SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

BELLA LANE SOUTH EXTENSTION & ALPHA ROAD CONNECTOR

TOWN OF ADDISON, TEXAS
PUBLIC WORKS AND ENGINEERING SERVICES
BID NUMBER 21-69

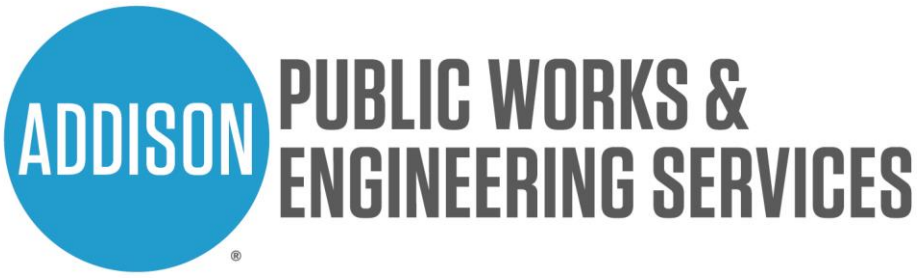
SEPTEMBER 2021

PREPARED BY

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TOWN OF ADDISON, TEXAS

MAYOR

Joe Chow

MAYOR PRO TEM:

Guillermo Quintanilla

DEPUTY MAYOR PRO TEM:

Paul Walden

COUNCIL MEMBERS

Tom Braun

Lori Ward

Kathryn Wheeler

Marlin Willesen

CITY MANAGER

Wesley S. Pierson

DIRECTOR OF PUBLIC WORKS AND ENGINEERING SERVICES

Shannon Hicks, P.E.

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SECTION AB

ADVERTISEMENT FOR BIDS

ADVERTISEMENT FOR BIDS

1. The Town of Addison is requesting bids for the Bid of the Bella Lane South Extension and Alpha Road Connector. **Bids will be accepted until 2:00 p.m., Thursday, October 21, 2021** at the Finance Building, 5350 Belt Line Rd., Dallas, Texas 75254 – Attention Purchasing Department, at which time responders names and bids will be publicly read aloud. Late bids will not be considered. The plans, specifications, quantities, pre-bid time and date, and other information are available on www.civcastusa.com. The plans, specifications, and quantities for the work to be done are also on file with Public Works & Engineering Services Department, Town of Addison, 16801 Westgrove Drive, Addison, Texas 75001, and such plans, specifications, and quantities may be examined without charge. The Town of Addison reserves the right to waive any formalities, to reject any and all bids, and to select the proposal deemed most advantageous to the Town of Addison.

2. The Contractor shall identify his bid on the outside of the envelope by writing the words **PUBLIC WORKS AND ENGINEERING SERVICES BID NUMBER 21-69, BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR.**

   PAPER BIDS SHALL BE REQUIRED. AN ELECTRONIC COPY OF THE BID SHALL BE INCLUDED IN THE ENVELOPE WHEN THE PAPER BID IS SUBMITTED. A USB DRIVE IS PREFERRED.

3. Bids shall be accompanied by a bid bond in the same amount from a reliable surety company licensed by the State of Texas to act as a Surety and be listed on the current U.S. Treasury Listing of Approved Sureties, or a Binder of Insurance executed by a surety company licensed by the State of Texas to act as a surety or its authorized agent as a guarantee that the bidder will enter into a contract and execute a Performance Bond within ten (10) days after notice of award of contract to him.

4. Plans, specifications and bidding documents may be downloaded from www.civcastusa.com. The Town of Addison is a "free buyer", meaning that prospective bidders need only a free registration to sign up for plan updates. Bidders assume all risk for acquiring specs and/or plans from third party sites and plan rooms, as only www.civcastusa.com will be directly updated by Addison.

5. The right is reserved by the Mayor and the City Council as the interests of the City may require to reject any or all bids and to waive any formality in bids received and to select the proposal deemed most advantageous to the City.

6. The Bidder (Proposer) must supply all the information required by the Proposal Form.

7. A Performance Bond, Labor and Material Payment Bond, and Maintenance Bond will be required by the Owner; each Bond shall be in the amount of 100% of the total contract amount. Bonds shall be issued by a surety company licensed by the State of Texas to act as a Surety and be listed on the current U.S. Treasury Listing of Approved Sureties.

8. The Bidder (Proposer) must supply all the information required by the Bidder Qualification Statement.

9. **An optional pre-bid meeting will be held on Thursday, October 7, 2021 at 2:00pm in the The Town of Addison Service Center 16801 Westrgrove Drive, Addison, Texas 75001 A site visit will follow this meeting.**

10. For information on bidding or work to be performed, please submit all questions on www.civcastusa.com. **All questions must be received by 5:00pm on Wednesday, October 13, 2021. All questions received by this deadline will be answered by 5:00pm on Monday, October 18, 2021.**

11. **The project consists of constructing the extension of Bella Lane South from Vitruvian Park to Windmill Circle and connection to Alpha Road from Farmers Branch Creek. The improvements include, but are not limited to, subgrade preparation, concrete pavement, storm sewer pipe, storm sewer structure, water line, bridge construction, and detention pond construction.**

SECTION IB

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

A. PROJECT: BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR, in the Town of Addison. The bids will be evaluated as stated in Section "O" of these Instructions to Bidders.

B. PROJECT DESCRIPTION: The project consists of constructing the extension of Bella Lane South from Vitruvian Park to Windmill Circle and connection to Alpha Road from Farmers Branch Creek. The improvements include, but are not limited to, subgrade preparation, concrete pavement, storm sewer pipe, storm sewer structure, water line, bridge construction, and detention pond construction.

C. PROPOSALS: Proposals must be in accordance with these instructions in order to receive consideration.

D. DOCUMENTS: Reference the Contract Agreement for a listing of Contract Documents to be included for this project.

E. EXAMINATION OF DOCUMENTS AND SITE: Bidders shall carefully examine the Bidding Documents and the construction site to obtain firsthand knowledge of the scope and the conditions of the Work. Each Contractor, Subcontractor and Sub-subcontractor, by submitting a proposal to perform any portion of the Work, represents and warrants that he has examined the Contract Documents and the site of the Work, and from his own investigation has satisfied himself as to the scope, accessibility, nature and location of the Work; the character of the equipment and other facilities needed for the performance of the Work; the character and extent of other work to be performed; the local conditions; labor availability, practices and jurisdictions; and other circumstances that may affect the performance of the Work. No additional compensation will be allowed by the Owner for the failure of such Contractor, Subcontractor or Sub-subcontractor to inform himself as to conditions affecting the Work.

F. INTERPRETATION OF DOCUMENTS: If any person contemplating submitting a bid for the proposed Contract is in doubt as to the meaning of any part of the Drawings, Specifications (Project Manual) or other proposed Contract Documents, he may submit questions to the Town of Addison, no later than 5:00pm on Wednesday, October 13, 2021. All questions received by this deadline will be answered by 5:00pm on Monday, October 18, 2021. Bidders should act promptly and allow sufficient time for a reply to reach them before preparing their bids. Any interpretation or clarification will be in the form of an Addendum duly issued. No alleged verbal interpretation or ruling will be held binding upon the Owner.

G. SUBSTITUTIONS: Conditions governing the submission of substitutions for specific materials, products, equipment and processes are in the Special Provisions. Requests for substitutions must be received by the Town of Addison seven (7) calendar days prior to the established bid date.

H. ADDENDA: Interpretations, clarifications, additions, deletions and modifications to the Documents during the bidding period will be issued in the form of Addenda and a copy of

such Addenda will be released through www.civcastusa.com. It will be the responsibility of each person who has been issued a set of bid documents to secure all Addenda from www.civcastusa.com. Addenda will be a part of the Bidding Documents and the Contract Documents, and receipt of them shall be acknowledged in the Bid Form. All such interpretations and supplemental instructions will be in the form of written addenda to the contract documents which, if issued, will be released through www.civcastusa.com not later than three (3) calendar days prior to the date fixed for the opening of bids. If any bidder fails to acknowledge the receipt of such addenda in the space provided in the bid form, his bid will nevertheless be construed as though the receipt of such addenda had been acknowledged.

I. The Town may consider more factors than just price in awarding a the contract in accordance with the requirements for competitive bidding under the Local Government Code Section 252.043. The criteria that will be considered are:

- the price;
- the offeror's experience and reputation;
- the quality of the offeror's goods or services;
- the impact on the ability of the Town to comply with rules relating to historically underutilized businesses;
- the offeror's safety record;
- the offeror's proposed personnel;
- whether the offeror's financial capability is appropriate to the size and scope of the project; and
- any other relevant factor specifically listed in the request for bids, proposals, or qualifications

J. COMPLETION TIME: The selected contractor shall use the time period between the awarding of the contract at Town Council and the date of Notice to Proceed to submit materials and shop drawings for approval by **Kimley-Horn and Associates**. **Kimley- Horn** shall review and return these submittals in the most expedient manner possible to accommodate immediate material ordering.

a. Upon receiving Notice to Proceed, the selected contractor shall have **330 calendar days** to construct the project and achieve substantial completion. Substantial completion for this project includes the following items:
    i. Preliminary Punchlist walk-through with the Town performed.
b. After substantial completion is reached, the contractor shall have **an additional 20 calendar days to** achieve 100% final completion. Final completion for this project shall include:
    i. Punchlist items completed and approved by the Town;
    ii. Site clean-up;
    iii. Submittal of Record Drawings; and
    iv. Execution of Maintenance Bond.

K. PREPARATION OF BIDS: Prices quoted shall include all items of cost, expense, taxes, fees and charges incurred by, or arising out of, the performance of the work to be performed under the Contract. Bids shall be submitted in duplicate and shall be signed in ink. Any bid on other than the required form will be considered informal and may be rejected. Erasures or other changes in a bid must be explained or noted over the initials of the bidder. Bids containing any conditions, omissions, unexplained erasures and alterations, or irregularities of any kind may be rejected as informal. The prices should be expressed in words and figures or they may be deemed informal and may be rejected. In case of discrepancy between the price written in the bid and that given in the figures, the price in writing will be considered as the bid. In the case of a discrepancy between a unit price and its extension, the unit price will govern. Failure to submit all requested information will make a bid irregular and subject to rejection. Bids shall be signed with name typed or printed below signature, and, if a partnership, give full name of all partners. Where bidder is a corporation, bids must be signed with the legal name of the corporation followed by the name of the state of incorporation and the legal signature of an officer authorized to bind the corporation to a contract.

L. SUBMITTAL OF BIDS: Sealed proposals will be received at the time, date and place stated in the Advertisement for Bids. Proposals shall be made on unaltered Proposal Forms furnished by the Town of Addison. Bidders shall submit proposals in an opaque, sealed envelope addressed to the Owner and plainly mark on the outside of the envelope the name and address of the bidder. The envelopes shall also be marked with the following project description:

PUBLIC WORKS AND ENGINEERING SERVICES BID NUMBER 21-69

BELLA LANE SOUTH EXTENSTION & ALPHA ROAD CONNECTOR

An electronic copy of the bid shall be included in the envelope when the paper copy bid is submitted. A USB drive is preferred.

The Bid Bond must be completed and signed by each bidder and submitted with the bid. Submit Bids by mail or in person prior to the time for receiving bids set forth in the Advertisement for Bids issued by the Town.

Electronic bidding on www.civcastusa.com will not be considered for this project. The Town of Addison uses www.civcastusa.com to distribute bids and proposals. There will be NO COST to the contractor for the use of www.civcastusa.com.

M. MODIFICATION AND WITHDRAWAL OF BIDS: Prior to the time set for bid opening, bids may be withdrawn or modified. Bids may be modified only on the official bid form and must be signed by a person legally empowered to bind the bidder. No bidder shall modify, withdraw, or cancel his bid or any part thereof for sixty (60) calendar days after the time agreed upon for the receipt of bids.

N. DISQUALIFICATION: The Owner reserves the right to disqualify proposals, before or after the opening, upon evidence of collusion with intent to defraud or other illegal practices relating to this proposal upon the part of the bidder.

O. SUBMISSION OF POST-BID INFORMATION: Upon notification of acceptance, the selected bidder shall, within twenty-four (24) hours, submit the following:

1. A designation of the portions of the Work proposed to be performed by the bidder with his own force.
2. A list of names of the Subcontractors or other persons or organizations, including those who are to furnish materials and equipment fabricated to a special design proposed for such portions of the Work as may be designated in the Bidding Documents or as may be requested by the Town of Addison. The bidder will be required to establish to the satisfaction of the Owner the reliability and responsibility of the proposed Subcontractors and suppliers to furnish and perform the Work.

3. Other information as required.

P. AWARD: The Owner reserves the right to accept any or to reject any bids without compensation to bidders and to waive irregularities and informalities. The Town of Addison Public Works & Engineering Services Department, in making its recommendation, will consider the following elements:

1. Whether the bidder is a contractor with experience in the type of work involved.
2. Whether the bidder has adequate plant, equipment and personnel to perform the work properly and expeditiously.
3. Whether the bidder has a suitable financial status and reputation for meeting obligations incident to work of the kind specified.
4. Whether the bidder has complied with the terms and conditions.

Alternate items may or may not be awarded. Addition or deletion of other items or schedules will be governed by the *Standard Specifications for Public Works Construction – North Central Texas, November 2017, 5th Edition*, (hereinafter called SSPWC) Item 104.2 "Change or Modification of Contract".

Q. EXECUTION OF THE CONTRACT: The successful bidder will be required to enter into a contract with the Owner within ten (10) days of notice by the Owner that his bid has been accepted. Failure to enter into a contract within the established time limit shall be considered grounds for forfeiture of the bid bond.

R. CONSTRUCTION SCHEDULE: It is the Owner's desire to have the project completed and operational in as short a time as possible. The number of calendar days for completion of the project will begin with the date specified in the Notice to Proceed. The Notice to Proceed will be issued in a manner to facilitate a smooth construction of the project. The Contractor shall begin construction within ten (10) calendar days of the issuance of the Notice to Proceed.

S. COST PLUS TIME BIDDING: N/A

T. FORM OF CONTRACT: The contract for the construction of the project will be drawn up by the Owner. A sample form of agreement is included in the Contract Agreement Section.

U. BONDS: A Performance Bond, a Labor and Material Payment Bond and a Maintenance Bond will be required by the Owner. The Performance Bond and Payment Bond shall name the Town of Addison, and others as directed by the Town, as joint obligees. Sample forms have

been included in the Performance Bond, Payment Bond, and Maintenance Bond sections. (Contractor shall confirm the legal names of obligees prior to execution of Bonds.)

V. BID SECURITY: Bids shall be accompanied by a bid bond in the same amount from a surety company licensed to do business in the State of Texas as a guarantee that the bidder will enter into a contract and execute a Performance Bond and Payment Bond within ten (10) calendar days after notice of award of contract to him. Such bid bonds will be returned to all except the three lowest bidders within three (3) days after the opening of bids, and the remaining bid bonds will be returned promptly after the Owner has made an award of contract, or, if no award has been made within thirty (30) calendar days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

W. RESOLUTIONS: If the bidder is a corporation, a copy of the resolution empowering the person submitting the bid to bind the bidder must be included with the bid.

X. CONSTRUCTION STAKING: Construction staking and re-staking will not be provided by the Owner. Benchmarks and Horizontal Control are shown on the plans. There is no separate bid item for staking, therefore, the contractor must include value for staking in the various bid items as subsidiary to the contract. Any staking or re-staking that is required shall be the responsibility of the Contractor and shall be at no cost to the Owner.

Y. FINAL PAYMENT: The general provisions for Final Payment shall be as stated in Item 109.5.4 of the SSPWC including all Amendments and Additions. Prior to final payment the Contractor shall provide the Owner with the following items:

1. A Contractor's Affidavit of Bills Paid in accordance with Section BP.
2. A Consent of Surety Company to Final Payment.
3. A complete set of record plans which indicate all construction variations from the original construction documents in accordance with the Special Provisions.
4. A Two (2) years Maintenance Bond in accordance with Section MB.
5. Acknowledgement that the project has been reviewed and accepted by TDLR.

Z. PREVAILING WAGE RATES: Wage rates paid on this project shall not be less than specified in the schedule of general prevailing rates of per diem wages as attached in the Special Provisions.

AA. PRIORITY OF CONTRACT DOCUMENTS: Reference the Contract Agreement for information regarding the priority of Contract Documents.

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - STREET IMPROVEMENTS					
P1	MOBILIZATION (5% MAX)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P2	BARRICADES, SIGNS, AND TRAFFIC HANDLING	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P3	PROJECT SIGN	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P4	GENERAL SITE PREPARATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P5	REMOVE EX HEADWALL	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P6	REMOVAL OF EX 54" RCP	5	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P7	REMOVE EXISTING CONCRETE SIDEWALK/RAMPS	425	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P8	REMOVE EXISTING ASPHALT PAVEMENT	480	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P9	REMOVE EXISTING TREES	116	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P10	UNCLASSIFIED STREET EXCAVATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P11	BORROW AND SPOIL (ROADWAY)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P12	MOISTURE TREATED SUBGRADE	7,180	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
P13	6" LIME STABILIZED SUBGRADE	1,145	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P14	HYDRATED LIME	25	TON		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P15	4" TYP B HMAC (TXDOT)	30	TON		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P16	8" REINFORCED CONCRETE PAVEMENT (STREET)	6,615	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P17	10" PORTLAND CEMENT CONC PAVEMENT W/ 6" MONO CURB)	1,050	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P18	6" CURB AND GUTTER	875	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P19	REINFORCED CONCRETE STREET HEADERS	540	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P20	5" CONCRETE SIDEWALK	3,100	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P21	ACESSIBLE RAMP	12	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P22	RAIL (HANDRAIL) (TY F)	35	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P23	INSTALL NEW SIGN AND SIGN POST ASSEMBLY	20	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P24	REFL PAV MRKG TY I & TY II (W) 4" SOLID	3,300	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
P25	REFL PAV MRKG TY I & TY II (Y) 4" SOLID	3,050	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P26	REFL PAV MRKG TY I & TY II (Y) 4" BROKEN	140	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P27	REFL PAV MRKG TY I & TY II (W) ARROW	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P28	REFL PAV MRKG TY I & TY II (W) 24" STOP BAR MARKING	31	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P29	REFL PAV MRKG TY I & TY II (W) 5' X 8' CROSSWALK WITH 5' SPACE	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P30	REFL PAV MRKG TY I & TY II (W) 24"X 8" CROSSWALK WITH 4' SPACE	15	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P31	REFL PAV MRKG TY I (W) 24" TRIANGLE	21	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P32	REMOVE AND RELOCATE EX GATE	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P33	ONCOR DUCT CROSSING COORDINATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - STREET IMPROVEMENTS

_____
(Total Amount Bid, Numerical Value)

_____ Dollars
and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BRIDGE OVER FARMERS BRANCH CREEK					
B1	FLOWABLE BACKFILL	443	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B2	DRILL SHAFT (18 IN)	148	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B3	DRILL SHAFT (36 IN)	296	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B4	CL C CONC (ABUT) (HPC)	100	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B5	REINF CONC SLAB (HPC)	2,648	SF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B6	BRIDGE SIDEWALK (HPC)	490	SF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B7	APPROACH SLAB (HPC)	83	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B8	PRESTR CONC I-GIRDER (TX40)	329	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B9	RIPRAP (CONC) (CL B) (RR8&RR9)	76	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B10	RIPRAP (STONE PROTECTION) (24 IN)	1,470	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B11	ELASTOMERIC BEARING (LAMINATED)	8	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B12	STR STEEL (MISCELLANEOUS BRIDGE) (BS-EJCP)	186	LB		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
B13	RAIL (TY C221) (HPC)	238	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B14	SEALED EXPANSION JOINT (4 IN) (SEJ - M)	51	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B15	MTL BEAM GD FEN TRANS (THRIE-BEAM)	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B16	TERMINAL ANCHOR SECTION	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BRIDGE OVER FARMERS BRANCH CREEK

_____
(Total Amount Bid, Numerical Value)

_____ Dollars
and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - STORM SYSTEM IMPROVEMENTS					
D1	18" RCP CLASS III	490	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D2	24" RCP CLASS III	285	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D3	30" RCP CLASS III	80	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D4	6' CURB INLET	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D5	CONCRETE HEADWALL (CHFW-0)	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D6	18" RCP 2:1 SET TY II HEADWALL	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D7	18" RCP 6:1 SET TY II HEADWALL	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D8	24" RCP 6:1 SET TY II HEADWALL	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D9	RIPRAP (STONE PROTECTION) (12 IN) (CHFW-0 HEADWALL)	12	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D10	TRENCH EXCAVATION PROTECTION (STORM SYSTEM)	855	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - STORM SYSTEM IMPROVEMENTS

$ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - DETENTION POND IMPROVEMENTS					
H1	UNCLASSIFIED POND AND CREEK EXCAVATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H2	BORROW AND SPOIL (DETENTION POND AND CREEK)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H3	BORROW AND SPOIL (DETENTION POND AND CREEK) (SELECT FILL)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H4	RIPRAP (CONC) (CL B) (RR8&RR9) (DETENTION POND)	7	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H5	RIPRAP (STONE PROTECTION) (24 IN) (DETENTION POND)	910	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H6	CONCRETE OUTFALL STUCTURE	7	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - DETENTION POND IMPROVEMENTS

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - LANDSCAPE IMPROVEMENTS AND EROSION CONTROL					
L1	HYDRAULIC MULCHING WITH 4" TOPSOIL	43,868	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L2	SEDIMENT CONTROL FENCE (INSTALL/MAINTAIN/REMOVE)	7,475	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L3	STABILIZED CONSTRUCTION EXIT/ENTRANCE	180	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L4	INLET PROTECTION (INSTALL/MAINTAIN/REMOVE)	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L5	ROCK CHECK DAM	65	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L6	STORM WATER POLLUTION PREVENTION PLAN	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-TOTAL AMOUNT BID-BASE BID - DETENTION POND IMPROVEMENTS

$ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - WATER IMPROVEMENTS					
W1	8" PVC WATER LINE	355	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W2	12" PVC WATER LINE	575	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W3	8 " GATE VALVE	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W4	12" GATE VALVE	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W5	FIRE HYDRANT ASSEMBLY	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W6	REMOVE EXISTING 12" AC WATER LINE	8	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W7	ABANDON EXISTING ASBESTOS PIPE IN PLACE	500	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W8	WATER TESTING	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W9	TRENCH EXCAVATION PROTECTION (WATER SYSTEM)	930	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - WATER IMPROVEMENTS $ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - SANITARY SEWER IMPROVEMENTS					
SS1	8" PVC SSWR LINE	315	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS2	4' STANDARD MANHOLE	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS3	CEMENT STABILIZED SAND ENCASEMENT (MIN. 10% CEMENT/CY)	20	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS4	SANITARY SEWER CCTV INSPECTION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS5	TRENCH EXCAVATION PROTECTION (SANITARY SEWER IMPROVEMENTS)	315	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - SANITARY SEWER IMPROVEMENTS

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - OWNER'S CONTIGENCY					
O1	OWNER'S CONTIGENCY	1	LS		
	Complete in Place, for the Sum of Eighty Five Thousand Dollars and Zero Cents per unit			$ 85,000.00	$ 85,000.00

TOTAL AMOUNT BID-BASE BID - OWNER'S CONTIGENCY

$ 85,000.00

(Total Amount Bid, Numerical Value)

Dollars

and Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

TOTAL AMOUNT OF BASE BID (ITEMS P1 THROUGH O1)

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

(Total Amount Bid in Words)

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

NOTES:

1. All items, labor, materials, equipment, facilities, incidentals and work required for construction of the project are to be provided and installed by the Contractor as part of the project and payment for the cost of such shall be included in the price bid for the construction of the project.

2. Prices must be shown in words and figures for each item listed in the Proposal. In the event of discrepancy, the words shall control.

3. Materials, which are "tax exempt", are those items which are physically incorporated into the facilities constructed for the Town of Addison, as set forth in the Special Provisions. Materials include, but are not limited to purchased items such as water pipe, sanitary sewer pipe, storm drain pipe, etc.

   Services, which are "not tax exempt", are those items which are used by the Contractor but are not physically incorporated into the Town of Addison's facility and/or items which are consumed by construction, as set forth in the Special Provisions. Services include, but are not limited to, items such as supplies, tools, skill and labor, the purchase, rental or lease of equipment, etc.

_____

Name of Person Signing Bid

_____

Signature of Person Signing Bid

_____

Address

_____

Telephone No. Fax No.

_____

T.I.N. (Tax Identification or Employer's Number)

If BIDDER is:

AN INDIVIDUAL

By _____ (Seal)
(Individual's Name)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A PARTNERSHIP

By _____ (Seal)
(Firm Name)

_____
(General Partner)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A CORPORATION

By _____
(Corporation Name)

_____
(State of Incorporation)

By _____
(Name of Person Authorized to Sign)

_____
(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business address: _____

_____

_____

Phone No. _____

A JOINT VENTURE

By _____
(Name)

_____
(Address)

By _____
(Name)

_____
(Address)

(Each joint venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

SECTION PF-1

PROPOSAL FORM

PROPOSAL FORM

_____ , 2021

TO: The Honorable Mayor and Town Council
Town of Addison, Texas

Gentlemen:

The undersigned bidder, having examined the plans, specifications and contract documents, and the location of the proposed work, and being fully advised as to the extent and character of the work, proposes to furnish all equipment and to perform labor and work necessary for completion of the work described by and in accordance with the Plans, Specifications and Contract for the following prices, to wit:

Signed by: _____

ACKNOWLEDGMENT OF ADDENDA:

The Bidder acknowledges receipt of the following addenda:

Addendum No. 1 _____

Addendum No. 2 _____

Addendum No. 3 _____

The following pages contain all bid items for:

BID SCHEDULE – BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR
BID NUMBER 21-69

TOTAL AMOUNT OF BASE BID (ITEMS P1 THROUGH O1)

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

(Total Amount Bid in Words)

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

NOTES:

1. All items, labor, materials, equipment, facilities, incidentals and work required for construction of the project are to be provided and installed by the Contractor as part of the project and payment for the cost of such shall be included in the price bid for the construction of the project.

2. Prices must be shown in words and figures for each item listed in the Proposal. In the event of discrepancy, the words shall control.

3. Materials, which are "tax exempt", are those items which are physically incorporated into the facilities constructed for the Town of Addison, as set forth in the Special Provisions. Materials include, but are not limited to purchased items such as water pipe, sanitary sewer pipe, storm drain pipe, etc.

   Services, which are "not tax exempt", are those items which are used by the Contractor but are not physically incorporated into the Town of Addison's facility and/or items which are consumed by construction, as set forth in the Special Provisions. Services include, but are not limited to, items such as supplies, tools, skill and labor, the purchase, rental or lease of equipment, etc.

_____

Name of Person Signing Bid

_____

Signature of Person Signing Bid

_____

Address

_____

Telephone No. Fax No.

_____

T.I.N. (Tax Identification or Employer's Number)

If BIDDER is:

AN INDIVIDUAL

By _____ (Seal)
(Individual's Name)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A PARTNERSHIP

By _____ (Seal)
(Firm Name)

_____
(General Partner)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A CORPORATION

By _____
(Corporation Name)

_____
(State of Incorporation)

By _____
(Name of Person Authorized to Sign)

_____
(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business address: _____

_____

_____

Phone No. _____

A JOINT VENTURE

By _____
(Name)

_____
(Address)

By _____
(Name)

_____
(Address)

(Each joint venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

SECTION PF-1

PROPOSAL FORM

PROPOSAL FORM

_____ , 2021

TO: The Honorable Mayor and Town Council
Town of Addison, Texas

Gentlemen:

The undersigned bidder, having examined the plans, specifications and contract documents, and the location of the proposed work, and being fully advised as to the extent and character of the work, proposes to furnish all equipment and to perform labor and work necessary for completion of the work described by and in accordance with the Plans, Specifications and Contract for the following prices, to wit:

Signed by: _____

ACKNOWLEDGMENT OF ADDENDA:

The Bidder acknowledges receipt of the following addenda:

Addendum No. 1 _____

Addendum No. 2 _____

Addendum No. 3 _____

The following pages contain all bid items for:

BID SCHEDULE – BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR
BID NUMBER 21-69

SECTION BB

BID BOND

BID BOND

Bidder shall submit a bid bond equal to five percent (5%) of the bid price. Failure to submit a bid bond when required may deem the bid non-responsive. Bid Bonds may be submitted electronically with the executed original provided immediately upon request.

SECTION BQS

BIDDER QUALIFICATION STATEMENT

SECTION BQS

ALL BIDDERS ARE NOTIFIED THAT THE FOLLOWING QUALIFICATION STATEMENT MUST BE COMPLETED AND SUBMITTED WITH THE BID PROPOSAL

CONTRACTOR'S QUALIFICATIONS

The Contractor shall show that he has experience with similar projects that require working on concrete pavement, water, storm sewer, detention pond, and bridge construction in close proximity to many physical features (such as: fences, carports, utility poles, guy lines, gas lines and meters, water lines, sewer manholes and cleanouts, etc.) which will require the Contractor to plan his work efforts and equipment needs with these limitations in mind. The Contractor shall submit a complete list of ALL Municipal and Similar Non-Municipal current and completed projects for the past three (3) years for review. This list shall include the names of supervisors and type of equipment used to perform this work.

BIDDERS QUALIFICATION STATEMENT

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 21-69, BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR

Contractor:_____

Indicate One: _____Sole Proprietor _____Partnership _____Other

_____Corporation _____ Joint Venture

Name:_____Partner:_____

Title:_____Title:_____

Address:_____ Address:_____

City:_____ City:_____

State & Zip:_____ State & Zip:_____

Phone:_____ ___Phone:_____

State and Date of Incorporation, Partnership, Ownership, Etc._____

Location of Principal Office:_____

Contact and Phone at Principal Office:_____

Liability Insurance Provider and Limits of Coverage:_____

Workers Compensation Insurance Provider:_____

Surety (Performance and Payment):_____

Address:_____

Contact and Phone:_____

Superintendent and Backup Superintendent: (Work Resume - attach additional sheets.) (Safety Record – attached additional sheets; if needed show all verified safety violations.) The superintendent shall be able to communicate in English and not operate any equipment and have not had any verified job safety violations in the past five years. Any variations shall be reviewed by the OWNER for approval or denial. A job site shall be shut down if proper supervision is not provided.

Superintendent Name Backup Superintendent Name

_____ _____

Safety Record – List ALL Verified Violations for Superintendent and Backup Superintendent with explanation, date and action taken to correct future safety violations:

Superintendent

_____

_____

_____

_____

Backup Superintendent

_____

_____

_____

_____

Total Number of Employees to be Associated with this Job:_____

Managerial_____ Administrative_____ Professional_____

Skilled_____ Semi-Skilled_____ Other_____

Percentage of work to be done by Bidder's Employees (Based on Dollars Bid): _____

Type(s) of work to be done by Bidder's Employees (examples: concrete paving, structural concrete, waterlines, sanitary sewer lines, storm pipe, storm inlets, excavation, lime, bridge fencing, etc.)

_____

_____

_____

Access to Tools and Equipment: Percent Owned____ Percent Rented____

Number of Years in Business as a Contractor on Above Types of Works:_____

Type(s) of Work to be done by Sub-Contractors
Include Name, Address, and Phone Number of Sub-Contractor.
Use additional sheets if needed.

Type of Work Sub-Contractor

_____

_____

_____

_____

_____

List Equipment to be used on this project (Make/Model/Age of Major Equipment) Any Equipment not listed shall be reviewed by the OWNER for approval or rejection prior to use of Equipment on this project. (Use additional sheets if necessary)

Type of Equipment Make Model Age (years)

_____

_____

_____

_____

_____

_____

_____

List of ALL Municipal and Similar Non-Municipal current and completed projects for the past three (3) years. (Use additional sheets if necessary.)

1. Project:_____

   Current Status:_____

   Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

   _____

   _____

   _____

   Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

   _____

   _____

   _____

   Project Description:_____

   Owner/Agency:_____

   Year Built:_____ Contract Price:_____

   Contact Person:_____ Phone:_____

2. Project:_____

   Current Status:_____

   Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

   _____

   _____

   _____

   Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

   _____

   _____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

3. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

4. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

5. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

6. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

7. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

8. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

9. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

10. Project:_____

Current Status:_____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain:_____

_____

_____

_____

Project Description:_____

Owner/Agency:_____

Year Built:_____ Contract Price:_____

Contact Person:_____ Phone:_____

Trade references (List Company, Address, Contact Person, and Phone):

_____

_____

_____

Bank References (List Institution, Address, Contact Person, and Phone)

_____

_____

_____

Claims and Suits (if the answer to any of the following questions is yes, please attached details):

1. Has your organization ever failed to complete any work awarded to it?_____

2. Are there any judgments, claims, arbitration proceedings, or suits pending or outstanding against your organization or officers?_____

3. Has your organization filed any lawsuits or requested arbitration with regard to construction contracts within the last five years?_____

4. Within the last five (5) years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract?_____

I,_____,being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Date this_____day of_____, 20_____.
Name of
Organization:_____

By:_____

Title:_____

STATE OF TEXAS

COUNTY OF DALLAS

BEFORE ME the undersigned authority, on this day personally appeared _____

_____, known to me to be the person whose name subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this ___day of _____ 20____.

_____

Notary Public in and for _____ County, Texas

SECTION CA

CONTRACT AGREEMENT

CONTRACT AGREEMENT

STATE OF TEXAS

COUNTY OF DALLAS

THIS AGREEMENT is made and entered into this _____ day of _____, 2021, by and between the Town of Addison, of the County of Dallas and State of Texas, acting through its City Manager, thereunto duly authorized so to do, Party of the First Part, hereinafter termed the OWNER, and _____, of the City of _____, County of _____, State of _____, Party of the Second Part, hereinafter termed CONTRACTOR.

WITNESSETH: That for and in consideration of the payment and agreement hereinafter mentioned, to be made and performed by the OWNER, the said CONTRACTOR hereby agrees with the said OWNER to commence and complete construction of certain improvements as follows:

BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR

PUBLIC WORKS AND ENGINEERING SERVICES BID NUMBER 21-69

and all extra work in connection therewith, under the terms as stated in the General and Specific Conditions of the AGREEMENT; and at his own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance and other accessories and services necessary to complete the said construction, in accordance with the conditions and prices stated in the Proposal attached hereto and in accordance with the ~~Advertisement for Bids, Instructions to Bidders, General Provisions, Special Provisions, Plans, and other drawings and printed or written explanatory matter thereof, and the Technical Specifications and Addenda thereto~~ Contract Documents~~, as prepared by the OWNER, each of which has been identified by the endorsement of the CONTRACTOR and the OWNER thereon, together with the CONTRACTOR's written Proposal and the General Provisions, all of which are made a part hereof and collectively evidence and constitute the entire AGREEMENT.~~.

The Contract Documents shall consist of the following documents:

1. this Contract Agreement;
2. properly authorized change orders;
3. any listed and numbered addenda;
4. the Special Provisions;
5. Technical Specifications & Construction Drawings;
6. the OWNER's Standard Construction Details;
7. the October 2017 5th Edition of the Public Works Construction Standards - North Central Texas as amended and published by the North Central Texas Council of Governments, as amended by the Owner (collectively, the "NCTCOG Specifications ");
8. the OWNER's written notice to proceed to the CONTRACTOR;

9. the Contractor's Bid Proposal;
10. the Performance, Payment, and Maintenance Bonds; and,
11. any other bid materials distributed by the Owner that relate to the Project.

These Contract Documents are incorporated by reference into this Construction Agreement as if set out here in their entirety. The Contract Documents are intended to be complementary; what is called for by one document shall be as binding as if called for by all Contract Documents. It is specifically provided, however, that in the event of any inconsistency in the Contract Documents, the inconsistency shall be resolved by giving precedence to the Contract Documents in the order in which they are listed herein above. If, however, there exists a conflict or inconsistency between the Technical Specifications and the Construction Drawings it shall be the Contractor's obligation to seek clarification as to which requirements or provisions control before undertaking any work on that component of the project. Should the Contractor fail or refuse to seek a clarification of such conflicting or inconsistent requirements or provisions prior to any work on that component of the project, the Contractor shall be solely responsible for the costs and expenses - including additional time - necessary to cure, repair and/or correct that component of the project.

The CONTRACTOR hereby agrees to commence work within ten (10) calendar days after the date of written notice to do so shall have been given to him, to complete the work within three hundred and thirty **(**330) calendar days, after he commences work, subject to such extensions of time as are provided by the General Provisions.

The OWNER agrees to pay the CONTRACTOR _____ _____ Dollars **($_____)** in current funds for the performance of the Contract in accordance with the Proposal submitted thereof, subject to additions and deductions, as provided in the General Provisions, and to make payments of account thereof as provided therein.

IN WITNESS WHEREOF, the parties of these presents have executed this AGREEMENT in the year and day first above written.

TOWN OF ADDISON, TEXAS (OWNER) **ATTEST:**

By: _____ By: _____
City Manager

(CONTRACTOR) ATTEST:

By: _____ By: _____

The following to be executed if the CONTRACTOR is a corporation:

I, _____ certify that I am the secretary of the corporation named as CONTRACTOR herein; that _____, who signed this Contract on behalf of the CONTRACTOR is the _____ (official title) of said corporation; that said Contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Signed: _____

Corporate Seal

SECTION PrB

PERFORMANCE BOND

PERFORMANCE BOND

STATE OF TEXAS }
COUNTY OF DALLAS }

WHEREAS, _____as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns, and to all persons, firms, subcontractors and corporations who may furnish materials or labor under the contract as more fully described below, the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct _____
_____
_____
which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, this bond is given pursuant to Chapter 2253 of the Texas Government Code;

NOW, THEREFORE, if Contractor shall well, truly and faithfully perform all of the undertakings, duties, terms, conditions and agreements of the Contract; shall satisfy all claims and demands incurred under the Contract; shall fully indemnify and hold the Town harmless; shall reimburse and repay the Town for any outlay or expense which the Town may incur in making good any default, and shall promptly make payment to all persons, firms, subcontractors and corporations who may furnish materials or labor under the Contract, then this obligation shall be void; otherwise to remain in full force and effect. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2_____.

CONTRACTOR: SURETY: 1

By:_____ By:_____

Title:_____ Title:_____

ACKNOWLEDGMENTS
[Contractor]

STATE OF TEXAS }
COUNTY OF DALLAS }

Before me _____ (insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS }
COUNTY OF DALLAS }

This instrument was acknowledged before me on the ____day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary

My Commission Expires:_____

1 Please see attached contact sheet for Surety and the Texas Department of Insurance.

Payment and Performance Bond Contact Sheet

(1) Claims:

All notices of claims shall be sent to the surety at the following address:

_____
(Name of surety)

_____
(Mailing address)

_____
(Physical address)

_____
(Phone number)

(2) Texas Department of Insurance Contact Number:

The address and contact information of the surety may otherwise be obtained by contacting the Texas Department of Insurance at the following toll free telephone number:

1-800-252-3439.

SECTION PyB

PAYMENT BOND

PAYMENT BOND

STATE OF TEXAS }
COUNTY OF DALLAS }

WHEREAS, _____, as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns, and to all persons, firms, subcontractors and corporations who may furnish materials or labor under the contract as more fully described below, the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct _____
_____

which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, this bond is given pursuant to Chapter 2253 of the Texas Government Code;

NOW, THEREFORE, if Contractor shall promptly make payment to all persons, firms, subcontractors and corporations who may furnish materials or labor under the Contract, then this obligation shall be void; otherwise to remain in full force and effect. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension of time or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2_____.

CONTRACTOR: SURETY: [1]

By:_____ By:_____

Title:_____ Title:_____

ACKNOWLEDGMENTS
[Contractor]

STATE OF TEXAS }
COUNTY OF DALLAS }

Before me _____ (insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS }
COUNTY OF DALLAS }

This instrument was acknowledged before me on the _____ day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary

My Commission Expires:_____

[1] Please see attached contact sheet for Surety and the Texas Department of Insurance

Payment and Performance Bond Contact Sheet

(1) Claims:

All notices of claims shall be sent to the surety at the following address:

_____
(Name of surety)

_____
(Mailing address)

_____
(Physical address)

_____
(Phone number)

(2) Texas Department of Insurance Contact Number:

The address and contact information of the surety may otherwise be obtained by contacting the Texas Department of Insurance at the following toll free telephone number:

1-800-252-3439.

SECTION MB

MAINTENANCE BOND

MAINTENANCE BOND – TWO YEAR

STATE OF TEXAS '

COUNTY OF DALLAS '

WHEREAS,_____, as principal ("Contractor") and _____, a corporation organized under the laws of _____ and being duly authorized to do business in the State of Texas, as surety ("Surety")(whether one or more), do hereby expressly acknowledge themselves to he held and bound to pay to the Town of Addison, Texas, a home-rule municipality organized and operating under the Constitution and laws of the State of Texas (the "Town"), its successors and assigns the sum of _____ Dollars in the lawful currency of the United States of America ($) for the payment of which Contractor and Surety are liable to the Town, jointly and severally; and

WHEREAS, Contractor has this day entered into a written contract with the Town to build and construct which contract and the plans and specifications therein mentioned (collectively referred to hereinafter as the "Contract") are hereby expressly incorporated into and made a part hereof as though set forth at length; and

WHEREAS, under the Contract it is provided that the Contractor will maintain and keep in good repair all work to be performed and done under the Contract for a period of **two (2) years** from and after its date of final completion and written acceptance by the Town, and to do and perform all necessary work and repair any defective condition, it being understood that the purpose of this maintenance bond is to insure all warranties, express or implied, made or given by the Contractor to the Town and to cover all defective, inadequate or non-conforming conditions arising by reason of any materials or labor installed, provided, constructed or performed by the Contractor and in case the Contractor shall fail to correct any such conditions it is agreed that the Town may make such corrections and charge the cost of making those corrections against the Contractor and the Surety on this obligation, and the Contractor and Surety shall be subject to the liquidated damages provided in the contract, the plans and the specifications for each day's failure on its part to comply with the terms and provisions of the Contract;

NOW, THEREFORE, if the Contractor shall keep and perform its obligation to maintain the work and keep the work in repair for the full maintenance period of two (2) years as herein provided, then these presents shall be null and void and have no further effect, but if default shall be made by Contractor in the performance of its obligations, then these presents shall have full force and effect, and the Town shall have and recover from the Contractor and its Surety damages in the premises as provided and it is further understood and agreed that this obligation shall be a continuing one against the Contractor and the Surety and that successive recoveries may be had hereon for successive breaches until the full amount of this bond shall have been exhausted; and it is further understood that the obligation under this bond to maintain the work shall continue throughout the maintenance period and shall not be changed, diminished, or in any other manner affected during the term of this bond. The obligations of Contractor and Surety under this bond apply both to the original Contract and to any extension or modification of the Contract and Surety agrees that no change, extension of time, addition, expansion or other modification of the Contract, the work to be done under the Contract, or the plans and specifications which are a part of the Contract shall in any manner affect the obligations of Surety under this bond, and Surety waives notice of any such change, extension of time, addition, expansion or other modification. The obligations of Contractor and Surety under this bond are performable and payable in Dallas County, Texas such that exclusive venue for any legal action pertaining to this bond shall lie in Dallas County, Texas. By their signatures below, the persons signing this bond warrant and represent that they are, respectively, duly authorized to sign on behalf of Contractor and Surety.

EXECUTED this the _____ day of _____, 2_____.

CONTRACTOR:	SURETY:
By:_____	By:_____
Printed Name:_____	Printed Name:_____
Title:_____	Title:_____
Address of Principal:	Address of Surety:
_____	_____
_____	_____
_____	_____

ACKNOWLEDGMENTS

[Contractor]

STATE OF TEXAS '
COUNTY OF DALLAS '

Before me _____(insert the name of the officer) on this day _____ personally appeared _____ known to me (or proved to me on the oath of _____) or through _____ (description of identity card or other document) to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
My Commission Expires:_____

[Surety]

STATE OF TEXAS '
COUNTY OF DALLAS '

This instrument was acknowledged before me on the ___ day of _____, 2_____ by _____ who is the _____ of the Surety, on behalf of Surety.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2_____.

_____ _____
Notary Public in and for the State of Texas Typed or Printed Name of Notary
2-4-13 2 yr

SECTION BP

CONTRACTOR'S AFFIDAVIT OF BILLS PAID

CONTRACTOR'S AFFIDAVIT OF BILLS PAID

STATE OF TEXAS

COUNTY OF DALLAS

Personally, before me the undersigned authority, on this day appeared _____ who, being duly sworn, on oath, says that he is a legal representative of _____
(full name of Contractor as in contract)

and that the contract for the construction of the project, designated as

BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR

INFRASTRUCTURE AND DEVELOPMENT SERVICES BID NUMBER 21-69

has been satisfactorily completed and that all bills for materials, apparatus, fixtures, machinery and labor used in connection with the construction of this project have, to the best of my knowledge and belief, been fully paid.

_____
Signature

_____
Title

Sworn to and subscribed before me this _____day of _____, 202_.

_____
Notary Public in and for

_____ County, Texas

Instructions:

If the contractor is an individual, he shall sign the affidavit. If the contractor is a partnership, any partner may sign the affidavit. If the contractor is a corporation, a person authorized by the by-laws or by the Board of Directors shall sign the affidavit. If the Contractor is a joint-venture of individuals, any of the individuals may sign the affidavit. If the Contractor is a joint-venture of partnerships, or of individuals and partnerships, the affidavit may be signed by the individual or any partner of any partnership. If the contractor is a joint-venture in which a corporation is a party, separate affidavits must be executed in the name of the joint-venture: one by each corporation and one by each individual or partnership. Signatures for corporations should be by a duly authorized officer. If signature is by another, a showing of authority to sign must accompany the affidavit.

SECTION GP

GENERAL PROVISIONS

GENERAL PROVISIONS

The General Provisions of the Contract shall be as stated in the *Standard Specifications for Public Works Construction – North Central Texas, 5th Edition (2017)*, under Division 100, "General Provisions," Items 101.1 through 109.6 inclusive, as amended or supplemented and except as modified by the Special Provisions or Instructions to Bidders.

SECTION SP

SPECIAL PROVISIONS

SPECIAL PROVISIONS

1. **SCOPE OF WORK:** The Work to be performed under the provisions of these Contract Documents shall consist of furnishing all materials, labor, equipment, supplies and appurtenances; providing all construction, plant, equipment and tools; performing all necessary labor and supervision; and the construction complete, including all Work appurtenant thereto, the proposed improvements for: **BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR**.

2. **GENERAL:** This Work shall conform to the requirements of the Contract Documents as listed in the Contract Agreement. These Contract Documents are intended to be complementary. The Contractor shall do all work as provided in the Contract Documents shall do such additional Extra work as may be considered necessary to complete the work in a satisfactory and acceptable manner. The Contractor shall furnish all labor, tools, materials, machinery, equipment, and incidentals necessary to the satisfactory prosecution and completion of the Work.

3. **EXAMINATION OF SITE:** The Contractor acknowledges that he has investigated and satisfied itself as to the conditions affecting the Work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, or similar physical conditions at the site, conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the Work. The Contractor acknowledges that he has inspected the site of the Work and is familiar with the soil conditions to be encountered. Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. The Town of Addison assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Town and the Engineer of Record (**Kimley-Horn and Associates, Inc.).**

4. **SPECIFICATIONS:** Construction improvements shall be governed by the following published specifications and details (except as modified by these Special Provisions):

   Standard Specification for Construction and Maintenance of Highways, Streets, and Bridges, Texas Department of Transportation (November 2014);Standard Specifications for Public Works Construction, North Central Texas - North Central Texas Council of Governments (5th edition, 2017); Town of Addison Standard Construction Details;

   The Contractor shall keep copies of applicable Specifications on the Project site at all times.

   Where reference is made to specifications compiled by other agencies, organizations or departments, such referenced specifications are hereby made a part of the Project Specifications.

   Portions of TxDOT standards and specifications, latest editions, shall be incorporated into this contract by specific reference in the contract plans and specifications. In the event of

conflict with other documents, TxDOT standards and specifications shall govern for construction materials and methods. In the event of conflict with other documents, Town of Addison contract documents shall govern for contract procedures and measurement and payment.

5. **SUBSURFACE INVESTIGATION:** Subsurface exploration to ascertain the nature of soils, including the amount of rock, if any, is the responsibility of any and all prospective Bidders. It shall be the responsibility of the Bidders to make such subsurface investigations as he deems necessary to determine the nature of the material to be encountered. Some preliminary subsurface exploration has been performed by the Town of Addison and the Engineer, and is provided to the Contractor in the Contract Documents. This information is provided only as preliminary and all bids shall be based on information obtained by the Contractor. The Town of Addison and the Engineer disclaim any responsibility for the accuracy, true location and extent of the soils information that has been prepared by others. They further disclaim responsibility for interpretation of that data by Bidders, as in projecting soil bearing values, rock profiles, soils stability and the presence, level and extent of underground water.

6. **HISTORICAL, SCIENTIFIC AND ARCHAEOLOGICAL DISCOVERIES:** Contractor shall immediately give an oral and written report to the Town of Addison of the discovery of any articles of historical, scientific, or archaeological significance. Contractor shall take all necessary steps to preserve the article and shall cease operations, which would affect the find until otherwise directed by the Town of Addison but continue with all other unaffected operations. The future operations of Contractor with respect to the discovery, including disposition of the articles, shall be decided by the Town of Addison. The Town of Addison shall have sole and exclusive title to any discovered articles.

The Town of Addison shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in Contractor's cost of, or the time required for performing any part of the work under the Contract, whether or not changed as a result of conditions, an equitable adjustment will be made and the Contract modified in writing accordingly.

No request by Contractor for an equitable adjustment to the Contract under this Section shall be allowed unless Contractor has given the written notice required. No request by Contractor for an equitable adjustment of the Contract for differing site conditions will be allowed or shall be made after final payment under the Contract.

ENVIRONMENTAL REQUIREMENTS: In addition to requirements set forth in other sections of the Contract, including the Plans and Specifications, Contractor shall ensure that the requirements of this Section are fulfilled and incorporated into its procedures and processes as well as those of any Subcontractors. All materials utilized by Contractor on the Project shall comply with all applicable local, state and federal laws and regulations.

A. Contractor is responsible for compliance with any requirements included in the Contract Documents regarding Hazardous Materials. If Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable

precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by Contractor, Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Town of Addison in writing.

1. The term "Hazardous Materials" means any substance or compound, whether solid, liquid or gaseous: (i) which is listed, defined or regulated as a "hazardous substance", "hazardous waste", "extremely hazardous waste", "solid waste", "toxic substance", "hazardous substance", "hazardous material" or "regulated substance" or otherwise classified as hazardous or toxic, in or pursuant to any Environmental Law; or (ii) which is or contains asbestos, radon, any polychlorinated biphenyl, urea formaldehyde foam insulation, explosive or radioactive material, lead, or motor fuel or other volatile organic compounds; or (iii) which causes or poses a threat to cause a contamination or nuisance on the Project Site or any adjacent property, or (iv) which causes or poses a threat to cause a hazard to the environment or to the health, safety or welfare of persons on or about the Project Site.

2. The term "Environmental Law" means any federal, state or local law, statute, guidance or policy statement, ordinance, code, rule, regulation, license, authorization, decision, order, injunction or decree, which pertains to health, safety or the environment (including, but not limited to, ground, air, water or noise pollution or contamination, and underground or aboveground tanks) and shall include without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, the Resource Conservation and Recovery Act of 1976, as amended, the Occupational Health and Safety Act, the Toxic Substances Control Act, the Texas Water Code and the Texas Solid Waste Disposal Act and any other state or federal environmental statutes.

B. If the material or substance was on the site prior to the issuance of the Notice to Proceed, the Town of Addison shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by Contractor and, in the event such material or substance is found to be present, to verify that it has been remediated to levels required by the Texas Commission on Environmental Quality. When the material or substance has been remediated, Work in the affected area shall resume upon written direction of the Town of Addison.

C. Except as provided in Subparagraph B., Contractor (with the Town of Addison's prior written approval of the laboratory) shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by Contractor and, in the event such material or substance is found to be present, the Town of Addison shall determine whether Contractor or the Town of Addison shall have the substance remediated to levels required by the Texas Commission on Environmental Quality. When the material or substance has been remediated, Work in the affected area shall resume upon written direction of the Town of Addison. The Contract time shall be not be extended and the Contract Price shall not be increased, unless the material or substance to be remediated

were not introduced to the Work Site by Contractor, and Contractor shall then pay for (or reimburse the Town of Addison for) the testing and remediation.

D. The Town of Addison shall not be responsible under this Section for materials or substances Contractor brings or introduces to the Project Site. Contractor shall be responsible for the fault or negligence in the use and handling of materials or substances of Contractor, Subcontractor, Sub-subcontractor, or anyone directly or indirectly employed by any of them.

E. Contractor shall indemnify the Town of Addison and its affiliates for any and all damages incurred by the Town of Addison as a result of Contractor's actions with respect to all applicable state and federal environmental laws related to materials or substances Contractor brings to the Project Site, including but not limited to fines, penalties, costs of remediation and reasonable attorney's fees. No time extension shall be granted for breach of this provision.

F. Contractor agrees that it shall not transport to, use, generate, dispose of, or install at the Project Site any Hazardous Materials, except in accordance with applicable environmental laws. Further, in performing the Work, Contractor shall not cause any release of Hazardous Materials into, or contamination of, the environment, including the soil, the atmosphere, any water course or ground water unless required by the Contract Documents. In the event Contractor engages in any of the activities prohibited in this Section or fails to stop Work as provided in this Section, to the fullest extent permitted by law, Contractor hereby indemnifies and holds the Town of Addison, its affiliates and their respective officers, agents, employees and tenants harmless from and against any and all claims, damages, losses, causes of action, suits and liabilities of every kind, including but not limited to, expenses of litigation, court costs, punitive damages and attorneys' fees, arising out of, incidental to or resulting from the activities prohibited in this Section or Contractor's failure to stop Work as required. Contractor shall obtain from manufacturers and furnish to the Town of Addison Materials Safety Data Sheets (OSHA Form 20) for all materials incorporated into the Project by Contractor. The Town of Addison hereby agrees that, as between the Town of Addison and Contractor, the Town of Addison will be responsible for Hazardous Materials on site which existed prior to Contractor performing Work on the Project Site or which are introduced to the Project Site by the Town of Addison, except as provided in this Section. Contractor will not be considered the generator of Hazardous Materials on site which existed prior to Contractor performing Work on the Work Site or which are introduced to the Project Site by the Town of Addison. If the Hazardous Materials were on the Project Site prior to Contractor's presence on the Project Site or were introduced to the Project Site by the Town of Addison, then, if appropriate, the Town of Addison will make an equitable adjustment to the Contract.

G. Include in all construction subcontracts exceeding $100,000, the following requirement: "Contractor is responsible for compliance with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act, Section 505 of the Clean Water Act, Executive Order 11738, and Environmental Protection Agency regulations."

H. No request by Contractor for an equitable adjustment to the Contract under this Section shall be allowed unless Contractor has given the written notice required.

I. No request by Contractor for an equitable adjustment of the Contract for Hazardous Materials will be allowed or shall be made after final payment under the Contract.

7. **COMPLIANCE WITH LAWS:** The Contractor shall familiarize himself with the nature and extent of the Specifications, Plans, Project Site conditions, traffic and safety requirements, and shall fully comply with all local, state and federal laws, including all codes, ordinances, rules and regulations applicable to this Contract and the Work to be done hereunder, which exist or which may be enacted later by governmental bodies having jurisdiction or authority for such enactment. The Contractor shall comply with all federal, state and local laws, rules and regulations of every kind and nature applicable to the performance of its Work hereunder, and shall hold the Town of Addison and the Engineer harmless therefrom. No plea of ignorance or misunderstanding thereof will be considered.

8. **PERMITS, LICENSES. AND REGULATIONS:** Permits and licenses for the prosecution of the Work shall be secured and paid for by the Contractor. Any required permit fees will still be paid by the Contractor. Wherever the Work under this contract requires the obtaining of permits from the Town of Addison or other public authorities, duplicate copies of such permits shall be furnished to the Engineer by the Contractor hereunder before the Work covered thereby is started. **NO WORK WILL BE ALLOWED TO PROCEED BEFORE SUCH PERMITS ARE OBTAINED.**

9. **RIGHTS-OF-WAY AND EASEMENTS:** Rights-of-way and permanent easements, dedicated to the Town of Addison, will be secured for this Project and made a part of thereto. The Contractor shall obtain a right-of-way permit from the Town of Addison prior to beginning Work. When working within the public rights-of-way and easements, the Contractor shall at all times observe and comply with all Federal and State Laws, and Town of Addison ordinances and regulations which in any way affect the conduct of the Work or its operations, and shall observe and comply with all orders, laws, ordinances and regulations which exist or which may be enacted later by bodies having jurisdiction or authority for such enactment. No plea of misunderstanding or ignorance thereof will be considered. The Contractor and his Sureties shall indemnify and save harmless the Town of Addison, the Engineer and all of their officers, agents, and employees against any and all claims or liability arising from or based on the violation of any such law, ordinance, regulation, or order, whether it be by itself or its employees.

It shall be the responsibility of the Contractor, prior to the initiation of construction on easements through private property, to inform the property owner of its intent to begin construction. Before beginning construction in areas of public dedication, the Contractor shall inform the agency having jurisdiction in the area forty-eight (48) hours prior to initiation of the Work. All easements shall be cleaned up after use and restored to their original conditions or better.

10. **RESTRICTED WORK HOURS:** Per the Town of Addison Building Regulations, "It shall be unlawful for a person, firm or corporation to excavate, erect, build, construct,

alter, repair or demolish any building or structure which has been issued or which is required to be issued a building permit by the Town of Addison between the hours of 7:00 p.m. and 7:00 a.m. Monday through Friday, and between the hours of 7:00 p.m. and 8:00 a.m. on Saturday and Sunday, if such activity is performed within a residential, apartment, or townhouse zoned area, or within three hundred (300) feet of an occupied residence, except in cases of urgent necessity or in the interest of public safety and convenience, and then only by permit of the City Manager."

11. **COMPLIANCE WITH IMMIGRATION LAWS:** Contractor shall take all steps necessary to ensure that all of the Contractor's employees are authorized to work in the United States as required by the Immigration Reform and Control Act of 1986.

12. **NON-DISCRIMINATION POLICY:** It is the policy of the Town of Addison to afford all people an equal opportunity to bid on any contract being let by the Town. The Town of Addison has a policy that prohibits discrimination against any person because of race, color, sex, or national origin, in the award or performance of any contract. The Town of Addison will require its employees, agents, and Contractors to adhere to this policy.

13. **ANTITRUST LAWS:** The Contractor hereby assigns to the Town of Addison any and all claims for overcharges associated with this contract which arise under the antitrust laws of the United States 15 U.S.C.A. Sec. 1, et seq. (1973).

14. **ABANDONMENT:** The Town of Addison reserves the right to abandon, without obligation to the Contractor, any part of the Project, or the entire Project, at any time before the Contractor begins any construction Work authorized by the Town of Addison. In case of total abandonment of the Project, the Contract becomes void. The Town of Addison may abandon portions of the Project at any time during the Project duration. In case of such partial abandonment, the Contractor shall not be due any payment for lost or unrealized profits on the abandoned portions of the Project.

15. **DISCREPANCIES:** If the Contractor, in the course of the Work, finds any discrepancy between the Contract Documents and the physical conditions of the Project, or any errors or omissions in Plans or in the layout as given by survey points and instructions, or if it appears that any Plan, Specification or other Contract Document is or may not be in compliance with any building code or other requirement of any governmental body, he shall immediately inform the Town of Addison and the Engineer in writing, and the Town of Addison and the Engineer shall promptly verify the same. Any Work done after such discovery, until authorized, will be done at the Contractor's risk.

16. **PREPARATION OF STORM WATER POLLUTION PREVENTION PLAN:** A Storm Water Pollution Prevention Plan (SW3P) will be required for this project, the area disturbed on this project during construction exceed 1 acre.

This specification is not all inclusive of the requirements for an SW3P. The Contractor shall comply with all requirements of the TCEQ TPDES permit and the local authorities' storm water ordinance and/or regulations.

17. **ADDENDA:** Bidders desiring further information, or interpretation of the Plans and Specifications, must make written request for such information to the Engineer (not later than four (4) working days prior to the date set for the Bid opening. The ability to ask questions will close at **5:00 PM, Wednesday, October 13, 2021**. Answers to all such requests will be issued in the form of Addenda and a copy of such Addenda will be released through www.civcastusa.com. It will be the responsibility of each person who has been issued as set of Bidding Documents to secure all Addenda from www.civcastusa.com . Addenda will be bound with and made a part of the Contract Documents. No other explanation or interpretation will be considered official or binding. Should a Bidder find discrepancies in, or omissions from, the Plans, Specifications or Contract Documents, or should it be in doubt as to their meaning, it shall at once notify the Engineer in writing in order that a written addendum may be sent to all Bidders.

18. **PAY ITEMS:** Pay items provided are intended to be all-inclusive of the Work required on this Project. Work required by the Plans or Specifications but not provided with a specific pay item shall be considered incidental to other items of Work. Final payment to the construction Contractor shall not be made until all Work has been finally completed and verified in accordance with the construction contract, Plans and Specifications and have been finally accepted by the Town of Addison.

19. **QUANTITIES:** The quantities in the Bid Items are approximate and may represent quantities in excess of those actually installed. Final Payment will be based on the actual quantities installed and paid in accordance with the applicable Specifications.

Bid Items descriptions

Bid Item No. P1 - MOBILIZATION (5% MAX)

This item shall cover the lump sum cost for all charges for labor and for moving supplies, construction equipment and materials to the project site at the beginning of the project and for removing the same equipment and related supplies upon completion of the project, and for site cleanup. **See Special Provisions No. 25 for details for payment for this line Item.**

Bid Item No. P2 - BARRICADES, SIGNS, AND TRAFFIC HANDLING

This item shall include the lump sum cost for installation, maintenance, relocation, and removal of all traffic signs (street name, directional, informational or regulatory), barricades, temporary signs, temporary pavement markings (except those identified in the permanent pavement marking bid items), traffic control plan and all other traffic control measures necessary to provide for the safe travel of vehicles and pedestrians through, along, or around the construction site and for the protection of the workers on the project. All barricades and warning signs will conform to those sections of the Texas Manual on Uniform Traffic Control Devices, latest edition, as amended by the Texas Department of Transportation. **See Special Provisions No. 50 and 51 for additional information.**

Partial payment of the Lump Sum bid shall be limited as follows:

1. When 5% of the *adjusted contract amount is earned, 25% of the Lump Sum bid shall be paid.

2. When 25% of the *adjusted contract amount is earned, 50% of the Lump Sum bid shall be paid. Previous payments under this item will be deducted from this amount.

3. When 50% of the *adjusted contract amount is earned, 75% of the Lump Sum bid shall be paid. Previous payments under this item will be deducted from this amount.

4. When all work under the contract is completed by the Contractor and accepted by the City, 100% of the Lump Sum bid shall be paid.

5. An overrun of the contract quantity will not be allowed under any circumstances unless the quantity is added by an approved change order.

Additional Notes - If the Contractor fails to provide properly maintain barricades, signs, and traffic control devices in compliance with the specifications, the Contractor will be considered in non-compliance with this item and payment may be delayed for this item.

Bid Item No. P3 - PROJECT SIGN

This item shall consist of the installation of a project sign in the locations approved by the OWNER. Each sign shall be constructed in accordance with the details found in Section PS of the Specification, details and notes, including NCTCOG Item 107.21.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P4 - GENERAL SITE PREPARATION

This work includes the preparing the jobsite within the project limits requiring such work, unless otherwise noted. This includes work within the right-of-way and any adjacent property that is necessary to complete the work as shown on the construction plans or as determined by the ENGINEER in accordance with the appropriate details and specifications, including NCTCOG Item 203.1. All vegetation within the paving limits shall be removed.

This work may also include, but not be limited to:

(a) The removal of existing pavement markings and traffic buttons;
(b) The removal or relocation of any existing barricades or signage;
(c) The removal of any existing driveway/roadway;
(d) The removal and relocation of any fencing and gates within the proposed right of way as specified within the construction plans;

(e) The removal of existing rock rip rap;
(f) The removal of a portion of the existing retaining wall at the locations shown in the construction plans;
(g) The removal of landscape edging;
(h) The removal of mailboxes;
(i) Any grading activities (excavation or fill) deemed necessary to prepare the proposed grades of the subgrade prior to pavement, unless separate bid items are provided for excavation or embankment;
(j) The removal and salvage of any existing regulatory, school or informational signs;
(k) The removal of all trees, stumps, bushes, vegetation, roots and shrubs not specified and are within the limits of work;
(l) Adjusting water vaults to finished grade as indicated on the plans;
(m) Protection and replacement of existing irrigation equipment.
(n) Dewatering of site for access.

These items of work will not be paid for directly but shall be considered subsidiary to this pay item. Any item indicated in the plans to be removed (directly called out or implied) for which there is no specific pay item shall be considered subsidiary to this pay item.

Measurement and payment for work performed and materials furnished related to general site and/or right of way preparation, as provided herein, shall be made on the basis of the price bid per lump sum (LS) and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. P5 - REMOVE EX HEADWALL

This item shall consist of the removal and disposal of the existing headwall(s) at the locations shown in the drawings. Existing headwall shall be removed in accordance with appropriate specifications, details, and notes, including NCTCOG Item 701.2.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P6 - REMOVAL OF EX 54" RCP

This item shall consist of the removal and disposal of existing 54” reinforced concrete pipe at the locations shown in the drawings. Existing 54” reinforced concrete pipe shall be removed in accordance with appropriate specifications, details, and notes, including NCTCOG Item 701.2.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P7 - REMOVE EXISTING CONCRETE SIDEWALK/RAMPS

This item shall consist of the removal and disposal of existing concrete sidewalks and curb ramps at the locations shown in the drawings. Existing concrete sidewalks and curb ramps shall be removed in accordance with appropriate specifications, details, and notes, including NCTCOG Item 701.2.

Measurement and payment shall be made on the basis of price bid per square yard (SY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P8 - REMOVE EXISTING ASPHALT PAVEMENT

This item shall consist of the removal and disposal of asphalt pavement at the locations shown in the drawings. Existing asphalt pavement shall be removed in accordance with appropriate specifications, details, and notes, including NCTCOG Item 701.2.

Measurement and payment shall be made on the basis of price bid per square yard (SY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P9 - REMOVE EXISTING TREES

This item shall consist of the removal and disposal of existing trees at the locations shown in the drawings. Existing trees shall be removed in accordance with appropriate specifications, details, and notes, including NCTCOG Item 204.1

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P10 - UNCLASSIFIED STREET EXCAVATION

This work consists of all the required excavation within the limits of the right-of-way and adjacent areas to establish the roadway cross-section, grade, drainage ditches and profile as shown on the plans. All excavation is considered unclassified and shall be performed to the lines & grades shown on the construction plans or as directed by the ENGINEER, in accordance with the appropriate specifications, details and notes, including NCTCOG Item 203.2, 203.4 & 203.5.

This item also includes temporary stockpiling, placement, and compaction of excavated or borrow material required for this project, in accordance with the appropriate specifications. Fill shall be placed and compacted (minimum 95% of maximum dry density) in accordance with the specifications, details, notes, and geotechnical report.

This is a “Plans Quantity” item and will not be measured unless there are revisions to the scope of work. Payment for work performed and materials furnished related to the unclassified excavation and embankment, as provided herein, shall be made on the basis of the price bid per lump sum (LS) for unclassified excavation and shall be total compensation for furnishing and/or

operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. P11 - BORROW AND SPOIL (ROADWAY)

This work consists of all the require fill within the limits of the right-of-way and adjacent areas to establish the roadway cross-section, grade, drainage ditches and profile as shown on the plans. All fill is considered unclassified and shall be performed to the lines & grades shown on the construction plans or as directed by the ENGINEER, in accordance with the appropriate specifications, details and notes, including NCTCOG Item 203.2, 203.4 & 203.5.

This item also includes temporary stockpiling, placement, and compaction of excavated or borrow material required for this project, in accordance with the appropriate specifications. Fill shall be placed and compacted (minimum 95% of maximum dry density) in accordance with the specifications, details, notes, and geotechnical report.

This is a "Plans Quantity" item and will not be measured unless there are revisions to the scope of work. Payment for work performed and materials furnished related to the unclassified fill, as provided herein, shall be made on the basis of the price bid per lump sum (LS) for unclassified fill and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. P12 - MOISTURE TREATED SUBGRADE

This item shall consist of the moisture treatment of the roadway subgrade to the limits shown and locations shown in the drawings. The subgrade shall be treated in accordance with project specification, notes, and geotechnical report.

Measurement and payment shall be made on the basis of price bid per square yard (SY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P13 - 6" LIME STABILIZED SUBGRADE

This item shall consist of lime stabilization of the roadway subgrade to the limits shown and locations shown in the drawings. The subgrade shall be stabilized in accordance with project specification, geotechnical report, and notes, including NCTCOG Item 301.2.

Measurement and payment shall be made on the basis of price bid per square yard (SY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P14 - HYDRATED LIME

This item shall consist of furnishing hydrate lime for the stabilization of the roadway subgrade to the limits shown and locations shown in the drawings. Hydrated lime shall be in accordance with project specification, geotechnical report, and notes, including NCTCOG Item 301.2.

Measurement and payment shall be made on the basis of price bid per ton (TON) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P15 - 4" TYP B HMAC (TXDOT)

This item shall consist of installation of type B hot mix asphalt concrete at the locations shown in the drawings. Hot mix asphalt concrete shall be installed accordance with project specification, details, and notes, including TxDOT Item 340.

Measurement and payment shall be made on the basis of price bid per ton (TON) and shall be total compensation for furnishing all materials, seal coat, tack coat, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P16 - 8" REINFORCED CONCRETE PAVEMENT (STREET)

This item shall consist of installation of reinforced concrete pavement at the locations shown in the drawings. Concrete pavement shall be installed in accordance with project specification, details, and notes, including NCTCOG Item 303.

Measurement and payment shall be made on the basis of price bid per square yard (SY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P17 - 10" PORTLAND CEMENT CONC PAVEMENT W/ 6" MONO CURB

This item shall consist of installation of reinforced concrete pavement with 6” mono curb at the locations shown in the drawings. Concrete pavement shall be installed in accordance with project specification, details, and notes, including NCTCOG Item 303.

Measurement and payment shall be made on the basis of price bid per square yard (SY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P18 - 6" CURB AND GUTTER

This item shall consist of installation of 6” curb and gutter at the locations shown in the drawings. Concrete curb and gutter shall be installed in accordance with project specification, details, and notes, including NCTCOG Item 305.1.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P19 - REINFORCED CONCRETE STREET HEADERS

This item shall consist of installation of concrete street headers at the locations shown in the drawings. Concrete street headers and gutter shall be installed in accordance with project specification, details, and notes, including NCTCOG Item 305.4.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P20 - 5" CONCRETE SIDEWALK

This item shall consist of installation of 5” concrete sidewalks at the locations shown in the drawings. Concrete sidewalk shall be installed in accordance with project specification, details, and notes, including NCTCOG Item 305.2.

Measurement and payment shall be made on the basis of price bid per square yard (SY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P21 – ACCESSIBLE RAMPS

This item shall consist of installation of curb ramps of the type shown at the locations shown in the drawings. Curb ramps shall be installed in accordance with project specification, details, and notes, including TxDOT Item 531.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P22 - RAIL (HANDRAIL) (TY F)

This item shall consist of installation of handrail of the type shown at the locations shown in the drawings. Handrail shall be installed in accordance with project specification, details, and notes, including TxDOT Item 450.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P23 - INSTALL NEW SIGN AND SIGN POST ASSEMBLY

This item shall consist of installation of new road signs, signposts and assemblies at the locations shown in the drawings. Signs, posts, and assemblies shall be installed in accordance with project specification, details, and notes, including TxDOT Item 644.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P24 - REFL PAV MRKG TY I & TY II (W) 4" SOLID
Bid Item No. P25 - REFL PAV MRKG TY I & TY II (Y) 4" SOLID
Bid Item No. P26 - REFL PAV MRKG TY I & TY II (Y) 4" BROKEN
Bid Item No. P28 - REFL PAV MRKG TY I & TY II (W) 24" STOP BAR MARKING

This item shall consist of installation of reflective pavement markings of the type shown at the locations shown in the drawings. Reflective pavement markings shall be installed in accordance with project specification, details, and notes, including TxDOT Item 666.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P27 - REFL PAV MRKG TY I & TY II (W) ARROW
Bid Item No. P29 - REFL PAV MRKG TY I & TY II (W) 5' X 8' CROSSWALK WITH 5' SPACE
Bid Item No. P30 - REFL PAV MRKG TY I & TY II (W) 24"X 8" CROSSWALK WITH 4' SPACE
Bid Item No. P31 - REFL PAV MRKG TY I (W) 24" TRIANGLE

This item shall consist of installation of reflective pavement markings of the type shown at the locations shown in the drawings. Reflective pavement markings shall be installed in accordance with project specification, details, and notes, including TxDOT Item 666.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P32 - REMOVE AND RELOCATE EX GATE

This item shall consist of removing and relocating existing swing gate at the locations shown in the drawings. Existing gate shall be removed and relocated in accordance with project specification, details, and notes.

Removal and relocation of existing post bollards, gate, gate posts, and gate spots shall be considered subsidiary to this item.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. P33 - ONCOR DUCT CROSSING COORDINATION

This item shall consist of the labor, equipment, and materials required for active coordination with Oncor during crossing of duct banks to be installed by others.

This work required for this item may include, but is not limited to:

- Active communication with Oncor of work progress
- Adequate notifications to Oncor of work adjacent to Oncor facilities
- Movement of equipment that may impede Oncor operations
- Protection of in-place work that could be damaged by others
- Constructing leave out of concrete pavement and sidewalk for Oncor to perform duct bank operations

Measurement and payment shall be made on the basis of price bid per lump sum (LS) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work. Coordination with Oncor and/or other utility companies related to other facilities shall be considered subsidiary to the cost of the project.

Bid Item No. B1 - FLOWABLE BACKFILL

This item shall consist of installation flowable backfill at the locations shown in the drawings. Flowable backfill shall be installed in accordance with project specification, details, and notes, including TxDOT Item 401.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B2 - DRILL SHAFT (18 IN)
Bid Item No. B3 - DRILL SHAFT (36 IN)

This item shall consist of construction of drilled shafts of the different sizes at the locations shown in the drawings. Drilled shaft shall be installed in accordance with project specification, details, and notes, including TxDOT Item 416.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B4 - CL C CONC (ABUT) (HPC)

This item shall consist of construction of bridge abutment cap, wingwalls, and backwall at the locations shown in the drawings. Concrete abutment cap, wingwalls, and backwall shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 420.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B5 - REINF CONC SLAB (HPC)

This item shall consist of construction of bridge reinforced concrete slab at the locations shown in the drawings. Reinforced bridge deck shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 422.

Measurement and payment shall be made on the basis of price bid per square feet (SF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B6 – BRIDGE SIDEWALK (HPC)

This item shall consist of construction of bridge sidewalk at the locations shown in the drawings. Bridge sidewalk shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 422.

Measurement and payment shall be made on the basis of price bid per square feet (SF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B7 - APPROACH SLAB (HPC)

This item shall consist of construction of bridge approach slab at the locations shown in the drawings. Approach slab shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 422.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B8 - PRESTR CONC I-GIRDER (TX40)

This item shall consist of installation of prestressed concrete girders at the locations shown in the drawings. Prestressed concrete girders shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 425.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B9 - RIPRAP (CONC) (CL B) (RR8&RR9)

This item shall consist of installation of concrete riprap at the locations adjacent to the bridge as shown in the drawings. Concrete riprap shall be installed in accordance with project specification, details, and notes, including TxDOT Item 432.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B10 - RIPRAP (STONE PROTECTION) (24 IN)

This item shall consist of installation stone riprap at the locations adjacent to the bridge as shown in the drawings. Stone riprap shall be installed in accordance with project specification, details, and notes, including TxDOT Item 432.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B11 - ELASTOMERIC BEARING (LAMINATED)

This item shall consist of installation of elastomeric bearing pads at the locations shown in the drawings. Elastomeric bearing pads shall be installed in accordance with project specification, details, and notes, including TxDOT Item 434.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B12 - STR STEEL (MISCELLANEOUS BRIDGE) (BS-EJCP)

This item shall consist of installation of structural steel plate at the locations shown in the drawings. Structural steel shall be installed in accordance with project specification, details, and notes, including TxDOT Item 442.

Measurement and payment shall be made on the basis of price bid per pound (LB) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B13 - RAIL (TY C221) (HPC)

This item shall consist of construction of combination rail of the type shown at the locations shown in the drawings. Combination rail shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 450.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B14 - SEALED EXPANSION JOINT (4 IN) (SEJ - M)

This item shall consist of installation of sealed expansion joint of the type shown at the locations shown in the drawings. Sealed expansion joint shall be installed in accordance with project specification, details, and notes, including TxDOT Item 454.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B15 - MTL BEAM GD FEN TRANS (THRIE-BEAM)

This item shall consist of installation of metal beam guard fence transition of the type shown at the locations shown in the drawings. Metal beam guard fence transition shall be installed in accordance with project specification, details, and notes, including TxDOT Item 540.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. B16 - TERMINAL ANCHOR SECTION

This item shall consist of installation of metal beam guard fence terminal anchor section of the type shown at the locations shown in the drawings. Metal beam guard fence terminal anchor section shall be installed in accordance with project specification, details, and notes, including TxDOT Item 540.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. D1 - 18" RCP CLASS III
Bid Item No. D2 - 24" RCP CLASS III
Bid Item No. D3 - 30" RCP CLASS III

This item shall consist of installation of reinforced concrete pipe of the type and size shown at the locations shown in the drawings. Reinforced concrete pipe shall be installed in accordance with project specification, details, and notes, including TxDOT Item 464.

TV inspection of reinforced concrete pipe shall be considered subsidiary to this item.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. D4 - 6' CURB INLET

This item shall consist of construction of curb inlets of the size shown at the locations shown in the drawings. Curb inlets shall be constructed in accordance with project specification, details, and notes, including NCTCOG 702.1.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. D5 - CONCRETE HEADWALL (CHFW-0)

This item shall consist of installation of concrete headwall of the type shown at the locations shown in the drawings. Concrete headwall shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 466.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. D6 - 18" RCP 2:1 SET TY II HEADWALL

This item shall consist of installation of safety end treatment of the type shown at the locations shown in the drawings. Safety end treatment shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 467.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. D7 - 18" RCP 6:1 SET TY II HEADWALL

This item shall consist of installation of safety end treatment of the type shown at the locations shown in the drawings. Safety end treatment shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 467.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. D8 - 24" RCP 6:1 SET TY II HEADWALL

This item shall consist of installation of safety end treatment of the type shown at the locations shown in the drawings. Safety end treatment shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 467.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. D9 – RIPRAP (STONE PROTECTION) (12 IN) (CHFW-0 HEADWALL)

This item shall consist of installation stone riprap at the locations adjacent to CHFW-0 headwall as shown in the drawings. Stone riprap shall be installed in accordance with project specification, details, and notes, including TxDOT Item 432.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. D10 - TRENCH EXCAVATION PROTECTION (STORM SYSTEM)

This work includes preparing a job specific trench safety plan and installing the proper shoring and/or bracing to adequately provide a safe trench for all storm sewer improvements, in compliance with current regulations and requirements of the United States Department of Labor Occupational Safety and Health Administration (OSHA). The CONTRACTOR shall have a Trench Safety Plan prepared, signed, and sealed by a professional engineer and provided to the ENGINEER prior to the start of construction. The preparation of the trench safety plan, as required by these specifications, will not be paid for directly but shall be considered subsidiary to this pay item.

Measurement and payment for work performed and materials furnished related to the preparation of a trench safety plan and the installation of a trench safety systems, as provided herein, shall be made on the basis of the price bid per linear foot (LF) of trench exceeding a depth of 4-ft and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. H1 - UNCLASSIFIED POND AND CREEK EXCAVATION

This work consists of all the required excavation within the limits of the right-of-way and adjacent areas to grade detention pond and creek as shown on the plans. All excavation is considered unclassified and shall be performed to the lines & grades shown on the construction plans or as directed by the ENGINEER, in accordance with the appropriate specifications, details and notes, including NCTCOG Item 203.2, 203.4 & 203.5.

This item also includes temporary stockpiling, placement, and compaction of excavated or borrow material required for this project, in accordance with the appropriate specifications. Fill shall be placed and compacted (minimum 95% of maximum dry density) in accordance with the specifications, details, notes, and geotechnical report.

This is a "Plans Quantity" item and will not be measured unless there are revisions to the scope of work. Payment for work performed and materials furnished related to the unclassified excavation and embankment, as provided herein, shall be made on the basis of the price bid per lump sum (LS) for unclassified excavation and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. H2 - BORROW AND SPOIL (DETENTION POND AND CREEK)

This work consists of all the require fill within the limits of the right-of-way and adjacent areas to grade the detention pond and creek grading as shown on the plans. All fill is considered unclassified and shall be performed to the lines & grades shown on the construction plans or as directed by the ENGINEER, in accordance with the appropriate specifications, details and notes, including NCTCOG Item 203.2, 203.4 & 203.5.

This item also includes temporary stockpiling, placement, and compaction of excavated or borrow material required for this project, in accordance with the appropriate specifications. Fill shall be placed and compacted (minimum 94% of maximum dry density) in accordance with the specifications, details, notes, and geotechnical report.

This is a "Plans Quantity" item and will not be measured unless there are revisions to the scope of work. Payment for work performed and materials furnished related to the unclassified fill, as provided herein, shall be made on the basis of the price bid per lump sum (LS) for unclassified fill and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. H3 - BORROW AND SPOIL (DETENTION POND AND CREEK) (SELECT FILL)

This work consists of all the require select fill within the limits of the right-of-way and adjacent areas to grade bridge and creek grading as shown on the plans. The select fill shall be performed to the lines & grades shown on the construction plans or as directed by the ENGINEER, in accordance with the appropriate specifications, details and notes, including NCTCOG Item 203.2, 203.4 & 203.5.

This item also includes temporary stockpiling, placement, and compaction of excavated or borrow material required for this project, in accordance with the appropriate specifications. Fill shall be placed and compacted in accordance with the specifications, details, notes, and geotechnical report.

This is a "Plans Quantity" item and will not be measured unless there are revisions to the scope of work. Payment for work performed and materials furnished related to the select fill, as provided herein, shall be made on the basis of the price bid per lump sum (LS) for select fill and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. H4 - RIPRAP (CONC) (CL B) (RR8&RR9) (DETENTION POND)

This item shall consist of installation of concrete riprap at the locations adjacent to the detention pond and outfall as shown in the drawings. Concrete riprap shall be installed in accordance with project specification, details, and notes, including TxDOT Item 432.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. H5 - RIPRAP (STONE PROTECTION) (24 IN) (DETENTION POND)

This item shall consist of installation stone riprap at the locations adjacent to the detention pond and outfall as shown in the drawings. Stone riprap shall be installed in accordance with project specification, details, and notes, including TxDOT Item 432.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. H6 - CONCRETE OUTFALL STUCTURE

This item shall consist of construction of concrete outfall structure at the detention pond as shown in the drawings. The outfall structure shall be constructed in accordance with project specification, details, and notes, including TxDOT Item 420.

Measurement and payment shall be made on the basis of price bid per cubic yard (CY) and shall be total compensation for furnishing all materials, grates, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. L1 - HYDRAULIC MULCHING WITH 4" TOPSOIL

This item includes all work, materials and incidentals necessary to restore parkways, yards or other areas that are disturbed to an equal or better condition than prior to construction, in accordance with the appropriate details and specifications, including NCTCOG Item 204. Disturbed areas along the length of the project shall be fine graded and cut to receive hydraulic mulching. A minimum of 4" of topsoil shall be placed to bring the site to grade.

Unless directed otherwise by the engineer, hydraulic mulching shall match the species (minimum of Bermuda sod) that existed prior to construction and/or the species adjacent to the disturbed

area shall be placed in all disturbed areas where improved lawn or established turf existed prior to construction. The contractor will be required to water, fertilize, mow and otherwise maintain restored areas to establish healthy growth, even distribution of vegetation and full coverage over the entire restored area. The contractor shall also maintain and protect these areas from damage and repair any damage that occurs, until completion and final acceptance of the project by the OWNER.

Measurement and payment for parkway and disturbed area restoration work performed and materials furnished complete and in place as provided herein shall be made on the basis of the price bid per square yard (SY) and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work, including watering, fertilizing, mowing and maintenance of the restored areas. Payment shall be made based on the quantity shown in the bid proposal, regardless if the amount installed in order to hydraulic mulching all disturbed areas exceeds the bid quantity. No more than 75% of this item will be paid until 100% turf coverage has been established in all areas disturbed, to the satisfaction of the OWNER.

Bid Item No. L2 - SEDIMENT CONTROL FENCE (INSTALL/MAINTAIN/REMOVE)

This item shall consist of installation, maintenance, and removal of sediment control fence at the locations shown in the drawings. Sediment control fence shall be constructed in accordance with project specification, details, and notes, including NCTCOG Item 202.5.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. L3 - STABILIZED CONSTRUCTION EXIT/ENTRANCE

This item shall consist of installation, maintenance, and removal of stabilized construction exit/entrance at the locations shown in the drawings. Construction exits/entrances shall be constructed in accordance with project specification, details, and notes, including NCTCOG Item 202.11.

Measurement and payment shall be made on the basis of price bid per square yard (SY) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. L4 - INLET PROTECTION (INSTALL/MAINTAIN/REMOVE)

This item shall consist of installation, maintenance, and removal of inlet protection at the locations shown in the drawings. Inlet protection shall be constructed in accordance with project specification, details, and notes, including NCTCOG Item 202.14.

Measurement and payment shall be made on the basis of price bid per each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. L5 – ROCK CHECK DAM

This item shall consist of installation, maintenance, and removal of rock check dam at the locations shown in the drawings. Rock check dam shall be constructed in accordance with project specification, details, and notes, including NCTCOG Item 202.9.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. L6 - STORM WATER POLLUTION PREVENTION PLAN

This pay item shall consist of furnishing, installing, maintaining and removing erosion controls throughout the duration of the project in accordance with the Texas Commission on Environmental Quality's (TCEQ) permitting procedures and requirements for construction projects that disturb five (5) or more acres. Under the Texas Pollution Discharge Elimination System (TPDES) general construction permit TXR 150000, the operator with control of construction plans and specifications (OWNER) and the operator with day-to-day operational control (CONTRACTOR) are required to obtain a permit for the discharge of storm water runoff. The CONTRACTOR shall be required to prepare and implement a single comprehensive site-specific Storm Water Pollution Prevention Plan (SWP3) for the entire construction site. The CONTRACTOR shall: (1) sign the SWP3, (2) submit an NOI for the Town of Addison & CONTRACTOR if required, and (3) post a site notice as part of the permit. The SWP3 must describe and ensure the implementation of best management practices that will be used to reduce, to the maximum extent possible, the pollutants and storm water discharges associated with the construction activity and ensure compliance with the terms and conditions of the permit. The SWP3 must clearly indicate which operator is responsible for satisfying each shared requirement of the SWP3. The SWP3 shall be subject to approval by the OWNER and must be retained on-site during the term of the construction. Notice must be posted if the SWP3 is retained off-site.

A Texas Registered Professional Engineer must sign and seal the Erosion Control Plan (ECP) submitted as part of the SWP3. The CONTRACTOR shall submit a Notice of Termination for Town of Addison and CONTRACTOR upon completion of the project if required.

This work shall also include the installation and maintenance of, unless specified otherwise:

- Silt fence;
- Rock check dam;
- Stabilized construction entrance;
- Staged inlet protection;
- Any additional erosion control measures required by the SWP3.

Measurement and payment shall be made on the basis of the price bid per lump sum (LS) for preparation and implementation of the SWP3. This includes any necessary revisions to the Erosion Control Plan throughout the term of construction and the installation, sequencing, and maintenance of structural control measures throughout the duration of construction and along its entire stretch. Payment shall be total compensation for furnishing all labor, materials, tools, and equipment necessary to complete the work. Payment shall be evenly prorated throughout the term of construction on a monthly basis, based on amount bid and time bid.

Bid Item No. W1 - 8" PVC WATER LINE
Bid Item No. W2 - 12" PVC WATER LINE

This work includes the furnishing and installation of 8", and 12" diameter PVC meeting the requirements of AWWA C900, at the locations shown in the plans as per NCTCOG items 501.14, 502, 503, 504, and 506 and the Town of Addison Standard Construction Details. Proposed water line shall comply with AWWA C900. Payment shall include furnishing, hauling and laying of pipe shown on the plans, trench excavation, and backfilling, including embedment material as specified, replacement of topsoil, protecting or replacing existing structures or utilities, testing, disposal of surplus materials, and cleaning up and maintenance. Payment shall include any and all extra precautions or construction requirements necessary to adequately protect and support existing utilities. Payment for the pipelines shall include all costs required to have utility companies repair any damage inflicted to their lines by the CONTRACTOR and any cleanup, property damages, fines, etc. resulting from damage inflicted to any utility line by the CONTRACTOR.

Embedment for water lines shall be per Town of Addison standard construction details.

All fittings associated with the proposed water line installation, as indicated in the plans, shall be considered incidental to this pay item.

This work shall also include the construction of temporary pavement repair necessary for traffic control and detours or as determined by the ENGINEER. Temporary pavement repair shall be constructed and maintained in water line installation areas as indicated in the construction plans that will be open to traffic prior to the construction of the final pavement. Temporary pavement repair, as required by these specifications, will not be paid for directly but shall be considered subsidiary to this pay item.

Measurement and payment shall be made on the basis of price bid per linear foot (LF) measured horizontally and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work, including all excavation, embedment and backfill.

Bid Item No. W3 - 8 " GATE VALVE
Bid Item No. W4 - 12 " GATE VALVE

This work includes the furnishing and installation of 8", and 12" gate valves as shown on the plans or as determined by the ENGINEER, in accordance with NCTCOG Item 502.6 and the Town of Addison Standard Construction Details and Specifications. These pay items shall be inclusive of all items necessary to complete the installation.

Measurement and payment shall be made on the basis of the price per bid each (EA) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work, including curb identification markings, valve boxes, all excavation, embedment and backfill necessary to complete the work.

Bid Item No. W5 - FIRE HYDRANT ASSEMBLY

This pay item shall consist of the installation of new fire hydrant assemblies including connections and testing of the fire hydrants at locations indicated on the plans and in accordance with NCTCOG Item 502.3 and Town of Addison Construction Details and Specifications. The 6" PVC water line lead from water main to gate valve and the 6" gate valve required for fire hydrant installation are considered subsidiary to this item and shall not be paid for separately.

Fire hydrant assemblies shall be inclusive of all work necessary to install and connect the new fire hydrant to the water line. This includes all fittings, megalugs, water pipe from fire hydrant gate valve and water pipe for stack, blocking, etc. necessary to complete the construction.

Measurement and payment for work performed and materials furnished related to installing the fire hydrant and valve assembly, as provided herein, shall be made on the basis of the price bid per each (EA) and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work, including curb identification markings and any barrel extensions required.

Bid Item No. W6 - REMOVE EXISTING 12" AC WATER LINE

This work includes the removal and disposal of the existing 12" Asbestos Concrete Pipe water line at the locations shown in the drawings. The removal of the existing Asbestos Concrete Pipe shall be completed in accordance with NCTCOG Item 604.

Measurement and payment shall be made on the basis of the price per bid linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. W7 - ABANDON EXISTING ASBESTOS PIPE IN PLACE

The work includes the grouting of existing various diameter water lines for the purpose of abandonment as indicated on the construction plans or a s determined by the ENGINEER, in accordance with TxDOT Special Specification 7076, "Grouting of Water Mains" and NCTCOG Item 604. The CONTRACTOR shall verify that all services, meters, stub-outs, and other branch

water lines supplied from the existing water lines to be abandoned are transferred to other water lines as shown on the construction plans prior to pavement construction.

The existing water lines shall be abandoned as follows:

After each section of the existing water line is taken out of service, the abandoned section shall be completely drained, including pumping water from the system, as necessary.
Place grout/flowable fill using concrete or grout pumps capable of continuous delivery.
Any and all openings into the existing pipe will be closed by use of approved M.J. cast irons caps or plugs and blocking according to the plans, specifications and/or details governing such work.
Existing valves may be used to close the existing system, the pipe on the abandoned side shall not be left open, but shall be plugged and blocked.

Valves stacks shall be removed and backfilled with soil.

All grout/flowable fill shall conform to TxDOT Item 401, "Flowable Backfill" and TxDOT Special Specification 7076, "Grouting of Water Mains".

Existing Asbestos Concrete Pipe shall be handled in accordance with NCTCOG Item 604 and details governing such work.

Measurement and payment for work performed and materials furnished related to abandoning existing water line, as provided herein, shall be made on the basis of the price bid per linear feet (LF) and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. W8 - WATER TESTING

This work includes the testing of the water line in accordance with plans, specifications, details, and NCTCOG Item 506.

Measurement and payment shall be made on the basis of the price per bid lump sum (LS) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. W9 - TRENCH EXCAVATION PROTECTION (WATER SYSTEM)

This work includes preparing a job specific trench safety plan and installing the proper shoring and/or bracing to adequately provide a safe trench for all water improvements, in compliance with current regulations and requirements of the United States Department of Labor Occupational Safety and Health Administration (OSHA). The CONTRACTOR shall have a Trench Safety Plan prepared, signed, and sealed by a professional engineer and provided to the ENGINEER prior to the start of construction. The preparation of the trench safety plan, as required by these specifications, will not be paid for directly but shall be considered subsidiary to this pay item.

Measurement and payment for work performed and materials furnished related to the preparation of a trench safety plan and the installation of a trench safety systems, as provided herein, shall be made on the basis of the price bid per linear foot (LF) of trench exceeding a depth of 4-ft and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. SS1 - 8" PVC SSWR LINE

This work includes the installation of ASTM D3034 PVC sewer pipe and fittings at the locations and to the grades shown on the plans. Work shall be in accordance with NCTCOG Items 501, 502, 503, 504, 505, 507, 509 and Standard Construction Details. Payment shall include furnishing, hauling and laying of pipe shown on the plans, trench excavation, dry boring under existing utilities if necessary, and backfilling, including embedment material as specified, replacement of top soil, protecting or replacing existing structures or utilities, mandrel pulling, testing, disposal of surplus materials, general clean-up and maintenance. Payment shall include any and all extra precautions or construction requirements necessary to adequately protect and support existing utilities. Payment for the pipelines shall include all costs required to have utility companies repair any damage inflicted to their lines by the CONTRACTOR and any cleanup, property damages, fines, etc. resulting from damage inflicted to any utility line by the CONTRACTOR.

Embedment for sewer lines shall be per NCTCOG standard details, unless otherwise noted.

This item includes submittal of a plan and execution of the approved plan for any necessary bypass pumping.

This work shall also include the construction of temporary pavement repair necessary for traffic control and detours or as determined by the ENGINEER. Temporary pavement repair shall be constructed and maintained in sanitary sewer installation areas as indicated in the construction plans that will be open to traffic prior to the construction of the final pavement. Temporary pavement repair, as required by these specifications, will not be paid for directly but shall be considered subsidiary to this pay item.

Measurement and payment shall be made on the basis of price bid per linear foot (LF), regardless of depth, measured horizontally from center of manhole to center of manhole or cleanout without any deduction for the length of pipe through manholes and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work, including all excavation, embedment and backfill.

Bid Item No. SS2 - 4' STANDARD MANHOLE

This work includes the installation of 4’ diameter standard sanitary manholes per NCTCOG item number 502.1 and Town of Addison Construction Details. Payment shall include excavation, castings, reinforcing steel, concrete, backfill, and other materials, and all appurtenances for a complete and functional unit. Both pre-cast and cast-in-place manholes are permitted for this project.

This item includes submittal of a plan and execution of the approved plan for any necessary bypass pumping.

Measurement and payment shall be made on the basis of price bid per each (EA). There is no separate bid item for extra depth of manhole. The contract price shall be the total compensation for the furnishing of all labor, materials, tools, equipment, and incidentals necessary to complete the work, including curb identification markings, earth excavation, disposal of surplus materials and backfill.

Bid Item No. SS3 - CEMENT STABILIZED SAND ENCASEMENT (MIN. 10% CEMENT/CY)

This work includes the installation of Cement Stabilized Sand Encasement in the areas shown in the drawings. Work shall completed be in accordance with latest TCEQ requirements.

Unless otherwise noted the cement, stabilized sand shall have a minimum content of 10%, based on loose dry weight volume.

Measurement and payment shall be made on the basis of price bid per linear foot (LF), regardless of depth, and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. SS4 - SANITARY SEWER CCTV INSPECTION

This work includes the testing of the TV testing in accordance with plans, specifications, and details.

Cost for additional testing per NCTCOG requirements will not be paid for separately, but should be considered subsidiary to the various items.

Measurement and payment shall be made on the basis of the price per bid lump sum (LS) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work.

Bid Item No. SS5 - TRENCH EXCAVATION PROTECTION (SANITARY SEWER IMPROVEMENTS)

This work includes preparing a job specific trench safety plan and installing the proper shoring and/or bracing to adequately provide a safe trench for all sanitary sewer improvements, in compliance with current regulations and requirements of the United States Department of Labor Occupational Safety and Health Administration (OSHA). The CONTRACTOR shall have a Trench Safety Plan prepared, signed, and sealed by a professional engineer and provided to the ENGINEER prior to the start of construction. The preparation of the trench safety plan, as

required by these specifications, will not be paid for directly but shall be considered subsidiary to this pay item.

Measurement and payment for work performed and materials furnished related to the preparation of a trench safety plan and the installation of a trench safety systems, as provided herein, shall be made on the basis of the price bid per linear foot (LF) of trench exceeding a depth of 4-ft and shall be total compensation for furnishing and/or operating all labor, materials, tools, equipment and other incidentals necessary to complete the work.

Bid Item No. O1 – OWNER'S CONTIGENCY

This item will be used at the Owner's discretion to cover any unexpected costs associated with performing the work.

20. **SUBSIDIARY WORK:** Any and all Work specifically governed by documentary requirements for the Project, such as conditions imposed by the Plans or these Special Provisions, in which no specific item for bid has been provided for in the Proposal, shall be considered as a subsidiary item of Work, the cost of which shall be included in the various bid items in the Proposal. Costs of CCTV, permits, inspection fees, traffic control, construction staking, surface restoration and cleanup are general items of Work which fall in the category of subsidiary Work. Any repairs or replacement of items damaged during demolition or as a result of new construction will be considered subsidiary. Limits of all Work requiring repair will be determined by the Town of Addison staff or the inspector. Extreme care should be taken during all demolition and construction operations.

21. **QUALIFICATION OF BIDS:** The Town of Addison reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work, and the right to disregard all nonconforming, non-responsive, unbalanced, or conditional Bids. The Town reserves the right to reject the Bid of any Bidder if the Town believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the Town. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolve in favor of the correct sum.

To be considered responsive, the apparent two lowest Bidders are required to submit the Statement of Experience per Section BQS "Bidder Qualification Statement" within 5 days.

The apparent low two Bidders will be notified by the Engineer to request the information.

AWARD AND EXECUTION OF CONTRACT: For the purpose of award, each bid submitted shall consist of three parts whereby the correct summation of the products of the estimated quantities shown in the proposal, multiplied by their bid unit prices for the following parts:

BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR

Bidders must fill bid proposal for all base bids and all additive alternates. The method of Award will be based on the lowest qualified bidder for all base bids plus any combination of the additive alternates depending on the availability of funds.

The Town reserves the right to accept whichever bid is determined to be in the best interest of the public and to reject all bids.

All payments will be based on actual quantities and bid unit prices.

22. **EXPLANATION OF CONTRACT TIME:** The term "Contract Time" as used in this Provision will mean the **330** calendar days (approx. 11 months) for substantial completion of the Work of the Contract from the date the Contract was executed. The term "calendar day" as used in this Article will mean every day shown on the calendar. Calendar days will be consecutively counted from commencement of Contract Time (issuance of a Notice to Proceed) regardless of weather, weekends, and holidays, suspensions of Contractor's operations, delays or other events as described herein.

In the event of a catastrophic event (i.e., war, invasion, riot, declared state of emergency, national strike, or other situations as declared by the Town of Addison) directly and substantially affecting the Contractor's operations on the Contract, the Contractor and the Town shall agree as to the number of calendar days to extend the Contract Time. In the event the Contractor and Town are unable to agree to the number of calendar days to extend the Contract Time, the Town shall unilaterally determine the number of calendar days to extend the Contract Time reasonably necessary and due solely to such catastrophic event and the Contractor shall have no right whatsoever to contest such determination, save and except that the Contractor establishes that the number of calendar days determined by the Town were arbitrary or without any reasonable basis.

Should the Contractor fail to complete the Contract on or before expiration of the Allowable Contract Time, as adjusted in accordance with the special provisions No. 78 of liquidated damage, the Town shall deduct from the moneys due the Contractor the Daily Value for each calendar day completion exceeds the Allowable Contract Time. The term "Allowable Contract Time" as used in this Article shall mean the Original Contract Time plus adjustments pursuant to the statements above. This deduction shall be the disincentive for the Contractor's failing to timely complete the Contract. **This shall be strictly enforced.**

23. **COPIES OF PLANS FURNISHED:** One (1) copy of 24" x 36" and one (1) electronic copy of the Plans shall be furnished to the successful Contractor, at no charge, for construction purposes.

24. **PRE-CONSTRUCTION CONFERENCE:** The successful Contractor, Engineer, and Town of Addison shall meet for a pre-construction conference before any of the Work begins on this Project. At this time, details of sequencing of the Work, contact individuals

for each party, testing requirements, submittals, traffic control, time sensitive completion of the project and pay requests will be covered. Prior to the meeting, the Contractor shall prepare schedules showing the sequencing and progress of their Work and its effect on others. A final composite schedule will be prepared during this conference to allow an orderly sequence of Project construction.

Prior to the start of construction, Contractor shall video the construction area and property adjacent to construction in the presence of the City Inspector. The format shall be DVD. The video shall be narrated. The Contractor shall furnish the Town of Addison a copy of the video in DVD format prior to commencement of Project. This shall be subsidiary to Project.

25. **MOBILIZATION:** Mobilization and Demobilization includes the movement of all labor, equipment and supplies, establishment of facilities necessary for work, and other work and operations which must be performed and cost no directly attributable to other pay items, excluding bidding costs, which must be incurred in order to enable the Contractor to begin work on other contract items. And this item incudes all work for removing all equipment and supplies and project site cleanup.

Payment

- Partial Payments of the Lump Sum bid for Mobilization shall be limited as follows:
- When 1% of the *adjusted contract amount is earned, 50% of the Mobilization Lump Sum or 5% of the total contract amount shall be paid, whichever is less. Previous payments under this item will be deducted from this amount.
- When 5% of the *adjusted contract amount is earned, 75% of the Mobilization Lump Sum or 10% of the total contract amount shall be paid, whichever is less. Previous payments under this item will be deducted from this amount.
- When 10% of the *adjusted contract amount is earned, 100% of the Mobilization Lump Sum or 10% of the total contract amount shall be paid, whichever is less. Previous payments under this item will be deducted from this amount.
- When all work under the contract is completed by the Contractor and accepted by the Town, 100% of the Mobilization Lump Sum will be paid

26. **GENERAL SEQUENCE OF CONSTRUCTION:** Prior to the start of Work, the Contractor shall develop a detailed construction and sequence of construction schedule using the critical path method (CPM) and submit to the Town of Addison and Engineer for approval. The CPM shall reflect all definable features of Work and activities that shall cause minimum interference with traffic along, across and adjacent to the Project during construction. If the schedule or sequence becomes unworkable or unsatisfactory as Work proceeds, adjustments shall be made. During all phases of construction access to all existing businesses must be maintained at all times unless otherwise authorized in writing

by the Town of Addison. Erosion control devices must be properly installed and maintained during all stages of construction.

1. The project schedule shall be prepared using Microsoft Project, Primavera P6 or other as approved by the OWNER. Electronic files in the scheduling software native format and PDF copies shall be included with all schedule submittals.
2. The Original Project Schedule submitted prior to construction and approved by the OWNER shall become the basis for measuring progress and evaluating whether the project is on schedule (Baseline schedule for the project). Once approved by the OWNER, the Original Project Schedule shall not be changed.
3. There shall be at a minimum one schedule Activity for each major bid item in the proposal. Many bid items will need to consist of multiple Activities.
4. The length of this project is such that many Activities or Sets of activities will be repeated for various stages of construction and segments of the roadway. Any repeated Activity must clearly identify the location and/or stage of construction.
5. The schedule must be based on clearly defined Activities, phases of construction and any project milestones. Schedule limits must be easily field verified.
6. All Activities must have Predecessor and Successor activities (except start and finish milestones). Independent or open-ended activities shall not be included.
7. The schedule must clearly identify relationship between Predecessor and Successor activities as “start-to-start”, “start-to-finish”, or “finish-to-finish”.
8. Negative lag times shall not be permitted.
9. Activities with a duration of twenty days or greater shall be broken into sub-activities. (For example, if the activity for “Install Water Line A” has a duration of 21 days, is should be divided into sub-activities such as “Install Water Line A, Sta 0+00 to 15+00”, etc.)
10. Monthly schedule updates shall include actual start and completion dates for completed and ongoing Activities. Original Project Schedule dates must be shown for tracking purposes.
11. For activities behind schedule, a Recovery Plan must be submitted detailing how project will be brought back within schedule. This may include such measures as adding work crews, leasing additional equipment, or engaging subcontractors. Fragnets or copies of the revised schedule reflecting proposed changes shall be used to document proposed plan revisions and their schedule impacts. Any additional costs resulting from Recovery Plan measures shall be at the contractor’s sole expense.
12. Activity durations reflected in the original schedule cannot be reduced without a Recovery Plan description reflecting what additional resources or actions will implemented justifying the schedule change.

The Contractor must comply with all work area restrictions as indicated in the Plans unless specifically authorized in writing by the Town of Addison.

27. **PROJECT REPRESENTATIVE:** The Town of Addison, the Engineer, the Contractor(s), and any applicable public utilities shall designate a single individual within

their organization to act as liaison for the Project. This individual shall be aware of the day to day activities on the Project, have authority to make decisions binding on the party, and serve as single point for coordination of activities with the other team members. The Contractor's representative must be available to meet and discuss construction related issues on site or at the Town's offices within 20 minutes of a request during working hours and throughout the entire construction period. Upon repeated failure of attendance at requested meetings, Contractor will be required to have a Project representative on-site at all times.

28. **COORDINATION WITH OTHERS:** In the event that other Contractors are doing Work in the same area simultaneously with this Project, the Contractor shall coordinate his proposed construction with that of the other Contractors. The Town of Addison and/or the Engineer shall mediate any disputes, and the Contractors shall comply with their decisions.

29. **INSURANCE:** Each insurance policy that the Contractor must furnish in accordance with these contract documents shall name the Town of Addison and the Engineer as additional insured. Contractor shall include in their bid package, a copy of their certificate of insurance showing compliance to the limits established by the Town of Addison.

1.0 The Contractor shall agree to furnish and maintain continuously during the period of this agreement, any renewals or extension, insurance coverage meeting all of the following requirements:

1.1 Commercial General Liability Insurance at minimum combined single limits of $1,000,000 per occurrence and $2,000,000 general aggregate for Bodily Injury and Property Damage, which coverage shall include Products/Completed Operations, and XCU Hazards. Coverage for product/completed operations must be maintained for at least two (2) years after the construction Work has been completed. Coverage must be amended to provide for an each-project aggregate limit of insurance. Contractual Liability must be included.

1.2 Workers Compensation Insurance at statutory limits, including employer's liability coverage at minimum limits of $1,000,000 each occurrence-each accident, $1,000,000 by disease-each occurrence and $1,000,000 by disease aggregate

1.3 Commercial Automobile Liability Insurance at minimum combined single limits of $1,000,000 per occurrence for bodily injury and property damage, including owned, non-owned, and hired car coverage.

1.4 Umbrella Liability at minimum limits of $1,000,000 each-occurrence $4,000,000 aggregate with respect to primary commercial general liability, automobile liability and employer's liability policies.

1.5 Any Subcontractor(s) hired by the Contractor shall maintain insurance coverage equal to that required by the Contractor. It is the responsibility of the Contractor to assure compliance with this provision. The Town accepts no responsibility arising from the conduct, or lack of conduct, of the Subcontractor.

1.6 A comprehensive general liability insurance form may be used in lieu of a commercial general liability form. In this event, coverage must be written on an occurrence basis, at limits of $1,000,000 each-occurrence, combined single limit and coverage must include a broad form comprehensive general liability endorsement, products/completed operations, XCU hazards and contractual liability.

2.0 With reference to the foregoing insurance requirements, Contractor shall specifically endorse applicable insurance policies as follows:

2.1 The Town shall be named as an additional insured with respect to general liability and automobile liability.

2.2 All liability policies shall contain no cross liability exclusions or insured versus insured restrictions.

2.3 A waiver of subrogation in favor of the Town of Addison shall be contained in the workers compensation and all liability policies.

2.4 All insurance policies shall be endorsed to require the insured to immediately notify the Town of Addison of any material changes in the insurance coverage.

2.5 All insurance policies shall be endorsed to the effect that the Town will receive at least thirty (30) days notice prior to cancellation or non-renewal of the insurance.

2.6 All certificates shall be mailed to Town of Addison, Purchasing Dept., P.O. Box 9010, Addison, Texas 75001 or emailed to purchasing@addisontx.gov.

2.7 All insurance policies, which name the Town as an additional insured, must be endorsed to read as primary coverage regardless of the application of other insurance.

2.8 Required limits may be satisfied by any combination of primary and umbrella liability insurances.

2.9 Contractor may maintain reasonable and customary deductibles, subject to approval by the Town.

3.0 All insurance shall be purchased from an insurance company who meets the following requirements:

3.1 Must be issued by a carrier, which is rated "A-" VII or better by A.M. Best's Key Rating Guide.

3.2 Licensed and admitted to do business in the State of Texas and is a subscriber to the Texas Guaranty Fund.

4.0 All insurance must be written on forms filed with and approved by the Texas State Board of Insurance. Certificates of insurance shall be prepared and executed by the insurance

company or its authorized agent and shall contain provisions representing and warranting the following:

4.1 Set forth all endorsements and insurance coverages according to requirements and instruction contained herein.

4.2 Shall specifically set forth the notice-of-cancellation or termination provisions to the Town.

5.0 Upon request, Contractor shall furnish the Town of Addison with certified copies of all insurance policies.

WORKERS' COMPENSATION INSURANCE COVERAGE:

A. Definitions.

Certificate of Coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self insure issued by the Texas Workers' Compensation Commission (the "TWCC"), or a coverage agreement (TWCC-81, TWCC-82, TWCC-83 or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a Project, for the duration of the Project.

Duration of the Project - includes the time from the beginning of the Work on the Project until the Contractor's/person's Work on the Project has been completed and accepted by the governmental entity.

Persons Providing Services on the Project ("Subcontractor" in Section 406.096 of the Texas Labor Code) - includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the Project, regardless of whether that person contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent Contractors, Subcontractors, leasing companies, motor carriers, Town-operators, employees of any such entity or employees of any entity which furnishes persons to provide services on the Project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a Project. "Services" does not include activities unrelated to the Project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

B. The Contractor shall provide coverage, based on property reporting of classification codes and payroll amounts and filing of any coverage agreement, which meets the statutory requirements of Texas Labor Code, 401.011(44) for all employees of the Contractor providing services on the Project, for the duration of the Project.

C. The Contractor must provide a certificate of coverage to the Town of Addison prior to being awarded the contract.

D. If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the Project, the Contractor must, prior to the end of the coverage

period, file a new certificate of coverage with the Town of Addison, showing that the coverage has been extended.

E. The Contractor shall obtain from each person providing services on the Project, and provide to the Town of Addison:

(1) a certificate of coverage, prior to that person beginning Work on the Project, so that the Town of Addison will have on file certificates of coverage showing coverage for all persons providing services on the Project; and,

(2) no later than seven days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project;

F. The Contractor shall retain all required certificates of coverage on file for the duration of the Project and for one year thereafter.

G. The Contractor shall notify the Town of Addison in writing by certified mail or personal delivery, within 10 days after the Contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project.

H. The Contractor shall post on each Project site a notice, in the text, form and manner prescribed by the TWCC, informing all persons providing services on the Project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage.

I. The Contractor shall contractually require each person with whom it contracts to provide Services on a Project to:

(1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Codes 401.011 (44) for all its employees providing services on the Project, for the duration of the Project;

(2) provide to the Contractor, prior to that person beginning Work on the Project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the Project, for the duration of the Project;

(3) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project;

(4) obtain from each person with whom it contracts, and provide to the Contractor;

a. a certificate of coverage, prior to the other person beginning Work on the Project; and,

b. a new certificate of coverage showing extension of the coverage period, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the Project.

(5) retain all required certificates of coverage on file for the duration of the Project and for one year thereafter;

(6) notify the Town of Addison in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project; and

(7) contractually require each other person with whom it contracts to perform as required by paragraphs (1) - (7) with the certificate of coverage to be provided to the person for whom they are providing services.

J. By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the Town of Addison that all employees of the Contractor who will provide services on the Project will be covered by worker's compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the TWCC's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties or other civil actions.

K. The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the Town of Addison to declare the contract void if the Contractor does not remedy the breach within ten days after receipt of notice of breach from the Town.

The following is the form of notice of workers' compensation coverage prescribed by the TWCC. Pursuant to Section 110.110 (d) (7), this notice must be printed with a title in at least 30-point bold type, and text in at least 19-point nominal type, and shall be in both English and Spanish and any other language common to the worker population.

REQUIRED WORKERS' COMPENSATION COVERAGE

"The law requires that each person working on this site or providing services related to this construction Project must be covered by workers' compensation insurance. This includes persons providing, hauling or delivering equipment or materials, or providing labor or transportation or other service related to the Project, regardless of the identity of their employer or status as an employee.

"Call the Texas Workers' Compensation Commission (TWCC) at (512) 440-3789 to receive further information on the legal requirements for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

30. **RESOLUTION OF DISPUTES:** The parties hereby covenant and agree that in the event of any controversy, dispute, or claim, of whatever nature arising out of, in connection with or in relation to the interpretation, performance or breach of this Contract, including but not limited to any claims based on contract, tort or statute, before filing a lawsuit, the parties agree to submit the matter to Alternative Dispute Resolution pursuant to the laws of the State of Texas. The parties shall select a third party arbitrator or mediator from the current list of neutrals on file with the Alternative Dispute Resolution Administrator of the Dallas County District Courts or other mutually agreeable mediator or arbitrator. All forms of Alternative Dispute Resolution may be used except binding arbitration. The proceedings shall be conducted in accordance with the laws of the State of Texas.

31. **SHOP DRAWINGS:** The Contractor shall provide, review, approve and submit all shop drawings, product data and samples required by the Town of Addison, the Engineer and the Contract Documents in accordance with Item 1.28 of the Standard Specifications for Public Works Construction, North Central Texas Council of Governments. The Contractor shall electronically submit shop drawing for review to Kimley-Horn, who will review, comment and forward to the Town of Addison for acceptance.

Shop drawings shall include all items to be installed in the Project, including but not limited to:

□ Concrete Mix Designs	□ Traffic Control Plan	□ Water Main Pipe/Fitting
□ Storm Sewer Pipe	□ Bridge Superstructure	□ Valves & Boxes
□ Rock Riprap	□ Manholes & Vaults	□ Backfill Materials
□ Sanitary Sewer Pipe/Fitting	□ Metal Beam Guard Fence	□ Handrail Shop Drawings

32. **PROJECT VIDEO:** Prior to the start of construction, Contractor shall video the construction area and property adjacent to construction in the presence of the City Inspector. The format shall be DVD. The video shall be narrated. The Contractor shall furnish the Town of Addison a copy of the video in DVD format prior to commencement of Project. This effort shall be considered as subsidiary to the various bids items for this Project (See Section 19).

33. **SAMPLES AND TESTS OF MATERIALS:** The Town of Addison shall designate and pay an independent testing laboratory to furnish testing for this Project. Random testing will be provided by the independent lab as necessary for compliance with the Specifications. The Contractor shall coordinate construction with the testing lab and the Town of Addison, and shall provide assistance to the testing labs by providing excavation, access, trench safety, materials for testing and any other Work required to insure all testing requirements are met. Work performed to accommodate testing will be a subsidiary item and no extra payment will be authorized. All costs for the field quality control testing shall be paid for by the Town of Addison, except for any and all re-testing, which shall be paid by the Contractor and such cost shall be deducted from monthly pay requests. As a guide, the Contractor shall be responsible for providing any test required by the Specifications.

All samples and tests shall be performed in accordance with the Standard Specifications for Public Works Construction, North Central Texas Council of Governments (5th Addition) as amended or supplemented.

34. **INSPECTION:** The Town of Addison and the Engineer reserve the right to inspect, test, measure or verify the construction Work for this Project as they deem necessary to ascertain that the Work is being accomplished in accordance with the standards and requirements set forth in the Contract Documents. Notwithstanding such reviews, the Contractor will be held responsible for the finished Work and any acceptance of the Work by the Town or governmental agencies will not relieve the Contractor from responsibility for the Work. The Town reserves the right to place full-time construction inspectors at the site of the Work. Costs for inspection services will be paid by the Town of Addison. The Contractor shall provide assistance to the Town of Addison and the Engineer by providing excavation, trench safety, or other Work necessary to facilitate inspection activities, and shall give sufficient notice well in advance of pending construction activities for scheduling of inspection services.

If the Specifications, the Town's instructions, laws, ordinances, or any public authority require any Work to be specially tested, the Contractor shall give the Town timely notice of its readiness for testing, and if the testing is by an authority other than the Town, of the date fixed for such testing. Tests by the Town shall be made promptly, and where practicable at the source of supply.

35. **ACCESS ROUTES, STAGING AREAS AND STORAGE AREAS:** All haul roads and access routes and the location of job site trailers, staging areas, and storage areas shall be subject to the approval of the Town and the Engineer. The Contractor shall be responsible for obtaining a staging area for storage of equipment and materials and for employee parking. The Contractor is responsible for maintaining and repairing all roads and other facilities used during construction. Upon completion of the Project all existing roads and other disturbed areas shall be left in a condition equal to that at the time the Contractor commences Work on this Project.

36. **PROPERTY ACCESS:** Access to adjacent commercial property shall be maintained at all times unless otherwise directed by the Engineer and/or Town of Addison. Contractor shall also maintain sufficient access throughout the Project limits to the existing buildings and businesses during construction operations.

37. **PLANT, PROCEDURES, METHODS AND EQUIPMENT:** The Contractor shall determine the methods to be employed, the procedures to be followed, and equipment to be used on the Work under this contract, subject to the requirements of these Specifications and approval of the Engineer and Town of Addison. Only adequate and safe procedures, methods and equipment shall be used.

The Contractor shall so arrange his Work and provide such plant and equipment as is necessary in order to meet the progress requirements of the approved time schedule and to complete the Work within the period of time as specified in the Contract. Only such

materials and equipment as are necessary for the construction of the Work under this contract shall be placed, stored or allowed to occupy any space at the site of the Work.

It is expressly agreed that the acceptance or approval of any order of procedure, methods or equipment submitted or employed by the Contractor shall not in any manner relieve the Contractor of responsibility for the safety, maintenance and repairs of any Work, or for the construction maintenance and safety of the Work hereunder, or from any liability whatsoever on account of any procedure or method employed by the Contractor.

Where the Work under this contract requires permits from the Town of Addison, the State of Texas, or other public authorities, duplicate copies of such permits shall be furnished to the Engineer by the Contractor before the Work covered thereby is started. **NO WORK WILL BE ALLOWED TO PROCEED BEFORE REQUIRED PERMITS ARE OBTAINED AND DISTRIBUTED.**

38. **PARKING OF CONSTRUCTION EQUIPMENT:** During all other periods of time when the Contractor's or their sub-contractors equipment is not being actively used on the construction Work, the Contractor shall park the equipment at locations which are approved by the Town of Addison. The Contractor shall provide adequate barricades, markers and lights to protect the Town of Addison, the Engineer, the public and other Work. All barricades, lights, and markers must meet the requirements of the Town of Addison, State and Federal regulations.

39. **ZONING REQUIREMENTS:** During the construction of this Project, the Contractor shall comply with the present zoning requirements of the Town of Addison in the use of vacant property for storage purposes.

40. **IN PUBLIC ROADS AND PRIVATE DRIVES:** No public road shall be entirely closed overnight, unless approved by the Town of Addison. It shall be the responsibility of the Contractor to build and maintain all weather bypasses and detours, if necessary, and to properly light, barricade and mark all bypasses and detours that might be required on and across the roads involved in the Work included in this Contract.

The Contractor shall make every effort to complete construction and allow immediate access to adjacent property at driveway entrances located along the roadways. Towns or tenants of improvements where access and/or entrance drives are located shall be notified at least twenty-four (24) hours prior to the time the construction will be started at their driveways or entrances and informed as to the length of time driveways will be closed. Contractor shall at all times maintain at least one point of access into all properties, unless obtaining written permission from property owner to do otherwise with such written permission being provided to the Town's inspector.

The Contractor shall be responsible for all road and entrance reconstruction and repairs and maintenance of same for a period of two years from the date of Town of Addison's acceptance of the Work. In the event the repairs and maintenance are not made immediately to the satisfaction of the Town, and it becomes necessary for the Town to make such repairs, the Contractor shall reimburse the Town for the cost of such repairs.

The Contractor shall, at all times, keep a sufficient width of the roadway clear of dirt and other material to allow the free flow of traffic. The Contractor shall assume any and all responsibility for damage, personal or otherwise, that may be caused by the construction along roads and private drives.

41. **HAULING ON TOWN OF ADDISON STREETS:** The Contractor shall receive approval of its haul routes and type of equipment to be used prior to beginning construction. The Contractor shall be responsible for maintaining the cleanliness of existing paved roadways and shall provide equipment and manpower for that purpose.

42. **EXISTING POWER POLES & GUY WIRES:** The Contractor shall have the responsibility of coordinating with the proper authorities for the bracing, replacing or relocating of all utility poles and guy wires which interfere with the Work on this Project prior to beginning its construction operations. The Contractor will also be responsible for all damage to poles, guy wires, etc. that are damaged or destroyed by Contractor's operations.

43. **SAFETY RESTRICTIONS - WORK NEAR HIGH VOLTAGE LINES:** The contractor is responsibly for the site safety of the project. Contractor shall follow governing regulatory requirements when working near high voltage lines, including but not limited to, OSHA 1926 and Town of Addison requirements.

44. **PROTECTION OF EXISTING UTILITIES AND STRUCTURES:** The location and dimensions shown on the Plans relative to existing utilities and subsurface structures are based on the best records and/or field information available and are not guaranteed by the Town of Addison or the Engineer to be accurate as to location and depth. It shall be the Contractor's responsibility to verify locations of adjacent and conflicting utilities sufficiently in advance of its activities in order that he may negotiate such restrictive locations with the Town of Addison of the conflicting utility and/or make local adjustments to provide adequate clearances. The Contractor shall take all necessary precautions in order to protect all utilities and services encountered, whether or not they are indicated on the Plans. All damage to utilities resulting from Contractor's operations shall be restored at its expense. The Town of Addison and the Engineer assume no responsibility for failure to show any or all of these utilities or structures on the Plans, or to show them in their exact locations. It is mutually agreed that such failure shall not be considered sufficient basis for claims for additional compensation for Extra Work or for increasing the pay quantities in any manner whatsoever, unless the obstruction encountered is such as to necessitate changes in the lines or grades, or requires the building of special Work, provisions for which are not made in the Plans, in which case, provisions in these Specifications for Extra Work shall apply.

45. **PUBLIC UTILITIES AND OTHER PROPERTY TO BE CHANGED:** In case it is necessary to change or move the property of a public utility, such property shall not be moved or interfered with until authorized by the Town of Addison or the Engineer. The right is reserved for the Owner of public utilities to enter upon the limits of the Project for the purpose of making such changes or repairs of their property that may be made necessary by performance of the Contract. The Contractor shall be responsible for coordination with

the Town of Addison and the Engineer, and all utility companies whose utility lines or streets may be affected by the proposed improvements. The Contractor shall observe the following:

a. Prior to any excavation, the Contractor shall determine the locations of all existing water, gas, sewer, electric, telephone, telegraph, television, pipelines and other underground utilities and structures.

b. After commencing Work, the Contractor shall use every precaution to avoid interference with existing underground and surface utilities and structures, and protect them from damage.

c. Where the locations of existing underground and surface utilities and structures are indicated, these locations are generally approximate, and all items which may be encountered during the Work are not necessarily indicated. The Contractor shall determine the exact locations of all items indicated, and the existence and locations of all items not indicated.

d. The Contractor shall repair or pay for all damage caused by its operations to all existing utility lines, public property, and private property, whether it is below ground or above ground, and he shall defend and settle in total the cost of all lawsuits which may arise as a result of its operations.

e. To avoid unnecessary interferences or delays, the Contractor shall coordinate all utility removals, replacements and construction with the appropriate utility company, and then request written authorization from the Town of Addison or the Engineer. The Town of Addison and the Engineer will not be liable for damages due to delay as a result of the above.

46. **MAINTENANCE AND REPAIRS:** The Contractor shall maintain and keep in good repair all Work contemplated under these Plans, Specifications, and Plans which shall include the maintenance and repair of all existing streets, storm sewer crossings, utility crossings, temporary crossings for access to adjacent property, barricades, lights, and danger signals, and all Work which is necessary for the well-being of the general public. In the event the Contractor fails in its obligations to properly maintain the Work, the Town of Addison shall make such repairs as are necessary and the cost of such repairs shall be deducted from payment due the Contractor.

47. **PROTECTION OF WORK:** During performance and up to date of final acceptance, the Contractor shall be under the absolute obligation to protect the finished Work against damage, loss or injury. In the event of damage, loss or injury, the Contractor shall promptly replace or repair such Work, whichever the Town of Addison shall determine to be preferable. The obligation to deliver finished Work in strict accordance with the contract prior to final acceptance shall be absolute and shall not be affected by the Town of Addison's approval of or failure to prohibit means and methods of construction used by the Contractor. All risk of loss or damage to the Work shall be borne solely by the

Contractor until final acceptance of all Work by the Town of Addison, as evidenced by the Town of Addison's issuance of a certificate of acceptance.

48. **PUBLIC CONVENIENCE AND SAFETY:** In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the Project site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal Work hours.

Materials stored about the Work site shall be so placed, and the Work shall at all times be so conducted, as to cause no greater obstruction to the traveling public than is considered necessary by the Town of Addison. The materials excavated shall be placed so as not to endanger the Work or prevent free access to all fire hydrants, water valves, gas valves, manholes (telephone, telegraph or electrical conduits, and sanitary sewers) and fire alarm or police call boxes in the vicinity.

The Town of Addison reserves the right to remedy any neglect on the part of the Contractor as regards to the public convenience and safety which may come to the Town of Addison's attention, after 24 hours notice in writing to the Contractor, save in cases of emergency, when the Town of Addison shall have the right to remedy any neglect without notice; and, in either case, the cost of such Work done by the Town of Addison shall be deducted from the monies due or to become due the Contractor. The Contractor shall notify the Town of Addison and the Engineer when any street is to be closed or obstructed. The Contractor shall provide for emergency vehicle access at all times.

Where the Work passes over or through private property, the Town of Addison shall provide such right-of-way. The Contractor shall notify the proper representatives of any public utility, corporation, company or individual, not less than 48 hours in advance of Work which might damage or interfere with the operation of their property along or adjacent to the Work. The Contractor shall be responsible for all damage or injury to property of any character (except such as may be required by the provisions of the Contract Documents, or caused by agents or employees or the Town of Addison) by reason of any negligent act or omission on the part of the Contractor, its employees, agents or Subcontractors, or at any time due to defective Work or materials, or due to its failure to reasonably or properly prosecute the Work, and said responsibility shall not be released by the fact that the Work shall have been completed and accepted.

When and where any such damage or injury is done to public or private property on the part of the Contractor, he shall restore or have restored at its own cost and expense such property to a condition similar or equal to that existing before such damage was done, by repairing, rebuilding or otherwise restoring as he may be directed, or he shall make good such damage or injury in a manner acceptable to the property Town of Addison and the Engineer. In case of failure on the part of the Contractor to restore such property or make good such damage or injury, the Town of Addison may, upon 48 hour written notice under ordinary circumstances, and without notice when a nuisance or hazardous condition results, proceed to repair, rebuild or otherwise restore such property as may be determined

necessary, and the cost thereof shall be deducted from any monies due or to become due to the Contractor under this contract; or where sufficient contract funds are unavailable for this purpose, the Contractor or its surety shall reimburse the Town of Addison for all such costs.

49. **PROTECTION OF PERSONS AND PROPERTY**: The Contractor shall have the responsibility to provide and maintain all warning devices and take all precautionary measures required by law or otherwise necessary to protect the Work and persons and property while said persons or property are approaching, leaving or within the Work site or any area adjacent to said Work site. No separate compensation shall be paid to the Contractor for the installation or maintenance of any protective measures, warning devices, barricades, lights, signs, or any other precautionary measures required by law or otherwise necessary for the protection of persons or property.

The Contractor shall assume all responsibilities to the general public in connection with the general public's immediate approach to and travel through the Work site and the area adjacent to said Work site.

Where the Work is in or adjacent to any street, alley, sidewalk, public right-of-way or public place, the Contractor shall at its own cost and expense provide such flagmen and watchmen and furnish, erect and maintain such warning devices, barricades, lights, signs, and other precautionary measures for the protection of persons or property as may be prudent or necessary, or as required by law. The Contractor's responsibility for providing and maintaining flagmen, watchmen, warning devices, barricades, signs and lights and other precautionary measures shall not cease until the Project shall have been completed and accepted by the Town of Addison, and shall cease when the Town of Addison notifies the Contractor in writing of final Project acceptance.

If the Town of Addison discovers that the Contractor has failed to comply with applicable federal or state laws (by failing to furnish the necessary flagmen, warning devices, barricades, lights, signs or other precautionary measures for the protection of persons or property), the Town of Addison may order the Contractor to take such additional precautionary measures as required by law to protect persons and property. In addition, the Contractor shall be held responsible for all damages to the Work and other public or private property due to the failure of warning devices, barricades, signs, lights or other precautionary measures in protecting said property; and whenever evidence is found of such damage, the Town of Addison may order the damaged portion immediately removed and replaced by and at the cost and expanse of the Contractor.

50. **TRAFFIC CONTROL:** It shall be the responsibility of the Contractor to provide traffic control during the construction as required by the State of Texas, the Town of Addison, and in accordance with the following additional requirements:

a. The Contractor shall be required to furnish barricades, flares, flagmen, etc., for the protection of the public, employees and the Work.

b. The Contractor shall prosecute its Work in such a manner as to create a minimum of interruption to traffic along adjacent roadways.

c. The unit price bid under the appropriate bid item of the proposal shall cover all cost for providing signage, markings, lighting, barricades, flagmen and other devices and personnel required for traffic control during construction of the Project.

d. The Contractor shall not remove any regulatory sign, instructional sign, warning sign, street name sign or any other sign or signal which currently exists.

e. **The Contractor shall provide a comprehensive Traffic Control Plan to the Town of Addison for review, comment, and approval.** In the event the planned sequence of work is different in any way from that sequence of work provided for in the plans or where additional details are required to be reviewed and approved by Addison prior to any further work is performed. The Traffic Control Plan shall be designed in accordance with established standards and regulations and signed and sealed by a professional engineer, registered in the State of Texas. The plan should reflect the Contractor's proposed construction phasing and methodology and include the design layout for all proposed detour and traffic situations. This effort is paid by lump sum in bid item A-31.

51. BARRICADES, WARNING SIGNS, DETOURS AND SEQUENCE OF CONSTRUCTION: Throughout the construction operations, streets and intersections will remain open to traffic by constructing the Work in stages. All streets, driveways, adjacent business and alleys shall remain open to traffic as far as is practicable.

A. General Construction: The Contractor shall plan its Work sequence in a manner that will cause minimum interference with aircraft operations during construction operations. Before beginning Work on this Project, the Contractor shall submit, for approval by the Town of Addison, a plan of construction operations outlining in detail a sequence of Work to be followed; setting out the method of handling traffic on streets, roads and driveways along, across and adjacent to the Work. If at any time during the construction, the Contractor's proposed plan of operation for handling traffic does not provide for safe comfortable movement, the Contractor shall immediately change its operations to correct the unsatisfactory conditions.

Ditches across the traffic lanes will be kept covered with a portable traffic-bearing surface at all times unless Work in the ditch is in progress. Only one lane of traffic may be closed at a time when Work is in progress in a ditch.

B. Safety: The Contractor shall provide, construct and maintain barricades and signs at locations set out in the Plans and in the Special Provisions in accordance with the Texas Manual on "Uniform Traffic Control Devices for Streets and Highways". In addition, he shall provide and maintain such other barricades and signs as deemed necessary by the Town or the Engineer, and provide and maintain, between sunset and sunrise, a sufficient number of lights at barricades and points of danger for the protection of vehicular and pedestrian traffic.

Barricades shall be placed in such a manner as not to interfere with the sight distance of drivers entering the street from side streets.

The Contractor shall keep traveled surfaces used in its hauling operation clear and free of dirt or other material.

The Contractor shall provide and maintain qualified flagmen at such points and for such periods of time as may be required to provide for the safety and convenience of public travel and Contractor's personnel.

52. EXCAVATION SAFETY SYSTEMS:

The Work performed under this section of the Specifications consists of providing trench safety systems consisting of shoring, sheeting, trench shield, and/or laid back slopes to meet the trench safety requirements of the Occupational Safety and Health Administration (O.S.H.A.), as required for this Project and specified herein.

A. General: Trench safety systems shall be provided by the Contractor as provided in Subpart P - Excavation, Trenching and Shoring, Part 1926 of the Code of Federal Regulations which describes safety and health regulations as administered by the U.S. Department of Labor Occupational Safety and Health Administration (O.S.H.A.). The standards specified by the O.S.H.A. Regulations shall be the minimum allowed on this Project. It shall be the responsibility of the Contractor to design and install adequate trench safety systems for all trenches excavated on this Project.

The Contractor shall furnish to the Town for review, prior to beginning construction activity, a Trench Safety Plan for the entire Project. The trench safety plan must be prepared and sealed by a Professional Engineer registered in the State of Texas. In addition, all trench safety systems utilized in this Project must be designed by a Professional Engineer registered in the State of Texas. The Contractor shall be totally responsible for the safety of all persons involved in the construction of this Project.

B. Core Borings: Any core borings and soil data furnished by the Town are for the convenience of the Contractor. The Contractor shall be responsible for any additional soil or geotechnical information required. The Contractor shall be responsible for properly designed trench safety systems to be utilized for any type of subsurface condition found on this Project. The furnishing of soil information by the Town of Addison in no way relieves the Contractor of this obligation. If no core borings or soil data are furnished by the Town, it shall be the Contractor's responsibility to obtain whatever geotechnical information required for preparation of trench safety systems.

C. Inspections: In addition to the inspections of the trench and trench safety systems required of the Contractor by the O.S.H.A. Regulations, the Town may further inspect the Work. The Town shall have the right to reject any trench safety systems which he finds to be inadequate, and the Contractor shall immediately improve the system to comply with this specification.

D. Measurement and Payment: Measurement and payment of Trench Safety Systems shall be based on the actual linear footage of the pipe installed on the Project. The payment shall be full compensation for all planning, engineering, materials, equipment, fabrications, installation, recovery and all incidental Work required.

53. **TRENCH EXCAVATION, BACKFILL AND COMPACTION:** Trench excavation, backfill and compaction of water and sewer utility trenches shall be in accordance with Town of Addison Standards and with details shown on the Construction Plans.

A. Trench Excavation: If the stated maximum trench widths are exceeded, either through accident or otherwise, and if the Engineer determines that the design loadings of the pipe will be exceeded, the Contractor will be required to support the pipe with an improved trench bottom. The expense of such remedial measures shall be entirely the Contractor's own. All trenching operations shall be confined to the width of permanent rights-of-way, permanent easements and any temporary construction easements. All excavation shall be in strict compliance with the Trench Safety Systems Special Condition of this document.

B. Trench Backfill: Trenches shall be backfilled above the top of the embedment material with approved backfill material per Town of Addison Standards for the appropriate pipe size, pipe material, depth, and soil condition.

C. Compaction: All trenches under proposed or existing pavement shall be compacted to within a range of 95% to 100% Standard Proctor Density. Trenches which lie outside limits of pavement shall be compacted to a minimum of 90% Standard Proctor Density (ASTM D-698).

54. **TRENCH WALLS:** The Contractor shall use shoring or a drag box in those areas where it is required to protect existing improvements. This shall be subsidiary to the linear foot cost of the pipe and not a separate pay item.

55. **SUSPENSION OF WORK RELATED TO DANGER:** In addition to the other remedies for suspension of the Work as provided for in the General Provisions and Special Provisions, the Town of Addison has the authority to suspend all work immediately if, in the Town of Addison's opinion, there is imminent danger to workers or the general public. If there is no imminent danger to workmen or the general public, but trench conditions are not in compliance with Federal Regulations 29 C.F.R. 1926.650-1926.652, the Town of Addison shall warn the Contractor who shall then immediately order all workmen in and adjacent to the trench away from the area. The Contractor must then bring the trench into compliance with the regulations. If the Contractor does not make the required corrections, all work on the Contract shall cease and the Town of Addison will issue a letter of Temporary Suspension of Work. The only work authorized after issuance of this letter is work approved by the regulations. Other work shall not be permitted until the Town of Addison issues a letter of Release of Temporary Suspension of Work. The Contractor shall not be entitled to additional compensation, an extension of time or payment of damages as a result of a temporary suspension of work under this provision.

56. **PROPERTY LINES AND MONUMENTS:** The Contractor shall protect all property corner markers, and when any such markers or monuments are in danger of being disturbed, they shall be properly referenced and if disturbed shall be reset at expense of the Contractor.

57. **CONSTRUCTION STAKING:** Construction staking will not be provided by the Town of Addison or Engineer. This item will be performed by the Contractor and shall be subsidiary to other bid items. The Contractor will also be responsible for maintaining stakes. If re-staking is required for any reason, it will be the Contractor's responsibility, including associated costs.

All construction staking shall be done under the supervision of a Registered Professional Land Surveyor registered in the State of Texas. The Contractor shall submit copies of cut sheets and field books for the construction of all paving, water, wastewater, and stormwater improvements to the Town of Addison for review prior to construction of the improvements. The information on the cut sheets and field books shall include but not be limited to the following:

a. Heading to include date, contract number, Project name, surveying firm, Contractor, and construction plan sheet number.

b. Location, description of street/line and street/line name, number, letter, etc. designation.

c. Benchmark Data: Location, description, and elevation.

d. Slope or percent of grade of each curb line or utility line.

e. Stations at 50 foot intervals and including all PC, PT, PI, PVC, PVI, PVT, PRC, grade changes, etc.

f. Offset description including distance to center line or back of curb and direction of offset; left, right, east, west, etc,

g. Cut to subgrade, pavement, top of curb, or flowline of the street or utility being staked.

h. Clarifying remarks such as top of curb, gutter, pavement, subgrade, manhole, cleanout, valve, tee, cross, fire hydrant, wastewater lateral, water service, etc.

i. Cut sheets shall be signed by a Texas Registered Professional Land Surveyor.

58. **DURING CONSTRUCTION**: During construction of the Work, the Contractor shall, at all times, keep the site of the Work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove same from any portion of the site if, in the opinion of the Town of Addison or the Engineer, such material, debris or rubbish constitutes a nuisance or is objectionable. In case of failure on the part of the Contractor to maintain a clean site, the Town of Addison may, upon 24 hour written notice, clean the site, and the cost thereof shall be deducted from any monies due or to become due to the

Contractor under its contract; or where sufficient contract funds are unavailable for this purpose, the Contractor or its surety shall reimburse the Town of Addison for all such costs.

59. **CONSTRUCTION TRAFFIC OVER PIPE LINES:** The design of the new pipes and the design of the existing pipe have been taken into account and provided for highway live loads. It is apparent, however, that certain construction vehicles could exceed this highway load condition under shallow bury conditions. It will be the responsibility of the Contractor to protect both the new line and the existing lines from these possibly excessive loads. The Contractor shall not at any time cross the existing or new pipe with a truck delivering new pipe to the site. Any damage to the existing or new pipe will be repaired or replaced by the Contractor to the satisfaction of the Town of Addison.

In locations where it is not permissible to cross the existing or proposed pipes without additional protection, the Contractor may elect to provide additional protection of the pipes, such as steel plates, so that more frequent crossings of the pipes are allowed. It still is, however, the responsibility of the Contractor to repair any damage to the existing or proposed lines if the damage results from any phase of its construction operation.

60. **CONTRACTOR'S CONTINUING OBLIGATION:** Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the Town of Addison, nor the issuance of a certificate of Substantial Completion, nor any payment by Town of Addison to Contractor under the Contract Documents, nor any use or occupancy of the Work or any part thereof by Town of Addison, nor any act of acceptance by Town of Addison nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by the Town of Addison pursuant to final payment nor any correction of defective Work by Town of Addison will constitute an acceptance of Work not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents.

61. **IRRIGATION AND SPRINKLER REPAIR:** The Contractor shall maintain all existing irrigation systems within the limits of the Project during the duration of the contract, if necessary. The Contractor shall employ a licensed irrigator who is responsible for the repair or replacement of any damage to irrigation lines, valves, controllers, sprinklers, wiring and appurtenances which are damaged during construction. **This repair is subsidiary to the various other items bid. The Contractor will be responsible for any vegetation that dies as a result of damage to the irrigation system and replace it with equal vegetation at its own cost.**

62. **REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK:** All Work which has been rejected or condemned shall be repaired; or if it cannot be repaired satisfactorily, it shall be removed and replaced at the Contractor's expense. Defective materials shall be immediately removed from the Work site. Work done without line and grade having been provided; Work done beyond the line or not in conformity with the grades shown on the Plans or as provided, Work done without proper inspection; or any Extra or unclassified Work done without written authority and prior agreement in writing as to prices, shall be at the Contractor's risk and will be considered unauthorized, and at the option of the Town

of Addison may not be measured and paid for and may be ordered removed at the Contractor's expense. Upon failure of the Contractor to repair satisfactorily or to remove and replace, if so directed, rejected, unauthorized or condemned Work or materials immediately after receiving notice from the Town of Addison, the Town will, after giving written notice to the Contractor, have the authority to cause defective Work to be remedied or removed and replaced, or to cause unauthorized Work to be removed and to deduct the cost thereof from any monies due or to become due the Contractor.

63. **DISPOSITION AND DISPOSAL OF MATERIALS:** All materials to be removed from the site including refuse and other debris shall become the property of the Contractor and shall be disposed of outside the limits of the Project. Contractor shall also comply with all applicable laws governing the spillage of debris while transporting to a disposal site.

64. **CLEAN-UP FOR FINAL ACCEPTANCE:** The Contractor shall make a final cleanup of all parts of the Work before acceptance by the Town of Addison. This cleanup shall include removal of all objectionable rock and other construction materials, and in general preparing the site of the Work in an orderly manner and appearance.

65. **TV INSPECTION OF SANITARY SEWER/STORM SEWER:** Part of the final inspection of the wastewater systems on this Project shall include a closed circuit TV survey of the completed pipe installation, exclusive of services, and all imperfections in the installed facility revealed by the TV survey shall be remedied by the Contractor prior to acceptance of the Project as complete. All TV survey Work, including furnishing of necessary personnel, equipment and material shall be performed by the Contractor.

66. **TESTING REQUIREMENTS:** Testing shall be conducted in accordance with Town of Addison Specifications except as modified in the Special Provisions, Technical Specifications, or as on the plans. The Town of Addison will provide random testing. The Contractor shall coordinate construction with the Town of Addison, and shall provide assistance to the testing labs by providing trench safety, excavation, or other work to insure all testing requirements are met. Work performed to accommodate testing will be a subsidiary item and no extra payment will be authorized. All retesting shall be at the expense of the Contractor. As a general guide, the Contractor shall be responsible for providing the following tests:

(1) Density and associated tests on embedment and backfill.
(2) Compressive strength tests on concrete.
(3) Gradation soil tests on backfill as may be required.
(4) Pressure test, bacteriological tests for disinfection of water lines,
(5) Mandrel test for gravity sewer pipeline
(6) Vacuum test for SSMH for water tightness.
(7) Providing test results from manufacturer and as specified in Town of Addison Specifications (NTCOG).

67. **SILICONE JOINT SEALANT:** Silicone joint sealant must be used in all instances where joint sealant applies to Portland Cement Concrete pavement and curbs. Payment for the

use of silicone joint throughout this Project will in all cases be subsidiary to this contract at no extra cost.

68. **CLAIMS FOR DAMAGES OR INJURY:** General Provision Item 1.24.3 - SMALL CLAIMS FOR DAMAGE OR INJURY is amended to read as follows: "If any person files a claim against the Town of Addison or Contractor for personal injury or property damage resulting from, arising out of, or caused by, the operations of the Contractor, or any Work within the limits of the Project, the Contractor must either submit to the Town of Addison, a duly executed full release within thirty (30) days from the date of written claim, or immediately report the claim to its liability insurance carrier for their action in adjusting the claim. If the Contractor fails to comply with this provision within the stipulated time limit, it will be automatically deemed that the Contractor has appointed the Town as it's irrevocably Attorney-In-Fact authorizing the Town to report the claim directly with the liability insurance carrier. This provision is in and of itself a Power-of-Attorney from the Contractor to the Town which authorizes the Town to take said action on behalf of the Contractor without the necessity of the execution of any other document. If the Contractor fails to comply with the provisions of this item the Town, at its own discretion, may terminate this contract or take any other actions it deems appropriate. Any payment or portion thereof due the Contractor, whether it is a final payment, progress payment, payment out of retainage or refund payment may be withheld by the Town as is authorized by Item 109.4. Bankruptcy, insolvency or denial of liability by the insurance carrier shall not exonerate the Contractor from liability.

As a result of the additional Work created to Town of Addison due to un-responded claims for damages by Contractor to third parties, Contractor shall incur penalties for failure to abide by this Special Provision.

Contractor shall respond to the claimant in writing regarding the status of the claim, including whether Contractor disputes the claim, wishes to settle, or will notify its liability insurance carrier regarding the claim. Contractor will be assessed a penalty by the Town of $75.00 per claim, for its failure to respond to the claimant as described above within thirty days of its written notice of claim by the Town.

To ensure Contractor compliance, the Town of Addison shall be notified, by copied correspondence of responses or settlement by Contractor."

69. **WAIVER OF CLAIMS:** The making and acceptance of final payment will constitute:

A. A waiver of all claims by Town of Addison against Contractor, except claims arising from unsettled Liens, from defective Work appearing after final inspection or failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by Town of Addison of any rights in respect of Contractor's continuing obligations under the Contract Documents.

B. A waiver of all claims by Contractor against Town of Addison other than those previously made in writing and still unsettled.

70. **MECHANICS AND MATERIALMEN'S LIEN:** The Contractor shall be required to execute a release of mechanics and materialmen's liens upon receipt of payment and shall ensure that the Project remains free and clear of all liens related to the Work. The Contractor shall have all liens removed by obtaining releases acceptable to the Town of Addison or shall bond around such liens by obtaining a discharge of all liens.

71. **CONTRACTOR'S AFFIDAVIT OF BILLS PAID:** The Contractor shall be required to execute the form provided in Section BP prior to the acceptance of the Project.

72. **PRODUCT RECORD DOCUMENTS:** The Contractor shall maintain record Plans and legibly annotate shop drawings to record changes made after review. A red felt-tip marking pen shall be used for all recording.

Maintenance of Documents: The Contractor shall maintain at the job site one record copy of the Contract Plans, Specifications, Shop Drawings, Change Orders, other modification to the Contract, field test records and other documents submitted by Contractor in compliance with specification requirements. These documents shall be maintained at the job site apart from documents used for construction. These documents are not to be used for construction purposes. The documents shall be maintained in clean, legible condition. The documents shall be made available at all times for inspection by the Town.

Recording: Each document shall be labeled Project Record Copy in 2-inch high printed letters. The record documents shall be kept current. No Work shall be covered until required information has been recorded.

Contract Plans: The appropriate drawing shall be legibly marked to record, where applicable:

a. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.

b. Field changes of dimension and detail made during construction process.

c. Changes made by Change Order or Supplemental Agreement.

d. Details not on original Contract Plans.

e. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.

f. Changes made by Change Order or Supplemental Agreement.

g. Other matters not originally specified.

Shop Drawing: The Contractor shall maintain the Shop Drawings as record drawings and legibly annotate shop drawings to record changes made after review.

Submittal: At the completion of the Project, the Contractor shall deliver record Plans to the Town. The transmittal letter shall be accompanied, in duplicate, with:

a. Date, Project title and number.

b. Contractor's name and address.

c. Title and number of each record document.

d. Certification that each document as submitted is complete and accurate.

e. Signature of Contractor or its authorized representative.

73. OWNERSHIP OF WORK AND MATERIALS: All Work performed by Contractor pursuant to the Contract shall be the property of the Town of Addison. The Town of Addison shall own all construction, and any data, documents, plans, specifications, working papers, computer programs, photographs, or other material produced by Contractor pursuant to the Contract, and Contractor hereby assigns and transfers to the Town of Addison any and all copyrights for such material. To the extent that such programs used are internal, proprietary programs used by Contractor in the performance of the Work, Contractor will provide the Town of Addison such access to the programs as is necessary for the Town of Addison to be able to use the products and documents generated by the program, but Contractor is not required to transfer the copyrights or other intellectual property rights to the program to the Town of Addison. As security for partial, progress, or other payments, title to work for which such payments are made shall pass to the Town of Addison at the time of the payment. To the extent that title has not previously been vested in the Town of Addison by reason of payments, full title shall pass to the Town of Addison at delivery of the Work at the location specified in the Contract.

Unincorporated Work to which the Town of Addison has received title by reason of progress, partial or other payments shall be segregated from other Contractor or Subcontractor materials and clearly identified as the Town of Addison property. The Contractor shall be responsible for all materials until they have been incorporated into the Work and the Work has been finally accepted by the Town of Addison. The title transferred as above shall in each case be good, and free and clear of any and all security interests, liens, or other encumbrances. The Contractor promises and agrees that it will not pledge, hypothecate, or otherwise encumber the items in any way that would result in any lien, security interest, charge, or claim upon or against said items. The transfer of title as provided above shall not imply acceptance by the Town of Addison, nor relieve Contractor from the responsibility to strictly comply with the Contract, and shall not relieve Contractor of responsibility for any loss of or damage to such items.

The Contractor shall insert provisions in its subcontracts sufficient to ensure compliance with the content of this Section.

74. DRAWINGS AND OTHER DATA: All documents developed by Contractor in the performance of the Contract shall become the sole property of the Town of Addison and may be used by the Town of Addison on any other project without additional compensation

to Contractor. Use by the Town of Addison of these documents on other projects does not confer any liability on Contractor.

The Town of Addison shall be considered the "person for whom the work was prepared" for the purpose of authorship in any copyrightable work under 17 U.S.C. § 201(b). With respect thereto, Contractor agrees not to assert or authorize others to assert any rights or establish any claim under the design related patent and copyright laws. All design drawings, as-built drawings and specifications, in any form, shall contain a copyright mark of the Town of Addison.

75. **TOWN OF ADDISON APPROVAL:** This Project is subject to final approval and acceptance by the Town of Addison. Final approval acceptance will not be given until the punch list items are completed to the Town's satisfaction and as-built Plans are given to the Town of Addison.

76. **USE OF EXPLOSIVES:** The use of explosives by the Contractor to complete the Work shall be prohibited.

77. **POWER FOR CONSTRUCTION:** The Contractor shall contract with the local power provider and make the necessary arrangements for securing power required for the construction, including power required for temporary offices. There will be no separated pay item for connection into the existing power system or for the power required for construction purposes.

78. **LIQUIDATED DAMAGES:** If the Contractor fails to complete the Work within the time specified in the contract, the Contractor shall pay liquidated damages to the Town of Addison in the amount of **$ 1,000** for each calendar day of delay until the Work is completed or accepted.

79. **CONTRACT DELAY:** The parties anticipate that delays may be caused by or arise from any number of events during the course of the Contract, including, but not limited to, Work performed, disruptions, permitting issues, actions of subcontractors, suppliers, or other contractors, actions by third parties, weather, weekends, holidays, or other such events, forces or factors sometimes experienced in construction work. Such delays or events and their potential impacts on performance by the Contractor are specifically contemplated and acknowledged by the parties in entering into this Contract, and shall not extend the Contract time for completion. Further, any and all costs or impacts whatsoever incurred by the Contractor in accelerating the Work to overcome or absorb such delays or events in an effort to complete the Contract prior to expiration of the Contract time to complete, regardless of whether the Contractor does so or not, shall be the sole responsibility of the Contractor in every instance.

80. **SUBCONTRACTORS:** No subcontract shall relieve Contractor of any of Contractor's obligations or liabilities under the Contract. Contractor shall be fully responsible and liable for the acts or omissions of all Subcontractors, including persons directly or indirectly employed by them, their guests and invitees. Contractor shall have sole responsibility for managing and coordinating the operations of its Subcontractors, including the settlement

of disputes with or between them. Nothing contained in the Contract shall be deemed to create a contractual relationship between any Subcontractor, and the Town of Addison.

Contractor shall provide to the Town of Addison one (1) copy of all executed subcontracts associated with the Contract, including any changes or modifications to the subcontracts, within three (3) days of their execution. No Subcontractor shall be permitted to perform work associated with the subcontract until the Subcontractor (or Contractor on the Subcontractor's behalf) is in compliance with the insurance requirements specified elsewhere in the Contract, and has furnished satisfactory evidence of insurance to the Town of Addison.

81. **PAYMENTS TO SUBCONTRACTORS:** Contractor shall comply with the provisions of applicable laws and regulations relating to Contractor's relations with Subcontractors. Payments by Contractor to Subcontractors associated with the Town of Addison Contracts are subject to the time periods established in the Texas "Prompt Payment Act", contained in Chapter 2251 of the Texas Government Code.

All persons employed in the performance of the Work under the Contract, or any subcontracts hereunder, shall be paid not less than the general rates of per diem, holiday, and overtime wages prevailing in the locality of the Work of a similar character as detailed in the Special Provisions. Failure to comply with this provision shall subject Contractor to the penalties prescribed in Chapter 2258 of the Texas Government Code, as amended.

Contractor will include in each subcontract for property or services entered into by Contractor and a Subcontractor, including a supplier, for purposes of performing the Work under the Contract a payment clause that obligates Contractor to pay the Subcontractor for satisfactory performance under its subcontract within seven (7) days out of such amounts as are paid to Contractor by the Town of Addison under the Contract. A false certification to the Town of Addison under the provisions of the Payments clause may be a principal offense in violation of Section 37.10 of the Texas Penal Code.

82. **USE OF COMPLETED PORTIONS OF THE WORK:** Whenever, as determined by the Town of Addison, any portion of the Work performed by Contractor is in a condition suitable for use, and the best interests of the Town of Addison requires such use the Town of Addison may take possession of or use such portion of the Work. Such use by the Town of Addison shall in no case be construed as final acceptance, and shall neither relieve Contractor of any of its responsibilities under the Contract, nor act as a waiver by the Town of Addison of any of the conditions thereof. Contractor shall not be liable for the cost of repairs, rework, or renewals, which may be required due to ordinary wear and tear resulting from such use. However, if such use increases the cost or delays the completion of remaining portions of the Work, Contractor shall notify the Town of Addison in writing as required by the Contract and shall be entitled to such additional compensation or extension of time, or both, as determined in accordance with the Contract.

If in the course of such use, the Work proves to not be in compliance with the Contract, the Town of Addison shall have the right to continue such use until such portion of the Work can, without injury to the Town of Addison, be taken out of service for correction of

defects, errors, omissions, or replacement of unsatisfactory materials, as necessary for such portions of the Work to comply with the Contract. Contractor shall correct the Work as soon as practical, but not later than one (1) month after notification by the Town of Addison.

Contractor shall not use any permanently incorporated materials unless such use is approved in writing by the Town of Addison. Where Contractor's request is granted for the use of certain materials, Contractor shall properly use and maintain and, upon completion of its use and at its own expense, recondition such materials to the satisfaction of the Town of Addison.

83. **COMPLETE AGREEMENT:** The Contract (including Attachments, the Special Provisions, other documents and manuals incorporated herein) is the full and complete agreement between the Town of Addison and Contractor with respect to the subject matter herein and supersedes any and all prior agreements between the parties hereto.

84. **WAIVER:** The waiver by the Town of Addison of the breach of any provision of the Contract by Contractor shall in no way impair the right of the Town of Addison to enforce the provision for any subsequent breach thereof. All remedies provided hereunder are cumulative and are in addition to all other remedies available at law or in equity.

85. **EXECUTION OF THE CONTRACT:** The Contract may be executed in multiple counterparts, each of which shall, for all purposes, be deemed an original but which together shall constitute one and the same instrument, and the signature pages from any counterpart may be appended to any other counterpart to assemble fully executed documents, and counterparts of the Contract may also be exchanged via electronic facsimile machines and any electronic facsimile of any party's signature shall be deemed to be an original signature for all purposes.

86. **DEFINITIONS:** The following definitions are added to the General Provisions and Special Provisions:

BIDDER: Any person, persons, partnership, company, firm, association, or corporation acting directly or through a duly authorized representative submitting a bid for the work contemplated.

PROJECT: The Town of Addison's overall objective and endeavor of which the Contract forms a part and ultimately creates, which encompasses all Contact Documents constructed to final completion and final acceptance.

TOWN ENGINEER (ENGINEER): Town Engineer or his/her authorized representative with the Town of Addison located at 16801 Westgrove Drive, Addison, Texas 75001.

CONSULTANT ENGINEER (DESIGN ENGINEER): The consultant engineer of record is Brian J. LaFoy, PE (Texas Registered PE #89363 with Kimley-Horn and Associates, Inc. located at 2201 West Royal Lane, Suite 275, Irving, Texas 75063.

WORKING DAY: A working day is defined as a calendar day not including Saturdays, Sundays, or legal holidays authorized in the list prepared by the City of Dallas for contract purposes, in which weather or other conditions not under the control of the Contractor shall permit the performance of the principal units of work underway for a continuous period of not less than 7 hours between 7 A.M. and 6 PM. A principle unit of work shall be that unit which controls completion time of the contract. Nothing in this definition shall be construed as prohibiting the Contractor from working on Saturdays, if the Contractor so desires and permission of the Town of Addison has been granted. Work on Sundays shall not be permitted except in cases of extreme emergency and then only with the written permission of the Town of Addison. If Saturday or Sunday work is permitted, working time shall be charged on the same basis as weekdays. Where the working time is expressed as calendar days or a specific date, the concept of working days shall no longer be relevant to the contract.

87. **MODIFICATIONS TO THE LANGUAGE OF THE GENERAL PROVISIONS:** The General Provisions are modified as follows:

A. Add the following words to the General Provisions before the word "Certificates" found on the fourth line of Section 103.4.1:

"When permitted by law,"

B. Delete the sentence "A model Certificate of Insurance is illustrated in Model Form A.6 in Appendix A." beginning on the ninth line of Section 103.4.1 of the General Provisions and replace with the following:

"Certificates of Insurance shall be provided on a state approved form."

C. Delete the following sentence beginning on the second line of the fifth subparagraph of Section 104.2.1 of the General Provisions:

"The foregoing notwithstanding, the total original Contract amount shall not be increased more than 25 percent; the CONTRACTOR, by submission of a bid and execution of the Contract, is deemed to consent to the OWNER'S right to reduce the total original Contract amount by more than 25 percent."

D. Add the following word before the word "decide" found on the second line of Section 105.7.1 of the General Provisions:

"initially"

E. Add the following word after the word "work" found on the fifth line of Section 105.7.1 of the General Provisions:

", subject to the agreement of the Owner"

F. Delete the following sentence beginning on the sixth line of Section 105.7.1 of the General Provisions:

> "Engineer shall determine the amount and quality of work performed and materials furnished, and Engineer's decision and estimates shall be final."

G. Delete Section 105.9.3 of the General Provisions titled "Inspection Overtime" in its entirety.

H. Delete Section 107.2 of the General Provisions titled "Indemnification" in its entirety and replace with the following:

> **"THE CONTRACTOR AGREES TO INDEMNIFY, SAVE, PROTECT, DEFEND, AND HOLD HARMLESS THE OWNER, ITS AFFILIATES AND THEIR OFFICERS, DIRECTORS, AGENTS, INVITEES, AND EMPLOYEES ("INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL LIABILITY, COST, DAMAGE, EXPENSES, FINES AND ALL REASONABLE LEGAL FEES AND COURT COSTS, CLAIMS, LOSSES, CAUSES OF ACTION, SUITS, AND LIABILITY OF ANY KIND, INCLUDING ALL EXPENSES OF LITIGATION AGAINST THE INDEMNIFIED PARTIES, WHETHER OR NOT CAUSED IN PART BY ANY ACT OR OMISSION OF A PERSON OR ENTITY INDEMNIFIED HEREUNDER, OR WHETHER LIABILITY IS IMPOSED UPON SUCH PERSON OR ENTITY, FOR ANY LOSS, INJURY, DAMAGE OR DEATH ARISING FROM OR OUT OF THE CONTRACTOR'S ACTS OR OMISSIONS, INCLUDING, BUT NOT LIMITED TO CONTRACTOR'S NEGLIGENT OR GROSSLY NEGLIGENT PERFORMANCE OF THE WORK; NEGLIGENT OR GROSSLY NEGLIGENT USE OR MISUSE OF OWNER'S PROPERTY; NEGLIGENT OR INTENTIONAL ACTIONS, ERRORS OR OMISSIONS AND THOSE OF ITS EMPLOYEES, OFFICERS, DIRECTORS, AGENTS OR SUBCONTRACTORS; VIOLATION OF ANY FEDERAL, STATE OR MUNICIPAL LAWS, REGULATIONS AND/OR ORDINANCES; CONTRACTOR'S OR ITS SUBCONTRACTOR'S USE OF PROPERTY, EQUIPMENT, VEHICLES, OR MATERIALS; DEFECTIVE WORKMANSHIP; NEGLIGENT OR GROSSLY NEGLIGENT USE OR MISUSE OF UTILITIES; OR SUBCONTRACTORS', EMPLOYEES', AGENTS', OFFICERS', OR DIRECTORS' NEGLIGENCE OR INTENTIONAL TORTS. IT IS THE EXPRESS INTENT OF CONTRACTOR TO INDEMNIFY THE INDEMNIFIED**

PARTIES FROM THE CONSEQUENCES OF THEIR JOINT AND/OR CONCURRENT NEGLIGENCE AND/OR SOLE NEGLIGENCE. IN THE EVENT OF FAILURE BY THE CONTRACTOR TO FULLY PERFORM IN ACCORDANCE WITH THIS INDEMNIFICATION PARAGRAPH, EACH OF THE INDEMNIFIED PARTIES, AT ITS OPTION, AND WITHOUT RELIEVING CONTRACTOR OF ITS OBLIGATIONS HEREUNDER, MAY SO PERFORM, BUT ALL COSTS AND EXPENSES SO INCURRED BY ANY OF THE INDEMNIFIED PARTIES IN THAT EVENT SHALL BE REIMBURSED BY CONTRACTOR TO THE INDEMNIFIED PARTIES, OR ANY OF THEM, AND UNTIL REIMBURSED BY CONTRACTOR SHALL BEAR INTEREST, AT THE RATE OF INTEREST PROVIDED TO BE PAID ON JUDGMENT UNDER THE LAWS OF THE STATE OF TEXAS. THIS INDEMNIFICATION SHALL NOT BE LIMITED TO DAMAGES, COMPENSATION OR BENEFITS PAYABLE UNDER INSURANCE POLICIES, WORKERS' COMPENSATION ACTS, DISABILITY BENEFIT ACTS OR OTHER EMPLOYEE BENEFIT ACTS.

IN THE EVENT THIS CONTRACT RELATES TO A PROJECT OTHER THAN A SINGLE FAMILY HOUSE, TOWNHOUSE, DUPLEX, OR LAND DEVELOPMENT DIRECTLY RELATED THERETO OR A PUBLIC WORKS PROJECT OF A MUNICIPALITY THEN THE INDEMNITY PROVISIONS INCLUDED HEREIN SHALL BE LIMITED SUCH THAT SUBCONTRACTOR SHALL NOT BE REQUIRED TO INDEMNIFY, HOLD HARMLESS OR DEFEND CONTRACTOR OR ANY THIRD PARTIES AGAINST A CLAIM CAUSED BY THE NEGLIGENCE OR FAULT, THE BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION, STANDARD, OR RULE, OR THE BREACH OF CONTRACT OF AN INDEMNIFIED PARTY, ITS AGENT OR EMPLOYEE, OR ANY THIRD PARTY UNDER THE CONTROL OR SUPERVISION OF THE INDEMNIFIED PARTY, OTHER THAN SUBCONTRACTOR OR ITS AGENT, EMPLOYEE, OR SUBCONTRACTOR OF ANY TIER EXCEPT THAT SUBCONTRACTOR SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE INDEMNIFIED PARTY AGAINST ANY CLAIMS FOR THE BODILY INJURY OR DEATH OF AN EMPLOYEE OF SUBCONTRACTOR, ITS AGENTS, OR ITS SUBCONTRACTORS OF ANY TIER.

NOTWITHSTANDING ANYTHING HEREIN TO THE CONTRARY, THE INDEMNITY PROVISIONS INCLUDED HEREIN SHALL BE LIMITED SUCH THAT CONTRACTOR SHALL NOT BE REQUIRED TO INDEMNIFY, HOLD HARMLESS OR DEFEND OWNER OR ANY THIRD PARTIES AGAINST A CLAIM CAUSED BY THE NEGLIGENCE OR FAULT, THE BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION, STANDARD, OR RULE, OR THE BREACH OF CONTRACT OF THE INDEMNIFIED PARTIES, ITS AGENT OR EMPLOYEE, OR ANY THIRD PARTY UNDER THE CONTROL OR SUPERVISION OF THE INDEMNIFIED PARTIES, OTHER THAN CONTRACTOR OR ITS AGENT, EMPLOYEE, OR SUBCONTRACTOR OF ANY TIER EXCEPT THAT CONTRACTOR SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE INDEMNIFIED PARTIES AGAINST ANY CLAIMS FOR THE BODILY INJURY OR DEATH OF AN EMPLOYEE OF CONTRACTOR, ITS AGENTS, OR ITS SUBCONTRACTORS OF ANY TIER."

I. Add the following language after Section 103.3.1.4 of the General Provisions:

"**103.3.1.5. Maintenance Bond**. A good and sufficient bond in an amount not less than **100-percent** of the approximate total of the Contract, as evidenced by the proposed tabulation, or conditioned on the full and proper maintenance and repair of the Work to be done and performed for a period of one year from the date of final acceptance of the Work and the Contractor will do all necessary backfilling that may arise on account of sunken conditions in ditches, or otherwise, and do and perform the necessary Work and repair any defective condition growing out of or arising from the improper laying or construction of same, or on account of any breaking of same caused by the Contractor in construction of same, or on account of any defect arising in any of the Work laid or constructed by the Contractor or on account of improper excavation or backfilling, it being understood that the purpose of this Section is to cover all defective conditions arising by reason of defective materials, Work, or labor performed by the Contractor."

J. Add the following language after Section 104.2.5. of the General Provisions:

"**104.2.6. Change Orders**. A Change Order is a written instrument and signed by the Owner, Contractor and Engineer stating their agreement upon all of the following:

(1) the change in the Work;

(2) the amount of the adjustment, if any, in the Contract Sum; and

(3) the extent of the adjustment, if any, in the Contract Time.

In the event the Contractor proposes a Change Order, the Contractor shall provide sufficient detail for such Change Order to allow analysis and review by the Engineer.

Agreement on any Change Order shall constitute final agreement on the Work which is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time. In the event a Change Order increases the Contract Sum, the Contractor shall include the Work covered by such Change Orders in Applications for Payment as if such Work were originally part of the Contract Documents.

The Contractor, upon receipt of written notification by the Owner or the Engineer of a proposed item or change in Work, shall prepare as soon as possible a Change Order on the form provided by the Owner. If the Change Order is returned to the Contractor for additional information or if the scope of the proposed change in the Work is modified by additions, deletions or other revisions, the Contractor shall revise the Change Order accordingly and resubmit the revised Change Order to the Owner and Engineer."

K. Delete the language in Section 105.2.1 of the General Provisions and replace it with the following language:

"105.2.1. WORKMANSHIP: If the OWNER notifies the CONTRACTOR in writing of defective work, the CONTRACTOR shall correct the deficiencies within five (5) calendar days of the Notice at no additional cost to the OWNER. If the defective work is not corrected within five (5) calendar days, or the CONTRACTOR is not making satisfactory progress (in the opinion of the OWNER) to correct the deficiencies, the OWNER may withhold future payments for All Work until the defective work has been corrected to the satisfaction of the OWNER."

L. Add the following language after Section 105.10 of the General Provisions:

"**105.10.2. GUARANTEE AFTER COMPLETION**: Unless otherwise specified in the technical section of these specifications, the CONTRACTOR shall, after test and acceptance, and for a period of one year from date of final written acceptance by the OWNER or within such longer or shorter period of time as may be prescribed by law or by the terms of any other applicable special warranty on designated equipment or portions of work as required by the Contract Documents, rebuild, repair, or replace any and all items

which have proven defective due to unsatisfactory material and/or workmanship. Upon written notice from the OWNER, the CONTRACTOR shall immediately make any repairs that may be ordered, or such repairs will be made by the Owner at the expense of the CONTRACTOR or the CONTRACTOR'S Surety. In case of an emergency where delay would cause serious loss or damage, the Owner may undertake to have the defects repaired without previous notice. The expense of all repairs, including all emergency repairs, shall be borne by the CONTRACTOR or the CONTRACTOR'S Surety, at no cost to the Owner. This obligation shall survive termination of the Contract.

105.10.3. OFFSET PROGRESS PAYMENTS: OWNER may, at its option, offset any progress payment or final payment under the Contract Documents against any debt (including taxes) lawfully due to OWNER from Contractor, regardless of whether the amount due arises pursuant to the terms of the Contract Documents or otherwise and regardless of whether or not the debt due to OWNER has been reduced to judgment by a court.

105.10.4. FINAL ACCEPTANCE AND PAYMENT: This Project is subject to final inspection and final acceptance by the Owner. Whenever the Work provided for by the Contract shall have been completely performed on the part of the CONTRACTOR, including, but not limited to compliance with North Central Texas Council of Governments Standard Specifications for Public Works Construction, October 2004 Section 202.6.4.6., the CONTRACTOR shall notify the OWNER that the Work is ready for final inspection. The OWNER will then make such final inspection and if the work is satisfactory and in accordance with the specifications and contract documents, the OWNER shall issue a certificate of acceptance to the CONTRACTOR and submit a request to accept the Work performed by the CONTRACTOR and payment of a final estimate under the terms of which the OWNER will release 100% of the retainage, plus the unpaid portions of the final estimate as the OWNER deems advisable.

Whenever the improvements provided for by the Contract shall have been completely performed on the part of the Contractor, as evidenced in the certificate of acceptance, and all required submissions provided to the OWNER, a final estimate showing the value of the Work shall be prepared by the OWNER as soon as the necessary measurements and computations can be made. All prior estimates upon which payments have been made are subject to necessary corrections or revisions in the final payment. The amount of this final estimate, less any sums that have been previously paid, deducted or retained under the provisions of the contract, shall be

paid the CONTRACTOR within 30 days after the final acceptance by the OWNER, provided the CONTRACTOR has furnished to the OWNER a consent of Surety and satisfactory evidence that all indebtedness connected with the Work and all sums of money due for any labor, materials, apparatus, fixtures, or machinery furnished for and used in the performance of the Work have been paid or otherwise satisfied, or that the person or persons to whom the same may respectively be due have consented to such final payment This requirement it not intended and shall not be construed to recognize subcontractors for the purpose of privity of contract, and no third party benefit rights shall be obtained through these provisions for final payment. The acceptance by the CONTRACTOR of the final payment as aforesaid shall operate as and shall be a release to the OWNER from all claims or liabilities under the Contract, including all subcontractor claims, for anything done or furnished or relating to the Work under the Contract or for any act or neglect of said OWNER relating to or connected with the Contract.

All warranties and guarantees shall commence from the date of the certificate of acceptance. No interest shall be due the CONTRACTOR on any partial or final payment, or on the retainage.

105.10.5. RIGHT TO AUDIT CONTRACTOR'S RECORDS: By execution of the Contract, CONTRACTOR grants the OWNER the right to audit, at Owner's election, all of CONTRACTOR'S records and billings relating to the performance of the Work under the Contract. CONTRACTOR agrees to retain such records for a minimum of three (3) years following completion of the Work under this Contract. OWNER agrees that it will exercise the right to audit only at reasonable hours."

M. Add the following language after Section 107.5 of the General Provisions:

"**107.5.1. COMPENSATION AND ACKNOWLEDGEMENT OF WORK**: The CONTRACTOR shall receive and accept compensation, as herein provided, as full payment for furnishing all labor, tools, material, equipment and incidentals; for performing all Work contemplated and embraced under the Contract; for all loss or damage arising out of the nature of the Work, or from the action of the elements; for any unforeseen defects or obstruction which may arise or be encountered during the prosecution of the Work and before its final acceptance by the OWNER; for all risks of whatever description connected with the prosecution of the Work; for all expense incurred by or in consequence of suspension or discontinuance of such prosecution of the Work as herein specified; for any infringement of patents, trademarks or copyrights; and for

completing the Work in an acceptable manner according to the Plans and Specifications."

N. Add the following language after Section 107.11 of the General Provisions:

"**107.11.1. COOPERATION OF THE CONTRACTOR**: The CONTRACTOR shall give to the work the consistent attention necessary to facilitate the progress thereof, and the CONTRACTOR shall cooperate with the OWNER, and with other CONTRACTORS in every way possible.

The OWNER and the OWNER'S representatives shall at all times have free access to the Work whenever it is in preparation or progress and the contractor shall provide safe, convenient and proper facilities for such access and inspection."

O. Delete Section 107.4 of the General Provisions and replace it with the following:

"**107.4. VENUE AND CHOICE OF LAW**

The Owner, the Contractor, and the Contractor's sureties agree that this Contract shall be performed in Dallas, Dallas County, Texas, and if legal action is necessary in connection therewith, exclusive venue shall lie in Dallas County, Texas. The terms and provisions of the Contract Documents shall be construed in accordance with the laws and court decisions of the State of Texas."

P. Delete the following language (which is the first paragraph) from Section 109.5.1. of the General Provisions:

"Between the 25th day and the last day of each month, the Owner shall make an approximate estimate of the value of the work done during the month under the specifications. Whenever the said estimate or estimates of work done since the last previous estimate exceeds $100 in amount, a percentage of such estimate sum shall be paid the Contractor on or before the 15th day of the month next following. The monthly estimate may include acceptable nonperishable materials delivered to the work; such payment shall be allowed on the same percentage basis of the net invoice value as provided hereinafter. The percent retained by the owner shall normally be up to 10 percent at completion, unless otherwise stated. At the midpoint, or at any subsequent time, if the owner determines that the progress of the Contract is satisfactory in all respects, it may at its discretion cease to retain additional funds until the completion of the project, or until progress ceases to be satisfactory. The owner shall make the sole determination in this matter."

Q. Add the following language after Section 109.5.1. of the General Provisions:

"**109.5.1.1. Applications for Payment.** Applications for progress payment ("Application for Payment") will be submitted no more often than monthly and shall be submitted on the dates set forth in the Agreement. Each Application for Payment shall be (1) sworn to and notarized, (2) supported by such data substantiating the Contractor's right to payment as the Owner or Engineer may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents, and (3) submitted by the Contractor for review to the Engineer in form and substance as mandated by the Owner. The Contractor's Application for Payment shall be segregated and detailed in a manner satisfactory to the Owner.

