Commissioners Court June 22, 2021
NOTICE OF A MEETING OF THE
COMMISSIONERS COURT OF HAYS COUNTY, TEXAS

This Notice is posted pursuant to the Texas Open Meetings Act. (VERNONS TEXAS CODES ANN. GOV. CODE CH.551). The Hays County Commissioners Court will hold a meeting at **9:00 A.M.** on the **22nd day of June 2021**, in the Hays County Courthouse, Room 301, San Marcos, Texas. An Open Meeting will be held concerning the following subjects:

CALL TO ORDER
INVOCATION
PLEDGE OF ALLEGIANCE - **Pledge of Allegiance to the American Flag & Pledge of Allegiance to the Texas Flag**
ROLL CALL

PUBLIC COMMENTS

At this time **3-MINUTE** comments will be taken from the audience on Non-Agenda related topics. To address the Court, please submit a Public Participation/ Witness Form to the County Clerk. Please Complete the Public Participation/ Witness Form in its Entirety.
NO ACTION MAY BE TAKEN BY THE COURT DURING PUBLIC COMMENTS.

PRESENTATIONS & PROCLAMATIONS

1	4-5	Adopt a proclamation declaring July 2021 as Parks and Recreation Month in Hays County. **SHELL/T.CRUMLEY**
2	6-7	Adopt a Proclamation recognizing the 25th year of operation of the Edwards Aquifer Authority. **INGALSBE**

CONSENT ITEMS

The following may be acted upon in one motion.
A Commissioner, the County Judge, or a Citizen may request items be pulled for separate discussion and/or action.

3	8	Approve payments of County invoices. **VILLARREAL-ALONZO**
4	9	Approve the payment of United Healthcare claims. **VILLARREAL-ALONZO**
5	10	Approve the payment of the June 30, 2021 payroll disbursements in an amount not to exceed $4,025,000.00 effective June 30, 2021 and post totals for wages, withholdings, deductions and benefits on the Hays County website once finalized. **BECERRA/RICHEY**
6	11-22	Authorize the execution of the FY 2021 Grant Agreement with the U.S. Department of Justice, Drug Enforcement Administration for overtime reimbursements related to the Sheriff's Office Organized Crime Drug Enforcement Task Force (OCDETF) and amend the budget accordingly. **INGALSBE/CUTLER**
7	23	Authorize the Constable Pct. 4 Office to accept a $4,500 donation from Steve Venski, Billy Brandenberger, and William Cariker for the purchase of law enforcement equipment and supplies and amend the budget accordingly. **SMITH/HOOD**
8	24-26	Approve Election Fees for election services provided. **INGALSBE/ANDERSON**
9	27	Authorize On-Site Sewage Facility Permit for the 2 barndominiums and 2 RV spaces located at 710 Bell Springs Rd, Dripping Springs, Texas 78620. **SMITH/PACHECO**
10	28	Approve out of state travel, utilizing the Sheriff's Office Continuing Education Funds, for Fleet Maintenance Supervisor Martin Gonzales to attend the Harley Davidson Motor Company's Police Technical Training in Orlando, Florida on September 13-30, 2021. **INGALSBE/CUTLER**
11	29	Authorize On-Site Sewage Facility Permit for an office building at 2710 W Hwy 290, Dripping Springs, TX, 78620. **SMITH/PACHECO**
12	30	Authorize On-Site Sewage Facility Permit for a duplex located at 701 Horace Howard Lane, San Marcos, Texas 78666. **INGALSBE/PACHECO**
13	31-36	Approve Utility Permits. **JONES/SHELL/BORCHERDING**
14	37-42	Authorize the County Judge to execute a Software License Agreement with BOLDplanning, Inc. related to the Continuity of Operations (COOP) and Emergency Operations Plans (EOP) annual licensing for county wide planning. **BECERRA/MIKE JONES**
15	43-59	Authorize JM Engineering, LLC to replace the current Magic Chef 3.5-Ton heat pump split system HVAC with a new 3.5-Ton American Standard HVAC located at the PCT 5 Office in the amount of $9,006 and amend the budget accordingly. **JONES/T.CRUMLEY**

16	60-66	Authorize JM Engineering, LLC to replace the failed Carrier HVAC system currently located at the PCT 4 office with a new 3.5-Ton American Standard HVAC system in the amount of $6,603 and amend the budget accordingly. **SMITH/T.CRUMLEY**
17	67-426	Approve specifications for IFB 2021-B10 Fischer Store Road @ RM 2325 and authorize Purchasing to solicit for proposals and advertise. **SHELL/BORCHERDING**
18	427-429	Authorize the Hays County Commissioner's Court to submit a request for funds to the Texas Comptroller's Office for unclaimed capital credits pursuant to the Texas Property Code, Section 74.602 and certify any available funding will be used per Texas Local Government Code, Section 381.004. **BECERRA/VILLARREAL-ALONZO**

ACTION ITEMS

ROADS

19	430-433	Discussion and possible action to call for a public hearing on July 13, 2021 to establish a 4-way stop at the intersection of Darden Hill Road, Sawyer Ranch Road, and the entrance for the new Cypress Springs Elementary School opening Fall 2021. **SMITH/BORCHERDING**
20	434-435	Discussion and possible action to call for a public hearing on July 13, 2021 to establish a One-Way traffic zone (eastbound only) for the eastern segment of Tiger Lane as a result of new school traffic routes for the Dripping Springs Middle School for Fall 2021. **SMITH/BORCHERDING**
21	436-441	Discussion and possible action to accept the maintenance bond rider extension #PB03016800273M in the amount of $32,600.00 until December 3, 2021 for Sunfield subd., Phase 3, Section 2. **JONES/BORCHERDING**
22	442-447	Discussion and possible action to accept the maintenance bond rider extension #PB03016800240M in the amount of $22,000.00 until December 3, 2021 for Sunfield subd., Phase 3, Section 4. **JONES/BORCHERDING**
23	448	Discussion and possible action to approve the selection of Pape Dawson Engineers, Inc. to perform Construction Engineering & Inspection (CE&I) services for the Fischer Store Road Safety Improvements project in Precinct 3; and to authorize staff and counsel to negotiate a Work Authorization under their On-Call CE&I contract. **SHELL/BORCHERDING**
24	449-455	Discussion and possible action to consider the acceptance of road construction & drainage improvements, accept the 2-year maintenance bond #107434401 in the amount of $135,377.94, and accept the 1-year revegetation bond #107434402 in the amount of $56,853.00 for Parten Ranch subd., Phase 5. **SMITH/BORCHERDING**
25	456-458	Discussion and possible action to authorize the County Judge to execute Contract Amendment No. 1 for a time extension on the Public Involvement Services Agreement between Hays County and Concept Development & Planning, LLC. for the RM 150 West Alignment project as part of the Hays County Road Bond Program. **SMITH/BORCHERDING**
26	459-461	Discussion and possible action to authorize the County Judge to execute Supplemental No. 8 in the amount of $6,002 to the Professional Services Agreement for General Engineering Consultant (GEC)/Program Management services with HNTB Corporation for the Hays County/TxDOT Partnership Program; an authorize a discretionary exemption pursuant to Texas Local Government Code Ch. 262.024(a)(4).**INGALSBE/BORCHERDING**
27	462	Discussion and possible action to authorize the selection of Pape-Dawson Engineers to provide engineering design services related to improvements to Beback Inn Road and authorize staff and counsel to negotiate a contract. **INGALSBE/BORCHERDING**
28	463	Discussion and possible action to call for a public hearing on July 13, 2021 to establish a 4-way stop at the intersection of Centerpoint Road and CR 266. **INGALSBE/BORCHERDING**

SUBDIVISIONS

29	464-472	PLN-1646-NP Anthem Phase 2 and 3 Preliminary Plan (153 Lots). Discussion and possible action to approve preliminary plan. **JONES/PACHECO**
30	473-475	PLN-1549-PC; Call for a Public Hearing on July 13th, 2021 to discuss approval of the final plat of the Pico Ranch 1, Replat. **SHELL/MACHACEK**

MISCELLANEOUS

31	476-477	Discussion and possible action to authorize the Office of Emergency Services to purchase Pix4Dmapper Software through Granite Defense Technologies related to UAV mapping software for disaster and recovery efforts. **BECERRA/MIKE JONES**

32	478-481	Discussion and possible action to approve a resolution providing comments to Groundwater Management Area (GMA) 9 regarding joint planning efforts to adopt desired future conditions. **SHELL**
33	482	Discussion and possible action to provide direction to staff and to identify a Hays County approach to the prospective allocation under the American Rescue Plan Act of 2021 (H.R. 1319). **SMITH**

EXECUTIVE SESSIONS

The Commissioners Court will announce it will go into Executive Session, if necessary, pursuant to Chapter 551 of the Texas Government Code, to receive advice from Legal Counsel to discuss matters of land acquisition, litigation, and personnel matters as specifically listed on this agenda. The Commissioners Court may also announce it will go into Executive Session, if necessary, to receive advice from Legal Counsel regarding any other item on this agenda.

34	483	Executive Session pursuant to Sections 551.071 and 551.072 of the Texas Government Code: consultation with counsel and deliberation regarding the purchase, exchange, lease and/or value of real property associated with the POSAC-recommended 2020 Parks and Open Space Bond Projects. Possible discussion and/or action may follow in open court. **INGALSBE**
35	484	Executive Session pursuant to Sections 551.071 and 551.072 of the Texas Government Code: consultation with counsel and deliberation to consider a resolution determining the necessity and authorizing the use of the County's power of eminent domain to acquire approximately 1.2596 acres in fee simple and 0.7610 acres of permanent utility easement from property located along Old Bastrop Hwy (CR266) south of Rattler Road, owned SHC Holdings, LLC, and which is required for the construction of the proposed CR 266 roadway improvements, and take other appropriate action (CR266 Centerpoint to Rattler, Parcel20). Possible action to follow in open court. **INGALSBE**
36	485	Executive Session pursuant to Section 551.071 of the Texas Government Code: consultation with counsel regarding the County Retiree Policy, including but not limited to Retiree Insurance. Deliberation and/or possible action may follow in Open Court. **BECERRA**

STANDING AGENDA ITEMS

The Commissioners Court utilizes Standing Agenda Items to address issues that are frequently or periodically discussed in court. This section allows the Court to open the item when a need for discussion arises.

37	Discussion and possible action related to the burn ban and/or disaster declaration. **BECERRA**
38	Discussion related to the Hays County inmate population, to include current population counts and costs. **BECERRA**
39	Discussion of issues related to the Hays County Jail, and the planning of projects pertaining to the public safety facilities needs within the County. Possible action may follow. **INGALSBE/CUTLER**
40	Discussion and possible action related to proposed bills in the 87th Regular Session of the Texas Legislature and to consider adoption of resolution(s) regarding proposed bills. The Court may opt to withdraw to Executive Session during this item to consult with legal counsel pursuant to Texas Government Code 551.071. **SMITH**
41	Update from the County Judge and staff regarding the Local Disaster Declaration and COVID-19. Possible discussion and action may follow. **BECERRA**

ADJOURNMENT

Posted by 5:00 o'clock P.M. on the 18th day of June, 2021

COMMISSIONERS COURT, HAYS COUNTY, TEXAS

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CLERK OF THE COURT

Hays County encourages compliance with the Americans with Disabilities Act (ADA) in the conduct of all public meetings. To that end, persons with disabilities who plan to attend this meeting and who may need auxiliary aids such as an interpreter for a person who is hearing impaired are requested to contact the Hays County Judge's Office at (512) 393-2205 as soon as the meeting is posted (72 hours before the meeting) or as soon as practical so that appropriate arrangements can be made. While it would be helpful to receive as much advance notice as possible, Hays County will make every reasonable effort to accommodate any valid request regardless of when it is received. Braille is not available.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Adopt a proclamation declaring July 2021 as Parks and Recreation Month in Hays County.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
PROCLAMATIONS/PRESENTATIONS	June 22, 2021	N/A

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
T. CRUMLEY	SHELL	N/A

SUMMARY

See attached proclamation.

PROCLAMATION DECLARING JULY AS
PARK AND RECREATION MONTH

WHEREAS, parks and recreation programs are an integral part of communities throughout this country, including Hays County; and

WHEREAS, our parks and recreation are vitally important to establishing and maintaining the quality of life in our communities, ensuring the health of all citizens, and contributing to the economic and environmental well-being of a community and region; and

WHEREAS, parks and recreation programs build healthy, active communities that aid in the prevention of chronic disease, provide therapeutic recreation services for those who are mentally or physically disabled, and improve the mental and emotional health of all citizens; and

WHEREAS, parks and recreation programs increase a community's economic prosperity through increased property values, expansion of the local tax base, increased tourism, the attraction and retention of businesses, and crime reduction; and

WHEREAS, parks and recreation areas are fundamental to the environmental well-being of our community; and

WHEREAS, parks and natural recreation areas improve water quality, protect groundwater, prevent flooding, improve the quality of the air we breathe, provide vegetative buffers to development, and produce habitat for wildlife; and

WHEREAS, our parks and natural recreation areas ensure the ecological beauty of our community and provide a place for children and adults to connect with nature and recreate outdoors; and

WHEREAS, the U.S. House of Representatives has designated July as Parks and Recreation Month; and

WHEREAS, Hays County recognizes the benefits derived from parks and recreation resources

NOW, THEREFORE, BE IT RESOLVED that the Hays County Commissioners Court does hereby recognize July as

PARK AND RECREATION MONTH IN HAYS COUNTY

ADOPTED THIS THE 22ND DAY OF JUNE, 2021

Ruben Becerra
Hays County Judge

Debbie Gonzales Ingalsbe
Commissioner, Pct. 1

Mark Jones
Commissioner, Pct. 2

Lon A. Shell
Commissioner, Pct. 3

Walt Smith
Commissioner, Pct. 4

ATTEST:

Elaine H. Cárdenas, MBA, PhD
Hays County Clerk

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Adopt a Proclamation recognizing the 25th year of operation of the Edwards Aquifer Authority.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
PROCLAMATIONS/PRESENTATIONS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
	INGALSBE	N/A

SUMMARY

The Edwards Aquifer Authority (EAA) is a regional water management agency that regulates the use of the aquifer through integrity, transparency, and respect for the resource and the people that use it. It became fully operational on June 28th, 1996, when the Texas Supreme Court unanimously overturned the district court ruling to find that the EAA Act was constitutional, thus, allowing the EAA to be created as a political subdivision of the state of Texas to manage, protect, and enhance the Edwards Aquifer region. The EAA Act is intended to preserve the Edwards Aquifer, while protecting the threatened and endangered species that dwell in it.

PROCLAMATION RECOGNIZING THE 25th YEAR OF OPERATION OF THE EDWARDS AQUIFER AUTHORITY

STATE OF TEXAS §
§
COUNTY OF HAYS §

WHEREAS, the Edwards Aquifer is the primary source of water for drinking and other purposes, including agricultural, municipal, and industrial, for over 2 million people throughout an eight-county region of South-Central Texas, including Hays County; and

WHEREAS, the Edwards Aquifer Authority (EAA) was created by the Texas Legislature through its enabling statute, the EAA Act, as a regional groundwater management agency with the mission to manage, enhance, and protect the Edwards Aquifer System; and

WHEREAS, by virtue of its creation, the EAA supplanted the former Edwards Underground Water District (EUWD) and began operations on June 28, 1996, as a groundwater conservation district unlike any other in the State of Texas; and

WHEREAS, over the past 25 years the EAA has helped achieve unprecedented certainty in the protection and preservation of the Edwards Aquifer through a combination of effective regulation, science-based programming, and the promotion of conservation practices; and

WHEREAS, the EAA seeks to build upon the success of its first quarter century of service through the implementation of the Next Generation of its mission, which is aimed at further building assurance in the sustainability, resilience and reliability of the Edwards Aquifer for all uses and users for generations to come; and

WHEREAS, the EAA's *Next Generation* efforts include the establishment and operation of a Field Research Park and Education Outreach Center, to further build understanding of the Edwards Aquifer and techniques and practices to protect and, where possible, enhance the quantity and quality of water within it.

NOW, THEREFORE, BE IT RESOLVED that the Hays County Commissioners Court does hereby recognize June 28, 2021 as the **25th YEAR OF OPERATION OF THE EDWARDS AQUIFER AUTHORITY** and looks forward to its next 25 years of operation, with sustained and positive impact on our community.

ADOPTED THIS THE 22nd DAY OF JUNE 2021

Ruben Becerra
Hays County Judge

Debbie Gonzales Ingalsbe
Commissioner, Pct. 1

Mark Jones
Commissioner, Pct. 2

Lon A. Shell
Commissioner, Pct. 3

Walt Smith
Commissioner, Pct. 4

ATTEST:

Elaine H. Cárdenas, MBA, PhD
Hays County Clerk

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Approve payment of County invoices.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR APPROVAL:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Auditor's Office	VILLARREAL-ALONZO	N/A

SUMMARY

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Approve the payment of United Healthcare claims.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR APPROVAL:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Auditor's Office	VILLARREAL-ALONZO	N/A

SUMMARY

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Approve the payment of the June 30, 2021 payroll disbursements in an amount not to exceed $4,025,000.00 effective June 30, 2021 and post totals for wages, withholdings, deductions and benefits on the Hays County website once finalized.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	N/A

LINE ITEM NUMBER

N/A

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Britney Richey, Hays County Treasurer	BECERRA	N/A

SUMMARY

Approve the June end of month payroll disbursements not to exceed $4,025,000.00.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize the execution of the FY 2021 Grant Agreement with the U.S. Department of Justice, Drug Enforcement Administration for overtime reimbursements related to the Sheriff's Office Organized Crime Drug Enforcement Task Force (OCDETF) and amend the budget accordingly.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	None

LINE ITEM NUMBER

001-618-99-069

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** MARISOL VILLARREAL-ALONZO

REQUESTED BY	SPONSOR	CO-SPONSOR
Sheriff Gary Cutler	INGALSBE	N/A

SUMMARY

The Sheriff's Office has received funding from the Drug Enforcement Administration to offset overtime costs for the deputy assigned to the OCDETF Program, specifically Operation Karma. No county match is required.

Attachment: OCDETF SW-TXW-0958

Budget Amendment
Increase Intergovernmental Revenue .4301 - $1,000
Increase Overtime Compensation .5302 - $1,000

ORGANIZED CRIME DRUG ENFORCEMENT TASK FORCES

FY 2021 Agreement

FOR THE USE OF THE STATE OR LOCAL OVERTIME AND AUTHORIZED EXPENSE/STRATEGIC INITIATIVE PROGRAM

DUNS #: 097494884

Federal Tax Identification #: 74-6002241

Rural* Y ✓ N ✓

DC#: X-32-

Amount Requested:

Amount requested should match the amount calculated on the Initial Funding Form, Page 2.

$ 1,000.00

Number of Officers Listed: 1

From: May 27, 2021
Beginning Date of Agreement

To: September 30, 2021
Ending Date of Agreement

OCDETF Investigation / Strategic Initiative Number: SW- TXW-0958

Operation Name: Operation Karma

Operation Zip Code(s): 78759

Federal Agency Investigations:
Number: M8-21-0016

State or Local Organization

Narcotics Supervisor: Joe Faulkner

Telephone Number: (512) 738-1020

E-mail Address: joe.faulkner@co.hays.tx.us

State or Local Organization Name:
Hays County Sheriff's Office

Address to receive OCDETF paperwork (no PO Boxes):

Attention:** Vickie Dorsett

1307 Uhland Road

San Marcos, Texas 78666

Sponsoring Federal Agency(ies):
Drug Enforcement Administration (DEA)

Sponsoring Federal Agency Group/Squad Supervisor: GS Dwayne T. Crawley

Telephone Number: (512) 344-4900

E-mail Address: dwayne.t.crawley@usdoj.gov

Please provide the name, telephone number, and email address for the **financial staff person at the State or Local Organization, who is directly responsible for the billing on the Reimbursement Request:**

Name: Vickie Dorsett

Telephone Number: (512) 393-2275

E-mail Address: vickie.dorsett@co.hays.tx.us

*This agreement can be classified as rural if the state & local agency's operating address or the location of the investigation produces a "Yes" response to both the CMS and FORHP Programs on the following website - https://www.ruralhealthinfo.org/am-i-rural

**Include the name of the person the form should be mailed to.

ORGANIZED CRIME DRUG ENFORCEMENT TASK FORCES

FY 2021 Agreement Initial Funding Form

FOR THE USE OF THE STATE OR LOCAL
OVERTIME AND AUTHORIZED EXPENSE/STRATEGIC INITIATIVE PROGRAM

OCDETF Case #: SW-TXW-0958

Amount Requested: $ 1,000.00

This amount should be entered on Page 1 of the Reimbursable Agreement.

Please note: The amount requested should cover your active investigation plan from the agreement start date. Proactive funding analysis will be conducted to determine the need for additional funds throughout the life of the agreement.

Agreement Activity: *(Please check all that apply)*

- [x] Surveillance
- [x] Takedown
- [ ] Trial/Court
- [x] Wire: [ ] Approved [ ] Pending
- [ ] Other

If Other, please describe the type of investigative activity the State & Local Agency will be participating in:

Factors to Consider when Determining the Initial Agreement Amount:

Average Officer Overtime Rate:	Estimated overtime hours for your active investigation plan, from the agreement start date:	Prior year agreement spending, if any:
$ 56.29	71.00	$ 0.00

Please provide a brief explanation on how the initial funding amount was determined, if other factors were considered:

Hays County Sheriff's Office supplies investigative support and surveillance units for the wiretap investigations. They also provide manpower support for the monitoring of the wire intercepts, surveillance and take-downs.

This Agreement is between the above named State or Local Law Enforcement Organization and the Organized Crime Drug Enforcement Task Forces (OCDETF) Program. This Agreement shall be effective when signed by an authorized State or Local Organization official, the sponsoring Federal Agency Special Agent-In-Charge, the sponsoring Agency Regional OCDETF Coordinator, the Assistant United States Attorney Regional OCDETF Director, and the OCDETF Executive Office.

1. It is agreed that the State or Local Law Enforcement officers named on this Agreement will assist in OCDETF Investigations, Strategic Initiatives and prosecutions as set forth in the Organized Crime Drug Enforcement Task Forces State or Local Overtime and Authorized Expense/Strategic Initiative Programs, Policies and Procedures Manual, Fiscal Year 2021.

2. No individual Agreement with a State or Local organization may exceed $25,000, and the cumulative amount of OCDETF State and Local overtime monies that may be expended on a single OCDETF Investigation or Strategic Initiative in a single fiscal year may not exceed $50,000 without express prior approval from the OCDETF Executive Office. The OCDETF Executive Office will entertain requests to exceed these funding levels in particular cases. Please submit a written request including justification approved by the AUSA Regional Director to the OCDETF Budget Officer/Deputy Budget Officer when seeking to exceed the above stated funding levels.

3. Each Reimbursable Agreement will be allowed no more than six (6) modifications per year. In addition, if the funds for a particular Agreement are completely deobligated with the intention of closing that Agreement, it will not count as a modification for purposes of this policy. These amendments must be transmitted by a memorandum approved and signed by the AUSA Regional OCDETF Director or designee for the region and sent to the OCDETF Executive Office.

4. If an Agreement does not have any activity during the last ninety (90) days, the funds shall automatically be deobligated. The OCDETF Executive Office will assist with the monitoring of the aging Agreements. Further, if a State or Local Organization indicates that it is no longer performing work under a particular Agreement, the State or Local Overtime and Authorized Expense/Strategic Initiative Programs, Policies and Procedures Manual requires that a modification memorandum identifying the amount to be deobligated be submitted to the OCDETF Executive Office as soon as possible after determining that no work is being performed.

5. The State or Local Law Enforcement Organization agrees to provide experienced drug Law Enforcement officers who are identified in this Agreement to work on the specified OCDETF Investigation or Strategic Initiative. Any change in Law Enforcement officers assigned must be agreed to by all approving officials.

6. Officers who are not deputized shall possess no Law Enforcement authority other than that conferred by virtue of their position as a commissioned officer of their parent Agency.

7. Officers who are deputized may possess Federal Law Enforcement authority as specified by the Agency affording the deputation.

8. Any State or Local officers assigned to an OCDETF Investigation or Strategic Initiative in accordance with this Agreement are not considered Federal employees and do not take on the benefits of Federal employment by virtue of their participation in the Investigation or Strategic Initiative.

9. OCDETF and the sponsoring Federal Law Enforcement Agency(ies) for the approved OCDETF Investigation or Strategic Initiative will provide to the assigned State or Local officers the clerical, operational and administrative support that is mutually agreed to by the parties in this Agreement.

10. Officers assigned to OCDETF Investigations or Strategic Initiatives should work full-time on the Investigation(s) or Strategic Initiative(s) in order to be paid overtime. In order to satisfy the "full-time" expectation, a Law Enforcement officer should work forty (40) hours per week or eight (8) hours per day on a single or multiple OCDETF Investigation(s) or Strategic Initiative(s). Any established exceptions or waivers to this definition shall be requested by the Regional Coordination Group and attached as Addendum A to the Agreement. [The parent State or Local Organization must pay the base salary of its officers. In the event officers must work overtime on an OCDETF Investigation or Strategic Initiative, the OCDETF Program will reimburse the parent State or Local Law Enforcement Organization for a limited amount of those overtime costs.] The Organization is responsible for paying its Law Enforcement officer(s) for their overtime, travel and per diem expenses. To ensure proper and complete utilization of OCDETF overtime and expense allocations, reimbursement claims must be submitted monthly on the OCDETF Reimbursement Request Form. The OCDETF Executive Office may refuse payment on any reimbursement request that is not submitted to the OCDETF Regional Coordination Group within thirty (30) days of the close of the month in which the overtime was worked.

11. It is the responsibility of the State or Local Organization to retain and have available for inspection sufficient supporting documentation for all regular hours and overtime hours worked towards a specific OCDETF case. Officers' timesheets must reflect work towards a specific OCDETF case and must be reviewed and signed by an authorized State or Local official.

12. Analysis of reimbursement claims by the Regional Coordination Group may result in a modification of the obligation of funds contained within this Agreement as well as the time period covered. The Organization affected by any such modification will receive a memo notifying them of the changes.

13. Overtime payments, including all other non-OCDETF Federal sources (such as Safe Streets, HIDTA, IRS, ICE, FEMA, etc.) may not, on an annual per person basis, exceed 25% of the current approved Federal salary rate in effect at the time the overtime is performed. The State or Local Organization is responsible for ensuring that this annual payment is not exceeded. The Executive Assistant/OCDETF Program Specialist will monitor these payments via MIS and communicate to the Federal Agency Regional OCDETF Coordinators who provide status updates to any officer approaching the threshold.

14. The overtime log must be attached to the reimbursement request when submitting the monthly invoices. The Sponsoring Federal Agency Supervisory Special Agent and the State or Local official authorized to approve the Reimbursement Request must certify that only authorized expenses are claimed, the regular hours requirement is satisfied, and that overtime has not exceeded 25% of the current Federal salary rate in effect at the time the overtime was worked.

15. Under no circumstances will the State or Local Organization charge any indirect costs for the administration or implementation of this Agreement.

16. The State or Local Organization shall maintain complete and accurate records and accounts of all obligations and expenditures of funds under this Agreement for a period of six (6) years and in accordance with generally accepted accounting principles to facilitate inspection and auditing of such records and accounts.

17. The State or Local Organization shall permit examination and auditing by representatives of the OCDETF Program, the sponsoring Federal Agency(ies), the U.S. Department of Justice, the Comptroller General of the United States, and/or any of their duly-authorized agents and representatives, of any and all records, documents, accounts, invoices, receipts, or expenditures relating to this Agreement. Failure to provide proper documentation will limit State or Local Law Enforcement Organizations from receiving OCDETF funding in the future.

18. The State or Local Organization will comply with Title VI of the Civil Rights Act of 1964 and all requirements applicable to OCDETF Agreements pursuant to the regulations of the Department of Justice (see, e.g., 28 C.F.R. Part 42, Subparts C and G; 28 C.F.R. 50.3 (1991)) relating to discrimination on the grounds of race, color, sex, age, national origin or handicap.

19. This Agreement may be terminated by any of the parties by written notice to the other parties ten (10) business days prior to termination. Billing for outstanding obligations shall be received by OCDETF within thirty (30) days of the notice of termination.

20. The Debt Collection Improvement Act of 1996 requires that most payments made by the Federal government, including vendor payments, must be made by electronic funds transfer (EFT). In accordance with the act, all OCDETF reimbursement payments will be issued via EFT. Participants are required to register in SAM.gov to receive reimbursements; registration information will be provided upon request. In certain circumstances the OCDETF Executive Office may make exceptions for Organizations that are unable to accept this form of payment, however, such Organizations must include written justification in the addendum of each new Agreement.

21. All changes made to the original Agreement must be approved by the OCDETF Executive Office and initialed by the Executive Assistant/OCDETF Program Specialist of the Regional Coordination Group making the revision. The AUSA Regional OCDETF Director or designee must initial all funding changes.

22. The Regional Coordination Group is responsible for identifying and implementing any additional policy requirements, as needed, for its specific region. Those regional policies will be documented in the Addendum B and attached to the approved Agreement. The Organizations are agreeing to adhere to these additional requirements and must have written approval by the Regional Coordination Group for any exceptions to the regional policies.

23. Restrictions: Fringe benefits (such as retirement, FICA, or other expenses) are NOT to be included in overtime payment. Auxiliary educational benefits are also NOT to be included in overtime payment. Reimbursement of overtime payment is based solely on the authorized overtime rate of each participating officer listed in the Agreement. Under no circumstances may a State or Local agency include any administrative fees for the processing of overtime. Additionally, officers are not eligible for reimbursement of compensation time earned in lieu of overtime payment. OCDETF will only reimburse an actual $ amount paid to the officer for overtime worked, any additional benefit (including compensation time) will NOT be reimbursed.

This Agreement is not a contract or obligation to commit Federal funds in the maximum amounts projected. Funding allocations for the time period set forth and agreed to herein represent projections only and are based upon consultation between the sponsoring Federal Agency and the State or Local Law Enforcement Organization. They are, therefore, subject to modification by OCDETF based upon the progress and needs of the OCDETF Investigation or Strategic Initiative. Additionally, resources are contingent upon the availability of funds per the approval and signature of the OCDETF Executive Office obligating authority. The OCDETF Executive Office will approve and certify that all the terms and conditions of the Agreement have been met.

Each Agreement must be approved and signed by a State or Local Law Enforcement Organization official who has supervisory authority over, and is authorized to assign, the participating Law Enforcement officers to the OCDETF Investigation or Strategic Initiative.

Approved By: _____

Authorized State or Local Official *Title* *Date*

_____

Print Name

Approved By: _____

Sponsoring Federal Agency Special Agent in Charge or Designee *Date*

_____

Print Name

Approved By: _____

Sponsoring Agency Regional OCDETF Coordinator *Date*

Approved By: _____

Assistant United States Attorney Regional OCDETF Director/Program Specialist *Date*

Funds are encumbered for the State or Local Organization overtime costs and authorized expense/Strategic Initiative Programs specified above. **Subject to availability of funds**.

Approving Official: _____

OCDETF Executive Office *Date*

ORGANIZED CRIME DRUG ENFORCEMENT TASK FORCES

STATE OR LOCAL LAW ENFORCEMENT OFFICERS ASSIGNED TO PARTICIPATE IN THE STATE AND LOCAL OVERTIME AND AUTHORIZED EXPENSE/STRATEGIC INITIATIVE PROGRAMS

State or Local Organization: Hays County Sheriff's Office

OCDETF Investigation / Strategic Initiative Number: Operation Karma / SW-TXW-0958

The Law Enforcement officers listed below will assist with the above identified OCDETF Investigation or Strategic Initiative. Any modification of the list of Law Enforcement officers must be agreed to in writing by all of the parties to this Agreement, made a part of the Agreement, and forwarded to the OCDETF Executive Office.

	NAME	TITLE/RANK	DOB
1.	Michael Bishop	Deputy	10/9/79
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

OCDETF Officer Form Continued

State or Local Organization: Hays County Sheriff's Office

OCDETF Investigation / Strategic Initiative Number: Operation Karma / SW-TXW-0958

The Law Enforcement officers listed below will assist with the above identified OCDETF Investigation or Strategic Initiative. Any modification of the list of Law Enforcement officers must be agreed to in writing by all of the parties to this Agreement, made a part of the Agreement, and forwarded to the OCDETF Executive Office.

NAME	TITLE/RANK	DOB
11.		
12.		
13.		
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32.		

Definition of "Full-Time Participation" Exemption

The Southwest Region Coordination Group State and Local OVERTIME POLICY For purposes of reimbursing OCDETF overtime claims, the following applies:

1. Work 40 hours per week on a single OCDETF investigation or multiple OCDETF investigations; or
2. If the officer/agent is not assigned full time to a task force working exclusively OCDETF investigations, then the officer/agent is required to work 8 hours regular time in a given day toward the OCDETF investigation before claiming any overtime;
or
3. To accommodate exigent unforeseen circumstances when effective management of dedicated resources cannot handle a particular enforcement action, overtime hours incurred may be reimbursed without the officer/agent having worked an 8 hour shift dedicated to the investigation, provided that the officer/agent is diverted from normal shift work to accommodate the need at the request of a supervisor of a federal agency.
Reimbursement under such circumstances will be limited to the overtime incurred in response to the unforeseen exigent circumstances, that is, when the enforcement action is complete, no additional overtime will be reimbursed without compliance with 1 or 2 above. Under no circumstances will more than 24 overtime hours be reimbursed under this provision. The federal agency supervising the enforcement action should notify the appropriate Regional Coordinator of the enforcement action and overtime hours incurred by the State and Local Department(s) promptly.
Exemptions will be considered on a case by case basis per individual incident. All approvals are subjected to the availability of funds.

Any Other Exceptions or Justifications Agreement – This form should not be altered. Any changes/additions must be submitted in writing and pre-approved by OCDETF Regional Coordinator.

ADDENDUM B
TO STATE AND LOCAL OVERTIME AGREEMENT
STRATEGIC INITIATIVE FUNDING REQUEST

Note: The following ONLY pertains to Strategic Initiative Funding Requests

State and Local agencies acknowledge that all proposed expenditures requested under State and Local Overtime funds are conditioned upon the Southwest Regional Coordination Group (RCG) approval concurrent with any pre-approval process by the OCDETF Executive Office before funding is initiated.

Furthermore, the requesting State and Local agencies acknowledge that any approval process from the State and Local Overtime funds are considered reimbursable expenditures.

Any State and Local agency seeking Strategic Initiative Funding should initially contact the federal agency point of contact. The federal agency point of contact will coordinate further responses with the RCG.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize the Constable Pct. 4 Office to accept a $4,500 donation from Steve Venski, Billy Brandenberger, and William Cariker for the purchase of law enforcement equipment and supplies and amend the budget accordingly.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	$0

LINE ITEM NUMBER

001-638-00]

AUDITOR USE ONLY

AUDITOR COMMENTS:
Requires Hays County Purchasing Policy waiver for three quotes.

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** MARISOL VILLARREAL-ALONZO

REQUESTED BY	SPONSOR	CO-SPONSOR
Ron Hood, Constable, Pct. 4	SMITH	N/A

SUMMARY

The Hays County Constable, Pct. 4 Office has received a contribution to purchase five (5) suppressors for patrol rifles and other law enforcement supplies as needed.

In the long term, suppressors provide an important health benefit in reducing hearing loss. Noise-induced hearing loss has long been identified as a problem in law enforcement, with gunfire being an obvious cause. Suppressed weapons below the 140-decibel danger threshold are much less likely to damage the eardrum or middle ear when fired. Because of the health benefits, Mr. Venski, Brandenberger, and Cariker are donating the funds for the specific purpose of this office to purchase suppressors that meet certain standards to be mounted on County issued patrol rifles. The donors reviewed quotes with the Constable and submitted the donation value to meet the 777X, LLC quote to ensure the donated funds were utilized for quality suppressors. Therefore, the Constable is requesting a purchasing waiver requiring three quotes in order to meet the guidelines of the donors as set forth. The remaining donation for law enforcement supplies will be purchased at the discretion of the Constable following purchasing policy requirements.

Budget Amendment: Increase Contributions .4610 - ($4,500)
Increase Law Enforcement Eqpt_Ops .5717_400 - $3,700 - (5 Silencer Dead Air suppressors)
Increase Law Enforcement Supplies .5206 - $800

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Approve Election Fees for election services provided.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	0.00

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jennifer Anderson	INGALSBE	N/A

SUMMARY

Recommendation to amend the Alternate Judge pay to $12/hr. and the poll worker pay to $11/hr. due to increased responsibilities associated with the position. In addition, it's recommended to amend the election worker training pay to $11/hr. as an incentive to workers for additional training to comply with legislative changes. All recommended revisions will make the pay consistent within the overall poll worker pay structure.

THE COUNTY OF HAYS

Elections/Voter Registration
712 S. Stagecoach Trail, Ste. 1045
San Marcos, TX 78666-7751

Phone: (512) 393-7310
Fax: (512) 393-7315
www.co.hays.tx.us

Jennifer Anderson
Elections Administrator/Voter Registrar

ELECTION FEES

EQUIPMENT	**Fees**
Programming/Testing: $ **SEE ATTACHED (Page 2)**	
Equipment Rental:	**$175 ($5)**
Public Notice for Testing:	**$150**
Election Kits:	**$175**
Equipment Transport (Truck Rental)	**Actual Cost**
Election Judges	**$12/hr**
Alternate Judges	**$12/hr**
Election Clerks	**$11/hr**
Early Voting Clerks	**$12/hr**
Judge Delivery Fee	**$25 ($15)**
Central Count Personnel	**$12/hr**
Early Voting Ballot Board	**$12/hr**
Training Fee	**$11/hr**
Security Central Count	**$20/hr**
Tabulation Supervisor	**$25/hr**

VOTING HISTORY	
General Elections (All Pcts) (Hard Copy)	**$15.00**
General Elections (All Pcts – emailed/disk/Dropbox)	$**5.00**

MISCELLANOUS	
Copies (per page)	**$ .10**
CD-RW Disk	**$1 .00**

Programming Fees

Proposed Programming Changes: (Pricing includes programming, audio, proofs, testing, ballot layout and mail ballot processing)

1 to 4	**$ 500.00**	**$25.hr (Both English and Spanish) - Audio**
5-10	**$1,200.00**	**$25.hr (Both English and Spanish) - Audio**
11-20	**$1,250.00**	**$25.hr (Both English and Spanish) - Audio**

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize On-Site Sewage Facility Permit for the 2 barndominiums and 2 RV spaces located at 710 Bell Springs Rd, Dripping Springs, Texas 78620.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Marcus Pacheco, Director of Development Services	SMITH	N/A

SUMMARY

Kenneth Hepburn of Back to the Land LLC is proposing an On-Site Sewage System to 2 barndominiums and 2 RV spaces. This 26.243 acre parcel of land will be served by a private well for a potable water supply.
The system designer, Derrick Lormand, R.S., has designed a standard treatment system. After treatment, the effluent will be dispersed via standard disposal for a maximum daily rate of 450 gallons.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Approve out of state travel, utilizing the Sheriff's Office Continuing Education Funds, for Fleet Maintenance Supervisor Martin Gonzales to attend the Harley Davidson Motor Company's Police Technical Training in Orlando, Florida on September 13-30, 2021.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	$5,800.00

LINE ITEM NUMBER

001-618-00.5551

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
CUTLER	INGALSBE	N/A

SUMMARY

Out of state travel is needed to send Fleet Maintenance Supervisor Martin Gonzales to attend the Harley Davidson Motor Company's Police Technical Training in Orlando, Florida on September 13-30, 2021.
Harley-Davidson University along with their partners at MMI work to bring the best possible training to technicians and officers regularly employed by law enforcement agencies using Harley-Davidson Police Motorcycles. Course curriculum is designed to align Police Technical Training classes with the professional Harley-Davidson training received by dealership technicians. Students will be evaluated on their ability to perform the required procedures. This training will be beneficial for the Sheriff's Office and the Constable's Office, as both agencies use Harley Davidson Motorcycles. This training was originally approved by Commissioner's Court on January 12, 2021, but the class was moved to another state with different dates.
Funding for registration and travel expenses including hotel, airfare, and per diem fees will be paid for out of the Sheriff's Office Continuing Education Fund.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize On-Site Sewage Facility Permit for an office building at 2710 W Hwy 290, Dripping Springs, TX, 78620.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Marcus Pacheco, Director of Development Services	SMITH	N/A

SUMMARY

Greg Bland is proposing an On-Site Sewage System for an office building to accommodate a maximum of 15 employees. This is located in the Robinson Ranch Subdivision, Block 1, Lot 1, and will be served by a private well for a potable water supply. The system designer, Stephen Jetton, R.S., has designed a proprietary treatment system with flow equalization. After treatment, the effluent will be dispersed via surface application for a maximum daily rate of 300 gallons.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize On-Site Sewage Facility Permit for a duplex located at 701 Horace Howard Lane, San Marcos, Texas 78666.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Marcus Pacheco, Director of Development Services	INGALSBE	N/A

SUMMARY

Chad & Karen Crawford are proposing an On-Site Sewage System for a new duplex. This 10.039 acre tract of land will be served by a public water supply for a potable water supply. The system designer, Clifford Conner, R.S., has designed a standard treatment system. After treatment, the effluent will be dispersed via evapotranspiration beds for a maximum daily rate of 480 gallons.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Approve Utility Permits.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding	JONES	SHELL

SUMMARY

Permit #:	Road Name:	Utility Company:
TRN-2021-4395-UTL	800Blk Mathias Lane (Trench)	Grande (Telecom)
TRN-2021-4396-UTL	5 Cripple Creek (Bore)	PEC (Electric)

Hays County Transportation Department

2171 Yarrington Rd, Suite 200, Kyle Texas 78640
(P) 512-393-7385 (Web) www.hayscountytx.com

UTILITY PERMIT APPROVAL LETTER

** Notification must be given **IN WRITING** at least 24 hours before work begins and proper traffic control must be implemented throughout the work zone. **

The utility company or any of its representatives, engineers, contractors, or authorized agents agree to use Best Management Practices to minimize erosion and sedimentation resulting from the proposed installation AND will insure that traffic control measures complying with applicable portions of the Texas Manual of Uniform Traffic Control Devices will be installed and maintained during installation.

General Special Provisions:

1. Construction of this line will begin on or after .

Utility Company Information:

Name: Grande Communications
Address: 13505 Burnet Rd Austin TX
Phone:
Contact Name: Mario Luna

Engineer / Contractor Information:

Name: S&S Cable
Address: 1900 Howard Ln B3 Pflugerville TX 78660
Phone:
Contact Name: Troy Sylvester

Hays County Information:

Utility Permit Number: TRN-2021-4395-UTL
Type of Utility Service: Telecom
Project Description:
Road Name(s): Mathias Ln, , , , , , ,
Subdivision:
Commissioner Precinct:

What type of cut(s) will you be using ? ☐ Boring ☒ Trenching ☐ Overhead ☐ N/A

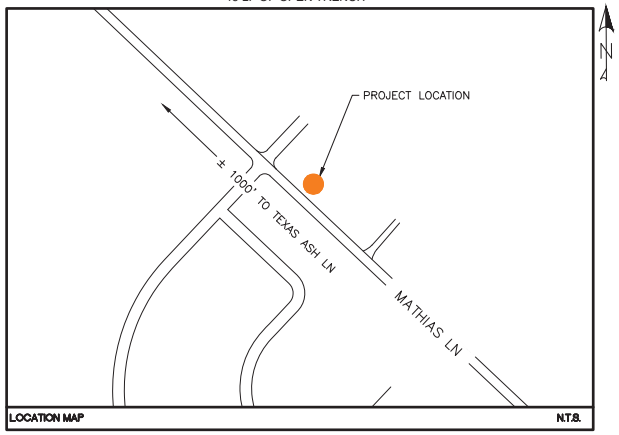
Authorization by Hays County Transportation Department
The above-mentioned permit was approved in Hays County Commissioners Court on .

	Engineering Technician	06/15/2021
Signature	Title	Date

SHEET INDEX:

GRANDE COMMUNICATIONS
700584204
SOUTHGROVE
BURIED IMPROVEMENTS

15 LF OF OPEN TRENCH



LOCATION MAP N.T.S.

PROJECT INFORMATION:

STREET ADDRESS:
800BLK MATHIAS LN
KYLE, TX 78640

OWNER:
MARIO LUNA
GRANDE COMMUNICATIONS
13505 BURNET RD
AUSTIN, TX 78727
PERMITS@MYGRANDE.COM
210-320-3125

CONTACT:
BRENT GURLEY, SR PROJECT MANAGER
LJA ENGINEERING, INC
2700 LA FRONTERA, SUITE 150
ROUND ROCK, TX 78681
BGURLEY@LJA.COM
512-439-4758

SUBMITTAL PREPARED BY:

LJA Engineering, Inc.
FRN - F-1386

2700 LA FRONTERA BLVD, STE 150
ROUND ROCK, TX 78681
512-767-7300
TBPE FIRM REGISTRATION: F-1386

CONTACT:
STUART COWELL, P.E.
PHONE:
(512) 439-4717

SUBMITTED FOR APPROVAL BY:

ENGINEER OF RECORD 6/3/2021 DATE

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

811 Know what's below. Call before you dig.

PRINTED: 6/3/2021 1:53 PM E:\2468_Projects\2468-1000s OSPE\1100s\2468-1156 Southgrove - Phases 2,3,4,&5\CADD\2468-1156 Southgrove - Phases 2,3,4,&5_JG.dwg SAVED: 6/3/2021 1:52 PM SAVED BY: Sandoma USER: Sergio Sandoma


Riser pole
Conduit
LCC Cabinet
17+50

Hays County Transportation Department
2171 Yarrington Rd, Suite 200, Kyle Texas 78640
(P) 512-393-7385 (Web) www.hayscountytx.com

UTILITY PERMIT APPROVAL LETTER

** Notification must be given **IN WRITING** at least 24 hours before work begins and proper traffic control must be implemented throughout the work zone. **

The utility company or any of its representatives, engineers, contractors, or authorized agents agree to use Best Management Practices to minimize erosion and sedimentation resulting from the proposed installation AND will insure that traffic control measures complying with applicable portions of the Texas Manual of Uniform Traffic Control Devices will be installed and maintained during installation.

General Special Provisions:

1. Construction of this line will begin on or after 6/16/2021 .

Utility Company Information:

Name: PEC
Address: P.O. Box 1 Johnson City TX
Phone:
Contact Name:

Engineer / Contractor Information:

Name: Canyon Construction
Address: 3736 Bee Cave Rd. #1-127 West Lake Hills 78746
Phone: 5129154545
Contact Name: Calvin Ates

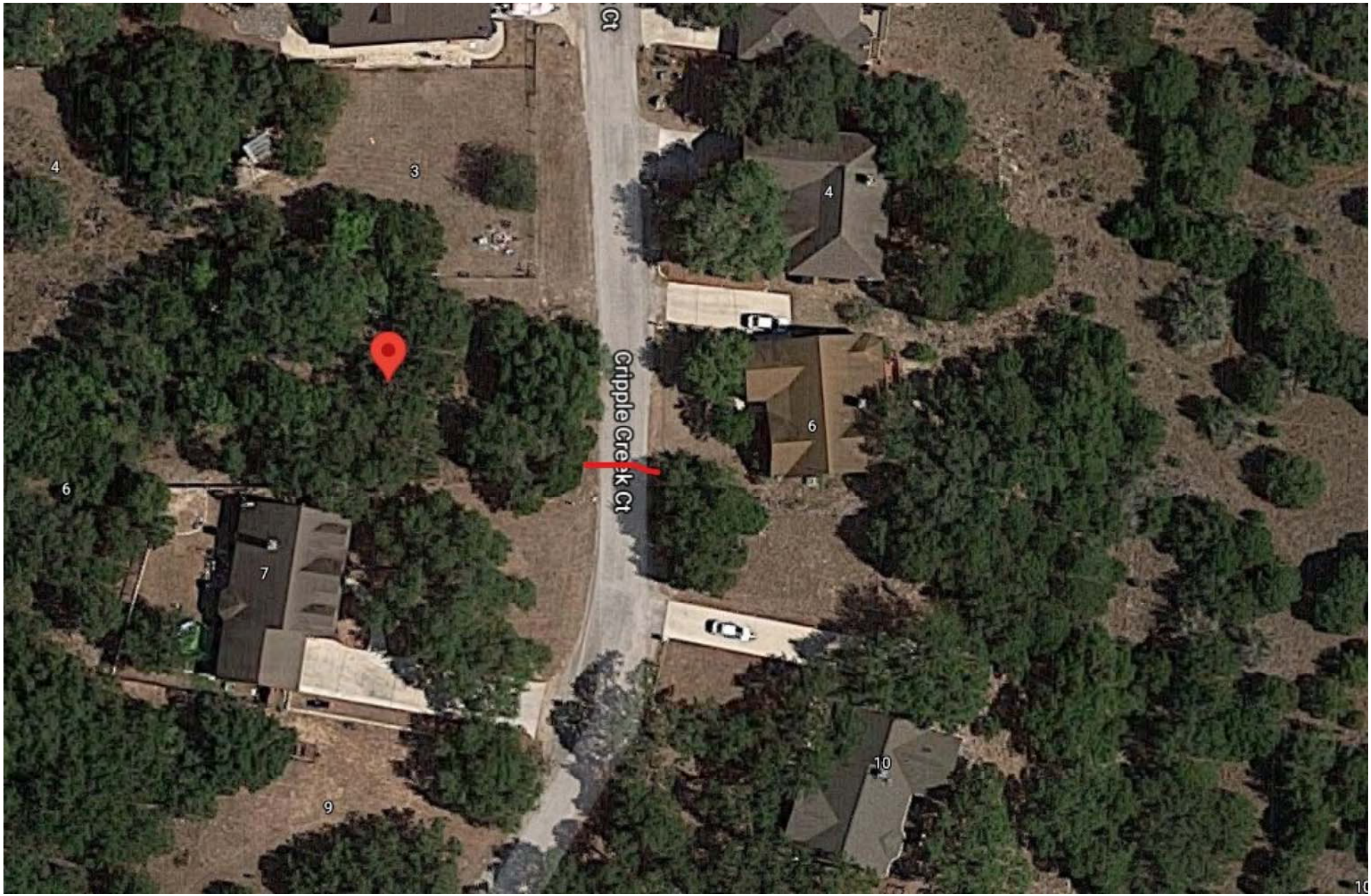
Hays County Information:

Utility Permit Number: TRN-2021-4396-UTL
Type of Utility Service: Electrical
Project Description:
Road Name(s): Cripple Creek Court, , , , , , ,
Subdivision:
Commissioner Precinct:

What type of cut(s) will you be using ? ☒ Boring ☐ Trenching ☐ Overhead ☐ N/A

Authorization by Hays County Transportation Department
The above-mentioned permit was approved in Hays County Commissioners Court on .

	Engineering Technician	06/16/2021
Signature	Title	Date


Cripple Creek Ct
Ct
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AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize the County Judge to execute a Software License Agreement with BOLDplanning, Inc. related to the Continuity of Operations (COOP) and Emergency Operations Plans (EOP) annual licensing for county wide planning.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	$18,000 annually

LINE ITEM NUMBER

001-656-00.5429

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: YES **AUDITOR REVIEW:** MARISOL VILLARREAL-ALONZO

REQUESTED BY	SPONSOR	CO-SPONSOR
Mike Jones	BECERRA	N/A

SUMMARY

This Office of Emergency Services currently utilizes BOLDplanning for county wide EOP's and COOPS. This renewal agreement allows the vendor to continue to make the Continuity of Operations Planning and Emergency Operations Planning modules of its BOLDplanning.com online software platform ("Licensed Software") available to Hays County. Funds were budgeted during the budget process for this license agreement.

Attachment: BOLDplanning Software License Agreement
BOLDplanning Quote
US General Services Administration (GSA) Contract #GS-35F-0301Y

480 Duke Drive; Suite 130
Franklin, TN 37067
(615) 469-5558
www.BOLDplanning.com

HaysCountyPlanning.com
Software License Agreement
GSA #GS-35F-0301Y

This Software License Agreement ("**Agreement**") is entered into this 22nd day of June, 2021, and effective as of October 1, 2021 ("**Effective Date**") by and between **BOLDplanning, Inc.**, a Tennessee corporation having its principal place of business at 480 Duke Drive, Ste 130; Franklin, TN 37067 ("**BOLDplanning**") and **Hays County Office of Emergency Services** having its principal place of business at 712 South Stagecoach Trail, Ste. 1071; San Marcos, TX 78666 ("**Customer**").

For good and valuable consideration, the receipt and sufficiency of which is acknowledged, the parties agree as follows:

1. **Provision of Service.** BOLDplanning shall continue to make the Continuity of Operations Planning and Emergency Operations Planning modules of its BOLDplanning.com online software platform ("Licensed Software") available to Customer pursuant to the terms and conditions set forth in this Agreement and further defined in Exhibit A, attached hereto and incorporated herein. During the term of this Agreement, (i) the Service shall perform materially in accordance with the User Guide, and (ii) the functionality of the Service will not be materially decreased from that available as of the Effective Date. Customer agrees that its purchase of subscriptions is not contingent upon the delivery of any future functionality or features nor is it dependent upon any oral or written public comments made by BOLDplanning with respect to future functionality or features.

2. **Proprietary Rights.**

2.1 **Reservation of Rights.** Customer acknowledges that in providing the Licensed Software, BOLDplanning utilizes (i) the BOLDplanning name, the BOLDplanning logo, the BOLDplanning domain names, the product and service names associated with the Licensed Software, and other trademarks and service marks; (ii) certain audio and visual information, documents, software and other works of authorship; and (iii) other technology, software, hardware, products, processes, algorithms, user interfaces, know-how and other trade secrets, techniques, designs, inventions and other tangible or intangible technical material or information (collectively, "**BOLDplanning IP**") and that the BOLDplanning IP is covered by intellectual property rights owned or licensed by BOLDplanning (collectively, "**BOLDplanning IP Rights**"). Other than as expressly set forth in this Agreement, no license, or other rights in or to the BOLDplanning IP or BOLDplanning IP Rights are granted to Customer, and all licenses and rights are expressly reserved.

2.2 **License Grant.** BOLDplanning grants Customer a worldwide, non-exclusive, non-transferable, non-sublicensable right to access and use the HaysCountyPlanning.com Licensed Software for COOP and EOP, including all departments within the Hays County organization, for a one (1) year period beginning October 1, 2021 and ending September 30, 2022 for which a payment of $18,800.00 is remitted and an optional three (3,) individual, one (1) year renewals with $18,800.00 being remitted annually.

(a) In the event the Hays County Commissioners Court does not allocate adequate funding for this Agreement in any fiscal year, this Agreement shall automatically terminate on October 1st of such fiscal year.

(b) The three (3), individual, one (1)-year renewals mentioned above shall be automatic unless Customer gives thirty (30) days' notice, prior to each individual renewal period, that it does not intend to renew the Agreement.

2.3 **Restrictions.** Customer shall not (i) modify, copy or create derivative works based on the Service or BOLDplanning IP; (ii) create Internet "links" to or from the Service, or "frame" or "mirror" any content forming part of the Service, other than on Customer's own intranets or otherwise for its own internal business purposes; or (iii) disassemble, reverse engineer, or decompile the Service or BOLDplanning IP, or access it in order to (A) build a competitive product or service, (B) build a product or service using similar ideas, features, functions or graphics of the Service, or (C) copy any ideas, features, functions or graphics of the Service.

2.4 Customer Data. As between BOLDplanning and Customer, all Customer Data is owned exclusively by Customer. Customer Data shall be considered Confidential Information subject to the terms of this Agreement. BOLDplanning may access Customer's User accounts, including Customer Data, solely to respond to service or technical problems or at Customer's request. Customer grants BOLDplanning an unrestricted, royalty-free, irrevocable license to maintain and distribute aggregated compilations of Customer Data ("**Aggregated Data**"). The Aggregated Data will not reveal any personal information or the identity of Customer.

2.5 Suggestions. BOLDplanning shall have a royalty-free, worldwide, perpetual license to use or incorporate into the Service any suggestions, ideas, enhancement requests, feedback, recommendations, or other information provided by Customer or its Users relating to the operation of the Service.

2.6 Governing Law and Venue. This Agreement shall be governed by the laws of the State of Texas. Venue for any claims or controversies arising from or related to this Agreement shall lie in the District Courts of Hays County, Texas or in the United States District Court, Western District of Texas—Austin Division, if applicable.

2.7 Counterparts. This Agreement may be executed in counterparts, which taken together shall form one legal instrument.

IN WITNESS WHEREOF, the parties' authorized signatories have duly executed this Agreement as of the 22nd day of June, 2021:

BOLDPLANNING, INC.

By: _____

Print Name: Fulton Wold

Title: Owner/Founder

Date: _____

CUSTOMER

By: _____

Print Name: _____

Title: _____

Date: _____

EXHIBIT A
Scope of Work Attachments

The BOLDplanning.com COOP & EOP Platform

BOLDplanning.com focuses on the following key strengths:

- Keeping our system easy-to-use for planners of all levels
- Maintaining the entire technical infrastructure
- Customizing the plan elements to match the specific requirements of each organization
- Providing best-practice guidance embedded in the system for ongoing compliance with current regulations and standards

The BOLDplanning.com Platform is the centralized data collection tool that makes plan standardization, plan review and plan monitoring possible. The platform is deployed under the Application Service Provider (ASP) model – more commonly known as Software-as-a-Service (SaaS) or the Cloud.

Our team manages every technical aspect related to the system for the life of the project including hosting, backups, system redundancy, disaster recovery planning, system maintenance and technical support. Access to the Internet is the only requirement for using this system. The following details the technical specifications for this standard hosted service:

- Utilizes standard Microsoft Operations system and SQL Server
- Compatible with Microsoft Word and Excel
- Supports SSL browser encryption, complex passwords and AES-256 data encryption at-rest for data security
- Hosted in a professional secure data center on dedicated servers
- Data backup conducted nightly to ensure data redundancy

Planning Modules

The Planning Modules within BOLDplanning.com Platform are easy-to-use tools that walk users through each step of developing their planning elements. By following the system's Main Menu, organizations are assured of compliance with appropriate requirements and guidance. Data elements are addressed, and then detailed plans and reports are generated for preparedness and response.

BOLDplanning has developed a complete set of data entry screens for each planning element. These screens are constantly modified and updated based on the feedback from the collective user group of state and local emergency managers and planners. For each data entry screen, users have the following capabilities:

- Add, modify, and delete planning data
- Simultaneous access for multiple planners from diverse geographic locations
- Save data to make it immediately accessible to other planners
- Helper Tips on each page for commonly asked questions
- Drag-and-drop, spell check and other incorporated technologies

HaysCountyPlanning.com COOP & EOP Module Annual Licensing Renewal

With each annual renewal term period includes the following deliverables:

- All hosting, maintenance, redundancy, data back-up and systems upgrades.
- Continued access to the system for the plan development and maintenance for all departments, divisions, and business units.
- Real time plan access through the internet for all planners and emergency responders.
- Continuing telephone and internet technical support and customer service.
-

HayCountyPlanning.com COOP and EOP Module Pricing

Hays County BOLDplanning.com COOP & EOP Module Annual Licensing	Amount
Hays County COOP & EOP Module – October 1, 2021 to September 30, 2022	**$18,800.00**
Hays County COOP & EOP Module – October 1, 2022 to September 30, 2023	**$18,800.00**
Hays County COOP & EOP Module – October 1, 2023 to September 30, 2024	**$18,800.00**
Hays County COOP & EOP Module – October 1, 2024 to September 30, 2025	**$18,800.00**

480 Duke Drive; Suite 130
Franklin, TN 37067
(615) 469-5558
www.BOLDplanning.com

Quote
GSA# GS-35F-0301Y

April 29, 2021

Hays County Emergency Management
PO Box 988
San Marcos, TX 78667

Please find below the requested quote from BOLDplanning, Inc. regarding the HaysCountyPlanner.com COOP & EOP Module Annual License/Support Renewal for the period of October 1, 2021 to September 30, 2022.

With the renewal of the subscription, the customer will receive the following benefits for year of renewal:

- Continual access to the web-based planning system
- Continual system updates and functionality as developed
- Continued system services, hosting and data backup service
- Continual Help Desk and Technical Assistance

HaysCountyPlanniner.com Annual Licensing Renewal Price	Qty	Amount
HayCountyPlanner.com - Renewal Period of October 1, 2021 to September 30, 2022	1	$18,800.00

BOLDplanning, Inc. thanks you for this opportunity to be of continuing service to your organization.

Sincerely,

Will Minkoff, CBCP
Regional Director
will@boldplanning.com
615.823.4448

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize JM Engineering, LLC to replace the current Magic Chef 3.5-Ton heat pump split system HVAC with a new 3.5-Ton American Standard HVAC located at the PCT 5 Office in the amount of $9,006 and amend the budget accordingly.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	$9,006

LINE ITEM NUMBER

01-695-00.5719_700

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: YES **AUDITOR REVIEW:** MARISOL VILLARREAL-ALONZO

REQUESTED BY	SPONSOR	CO-SPONSOR
T. CRUMLEY	JONES	N/A

SUMMARY

The current Magic Chef 3.5-Ton unit that was installed in 1986 and located at the PCT 5 office has failed and is unable to be repair due to the age of the unit. Under contract RFP 2020-P01, JM Engineering, LLC has submitted a quote recommending the replacement of the unit and will replace it with a new 3.5-Ton American Standard Heat Pump Split System.

Attachments:
JM Engineering Proposal
Pictures of old unit
Specs for new unit

Budget Amendment:
Increase Building Maintenance Misc. Capital Equipment 001-695-00.5719_700
Possible Funding Source County Wide Contingencies 001-645-00.5399

JM Engineering, LLC
1314 Hillridge Drive
Round Rock, Texas 78665

Date: June 17, 2021
Quote No: 010721-1
Quote Expiration: 30 days after above date

To: **Chris Deichmann**
Hays County - County Wide Operations
Office: 512-393-7659
Email: chris.deichmann@co.hays.tx.us

Project: HVAC Maint & Repair Services
Contract No: RFP 2020-P01
Location: Precinct 5

Scope of Services:

JM Engineering will replace 3.5 ton heat pump split system at Precinct 5. Scope of services include the following:

1. Recover refrigerant;
2. Disconnect power supply to condensing unit and air handler;
3. Cut copper line sets;
4. Flush line sets with R-11 flush kit;
5. Remove old condensing unit and air handler;
6. Clean existing area prior to setting new equipment;
7. Set new condensing unit and air handler in place;
8. Connect copper line sets to new condensing unit and air handler;
9. Pressure system with nitrogen and leak check;
10. If no leaks are present, blow down nitrogen and begin evacuating system with vacuum pump;
11. Terminate electrical supply and control voltages to condensing unit, air handler and thermostat;
12. When evacuating system is completed (800 micron or less), open block valves on condensing unit;
13. Verify voltage is correct;
14. Commission startup of equipment;
15. Complete performance log and service ticket on jobsite; and,
16. Perform final jobsite cleanup, demolition and disposal of equipment per EPA guidelines

All work will be completed during normal business hours. Quote includes material and labor costs up to the amount listed below. Quote does not include obtaining City permits. Quote does not include any unknown issues found while performing these scope of services. If any unknown issues are discovered, JM Engineering will contact Hays County representative to determine next steps and/or solutions.

Pricing - Labor

Task	Labor Hours		Extended Price
	Reg Time	Over Time	
Licensed Air Conditioning & Heating Tech, Monday - Friday - Regular Hours ($86.44 per hour) Equipment Procurement, Onsite Management, Resource Management, On-Site Inspection	6.0		$ 518.64
Licensed Air Conditioning & Heating Tech, Monday - Friday - Regular Hours ($86.44 per hour) Installation of 3.5 Ton Heat Pump Split System	36.0		$ 3,111.84
Subtotal	42.0	0	$ 3,630.48

Pricing - Material

Task	Quantity	Unit	Unit Price	Extended Price
Trip Charge for Repair, On Call/Emergency Calls and New Installation	1	EA	$ 75.00	$ 75.00
American Standard 3.5 Ton 14+ Heat Pump Split System with 9.6KW HT PKG, Filter Base and associated parts	1.20	EA	$ 4,417.00	$ 5,300.40
Subtotal				$ 5,375.40
GRAND TOTAL				**$ 9,005.88**

Thank you for this opportunity to be of service. If you have any questions or need additional information, please feel free to give me a call.