In each Application for Payment, the Contractor shall certify that such Application for Payment represents a just estimate of portion of the Work that is complete as of the last day covered by the Application for Payment and shall also certify by sworn affidavit as follows:

> 'There are no known mechanics' or materialmen's liens outstanding at the date of this Application, all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of this Application for Payment, there is no known basis for filing of any mechanics' or materialmen's liens on the Work, and waivers from all subcontractors and materialmen have been or, at the time of payment, will be obtained in such form as to constitute an effective waiver of lien under the applicable laws of the State of Texas.'

109.5.1.2. Lien Waivers. Concurrent with each Application for Payment, the Contractor shall execute and furnish a waiver and release of its lien rights current through the effective date of such Application for Payment conditioned upon receipt of the payment that is the subject of the application. Beginning with the second Application for Payment, the Contractor shall also deliver with each such Application as a condition precedent to payment thereof, waivers of lien from each of the Subcontractors, Sub-subcontractors, and suppliers current through the effective date of the previous Application of Payment. The Contractor shall also execute and obtain any other reasonable forms as the Owner may require in order to assure an effective waiver and release of mechanics' and materialmen's liens in compliance with the laws of the State of Texas. The Contractor shall, if any Subcontractor, Sub-subcontractor or supplier refuses to furnish a release in full, furnish a bond satisfactory to the Owner to indemnify against any lien."

R. Delete Section 109.5.2 of the General Provisions and replace with the following:

> "Ten-percent (10%) retainage shall be withheld until 40 days after Final Completion."

88. **CONTRACTOR REPRESENTATIONS:** By entering into the Contract, the Contractor makes the following representations to the Town of Addison:

A. Contractor has examined and carefully studied the Bidding Documents and the related data identified in the Bidding Documents.

B. The Contractor has visited the Project site where the goods are to be installed or services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, or the furnishing of goods and services, if required to do so by the Bidding Documents, or if, in the Contractor's judgment, any local condition may affect cost, progress, or the furnishing of goods and services.

C. The Contractor is familiar with and is satisfied as to all Laws and Regulations in effect as of the date of the bid that may affect cost, progress, and the furnishing of goods and services.

D. The Contractor has carefully studied, considered, and correlated the information known to the Contractor; information commonly known to sellers of similar goods doing business in the locality of the Project site where the goods will be installed or where services will be provided; information and observations obtained from the Contractor's visits, if any, to the Project site where the goods will be installed or services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Project site where the goods will be installed or where services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of the Contractor's obligations under the Bidding Documents.

E. The Contractor has given the Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that the Contractor has discovered in the Bidding Documents, and the written resolution (if any) thereof by the Engineer is acceptable to the Contractor.

F. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the goods and services for which the bid is submitted

G. The Contractor acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of bids, and final payment for all unit price bid items will be based on actual quantities, determined as provided in the Contract Documents. The Contractor also acknowledges that each unit price includes an amount considered by the Contractor to be adequate to cover the Contractor's overhead and profit for each separately identified item.

89. **PREVAILING WAGE RATES:** Wage rates paid on this Project shall not be less than specified in the schedule of general prevailing rates of per diem wages as set forth below in the Davis Bacon Act General Decision No. TX130035:

General Decision Number: TX20210025 01/01/2021

Superseded General Decision Number: TX20200025

State: Texas

Construction Type: Highway

Counties: Archer, Callahan, Clay, Collin, Dallas, Delta,

Denton, Ellis, Grayson, Hunt, Johnson, Jones, Kaufman, Parker,

Rockwall, Tarrant and Wise Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building

structures in rest area projects & railroad construction;

bascule, suspension & spandrel arch bridges designed for

commercial navigation, bridges involving marine construction;

and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number Publication Date

0 01/01/2021

* SUTX2011-007 08/03/2011

	Rates	Fringes
CONCRETE FINISHER (Paving and Structures)	$ 14.12	
ELECTRICIAN	$ 19.80	
FORM BUILDER/FORM SETTER		
Paving & Curb	$ 13.16	
Structures	$ 13.84	
LABORER		
Asphalt Raker	$ 12.69	
Flagger	$ 10.06	
Laborer, Common	$ 10.72	

Laborer, Utility.....$ 12.32

Pipelayer.....$ 13.24

Work Zone Barricade

Servicer.....$ 11.68

POWER EQUIPMENT OPERATOR:

Asphalt Distributor.....$ 15.32

Asphalt Paving Machine.....$ 13.99

Broom or Sweeper.....$ 11.74

Concrete Pavement

Finishing Machine.....$ 16.05

Concrete Saw.....$ 14.48

Crane Operator, Lattice

Boom 80 Tons or Less.....$ 17.27

Crane Operator, Lattice

Boom over 80 Tons.....$ 20.52

Crane, Hydraulic 80 Tons

or Less.....$ 18.12

Crawler Tractor.....$ 14.07

Excavator, 50,000 pounds

or less.....$ 17.19

Excavator, over 50,000

pounds.....$ 16.99

Foundation Drill , Truck

Mounted.....$ 21.07

Foundation Drill, Crawler Mounted.....$ 17.99

Front End Loader 3 CY or Less.....$ 13.69

Front End Loader, over 3 CY.$ 14.72

Loader/Backhoe.....$ 15.18

Mechanic.....$ 17.68

Milling Machine.....$ 14.32

Motor Grader, Fine Grade....$ 17.19

Motor Grader, Rough.....$ 16.02

Pavement Marking Machine....$ 13.63

Reclaimer/Pulverizer.....$ 11.01

Roller, Asphalt.....$ 13.08

Roller, Other.....$ 11.51

Scraper.....$ 12.96

Small Slipform Machine.....$ 15.96

Spreader Box.....$ 14.73

Servicer.....$ 14.58

Steel Worker (Reinforcing).....$ 16.18

TRUCK DRIVER

Lowboy-Float.....$ 16.24

Off Road Hauler.....$ 12.25

Single Axle.....$ 12.31

Single or Tandem Axle Dump

Truck.....$ 12.62

Tandem Axle Tractor with

Semi Trailer.....$ 12.86

Transit-Mix.....$ 14.14

WELDER.....$ 14.84

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is

like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and

the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

90. **NO BOYCOTT ISREAL:** Pursuant to Texas Government Code Chapter 2270, Contractor's execution of this Agreement shall serve as verification that the Contractor does not presently boycott Israel and will not boycott Israel during the term of this Agreement.

END OF GENERAL DECISION

SECTION PS

PROJECT SIGN

PROJECT SIGN

1. Quantity

Two (2) Project Designation signs will be constructed and installed on the project site as directed by the Owner. It will be the responsibility of the Contractor to maintain the sign in a presentable condition at all times during construction. Maintenance will include painting and repairs as directed by the City Engineer or his appointee. The locations of the signs will be given to the Contractor by the Town of Addison at the Pre-Construction Conference.

2. Material

Sign shall be constructed of ¾-inch thick smooth finish fir plywood (Grade A-C, exterior or better).

Sign will be securely mounted to 6" x 6" square posts. Nuts and bolts will not protrude from face of sign. Posts will be mounted to a support system that will provide adequate stabilization to ensure the sign will not fall over in heavy winds. Sand bags or other techniques may be necessary to protect sign.

3. Dimensions

Size of sign will be four feet tall and six feet wide. The height and arrangement of the lettering shall be in accordance with the attached detail.

4. Paint

Sign will be one-sided and will have a white background. Text will be black, except for the word "Addison!" which will be a blue color approved by the City Engineer. The paint will be an outdoor paint and will be maintained throughout the project in proper order. The quality of the paint, painting, and lettering on the signs shall be approved by the City Engineer or his appointee.

5. Payment

Project Signs will be a separate pay item. This will include all labor, equipment, tools, and incidentals necessary to complete and install the work.

The Town of ADDISON SM

PLEASE PARDON THE TEMPORARY INCONVENIENCE DURING THIS PROJECT

"PROJECT NAME"

CONTRACTOR: _____

ESTIMATED COMPLETION DATE: XXX

AN ADDISON PROJECT

FOR MORE INFORMATION, PLEASE CALL (972) 450-2871

Special Specification 7076
Grouting of Water Mains

1. DESCRIPTION

This item will govern the grouting of existing water mains for the purposes of abandonment underneath roadways, paved areas, and at other designated locations. The location of this Work is as shown on the Contract Document plans and/or as encountered in the field during construction. The Contractor will, unless otherwise specified, furnish all labor, materials, equipment, tools and all other appurtenances necessary to abandon water lines segments in place by filling them with flowable cementious low strength grout including plugs, bulkheads, excavation and backfill at locations as required to completely fill the line to be abandoned in place with grout to protect against future collapse of the line.

2. SUBMITTALS

A. Proposed Mix Design Report

B. Submit manufacturers data for proposed plugs and detail of bulkhead

C. Technical information for equipment and operations procedures including projected injection rate, grout pressure, method of controlling grout pressure, bulkhead and vent design and number of stages of grout application.

D. Submit project specific plan for abandonment at least 15 days prior to commencing grouting activities, describe proposed sequence and other information pertinent to completion of Work.

3. MATERIALS

A. Cement-based grout/ flowable fill with self-leveling and non-shrink characteristics.

B. Unconfined compressive strength: Minimum 100 psi at 56 days as determined based on average of three tests for same placement. Present at least three acceptable strength tests for proposed mix design in mix design report.

4. CONSTRUCTION

Abandoning and grouting of water lines must not occur until all existing water mains and services have been transferred to a relocated water line or another line as designated in the Contract Documents. The Contractor will be responsible for the satisfactory coordination of the pipe abandonments with other construction and activities in the area. Delays in work resulting from lack of coordination will not be cause for additional compensation. Any work involving or impacting asbestos concrete pipe must be in accordance with the procedures outlined in the approved specifications for this project and will comply with all federal, state, and local laws, ordinances and regulations regarding the management of asbestos containing materials.

Remove all water line appurtenances, such as hydrants, valves and valve casing and castings. These appurtenances must be returned to the designated utility representative.

Make cuts, install bulkheads, vents to allow for air release

Remove any free standing water prior to starting fill placement.

Place grout/flowable fill using concrete or grout pumps capable of continuous delivery at planned placement rate to fill volume between placement points not to exceed 500 linear ft. at a time. Pump flowable fill through bulkheads constructed for placement of PVC pipes or other methods to contain grout in line to be abandoned. These pipe will be used for injection points or vents during placement. Place grout under pressure into property vented open system until grout emerges from vent pipes indicating pipe is completely filled. Pumping grout must be completed under sufficient pressure to overcome friction and to fill water main from downstream to upstream end. Remediate areas where flowable fill did not fill voids in water main by pressure grouting from inside water main or from surface if necessary. Plug each end of the water main being abandoned. Ensure that concrete is around plug/bulkhead and around pipe including bedding area such that it is not penetrable by groundwater and that bedding at this location is not a conduit for groundwater. The method of installation must be able to meet the requirement of completely filling the existing water main and any voids adjacent to it.

Backfill to grade above pipe left in place. Place and compact backfill in compliance with the Special Specifications.

Remove, transport, and, dispose of spoils. Spoils including pipe must be hauled to a facility permitted to accept the material. The method must provide for the release of air. When intermediate points are required to be constructed for the abandonment of the system, they must be a part of the abandonment project process. The method must provide for the isolation of water mains to be grouted from water mains that are abandoned in place without grouting as shown on the plans.

Water mains that are not under proposed pavement are generally not required to be grouted unless it is specified in the contract documents. Mains to be abandoned must be grouted only if required by the contract documents and payment as per these specifications is provided.

5. MEASUREMENT

This Item will be measured by the linear foot of water main to be abandoned regardless of depth.

6. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price bid for “Grout Abandonment Water Main of the size of water main specified. This price will be full compensation for the removing of the content within the pipe, cleaning, grouting, plugging, capping and abandoning all pipe, pipe bend section and all other appurtenance, and of dewatering, trenching, excavation and backfill, removal, transportation and disposal and all material or work necessary to properly abandon the pipe and must include all materials, labor, equipment, tools and incidentals necessary to complete the work.

SECTION TS

TECHNICAL SPECIFICATIONS

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (North Central Texas) - Fifth Edition 2017

For this project, the Standard Specifications for Public Works Construction, North Central Texas, as prepared by the North Central Texas Council of Governments, and Town of Addison Standard Construction Details, shall govern all work to be done, together with any additional Technical Specifications included herein.

The following is a listing of technical specification sections that are anticipated for use on this project.

Site Protection & Preparation	Division 200
Roadway Construction	Division 300
Roadway Maintenance & Rehabilitation	Division 400
Underground Construction	Division 500
Conduit & Appurtenance Rehabilitation	Division 600
Structures	Division 700
Misc. Construction & Materials	Division 800

TXDOT STANDARD SPECIFICATION

The Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges Adopted by the Texas Department of Transportation November 1, 2014 are included in the contract by reference and are available as a separate document from TxDOT at the following link: https://www.txdot.gov/business/resources/txdot-specifications.html)

The following is a listing of technical specifications that are anticipated for use on this project.

Item 340	Dense-Graded Hot-Mix Asphalt (Small Quantity)
Item 401	Flowable Fill
Item 416	Drilled Shaft Foundations
Item 420	Concrete Substructures
Item 422	Concrete Superstructures
Item 425	Precast Prestressed Concrete Structural Members
Item 432	Riprap
Item 434	Bridge Bearings
Item 442	Metals for Structures
Item 450	Railing
Item 454	Bridge Expansion Joints
Item 462	Concrete Box Culverts and Drains
Item 464	Reinforced Concrete Pipe

Item 466	Headwall and Wingwall
Item 467	Safety End Treatment
Item 531	Sidewalks
Item 540	Metal Beam Guard Fence
Item 644	Small Roadside Sign Assemblies
Item 666	Retroreflectorized Pavement Markings

The following is a listing of special specifications that are anticipated for use on this project.

SS7076	Grouting of Water Mains

SECTION IS

ADDITIONAL INSURANCE REQUIREMENTS

TOWN OF ADDISON, TEXAS
ADDISON AIRPORT NORTHWEST DRAINAGE DITCH IMPROVEMENTS

REQUIREMENTS

Contractors performing work on TOWN OF ADDISON property or public right-of-way shall provide the TOWN OF ADDISON a certificate of insurance or a copy of their insurance policy(s) (and including a copy of the endorsements necessary to meet the requirements and instructions contained herein) evidencing the coverages and coverage provisions identified herein within ten (10) days of request from TOWN OF ADDISON. Contractors shall provide TOWN OF ADDISON evidence that all subcontractors performing work on the project have the same types and amounts of coverages as required herein or that the subcontractors are included under the contractor's policy. Work shall not commence until insurance has been approved by TOWN OF ADDISON.

All insurance companies and coverages must be authorized by the Texas Department of Insurance to transact business in the State of Texas and must have a A.M. Best's rating A-:VII or greater.

Listed below are the types and minimum amounts of insurances required and which must be maintained during the term of the contract. TOWN OF ADDISON reserves the right to amend or require additional types and amounts of coverages or provisions depending on the nature of the work.

TYPE OF INSURANCE	AMOUNT OF INSURANCE	PROVISIONS
1. **Workers' Compensation Employers' Liability** to include: (a) each accident (b) Disease Policy Limits (c) Disease each employee	Statutory Limits per occurrence Each accident $1,000,000 Disease Policy Limits $1,000,000 Disease each employee$1,000,000	**TOWN OF ADDISON, and Cobb, Fendley & Associates, Inc. to be provided a *WAIVER OF SUBROGATION AND 30 DAY NOTICE OF CANCELLATION or*** material change in coverage. **Insurance company must be A-:VII rated or above.**
2. **Commercial General (Public) Liability** to include coverage for: a) Bodily Injury b) Property damage c) Independent Contractors d) Personal Injury e) Contractual Liability	Bodily Injury/Property Damage per occurrence $1,000,000, General Aggregate $2,000,000 Products/Completed Aggregate $2,000,000, Personal Advertising Injury per occurrence $1,000,000, Medical Expense 5,000	**TOWN OF ADDISON, and Cobb, Fendley & Associates, Inc. *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage.** **Insurance company must be A-:VII rated or above.**
3. **Business Auto Liability** to include coverage for: a) Owned/Leased vehicles b) Non-owned vehicles c) Hired vehicles	Combined Single Limit $1,000,000 per occurrence for bodily injury and property damage	**TOWN OF ADDISON, and Cobb, Fendley & Associates, Inc. *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage.** **Insurance company must be A:VII- rated or above.**
4. **Umbrella or Excess Liability Policy over Commercial General Liability and Automobile Liability limits of $1 million per occurrence**	Minimum $4 million per occurrence excess $1 million underlying per occurrence	**TOWN OF ADDISON, and Cobb, Fendley & Associates, Inc. *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage.** **Insurance company must be A:VII- rated or above.**

Certificate of Liability Insurance forms (together with the endorsements necessary to meet the requirements and instructions contained herein)may be **faxed** to the Purchasing Department: **972-450-7074 or emailed to: purchasing@addisontx.gov.** Questions regarding required insurance should be directed to the Purchasing Manager.

With respect to the foregoing insurance,

1. All liability policies shall contain no cross liability exclusions or insured versus insured restrictions applicable to the claims of the Town of Addison.

2. All insurance policies shall be endorsed to require the insurer to immediately notify the Town of Addison, Texas of any material change in the insurance coverage.

3. All insurance policies shall be endorsed to the effect that the Town of Addison, Texas will receive at least thirty (30) days' notice prior to cancellation or non-renewal of the insurance.

4. All insurance policies, which name the Town of Addison and Kimley-Horn and Associates, Inc. as an additional insured, must be endorsed to read as primary coverage regardless of the application of other insurance.

5. Insurance must be purchased from insurers that are financially acceptable to the Town of Addison and licensed to do business in the State of Texas.

All insurance must be written on forms filed with and approved by the Texas Department of Insurance. Upon request, Contractor shall furnish the Town of Addison with complete copies of all insurance policies certified to be true and correct by the insurance carrier.

This form must be signed and returned with your quotation. You are stating that you do have the required insurance and if selected to perform work for TOWN OF ADDISON, will provide the certificates of insurance (and endorsements) with the above requirements to TOWN OF ADDISON within 10 working days.

A CONTRACT/PURCHASE ORDER WILL NOT BE ISSUED WITHOUT EVIDENCE AND APPROVAL OF INSURANCE.

AGREEMENT

I agree to provide the above described insurance coverages within 10 working days if selected to perform work for TOWN OF ADDISON. I also agree to require any subcontractor(s) to maintain insurance coverage equal to that required by the Contractor. It is the responsibility of the Contractor to assure compliance with this provision. The Town accepts no responsibility arising from the conduct, or lack of conduct, of the Subcontractor.

Project/Bid#_____

Company:_____

Printed Name: _____

Signature:_____ **Date:** _____

APPENDIX A

GEOTECHNICAL STUDY

GEOTECHNICAL STUDY

Alpha Road Connector – Vitruvian Phase IV
Farmers Branch, Texas

20212439.001A
December 2, 2020
Revision No. 1: July 15, 2021

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December 2, 2020
Revision No. 1: July 15, 2021
20212439.001A

Kimley-Horn & Associates, Inc.
2201 West Royal Lane, Suite 275
Irving, Texas 75063

Attention: Mr. Brian LaFoy, PE

Subject: Geotechnical Study
Alpha Road Connector – Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

Dear Mr. LaFoy:

This report transmits the findings of our geotechnical study for the proposed Alpha Road Connector in Farmers Branch, Texas. The results of the field and laboratory work are included along with engineering recommendations for use during the design and construction of the project.

We appreciate the opportunity to be of service to you on this project. If we can be of additional assistance as the design progresses, please contact us at 972.868.5900.

Sincerely,

KLEINFELDER, INC.
Texas Registered Engineering Firm F-16438

Richard J. Hammerberg, PE
Senior Project Manager

Sri Dinakaran, PE, DGE, DBIA
Senior Program Manager

Copies Submitted: 1 electronic copy & 1 copy via mail

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A Report Prepared for:

Kimley Horn & Associates
2201 West Royal Lane, Suite 275
Irving, Texas 75063

GEOTECHNICAL STUDY
Alpha Road Connector – Vitruvian Phase IV
Farmers Branch, Texas

20212439.001A
December 2, 2020
Revision No. 1: July 15, 2021

Prepared by:



Richard J. Hammerberg, PE
Senior Project Manager

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GEOTECHNICAL STUDY
ALPHA ROAD CONNECTOR – VITRUVIAN PHASE IV
FARMERS BRANCH, TEXAS

1 INTRODUCTION

1.1 PROJECT DESCRIPTION

This report presents the results of the geotechnical study for the proposed Alpha Road Connector in Farmers Branch, Texas. We understand that the project is planned to link Alpha Road and Bella Road to the Brookhaven Community College and to the master-planned Vitruvian community. Currently, Brookhaven Community College has one point of ingress and egress. The proposed project will increase the ingress and egress points to three and improve the traffic mobility to the college.

Geotechnical information was originally requested to provide design level recommendations for the proposed pavements, culverts, and for the three-span bridge along with its associated walls and embankments. A draft report dated January 30, 2014, was submitted to the Town of Addison under our Project No. 137422. Shortly thereafter, the project was suspended, thus a sealed report was never issued. The project has since been reinstated and assigned to Kimley Horn & Associates (KHA) who requested additional geotechnical work for a detention pond. We understand that the design of the entire project will be performed by KHA (), and that the bridge structure will be designed in accordance with the Texas Department of Transportation (TxDOT) bridge design standards. We understand that retaining walls and embankments will not be constructed as part of the approaches to the aforementioned bridge. A detention pond is planned along the southern portion of the road and slope recommendations have been requested.

1.2 SITE DESCRIPTION

The Alpha Road Connector is located at the northeast quadrant of Brookhaven College to Bella Road and Alpha Road in Farmers Branch, Texas. The site is relatively flat and partially wooded with a creek running through the property.

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1.3 PURPOSE AND SCOPE

This study was performed based on the Scope of Services presented in our proposal number 136796 dated October 11, 2013, and our proposal DFW20P110120), dated April 9, 2020. The purpose of our geotechnical study was to evaluate subsurface soil and groundwater conditions at the site to provide recommendations for use during design and construction of the proposed additions. To accomplish this purpose, we performed the following tasks:

- Drilled 4 bridge borings (3 borings to a depth of 80 feet and 1 boring to a depth of 60 feet), 4 pavement borings to a depth of 10 feet, 2 culvert borings to a depth of 25 feet below grade under the original scope of work, and 4 detention pond borings were drilled to a depths of 5.5 to 20 feet below ground service under the 2020 scope of work. Borings were drilled to obtain samples for visual evaluation, laboratory testing, and to observe subsurface conditions;
- Performed laboratory testing on select samples to evaluate soil/rock classification and to determine the generalized engineering properties of the subsurface soils and rock; and
- Performed engineering analyses using the collected data to develop geotechnical recommendations for the design and construction of the proposed bridge, culverts, and pavement.

This report is based on the project information provided to us by the Town of Addison and the original engineer of record, Nathan D. Maier Consulting Engineers, and KHA. If the project information differs from the descriptions contained in this report, we should be contacted to review our recommendations. It is possible that modification of our recommendations may be required based upon changes in the project.

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2 FIELD EXPLORATION AND LABORATORY TESTING

2.1 FIELD EXPLORATION

Subsurface conditions were evaluated by drilling and sampling 10 borings with a truck-mounted drilling rig. Bridge borings B-01 through B-04 were drilled to depths of 60 to 80 feet below existing grade, pavement borings P-01 through P-04 were drilled to a depth of 10 feet below existing grade, and culvert borings C-01 and C-02 were drilled to a depth of 25 feet below existing grade. These boring were completed between October 29 and November 5, 2013. The approximate boring locations are presented on Figure 1, Exploration Location Plan and Vicinity Map Plan of Borings, in the Appendix. These original locations were staked by NDMCE.

Borings D-01 and D-02 were drilled on October 19, 2020, due to the addition of a detention pond on the southern portion of the proposed road. The borings were located in the field by Kleinfelder and drilled to depths of approximately 15 and 20 feet below existing grade.

Borings D-03 and D-04 were drilled on December 15, 2020, with a manual hand auger to evaluate soils within the detention pond as well as the depth of weathered limestone in the footprint of the detention pond. The borings were located in the field by Kleinfelder and drilled to depths of approximately 5.5 to 7 feet below existing grade.

Hollow stem augers, continuous flight augers and push sampling drilling techniques were used without drilling fluids within the clayey material. Rock and rock-like materials were collected with a NX size double-tube core barrel. Drilling fluid was introduced into the boring during coring operations.

When present, seepage and groundwater levels were recorded, as discussed in a following section. Bridge Borings B-01, B-02, and B-04 were left open overnight for a 24-hour water reading. At the completion of drilling or at the end of the 24-hour water reading, each boring was backfilled with auger cuttings up to and slightly above the existing ground surface in open areas.

A log of each boring is presented in the Appendix, along with a boring log key to the symbols and terms used on the logs (Figures 2 and 3). The logs indicate the material types, depths, and other details of materials encountered for each boring. Soil and rock descriptions presented

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upon the boring logs resulted from a combination of field and laboratory test data. Stratigraphy lines correspond to the approximate boundary between strata. However, the in-situ subsurface transition can be, and is often gradual.

Relatively undisturbed samples of cohesive soils were collected by using the drilling rig to push a seamless steel Shelby tube sampler with an outside diameter of 3 inches into the soil (based upon ASTM D1587). The depths at which these samples were collected are indicated on the boring logs. After a tube was recovered, the sample was extruded in the field, examined, and logged. The sample was then sealed in a plastic bag to reduce moisture loss and protect the sample.

During logging, an estimate of the sample consistency was obtained using a pocket penetrometer. This test provides relative strength data that is used as an approximate indicator of shear strength. The result of the penetrometer reading was recorded at a corresponding depth on the boring logs. Note that a reported value of “4.5+” indicates that the capacity of the penetrometer device was exceeded.

Additionally, granular soils and weathered limestone samples were collected by driving a split-spoon sampler in conjunction with the Standard Penetration Test (SPT). This technique involves driving the spoon sampler a distance into the soil using a free-falling hammer (based upon ASTM D 1586). During the test, the logger records the number of blows required to drive the spoon sampler over three successive 6-inch increments. The first 6 inches is the “seating drive,” while the number of blows required to drive the sampler the last two 6-inch increments is the “penetration” in blows per foot. Where resistance was high, the number of inches of penetration for 50 blows of the hammer is recorded. When less than 6 inches of penetration is obtained, the test is terminated regardless of the drive increment. The results of the penetration test are reported on the boring log at the corresponding depth. Materials recovered from the split-spoon sampler are then placed in a plastic bag to protect the sample and to reduce moisture loss. The boreholes were backfilled with soil cutting upon completion of drilling.

Rock and rock-like materials were evaluated in place using the Texas Department of Transportation (TxDOT) cone penetrometer test. This test evaluates the shear strength of the tested material by driving a steel cone into the material using a free-falling hammer (based upon Method TEX 132-E). During the test, the logger recorded either the number of blows producing 12 inches of penetration or the total inches of penetration due to two successive applications of

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50 blows, for a total of 100 blows. The results of the test were recorded on the boring logs at the corresponding test depth. The bridge borings were terminated based on TxDOT standards for bridge design, which requires 4 consecutive blow counts of 100 blows for 3 inches or better.

Samples of rock and/or rock-like materials were collected with an NX size double-tube core barrel fitted with a carbide bit. The lengths of core run and are recorded on the boring logs at the corresponding depth. Samples are removed from the core barrel in the field, field classified, sealed, and packaged for transportation for further examination and testing. Before packaging, the total length of the recovered sample is recorded and reported as a percentage of the total sample length (REC). The total length of all the pieces greater than four inches in length is also recorded as a percentage of the total sample length and reported as the rock quality designation (RQD). Core breaks obviously caused by the drilling process were fitted together and counted as a continuous piece. Breaks that were not easily distinguished as being a result of the drilling process were conservatively considered a natural break.

2.2 LABORATORY TESTING

Laboratory testing was performed on selected samples collected from the borings during drilling. These samples were selected as being generally representative of that stratum and/or boring(s). Testing was performed to allow for material classification according to the Unified Soil Classification System (ASTM D 2487), and to evaluate the engineering properties of the materials. These tests included:

- Moisture content;
- Dry unit weight;
- Atterberg limits (liquid and plastic limits);
- Percent passing No. 200 sieve;
- One-dimensional swell under approximate overburden load;
- Soluble sulfates;
- Lime vs pH series test; and
- Unconfined compressive strength of soil/rock.

The test results are presented at the corresponding depth on each boring log and Table 1, Laboratory Test Results Summary in the Appendix.

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3 SUBSURFACE CONDITIONS

3.1 GEOLOGY

The Atlas maps published by the Bureau of Economic Geology at the University of Texas, Austin indicated that the site is located on border of the Austin Chalk and Eagle Ford geological formation. The Austin Chalk was encountered on the eastern part of the project at borings C-02 and P-01. The rest of the borings lie in the Eagle Ford Formation. The Austin Chalk formation typically consists of fat clays overlying lean, chalky clay, followed by the parent limestone bedrock. The thickness of the clay above the limestone varies but is generally encountered at a shallow depth. The dark brown fat clays are typically highly expansive, while the lean chalky clay is only moderately expansive. The upper portions of the limestone is generally weathered, fractured, and very light brown to light yellow brown in color. Some zones of severely weathered limestone that are clay-like can be present above the weathered material. The underlying primary limestone is generally harder than the weathered limestone and is light to medium gray in color.

The Eagle Ford formation typically includes residual clay and shaly clay overlying the primary shale that contains significant quantities of soluble sulfates. The clays and shaly clays of the Eagle Ford vary in color from dark brown to yellow brown, are highly expansive. The clays are often jointed; contain silt and sand seams/partings, and bentonite seams/layers. The primary shale is commonly gray to dark gray in color and is not as hard as most regional rock materials. The shale is often calcareous and can contain very hard limestone and sandstone seams. Soft bentonite seams and layers can also be present.

3.2 STRATIGRAPHY

The subsurface conditions, observed in our borings, consisted of are high plasticity clay (CH) and moderate plasticity clay (CL), overlying shale or weathered limestone and limestone. Detailed descriptions of the stratigraphy are included in the boring logs presented on Plates 4 through 14 in the Appendix.

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3.3 GROUNDWATER OBSERVATIONS

The borings were advanced using techniques that allow for direct and indirect observations of seepage and groundwater during drilling operations. Groundwater was observed in two of the borings (B-01 and C-01) during drilling operations. All pavement borings were dry. These observations have been made during the course of this study, as indicated on the boring logs and Table 3.1.

Table 3.1: Groundwater Observation

Boring	Depth to Groundwater below Existing Grade (feet)		
	During Drilling	On completion of Drilling	After 24 hours
B-01	13	5 (water added for coring)	5
B-02	Dry	5 (water added for coring)	13
B-03	Dry	16 (water added for coring)	NA
B-04	Dry	6 (water added for coring)	Dry
C-01	5	4	6
C-02	Dry	Dry	NA
D-01	Dry	Dry	NA
D-01	Dry	Dry	NA

The occurrence of groundwater can vary due to many factors. These factors include seasonal changes, site topography, surface runoff, the layering and permeability of subsurface strata; water levels in the creek, utilities, and other factors not evident at the time of this study. The possibility of groundwater and its fluctuation should be considered when developing this project. A groundwater study has not been performed. Long-term observations would be necessary to more accurately evaluate groundwater levels and fluctuations. We recommend that a test hole be drilled outside the footprint of the proposed bridge prior to the start of construction to establish the groundwater level at that time. This will enable the contractor to select the appropriate equipment to install the foundations.

3.4 EXPANSIVE SOIL CHARACTERISTICS

The subgrade at this site includes expansive soil that will exhibit shrink and swell behavior. The amount of shrink/swell behavior will depend upon moisture fluctuations that occur over the

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design life of the structure. The total magnitude of the shrink/swell behavior is also dependent upon the thickness of the expansive soil and the depth of the active moisture zone. Moisture fluctuations occur due to seasonal cycles but can also be influenced to varying degrees by drainage conditions; site grades/sloping ground, landscaping, irrigation practices, the presence of vegetation, groundwater, and the presence of flatwork or other impervious barriers. This large number of variables complicates the evaluation of the magnitude of shrink/swell movements that could occur.

An estimate of the potential expansive soil movement was made using a variety of methods, including the Potential Vertical Rise (PVR) Method 124-E published by TxDOT, the results of laboratory index and swell testing, engineering judgment, and our experience. The estimated soil movement or Potential Vertical Movement (PVM) is summarized in Table 3.2.

Table 3.2: Estimated Potential Soil Movement (PVM)

Location	Based on TxDOT Method (dry condition)
B-01	2.0
B-02	3.5
B-03	3.0
B-04	3.5
C-01	1.5
C-02	1.0
P-01	2.0
P-02	3.0
P-03	3.0
P-04	1.0

Recognize these values are not exact values but are only an indication of the potential movements due to expansive soil for seasonal moisture fluctuations. Actual movements may be significantly larger than estimated due to inadequate site grading, poor drainage, ponding surface water, and/or leaks in utility lines. Significant changes to existing site grading can also alter actual vertical movements by changing the thickness of the expansive soil and/or altering the active moisture zone depth.

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Selected plastic soils were also subjected to one-dimensional swell tests. These tests are summarized in Table 3.3. The swell and swell pressure values provided are based upon laboratory testing. Higher and lower values are possible in other areas of the structure.

TABLE 3.3: SWELL TEST SUMMARY

Location	Depth (ft.)	Swell (%)	Load Applied (psf)	Swell Pressure (psf)
B-01	3.5-5	0.0	500	NA
B-01	8-10	0.0	1000	NA
B-02	3.5-5	7.7	500	31,500
B-02	6.5-8	7.3	875	24,125
B-03	3.5-5	6.9	500	24,500
B-03	8-10	0.5	1,000	NA
B-04	6.5-8	4.7	875	13,525
C-01	8-10	0.0	1,000	NA

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4 ANALYSIS AND RECOMMENDATIONS

Based on the results of our evaluation, in our professional opinion, the project site can be developed for the proposed structure using conventional grading and foundation construction techniques, provided that the recommendations presented herein are incorporated into the design and construction of the project. The primary geotechnical concern for this project is the presence of inconsistent and highly expansive clay soils. Recommendations addressing expansive clay soils, as well as general recommendations regarding geotechnical aspects of the project design and construction, are presented below.

4.1 BRIDGE STRUCTURE

4.1.1 Drilled Shaft Foundations

Borings B-01 through B-4 were drilled for the bridge structure. The shafts should be straight-sided, steel reinforced concrete, and designed based on the recommendations presented in Table 4.1.

Table 4.1: Drilled Shaft Design Values

Design Item	Design Value
Shaft type	Auger-excavated and straight-sided
Bearing Stratum Description	Gray Shale
Approximate Bearing Stratum Depth	19 to 25 feet below existing grade
Minimum Penetration	12 feet into bearing stratum for bridge (2)
Maximum Allowable Bearing Pressure	12,000 psf (1)
Maximum Allowable Side Shear Within Bearing Stratum	1,000 psf (for axial downward and upward resistance) (1)
Minimum Shaft Diameter	24 inches
Need for Temporary Steel Casing During Installation	Should be Anticipated
Uplift Pressure due to expansive clays	1,200 psf over 10 feet

Note: (1) A factor of safety of 3 was used to evaluate allowable bearing pressure and for side shear.
(2) The actual penetrations will need to be determined by the project structural engineer during structural design.

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Straight drilled reinforced concrete shafts will use a combination of end bearing and side resistance in developing their load carrying capacity. Where temporary casing is required, no side resistance should be considered above the bottom of the casing. Foundations designed based on these values should experience minor settlement due to loading when properly constructed, but we recommend that the design account for one-half inch of potential settlement. Because of potential variations in the depth of the bearing material, the depth of the shafts should be based upon the recommended penetration into the bearing stratum, and not upon a predetermined elevation. We recommend that Kleinfelder be present during construction to observe the penetration into the bearing material.

The expansive subgrade will subject the shafts to uplift pressures and will create tensile forces within the shafts. Accordingly, each shaft should be steel reinforced to withstand these forces. The actual uplift forces will vary with depth and moisture condition, but steel reinforcement design for the soil uplift pressures may be modeled using 1,200 psf acting over the entire shaft perimeter of the upper 10 feet of the shaft., This reinforcement should not preclude the need for additional reinforcement due to structural design or as required by appropriate codes. It is important to note that the uplift pressure provided is due to expansive soils and does not consider other pressures such as wind, impact, etc. Resistance to structural uplift loads should be evaluated using the values provided in Table 4.1.

4.1.2 Drilled Shaft Construction Considerations

We recommend that Kleinfelder monitor drilled shaft construction to observe the followings:

- the proper identification of bearing material;
- that adequate penetration of the shaft excavation into the bearing layer is provided;
- that the base and sides of the shaft excavation are clean of loose cuttings; and
- that if seepage is encountered, whether it is of sufficient amount to require the use of temporary steel casing for straight-sided shafts.

Note that these items and the following discussion are intended to benefit the Owner and maintain the intent of the design during construction. This discussion is not intended to prescribe a specific means and methods for construction.

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Seepage and groundwater were observed in borings B-01 and C-01, at the site during this study. If seepage occurs during construction, temporary steel casing may be required. If casing is used, the casing should be advanced 2 to 3 feet into the shale stratum to establish an impermeable seal. A continuous head of plastic concrete should be maintained within the casing during casing extraction to prevent the caving of the excavation and/or inflow of groundwater.

The concrete placement should occur as soon as possible after completion of the excavation and observation of the shaft, and no longer than 8 hours after completion of the excavation. Prolonged air exposure or inundation of the bearing surface with groundwater could deteriorate the bearing material. Shaft excavations should be deepened if delays occur to provide a suitable bearing surface. Kleinfelder should be contacted in this event to provide appropriate recommendations.

Some intervals of the limestone within the shale stratum are hard. This limestone can be difficult to penetrate, especially when drilling large diameter shafts. The drilled shaft excavations should be performed with hard rock drilling equipment suitable to perform this work by a contractor experienced in this area.

Precautions are required during reinforcing steel and concrete placement to prevent loose soil, rock, and debris from falling into the excavation. The concrete should not be allowed to strike the reinforcing cage or the sides of the excavation during placement. A tremie pipe can prevent this occurrence. Mushrooming of the drilled shaft near or at the surface should not be allowed to prevent the formation of a horizontal surface that will be subject to expansive uplift pressures.

4.1.3 LPILE Parameters (version 2019) for Soil and Rock

The LPILE parameters provided below are for the subsurface material encountered in the Borings B-01 through B-04. The depths of each layer can be generalized from the boring log. The Stiff Clay w/o water soil type parameter was used for the CH, CL, and Weathered Shale soils encountered in the borings. Tables 4.2 and 4.3 provide Lpile parameters for soil and rock.

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Table 4.2 – Lpile Parameters for Soil

Soil Type	Cohesion, psf	Friction Angle	Unit Wt, pcf(1)	ε_{50}/k_{rm}
Neglect 0 - 3 feet	---	---	---	---
Stiff Clay w/o water (above water table)	2,500	---	124	0.0055
Stiff Clay w/o water (below water table)	1,500	---	124	0.007

(1) Represents total unit weight. In conditions where soils are below the water table, submerged unit weights should be used. Submerged unit weight is obtained by subtracting the unit weight of water (62.4 pcf) from the total unit weight.

Table 4.3 – Lpile Parameters for Rock

Lpile Rock Type	Uniaxial Compressive strength, psi	Initial Modulus of Rock Mass, psi	RQD, %	Unit Wt, pcf(1)	K_{rm}
Weak Rock (Shale)	90	800	50	137	0.0007

(1) Unit weights represent total unit weights. In conditions where soils are below the water table, submerged unit weights should be used.

4.1.4 Soluble Sulfates

Concrete that comes into contact with soils can be subject to sulfate attack. We measured soluble sulfate concentrations in 5 samples from this site. Concentrations were measured between 0.01 to 0.58 percent, with one sample having sulfate concentrations greater than 0.2 percent and four samples with concentrations less than 0.2 percent. Water-soluble sulfate concentrations of 0.2 percent or greater indicate Class 2 severe sulfate exposure, and concentrations of 0.1 percent to 0.2 percent indicate moderate sulfate exposure, according to the American Concrete Institute (ACI). For sites with Class 2 sulfate exposure, ACI recommends using a cement meeting the requirements for Type V (sulfate resistant) cement or the equivalent, with a maximum water-to-cementitious material ratio of 0.45 and air entrainment of 5 to 7 percent. We understand Type V cement may not be readily available. As alternative ACI allows a blend of any type of Portland cement and fly ash (Class F) that meets the performance requirements (ASTM C 1012) of ACI 201.

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4.2 PAVEMENT RECOMMENDATIONS

4.2.1 Pavement Thickness

The pavement thickness calculation for the new rigid pavement section was performed using Pavement Analysis Software (WinPAS), Version 1.0.4, which is based on the AASHTO pavement design procedures. Values used in the analysis of the pavement capacity are as follows:

- 85% Reliability
- 0.35 Overall (Standard) Deviation
- 3,500 (psi) Concrete compressive strength at 28 days
- 3,694,022 psi Concrete Modulus of Elasticity
- 3.2 Load Transfer Coefficient (assumes the use of load transfer dowels across joints and tied shoulders)
- 256 psi/in Modulus of Subgrade Reaction (assumes treated subgrade)
- 1.1 Drainage Coefficient (assumes slow, positive drainage)
- 4.2 Initial Serviceability
- 2.5 Terminal Serviceability

These values were selected based upon guidance in the AASHTO and TxDOT pavement design guides, local experience, and engineering judgment.

Traffic information for pavement design was based on estimates from 2008 average weekday traffic on the City of Farmers Branch, Traffic Engineering Division website. If more accurate traffic information is available then we should be contacted to review the pavement section and revise our recommendations, if necessary. The recommended pavement is intended to provide a sufficient thickness of structural materials, such that wheel loads are widely distributed. Based upon this assumption, we recommend a minimum 6 inches of reinforced concrete pavement and 8 inches of lime stabilized subgrade below the concrete.

We understand the City of Farmers Branch prefers a pavement section consisting of 8 inches of Portland cement concrete over a moisture conditioned clay subgrade. While this pavement section is structurally sufficient for the anticipated traffic loads, it is our opinion that removing the

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lime stabilized portion of the pavement section can lead to premature subgrade failures. The lime stabilized subgrade provides a consistent subgrade, reduces surface moisture infiltration, and provides a stable working platform for the paving contractor, particularly during wetter portions of the year.

An estimated PVR on the order of 2 to 4 inches was calculated for the subsurface material encountered in the pavement borings. While the pavement may be structurally adequate, it can still experience cracking and movement due to the expansive subgrade. Please note that the purpose of lime stabilizing the pavement subgrade is to increase its strength and to increase its permeability/porosity, not to reduce its post-construction swell potential. Post-construction heave can be mitigated by excavating, moisture conditioning and compacting the native clays soils during construction. Kleinfelder can provide recommendations for over-excavation, if desired, based upon the movement criteria established by the Town of Addison and the City of Farmers Branch.

The residual soils of the Eagle Ford formation typically contain high concentrations of soluble sulfates. When mixed with hydrated lime, the sulfates can react with the free calcium, forming the mineral ettringite. This reaction is typically highly expansive and can cause significant distress to the stabilized subgrade and pavement. This reaction can be mitigated by removal and replacement of the sulfate bearing soils, extending the mellowing time during the stabilization process, and double lime application techniques. Prior to the lime application process, we recommend the subgrade soils within the Eagle Ford zone be sampled at approximate 250-foot intervals and tested for soluble sulfate concentrations. Once the concentration level is established, an effective mitigation plan can be recommended. We recommend the construction contract provide provisions for removal and replacement of subgrade soils, extended mellowing periods, and double lime application techniques.

Due to the presence of softer material at the site, continuous proof rolling should be used to detect areas of soft and/or pumping soil. Proof rolling should be based upon TxDOT Standard Specification Item 216 and performed using a heavy tired vehicle weighing at least 25 tons, with the tires inflated to the manufacturer's specified operating pressure. The entire area should be proof rolled, with each succeeding pass offset by not greater than one tire width. Proof rolling should be performed within the pavement area, and also within flatwork areas, such as sidewalks, pads, etc. Kleinfelder should be present during proof rolling activities to assist with

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the identification of unsuitable soil. Unsuitable soil should be undercut and reworked, or otherwise improved in a manner that is suitable to the engineer. When fill is planned, proof rolling should occur before the fill is placed. After proof rolling, and before fill placement, the subgrade should be scarified to a depth of 8 inches, and recompacted to the specified density and moisture content.

4.2.2 Pavement Subgrade Preparation

Subgrade soils at this site in the proposed pavement areas consist of dark brown to olive brown clay. Based on the results of laboratory testing, the subgrade performance of the on-site can be improved by stabilization with hydrated lime.

4.2.3 Pavement Material Specifications

The following pavement material specifications are based on Texas Department of Transportation's (TxDOT) 2014 Edition Standard Specifications.

- Portland Cement Concrete - TxDOT Item 360 - Concrete with a minimum 28-day compressive strength of 3,500 psi is recommended. Concrete should be reinforced and include load transfer dowels at joints. Concrete should include air entrainment to increase temperature resistance.
- Lime Stabilized Subgrade - TxDOT Item 260 except as modified herein. Apply and mix hydrated lime at an estimated application rate of 7 percent (42 lbs/sq.yd.) hydrated lime for an 8-inch stabilization depth. The application rate of hydrated lime should be verified during construction by performing lime series tests with the lime proposed by the contractor. The lime series should include pH (12.4 target) percent swell (less than 1 percent under a confining pressure of 150 psf after curing) and compressive strength (minimum of 150 psi after curing for 5 days at 100 degrees Fahrenheit) The well mixed material should be mellowed for a minimum of 3 days, remixed, moisture conditioned and compacted to a minimum of 95 percent of ASTM D 698 (Standard Proctor density) at 2 to 5 percentage points above the optimum moisture content. Stabilization of the subgrade should extend at least one foot outside the perimeter of the pavement.

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4.3 ADDITIONAL DESIGN CONSIDERATIONS

4.3.1 Box Culvert

We understand that construction of two box culverts are planned for the site. One will be located west of Alpha Road and the other located at the road next to Brookhaven College. The subsurface conditions vary greatly between the two culverts. Boring C-01 located next to Brookhaven College encountered subsurface conditions of dark brown, olive brown to yellow brown clay and groundwater at 5 feet. This culvert at Boring C-01 may utilize an allowable bearing pressure of 1,500 psf. Boring C-02 located next to Alpha Road encountered dark brown to light brown clay, underlain by weathered limestone and limestone. This culvert at Boring C-02 may utilize an allowable bearing pressure of 2,000 psf.

4.3.2 Wall Structures

Reinforced concrete walls related to the bridge construction should be supported by drilled shafts. The drilled shaft recommendations provided for the bridge structure should be used for designing the drilled shafts to support the wing walls or other walls related to the bridge construction. Where the wall bottoms are supported on drilled shafts, wall bottoms should be isolated from the underlying clay by minimum 8-inch voids. Retainers should be provided to prevent sloughing and caving of soils into the voids. The following design parameters and considerations are presented for design of the walls subject to lateral earth pressures.

4.3.3 Wall Outfall

The concrete cantilever gravity walls planned around the detention pond will have an outfall that should be supported by spread footings. We recommend footings be designed for a net allowable soil bearing pressure of 1,500 pounds per square foot (psf) for dead plus sustained live loads. Footings should be embedded at least 24 inches below the lowest adjacent grade. Additional embedment for uplift resistance shall be determined by the structural engineer. All footings should bear on native stiff clay soils. The footing dimension and reinforcement should be designed by the structural engineer; however, continuous, and isolated spread footings should have minimum widths of 18 and 24 inches, respectively. A one-third increase in the above bearing pressures can be used for transient wind or seismic loads. Footings should be

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backfilled as soon as practical after concrete placement. An allowable coefficient of friction of 0.24 between the base of the footings and the native soils can be used for sliding resistance using the dead load normal stresses.

4.3.4 Lateral Earth Pressures

The lateral earth pressures on the retaining walls and culvert will depend on the restraint conditions of the walls, type of backfill, surcharge pressure, and hydrostatic pressure potential. Depending on the wall type, the design condition could be active or at-rest. If the walls are constructed to be restrained at the top, thus the at-rest (K_o) earth pressure coefficient will be developed. Active pressures will apply for walls that are allowed to rotate. Coefficients of active earth pressure and earth pressure at rest are provided in Table 4.4 and may be used for horizontal backfill.

TABLE 4.4: EARTH PRESSURE CRITERIA

Material	Earth Pressure Condition	Equivalent Fluid Pressure, pcf	
		Drained Condition	Undrained Condition
Compacted, On-site Site Soil ϕ=19°, γ_t=125 pcf	At-rest, K_o = 0.67	84	105
	Active, K_a = 0.51	64	94
Granular/Select Fill ϕ=28°, γ_t=120 pcf	At-rest, K_o = 0.53	64	93
	Active, K_a = 0.36	43	83

The above values do not include the effect of hydrostatic pressures or lateral pressures induced by surface loads, which must be taken into account by the structural engineer. Subsurface drain systems must be included in the design to prevent hydrostatic build-up behind the walls. The preceding recommendations assume that the backfill material between the wall and excavation face consists of fine-graded and coarse-graded drainage material meeting the specifications listed in the following section. The above lateral pressures do not include any surcharge loads such as traffic loads, which could be applied behind the top of the wall. Sloping ground surface behind the tops of walls or surcharge loads behind the walls will increase lateral earth pressures. Appropriate factors of safety must be used.

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4.3.5 2018 IBC Seismic Design Parameters

Based on information obtained from the borings, published geologic literature and maps, and on our interpretation of the 2018 IBC criteria, it is our opinion that the project site may be classified as Site Class C according to Section 1613.2.2 of 2018 IBC and Chapter 20 of ASCE 7. Approximate coordinates for the site are noted below. Accordingly, seismic design parameters for Site Class C have been provided for the 2018 IBC.

- Latitude: 32.93200 °N
- Longitude: -96.84802 °W

The Risk-Targeted Maximum Considered Earthquake (MCE_R) mapped spectral accelerations for 0.2 seconds and 1 second periods (S_s and S_1) were estimated using Section 1613.2.1 of the 2018 IBC and the SEAOC and OSHPD website that uses the U.S. Geological Survey (USGS) web services (available at http://seismicmaps.org). The mapped acceleration values and associated soil amplification factors (F_a and F_v) based on the USGS Hazard Data and corresponding site modified spectral accelerations (S_{MS} and S_{M1}) and design spectral accelerations (S_{DS} and S_{D1}) are presented in Table 4.5.

Table 4.5
2018 IBC Seismic Design Parameters

Design Parameter	Recommended Value
Site Class	C
S_s (g)	0.104
S_1 (g)	0.055
F_a	1.3
F_v	1.5
S_{MS} (g)	0.135
S_{M1} (g)	0.083
S_{DS} (g)	0.09
S_{D1} (g)	0.055

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4.3.6 Utility and Service Lines

Utility lines along the sidewalk or roadway may experience differential movement in response to expansive soil movements. These movements may damage connections. Flexible connections are recommended to account for differential movement between the lighting and utilities.

Design and construction of the utilities must also consider other expansive soil issues in order to limit damage. Excavations should be sloped so that water within excavations will flow to a low point away from the roadway where it can be removed before backfilling. Compaction of bedding material should not be water-jetted. Compacted backfill above the utilities should be on-site clays to limit the percolation of surface water. Utility trenches extending under structures should include fat clay or concrete cut-off collars at the perimeter/edge to prevent the transmission of water along trench lines.

4.3.7 Detention Pond Slopes

Borings D-01 and D-02 indicate the detention pond side slopes will consist of very high plasticity clay soils. As such we recommend a target slope of 4 horizontal to 1 vertical (4H:1V) if space allows, but in no case should be less than 3H:1V. The side slopes should be well vegetated for erosion mitigation; however, routine maintenance may be required to repair shallow skin slides caused by cyclic wetting and drying.

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5 EARTHWORK

5.1 SITE PREPARATION

The project sites should be stripped of vegetation, roots, organic material, existing construction materials (if present) and other undesirable debris. Obstructions that could hinder preparation of the sites should also be removed, with special attention given to tree stumps and associated root systems. A typical stripping depth is about 6 inches, but the actual depth will vary and should be based on field observations. After stripping, the area should be suitable for the support of construction equipment. Unsuitable areas (such as those with wet, soft, yielding, and/or pumping subgrade) should be corrected before construction proceeds.

We recommend proof rolling be used to detect areas of soft and/or pumping soil in the proposed roadway. Proof rolling should be based upon TxDOT Standard Specification Item 216 and performed using a heavy tired vehicle weighing at least 25 tons, with the tires inflated to the manufacturer's specified operating pressure. The entire roadway area should be proof rolled at the final subgrade level, with each succeeding pass offset by not greater than one tire width. Kleinfelder can provide construction observation services during proof rolling activities to assist with the identification of unsuitable soil. Unsuitable soil should be undercut and reworked, or otherwise improved in a manner that is suitable to the engineer. When fill is planned, proof rolling should occur before the fill is placed. After proof rolling, and before fill placement, the subgrade should be scarified to a depth of 8 inches, and recompacted to the specified density and moisture content.

5.2 MATERIAL REQUIREMENTS AND TESTING

Table 5.1 provides material, moisture, and density requirements for a variety of materials and applications. Compaction of each lift should be continuous over its entire area. The maximum allowable aggregate size for these materials is 2 inches (except for crushed limestone, which should be limited to 1½ inches). Fill should be placed in loose horizontal lifts not exceeding 8 inches, with the intent of providing a compacted lift thickness of 6 inches. When crushed limestone is used, the maximum loose lift thickness should be reduced to 6 inches (or less if there is difficulty achieving compaction). Fill placed along slopes should be placed in horizontal lifts that are benched into the slope.

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Table 5.1 - Material and Compaction Requirements

Material Use	Material Requirements	Proctor Test Method	[1]Density Requirement	[1]Moisture Requirement
"Low-expansive" Select Fill:	PI: 7 to 15, LL≤35 Passing #200 Sieve: ≤70% Organics < 2 %	ASTM D 698	95 % minimum	-1 to +3 %
Native Clay Soils	NA	ASTM D 698	94 % minimum	+2 to +6 %
Lime Stabilized Subgrade: Pavement	TxDOT Item 260 Organics < 2 %	ASTM D 698	95 % minimum	+2 to +5 %

[1] Based upon Maximum Dry Density and Optimum Moisture Content

Prior to placing any fill material, the exposed subgrade should be scarified to a depth of 8 inches; moisture conditioned and compacted per the requirements for moisture conditioned on-site soil provided in Table 5.1. The material should be a consistent with regard to type and moisture content. Clods should be processed and mixed, and water should be evenly applied, so that each lift has a uniform moisture and density. Each lift should be tested to confirm it has the specified moisture and compaction. One moisture/density test should be performed for every 5,000 square feet per lift of compacted area. For smaller areas, a minimum of three tests should be provided for every lift. Subsequent lifts should not be placed until the exposed lift has the specified moisture and density. Lifts failing to meet the moisture and density requirements should be reworked to meet the required specifications.

The specified moisture content must be maintained until compaction of the overlying lift, or construction of overlying flatwork. Failure to maintain the moisture content could result in excessive soil movement and can also have a detrimental effect on overlying plastic concrete. The contractor must provide some means of controlling the moisture content (such as water hoses, water trucks, etc.). Maintaining subgrade moisture is always critical, but will require the most effort during warm, windy and/or sunny conditions. Density and moisture testing is recommended to provide an indication that adequate earthwork is being provided. However, the quality of the fill is the sole responsibility of the contractor. Satisfactory verification testing is not a guarantee of the quality of the contractor's earthwork operations.

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6 LIMITATIONS

This work was performed in a manner consistent with the level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

This report may be used only by the Client and the registered design professional in responsible charge and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two (2) years from the date of the report.

The work performed was based on project information provided by Client. If Client does not retain Kleinfelder to review any plans and specifications, including any revisions or modifications to the plans and specifications, Kleinfelder assumes no responsibility for the suitability of our recommendations. In addition, if there are any changes in the field to the plans and specifications, Client must obtain written approval from Kleinfelder's engineer that such changes do not affect our recommendations. Failure to do so will vitiate Kleinfelder's recommendations.

Recommendations contained in this report are based on our field observations and subsurface explorations, limited laboratory tests, and our present knowledge of the proposed construction. It is possible that soil, rock, or groundwater conditions could vary between or beyond the points explored. If soil, rock, or groundwater conditions are encountered during construction that differ from those described herein, the client is responsible for ensuring that Kleinfelder is notified immediately so that we may reevaluate the recommendations of this report. If the scope of the proposed construction, including the traffic estimates, and the design depths or locations of the foundations, changes from that described in this report, the conclusions and recommendations contained in this report are not considered valid unless the changes are reviewed, and the conclusions of this report are modified or approved in writing, by Kleinfelder.

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As the geotechnical engineering firm that performed the geotechnical evaluation for this project, Kleinfelder should be retained to confirm that the recommendations of this report are properly incorporated in the design of this project, and properly implemented during construction. This may avoid misinterpretation of the information by other parties and will allow us to review and modify our recommendations if variations in the soil conditions are encountered. As a minimum Kleinfelder should be retained to provide the following continuing services for the project:

- Review the project plans and specifications, including any revisions or modifications;
- Observe foundation bearing soils to confirm conditions are as anticipated.

This report, and any future addenda or reports regarding this site, may be made available to bidders to supply them with only the data contained in the report regarding subsurface conditions and laboratory test results at the point and time noted. Bidders may not rely on interpretations, opinion, recommendations, or conclusions contained in the report. Because of the limited nature of any subsurface study, the contractor may encounter conditions during construction which differ from those presented in this report. In such event, the contractor should promptly notify the owner so that Kleinfelder's geotechnical engineer can be contacted to confirm those conditions. We recommend the contractor describe the nature and extent of the differing conditions in writing and that the construction contract include provisions for dealing with differing conditions. Contingency funds should be reserved for potential problems during earthwork and foundation construction.

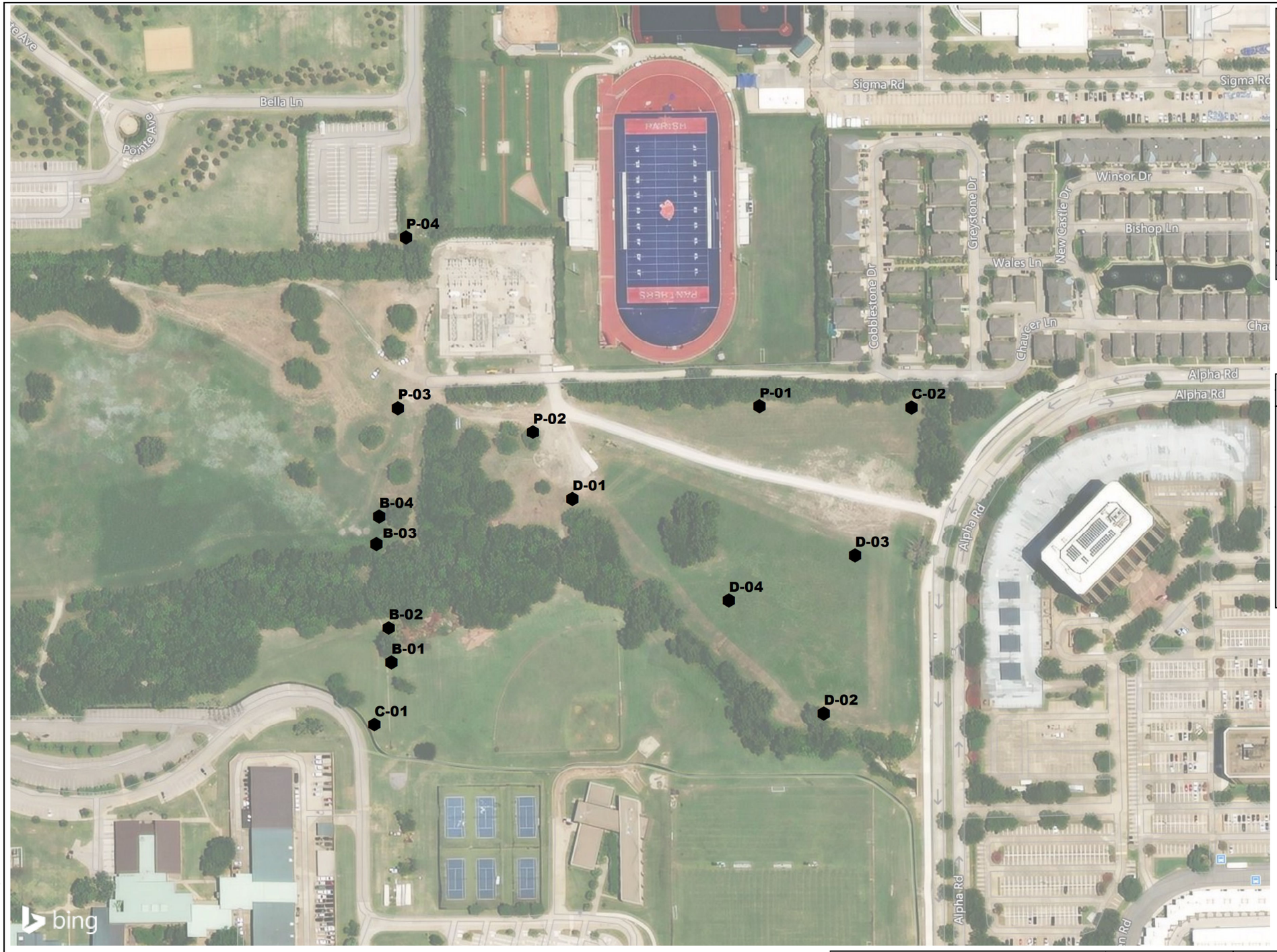
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Figures

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VICINITY MAP

NOT TO SCALE

NOTE:
BASE MAPPING AND VICINITY MAP CREATED FROM LAYERS COMPILED BY ESRI PRODUCTS AND 2021 MICROSOFT CORPORATION.
COORDINATE SYSTEM: NAD 1983 2011 STATEPLANE TEXAS NORTH CENTRAL FIPS 4202

LEGEND

SOIL BORING

N

0 200 400

1 " = 200 SCALE IN FEET

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PROJECT NO. 20212439.001A
DRAWN BY: DM
CHECKED BY: RH
DATE: 07-13-2021

EXPLORATION LOCATION PLAN AND VICINITY MAP

Alpha Road Connector - Vitruvian Phase I
Brookhaven Community College
Farmers Branch, Texas

FIGURE 1

GIS FILE PATH: \\azrgisstorp01\Working_clients_Automated_Exploration Plans

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Appendix A

SAMPLE/SAMPLER TYPE GRAPHICS



Auger Sample

NX CORE SAMPLE
(2.154 in. (54.7 mm.) core diameter)

SHELBY TUBE SAMPLER

STANDARD PENETRATION SPLIT SPOON SAMPLER
(2 in. (50.8 mm.) outer diameter and 1-3/8 in. (34.9 mm.) inner diameter)

TEXAS CONE PENETRATION

GROUND WATER GRAPHICS

WATER LEVEL (level where first observed)

WATER LEVEL (level after exploration completion)

WATER LEVEL (additional levels after exploration)

OBSERVED SEEPAGE

NOTES

1. The report and log key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.

2. Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown.

3. No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.

4. Logs represent general soil or rock conditions observed at the point of exploration on the date indicated.

5. In general, Unified Soil Classification System designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.

6. Fine grained soils that plot within the hatched area on the Plasticity Chart, and coarse grained soils with between 5% and 12% passing the No. 200 sieve require dual USCS symbols, ie., GW-GM, GP-GM, GW-GC, GP-GC, GC-GM, SW-SM, SP-SM, SW-SC, SP-SC, SC-SM.

7. If sampler is not able to be driven at least 6 inches, 50/X indicates number of blows required to drive the identified sampler X inches with a 140 pound hammer falling 30 inches.

8. TCP-Texas Cone Penetrometer, a 3 inches diameter by 2.5 inches inch long 60 degree conical point driven with a 170 ±2 pound hammer dropped 24 ±0.5 inches.

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	**GRAVELS** (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu ≥4 and 1≤ Cc≤3		**GW**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			Cu <4 and/ or 1>Cc >3		**GP**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH 5% TO 12% FINES	Cu ≥4 and 1≤ Cc≤3		**GW-GM**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
					GW-GC	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
			Cu <4 and/ or 1>Cc >3		**GP-GM**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
					GP-GC	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
		GRAVELS WITH > 12% FINES			**GM**	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
					GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
					GC-GM	CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES
	SANDS (More than half of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH <5% FINES	Cu ≥6 and 1≤ Cc≤3		**SW**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			Cu <6 and/ or 1>Cc >3		**SP**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH 5% TO 12% FINES	Cu ≥6 and 1≤ Cc≤3		**SW-SM**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
					SW-SC	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
			Cu <6 and/ or 1>Cc >3		**SP-SM**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
					SP-SC	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
		SANDS WITH > 12% FINES			**SM**	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES
					SC-SM	CLAYEY SANDS, SAND-SILT-CLAY MIXTURES

FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid Limit less than 50)	**ML**	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		CL-ML	INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid Limit greater than 50)	**MH**	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
		OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY

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PROJECT NO.:	137422
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CHECKED BY:	RH
DATE:	11/8/2013
REVISED:	

BORING LOG KEY

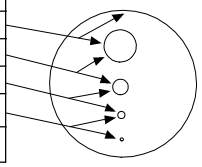
Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING 3

gINT FILE: L:\gint\projects\dfw Project Logs\137422 Alphal Road Connector.gpj R:KLF_STANDARD_GINT_LIBRARY_SR.1.2.GLB [GEO-LEGEND 1 (GRAPHICS KEY) WITH USCS]

GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		>12 in. (304.8 mm.)	>12 in. (304.8 mm.)	Larger than basketball-sized
Cobbles		3 - 12 in. (76.2 - 304.8 mm.)	3 - 12 in. (76.2 - 304.8 mm.)	Fist-sized to basketball-sized
Gravel	coarse	3/4 -3 in. (19 - 76.2 mm.)	3/4 -3 in. (19 - 76.2 mm.)	Thumb-sized to fist-sized
	fine	#4 - 3/4 in. (#4 - 19 mm.)	0.19 - 0.75 in. (4.8 - 19 mm.)	Pea-sized to thumb-sized
Sand	coarse	#10 - #4	0.079 - 0.19 in. (2 - 4.9 mm.)	Rock salt-sized to pea-sized
	medium	#40 - #10	0.017 - 0.079 in. (0.43 - 2 mm.)	Sugar-sized to rock salt-sized
	fine	#200 - #10	0.0029 - 0.017 in. (0.07 - 0.43 mm.)	Flour-sized to sugar-sized
Fines		Passing #200	<0.0029 in. (<0.07 mm.)	Flour-sized and smaller

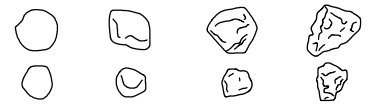


Munsell Color

NAME	ABBR
Red	R
Yellow Red	YR
Yellow	Y
Green Yellow	GY
Green	G
Blue Green	BG
Blue	B
Purple Blue	PB
Purple	P
Red Purple	RP

ANGULARITY

DESCRIPTION	CRITERIA
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	Particles are similar to angular description but have rounded edges
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges
Rounded	Particles have smoothly curved sides and no edges



PLASTICITY

DESCRIPTION	LL	FIELD TEST
Non-plastic	NP	A 1/8-in. (3 mm.) thread cannot be rolled at any water content.
Low (L)	< 30	The thread can barely be rolled and the lump or thread cannot be formed when drier than the plastic limit.
Medium (M)	30 - 50	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump or thread crumbles when drier than the plastic limit
High (H)	> 50	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump or thread can be formed without crumbling when drier than the plastic limit

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

REACTION WITH HYDROCHLORIC ACID

DESCRIPTION	FIELD TEST
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPT-N_{60} (# blows/ft)	MODIFIED CA SAMPLER (# blows/ft)	CALIFORNIA SAMPLER (# blows/ft)	RELATIVE DENSITY (%)
Very Loose	<4	<4	<5	0 - 15
Loose	4 - 10	5 - 12	5 - 15	15 - 35
Medium Dense	10 - 30	12- 35	15 - 40	35 - 65
Dense	30 - 50	35 - 60	40 - 70	65 - 85
Very Dense	>50	>60	>70	85 - 100

NOTE: AFTER TERZAGHI AND PECK, 1948

CONSISTENCY - FINE-GRAINED SOIL

CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (Qu)(psf)	CRITERIA
Very Soft	< 1000	Thumb will penetrate soil more than 1 in. (25 mm.)
Soft	1000 - 2000	Thumb will penetrate soil about 1 in. (25 mm.)
Firm	2000 < 4000	Thumb will indent soil about 1/4-in. (6 mm.)
Hard	4000 < 8000	Thumb will not indent soil but readily indented with thumbnail
Very Hard	> 8000	Thumbnail will not indent soil

STRUCTURE

DESCRIPTION	CRITERIA
Stratified	Alternating layers of varying material or color with layers at least 1/4-in. thick, note thickness
Laminated	Alternating layers of varying material or color with the layer less than 1/4-in. thick, note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

CEMENTATION

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

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CHECKED BY:	RH
DATE:	11/8/2013
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SOIL DESCRIPTION KEY

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING

4

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Date Begin - End: 11/01/2013 **Drill Company:** StrataBore **BORING LOG B-01**

Logged By: D. Russell **Drill Crew:** Marcus

Hor.-Vert. Datum: Not Available **Drill Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 45 in.

Exploration Plunge: -90 degrees **Exploration Method:** Hollow Stem Auger

Weather: **Auger Diameter:** 6 in. O.D.

Latitude: 32.93125° N
Longitude: -96.84792° W
No Elevation Available

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(SC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
				Lean CLAY to Fat CLAY (CL-CH): dark brown to olive brown, very stiff to stiff, with calcareous nodules, fine gravel, and sand									
		U-1		PP=4.0									
		T-2		TC=10/6" 5/6"									
		U-3		PP=2.0			26.7	96					
5				- becoming olive brown									
		T-4		TC=4/6" 4/6"									
		U-5		PP=1.5		CL	29.2			79	43	22	
				- large gravel, moist, olive brown to light brown									
		U-6		PP=2.5			39.4	83					
10		T-7		TC=6/6" 9/6"									
				- clayey gravel layer from 12 to 14 feet									
		U-8		PP=4.0									
15		T-9		TC=7/6" 9/6"									
				WEATHERED SHALE: gray to olive brown, very stiff, with iron oxide staining									
		U-10		PP=3.5			22.9	101					Unc. Comp. Str.= 1.68 tsf
20		T-11		TC=12/6" 17/6"									
				SHALE: dark gray, laminated									
		U-12		PP=4.5									
25		T-13		TC=50/3" 50/3½"									
		T-14		TC=50/3¾" 50/4" RQD=42									
		C-15			72%		14.6	120					Unc. Comp. Str.= 6.47 tsf
30		T-16		TC=50/2½" 50/2" RQD=69									
		C-17			92%								
35		T-18		TC=50/1½" 50/1" RQD=76									
		C-19			83%		17.8	113					Unc. Comp. Str.= 6.75 tsf
40				- with interbedded limestone layer									

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG B-01

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING

B-01

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BORING LOG B-01

Date Begin - End:	11/01/2013	**Drill Company:**	StrataBore		
Logged By:	D. Russell	**Drill Crew:**	Marcus		
Hor.-Vert. Datum:	Not Available	**Drill Equipment:**	CME-75	**Hammer Type - Drop:**	140 lb. Auto - 45 in.
Exploration Plunge:	-90 degrees	**Exploration Method:**	Hollow Stem Auger		
Weather:		**Auger Diameter:**	6 in. O.D.		

Latitude: 32.93125° N
Longitude: -96.84792° W
No Elevation Available

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		T-20		TC=47/6" 50/5"	NR								
		C-21		RQD=0									
		T-22		TC=50/1" 50/¾"									
50		C-23		RQD=90	90%								
		T-24		TC=50/3" 50/3½"									
55		C-25		RQD=83	91%								
		T-26		TC=50/3" 50/3¼"									
60		C-27		RQD=93	94%								
		T-28		TC=50/1¼" 50/½"									
65		C-29		RQD=95	95%								
		T-30		TC=50/¼" 50/¼"									
70		C-31		RQD=97	97%								
		T-32		TC=50/1¼" 50/1¼"									
75		C-33		RQD=96	98%								
		T-34		TC=50/1" 50/½"									
80													
85													

SHALE: dark gray, laminated
- limestone seam plugged core barrel

- with interbedded limestone layer

LIMESTONE: gray, with occasional shells

SHALE: dark gray

The exploration was terminated at approximately 80 ft. below ground surface. The exploration was backfilled with auger cuttings on November 01, 2013.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was encountered at 13 feet below the existing ground surface. After a 24 hour observation period, the water level was at 5 feet below existing ground surface.

GENERAL NOTES:
Boring was advanced to a depth of 30 feet prior to the use of water in the rock core drilling process.

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PROJECT NO.:	137422
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CHECKED BY:	DR
DATE:	11/8/2013
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BORING LOG B-01

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING
B-01

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Date Begin - End: 10/29/2013 **Drill Company:** StrataBore **BORING LOG B-02**

Logged By: D. Russell **Drill Crew:** Pat

Hor.-Vert. Datum: Not Available **Drill Equipment:** CME-45 **Hammer Type - Drop:** 140 lb. Auto - 45 in.

Exploration Plunge: -90 degrees **Exploration Method:** Hollow Stem Auger

Weather: **Auger Diameter:** 6 in. O.D.

FIELD EXPLORATION | LABORATORY RESULTS

Latitude: 32.93139° N
Longitude: -96.84795° W
No Elevation Available
Location Offset: 20 ft. East of tree line

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		Fat CLAY (CH): brown to dark brown, hard, with fine to coarse gravel	U-1	PP=4.5+									
			T-2	TC=20/6" 20/6"									
			U-3	PP=4.5+			14.9	116					
5			T-4	TC=17/6" 17/6"									
		- becoming olive brown to yellow brown	U-5	PP=4.5+		CH	18.6	109		95	66	39	
		- becoming gray with manganese staining and orange sand seams	U-6	PP=4.5+			18.4						Unc. Comp. Str.= 5.26 tsf
10			T-7	TC=15/6" 14/6"									
		WEATHERED SHALE: dark brown to gray, very stiff to hard, some orange staining, laminated	U-8	PP=4.0									
							30.9						
15			T-9	TC=8/6" 9/6"									
			U-10	PP=4.5+									
20		- with interbedded limestone seam	T-11 / C-12	TC=50/1" 50/½" RQD=17	62%								
		SHALE: dark gray, with occasional shells					21.6	103					Unc. Comp. Str.= 3.38 tsf
25			T-13 / C-14	TC=50/2¼" 50/2½" RQD=87	94%								
30			T-15 / C-16	TC=50/1½" 50/1½" RQD=86	114%								
35			T-17 / C-18	TC=50/2" 50/¼" RQD=19	82%		11.2	128					Unc. Comp. Str.= 9.85 tsf
40			T-19 / C-20	TC=50/5" 50/6" RQD=74	91%								
		- with interbedded limestone seam											

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PROJECT NO.: 137422
DRAWN BY: GW
CHECKED BY: DR
DATE: 11/8/2013
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BORING LOG B-02

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING

B-02

PAGE: 1 of 2

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Date Begin - End:	10/29/2013	**Drill Company:**	StrataBore	**BORING LOG B-02**	
Logged By:	D. Russell	**Drill Crew:**	Pat		
Hor.-Vert. Datum:	Not Available	**Drill Equipment:**	CME-45	**Hammer Type - Drop:**	140 lb. Auto - 45 in.
Exploration Plunge:	-90 degrees	**Exploration Method:**	Hollow Stem Auger		
Weather:		**Auger Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Latitude: 32.93139° N
Longitude: -96.84795° W
No Elevation Available
Location Offset: 20 ft. East of tree line

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)
		T-21		TC=50/¼" 50/¼" RQD=72	72%
		C-22			
		T-23		TC=50/3½" 50/3¼" RQD=71	
50		C-24			71%
		T-25		TC=50/2¾" 50/3¼" RQD=40	
55		C-26			40%
		T-27		TC=50/1¾" 50/1¼" RQD=93	
60		C-28			93%
		T-29		TC=50/¾" 50/½" RQD=94	
65		C-30			94%
		T-31		TC=50/1½" 50/¾" RQD=96	
70		C-32			95%
		T-33		TC=50/1¼" 50/1" RQD=98	
75		C-34			98%
		T-35		TC=50/1" 50/1"	
80					
85					

SHALE: dark gray, with occasional shells

LIMESTONE: gray, with occasional shells, with interbedded shale layers

SHALE: dark gray, hard, sandy, with shells

LABORATORY RESULTS

USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks

The exploration was terminated at approximately 80 ft. below ground surface. The exploration was backfilled with auger cuttings on October 29, 2013.

GROUNDWATER LEVEL INFORMATION:
▼ **Groundwater was not encountered during drilling operations or upon completion.** After a 24 hour observation period, the water level was at 5 feet below existing ground surface.

GENERAL NOTES:
Boring was advanced to a depth of 20 feet prior to the use of water in the rock core drilling process.

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG B-02

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING
B-01

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BORING LOG B-03

Date Begin - End:	11/05/2013	**Drill Company:**	StrataBore		
Logged By:	D. Russell	**Drill Crew:**	Marcus		
Hor.-Vert. Datum:	Not Available	**Drill Equipment:**	CME-75	**Hammer Type - Drop:**	140 lb. Auto - 45 in.
Exploration Plunge:	-90 degrees	**Exploration Method:**	Hollow Stem Auger		
Weather:		**Auger Diameter:**	6 in. O.D.		

Latitude: 32.93185° N
Longitude: -96.84804° W
No Elevation Available
Location Offset: 40 ft. Northwest of Stake

Surface Condition: Bare Earth

Depth (feet)	Graphical Log		Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		Fat CLAY (CH): brown to dark brown, hard, with calcareous nodules, coarse to fine gravel, and sand	U-1		PP=4.5+									
			T-2		TC=14/6" 14/6"									
			U-3		PP=4.5+		CH	18.9	107		81	58	32	
5			T-4		TC=12/6" 12/6"									
			U-5		PP=4.5+			21.2 22.0	102					Unc. Comp. Str.= 7.06 tsf
		- becoming brownish gray, slickensided, iron oxide staining	U-6		PP=4.5			25.0	98					
10			T-7		TC=2/6" 4/6"									
		- with coarse gravel seam	U-8		PP=3.0			24.5						
15			T-9		TC=13/6" 12/6"									
		WEATHERED SHALE: dark gray, laminated	U-10		PP=4.5+									
20			T-11		TC=50/5" 50/5½"									
			T-12		TC=50/4" 50/3½"									
25		**SHALE**: gray to dark gray, stiff to hard, sandy	C-13		RQD=98	98%		14.2	121					Unc. Comp. Str.= 13.53 tsf
			T-14		TC=50/6" 50/2"									
30			C-15		RQD=100	100%								
			T-16		TC=50/1½" 50/1¼"									
35		- limestone seam plugged core barrel	C-17		RQD=39	48%		18.5	113					Unc. Comp. Str.= 6.13 tsf
			T-18		TC=50/3¼" 50/4"									
40			C-19		RQD=0	50%								

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG B-03

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING

B-03

gINT FILE: L:\gint\projects\dfw Project Logs\137422 Alphal Road Connector.gpj R:KLF_STANDARD_GINT_LIBRARY_SR.1.2.GLB [KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	11/05/2013	**Drill Company:**	StrataBore	**BORING LOG B-03**	
Logged By:	D. Russell	**Drill Crew:**	Marcus		
Hor.-Vert. Datum:	Not Available	**Drill Equipment:**	CME-75	**Hammer Type - Drop:**	140 lb. Auto - 45 in.
Exploration Plunge:	-90 degrees	**Exploration Method:**	Hollow Stem Auger		
Weather:		**Auger Diameter:**	6 in. O.D.		

FIELD EXPLORATION | LABORATORY RESULTS

Latitude: 32.93185° N
Longitude: -96.84804° W
No Elevation Available
Location Offset: 40 ft. Northwest of Stake

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(SC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		T-20		TC=50/1½" 50/1" RQD=87	87%								
		C-21											
50		T-22		TC=50/1¼" 50/1½" RQD=88	88%								
		C-23											
55		T-24		TC=50/1¼" 50/1" RQD=100	100%								
		C-25											
60		T-26		TC=50/1¾" 50/1"									
65													
70													
75													
80													
85													

SHALE: gray to dark gray, stiff to hard, sandy
- with interbedded limestone layer

The exploration was terminated at approximately 60 ft. below ground surface. The exploration was backfilled with auger cuttings on November 05, 2013.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
Boring was advanced to a depth of 25 feet prior to the use of water in the rock core drilling process.

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PROJECT NO.:	137422
DRAWN BY:	GW
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DATE:	11/8/2013
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BORING LOG B-03

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

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Date Begin - End:	11/04/2013	**Drill Company:**	StrataBore	**BORING LOG B-04**	
Logged By:	D. Russell	**Drill Crew:**	Marcus		
Hor.-Vert. Datum:	Not Available	**Drill Equipment:**	CME-75	**Hammer Type - Drop:**	140 lb. Auto - 45 in.
Exploration Plunge:	-90 degrees	**Exploration Method:**	Hollow Stem Auger		
Weather:		**Auger Diameter:**	6 in. O.D.		

FIELD EXPLORATION | LABORATORY RESULTS

Latitude: 32.93200° N
Longitude: -96.84802° W
No Elevation Available

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(SC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		Fat CLAY (CH): dark brown to olive brown, hard, with calcareous nodules and coarse to fine gravel	U-1	PP=4.5+									
			T-2	TC=11/6" 9/6"									
		- becoming olive brown	U-3	PP=4.5+		CH	16.8			90	65	40	
5			T-4	TC=7/6" 14/6"									
			U-5	PP=4.5+			19.1	107					
		- iron oxide staining	U-6	PP=4.5+			18.8						Unc. Comp. Str.= 8.79 tsf
10			T-7	TC=14/6" 20/6"									
		WEATHERED SHALE: dark gray, laminated, with iron oxide staining, slickensided	U-8	PP=4.5+			20.7	107					Unc. Comp. Str.= 5.15 tsf
15			T-9	TC=47/6" 50/6"									
		SHALE: dark gray, stiff to hard, with interbedded limestone seams and occasional shells	T-10	TC=50/5" 50/3"									
20			C-11	RQD=81	81%								
			T-12	TC=50/1½" 50/1¼"									
25			C-13	RQD=96	96%								
			T-14	TC=50/1" 50/1½"									
30			C-15	RQD=93	93%								
			T-16	TC=50/1" 50/1"									
35			C-17	RQD=62	92%		17.8	112					Unc. Comp. Str.= 5.55 tsf
			T-18	TC=50/4" 50/3"									
40			C-19	RQD=94	94%								

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG B-04

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING

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gINT FILE: L:\gint\projects\dfw Project Logs\137422 Alphal Road Connector.gpj R:KLF_STANDARD_GINT_LIBRARY_SR.1.2.GLB [KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	11/04/2013	**Drill Company:**	StrataBore	**BORING LOG B-04**	
Logged By:	D. Russell	**Drill Crew:**	Marcus		
Hor.-Vert. Datum:	Not Available	**Drill Equipment:**	CME-75	**Hammer Type - Drop:**	140 lb. Auto - 45 in.
Exploration Plunge:	-90 degrees	**Exploration Method:**	Hollow Stem Auger		
Weather:		**Auger Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Latitude: 32.93200° N
Longitude: -96.84802° W
No Elevation Available

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)
		T-20		TC=50/1¼"	91%
		C-21		50/½" RQD=91	
50		T-22		TC=50/2"	98%
		C-23		50/1" RQD=98	
55		T-24		TC=50/1¼"	82%
		C-25		50/1½" RQD=82	
60		T-26		TC=50/2¼"	95%
		C-27		50/1½" RQD=95	
65		T-28		TC=50/¾"	9362%
		C-29		50/½" RQD=94	
70		T-30		TC=50/1¼"	89%
		C-31		50/1" RQD=89	
75		T-32		TC=50/1¼"	80%
		C-33		50/¾" RQD=80	
80		T-34		TC=50/1" 50/¾"	
85					

SHALE: dark gray, stiff to hard, with interbedded limestone seams and occasional shells

LIMESTONE: gray, hard, pitted

SHALE: dark gray, with occasional shells

The exploration was terminated at approximately 80 ft. below ground surface. The exploration was backfilled with auger cuttings on November 04, 2013.

LABORATORY RESULTS

USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks

GROUNDWATER LEVEL INFORMATION:
▼ **Groundwater was not encountered during drilling operations or upon completion.** After a 24 hour observation period, the boring was dry.

GENERAL NOTES:
Boring was advanced to a depth of 25 feet prior to the use of water in the rock core drilling process.

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG B-04

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING

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gINT FILE: L:\gint\projects\dfw Project Logs\137422 Alphal Road Connector.gpj R:KLF_STANDARD_GINT_LIBRARY_SR.1.2.GLB [KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End: 10/29/2013 **Drill Company:** StrataBore **BORING LOG C-01**

Logged By: D. Russell **Drill Crew:** Marcus

Hor.-Vert. Datum: Not Available **Drill Equipment:** CME-45 **Hammer Type - Drop:** 140 lb. Auto - 30 in.

Exploration Plunge: -90 degrees **Exploration Method:** Hollow Stem Auger

Weather: **Auger Diameter:** 6 in. O.D.

Latitude: 32.93141° N
Longitude: -96.84794° W
No Elevation Available

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
				FIELD EXPLORATION		LABORATORY RESULTS							
0		**Fat CLAY to Lean CLAY (CL-CH)**: dark brown to olive brown, very stiff to soft, with calcareous nodules and gravel	U-1	PP=3.5									
			U-2	PP=3.0									
			U-3	PP=2.5									
▽ 5		- friable, olive brown to yellow brown	U-4	PP=0.5									
		- pale brown, with coarse to fine gravel and sand seams	U-5	PP=1.5		SC	24.2	107		36	43	21	Unc. Comp. Str.= 0.84 tsf
10													
		Lean CLAY with gravel (CL): light brown, gray, hard, high amount of gravel	U-6	PP= --									
15			S-7	BC=12 27 28									
		WEATHERED SHALE: dark gray to light gray, with iron oxide staining, laminated	U-8	PP=4.5									
20													
			U-9	PP=4.5+									
25													

The exploration was terminated at approximately 25 ft. below ground surface. The exploration was backfilled with auger cuttings on October 29, 2013.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was encountered at 5 feet below the existing ground surface. After a 24 hour observation period, the water level was at 6 feet below existing ground surface.
GENERAL NOTES:
Boring drilled at stake

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG C-01

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

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Date Begin - End:	10/29/2013	**Drill Company:**	StrataBore	**BORING LOG C-02**	
Logged By:	D. Russell	**Drill Crew:**	Marcus		
Hor.-Vert. Datum:	Not Available	**Drill Equipment:**	CME-45	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Exploration Plunge:	-90 degrees	**Exploration Method:**	Hollow Stem Auger		
Weather:		**Auger Diameter:**	6 in. O.D.		

FIELD EXPLORATION

Latitude: 32.93256° N
Longitude: -96.85580° W
No Elevation Available

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		Fat CLAY (CH): dark brown, hard, with occasional calcareous nodules	U-1	PP=4.5+									
			U-2	PP=4.5+			34.1						
		Lean CLAY (CL): light grayish brown to light brown, hard, with gravel and sand seams	S-3	BC=14 14 25		SC	12.6			38	41	21	
5													
		WEATHERED LIMESTONE: light brown to brown, with clay seams	S-4	BC=50/4"									
			T-5	TC=50/2" 50/2"									
10													
		LIMESTONE: gray											
			T-6	TC=50/½" 50/½"									
15													
			T-7	TC=50/¾" 50/½"									
20													
			T-8	TC=50/½" 50/¼"									
25													

The exploration was terminated at approximately 25 ft. below ground surface. The exploration was backfilled with auger cuttings on October 29, 2013.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.
GENERAL NOTES:
Boring drilled at stake

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG C-02

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

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Date Begin - End:	10/29/2013	**Drill Company:**	StrataBore	**BORING LOG P-01**	
Logged By:	D. Russell	**Drill Crew:**	Marcus		
Hor.-Vert. Datum:	Not Available	**Drill Equipment:**	CME-45	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Exploration Plunge:	-90 degrees	**Exploration Method:**	Hollow Stem Auger		
Weather:		**Auger Diameter:**	6 in. O.D.		

Latitude: 32.93256° N
Longitude: -96.84558° W
No Elevation Available

Surface Condition: Bare Earth

Depth (feet)	Graphical Log	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		Fat CLAY (CH): dark brown, hard, with limestone fragments	U-1	PP=4.5+									
			U-2	PP=4.5+		CH	11.5			95	71	44	
5		**WEATHERED LIMESTONE**: light brownish gray to light brown, with clay	S-3	BC=35 50/4"									
			T-4	TC=50/1" 50/¾"									
		- becoming brownish gray	T-5	TC=**50**									
10													
15													
20													
25													

The exploration was terminated at approximately 10 ft. below ground surface. The exploration was backfilled with auger cuttings on October 29, 2013.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.
GENERAL NOTES:
Boring drilled at stake

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG P-01

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING

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Date Begin - End: 10/29/2013 **Drill Company:** StrataBore **BORING LOG P-02**

Logged By: D. Russell **Drill Crew:** Marcus

Hor.-Vert. Datum: Not Available **Drill Equipment:** CME-45 **Hammer Type - Drop:** 140 lb. Auto - 30 in.

Exploration Plunge: -90 degrees **Exploration Method:** Hollow Stem Auger

Weather: **Auger Diameter:** 6 in. O.D.

Depth (feet)	Graphical Log	FIELD EXPLORATION Latitude: 32.93244° N Longitude: -96.84703° W No Elevation Available Surface Condition: Bare Earth	Sample Number	Sample Type	Blow Counts(SC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	LABORATORY RESULTS USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		Fat CLAY (CH): dark brown to dark grayish brown, hard to very stiff, with fine gravel and sand seams	U-1		PP=4.0			30.5						
			U-2		PP=4.5+		CH	14.0			67	57	34	
5			U-3		PP=4.5+			17.2						
			U-4		PP=3.5			23.5						
		- becoming olive brown	U-5		PP=2.0									
10														
15														
20														
25														

The exploration was terminated at approximately 10 ft. below ground surface. The exploration was backfilled with auger cuttings on October 29, 2013.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
Boring drilled at stake

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG P-02

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

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Date Begin - End: 10/29/2013 **Drill Company:** StrataBore **BORING LOG P-03**

Logged By: D. Russell **Drill Crew:** Marcus

Hor.-Vert. Datum: Not Available **Drill Equipment:** CME-45 **Hammer Type - Drop:** 140 lb. Auto - 30 in.

Exploration Plunge: -90 degrees **Exploration Method:** Hollow Stem Auger

Weather: **Auger Diameter:** 6 in. O.D.

Depth (feet)	Graphical Log	FIELD EXPLORATION	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	LABORATORY RESULTS: USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		Latitude: 32.93258° N Longitude: -96.84789° W No Elevation Available Surface Condition: Bare Earth												
		Fat CLAY (CH): dark brown to dark brownish gray, hard, with fine gravel	U-1		PP=2.5		CH	31.5			91	63	34	
			U-2		PP=4.5+			22.2						
5			U-3		PP=4.5+			24.8						
			U-4		PP=4.5+			23.1						
		- becoming olive brown, some gray	U-5		PP=4.5+									
10														
15														
20														
25														

The exploration was terminated at approximately 10 ft. below ground surface. The exploration was backfilled with auger cuttings on October 29, 2013.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
Boring drilled at stake

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG P-03

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
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Date Begin - End: 10/29/2013 **Drill Company:** StrataBore **BORING LOG P-04**

Logged By: D. Russell **Drill Crew:** Marcus

Hor.-Vert. Datum: Not Available **Drill Equipment:** CME-45 **Hammer Type - Drop:** 140 lb. Auto - 30 in.

Exploration Plunge: -90 degrees **Exploration Method:** Hollow Stem Auger

Weather: **Auger Diameter:** 6 in. O.D.

Depth (feet)	Graphical Log	FIELD EXPLORATION	Sample Number	Sample Type	Blow Counts(SC)= Uncorr. blows/6 in. Pocket Pen(PP)= tsf Texas Cone(TC)= blows/6 in RQD=%	Recovery (NR=No Recovery)	LABORATORY RESULTS: USCS Symbol	Water Content (%)	Dry Density (pcf)	Passing No.4 Sieve (%)	Passing #200 Sieve (%)	Liquid Limit (NV=No Value)	Plasticity Index (NP=No Plasticity)	Other Tests/ Remarks
		Latitude: 32.93350° N Longitude: -96.84782° W No Elevation Available Location Offset: 10 ft. South Surface Condition: Bare Earth												
		CLAY (CL): dark brown to orange, with limestone fragments, calcareous, possible fill, with sand seams	U-1		PP=4.5+			17.7						
			U-2		PP=4.5+		CL	16.7			51	38	17	
		Fat CLAY (CH): dark brown to dark brownish gray, hard, with fine gravel	U-3		PP=4.0									
5			U-4		PP=4.0			23.0						
			U-5		PP=4.0			25.6						
10														
15														
20														
25														

The exploration was terminated at approximately 10 ft. below ground surface. The exploration was backfilled with auger cuttings on October 29, 2013.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered during drilling or after completion.

GENERAL NOTES:
Boring drilled at stake

KLEINFELDER
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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	DR
DATE:	11/8/2013
REVISED:	

BORING LOG P-04

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

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Date Begin - End:	10/19/2020	**Drilling Company:**	StrataBore Inc.	**BORING LOG D-01**	
Logged By:	D. Marsau	**Drill Crew:**	Castillo		
Hor.-Vert. Datum:	Not Available	**Drilling Equipment:**	CME-45	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Continuous Flight Auger		
Weather:	Overcast	**Exploration Diameter:**	8" in. O.D.		

FIELD EXPLORATION

Latitude: 32.93208°
Longitude: -96.84678°
Surface Condition: Grass

Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. / Pocket Pen(PP)= tsf / Texas Cone(TC)= blows/6 in	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
		6" TOPSOIL		PP=4.5+	6""								
		Fat CLAY (CH): dark brown and brown, moist, very stiff to hard, with calcareous nodules		PP=3.5	9""								
				PP=3.0	9""								
5				PP=2.5	13""								
				PP=2.5	14""	CH	29.4		92	77	85	58	
		-light brown below 9 feet											
10													
		-increase in sand, moist to wet below 13 feet		BC=3 5 6	18""								
15													
		- shaly, dark gray below 18 feet		PP=4.5+	8""								
20													
25													

The boring was terminated at approximately 20 ft. below ground surface. The boring was backfilled with auger cuttings on October 19, 2020.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The boring was located in the field by a Kleinfelder professional using a handheld GPS device with a horizontal accuracy of approximately 15 feet.

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PROJECT NO.: 20212439.001A	BORING LOG D-01		BORING
DRAWN BY: DM	Alpha Road Connector - Vitruvian Phase IV Brookhaven Community College Farmers Branch, Texas		D-01
CHECKED BY: RJH			
DATE:			PAGE: 1 of 1

PLOTTED: 11/30/2020 08:42 PM BY: DMarsau
OFFICE FILTER: DALLAS
PROJECT NUMBER: 20212439.001A
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2021.GLB [_KLF_BORING/TEST PIT SOIL LOG]
gINT FILE: Klf_gint_master_2021

Date Begin - End:	10/19/2020	**Drilling Company:**	StrataBore Inc.	**BORING LOG D-02**	
Logged By:	D. Marsau	**Drill Crew:**	Castillo		
Hor.-Vert. Datum:	Not Available	**Drilling Equipment:**	CME-45	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	Continuous Flight Auger		
Weather:	Overcast	**Exploration Diameter:**	8" in. O.D.		

FIELD EXPLORATION

Latitude: 32.93090°
Longitude: -96.84520°
Surface Condition: Grass

Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. / Pocket Pen(PP)= tsf / Texas Cone(TC)= blows/6 in	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
		6" TOPSOIL		PP=4.5+	7"								
		Fat CLAY (CH): dark brown and gray, moist, hard, with calcareous nodules		PP=4.5+	11"	CH	27.3		100	93	83	56	
				PP=4.5+	4"								
5				PP=NT	3"								
		Weathered LIMESTONE: light yellowish brown, soft		TC=50/5" 50/1"									
10				TC=50/3" 50/1"									
		LIMESTONE: light gray, hard											
15				TC=50/1" 50/0.5"									
20													

The boring was terminated at approximately 15 ft. below ground surface. The boring was backfilled with auger cuttings on October 19, 2020.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The boring was located in the field by a Kleinfelder professional using a handheld GPS device with a horizontal accuracy of approximately 15 feet.

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PROJECT NO.: 20212439.001A
DRAWN BY: DM
CHECKED BY: RJH
DATE:

BORING LOG D-02

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING
D-02
PAGE: 1 of 1

PLOTTED: 11/30/2020 08:42 PM BY: DMarsau
OFFICE FILTER: DALLAS
PROJECT NUMBER: 20212439.001A
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2021.GLB [_KLF_BORING/TEST PIT SOIL LOG]
gINT FILE: Klf_gint_master_2021

Date Begin - End:	12/15/2020	**Drilling Company:**	Kleinfelder	**BORING LOG D-03**
Logged By:	D. Marsau	**Drill Crew:**	D. Marsau	
Hor.-Vert. Datum:	Not Available	**Drilling Equipment:**	Hand Auger	
Plunge:	-90 degrees	**Drilling Method:**	Hand Auger	
Weather:	Overcast	**Exploration Diameter:**	3" in. O.D.	

FIELD EXPLORATION

Latitude: 32.93175°
Longitude: -96.84498°
Surface Condition: Grass

Depth (feet)	Graphical Log	Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. / Pocket Pen(PP)= tsf / Texas Cone(TC)= blows/6 in	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
		6" TOPSOIL											
		Fat CLAY (CH): dark brown and brown, moist, stiff, with calcareous nodules											
		- light brown, with broken limestone pieces below 4 feet				CH	25.0		98	79	60	38	
5		**Weathered LIMESTONE**: light brown, soft											
10													

The boring was terminated at approximately 6 ft. below ground surface. The boring was backfilled with auger cuttings on December 15, 2020.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The boring was located in the field by a Kleinfelder professional using a handheld GPS device with a horizontal accuracy of approximately 15 feet.

KLEINFELDER
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PROJECT NO.: 20212439.001A
DRAWN BY: DM
CHECKED BY: RJH
DATE:

BORING LOG D-03

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING
D-03

PLOTTED: 12/29/2020 10:11 AM BY: DMarsau
OFFICE FILTER: DALLAS
PROJECT NUMBER: 20212439.001A
gINT FILE: Klf_gint_master_2021
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2021.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	12/15/2020	**Drilling Company:**	Kleinfelder	**BORING LOG D-04**
Logged By:	D. Marsau	**Drill Crew:**	D. Marsau	
Hor.-Vert. Datum:	Not Available	**Drilling Equipment:**	Hand Auger	
Plunge:	-90 degrees	**Drilling Method:**	Hand Auger	
Weather:	Overcast	**Exploration Diameter:**	3" in. O.D.	

Depth (feet)	Graphical Log	FIELD EXPLORATION Latitude: 32.93152° Longitude: -96.84580° Surface Condition: Grass Lithologic Description	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. / Pocket Pen(PP)= tsf / Texas Cone(TC)= blows/6 in	Recovery (NR=No Recovery)	LABORATORY RESULTS USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
		6" TOPSOIL											
		Fat CLAY (CH): dark brown and brown, moist, stiff, with calcareous nodules				CH	44.6		99	87	80	49	
5													
10													

The boring was terminated at approximately 7 ft. below ground surface. The boring was backfilled with auger cuttings on December 15, 2020.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The boring was located in the field by a Kleinfelder professional using a handheld GPS device with a horizontal accuracy of approximately 15 feet.

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PROJECT NO.: 20212439.001A	BORING LOG D-04		BORING
DRAWN BY: DM	Alpha Road Connector - Vitruvian Phase IV Brookhaven Community College Farmers Branch, Texas		D-04
CHECKED BY: RJH			
DATE:			PAGE: 1 of 1

PLOTTED: 12/29/2020 10:11 AM BY: DMarsau
OFFICE FILTER: DALLAS
PROJECT NUMBER: 20212439.001A
gINT FILE: Klf_gint_master_2021
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2021.GLB [_KLF_BORING/TEST PIT SOIL LOG]

KLEINFELDER

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Appendix B

Exploration ID	Approx. Sample Depth (ft.)	Sample No.	Sample Description	Moisture Content (%)	Dry Density (pcf)	Sieve Analysis			Atterberg Limits			Swell/Compression	Other Tests
						Passing 3/4 inch Sieve (%)	Passing #4 Sieve (%)	Passing #200 Sieve (%)	LL	PL	PI		
B-01	3.5	U-3		26.7	96								
B-01	6.5	U-5	LEAN CLAY WITH SAND (CL)	29.2				79	43	21	22		
B-01	8.0	U-6		39.4	83								
B-01	19.0	U-10		22.9	101								Unc. Comp. Str. = 1.68 tsf
B-01	30.0	C-15		14.6	120								Unc. Comp. Str. = 6.47 tsf
B-01	40.0	C-19		17.8	113								Unc. Comp. Str. = 6.75 tsf
B-02	3.5	U-3		14.9	116								
B-02	6.5	U-5	FAT CLAY (CH)	18.6	109			95	66	27	39		
B-02	8.0	U-6		18.4									Unc. Comp. Str. = 5.26 tsf
B-02	14.0			30.9									
B-02	22.0			21.6	103								Unc. Comp. Str. = 3.38 tsf
B-02	35.0	C-18		11.2	128								Unc. Comp. Str. = 9.85 tsf
B-03	3.5	U-3	FAT CLAY WITH SAND (CH)	18.9	107			81	58	26	32		
B-03	6.0			21.2	102								Unc. Comp. Str. = 7.06 tsf
B-03	6.5	U-5		22.0									
B-03	8.0	U-6		25.0	98								
B-03	14.0	U-8		24.5									
B-03	25.0	C-13		14.2	121								Unc. Comp. Str. = 13.5 tsf
B-03	35.0	C-17		18.5	113								Unc. Comp. Str. = 6.13 tsf
B-04	3.5	U-3	FAT CLAY (CH)	16.8				90	65	25	40		
B-04	6.5	U-5		19.1	107								
B-04	8.0	U-6		18.8									Unc. Comp. Str. = 8.79 tsf
B-04	14.0	U-8		20.7	107								Unc. Comp. Str. = 5.15 tsf
B-04	35.0	C-17		17.8	112								Unc. Comp. Str. = 5.55 tsf
C-01	8.0	U-5	CLAYEY SAND (SC)	24.2	107			36	43	22	21		Unc. Comp. Str. = 0.84 tsf
C-02	2.0	U-2		34.1									
C-02	4.0	S-3	CLAYEY SAND (SC)	12.6				38	41	20	21		
P-01	2.0	U-2	FAT CLAY (CH)	11.5				95	71	27	44		

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PROJECT NO.: 137422
DRAWN BY: GW
CHECKED BY: RH
DATE: 11/8/2013
REVISED:

LABORATORY TEST RESULT SUMMARY

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING
15

Exploration ID	Approx. Sample Depth (ft.)	Sample No.	Sample Description	Moisture Content (%)	Dry Density (pcf)	Sieve Analysis			Atterberg Limits			Swell/Compression	Other Tests
						Passing 3/4 inch Sieve (%)	Passing #4 Sieve (%)	Passing #200 Sieve (%)	LL	PL	PI		
P-02	0.0	U-1		30.5									
P-02	2.0	U-2	SANDY FAT CLAY (CH)	14.0				67	57	23	34		
P-02	4.0	U-3		17.2									
P-02	6.0	U-4		23.5									
P-03	0.0	U-1	FAT CLAY (CH)	31.5				91	63	29	34		
P-03	2.0	U-2		22.2									
P-03	4.0	U-3		24.8									
P-03	6.0	U-4		23.1									
P-04	0.0	U-1		17.7									
P-04	2.0	U-2	SANDY LEAN CLAY (CL)	16.7				51	38	21	17		
P-04	6.0	U-4		23.0									
P-04	8.0	U-5		25.6									

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PROJECT NO.:	137422
DRAWN BY:	GW
CHECKED BY:	RH
DATE:	11/8/2013
REVISED:	

LABORATORY TEST RESULT SUMMARY

Alpha Road Connector - Vitruvian Phase IV
Brookhaven Community College
Farmers Branch, Texas

BORING

16

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Geotechnical Engineering, Enviromental Services, and
Construction Materials Engineering and Testing

Swell at Overburden Pressure Test Results

Project Name: Alpha Road Connector
Location: Farmers Branch, Texas
Material Description: Lean clay, yellow/brown & brown, with calcerous nodules

Project No.: 137422
Boring No.: B-1
Sample Depth (ft.): 3.5' - 5.0'

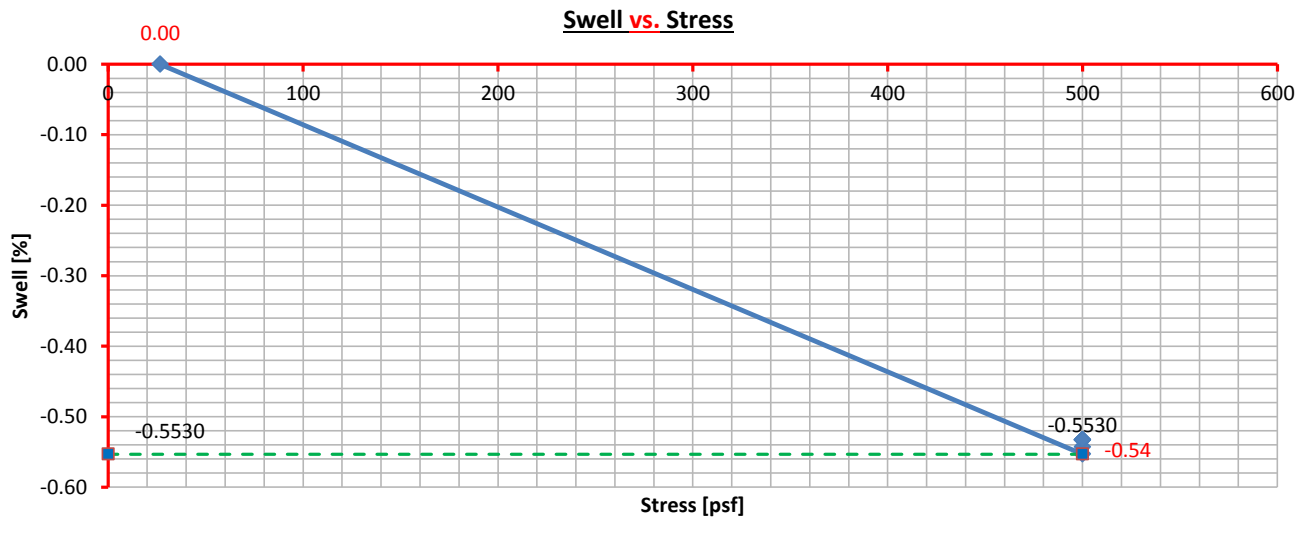
Tested By: E. Arapi
Date Tested: 10/8/2013
Oedometer ID: 1

Soil Classification Properties

Liquid Limit =	NA
Plastic Limit =	NA
Plasticity Index =	NA
% Passing #200 Sieve =	NA

	Initial	Final
Load Applied (psf) =	500	500
Moisture Content (%) =	26.7	27.0
Wet Unit Weight (pcf) =	121.8	122.0
Dry Unit Weight (pcf) =	96.1	96.1

One-Dimensional Swell at Overburden Pressure = 0.0%



Geotechnical Engineering, Enviromental Services, and
Construction Materials Engineering and Testing

Swell at Overburden Pressure Test Results

Project Name: Alpha Road Connector
Location:
Material Description: Lean clay, light brown, with fine gravel

Project No.: 137422
Boring No.: B-1
Sample Depth (ft.): 8.0' - 10.0'

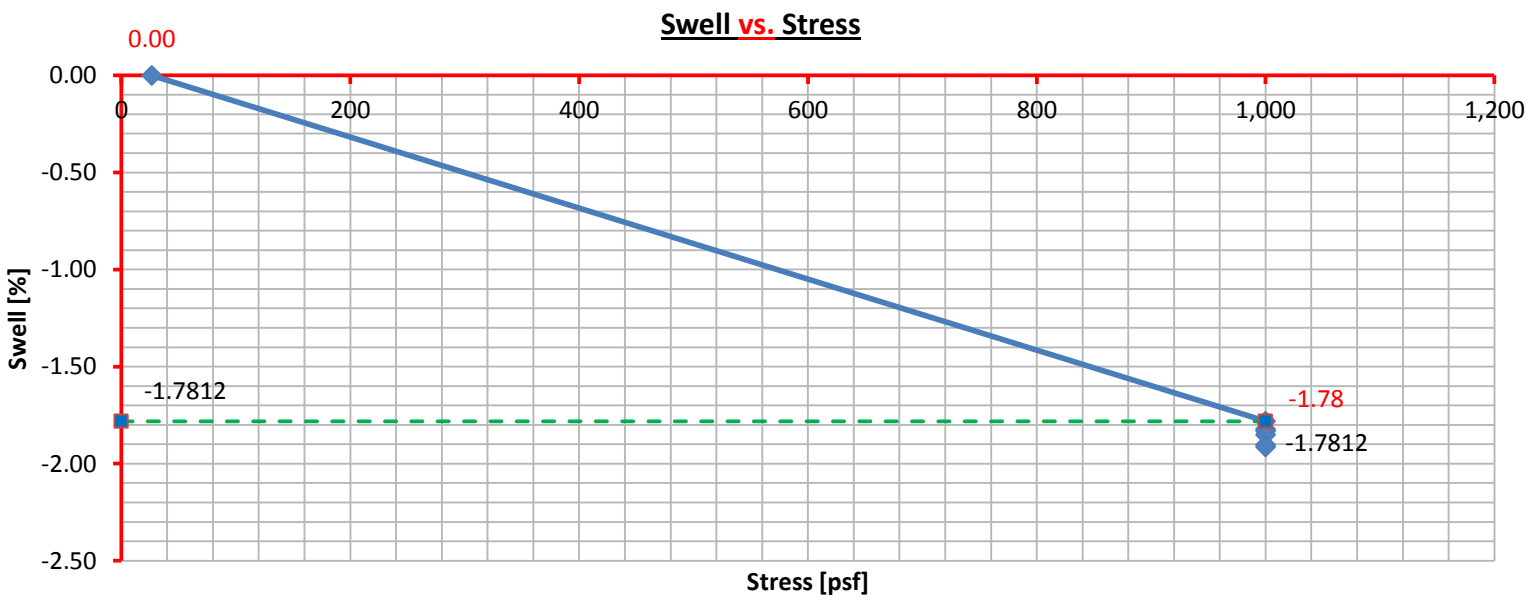
Tested By: E. Arapi
Date Tested: 10/8/2013
Oedometer ID: 2

Soil Classification Properties

Liquid Limit =	NA
Plastic Limit =	NA
Plasticity Index =	NA
% Passing #200 Sieve =	NA

	Initial	Final
Load Applied (psf) =	1000	1000
Moisture Content (%) =	39.4	38.5
Wet Unit Weight (pcf) =	115.2	114.7
Dry Unit Weight (pcf) =	82.7	82.8

One-Dimensional Swell at Overburden Pressure = -0.1%



Geotechnical Engineering, Enviromental Services, and
Construction Materials Engineering and Testing

Swell at Overburden Pressure Test Results

Project Name: Alpha Road Connector
Location: Farmers Branch, Texas
Material Description: Fat Clay, dark brown, with calcerous nodules

Project No.: 137422
Boring No.: B-2
Sample Depth (ft.): 3.5' - 5.0'

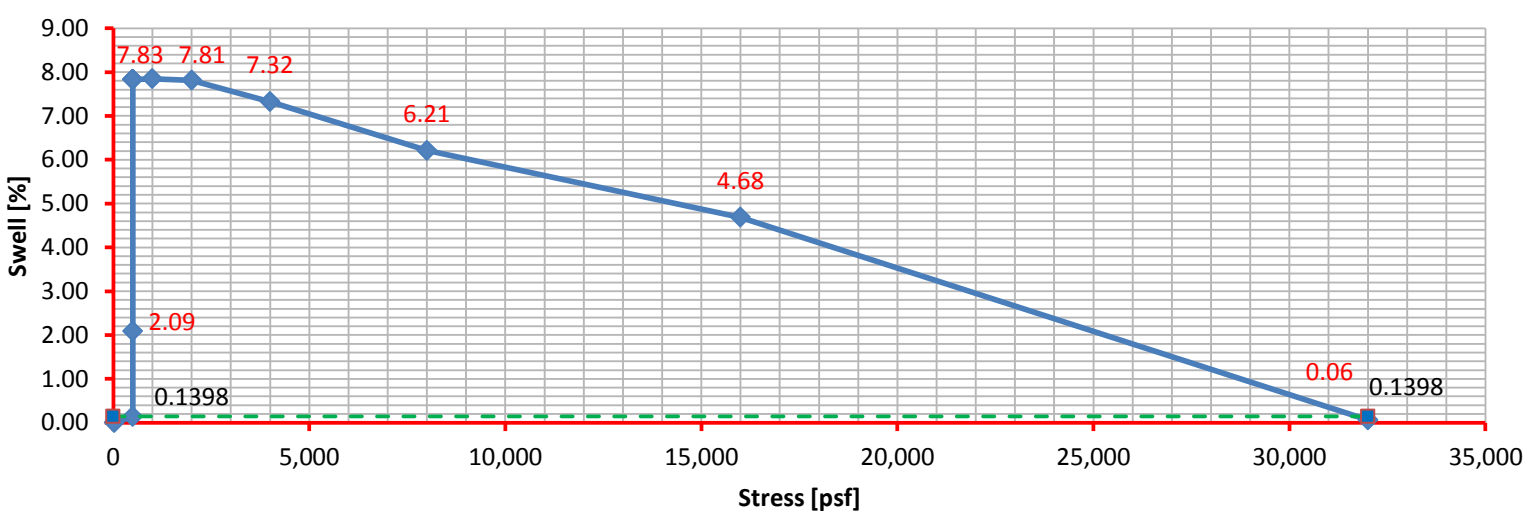
Tested By: E. Arapi
Date Tested: 10/8/2013
Oedometer ID: 3

Soil Classification Properties

Liquid Limit =	NA
Plastic Limit =	NA
Plasticity Index =	NA
% Passing #200 Sieve =	NA

	Initial	Final
Load Applied (psf) =	500	32000
Moisture Content (%) =	14.9	17.6
Wet Unit Weight (pcf) =	133.0	126.4
Dry Unit Weight (pcf) =	115.8	107.5

One-Dimensional Swell at Overburden Pressure = 7.7%
Swell Pressure = 31500 psf



Geotechnical Engineering, Enviromental Services, and
Construction Materials Engineering and Testing

Swell at Overburden Pressure Test Results

Project Name: Alpha Road Connector
Location: Farmers Branch, Texas
Material Description: Fat Clay, olive brown, with calcerous nodules

Project No.: 137422
Boring No.: B-2
Sample Depth (ft.): 6.5' - 8.0'

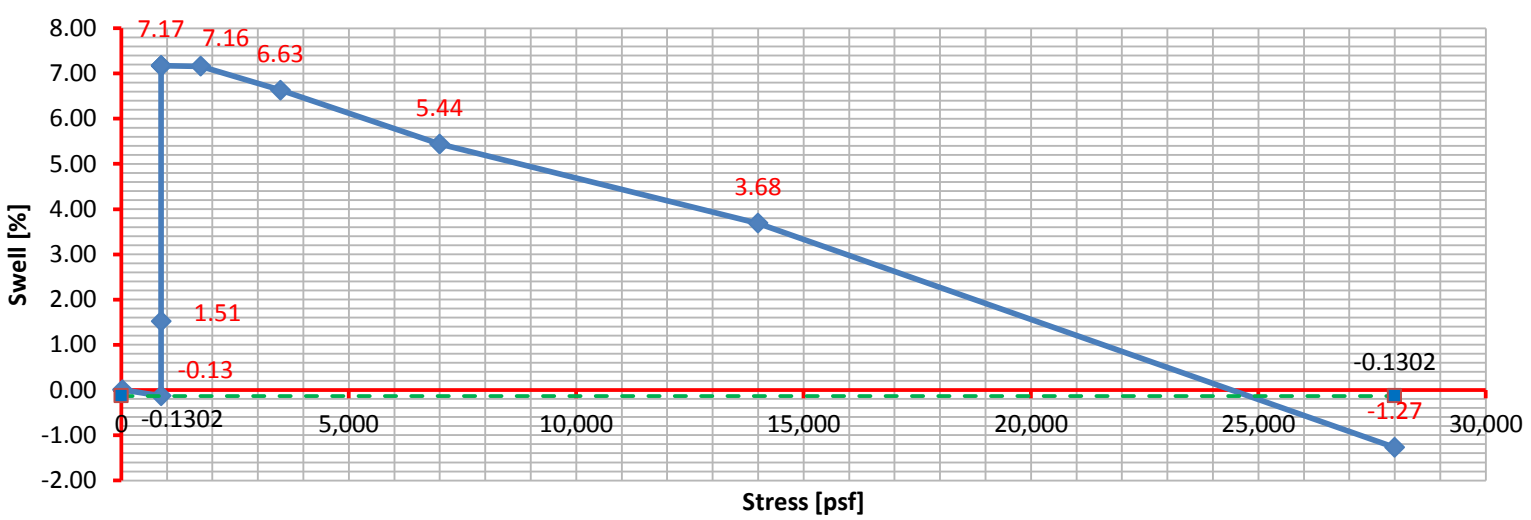
Tested By: E. Arapi
Date Tested: 10/8/2013
Oedometer ID: 4

Soil Classification Properties

Liquid Limit =	NA
Plastic Limit =	NA
Plasticity Index =	NA
% Passing #200 Sieve =	NA

	Initial	Final
Load Applied (psf) =	875	28000
Moisture Content (%) =	19.7	21.0
Wet Unit Weight (pcf) =	129.5	122.0
Dry Unit Weight (pcf) =	108.2	100.8

One-Dimensional Swell at Overburden Pressure = 7.3%
Swell Pressure = 24125 psf



Geotechnical Engineering, Enviromental Services, and
Construction Materials Engineering and Testing

Swell at Overburden Pressure Test Results

Project Name: Alpha Road Connector
Location: Farmers Branch, Texas
Material Description: Fat Clay, dark gray, with calcerous nodules & multi-colored shale partings

Project No.: 137422
Boring No.: B-3
Sample Depth (ft.): 3.5' - 5.0'

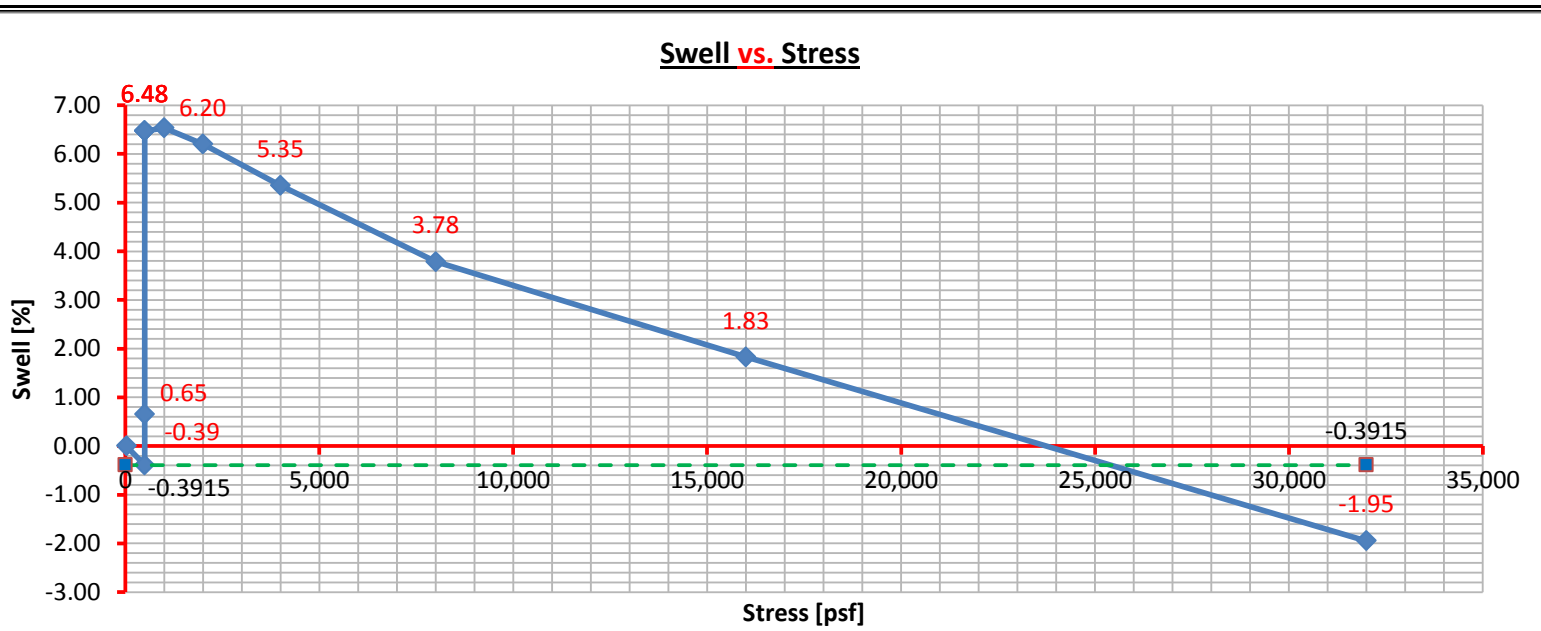
Tested By: E. Arapi
Date Tested: 10/8/2013
Oedometer ID: 5

Soil Classification Properties

Liquid Limit =	NA
Plastic Limit =	NA
Plasticity Index =	NA
% Passing #200 Sieve =	NA

	Initial	Final
Load Applied (psf) =	500	32000
Moisture Content (%) =	19.6	20.9
Wet Unit Weight (pcf) =	127.7	120.9
Dry Unit Weight (pcf) =	106.8	100.0

One-Dimensional Swell at Overburden Pressure = 6.9%
Swell Pressure = 24500 psf



Geotechnical Engineering, Enviromental Services, and
Construction Materials Engineering and Testing

Swell at Overburden Pressure Test Results

Project Name: Alpha Road Connector
Location: Farmers Branch, Texas
Material Description: Fat Clay, dark brown, with gray shale partings

Project No.: 137422
Boring No.: B-3
Sample Depth (ft.): 8.0' - 10.0'

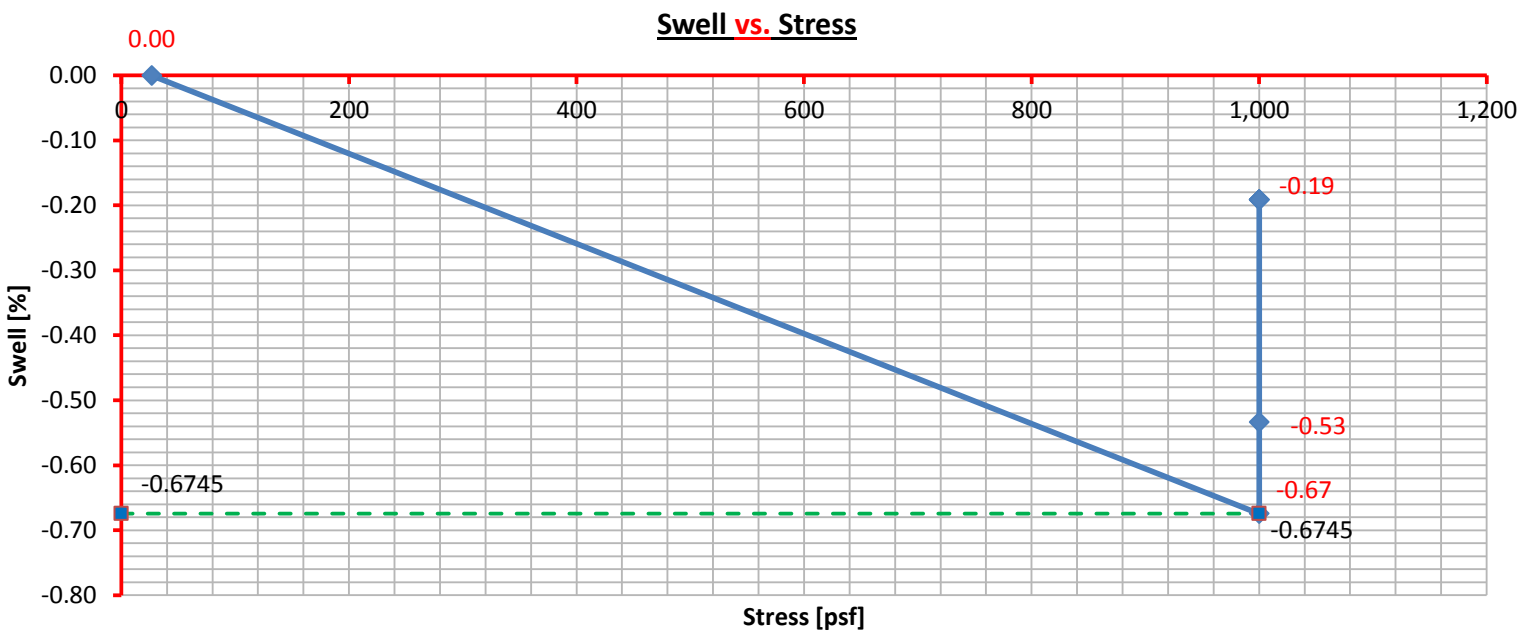
Tested By: E. Arapi
Date Tested: 10/8/2013
Oedometer ID: 6

Soil Classification Properties

Liquid Limit =	NA
Plastic Limit =	NA
Plasticity Index =	NA
% Passing #200 Sieve =	NA

	Initial	Final
Load Applied (psf) =	1000	1000
Moisture Content (%) =	25.0	26.6
Wet Unit Weight (pcf) =	123.1	124.0
Dry Unit Weight (pcf) =	98.5	98.0

One-Dimensional Swell at Overburden Pressure = 0.5%



Geotechnical Engineering, Enviromental Services, and
Construction Materials Engineering and Testing

Swell at Overburden Pressure Test Results

Project Name: Alpha Road Connector
Location: Farmers Branch, Texas
Material Description: Fat Clay, brown, with calcerous nodules

Project No.: 137422
Boring No.: B-4
Sample Depth (ft.): 6.5' - 8.0'

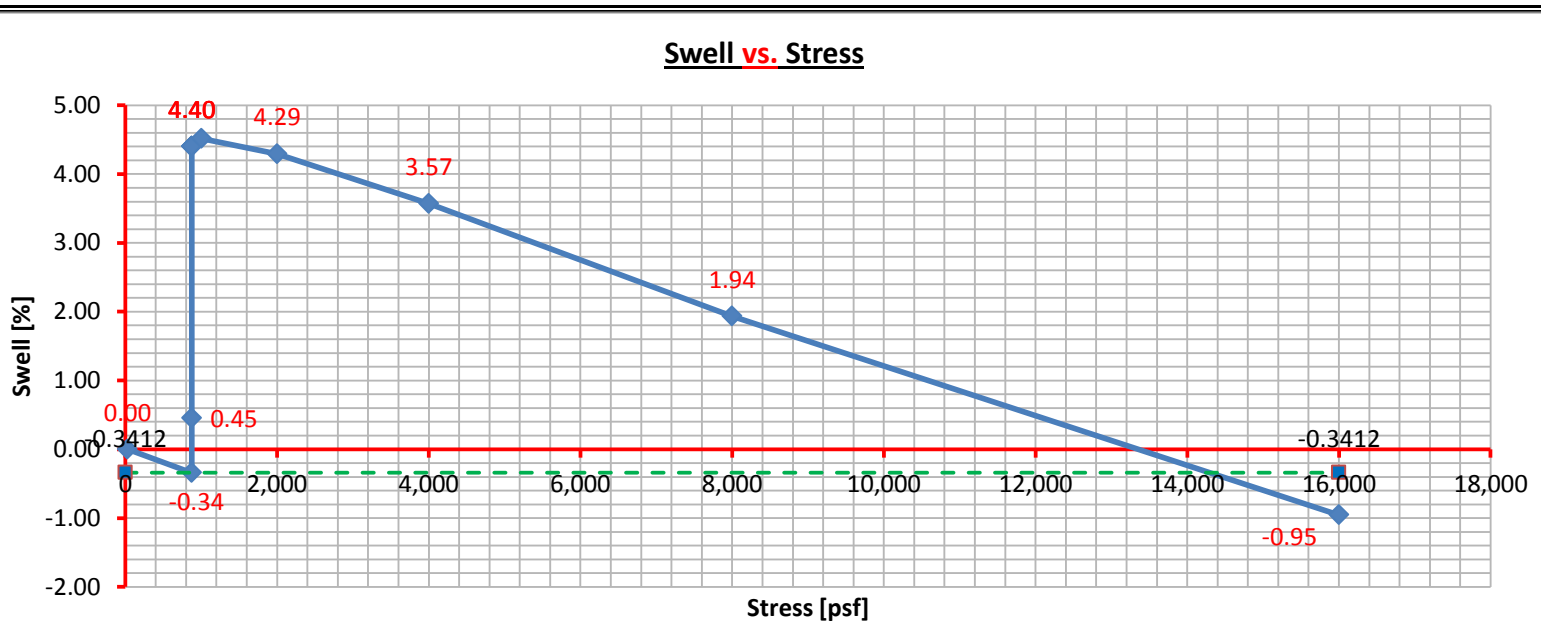
Tested By: E. Arapi
Date Tested: 10/8/2013
Oedometer ID: 7

Soil Classification Properties

Liquid Limit =	NA
Plastic Limit =	NA
Plasticity Index =	NA
% Passing #200 Sieve =	NA

	Initial	Final
Load Applied (psf) =	875	16000
Moisture Content (%) =	19.1	21.0
Wet Unit Weight (pcf) =	127.4	123.6
Dry Unit Weight (pcf) =	107.0	102.1

One-Dimensional Swell at Overburden Pressure = 4.7%
Swell Pressure = 13525 psf



Geotechnical Engineering, Enviromental Services, and
Construction Materials Engineering and Testing

Swell at Overburden Pressure Test Results

Project Name: Alpha Road Connector
Location: Farmers Branch, Texas
Material Description: Sandy clay, brown & light brown

Project No.: 137422
Boring No.: C-1
Sample Depth (ft.): 8.0' - 10.0'

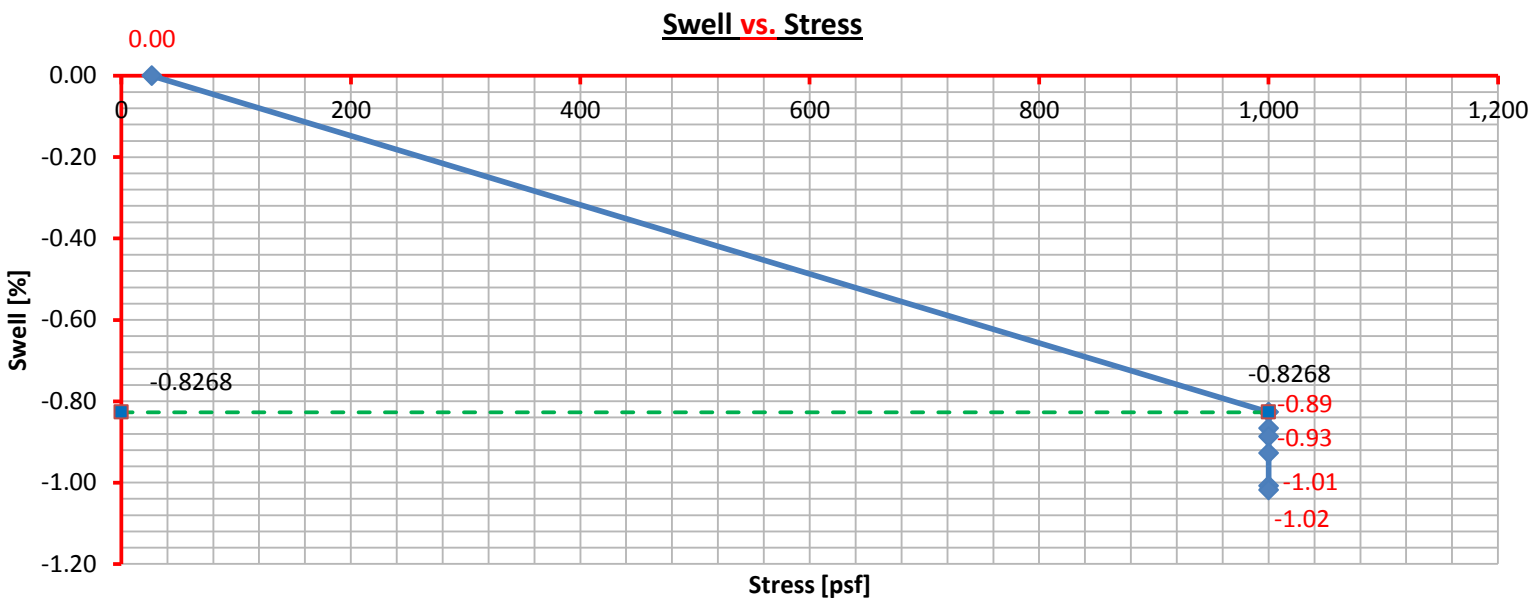
Tested By: E. Arapi
Date Tested: 10/8/2013
Oedometer ID: 6

Soil Classification Properties

Liquid Limit =	NA
Plastic Limit =	NA
Plasticity Index =	NA
% Passing #200 Sieve =	NA

	Initial	Final
Load Applied (psf) =	1000	1000
Moisture Content (%) =	26.5	26.0
Wet Unit Weight (pcf) =	123.0	122.7
Dry Unit Weight (pcf) =	97.2	97.4

One-Dimensional Swell at Overburden Pressure = -0.2%



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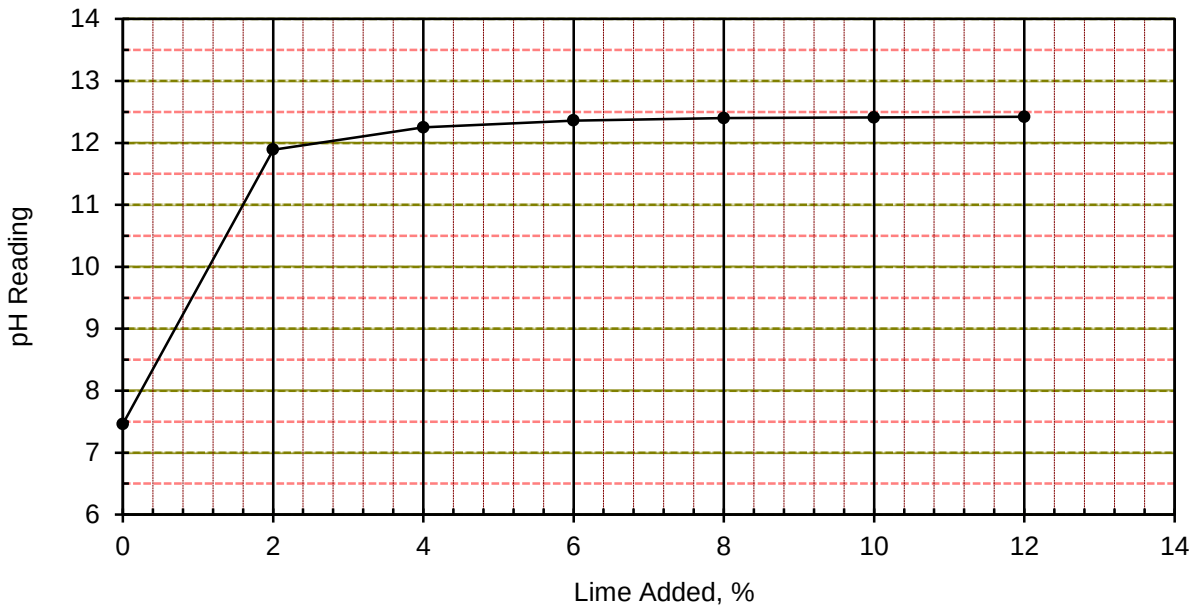
pH Lime Series Test Results

Project Name: Alpha Road Connector
Project Location: Farmers Branch, Texas
Material Description: Fat Clay, dark brown

Project No.:	137422	**Tested By:**	R. Brewer
Boring No.:	P-1	**Date Tested:**	11/13/13
Depth (ft.):	1.0' - 3.0'	**pH Meter ID:**	54549

Soil Classification Properties:

Liquid Limit =	71
Plastic Limit =	27
Plasticity Index =	44
% Passing #200 Sieve =	95



The results shown on this report are for the exclusive use of the client for whom they were obtained and apply only to the samples tested and/or inspected. They are not intended to be indicative of the qualities of apparently identical products. The use of our name must receive prior written approval. Reports must be reproduced in their entirety. Test method based on ASTM C 977 (Eades and Grim).

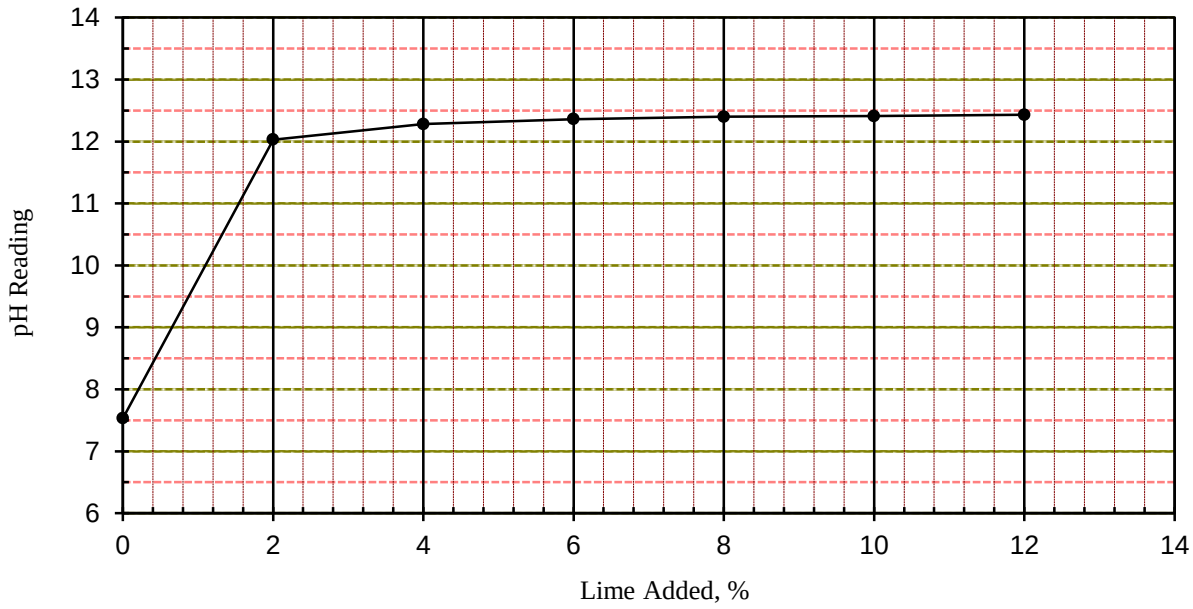
KLEINFELDER
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pH Lime Series Test Results

Project Name: Alpha Road Connector
Project Location: Farmers Branch, Texas
Material Description: Fat Clay, light brown & dark brown

Project No.: 137422
Boring No.: C-1
Depth (ft.): 1.0' - 4.0'
Tested By: R. Brewer
Date Tested: 11/13/13
pH Meter ID: 54549

% Lime Added	pH Reading
0	7.53
2	12.03
4	12.28
6	12.36
8	12.40
10	12.41
12	12.43



The results shown on this report are for the exclusive use of the client for whom they were obtained and apply only to the samples tested and/or inspected. They are not intended to be indicative of the qualities of apparently identical products. The use of our name must receive prior written approval. Reports must be reproduced in their entirety. Test method based on ASTM C 977 (Eades and Grim).

ADDISON PUBLIC WORKS & ENGINEERING SERVICES

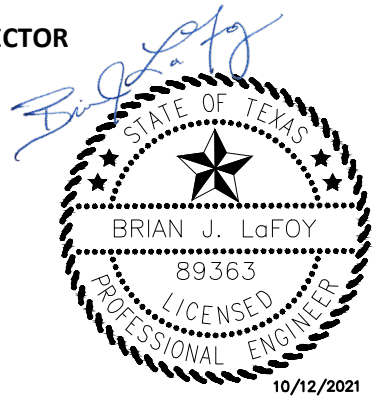
Kimley»Horn
2201 West Royal Lane, Irving, Texas 75063
kimley-horn.com 214.420.5600
Texas Firm Registration No. F-928

Addendum No. 1

BELLA LANE SOUTH EXTENSTION & ALPHA ROAD CONNECTOR

TOWN OF ADDISON, TEXAS
PUBLIC WORKS AND ENGINEERING SERVICES
BID NUMBER 21-69

10/12/2021



To: All Plan Holders of Record

This addendum forms part of the Contract Documents and modifies the Contract Documents and Specifications as noted below. Acknowledge receipt of the Addendum in the space provided on the Proposal Form and on the outer envelope of the Bid Proposal. Failure to acknowledge receipt of this Addendum may subject the Bidder to disqualification.

This addendum consists of 3 pages and 3 attachments.

QUESTIONS RECEIVED ON CIVCAST AS OF 10/08/21 at 5:00 PM CST. NOTE, QUESTIONS RECEIVED AFTER 10/08/21 WILL BE ANSWERED IN ADDENDUM NO. 2

1. What is the estimated cost range?

   Answer: The opinion of probable construction cost is not available for this project.

2. The bridge sidewalk bid quantity (490 SF) appears to be incorrect. I get (7' X 82.75' = 579 SF on the bridge) and (7' X 57.32' = 401 SF on the approach slabs). Please confirm the bid quantity.

   Answer: Item B6, BRIDGE SIDEWALK (HPC) bid quantity has been updated from 490 SF to 980 SF.

3. Where is the bid item for "Select Fill" shown on Sheets C5.01 C11.01?

   Answer: "Select Fill" shown on sheets C5.01 and C11.01 will constructed, measured, and paid for in accordance with Item H3, BORROW AND SPOIL (DETENTION POND AND CREEK) (SELECT FILL).

4. How many feet of penetration into the bearing strata is required for the drill shafts at the bridge?

   Answer: Reference Bridge Layout Plan and Profile Notes, Note 6, on sheet C5.01. Extend drilled shafts to the length shown or deeper necessary to obtain a minimum penetration of twelve (12) feet into the bearing strata.

5. Will any of the exposed concrete on the bridge require paint or opaque sealer?

   Answer: Exposed concrete on the bridge does not require paint or opaque sealer.

6. Will the steel railing on top of the C221 bridge rail received a galvanized finish only?

   Answer: The steel rail for the C221 combination rail only requires a galvanized finish. Galvanizing of steel rail shall be completed in accordance with TxDOT Item 445, "Galvanizing".

7. Is access to the south end of the new right of way for Bella Lane allowed through the College?

   Answer: Contractor shall coordinate directly with the Dallas College Brookhaven Campus to access the new right of way for Bella Lane from the south end. A written agreement must be submitted to the Town of Addison prior accessing the new right of way for Bella Lane from the south end.

8. After Delete/Replace, 109.5.2 appears to reflect 10% retainage for this project. Please confirm.

   Answer: The retainage value for this project will be 5% in accordance with NCTCOG Item 109.5.2. Retainage.

9. Item P1 Mobilization shows a maximum of 5%. That is insufficient for this project, especially with a projected retainage of 10%. Please consider revising this to 10%.

   Answer: Item P1, MOBILIZATION (5% MAX) maximum amount will remain at 5%.

10. Sheet IS-2 Insurance requirements is labelled for Airport Northwest Drainage Ditch Improvements. Will the insurance requirements for this project be the same?

    Answer: Insurance requirements will remain the same. Project relevant information has been updated. Reference revised document Section IS, Additional Insurance Requirements, Town of Addison.

11. Would you please post the pre-bid meeting attendees list?

    Answer: The pre-bid sign in has been uploaded to Civcast.

QUESTIONS ASKED AT PRE-BID

1. Will pre-bid sign in sheet be uploaded to Civcast?

   Answer: The pre-bid sign in has been uploaded to Civcast.

2. Will an addendum be issued?

   Answer: This addendum is intended to address revisions and answers to questions received as of 10/08/2021 at 5:00pm. The deadline for any additional questions is 5:00p.m. on Wednesday, October 13th. If needed an additional addendum will be issued no later than 5:00p.m. on Monday, October 18th.

3. Are CAD files available to bidders?

   Answer: A release form has been provided on Civcast to allow bidders to request CAD files.

4. Are earthwork quantities available to bidders?

   Answer: CAD files are being made available to bidders.

5. Can existing topsoil be stripped, stockpiled and replaced on site?

   Answer: The Town of Addison has no objections to stripping and reusing topsoil at the site.

6. What stabilization is required in the center of the roundabout?

   Answer: Sod is required. Reference revised plan sheet C9.02.

7. Why is there no typical section from STA 10+76 to STA 11+58.

   Answer: The typical section varies in that area. Reference revised plan sheet C1.10.

CHANGES TO SPECIFICATIONS

1. Section SP – Special Provisions

   Page – SP68 Remove, "**R. Delete Section 109.5.2 of the General Provisions and replace with the following:**

   "Ten-percent (10%) retainage shall be withheld until 40 days after Final Completion.""

2. Section PF – Proposal Form

   Replace the Bid Schedule with the attached.

3. Section IS – Additional Insurance Requirements

   Replace Section IS, Additional Insurance Requirements, Town of Addison with the attached.

CHANGES TO PLANS

1. Replace PLAN SHEETS C1.10, C3.07, C3.08, C4.13, C7.01, C7.02, C7.03, C8.01, C9.02, C10.02, C11.01 and C11.02 with the plan sheets attached. Revisions have been noted on each sheet.

END OF ADDENDUM NO. 1

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - STREET IMPROVEMENTS					
P1	MOBILIZATION (5% MAX)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P2	BARRICADES, SIGNS, AND TRAFFIC HANDLING	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P3	PROJECT SIGN	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P4	GENERAL SITE PREPARATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P5	REMOVE EX HEADWALL	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P6	REMOVAL OF EX 54" RCP	5	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P7	REMOVE EXISTING CONCRETE SIDEWALK/RAMPS	425	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P8	REMOVE EXISTING ASPHALT PAVEMENT	480	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P9	REMOVE EXISTING TREES	116	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P10	UNCLASSIFIED STREET EXCAVATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P11	BORROW AND SPOIL (ROADWAY)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P12	MOISTURE TREATED SUBGRADE	7,180	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
P13	6" LIME STABILIZED SUBGRADE	1,145	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P14	HYDRATED LIME	25	TON		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P15	4" TYP B HMAC (TXDOT)	30	TON		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P16	8" REINFORCED CONCRETE PAVEMENT (STREET)	6,615	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P17	10" PORTLAND CEMENT CONC PAVEMENT W/ 6" MONO CURB)	1,050	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P18	6" CURB AND GUTTER	875	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P19	REINFORCED CONCRETE STREET HEADERS	540	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P20	5" CONCRETE SIDEWALK	3,100	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P21	ACESSIBLE RAMP	12	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P22	RAIL (HANDRAIL) (TY F)	35	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P23	INSTALL NEW SIGN AND SIGN POST ASSEMBLY	20	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P24	REFL PAV MRKG TY I & TY II (W) 4" SOLID	3,300	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
P25	REFL PAV MRKG TY I & TY II (Y) 4" SOLID	3,050	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P26	REFL PAV MRKG TY I & TY II (Y) 4" BROKEN	140	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P27	REFL PAV MRKG TY I & TY II (W) ARROW	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P28	REFL PAV MRKG TY I & TY II (W) 24" STOP BAR MARKING	31	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P29	REFL PAV MRKG TY I & TY II (W) 5' X 8' CROSSWALK WITH 5' SPACE	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P30	REFL PAV MRKG TY I & TY II (W) 24"X 8" CROSSWALK WITH 4' SPACE	15	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P31	REFL PAV MRKG TY I (W) 24" TRIANGLE	21	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P32	REMOVE AND RELOCATE EX GATE	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P33	ONCOR DUCT CROSSING COORDINATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - STREET IMPROVEMENTS

_____
(Total Amount Bid, Numerical Value)

_____ Dollars
and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BRIDGE OVER FARMERS BRANCH CREEK					
B1	FLOWABLE BACKFILL	443	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B2	DRILL SHAFT (18 IN)	148	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B3	DRILL SHAFT (36 IN)	296	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B4	CL C CONC (ABUT) (HPC)	100	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B5	REINF CONC SLAB (HPC)	2,648	SF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
1 **B6**	BRIDGE SIDEWALK (HPC)	980	SF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B7	APPROACH SLAB (HPC)	83	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B8	PRESTR CONC I-GIRDER (TX40)	329	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B9	RIPRAP (CONC) (CL B) (RR8&RR9)	76	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B10	RIPRAP (STONE PROTECTION) (24 IN)	1,470	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B11	ELASTOMERIC BEARING (LAMINATED)	8	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B12	STR STEEL (MISCELLANEOUS BRIDGE) (BS-EJCP)	186	LB		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
B13	RAIL (TY C221) (HPC)	238	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B14	SEALED EXPANSION JOINT (4 IN) (SEJ - M)	51	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B15	MTL BEAM GD FEN TRANS (THRIE-BEAM)	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B16	TERMINAL ANCHOR SECTION	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BRIDGE OVER FARMERS BRANCH CREEK

_____
(Total Amount Bid, Numerical Value)

_____ Dollars
and _____ Cents

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Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - STORM SYSTEM IMPROVEMENTS					
D1	18" RCP CLASS III	490	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D2	24" RCP CLASS III	285	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D3	30" RCP CLASS III	80	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D4	6' CURB INLET	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D5	CONCRETE HEADWALL (CHFW-0)	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D6	18" RCP 2:1 SET TY II HEADWALL	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D7	18" RCP 6:1 SET TY II HEADWALL	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D8	24" RCP 6:1 SET TY II HEADWALL	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D9	RIPRAP (STONE PROTECTION) (12 IN) (CHFW-0 HEADWALL)	12	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
D10	TRENCH EXCAVATION PROTECTION (STORM SYSTEM)	855	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - STORM SYSTEM IMPROVEMENTS

$ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - DETENTION POND IMPROVEMENTS					
H1	UNCLASSIFIED POND AND CREEK EXCAVATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H2	BORROW AND SPOIL (DETENTION POND AND CREEK)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H3	BORROW AND SPOIL (DETENTION POND AND CREEK) (SELECT FILL)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
1 **H4**	RIPRAP (CONC) (CL B) (RR8&RR9) (DETENTION POND)	6	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H5	RIPRAP (STONE PROTECTION) (24 IN) (DETENTION POND)	910	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H6	CONCRETE OUTFALL STUCTURE	7	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - DETENTION POND IMPROVEMENTS

$ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - LANDSCAPE IMPROVEMENTS AND EROSION CONTROL					
L1	HYDRAULIC MULCHING WITH 4" TOPSOIL	45,459	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L2	SEDIMENT CONTROL FENCE (INSTALL/MAINTAIN/REMOVE)	7,475	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L3	STABILIZED CONSTRUCTION EXIT/ENTRANCE	180	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L4	INLET PROTECTION (INSTALL/MAINTAIN/REMOVE)	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L5	ROCK CHECK DAM	65	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L6	STORM WATER POLLUTION PREVENTION PLAN	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-TOTAL AMOUNT BID-BASE BID - DETENTION POND IMPROVEMENTS

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - WATER IMPROVEMENTS					
W1	8" PVC WATER LINE	355	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W2	12" PVC WATER LINE	575	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W3	8 " GATE VALVE	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W4	12" GATE VALVE	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W5	FIRE HYDRANT ASSEMBLY	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W6	REMOVE EXISTING 12" AC WATER LINE	8	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W7	ABANDON EXISTING ASBESTOS PIPE IN PLACE	500	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W8	WATER TESTING	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W9	TRENCH EXCAVATION PROTECTION (WATER SYSTEM)	930	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - WATER IMPROVEMENTS $ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - SANITARY SEWER IMPROVEMENTS					
SS1	8" PVC SSWR LINE	315	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS2	4' STANDARD MANHOLE	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS3	CEMENT STABILIZED SAND ENCASEMENT (MIN. 10% CEMENT/CY)	20	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS4	SANITARY SEWER CCTV INSPECTION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS5	TRENCH EXCAVATION PROTECTION (SANITARY SEWER IMPROVEMENTS)	315	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - SANITARY SEWER IMPROVEMENTS

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - OWNER'S CONTINGENCY					
O1	OWNER'S CONTINGENCY	1	LS		
	Complete in Place, for the Sum of Eighty Five Thousand Dollars and Zero Cents per unit			$ 85,000.00	$ 85,000.00

TOTAL AMOUNT BID-BASE BID - OWNER'S CONTINGENCY

$ 85,000.00

(Total Amount Bid, Numerical Value)

Dollars

and Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

SECTION IS

ADDITIONAL INSURANCE REQUIREMENTS

1

TOWN OF ADDISON, TEXAS
BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR

REQUIREMENTS

Contractors performing work on TOWN OF ADDISON property or public right-of-way shall provide the TOWN OF ADDISON a certificate of insurance or a copy of their insurance policy(s) (and including a copy of the endorsements necessary to meet the requirements and instructions contained herein) evidencing the coverages and coverage provisions identified herein within ten (10) days of request from TOWN OF ADDISON. Contractors shall provide TOWN OF ADDISON evidence that all subcontractors performing work on the project have the same types and amounts of coverages as required herein or that the subcontractors are included under the contractor's policy. Work shall not commence until insurance has been approved by TOWN OF ADDISON.

All insurance companies and coverages must be authorized by the Texas Department of Insurance to transact business in the State of Texas and must have a A.M. Best's rating A-:VII or greater.

Listed below are the types and minimum amounts of insurances required and which must be maintained during the term of the contract. TOWN OF ADDISON reserves the right to amend or require additional types and amounts of coverages or provisions depending on the nature of the work.

TYPE OF INSURANCE	AMOUNT OF INSURANCE	PROVISIONS
1. **Workers' Compensation Employers' Liability** to include: (a) each accident (b) Disease Policy Limits (c) Disease each employee	Statutory Limits per occurrence Each accident $1,000,000 Disease Policy Limits $1,000,000 Disease each employee$1,000,000	**TOWN OF ADDISON, and Kimley-Horn and Associates, Inc. to be provided a *WAIVER OF SUBROGATION AND 30 DAY NOTICE OF CANCELLATION or*** material change in coverage. **Insurance company must be A-:VII rated or above.**
2. **Commercial General (Public) Liability** to include coverage for: a) Bodily Injury b) Property damage c) Independent Contractors d) Personal Injury e) Contractual Liability	Bodily Injury/Property Damage per occurrence $1,000,000, General Aggregate $2,000,000 Products/Completed Aggregate $2,000,000, Personal Advertising Injury per occurrence $1,000,000, Medical Expense 5,000	**TOWN OF ADDISON, and Kimley-Horn and Associates, Inc. *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage. Insurance company must be A-:VII rated or above.**
3. **Business Auto Liability** to include coverage for: a) Owned/Leased vehicles b) Non-owned vehicles c) Hired vehicles	Combined Single Limit $1,000,000 per occurrence for bodily injury and property damage	**TOWN OF ADDISON, and Kimley-Horn and Associates, Inc. *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage. Insurance company must be A:VII- rated or above.**
4. **Umbrella or Excess Liability Policy over Commercial General Liability and Automobile Liability limits of $1 million per occurrence**	Minimum $4 million per occurrence excess $1 million underlying per occurrence	**TOWN OF ADDISON, and Kimley-Horn and Associates, Inc. *to be listed as ADDITIONAL INSURED and provided 30 DAY NOTICE OF CANCELLATION* or material change in coverage. Insurance company must be A:VII- rated or above.**

Certificate of Liability Insurance forms (together with the endorsements necessary to meet the requirements and instructions contained herein) may be **faxed** to the Purchasing Department: **972-450-7074 or emailed to: purchasing@addisontx.gov.** Questions regarding required insurance should be directed to the Purchasing Manager.

With respect to the foregoing insurance,

1. All liability policies shall contain no cross liability exclusions or insured versus insured restrictions applicable to the claims of the Town of Addison.

2. All insurance policies shall be endorsed to require the insurer to immediately notify the Town of Addison, Texas of any material change in the insurance coverage.

3. All insurance policies shall be endorsed to the effect that the Town of Addison, Texas will receive at least thirty (30) days' notice prior to cancellation or non-renewal of the insurance.

4. All insurance policies, which name the Town of Addison and Kimley-Horn and Associates, Inc. as an additional insured, must be endorsed to read as primary coverage regardless of the application of other insurance.

5. Insurance must be purchased from insurers that are financially acceptable to the Town of Addison and licensed to do business in the State of Texas.

All insurance must be written on forms filed with and approved by the Texas Department of Insurance. Upon request, Contractor shall furnish the Town of Addison with complete copies of all insurance policies certified to be true and correct by the insurance carrier.

This form must be signed and returned with your quotation. You are stating that you do have the required insurance and if selected to perform work for TOWN OF ADDISON, will provide the certificates of insurance (and endorsements) with the above requirements to TOWN OF ADDISON within 10 working days.

A CONTRACT/PURCHASE ORDER WILL NOT BE ISSUED WITHOUT EVIDENCE AND APPROVAL OF INSURANCE.

AGREEMENT

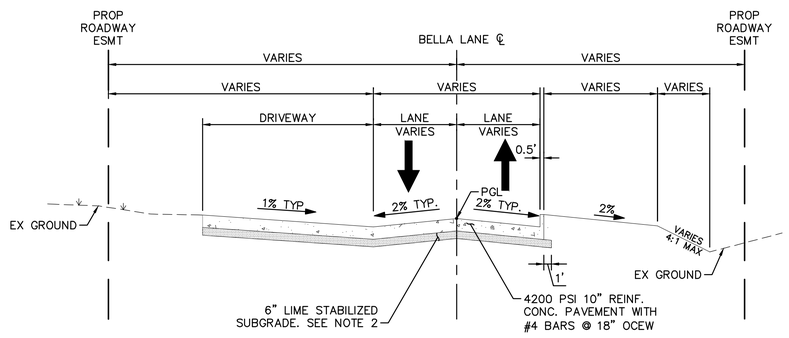
I agree to provide the above described insurance coverages within 10 working days if selected to perform work for TOWN OF ADDISON. I also agree to require any subcontractor(s) to maintain insurance coverage equal to that required by the Contractor. It is the responsibility of the Contractor to assure compliance with this provision. The Town accepts no responsibility arising from the conduct, or lack of conduct, of the Subcontractor.

Project/Bid#_____

Company:_____

Printed Name: _____

Signature:_____ **Date:** _____



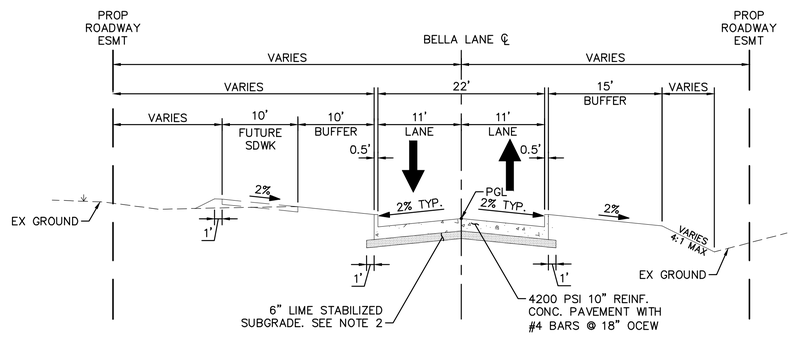
PROPOSED ROADWAY TYPICAL SECTION

BELLA LANE CURB AND GUTTER SECTION

5 / C1.10

SCALE: H: 1"=10' V: 1"= 2'

BELLA LANE STA 10+76 TO 11+58



PROPOSED ROADWAY TYPICAL SECTION

BELLA LANE CURB AND GUTTER SECTION

6 / C1.10

SCALE: H: 1"=10' V: 1"= 2'

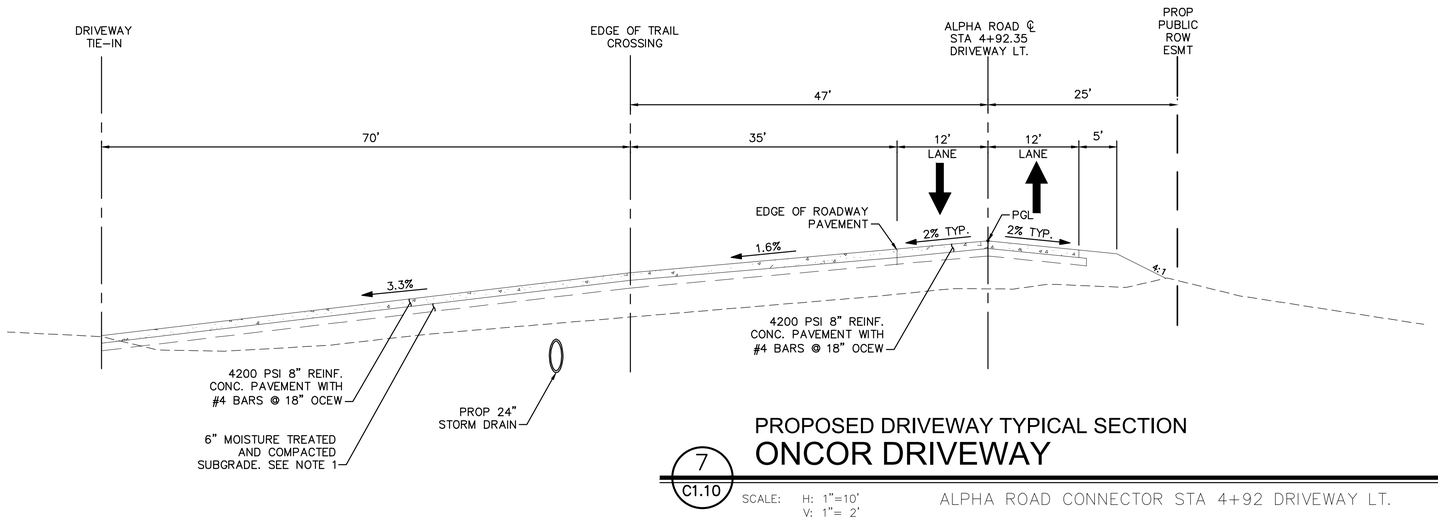
BELLA LANE STA 11+58 TO END

NOTES:

1. MOISTURE CONDITION AND COMPACT TO A MINIMUM OF 94% OF ASTM D 698 (STANDARD PROCTOR DENSITY) AT 2% TO 6% ABOVE THE OPTIMUM MOISTURE CONTENT. EXTEND AT LEAST 1' OUTSIDE THE EDGE OF PROPOSED PAVEMENT. IN-SITU MATERIAL SHALL BE PROOF-ROLLED PER SECTION 4.2.3. (REFER TO GEOTECH REPORT PREPARED BY KLEINFELDER, INC. (REPORT 20212439.001A) DATED DECEMBER 2, 2020.)
2. 6" LIME-STABILIZED SUBGRADE (42 LBS/SY) COMPACTED TO A MINIMUM OF 95% ASTM D 698 (STANDARD PROCTOR DENSITY) AT 2% TO 5% ABOVE THE OPTIMUM MOISTURE CONTENT.
3. ALL PAVEMENT DIMENSIONS SHOWN ON THE PLANS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
4. TYPICAL SECTIONS ARE APPROXIMATE. REFER TO PLAN SHEETS FOR STATIONING AND LIMITS.
5. DIMENSIONS GIVEN FOR PARKWAY WIDTHS ARE TYPICAL, BUT MAY VARY IN LOCATIONS. REFER TO PLAN SHEETS FOR PARKWAY WIDTHS.
6. ALL DISTURBED AREAS TO RECEIVE HYDRAULIC MULCHING WITH 4" TOPSOIL. REFER TO EROSION CONTROL SHEETS.
7. REFER TO TOWN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8. REFER TO GEOTECH REPORT NUMBER 20212439.001A PREPARED BY: KLEINFELDER, INC. DATED: 07-15-2021.
9. ALL WORK WITHIN FARMERS BRANCH SHALL BE COMPLETED IN ACCORDANCE WITH FARMERS BRANCH SPECIFICATIONS.

LISTING OF ABBREVIATIONS:

ROW = RIGHT-OF-WAY
℄ = CENTER LINE
PGL = PROFILE GRADE LINE



PROPOSED DRIVEWAY TYPICAL SECTION

ONCOR DRIVEWAY

7 / C1.10

SCALE: H: 1"=10' V: 1"= 2'

ALPHA ROAD CONNECTOR STA 4+92 DRIVEWAY LT.

Know what's **below.** **Call** before you dig.

No.	REVISIONS	DATE	BY
1	ADDENDUM #1	10/12/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

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PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/12/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

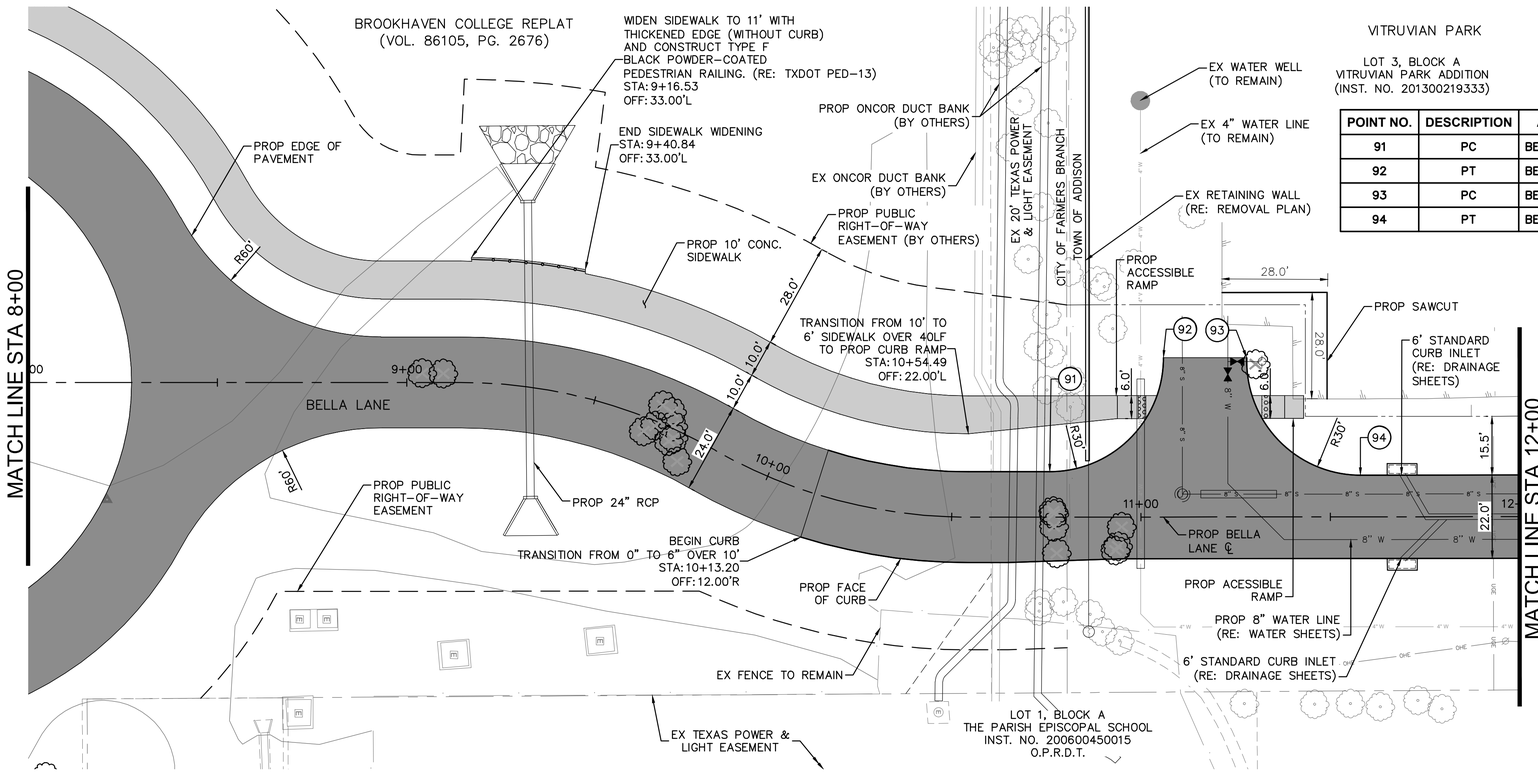
KHA PROJECT	063543031
DATE	10/12/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

TYPICAL SECTIONS
SHEET 2 OF 2

SHEET NUMBER
C1.10

Plotted By: Shettell, Cody October 11, 2021 - 11:38:53am K:\LAS_Civil\063543031 Addison Alpha Road Connect\CADD\Plan Sheets\Typical Sections.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
91	PC	BELLA LANE EXT	10+75.93	12.00' L	562.13'
92	PT	BELLA LANE EXT	11+05.93	42.00' L	562.11'
93	PC	BELLA LANE EXT	11+27.93	41.99' L	562.11'
94	PT	BELLA LANE EXT	11+57.93	11.00' L	561.57'

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

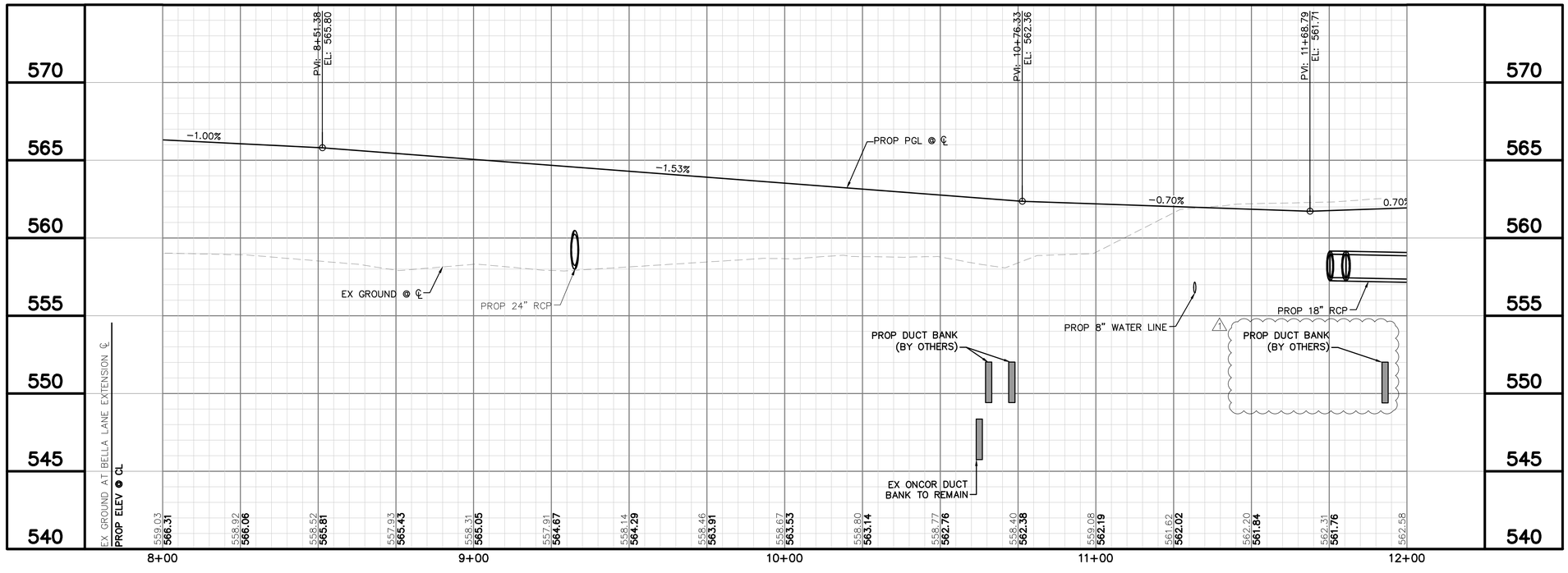
LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
- EX TREE TO BE REMOVED

NOTES

1. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ANY SIGNS AND COORDINATION WITH THE CITY ON ANY NECESSARY MODIFICATIONS.
2. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL IRRIGATION FACILITIES WITHIN LOC.
3. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/ OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND CITY UTILITIES PRIOR TO CONSTRUCTION.
4. ELEV ARE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

EX	EXISTING
PROP	PROPOSED
STA	STATION
EL	ELEVATION
PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
PRC	POINT OF HORIZONTAL REVERSE CURVATURE
PVI	POINT OF VERTICAL INFLECTION
AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT



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No.	REVISIONS	DATE	BY
1	ADDENDUM #1	10/12/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/12/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031		
DATE	10/12/2021	
SCALE	AS SHOWN	
DESIGNED BY	RMD	
DRAWN BY	CDS	
CHECKED BY	LNA	

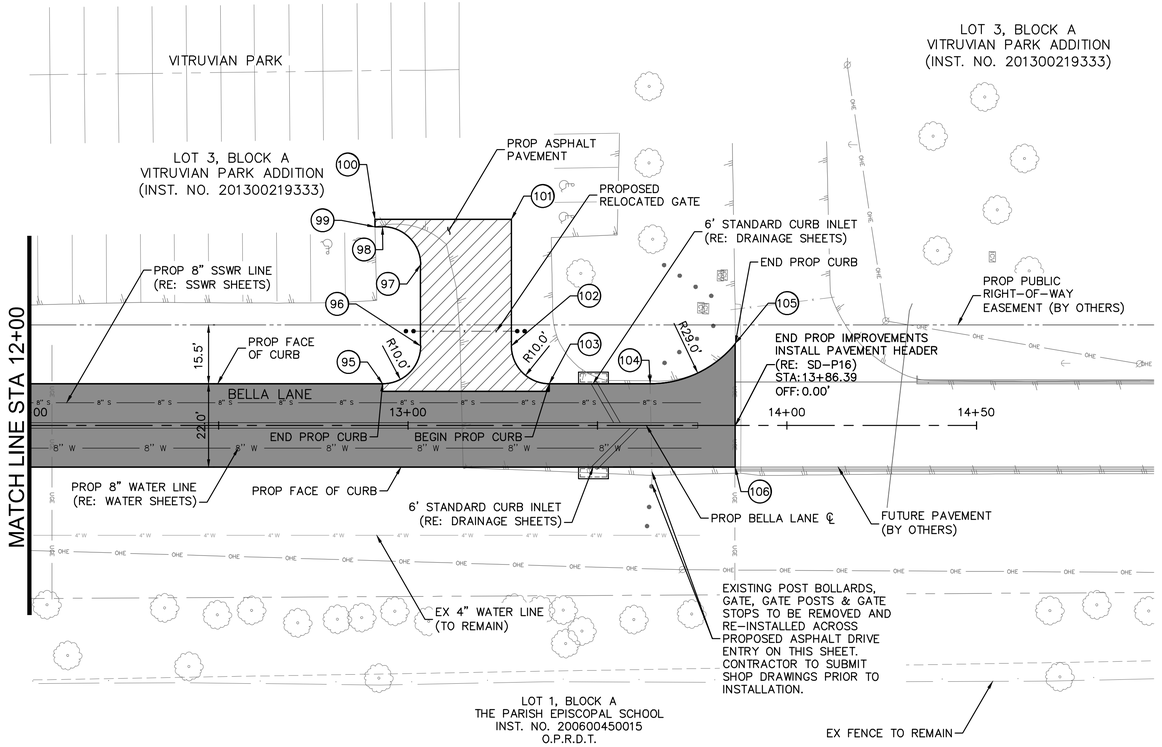
TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

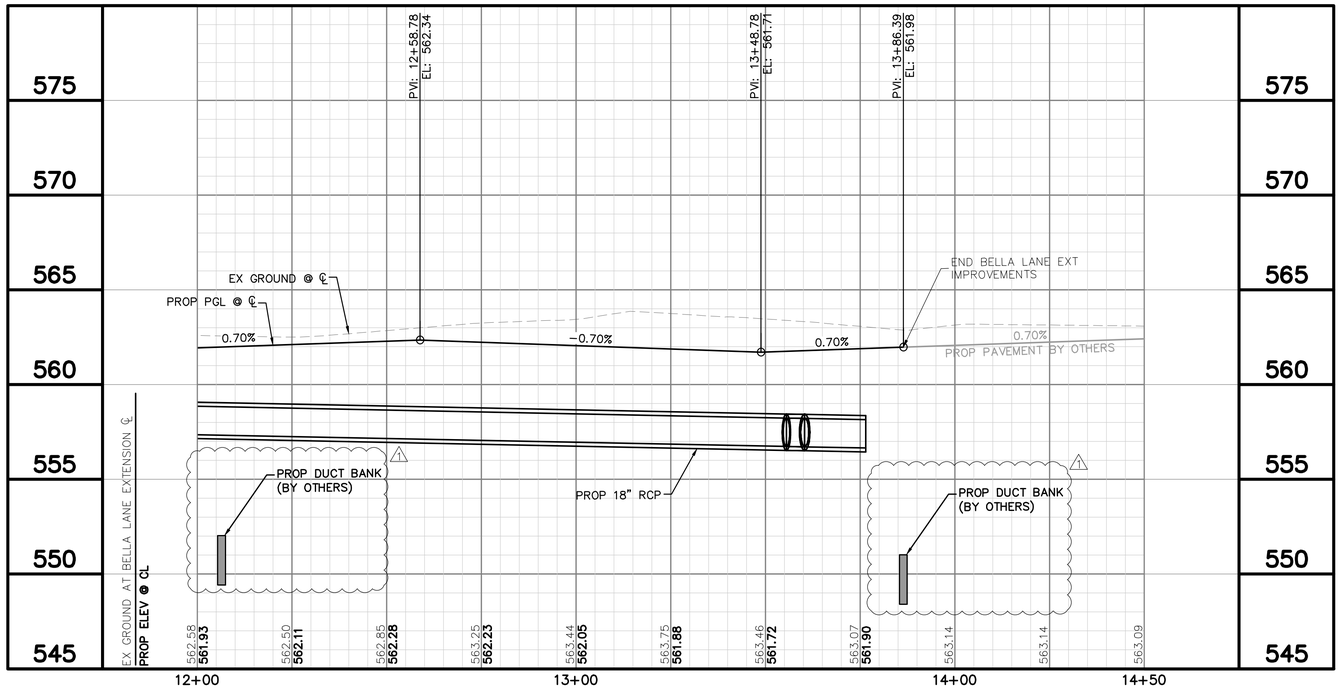
BELLA LANE EXTENSION
PLAN AND PROFILE STA 8+00 TO STA 12+00

SHEET NUMBER
C3.07

Plotted By-Shettigh, Cody October 11, 2021 11:36:39am K:\NAC-Civil\063543031-Addison-Alpha Road Connector\CAD\Plans\Street\Paving Plan&Profile.dwg
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Plotted By: Strahan, Cody October 11, 2021 11:39:57am K:\IAC_Dal\063543031 Addison Alpha Road Connector\C400\Plan Sheet\Paving Plan&Profile.dgn
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
95	PC	BELLA LANE EXT	12+93.27	11.00' L	561.88'
96	PT	BELLA LANE EXT	13+03.27	21.00' L	562.82'
97	PC	BELLA LANE EXT	13+03.27	42.37' L	564.46'
98	PT	BELLA LANE EXT	12+93.27	52.37' L	564.54'
99	PI	BELLA LANE EXT	12+91.27	52.37' L	564.55'
100	PI	BELLA LANE EXT	12+91.27	54.37' L	564.57'
101	PI	BELLA LANE EXT	13+27.27	54.37' L	564.61'
102	PC	BELLA LANE EXT	13+27.27	21.00' L	562.54'
103	PT	BELLA LANE EXT	13+37.27	11.00' L	561.57'
104	PC	BELLA LANE EXT	13+63.89	10.99' L	561.60'
105	PI	BELLA LANE EXT	13+86.29	21.55' L	561.54'
106	PI	BELLA LANE EXT	13+86.30	10.99' R	561.75'

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
- EX TREE TO BE REMOVED

NOTES

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4. ELEV ARE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

EX	EXISTING
PROP	PROPOSED
STA	STATION
EL	ELEVATION
PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
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PVI	POINT OF VERTICAL INFLECTION
AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT

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PROJECT NO. 2021-01C/ BID NO. 21-69

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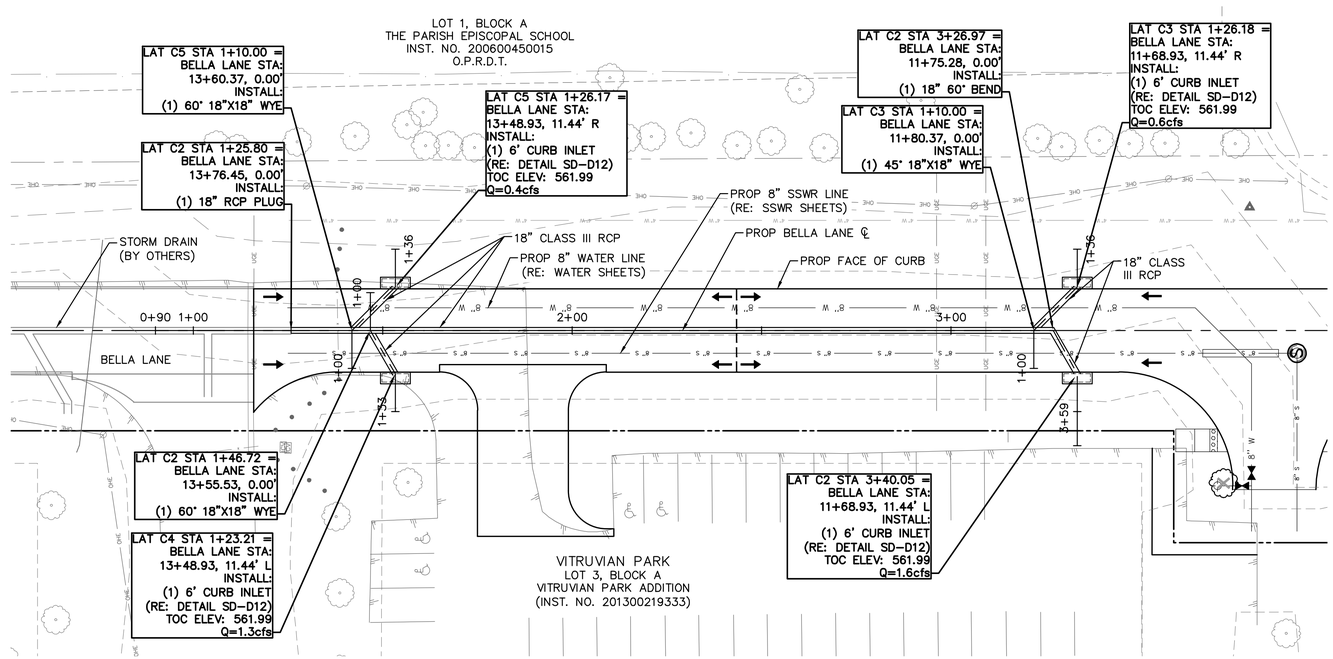
10/12/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

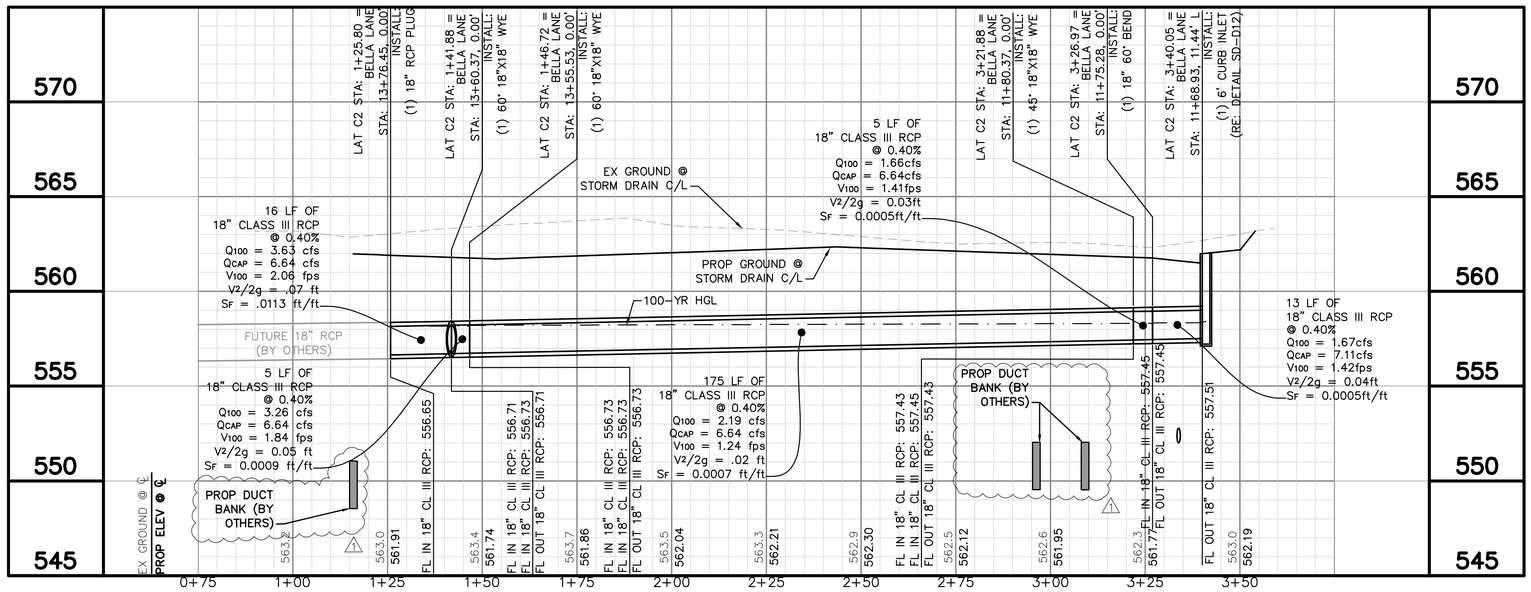
KHA PROJECT 063543031
DATE 10/12/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

BELLA LANE EXTENSION
PLAN AND PROFILE
STA 12+00 TO END

SHEET NUMBER
C3.08





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STATE OF TEXAS
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KHA PROJECT 063543031

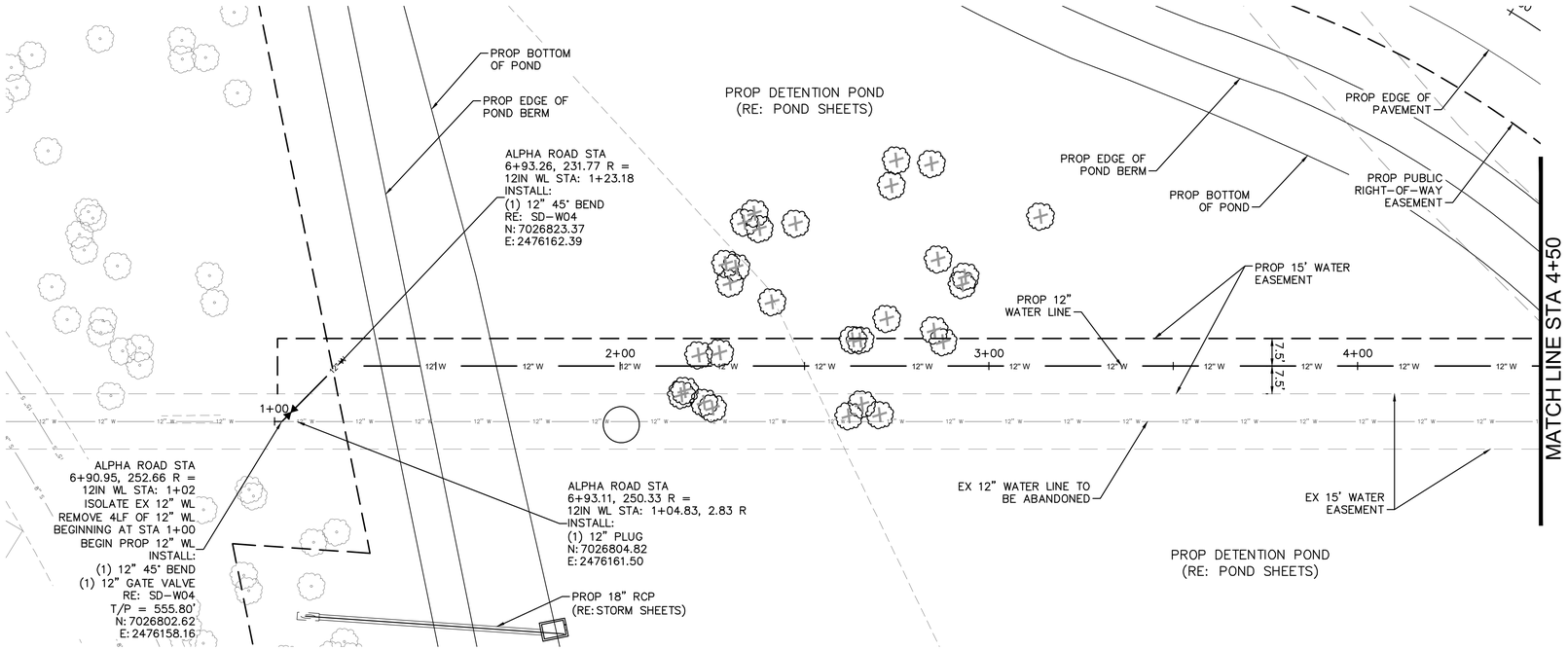
DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
10/12/2021	AS SHOWN	RMD	CDS	LNA

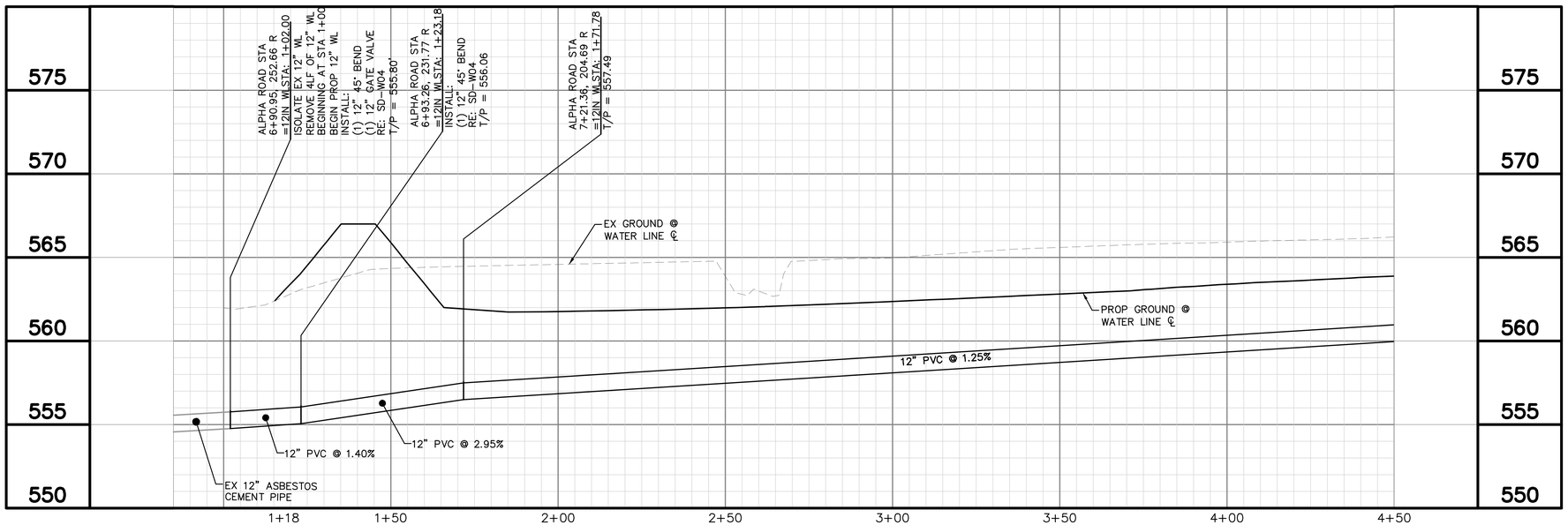
TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE SYSTEM C

SHEET NUMBER
C4.13

Plotted By: Shettell, Cody October 11, 2021 - 11:40:01am K:\VAC_Civil\063543031 Addison Alpha Road Connect\CADD\PlanSheets\Drainage Plan&Profile.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

UTILITY LEGEND

- PROPERTY LINE
- PROP WATER LINE
- PROP SANITARY SEWER LINE
- PROP WATER VALVE
- PROP FIRE HYDRANT
- PROP SANITARY SEWER MANHOLE
- EX GAS LINE
- EX UNDERGROUND TELEPHONE
- EX UNDERGROUND ELECTRIC
- EX OVERHEAD POWER LINE
- EX WATER LINE
- EX SANITARY SEWER LINE
- EX STORM SEWER LINE
- EX POWER POLE
- EX FIRE HYDRANT
- EX WATER VALVE
- EX SANITARY SEWER MANHOLE

WATER GENERAL NOTES:

1. FIRE HYDRANTS, VALVES, FITTINGS, ETC. SHOWN AS A GRAPHICAL REPRESENTATION ONLY. CONTRACTOR TO LOCATE AND CONSTRUCT THESE IMPROVEMENTS BASED ON THE CURRENT TOWN/CITY/JURISDICTIONAL DESIGN STANDARDS AND DETAILS. CONTRACTOR TO NOTIFY ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED PRIOR TO BEGINNING CONSTRUCTION.
2. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. FIRE HYDRANT ASSEMBLY INCLUDES ALL FITTINGS, TEES AND VALVES.
4. VALVE DISTANCES AND LOCATION AND APPROXIMATE AND ARE PROVIDED TO ASSIST DEWATERING VOLUME ESTIMATES. NO ADDITIONAL PAYMENT WILL BE MADE IF FIELD CONDITION VARY.
5. TOWN OF ADDISON/CITY OF FARMERS BRANCH STAFF WILL OPERATE ALL EXISTING VALVES.

!!WARNING!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

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PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/12/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT 063543031

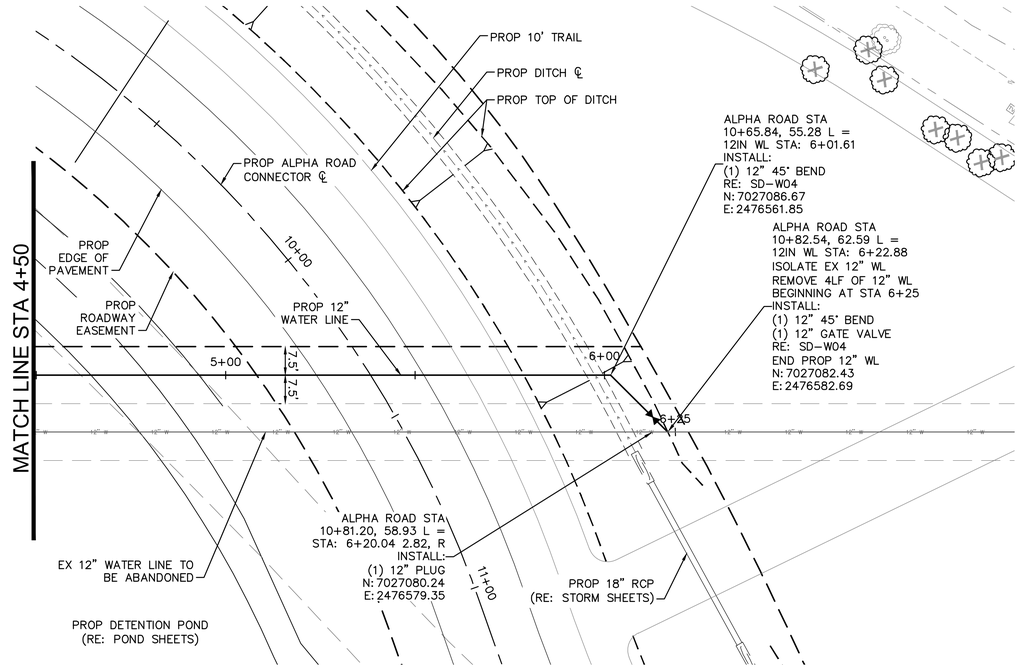
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DRAWN BY	CDS
CHECKED BY	LNA

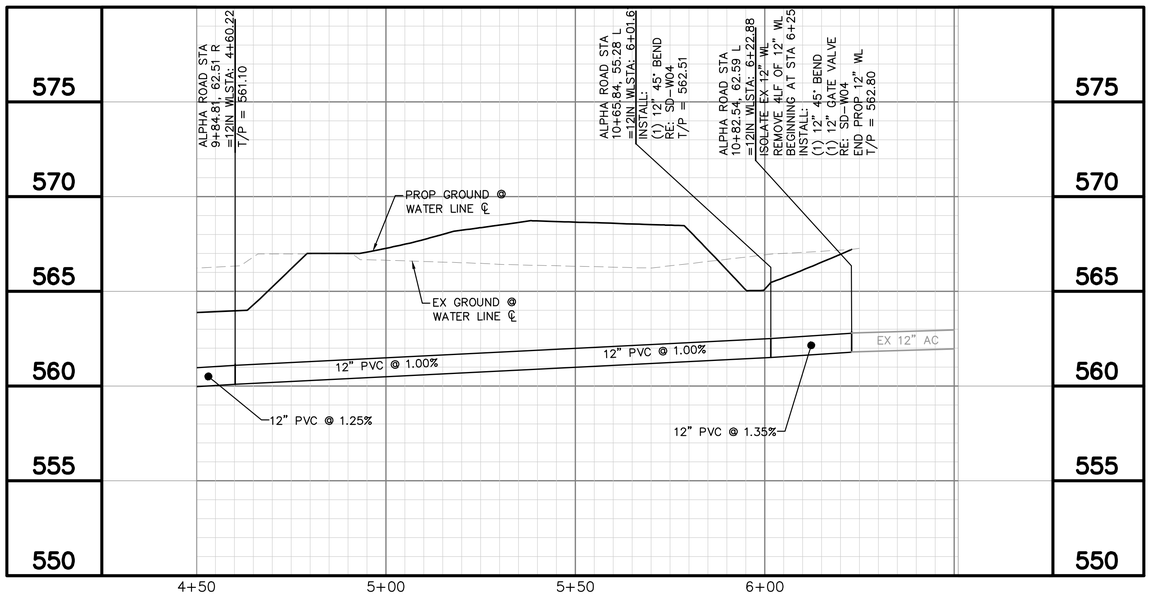
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

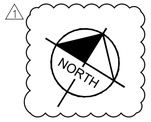
WATER LINE
PLAN & PROFILE
ALPHA ROAD CONNECTOR
BEGIN TO STA 4+50

SHEET NUMBER
C7.01

Plotted By: Shettigh, Cody October 11, 2021 11:41:47am K:\IVAC_Civil\063543031 Addison Alpha Road Connect\CAD\PlanSheet\Water Plan.dgn
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GRAPHIC SCALE IN FEET
0 10 20 40

UTILITY LEGEND

- PROPERTY LINE
- PROP WATER LINE
- PROP SANITARY SEWER LINE
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- PROP SANITARY SEWER MANHOLE
- EX GAS LINE
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PROFESSIONAL ENGINEER

KHA PROJECT 063543031

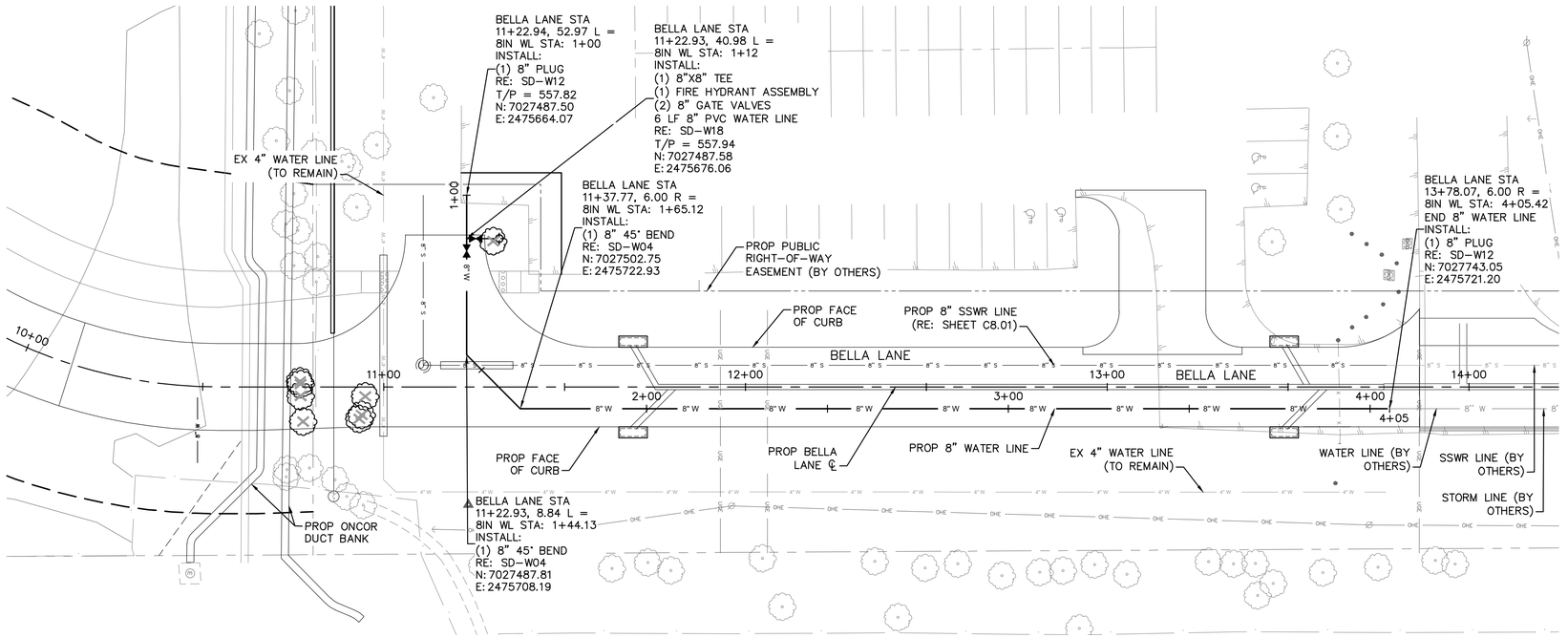
DATE	10/12/21
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

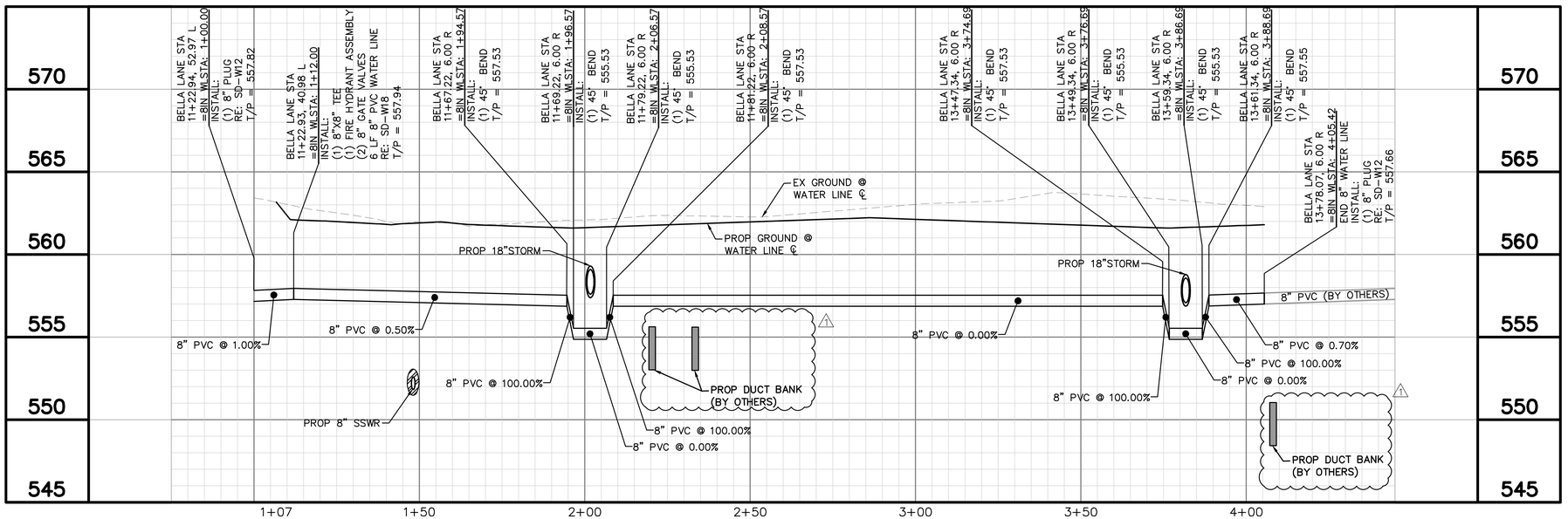
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

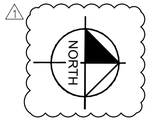
WATER LINE
PLAN & PROFILE
ALPHA ROAD CONNECTOR
STA 4+50 TO END

SHEET NUMBER
C7.02

Plotted By: Shettigh, Cody October 11, 2021 11:41:52am K:\VAC_Civil\063543031 Addison Alpha Road Connect\CAD\PlanSheet\Water Plan.dgn
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GRAPHIC SCALE IN FEET
0 10 20 40

UTILITY LEGEND

- PROPERTY LINE
- PROP WATER LINE
- PROP SANITARY SEWER LINE
- PROP WATER VALVE
- PROP FIRE HYDRANT
- PROP SANITARY SEWER MANHOLE
- EX GAS LINE
- EX UNDERGROUND TELEPHONE
- EX UNDERGROUND ELECTRIC
- EX OVERHEAD POWER LINE
- EX WATER LINE
- EX SANITARY SEWER LINE
- EX STORM SEWER LINE
- EX POWER POLE
- EX FIRE HYDRANT
- EX WATER VALVE
- EX SANITARY SEWER MANHOLE

WATER GENERAL NOTES:

1. FIRE HYDRANTS, VALVES, FITTINGS, ETC. SHOWN AS A GRAPHICAL REPRESENTATION ONLY. CONTRACTOR TO LOCATE AND CONSTRUCT THESE IMPROVEMENTS BASED ON THE CURRENT TOWN/CITY/JURISDICTIONAL DESIGN STANDARDS AND DETAILS. CONTRACTOR TO NOTIFY ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED PRIOR TO BEGINNING CONSTRUCTION.
2. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. FIRE HYDRANT ASSEMBLY INCLUDES ALL FITTINGS, TEES AND VALVES.
4. VALVE DISTANCES AND LOCATION AND APPROXIMATE AND ARE PROVIDED TO ASSIST DEWATERING VOLUME ESTIMATES. NO ADDITIONAL PAYMENT WILL BE MADE IF FIELD CONDITION VARY.
5. TOWN OF ADDISON/CITY OF FARMERS BRANCH STAFF WILL OPERATE ALL EXISTING VALVES.

!!WARNING!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's **below.** **Call** before you dig.

No.	REVISIONS	DATE	BY
1	ADDENDUM #1	10/12/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/12/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

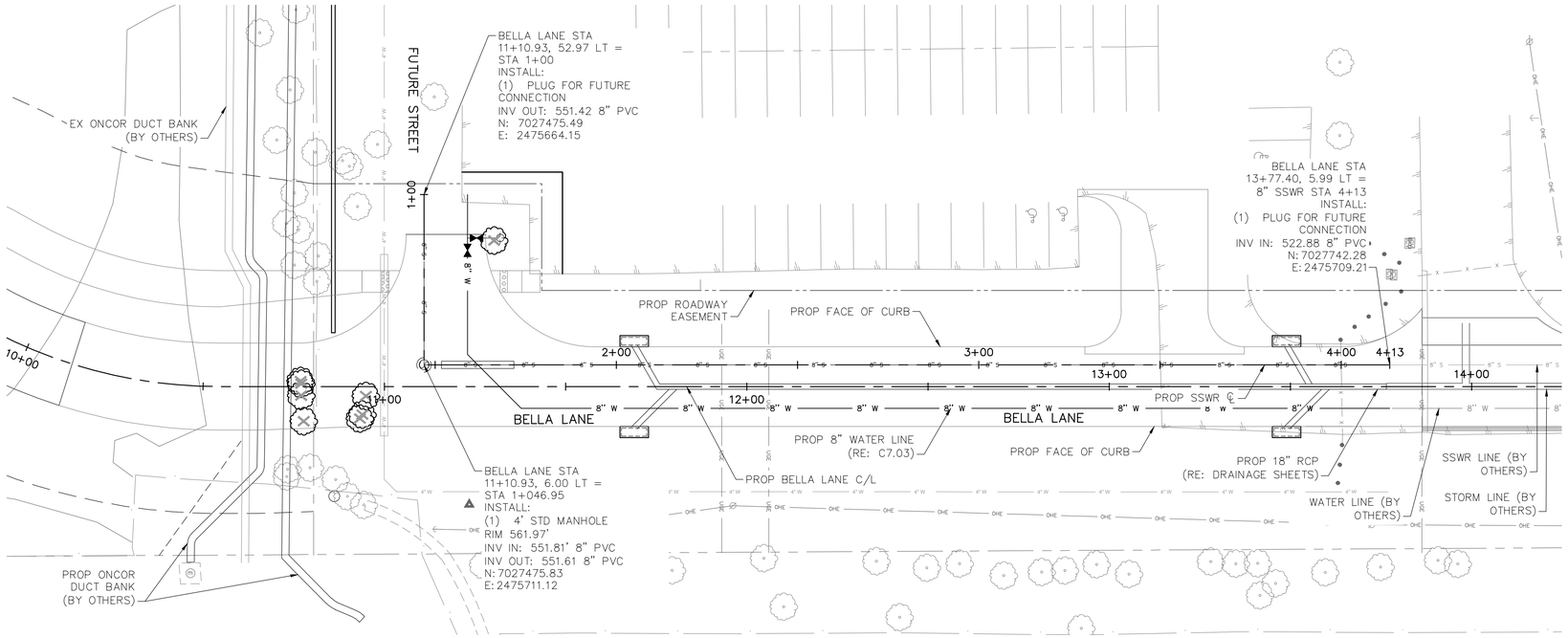
KHA PROJECT 063543031
DATE 10/12/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

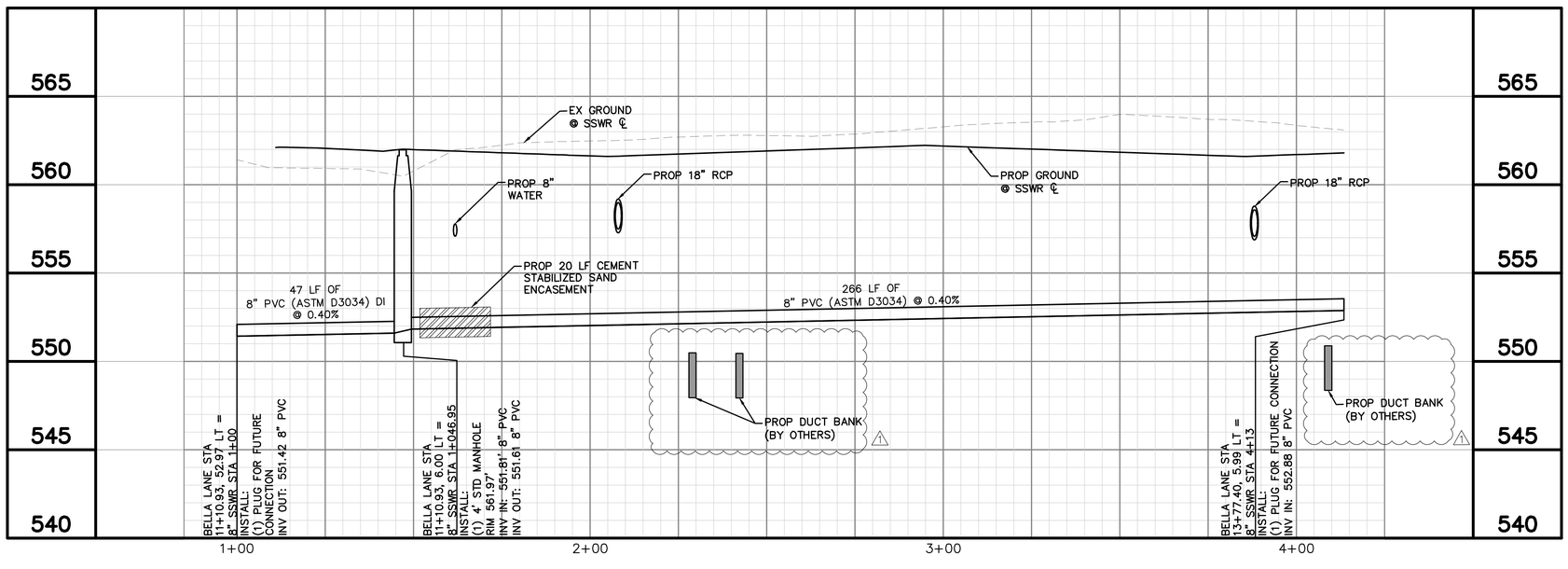
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

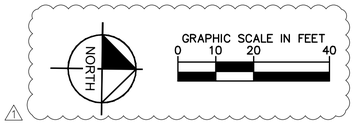
WATER LINE
PLAN & PROFILE
BELLA LANE

SHEET NUMBER
C7.03

Plotted By: Shettcliffe, Cody October 11, 2021 11:41:58am K:\ALA_Civil\063543031 Addison Alpha Road Connect\CAD\PlanSheets\Water Plan.dwg
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UTILITY LEGEND

- PROPERTY LINE
- 8" W — PROP WATER LINE
- 8" S — PROP SANITARY SEWER LINE
- PROP WATER VALVE
- PROP FIRE HYDRANT
- PROP SANITARY SEWER MANHOLE
- G — EX GAS LINE
- U/T — EX UNDERGROUND TELEPHONE
- U/E — EX UNDERGROUND ELECTRIC
- OHE — EX OVERHEAD POWER LINE
- 8" W — EX WATER LINE
- 8" S — EX SANITARY SEWER LINE
- EX STORM SEWER LINE
- SANITARY SEWER/ WATER ABANDONMENT
- EX POWER POLE
- EX FIRE HYDRANT
- EX WATER VALVE
- EX SANITARY SEWER MANHOLE

NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ANY SIGNS AND COORDINATION WITH THE CITY ON ANY NECESSARY MODIFICATIONS.
2. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL IRRIGATION FACILITIES WITHIN PROJECT LIMITS.
3. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/ OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND CITY UTILITIES PRIOR TO CONSTRUCTION.

!!WARNING!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

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No.	REVISIONS	DATE	BY
1	ADDENDUM #1	10/12/21	CDS

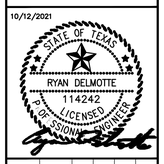
PROJECT NO. 2021-01C/ BID NO. 21-69

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10/12/2021



KHA PROJECT	063543031
DATE	10/12/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
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CHECKED BY	LNA

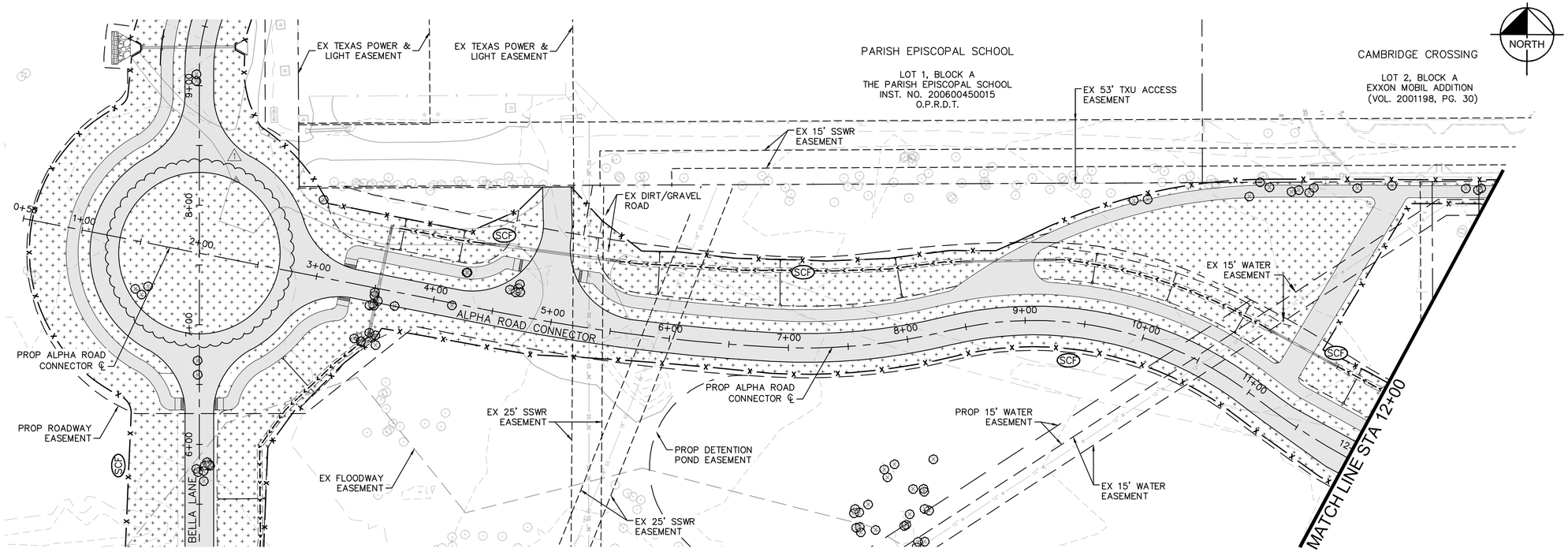
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

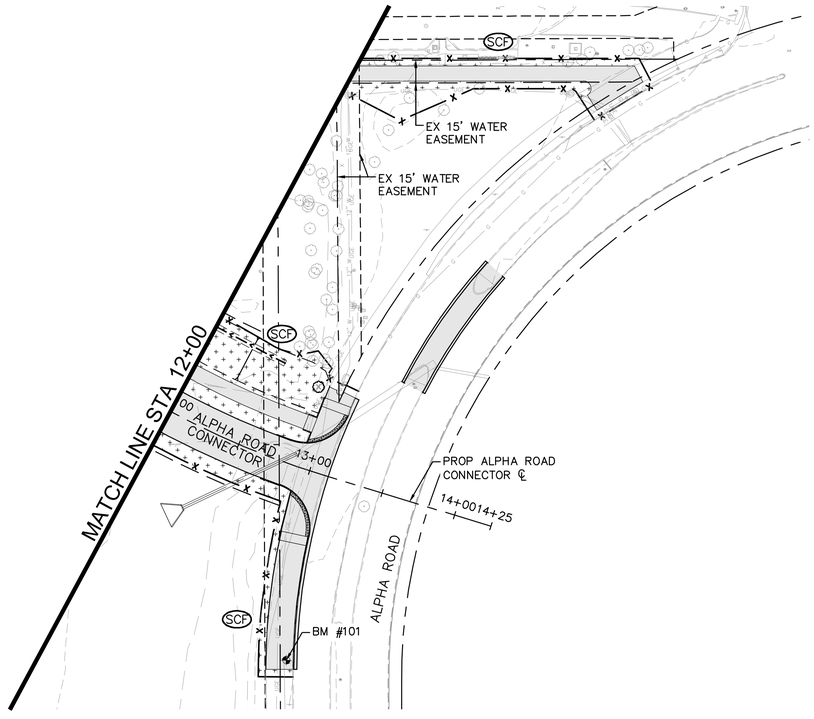
SANITARY SEWER LINE PLAN AND PROFILE BEGIN TO END

SHEET NUMBER
C8.01

Plotted By: Shettigh, Cody October 11, 2021 - 11:39:19am K:\VLAC_Civil\063543031_Addison_Alpha_Road_Connect\C400\PlanSheets\SSWR Plan&Profile.dwg
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Plotted By: Shadbolt, Cody October 11, 2021 11:39:12am K:\JAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Erosion Control.dwg
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GRAPHIC SCALE IN FEET
0 25 50 100

LEGEND

- SCF — SEDIMENT CONTROL FENCE
- IP — INLET PROTECTION
- RCD — ROCK CHECK DAM
- PROP CONCRETE
- HYDRAULIC MULCHING WITH 4" TOPSOIL

EROSION CONTROL NOTES

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED DURING SITE PREP IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT.
3. CONTRACTOR SHALL MINIMIZE THE REMOVAL OF GRASS COVER UNTIL ACTUAL WORK PHASE BEGINS.
4. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED (NO SEPARATE PAY).
5. OFF-SITE SOIL BORROW AND SPOIL AREAS ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL OFFSITE SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT.
6. INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO INSURE THAT THE DEVICES ARE FUNCTIONING PROPERLY.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING APPROPRIATE CONSTRUCTION ENTRANCE. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN STONES OR MUD IS BEING TRACKED ONTO A PUBLIC ROADWAY, THE STABILIZED CONSTRUCTION ENTRANCE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASHDOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL OFF SITE SEDIMENTATION. PERIODIC RE-GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFICIENCY OF THE INSTALLATION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTAL OF N.O.I., N.O.T. AND ANY ADDITIONAL INFORMATION REQUIRED BY THE E.P.A. CONTRACTOR SHALL COMPLY WITH ALL E.P.A. STORMWATER POLLUTION PREVENTION REQUIREMENTS.
9. PRIOR TO FINAL ACCEPTANCE AND/OR OPENING ROADWAY TO TRAFFIC, ALL DISTURBED AREAS SHALL BE STABILIZED AND EROSION CONTROL DEVICES SHALL BE REMOVED.
10. SEE GENERAL NOTES SHEET FOR EROSION CONTROL REQUIREMENTS.

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No.	REVISIONS	DATE	BY
1	ADDENDUM #1	10/12/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

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10/12/2021

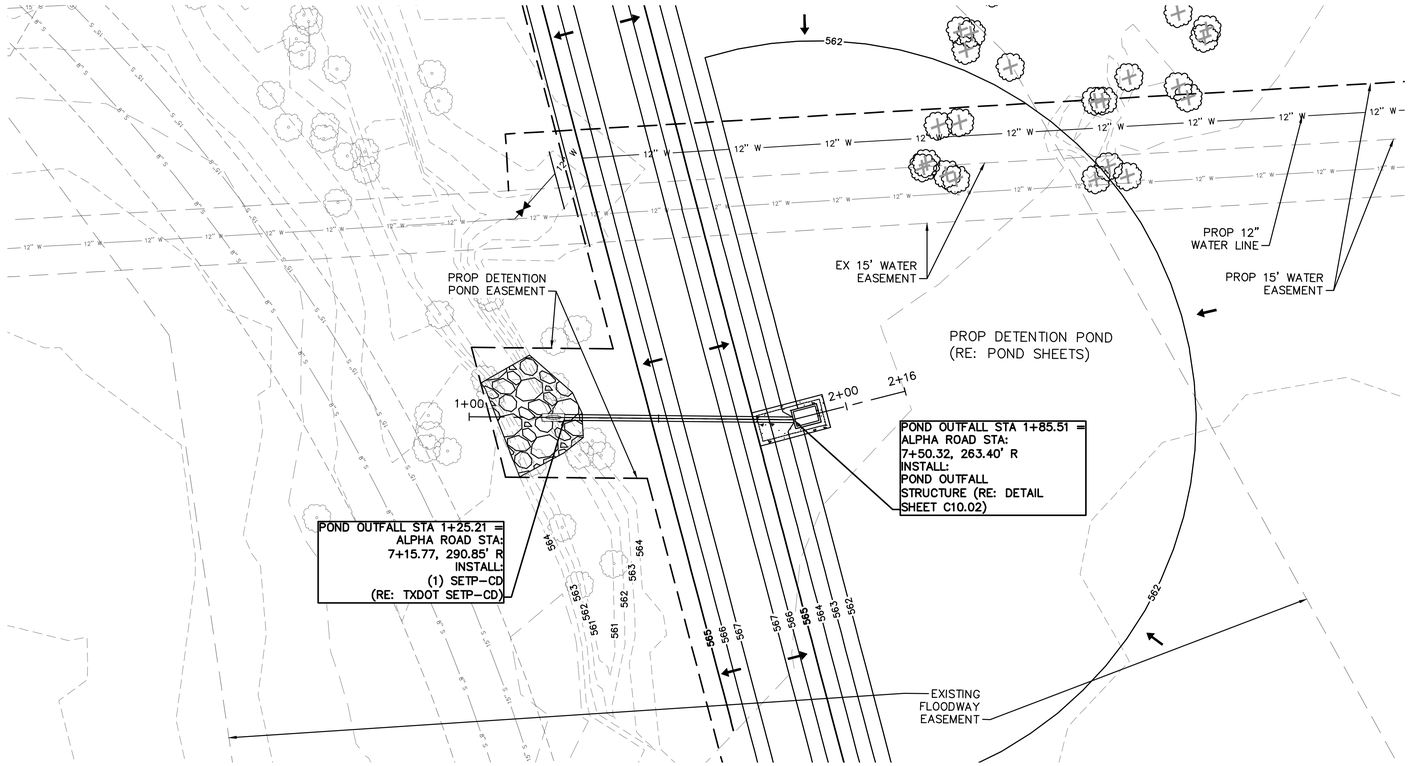
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

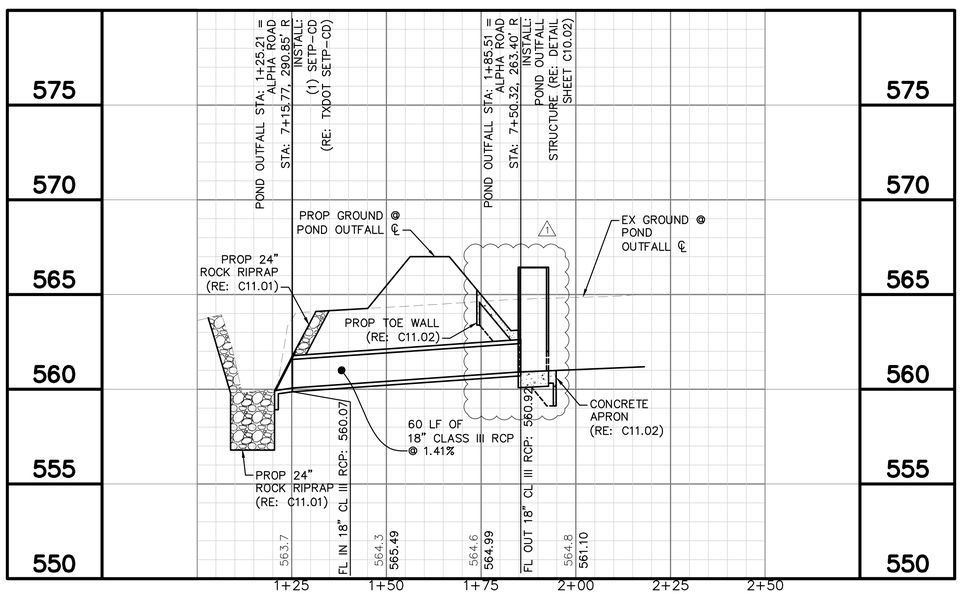
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		DRAWN BY CDS	CHECKED BY LNA

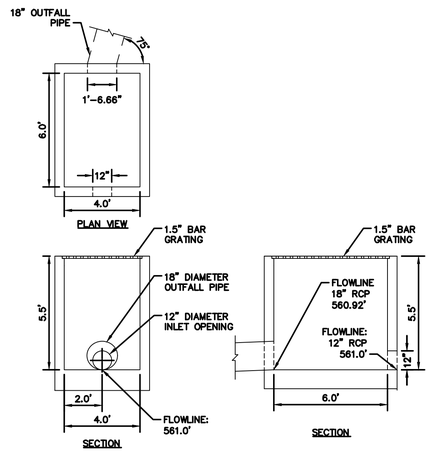
TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

EROSION CONTROL ALPHA ROAD CONNECTOR

SHEET NUMBER
C9.02







POND OUTLET STRUCTURE DETAIL
1"=4'

OUTLET STRUCTURE NOTES:

1. OUTLET STRUCTURE SHALL BE PRECAST CONCRETE. CONCRETE SHALL BE IN ACCORDANCE WITH TXDOT ITEM 421, CLASS C.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND ENGINEERING CALCULATIONS FOR OUTLET STRUCTURE. MAT SLAB OR FOOTING SHALL BE DESIGNED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT. SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS.
3. STEEL BAR GRATING SHALL BE REMOVABLE 1.5" STEEL GRATING, BOLTED OR CLIPPED.

811 Know what's below. Call before you dig.

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- 565 EX CONTOURS
- 565 PROP CONTOURS
- PROP 24" ROCK RIPRAP
- PROP CONCRETE RIPRAP

No.	REVISIONS	DATE	BY
1	ADDENDUM #1	10/12/21	BCS

PROJECT NO. 2021-01C/ BID NO. 21-69

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10/12/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

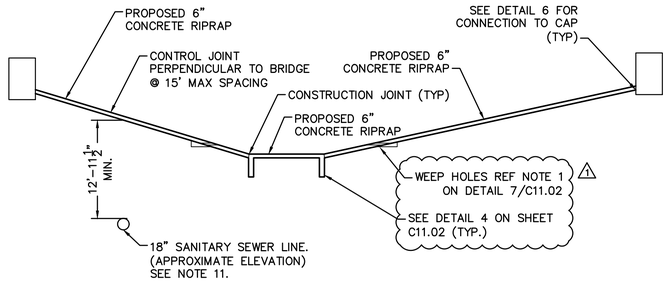
KHA PROJECT 063543031
DATE 10/12/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DETENTION POND OUTFALL DRAINAGE SYSTEM D

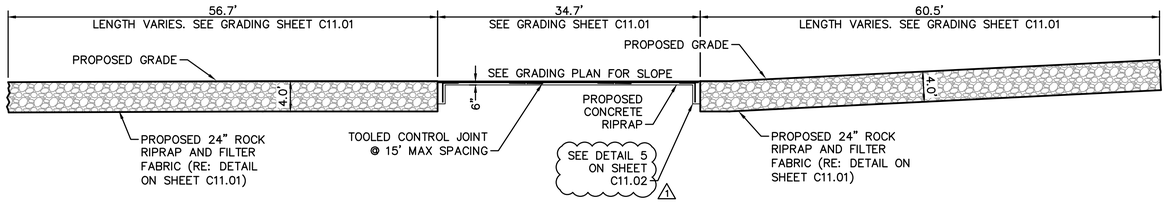
SHEET NUMBER
C10.02

Plotted By:Walter Austin October 12, 2021 03:27:46pm K:\ADC_Dal\063543031 Addison Alpha Road Connector\CAD\PlanSheet\Drainage Plan&Profile.dwg
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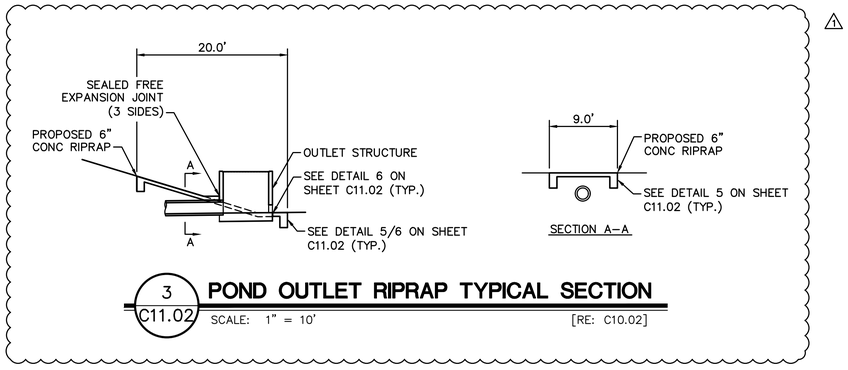
1 C11.02 **CHANNEL LINING TYPICAL SECTION**

SCALE: 1" = 10' [RE: C11.01]



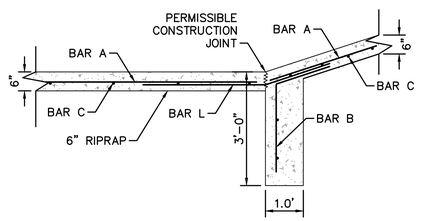
2 C11.02 **CHANNEL LINING TYPICAL SECTION**

SCALE: 1" = 10' [RE: C11.01]



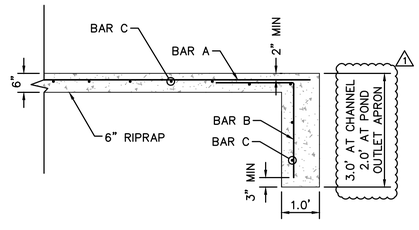
3 C11.02 **POND OUTLET RIPRAP TYPICAL SECTION**

SCALE: 1" = 10' [RE: C10.02]



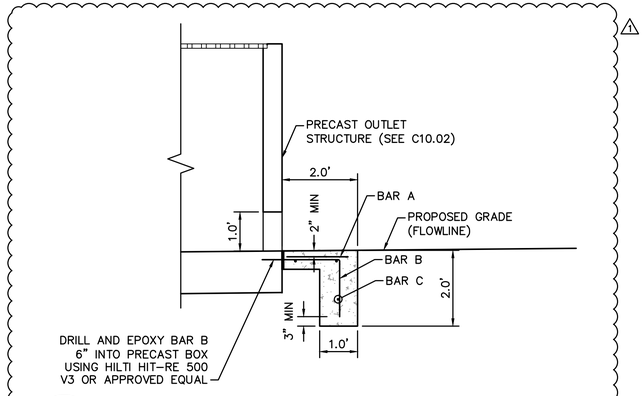
4 C11.02 **6" RIPRAP CHANNEL GRADE BREAK DETAIL**

SCALE: 1/2" = 1'



5 C11.02 **TYPICAL 6" CONCRETE RIPRAP DETAIL**

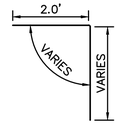
SCALE: 1/2" = 1'



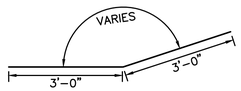
6 C11.02 **RIPRAP AT POND OUTLET FLOWLINE**

SCALE: 1/2" = 1'

REBAR SCHEDULE		
BAR	SIZE	SPACING
A	4	1'–0"
B	4	1'–0"
C	4	1'–0"
L	4	1'–0"



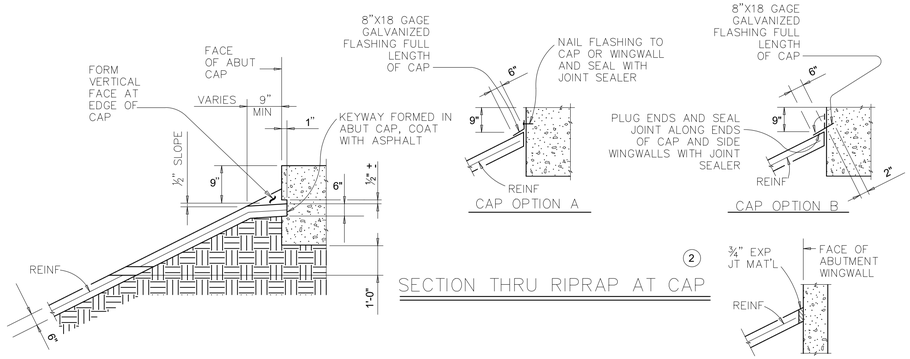
BAR B



BAR L

NOTES:

1. CHAMFER ALL EXPOSED EDGES OF CONCRETE ¾".
2. ALL CONCRETE SHALL HAVE A 28–DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
3. ALL CLEAR COVER FOR CONCRETE SHALL BE 3 INCHES UNLESS OTHERWISE SHOWN.
4. ALL REINFORCING STEEL SHALL BE ASTM 615 GR 60 STEEL.
5. ALL REINFORCING IN CHANNEL BOTTOM SHALL BE EPOXY COATED. EPOXY MATERIAL SHALL BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
6. MIX DESIGNS FOR CONCRETE SHALL BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
7. REINFORCING BAR DIMENSIONS ARE TO OUTSIDE OF BAR UNLESS OTHERWISE NOTED.
8. CONTRACTOR TO VERIFY ALL ELEVATIONS AND DIMENSIONS.
9. ROCK RIPRAP SHALL BE A MINIMUM OF 24–INCH (NOMINAL SIZE). ROCK RIPRAP SHALL CONFORM TO TXDOT ITEM 432 RIPRAP.
10. RCP SHALL HAVE PRECAST BEVELED ENDS TO MATCH RIPRAP GRADE WITH 12" OF EXPOSED REINFORCING. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REINFORCEMENT NEEDED TO DEVELOP THE CONNECTION BETWEEN RIPRAP AND RCP (SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS).
11. VERTICAL CLEARANCE SHALL BE A MIN. 12'–11½" AS SHOWN ON THE PLANS. CONTRACTOR SHALL LOCATE AND VERIFY ELEVATIONS OF UTILITIES PRIOR TO ANY DRILLING OR EXCAVATION. CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
12. FOR DETAILS AND SPECIFICATIONS NOT ADDRESSED HEREIN, SEE TXDOT STANDARDS AND SPECIFICATIONS.



1. PROVIDE LOWER LEVEL OF 2" DIA WEEP HOLES AT 10' C–C BACKED BY 1 CF PACKET OF GRAVEL AND GALVANIZED HARDWARE CLOTH AT ALL LOCATIONS.
2. PROVIDE SEALING OPTIONS FOR JOINT BETWEEN THE FACE OF CAP AND RIPRAP AS DESIGNATED BY THE ENGINEER OR AS SHOWN ELSEWHERE ON PLANS.
3. FLASHING (SHOWN IN CAP OPTION A) SHALL BE USED AT WINGWALL IN ADDITION TO EXP JT MAT'L.
4. 8" x 18 GAGE GALC SHEET METAL.
5. REINFORCING STEEL IS CONTINUOUS THROUGH RIPRAP CONSTRUCTION JOINTS. PROVIDE REINFORCING STEEL THAT EXTENDS 2'–0" MINIMUM INTO ADJACENT RIPRAP ON EACH SIDE OF CONSTRUCTION JOINT EVEN IF SYNTHETIC REINFORCING FIBER IS UTILIZED.

7 C11.02 **CONCRETE RIPRAP**

SCALE: NTS

Know what's **below.** **Call** before you dig.

No.	REVISIONS	DATE	BY
1	ADDENDUM #1	10/12/21	BCS

PROJECT NO. XXXXX/ BID NO. XXXX–XXX

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-2600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

STATE OF TEXAS
BRIAN J. LAFOY
89363
LICENSED
PROFESSIONAL ENGINEER
10/12/2021

KHA PROJECT	063543031
DATE	10/12/2021
SCALE	AS SHOWN
DESIGNED BY	BCS
DRAWN BY	AT/TLS
CHECKED BY	BJL

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

FARMERS BRANCH CREEK TRIBUTARY 1
CHANNEL LINING DETAILS

SHEET NUMBER
C11.02

Plotted By:Sutherland, Clay October 12, 2021 02:32:56pm K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Channel Details.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

ADDISON PUBLIC WORKS & ENGINEERING SERVICES

Kimley»Horn
2201 West Royal Lane, Irving, Texas 75063
kimley-horn.com 214.420.5600
Texas Firm Registration No. F-928

Addendum No. 2

BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR

TOWN OF ADDISON, TEXAS
PUBLIC WORKS AND ENGINEERING SERVICES
BID NUMBER 21-69

10/18/2021



To: All Plan Holders of Record

This addendum forms part of the Contract Documents and modifies the Contract Documents and Specifications as noted below. Acknowledge receipt of the Addendum in the space provided on the Proposal Form and on the outer envelope of the Bid Proposal. Failure to acknowledge receipt of this Addendum may subject the Bidder to disqualification.

This addendum consists of 5 pages and 3 attachments.

QUESTIONS RECEIVED ON CIVCAST PRIOR TO DEADLINE FOR QUESTIONS ON 10/13/2021 AT 5:00 PM CST.

1. Will a slip form paving machine be needed or are we allowed to use a vibratory truss screed?

   Answer: Slip-form paving operations are required for this project except in small and/or irregular area of placements. These may include but are not limited to; transitional areas to tie to existing pavement, driveways, separate concrete curb and gutter, and traffic circle. Non slip-form paving areas shall be approved by the Owner prior to construction.

2. Special Provision 8 - Permits, Licenses and Regulations - What permits will the Contractor be required to obtain, and what are the fees to obtain them?

   Answer: The Town of Addison and the City of Farmers Branch does not require any additional permitting for this project. The contractor will still need to obtain the environmental permit required per item L6 – Storm Water Pollution Prevention Plan.

3. Has the Town acquired all of the Right-of-Way for this Project?

   Answer: The easement required to perform the work will be obtained prior to issuance of the Notice to Proceed. As discussed in pre-bid conference, Notice to Proceed is anticipated to be issued in January 2022.

4. Special Provision 50 - Traffic Control - Section e. states the Contractor shall provide a Traffic Control Plan signed and sealed by a P.E. Will the Contractor be allowed to use the traffic control plan that is provided in the plans, and not supply their own plan?

Answer: The contractor is allowed to use the traffic control plan that is provided in plans. If the contractor elects to modify the traffic control plan, the contractor shall submit a modified traffic control plan signed and sealed by a professional engineer.

5. Special Provision 33 states the Town will pay an independent testing lab to furnish testing. Special Provision 66 states the Contractor will be responsible for providing some tests that are normally performed by the independent testing lab referred to in Special Provision 33. Will the Town provide testing, or will the Contractor be required to provide some of the testing?

   Answer: The Town will pay an independent testing lab to furnish testing for construction materials. The contractor will be required to provide some of the testing. Special Provision 66 has been updated to clarify the testing that shall be furnished and performed by the Contractor.

6. Just to be clear, you have provided a lump sum earthwork item with no informational quantity or adequate information on the drawings to assess the scope and magnitude of the earthwork for this project, AND want the Contractor to release the Engineer and the Town of Addison from any liability from information, accurate or not, they might, or do, supply? That seems to violate, or nullify, several of the contract provisions relative to claims, extra work and changes in the work. Can you post the data so it is the same for all at the time of retrieval, and issues with altering or corrupting are irrelevant?

   Answer: Earthwork quantities are documented below for bidder's information only. CAD files are also available to bidders. A release form has been provided on CivCast to allow bidders to request CAD files. Earthwork related bid items will remain price per Lump Sum (LS).

Item No.	Description	Quantity	Unit of Measure
P10	UNCLASSIFIED STREET EXCAVATION	1,232	CY
P11	BORROW AND SPOIL (ROADWAY)	26,368	CY
H1	UNCLASSIFIED POND AND CREEK EXCAVATION	24,990	CY
H2	BORROW AND SPOIL (DETENTION POND AND CREEK)	1,000	CY
H3	BORROW AND SPOIL (DETENTION POND AND CREEK) (SELECT FILL)	753	CY

7. The project manual includes a copy of a Geotechnical Report for this project. It is not one of the eleven documents listed in the modified listing of Contract Documents in the CONTRACT AGREEMENT. Is the Contractor supposed to be able to rely on information contained in the report in preparation of his bid, and if not, for what purpose was it published?

   Answer: The contractor is able to rely on information contained in the Geotechnical Report for this project. In the Contract Documents listing, the Geotechnical Report shall be considered as, "any other bid materials distributed by the Owner that relate to the Project."

8. It appears we are missing C11.01. Please advise. Thank you.

   Answer: Plan sheet C11.01 was not updated. Please disregard from Addendum No. 1 "Changes to Plans" list.

9. Is the Type B Asphalt Drive at Bella Lane station 13+15 4" thick?

   Answer: Yes.

10. On C3.09 the pass through on Alpha rd looks like you are eliminating the pass through, but you shade it all as prop pavement. Can you give a typical cross section through here showing what you are wanting?

    Answer: Proposed pavement hatch has been updated accordingly. See revised plan sheet C3.09.

11. Can we get the bid form in excel spreadsheet?

    Answer: Bid form in excel format has been uploaded to www.civcastusa.com. Bid form in excel format is for the bidder's convenience only and bidders shall utilize at their own risk. Paper shall be required. An electronic copy of the bid (.PDF) shall be included in the envelope when the paper bid is submitted. Submittal of file in excel format will not be accepted.

12. How many copies of our proposal do we need to submit?

    Answer: One paper copy of the proposal and one electronic copy of the proposal shall be submitted in accordance with the Instructions to Bidders section L.

13. What documents do we need to submit with our proposal?

    Answer: The bidder shall submit a bid security, bidders qualifications statement, and proposal form, along with other documents required listed on the instructions to bidders.

CHANGES TO SPECIFICATIONS

1. Section CA – Contract Agreement

   Replace the Contract Agreement with the attached.

2. Section PF – Proposal Form

   Replace the Proposal Form with the attached.

3. Section SP – Special Provisions

   Page – SP10 Remove, **"Bid Item No. P6 - REMOVAL OF EX 54" RCP**

   This item shall consist of the removal and disposal of existing 54" reinforced concrete pipe at the locations shown in the drawings. Existing 54" reinforced concrete pipe shall be removed in accordance with appropriate specifications, details, and notes, including NCTCOG Item 701.2.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work." and replace with the following:

"Bid Item No. P6 - REMOVAL OF EX RCP

This item shall consist of the removal and disposal of existing 30" and 54" reinforced concrete pipe at the locations shown in the drawings. Existing 30" and 54" reinforced concrete pipe shall be removed in accordance with appropriate specifications, details, and notes, including NCTCOG Item 701.2.

Measurement and payment shall be made on the basis of price bid per linear feet (LF) and shall be total compensation for furnishing all materials, tools, equipment, labor, and any other incidentals necessary to complete the work."

4. Section SP – Special Provisions

Page – SP13 Add, **"Traffic circle pavement reinforcement shall be placed radially. Contractor shall submit a jointing plan for review prior to construction**." after, **"NCTCOG Item 303."** and before, **"Measurement and payment".**

5. Section SP – Special Provisions

Page – SP13-SP15 Remove bid item, **"Bid Item. P18 – 6" CURB AND GUTTER".** Renumber subsequent bid items by minus one (-1) accordingly. Refer to updated Proposal Form for bid item numbering.

6. Section SP – Special Provisions

Page – SP19 Remove, "**Bid Item No. D3 – 30" RCP CLASS III"** and replace with, **Bid Item No. D3 – 54" RCP CLASS III"**

7. Section SP – Special Provisions

Page – SP48 Remove, "**bid item A-31.**" and replace with, "**bid item P2.**"

8. Section SP – Special Provisions

Page- SP-52 Remove, **"66. TESTING REQUIREMENTS: Testing shall be conducted in accordance with Town of Addison Specifications except as modified in the Special Provisions, Technical Specifications, or as on the plans. The Town of Addison will provide random testing. The Contractor shall coordinate construction with the Town of Addison, and shall provide assistance to the testing labs by providing trench safety, excavation, or other work to insure all testing requirements are met. Work performed to accommodate testing will be a subsidiary item and no extra payment will be authorized. All retesting shall be at the expense of the Contractor. As a general guide, the Contractor shall be responsible for providing the following tests:**

(1) Density and associated tests on embedment and backfill.

(2) Compressive strength tests on concrete.

(3) Gradation soil tests on backfill as may be required.

(4) Pressure test, bacteriological tests for disinfection of water lines,

(5) Mandrel test for gravity sewer pipeline

(6) Vacuum test for SSMH for water tightness.

(7) Providing test results from manufacturer and as specified in Town of Addison Specifications (NTCOG)" and replace with the following:

"66. TESTING REQUIREMENTS: Testing shall be conducted in accordance with Town of Addison Specifications except as modified in the Special Provisions, Technical Specifications, or as on the plans. As a general guide, the Contractor shall be responsible for providing the following tests:

(1) Pressure test, bacteriological tests for disinfection of water lines,

(2) Mandrel test for gravity sewer pipeline

(3) Vacuum test for SSMH for water tightness.

(4) Providing test results from manufacturer and as specified in Town of Addison Specifications (NCTCOG)

No separate pay will be provided to perform any additional testing not usually performed by the independent testing lab referred to in Special Provision 33, unless otherwise noted."

CHANGES TO PLANS

1. Replace PLAN SHEETS C1.03, C3.09, C4.09, C4.10, C4.11, C4.12, C4.15, C9.02 with the plan sheets attached. Revisions have been noted on each sheet.

END OF ADDENDUM NO. 2

SECTION CA

CONTRACT AGREEMENT

CONTRACT AGREEMENT

STATE OF TEXAS

COUNTY OF DALLAS

THIS AGREEMENT is made and entered into this _____ day of _____, 2021, by and between the Town of Addison, of the County of Dallas and State of Texas, acting through its City Manager, thereunto duly authorized so to do, Party of the First Part, hereinafter termed the OWNER, and _____, of the City of _____, County of _____, State of _____, Party of the Second Part, hereinafter termed CONTRACTOR.

WITNESSETH: That for and in consideration of the payment and agreement hereinafter mentioned, to be made and performed by the OWNER, the said CONTRACTOR hereby agrees with the said OWNER to commence and complete construction of certain improvements as follows:

BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR

PUBLIC WORKS AND ENGINEERING SERVICES BID NUMBER 21-69

and all extra work in connection therewith, under the terms as stated in the General and Specific Conditions of the AGREEMENT; and at his own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance and other accessories and services necessary to complete the said construction, in accordance with the conditions and prices stated in the Proposal attached hereto and in accordance with the Contract Documents.

The Contract Documents shall consist of the following documents:

1. this Contract Agreement;
2. properly authorized change orders;
3. any listed and numbered addenda;
4. the Special Provisions;
5. Technical Specifications & Construction Drawings;
6. the OWNER's Standard Construction Details;
7. the October 2017 5th Edition of the Public Works Construction Standards - North Central Texas as amended and published by the North Central Texas Council of Governments, as amended by the Owner (collectively, the "NCTCOG Specifications ");
8. the OWNER’s written notice to proceed to the CONTRACTOR;
9. the Contractor’s Bid Proposal;
10. the Performance, Payment, and Maintenance Bonds; and,
11. any other bid materials distributed by the Owner that relate to the Project.

These Contract Documents are incorporated by reference into this Construction Agreement as if set out here in their entirety. The Contract Documents are intended to be complementary; what is called for by one document shall be as binding as if called for by all Contract Documents. It is specifically provided, however, that in the event of any inconsistency in the Contract Documents, the inconsistency shall be resolved by giving precedence to the Contract Documents in the order in which they are listed herein above. If, however, there exists a conflict or inconsistency between the Technical Specifications and the Construction Drawings it shall be the Contractor's obligation to seek clarification as to which requirements or provisions control before undertaking any work on that component of the project. Should the Contractor fail or refuse to seek a clarification of such conflicting or inconsistent requirements or provisions prior to any work on that component of the project, the Contractor shall be solely responsible for the costs and expenses - including additional time - necessary to cure, repair and/or correct that component of the project.

The CONTRACTOR hereby agrees to commence work within ten (10) calendar days after the date of written notice to do so shall have been given to him, to complete the work within three hundred and thirty **(**330) calendar days, after he commences work, subject to such extensions of time as are provided by the General Provisions.

The OWNER agrees to pay the CONTRACTOR _____ _____ Dollars **($_____)** in current funds for the performance of the Contract in accordance with the Proposal submitted thereof, subject to additions and deductions, as provided in the General Provisions, and to make payments of account thereof as provided therein.

IN WITNESS WHEREOF, the parties of these presents have executed this AGREEMENT in the year and day first above written.

TOWN OF ADDISON, TEXAS (OWNER) **ATTEST:**

By: _____ By: _____
City Manager

(CONTRACTOR) ATTEST:

By: _____ By: _____

The following to be executed if the CONTRACTOR is a corporation:

I, _____ certify that I am the secretary of the corporation named as CONTRACTOR herein; that _____, who signed this Contract on behalf of the CONTRACTOR is the _____ (official title) of said corporation; that said Contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Signed: _____

Corporate Seal

SECTION PF-1

PROPOSAL FORM

PROPOSAL FORM

_____ , 2021

TO: The Honorable Mayor and Town Council
Town of Addison, Texas

Gentlemen:

The undersigned bidder, having examined the plans, specifications and contract documents, and the location of the proposed work, and being fully advised as to the extent and character of the work, proposes to furnish all equipment and to perform labor and work necessary for completion of the work described by and in accordance with the Plans, Specifications and Contract for the following prices, to wit:

Signed by: _____

ACKNOWLEDGMENT OF ADDENDA:

The Bidder acknowledges receipt of the following addenda:

Addendum No. 1 _____

Addendum No. 2 _____

Addendum No. 3 _____

The following pages contain all bid items for:

BID SCHEDULE – BELLA LANE SOUTH EXTENSION & ALPHA ROAD CONNECTOR
BID NUMBER 21-69

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - STREET IMPROVEMENTS					
P1	MOBILIZATION (5% MAX)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P2	BARRICADES, SIGNS, AND TRAFFIC HANDLING	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P3	PROJECT SIGN	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P4	GENERAL SITE PREPARATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P5	REMOVE EX HEADWALL	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
2 **P6**	REMOVAL OF EX RCP	19	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P7	REMOVE EXISTING CONCRETE SIDEWALK/RAMPS	425	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P8	REMOVE EXISTING ASPHALT PAVEMENT	480	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P9	REMOVE EXISTING TREES	116	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P10	UNCLASSIFIED STREET EXCAVATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P11	BORROW AND SPOIL (ROADWAY)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P12	MOISTURE TREATED SUBGRADE	7,180	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
P13	6" LIME STABILIZED SUBGRADE	1,145	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P14	HYDRATED LIME	25	TON		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P15	4" TYP B HMAC (TXDOT)	30	TON		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
2 **P16**	8" REINFORCED CONCRETE PAVEMENT (STREET)	6,299	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P17	10" PORTLAND CEMENT CONC PAVEMENT W/ 6" MONO CURB)	1,050	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
2 **P18**	REINFORCED CONCRETE STREET HEADERS	540	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P19	5" CONCRETE SIDEWALK	3,100	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P20	ACCESSIBLE RAMP	12	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P21	RAIL (HANDRAIL) (TY F)	35	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P22	INSTALL NEW SIGN AND SIGN POST ASSEMBLY	20	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P23	REFL PAV MRKG TY I & TY II (W) 4" SOLID	3,300	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
P24	REFL PAV MRKG TY I & TY II (Y) 4" SOLID	3,050	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
P25	REFL PAV MRKG TY I & TY II (Y) 4" BROKEN	140	LF		
	Complete in Place, for the Sum of _____ _____ Dollars and _____ Cents per unit			$	$
P26	REFL PAV MRKG TY I & TY II (W) ARROW	3	EA		
	Complete in Place, for the Sum of _____ _____ Dollars and _____ Cents per unit			$	$
P27	REFL PAV MRKG TY I & TY II (W) 24" STOP BAR MARKING	31	LF		
	Complete in Place, for the Sum of _____ _____ Dollars and _____ Cents per unit			$	$
P28	REFL PAV MRKG TY I & TY II (W) 5' X 8' CROSSWALK WITH 5' SPACE	3	EA		
	Complete in Place, for the Sum of _____ _____ Dollars and _____ Cents per unit			$	$
P29	REFL PAV MRKG TY I & TY II (W) 24"X 8" CROSSWALK WITH 4' SPACE	15	EA		
	Complete in Place, for the Sum of _____ _____ Dollars and _____ Cents per unit			$	$
P30	REFL PAV MRKG TY I (W) 24" TRIANGLE	21	EA		
	Complete in Place, for the Sum of _____ _____ Dollars and _____ Cents per unit			$	$
P31	REMOVE AND RELOCATE EX GATE	1	EA		
	Complete in Place, for the Sum of _____ _____ Dollars and _____ Cents per unit			$	$
P32	ONCOR DUCT CROSSING COORDINATION	1	LS		
	Complete in Place, for the Sum of _____ _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - STREET IMPROVEMENTS

_____
(Total Amount Bid, Numerical Value)

_____ Dollars
and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BRIDGE OVER FARMERS BRANCH CREEK					
B1	FLOWABLE BACKFILL	443	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B2	DRILL SHAFT (18 IN)	148	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B3	DRILL SHAFT (36 IN)	296	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B4	CL C CONC (ABUT) (HPC)	100	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B5	REINF CONC SLAB (HPC)	2,648	SF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
1 **B6**	BRIDGE SIDEWALK (HPC)	980	SF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B7	APPROACH SLAB (HPC)	83	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B8	PRESTR CONC I-GIRDER (TX40)	329	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B9	RIPRAP (CONC) (CL B) (RR8&RR9)	76	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B10	RIPRAP (STONE PROTECTION) (24 IN)	1,470	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B11	ELASTOMERIC BEARING (LAMINATED)	8	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B12	STR STEEL (MISCELLANEOUS BRIDGE) (BS-EJCP)	186	LB		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
B13	RAIL (TY C221) (HPC)	238	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B14	SEALED EXPANSION JOINT (4 IN) (SEJ - M)	51	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B15	MTL BEAM GD FEN TRANS (THRIE-BEAM)	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
B16	TERMINAL ANCHOR SECTION	3	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BRIDGE OVER FARMERS BRANCH CREEK

_____
(Total Amount Bid, Numerical Value)

_____ Dollars
and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - STORM SYSTEM IMPROVEMENTS					
D1	18" RCP CLASS III	490	LF		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D2	24" RCP CLASS III	285	LF		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D3	54" RCP CLASS III	95	LF		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D4	6' CURB INLET	4	EA		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D5	CONCRETE HEADWALL (CHFW-0)	3	EA		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D6	18" RCP 2:1 SET TY II HEADWALL	1	EA		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D7	18" RCP 6:1 SET TY II HEADWALL	4	EA		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D8	24" RCP 6:1 SET TY II HEADWALL	4	EA		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D9	RIPRAP (STONE PROTECTION) (12 IN) (CHFW-0 HEADWALL)	12	CY		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$
D10	TRENCH EXCAVATION PROTECTION (STORM SYSTEM)	870	LF		
	Complete in Place, for the Sum of Dollars and Cents per unit			$	$

2

TOTAL AMOUNT BID-BASE BID - STORM SYSTEM IMPROVEMENTS

$ -

(Total Amount Bid, Numerical Value)

Dollars

and Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - DETENTION POND IMPROVEMENTS					
H1	UNCLASSIFIED POND AND CREEK EXCAVATION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H2	BORROW AND SPOIL (DETENTION POND AND CREEK)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H3	BORROW AND SPOIL (DETENTION POND AND CREEK) (SELECT FILL)	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
1 **H4**	RIPRAP (CONC) (CL B) (RR8&RR9) (DETENTION POND)	6	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H5	RIPRAP (STONE PROTECTION) (24 IN) (DETENTION POND)	910	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
H6	CONCRETE OUTFALL STUCTURE	7	CY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - DETENTION POND IMPROVEMENTS

$ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - LANDSCAPE IMPROVEMENTS AND EROSION CONTROL					
L1	HYDRAULIC MULCHING WITH 4" TOPSOIL	45,490	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L2	SEDIMENT CONTROL FENCE (INSTALL/MAINTAIN/REMOVE)	7,475	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L3	STABILIZED CONSTRUCTION EXIT/ENTRANCE	180	SY		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L4	INLET PROTECTION (INSTALL/MAINTAIN/REMOVE)	4	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L5	ROCK CHECK DAM	65	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
L6	STORM WATER POLLUTION PREVENTION PLAN	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-TOTAL AMOUNT BID-BASE BID - DETENTION POND IMPROVEMENTS

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - WATER IMPROVEMENTS					
W1	8" PVC WATER LINE	355	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W2	12" PVC WATER LINE	575	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W3	8 " GATE VALVE	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W4	12" GATE VALVE	2	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W5	FIRE HYDRANT ASSEMBLY	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W6	REMOVE EXISTING 12" AC WATER LINE	8	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W7	ABANDON EXISTING ASBESTOS PIPE IN PLACE	500	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W8	WATER TESTING	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
W9	TRENCH EXCAVATION PROTECTION (WATER SYSTEM)	930	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - WATER IMPROVEMENTS $ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - SANITARY SEWER IMPROVEMENTS					
SS1	8" PVC SSWR LINE	315	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS2	4' STANDARD MANHOLE	1	EA		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS3	CEMENT STABILIZED SAND ENCASEMENT (MIN. 10% CEMENT/CY)	20	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS4	SANITARY SEWER CCTV INSPECTION	1	LS		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$
SS5	TRENCH EXCAVATION PROTECTION (SANITARY SEWER IMPROVEMENTS)	315	LF		
	Complete in Place, for the Sum of _____ Dollars and _____ Cents per unit			$	$

TOTAL AMOUNT BID-BASE BID - SANITARY SEWER IMPROVEMENTS

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

Item No.	Name of Pay Item with Unit Price in Words	Est. Quantity	Unit	Unit Bid Price	Amount Bid
BASE BID - OWNER'S CONTINGENCY					
O1	OWNER'S CONTINGENCY	1	LS		
	Complete in Place, for the Sum of Eighty Five Thousand Dollars and Zero Cents per unit			$ 85,000.00	$ 85,000.00

TOTAL AMOUNT BID-BASE BID - OWNER'S CONTINGENCY

$ 85,000.00

(Total Amount Bid, Numerical Value)

Dollars

and Cents

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

TOTAL AMOUNT OF BASE BID (ITEMS P1 THROUGH O1)

$ _____ -

(Total Amount Bid, Numerical Value)

_____ Dollars

and _____ Cents

(Total Amount Bid in Words)

***The Owner reserves the right to delete any bid items or portions thereof. If the Owner elects to delete any portions of the PROJECT from the contract, then the contract can be awarded on that basis.**

NOTES:

1. All items, labor, materials, equipment, facilities, incidentals and work required for construction of the project are to be provided and installed by the Contractor as part of the project and payment for the cost of such shall be included in the price bid for the construction of the project.

2. Prices must be shown in words and figures for each item listed in the Proposal. In the event of discrepancy, the words shall control.

3. Materials, which are "tax exempt", are those items which are physically incorporated into the facilities constructed for the Town of Addison, as set forth in the Special Provisions. Materials include, but are not limited to purchased items such as water pipe, sanitary sewer pipe, storm drain pipe, etc.

   Services, which are "not tax exempt", are those items which are used by the Contractor but are not physically incorporated into the Town of Addison's facility and/or items which are consumed by construction, as set forth in the Special Provisions. Services include, but are not limited to, items such as supplies, tools, skill and labor, the purchase, rental or lease of equipment, etc.

_____

Name of Person Signing Bid

_____

Signature of Person Signing Bid

_____

Address

_____

Telephone No. Fax No.

_____

T.I.N. (Tax Identification or Employer's Number)

If BIDDER is:

AN INDIVIDUAL

By _____ (Seal)
(Individual's Name)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A PARTNERSHIP

By _____ (Seal)
(Firm Name)

_____
(General Partner)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A CORPORATION

By _____
(Corporation Name)

_____
(State of Incorporation)

By _____
(Name of Person Authorized to Sign)

_____
(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business address: _____

_____

_____

Phone No. _____

A JOINT VENTURE

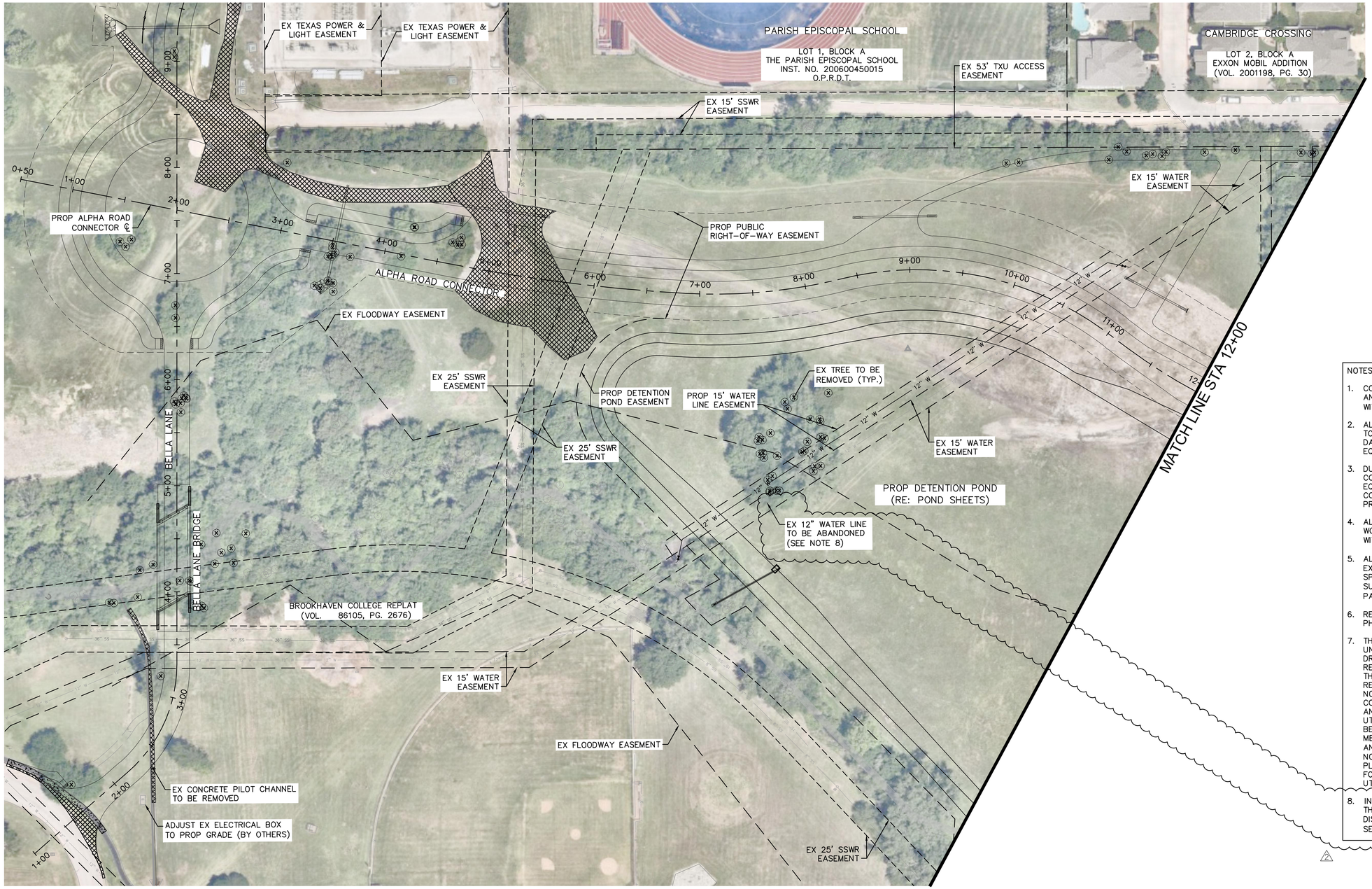
By _____
(Name)

_____
(Address)

By _____
(Name)

_____
(Address)

(Each joint venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)



NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

LEGEND

- EX ROW
- 12" W — EX 12" WATER
- 8" SS — EX 8" SANITARY SEWER
- 15" SS — EX 8" SANITARY SEWER
- 18" SS — EX 18" SANITARY SEWER
- 36" SS — EX 18" SANITARY SEWER
- EX STORM DRAIN
- UGE — EX UNDERGROUND ELECTRIC
- G — EX GAS
- OHE — EX OVERHEAD ELECTRIC
- EX TREE TO REMAIN
- EX TREE TO BE REMOVED
- CONCRETE PAVEMENT, GRAVEL, DIRT AND ASPHALT TO BE REMOVED
- SIDEWALK AND RAMPS TO BE REMOVED

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND RESTORING ALL IRRIGATION FACILITIES WITHIN PROJECT LIMITS (NO SEPARATE PAY).
2. ALL LANDSCAPING AND TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED. IF DAMAGED, CONTRACTOR SHALL RESTORE TO EQUAL OR BETTER CONDITION.
3. DUE TO TREE LIMB HEIGHT LIMITATIONS, CONTRACTOR SHALL INSPECT AREA FOR EQUIPMENT CLEARANCE. IN THE EVENT OF A CONFLICT, CONTRACTOR SHALL NOTIFY TOWN PRIOR TO CONSTRUCTION.
4. ALL TREE ROOTS IN CONFLICT WITH PROPOSED WORK SHALL BE STRAIGHT CUT AND TREATED WITH PRUNING PAINT (NO SEPARATE PAY).
5. ALL DAMAGE AND/OR REPLACEMENT TO EXISTING DECORATIVE WALK WAYS NOT SPECIFICALLY NOTED IN THE PLANS SHALL BE SUBSIDIARY TO ANY BID ITEM (NO SEPARATE PAY).
6. REFER TO TRAFFIC CONTROL SHEETS FOR PHASING.
7. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/ OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND TOWN UTILITIES PRIOR TO CONSTRUCTION.
8. IN THE EVENT THE CONTRACTOR REMOVES THE WATER LINE THE MATERIAL SHALL BE DISPOSED OF PROPERLY OFFSITE (NO SEPARATE PAY)

CAUTION!
EXISTING UNDERGROUND UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

811 Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY
1	ADDENDUM #2	10/18/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/18/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

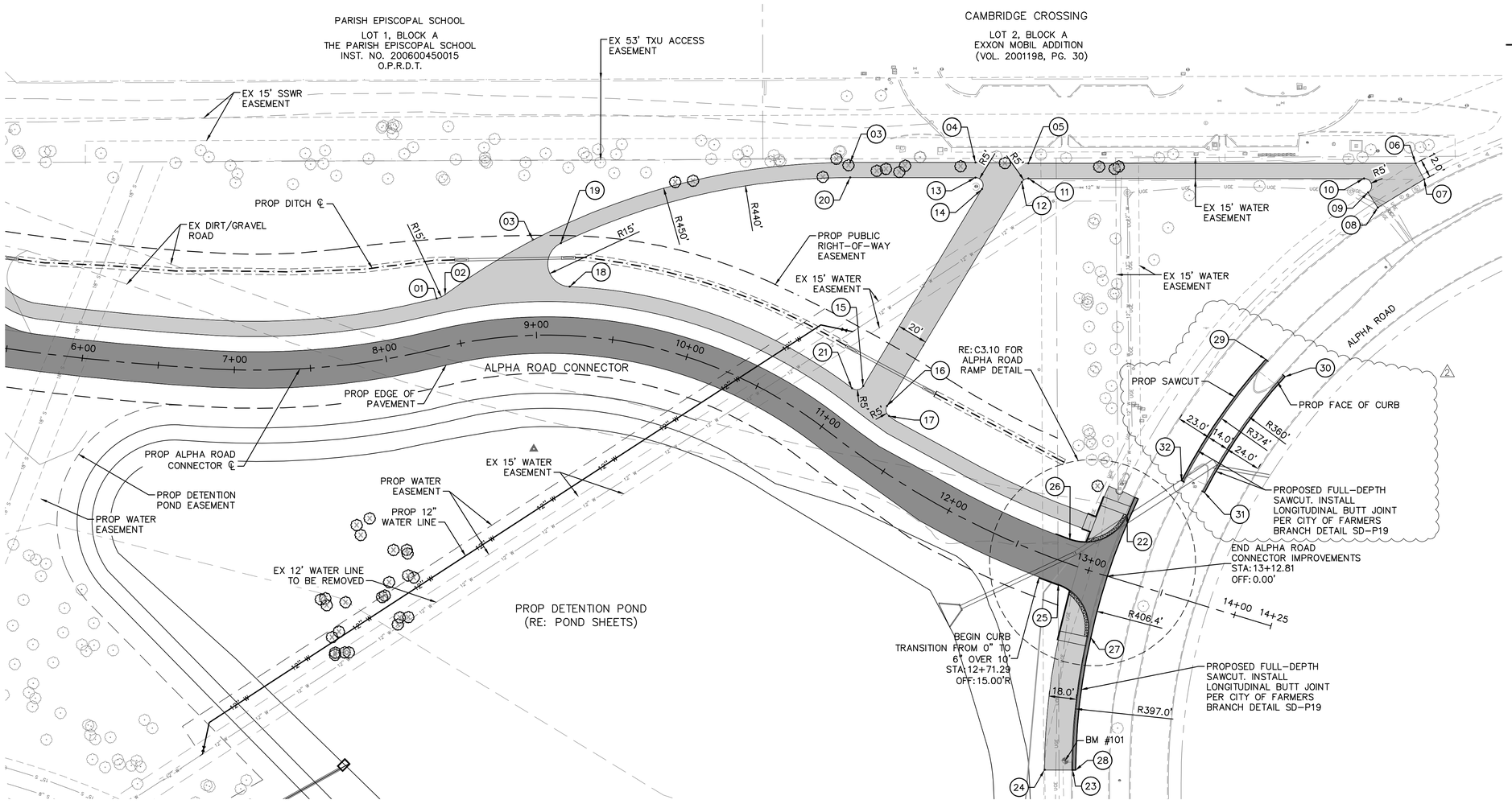
KHA PROJECT	063543031
DATE	10/18/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

REMOVAL PLAN
ALPHA ROAD
CONNECTOR
SHEET 1 OF 2

SHEET NUMBER
C1.03

Plotted By: Staudolt, Cody October 15, 2021 11:08:18am K:\VAC_Civil\063543031_Addison_Alpha_Road_Connector\VCADD\PlanSheets\Removal Plan.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
- EX TREE TO BE REMOVED

NOTES

1. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ANY SIGNS AND COORDINATION WITH THE CITY ON ANY NECESSARY MODIFICATIONS.
2. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL IRRIGATION FACILITIES WITHIN LOC.
3. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/ OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND CITY UTILITIES PRIOR TO CONSTRUCTION.
4. ELEV ARE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

EX	EXISTING
PROP	PROPOSED
STA	STATION
EL	ELEVATION
PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
PRC	POINT OF HORIZONTAL REVERSE CURVATURE
PVI	POINT OF VERTICAL INFLECTION
AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	PRC	ALPHA ROAD CONN	8+40.94	32.00' L	568.29'
02	PRC	ALPHA ROAD CONN	8+46.33	33.30' L	568.21'
03	PT	ALPHA ROAD CONN	10+41.41	158.51' L	569.20'
04	PI	ALPHA ROAD CONN	10+86.01	199.59' L	571.20'
05	PI	ALPHA ROAD CONN	11+02.77	219.46' L	571.30'
06	PI	ALPHA ROAD CONN	--	--	576.17'
07	TIE TO EX	ALPHA ROAD CONN	--	--	576.31'
08	TIE TO EX	ALPHA ROAD CONN	14+12.10	282.92' L	576.24'
09	PC	ALPHA ROAD CONN	14+03.07	290.55' L	576.12'
10	PT	ALPHA ROAD CONN	13+97.78	298.55' L	575.68'
11	PC	ALPHA ROAD CONN	11+06.33	211.55' L	571.11'
12	PT	ALPHA ROAD CONN	11+05.22	207.01' L	571.00'
13	PC	ALPHA ROAD CONN	10+89.44	191.35' L	570.95'
14	PT	ALPHA ROAD CONN	10+94.27	187.64' L	570.85'
15	PC	ALPHA ROAD CONN	11+05.24	37.55' L	569.90'
16	PC	ALPHA ROAD CONN	11+26.67	36.60' L	570.62'
17	PC	ALPHA ROAD CONN	11+32.01	32.00' L	570.96'
18	PC	ALPHA ROAD CONN	9+20.23	32.00' L	567.49'
19	PCC	ALPHA ROAD CONN	9+14.35	60.30' L	565.89'
20	PT	ALPHA ROAD CONN	10+44.30	149.52' L	569.00'

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
21	PRC	ALPHA ROAD CONN	11+00.82	32.00' L	569.87'
22	PT	ALPHA ROAD CONN	13+13.70	42.13' L	574.52'
23	TIE TO EX	ALPHA ROAD CONN	13+28.08	128.20' R	573.69'
24	TIE TO EX	ALPHA ROAD CONN	13+10.50	133.45' R	574.29'
25	PI	ALPHA ROAD CONN	12+84.35	15.00' R	574.34'
26	PT	ALPHA ROAD CONN	12+81.60	15.00' L	574.92'
27	PCC-SC	ALPHA ROAD CONN	13+14.18	41.69' R	574.12'
28	TIE TO EX	ALPHA ROAD CONN	13+30.01	127.68' R	573.66'

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET
29	PI-ME	ALPHA ROAD CONN	13+70.76	166.39' L
30	PI-ME	ALPHA ROAD CONN	13+86.14	159.15' L
31	PI-ME	ALPHA ROAD CONN	13+57.85	71.06' L
32	PI-ME	ALPHA ROAD CONN	13+41.13	74.13' L

Know what's below.
Call before you dig.

No.	REVISIONS	DATE	BY
1	ADDENDUM #2	10/18/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/18/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

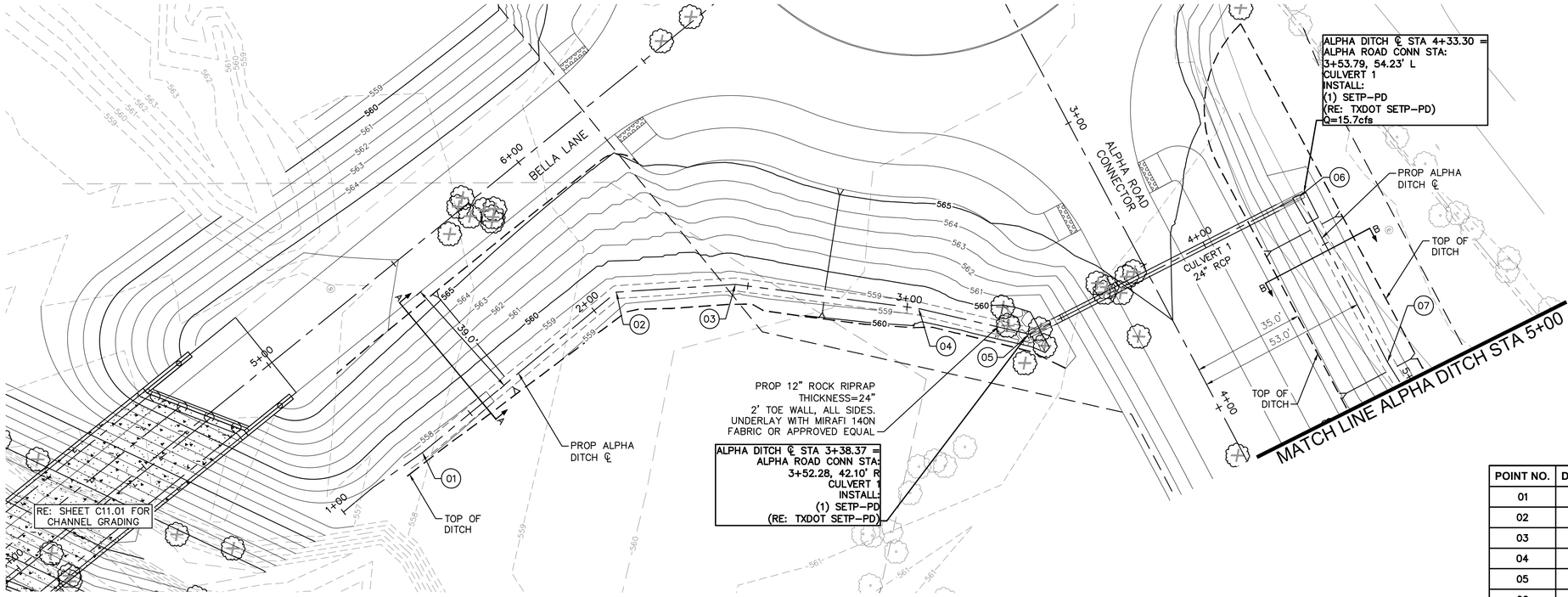
KHA PROJECT	063543031
DATE	10/18/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

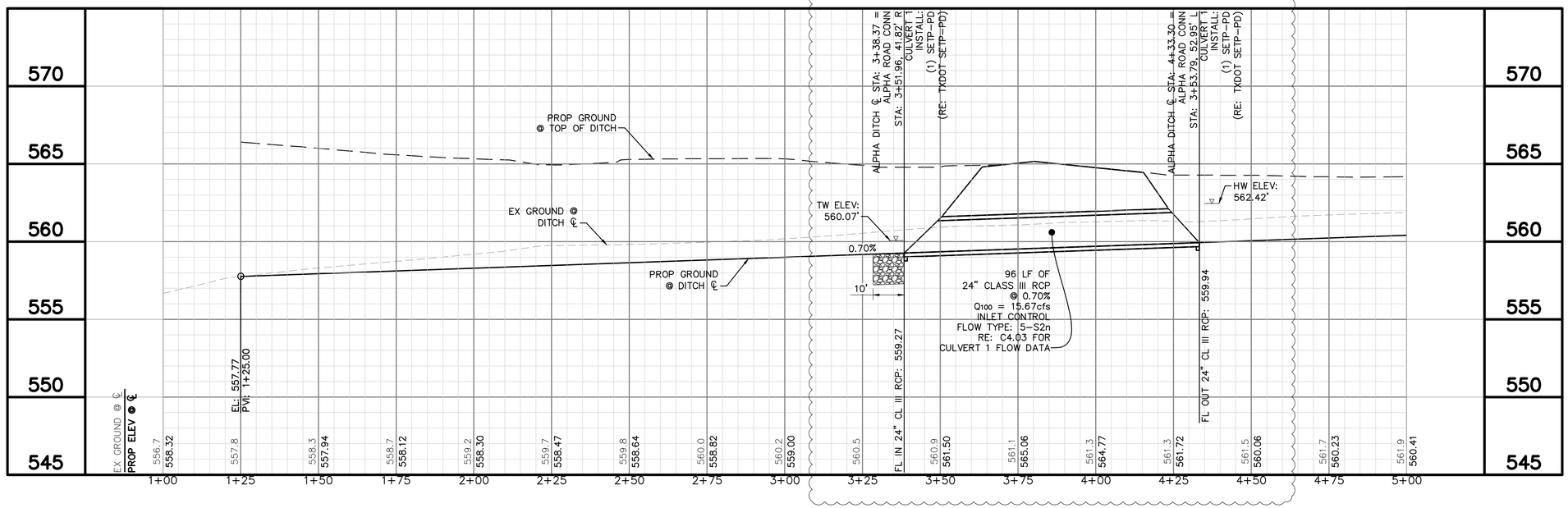
PAVING
PAVING AND
SIDEWALK LAYOUT

SHEET NUMBER
C3.09

Plotted By: Shettigh, Cody October 15, 2021 11:12:39am K:\LNAC-Civil\063543031-Addison, Alpha Road Connector\CAD\Plan Sheets\Paving Plans\P-Plan.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET
01	PI	ALPHA ROAD CONN	2+96.62	225.45' R
02	PI	ALPHA ROAD CONN	2+80.70	148.85' R
03	PI	ALPHA ROAD CONN	2+95.89	114.97' R
04	PI	ALPHA ROAD CONN	3+29.14	68.15' R
05	PI	ALPHA ROAD CONN	3+52.29	41.44' R
06	PI	ALPHA ROAD CONN	3+53.77	52.95' L
07	PI	ALPHA ROAD CONN	4+12.02	53.00' L



Know what's **below.**
Call before you dig.

No.	REVISIONS	DATE	BY
1	ADDENDUM #2	10/18/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
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PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM

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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/18/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

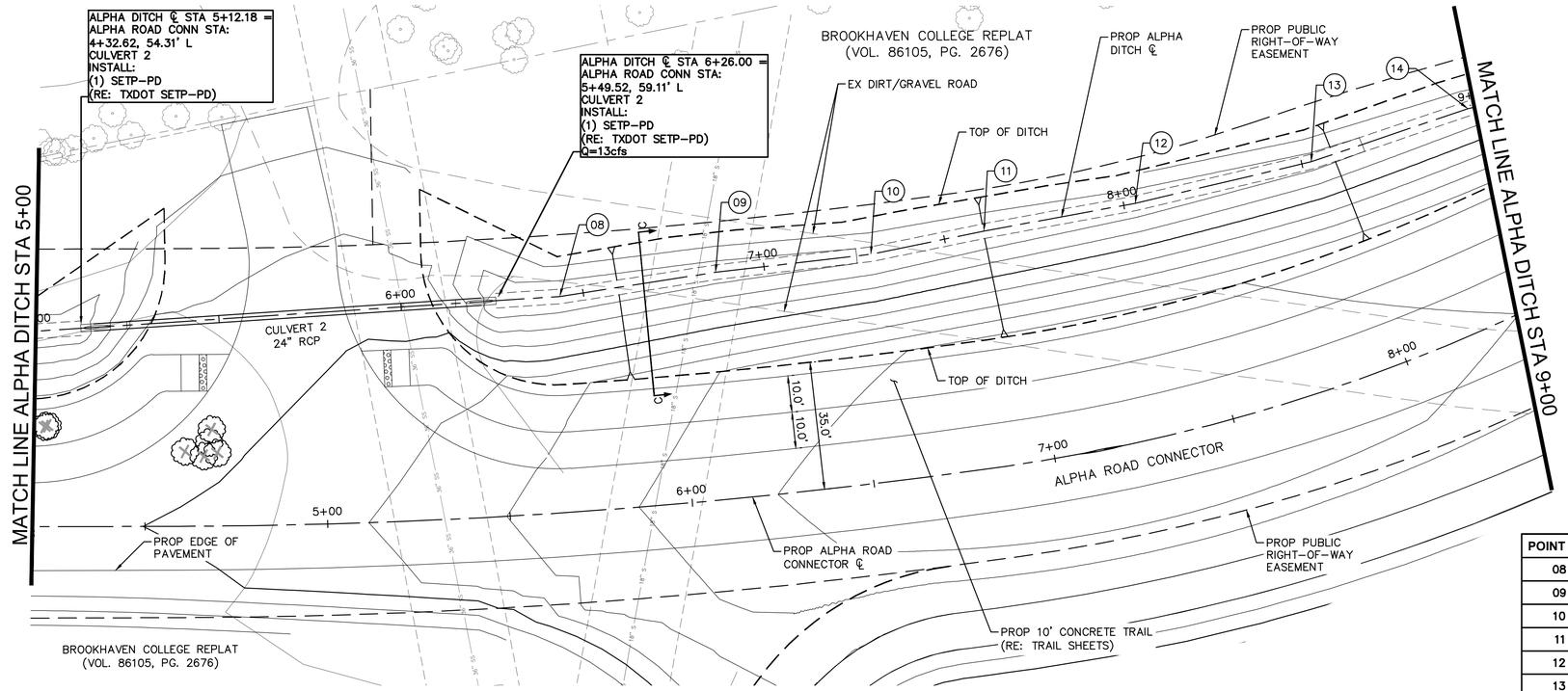
KHA PROJECT 063543031
DATE 10/18/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

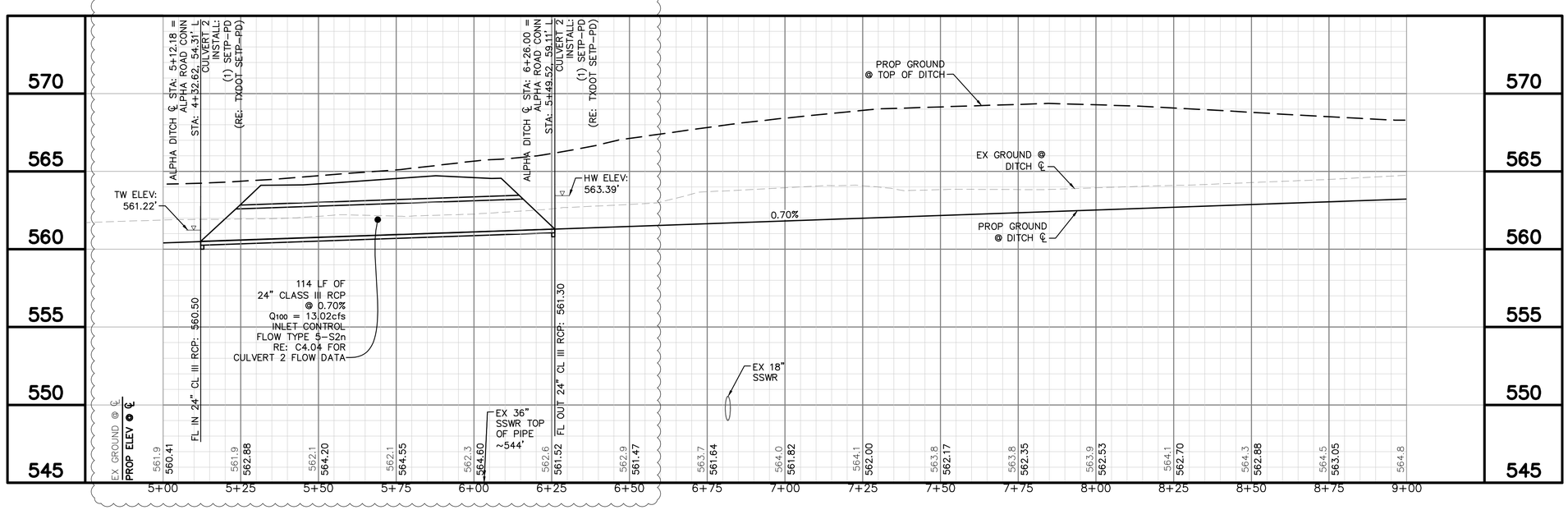
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE
ALPHA DITCH
BEGIN TO STA 5+00

SHEET NUMBER
C4.09

Plotted By: Ghatwai, Cody October 15, 2021 - 11:30:57am K:\IAC-Civil\063543031-Addison Alpha Road Connector\CAD\Plan Sheet\Drainage Plan&Profile.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET
08	PI	ALPHA ROAD CONN	5+67.67	59.16' L
09	PI	ALPHA ROAD CONN	6+12.38	62.22' L
10	PI	ALPHA ROAD CONN	6+56.90	62.43' L
11	PI	ALPHA ROAD CONN	6+90.00	64.58' L
12	PI	ALPHA ROAD CONN	7+38.32	63.92' L
13	PI	ALPHA ROAD CONN	7+94.70	60.45' L
14	PI	ALPHA ROAD CONN	8+43.08	56.90' L

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND
- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

No.	REVISIONS	DATE	BY
1	ADDENDUM #2	10/18/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/18/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 10/18/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

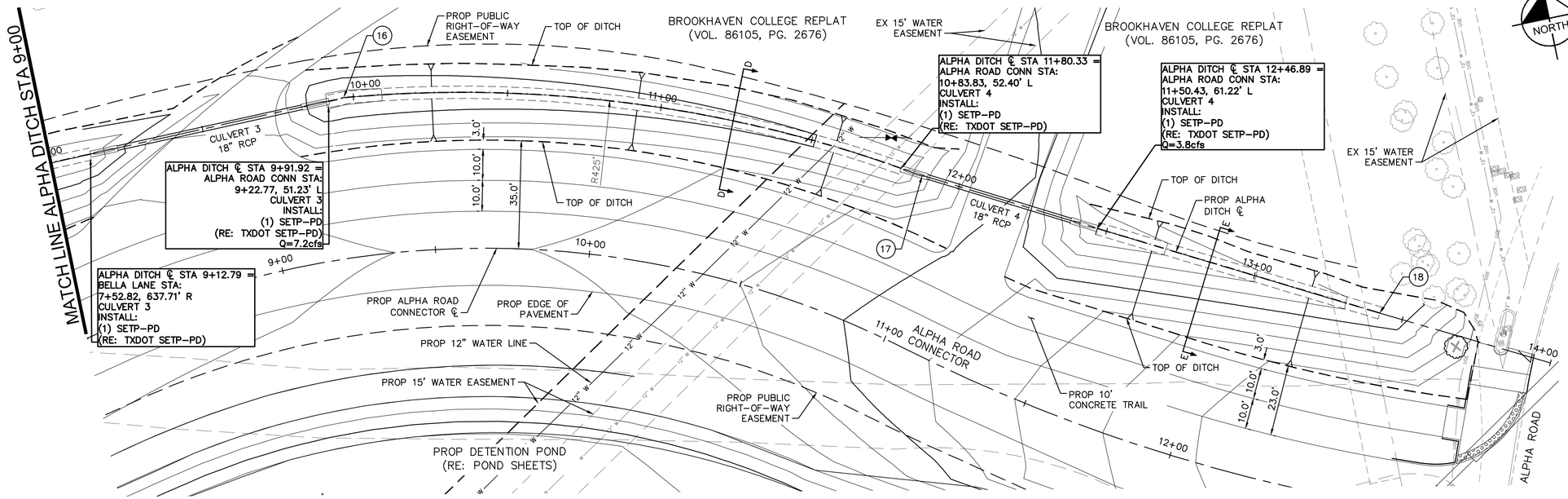
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE
ALPHA DITCH
STA 5+00 TO STA 9+00

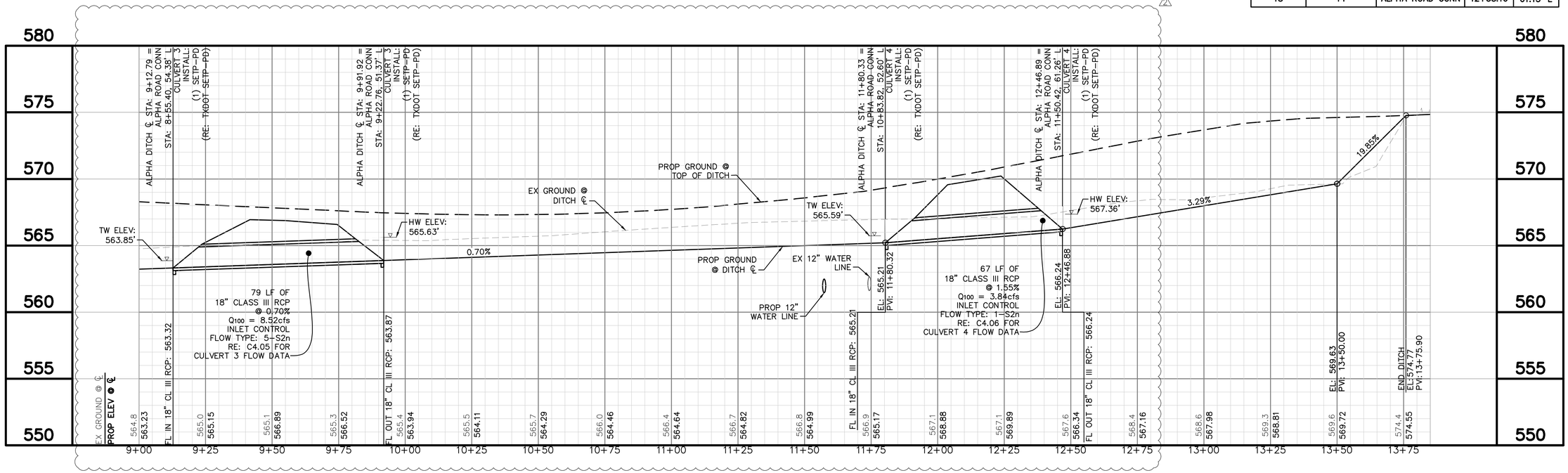
SHEET NUMBER
C4.10

811 Know what's below. Call before you dig.

Plotted By: Ghatfield, Cody October 15, 2021 - 11:31:06am K:\IAC-Civil\063543031_Addison_Alpha_Road_Connector\CAD\PlanSheet\Drainage Plan&Profile.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET
16	PC	ALPHA ROAD CONN	9+26.98	51.79' L
17	PT	ALPHA ROAD CONN	10+90.00	53.01' L
18	PI	ALPHA ROAD CONN	12+58.10	61.13' L



811 Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY
1	ADDENDUM #2	10/18/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/18/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 10/18/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

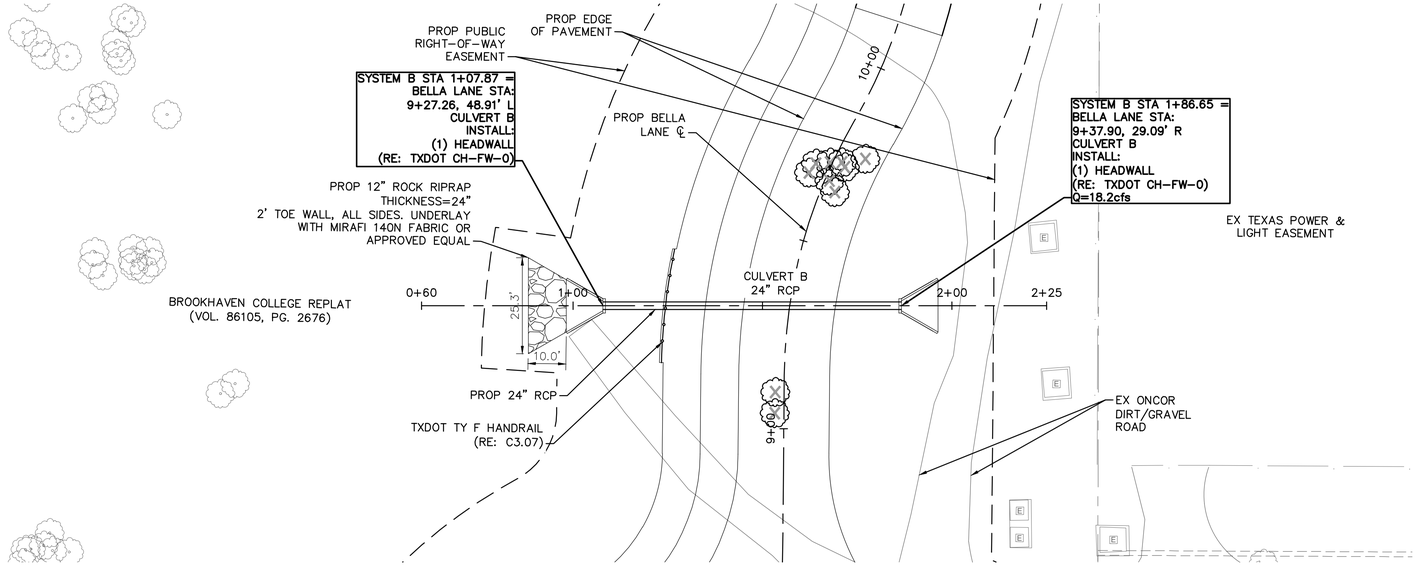
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

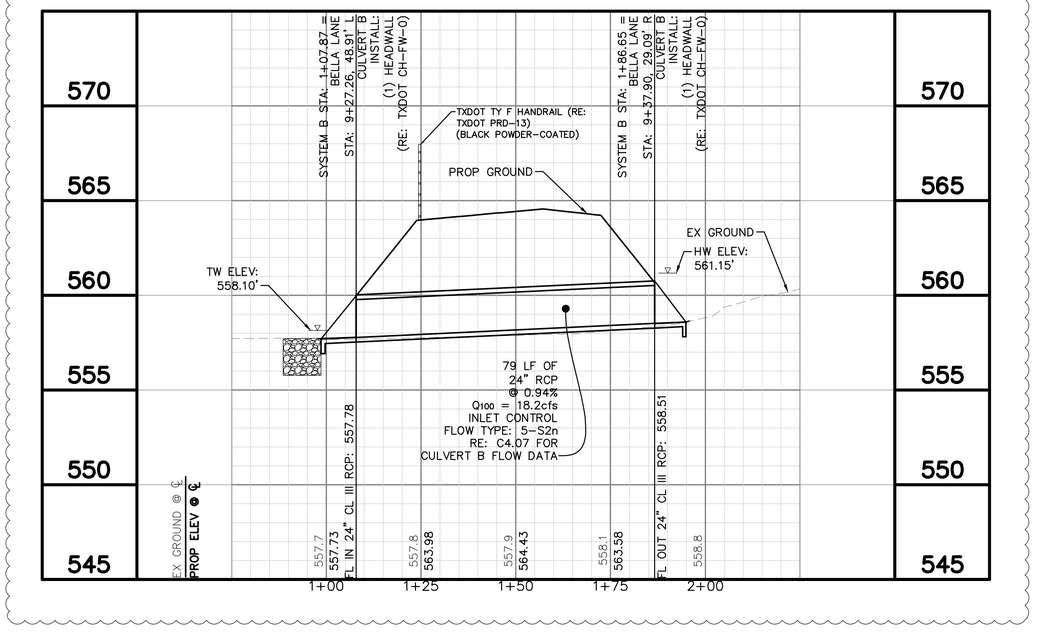
DRAINAGE
ALPHA DITCH
STA 9+00 TO END

SHEET NUMBER
C4.11

Plotted By: Shettcliff, Cody October 15, 2021 11:31:13am K:\IAC_Civil\063543031 Addison Alpha Road Corridor\CAD\01 Plan Sheets\Drainage Plan&Profile.dwg
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Plotted By-Shettigh, Cody October 15, 2021 11:31:19am K:\NAC Civil\063543031- Addison, Alpha Road Corridor\2400\PlanSheet\2400PlanSheet Plan&Profile.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

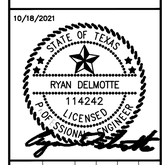
LEGEND
- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

No.	REVISIONS	DATE	BY
2	ADDENDUM #2	10/18/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

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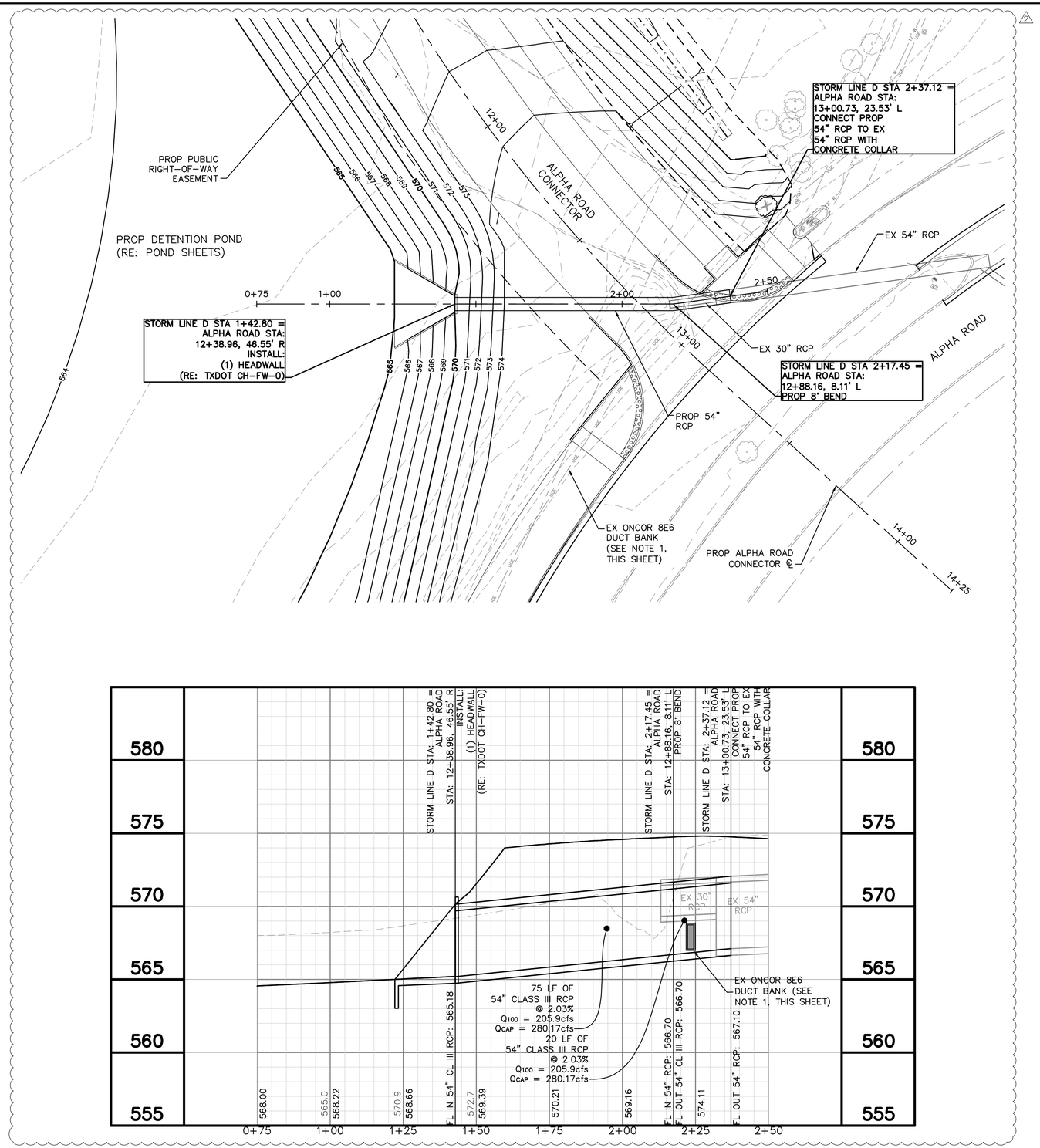
KHA PROJECT 063543031	DATE 10/18/2021
SCALE AS SHOWN	DESIGNED BY RMD
DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

DRAINAGE
SYSTEM B
SHEET 1 OF 1

SHEET NUMBER
C4.12

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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

NOTES

1. ONCOR IS IN THE PROCESS OF LOWERING THE DUCT BANK TO CLEAR THE PROPOSED 54" RCP EXTENSION AND WORK IS ANTICIPATED TO BE COMPLETED PRIOR TO END OF APRIL 2022. CONTRACTOR SHALL COORDINATE WITH ONCOR AND PHASE IMPROVEMENTS TO BE COMPLETED AFTER DUCT BANK WORK IS COMPLETE.

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No.	REVISIONS	DATE	BY
2	ADDENDUM #2	10/18/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/18/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

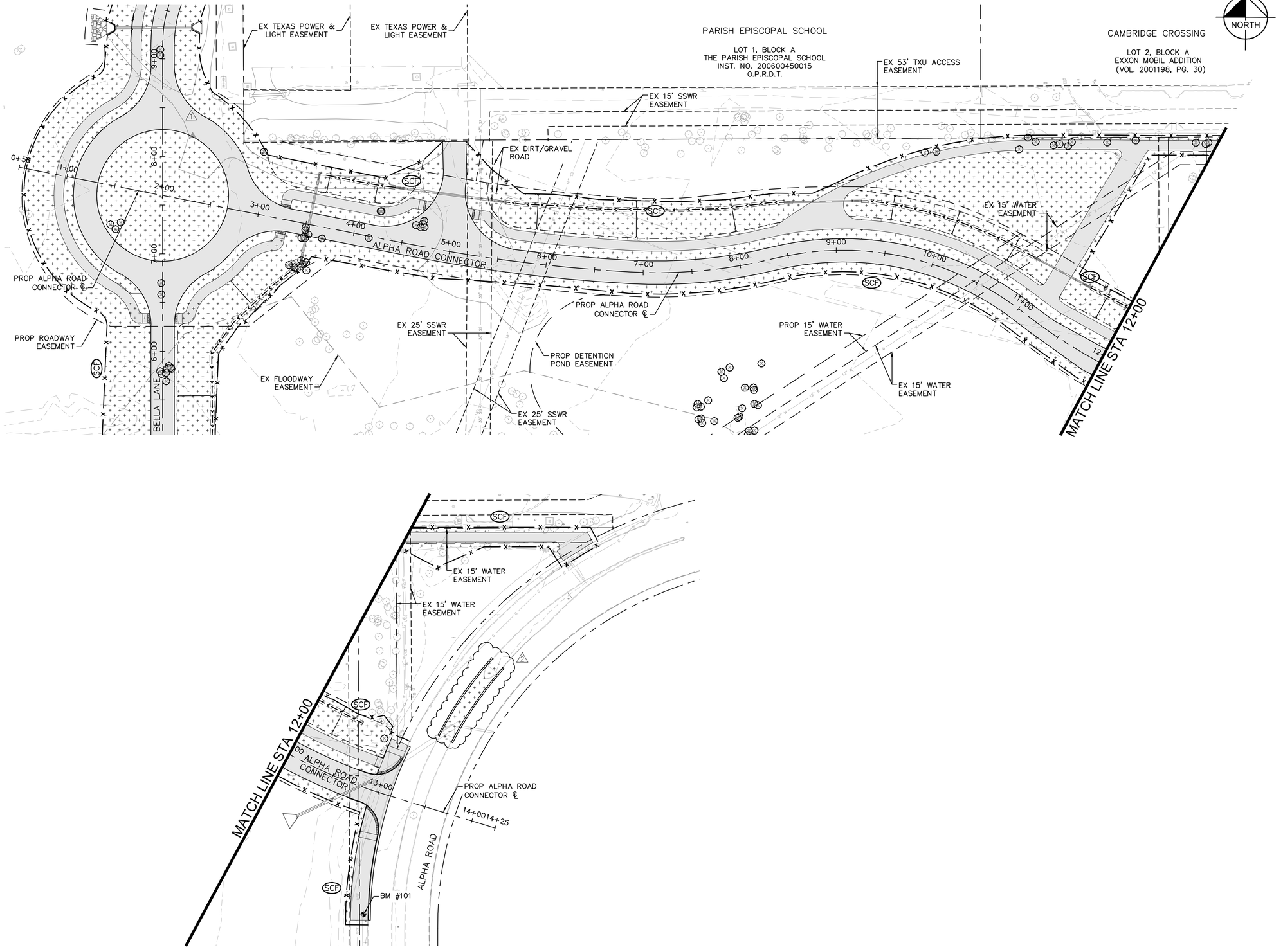
KHA PROJECT	063543031
DATE	10/18/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE SYSTEM D

SHEET NUMBER
C4.15

Plotted By: Ghatwai, Cody October 18, 2021 02:25:47pm K:\VAC_Civil\063543031_Addison_Alpha_Road_Connector\CAD\PlanSheet\Drainage Plan&Profile2.dwg
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GRAPHIC SCALE IN FEET
0 25 50 100

NORTH

LEGEND

- SCF — SEDIMENT CONTROL FENCE
- IP — INLET PROTECTION
- RCD — ROCK CHECK DAM
- PROP CONCRETE
- HYDRAULIC MULCHING WITH 4" TOPSOIL

EROSION CONTROL NOTES

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED DURING SITE PREP IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT.
3. CONTRACTOR SHALL MINIMIZE THE REMOVAL OF GRASS COVER UNTIL ACTUAL WORK PHASE BEGINS.
4. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED (NO SEPARATE PAY).
5. OFF-SITE SOIL BORROW AND SPOIL AREAS ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL OFFSITE SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT.
6. INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO INSURE THAT THE DEVICES ARE FUNCTIONING PROPERLY.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING APPROPRIATE CONSTRUCTION ENTRANCE. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN STONES OR MUD IS BEING TRACKED ONTO A PUBLIC ROADWAY, THE STABILIZED CONSTRUCTION ENTRANCE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASHDOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL OFF SITE SEDIMENTATION. PERIODIC RE-GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFICIENCY OF THE INSTALLATION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTAL OF N.O.I., N.O.T. AND ANY ADDITIONAL INFORMATION REQUIRED BY THE E.P.A. CONTRACTOR SHALL COMPLY WITH ALL E.P.A. STORMWATER POLLUTION PREVENTION REQUIREMENTS.
9. PRIOR TO FINAL ACCEPTANCE AND/OR OPENING ROADWAY TO TRAFFIC, ALL DISTURBED AREAS SHALL BE STABILIZED AND EROSION CONTROL DEVICES SHALL BE REMOVED.
10. SEE GENERAL NOTES SHEET FOR EROSION CONTROL REQUIREMENTS.

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No.	REVISIONS	DATE	BY
1	ADDENDUM #1	10/12/21	CDS
2	ADDENDUM #2	10/18/21	CDS

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

10/18/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 10/18/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

EROSION CONTROL ALPHA ROAD CONNECTOR

SHEET NUMBER
C9.02

Plotted By: Skadbolt, Cody October 15, 2021 11:36:25am K:\JAC_Civil\063543031_Addison_Alpha_Road_Connector\CAD\PlanSheets\Erosion Control.dwg
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PROJECT NO: 2021-01C
BID NO: 21-69
KHA NO. 063543031

THE TOWN OF ADDISON

CONSTRUCTION PLANS FOR

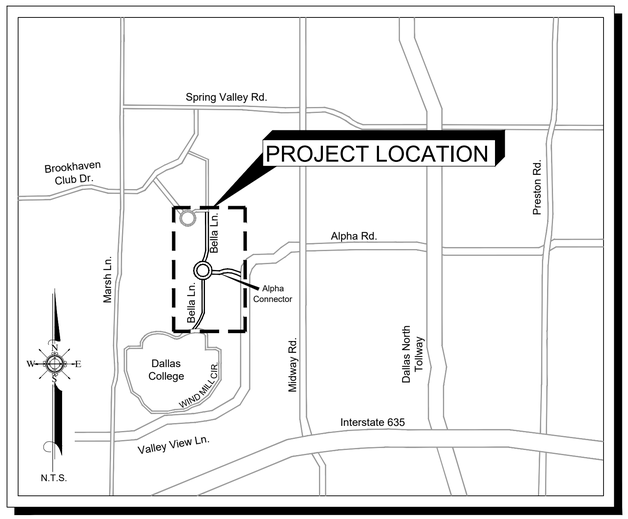
BELLA LANE SOUTH EXTENSION &

FROM VITRUVIAN PARK TO WINDMILL CIRCLE (APPROXIMATELY 1250 LF)

ALPHA ROAD CONNECTOR

FROM FARMERS BRANCH CREEK TO ALPHA ROAD (APPROXIMATELY 1200 LF)

LOCATION MAP:



PROJECT NO: 2021-01C
BID NO: 21-69

ADDISON

CITY OFFICIALS:

Mayor:	Joe Chow
Mayor Pro Tem:	Guillermo Quintanilla
Deputy Mayor Pro Tem:	Paul Walden
City Council:	Tom Braun Lori Ward Kathryn Wheeler Marlin Willesen
City Manager:	Wesley S. Pierson
Director of Public Works and Engineering Services:	Shannon Hicks, P.E.

STATE OF TEXAS
BRIAN J. LAFOY
89363
LICENSED
PROFESSIONAL ENGINEER
09/10/2021

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

STATE OF TEXAS
JENNIFER M. LAFOY
97309
LICENSED
PROFESSIONAL ENGINEER
10 SEPTEMBER 2021

811
Know what's **below.**
Call before you dig.

TOWN OF ADDISON

Addison Services Center
16801 Westgrove Drive
Addison, TX 75001
Ph. 972-450-2871

FINAL SUBMITTAL
SEPTEMBER 2021

Kimley»Horn
2201 West Royal Lane, Suite 275, Irving, TX 75063 214-420-5600
Texas Registered Engineering Firm # F-928

SHEET NUMBER
C0.01

GENERAL

SHEET NUMBER	SHEET TITLE
C0.01	COVER
C0.02	SHEET INDEX
C0.03	PROJECT OVERVIEW
C0.04	EASEMENT OVERVIEW
C0.05	GENERAL NOTES - TOWN OF ADDISON
C0.06	GENERAL NOTES - CITY OF FARMERS BRANCH - SHEET 1 OF 2
C0.07	GENERAL NOTES - CITY OF FARMERS BRANCH - SHEET 2 OF 2

PROJECT CONTROL

SHEET NUMBER	SHEET TITLE
C1.01	PROJECT CONTROL - ALPHA ROAD CONNECTOR
C1.02	PROJECT CONTROL - BELLA LANE

REMOVAL PLAN

SHEET NUMBER	SHEET TITLE
C1.03	REMOVAL PLAN - ALPHA ROAD CONNECTOR - SHEET 1 OF 2
C1.04	REMOVAL PLAN - ALPHA ROAD CONNECTOR - SHEET 2 OF 2
C1.05	REMOVAL PLAN - BELLA LANE EXTENSION
C1.06	TREE REMOVAL PLAN - SHEET 1 OF 3
C1.07	TREE REMOVAL PLAN - SHEET 2 OF 3
C1.08	TREE REMOVAL PLAN - SHEET 3 OF 3

TYPICAL SECTIONS

SHEET NUMBER	SHEET TITLE
C1.09	TYPICAL SECTIONS - SHEET 1 OF 2
C1.10	TYPICAL SECTIONS - SHEET 2 OF 2

TRAFFIC CONTROL PLANS

SHEET NUMBER	SHEET TITLE
C2.01	TRAFFIC CONTROL PLANS - ALPHA ROAD CONNECTOR
C2.02	TRAFFIC CONTROL PLANS - BELLA LANE EXTENSION

PAVING

SHEET NUMBER	SHEET TITLE
C3.01	PAVING - PLAN AND PROFILE - ALPHA ROAD CONNECTOR - BEGIN TO STA 4+00
C3.02	PAVING - PLAN AND PROFILE - ALPHA ROAD CONNECTOR - STA 4+00 TO STA 8+00
C3.03	PAVING - PLAN AND PROFILE - ALPHA ROAD CONNECTOR - STA 8+00 TO STA 12+00
C3.04	PAVING - PLAN AND PROFILE - ALPHA ROAD CONNECTOR - STA 12+00 TO END
C3.05	PAVING - PLAN AND PROFILE - BELLA LANE EXTENSION - BEGIN TO STA 4+00
C3.06	PAVING - PLAN AND PROFILE - BELLA LANE EXTENSION - STA 4+00 TO STA 8+00
C3.07	PAVING - PLAN AND PROFILE - BELLA LANE EXTENSION - STA 8+00 TO STA 12+00
C3.08	PAVING - PLAN AND PROFILE - BELLA LANE EXTENSION - STA 12+00 TO END
C3.09	PAVING - PAVING AND SIDEWALK LAYOUT
C3.10	PAVING - RAMP GRADING
C3.11	PAVING - TRAFFIC CIRCLE - GRADING PLAN
C3.12	*TXDOT DETAILS - BED-14
C3.13	*TXDOT DETAILS - PRD-13
C3.14 - C3.17	*TXDOT DETAILS - PED-18 (4 SHEETS)
C3.18 - C3.21	*STANDARD DETAILS - TOWN OF ADDISON (4 SHEETS)
C3.22	*STANDARD DETAILS - CITY OF FARMERS BRANCH

DRAINAGE

SHEET NUMBER	SHEET TITLE
C4.01	DRAINAGE - PROPOSED DRAINAGE AREA MAP
C4.02	DRAINAGE - DRAINAGE CALCULATIONS
C4.03	DRAINAGE - CULVERT 1 CALCULATIONS
C4.04	DRAINAGE - CULVERT 2 CALCULATIONS
C4.05	DRAINAGE - CULVERT 3 CALCULATIONS
C4.06	DRAINAGE - CULVERT 4 CALCULATIONS
C4.07	DRAINAGE - CULVERT B CALCULATIONS
C4.08	DRAINAGE - DITCH SECTIONS
C4.09	DRAINAGE - SYSTEM A - ALPHA DITCH - BEGIN TO STA 5+00
C4.10	DRAINAGE - SYSTEM A - ALPHA DITCH - STA 5+00 TO STA 9+00
C4.11	DRAINAGE - SYSTEM A - ALPHA DITCH - STA 9+00 TO END
C4.12	DRAINAGE - SYSTEM B
C4.13	DRAINAGE - SYSTEM C
C4.14	DRAINAGE - SYSTEM C LATERALS
C4.15	DRAINAGE - SYSTEM D
C4.16	DRAINAGE - BELLA DITCH
C4.17	*TXDOT DETAILS - CH-FW-0
C4.18	*TXDOT DETAILS - SETP-PD
C4.19	*STANDARD DETAILS - TOWN OF ADDISON

STRUCTURAL

SHEET NUMBER	SHEET TITLE
C5.01	STRUCTURAL - BRIDGE LAYOUT - PLAN AND PROFILE
C5.02	STRUCTURAL - TYPICAL SECTION
C5.03	STRUCTURAL - ESTIMATED QUANTITIES
C5.04	STRUCTURAL - FOUNDATION LAYOUT
C5.05 - C5.06	STRUCTURAL - ABUTMENT DETAILS (2 SHEETS)
C5.07	STRUCTURAL - FRAMING PLAN
C5.08	STRUCTURAL - SLAB DETAILS
C5.09	STRUCTURAL - TRANSVERSE SECTION
C5.10	STRUCTURAL - IGND
C5.11	STRUCTURAL - **TXDOT - BAS-C
C5.12 - C5.13	STRUCTURAL - **TXDOT - BRSM - (2 SHEETS)
C5.14	STRUCTURAL - **TXDOT - BS-EJCP
C5.15 - C5.16	STRUCTURAL - **TXDOT - CSAB - (2 SHEETS)
C5.17 - C5.19	STRUCTURAL - **TXDOT - C221 - (3 SHEETS)
C5.20 - C5.21	STRUCTURAL - **TXDOT - FD - (2 SHEETS)
C5.22	STRUCTURAL - **TXDOT - IGCS
C5.23 - C5.24	STRUCTURAL - **TXDOT - IGD - (2 SHEETS)
C5.25 - C5.27	STRUCTURAL - **TXDOT - IGEB - (3 SHEETS)
C5.28 - C5.29	STRUCTURAL - **TXDOT - IGMS - (2 SHEETS)
C5.30	STRUCTURAL - **TXDOT - IGSK
C5.31	STRUCTURAL - **TXDOT - IGTS
C5.32 - C5.33	STRUCTURAL - **TXDOT - MEBR - (2 SHEETS)
C5.34 - C5.37	STRUCTURAL - **TXDOT - PCP - (4 SHEETS)
C5.38	STRUCTURAL - **TXDOT - PCP-FAB
C5.39 - C5.40	STRUCTURAL - **TXDOT - PMDF - (2 SHEETS)
C5.41	STRUCTURAL - **TXDOT - SEJ-M

PAVEMENT MARKING AND SIGNING

SHEET NUMBER	SHEET TITLE
C6.01	PAVEMENT MARKING AND SIGNING - ALPHA ROAD CONNECTOR - BEGIN TO STA 8+00
C6.02	PAVEMENT MARKING AND SIGNING - ALPHA ROAD CONNECTOR - STA 8+00 TO END
C6.03	PAVEMENT MARKING AND SIGNING - BELLA LANE EXTENSION - BEGIN TO STA 8+00
C6.04	PAVEMENT MARKING AND SIGNING - BELLA LANE EXTENSION - STA 8+00 TO END
C6.05	*TXDOT DETAILS - PM(1)-20
C6.06	*TXDOT DETAILS - PM(2)-20
C6.07	*TXDOT DETAILS - PM(4)-20
C6.08	*TXDOT DETAILS - SMD(GEN)-08
C6.09 - C6.11	*TXDOT DETAILS - SMD(BR-1,2,3)-14 (3 SHEETS)
C6.12 - C6.14	*TXDOT DETAILS - SMD (SLIP-1,2,3)-08 (3 SHEETS)
C6.15	*STANDARD DETAILS - CITY OF FARMERS BRANCH

WATER LINE

SHEET NUMBER	SHEET TITLE
C7.01	WATER LINE - PLAN AND PROFILE - ALPHA ROAD CONNECTOR - BEGIN TO STA 4+50
C7.02	WATER LINE - PLAN AND PROFILE - ALPHA ROAD CONNECTOR - STA 4+50 TO END
C7.03	WATER LINE - PLAN AND PROFILE - BELLA LANE
C7.04 - C7.05	*WATER LINE - STANDARD DETAILS - TOWN OF ADDISON (2 SHEETS)

SANITARY SEWER LINE

SHEET NUMBER	SHEET TITLE
C8.01	SANITARY SEWER LINE - PLAN AND PROFILE - BELLA LANE - BEGIN TO END
C8.02	*SANITARY SEWER LINE - TOWN OF ADDISON

EROSION CONTROL

SHEET NUMBER	SHEET TITLE
C9.01	EROSION CONTROL - DETENTION POND
C9.02	EROSION CONTROL - ALPHA ROAD CONNECTOR
C9.03	EROSION CONTROL - BELLA LANE EXTENSION
C9.04	*EROSION CONTROL - STANDARD DETAILS

DETENTION POND

SHEET NUMBER	SHEET TITLE
C10.01	DETENTION POND - LAYOUT
C10.02	DETENTION POND - OUTFALL - DRAINAGE SYSTEM D

FARMERS BRANCH CREEK TRIBUTARY 1

SHEET NUMBER	SHEET TITLE
C11.01	FARMERS BRANCH CREEK TRIBUTARY 1 - CHANNEL GRADING
C11.02	FARMERS BRANCH CREEK TRIBUTARY 1 - CHANNEL LINING DETAILS

CROSS SECTIONS

SHEET NUMBER	SHEET TITLE
C12.01	CROSS SECTIONS - ALPHA ROAD CONNECTOR - BEGIN TO STA 7+00
C12.02	CROSS SECTIONS - ALPHA ROAD CONNECTOR - STA 7+50 TO STA 11+00
C12.03	CROSS SECTIONS - BELLA LANE EXTENSION - BEGIN TO STA 5+50
C12.04	CROSS SECTIONS - BELLA LANE EXTENSION - STA 6+00 TO 9+50
C12.05	CROSS SECTIONS - BELLA LANE EXTENSION - STA 10+00 TO END

*THE CITY STANDARD DETAIL SHEETS AND STANDARD TXDOT SHEETS, SPECIFICALLY IDENTIFIED IN THIS SHEET INDEX, HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

**THE STANDARD TXDOT SHEETS, SPECIFICALLY IDENTIFIED IN THIS SHEET INDEX, HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

STATE OF TEXAS
BRIAN J. LAFOY
89363
LICENSED
PROFESSIONAL ENGINEER
09/10/2021

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031

DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
09/10/2021	AS SHOWN	RMD	CDS	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

SHEET INDEX

SHEET NUMBER
C0.02

Plotted By: Tyrell, Abagail September 10, 2021 12:14:36pm K:\IAC_Civil\063543031_Addison_Alpha_Road_Connector\X-ADD\Plan\Sheet\Sheet Index.dwg
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Plotted By: Snodbolt, Cody September 08, 2021 08:55:12am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Project Overview.dwg
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MATCH LINE STA 10+00

PROP 24" RCP (RE: DRAINAGE SHEETS)

EX TEXAS POWER & LIGHT EASEMENT

EX TEXAS POWER & LIGHT EASEMENT

PROP ALPHA ROAD CONNECTOR ℄

PROP PUBLIC RIGHT-OF-WAY EASEMENT

PROP BELLA LANE ℄

BROOKHAVEN COLLEGE REPLAT (VOL. 86105, PG. 2676)

BELLA LANE

PROP DITCH ℄

PROP BELLA LANE BRIDGE (RE: STRUCTURAL SHEETS)

LIKELY JURISDICTIONAL INTERMITTENT STREAM LIMITS FARMERS BRANCH CREEK TRIBUTARY 1

EX 25' SSWR EASEMENT

WINDMILL CIRCLE

DALLAS COLLEGE

LIKELY NON-JURISDICTIONAL SWALE

ONCOR DRIVEWAY

EX 15' SSWR EASEMENT

PROP 24" RCP (RE: DRAINAGE SHEETS)

PROP PARK EASEMENT

PROP ALPHA DITCH ℄

PROP 24" RCP (RE: DRAINAGE SHEETS)

EX FLOODWAY EASEMENT

EX 25' SSWR EASEMENT

EX 25' SSWR EASEMENT

LIKELY JURISDICTIONAL INTERMITTENT STREAM LIMITS FARMERS BRANCH CREEK TRIBUTARY 1

EX 25' SSWR EASEMENT

EX 15' WATER EASEMENT

BROOKHAVEN COLLEGE REPLAT (VOL. 86105, PG. 2676)

EX 15' SSWR EASEMENT

EX 53' TXU ACCESS EASEMENT

PROP 18" RCP (RE: DRAINAGE SHEETS)

PROP PUBLIC RIGHT-OF-WAY EASEMENT

PROP 15' WATER EASEMENT

EX 15' WATER EASEMENT

PROP 18" RCP (RE: DRAINAGE SHEETS)

PROP DETENTION POND EASEMENT

PROP DETENTION POND (RE: POND SHEETS)

EX 25' SSWR EASEMENT

PROP 30" RCP (RE: DRAINAGE SHEETS)

EX 15' WATER EASEMENT

EX 15' WATER EASEMENT

EX 15' WATER EASEMENT

PROP MEDIAN CLOSURE

BM #101

LIKELY NON-JURISDICTIONAL DITCH

ALPHA ROAD

ALPHA ROAD CONNECTOR

EX 20' TEXAS POWER & LIGHT EASEMENT CITY OF FARMERS BRANCH TOWN OF ADDISON

EX WELL TO REMAIN

VITRUVIAN PARK

LOT 3, BLOCK A VITRUVIAN PARK ADDITION (INST. NO. 201300219333)

PROP ROADWAY EASEMENT (BY OTHERS)

PROP 8" SSWR LINE

PROP BELLA LANE ℄

BELLA LANE

PROP 8" WATER LINE

EX 4" WATER LINE (TO REMAIN)

PROP PAVEMENT (BY OTHERS)

PROP ONCOR DUCT BANK (BY OTHERS)

BEGIN CURB AND GUTTER SECTION

EX 70' TEXAS POWER & LIGHT EASEMENT

LOT 1, BLOCK A THE PARISH EPISCOPAL SCHOOL INST. NO. 200600450015 O.P.R.D.T.

PARISH EPISCOPAL SCHOOL
LOT 1, BLOCK A
THE PARISH EPISCOPAL SCHOOL
INST. NO. 200600450015
O.P.R.D.T.

CAMBRIDGE CROSSING
LOT 2, BLOCK A
EXXON MOBIL ADDITION
(VOL. 2001198, PG. 30)

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

811 Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

GENERAL PROJECT OVERVIEW

SHEET NUMBER
C0.03

Plotted By:Shadbolt, Cody September 08, 2021 08:55:37am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Easement Overview.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

ADDISON EASEMENT (BY OTHERS)
GRANTOR: VPDEV 2, LLC
GRANTEE: TOWN OF ADDISON
ACQUIRED AS PART OF SEPARATE PROJECT
USES: PUBLIC RIGHT-OF-WAY

VITRUVIAN PARK
LOT 3, BLOCK A
VITRUVIAN PARK ADDITION
(INST. NO. 201300219333)

BELLA LANE

TOWN OF ADDISON
CITY OF FARMERS BRANCH

EX TEXAS POWER & LIGHT EASEMENT

FARMERS BRANCH EASEMENT
GRANTOR: DALLAS COLLEGE
GRANTEE: CITY OF FARMERS BRANCH
SIZE: 4.01 ACRES
USES: PUBLIC RIGHT-OF-WAY

LOT 1, BLOCK A
THE PARISH EPISCOPAL SCHOOL
INST. NO. 200600450015
O.P.R.D.T.

PARISH

PARISH EPISCOPAL SCHOOL
LOT 1, BLOCK A
THE PARISH EPISCOPAL SCHOOL
INST. NO. 200600450015
O.P.R.D.T.

EX TEXAS POWER & LIGHT EASEMENT

WATER LINE EASEMENT
GRANTOR: DALLAS COLLEGE
GRANTEE: CITY OF FARMERS BRANCH
SIZE: 0.17 ACRES
USES: WATER LINE

EX 53' TXU ACCESS EASEMENT

CAMBRIDGE CROSSING
LOT 2, BLOCK A
EXXON MOBIL ADDITION
(VOL. 2001198, PG. 30)

ALPHA ROAD MINI-PARK EASEMENT
GRANTOR: DALLAS COLLEGE
GRANTEE: CITY OF FARMERS BRANCH
SIZE: 1.23 ACRES
USES: PUBLIC PARK AND RECREATION

ASSUMED MINI-PARK
SIZE: 1.84 ACRES

ALPHA ROAD CONNECTOR

EXISTING CITY OF FARMERS BRANCH PROPERTY
(ASSUMED PORTION OF MINI-PARK)
SIZE: 0.44 ACRES

EXISTING RIGHT-OF-WAY WITHIN CITY OF FARMERS BRANCH
(ASSUMED PORTION OF MINI-PARK)
SIZE: 0.17 ACRES

PROJECTION OF PROPOSED
ROADWAY/PARK EASEMENT

BROOKHAVEN COLLEGE REPLAT
(VOL. 86105, PG. 2676)

EX 25' SSWR EASEMENT

EX 25' SSWR EASEMENT

EX FLOODWAY EASEMENT

EX 25' SSWR EASEMENT

EX 15' WATER EASEMENT

BROOKHAVEN COLLEGE REPLAT
(VOL. 86105, PG. 2676)

DETENTION POND EASEMENT
GRANTOR: DALLAS COLLEGE
GRANTEE: CITY OF FARMERS BRANCH
SIZE: 5.87 ACRES
USES: DETENTION POND AND ASSOCIATED
STORM DRAIN INFRASTRUCTURE

ALPHA ROAD

WINDMILL CIRCLE

DALLAS COLLEGE

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD
		DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

GENERAL EASEMENT OVERVIEW

SHEET NUMBER
C0.04

GENERAL ITEMS

1. Prior to any construction the contractor shall be familiar with the contract documents, specifications, construction plans (including notes), Town of ADDISON specifications and any other applicable standards or specifications relevant to the proper completion of the work specified. Failure on the part of the contractor to be familiar with all standards and specifications pertaining to this work shall in no way relieve the contractor of responsibility for performing the work in accordance with such applicable standards and specifications.
2. Prior to construction, contractor shall have in their possession all necessary permits, plans, licenses etc. Contractor shall have at least one set of approved engineering plans and specifications on site at all times.
3. All work shall conform to the Town of ADDISON's design manuals and standards. In the event an item is not covered in the plans or the Town of ADDISON's design manuals and standards, notification shall be given to the Owner's Representative and Project Engineers. The Town engineer shall have the final decision on all construction materials, methods and procedures.
4. Representative of the owner, engineer, Town, geotechnical engineer and reviewing authorities and agencies, will perform construction inspection. Unrestricted access shall be provided to them at all times. Contractor is responsible for understanding and scheduling required inspections. Test samples shall be collected and processed by certified technicians.
5. Work may not be backfilled or covered until the Town and/or inspector have inspected it.
6. All contractors must confine their activities to the work area. No encroachments onto developed or undeveloped areas will be allowed. Any damage resulting shall be contractor's responsibility to repair.
7. It will be the responsibility of each contractor to protect all existing public and private utilities throughout the construction of projects. Contractor shall contact the appropriate utility company for line locations prior to commencement of construction and shall assume full liability to those companies for any damages caused to their facilities.
8. Trench safety design will be the responsibility of the utility contractor. Contractor shall submit a trench safety design approved by a professional engineer to the Town's engineering inspector to review prior to the start of any underground utility construction.
9. Continuous access for mail service shall be provided during construction.
10. Construction may not begin earlier than 7:00 am on weekdays nor continue after dark without permission from the Town. Construction on holidays and Saturdays must be approved two days in advance.
11. Contractor shall contact the street department for the removal of any Town signs in right-of-way.
12. If any conflict arises between these general notes and any other notes found in the plans, the Town's general notes shall take precedence.
13. Contractor shall comply with all terms and conditions outlined in the Aquatic Resources Delineation Report and Nationwide Permit Memo to File dated September 10, 2021 as well as any other local, state, or federal regulations as noted or not.

TRAFFIC CONTROL

1. When the normal function of the roadway is suspended through closure of any portion of the right-of-way, temporary construction work zone traffic control devices shall be installed to effectively guide the motoring public through the area. Consideration for road user safety, worker safety and the efficiency of road user flow shall be an integral element of every traffic control zone. All traffic control devices shall be in accordance with the latest TMUTCD.
2. Any traffic control plans not included in the engineering plan set must be submitted for review a minimum of seven (7) calendar days prior to the anticipated lane closure. Construction activity shall not begin until the traffic control plan is approved by the Town. Traffic control plans may be required on other roadways as determined by the traffic engineer or the designee. All traffic control plan must be reviewed by the traffic engineer or their designated representative.
3. The contractor shall be responsible for maintaining all traffic control devices whether or not work is active. Any deficiencies shall be corrected by the contractor immediately, regardless of time of day.
4. Lane closure will not be permitted on arterial roadways before 9:00 am or after 4:00 pm unless approved otherwise by the Town. Violations may result in suspension of all work at the job site for a minimum of forty eight (48) hours. The Town reserves the right to deny a closure for a special event.
5. Lane closures will not be permitted on streets adjacent to private and/or public schools during the following hours unless approved otherwise by the Town:
   ELEMENTARY: 7:15 AM - 8:15 AM; 2:45 PM - 3:45PM
   MIDDLE SCHOOL: 7:55 AM - 9:00 AM; 3:30 PM - 4:40PM
   HIGH SCHOOL: 6:45 AM - 7:45AM; 2:15PM-3:15PM
6. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time at the end of the workday, temporary traffic control devices that are no longer appropriate shall be removed or covered. The first violation will result in suspension of all work at the job site a minimum of forty eight (48) hours.
7. Existing permanent signs removed by the contractor for construction purposes other than stop, yield and street name signs shall be returned to the Town of ADDISON. All stop, yield and street name signs removed shall be temporarily erected in the appropriate locations (no less than seven feet (7') vertical from grade) until permanent signing can be installed . Any temporary stop or yield sign locations to be left in place overnight will require prior approval from the Town engineer.
8. Any permanent sign or existing pavement markings that conflict with the approved traffic control plan shall be covered, obliterated or removed as directed by the Town engineer.
9. Access must be maintained to all drives and side streets or as indicated in the traffic control plan.

EROSION CONTROL AND VEGETATION

1. Every soil disturbing activity shall have an accompanying Erosion Control Plan (ECP), and either Construction Site Notice (CSN) for those activities disturbing more than one (1) but less than five (5) acres and/or Notice of Intent (NOI) for those activities disturbing five (5) or more acres. A copy of the appropriate CSN and/or NOI shall be provided to the Town of ADDISON prior to issuance of a grading permit. the ECP shall be provided to Town of ADDISON's engineering department for approval prior to grading.
2. If applicable,the CSN and/or NOI shall be posted in a location viewable to the public until construction is complete and notice of termination (NOT) submitted. The Storm Water Pollution Prevention Plan (SW3P) shall be readily available for review by federal, state or local officials.
3. If applicable, no soil disturbing activities will occur prior to the SW3P, ECP and associated Best Management Practices (BMP) being fully implemented, and then inspected by the Town's engineering inspector.
4. The contractor shall comply with the Town of ADDISON's storm water ordinance, the current NCTCOG ISWM technical manual for construction and any other state and/or local regulations.
5. The contractor shall employ measures as necessary to prevent dirt, mud, and debris from being tracked off site. Any dirt, mud, debris tracked offsite shall be cleaned up by the contractor immediately.
6. The operator or his representative shall review the site weekly and after any major storm. Adjustments/repairs to the erosion control measures will be made as needed. The contractor shall notify the Town's engineering inspector of adjustments/repairs such that the adjustments/repairs may be inspected and approved by the inspector.
7. Along parkways and medians in the right-of-way, a four-foot (4') strip of native sod shall be placed behind the curb on top of four inches (4") of topsoil. Contractor shall be responsible for any temporary irrigation or watering as needed.
8. Inspections shall be performed every seven (7) days and any repair or maintenance on erosion controls and best management practices will be made promptly as needed.
9. No excavation or curb cut-backs will be allowed within eighteen inches (18") of the street or curb without approval from the Town engineer.
10. Streets will be kept free from mud or earth materials during the construction.
11. Use of alternate erosion control devices must be approved in advance by Town engineer and shown clearly on the erosion control plans prior to any earth disturbing activities.
12. The requirements of NCTCOG best management practices standards shall apply to all alternate erosion control devices as amended by the Town.
13. Concrete wash-out shall be maintained and shall have signage and shown on erosion control drawings.

GRADING:

1. Top soil stripping and replacement: Top soil stripping shall be incorporated into landscape areas outside overbuilt pads, in street parkways, medians, open space, earthen drainage ditches and swales for all subdivisions. A minimum of four inches (4") of topsoil shall be placed in advance of grassing operations. The grading operations shall accommodate topsoil to be placed in the designated areas. Stockpiled topsoil shall be protected from erosion with appropriate erosion control measures at all time. Once the excess material has been placed and compacted, the top soil shall be evenly redistributed on top of the placed fill before being re-vegetated.
2. Re-grading work shall be closely coordinated with the owner and engineer before and as the work is being accomplished. Once started, the work shall be proceeded with diligence until complete.
3. All new work shall slope uniformly between spot elevations unless noted otherwise. Provide positive drainage on all finish grades.
4. In areas to be filled, all trees, stumps, brush, abandoned structures, roots, topsoil, vegetation, sediments, large rock fragments, rubbish and any other undesirable or deleterious matter shall be properly removed and disposed off. All top soil, roots and other vegetation and loose or soft soils shall be stripped to a depth of six inches (6") or to the extent practical. It is recommended that trees scheduled for removal in the vicinity of proposed slab-on-grade foundations be removed as far in advance of slab construction as possible. This will tend to restore a more favorable soil moisture equilibrium which will in turn minimize the potential for greater than anticipated post-construction ground movements. Trees should be excavated to below their root balls. Excavation should be filled with soil similar to the surrounding soil. The fill should be constructed in accordance with the recommendations presented in the preliminary geotechnical investigation.
5. Watering of earthwork placed in fill areas may be necessary to achieve the specified moisture density requirement and to germinate/sustain grass cover in areas to receive a vegetative cover after grading is complete. The contractor may request for a fire hydrant meter from the town for construction water use or obtain water from an alternate source. No extra payment will be made to the contractor for water.
6. Contractors are directed to ensure that all swales as shown on the grading plans are properly installed. At locations where retaining walls exist and/or are proposed behind, beside or between lots, swales must be created on the upper lot directly behind the wall and on the lower lot adjacent to the wall where shown to convey surface drainage in the direction shown on the grading plan.

ESTABLISHMENT OF GROUND COVER

1. Eighty percent (80%) evenly distributed ground cover, without large bare areas, shall be established after the designated areas have been completed to the lines, grades and cross sections shown on the plans and prior to final acceptance.
2. Prior to planting, contractor shall provide the town engineer, or his designee, with the State of Texas certificate stating analysis of purity and germination of seed (certificate of purity).
3. Planting season and application rates: all planting shall be done between the dates specified in table 1, for each grass type except when specifically authorized in writing. The seeds planted per acre shall be of a type specified with the mixture, rate and planting dates as shown in the table 1, or as specified by the engineer.
4. Seeded areas shall be maintained, including watering and mowing, at such time and in a manner and quality to establish a minimum eighty percent (80%) evenly distributed ground cover.
5. In lieu of silt fences, the contractor shall use temporary erosion control matting and/or mulching perimeter guard to stabilize disturbed soil area.
6. Erosion control mats used against paved areas shall have a width of no less than eight feet (8'). No hay products shall be used.
7. All material incorporated in the construction shall be new.

Table 1. Seeding Turfgrass

Type	Planting Season	Seed and Rate
Type I	March through September	Bermuda grass, Hulled 50-LB (22.7-KG) Pls per acre
Type II	October through February	Rye grass, 100-LB (45.4-KG) pls per acre combined with Bermuda grass, Hulled 20-LB (9.1-KG) pls per acre.1
Other	As specified on plans	As specified on plans

[1]PLS - Pure Live Seed is determined by multiplying the gross weight times purity times the germination [For example, a 100-lb bag with 85% purity and 80% germination. (PLS=pounds in bag x Purity x germination) 100 x 0.85 x 0.8 = 60.8 -lbs of pure live seed.)

STORM SEWER

1. The contractor shall field verify the vertical and horizontal locations of all existing utilities prior to start of construction. The contractor shall notify the design engineer immediately if any conflict is discovered.
2. Contractor shall verify and coordinates all dimensions shown, including the horizontal and vertical location of curb inlets and all utilities crossing the storm sewer.
3. In event where a water line crosses an inlet, the water line shall be deflected as recommended by manufacturer.

TREE PRESERVATION

1. Prior to construction, the contractor or subcontractor shall construct and maintain a protective fence at the drip line of all protected existing trees, bushes, landscaping plants, sprinklers and lawns unless noted otherwise on the construction drawings. Any damage to existing trees, landscaping plants, sprinklers and lawns caused by construction shall be replaced to the satisfaction of the Town at the contractor's expense.
2. All protective measures shall be in place prior to commencement of any site or grading work and remain in place until all exterior work has been completed.
3. The Town shall be contacted to approve the placement of the tree preservation fencing prior to beginning of site work on the property.
4. The following activities shall be prohibited within the limits of the primary root zone: material storage, liquid disposal, equipment storage and cleaning. Attachments of signs or wires on trees and construction equipment/ vehicular traffic are also prohibited.
5. Unless specifically allowed, no grade changes shall be allowed within the limits of the primary root zone of any protected tree unless the Town approves adequate construction methods.
6. No trimming of trees may occur within the tree preservation fencing limits without prior consent of the Town.

WATER

1. Refer to City of Farmers Branch notes for portion of water line located in Farmers Branch.
2. PVC water pipe shall not be stored onsite without approval from the Town.
3. All fittings and appurtenances shall be manufactured in the United States.
4. Hot tap sleeves shall not be used unless approved otherwise. In event of its approval, a stainless steel sleeve shall be used.
5. Valve extensions shall only be used under approved conditions.
6. Where specified name brands are indicated, products of equal or better quality may be considered for approval upon submittal of all supporting data to the Town engineer for review.
7. All material incorporated in the construction shall be new.

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

GENERAL NOTES
TOWN OF ADDISON

SHEET NUMBER
C0.05

Plotted By:Walter, Austin, September 10, 2021 01:53:20pm K:\LaC_Civil\063543031_Addison_Alpha_Road_Connection\C400\Plan Sheets\Sheet Index.dgn
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Date Updated: September 15, 2020

GENERAL NOTES

1. All construction shall conform to the requirements of the **"STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"** by North Central Texas Council of Governments (NCTCOG) 2017 (Fifth Edition), and amendments thereto and in accordance with the City of Farmers Branch construction specifications and standard details. Contractor is responsible for obtaining a copy of the above-mentioned specifications and details and having on the job site.

2. **THE CONTRACTOR** shall provide "As Built" plans to **THE ENGINEER** so that the reproducible sheets of the engineering plans may be corrected to reflect "As Built" conditions. **THE ENGINEER** shall furnish one set of mylar reproducible plans, a PDF set and AutoCAD drawing file reflecting the "As Built" conditions, to the City prior to final acceptance of the work.

3. **THE CONTRACTOR** shall not stockpile material contiguous to any creek without the written permission of THE **ENGINEER**.

4. **THE CONTRACTOR** shall not allow soils and debris to enter existing inlets. All inlets shall be protected during construction.

5. **THE CONTRACTOR** shall limit his work to the R.O.W. or Easements shown on the drawings. All disturbed/damaged areas outside the construction limits shall be repaired and or replaced at contractor's expense.

6. **THE CONTRACTOR** shall maintain adequate drainage at all times and provide and maintain erosion protection in and adjacent to construction site.

7. All groundwater, seepage, storm water, or water from any source that may occur or accumulate in excavations during the progress of the work shall be removed. All excavations shall be kept entirely free of standing water at all times during the construction work or until otherwise directed by the City. All expense necessary to comply with this requirement shall be borne by the contractor.

8. Areas which have been backfilled to comply with the requirements of paragraph #7, above, but have not been properly compacted, shall be promptly removed at the start of the next working day and compacted in accordance with sections of the specifications.

9. **THE CONTRACTOR** shall not dispose wastes or any other materials into streams or waterways. Excess material shall be hauled away each day and not be allowed to accumulate.

10. **THE CONTRACTOR** shall not burn or bury rubbish and waste materials on project site.

11. **THE CONTRACTOR** shall wet down dry materials to allay dust and prevent blowing dust.

12. All dimensions shown on the plans are to back of curb and/or to the centerline of pipe, unless noted otherwise.

13. **THE CONTRACTOR** will be responsible for notifying **THE ENGINEER**, the Traffic Engineer, the Police and Fire Departments at least 24 hours in advance when any roadway will be closed or reopened.

14. **THE CONTRACTOR** shall be required to provide and maintain all necessary warning and safety devices (flashing lights, barricades, signs, etc. in conformance with the **Texas Manual on Uniform Traffic Control Devices**) to protect public safety and health until the work has been completed and accepted by **THE CITY**.

15. The locations of existing utilities and structures shown on these plans are approximate and the completeness and the accuracy of this data is not guaranteed. It is the responsibility of **THE CONTRACTOR** to locate and verify in the field any utilities and structures that may conflict with the construction of the project. Any utilities and/or structures damaged during the construction of the project shall be repaired at the contractor's expense. At least 24 hours prior to beginning construction in the vicinity of existing underground utilities, **THE CONTRACTOR** shall notify the following, as applicable:

City of Farmers Branch 972-247-3131
Public Works Department 972-919-2597
Utilities Department 972-919-2597
TRA..... 817-493-5100
Oncor Electric Delivery
Line Location Service (Digtess)1-800-344-8377
Emergencies 1-888-313-4747
Atmos Energy
Line Location Service (Digtess)1-800-344-8377
Emergencies 1-800-817-8090
Time Warner Cable
Line Location Service (Digtess) 1-800-344-8377
Emergencies 1-877-833-6350 (Option2)
A.T. & T. 1-800-245-4545
Line Location Service (Digtess) 1-800-344-8377
Emergencies 214-458-8879

The Public Works Department, Utility Division (972.919-2597), shall to be contacted to locate City-owned water lines and sanitary sewer lines. The Parks and Recreation Department (972.919-2620) shall be contacted to locate City-owned irrigation lines and electric (lighting) lines. The Public Works Department, Streets Division (972.919-2597) shall to be contacted to locate City-owned fiber optic lines and traffic signal lines.

When the City-owned lines are located by any City department, the locates shall be considered valid up to two weeks, after which new locates shall be required. Unless the lines are physically uncovered, surface locates of City-owned lines shall be considered to be approximate. For any facilities that are to be constructed within 3 feet of the surface locates, additional subsurface investigation should be considered to ensure that the City-owned lines are appropriately located.

16. Contractor must have a set of plans with red stamp stating "Released For Construction" on the project at all times.

17. Product Manufacturer's name(s) and/or model numbers are used herein to set a standard of quality and are not intended to be a restraint of trade or prevent submittals of other manufacturer's products of equal quality and equal colors, for products so mentioned.

18. Should any part of a concrete pavement panel be removed for utility line installation, the entire panel shall be replaced except otherwise directed by **THE ENGINEER**.

19. Existing regulatory signs and street designation signs in conflict within the construction limits shall be removed and relocated or removed, salvaged, and replaced by the Contractor as directed by the Engineer. Cost of removal and relocation of permanent and temporary signs shall be subsidiary to other items of the project. Sign removal, replacement and relocation shall include foundation, post, sign panel and associated labor cost.

20. Contractor shall maintain continuous all weather access into and out of the subdivision, to local streets, and to and from each residence during the construction.

21. Work may not be backfilled or covered until it has been inspected by the City Inspector.

22. Any work indicated on the plans that does not have a specific pay item shall be considered subsidiary to related pay items

23. **THE CONTRACTOR** shall provide the City a Maintenance Bond that covers all constructed public works infrastructure as shown on these plans. Maintenance Bond shall be for a period of one year from acceptance of project by the City and shall be in an amount of 100% of the cost of said infrastructure. Bond shall be prepared by a Surety authorized to do business in the State of Texas.

24. All boring in City of Farmers Branch rights-of-way and easements must be performed with a steerable, traceable boring machine and all pipes 6" and above has to be encased.