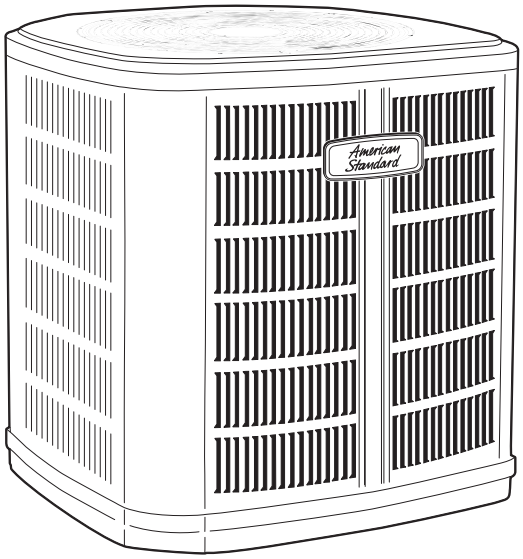
Sincerely,
Chad Liesman
JM Engineering, LLC
Office: 512-874-9245
Mobile: 512-966-3959
chad.liesman@jm-engineer.com

American Standard®
HEATING & AIR CONDITIONING

Submittal

Split System Heat Pump

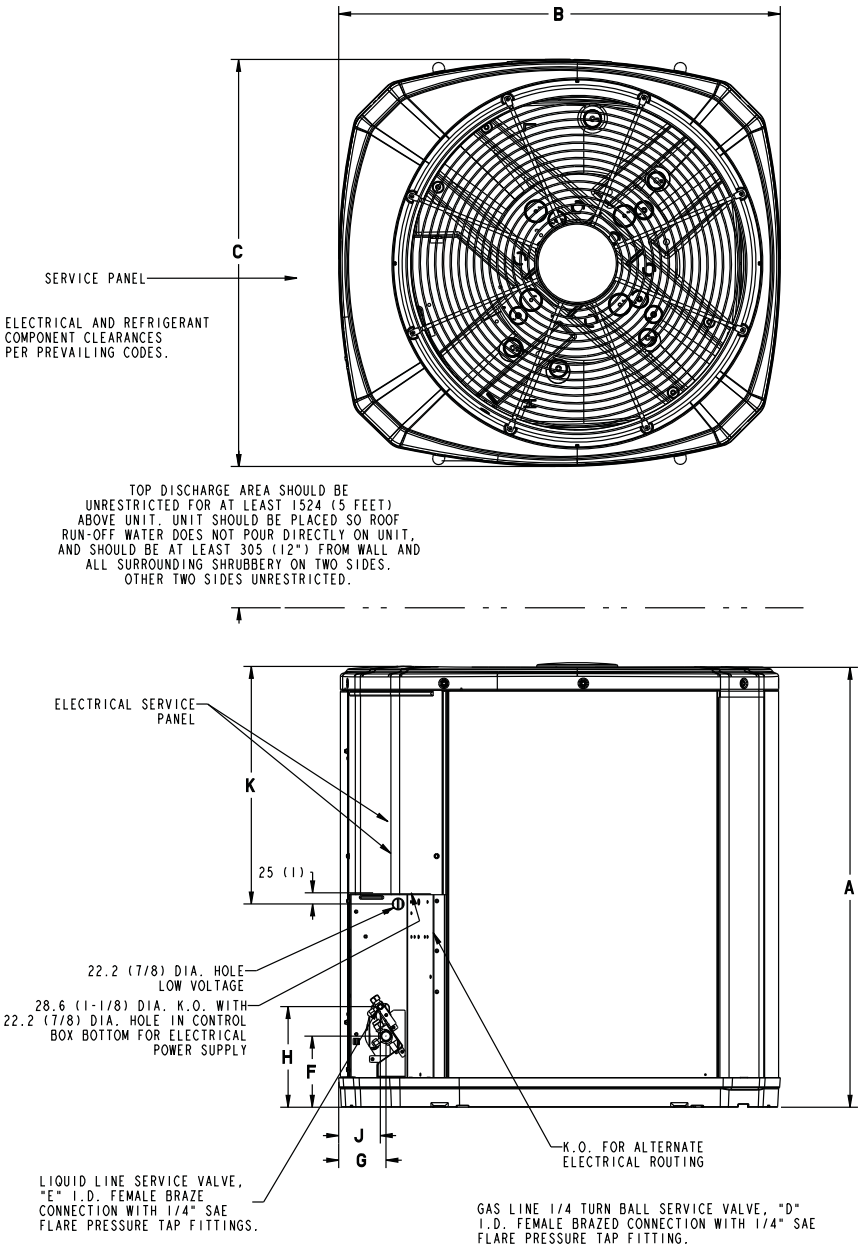
4A6H4042G1000A



Note: *"Graphics in this document are for representation only. Actual model may differ in appearance."*

April 2020

4A6H4042G-SUB-1D-EN



Model	Base	A	B	C	D	E	F	G	H	J	K
4A6H4042G	4	741 (29–1/8)	946 (37–1/4)	870 (34–1/4)	7/8	3/8	143 (5–5/8)	83 (3–1/4)	206 (8–1/8)	70 (2–3/4)	508 (20)

SOUND POWER LEVEL									
Model	A-Weighted Sound Power Level [dB(A)]	Full Octave Sound Power [dB]							
		63 Hz*	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
4A6H4042G	72	79	70	68	67	64	59	56	51
Note: Rated in accordance with AHRI Standard 270–2008 *For reference only.									

American Standard®
HEATING & AIR CONDITIONING

Product Specifications

OUTDOOR UNIT (a) (b)	4A6H4042G1000A
POWER CONNS. — V/PH/HZ (c)	208/230/1/60
MIN. BRCH. CIR. AMPACITY	25
BR. CIR. PROT. RTG. — MAX. (AMPS)	40
COMPRESSOR	DURATION™- SCROLL
NO. USED — NO. STAGES	1 — 1
VOLTS/PH/HZ	208/230/1/60
R.L. AMPS (d) — L.R. AMPS	19.2— 124
FACTORY INSTALLED	
START COMPONENTS (e)	NO (Uses BAYKSKT263)
INSULATION/SOUND BLANKET	NO
COMPRESSOR HEAT	NO
OUTDOOR FAN	PROPELLER
DIA. (IN.) — NO. USED	27.5 — 1
TYPE DRIVE — NO. SPEEDS	DIRECT — 1
CFM @ 0.0 IN. W.G. (f)	4100
NO. MOTORS — HP	1 — 1/5
MOTOR SPEED R.P.M.	850
VOLTS/PH/HZ	208/230/1/60
F.L. AMPS	.93
OUTDOOR COIL — TYPE	SPINE FIN™
ROWS — F.P.I.	1 — 24
FACE AREA (SQ. FT.)	19.1
TUBE SIZE (IN.)	3/8
REFRIGERANT CONTROL	EXPANSION VALVE
REFRIGERANT	
LBS. — R-410A (O.D. UNIT) (g)	6 LBS., 5 OZ
FACTORY SUPPLIED	YES
LINE SIZE — IN. O.D. GAS (h) (i)	7/8
LINE SIZE — IN. O.D. LIQ.	3/8
CHARGING SPECIFICATIONS	
SUBCOOLING	10°F
DIMENSIONS	H X W X D
CRATED (IN.)	42 x 35.1 x 38.7
WEIGHT	
SHIPPING (LBS.)	248
NET (LBS.)	216

(a) Certified in accordance with the Air-Source Unitary Air-conditioner Equipment certification program, which is based on AHRI standard 210/240.
(b) Rated in accordance with AHRI standard 270.
(c) Calculated in accordance with Natl. Elec. Codes. Use only HACR circuit breakers or fuses.
(d) This value shown for compressor RLA on the unit nameplate and on this specification sheet is used to compute minimum branch circuit ampacity and max. fuse size. The value shown is the branch circuit selection current.
(e) No means no start components. Yes means quick start kit components. PTC means positive temperature coefficient starter. Optional kit shown.
(f) Standard Air — Dry Coil — Outdoor
(g) This value approximate. For more precise value see unit nameplate.
(h) Reference the outdoor unit ship-with literature for refrigerant piping length and lift guidelines. Reference the refrigerant piping software pub # 32-3312-xx or refrigerant piping application guide SS-APG006-xx for long line sets or specialty applications (xx denotes latest revision).
(i) The outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit, ten (10) feet of tested connecting line, and the smallest rated indoor evaporative coil match. Always verify proper system charge via subcooling (TXV/EEV) or superheat (fixed orifice) per the unit nameplate.

American Standard®
HEATING & AIR CONDITIONING

Mechanical Specification Options

General

The outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit, ten (10) feet of tested connecting line, and the smallest rated indoor evaporative coil match. This unit is designed to operate at outdoor ambient temperatures as high as 115°F. Cooling capacities are matched with a wide selection of air handlers and furnace coils that are AHRI certified. The unit is certified to UL 1995. Exterior is designed for outdoor application.

Casing

Unit casing is constructed of heavy gauge, galvanized steel and painted with a weather-resistant powder paint finish. The corner panels are prepainted. All panels are subjected to our 1,000 hour salt spray test.

Refrigerant Controls

Refrigeration system controls include condenser fan, compressor contactor and low and high pressure switches. A factory supplied, field installed liquid line drier is standard.

Compressor

The compressor features internal over temperature and pressure protection. Other features include: Centrifugal oil pump and low vibration and noise.

Condenser Coil

The outdoor coil provides low airflow resistance and efficient heat transfer. The coil is protected on all four sides by louvered panels.

Low Ambient Cooling

As manufactured, this system has a cooling capacity to 55°F. The addition of an evaporator defrost control permits operation to 40°F. The addition of an evaporator defrost control with TXV permits low ambient cooling to 30°F.

The addition of the BAYLOAM107A low ambient kit permits ambient cooling to 20°F.

Thermostats—Cooling only and heat/cooling (manual and automatic change over). Sub-base to match thermostat and locking thermostat cover.

American Standard®
HEATING & AIR CONDITIONING

About American Standard Heating and Air Conditioning

American Standard has been creating comfortable and affordable living environments for more than a century. For more information, please visit www.americanstandardair.com.

AHRI CERTIFIED®
www.ahridirectory.org
Unitary Small HP
AHRI Standard 210/240
Certification applies only when the complete system is listed with AHRI.

c UL us LISTED

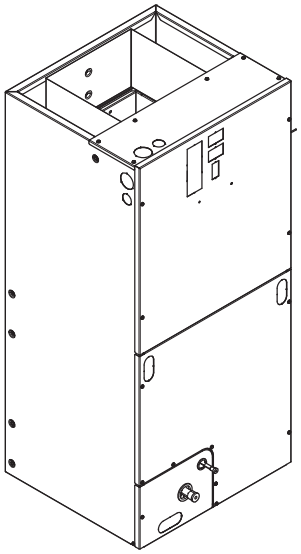
The AHRI Certified mark indicates company participation in the AHRI Certification program. For verification of individual certified products, go to ahridirectory.org.

The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

4A6H4042G-SUB-1D-EN 30 Apr 2020
Supersedes 4A6H4042G-SUB-1C-EN (November 2019)

Submittal

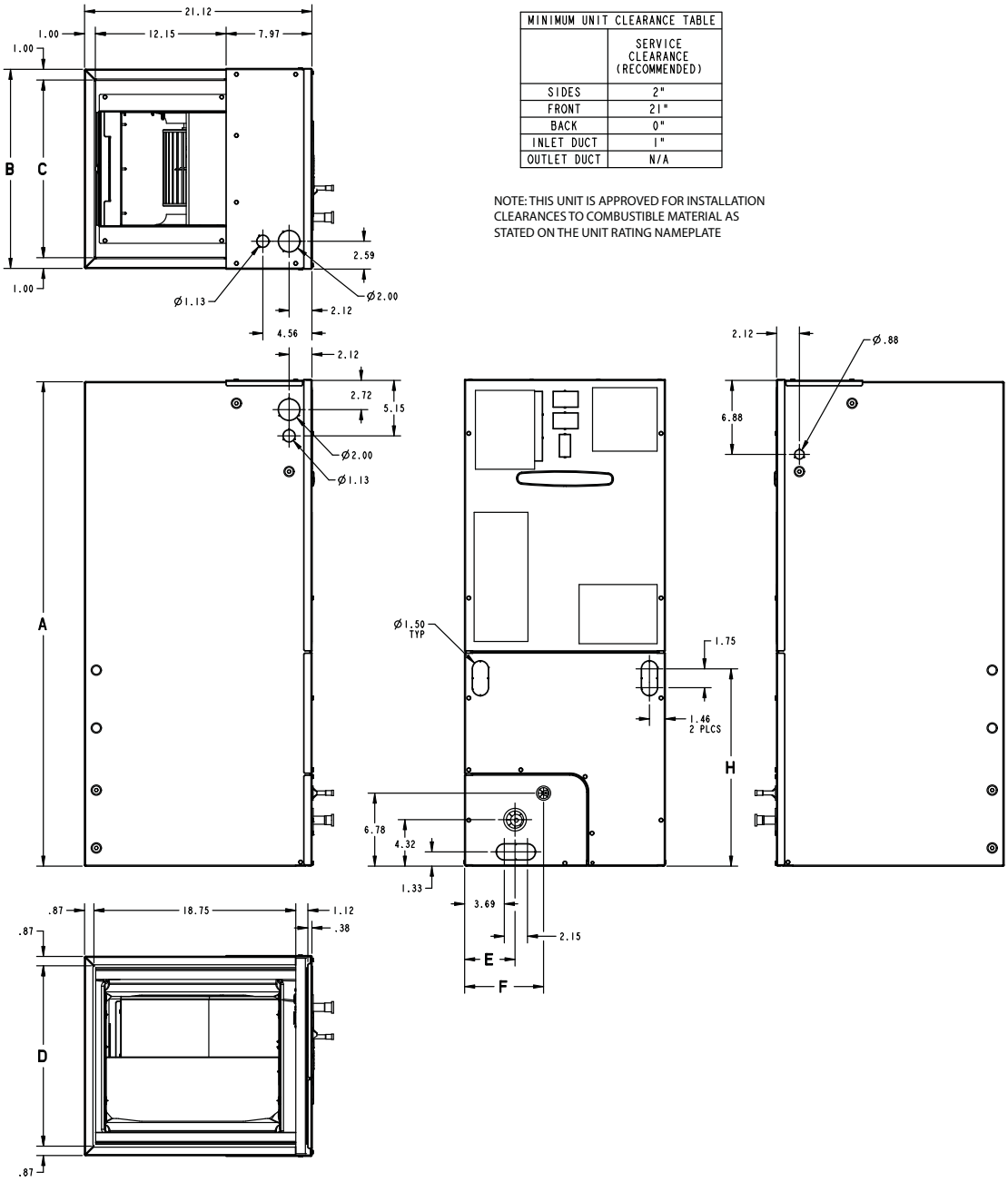
3–1/2 Ton
Convertible Air Handler
TEM4A0C42S41SB



April 2020

TEM4A0C42-SUB-1E-EN

Outline Drawing



MINIMUM UNIT CLEARANCE TABLE	
	SERVICE CLEARANCE (RECOMMENDED)
SIDES	2"
FRONT	21"
BACK	0"
INLET DUCT	1"
OUTLET DUCT	N/A

NOTE: THIS UNIT IS APPROVED FOR INSTALLATION CLEARANCES TO COMBUSTIBLE MATERIAL AS STATED ON THE UNIT RATING NAMEPLATE

PRODUCT DIMENSIONS									
Air Handler Model	A	B	C	D	E	F	H	Flow Control	Gas Line Braze
TEM4A0C42S41SB	51.27	23.50	21.50	21.75	7.01	9.66	24.59	TXV	7/8
All dimensions are in inches									

Product Specifications

MODEL	TEM4A0C42S41SB
RATED VOLTS/PH/HZ	208-230/1/60
RATINGS[a]	See O.D. Specifications
INDOOR COIL — Type	Plate Fin
Rows — F.P.I.	3 - 14
Face Area (sq. ft.)	5.50
Tube Size (in.)	3/8
Refrigerant Control	TXV
Drain Conn. Size (in.)[b]	3/4 NPT
DUCT CONNECTIONS	**See Outline Drawing**
INDOOR FAN — Type	Centrifugal
Diameter-Width (In.)	11 X 8
No. Used	1
Drive - No. Speeds	Direct - 3 [c]
CFM vs. in. w.g.	See Fan Performance Table
No. Motors — H.P.	1 - 1/2
Motor Speed R.P.M.	1050
Volts/Ph/Hz	208-230/1/60
F.L. Amps	4.1
FILTER	
Filter Furnished? [d]	No
REFRIGERANT	**R-410A**
Ref. Line Connections	Brazed
Coupling or Conn. Size — in. Gas	7/8
Coupling or Conn. Size — in. Liq.	3/8

DIMENSIONS	H x W x D
Crated (In.)	52–1/2 x 26 x 24
Uncrated	51-3/8 x 23-1/2 x 21-1/8
WEIGHT	
Shipping (Lbs.) / Net (Lbs.)	145/138

[a] These Air Handlers are A.H.R.I certified with various Split System Air Conditioners and Heat Pumps (AHRI STANDARD 210/240). Refer to the Split System Outdoor Unit Product Data Guides for performance data.
[b] 3/4" Male Plastic Pipe (Ref: ASTM 1785–76)
[c] ECM Motor
[d] Remote filter required.

Minimum Airflow CFM

TEM4A0C42S41SB		
Heater	**Minimum Heat Speed Tap**	
	With Heat Pump	Without Heat Pump
BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG	Low	Low
BAYHTR1508BRK, BAYHTR1508LUG, BAYHTR1510BRK, BAYHTR1510LUG, BAYHTR3510LUG	Low	Low
BAYHTR1517BRK	Low	Low
BAYHTR1523BRK	Med	Low
BAYHTR3517LUG	Low	Low

Heater Pressure Drop Table
TEM Air Handler Models

Airflow CFM	Number of Racks					Heater Racks	
	1	2	3	4		Heater Model	No. of Racks
	Air Pressure Drop — Inches W.G.					BAYHTR1504	1
1800	0.02	0.04	0.06	0.14		BAYHTR1505	1
1700	0.02	0.04	0.06	0.14		BAYHTR1508	2
1600	0.02	0.04	0.06	0.13		BAYHTR1510	2
1500	0.02	0.04	0.06	0.12		BAYHTR3510	3
1400	0.02	0.04	0.06	0.12		BAYHTR1515	3
1300	0.02	0.04	0.05	0.11		BAYHTR1517	3
1200	0.01	0.04	0.05	0.10		BAYHTR3515	3
1100	0.01	0.03	0.05	0.09		BAYHTR3517	3
1000	0.01	0.03	0.04	0.09		BAYHTR1519	4
900	0.01	0.03	0.04	0.08		BAYHTR1520	4
800	0.01	0.03				BAYHTR1521	4
700	0.01	0.02				BAYHTR1523	4
600	0.01	0.02				BAYHTR1525	4

Performance and Electrical Data

1. See Product Data or Air Handler nameplate for approved combinations of Air Handlers and Heaters.
2. Heater model numbers may have additional suffix digits.

Table 1. Air Flow Performance

TEM4A0C42S41SB [a]			
EXTERNAL STATIC (in w.g)	AIRFLOW		
	Speed Taps — 208–230 VOLTS		
	High	**Med**	**Low †**
0.1	1623	1509	1403
0.2	1583	1465	1357
0.3	1539	1420	1309
0.4	1494	1373	1260
0.5	1450	1356	1211
0.6	1399	1276	1159
0.7	1353	1223	1102

1. Values are with wet coil, no filter, and no heaters
2. CFM Correction for dry coil = Add 3%
3. † = Factory setting
4. Low = Tap 1–3, Med = Tap 4, High = Tap 5

[a] For the TEM4A0C42S41SB in downflow applications, airflow must not exceed 1600 cfm due to condensate blow off.

Table 2. Electrical Data

TEM4A0C42S41SB											
Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
No Heater				4.1 *	5	15			4.1 *	5	15
BAYHTR1504BRK BAYHTR1504LUG	1/1	3.84	13100	16.0	25	25	2.88	9800	13.8	22	25
BAYHTR1505BRK BAYHTR1505LUG	1/1	4.8	16400	20.0	30	30	3.6	12300	17.3	27	30
BAYHTR1508BRK BAYHTR1508LUG	1/1	7.68	26200	32.0	45	45	5.76	19700	27.7	40	40
BAYHTR1510BRK BAYHTR1510LUG	1/1	9.6	32800	40.0	55	60	7.2	24600	34.6	48	50
BAYHTR1517BRK-Circuit 1 [a]	2/1	9.6	32800	40.0	55	60	7.2	24600	34.6	48	50
BAYHTR1517BRK-Circuit 2		4.8	16400	20.0	25	25	3.6	12300	17.3	22	25
BAYHTR1523BRK-Circuit 1	2/1	9.6	32800	40.0	55	60	7.2	24600	34.6	48	50
BAYHTR1523BRK-Circuit 2		9.6	32800	40.0	50	50	7.2	24600	34.6	43	45
BAYHTR3510LUG	1/3	9.6	32800	23.1	33	35	7.2	24600	20.0	30	30
BAYHTR3517LUG	1/3	14.4	49200	34.6	48	50	10.8	36900	30.0	42	45
BAYHTR1517BRK with single circuit power source kit BAYSPEKT201A	1/1	14.4	49200	60.0	83	90	10.8	36900	51.9	73	80
BAYHTR1523BRK with single circuit power source kit BAYSPEKT201A	1/1	19.2	65600	80.0	108	110	14.4	49200	69.2	94	100
* = Motor Amps											

[a] MCA and MOP for circuit 1 contains the motor amps.

Features and Benefits

- Painted metal cabinet with captured foil face insulation
- 2% or less air leakage
- R-4.2 Insulating Value
- Multi-Position UP/Down Flow, Horizontal Left /Right
- ALL Aluminum Coil with Enhanced Patented Coil Fin
- Electric Heaters with polarized plug connections (sold as accessory)
- R-410A Thermal Expansion Valve
- ECM Motor ***(3.5 – 5 Ton Models)***
- Low Voltage Pigtail Connections
- Draw Through Design
- Horizontal Drain pan
- Fused 24V Power
- **3 year warranty**
- **10-year warranty registered**
- **Optional extended warranty available**

Important: *Condensate management kit is required for all 5 ton air handler models installed in downflow applications.*

About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit www.trane.com or www.americanstandardair.com.

The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

TEM4A0C42-SUB-1E-EN 09 Apr 2020
Supersedes TEM4A0C42-SUB-1D-EN (February 2019)


CU-6

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize JM Engineering, LLC to replace the failed Carrier HVAC system currently located at the PCT 4 office with a new 3.5-Ton American Standard HVAC system in the amount of $6,603 and amend the budget accordingly.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	$6,603

LINE ITEM NUMBER

01-695-00.5719_700

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: YES **AUDITOR REVIEW:** MARISOL VILLARREAL-ALONZO

REQUESTED BY	SPONSOR	CO-SPONSOR
T. CRUMLEY	SMITH	N/A

SUMMARY

The current Carrier unit located at the PCT 4 office has failed and is unable to be repaired. Under contract RFP 2020-P01, JM Engineering, LLC has submitted a proposal recommending the replacement of the unit and will replace it with a new 3.5-Ton American Standard split system heat pump.

Attachments:
JM Engineering Proposal
Specs for new unit

Budget Amendment:
Increase Building Maintenance Misc. Capital Equipment 001-695-00.5719_700
Possible Funding Source County Wide Contingencies 001-645-00.5399

JM Engineering, LLC
1314 Hillridge Drive
Round Rock, Texas 78665

Date: June 17, 2021
Quote No: 011021
Quote Expiration: 30 days after above date

To: **Chris Deichmann**
Hays County - County Wide Operations
Office: 512-393-7659
Email: chris.deichmann@co.hays.tx.us

Project: HVAC Maint & Repair Services
Contract No: RFP 2020-P01
Location: Precinct 4 - Courtroom AC Unit

Scope of Services:

JM Engineering will replace evaporator coil; TXV valve; and 3.5 ton, 14 SEER heat pump condenser unit on AC unit serving Courtroom at Precinct 4. Work will upgrade existing unit from R-22 refrigeration to R-410a refrigeration to be EPA compliant. Once work is completed, JM Engineering will clean up job site, dispose of any trash and complete service ticket.

All work will be completed during normal business hours. Quote includes material and labor costs up to the amount listed below. Quote does not include obtaining City permits. Quote does not include any unknown issues found while performing these scope of services. If any unknown issues are discovered, JM Engineering will contact Hays County representative to determine next steps and/or solutions.

Pricing - Labor

Task	Labor Hours		Extended Price
	Reg Time	Over Time	
Licensed Air Conditioning & Heating Tech, Monday - Friday - Regular Hours ($86.44 per hour) Equipment Procurement, Onsite Management, Resource Management, On-Site Inspection	4.0		$ 345.76
Licensed Air Conditioning & Heating Tech, Monday - Friday - Regular Hours ($86.44 per hour) Replace Evaporator Coil, TXV Valve and Heat Pump Condenser Unit	28.0		$ 2,420.32
Subtotal	32.0	0	$ 2,766.08

Pricing - Material

Task	Quantity	Unit	Unit Price	Extended Price
Trip Charge for Repair, On Call/Emergency Calls and New Installation	1	EA	$ 75.00	$ 75.00
Evaporator Coil, TXV Valve and Associated Parts and Refrigeration (20% Markup)	1.20	EA	$ 1,045.00	$ 1,254.00
3.5 Ton, 14 SEER Heat Pump Condenser Unit and Associated Parts and Refrigeration (20% Markup)	1.20	EA	$ 2,090.00	$ 2,508.00
Subtotal				$ 3,837.00
GRAND TOTAL				**$ 6,603.08**

Thank you for this opportunity to be of service. If you have any questions or need additional information, please feel free to give me a call.

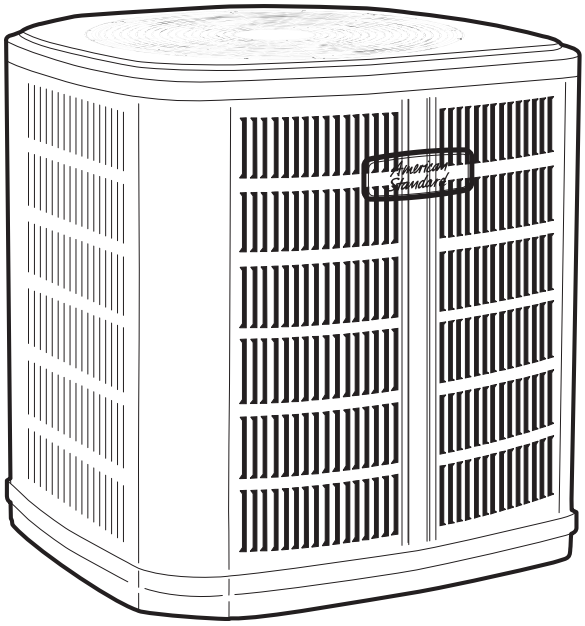
Sincerely,
Chad Liesman
JM Engineering, LLC
Office: 512-874-9245
Mobile: 512-966-3959
chad.liesman@jm-engineer.com

American Standard®
HEATING & AIR CONDITIONING

Submittal

Split System Heat Pump

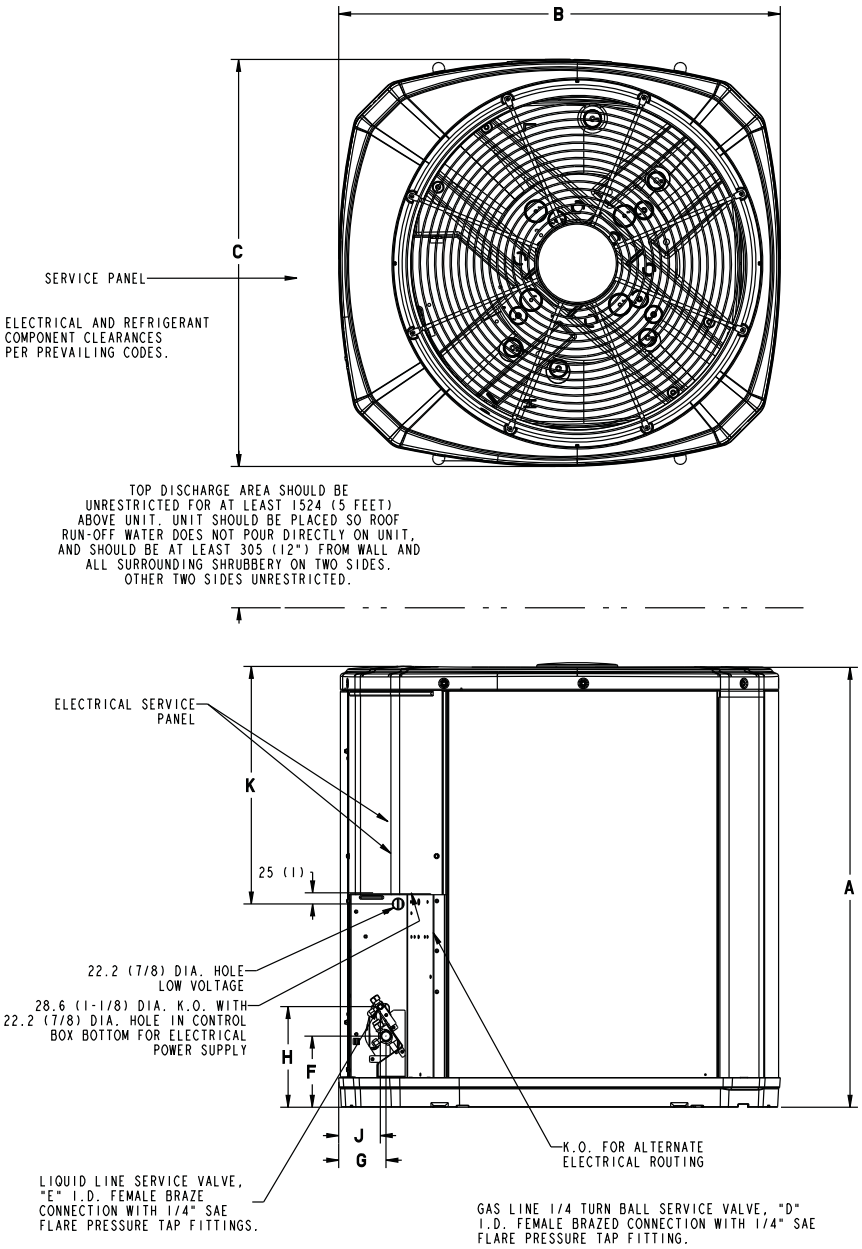
4A6H6042H1000A



Note: *"Graphics in this document are for representation only. Actual model may differ in appearance."*

March 2020

4A6H6042H- SUB- 1B- EN



Model	Base	A	B	C	D	E	F	G	H	J	K
4A6H6042H	4	1147 (45–1/8)	946 (37–1/4)	870 (34–1/4)	7/8	3/8	152 (6)	98 (3–7/8)	219 (8–5/8)	86 (3–3/8)	813 (32)

SOUND POWER LEVEL									
Model	A-Weighted Sound Power Level [dB(A)]	Full Octave Sound Power [dB]							
		63 Hz*	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
4A6H6042H	72	77	75	72	70	67	62	59	52
Note: Rated in accordance with AHRI Standard 270–2008 *For reference only66									

American Standard®
HEATING & AIR CONDITIONING

Product Specifications

OUTDOOR UNIT (a) (b)	4A6H6042H1000A
POWER CONNS. — V/PH/HZ (c)	208/230/1/60
MIN. BRCH. CIR. AMPACITY	22
BR. CIR. PROT. RTG. — MAX. (AMPS)	35
COMPRESSOR	DURATION™- SCROLL
NO. USED — NO. STAGES	1 — 1
VOLTS/PH/HZ	208/230/1/60
R.L. AMPS (d) — L.R. AMPS	16.7— 109
FACTORY INSTALLED	
START COMPONENTS (e)	NO (Uses BAYKSKT263)
INSULATION/SOUND BLANKET	NO
COMPRESSOR HEAT	NO
OUTDOOR FAN	PROPELLER
DIA. (IN.) — NO. USED	26.6 — 1
TYPE DRIVE — NO. SPEEDS	DIRECT — 1
CFM @ 0.0 IN. W.G. (f)	4171
NO. MOTORS — HP	1 — 1/3
MOTOR SPEED R.P.M.	850
VOLTS/PH/HZ	200/230/1/60
F.L. AMPS	2.80
OUTDOOR COIL — TYPE	SPINE FIN™
ROWS — F.P.I.	2 — 24
FACE AREA (SQ. FT.)	29.15
TUBE SIZE (IN.)	3/8
REFRIGERANT CONTROL	EXPANSION VALVE
REFRIGERANT	
LBS. — R-410A (O.D. UNIT) (g)	10 LBS., 5 OZ
FACTORY SUPPLIED	YES
LINE SIZE — IN. O.D. GAS (h) (i)	7/8
LINE SIZE — IN. O.D. LIQ.	3/8
CHARGING SPECIFICATIONS	
SUBCOOLING	8°F
DIMENSIONS	H X W X D
CRATED (IN.)	51 x 35.1 x 38.7
WEIGHT	
SHIPPING (LBS.)	277
NET (LBS.)	227

(a) Certified in accordance with the Air-Source Unitary Air-conditioner Equipment certification program, which is based on AHRI standard 210/240.
(b) Rated in accordance with AHRI standard 270.
(c) Calculated in accordance with Natl. Elec. Codes. Use only HACR circuit breakers or fuses.
(d) This value shown for compressor RLA on the unit nameplate and on this specification sheet is used to compute minimum branch circuit ampacity and max. fuse size. The value shown is the branch circuit selection current.
(e) No means no start components. Yes means quick start kit components. PTC means positive temperature coefficient starter. Optional kit shown.
(f) Standard Air — Dry Coil — Outdoor
(g) This value approximate. For more precise value see unit nameplate.
(h) Reference the outdoor unit ship-with literature for refrigerant piping length and lift guidelines. Reference the refrigerant piping software pub # 32-3312-xx or refrigerant piping application guide SS-APG006-xx for long line sets or specialty applications (xx denotes latest revision).
(i) The outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit, ten (10) feet of tested connecting line, and the smallest rated indoor evaporative coil match. Always verify proper system charge via subcooling (TXV/EEV) or superheat (fixed orifice) per the unit nameplate.

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Mechanical Specification Options

General

The outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit, ten (10) feet of tested connecting line, and the smallest rated indoor evaporative coil match. This unit is designed to operate at outdoor ambient temperatures as high as 115°F. Cooling capacities are matched with a wide selection of air handlers and furnace coils that are AHRI certified. The unit is certified to UL 1995. Exterior is designed for outdoor application.

Casing

Unit casing is constructed of heavy gauge, galvanized steel and painted with a weather-resistant powder paint finish. The corner panels are prepainted. All panels are subjected to our 1,000 hour salt spray test.

Refrigerant Controls

Refrigeration system controls include condenser fan, compressor contactor and low and high pressure switches. A factory supplied, field installed liquid line drier is standard.

Compressor

The compressor features internal over temperature and pressure protection. Other features include: Centrifugal oil pump and low vibration and noise.

Condenser Coil

The outdoor coil provides low airflow resistance and efficient heat transfer. The coil is protected on all four sides by louvered panels.

Low Ambient Cooling

As manufactured, this system has a cooling capacity to 55°F. The addition of an evaporator defrost control permits operation to 40°F. The addition of an evaporator defrost control with TXV permits low ambient cooling to 30°F.

The addition of the BAYLOAM107A low ambient kit permits ambient cooling to 20°F.

Thermostats—Cooling only and heat/cooling (manual and automatic change over). Sub-base to match thermostat and locking thermostat cover.

American Standard®
HEATING & AIR CONDITIONING

About American Standard Heating and Air Conditioning
American Standard has been creating comfortable and affordable living environments for more than a century.
For more information, please visit www.americanstandardair.com.

The AHRI Certified mark indicates company participation in the AHRI Certification program. For verification of individual certified products, go to ahridirectory.org.

The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

4A6H6042H-SUB-1B-EN 23 Mar 2020
Supersedes 4A6H6042H-SUB-1A-EN (December 2014)

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Approve specifications for IFB 2021-B10 Fischer Store Road @ RM 2325 and authorize Purchasing to solicit for proposals and advertise.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding	SHELL	N/A

SUMMARY

Hays County issues this Invitation for Bid (IFB) to solicit bids to secure a contractor to perform all work laid out in the technical specification of IFB 2021-B10 project manual and supporting documents.

Attached:
IFB 2021-B10 Fischer Store Road @ RM 2325 Project Manual

HAYS COUNTY

PROJECT CONSTRUCTION MANUAL

FOR
FISCHER STORE ROAD AT RM 2325

CSJ: 0285-02-014

Bid No. IFB 2021-B10

Bid Date: JULY 22, 2021
Bid Time: 3:00 PM

Hays County, Texas
Purchasing Department
712 South Stagecoach Trail, Suite 1071
San Marcos, TX 78667

STATE OF TEXAS
DENNIS K. SEAL
80287
LICENSED
PROFESSIONAL ENGINEER

5/6/2021

DENNIS K. SEAL, P.E.

JUNE 2021

TABLE OF CONTENTS

Attachment C – Contributing Zone Plan (Bound Separately)

Attachment D – Disadvantaged Business Enterprise (DBE) Commitment Agreement Form (Bound Separately)

Appendices

Appendix A – Quality Assurance Program for Construction Projects

Appendix B – Guide Schedule of Sampling and Testing

Appendix C – AASHTO Accredited Laboratories

SECTION 1
IFB SUBMITTAL CHECKLIST

IFB Submittal Checklist

This checklist is provided for convenience and identifies documents that must be submitted with the bid/proposal in order to be considered responsive. Any bids/proposals received without these requisite documents may be deemed nonresponsive and may not be considered for contract award.

The following forms MUST be returned for the bid/proposal to be considered responsive:

____ 1. Completed Bid Form

____ 2. Completed Schedule of Rates and Prices

____ 3. Vendor References Completed

____ 4. Bid Bond for 5% of total bid amount

Required Forms by Hays County:

____ 1. Conflict of Interest Questionnaire Completed and Signed

____ 2. Certificate of Interested Parties – Form 1295 filed online with the Texas Ethics Commission and Signed

____ 3. Code of Ethics for Hays County Signed

____ 4. Hays County Practices Related to Historically Underutilized Businesses Signed

____ 5. Hays County House Bill 89 Verification Signed and Notarized

____ 6. Hays County Purchasing Department Senate Bill 252 Certification Signed

____ 7. Vendor/Bidder's Affirmation Completed and Signed

____ 8. Related Party Disclosure Form Completed and Signed

____ 9. Debarment & Licensing Certification Signed and Notarized

____ 10. State of Texas Child Support Business Ownership Form Completed and Signed

____ 11. FHWA 1273 Certification Completed and Signed

____ 12. Appendix II to Part 200 – Contract Provisions for Non-Federal Entity Contracts Under Federal Awards Completed and Signed

____ 13. Disadvantaged Business Enterprise (DBE) Commitment Agreement Form

____ 14. System for Award Management (www.SAM.gov) Entity Registration Page

____ 15. Any addenda applicable to this solicitation

Hays County will accept bids, by the stated due date by one of the following methods:

____ 1. Electronic Submission of Bid Packet through BidNet Direct OR

____ 2. One (1) original proposal and one (1) digital copy on a thumb drive are in a sealed envelope with the Solicitation Number and Respondent's Name on the outermost envelope, addressed to:

Hays County Purchasing, 712 S Stagecoach Trail, Suite 1071, San Marcos, TX 78666

SECTION 2
INVITATION FOR BIDS

PUBLIC NOTICE
HAYS COUNTY
INVITATION FOR BIDS

Hays County will be accepting sealed Bids for:

FISCHER STORE ROAD AT RM 2325, BID No. IFB 2021-B10

Sealed Bids will be received by Hays County, through either hardcopy at the Purchasing Office, Hays County Government Center, 712 South Stagecoach Trail, Suite 1071, San Marcos, TX 78666 or electronically through www.bidnetdirect.com/hayscounty (the BidNet Direct website) until **3:00 PM** local time on **THURSDAY, JULY 22, 2021** at which time and place the bids will be publicly opened and read. Bids received after the time and date set for submission will be returned unopened.

DETAIL SUMMARY

Issuing Office:	Hays County Auditor Purchasing Office 712 S. Stagecoach Trial, Suite 1071 San Marcos, TX 78666 Plans, Specifications, and Bidding documents for pre-qualified bidders and interested non-bidders may be secured from the websites: www.bidnetdirect.com/hayscounty, http://www.txsmartbuy.com/sp, https://www.sanmarcostx.gov/Bids.aspx
Responses to Solicitation:	Sealed bids marked with Solicitation Number and Respondent Name on the outermost envelope: One (1) original and one (1) digital copy on a thumb drive OR Electronic Bid Packets can be submitted through BidNet Direct.
Deadline for Responses:	In issuing office or submitted to BidNet Direct no later than: **THURSDAY, JULY 22, 2021; 3:00 PM, Central Time (CT)** Any bid may be withdrawn prior to the above scheduled time for the opening of the bids or authorized postponement thereof. Any bid received after the time and date specified shall not be accepted.
Pre-Bid Meeting:	**A non-mandatory Virtual Pre-Bid Conference will be held on WEDNESDAY, JUNE 30, 2021 at 1:00 PM through Microsoft Teams.** See link: Join Microsoft Teams Meeting or contact purchasing@co.hays.tx.us for a calendar appointment.
Bonding Requirements:	Bid Bond in the amount not less than five percent (5%) of the total amount of the bid, issued by an acceptable surety company or in the form of a certified or cashier's check, must accompany each bid as a guarantee that the successful bidder will enter into a proper contract and execute bonds and guaranties within ten (10) days after the date contract documents are received by the awarded contractor. Performance and Payment Bonds (100% of Contract Price) will be required as stated in the bidding documents.
Other Requirements:	To submit Proposals for this Contract, prospective bidder shall, on **THURSDAY, JULY 22, 2021**, meet the following requirements:

	(1) be qualified via "Confidential Questionnaire" by the Texas Department of Transportation (TxDOT) for bidding on State projects or within the 90 day grace period for the preparation of a new qualification statement, or have submitted the Confidential Questionnaire and have it on file with TxDOT at least 14 days before the date proposals are to be opened; (2) not on the TxDOT list of currently debarred/sanctioned contractors; and (3) provide suitable evidence of prior experience for similar work and be able to provide written documentation of successfully completed similar contracts. (4) SYSTEM FOR AWARD MANAGEMENT (SAM): Respondent and its Principals may not be debarred or suspended nor otherwise on the Excluded Parties List System (EPLS) in SAM. Include verification that the company as well as the company's principals are not listed (are not debarred) through the System for Award Management (www.SAM.gov). Enclose a printout of the search results that includes the record on THURSDAY, JULY 22, 2021. (5) Attachment D: DBE Commitment Agreement Form must be filled out and submitted with bid.
Initial Contract Term:	150 calendar days
Optional Contract Terms:	None.
Designated Contact:	Hays County Purchasing Department Email: purchasing@co.hays.tx.us
Questions & Answers:	Questions regarding this solicitation must be made in writing and submitted to the designated contact above no later than **WEDNESDAY, JULY 14, 2021 at 5:00 PM**, CT. Telephone inquiries will not be accepted. Questions will be accepted in writing to purchasing@co.hays.tx.us. Answers to questions will be provided in the form of an addendum after the question deadline has passed. All addenda will be posted on BidNet Direct and ESBD websites.
Addenda	Any interpretations, corrections or changes to this IFB and specifications will be made by addenda. Sole issuing authority of addenda shall be vested in the Hays County Purchasing Office. It is the Respondent's responsibility to acknowledge receipt of all addenda with bid submission.
Contact with County Staff:	Upon issuance of this solicitation, employees and representatives of Hays County, other than the Purchasing Office staff identified as the Designated Contact above, will not discuss the contents of this solicitation with any Respondent or its representatives. Failure of a Respondent or any of its representatives to observe this restriction may result in disqualification of any related offer. This restriction does not preclude discussions between affected parties for the purpose of conducting business unrelated to this procurement.

Anticipated Schedule of Events

June 22, 2021	**Issuance of IFB**
June 30, 2021	**Pre-Bid Meeting Online (1:00 PM, CT)**
July 14, 2021	**Deadline for Submission of Questions (5:00 PM, CT)**
July 22, 2021	**Deadline for Submission of Bids (3:00 PM, CT)** **Late bids will not be accepted**
Summer 2021	**Anticipated Contract Award Date**

SECTION 3
BID INSTRUCTIONS / REQUIREMENTS

BID INSTRUCTIONS / REQUIREMENTS

THE CONTRACT BID INSTRUCTION SHALL BE AS SET FORTH IN SECTION 13 TECHNICAL SPECIFICATIONS.

SECTION 4
BID FORM /
SCHEDULE OF RATES AND PRICES /
CONFLICT OF INTEREST QUESTIONNAIRE /
CERTIFICATE OF INTEREST PARTIES /
CODE OF ETHICS FOR HAYS COUNTY /
HAYS COUNTY PRACTICES RELATED TO HISTORICALLY UNDERUTILIZED BUSINESSES /
HAYS COUNTY HOUSE BILL 89 VERIFICATION /
HAYS COUNTY PURCHASING DEPARTMENT SENATE BILL 252 CERTIFICATION /
VENDOR REFERENCES /
VENDOR/BIDDER'S AFFIRMATION /
RELATED PARTY DISCLOSURE FORM /
DEBARMENT AND LICENSING CERTIFICATION /
CHILD SUPPORT STATEMENT /
STATE OF TEXAS CHILD SUPPORT BUSINESS OWNERSHIP FORM /
REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS (FHWA 1273) /
FHWA 1273 CERTIFICATION /
APPENDIX II TO PART 200 - CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS

BID FORM

PROJECT IDENTIFICATION

Project No. IFB 2021-B10 Fischer Store Road at RM 2325

THIS BID IS SUBMITTED TO:

Electronically: Bid Packets can be submitted through BidNet Direct: www.bidnetdirect.com/hayscounty,

Manually:
Hays County Purchasing Department
Attn: Stephanie Hunt
712 South Stagecoach Trail, Suite 1071
San Marcos, Texas 78666

The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with COUNTY in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

BIDDER accepts all of the terms and conditions of the Invitation for Bids and Bid Instructions/Requirements, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the day of Bid opening. BIDDER will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within 10 working days after the date of COUNTY's Notice of Award.

This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm, or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over COUNTY.

BIDDER will complete the work in accordance with the Contract Documents and the accompanying Schedule of Rates and Prices and will pay not less than the Prevailing Wage Rates for Hays County, Texas. The work will be completed within 150 calendar days from the date for commencing work as set forth in the "Notice to Proceed" to be issued by the COUNTY.

Communications concerning this Bid shall be addressed to the address of BIDDER indicated below:

_____

_____

_____

Terms used in this Bid which are defined in the General Provisions or Instructions will have the meanings indicated in the General Provisions or Instructions.

SUBMITTED ON _____, 20___.

State Contractor License Number _____

IF BIDDER is:

An Individual

By _____ (SEAL)
(Individual's Name)

_____
(Signature)

doing business as _____
Business address: _____

_____
Phone Number: _____Fax Number: _____
Email: _____

A Partnership

By _____ (SEAL)
(Firm Name)

_____
(General Partner)

_____
(Signature)

Business address:

_____

_____

_____

Phone Number: _____Fax Number: _____
Email: _____

A Corporation

By _____ (SEAL)
(Corporate Name)

_____
(State of Incorporation)

By _____ (SEAL)
(Name of Person Authorized to Sign)

_____
(Signature)

(Corporate Seal)

Attest: _____
(Secretary)

Business Address

_____

_____

_____

Phone Number: _____Fax Number: _____
Email: _____

Date of Qualification to Do Business is _____

A Joint Venture

By _____ (SEAL)
(Name)

_____
(Address)

_____
(Signature)

By _____
(Name)

_____
(Address)

_____
(Signature)

Phone & Fax Numbers, Email & mailing addresses for receipt of official communications:

_____
_____
_____
_____

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

ATTACHMENT A - IFB 2021-B10 BID FORM
SCHEDULE OF RATES AND PRICES
HAYS COUNTY, TEXAS

PROJECT: IFB 2021-B10 - FISCHER STORE ROAD AT RM 2325 CONTRACTOR: _____

Full compensation for compliance with each and every provision of the Request for Bids, the Bid, the Specifications, and the Contract will be considered as included in the unit prices for the work set forth below, and no separate payment will be made for compliance with each and every provision of the Request for Bids, the Bid, the Specifications, and the Contract, unless separate payment is expressly provided for therein.

BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
1	0100-6002	PREPARING ROW	26	STA		$ -
2	0104-6009	REMOVING CONC (RIPRAP)	472	SY		$ -
3	0104-6031	REMOVING CONC (HEADWALL)	4	CY		$ -
4	0105-6092	REMOVING STAB BASE AND ASPH PAV (5"-8")	1806	SY		$ -
5	0110-6001	EXCAVATION (ROADWAY)	6709	CY		$ -
6	0132-6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	182	CY		$ -
7	0160-6003	FURNISHING AND PLACING TOPSOIL (4")	9065	SY		$ -
8	0161-6023	EROSION CONTROL COMPOST (4")	290	SY		$ -
9	0164-6027	CELL FBR MLCH SEED(PERM)(URBAN)(CLAY)	9065	SY		$ -
10	0164-6029	CELL FBR MLCH SEED(TEMP)(WARM)	9065	SY		$ -
11	0168-6001	VEGETATIVE WATERING	152	MG		$ -
12	0169-6002	SOIL RETENTION BLANKETS (CL 1) (TY B)	2499	SY		$ -

Refer to the Technical Specifications section for a description of the specific reference number.

ATTACHMENT A - IFB 2021-B10 BID FORM
SCHEDULE OF RATES AND PRICES
HAYS COUNTY, TEXAS

PROJECT: IFB 2021-B10 - FISCHER STORE ROAD AT RM 2325 CONTRACTOR: _____

Full compensation for compliance with each and every provision of the Request for Bids, the Bid, the Specifications, and the Contract will be considered as included in the unit prices for the work set forth below, and no separate payment will be made for compliance with each and every provision of the Request for Bids, the Bid, the Specifications, and the Contract, unless separate payment is expressly provided for therein.

BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
13	0247-6366	FL BS (CMP IN PLC) (TY A GR 5) (FINAL POS)	1057	CY		$ -
14	0310-6001	PRIME COAT (MULTI OPTION))	1508	GAL		$ -
15	0340-6034	D-GR HMA(SQ) TY-C PG64-22	322	TON		$ -
16	0340-6138	D-GR HMA(SQ) TY-D PG76-22	320	TON		$ -
17	0340-6272	TACK COAT	144	GAL		$ -
18	0347-6001	TOM (ASPHALT) PG 76-22	53	TON		$ -
19	0347-6002	TOM-C (AGGREGATE) SAC-A	679	TON		$ -
20	0351-6013	FLEXIBLE PAVEMENT STRUCTURE REPAIR (4")	414	SY		$ -
21	0400-6006	CUT & RESTORING PAV	41	SY		$ -
22	0402-6001	TRENCH EXCAVATION PROTECTION	293	LF		$ -
23	0403-6001	TEMPORARY SPL SHORING	1190	SF		$ -
24	0432-6002	RIPRAP (CONC)(5 IN)	15.0	CY		$ -

Refer to the Technical Specifications section for a description of the specific reference number.

ATTACHMENT A - IFB 2021-B10 BID FORM
SCHEDULE OF RATES AND PRICES
HAYS COUNTY, TEXAS

PROJECT: IFB 2021-B10 - FISCHER STORE ROAD AT RM 2325 CONTRACTOR: _____

Full compensation for compliance with each and every provision of the Request for Bids, the Bid, the Specifications, and the Contract will be considered as included in the unit prices for the work set forth below, and no separate payment will be made for compliance with each and every provision of the Request for Bids, the Bid, the Specifications, and the Contract, unless separate payment is expressly provided for therein.

BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
25	0432-6045	RIPRAP (MOW STRIP)(4 IN)	6.0	CY		$ -
26	0464-6007	RC PIPE (CL III)(30 IN)	146	LF		$ -
27	0464-6018	RC PIPE (CL IV)(24 IN)	270	LF		$ -
28	0467-6388	SET (TY II) (24 IN) (RCP) (3: 1) (C)	2	EA		$ -
29	0467-6394	SET (TY II) (24 IN) (RCP) (6: 1) (C)	4	EA		$ -
30	0467-6417	SET (TY II) (30 IN) (RCP) (3: 1) (C)	2	EA		$ -
31	0467-6419	SET (TY II) (30 IN) (RCP) (4: 1) (C)	2	EA		$ -
32	0496-6007	REMOV STR (PIPE)	193	LF		$ -
33	0500-6001	MOBILIZATION	1	LS		$ -
34	0502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	7	MO		$ -
35	0506-6002	ROCK FILTER DAMS (INSTALL) (TY 2)	75	LF		$ -
36	0506-6011	ROCK FILTER DAMS (REMOVE)	75	LF		$ -

Refer to the Technical Specifications section for a description of the specific reference number.

ATTACHMENT A - IFB 2021-B10 BID FORM
SCHEDULE OF RATES AND PRICES
HAYS COUNTY, TEXAS

PROJECT: IFB 2021-B10 - FISCHER STORE ROAD AT RM 2325 CONTRACTOR: _____

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BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
37	0506-6020	CONSTRUCTION EXITS (INSTALL) (TY 1)	333	SY		$ -
38	0506-6024	CONSTRUCTION EXITS (REMOVE)	333	SY		$ -
39	0506-6034	CONSTRUCTION PERIMETER FENCE	330	LF		$ -
40	0506-6038	TEMP SEDMT CONT FENCE (INSTALL)	2134	LF		$ -
41	0506-6039	TEMP SEDMT CONT FENCE (REMOVE)	2134	LF		$ -
42	0506-6040	BIODEG EROSN CONT LOGS (INSTL) (8")	160	LF		$ -
43	0506-6043	BIODEG EROSN CONT LOGS (REMOVE)	160	LF		$ -
44	0508-6001	CONSTRUCTING DETOURS	1465	SY		$ -
45	0512-6009	PORT CTB (FUR & INST)(LOW PROF)(TY 1)	400	LF		$ -
46	0512-6010	PORT CTB (FUR & INST)(LOW PROF)(TY 2)	40	LF		$ -
47	0512-6033	PORT CTB (MOVE)(LOW PROF)(TY 1)	400	LF		$ -
48	0512-6034	PORT CTB (MOVE)(LOW PROF)(TY 2)	40	LF		$ -

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BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
49	0512-6057	PORT CTB (REMOVE)(LOW PROF)(TY 1)	400	LF		$ -
50	0512-6058	PORT CTB (REMOVE)(LOW PROF)(TY 2)	40	LF		$ -
51	0529-6008	CONC CURB & GUTTER (TY II)	193	LF		$ -
52	0530-6006	DRIVEWAYS (ACP)	242	SY		$ -
53	0540-6001	MTL W-BEAM GD FEN (TIM POST)	50	LF		$ -
54	0542-6001	REMOVE METAL BEAM GUARD FENCE	250	LF		$ -
55	0542-6002	REMOVE TERMINAL ANCHOR SECTION	2	EA		$ -
56	0544-6001	GUARDRAIL END TREATMENT (INSTALL)	1	EA		$ -
57	0544-6003	GUARDRAIL END TREATMENT (REMOVE)	1	EA		$ -
58	0552-6002	WIRE FENCE (TY B)	2646	LF		$ -
59	0560-6015	MAILBOX INSTALL-S (TIM POST) TY 5	3	EA		$ -
60	0618-6029	CONDT (PVC) (SCH 40) (3")	410	LF		$ -

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BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
61	0624-6010	GROUND BOX TY D (162922) W/APRON	3	EA		$ -
62	0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	8	EA		$ -
63	0644-6031	IN SM RD SN SUP&AM TYS80(1)SA(T-2EXT)	1	EA		$ -
64	0644-6036	IN SM RD SN SUP&AM TYS80(1)SA(U-BM)	1	EA		$ -
65	0644-6076	REMOVE SM RD SN SUP&AM	7	EA		$ -
66	0658-6016	INSTL DEL ASSM (D-SW)SZ (BRF)GF1 (BI)	2	EA		$ -
67	0658-6048	INSTL OM ASSM (OM-2Z)(FLX)GND	12	EA		$ -
68	0662-6004	WK ZN PAV MRK NON-REMOV (W)4"(SLD)	5702	LF		$ -
69	0662-6016	WK ZN PAV MRK NON-REMOV (W)24"(SLD)	33	LF		$ -
70	0662-6034	WK ZN PAV MRK NON-REMOV (Y)4"(SLD)	7524	LF		$ -
71	0662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	282	EA		$ -
72	0662-6110	WK ZN PAV MRK SHT TERM (TAB)TY Y	226	EA		$ -

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BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
73	0666-6030	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	259	LF		$ -
74	0666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	1464	LF		$ -
75	0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	287	LF		$ -
76	0666-6054	REFL PAV MRK TY I (W)(ARROW)(100MIL)	8	EA		$ -
77	0666-6078	REFL PAV MRK TY I (W)(WORD)(100MIL)	8	EA		$ -
78	0666-6170	REFL PAV MRK TY II (W) 4" (SLD)	5030	LF		$ -
79	0666-6176	REFL PAV MRK TY II (W) 8" (DOT)	259	LF		$ -
80	0666-6178	REFL PAV MRK TY II (W) 8" (SLD)	1464	LF		$ -
81	0666-6182	REFL PAV MRK TY II (W) 24" (SLD)	287	LF		$ -
82	0666-6184	REFL PAV MRK TY II (W) (ARROW)	8	EA		$ -
83	0666-6192	REFL PAV MRK TY II (W) (WORD)	8	EA		$ -
84	0666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	6506	LF		$ -

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BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
85	0666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	5030	LF		$ -
86	0666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	6506	LF		$ -
87	0672-6007	REFL PAV MRKR TY I-C	75	EA		$ -
88	0672-6009	REFL PAV MRKR TY II-A-A	244	EA		$ -
89	0677-6001	ELIM EXT PAV MRK & MRKS (4")	8270	LF		$ -
90	0677-6003	ELIM EXT PAV MRK & MRKS (8")	323	LF		$ -
91	0677-6007	ELIM EXT PAV MRK & MRKS (24")	17	LF		$ -
92	0677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	2	EA		$ -
93	0677-6012	ELIM EXT PAV MRK & MRKS (WORD)	2	EA		$ -
94	1004-6001	TREE PROTECTION	6	EA		$ -
95	3085-6001	UNDERSEAL COURSE	265	GAL		$ -
96	6001-6002	PORTABLE CHANGEABLE MESSAGE SIGN	3	EA		$ -

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BID ITEM	TECH SPEC	DESCRIPTION	BID QUANTITY	UNIT MEASURE	UNIT COST	AMOUNT BID
97	6185-6002	TMA (STATIONARY)	30	DAY		$ -
98	6185-6005	TMA (MOBILE OPERATION)	3	DAY		$ -
99	7016-6082	CASING (STEEL) (8 IN) (OPEN TRENCH)	110	LF		$ -
100	7016-6084	CASING (STEEL) (12 IN) (OPEN TRENCH)	110	LF		$ -
101	7251-6001	SUB SURFACE UTIL LOCATE (OUTSIDE RBD)	6	EA		$ -

TOTAL AMOUNT OF BID

_____ Dollars and_____ Cents $ -

NOTE: THE COURT MAY EITHER REJECT ALL BIDS OR AWARD A CONTRACT TO THE LOWEST AND/OR BEST BID.

Acknowledgment of Addenda
Addendum No. 1: _____
Addendum No. 2: _____
Addendum No. 3: _____
Addendum No. 4: _____

Refer to the Technical Specifications section for a description of the specific reference number.

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

Signature of vendor doing business with the governmental entity

Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

Certificate of Interested Parties

In 2015, the Texas Legislature adopted **House Bill 1295,** which added 2252.908 to the Texas Government Code and applies to all contracts entered into on or after January 1, 2016. Section 2252.908 (b)(1)(2) applies only to a contract of a governmental entity or state agency that requires an action or vote by the governing body of the entity or agency before the contract may be signed or that has a value of at least $1 million. In addition, pursuant to Section 2252.908 (d), a governmental entity or state agency may not enter into a contract described by Subsection (b) with a business entity unless the business entity, in accordance with this section and rules adopted under this section, submits a disclosure of interested parties to the governmental entity or state agency at the time the business entity submits the signed contract to the governmental entity or state agency.

With regard to Hays County purchases, a vendor that is awarded a contract or purchase approved by Hays County Commissioner's Court is required to electronically complete a Form 1295 through the Texas Ethics Commission website (https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm) and submit a signed and notarized copy of the form to the County. A contract, including County issued purchase order (if applicable), will not be enforceable or legally binding until the County receives and acknowledges receipt of the properly completed Form 1295 from the awarded vendor.

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

OFFICE USE ONLY

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

4 Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO Interested Party. ☐

6 UNSWORN DECLARATION

My name is _____, and my date of birth is _____.

My address is _____, _____, _____, _____, _____.
(street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct.

Executed in _____ County, State of _____ , on the _____ day of _____, 20_____.
(month) (year)

_____
Signature of authorized agent of contracting business entity
(Declarant)

ADD ADDITIONAL PAGES AS NECESSARY

CODE OF ETHICS FOR HAYS COUNTY

Public employment is a public trust. It is the policy of Hays County to promote and balance the objective of protecting government integrity and the objective of facilitating the recruitment and retention of personnel needed by Hays County. Such a policy implemented by prescribing essential standards of ethical conduct without creating unnecessary obstacles to entering public services.

Public servants must discharge their duties impartially so as to assure fair competitive access to governmental procurement by responsible contractors. Moreover, they should conduct themselves in such a manner as to foster public confidence in the integrity of the Hays County procurement organization.

To achieve the purpose of this article, it is essential that those doing business with Hays County also observe the ethical standards prescribed here.

It shall be a breach of ethics to attempt to influence any public employee, elected official or department head to breach the standards of ethical conduct set forth in this code.

It shall be a breach of ethics for any employee of Hays County or a vendor doing business with the county to participate directly or indirectly in a procurement when the employee or vendor knows that:

The employee or any member of the employee's immediate family, or household has a substantial financial interest pertaining to the procurement. This means ownership of 10% or more of the company involved and/or ownership of stock or other interest or such valued at $2500.00 or more.

A business or organization in which the employee, or any member of the employee's immediate family, has a financial interest pertaining to the procurement.

Gratuities: It shall be a breach of ethics to offer, give or agree to give any employee of Hays County or for any employee to solicit, demand, accept or agree to accept from a vendor, a gratuity of consequence or any offer of employment in connection with any decision approval, disapproval, recommendation, preparation or any part of a program requirement or purchase request influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or controversy, any particular matter pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore pending before this government.

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

Contract Clause: The prohibition against gratuities and kickbacks prescribed above shall be conspicuously set forth in every contract and solicitation therefore.

Any effort to influence any employee, elected official, or department head to violate the standards of the code is grounds to void the contract. Please certify, by your signature below, that you understand the ethics policy of Hays County and in no way will attempt to violate the code.

SIGNATURE: _____

PRINT NAME & TITLE: _____

COMPANY NAME: _____

Hays County Practices Related to Historically Underutilized Businesses

1. STATEMENT OF PRACTICES

Hays County will strive to ensure that all businesses, regardless of size, economic, social or ethnic status have an equal opportunity to participate in the County's procurement processes. The County is committed to promote full and equal business opportunity for all businesses to supply the goods and services needed to support the mission and operations of county government, and seeks to encourage the use of certified historically underutilized businesses (HUB's) through the use of race, ethnic and gender neutral means. It is the practice of Hays County to involve certified HUBs to the greatest extent feasible in the County's procurement of goods, equipment, services and construction projects while maintaining competition and quality of work standards. The County affirms the good faith efforts who recognize and practice similar business standards.

2. DEFINITIONS

Historically underutilized businesses (HUBs), also known as a disadvantaged business enterprise (DBE), are generally business enterprises at least 51% of which is owned and the management and daily business operations are controlled by one or more persons who is/are socially and economically disadvantaged because of his/her identification as a member of certain groups, including women, Black Americans, Mexican Americans, and other Americans if Hispanic origin, Asian Americans and American Indians.

Businesses include firms, corporations, sole proprietorships, vendors, suppliers, contractors, subcontractors, professionals and other similar references when referring to a business that provides goods and/or services regardless of the commodity category.

Certified HUB's include business enterprises that meet the definition of a HUB and who meet the certification requirements of certification agencies recognized by Hays County, as expressed below.

Statutory bid limit refers to the Texas Local Government Code provision that requires competitive bidding for many items valued at greater than $50,000.

3. GUIDELINES

a. Hays County, its contractors, their subcontractors and suppliers, as well as all vendors of goods, equipment and services, shall not discriminate on the basis of race, color, creed, gender, age, religion, national origin, citizenship, mental or physical disability, veteran's status or political affiliation in the award and/or performance of contracts. All entities doing business or anticipating doing business with the County shall support, encourage and implement affirmative steps toward a common goal of establishing equal opportunity for all citizens and businesses of the County.

b. Vendors and/or contractors desiring to participate in the HUB program must successfully complete the certification process with the State of Texas or Texas Unified Certification Program. The vendor or contractor is also required to hold a current valid certification (title) from either of these entities.

c. Vendors and/or contractors must be registered with the State Comptroller's web-based HUB directory and with the Comptroller's Centralized Master Bidder's List (CMBL). Hays

County will solicit bids from certified HUB's for state purchasing and public works contracts.

4. Hays County will actively seek and encourage HUBs to participate in all facets of the procurement process by:
    a. Continuing to increase and monitor a database of certified HUB vendors, professionals and contractors. The database will be expanded to include products, areas of expertise and capabilities of each HUB firm.
    b. Continuing to seek new communication links with HUB vendors, professionals and contractors to involve them in the procurement process.
    c. Continuing to advertise bids on the County's website and in the newspapers including newspapers that target socially and economically disadvantaged communities.
5. As prescribed by law, the purchase of one or more items costing in excess of the statutory bid limit must comply with the competitive bid process. Where possible, those bids will be structured to include and encourage the participation of HUB firms in the procurement process by:
    a. Division of proposed requisitions into reasonable lots in keeping with industry standards and competitive bid requirements.
    b. Where feasible, assessment of bond and insurance requirements and the designing of such requirements to reasonably permit more than one business to perform the work.
    c. Specifications of reasonable, realistic delivery schedules consistent with the County's actual requirements.
    d. Specifications, terms and conditions reflecting the County's actual requirements are clearly stated, and do not impose unreasonable or unnecessary contract requirements.
6. A HUB practice statement shall be included in all specifications. The County will consider the bidder's responsiveness to the HUB Practices in the evaluation of bids and proposals. Failure to demonstrate a good faith effort to comply with the County's HUB practices may result in a bid or proposal being considered non-responsive to specifications.
7. Nothing in this practice statement shall be construed to require the County to award a contract other than to the lowest responsive bidder as required by law. This practice is narrowly tailored in accordance with applicable law.