PAVING

1. All concrete shall be Class 'C' 3600 PSI (six sack mix) compressive strength at 28 days, unless noted otherwise. Fly ash will not be allowed. Reinforcement shall be spaced on 18" centers in both directions. Pavement thickness 8" & above shall have #4 rebar and 7" & below shall use #3 rebar.

2. All joints shall be sawed into the completed concrete pavement surface within 12 hours of placement.

3. Contractor shall baker broom finish all placed concrete as approved by **The Engineer** unless noted otherwise.

4. Contractor shall match all proposed pavement, curb, sidewalk and driveways with existing unless noted otherwise.

5. The cost of elevation adjustment of manholes, valves, cleanouts, irrigation heads, pullboxes and water meters shall be subsidiary to the other items of the project. All meters, valves and manholes requiring adjustment shall be cross-referenced by the Contractor so that they may be easily relocated after paving. All elevation adjustments shall be completed prior to placing the pavement.

6. All dimensions and station locations shown on the plans are to back of curb unless noted otherwise.

7. Removal of existing curb shall be subsidiary to pavement removal pay item.

8. Construction of 6" integral curb on streets shall be subsidiary to street pavement pay item.

9. All sawcuts including longitudinal butt joints & reinforcing steel shall be subsidiary to removal or replacement of pavement pay item.

10. At all streets, alleys, and driveways the Contractor shall construct City of Farmers Branch standard driveway approach with TAS compliant path.

11. Preparation of R.O.W. (NCTCOG item 203.3.) includes but is not limited to removal of existing curb and gutter, driveways, pavements, trees, inlets, manholes, pipes and necessary excavation to proposed grade shown on the plans unless otherwise provided for in a separate bid item.

12. Unclassified excavation (Reference: NCTCOG item 203.4, 203.5) includes all excavation, removal and disposal within the limits of R.O.W. and areas adjacent thereto as shown on the plans.

CURB PAINTING

1. The address numbers must be 3 inches, white in color centered within a 5-inch high red color background.

2. When painting an address at one location, it must be placed at the center of the property. When painting an address at two locations, it must be painted on each side of the driveway.

STORM SEWER

1. All storm sewer pipe shall be reinforced concrete pipe, Class III, with C+ embedment, unless noted otherwise. Embedment, backfill and compaction is subsidiary to pipe installation.

2. From the time a station for manhole is reached, **THE CONTRACTOR** shall case and cure the manhole and backfill to a drivable surface within fourteen (14) calendar days unless otherwise specified by **THE ENGINEER**.

3. Concrete collar shall be placed at all pipe size changes as per detail and cost is subsidiary to pipe installation.

TRENCH

1. All trenching and excavation shall be performed in accordance with OSHA standards. The maximum length of open excavation for trenches shall be limited to 100 linear feet regardless of depth. All trenches that open to traffic shall be plated or backfilled with flexbase or crushed concrete and shall be a drivable surface. A drivable surface shall not be lower than the adjoining/existing drivable surface and not give way when driven on or shall be as determined by **THE ENGINEER**. All the trenches that remain behind barricades do not need to be backfilled. The cost of this backfill is not a separate pay item.

BACKFILL

1. Backfill (NCTCOG Section 1, Div. 301) under pavement shall have a uniform density of not less than 95% of the maximum density as determined by ASTM D698. Backfill not under pavement shall have a uniform density of not less than 90% of the maximum density as determined by ASTM D698.

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

GENERAL NOTES
CITY OF FARMERS
BRANCH
SHEET 1 OF 2

SHEET NUMBER
C0.06

Plotted By: Shettigh, Cody Generated: 09/10/2021 08:56:21pm K:\IVG_Dal\063543031_Addison_Alpha_Bryan_Connector\CADD\Pro-Sheets\Sheet Index.dwg
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BACKFILL

1. Backfill (NCTCOG Section 1, Div. 301) under pavement shall have a uniform density of not less than 95% of the maximum density as determined by ASTM D698. Backfill not under pavement shall have a uniform density of not less than 90% of the maximum density as determined by ASTM D698.

WATER

1. All water main construction shall conform to the minimum requirements of the **Texas Commission on Environmental Quality (TCEQ)** rules and regulations for public water and sewer systems.
2. Acceptable water main sizes shall be 6" and larger. Water mains less than 6" diameter will not be permitted.
3. All water mains 8" or less shall be DR18, AWWA C900 P.V.C. water pipe. Pipe color shall be blue unless specified otherwise.
4. All 12" water mains shall be DR18 (unless specified otherwise), AWWA C900 P.V.C. water pipe or AWWA C303 RCCP. P.V.C. pipe color shall be blue.
5. All 16" water mains shall be Class 165 (unless specified otherwise), AWWA C905 P.V.C. water pipe or AWWA C303 RCCP. P.V.C. pipe color shall be blue.
6. All water mains larger than 18" shall be AWWA C303 bar-wrapped concrete cylinder pipe.
7. All 4" through 12" resilient seat gate valves shall be Mueller (A-2370-series), EJ Flowmaster or approved equal.
8. All 16" and larger valves shall be Mueller Lineseal iii butterfly valves (B-3211-series-0024) or approved equal.
9. All tapping sleeves shall be Mueller full circle stainless steel or approved equal.
10. All joints shall be mechanical joints with non-corrosive bolts and be equipped w/ mega lug style rings.
11. All water mains shall have a minimum cover of 48" below finished grades.
12. All water mains shall be pressure tested in accordance with the NCTCOG specifications. The contractor shall flush and sterilize all water mains. The city will take water samples and have laboratory tests performed to prove the water mains to be free of bacteria/micro-organisms.
13. The water services that are installed before the completion of street construction shall be laid in the service ditch at the same elevation as the water main or a minimum cover of 30" below top of curb grade. At the proper location for the meter box, the meter (curb) stop shall be raised to 18" below top of curb grade with excess copper tubing to raise the stop at a future date to 8" below top of curb grade.
14. For service connections, use double brass strap service clamp when tapping all pipe.
15. All fire hydrants shall conform to AWWA standard specifications for fire hydrants for ordinary water works service, C-502. Fire hydrants shall be three-way and have a 5 1/4" barrel, 4 1/2" steamer nozzle and 2 1/2" hose nozzles. All hydrants shall be equipped with a breakaway flange. Fire hydrant shall have non-rising stem "O" ring seals and mechanical joint inlet ends.
16. All new Fire Hydrants shall be AVK 2780, Mueller Super Centurion 250, M&H Model 129, or approved equal. All Fire Hydrants shall be powder coated RAL 3020 Traffic Red in color.
17. Hose/Pumper nozzles on fire hydrants shall be 18" to 24" above the top of curb, or finished grade, and shall face the streets or firelane. Fire hydrant shall be placed not less than 3' nor more than 6' behind the curb. Set fire hydrant on the lot line extended and/or at curb return of street intersection. Fire hydrant shall be no closer than 18" to existing or proposed sidewalks. Standard bury depth of fire hydrant is 4'. Actual valve location will depend on location of water main.
18. Embedment shall be Embedment B+ Per NCTCOG Embedment Detail 3020 unless noted otherwise on plans and is not a separate pay item.
19. For Thrust Block use NCTCOG 4010A-4040 Details and is not a separate pay item.
20. For pavement cuts use NCTCOG 3070 Detail.
21. All service fittings shall be brass w/ compression style fittings.
22. All valve stacks located in unimproved areas shall have 24"x24"x12" concrete pad.
23. All tees shall be M.J. x Flange and equipped with appropriate flanged valve (Unless specified otherwise).
24. All 1" and 2" taps shall be made on 45 degree angles.
25. Water meter boxes for size 1" or smaller shall be "DFW" (DFW37C-12-1BA) with brass key lock or approved equal.
26. Water meter boxes for size 1 1/2" to 2" shall be "DFW" (DFW65C-14-1BA) with brass key lock or approved equal.
27. Cutting & plugging of existing water mains are subsidiary to water main installation unless specified otherwise.
28. All fittings including but not limited to plugs, tees, bends, reducers, caps etc are subsidiary to the water main installation item unless specified otherwise.
29. All fittings shall be Compact Ductile Iron meeting AWWA C153. Fittings shall be domestically manufactured.
30. Water meters shall be Badger, Hersey, or a brand approved by the City and must be potted for ITRON 100W+end points. Splicing is not acceptable. The cost of all new water meters and the installation shall be borne by the water service applicant/developer/owner of the property and shall include the required ITRON 100W+end points. The applicant/developer/owner shall install or cause to be installed the water meter and shall also provide the City of Farmers Branch Public Works Department, Utility Division with the above approved ITRON end point to be installed by the City. Upon complete installation of water meter by the applicant/developer/owner, and installation of the end point by the City of Farmers Branch, the City shall own said equipment.
31. Water valve abandonment: Remove existing valve cover lid, valve cover, valve stack as needed for 12" min. clearance from existing pavement, soil, or proposed pavement (whichever is greater), remove valve stem extension if equipped, and backfill valve stack with min. 2 sack conc. Mix.

SANITARY SEWER

1. All sanitary sewer mains 6" to 15" shall be ASTM D3034 SDR-26 P.V.C. gravity sewer pipe. Pipe color shall be green.
2. All sanitary sewer mains 18" to 27" shall be ASTM F679 (Type 1) PS115 P.V.C. gravity sewer pipe. Pipe color shall be green.
3. All sanitary sewer mains larger than 27" shall be RCP ASTM C76 of minimum strength class III. All joints to be rubber o_ring gasket type conforming to ASTM C443.
4. All sanitary sewers shall be air tested in accordance with the NCTCOG specifications and Mandrel.
5. All sanitary sewers shall be televised in the presence of The City Inspector and a video tape shall be made and furnished to the city.
6. All sanitary sewer service laterals (4") shall be schedule 40 Poly Vinyl Chloride (PVC) pipe.
7. Embedment shall be Embedment B-2 Per NCTCOG Embedment Detail 3030 unless noted otherwise on plans and is not a separate pay item.
8. For pavement cuts use NCTCOG 3070 Detail with full depth saw cut.
9. Manhole ring and cover shall be Bass & Hays HM ERGO 30XL w/Farmers Branch Logo or approved equal.
10. All Sanitary Sewer Manholes shall be vacuum tested in the presence of The City Inspector.
11. Cutting & plugging of existing sewer mains are subsidiary to sewer main installation item unless specified otherwise.
12. All fittings including but not limited to plugs, tees, crosses, bends, reducers, caps etc are subsidiary to the sewer main installation item unless specified otherwise.

IRRIGATION & LANDSCAPE

1. All existing irrigation shall be considered to remain unless noted otherwise. Damage to existing irrigation shall be repaired/replaced at the contractor's expense. Damage to existing irrigation systems shall be repaired within 24 hours.
2. Existing irrigation heads to be relocated are to be set 4" from edge of pavement or back of curb. Set heads flush with finished grade.
3. All landscaping in rights_of_way or easements shall be approved by **THE ENGINEER** prior to construction.
4. Damage to existing landscape to remain shall be replaced with like kind and size at the contractor's expense.

SOD

1. All sodding shall be accomplished with the type of turf which matches the existing sod, or as specified in the plans or specifications.
2. All turf areas disturbed by work shall be sodded unless otherwise noted on the plans. Payment shall be made for work required inside grading limits and construction limits as shown on plans. All turf areas disturbed outside these limits shall be the responsibility of **THE CONTRACTOR** and shall be sodded at the contractor's expense. All sodding shall adhere to requirements of City of Farmers Branch standard Specifications for Turf Establishment / Solid Sod.

TREES

1. **THE CONTRACTOR** is to exercise extreme caution during all phases of the project to protect existing trees and shrubs. Contractor shall be responsible for replacement of any trees and shrubs damaged that was not indicated to be removed during the construction. Contractor shall fully remove the trees indicated on the plans to be removed. Damaged tree roots shall be saw cut.

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

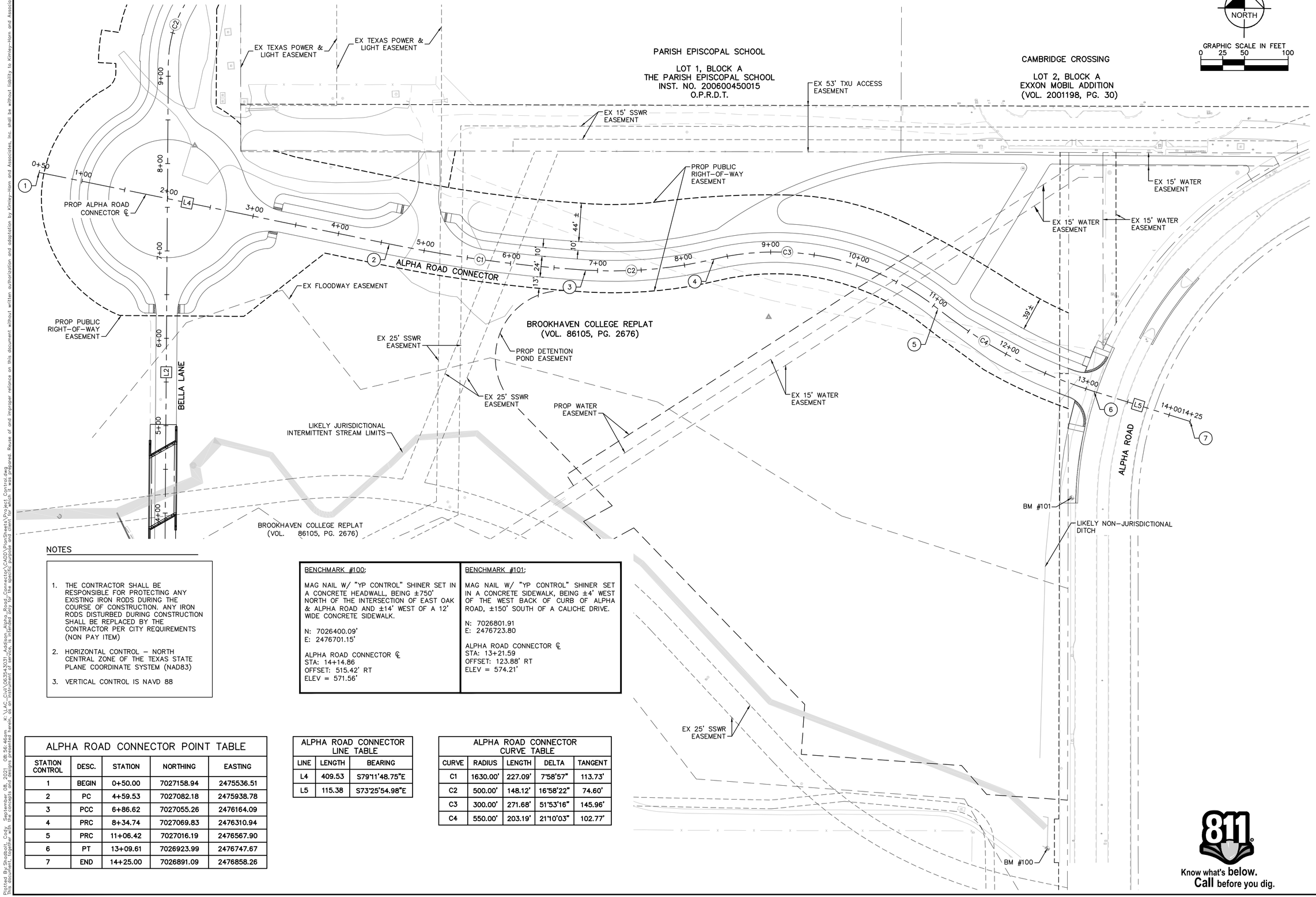
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

GENERAL NOTES
CITY OF FARMERS BRANCH
SHEET 2 OF 2

SHEET NUMBER
C0.07

Plotted By: Christian Cody September 08, 2021 08:56:01pm K:\LAC_Civil\063543031-Addison Alpha Road Connector\CAD\Plan\Sheet\Sheet Index.dwg
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NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ANY EXISTING IRON RODS DURING THE COURSE OF CONSTRUCTION. ANY IRON RODS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR PER CITY REQUIREMENTS (NON PAY ITEM)
2. HORIZONTAL CONTROL – NORTH CENTRAL ZONE OF THE TEXAS STATE PLANE COORDINATE SYSTEM (NAD83)
3. VERTICAL CONTROL IS NAVD 88

BENCHMARK #100:

MAG NAIL W/ "YP CONTROL" SHINER SET IN A CONCRETE HEADWALL, BEING ±750' NORTH OF THE INTERSECTION OF EAST OAK & ALPHA ROAD AND ±14' WEST OF A 12' WIDE CONCRETE SIDEWALK.

N: 7026400.09'
E: 2476701.15'

ALPHA ROAD CONNECTOR ℄
STA: 14+14.86
OFFSET: 515.42' RT
ELEV = 571.56'

BENCHMARK #101:

MAG NAIL W/ "YP CONTROL" SHINER SET IN A CONCRETE SIDEWALK, BEING ±4' WEST OF THE WEST BACK OF CURB OF ALPHA ROAD, ±150' SOUTH OF A CALICHE DRIVE.

N: 7026801.91
E: 2476723.80

ALPHA ROAD CONNECTOR ℄
STA: 13+21.59
OFFSET: 123.88' RT
ELEV = 574.21'

ALPHA ROAD CONNECTOR POINT TABLE

STATION CONTROL	DESC.	STATION	NORTHING	EASTING
1	BEGIN	0+50.00	7027158.94	2475536.51
2	PC	4+59.53	7027082.18	2475938.78
3	PCC	6+86.62	7027055.26	2476164.09
4	PRC	8+34.74	7027069.83	2476310.94
5	PRC	11+06.42	7027016.19	2476567.90
6	PT	13+09.61	7026923.99	2476747.67
7	END	14+25.00	7026891.09	2476858.26

ALPHA ROAD CONNECTOR LINE TABLE

LINE	LENGTH	BEARING
L4	409.53	S79°11'48.75"E
L5	115.38	S73°25'54.98"E

ALPHA ROAD CONNECTOR CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	TANGENT
C1	1630.00'	227.09'	7°58'57"	113.73'
C2	500.00'	148.12'	16°58'22"	74.60'
C3	300.00'	271.68'	51°53'16"	145.96'
C4	550.00'	203.19'	21°10'03"	102.77'

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PROJECT NO. 2021-01C/ BID NO. 21-69

No.	REVISIONS	DATE	BY

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9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

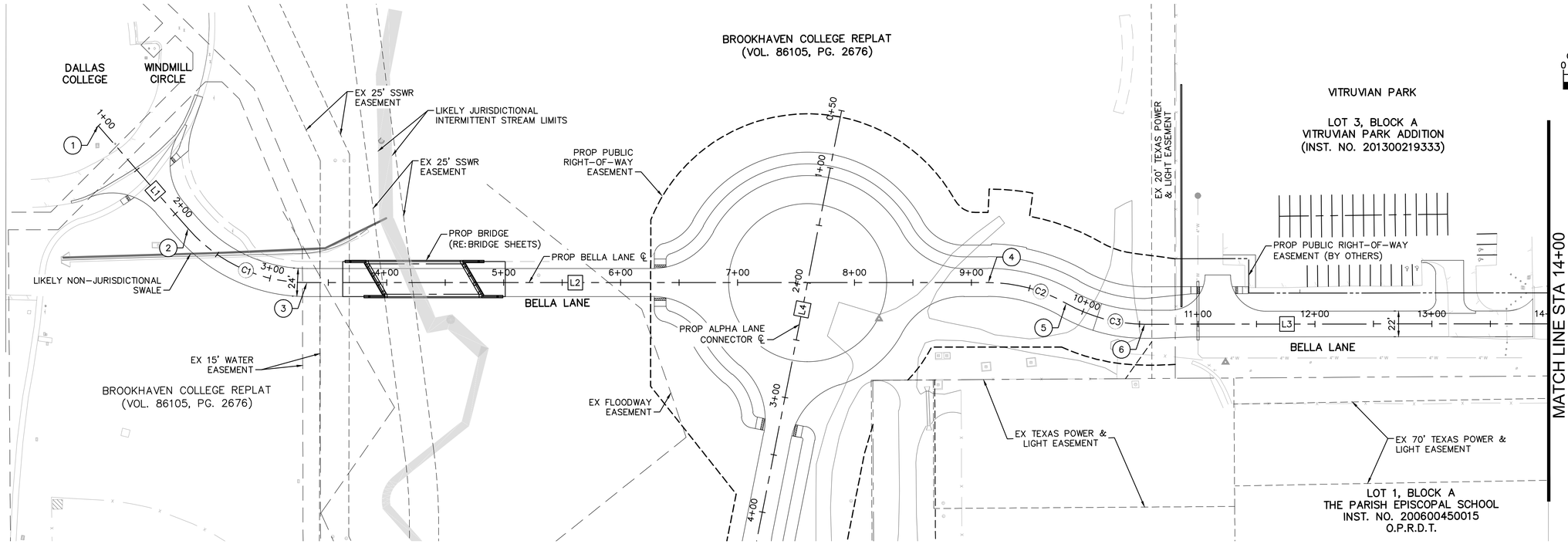
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

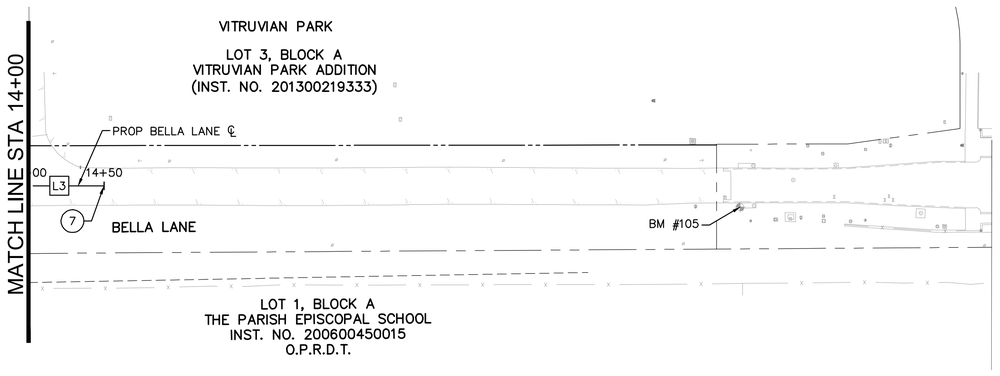
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

PROJECT CONTROL
ALPHA ROAD
CONNECTOR

SHEET NUMBER
C1.01

Plotted By: Shadbolt, Cody September 08, 2021 08:56:46am
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BELLA LANE POINT TABLE				
STATION CONTROL	DESC.	STATION	NORTHING	EASTING
1	BEGIN	1+00.00	7026523.46	2475553.51
2	PC	2+16.71	7026600.81	2475640.90
3	PT	3+31.79	7026702.74	2475686.42
4	PC	9+14.21	7027285.14	2475682.80
5	PRC	9+84.28	7027352.22	2475700.17
6	PT	10+54.49	7027419.43	2475717.53
7	END	14+50.00	7027814.94	2475714.69

BELLA LINE TABLE		
LINE	LENGTH	BEARING
L1	116.71	N48°29'09.69"E
L2	582.42	N0°21'20.59"W
L3	395.52	N0°24'43.38"W

BELLA CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C1	135.00'	115.08'	48°50'30"	61.30'
C2	135.00'	70.07'	29°44'23"	35.84'
C3	135.00'	70.21'	29°47'46"	35.92'

BENCHMARK #105:

MAG NAIL W/ "YP CONTROL" SHINER SET IN THE SOUTHEAST CORNER OF A CURB INLET, BEING ±169' SOUTH OF THE SOUTH BRIDGE ABUTMENT ON BELLA LANE AND BEING ±14' EAST OF THE CENTERLINE OF BELLA DRIVE.

N: 7028234.53'
E: 2475726.23'

BELLA LANE ℄
STA:
OFFSET: XX.XX' RT
ELEV = 561.04'

NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ANY EXISTING IRON RODS OR MONUMENTS DURING THE COURSE OF CONSTRUCTION. ANY IRON RODS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR PER TOWN REQUIREMENTS (NON-PAY ITEM).
2. HORIZONTAL CONTROL- NORTH CENTRAL ZONE OF THE TEXAS STATE PLANE COORDINATE SYSTEM (NAD83).
3. VERTICAL CONTROL IS NAVD 88.

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

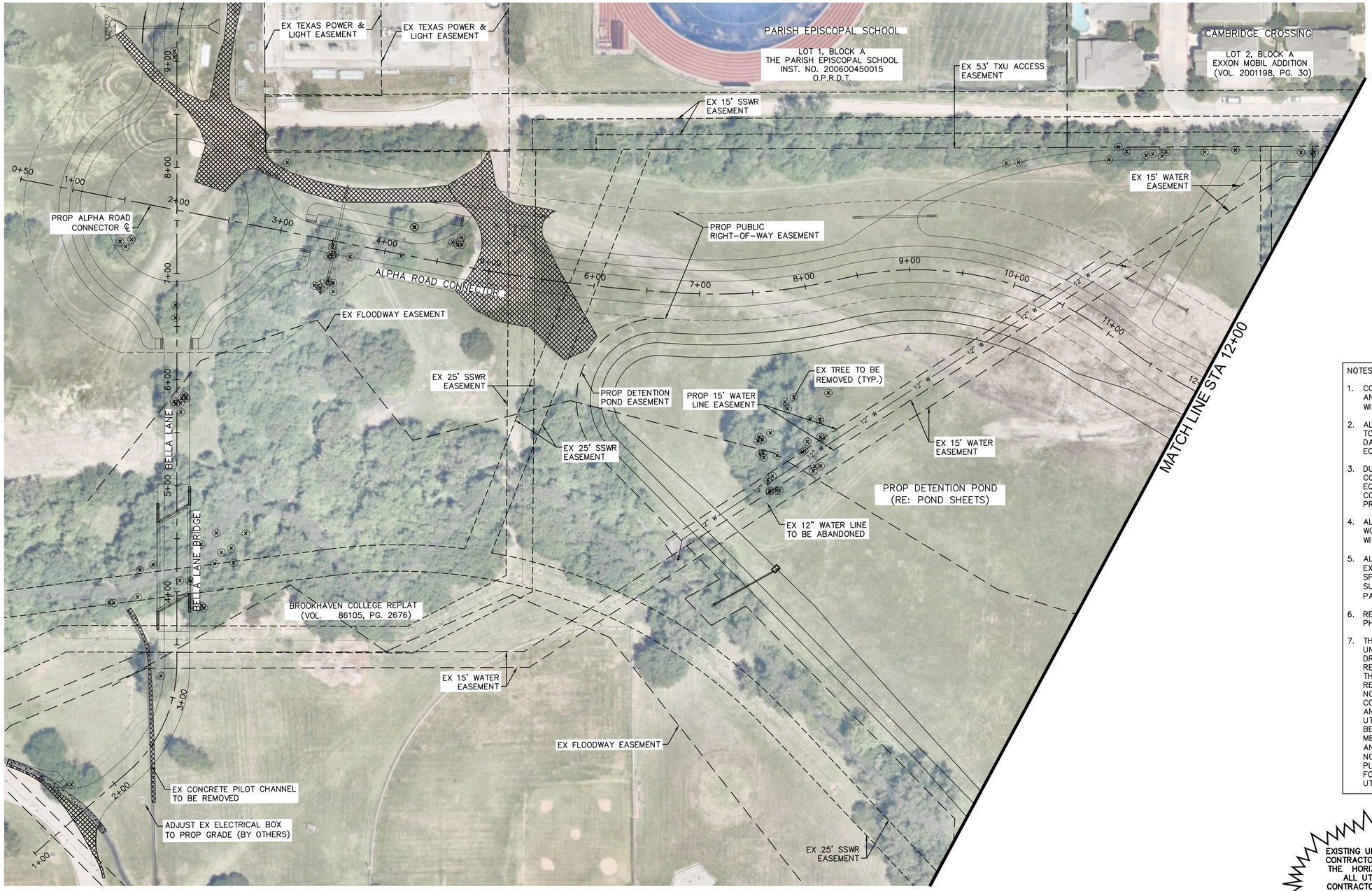
KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PROJECT CONTROL
BELLA LANE

SHEET NUMBER
C1.02

Plotted By: Snodbolt, Cody September 08, 2021 08:56:48am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Project Control.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

LEGEND

- EX ROW
- 12" W — EX 12" WATER
- 8" SS — EX 8" SANITARY SEWER
- 15" SS — EX 8" SANITARY SEWER
- 18" SS — EX 18" SANITARY SEWER
- 36" SS — EX 18" SANITARY SEWER
- EX STORM DRAIN
- UGE — EX UNDERGROUND ELECTRIC
- G — EX GAS
- OHE — EX OVERHEAD ELECTRIC
- EX TREE TO REMAIN
- EX TREE TO BE REMOVED
- CONCRETE PAVEMENT, GRAVEL, DIRT AND ASPHALT TO BE REMOVED
- SIDEWALK AND RAMPS TO BE REMOVED

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND RESTORING ALL IRRIGATION FACILITIES WITHIN PROJECT LIMITS (NO SEPARATE PAY).
2. ALL LANDSCAPING AND TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED. IF DAMAGED, CONTRACTOR SHALL RESTORE TO EQUAL OR BETTER CONDITION.
3. DUE TO TREE LIMB HEIGHT LIMITATIONS, CONTRACTOR SHALL INSPECT AREA FOR EQUIPMENT CLEARANCE. IN THE EVENT OF A CONFLICT, CONTRACTOR SHALL NOTIFY TOWN PRIOR TO CONSTRUCTION.
4. ALL TREE ROOTS IN CONFLICT WITH PROPOSED WORK SHALL BE STRAIGHT CUT AND TREATED WITH PRUNING PAINT (NO SEPARATE PAY).
5. ALL DAMAGE AND/OR REPLACEMENT TO EXISTING DECORATIVE WALK WAYS NOT SPECIFICALLY NOTED IN THE PLANS SHALL BE SUBSIDIARY TO ANY BID ITEM (NO SEPARATE PAY).
6. REFER TO TRAFFIC CONTROL SHEETS FOR PHASING.
7. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/ OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND TOWN UTILITIES PRIOR TO CONSTRUCTION.

CAUTION!
EXISTING UNDERGROUND UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

811
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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
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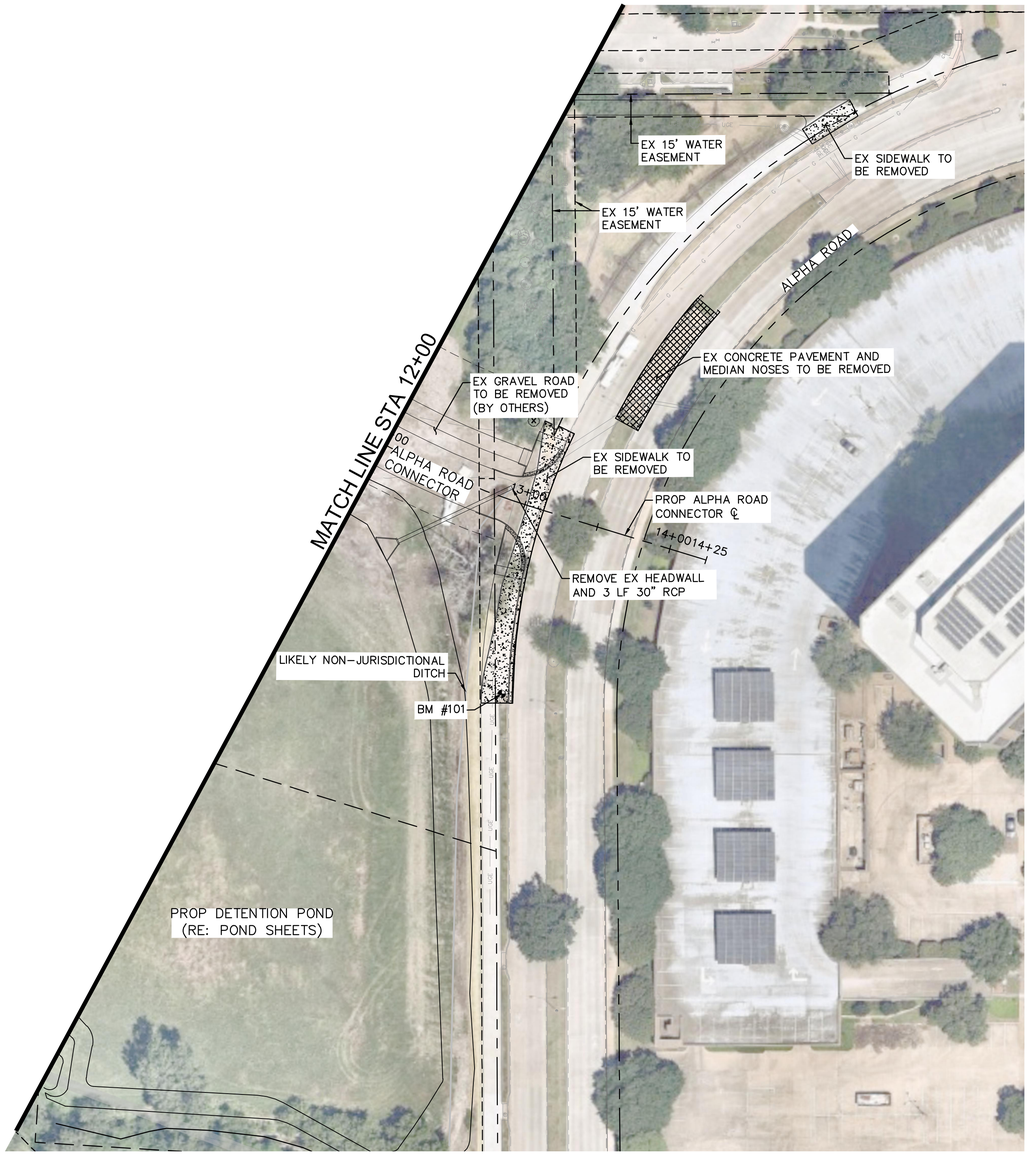
KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
063543031	09/10/2021	AS SHOWN	RMD	CDS	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

REMOVAL PLAN
ALPHA ROAD
CONNECTOR
SHEET 1 OF 2

SHEET NUMBER
C1.03

Plotted By: Staudolt, Cody September 08, 2021 08:57:17am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Removal_Plan.dwg
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GRAPHIC SCALE IN FEET
0 25 50 100

LEGEND

EX ROW	
12" W	EX 12" WATER
8" SS	EX 8" SANITARY SEWER
15" SS	EX 8" SANITARY SEWER
18" SS	EX 18" SANITARY SEWER
36" SS	EX 18" SANITARY SEWER
	EX STORM DRAIN
UGE	EX UNDERGROUND ELECTRIC
G	EX GAS
OHE	EX OVERHEAD ELECTRIC
	EX TREE TO REMAIN
X	EX TREE TO BE REMOVED
	CONCRETE PAVEMENT, GRAVEL, DIRT AND ASPHALT TO BE REMOVED
	SIDEWALK AND RAMPS TO BE REMOVED

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND RESTORING ALL IRRIGATION FACILITIES WITHIN PROJECT LIMITS (NO SEPARATE PAY).
2. ALL LANDSCAPING AND TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED. IF DAMAGED, CONTRACTOR SHALL RESTORE TO EQUAL OR BETTER CONDITION.
3. DUE TO TREE LIMB HEIGHT LIMITATIONS, CONTRACTOR SHALL INSPECT AREA FOR EQUIPMENT CLEARANCE. IN THE EVENT OF A CONFLICT, CONTRACTOR SHALL NOTIFY TOWN PRIOR TO CONSTRUCTION.
4. ALL TREE ROOTS IN CONFLICT WITH PROPOSED WORK SHALL BE STRAIGHT CUT AND TREATED WITH PRUNING PAINT (NO SEPARATE PAY).
5. ALL DAMAGE AND/OR REPLACEMENT TO EXISTING DECORATIVE WALK WAYS NOT SPECIFICALLY NOTED IN THE PLANS SHALL BE SUBSIDIARY TO ANY BID ITEM (NO SEPARATE PAY).
6. REFER TO TRAFFIC CONTROL SHEETS FOR PHASING.
7. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/ OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND TOWN UTILITIES PRIOR TO CONSTRUCTION.

CAUTION!
EXISTING UNDERGROUND UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

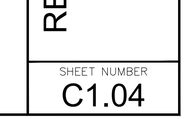
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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
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9/10/2021



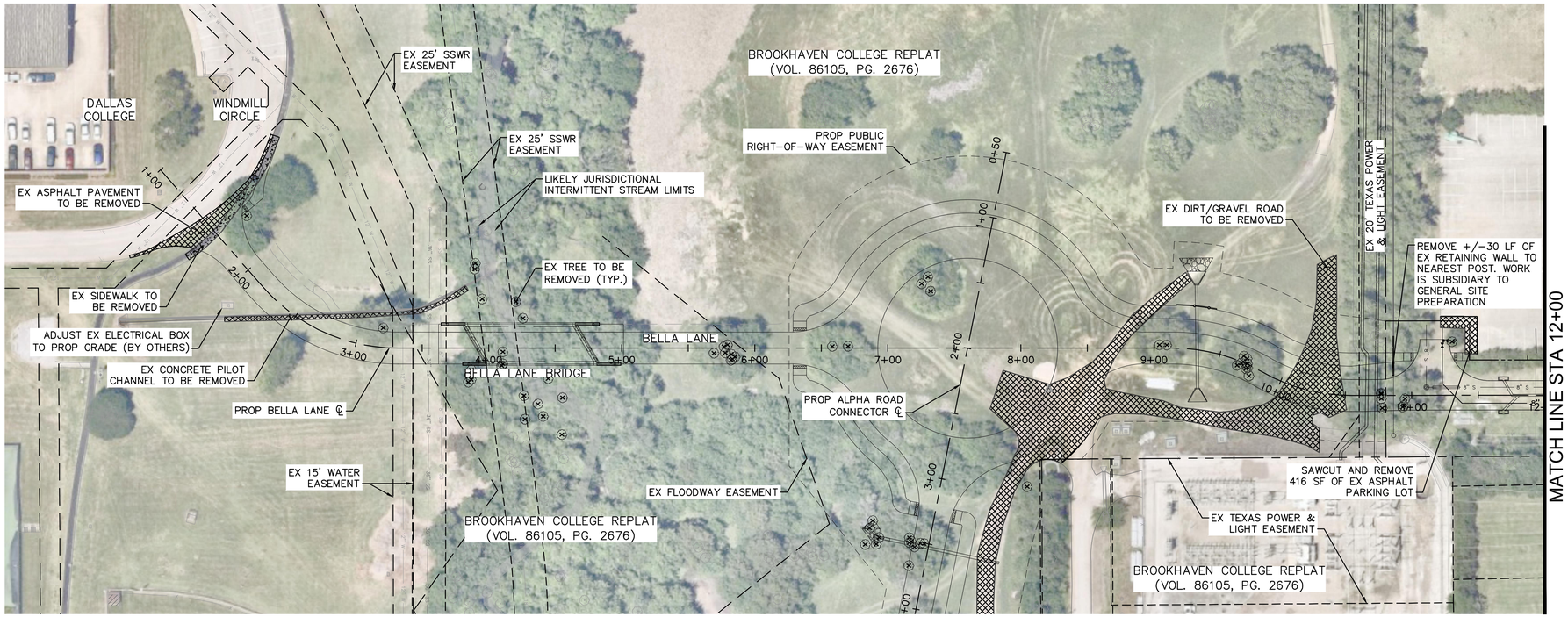
KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
063543031	09/10/2021	AS SHOWN	RMD	CDS	LNA

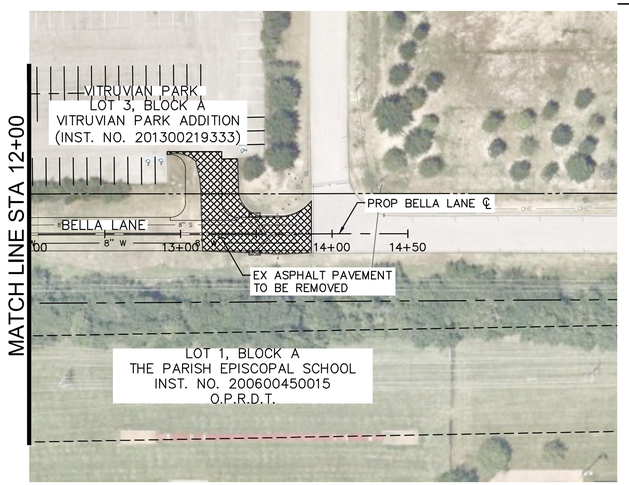
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

REMOVAL PLAN
ALPHA ROAD CONNECTOR
SHEET 2 OF 2

SHEET NUMBER
C1.04

Plotted By: Snodbolt, Cody September 09, 2021 01:20:15pm K:\IAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Removal Plan.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

LEGEND

- EX ROW
- 12" W — EX 12" WATER
- 8" SS — EX 8" SANITARY SEWER
- 15" SS — EX 8" SANITARY SEWER
- 18" SS — EX 18" SANITARY SEWER
- 36" SS — EX 18" SANITARY SEWER
- EX STORM DRAIN
- UGE — EX UNDERGROUND ELECTRIC
- G — EX GAS
- OHE — EX OVERHEAD ELECTRIC
- EX TREE TO REMAIN
- EX TREE TO BE REMOVED
- CONCRETE PAVEMENT, GRAVEL, DIRT AND ASPHALT TO BE REMOVED
- SIDEWALK AND RAMPS TO BE REMOVED

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND RESTORING ALL IRRIGATION FACILITIES WITHIN PROJECT LIMITS (NO SEPARATE PAY).
2. ALL LANDSCAPING AND TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED. IF DAMAGED, CONTRACTOR SHALL RESTORE TO EQUAL OR BETTER CONDITION.
3. DUE TO TREE LIMB HEIGHT LIMITATIONS, CONTRACTOR SHALL INSPECT AREA FOR EQUIPMENT CLEARANCE. IN THE EVENT OF A CONFLICT, CONTRACTOR SHALL NOTIFY TOWN PRIOR TO CONSTRUCTION.
4. ALL TREE ROOTS IN CONFLICT WITH PROPOSED WORK SHALL BE STRAIGHT CUT AND TREATED WITH PRUNING PAINT (NO SEPARATE PAY).
5. ALL DAMAGE AND/OR REPLACEMENT TO EXISTING DECORATIVE WALK WAYS NOT SPECIFICALLY NOTED IN THE PLANS SHALL BE SUBSIDIARY TO ANY BID ITEM (NO SEPARATE PAY).
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

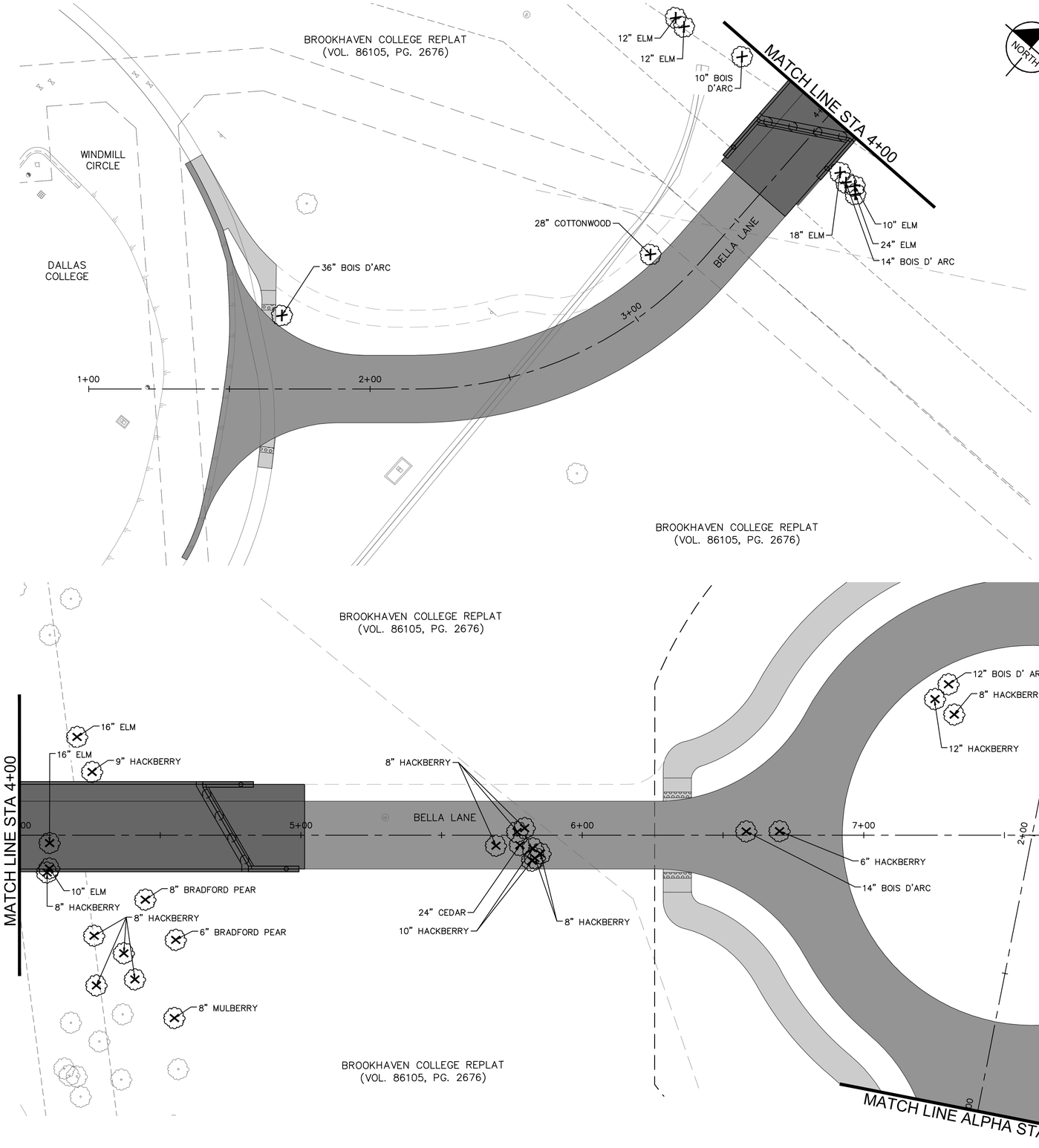
KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

REMOVAL PLAN
BELLA LANE EXTENSION

SHEET NUMBER
C1.05

Plotted By: Shadbolt, Cody September 08, 2021 08:57:27am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Removal Plan.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

NOTES

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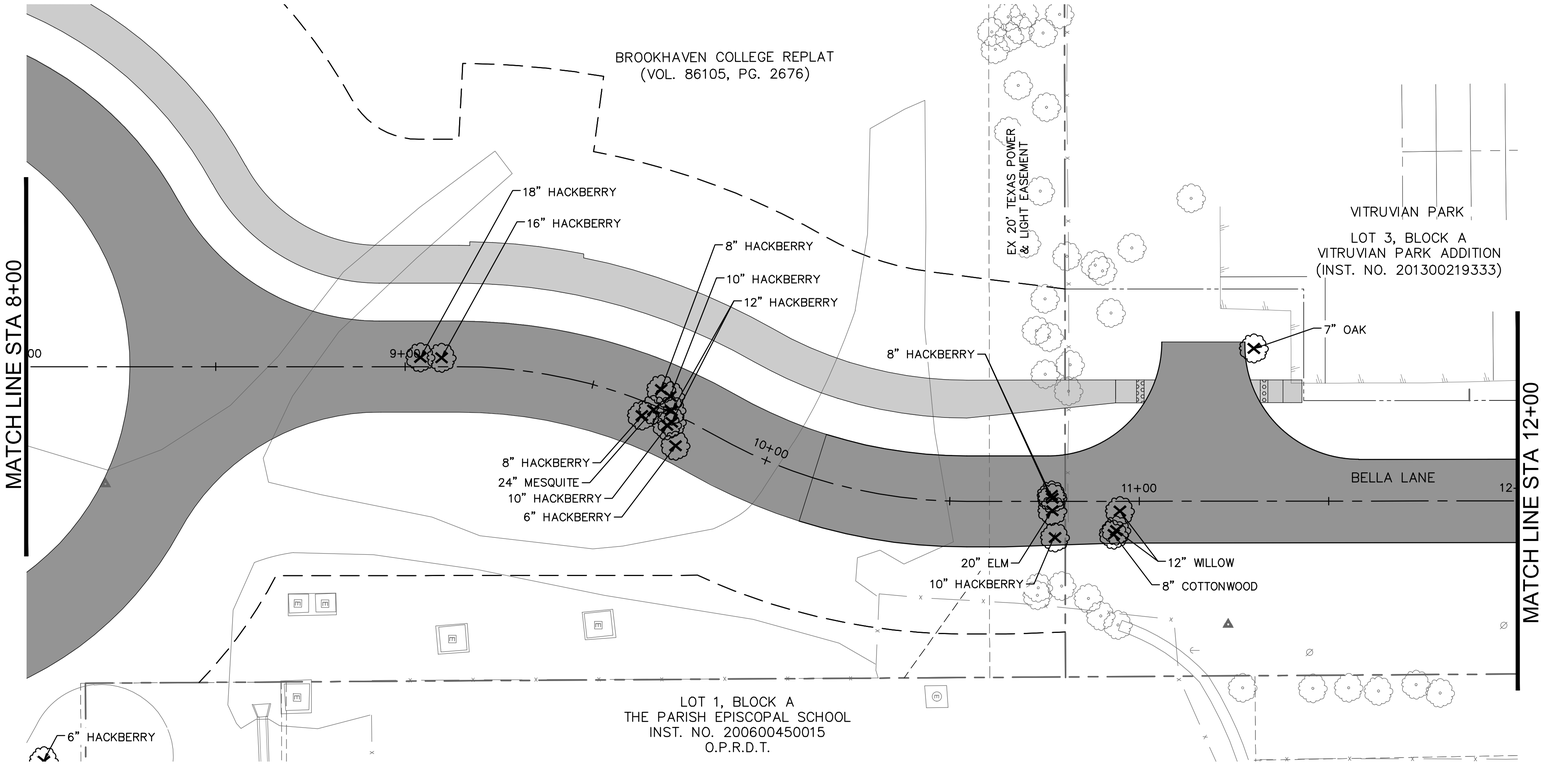
KHA PROJECT			
063543031	DATE 09/10/2021		
	SCALE AS SHOWN	DESIGNED BY RMD	
		DRAWN BY CDS	
		CHECKED BY LNA	

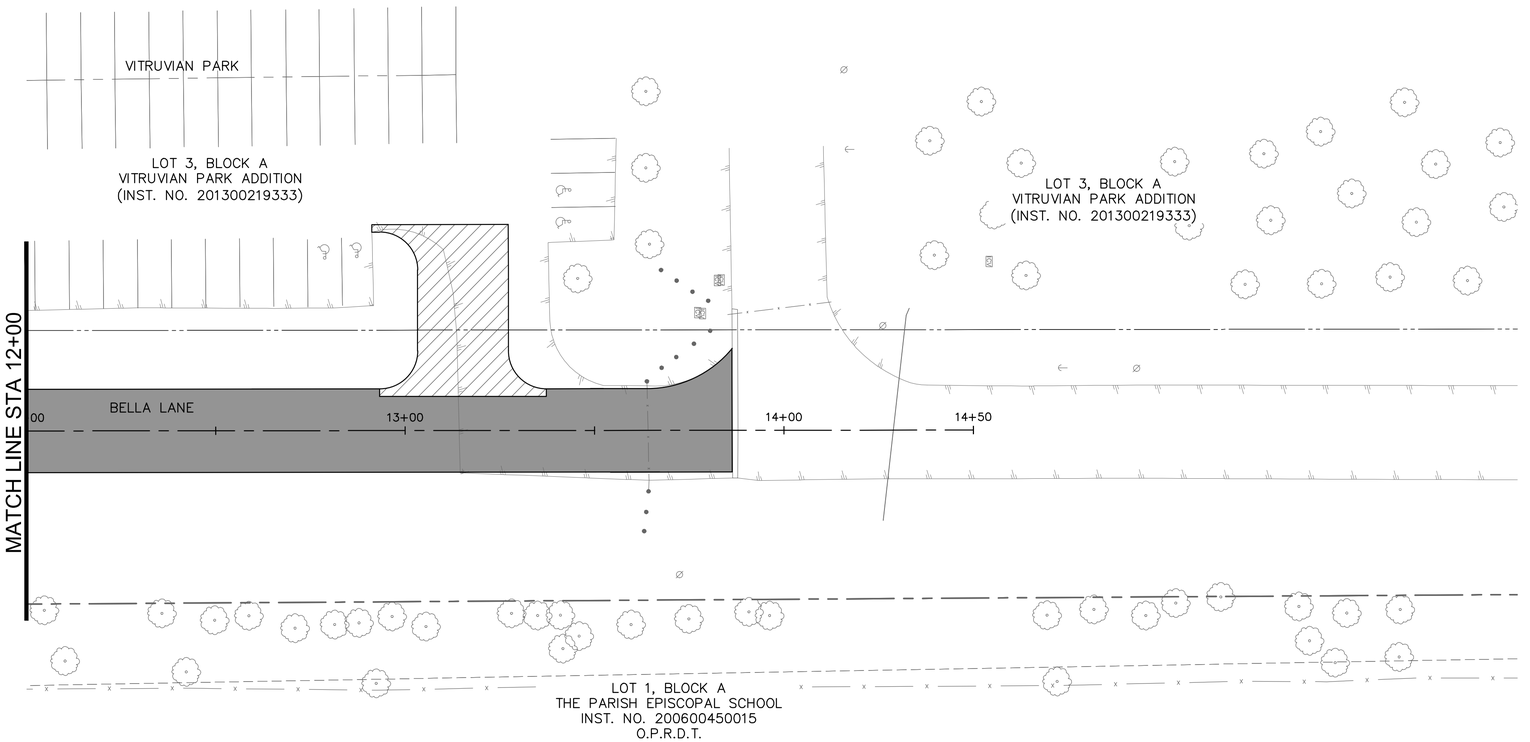
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

TREE REMOVAL PLAN
SHEET 1 OF 3

SHEET NUMBER
C1.06

Plotted By: Shettell, Cody September 08, 2021 08:57:54pm K:\LAC_Civil\063543031-Addison-Alpha_Road_Connect\CADD\Plan Sheets\Tree Plan.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

TREE REMOVAL PLAN
SHEET 2 OF 3

SHEET NUMBER
C1.07

Plotted By: Ghotbadi, Cody September 08, 2021 - 08:57:57am K:\LAD_Civil\063543031_Addison Alpha Road Connector\CAD\Plan Sheets\Tree Plan.dwg
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Plotted By: Shotwell, Cody September 08, 2021 08:58:01am K:\IAC_Dal\063543031_Addison-Alpha Road Connector\400\Proj\Sheets\Tree Plan.dwg
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BROOKHAVEN COLLEGE REPLAT
(VOL. 86105, PG. 2676)

MATCH LINE ALPHA STA 3+00

ALPHA ROAD CONNECTOR

4+00 5+00 6+00 7+00 8+00

12" ELM
12" HACKBERRY
8" BOIS D'ARC
12" HACKBERRY
6" ELM
8" CEDAR
6" HACKBERRY
8" HACKBERRY
12" CEDAR
12" CEDAR
16" CEDAR
16" BOIS D'ARC
8" HACKBERRY
16" CEDAR
10" HACKBERRY
26" CEDAR

BROOKHAVEN COLLEGE REPLAT
(VOL. 86105, PG. 2676)

18" ELM
14" ELM
36" CEDAR
36" COTTONWOOD
6" HACKBERRY
8" ELM
12" CEDAR
6" CEDAR
8" HACKBERRY
6" HACKBERRY
6" HACKBERRY
22" COTTONWOOD
26" COTTONWOOD
10" WILLOW
10" COTTONWOOD
38" COTTONWOOD
16" COTTONWOOD
12" ELM
6" HACKBERRY
16" ELM
8" ELM
20" ELM

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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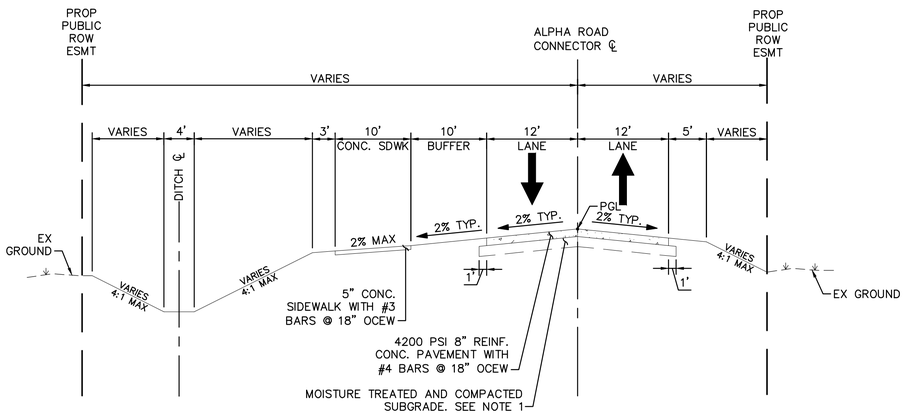
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

TREE REMOVAL PLAN
SHEET 3 OF 3

SHEET NUMBER
C1.08



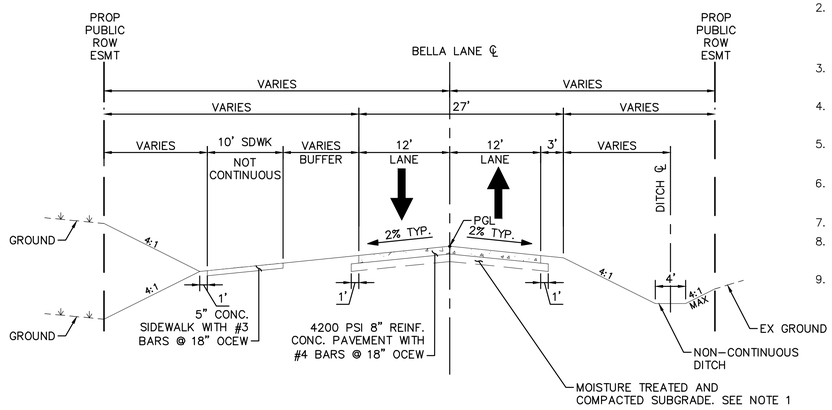
PROPOSED ROADWAY TYPICAL SECTION

ALPHA ROAD CONNECTOR

1 / C1.09

SCALE: H: 1"=10' V: 1"= 2'

EAST/WEST ALPHA ROAD CONNECTOR STA 3+25 TO END



PROPOSED ROADWAY TYPICAL SECTION

BELLA LANE DITCH SECTION

2 / C1.09

SCALE: H: 1"=10' V: 1"= 2'

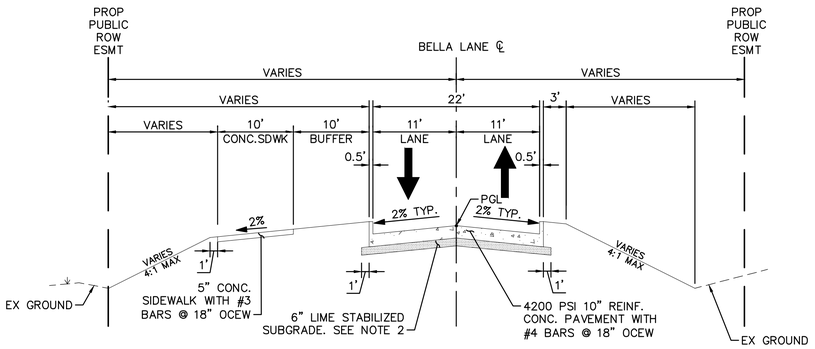
BELLA LANE BEGIN TO STA 3+62, STA 5+01 TO STA 6+50 AND STA 9+00 TO STA 10+13
DITCH LIMITS FROM STA 2+25 TO 3+00

NOTES:

1. MOISTURE CONDITION AND COMPACT TO A MINIMUM OF 94% OF ASTM D 698 (STANDARD PROCTOR DENSITY) AT 2% TO 6% ABOVE THE OPTIMUM MOISTURE CONTENT. EXTEND AT LEAST 1' OUTSIDE THE EDGE OF PROPOSED PAVEMENT. IN-SITU MATERIAL SHALL BE PROOF-ROLLED PER SECTION 4.2.3. (REFER TO GEOTECH REPORT PREPARED BY KLEINFELDER, INC. (REPORT 20212439.001A) DATED DECEMBER 2, 2020.)
2. 6" LIME-STABILIZED SUBGRADE (42 LBS/SY) COMPACTED TO A MINIMUM OF 95% ASTM D 698 (STANDARD PROCTOR DENSITY) AT 2% TO 5% ABOVE THE OPTIMUM MOISTURE CONTENT.
3. ALL PAVEMENT DIMENSIONS SHOWN ON THE PLANS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
4. TYPICAL SECTIONS ARE APPROXIMATE. REFER TO PLAN SHEETS FOR STATIONING AND LIMITS.
5. DIMENSIONS GIVEN FOR PARKWAY WIDTHS ARE TYPICAL, BUT MAY VARY IN LOCATIONS. REFER TO PLAN SHEETS FOR PARKWAY WIDTHS.
6. ALL DISTURBED AREAS TO RECEIVE HYDRAULIC MULCHING WITH 4" TOPSOIL. REFER TO EROSION CONTROL SHEETS.
7. REFER TO TOWN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8. REFER TO GEOTECH REPORT NUMBER 20212439.001A PREPARED BY: KLEINFELDER, INC. DATED: 07-15-2021.
9. ALL WORK WITHIN FARMERS BRANCH SHALL BE COMPLETED IN ACCORDANCE WITH FARMERS BRANCH SPECIFICATIONS.

LISTING OF ABBREVIATIONS:

ROW = RIGHT-OF-WAY
℄ = CENTER LINE
PGL = PROFILE GRADE LINE



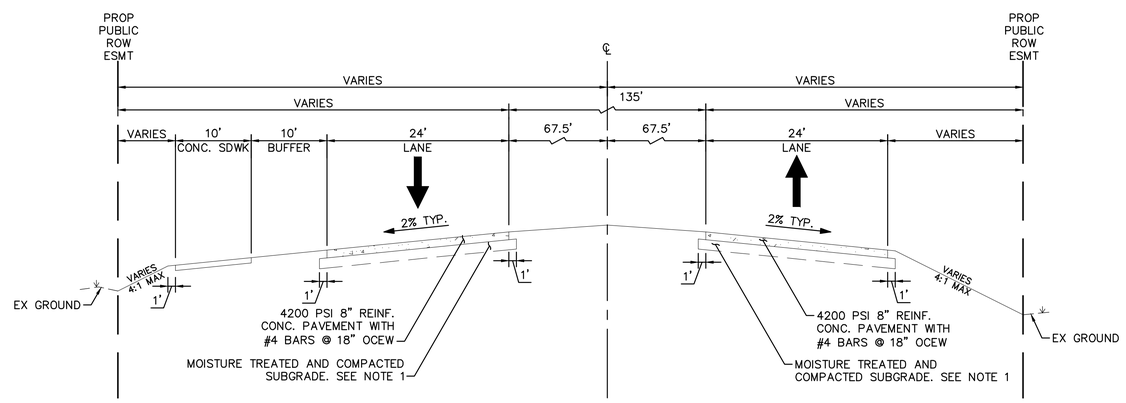
PROPOSED ROADWAY TYPICAL SECTION

BELLA LANE CURB AND GUTTER SECTION

3 / C1.09

SCALE: H: 1"=10' V: 1"= 2'

BELLA LANE STA 10+13 TO STA 10+76



PROPOSED ROADWAY TYPICAL SECTION

TRAFFIC CIRCLE

4 / C1.09

SCALE: H: 1"=10' V: 1"= 2'

TRAFFIC CIRCLE

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STATE OF TEXAS
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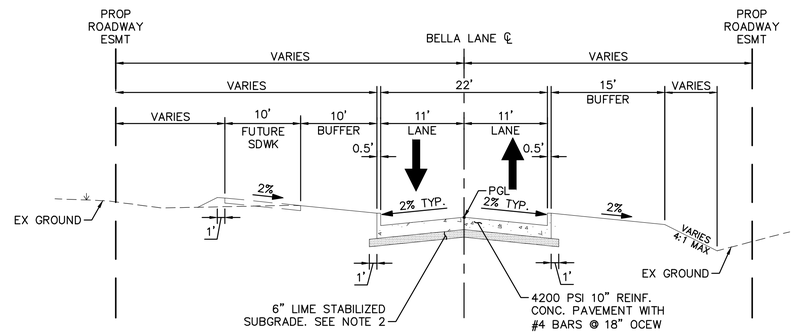
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

TYPICAL SECTIONS
SHEET 1 OF 2

SHEET NUMBER
C1.09

Plotted By: Ghotkar, Ovais, September 09, 2021 - 01:18:37pm K:\ADC_Civil\063543031_Addison Alpha Road Connection\2-ADD\Plan Sheets\Typical Sections.dwg
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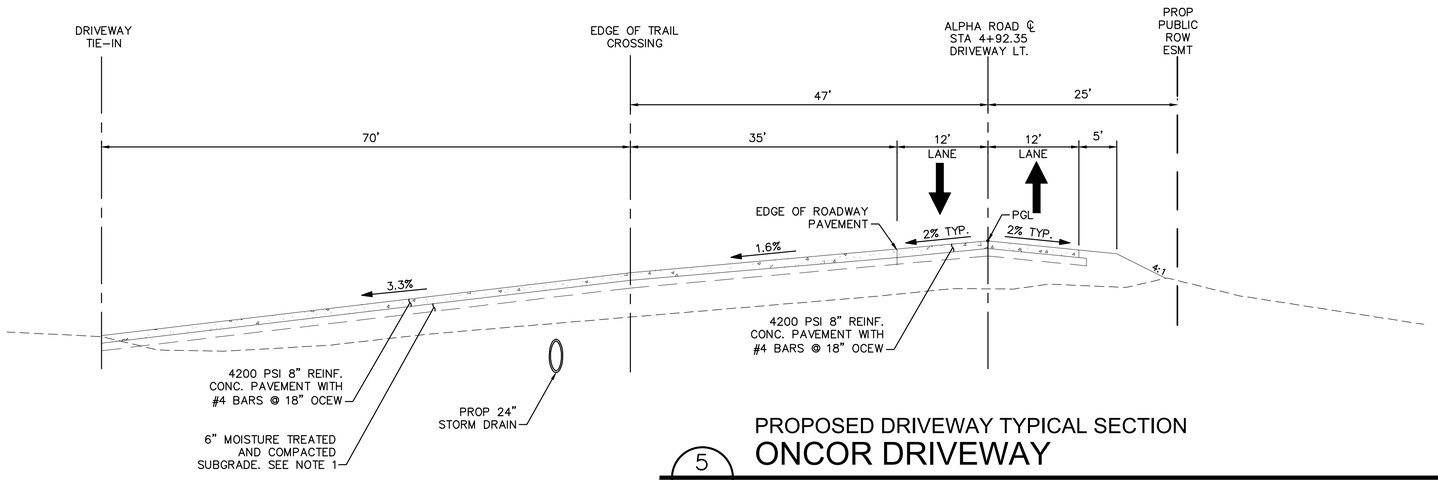
PROPOSED ROADWAY TYPICAL SECTION

BELLA LANE CURB AND GUTTER SECTION

5 / C1.10

SCALE: H: 1"=10'
V: 1"= 2'

BELLA LANE STA 11+58 TO END



PROPOSED DRIVEWAY TYPICAL SECTION

ONCOR DRIVEWAY

5 / C1.10

SCALE: H: 1"=10'
V: 1"= 2'

ALPHA ROAD CONNECTOR STA 4+92 DRIVEWAY LT.

NOTES:

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PROJECT NO. 2021-01C/ BID NO. 21-69

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PHONE: 214-420-5600
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT 063543031			
DATE 09/10/2021	SCALE	AS SHOWN	
	DESIGNED BY	RMD	
	DRAWN BY	CDS	
	CHECKED BY	LNA	

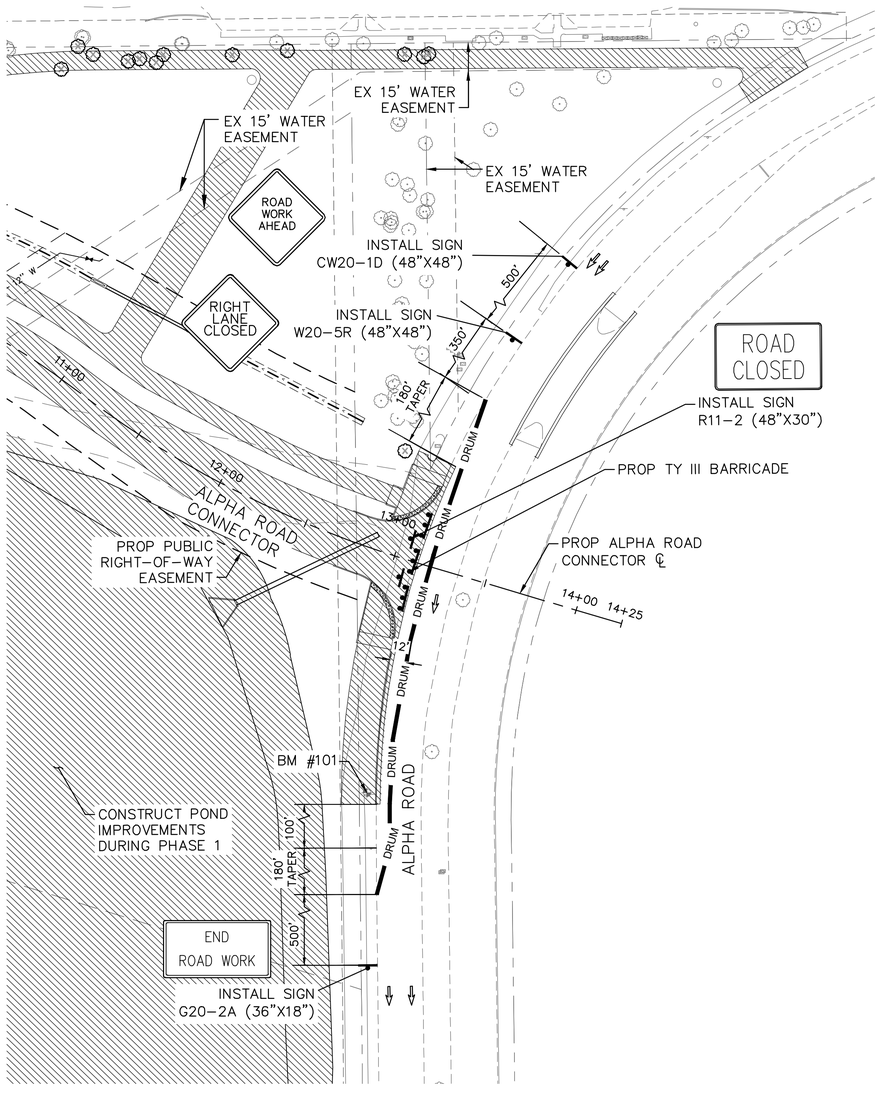
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

TYPICAL SECTIONS
SHEET 2 OF 2

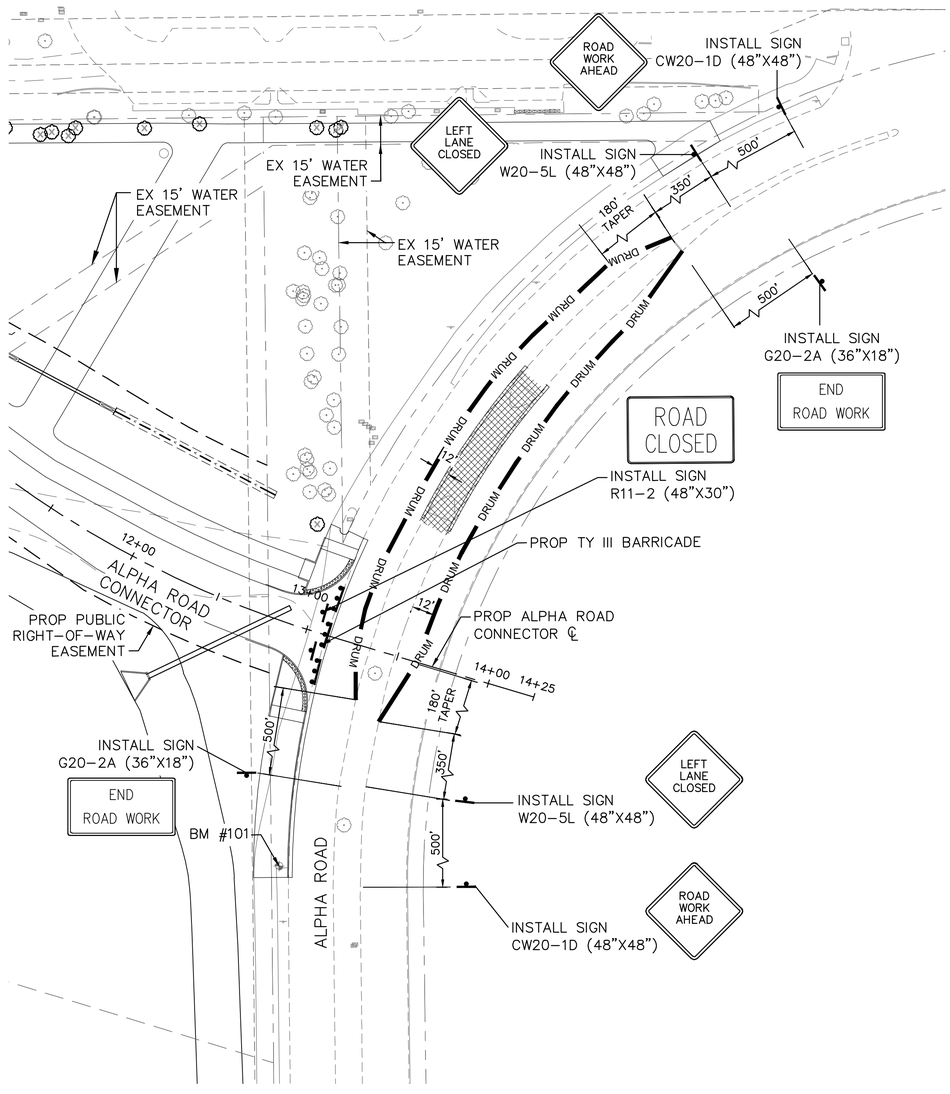
SHEET NUMBER
C1.10

Plotted By: Shettell, Cody September 09, 2021 01:18:37pm K:\I4C-Civil\063543031-Addison Alpha Road Connector\CAD\1-Plan Sheets\1-Typical Sections.dwg
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PHASE 1



PHASE 2



NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

PHASE 1

PHASE 2

NOTES

Phase 1 Alpha Road Connector

1. Implement approved traffic control plan and install erosion and sedimentation best management practices.
2. Perform storm drainage, subgrade and paving improvements for remainder of work area.
3. Staging for bridge construction and all construction materials shall remain within the proposed easements at all times.
4. Install temporary stabilization for completed areas of work.
5. Obtain approval for initiation of next sequential phase of work.
6. Remove temporary traffic control measures.
7. Open Phase 1 to traffic.

Phase 2 Alpha Road - Inside Lane/Medians

1. Implement approved traffic control plan and install erosion and sedimentation best management practices.
2. Perform subgrade and paving improvements.
3. Obtain approval for initiation of next sequential phase of work.
4. Remove temporary traffic control measures.

Know what's **below.**
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No.	REVISIONS	DATE	BY

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9/10/2021

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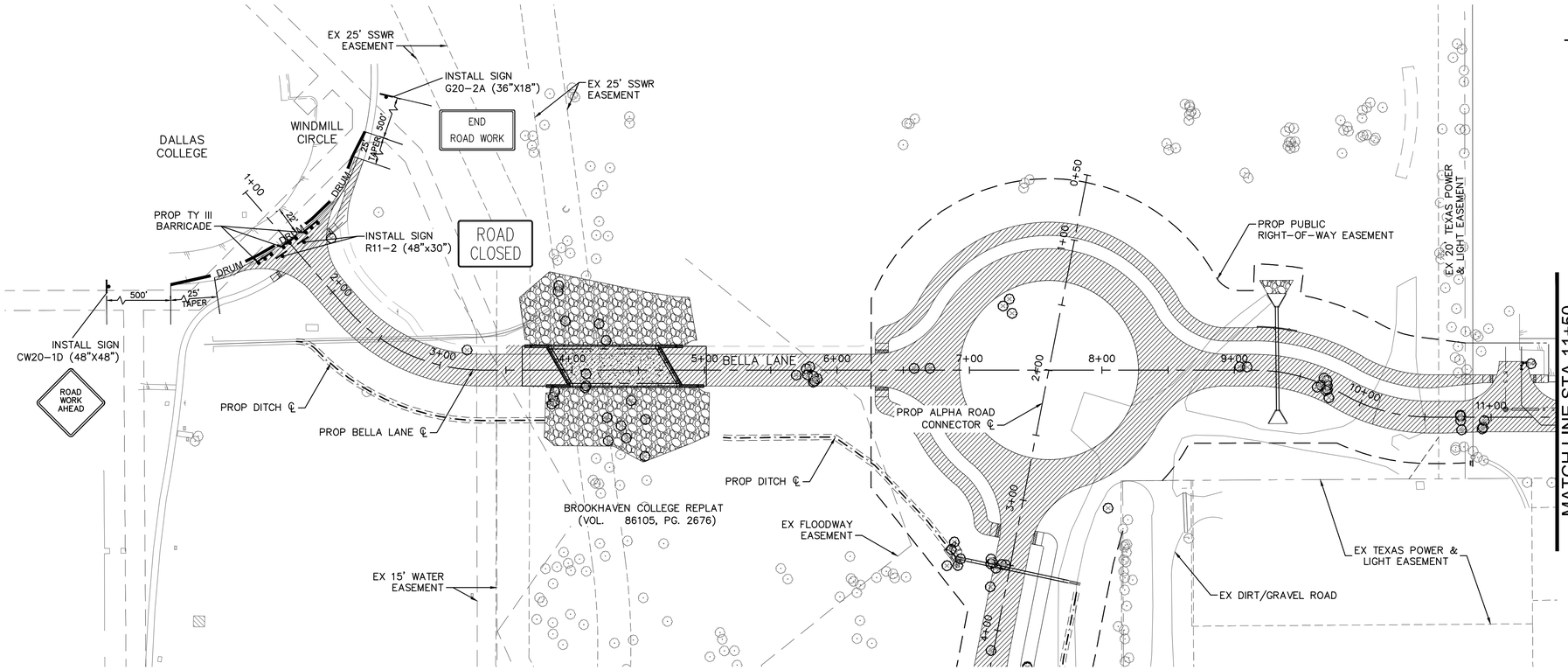
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

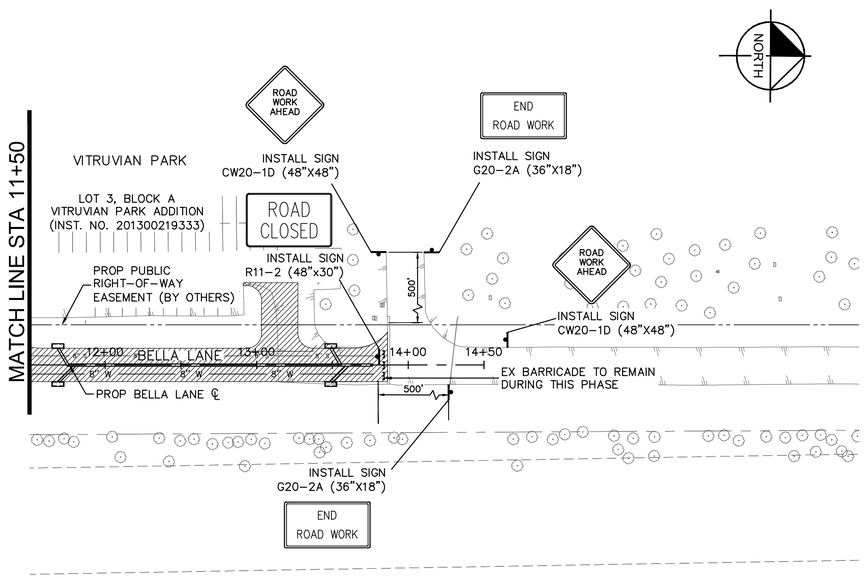
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

TRAFFIC CONTROL PLANS
ALPHA ROAD CONNECTOR

SHEET NUMBER
C2.01

Plotted By: Shettigh, Cody Sep 1ember 08, 2021 - 06:59:18pm K:\IVG_Civil\063543031_Addison_Alpha_Road_Connector\C4D\0-Pro-Sheets\Traffic Control.dwg
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LEGEND

PHASE 1

PHASE 2

NOTES

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6. Remove temporary traffic control measures.
7. Open Phase 1 to traffic.

Phase 2 Alpha Road - Inside Lane/Medians

1. Implement approved traffic control plan and install erosion and sedimentation best management practices.
2. Perform subgrade and paving improvements.
3. Obtain approval for initiation of next sequential phase of work.
4. Remove temporary traffic control measures.

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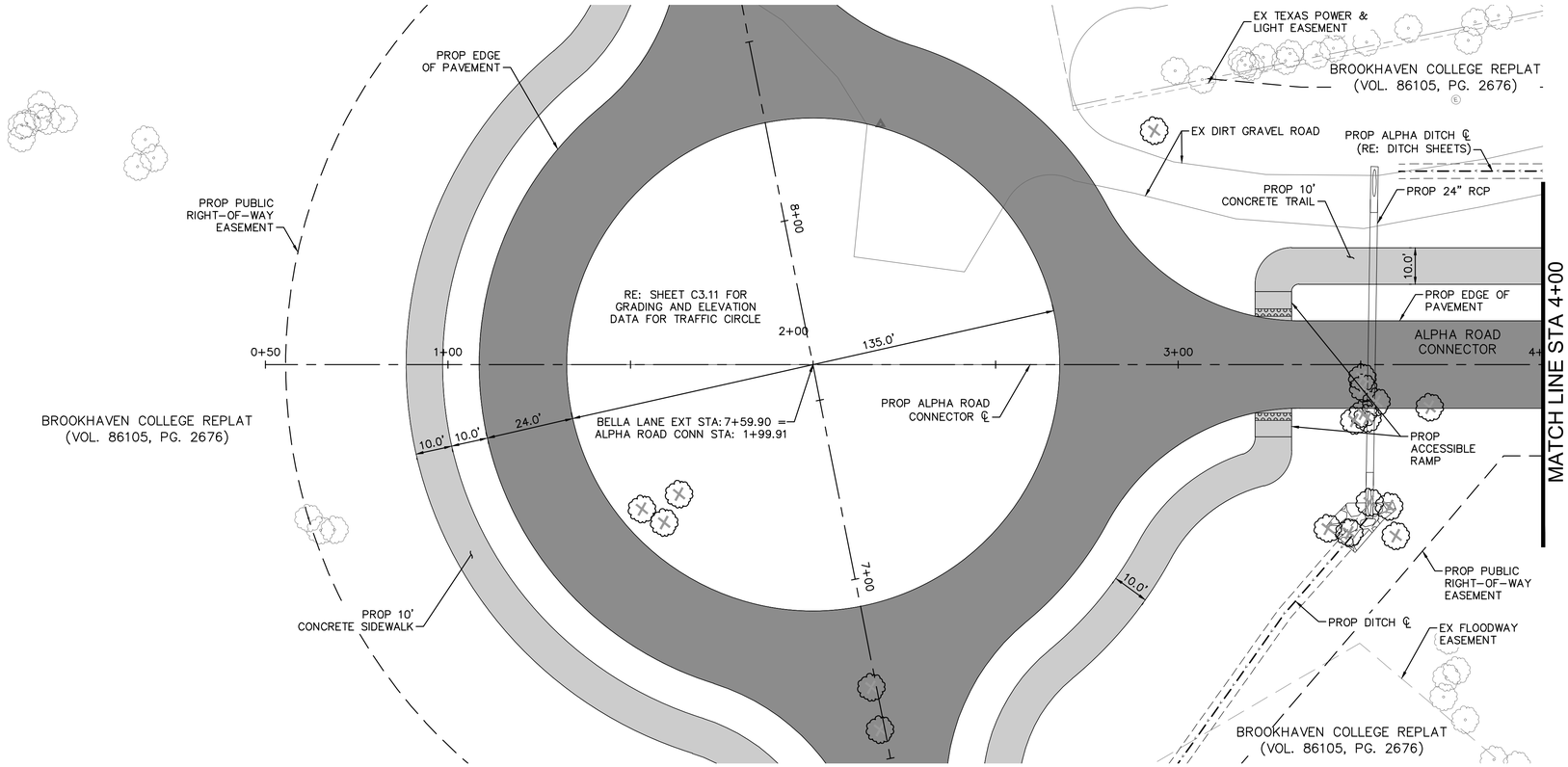
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

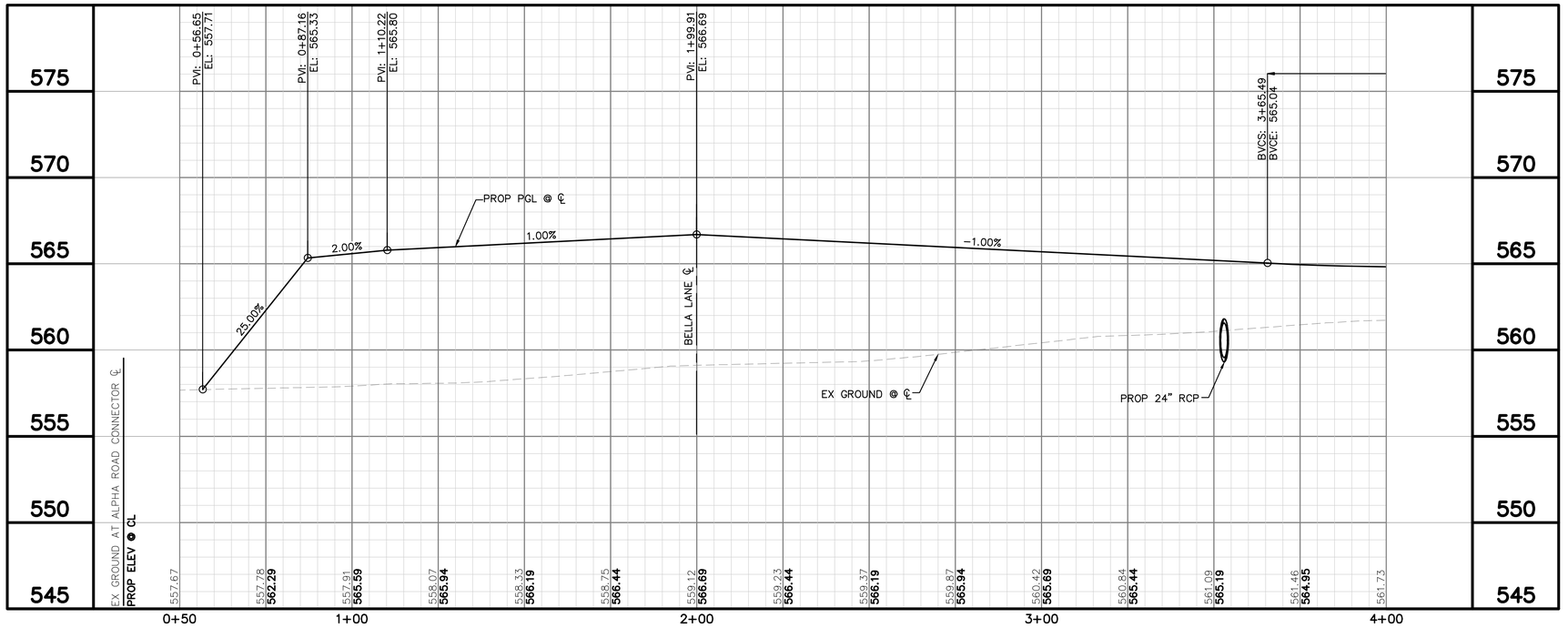
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

TRAFFIC CONTROL PLANS
BELLA LANE EXTENSION

SHEET NUMBER
C2.02

Plotted By: Shethshi, Cody September 08, 2021 08:59:22pm K:\NAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\Pro-Sheets\Traffic Control.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
- EX TREE TO BE REMOVED

NOTES

1. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ANY SIGNS AND COORDINATION WITH THE CITY ON ANY NECESSARY MODIFICATIONS.
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4. ELEV ARE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

EX	EXISTING
PROP	PROPOSED
STA	STATION
EL	ELEVATION
PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
PRC	POINT OF HORIZONTAL REVERSE CURVATURE
PVI	POINT OF VERTICAL INFLECTION
AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

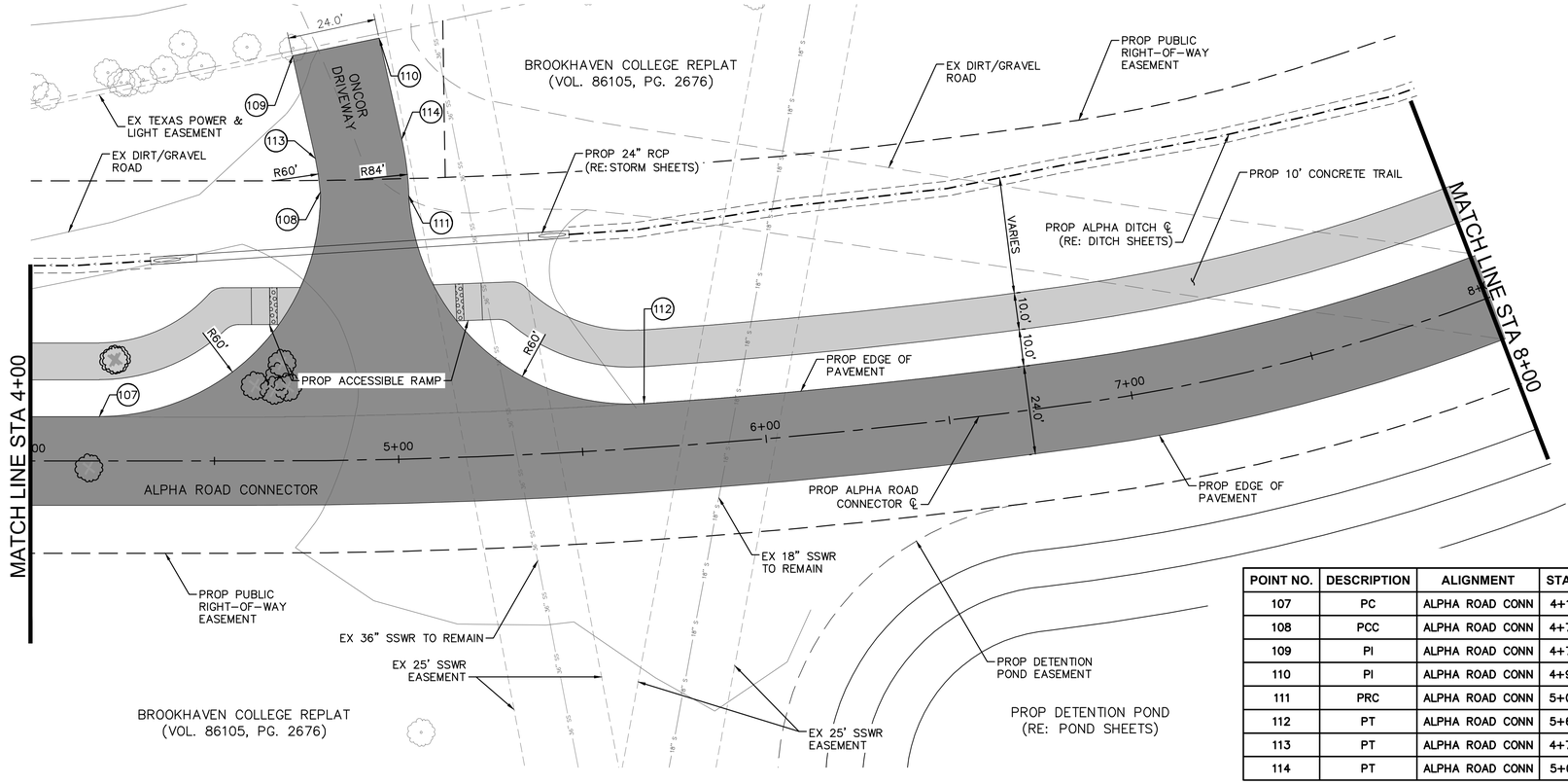
KHA PROJECT 063543031		
	DATE	09/10/2021
	SCALE	AS SHOWN
	DESIGNED BY	RMD
	DRAWN BY	CDS
	CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

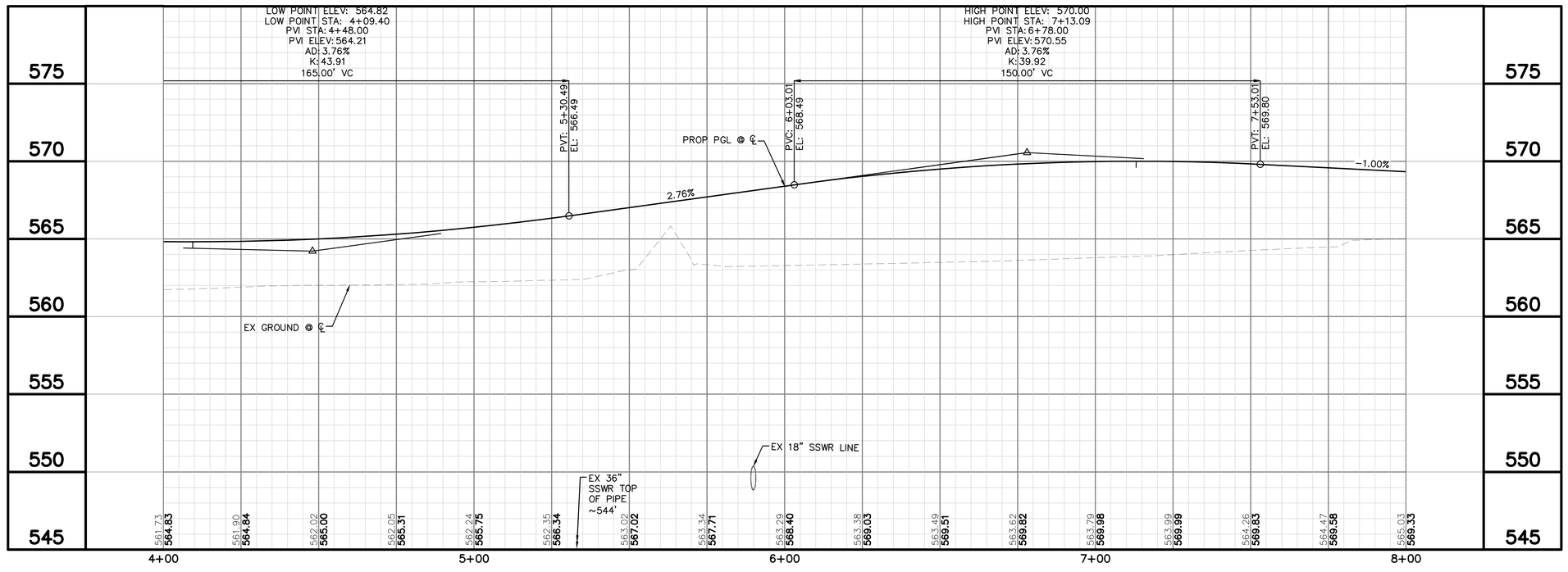
ALPHA ROAD CONNECTOR PLAN AND PROFILE
BEGIN TO STA 4+00

SHEET NUMBER
C3.01

Plotted By: Shettigh, Cody Sep 10, 2021 01:26:09pm K:\IRV_Civil\063543031 Addison Alpha Royal Connector\CADD\PrintSheets\Prints Plots\Prints\Alpha Road Connector Plan and Profile.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
107	PC	ALPHA ROAD CONN	4+18.68	12.00' L	564.59'
108	PCC	ALPHA ROAD CONN	4+79.57	72.80' L	563.88'
109	PI	ALPHA ROAD CONN	4+72.09	109.88' L	562.51'
110	PI	ALPHA ROAD CONN	4+97.34	114.28' L	562.51'
111	PRC	ALPHA ROAD CONN	5+04.73	71.34' L	564.26'
112	PT	ALPHA ROAD CONN	5+67.49	12.00' L	567.27'
113	PT	ALPHA ROAD CONN	4+78.32	82.00' L	563.55'
114	PT	ALPHA ROAD CONN	5+03.13	86.74' L	563.66'





GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
- EX TREE TO BE REMOVED

NOTES

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EX	EXISTING
PROP	PROPOSED
STA	STATION
EL	ELEVATION
PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
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PVI	POINT OF VERTICAL INFLECTION
AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

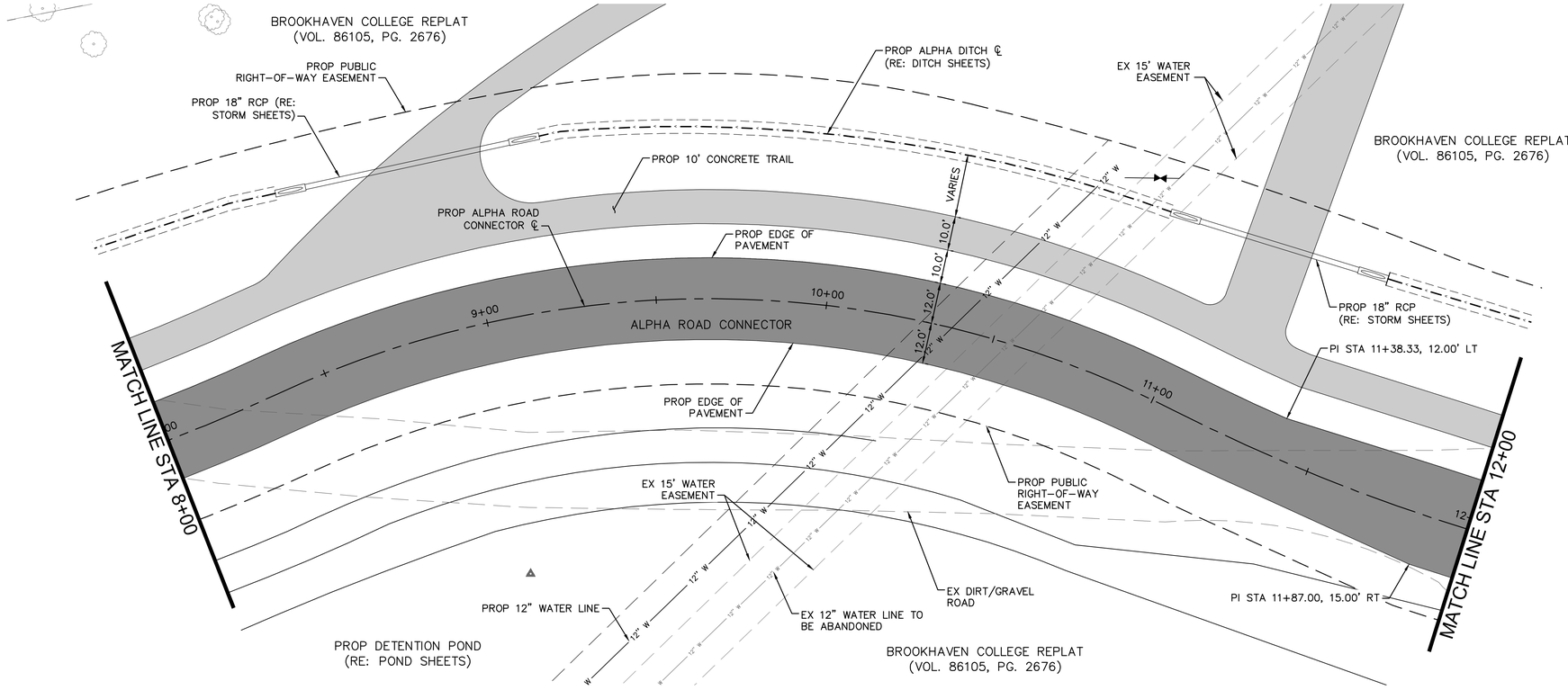
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

ALPHA ROAD CONNECTOR
PLAN AND PROFILE
STA 4+00 TO STA 8+00

SHEET NUMBER
C3.02

Plotted By-Shettyth, Cody Sep/ember 09, 2021 01:26:18pm K:\IAG-Giv\063543031_Addison-Alpha Road Connector\CADD\Pro-Sheet\Paving Plan-Profile.dwg
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Plotted By-Shettigh, Cody Sep 1ember 08, 2021 - 09:05:14am K:\IAC_Civil\063543031_Addison-Alpha-Broyd_Connector\CADD\PlanSheet\Prelim_PlanAndProfile.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

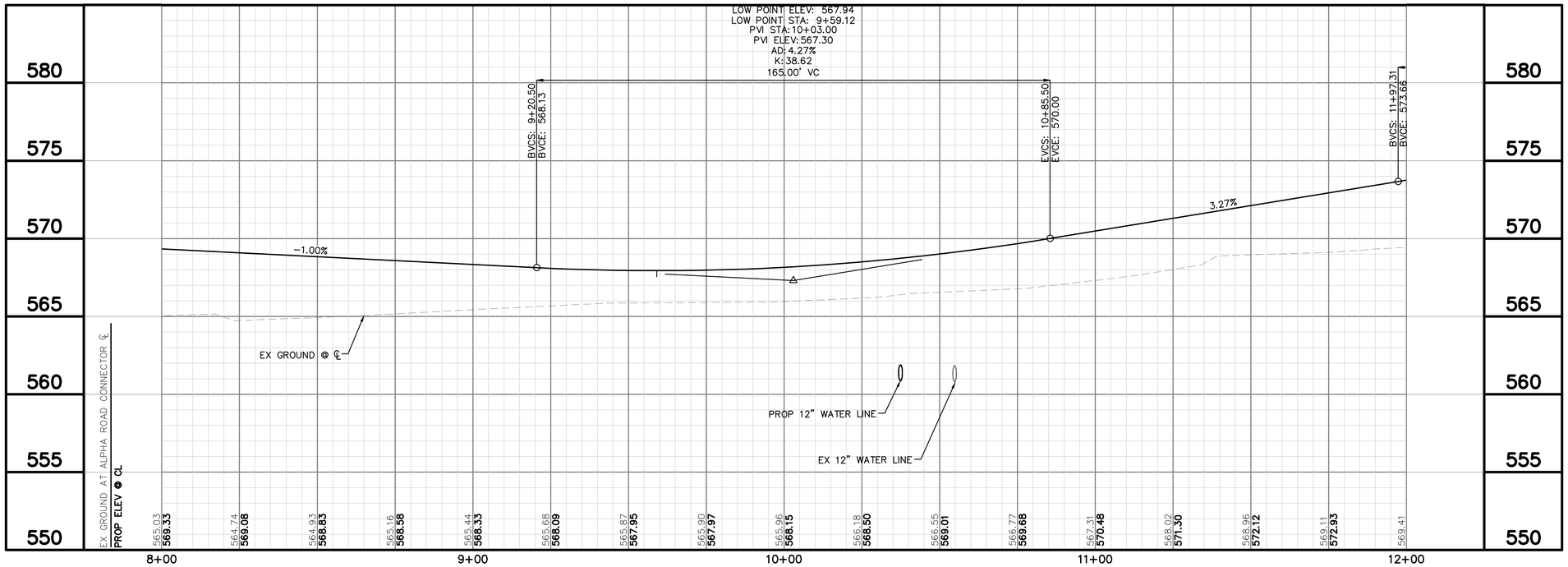
LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
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PROP	PROPOSED
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PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
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TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT



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9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
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No.	REVISIONS	DATE	BY

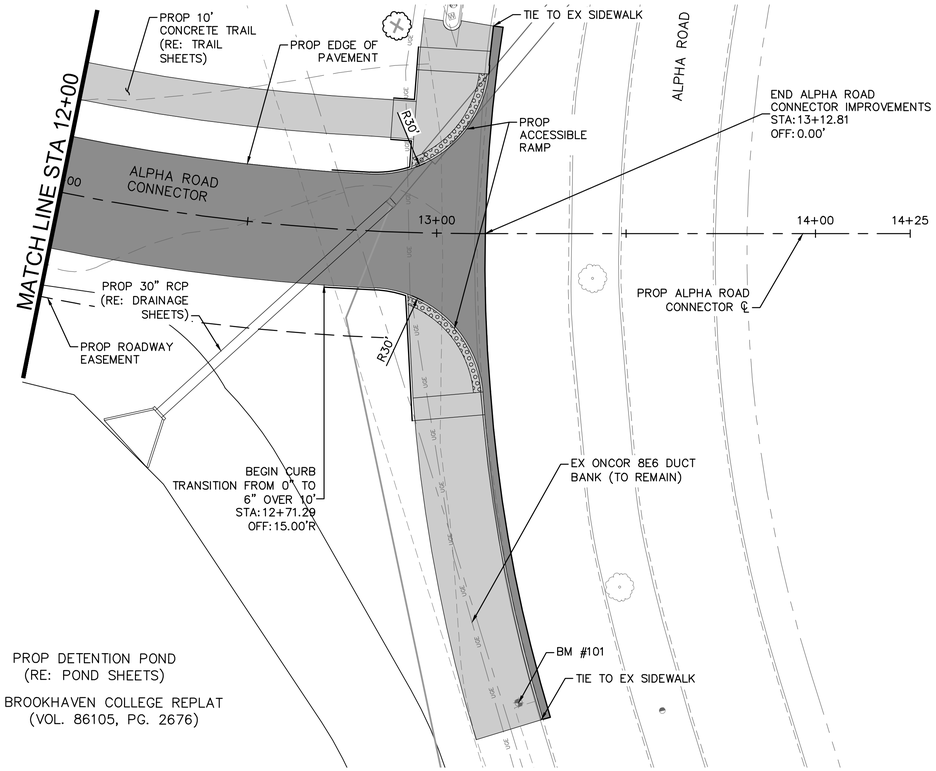
PROJECT NO. 2021-01C/ BID NO. 21-69

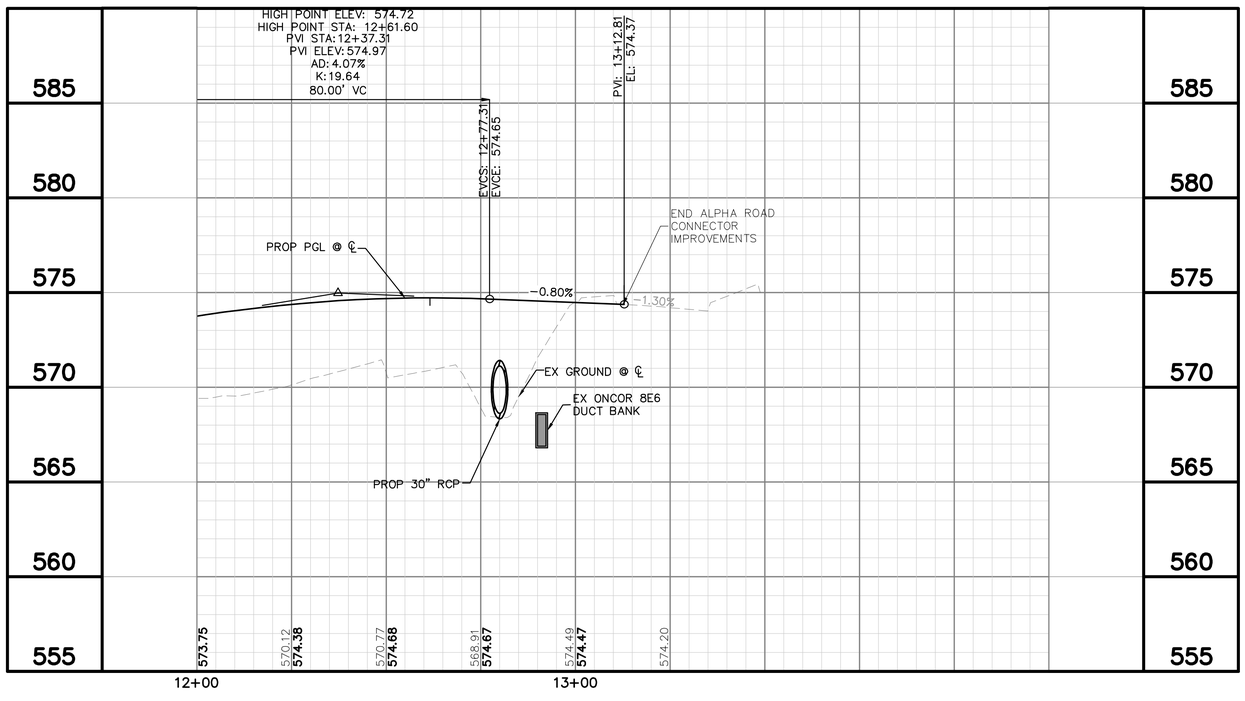
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

ALPHA ROAD CONNECTOR
PLAN AND PROFILE
STA 8+00 TO STA 12+00

SHEET NUMBER
C3.03







GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
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TCE	TEMPORARY CONSTRUCTION EASEMENT
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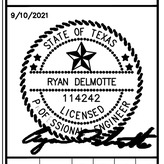
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No.	REVISIONS	DATE	BY

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9/10/2021



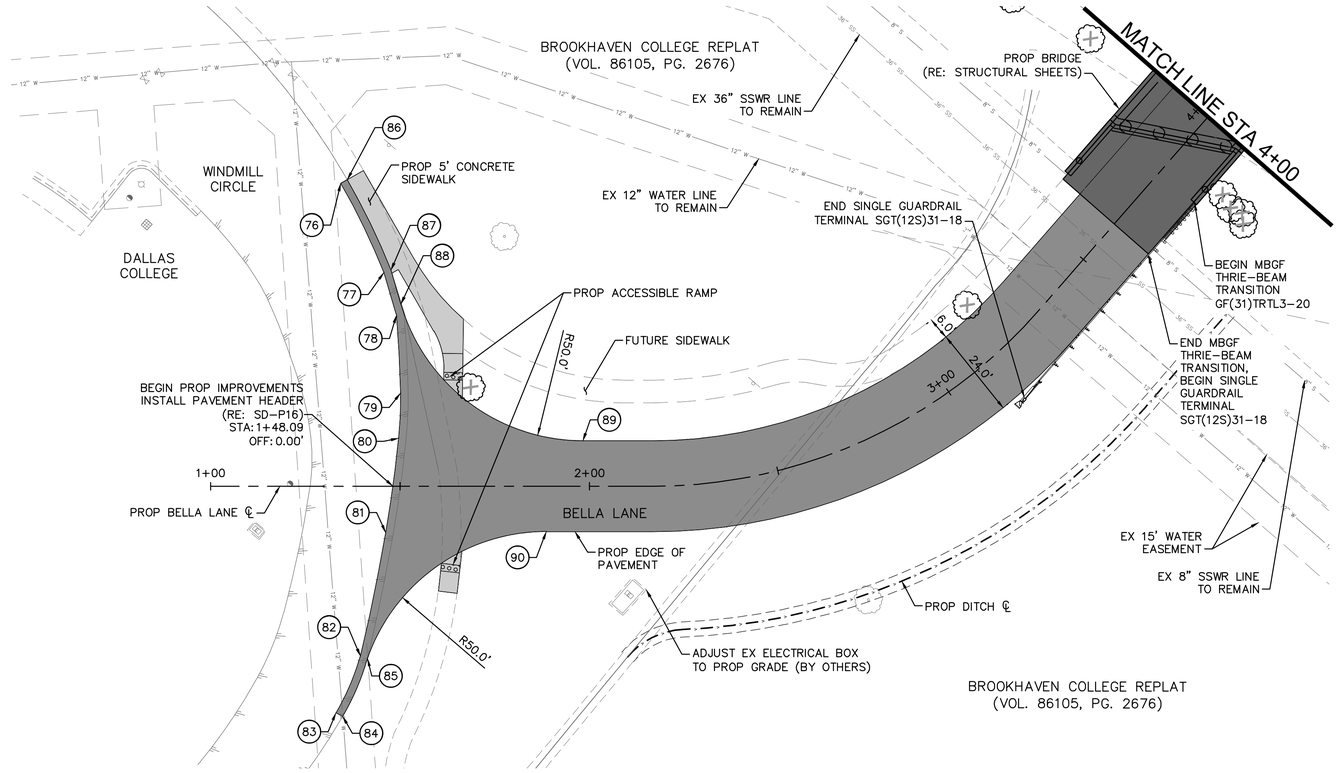
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
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TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

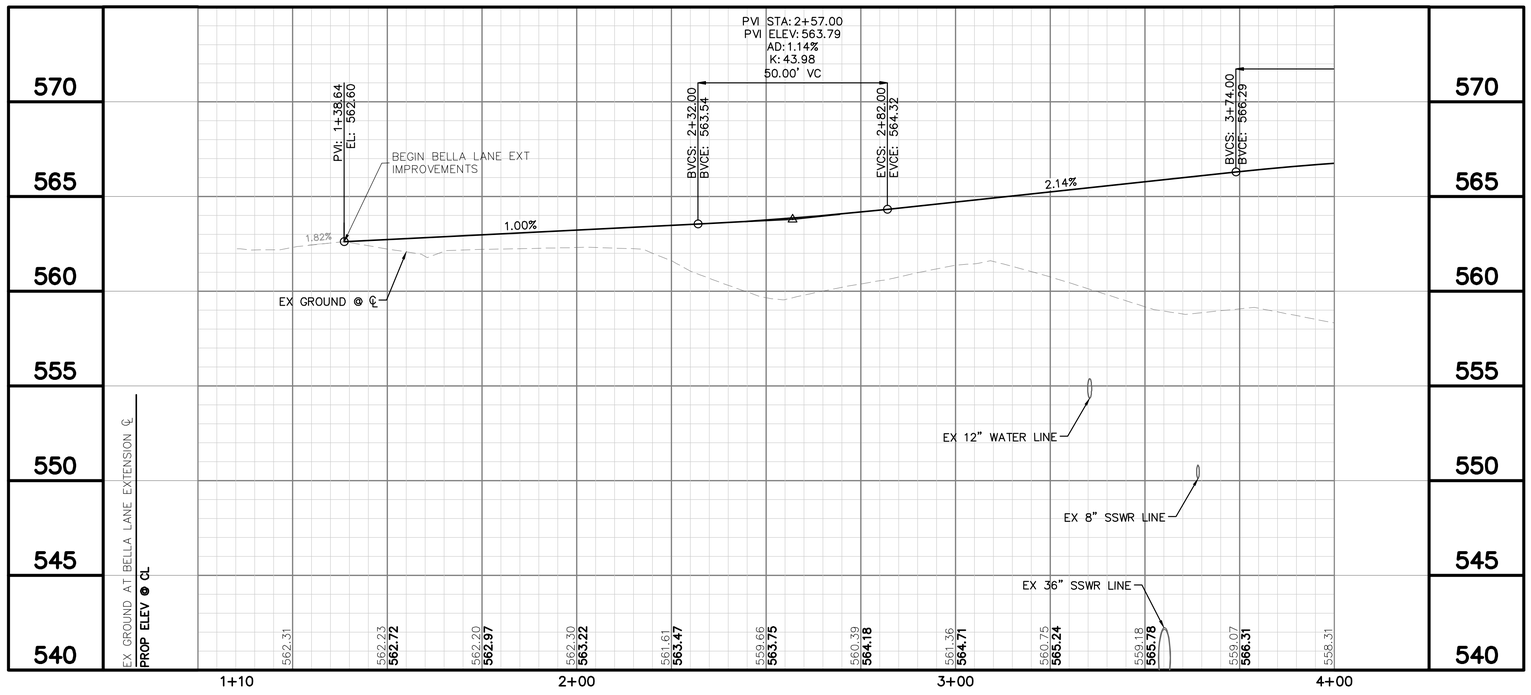
ALPHA ROAD CONNECTOR PLAN AND PROFILE STA 12+00 TO END

SHEET NUMBER
C3.04

Plotted By-Shettyh, Only Saturday, 09, 2021 09:09:21pm K:\IAC_Civil\063543031_Addison-Alpha-Royal_Connector\CADD\PlanSheet\Prints_PlanSheet.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
76	PI–SC	BELLA LANE EXT	1+34.35	79.88' L	560.77'
77	PI–SC	BELLA LANE EXT	1+45.71	56.37' L	561.30'
78	PI–SC	BELLA LANE EXT	1+49.05	45.10' L	561.56'
79	PI–SC	BELLA LANE EXT	1+50.10	24.57' L	561.76'
80	PI–SC	BELLA LANE EXT	1+49.60	12.65' L	561.97'
81	PI–SC	BELLA LANE EXT	1+46.20	12.25' R	562.60'
82	PI–SC	BELLA LANE EXT	1+39.51	44.82' R	563.39'
83	PI–SC	BELLA LANE EXT	1+33.07	59.81' R	563.73'
84	PI	BELLA LANE EXT	1+34.84	60.74' R	563.70'
85	PC	BELLA LANE EXT	1+41.39	45.46' R	563.36'
86	PI–SC	BELLA LANE EXT	1+36.08	80.87' L	560.74'
87	PI–SC	BELLA LANE EXT	1+47.61	57.02' L	561.28'
88	PC	BELLA LANE EXT	1+50.21	48.05' L	561.35'
89	PT	BELLA LANE EXT	1+98.23	12.00' L	562.97'
90	PT	BELLA LANE EXT	1+88.59	12.00' R	563.25'



NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
- EX TREE TO BE REMOVED

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4. ELEV ARE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

EX	EXISTING
PROP	PROPOSED
STA	STATION
EL	ELEVATION
PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
PRC	POINT OF HORIZONTAL REVERSE CURVATURE
PVI	POINT OF VERTICAL INFLECTION
AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT

811 Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

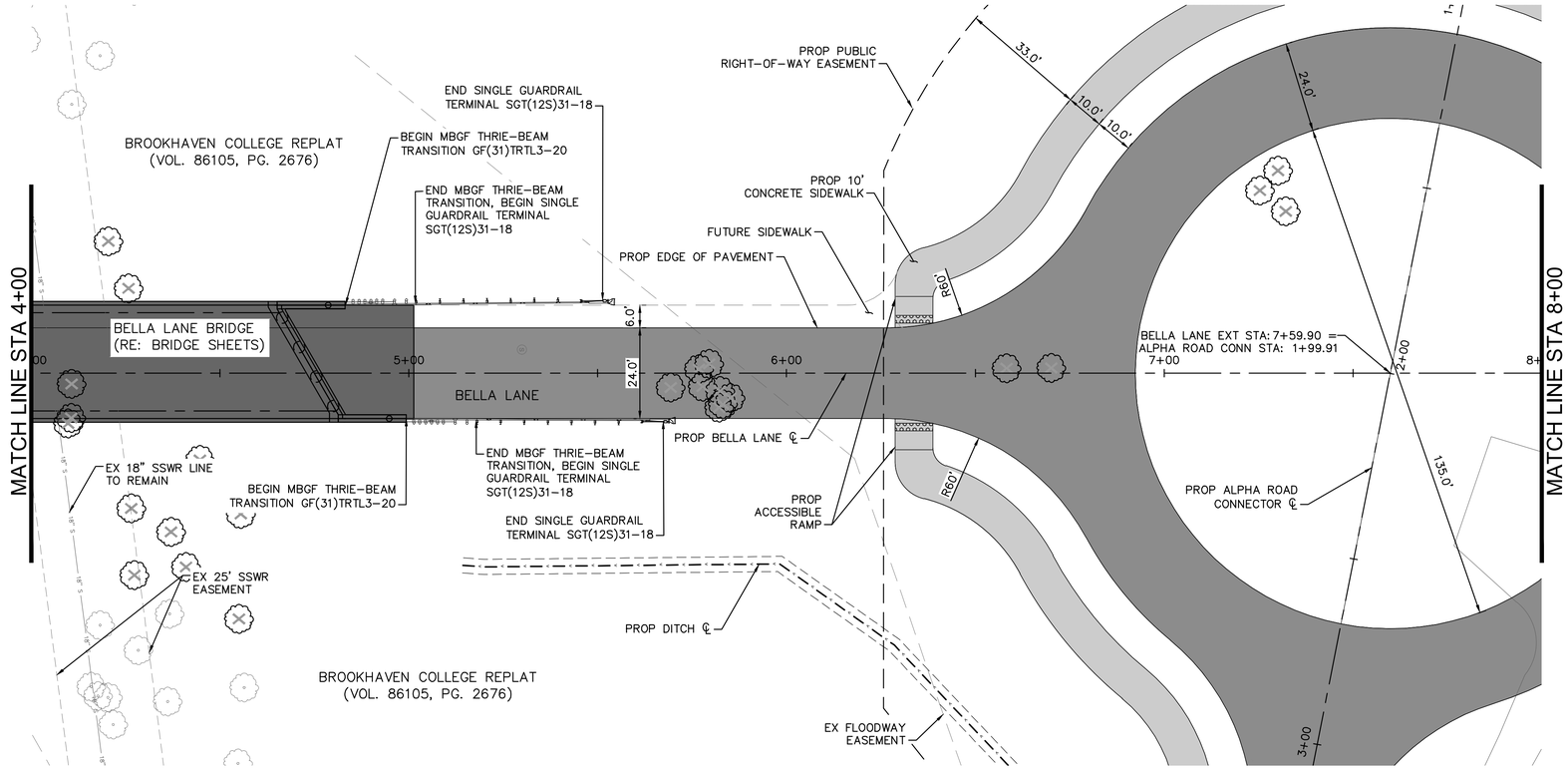
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

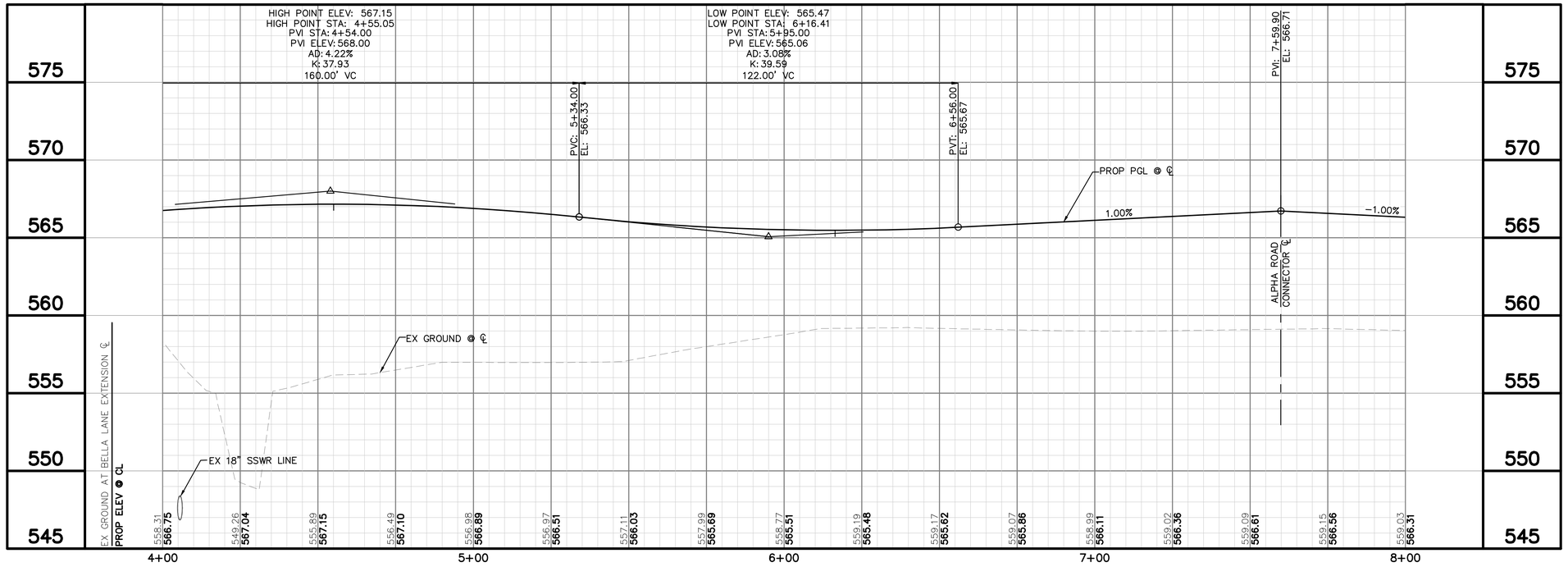
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

BELLA LANE EXTENSION
PLAN AND PROFILE
BEGIN TO STA 4+00

SHEET NUMBER
C3.05

Plotted By-Shettigh, Cody Sep 10, 2021 - 09:09:31am K:\IAC_Civil\063543031_Addison-Alpha_Bryan_Connector\CADD\PlanSheet\Prints_Plots\Plan-Profile.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
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PROP	PROPOSED
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EL	ELEVATION
PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
PRC	POINT OF HORIZONTAL REVERSE CURVATURE
PVI	POINT OF VERTICAL INFLECTION
AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT

Know what's **below.**
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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

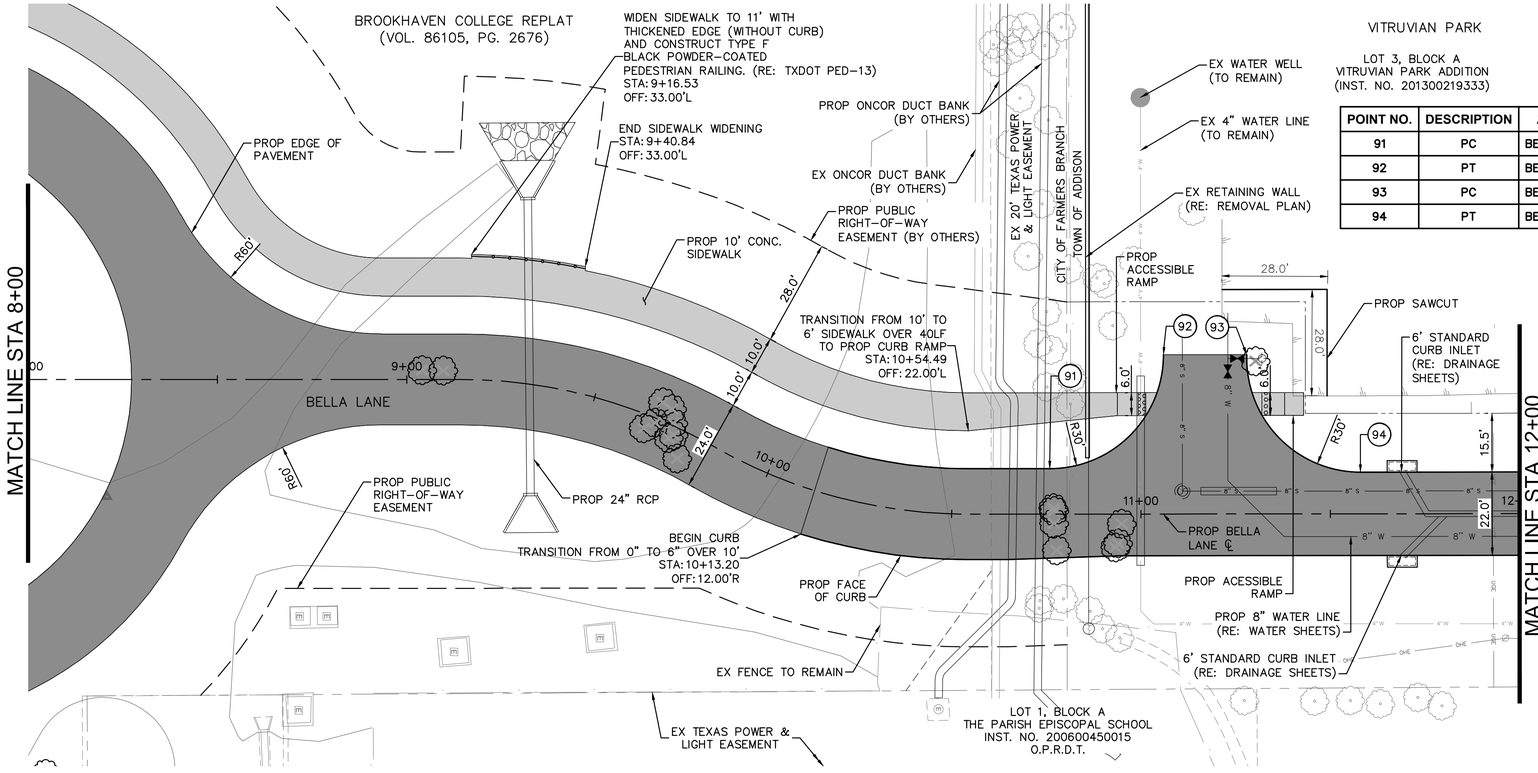
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

BELLA LANE EXTENSION
PLAN AND PROFILE
STA 4+00 TO STA 8+00

SHEET NUMBER
C3.06

Plotted By: Shuttloth, Cody Saturday, 09, 2021 - 09:09:41pm K:\ALC_Civil\063543031_Addison-Alpha-Royal_Connector\CADD\PrintSheets\Preview_PlanAndProfile.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
91	PC	BELLA LANE EXT	10+75.93	12.00' L	562.13'
92	PT	BELLA LANE EXT	11+05.93	42.00' L	562.11'
93	PC	BELLA LANE EXT	11+27.93	41.99' L	562.11'
94	PT	BELLA LANE EXT	11+57.93	11.00' L	561.57'

GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

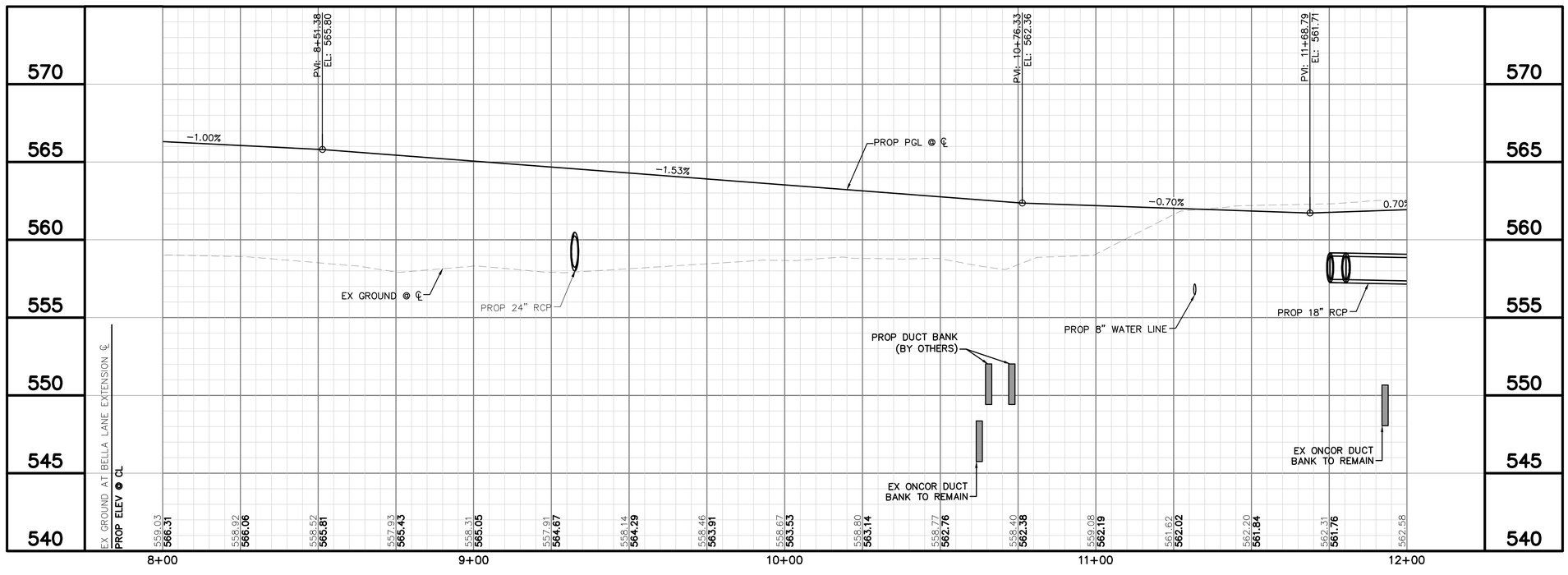
LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
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PROP	PROPOSED
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PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT



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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

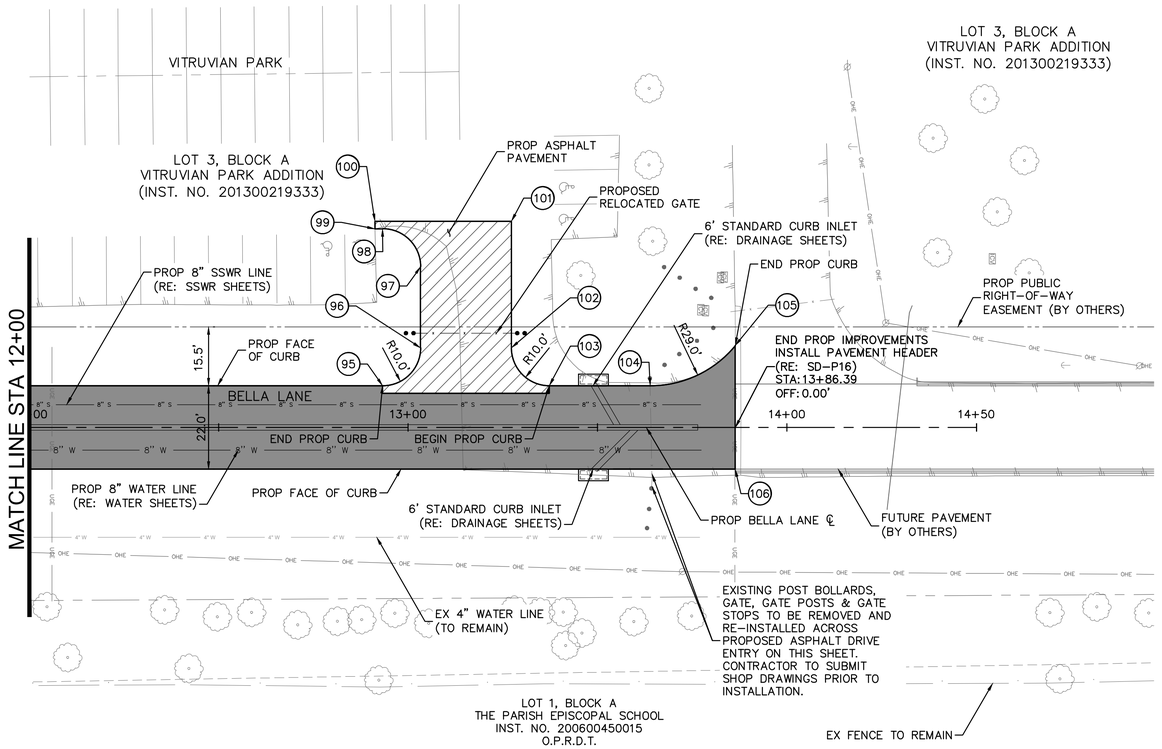
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

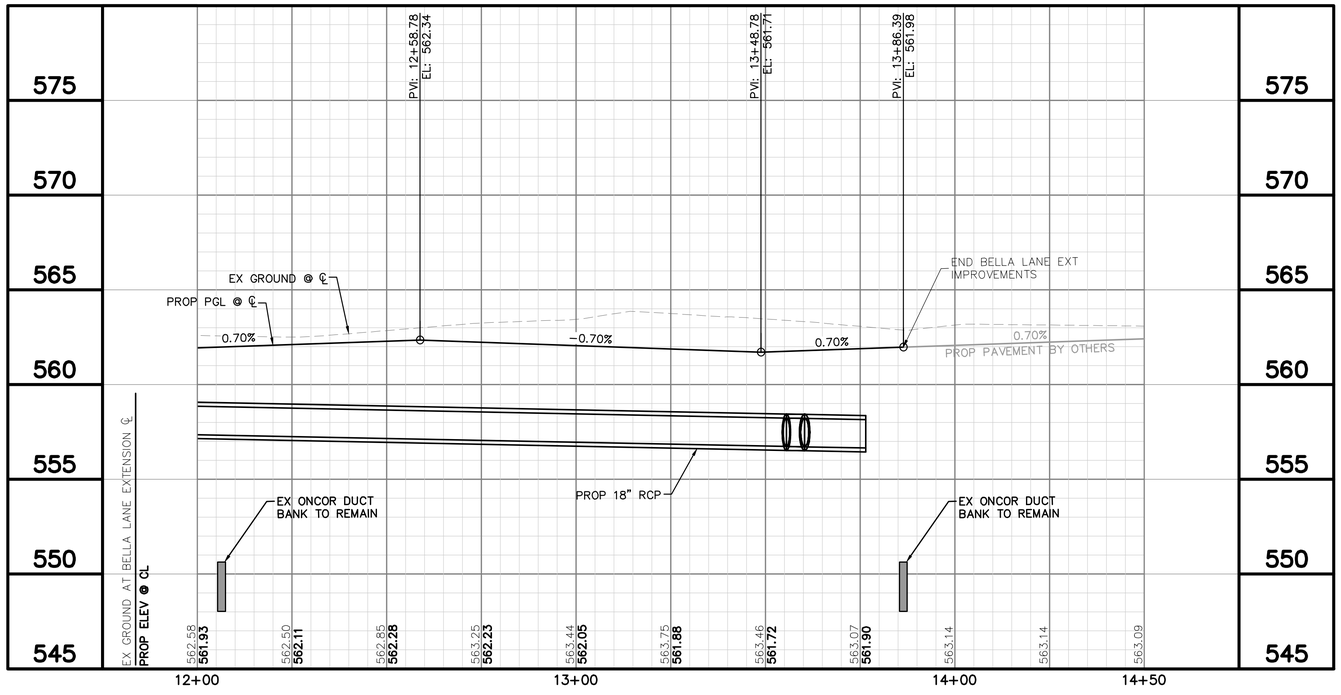
BELLA LANE EXTENSION
PLAN AND PROFILE
STA 8+00 TO STA 12+00

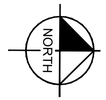
SHEET NUMBER
C3.07

Plotted By-Shettigh, Cody Sep 10, 2021 - 09:09:50pm K:\IAC_Dal\063543031_Addison_Alpha_Road_Connector\CAD\PlanSheet\Paving Plan&Profile.dwg
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95	PC	BELLA LANE EXT	12+93.27	11.00' L	561.88'
96	PT	BELLA LANE EXT	13+03.27	21.00' L	562.82'
97	PC	BELLA LANE EXT	13+03.27	42.37' L	564.46'
98	PT	BELLA LANE EXT	12+93.27	52.37' L	564.54'
99	PI	BELLA LANE EXT	12+91.27	52.37' L	564.55'
100	PI	BELLA LANE EXT	12+91.27	54.37' L	564.57'
101	PI	BELLA LANE EXT	13+27.27	54.37' L	564.61'
102	PC	BELLA LANE EXT	13+27.27	21.00' L	562.54'
103	PT	BELLA LANE EXT	13+37.27	11.00' L	561.57'
104	PC	BELLA LANE EXT	13+63.89	10.99' L	561.60'
105	PI	BELLA LANE EXT	13+86.29	21.55' L	561.54'
106	PI	BELLA LANE EXT	13+86.30	10.99' R	561.75'





GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
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TP	TOP OF PAVEMENT

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
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LICENSED
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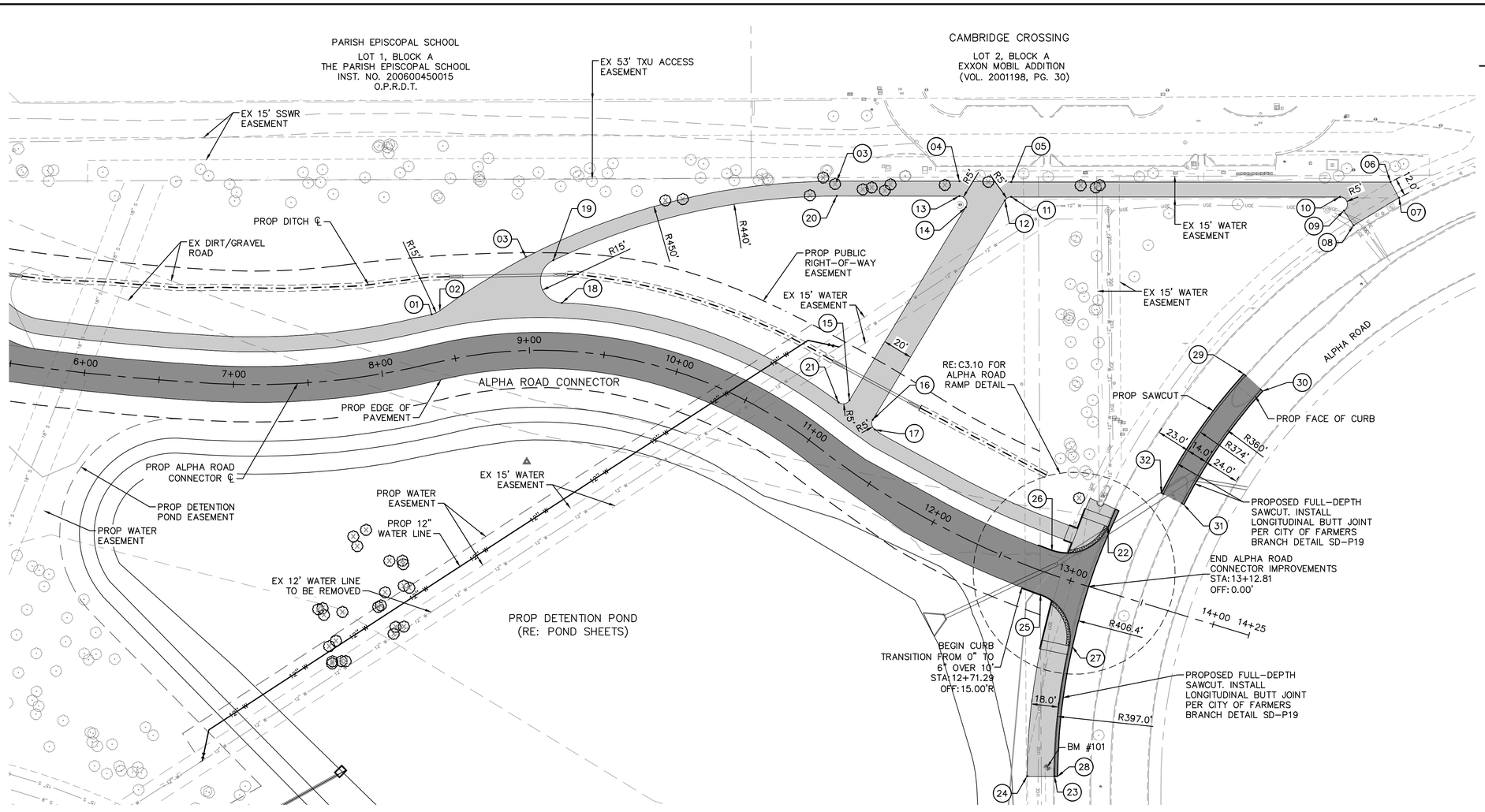
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

BELLA LANE EXTENSION
PLAN AND PROFILE
STA 12+00 TO END

SHEET NUMBER
C3.08

Plotted By: Strahan, Cody September 08, 2021 09:00:58pm K:\IAC_Civil\063543031_Addison Alpha Road Connector\CAD\ViewSheet\Design Plan&Profile.dwg
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GRAPHIC SCALE IN FEET
0 20 40 80

NORTH

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
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TP	TOP OF PAVEMENT

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	PRC	ALPHA ROAD CONN	8+40.94	32.00' L	568.29'
02	PRC	ALPHA ROAD CONN	8+46.33	33.30' L	568.21'
03	PT	ALPHA ROAD CONN	10+41.41	158.51' L	569.20'
04	PI	ALPHA ROAD CONN	10+86.01	199.59' L	571.20'
05	PI	ALPHA ROAD CONN	11+02.77	219.46' L	571.30'
06	PI	ALPHA ROAD CONN	--	--	576.17'
07	TIE TO EX	ALPHA ROAD CONN	--	--	576.31'
08	TIE TO EX	ALPHA ROAD CONN	14+12.10	282.92' L	576.24'
09	PC	ALPHA ROAD CONN	14+03.07	290.55' L	576.12'
10	PT	ALPHA ROAD CONN	13+97.78	298.55' L	575.68'
11	PC	ALPHA ROAD CONN	11+06.33	211.55' L	571.11'
12	PT	ALPHA ROAD CONN	11+05.22	207.01' L	571.00'
13	PC	ALPHA ROAD CONN	10+89.44	191.35' L	570.95'
14	PT	ALPHA ROAD CONN	10+94.27	187.64' L	570.85'
15	PC	ALPHA ROAD CONN	11+05.24	37.55' L	569.90'
16	PC	ALPHA ROAD CONN	11+26.67	36.60' L	570.62'
17	PC	ALPHA ROAD CONN	11+32.01	32.00' L	570.96'
18	PC	ALPHA ROAD CONN	9+20.23	32.00' L	567.49'
19	PCC	ALPHA ROAD CONN	9+14.35	60.30' L	565.89'
20	PT	ALPHA ROAD CONN	10+44.30	149.52' L	569.00'

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
21	PRC	ALPHA ROAD CONN	11+00.82	32.00' L	569.87'
22	PT	ALPHA ROAD CONN	13+13.70	42.13' L	574.52'
23	TIE TO EX	ALPHA ROAD CONN	13+28.08	128.20' R	573.69'
24	TIE TO EX	ALPHA ROAD CONN	13+10.50	133.45' R	574.29'
25	PI	ALPHA ROAD CONN	12+84.35	15.00' R	574.34'
26	PT	ALPHA ROAD CONN	12+81.60	15.00' L	574.92'
27	PCC-SC	ALPHA ROAD CONN	13+14.18	41.69' R	574.12'
28	TIE TO EX	ALPHA ROAD CONN	13+30.01	127.68' R	573.66'

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET
29	PI-ME	ALPHA ROAD CONN	13+70.76	166.39' L
30	PI-ME	ALPHA ROAD CONN	13+86.14	159.15' L
31	PI-ME	ALPHA ROAD CONN	13+57.85	71.06' L
32	PI-ME	ALPHA ROAD CONN	13+41.13	74.13' L

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT 063543031			
DATE 09/10/2021	SCALE	AS SHOWN	
	DESIGNED BY	RMD	
	DRAWN BY	CDS	
	CHECKED BY	LNA	

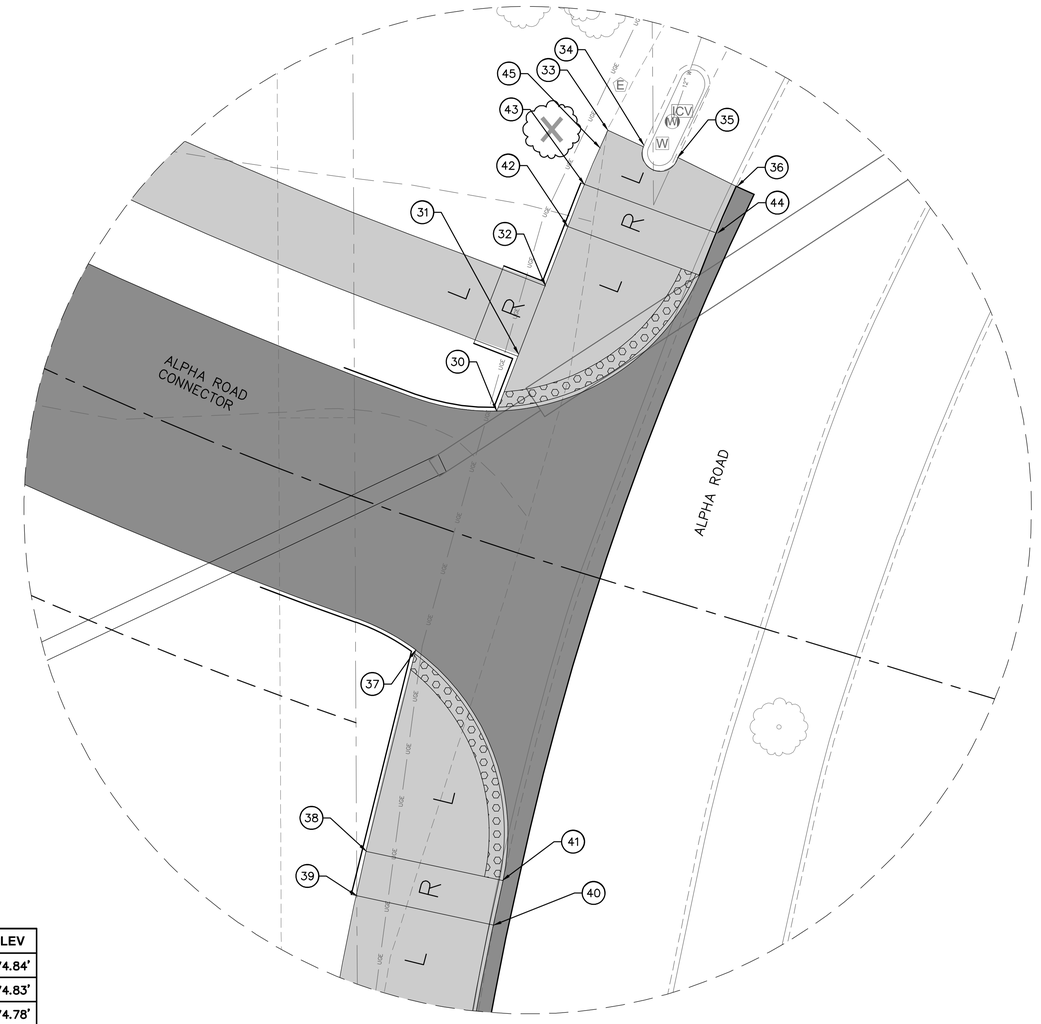
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

PAVING
PAVING AND
SIDEWALK LAYOUT

SHEET NUMBER
C3.09

Plotted By: Shettigh, Cody Sep 08, 2021 - 09:01:06pm K:\IAC_Civil\063543031_Addison_Alpha_Bryan_Connector\CADD\PrintSheet\Paving_PlanAndProfile.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
30	SW	ALPHA ROAD CONN	12+92.83	16.93' L	574.84'
31	SW	ALPHA ROAD CONN	12+93.16	25.00' L	574.83'
32	SW	ALPHA ROAD CONN	12+93.68	34.64' L	574.78'
33	SW–ME	ALPHA ROAD CONN	12+95.08	56.73' L	574.70'
34	SW–ME	ALPHA ROAD CONN	13+00.83	56.31' L	574.83'
35	SW–ME	ALPHA ROAD CONN	13+06.12	56.15' L	574.96'
36	PI–ME	ALPHA ROAD CONN	13+15.10	54.80' L	574.59'
37	SW	ALPHA ROAD CONN	12+92.81	16.36' R	574.32'
38	SW	ALPHA ROAD CONN	12+94.97	43.59' R	574.24'
39	SW	ALPHA ROAD CONN	12+95.57	49.57' R	574.69'
40	PI–TP	ALPHA ROAD CONN	13+12.74	47.81' R	574.11'
41	PI–TP	ALPHA ROAD CONN	13+12.12	41.84' R	574.14'
42	SW	ALPHA ROAD CONN	12+94.01	42.99' L	574.74'
43	SW	ALPHA ROAD CONN	12+94.37	48.96' L	574.82'
44	PI–TP	ALPHA ROAD CONN	13+14.42	48.16' L	574.56'
45	SW	ALPHA ROAD CONN	12+94.83	54.18' L	574.77'

NORTH

GRAPHIC SCALE IN FEET
0 ## ## ##

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
- EX TREE TO BE REMOVED

NOTES

1. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ANY SIGNS AND COORDINATION WITH THE CITY ON ANY NECESSARY MODIFICATIONS.
2. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL IRRIGATION FACILITIES WITHIN LOC.
3. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/ OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND CITY UTILITIES PRIOR TO CONSTRUCTION.
4. ELEV ARE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

EX	EXISTING
PROP	PROPOSED
STA	STATION
EL	ELEVATION
PI	POINT OF HORIZONTAL INFLECTION
PC	POINT OF HORIZONTAL CURVATURE
PT	POINT OF HORIZONTAL TANGENCY
PRC	POINT OF HORIZONTAL REVERSE CURVATURE
PVI	POINT OF VERTICAL INFLECTION
AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT

Know what's **below.**
Call before you dig.

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

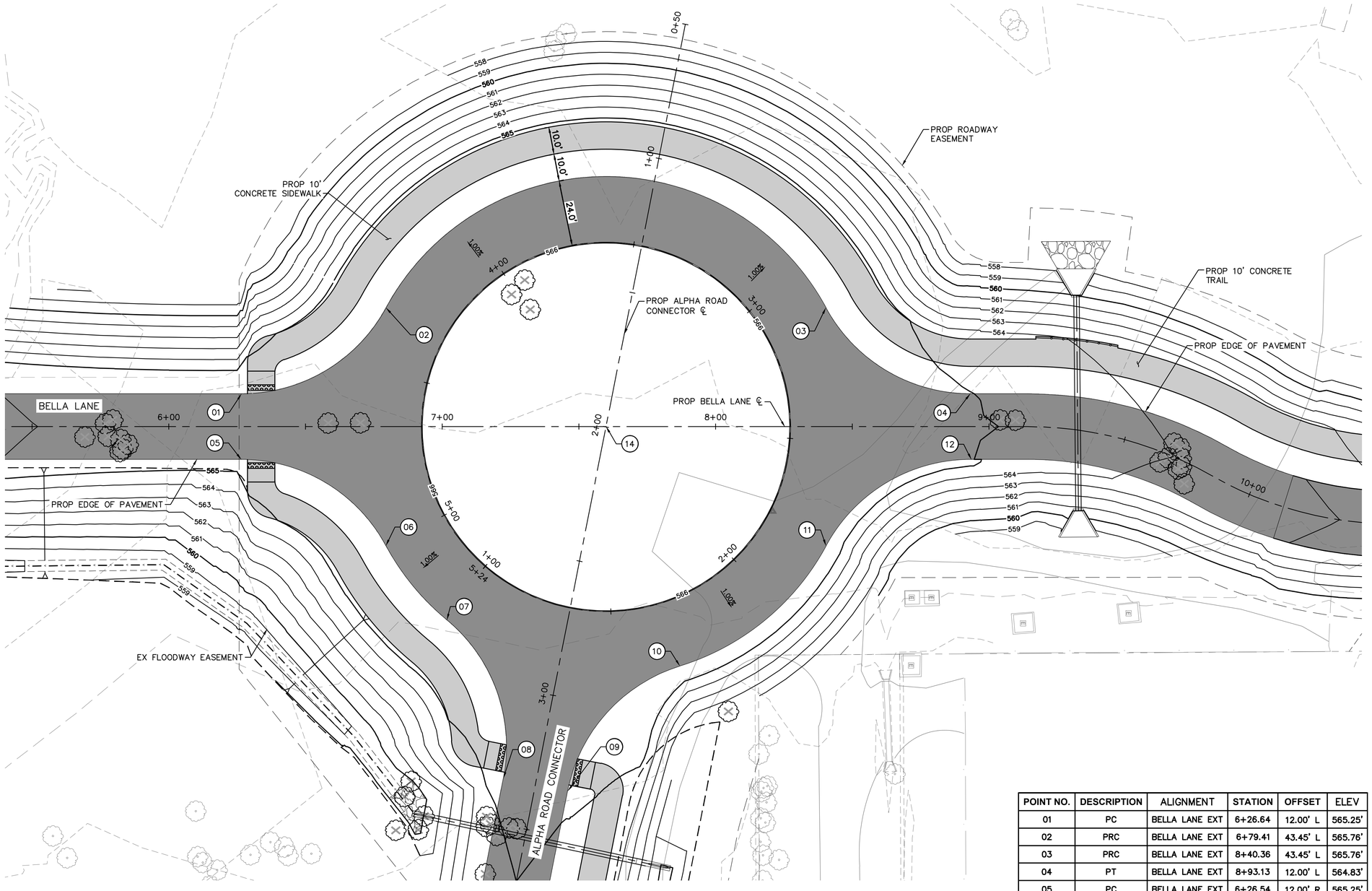
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PAVING RAMP GRADING

SHEET NUMBER
C3.10



GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN
- PROP DITCH ℄
- PROP PAVEMENT
- PROP SIDEWALK
- PROP ASPHALT
- EX TREE
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AD	ALGEBRAIC DIFFERENCE IN GRADES
VC	VERTICAL CURVE
BVCS/ EVCS	BEGIN/END VERTICAL CURVE STATION
BVCE/ EVCE	BEGIN/END VERTICAL CURVE ELEVATION
PGL	PROPOSED GRADE LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TP	TOP OF PAVEMENT

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	PC	BELLA LANE EXT	6+26.64	12.00' L	565.25'
02	PRC	BELLA LANE EXT	6+79.41	43.45' L	565.76'
03	PRC	BELLA LANE EXT	8+40.36	43.45' L	565.76'
04	PT	BELLA LANE EXT	8+93.13	12.00' L	564.83'
05	PC	BELLA LANE EXT	6+26.54	12.00' R	565.25'
06	PRC	BELLA LANE EXT	6+79.35	43.52' R	565.76'
07	PRC	BELLA LANE EXT	7+01.64	70.66' R	565.76'
08	PT	BELLA LANE EXT	7+22.31	128.55' R	565.15'
09	PC	BELLA LANE EXT	7+45.86	133.19' R	565.21'
10	PRC	BELLA LANE EXT	7+86.97	87.49' R	565.76'
11	PRC	BELLA LANE EXT	8+40.42	43.52' R	565.76'
12	PT	BELLA LANE EXT	8+93.60	12.00' R	564.97'
14	PI	BELLA LANE EXT	7+59.90	0.00'	566.71'

Know what's **below.**
Call before you dig.

No.	REVISIONS	DATE	BY

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KHA PROJECT	063543031
DATE	09/10/2021
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TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

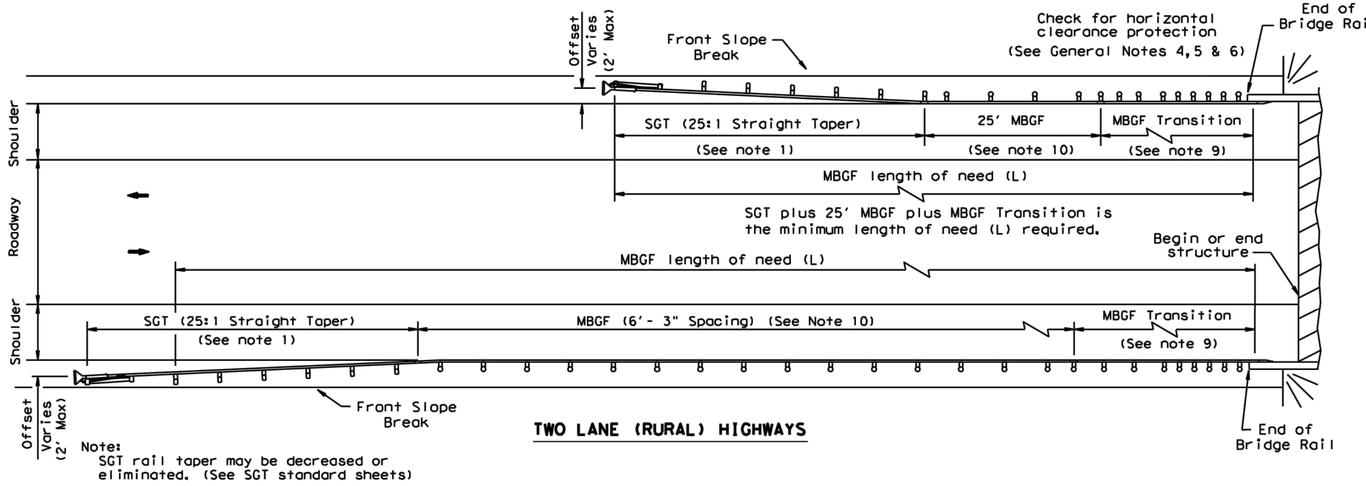
PAVING
TRAFFIC CIRCLE
GRADING PLAN

SHEET NUMBER
C3.11

Plotted By: Shyndahl, Cody Sep 14, 2021 - 09:01:48am K:\IAC Civil\063543031_Addison-Alpha Road Connector\CAD\Plan Sheets\Traffic Circle Layout.dwg
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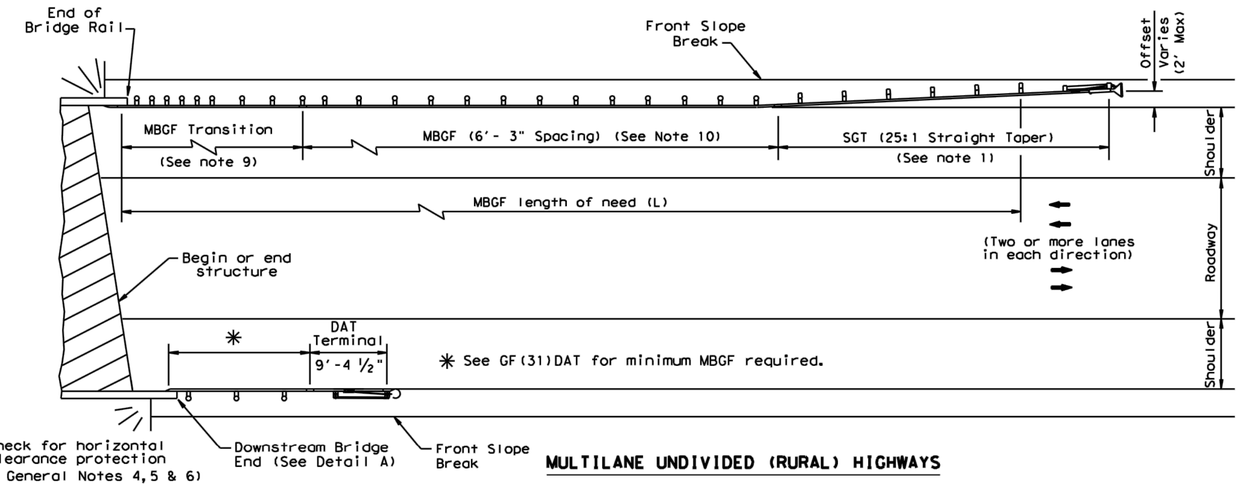
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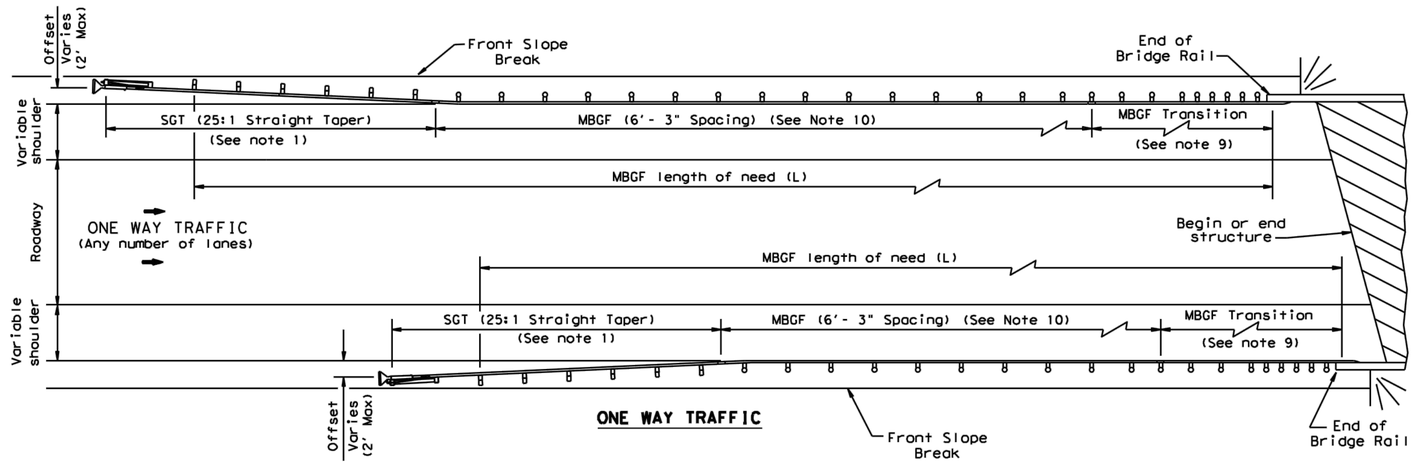


Note:
SGT rail taper may be decreased or eliminated. (See SGT standard sheets)

TWO LANE (RURAL) HIGHWAYS



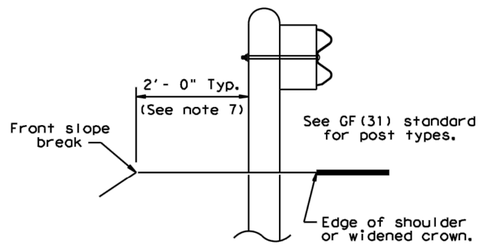
MULTILANE UNDIVIDED (RURAL) HIGHWAYS



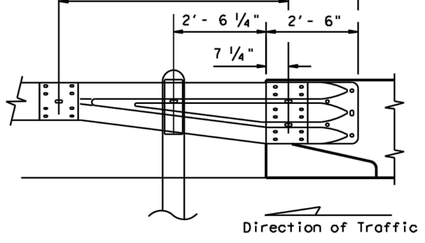
ONE WAY TRAFFIC

GENERAL NOTES

1. For more detail: See GF(31), SGT( )31, GF(31)TR, and GF(31)TL2 standard sheets.
2. Quantities of metal beam guard fence (MBGF) at individual bridge ends are as shown in the plans.
3. Use average daily traffic (ADT) for the current year to determine MBGF length of need in accordance with the Roadway Design Manual unless otherwise specified. Where significant traffic volume growth is anticipated on low volume (0-750 ADT) highways, use length determinations for the higher volume category.
4. MBGF may not be required to shield departure end of bridge unless other obstacles within the horizontal clearance limits or opposing traffic indicate a MBGF consideration.
5. Downstream anchor terminals (DAT) are only for downstream end anchorage use, outside the horizontal clearance area of opposing traffic.
6. Direct connection of MBGF to concrete rails are only for downstream rail connections outside the horizontal clearance area of opposing traffic. (This requires a minimum of three standard line posts plus the DAT terminal, See Detail A)
7. The crown shall be widened to accommodate MBGF. Typically the "front slope" break should be 2'- 0" from the back of the MBGF post. This applies to new construction on new alignment or where existing roadway cross section is to be widened to increase roadway width. This does not apply to rehabilitation work where existing roadway crown width is to be retained (See Typical Cross Section at MBGF).
8. For restrictive bridge widths: The MBGF should be properly transitioned from the existing bridge rail to the adjoining MBGF (See MBGF Transition Standards). Metal beam guard fence at these bridge location(s) shall be flared at the rate of 25:1 or flatter, and be of the length necessary to locate the terminal end at the 2 ft."maximum" offset from the shoulder edge in the approach direction.
9. Transition length and post spacing will vary depending on the transition type. Transition type will be shown elsewhere in the plans.
10. A minimum 25' length of MBGF will be required.



TYPICAL CROSS SECTION AT MBGF



Note:
All rail elements shall be lapped in the direction of adjacent traffic.

DETAIL A

Showing Downstream Rail Attachment

Texas Department of Transportation

Design Division Standard

BRIDGE END DETAILS

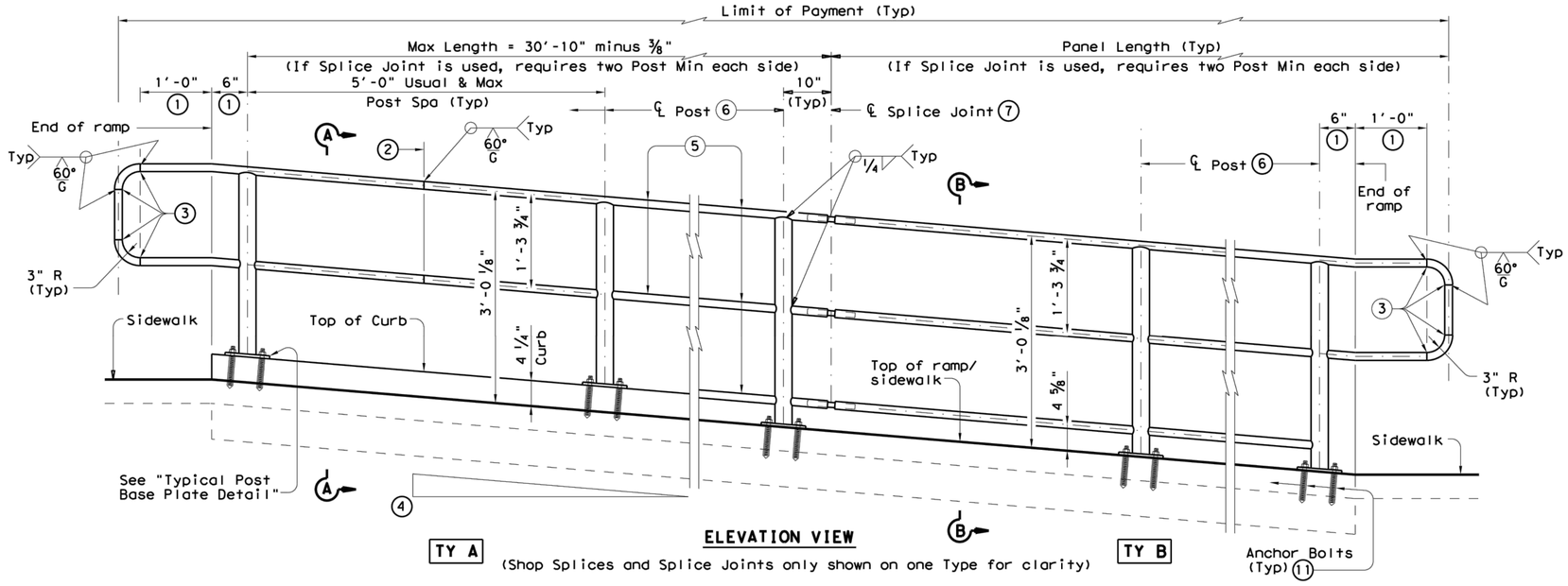
(METAL BEAM GUARD FENCE APPLICATIONS TO RIGID RAILS)

BED-14

FILE: bed14.dgn	DN: TxDOT	CK: AM	DW: BD/VP	CK: CGL
©TxDOT: December 2011	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED APRIL 2014 SEE (MEMO 0414)	DIST	COUNTY		SHEET NO.

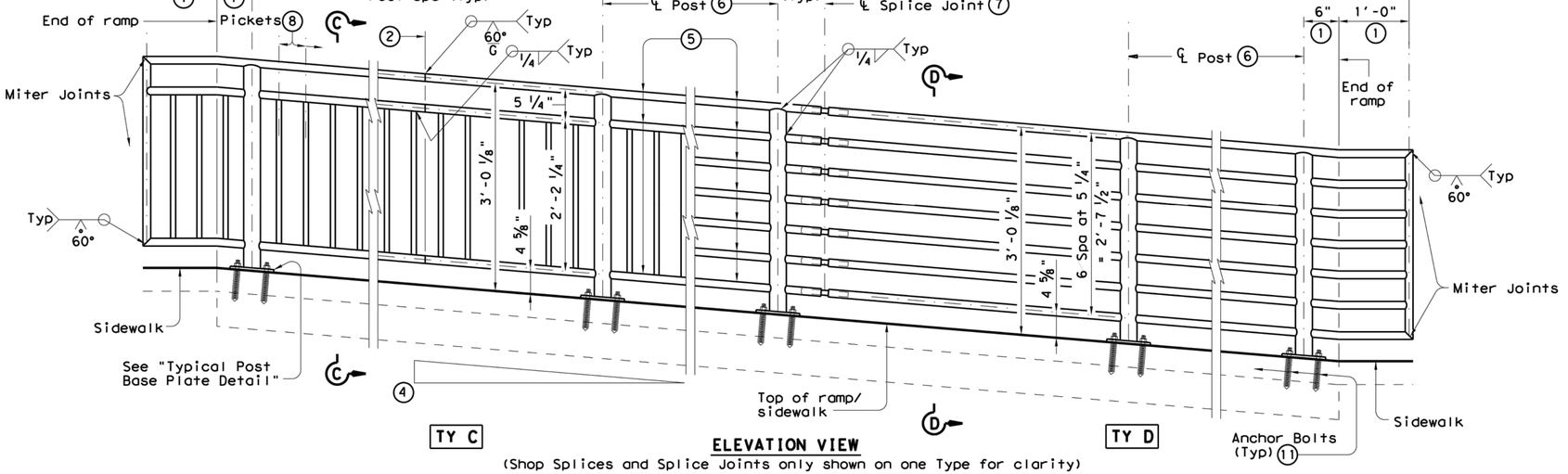
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DATE:
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ELEVATION VIEW

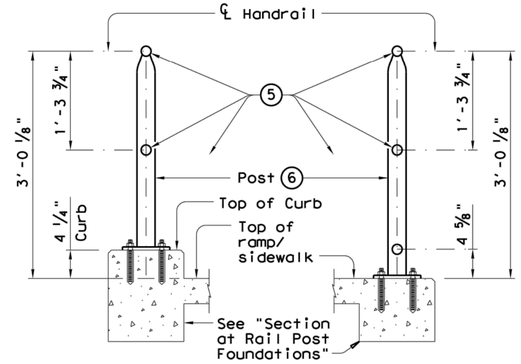
(Shop Splices and Splice Joints only shown on one Type for clarity)



ELEVATION VIEW

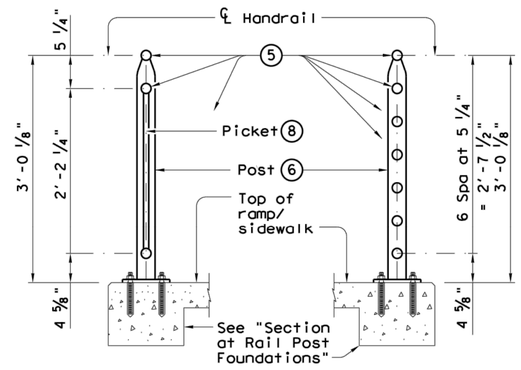
(Shop Splices and Splice Joints only shown on one Type for clarity)

RECOMMENDED USAGE ⑨⑩	
Dropoff Height/ Condition	Recommended Rail Options
<30" dropoff	TY A, TY B, TY C, or TY D
≥ 30" dropoff, or along Bike Path	TY E or TY F



SECTION A-A
(Showing Handrail **TY A**)

SECTION B-B
(Showing Handrail **TY B**)



SECTION C-C
(Showing Handrail **TY C**)

SECTION D-D
(Showing Handrail **TY D**)

1. Parallel to ground.
2. One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
3. Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
4. See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.
5. 1 ½" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 ½" Dia. pipe for galvanizing drainage and venting.
6. 2 ½" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
7. See "Handrail Fabrication Details" for Splice Joints.
8. ℄ ⅝" Dia. Round Bar equal spacing at 4 ½" Max. Plumb all pickets.
9. When needed for accessibility (grade > 5 percent) or as needed for pedestrian safety.
10. Not to be used on bridges.
11. See "General Notes" for anchor bolt information.

SHEET 1 OF 3

Texas Department of Transportation

Design Division Standard

PEDESTRIAN HANDRAIL DETAILS

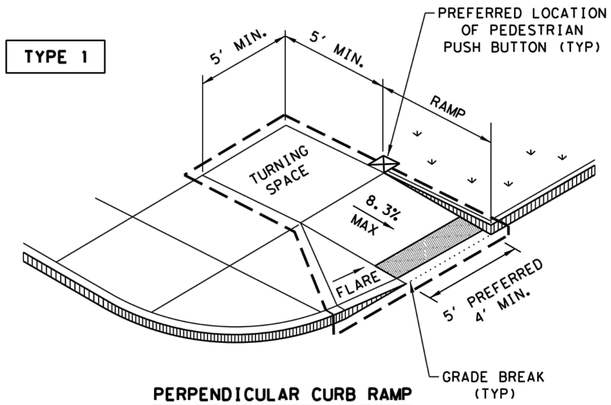
PRD-13

FILE: prd13.dgn	DN: TxDOT	CK: AM	DW: JTR	CK: CGL
©TxDOT December 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED MAY, 2013 (VP)	DIST	COUNTY		SHEET NO.