Please sign for acknowledgement of the Hays County HUB Practices:

_____ _____

Signature Date

Hays County House Bill 89 Verification

I, _____ (Person name), the undersigned representative of _____(Company or Business name, hereafter referred to as Company) being an adult over the age of eighteen (18) years of age, after being duly sworn by the undersigned notary, do hereby depose and verify under oath that the company named above, under the provisions of Subtitle F, Title 10, Government Code Chapter 2270:

1. Does not boycott Israel currently; and
2. Will not boycott Israel during the term of the contract.

Pursuant to Section 2270.001, Texas Government Code:

1. *"Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and*

2. *"Company" means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit.*

_____ _____

Signature of Company Representative Date

On this _____ day of _____ 20____, personally appeared _____, the above-named person, who after by me being duly sworn, did swear and confirm that the above is true and correct.

NOTARY SEAL

_____

Notary Signature

_____

Date

Hays County Purchasing Department Senate Bill 252 Certification

On this day, I, _____, the Purchasing Representative for Hays County in San Marcos, Texas, pursuant to Texas Government Code, Chapter 2252, Section 2252.152 and Section 2252.153, certify that I did review the website of the Comptroller of the State of Texas concerning the listing of companies that is identified under Section 806.051, Section 807.051 or Section 2253.253 and I have ascertained that the below-named company is not contained on said listing of companies which do business with Iran, Sudan or any Foreign Terrorist Organization.

_____

Company Name

_____

IFB or Vendor number

CERTIFICATION CHECK PERFORMED BY:

_____

Purchasing Representative

_____

Date

Vendor References

List three (3) references of current customers who can verify the quality of service your company provides. The County prefers customers of similar size and scope of work to this proposal/bid. **This form must be returned with your bid/proposal.**

REFERENCE ONE

Company Name: _____

Address: _____

Contact Person and Title: _____

Phone Number: _____

Scope & Duration of Contract: _____

REFERENCE TWO

Company Name: _____

Address: _____

Contact Person and Title: _____

Phone Number: _____

Scope & Duration of Contract: _____

REFERENCE THREE

Company Name: _____

Address: _____

Contact Person and Title: _____

Phone Number: _____

Scope & Duration of Contract: _____

Vendor/Bidder's Affirmation

1. Vendor/Bidder affirms that they are duly authorized to execute this Contract, that this company, corporation, firm, partnership or individual has not prepared this bid in collusion with any other bidder, and that the contents of this bid as to price, terms or conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any other person engages in this type of business prior to the official opening of this bid.

2. Vendor/Bidder hereby assigns to Purchaser any and all claims for overcharges associated with this Contract which arise under the antitrust laws of the United States, 15 USCA Section 1 et seq., and which arise under the antitrust laws of the State of Texas, Tex. Bus. & Com. Code, Section 15.01, et seq.

3. Pursuant to 262.0276 (a) of the Texas Local Government Code, Vendor/Bidder, hereby affirms that Vendor/Bidder:

   _____ Does not own taxable property in Hays County, or;

   _____ Does not owe any ad valorem taxes to Hays County or is not otherwise indebted to Hays County

_____
Name of Contracting Company

If taxable property is owned in Hays County, list property ID numbers:

_____

_____
Signature of Company Official Authorizing Bid/Offer

_____ _____
Printed Name Title

_____ _____
Email Address Phone

Related Party Disclosure Form

Hays County strives to provide financial transparency to its taxpayers. Completion of this form will allow for added transparency into the procurement process by disclosing Vendor relationships with current or former Hays County employees. The existence of a relationship may not present a legal or ethical conflict for a Vendor. However, disclosure will allow for consideration of potential conflicts and/or ways to eliminate conflicts.

A Vendor who Employs any of the following is required to disclose the relationship on this form:

- Current Hays County employee (including elected or appointed official)(Complete Section A)
- Former Hays County employee who has been separated from Hays County for no less than four (4) years (including elected or appointed official) (Complete Section B)
- Person related within the 2nd degree of consanguinity or affinity to either of the above[1] (Complete Section C)

If no known relationships exist, complete Section D.

This form is required to be completed in full and submitted with the proposal package. A submitted proposal package that does not include this completed form will be considered non-responsive and will not be eligible for an award.

Section A: Current Hays County Employee

_____

Employee Name Title

Section B: Former Hays County Employee

_____

Employee Name Title Date of Separation from County

Section C: Person Related to Current or Former Hays County Employee

_____

Employee or Former Employee Name Title

_____

Name of Related Person Title Relationship

Section D: No Known Relationships

If no relationships in accordance with the above exist or are known to exist, provide a written explanation below:

_____

_____

_____

Attach additional pages if necessary.

I, the undersigned, hereby certify that the information provided is true and complete to the best of my knowledge.

_____
Name of Vendor

_____ _____
Signature of Certifying Official Title of Certifying Official

_____ _____
Printed Name of Certifying Official Date

[1]A degree of relationship is determined under Texas Government Code Chapter 573. (as outlined below)

Relationship of Consanguinity				
	1st Degree	**2nd Degree**	**3rd Degree***	**4th Degree***
Person	child or parent	grandchild, sister, brother or grand-parent	great-grandchild, niece, nephew, aunt,* uncle* or great-grandparent	great-great-grandchild, grandniece, grandnephew, first cousin, great aunt,* great uncle* or great-great-grandparent
* An aunt, uncle, great aunt or great uncle is related to a person by consanguinity only if he or she is the sibling of the person's parent or grandparent.				

Relationship of Affinity		
	1st Degree	**2nd Degree**
Person	spouse, mother-in-law, father-in-law, son-in-law, daughter-in-law, stepson, stepdaughter, stepmother or stepfather	brother-in-law, sister-in-law, spouse's grandparent, spouse's grandchild, grandchild's spouse or spouse of grandparent

“Vendor” shall mean any individuals or entity that seeks to enter into a contract with Hays County.

“Employs” shall mean any relationship wherein Vendor has made arrangements to compensate an individual, directly or by way of a business organization in which the individual has a sharehold or ownership interest, even if that arrangement is contractual and/or on an hourly-charge basis.

DEBARMENT AND LICENSING CERTIFICATION

STATE OF TEXAS §
§
COUNTY OF HAYS §

I, the undersigned, being duly sworn or under penalty of perjury under the laws of the United States and the State of Texas, certifies that Firm named herein below and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any federal department or agency:

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a federal, state or local governmental entity with commission of any of the offenses enumerated in paragraph (1)(b) of this certification;

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

(e) Are registered and licensed in the State of Texas to perform the professional services which are necessary for the project; and

(f) Have not been disciplined or issued a formal reprimand by any State agency for professional accreditation within the past three years.

_____
Name of Firm

_____ _____
Signature of Certifying Official Title of Certifying Official

_____ _____
Printed Name of Certifying Official Date

Where the Firm is unable to certify to any of the statements in this certification, such Firm shall attach an explanation to this certification.

SUBSCRIBED and sworn to before me the undersigned authority by

on this the day of _____, 20___, on behalf of said Firm.

_____
Notary Public in and for the State of Texas

My commission expires: _____

CHILD SUPPORT STATEMENT

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

State of Texas Child Support Business Ownership Form

County: _____ Project Name: _____

TxDOT CSJ: _____ LG Project Number: _____

Business Entity Submitting Bid:_____

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

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

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

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

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

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

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

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

_____ _____

Signature Date

_____

Printed Name

IF THIS PROJECT IS A JOINT VENTURE,

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

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

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

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

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

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

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

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

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

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

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

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

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

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

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

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

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

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

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

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

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

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

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

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

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

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

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

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

FHWA 1273 CERTIFICATION

I have read, understand, and agree to comply with the FHWA 1273 presented in Attachment C. Checking "YES" indicates acceptance, while checking "NO" denotes non-acceptance.

YES_____ NO_____

Authorized Signature: _____

Printed Name and Title: _____

Respondent's Tax ID: _____ Telephone: _____

If Respondent is a Corporation or other legal entity, please attach a corporate resolution or other appropriate official documentation that states that the person signing this Solicitation Response is an authorized person to sign for and legally bind the corporation or entity.

Appendix II to Part 200—Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non- Federal entity under the Federal award must contain provisions covering the following, as applicable.

(A) Contracts for more than the simplified acquisition threshold currently set at $150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of $10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be affected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are
unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of

experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201).

(I) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide Excluded Parties List System in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR Part 1986 Comp., p. 189) and 12689 (3 CFR Part 1989 Comp., p. 235), "Debarment and Suspension." The Excluded Parties List System in SAM contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(J) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award of $100,000 or more must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(K) § 200.322 Procurement of recovered materials—A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded
$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

I have read, understand, and agree to comply with the Federal Affirmations specified above. Checking "YES" indicates acceptance, while checking "NO" denotes non-acceptance.

YES_____ NO_____

Authorized Signature: _____

Printed Name and Title: _____

Respondent's Tax ID: _____ Telephone: _____

If Respondent is a Corporation or other legal entity, please attach a corporate resolution or other appropriate official documentation that states that the person signing this Solicitation Response is an authorized person to sign for and legally bind the corporation or entity.

SECTION 5
STANDARD FORM OF CONTRACT

STANDARD FORM OF CONTRACT

STATE OF TEXAS

HAYS COUNTY

THIS STANDARD FORM OF CONTRACT (the "Contract") is by and between HAYS COUNTY, TEXAS, a political subdivision of the State of Texas (hereinafter called "County") and _____ (hereinafter called "Contractor").

The County and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

Article 1. Work

Contractor shall complete all Work as specified or indicated in the Contract Documents. The "Project" is generally described as follows:

Project No. IFB 2021-B10 - Fischer Store Road at RM 2325

Article 2. Engineer of Record

The Project has been designed by Pape Dawson, Engineers, Inc., who is hereinafter called the "Engineer of Record" and who is to act as the County's design professional.

Article 3. Contract Time

The Work shall be Substantially Completed in 150 calendar days (the "Contract Time"). Following Substantial Completion, the Contractor shall proceed expeditiously with adequate forces and shall achieve Final Completion within the time specified in the Special Conditions.

Article 4. Contract Price

County shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to paragraph 4.1 below (the "Contract Price"):

4.1 For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in the Bid Form Schedule of Rates and Prices, and as totaled below:

TOTAL OF ALL UNIT PRICES_____ $_____(dollars)
(insert words)

As provided in the Standard Specifications, estimated quantities are not guaranteed, and determinations of actual quantities and classification are to be made by the Engineer of Record.

Article 5. Contractor's Representations

In order to induce County to enter into this Contract, Contractor makes the following representations:

5.1 Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents including the "technical data".

5.2 Contractor has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.

5.3 Contractor is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

5.4 Contractor has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site which have been identified. Contractor acknowledges that such reports and drawings are not Contract Documents and may not be complete for Contractor's purposes. Contractor acknowledges that the County and Engineer of Record do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the site.

5.5 Contractor has correlated the information known to Contractor, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.

5.6 Contractor has given Engineer of Record written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Engineer of Record is acceptable to Contractor, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

5.7 Contractor represents and agrees that there are no obligations, commitments, or impediments of any kind that will limit or prevent performance of its obligations under the Contract Documents.

5.8 Contractor warrants, represents, and agrees that if (i) it is a corporation or limited liability company, then it is a corporation duly organized, validly existing and in good standing under the laws of the State of Texas, or a foreign corporation or limited liability company duly authorized and in good standing to conduct business in the State of Texas, that it has all necessary corporate power and has received all necessary corporate approvals to execute and deliver this Contract, and the individual executing the Contract on behalf of Contractor has been duly authorized to act for and bind Contractor; or (ii) if it is a partnership, limited partnership, or limited liability partnership, then it has all necessary partnership power and has secured all necessary approvals to execute and deliver this Contract and perform all its obligations under the Contract Documents; and the individual executing this Contract on behalf of Contractor has been duly authorized to act for and bind Contractor.

5.9 Neither the execution and delivery of this Contract by Contractor nor the performance of its obligations under the Contract Documents will result in the violation of any provision, if a corporation, of its articles of incorporation or by-laws, if a limited liability company, of its articles of organization or regulations, or if a partnership, by any partnership agreement by which Contractor is bound, or any agreement by which Contractor is bound or to the best of the Contractor's knowledge and belief, will conflict with any order or decree of any court or governmental instrumentality relating to Contractor.

5.10 Except for the obligation of the County to pay Contractor the Contract Price pursuant to the terms of the Contract Documents, and to perform certain other obligations pursuant to the terms and conditions explicitly set forth in the Contract Documents, County shall have no liability to Contractor or to anyone claiming through or under Contractor by reason of the execution or performance of this Contract. Notwithstanding any obligation or liability of County to Contractor, no present or future partner or affiliate of County or any agent, officer, director, or employee of County, or of the various departments comprising Hays County, or anyone claiming under County has or shall have any personal liability to Contractor or to anyone claming through or under Contractor by reason of the execution or performance of this Contract.

Article 6. Contract Documents

The "Contract Documents," which comprise the entire agreement between the County and Contractor concerning the Work, consist of the following:

6.1 This Standard Form of Contract

6.2 Performance Bond

6.3 Payment Bond

6.4 Maintenance Bond

6.5 Certificate of Insurance

6.6 Wage Rates

6.7 Standard Specifications

6.8 Special Provisions

6.9 Special Conditions

6.10 Technical Specifications

6.11 Plan Drawings

6.12 Addenda numbers _____ to _____, inclusive

6.13 Contractor's Bid Form

6.14 Documentation submitted by Contractor prior to Notice of Award.

6.15 The following which may be delivered or issued after the Effective Date of the Contract and are not attached hereto: All Written Amendments and other documents amending, modifying or supplementing the Contract Documents pursuant to applicable sections in the Standard Specifications.

The documents listed in paragraphs 6.2 et seq. above are attached to this Contract (except as expressly noted otherwise above).

There are no Contract Documents other than those listed above in this Article 6. The Contract Documents may only be amended, modified or supplemented as provided in the Standard Specifications.

Article 7. Miscellaneous

7.1 Terms used in this Contract which are defined in the Standard Specifications will have the meanings indicated in the Standard Specifications.

7.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

7.3 The County and Contractor each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

7.4 Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the County and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken position.

7.5 Each party to this Contract hereby agrees and acknowledges that venue and jurisdiction of any suit, right, or cause of action arising out of or in connection with this Contract shall lie exclusively in Hays County, Texas. Furthermore, this Contract shall be governed by and construed in accordance with the laws of the State of Texas, excluding, however, its choice of law rules.

7.6 The parties to this Contract agree that during the performance of the services under this Contract they will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The parties to this Contract will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; termination; rates of pay or other forms of compensation, and selection for training, including apprenticeship.

7.7 This Contract is for the sole and exclusive benefit of the parties hereto, and nothing in this Contract, express or implied, is intended to confer or shall be construed as conferring upon any other person any rights, remedies or any other type or types of benefits.

7.8 Each party to this Contract acknowledges that it and its counsel have reviewed this Contract and that the normal rules of construction are not applicable and there will be no presumption that any ambiguities will be resolved against the drafting party in the interpretation of this Contract.

7.9 Each party to this Contract, in the performance of this Contract, shall act in an individual capacity and not as agents, employees, partners, joint ventures or associates of one another. The employees or agents of one party shall not be deemed or construed to be the employees or agents of the other party for any purposes whatsoever.

7.10 Nothing in this Contract shall be deemed to waive, modify or amend any legal defense available at law or in equity to County, its past or present officers, employees, or agents or employees, nor to create any legal rights or claim on behalf of any third party. County does not waive, modify, or alter to any extent whatsoever the availability of the defense of governmental immunity under the laws of the State of Texas and of the United States.

7.11 To the extent, if any, that any provision in this Contract is in conflict with Tex. Gov't Code 552.001 et seq., as amended (the "Public Information Act"), the same shall be of no force or effect. Furthermore, it is expressly understood and agreed that County, its officers and employees may request advice, decisions and opinions of the Attorney General of the State of Texas in regard to the application of the Public Information Act to any items or data furnished to County as to whether or not the same are available to the public. It is further understood that County's officers and employees shall have the right to rely on the advice, decisions and opinions of the Attorney General, and that County, its officers and employees shall have no liability or obligation to any party hereto for the disclosure to the public, or to any person or persons, of any items or data furnished to County by a party hereto, in reliance of any advice, decision or opinion of the Attorney General of the State of Texas.

7.12 County and Contractor have signed this Contract in triplicate. One counterpart each has been delivered to the County, Contractor and Engineer of Record. All portions of the Contract Documents have been signed, initialed or identified by County and Contractor or identified by Engineer of Record on their behalf.

7.13 This Contract and the Contract Documents represent the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either oral or written. This Contract may be amended only by written instrument signed by each party to this Contract. NO OFFICIAL, EMPLOYEE, AGENT, OR REPRESENTATIVE OF THE COUNTY HAS ANY AUTHORITY, EITHER EXPRESS OR IMPLIED, TO AMEND THIS CONTRACT, EXCEPT PURSUANT TO SUCH EXPRESS AUTHORITY AS MAY BE GRANTED BY THE HAYS COUNTY COMMISSIONERS COURT.

This Contract will be effective on _____, 20_____ (which is the "Effective Date" of the Contract).

COUNTY_____	CONTRACTOR_____
By:_____ Ruben Becerra, Hays County Judge	By: _____ Title: _____
	[CORPORATE SEAL]
Attest_____	Attest_____

SECTION 6
WAGE RATES

Texas Department of Transportation

The wage rates listed herein are those predetermined by the Secretary of Labor and State Statue and listed in the United States Department of Labor's (USDOL) General Decisions dated **01-01-2021** and are the minimum wages to be paid accordingly for each specified classification. To determine the applicable wage rate zone, a list entitled "TEXAS COUNTIES IDENTIFIED BY WAGE RATE ZONES" is provided in the contract. Any wage rate that is not listed herein and not in the USDOL's general decision, must be submitted to the Engineer for approval. IMPORTANT NOTICE FOR STATE PROJECTS: only the controlling wage rate zone applies to the contract. Effective 01-01-2021.

CLASS. #	CLASSIFICATION DESCRIPTION	ZONE TX02 *(TX20210002)	ZONE TX03 *(TX20210003)	ZONE TX04 *(TX20210004)	ZONE TX05 *(TX20210005)	ZONE TX06 *(TX20210006)	ZONE TX07 *(TX20210007)	ZONE TX08 *(TX20210008)	ZONE TX24 *(TX20210024)	ZONE TX25 *(TX20210025)	ZONE TX27 *(TX20210027)	ZONE TX28 *(TX20210028)	ZONE TX29 *(TX20210029)	ZONE TX30 *(TX202210030)	ZONE TX37 *(TX20210037)	ZONE TX38 *(TX20210038)	ZONE TX42 *(TX20210042)
1428	Agricultural Tractor Operator						$12.69					$12.35			$11.75		
1300	Asphalt Distributor Operator	$14.87	$13.48	$13.88	$15.72	$15.58	$15.55	$15.72	$13.28	$15.32	$15.62	$14.36	$14.25	$14.03	$13.75	$14.06	$14.40
1303	Asphalt Paving Machine Operator	$13.40	$12.25	$12.35	$13.87	$14.05	$14.36	$14.20	$13.26	$13.99	$14.68	$12.92	$13.44	$12.53	$14.00	$14.32	$12.99
1106	Asphalt Raker	$12.28	$10.61	$12.02	$14.21	$11.65	$12.12	$11.64	$11.44	$12.69	$12.05	$11.34	$11.67	$11.40	$12.59	$12.36	$11.78
1112	Batching Plant Operator, Asphalt																
1115	Batching Plant Operator, Concrete																
1214	Blaster																
1615	Boom Truck Operator						$18.36										
1444	Boring Machine Operator																
1305	Broom or Sweeper Operator	$11.21	$10.33	$10.08	$11.99		$11.04	$11.62		$11.74	$11.41	$10.30		$10.23	$10.60	$12.68	$11.05
1144	Communications Cable Installer																
1124	Concrete Finisher, Paving and Structures	$13.55	$12.46	$13.16	$12.85	$12.64	$12.56	$12.77	$12.44	$14.12	$13.04	$13.38	$12.64	$12.80	$12.79	$12.98	$13.32
1318	Concrete Pavement Finishing Machine Operator				$16.05		$15.48			$16.05		$19.31				$13.07	
1315	Concrete Paving, Curing, Float, Texturing Machine Operator											$16.34				$11.71	
1333	Concrete Saw Operator				$14.67					$14.48	$17.33					$13.99	
1399	Concrete/Gunite Pump Operator																
1344	Crane Operator, Hydraulic 80 tons or less				$18.22		$18.36			$18.12	$18.04	$20.21			$18.63	$13.86	
1345	Crane Operator, Hydraulic Over 80 Tons																
1342	Crane Operator, Lattice Boom 80 Tons or Less	$16.82	$14.39	$13.85	$17.27		$15.87			$17.27		$14.67			$16.42	$14.97	$13.87
1343	Crane Operator, Lattice Boom Over 80 Tons				$20.52		$19.38			$20.52		$17.49			$25.13	$15.80	
1306	Crawler Tractor Operator	$13.96	$16.63	$13.62	$14.26		$15.67			$14.07	$13.15	$13.38			$14.60	$13.68	$13.50
1351	Crusher or Screen Plant Operator																
1446	Directional Drilling Locator						$11.67										
1445	Directional Drilling Operator				$20.32		$17.24										
1139	Electrician	$20.96		$19.87	$19.80		$26.35		$20.27	$19.80		$20.92				$27.11	$19.87
1347	Excavator Operator, 50,000 pounds or less	$13.46	$12.56	$13.67	$17.19		$12.88	$14.38	$13.49	$17.19		$13.88			$14.09	$12.71	$14.42
1348	Excavator Operator, Over 50,000 pounds		$15.23	$13.52	$17.04		$17.71			$16.99	$18.80	$16.22				$14.53	$13.52
1150	Flagger	$9.30	$9.10	$8.50	$10.28	$8.81	$9.45	$8.70		$10.06	$9.71	$9.03	$8.81	$9.08	$9.90	$10.33	$8.10
1151	Form Builder/Setter, Structures	$13.52	$12.30	$13.38	$12.91	$12.71	$12.87	$12.38	$12.26	$13.84	$12.98	$13.07	$13.61	$12.82	$14.73	$12.23	$12.25
1160	Form Setter, Paving & Curb	$12.36	$12.16	$13.93	$11.83	$10.71	$12.94			$13.16	$12.54	$11.33	$10.69		$13.33	$12.34	$13.93
1360	Foundation Drill Operator, Crawler Mounted				$17.99					$17.99						$17.43	
1363	Foundation Drill Operator, Truck Mounted		$16.86	$22.05	$21.51		$16.93			$21.07	$20.20	$20.76		$17.54	$21.39	$15.89	$22.05
1369	Front End Loader Operator, 3 CY or Less	$12.28	$13.49	$13.40	$13.85		$13.04	$13.15	$13.29	$13.69	$12.64	$12.89			$13.51	$13.32	$12.17
1372	Front End Loader Operator, Over 3 CY	$12.77	$13.69	$12.33	$14.96		$13.21	$12.86	$13.57	$14.72	$13.75	$12.32			$13.19	$13.17	$13.02
1329	Joint Sealer																
1172	Laborer, Common	$10.30	$9.86	$10.08	$10.51	$10.71	$10.50	$10.24	$10.58	$10.72	$10.45	$10.30	$10.25	$10.03	$10.54	$11.02	$10.15
1175	Laborer, Utility	$11.80	$11.53	$12.70	$12.17	$11.81	$12.27	$12.11	$11.33	$12.32	$11.80	$11.53	$11.23	$11.50	$11.95	$11.73	$12.37

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1346	Loader/Backhoe Operator	$14.18	$12.77	$12.97	$15.68		$14.12			$15.18	$13.58	$12.87		$13.21	$14.13	$14.29	$12.90
1187	Mechanic	$20.14	$15.47	$17.47	$17.74	$17.00	$17.10			$17.68	$18.94	$18.58	$17.00	$16.61	$18.46	$16.96	$17.47
1380	Milling Machine Operator	$15.54	$14.64	$12.22	$14.29		$14.18			$14.32	$14.35	$12.86			$14.75	$13.53	$12.80
1390	Motor Grader Operator, Fine Grade	$17.49	$16.52	$16.88	$17.12	$18.37	$18.51	$16.69	$16.13	$17.19	$18.35	$17.07	$17.74	$17.47	$17.08	$15.69	$20.01
1393	Motor Grader Operator, Rough	$16.15	$14.62	$15.83	$16.20	$17.07	$14.63	$18.50		$16.02	$16.44	$15.12	$16.85	$14.47	$17.39	$14.23	$15.53
1413	Off Road Hauler			$10.08	$12.26		$11.88			$12.25		$12.23			$13.00	$14.60	
1196	Painter, Structures					$21.29	$18.34						$21.29			$18.62	
1396	Pavement Marking Machine Operator	$16.42		$13.10	$13.55		$19.17	$12.01		$13.63	$14.60	$13.17		$16.65	$10.54	$11.18	$13.10
1443	Percussion or Rotary Drill Operator																
1202	Piledriver															$14.95	
1205	Pipelayer		$11.87	$14.64	$13.17	$11.17	$12.79		$11.37	$13.24	$12.66	$13.24	$11.17	$11.67		$12.12	$14.64
1384	Reclaimer/Pulverizer Operator	$12.85			$11.90		$12.88			$11.01		$10.46					
1500	Reinforcing Steel Worker	$13.50	$14.07	$17.53	$16.17		$14.00			$16.18	$12.74	$15.83		$17.10		$15.15	$17.72
1402	Roller Operator, Asphalt	$10.95		$11.96	$13.29		$12.78	$11.61		$13.08	$12.36	$11.68			$11.71	$11.95	$11.50
1405	Roller Operator, Other	$10.36		$10.44	$11.82		$10.50	$11.64		$11.51	$10.59	$10.30		$12.04	$12.85	$11.57	$10.66
1411	Scraper Operator	$10.61	$11.07	$10.85	$12.88		$12.27		$11.12	$12.96	$11.88	$12.43		$11.22	$13.95	$13.47	$10.89
1417	Self-Propelled Hammer Operator																
1194	Servicer	$13.98	$12.34	$14.11	$14.74		$14.51	$15.56	$13.44	$14.58	$14.31	$13.83		$12.43	$13.72	$13.97	$14.11
1513	Sign Erector																
1708	Slurry Seal or Micro-Surfacing Machine Operator																
1341	Small Slipform Machine Operator									$15.96							
1515	Spreader Box Operator	$12.60		$13.12	$14.71		$14.04			$14.73	$13.84	$13.68		$13.45	$11.83	$13.58	$14.05
1705	Structural Steel Welder															$12.85	
1509	Structural Steel Worker						$19.29									$14.39	
1339	Subgrade Trimmer																
1143	Telecommunication Technician																
1145	Traffic Signal/Light Pole Worker						$16.00										
1440	Trenching Machine Operator, Heavy						$18.48										
1437	Trenching Machine Operator, Light																
1609	Truck Driver Lowboy-Float	$14.46	$13.63	$13.41	$15.00	$15.93	$15.66			$16.24	$16.39	$14.30	$16.62	$15.63	$14.28	$16.03	$13.41
1612	Truck Driver Transit-Mix				$14.14					$14.14							
1600	Truck Driver, Single Axle	$12.74	$10.82	$10.75	$13.04	$11.61	$11.79	$13.53	$13.16	$12.31	$13.40	$10.30	$11.61		$11.97	$11.46	$10.75
1606	Truck Driver, Single or Tandem Axle Dump Truck	$11.33	$14.53	$11.95	$12.95		$11.68		$14.06	$12.62	$11.45	$12.28		$13.08	$11.68	$11.48	$11.10
1607	Truck Driver, Tandem Axle Tractor with Semi Trailer	$12.49	$12.12	$12.50	$13.42		$12.81	$13.16		$12.86	$16.22	$12.50			$13.80	$12.27	$12.50
1441	Tunneling Machine Operator, Heavy																
1442	Tunneling Machine Operator, Light																
1706	Welder		$14.02		$14.86		$15.97		$13.74	$14.84					$13.78		
1520	Work Zone Barricade Servicer	$10.30	$12.88	$11.46	$11.70	$11.57	$11.85	$10.77		$11.68	$12.20	$11.22	$11.51	$12.96	$10.54	$11.67	$11.76

Notes:

*Represents the USDOL wage decision.

Any worker employed on this project shall be paid at the rate of one and one half (1-1/2) times the regular rate for every hour worked in excess of forty (40) hours per week.

For reference, the titles and descriptions for the classifications listed here are detailed further in the AGC of Texas' *Standard Job Classifications and Descriptions for Highway, Heavy, Utilities, and Industrial Construction in Texas* posted on the AGC's Web site for any contractor.

TEXAS COUNTIES IDENTIFIED BY
WAGE RATE ZONES: 2, 3, 4, 5, 6, 7, 8, 24, 25, 27, 28, 29, 30, 37, 38, 42

County Name	Zone	County Name	Zone	County Name	Zone	County Name	Zone
Anderson	28	Donley	37	Karnes	27	Reagan	37
Andrews	37	Duval	30	Kaufman	25	Real	37
Angelina	28	Eastland	37	Kendall	7	Red River	28
Aransas	29	Ector	2	Kenedy	30	Reeves	8
Archer	25	Edwards	8	Kent	37	Refugio	27
Armstrong	2	El Paso	24	Kerr	27	Roberts	37
Atascosa	7	Ellis	25	Kimble	37	Robertson	7
Austin	38	Erath	28	King	37	Rockwall	25
Bailey	37	Falls	28	Kinney	8	Runnels	37
Bandera	7	Fannin	28	Kleberg	27	Rusk	4
Bastrop	7	Fayette	27	Knox	37	Sabine	28
Baylor	37	Fisher	37	Lamar	28	San Augustine	28
Bee	27	Floyd	37	Lamb	37	San Jacinto	38
Bell	7	Foard	37	Lampasas	7	San Patricio	29
Bexar	7	Fort Bend	38	LaSalle	30	San Saba	37
Blanco	27	Franklin	28	Lavaca	27	Schleicher	37
Borden	37	Freestone	28	Lee	27	Scurry	37
Bosque	28	Frio	27	Leon	28	Shackelford	37
Bowie	4	Gaines	37	Liberty	38	Shelby	28
Brazoria	38	Galveston	38	Limestone	28	Sherman	37
Brazos	7	Garza	37	Lipscomb	37	Smith	4
Brewster	8	Gillespie	27	Live Oak	27	Somervell	28
Briscoe	37	Glasscock	37	Llano	27	Starr	30
Brooks	30	Goliad	29	Loving	37	Stephens	37
Brown	37	Gonzales	27	Lubbock	2	Sterling	37
Burleson	7	Gray	37	Lynn	37	Stonewall	37
Burnet	27	Grayson	25	Madison	28	Sutton	8
Caldwell	7	Gregg	4	Marion	28	Swisher	37
Calhoun	29	Grimes	28	Martin	37	Tarrant	25
Callahan	25	Guadalupe	7	Mason	27	Taylor	2
Cameron	3	Hale	37	Matagorda	27	Terrell	8
Camp	28	Hall	37	Maverick	30	Terry	37
Carson	2	Hamilton	28	McCulloch	37	Throckmorton	37
Cass	28	Hansford	37	McLennan	7	Titus	28
Castro	37	Hardeman	37	McMullen	30	Tom Green	2
Chambers	38	Hardin	38	Medina	7	Travis	7
Cherokee	28	Harris	38	Menard	37	Trinity	28
Childress	37	Harrison	42	Midland	2	Tyler	28
Clay	25	Hartley	37	Milam	28	Upshur	4
Cochran	37	Haskell	37	Mills	37	Upton	37
Coke	37	Hays	7	Mitchell	37	Uvalde	30
Coleman	37	Hemphill	37	Montague	37	Val Verde	8
Collin	25	Henderson	28	Montgomery	38	Van Zandt	28
Collingsworth	37	Hidalgo	3	Moore	37	Victoria	6
Colorado	27	Hill	28	Morris	28	Walker	28
Comal	7	Hockley	37	Motley	37	Waller	38
Comanche	37	Hood	28	Nacogdoches	28	Ward	37
Concho	37	Hopkins	28	Navarro	28	Washington	28
Cooke	37	Houston	28	Newton	28	Webb	3
Coryell	7	Howard	37	Nolan	37	Wharton	27
Cottle	37	Hudspeth	8	Nueces	29	Wheeler	37
Crane	37	Hunt	25	Ochiltree	37	Wichita	5
Crockett	8	Hutchinson	37	Oldham	37	Wilbarger	37
Crosby	2	Irion	2	Orange	38	Willacy	30
Culberson	8	Jack	28	Palo Pinto	28	Williamson	7
Dallam	37	Jackson	27	Panola	28	Wilson	7
Dallas	25	Jasper	28	Parker	25	Winkler	37
Dawson	37	Jeff Davis	8	Parmer	37	Wise	25
Deaf Smith	37	Jefferson	38	Pecos	8	Wood	28
Delta	25	Jim Hogg	30	Polk	28	Yoakum	37
Denton	25	Jim Wells	27	Potter	2	Young	37
DeWitt	27	Johnson	25	Presidio	8	Zapata	30
Dickens	37	Jones	25	Rains	28	Zavala	30
Dimmit	30			Randall	2		

SECTION 7
PERFORMANCE BOND

PERFORMANCE BOND

STATE OF TEXAS
COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS: That _____

_____of the City of _____

County of _____, and State of _____, as principal, and

_____
authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto Hays County (County), in the penal sum of

_____Dollars

($_____) for the payment whereof, the said Principal and Surety bind themselves, their heirs, administrators, executors, successors, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written Agreement with the County, dated the _____day of _____, 20_____(the "Agreement"), to which the said Agreement, along with the Contract Documents referenced therein are hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform said Agreement and shall in all respects duly and faithfully observe and perform all and singular the covenants, conditions and agreements in and by the Agreement agreed and covenanted by the Principal to be observed and performed, and according to the true intent and meaning of said Agreement and the Contract Documents hereto annexed, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code, as amended and all liabilities on this bond shall be determined in accordance with the provisions of said Chapter to the same extent as if it were copied at length herein.

SURETY, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Agreement or to the work performed thereunder, or to the Contract Documents referenced therein, shall in anyway affect the obligations on this bond, and it does hereby waive notice of such change, extension of time, alteration or addition to the terms on the Agreement, or to the work to be performed thereunder.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 20____.

_____	_____
PRINCIPAL	SURETY
_____	_____
SIGNATURE	SIGNATURE
_____	_____
NAME & TITLE	NAME & TITLE
_____	_____
ADDRESS	ADDRESS
_____	_____
(_____)_____	(_____)_____
PHONE NUMBER	PHONE NUMBER

The name and address of the Resident Agency of Surety is:

_____

_____

(_____)_____	_____
PHONE NUMBER	SIGNATURE OF LICENSED LOCAL RECORDING AGENT appointed to countersign on behalf of Surety (Required by Art. 21.09 of the Insurance Code)

****

I,_____, having executed Bonds
SIGNATURE

for _____ do hereby affirm I have
NAME OF SURETY

verified that said Surety is now certified with Authority from either: (a) the Secretary of the Treasury of the United States if the project funding includes Federal monies; or (b) the State of Texas if none of the project funding is from Federal sources; and further, said Surety is in no way limited or restricted from furnishing Bond in the State of Texas for the amount and under conditions stated herein.

SECTION 8
PAYMENT BOND

PAYMENT BOND

STATE OF TEXAS
COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS: That _____

_____of the City of _____

County of _____, and State of _____, as Principal (hereinafter referred to as the "Principal"), and

_____

authorized under the laws of the State of Texas to act as Surety on bonds for principals (hereinafter referred to as the "Surety"), are held and firmly bound unto Hays County, (hereinafter referred to as the "County"), in the penal sum of

_____Dollars

($_____) for the payment whereof, the said Principal and Surety bind themselves, their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written agreement with the County, dated the _____ day of _____, 20_____, to _____

_____ (hereinafter referred to as the "Agreement"), which said Agreement and the Contract Documents incorporated therein are hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the Work provided for in said Agreement, then, this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code, as amended and all liabilities on this bond shall be determined in accordance with the provisions of said Chapter to the same extent as if it were copied at length herein.

SURETY, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Agreement or to the Work performed thereunder, or to the other Contract Documents accompanying the same, shall in anyway affect its obligation on this bond, and it does hereby waive notice of such change, extension of time, alteration or addition to the terms of the Agreement, or to the work to be performed thereunder or to the other Contract Documents accompanying the same.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 20____.

_____	_____
PRINCIPAL	SURETY
_____	_____
SIGNATURE	SIGNATURE
_____	_____
NAME & TITLE	NAME & TITLE
_____	_____
ADDRESS	ADDRESS
_____	_____
(_____) _____	(_____) _____
PHONE NUMBER	PHONE NUMBER

The name and address of the Resident Agency of Surety is:

_____

_____

(_____) _____	_____
PHONE NUMBER	SIGNATURE OF LICENSED LOCAL RECORDING AGENT appointed to countersign on behalf of Surety (Required by Art. 21.09 of the Insurance Code)

SECTION 9
CERTIFICATE OF INSURANCE

CERTIFICATE OF INSURANCE

TO: DATE:_____

_____ Project No.:_____
(COUNTY)

_____ Type of _____

_____ Project:_____
(ADDRESS)

THIS IS TO CERTIFY THAT _____
(Name and address of insured)
is, at the date of this certificate, insured by this Company with respect to the business operations hereinafter described for the types of Insurance and in accordance with the provisions of the standard policies used by this Company, and further hereinafter described. Exceptions to the standard policy noted on reverse side hereof.

TYPE OF INSURANCE	POLICY NO.	EFFECTIVE	EXPIRES	LIMITS OF LIABILITY	
Workmen's Compensation					
				1 Person	$_____
Public Liability				1 Accident	$
Contingent				1 Person	$_____
Liability				1 Accident	$
Property Damage					
Builder's Risk					
Automobile					
Other					

The foregoing Policies (do) (do not) cover all sub-contractors.

Locations Covered:_____

Descriptions of Operations Covered:_____

The above policies either in the body thereof or by appropriate endorsement provide that they may not be changed or canceled by the insurer in less than five days after the insured has received written notice of such change or cancellation.

Where applicable local laws or regulations require more than five days actual notice of change or cancellation to the assured, the above policies contain such special requirements, either in the body thereof or by appropriate endorsement thereto attached.

_____
(Name of Insurer)

By:_____

Phone No. (___)_____ Title:_____

SECTION 10
GENERAL CONDITIONS

General Conditions

THE CONTRACT GENERAL CONDITIONS SHALL BE AS SET FORTH IN THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES, ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION NOVEMBER 1, 2014, INCLUSIVE OF ITEMS 1L – 9L GENERAL REQUIRMENTS AND COVENANTS, AND APPLICABLE SPECIAL PROVISIONS (SEE SECTION 13 TECHNICAL SPECIFICATIONS).

SECTION 11
SPECIAL CONDITIONS

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SPECIAL CONDITIONS

I. County

Hays County, a political subdivision of the State of Texas, acting through its County Judge, or his designee, agents or employees, whom Contractor has entered into the Agreement and for whom the Work is to be performed, is referred to as "County". The County shall be contacted through its Purchasing Department for contract related subjects and through the County Engineer's office for design and construction related subjects:

Purchasing Department	County Engineer
Hays County	Hays County
712 South Stagecoach Trl, Ste 1071	2171 Yarrington Road
San Marcos, TX 78666	San Marcos, TX 78667

II. Program Manager

HNTB Corporation is the County's Program Manager for the Project. The Program Manager represents the County and oversees the planning, design, review, and coordination of the design and construction phases of the Project.

III. General Engineering Consultant (GEC)

HNTB Corporation is the consulting engineering firm representing and assisting the County in the design, review, and coordination of the design and construction phases of the project, including oversight of the construction engineering and inspection services performed on the Project.

IV. The Construction Inspector

Pape Dawson Engineers, Inc. is the "Construction Inspector" referred to herein and in the Contract Documents. The Construction Inspector will be responsible for performing construction engineering and inspection services on the Project.

V. Engineer of Record

Pape Dawson Engineers, Inc. is the County's design professional, who shall provide professional engineering services as defined in the Texas Government Code Chapter 2254, Subchapter A, and referred to as the " Engineer of Record" in Article 2 of the "Standard Form of Contract" contained in the Contract Documents. Nothing contained in the Contract Documents shall create any contractual or agency relationship between the Engineer of Record and the Contractor.

VI. Insurance

The Contractor will carry Workmen's Compensation Insurance, Public Liability and Property Damage Insurance, and Automobile Insurance sufficient to provide adequate protection against damage claims which may arise from operations under the Contract Documents, in compliance with the following:

Contractors Insurance: Without limiting any of the other obligations or liabilities of the Contractor, during the term of the Agreement and prior to Final Completion, the Contractor

and each subcontractor, at their own expense, shall purchase and maintain the herein stipulated minimum insurance with companies duly approved to do business in the State of Texas and satisfactory to the County. Certificates of each policy shall be delivered to the County before any work is started, along with a written statement from the issuing company stating that said policy shall not be canceled, non-renewed or materially changed without 30 days advance written notice being given to the County. Prior to the effective date of cancellation, Contractor must deliver to the County a replacement certificate of insurance or proof of reinstatement. A model Certificate of Insurance is illustrated herein. Coverage shall be of the following types and not less than the specified amounts:

(a) workers' compensation as required by Texas law, with the policy endorsed to provide a waiver of subrogation as to the County; employer's liability insurance of not less than $500,000 for each accident, $500,000 disease--each employee, $500,000 disease-policy limit.

(b) commercial general liability insurance, including independent contractor's liability, completed operations and contractual liability covering, but not limited to, the liability assumed under the indemnification provisions of the Contract Documents, fully insuring Contractor's (or subcontractor's) liability for injury to or death of County's employees and third parties, extended to include personal injury liability coverage with damage to property of third parties, with minimum limits as set forth below:

General Aggregate	$1,000,000
Operations Aggregate	$1,000,000
Personal and Advertising Injury	$600,000
Each Occurrence	$600,000
Fire Damage (any one fire)	$50,000
Medical Expense (any one person)	$5,000

The policy shall include coverage extended to apply to completed operations, asbestos hazards (if this project involves work with asbestos) and XCU (explosion, collapse and underground) hazards. The completed operations coverage must be maintained for a minimum of one year after Final Completion and acceptance of the Work, with evidence of same filed with County.

(c) comprehensive automobile and truck liability insurance, covering owned, hired and non-owned vehicles, with a combined bodily injury and property damage minimum limit of $600,000 per occurrence; or separate limits of $250,000 for bodily injury (per person), $500,000 bodily injury (per accident) and $100,000 for property damage. Such insurance shall include coverage for loading and unloading hazards.

"Umbrella" Liability Insurance: The Contractor shall obtain, pay for and maintain umbrella liability insurance during the contract term, insuring Contractor for an amount of not less than $1,000,000 per occurrence combined limit for bodily injury and property damage that follows form and applies in excess of the primary liability coverages required herein above. The policy shall provide "drop down" coverage where underlying primary insurance

coverage limits are insufficient or exhausted. County and Project Engineer shall be named as additional insured.

Policy Endorsements and Special Conditions

(a) Each insurance policy to be furnished by Contractor shall include the following conditions by endorsement to the policy:

(1) name the County, the Program Manager/GEC, the County's Representatives, the Construction Inspector and the Engineer of Record as an additional insured to all applicable coverage;
(2) each policy shall require that 30 days prior to the cancellation, non-renewal or any material change in coverage, a notice thereof shall be given to County by certified mail.
(3) the term "County" shall include all authorities, boards, bureaus, commissions, divisions, departments and offices of the County and individual members, employees and agents thereof in their official capacities, and/or while acting on behalf of the County;
(4) the "Program Manager" represents and assists the County in the planning, design, review, and coordination of the design and construction phases of the project.
(5) the policy phrase "other insurance" shall not apply to the County where the County is an additional insured on the policy; and
(6) all provisions of the Contract Documents concerning liability, duty and standard of care together with the indemnification provision, shall be underwritten by contractual liability coverage sufficient to include such obligations within applicable policies.

(b) Insurance furnished by the Contractor shall also be in accordance with the following requirements:
(1) any policy submitted shall not be subject to limitations, conditions or restrictions deemed inconsistent with the intent of the insurance requirements to be fulfilled by Contractor. The County's decision thereon shall be final;
(2) all policies are to be written through companies duly licensed to transact that class of insurance in the State of Texas; and
(3) all liability policies required herein shall be written with an "occurrence" basis coverage trigger.

(c) Contractor agrees to the following:
(1) Contractor hereby waives subrogation rights for loss or damage to the extent same are covered by insurance. Insurers shall have no right of recovery or subrogation against the County, it being the intention that the insurance policies shall protect all parties to the Agreement and be primary coverage for all losses covered by the policies;
(2) companies issuing the insurance policies and Contractor shall have no recourse against the County for payment of any premiums or assessments for any deductibles, as all such premiums and deductibles are the sole responsibility and risk of the Contractor;

(3) approval, disapproval or failure to act by the County regarding any insurance supplied by the Contractor (or any subcontractors) shall not relieve the Contractor of full responsibility or liability for damages and accidents as set forth in the contract documents. Neither shall the bankruptcy, insolvency or denial of liability by the insurance company exonerate the Contractor from liability; and

(4) no special payments shall be made for any insurance that the Contractor and subcontractors are required to carry; all are included in the contract price and the contract unit prices.

Any of such insurance policies required under the Contract Documents may be written in combination with any of the others, where legally permitted, but none of the specified limits may be lowered thereby.

The Contractor shall furnish the County with satisfactory proof that it has provided adequate insurance coverage in amounts and by approved carriers as required by the Contract Documents.

VII. Record ("As-Built") Drawings

The Contractor shall mark all changes and revisions on all of its copies of the working drawings during the course of the Project as they occur. Upon completion of the Project and prior to Final Acceptance and Payment, the Contractor shall submit to the Construction Inspector one set of its working drawings, dated and signed by the Contractor and its project superintendent and labeled as "As-Built", that shows all changes and revisions outlined above and that shows field locations of all above ground appurtenances including, but not limited to valves, fire hydrants and manholes. These as-built drawings shall be forwarded to the GEC and then to the County and become the property of the County. Each appurtenance shall be located by at least two (2) horizontal distances measured from existing, easily identifiable, immovable appurtenances such as fire hydrants or valves. Property pins can be used for as-builts tie-ins provided no existing utilities as previously described are available. Costs for delivering as-built drawings shall be subsidiary to other bid items.

VIII. Limit of Financial Resources

The County has a limited amount of financial resources committed to this Project; therefore, it shall be understood by Contractor that the County may be required to change and/or delete any items which it may feel is necessary to accomplish all or part of the scope of work within its limit of financial resources. Contractor shall be entitled to no claim for damages or anticipated profits on any portion of work that may be omitted. At any time during the duration of the Project, the County reserves the right to omit any work from the Contract Documents. Unit prices for all items previously approved in the Contract Documents shall be used to delete or add work per change order.

IX. Limits of Work and Payment

It shall be the obligation of the Contractor to complete all work included in the Contract Documents, so authorized by the County, as described in the Contract Documents and

Technical Specifications. Any question arising as to the limits of work shall be left up to the interpretation of the Engineer and/or Inspector.

X. State Sales Tax

On a contract awarded by a governmental entity for the construction of a publicly-owned improvement in a street right-of-way or other easement which has been dedicated to the public and to the Organization which qualifies for exemption pursuant to the provisions of Article 20.04 (F) of the Texas Limited Sales, Excise and Use Tax Act, the Contractor can probably be exempted in the following manner:

> The Contractor may buy tax-free any materials incorporated into the project by issuing a resale certificate in lieu of paying the sales tax at the time of purchase. The Contractor may then accept an exemption certificate from the City for the materials.

Even with a separated contract, the rental of equipment and the purchase of items which do not ultimately become part of the physical structure will still be subject to state and local sales taxes.

XI. Completion of Work on Time

The Contractor agrees that time is of the essence and that the definite value of damages which would result from delay would be incapable of ascertainment and uncertain, so that for each day of delay beyond the number of days herein agreed upon for the Substantial Completion of the Work specified in the Contract Documents and contracted for, after due allowance for such extension of time as is provided for under the provisions of the Contract, the County may withhold permanently from the Contractor's total compensation, not as penalty but as liquidated damages, the sum as specified in Special Specification 000-HC01 per calendar day.

Furthermore, it is agreed by the Contractor that the time period between Substantial Completion and Final Completion shall be no longer than **30** calendar days. This separate time period shall be for completion of the Punch List, as set forth in Item 5L Control of Work of the Contract, Final Completion and Acceptance. In the event that Contractor fails to attain Final Completion on or before the expiration of the above said time period, the Contractor shall be subject to the remedies set forth in the Contract Documents. More specifically, the Contractor shall be subject to the terms set forth in Item 8L Prosecution and Progress under Article 7, Default of Contract. In addition to exercising its rights and remedies under the Contract Documents, the County may also exercise any remedy that may be available to it under the law or in equity.

XII. Layout and Construction Stakes

All construction staking shall be performed by the Contractor at the Contractor’s expense.

The Contractor shall coordinate with design engineer to identify all necessary elements for station development as well as identify the trees, shrubs, and grass areas designated to remain within the construction limits to prevent damage to these items.

XIII. Safety

The Contractor must use methods of construction that meet or exceed Occupational Safety and Health Administration Standards and any other local, state or federal regulations for safety that are in effect. The Contractor will have a trench safety plan prepared and sealed by Contractor's registered professional engineer.

XIV. Maintenance Bond Term & Amount - OMITTED

No Maintenance Bond is required.

XV. Safety Restrictions - Work Near High Voltage Lines

The following procedures shall be followed for work near high voltage lines on the Project.

(a) A warning sign not less than five (5) inches by seven (7) inches, painted yellow with black letters that are legible at twelve (12) feet shall be placed inside and outside vehicles such as cranes, derricks, power shovels, drilling rigs, pile drivers, hoisting equipment or similar apparatus. The warning sign shall read as follows: "Warning-Unlawful to Operate This Equipment Within Six Feet of High Voltage Lines".

(b) Equipment that may be operated with ten (10) feet of high voltage lines shall have an insulating cage guard around the boom or arm (except backhoes or dippers), and insulator links on the lift hook connections.

(c) When necessary to work within six (6) feet of high voltage electrical lines, notify the power company. The electric company will erect temporary mechanical barriers, de-energize the line, or raise or lower the line. All such work done by the power company shall be at the expense of the contractor. The contractor shall maintain an accurate log of all such calls to the electric company.

(d) No person shall work within six (6) feet of high voltage lines without protection measures having been taken as outlined in Paragraph C.

XVI. Erosion Control

Contractor shall comply with all laws prohibiting the pollution of any lake, stream, river, or wetland by the dumping of any refuse, rubbish, dredge material, or debris therein.

The Contractor will file the Notice of Intent (NOI) and the Notice of Termination (NOT) as the Project's operator. All required Permits and Notices shall be posted by the Contractor at the Project site.

Contractor shall apply temporary and/or permanent erosion and sedimentation controls, as specified in the plans or directed to disturbed roadside areas, fifteen feet and beyond from road pavement, prior to initiating road base operations. Following asphalt paving of road pavement, apply temporary and/or permanent erosion and sedimentation controls to remaining disturbed areas, as specified in the plans or as directed.

Contractor shall be responsible for the maintenance of all temporary and permanent water quality and erosion control measures proposed under the Storm Water Pollution Prevention Plan (SWPPP) or the Water Pollution Abatement Plan (WPAP) for the duration of the

Project construction. Upon completion of construction and before the Construction Inspector issues the Certificate of Completion, Contractor shall be responsible for the removal of all temporary measures and the cleaning and resetting of all permanent measures. All costs associated with this work shall be considered subsidiary to other bid items and no additional compensation shall be allowed.

Contractor shall take special precautions during all periods of heavy rainfall and at all locations where storm water, groundwater and/or mud and debris may enter the sewer systems. All mud, stones, and debris that enter the sewer systems due to Contractor's operations, or Contractor's neglect, shall be cleaned from the system by Contractor. It shall be Contractor's responsibility to see that such storm water, groundwater and debris do not enter the sewer system. All costs for such work shall be merged in the unit prices bid and no additional compensation shall be allowed.

If it is necessary in the prosecution of the Work to interrupt existing surface drainage, sewers, or under drainage, temporary drainage shall be provided until permanent drainage work is completed. The construction of all temporary drainage installations shall be considered as incidental to the construction of the Work. Drainage ways shall be kept clear or other satisfactory provisions made for drainage.

Contractor shall be responsible for and shall take all reasonable and necessary precautions to preserve and protect all existing tile drains, sewers, and other subsurface drains, or parts thereof, which may be continued in service without change. Contractor shall repair, at its own expense, any and all damage to such facilities resulting from negligence or carelessness on the part of its operations.

The Construction Inspector shall be responsible for the monitoring and inspection of the erosion control measures by completion of the Construction Pollution Prevention Plan Inspection and Maintenance Report, as required for coverage under the Texas Pollutant Discharge Elimination System (TPDES) General Construction Permit (TXR150000).

XVII. Discovery of Hazardous Materials

If, during the course of the Work, the existence of hazardous material, including asbestos containing material, is observed in the work area, the Contractor shall immediately notify the County in writing. The Contractor shall not perform any work pertinent to the hazardous material prior to receipt of special instructions from the County. Asbestos containing material includes transit pipe.

XVIII. Submittals – Certificate of Compliance

The Contractor shall submit to the Construction Inspector a Certificate of Compliance from the manufacturer and/or supplier of each and every specified material or manufactured equipment item. The said certificate shall state that the material or the item of equipment to be furnished has been manufactured with materials in accordance with the applicable sections of all required codes, specifications, and standards as required by the specifications.

XIX. Unavailability of Materials

If the Contractor is unable to furnish or use any of the materials or equipment specified because of any order by a governmental agency limiting the manufacture or use, or because of the supply situation in the general market for such material or equipment, the Contractor shall offer substitutes therefor. The substitutes shall be suitable for the purpose, considering the factors of quality, serviceability, appearance, and maintenance. No substitute shall be used until the Engineer has approved it.

No consideration will be given to the use of substitutes on account of market conditions unless the Contractor demonstrates that, for the item in question, the Contractor placed its order without delay, that it has shown due diligence in attempting to locate the item as specified, and that the unavailability is due to market conditions in general throughout the particular industry.

If substitutes are used in the Work, the compensation to be paid to the Contractor shall be subject to review and adjustment. As a general principle, if the Engineer shall determine that the substitute will be less satisfactory, the Contractor shall allow a credit to the County; only under unusual circumstances shall there be an increase in compensation to the Contractor on account of substitution. The basis upon which the amount of price and adjustments will be founded shall be the cost of the appropriate items at the time the bids for the Project were opened.

XX. Traffic Control

Access shall be provided for residents and emergency vehicles at all times. When it becomes necessary to restrict access, the Contractor shall notify all applicable agencies (i.e. Fire Department, E.M.S., Public Works, etc.) a minimum of five (5) working days in advance of the proposed restrictions. At the end of each day, two lanes of traffic shall be opened to the public, unless otherwise stated in the Contract Documents.

The Contractor shall coordinate with other contractors working in the area.

XXI. Temporary Traffic Handling Devices

The Contractor shall furnish, erect and maintain all necessary barricades, lights, warning signs and temporary pavement markings as shown on the Plans and/or in accordance with the Texas Manual on Uniform Traffic Control Devices and with the Specifications in the Contract Documents. In addition, the Contractor shall provide flag-persons and take necessary precautionary measures for the protection of persons, property and the Work, when deemed necessary by the County or the Construction Inspector.

The Construction Inspector shall be responsible for the monitoring and inspection of the traffic control measures by completion of the Traffic Control Devices Inspection Report (TCDIR), and the Contractor shall be responsible for compliance with the terms of the TCDIR procedures.

XXII. Roadway Signs

All permanent and temporary roadway signage designated in the Contract Documents shall be in accordance with the Texas Manual on Uniform Traffic Control Devices.

XXIII. Project Signs

The Contractor shall erect at the site of construction, and maintain during construction, signs satisfactory to the County identifying the Project and indicating that the government is participating in the development of the Project. Two project signs will be required for the Project. The two said signs shall be 8' X 4' and made out of white 10 mm corrugated plastic with pressure sensitive vinyl lettering to include: Hays County / TxDOT Partnership Program with the Hays County Seal, the Project's name, and a brief description relating to the estimated date of completion, contact phone number, website address and the appropriate Hays County Commissioner's name and precinct number. Furnishing, installing and maintaining these signs shall be considered subsidiary to Item 502, "Barricades, Signs and Traffic Handling". Proofs of sign shall be submitted to the Inspector for approval prior to fabrication.

XXIV. Permits

The Contractor shall be responsible for obtaining any and all required construction permits. Contractor agrees to comply with all conditions of the permits and to maintain copies of the permits at the site at all times while the Work is in progress. The County shall be responsible for obtaining Section 404 permits from the U.S. Army Corps of Engineers as part of the Project design. When Contractor-initiated changes in the construction method changes the impacts to waters of the U.S., Contractor shall be responsible for obtaining new or revised Section 404 permits.

XXV. Landscape Restoration

If not designated as a specific pay item in bid package, the Contractor shall take the means necessary to protect all trees, shrubbery and sod. Protection, removal and replacement of existing landscaping will be in accordance with the Contract Documents.

XXVI. Existing Fencing

All fences encountered during construction within the right-of-way (ROW) shall be removed by the Contractor under "Preparing Right-of-Way." Permanent fencing, designating the ROW, will be provided by others, unless otherwise shown in the Contract Documents. The Contractor will be required to coordinate preparing ROW operations and fence removal and installations with the landowners as needed.

XXVII. Easements

Any easements, both temporary and permanent, required for the Project will be provided by the County as shown in the Contract Documents. Other easements required or desirable by the Contractor shall be arranged by the Contractor at its sole expense. The easements shall be cleaned after use and restored to their original conditions, or better by the Contractor. In the event additional work is required by the Contractor, it shall be the Contractor's responsibility to obtain written permission from the property owners involved for the use of additional property required. No additional payment will be allowed for this item.

XXVIII. Limits of Contractor's Operation

The Contractor shall limit construction operations to within the ROW or the easement unless otherwise directed by the County or its authorized representative.

XXIX. Maintenance of Pedestrian Walkways

The Contractor will be required to maintain clear walkways for pedestrians during construction in a manner to provide access in the most convenient and safest manner consistent with essential construction operations. Specifically, the following will be enforced.

Pedestrian traffic may be blocked at a location where work is actually in progress. Signs, barricades, and warning devices must be placed at nearest crosswalks approaching the construction site from every direction advising pedestrians of the blockage and advising them to use alternate routes.

Access to doorways and pedestrian entrances must be maintained at all times during hours that access is needed by business. Paving by sections or providing temporary access may be required.

No more than one corner of any intersection may be under construction at any one time. Work must be completed and opened for use by pedestrians before starting work on any other corner of an intersection.

The Contractor will be expected to diligently pursue construction from start to completion at every location to avoid prolonged and unnecessary disruptions to pedestrian traffic.

This work shall be considered incidental and not a separate pay item, unless provided otherwise in the Contract Documents.

XXX. Spoil

All excavated material unfit for backfill, waste material accumulated on the job, and any material surplus to that needed in the prosecution of the Work shall be removed from the site by the Contractor and properly and legally disposed of at its expense, unless otherwise directed by the Inspector. **THE CONTRACTOR SHALL INDEMNIFY AND SAVE HARMLESS THE COUNTY, ALL OF ITS OFFICERS, AGENTS, AND EMPLOYEES FROM ALL SUITS, ACTIONS, OR CLAIMS OF ANY CHARACTER RESULTING FROM ITS ARRANGEMENTS FOR THE DISPOSAL OF SPOIL.** This shall be incidental and not a separate pay item.

XXXI. Materials Testing

Quality Control testing of all materials, construction items or products incorporated in the work shall be performed by the Contractor at the Contractor's expense.

Quality Assurance sampling and testing for acceptance will be performed by the Inspector in accordance with the Quality Control (QC) / Quality Assurance (QA) program outlined in Appendix A. The cost of such tests will be incurred by the County and coordinated by the Construction Inspector through funds made available to the Construction Inspector

under his/her agreement with the County for the professional services related to construction engineering and inspection on the Project.

The Inspector shall furnish for review by the GEC, not later than 10 days after receipt of notice to proceed, a Quality Control Plan consisting of plans, procedures, and organization necessary to produce an end product which complies with the contract documents. The Inspector will be allowed the latitude to develop standards of control subject to approval by the County. As a minimum, the plan shall include description of the type and frequency of inspection staffing, materials handling and construction procedures, calibration and maintenance of equipment, production process control, and testing deemed necessary to assure quality as specified by the Contract Documents.

XXXII. Pre-Construction Conference

Before the Project work order is issued, a pre-construction conference shall be held with representatives of the County and the Contractor. The Contractor shall plan to submit a schedule of operations at the pre-construction conference, unless otherwise notified. See Section XXXVI-Prosecution and Progress for additional construction schedule requirements.

XXXIII. Weight Tickets

The Contractor will be responsible for providing asphalt and aggregate tickets for quantity verifications on all asphaltic concrete used for the Project.

XXXIV. Confined Space Entry Program

It shall be the responsibility of the Contractor to implement and maintain a variable "Confined Space Entry Program" which must meet OSHA requirements for all its employees and subcontractors at all times during construction. OSHA defines all active sewer manholes, regardless of depth, as "permit required confined spaces". Contractors shall submit an acceptable "Confined Space Entry Program" for all applicable manholes and maintain an active file for these manholes. The cost of complying with this program shall be subsidiary to the pay items involving work in confined spaces.

XXXV. Tree and Plant Protection

Scope: Provide complete protection and maintenance of existing trees, shrubs, and grass areas designated to remain within construction limits and/or right-of-way.

Coordination: Coordinate protection of existing trees, shrubs and grass areas with other trades so as to prevent damage to these items.

Payment for Damages: If existing trees, shrubs or grass areas are destroyed, killed or badly damaged as a result of construction observations, Contract sum will be reduced by the amount of assessed damages. Damages will be evaluated by the Construction Inspector, using the following:

Trees: International Shade Tree Conference Standards and following formula – measurement of a cross section of tree trunk will be made at a point 2 feet above

existing grade level to determine cross section area in square inches. Assessment for damage will be $27.00 per square inch.

Shrubs and Grass Areas: An initial fine of $1,000 shall be imposed for any unauthorized disturbance within the boundaries of the shrub and grass areas to remain within the right-of-way and outside the limits of disturbance. This disturbance includes but is not limited to: parking or intrusion of equipment or vehicles; storage of any materials, and any unauthorized damage and/or removal of vegetation. In addition to the initial fine, a base fine of $8.00 for every square foot of area of damaged vegetation within any areas designated to remain on the plans shall be imposed. The areas covered under this section include but are not limited to: areas designated to remain or no-work areas. In determining the amount of fine, the Construction Inspector shall consider the degree and extent of harm caused by the violation, the cost of rectifying the damage, and whether the violation was committed willfully.

Materials: Tree Protection lumber dimensions shall be 4X4 and 2X4 sizes.

Protection: The Contractor shall protect existing trees, shrubs, and grass areas within construction limits from the following damage:

(1) Compaction of root area by equipment, vehicles or material storage;
(2) Trunk damage by moving equipment material storage, nailing or bolting;
(3) Strangling by tying ropes or guy wires to trunks or large branches;
(4) Poisoning by pouring solvents, gas, paint or other chemicals on or around trees and roots;
(5) Cutting of roots by excavating or ditching;
(6) Damage of branches by improper pruning;
(7) Drought from failure to water or by cutting or changing normal drainage pattern past roots;
(8) Changes of soil pH factor by disposal of lime base materials such as concrete or plaster;
(9) Do not cut roots 1-1/2” in diameter or over. Excavation and earthwork within drip line of trees shall be done by hand.

Install barricade protection around trees and shrubs, constructed of 4X4 posts and 2X4 stringers top and bottom. Install protection prior to demolition or excavation operations. Leave protection until construction operations are essentially complete.

Maintenance:

(1) Water trees and shrubs within construction limits as required to maintain their health during course of construction operations.
(2) Pruning will be performed by County.

XXXVI. Prosecution and Progress

At the pre-construction meeting, the Contractor shall submit for acceptance a schedule of all planned work activities and sequences that is intended to be followed in order to both substantially and fully complete the Work within the allotted time periods (the "Project Schedule"). The purpose of the County requiring the Project Schedule shall be to:

(1) Ensure adequate planning during the prosecution and progress of the work in accordance with the allowable number of working/ calendar days and all milestones;
(2) Assure coordination of the efforts of the Contractor, County, Program Manager/GEC, Construction Inspector, utilities and others that may be involved in the Project;
(3) Assist the Contractor, County, Program Manager/GEC and Construction Inspector in monitoring the progress of the Work and evaluating proposed changes to the Contract Documents; and
(4) Assist the County, Program Manager/GEC and Construction Inspector in administering the time requirements set forth in the Contract Documents.