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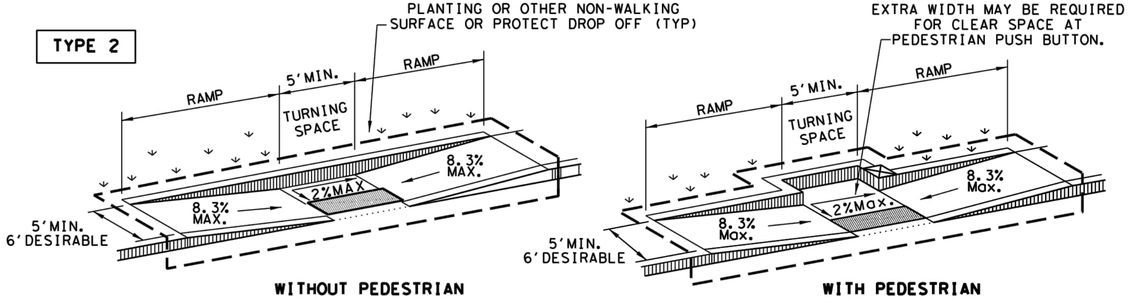
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FILE:

TYPE 1



PERPENDICULAR CURB RAMP

TYPE 2

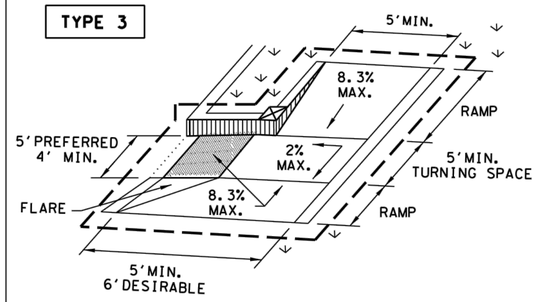


WITHOUT PEDESTRIAN PUSH BUTTON

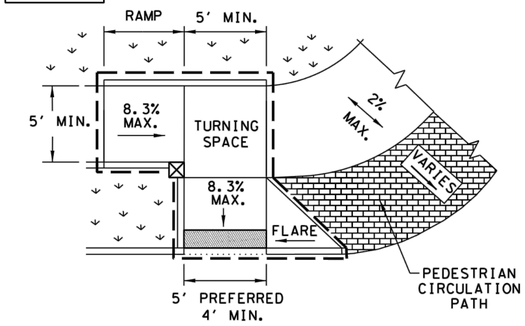
WITH PEDESTRIAN PUSH BUTTON

PARALLEL CURB RAMP

TYPE 3

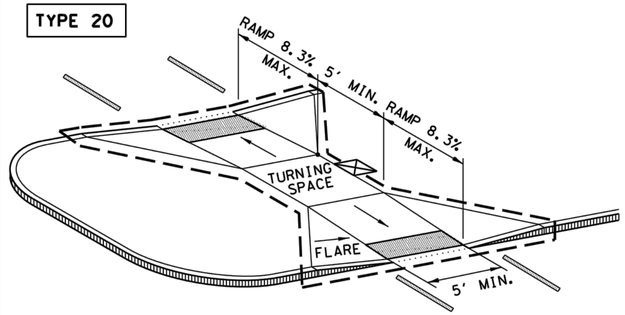


TYPE 6



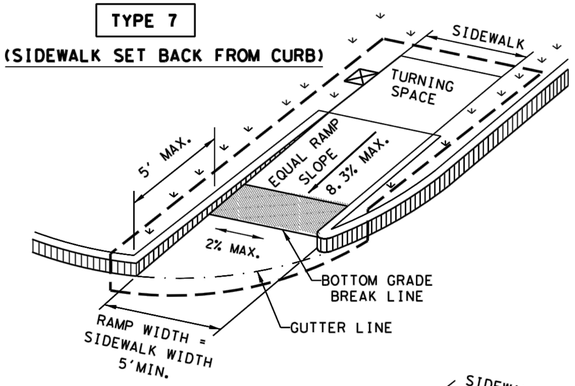
COMBINATION CURB RAMPS

TYPE 20

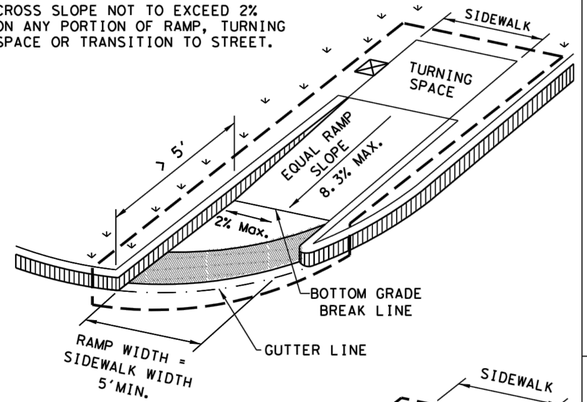


CURB RAMPS AT MEDIAN ISLANDS

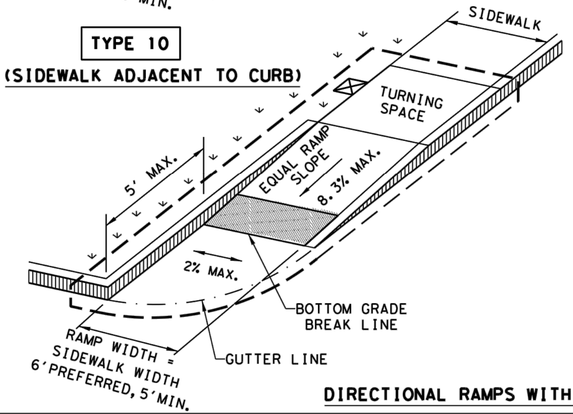
TYPE 7
(SIDEWALK SET BACK FROM CURB)



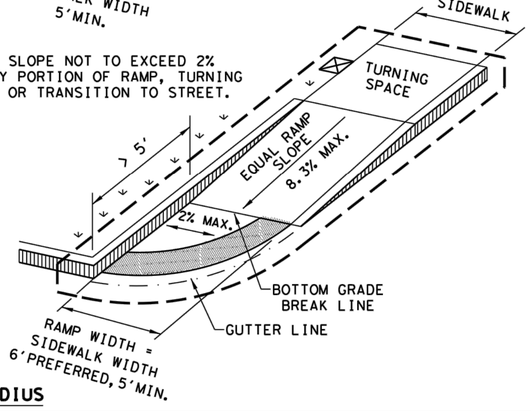
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



TYPE 10
(SIDEWALK ADJACENT TO CURB)

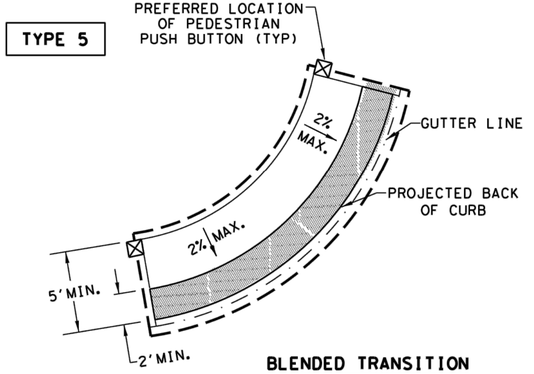


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



DIRECTIONAL RAMPS WITHIN RADIUS

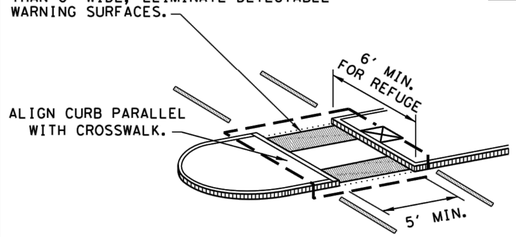
TYPE 5



BLENDED TRANSITION
(FLUSH LANDING)

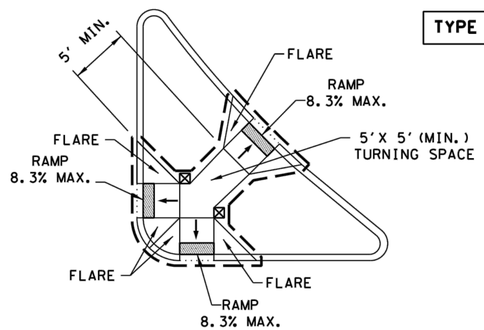
TYPE 21

INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.

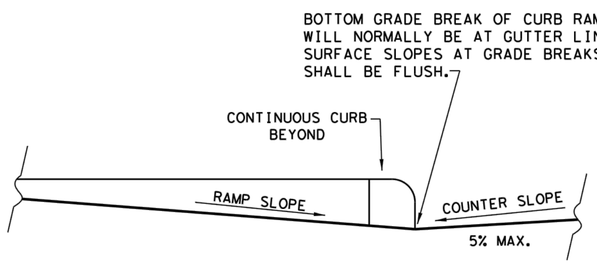


NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

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.
					C3.14

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DATE:
FILE:

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 applicalble standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

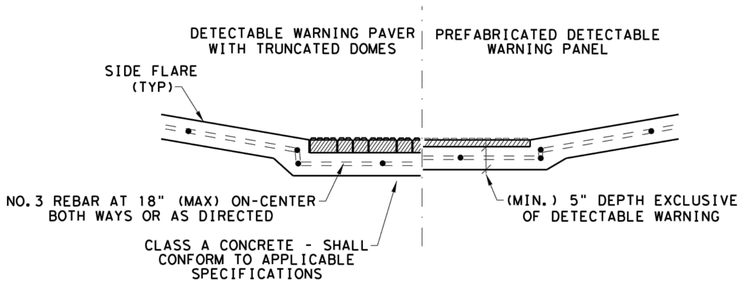
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material 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.

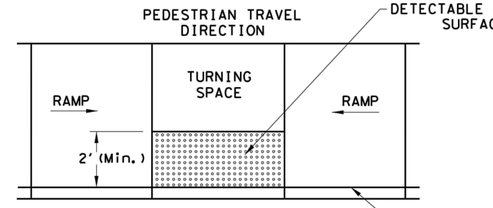
SIDEWALKS

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.

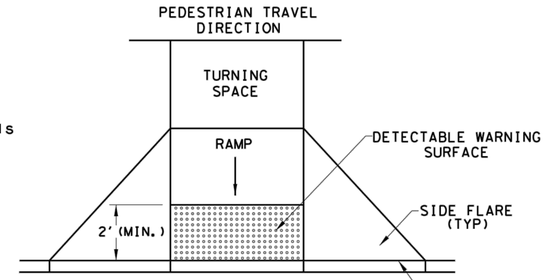


SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

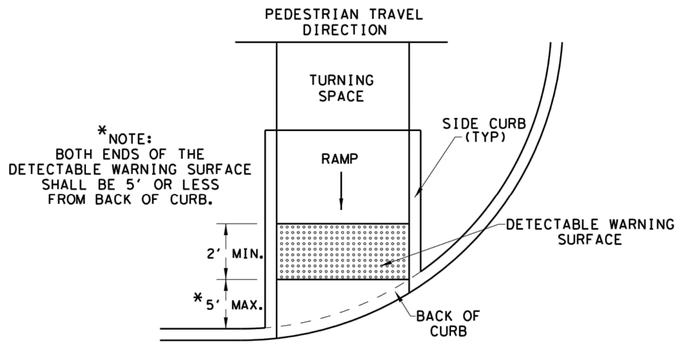
DETECTABLE WARNING SURFACE DETAILS



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.

SHEET 2 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

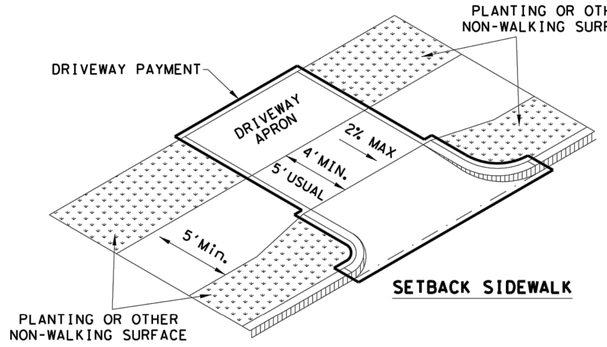
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
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REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.
				C3.15

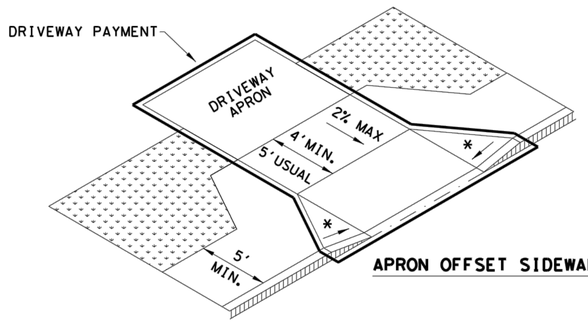
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FILE:

SIDEWALK TREATMENT AT DRIVEWAYS

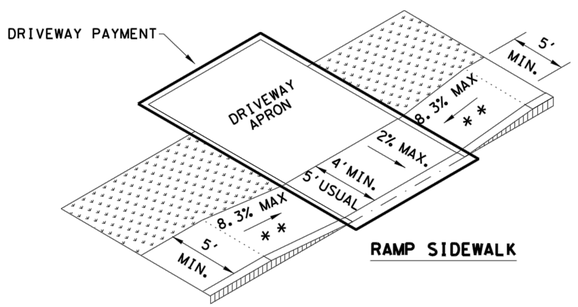


SETBACK SIDEWALK



APRON OFFSET SIDEWALK

WIDE SIDEWALK

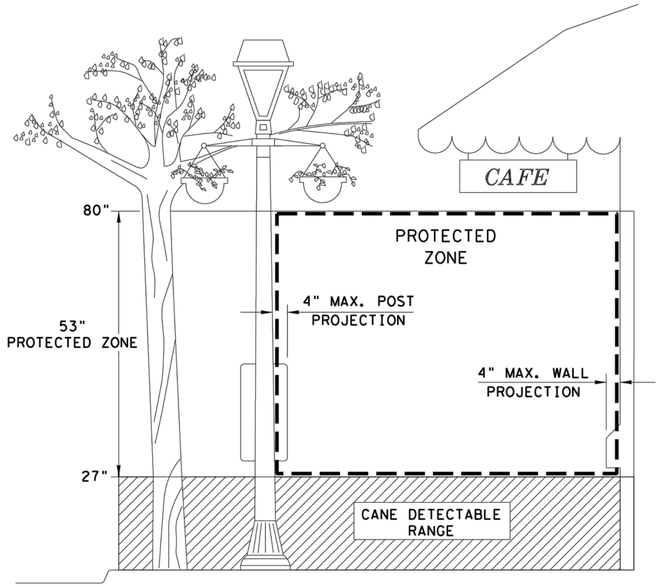


RAMP SIDEWALK

NOTES:

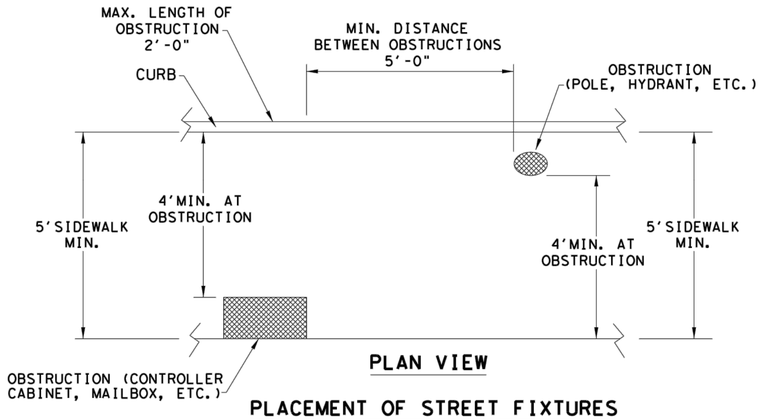
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

** 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

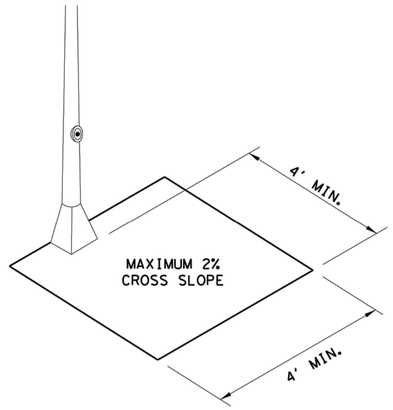
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



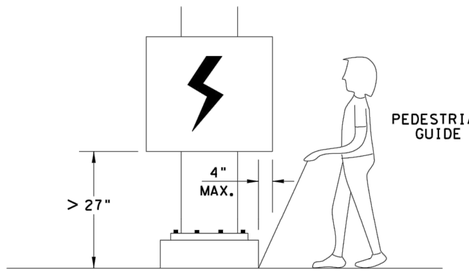
PLAN VIEW

PLACEMENT OF STREET FIXTURES

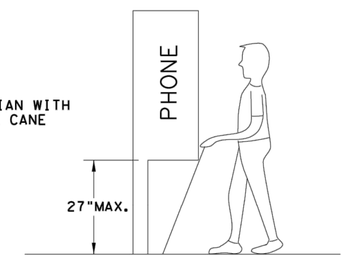
NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



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

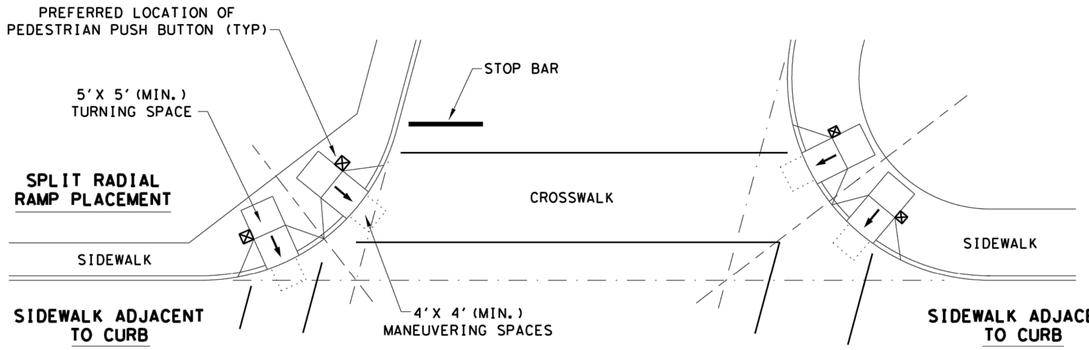
FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
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REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.
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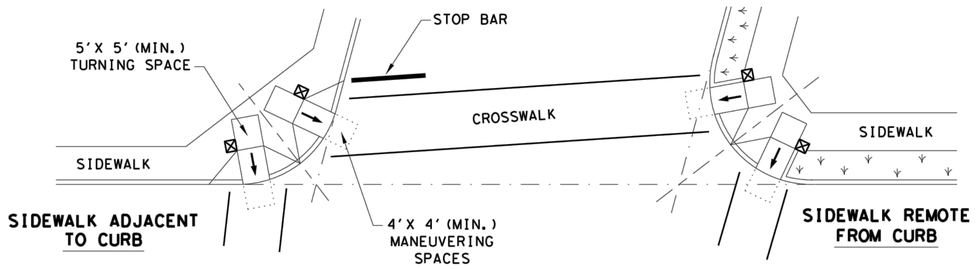
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FILE:

TYPICAL CROSSING LAYOUTS

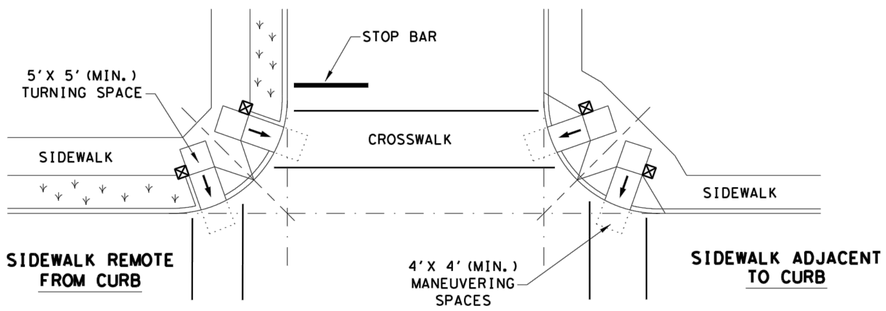
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



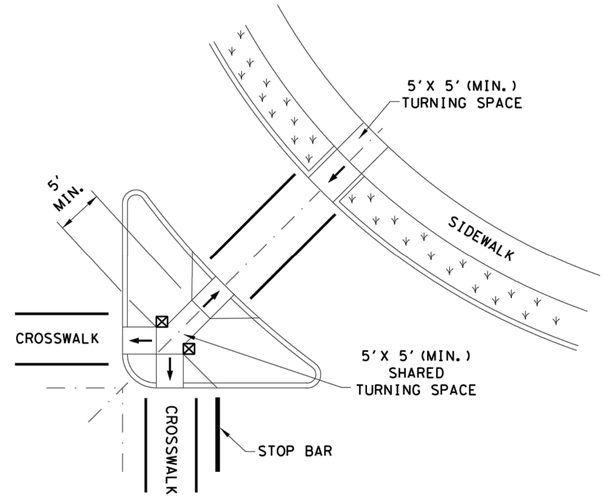
SKEWED INTERSECTION WITH "LARGE" RADIUS



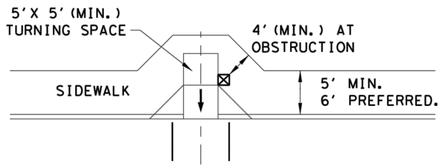
SKEWED INTERSECTION WITH "SMALL" RADIUS

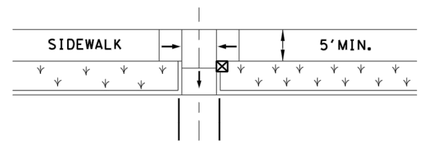


NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND





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

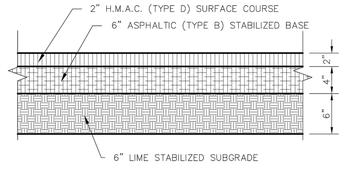
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REVISIONS					
REVISED 08,2005	DIST	COUNTY			SHEET NO.
REVISED 06,2012					C3.17
REVISED 01,2018					

Plotted By:Shabolt, Cody September 08, 2021 09:02:19am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Paving_Details.dwg
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PAVING – GENERAL NOTES

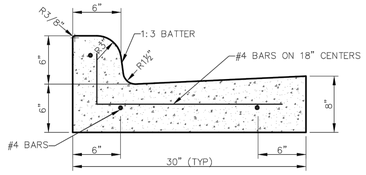
1. GENERAL:
   PAVEMENT THICKNESS IS AS SHOWN IN ITEM 7. SUBGRADE DESIGN SHALL CONFORM TO TOWN OF ADDISON PUBLIC WORKS REQUIREMENTS IN ITEM 3, AND SHALL EXTEND 12" MIN. BEHIND THE BACK OF CURB.
2. REINFORCED CONCRETE PAVEMENT:
   A. CONCRETE STRENGTH SHALL BE AS SHOWN IN ITEM 7 (NCTCOG LATEST EDITION).
   B. ALL CURBS SHALL BE INTEGRAL WITH PAVEMENT AND SHALL BE OF THE SAME STRENGTH AS CONCRETE PAVEMENT.
   C. DETAIL AND ARRANGEMENT OF PAVEMENT JOINTS, ALL TYPES, SHALL BE AS SHOWN ON THE TOWN STANDARD CONSTRUCTION DETAILS.
   D. BAR LAPS SHALL BE THIRTY DIAMETERS.
   E. REINFORCING STEEL SHALL BE #3 REBAR (3/8") ON 18" CENTERS FOR 8" OR LESS. #4 FOR 10" OR ABOVE
3. SUBGRADE:
   SUBGRADE UNDER ALL PAVEMENT SHALL BE 6" THICK AND SHALL BE STABILIZED WITH AT LEAST 30 LBS. PER SQ. YD. HYDRATED LIME, COMPACTED TO A DENSITY NOT LESS THAN 95 PERCENT. LABORATORY TESTS MUST BE SUBMITTED TO THE PUBLIC WORKS DEPARTMENT FOR APPROVAL TO DETERMINE AMOUNT OF LIME REQUIRED. LABORATORY TEST MAY BE WAIVED PROVIDED AT LEAST 36 LBS. OF LIME PER SQ. YD. IS USED. SEE NCTCOG ITEM 301.2 "LIME TREATMENT". FLEXIBLE BASE (CRUSHED STONE/CONCRETE) PER NCTCOG ITEM 301.5 MAY BE SUBSTITUTED FOR LIME TREATMENT WITH THE APPROVAL OF THE TOWN ENGINEER.
4. REBAR SHALL BE SUPPORTED BY BAR CHAIRS OR OTHER DEVICES APPROVED BY TOWN ENGINEER.
5. NO TRAFFIC ON FINISHED SUBGRADE SHALL BE PERMITTED AFTER REINFORCING STEEL IS INSTALLED ABOVE SUBGRADE. NO TRAFFIC SHALL BE PERMITTED BEFORE OR DURING THE PLACING OF CONCRETE.
6. CROSS SLOPE OF STRAIGHT CROWN STREETS SHALL BE 1/4" PER FOOT UNLESS APPROVED BY THE TOWN ENGINEER.
7. PAVEMENT THICKNESS AND STRENGTHS SHALL BE AS FOLLOWS:
   MAJOR ARTERIAL – 10" CLASS "P1" OR "P2."
   MINOR ARTERIAL – 8" CLASS "P1" OR "P2."
   COMMERCIAL/INDUSTRIAL COLLECTOR – 8" CLASS "P1" OR "P2."
   RESIDENTIAL COLLECTOR – 8" CLASS "P1" OR "P2."
   RESIDENTIAL LOCAL – 8" CLASS "P1" OR "P2."
   SIDEWALK AND BFR's–4"–CLASS "A"
   DRIVE APPROACH–8"–CLASS "P2"
   ALLEY–6" CLASS "P1" OR "P2."
8. CONCRETE MIX DESIGN SHALL BE AS DEFINED BY NCTCOG 303.3.
9. ALL MEDIANS AND PARKWAYS SHALL BE PROVIDED WITH BERMUDA GROUND COVER.
10. ONCE A CURB ABUTTING A THOROUGHFARE HAS BEEN SAWCUT AND REMOVED, THE CONTRACTOR MUST REPLACE THE CONCRETE WITH A NEW POUR (i.e. DRIVEWAY) WITHIN 14 CALENDAR DAYS. LIQUIDATED DAMAGES WILL BE ASSESSED AT $500 PER DAY FOR EACH CALENDAR DAY IN EXCESS OF 14 CALENDAR DAYS. PAYMENT SHALL BE MADE PRIOR TO ACCEPTANCE OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
11. ALL SIDEWALKS AND ACCESSIBLE ROUTES SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 5% AND A MAXIMUM CROSS SLOPE OF 2%.
12. ALLEYS AND DRIVEWAYS
    A. CONCRETE FOR ALLEY RETURNS AND DRIVEWAYS SHALL HAVE A MINIMUM COPRESSIVE STRENGTH AT 28 DAYS IDENTICAL TO THAT SPECIFIED FOR THE STREET PAVEMENT OR BASE WHEN BUILT AS COMPONENTS OF A CONCRETE PAVING PROJECT. WHEN BUILT SEPARATELY, THE STRENGTH SHALL BE AS SPECIFIED ON THE CONSTRUCTION PLAN.
    B. SPACING AND CONSTRUCTION OF JOINTS SHALL CONFORM TO PARABOLIC STREET PAVEMENT.

Addison! PUBLIC WORKS DEPARTMENT | PAVING GENERAL NOTES | STANDARD CONSTRUCTION DETAILS PAVING | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD–P01

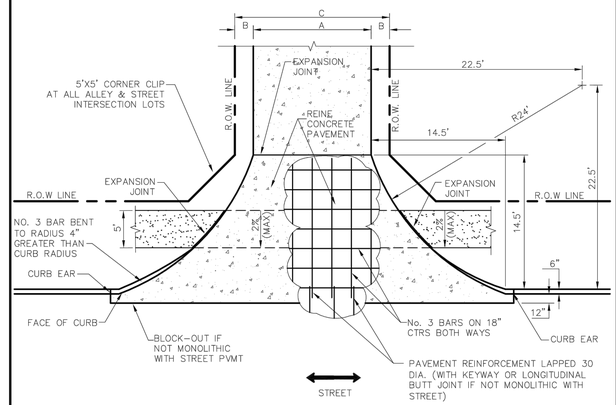


ASPHALT PAVING CROSS SECTION

NOTE:
CUT OF 6" INTO EXISTING PAVEMENT IS REQUIRED FOR CONSTRUCTION JOINT WITH NEW POURS TO GET A SMOOTH FINISH.



Addison! PUBLIC WORKS DEPARTMENT | CURB AND GUTTER & ASPHALT PAVING CROSS SECTION | STANDARD CONSTRUCTION DETAILS PAVING | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD–P06

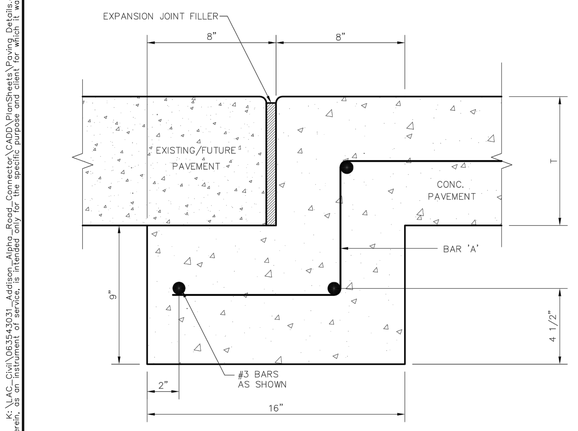


*** ACCESSIBLE PATH MUST NOT BE OBSTRUCTED BY CURB AND MUST NOT EXCEED 2% CROSS–SLOPE.**

ALLEY WIDTH	A	B	C
12'	12'	2'–0"	16'
16'	16'	2'–0"	20'
20'	20'	2'–0"	24'

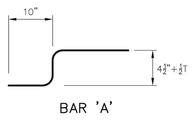
ALLEY RETURN DETAILS
NTS

Addison! DEPARTMENT OF PUBLIC WORKS | ALLEY RETURN DETAIL | STANDARD CONSTRUCTION DETAILS PAVING | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD–P12



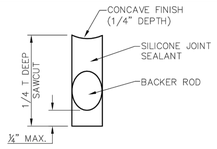
NOTES:
1. PAVEMENT BARS TO BE BENT DOWN INTO HEADER.
2. HEADER AND PAVEMENT TO BE MONOLITHIC.

T=PAVEMENT THICKNESS

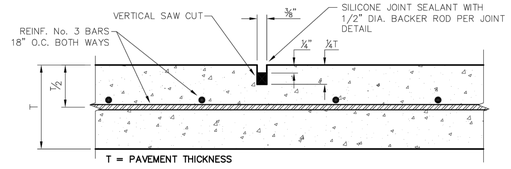


STREET HEADER
NTS

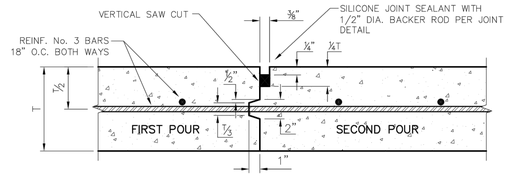
Addison! PUBLIC WORKS DEPARTMENT | STREET HEADER | STANDARD CONSTRUCTION DETAILS PAVING | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD–P15



JOINT DETAIL
NTS



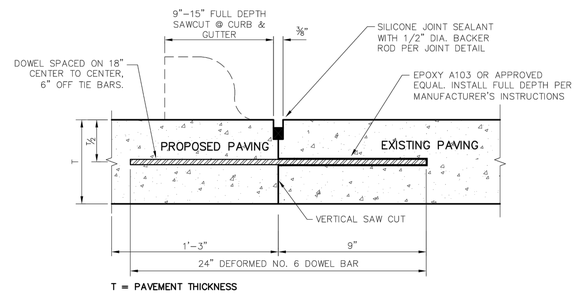
SAWED DUMMY JOINTS
NTS



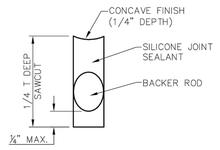
NOTE: CONTRACTOR SHALL PROTECT KEYWAY PRIOR TO SECOND POUR. IF LONGITUDINAL KEYWAY IS DAMAGED, CONTRACTOR SHALL REPAIR WITH THE USE OF LONGITUDINAL BUTT JOINT. DRILL AND GROUT DOWELS INTO FIRST POUR.

CONSTRUCTION JOINTS FOR PAVEMENT
NTS
TRANSVERSE AND LONGITUDINAL JOINTS

Addison! PUBLIC WORKS DEPARTMENT | JOINT DETAILS | STANDARD CONSTRUCTION DETAILS PAVING | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD–P18



NOTES:
1. NO. 5 DEFORMED BAR MAY BE USED IN 6 INCH PAVEMENT.
2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.
4. DRILLING BY HAND IS NOT ACCEPTABLE. PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE.



JOINT DETAIL
NTS

LONGITUDINAL BUTT JOINT
NTS

Addison! PUBLIC WORKS DEPARTMENT | LONGITUDINAL BUTT JOINT | STANDARD CONSTRUCTION DETAILS PAVING | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD–P19

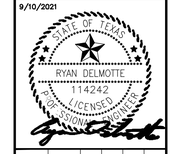
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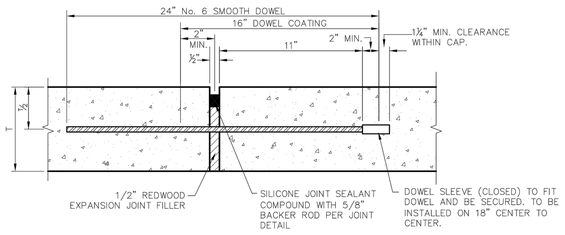


KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

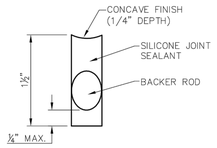
PAVING
STANDARD DETAILS
TOWN OF ADDISON
SHEET 1 OF 4

SHEET NUMBER
C3.18



T=PAVEMENT THICKNESS

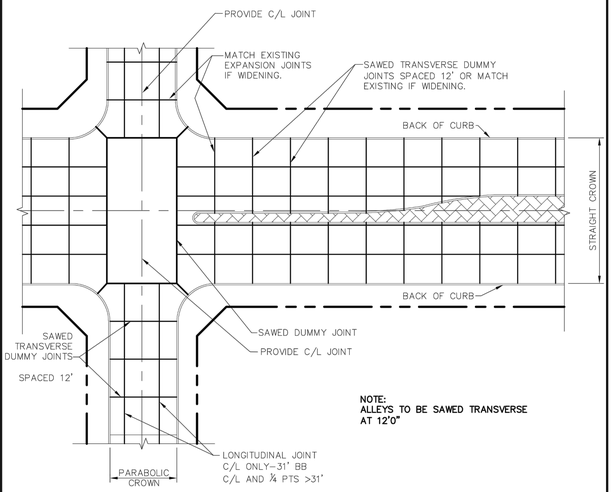
NOTES:
1. DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE AND MUST BE TIED OR CHAIRED ON EACH SIDE.
2. DOWELS MUST BE PERPENDICULAR TO FACE OF CONCRETE..
3. NO. 5 SMOOTH DOWEL BARS MAY BE USED IN 6" PAVEMENT.
4. TRANSVERSE EXPANSION JOINTS SHALL HAVE A MAXIMUM SPACING OF 600 FT.
5. TRANSVERSE EXPANSION JOINTS SHALL BE LOCATED AT INTERSECTIONS.



JOINT DETAIL
NTS

TRANSVERSE EXPANSION JOINT
N.T.S.

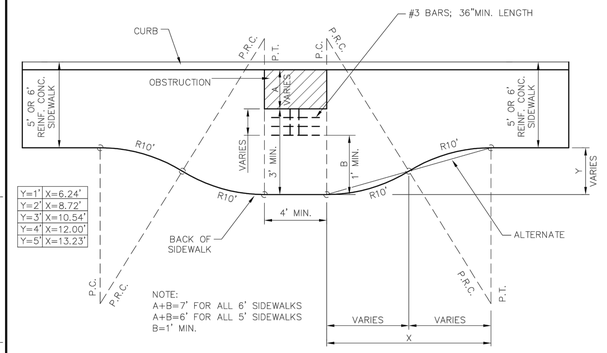
Addison! PUBLIC WORKS DEPARTMENT	TRANSVERSE EXPANSION JOINT	STANDARD CONSTRUCTION DETAILS PAVING		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–P20



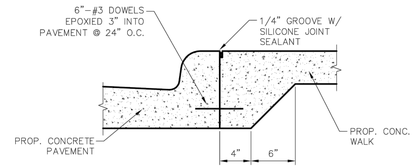
NOTE:
ALLEYS TO BE SAWED TRANSVERSE AT 12'0"

SPACING DIAGRAM FOR TRANSVERSE JOINTS
NTS

Addison! PUBLIC WORKS DEPARTMENT	SPACING DIAGRAM FOR TRANSVERSE JOINTS	STANDARD CONSTRUCTION DETAILS PAVING		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–P22

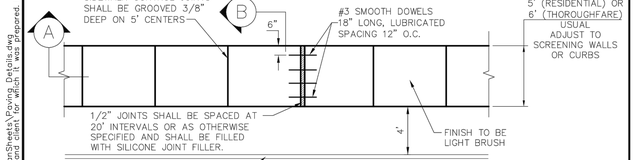


SIDEWALK WIDENING REQUIRED AROUND OBSTACLE IN SIDEWALK
NTS

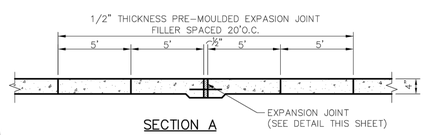


JOINT DETAIL FOR SIDEWALKS ADJACENT TO CURB
NTS

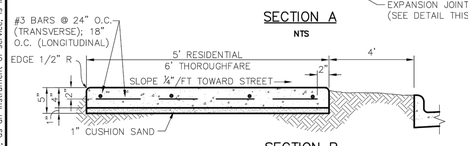
Addison! PUBLIC WORKS DEPARTMENT	SIDEWALK WIDENING REQUIRED AROUND OBSTACLE IN SIDEWALK & JOINT DETAIL FOR SIDEWALKS ADJACENT TO CURB	STANDARD CONSTRUCTION DETAILS PAVING		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–P25



PLAN
NTS

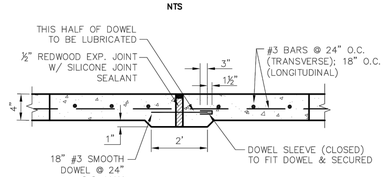


SECTION A
NTS



SECTION B
NTS

NOTE:
WHEN CONCRETE WALK IS ADJACENT TO CURB, DEPTH OF EXPANSION JOINT MATERIAL SHALL BE SUFFICIENT TO PREVENT CONCRETE TO CONCRETE CONTACT BETWEEN WALK AND CURB.

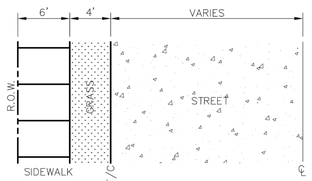


EXPANSION JOINT DETAIL
NTS

Addison! PUBLIC WORKS DEPARTMENT	CONCRETE SIDEWALK	STANDARD CONSTRUCTION DETAILS PAVING		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–P26

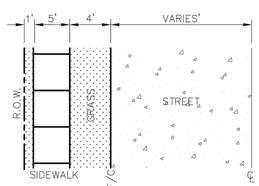
ARTERIAL

6' SIDEWALK EDGE SHALL BE LOCATED ON THE R.O.W. LINE OF ARTERIAL STREETS.

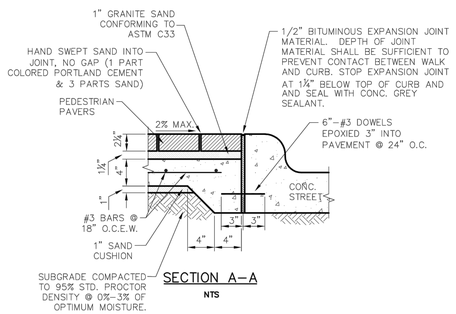


RESIDENTIAL/COLLECTOR

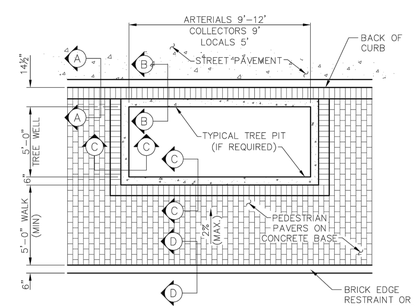
5' SIDEWALK SHALL BE LOCATED 1' INSIDE R.O.W. OF RESIDENTIAL STREETS.



Addison! PUBLIC WORKS DEPARTMENT	CONCRETE SIDEWALK CONTINUED	STANDARD CONSTRUCTION DETAILS PAVING		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–P27



SECTION A–A
NTS



SIDEWALK PLAN: BRICK PAVERS
NTS

NOTE:
SEE SD–P29 FOR ADDITIONAL SECTIONS AND GENERAL NOTES

Addison! PUBLIC WORKS DEPARTMENT	SIDEWALK BRICK PAVERS	STANDARD CONSTRUCTION DETAILS PAVING		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–P28

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STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

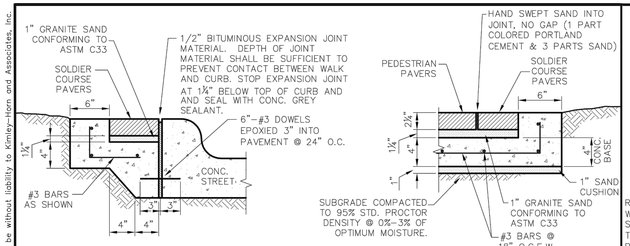
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
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TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PAVING
STANDARD DETAILS
TOWN OF ADDISON
SHEET 2 OF 4

SHEET NUMBER
C3.19

Plotted By: Shadbolt, Cody September 08, 2021 - 09:02:22am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Paving Details.dwg
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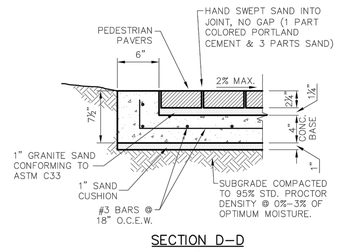


SECTION B–B

NTS

SECTION C–C

NTS



SECTION D–D

NTS

NOTES:

1. PEDESTRIAN PAVERS AND SOLDIER COURSE PAVERS SHALL BE LIGHT TRAFFIC PAVING BRICK MEETING ASTM C902, CLASS SX, TYPE II, APPLICATION PX, W/ DIMENSIONS (W)4"X(L)8"X(T)2¼".
2. PEDESTRIAN PAVERS SHALL BE APPROVED BY PUBLIC WORKS.
3. PROVIDE BRICK WITHOUT FROGS OR CORES, IN SURFACES EXPOSED TO VIEW IN COMLETED WORK.

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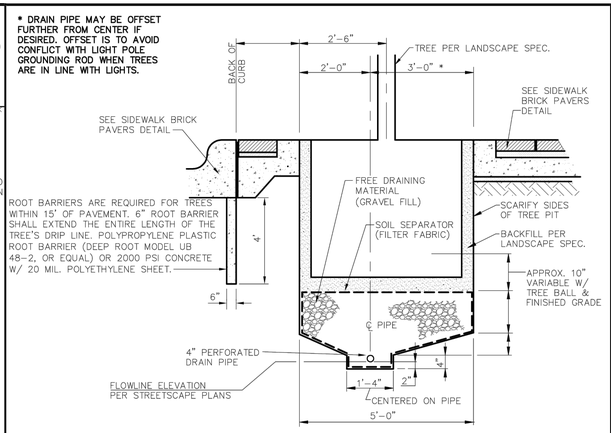
PUBLIC WORKS DEPARTMENT

SIDEWALK BRICK PAVERS CONTINUED

STANDARD CONSTRUCTION DETAILS PAVING

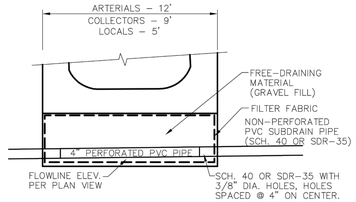
DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD–P29

*** DRAIN PIPE MAY BE OFFSET FURTHER FROM CENTER IF DESIRED. OFFSET IS TO AVOID CONFLICT WITH LIGHT POLE GROUNDING ROD WHEN TREES ARE IN LINE WITH LIGHTS.**



SECTION PERPENDICULAR TO CURB

NTS



SECTION PARALLEL TO CURB

NTS

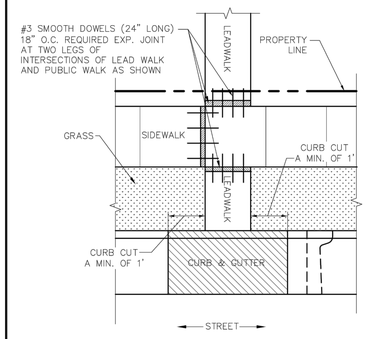
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PUBLIC WORKS DEPARTMENT

SUBSURFACE DRAIN SYSTEM

STANDARD CONSTRUCTION DETAILS PAVING

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD–P30



NOTES:

1. ALL SIDEWALKS AND DRIVEWAY REINFORCEMENT SHALL BE #3 STEEL 18" O.C.E.W. TIED TO #3 SMOOTH DOWELS AND SET UPON CHAIRS.
2. 1–INCH CUSHION SAND REQUIRED ON SUBGRADE COMPACTED WITHIN 95% STANDARD PROCTOR DENSITY.
3. POURS SHALL REQUIRE A PRE–POUR INSPECTION FOR FORMWORK, REINFORCEMENT AND GEOMETRY. VISUAL INSPECTIONS MAY BE MADE AFTER THE POUR TO ADDRESS TOOLED JOINTS, FINISH, SUBGRADE INTEGRITY, ETC.
4. ENSURE THAT FLATWORK DOES NOT OBSCURE ABOVE–GROUND APPURTENANCES (I.E. VALVES, MH LIDS)
5. EXPOSED AGGREGATE CONCRETE IS NOT ACCEPTABLE FOR SIDEWALK WITHIN PUBLIC RIGHT–OF–WAY.
6. SIDEWALKS SHALL BE 5' WIDE (MIN.) WITH 42" (MIN.) UNOBSTRUCTED. SIDEWALKS ALONG ARTERIAL (THOROUGHFARE) ROADWAYS SHALL BE 6' MIN.
7. FOR CURB DETAIL SEE CURB AND GUTTER & ASPHALT PAVING CROSS SECTION

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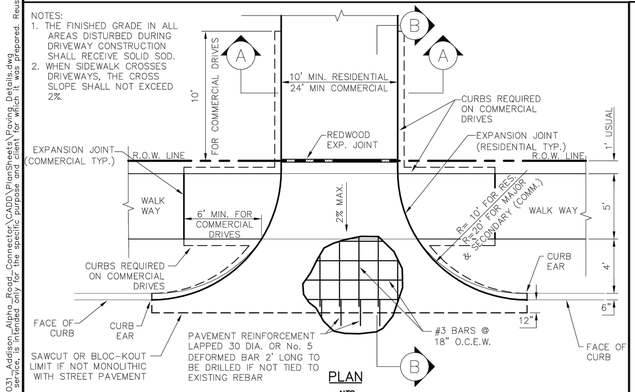
CURB AND LEAD WALK REPAIR

STANDARD CONSTRUCTION DETAILS PAVING

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD–P34

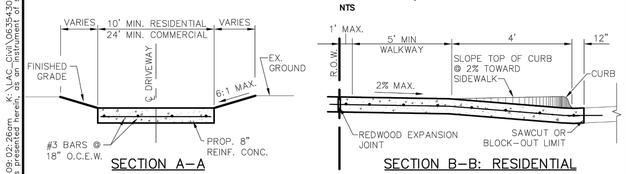
NOTES:

1. THE FINISHED GRADE IN ALL AREAS DISTURBED DURING DRIVEWAY CONSTRUCTION SHALL RECEIVE SOLID SOD.
2. WHEN SIDEWALK CROSSES DRIVEWAYS, THE CROSS SLOPE SHALL NOT EXCEED 2%.



PLAN

NTS

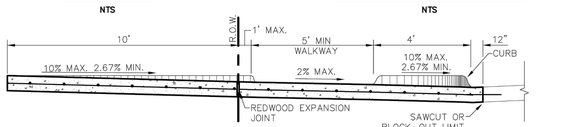


SECTION A–A

NTS

SECTION B–B: RESIDENTIAL

NTS



SECTION B–B: COMMERCIAL

NTS

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PUBLIC WORKS DEPARTMENT

DRIVEWAY RETURN DETAILS

STANDARD CONSTRUCTION DETAILS PAVING

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD–P35

GENERAL NOTES FOR PEDESTRIAN FACILITIES

1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
2. LANDINGS SHALL BE 5'X5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
3. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'X4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
4. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2%
5. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP, EITHER BECAUSE THE ADJACENT SURFACE IS PLANTING OR OTHER NON–WALKING SURFACE OR BECAUSE THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED. OTHERWISE, PROVIDE FLARED SIDES.
6. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND 16 TAC §68.102.
7. CURB RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE TOWN ENGINEER.
8. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER ON ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
9. FLARE SLOPE SHALL NOT EXCEED 10% MEASURED ALONG CURB LINE.
10. BARRIER FREE RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS).
11. ALL BARRIER FREE RAMPS MUST PASS AN INDEPENDENT INSPECTION. A LETTER OF COMPLIANCE ACCEPTANCE IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE TOWN OF ADDISON.
12. STREETS ON STEEP GRADE WILL REQUIRE LONGER TRANSITION ON UPGRADE SIDE.
13. MAXIMUM SLOPE ON RAMP PORTION SHALL NOT EXCEED 1" PER FOOT AT ANY LOCATION. VERTICAL DISTANCE BETWEEN STREET AND RAMP SHALL NOT EXCEED ¼".

GENERAL NOTES FOR DETECTABLE WARNINGS

1. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSIST OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 4.29 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH THE ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK RED COLORED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE AND CREAM COLORED DETECTABLE WARNING SURFACE ADJACENT TO DARK RED COLORED BRICK PAVERS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" 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.
5. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS A MINIMUM OF 6" AND A MAXIMUM OF 8" FROM THE EXTENSION OF THE FACE OF CURB AND SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.

GENERAL NOTES FOR DETECTABLE WARNING PAVER UNITS

1. DETECTABLE WARNING PAVER UNITS SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM C–936, C–33, AND BE LAID IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.
2. LAY FULL–SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING PAVER UNITS USING A POWER SAW.

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PUBLIC WORKS DEPARTMENT

PEDESTRIAN FACILITIES GENERAL NOTES

STANDARD CONSTRUCTION DETAILS PAVING

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RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

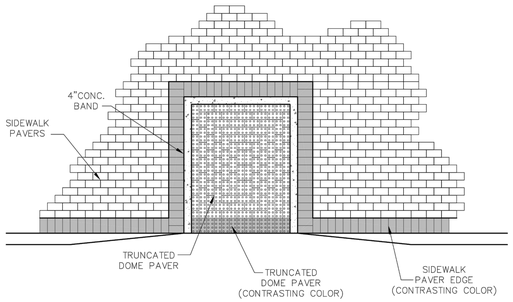
KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PAVING
STANDARD DETAILS
TOWN OF ADDISON
SHEET 3 OF 4

SHEET NUMBER
C3.20

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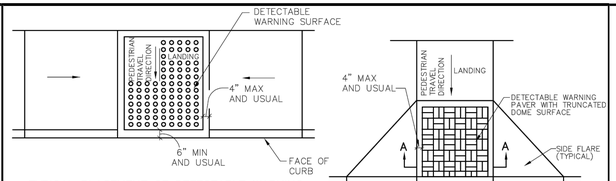


NOTE:
ALL PAVER COLORS TO BE APPROVED BY TOWN OF ADDISON.

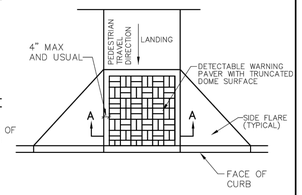
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PUBLIC WORKS DEPARTMENT

TYPICAL PATTERN FOR PAVER SIDEWALK AND CURB RAMP

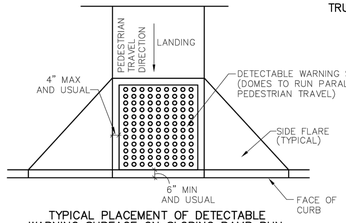
STANDARD CONSTRUCTION DETAILS PAVING		
DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-P40



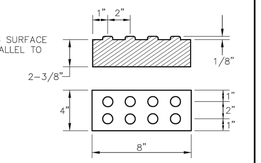
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



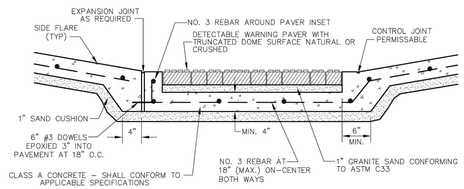
TRUNCATED DOME PATTERN CURB RAMP



TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



DETECTABLE WARNING PAVER



SECTION A–A

DETECTABLE WARNING PAVER (OPTION)

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DETECTABLE WARNING PAVER

STANDARD CONSTRUCTION DETAILS PAVING		
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9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
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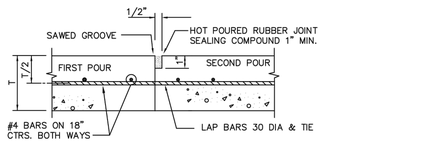
KHA PROJECT 063543031	DATE 09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PAVING
STANDARD DETAILS
TOWN OF ADDISON
SHEET 4 OF 4

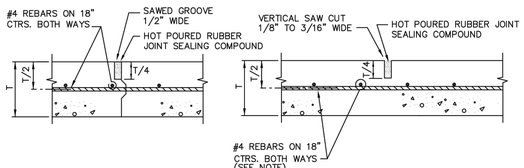
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CONSTRUCTION JOINT

N.T.S.



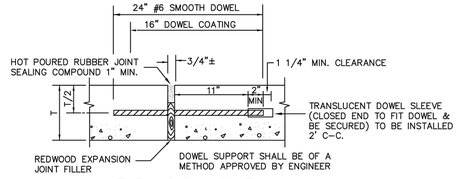
KEYWAY JOINT

(FOR PAVEMENT THICKNESS > 6")

N.T.S.

SAWED CONTRACTION JOINT

N.T.S.



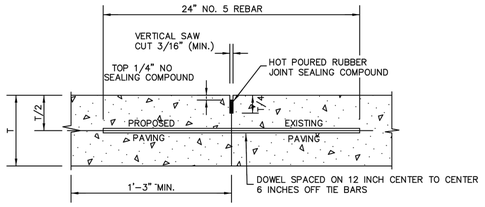
EXPANSION JOINT

(SPACED 600 FT. MAXIMUM; LOCATE AT STRUCTURES AND AT INTERSECTION P.C.'S & P.T.'S)

N.T.S.

1. REINFORCEMENT SHALL BE NO. 3 FOR PAVEMENT THICKNESS 7" OR BELOW.
2. REINFORCEMENT SHALL BE NO. 4 FOR PAVEMENT THICKNESS 8" OR ABOVE.

PAVEMENT JOINTS		REPLACING N.C.T.C.O.G. DWG. NAME:	2050
PAVING	STREETS	SCALE: N.T.S. / DRAWN BY: BSJ / APPROVED BY: MOB	DATE: JULY 2020 / F.B. DWG. NAME: FB-P-250.DWG

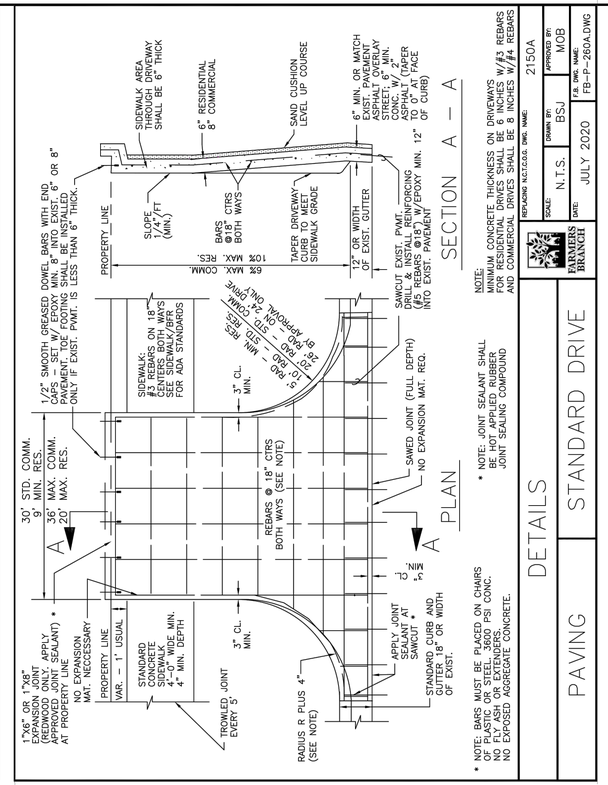


LONGITUDINAL BUTT JOINT

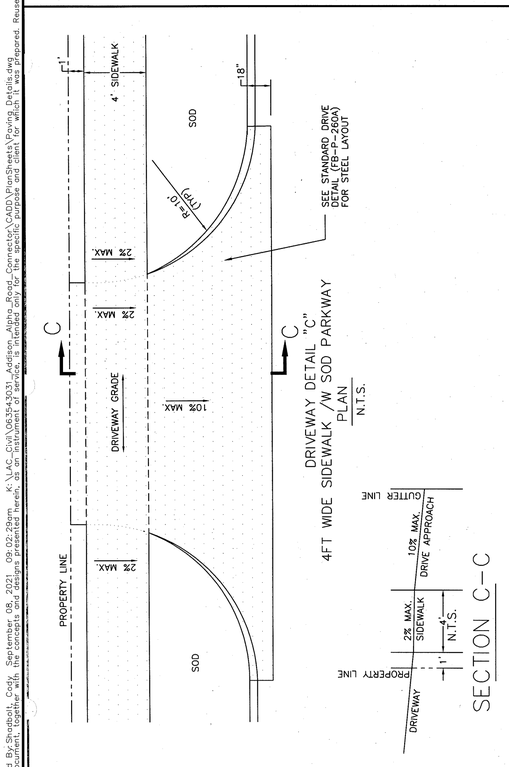
NO SCALE

NOTE:
DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.

LONGITUDINAL BUTT JOINT		REPLACING N.C.T.C.O.G. DWG. NAME:	2050
PAVING	STREETS	SCALE: N.T.S. / DRAWN BY: BSJ / APPROVED BY: MOB	DATE: AUG 2019 / F.B. DWG. NAME: FB-P-250B.DWG



DETAILS		REPLACING N.C.T.C.O.G. DWG. NAME:	2150A
PAVING	STANDARD DRIVE	SCALE: N.T.S. / DRAWN BY: BSJ / APPROVED BY: MOB	DATE: JULY 2020 / F.B. DWG. NAME: FB-P-260A.DWG

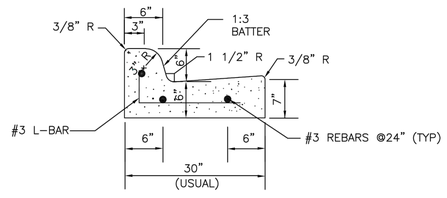


DRIVE: @ SIDEWALK AWAY FROM CURB TYPE C		REPLACING N.C.T.C.O.G. DWG. NAME:	
PAVING	SIDEWALK	SCALE: N.T.S. / DRAWN BY: BSJ / APPROVED BY: JVM	DATE: August 2008 / F.B. DWG. NAME: FB-P-280C.DWG

SIDEWALK NOTES:

1. CONCRETE SHALL BE 3600 PSI @ 28 DAYS;
2. REINFORCEMENT SHALL BE #3 BARS ON 18 INCH CENTERS, ON CHAIRS OR STEEL POSTS (NO WELDED WIRE FABRIC WILL BE ACCEPTABLE AS A SUBSTITUE FOR STEEL BARS);
3. FINISH OF THE TOP SURFACE SHALL BE "LIGHT BROOM FINISH" WITH SCORED TOOL JOINTS.
4. SLOPE OF WALK SHALL BE 2% MAX. OR APPROVED BY THE CITY ENGINEER.
5. MIN. CONCRETE THICKNESS ON SIDEWALK SHALL BE 4 INCHES. MIN. CONCRETE THICKNESS ON BARRIER FREE RAMP PAY LIMIT AREA SHALL BE 6 INCHES.
6. INSTALL REDWOOD EXPANSION JOINTS @ 40' O.C. ON SIDEWALKS
7. IF AN ACCESSIBLE ROUTE HAS LESS THAN 60 IN. (1525 MM) CLEAR WIDTH THEN PASSING SPACES AT LEAST 60 IN BY 60 IN (1525 MM BY 1525 MM) SHALL BE LOCATED AT REASONABLE INTERVALS NOT TO EXCEED 200 FT (61 M).

SIDEWALK NOTES		REPLACING N.C.T.C.O.G. DWG. NAME:	
PAVING	SIDEWALK	SCALE: N.T.S. / DRAWN BY: BSJ / APPROVED BY: JVM	DATE: August 2008 / F.B. DWG. NAME: FB-P-310.DWG



SEPARATE CURB AND GUTTER

SEPARATE CURB & GUTTER		REPLACING N.C.T.C.O.G. DWG. NAME:	2120
PAVING	STREETS	SCALE: N.T.S. / DRAWN BY: BSJ / APPROVED BY: MOB	DATE: JULY 2020 / F.B. DWG. NAME: FB-P-250A.DWG

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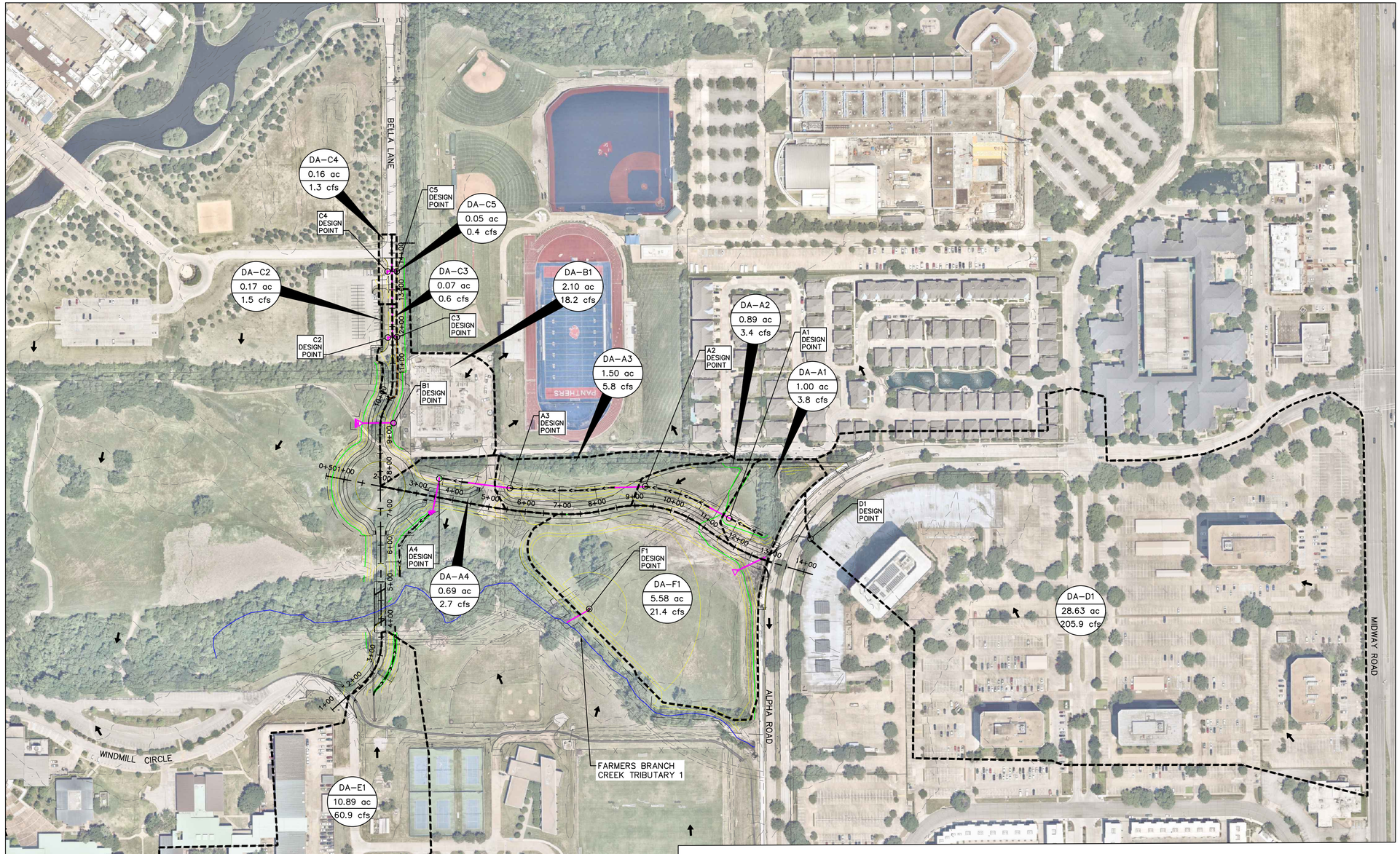
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		DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PAVING
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CITY OF FARMERS BRANCH

SHEET NUMBER
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NORTH

GRAPHIC SCALE IN FEET
0 37.5 150 300

LEGEND

- # — DRAINAGE AREA NUMBER
- XX ac — DRAINAGE AREA SIZE (ACRES)
- XX cfs — 100-YEAR EXISTING RUNOFF FROM AREA (CFS)
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY

DRAINAGE AREA CALCULATIONS

DRAINAGE AREA NO.	AREA (ac)	RUNOFF COEFFICIENT "C"	TIME OF CONCENTRATION (minutes)	RAINFALL INTENSITY "I"100 (in/hr)	TOTAL FLOW Q100 (cfs)	DESIGN/COLLECTION POINT
DA–A1	1.00	0.40	10.0	9.60	3.8	DITCH TO STORM DRAIN
DA–A2	0.89	0.40	10.0	9.60	3.4	DITCH TO STORM DRAIN
DA–A3	1.50	0.40	10.0	9.60	5.8	DITCH TO STORM DRAIN
DA–A4	0.69	0.40	10.0	9.60	2.7	STORM DRAIN
DA–B1	2.10	0.90	10.0	9.60	18.2	STORM DRAIN
DA–C2	0.17	0.90	10.0	9.27	1.5	CURB INLET
DA–C3	0.07	0.90	10.0	9.27	0.6	CURB INLET
DA–C4	0.16	0.90	10.0	9.27	1.3	STORM DRAIN
DA–C5	0.05	0.90	10.0	9.27	0.4	STORM DRAIN
DA–D1	28.63	0.90	15.0	7.99	205.9	STORM DRAIN
DA–E1	10.89	0.70	15.0	7.99	60.9	DITCH
DA–F1	5.58	0.40	10.0	9.60	21.4	POND OUTFALL

NOTE:

- FLOWS FOR DRAINAGE AREAS LOCATED WITHIN FARMERS BRANCH ARE CALCULATED USING AN INTENSITY VALUE OF 9.60 IN/HR FOR A TIME OF CONCENTRATION OF 10 MINUTES AND 7.99 IN/HR FOR A TIME OF CONCENTRATION OF 15 MINUTES, PER THE CITY OF FARMERS BRANCH.
- FLOWS FOR DRAINAGE AREAS LOCATED WITHIN THE TOWN OF ADDISON ARE CALCULATED USING AN INTENSITY VALUE OF 9.27 IN/HR FOR A TIME OF CONCENTRATION OF 10 MINUTES PER THE TOWN OF ADDISON

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9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021
SCALE AS SHOWN	DESIGNED BY RMD
DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE
PROPOSED DRAINAGE AREA MAP

SHEET NUMBER
C4.01

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STORM DRAIN CALCULATION TABLE

SYSTEM C

From Sta	To Sta	Line Length	Drainage Area			Runoff Coefficient	Incr CxA	Total CxA	Time of Concentration			100 Year Intensity	100 Year Runoff (Q100)	Inlet Carryover (To Inlet)	Inlet Carryover (From Inlet)	"Qpipe"	Pipe Size Diameter	Box Size		n	Sf	HGL		Head Loss Calculations				Ki	Ki*V^2/2g	Hk	Design HGL	Invert Elevations		T/C Elev
			No.	Area	Total Area				Inlet Time	Travel Time	Total Time							Width	Height			U/S	D/S	V1 (in)	V2 (out)	V1^2/2g	V2^2/2g					From	To	
(ft)	(ft)	(ft)		(ac)	(ac)	(C)			(min)	(min)	(min)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(in)	(in)	(in)	(%)	(%)	(ft)	(ft)	(ft/s)	(ft/s)	(ft)	(ft)					(ft)	(ft)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
INSTALL: (1) 6' CURB INLET BELLA LANE STA 11+68.93, 11.44 RT	INSTALL: (1) 60' 18"x18" WYE BELLA LANE STA 11+75.25, 0.00 RT	13.000	C2	0.20	0.20	0.90	0.18	0.18	10.0	0.23	10.23	9.27	1.67	0.00	0.00	1.67	18	-	-	0.013	0.053	558.40	558.40	1.53	1.42	0.04	0.03	1.25	0.04	0.05	558.45	557.51	557.45	562.00
INSTALL: (1) 60' 18"x18" WYE BELLA LANE STA 11+75.25, 0.00 RT	INSTALL: (1) 45° 18"X18" WYE BELLA LANE STA 11+60.37, 0.00'	5.087	-	-	0.20	-	-	0.18	10.23	0.09	10.32	9.20	1.66	-	-	1.66	18	-	-	0.013	0.049	558.38	558.38	1.45	1.41	0.03	0.03	0.70	0.02	0.02	558.40	557.45	557.43	-
INSTALL: (1) 6' CURB INLET BELLA LANE STA 11+68.93, 11.44 RT	INSTALL: (1) 45° 18"X18" WYE BELLA LANE STA 11+60.37, 0.00'	16.175	C3	0.07	0.07	0.90	0.06	0.06	10.0	0.82	10.82	9.27	0.58	0.00	0.00	0.58	18	-	-	0.013	0.000	558.00	558.38	2.52	0.51	0.10	0.10	1.25	0.13	-	558.00	557.72	557.45	562.00
INSTALL: (1) 45° 18"X18" WYE BELLA LANE STA 11+60.37, 0.00'	INSTALL: (1) 60' 18"X18" WYE BELLA LANE STA 13+55.53, 0.00'	175.166	-	-	0.27	-	-	0.24	10.82	2.30	13.12	9.03	2.19	-	-	2.19	18	-	-	0.013	0.070	558.33	558.24	1.98	1.24	0.06	0.02	0.75	0.02	0.05	558.38	557.43	556.73	-
INSTALL: (1) 6' CURB INLET BELLA LANE STA 13+48.93, 11.44 L	INSTALL: (1) 60' 18"X18" WYE BELLA LANE STA 13+55.53, 0.00'	13.207	C4	0.16	0.16	0.90	0.14	0.14	10.0	0.29	10.29	9.27	1.34	0.00	0.00	1.34	18	-	-	0.013	0.030	558.23	558.24	1.31	0.76	0.03	0.01	1.25	0.01	0.03	558.27	557.39	556.73	562.00
INSTALL: (1) 60' 18"X18" WYE BELLA LANE STA 13+48.93, 11.44 R	INSTALL: (1) 60' 18"X18" WYE BELLA LANE STA 13+60.37, 0.00'	4.833	-	-	0.43	-	-	0.39	13.12	0.04	13.16	8.42	3.26	-	-	3.26	18	-	-	0.013	0.093	558.22	558.22	1.85	1.84	0.05	0.05	0.43	0.02	0.02	558.24	556.73	556.71	-
INSTALL: (1) 6' CURB INLET BELLA LANE STA 13+48.93, 11.44 R	INSTALL: (1) 60' 18"X18" WYE BELLA LANE STA 13+60.37, 0.00'	16.175	C5	0.05	0.05	0.90	0.05	0.05	10.0	1.14	11.14	9.27	0.42	0.00	0.00	0.42	18	-	-	0.013	0.000	557.63	558.22	2.31	0.24	0.08	0.08	0.43	0.03	-	557.63	557.39	556.73	562.00
INSTALL: (1) 60' 18"X18" WYE BELLA LANE STA 13+60.37, 0.00'	CONNECT TO EX 18" BY OTHERS	16.083	-	-	0.48	-	-	0.43	13.16	0.12	13.28	8.41	3.63	-	-	3.63	18	-	-	0.013	0.113	558.17	558.15	2.07	2.06	0.07	0.07	0.75	0.05	0.05	558.22	556.71	556.65	-

INLET CALCULATIONS - SYSTEM C

Inlet ID	Location	Street	Area (acres)	Q100 (cfs)	CO (Carryover) (cfs)	Qa (cfs)	x-slope	z	n	s ft/ft	y (depth of flow) (ft)	Width Conveying Flow	La (ft)	Qi (Sag) (Intercepted) (cfs)	Qa-Qi (cfs)
2	Sag	Bella Lane	0.17	1.42	0.00	1.42	0.02	50.00	0.0175	0.007	0.18	9.09	6.00	1.42	0.00
3	Sag	Bella Lane	0.07	0.58	0.00	0.58	0.02	50.00	0.0175	0.007	0.13	6.51	6.00	0.86	0.00
4	Sag	Bella Lane	0.16	1.33	0.00	1.33	0.02	50.00	0.0175	0.007	0.18	8.88	6.00	1.37	0.00
5	Sag	Bella Lane	0.05	0.42	0.00	0.42	0.02	50.00	0.0175	0.007	0.11	5.74	6.00	0.71	0.00

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9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE
DRAINAGE CALCULATIONS

SHEET NUMBER
C4.02

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Rating Curve Plot for Crossing: Crossing 1

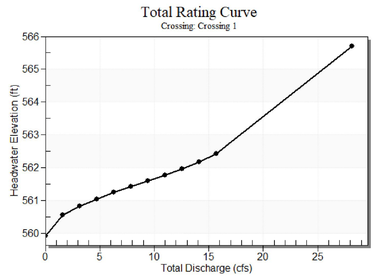
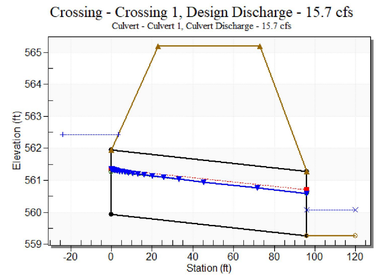


Table 1 - Culvert Summary Table: Culvert 1

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	559.94	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
1.57	1.57	560.55	0.615	0.0*	1-S2	0.372	0.431	0.372	0.231	3.904	1.382
3.14	3.14	560.83	0.888	0.0*	1-S2	0.526	0.616	0.526	0.340	4.744	1.722
4.71	4.71	561.05	1.112	0.186	1-S2	0.647	0.761	0.655	0.424	5.246	1.948
6.28	6.28	561.25	1.307	0.385	1-S2	0.758	0.887	0.758	0.495	5.769	2.122
7.85	7.85	561.42	1.483	0.590	1-S2	0.856	0.997	0.856	0.557	6.109	2.263
9.42	9.42	561.60	1.655	0.802	1-S2	0.951	1.093	0.956	0.612	6.359	2.385
10.99	10.99	561.77	1.834	1.030	1-S2	1.041	1.185	1.041	0.663	6.649	2.491
12.56	12.56	561.97	2.028	1.275	1-S2	1.131	1.272	1.131	0.710	6.854	2.586
14.13	14.13	562.18	2.244	1.532	1-S2	1.220	1.350	1.224	0.754	7.016	2.672
15.70	15.70	562.42	2.484	1.805	1-S2	1.312	1.424	1.312	0.795	7.178	2.751

Water Surface Profile Plot for Culvert: Culvert 1



Site Data - Culvert 1

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 559.94 ft
Outlet Station: 96.00 ft
Outlet Elevation: 559.27 ft
Number of Barrels: 1

Culvert Data Summary - Culvert 1

Barrel Shape: Circular
Barrel Diameter: 2.00 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0120
Culvert Type: Straight
Inlet Configuration: Mitered to Conform to Slope
Inlet Depression: NONE

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

DRAINAGE
CULVERT 1
CALCULATIONS

SHEET NUMBER
C4.03

Plotted By: Shotwell, Cody Septmember 08, 2021 09:03:10pm K:\IrC_Civil\063543031_Addison-Alpha Road Connection\C400\ProjSheets\Proj Drainage Area Map.dwg
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Rating Curve Plot for Crossing: Crossing 2

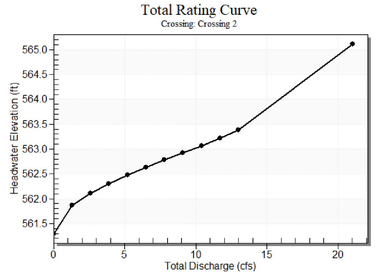
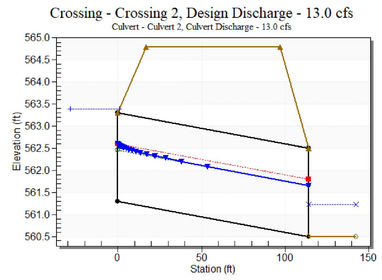


Table 2 - Culvert Summary Table: Culvert 2

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	561.30	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
1.30	1.30	561.87	0.565	0.0*	1-S2	0.334	0.390	0.334	0.207	3.716	1.298
2.60	2.60	562.11	0.807	0.0*	1-S2	0.473	0.558	0.482	0.306	4.428	1.624
3.90	3.90	562.30	0.999	0.0*	1-S2	0.586	0.688	0.591	0.383	5.058	1.841
5.20	5.20	562.48	1.176	0.124	1-S2	0.682	0.800	0.686	0.448	5.445	2.007
6.50	6.50	562.63	1.333	0.296	1-S2	0.770	0.903	0.773	0.504	5.818	2.143
7.80	7.80	562.78	1.478	0.471	1-S2	0.851	0.994	0.851	0.555	6.112	2.259
9.10	9.10	562.93	1.620	0.652	1-S2	0.931	1.075	0.931	0.602	6.355	2.361
10.40	10.40	563.07	1.766	0.846	1-S2	1.005	1.152	1.005	0.645	6.575	2.452
11.70	11.70	563.22	1.920	1.048	1-S2	1.080	1.223	1.080	0.685	6.760	2.535
13.00	13.00	563.39	2.087	1.265	5-S2	1.154	1.294	1.154	0.723	6.928	2.611

Water Surface Profile Plot for Culvert: Culvert 2



Site Data - Culvert 2

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 561.30 ft
Outlet Station: 114.00 ft
Outlet Elevation: 560.50 ft
Number of Barrels: 1

Culvert Data Summary - Culvert 2

Barrel Shape: Circular
Barrel Diameter: 2.00 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0120
Culvert Type: Straight
Inlet Configuration: Mitered to Conform to Slope
Inlet Depression: NONE

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

DRAINAGE
CULVERT 2
CALCULATIONS

SHEET NUMBER
C4.04

Plotted By: Shethshi, Cody September 08, 2021 - 09:03:11pm - K:\LAC_Civil\063543031_Addison_Alpha_Road_Connect\04CD\PlanSheets\Proje Drainage Area Map.dwg
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Rating Curve Plot for Crossing: Crossing 3

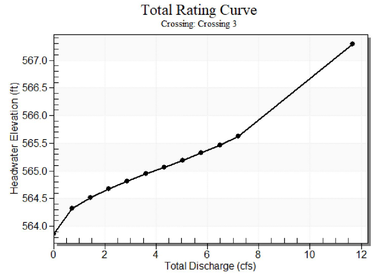
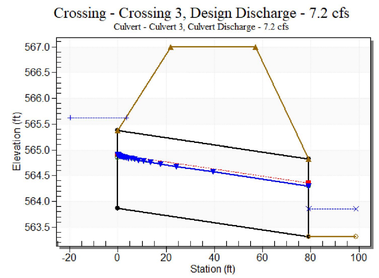


Table 4 - Culvert Summary Table: Culvert 3

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft	Outlet Control Depth (ft	Flow Type	Normal Depth (ft	Critical Depth (ft	Outlet Depth (ft	Tailwater Depth (ft	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	563.87	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
0.72	0.72	564.33	0.457	0.0*	1-S2	0.278	0.313	0.278	0.148	3.202	1.062
1.44	1.44	564.52	0.650	0.0*	1-S2	0.392	0.448	0.392	0.220	3.901	1.343
2.16	2.16	564.68	0.806	0.067	1-S2	0.482	0.549	0.482	0.276	4.385	1.531
2.88	2.88	564.82	0.948	0.214	1-S2	0.565	0.644	0.565	0.324	4.739	1.676
3.60	3.60	564.94	1.074	0.363	1-S2	0.638	0.725	0.641	0.367	4.995	1.796
4.32	4.32	565.07	1.196	0.517	1-S2	0.708	0.796	0.712	0.405	5.233	1.899
5.04	5.04	565.19	1.320	0.678	1-S2	0.776	0.859	0.777	0.440	5.454	1.988
5.76	5.76	565.32	1.451	0.854	1-S2	0.842	0.922	0.842	0.473	5.637	2.068
6.48	6.48	565.47	1.596	1.042	5-S2	0.909	0.982	0.909	0.503	5.792	2.141
7.20	7.20	565.63	1.755	1.239	5-S2	0.976	1.036	0.976	0.532	5.909	2.207

Water Surface Profile Plot for Culvert: Culvert 3



Site Data - Culvert 3

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 563.87 ft
Outlet Station: 79.00 ft
Outlet Elevation: 563.32 ft
Number of Barrels: 1

Culvert Data Summary - Culvert 3

Barrel Shape: Circular
Barrel Diameter: 1.50 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0120
Culvert Type: Straight
Inlet Configuration: Mitered to Conform to Slope
Inlet Depression: NONE

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

DRAINAGE
CULVERT 3
CALCULATIONS

SHEET NUMBER
C4.05

Plotted By: Shepherd, Cody September 08, 2021 09:03:13am K:\Ald_Civil\063543031_Addison-Alpha Road Connector\C400\ProjSheets\Proj Drainage Area Map.dwg
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Rating Curve Plot for Crossing: Crossing 4

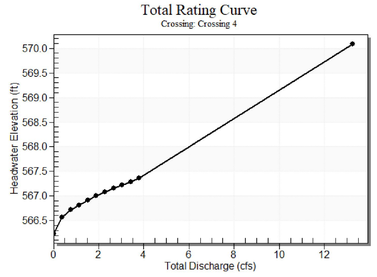
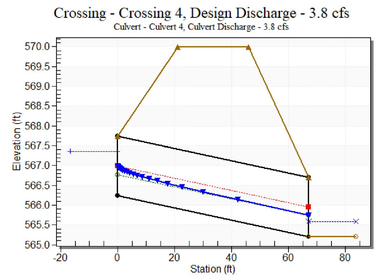


Table 3 - Culvert Summary Table: Culvert 4

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	566.24	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
0.38	0.38	566.56	0.322	0.0*	1-S2	0.161	0.223	0.161	0.102	4.908	0.848
0.76	0.76	566.72	0.477	0.0*	1-S2	0.227	0.318	0.227	0.152	4.397	1.083
1.14	1.14	566.82	0.577	0.0*	1-S2	0.286	0.395	0.286	0.192	4.902	1.243
1.52	1.52	566.92	0.679	0.0*	1-S2	0.326	0.457	0.326	0.227	5.310	1.367
1.90	1.90	567.00	0.758	0.0*	1-S2	0.367	0.516	0.374	0.257	5.492	1.469
2.28	2.28	567.08	0.840	0.0*	1-S2	0.407	0.566	0.407	0.285	5.879	1.558
2.66	2.66	567.18	0.915	0.0*	1-S2	0.438	0.616	0.443	0.310	6.152	1.636
3.04	3.04	567.23	0.986	0.0*	1-S2	0.469	0.663	0.477	0.334	6.260	1.705
3.42	3.42	567.29	1.052	0.0*	1-S2	0.499	0.705	0.507	0.356	6.483	1.768
3.80	3.80	567.36	1.117	0.0*	1-S2	0.530	0.745	0.537	0.378	6.689	1.826

Water Surface Profile Plot for Culvert: Culvert 4



Site Data - Culvert 4

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 566.24 ft
Outlet Station: 67.00 ft
Outlet Elevation: 565.21 ft
Number of Barrels: 1

Culvert Data Summary - Culvert 4

Barrel Shape: Circular
Barrel Diameter: 1.50 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0120
Culvert Type: Straight
Inlet Configuration: Mitered to Conform to Slope
Inlet Depression: NONE

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No.	REVISIONS	DATE	BY

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9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	
SCALE	AS SHOWN	
DESIGNED BY	RMD	
DRAWN BY	CDS	
CHECKED BY	LNA	

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

DRAINAGE
CULVERT 4
CALCULATIONS

SHEET NUMBER
C4.06

Plotted By: Shepherd, Cody September 08, 2021 09:03:16pm K:\Lnc_Civil\063543031_Addison-Alpha Road Connection\C400\Prop_Drainage_Area_Map.dwg
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Rating Curve Plot for Crossing: Culvert B

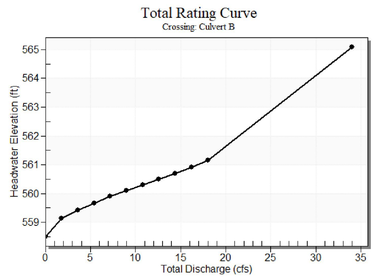
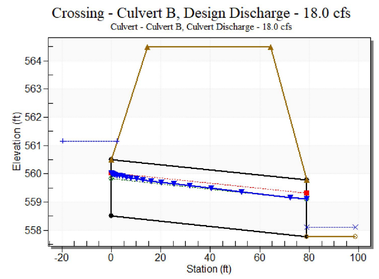


Table 5 - Culvert Summary Table: Culvert B

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	558.51	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
1.80	1.80	559.14	0.628	0.0*	1-S2	0.372	0.462	0.372	0.134	4.484	1.001
3.60	3.60	559.42	0.909	0.0*	1-S2	0.525	0.659	0.530	0.174	5.381	1.191
5.40	5.40	559.67	1.159	0.194	1-S2	0.646	0.817	0.656	0.202	6.005	1.318
7.20	7.20	559.90	1.386	0.413	1-S2	0.756	0.953	0.765	0.226	6.534	1.416
9.00	9.00	560.10	1.589	0.636	1-S2	0.854	1.069	0.867	0.245	6.892	1.497
10.80	10.80	560.29	1.782	0.873	1-S2	0.949	1.175	0.962	0.263	7.223	1.567
12.60	12.60	560.48	1.978	1.126	1-S2	1.039	1.274	1.053	0.278	7.513	1.628
14.40	14.40	560.69	2.179	1.394	5-S2	1.128	1.363	1.144	0.292	7.760	1.684
16.20	16.20	560.91	2.398	1.679	5-S2	1.217	1.446	1.233	0.306	7.976	1.734
18.00	18.00	561.15	2.638	2.222	5-S2	1.309	1.526	1.323	0.318	8.170	1.780

Water Surface Profile Plot for Culvert: Culvert B



Site Data - Culvert B

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 558.51 ft
Outlet Station: 79.00 ft
Outlet Elevation: 557.78 ft
Number of Barrels: 1

Culvert Data Summary - Culvert B

Barrel Shape: Circular
Barrel Diameter: 2.00 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0120
Culvert Type: Straight
Inlet Configuration: Square Edge with Headwall
Inlet Depression: NONE

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No.	REVISIONS	DATE	BY

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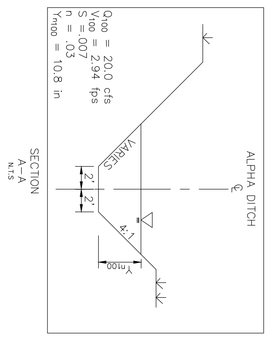
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
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DRAWN BY CDS
CHECKED BY LNA

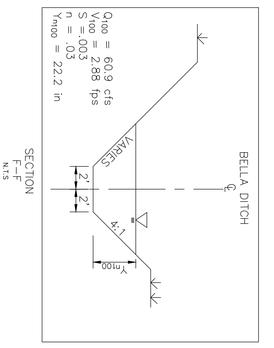
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

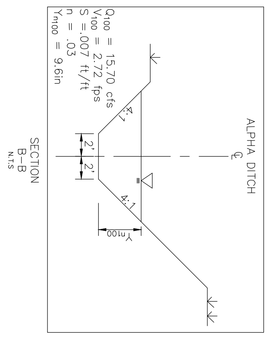
DRAINAGE
CULVERT B
CALCULATIONS

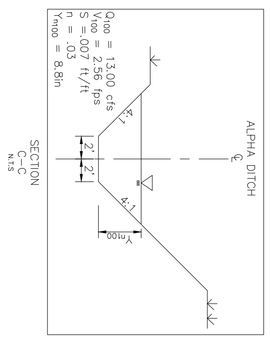
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C4.07

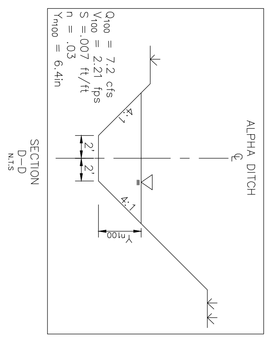
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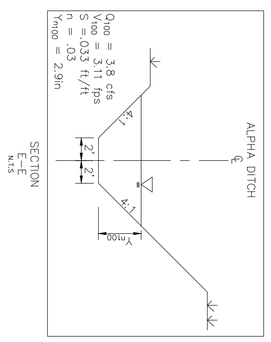












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811

C4.08
SHEET NUMBER

DRAINAGE
DITCH SECTIONS

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

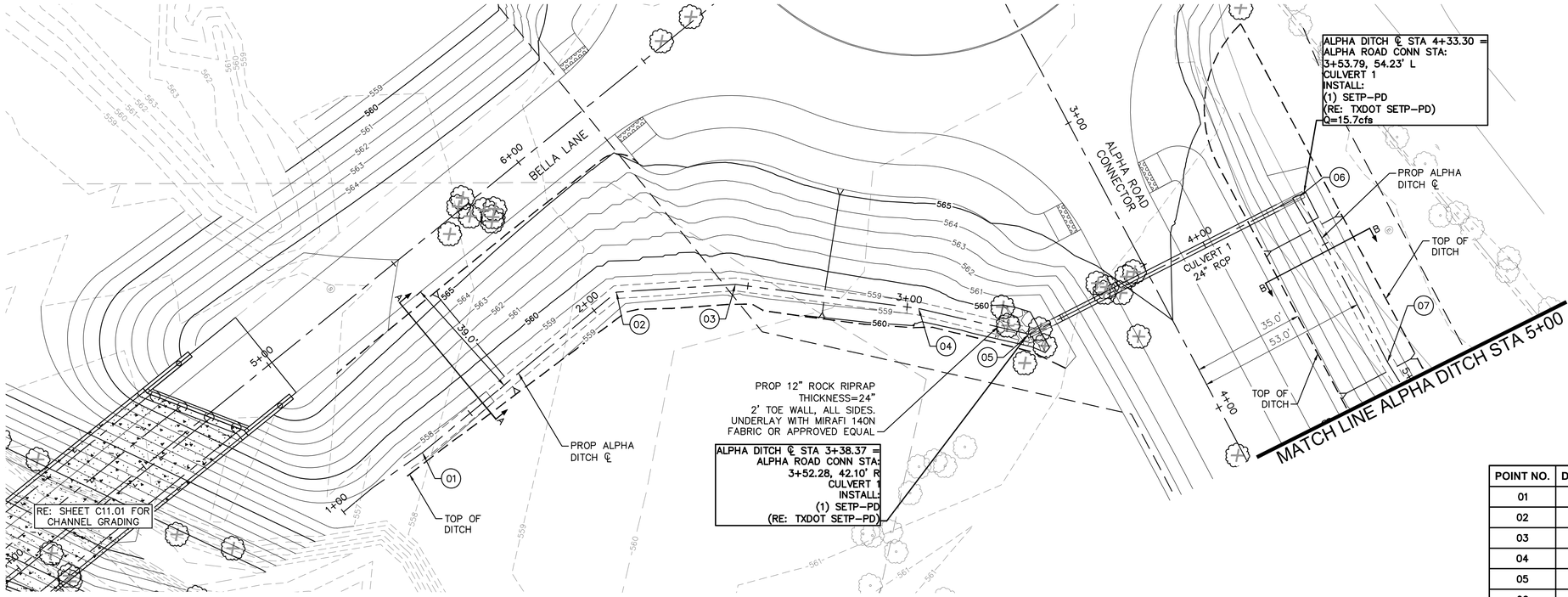
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

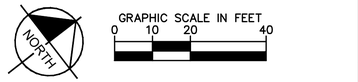
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER
9/10/2021

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

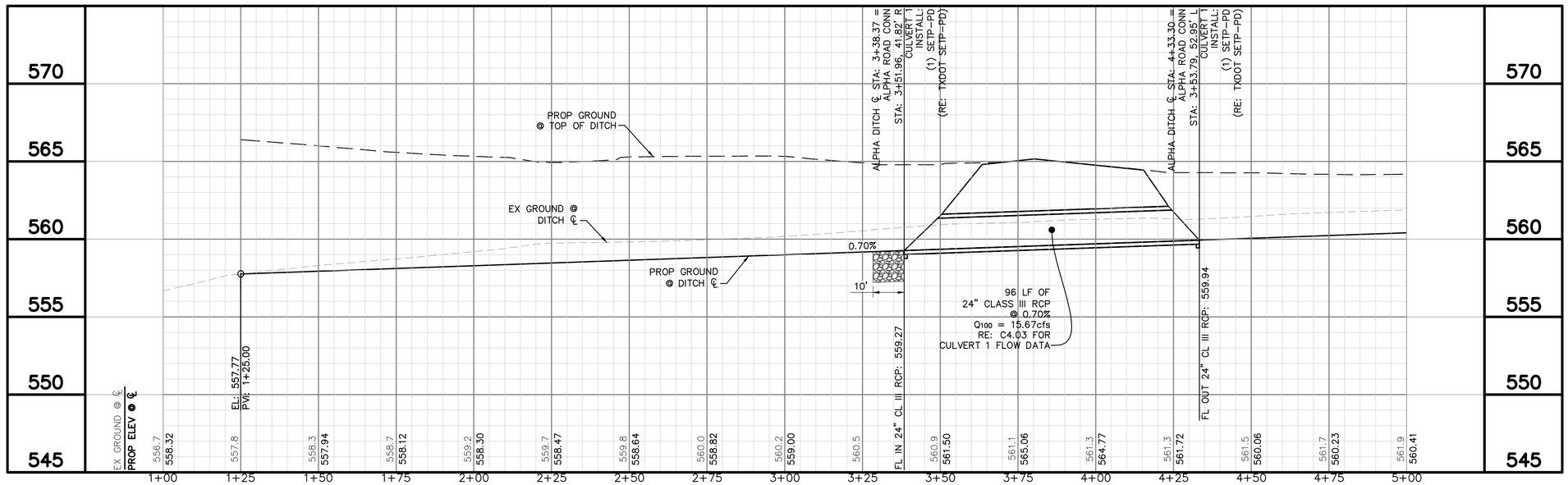




LEGEND

- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET
01	PI	ALPHA ROAD CONN	2+96.62	225.45' R
02	PI	ALPHA ROAD CONN	2+80.70	148.85' R
03	PI	ALPHA ROAD CONN	2+95.89	114.97' R
04	PI	ALPHA ROAD CONN	3+29.14	68.15' R
05	PI	ALPHA ROAD CONN	3+52.29	41.44' R
06	PI	ALPHA ROAD CONN	3+53.77	52.95' L
07	PI	ALPHA ROAD CONN	4+12.02	53.00' L



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RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

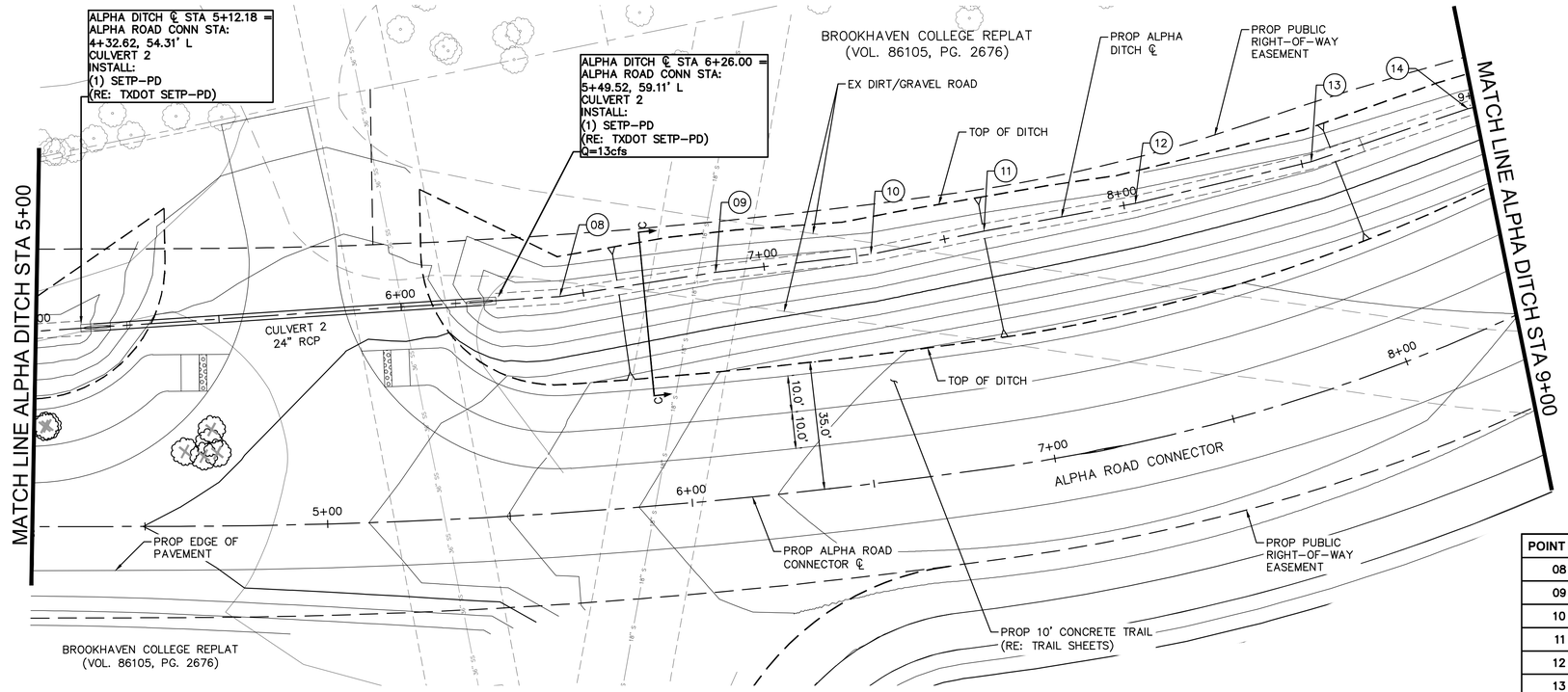
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

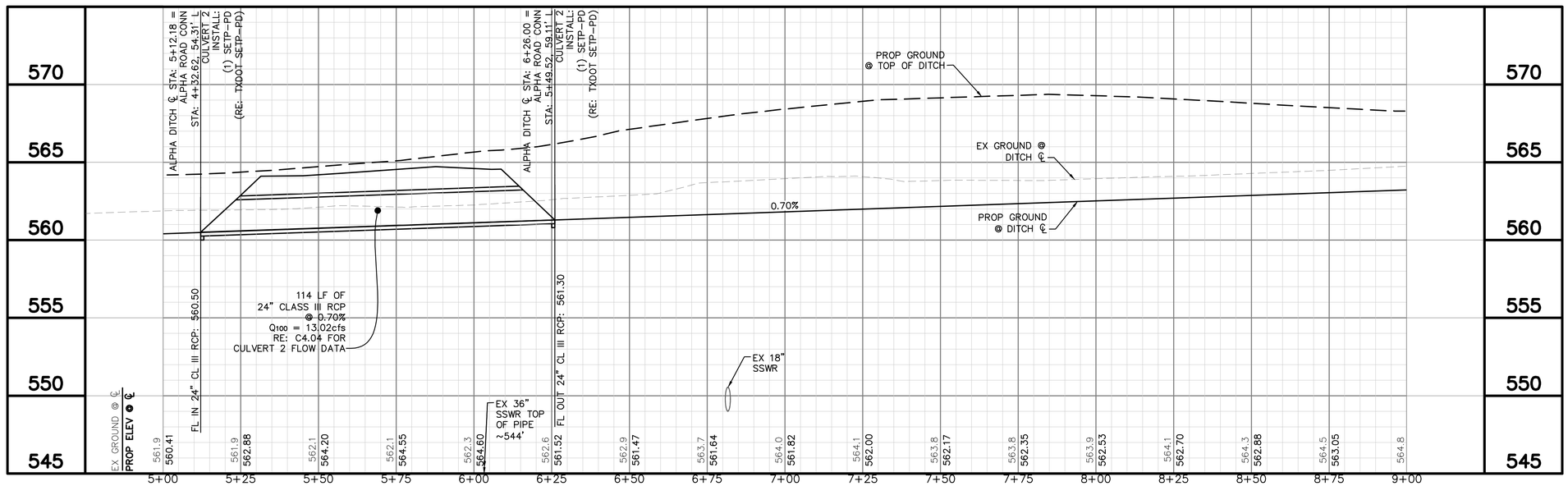
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE
ALPHA DITCH
BEGIN TO STA 5+00

SHEET NUMBER
C4.09

Plotted By: Ghatlett Date: September 09, 2021 01:37:17pm K:\ADC Civil\063543031 Addison Alpha Road Connector\CADD\Plan Sheets\Drainage Plan&Profile.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET
08	PI	ALPHA ROAD CONN	5+67.67	59.16' L
09	PI	ALPHA ROAD CONN	6+12.38	62.22' L
10	PI	ALPHA ROAD CONN	6+56.90	62.43' L
11	PI	ALPHA ROAD CONN	6+90.00	64.58' L
12	PI	ALPHA ROAD CONN	7+38.32	63.92' L
13	PI	ALPHA ROAD CONN	7+94.70	60.45' L
14	PI	ALPHA ROAD CONN	8+43.08	56.90' L

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GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND
- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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STATE OF TEXAS
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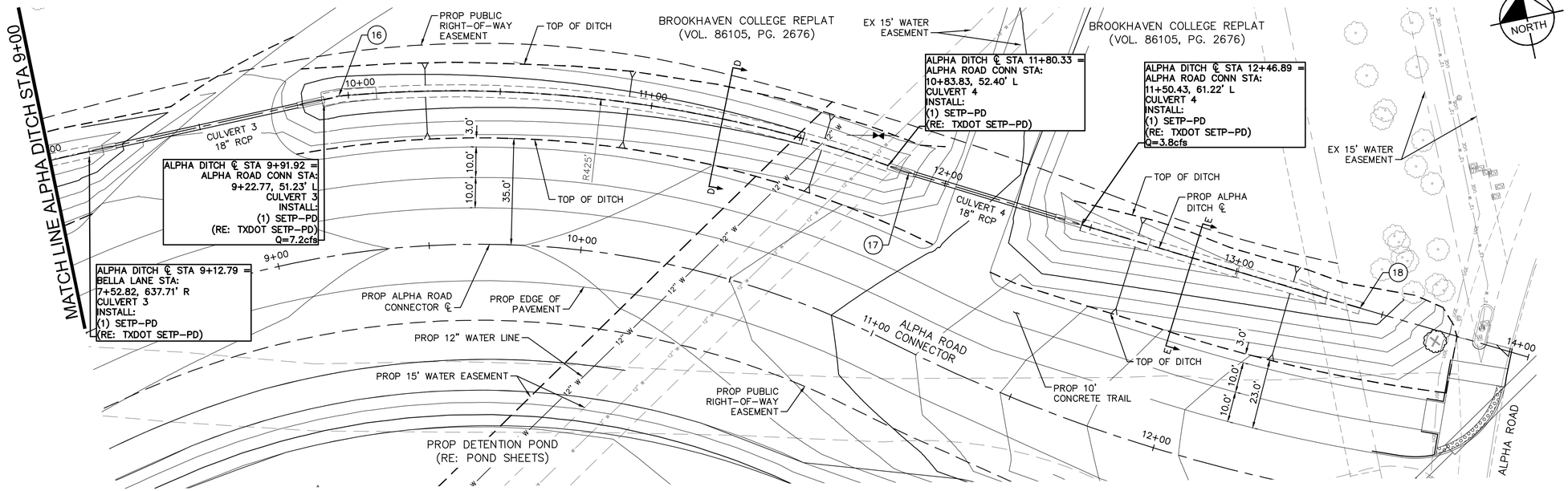
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

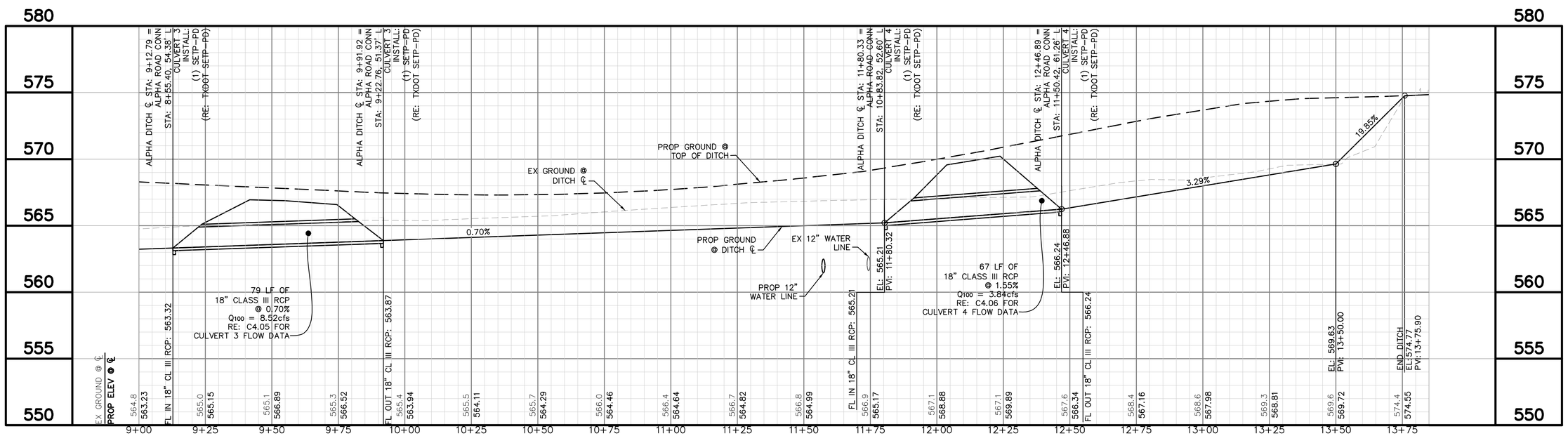
DRAINAGE
ALPHA DITCH
STA 5+00 TO STA 9+00

SHEET NUMBER
C4.10

Plotted By: Ghattadi, Cody September 08, 2021 - 09:04:15am K:\ARC-Civil\063543031-Addison Alpha Road Connector\CADD\Plan Sheets\Drainage Plan & Profile.dwg
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET
16	PC	ALPHA ROAD CONN	9+26.98	51.79' L
17	PT	ALPHA ROAD CONN	10+90.00	53.01' L
18	PI	ALPHA ROAD CONN	12+58.10	61.13' L



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PROJECT NO. 2021-01C/ BID NO. 21-69

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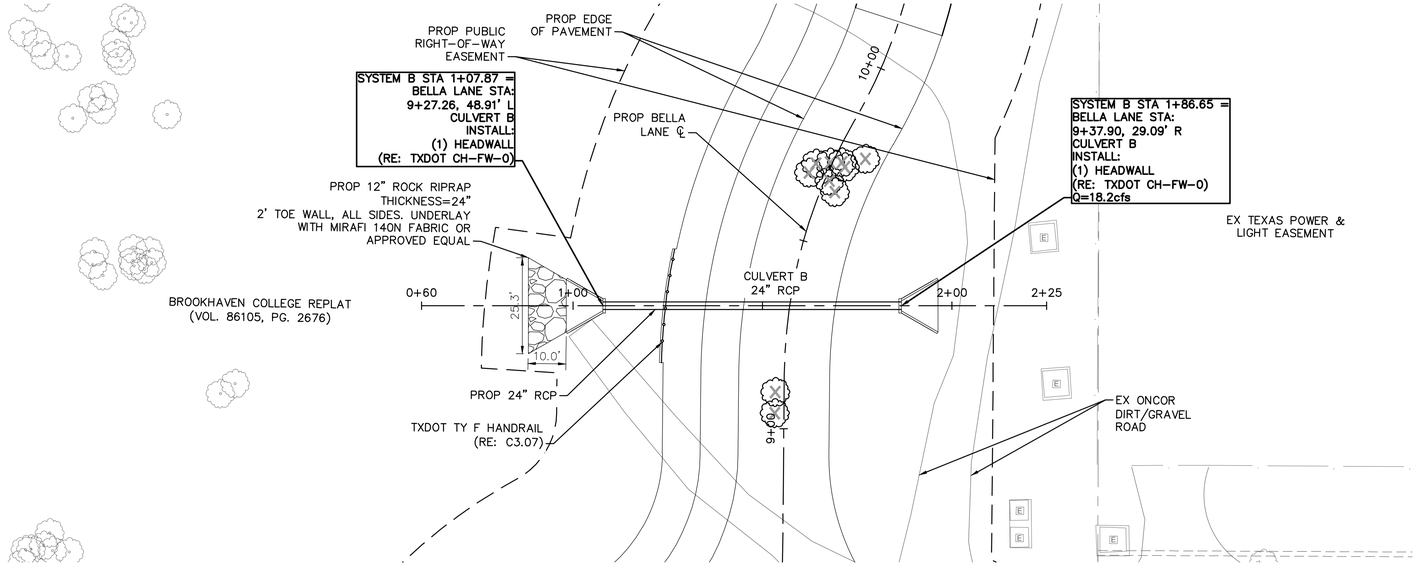
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

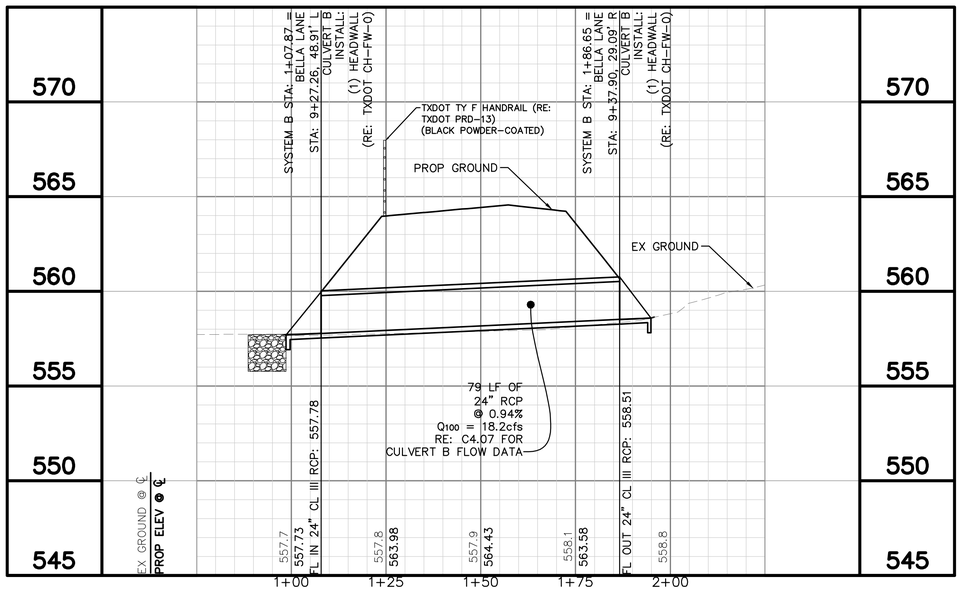
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE
ALPHA DITCH
STA 9+00 TO END

SHEET NUMBER
C4.11

Plotted By: Shettachi, Cody September 08, 2021 - 09:04:26pm K:\IVG_Civil\063543031 - Addison Alpha Road Connector\CAD\Pro-Sheets\Drainage Pro-Sheets\Pro-Sheet-Drainage
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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND
- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

No.	REVISIONS	DATE	BY

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KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

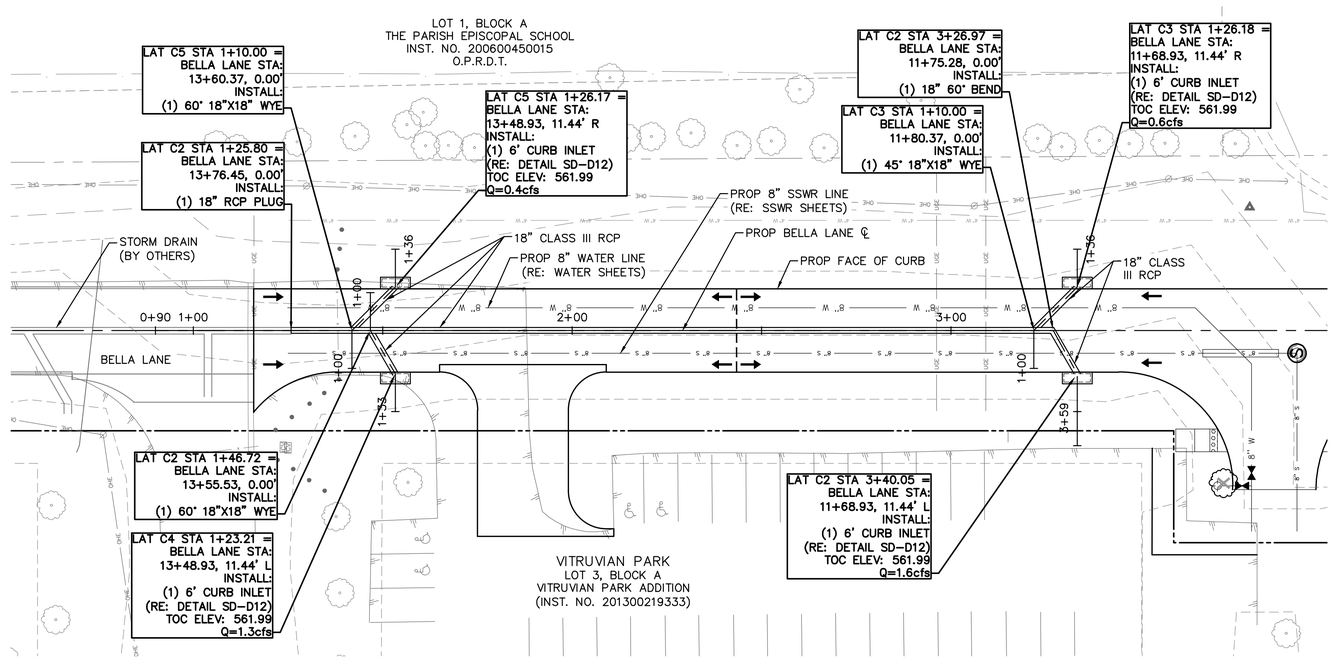
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

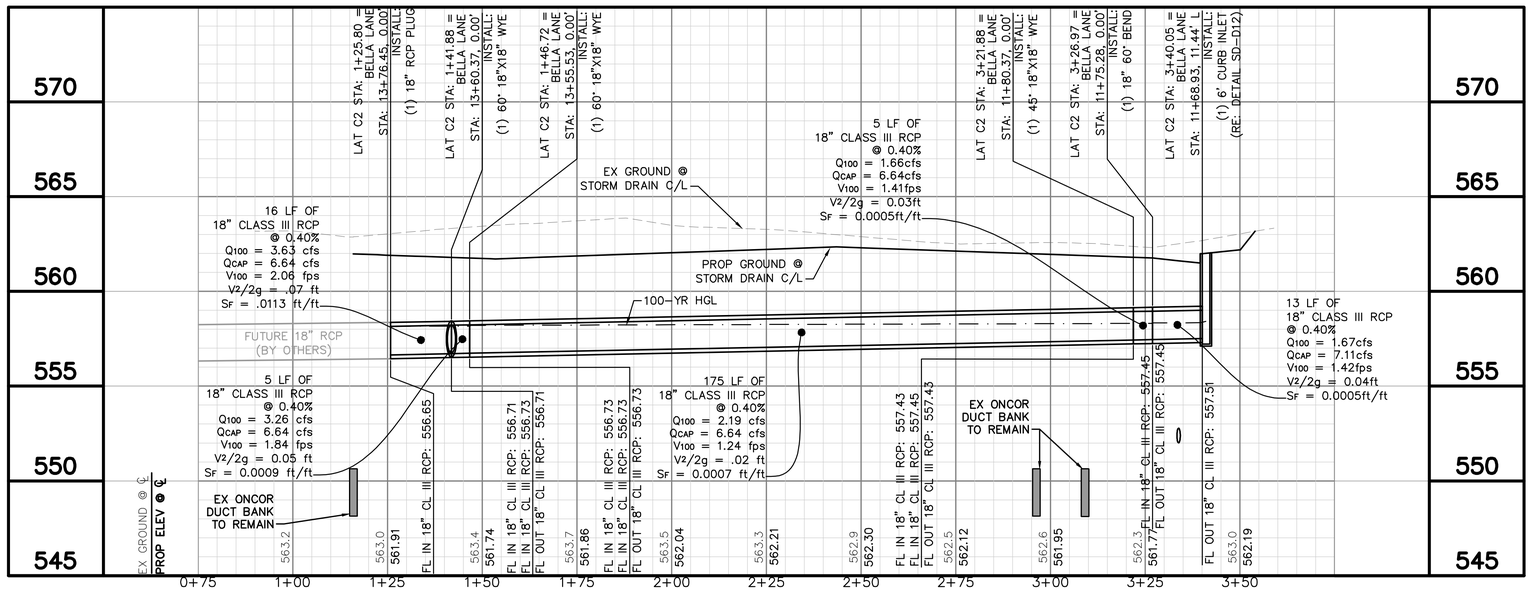
DRAINAGE
SYSTEM B
SHEET 1 OF 1

SHEET NUMBER
C4.12

811 Know what's below. Call before you dig.

Plotted By: Shettell, Cody September 09, 2021 01:37:27pm K:\I4S-Civil\063543031-Addison Alpha Rd Connector\C4001\PlanSheets\Drainage Plans\Drainage Plan-Flow.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND
- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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KHA PROJECT 063543031			
DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	
		DRAWN BY CDS	
		CHECKED BY LNA	

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

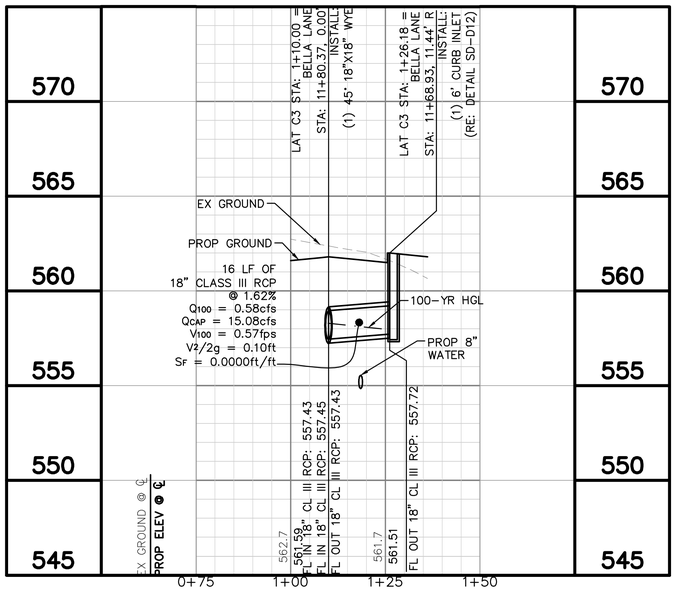
DRAINAGE SYSTEM C

SHEET NUMBER
C4.13

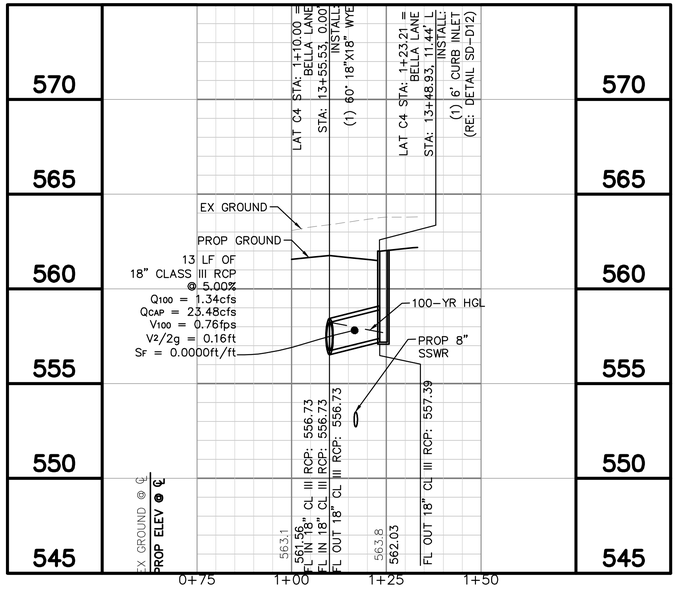
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Plotted By: Shettell, Cody September 08, 2021 09:04:42pm K:\NAC-Civil\063543031-Addison-Alpha Road Connect\C4D\Plan Sheets\Drainage Plan&Profile.dwg
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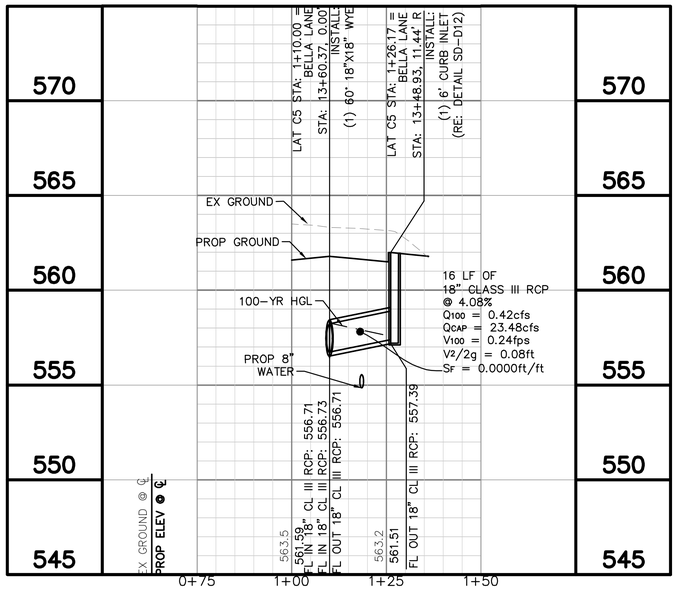
LAT C3



LAT C4



LAT C5



NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND
- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

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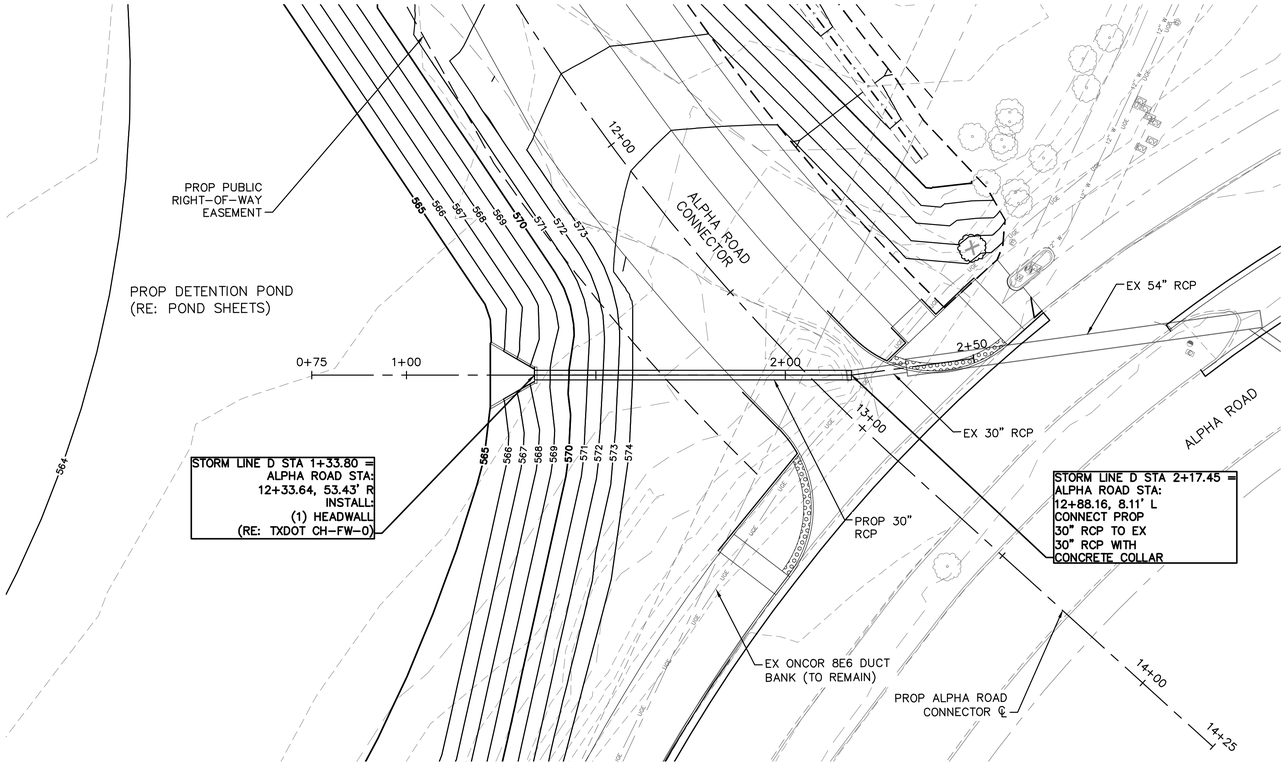
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

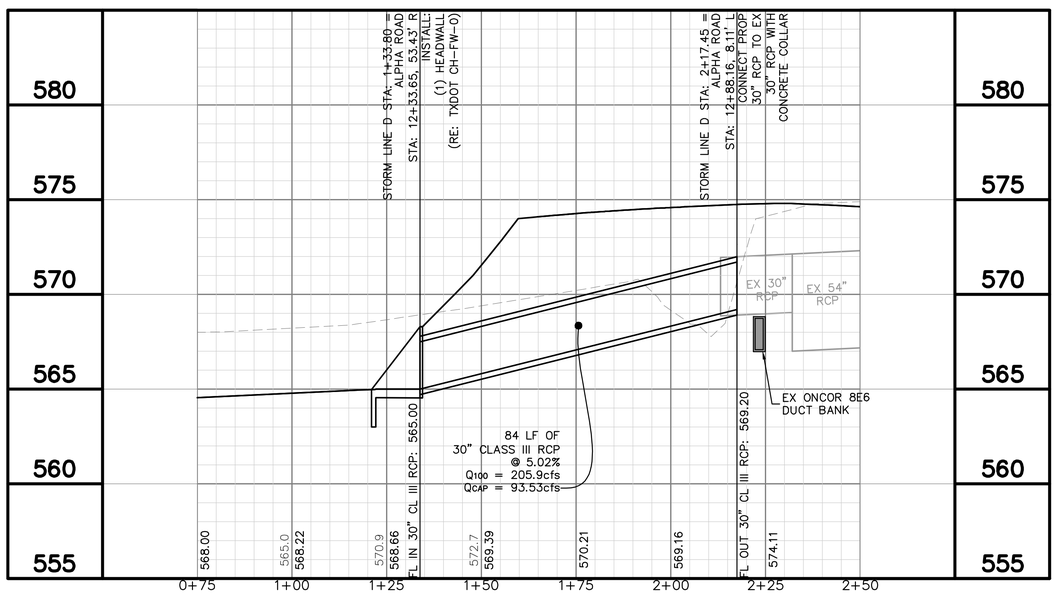
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

DRAINAGE
SYSTEM C LATERALS DRAINAGE

SHEET NUMBER
C4.14

Plotted By: Chatfield, Cody Saturday, September 04, 2021 09:41:08am K:\ALC_Civil\063543031_Addison Alpha Road Connect\CADD\Plan Sheets\Drainage Plan&Profile.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND
- EX ROW
- EX EASEMENT
- PROP EASEMENT
- PROP STORM DRAIN

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

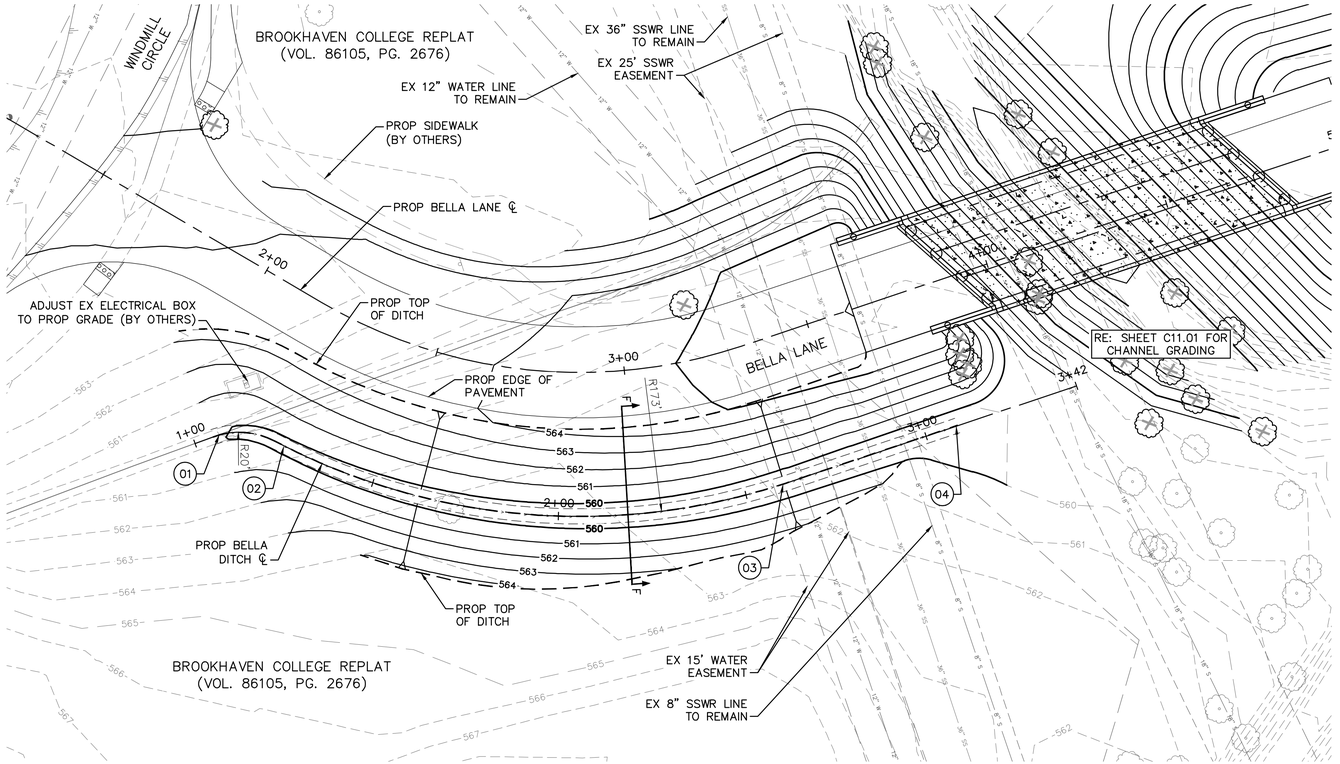
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

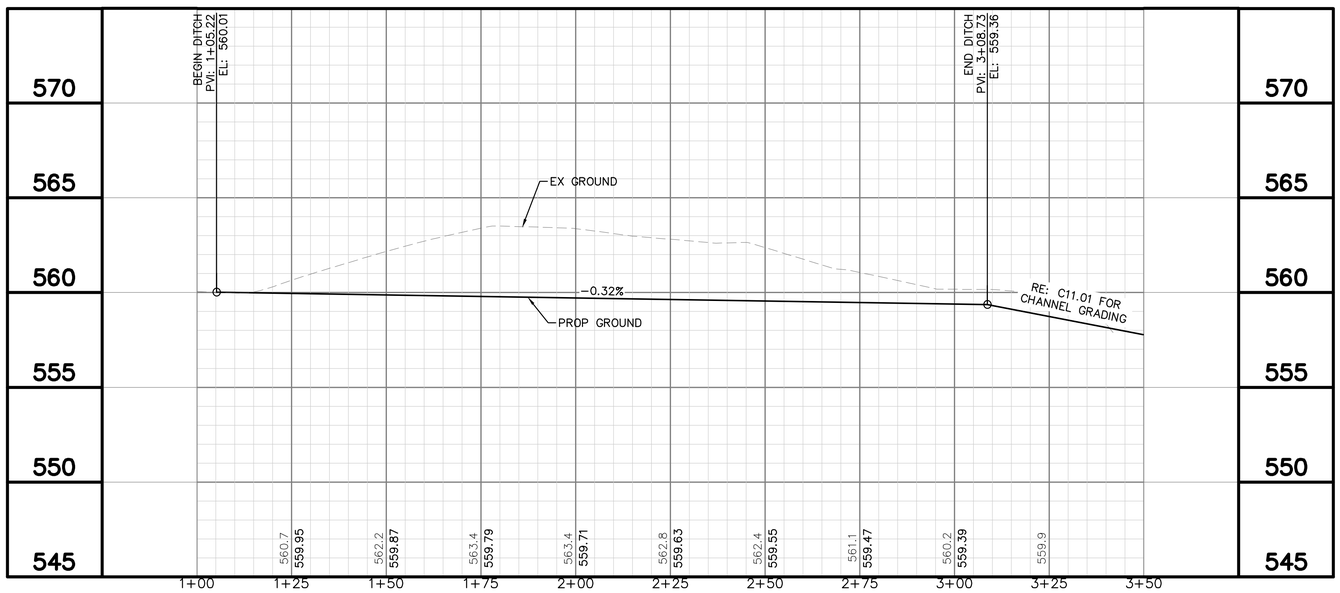
DRAINAGE SYSTEM D

SHEET NUMBER
C4.15

811
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POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	BEGIN–PC	BELLA LANE EXT	2+11.12	43.74' R	560.02'
02	PRC	BELLA LANE EXT	2+25.00	38.00' R	559.95'
03	PT	BELLA LANE EXT	3+30.85	38.00' R	559.52'
04	END	BELLA LANE EXT	3+78.78	38.00' R	559.36'

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND
- EX ROW
- EX EASEMENT
- PROP EASEMENT

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9/10/2021

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114242
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PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021
SCALE AS SHOWN	
DESIGNED BY RMD	
DRAWN BY CDS	
CHECKED BY LNA	

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

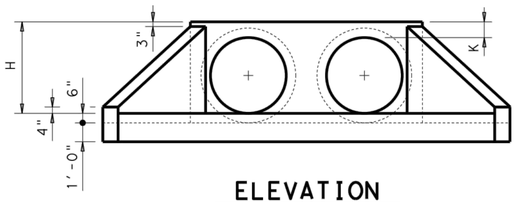
DRAINAGE
BELLA DITCH

SHEET NUMBER
C4.16

Plotted By: Dhatwell, Cody September 09, 2021 01:41:32pm K:\ADC_Civil\063543031 Addison Alpha Road Connector\2400\Plot Sheet\Drainage Plan&Prof-Bella Ditch.dwg
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TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (4)

SLOPE	DIA OF PIPE, D	Values for one Pipe						Values to be added for each addt'l Pipe		
		W	X	Y	L	Reinf (Lbs)	Conc (CY) (1)	X and W	Reinf (Lbs)	Conc (CY) (1)
2:1	12"	4'- 7 ½"	2'- 6"	2'-10"	3'- 3 ¼"	84	0.6	1'- 9"	20	0.2
	15"	5'- 5 ¾"	2'- 9 ½"	3'- 4"	3'-10 ¼"	99	0.7	2'- 2"	24	0.3
	18"	6'- 4 ¼"	3'- 1"	3'-10"	4'- 5"	120	0.9	2'- 8"	32	0.3
	21"	7'- 2 ¾"	3'- 4 ½"	4'- 4"	5'- 0"	137	1.1	3'- 1"	43	0.4
	24"	8'- 2 ½"	3'- 9 ½"	4'-10"	5'- 7"	158	1.3	3'- 7"	50	0.5
	27"	9'- 1"	4'- 1"	5'- 4"	6'- 2"	173	1.5	3'-11"	56	0.6
	30"	9'-11 ½"	4'- 4 ½"	5'-10"	6'- 8 ¾"	197	1.7	4'- 4"	65	0.8
	33"	10'-10"	4'- 8"	6'- 4"	7'- 3 ¾"	216	2.0	4'- 8"	71	0.9
	36"	11'- 8 ¼"	4'-11 ½"	6'-10"	7'-10 ¾"	241	2.2	5'- 1"	81	1.0
	42"	13'- 5 ¼"	5'- 6 ½"	7'-10"	9'- 0 ½"	290	2.8	5'-10"	97	1.3
	48"	15'- 9"	6'- 1 ½"	9'- 4"	10'- 9 ¼"	350	3.8	6'- 7"	117	1.7
	54"	17'- 5 ¾"	6'- 8 ½"	10'- 4"	11'-11 ¼"	415	4.5	7'- 6"	151	2.1
	60"	19'- 2 ¾"	7'- 3 ½"	11'- 4"	13'- 1"	469	5.3	8'- 3"	174	2.5
	66"	20'-11 ½"	7'-10 ½"	12'- 4"	14'- 3"	530	6.2	8'- 9"	194	2.9
	72"	22'- 8 ½"	8'- 5 ½"	13'- 4"	15'- 4 ¾"	587	7.1	9'- 4"	213	3.3
3:1	12"	6'- 3"	2'- 6"	4'- 3"	4'-11"	114	0.8	1'- 9"	22	0.2
	15"	7'- 5"	2'- 9 ½"	5'- 0"	5'- 9 ¼"	133	1.1	2'- 2"	28	0.3
	18"	8'- 6 ¾"	3'- 1"	5'- 9"	6'- 7 ¾"	166	1.3	2'- 8"	37	0.5
	21"	9'- 8 ¾"	3'- 4 ½"	6'- 6"	7'- 6"	189	1.6	3'- 1"	48	0.6
	24"	11'- 0"	3'- 9 ½"	7'- 3"	8'- 4 ½"	221	2.0	3'- 7"	58	0.7
	27"	12'- 2"	4'- 1"	8'- 0"	9'- 2 ¾"	245	2.3	3'-11"	67	0.8
	30"	13'- 4"	4'- 4 ½"	8'- 9"	10'- 1 ¼"	287	2.7	4'- 4"	77	1.0
	33"	14'- 5 ¾"	4'- 8"	9'- 6"	10'-11 ¾"	310	3.1	4'- 8"	84	1.2
	36"	15'- 7 ¾"	4'-11 ½"	10'- 3"	11'-10"	343	3.5	5'- 1"	96	1.4
	42"	17'-11 ½"	5'- 6 ½"	11'- 9"	13'- 6 ¾"	424	4.5	5'-10"	119	1.7
	48"	21'- 1 ¾"	6'- 1 ½"	14'- 0"	16'- 2"	527	6.1	6'- 7"	146	2.3
	54"	23'- 5 ½"	6'- 8 ½"	15'- 6"	17'-10 ¾"	618	7.3	7'- 6"	186	2.9
	60"	25'- 9 ¼"	7'- 3 ½"	17'- 0"	19'- 7 ½"	707	8.7	8'- 3"	219	3.4
	66"	28'- 1"	7'-10 ½"	18'- 6"	21'- 4 ¼"	797	10.1	8'- 9"	242	3.9
	72"	30'- 4 ¾"	8'- 5 ½"	20'- 0"	23'- 1 ¼"	910	11.7	9'- 4"	272	4.4
4:1	12"	7'-10 ¾"	2'- 6"	5'- 8"	6'- 6 ½"	144	1.1	1'- 9"	24	0.3
	15"	9'- 4"	2'- 9 ½"	6'- 8"	7'- 8 ½"	177	1.5	2'- 2"	32	0.4
	18"	10'- 9 ½"	3'- 1"	7'- 8"	8'-10 ¼"	217	1.9	2'- 8"	42	0.5
	21"	12'- 2 ¾"	3'- 4 ½"	8'- 8"	10'- 0"	254	2.3	3'- 1"	57	0.7
	24"	13'- 9 ½"	3'- 9 ½"	9'- 8"	11'- 2"	295	2.8	3'- 7"	67	0.9
	27"	15'- 3"	4'- 1"	10'- 8"	12'- 3 ¾"	328	3.3	3'-11"	77	1.0
	30"	16'- 8 ¼"	4'- 4 ½"	11'- 8"	13'- 5 ¾"	379	3.8	4'- 4"	89	1.3
	33"	18'- 1 ¾"	4'- 8"	12'- 8"	14'- 7 ½"	417	4.5	4'- 8"	101	1.4
	36"	19'- 7"	4'-11 ½"	13'- 8"	15'- 9 ¼"	464	5.1	5'-1"	115	1.7
	42"	22'- 5 ¾"	5'- 6 ½"	15'- 8"	18'- 1"	575	6.5	5'-10"	141	2.1
	48"	26'- 6 ¼"	6'- 1 ½"	18'- 8"	21'- 6 ¾"	720	8.9	6'- 7"	175	2.8
	54"	29'- 5"	6'- 8 ½"	20'- 8"	23'-10 ¼"	863	10.7	7'- 6"	226	3.6
	60"	32'- 3 ¾"	7'- 3 ½"	22'- 8"	26'- 2"	984	12.7	8'- 3"	264	4.3
	66"	35'- 2 ½"	7'-10 ½"	24'- 8"	28'- 5 ¾"	1126	14.9	8'- 9"	300	4.9
	72"	38'- 1 ¼"	8'- 5 ½"	26'- 8"	30'- 9 ½"	1283	17.3	9'- 4"	334	5.6
6:1	12"	11'- 2"	2'- 6"	8'- 6"	9'- 9 ¾"	220	1.9	1'- 9"	28	0.4
	15"	13'- 2 ¼"	2'- 9 ½"	10'- 0"	11'- 6 ½"	264	2.5	2'- 2"	37	0.5
	18"	15'- 2 ½"	3'- 1"	11'- 6"	13'- 3 ¼"	326	3.2	2'- 8"	50	0.7
	21"	17'- 2 ¾"	3'- 4 ½"	13'- 0"	15'- 0 ¼"	381	3.9	3'- 1"	69	0.9
	24"	19'- 4 ½"	3'- 9 ½"	14'- 6"	16'- 9"	447	4.8	3'- 7"	80	1.2
	27"	21'- 4 ¾"	4'- 1"	16'- 0"	18'- 5 ¾"	506	5.7	3'-11"	96	1.4
	30"	23'- 5 ¼"	4'- 4 ½"	17'- 6"	20'- 2 ½"	587	6.7	4'- 4"	110	1.7
	33"	25'- 5 ½"	4'- 8"	19'- 0"	21'-11 ¼"	667	7.8	4'- 8"	127	2.0
	36"	27'- 5 ¾"	4'-11 ½"	20'- 6"	23'- 8"	727	9.0	5'- 1"	144	2.3
	42"	31'- 6 ¼"	5'- 6 ½"	23'- 6"	27'- 1 ½"	914	11.5	5'-10"	179	3.0
	48"	37'- 3 ½"	6'- 1 ½"	28'- 0"	32'- 4"	1181	15.9	6'- 7"	231	4.0
	54"	41'- 4 ¼"	6'- 8 ½"	31'- 0"	35'- 9 ½"	1412	19.2	7'- 6"	300	5.0
	60"	45'- 4 ¾"	7'- 3 ½"	34'- 0"	39'- 3"	1619	22.9	8'- 3"	353	6.0



ELEVATION
Showing dimensions

(1) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

(2) For vehicle safety, curbs shall project no more than 3" above finished grade. Curb heights shall be reduced, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(3) Provide a 1'-0" footing as shown where required to maintain 4" Min cover for pipes.

(4) Quantities shown are for one structure end only (one headwall).

(5) Min Length = $6" + 3" \times \left(\frac{12 \times H - 7}{12 \times L}\right)$

Max Length = $12 \times H - 3" \times \left(\frac{12 \times H - 7}{12 \times L}\right) - 1"$

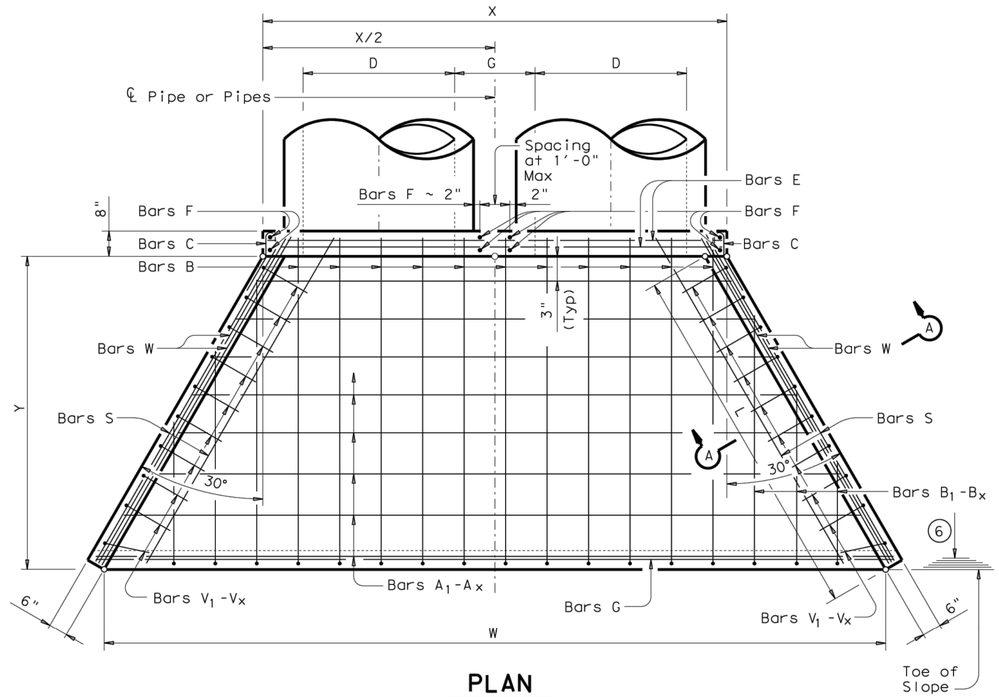
(6) Lengths of wings based on SL:1 Slope along this line.

TABLE OF REINFORCING STEEL (4)

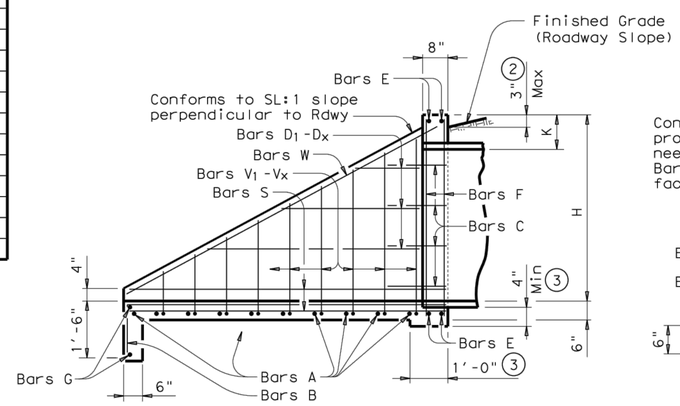
Bar	Size	Spa	No.
A	# 4	1'-0"	~
B	# 3	1'-6"	~
C	# 4	1'-0"	~
D	# 3	1'-0"	~
E	# 5	~	4
F	# 5	~	~
G	# 3	~	2
S	# 4	~	6
V	# 4	1'-0"	~
W	# 5	~	4

TABLE OF CONSTANT DIMENSIONS

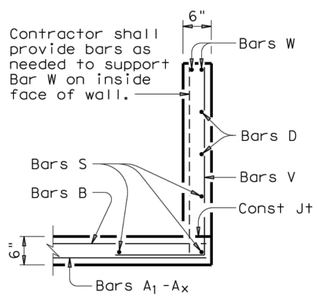
DIA OF PIPE, D	G	K	H
12"	9"	1'- 0"	2'- 0"
15"	11"	1'- 0"	2'- 3"
18"	1'- 2"	1'- 0"	2'- 6"
21"	1'- 4"	1'- 0"	2'- 9"
24"	1'- 7"	1'- 0"	3'- 0"
27"	1'- 8"	1'- 0"	3'- 3"
30"	1'-10"	1'- 0"	3'- 6"
33"	1'-11"	1'- 0"	3'- 9"
36"	2'- 1"	1'- 0"	4'- 0"
42"	2'- 4"	1'- 0"	4'- 6"
48"	2'- 7"	1'- 3"	5'- 3"
54"	3'- 0"	1'- 3"	5'- 9"
60"	3'- 3"	1'- 3"	6'- 3"
66"	3'- 3"	1'- 3"	6'- 9"
72"	3'- 4"	1'- 3"	7'- 3"



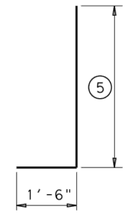
PLAN



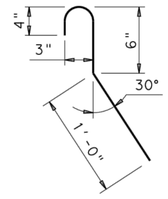
TYPICAL WING ELEVATION



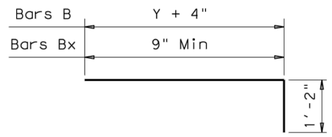
SECTION A-A



BARS V



BARS C
(2'-0" long)



BARS B & B_1-B_x

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.

No bridge rails of any type may be mounted directly to these culvert headwalls.

Texas Department of Transportation

Bridge Division Standard

CONCRETE HEADWALLS WITH FLARED WINGS FOR 0° SKEW PIPE CULVERTS

CH-FW-0

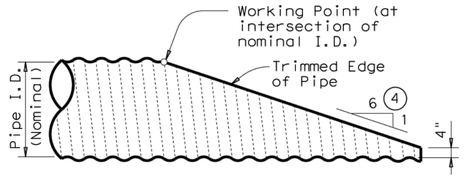
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©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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FILE:

DISCLAIMER:
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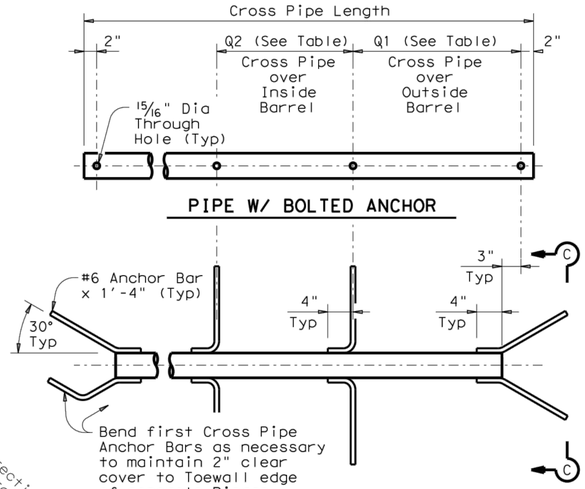
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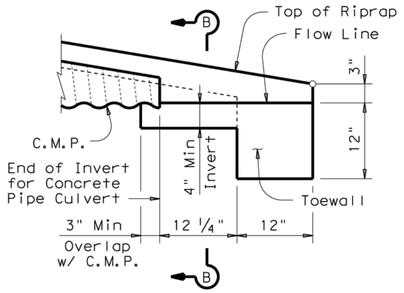
NOTE: All Cross Pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing Corrugated Metal Pipe Culvert.)
(Details at Concrete Pipe Culvert are similar.)

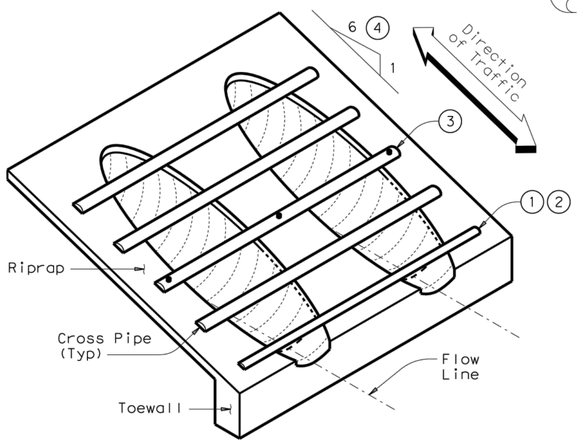


PIPE W/ BOLTED ANCHOR

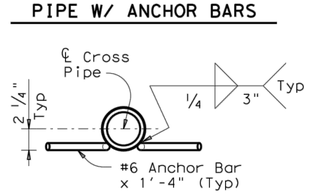


DETAIL "A"

(Showing Invert with Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Cross Pipes not shown for clarity.)



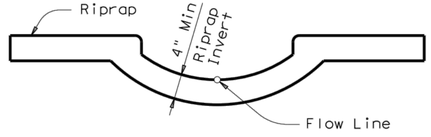
ISOMETRIC VIEW OF TYPICAL INSTALLATION



SECTION C-C

PIPE W/ ANCHOR BARS

CROSS PIPE DETAILS



SECTION B-B

(Cross Pipes not shown for clarity.)

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, & RIPRAP QUANTITIES (2)

Nominal Culvert I.D.	Conc Riprap (CY) (6)	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for use of Cross Pipes	Cross Pipe Size
12"	0.6	9"	N/A	2'- 1"	1'- 9"	3 or more Pipe Culverts	3" Std (3.500" O.D.)
15"	0.7	11"	N/A	2'- 5"	2'- 2"		
18"	0.8	1'- 2"	N/A	2'-10"	2'- 8"		
21"	0.9	1'- 4"	N/A	3'- 2"	3'- 1"		
24"	0.9	1'- 7"	N/A	3'- 6"	3'- 7"		
27"	1.0	1'- 8"	N/A	3'-10"	3'-11"	3 or more Pipe Culverts	3 1/2" Std (4.000" O.D.)
30"	1.1	1'-10"	N/A	4'- 2"	4'- 4"	2 or more Pipe Culverts	
33"	1.2	1'-11"	4'- 2"	4'- 5"	4'- 8"	All Pipe Culverts	
36"	1.3	2'- 1"	4'- 5"	4'- 9"	5'- 1"	All Pipe Culverts	4" Std (4.500" O.D.)
42"	1.5	2'- 4"	4'-11"	5'- 5"	5'-10"		
48"	1.7	2'- 7"	5'- 5"	6'- 0"	6'- 7"	All Pipe Culverts	5" Std (5.563" O.D.)
54"	2.0	3'- 0"	5'-11"	6'- 9"	7'- 6"		
60"	2.2	3'- 3"	6'- 5"	7'- 4"	8'- 3"		
66"	2.4	3'- 3"	6'-11"	7'-10"	8'- 9"		
72"	2.7	3'- 4"	7'- 5"	8'- 5"	9'- 4"		

(1) The proper installation of the first Cross Pipe is critical for vehicle safety. The top of the first Cross Pipe must be placed at no more than 6" above the flow line.

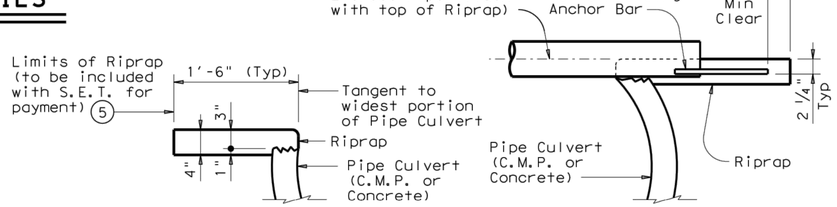
(2) Size of Cross Pipes, except the first bottom pipe, shall be as shown in the PIPE SIZE table. The first bottom pipe shall be 3 1/2" Standard Pipe (4" O.D.).

(3) The third Cross Pipe from the bottom of the Culvert shall always be installed using a bolted connection. Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, all other Cross Pipes may also be installed using the bolted connection details.

(4) Match Cross Slope as shown elsewhere in the plans. Cross Slope of 6:1 or flatter is required for vehicle safety.

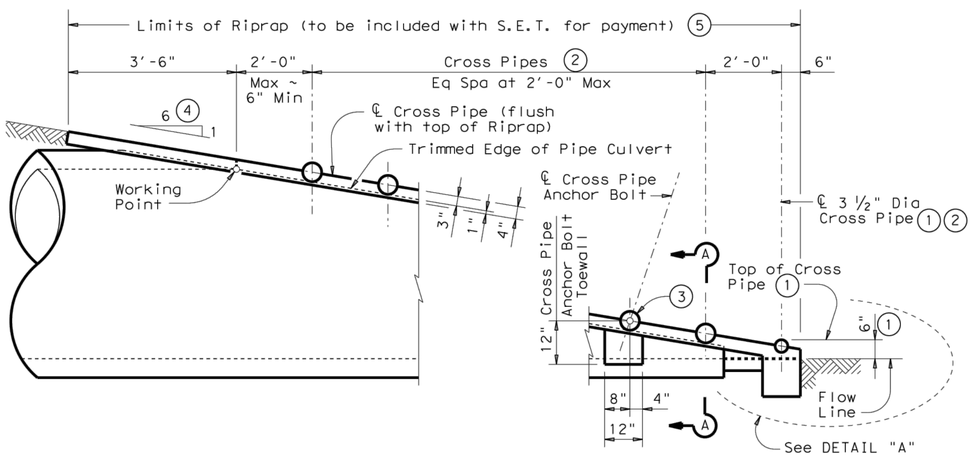
(5) Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

(6) Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple pipe culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.



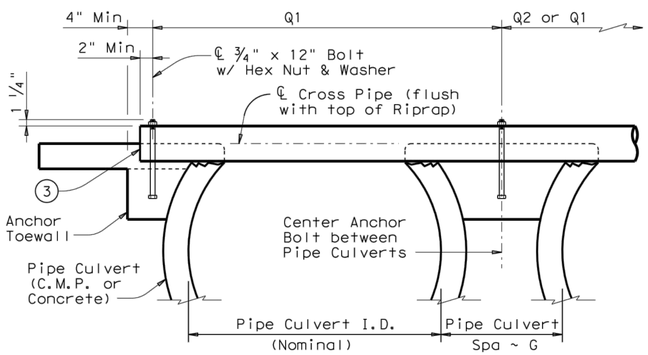
SHOWING TYPICAL PIPE CULVERT & RIPRAP

SHOWING CROSS PIPE WITH ANCHOR BAR



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert.)
(Details at Corrugated Metal Pipe Culvert are similar.)



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

GENERAL NOTES:

Cross Pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Cross Pipes.

Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap".

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Cross Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Bolts and nuts shall conform to ASTM A307.

All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 72" DIA
PIPE CULVERTS
TYPE II ~ PARALLEL DRAINAGE

SETP-PD

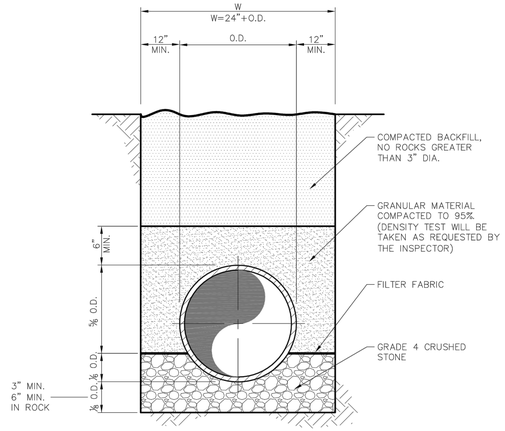
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©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-10: Add note for synthetic fibers.	DIST	COUNTY		SHEET NO.

Printed By:Shadbolt, Cody, September 08, 2021 09:05:28am K:\IAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Drainage Details.dwg
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STORM SEWER – GENERAL NOTES:

1. ALL CONCRETE DRAINAGE STRUCTURES SHALL BE CLASS C CONCRETE MINIMUM.
2. ALL CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE (GRADE 4).
3. ALL FIELD JOINTS WILL BE APPROVED BY THE TOWN ENGINEER IF NECESSARY. FIELD JOINTS SHALL BE WIPED ON THE INSIDE AND OUTSIDE TO PROVIDE FOR SMOOTH FLOW OF WATER.
4. RAMNECK COMPOUND OR APPROVED EQUAL SHALL BE USED FOR JOINT SEALS.
5. ALL STORM SEWER PIPE SHALL BE CAMERA INSPECTED AFTER THE INSTALLATION OF ALL PAVING AND UTILITIES AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

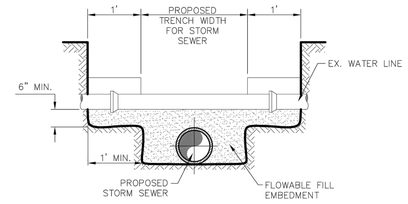
Addison! PUBLIC WORKS DEPARTMENT | STORM SEWER GENERAL NOTES | STANDARD CONSTRUCTION DETAILS STORM DRAINAGE | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD-001



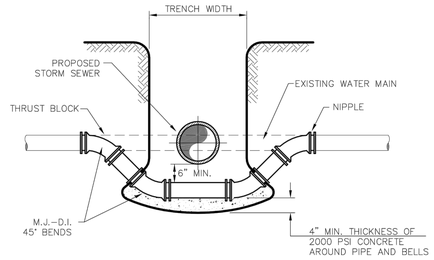
RCP STORM SEWER PIPE BEDDING
NTS

NOTE:
1. THE DEPTH OF TRENCH BELOW THE PROPOSED CONDUIT SHALL BE AS FOLLOWS:
   – 3" MIN. FOR 27" PIPE & SMALLER.
   – 4" MIN. FOR 30" TO 60" PIPE.
   – 6" MIN. FOR 66" PIPE OR LARGER.

Addison! PUBLIC WORKS DEPARTMENT | RCP STORM SEWER PIPE BEDDING | STANDARD CONSTRUCTION DETAILS STORM DRAINAGE | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD-003



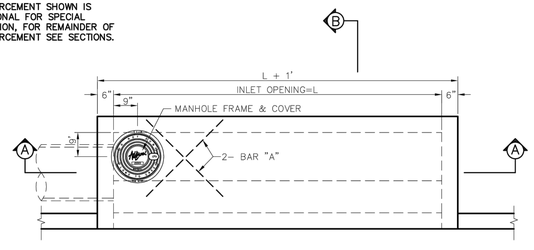
UTILITY SUPPORT DETAIL
NTS



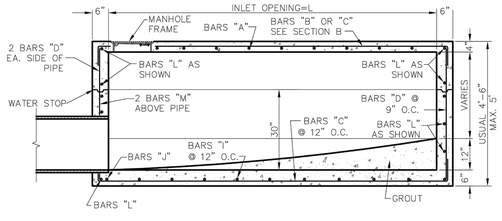
WATER MAIN LOWERING DETAIL
NTS

Addison! PUBLIC WORKS DEPARTMENT | WATER MAIN LOWERING & UTILITY SUPPORT DETAILS | STANDARD CONSTRUCTION DETAILS STORM DRAINAGE | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD-004

NOTE:
REINFORCEMENT SHOWN IS ADDITIONAL FOR SPECIAL CONDITION, FOR REMAINDER OF REINFORCEMENT SEE SECTIONS.

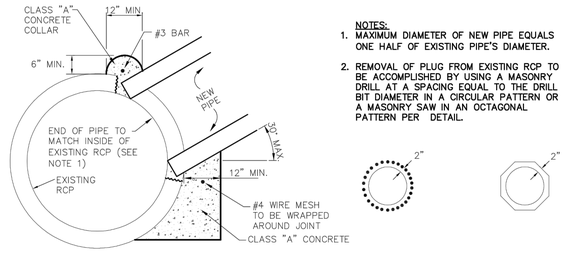


PLAN–STANDARD INLET
NTS



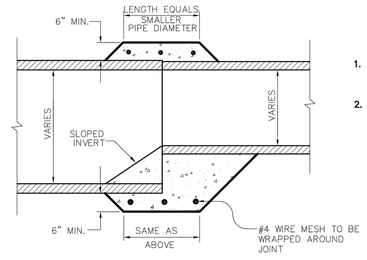
SECTION A
NTS

Addison! PUBLIC WORKS DEPARTMENT | STANDARD CURB INLET 4, 6, 8 & 10 FOOT INLETS | STANDARD CONSTRUCTION DETAILS STORM DRAINAGE | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD-012



NOTES:
1. MAXIMUM DIAMETER OF NEW PIPE EQUALS ONE HALF OF EXISTING PIPE'S DIAMETER.
2. REMOVAL OF PLUG FROM EXISTING RCP TO BE ACCOMPLISHED BY USING A MASONRY DRILL AT A SPACING EQUAL TO THE DRILL BIT DIAMETER IN A CIRCULAR PATTERN OR A MASONRY SAW IN AN OCTAGONAL PATTERN PER DETAIL.

CONNECTION TO EXISTING RCP STORM DRAIN
NTS



NOTES:
1. THIS PROCEDURE/DETAIL WILL ONLY BE USED WHEN A PREFAB REDUCTION IS NOT POSSIBLE.
2. CONCRETE SHALL BE CLASS A.

PIPE COLLAR
NTS

Addison! PUBLIC WORKS DEPARTMENT | CONNECTION TO EXISTING RCP STORM DRAIN PIPE COLLAR | STANDARD CONSTRUCTION DETAILS STORM DRAINAGE | DATE: AUGUST, 2010 | REV DATE: – | SHEET : SD-005

Know what's **below.** **Call** before you dig.

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PROJECT NO. 2021-01C/ BID NO. 21-69

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9/10/2021

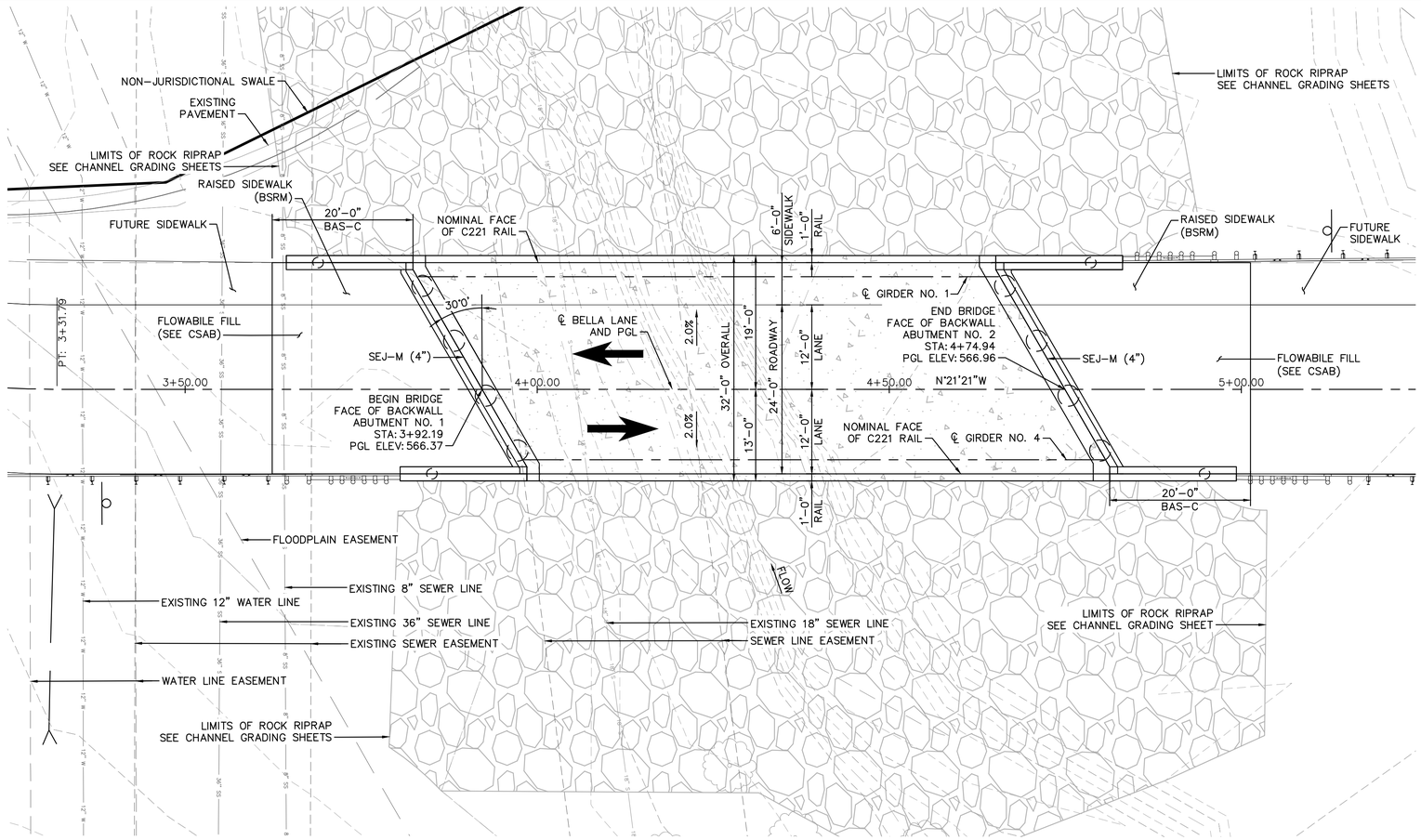
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

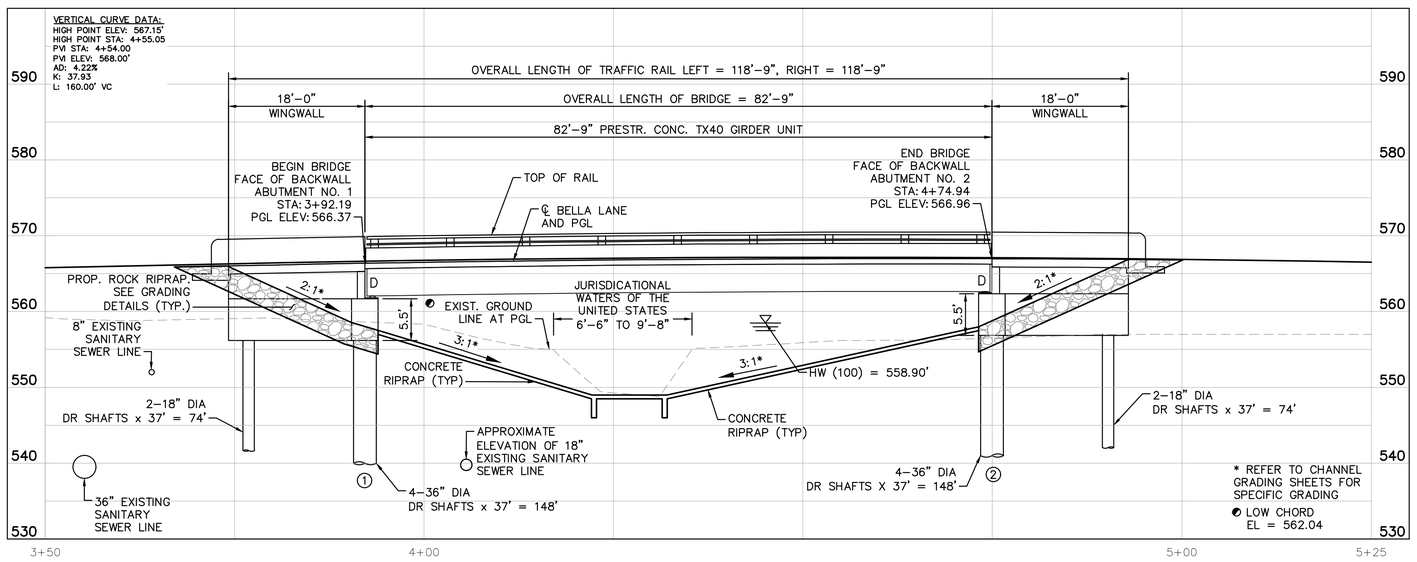
DRAINAGE
STANDARD DETAILS
TOWN OF ADDISON

SHEET NUMBER
C4.19



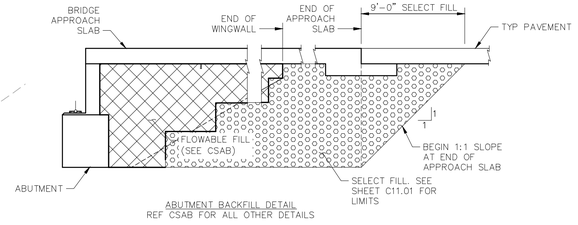
PLAN

SCALE: 1" = 10'-0"

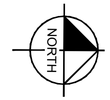


BRIDGE ELEVATION

SCALE: 1" = 10'-0"



ABUTMENT BACKFILL DETAIL
REF CSAB FOR ALL OTHER DETAILS



GRAPHIC SCALE IN FEET
0 5 10 20

NOTES
1. BRIDGE DESIGNED FOR HL93 LOADING UNDER 2017 AASHTO LRFD SPECIFICATIONS AND INTERIM REVISIONS THERETO.
2. ALL DIMENSIONS ARE HORIZONTAL AND MUST BE ADJUSTED FOR GRADE AND CROSS SLOPE.
3. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL LOCATE AND VERIFY ELEVATIONS OF UTILITIES PRIOR TO ANY DRILLING OR EXCAVATION. CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
5. REFER TO GEOTECHNICAL ENGINEERING REPORT PROJECT NUMBER 20212439.001A DATED DECEMBER 2,2020 BY KLEINFELDER. CONTRACTOR SHALL REVIEW ALL RECOMMENDATIONS INCLUDED IN THIS REPORT AND FOLLOW STATED RECOMMENDATIONS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
6. EXTEND DRILLED SHAFTS TO THE LENGTH SHOWN OR DEEPER AS NECESSARY TO OBTAIN A MINIMUM PENETRATION OF TWELVE (12) FEET INTO THE BEARING STRATA.
7. BEARING CONDITIONS:
   D = DOWEL

FULLY-DEVELOPED HYDRAULIC DATA
UPSTREAM BRIDGE FACE

EXISTING:	PROPOSED:
Q(100) = 1665 CFS	Q(100) = 1665 CFS
HW(100) = 559.19'	HW(100) = 558.90'
V(100) = 5.42 FPS	V(100) = 4.52 FPS

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TEXAS REGISTERED ENGINEERING FIRM #F-928

STATE OF TEXAS
BRIAN J. LAFOY
89363
LICENSED PROFESSIONAL ENGINEER
09/10/2021

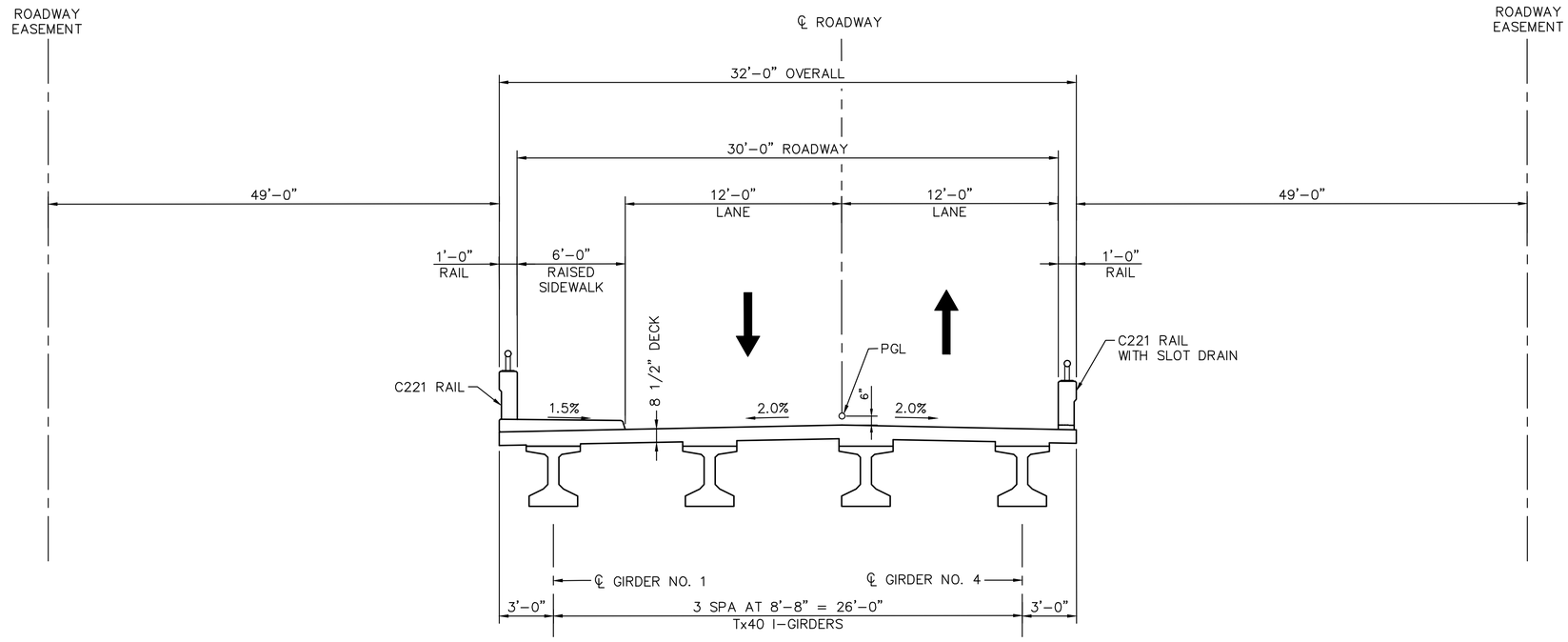
KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY BCS
		DRAWN BY AT/TLS	CHECKED BY BJL

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

STRUCTURAL
BRIDGE LAYOUT
PLAN & PROFILE

SHEET NUMBER
C5.01

Plotted By:Turabi, Abuzar, September 10, 2021 08:18:57am K:\IAC-Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Structures_Bridge Layout.dwg
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TYPICAL SECTION

SCALE: 3" = 1'–0"

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STATE OF TEXAS
BRIAN J. LAFOY
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PROFESSIONAL ENGINEER
09/10/2021

KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	BCS
DRAWN BY	AT/TLS
CHECKED BY	BJL

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

STRUCTURAL TYPICAL SECTION

SHEET NUMBER
C5.02

Plotted By: Turabi, Abuzar September 10, 2021 08:19:00am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\C-ADD\PlanSheets\Structures\C_Typical Section.dwg
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ITEM NO.	401	416	416	420	422	422	425	450	434	442	454	422
DESC. CODE	6001	6001	6004	6014	6002	6016	6039	6011	6002	6008	6018	6014
DESCRIPTION	FLOWABLE BACKFILL	DRILL SHAFT (18 IN)	DRILL SHAFT (36 IN)	CL C CONC (ABUT) (HPC)	REINF CONC SLAB (HPC)	APPROACH SLAB (HPC)	PRESTR CONC GIRDER (TX40)	RAIL (TY T221) (HPC)	ELASTOMERIC BEARING (LAMINATED)	STR STEEL (MISCELLANEOUS BRIDGE) (BS-EJCP)	SEALED EXPANSION JOINT (4 IN) (SEJ-M)	BRIDGE SIDEWALK (HPC)
	CY	LF	LF	CY	SF	CY	LF	LF	EA	LB	LF	SF
ABUTMENTS	443	148	296	99.3		83		237.6	8	186	50.4	490
82.75' PRESTR CONC Tx40 I-GIRDER UNIT					2,648		329.0					
TOTAL	443	148	296	99.3	2,648	83	329.0	237.6	8	186	50.4	490

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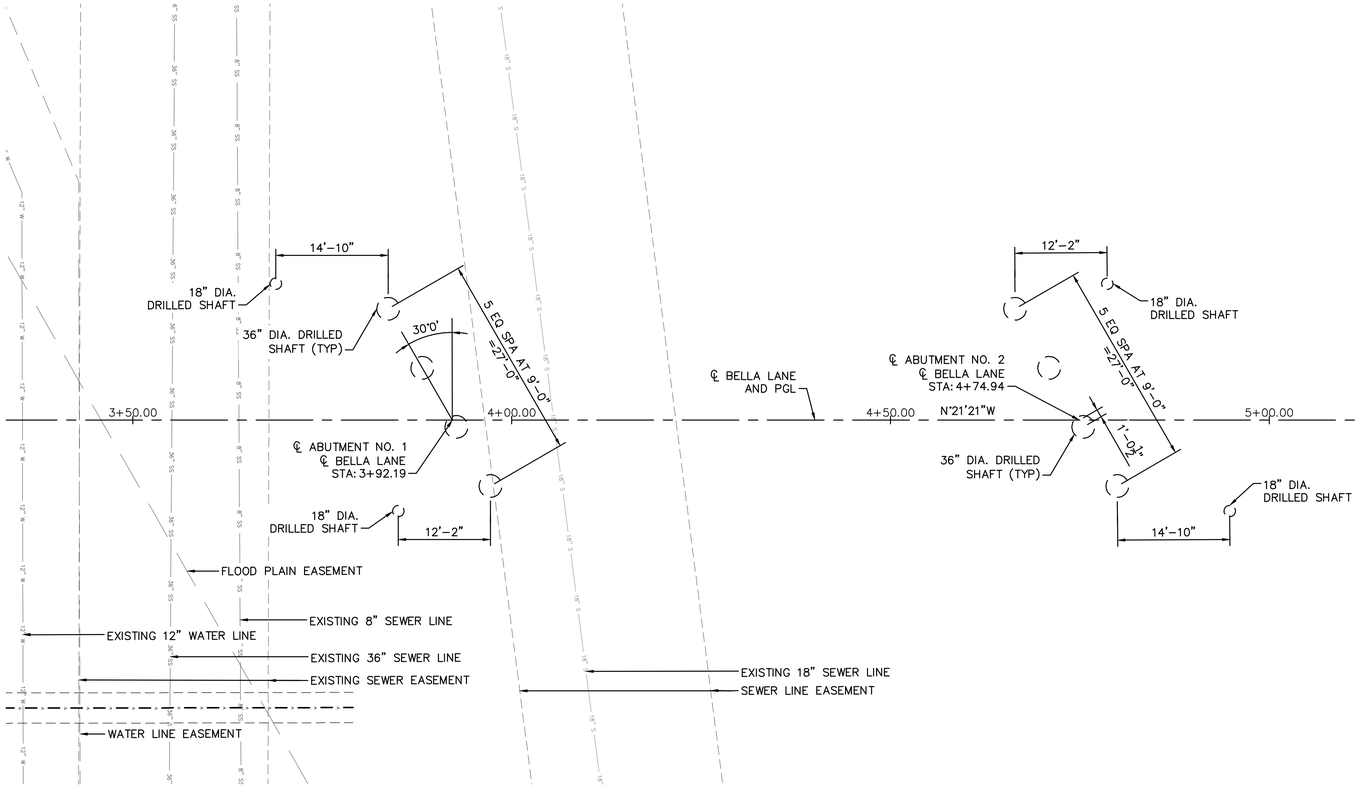
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	BCS
DRAWN BY	AT/TLS
CHECKED BY	BJL

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

STRUCTURAL ESTIMATED QUANTITIES

SHEET NUMBER
C5.03

Plotted By: Turabi, Abuzar September 10, 2021 08:19:02am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Structures\3_Estimated Bridge Quantities.dwg
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PLAN

SCALE: 1" = 10'-0"



GRAPHIC SCALE IN FEET

0 5 10 20

NOTES

1. SEE BRIDGE LAYOUT FOR DRILLED SHAFT LENGTHS.
2. SEE FOUNDATION DETAIL STANDARD SHEET FD FOR FOUNDATION DETAILS AND NOTES.