A Type B Schedule will be required on all projects. Following is the schedule requirements:

Type B Schedule:

The Contractor shall create and maintain a Critical Path Method (CPM) Project Schedule showing the manner of prosecution of work that it intends to follow in order to both substantially and fully complete the Work within the allotted time periods. The Project Schedule shall employ computerized CPM for the planning, scheduling and reporting of the work as described in this specification. The CPM Project Schedule shall be prepared using the Precedence Diagram Method (PDM). No direct compensation will be allowed for fulfilling these requirements, as such work is considered subsidiary to the various bid items of the Project.

(1) Personnel. The Contractor shall provide an individual, referred to hereinafter as the Scheduler, to create and maintain the CPM schedule. He or she shall be proficient in CPM analysis and shall be able to perform required tasks on the specified software. The Scheduler shall be made available for discussion or meetings when requested by the County, Construction Inspector or Program Manager/GEC.

(2) Schedule. The Project Schedule shall show the sequence and interdependence of activities required for complete performance of the work. The Contractor shall be responsible for assuring all work sequences are logical and show a coordinated plan of the Work.

Each activity on the schedule shall be described by: An activity number utilizing an alphanumeric designation system tied to the traffic control plans, and that is agreeable to the County, Program Manager/GEC, or Construction Inspector; concise description of the Work represented by the activity; and activity durations

in whole working days with a maximum of twenty (20) working days. Durations greater than twenty (20) working days may be used for non-construction activities (mobilization, submittal preparation, curing, etc.), and other activities mutually agreeable between the Contractor and County, Program Manager/GEC or Construction Inspector. The Contractor shall provide a legend for all abbreviations. The activities shall be coded so that organized plots of the schedule may be produced. Typical activity coding includes: Traffic control phase, location and work type. If allowed and if the Contractor chooses to use Suretrak Project Manager to create the schedule, the Contractor shall not use the independent activity type. This would cause the schedule to be incompatible with Primavera Project Planner.

The activity durations shall be based on the quantity for the individual work activity divided by a production rate. An estimated production rate for each activity shall also be shown.

The Contractor shall plan and incorporate major resources into the schedule. Major resources are defined as crews and equipment that constrain the Contractor from pursuing available work. The resources shall accurately represent the Contractor's planned equipment and manpower to achieve the productivity rates specified above.

Seasonal weather conditions shall be considered and included in the CPM schedule for all work influenced by temperature and/or precipitation. Seasonal weather conditions shall be determined by an assessment of average historical climatic conditions. Average historical weather data is available through the National Oceanic and Atmospheric Administration (NOAA). These effects will be simulated through the use of work calendars for each major work type (i.e., earthwork, concrete paving, structures, asphalt, drainage, etc.) Project and work calendars should be updated each month to show days actually able to work on the various work activities.

"Total float" is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, for each and every activity in the schedule. Float time in the schedule is a shared commodity between the County and the Contractor.

Only responsible delays in activities that affect milestone dates or the Project's completion date, as determined by CPM analysis, will be considered for a time extension.

The schedule shall show the sequence and interdependence of activities required for complete performance of the work. The schedule shall be prepared and maintained in accordance with the scheduling requirements stated in this Section and shall include two (2) organized plots with the activities logically grouped using the activity coding. The Contractor shall also provide an electronic copy of the schedule on diskette or CD-ROM.

The schedule shall encompass the time from the start of the Contract Time to the

Project's Final Completion. The longest path through the schedule shall be readily discernable on the plot of the schedule.

(3) Joint Review, Revision and Acceptance. Within twenty (20) calendar days of receipt of the Contractor's proposed schedule, the County or its authorized agents shall evaluate the schedule for compliance with this specification, and notify the Contractor of the findings. If the County or its authorized personnel request a revision or justification, the Contractor shall provide a satisfactory revision or adequate justification to the satisfaction of the Construction Inspector or County authorized personnel within seven (7) calendar days.

If the Contractor submits a CPM schedule for acceptance which is based on a sequence of work not in the Contract Documents, then the Contractor shall notify the County or its authorized entities in writing, separate from the schedule submittal.

The County's review and acceptance of the Contractor's Project Schedule is for conformance to the requirements of the Contract Documents only. Review and acceptance by the County or other authorized personnel of the Contractor's Project Schedule does not relieve the Contractor of any of its responsibility for the Project Schedule, or of the Contractor's ability to meet interim milestone dates (if specified) and the Final Completion date, nor does such review and acceptance expressly or by implication warrant, acknowledge or admit the reasonableness of the logic, durations, manpower or equipment loading of the Contractor's Project Schedule. In the event the Contractor fails to define any element of work, activity or logic and the County's review does not detect this omission or error, such omission or error, when discovered by the Contractor or County and its authorized personnel, shall be corrected by the Contractor at the next monthly schedule update and shall not affect the project completion date.

(4) Updates. The Project Schedule shall be updated on a monthly basis and shall be required as a basis for the pay application approval. The Project Schedule update shall be submitted on the first working day of each month. The Contractor shall meet with the Construction Inspector or County authorized personnel each month at a scheduled update meeting to review actual progress made through the data date of the schedule update. The review of progress will include dates activities actually started and/or completed, and the percentage of work completed or remaining duration on each activity started and/or completed. The percentage of work complete shall be calculated by utilizing the quantity and productivity rate information. The Project Schedule update shall include one (1) copy of the following information:

a) Electronic copy of the updated schedule including revisions and changes on diskette or CD-ROM or other storage media.
b) One (1) logically organized plot of the schedule update if requested by the County or its authorized personnel.

(5) Project Schedule Revisions. If the Contractor desires to make major changes in the

Project Schedule, the Contractor shall notify the County or Construction Inspector in writing. The written notification shall include the reason for the proposed revision, what the revision is comprised of, and how the revision was incorporated into the schedule. In addition to the written notification of the revision, the Contractor shall provide an electronic copy and one logically organized plot of the schedule including the revision if requested by the County or Construction Inspector.

Major changes are hereby defined as those that may affect compliance with the requirements of the Contract Documents or those that change the critical path. All other changes may be accomplished through the monthly updating process.

(6) Time Impact Analysis. The Contractor shall notify the County or Construction Inspector when an impact may justify an extension of Contract Time or adjustment of milestone dates. This notice shall be made in writing as soon as possible, but no later than the end of the next estimate period after the commencement of an impact or the notice for a change is given to the Contractor. Not providing notice to the County or Construction Inspector by the end of the next estimate period will indicate the Contractor's approval of the time charges as shown on that time statement. Future consideration of that statement will not be permitted and the Contractor forfeits its right to subsequently request a time extension or time suspension unless the circumstances are such that the Contractor could not reasonably have knowledge of the impact by the end of the next estimate period.

When changes are initiated or impacts are experienced, the Contractor shall submit to the County or Construction Inspector a written time impact analysis describing the influence of each change or impact.

A time impact analysis is an evaluation of the effects of changes in the construction sequence, contract, plans, or site conditions on the Contractor's plan for constructing the Project, as represented by the Project Schedule. The purpose of the time impact analysis is to determine if the overall Project has been delayed, and if necessary, to provide the Contractor and the County a basis for making adjustments to the time allotted for Substantial Completion and Final Completion.

A time impact analysis shall consist of one or all of the steps listed below.

Step 1. Establish the status of the Project before the impact using the most recent Project Schedule update prior to the impact occurrence.

Step 2. Predict the effect of the impact on the most recent Project Schedule update prior to the impact occurrence. This requires estimating the duration of the impact and inserting the impact into the schedule update. The Contractor shall demonstrate how the impact was inserted into the schedule showing the added or modified activities and the added or modified relationships. Any other changes made to the schedule including modifications to the calendars or constraints shall be noted.

Step 3. Track the effects of the impact on the schedule during its occurrence. Note any

changes in sequencing, and mitigation efforts.

Step 4. Compare the status of the Work prior to the impact (Step 1) to the prediction of the effect of the impact (Step 2), and to the status of the work during and after the effects of the impact are over (Step 3). Note that if an impact causes a lack of access to a portion of the Project, the effects of the impact may extend to include a reasonable period for remobilization.

The time impact analysis shall include an electronic copy of the complete schedule prepared in Step 2. If the Project Schedule is revised after the submittal of a time impact analysis but prior to its approval, the Contractor shall promptly indicate in writing to the County or Construction Inspector the need for any modification to its time impact analysis.

Only one (1) copy of each time impact analysis shall be submitted within fourteen (14) calendar days after the completion of an impact. The County or Construction Inspector may require Step 1 and Step 2 of the time impact analysis be submitted at the commencement of the impact, if needed to make a decision regarding the suspension of Contract Time.

Approval or rejection of each time impact analysis by the County, Construction Inspector or Program Manager/GEC shall be made within fourteen (14) calendar days after receipt unless subsequent meetings and negotiations are necessary.

The time impact analysis shall be incorporated into and attached to any relevant change order(s) and/or supplemental agreement(s).

XXXVII. Sanitary Provisions

Provide and maintain adequate, neat, and sanitary toilet accommodations for employees, including County employees and representatives, in compliance with the requirements and regulations of the Texas Department of Health or other authorities having jurisdiction.

XXXVIII. Work Near Railroads

(A) General.

If the work crosses or is in close proximity to a railroad, do not interfere with the use or operation of the railroad company's trains or other property. Assign responsible supervisory personnel to ensure that tracks and adjacent areas are clear of debris, road materials, and equipment. It is the Contractor's responsibility to contact the railroad to determine the railroad's requirements for work within the railroad right of way and to comply with the requirements. The County will not reimburse the Contractor for any cost associated with these requirements. If the work requires construction within 25 ft. horizontally of the near rail or if the tracks may be subject to obstruction due to construction operations, notify the Engineer and the Railroad Company at least 3 days before performing work. The railroad company will provide flaggers during this work. If railroad flaggers will be needed longer than 2 consecutive days, request them at least 30 days before performing

work within the railroad right of way. Flaggers provided by the railroad company will be paid for by the County. Do not store material or equipment in the Railroad's right of way within 15 ft. of the centerline of any track. Do not place any forms or temporary falsework within 8.5 ft. horizontally from the centerline or 22 ft. vertically above the top of rails of any track, unless otherwise shown in the Contract Documents.

(B) Temporary Crossings.

If a temporary crossing is needed, obtain permission from the railroad company before crossing the tracks. Execute the "Agreement for Contractor's Temporary Crossing" if required by the Railroad Company. The Contractor shall ensure that the tracks are left clear of equipment and debris that would endanger the safe operation of railroad traffic. Provide a crossing guard on each side of the crossing to direct equipment when hauling across the tracks. The Contractor shall stop construction traffic a safe distance away from the crossing upon the approach of railroad traffic. Work for temporary crossings will not be paid for directly, but shall be subsidiary to items of the Work subject of the Contract Documents. Work performed by the Railroad Company for the temporary crossing, except flaggers, will be at the Contractor's expense.

SECTION 12
GENERAL NOTES

GENERAL NOTES: Version: May 7, 2021

Item	Description	**Rate
**204	**Sprinkling** (Dust) (Item 132) (Item 247)	 30 GAL/CY 30 GAL/CY 30 GAL/CY
**210	**Rolling (Flat Wheel)** (Item 247) (Item 316)	 1 HR/200 TON 1 HR/6000 SY
**210	**Rolling (Tamping and Heavy Tamping)**	1 HR/200 CY
**210	**Rolling (Lt Pneumatic Tire)** (Item 132) (Item 247) (Item 316 - Seal Coat) (Item 316 - Two Course)	 1 HR/500 CY 1 HR/200 TON 1 HR/6000 SY 1 HR/3000 SY
247	**Flexible Base (CMP IN PLC)**	132 LB/CF
310	**Prime Coat**	0.20 GAL/SY
314	**Emulsified Asphalt Treatment (SS-1 or MS-2)**	0.30 GAL/SY
316	**Underseals Asphalts (Multi Option)** **Surface Treatments** **Seal Coat** Grade 4 Asphalt Aggregate Grade 5 Asphalt Aggregate **Two Course Surface Treatment** Asphalt 1st Application Asphalt 2nd Application Aggregate 1st Application Grade 4 Aggregate 2nd Application Grade 4	0.20 GAL/SY 0.38 GAL/SY 1 CY/120 SY 0.32 GAL/SY 1 CY/150 SY 0.28 GAL/SY 0.24 GAL/SY 1 CY/110 SY 1 CY/130 SY
340/3078,341/3076 ,344/3077	**Dense-Graded Hot-Mix Asphalt and Superpave**	110 LB/SY/IN
347	**Thin Surface Mixtures (TOM)** Asphalt Aggregate	 7.9 LB/SY/IN 102.1 LB/SY/IN
3085	**UnderSeal Course**	0.08 GAL/SY
	Tack Coat	0.08 GAL/SY

** For Informational Purposes Only

The following standard detail sheet or sheets have been modified:

Modified Standards

GENERAL

Contractor questions on this project are to be addressed to the following individual(s):
Hays County Purchasing purchasing@co.hays.tx.us

Bid information, including plans, specifications and bidding documents, is available through the following websites:
City of San Marcos E-Procurement: https://sanmarcostx.gov/bids.aspx
BidNet Direct: https://www.bidnetdirect.com/texas/hayscounty
Texas Comptroller: http://www.txsmartbuy.com/

All contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to websites above:

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved.

If work is performed at Contractor's option, when inclement weather is impending, and the work is damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

The roadbed will be free of organic material prior to placing any section of the pavement structure.

Contact the supervisor for the passenger facility at Capital Metro and request the relocation of Capital Metro signs. Contact the supervisor at (512) 385-0190.

Equip all construction equipment used in roadway work with highly visible omnidirectional flashing warning lights.

Provide a smooth, clean sawcut along the existing asphalt pavement structure, as directed. Consider subsidiary to the pertinent Items.

Construct all manholes/valves to final pavement elevations prior to the placement of final surface. If the manholes/valves are going to be exposed to traffic, place temporary asphalt around the manhole/valve to provide a 50:1 taper. The asphalt taper is subsidiary to the ACP work.

Use a self-contained vacuum broom to sweep the roadway and keep it free of sediment as directed. The contractor will be responsible for any sweeping above and beyond the normal maintenance required to keep fugitive sediment off the roadway as directed by the Engineer.

Damage to existing pipes and SET's due to Contractor operations will be repaired at Contractor's expense.

All locations used for storing construction equipment, materials, and stockpiles of any type, within the right of way, will be as directed. Use of right of way for these purposes will be restricted to those locations where driver sight distance to businesses and side street intersections is not obstructed and at other locations where an unsightly appearance will not exist. The Contractor will not have exclusive use of right of way but will cooperate in the use of the right of way with the city/county and various public utility companies as required.

ITEM 5 – CONTROL OF THE WORK

Overhead and underground utilities may exist in the vicinity of the project. The exact location of underground utilities is not known.

Place construction stakes at intervals of no more than 100 ft. This work is subsidiary.

Precast Alternate Proposals.
When a precast or cast-in-place concrete element is included in the plans, a precast concrete alternate may be submitted in accordance with "Standard Operating Procedure for Alternate Precast Proposal Submission" found online at https://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html#design. Acceptance or denial of an alternate is at the sole discretion of the Engineer. Impacts to the project schedule and any additional costs resulting from the use of alternates are the sole responsibility of the Contractor.

Alignment and Profile
Unless shown in the plans, profile and alignment data for roadways being overlaid or widened are for design verification only. Provide survey and construct the roadway in accordance with the typical section. Bid items and data may be provided to adjust cross slope and super elevations.

ITEM 6 - CONTROL OF MATERIALS
Give a minimum of 1 business day notice for materials, which require inspection at the Plant.

For structures with paint containing hazardous materials, provide locations of paint removal 60 days prior to begin removal.

For removal, tie, or tap of asbestos concrete (AC) pipe, contact TxDOT and the local utility company 60 days prior to performing the work. Expose the AC pipe to provide a minimum of 1 ft. of clearance around the top and sides. A minimal amount of soil may remain around the AC pipe to avoid disturbance. The local utility company will be responsible for the demo notice to DSHS and removal of the AC pipe. Tie or tap into existing AC pipe may require removing an entire section of pipe from collar to collar and replacement of pipe with new pipe using existing bid items.

ITEM 7 – LEGAL RELATIONS AND RESPONSIBILITIES
Hays County will coordinate with TDLR regarding pedestrian elements and sidewalks. The contractor will procure and provide all permits, licenses, and inspections; pay all charges, fees, and taxes regarding TDLR rules governing industrialized housing and buildings.

Roadway closures during key dates and/or special events are prohibited. See notes for Item 502 for the key dates and/or special events.

Refer to the Environmental Permits, Issues and Commitments (EPIC) plan sheets for additional requirements and permits.

When any abandoned well is encountered, cease construction operations in this area and notify the Engineer who will coordinate the proper plugging procedures. A water well driller licensed in the State of Texas must be used to plug a well.

Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. Track all exposed soil, stockpiles, and slopes. Tracking consists of operating a tracked vehicle or equipment up and down the slope, leaving track marks perpendicular to the direction of the slope. Re-track slopes and stockpiles after each rain event or every 14 days, whichever occurs first. This work is subsidiary.

Perform maintenance of vehicles or equipment at designated maintenance sites. Keep a spill kit on-site during fueling and maintenance. This work is subsidiary.

Maintain positive drainage for permanent and temporary work for the duration of the project. Be responsible for any items associated with the temporary or interim drainage and all related maintenance. This work is subsidiary.

Suspend all activities near any significant recharge features, such as sinkholes, caves, or any other subterranean openings that are discovered during construction or core sampling. Do not proceed until the designated Geologist or TCEQ representative is present to evaluate and approve remedial action.

Locate aboveground storage tanks kept on-site for construction purposes in a contained area as to not allow any exposure to soils. The containment will be sized to capture 150% of the total capacity of the storage tanks.

PSL in Edwards Aquifer Recharge and Contributing Zone

Obtain written approval from the Engineer for all on or off right of way PSLs not specifically addressed in the plans. Provide a signed SW3P sketch of the location 30 business days prior to use of the PSL. Include a list of materials, equipment and portable facilities that will be stored at the PSL.

PSL in USACE Jurisdictional Area

Do not initiate activities in a PSL associated with a U.S. Army Corps of Engineers (USACE) jurisdictional area that have not been previously evaluated by the USACE as part of the permit review of this project. Such activities include, but are not limited to, haul roads, equipment staging areas, borrow and disposal sites. Associated defined here means materials are delivered to or from the PSL. The jurisdictional area includes all waters of the U.S. including wetlands or associated wetlands affected by activities associated with this project. Special restrictions may be required for such work. Consult with the USACE regarding activities, including PSLs that have not been previously evaluated by the USACE. Provide the Department with a copy of all USACE coordination and approvals before initiating activities.

Proceed with activities in PSLs that do not affect a USACE jurisdictional area if self-determination has been made that the PSL is non-jurisdictional or proper clearances have been obtained in USACE jurisdictional areas or have been previously evaluated by the USACE as part of the permit review of this project. Document any determinations that PSL activities do not affect a USACE jurisdictional area. Maintain copies of PSL determinations for review by the Department or any regulatory agency. The Contractor must document and coordinate with the USACE, if required, before any excavation material hauled from or embankment material hauled into a USACE jurisdictional area by either (1) or (2) below.

1. **Restricted Use of Materials for the Previously Evaluated Permit Areas.** When an area within the project limits has been evaluated by the USACE as part of the permit process for this project:
    a. suitable excavation of required material in the areas shown on the plans and cross sections as specified in Standard Specification Item 110, Excavation is used for permanent or temporary fill within a USACE jurisdictional area;
    b. suitable embankment from within the USACE jurisdictional area is used as fill within a USACE evaluated area;
    c. Unsuitable excavation or excess excavation that is disposed of at an approved location within a USACE evaluated area.
2. **Contractor Materials from Areas Other than Previously Evaluated Areas.** Provide the Department with a copy of all USACE coordination and approvals before initiating any activities in a jurisdictional area within the project limits that has not been evaluated by the USACE or for any off right of way locations used for the following, but not limited to, haul roads, equipment staging areas, borrow and disposal sites:
    a. Standard Specification Item 132, Embankment is used for temporary or permanent fill within a USACE jurisdictional area;
    b. Unsuitable excavation or excess excavation that is disposed of outside a USACE evaluated area.

Work over or near Bodies of Water (Lakes, Rivers, Ponds, Creeks, etc.).
Keep on site a universal spill kit adequate for the body of water and the work being performed. Debris is not allowed to fall into the ordinary high water level (OHWL). Debris that falls into the OHWL must be removed at the end of each work day. Debris that falls into the floodway must be removed at the end of each work week or prior to a rain event. Install and maintain traffic control devices to maintain a navigable corridor for water traffic, except during bridge demo and beam placement. This work is subsidiary.

Temporary fill or crossings require Hays County approval and will be in accordance with the environmental requirements. Provide 60-day advance email notice, including a sketch of the proposed work, prior to placing temporary fill or crossing.

DSHS Asbestos and Demolition Notification.
Complete and provide the Texas Department of State Health Services (DSHS) notification form to Hays County at least 30 calendar days prior to bridge removal or renovation. Notify the Engineer via email of any changes to the work start and end dates.

Migratory Birds and Bats.
Migratory birds and bats may be nesting within the project limits and concentrated on roadway structures such as bridges and culverts. Remove all old and unoccupied migratory bird nests from any structures, trees, etc. between September 16 and February 28. Prevent migratory birds from re-nesting between March 1 and September 15. Prevention shall include all areas within 25 ft. of proposed work. All methods used for the removal of old nesting areas and the prevention of re-nesting must be submitted to Hays County 30 business days prior to begin work. This work is subsidiary.

If active nests are encountered on-site during construction, all construction activity within 25 ft. of the nest must stop. Contact the Engineer to determine how to proceed.

Tree and Brush Trimming and Removal.
Work will be conducted September 16 thru February 28. Work conducted outside this timeframe will require a bird survey. Submit a survey request to TxDOT 30 business days prior to begin work.

No extension of time or compensation will be granted for a delay or suspension due to the above bird, bat and tree/brush requirements.

Law Enforcement Personnel.
Submit charge summary and invoices using the Department forms.

Patrol vehicles must be clearly marked to correspond with the officer's agency and equipped with appropriate lights to identify them as law enforcement. For patrol vehicles not owned by a law enforcement agency, markings will be retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Lights will be high intensity and visible from all angles.
No payment will be made for law enforcement personnel needed for moving equipment or payment for drive time to/from the event site. A minimum number of hours is not guaranteed. Payment is for work performed.
If the Contractor has a field office, provide an office location for a supervisory officer when event requires a supervising officer. This work is subsidiary.

A maximum combined rate of $70 per hour for the law enforcement personnel and the patrol vehicle will be allowed. Any scheduling fee is subsidiary per Standard Specification 502.4.2.

Cancel law enforcement personnel when the event is canceled. Cancellation, minimums or "show up" fees will not be paid when cancellation is made 12 hours prior to beginning of the event. Failure to cancel within 12 hours will not be cause for payment for cancellation, minimums, or "show up" time. Payment of actual "show up" time to the event site due to cancellation will be on a case by case basis at a maximum of 2 hours per officer.

Alterations to the cancellation and maximum rate must be approved by the Engineer or pre-determined by official policy of the officers governing authority.

ITEM 100 - PREPARING RIGHT OF WAY

Prep ROW must not begin until accessible trees designated for preservation have been protected, items listed in the EPIC have been addressed, and SW3P controls installed in accessible areas.

Backfill material will be Type B Embankment using ordinary compaction.

Follow Item 752.4 Work Methods and Item 752 general notes when removing or working on or near trees and brush.

Unless shown otherwise in the plans or a designated non-mow area, perform trimming or removal for areas within 30 ft. of edge of pavement under construction. Trim or remove to provide minimum of 5 ft. of horizontal clearance and 7 ft. of vertical clearance for the following: sidewalks, paths, guard fence, rails, signs, object markers, and structures. Trim to provide a minimum of 14 ft. vertical clearance under all trees. This work is subsidiary.

ITEM 110 – EXCAVATION

The Engineer will define unsuitable material.

ITEM 132 – ALL EMBANKMENT

At no time will the retaining wall backfill material exceed the adjacent embankment operation by more than one lift. At no time will the embankment adjacent to the retaining wall backfill exceed the wall backfill by any elevation. Embankment placed over the area of MSE backfill must meet the same backfill requirements for the type specified under Item 423.

The Engineer will define unsuitable material. Material which the Contractor might deem to be unsuitable due to moisture content will not be considered unsuitable material.

Prior to begin embankment of existing area, correct or replace unstable material to a depth of 6 in. below existing grade. Embankment areas will be inspected prior to beginning work.

Rock or broken concrete produced by the project is allowed in earth embankments. The size of the rock or broken concrete will not exceed the layer thickness requirements in Section 132.3.4., "Compaction Methods." The material will not be placed vertically within 5 ft. of the finished subgrade elevation.

Embankment placed vertically within 5 ft. of the finished subgrade elevation or within the edges of the subgrade and treated with lime, cement, or other calcium based additives must have a sulfate content less than 3000 ppm. Allow 5 business days for testing. Treatment of sulfate material 3000 ppm to 7000 ppm requires 7 days of mellowing and continuous water curing, in accordance TxDOT guidelines for Treatment of Sulfate-Rich Soils and Bases in Pavement Structures (9/2005). Material over 7000 ppm is not allowed.

ITEM 132 – EMBANKMENT TY C

The Department must approve all Type C embankment material before use on the project. Do not furnish shale clays. Furnish embankment with sulfate content less than 3000 ppm if treated with calcium-based chemicals or within 5 ft. of the finished subgrade elevation. Existing material from within the project limits that meets the Type C Substitute requirements may substituted for Type C but is not allowed to substitute for C1, C2, or density controlled material. Offsite material may be used to blend with onsite material to achieve the Type C requirements. The Type C substitute may also be

existing material in accordance with 132 for rock embankment. The Type C substitute material may only be placed vertically beyond 5 ft. below the finished subgrade elevation or 5 ft. beyond the edge of the subgrade.

Type C				
Percent Retained		LL Max	PI Max	PI Min
3”				
0		55	20	6
Type C Substitute				
Percent Retained			PI Max	
3”	#4			
Max 10	10-90		25	

ITEM 160 - TOPSOIL
Off-site topsoil will have a minimum PI of 25.

No Sandy Loam allowed.

Obtain approval of the actual depth of the topsoil sources for both on-site and off-site sources.

Construct topsoil stockpiles of no more than five (5) feet in height.

It is permissible to use topsoil dikes for erosion control berms within the right of way, as directed.

Seed or track slopes within 14 days of placement.

Salvage topsoil from sites of excavation and embankment. Maximum salvage depth is 6 inches.

Windrowing of topsoil obtained from the Right of Way (ROW) is not allowed.

ITEM 168 – VEGETATIVE WATERING
Water all areas of project to be seeded or sodded.

Maintain the seedbed in a condition favorable for the growth of grass. Watering can be postponed immediately after a rainfall on the site of ½ inch or greater, but will be resumed before the soil dries out. Continue watering until final acceptance.

Vegetative watering rates and quantities are based on ¼ inch of watering per week over a 3-month watering cycle. The actual rates used and paid for will be as directed and will be based on prevailing weather conditions to maintain the seedbed.

Obtain water at a source that is metered (furnish a current certification of the meter being used) or furnish the manufacturer’s specifications showing the tank capacity for each truck used. Notify the Engineer, each day that watering takes place, before watering, so that meter readings or truck counts can be verified.

ITEM 169 – SOIL RETENTION BLANKETS

Type A blankets containing straw fibers are not allowed. Type B and D blankets shall be a spray type blanket.

ITEM 247 - FLEXIBLE BASE

The layer thickness will be 4 in. to 6 in. unless shown on the plans. Placing in a single layer is allowed when total thickness of base is 8 in. or less. When placed in multiple layers, compact the bottom and middle layers to at least 95% and 98% of the maximum dry density, respectively. When placed in a single layer or the final layer, compact to at least 100%.

Correction of subgrade soft spots is subsidiary.

Complete per plans the subgrade, ditches, slopes, and drainage structures prior to the placement of base.

Do not use a vibratory roller to compact base placed directly on top of a drainage structure.

ITEM 300s – SURFACE COURSES AND PAVEMENTS

Asphalt season is May 1 thru September 15. Emulsified Asphalt season is April 1 thru October 15. The latest work start date for asphalt season is August 1.

If an under seal is not provided, furnish a tack coat. Apply tack coat at 0.08 GAL/SY (residual). Apply non-tracking tack coat using manufacturer recommend rates.

ITEM 310 – PRIME COAT

Apply blotter material to all driveways and intersections. This work is subsidiary.

When Multi Option is allowed, provide MC 30, EC 30 or AE-P. MC 30 is not allowed in Travis County.

Rolling to ensure penetration is required.

ITEM 316 – SEAL COAT

Ensure that all underseals are covered by HMACP before exposing to traffic for roadways listed in Table 1 of Item 502 or ADT greater than 5,000.

Aggregates (Multi Option) for seal coats not exposed to traffic and underseals shall be Type E, PA, PB, A or B. The Grade shall range between 4 and 5.

Use a medium pneumatic roller in accordance with Item 210.

Surface all transitions, tapers, climbing lanes and intersections to the limits as directed.

Remove and dispose of off the ROW the audible/profile markings, reflectorized markings, and raised markers. Blade pavement edges to remove vegetation. Any areas with excessive asphalt or aggregate will be removed. Continue sweeping excess aggregate off the roadway, riprap, and shoulder up to two weeks after completing the work. This work is subsidiary.

ITEM 340/3078 THRU 348/3082 - HOT-MIX ASPHALT PAVEMENT

Core holes may be filled with an Asphaltic patching material meeting the requirements of DMS-9203 or with SCM meeting requirements of DMS-9202.

Install transverse butt joints with 50 ft. H: 1 in. V transition from the new ACP to the existing surface. Install a butt joint with 24 in. H: 1 in. V transition from the new ACP to a driveway, pullout or intersection. Saw cut the existing pavement at the butt joints. This work is subsidiary.

Use a device to create a maximum 3H:1V notched wedge joint on all longitudinal joints of 2 in. or greater. This work is subsidiary.

Prior to milling, core the existing pavement to verify thickness. This work is subsidiary.

Ensure placement sequence to avoid excess distance of longitudinal joint lap back not to exceed one day's production rates.

Submit any proposed adjustments or changes to a JMF before production of the new JMF.

Tack every layer. Do not dilute tack coat. Apply it evenly through a distributor spray bar.

Provide a minimum transition of 10' for intersections, 10' for commercial driveways, and 6' for residential driveways unless otherwise shown on the plans.

Irregularities will require the replacement of a full lane width using an asphalt paver. Replace the entire sublot if the irregularities are greater than 40% of the sublot area.

Lime or an approved anti-stripping agent must be used when crushed gravel is utilized to meet a SAC "A" requirement.

When using RAP or RAS, include the management methods of processing, stockpiling, and testing the material in the QCP submitted for the project. If RAP and RAS are used in the same mix, the QCP must document that both of these materials have dedicated feeder bins for each recycled material. Blending of RAP and RAS in one feeder bin or in a stockpile is not permitted.

Asphalt content and binder properties of RAP and RAS stockpiles must be documented when recycled asphalt content greater than 20% is utilized.

No RAS is allowed in surface courses.

Department approved warm-mix additives is required for all surface mix application when RAP is used. Dosage rates will be approved during JMF approval.

The Hamburg Wheel Test will have a minimum rut depth of 3mm.

ITEM 340/3078 & 341/3076 - DENSE-GRADED HOT-MIX ASPHALT

Use the SGC for design and production testing of all mixtures. Design all Dense-Graded Type D mixtures as a surface mix, maximum 15% RAP and no RAS.

When using substitute binders, mold specimens for mix design and production at the temperature required for the substitute binder used to produce the HMA.

The Hamburg Wheel minimum number of passes for PG 64 or lower is reduced to 7,000.
The Engineer may accept Hamburg Wheel test results for production and placement if no more than 1 of the 5 most recent tests is below the specified number of passes and the failing test is no more than 2,000 passes below the specified number of passes.

ITEMS 347/3081 - THIN OVERLAY MIXTURES (TOM)
For SAC A, blending SAC B aggregate with an RSSM greater than the SAC A rating or 10, whichever is greater, is prohibited.
When using a Thermal Imaging System follow the Weather Condition requirements for When Not Using a Thermal Imaging System.

Produce mixture with a Department approved WMA additive or process to facilitate compaction when the haul distance is greater than 40 miles or when the air temperature is 70°F and falling. WMA processes such as water or foaming processes are not allowed under these circumstances.

ITEM 400 - EXCAVATION AND BACKFILL FOR STRUCTURES
Unless shown on the plans, the following backfill will apply to cutting and restoring flexible pavement. Backfill with cement-stabilized backfill.. The cement-stabilized backfill is subsidiary. Cap the backfill with Type B hot-mix to a depth equal to the adjacent hot-mix. At locations where the backfill surface is final, place 1-1/2 in. Type D for the surface. The minimum hot-mix depth will be 4 in.

Saw-cut the pavement at the edge of the excavation. This work is subsidiary.

ITEM 432 - RIPRAP
Mow strip riprap will be 4 in. and all other riprap will be 5 in. unless otherwise shown on the plans or in the pay items. Mow strip for cable barrier may be placed monolithically with the barrier foundations if using concrete in accordance with Item 543. Fiber reinforcement is not allowed except in mow strip for cable barrier if foundation and mow strip are placed monolithically.

Saw-cut existing riprap then epoxy 12 in. long No. 3 or No. 4 bars 6 in. deep at a maximum spacing of 18 in. in each direction to tie new riprap to existing riprap. This work is subsidiary.

For cement-stabilized riprap, provide Type A Grade 5 flexible base. Compressive strengths for Item 247 are waived.

SGT approach taper, paid using mow strip item, shall be installed using concrete, flexible base coated with SS-1 at a rate of 0.12 GAL/SY, or HMA Type B/C/D. Placement shall be ordinary compaction and does not require placement using an asphalt paver.

ITEM 467 - SAFETY END TREATMENT
Field adjust pipe end to maintain the necessary slope. Field cutting of pipe end is allowed. Coat all metal field cuts or exposed reinforcement with asphalt paint.

ITEM 502 - BARRICADES, SIGNS, AND TRAFFIC HANDLING

Table 1

Roadway	Limits	Allowable Closure Time
IH 35	All (1 lane closed)	9 P to 5 A
IH 35	All (2 lanes closed, see allowable work below)	9 P to 5 A
IH 35	All (2 lanes closed, all work)	11 P to 5 A
SH 45	US 183 to SH130	8 P to 5 A
LP 1	William Cannon to Parmer Lane	8 P to 5 A
US 183	SH 29 to FM 1327	8 P to 5 A
SH 71	SH 130 to IH 35	8 P to 5 A
SH 71	SH 304 to Tahitian Drive	8 P to 5 A
SH 71	US 290 W to RM 3238	8 P to 5 A
US 290 W	IH 35 to Nutty Brown Rd	8 P to 5 A
US 290 E	IH 35 to SH 95	8 P to 5 A
FM 734	FM 1431 to US 290 E	8 P to 5 A
US 79	IH 35 to Bus 79 in Taylor	8 P to 5 A
RM 1431	Lohmans Ford Rd to IH 35	8 P to 5 A
SH 29	LP 332 western terminus to SH 130	8 P to 5 A
SH 80	Charles Austin to River Road	8 P to 5 A
RM 2222	All	8 P to 5 A
RM 620	All	8 P to 5 A
RM 2244	All	8 P to 5 A
SPUR 69	All	8 P to 5 A
LP 360	All	8 P to 5 A
LP 343	All	8 P to 5 A
LP 275	All	8 P to 5 A
FM 1325	All	8 P to 5 A
All	Within 200’ of a signalized intersection	8 P to 5 A
All	All (Full Closure, see allowable work below)	11 P to 4 A

Table 3 (Mobile Operations)

Roadway	Allowable Sun Night thru Fri Noon	Allowable Sat thru Sun Morn
Within Austin City Limits	10 A to 2 P and 7 P to 6 A	7 P to 10 A
Outside Austin City Limits	9 A to 3 P and 7 P to 7 A	6 P to 11 A
IH 35 main lanes	10 P to 5 A	9 P to 9 A
AADT over 50,000	8 P to 6 A	8 P to 10 A

For roadways without defined allowable closure times, nighttime lane closures will be allowed from 7 P to 6 A. Unless stated, daytime or Friday night lane closures will not be allowed and one lane in each direction will remain open at all times for all roadways.

Two lanes closed on IH 35 allowed to begin at 9 P for main lane (shoulder work not included) hotmix overlay or pavement repair operations (does not include bridge joint work).

Full closures only allowed Friday night thru Monday morning for bridge beam installation, bridge demolition, or OSB truss removal/installation. Full closures only allowed for roadways with frontage roads or if a designated detour route is provided in the plans.

No closures will be allowed on the weekends, working day prior, and working day after the National Holidays defined in the Standard Specifications, Good Friday, and Easter weekend. Closures the Sunday of the Super Bowl will not be allowed from 1 P to 11 P. No closures will be allowed on Friday and the weekends for projects within 20 miles of Formula 1 at COTA, ACL Fest, SXSW, ROT Rally, UT home football games (includes games not on a Friday or weekend), sales tax holiday, Dell Match Play (includes Thursday) or other special events that could be impacted by the construction. All lanes will be open by noon of the day before these special events.

To account for directional traffic volumes, begin and end times of closures may be shifted equally by the Engineer. The closure duration will remain. Added compensation is not allowed.

Submit an emailed request for a lane closure (LCN) to TxDOT. The email will be submitted in the format provided. Receive concurrence prior to implementation. Submit a cancellation of lane closures a minimum of 18 hours prior to implementation. Blanket requests for extended periods are not allowed. Max duration of a request is 2 weeks prior to requiring resubmittal.

Provide 2 hour notice prior to implementation and immediately upon removal of the closure.

For roadways listed in Table 1: Submit the request 96 hours prior to implementation.

For roadways not listed in Table 1: Submit the request a minimum of 48 hours prior to the closure and by the following deadline immediately prior to the closure: 11A on Tuesday or 11A on Friday.

For all roadways: Submit request for traffic detours and full roadway closures 168 hours prior to implementation. Submit request for nighttime work 96 hours to implementation date.

Cancellations of accepted closures (not applicable to full closures or detours) due to weather will not require resubmission in accordance with the above restrictions if the work is completed during the next allowable closure time.

Closures that conflict with adjacent contractor will be prioritized according to critical path work per latest schedule. Conflicting critical path or non-critical work will be approved for first LCN submitted. Denial of a closure due to prioritization or other reasons will not be reason for time suspension, delay, overhead, etc.

Cover, relocate or remove existing signs that conflict with traffic control. Install all permanent signs, delineation, and object markers required for the operation of the roadway before opening to traffic. Use of temporary mounts is allowed or may be required until the permanent mounts are installed or not impacted by construction. Maintain the temporary mounts. This work is subsidiary.

Meet with the Engineer prior to lane closures to ensure that sufficient equipment, materials, devices, and workers will be used. Take immediate action to modify traffic control, if at any time the queue becomes greater than 20 minutes. Have a contingency plan of how modification will occur. Consider inclement weather prior to implementing the lane closures. Do not set up traffic control when the pavement is wet.

Place a 28-inch cone, meeting requirements of BC (10), on top of foundations that have protruding studs. This work is subsidiary.

Edge condition treatment types must be in accordance with the TxDOT standard. Installation and removal of a safety slope is subsidiary.

To determine a speed limit or an advisory speed limit, submit a request to TxDOT 60 business days prior to manufacture of the sign.

For non-site specific signal projects, 2 months of barricades will be paid per work order location. The Contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Shadow Vehicle with TMA is required as shown in the TCP sheets and for setup/removal of traffic control devices.

Submit an emailed request for a lane closure (LCN) to the TxDOT representative. The email will be submitted in the format provided. Receive concurrence prior to implementation. Submit a cancellation of lane closures a minimum of 18 hours prior to implementation. Blanket requests for extended periods are not allowed. Max duration of a request is 2 weeks prior to requiring resubmittal. Provide 2 hour notice prior to implementation and immediately upon removal of the closure.

Incorporate and maintain a 3H: 1V safety wedge into the proposed construction for any roadway edge of 2 inches or greater adjacent to a roadway under traffic.

For Mainlanes use night-work and same-night remove-and-replace operations.

Maintain 1 two-way through lane with flaggers, during the daylight hours, as directed. Traffic to return to existing configuration during non-working hours.

Furnish advisory speed signs in enough numbers as directed. To determine an advisory speed limit to post for various curves and ramps within this project notify the Engineer 2 months prior to manufacture of the sign.

ITEM 506 - TEMPORARY EROSION, SEDIMENTATION, AND ENV CONTROLS

Install, maintain, remove erosion, sedimentation and environmental control measures in areas of the right of way utilized by the contractor that are outside the limits of disturbance required for construction. Permanently stabilize the area. This work is subsidiary.

Consider the SW3P for this project to consist of the following items, as directed: Temporary Sediment Control Fence, Rock Filter Dams, Construction Exits, and Earthwork for Erosion and Sediment Control.

ITEM 508 – CONSTRUCTING DETOURS
Detour typical section must match the adjacent roadway section, unless shown on the plans.

Flexible base will be Type A Grade 5 placed using ordinary compaction. Base compressive strengths are waived for roadways not listed in Item 502, Table 1.

ITEM 512 – PORTABLE TRAFFIC BARRIER
In lieu of a crash cushion, place 25:1 Class C concrete transition where PTB terminates adjacent to existing concrete barrier. Installation and removal will be paid using Item 512.

Any increase in temporary barrier quantities that occur due to Contractor changes in the sequence of work or the traffic control plan will not be paid.

ITEM 540, 542, & 544 - METAL BEAM GUARD FENCE AND GUARDRAIL END TREATMENTS
Furnish round timber posts for guard fence. Steel posts for low fill culverts are subsidiary. Stake the locations for approval prior to installation. Adjust the limits of the fence to meet field conditions. Install delineators before opening the road to traffic.

Retain all materials. Contractor may reuse all existing materials that are structurally sound and dent free. All reused material shall be from this project and in compliance with current standards. Structurally sound rust spots with the largest dimension of 4 in. may be cleaned and repaired in accordance with 540.3.5. Contractor may punch or field drill holes in the metal rail element to accommodate post spacing. Additional holes for splice or connections are not allowed. The holes shall be spaced in accordance with the latest standard and shall not be closer than the minimum spacing shown on the current standard.

Remove, replace, and install mow strip block out material. Construct new block outs and backfill unused block outs with class B concrete. This work is subsidiary.

Repair of mow strip damage, not caused by contractor negligence, and installation of new mow strip will be paid with appropriate bid items. Backfill and shoulder up of area around fence and mow strip will be paid using embankment item.

ITEM 618 - CONDUIT
Fit PVC and HDPE conduit terminations with bell ends.

Shift the locations of conduit and ground boxes to accommodate field conditions.

Install conduit in an area not exceeding 2 feet in any direction from a straight line.

Install conduit at a minimum depth of 2 ft. below finished grade. Installation of the conduit by jacking or boring method will be at a depth of at least 1 ft. below subgrade.

Install a high tension, non-metallic pull rope in all conduit runs. The pull ropes are for future use. Cap all empty conduit using standard weather tight conduit caps as directed. This work is subsidiary.

Use a coring device when drilling holes through concrete structures.

Structurally mounted junction boxes will be as shown on the plans. When used for traffic signal installations, these boxes will be 12" x 12" x 8", and will be approved by the Engineer. This work is subsidiary.

When using existing conduit, ensure that all conduits have bushings and cleaned of dirt, mud, grease, and other debris. Re-strap existing or relocated conduit per the specification. This work is subsidiary. Replacement conduit will be paid using the existing bid items.

ITEM 658 – DELINEATOR AND OBJECT MARKER ASSEMBLIES
Installation and maintenance of portable CTB reflectors will be subsidiary to the barrier.

ITEM 662 - WORK ZONE PAVEMENT MARKINGS
Notify the Engineer at least 24 hours in advance of work for this item.

Maintain removable and short-term markings daily. Remove within 48 hours after permanent striping has been completed.

Item 668 is not allowed for use as Item 662.

ITEM 666 - RETROREFLECTORIZED PAVEMENT MARKINGS
Notify the Engineer at least 24 hr. before beginning work.

Place longitudinal markings nightly for IH 35 main lanes or roadways with AADT greater than 100,000. Use of temporary flexible reflective roadway marker tabs is subsidiary and at the Contractor's option. Replace missing or damaged tabs nightly. If using tabs, place longitudinal markings weekly by 5 AM Friday for all weekday work and by 5 AM Monday for all weekend work. Failure to maintain tabs or place longitudinal markings by deadline will require nightly placement of longitudinal markings.

Place longitudinal markings no later than 7 calendar days after placement of the surface for roadways with AADT greater than 20,000.

When the raised portion of a profile marking is placed as a separate operation from the pavement marking, the raised portion must be placed first then covered with TY I.

When using black shadow to cover existing stripe apply a non-retroreflective angular abrasive bead drop. The marking color shall be adjusted to resemble the pavement color. If Item 677 is not used prior to placement of black shadow, scrape the top of the marking with a blade or large piece of equipment unless surface is a seal coat. The scraping of the marking is subsidiary.

ITEM 677 - ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS
Dispose of removed materials and debris at locations off the right of way.

Elimination using a pavement marking will not be allowed in lieu of methods listed in specification.

Remove pavement markings on concrete surfaces by a blasting method. Flail milling will be allowed when total quantity of removal on concrete surfaces is less than 1000 ft.

Strip seal is only method allowed on seal coat surface unless project includes placement of a new surface. If total quantity of removal on a seal coat surface is less than 2000 ft., elimination using a pavement marking is allowed if a test section is approved by the Engineer. Test section shall demonstrate the thermo marking color matches the existing pavement color.

Remove pavement markings outside the limits of the new surface by a blasting method.

Use a TRAIL or a non-retroreflective paint to cover stripe remnants that remain after elimination. The test requirements for these materials are waived. The paint color shall be adjusted to resemble the existing pavement color. Installation and maintenance is subsidiary.

ITEM 752 – TREE AND BRUSH REMOVAL

Follow Item 752.4 Work Methods and Item 752 general notes when removing or working on or near trees and brush even if Item 752 is not included as a pay item.

Flailing equipment is not allowed. Burning brush is not allowed in urban areas or on ROW. Use hand methods or other means of removal if doing work by mechanical methods is impractical.
Prior to begin tree pruning, send email confirmation to the Engineer that training and demonstration of work methods has been provided to the employees. This work is subsidiary.

Shredded vegetation may be blended, at a rate not to exceed 15 percent by volume, with Item 160 if the maximum dimension is not greater than 2 in.

ITEM 6001 – PORTABLE CHANGEABLE MESSAGE SIGN

Provide 1 PCMS. Provide a replacement within 12 hours. PCMS will be available for traffic control, event notices, roadway conditions, service announcements, etc.

Place PCMS 10 calendar days prior to begin work stating “Road Work Begin Soon, Contact 832-7000 For Info”.

Place PCMS at time of LCN request. Place the PCMS at the expected end of queue caused by the closure. When the closure is active, revise the message to reflect the actual condition during the closure, such as “RIGHT LN CLOSED XXX FT”.

ITEM 6185 – TRUCK MOUNTED ATTENUATOR AND TRAILER ATTENUATOR
The TMA/TA used for installation/removal of traffic control for a work area will be subsidiary to the TMA/TA used to perform the work.

The contractor will be responsible for determining if one or more operations will be ongoing at the same time to determine the total number of TMA/TA required for the work. TMA/TAs paid by the day is full compensation for all worksite locations during an entire day.

TMA/TAs used to protect damaged attenuators will be paid by the day using the force account item for the repair.

SECTION 13
TECHNICAL SPECIFICATIONS

HAYS COUNTY /
TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS

(STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, AND SPECIAL SPECIFICATIONS)

WHERE DISCREPANCIES OCCUR BETWEEN THE TECHNICAL SPECIFICATIONS, THE FOLLOWING DESCENDING ORDER OF PRIORITY SHALL GOVERN: (1) SPECIAL CONDITIONS, (2) SPECIAL PROVISIONS TO SPECIAL SPECIFICATIONS, (3) SPECIAL SPECIFICATIONS, (4) SPECIAL PROVISIONS, AND (5) STANDARD SPECIFICATIONS.

ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED AS FOLLOWS:

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION NOVEMBER 1, 2014. STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE CONTRACT BY REFERENCE.

ITEMS 1L – 9L GENERAL REQUIRMENTS AND COVENANTS

ITEM 100 PREPARING RIGHT OF WAY (004)(005)(006)(103)
ITEM 104 REMOVING CONCRETE (009)
ITEM 105 REMOVING TREATED AND UNTREATED BASE AND ASPHALT PAVEMENT
ITEM 110 EXCAVATION (009)(132)
ITEM 132 EMBANKMENT (007)(009)(100)(160)(204)(210)(216)(260)(400)
ITEM 160 TOPSOIL (007)(168)
ITEM 161 COMPOST (009)(160)
ITEM 164 SEEDING FOR EROSION CONTROL (162)(166)(168)
ITEM 168 VEGETATIVE WATERING
ITEM 169 SOIL RETENTION BLANKETS
ITEM 247 FLEXIBLE BASE (004)(009)(105)(204)(210)(216)(520)
ITEM 310 PRIME COAT (300)(316)
ITEM 340 DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY) (005)(006)(300)(301)(320)(520)(585)
ITEM 347 THIN SURFACE MIXTURES (TSM) (005)(006)(300)(301)(320)(520)(585)
ITEM 351 FLEXIBLE PAVEMENT STRUCTURE REPAIR (132)(204)(247)(260)(263)(275)(276)(292)(310)(316)(330)(334)(340)
ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES (007)(009)(110)(132)(401)(402)(403)(416)(420)(421)(423)
ITEM 402 TRENCH EXCAVATION PROTECTION
ITEM 403 TEMPORARY SPECIAL SHORING (410)(411)(423)
ITEM 432 RIPRAP (247)(420)(421)(431)(440)
ITEM 464 REINFORCED CONCRETE PIPE (009)(400)(402)(403)(467)(476)
ITEM 467 SAFETY END TREATMENT (400)(420)(421)(432)(440)(442)(445)(460)(464)
ITEM 496 REMOVING STRUCTURES
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS AND TRAFFIC HANDLING (005)(009)
ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS (161)(432)(556)
ITEM 508 CONSTRUCTING DETOURS (004)(007)
ITEM 512 PORTABLE CONCRETE TRAFFIC BARRIER (420)(421)(424)(440)(442)
ITEM 529 CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER (360)(420)(421)(440)
ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247)(260)(263)(275)(276)(292)(316)(330)(334)(340)(360)(421)(440)
ITEM 540 METAL BEAM GUARD FENCE (421)(441)(445)(529)
ITEM 542 REMOVING METAL BEAM GUARD FENCE

ITEM 544	GUARDRAIL END TREATMENTS
ITEM 552	WIRE FENCE (445)(492)
ITEM 560	MAILBOX ASSEMBLIES
ITEM 644	SMALL ROADSIDE SIGN ASSEMBLIES (421)(440)(441)(442)(445)(636)(643)(656)
ITEM 658	DELINEATOR AND OBJECT MARKER ASSEMBLIES (009)(445)
ITEM 662	WORK ZONE PAVEMENT MARKINGS (009)(666)(668)(672)(677)
ITEM 666	REFLECTORIZED PAVEMENT MARKINGS (009)(316)(318)(502)(662)(677)(678)
ITEM 672	RAISED PAVEMENT MARKERS (009)(677)(678)
ITEM 677	ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS (009)(300)(302)(316)

SPECIAL SPECIFICATIONS:

ITEM 1004	TREE PROTECTION
ITEM 3002	SPRAY APPLIED UNDERSEAL MEMBRANE (320)
ITEM 3085	UNDERSEAL COURSE (300)(316)(3002)
ITEM 6001	PORTABLE CHANGEABLE MESSAGE SIGN
ITEM 6185	TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATENUATOR (TA)
ITEM 7016	WATER AND SANITARY SEWER SYSTEMS
ITEM 7251	SUBSURFACE UTILITY LOCATE (132)(334)(340)(400)(421)(700)

SPECIAL PROVISIONS:

SPECIAL PROVISION	(000--HC03)
SPECIAL PROVISION TO ITEM 132	(132---002)
SPECIAL PROVISION TO ITEM 247	(247---003)
SPECIAL PROVISION TO ITEM 300	(300---017)
SPECIAL PROVISION TO ITEM 340	(340---003)
SPECIAL PROVISION TO ITEM 347	(347---002)
SPECIAL PROVISION TO ITEM 421	(421---009)
SPECIAL PROVISION TO ITEM 442	(442---001)
SPECIAL PROVISION TO ITEM 464	(464---001)
SPECIAL PROVISION TO ITEM 500	(500---001)
SPECIAL PROVISION TO ITEM 502	(502---008)
SPECIAL PROVISION TO ITEM 506	(506---005)
SPECIAL PROVISION TO ITEM 520	(520---002)
SPECIAL PROVISION TO ITEM 540	(540---001)
SPECIAL PROVISION TO ITEM 636	(636---001)
SPECIAL PROVISION TO ITEM 643	(643---001)
SPECIAL PROVISION TO ITEM 666	(666---007)
SPECIAL PROVISION TO ITEM 6185	(6185--002)

GENERAL: THE ABOVE-LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH PAYMENT IS TO BE MADE. THESE, TOGETHER WITH SUCH OTHER PERTINENT ITEMS, IF ANY, AS MAY BE REFERRED TO IN THE ABOVE-LISTED SPECIFICATION ITEMS, AND INCLUDING THE SPECIAL PROVISIONS AND SPECIAL SPECIFICATIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFICATIONS FOR THIS PROJECT.

Item 1L
Abbreviations and Definitions

1. APPLICABILITY

Wherever the following terms are used in these specifications or other Contract documents, the intent and meaning will be interpreted as shown below.

2. ABBREVIATIONS

AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALSC	American Lumber Standard Committee, Inc.
AMRL	AASHTO Materials Reference Laboratory
ANLA	American Nursery and Landscape Association
ANSI	American National Standards Institute
APA	The Engineered Wood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASBI	American Segmental Bridge Institute
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWC	American Wood Council
AWG	American Wire Gage
AWPA	American Wood Protection Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BMP	Best Management Practices
CFR	Code of Federal Regulations
CMP	Corrugated Metal Pipe
COE	U.S. Army Corps of Engineers
CRSI	Concrete Reinforcing Steel Institute
DBE	Disadvantaged Business Enterprise
DMS	Departmental Material Specification
EIA	Electronic Industries Alliance
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration, U.S. Department of Transportation
FSS	Federal Specifications and Standards (General Services Administration)
GSA	United States General Services Administration
HUB	Historically Underutilized Business
ICEA	Insulated Cable Engineers Association

IEEE	Institute of Electrical and Electronics Engineers
IESNA	Illuminating Engineering Society of North America
IMSA	International Municipal Signal Association
ISO	International Organization for Standardization
ITS	Intelligent Transportation System
ITE	Institute of Transportation Engineers
LG	Local Government
LRFD	Load and Resistance Factor Design
MASH	Manual for Assessing Safety Hardware
MPL	Material Producer List (TxDOT document)
NCHRP	National Cooperative Highway Research Program
NCR	Nonconformance Report (TxDOT form)
NEC	National Electrical Code (Published by NFPA)
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
NRM	Nonhazardous Recyclable Material
NRMCA	National Ready Mixed Concrete Association
NSBA	National Steel Bridge Alliance
NTPEP	National Transportation Product Evaluation Program
OSHA	Occupational Safety & Health Administration, U.S. Department of Labor
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
PE	Professional Engineer
PPI	Plastics Pipe Institute
PS&E	Plans, Specifications, and Estimates
PSL	Project-Specific Location
PTI	Post-Tension Institute
QA	Quality Assurance
QC	Quality Control
RCP	Reinforced Concrete Pipe
RPLS	Registered Public Land Surveyor
RRC	Railroad Commission of Texas
SBE	Small Business Enterprise
SFPA	Southern Forest Products Association
SI	International System of Units
SPIB	Southern Pine Inspection Bureau
SSPC	The Society for Protective Coatings
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TDLR	Texas Department of Licensing and Regulation
TGC	Texas Government Code
TMUTCD	Texas Manual on Uniform Traffic Control Devices
TxDOT	Texas Department of Transportation
UL	Underwriters Laboratory, Inc.
USC	United States Code
WRI	Wire Reinforcement Institute
WWPA	Western Wood Products Association

3. DEFINITIONS

3.1. **Abrasive Blasting**. Spraying blasts of pressurized air combined with abrasive media.

3.2. **Actual Cost**. Contractor's actual cost to provide labor, material, equipment, and project overhead necessary for the work.

3.3. **Addendum**. Change in bid documents developed between advertising and bid submittal deadline.

3.4. **Additive Alternate**. A bid item contained in the bid documents that is not a regular item or a replacement alternate bid item. The additive alternate items include work that may be added to the base bid work.

3.5. **Deductive Alternate.** A bid item contained in the bid documents that is not a regular item or a replacement alternate bid item. The deductive alternate items include work that may be deducted from the base bid work.

3.6. **Advertisement**. The public announcement required by law inviting bids for work to be performed or materials to be furnished.

3.7. **Affiliates**. Two or more firms are affiliated if they share common officers, directors, or stockholders; a family member of an officer, director, or stockholder of one firm serves in a similar capacity in another of the firms; an individual who has an interest in, or controls a part of, one firm either directly or indirectly also has an interest in, or controls a part of, another of the firms; the firms are so closely connected or associated that one of the firms, either directly or indirectly, controls or has the power to control another firm; one firm controls or has the power to control another of the firms; or the firms are closely allied through an established course of dealings, including, but not limited to, the lending of financial assistance.

3.8. **Air Blasting**. Spraying blasts of pressurized air free of oil and moisture.

3.9. **Air Temperature**. The temperature measured in degrees Fahrenheit (°F) in the shade, not in the direct rays of the sun, and away from artificial heat.

3.10. **Anticipated Profit**. Profit for work not performed.

3.11. **Apparent Low Bidder**. The Bidder determined to have the numerically lowest total bid as a result of the tabulation of bids by the Owner.

3.12. **Architect of Record**. A person registered as an architect or licensed as a landscape architect, in accordance with State law, exercising overall responsibility for the design or a significant portion of the design and performs certain Contract administration responsibilities as described in the Contract; or a firm employed by the Owner to provide professional architectural services.

3.13. **Arterial Highway**. A highway used primarily for through traffic and usually on a continuous route.

3.14. **Notice of Award**. The Owner's acceptance of a Contractor's bid for a proposed Contract that authorizes the Owner to enter into a Contract.

3.15. **Base Bid**. The total bid amount without additive alternates.

3.16. **Bid**. The offer from the Bidder for performing the work described in the bid documents, submitted on the prescribed bid form, considering addenda issued and giving unit bid prices for performing the work described in the bid documents.

3.17. **Bid Bond**. The security executed by the Contractor and the Surety furnished to the Owner to guarantee payment of liquidated damages if the Contractor fails to enter into an awarded Contract.

3.18. **Bid Documents.** The complete set of documents necessary for a Bidder to submit a bid. The documents may include plans, specifications, special specifications, special provisions, addenda, and the prescribed form a Bidder is to submit as the Bid. Other terms used may include general conditions, proposal, instructions to bidders, and construction specifications.

3.19. **Bid Error**. A mathematical mistake made by a Bidder in the unit price entered into the bid documents.

3.20. **Bid Form.** The portion of the bid documents that a prospective Bidder must submit to the Owner for their bid to be considered.

3.21. **Bidder**. An individual, partnership, limited liability company, corporation, or joint venture submitting a bid for a proposed Contract.

3.22. **Blast Cleaning**. Using one of the blasting methods, including, but not limited to, water blasting, low-pressure water blasting, high-pressure water blasting, abrasive blasting, water-abrasive blasting, shot blasting, slurry blasting, water injected abrasive blasting, and brush blasting.

3.23. **Bridge**. A structure, including supports, erected over a depression or an obstruction (e.g., water, a highway, or a railway) having a roadway or track for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 ft. between faces of abutments, spring lines of arches, or extreme ends of the openings for multiple box culverts.

3.24. **Brush Blasting**. Sweeping lightly with an abrasive blast to remove loose material.

3.25. **Building Contract**. A Contract entered under State law for the construction or maintenance of an Owner building or appurtenance facilities. Building Contracts are considered to be construction Contracts.

3.26. **Certificate of Insurance**. A form approved by the Owner covering insurance requirements stated in the Contract.

3.27. **Change Order**. Written order to the Contractor detailing changes to the specified work, item quantities or any other modification to the Contract.

3.28. **Concrete Construction Joint**. A joint formed by placing plastic concrete in direct contact with concrete that has attained its initial set.

3.29. **Concrete Repair Manual**. TxDOT manual specifying methods and procedures for concrete repair as an extension of the standard specifications.

3.30. **ConcreteWorks©**. TxDOT-owned software for concrete heat analysis. Software is available on the TxDOT's website.

3.31. **Construction Contract**. A Contract entered under State law for the construction, reconstruction, or maintenance of a segment of the transportation system.

3.32. **Consultant**. The licensed professional engineer or engineering firm, or the architect or architectural firm, registered in the State of Texas and under Contract to the Owner to perform professional services. The consultant may be the Engineer or architect of record or may provide services through and be subcontracted to the Engineer or architect of record.

3.33. **Contract**. The agreement between the Owner and the Contractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract documents.

3.34. **Contract Documents**. Elements of the Contract, including, but not limited to, the plans, specifications incorporated by reference, special provisions, special specifications, Contract bonds, change orders, addendums, and supplemental agreements.

3.35. **Contract Time**. The number of days specified for completion of the work, including authorized additional working days.

3.36. **Contractor**. The individual, partnership, limited liability company, corporation, or joint venture and all principals and representatives with which the Contract is made by the Owner.

3.37. **Controlled Access Highway**. Any highway to or from which access is denied or controlled, in whole or in part, from or to abutting land or intersecting streets, roads, highways, alleys, or other public or private ways.

3.38. **Control of Access**. The condition in which the right to access of owners or occupants of abutting land or other persons in connection with a highway is fully or partially controlled by public authority.

3.39. **Control Point**. An established point shown on the plans to provide vertical and horizontal references for geometric control for construction.

3.40. **Cross-Sections**. Graphic representations of the original ground and the proposed facility, at right angles to the centerline or base line.

3.41. **Culvert**. Any buried structure providing an opening under a roadway for drainage or other purposes. Culverts may also be classified as bridges. (See Section 1.3.23., "Bridge.")

3.42. **Cycle**. The activity necessary for performing the specified work within the right of way project limits once.

3.43. **Daily Road-User Cost**. Damages based on the estimated daily cost of inconvenience to the traveling public resulting from the work.

3.44. **Date of Written Authorization**. Date of the written Notice to Proceed authorizing the Contractor to begin work.

3.45. **Debar (Debarment)**. Action taken by the Owner, State, or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or from participating as a subcontractor, or supplier of materials or equipment used in a highway improvement Contract as defined in local, state, or federal law.

3.46. **Detour**. A temporary traffic route around a closed portion of a road.

3.47. **Department**. When used in the context of the party with whom the Contractor has a Construction Contract, Department refers to Owner. When used in other contexts such as technical specifications, refers to the Texas Department of Transportation.

3.48. **Departmental Material Specifications**. Reference specifications for various materials published by TxDOT's Construction Division with a DMS-XXXXX numbering system.

3.49. **Direct Traffic Culvert**. Concrete box culvert whose top slab is used as the final riding surface or is to have an overlay or other riding surface treatment.

3.50. **Disadvantaged Business Enterprise**. A small business certified through the Texas Unified Certification Program in accordance with 49 CFR Part 26, that is at least 51% owned by one or more socially and economically disadvantaged individuals, or in the case of a publicly owned business, in which is at least 51% of the stock is owned by one or more socially and economically disadvantaged individuals, and whose management and daily business operations are controlled by one or more of the individuals who own it.

3.51. **Divided Highway**. A highway with separate roadways intended to move traffic in opposite directions.

3.52. **Easement**. A real property right acquired by one party to use land belonging to another party for a specified purpose.

3.53. **Engineer**. The Professional Engineer licensed in Texas who represents the interests of the Owner.

3.54. **Entity.** Political subdivision for which the project is designed and constructed. Either a Municipality (City) or a County or other entity organized under the authority of State of Texas statutes. May also be referred to as an **Owner**.

3.55. **Expressway**. A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at intersections.

3.56. **Family Member**. A family member of an individual is the individual's parent, parent's spouse, step-parent, step-parent's spouse, sibling, sibling's spouse, spouse, child, child's spouse, spouse's child, spouse's child's spouse, grandchild, grandparent, uncle, uncle's spouse, aunt, aunt's spouse, first cousin, or first cousin's spouse.

3.57. **Force Account**. Payment for directed work based on the actual cost of labor, equipment, and materials furnished with markups for project overhead and profit.

3.58. **Freeway**. An expressway with full control of access.