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No.	REVISIONS	DATE	BY

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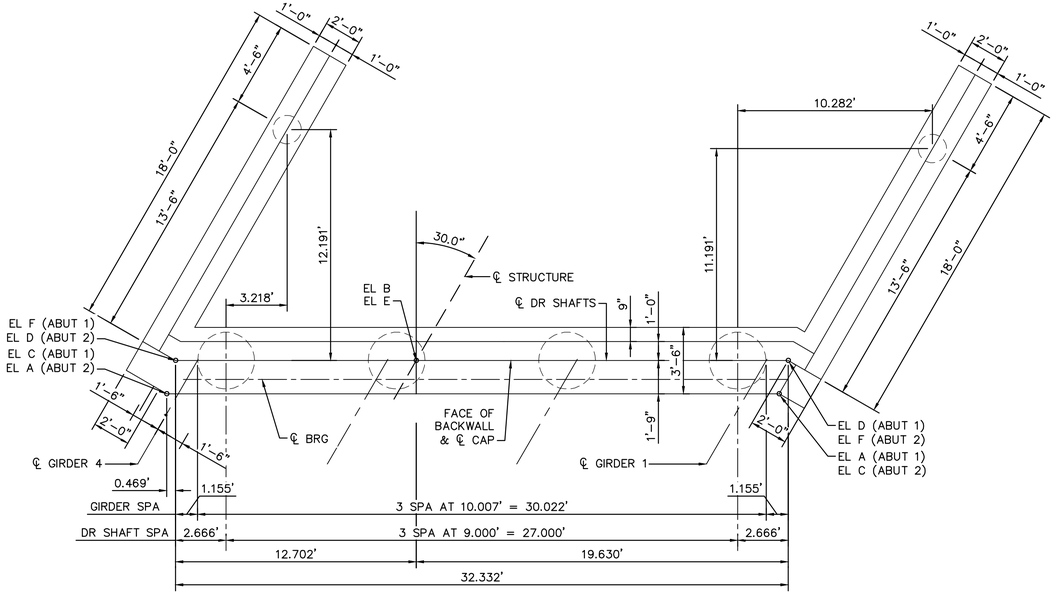
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	BCS
DRAWN BY	AT/TLS
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TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

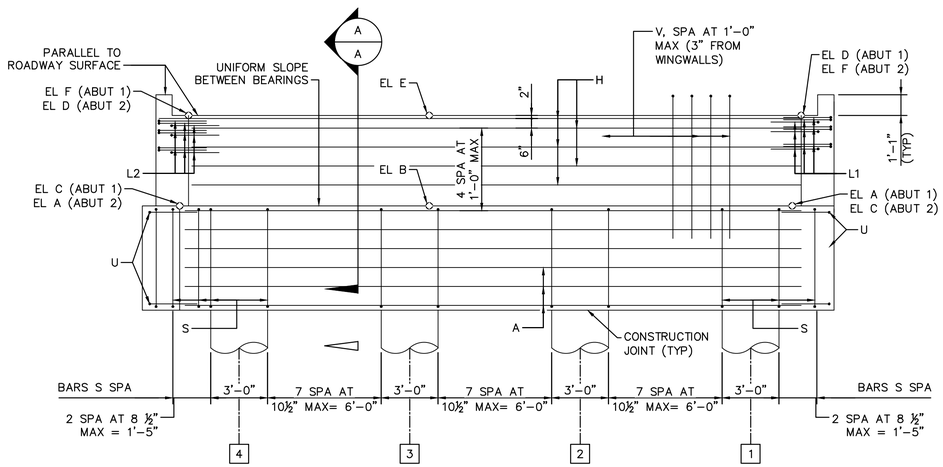
STRUCTURAL FOUNDATION LAYOUT

SHEET NUMBER
C5.04

Plotted By: Turabi, Abuzar September 10, 2021 08:19:05am K:\JAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Structures\4_Foundation Plan.dwg
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PLAN
(ABUTMENT 1 LOOKING BACKSTATION)
(ABUTMENT 8 OPPOSITE-HAND, LOOKING UPSTATION)



ELEVATION
(ABUTMENT 1 LOOKING BACKSTATION)
(ABUTMENT 8 OPPOSITE-HAND, LOOKING UPSTATION)

BEARING SEAT ELEVATIONS				
	GRDR 1	GRDR 2	GRDR 3	GRDR 4
ABUT 1 (FWD)	561.610'	561.874'	562.077'	561.981'
ABUT 2 (BK)	562.260'	562.418'	562.515'	562.313'

CONTROL ELEVATIONS						
	TOP OF CAP			TOP OF BACKWALL		
	EL A	EL B	EL C	EL D	EL E	EL F
ABUT 1	561.430'	561.948'	561.826'	565.105'	565.552'	565.411'
ABUT 2	562.104'	562.414'	562.157'	565.060'	566.018'	565.820'

GENERAL NOTES:

1. BRIDGE DESIGNED FOR HL93 LOADING UNDER 2017 AASHTO LRFD SPECIFICATIONS AND INTERIM REVISIONS THERETO.
2. SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE, AND LENGTH.
3. SEE TxDOT STANDARD SHEET, COMMON FOUNDATION DETAILS (FD), FOR ALL FOUNDATION DETAILS AND NOTES.
4. SEE TxDOT STANDARD SHEET, CONCRETE RIPRAP (CRR), FOR RIPRAP ATTACHMENT DETAILS.
5. SEE TxDOT STANDARD SHEET, SHEAR KEY (IGSK), FOR ALL SHEAR KEY DETAILS AND NOTES.
6. SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
7. SHAFT LOAD = 102 TONS/SHAFT.

COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.

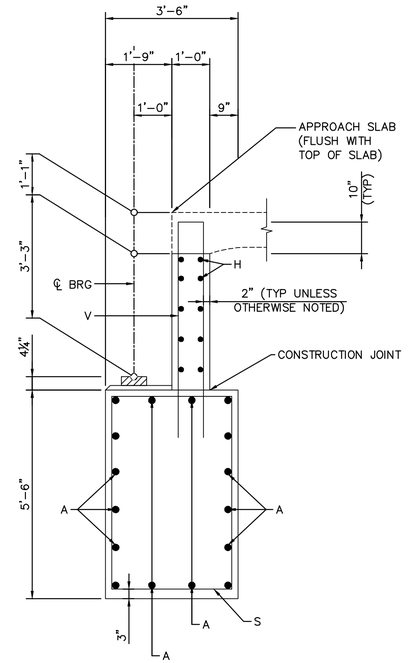
REINFORCING BAR DIMENSIONS SHOWN ARE OUT-TO-OUT OF BAR.

MATERIAL NOTES:

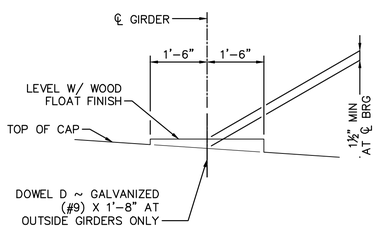
PROVIDE CLASS C (HPC) CONCRETE (f'c = 3600 psi).
PROVIDE GRADE 60 REINFORCING STEEL.
DRILLED SHAFT CONCRETE SHALL BE SULFATE-RESISTANT PER TXDOT SPEC. 421.4.A.1.

NOTES:

① INCREASE AS REQUIRED TO MAINTAIN 3" FROM FINISHED GRADE.



SECTION A-A



BEARING SEAT DETAIL
(BEARING SURFACE MUST BE CLEAN
AND FREE OF ALL LOOSE MATERIAL
BEFORE PLACING BEARING PAD)

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No.	REVISIONS	DATE	BY

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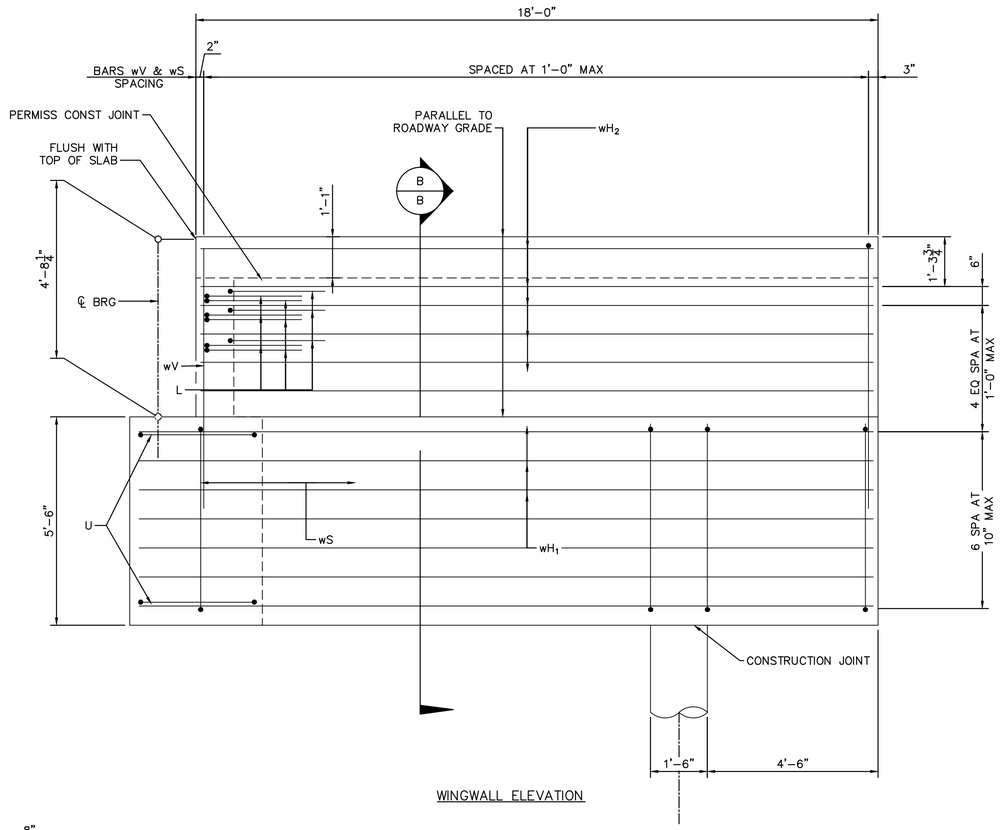
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY BCS
DRAWN BY AT/TLS
CHECKED BY BJL

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

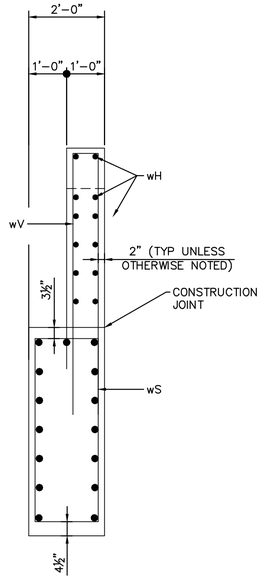
STRUCTURAL
ABUTMENT DETAILS
SHEET 1 OF 2

SHEET NUMBER
C5.05

Plotted By: Turabi, Abuzar, September 10, 2021 - 08:19:07am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Structures\S_Abutment Details.dwg
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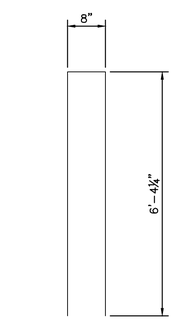
WINGWALL ELEVATION



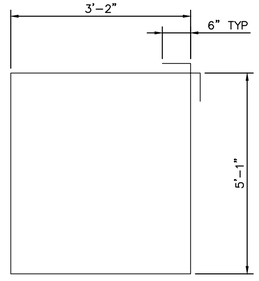
SECTION B-B

TABLE OF ESTIMATED QUANTITIES (QUANTITIES SHOWN ARE FOR ONE ABUTMENT)				
BAR	NO.	SIZE	LENGTH	WEIGHT
A	16	#11	32'-4"	2,749
H	10	#6	32'-4"	486
L1	9	#6	5'-11"	80
L2	9	#6	5'-9"	78
S	30	#5	11'-6"	360
U	4	#6	11'-7"	70
V	35	#5	13'-4"	493
wH1	14	#6	19'-5"	408
wH2	24	#6	17'-8"	637
wS	38	#4	7'-10"	199
wV	38	#5	13'-4"	528
REINFORCING STEEL *			LB	6,007
CLASS "C" (HPC) CONCRETE			CY	28.6

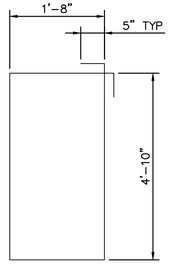
* FOR CONTRACTOR'S INFORMATION ONLY



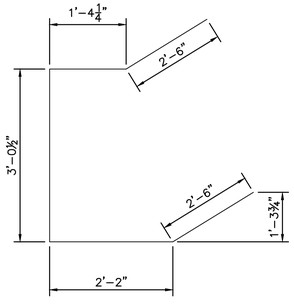
BARS V AND wV



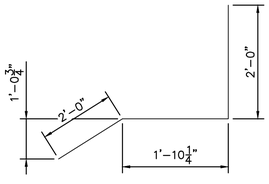
BARS S



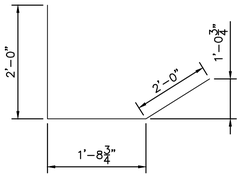
BARS wS



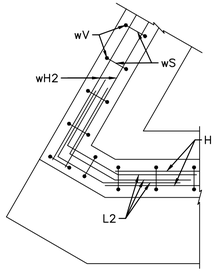
BARS U

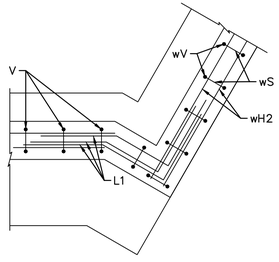


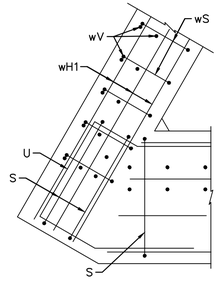
BARS L1

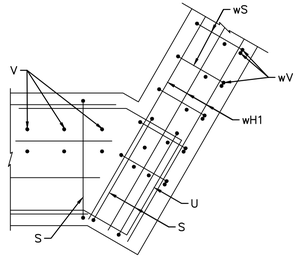


BARS L2









BACKWALL

CAP

CORNER DETAILS

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TEXAS REGISTERED ENGINEERING FIRM #F-928

STATE OF TEXAS
BRIAN J. LAFOY
89363
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PROFESSIONAL ENGINEER
09/10/2021

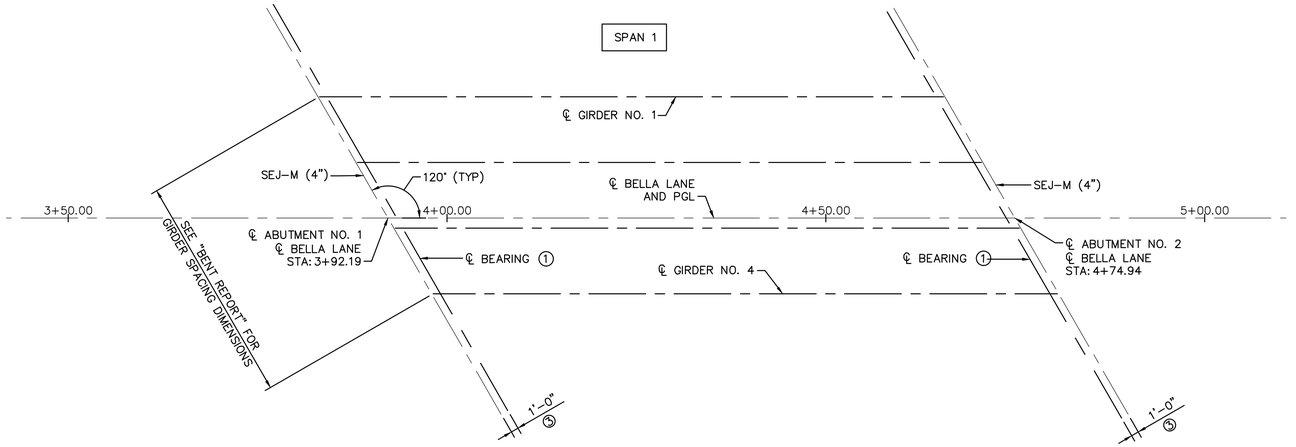
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	BCS
DRAWN BY	AT/TLS
CHECKED BY	BJL

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

STRUCTURAL
ABUTMENT DETAILS
SHEET 2 OF 2

SHEET NUMBER
C5.06

Plotted By: Turabi, Abuzar September 10, 2021 08:19:09am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Structures\S_Abutment Details.dwg
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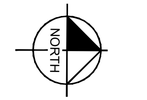
PLAN
SCALE: 1" = 10'-0"

BENT REPORT
BENT NO. 1 (S 59 38 39.36 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 18.475 L

			BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 1	BEAM	1	0.000	60	0	0
	BEAM	2	10.007	60	0	0
	BEAM	3	10.007	60	0	0
	BEAM	4	10.007	60	0	0
			TOTAL 30.022			

BENT REPORT
BENT NO. 2 (S 59 38 39.36 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 18.475 L

			BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 1	BEAM	1	0.000	60	0	0
	BEAM	2	10.007	60	0	0
	BEAM	3	10.007	60	0	0
	BEAM	4	10.007	60	0	0
			TOTAL 30.022			



NOTES

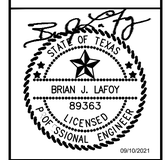
1. SEE IGEB FOR BEARING & GIRDER END DETAILS
2. BEAM LENGTHS SHOWN ARE BOTTOM OF BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.
3. MEASURED 60° PERPENDICULAR TO FACE OF BACKWALL. SEE IGEB STNADARD FOR ADDITIONAL INFORMATION.

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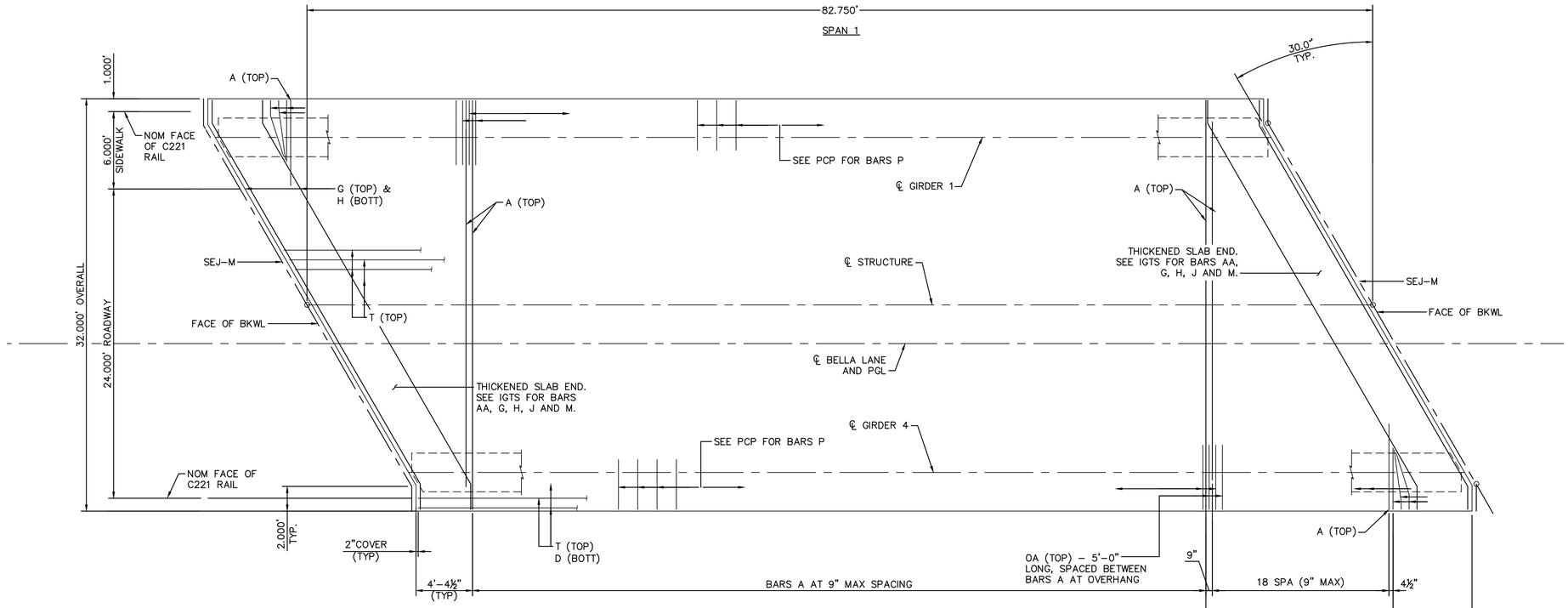
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	BCS
DRAWN BY	AT/TLS
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TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

STRUCTURAL
FRAMING PLAN

SHEET NUMBER
C5.07

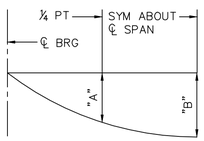
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PLAN

NORTH

GRAPHIC SCALE IN FEET
0 2.5 5 10



DEAD LOAD DEFLECTION DIAGRAM

CALCULATED DEFLECTIONS SHOWN ARE DUE TO THE CONCRETE SLAB ONLY (Ec = 5000 KSI). ADJUST VALUES AS REQUIRED FOR EXTERIOR GIRDERS AND IF OPTIONAL SLAB FORMING IS USED. THESE VALUES MAY REQUIRE FIELD VERIFICATION.

DEAD LOAD DEFLECTION TABLE		
	"A"	"B"
	FT	FT
SPAN 1	0.040	0.057

BAR TABLE	
BAR	SIZE
A	#4
AA	#5
D	#4
G	#4
H	#4
J	#4
K	#4
M	#4
OA	#5
P	#4
T	#4

TABLE OF ESTIMATED QUANTITIES			
SPAN NO.	REINF CONCRETE SLAB	PRESTRESSED CONCRETE GIRDERS (Tx40) ①	TOTAL REINF STEEL** ②
	SF	LF	LB
1	2,648	329	6,091

① BEAM LENGTHS SHOWN ARE BOTTOM OF BEAM FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.

② REINFORCING STEEL WEIGHT IS CALCULATED USING AN APPROXIMATE FACTOR OF 2.3 LBS/SF.

** QUANTITY FOR CONTRACTOR'S INFORMATION ONLY.

NOTES
1. BRIDGE DESIGNED FOR HL93 LOADING UNDER 2017 AASHTO LRFD SPECIFICATIONS AND INTERIM REVISIONS THERETO.
2. SEE IGTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
3. SEE PCP AND PCP-FAB STANDARDS FOR PANEL DETAILS NOT SHOWN.
4. SEE PMDF STANDARD FOR DETAILS AND QUANTITY ADJUSTMENTS IF THIS OPTION IS USED.
5. SEE IGMS STANDARD FOR MISCELLANEOUS DETAILS.
6. SEE C221 RAIL STANDARD FOR RAIL ANCHORAGE IN SLAB.
7. COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.

MATERIAL NOTES
1. CONCRETE SHALL BE CLASS S (HPC) (f'c = 4,000 PSI).
2. ALL DECK REINFORCING SHALL BE EPOXY COATED GRADE 60 STEEL.
3. BAR LAPS, WHERE REQUIRED, SHALL BE QAS FOLLOWS:
   EPOXY COATED ~#4 = 2'-2"
   ~#5 = 2'-9"

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PROFESSIONAL ENGINEER
09/10/2021

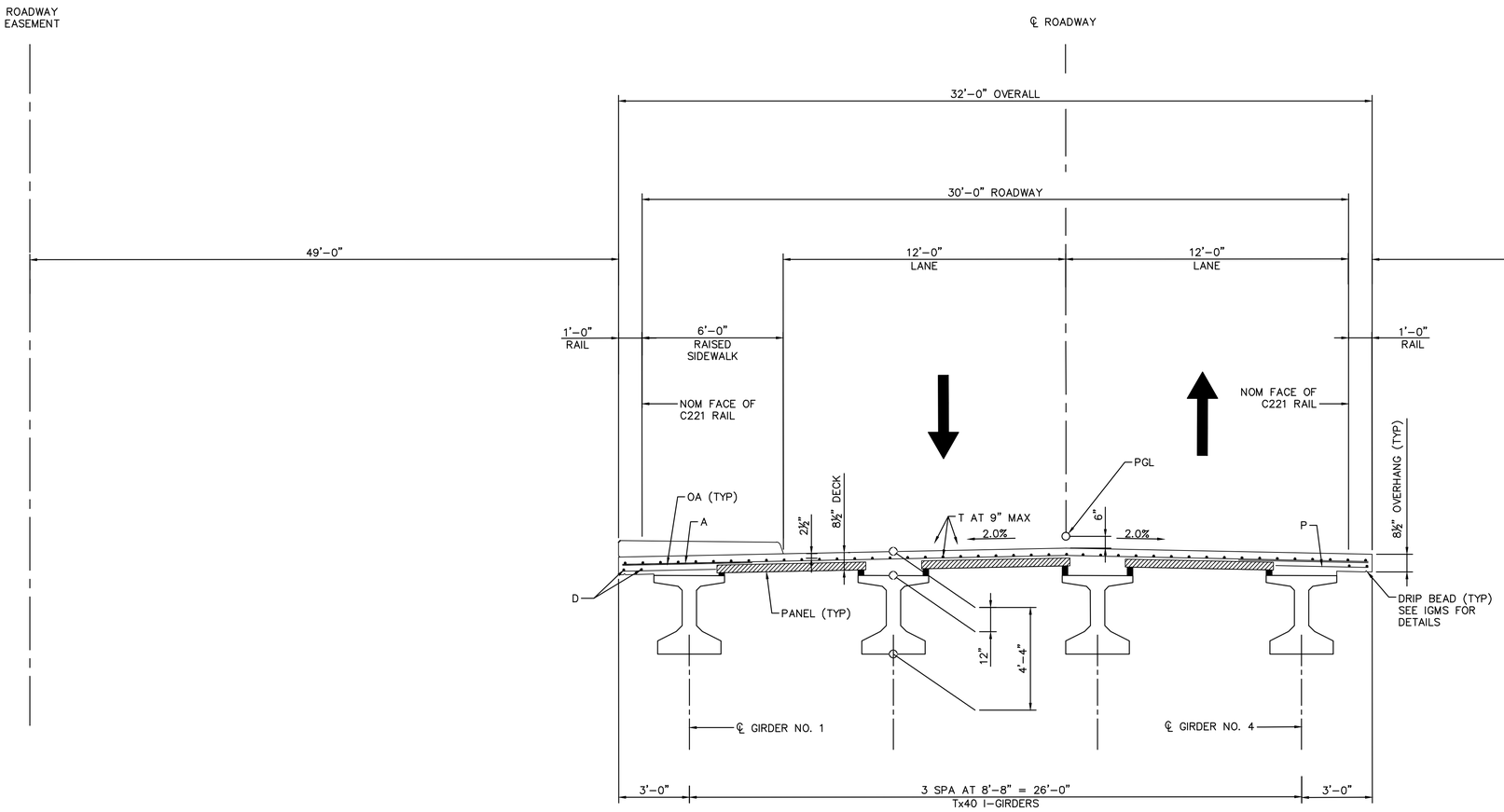
KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY BCS
		DRAWN BY AT/TLS	CHECKED BY BJL

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

STRUCTURAL
SLAB DETAILS

SHEET NUMBER
C5.08

Plotted By: Turabi, Abuzar September 10, 2021 08:20:09am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connection\CADD\PlanSheets\Structures\8_Slab Details.dwg
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TYPICAL TRANSVERSE SECTION

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STATE OF TEXAS
BRIAN J. LAFOY
89363
LICENSED
PROFESSIONAL ENGINEER
09/10/2021

KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	BCS
DRAWN BY	AT/TLS
CHECKED BY	BJL

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

STRUCTURAL TRANSVERSE SECTION

SHEET NUMBER
C5.09

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STRUCTURE	DESIGNED GIRDERS									DEPRESSED STRAND PATTERN		CONCRETE		OPTIONAL DESIGN				
	SPAN NO.	GIRDER NO.	GIRDER TYPE	PRESTRESSING STRANDS						NO.	TO END (in)	RELEASE STRGTH (1) f'ci (ksi)	MINIMUM 28 DAY COMP STRGTH f'c (ksi)	DESIGN LOAD COMP STRESS (TOP ℄) (SERVICE I) fct(ksi)	DESIGN LOAD TENSILE STRESS (BOTT ℄) (SERVICE III) fcb(ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (kip-ft)	LIVE LOAD DISTRIBUTION FACTOR (2)	
				NON-STD STRAND PATTERN	TOTAL NO.	SIZE (in)	STRGTH fpu (ksi)	"e" ℄ (in)	"e" END (in)								Moment	Shear
BELLA LANE	1	ALL	TX 40		30	0.600	270	14.40	8.80	6	6.50	5.000	5.900	3.148	-3.705	4580.06	0.657	0.960

NON-STANDARD STRAND PATTERNS

PATTERN	STRAND ARRANGEMENT AT ℄ OF GIRDER

(1) Based on the following allowable stresses (ksi):

Compression = 0.65 f'ci

Tension = $0.24\sqrt{f'ci}$

Optional designs must likewise conform.

(2) Portion of full HL93.

DESIGN NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Optional designs for girders 120 feet or longer must have a calculated residual camber equal to or greater than that of the designed girder.

Prestress losses for the designed girders have been calculated for a relative humidity of 60 percent. Optional designs must likewise conform.

FABRICATION NOTES:

Provide Class H concrete.

Provide Grade 60 reinforcing steel bars.

Use low relaxation strands, each pretensioned to 75 percent of fpu.

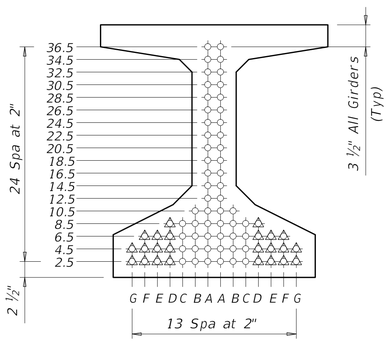
Strand debonding must comply with Item 424.4.2.2.2.4. Full-length debonded strands are only permitted in positions marked △. Double wrap full-length debonded strands in outer most position of each row.

When shown on this sheet, the Fabricator has the option of furnishing either the designed girder or an approved optional design. All optional design submittals must be signed, sealed and dated by a Professional Engineer registered in the State of Texas.

Seal cracks in girder ends exceeding 0.005" in width as directed by the Engineer. The fabricator is permitted to decrease the spacing of Bars R and S by providing additional bars to help limit crack width provided the decreased spacing results in no less than 1" clear between bars. The fabricator must take an approved corrective action if cracks greater than 0.005" form on a repetitive basis.

DEPRESSED STRAND DESIGNS:

Locate strands for the designed girder as low as possible on the 2" grid system unless a non-standard strand pattern is indicated. Fill row "2.5", then row "4.5", then row "6.5", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position must be depressed, maintaining the 2" spacing so that, at the girder ends, the upper two strands are in the position shown in the table.



TYPE Tx40



HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

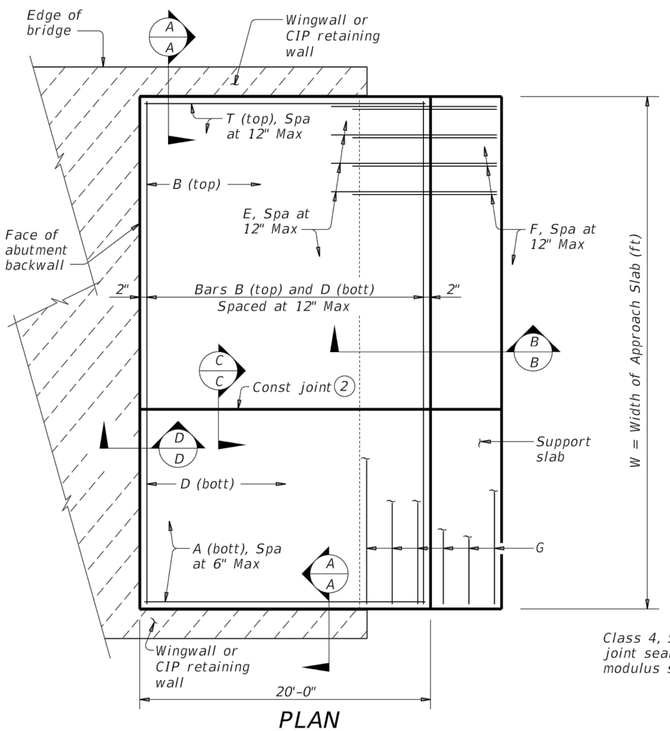
BELLA LANE I-GIRDER DESIGNS (NON-STANDARD SPANS)

IGND

FILE:	DN: _TxDOT_	CK: TxDOT	DW: AT	CK: RCL
©TxDOT August 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS 10-19: Modified for depressed strands only.				
	DIST	COUNTY		SHEET NO.
				C5.10

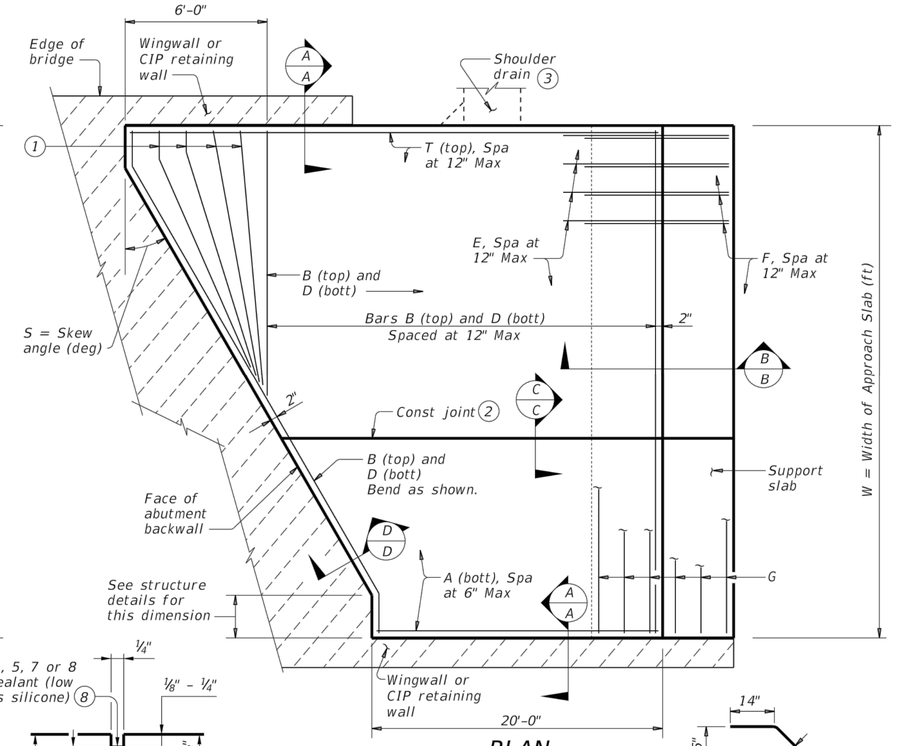
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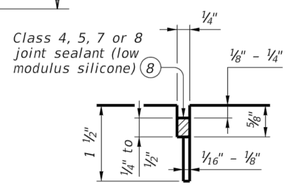
PLAN

(Showing non-skewed approach slab.)

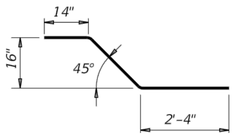


PLAN

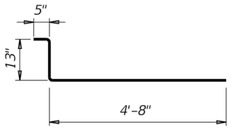
(Showing skewed approach slab.)



LONGITUDINAL SAW CUT JOINT DETAIL



BARS E (#5)



BARS F (#5)

BAR TABLE	
BAR	SIZE
A	#8
B	#5
D	#5
E	#5
F	#5
G	#5
T	#5

APPROXIMATE QUANTITIES (4)

Reinf steel weight = 8.5 Lbs/SF of Approach Slab
= 18.4 Lbs/LF of Support Slab

Vol of Appr Slab Conc (CY) = 1.057W – 0.008W x T + 0.02W² Tan S
(Includes Support Slab)

W = Width of Approach Slab (ft)

T = Conc Pavement Thickness (in)

S = Skew Angle (deg)

(1) Flare Bars B and D in this region (1'-6" Max Spa, 3" Min Spa). Minimum flared bar length = 2'-6". Bend bars as necessary.

(2) Provide longitudinal construction joints that align with longitudinal construction joints in the bridge slab with bridges built in stages. Other longitudinal construction joints must receive approval of the Engineer.

(3) See details elsewhere in plans for shoulder drain location and details.

(4) For Contractor's information only. Quantities shown are for one approach slab only.

(5) On portion of support slab that supports the concrete pavement, adjust top surface elevation, if required, to accommodate concrete pavement thickness. Smooth trowel finish. Oil top of support slab with 60 grade oil and apply heavy coat of powdered graphite. Press down one layer of 30# roofing felt.

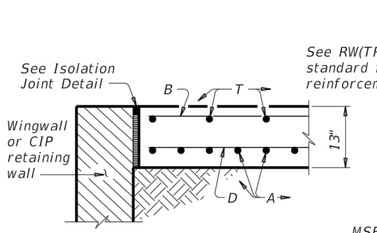
(6) Multiple piece tie bars are acceptable at longitudinal construction joints provided minimum laps shown are achieved.

(7) See details elsewhere in plans for required cross-slope.

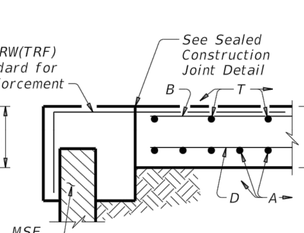
(8) Place in accordance with Item 438.

(9) Provide backer rod that is 25% larger than joint opening and compatible with the sealant.

(10) If bridge rail is present at the wingwall or CIP retaining wall, place ½" rebonded recycled tire rubber between concrete railing and top of approach slab as shown when concrete railing projects over the approach slab.

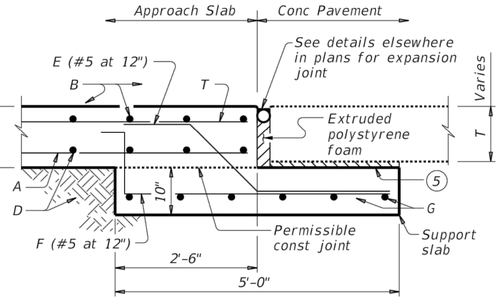


SHOWING WINGWALL OR CIP RETAINING WALL

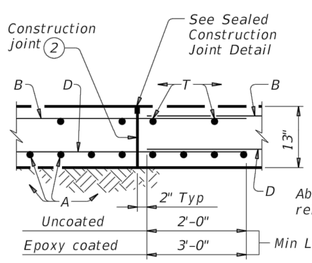


SHOWING MSE WALL

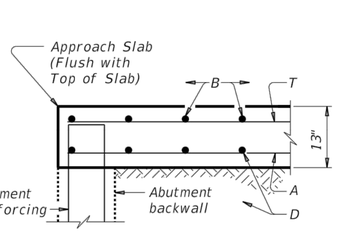
SECTION A-A



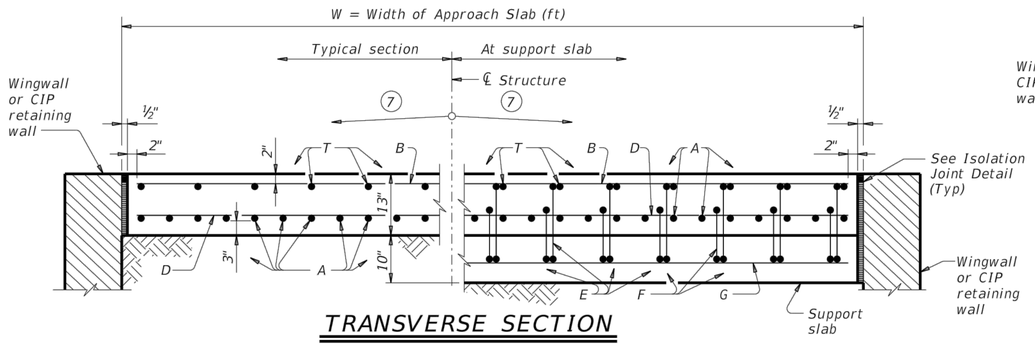
SECTION B-B



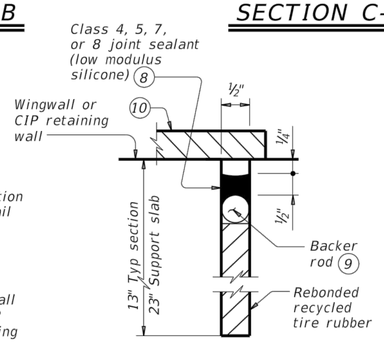
SECTION C-C (6)



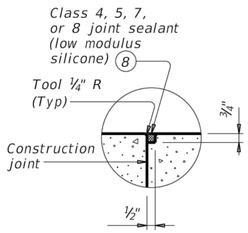
SECTION D-D



TRANSVERSE SECTION



ISOLATION JOINT DETAIL



SEALED CONSTRUCTION JOINT DETAIL

GENERAL NOTES:

Construct approach slab in accordance with Item 422.

Provide Class "S" concrete with a minimum compressive strength of 4,000 psi.

Provide Grade 60 reinforcing steel.

Provide longitudinal joints as shown on the Longitudinal Saw Cut Joint Detail at lane lines and shoulders when width between longitudinal construction joints or edges of approach slab exceeds 16 feet. Saw cut joints within 24 hours of concrete placement to a depth of 1 ½" and seal in accordance with Item 438. Alternately, provide a controlled joint consisting of 1 ½" vinyl or plastic joint former (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)

Provide rebonded recycled tire rubber joint filler that meets the requirements of DMS-6310, "Joint Sealants and Fillers."

Construct the subgrade or subbase away from the bridge for a minimum distance of 100 feet prior to the approach slab, unless otherwise indicated on the plans.

Compact and finish the subgrade or foundation for the approach slab to the typical cross-section and to the lines and grades shown on the plans.

Cure for 4 days using water or membrane curing per Item 422.

All details shown herein are subsidiary to bridge approach slab.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

Texas Department of Transportation

Bridge Division Standard

BRIDGE APPROACH SLAB

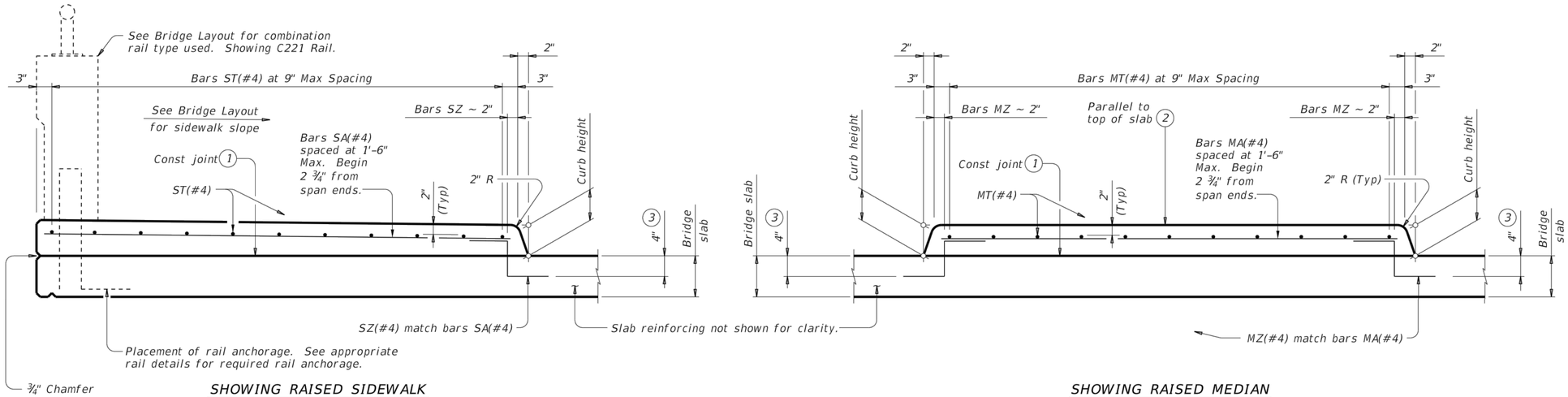
CONCRETE PAVEMENT

BAS-C

FILE: bascste1-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS				
02-20: Removed stress relieving pad.	DIST	COUNTY		SHEET NO.
				C5.11

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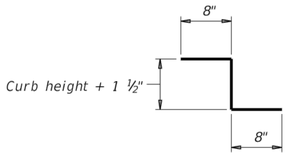
DATE:
FILE:



TYPICAL TRANSVERSE SECTIONS

See Span Details for dimensions not shown.

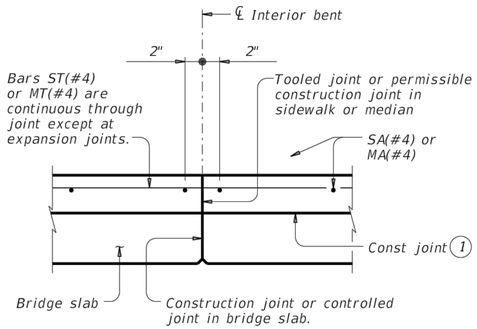
1. Provide broom finish to top of bridge slab where raised sidewalk or raised median area is defined.
2. Unless noted otherwise on the span details.
3. Bars may rest on top of PCPs.



BARS SZ(#4) AND MZ(#4)

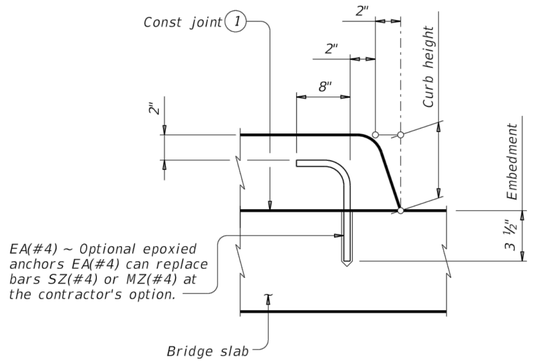
APPROVED SLIP RESISTANT PLATE	
Product	Manufacturer Website
Algrip™, Steel	www.algrip.com
Mebac® #3, Steel	www.harscoikg.com
SlipNOT® Grade 2, Steel	www.slipnot.com

Provide drain cover plates fabricated with a product from this list. No exceptions are permitted.



LONGITUDINAL SECTION AT INTERIOR BENT

At bents with expansion joints, provide an open joint in the sidewalk/median matching the deck's joint width.



OPTIONAL EPOXY ANCHORS

Embed EA(#4) bar into concrete with a Type III (Class C, D, E, or F) epoxy meeting the requirements of DMS-6100, "Epoxies and Adhesives". Follow manufacturer's directions for installing the epoxied anchor bars.

MATERIAL NOTES:

Provide the same concrete required for the bridge deck, Class S or Class S (HPC) concrete.

Provide Grade 60 reinforcing steel. Deformed welded wire reinforcement (WWR) meeting ASTM A1064 of equivalent size and spacing may be substituted for bars SA, ST, MA, and MT.

Provide epoxy coat or galvanize reinforcement if bridge deck reinforcement is required to be epoxy coated or galvanized.

Provide hot-dip galvanize slip resistant steel plate after fabrication in accordance with Item 445, "Galvanizing". Chamfer or round edges approximately 1/16" prior to galvanizing.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Provide the following bar or wire lap lengths when required:
- Uncoated, 1'-7" Min
- Coated, 2'-5" Min

Submittal and approval of drain cover plate shop drawings is not required if fabrication is accordance with these details.

Raised sidewalks will be paid under Item 422 by the SF of Bridge Sidewalk or Bridge Sidewalk (HPC). Raised medians will be paid under Item 422 by the SF of Bridge Median or Bridge Median (HPC).

Payment for drain cover plates will be by the pound of "Structural Steel (Misc Non-Bridge)" as per Item 442, "Metal for Structures". Weight of one drain cover plate is 48 plf.

DESIGNER NOTES:

These details do not apply for longitudinal grades exceeding 5 percent.

Cover dimensions are clear dimensions, unless noted otherwise.

Reinforcing bar dimensions shown are out-to-out of bar.

Texas Department of Transportation

Bridge Division Standard

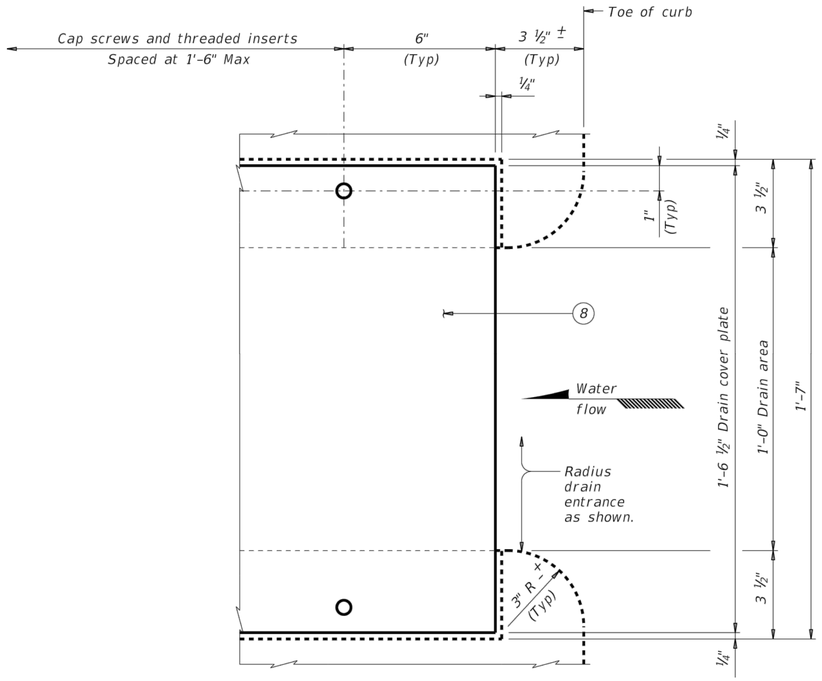
BRIDGE RAISED SIDEWALK AND MEDIAN DETAILS

BRSM

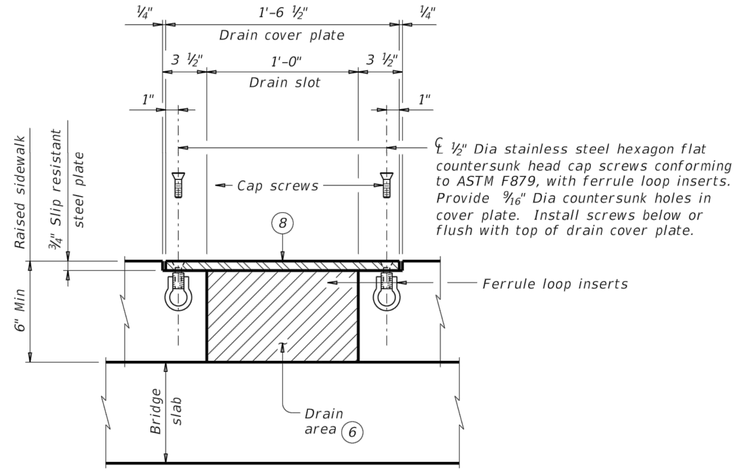
FILE: brsmste1-19.dgn	DN: JMH	CK: TxDOT	DW: JTR	CK: TxDOT
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				C5.12

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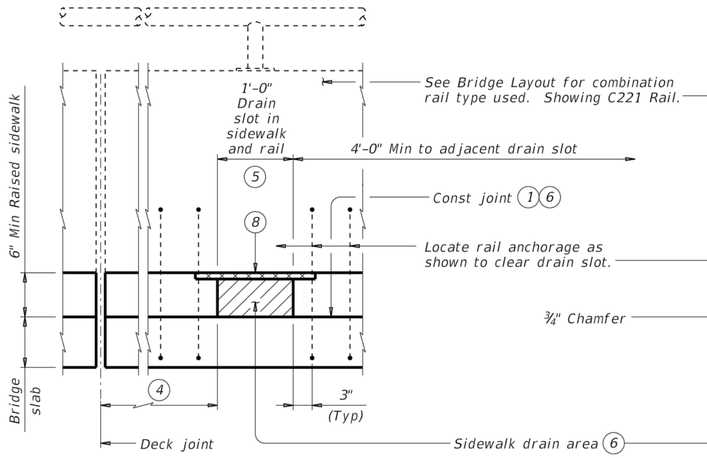
PARTIAL PLAN CURB DRAIN



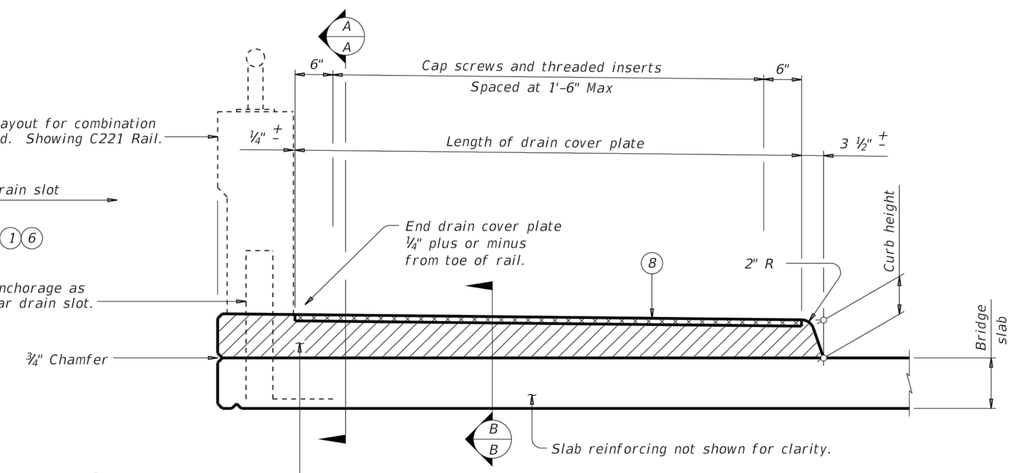
SECTION B-B

Reinforcing not shown for clarity.

1. Provide broom finish to top of bridge slab where raised sidewalk or raised median area is defined.
4. 3'-0" Min at deck expansion joints, deck construction joints or controlled joints, rail intermediate wall joints or from face of substructure.
5. For rail Type C1W, center drain slots between posts.
6. Steel trowel top surface of bridge deck in drain locations.
7. Provide sidewalk drains where shown elsewhere on the plans or as directed by the Engineer. Do not place drains over railroad tracks, lower roadways, or sidewalks. Place drain and cover plate perpendicular to toe of rail.
8. Drain cover plate (PL ¾ x 18 ½ slip resistant steel plate). Install flush with top of sidewalk.



SECTION A-A



SHOWING RAISED SIDEWALK WITH DRAIN SLOT

OPTIONAL DRAIN DETAILS 7

SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

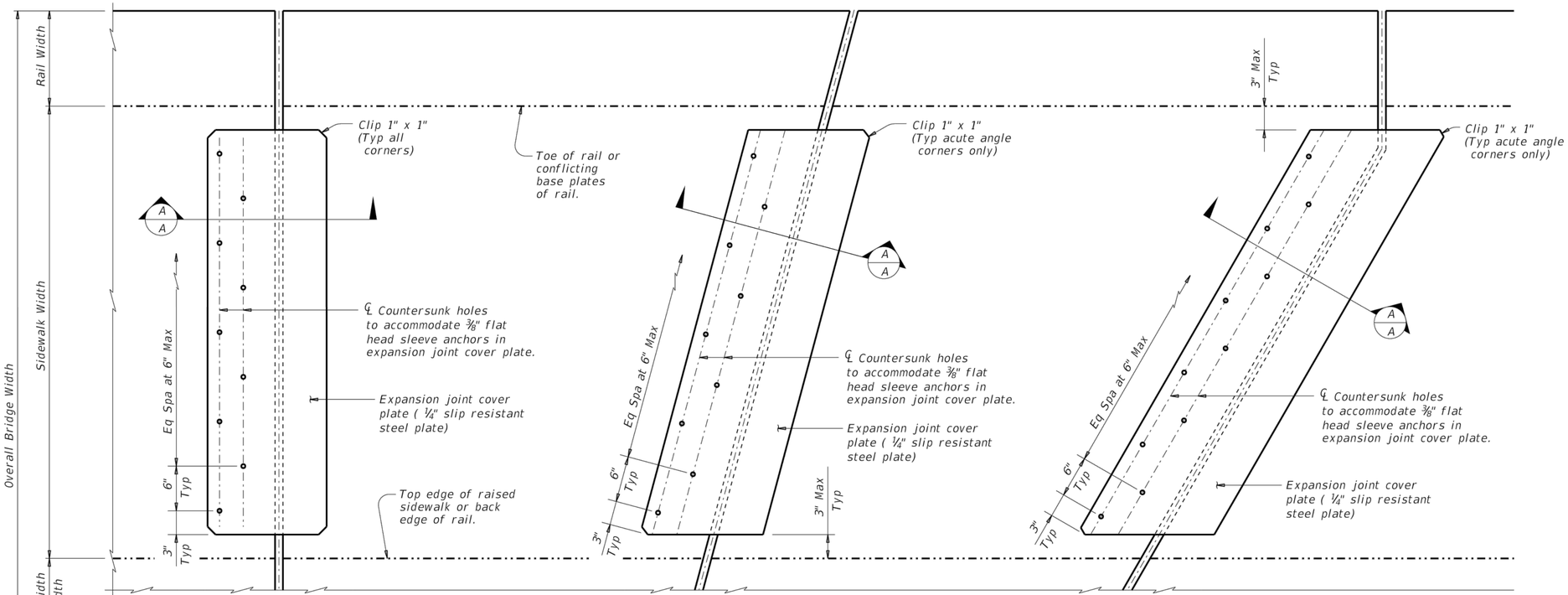
BRIDGE RAISED SIDEWALK AND MEDIAN DETAILS

BRSM

FILE: brsmste1-19.dgn	DN: JMH	CK: TxDOT	DW: JTR	CK: TxDOT
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	DIST	COUNTY		SHEET NO.
				C5.13

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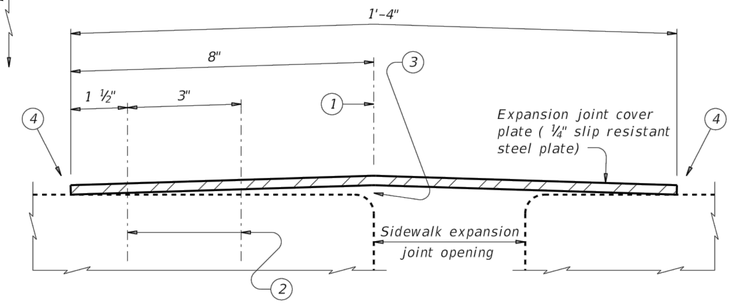


NO SKEW

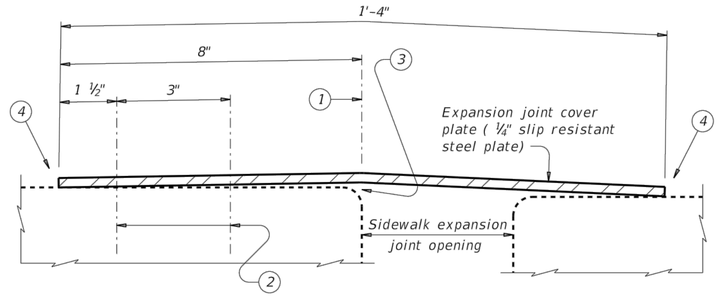
SKEW WITHOUT SLAB BREAKBACK

SKEW WITH SLAB BREAKBACK

PLAN



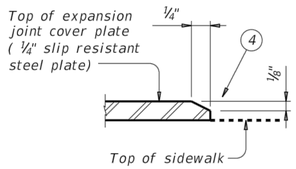
SHOWING LEVEL EXP JOINT



SHOWING UNLEVEL EXP JOINT
(Install sleeve anchors on high side of expansion joint)

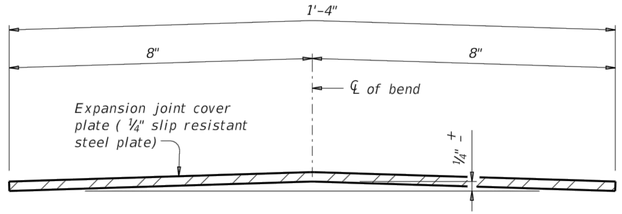
SECTION A-A

1. ℄ Expansion joint cover plate and edge of expansion joint.
2. ℄ ⅜" x 2 ½" Min, Flat Head Sleeve Anchors, Stainless Steel. Countersink Flat Head Sleeve Anchors in ¼" Slip Resistant Steel Plate.
3. It is not necessary to remove plate crown provided the plate is firmly secured to the sidewalk.
4. Transverse edges must be in contact with sidewalk surface after installation.



EXP JOINT COVER PLATE BEVEL DETAIL

Bevel all plate edges as shown.



BENDING DIAGRAM OF EXP JOINT COVER PLATE

APPROVED SLIP RESISTANT PLATE	
Product	Manufacturer Website
Algrip™, Steel	www.algrip.com
Mebac® #3, Steel	www.harscoikg.com
SlipNOT®Grade 2, Steel	www.slipnot.com

Provide cover plates fabricated with a product from this list. No exceptions are permitted.

FABRICATION NOTES:

Shop drawings for the fabrication of Bridge Sidewalk Expansion Joint Cover Plate will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.

A Bridge Sidewalk Expansion Joint Cover Plate Layout which identifies location side of sleeve anchors and orientation of all cover plate sections must be developed by the fabricator. Mark each steel section in accordance with the Bridge Sidewalk Expansion Joint Cover Plate Layout. A copy of the Bridge Sidewalk Expansion Joint Cover Plate Layout is to be provided to the Engineer.

Sidewalk expansion joint cover plates must be hot-dipped galvanized ¼" slip resistant steel plate. Checker plate or diamond plate is not allowed nor are slip resistant tapes, films and non-metallic coatings.

Minimum required yield strength of steel plate is 36 ksi.

Hot-dip galvanize slip resistant steel plate after fabrication in accordance with Item 445, "Galvanizing".

Provide stainless steel flat head sleeve anchors meeting the requirements of ASTM F 593, Group I, Alloy 304. Countersink holes in slip-resistant plate for sleeve anchors. Drill holes in sidewalk as per sleeve anchor manufacturer's recommendations. Install sleeve anchors flush with, or slightly recessed below, top surface of sidewalk expansion joint cover plate.

GENERAL NOTES:

Sidewalk expansion joint cover plates can only accommodate up to a 7" maximum expansion joint opening.

Details provided are applicable to concrete walkway surfaces only.

Payment for sidewalk expansion joint cover plates are by the pound of "Structural Steel (Misc Non-Bridge)" as per Item 442, "Metal for Structures".

Estimated weight of one sidewalk expansion joint cover plate is 14 plf.

Texas Department of Transportation

Bridge Division Standard

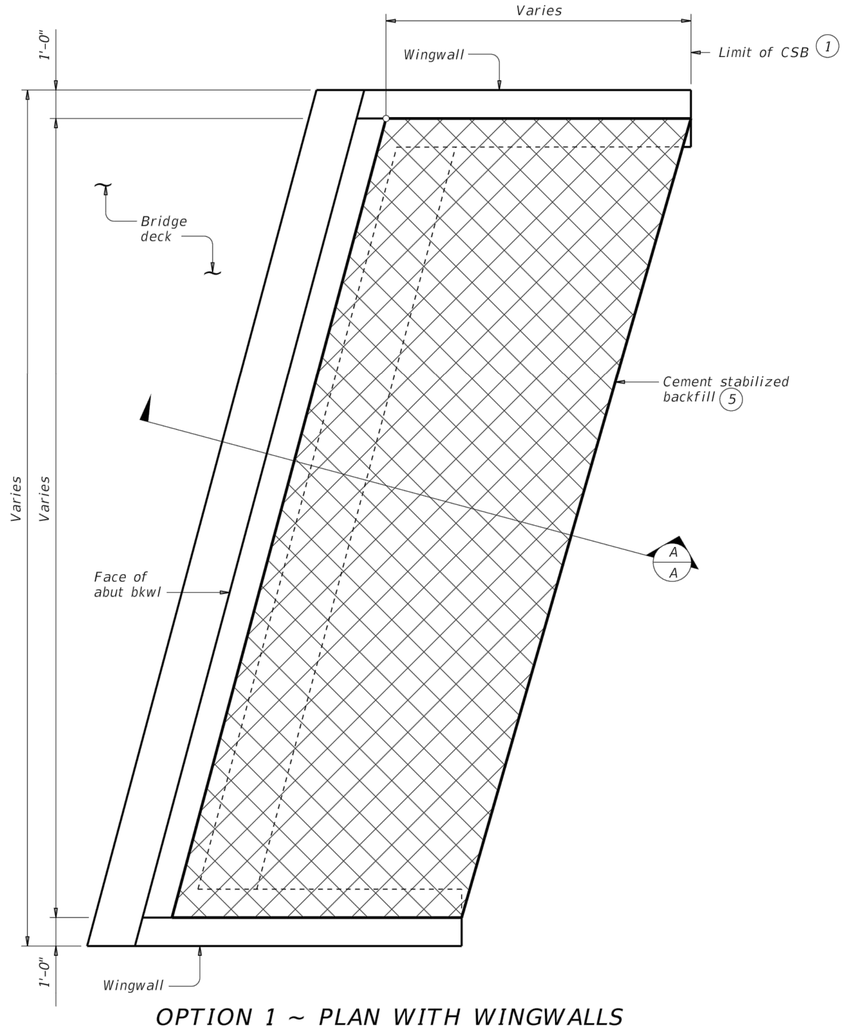
BRIDGE SIDEWALK EXPANSION JOINT COVER PLATE (ALL SKEWS)

BS-EJCP

FILE: bsejste1-19.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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	DIST	COUNTY		SHEET NO.
				C5.14

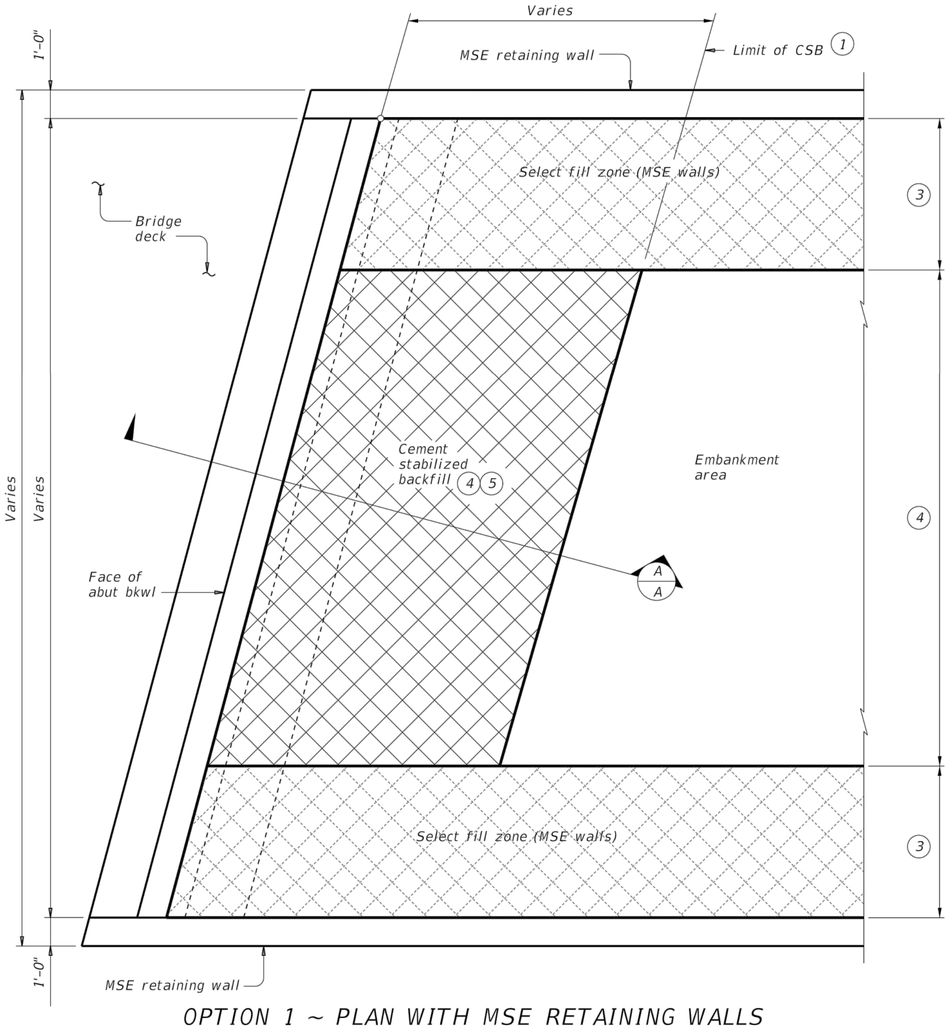
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OPTION 1 ~ PLAN WITH WINGWALLS

Cast-in-place retaining walls similar.



OPTION 1 ~ PLAN WITH MSE RETAINING WALLS

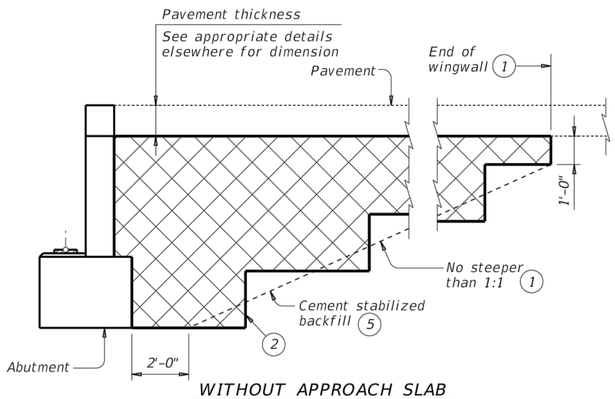
(1) Usual limit of Cement Stabilized Backfill is at end of wingwall. Extend CSB limits as required to maintain a slope no steeper than 1:1 at bottom of backfill.

(2) Bench backfill as shown with 12" (approximate) bench depths.

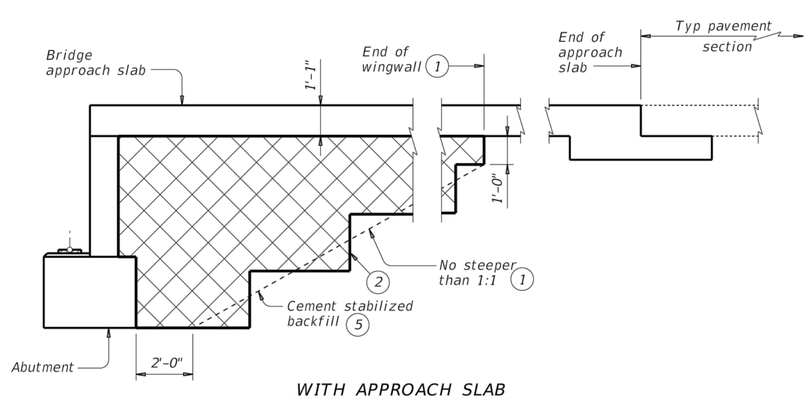
(3) Where MSE retaining walls are present, adjust CSB limits to accommodate the select fill zone. See retaining wall details for additional information.

(4) When distance between select fill zones is less than 5'-0", MSE select fill may be substituted for cement stabilized backfill with approval from the Engineer.

(5) If shown in the plans flowable backfill can be used as a substitute for cement stabilized backfill with the following constraints:
a). If flowable backfill is to be placed over MSE backfill then a filter fabric will be placed over the MSE backfill prior to placement of the flowable fill; and
b). Place flowable fill in lifts not exceeding 2 feet in height, place each successive lift when the previous lift has stiffened/hardened (i.e. has lost its flowability).



WITHOUT APPROACH SLAB



WITH APPROACH SLAB

(Showing BAS-C, BAS-A similar.)

SECTION A-A

GENERAL NOTES:

See the Bridge Layout for selected Option. Option 2 is intended for new construction requiring high plasticity embankment fill with a plasticity index (PI) greater than 30 or pavement built in poor native soil. Poor soils are defined as high plasticity clays or expansive clays. Option 1 is intended for construction only requiring PI controlled embankment fill or excavation in competent soils/rocks in order to construct the abutment.

Provide Cement Stabilized Backfill (CSB) meeting the requirements of Item 400, "Excavation and Backfill for Structures", to the limits shown at bridge abutments.

If required elsewhere in the plans, provide Flowable Backfill meeting the requirements of Item 401, "Flowable Backfill", to the limits shown at bridge abutments.

Details are drawn showing left forward skew. See Bridge Layout for actual skew direction.

These details do not apply when Concrete Block retaining walls are used in lieu of wingwalls.

Texas Department of Transportation

Bridge Division Standard

CEMENT STABILIZED ABUTMENT BACKFILL

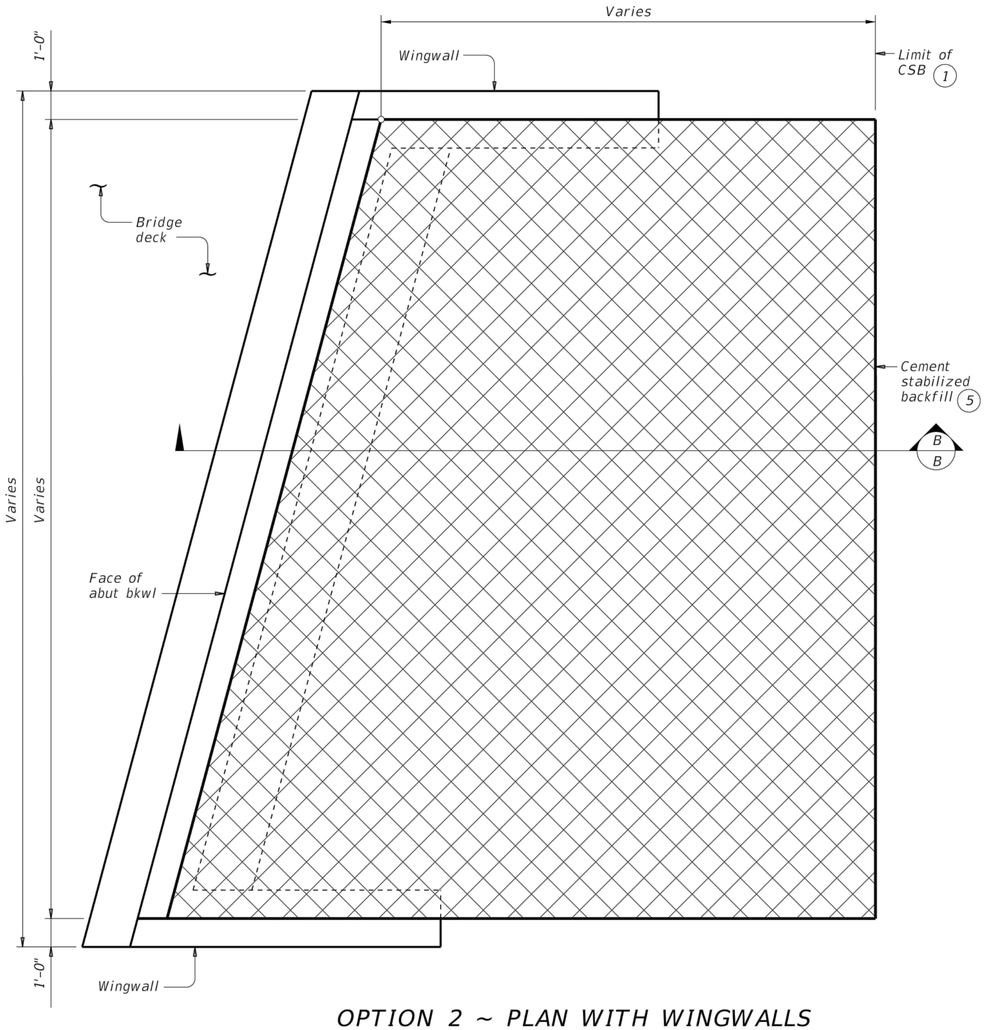
BRIDGE ABUTMENT

CSAB

FILE: csabste1-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS				
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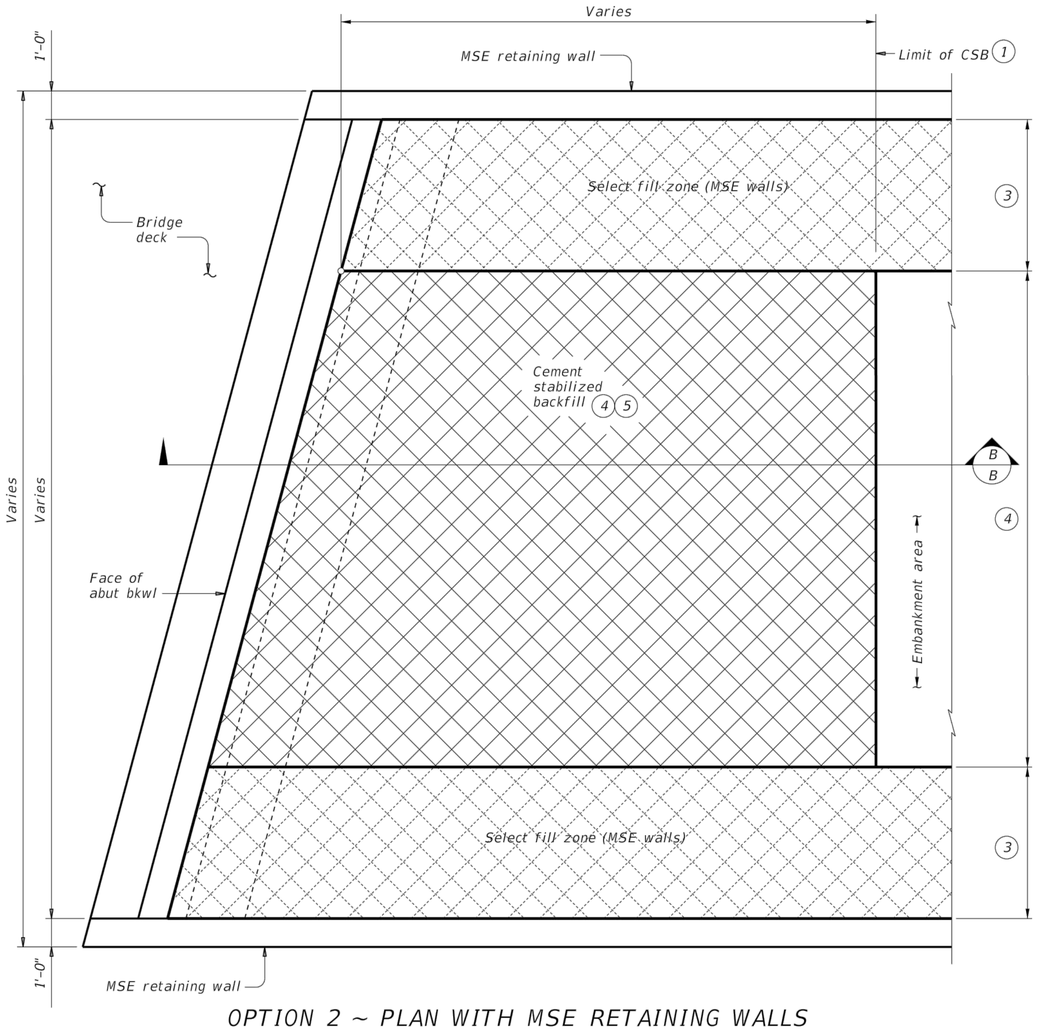
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OPTION 2 ~ PLAN WITH WINGWALLS

Cast-in-place retaining walls similar.



OPTION 2 ~ PLAN WITH MSE RETAINING WALLS

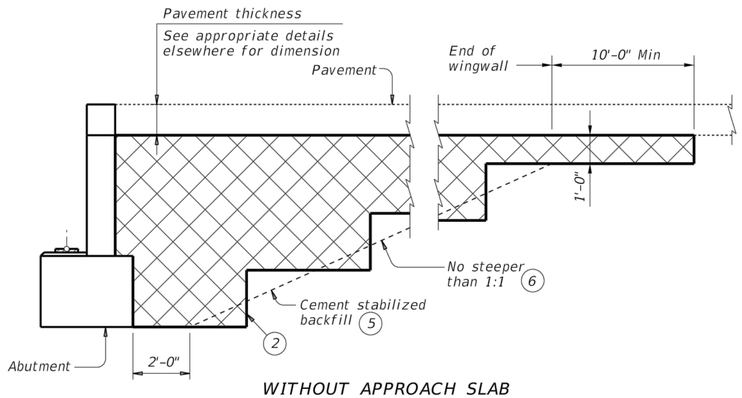
(1) Usual limit of Cement Stabilized Backfill is at end of wingwall. Extend CSB limits as required to maintain a slope no steeper than 1:1 at bottom of backfill.

(2) Bench backfill as shown with 12" (approximate) bench depths.

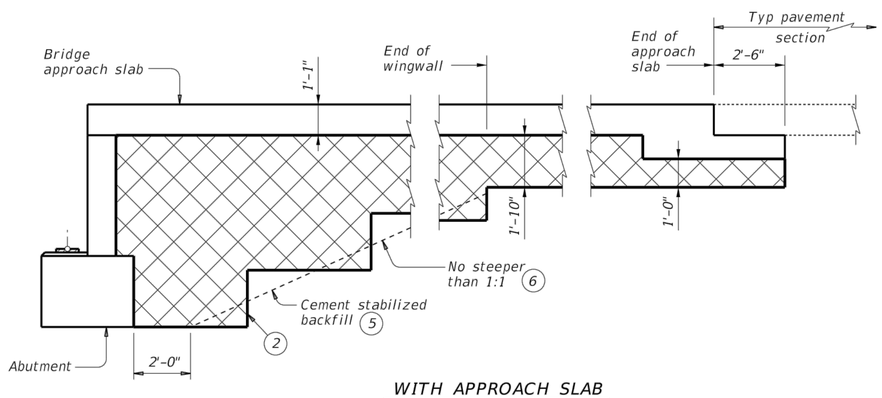
(3) Where MSE retaining walls are present, adjust CSB limits to accommodate the select fill zone. See retaining wall details for additional information.

(4) When distance between select fill zones is less than 5'-0", MSE select fill may be substituted for cement stabilized backfill with approval from the Engineer.

(5) If shown in the plans flowable backfill can be used as a substitute for cement stabilized backfill with the following constraints:
a). If flowable backfill is to be placed over MSE backfill then a filter fabric will be placed over the MSE backfill prior to placement of the flowable fill; and
b). Place flowable fill in lifts not exceeding 2 feet in height, place each successive lift when the previous lift has stiffened/hardened (i.e. has lost its flowability).



WITHOUT APPROACH SLAB



WITH APPROACH SLAB

(Showing BAS-C, BAS-A similar.)

SECTION B-B

SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

CEMENT STABILIZED ABUTMENT BACKFILL

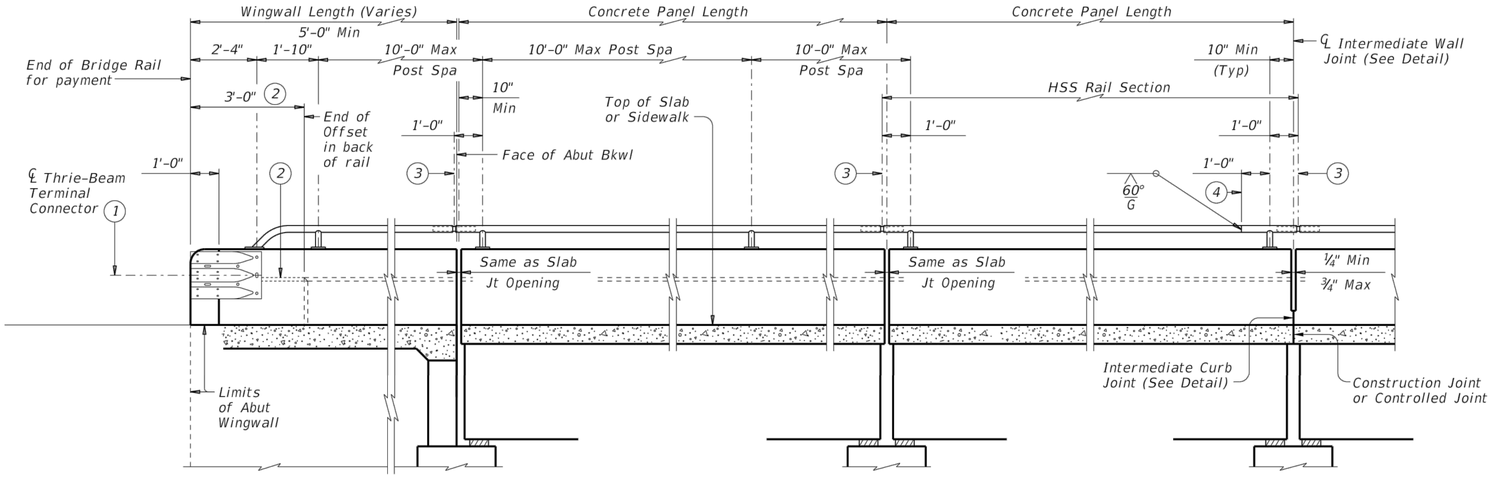
BRIDGE ABUTMENT

CSAB

FILE: csabste1-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY	
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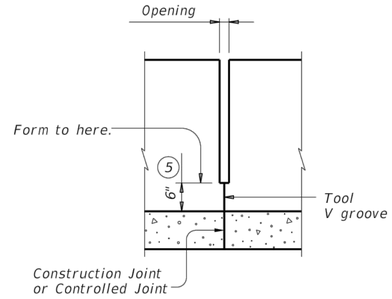


AT ABUTMENTS

AT BENTS WITH SLAB EXP JOINTS

AT BENTS WITHOUT SLAB EXP JOINTS

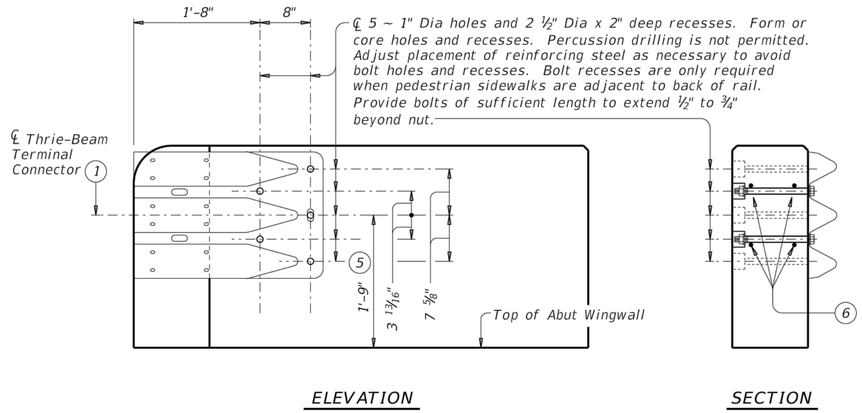
ROADWAY ELEVATION OF RAIL



INTERMEDIATE WALL JOINT DETAIL

Provide at all interior bents without slab expansion joints.

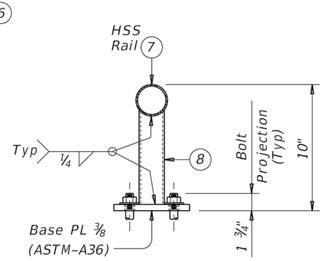
1. Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
2. Back of rail offset may, with Engineer's approval, be continued to the end of the railing.
3. ℄ Exp Joint or Splice Joint as required.
4. One shop splice per HSS rail section is permitted with minimum 85 percent penetration. The weld may be square groove, or single vee groove. Grind smooth.
5. Increase 2" for structures with overlay.
6. Place 4 additional Bars R(#4) 3'-8" in length inside Bars S(#4) and centered 2'-0" from end of rail when Terminal Connections are required. Field bend as needed.
7. HSS 2.875 x 0.203
8. HSS 2.375 x 0.154
9. ⅜" Dia Hole in bottom of HSS rail (Minimum 1 hole between posts ~ Typ)



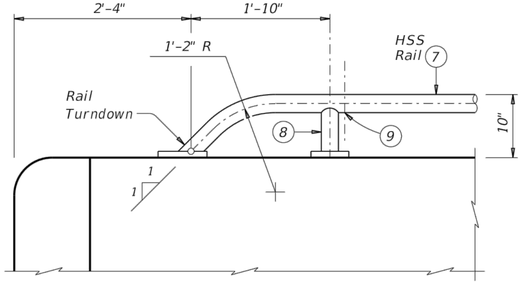
ELEVATION

SECTION

TERMINAL CONNECTION DETAILS

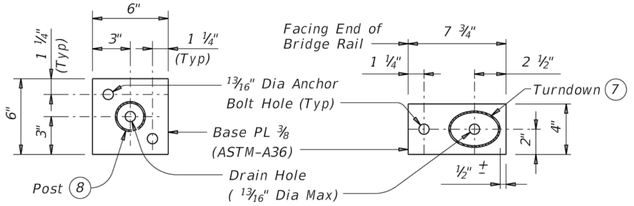


TRANSVERSE SECTION



Note that at least two anchor points (as shown) are required for the Bridge Rail on the Abutment Wingwall. Longer Wingwalls may require more than two Rail anchorages.

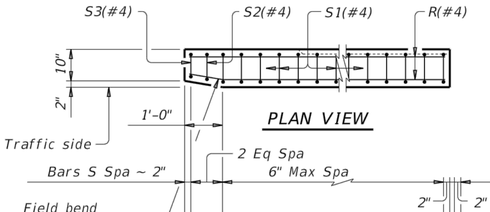
HSS RAIL TERMINAL DETAIL



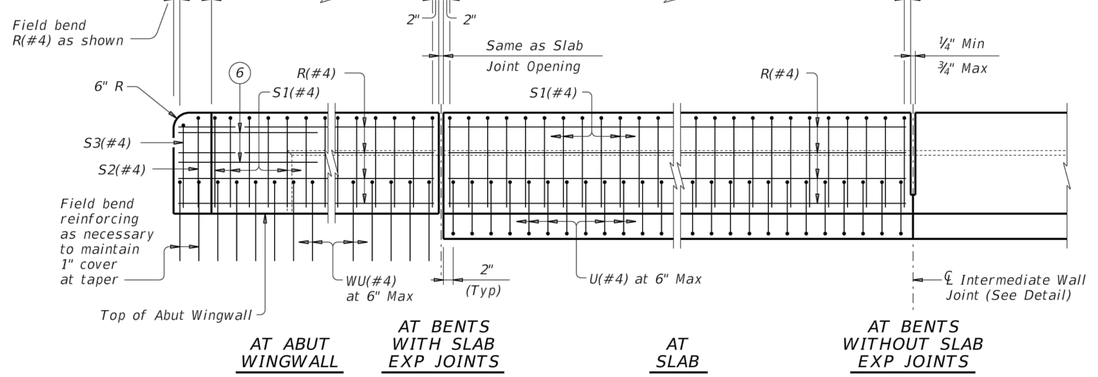
POST BASE PLATE PLAN

RAIL TURNDOWN BASE PLATE PLAN

HSS RAIL DETAILS



PLAN VIEW



AT ABUT WINGWALL

AT BENTS WITH SLAB EXP JOINTS

AT SLAB

AT BENTS WITHOUT SLAB EXP JOINTS

ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT

(Showing without raised sidewalk)

SHEET 1 OF 3

Texas Department of Transportation

Bridge Division Standard

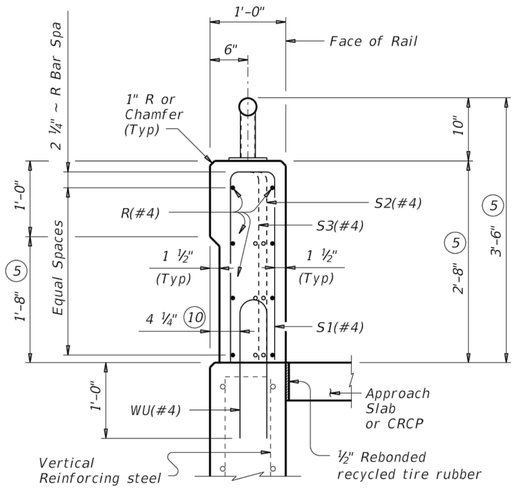
COMBINATION RAIL

TYPE C221

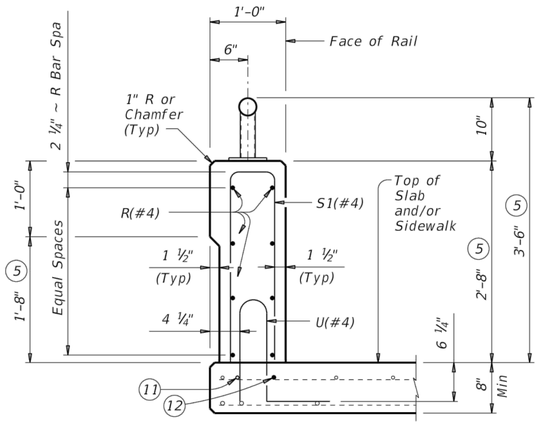
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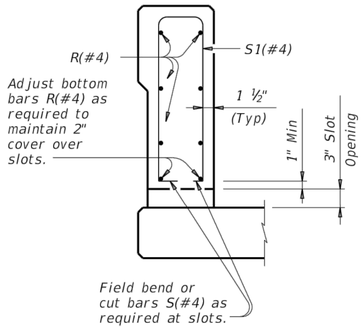


ON ABUTMENT WINGWALLS OR CIP RETAINING WALLS

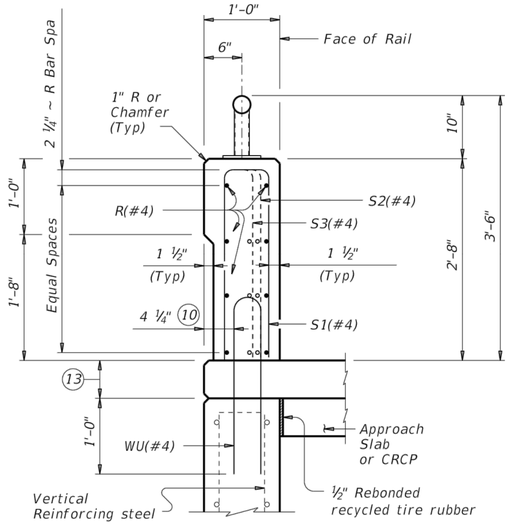


ON BRIDGE SLAB

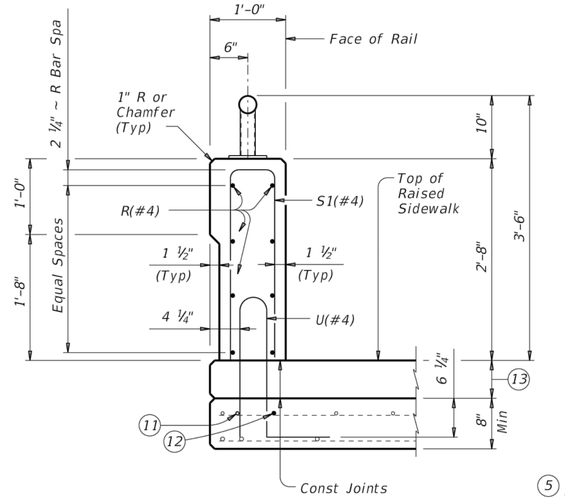
SECTIONS THRU RAIL WITHOUT RAISED SIDEWALK



SECTION THRU OPTIONAL SIDE SLOT DRAIN

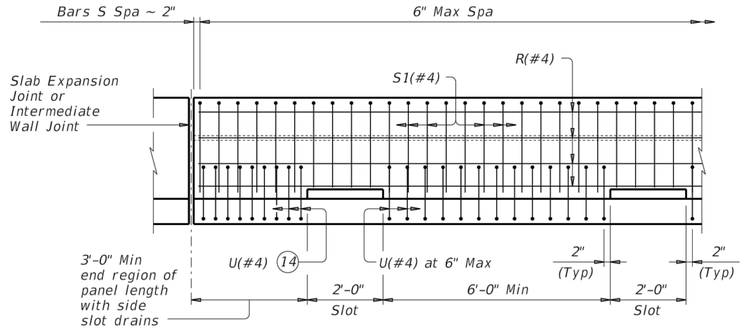


ON ABUTMENT WINGWALLS OR CIP RETAINING WALLS



ON BRIDGE SLAB

SECTIONS THRU RAIL WITH RAISED SIDEWALK



OPTIONAL SIDE SLOT DRAIN DETAIL

Note: Side Slot Drains may be used where shown elsewhere on the plans or as directed by the Engineer. Drains should not be placed over railroad tracks, lower roadways, or sidewalks. When this rail is used as a separator between a roadway surface and a sidewalk surface, side drain slots will not be permitted.

(5) Increase 2" for structures with overlay.

(10) 5 ¼" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls or retaining walls on traffic side of wall.

(11) As an aid in supporting reinforcement, additional longitudinal bars may be used in the slab with the approval of the Engineer. Such bars must be furnished at the Contractors expense.

(12) Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.

(13) Raised Sidewalk

(14) Space U(#4) bars at 4" Max when end region of panel length is less than 6'-0" to side slot drain. Space U(#4) bars at 6" Max when end region of panel length is 6'-0" and greater to side slot drain.

Texas Department of Transportation

Bridge Division Standard

COMBINATION RAIL

TYPE C221

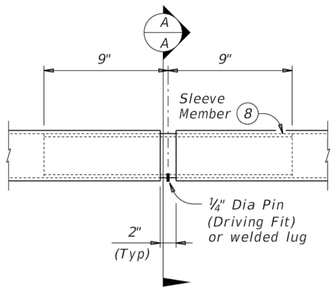
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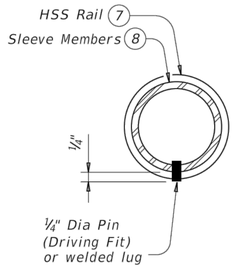
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RAIL DATA FOR HORIZONTAL CURVES

	RADIUS TO FACE OF RAIL	MAX CHORD LENGTH	CONSTRUCT OR FABRICATE
HSS Rail	Over 2800'	29'–0"	Straight rail panels
	Over 1400' thru 2800'	14'–6"	To required radius or to chords shown
	Over 700' thru 1400'	7'–3"	
	Thru 700'	Zero	To required radius

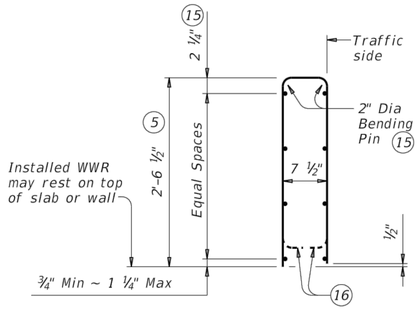


AT SPLICE OR EXP JTS



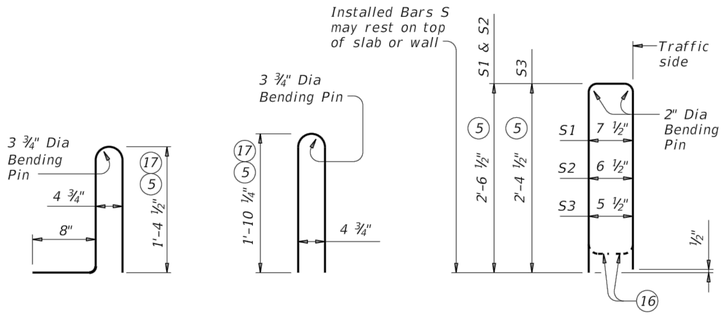
SECTION A-A

PIPE SPLICE DETAILS

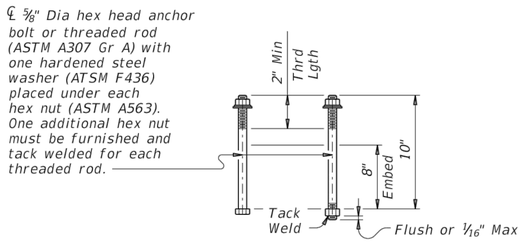


OPTIONAL WELDED WIRE REINFORCEMENT (WWR)

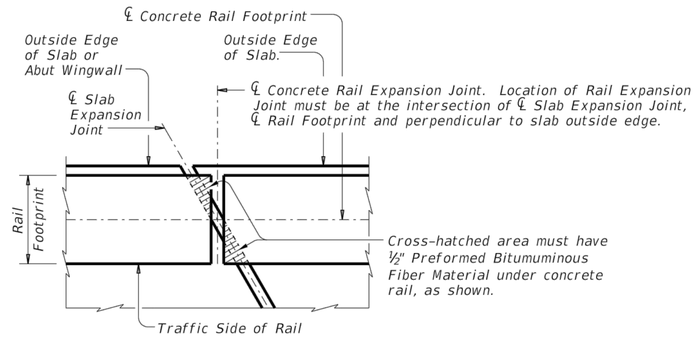
DESCRIPTION	LONGITUDINAL WIRES	VERTICAL WIRES
Minimum (Cumulative Total) Wire Area	1.067 Sq In.	0.267 Sq In. per Ft
	No. of Wires	Spacing
Minimum	8	4"
Maximum	10	8"
Maximum Wire Size Differential	The smaller wire must have an area of 40% or more of the larger wire.	



BARS U (#4) BARS WU (#4) BARS S (#4)



CAST-IN-PLACE ANCHOR BOLT OPTIONS (18)



PLAN OF RAIL AT EXPANSION JOINTS

Example showing Slab Expansion Joints without breakbacks.

(5) Increase 2" for structures with overlay.

(7) HSS 2.875 x 0.203

(8) HSS 2.375 x 0.154

(15) No longitudinal wires may be in top center of cage.

(16) Bend or cut as required to clear drain slots.

(17) For raised sidewalks, add sidewalk height to total bar height. Use sidewalk height at rail's location.

(18) See "Material Notes" for anchor bolt information.

CONSTRUCTION NOTES:

This railing may be constructed by the slipform process when approved by the Engineer, with equipment approved by the Engineer and when adhesive anchor bolts are used. Slipforming parapet is not allowed if anchor bolts are cast with parapet wall. Provide sensor control for both line and grade. Tack welding to provide bracing for slipform operations is acceptable. Welding may be performed at a minimum spacing of 3 ft between the cage and the anchorage. It is permissible to weld to bars U, WU and S at any location on the cage. If increased bracing is needed, provide additional anchorage devices and weld in the upper two thirds of the cage. Paint welded areas on epoxy coated and/or galvanized reinforcing with an organic zinc rich paint in accordance with Item 445 "Galvanizing".

If rail is slipformed, apply an heavy epoxy bead 1" behind toe of traffic side of rail to concrete deck just prior to slip forming. Provide a ⅜" width x ¼" tall heavy epoxy bead with Type III, Class C or a Type V epoxy.

Test adhesive anchors in accordance with Item 450.3.3, "Tests". Test 3 anchors per 100 anchors installed. Perform corrective measures to provide adequate capacity if any of the tests do not meet the required test load. Repair damage from testing as directed.

At the Contractor's option anchor bolts may be cast with the parapet. See "Material Notes".

Face of rail, parapet must be plumb unless otherwise approved by the Engineer. HSS rail posts must be square to the top of parapet. Use epoxy mortar under post base plates if gaps larger than 1/16" exist.

Round or chamfer exposed edges of HSS rail and HSS rail posts to approximately 1/16" by grinding.

HSS rail sections must not include less than two posts, and no more than four (except at Abutments).

Chamfer all parapet exposed corners.

MATERIAL NOTES:

Provide Class "C" concrete. Povide Class "C" (HPC) if required elsewhere.

Provide Grade 60 reinforcing steel.

Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized.

Provide ASTM A1085 or A500 Gr B or A53 Gr B for all HSS.

Galvanize all metal components of steel rail system. Apply additional coatings when shown elsewhere on the plans. When plans require paint over gavanizing, follow the requirements for painting galvanized steel in Item 445, "Galvanizing" and when field painting, Item 446, "Field Cleaning and Painting Steel". Sleeve members and anchor bolts must receive galvanization prior to installation and only field paint after installation unless directed otherwise by Engineer.

Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars U and WU unless noted otherwise. Deformed WWR (ASTM 1064) may be substituted for Bars R and S, as shown. Combinations of reinforcing steel and WWR or configurations of WWR other that shown are permitted if conditions in the table are satisfied. Provide the same laps as required for reinforcing bars.

Anchor bolts must be ⅝" Dia ASTM A307 Gr A fully threaded rods with one hex nut and one hardened steel washer (ASTM F436) each. Nuts must conform to ASTM A563 requirements. Embed fully threaded rods into parapet wall with a Type III, Class C, D, E, or F anchor adhesive. Minimum adhesive anchor embedment depth is 3". Anchor adhesive chosen must be able to achieve a nominal bond strength in tension of a single anchor, Na, of 5 kips (edge distance must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing".

Optional cast-in-place anchor bolts must be ⅝" Dia ASTM A307 Gr A bolts (or threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer (ASTM F436) at each bolt. Nuts must conform to ASTM A563 requirements.

Provide bar laps, where required, as follows: Uncoated or galvanized ~ #4 = 1'–7"
Epoxy coated ~ #4 = 2'–5"

GENERAL NOTES:

This rail has been evaluated and accepted to be of equal strength to railings with like geometry, which have been crash tested to meet MASH TL-3 criteria. This rail can be used for speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 45 mph and less.

Do not use this railing on bridges with expansion joints providing more than 5" movement.

Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Submit erection drawings showing panel lengths, rail post spacing, and anchor bolt setting to the Engineer for approval.

Average weight of railing with no overlay: 380 plf (total)
370 plf (Conc)
10 plf (Steel)

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

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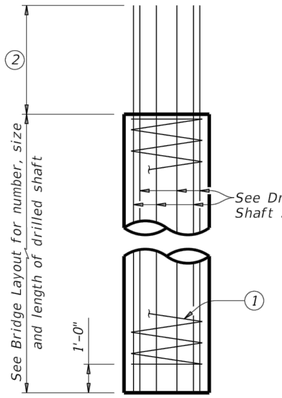
COMBINATION RAIL

TYPE C221

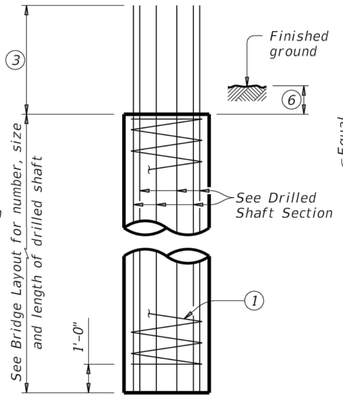
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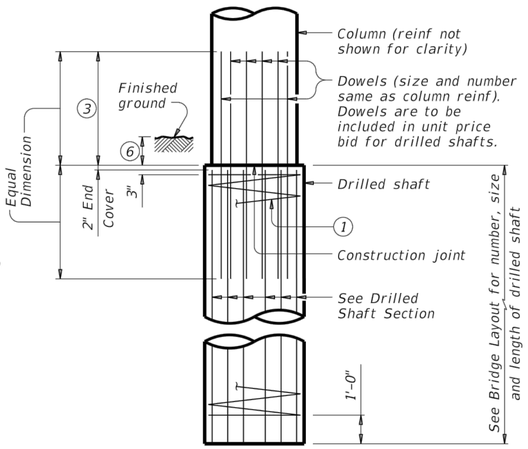
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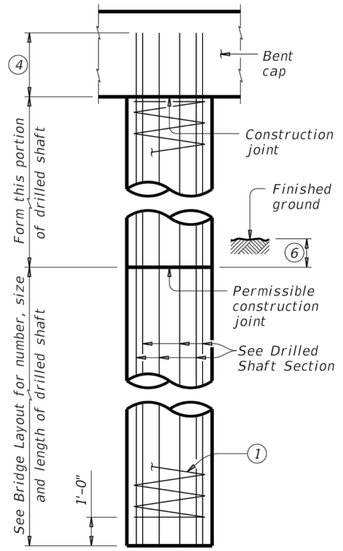
ABUTMENTS, WINGWALLS AND MULTI-DRILLED SHAFT FOOTINGS



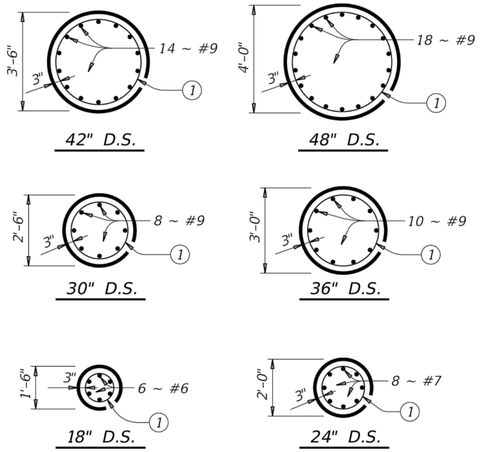
INTERIOR BENTS DRILLED SHAFT DIA EQUAL TO COLUMN DIA



INTERIOR BENTS DRILLED SHAFT DIA GREATER THAN COLUMN DIA



OPTIONAL INTERIOR BENT DRILLED SHAFT DETAIL (5)

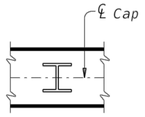


DRILLED SHAFT SECTIONS

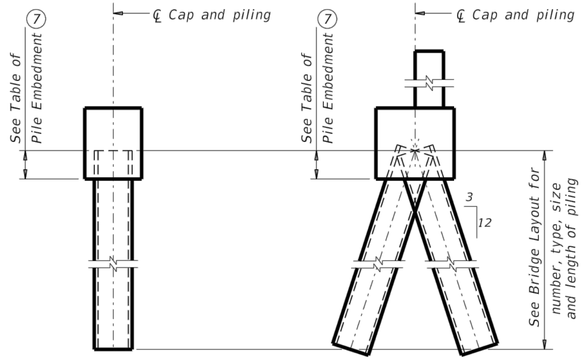
DRILLED SHAFT DETAILS

TABLE OF PILE EMBEDMENT	
Pile Type	Embedment Depth (Ft)
16" Sq Concrete 18" Sq Concrete HP14 Steel HP16 Steel	1'-0"
20" Sq Concrete 24" Sq Concrete HP18 Steel	1'-6"

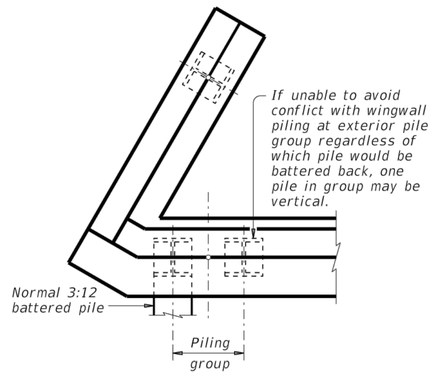
See Prestressed Concrete Piling (CP) standard for additional details on concrete pile embedment.



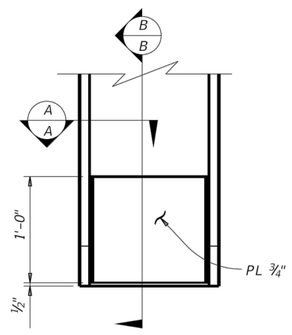
ORIENTATION OF STEEL H-PILING



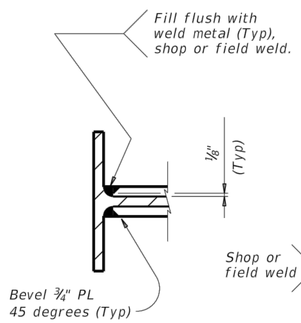
PILING DETAILS
(Concrete or steel H)



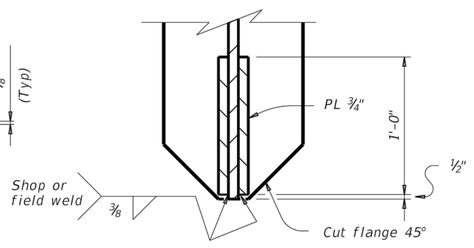
DETAIL "A"
(Showing plan view of a 30° skewed abutment)



ELEVATION



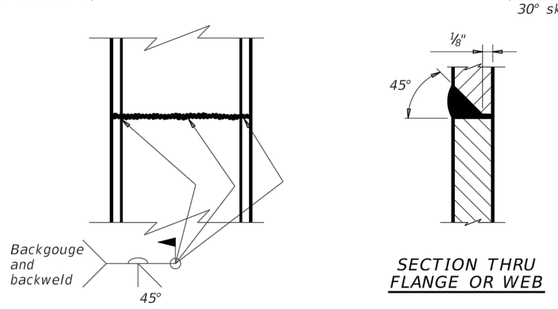
SECTION A-A



SECTION B-B

STEEL H-PILE TIP REINFORCEMENT

See Item 407 "Steel Piling" to determine when tip reinforcement is required and for options to the details shown.



SECTION THRU FLANGE OR WEB

STEEL H-PILE SPLICE DETAIL

Use when required.

(1) #3 spiral at 6" pitch (one and a half flat turns top and bottom).

(2) Min extension into supported element:
#6 Bars = 1'-11"
#7 Bars = 2'-0"
#9 Bars = 2'-3"

(3) Min lap with column reinf:
#7 Bars = 2'-11"
#9 Bars = 3'-9"

(4) Min extension into supported element:
#6 Bars = 1'-11"
#7 Bars = 2'-3"
#9 Bars = 2'-9"

(5) Drilled shafts may extend to the bottom of bent caps for "H" heights of 6 ft and less (as shown on the Bridge Layout), if approved. This option can only be used when the drilled shaft diameter equals the column diameter. Obtain approval of the forming method above the ground line prior to construction. No adjustments in payment will be made if this option is used.

(6) 1'-0" Min, unless shown otherwise on plans.

(7) Or as shown on plans.

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Bridge Division Standard

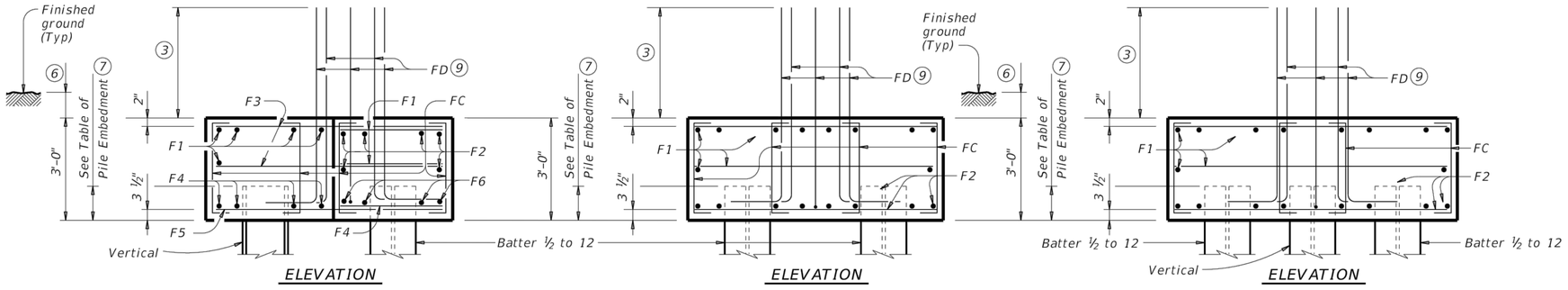
COMMON FOUNDATION DETAILS

FD

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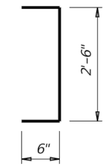
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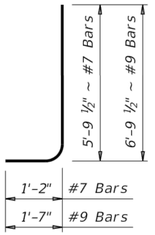
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ELEVATION

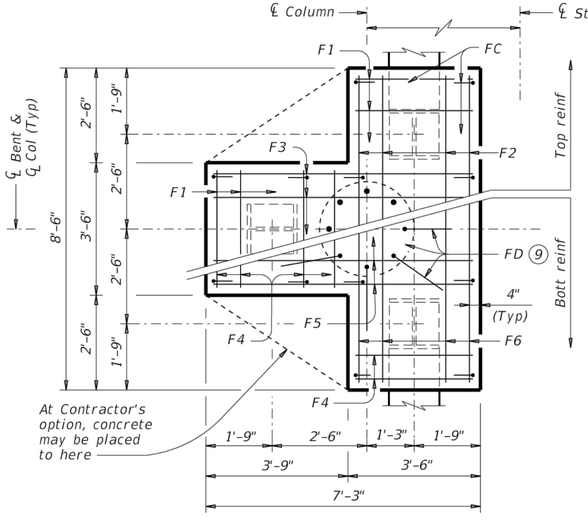
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BARS FC



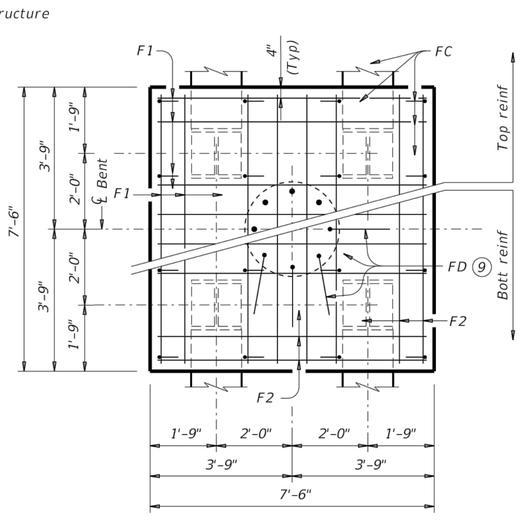
BARS FD (9)



PLAN

THREE PILE FOOTING (8)

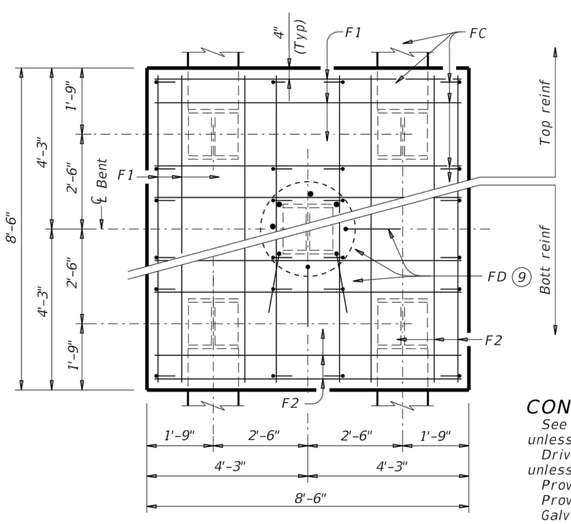
For 36" Dia and smaller columns.



PLAN

FOUR PILE FOOTING (8)

For 42" Dia and smaller columns.



PLAN

FIVE PILE FOOTING (8)

For 42" Dia and smaller columns.

(3) Min lap with column reinf:
#7 Bars = 2'-11"
#9 Bars = 3'-9"

(6) 1'-0" Min, unless shown otherwise on plans.

(7) Or as shown on plans.

(8) See Bridge Layout for type, size and length of piling.

(9) Number and size of FD bars must match column reinforcing. Tie FD bars to the top of the bottom reinforcing mat.

(10) For 24" columns, use #7 FD bars (7'-1") in place of #9 bars and deduct 116 lbs.
For 36" columns, add 2 FD bars (55 lbs).

(11) For 24" columns, use #7 FD bars (7'-1") in place of #9 bars and deduct 116 lbs.
For 36" columns, add 2 FD bars (55 lbs).
For 42" columns, add 6 FD bars (172 lbs)
(42" columns disallowed on 3 Pile Footings)

TABLE OF FOOTING QUANTITIES FOR 30" COLUMNS

ONE 3 PILE FOOTING				
Bar	No.	Size	Length	Weight
F1	11	#4	3'- 2"	23
F2	6	#4	8'- 2"	33
F3	6	#4	6'- 11"	28
F4	8	#9	3'- 2"	86
F5	4	#9	6'- 11"	94
F6	4	#9	8'- 2"	111
FC	12	#4	3'- 6"	28
FD (10)	8	#9	8'- 8"	231
Reinforcing Steel			Lb	606
Class "C" Concrete			CY	4.8

ONE 4 PILE FOOTING				
Bar	No.	Size	Length	Weight
F1	20	#4	7'- 2"	96
F2	16	#8	7'- 2"	306
FC	16	#4	3'- 6"	37
FD (11)	8	#9	8'- 8"	231
Reinforcing Steel			Lb	670
Class "C" Concrete			CY	6.3

ONE 5 PILE FOOTING				
Bar	No.	Size	Length	Weight
F1	20	#4	8'- 2"	109
F2	16	#9	8'- 2"	444
FC	24	#4	3'- 6"	56
FD (11)	8	#9	8'- 6"	231
Reinforcing Steel			Lb	840
Class "C" Concrete			CY	8.0

CONSTRUCTION NOTES:

See Bridge Layout for foundation type required. Use these foundation details unless shown otherwise.
Drive piling under abutment wingwalls to a minimum resistance of 10 Tons/Pile unless shown otherwise.
Provide Class C Concrete (f'c = 3,600 psi), unless shown otherwise.
Provide Grade 60 reinforcing steel.
Galvanize reinforcing if shown elsewhere in the plans.
Provide bar laps for drilled shaft reinforcing, where required, as follows:
Uncoated or galvanized (#6) ~ 2'-6"
Uncoated or galvanized (#7) ~ 2'-11"
Uncoated or galvanized (#9) ~ 3'-9"

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

DESIGNER NOTES:

Do not use the drilled shaft details shown on this standard for retaining wall, noise wall, barrier, or sign foundations without structural evaluation.
Do not use the footings shown on this standard in direct contact with salt water or exposed to salt water spray.
Maximum allowable pile loads for the footings shown are :
72 Tons/Pile with 24" Dia Columns
80 Tons/Pile with 30" Dia Columns
100 Tons/Pile with 36" Dia Columns
120 Tons/Pile with 42" Dia Columns

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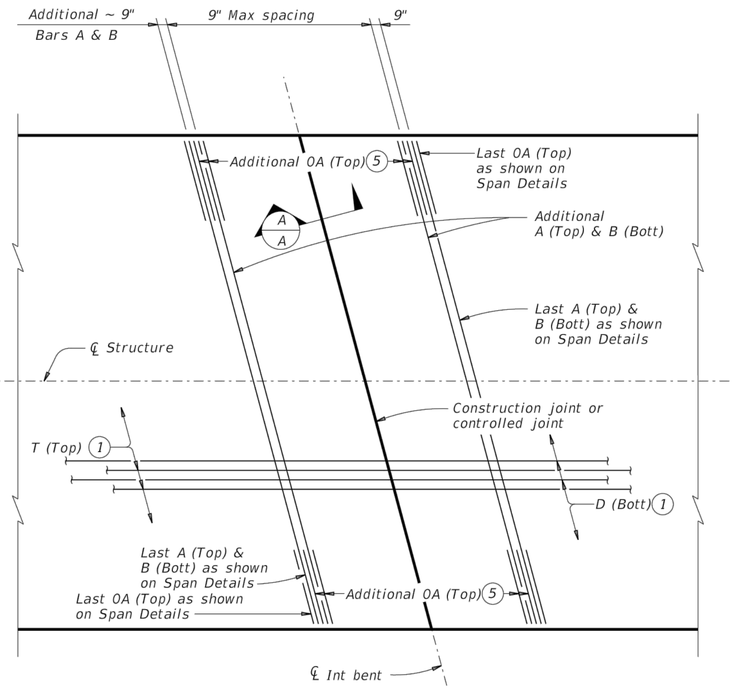
COMMON FOUNDATION DETAILS

FD

FILE: fdstde01-19.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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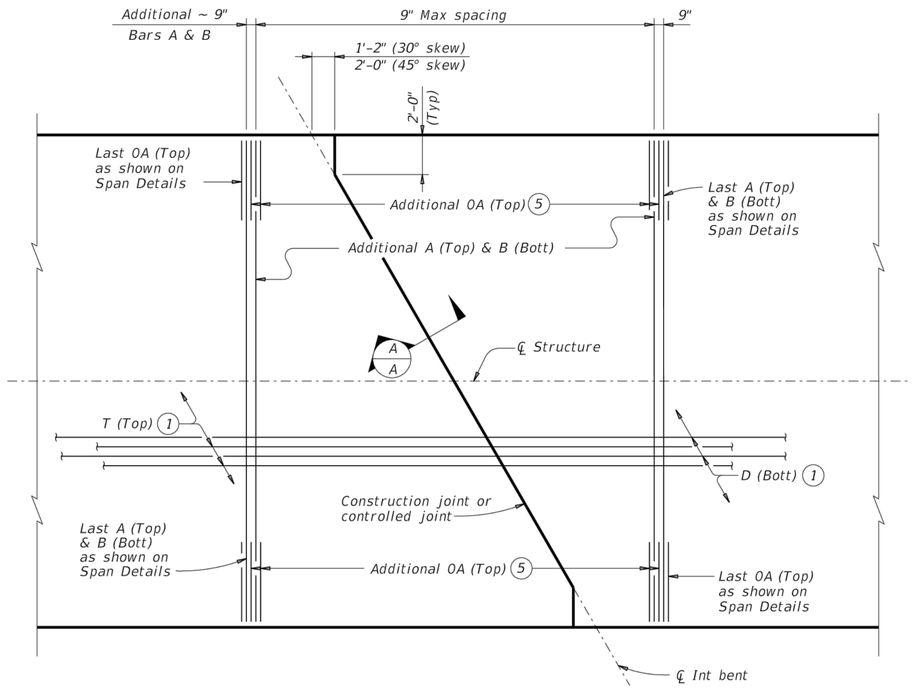
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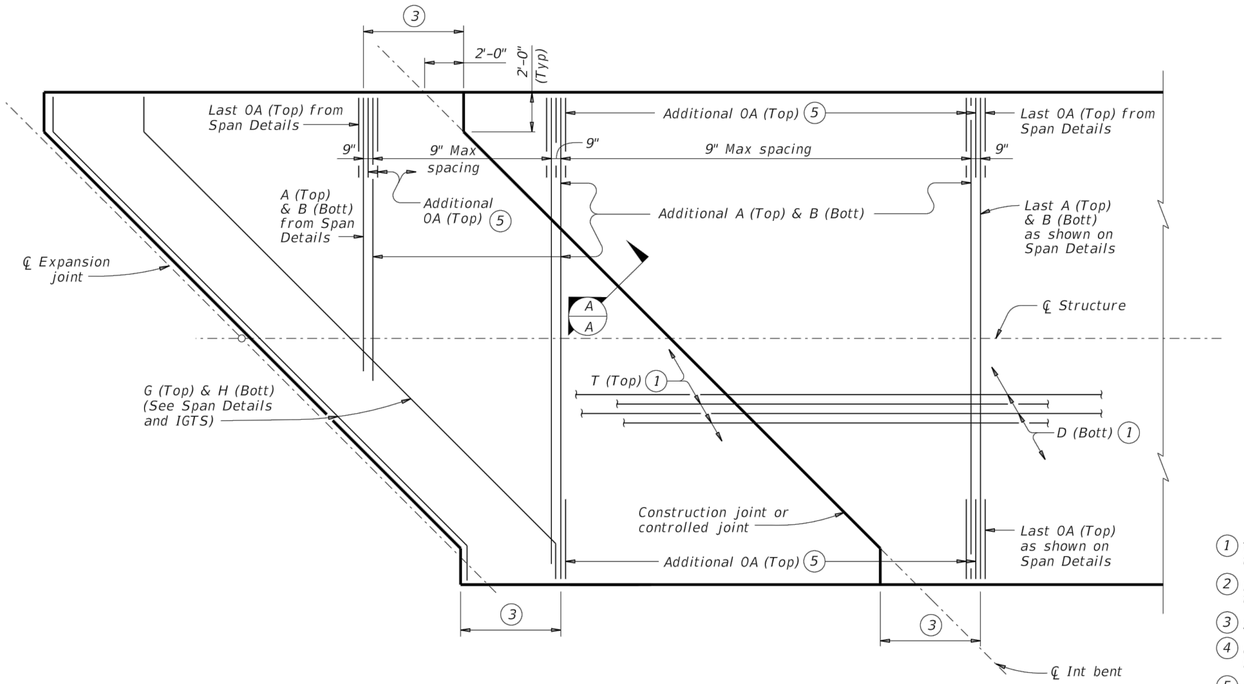
PLAN FOR 0° OR 15° SKEW

(Showing 15° skew)



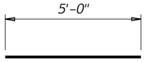
PLAN FOR 30° OR 45° SKEW

(Showing 30° skew)

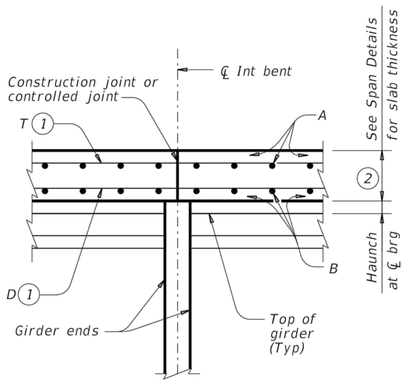


PLAN FOR 45° SKEW 4

(Showing short span condition.)



BARS OA (#5)



SECTION A-A

Bars 0A (Top) not shown for clarity.

1. Top and bottom mats must be continuous through joint.
2. Maintain a constant slab thickness over the bent.
3. 5'-4" as shown on Span Details.
4. Use these details when no full slab width bars A and B are shown on Span Details.
5. Bars 0A (Top) at 9" Max spacing between Bars A (Top).
6. Values in table assume a temperature change of 70° F after erection when calculating thermal movement in one direction (not total).

TABLE OF (6) ALLOWABLE UNIT LENGTH

Max Rdwy Grade, Percent	Unit Length Factor
0.00	4.1
1.00	3.9
2.00	3.7
3.00	3.5
4.00	3.3
5.00	3.1

Unit length must not exceed the length of the shortest end span times the Unit Length Factor shown in table or 400', whichever is less.

BAR TABLE

BAR	SIZE
A	#4
B	#4
D	#4
T	#4
0A	#5

The details shown on this sheet are applicable for two and three span units comprised of the same girder type.
Units may be comprised of different span lengths. See "Table of Allowable Unit Length".

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

This standard is drawn showing right forward skew. See Bridge Layout for actual skew direction.

CONSTRUCTION NOTES:

Where multi-span units are indicated on the Bridge Layout, the thickened slab end details and reinforcement shown on IGTS standard (Bars AA, G, H, J, K, and M) and on the Span Details will be omitted where slabs are continuous over interior bents. At these locations, the slab details and reinforcement will be as shown on this sheet or on PCP standard (if using this option).

Thickened slab end reinforcement and details still apply at expansion joint locations (ends of units).

See Span Details for remainder of slab reinforcement and details.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.

Provide Class "S" concrete (f'c = 4,000 psi). Provide Class "S" (HPC) if shown elsewhere on the plans.

Provide bar laps, where required, as follows:
Uncoated ~ #4 = 1'-7"
Epoxy Coated ~ #4 = 2'-5"

The details shown on this sheet are applicable for use only with the Prestressed Concrete I-Girder Standard Designs shown on standards IGSD-24, IGSD-28, IGSD-30, IGSD-32, IGSD-38, IGSD-40 and IGSD-44.

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CONTINUOUS SLAB DETAILS

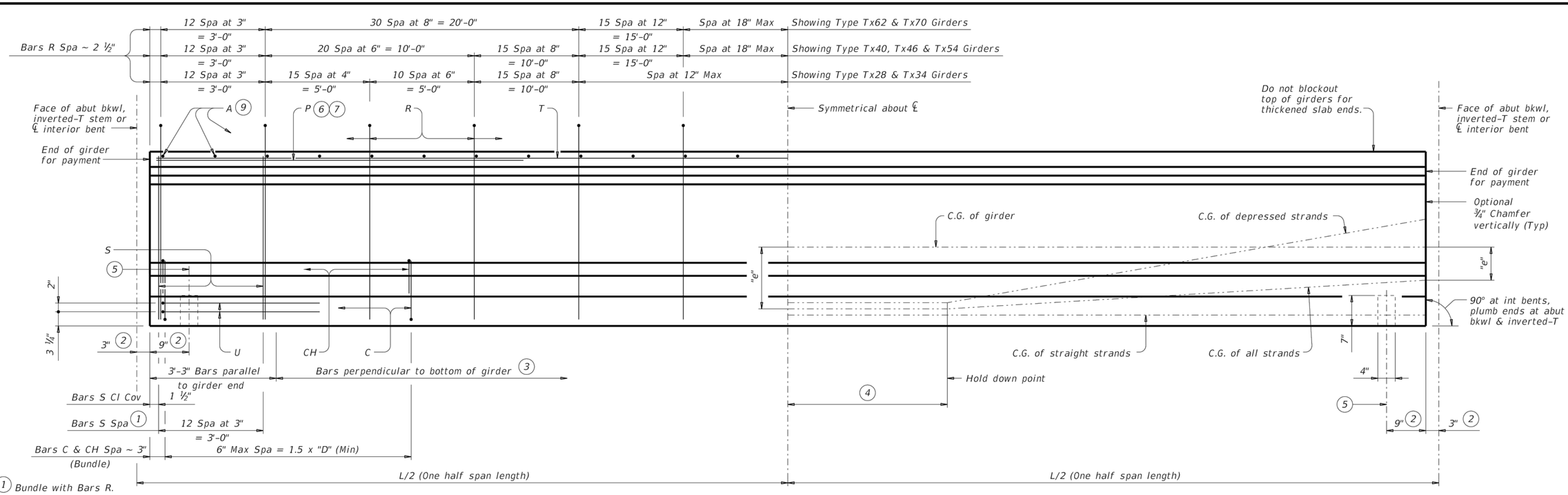
PRESTR CONC I-GIRDER SPANS

IGCS

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REVISIONS 10-19: Added bubble note 6.	DIST	COUNTY		SHEET NO. C5.22

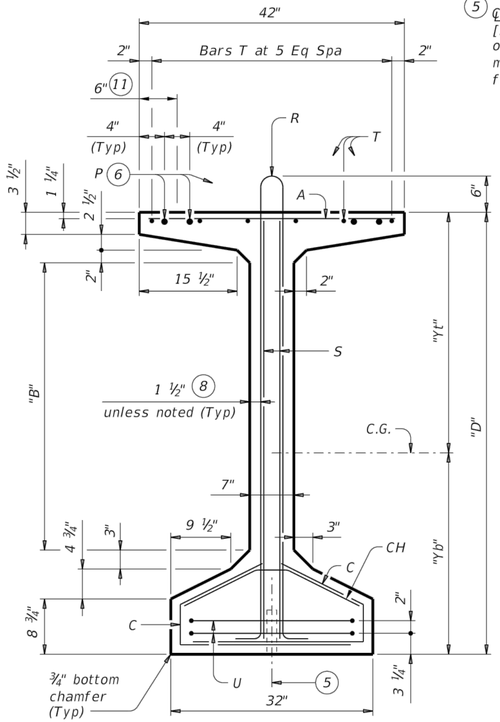
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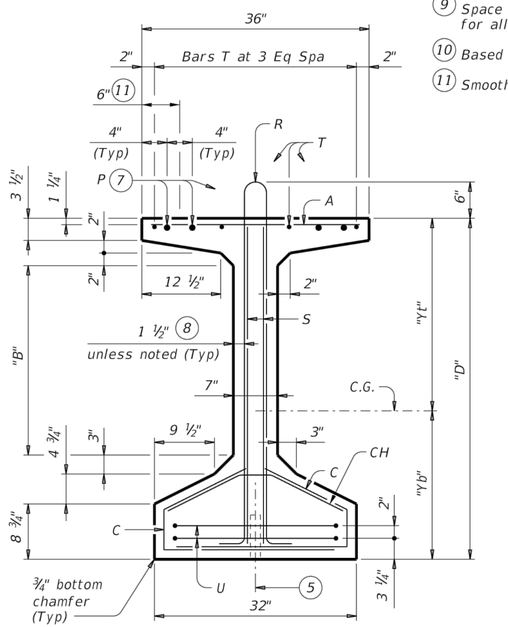


GIRDER ELEVATION

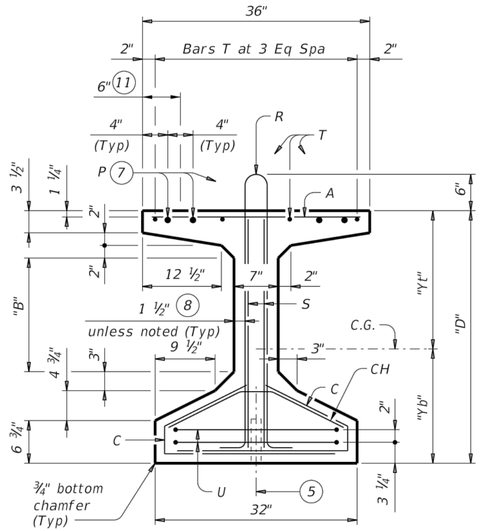
1. Bundle with Bars R.
2. Measured along ℄ Girder at interior bents; perpendicular to abutment bkwl or inverted-T stem.
3. The average of the top and bottom spacing of Bars R cannot exceed the required spacing.
4. L/20, but not less than 5'-0" (-0,+2').
5. ℄ 4" x 1 ½" Vertical Slotted Hole at doweled girder end [labeled (D) on Bridge Layout]. Required for outside girder only or as shown on substructure details. Anchorage holes may be tapered (4 ¾" x 1 ⅝") at base. If holes are formed with sheet metal, forms may be left in place.
6. Bars P (#6 x 15'-0") required in Tx62 and Tx70 girders. At the fabricator's option bars larger than #6 may be used. When L is less than 50 ft, Bars P are to be the same length as Bars T.
7. Bars P (#6 x 15'-0") are only required in Tx28, Tx34, Tx40, Tx46, and Tx54 girders when "e" at girder ends exceeds 0.25 x "D". At the fabricator's option bars larger than #6 may be used. When L is less than 50 ft, Bars P are to be the same length as Bars T.
8. 1 ⅜" Clear Cover to Bars S.
9. Space Bars A at 6" Max for girders requiring overhang bracket hangers. Space at 12" Max for all other girders. Tie to Bars R as necessary. See standard IGMS for "Deck Forming Notes".
10. Based on 155 pcf total weight of concrete and reinforcing steel.
11. Smooth trowel finish on the slab overhang side of exterior girder.



TYPE Tx62 & Tx70



TYPE Tx46 & Tx54



TYPE Tx28, Tx34 & Tx40

GIRDER DIMENSIONS AND SECTION PROPERTIES

Girder Type	"D" (in.)	"B" (in.)	"Yt" (in.)	"Yb" (in.)	Area (in.²)	"Ix" (in.⁴)	"Iy" (in.⁴)	Weight (10) (plf)
Tx28	28	6	15.02	12.98	585	52,772	40,559	630
Tx34	34	12	18.49	15.51	627	88,355	40,731	675
Tx40	40	18	21.90	18.10	669	134,990	40,902	720
Tx46	46	22	25.90	20.10	761	198,089	46,478	819
Tx54	54	30	30.49	23.51	817	299,740	46,707	880
Tx62	62	37 ½"	33.72	28.28	910	463,072	57,351	980
Tx70	70	45 ½"	38.09	31.91	966	628,747	57,579	1,040

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
Provide Class H concrete.
Provide Grade 60 reinforcing steel.
An equal area of deformed Welded Wire Reinforcement (WWR) (ASTM A1064) may be substituted for Bars A, C, R or T unless otherwise noted.
It is permissible for bars or strands to come in contact with materials used in forming anchor holes.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

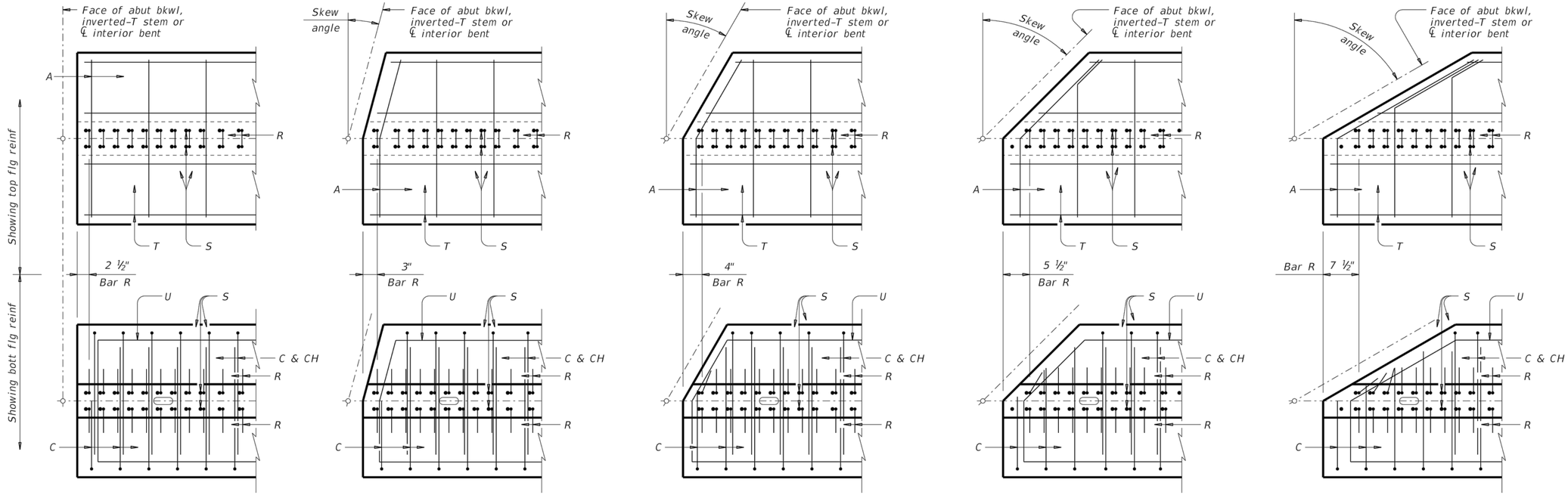
PRESTRESSED CONCRETE I-GIRDER DETAILS

IGD

FILE: igdstds1-17.dgn	DN: TxDOT	CK: JMH	DW: JTR	CK: JMH
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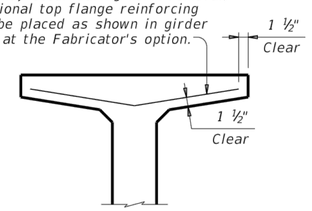
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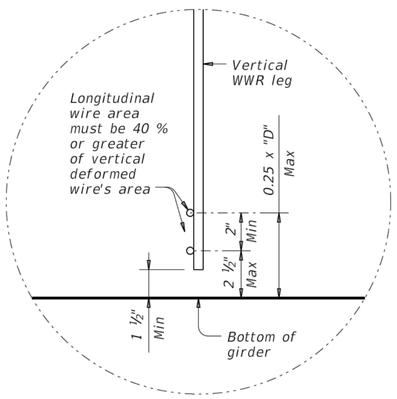


PLAN OF GIRDER ENDS (12)

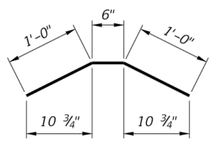
To control top flange cracking that may occur during form removal, additional top flange reinforcing may be placed as shown in girder ends at the Fabricator's option.



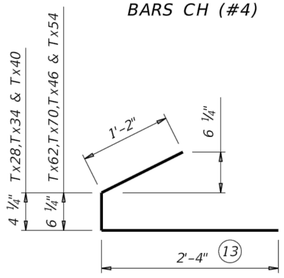
OPTIONAL TOP FLANGE REINFORCING DETAIL



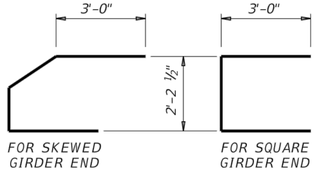
OPTIONAL WELDED WIRE REINFORCEMENT (WWR) DETAIL



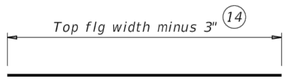
BARS CH (#4)



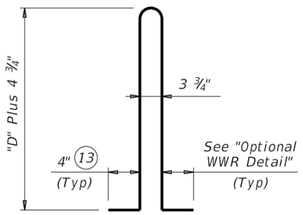
BARS C (#4)



BARS U (#5)



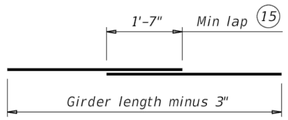
BARS A (#3)



BARS R (#4) (16)



BARS S (#6)



BARS T (#4)

(12) Reinforcing patterns shown are provided as guides to determine reinforcement placement in skewed ends. Place Bars S as close to girder end as cover requirements permit, which may prevent them to be bundled with Bars R.

(13) Bars may be cut or bent at skewed end as required.

(14) Increase as necessary for bars at skewed end.

(15) No portion of bar less than 10 ft.

(16) For Welded Wire Reinforcement (WWR) option, area of Bars R may be reduced in proportion to the increase in reinforcement yield strength over 60 ksi. Yield strength of WWR is limited to 75 ksi.

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

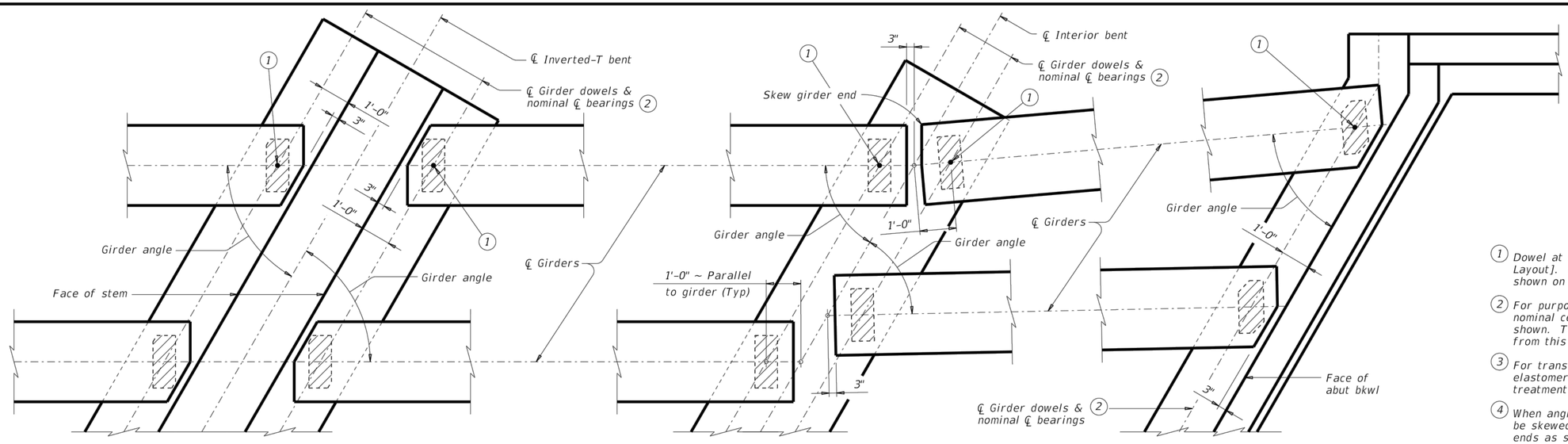
PRESTRESSED CONCRETE I-GIRDER DETAILS

IGD

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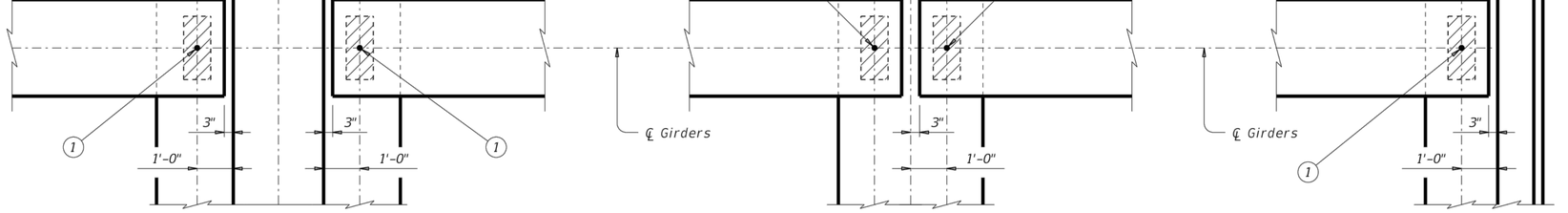
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AT INVERTED-T BENT W/SKEW

AT CONVENTIONAL INTERIOR BENT W/SKEW

AT ABUTMENT W/SKEW (3)

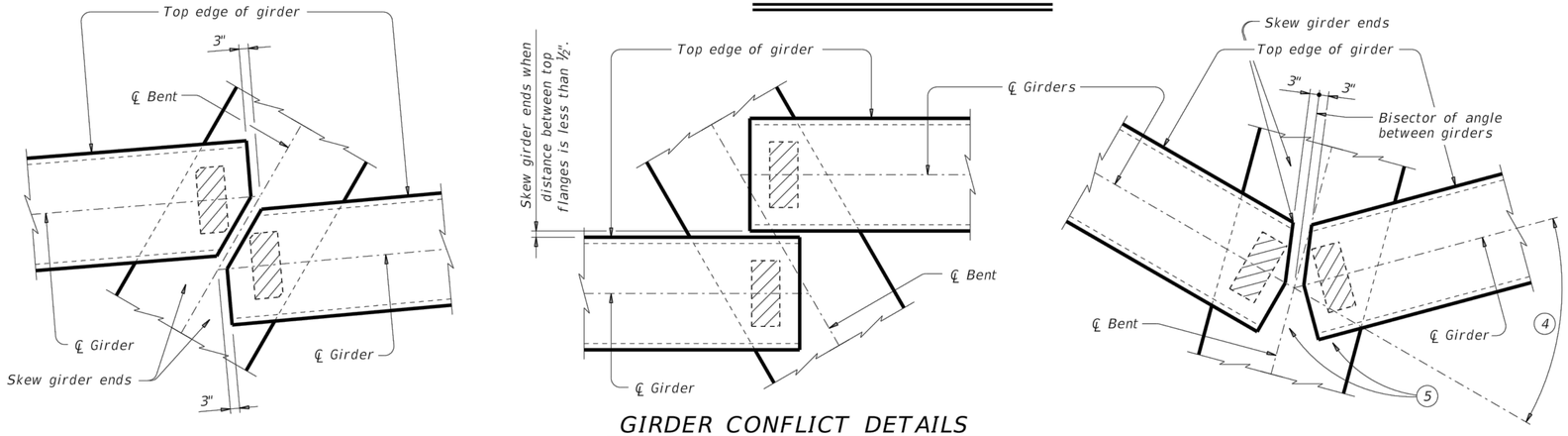


AT INVERTED-T BENT

AT CONVENTIONAL INTERIOR BENT

AT ABUTMENT (3)

GIRDER END DETAILS



GIRDER CONFLICT DETAILS

GENERAL NOTES:

These details accommodate skew angles up to 60°.

Shop drawings for approval are required.

A bearing layout which identifies location and orientation of all bearings must be developed by the bearing fabricator. Permanently mark each bearing in accordance with the bearing layout. A copy of the bearing layout is to be provided to the Engineer.

Cost of furnishing and installing elastomeric bearings, including beveled and embedded steel plates, must be included in unit price bid for "Prestressed Concrete Girders".

HL93 LOADING

SHEET 1 OF 3

Texas Department of Transportation

Bridge Division Standard

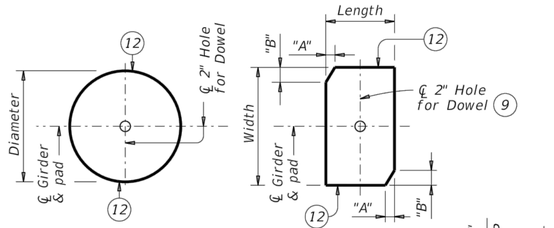
ELASTOMERIC BEARING AND GIRDER END DETAILS
PRESTR CONCRETE I-GIRDERS

IGEB

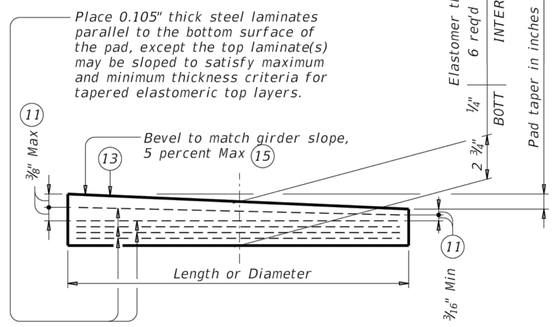
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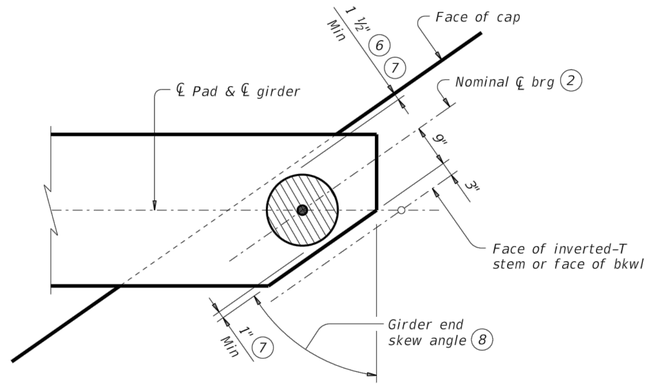
PLANS (10)



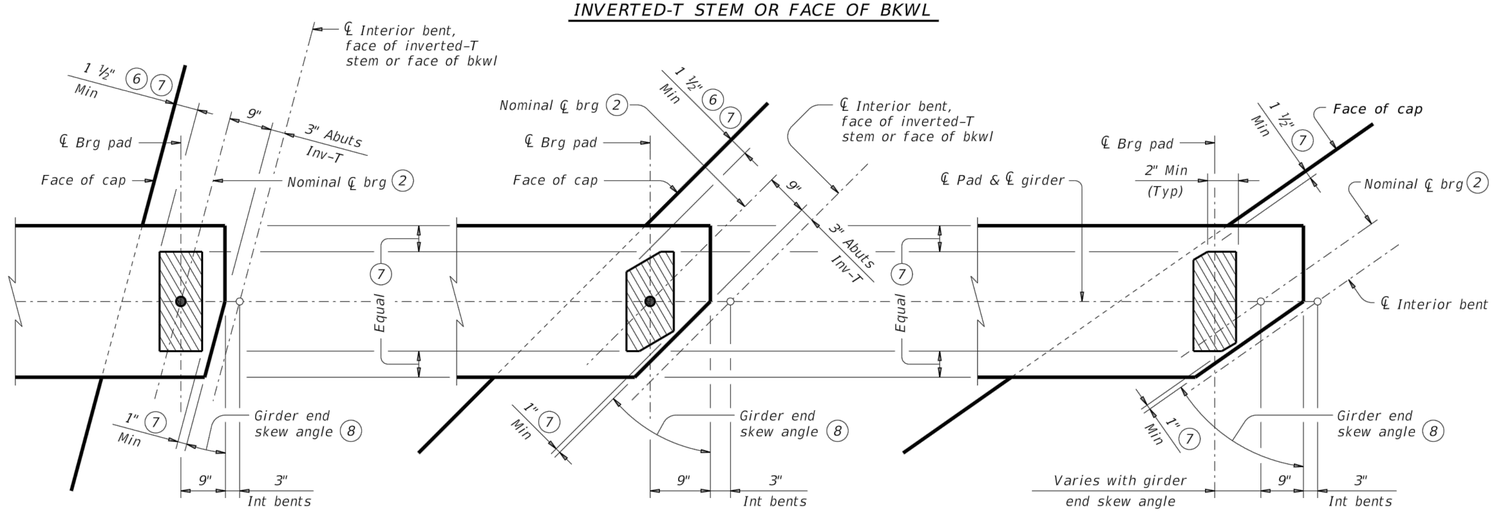
ELEVATION

LAMINATED ELASTOMERIC BEARING PAD

(50 DUROMETER)



ROUND BEARINGS FOR SKEWED GIRDER ENDS AT FACE OF INVERTED-T STEM OR FACE OF BKWL



SKEWED GIRDER ENDS AT INT BENTS, FACE OF INVERTED-T STEM OR FACE OF BKWL

SKEWED GIRDER ENDS AT CONVENTIONAL INTERIOR BENTS (16)

(NO GIRDER DOWELS)

BEARING PAD PLACEMENT DIAGRAMS

TABLE OF MINIMUM SUBSTRUCTURE DIMENSIONS (14)

Girder Type	Abutments	Int Bents	Inv-T Bents
	Face of Bkwl to Face of Cap	Overall Cap Width	Corbel Width
Tx28 thru Tx54	1'-9"	3'-6"	1'-10 ½"
Tx62 & Tx70	2'-0"	4'-0"	2'-1 ½"

TABLE OF BEARING PAD DIMENSIONS

Bent Type	Girder Type	Bearing Type (13)	Girder End Skew Angle Range	Pad Size Lgth x Wdth	Pad Clip Dimensions "A"	Pad Clip Dimensions "B"
ABUTMENTS, INVERTED-T AND TRANSITION BENTS WITH BACKWALLS	Tx28,Tx34, Tx40,Tx46 & Tx54	G-1-"N"	0° thru 21°	8" x 21"	---	---
		G-2-"N"	21°+ thru 30°	8" x 21"	1 ½"	2 ½"
		G-3-"N"	30°+ thru 45°	9" x 21"	4 ½"	4 ½"
		G-4-"N"	45°+ thru 60°	15" Dia	---	---
	Tx62 & Tx70	G-5-"N"	0° thru 21°	9" x 21"	---	---
		G-6-"N"	21°+ thru 30°	9" x 21"	1 ½"	2 ½"
		G-7-"N"	30°+ thru 45°	10" x 21"	4 ½"	4 ½"
		G-8-"N"	45°+ thru 60°	10" x 21"	7 ¼"	4 ¼"
CONVENTIONAL INTERIOR BENTS	Tx28,Tx34, Tx40,Tx46 & Tx54	---	---	---	---	---
		---	---	---	---	---
		G-1-"N"	0° thru 60°	8" x 21"	---	---
	Tx62 & Tx70	G-5-"N"	0° thru 60°	9" x 21"	---	---
CONVENTIONAL INTERIOR BENTS WITH SKEWED GIRDER ENDS (GIRDER CONFLICTS) (16)	Tx28,Tx34, Tx40,Tx46 & Tx54	G-1-"N"	0° thru 18°	8" x 21"	---	---
		G-2-"N"	18°+ thru 30°	8" x 21"	1 ½"	2 ½"
		G-9-"N"	30°+ thru 45°	8" x 21"	3"	3"
		G-10-"N"	45°+ thru 60°	9" x 21"	6"	3 ½"
	Tx62 & Tx70	G-5-"N"	0° thru 18°	9" x 21"	---	---
		G-5-"N"	18°+ thru 30°	9" x 21"	---	---
		G-11-"N"	30°+ thru 45°	9" x 21"	1 ½"	1 ½"
		G-12-"N"	45°+ thru 60°	9" x 21"	3"	1 ¾"

(2) For purposes of computing bearing seat elevations, nominal centerline of bearing must be defined as shown. The actual center of bearing pad may vary from this line.

(6) 3" for inverted-T.

(7) Place centerline pad as near nominal centerline bearing as possible between limits shown.

(8) Girder end skew angle is equal to 90° minus the girder angle except at some conflicting girders.

(9) Provide 2" dia hole only at locations required. See Substructure details for location.

(10) See Table of Bearing Pad Dimensions for dimensions.

(11) Maximum and minimum layer thicknesses shown are for elastomer only, on tapered layers.

(12) Locate Permanent Mark here.

(13) Indicate BEARING TYPE on all pads. For tapered pads, locate BEARING TYPE on the high side. The Fabricator must include the value of "N" (amount of taper in ⅛" increments) in this mark.
Examples: N=0, (for 0" taper)
N=1, (for ⅛" taper)
N=2, (for ¼" taper)
(etc.)
Fabricated pad top surface slope must not vary from plan girder slope by more than $\left(\frac{0.0625"}{\text{Length or Dia}}\right)$ IN/IN.

(14) Substructure dimensions must satisfy the minimums provided to accommodate the elastomeric bearings shown on this standard.

(15) See sheet 3 of 3 for beveled plate use when slopes exceed 5 percent.

(16) If girder end is skewed for a girder conflict at an interior bent and a beveled sole plate is required, use bearing type for abutments at this location. Location of bearing centerline is to be set as for abutments in this case.

HL93 LOADING SHEET 2 OF 3

Texas Department of Transportation

Bridge Division Standard

ELASTOMERIC BEARING AND GIRDER END DETAILS

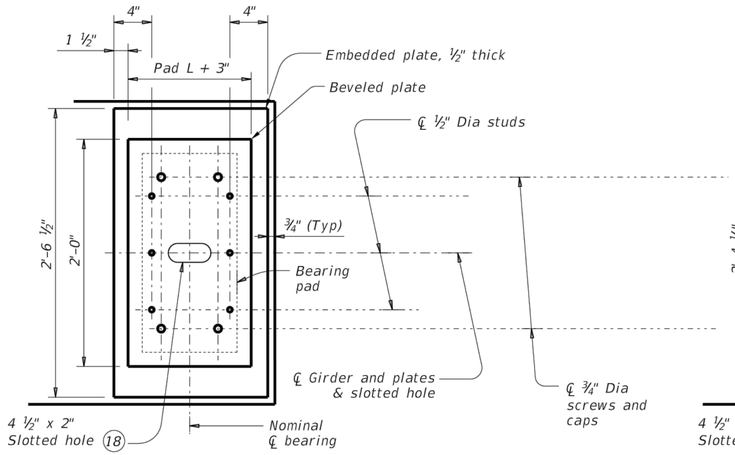
PRESTR CONCRETE I-GIRDERS

IGEB

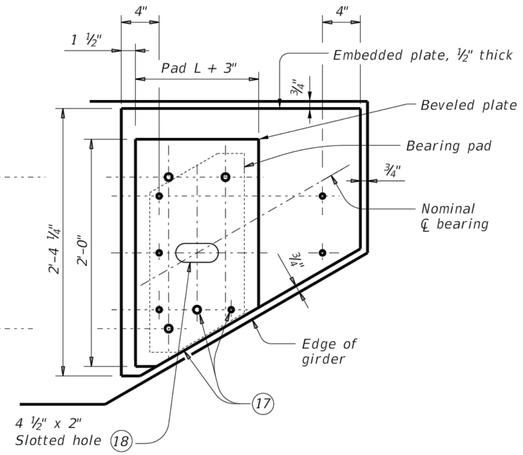
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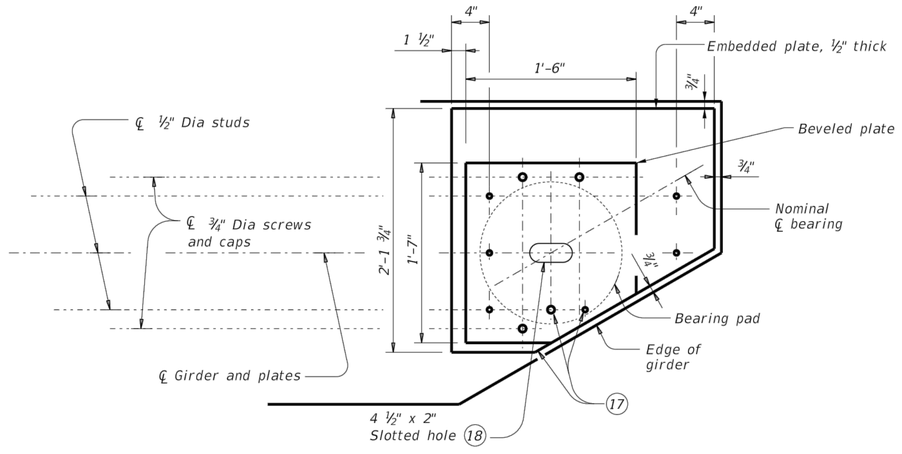
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NORMAL GIRDER END
RECTANGULAR BEARING PAD

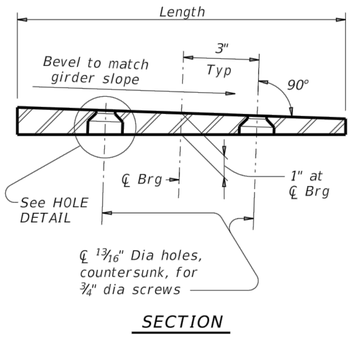


SKEWED GIRDER END
CLIPPED RECTANGULAR BEARING PAD

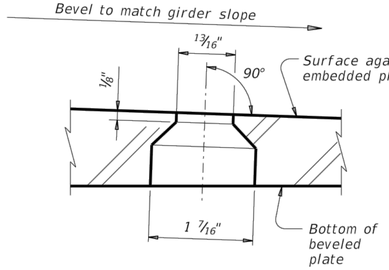


SKEWED GIRDER END
15" DIA BEARING PAD

PLAN VIEW OF SOLE PLATE DETAILS



SECTION



HOLE DETAIL

(17) Cut beveled and embedded plates to match girder end skew. Adjust location of screw and stud as shown when necessary.

(18) Slotted hole is required at doweled girder end locations.

SOLE PLATE NOTES:

Provide constant thickness elastomeric bearings with beveled and embedded steel sole plates in accordance with these details when the girder slope exceeds 5 percent or if otherwise required in the plans. Provide for all girders in the span.

On the shop drawings, dimension sole plates to the nearest 1⁄16" based on required thickness at centerline of bearing and slope of girder. Thickness tolerance variation from the approved shop drawings is 1⁄16"+/-, except variation from a plane parallel to the theoretical top surface can not exceed 1⁄16" total. Bearing surface tolerances listed in Item 424 apply to embedded and beveled plates.

Steel plate must conform to ASTM A36, A572 Gr 50, or A709 Gr 36 or Gr 50. Hot dip galvanize both the embedded plate and beveled sole plate after fabrication. Seal weld caps to embedded plate before galvanizing.

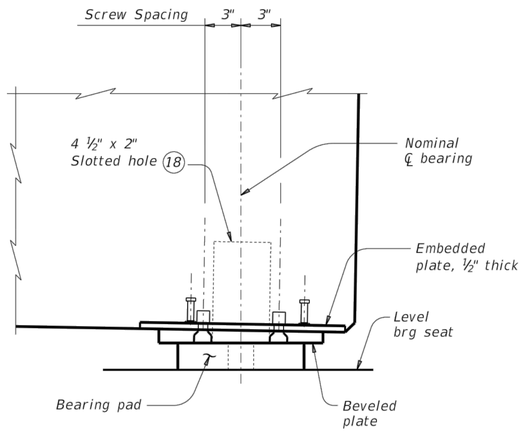
When determining if relocation of screw holes and studs are necessary for skewed girder ends, minimum clearance from screw or stud centerline to plate edge is 1.25".

Tap threads in the embedded plate only. Drill and tap prior to galvanizing.

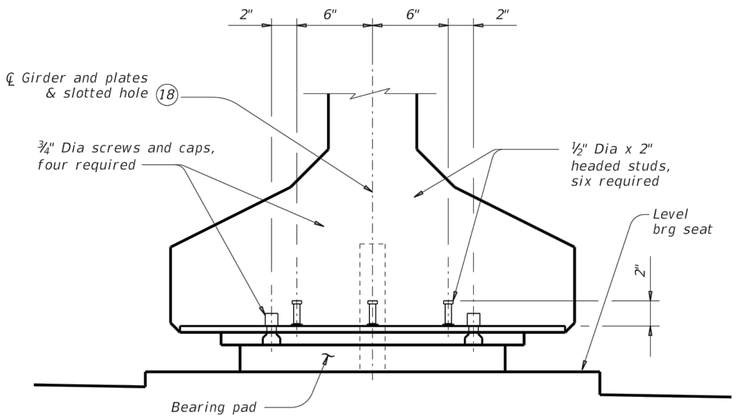
¾" Dia screws must be electroplated, socket flat head countersunk cap screws conforming to ASTM F835. Electroplating must conform to ASTM B633, SC 2, Type I. Provide screws long enough to maintain a ¾" minimum embedment into the embedded plate and galvanized cap. Provide galvanized steel caps (16 ga Min) with a nominal 1" inside diameter and deep enough to accommodate the screws, but not less than ½" deep or deeper than 1".

Install beveled sole plates prior to shipping girders. Installed screw heads must not protrude below the bottom of the beveled plate.

BEVELED PLATE DETAILS



SIDE ELEVATION



END ELEVATION
Showing normal girder end.

GIRDER DETAILS

HL93 LOADING SHEET 3 OF 3

Texas Department of Transportation | Bridge Division Standard

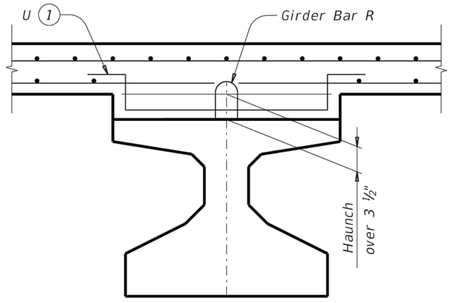
ELASTOMERIC BEARING AND GIRDER END DETAILS
PRESTR CONCRETE I-GIRDERS

IGEB

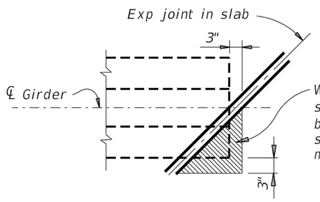
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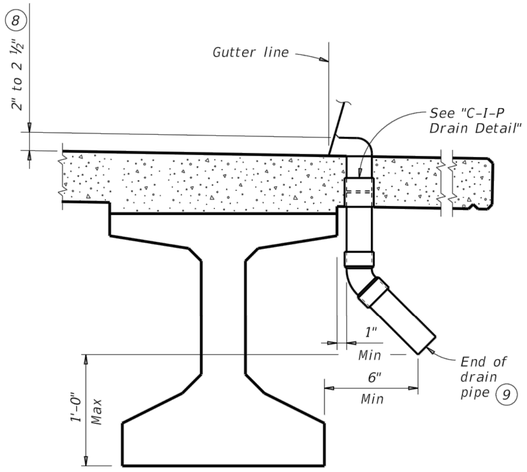


HAUNCH REINFORCING DETAIL

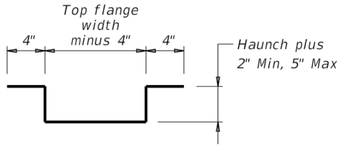


Where flanges project under slab of adjacent span, provide a minimum of ½" clearance between top of girder and bottom of adjacent slab. Polystyrene or other suitable compressible material may be used as a filler.

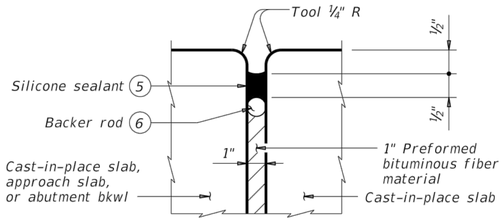
TREATMENT AT GIRDER END FOR SKEWED SPANS



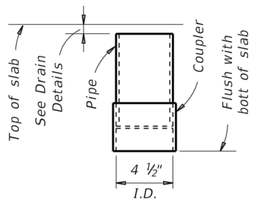
DRAIN DETAIL (10)



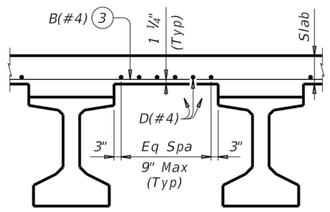
BARS U (#4)



TYPE A JOINT DETAIL (7)



C-I-P DRAIN DETAIL (2)



TYPICAL PART TRANSVERSE SLAB SECTION WITHOUT PCP (4)

Top reinforcing steel not shown for clarity.

(1) Space Bars U with girder Bars R in all areas where measured haunch exceeds 3 ½".

(2) Roughen outside of PVC with coarse rasp or equal to ensure bond with cast-in-place concrete.

(3) Bars B(#4) spaced at 9" Max with 2" end cover. Overhang option, Contractor's may end alternating bars B(#4) at centerline outside girder.

(4) Provide Grade 60 reinforcing steel. Provide bar laps, where required, as follows:
Uncoated ~ #4 = 1'-7"
Epoxy coated ~ #4 = 2'-5"

(5) Class 7 silicone sealant that conforms to DMS-6310. Install when ambient temperature is between 55°F and 85°F and rising. Engineer to determine allowable hours for sealant application.

(6) 1 ¼" backer rod must be compatible with joint sealant. Use of multiple pieces to create a backer rod cross section is not permitted. Top of backer rod must be convex as shown.

(7) The maximum distance between Type A expansion joints is 100'. See Bridge Layout for location of joints. Type A joints are subsidiary to Item 422, "Concrete Superstructures".

(8) Drain entrance formed in rail or sidewalk.

(9) Water may not be discharged onto girders.

(10) All drain pipe and fittings to be 4" diameter (Sch 40) PVC. See Item 481 "Pipe for Drains" for pipe, connections and solvent welding. Bend reinforcing steel to clear PVC 1". Drain length and location is as directed by the Engineer. Drains are not permitted over roadways or railways, or within 10'-0" of bent caps. Degrease outside of exposed PVC, apply acrylic water base primer, then coat with same surface finishing material as used for outside girder face. Variations of the above designs, as required for the type of rail used and its location on the structure, may be installed with the approval and direction of the Engineer.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

All items (reinforcing steel, drains, joint formers, etc.) shown on this sheet are subsidiary to other bid items.

Cover dimensions are clear dimensions, unless noted otherwise.

Reinforcing bar dimensions shown are out-to-out of bar.

DECK FORMWORK NOTES:

Overhang bracket hangers are limited to a safe working load of 3,600 lbs, applied to and along the axis of a coil rod at 45 degrees from vertical, regardless of higher loads permitted by hanger manufacturers. Do not place a hanger less than 12" from girder end. Space hangers accordingly.

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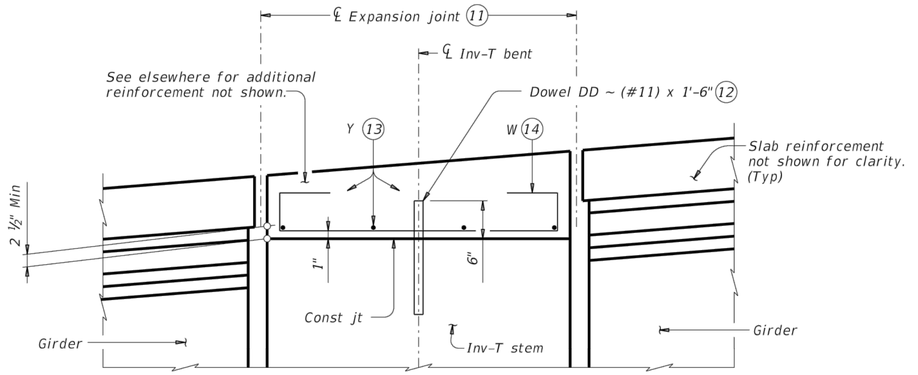
Bridge Division Standard

MISCELLANEOUS SLAB DETAILS

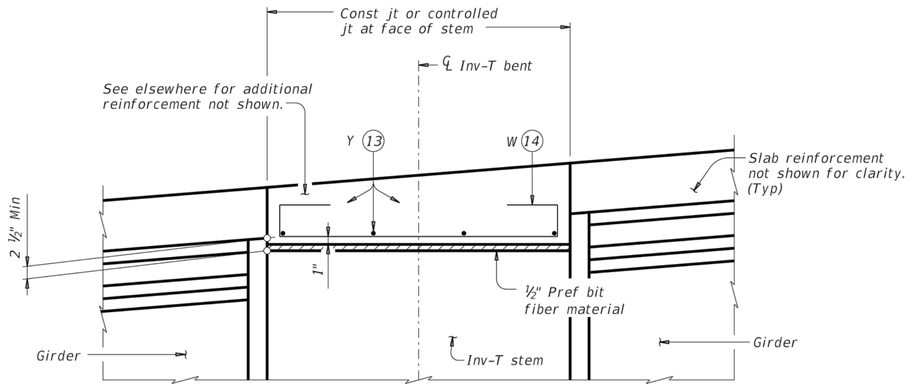
PRESTR CONCRETE I-GIRDERS

IGMS

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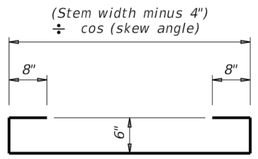


SHOWING EXPANSION JOINTS

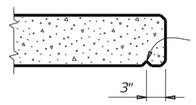


SHOWING CONST JTS OR CONTROLLED JTS

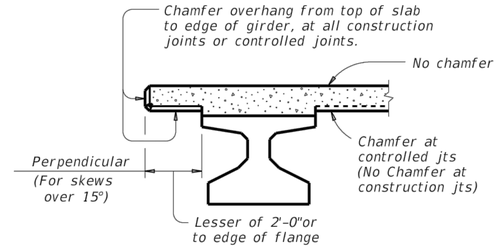
REINFORCEMENT OVER INV-T BENTS



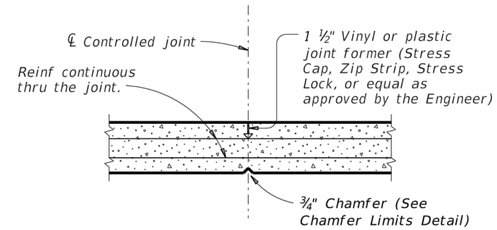
BARS W (#4)



DRIP BEAD DETAIL



CHAMFER LIMITS DETAIL (15)



CONTROLLED JOINT DETAIL

(Saw-cutting is not allowed)

(11) See Layout for joint type.

(12) Dowels DD (#11) spaced at 5 Ft Max. See Inv-T bents for quantity and location.

(13) Space Bars Y (#4) at 12" Max. Use 2" end cover. Number of Bars Y must satisfy spacing limit. Place parallel to bent.

(14) Space Bars W at 12" Max (3" from end of cap). Tilt if necessary to maintain cover requirements. Place parallel to longitudinal slab reinforcement.

(15) See Span details for type of joint and joint locations.

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SHEET 2 OF 2

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Bridge Division Standard

MISCELLANEOUS SLAB DETAILS

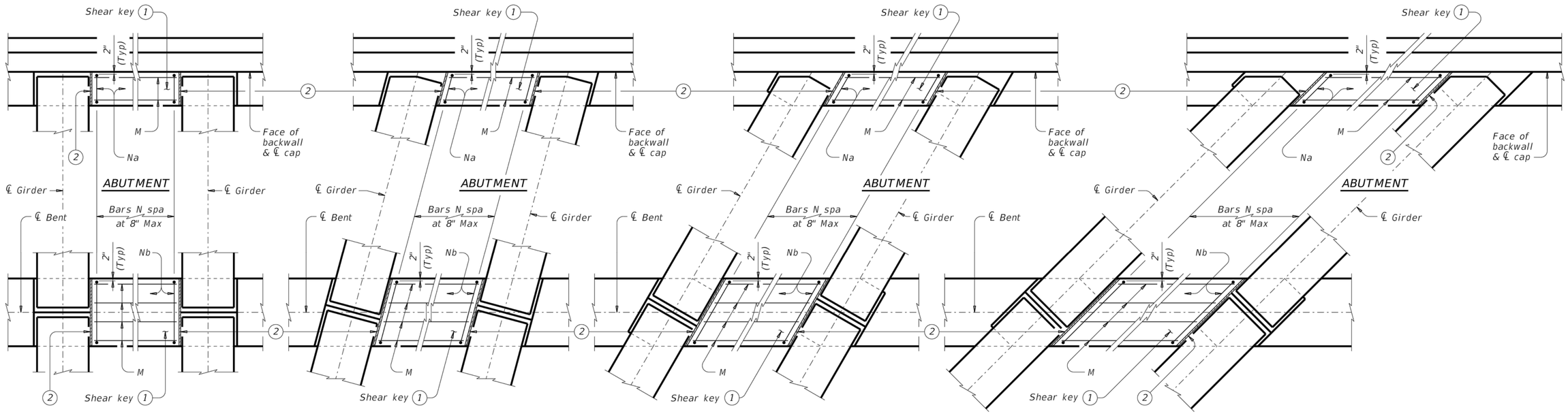
PRESTR CONCRETE I-GIRDERS

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PARTIAL PLANS WITH NO SKEW

Showing shear keys on 3'–6" wide caps. 4'–0" caps similar.

PARTIAL PLANS WITH 15° SKEW

Showing shear keys on 3'–6" wide caps. 4'–0" caps similar.

PARTIAL PLANS WITH 30° SKEW

Showing shear keys on 3'–6" wide caps. 4'–0" caps similar.

PARTIAL PLANS WITH 45° SKEW

Showing shear keys on 3'–6" wide caps. 4'–0" caps similar.

(1) Place shear keys on the upstream side of structure between outside girder and next adjacent girder, unless shown otherwise on plans.

(2) UHMW polyethylene wear pad. (Typ)

(3) Leave a ¼" gap plus or minus between girder and face of wear pad. Cast wear pad with shear key, smooth side facing girder. Care must be taken to keep concrete from flowing under girder. Slope top of shear keys in accordance with Item 420.4.9, "Treatment and Finishing of Horizontal Surfaces."

(4) Measure at higher bearing seat elevation forward or back. Dimension based on typical bearing pad and bearing seat. Increase as necessary to maintain 5" overlap.

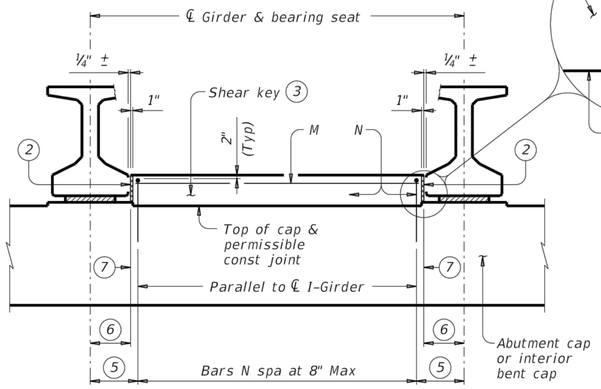
(5) With No Skew = 1'–8 ¼", measured along ℄ cap.
With Skew = 1'–8 ¼" ∗ Cos Skew, measured along ℄ cap.

(6) With No Skew = 1'–4 ¼", measured along ℄ cap.
With Skew = 1'–4 ¼" ∗ Cos Skew, measured along ℄ cap.

(7) Face of UHMW polyethylene wear pad. Smooth side of pad facing girder.

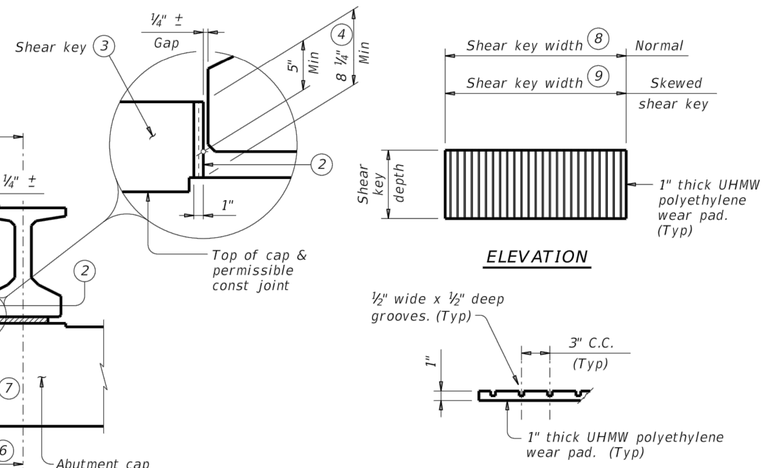
(8) Abutments = ½ Cap width.
Interior bents = Cap width.

(9) Abutments = ½ Cap width ∗ Cos Skew.
Interior bents = Cap width ∗ Cos Skew.

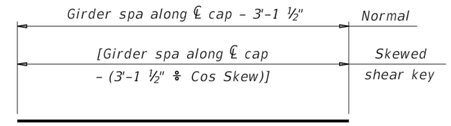


PARTIAL ELEVATION OF ABUTMENT OR INTERIOR BENT CAP (1)

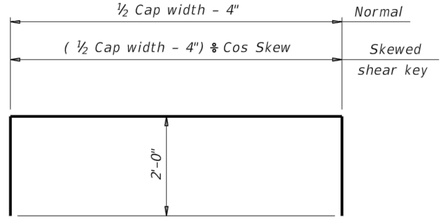
Showing shear key with girder Type Tx46. Other I-Girder types similar.



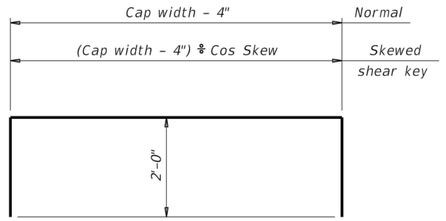
ULTRA HIGH MOLECULAR WEIGHT (UHMW) POLYETHYLENE WEAR PAD DETAILS



BARS M (#5)



BARS Na (#5)
(For abutments)



BARS Nb (#5)
(For interior bents)

CONSTRUCTION NOTES:

Provide Class "C" concrete (f'_c = 3,600 psi). Provide Class "C" (HPC) if shown elsewhere on the plans.

Provide Grade 60 reinforcing steel.

Provide epoxy coated reinforcing steel for shear key if abutment or interior bent reinforcing steel is epoxy coated.

Provide Ultra High Molecular Weight (UHMW) polyethylene wear pads in accordance with ASTM D6712.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Details showing skew are drawn showing right forward skew. See Bridge Layout for actual skew direction.

These details are limited to bridges skewed 45 degrees and less.

This standard is only applicable for I-Girders.

Modify details for bearing conditions, and girder spacing not shown on this standard. Details do not account for sole plate or pedestal bearing seat.

Include shear key concrete in abutment or bent concrete for payment.

UHMW polyethylene wear pads are subsidiary to Class "C" concrete.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

Texas Department of Transportation

Bridge Division Standard

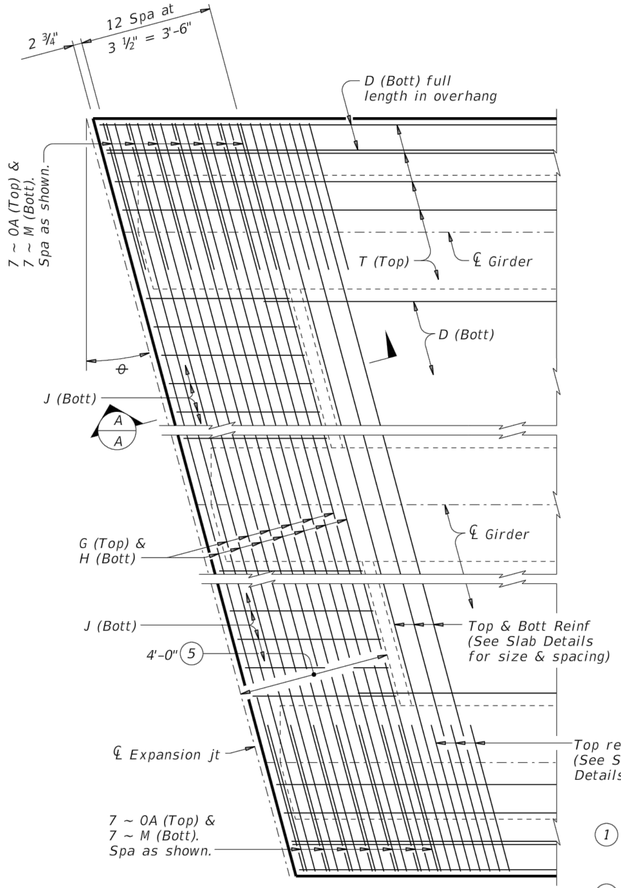
SHEAR KEY DETAILS
PRESTR CONCRETE I-GIRDERS

IGSK

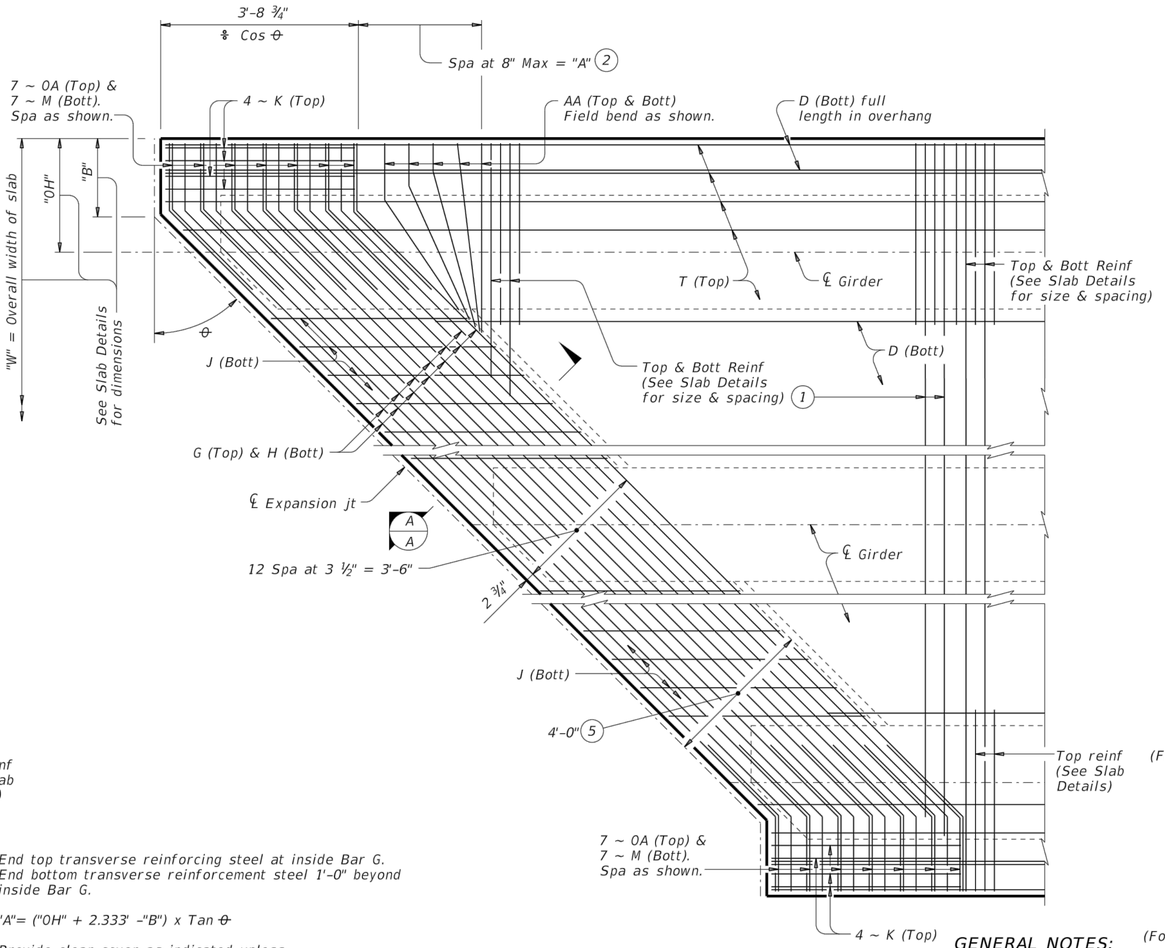
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PARTIAL PLAN FOR SLABS WITHOUT BREAKBACK



PARTIAL PLAN FOR SLABS WITH BREAKBACK

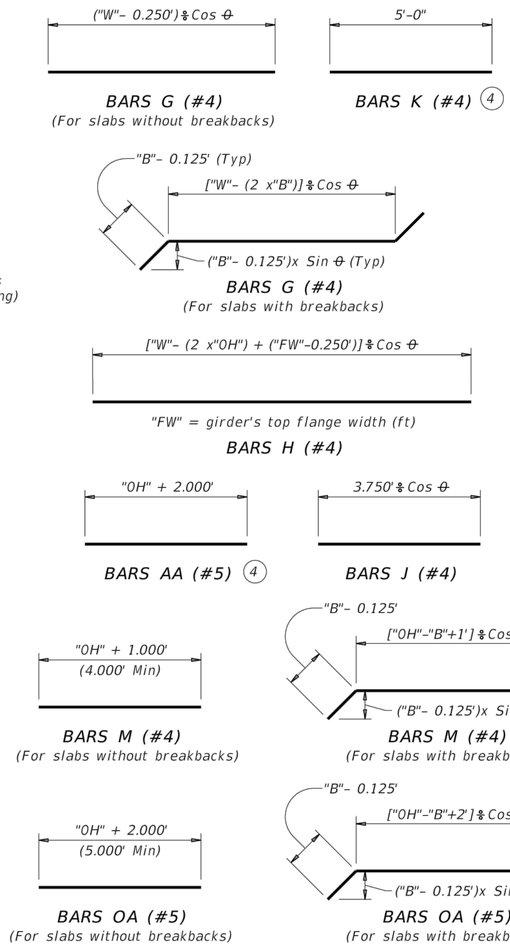
(1) End top transverse reinforcing steel at inside Bar G. End bottom transverse reinforcement steel 1'-0" beyond inside Bar G.

(2) "A"= ("0H" + 2.333' -"B") x Tan θ

(3) Provide clear cover as indicated unless otherwise shown on Span Details.

(4) Only required on slabs with breakbacks.

(5) Thickened slab end dimensioned perpendicular to face of bkwl, centerline interior bent or face of inverted-T stem.



GENERAL NOTES:

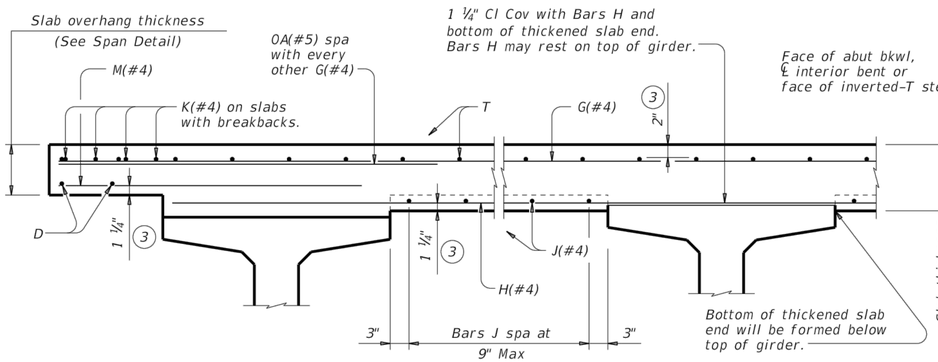
Designed according to AASHTO LRFD Bridge Design Specifications.
These details are restricted to Prestressed Concrete I-Girder Spans.
These details are to be used in conjunction with the Span Details and PCP standard (if prestressed concrete panels are used).
When Option 2 from PCP standard is used, provide Bars AA, G, K and OA in the slab.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
If slab reinforcing steel is shown on the Slab Details to be epoxy coated, then Bars AA, G, K, H, J, M and OA must be epoxy coated.
Provide bar laps, where required, as follows:
Uncoated ~ #4 = 1'-7"
Epoxy Coated ~ #4 = 2'-5"

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

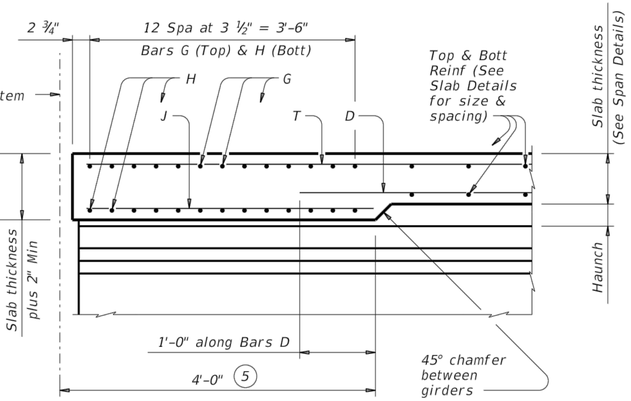
HL93 LOADING



2" AND MORE OF HAUNCH — LESS THAN 2" OF HAUNCH

TYPICAL TRANSVERSE SECTION

(Showing Prestressed Conc I-Girders at ℄ Brg)



SECTION A-A

(Showing with 2" and more of haunch)

Bridge Division Standard

Texas Department of Transportation

THICKENED SLAB END DETAILS

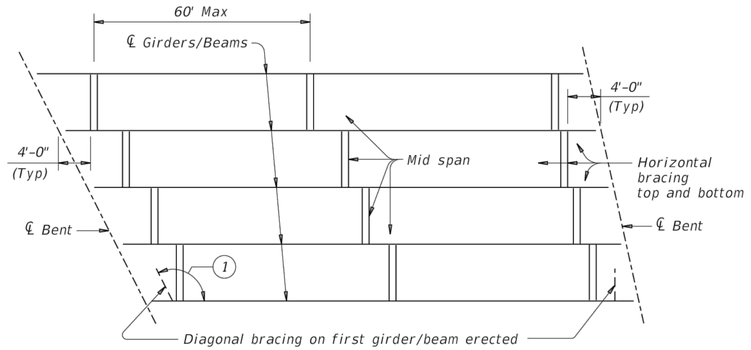
PRESTRESSED CONCRETE I-GIRDER SPANS

IGTS

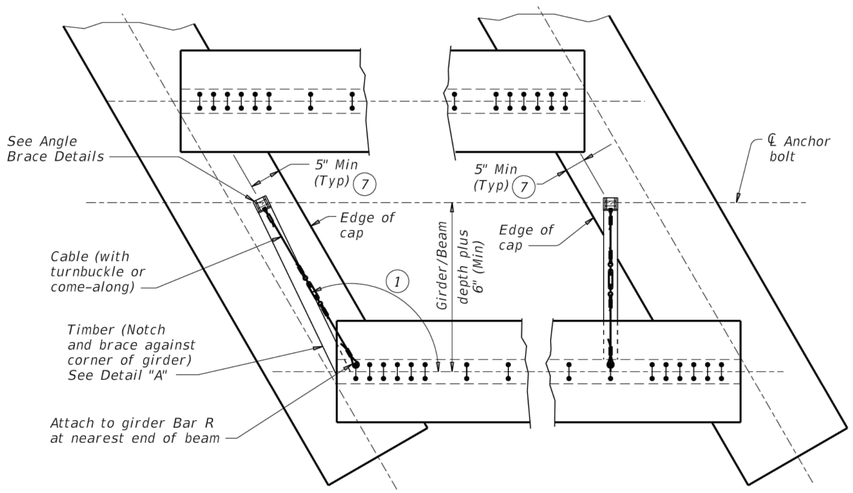
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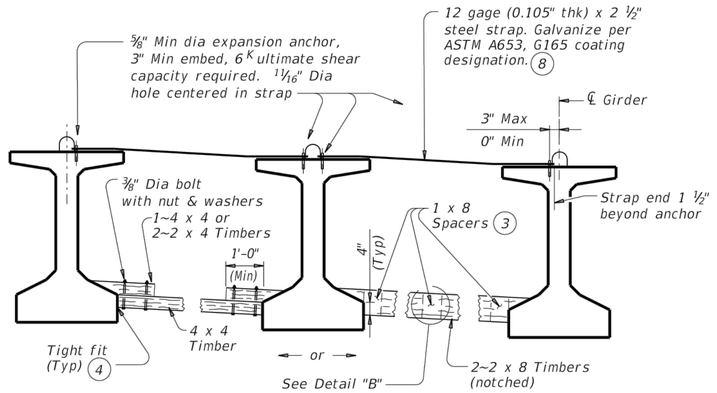
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ERECTION BRACING

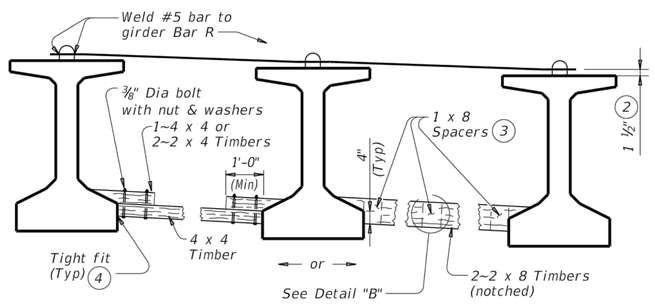


PLAN



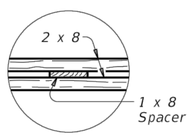
FOR ERECTION BRACING, OPTION 1

(This option is not allowed when slab is formed with PMDF or plywood.)



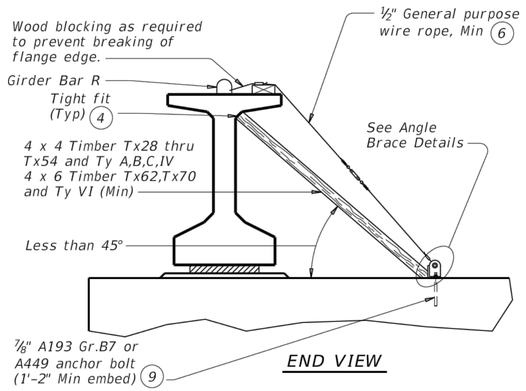
FOR ERECTION BRACING, OPTION 2

HORIZONTAL BRACING DETAILS 5



PLAN

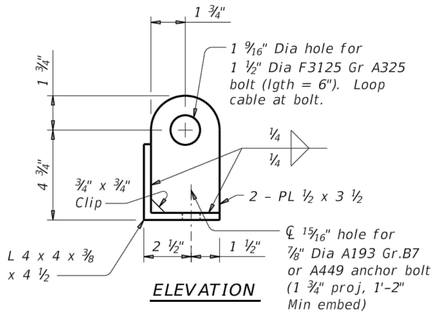
DETAIL "B"



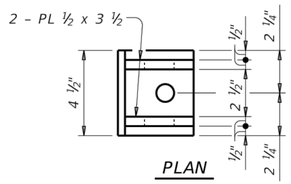
END VIEW

DIAGONAL BRACING DETAILS 5

(To be used on both ends of the first girder/beam erected in the span in each phase.)



ELEVATION



PLAN

ANGLE BRACE DETAILS

HAULING & ERECTION:

The Contractor's attention is directed to the possible lateral instability of prestressed concrete girders and beams over 130' long, especially during hauling and erection. The use of the following methods to improve stability is encouraged: Locate lifting devices at the maximum practical distance from girder ends; use external lateral stiffening devices during hauling and erection; lift with vertical lines using two machines; and take care in handling to minimize inertial and impact forces.

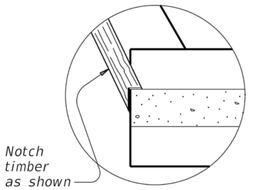
ERECTION BRACING:

Erection bracing details shown are considered the minimum for fulfilling the bracing requirements of Item 425.

Required erection bracing must be placed immediately after erection of each girder and remain in place until additional bracing as required for slab placement is in place. This standard is needed in all cases to meet requirements for Slab Placement Bracing.

PHASED CONSTRUCTION:

Place erection and slab placement bracing for all girders in a phase as shown in these details. For phases after first, also place erection and slab placement bracing between outer girder of completed phase and adjacent girder of current phase. When the phase construction joint is between girders, top bracing can be omitted.



DETAIL "A"

(1) If angle shown exceeds 120 degrees, move diagonal brace to other side of girder/beam and place square to girder/beam. This may prevent exterior girder from being erected first.

(2) Place and weld #5 bars as shown during erection. If forming deck with prestressed panels, bars can be temporarily removed, one at a time, during panel erection. Re-install bar prior to additional panel erection. Bars can rest on panels and be bent down and welded to girder Bars R (See Sheet 2 of 2).

(3) Clear distance between spacers must not exceed 3'. Nail together with 16d nails.

(4) Use wedges as necessary to obtain tight fit. Nail wedges to timbers.

(5) Pressure treated landscape timbers can not be used.

(6) All hardware used with cable must be able to develop a minimum 25 kips breaking strength. Use thimbles at all loops in cable. Install cable clamps with saddles bearing against the live end and U-bolts bearing aginst the dead end.

(7) It is acceptable to tie anchor bolts to cap reinforcement.

(8) Prior to installing, field bend strap to lay flush on both girders' top flange and slope between flange tips.

(9) Anchor bolt may be drilled and epoxied in place. Provide 25k minimum pullout. Core drill hole.

Texas Department of Transportation

Bridge Division Standard

MINIMUM ERECTION AND BRACING REQUIREMENTS

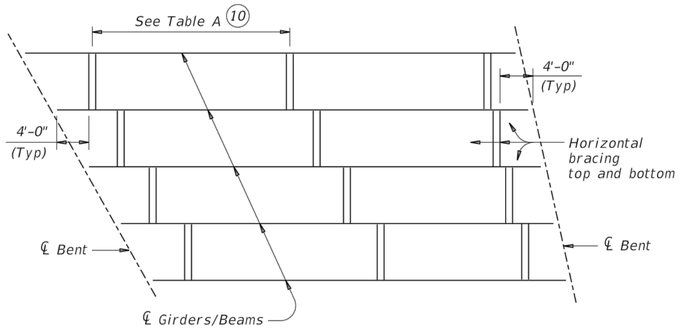
PRESTRESSED CONCRETE I-GIRDERS AND I-BEAMS

MEBR(C)

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SLAB PLACEMENT BRACING

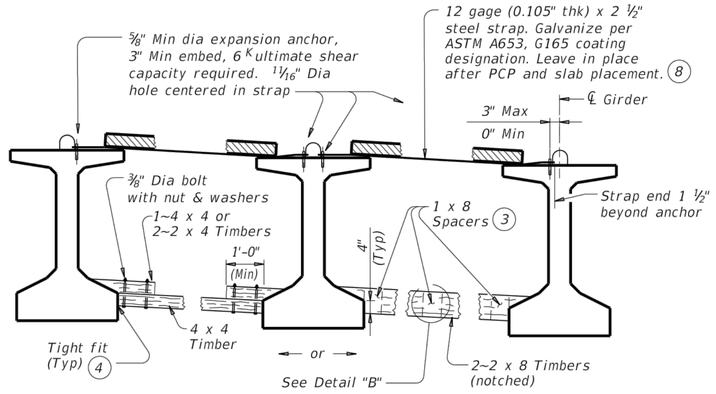
TABLE A

OPTION 1-RIGID BRACING (STEEL STRAP)

Girder or Beam Type	Maximum Bracing Spacing	
	Slab Overhang less than 4'-0" (11)	Slab Overhang 4'-0" and greater (11)
Tx28	¼ points	¼ points
Tx34	¼ points	¼ points
Tx40	¼ points	⅛ points
Tx46	¼ points	⅛ points
Tx54	¼ points	⅛ points
Tx62	¼ points	⅛ points
Tx70	¼ points	⅛ points
A	⅛ points	⅛ points
B	⅛ points	⅛ points
C	⅛ points	⅛ points
IV	¼ points	⅛ points
VI	¼ points	⅛ points

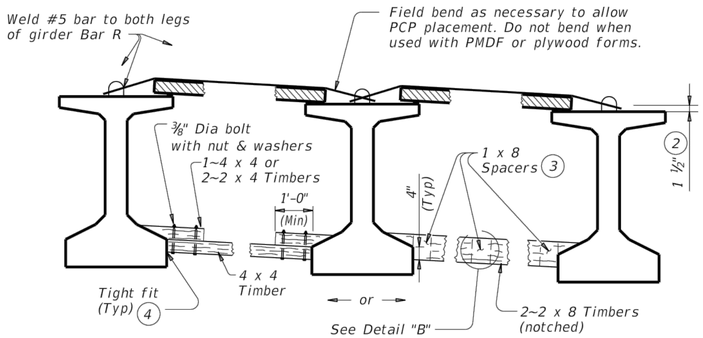
OPTION 2-FLEXIBLE BRACING (NO. 5 OVER PCP)

Girder or Beam Type	Maximum Bracing Spacing	
	Slab Overhang less than 4'-0" (11)	Slab Overhang 4'-0" and greater (11)
Tx28	¼ points	⅛ points
Tx34	¼ points	⅛ points
Tx40	¼ points	⅛ points
Tx46	¼ points	⅛ points
Tx54	¼ points	⅛ points
Tx62	¼ points	⅛ points
Tx70	¼ points	⅛ points
A	2.0 ft	1.5 ft
B	3.0 ft	2.0 ft
C	4.5 ft	2.0 ft
IV	¼ points	4.0 ft
VI	¼ points	4.0 ft



FOR SLAB PLACEMENT BRACING, OPTION 1 - RIGID

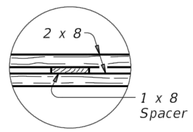
(Showing slab formed with PCP. This option is not allowed when slab is formed with PMDF or plywood.)



FOR SLAB PLACEMENT BRACING, OPTION 2 - FLEXIBLE

(Showing slab formed with PCP.)

HORIZONTAL BRACING DETAILS (5)



PLAN

DETAIL "B"

(2) Place and weld #5 bars as shown during erection. If forming deck with prestressed panels, bars can be temporarily removed, one at a time, during panel erection. Re-install bar prior to additional panel erection. Bars can rest on panels and be bent down and welded to girder Bars R.

(3) Clear distance between spacers must not exceed 3'. Nail together with 16d nails.

(4) Use wedges as necessary to obtain tight fit. Nail wedges to timbers.

(5) Pressure treated landscape timbers can not be used.

(8) Prior to installing, field bend strap to lay flush on both girders' top flange and slope between flange tips.

(10) Bracing spacing (¼ and ⅛ points) measured between first and last typical brace location.

(11) Measure slab overhang from centerline of girder or beam. When overhang varies in span, determine bracing spacing based on largest overhang.

SLAB PLACEMENT BRACING:

The details for slab placement bracing are considered minimum for fulfilling the requirements of Specification Items 422 and 425.

Required slab placement bracing must remain in place until slab concrete has attained a compressive strength of 3000 psi.

GENERAL NOTES:

Bracing details for spans longer than 150' are not provided. The Contractor must submit proposed bracing details for such conditions to the Engineer for approval prior to erection.

Systems equal to or better than those shown may be used provided details of such systems are submitted to and approved by the Engineer prior to erection.

Use of these systems or details does not relieve the Contractor of the responsibility for the adequacy of the bracing and the safety of the structure.

Removal of bracing for short periods of time to align girders and beams is permissible.

All turn-buckles, come-alongs, anchors and other connections must be capable of developing the full strength of the cable shown.

Furnish anchor bolts and nuts in accordance with Item 449, "Anchor Bolts".

Texas Department of Transportation

Bridge Division Standard

MINIMUM ERECTION AND BRACING REQUIREMENTS

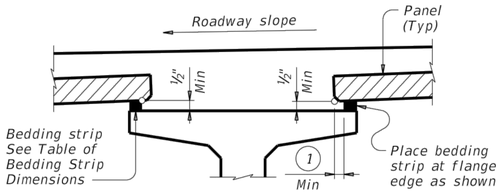
PRESTRESSED CONCRETE I-GIRDERS AND I-BEAMS

MEBR(C)

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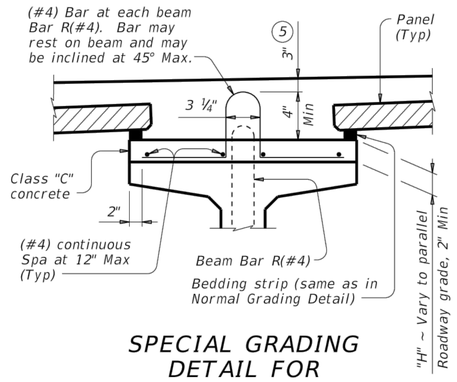
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NORMAL GRADING DETAIL (3)

Showing prestressed concrete I-girders. (Other beam types similar)



SPECIAL GRADING DETAIL FOR CONCRETE BEAMS

Showing prestressed concrete I-girders. (Other beam types similar)

TABLE OF BEDDING STRIP DIMENSIONS		
WIDTH	HEIGHT (4)	
	Min	Max
1" (Min)	½"	2"
1 ¼"	½"	2 ½"
1 ½"	½"	3"
1 ¾"	½"	3 ½"
2"	½"	4"
2 ¼"	½"	4 ½" (2)
2 ½"	½"	5" (2)
2 ¾"	½"	5 ½" (2)
3" (Max)	½"	6" (2)

(1) 2" Min for I-giders, 1 ½" Min for all other beam types.

(2) Allowed for I-girders, not allowed on other beam types.

(3) To reduce the quantity of cast-in-place concrete, bedding strip thickness may be increased in ¼" increments. Bedding strips must be comprised of one layer. Bond bedding strips to the beams with an adhesive compatible with bedding strips. Bedding strips over 2.5" high may need to be bonded to panels. The same thickness strip must be used under any one panel edge and the maximum change in thickness between adjacent panels is ¼". Alternatively, bedding strips may be cut to grade. Panels may be supported by an alternate method, using a commercial product, if approved by the Engineer of Bridge Design, Bridge Division. If bedding strips exceed 6" high for I-Girders, 4" high for all other beam types, use Special Grading Detail for Concrete Beams or submit an alternate method to the Bridge Division for approval.

(4) Height must not exceed twice the width.

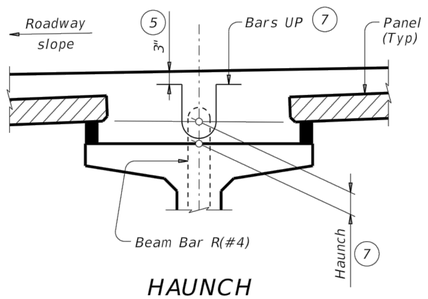
(5) Provide clear cover as indicated unless otherwise shown on Span Details.

(6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

(7) Space Bars UP(#4) with Beam Bars R(#4) in all areas where measured haunch exceeds 3 ½" with I-girders, and 3" for all other beam types. Epoxy coating for Bars UP is not required.

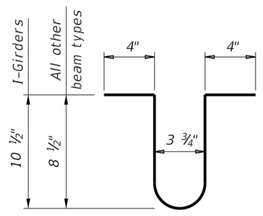
(8) Do not locate construction joints on top of a panel.

(9) Butt adjacent bedding strips together with adhesive. Cut v-notches, approx ¼" deep, in the top of the bedding strips at 8' o.c..

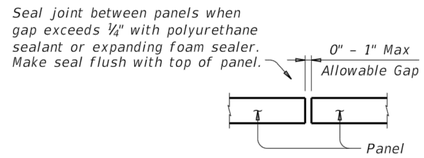


HAUNCH REINFORCING DETAIL

Showing prestressed concrete I-girders. (Other beam types similar)

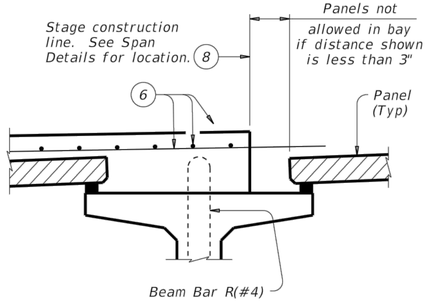


BARS UP (#4) (7)

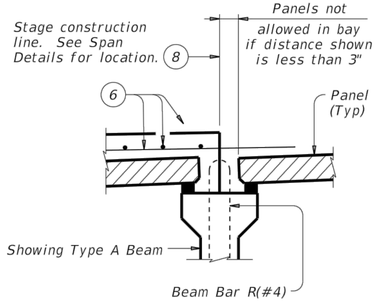


PANEL JOINTS

(Panel reinforcing not shown for clarity. The gap cannot be considered as a panel fabrication tolerance. Adjust panel placement to minimize joint openings.)



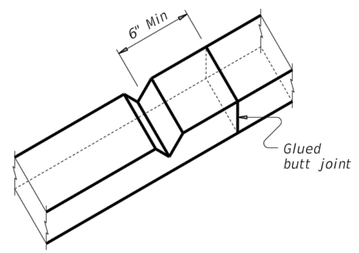
PRESTR CONC I-GIRDERS



PRESTR CONC I-BEAMS

STAGE CONSTRUCTION LIMITATIONS

(Other beam types similar)



BEDDING STRIP DETAIL (9)

CONSTRUCTION NOTES:

Erected panels must bear uniformly on bedding strips of extruded polystyrene placed along top flange edges.

Placing panels to minimize joint openings is recommended.

If additional blocking is needed, special grading details for supporting the panels and extra reinforcing between beam and slab will be considered subsidiary to deck construction.

Bars U, shown on PCP-FAB, may be bent over or cut off if necessary.

Care must be taken to ensure proper cleaning of construction debris and consolidation of concrete material under the edges of the panels. Bedding strips must be placed at beam flange edges so that adequate space is provided for the mortar to flow a minimum of 1 ½" under the panels as the slab concrete is placed.

To allow the proper amount of mortar to flow between beam and panel, the minimum vertical opening must be at least ½". Roadway cross-slope reduces the opening available for entry of the mortar. Bedding strips varying in thickness across the beam are therefore required.

For clear span between U-beams less than or equal to 18", see Permissible Slab Forming Detail on Miscellaneous Slab Detail sheets, UBMS.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel in the cast-in-place slab. See Table of Reinforcing Steel for size and spacing of reinforcement.

If the top and bottom layer of reinforcing steel is shown on the Span Details to be epoxy coated, then the D, E, P, & Z bars must be epoxy coated.

Provide bar Laps, where required, as follows:

Uncoated ~ #4 = 1'-7"
Epoxy Coated ~ #4 = 2'-5"

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Panel placement may follow either Option 1 or Option 2 except Option 1 must be used if the skew exceeds 45 degrees.

Use of Prestressed Concrete Panels is not permitted for horizontally curved steel plate or tub girders. See Span Details for other possible restrictions on their use.

These details are to be used in conjunction with the Span Details, PCP-FAB and other applicable standard drawings.

When panel support (bedding strips) deviates from what is shown herein, provide details signed and sealed by a professional Engineer.

Any additional reinforcement or concrete required on this standard is considered subsidiary to the bid Item "Reinforced Concrete Slab".

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

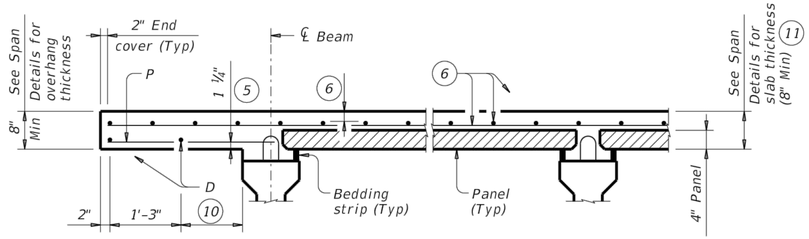
PRESTRESSED CONCRETE PANELS DECK DETAILS

PCP

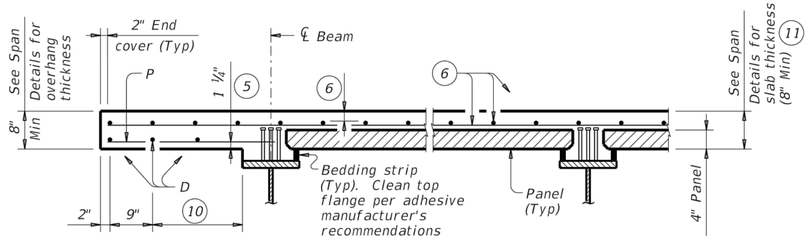
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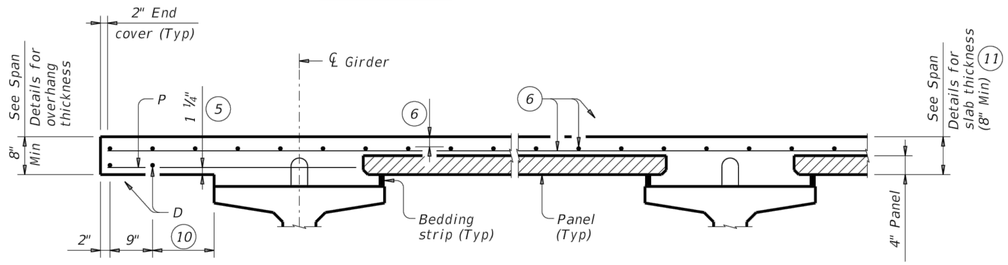
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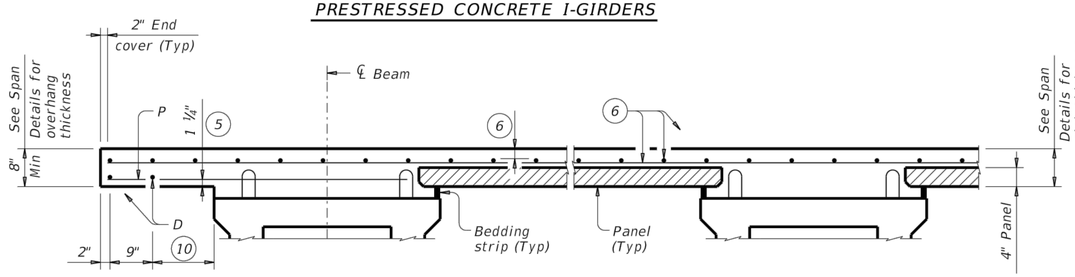
PRESTRESSED CONCRETE I-BEAMS



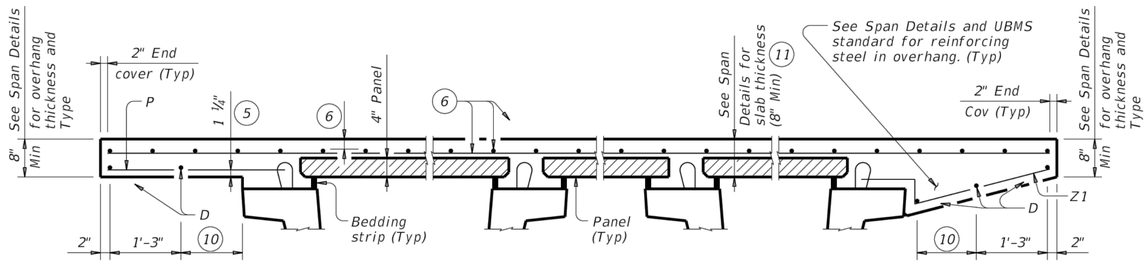
STEEL BEAMS



PRESTRESSED CONCRETE I-GIRDERS



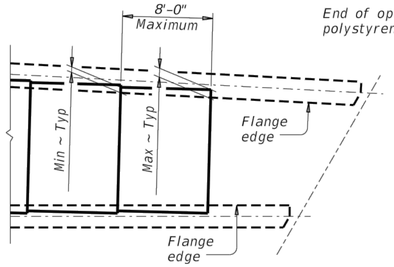
PRESTRESSED CONCRETE X-BEAMS



NORMAL OVERHANG WITH PRESTR CONC U-BEAMS

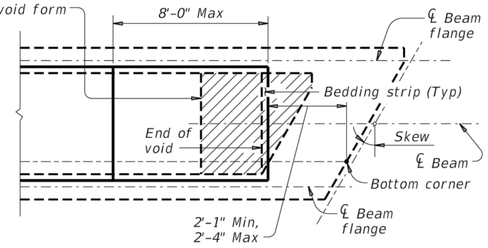
SLOPED OVERHANG WITH PRESTR CONC U-BEAMS

TYPICAL PART TRANSVERSE SECTIONS

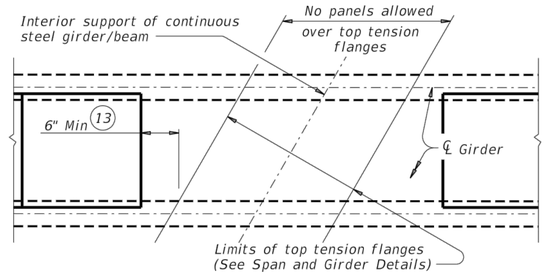


AT FLARED BEAMS OR GIRDERS

See PCP-FAB standard for Min and Max dimensions based on bemm/girder type.



OVER CONC U-BEAMS



AT INT SUPPORTS OF CONTINUOUS STEEL GIRDERS

PART PLANS OF PANEL PLACEMENT

(5) Provide clear cover as indicated unless otherwise shown on Span Details.

(6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

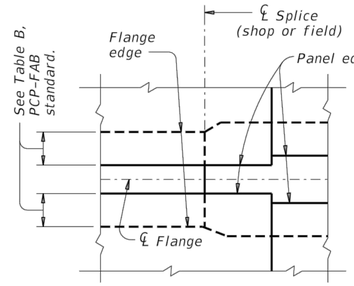
(9) Butt adjacent bedding strips together with adhesive. Cut v-notches, approx ¼" deep, in the top of the bedding strips at 8' o.c..

(10) Equally space additional bar if more than 1'–3" Max.

(11) The actual thickness constructed may exceed the slab thickness shown on the Span Details but the extra thickness may be no more than 2" (1" for prestressed concrete U-beams and steel beams). Bearing seat elevations or finished grade may be adjusted.

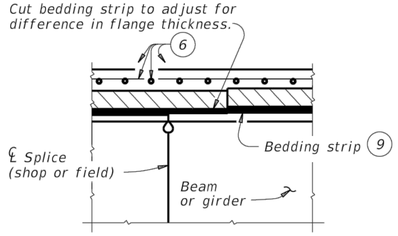
(12) Field adjust Bars Z1(#4) to match actual slope of slab overhangs. Width of slab overhang will vary along span with curved slab edges. Adjust Bar Z1(#4) dimensions to maintain proper cover. Bars Z2(#4) are located at Inverted-Tee stems only.

(13) Location of concrete placement sequence boundaries and bolted field splices should be considered by the contractor in determining panel limits.



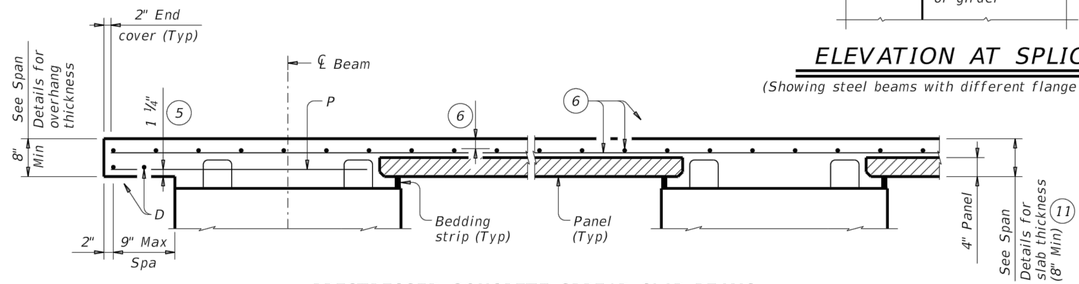
PLAN AT SPLICE

(Showing steel beams with flange width transition)



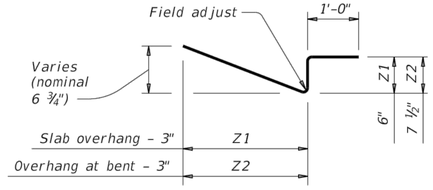
ELEVATION AT SPLICE

(Showing steel beams with different flange thickness)



PRESTRESSED CONCRETE SPREAD SLAB BEAMS

Bars P over exterior beams are still required when no overhang is used. In this case, only one Bar D, 2" from slab edge, is required.



BARS Z (#4) (12)

HL93 LOADING SHEET 2 OF 4

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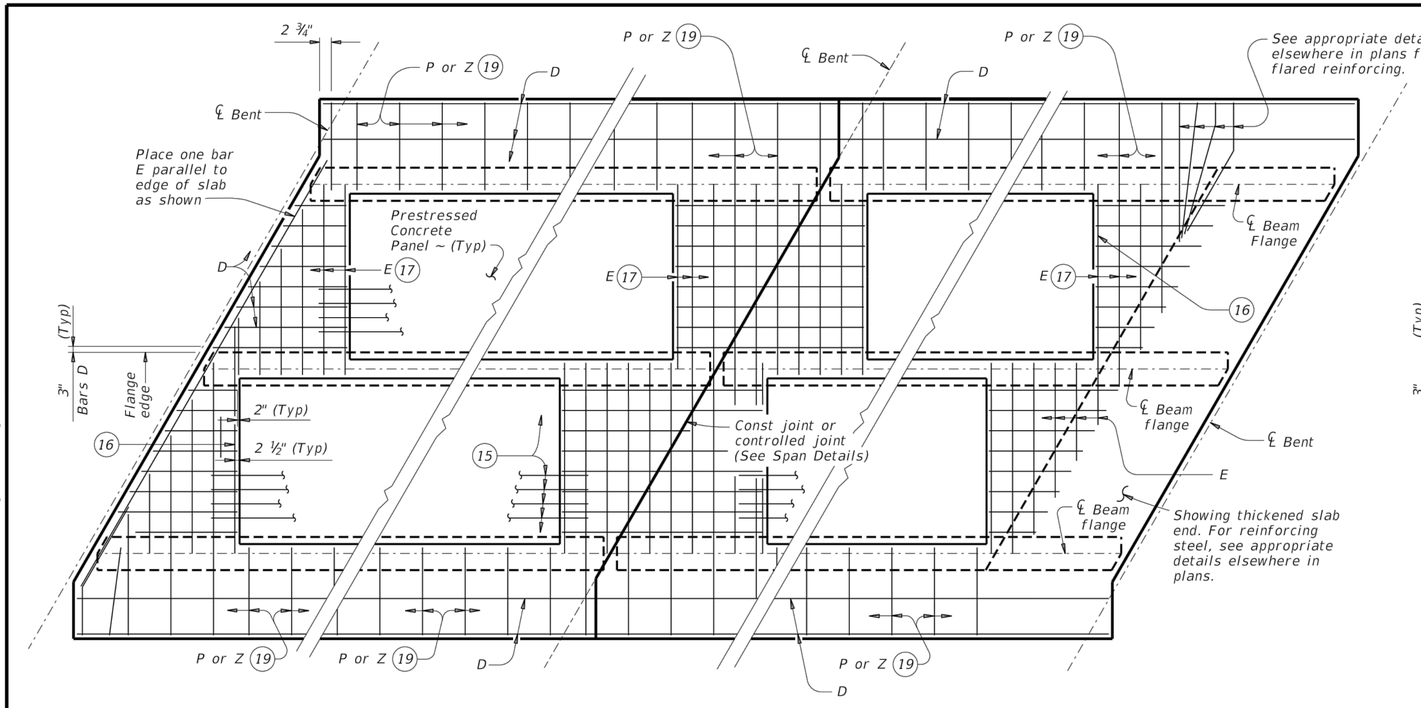
PRESTRESSED CONCRETE PANELS DECK DETAILS

PCP

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©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.
				C5.35

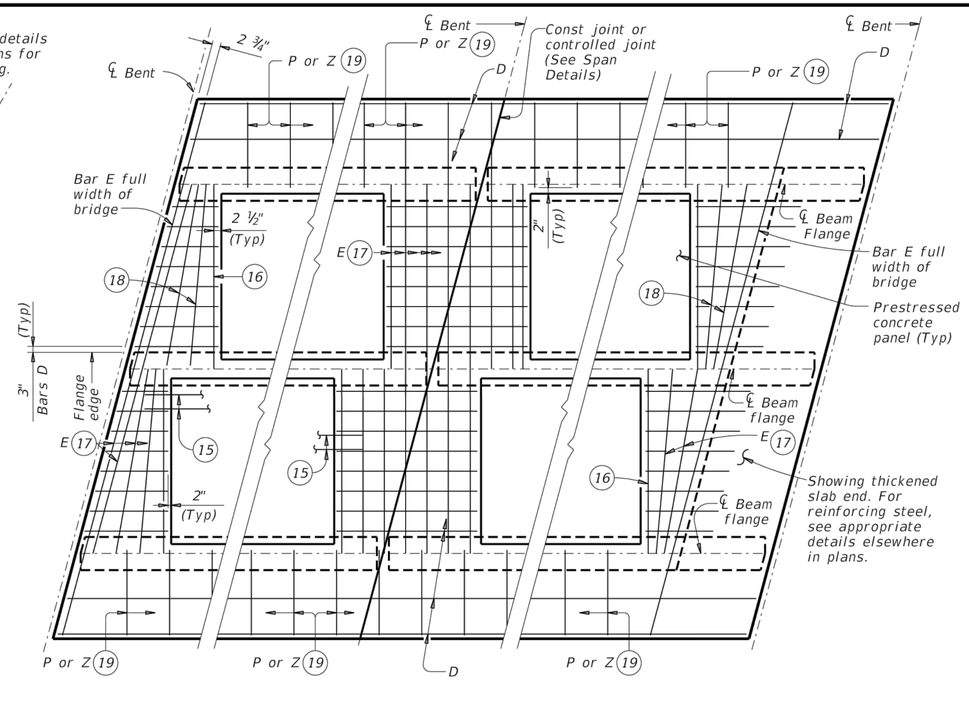
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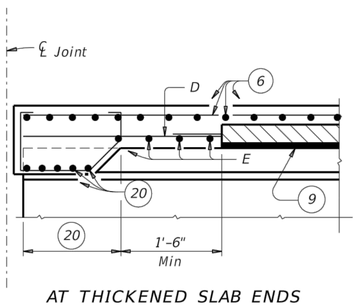
AT ALL SPAN ENDS UNLESS NOTED OTHERWISE | AT INTERIOR BENTS | AT THICKENED END SLABS

OPTION 1 ~ PLAN OF SLABS WITH NORMAL REINFORCEMENT

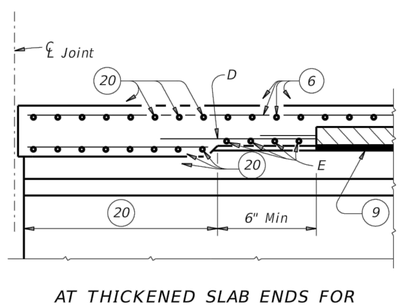


AT ALL SPAN ENDS UNLESS NOTED OTHERWISE | AT INTERIOR BENTS | AT THICKENED END SLABS

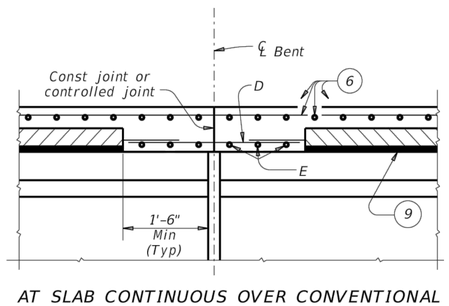
OPTION 1 ~ PLAN OF SLABS WITH SKEWED REINFORCEMENT



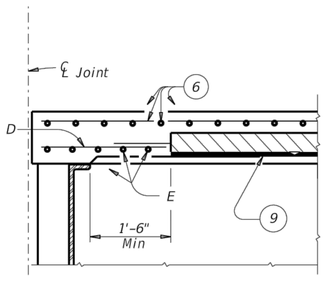
AT THICKENED SLAB ENDS FOR PRESTR CONC U-BMS



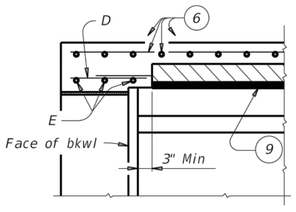
AT THICKENED SLAB ENDS FOR PRESTR CONC I-BMS AND STEEL BMS



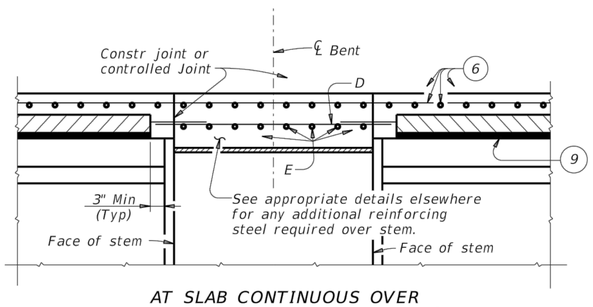
AT SLAB CONTINUOUS OVER CONVENTIONAL INTERIOR BENTS FOR ALL SIMPLE SPAN BMS



AT CONVENTIONAL END DIAPHRAGMS FOR STEEL BMS



AT SLAB OVER ABUTMENT BACKWALL FOR ALL BMS



AT SLAB CONTINUOUS OVER INVERTED-T BENTS FOR ALL BMS

OPTION 1 ~ ELEVATIONS AT BEAM ENDS

(6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

(9) Butt adjacent bedding strips together with adhesive. Cut v-notches, approx ¼" deep, in the top of the bedding strips at 8' o.c.

(14) Max Spacing as listed unless otherwise shown.

(15) At connection with cast-in-place slab, extend longitudinal panel reinforcement. See PCP-FAB for details.

(16) Maintain one Bar E(#4) parallel to panel ends (Typ).

(17) Bars E(#4) not continuous over beam flanges must overlap beam flange 6" Min.

(18) Add flared Bars E(#4) (Min Spa = 6", Max Spa = 12") as required at panel ends.

(19) Where possible, Bars E(#4) may be extended into overhangs to replace Bars P(#4). Bars Z(#4) are required for sloped overhangs with U-Beams.

(20) See appropriate thickened slab end details for top reinforcing and limits of thickened slab end.

TABLE OF REINFORCING STEEL (14)

BAR	SIZE	Max Spa (in.)
D	#4	9
E	#4	9
P	#4	18
UP	#4	~
Z	#4	18

HL93 LOADING

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Texas Department of Transportation

Bridge Division Standard

PRESTRESSED CONCRETE PANELS
DECK DETAILS

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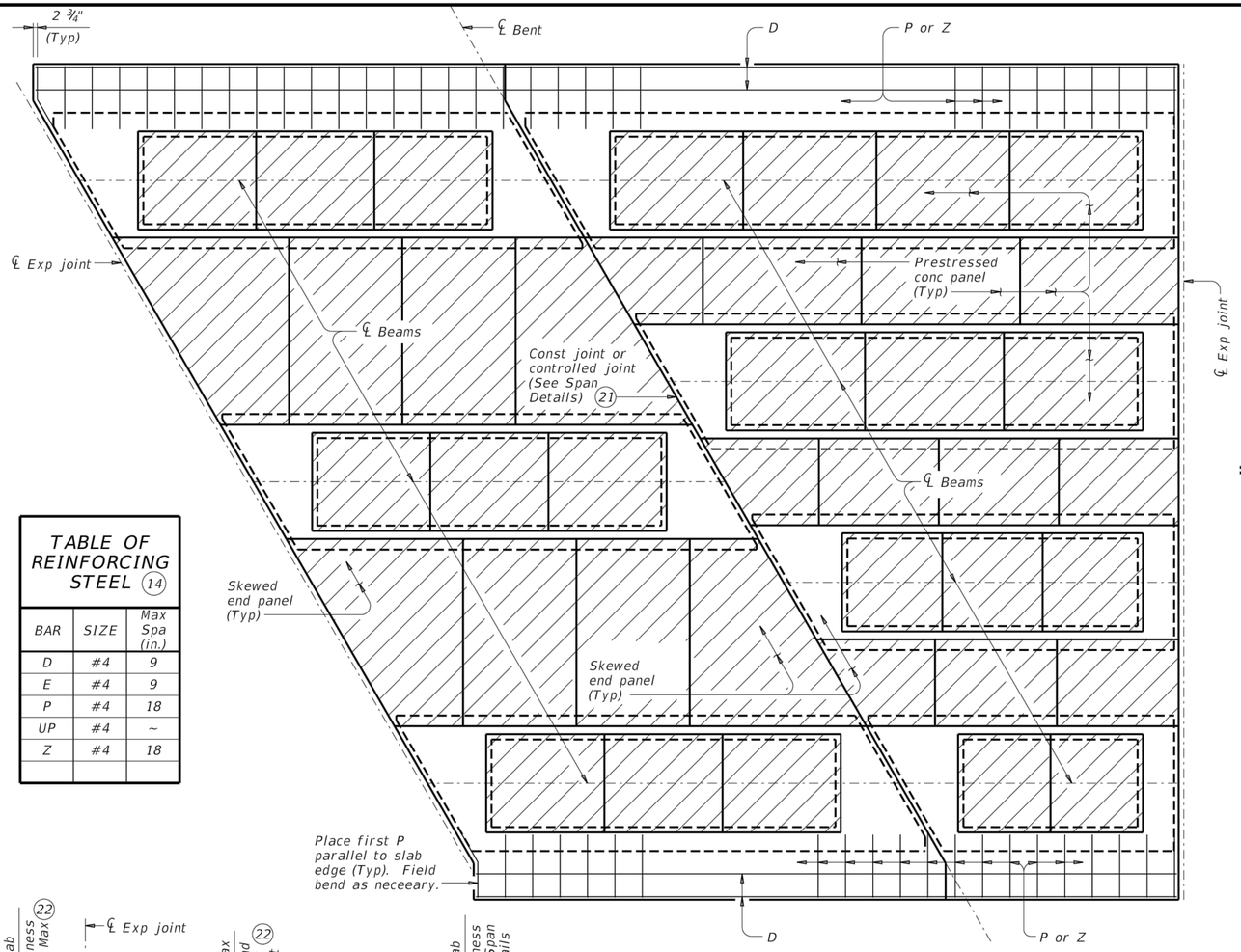
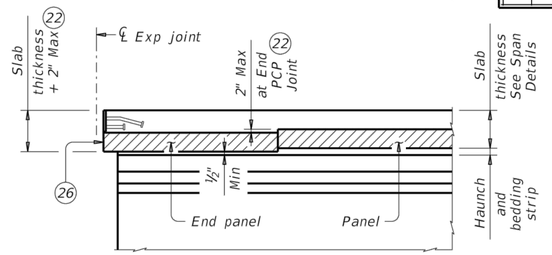


TABLE OF REINFORCING STEEL (14)

BAR	SIZE	Max Spa (in.)
D	#4	9
E	#4	9
P	#4	18
UP	#4	~
Z	#4	18

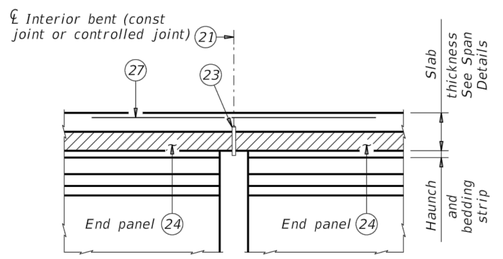
OPTION 2 ~ PLAN OF SLAB

(Showing U-Beams; other beams similar)



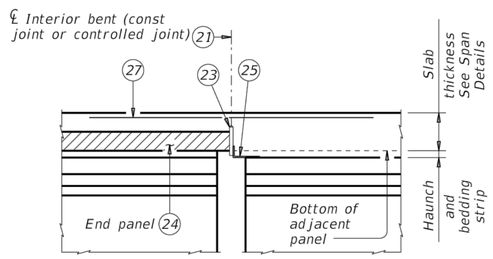
JOINTS (BETWEEN BEAMS/GIRDERS OR AT INV-T STEM)

For SEJ-A, SEJ-S(0), AJ, and Type A expansion joints only.



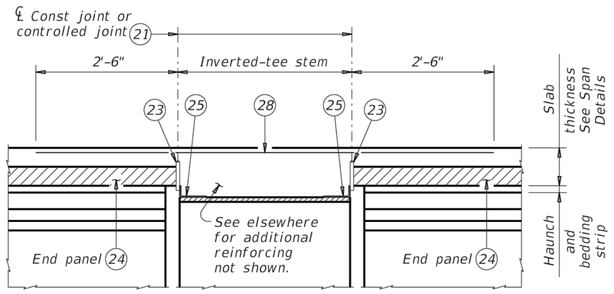
CONVENTIONAL INTERIOR BENT

Panel against panel between beams/girders.



CONVENTIONAL INTERIOR BENT

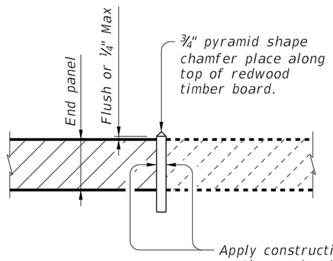
Panel against beam/girder end in adacent span.



INVERTED-T BENT

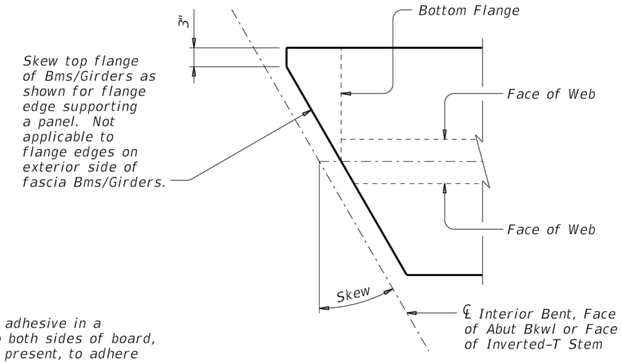
Panels against inverted-tee stem

OPTION 2 ~ ELEVATIONS AT BEAM ENDS (6)



ELEVATION EXAMPLE OF END PANEL AND TIMBER BOARD (23)

See "Option 2 ~ Elevation At Beam Ends".



OPTION 2 ~ SHOWING MODIFICATION TO BEAM/GIRDER TOP FLANGE FOR SKEWS OVER 5°

Showing I-Bm/I-Girder, U-Bms and Steel Bms similar.

(6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

(14) Max Spacing as listed unless otherwise shown.

(21) 1 ½" Vinyl or plastic joint former at controlled joints (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)

(22) End panel may be set up to 2" lower to accommodate expansion joint hardware, provided bedding strip is not less than ½" thick.

(23) ¾" thick redwood timber board, leave in place. Redwood timber board placed flush with top of panel or within ¼" Max above panel. Place ¾" pyramid shape chamfer along top of timber board. See "Elevation Example of End Panel and Timber Board". Place straight, within ¼" of centerline of bent or face of inverted-tee, across bridge width and end board at exterior flange edge of fascia beams/girders. Do not extend into overhang.

(24) Place panel within ½" of ¾" thick board.

(25) Permanent galvanized steel sheet form. Removable formwork is acceptable.

(26) Place end panel within ½" of expansion joint opening. End panel cannot encroach on required expansion joint opening.

(27) Place additional (#4) bar 5'-0" in length between every slab bars T. Center (#4) bar on Joint.

(28) Place additional (#4) bar continuous 2'-6" beyond each side of Inverted-T Stem between every slab bars T.

SPECIAL OPTION 2 CONSTRUCTION NOTES:

When Option 2 is chosen bottom mat of thickened end slab reinforcing is not required. Use the same top mat as shown on the Thickened Slab End Details sheet.

Placing panels adjacent to expansion joints and bent centerlines prior to completing interior panel placement is recommended. Saw cutting panels to fit is acceptable when approved by the Engineer. Minimum distance from a saw cut edge to a panel strand is 1 ½".

Do not extend the longitudinal panel reinforcement into the cast-in-place slab.

Top flanges of beams and girders on skewed bridges must be modified as shown on this drawing. The Contractor is responsible for coordinating this modification with the beam fabricator prior to submitting shop drawings for approval.

Fabricator may optionally skew the whole end. When electing to skew whole end, girder end details and bearing type at conventional interior bent must be changed to use condition at abutment. Fabricator must coordinate change in bearing type, bearing centerline location, and dowel location with Engineer and Contractor. Show appropriate changes on girder and bearing shop drawings.

Bending of anchor studs of expansion joints shown on standards AJ, SEJ-A and SEJ-S(0) is permissible if necessary to clear top of end panels. The Contractor is responsible for coordinating modifications with the joint fabricator. Submit shop drawings for approval when modifications to expansion joint hardware are made.

Bedding strips under skewed end panels must conform to the requirements of Item 422 except their minimum compressive strength must be 60 psi.

Provide Bars AA, G, K and OA from standard IGTS in the slab.

HL93 LOADING SHEET 4 OF 4

Texas Department of Transportation

Bridge Division Standard

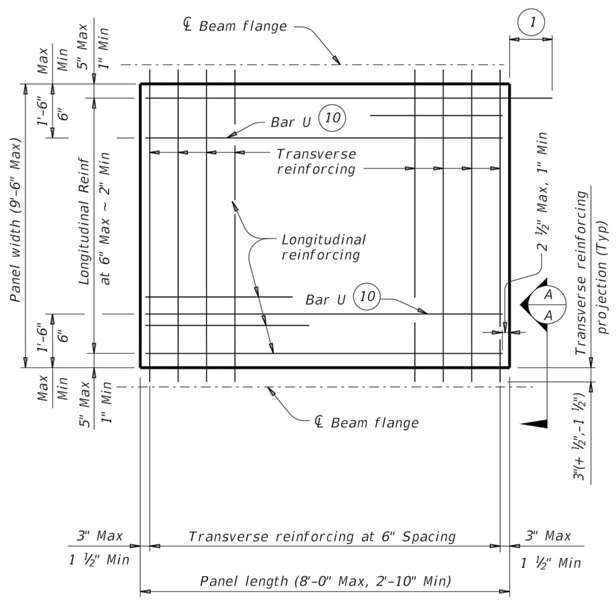
PRESTRESSED CONCRETE PANELS
DECK DETAILS

PCP

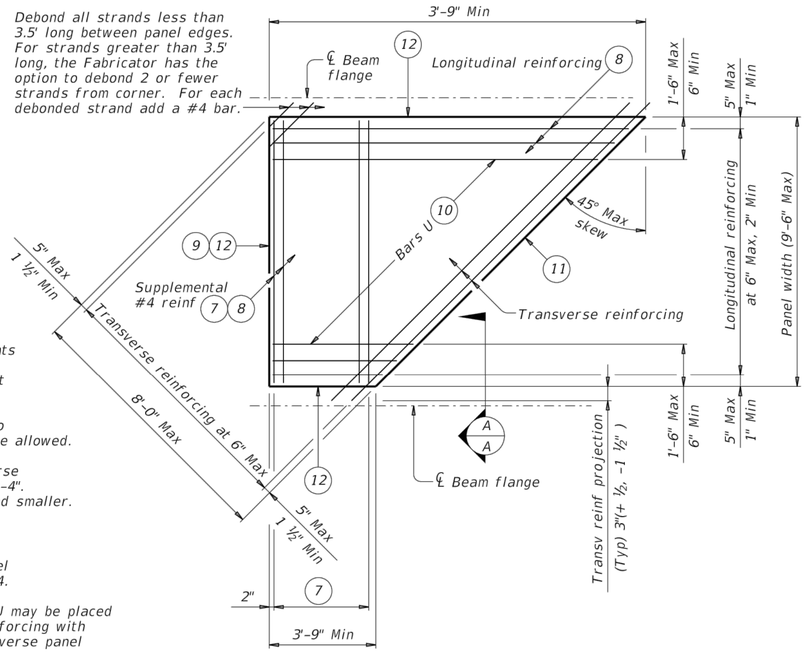
FILE: pcpstde1-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
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TYPICAL NON-SKEWED PANEL PLAN



TYPICAL SKEWED END PANEL PLAN

(Only to be used with details shown elsewhere in the plans.)

1. At connection with cast-in-place slab, extend longitudinal panel reinforcement 1'-0" (+2",-0") past panel end. Alternatively, provide (#3) x 2'-0" dowels at 6" Max Spacing and extend dowels 1'-0" past panel end.
2. Four loops required per panel.
3. Four loops required per panel. ⅜" or ½" strands may be used.
4. Normal dimensions must be used on spans with parallel beams. Maximum and Minimum dimensions apply only to spans with flared beams.
5. See Normal Grading Detail on PCP standard for lap requirements and bedding strip dimensions. Some laps shown in tables cannot utilize all bedding strip widths.
6. One Splice allowed per panel. No more than two sheets of WWR are allowed.
7. Provide (#4) bars under transverse reinforcing, 10 Spaces at 4" = 3'-4". Omit for 5 degree (1:12) skew and smaller.
8. End Cover 2 ½" Max, 1" Min.
9. Recess strands on indicated panel edge in accordance with Item 424.
10. At the fabricator's option, Bars U may be placed parallel to transverse panel reinforcing with horizontal legs in plane of transverse panel reinforcing.
11. Use length of indicated panel edge as panel width for purpose of determining type of transverse reinforcing.
12. Timber form work permissible this edge.

Debond all strands less than 3.5' long between panel edges. For strands greater than 3.5' long, the Fabricator has the option to debond 2 or fewer strands from corner. For each debonded strand add a #4 bar.

TABLE A (4) (5)			
Beam Type	Normal (In.)	Min (In.)	Max (In.)
A	3	2 ½	3 ½
B	3	2 ½	3 ½
C	4	3	4 ½
IV	6	4	7 ½
VI	6 ½	4 ½"	8 ½
U40 – 54	5 ½	5 ½	7
Tx28-70	6	5	7 ½
XB20 – 40	4	3	4 ½
XSB12 – 15	4	3	4 ½

TABLE B (4) (5)			
Top Flange Width	Normal (In.)	Min (In.)	Max (In.)
11" to 12"	2 ¾	2 ½	2 ¾
Over 12" to 15"	3 ¼	3	3 ¼
Over 15" to 18"	4	3	4 ¾
Over 18"	5	3 ½	6 ¼

GENERAL NOTES:

Provide Class H concrete for panels. Release strength f'ci=3,500 psi. Minimum 28 day strength f'c=5,000 psi.

Provide ¾" chamfer along bottom edge of panel on beam side.

Do not use epoxy-coated reinforcing steel bar or strand in panels.

Remove laitance from top panel surface.

Finish top of panel to a roughness between a No. 6 and No. 9 concrete surface profile, inclusive, as specified by the International Concrete Repair Institute (ICRI).

Shop drawings for the fabrication of panels will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.

A panel layout which identifies location of each panel must be developed by the Fabricator. Permanently mark each panel in accordance with the panel layout. A copy of the layout is to be provided to the Engineer.

TRANSVERSE PANEL REINFORCEMENT:

For panel widths over 5', use ⅜" or ½" Dia (270k) prestressing strands with a tension of 14.4 kips per strand.

For panel widths over 3'-6" up to and including 5', use ⅜" or ½" Dia (270k) prestressing strands with a tension of 14.4 kip per strand. Optionally, (#4) Grade 60 reinforcing bars may be used in lieu of prestressed strands.

For panel widths up to 3'-6", use (#4) Grade 60 reinforcing bars (prestressed strands alone are not allowed).

Place transverse panel reinforcement at panel centroid and space at 6" Max.

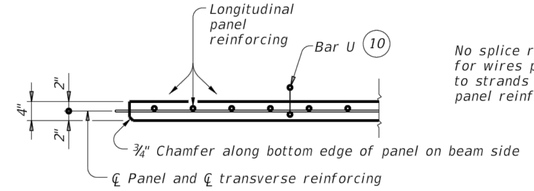
LONGITUDINAL PANEL REINFORCEMENT:

Any of the following options may be used for longitudinal panel reinforcement:

1. (#3) Grade 60 reinforcing steel at 6" Max Spacing. No splices allowed.
2. ⅜" Dia prestressing strands at 4 ½" Max Spacing (unstressed). No splices allowed.
3. ½" Dia prestressing strands at 6" Max Spacing (unstressed). No splices allowed.
4. Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) providing 0.22 sq in per foot of panel width. Wires larger than D11 not permitted. Provide transverse wires to ensure proper handling of reinforcing. One splice per panel is allowed. See WWR Splice Detail.

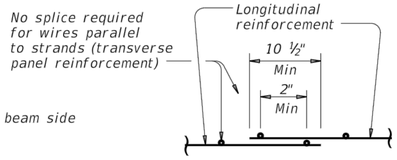
No combination of longitudinal reinforcement options in a panel is allowed.

Place longitudinal panel reinforcement above or below transverse panel reinforcement. Must be placed above transverse panel reinforcement for skewed end panels with supplemental (#4) reinforcement.

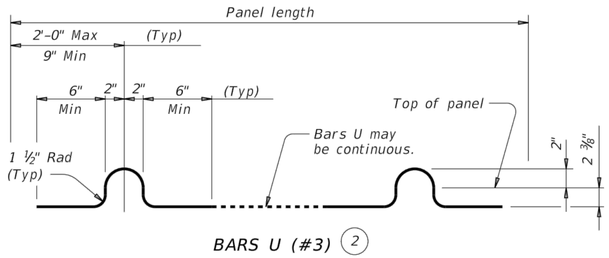


SECTION A-A

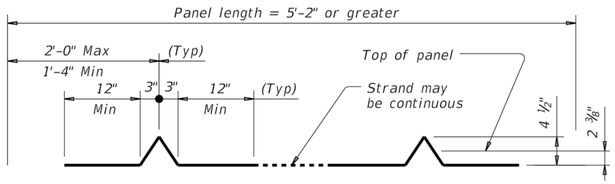
(Not showing supplemental #4 bars for skewed end panels.)



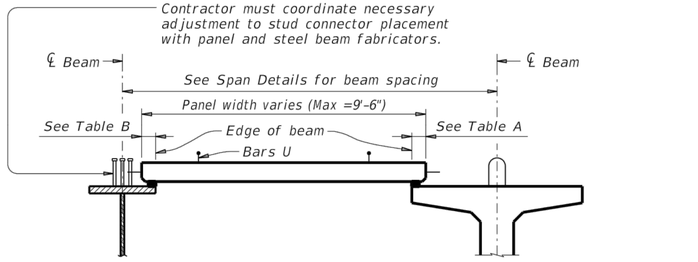
WELDED WIRE REINFORCEMENT (WWR) SPLICE DETAIL (6)



BARS U (#3) (2)



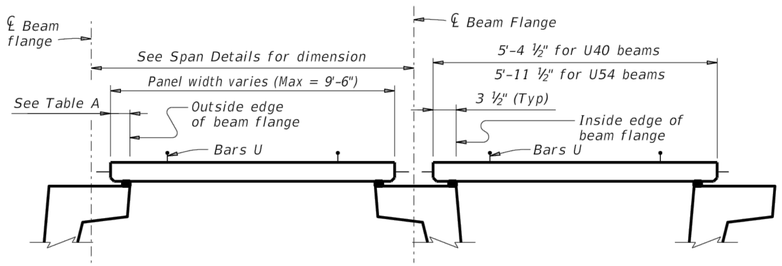
OPTIONAL STRAND FOR BARS U (3)



STEEL BEAMS

PRESTRESSED CONCRETE BEAMS OR GIRDERS

Typ unless noted otherwise



PRESTRESSED CONCRETE U-BEAMS

TYPICAL SECTIONS FOR DETERMINING PANEL WIDTH

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

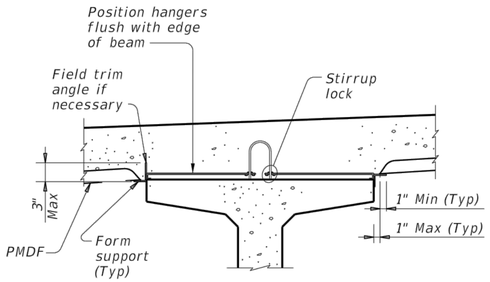
PRESTRESSED CONCRETE PANEL FABRICATION DETAILS

PCP-FAB

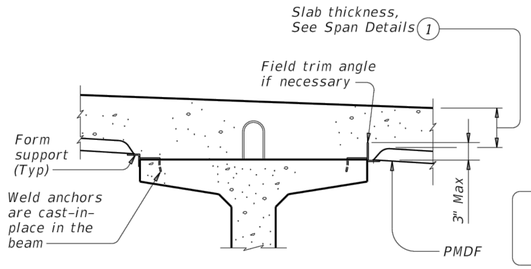
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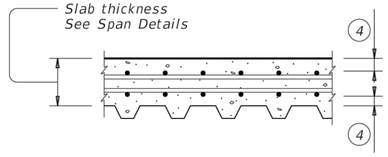
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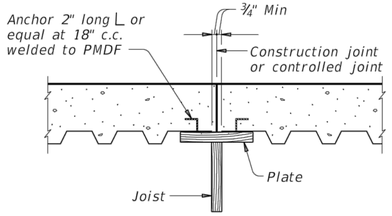
PRESTR CONC I-BEAMS AND I-GIRDERS WITH STIRRUP LOCKS



PRESTR CONC I-BEAMS AND I-GIRDERS WITH WELD ANCHORS

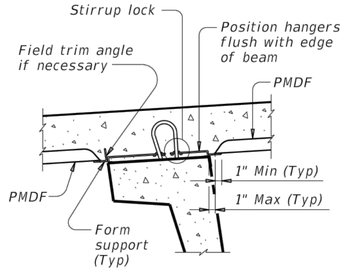


TYP LONGITUDINAL SLAB SECTION

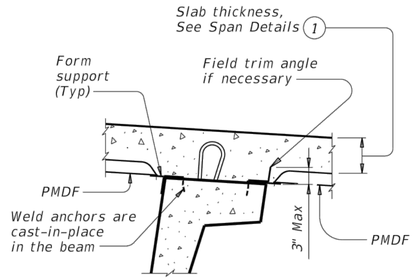


Note: In spans where PMD forms are used, timber forms must be used at construction joints.
Adequate provision must be made to support edge of metal form and to provide anchorage of metal form to slab concrete where joined to wood forms.

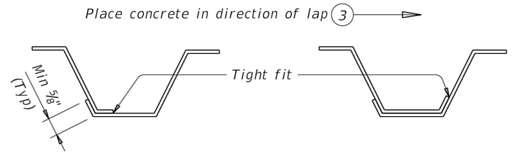
SECTION THRU CONSTRUCTION JOINT



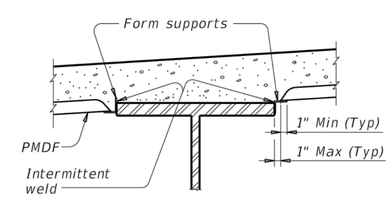
U-BEAMS WITH STIRRUP LOCKS



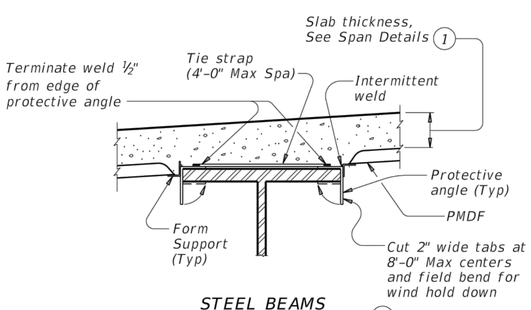
U-BEAMS WITH WELD ANCHORS



SIDE LAP DETAILS

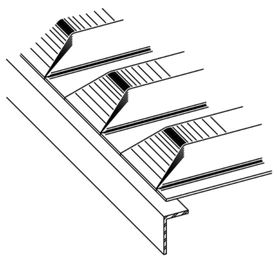


STEEL BEAMS AT COMPRESSION FLANGES

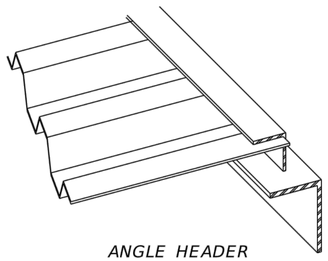


STEEL BEAMS AT TENSION FLANGES (2)

TYPICAL TRANSVERSE SECTIONS



PRECLOSED



ANGLE HEADER

NOTE: This type is to be used for skewed ends only.

TYPES OF END CLOSURES

(1) Slab thickness minus ⅝" if corrugations match reinforcing bars.

(2) Welding of form supports to tension flanges will not be permitted. Other methods of providing wind hold down resistance for PMDF in tension flange zones will be considered. At least one layer of sheet metal must be provided between the flange and the weld joint.

(3) The direction of concrete placement will be such that the upper layer of the form overlap is loaded first.

(4) See Span details for cover requirements.

GENERAL NOTES:
Steel for Permanent Metal Deck Forms (PMDF) and support angles shall conform to ASTM A653, structural steel (SS), with coating designation G165. Steel must have a minimum yield strength of 33 ksi. Minimum thickness of PMDF is 20 gage and that of support angles and protective angles is 12 gage.
Submit two copies of forming plans for PMDF to the Engineer. These plans must show all essential details of proposed form sheets, closures, fasteners, supports, connectors, special conditions and size and location of welds. These plans must clearly show areas of tension flanges for steel beams and provisions for protecting the tension flanges from welding notch effects by inclusion of separating sheet metal or other positive method. These plans must be designed, signed, and sealed by a licensed professional engineer. Department approval of these plans is not required, but the Department reserves the right to require modifications to the plans. The Contractor is responsible for the adequacy of these plans.
The details and notes shown on this standard are to be used as a guide in preparation of the forming plans.
All material, labor, tools and incidentals necessary to form a bridge deck with Permanent Metal Deck Forms is considered subsidiary to Item 422, "Concrete Superstructures".

DESIGN NOTES:
As a minimum, PMDF and support angles must be designed for the dead load of the form, reinforcement and concrete plus 50 psf for construction loads. Flexural stresses due to these design loads must not exceed 75 percent of the yield strength of the steel. Allowable stress for weld metal must be 12,400 psi.
Maximum deflection under the weight of forms, reinforcement and concrete or 120 psf, whichever is greater, shall not exceed the following:

1/180 of the form design span, but not more than 0.50", for design spans of 10' or less.

1/240 of the form design span, but not more than 0.75", for design spans greater than 10'.

The form design span must not be less than the clear distance between beam flanges, measured parallel to the form flutes, minus 2".

CONSTRUCTION NOTES:
Form sheets must not be permitted to rest directly on the top of beam flanges. Form sheets must be securely fastened to form supports and must have a minimum bearing length of one inch at each end. Form supports must be placed in direct contact with beam flanges.
All attachments must be made by permissible welds, screws, bolts, clips or other means shown on the the forming plans. All sheet metal assembly screws must be installed with torque–limiting devices to prevent stripping. Only welds or bolts must be used to support vertical loads.
Welding and welds must be in accordance with the provisions of Item 448, "Structural Field Welding", pertaining to fillet welds. All welds must be made by a qualified welder in accordance with Item 448.
All permanently exposed form metal, where the galvanized coating has been damaged, must be thoroughly cleaned and repaired in accordance with Item 445, "Galvanizing". Minor heat discoloration in areas of welds need not be touched up.
Flutes must line up uniformly across the entire width of the structure where main reinforcing steel is located in the flute.
Construction joints will not be permitted unless shown on the plans. The location of and forming details for any construction joint used must be shown on the forming plans. Forms below a construction joint must be removed after curing of the slab.
A sequence for uniform vibration of concrete must be approved by the Engineer prior to concrete placement. Attention must be given to prevent damage to the forms, yet provide proper vibration to prevent voids or honeycomb in the flutes and at headers and/or construction joints.

FOR PRESTR CONC U-BEAM BRIDGES:
Size, spacing, and orientation of bottom mat of slab reinforcement must match the top mat of reinforcing shown on the span details except all bottom mat bars are to be #5.

FOR PRESTR CONC TX-GIRDER BRIDGES:
See Miscellaneous Slab Details, Prestr Concrete I–Girders (IGMS) standard sheet for bottom mat reinforcing.

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

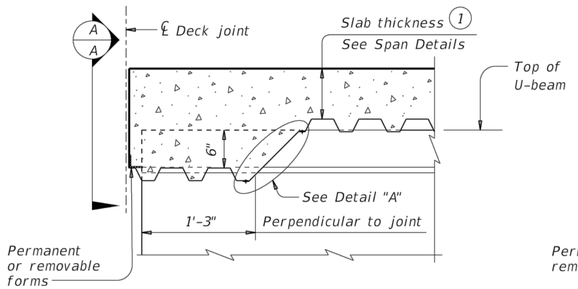
PERMANENT METAL DECK FORMS

PMDF

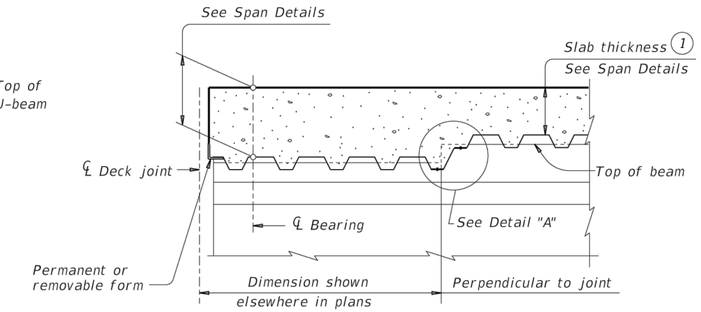
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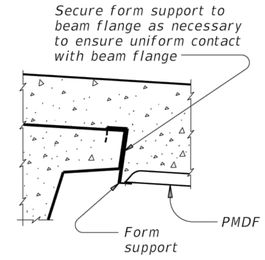


AT THICKENED SLAB END FOR U-BEAMS

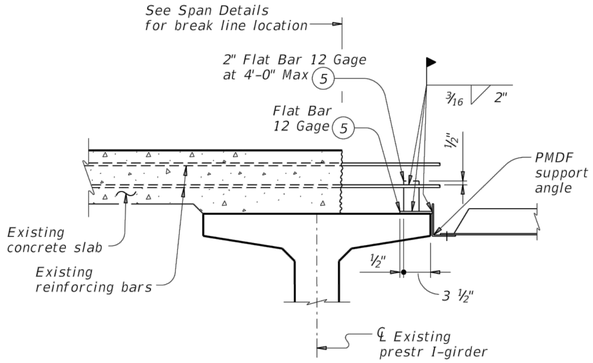


AT THICKENED SLAB END FOR PRESTRESSED I-BEAMS, I-GIRDERS AND STEEL BEAMS

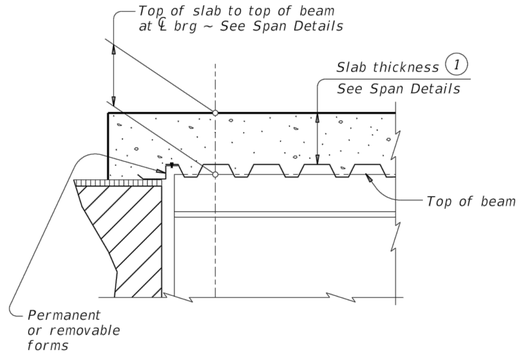
Showing I-beam block-out. No block-out for I-girders or steel beams.



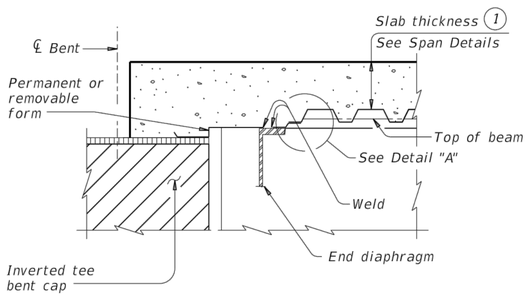
SECTION A-A



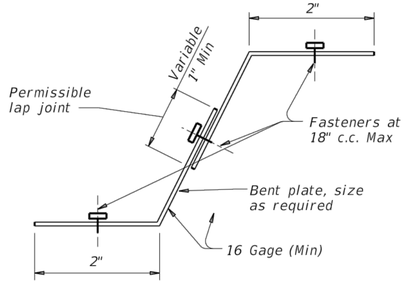
SHOWING PRESTRESSED CONCRETE I-BEAMS, I-GIRDERS AND U-BEAMS



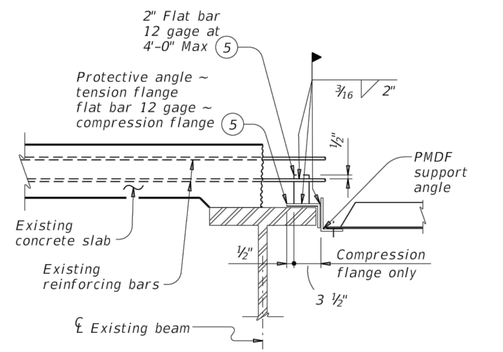
AT SLAB OVER ABUT BKWL OR INV TEE STEM FOR CONC BEAMS WITHOUT THICKENED SLAB END



AT SLAB OVER INV TEE STEM FOR STEEL BEAMS WITHOUT THICKENED SLAB END

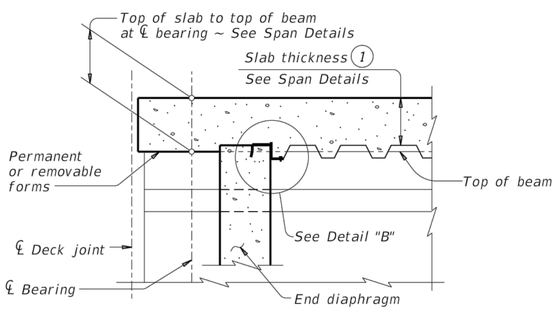


DETAIL "A"

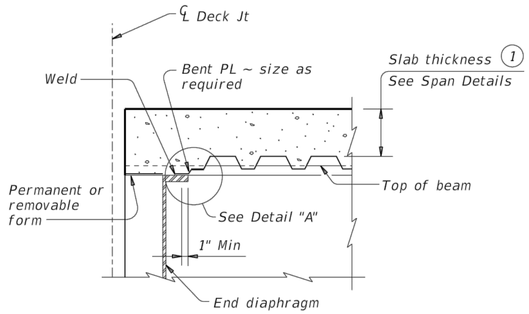


SHOWING STEEL BEAMS

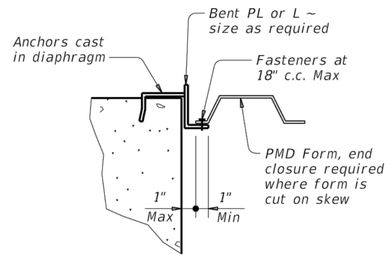
WIDENING DETAILS



AT CONC END DIAPHRAGM FOR PRESTRESSED I-BEAMS AND STEEL BEAMS



AT END DIAPHRAGM FOR STEEL BEAMS WITHOUT THICKENED SLAB END



DETAIL "B"

(1) Slab thickness minus 5/8" if corrugations match reinforcing bars

(5) Minimum yield stress of 12 gage bars shall be 40 ksi

DETAILS AT ENDS OF BEAMS

SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

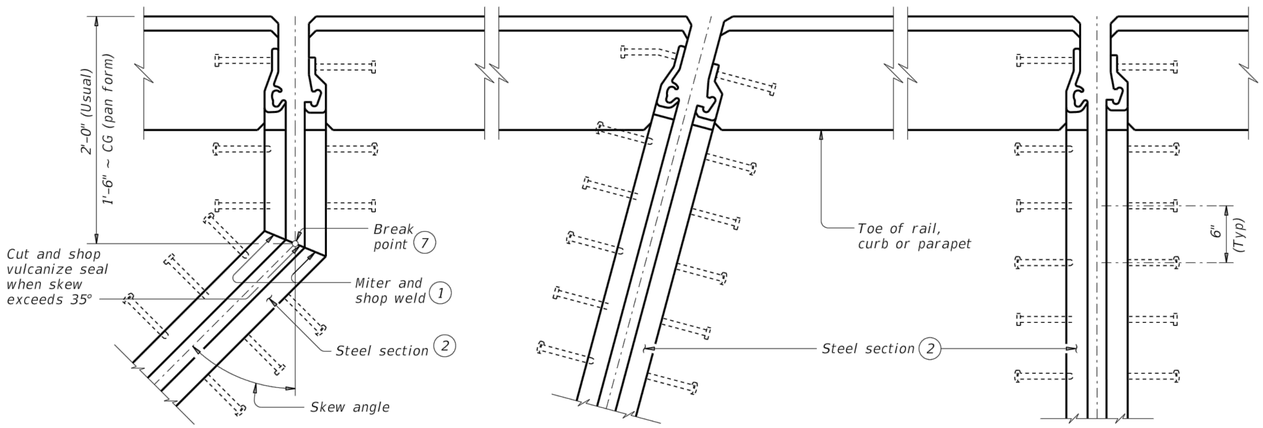
PERMANENT METAL DECK FORMS

PMDF

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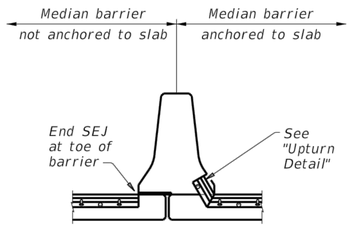
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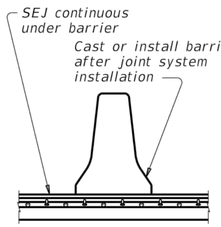


SHOWING SKEWS WITH SLAB BREAKBACKS | SHOWING SKEWS WITHOUT SLAB BREAKBACKS | SHOWING WITHOUT SKEWS AND SLAB BREAKBACKS

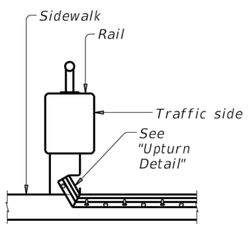
PLANS OF END CONDITIONS



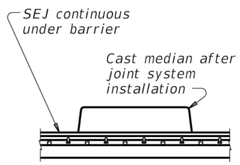
WITH OPEN DECK JOINT BELOW MEDIAN BARRIER



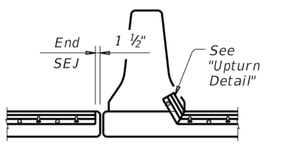
AT MEDIAN BARRIER



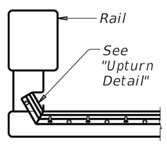
AT SIDEWALK BEHIND BRIDGE RAIL



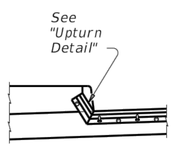
AT RAISED MEDIAN



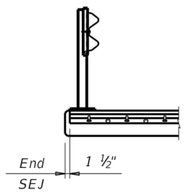
WITH OPEN DECK JOINT ADJACENT TO MEDIAN BARRIER



AT CONCRETE BRIDGE RAIL

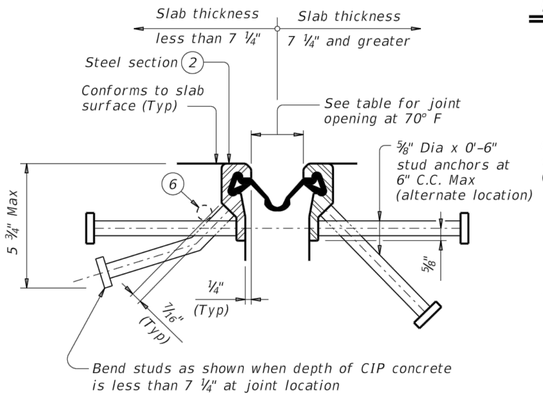


AT SIDEWALK

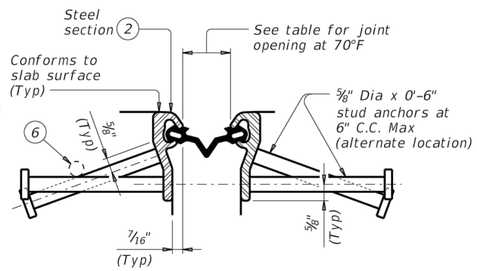


AT STEEL POST BRIDGE RAIL

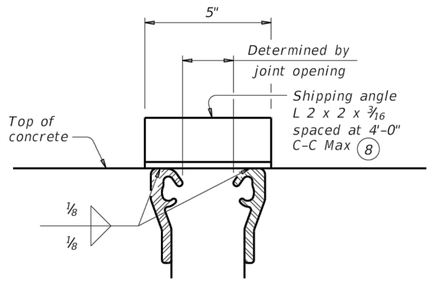
TYPICAL SECTIONS (5)



SECTION THRU WATSON BOWMAN ACME (SE-400 OR SE-500) JOINTS



SECTION THRU D.S. BROWN (A2R-400 OR A2R-XTRA) JOINTS



SHOWING D.S. BROWN (Ty SSCM2)
(All joints are similar.) (Studs are not shown for clarity.)

SHIPPING ANGLE

An alternate method of securing joint sections may be used if approved by the Bridge Division. Erection bolts are not allowed.

TABLE OF SEALED EXPANSION JOINT INFORMATION

MANUFACTURER	STEEL SECTION (2)	STRIP SEAL			
		4" JOINT		5" JOINT	
		Seal Type	Joint Opening (3)	Seal Type	Joint Opening (3)
D.S. Brown	Type SSCM2	A2R-400	1 ¾"	A2R-XTRA	2"
Watson Bowman Acme	Type R	SE-400	1 ¾"	SE-500	2"

REDUCED LONGITUDINAL MOVEMENT RANGE

SKEW (deg)	JOINT SIZE	
	4"	5"
0	4.0"	5.0"
15	4.0"	5.0"
30	3.5"	4.3"
45	2.8"	3.5"

DESIGN NOTES:

Joints installed on a skew have reduced ability to accommodate longitudinal movement. Use table values to determine the correct joint size for skewed installations.

For other skews over 25 degrees, calculate reduced movement range by multiplying joint size by cosine (skew).

(1) Remove all burrs which will be in contact with seal prior to making splice.

(2) Shape of steel section shown is typical. Variations in sections must be approved by the Engineer.

(3) These openings are also the recommended minimum installation openings.

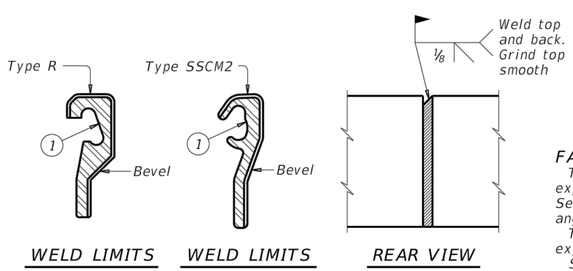
(4) Reduce for sidewalk or parapet heights less than 6".

(5) Other conditions affecting the joint profile should be noted elsewhere.

(6) Move transverse bars that are in conflict with SEJ studs, in either the bridge slab or approach slab, to rest at the junction of the studs.

(7) See Span details for location of break point.

(8) Align shipping angle perpendicular to joint.



WELD LIMITS | WELD LIMITS | REAR VIEW

FIELD SPLICE DETAIL

FABRICATION NOTES:

Temporarily shop assemble corresponding sections of sealed expansion joints (SEJ), check for fit, and match mark for shipment. Secure corresponding sections together for shipment with shipping angle. Do not use erection bolts.

The seal must be continuous and included in the price bid for sealed expansion joint.

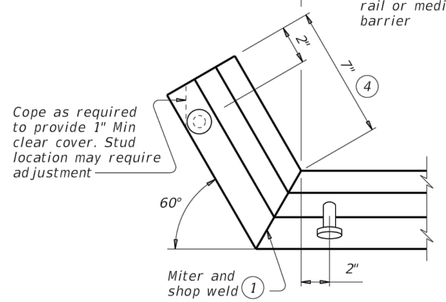
Ship steel sections in convenient lengths of 10'-0" Min and 24'-0" Max unless necessary for staged construction or widenings. One shop splice is permitted in each shipping length provided no piece is less than 2'-0" long and sufficient studs are added to limit the stud to shop splice distance to 2" Min and 4" Max.

Weld studs in accordance with AWS D1.1.

Butt weld all shop and field splices and grind smooth areas in contact with seal. Make all necessary field splice joint preparations in the shop.

Paint the entire steel section with System II or IV primer in accordance with Item 446, "Feild Cleaning and Painting Steel", unless required to galvanize when shown in the plans. Provide galvanizing in accordance with Item 445, "Galvanizing". Provide paints in accordance with Item 446.2. Prepare steel and apply paint in accordance with Item 446.4.7.3 and 446.4.7.4.

Shop drawings for the fabrication of sealed expansion joints will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.



UPTURN DETAIL

CONSTRUCTION NOTES:

Secure the sealed expansion joint in position and place to the proper grade and alignment by welding braces to adjacent reinforcing steel, to prestressed beam stirrups, or to anchors cast in concrete diaphragms. Include cost of temporary bracing in the price bid for sealed expansion joint.

Remove shipping angle immediately after each joint half is secured in place. Grind smooth, and touch up with organic zinc-rich paint.

Clean and prepare seal cavity for seal installation as per the Manufacturer's installation procedures.

GENERAL NOTES:

Provide sealed expansion joints in the size and at locations shown on the plans.

Minimum slab and overhang thickness required for the use of SEJ-M is 6 ½".

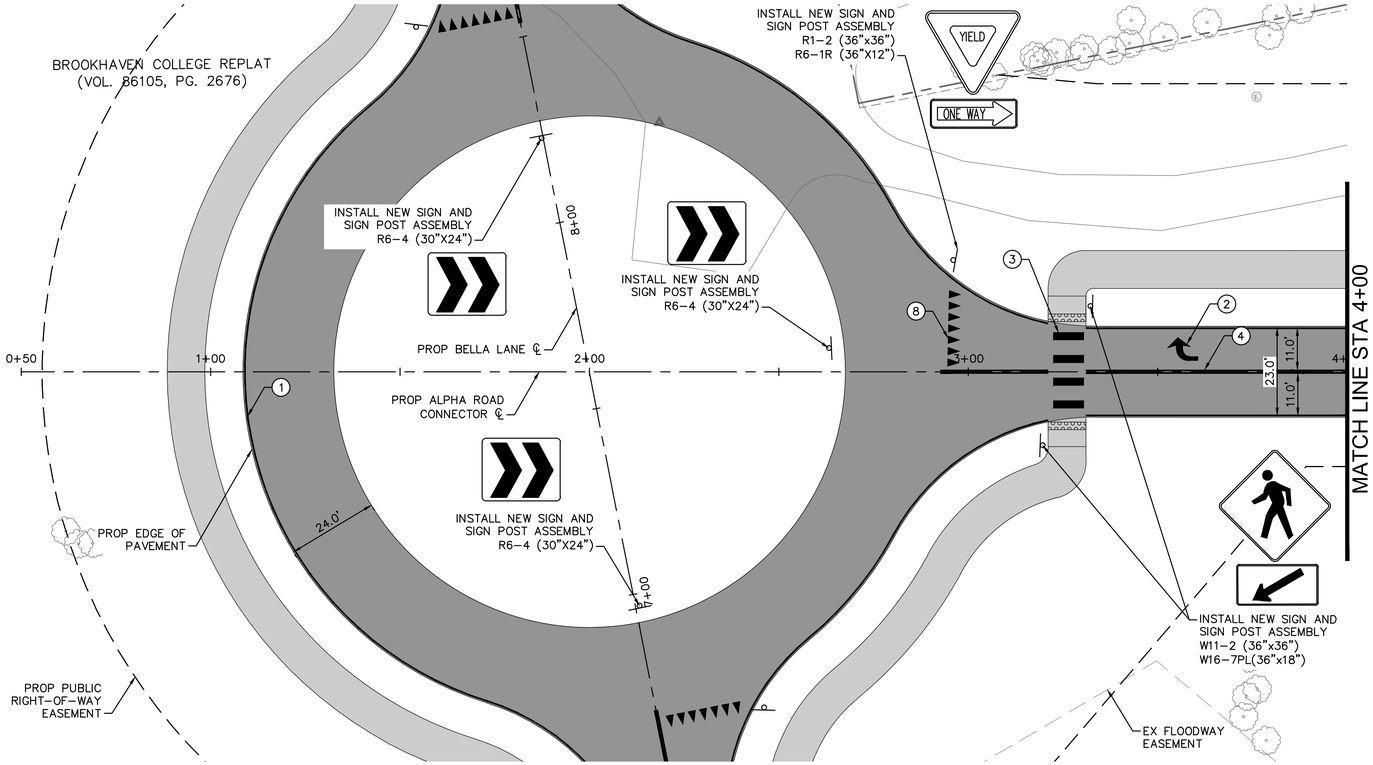
Texas Department of Transportation

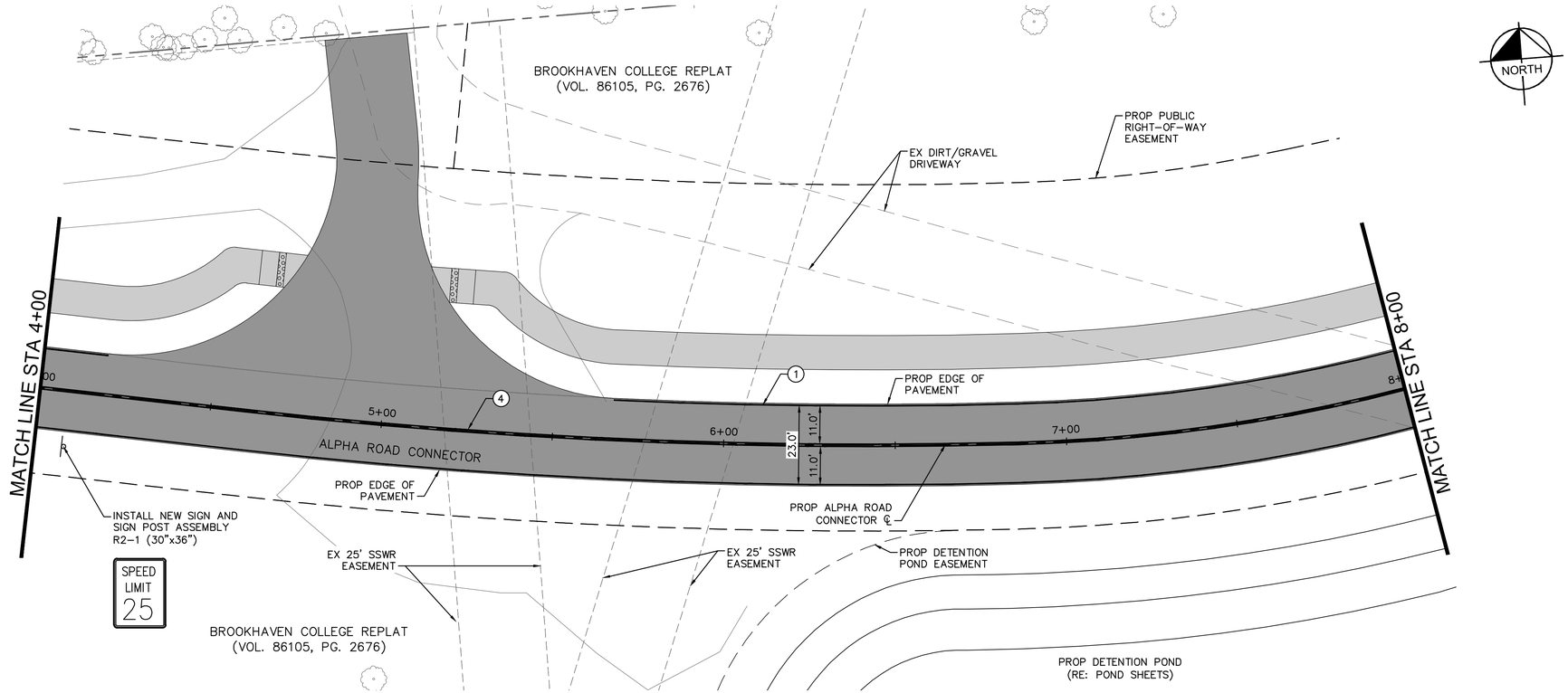
Bridge Division Standard

SEALED EXPANSION JOINT TYPE M WITHOUT OVERLAY

SEJ-M

FILE: sejmste1-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH
©TxDOT April 2019 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.
				C5.41





NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

STRIPING LEGEND

1	INSTALL 4" WHITE EDGE LINE
2	INSTALL ARROW (W)
3	INSTALL 24" X 8' WHITE LINE WITH 4' SPACE (CROSSWALK)
4	INSTALL 4" DOUBLE YELLOW LINE
5	INSTALL BROKEN 4" YELLOW LINE
6	INSTALL 24" STOP BAR MARKING
7	INSTALL 5' X 17' WHITE LINE WITH 5' SPACE (CROSSWALK)
8	INSTALL YIELD LINES TY I (W) 24" (TRI) (100MIL)

NOTES

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2. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL IRRIGATION FACILITIES WITHIN LOC.
3. ALL PAVEMENT MARKINGS SHALL BE 100 MIL THERMOPLASTIC UNLESS OTHERWISE NOTED

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PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

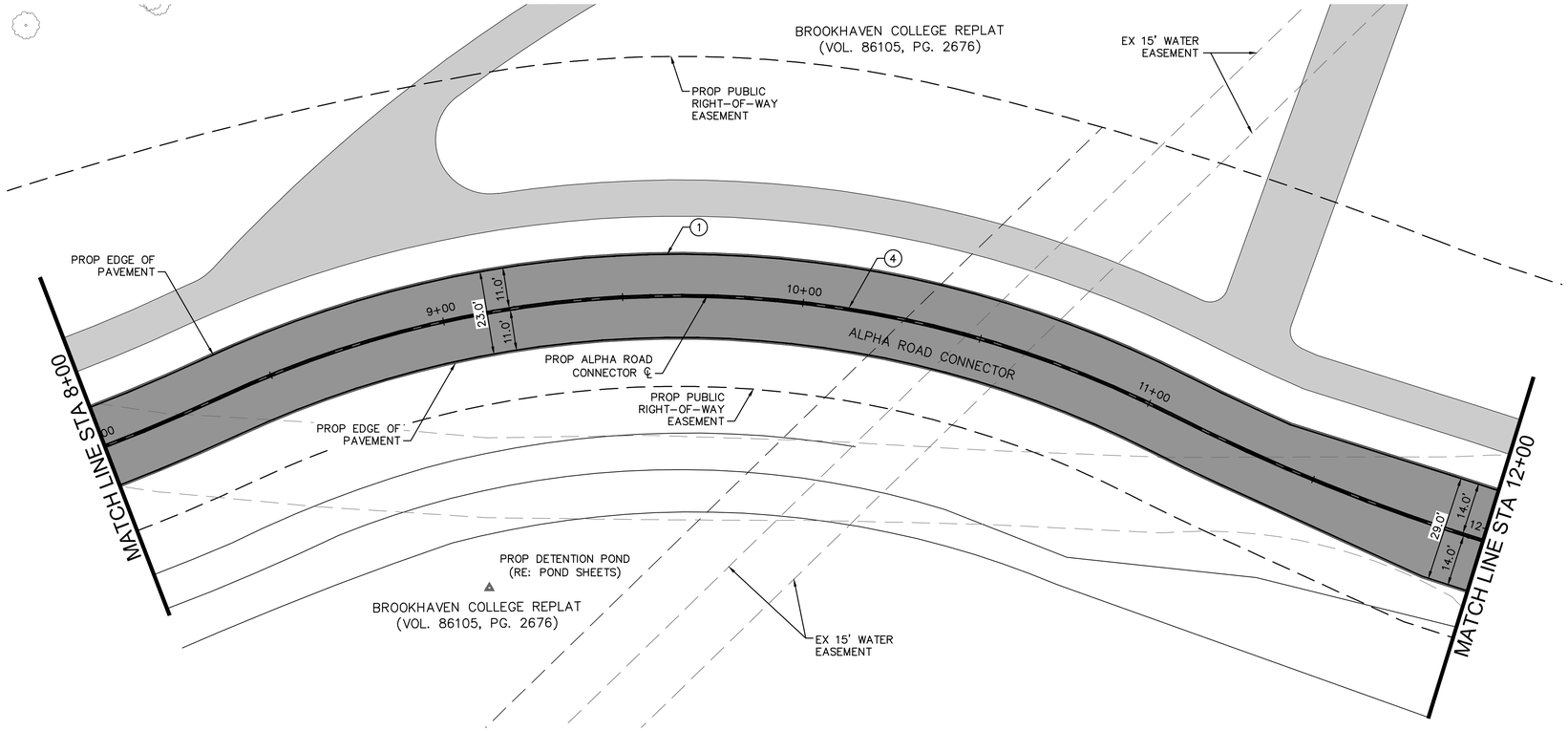
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DATE 09/10/2021	SCALE	AS SHOWN	
	DESIGNED BY	RMD	
	DRAWN BY	CDS	
	CHECKED BY	LNA	

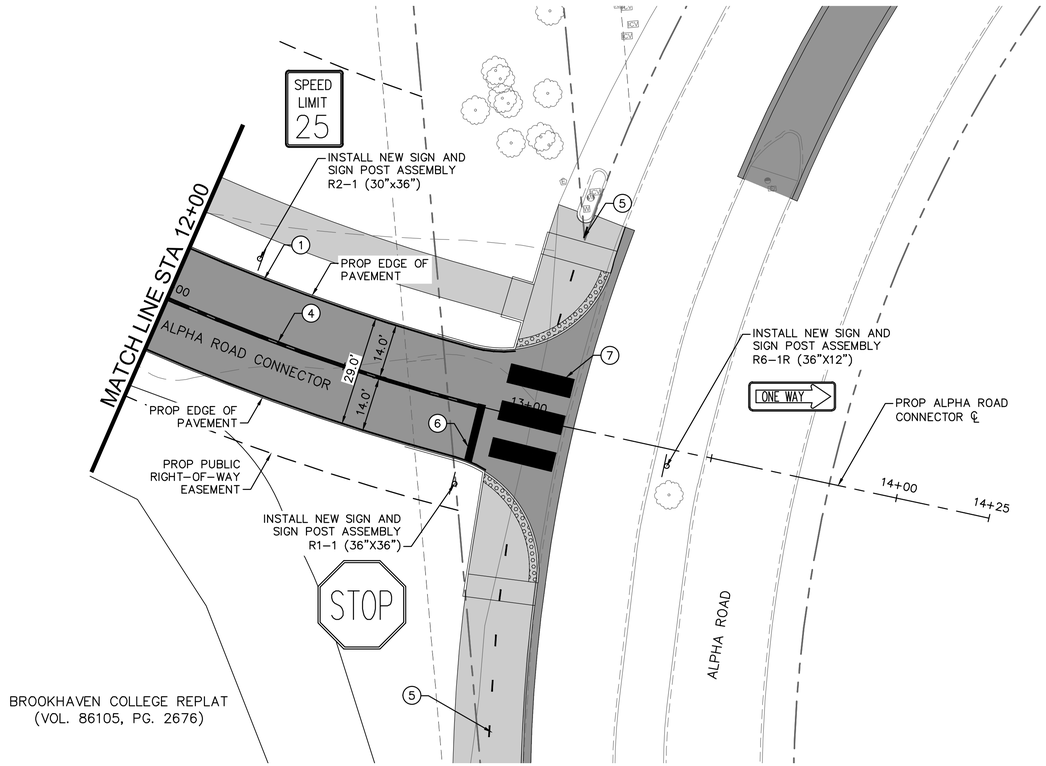
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PAVEMENT MARKING AND SIGNING
ALPHA ROAD CONNECTOR
BEGIN TO STA 8+00

SHEET NUMBER
C6.01

Plotted By: Ghattoni, Cody September 08, 2021 09:14:40am K:\IAC-Civil\063543031-Addison Alpha Road Connector\24-DD\Plan Sheets\Pavement Markings.dwg
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No.	REVISIONS	DATE	BY

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9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

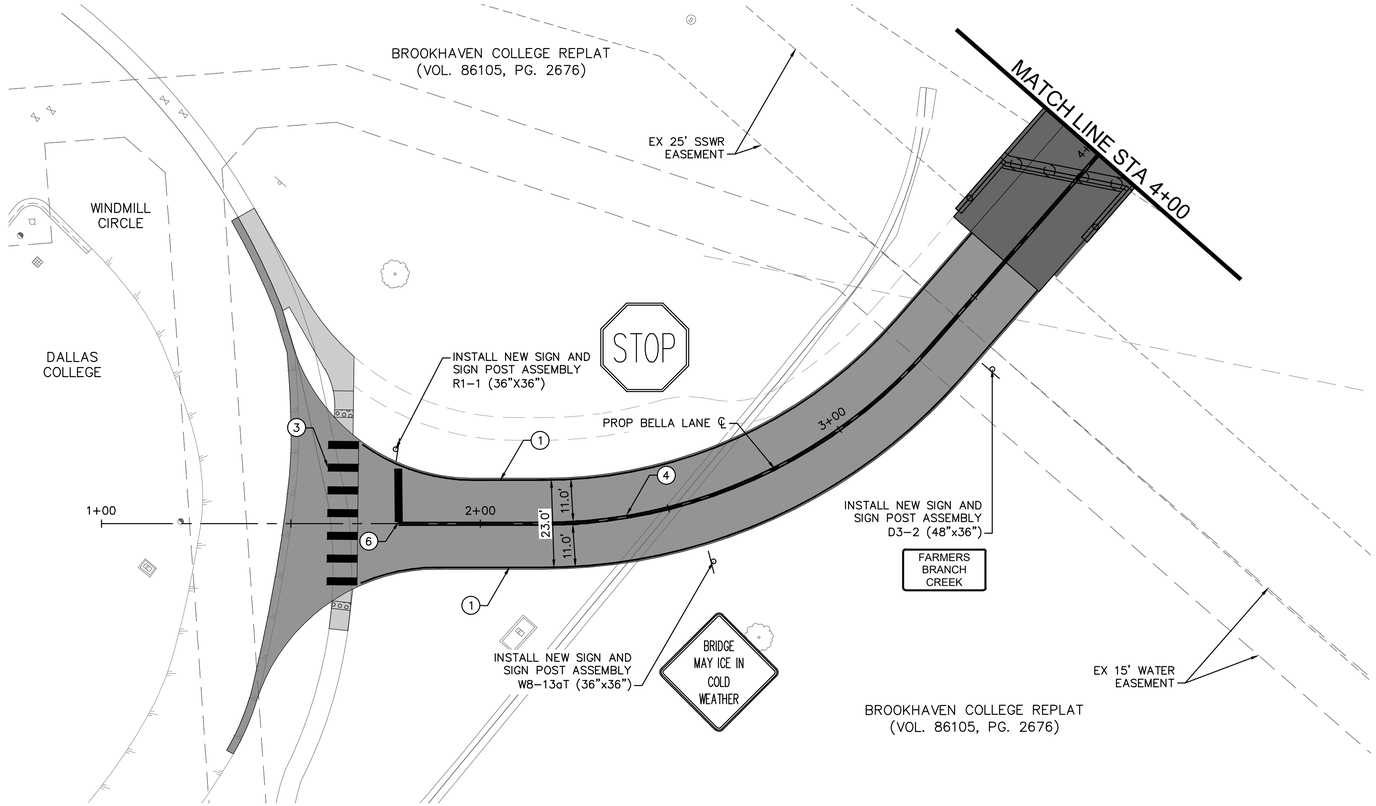
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

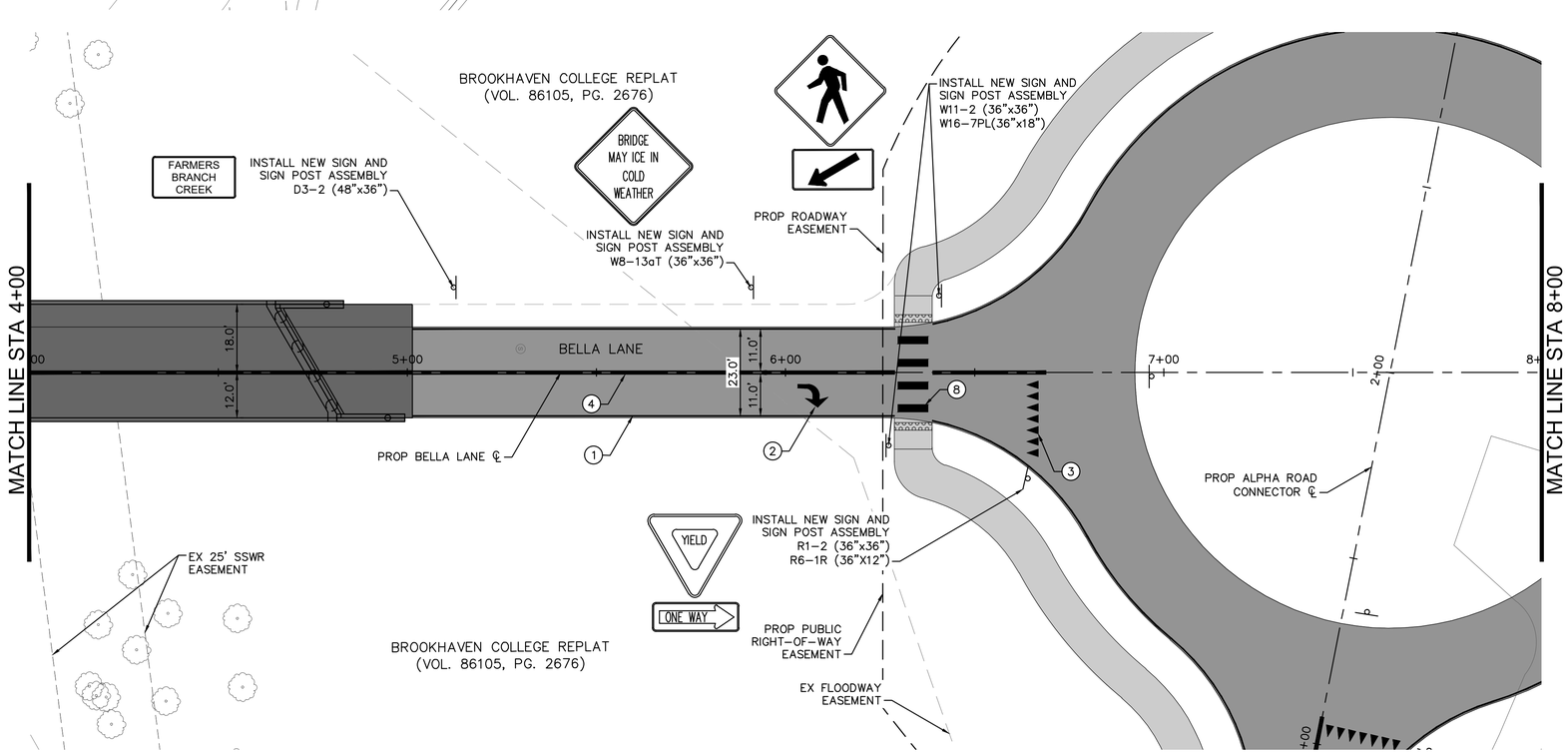
PAVEMENT MARKING AND SIGNING
ALPHA ROAD CONNECTOR
STA 8+00 TO END

SHEET NUMBER
C6.02

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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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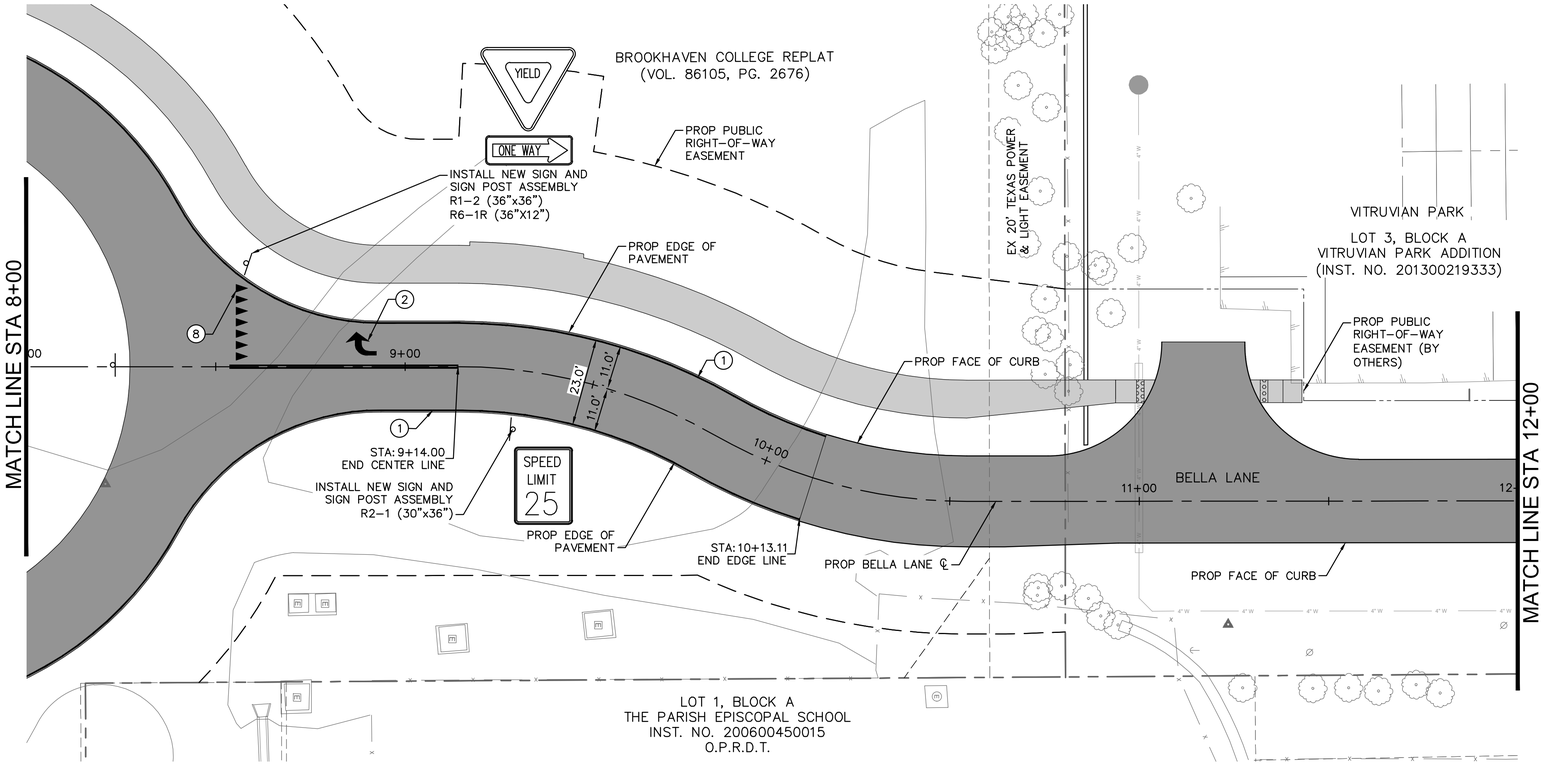
9/10/2021
STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

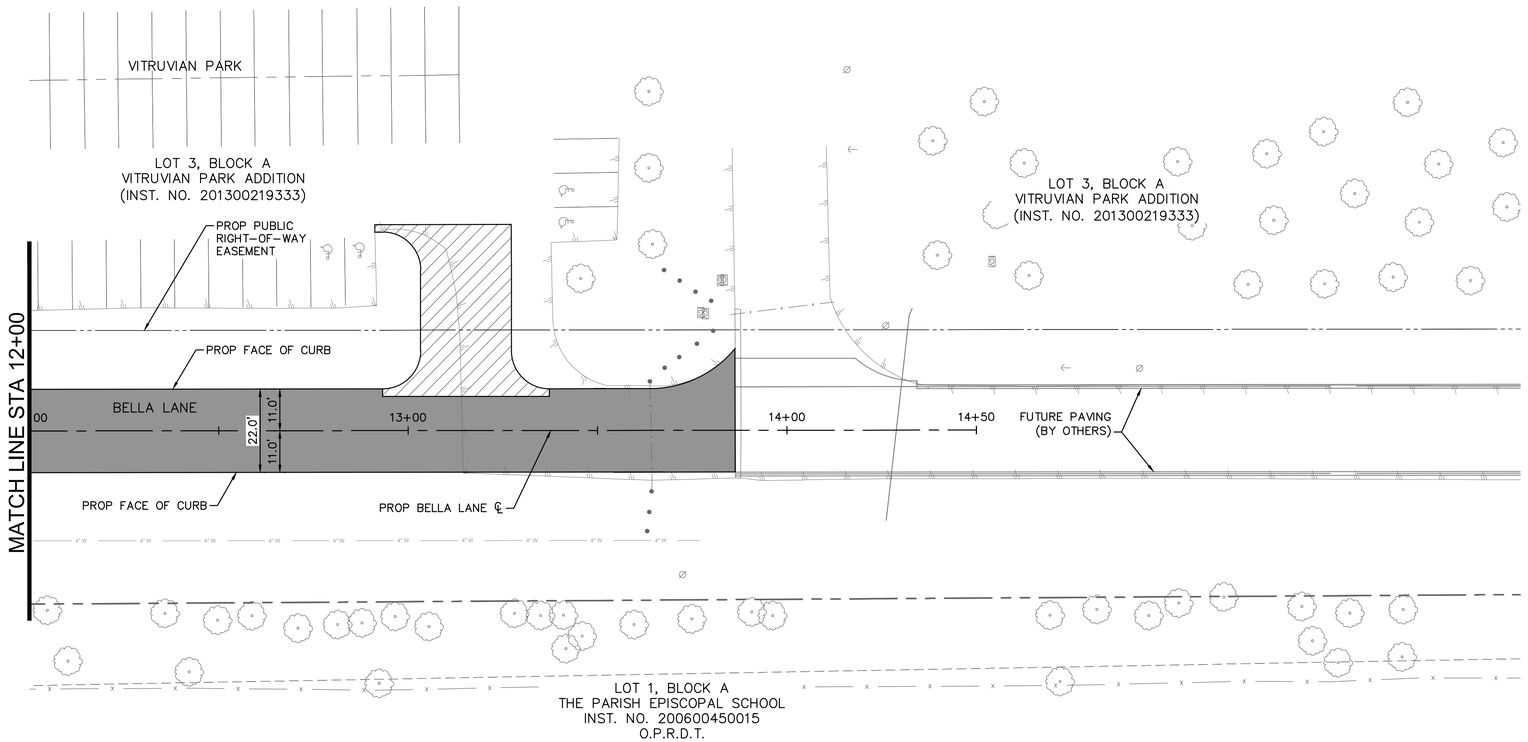
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DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PAVEMENT MARKING AND SIGNING
BELLA LANE EXTENSION
BEGIN TO STA 8+00

SHEET NUMBER
C6.03





NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
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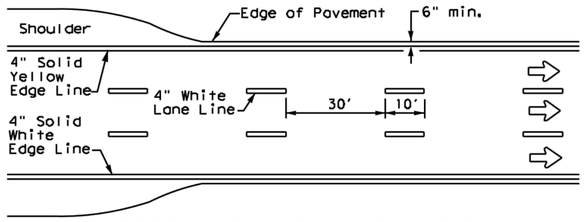
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

PAVEMENT MARKING
AND SIGNING
BELLA LANE EXTENSION
STA 8+00 TO END

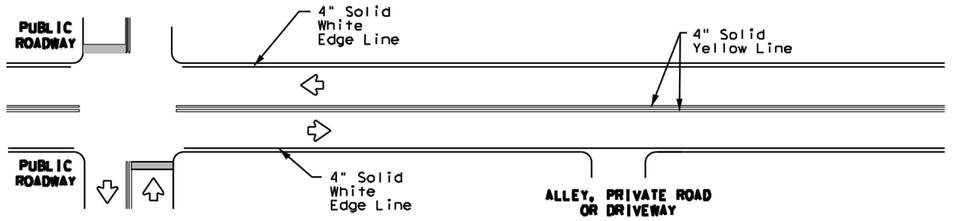
SHEET NUMBER
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Plotted By: Christian Cruz September 09, 2021 01:43:04pm K:\ADC_Civil\063543031-Addison Alpha Road Connect\CADD\Plan Sheets\Pavement Marking.dwg
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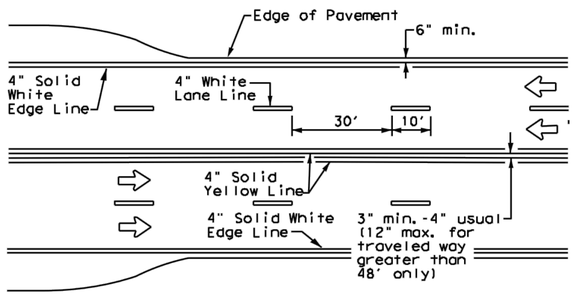
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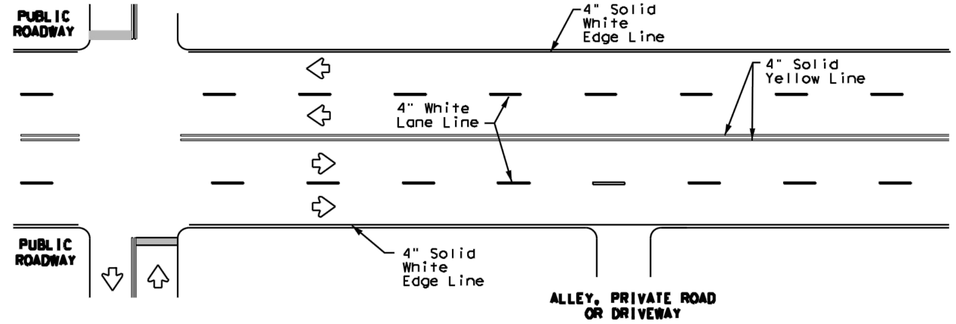
EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



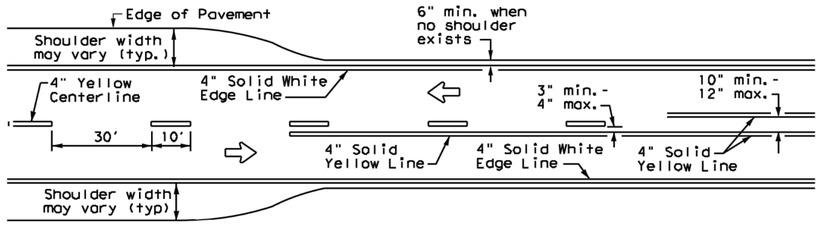
TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



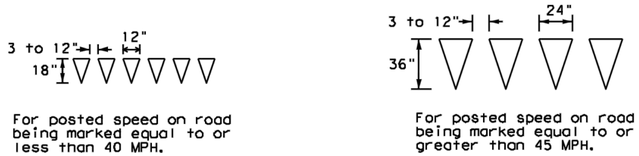
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



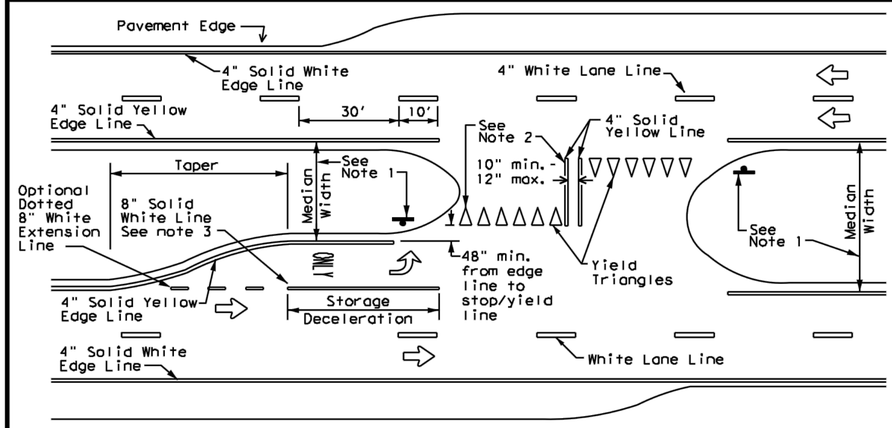
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



YIELD LINES



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs are optional as determined by the Engineer.

2. Install median striping (double yellow centerlines and stop bars/yield triangles) when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs. Yield traingles shall only be used with yield signs.

3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

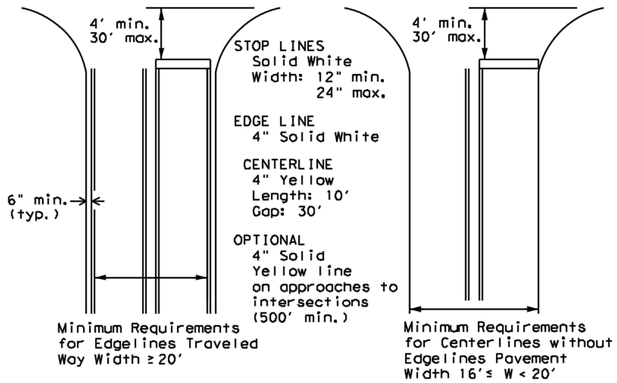
GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.

2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the inside of edgeline of a two lane roadway.

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.



GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Highways

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-20

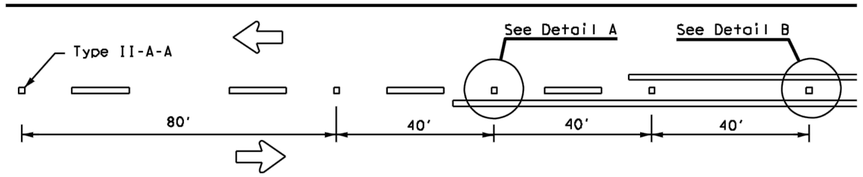
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©TxDOT November 1978	CONT	SECT	JOB	HIGHWAY
REVISIONS 8-95 3-03				
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8-00 6-20				

22A

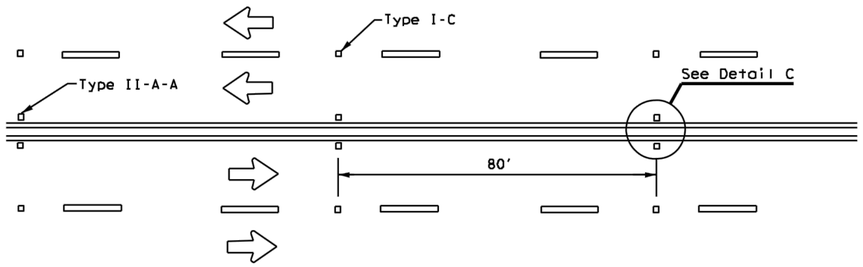
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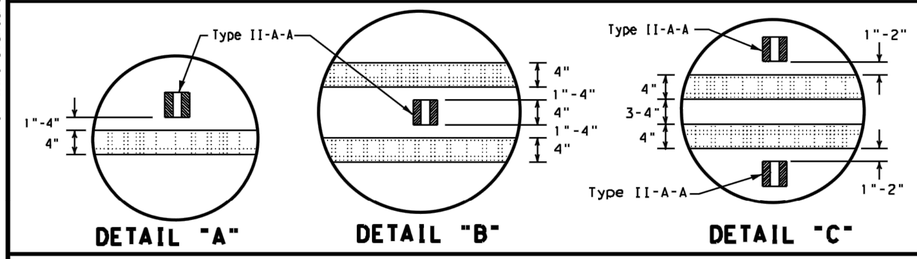
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



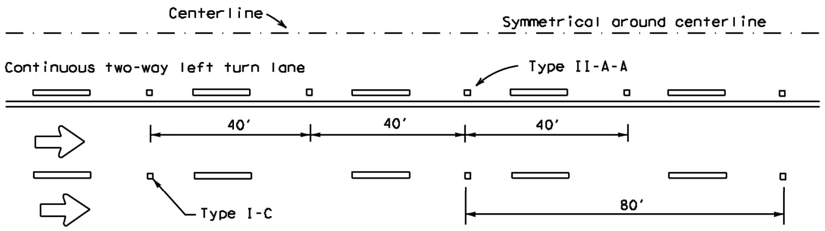
CENTERLINE FOR ALL TWO LANE ROADWAYS



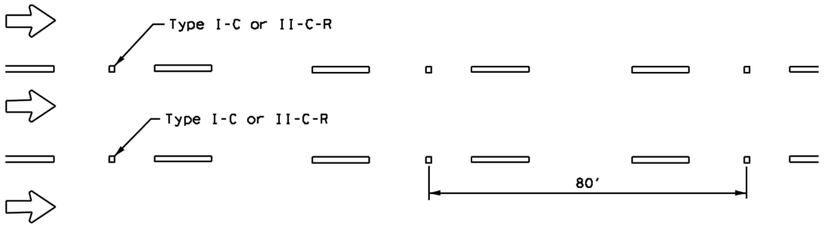
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS



DETAIL "A" **DETAIL "B"** **DETAIL "C"**

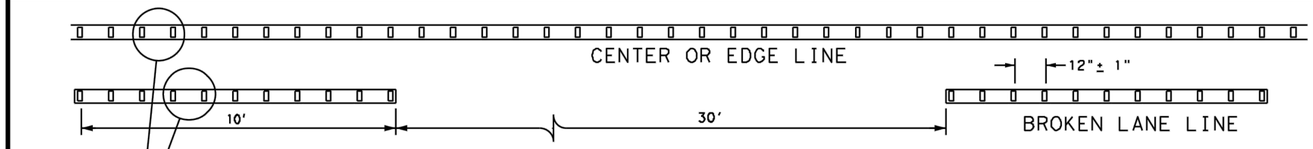


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



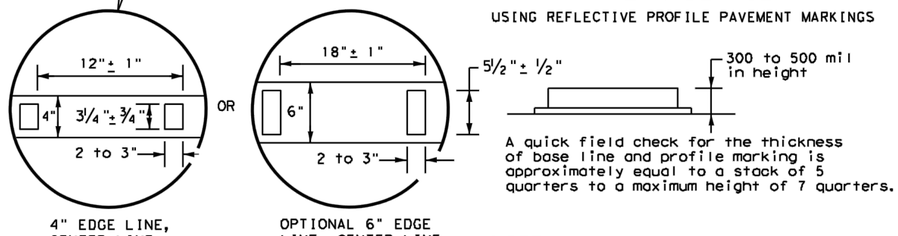
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

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

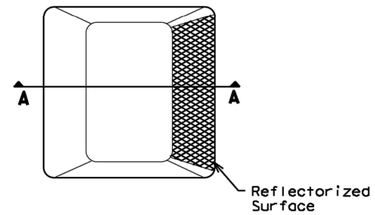
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

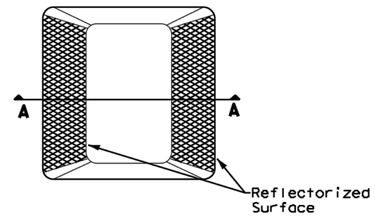
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

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

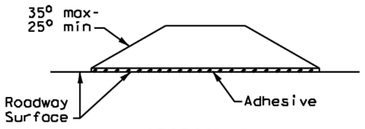
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation

Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS PM(2)-20

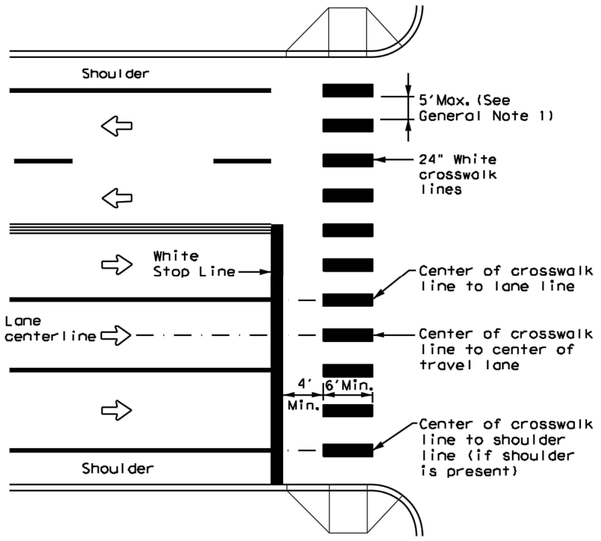
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©TxDOT April 1977	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-92 2-10	DIST	COUNTY		SHEET NO.
5-00 2-12				
8-00 6-20				

228

DATE:
FILE:

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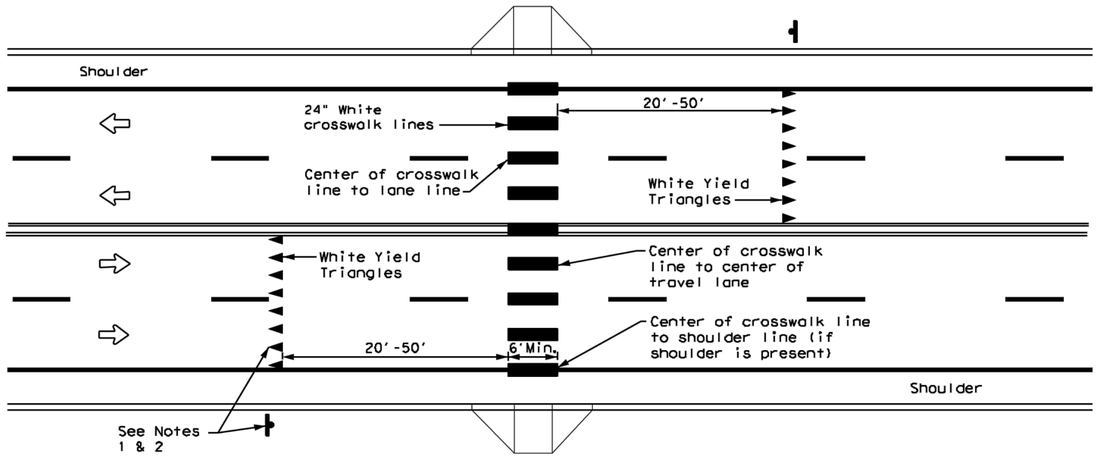
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar/Yield Triangles and Crosswalk shall be approved by the Engineer in the field.

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.



UNSIGNALIZED MID BLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES

1. Use yield triangles with "Yield Here to Pedestrians" signs at unsignalized mid block crosswalks.
2. Use stop bars with "Stop Here on Red" signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation

Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-20

FILE: pm4-20.dgn	DN:	CK:	DW:	CK:
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	DIST	COUNTY		SHEET NO.

22D

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

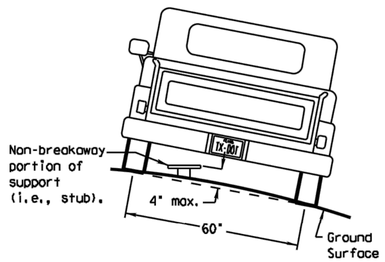
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

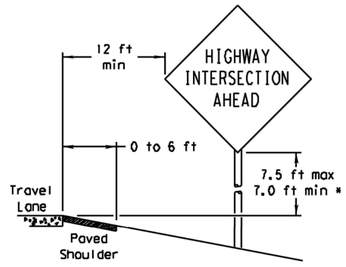
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

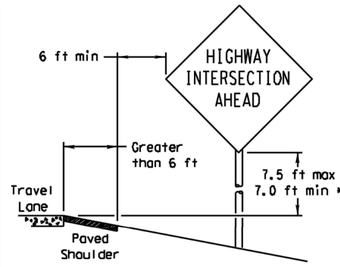
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

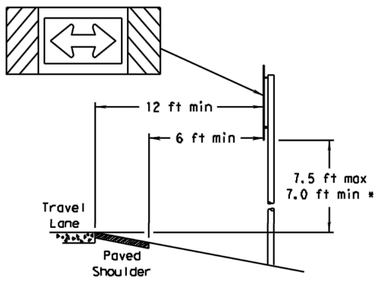
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



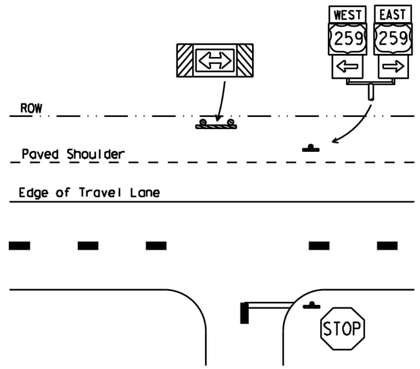
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

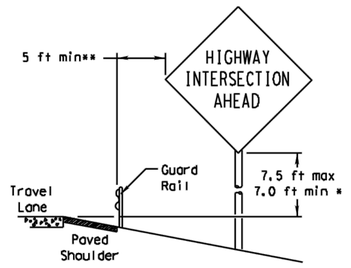
T-INTERSECTION



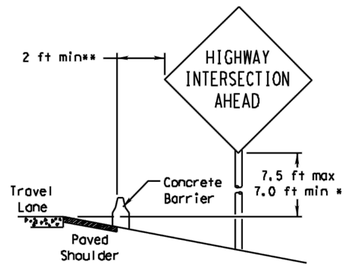
When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



BEHIND GUARDRAIL



BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

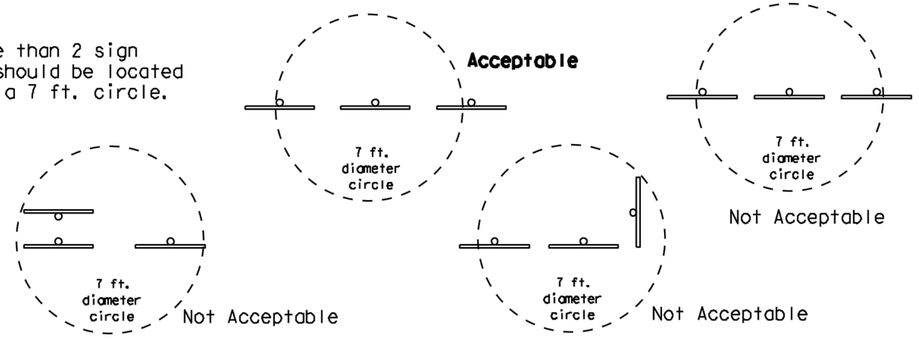
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

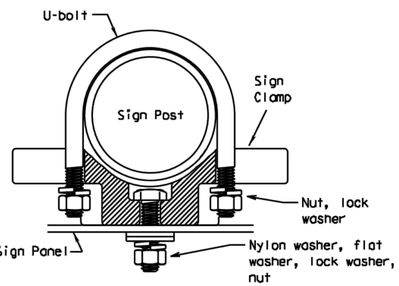
The website address is:
http://www.txdot.gov/publications/traffic.htm

No more than 2 sign posts should be located within a 7 ft. circle.

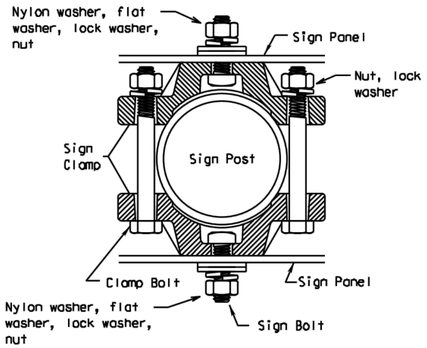


TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs



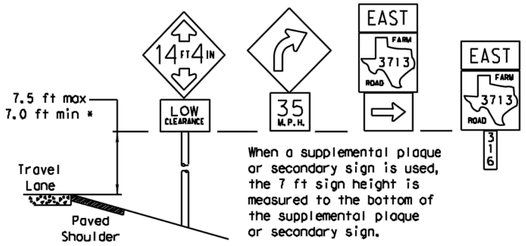
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

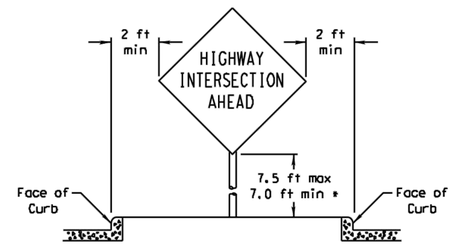
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



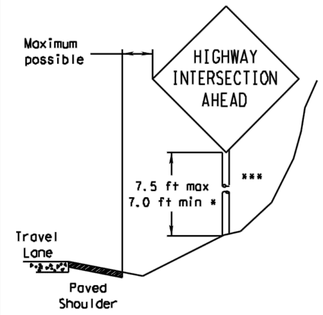
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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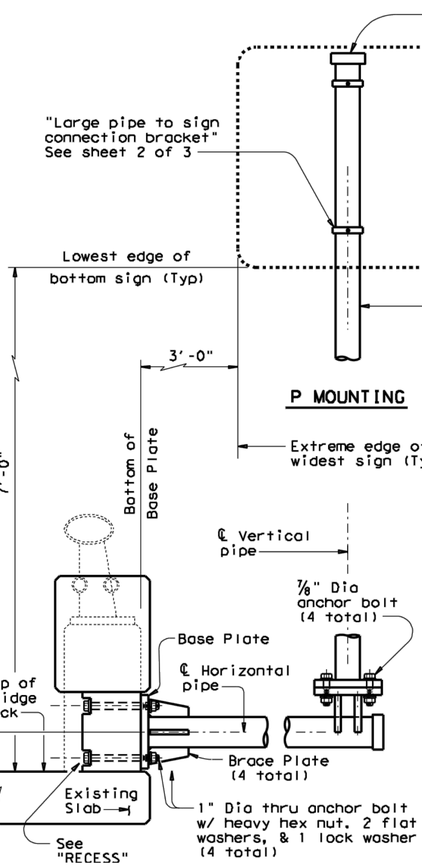
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CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.

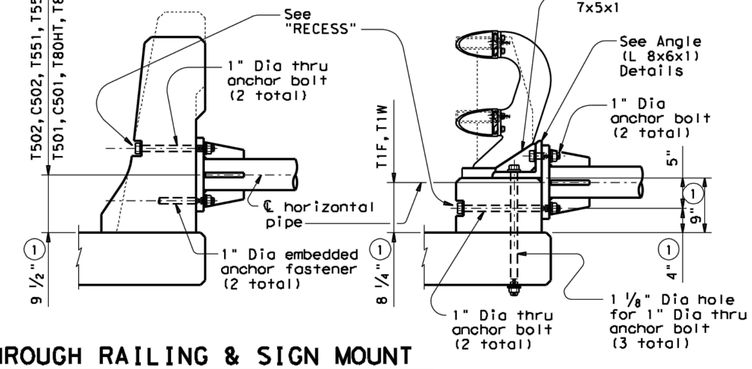
9-08 REVISIONS

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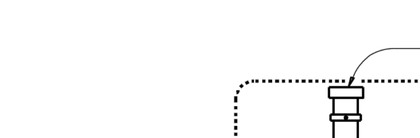
T201, C201, T221, C221, T4, C4, T401, T402, C402
T203, C203, T223, C223 (2))



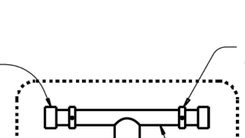


VARIOUS SIGN ATTACHMENTS

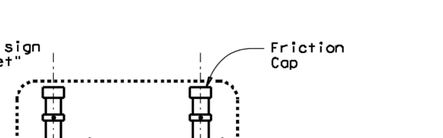
(Mounting NOT deviated from SHSD)



P MOUNTING

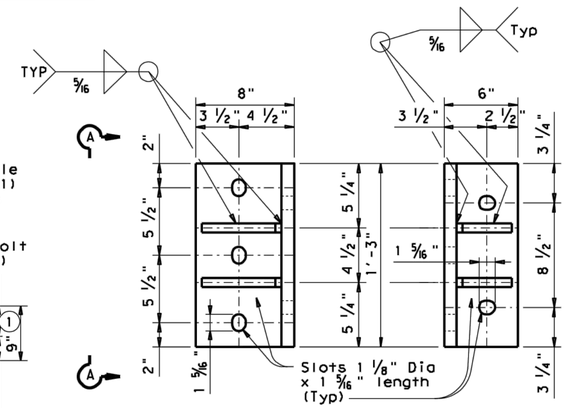


T MOUNTING



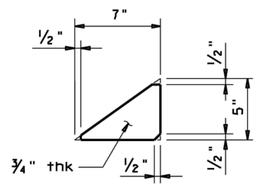
U MOUNTING

LONGITUDINAL SECTION THROUGH RAILING & SIGN MOUNT



PLAN VIEW

SECTION A-A

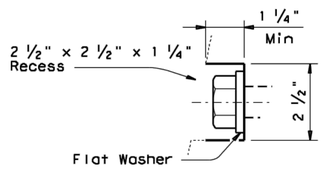


STIFFENER

ANGLE (L 8x6x1) DETAILS

① Increase 2" for structure with overlay.

② Attached at ℄ post.



RECESS

PIPE SIZE AND THICKNESS			
Pipe Placement / Design Wind Speed	Horizontal	Vertical	Bracing
90 mph	5" X-Strong (.375")	4" X-Strong (.337")	2 ½" Standard (.203")
130 mph	6" X-Strong (.432")	5" X-Strong (.375")	3" X-Strong (.300")

GENERAL NOTES:

Design conforms to 2013 AASHTO Standard Specifications for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design 3-second gust wind speeds of 90 mph and 130 mph with a 1.14 gust factor, and a wind importance factor of 1.0 (50-year mean recurrence interval) for the supporting structures. For mounting connection between sign panel and pipe, wind importance factors of 0.71 and 0.54, for 90 mph and 130 mph winds, respectively, are applied to adjust the wind speeds to a 10-year mean recurrence interval.

See standard sheet WV & IZ(LTS2013) for the boundaries of each design wind zone. All mounting shall be based on 130 mph wind speed design except when located in 90 mph wind zone. Maximum panel area is 30 sq. ft. Maximum design height is 50 ft, with design height defined as the distance between natural ground (average elevation of surrounding terrain) and the center of sign(s) at the mounting location.

Material for pipe shall be ASTM A53 Grade B, or A501. Structural steel plates shall be ASTM A36, A572 Grade 50, or A588. Bolts used to connect pipe and mounting bracket, and wind beam to sign panel shall be ASTM A307. Anchor bolts shall be ASTM A325 or A193 B7. Each anchor bolt shall be provided with 2 flat washers, 1 lock washer, and 1 heavy hex nut. All parts shall be galvanized in accordance with Standard Specifications Item 445, "Galvanizing".

Attach horizontal pipe at least 2'-0" from the edge of any nearby drain slot.

Contractor shall verify applicable field dimensions before fabrication. Holes drilled through the railing parapet wall shall be drilled with rotary (coring or masonry drill) type equipment. Percussion (star) drilling shall not be allowed. Anchorage for pipe attached to rail shall be placed using an anchoring system approved by the engineer. Installation of anchor fasteners including hole depth, diameter and material shall be in accordance with the manufacturers' recommendation.

Each embedded anchor fastener shall resist an allowable design loading (after applying the reduction factors of bolt spacing and bolt edge distance) of:

	130 mph	90 mph
Tension	12.5 kips	7.5 kips
Shear	9.0 kips	5.0 kips

Each anchoring system shall provide a capacity to resist the required tension and shear acting simultaneously.

For sign connection to mounting, shop drill holes on sign blank in accordance with the current Standard Highway Sign Designs for Texas (SHSD). Additional hole(s) needed to meet a stipulated-type mounting may be field drilled. For multi-sign or back-to-back signs mounting, the engineer shall determine the proper type which ensures each individual mounting meets requirements.

Refer to Standard sheets SMD(GEN), SMD(SLIP-2 and SMD(2-1) for details not covered here.

SHEET 1 OF 3

Texas Department of Transportation

Traffic Operations Division Standard

BRIDGE RAILING SIGN MOUNT DETAILS

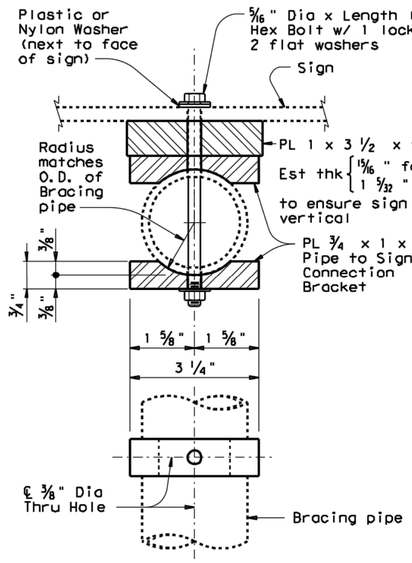
SMD(BR-1)-14

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	DIST	COUNTY		SHEET NO.