3.59. **Frontage Road**. A local street or road auxiliary to and located along an arterial highway for service to abutting property and adjacent areas and for control of access (sometimes known as a service road, access road, or insulator road).

3.60. **Hazardous Materials or Waste**. Hazardous materials or waste include, but are not limited to, explosives, compressed gas, flammable liquids, flammable solids, combustible liquids, oxidizers, poisons, radioactive materials, corrosives, etiologic agents, and other material classified as hazardous by 40 CFR 261, or applicable state and federal regulations.

3.61. **High-Pressure Water Blasting**. Water blasting with pressures between 5,000 and 10,000 psi.

3.62. **Highway, Street, or Road**. General terms denoting a public way for purposes of vehicular travel, including the entire area within the right of way. Recommended usage in urban areas is highway or street; in rural areas, highway or road.

3.63. **Historically Underutilized Business**. A corporation, sole proprietorship, partnership, or joint venture formed for the purpose of making a profit certified by the Texas Comptroller of Public Accounts, and 51% owned by one or more persons who are economically disadvantaged because of their identification as members of certain groups, including African Americans, Hispanic Americans, Asian-Pacific Americans, Native Americans, or women, and have a proportionate interest and demonstrate active participation in the control, operation, and management of the business' affairs. Individuals meeting the HUB definition are required to be residents of the State of Texas. Businesses that do not have their primary headquarters in the State of Texas are not eligible for HUB certification.

3.64. **Incentive/Disincentive Provisions**. An adjustment to the Contract price of a predetermined amount for each day the work is completed ahead of or behind the specified milestone, phase, or Contract completion dates. The amount of the incentive/disincentive is determined based on estimated costs for engineering, traffic control, delays to the motorists, and other items involved in the Contract.

3.65. **Independent Assurance Tests**. Tests used to evaluate the sampling and testing techniques and equipment used in the acceptance program. The tests are performed by the Owner or the Owner's representative and are not used for acceptance purposes.

3.66. **Inspector**. The person assigned by the Owner to inspect any or all parts of the work and the materials used for compliance with the Contract.

3.67. **Intelligent Transportation System**. An integrated system that uses video and other electronic detection devices to monitor traffic flows.

3.68. **Intersection**. The general area where 2 or more highways, streets, or roads join or cross, including the roadway and roadside facilities for traffic movements within it.

3.69. **Island**. An area within a roadway from which vehicular traffic is intended to be excluded, together with any area at the approach occupied by protective deflecting or warning devices.

3.70. **Joint Venture**. Any combination of individuals, partnerships, limited liability companies, or corporations submitting a single bid form.

3.71. **Lane Rental**. A method to assess the Contractor daily or hourly rental fees for each lane, shoulder, or combination of lanes and shoulders taken out of service.

3.72. **Letting**. The receipt, opening, tabulation, and determination of the apparent low Bidder.

3.73. **Letting Official**. The Owner representative empowered by the Owner to officially receive bids and close the receipt of bids at a letting.

3.74. **Licensed Professional Engineer**. A person who has been duly licensed by the Texas Board of Professional Engineers to engage in the practice of engineering in the State of Texas; also referred to as a Professional Engineer.

3.75. **Limits of Construction**. An area with established boundaries, identified within the highway right of way and easements, where the Contractor is permitted to perform the work.

3.76. **Local Street or Road**. A street or road primarily for access to residence, business, or other abutting property.

3.77. **Low-Pressure Water Blasting**. Water blasting with pressures between 3,000 and 5,000 psi.

3.78. **Major Item**. An item of work included in the Contract that has a total cost equal to or greater than 5% of the original Contract or $100,000 whichever is less. A major item at the time of bid will remain a major item. An item not originally a major item does not become one through the course of the Contract.

3.79. **Material Producer List**. TxDOT-maintained list of approved products. Referenced as “Department’s MPL”.

3.80. **Materially Unbalanced Bid**. A bid that generates a reasonable doubt that award to the Bidder submitting a mathematically unbalanced bid will result in the lowest ultimate cost to the Owner.

3.81. **Mathematically Unbalanced Bid**. A bid containing bid prices that do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder’s anticipated profit, overhead costs, and other indirect costs.

3.82. **Median**. The portion of a divided highway separating the traffic lanes in opposite directions.

3.83. **Milestone Date**. The date that a specific portion of the work is to be completed, before the completion date for all work under the Contract.

3.84. **Monolithic Concrete Placement**. The placement of plastic concrete in such manner and sequence to prevent a construction joint.

3.85. **National Holidays**. January 1, the last Monday in May, July 4, the first Monday in September, the fourth Thursday in November, and December 24 or December 25.

3.86. **Nonhazardous Recyclable Material**. A material recovered or diverted from the nonhazardous waste stream for the purposes of reuse or recycling in the manufacture of products that may otherwise be produced using raw or virgin materials.

3.87. **Nonresident Bidder**. A Bidder whose principal place of business is not in Texas. This includes a Bidder whose ultimate parent company or majority owner does not have its principal place of business in Texas.

3.88. **Nonresponsive Bid**. A bid that does not meet the criteria for acceptance contained in the bid documents.

3.89. **Non-Site-Specific Contracts**. Contracts in which a geographic region is specified for the work and for which work orders, with or without plans, further detail the limits and work to be performed.

3.90. **Notice to Proceed,** Written notification to the Contractor authorizing work to begin.

3.91. **Notification**. Either written or oral instruction to the Contractor concerning the work. Voice mail is oral notification.

3.92. **Owner,** Political subdivision for whom the project is designed and constructed. Either a Municipality (City), a County or other entity organized under the authority of State of Texas statutes. May also be referred to as an **Entity**.

3.93. **Pavement**. That part of the roadway having a constructed surface for the use of vehicular traffic.

3.94. **Pavement Structure**. Combination of surface course and base course placed on a subgrade to support the traffic load and distribute it to the roadbed.

3.94.1. **Surface Course**. Pavement structure layers designed to accommodate the traffic load. The top layer resists skidding, traffic abrasion, and the disintegrating effects of climate and is sometimes called the wearing course.

3.94.2. **Base Course**. One or more layers of specified material thickness placed on a subgrade to support a surface course.

3.94.3. **Subgrade**. The top surface of a roadbed upon which the pavement structure, shoulders, and curbs are constructed.

3.94.4. **Subgrade Treatment**. Modifying or stabilizing material in the subgrade.

3.95. **Payment Bond**. The security executed by the Contractor and the Surety, furnished to the Owner to guarantee payment of all legal debts of the Contractor pertaining to the Contract.

3.96. **Performance Bond**. The security executed by the Contractor and the Surety, furnished to the Owner to guarantee the completion of the work in accordance with the terms of the Contract.

3.97. **Plans**. The approved drawings, including true reproductions of the drawings that show the location, character, dimensions, and details of the work and are a part of the Contract.

3.98. **Power of Attorney for Surety Bonds**. An instrument under corporate seal appointing an attorney-in-fact to act on behalf of a Surety in signing bonds.

3.99. Qualification. The process for determining a Contractor's eligibility to be awarded a construction contract

3.100. **Prequalification**. The process for determining a Contractor's eligibility to bid work.

3.101. **Prequalification Statement**. The forms on which required information is furnished concerning the Contractor's ability to perform and finance the work.

3.102. **Prequalified Contractor.** A contractor that is approved to bid on TxDOT contracts by satisfying their Prequalification Process.

3.103. **Post Qualfication**. The owner will determine if contractors are qualified to bid on the project after bids are open. The bid documents will identify the minimum requirements that contractor must meet to be qualified for the project. Unqualified contractors' bids will be considered non-responsive and not accepted.

3.104. **Project-Specific Location**. A material source, plant, waste site, parking area, storage area, field office, staging area, haul road, or other similar location either outside the project limits or within the project limits but not specifically addressed in the Contract.

3.105. **Proposal Guaranty**. The security furnished by the Bidder as a guarantee that the Bidder will enter into a Contract if awarded the work.

3.106. **Quality Assurance**. Sampling, testing, inspection, and other activities conducted by the Engineer to determine payment and make acceptance decisions.

3.107. **Quality Control**. Sampling, testing, and other process control activities conducted by the Contractor to monitor production and placement operations.

3.108. **Ramp**. A section of highway for the primary purpose of making connections with other highways.

3.109. **Referee Tests**. Tests requested to resolve differences between Contractor and Owner test results. The referee laboratory is the Owners.

3.110. **Regular Item**. A bid item contained in the bid documents and not designated as an additive alternate or replacement alternate bid item.

3.111. **Rental Rate Blue Book for Construction Equipment**. Publication containing equipment rental rates.

3.112. **Replacement Alternate**. A bid item identified on the bid documents that a Bidder may substitute for a specific regular item of work.

3.113. **Responsive Bid**. A bid that meets all requirements of the advertisement and the bid documents for acceptance.

3.114. **Right of Way**. A general term denoting land or property devoted to transportation purposes.

3.115. **Roadbed**. The graded portion of a highway prepared as foundation for the pavement structure and shoulders. On divided highways, the depressed median type and the raised median type highways are considered to have 2 roadbeds. Highways with a flush median are considered to have 1 roadbed. Frontage roads are considered separate roadbeds.

3.116. **Road Master**. A railroad maintenance official in charge of a division of railway.

3.117. **Roadside**. The areas between the outside edges of the shoulders and the right of way boundaries. Unpaved median areas between inside shoulders of divided highways and areas within interchanges are included.

3.118. **Roadway**. The portion of the highway (including shoulders) used by the traveling public.

3.119. **Sandblasting, Dry**. Spraying blasts of pressurized air combined with sand.

3.120. **Sandblasting, Wet**. Spraying blasts of pressurized water combined with sand.

3.121. **Shoulder**. That portion of the roadway contiguous with the traffic lanes for accommodation of stopped vehicles for emergency use or for lateral support of base and surface courses.

3.122. **Shot Blasting**. Spraying blasts of pressurized air combined with metal shot.

3.123. **Sidewalk**. Portion of the right of way constructed exclusively for pedestrian use.

3.124. **Slurry Blasting**. Spraying blasts of pressurized air combined with a mixture of water and abrasive media.

3.125. **Special Provisions**. Additions or revisions to these standard specifications or special specifications.

3.126. **Special Specifications**. Supplemental specifications applicable to the Contract not covered by these standard specifications.

3.127. **Specifications**. Directives or requirements issued or made pertaining to the method and manner of performing the work or to quantities and qualities of materials to be furnished under the Contract. References to DMSs, ASTM or AASHTO specifications, or TxDOT bulletins and manuals, imply the latest standard or tentative standard in effect on the date of the bid. The Owner will consider incorporation of subsequent changes to these documents in accordance with Item 4L, "Scope of Work."

3.128. **Small Business Enterprise**. A firm (including affiliates) whose annual gross receipts do not exceed the U.S. Small Business Administration's size standards for 4 consecutive years.

3.129. **State**. The State of Texas.

3.130. **State Holiday**. A holiday authorized by the State Legislature excluding optional state holidays and not listed in Section 1.3.85., "National Holidays." A list of state holidays can be found on the TxDOT's website.

3.131. **Station**. A unit of measurement consisting of 100 horizontal feet.

3.132. **Subcontract**. The agreement between the Contractor and subcontractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract documents.

3.133. **Subcontractor**. An individual, partnership, limited liability company, corporation, or any combination thereof that the Contractor sublets, or proposes to sublet, any portion of a Contract, excluding a material supplier, a hauling firm hauling only from a commercial source to the project, truck owner-operator, wholly-owned subsidiary, or specialty-type businesses such as security companies and rental companies.

3.134. **Subsidiary**. Materials, labor, or other elements that because of their nature or quantity have not been identified as a separate item and are included within the items on which they necessarily depend.

3.135. **Substructure**. The part of the structure below the bridge seats, but not including bearings, drilled shafts, or piling. Parapets, back walls, wing walls of the abutments, and drainage structures are considered parts of the substructure.

3.136. **Superintendent**. The representative of the Contractor who is available at all times and able to receive instructions from the Owner or authorized Owner representatives and to act for the Contractor.

3.137. **Superstructure**. The part of the structure above the bridge seats or above the springing lines of arches and including the bearings. Flatwork construction may be considered superstructure.

3.138. **Supplemental Agreement**. Written agreement entered into between the Contractor and the Owner and approved by the Surety, covering alterations and changes in the Contract. A supplemental agreement is used by the Owner whenever the modifications include assignment of the Contract from one party to another or other cases as desired by the Owner.

3.139. **Surety**. The corporate body or bodies authorized to do business in Texas bound with and for the Contractor for the faithful performance of the work covered by the Contract and for the payment for all labor and material supplied in the prosecution of the work.

3.140. **Surplus Materials**. Any debris or material related to the Contract but not incorporated into the work.

3.141. **Suspension**. Action taken by the Owner, State, or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or from participating as a subcontractor, or supplier of materials or equipment used in a contract

3.142. **Tex –XXX-X**. TxDOT material test methods found on TxDOT's Construction Division Web Site.

3.143. **Traffic Lane**. The strip of roadway intended to accommodate the forward movement of a single line of vehicles.

3.144. **Traveled Way**. The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

3.145. **Truck Owner-Operator**. An individual who owns and operates 1 truck for hire.

3.146. **UT-Bridge**. TxDOT-owned software for steel girder erection. Software is available on TxDOT's website.

3.147. **UT-Lift**. TxDOT-owned software for steel girder erection. Software is available on TxDOT's website.

3.148. **Utility**. Privately, publicly, or cooperatively owned lines, facilities, and systems for producing, transmitting, or distributing communications, power, heat, gas, oil, water, waste, or storm water that are not connected with the highway drainage, signal systems, or other products that directly or indirectly serve the public; the utility company.

3.149. **Verification Tests**. Tests used to verify accuracy of QC and QA and mixture design testing.

3.150. **Water-Abrasive Blasting**. Spraying blasts of pressurized water combined with abrasive media.

3.151. **Water Blasting**. Spraying blasts of pressurized water of at least 3,000 psi.

3.152. **Water-Injected Abrasive Blasting**. Abrasive blasting with water injected into the abrasive/air stream at the nozzle.

3.153. **Wholly-Owned Subsidiary**. A legal entity owned entirely by the Contractor or subcontractor.

3.154. **Work**. The furnishing of all labor, materials, equipment, and other incidentals necessary for the successful completion of the Contract.

3.155. **Written Notice**. Written notice is considered to have been duly given if delivered in person to the individual or member to whom it is intended or if sent by regular, registered, or certified mail and delivered to the last known business address; sent by facsimile to the last known phone number; or sent by e-mail to the last known address. The date of the letter will serve as the beginning day of notice. Unclaimed mail or failure to provide current mailing address will not be considered a failure to provide written notice.

Item 2L
Instructions to Bidders

1. INTRODUCTION

Instructions to the Contractor in these specifications are generally written in active voice, imperative mood. The subject of imperative sentences is understood to be "the Contractor." The Owner's responsibilities are generally written in passive voice, indicative mood. Phrases such as "as approved," "unless otherwise approved," "upon approval," "as directed," "as verified," "as ordered," and "as determined" refer to actions of the Engineer unless otherwise stated, and it is understood that the directions, orders, or instructions to which they relate are within the limitations of and authorized by the Contract.

2. ELIGIBILITY OF BIDDERS

Bidders on this project must be prequalified though TxDOT. Refer to TxDOT's web site for prequalification requirements. Assure prequalification documents are submitted to TxDOT at least 14 days before bid opening. Comply with all technical prequalification requirements in the bid documents.

3. ISSUING BID DOCUMENTS

Bid Documents may be obtained at from the websites:
www.bidnetdirect.com/hayscounty,
http://www.txsmartbuy.com/sp,
https://www.sanmarcostx.gov/Bids.aspx

At the time Bid Documents are obtained, Bidder must provide a working e-mail address, so as to receive any addenda or clarification issued by the Owner.

The Owner will not issue bid documents if one or more of the following apply:

- the Bidder is prohibited from rebidding a specific project due to a bid error on the original bid documents,
- the Bidder failed to enter into a Contract on the original award,
- the Bidder was defaulted or terminated on the original Contract, unless the Owner terminated for convenience, or
- the Bidder or a subsidiary or affiliate of the Bidder has received compensation from the Owner to participate in the preparation of the plans or specifications on which the bid or Contract is based.

4. INTERPRETING ESTIMATED QUANTITIES

The quantities listed in the bid documents are approximate and will be used for the comparison of bids. Payments will be made for actual quantities of work performed in accordance with the Contract.

5. EXAMINING DOCUMENTS AND WORK LOCATIONS

Examine the bid documents and specified work locations before submitting a bid for the work. Submitting a bid will be considered evidence that the Bidder has performed this examination. Borings, soil profiles, water elevations, and underground utilities shown on the plans were obtained for the use of the Owner in the preparation of plans. This information is provided for the Bidder's information only and the Owner makes no representation as to the accuracy of the data. Be aware of the difficulty of accurately classifying all material

encountered in making foundation investigations, the possible erosion of stream channels and banks after survey data have been obtained, and the unreliability of water elevations other than for the date recorded.

Oral explanations, instructions, or consideration for Contractor-proposed changes in the bid documents given during the bidding process are not binding. Only requirements included in the bid documents and Owner-issued addenda are binding. Request explanations of documents at least five(5) days prior to the bid opening.

Immediately notify the Owner of any error, omission, or ambiguity discovered in any part of the bid documents. The Owner will issue addenda when appropriate.

6. PREPARING THE BID

Prepare the bid form furnished by the Owner. Informational bid forms printed from the Owner's website will not be accepted.

Specify a unit price in dollars and cents for each regular item, additive alternate item, deductive alternate item or replacement alternate item for which an estimated quantity is given.

When "Working Days" is an item, submit the number of working days to be used to complete the Contract or phases of the Contract.

The Owner will not accept an incomplete bid. A bid that has one or more of the deficiencies listed below is considered incomplete:

- the bid form was not signed,
- all certifications were not acknowledged,
- a regular item, additive alternate item or deductive alternate item is left blank,
- a regular item and the corresponding replacement alternate item are left blank,
- the bid form submitted had the incorrect number of items, or
- all addenda were not acknowledged,
- items missing from Section 1 IFB Checklist.

7. NONRESPONSIVE BID

The Owner will not accept a nonresponsive bid. A bid that has one or more of the deficiencies listed below is considered nonresponsive:

- The bid was not in the hands of the Letting Official at the time and location specified in the advertisement.
- A bid was submitted for the same project by a Bidder or Bidders and one or more of its partners or affiliates.
- The Bidder failed to acknowledge receipt of all addenda issued.
- The bid form was signed by a person who was not authorized to bind the Bidder or Bidders.
- The bid guaranty did not comply with the requirements contained in this Item.
- The bid was in a form other than the official bid form issued by the Owner.
- The Bidder modified the bid in a manner that altered the conditions or requirements for work as stated in the bid documents.
- The Bidder bid more than the maximum or less than the minimum number of allowable working days when working days was an item.
- The Bidder did not attend a specified mandatory pre-bid conference.
- The Bidder did not meet the requirements of the technical qualification.
- The Bidder did not include a signed State of Texas Child Support Business Ownership Form.
- The bidder is not prequalified by TxDOT

- The bidder does not meet the Owner's qualification requirements.

8. SUBMITTAL OF BIDS

8.1. **Electronic Bids.** When electronic bidding is available, the Bidder is responsible for taking the appropriate measures to submit a bid. These measures include, but are not limited to, acquiring hardware, software, and Internet connectivity needed for submitting a bid via the Owner's bidding system.

8.1.1. **Bid Form**. Use the electronic bid form in the Owner's bidding system. When regular bid items have corresponding replacement alternate items, select the bid item or group of items to be used for the bid tabulation. Acknowledge all addenda listed in the Owner's bidding system.

The electronic bid form may not contain the special provisions, special specifications, general notes, and other Contract documents. These documents are included by reference.

8.1.2. **Bid Guaranty**. Provide a bid guaranty in the amount indicated on the bid form. Use an electronic bid bond. Guaranty checks or printed bid bonds will not be accepted.

Use the most current version of the electronic bond accepted by the Owner. For a joint venture, the bond must be in the name of all joint venture participants. Enter the bond authorization code into the Owner's bidding system.

It is the Bidder's responsibility to ensure the electronic bid bond is issued in the name or names of the Bidder or Bidders.

8.1.3. **Submittal of Bid**. Submit the bid using the Owner's bidding system.

8.1.4. **Revising the Bid Form**. Make desired changes as allowed by the Owner's bidding system up until the time and date set for the opening of bids. The last bid submitted will be used for tabulation purposes.

8.1.5. **Withdrawing a Bid**. Submit an electronic or written request to withdraw a bid before the time and date set for the opening. The Owner will not accept oral requests. An electronic request must be made using the Owner's bidding system.

A written request must be signed and submitted to the Letting Official with proof of identification. The request must be made by a person authorized to bind the Bidder or Bidders. In the case of joint venture, the Owner will accept a request from any person authorized to bind a party to the joint venture. The Owner may require written delegation of authority to withdraw a bid when the individual sent to withdraw the bid is not authorized to bind the Bidder or Bidders.

8.2. **Printed Bid.**

8.2.1. **Bid Form**. Mark all entries in ink. As an alternative to hand writing the unit prices in the bid form, submit an electronic bid form.

When regular bid items have corresponding replacement alternate items, select the bid item or group of items to be used for the bid tabulation. Acknowledge all addenda by checking the appropriate box on the addendum acknowledgement page. Provide the complete and correct name of the Bidder submitting the bid. A person authorized to bind the Bidder must sign the bid form. In the case of a joint venture, provide the complete and correct name of all Bidders submitting the bid. In the case of a joint venture, the person signing the bid form must be authorized to bind all joint venture participants.

If a bid form contains both regular items for domestic steel or iron materials and replacement alternate items for foreign steel or iron materials, the Bidder must either:

- submit unit bid prices for domestic items only, or
- submit unit bid prices for both the domestic and foreign items.

8.2.2. **Bid Guaranty**. Provide a bid guaranty in the amount indicated on the bid documents. Use either a guaranty check or a printed bid bond. An electronic bid bond may be used as the guaranty. Ensure the electronic bid bond meets the requirements of Section 2.8.1.2., "Bid Guaranty," and submit the electronic bid bond with the printed bid.

8.2.3. **Guaranty Check**. Make the check payable to the Owner. The check must be a cashier's check, money order, or teller's check drawn by or on a state or national bank, or a state or federally chartered credit union (collectively referred to as "bank"). The check must be dated on or before the date of the bid opening. Postdated checks will not be accepted. The type of check or money order must be indicated on the face of the instrument, except in the case of a teller's check, and the instrument must be no more than 90 days old. A check must be made payable at or through the institution issuing the instrument; be drawn by a bank and on a bank; or be payable at or through a bank. The Owner will not accept personal checks, certified checks, or other types of money orders.

8.2.4. **Bid Bond**. Use the bid bond form provided by the Owner. Submit the bid bond with the powers of attorney attached and in the amount specified. The bond must be dated on or before the date of the bid opening, bear the impressed seal of the Surety, and be signed by the Bidder or Bidders and an authorized individual of the Surety. As an alternative for joint venture Bidders, each of the Bidders may submit a separate bid bond completed as outlined in this section. Bid bonds will only be accepted from Sureties authorized to execute a bond under and in accordance with State law.

8.2.5. **Submittal of Bid**. Place the completed bid form and the bid guaranty in a sealed envelope marked to indicate the contents.

When submitting by mail or delivery service, place the envelope in another sealed envelope and address as indicated in the official advertisement or in the bid documents. It is the Bidder's responsibility to ensure that the sealed bid arrives at the location described on or before the time and date set for the bid opening. To be accepted, the bid must be in the hands of the Letting Official by that time of opening regardless of the method chosen for delivery.

8.2.6. **Revising the Bid Form**. Make desired changes to the bid form in ink and submit the bid to the Letting Official. The Owner will not make revisions to a bid on behalf of a Bidder.

8.2.7. **Withdrawing a Bid**. Submit a written request to withdraw a bid before the time and date set for the opening. The Owner will not accept oral requests. A written request must be signed and submitted to the Letting Official with proof of identification. The request must be made by a person authorized to bind the Bidder or Bidders. In the case of joint venture, the Owner will accept a request from any person authorized to bind a party to the joint venture. The Owner may require written delegation of authority to withdraw a bid when the individual sent to withdraw the bid is not authorized to bind the Bidder or Bidders.

9. OPENING AND READING OF BIDS

At the time, date, and location specified in the official advertisement, the Owner will publicly open and read bids.

10. TABULATING BIDS

10.1. **Official Total Bid Amount**. The Owner will sum the products of the quantities and the unit prices bid in the bid form to determine the official total bid amount, except as provided in Section 2.11., "Consideration of Unit

Prices." The official total bid amount is the basis for determining the apparent low Bidder. The total bid amounts will be compared and the results made public.

10.2. **Rounding of Unit Prices**. The Owner will round off all unit bids involving fractional parts of a cent to the nearest one-tenth cent ($0.001) in determining the amount of the bid as well as computing the amount due for payment of each item under the Contract. For rounding purposes, entries of five-hundredths of a cent ($0.0005) or more will be rounded up to the next highest tenth of a cent, while entries less than five-hundredths of a cent will be rounded down to the next lowest tenth of a cent.

10.3. **Interpretation of Unit Prices**. The Owner will make a documented determination of the unit bid price if a unit bid price is illegible or conflicting in the case of replacement alternate items. The Owner's determination will be final.

10.4. **Consideration of Unit Prices**.

10.4.1. **A + B Bidding**. The official total bid amount will be determined by the summation of the Contract amount and the time element. The Owner will use the following formula to make the calculation:

A + B1 + B2 + BX + … + BT

The Contract amount, equal to A in the formula, is determined by the summation of the products of the approximate quantities shown in the bid and the unit bid prices bid. The time element, equal to B1, B2, BX (when phases are included as bid components), and BT (substantial completion of the project when included as a bid component), of the bid is determined by multiplying the number of working days bid to substantially complete the project, or phases, by the daily road-user cost (RUC) provided on the bid documents. When partial days are bid they will be rounded up to the nearest whole day.

The formula above determines the low Bidder and establishes the Contract time.

10.4.2. **"Buy America."** Comply with Buy America in accordance with Section 6.1.1.. For a Bidder who proposes to use foreign steel or iron materials to be considered the apparent low Bidder, their total bid must be at least 25% lower than the next lowest bid if that bid proposes to use domestic steel or iron materials.

This requirement does not apply to minimal use of steel or iron materials provided that the total cost of all foreign source items used in the project, as delivered to the project site, is less than $2,500 or one-tenth-of-one-percent (1/10 of 1%) of the Contract amount, whichever is greater

11. CONSIDERATION OF BID ERRORS.

The Owner will consider a claim of a bid error by the apparent low Bidder if the following requirements have been met:

- Submit written notification to the Owner within 5 business days after the date the bid is opened.
- Identify the items of work involved and include bidding documentation. The Owner may request clarification of submitted documentation.

The Owner will evaluate the claim of an error by the apparent low Bidder by considering the following:

- The bid error relates to a material item of work.
- The bid error amount is a significant portion of the total bid.
- The bid error occurred despite the exercise of ordinary care.
- The delay of the proposed work will not impact cost and safety to the public.

Acceptance of the bid error claim by the Owner will result in the rejection of the bid of the apparent low bidder .and the Owner may consider the second responsive bid. The erring Contractor will not be allowed to bid the

project if it is relet. Rejection of bids due to the Contractor's bid error may result in the application of sanctions by the Owner.

12. TIE BIDS

If the official total bid amount for 2 or more Bidders is equal and those bids are the lowest submitted, each tie Bidder will be given an opportunity to withdraw their bid. If 2 or more tie Bidders do not withdraw their bids, the low Bidder will be determined by a coin toss. If all tie Bidders request to withdraw their bids, no withdrawals will be allowed and the low Bidder will be determined by a coin toss. The Letting Official will preside over the proceedings for the coin toss.

Item 3L
Award and Execution of Contract

1. AWARD OF CONTRACT

The Owner will award, reject, or defer the Contract within 90 days after the opening of the bid. The Owner reserves the right to reject any or all bids and to waive technicalities in the best interest of the Owner.

1.1. **Award**. The Owner will award the Contract to the low Bidder as determined by Article 2.11., "Tabulating Bids." The Owner may award a Contract to the second lowest Bidder when the following requirements have been met:

- The low Bidder withdraws its bid.
- The low Bidder fails to enter into a contract with the Owner after Award
- The second low Bidder's unit bid prices are reasonable.

1.2. **Rejection**. The Owner will reject the Contract if:

- Collusion may have existed among the Bidders. Collusion participants will not be allowed to bid future bids for the same Contract.
- The low bid is mathematically and materially unbalanced. The Bidder will not be allowed to bid future bids for the same Contract.
- The lowest bid is higher than the Owner's estimate and re-advertising for bids may result in a lower bid.
- Rejection of the Contract is in the best interest of the Owner.

1.3. **Deferral**. The Owner may defer the award or rejection of the Contract when deferral is in the best interest of the Owner.

2. RESCINDING OF AWARD

The Owner reserves the right to cancel the award of any Contract before Contract execution with no compensation due when the cancellation is in the best interest of the Owner. The Owner will return the bid guaranty to the Contractor.

3. DISADVANTAGED BUSINESS ENTERPRISE (DBE)/HISTORICALLY UNDERUTILIZED BUSINESS/SMALL BUSINESS ENTERPRISE (SBE)

Submit all DBE/HUB/SBE information in the time frame specified when required by the bid documents.

4. EXECUTION OF CONTRACT

Provide the following within 15 days after written notification of award of the Contract:

4.1. **Contract**. Executed by Contractor and Surety.

4.2. **Bonds**. Executed performance bond and payment bond in the full amount of the Contract price with powers of attorney. Provide bonds in accordance with Table 1. Furnish the payment and performance bonds as a guaranty for the protection of the claimants and the Owner for labor and materials and the faithful performance of the work.

Table 1
Bonding Requirements

Contract Amount	Required Bonds
Less than $25,000	None
$25,000 to $100,000	Payment
More than $100,000	Performance and Payment

4.3. **Insurance**. Submit a Certificate of Insurance showing coverages in accordance with Contract requirements.

Insurances must cover the contracted work for the duration of the Contract and must remain in effect until final acceptance. Failure to obtain and maintain insurance for the contracted work may result in suspension of work or default of the Contract. If the insurance expires and coverage lapses for any reason, stop all work until the Owner receives an acceptable Certificate of Insurance.

Provide the Owner with a Certificate of Insurance verifying the types and amounts of coverage shown in Section 11 Special Conditions. The Certificate of Insurance must be in a form approved by the Owner. Any Certificate of Insurance provided must be available for public inspection.

By signing the Contract, the Contractor certifies compliance with all applicable laws, rules, and regulations pertaining to workers' compensation insurance. This certification includes all subcontractors. Pay all deductibles stated in the policy. Subcontractors must meet the requirements of Section 11 Special Conditions either through their own coverage or through the Contractor's coverage.

The Workers' Compensation policy must include a waiver of subrogation endorsement in favor of the Owner.

For building-facilities Contracts, provide All Risk Builder's Risk Insurance to protect the Owner against loss by storm, fire or extended coverage perils on work and materials intended for use on the project including the adjacent structure. Name the Owner under the Lost Payable Clause.

For Contracts with railroad requirements, see project-specific details for additional insurance requirements.

Provide a substitute Surety on the Contract bonds in the original full Contract amount within 15 days of notification if the Surety is declared bankrupt or insolvent, the Surety's underwriting limitation drops below the Contract amount or the Surety's right to do business is terminated by the Owner. The substitute Surety must be authorized by the laws of the State and acceptable to the Owner. Work will be suspended until a substitute Surety is provided. Working day charges will be suspended for 15 days or until an acceptable Surety is provided, whichever is sooner.

The work performed under this section will not be measured or paid for directly but will be subsidiary to pertinent items.

4.4. **Railroad Documents**. Provide all required documents for satisfaction of railroad requirements for projects that have work which involves railroad right of way.

5. FAILURE TO ENTER CONTRACT

If the Contractor fails to comply with all of the requirements in Article 3.4., "Execution of Contract," the bid guaranty will become the property of the Owner, not as a penalty, but as liquidated damages. The Contractor forfeiting the bid guaranty will not be considered in future bids for the same work unless there has been a substantial change in design of the work.

6. APPROVAL AND EXECUTION OF CONTRACT

The Contract will be approved and signed under authority of the Owner.

7. RETURN OF BID GUARANTY

The bid guaranty check of the low Bidder will be retained until after the Contract has been rejected or awarded and executed. Bid bonds will not be returned.

8. BEGINNING OF WORK

Do not begin work until authorized in writing by the Owner.

When callout work is required, provide a method of contact available from 8 A.M. until 5 P.M. every work day and 24 hr. a day, 7 days a week for projects with emergency mobilization, unless otherwise shown on the plans. The time of notice will be the transmission time of the notice sent, provided orally, or provided in person by the Owner's representative.

Verify all quantities of materials shown on the plans before ordering.

For projects with alternate bid items, the work order will identify the base bid work and additive or deductive alternate work to be performed. The Owner makes no guarantee that the additive or deductive alternate work will be required.

9. ASSIGNMENT OF CONTRACT

Do not assign, sell, transfer, or otherwise dispose of the Contract or any portion rights, title, or interest (including claims) without the approval of the Owner or designated representative. The Owner must deem any proposed assignment justified and legally acceptable before the assignment can take place.

10. EXCLUDED PARTIES

The Contractor certifies by signing the Contract that the Contractor will not enter into any subcontract with a subcontractor that is debarred or suspended by the Owner or by any state or federal agency.

Item 4L
Scope of Work

1. CONTRACT INTENT

The intent of the Contract is to describe the completed work to be performed. Furnish materials, supplies, tools, equipment, labor, and other incidentals necessary for the proper prosecution and completion of the work in accordance with Contract documents.

2. PRECONSTRUCTION CONFERENCE

Before starting work, schedule and attend a preconstruction conference with the Owner. Failure to schedule and attend a preconstruction conference is not grounds for delaying the beginning of working day charges.

Work with the Owner to resolve all issues during the course of the Contract. Refer to Article 4.7., "Dispute or Claims Procedure," for all unresolved issues.

3. CHANGES IN THE WORK

The Engineer reserves the right to make changes in the work including addition, reduction, or elimination of quantities and alterations needed to complete the Contract. Perform the work as altered. These changes will not invalidate the Contract nor release the Surety. The Contractor is responsible for notifying the sureties of any changes to the Contract.

If the changes in quantities or the alterations do not significantly change the character of the work under the Contract, the altered work will be paid for at the Contract unit price. If the changes in quantities or the alterations significantly change the character of the work, the Contract will be amended by a change order. If no unit prices exist, this will be considered extra work and the Contract will be amended by a change order. Provide cost justification as requested, in an acceptable format. Payment will not be made for anticipated profits on work that is eliminated.

Agree on the scope of work and the basis of payment for the change order before beginning the work. If there is no agreement, the Engineer may order the work to proceed under Article 9.7., "Payment for Extra Work and Force Account Method," or by making an interim adjustment to the Contract. In the case of an adjustment, the Engineer will consider modifying the compensation after the work is performed.

A significant change in the character of the work occurs when:

- the character of the work for any item as altered differs materially in kind or nature from that in the Contract or
- a major item of work varies by more or less than 25% from the original Contract quantity.

When the quantity of work to be done under any major item of the Contract is more than 125% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price on the portion of the work that is above 125%.

When the quantity of work to be done under any major item of the Contract is less than 75% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price. When mutually agreed, the unit price may be adjusted by multiplying the Contract unit price by the factor in Table 1. If an adjusted unit price cannot be agreed upon, the Engineer may determine the unit price by multiplying the Contract unit price by the factor in Table 1.

Table 1
Quantity-Based Price Adjustment Factors

% of Original Quantity	Factor
≥ 50 and < 75	1.05
≥ 25 and < 50	1.15
< 25	1.25

If the changes require additional working days to complete the Contract, Contract working days will be adjusted in accordance with Item 8, "Prosecution and Progress."

4. DIFFERING SITE CONDITIONS

During the progress of the work, differing subsurface or latent physical conditions may be encountered at the site. The 2 types of differing site conditions are defined as:

- those that differ materially from those indicated in the Contract and
- unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract.

Notify the Engineer in writing when differing site conditions are encountered. The Engineer will notify the Contractor when the Owner discovers differing site conditions. Unless directed otherwise, do not work on the affected items and leave the site undisturbed. The Engineer will investigate the conditions and determine whether differing site conditions exist. If the differing site conditions cause an increase or decrease in the cost or number of working days specified for the performance of the Contract, the Engineer will make adjustments, excluding the loss of anticipated profits, in accordance with the Contract. Additional compensation will be made only if the required written notice has been provided.

5. REQUESTS FOR ADDITIONAL COMPENSATION

Notify the Engineer in writing of any intent to request additional compensation once there is knowledge of the basis for the request. An assessment of damages is not required to be part of this notice but is desirable. The intent of the written notice requirement is to provide the Owner an opportunity to evaluate the request and to keep an accurate account of the actual costs that may arise. Minimize impacts and costs.

If written notice is not given, the Contractor waives the right to additional compensation unless the circumstances could have reasonably prevented the Contractor from knowing the cost impact before performing the work. Notice of the request and the documentation of the costs will not be construed as proof or substantiation of the validity of the request. Submit the request in enough detail to enable the Owner to determine the basis for entitlement, adjustment in the number of working days specified in the Contract, and compensation.

The Owner will not consider fees and interest on requests for additional compensation. Fees include, but are not limited to: preparation, attorney, printing, shipping, and various other fees.

Damages occur when impacts that are the responsibility of the Owner result in additional costs to the Contractor that could not have been reasonably anticipated at the time of letting. Costs of performing additional work are not considered damages. For Contractor damages, the intent is to reimburse the Contractor for actual expenses arising out of a compensable impact. No profit or markups, other than labor burden, will be allowed. For damages, labor burden will be reimbursed at 35% unless the Contractor can justify higher actual cost. Justification for a higher percentage must be in accordance with the methodology provided by the Owner , submitted separately for project overhead labor and direct labor, and determined and submitted by a Certified Public Accountant (CPA). Submit CPA-prepared labor burden rates directly to the Owner.

If the Contractor requests compensation for delay damages and the delay is determined to be compensable, then standby equipment costs and project overhead compensation will be based on the duration of the compensable delay and will be limited as follows:

5.1. **Standby Equipment Costs**. Payment will be made in accordance with Section 9.7.1.4.3., "Standby Equipment Costs."

5.2. **Project Overhead**. Project overhead is defined as the administrative and supervisory expenses incurred at the work locations. When delay to project completion occurs, reimbursement for project overhead for the Contractor will be made using the following options:

- reimbursed at 6% (computed as daily cost by dividing 6% of the original Contract amount by the number of original Contract work days), or
- actual documented costs for the impacted period.

Project overhead for delays impacting subcontractors will be determined from actual documented costs submitted by the Contractor.

Time extensions and suspensions alone will not be justification for reimbursement for project overhead.

5.3. **Home Office Overhead**. The Owner will not compensate the Contractor for home office overhead.

6. DISPUTE OR CLAIMS PROCEDURE

The dispute resolution policy promotes a cooperative attitude between the Engineer and Contractor. Emphasis is placed on resolving issues while they are still current, at the project office, and in an informal manner. Open sharing of information is encouraged by all parties involved so the information provided completely and accurately reflects the issues and facts. If information is not shared, decisions may be limited to relying on the documentation that is available for review.

The Owners's goal is to have a dispute settled by the Engineer before elevating it as a claim.

If a dispute cannot be resolved, initiate the Contract claim procedure by filing a Contract claim after the completion of the Contract or when required for orderly performance of the Contract. Submit the claim to the Owner in accordance with state law.

For a claim resulting from enforcement of a warranty period, file the claim no later than one year after expiration of the warranty period. For all other claims, file the claim no later than the date the Owner issues notice to the Contractor that they are in default, the date the Owner terminates the Contract, or one year after the date of final acceptance of the Contract. It is the Contractor's responsibility to submit requests in a timely manner.

Item 5L
Control of the Work

1. AUTHORITY OF ENGINEER

The Engineer has the authority to observe, test, inspect, approve, and accept the work on behalf of the Owner. The Engineer decides all questions about the quality and acceptability of materials, work performed, work progress, Contract interpretations, and acceptable Contract fulfillment. The Engineer has the authority to enforce and make effective these decisions.

The Engineer acts as a referee in all questions arising under the terms of the Contract. The Engineer's decisions will be final and binding.

2. PLANS AND WORKING DRAWINGS

When required, provide working drawings to supplement the plans with all necessary details not included on the Contract plans. Prepare and furnish working drawings in a timely manner and obtain approval, if required, before the beginning of the associated work. For all working drawing submittal requirements, the Engineer may allow electronic and other alternative submission procedures. Have a licensed professional engineer sign, seal, and date the working drawings as indicated in Table 1.

Prepare working drawings using United States standard measures in the English language. The routing of submittals for review and approval will be established at the preconstruction conference. The Contractor is responsible for the accuracy, coordination, and conformity of the various components and details of the working drawings. Owner approval of the Contractor's working drawings will not relieve the Contractor of any responsibility under the Contract. The work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

Table 1
Signature and Approval Requirements for Working Drawings

Working Drawings For		Requires Licensed Professional Engineer's Signature, Seal, and Date	Requires Owner Approval
1. Alternate or optional designs submitted by Contractor		Yes	Yes
2. Supplementary shop and fabrication drawings for structural Items		No unless required on the plans	See applicable Item
3. Contractor-proposed temporary facilities that affect the public safety, not included on the plans		Yes	Yes
4. Form and falsework details	Bridges, retaining walls, and other major structures	Yes unless otherwise shown on the plans	No[1]
	Minor structures	No unless otherwise shown on the plans	No
5. Erection drawings		Yes	No[1,2]
6. Contractor-proposed major modifications to traffic control plan		Yes	Yes

1. The Engineer may require that the Contractor have a licensed professional engineer certify that the temporary works are constructed according to the sealed drawings.
2. Approval is required for items spanning over live traffic or where safety of the traveling public is affected, in the opinion of the Engineer.

3. CONFORMITY WITH PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

Furnish materials and perform work in reasonably close conformity with the lines, grades, cross-sections, dimensions, details, gradations, physical and chemical characteristics of materials, and other requirements shown in the Contract (including additional plans for non-site-specific work). Reasonably close conformity limits will be as defined in the respective items of the Contract or, if not defined, as determined by the Engineer. Obtain approval before deviating from the plans and approved working drawings. Do not perform work beyond the lines and grades shown on the plans or any extra work without the Engineer's approval. Work performed beyond the lines and grades shown on the plans or any extra work performed without approval is considered unauthorized and excluded from pay consideration. The Owner will not pay for material rejected due to improper fabrication, excess quantity, or any other reasons within the Contractor's control.

3.1. **Acceptance of Defective or Unauthorized Work**. When work fails to meet Contract requirements, but is adequate to serve the design purpose, the Engineer will decide the extent to which the work will be accepted and remain in place. The Engineer will document the basis of acceptance by a letter and may adjust the Contract price.

3.2. **Correction of Defective or Unauthorized Work**. When work fails to meet Contract requirements and is inadequate to serve the design purpose it will be considered defective. Correct, or remove and replace, the work at the Contractor's expense, as directed.

The Engineer has the authority to correct or to remove and replace defective or unauthorized work. The cost may be deducted from any money due or to become due to the Contractor.

4. COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

The specifications, accompanying plans (including additional plans for non-site-specific work), special provisions, change orders, and supplemental agreements are intended to work together and be interpreted as a whole.

Numerical dimensions govern over scaled dimensions. Special provisions govern over plans (including general notes), which govern over standard specifications and special specifications. Job-specific plan sheets govern over standard plan sheets.

However, in the case of conflict between plans (including general notes) and specifications regarding responsibilities for hazardous materials and traffic control in Items 1L through 9L and Item 502, "Barricades, Signs, and Traffic Handling," special provisions govern over standard specifications and special specifications, which govern over the plans.

Notify the Engineer promptly of any omissions, errors, or discrepancies discovered so that necessary corrections and interpretations can be made. Failure to promptly notify the Engineer will constitute a waiver of all claims for misunderstandings or ambiguities that result from the errors, omissions, or discrepancies discovered.

5. COOPERATION OF CONTRACTOR

Cooperate with the Engineer. Respond promptly to instructions from the Engineer. Provide all information necessary to administer the Contract.

Designate in writing a competent, English-speaking Superintendent employed by the Contractor. The Superintendent must be experienced with the work being performed and capable of reading and understanding the Contract. Ensure the Superintendent is available at all times and able to receive instructions from the Engineer or authorized Owner representatives and to act for the Contractor. The

Engineer may suspend work without suspending working day charges if a Superintendent is not available or does not meet the above criteria.

At the written request of the Engineer, immediately remove from the project any employee or representative of the Contractor or a subcontractor who, in the opinion of the Engineer, does not perform work in a proper and skillful manner or who is disrespectful, intemperate, disorderly, uncooperative, or otherwise objectionable. Do not reinstate these individuals without the written consent of the Engineer.

Furnish suitable machinery, equipment, and construction forces for the proper prosecution of the work. Provide adequate lighting to address quality requirements and inspection of nighttime work.

The Engineer may suspend the work without suspending working day charges until the Contractor complies with this requirement. All work associated with fulfilling this requirement is subsidiary to the various items of the Contract and no direct compensation will be made.

6. COOPERATING WITH UTILITIES

Use established safety practices when working near utilities. Consult with the appropriate utilities before beginning work. Notify the Engineer immediately of utility conflicts. The Engineer will decide whether to adjust utilities or adjust the work to eliminate or lessen the conflict. Unless otherwise shown on the plans, the Engineer will make necessary arrangements with the utility owner when utility adjustments are required.

Use work procedures that protect utilities or appurtenances that remain in place during construction. Cooperate with utilities to remove and rearrange utilities to avoid service interruption or duplicate work by the utilities. Allow utilities access to the right of way.

Immediately notify the appropriate utility of service interruptions resulting from damage due to construction activities. Cooperate with utilities until service is restored. Maintain access to active fire hydrants at all times unless approved by the Engineer.

7. COOPERATION BETWEEN CONTRACTORS

Cooperate and coordinate with other Contractors working within the limits or adjacent to the limits.

8. COOPERATION WITH RAILROADS

Plan and prosecute portions of the work involving a railway to avoid interference with or hindrance to the railroad company.

If the work is on railroad right of way, do not interfere with the operation of the railroad company's trains or other property.

8.1. **Project-Specific Information**. Refer to project-specific plan sheets in the Contract for specific information concerning the work to be completed by both the Contractor and the railroad within railroad right of way; railroad right of way locations impacted by construction; percentage of Contract work at each location; train movements at each location; and requirements for railroad insurance, flagging, and Right of Entry (ROE) Agreements.

8.2. **Right of Entry Agreement (if required)**. The process for obtaining a fully executed ROE Agreement will be as follows:

- The Owner will send the unexecuted ROE Agreement to the Contractor with the unexecuted construction Contract.
- Partially execute the ROE Agreement and return it to the Department with the required insurance attached.

- The Owner will coordinate with the railroad company regarding the further execution of the ROE Agreement and associated fees. The Owner will pay any ROE Agreement fees directly to the railroad company.
- Once the Owner has received the fully-executed ROE Agreement from the railroad company, the Owner will forward the fully-executed ROE Agreement to the Contractor.

9. CONSTRUCTION SURVEYING

Use Method A unless otherwise specified in the Contract. Upon request, the Engineer will allow the Contractor to copy available earthwork cross-sections, computer printouts or data files, and other information necessary to establish and control work. Maintain the integrity of control points. Preserve all control points, stakes, marks, and right of way markers. Assume cost and responsibility of replacing disturbed control points, stakes, marks, and right of way markers damaged by the Contractor's or its subcontractor operations. If the Owner repairs disturbed control points, stakes, marks, or right of way markers, the cost of repair may be deducted from money due or to become due to the Contractor. Replace right of way markers under the direction of a RPLS. This work will be subsidiary to pertinent items.

The Engineer reserves the right to make measurements and surveys to determine the accuracy of the work and determine pay quantities. The Engineer's measurements and surveys do not relieve the Contractor's responsibility for accuracy of work. Allow the Engineer adequate time to verify the surveying.

9.1. **Method A**. The Engineer will set control points for establishing lines, slopes, grades, and centerlines and for providing both vertical and horizontal control. At a minimum, provide a controlling pair of monument points at both the beginning and end of construction project for projects less than 2 miles in length. For projects greater than 2 miles in length, monuments will be set in pairs of 2 at a minimum of 2 miles based on the overall length of the project. Use these control points as reference to perform the work.

Furnish materials, equipment, and qualified workforce necessary for the construction survey work. Place construction points, stakes, and marks at intervals sufficient to control work to established tolerances. Place construction stakes at intervals of no more than 100 ft., or as directed. Place stakes and marks so as not to interfere with normal maintenance operations.

9.2. **Method B**. The Engineer will set adequate control points, stakes, and marks to establish lines, slopes, grades, and centerlines. Furnish additional work, stakes, materials, and templates necessary for marking and maintaining points and lines.

9.3. **Method C**. Set adequate control points, stakes, and marks to establish lines, slopes, grades, and centerlines.

10. INSPECTION

Inspectors are authorized representatives of the Engineer. Inspectors are authorized to examine all work performed and materials furnished, including preparation, fabrication, and material manufacture. Inspectors inform the Contractor of failures to meet Contract requirements. Inspectors may reject work or materials and may suspend work until any issues can be referred to and decided by the Engineer. Inspectors cannot alter, add, or waive Contract provisions, issue instructions contrary to the Contract, act as foremen for the Contractor, or interfere with the management of the work. Inspection, or lack of inspection, will not relieve the Contractor from obligation to provide materials or perform the work in accordance with the Contract.

Provide safe access to all parts of the work and provide information and assistance to the Engineer to allow a complete and detailed inspection. Give the Engineer sufficient notice to inspect the work. Work performed without suitable inspection, as determined by the Engineer, may be ordered removed and replaced at Contractor's expense. Remove or uncover portions of finished work as directed. Once inspected, restore work to Contract requirements. If the uncovered work is acceptable, the costs to uncover, remove, and replace or make good the parts removed will be paid for in accordance with Article 4.4., "Changes in the

Work." If the work is unacceptable, assume all costs associated with repair or replacement, including the costs to uncover, remove, and replace or make good the parts removed.

When a government entity, utility, railroad company, or other entity accepts or pays a portion of the Contract, that organization's representatives may inspect the work but cannot direct the Contractor. The right of inspection does not make that entity a party to the Contract and does not interfere with the rights of the parties to the Contract.

11. FINAL CLEANUP

Upon completion of the work, remove litter, debris, objectionable material, temporary structures, excess materials, and equipment from the work locations. Clean and restore property damaged by the Contractor's operations during the prosecution of the work. Leave the work locations in a neat and presentable condition. This work will not be paid for directly but will be considered subsidiary to items of the Contract.

Remove from the right of way cofferdams, construction buildings, material and fabrication plants, temporary structures, excess materials, and debris resulting from construction. Where work is in a stream, remove debris to the ground line of the bed of the stream. Leave stream channels and rights of way in a neat and presentable condition. Clean structures to the flow line or the elevation of the outfall channel, whichever is higher. Dispose of all excess material in accordance with federal, state, and local regulations.

12. FINAL ACCEPTANCE

12.1. Final acceptance is made when all work is complete and the Engineer, in writing, accepts all work for the work locations in the Contract. Final acceptance relieves the Contractor from further Contract responsibilities.

12.1.1. **Work Completed**. Work completed must include work for vegetative establishment and maintenance, test, and performance periods and work to meet the requirements of Article 5.11., "Final Cleanup."

12.1.2. **Final Inspection**. After all work is complete, the Contractor will request a final inspection by the Engineer authorized to accept the work.

The final inspection will be made as soon as possible, and not later than 10 calendar days after the request. No working day charges will be made between the date of request and final inspection.

After the final inspection, if the work is satisfactory, the Engineer will notify the Contractor in writing of the final acceptance of the work. If the final inspection finds any work to be unsatisfactory, the Engineer will identify in writing all deficiencies in the work requiring correction. Correct the deficiencies identified. Working day charges will resume if these deficiencies are not corrected within 7 calendar days, unless otherwise approved. Upon correction, the Engineer will make an inspection to verify that all deficiencies were corrected satisfactorily. The Engineer will provide written notice of the final acceptance.

12.1.3. **Final Measurement**. Final measurements and pay quantity adjustments may be made after final acceptance.

12.1.4. **Removal of Traffic Control Devices**. Remove construction traffic control devices and advance warning signs upon final acceptance or as directed.

Item 6L
Control of Materials

1. SOURCE CONTROL

Use only materials that meet Contract requirements. Unless otherwise specified or approved, use new materials for the work. Secure the Engineer's approval of the proposed source of materials to be used before their delivery. Materials can be approved at a supply source or staging area but may be reinspected in accordance with Article 6.4., "Sampling, Testing, and Inspection."

1.1. **Buy America**. Comply with the latest provisions of Buy America as listed at 23 CFR 635.410. Use steel or iron materials manufactured in the United States except when:

- the cost of materials, including delivery, does not exceed 0.1% of the total Contract cost or $2,500, whichever is greater;
- the Contract contains a replacement alternate item for a foreign source steel or iron product and the Contract is awarded based on the replacement alternate item; or
- the materials are temporarily installed.

Provide a notarized original of the TxDOT FORM D-9-USA-1 (or equivalent) with the proper attachments for verification of compliance.

Manufacturing is any process that modifies the chemical content, physical shape or size, or final finish of a product. Manufacturing begins with initial melting and mixing and continues through fabrication (cutting, drilling, welding, bending, etc.) and coating (paint, galvanizing, epoxy, etc.).

1.2. **Convict Produced Materials.** Materials produced by convict labor may only be incorporated in the work if such materials have been:

- produced by convicts who are on parole, supervised release, or probation from prison; or
- produced in a qualified prison facility.

A "qualified prison facility" means any prison facility in which convicts, during the 12-month period ending July 1, 1987, produced materials for use in federal-aid highway construction projects.

2. MATERIAL QUALITY

Correct or remove materials that fail to meet Contract requirements or that do not produce satisfactory results. Reimburse the Owner for cost incurred if additional sampling and testing is required by a change of source.

Materials not meeting Contract requirements will be rejected, unless the Engineer approves corrective actions. Upon rejection, immediately remove and replace rejected materials.

If the Contractor does not comply with this article, the Owner may have defective material removed and replaced. The cost of testing, removal, and replacement will be deducted from the estimate.

3. MANUFACTURER WARRANTIES

Transfer to the Owner warranties and guarantees required by the Contract or received as part of normal trade practice.

4. SAMPLING, TESTING, AND INSPECTION

Incorporate into the work only material that has been inspected, tested, and accepted by the Engineer. Remove, at the Contractor's expense, materials from the work locations that are used without prior testing and approval or written permission.

Unless otherwise mutually agreed, the material requirements and standard test methods in effect at the time the proposed Contract is advertised govern. Unless otherwise noted, the Engineer will perform testing at Owner's expense. In addition to facilities and equipment required by the Contract, furnish facilities and calibrated equipment required for tests to control the manufacture of construction items. If requested, provide a complete written statement of the origin, composition, and manufacture of materials.

All materials used are subject to inspection or testing at any time during preparation or use. Material which has been tested and approved at a supply source or staging area may be reinspected or tested before or during incorporation into the work, and rejected if it does not meet Contract requirements. Copies of test results are to be made available upon request. Do not use material that, after approval, becomes unfit for use.

Unless otherwise noted in the Contract, all testing must be performed within the United States and witnessed by the Engineer. If materials or processes require testing outside the contiguous 48 United States, reimburse the Owner for inspection expenses.

5. PLANT INSPECTION AND TESTING

The Engineer may, but is not obligated to, inspect materials at the acquisition or manufacturing source. Material samples will be obtained and tested for compliance with quality requirements.

If inspection is at the plant, meet the following conditions unless otherwise specified:

- Cooperate fully and assist the Engineer during the inspection.
- Ensure the Engineer has full access to all parts of the plant used to manufacture or produce materials.
- In accordance with pertinent items and the Contract, provide a facility at the plant for use by the Engineer as an office or laboratory.
- Provide and maintain adequate safety measures and restroom facilities.
- Furnish and calibrate scales, measuring devices, and other necessary equipment.

The Engineer may provide inspection for periods other than daylight hours if:

- continuous production of materials for Owner use is necessary due to the production volume being handled at the plant, and
- the lighting is adequate to allow satisfactory inspection.

6. STORAGE OF MATERIALS

Store and handle materials to preserve their quality and fitness for the work. Store materials so that they can be easily inspected and retested. Place materials under cover, on wooden platforms, or on other hard, clean surfaces as necessary or when directed.

Obtain approval to store materials on the right of way. Storage space off the right of way is at the Contractor's expense.

7. OWNER-FURNISHED MATERIAL

The Owner will supply materials as shown in the Contract documents. The cost of handling and placing materials supplied by the Owner will not be paid for directly but is subsidiary to the item in which they are used. Assume responsibility for materials upon receipt.

8. USE OF MATERIALS FOUND ON THE RIGHT OF WAY

Material found in the excavation areas and meeting the Owner's specifications may be used in the work. This material will be paid for at the Contract bid price for excavation and under the item for which the material is used.

Do not excavate or remove any material from within the right of way that is not within the limits of the excavation without written permission. If excavation is allowed within a right of way project-specific location (PSL), replace the removed material with suitable material at no cost to the Owner as directed.

9. RECYCLED MATERIALS

The Owner will not allow hazardous wastes, as defined in 30 TAC 335, proposed for recycling to be used on the project. Use nonhazardous recyclable materials (NRMs) only if the specification for the item does not disallow or restrict use. Determine if NRMs are regulated under 30 TAC 312, 330, 332, 334, or 335, and comply with all general prohibitions and requirements. Use NRMs in accordance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines," and furnish all documentation required by that specification.

10. HAZARDOUS MATERIALS

Use materials that are free of hazardous materials as defined in Item 1L, "Abbreviations and Definitions."

Notify the Engineer immediately when a visual observation or odor indicates that materials in required material sources or on sites owned or controlled by the owner may contain hazardous materials. Except when the contract includes bid items for the contractor to remove hazardous materials, the Engineer is responsible for testing and removing or disposing of hazardous materials not introduced by the Contractor on sites owned or controlled by the Owner as indicated below.

The plans will indicate locations where paint on steel is suspected to contain hazardous materials and where regulated asbestos containing materials have been found. The Engineer may suspend work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Owner, except in the case of when the contract includes removing and disposing of hazardous materials.

When a visual observation or odor indicates that materials delivered to the work locations by the Contractor may contain hazardous materials, have an approved commercial laboratory test the materials for contamination. Remove, remediate, and dispose of any of these materials found to be contaminated. Testing, removal, and disposition of hazardous materials introduced onto the work locations by the Contractor will be at the Contractor's expense. Working day charges will not be suspended and extensions of working days will not be granted for activities related to handling hazardous material delivered by the Contractor.

10.1. **Painted Steel Requirements**. Paint containing hazardous materials will be removed as shown on the plans.

10.1.1. **Paint Removed by Third Party**. The Owner may provide a third party to remove paint containing hazardous materials where paint must be removed to perform work or to allow dismantling of the steel.

10.1.2. **Paint Removed by the Contractor**. This work may only be performed by a firm or company with one of the following certifications:

- SSPC-QP2 certification for lead painting operations, or
- Certified Lead Firm by the Texas Department of State Health Services.

Maintain certification for the duration of the work. Provide copies of audits or certification if requested.

Comply with worker and public safety regulations, including, but not limited to, OSHA 29 CFR Parts 1910.1025, 1926.62, and 1926.63. Monitor permissible exposure limits in accordance with OSHA requirements.

Remove paint containing hazardous materials from designated areas shown on the plans or as directed. Comply with access limitations shown on the plans.

Provide power hand tools, equipped with high-efficiency particulate air filter vacuums to mechanically remove paint.

Contain, collect, store, transport, and dispose of all waste generated by cleaning operation in accordance with local, state, and federal requirements including 40 CFR 302. Properly characterize and dispose of all wastes. Manage any hazardous wastes in accordance with regulatory requirements and dispose in a facility authorized to accept such wastes. Provide copies of disposal manifests.

The work performed, materials furnished, equipment, labor, tools, and incidentals will be paid for in accordance with Item 446, "Field Cleaning and Painting Steel."

10.2. **Removal and Disposal of Painted Steel**. Painted steel will be disposed of at a steel recycling or smelting facility unless otherwise shown on the plans. If the paint contains hazardous materials, maintain and make available to the Engineer invoices and other records obtained from the facility showing the received weight of the steel and the facility name.

For steel that is dismantled by unbolting, no paint stripping will be required. Use care to not damage existing paint. When dismantling is performed using flame or saw-cutting methods to remove steel elements coated with paint containing hazardous materials, the plans will show stripping locations.

The work provided, materials furnished, equipment, labor, tools, and incidentals will be paid for in accordance with Item 496, "Removing Structures," and Item 497, "Sale of Salvagable Material."

10.3. **Asbestos Requirements**. The plans will indicate locations or elements where asbestos containing materials (ACM) have been found. At locations where previously unknown ACM has been found, the Owner will arrange for abatement by a third party. For work at these locations, notify the Engineer of proposed dates of demolition or removal of structural elements with ACM at least 60 days before work is to begin to allow the Owner enough time to abate the asbestos.

10.4. **Work Performed by a Third Party**. When the work for removal of paint or asbestos abatement is to be provided by a third party, coordinate and cooperate with the third party and the Owner. Continue other work detailed on the plans not directly involved in the paint removal or asbestos abatement work. Provide notice to the Owner regarding the progress of the work to allow the Owner enough time to schedule the third party work.

11. SURPLUS MATERIALS

Take ownership of surplus materials unless otherwise shown on the plans or as directed by the Engineer. Remove and dispose of materials in accordance with federal, state, and local regulations. If requested, provide an appropriate level of documentation to verify proper disposal. When materials are disposed of on private property, provide written authorization from the property owner for the use of the property for this purpose upon request.

Item 7L
Legal Relations and Responsibilities

1. SAFETY

1.1. **Point of Contact**. Designate a Contractor Safety Point of Contact (CSPOC). The Owner will assign an Owner employee for their point of contact designated as Owner's Safety Point of Contact OSPOC. The CSPOC will ensure that the Contractor's and Subcontractor's employees' use the appropriate personal protection equipment (hard hats, safety vests, protective toe footwear, etc.).

The CSPOC will ensure that crew leaders and foremen (including subcontractors) have attended the required training.

1.2. **Safety Preconstruction Meeting**. In cooperation with the Engineer, schedule and attend a safety preconstruction meeting (may be a part of the preconstruction conference in Article 4.2., "Preconstruction Conference." Attendees for this safety preconstruction meeting will be:

- the Contractor,
- subcontractors,
- Owner,
- local law enforcement, and
- other personnel that play an active role on the project.

1.3. **Public Safety and Convenience**. Ensure the safety and convenience of the public and property as provided in the Contract and as directed by the Engineer. Keep existing roadways open to traffic or construct and maintain detours and temporary structures for safe public travel. Manage construction to minimize disruption to traffic. Maintain the roadway in a good and passable condition, including proper drainage and provide for ingress and egress to adjacent property.

Store all equipment not in use in a manner and at locations that will not interfere with the safe passage of traffic.

Provide qualified flaggers in accordance with Item 502.2.2., "Flaggers," for the safety and convenience of the traveling public and workers, as directed.

If the Engineer determines that any of the requirements of this article have not been met, the Engineer may take any necessary corrective action. This will not change the legal responsibilities set forth in the Contract. The cost to the Owner for this work will be deducted from any money due or to become due to the Contractor.

1.4. **Use of Blue Warning Lights**. Texas Transportation Code 547.105 authorizes the use of warning lights to promote safety and provides an effective means of gaining the travelling public's attention as they drive in areas where construction crews are present. In order to influence the public to move over when high risk construction activities are taking place, minimize the utilization of blue warning lights. These lights must be used only while performing work on or near the travel lanes or shoulder where the travelling public encounters construction crews that are not protected by a standard work zone set up such as a lane closure, shoulder closure, or one-way traffic control. Refrain from leaving the warning lights engaged while travelling from one work location to another or while parked on the right of way away from the pavement or a work zone.

1.5. **Barricades, Warning and Detour Signs, and Traffic Handling**. Provide, install, move, replace, maintain, clean, and remove all traffic control devices in accordance with the traffic control devices specifications and as shown on the plans and as directed. If details are not shown on the plans, provide devices and work in

accordance with the TMUTCD and as directed by the Engineer. When authorized or directed by the Engineer, provide additional signs or traffic control devices not required by the plans.

If an unexpected situation arises that causes the Contractor to believe that the traffic control should be changed, make all reasonable efforts to promptly contact the Engineer. Take prudent actions until the Engineer can be contacted.

The Engineer may authorize or direct in writing the removal or relocation of project limit advance warning signs. When project limit advance warning signs are removed before final acceptance, traffic control in accordance with the TMUTCD may be used for minor operations as approved. Removal or relocation of project limit advance warning signs does not imply final acceptance.

2. LAWS TO BE OBSERVED

Comply with all federal, state, and local laws, ordinances, and regulations that affect the performance of the work. Indemnify and save harmless the Owner and its representatives against any claim arising from violation by the Contractor of any law, ordinance, or regulation.

This Contract is between the Owner and the Contractor only. No person or entity may claim third-party beneficiary status under this Contract or any of its provisions, nor may any non-party sue for personal injuries or property damage under this Contract.