266

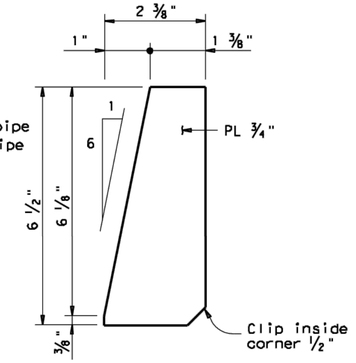
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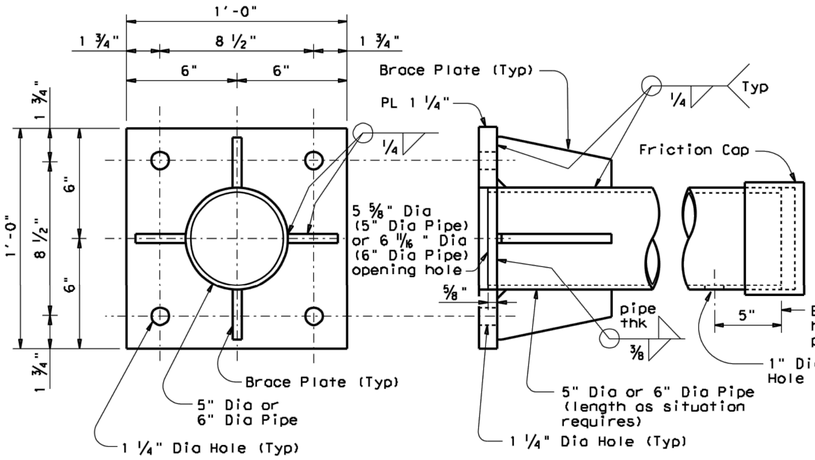


BRACING PIPE TO SIGN CONNECTION BRACKET DETAILS

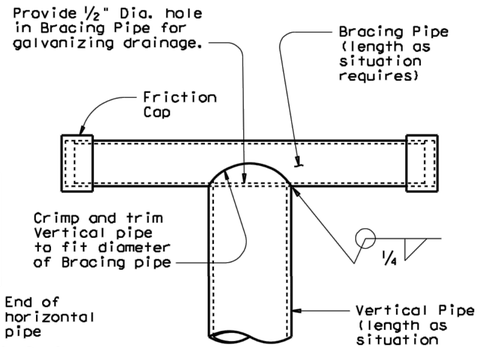
(Showing T Mounting)

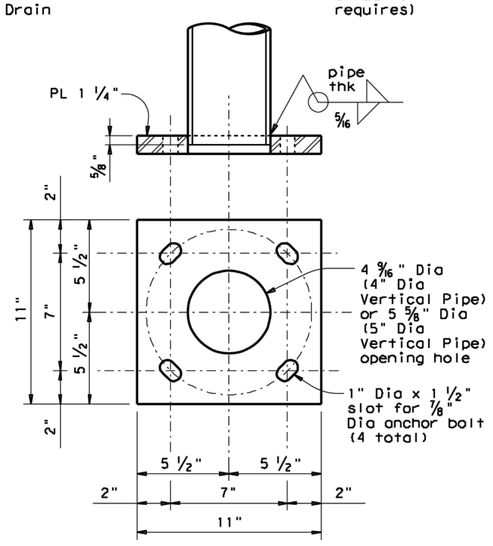


BRACE PLATE DETAILS



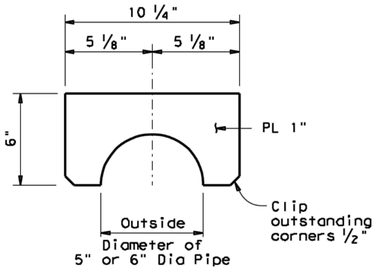
BASE PLATE DETAILS



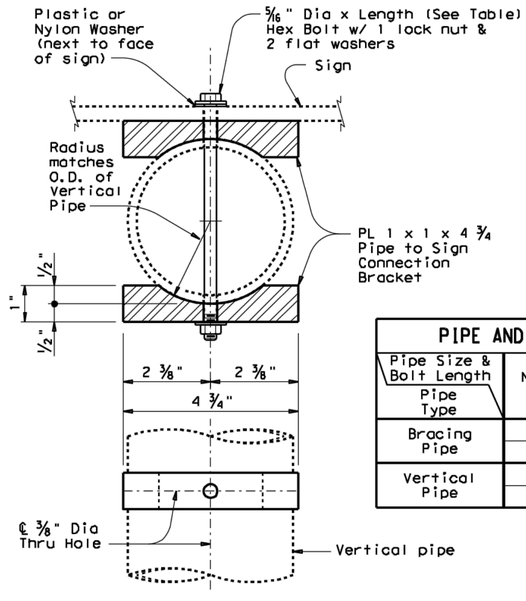


SIGN POLE & POLE BASE PLATE DETAILS

(Showing only T Mounting)



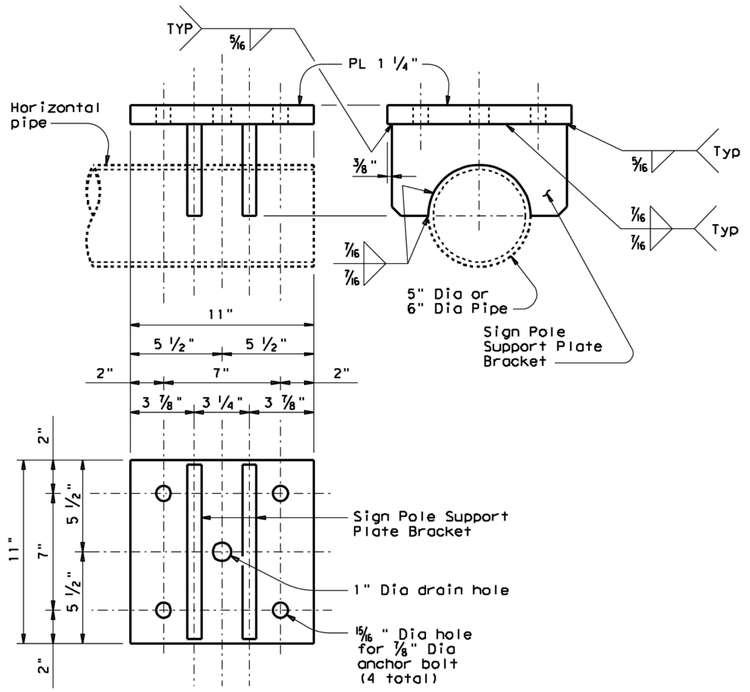
SIGN POLE SUPPORT PLATE BRACKET DETAILS



LARGE PIPE TO SIGN CONNECTION BRACKET DETAILS

(Showing P or T Mounting)

PIPE AND BOLT SPECIFICATIONS		
Pipe Size & Bolt Length / Pipe Type	Nominal Pipe Dia (in.)	Bolt Length (in.)
Bracing Pipe	2 1/2	6
	3	7
Vertical Pipe	4	7
	5	8



SIGN POLE SUPPORT PLATE DETAILS

SHEET 2 OF 3

Texas Department of Transportation

Traffic Operations Division Standard

BRIDGE RAILING SIGN MOUNT DETAILS

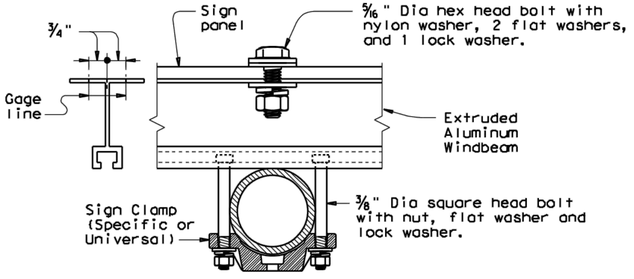
SMD(BR-2)-14

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REVISIONS	DIST	COUNTY		SHEET NO.

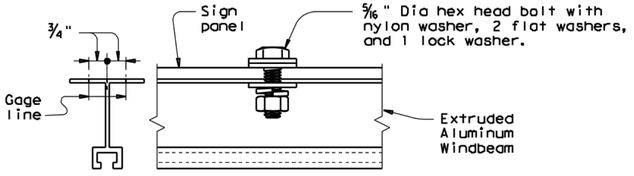
26H

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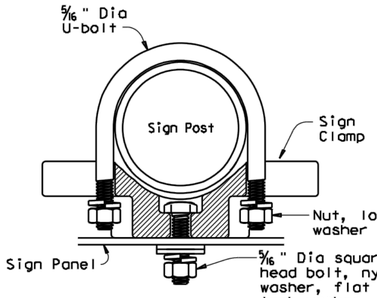
DATE:
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DETAIL 1



DETAIL 2

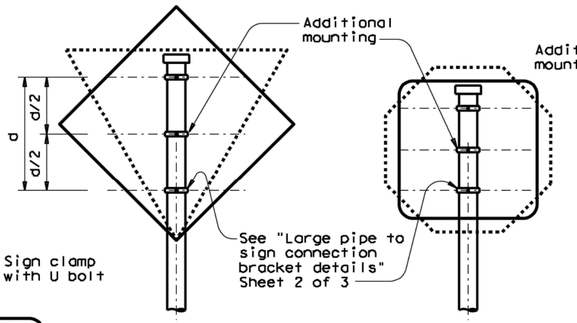


DETAIL 3

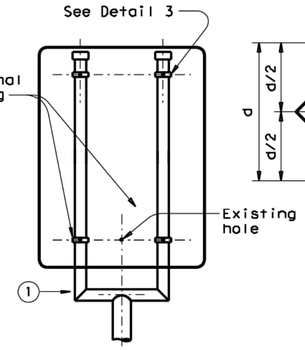
SIGN SHAPE	SQUARE			HORIZONTAL RECTANGLE			VERTICAL RECTANGLE			DIAMOND			OCTAGON			EQUILATERAL TRIANGLE			INTERSTATE SHIELD	PENTAGON (SCHOOL)	
Type of Sign Mounting on SHSD / Design Wind Speed	P	T	U	P	T	U	P	T	U	P	T	U	P	T	U	P	T	U	P	P	T
90 mph					(Type 23) 60"x48"	(Type 3) 72"x36" 78"x36" (Type 23) 72"x30" 84"x24"		(Type 2) 36"x48" (Type 32) 36"x60" 36"x72" 42"x60" 48"x54" 48"x60" 48"x72" (Type 3) 48"x84"			(Type 3) 60"x60"									(Type Special) 45"x36"		
130 mph	(Type 1) 30"x30" 36"x36"	(Type 3) 48"x48"		(Type 1) 36"x24" 36"x30"	(Type 23) 48"x42" 54"x42" 60"x30" 66"x36" 84"x24" (Type 3) 60"x48"	(Type 3) 72"x36" 78"x36" (Type 23) 72"x30" 84"x24"	(Type 1) 30"x36" 30"x42"	(Type 3) 36"x48" 36"x60" 36"x72" 42"x60" 48"x54" 48"x60" (Type 4) 48"x72" 48"x84"	(Type 3) 48"x60"	(Type 1) 36"x36"	(Type 3) 48"x48" 60"x60"					(Type 1) 48"x48"			(Type Special) 36"x36" 45"x36"		

Notes:
1. Drill holes in addition to the hole pattern of the Standard Highway Sign Designs for Texas (SHSD) at specified locations to meet a stipulated-type mounting indicated in the parenthesis ( ).
2. "Blank" in the above table indicates all other signs excluded from stipulated mounting shall be mounted in accordance with SHSD.

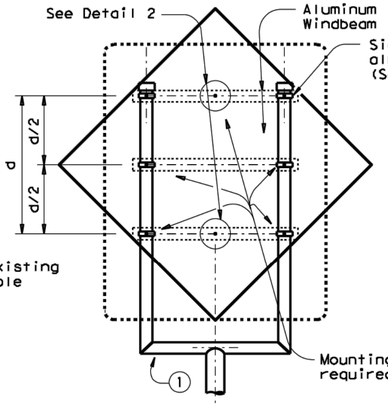
(1) In lieu of welding, the Fabricator may bend bracing pipe elbows if the following conditions are met:
a. Spacing between vertical bracing pipes is equal to or greater than 2'-6".
b. Bending radius is 12".
c. The distance between the lowest clamp and centerline of horizontal bent pipe is 13" max.

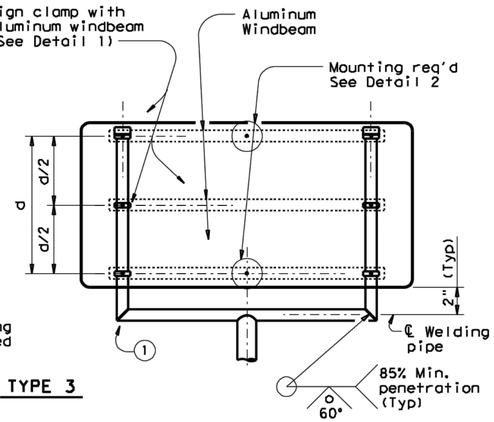


TYPE 1

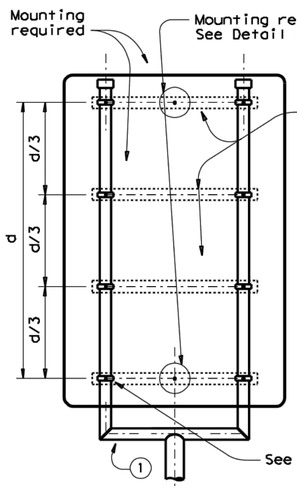


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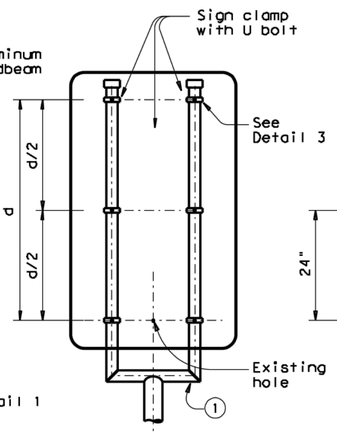




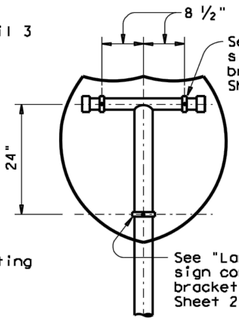
TYPE 3



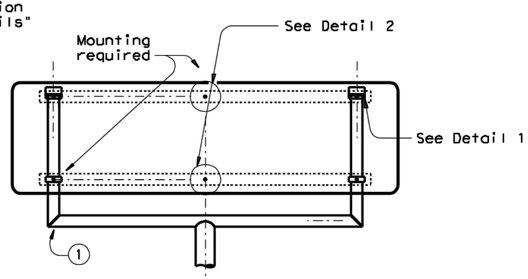
TYPE 4



TYPE 32



TYPE SPECIAL



TYPE 23

SHEET 3 OF 3

Texas Department of Transportation

Traffic Operations Division Standard

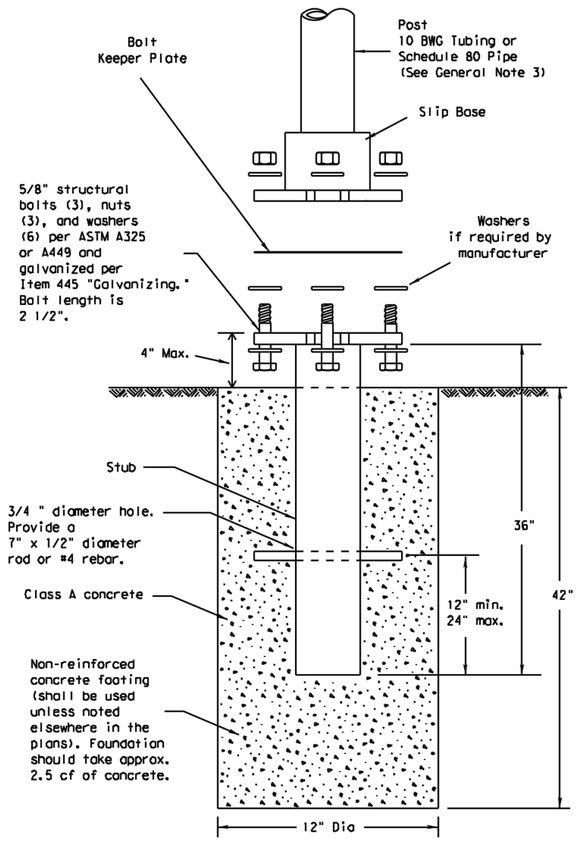
BRIDGE RAILING SIGN MOUNT DETAILS

SMD(BR-3)-14

FILE: smdbr-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

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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

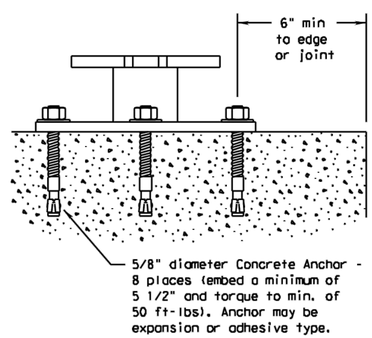
Foundation

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

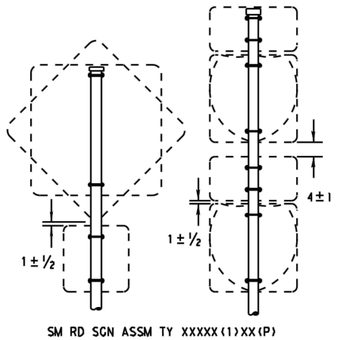
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

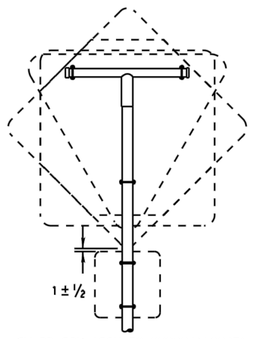
©TxDOT July 2002	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08				
	DIST	COUNTY		SHEET NO.

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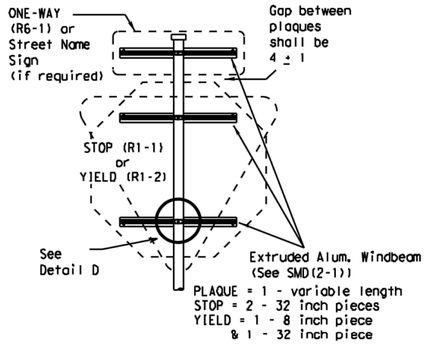
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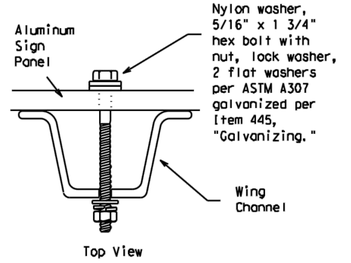
SM RD SGN ASSM TY XXXXX(1)XX(P)



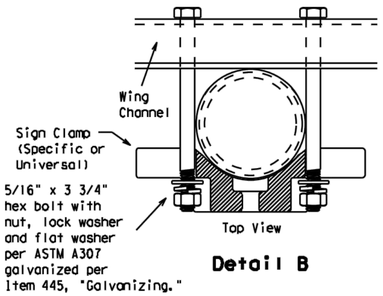
SM RD SGN ASSM TY XXXXX(1)XX(T)



SM RD SGN ASSM TY XXXXX(1)XX(P-BM)



Detail A

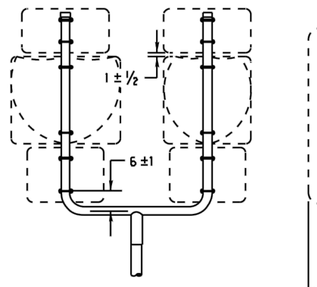


Detail B

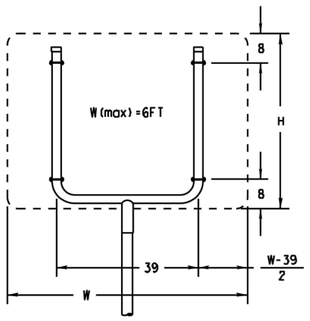
GENERAL NOTES:

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

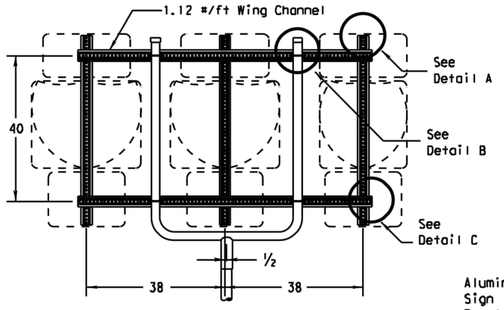
1. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
2. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
3. Aluminum sign blanks shall conform to Departmental Material 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. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
10. 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.
11. Post open ends shall be fitted with Friction Caps.
12. Sign blanks shall be the sizes and shapes shown on the plans.



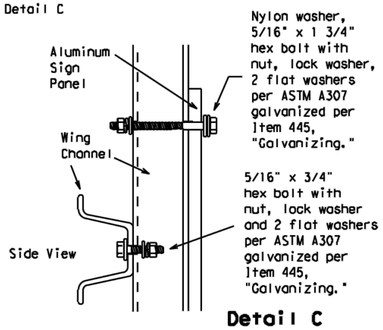
SM RD SGN ASSM TY XXXXX(1)XX(U)



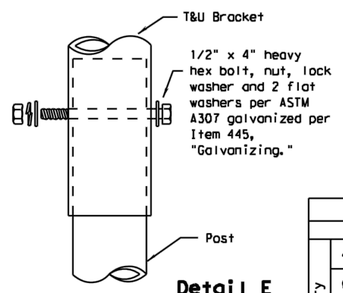
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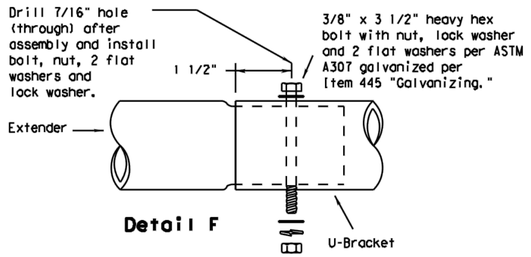
SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)



Detail C

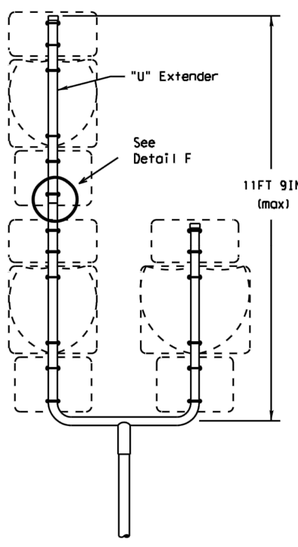


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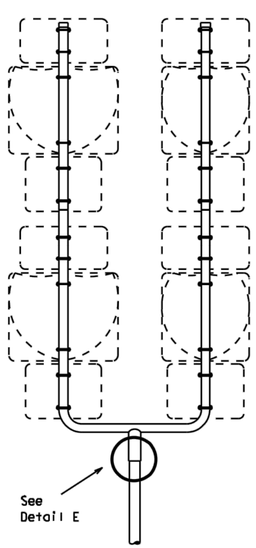


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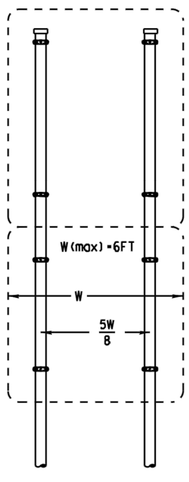
Splices shall only be allowed behind the sign substrate.



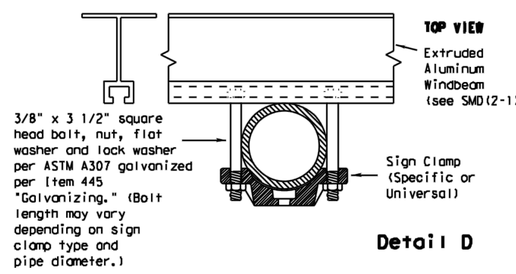
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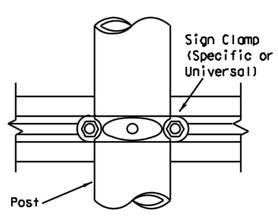
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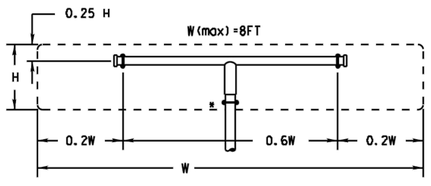
SM RD SGN ASSYM TY XXXXX(2)XX(P)



Detail D



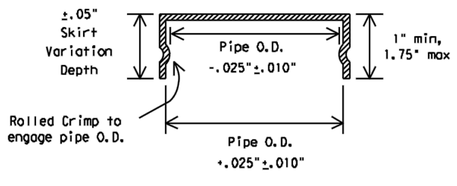
REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	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)



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.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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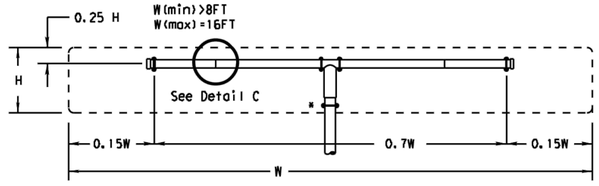
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REVISIONS
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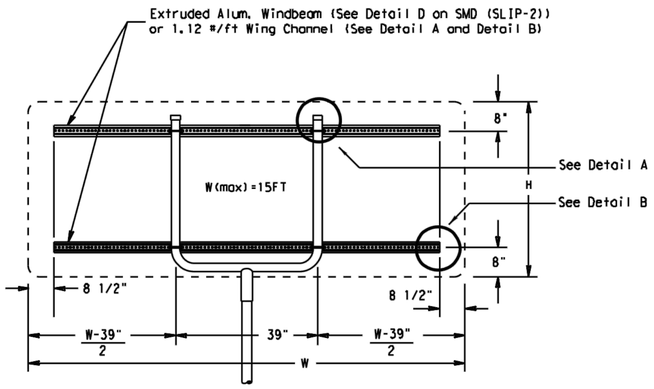
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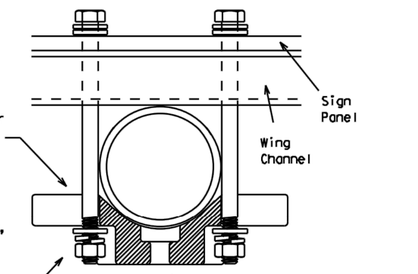
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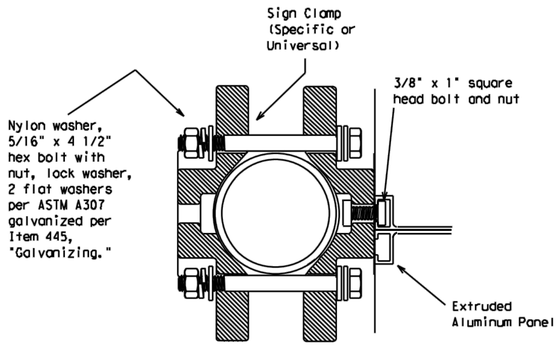
SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)



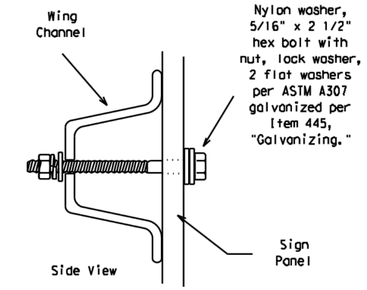
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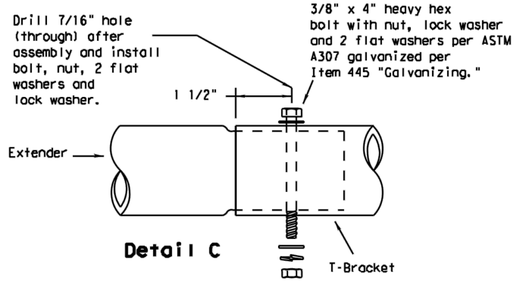
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET

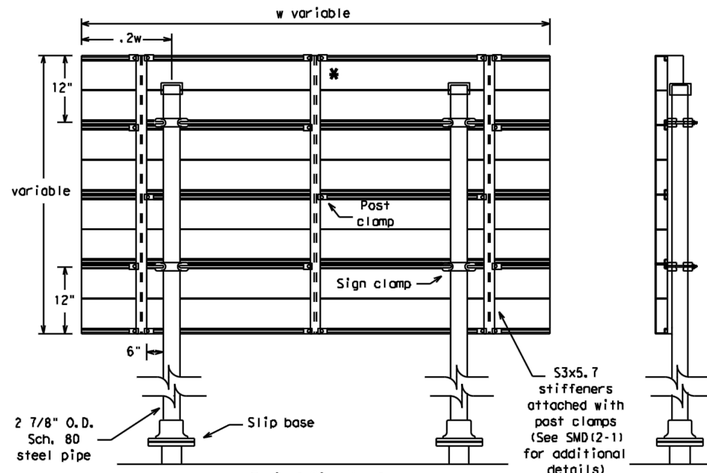


Detail B



Detail C

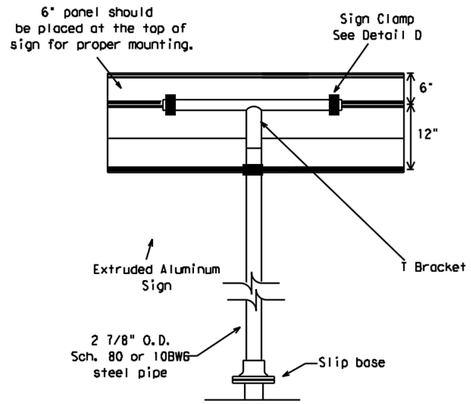
Splices shall only be allowed behind the sign substrate.



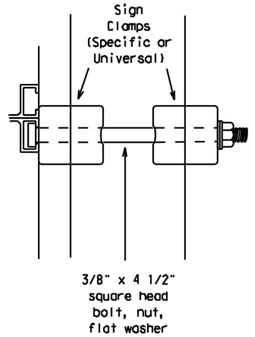
Typical Sign Mount

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

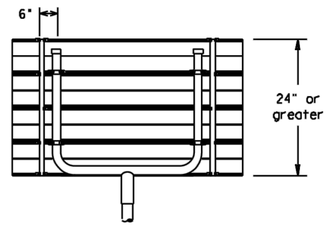
* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



Extruded Aluminum Sign
With T Bracket



Detail E



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)
	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)

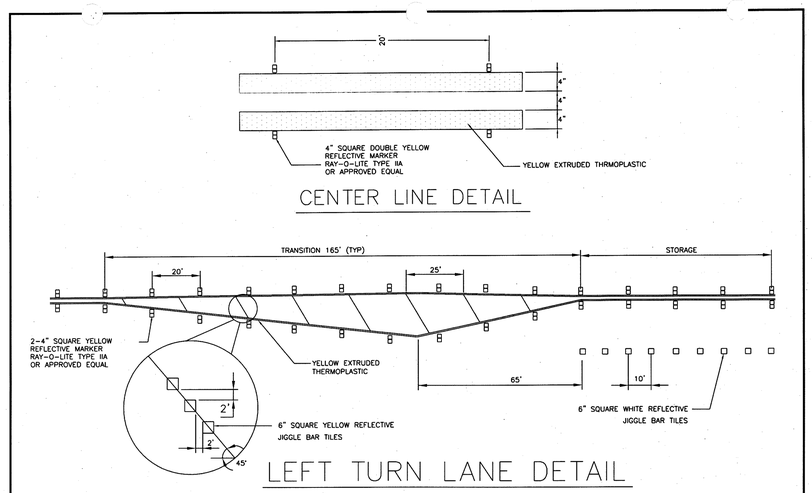
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

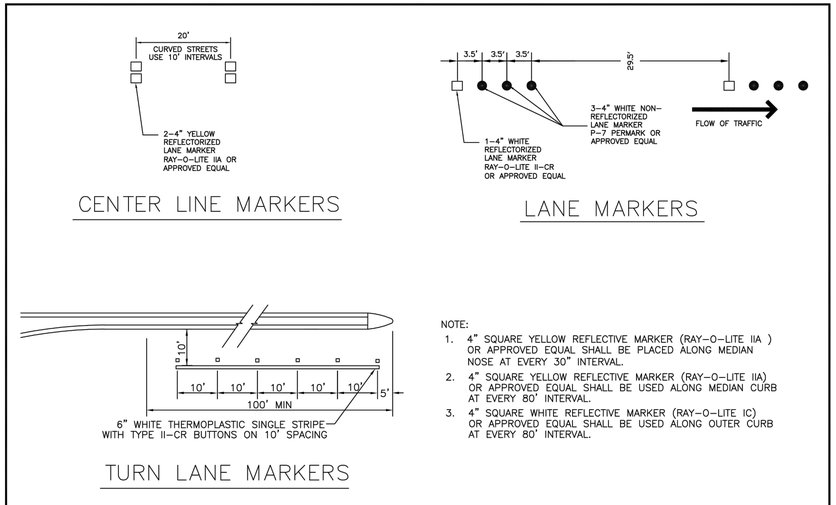
SMD(SLIP-3)-08

©TxDOT July 2002

REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

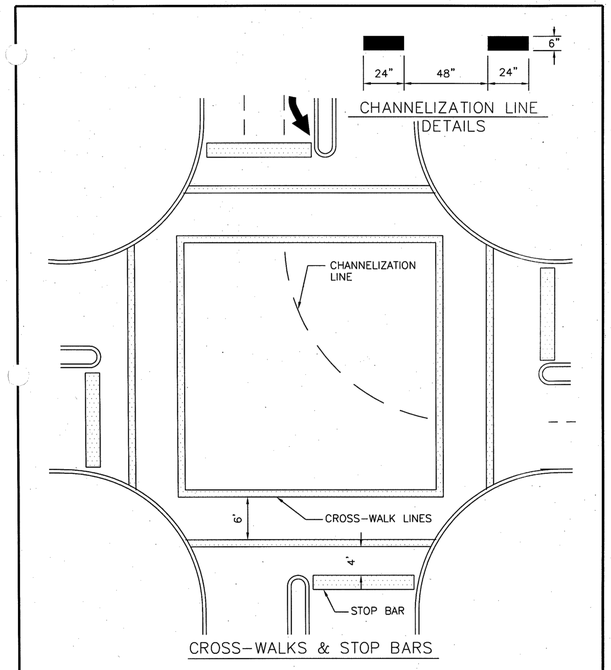


CENTERLANE MARKERS & BUTTONS		REPLACING N.C.T.C.O.G. DWG. NAME:	2010
		SCALE: N.T.S.	DRAWN BY: BSJ
		DATE: August 2008	APPROVED BY: DID
TRAFFIC	LANE MARKERS	FARMERS BRANCH	F.B. DWG. NAME: FB-T-1210.DWG



NOTE:
1. 4" SQUARE YELLOW REFLECTIVE MARKER (RAY-O-LITE IIA) OR APPROVED EQUAL SHALL BE PLACED ALONG MEDIAN NOSE AT EVERY 30" INTERVAL.
2. 4" SQUARE YELLOW REFLECTIVE MARKER (RAY-O-LITE IIA) OR APPROVED EQUAL SHALL BE USED ALONG MEDIAN CURB AT EVERY 80' INTERVAL.
3. 4" SQUARE WHITE REFLECTIVE MARKER (RAY-O-LITE IC) OR APPROVED EQUAL SHALL BE USED ALONG OUTER CURB AT EVERY 80' INTERVAL.

BUTTONS		REPLACING N.C.T.C.O.G. DWG. NAME:	2020
		SCALE: N.T.S.	DRAWN BY: BSJ
		DATE: October 2018	APPROVED BY: DID
TRAFFIC	LANE MARKERS	FARMERS BRANCH	F.B. DWG. NAME: FB-T-1220.DWG



CROSS WALK/STOP BARS		REPLACING N.C.T.C.O.G. DWG. NAME:	
		SCALE: N.T.S.	DRAWN BY: BSJ
		DATE: August 2008	APPROVED BY: DID
TRAFFIC	MARKINGS	FARMERS BRANCH	F.B. DWG. NAME: FB-T-1230A.DWG

NOTES:
1. LANE DIRECTION ARROWS SHALL BE (90 MIL. MIN.) EXTRUDED THERMOPLASTIC.
2. STOP BARS SHALL BE 24" WIDE (90 MIL. MIN.) EXTRUDED THERMOPLASTIC.
3. CROSS-WALKS SHALL BE 12" WIDE (90 MIL. MIN.) EXTRUDED THERMOPLASTIC.
4. CHANNELIZATION LINES SHAL BE 6" WIDE (90 MIL. MIN.) EXTRUDED THERMOPLASTIC.
5. ALL MARKINGS SHALL BE INSTALLED PER MUTCD SPECIFICATIONS.
6. THE AREA WHERE NEW STOP BARS OR CROSSWALK MATERIAL IS TO BE APPLIED MUST HAVE THE SURFACE SCUFFED WITH GRINDER AND SWEPT CLEAN TO MEET MANUFACTUREER'S RECOMMENDATION. ALL MATERIAL MANURACTURER'S RECOMMENDATION FOR APPLICATION MUST BE FOLLOWED.

PERMANENT MARKING NOTES		REPLACING N.C.T.C.O.G. DWG. NAME:	
		SCALE: N.T.S.	DRAWN BY: BSJ
		DATE: August 2008	APPROVED BY: DID
TRAFFIC	MARKINGS	FARMERS BRANCH	F.B. DWG. NAME: FB-T-1230B.DWG

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9/10/2021



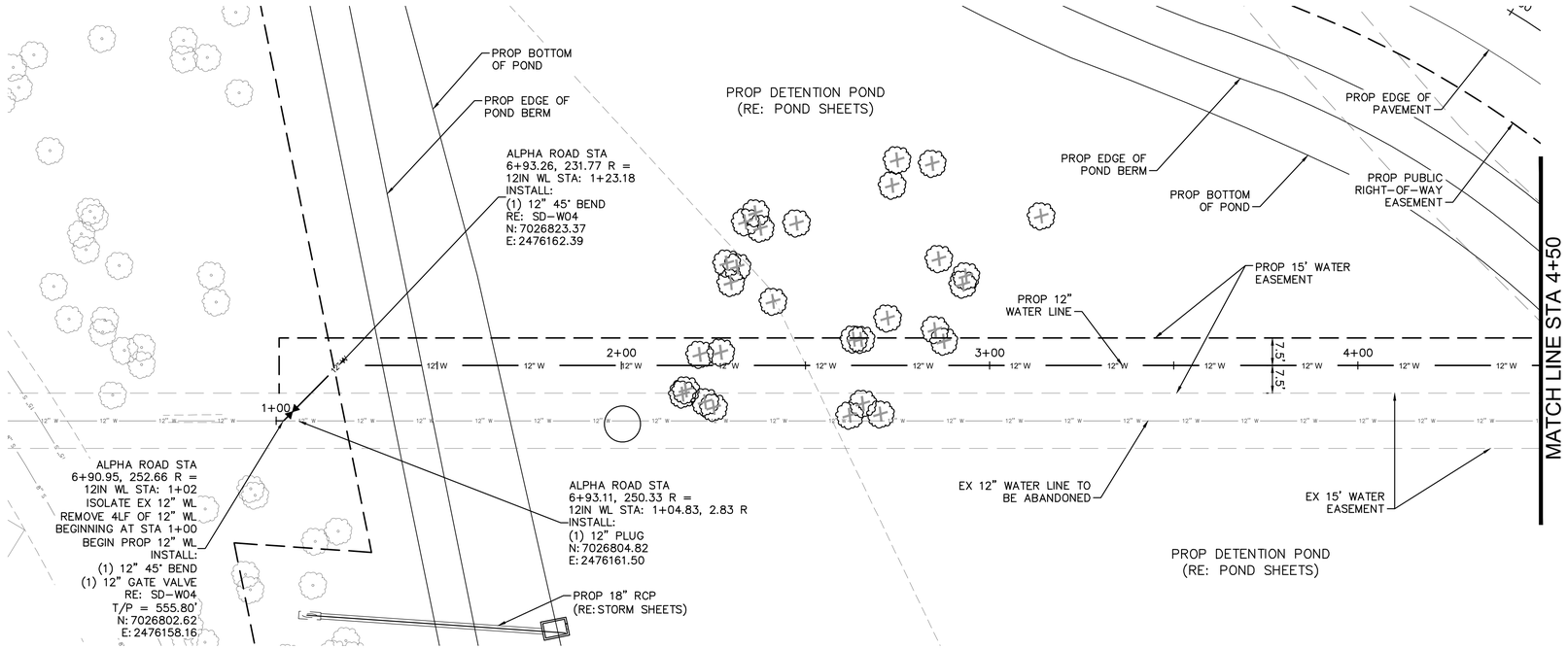
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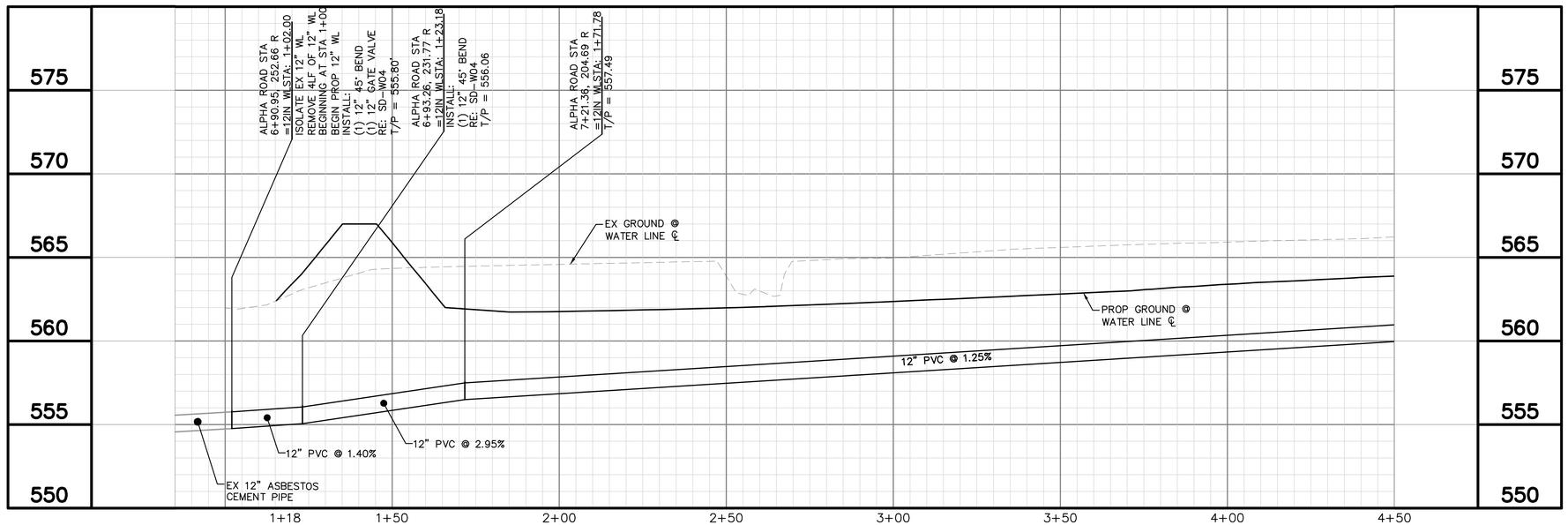
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

PAVING
STANDARD DETAILS
CITY OF FARMERS BRANCH

SHEET NUMBER
C6.15

Plotted By:Shotbolt, Cody September 08, 2021 09:15:24am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Paving Details.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

UTILITY LEGEND

- PROPERTY LINE
- PROP WATER LINE
- PROP SANITARY SEWER LINE
- PROP WATER VALVE
- PROP FIRE HYDRANT
- PROP SANITARY SEWER MANHOLE
- EX GAS LINE
- EX UNDERGROUND TELEPHONE
- EX UNDERGROUND ELECTRIC
- EX OVERHEAD POWER LINE
- EX WATER LINE
- EX SANITARY SEWER LINE
- EX STORM SEWER LINE
- EX POWER POLE
- EX FIRE HYDRANT
- EX WATER VALVE
- EX SANITARY SEWER MANHOLE

WATER GENERAL NOTES:

1. FIRE HYDRANTS, VALVES, FITTINGS, ETC. SHOWN AS A GRAPHICAL REPRESENTATION ONLY. CONTRACTOR TO LOCATE AND CONSTRUCT THESE IMPROVEMENTS BASED ON THE CURRENT TOWN/CITY/JURISDICTIONAL DESIGN STANDARDS AND DETAILS. CONTRACTOR TO NOTIFY ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED PRIOR TO BEGINNING CONSTRUCTION.
2. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. FIRE HYDRANT ASSEMBLY INCLUDES ALL FITTINGS, TEES AND VALVES.
4. VALVE DISTANCES AND LOCATION AND APPROXIMATE AND ARE PROVIDED TO ASSIST DEWATERING VOLUME ESTIMATES. NO ADDITIONAL PAYMENT WILL BE MADE IF FIELD CONDITION VARY.
5. TOWN OF ADDISON/CITY OF FARMERS BRANCH STAFF WILL OPERATE ALL EXISTING VALVES.

!!WARNING!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

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Kimley»Horn
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PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

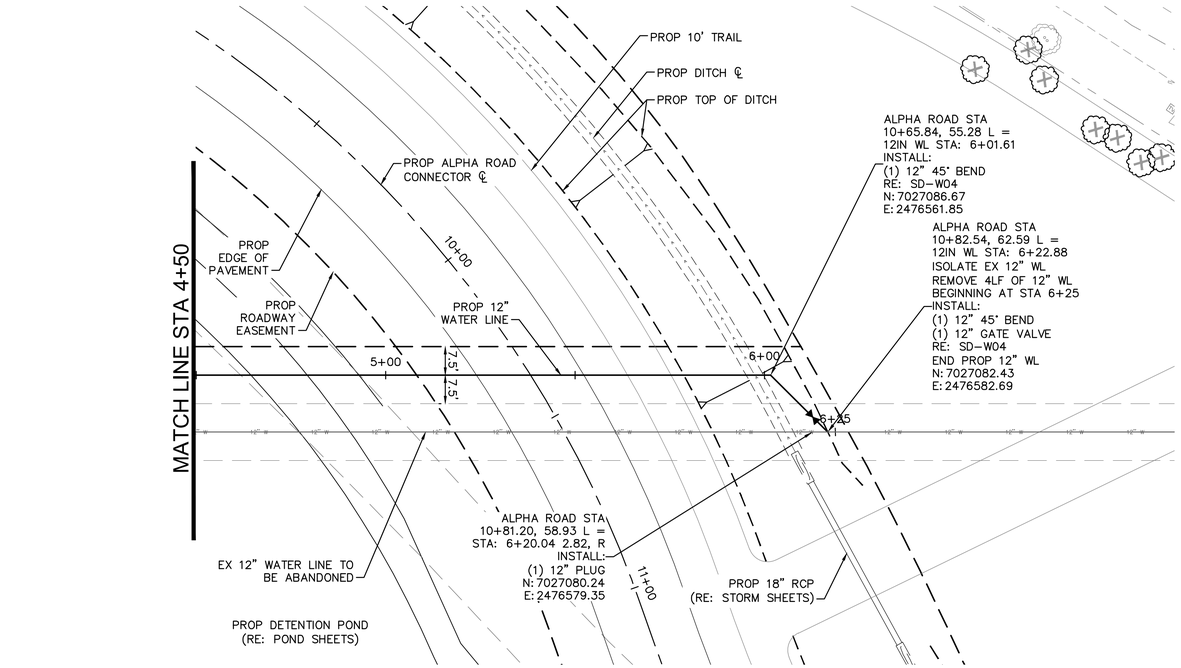
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DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

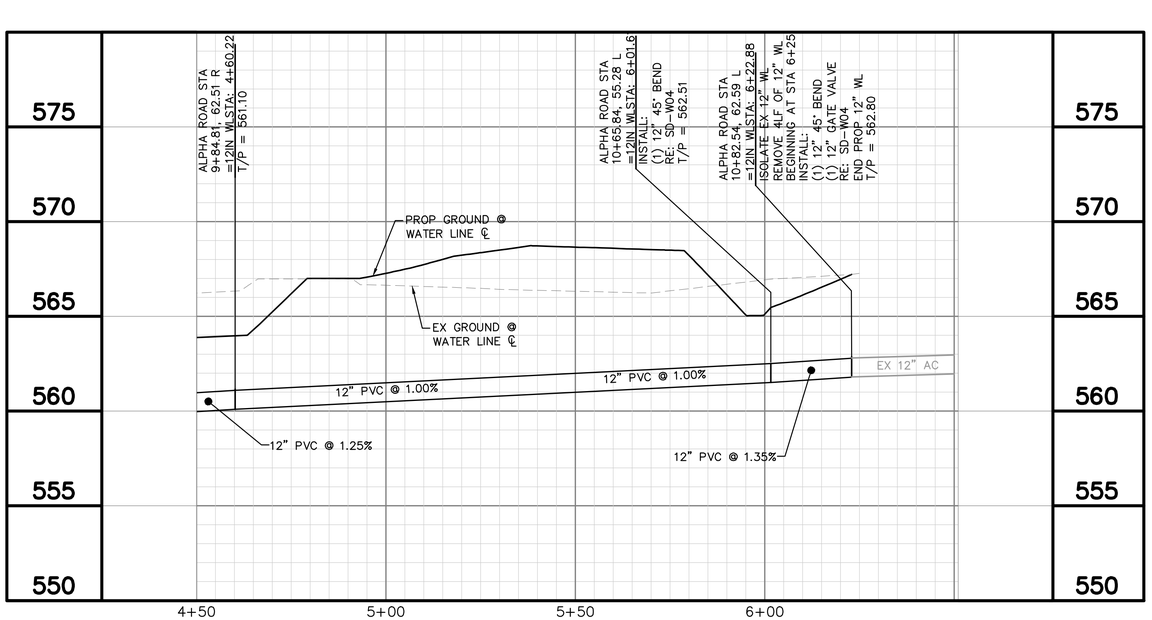
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

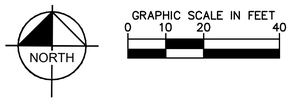
WATER LINE
PLAN & PROFILE
ALPHA ROAD CONNECTOR
BEGIN TO STA 4+50

SHEET NUMBER
C7.01

Plotted By: Shettich, Cody - September 08, 2021 - 09:17:05am - K:\NAC-Civil\063543031-Addison-Alpha-Royal Connector\04-01\Plan-Sheets\Water Plan.dwg
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UTILITY LEGEND

- PROPERTY LINE
- PROP WATER LINE
- PROP SANITARY SEWER LINE
- PROP WATER VALVE
- PROP FIRE HYDRANT
- PROP SANITARY SEWER MANHOLE
- EX GAS LINE
- EX UNDERGROUND TELEPHONE
- EX UNDERGROUND ELECTRIC
- EX OVERHEAD POWER LINE
- EX WATER LINE
- EX SANITARY SEWER LINE
- EX STORM SEWER LINE
- EX POWER POLE
- EX FIRE HYDRANT
- EX WATER VALVE
- EX SANITARY SEWER MANHOLE

WATER GENERAL NOTES:

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!!WARNING!!

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9/10/2021

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RYAN DELMOTTE
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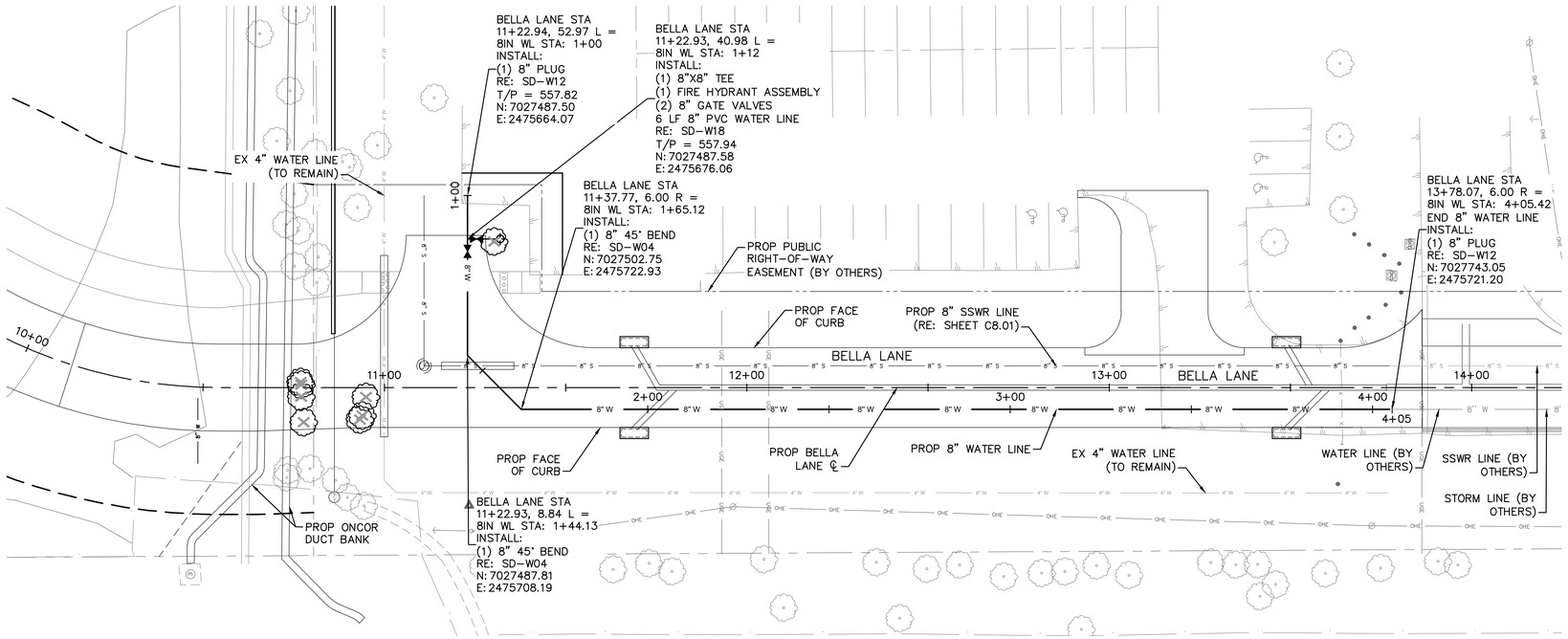
KHA PROJECT 063543031		
DATE	09/10/2021	
SCALE	AS SHOWN	
DESIGNED BY	RMD	
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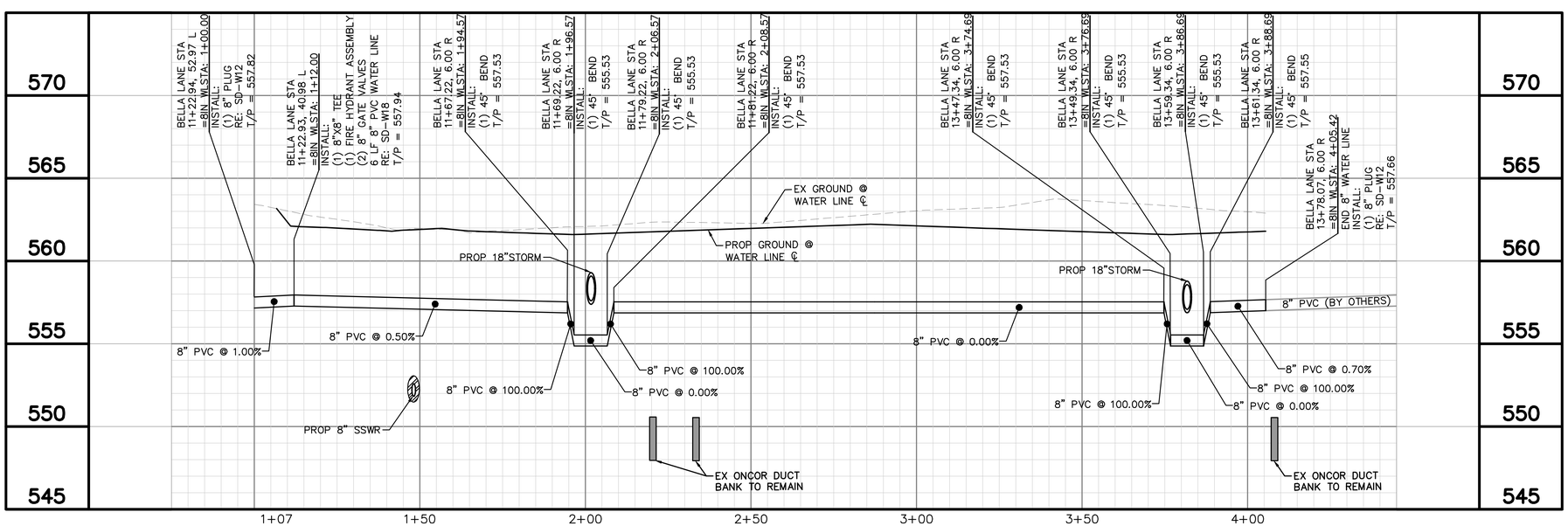
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

WATER LINE
PLAN & PROFILE
ALPHA ROAD CONNECTOR
STA 4+50 TO END

SHEET NUMBER
C7.02

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GRAPHIC SCALE IN FEET
0 10 20 40

UTILITY LEGEND

- PROPERTY LINE
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- PROP SANITARY SEWER LINE
- PROP WATER VALVE
- PROP FIRE HYDRANT
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- EX GAS LINE
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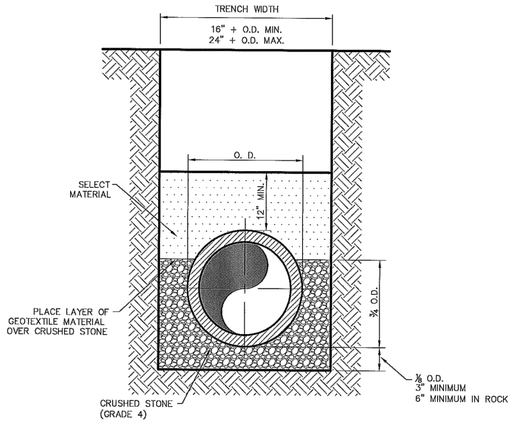
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DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

WATER LINE
PLAN & PROFILE
BELLA LANE

SHEET NUMBER
C7.03

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CLASS "B+" EMBEDMENT

CRUSHED STONE SHALL BE 3/4", PASSING # 4 SIEVE

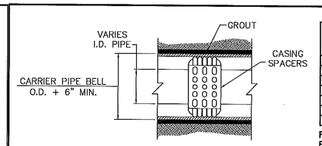
TYPICAL P.V.C. WATER MAIN EMBEDMENT

Addison!
PUBLIC WORKS DEPARTMENT

P.V.C. WATER MAIN EMBEDMENT

STANDARD CONSTRUCTION DETAILS WATER

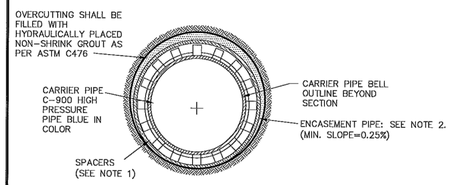
DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-W01



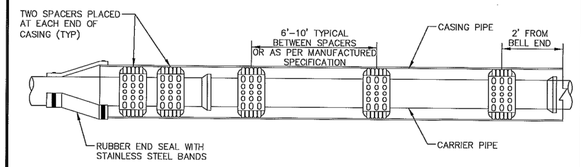
TYPICAL CASING SECTION

CARRIER PIPE SIZE (IN)	STEEL ENCASEMENT O.D. (IN)	STEEL ENCASEMENT WALL THICKNESS (IN)
6	14	1/4
8	16	1/4
12	21	1/4
18	27	3/8
21	30	3/8
24	36	3/8
27	39	1/2

FOR ALL CARRIER PIPES OVER 27": THE STEEL ENCASEMENT PIPE SHALL BE 12" LARGER THAN THE CARRIER PIPE AND THE STEEL ENCASEMENT WALL THICKNESS SHALL BE 1/2".



WATER MAIN ENCASEMENT



INSULATOR SPACING DETAIL

NOTES:

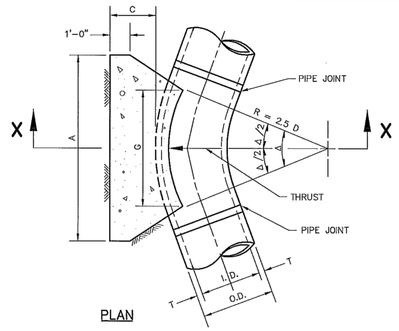
1. HIGH DENSITY POLYETHYLENE SPACERS, RACI OR EQUAL, SHALL BE USED. WHERE NO CASING PIPE IS REQUIRED OVERCUTTING AROUND UTILITY SHALL BE FILLED WITH HYDRAULICALLY PLACED NON-SHRINK GROUT AS PER ASTM C476.
2. ENCASEMENT PIPE SHALL BE HIGH DENSITY STEEL PIPE. ALL JOINTS TO BE WELDED 100%.

Addison!
DEPARTMENT OF PUBLIC WORKS

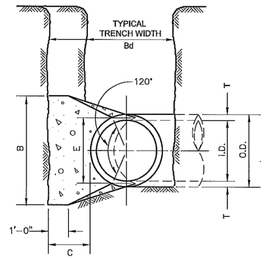
CASING

STANDARD CONSTRUCTION DETAILS WATER

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-W03



PLAN



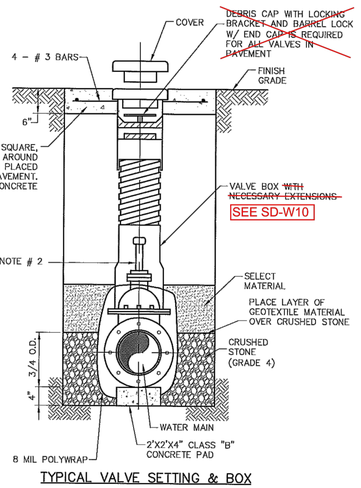
SECTION X-X

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PUBLIC WORKS DEPARTMENT

HORIZONTAL THRUST BLOCK AT PIPE BEND

STANDARD CONSTRUCTION DETAILS WATER

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-W04



TYPICAL VALVE SETTING & BOX

NOTE:

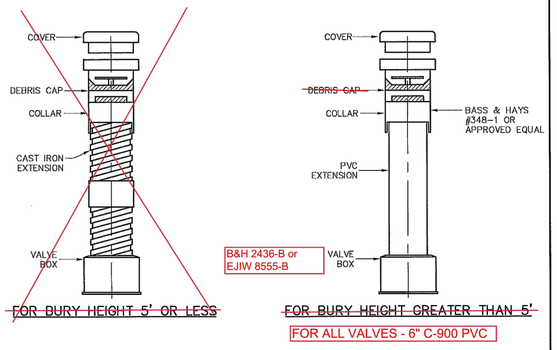
1. 4"-12" R.S. GATE VALVES SHALL BE IN ACCORDANCE WITH TOWN OF ADDISON WATER SYSTEM REQUIREMENTS.
2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WHERE THE OPERATING NUT IS LOCATED IN EXCESS OF 5 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 5 FEET OF VALVE BOX LID.
3. BLUE "V" (3") CUT INTO FACE OF NEAREST CURB AND POINTING TOWARD THE VALVE.
4. ALL IRON MATERIALS SHALL BE DOMESTIC. (MADE IN USA)
5. CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE.

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PUBLIC WORKS DEPARTMENT

VALVE SETTING ~~BOX~~

STANDARD CONSTRUCTION DETAILS WATER

DATE:	REV DATE:	SHEET :
AUGUST, 2010	04/06/17	SD-W09



NOTE

1. ALL CAST IRON FITTINGS SHALL BE DOMESTIC. (MADE IN U.S.A.)
2. ~~VALVE BOXES SHALL BE PROVIED FOR BURIED VALVES. THESE BOXES SHALL BE THREE (3) PIECE SCREW TYPE CAST IRON OF THE EXTENSION TYPE AND SHALL BE: BASS & HAYS THREE (3) PIECE ADJUSTABLE SCREW TYPE, EAST JORDAN IRON WORKS 8500 W/ 8600 LID, MUELLER NO. H-10360 OR APPROVED EQUAL. THE THREE (3) PIECES SHALL CONSIST OF THE TOP SECTION, BOTTOM SECTION AND COVER.~~

Addison!
PUBLIC WORKS DEPARTMENT

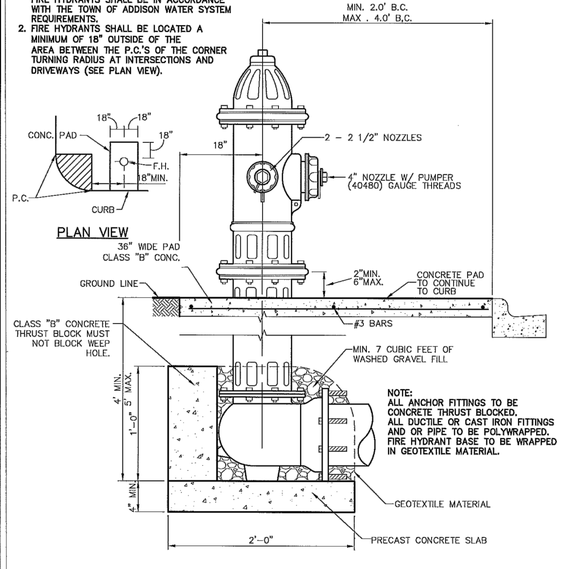
VALVE BOX WITH EXTENSION

STANDARD CONSTRUCTION DETAILS WATER

DATE:	REV DATE:	SHEET :
~~AUGUST, 2010~~ JANUARY 2017	–	SD-W10

NOTE:

1. DESIGN, SITE REQUIREMENTS, THE GENERAL OPERATION, PAINTING AND DELIVERY OF ALL FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH THE TOWN OF ADDISON WATER SYSTEM REQUIREMENTS.
2. FIRE HYDRANTS SHALL BE LOCATED A MINIMUM OF 18" OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADIUS AT INTERSECTIONS AND DRIVEWAYS (SEE PLAN VIEW).



TYPICAL FIRE HYDRANT INSTALLATION

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PUBLIC WORKS DEPARTMENT

TYPICAL FIRE HYDRANT INSTALLATION

STANDARD CONSTRUCTION DETAILS WATER

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-W16

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2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

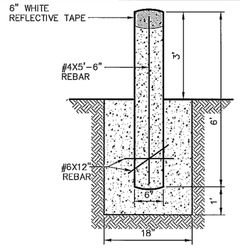
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

WATER LINE
STANDARD DETAILS
SHEET 1 OF 2
TOWN OF ADDISON

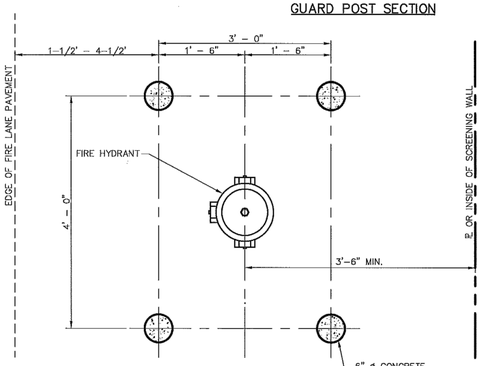
SHEET NUMBER
C7.04

Plotted By: Shadbolt, Cody September 08, 2021 09:17:27am K:\AC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\WATER_DETAILS.dwg
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NOTE
6"ø STEEL PIPE W/CONCRETE FILL 6' LENGTH (3' ABOVE PAVING, 3' BELOW PAVING) WITH 1-#4X5'-6" TO BE CASED IN 18"ø PIER TO DEPTH OF 1'-0" BELOW BOTTOM OF PIPE. USE 2-#6x12" REBAR THRU PIPE INTO CONCRETE PIER. PIPES TO BE PAINTED TRAFFIC YELLOW W/ 6" WHITE RELECTOR TAPE.



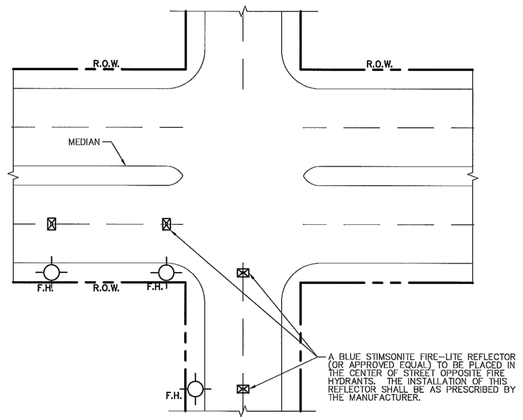
GUARD POST SECTION



NOTE:
FOR USE ONLY WHERE CURBS ARE NOT POSSIBLE.

FIRE HYDRANT GUARD POST DETAIL

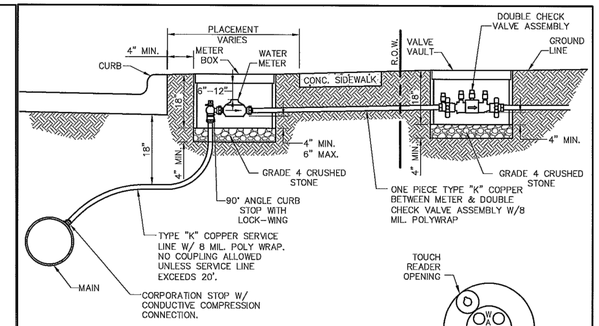
Addison!. PUBLIC WORKS DEPARTMENT	FIRE HYDRANT GUARD POST	STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W18



NOTE:
FIRE HYDRANT SHALL BE LOCATED OUTSIDE OF RADIUS.

TYPICAL FIRE HYDRANT REFLECTOR INSTALLATION

Addison!. PUBLIC WORKS DEPARTMENT	FIRE HYDRANT REFLECTOR INSTALLATION	STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W19

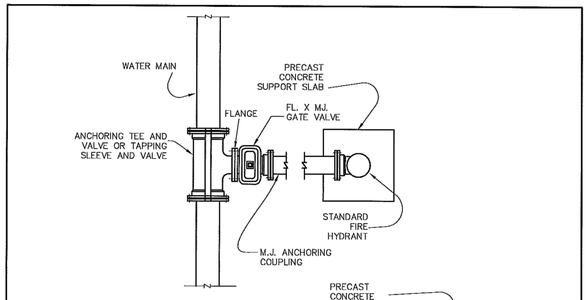


GENERAL INSTALLATION NOTES:

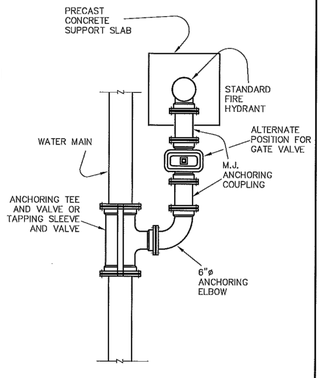
1. WATER METER SHALL BE PLACED IN CENTER OF LOT WITH THE SANITARY SEWER SERVICE TO BE LOCATED 10' DOWNSTREAM.
2. METER AND BOX SHALL BE SET BY THE CONTRACTOR TO ADDISON STANDARDS IN ALL CASES.
3. THE METER BOX SHALL BE SET WITHIN THE R.O.W. OR A DEDICATED UTILITY EASEMENT. IN ALL CASES, THE METER BOX SHALL BE PROTECTED FROM VEHICULAR TRAFFIC.
4. WATER SERVICES SHALL NOT BE CONNECTED TO DEAD END LINES OR FIRE HYDRANT LEADS.
5. ALL MATERIALS SHALL CONFORM TO THE TOWN OF ADDISON WATER SYSTEM REQUIREMENTS.

Type "K" Copper Service Pipe.	Double Strap Bronze Service Saddle with C.C. Threads	East Jordan Iron Works Galvanized Meter Box With Iron Ring & Cover				
		Min. Dia.	Covers & Rigns	Min. Ht.	Min. Can Weight	Min. Total Weight
3/4 Inch	3/4 Inch	18 Inches	12⅝ Inches	18 Inches	13 lbs.	42 lbs.
1 Inch	1 Inch	24 Inches	20⅜ Inches	18 Inches	17 lbs.	98 lbs.
1 1/2 Inch	1 1/2 Inch	28 Inches	20⅜ Inches	18 Inches	20 lbs.	127 lbs.
2 Inch	2 Inch	28 Inches	20⅜ Inches	18 Inches	20 lbs.	127 lbs.

Addison!. PUBLIC WORKS DEPARTMENT	SERVICE CONNECTION WITH METER BOX	STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W20



STANDARD INSTALLATION



NOTE:
MEGALUGS SHALL BE USED AT ALL TEES AND BENDS.

ALTERNATE INSTALLATION

Addison!. PUBLIC WORKS DEPARTMENT	TYPICAL FIRE HYDRANT INSTALLATION	STANDARD CONSTRUCTION DETAILS WATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD-W17

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

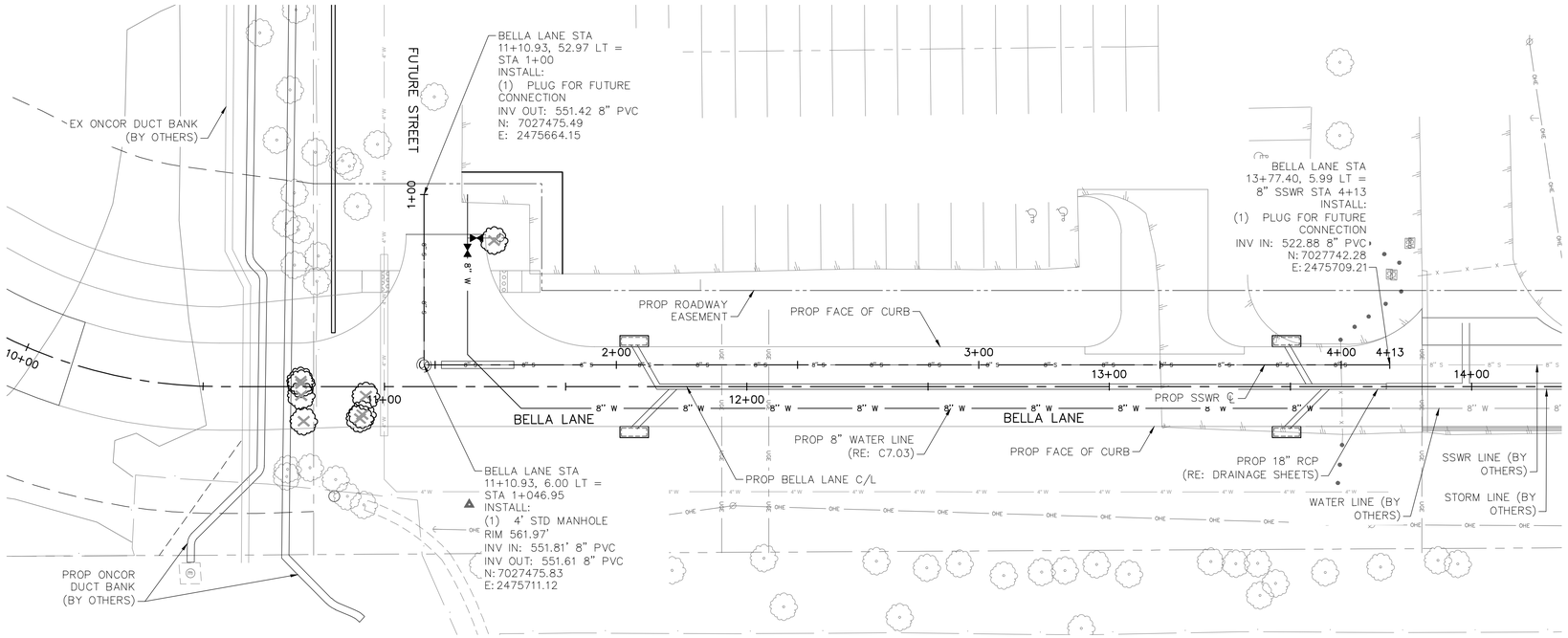
KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD	DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

WATER LINE
STANDARD DETAILS
SHEET 2 OF 2
TOWN OF ADDISON

SHEET NUMBER
C7.05

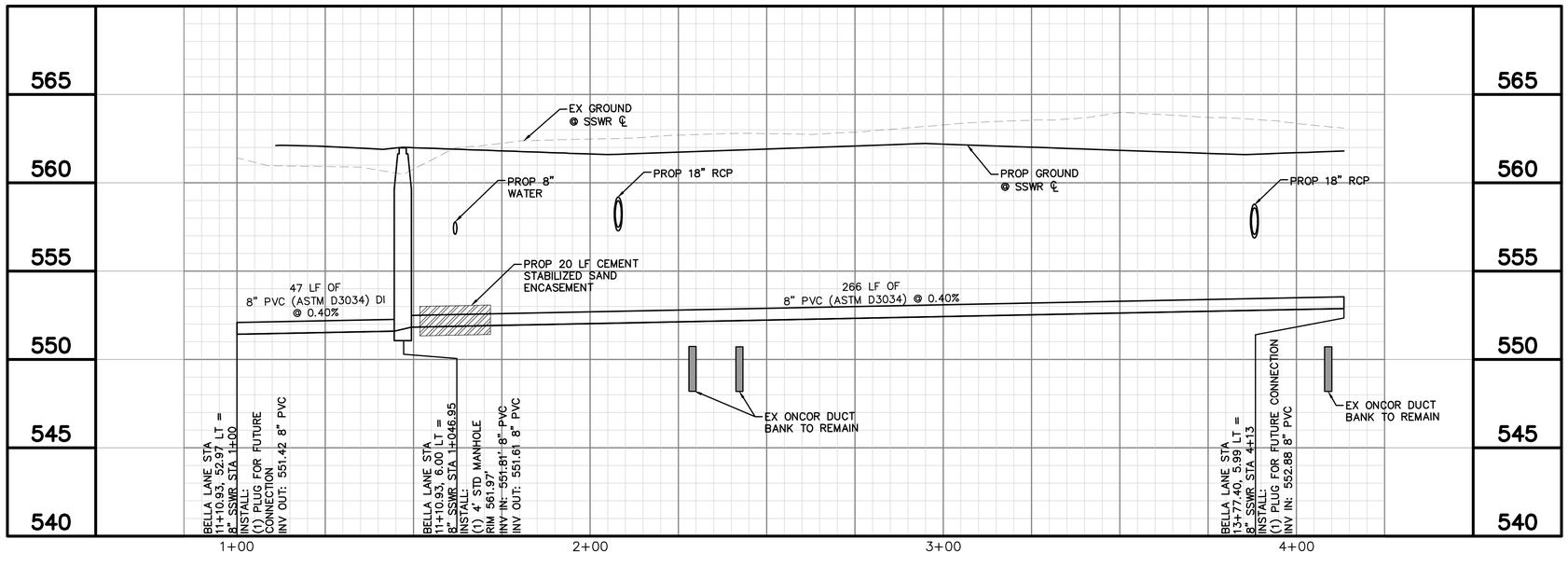
Plotted By: Skadbolt, Cody September 08, 2021 09:17:30am K:\DAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\WATER_DETAILS.dwg
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UTILITY LEGEND

- PROPERTY LINE
- 8" W — PROP WATER LINE
- 8" S — PROP SANITARY SEWER LINE
- PROP WATER VALVE
- PROP FIRE HYDRANT
- PROP SANITARY SEWER MANHOLE
- G — EX GAS LINE
- U/T — EX UNDERGROUND TELEPHONE
- U/E — EX UNDERGROUND ELECTRIC
- OHE — EX OVERHEAD POWER LINE
- 8" W — EX WATER LINE
- 8" S — EX SANITARY SEWER LINE
- EX STORM SEWER LINE
- SANITARY SEWER/ WATER ABANDONMENT
- EX POWER POLE
- EX FIRE HYDRANT
- EX WATER VALVE
- EX SANITARY SEWER MANHOLE

NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ANY SIGNS AND COORDINATION WITH THE CITY ON ANY NECESSARY MODIFICATIONS.
2. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL IRRIGATION FACILITIES WITHIN PROJECT LIMITS.
3. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/ OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND CITY UTILITIES PRIOR TO CONSTRUCTION.



!!WARNING!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

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114242
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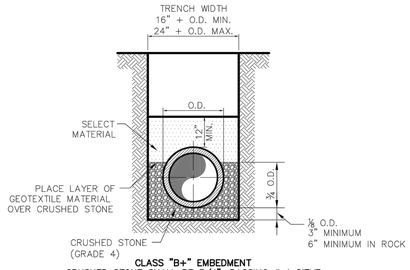
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

SANITARY SEWER LINE
PLAN AND PROFILE
BEGIN TO END

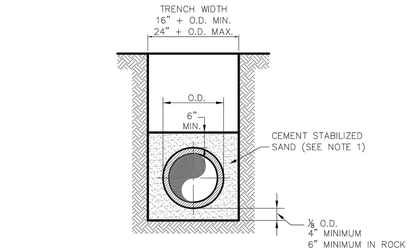
SHEET NUMBER
C8.01

Plotted By: Shettigh, Cody September 09, 2021 - 09:18:09am K:\LAC-Civil\063543031-Addison-Alpha-Royal Connector\CAD\Pln-Sht\eh1_SSWR Pln-Prf\Pln-dwg
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CLASS "B+" EMBEDMENT
CRUSHED STONE SHALL BE 3/4", PASSING # 4 SIEVE

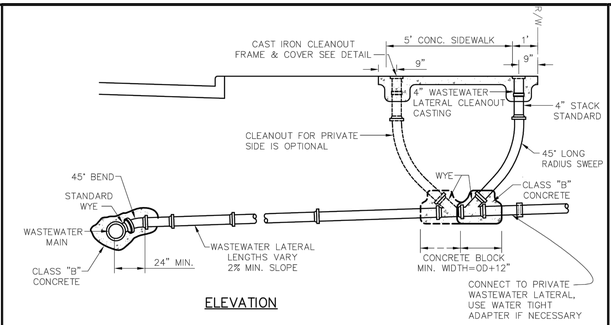
TYPICAL P.V.C. WASTEWATER MAIN EMBEDMENT



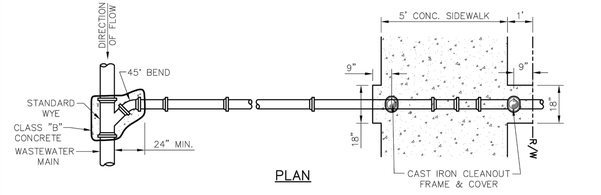
NOTE:
1. CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND IS REQUIRED FOR PRESSURE RATED WASTEWATER MAIN AND LATERAL BEDDING.

P.V.C. WASTEWATER MAIN CEMENT STABILIZED SAND EMBEDMENT

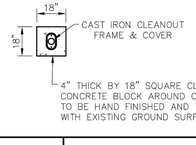
Addison! PUBLIC WORKS DEPARTMENT	P.V.C. WASTEWATER MAIN EMBEDMENT	STANDARD CONSTRUCTION DETAILS WASTEWATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–WW01



ELEVATION

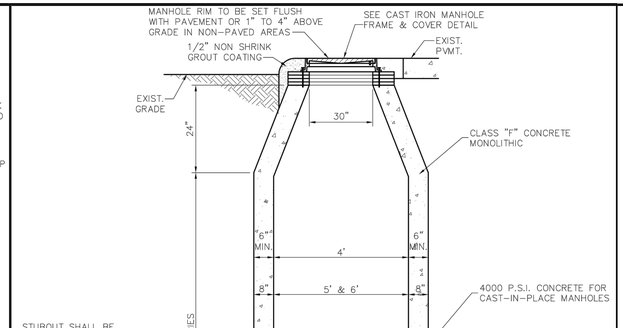


PLAN



NOTES:
1. WASTEWATER LATERALS ARE TO BE CONSTRUCTED TO CLEAR EXISTING AND PROPOSED FACILITIES, SUCH AS STORM DRAIN MAINS, RETAINING WALLS, OTHER UTILITIES, ETC.
2. THE WASTEWATER LATERAL SHALL HAVE MINIMUM COVER OF 4'–0" BELOW THE PROPOSED CURB GRADE AT THE PROPERTY LINE, DETERMINED FROM PAVING GRADE, OR AS REQUIRED TO MAINTAIN A MINIMUM OF 2.0% GRADE, OR AS DIRECTED BY THE OWNER.

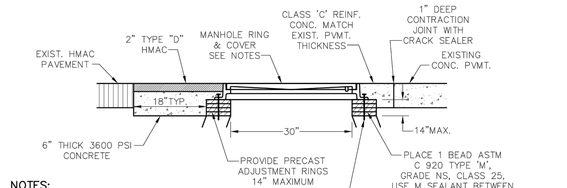
Addison! PUBLIC WORKS DEPARTMENT	TWO–WAY CLEANOUT NEW CONSTRUCTION	STANDARD CONSTRUCTION DETAILS WASTEWATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–WW02



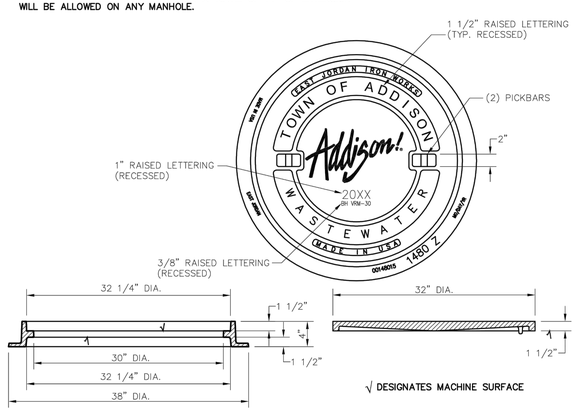
NOTES:
1. IF FALSE MANHOLE BOTTOMS ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED, AND REMOVED PER WASTEWATER MANHOLE FALSE BOTTOM STD. DETAIL.
2. WHERE MANHOLE'S ARE OUTSIDE OF PAVEMENT, FRAME & COVER SHALL BE CENTERED IN 5'x5' CONCRETE PAD CLASS 'A' CONCRETE, 4" THICK
3. ALL MANHOLES SHALL PASS VACUUM TEST AS PER NCTCOG SPECIFICATIONS

CAST–IN–PLACE NOTES:
1. KEYWAYS REQUIRED FOR ALL CONSTRUCTION JOINTS.
2. P.V.C. WATER STOP REQUIRED FOR ALL JOINTS IN LOWER 4'–0" OF MANHOLES
3. CONCRETE SHALL BE 4000 P.S.I.

Addison! PUBLIC WORKS DEPARTMENT	CAST–IN–PLACE MANHOLE	STANDARD CONSTRUCTION DETAILS WASTEWATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–WW04

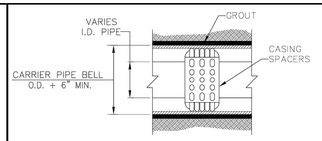


NOTES:
1. THERE SHALL BE SMOOTH TRANSITION BETWEEN THE FRAME GRADE RING, OR THE GRADE RING AND THE CONE.
2. CONCRETE EXTENSION RINGS MAY BE PRECAST OR CAST–IN–PLACE. BRICK EXTENSION RINGS WILL NOT BE ALLOWED.
3. STANDARD EXTENSIONS SHALL BE 2", 3", 4", 6", AND 12". EXTENSIONS SHALL BE SIZED TO MINIMIZE THE NUMBER REQUIRED TO RAISE THE MANHOLE. NO MORE THAN A TOTAL OF 14" OF EXTENSION WILL BE ALLOWED ON ANY MANHOLE.



√ DESIGNATES MACHINE SURFACE

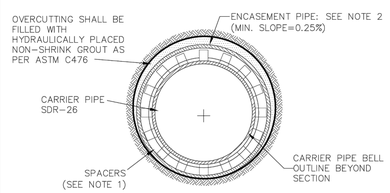
Addison! PUBLIC WORKS DEPARTMENT	CAST IRON MANHOLE FRAME AND COVER	STANDARD CONSTRUCTION DETAILS WASTEWATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–WW11



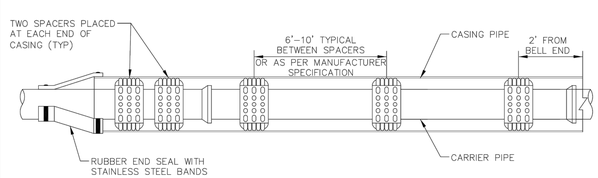
TYPICAL CASING SECTION

CARRIER PIPE SIZE (IN)	STEEL ENCASEMENT O.D. (IN)	STEEL ENCASEMENT WALL THICKNESS (IN)
6	14	1/4
8	18	1/4
12	21	1/4
18	27	3/8
21	30	3/8
24	36	3/8
27	39	1/2

FOR ALL CARRIER PIPES OVER 27": THE STEEL ENCASEMENT PIPE SHALL BE 12" LARGER THAN THE CARRIER PIPE AND THE STEEL ENCASEMENT WALL THICKNESS SHALL BE 1/2".



WASTEWATER ENCASEMENT



INSULATOR SPACING DETAIL

NOTES:
1. HIGH DENSITY POLYETHYLENE SPACERS, RACI OR EQUAL, SHALL BE USED. WHERE NO CASING PIPE IS REQUIRED OVERCUTTING AROUND UTILITY SHALL BE FILLED WITH HYDRAULICALLY PLACED NON–SHRINK GROUT AS PER ASTM C476.
2. ENCASEMENT PIPE SHALL BE HIGH DENSITY STEEL PIPE. ALL JOINTS TO BE WELDED 100%.

Addison! PUBLIC WORKS DEPARTMENT	CASING	STANDARD CONSTRUCTION DETAILS WASTEWATER		
		DATE: AUGUST, 2010	REV DATE: –	SHEET : SD–WW16

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021–01C/ BID NO. 21–69

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TEXAS REGISTERED ENGINEERING FIRM #F–928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

SANITARY SEWER LINE
STANDARD DETAILS
TOWN OF ADDISON

SHEET NUMBER
C8.02

Plotted By: Shadbolt, Cody September 09, 2021 01:48:29pm K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\SWR Details.dwg
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PROPOSED ALPHA ROAD CONNECTOR

ROCK CHECK DAM

SILT FENCE

GRAPHIC SCALE IN FEET
0 10 20 40

PROPOSED BELLA LANE BRIDGE

ROCK CHECK DAM

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

- SCF — SEDIMENT CONTROL FENCE
- IP — INLET PROTECTION
- RCD — ROCK CHECK DAM
- PROP CONCRETE
- HYDRAULIC MULCHING WITH 4" TOPSOIL
- PROP 24" ROCK RIPRAP

EROSION CONTROL NOTES

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED DURING SITE PREP IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT.
3. CONTRACTOR SHALL MINIMIZE THE REMOVAL OF GRASS COVER UNTIL ACTUAL WORK PHASE BEGINS.
4. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED (NO SEPARATE PAY).
5. OFF-SITE SOIL BORROW AND SPOIL AREAS ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL OFFSITE SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT.
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7. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING APPROPRIATE CONSTRUCTION ENTRANCE. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN STONES OR MUD IS BEING TRACKED ONTO A PUBLIC ROADWAY, THE STABILIZED CONSTRUCTION ENTRANCE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASHDOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL OFF SITE SEDIMENTATION. PERIODIC RE-GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFICIENCY OF THE INSTALLATION.
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10. SEE GENERAL NOTES SHEET FOR EROSION CONTROL REQUIREMENTS.

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PROJECT NO. XXXXX/ BID NO. XXXX-XXX

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TEXAS REGISTERED ENGINEERING FIRM #F-928

STATE OF TEXAS
JENNIFER M. LATCY
97309
LICENSED
PROFESSIONAL ENGINEER
10 SEPTEMBER 2021

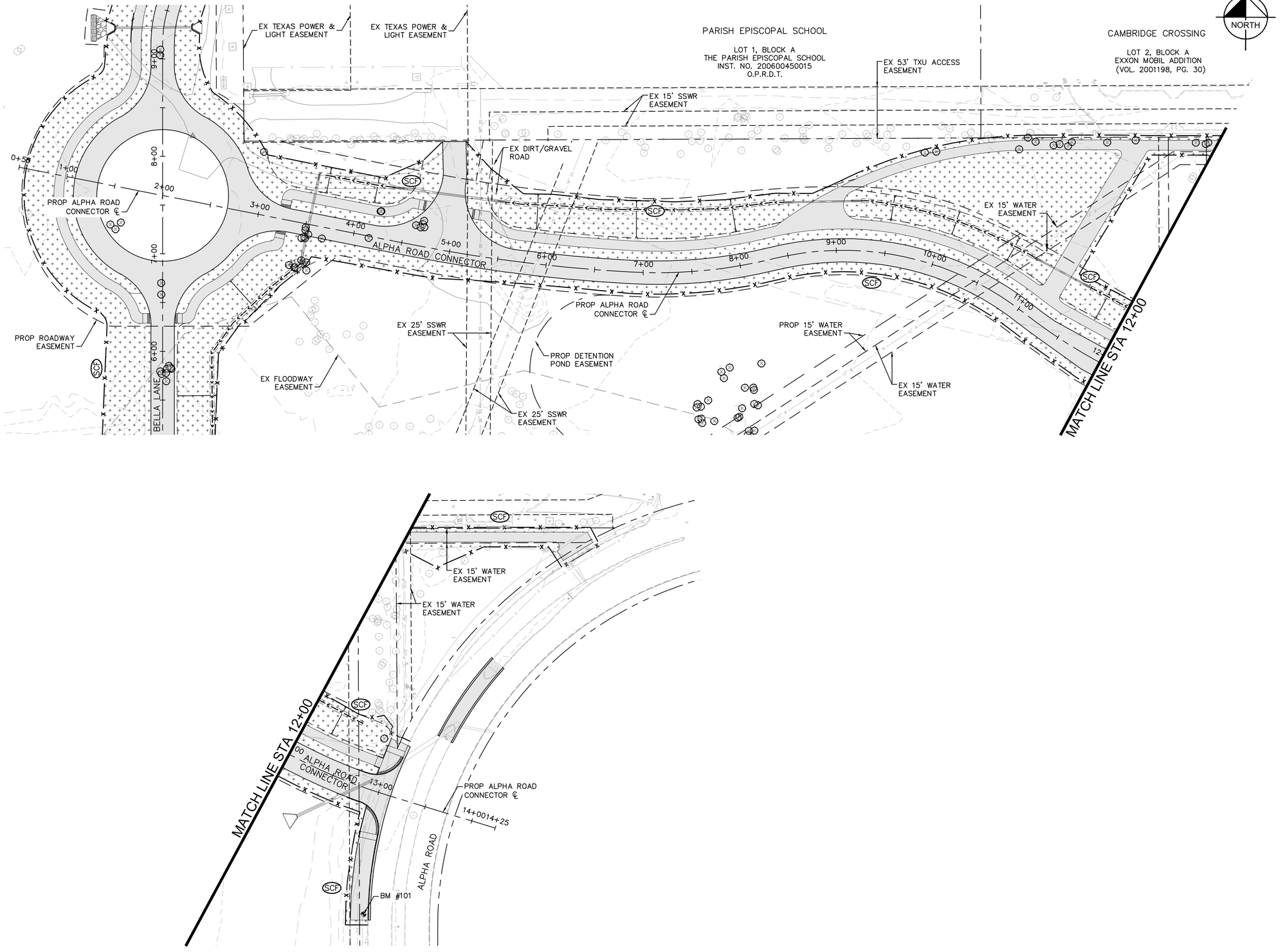
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	JML
DRAWN BY	ADW
CHECKED BY	JML

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

EROSION CONTROL DETENTION POND

SHEET NUMBER
C9.01

Plotted By: Weber Austin, September 09, 2021 - 02:36:43pm K:\ALC_Civil\063543031_Addison_Alpha_Road_Connector\3_Project_Engineering and_Design\1_Tech\063543031_Addison Alpha Road Connector Erosion Control Plan.dwg
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GRAPHIC SCALE IN FEET
0 25 50 100

NORTH

LEGEND

- SCF — SEDIMENT CONTROL FENCE
- IP — INLET PROTECTION
- RCD — ROCK CHECK DAM
- PROP CONCRETE
- HYDRAULIC MULCHING WITH 4" TOPSOIL

EROSION CONTROL NOTES

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10. SEE GENERAL NOTES SHEET FOR EROSION CONTROL REQUIREMENTS.

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

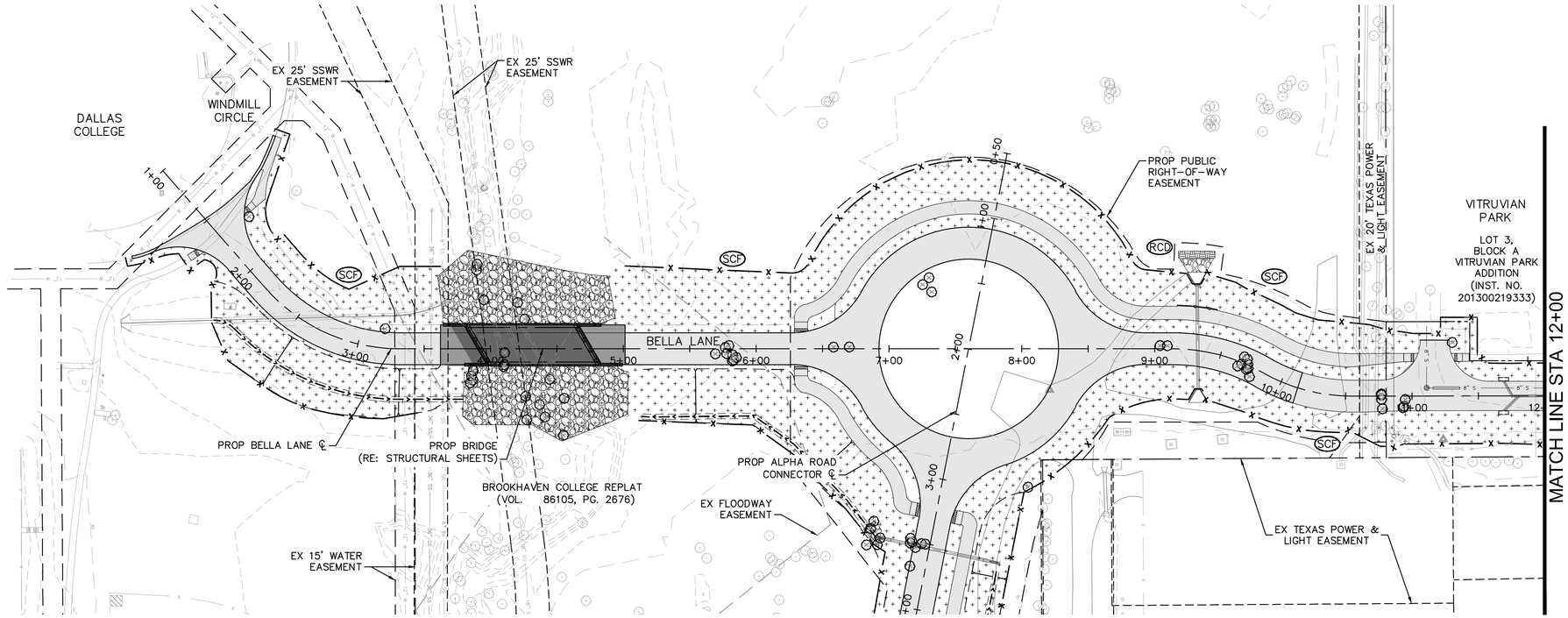
KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD
		DRAWN BY	CDS
		CHECKED BY	LNA

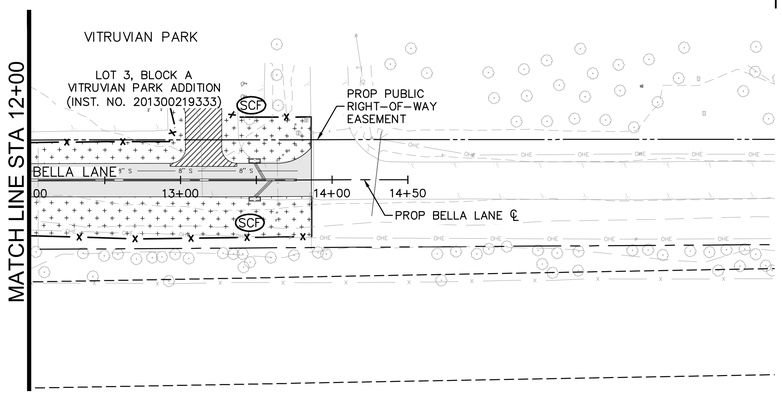
TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

EROSION CONTROL ALPHA ROAD CONNECTOR

SHEET NUMBER
C9.02

Plotted By: Skadbolt, Cody September 08, 2021 09:19:20am K:\DAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Erosion_Control.dwg
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GRAPHIC SCALE IN FEET
0 25 50 100

LEGEND

- SCF — SEDIMENT CONTROL FENCE
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- RCD — ROCK CHECK DAM
- PROP CONCRETE
- HYDRAULIC MULCHING WITH 4" TOPSOIL

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10. SEE GENERAL NOTES SHEET FOR EROSION CONTROL REQUIREMENTS.

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD
		DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

EROSION CONTROL
BELLA LANE EXTENSION

SHEET NUMBER
C9.03

Plotted By: Shadbolt, Cody September 08, 2021 09:19:25am K:\IAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Erosion_Control.dwg
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EROSION CONTROL PLAN NOTES

1. ALL OPERATORS AND/OR CONTRACTORS SHALL CONFORM TO THE TERMS AND CONDITIONS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ), TPDES GENERAL PERMIT NO. TXR 150000 ISSUED AND DATED MARCH 5, 2003.
2. THE NOTICE OF INTENT (NOI), AS REQUIRED BY THE GENERAL PERMIT, MUST BE PROPERLY DISPLAYED ON SITE AT ALL TIMES BY EACH OPERATOR.
3. ALL RELEASES OF THE REPORTABLE QUANTITIES OF HAZARDOUS SUBSTANCES SHALL BE REPORTED IMMEDIATELY TO THE FACILITY OPERATOR, EPA AND TCEQ.
4. QUALIFIED OPERATOR PERSONNEL MUST INSPECT THE SITE AT LEAST ONCE EVERY 14 DAYS AND WITHIN 24 HOURS OF A STORM EVENT OF 0.5 INCHES OR GREATER. AS AN ALTERNATIVE, AN INSPECTION CAN BE CONDUCTED ONCE EVERY SEVEN (7) CALENDAR DAYS ON A DEFINED DAY. A DECISION ON WHICH METHOD TO USE MUST BE DECIDED BEFORE WORK BEGINS AND MUST BE FOLLOWED THROUGHOUT THE PROJECT.
5. MODIFICATIONS TO THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE IMPLEMENTED AND BE IN-PLACE WITHIN A SEVEN CALENDAR DAY PERIOD.
6. IF ANY CONTRACTOR SEES A VIOLATION BY AN OPERATOR OR ANOTHER CONTRACTOR, THAT OPERATOR OR CONTRACTOR IN VIOLATION SHALL BE NOTIFIED AS WELL AS THE FACILITY OPERATOR.
7. EROSION CONTROL SHALL BE INSTALLED PRIOR TO GRADING.
8. ACCUMULATED SILT DEPOSITS SHALL BE REMOVED FROM SILT FENCES AND HAY BALE DIKES WHEN SILT DEPTH REACHES THREE INCHES OR 25%.
9. THE CONTRACTOR SHALL ADD OR DELETE EROSION PROTECTION AT THE REQUEST AND DIRECTION OF THE OPERATOR OR TOWN.
10. AFTER INSTALLATION OF PAVEMENT, FINAL LOT BENCHING AND GENERAL CLEANUP, THE CONTRACTOR SHALL ESTABLISH GRASS GROUNDCOVER IN ALL STREET PARKWAYS, LOT AND ALL OTHER DISTURBED AREAS. SODDING SHALL BE DONE AS SPECIFIED BY SECTION 202.5 AND SEEDING AS SPECIFIED BY SECTION 202.6 OF THE OCTOBER 2004 OR LATEST EDITION OF NCTCOG STANDARD SPECIFICATION.
11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTROL AND LIMIT SILT AND SEDIMENT LEAVING THE SITE. SPECIFICALLY, THE CONTRACTOR SHALL PROTECT ALL PUBLIC STREETS, ALLEYS, STREAMS AND STORM DRAINAGE SYSTEMS FROM EROSION DEPOSITS.
12. A DRAINAGE AREA MAP WILL BE INCLUDED WITH THE EROSION CONTROL PLAN.
13. CONSTRUCTION WASTE DISPOSAL CONTAINERS SHALL BE PROVIDED ON THE SITE FOR DISPOSAL OF ALL NON-HAZARDOUS CONSTRUCTION WASTE MATERIALS. THE CONTAINERS SHALL BE HAULED TO LANDFILL BY THE CONTRACTOR.
14. ALL HAZARDOUS MATERIALS SHALL BE HANDLED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SILT FENCE NOTES

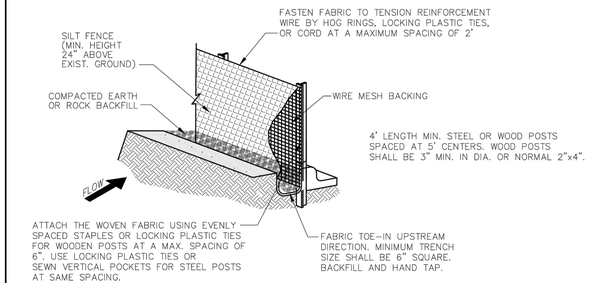
1. POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. THE POST MUST BE EMBEDDED A MINIMUM OF 18 INCHES.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT); WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON THE UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE SUPPORT POST. THERE SHALL BE A 6 INCH DOUBLE OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE EVERY TWO WEEKS OR AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 3 INCHES. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

Addison!
PUBLIC WORKS DEPARTMENT

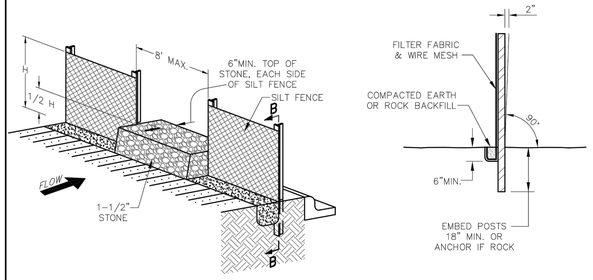
EROSION CONTROL & SILT FENCE NOTES

STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-EC01



ISOMETRIC PLAN VIEW
N.T.S.



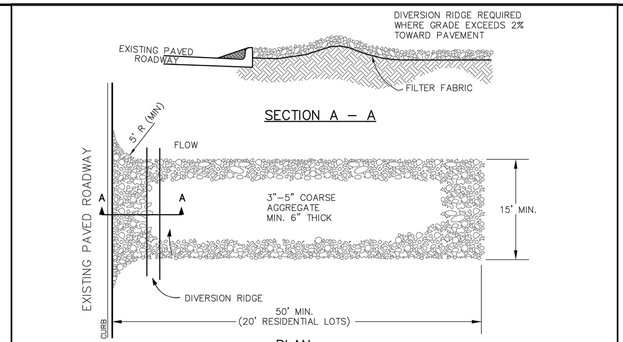
SILT FENCE
STONE OVERFLOW STRUCTURE
N.T.S.

Addison!
PUBLIC WORKS DEPARTMENT

SILT FENCE DETAIL

STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-EC02

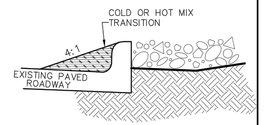


PLAN

TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT
N.T.S.

STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
3. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
4. WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED. PERIODIC RE-GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING.



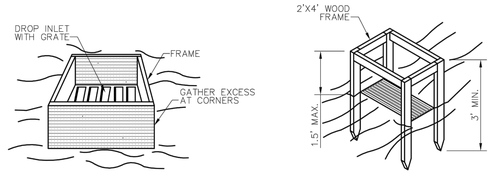
TRANSITION

Addison!
PUBLIC WORKS DEPARTMENT

TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT

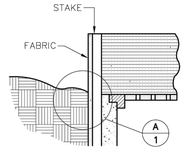
STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-EC03

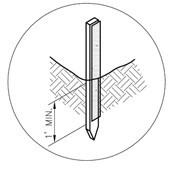


PERSPECTIVE VIEW

PERSPECTIVE VIEW



ELEVATION OR STAKE AND FABRIC ORIENTATION



DETAIL 'A'

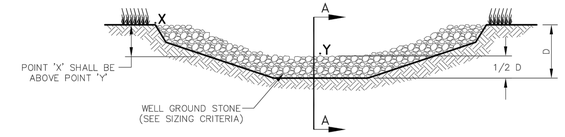
SPECIFIC APPLICATION
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVER-LAND FLOWS (NOT TO EXCEED 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS SUCH AS IN STREETS OR HIGHWAY MEDIANS.

Addison!
PUBLIC WORKS DEPARTMENT

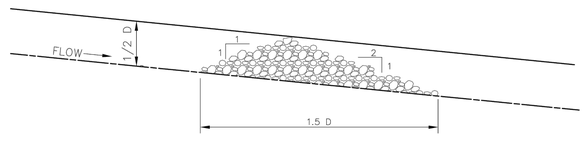
GRATE AND WYE INLET PROTECTION

STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

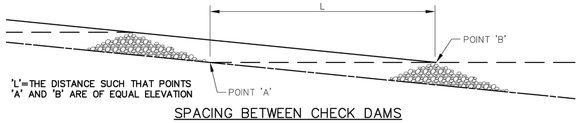
DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-EC04



VIEW LOOKING UPSTREAM



SECTION 'A-A'



SPACING BETWEEN CHECK DAMS

ROCK CHECK DAM NOTES:

1. STONE SHALL BE WELL GRADED STONE WITH SIZE RANGE FROM 1-1/2 TO 3-1/2 INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.
2. THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
3. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
4. WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

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PUBLIC WORKS DEPARTMENT

ROCK CHECK DAM

STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

DATE:	REV DATE:	SHEET :
AUGUST, 2010	–	SD-EC05

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PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY RMD
DRAWN BY CDS
CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

EROSION CONTROL STANDARD DETAILS

SHEET NUMBER
C9.04

Plotted By: Shadbolt, Cody September 08, 2021 09:19:37am K:\IAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\Erosion_Control Details.dwg
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PROPOSED ALPHA ROAD CONNECTOR

10' WIDE BERM
ELEV. 567

4:1 SLOPE

PROPOSED 15" WATER EASEMENT

EXISTING 15" WATER EASEMENT

1% SLOPE MIN

PROPOSED 12" WATER LINE

12" WATERLINE TO BE RELOCATED OUTSIDE OF LIMITS OF DETENTION POND

PROPOSED STORM SEWER OUTFALL (RE: DRAINAGE SHEET C4.15)

PROPOSED 30" RCP

FARMERS BRANCH CREEK TRIBUTARY 1

PROPOSED CONCRETE RIPRAP (RE: CHANNEL LINING DETAILS C11.02)

OUTFALL STRUCTURE
FL ELEV: 561'
(RE: DRAINAGE SHEET C10.02)

PROPOSED 24" ROCK RIPRAP

OUTFALL
(RE: DRAINAGE SHEET C10.02)

PIPE LENGTH: 60'
SLOPE: 1.41%

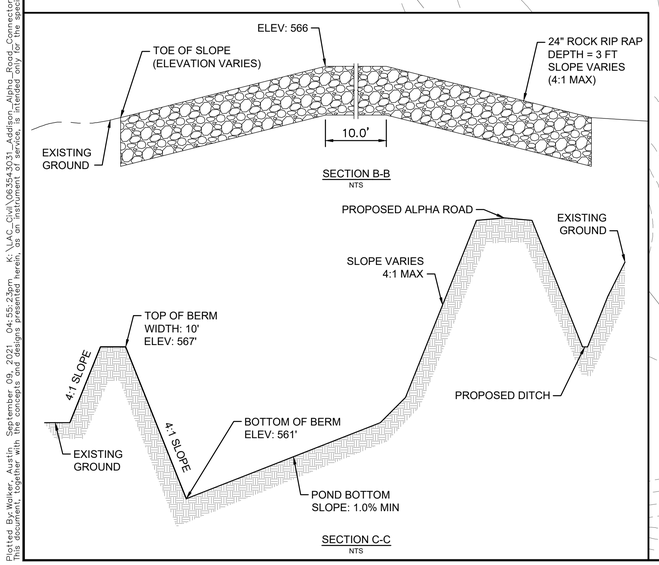
PROPOSED DETENTION POND EASEMENT

EXISTING FLOODWAY EASEMENT

FLOW

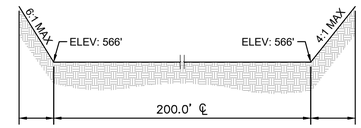
INLET STRUCTURE
200' WEIR
(SEE SECTION A-A AND B-B)

4:1 SLOPE



SECTION B-B
NTS

SECTION C-C
NTS



SECTION A-A
NTS

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

- 565 — EXISTING CONTOURS
- 565 — PROPOSED CONTOURS
- PROPOSED 24" ROCK RIPRAP
- PROPOSED CONCRETE RIPRAP

NOTES:
1. DETENTION POND DESIGN PARAMETERS WERE PROVIDED BY THE TOWN OF ADDISON FROM THE INTERLOCAL AGREEMENT AMONG THE TOWN OF ADDISON, THE CITY OF FARMERS BRANCH, AND DALLAS COLLEGE ADOPTED ON SEPTEMBER 22, 2020.
2. DETENTION POND VOLUME SHOWN IS 14.8 AC-FT AND INCLUDES ADDITIONAL COMPENSATORY STORAGE TO ACCOUNT FOR 0.6 AC-FT LOSS OF VALLEY STORAGE DUE TO ALPHA ROAD CONNECTOR PROPOSED IMPROVEMENTS.
3. POND OUTFALL STRUCTURE SHALL BE PRECAST CONCRETE. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION. OUTFALL STRUCTURE BOTTOM SLAB SHALL BE DESIGNED IN ACCORDANCE WITH GEOTECHNICAL REPORT NUMBER 20212439.001A PROVIDED BY KLEINFELDER ON JULY 15, 2021.

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No.	REVISIONS	DATE	BY

PROJECT NO. XXXXX/ BID NO. XXXX-XXX

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
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TEXAS REGISTERED ENGINEERING FIRM #F-928

STATE OF TEXAS
JENNIFER M. LAFOY
97309
LICENSED
PROFESSIONAL ENGINEER
10 SEPTEMBER 2021

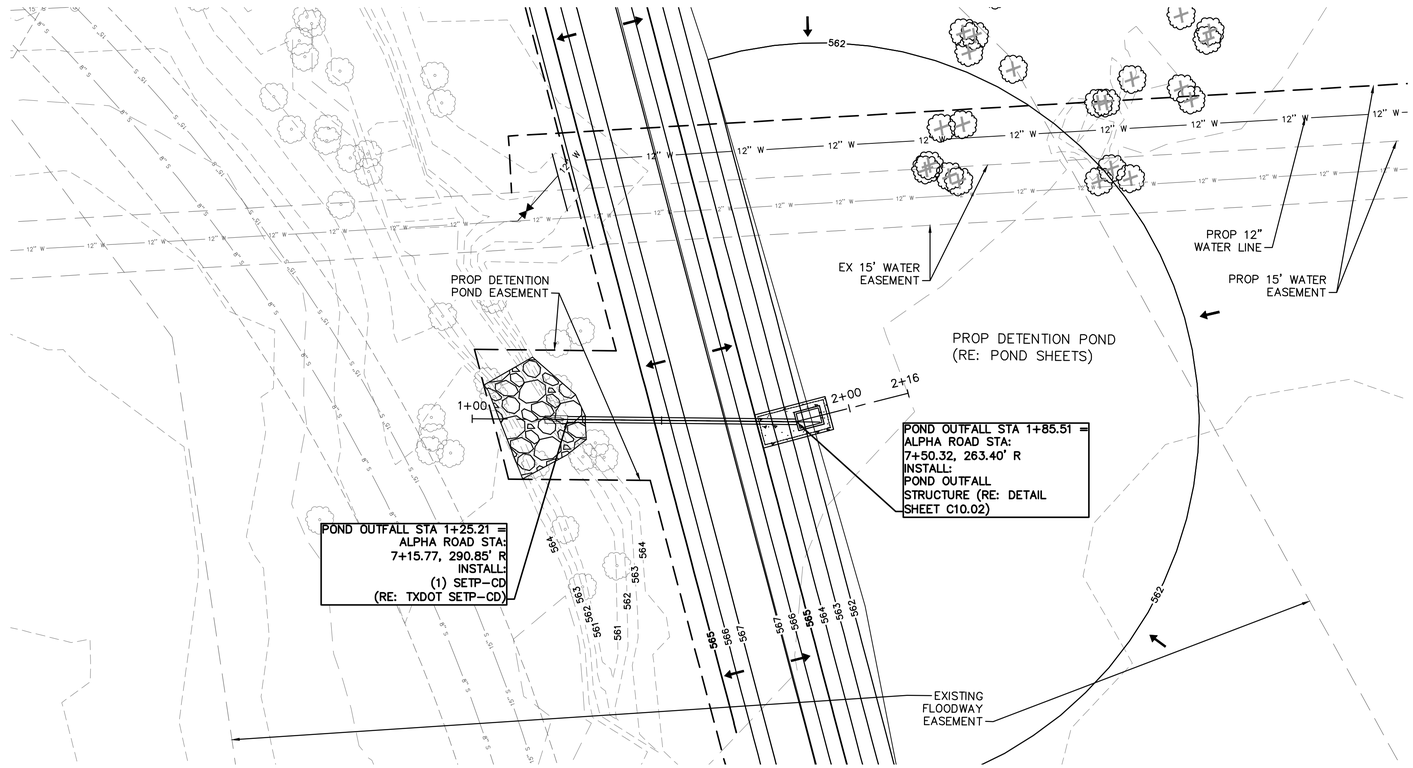
KHA PROJECT 063543031			
DATE	09/10/2021		
SCALE	AS SHOWN		
DESIGNED BY	JML	DRAWN BY	ADW
CHECKED BY	JML		

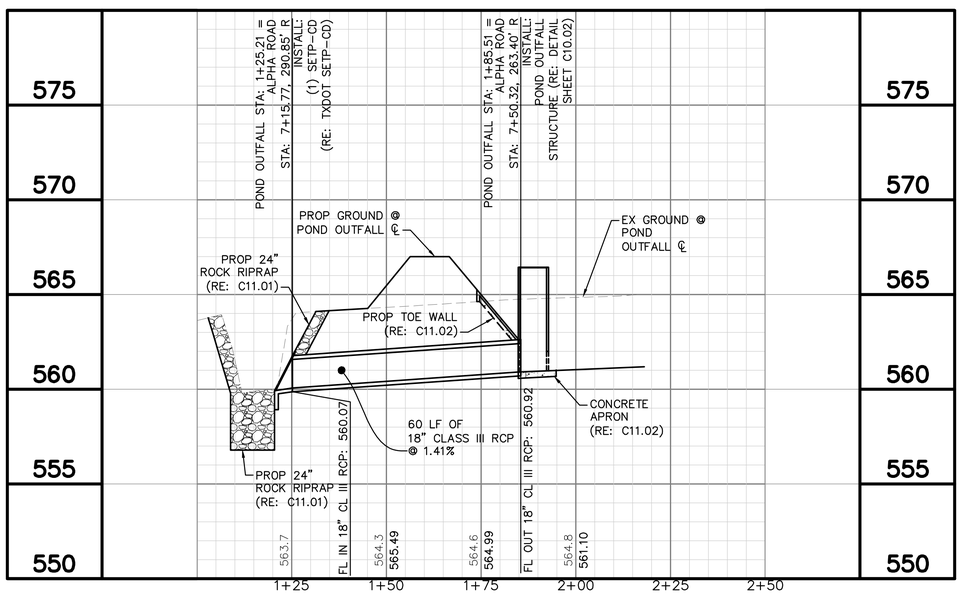
TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

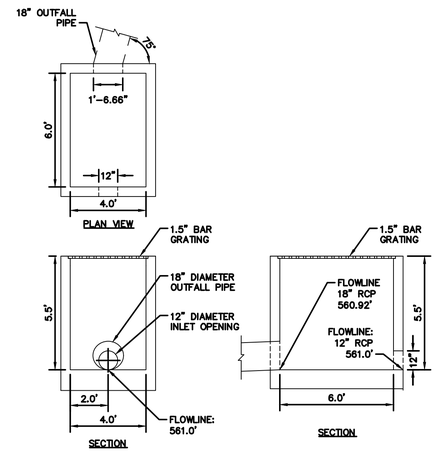
FARMERS BRANCH CREEK TRIBUTARY 1 CHANNEL GRADING

SHEET NUMBER
C10.01

Plotted By:Witter, Austin, September 09, 2021 - 04:55:37pm K:\IAC_Civil\063543031_Addison_Alpha_Road_Connector\3_Project_Engineering_and_Design\1_Team\063543031_Addison_Alpha_Road_Connector_C10.01.dwg
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POND OUTLET STRUCTURE DETAIL
1"=4'

OUTLET STRUCTURE NOTES:

1. OUTLET STRUCTURE SHALL BE PRECAST CONCRETE. CONCRETE SHALL BE IN ACCORDANCE WITH TXDOT ITEM 421, CLASS C.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND ENGINEERING CALCULATIONS FOR OUTLET STRUCTURE. MAT SLAB OR FOOTING SHALL BE DESIGNED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT. SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS.
3. STEEL BAR GRATING SHALL BE REMOVABLE 1.5" STEEL GRATING, BOLTED OR CLIPPED.

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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
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PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

DETENTION POND OUTFALL DRAINAGE SYSTEM D

SHEET NUMBER
C10.02

Plotted By:Walter Austin September 09, 2021 06:09:57pm K:\IrvC_Civil\063543031_Addison Alpha Road Connector\CAD\ViewSheet\Drainage Plan\ADP-PlnD.dwg
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EXISTING FLOODWAY EASEMENT
PROPOSED ALPHA ROAD LIMITS
SELECT FILL. SEE SHEET C5.01
PROPOSED SIDEWALK
STA: 5+03.62 OFF: 17.16'RT
STA: 4+94.94 OFF: 13.00'RT
STA: 5+03.31 OFF: 49.18'RT
STA: 4+86.06 OFF: 19.00'LT
STA: 4+94.20 OFF: 22.50'LT
STA: 4+89.09 OFF: 55.60RT
FARMERS BRANCH CREEK TRIBUTARY 1
STA: 4+81.29 OFF: 13.00'RT
PROPOSED ALPHA ROAD ALIGNMENT
STA: 4+88.44 OFF: 54.80'LT
PROPOSED BRIDGE
STA: 4+65.22 OFF: 18.99'LT
PROPOSED FULLY DEVELOPED 100-YEAR FLOODPLAIN
PROPOSED CONCRETE
STA: 4+56.42 OFF: 58.80'LT
STA: 4+53.67 OFF: 69.39'RT
PROPOSED 24" ROCK RIPRAP
PROPOSED FULLY DEVELOPED 100-YEAR FLOODPLAIN
STA: 4+31.46 OFF: 57.31'RT
PROPOSED 24" ROCK RIPRAP
EXISTING 18" SANITARY SEWER LINE
EXISTING FLOODWAY EASEMENT
STA: 3+82.92 OFF: 74.13'LT
STA: 4+00.30 OFF: 13.00'RT
STA: 3+82.36 OFF: 19.00'LT
STA: 3+82.92 OFF: 13.00'RT
STA: 3+80.23 OFF: 17.29'RT
STA: 3+86.40 OFF: 57.03'RT
STA: 3+78.98 OFF: 50.79'RT
EXISTING 8" SANITARY SEWER LINE
STA: 3+68.94 OFF: 19.00'LT
STA: 3+60.15 OFF: 54.61'LT
STA: 3+64.47 OFF: 22.98'LT
EXISTING 8" SANITARY SEWER LINE
SELECT FILL. SEE SHEET C5.01
EXISTING 12" WATER LINE
EXISTING 15' WATER EASEMENT
PT: 3+31.79

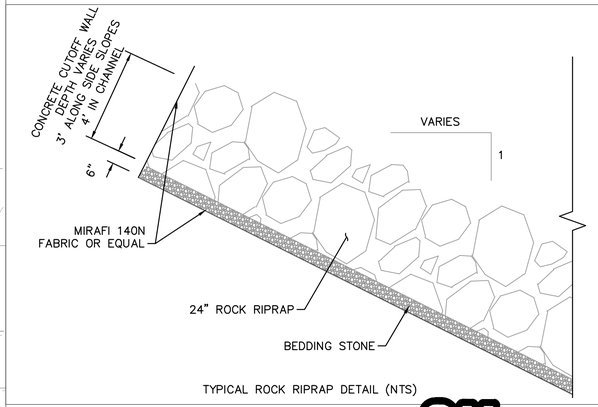
NORTH

GRAPHIC SCALE IN FEET
0 5 10 20

LEGEND

- 565 — EXISTING CONTOURS
- 565 — PROPOSED CONTOURS
- FARMERS BRANCH CREEK TRIBUTARY 1 FLOWLINE
- POST-PROJECT FULLY DEVELOPED 100-YEAR FLOODPLAIN
- PROPOSED 24" ROCK RIPRAP
- PROPOSED CONCRETE RIPRAP
- PROPOSED SELECT FILL (SEE C5.01 FOR DETAILS)
- EXISTING TREES TO BE REMOVED
- EXISTING TREES

NOTES:
1. ALL STATION/OFFSET CALLOUTS IN REFERENCE TO PROPOSED ALPHA ROAD ALIGNMENT.
2. ACCESS TO CREEK SHALL BE THROUGH PROPOSED IMPROVEMENTS. CONTRACTOR SHALL NOT DISTURB CREEK BANK BEYOND LIMITS OF IMPROVEMENTS.
3. REFER TO BRIDGE LAYOUT FOR BRIDGE DETAILS.
4. SEE TXDOT CRR STANDARD FOR ADDITIONAL CONCRETE RIPRAP INFORMATION.
5. ROCK RIPRAP SHALL CONFORM TO TXDOT SPEC ITEM 432. ROCK RIPRAP SHALL BE NOMINAL SIZE OF 24 INCHES. FILTER FABRIC AND BEDDING STONE (6 INCHES THICK) SHALL BE REQUIRED AT ALL INTERFACES BETWEEN EXISTING GROUND AND ROCK RIPRAP.
6. WITHIN 2:1 EMBANKMENT ZONES, PROVIDE SELECT FILL BENEATH ROCK RIPRAP DOWN TO ELEVATION 558 (SOUTH EMBANKMENTS) AND ELEVATION 561 (NORTH EMBANKMENTS).



TYPICAL ROCK RIPRAP DETAIL (NTS)

Know what's **below.**
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No.	REVISIONS	DATE	BY

PROJECT NO. XXXXX/ BID NO. XXXX-XXX

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM #F-928

STATE OF TEXAS
JENNIFER M. LATTY
97309
LICENSED PROFESSIONAL ENGINEER
10 SEPTEMBER 2021

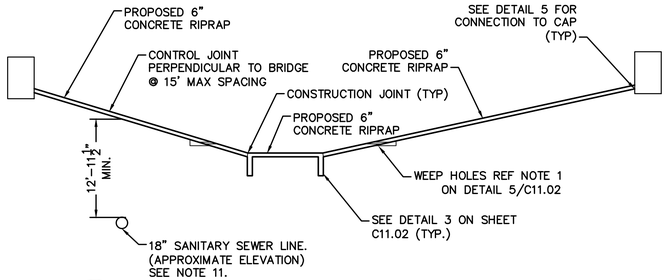
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	JML
DRAWN BY	ADW
CHECKED BY	JML

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

FARMERS BRANCH CREEK TRIBUTARY 1
CHANNEL GRADING

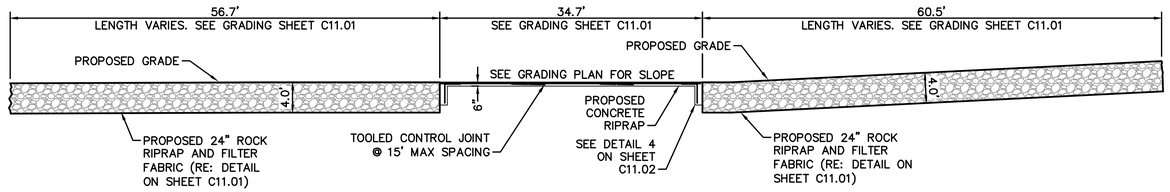
SHEET NUMBER
C11.01

Plotted By: Walker, Austin Sep/member 09, 2021 09:36:57pm K:\ADC Dist\063543031_Addison-Alpha Road Connection\3_Project Engineering and Design\1_Team\063543031 This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



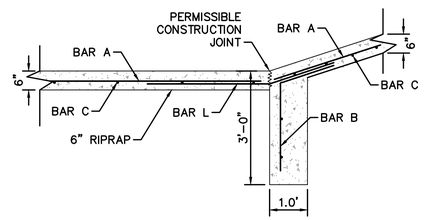
1 C11.02 **CHANNEL LINING TYPICAL SECTION**

SCALE: 1" = 10' [RE: C11.01]



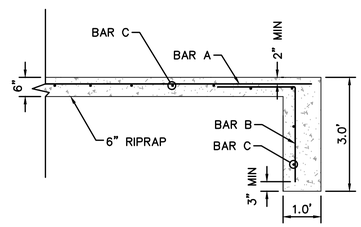
2 C11.02 **CHANNEL LINING TYPICAL SECTION**

SCALE: 1" = 10' [RE: C11.01]



3 C11.02 **6" RIPRAP GRADE BREAK DETAIL**

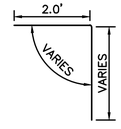
SCALE: 1/2" = 1'



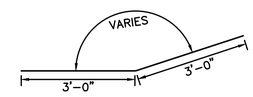
4 C11.02 **TYPICAL 6" CONCRETE RIPRAP DETAIL**

SCALE: 1/2" = 1'

REBAR SCHEDULE		
BAR	SIZE	SPACING
A	4	1'-0"
B	4	1'-0"
C	4	1'-0"
L	4	1'-0"



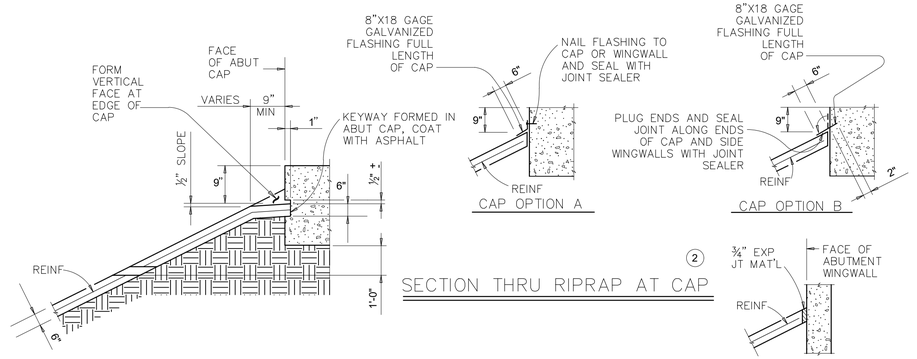
BAR B



BAR L

NOTES:

1. CHAMFER ALL EXPOSED EDGES OF CONCRETE ¾".
2. ALL CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
3. ALL CLEAR COVER FOR CONCRETE SHALL BE 3 INCHES UNLESS OTHERWISE SHOWN.
4. ALL REINFORCING STEEL SHALL BE ASTM 615 GR 60 STEEL.
5. ALL REINFORCING IN CHANNEL BOTTOM SHALL BE EPOXY COATED. EPOXY MATERIAL SHALL BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
6. MIX DESIGNS FOR CONCRETE SHALL BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
7. REINFORCING BAR DIMENSIONS ARE TO OUTSIDE OF BAR UNLESS OTHERWISE NOTED.
8. CONTRACTOR TO VERIFY ALL ELEVATIONS AND DIMENSIONS.
9. ROCK RIPRAP SHALL BE A MINIMUM OF 24-INCH (NOMINAL SIZE). ROCK RIPRAP SHALL CONFORM TO TXDOT ITEM 432 RIPRAP.
10. RCP SHALL HAVE PRECAST BEVELED ENDS TO MATCH RIPRAP GRADE WITH 12" OF EXPOSED REINFORCING. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REINFORCEMENT NEEDED TO DEVELOP THE CONNECTION BETWEEN RIPRAP AND RCP (SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS).
11. VERTICAL CLEARANCE SHALL BE A MIN. 12'-11½" AS SHOWN ON THE PLANS. CONTRACTOR SHALL LOCATE AND VERIFY ELEVATIONS OF UTILITIES PRIOR TO ANY DRILLING OR EXCAVATION. CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
12. FOR DETAILS AND SPECIFICATIONS NOT ADDRESSED HEREIN, SEE TXDOT STANDARDS AND SPECIFICATIONS.



SHOWING KEYWAY OPTION

1. PROVIDE LOWER LEVEL OF 2" DIA WEEP HOLES AT 10' C-C BACKED BY 1 CF PACKET OF GRAVEL AND GALVANIZED HARDWARE CLOTH AT ALL LOCATIONS.
2. PROVIDE SEALING OPTIONS FOR JOINT BETWEEN THE FACE OF CAP AND RIPRAP AS DESIGNATED BY THE ENGINEER OR AS SHOWN ELSEWHERE ON PLANS.
3. FLASHING (SHOWN IN CAP OPTION A) SHALL BE USED AT WINGWALL IN ADDITION TO EXP JT MAT'L.
4. 8" x 18 GAGE GALC SHEET METAL.
5. REINFORCING STEEL IS CONTINUOUS THROUGH RIPRAP CONSTRUCTION JOINTS. PROVIDE REINFORCING STEEL THAT EXTENDS 2'-0" MINIMUM INTO ADJACENT RIPRAP ON EACH SIDE OF CONSTRUCTION JOINT EVEN IF SYNTHETIC REINFORCING FIBER IS UTILIZED.

5 C11.02 **CONCRETE RIPRAP**

SCALE: NTS

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PROJECT NO. XXXXX/ BID NO. XXXX-XXX

No.	REVISIONS	DATE	BY

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TEXAS REGISTERED ENGINEERING FIRM #F-928

STATE OF TEXAS
BRIAN J. LAFOY
89363
LICENSED
PROFESSIONAL ENGINEER
09/10/2021

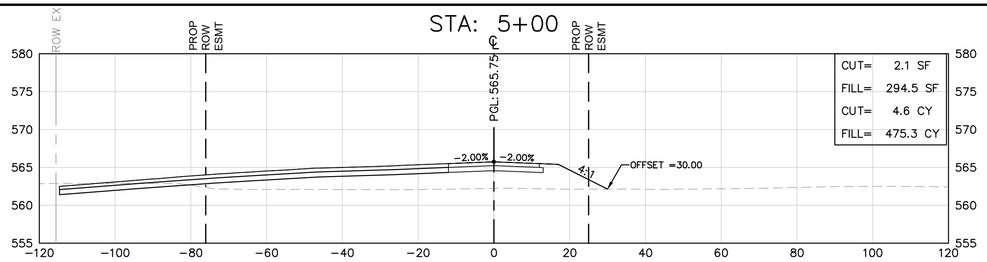
KHA PROJECT 063543031
DATE 09/10/2021
SCALE AS SHOWN
DESIGNED BY BCS
DRAWN BY AT/TLS
CHECKED BY BJL

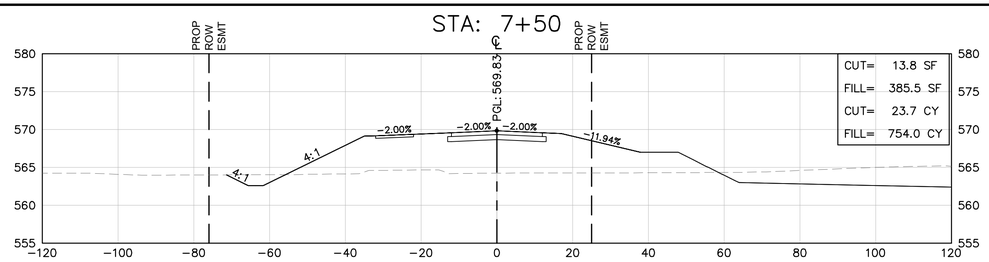
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ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

FARMERS BRANCH CREEK TRIBUTARY 1 CHANNEL LINING DETAILS

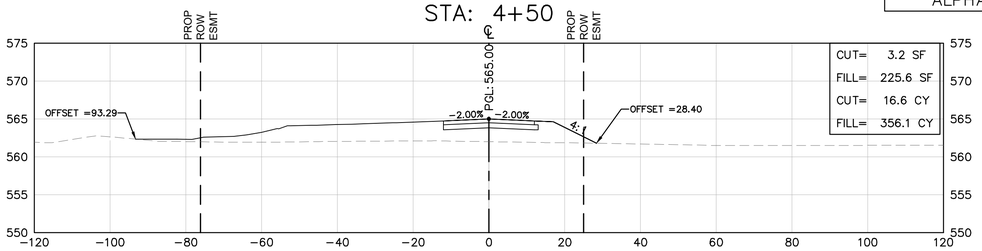
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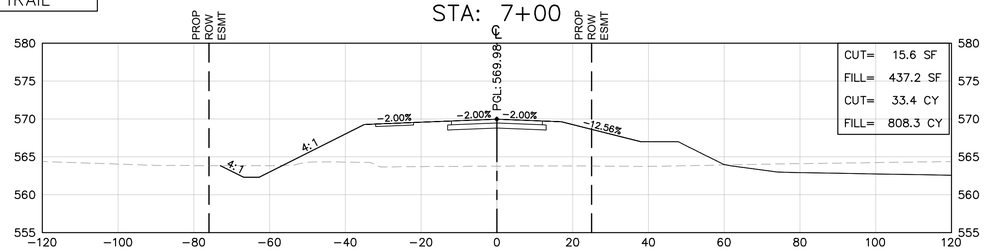
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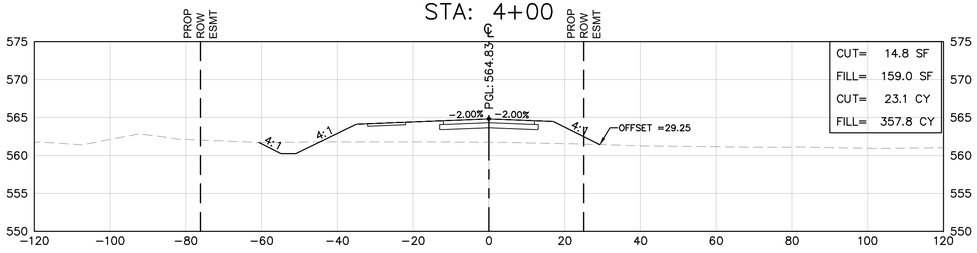


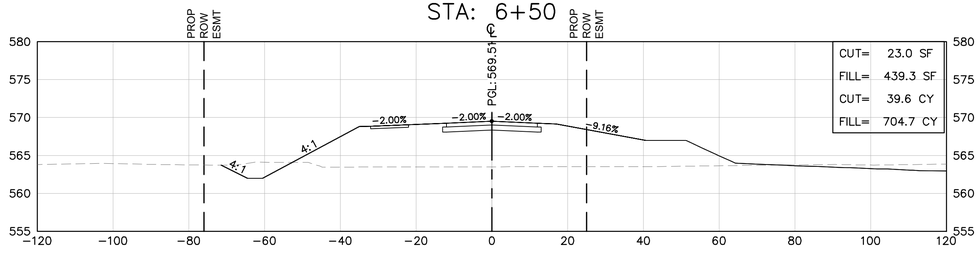


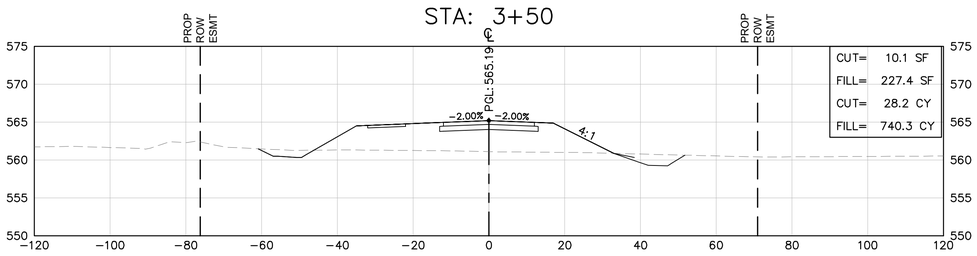
CUT & FILL QUANTITIES SHOWN DO NOT INCLUDE DETENTION POND OR ALPHA CONNECTOR TRAIL

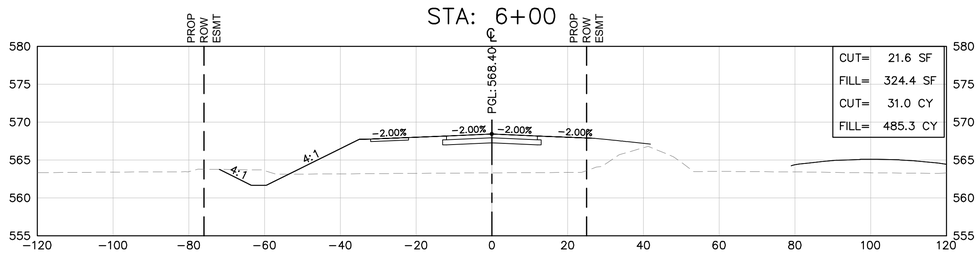


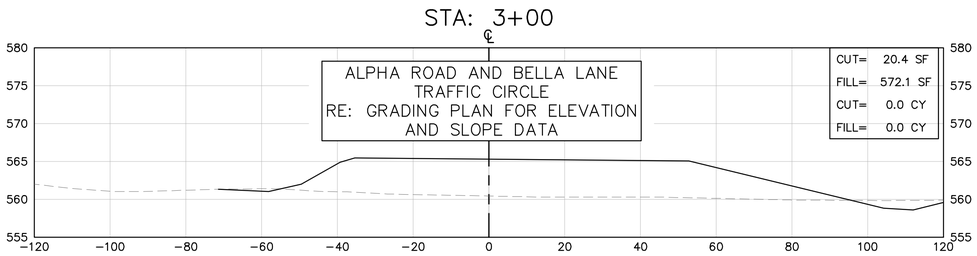


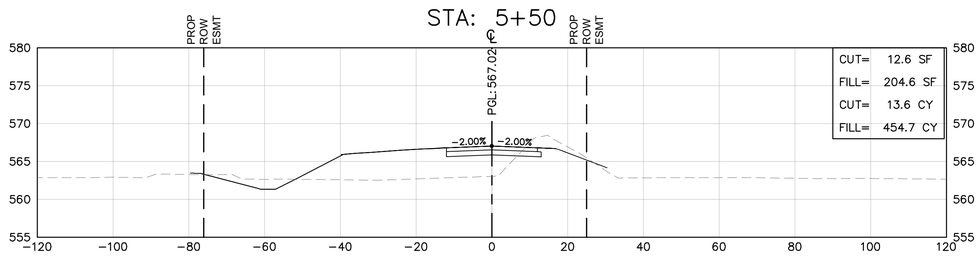












PROJECT NO. 2021-01C/ BID NO. 21-69

No.	REVISIONS	DATE	BY

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
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WWW.KIMLEY-HORN.COM
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

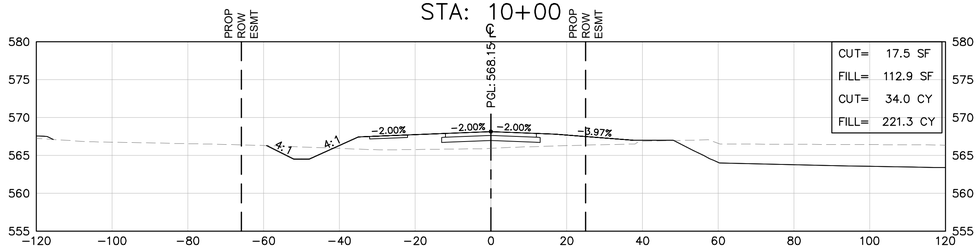
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

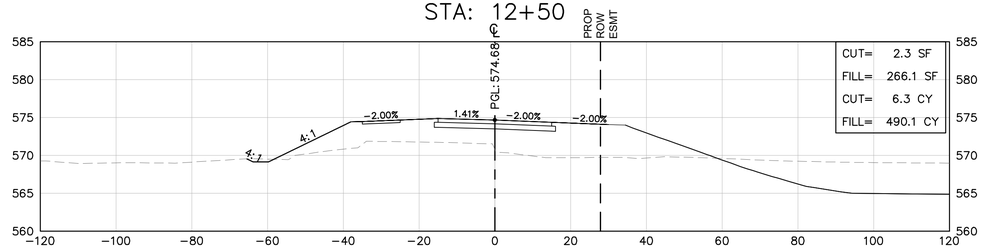
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ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

CROSS SECTIONS
ALPHA ROAD
CONNECTOR
BEGIN TO STA 7+00

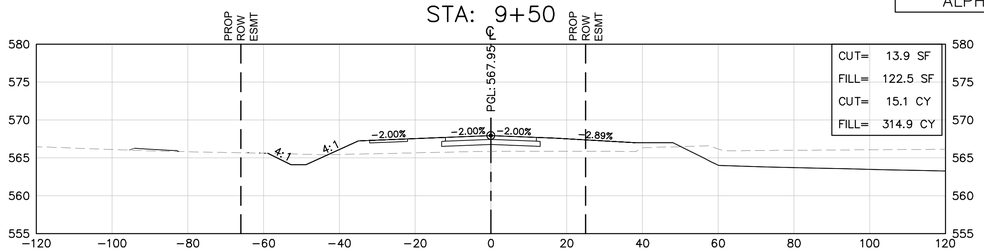
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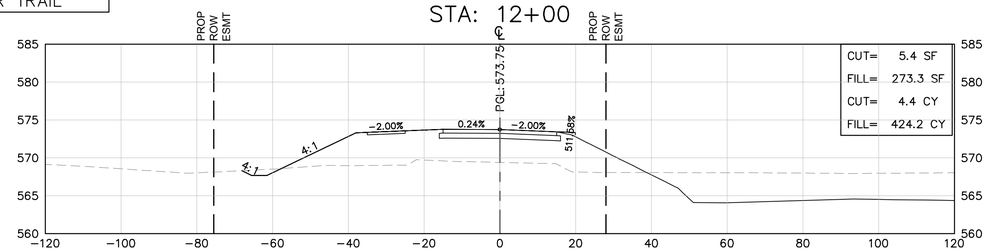
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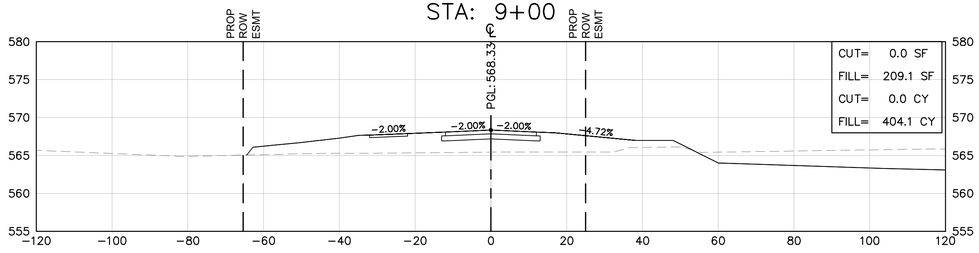


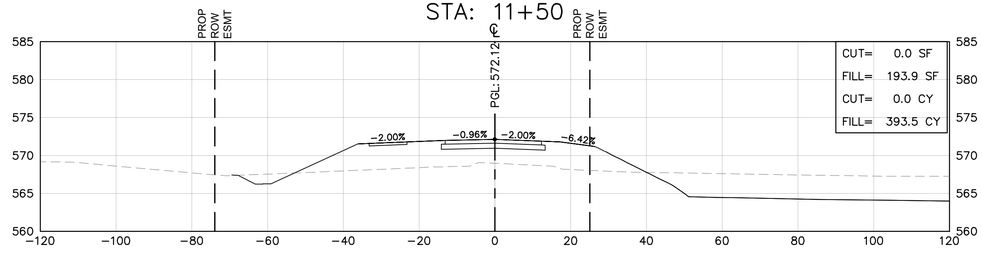


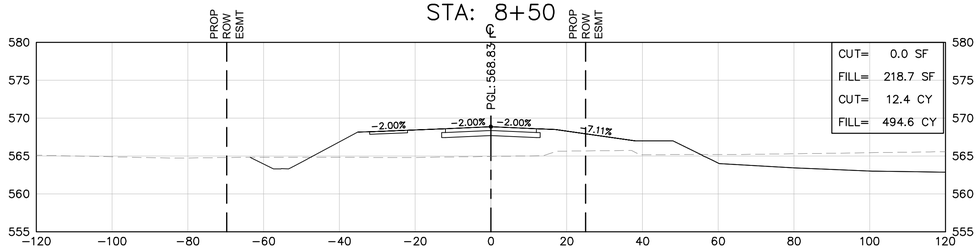
CUT & FILL QUANTITIES SHOWN DO NOT INCLUDE DETENTION POND OR ALPHA CONNECTOR TRAIL

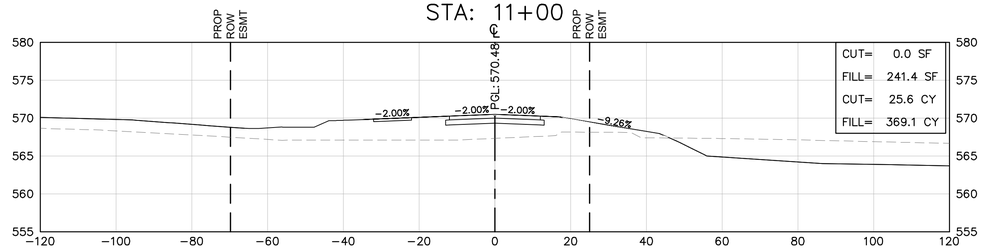


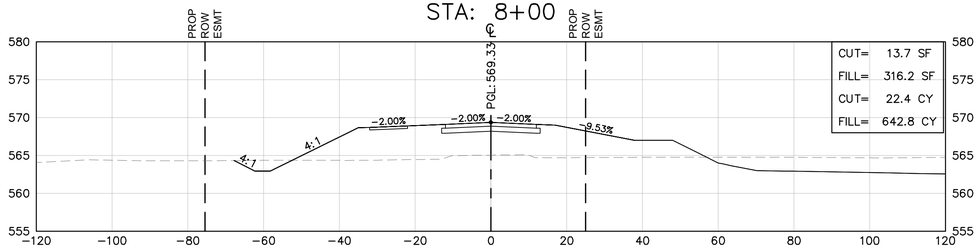


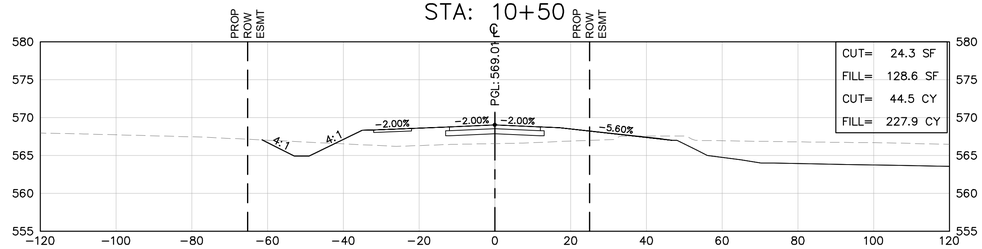












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No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021



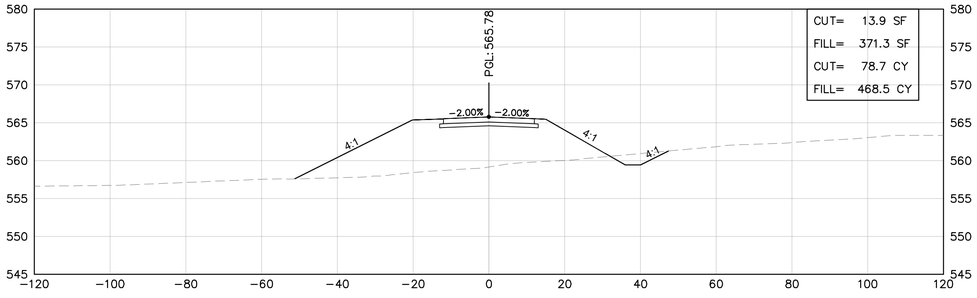
KHA PROJECT	063543031
DATE	09/10/2021
SCALE	AS SHOWN
DESIGNED BY	RMD
DRAWN BY	CDS
CHECKED BY	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

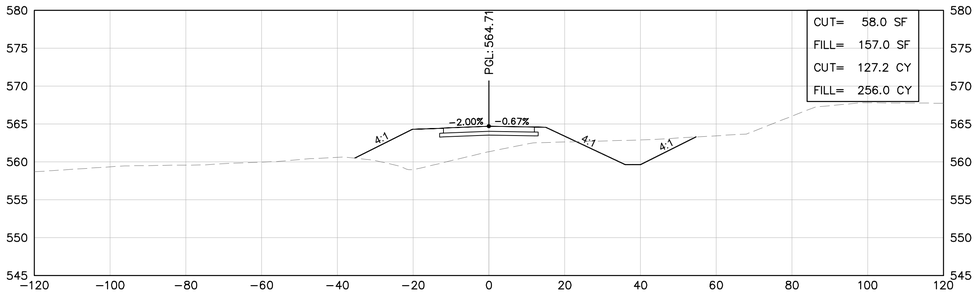
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ALPHA ROAD
CONNECTOR
STA 7+50 TO STA 11+00

SHEET NUMBER
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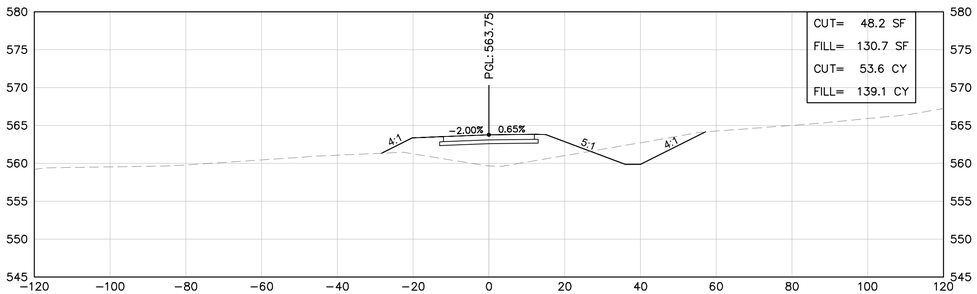
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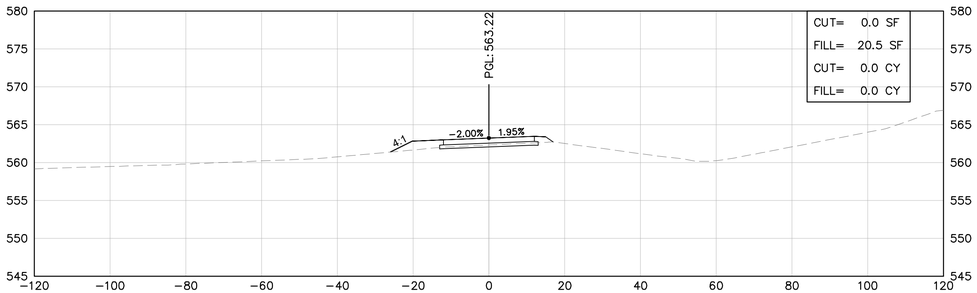
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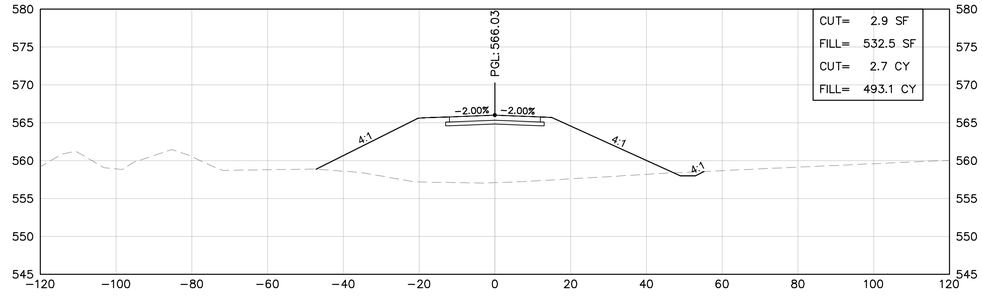
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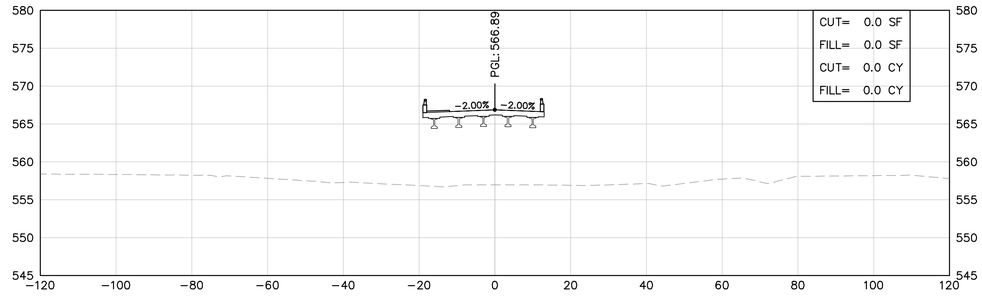
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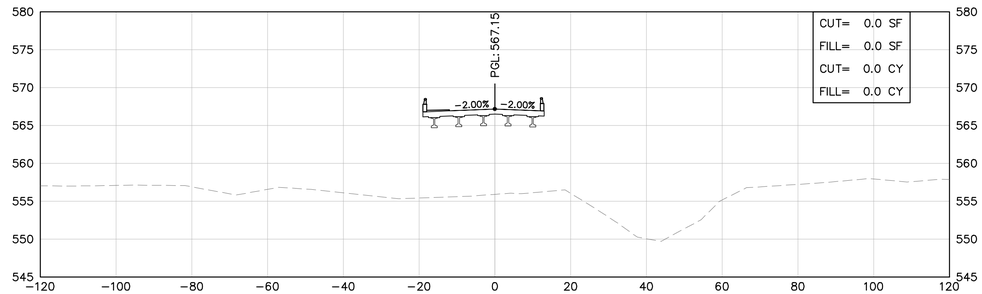
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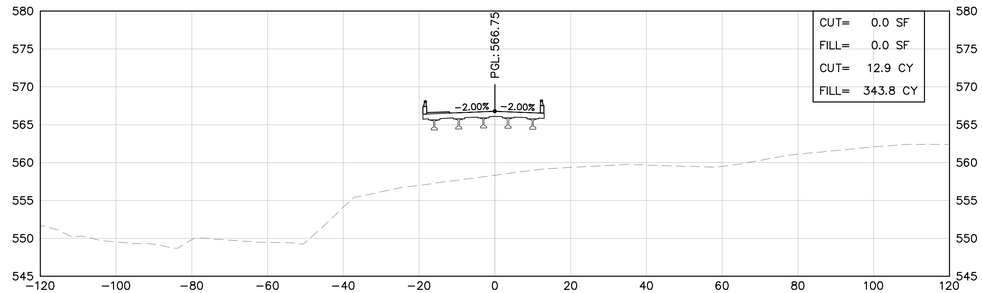
STA: 5+00



STA: 4+50



STA: 4+00



℄ – CENTERLINE
EX – EXISTING
PROP – PROPOSED

PGL – PROFILE GRADE LINE
TCE – TEMPORARY CONSTRUCTION EASEMENT

DE – DRAINAGE EASEMENT
EXISTING GRADE ~~~~
PROPOSED GRADE ——

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

Kimley»Horn
2201 WEST ROYAL LANE, SUITE 275, IRVING, TX 75063
PHONE: 214-420-5600
WWW.KIMLEY-HORN.COM

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED PROFESSIONAL ENGINEER

KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
063543031	09/10/2021	AS SHOWN	RMD	CDS	LNA

TOWN OF ADDISON
ALPHA ROAD CONN.
FROM FARMERS BRANCH CREEK TO ALPHA ROAD

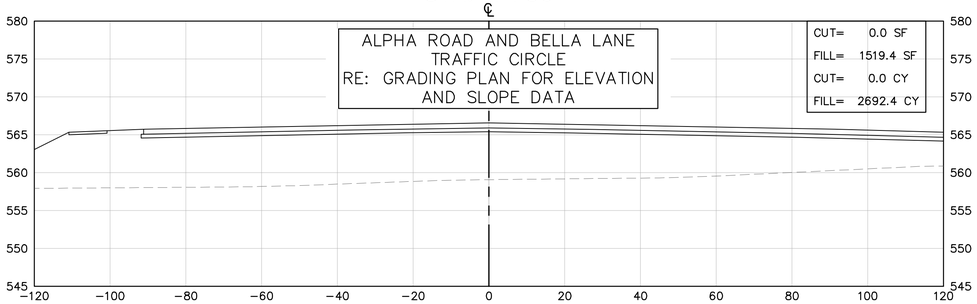
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BELLA LANE EXTENSION
BEGIN TO STA 5+50

SHEET NUMBER
C12.03

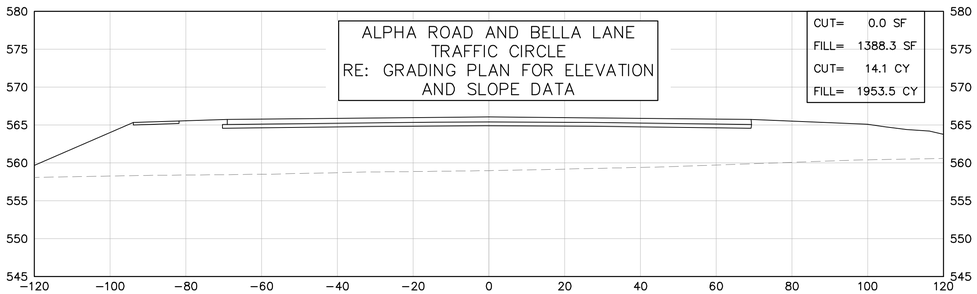
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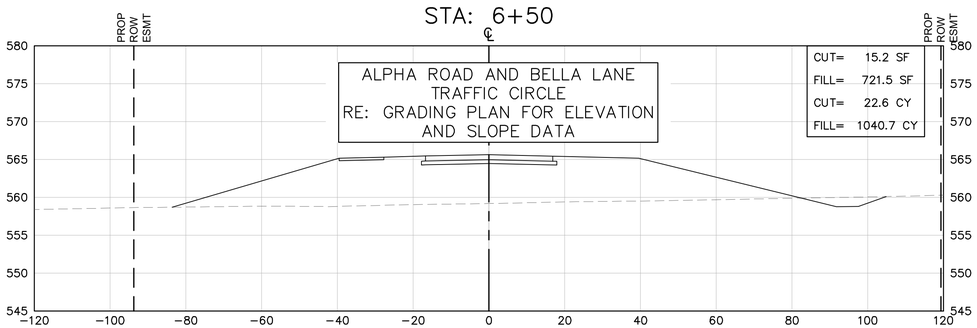
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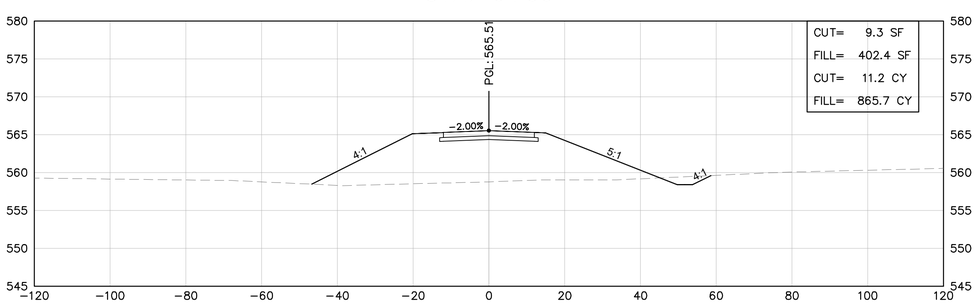
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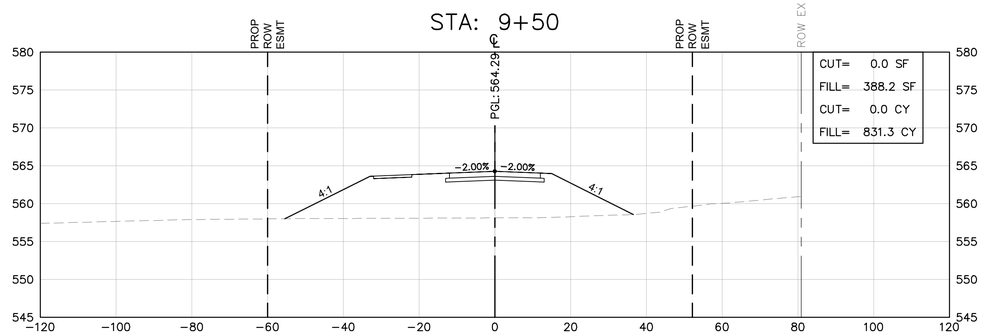
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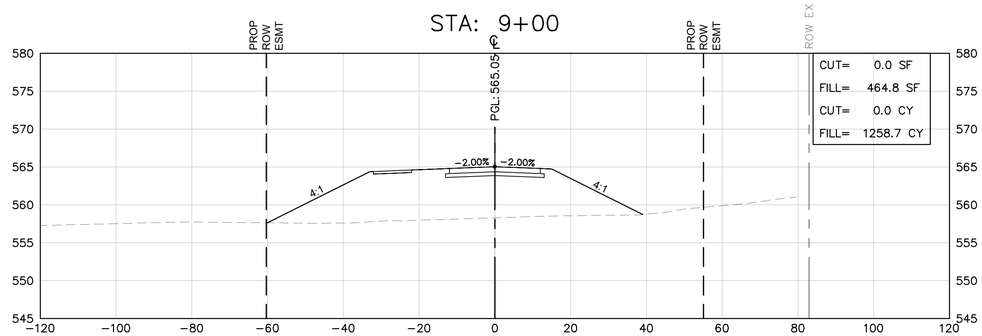
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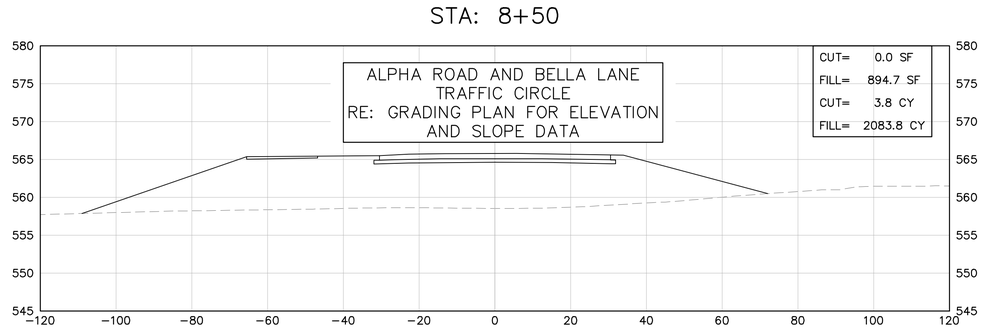
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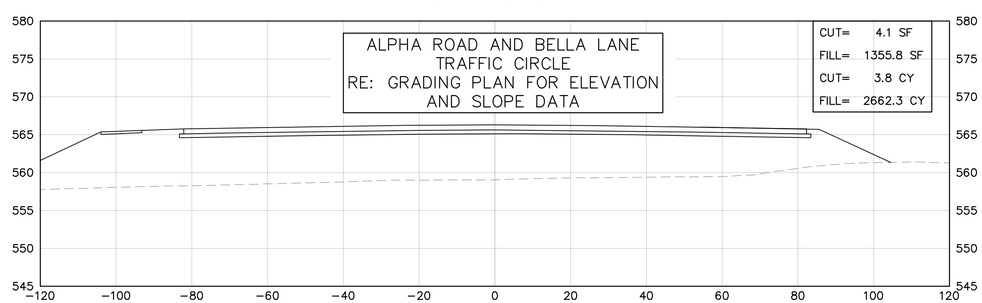
STA: 9+00



STA: 8+50



STA: 8+00



℄ – CENTERLINE
EX – EXISTING
PROP – PROPOSED
PGL – PROFILE GRADE LINE
TCE – TEMPORARY CONSTRUCTION EASEMENT
DE – DRAINAGE EASEMENT
EXISTING GRADE – – – –
PROPOSED GRADE ——

No.	REVISIONS	DATE	BY

PROJECT NO. 2021-01C/ BID NO. 21-69

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9/10/2021

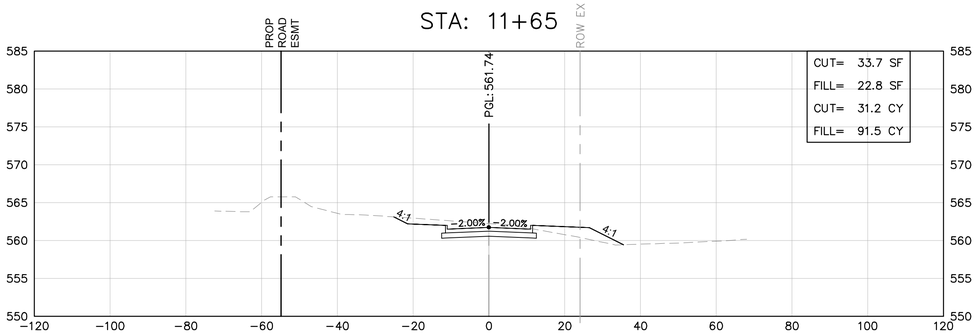


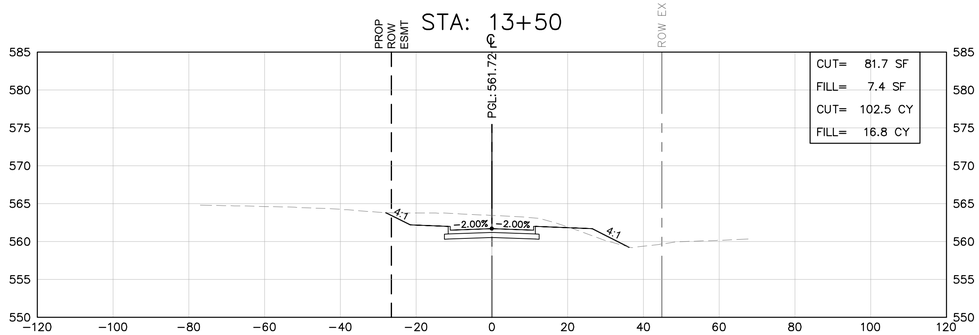
KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
063543031	09/10/2021	AS SHOWN	RMD	CDS	LNA

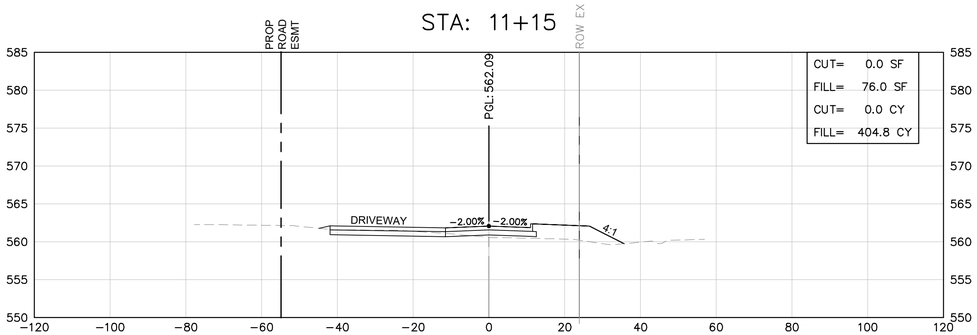
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ALPHA ROAD CONN.
FROM FARMERS BRANCH
CREEK TO ALPHA ROAD

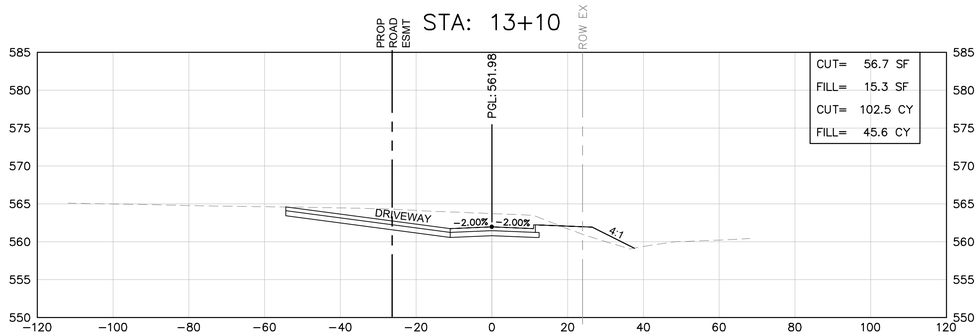
CROSS SECTIONS
BELLA LANE
EXTENSION
STA 6+00 TO 9+50

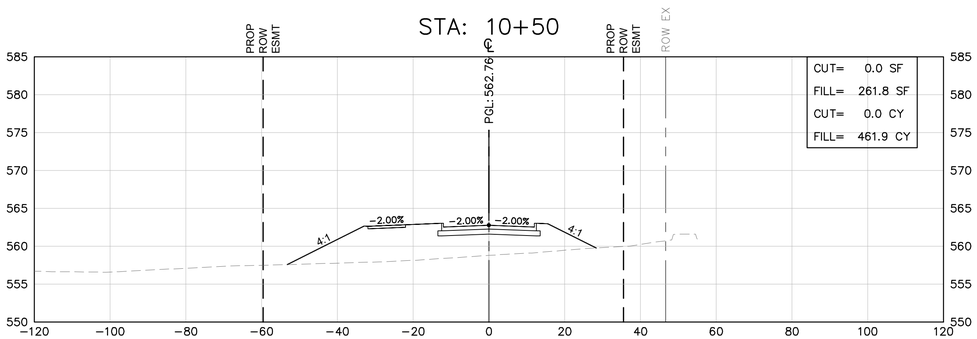
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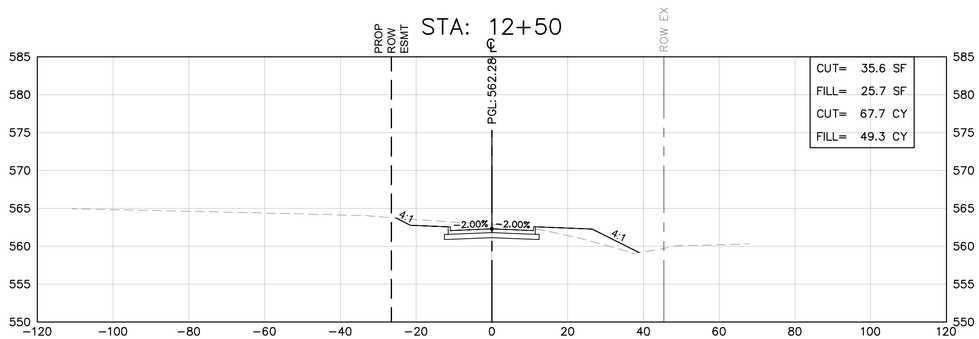


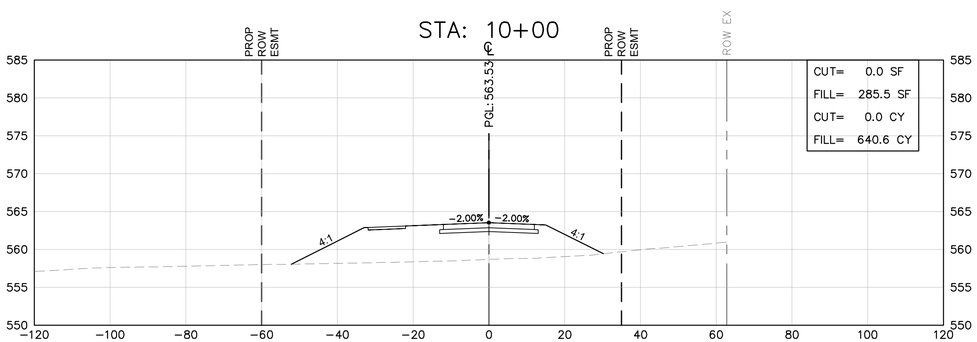


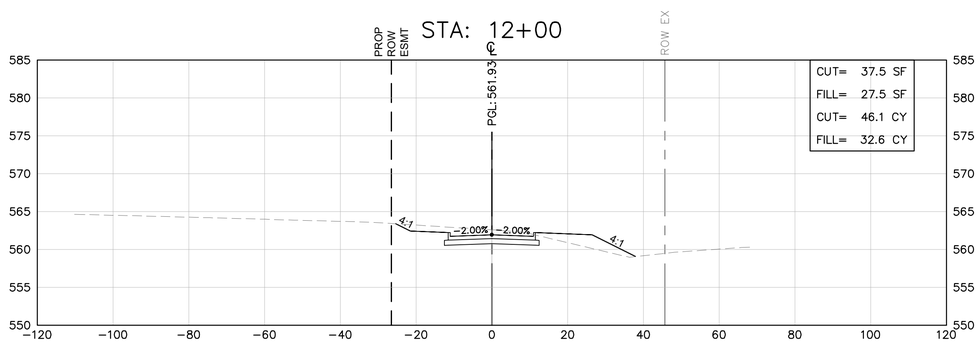












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TCE – TEMPORARY CONSTRUCTION EASEMENT
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EXISTING GRADE
PROPOSED GRADE

PROJECT NO. 2021-01C/ BID NO. 21-69

No.	REVISIONS	DATE	BY

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TEXAS REGISTERED ENGINEERING FIRM #F-928

9/10/2021

STATE OF TEXAS
RYAN DELMOTTE
114242
LICENSED
PROFESSIONAL ENGINEER

KHA PROJECT 063543031	DATE 09/10/2021	SCALE AS SHOWN	DESIGNED BY RMD
		DRAWN BY CDS	CHECKED BY LNA

TOWN OF ADDISON
ALPHA ROAD CONN. FROM FARMERS BRANCH CREEK TO ALPHA ROAD

CROSS SECTIONS
BELLA LANE EXTENSION
STA 10+00 TO END

SHEET NUMBER
C12.05

Plotted By: Shadbolt, Cody September 08, 2021 09:21:50am K:\LAC_Civil\063543031_Addison_Alpha_Road_Connector\CADD\PlanSheets\X-Sections-Bella.dwg
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