3. PERMITS, LICENSES, AND TAXES

Procure all permits and licenses; pay all charges, fees, and taxes; and give all notices necessary and incidental to the due and lawful prosecution of work, except for permits provided by the Owner and as specified in Article 7.6., "Preservation of Cultural and Natural Resources and the Environment."

4. PATENTED DEVICES, MATERIAL, AND PROCESSES

Indemnify and save harmless the Owner from any claims for infringement from the Contractor's use of any patented design, device, material, process, trademark, or copyright selected by the Contractor and used in connection with the work. Indemnify and save harmless the Owner against any costs, expenses, or damages that it may be obliged to pay, by reason of this infringement, at any time during the prosecution or after the completion of the work.

5. PERSONAL LIABILITY OF PUBLIC OFFICIALS

Owner employees are agents and representatives of the Owner and will incur no liability, personal or otherwise, in carrying out the provisions of the Contract or in exercising any power or authority granted under the Contract.

6. PRESERVATION OF CULTURAL AND NATURAL RESOURCES AND THE ENVIRONMENT

If the Contractor initiates changes to the Contract and the Owner approves the changes, the Contractor is responsible for obtaining clearances and coordinating with the appropriate regulatory agencies.

6.1. **Cultural Resources**. Cease all work immediately if a site, building, or location of historical, archeological, educational, or scientific interest is discovered within the right of way. The site, building, or location will be investigated and evaluated by the Owner.

6.2. **Texas Pollutant Discharge Elimination System (TPDES) Permits and Storm Water Pollution Prevention Plans (SWP3)**. The Owner will file the Notice of Intent (NOI) and the Notice of Termination (NOT) for work shown on the plans in the right of way. Adhere to all requirements of the SWP3.

6.3. **Work in Waters of the United States**. For work in the right of way, the Owner will obtain any required Section 404 permits from the U.S. Army Corps of Engineers before work begins. Adhere to all agreements, mitigation plans, and standard best management practices required by the permit. When Contractor-initiated changes in the construction method changes the impacts to waters of the U.S., obtain new or revised Section 404 permits.

6.4. **Work in Navigable Waters of the United States**. For work in the right of way, the Owner will obtain any required Section 9 permits from the U.S. Coast Guard before work begins. Adhere to the stipulations of the permits and associated best management practices. When Contractor-initiated changes in the construction method changes the impacts to navigable waters of the U.S., obtain new or revised Section 9 permits.

6.5. **Work Over the Recharge or Contributing Zone of Protected Aquifers**. Make every reasonable effort to minimize the degradation of water quality resulting from impacts relating to work over the recharge or contributing zones of protected aquifers, as defined and delineated by the TCEQ. Use best management practices and perform work in accordance with Contract requirements.

6.6. **Project-Specific Locations**. For all project-specific locations (PSLs) on or off the right of way (material sources, waste sites, parking areas, storage areas, field offices, staging areas, haul roads, etc.), signing the Contract certifies compliance with all applicable laws, rules, and regulations pertaining to the preservation of cultural resources, natural resources, and the environment as issued by the following or other agencies:

- Occupational Safety and Health Administration,
- Texas Commission on Environmental Quality,
- Texas Department of Transportation,
- Texas Historical Commission,
- Texas Parks and Wildlife Department,
- Texas Railroad Commission,
- U.S. Army Corps of Engineers,
- U.S. Department of Energy,
- U.S. Department of Transportation,
- U.S. Environmental Protection Agency,
- U.S. Federal Emergency Management Agency, and
- U.S. Fish and Wildlife Service.

All subcontractors must also comply with applicable environmental laws, rules, regulations, and requirements in the Contract. Maintain documentation of certification activities including environmental consultant reports, Contractor documentation on certification decisions and contacts, and correspondence with the resource agencies. Provide documentation upon request.

Obtain written approval from the Engineer for all PSLs in the right of way not specifically addressed on the plans. Prepare an SWP3 for all Contractor facilities, such as asphalt or concrete plants located within public right of way. Comply with all TCEQ permit requirements for portable facilities, such as concrete batch plants, rock crushers, asphalt plants, etc. Address all environmental issues, such as Section 404 permits, wetland delineation, endangered species consultation requirements, or archeological and historic site impacts. Obtain all permits and clearances in advance.

7. AGRICULTURAL IRRIGATION

Regulate the sequence of work and make provisions as necessary to provide for agricultural irrigation or drainage during the work. Meet with the Irrigation District or land owner to determine the proper time and sequence when irrigation demands will permit shutting-off water flows to perform work.

Unless otherwise provided on the plans, the work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

8. SANITARY PROVISIONS

Provide and maintain adequate, neat, and sanitary toilet accommodations for employees, including Owner employees, in compliance with the requirements and regulations of the Texas Department of Health or other authorities with jurisdiction.

9. ABATEMENT AND MITIGATION OF EXCESSIVE OR UNNECESSARY NOISE

Minimize noise throughout all phases of the Contract. Exercise particular and special efforts to avoid the creation of unnecessary noise impact on adjacent noise sensitive receptors in the placement of non-mobile equipment such as air compressors, generators, pumps, etc. Place mobile and stationary equipment to cause the least disruption of normal adjacent activities.

All equipment associated with the work must be equipped with components to suppress excessive noise and these components must be maintained in their original operating condition considering normal depreciation. Noise-attenuation devices installed by the manufacturer such as mufflers, engine covers, insulation, etc. must not be removed nor rendered ineffectual nor be permitted to remain off the equipment while the equipment is in use.

10. USING EXPLOSIVES

Do not endanger life or property. The contractor is required to submit a written Blasting Plan if required by the plans or requested by the Engineer. The Owner retains the right to reject the blasting plan. Store all explosives securely and clearly mark all storage places with “DANGER – EXPLOSIVES.” Store, handle, and use explosives and highly flammable material in compliance with federal, state, and local laws, ordinances, and regulations. Assume liability for property damage, injury, or death resulting from the use of explosives.

Give at least a 48-hr. advance notice to the appropriate Road Master before doing any blasting work involving the use of electric blasting caps within 200 ft. of any railroad track.

11. RESPONSIBILITY FOR HAZARDOUS MATERIALS

Indemnify and save harmless the Owner and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property arising from the generation or disposition of hazardous materials introduced by the Contractor on any work done by the Contractor on Owner-owned or controlled sites. Indemnify and save harmless the Owner and its representatives from any liability or responsibility arising out of the Contractor’s generation or disposition of any hazardous materials obtained, processed, stored, shipped, etc., on sites not owned or controlled by the Owner. Reimburse the Owner for all payments, fees, or restitution the Owner is required to make as a result of the Contractor’s actions.

12. ASBESTOS CONTAINING MATERIAL

In Texas, the Department of State Health Services (DSHS), Asbestos Programs Branch, is responsible for administering the requirements of the National Emissions Standards for Hazardous Air Pollutants, 40 CFR, Subpart M (NESHAP) and the Texas Asbestos Health Protection Rules (TAHPR). Based on EPA guidance and regulatory background information, bridges are considered to be a regulated “facility” under NESHAP. Therefore, federal standards for demolition and renovation apply.

Provide notice to the Owner of demolition or renovation to the structures listed on the plans at least 30 calendar days before initiating demolition or renovation of each structure or load bearing member. Provide the scheduled start and completion date of structure demolition, renovation, or removal.

When demolition, renovation, or removal of load-bearing members is planned for several phases, provide the start and completion dates identified by separate phases.

DSHS requires that notifications be postmarked at least 10 working days before initiating demolition or renovation. If the date of actual demolition, renovation, or removal is changed, the Owner will be required to notify DSHS at least 10 days in advance of the work. This notification is also required when a previously scheduled (notification sent to DSHS) demolition, renovation, or removal is delayed. Therefore, if the date of actual demolition, renovation, or removal is changed, provide the Engineer, in writing, the revised dates in enough time to allow for the Owner's notification to DSHS to be postmarked at least 10 days in advance of the actual work.

Failure to provide the above information may require the temporary suspension of work under Article 8.4., "Temporary Suspension of Work or Working Day Charges," due to reasons under the control of the Contractor. The Owner retains the right to determine the actual advance notice needed for the change in date to address post office business days and staff availability.

13. RESTORING SURFACES OPENED BY PERMISSION

Do not authorize anyone to make an opening in the highway for utilities, drainage, or any other reason without written permission by the Engineer. Repair all openings as directed by the Engineer. Payment for repair of surfaces opened by permission will be made in accordance with pertinent items or Article 4.4., "Changes in the Work." Costs associated with openings made with Contractor authorization but without Owner approval will not be paid.

14. PROTECTING ADJACENT PROPERTY

Protect adjacent property from damage. If any damage results from an act or omission on the part of or on behalf of the Contractor, take corrective action to restore the damaged property to a condition similar or equal to that existing before the damage was done.

15. RESPONSIBILITY FOR DAMAGE CLAIMS

Indemnify and save harmless the Owner and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property due to the Contractor's negligence in the performance of the work and from any claims arising or amounts recovered under any laws, including workers' compensation and the Texas Tort Claims Act. Indemnify and save harmless the Owner and assume responsibility for all damages and injury to property of any character occurring during the prosecution of the work resulting from any act, omission, neglect, or misconduct on the Contractor's part in the manner or method of executing the work; from failure to properly execute the work; or from defective work or material.

Pipelines and other underground installations that may or may not be shown on the plans may be located within the right of way. Indemnify and save harmless the Owner from any suits or claims resulting from damage by the Contractor's operations to any pipeline or underground installation. Make available the scheduled sequence of work to the respective utility owners so that they may coordinate and schedule adjustments of their utilities that conflict with the proposed work.

16. HAULING AND LOADS ON ROADWAYS AND STRUCTURES

Comply with federal and state laws concerning legal gross and axle weights. Except for the designated Interstate system, vehicles with a valid yearly overweight tolerance permit may haul materials to the work locations at the permitted load. Provide copies of the yearly overweight tolerance permits to the Engineer upon request. Construction equipment is not exempt from oversize or overweight permitting requirements on roadways open to the traveling public.

Protect existing bridges and other structures that will remain in use by the traveling public during and after the completion of the Contract. Construction traffic on roadways, bridges, and culverts within the limits of the work, including any structures under construction that will remain in service during and after completion of the Contract is subject to legal size and weight limitations.

Additional temporary fill may be required by the Engineer for hauling purposes for the protection of certain structures. This additional fill will not be paid directly but will be subsidiary.

Replace or restore to original condition any structure damaged by the Contractor's operations.

The Engineer may allow equipment with oversize or non-divisible overweight loads to operate without a permit within the work locations on pavement structures not open to the traveling public. Submit Contractor-proposed changes to traffic control plans for approval, in accordance with Item 502, "Barricades, Signs, and Traffic Handling." The following sections further address overweight allowances. The Owner will make available to the Contractor any available plans and material reports for existing structures.

16.1. **Overweight Construction Traffic Crossing Structures**. The Engineer may allow crossing of a structure not open to the public within the work locations, when divisible or non-divisible loads exceed legal weight limitations, including limits for load-posted bridges. Obtain written permission to make these crossings. Submit for approval a structural analysis by a licensed professional engineer indicating that the excessive loads should be allowed. Provide a manufacturer's certificate of equipment weight that includes the weight distribution on the various axles and any additional parts such as counterweights, the configuration of the axles, or other information necessary for the analysis. Submit the structural analysis and supporting documentation sufficiently in advance of the move to allow for review. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

Schedule loads so that only one vehicle is on any span or continuous unit at any time. Use barricades, fences, or other positive methods to prevent other vehicular access to structures at any time the overweight load is on any span or continuous unit.

16.2. **Construction Equipment Operating on Structures**. Cranes and other construction equipment used to perform construction operations that exceed legal weight limits may be allowed on structures. Before any operation that may require placement of equipment on a structure, submit for approval a detailed structural analysis prepared by a licensed professional engineer.

Submit the structural analysis and supporting documentation sufficiently in advance of the use to allow for review and approval. Include all axle loads and configurations, spacing of tracks or wheels, tire loads, outrigger placements, center of gravity, equipment weight, and predicted loads on tires and outriggers for all planned movements, swings, or boom reaches. The analysis must demonstrate that no overstresses will occur in excess of those normally allowed for occasional overweight loads.

16.3. **Loads on Structures**. Do not store or stockpile material on bridge structures without written permission. If required, submit a structural analysis and supporting documentation by a licensed professional engineer for review. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

16.4. **Hauling Divisible Overweight Loads on Pavement Within the Work Locations**. The Engineer may allow divisible overweight loads on pavement structures within the work locations not open to the traveling public. Obtain written approval before hauling the overweight loads. Include calculations to demonstrate that there will be no damage or overstress to the pavement structure.

17. CONTRACTOR'S RESPONSIBILITY FOR WORK

Until final acceptance of the Contract, take every precaution against injury or damage to any part of the work by the action of the elements or by any other cause, whether arising from the execution or from the nonexecution of the work. Protect all materials to be used in the work at all times, including periods of suspension.

When any roadway or portion of the roadway is in suitable condition for travel, it may be opened to traffic as directed. Opening of the roadway to traffic does not constitute final acceptance.

Repair damage to all work until final acceptance. Repair damage to existing facilities in accordance with the Contract or as directed. Repair damage to existing facilities or work caused by Contractor operations at the Contractor's expense. Repair work for damage that was not due to the Contractor's operations will not be paid for except as provided below.

17.1. **Reimbursable Repair**. Except for damage to appurtenances listed in Section 7.17.2.1., "Unreimbursed Repair," the Contractor will be reimbursed for repair of damage caused by:

- motor vehicle, watercraft, aircraft, or railroad-train incident;
- vandalism; or
- Acts of God, such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomena of nature.

17.2. **Appurtenances**.

17.2.1. **Unreimbursed Repair**. Except for destruction (not reusable) due to hurricanes, reimbursement will not be made for repair of damage to the following temporary appurtenances, regardless of cause:

- signs,
- barricades,
- changeable message signs, and
- other work zone traffic control devices.

Crash cushion attenuators and guardrail end treatments are the exception to the above listing and are to be reimbursed in accordance with Section 7.17.2.2., "Reimbursed Repair."

For the devices listed in this section, reimbursement may be made for damage due to hurricanes. Where the Contractor retains replaced appurtenances after completion of the project, the Owner will limit the reimbursement to the cost that is above the salvage value at the end of the project.

17.2.2. **Reimbursed Repair**. Reimbursement will be made for repair of damage due to the causes listed in Section 7.17.1., "Reimbursable Repair," to appurtenances (including temporary and permanent crash cushion attenuators and guardrail end treatments).

17.3. **Roadways and Structures**. Until final acceptance, the Contractor is responsible for all work constructed under the Contract. The Owner will not reimburse the Contractor for repair work to new construction, unless the failure or damage is due to one of the causes listed in Section 7.17.1., "Reimbursable Repair."

The Owner will be responsible for the cost for repair of damage to existing roadways and structures not caused by the Contractor's operations.

17.4. **Detours**. The Contractor will be responsible for the cost of maintenance of detours constructed under the Contract, unless the failure or damage is due to one of the causes listed in Section 7.17.1., "Reimbursable Repair." The Engineer may consider failures beyond the Contractor's control when determining reimbursement for repairs to detours constructed. The Owner will be responsible for the cost of maintenance of existing streets and roadways used for detours or handling traffic.

17.5. **Relief from Maintenance**. The Engineer may relieve the Contractor from responsibility of maintenance as outlined in this section. This relief does not release the Contractor from responsibility for defective materials or work or constitute final acceptance.

17.5.1. **Isolated Work Locations**. For isolated work locations, when all work is completed, including work for Article 5.11., "Final Cleanup," the Engineer may relieve the Contractor from responsibility for maintenance.

17.5.2. **Work Except for Vegetative Establishment and Test Periods**. When all work for all or isolated work locations has been completed, including work for Article 5.11., "Final Cleanup," with the exception of vegetative establishment and maintenance periods and test and performance periods, the Engineer may relieve the Contractor from responsibility for maintenance of completed portions of work.

17.5.3. **Work Suspension**. When all work is suspended for an extended period of time, the Engineer may relieve the Contractor from responsibility for maintenance of completed portions of work during the period of suspension.

17.5.4. **When Directed by the Engineer**. The Engineer may relieve the Contractor from the responsibility for maintenance when directed.

17.6. **Basis of Payment**. When reimbursement for repair work is allowed and performed, payment will be made in accordance with pertinent items or Article 4.4., "Changes in the Work."

18. ELECTRICAL REQUIREMENTS

18.1. **Definitions**.

18.1.1. **Electrical Work**. Electrical work is work performed for:

- Item 610, "Roadway Illumination Assemblies,"
- Item 614, "High Mast Illumination Assemblies,"
- Item 616, "Performance Testing of Lighting Systems,"
- Item 617, "Temporary Roadway Illumination,"
- Item 618, "Conduit,"
- Item 620, "Electrical Conductors,"
- Item 621, "Tray Cable,"
- Item 622, "Duct Cable,"
- Item 628, "Electrical Services,"
- Item 680, "Highway Traffic Signals,"
- Item 681, "Temporary Traffic Signals,"
- Item 684, "Traffic Signal Cables,"
- Item 685, "Roadside Flashing Beacon Assemblies,"
- other items that involve either the distribution of electrical power greater than 50 volts or the installation of conduit and duct banks,
- the installation of conduit and wiring associated with Item 624, "Ground Boxes," and Item 656, "Foundations for Traffic Control Devices," and
- the installation of the conduit system for communication and fiber optic cable.

Electrical work does not include the installation of communications or fiber optic cable, or the connections for low voltage and inherently power limited circuits such as electronic or communications equipment. Assembly and placement of poles, structures, cabinets, enclosures, manholes, or other hardware will not be considered electrical work as long as no wiring, wiring connections, or conduit work is done at the time of assembly and placement.

18.1.2. **Specialized Electrical Work**. Specialized electrical work is work that includes the electrical service and feeders, sub-feeders, branch circuits, controls, raceways, and enclosures for the following:

- pump stations,
- moveable bridges,
- ferry slips,
- motor control centers,
- facilities required under Item 504, "Field Office and Laboratory,"
- rest area or other public buildings,

- weigh-in-motion stations,
- electrical services larger than 200 amps,
- electrical services with main or branch circuit breaker sizes not shown in the Contract, and
- any 3-phase electrical power.

18.1.3. **Certified Person**. A certified person is a person who has passed the test from the TxDOT course TRF450, "TxDOT Roadway Illumination and Electrical Installations," or other courses as approved by the Owner. Submit a current and valid certification upon request.

18.1.4. **Licensed Electrician**. A licensed electrician is a person with a current and valid unrestricted master electrical license, or unrestricted journeyman electrical license that is supervised or directed by an unrestricted master electrician. An unrestricted master electrician need not be on the work locations at all times electrical work is being done, but the unrestricted master electrician must approve work performed by the unrestricted journeyman. Licensed electrician requirements by city ordinances do not apply to on state system work.

The unrestricted journeyman and unrestricted master electrical licenses must be issued by the Texas Department of Licensing and Regulation or by a city in Texas with a population of 50,000 or greater that issues licenses based on passing a written test and demonstrating experience.

The Engineer may accept other states' electrical licenses. Submit documentation of the requirements for obtaining that license. Acceptance of the license will be based on sufficient evidence that the license was issued based on:

- passing a test based on the NEC similar to that used by Texas licensing officials, and
- sufficient electrical experience commensurate with general standards for an unrestricted master and unrestricted journeyman electrician in the State of Texas.

18.2. **Work Requirements**. The qualifications required to perform electrical work and specialized electrical work are listed in Table 2.

Table 2
Work Requirements

Type of Work	Qualifications to Perform Work
Electrical work with plans	Licensed electrician, certified person, or workers directly supervised by a licensed electrician or certified person
Electrical work without plans	Licensed electrician or workers directly supervised by a licensed electrician
Specialized electrical work	Licensed electrician or workers directly supervised by a licensed electrician
Replace lamps, starting aids, and changing fixtures	Licensed electrician, certified person, or workers directly supervised by a licensed electrician or certified person
Conduit in precast section with approved working drawings	Inspection by licensed electrician or certified person
Conduit in cast-in-place section	Inspection by licensed electrician or certified person
All other electrical work (troubleshooting, repairs, component replacement, etc.)	Licensed electrician or workers directly supervised by a licensed electrician

A licensed electrician must be physically present during all electrical work when Table 2 states that workers are to be directly supervised by a licensed electrician or certified person.

A non-certified person may install conduit in cast-in-place concrete sections if the work is verified by a certified person before concrete placement.

When the plans specify IMSA certification, the requirements of Table 2 will still apply to the installation of the conduit, ground boxes, electrical services, pole grounding, and electrical conductors installed under Item 620, “Electrical Conductors.”

Item 8L
Prosecution and Progress

1. PROSECUTION OF WORK

Unless otherwise shown in the Contract, begin work within 10 calendar days after the authorization date to begin work as shown on the Notice to Proceed. Prosecute the work continuously to completion within the working days specified. Unless otherwise shown in the Contract documents, work may be prosecuted in concurrent phases if no changes are required in the traffic control plan or if a revised traffic control plan is approved. Notify the Engineer at least 24 hr. before beginning work or before beginning any new operation. Do not start new operations to the detriment of work already begun. Minimize interference to traffic.

2. SUBCONTRACTING

Do not sublet any portion of a construction Contract without the Engineer's written approval. A subcontract does not relieve any responsibility under the Contract and bonds. Ensure that all subcontracted work complies with all governing labor provisions.

The Contractor certifies by signing the Contract that the Contractor will not enter into any subcontract with a subcontractor that is debarred or suspended by the Owner, or any state or federal agency.

For federally funded Contracts, ensure the required federal documents are physically attached to each subcontract agreement including all tiered subcontract agreements.

For all DBE/HUB/SBE subcontracts including all tiered DBE/HUB/SBE subcontracts, submit a copy of the executed subcontract agreement.

Submit a copy of the executed non-DBE subcontracts including all tiered non-DBE subcontracts when requested.

2.1. **Construction Contracts**. Perform work with own organization on at least 30% of the total original Contract cost (25% if the Contractor is an SBE on a wholly State or local funded Contract) excluding any items determined to be specialty items. Specialty items are those that require highly specialized knowledge, abilities, or equipment not usually available in the contracting firm expected to bid on the proposed Contract as a whole.

Specialty items will be shown on the plans or as directed by the Engineer. Bid cost of specialty items performed by subcontractors will be deducted from the total original Contract cost before computing the required amount of work to be performed by the Contractor's own organization.

The term "perform work with own organization" includes only:

- workers employed and paid directly by the Contractor or wholly owned subsidiary;
- equipment owned by the Contractor or wholly owned subsidiary;
- rented or leased equipment operated by the Contractor's employees or wholly owned subsidiary's employees;
- materials incorporated into the work if the majority of the value of the work involved in incorporating the material is performed by the Contractor's own organization, including a wholly owned subsidiary's organization; and

- labor provided by staff leasing firms licensed under Chapter 91 of the Texas Labor Code for nonsupervisory personnel if the Contractor or wholly owned subsidiary maintains direct control over the activities of the leased employees and includes them in the weekly payrolls.

When staff leasing firms provide materials or equipment, they are considered subcontractors. In these instances, submit staff leasing firms for approval as a subcontractor.

Copies of cancelled checks and certified statements may be required to verify compliance with the requirements of this section.

2.2. **Payments to Subcontractors**. Report payments for DBE/HUB/SBE subcontracts including tiered DBE/HUB/SBE subcontracts in the manner as prescribed by the Owner.

2.3. **Payment Records**. Make payment records, including copies of cancelled checks, available for inspection by the Owner. Submit payment records upon request. Retain payment records for a period of 3 yr. following completion of the Contract work or as specified by the Owner.

Failure to submit this information to the Engineer by the 20th day of each month will result in the Owner taking actions, including, but not limited to, withholding estimates and suspending the work. This work will not be measured or paid for directly but will be subsidiary to pertinent items.

3. COMPUTATION OF CONTRACT TIME FOR COMPLETION

Upon request, the Engineer will provide the conceptual time determination schedule to the Contractor for informational purposes only. The schedules assume generic resources, production rates, sequences of construction and average weather conditions based on historic data. The Owner will not adjust the number of working days and milestones, if any, due to differences in opinion regarding any assumptions made in the preparation of the schedule or for errors, omissions, or discrepancies found in the Owner's conceptual time schedule.

The number of working days is established by the Contract. Working day charges will begin 10 calendar days after the date of the written authorization to begin work. Working day charges will continue in accordance with the Contract. The Engineer may consider increasing the number of working days under extraordinary circumstances.

3.1. **Working Day Charges**. Working days will be charged in accordance with Section 8.3.1.4., "Standard Workweek," unless otherwise shown in the Contract documents. Working days will be computed and charged in accordance with one of the following:

3.1.1. **Five-Day Workweek**. Working days will be charged Monday through Friday, excluding national holidays, regardless of weather conditions or material availability. The Contractor has the option of working on Saturdays. Provide sufficient advance notice when scheduling work on Saturdays. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Saturday, Sunday, or national holiday, and weather and other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

3.1.2. **Six-Day Workweek**. Working days will be charged Monday through Saturday, excluding national holidays, regardless of weather conditions or material availability. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Sunday or a national holiday, and weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

3.1.3. **Seven-Day Workweek**. Working days will be charged Monday through Sunday, excluding national holidays, regardless of weather conditions or material availability. Work on national holidays will not be permitted without written permission. If work is performed on any of these holidays requiring an Inspector to be present,

and weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

3.1.4. **Standard Workweek**. Working days will be charged Monday through Friday, excluding national or state holidays, if weather or other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. between 7 A.M. and 6 P.M., unless otherwise shown in the Contract. The Contractor has the option of working on Saturdays or state holidays. Provide sufficient advance notice to the Engineer when scheduling work on Saturdays. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Saturday, Sunday, or holiday, and weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

3.1.5. **Calendar Day**. Working days will be charged Sunday through Saturday, including all holidays, regardless of weather conditions, material availability, or other conditions not under the control of the Contractor.

3.1.6. **Other**. Days will be charged as shown in the Contract documents.

3.2. **Restricted Work Hours**. Restrictions on Contractor work hours and the related definition for working day charges are as prescribed in this article unless otherwise shown in the Contract documents.

3.3. **Nighttime Work**. Nighttime work is allowed only when shown in the Contract documents or as directed. Nighttime work is defined as work performed from 30 min. after sunset to 30 min. before sunrise.

3.3.1. **Five-, Six-, and Seven-Day Workweeks**. Nighttime work that extends past midnight will be assigned to the following day for the purposes of approval for allowing work on Sundays or national holidays.

3.3.2. **Standard Workweek**.

3.3.2.1. **Nighttime Work Only**. When nighttime work is allowed or required and daytime work is not allowed, working day charges will be made when weather and other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. for the nighttime period, as defined in Section 8.3.3., "Nighttime Work," unless otherwise shown in the Contract documents.

3.3.2.2. **Nighttime Work and Daytime Work Requiring Inspector**. When nighttime work is performed or required and daytime work is allowed, working day charges will be made when weather and other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. for the nighttime period, as defined in Section 8.3.3., "Nighttime Work," or for a continuous period of at least 7 hr. for the alternative daytime period unless otherwise shown in the Contract documents. Only one day will be charged for each 24-hr. time period. When the Engineer agrees to restrict work hours to the nighttime period only, working day charges will be in accordance with Section 8.3.3.2.1., "Nighttime Work Only."

3.4. **Time Statements**. The Engineer will furnish the Contractor a monthly time statement. Review the monthly time statement for correctness. Report protests in writing, no later than 30 calendar days after receipt of the time statement, providing a detailed explanation for each day protested. Not filing a protest within 30 calendar days will indicate acceptance of the working day charges and future consideration of that statement will not be permitted.

4. TEMPORARY SUSPENSION OF WORK OR WORKING DAY CHARGES

The Engineer may suspend the work, wholly or in part, and will provide notice and reasons for the suspension in writing. Suspend and resume work only as directed in writing.

When part of the work is suspended, the Engineer may suspend working day charges only when conditions not under the control of the Contractor prohibit the performance of critical activities. When all of the work is

suspended for reasons not under the control of the Contractor, the Engineer will suspend working day charges.

5. PROJECT SCHEDULES

Prepare, maintain, and submit project schedules. Project schedules are used to convey the Contractor's intended work plan to the Owner. Prepare project schedules with a level of effort sufficient for the work being performed. Project schedules will not be used as a basis to establish the amount of work performed or for the preparation of the progress payments.

5.1. **Project Scheduler**. Designate an individual who will develop and maintain the progress schedule. The Project Scheduler will be prepared to discuss, in detail, the proposed sequence of work and methods of operation, and how that information will be communicated through the Progress Schedule at the Preconstruction Meeting. This individual will also attend the project meetings and make site visits to prepare, develop, and maintain the progress schedules.

5.2. **Construction Details**. Before starting work, prepare and submit a progress schedule based on the sequence of work and traffic control plan shown in the Contract documents. At a minimum, prepare the progress schedule as a Bar Chart or Critical Path Method (CPM), as shown on the plans. Include all planned work activities and sequences and show Contract completion within the number of working days specified. Incorporate major material procurements, known utility relocations, and other activities that may affect the completion of the Contract in the progress schedule. Show a beginning date, ending date, and duration in whole working days for each activity. Do not use activities exceeding 20 working days, except for agreed upon activities. Show an estimated production rate per working day for each work activity.

5.3. **Schedule Format**. Format all project schedules according to the following:

- Begin the project schedule on the date of the start of Contract time or start of activities affecting work on the project;
- Show the sequence and interdependence of activities required for complete performance of the work. If using a CPM schedule, show a predecessor and a successor for each activity; and
- Ensure all work sequences are logical and show a coordinated plan of the work.

CPM schedules must also include:

- Clearly and accurately identify the critical path as the longest continuous path;
- Provide a legend for all abbreviations, run date, data date, project start date, and project completion date in the title block of each schedule submittal; and
- Through the use of calendars, incorporate seasonal weather conditions into the schedule for work (e.g., earthwork, concrete paving, structures, asphalt, drainage, etc.) that may be influenced by temperature or precipitation. Also, incorporate non-work periods such as holidays, weekends, or other non-work days as identified in the Contract.

5.4. **Activity Format**. For each activity on the project schedule provide:

- A concise description of the work represented by the activity;
- An activity duration in whole working days;
- Code activities so that organized plots of the schedule may be produced.

CPM schedules must also include the quantity of work and estimated production rate for major items of work. Provide enough information for review of the work being performed.

5.5. **Schedule Types**.

5.5.1. **Bar Chart**. Seven calendar days before the preconstruction meeting, prepare and submit a hard copy of the schedule using the bar chart method.

5.5.1.1. **Progress Schedule Reviews**. Update the project schedule and submit a hard copy when changes to the schedule occur or when requested.

5.5.2. **Critical Path Method**. Prepare and submit the schedule using the CPM.

5.5.2.1. **Preliminary Schedule**. Seven calendar days before the preconstruction meeting, submit both the plotted and electronic copies of the project schedule showing work to be performed within the first 90 calendar days of the project.

5.5.2.2. **Baseline Schedule**. The baseline schedule will be considered the Contractor's plan to successfully construct the project within the time frame and construction sequencing indicated in the Contract. Submit both plotted and electronic copies of the baseline schedule. Submit 2 plots of the schedule: one organized with the activities logically grouped using the activity coding; and the other plot showing only the critical path determined by the longest path, not based on critical float.

Develop and submit the baseline schedule for review within the first 45 calendar days of the project unless the time for submission is extended.

5.5.2.2.1. **Review**. Within 15 calendar days of receipt of the schedule, the Engineer will evaluate, and inform the Contractor if the schedule has been accepted. If the schedule is not accepted, the Engineer will provide comments to the Contractor for incorporation. Provide a revised schedule based on the Engineer's comments, or reasons for not doing so within 10 calendar days. The Engineer's review and acceptance of the project schedule is for conformance to the requirements of the Contract documents only and does not relieve the Contractor of any responsibility for meeting the interim milestone dates (if specified) or the Contract completion date. Review and acceptance does not expressly or by implication warrant, acknowledge, or admit the reasonableness of the logic or durations of the project schedule. If the Contractor fails to define any element of work, activity, or logic and the Engineer's review does not detect this omission or error, the Contractor is responsible for correcting the error or omission.

Submit an acceptable baseline schedule before the 90th calendar day of the project unless the time for submission is extended.

5.5.2.3. **Progress Schedule**. Maintain the project schedule for use by both the Contractor and the Engineer. Submit both the plotted and electronic copy as it will become an as-built record of the daily progress achieved on the project. If continuous progress of an activity is interrupted for any reason except non-work periods (such as holidays, weekend, or interference from temperature or precipitation), then the activity will show the actual finish date as that date of the start of the interruption and the activity will be broken into a subsequent activity (or activities, based on the number of interruptions) similarly numbered with successive alpha character as necessary. The original duration of the subsequent activity will be that of the remaining duration of the original activity. Relationships of the subsequent activity will match those of the original activity so that the integrity of the project schedule logic is maintained. Once established, the original durations and actual dates of all activities must remain unchanged. Revisions to the schedule may be made as necessary.

The project schedule must be revised when changes in construction phasing and sequencing occur or other changes that cause deviation from the original project schedule occur. Any revisions to the schedule must be listed in the monthly update narrative with the purpose of the revision and description of the impact on the project schedule's critical path and project completion date. Create the schedule revision using the latest update before the start of the revision.

Monthly updating of the project schedule will include updating of:

- The actual start dates for activities started;
- The actual finish dates for activities completed;
- The percentage of work completed and remaining duration for each activity started but not yet completed; and
- The calendars to show days actual work was performed on the various work activities.

The cut-off day for recording monthly progress will be the last day of each month. Submit the updated project schedule no later than the 20th calendar day of the following month. The Engineer will evaluate the updated schedule within 5 calendar days of receipt and inform the Contractor if it has or has not been accepted. If the schedule is not accepted, the Engineer will provide comments to the Contractor for incorporation. Provide a revised schedule based on the Engineer's comments, or reasons for not doing so within 5 calendar days.

Provide a brief narrative in a bulleted statement format for major items that have impacted the schedule. Notify the Engineer if resource-leveling is being used.

5.5.2.3.1. **Project Schedule Summary Report (PSSR)**. When shown on the plans, provide the PSSR instead of the narrative required in Section 8.5.5.2.3., "Progress Schedule." The PSSR includes a listing of major items that have impacted the schedule as well as a summary of progress in days ahead or behind schedule. Include an explanation of the project progress for the period represented on the form provided by the Owner.

5.5.3. **Notice of Potential Time Impact**. Submit a "Notice of Potential Time Impact" when a Contract time extension or adjustment of milestone dates may be justified or when directed.

Failure to provide this notice in the time frames outlined above will compromise the Owner's ability to mitigate the impacts and the Contractor forfeits the right to request a time extension or adjustment of milestone dates unless the circumstances are such that the Contractor could not reasonably have had knowledge of the impact at the time.

5.5.4. **Time Impact Analysis**. When directed, provide a time impact analysis. A time impact analysis is an evaluation of the effects of impacts on the project. A time impact analysis consists of the following steps:

- **Step 1**. Establish the status of the project immediately before the impact.
- **Step 2**. Predict the effect of the impact on the schedule update used in Step 1.
- **Step 3**. Track the effects of the impact on the schedule during its occurrence.
- **Step 4**. Establish the status of the project after the impact's effect has ended and provide details identifying any mitigating actions or circumstances used to keep the project ongoing during the impact period.

Determine the time impact by comparing the status of the work before the impact (Step 1) to the prediction of the effect of the impact (Step 2), if requested, and to actual effects of the impact once it is complete (Step 4). Unless otherwise approved, Steps 1, 3, and 4, must be completed before consideration of a Contract time extension or adjustment of a milestone date will be provided. Time extensions will only be considered when delays that affect milestone dates or the Contract completion date are beyond the Contractor's control. Submit Step 4 no later than 15 calendar days after the impact's effects have ended or when all the information on the effect has been realized.

Submit one electronic backup copy of the complete time impact analysis and a copy of the full project schedule incorporating the time impact analysis. If the project schedule is revised after the submittal of a time impact analysis, but before its approval, indicate in writing the need for any modification to the time impact analysis.

The Engineer will review the time impact analysis upon completion of step 4. If this review detects revisions or changes to the schedule that had not been performed and identified in a narrative, the Engineer may reject the time impact analysis. If the Engineer is in agreement with the time impact analysis, a change order may be issued to grant additional working days, or to adjust interim milestones. Once a change order has been executed, incorporate the time impact analysis into the project schedule. The time impact analysis may also be used to support the settlement of disputes and claims. Compensation related to the time impact analysis may be provided at the completion of the analysis or the completion of the project to determine the true role the impact played on the final completion.

The work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

6. FAILURE TO COMPLETE WORK ON TIME

The time established for the completion of the work is an essential element of the Contract. If the Contractor fails to complete the work within the number of working days specified, working days will continue to be charged. Failure to complete the Contract, a separate work order, or callout work within the number of working days specified, including any approved additional working days, will result in liquidated damages for each working day charged over the number of working days specified in the Contract. The dollar amount specified in the Contract will be deducted from any money due or to become due the Contractor for each working day the Contract remains incomplete. This amount will be assessed not as a penalty but as liquidated damages.

7. DEFAULT OF THE CONTRACT

7.1. **Declaration of Default.** The Engineer may declare the Contractor to be in default of the Contract if the Contractor:

- fails to begin the work within the number of days specified,
- fails to prosecute the work to assure completion within the number of days specified,
- is uncooperative, disruptive or threatening,
- fails to perform the work in accordance with the Contract requirements,
- neglects or refuses to remove and replace rejected materials or unacceptable work,
- discontinues the prosecution of the work without the Engineer's approval,
- makes an unauthorized assignment,
- fails to resume work that has been discontinued within a reasonable number of days after notice to do so,
- fails to conduct the work in an acceptable manner, or
- commits fraud or other unfixable conduct as determined by the Owner.

If any of these conditions occur, the Engineer will give notice in writing to the Contractor and the Surety of the intent to declare the Contractor in default. If the Contractor does not proceed as directed within 10 days after the notice, the Owner will provide written notice to the Contractor and the Surety to declare the Contractor to be in default of the Contract. The Owner will also provide written notice of default to the Surety. If the Contractor provides the Owner written notice of voluntary default of the Contract, the Owner may waive the 10 day notice of intent to declare the Contractor in default and immediately provide written notice of default to the Contractor and the Surety. Working day charges will continue until completion of the Contract. The Owner may suspend work in accordance with Section 8.4., "Temporary Suspension of Work or Working Day Charges," to investigate apparent fraud or other unfixable conduct before defaulting the Contractor. The Contractor may be subject to sanctions under the state and/or federal laws and regulations.

The Owner will determine the method used for the completion of the remaining work as follows:

- **Contracts without Performance Bonds**. The Owner will determine the most expeditious and efficient way to complete the work, and recover damages from the Contractor.
- **Contracts with Performance Bonds**. The Owner will, without violating the Contract, demand that the Contractor's Surety complete the remaining work in accordance with the terms of the original Contract. A completing Contractor will be considered a subcontractor of the Surety. The Owner reserves the right to approve or reject proposed subcontractors. Work may resume after the Owner receives and approves Certificates of Insurance as required in Section 3.4.3., "Insurance." Certificates of Insurance may be issued in the name of the completing Contractor. The Surety is responsible for making every effort to expedite the resumption of work and completion of the Contract. The Owner may complete the work using any or all materials at the work locations that it deems suitable and acceptable. Any costs incurred by the Owner for the completion of the work under the Contract will be the responsibility of the Surety.

From the time of notification of the default until work resumes (either by the Surety or the Owner), the Owner will maintain traffic control devices and will do any other work it deems necessary, unless otherwise agreed upon by the Owner and the Surety. All costs associated with this work will be deducted from money due to the Surety.

The Owner will hold all money earned but not disbursed by the date of default. Upon resumption of the work after the default, all payments will be made to the Surety. All costs and charges incurred by the Owner as a result of the default, including the cost of completing the work under the Contract, costs of maintaining traffic control devices, costs for other work deemed necessary, and any applicable liquidated damages or disincentives will be deducted from money due the Contractor for completed work. If these costs exceed the sum that would have been payable under the Contract, the Surety will be liable and pay the Owner the balance of these costs in excess of the Contract price. In case the costs incurred by the Owner are less than the amount that would have been payable under the Contract if the work had been completed by the Contractor, the Owner will be entitled to retain the difference.

Comply with Article 8.2., "Subcontracting," and abide by the DBE/HUB/SBE commitments previously approved by the Owner .

No markups as defined in Article 9.7., "Payment for Extra Work and Force Account Method," will be allowed for the Surety.

7.2. **Wrongful Default**. Submit a written request to the Owner within 14 calendar days of receipt of the notice of default for consideration of wrongful default.

The Owner will determine if the Contractor has been wrongfully defaulted, and will proceed with the following:

- If the Owner determines the default is proper, the default will remain. If the Contractor is in disagreement, the Contractor may file a claim in accordance with Article 4.7., "Dispute or Claims Procedure."
- If the Owner determines it was a wrongful default, the Owner will terminate the Contract for convenience, in accordance with Article 8.8., "Termination of the Contract."

8. TERMINATION OF THE CONTRACT

The Owner may terminate the Contract in whole or in part whenever:

- the Contractor is prevented from proceeding with the work as a direct result of an executive order of the President of the United States or the Governor of the State;
- the Contractor is prevented from proceeding with the work due to a national emergency, or when the work to be performed under the Contract is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor as the result of an order or a proclamation of the President of the United States;
- the Contractor is prevented from proceeding with the work due to an order of any federal authority;
- the Contractor is prevented from proceeding with the work by reason of a preliminary, special, or permanent restraining court order where the issuance of the restraining order is primarily caused by acts or omissions of persons or agencies other than the Contractor; or
- the Owner determines that termination of the Contract is in the best interest of the Owner or the public. This includes, but is not limited to, the discovery of significant hazardous material problems, right of way acquisition problems, or utility conflicts that would cause substantial delays or expense to the Contract.

8.1. **Procedures and Submittals**. The Engineer will provide written notice to the Contractor of termination specifying the extent of the termination and the effective date. Upon notice, immediately proceed in accordance with the following:

- stop work as specified in the notice;

- place no further subcontracts or orders for materials, services, or facilities, except as necessary to complete a critical portion of the Contract, as approved;
- terminate all subcontracts to the extent they relate to the work terminated;
- complete performance of the work not terminated;
- settle all outstanding liabilities and termination settlement proposals resulting from the termination for public convenience of the Contract;
- create an inventory report, including all acceptable materials and products obtained for the Contract that have not been incorporated in the work that was terminated (include in the inventory report a description, quantity, location, source, cost, and payment status for each of the acceptable materials and products); and
- take any action necessary, or that the Engineer may direct, for the protection and preservation of the materials and products related to the Contract that are in the possession of the Contractor and in which the Owner has or may acquire an interest.

8.2. **Settlement Provisions**. Within 60 calendar days of the date of the notice of termination, submit a final termination settlement proposal, unless otherwise approved. The Engineer will prepare a change order that reduces the affected quantities of work and adds acceptable costs for termination. No claim for loss of anticipated profits will be considered. The Owner will pay reasonable and verifiable termination costs including:

- all work completed at the unit bid price and partial payment for incomplete work;
- the percentage of Item 500, “Mobilization,” equivalent to the percentage of work complete or actual cost that can be supported by cost records, whichever is greater;
- expenses necessary for the preparation of termination settlement proposals and support data;
- the termination and settlement of subcontracts;
- storage, transportation, restocking, and other costs incurred necessary for the preservation, protection, or disposition of the termination inventory; and
- other expenses acceptable to the Owner.

Item 9L
Measurement and Payment

1. MEASUREMENT OF QUANTITIES

The Engineer will measure all completed work using United States standard measures, unless otherwise specified.

1.1. **Linear Measurement**. Unless otherwise specified, all longitudinal measurements for surface areas will be made along the actual surface of the roadway and not horizontally. No deduction will be made for structures in the roadway with an area of 9 sq. ft. or less. For all transverse measurements for areas of base courses, surface courses, and pavements, the dimensions to be used in calculating the pay areas will be the neat dimensions and will not exceed those shown on the plans, unless otherwise directed.

1.2. **Volume Measurement**. Transport materials measured for payment by volume in approved hauling vehicles. Display a unique identification mark on each vehicle. Furnish information necessary to calculate the volume capacity of each vehicle. The Engineer may require verification of volume through weight measurement. Use body shapes that allow the capacity to be verified. Load and level the load to the equipment's approved capacity. Loads not hauled in approved vehicles may be rejected.

1.3. **Weight Measurement**. Transport materials measured for payment by weight or truck measure in approved hauling vehicles. Furnish certified measurements, tare weights, and legal gross weight calculations for all haul units. Affix a permanent, legible number on the truck and on the trailer to correspond with the certified information. Furnish certified weights of loaded haul units transporting material if requested.

The material will be measured at the point of delivery. The cost of supplying these volume and weight capacities is subsidiary to the pertinent item. For measurement by the ton, in the field, provide measurements in accordance with Item 520, "Weighing and Measuring Equipment," except for items where ton measurements are measured by standard tables.

The Engineer may reject loads and suspend hauling operations for overloading.

1.3.1. **Hauling on Routes Accessible to the Traveling Public**. For payment purposes on haul routes accessible to the traveling public, the net weight of the load will be calculated as follows:

- If the gross vehicle weight is less than the maximum allowed by state law, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the gross weight.
- If the gross vehicle weight is more than the maximum allowed by state law, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the maximum gross weight allowed.

1.3.2. **Hauling on Routes Not Accessible to the Traveling Public**. For payment purposes on haul routes that are not accessible to the traveling public where advance permission is obtained in writing from the Engineer:

- If the gross vehicle weight is less than the maximum allowed, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the gross weight.
- If the gross vehicle weight is more than the maximum allowed, the net weight of the load will be determined by deducting the tare weight of the vehicle from the maximum gross weight allowed.

2. PLANS QUANTITY MEASUREMENT

Plans quantities may or may not represent the exact quantity of work performed or material moved, handled, or placed during the execution of the Contract. The estimated bid quantities are designated as final payment quantities, unless revised by the governing specifications or this article.

If the quantity measured as outlined under "Measurement" varies by more than 5% (or as stipulated under "Measurement" for specific Items) from the total estimated quantity for an individual item originally shown in the Contract, an adjustment may be made to the quantity of authorized work done for payment purposes.

When quantities are revised by a change in design approved by the Owner, by change order, or to correct an error on the plans, the plans quantity will be increased or decreased by the amount involved in the change, and the 5% variance will apply to the new plans quantity.

If the total Contract quantity multiplied by the unit bid price for an individual item is less than $250 and the item is not originally a plans quantity item, then the item may be paid as a plans quantity item if the Engineer and Contractor agree in writing to fix the final quantity as a plans quantity.

For Contracts with callout work and work orders, plans quantity measurement requirements are not applicable.

3. ADJUSTMENT OF QUANTITIES

The party to the Contract requesting the adjustment will provide field measurements and calculations showing the revised quantity. When approved, this revised quantity will constitute the final quantity for which payment will be made. Payment for revised quantity will be made at the unit price bid for that item, except as provided for in Article 4.4., "Changes in the Work."

4. SCOPE OF PAYMENT

Payment of the Contract unit price is full compensation for all materials, equipment, labor, tools, and supplies necessary to complete the item of work under the Contract. Until final acceptance in accordance with Article 5.12., "Final Acceptance," assume liability for completing the work according to the Contract documents and any loss or damage arising from the performance of the work or from the action of the elements, infringement of patent, trademark, or copyright, except as provided elsewhere in the Contract.

The Owner will only pay for material incorporated into the work in accordance with the Contract. Payment of progress estimates will in no way affect the Contractor's obligation under the Contract to repair or replace any defective parts in the construction or to replace any defective materials used in the construction and to be responsible for all damages due to defects if the defects and damages are discovered on or before final inspection and acceptance of the work.

5. PROGRESS PAYMENTS

The Engineer will prepare a monthly estimate of the amount of work performed, including materials in place. Incomplete items of work may be paid at an agreed upon percentage as approved. Payment of the monthly estimate is determined at the Contract item prices less any withholdings or deductions in accordance with the Contract. Progress payments may be withheld for failure to comply with the Contract.

6. PAYMENT FOR MATERIAL ON HAND (MOH)

If payment for MOH is desired, request compensation for the invoice cost of acceptable nonperishable materials that have not been used in the work before the request, and that have been delivered to the work location or are in acceptable storage places. Nonperishable materials are those that do not have a shelf life or whose characteristics do not materially change when exposed to the elements. Include only materials that

have been sampled, tested, approved, or certified, and are ready for incorporation into the work. Only materials which are completely constructed or fabricated on the Contractor's order for a specific Contract and are so marked and on which an approved test report has been issued are eligible. Payment for MOH may include the following types of items: concrete traffic barrier, precast concrete box culverts, concrete piling, reinforced concrete pipe, and illumination poles. Any repairs required after fabricated materials have been approved for storage will require approval of the Engineer before being made and will be made at the Contractor's expense. Include only those materials that have an invoice cost of at least $1,000 in the request for MOH payment.

If the request is acceptable, the Engineer will include payment for MOH in a progress payment. Payment for MOH does not constitute acceptance of the materials. Payment will not exceed the actual cost of the material as established by invoice, or the total cost for the associated item less reasonable placement costs, whichever is less. Materials for which the Contractor does not have a paid invoice within 60 days will not be eligible for payment and will be removed from the estimate. Payment may be limited to a portion of the invoice cost or unit price if shown elsewhere in the Contract. Payment for precast products fabricated or constructed by the Contractor for which invoices or freight bills are not available may be made based on statements of actual cost.

Submit the request on forms provided by the Owner. These forms may be electronically reproduced, provided they are in the same format and contain all the required information and certifications. Continue to submit monthly MOH forms until the total value of MOH is $0.

By submitting a request for MOH payment, the Contractor expressly authorizes the Owner to audit MOH records, and to perform process reviews of the record-keeping system. If the Owner determines noncompliance with any of the requirements of this provision, the Owner may exclude payment for any or all MOH for the duration of the Contract.

Maintain all records relating to MOH payment until final acceptance. Provide these records to the Engineer upon request.

7. PAYMENT FOR EXTRA WORK AND FORCE ACCOUNT METHOD

Payment for extra work directed, performed, and accepted will be made in accordance with Article 4.4., "Changes in the Work." Payment for extra work may be established by agreed unit prices or by Force Account Method.

Agreed unit prices are unit prices that include markups and are comparable to recent bid prices for the same character of work. These unit prices may be established without additional breakdown justification.

When using Force Account Method, determine an estimated cost for the proposed work and establish labor and equipment rates and material costs. Maintain daily records of extra work and provide copies of these records daily, signed by the Contractor's representative, for verification by the Engineer. Request payment for the extra work no later than the 10th day of the month following the month in which the work was performed. Include copies of all applicable invoices. If the extra work to be performed has an estimated cost of less than $10,000, submit for approval and payment an invoice of actual cost for materials, equipment, labor, tools, and incidentals necessary to complete the extra work.

7.1. **Markups**. Payment for extra work may include markups as compensation for the use of small tools, overhead expense, and profit.

7.1.1. **Labor**. Compensation will be made for payroll rates for each hour that the labor, foremen, or other approved workers are actually engaged in the work. In no case will the rate of wages be less than the minimum shown in the Contract for a particular category. An additional 25% of this sum will be paid as compensation for overhead, superintendence, profit, and small tools.

7.1.2. **Insurance and Taxes**. An additional 55% of the labor cost, excluding the 25% compensation provided in Section 9.7.1.1., "Labor," will be paid as compensation for labor insurance and labor taxes including the cost

of premiums on non-project-specific liability (excluding vehicular) insurance, workers compensation insurance, Social Security, unemployment insurance taxes, and fringe benefits.

7.1.3. **Materials**. Compensation will be made for materials associated with the work based on actual delivered invoice costs, less any discount. An additional 25% of this sum will be paid as compensation for overhead and profit.

7.1.4. **Equipment**. Payment will be made for the established equipment hourly rates for each hour that the equipment is involved in the work. An additional 15% of this sum will be paid as compensation for overhead and profit not included in the rates.

Transportation cost for mobilizing equipment will be included if the equipment is mobilized from an off-site location.

7.1.4.1. **Contractor-Owned Equipment**. For Contractor-owned machinery, trucks, power tools, or other equipment, use the FHWA rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor to establish hourly rates. Use the rates in effect for each section of the *Rental Rate Blue Book* at the time of use.

If a rate has not been established for a particular piece of equipment in the *Rental Rate Blue Book*, the Engineer will allow a reasonable hourly rate. This price will include operating costs.

Payment for equipment will be made for the actual hours used in the work. The Owner reserves the right to withhold payment for low production or lack of progress. Payment will not be made for time lost for equipment breakdowns, time spent to repair equipment, or time after equipment is no longer needed.

If equipment is used intermittently while dedicated solely to the work, payment will be made for the duration the equipment is assigned to the work but no more than 8 hours will be paid during a 24-hour day, nor more than 40 hours per week, nor more than 176 hours per month, except when time is computed using a six-day or seven-day workweek. When using a six-day workweek, no more than 8 hours will be paid during a 24-hour day, nor more than 48 hours per week, nor more than 211 hours per month. When using a seven-day workweek, no more than 8 hours will be paid during a 24-hour day, nor more than 56 hours per week, nor more than 246 hours per month.

7.1.4.2. **Equipment Not Owned by the Contractor**. For equipment rented from a third party not owned by the Contractor, payment will be made at the invoice daily rental rate for each day the equipment is needed for the work. The Owner reserves the right to limit the daily rate to comparable *Rental Rate Blue Book* rates. When the invoice specifies that the rental rate does not include fuel, lubricants, repairs, and servicing, the *Rental Rate Blue Book* hourly operating cost for each hour the equipment is operated will be added.

When the invoice specifies equipment operators as a component of the equipment rental, payment will be made at the invoice rate for each operator for each day the equipment is needed for the work.

7.1.4.3. **Standby Equipment Costs**. Payment for standby equipment will be made in accordance with Section 9.7.1.4., "Equipment," except that:

7.1.4.3.1. **Contractor-Owned Equipment**. For Contractor-owned machinery, trucks, power tools, or other equipment:

- Standby will be paid at 50% (to remove operating cost) of the FHWA rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor.
- Standby costs will not be allowed during periods when the equipment would have otherwise been idle.

7.1.4.3.2. **Equipment Not Owned by the Contractor**. For equipment rented from a third party not owned by the Contractor:

- Standby will be paid at the invoice daily rental rate, excluding operating cost, which includes fuel, lubricants, repairs, and servicing. The Owner reserves the right to limit the daily standby rate to

comparable FHWA rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor.

- Standby will be paid for equipment operators when included on the invoice and equipment operators are actually on standby.
- Standby costs will not be allowed during periods when the equipment would have otherwise been idle.

7.1.5. **Subcontracting**. An additional 5% of the actual invoice cost will be paid to the Contractor as compensation for administrative cost, superintendence, and profit.

7.1.6. **Law Enforcement**. An additional 5% of the actual invoice cost will be paid as compensation for administrative costs, superintendence, and profit.

7.1.7. **Railroad Flaggers**. An additional 5% of the actual invoice cost will be paid as compensation for administrative cost, superintendence, and profit.

7.1.8. **Bond Cost**. An additional 1% of the total compensation provided in Article 9.7., "Payment for Extra Work and Force Account Method," will be paid for the increase in bond.

8. RETAINAGE

The Owner will not withhold retainage on the Contractor. The Contractor may withhold retainage on subcontractors in accordance with state and federal regulations.

9. PAYMENT PROVISIONS FOR SUBCONTRACTORS

For the purposes of this article only, the term subcontractor includes suppliers and the term work includes materials provided by suppliers at a location approved by the Engineer.

These requirements apply to all tiers of subcontractors. Incorporate the provisions of this article into all subcontract or material purchase agreements.

Pay subcontractors for work performed within 10 days after receiving payment for the work performed by the subcontractor. Also, pay any retainage on a subcontractor's work within 10 days after satisfactory completion of all of the subcontractor's work. Completed subcontractor work includes vegetative establishment, test, maintenance, performance, and other similar periods that are the responsibility of the subcontractor.

For the purpose of this section, satisfactory completion is accomplished when:

- the subcontractor has fulfilled the Contract requirements of both the Owner and the subcontract for the subcontracted work, including the submittal of all information required by the specifications and the Owner; and
- the work done by the subcontractor has been inspected, approved, and paid by the Owner.

Provide a certification of prompt payment in accordance with the Owner's prompt payment procedure to certify that all subcontractors and suppliers were paid from the previous months payments and retainage was released for those whose work is complete. Submit the completed form each month and the month following the month when final acceptance occurred at the end of the project.

The inspection and approval of a subcontractor's work does not eliminate the Contractor's responsibilities for all the work as defined in Article 7.17., "Contractor's Responsibility for Work."

The Owner may pursue actions against the Contractor, including withholding of estimates and suspending the work, for noncompliance with the subcontract requirements of this section upon receipt of written notice with sufficient details showing the subcontractor has complied with contractual obligations.

10. FINAL PAYMENT

When the Contract has been completed, all work has been approved, final acceptance has been made in accordance with Article 5.12., “Final Acceptance,” and Contractor submittals have been received, the Engineer will prepare a final estimate for payment showing the total quantity of work completed and the money owed the Contractor. The final payment will reflect the entire sum due, less any sums previously paid.

Special Specification 1004
Tree Protection

1. DESCRIPTION

Install tree protection as shown on the plans or as directed.

2. MATERIALS

Furnish materials in accordance with the plans.

3. CONSTRUCTION

Use construction methods in accordance with the plans.

4. MEASUREMENT

This Item will be measured by the acres of trees protected or by each tree protected.

5. 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 "Tree Protection." This price is full compensation for furnishing all materials, equipment, labor, and incidentals.

Special Specification 3002
Spray Applied Underseal Membrane

1. DESCRIPTION

Construct an underseal membrane composed of a warm spray-applied polymer-modified emulsion meeting the requirements of Table 1. The membrane is applied through a spray-paver and is covered immediately with a mixture of aggregate, asphalt binder, and additives mixed hot in a mixing plant.

Table 1
Polymer-Modified Emulsions Requirements

Test on Emulsion	Test Method	Min	Max
Viscosity @ 77°F, SSF	Tex-513-C	20	100
Storage Stability[1], %	Tex-521-C		1
Demulsibility[2] Anionic emulsions — 35 ml of 0.02 N CaCl2, % Cationic emulsions — 35 ml 0.8% sodium dioctyl sulfosuccinate, %	Tex-521-C	55	
Sieve Test[3], %	Tex-521-C		0.05
Distillation Test[4] Residue by distillation, % by wt. Oil portion of distillate, % by vol.	Tex-521-C	 63	 0.5
Test on Residue from Distillation	**Test Method**	**Min**	**Max**
Elastic Recovery @ 50°F, 50 mm/min., %	Tex-539-C	60	
Penetration @ 77°F, 100 g, 5 sec, 0.1 mm	Tex-502-C	100	150

1. After standing undisturbed for 24 hr., the surface must be smooth, must not exhibit a white or milky colored substance, and must be a homogeneous color throughout.
2. Material must meet demulsibility test for emulsions.
3. May be required by the Engineer only when the emulsion cannot be easily applied in the field.
4. The temperature on the lower thermometer should be brought slowly to 350°F ±10°F and maintained at this temperature for 20 min. The total distillation should be complete in 60 ±5 min. from the first application of heat.

2. EQUIPMENT

2.1. **Spray Paver.** In addition to the requirements of Item 320, "Equipment for Asphalt Concrete Pavement," furnish a spray paver that will spray the membrane and apply the type and grade of mix shown on the plans and level the surface of the pavement layer in a single pass. Configure the spray paver so that the mixture is placed no more than 5 sec. after the membrane is applied.

2.2. **Membrane Storage Tank and Distribution System**. Equip the spray paver with an insulated storage tank having a minimum capacity of 900 gal., unless otherwise approved. Provide a metered mechanical pressure sprayer on the spray paver to apply the membrane at the specified rate. Locate the spray bar on the spray paver so that the membrane is applied immediately in front of the screed unit. Provide a read out device on the spray paver to monitor the membrane application rate.

Unless otherwise directed, furnish a volumetric calibration and strap stick for the tank in accordance with Tex-922-K, Part I. Calibrate the tank within the previous 5 yr. of the date first used on the project. The Engineer may verify calibration accuracy in accordance with Tex-922-K, Part II.

3. CONSTRUCTION METHODS

3.1. **Surface Preparation.** Remove existing raised pavement markers. Repair any damage incurred by removal as directed. Remove dirt, dust, or other harmful material before sealing. When shown on the plans, remove vegetation and blade pavement edges.

3.2. **Membrane Placement.** Unless otherwise directed, uniformly apply the membrane at a rate between 0.15 and 0.25 gal. per square yard. The Engineer may adjust the application rate, taking into consideration the existing pavement surface conditions. Spray the membrane using a metered mechanical pressure spray bar at a temperature between 140°F to 180°F. Monitor the membrane application rate and adjust the rate when needed or when directed. If required, verify that the spray bar is capable of applying the membrane at a uniform rate across the entire paving width as directed. Do not let the wheels or other parts of the paving machine contact the freshly applied membrane. Apply a uniform membrane coat to all contact surfaces and all joints as shown on the plans. Prevent splattering of the membrane when placed adjacent to curb, gutter, and other structures.

3.3. **Quality Control.** Perform the quality control tests listed in Table 2. If operational tolerances in Table 2 are exceeded, adjust processes or cease production when directed. The Engineer may perform independent tests to confirm contractor compliance and may require testing differences or failing results to be resolved before resuming production.

3.4. **Membrane Sampling.** Obtain a 1-qt. sample of the polymer-modified emulsion for each lot of mixture produced. The Engineer will witness the sampling of polymer-modified emulsion. Take the sample from the emulsion tank located on the paving machine, but not from the emulsion spraybar. Obtain the sample at approximately the same time the mixture random sample is obtained. Take all samples in accordance with Tex-500-C, Part III. Label the can with the corresponding lot and sublot numbers, and immediately deliver the sample to the Engineer. The Engineer will randomly choose at least 1 sample per project and test it to verify compliance with Table 1.

Table 2
Operational Tolerance and Minimum Testing Frequency

Test Description	Test Method	Minimum Testing Frequency	Operational Tolerance
Membrane Application Rate	Tex-247-F	1 per day	±0.02
Emulsion Membrane Sampling[1]	Tex-500-C	1 per day (sample only)	Table 1

1. The Engineer may reduce or waive the sampling and testing requirements based on a satisfactory history.

4. MEASUREMENT

Unless otherwise noted on the plans, underseal membrane material will be measured by one of the following methods:

4.1. **Volume.** Underseal membrane material will be measured at the applied temperature by strapping the tank before and after road application and determining the net volume in gallons from the distributor's calibrated strap stick. The Engineer will witness all strapping operations for volume determination.

If the meter and readout device is accurate within 1.5% of the strapped asphalt volume, the Engineer may allow use of the meter and readout to determine asphalt volume used and application rate.

The Engineer may require redetermination of meter readout at any time and will require volume determinations by strapping if the meter is not accurate to within 1.5% of strapped volume.

4.2. **Weight**. Underseal membrane material will be measured in tons using certified scales meeting the requirements of Item 320, "Equipment for Asphalt Concrete Pavement," unless otherwise approved. The transporting truck must have a seal attached to the driving device and other openings. The Engineer may require random checking on public scales, at the Contractor's expense, to verify weight accuracy.

Upon completion or temporary suspension, any remaining membrane material will be weighed by a certified public weigher or measured by volume in a calibrated tank, and the quantity converted to tons at the measured temperature. The quantity to be measured will be the number of tons received, minus the number of tons remaining after all directed work is complete, and minus the amount used for other Items.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided above will be paid for at the unit bid price for “Membrane Underseal.” These prices are full compensation for all materials, equipment, labor, tools, and incidentals necessary to complete the work.

Special Specification 3085
Underseal Course

1. DESCRIPTION

Construct an underseal course where sealing of the underlying surface is needed using a Tracking-Resistant Asphalt Interlayer (TRAIL), a Spray Applied Underseal Membrane, or a single layer of Seal Coat, applied before the placement of a new hot-mix asphalt concrete pavement.

2. MATERIALS

2.1. Furnish the materials for one of the following three options:

2.1.1. **TRAIL.** Furnish asphalt material described as "seal" for typical use in the TRAIL Material Producer List.

2.1.2. **Spray Applied Underseal Membrane.** Furnish asphalt material meeting the requirements of Special Specification 3002, "Spray Applied Underseal Membrane." Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

2.1.3. **Seal Coat.** Furnish asphalt and aggregate materials meeting the requirements of Item 316, "Seal Coat." Use a polymer modified asphalt or emulsion and aggregate as shown on the plans. Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

2.2. Furnish the material for applying tack coat to all miscellaneous contact surfaces when approved by the Engineer:

2.2.1. **Miscellaneous Tack.** Furnish TRAIL asphalt, CSS-1H, SS-1H, or a PG binder with a minimum high-temperature of PG 58 for tack coat binder in accordance with Item 300, "Asphalts, Oils, and Emulsions." Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

2.3. **Sampling.** The Engineer will witness the collection of at least one sample of each asphalt binder per project in accordance with Tex-500-C, Part III, and test it to verify compliance with Item 300, "Asphalts, Oils, and Emulsions" or Special Specification 3002, "Spray Applied Underseal Membrane."

The Engineer will sample and test the type and grade of the aggregate as shown on the plans at the frequency listed in the Department's *Guide Schedule of Sampling and Testing* in accordance with Item 302, "Aggregates for Surface Treatments."

3. EQUIPMENT

3.1. **TRAIL.** Provide the equipment recommend by the producer.

3.2. **Spray Applied Underseal Membrane.** Provide in accordance with Special Specification 3002, "Spray Applied Underseal Membrane."

3.3. **Seal Coat.** Provide in accordance with Item 316, "Seal Coat."

4. CONSTRUCTION

4.1. **Preparation.** Remove existing raised pavement markers. Repair any damage incurred by removal as directed. Remove dirt, dust, or other harmful material before sealing. When shown on the plans, remove

vegetation and blade pavement edges. When approved by the Engineer, apply a thin, uniform coating of Miscellaneous Tack to all miscellaneous contact surfaces such as curbs, structures, and manholes. Prevent splattering of the tack coat when placed adjacent to curb, gutter, and structures.

4.2. **TRAIL.** Perform the following construction methods when applying a TRAIL for an underseal course:

4.2.1. **Placement.** Uniformly apply the TRAIL material to all areas where mix will be placed, including joints, at the rate shown on the plans or as directed, within 15°F of the approved temperature, and not above the maximum allowable temperature. Unless otherwise directed, uniformly apply the TRAIL material at the minimum rate specified on the plans. The Engineer may adjust the application rate taking into consideration the existing pavement surface conditions.

4.3. **Spray Applied Underseal Membrane.** Place in accordance with Special Specification 3002, "Spray Applied Underseal Membrane."

4.3.1. **Placement.** Do not allow any loose mixture onto the prepared surface before application of the membrane. Unless otherwise directed, uniformly apply the membrane to all areas where mix will be placed, including joints, at the rate shown on the plans. Unless otherwise directed, uniformly apply the membrane at the minimum rate specified on the plans. The Engineer may adjust the application rate, taking into consideration the existing pavement surface conditions.

4.4. **Seal Coat.** Place in accordance with Item 316, "Seal Coat."

4.4.1. **Placement.** Unless otherwise directed, apply the asphalt material and aggregate at the minimum rate shown on the plans. The Engineer may adjust the application rate, taking into consideration the existing pavement surface conditions.

4.5. **Informational Shear Test.** Obtain one set of full depth core specimens per project in accordance with Tex-249-F within one working day of the time the lot placement is completed. The Engineer will select the core locations. Provide the cores to the Engineer in a container labeled with the Control-Section-Job (CSJ) and lot number. The district will determine the shear bond strength between the two bonded pavement layers in accordance with Tex-249-F. Results from these tests will not be used for specification compliance.

4.6. **Nonuniform Application.** Stop application if it is not uniform due to streaking, ridging, pooling, or flowing off the roadway surface. Verify equipment condition, operating procedures, application temperature, and material properties. Determine and correct the cause of non-uniform application.

4.7. **Test Strips.** The Engineer may perform independent tests to confirm contractor compliance and may require testing differences or failing results to be resolved before resuming production.

The Engineer may stop the application and require construction of test strips at the Contractor's expense if any of the following occurs:

- Non-uniformity of application continues after corrective action;
- Evidence of tracking or picking up of the TRAIL;
- In 3 consecutive shots, application rate differs by more than 0.03 gal. per square yard from the rate directed; or
- Any shot differs by more than 0.05 gal. per square yard from the rate directed.

The Engineer will approve the test strip location. The Engineer may require additional test strips until surface treatment application meets specification requirements.

5. MEASUREMENT

5.1. **Asphalt Material.**

5.1.1. **Volume**. The asphalt material, including all components, will be measured at the applied temperature by strapping the tank before and after road application and determining the net volume from the calibrated distributor. The Engineer will witness all strapping operations for volume determination. All asphalt material, including emulsions, will be measured by the gallon applied.

The Engineer may allow the use of a metering device to determine the asphalt volume used and application rate if the device is accurate to within 1.5% of the strapped volume.

5.2. **Aggregate.** The work performed, materials furnished, equipment, labor, tools, and incidentals will not be paid for directly but will be subsidiary.

5.3. **Quantity Adjustments.** Quantity based price adjustment factors are not applicable to compensate for over and under runs resulting from the method chosen.

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 "Underseal Course." These prices are full compensation for surface preparation; furnishing, preparing, hauling, Miscellaneous Tack used for all miscellaneous contact surfaces, and placing materials; removing existing pavement markers and excess aggregate; rolling; cleaning up stockpiles; and equipment, labor, tools, and incidentals.

Special Specification 6001
Portable Changeable Message Sign

1. DESCRIPTION

Furnish, operate, and maintain portable trailer mounted changeable message sign (PCMS) units.

2. MATERIALS

Furnish new or used material in accordance with the requirements of this Item and the details shown on the plans. Provide a self-contained PCMS unit with the following:

- Sign controller
- Changeable Message Sign
- Trailer
- Power source

Paint the exterior surfaces of the power supply housing, supports, trailer, and sign with Federal Orange No. 22246 or Federal Yellow No. 13538 of Federal Standard 595C, except paint the sign face assembly flat black.

2.1. **Sign Controller**. Provide a controller with permanent storage of a minimum of 75 pre-programmed messages. Provide an external input device for random programming and storage of a minimum of 75 additional messages. Provide a controller capable of displaying up to 3 messages sequentially. Provide a controller with adjustable display rates. Enclose sign controller equipment in a lockable enclosure.

2.2. **Changeable Message Sign**. Provide a sign capable of being elevated to at least 7 ft. above the roadway surface from the bottom of the sign. Provide a sign capable of being rotated 360° and secured against movement in any position.

Provide a sign with 3 separate lines of text and 8 characters per line minimum. Provide a minimum 18 in. character height. Provide a 5 × 7 character pixel matrix. Provide a message legibility distance of 600 ft. for nighttime conditions and 800 ft. for normal daylight conditions. Provide for manual and automatic dimming light sources.

The following are descriptions for 3 screen types of PCMS:

- **Character Modular Matrix**. This screen type comprises of character blocks.
- **Continuous Line Matrix**. This screen type uses proportionally spaced fonts for each line of text.
- **Full Matrix**. This screen type uses proportionally spaced fonts, varies the height of characters, and displays simple graphics on the entire sign.

2.3. **Trailer**. Provide a 2 wheel trailer with square top fenders, 4 leveling jacks, and trailer lights. Do not exceed an overall trailer width of 96 in. Shock mount the electronics and sign assembly.

2.4. **Power Source**. Provide a diesel generator, solar powered power source, or both. Provide a backup power source as necessary.

2.5. **Cellular Telephone**. When shown on the plans, provide a cellular telephone connection to communicate with the PCMS unit remotely.

3. CONSTRUCTION

Place or relocate PCMS units as shown on the plans or as directed. The plans will show the number of PCMS units needed, for how many days, and for which construction phases.

Maintain the PCMS units in good working condition. Repair damaged or malfunctioning PCMS units as soon as possible. PCMS units will remain the property of the Contractor.

4. MEASUREMENT

This Item will be measured by each PCMS or by the day used. All PCMS units must be set up on a work area and operational before a calendar day can be considered measurable. When measurement by the day is specified, a day will be measured for each PCMS set up and operational on the worksite.

5. 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 "Portable Changeable Message Sign." This price is full compensation for PCMS units; set up; relocating; removing; replacement parts; batteries (when required); fuel, oil, and oil filters (when required); cellular telephone charges (when required); software; and equipment, materials, tools, labor, and incidentals.

Special Specification 6185

Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)

1. DESCRIPTION

Furnish, operate, maintain and remove upon completion of work, Truck Mounted Attenuator (TMA) or Trailer Attenuator (TA).

2. MATERIALS

Furnish, operate and maintain new or used TMAs or TAs. Assure used attenuators are in good working condition and are approved for use. A list of approved TMA/TA units can be found in the Department's Compliant Work Zone Traffic Control Devices List. The host vehicle for the TMA and TA must weigh a minimum of 19,000 lbs. Host vehicles may be ballasted to achieve the required weight. Any weight added to the host vehicle must be properly attached or contained within it so that it does not present a hazard and that proper energy dissipation occurs if the attenuator is impacted from behind by a large truck. The weight of a TA will not be considered in the weight of the host vehicle but the weight of a TMA may be included in the weight of the host vehicle. Upon request, provide either a manufacturer's curb weight or a certified scales weight ticket to the Engineer.

3. CONSTRUCTION

Place or relocate TMA/TAs as shown on the plans or as directed. The plans will show the number of TMA/TAs needed, for how many days or hours, and for which construction phases.

Maintain the TMA/TAs in good working condition. Replace damaged TMA/TAs as soon as possible.

4. MEASUREMENT

4.1. **Truck Mounted Attenuator/Trailer Attenuator (Stationary).** This Item will be measured by the each or by the day. TMA/TAs must be set up in a work area and operational before a calendar day can be considered measurable. When measurement by the day is specified, a day will be measured for each TMA/TA set up and operational on the worksite.

4.2. **Truck Mounted Attenuator/Trailer Attenuator (Mobile Operation).** This Item will be measured by the hour. The time begins once the TMA/TA is ready for operation at the predetermined site and stops when notified by the Engineer. A minimum of 4 hr. will be paid each day for each operating TMA/TA used in a mobile operation.

5. 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 "Truck Mounted Attenuators/Trailer Attenuators (Stationary)," or "Truck Mounted Attenuators/Trailer Attenuators (Mobile Operation)." This price is full compensation for furnishing TMA/TA: set up; relocating; removing; operating; fuel; and equipment, materials, tools, labor, and incidentals.

Special Specification 7016
WATER AND SANITARY SEWER SYSTEMS

1. DESCRIPTION

This Item will govern for furnishing new materials and installing water and sanitary sewer systems shown on the plans.

2. TABLE OF CONTENTS

3. WATER MAINS

3.1. **Description.** Furnish all labor, materials, equipment and incidentals required to install water mains as shown on the plans and as specified.

3.2. **Materials.**

3.2.1. **Polyvinyl Chloride (PVC) Pressure Pipe.** The following specifications cover the requirements for polyvinyl chloride (PVC) pressure plastic pipe materials and installation for potable water use and apply to PVC pipe, sizes 4 inch through 16 inch diameters.

3.2.1.1. Quality Assurance. Color-code PVC pipe in blue to provide positive identification and prevent accidental damage to or interruption of the water facilities. Pipe will conform to American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61 “Drinking Water System Components - Health Effects” and be certified by and organization accredited by ANSI. Provide compliance affidavit from the manufacturer or vendor. If the pipe does not conform to this standard, information from the manufacturer regarding action being taken to comply with this standard must be submitted.

Only pipe manufactured in the United States of America will be accepted.

Pipe must be suitable for use in the conveyance of water for human consumption. Mark each piece of pipe with two seals of the testing agency that certified the pipe material as being suitable for potable water use.

3.2.1.2. Submittals. Furnish all necessary shop drawings, certificates, etc. for review and acceptance. A certification from the manufacturer must be furnished attesting compliance with appropriate ASTM Standards and ANSI/NSF Standard 61.Such compliance will be evidenced by an affidavit from the manufacturer or vendor.

If the pipe does not presently conform to this standard, information from the manufacturer regarding action being taken to comply with this standard must be submitted. Failure to provide this information may result in rejection of pipeline material. Include documentation on pipe products, fittings, and related materials as may be required by the plans or the Engineer. Review all submittals prior to submission. Submit it in a timely manner so as not to delay the project. Allow sufficient time for Engineer's review and resubmission, if necessary. Include certifications from manufacturer that the product complies with appropriate ASTM standards

3.2.1.3. Standards**.** Comply with the applicable requirements of the following items listed below. In case of conflict between the requirements of this Specification and those of the listed documents, the requirements of this Section will prevail.

- ANSI/NSF 61 Drinking Water System Components - Health Effects
- ASTM F-477 Specifications for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- ASTM D-1784 Specifications for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds
- ASTM D-2241 Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR-Series)
- ASTM D-2774 Recommended Practice for Underground Installation of Thermoplastic Pressure Piping
- ASTM D-2837 Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
- ASTM D-3139 Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
- AWWA C-651 Standard for Disinfecting Water Mains
- AWWA C-900 Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4-inch through 12-inches, for Water Distribution
- AWWA C-905 Standard for Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14-inch through 36-Inches
- AWWA M-23 Manual: PVC Pipe - Design and Installation
- UNI-BELL-3 Polyvinyl Chloride (PVC) Pressure Pipe (Complying with AWWA Standard C-900)
- UNI-BELL-11 Polyvinyl Chloride (PVC) Water Transmission Pipe Nominal Diameters 14-36 inches
- Texas Commission on Environmental Quality, Chapter 290 - Public Drinking Water

3.2.1.4. Delivery and Storage**.** Pipe, fittings, and accessories will be inspected upon delivery and during progress of the work. Any material found defective will be rejected and must be promptly removed from the site.

Unload at point of delivery all pipe, fittings, and other accessories, unless otherwise directed, haul to and distribute at the work site. In loading and unloading, lift materials by hoists or roll on skidways to avoid shock or damage. Do not incorporate materials that have been dropped. Do not skid or roll pipe handled on skidways against pipe already on the ground.

Do not store PVC pipe outside exposed to prolonged periods of sunlight. Any discoloration of pipe due to such exposure is an indication of reduced pipe impact strength, and will be sufficient cause for rejection of the pipe. Remove rejected all pipe from the job site.

3.2.1.5. Pipe Materials. Meet the requirements of AWWA C-900 for 4 inch through 12 inch sizes, and AWWA C-905 for 14 inch through 36 inch pipe. Provide pipe that is Underwriters Laboratories (UL) approved. Furnish all PVC pressure pipe in cast iron pipe equivalent outside diameters and a standard laying length of 20 feet. Provide a minimum pressure class of 235 psi (DR 18) for 4 inch through 12 inch diameters and 200 psi (DR 21) for 14 inch through 16 inch pipe.

3.2.1.6. Joints. Furnish push-on flexible, elastomeric gasketed pipe joints. The pipe length must contain one bell-end or couple with a synthetic elastomeric gasket.

Gaskets must meet the requirements of ASTM F-477. The bell will be an integral part of the pipe length, and have the same strength and DR as the pipe. The spigot pipe end will be beveled.

All push-on joint PVC pipe must have dual insertion marks on the spigot indicating proper penetration when the joint is assembled and only one mark remains visible. The sockets and/or spigot configurations for the fittings and couplings will be compatible to the pipe. Socket configuration must prevent improper installation of gasket and will ensure that the gasket remains in place during joining operations.

Cartridge-style restrained joint PVC pipe will be joined using a non-metallic coupling to form an integral system. Coupling will be designed for use at or above the pressure class of the pipe with which they are utilized and will incorporate twin elastomeric sealing gaskets meeting ASTM F-477. High strength, flexible thermoplastic splines will be inserted mating, machined grooves in the pipe and coupling to provide full 360° restraint.

Restrained joint pipe systems must have a restrained joint that in and of itself prevents over belling of the pipe during assembly of the joint and every joint already assembled in that string of pipe. Restrained joint system will allow the installer to both push and pull the pipe during installation without the risk of over belling of any of the pipe joints in the string. Joint will not require electrical power or other additional equipment (other than hand tools) to assemble.

3.2.1.7. Fittings**.** Provide DIP, cement lined pipe fittings in accordance with AWWA C-110 and Article 7, "Valves and Fittings". Provide mechanical joint (MJ) pipe fittings unless otherwise specified.

3.2.1.8. Provisions for Thrust**.** For 12-inch diameter water mains and smaller, concrete thrust blocks or other approved thrust restraint method will be installed at all fittings and valves per design plans and in accordance with these Specifications. If approved, thrust restraint devices may be installed in lieu of thrust blocks as per manufacturer's specifications.

For 16-inch diameter water mains and larger, thrust restraint devices must be installed at all fittings and valves per manufacturer's specifications and as shown on design plans. Concrete thrust blocks are not allowed unless approved by the Engineer.

Acceptable thrust restraint devices include EBAA Iron, Ford Uni-Flange, or approved equal.

NOTE: At connection of new water line to existing main, both concrete thrust blocking in accordance with this Specification and thrust restraint devices must be used, regardless of main size.

Thrust restraint devices must be used for a sufficient distance from each bend, tee, plug, or other fitting to resist thrust which will be developed at the test pressure of the pipe. For the purposes of thrust restraint, test pressure will be 1.5 times the design working pressure indicated. Length of pipe with restrained joints to resist thrust forces will be determined by pipe manufacturer.

3.2.1.9. Pipe Trenching, Installation and Backfill**.** Except as noted, Pipe Trenching, Installation and Backfill for PVC Pressure Pipe will be in accordance with AWWA M-23, C-900, C-905, and conforming to "Excavation and Backfill for Structures" Item 400 and details shown on construction plans.

3.2.1.9.1. Trench Width**.** Provide a minimum trench clear width of 1foot greater than the outside diameter of the pipe and a maximum clear width at a point 1 foot above the top of the pipe equal to the pipe outside diameter plus 2 feet. If the maximum recommended trench width is exceeded or if the pipe is installed in a compacted embankment, compact pipe embedment to a minimum point of 2 1/2 pipe diameters from the side of the pipe or to the trench walls.

3.2.1.9.2. Pipe Zone Embedment**.** Unless otherwise specified, embed PVC pressure pipe in Class II material as defined in Item 400, "Excavation and Backfill for Structures". Native material or imported material meeting or exceeding Class II requirements may be used. Class I material is acceptable at the Engineer's discretion.

3.2.1.9.3. Installation**.** Install plastic pressure pipe in accordance with AWWA M 23 and C-900/C-905 and/or manufacturer's printed recommendations, whichever is applicable. Where a conflict arises, this Specification controls.

Exercise care to insert the pipe spigot to the correct reference mark per manufacturer's recommendation to prevent buckling or separation of the pipe joint. The second insertion mark must be visible after installation and not be further than 3/4-inch from the leading edge of the pipe bell. Verify that the manufacturer's reference marks are correct per manufacturer's literature.

Do not drop pipe or accessories into the trench. When pipe laying is not in progress, close the open ends of installed pipe to prevent entrance of trench water, dirt, and foreign matter into the line.

3.2.1.9.4. Marking Tape**.** Mark PVC pressure water pipe by installing the appropriate marking tape for detection purposes concurrently. Provide a high visibility blue detectable tape consisting of a 5.0 mil inert polyethylene plastic material with the standard warning and identification for potable water imprinted on the tape. Provide a minimum width of 6 inches for all potable water lines and bury tape to a depth of 36 inches, measured from finished grade. Use detecting tape manufactured by Empire, Lineguard, or approved equal.

3.2.1.9.5. Deflection**.** Maximum ring deflection (cross-sectional deflection) of installed PVC pressure pipe is 5 percent. Joint deflection (horizontal deflection) will not exceed manufacturer's recommendations for the particular pipe size.

3.2.1.9.6. Corrosion Protection**.** As a precaution against corrosion, coat all flanges, bolts, nuts and other exposed metal surfaces underground with Texaco, Koppers, or approved equal rustproof compound.

3.2.1.10. Testing**.** Disinfect and test the piping system as detailed in AWWA C-651 and in accordance with Article 10, "Cleaning, Disinfection, and Testing of Water System".

3.2.2. **Ductile Iron Pipe**. The following specifications cover the requirements for ductile iron pipe (DIP) materials.

3.2.2.1. Quality Assurance**.** Manufacturer must have a minimum of ten years successful experience in designing and manufacturing DIP, pipe joints of similar design, pipe diameter, and pressure class of the type specified. The entire pipeline will be the product of one manufacturer. Pipe must conform to American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61 "Drinking Water System Components - Health Effects" and be certified by and organization accredited by ANSI. Such compliance will be evidenced by an affidavit from the manufacturer or vendor. If the pipe does not presently conform to this standard, information from the manufacturer regarding action being taken to comply with this standard must be submitted.

3.2.2.2. Submittals**.** Submit documentation on pipe products, fittings, and related materials as required by the plans or Engineer. Review all submittals prior to submission. Submit in a timely manner so as not to delay the project. Allow sufficient time for Engineer's review and resubmission, if necessary. Include certifications from manufacturer that the DIP complies with appropriate AWWA Standards and ANSI/NSF Standard 61. Provide by an affidavit from the manufacturer or vendor as evidence of compliance. If the pipe does not presently conform to this standard, information from the manufacturer regarding action being taken to comply with this standard must be submitted. If requested, provide copies of results of factory hydrostatic tests.

3.2.2.3. Standards**.** Comply with applicable requirements of the following items listed below. In case of conflict between the requirements of this Specification and those of the listed documents, the requirements of this Section will prevail:

- ANSI/NSF 61 Drinking Water System Components - Health Effects
- ASTM A-536 Specification for Ductile Iron Castings
- AWWA C-104 Standard for Cement Mortar Lining for Ductile Iron Pipe and Fittings
- AWWA C-105 Standard for Polyethylene Encasement for Ductile Iron Piping
- AWWA C-110 Standard for Ductile Iron and Gray Iron Fittings

- AWWA C-111 Standard for Rubber Gasket Joints for Ductile Iron Pipe and Fittings
- AWWA C-150 Standard for Thickness Design of Ductile Iron Pipe
- AWWA C-151 Standard for Ductile Iron Pipe
- AWWA C-214 Tape Coating Systems for the Exterior of Steel Water Pipelines
- AWWA C-600 Standard for Installation of Ductile Iron Water Mains & Appurtenances
- AWWA C-651 Disinfecting Water Mains
- Texas Commission on Environmental Quality, Chapter 290 - Public Drinking Water

3.2.2.4. Pipe Material**s.** Manufacture DIP in accordance with AWWA C-151 and conform to ASTM Specification A-536 with physical properties of Grade 60-40-18 with a minimum pressure class rating of 350 psi, unless otherwise specified. Design pipe for five (5) feet of cover or for the depths shown on the plans, whichever is greater. Provide a standard joint length of 18 or 20 feet and an industry standard inside diameter. Replace any material found to be damaged or defective in manufacture at Contractor's expense.

3.2.2.5. Joints**.** Provide push-on standard joints for DIP manufactured in accordance with AWWA C-111, AWWA C-151. Where indicated on the plans, joints will be mechanical or flanged. Flanged joints will have pressure ratings equal to or greater than adjacent pipe. Flange pattern will match pattern of valve, fitting, or appurtenance to be attached.

3.2.2.6. Fittings**.** Provide DIP in accordance with AWWA C-110 and Article 7 of this Specification. Fittings will be rated for a minimum working pressure of 250 psi, unless otherwise specified. Factory welded outlets, minimum pressure rating 250 psi, may be used in lieu of tee fittings for 18 inch and larger tee fittings. Do not use factory welded outlets near sources of vibration, such as pump stations or roads, unless specifically noted on the plans.

3.2.2.7. Exterior Coating**.** Provide a standard asphaltic coating in accordance with AWWA C-151, unless otherwise specified. The finished coating will be continuous, and smooth and strongly adherent to the pipe.

For DIP sizes 30 inches and smaller, use a 30 mils minimum thickness polyethylene wrap applied wrap in accordance with AWWA C-105/A21.5.

Tape coat DIP 36 inches and larger. The exterior of the pipe must have a prefabricated cold-applied tape coating system conforming to the requirements of ANSI/AWWA C-214, except as noted herein. Blast clean the surface to achieve a surface preparation at least equal to that specified in SSPC SP6. The blast profile must have an anchor pattern as specified by the tape manufacturer. Hold the coating back from the end of the pipe the minimum distance recommended by the pipe manufacturer for the type of joint used. Taper the tape wrap cut back. Provide a nominal thickness of 80 mils.

3.2.2.8. Interior Lining**.** DIP Pipe and fittings will have a cement mortar lining in accordance with AWWA C-104 and bituminous seal coat. Cement Type for lining will be appropriate for pipe application. Provide lining thickness as specified in AWWA C-104.

3.2.2.9. Provisions for Thrust**.** Where indicated and where required for thrust restraint, joints must be restrained. Restrained joints will be mechanically interlocking joints. Provide restrained joints such as U.S. Pipe "TR Flex", American Cast Iron Pipe "Flex Ring", or Clow Corporation "Super-Lock" that are capable of sustaining the specified design pressure. If thrust cannot be accommodated using restrained joints, such as bends adjacent to casing pipe, use approved thrust restraint devices.

Thrust at bends, tees, plugs, or other fittings must be resisted using thrust restraint devices. Concrete thrust blocks are not allowed unless approved by the Engineer. Acceptable thrust restraint devices are as manufactured by EBAA Iron, Ford Uni-Flange, or approved equal.

NOTE: At connection of new water line to existing main, both concrete thrust blocking (per Article II of these Specifications) and thrust restraint devices must be used.

Restrained joints and thrust restraint devices must be used for a sufficient distance from each bend, tee, plug, or other fitting to resist thrust which will be developed at the design pressure of the pipe. For the purposes of thrust restraint, design pressure is 1.5 times the design working pressure class indicated. Length of pipe with restrained joints and restraint devices will be determined by pipe manufacturer and/or in accordance with the Handbook of Ductile Iron Pipe.

The following parameters will be used: laying condition equal to AWWA C-600 Type 5 soil, safety factor of 1.8, a unit bearing resistance equal to zero, an a factor for polyethylene encasement as recommended by DIPRA (Ductile Iron Pipe Research Association), if required.

3.2.2.10. Pipe Trenching, Installation, and Backfill**.** Except as noted, perform pipe trenching, Installation, and Backfill for DIP in accordance with AWWA C-600 and Article 6 of this Specification.

3.2.2.10.1. General. Repair any damage to polyethylene wrap according to AWWA C-105. Keep pipe clean during installation. Provide two coats of Koppers Bitumastic No. 50, or approved equal to exposed ferrous metal that cannot be protected with field-applied tape coating. Install pipe and fittings to line and grade indicated. In areas where the line and grades indicated cannot be achieved using standard manufactured bends and fittings, make slight adjustments by deflecting joints according to the limitations of AWWA C-600.

3.2.2.10.2. Pipe Zone Embedment. Unless otherwise specified, embed DIP in Class II material as defined in Article 6. Native material or imported material meeting or exceeding Class II requirements may be used.

3.2.2.10.3. Marking Tape**.** Mark DIP by installing the appropriate marking tape for detection purposes concurrently. Provide a high visibility blue detectable tape consisting of a 5.0 mil inert polyethylene plastic material with the standard warning and identification for potable water imprinted on the tape. Provide a minimum width of 6 inches for all potable water lines and bury tape to a depth of 36 inches, measured from finished grade. Use detecting tape manufactured by Empire, Lineguard, or approved equal.

3.2.2.10.4. Pipe Cutting. When required, machine cut DIP leaving a smooth cut at right angles to the axis of the pipe. Bevel ends of cut pipe to be used with a push-on joint bell to comply with manufactured spigot end. Do not damage cement lining.

3.2.2.10.5. Corrosion Protection. As a precaution against corrosion, coat all flanges, bolts, nuts and other exposed metal surfaces underground with Texaco, Koppers, or equal rustproof compound.

3.2.2.11. Testing**.** Disinfect and test the piping system in accordance with Article 10 of this Specification and as detailed in AWWA C-651.

3.2.3. **Steel Main Pressure Pipe (STEEL)**. The following specifications cover the requirements for steel main pressure pipe (STEEL) materials and for proper and function of the pipe.

3.2.3.1. Quality Assurance**.** Conform to applicable standards of ASTM and AWWA and ANSI/NSF Standard 61 "Drinking Water System Components – Health Effects".

Manufacturer must have a minimum of five years successful experience in manufacturing pipe of the particular type and size indicated. The entire pipeline will be the product of one manufacturer and pipe manufacturing operations (pipe, fittings, lining, coating) must be performed at one location. Clearly mark one end of each pipe joint and fitting with the class for which it is designed, the date of manufacturer and the identification number.

The quality of materials, the process of manufacture and finished pipe will be subject to inspection and approval. Inspections may be made at the place of manufacture, on the jobsite or both places. Pipe may be subject to inspection by an independent testing laboratory selected and retained by the El Paso Water Utilities (EPWU). Pipe manufacturer must provide proper facilities for access and inspection and allow laboratory representatives or Engineer to inspect whenever work is in preparation or progress. Notify EPWU, through Engineer in writing, at least two weeks prior to pipe fabrication so that the manufacturer is advised of the decision regarding independent laboratory tests to be performed. Material, fabricated parts,

and pipe, discovered to be defective, or do not conform to the requirements of this specification are subject to rejection at any time prior to final acceptance of the product. Promptly remove rejected materials from the jobsite.

The inspection and testing by the independent testing laboratory anticipates that production of pipe be done over a normal period of time and without "slowdowns" or other abnormal delays. In the event that an abnormal production time is required, and EPWU is required to pay excessive costs for inspection, reimburse EPWU for such laboratory costs over and above those incurred under a normal schedule of production as determined by the Engineer.

Welders must be certified as qualified in accordance with Chapter 9 of the ASME Boiler and Pressure Vessel Code and AWWA C-206. Welds will be tested for conformance with ASTM E-165. Submit welded test specimens upon request.

3.2.3.2. Submittals**.** Provide record drawings from the pipe manufacturer for pipe and fittings prior to fabrication that a schematic location-profile and a tabulated layout schedule, both of which are appropriately referenced to the stationing of the proposed pipeline as shown on the plan-profile sheets. Base record drawings on the plans and specifications and incorporate changes necessary to avoid conflicts with existing details of reinforcement, lining, and dimensions for pipe and fittings. Include details for the design and fabrication of all fittings, specials and provisions for thrust restraint. Where welded joints are required, include proposed welding requirements and provisions for thermal stress control. Record drawings are for record purposes only and will not be reviewed or approved.

Provide an affidavit stating that the pipe to be furnished complies with AWWA C-200, AWWA C-205, AWWA C-214, and these specifications.

Furnish the procedure, specifications and qualification records of welding procedures for all pipe welding to be performed for review and approval. Submit a list of the welders and the type of welding for which each has been qualified. All qualification and requalification tests costs are at Contractor's expense.

3.2.3.3. Standards**.** Comply with the following applicable requirements:

- ASTM A-307 Low Carbon Steel Externally Threaded Standard Fasteners
- AWWA C-200 Standard for Steel Water Pipe 6-inches and Larger
- AWWA C-205 Standard for Cement Mortar Protective Lining and Coating for Steel Water Pipe – 4" and Larger
- AWWA C-206 Standard for Field Welding of Steel Water Pipe
- AWWA C-207 Standard for Steel Pipe Flanges Waterworks Service – Sizes 4"-144"
- AWWA C-208 Standard for Dimensions for Steel Water Pipe Fittings
- AWWA C-209 Standard for Cold Applied Tape Coatings for the Exterior of Special Sections, Connections, and Fittings
- AWWA C-214 Standard for Tape Coating Systems for the Exterior of Steel Water Pipelines
- AWWA M-11 Manual: Steel Pipe – A Guide for Design and Installation

3.2.3.4. Delivery and Storage. Deliver, handle, and store pipe in accordance with the Manufacturer's recommendations to protect coating systems. Prepare pipe for shipment to afford maximum protection from normal hazards of transportation and allow pipe to reach project site in an undamaged condition. Do not deliver pipe damaged in shipment to the project site unless such damaged pipe is properly repaired.

Band plastic end covers to pipe ends and maintain until pipe is placed in the trench. Maintain moisture inside the pipe by periodic application of water, as necessary.

Support pipes carefully during shipment and storage. Internally support and brace each end of each length of pipe, fitting, or special and the middle of each pipe joint with stulls to maintain a true circular shape. Provide internal supports consisting of timber or steel stulls firmly wedged and secured so that the stulls remain in place during handling. Rotate pipe so that one of the stulls is vertical during storage, shipment and

installation. Do not remove stulls from pipe until backfill operations are complete. Separate pipe, fittings, and specials so that they do not bear against each other, and securely fasten the entire load to prevent movement in transit. Ship pipe on padded bunks with tie-down straps approximately over stulling. Store pipe on padded skids, sand or dirt berm, tires, or other suitable means to protect the pipe from damage.

3.2.3.5. Pipe Materials**.** Steel pipe manufactured under AWWA C-200 must be fabricated from sheet or coil conforming to the requirements of ASTM A-570, Grades 30, 33, 36, or 40. It can also be fabricated from plate in coil form conforming to the requirements of ASTM A-36, A-283, Grades C or D, or A 572, Grade 42, or coil conforming to the requirements of ASTM A-139, Grades B or C. Butt weld all longitudinal and girth seams, whether straight or spiral using an approved electric-fusion weld process. Standard laying length is 45 feet.

3.2.3.5.1. Wall Thickness. Determined wall thickness by performance requirements as follows: Minimum pipe wall thickness is 0.188" or pipe O.D./230, whichever is greater for pipe and fittings with no minus tolerance. Maximum fiber stress for minimum wall thickness must not exceed 21,000 psi at design working pressure and not exceed 50% of the minimum yield strength of the steel used at the specified maximum working pressure for each class of pipe. In addition, the fiber stress must not exceed 75% of the maximum yield strength at the working pressure plus transient pressure. Minimum wall thickness for pipe placed in casing or tunnel liner is O.D./144 or 0.25" whichever is greater.

3.2.3.5.2. Exterior Tape Coating. Coat and wrap pipe outside with the pre-fabricated multi-layer cold-applied polyethylene tape coating in accordance with AWWA C-214. Provide machine-applied tape coating system in accordance with AWWA C-214 and is 80 mils consisting of a primer, 20 mil inner layer, and two 30 mil outer layers. Hold coating back from the end of the pipe the minimum distance recommended by the pipe manufacturer for the specified joint type. Taper tape wrap cut back. Hand wrap specials and fittings that cannot be machine wrapped. The application must conform to AWWA C-209 and consist of three layers, a primer layer and two 35 mm tape layers. Allow the fitting coating system to overlap the machine-applied coating system a minimum of 6-inches and bond together. Use the same manufacturer for hand wrap tape and machine wrap tape. Tape coating manufacturer will recommend the procedure and tape product required to smooth sharp or abrupt changes at bell, spigot, or flanged joints.

3.2.3.5.3. Cement Mortar Lining. Shop-applied cement linings must conform to the requirements of AWWA C-205. Use ASTM C-150 Type I or II cement and silica sand. Field applied cement mortar-lining must conform to the requirements of ASTM C-602. Linings on fittings and specials, such as miters, angles, bends and reducers, may be hand troweled. Thoroughly cleaned the pipe interior a method acceptable to the Engineer.

3.2.3.5.4. Mortar for Interior Joints. Furnish mortar that is one part cement to two parts sand using ASTM C-150 Type I or II cement and silica base sand is plaster and meets ASTM C-35 requirements. Dry mix cement and sand adding sufficient water added to permit packing and troweling without crumbling.

3.2.3.6. Pipe Design**.** Design, manufacture, and test steel pipe in accordance with AWWA C-200, AWWA Manual M-11, and with the criteria specified herein for sizes and pressure classes (working pressure) shown. For the purpose of pipe design, the total design internal pressure (transient pressure plus working pressure) will be 1.5 times the working pressure class specified. Design fittings, specials, and connections for the same pressure as the adjacent pipe. Base pipe design on trench conditions and the design pressure in accordance with AWWA Manual M-11. The trench depth is as shown on the plans. Provide the Unit Weight of Fill (W) of 130 pcf, and use live load for AASHTO HS-20 truck load (unless otherwise specified). Use a deflection lag factor 1.1, a bedding constant of 0.1, the modulus of Soil Reaction (E') for design purposes of 700 and the maximum allowable horizontal or vertical deflection of 2% after backfill. Submit design calculations for approval prior to the fabrication of the pipe. Standard laying length is 45 feet with special lengths, field trim pieces and closure pieces as required by plan and profile for location of elbows, tees, reducers, and other in-line fittings.

3.2.3.7. Joints**.** The standard field joint for steel pipe is either a single welded lap joint or a rubber gasket joint. Mechanically coupled or flanged joints are required where shown. Use butt strap joints where shown. Furnish joints that have the same or higher pressure rating as the abutting pipe.

3.2.3.7.1. Lap Welded Slip Joint. Provide lap welded slip joint at all locations where pipe is to be installed in casing or tunnels and where specified. Do not exceed a clearance of 1/8 inch at any point around the periphery between the surfaces of lap joints. In addition to the provisions of AWWA C-200 for a minimum lap of 1-1/2", the depth of bell must provide a minimum distance of 1inch between the weld and the nearest tangent of the bell radius when welds are to be located on the inside of the pipe. Weld joints from the outside for pipe diameters 30 inches or smaller and on the inside for pipe diameters larger than 30 inches. If specified on the plans, weld joints on the inside and outside.

3.2.3.7.2. Bell and Spigot with Rubber Gasket. The standard joint is bell and spigot with rubber gasket at locations where other joint types are not specified and for working pressures not exceeding 250 psi. Joints must conform to AWWA Standards C-200 and AWWA M-11. Form and size the spigot and groove designed to retain the O-ring rubber gasket and size by rolling on male-female dies to match the bell. The differences in diameter between the I.D. of bell and the O.D. of spigot shoulder, at point of full engagement with allowable deflection, is 0.00" to 0.04" as measured on the circumference with a diameter tape. Provide gasket with sufficient volume to approximately fill the area of the groove in conformance to AWWA C-200 and AWWA M-11. Ensure that the joint is suitable for a safe pressure equal to the pressure class of the pipe and operates satisfactorily with a deflection tangent not to exceed 0.75D where D is the outside diameter of the pipe in inches or with a pull-out of 3/4 inch.

3.2.3.7.3. Flanged Joints. Provide flanged joints on pipe, fittings and specials on welded steel piping exposed in vaults, on buried pipe system to connect valves and appurtenances or where otherwise indicated that conform to the requirements of AWWA C-207 and AWWA C-206. Ends to be fitted with slip-on flanges must have the longitudinal or spiral welds ground flush to accommodate the type of flanges provided. Rate pipe flange pressure equal to or greater than the adjacent pipe class and match the fittings or appurtenances that are to be attached.

3.2.3.7.4. Butt Strap Closure Joints. Provide butt strap closure joints in accordance with AWWA C-206 and applicable provisions of this specification where necessary to provide closure to previously laid pipe.

3.2.3.7.5. Flexible Couplings. Provide flexible couplings where specified. Prepare ends to be joined by flexible couplings as stipulated in AWWA C-200 with plain end type. Ground flush welds on ends to be joined by couplings to permit slipping the coupling in at least one direction to clear pipe joint. Provide harness bolts and lugs that comply with AWWA Manual M-11.

3.2.3.8. Fittings and Specials. Employ special shop fabricated fittings fabricated in accordance with AWWA C-200 and M-11 where abrupt changes in grade and direction occur. Provide fittings in conformance to the dimensions specified in AWWA C-208. Provide elbows with a minimum radius of 2.5 times the pipe O.D. Provide welded fittings of the sizes and types indicated on the plans. Provide steel plate thickness for fittings equal to or greater than nominal thickness of steel pipe. Reinforce all tees, laterals, and outlets in accordance with M-11. Do not field cut the ends of the steel pipe to accomplish angular changes in grade or direction of the line.

3.2.3.9. Provisions for Thrust**.** Use restrained joints to resist thrust at bends, tees, or other. If thrust cannot be resisted using restrained joints, such as bends adjacent to casing pipe, use thrust blocking or concrete anchors. Restrained joints consist of welded joints and will be used a sufficient distance from each side of the bend, tee, plug, or other fitting to resist thrust which develops at the design pressure of the pipe. For the purposes of thrust restraint, use a design pressure of 1.5 times the working pressure class. The length of pipe with restrained joints to resist thrust forces will be determined by the pipe manufacturer in accordance with AWWA Manual M-11. Apply the following criteria for unsaturated soil conditions: calculate the earth weight as the weight of the projected soil prism above the pipe, soil density = 110 pcf (maximum value to be used) and the coefficient of friction = 0.25 (maximum value to be used). In locations where groundwater is encountered, reduce the soil density to its buoyant weight for all backfill below the water table and reduce the coefficient of friction to 0.20.

3.2.3.10. Pipe Trenching, Installation, and Backfill**.** Except as noted, Pipe Trenching, Installation, and Backfill for DIP will be in accordance with AWWA C-600 and Article 6 of this Specification.

3.2.3.10.1. General. Inspect and "jeep" each joint for holidays just before it is lowered into the ditch. Repair all holidays before the pipe is lowered into the trench. Place and consolidate embedment and backfill prior to removing pipe stulls.

3.2.3.10.2. Trench Width. The minimum clear width of the trench is the outer diameter plus 36 inches.

3.2.3.10.3. Pipe Embedment. Unless otherwise specified or shown on the plans, embed steel pipe in Native material as defined in Article 6. If Native material is not suitable, use Class II material as defined in Article 6.2.4.2

3.2.3.10.4. Installation-Welded Joints. Weld joints in accordance with the AWWA C-206. Provide full circle fillet welds. Remove the pipe from the line if the ends of the pipe are laminated, split, or damaged to the extent of satisfactory welding contact cannot be obtained.

Welders are required to identify their work with a code marking. Furnish a listing of the welder's names with corresponding code marks. Any welder making defective welds will not be allowed to continue to weld. If a disagreement arises with the Engineer's interpretation of welding tests, test sections may be cut from the joint for physical testing. Repair joint, regardless of the results of physical testing, at no additional cost to the Department. Submit repair procedure for approval before proceeding.

Provide adequate provisions for reducing temperature stresses.

Shim or tack the spigot and bell essentially concentric to obtain clearance tolerance around the periphery of the joint after the pipes have been joined and properly aligned and prior to the start of the welding procedure. Clearance tolerances are not permitted to accumulate.

Before welding, thoroughly clean pipe ends. Weld pipe by machine or by the manual shielded electric arc process. Perform welding in a manner that does not damage lining or coating. Cover the tape coating as necessary to protect from welding.

Furnish labor, equipment, tools and supplies, including shielded type welding road. Protect welding road from any deterioration prior to its use. If any portion of a box or carton is damaged, reject entire box or carton.

Deposit metal in successive layers so that there will be at least 2 passes or beads in the completed welds. Deposit no more than 1/4 inch of metal on each pass. Thoroughly clean each pass, including the final pass, by wire brushing and hammering to remove dirt, slag, or flux.

In all hand welding, deposit metal in successive layers so that there are at least as many passes or beads in the completed weld as indicated in Table 1.

Table 1.
Hand Welding Requirements

Plate Thickness Inches	Fillet Weld, Minimum Number of Passes
3/16	1
1/4	2
5/16	2
3/8	3
13/32	3
7/16	3
15/32	4
1/2	4
More than 1/2	1 for each 1/8" and any remaining fraction thereof

Do not deposit more than 1/8" of metal in each pass for hand welds. Thoroughly bob or peen each pass except the final one, whether in butt or fillet welds, to relieve shrinkage stresses and to remove dirt, slag, or

flux before the succeeding bead is applied. Thoroughly fuse each pass into the plates at each side of the welding groove or fillet and do not permit to pile up in the center of the weld. Undercutting along the side is not permitted.

Construct welds free from pin holes, non-metallic inclusions, air pockets, undercutting and/or any other defects.

3.2.3.10.5. Installation – Rubber Gasket Joints. Join rubber gasket joints in accordance with the manufacturer's recommendations. Clean bell and spigot of foreign materials. Lubricate gaskets and relieve gasket tension around the perimeter of the pipe. Engage spigot as far as possible in bell, allowing for a 3/8 inch to 1 inch gap for inside joint grouting after any joint deflection.

3.2.3.10.6. Interior Joint Grouting for Pipe with Plant-Applied Mortar Lining. Upon completion of backfill, fill the inside joint recess with a stiff cement mortar as indicated. Prior to the placing of mortar, clean out dirt or trash that has collected in the joint, and moisten the mortar surfaces of the joint space by spraying or brushing with a wet brush. Ram or pack the stiff mortar into the joint and take extreme care to insure that no voids remain in the joint space. After the joint has been filled, level the surface of the joint with the interior surfaces of the pipe by steel troweling. Carefully inspect every joint to ensure a smooth continuous interior surface. Thoroughly clean the interior of the pipe and remove any obstructions that may reduce its carrying capacity. Butter with mortar the bottom of the bell on the interior joints of pipe smaller than 21 inches in diameter prior to inserting the spigots, such that when the spigot is pushed into position it extrudes surplus mortar from the joint. Strike off the surplus mortar flush by pulling a filled burlap bag or inflated ball through the pipe.

3.2.3.10.7. Field-Applied Outside Joint Coating. Clean the surface of foreign materials. Remove weld slag, splatter, and scale. Remove by grinding or filing the sharp edges or burrs that could puncture or cut the tape. Clean the surface using a solvent wash and wire brushing, dry, and prime the surface prior to tape coating. Wrap joints with a tape coating system conforming to AWWA C-209, consisting of three layers, a primer layer and two (2) 35 mm tape layers. Overlap the factory-applied coating system with the field-applied coating system a minimum of 6 inches and bond together.

3.2.3.10.8. Protection of Exposed Metal. Coat exposed ferrous metal such as bolts and flanges that cannot be protected with field-applied tape coatings with a coat of Koppers Bitumastic No. 50 or approved equal.

3.2.3.10.9. Patch of Coating: When visual inspection shows a portion of the tape system has sustained physical damage, the area in question may be subjected to an electrical holiday test to 6000 volts. When the area is tested and there are no holidays or tearing of the material (only winkling or bruising), no patching is required. When the damaged area has a tearing of material, remove the damaged layer(s) of outer-wrap by carefully cutting with a sharp razor type utility knife. Wipe the area clean and dry with a rag. Apply the repair tape using a "cigarette wrap" in accordance with the tape manufacturer's recommendation of sufficient size to completely cover the damaged areas, plus a minimum overlap of 6 inches tape in all directions. Apply a second patch of repair tape over the first patch. Overlap the first patch a minimum of 6 inches with the second patch.

3.2.3.10.10. Patch of Lining. Repair cracks larger than 1/16 inch and disbanded linings. Excessive patching of lining is not permitted. Field-patching of lining will be allowed where area to be repaired does not exceed 100 sq. in. and has no dimension greater than 12 inches. Repair larger areas by gunite method and reinforce work. No more than one patch in the lining of any joint of pipe is allowed. Wherever necessary to patch the pipe, make the patch with the mortar indicated. Do not install patched pipe until the patch has been properly and adequately cured and unless approved for laying by the pipe manufacturer's technician and by the Engineer.

3.2.3.11. Testing**.** Disinfect the piping system in accordance with Article 10 of this Specification and as detailed in AWWA C-651. Test the field-applied joint coating for holidays after field-applied coating and prior to backfilling as per AWWA C-209. Where welds cannot be tested by hydrostatic tests, such as fittings adjacent to test valves, perform a dye penetrant test in accordance with ASTM E-165. Replace or repair welds that prove to be defective. Engineer must approve all patch work necessary during such tests.

3.2.4. **Cathodic Protection**.

3.2.4.1. Anodes. Magnesium bar in pre-packaged backfill with test lead wire in weights shown on plans.

3.2.4.2. Chemical Composition of Magnesium Anodes: Percent by weight in accordance with Table 2.

Table 2.
Chemical Composition of Magnesium Anodes

Chemical	Standard	High Potential
Aluminum	5.0-7.0	0.01 Max.
Zinc	2.0-4.0	0.05 Max.
Manganese	0.150 Min.	0.5-1.30
Copper	0.100 Max.	0.02 Max.
Silicon	0.300 Max	0.05 Max.
Iron	0.003 Max	0.03 Max.
Nickel	0.003 Max	0.001 Max.
Others	0.300 Max	0.50 each or 0.300 Max Total
Magnesiurm	Balance	Balance

3.2.4.3. Pre-packaged Backfill.

- 75 percent ground hydrated gypsum
- 20 percent powdered bentonite
- 5 percent anhydrous sodium sulfate
- In water permeable fabric sack with anode centered in sack

3.2.4.4. Lead Wire: No. 12 AWG 600 volts solid copper wire with THW, THWN, or THHN white insulation, at least 15-feet long and factory connected to core with silver brazing alloy with minimum silver content of 15 percent.

3.2.4.5. Detectable Warning Tape. Yellow Mylar encased aluminum foil, minimum 6 inches wide, with imprinted words “CATHODIC PROTECTION”.

3.2.4.6. Thermite Welding Of Wires. Thermite weld test lead and joint bond wires to ductile iron and steel pipe joints and fittings, except where limited use of lugs is permitted following standard details. This weld process may be specified for use on other metallic structures.

3.2.4.7. Select and use thermite welding equipment following equipment manufacturer’s instructions and standard details.

- Use equipment and molds to accommodate wire size, metallic structure’s shape, wire position of attachment (vertical or horizontal) and other criteria specified.
- Before a mold is used, remove and clean slag, dirt, and other foreign matter from mold.
- Use cartridge and charge size based on manufacturer’s recommendations for specific application.
- Different charges are required for steel and ductile iron.

3.2.4.8. Surface Preparation

Surfaces with Little or No Coating. Clean to bare metal by grinding or filing area approximately 3-inches square to produce bright metal surface. Remove coating, dirt, mill scale, oxide, grease, moisture, and other foreign matter from weld areas.

Surfaces with High Performance or Thick Coating. Cut 4 inch square window through coating and clean 3 inch square of surface to bright metal, avoiding damage to surrounding coating.

3.2.4.9. Preparation for Welding. Before welding, remove wire insulation as required to fit mold, avoiding damage to exposed copper wire

- If wire is cut or nicked over half way through its diameter, cut off and strip new end.
- If manufacturer requires use of copper sleeve, crimp it securely to wire and remove excess wire protruding from end of sleeve.

3.2.4.10. Test Connection. After charge is set, remove mold and slag from weld area with welder's hammer. Strike top and sides of weld with hammer to test secureness of connection. If weld does not hold, remove scrap weld material, clean, and begin weld process again. After welding and before coating cleaned weld area, joint bond wires may be test for electrical continuity.

3.2.4.11. Weld Caps. When weld passes test for soundness and electrical continuity, repair coating in weld area with petrolatum or petroleum wax mastic and weld cap placed over weld following standard details.

- Apply mastic to fill weld cap or pre-filled weld cap and cover exposed metal of structure and wire to minimum thickness of 1/4 inch. Repair damage to coating around weld area following coating manufacturer's recommendations.
- If weld cap will not fit due to physical space limitations, coat bare metal and wire in weld area with minimum 1/4-inch thickness of petrolatum or petroleum wax mastic

3.2.5. **Flowable Backfill.** Backfill trenches to the elevations shown with flowable backfill as per Item 401, "Flowable Backfill".

3.2.6. **Cutting and Restoring Pavement.** Where water facilities must be installed in streets or other paved areas beyond limits of the roadway improvements, the work includes saw-cutting of the pavement and base to neat lines and prompt replacement of these materials after water excavation and backfill are completed. The replacement materials, as to type and thickness, are shown on the plans.

3.3. **Measurement.**

3.3.1. **Water Main (PVC).** This Item will be measured in place by the linear foot of PVC along the centerline of pipe as installed.

3.3.2. **Water Main (DIP).** This Item will be measured in place by the linear foot of DI pipe along the centerline of pipe as installed**.**

3.3.3. **Water Main (STEEL).** This Item will be measured in place by the linear foot of STEEL pipe along the center line of pipe as installed.

3.3.4. **Abandon and Fill Existing Water Pipe.** This Item will be measured by the linear foot of existing water main pipe that is abandoned in place for the size indicated

3.3.5. **Remove Existing Water Pipe.** This Item will be measured by the linear foot of existing water main pipe that is removed as identified in the plans.

3.3.6. **Cutting and Restoring Pavement.** This Item will be measured by the square yard as shown under Item 400, "Excavation and Backfill for Structures.

3.3.7. **Flowable Backfill.** This Item will be measured by the cubic yard as shown under Item 401, "Flowable Backfill".

3.4. **Payment.**

3.4.1. **Water Main (PVC).** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Water Main (PVC)" of the type and size specified. This price is full compensation for furnishing all required materials, including all

pipe, valves, fittings and accessories; mechanical joint restraints; and all appurtenances defined herein to include, but not limited to the following items: gate valves, tapping sleeves and valves, butterfly valves with manholes, air/vacuum release valves, blow-off valve assemblies, bonnet boxes, valve/access manholes, concrete collars, end plugs, bends, tees, couplings, reducers, marking tape, concrete thrust blocks, thrust restraint devices and all other items for the project not indicated as being covered under the other specific bid items shown on the proposal; furnishing all required labor, including coordination, traffic control, potholing, excavation, including hand-digging, if needed; embedment and backfilling; compaction and compaction testing; disinfection, pressure testing, dewatering of groundwater, where required; cutting, capping, and connection of new water main to existing water lines.

All fittings and appurtenances shown on the plans will not be paid for directly but will be subsidiary to the water pipe installation.

Cutting and restoring pavement will be paid for in accordance with Item 400, "Excavation and Backfill for Sturctures". Flowable fill will be paid for in accordance with Item 401, "Flowable Fill". Trench excavation protection will be paid for in accordance with Item 402, "Trench Excavation Protection".

3.4.2. **Water Main (DIP).** The work performed and the materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price bid for “Water Main (DIP)” of the type and size specified. This price is full compensation for furnishing all required materials, including all pipe, valves, fittings and accessories; mechanical joint restraints; and all appurtenances defined herein to include, but not limited to the following items: gate valves, tapping sleeves and valves, butterfly valves with manholes, air/vacuum release valves, blow-off valve assemblies, bonnet boxes, valve/access manholes, cathodic protection, concrete collars, end plugs, bends, tees, couplings, reducers, marking tape, polyethylene wrap, concrete thrust blocks, thrust restraint devices and all other items not indicated as being covered under the other specific bid items; furnishing all required labor, including coordination, traffic control, potholing, excavation, including hand-digging, if needed; embedment and backfilling; compaction and compaction testing;; disinfection, pressure testing, dewatering of groundwater, where required; cutting, capping, and connection of new water main to existing water lines.

All fittings and appurtenances shown on the plans will not be paid for directly but will be subsidiary to the water pipe installation.

Cutting and restoring pavement will be paid for in accordance with Item 400, "Excavation and Backfill for Sturctures". Flowable fill will be paid for in accordance with Item 401, "Flowable Fill". Trench excavation protection will be paid for in accordance with Item 402, "Trench Excavation Protection" .

3.4.3. **Water Main (STEEL)**. The work performed and the materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price bid for “Water Main (STEEL)” of the type and size specified. This price is full compensation for furnishing all required materials, including all pipe, valves, fittings and accessories; welded joint restraint systems; and all appurtenances defined herein to include, but not limited to the following items: gate valves, tapping sleeves and valves, butterfly valves with manholes, air/vacuum release valves, blow-off valve assemblies, valve/access manholes, cathodic protection, bonnet boxes, concrete collars, end plugs, bends, tees, couplings, reducers, marking tape, concrete thrust blocks, welded thrust restraint and all other items for the project not indicated as being covered under the other specific bid items shown on the proposal; furnishing all required labor, including testing, coordination, traffic control, potholing, excavation, including hand-digging, if needed; embedment and backfilling; compaction and compaction testing; disinfection, pressure testing, dewatering of groundwater, where required; cutting, capping, and connection of new water main to existing water lines.

All fittings and appurtenances shown on the plans will not be paid for directly but will be subsidiary to the water pipe installation.

Cutting and restoring pavement will be paid for in accordance with Item 400, "Excavation and Backfill for Sturctures". Flowable fill will be paid for in accordance with Item 401, "Flowable Fill". Trench excavation protection will be paid for in accordance with Item 402, "Trench Excavation Protection".

3.4.4. **Abandon and Fill Existing Water Pipe**. The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Abandon and Fill Existing Water Pipe" of the size specified. This price is full compensation for furnishing all required materials, labor, and equipment, including but not limited to the following items: coordination, traffic control, potholing, excavation, complete draining (dewatering) of pipe, flowable backfill, cutting, capping, complete filling with approved flowable backfill of water mains to be abandoned, removal of bonnet boxes from abandoned valves, and all other items for the project not indicated as being covered under the other specific bid items shown on the proposal.

3.4.5. **Remove Existing Water Pipe.** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Remove Exist Water Pipe" of the size specified. This price is full compensation for furnishing all required materials, labor, and equipment, including but not limited to the following items: coordination, traffic control, potholing, excavation and backfill, complete draining (dewatering) of pipe, groundwater dewatering, flowable backfill, cutting, capping, removal of pipe, disposal of materials, and all other items not indicated as being covered under the other specific bid items.

4. CONCRETE

4.1. **Description.** Furnish all labor, materials, equipment and incidentals necessary to mix and place concrete, consisting of Portland cement, fine aggregate, coarse aggregate, admixtures, and water in the proper proportions as specified herein for use in Water and Sewer Mains.

4.2. **Materials.**

4.2.1. Quality Assurance. Proportion cement to give the necessary workability and strength and conform to the requirements shown on Table 3.

Table 3.
Cement Requirements

CLASS	MINIMUM 28-DAY COMPRESSIVE STRENGTH	MINIMUM CEMENT	MAXIMUM SIZE COARSE AGGREGATE	SLUMP (inches)
A	3,000 psi	5.5 bag/cy	3/4"	3 1/2"
B	2,500 psi	4 bag/cy	1 1/2"	4"
C	4,000 psi	6 bag/cy	3/4"	4"

4.2.2. Class Designations. The class designations provided above are as defined by El Paso Water Utilities (EPWU) and are to be used as listed:

- Class A Use for curb, gutter, and sidewalk replacement, unless otherwise directed.
- Class B Use for thrust blocks, pipe encasement, ground anchors for piping and as noted in the plans.
- Class C Use for cast in place sewer manhole bases, special structures or as required by manufacturer's specifications for pre-cast structures, unless otherwise indicated.

4.2.3. Submittals**.** Submit certified test reports regarding concrete mix design and reinforcing steel as may be required by the plans or the Engineer. Submit in a timely manner so as not to delay the project. Allow sufficient time for Engineer's review and resubmission, if necessary.

4.2.4. Standards**.** Comply with the following applicable requirements for concrete and related products:

- ASTM C-33 Specification for Concrete Aggregates
- ASTM C-150 Specification for Portland Cement
- ASTM C-260 Specification for Air-Entraining Admixtures for Concrete
- ASTM C-494 Specification for Chemical Admixtures for Concrete

4.2.5. Portland Cement**.** Conform to ASTM C-150 for the appropriate required Type.

Aggregates. Conform to ASTM C-33. Use fine aggregate consisting of natural, washed, and screened sand having clean, hard, strong, durable, un-coated grains complying with ASTM C-33. Use coarse aggregates that comply with ASTM C-33 Size 467, Size 57, or Size 67. Local aggregates of proven durability may be used with prior approval

Use air-entraining admixture for concrete of 3,000 psi or greater and complies with ASTM C-260. The total average air content will be in accordance with ACI 211.1.

Use water reducing admixture when required by job conditions in conformance with ASTM C-494. Use only admixtures that have been tested and accepted in mix designs, unless otherwise acceptable. Use according to manufacturer's recommendations.

Use set retarding admixtures as approved, in conformance with ASTM C-494 and according to manufacturer's recommendations.

Use water that is clean and free from impurities. Drinking and ordinary household water is acceptable.

4.2.6. Manufactured Products**.** Provide forms of wood or metal of sufficient strength to support the concrete without bulging between supports and sufficiently water tight to hold the concrete mortar. Construct forms to the shape and dimensions of finished concrete shown on the plans. For exposed surfaces, provide form work material and construct to produce a smooth, even surface when the concrete is poured. Oil all forms before use. Remove wall forms after the concrete has been in place for 24 hours. Chamfer all exposed edges 3/4 inch chamfer. Repair any honeycombed sections immediately upon removal of the form as directed.

Embedded Items**.** Accurately set in place and maintained in position during concreting operations all bolts, pipe, pipe sleeves, inserts, or other fixtures, required by the plans or this specification to be embedded in the concrete.

Reinforcing Steel**.** Provide bar reinforcement that is round, deformed bars, Grade 60, conforming to either "Specification for Rail Steel Deformed and Plain Bars for Concrete Reinforcement" (ASTM A-616), or "Specifications for Axle Steel Deformed and Plain Bars for Concrete Reinforcement" (ASTM A-617).

- Rail Steel Bars will be permitted only where bending is not required.
- Permanently mark all reinforcement bars with grade identification marks or, on delivery, be accompanied by a manufacturer's guarantee of grade that will identify variation.
- Protect reinforcement stored on the site from accumulation of grease, mud or other foreign matter and from rust producing conditions.
- Ensure that bars are free from rust, scale, oil, mud, or structural defects when incorporated in the structures.
- Accurately place and securely hold in place reinforcement during concrete placement in accordance with the ACI Detailing Manual.

4.2.7. Concrete Thrust Blocking**.** Block with concrete all underground piping bearing solidly against undisturbed trench walls, at all changes in direction subsidiary to the installation of fittings, valves, and all other appurtenances requiring provisions for thrust restraint.

Place concrete blocking against undisturbed trench walls with a minimum 18 inches between trench wall and pipe extending a minimum of 0.75 times the pipe diameter shown on Table 4 and above the centerline of pipe. Do not extend beyond any joints. Place blockings in accordance with the recommendations of "A Guide for the Installation of Ductile Iron Pipe" published by Cast Iron Pipe Research Association. If requested, contain the ends of the thrust blocks in wood or metal forms. Reinforce concrete anchor where upward thrusts are to be resisted.

Use Class B concrete for Blocking. The minimum area of concrete bearing against undisturbed trench bank is shown on Table 4.

Table 4.
Bearing Surface Per Bend

PIPE SIZE	TEE, DEAD END, 90 DEGREE BEND	45 AND 22-1/2 DEGREE BEND
6”	4 sq. ft.	3 sq. ft.
8”	6 sq. ft.	3 sq. ft.
12”	13 sq. ft.	7 sq. ft.
16”	23 sq. ft.	12 sq. ft.
20”	37.02 sq. ft.	20.04 sq. ft.

4.3. **Measurement and Payment.** The work performed and the materials furnished in accordance with this Article will not be measured or paid for individually as it is considered subsidiary to the various water main bid items and related appurtenances items. This includes furnishing all required materials including concrete used for thrust blocking or anchoring fitting (bends, plugs, reducers, etc.), valves, fire hydrants, manholes, water services or water fire lines, and all other concrete items damaged by Contractor due to negligence during the course of the project; and all hauling, mixing, manipulation, tools, labor, equipment, forming and incidentals necessary to complete the work.

5. GROUT

5.1. **Description.** Provide all labor, materials, equipment, and incidentals for grout uses other than masonry.

5.2. **Materials.**

5.2.1. Non-shrink, Epoxy Type**.** Provide a non-metallic, 100% solids, high strength epoxy grout such as Epoxtite as manufactured by A.C. Horn Company, or Five Star Epoxy Grout by U.S. Grout Corporation, or approved equal.

5.2.2. Non-shrink, Non-metallic Type**.** Provide a premixed non-staining cementitious grout requiring only the addition of water at the job site. Provide Darex In-Pakt Grout Pre-mix by A.C. Horn Company, or Masterflow 713 by Master Builders Company, or approved equal.

5.2.3. Ordinary Cement-Sand Grout**.** Consisting of one part by weight of Portland cement complying with ASTM C-150, Type V, to three parts by weight of clean sand of suitable gradation and complying with ASTM C-33. Ordinary grout may be of masonry cement, 4 sacks per cu. yd. of clean sand, together with approved air-entraining agent and a minimum of clean water for placing. Where water repelling and shrinkage reducing requirements are shown or specified, use approved admixtures.

5.2.4. Water**.** Use clean, fresh, potable water free from injurious amounts of oils, acids, alkalies, or organic matter.

5.3. **Standards.** Comply with the following applicable requirements:

- ASTM C-33 “Specification for Concrete Aggregates”
- ASTM C-150 “Specification for Portland Cement”

5.4. **Measurement and Payment.** The work performed and the materials furnished in accordance with this Article will not be measured or paid for individually as it is considered subsidiary to the various water main bid items.

6. EXCAVATION, INSTALLATION, AND BACKFILL

6.1. **Description.** Excavation classification is defined as “unclassified” and involves removing unnecessary materials and excavating trenches to the alignment, width, and depth as indicated in the plans or as required

for the proper installation of the pipe and appurtenances. Protect adjacent structures from damage by construction equipment. Pile all excavated material along the trench in a manner that will not endanger the work.

6.2. **Materials.**

6.2.1. Standards**.** Comply with the following applicable requirements for embedment materials:

- ASTM D-75 "Methods for Sampling Aggregates"
- ASTM D-448 "Specification for Standard Sizes of Coarse Aggregate for Highway Construction"
- ASTM D-2321 "Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe"
- ASTM D-2487 "Classification of Soils for Engineering Purposes"

6.2.2. Definitions**.** For the purpose of this specification, "pipe zone" defines the area extending from the bottom of the trench bedding to 12 inches above the top of the pipe and to the undisturbed trench walls on either side of the pipe. "Embedment" is defined as those vertical stratas of backfill material in the pipe zone consisting of bedding, haunching, and initial backfill, as defined in ASTM D-2321.

6.2.3. Submittals**.** Include certified test reports for embedment material from an independent laboratory. Include sieve analysis and Atterberg's limits on test reports. Submit a gradation of Class I material for approval prior to installation.

6.2.4. Pipe Zone and Backfill**.** Classify materials according to The Unified Soil Classification System as defined in ASTM D-2487.

Class I Material**.** Provide manufactured angular, well-graded, crushed stone per ASTM D-2321, 1/4 inch to 3/4 inch size material. Acceptable materials under this class designation are: ASTM D-448 - Stone Sizes 4, 67, 5, 56, 57, and 6. Pea Gravel and other uniformly graded material are not acceptable under this class.

Class II Material. Provide coarse sands and gravels per ASTM D-2487 with maximum particle size of 3/4 inch, including variously graded sands and gravels, containing less than 5 percent fines (material passing the #200 sieve) generally granular and non-cohesive, either wet or dry. Soil Types GW, GP, SW and SP are included in this class.

Class III Material**.** Provide fine sand and clayey (clay filled) gravels, per ASTM D-2487, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Class III includes soil Types GM, GC, SM and SC.

Do not use Class IV or V material, as defined in ASTM D-2487, for embedment of flexible pipe.

6.2.5. Final Backfill**.** Unless otherwise shown, material for backfilling above the pipe zone is defined as follows:

Native. The most granular material excavated from the trench comprising the spoil bank may be used, provided it is devoid of rocks larger than three inches in greatest dimension, organic material, and other unsuitable material. If initially saturated during the excavation, allow backfill to dry sufficiently, being manipulated if necessary, prior to placing back into trench, to achieve the specified compaction at plus or minus 2 percent of optimum moisture content.

Select. Select material is designated as Class II as described in 6.2.4.2. If material excavated from the trench is unsuitable as backfill material, or the required compaction is unattainable for the particular spoil backfill material, import select material to be mixed with or used in place of the spoil material.

Soil Cement**.** When shown on the plans, cement stabilized backfill will consist of a mixture of soil or sand and 2 sacks of Portland cement per cubic yard. Use a sandy material, free from lumps, clods or organic material. If excavated material is not suitable, use pit-run sand. Mix cement stabilized backfill in a concrete mixer or transit mixer.

6.3. **Construction.**

6.3.1. Sources and Evaluation Testing**.** Obtain materials to be used for embedment and for backfill in accordance with a sampling plan and ASTM D-75. Perform testing of materials to certify conformance with specification requirements by an approved independent testing laboratory. Perform tests and provide results upon change of source and at sufficient intervals to certify conformance of all material furnished.

6.3.2. Trench Excavation and Preparation**.** Construct trench walls in the "pipe zone" vertically.

Trench Width**.** See Tables 5 and 6 below for trench widths for flexible and rigid pipes.

Table 5.
Flexible Pipe Trench Width

PIPE DIAMETER	TRENCH WIDTH = BARREL OUTER DIAMETER PLUS	
	Minimum	**Maximum**
Less than 24 inch	15 inches	18 inches
24 inch – 48 inch	18 inches	24 inches
Greater than 48 inch	24 inches	1/2" Pipe O.D.

Table 6.
Rigid Pipe Trench Width

Do not exceed the outside diameter of the pipe barrel plus the following allowance for RIGID PIPE trench width:	
PIPE DIAMETER	**TRENCH WIDTH = BARREL OUTER DIAMETER PLUS**
Less than 18-inch	16 inch
18 inch - 24 inch	19 inch
27 inch – 39 inch	22 inch
42-inch & Larger	½ Pipe O.D.

If maximum trench width specified above is exceeded at the top of the pipe, provide additional load-bearing capacity by means of improved bedding, concrete cradle, cap, or encasement, or other approved means

Lay back or bench the trench walls above the pipe zone, where space permits, as necessary to satisfy the requirements of OSHA and additional requirements for Trench Support as specified herein.

Wherever the prescribed maximum trench width is exceeded, remove all loose and sloughed-in material from the trench and replace with compacted granular material such that haunching and initial backfill is compacted to at least 2.5 pipe diameters from either side of the pipe or to the trench walls.

Unless otherwise agreed upon, no additional payment will be made for extra material and labor required to fill excessive trench widths caused by Contractor's equipment or natural collapse of trench walls.

6.3.3. Trench Bottom**.** Excavate the trench to an even grade so that the full length of the pipe barrel is supported and joints may be properly assembled.

For 30 inch diameter and smaller pipe, "rough cut the trench a minimum of 4 inches below the bottom of the pipe. For 33 inches and larger pipe, "rough cut the trench a minimum of 6 inches below the bottom of the

pipe. Increase the "rough cut" dimension as necessary to provide a minimum clearance of 2 inches from the bottom of the trench to the bottom of the bells, flanges, valves, fittings, etc.

The entire foundation area at the bottom of all excavations will be firm, stable material. Remove loose material leaving a clean, flat trench bottom. Do not disturb material below required subgrade except as described elsewhere in this specification.

If the subgrade is soft, spongy, disintegrated, or where the character of the foundation materials is such that a proper foundation cannot be achieved at the elevation specified, deepen the excavation, not less than 6 inches to a depth where a satisfactory foundation may be obtained. Bring back subgrade to the required grade with Class I coarse gravel compacted to 70% relative density per ASTM D-4254.

6.3.4. Over Excavation. If the trench is excavated to a faulty grade (at a lower elevation than indicated), correct the faulty grade at no additional cost as follows:

- In uniform, stable dry soils, correct the faulty grade with Class II granular embedment material thoroughly compacted to 90% Modified Proctor Density per ASTM D-1557.
- In soft spongy disintegrated soils, or where necessary to allow proper drainage, correct the faulty grade with Class I coarse gravel compacted to 70% of relative density.

6.3.5. Rock Excavation. When pipe is to be laid in rock cut, provide a clearance of at least 6 inches below parts of the pipe, valves or fittings. Provide adequate clearance at bell holes to permit proper jointing of pipe laid in rock trenches. Refill excavation to pipe grade with Class II granular embedment material compacted to 90% Modified Proctor Density. Blasting is not be permitted unless specifically required and called for in the plans and with a permit issued by governing authorities.

6.3.6. Bell Holes. Dig, in trenches, bell holes of ample dimension at each joint of pipe to permit the jointing to be made properly, visually inspected, and so that the pipe will rest on the full length of the barrel.

6.3.7. Dewatering. Dewater excavations by physically installing/drilling dewatering wells, laying of discharge piping, other preparatory work and the maintenance of the operating system so that the work is performed in dry conditions.

Use coarse gravel and geo-synthetic material to maintain the integrity of pipe and embedment material. Geo-synthetic material must wrap completely around pipe and gravel.

Determine and record the elevation of the groundwater level prior to dewatering. Unless otherwise specified, the method of dewatering will maintain a phreatic water surface a minimum of 18 inches below pipe grades. Should over-excavation be necessary due to unsuitable foundation conditions, lower the ground water as necessary.

Direct water removed from trenches to natural drainage ways, drains, or storm sewers in such a manner as to prevent damage to adjacent property or to the public. Provide pumps of ample capacity and in duplicate to ensure that once an excavation is dried, the water level remains below the trench depth until that portion of the work is completed. Obtain approval for discharge from the appropriate governing agency. Do not discharge into the sanitary sewer systems.

Determine if any wells used for domestic purposes are affected by the dewatering and furnish potable water to any affected residents when dewatering may affect the production of private wells along the route. Prepare baseline water level analysis in area to confirm affect on private wells.

Dispose of the water from the dewatering operation according to the conditions of the discharge permit. Coordinate dewatering effort with El Paso Water Utilities Engineering staff, insofar as compliance with discharge permit is concerned, and where dewatering effluent will enter drainage ditches operated and maintained by the Department.

Equip engines or engine generators used to run the dewatering pumps with residential grade silencers. Provide silencers that have an attenuation range of 25 to 30 dBA as required by the El Paso Municipal Code, Title 9, Chapter 9.40.

Submit a dewatering plan indicating proposed locations of dewatering wells, pumping facilities, collector and discharge pipe-lines, and discharge points (names of ditches, laterals, etc.). If discharging into El Paso County Water Improvement District No. 1 (EPCWID #1) drains, provide the plan for EPCWID#1 comments and approval. To comply with the requirements of the discharge permit between EPWU and the EPCWID #1, provide discharge monitoring points. EPWU personnel will obtain samples for laboratory analysis to check water quality limitations imposed by the permit.

Record pumping rates at dewatering wells, pump times, and flows and become familiar with the methods of measurements as shown on Table 7.

Table 7.
Pumping Rates Schedule

DATA RECORDED	METHOD OF MEASUREMENT	FREQUENCY OF MEASUREMENT
Pumping Rate At Each Dewatering Well or Discharge Point	"California-Pipe Method"	Daily If Changes Occur
Pumping Time	Hours	Daily
Total Dissolved Solids (TDS)	PSB Laboratory	Monthly
Total Discharge	Rate x Time	Continuous

Record obtained data on a standard data sheet and submit monthly. Comply with EPCWID #1 requirements and allow EPCWID#1 inspection of dewatering system at any time during project life.

Submit a Dewatering Plan, a Final Schedule for Dewatering, and an estimate of fees due EPCWID #1 within fifteen (15) working days from the date of the Notice to Proceed. The Plan is a mandatory submittal and must include the estimated quantities of dewatering for each month and the point(s) of discharge. The Engineer will review and approve the Dewatering Submittal and forward it, through the EPWU, to the District. EPWU must receive the approved plan at least two weeks in advance of the planned dewatering operations. Dewatering Fees due are estimated on the following basis:

- Non-refundable application fee of $1,000
- $150 per acre-foot of estimated groundwater estimated that will be discharged into the EPCWID #1's facilities during term of the agreement
- Payment due a minimum of seven (7) calendar days in advance of any discharge.

EPWU will prepay dewatering fees to EPCWID #1 based upon the estimates in the approved Submittal. EPWU is responsible for all Dewatering Fees, including those for water pumped in addition to the quantities presented in the approved Dewatering Plan.

Provide monthly reports of discharge quantities and quality (TDS and sulfates), which specific requirements may be more particularly described in the Technical Specifications, to EPWU through the Engineer for submittal to EPCWID #1. Resolve high TDS penalties with EPCWID#1.

6.3.8. Trench Support**.** Brace and sheet excavations to provide complete safety to persons working therein in conformance with applicable federal (OSHA), state and local laws and ordinances. Meet the requirements specified in the current OSHA Standard for all trenches exceeding 5 feet in depth as measured from the ground surface at the highest side of the trench to the trench bottom.

Provide sufficient and adequate bracing for excavations with respect to work under construction and to adjacent utility lines and private property. Where soil conditions within trench area require support, use tight

sheeting, skeleton sheeting, stay bracing, trench jacks, movable trench shield, or other approved methods to support the trench during pipe installation operations such as bedding preparation, pipe laying, and backfilling of haunches and initial zone.

Do not extend trench support below the pipe crown whenever possible. Where trench support must extend below the crown, such support should either be left in place or consist of approved steel sheets that can be retracted with minimal disturbance. Treat remaining voids with grout or granular embedment material.

When a movable trench shield is used, the trailing half of the shield should be notched to the height of the top of the pipe. This will allow the haunch area of the pipe to be compacted properly to the wall of the trench. Dragging of a trench shield at pipe grade may be done provided such practice does not disturb the bedding. Fill and compacted voids created by the shield properly.

6.3.9. Trenching in Public Right-of-Way**.** Except where otherwise specified, indicated on the plans, or approved in writing, do not exceed the maximum length of open trench shown on Table 8, where the construction is in any stage of completion. The definition of "open trench" for the purposes of this description includes excavation, pipe laying, backfilling, and pavement replacement. The descriptions under the area designations are general in nature and may be amended in writing by the Engineer due to particular or peculiar field conditions.

Table 8.
Maximum Open Trench Lengths

TYPE OF AREA	MAX LENGTH (LF)	DESCRIPTION
Business District	300	Store front areas
Commercial	300	Industrial, shopping centers, churches, schools, hotels, motels, markets, gas stations, government and private office buildings, hospitals, fire and police stations, and nursing homes
Residential	One (1) block or 300 linear feet, whichever is the least:	Single and multi-family residences, apartments, and condominiums
Undeveloped	1,500	Parks, golf courses, farms, undeveloped subdivided land

Any excavated areas is considered "open trench" until all pavement replacement has been made, or until all trenches outside of pavement replacement areas have been backfilled and compacted in accordance with the plans. Completely backfill trenches across streets with temporary or permanent pavement in place within 72 hours after pipe laying. An open trench is not permitted overnight, unless approved and adequately barricaded.

Provide steel plates with adequate trench shoring and bracing, designed to support traffic loads where required to bridge across trenches at street and alley crossings, commercial driveways, and residential driveways where trench backfill and temporary patch have not been completed during regular working hours. Provide safe and convenient passage for pedestrians. Maintain access to fire stations, fire hydrants, and hospitals at all times.

6.3.10. **Pipe Installation.** Install pipes true to lines and grades as indicated on the plans. Inspect all pipe and fittings before placing in the trench. Clean all joint surfaces and soiled materials prior to connecting one another. As work progresses, maintain interior of pipes clean.

6.3.10.1. Standard Cover**.** Standard cover depends on the water main size and installation conditions and is generally

- 6 and 8 inch diameter Main: Minimum of 4-foot cover from top of pipe to finished grade
- 12 inch & larger diameter Main: Minimum of 5-foot cover from top of pipe to finished grade

6.3.10.2. Potholing. Existing utilities shown on plans are for informational purposes only. Prior to new pipe installation, pothole all existing utilities and structures to confirm their location, depth, and size. In the event

of conflict or discrepancy that affects the project design, notify Engineer before proceeding with pipe installation in order to formulate a solution

6.3.10.3. Pipe Zone Embedment**.** Unless otherwise specified or shown on the plans, embed pipelines either Class I, II, or III material defined in this Article 6.2.4 and installed as described. Native or imported material for embedment may be used provided material conforms to this Specification.

Place embedment materials in lifts not exceeding 8 inches loose depth. Unless otherwise specified or directed in writing, provide homogenous material in the embedment zone

Place bedding to provide uniform and adequate longitudinal support under the pipe. Place the first lift of bedding material from the bottom of the trench to slightly above the bottom of the pipe grade. Unless otherwise shown on the plans, provide a minimum bedding of 4 inches in depth for pipe sizes 30 inches and smaller, and 6 inches for pipe sizes greater than 30 inches.

Install material true to line and grade with bell holes of ample dimension to permit pipe to rest on the full length of the barrel and to permit joint make-up and coating application at joints. Consolidate and compact the bedding material as described in Article 6, and lay pipe to indicated grade.

Place a second lift, and if required, subsequent lifts, of embedment material to the springline of pipe. This process is defined as Haunching. Slice material under the haunches of the pipe, carefully filling all voids, and using care to prevent movement of the pipe.

Place Initial Backfill using a third lift from the springline of the pipe to the pipe crown, and a fourth lift from the pipe crown to a point 12 inches above the pipe.

6.3.10.4. Groundwater Installation**.** In areas where the pipe is installed below existing or future ground water levels, use Class I material throughout the pipe zone and enclose with a layer of approved geotechnical filter fabric. Place fabric carefully along the bottom of the trench and up the side of the trench a sufficient distance to lap over the top of the completed pipe installation. Lap fabric a minimum of 3 feet in the longitudinal at the end of one roll and beginning of the next, and lap 2 feet in the transverse at the top of pipe, except that for trench widths greater than 3 feet measured at the top of pipe, the top overlap will be 3-feet. Follow manufacturer's recommendations for installation. Provide fabric that is either Mirafi 140N, Dupont Typar 3401, or approved equal.

6.3.10.5. Embedment Class Schedule**.** Unless otherwise shown on the plans, use the Utility Standard Embedment Class designations for the pipe material types listed in this Article to define each particular pipe's Embedment Condition allowed. Examine the detail drawings for additional information or other special bedding requirements.

6.3.10.6. Consolidation Methods in Embedment Zone**.** Compact embedment backfill by equipment that is suitable for the type of soil encountered, and is capable of producing the degree of compaction specified. Where applicable, provide backfill materials that is moisture conditioned to produce the required degree of compaction.

Do not use flooding or jetting methods for compaction of embedment material.

Use hand or mechanical tamping to compact Class II or III material used in bedding, haunching, and initial backfill, except that the use of mechanical tampers or vibratory compactors directly over the pipe in the embedment area is prohibited. Exercise caution in the use of mechanical compactors in the haunch and initial backfill to 12 inches above the pipe to avoid damaging or misaligning the pipe.

6.3.10.7. Compaction and Testing of Pipe Embedment Zone**.** Class I material used in the embedment zone may be placed by loose dumping with a minimum of compactive effort, exercising care to assure proper placement of material under the pipe haunches.

Class I material does not specifically require testing unless directed by the ENGINEER, in which case, such test will be measured by ASTM D-4254 by percent of relative density.

Compact Class II material used in the embedment zone to a density of not less than 90% of Standard Proctor Density defined by ASTM D-698.

Compact Class III material used in the embedment zone to a density of not less than 90% of Standard Proctor Density defined by ASTM D-698.

Do not exceed a moisture content of 3% over the optimum in Class II or III material to assure proper compaction.

Unless otherwise directed, one compaction test in the embedment zone for Class II or III material will be taken at 200 feet intervals along the trench on either side of the pipe, or at any other intervals as may be judged warranted by questionable installation conditions. For pipe sizes 8 inches to 12 inches diameter, perform the first test on the side level with the top of pipe. For sizes 15 inches and larger, perform the first test at the springline of the pipe. For all sizes, perform the second test at the top of the embedment zone.

6.3.10.8. Density Control and Laboratory Testing. Unless otherwise specified, reference to “maximum dry density” means maximum density defined by ASTM D-1557 or D-698. Determination of density of backfill in-place, will be in accordance with the requirements of ASTM D-2922.

Unless otherwise specified, the Engineer selects a soils testing laboratory to perform initial density testing of in-place backfill and Contractor is responsible for all density testing of backfills, including tests found not to be within the minimum requirements of the specifications.

Provide laboratory materials testing, including but not limited to determination of Atterberg Limits, Proctor Curves, Grain Size Analysis, as well as laboratory certification of manufactured materials and as required by this Article

Notify the soils testing laboratory and Engineer 24 hours in advance to obtain soil density tests to fulfill the compaction requirements.

6.3.11. **Final Backfill.**

6.3.11.1. General. Backfill trench, as soon as practicable after laying and jointing of the pipe, the completion of embedment and the completion of structures. Take the necessary precautions to protect the pipe during backfilling operations.

Remove sheeting and shoring as backfilling operations progress. Incorporate methods so that a good bond is achieved between the backfill material and the undisturbed trench walls. Where sheeting or trench protection is intact below the top of pipe and their removal cause obvious damage to the bedding and haunching, it may be necessary to leave portions of sheeting or bracing in place.

Exercise caution in the use of mechanical compactors in the haunch and initial backfill to 12 inches above the pipe avoid damaging or misaligning the pipe. Provide at least 3 feet of compacted cover over the top of the pipe before the trench is wheel-loaded, and 4 feet of cover before using pneumatic hammers during compaction. Avoid contact between pipe and compaction equipment at all times.

6.3.11.2. Consolidation Methods. Backfill above the pipe zone to surface subgrade with backfill material as indicated on the plans and described in this Article. Compact backfill above the pipe zone by mechanical means. Water consolidation (flooding) may be used if approved.

Mechanical Compaction. Place backfill material above the pipe zone in lifts not exceeding 8 inches loose depth, moisten or aerate to obtain optimum moisture, and compact to the required density as described in this Article.

Ponding Method. When permitted, place backfill material above the pipe zone in the trench not exceeding 3 feet loose depth, and flood until free water is evident on the surface for at least two hours. Place approximately 1 foot of water in the trench and start subsequent lifts by depositing backfill material in the water until a maximum 3 foot lift is placed. Add additional water to the backfill material until free water is again evident as before. Repeat procedure until the entire trench is filled and thoroughly settled

Jetting Method of water tamping is not allowed.

6.3.11.3. Cement Stabilized Backfill. Stabilize backfill material with a minimum of 2 sacks per cubic yard of Portland cement of material placed. Place stabilized soil as shown on the plans under roads, driveways, concrete slabs, and in the excavation zone for structures. Cement stabilized soil placed around all adjusted manholes is subsidiary to the various manhole installation items. No compensation will be made for use of soil cement backfill at the Contractor's discretion, without prior approval, or for over-excavated trenches.

6.3.11.4. Compaction and Testing Final Backfill. This subsection may be superseded by the Department requirements, if stricter. Under existing or proposed paved streets, compact final backfill to the Modified Proctor Densities shown on Table 9 and as per ASTM D-1557 and to standard plan detail layouts, "Typical Trench Backfill Detail under Existing or Proposed Paved Streets".

Table 9.
Paved Street Compaction Densities

ZONE	SOIL CONDITION	% OF PROCTOR
Top of Pipe Embedment to 18 inches Below Finished Subgrade	Native Material As Specified	90%
Top of Finished Subgrade to 18 inches Below Top of Subgrade	Cohesive Non-cohesive	90% 95%

Compaction tests are required on backfill under proposed or existing streets and easements as follows, unless otherwise directed and deemed necessary.

- Tests at 8 inches below subgrade at 200 feet intervals and not less than two per street at this level
- One test for every 2 feet of vertical trench backfill between top of pipe bedding and 18 inches below subgrade at 200 feet horizontal intervals and not less than two per street at each level

Obtain density of not less than 85% ASTM D-1557 from top of pipe bedding to ground surface for all other areas not in existing or proposed paved streets.

Provisions for selection of the testing laboratory and responsibilities for density control as described in this Article also apply to this backfilling section.

6.4. **Measurement**

6.4.1. **Excavation and Backfill.** This Item will not be measured individually and is subsidiary to the installation of the various water mains, sanitary sewer mains, and related appurtenances.

6.4.2. **Cement Stablized Backfill .** Unless shown on the plans as a pay item, quantities shown are for informational purposes. When specified as a pay item, this Item will be measured by the cubic yard as shown under Item 401, "Flowable Backfill".

6.5. **Payment.** The work performed and the materials furnished in accordance with this Article will not be measured or paid for individually as it is considered subsidiary to the various bid items for water main, sanitary sewer mains and manhole installations, including related appurtenances, such as all excavation, bedding, backfill for pipe zone (embedment), final backfill, compaction and compaction testing. Associated dewatering is subsidiary to the different materials and sizes of water mains, sanitary sewer mains, steel casings, valves, fittings and appurtenances, and service installation, including but not limited to excavation, embedment and final backfill for "Additional Fittings" as described in Article 7.

When Flowable Backfill is specified as a pay item, flowable backfill will be paid as provided in Item 401, "Flowable Backfill."

7. VALVES AND FITTINGS

7.1. **Description.** Furnish all valves and fittings as shown on the plans and as called for in this specification or as required for proper operation of the equipment in general. Unless otherwise indicated, conform to requirements as specified herein. Upon acceptance, provide and install valves similar and comparable to valves specified for similar and comparable duty in other parts of the project where proper operation and utilization of equipment and facilities require installation of valves not indicated or specified.

7.2. **Materials.** Conform to the pertinent material requirements of the items listed. Furnish complete shop drawings and specifications. If requested, submit a list of similar installations that have been in satisfactory operation for at least three years.

Furnish a complete set of installation, operation, and maintenance instructions, bound in a cover, for each type of valve furnished.

Quality Assurance**.** Conform to American National Standards Institute / National Sanitation Foundation (ANSI/NSF) Standard 61 “Drinking Water system Components - Health Effects” and be certified by an organization accredited by ANSI. Provide an affidavit from the manufacturer or vendor. If the pipe does not presently conform to this standard, submit information from the manufacturer regarding action being taken to comply with this standard. Include manufacturer’s name or trademark permanently stamped or cast on all valves and fittings along with “No Lead” brass alloy, e.g. “NL”. Design all valves installed in a given line to withstand the test pressure for that particular line and fabricate with ends to fit the piping.

7.2.1. **Valves.**

7.2.1.1. **Non-Rising Stem Double Disc Gate Valves (NRS)**. Provide Non-Rising Stem Gate Valves that are iron-body, bronze mounted, parallel seat internal wedging type with non-rising stem and designed for a gauge working pressure of 200 psig. Comply with latest revisions of AWWA C-500 “Gate Valves for Water and Sewage Systems”

Provide 12 inches or smaller valves for horizontal installation with a minimum number of turns to open at least three times the valve diameter. Acceptable manufacturers and models are:

- American-Darling 52NRS (Flanged Ends), 55NRS (Mechanical Joint Ends)
- Clow F5065 (Mechanical Joint Ends), F5070 (Flanged Ends)
- Kennedy 561X (Flanged Ends), 571X (Mechanical Joint Ends)
- M&H Style 67NRS
- MuellerA-2380-6 (Flanged), A-2380-20 (Mechanical Joint Ends)

Submittals. Provide submittals for approval. Provide manufacturer's Affidavit of Compliance in accordance with Section 6.3 of AWWA Standard C-500. Provide records of all tests performed in accordance with Section 5.1 of AWWA Standard C-500 that are representative test results per Section 5.1 of AWWA Standard C-500 along with an affidavit of testing for the valve assembly as outlined in Section 6.3 of AWWA Standard C-500 (300 ft-lbs.*)*.

Markings. Cast markings on the bonnet or body of each valve. Include the manufacturer’s name or mark, the year the valve casting was made, the size of the valves, and the designated working pressure.

Valve Ends. Provide mechanical joint or flanged with drilling valve ends and size, as specified, in compliance with ANSI B16.1.

Valve Body and Bonnet. Provide in cast iron conforming to ASTM A-126 Class B, or ductile iron conforming to ASTM A-395 or ASTM A-536.

Gate. Manufacture in cast iron or Grade A bronze. Grade A gate rings must be rolled, peened, or pressed into grooves machined in the discs, or may be fastened by some other accepted method.

Body-Seat Ring. Construct of Grade A bronze, back-face threaded and machined screwed into the valve body.

Wedges. Equip double-disc gate valves with a free and positive-operating internal device that presses the disc seats firmly against the body seats when the valve is closed and releases the load before the discs begin to move when the valve is opened. Provide a simple and rugged design with materials as specified in AWWA C-500. Iron to iron contact surface is not allowed.

Valve Stem. Construct of low zinc bronze CDA Copper Alloy No. C99500 with a minimum yield strength of 40,000 psi and minimum elongation in 2 inches of 10%.

Stem Seals. Provide two O-rings such that the seal above the stem collar can be replaced with the valve under pressure in the fully open position meeting the requirements of ASTM D-2000 and have physical properties suitable for the application.

Valve Operator. Provide a cast iron, ASTM A-126 Class B, wrench nut that has a 2 inch square base, a 1 15/16 inch square top and 1 3/4 inch high, opening counterclockwise (left). Paint wrench nut black with and cast an arrow indicating direction of opening in accordance with AWWA C-509.

Protective Coating. Apply an epoxy coating to all exterior and all stationary interior ferrous surfaces including all interior openings in the valves body in accordance with AWWA C-550 and the manufacturer's instructions. After the coating is completely cured, test coated surface for porosity, holidays, and pinholes using a holiday detector. Repair all holidays or irregularities and test the coating again. Do not apply coating to the gasket surfaces of the end flanges

7.2.1.2. **Outside Screw and Yoke (OS&Y) Gate Valves.** Provide iron-body, bronze mounted, parallel seat internal wedging type with outside screw and yoke in conformance with AWWA C-500 "Gate Valves for Water and Sewage Systems". Provide OS&Y gate valves for the size specified. Acceptable manufacturers and models are listed:

- American Darling 52 OS&Y
- Clow F5072
- Kennedy 566
- M&H STYLE 68
- Mueller A-2483-6

Submittals. Provide submittals for approval. Provide manufacturer's Affidavit of Compliance in accordance with Section 6.3 of AWWA Standard C-500. Provide records of all tests performed in accordance with Section 5.1 of AWWA Standard C-500 that are representative test results per Section 5.1 of AWWA Standard C-500 along with an affidavit of testing for the valve assembly as outlined in Section 6.3 of AWWA Standard C-500 (300 ft-lbs.). Provide records of all tests performed in accordance with Section 5.2 and 6.3 of AWWA Standard C-504.

Markings. Cast markings on the bonnet or body of each valve. Include the manufacturer's name or mark, the year the valve casting was made, the size of the valves, and the designated working pressure.

Valve Ends. Provide flanged ends with drilling in compliance with ANSI B16.1 or otherwise specified.

Valve Body and Bonnet. Provide in cast iron conforming to ASTM A-126 Class B, or ductile iron conforming to ASTM A-395 or ASTM A-536.

Gate. Manufacture in cast iron or Grade A bronze. Grade A gate rings must be rolled, peened, or pressed into grooves machined in the discs, or may be fastened by some other accepted method.

Body-Seat Ring. Construct of Grade A bronze, back-face threaded and machined screwed into the valve body.

Wedges. Equip double-disc gate valves with a free and positive-operating internal device that presses the disc seats firmly against the body seats when the valve is closed and releases the load before the discs begin to move when the valve is opened. Provide a simple and rugged design with materials as specified in AWWA C-500. Iron to iron contact surface is not allowed.

Valve Stem. Construct of low zinc bronze CDA Copper Alloy No. C99500 with a minimum yield strength of 40,000 psi and minimum elongation in 2 inches of 10%. Brush the opening through the bonnet for the stem with grade A, B, C, D, or E bronze as defined in AWWA C-500.

Yoke. The yoke may be either integral or bolted on to bonnet such that a hand may not be jammed between the yoke and handwheel.

Valve Operator. Provide a cast iron, ASTM A-126 Class B, wrench nut that has a 2 inch square base, a 1 15/16 inch square top and 1 3/4 inch high, opening counterclockwise (left). Paint wrench nut black with and cast an arrow indicating direction of opening in accordance with AWWA C-509.

Protective Coating. Apply an epoxy coating to all exterior and all stationary interior ferrous surfaces including all interior openings in the valves body in accordance with AWWA C-550 and the manufacturer's instructions. After the coating is completely cured, test coated surface for porosity, holidays, and pinholes using a holiday detector. Repair all holidays or irregularities and test the coating again. Do not apply coating to the gasket surfaces of the end flanges.

7.2.1.3. **Tapping Valves.** Provide iron-body, bronze mounted, parallel seat internal wedging type with non-rising stem tapping valves that conform to AWWA C-500 "Gate Valves for Water and Sewage Systems" except that tapping valves will have over-sized seat rings to accommodate full size cutters. Provide for the size specified. Acceptable manufacturers and models are listed:

- American Darling 565
- Clow 2640 (Figure F-6114)
- Kennedy 8950 KEN-SEAL II
- M&H STYLE 751
- Mueller H-667

Minimum number of turns to open is three times the valve diameter.

Submittals. Provide submittals for approval. Provide manufacturer's Affidavit of Compliance in accordance with Section 6.3 of AWWA Standard C-500. Provide records of all tests performed in accordance with Section 5.1 of AWWA Standard C-500 that are representative test results per Section 5.1 of AWWA Standard C-500 along with an affidavit and certificate of testing for the valve assembly as outlined in Section 6.3 of AWWA Standard C-500.

Markings. Cast markings on the bonnet or body of each valve. Include the manufacturer's name or mark, the year the valve casting was made, the size of the valves, and the designated working pressure.

Valve Ends. Provide mechanical joint outlet ends unless otherwise specified.

Valve Body and Bonnet. Provide in cast iron conforming to ASTM A-126 Class B, or ductile iron conforming to ASTM A-395 or ASTM A-536.

Gate. Manufacture in cast iron or Grade A bronze. Grade A gate rings must be rolled, peened, or pressed into grooves machined in the discs, or may be fastened by some other accepted method.

Body-Seat Ring. Construct of Grade A bronze, back-face threaded and machined screwed into the valve body.

Wedges. Equip double-disc gate valves with a free and positive-operating internal device that presses the disc seats firmly against the body seats when the valve is closed and releases the load before the discs begin to move when the valve is opened. Provide a simple and rugged design with materials as specified in AWWA C-500. Iron to iron contact surface is not allowed.

Valve Stem. Construct of low zinc bronze CDA Copper Alloy No. C99500 with a minimum yield strength of 40,000 psi and minimum elongation in 2 inches of 10%.

Stem Seals. Provide two O-rings such that the seal above the stem collar can be replaced with the valve under pressure in the fully open position meeting the requirements of ASTM D-2000 and have physical properties suitable for the application.

Valve Operator. Provide a cast iron, ASTM A-126 Class B, wrench nut that has a 2 inch square base, a 1 15/16 inch square top and 1 3/4 inch high, opening counterclockwise (left). Paint wrench nut black with and cast an arrow indicating direction of opening in accordance with AWWA C-509.

Protective Coating. Apply an epoxy coating to all exterior and all stationary interior ferrous surfaces including all interior openings in the valves body in accordance with AWWA C-550 and the manufacturer's instructions. After the coating is completely cured, test coated surface for porosity, holidays, and pinholes using a holiday detector. Repair all holidays or irregularities and test the coating again. Do not apply coating to the gasket surfaces of the end flanges.

7.2.1.4. **Non-Rising Stem (NRS) Resilient-Seated Gate Valves**. Provide NRS gate valves that are resilient seat, non-rising stem and have a minimum rated gauge working pressure of 200 psig that comply with AWWA C-509 "Resilient-Seated Gate Valves for Water and Sewage Systems" and AWWA C-550 "Standard for Protective Coatings for Valves and Hydrants". Valve designed with recesses, insets in the bottom of the waterway that would promote build-up or collection of residue and debris are not acceptable. Provide NRS Gate Valves the size specified. Acceptable manufacturers and models are listed:

- American Flow Control Series 500, Series 2500
- Clow 2640 (Figure F-6100)
- Kennedy 8571 KS – FW
- M&H 3067
- US Pipe METROSEAL 250
- Mueller A-2360
- J&S Series 6800, Series 6900

Submittals. Provide submittals for approval. Provide manufacturer's approved certified test data or an affidavit stating that the valve complies with AWWA C-509 Section 5.1 and the following, in accordance with AWWA C-509 Section 6.3:

- Hydrostatic Test. Provide results of manufacturer's pressure test for one valve of each size and class with 400 psi applied to one side and zero to the other made in each direction across the closed gate.
- Torque Test. Provide results of manufacturer over-torque test on one valve of each size to demonstrate that no distortion of the valve stem occurs. Applied torque for a 4-inch valve is 250 ft-lb and 350 ft-lb for the larger valves in both the open and closed position.
- Leakage Test. Provide results of manufacturer's leakage test where manufacturer selects two valves of each size to be fully opened and closed for 500 complete cycles with a 200 psi differential pressure across the gate and the valve is drip tight upon completion of the test.
- Pressure Test. Test one valve of each size with the gate fully open to a pressure of 500 psi. No evidence of rupture or cracking of valve body, bonnet or seal plated should be detected

Markings. Cast markings on the bonnet or body of each valve. Include the manufacturer's name or mark, the year the valve casting was made, the size of the valves, and the designated working pressure.

Valve Ends. Provide mechanical joint or flanged ends as specified.

Valve Body and Bonnet. Provide in cast iron conforming to ASTM A-126 Class B, or ductile iron conforming to ASTM A-395 or ASTM A-536.

Bolts. Provide all bonnet and seal plate bolts that are factory installed and made from stainless steel ASTM A-276 with either regular-square or hexagonal heads with dimensions conforming to ANSI B18.2.1.

Wedge. Provide cast iron or ductile iron fully encapsulated wedge with resilient rubber material bonded to the disc in conformance with ASTM D-429 as required by AWWA C-509.

Valve Stem. Construct of low zinc bronze CDA Copper Alloy No. C99500 with a minimum yield strength of 40,000 psi and minimum elongation in 2 inches of 10%.

Stem Seals. Provide two O-rings such that the seal above the stem collar can be replaced with the valve under pressure in the fully open position meeting the requirements of ASTM D-2000 and have physical properties suitable for the application.

Valve Operator. Provide a cast iron, ASTM A-126 Class B, wrench nut that has a 2 inch square base, a 1 15/16 inch square top and 1 3/4 inch high, opening counterclockwise (left). Paint wrench nut black with and cast an arrow indicating direction of opening in accordance with AWWA C-509.

Protective Coating. Apply an epoxy coating to all exterior and all stationary interior ferrous surfaces including all interior openings in the valves body in accordance with AWWA C-550 and having a minimum dry film thickness of 8 mils. After the coating is completely cured, test coated surface for porosity, holidays, and pinholes using a holiday detector. Repair all holidays or irregularities and test the coating again. Do not apply coating to the gasket surfaces of the end flanges.

7.2.1.5. **Butterfly Valves**. Provide butterfly valves that are tight-closing, rubber-seated type for Class 150B service and comply with the requirements of AWWA C-504, "Standard for Rubber-Seated Butterfly Valves". Provide valves for the size specified. Acceptable manufacturers and models are listed:

- Val-Matic — Class 150B Flanged or Mechanical Joint
- M&H — 450, 4500, 1450
- Kennedy — 30A, 30C
- Mueller — Lineseal III
- Pratt — Groundhog Flanged or Mechanical

Submittals. Provide submittals for approval. Provide manufacturer's approved certified test data or an affidavit stating that the valve complies with the performance tests, leakage tests, hydrostatic test and proof-of-design tests as described in Sections 5.2 and 6.3 of AWWA C-504.

Valve Ends. Provide short body flanged, mechanical joint valve ends or as otherwise specified.

Valve Bodies. Construct valve bodies of cast iron ASTM A-126, Class B, or ASTM A-48, Class 40 or Ductile Iron, ASTM A-536, Grade 65/45/12.

Valve Discs. Construct valve discs of cast iron conforming to ASTM A-126, Class B or Ductile Iron conforming to ASTM A-536, Grade 65/45/12, seat in a position of 90 degrees to the pipe axis and rotates 90 degrees between full open and tight closed position. Dimensions of clearance for valve discs are required.

Valve Shafts. Provide Type 304 or 316 Stainless Steel valve shafts, keys, dowel pins, or taper pins used for attaching valve shaft to the valve disc in conformance with ASTM A-276, or equivalent corrosion resistant material. All portions of shaft bearings must be stainless steel or bronze. Valve shafts may consist of a one-piece unit extending completely through the valve disc, or may be of the "stub shaft" type as defined in AWWA C-504. Provide butterfly valves with an extended bonnet, unless otherwise specified.

Shaft Seals. Provide a Split-V or O-ring type shaft seal that allows replacement without removing the valve shaft.

Valve Seats. Provide new natural or synthetic rubber resilient seats attached to either the disc or the body that provide tight shut off at the specified pressure. Seats must be clamped, mechanically secured, bonded or vulcanized to either the disc or body, be stainless steel and fastened by stainless steel cap screws.

Mating Seat Surface. Conform to ASTM A-276, stainless steel 18-8, Type 304, or have a 95% pure nickel overlay.

Valve Bearings. Manufacture bearings from corrosion resistant, and "self-lubricated" materials that will not damage natural or synthetic rubber and are sleeve type.

Valve Operators. Provide manual valve operations with a 2-inch square operating-nut and turn left (counterclockwise) to open. Totally enclose, pre-lubricate or grease pack all gearing. Provide operators of the worm gear or traveling nut and link type with field adjustable stops capable of withstanding 300 ft. lbs. input torque, as required by AWWA C-504.

Protective Coating. Except as otherwise specified, shop coat all interior steel or cast iron surfaces in accordance with the requirements of AWWA Standard C-504. Shop coat all external surfaces for buried valves with two coats of asphalt varnish according to AWWA C-504. When specified, apply a standard epoxy interior coating in accordance with AWWA Standard C-550, "Standard for Protective Interior Coatings for Valves and Hydrants".

7.2.1.6. **Air Release, Air/Vacuum, and Combination Air Valves**. Conform to AWWA C-512 requirements, testing requirements found in Section 5.1 of AWWA C-512 and the following specifications that apply to valve sizes 6" and smaller.

Air Release Valves (AR). Design to automatically release accumulated air pockets within the pipeline while in operation and under pressure. Provide air release valves APCO Model 200, Val-Matic Model 38, or Crispin Model P.

Air/Vacuum Valves (AV). Design to allow large volumes of air to escape through the valve orifice when filling a pipeline and to close watertight once the air has been expelled. Permit large volumes of air to enter through the valve orifice when the pipeline is being drained to break the vacuum. Provide AV valves that are APCO Series 140, Val-Matic Series 100, or Crispin Model AL.

Combination Air Valves (CAV). Provide heavy-duty air and vacuum valves with air release designed to release accumulations of air at high points within a pipeline by exhausting large volumes of air as the pipeline is being filled and by releasing accumulated pockets of air while the pipeline is in operation and under pressure. Also design CAV to permit large volumes of air to enter the pipeline during pipeline drainage. Provide CAV that are APCO, Val-matic Series 200, or Crispin Model C.

Submittals. Provide submittals for approval. Provide manufacturer's affidavit stating that the valve and all materials used in its construction conform to the applicable requirements of AWWA C-512 and these specifications. When required, the manufacturer shall provide and affidavit stating that the valve has been tested and is in compliance with the requirements specified in Section 5.1 of AWWA C-512.

Markings. Cast markings on the bonnet or body of each valve. Include the manufacturer's name or mark, the year the valve casting was made, the size of the valves, and the designated working pressure.

Body and Cover. Provide each air valve with a cast or ductile iron body and cover that complies with ASTM A-126 Class B, or ASTM A-48 Class 35. Ductile iron requirements in conformance with ASTM A-536, Grade 65-45-12. Meet or exceed the strength requirements of ASTM A-307 for bolting material. Provide all internal trim of stainless steel.

Float. Provide stainless steel float that is baffled to prevent air from blowing valve closed until air is exhausted. Design valve body, float, etc., for a working pressure equal to that of the system in which it is installed. Floats for valves with inlet sizes less than 4inches must be capable of withstanding a collapse pressure of 1000 psig. For larger inlet sizes, floats must be capable of withstanding a collapse pressure of 750 psig.

Valve Outlet. Fit outlet to attach discharge pipe as indicated. Provide N.P.T valve inlet. for 2 inch and smaller valves and ANSI flange for 3 inch and larger valves. Flange rating must equal or exceed the maximum working pressure of the system in which it is installed.

Installation. Install AR and AV valves within valve vaults, or manhole, in accordance with Utility Standard Details 263-1, 263-2, 263-3, 263-4 and plans.

Protective Coatings. Interior surface coatings are not required unless otherwise specified. Coat external surfaces with the manufacturer's standard primer.

7.2.1.7. **Swing Check Valves**. Provide swing check valves 2 1/2 inches to 12 inches in diameter that withstand a working pressure of 175 psig, comply with the requirements of AWWA C-508 and are tight seating to prevent the backflow of the media during pump shut-off or power failure. Design the closure assembly to assume the closed position by gravity under no flow conditions in a horizontal position. Provide fully open swing check valves with a net flow area not less than the area of a circle with a diameter equal to the nominal pipe size. Check valves can be either Swing Type Spring and Lever or Swing Type Lever and Weight. Acceptable manufacturers are Kennedy Company, Mueller, or equal.

Provide internals that are replaceable in the field without removing the main valve from the pipeline.

Submittals. Comply with the requirements of Article 7.2.1.2 in accordance to the applicable requirements of AWWA C-508. When required, the manufacturer must provide an affidavit stating that the valve has been tested and is in compliance with the requirements specified in Section 5.2 of AWWA C-508.

Markings. Cast markings on the bonnet or body of each valve. Include the manufacturer’s name or mark, the year the valve casting was made, the size of the valves, and the designated working pressure.

Valve Ends. Provide flanged valve ends unless otherwise specified.

Body. Provide heavy cast-iron body conforming to ASTM Standard A-126, Class B.

Disc. Provide cast-iron disc conforming to ASTM Standard A-126, Class B that is either Rubber-Faced, or Bronze-Faced conforming to ASTM B-584 "Specification for Copper Alloy Sand Castings for General Applications".

Disc Seat or Plate. Provide resilient Buna-N material or Bronze disc seat or plate conforming to ASTM Standard B-62 for drip tight shut-off and easily replaced in the field without the use of special tools.

Seat Ring. Provide Bronze seat ring conforming to ASTM Standard B-584 and is mechanically attached to machined surfaces in the body.

Hinge or Clapper Arm. Provide Bronze hinge or clapper arm conforming to ASTM Standard B-584.

Hinge Pins. Provide stainless steel hinge pins conforming to ASTM A-276 "Specification for Stainless and Heat Resisting Steel Bars and Shapes" in accordance with AWWA C-508.

Lever. For Swing-Type Lever and Weight, provide the lever with an adjustable counterweight to control opening and closing of clapper arm. For Swing-Type Spring and Lever, provide lever with an adjustable spring tension to control opening and closing of clapper. Install lever on either side of valve.

Protective Coating. Apply epoxy coating to all stationary interior ferrous surfaces including all interior openings in the valves body in accordance with AWWA C-550 and the manufacturer's instructions. Do not apply coating to the gasket surfaces of the end flanges. Paint valve exterior with Red Oxide Phenolic Primer Paint as accepted by the FDA for use on materials in contact with potable water.

7.2.1.8. **Pressure Reducing Valves.** Provide pressure reducing valves that maintain a constant downstream pressure regardless of varying inlet pressure and, unless otherwise specified, will be a direct acting, spring loaded, normally open globe pattern valve designed to permit flow when controlled pressure is less than the spring setting. Acceptable manufacturers and models are listed:

- Cla-Val Co. Model 90
- Fisher Governor Co. Type 616
- Bailey Model 30A

2 inches or smaller. Provide valves with a bronze body, nylon reinforced diaphragm, single seat, composition disc, Watt No. 223 or Masoneilan No. 227, or approved equal.

Larger than 2 inches. Provide valves with a cast iron body conforming to ASTM B-61, bronze main valve trim conforming to ASTM B-61, a reinforce neoprene diaphragm, stainless steel stem and flanged ends.

Pressure Rating. Provide a pressure rating of 125 psi with an adjustment range of 30-300 psi.

Valve Components. Provide removable and repairable components while the valve body remains in the line.

Diaphragm Assembly. Provide a synthetic rubber assembly a stem fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. Do not use diaphragm as a seating surface.

Resilient Disc. Provide discs that form a sealed chamber against the disc seat when the valve is closed. Provide seat that is removable and has a smooth surface that will not induce seal cutting or wear.

Strainer: For valves 3 inches and smaller, provide a standard flow clean strainer mounted in the inlet supply port of the main valve. For valves 4 inches and larger, provide a standard y-strainer externally mounted for the protection of the control circuit.

Protective Coating: Apply an epoxy coating to all exterior and all stationary interior ferrous surfaces including all interior openings in the valves body in accordance with AWWA C-550 and the manufacturer's instructions. After the coating is completely cured, test coated surface for porosity, holidays, and pinholes using a holiday detector. Repair all holidays or irregularities and test the coating again. Do not apply coating to the gasket surfaces of the end flanges.

7.2.2. **Fittings.** Provide ductile iron (DIP) fittings for use with ductile iron and polyvinyl chloride (PVC) for water pressure or transmission pipe that are smooth cement lined in accordance with AWWA C-104 and outside asphaltic coated per AWWA C-110. The size, body type, type of joint ends, and applicable reference standard are shown on plans or are specified.

Standards. Comply with the following applicable requirements:

ANSI B16.1"Cast Iron Pipe Flanges and Fittings"

AWWA C-104"American National Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water"

AWWA C-105 "Standard for Polyethylene Encasement for Ductile Iron Pipe and Fittings"

AWWA C-110"American National Standard for Ductile-Iron and Gray-Iron Fittings, 3 inches through 48 inches, for Water and Other Liquids"

AWWA C-111 "Rubber-Gasket Joints"

AWWA C-153 "American National Standard for Ductile-Iron Compact Fittings, 3 inches through 16 inches, for Water and Other Liquids"

Minimum Requirements**.** Apply minimum requirements of shown Table 10 and Table 11 to the specified fittings.

Table 10.
Standard Short-Body Fittings per AWWA C-110

TYPE OF JOINT	DIAMETER	RATE WORKING PRESSURE	MATERIAL
Mechanical (Rubber Gasket/C-111)	4-24 inches	350 psi	DI
Flanged	4-24 inches	250 psi	DI
All Types	30-80 inches	250 psi	DI
Push-On (Rubber-Gasket/C-111)	4-24 inches	250 psi	DI

Table 11.
Compact Short-Body Fittings per AWWA C-153

TYPE OF JOINT	DIAMETER	RATE WORKING PRESSURE	MATERIAL
Mechanical or Push-On (Rubber Gasket/C-111)	4-24 inches	350 psi	DI

Provide all joint accessories such as gaskets, glands, bolts, and nuts with mechanical joints, and gaskets and lubricant furnished with push-on joints in sufficient quantity for assembly of each joint.

Mark push-on joint fittings with the proprietary name or trademark of the joint marked on the outside with their applicable AWWA Standard and information specified in the standard.

Provide polyethylene wrapped fittings in accordance with AWWAC-105.:

7.2.3. **Valve Vaults.** Provide pre-cast vaults with pre-cast or cast-in-place bases as shown on the plans.

Quality Assurance**.** Provide vaults that meet the requirements of ACI 318 and are designed for a minimum H-20 loading per AASHTO Specifications, plus a 30% impact factor, or greater if shown on the plans or specified. Mark date of manufacture and name or trademark of manufacturer on inside of each pre-cast vault section.

Submittals. Submit structural calculations sealed by a Structural Engineer registered in the State of Texas for approval along with shop drawings.

Materials. Provide concrete with a minimum 28 days compressive strength of 4,000 psi and reinforcing steel that meets the requirements of Article 4. Provide metal frames, covers, steps, toe pockets and similar required items as shown. Each pipe entering and exiting the vault required an approved flexible joint the provides a watertight installation. Submit jointing system or material for approval..

Installation. Cast-In-Place. Place cast-in-place bases on suitable foundations after the pipes are laid. Exercise special care when placing the concrete around the bottom of the pipes to obtain a waterproof structure. Cast an approved bell in the base to receive the pipe sections forming the barrel.

Pre-Cast. Set pre-cast bases on a concrete or crushed stone foundation as shown at the proper grade and carefully aligned. Set pre-cast vault sections vertical in true alignment. Install sections, joints, and gaskets in accordance with manufacturer's recommendations.

Seal lifting holes tight with a solid rubber plug driven into hole and the remaining void filled with cement-sand mortar.

7.3. **Provisions for Thrust.** Block all underground piping with concrete, bearing solidly against undisturbed trench walls, at all changes in direction, fittings, and valves subsidiary to the installation of fittings, valves, and all other appurtenances requiring provisions for thrust restraint.

Place concrete blocking against undisturbed trench walls with a minimum 18 inches between trench wall and pipe. Extend blocking a minimum of 0.75 times pipe diameter below and above the centerline of pipe and do not extend beyond any joints. Place blockings in accordance with the recommendations of "A Guide for the Installation of Ductile Iron Pipe" published by Cast Iron Pipe Research Association and according to details shown on the plans.

If directed, contain the ends of the thrust blocks in wood or metal forms as provided for under Item 420, "Concrete Structures". Where upward thrusts are to be resisted, reinforce concrete anchor with reinforcing conforming to the provisions of Item 440, "Reinforcing Steel".

Use Class B concrete used for Blocking in accordance Item 421, "Portland Cement Concrete" and Table 12 depicting the minimum area of concrete bearing against undisturbed trench bank.

Table 12.
Bearing Surface Per Bend

PIPE SIZE	TEE, DEAD END, 90 DEGREE BEND	45 AND 22-1/2 DEGREE BEND
6 Inch	4 sq. ft.	3 sq. ft.
8 Inch	6 sq. ft.	3 sq. ft.
12 Inch	13 sq. ft.	7 sq. ft.
16 Inch	23 sq. ft.	12 sq. ft.
20 Inch	37.02 sq. ft.	20.04 sq. ft.

Install mechanical joint restrainers as specified that are manufactured by EBAA Iron, Uni-Flange or approved equal.

7.4. **Construction.**

Valve Installation**.** Polyethylene-wrap valves in accordance with AWWA C-105, unless otherwise specified. Provide thrust blocking as specified. Carefully handle and install valves horizontally in such a manner as to prevent damage to any parts of the valves in accordance with manufacturer's instruction. Valves delivered closed to the site will be opened by Contractor prior to installation. Record number of turns required to open the valve and submit information on the standard valve report to EPWU through Engineer.

Valve Testing**.** Upon completion of installation of the valves, conduct an acceptance test to verify the satisfactory operation of the valves. Check unit for operation and leakage. The valves must perform in a manner acceptable to the Engineer.

7.5. **Measurement.**

7.5.1. **Valves.** This Item will not be measured individually and is subsidiary to the installation of the various water mains and related appurtenances.

7.5.2. **Fittings.** This Item will not be measured individually and is subsidiary to the installation of the various water mains and related appurtenances.

7.5.3. **Additional Fittings.** This Item will be measured in place by the pound of additional fittings installed.

7.6. **Payment.**

7.6.1. **Valves.** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be not paid for individually as it is considered subsidiary to the various water mains Items. All valves shown on the plans are subsidiary to the various water mains and services pay items and include all costs associated with coordination; excavation; disposal of excess material; backfill, compaction, compaction testing for utilities, all labor, equipment and materials required for furnishing and installing all valves shown on the plans to include those required as part of the different pay items, complete in place, including but not limited to: thrust blocking, mechanical joint restrainers, concrete anchoring, polyethylene wrapping, and provisions for corrosion protection. Use of mechanical joint restrainers in lieu of or in conjunction with concrete thrust blocking is not be considered for additional compensation.

7.6.2. **Fittings.** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be not paid for individually as it is considered subsidiary to the various water mains pay items. All fittings shown on the plans are subsidiary to the different pay items for water mains and services and include all costs associated with coordination; excavation; disposal of excess material; backfill, compaction, compaction testing for utilities, all labor, equipment and materials required for furnishing and installing all fittings shown on the plans to include those required as part of the different pay items, complete in place, including but not limited to: thrust blocking, mechanical joint restrainers, concrete anchoring, polyethylene wrapping, and provisions for corrosion protection. Use of mechanical joint restrainers in lieu of or in conjunction with concrete thrust blocking will not be considered for additional compensation.

7.6.3. **Additional Fittings.** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Additional Fittings". This price is full compensation for furnishing all required materials based on the cost of material only. Include labor costs, all costs associated with coordination; excavation; backfill, compaction, compaction testing for utilities; disposal of excess material; equipment and materials required for cutting and removal of water mains, furnishing and installing additional valves, bends, tees, crosses, couplings, reducers, adaptors, flexible fittings, not originally shown on the plans or details, as deemed necessary, complete in place, including but not limited to: thrust blocking, mechanical joint restrainers, concrete anchoring, polyethylene wrapping, and provisions for corrosion protection in the unit price for Water Main (PVC), Water Main (DIP) and/or Water Main (STEEL). Mechanical joint restrainers in lieu of or in conjunction with concrete thrust blocking are not considered for individual payment through the "Additional Fittings" provisions. The actual amount of additional fittings may be less than, but may not exceed the total quantities on the plans without approval.

8. WATER SERVICE CONNECTIONS

8.1. **Description.** Furnish labor, materials, equipment and incidentals necessary to construct and install pre-cast concrete meter boxes and vaults, water service connections and fire lines, complete for potable water supply including .

8.2. **Materials.**

General. Provide fittings and valves in contact with potable water in conformance to the latest revision of NSF/ANSI Standard 61 (Annex F) and the requirements of Article 7. Include certifications from manufacturers that the products comply with appropriate ASTM, AWWA and Utility Standards with required submittals. New water meters will be furnished by EPWU when required unless otherwise specified.

Quality Assurance. Fittings and valves in contact with potable water must conform to the latest revision of NSF/ANSI Standard 61 (Annex F). Such compliance must be evidenced by an affidavit from the manufacturer or vendor.

All fittings and valves must have the manufacturer's name or trademark permanently stamped or cast on it and "No Lead" brass allow, e.g. "NL" shall be cast or stamped on the valves and fittings.

8.2.1.1. **Water Service Connections**.

Castings and Washer Nuts**.** Provide certified cast bronze composition castings and washer nuts, 85-5-5-5 percent per ASTM B-62, fully formed, tapped threads meeting requirements of AWWA C-800 for underground service.

Gaskets**.** Provide gaskets that are self-sealing, 100 percent neoprene or Buna-N rubber, formulated for water service.

Service Saddles**.** Provide two or three piece all-bronze, double strap with National Coarse Class 2 thread saddles suitable for Class 200 asbestos cement pipe, cast iron pipe and ductile iron pipe with double straps. Provide single strap saddles for C-900 or C-905 PVC pipe. Extend saddle body 180 degrees around pipe. Acceptable manufacturers and models are listed:

- Ford Meter Box Co. Model S90
- James Jones Co. J-996
- A.Y. McDonald Mfg. Co. 3805
- Mueller H-1344X

Straps**.** Provide silicon bronze straps, approximate tensile strength of 70,000 psi chamfered for easy nut starting and flattened to provide wide bearing surface.

Valves. Provide valves in accordance with Utility acceptable standards and requirements for Article 7.2.1.11, "Gate Valves".

Use bronze valves for copper pipes with minimum 85% copper content casting and cast iron valves for PVC pipe that conform to requirements for Article 7.2.1.11, "Gate Valves".

Provide corporation stops manufactured by Ford Meter Box Co., Mueller, or approved equal and conform to the requirements of AWWA C800.

Provide angle ball valves with padlock wings that are copper flared inlet and female iron pipe thread outlet such as James Jones Company Model J-1965W, McDonald MFG Model 74606B, or approved equal. Use outlet meter coupling nut for 3/4 inch and 1 inch meters. Use inlet female iron pipe by outlet oval flange ends valves for 1 1/2 inch and 2 inch meters.

Service Pipe**.** Provide copper Type "K" for service pipe sizes up to and including 2 inch, meeting ASTM B-88 requirements with bronze fittings. For 3-inch services, provide 4 inch PVC per AWWA C-900 with reducers at meters. For 4 inch services and larger, provide PVC pipe per AWWA C-900. Provide ductile iron fittings for PVC pipe.

8.2.1.2. **Meter Boxes.** Meet the standards listed:

- ASTM A-27 Specifications for Steel Castings, Carbon, for General Application
- ASTM A-36 Specification for Structural Steel
- ASTM A-48 Specification for Gray Iron Castings
- ASTM C-33 Specification for Concrete Aggregates
- ASTM C-150 Specification for Portland Cement
- ASTM C-309 Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- ASTM C-615 Specification for Granite Building Stone

Shop Drawings. Submit shop drawings on molds, meter boxes, and associated hardware for approval prior to fabrication. Provide manufacturer's certification that products comply with appropriate ASTM, AWWA, and Utility standard details

Testing. When requested, provide compressive tests results and allow Engineer to inspect of the manufacturing process at any time, perform tests on materials used and to extract cores from completed meter boxes for compressive strength testing and placement of reinforcement.

Cement. Use Portland cement conforming to ASTM C-150, Type I or Type III. Provide concrete with a minimum 28 day compressive strength of 4,500 psi, a water cement ratio of 0.5 or less by weight, and a maximum 5.5 gallons water per sack cement. Handle concrete from the mixer or transport vehicle to the place of final deposit in a continuous manner, as rapidly as practicable, and without segregation or loss of ingredients, until the operation is completed. Place concrete in layers not exceeding 2 feet deep. Compact each layer by mechanical internal or external vibrating equipment. Limit duration of the vibration cycle to the time necessary to produce satisfactory consolidation without causing objectionable segregation.

Aggregates. Conform to specifications outlined by ASTM C-33 for aggregates other than lightweight aggregates. Provide aggregate that is free of deleterious substances and graded in a manner as to produce a homogeneous concrete mix. Accurately weigh all materials at a central batching facility for mixture.

Curing. For the purposes of early re-use of forms, concrete may be heated in the mold, after initial seat has taken place. Do not exceed a temperature of 71.11°C (160°F) and raise temperature from normal ambient temperatures at a rate not to exceed 4.44˚C (40°F) per hour. Do not remove the cured unit from the forms until sufficient strength is obtained for the unit to withstand any structural strain that may be subjected during the form stripping operation. After the stripping of forms further curing by means of water spraying or a membrane curing compound of a clear or white type, conforming to ASTM C-309 may be used.

Steel Reinforcing. Comply with ASTM A-615 Grade 60 steel, F_Y= 60,000 psi. Minimum concrete cover on re-bar top slab is 1 1/4 inch and 1 1/2 inch on re-bar for walls. Comply latest ACI Standards for bar bending and placement. Provide all reinforcing steel, including welded wire mesh, of the size and place in location shown on the plans. Tie all reinforcing sufficiently to withstand displacement during the pouring operation. Design lifters to handle the imposed weights, and place as shown on the plans or manufacturer's requirements.

Steel Frames and Covers. Conform to ASTM A-27, Grade 70-36. For structural welded steel, conform to the requirements of ASTM A-36 with dimensions as specified on the plans.

Cast Iron Ring and Covers. Conform to the requirements of ASTM 48, Class 30. Provide all castings of uniform quality, free from blowholes, shrinkage, distortion or other defects, smoothed and well cleaned by shot-blasting. Manufacture true to pattern. Provide component parts that fit together in a satisfactory manner. Provide round frames and covers s with continuously machined bearing surfaces to prevent rocking and rattling. Do not exceed tolerances of 1/16 inch per foot and deviation in weight of 5%.

8.2.1.3. **Tapping Sleeves and Pipe Couplings**. Furnish labor, materials, equipment and incidentals necessary to install tapping sleeves and pipe couplings as specified suitable for operation at pressures as specified for the pipelines in which they will be installed, including test pressures and surge allowances. Furnish shop drawings a required.

8.2.1.3.1. Cast Tapping Sleeves**.** Provide tapping sleeves of suitable construction and reinforced to provide resistance to line pressures that are designed for the pipe size and material on which they will be used. Build tapping sleeves in halves for assembly around the main to be tapped. The branch outlet will have a flanged face for bolting to the tapping valve with the inside diameter of outlet branch larger than the nominal size to provide clearance for the full size cutters of the tapping machine. Acceptable manufactures are Mueller Company, Kennedy Valve Squareseal and M&H.

Type 1. Cast tapping sleeve allows water to circulate between the sleeve and the outside surface of the pipe. Gaskets of suitable material, designed for use on potable water must form watertight joints along the

entire length of the sleeve. Seal circumferential joints at the ends of the run of the sleeves by mechanical joints, conforming to AWWA C-111 as to dimensions, clearances, and materials, except that gaskets and glands from mechanical joints must be totally confined or compressed between ridges or grooves extending continuously for the full length of both halves of the sleeve casting. Locate bolts close to the outside of the gaskets and spaced so as to exert sufficient pressure to form a watertight joint and withstand stresses imposed by the intended use.

Type 2. Water is confined to the immediate area of the tap opening. Fit the outlet half of each sleeve with a continuous gasket of approximately circular cross section, permanently cemented into a groove surrounding the outlet opening and the back half of each sleeve fitted with elastomeric pads, a metal shoe, or other device for developing adequate pressure on the gasket to prevent leakage at any pressure within the design capacity of the pipe.

Protective Coating: Coat all surfaces exposed to flow in accordance with AWWA C-550.

8.2.1.3.2. Fabricated Tapping Sleeves**.** Fabricated tapping sleeves must be rated for a working pressure of 150 psi and meet the following requirements. Acceptable manufacturers and models are listed:

- Ford FTSC
- JCM 412
- Romac FTS 420
- Powerseal 3490

Markings: Permanently mark each tapping sleeve to identify the outer diameter size range.

Test Plug: Provide a 3/4" NPT with standard square head.

Nuts and Bolts: Provide high strength, corrosion resistant 18-8 Type 304 Stainless Steel.

4 inch to 12 inch. Provide tapping sleeve body and flange 18-8 Type 304 Stainless Steel or AWWA C111 Carbon Steel with fusion epoxy coating. Provide body, lug, and gasket armor plate in compliance with ASTM A-240 having all metal surfaces passivated, in accordance with ASTM A-380, after fabrication.

- Provide gasket with a watertight sealing surface around the full circumference of the pipe formed of natural or synthetic rubber.
- Weld lugs to the shell and prevent alignment problems by allowing the bolts to pass through. Do not weld bolts to the sleeve.

16 inch and Larger: Proving tapping sleeves that have a heavy welded steel body in compliance with ASTM A-36 or ASTM A-285, Grade C.

- Provide natural or synthetic rubber compounded gaskets for water use providing a watertight sealing surface.
- Construct flanges in accordance with AWWA C-207 Class D and properly recess for aligning the sleeve and tapping valves.
- Coat steel tapping sleeves with 8 mils minimum thickness epoxy

8.2.1.3.3. Flexible Couplings**.** Furnish and install couplings where shown on the plans, specified, or in locations as approved. Use ductile iron flexible couplings and Type 316 Stainless Steel nuts and bolts when installed underground. When flexible couplings are used as expansion joints, separate the pipe ends to allow for expansion. Where indicated on the plans or required by field conditions, flexible couplings must be suitable for connecting pipes having different outside diameters. Restrain flanged coupling adapters with tie rods.

Protective Coating: Coat entire coupling assembly with a 20 mil coating of T.C. Mastic as manufactured by Tape Coat Company, Bitumastic No. 50 as manufactured by Koppers Company, or approved equal.

Ductile Iron Pipe. Flexible Joint Couplings will be Dresser Style 38, Rockwell Style 411, or equal. Flanged coupling adapters for ductile iron pipe will be Dresser Type 127, Rockwell International 112, Baker Series 600, or equal.

Steel Pipe. Flexible couplings will be Dresser Style 38, Rockwell International 411, or equal, except where other styles are required for special conditions.

Provide neoprene rubber or equal gaskets.

8.2.1.3.4. Installation. Install tapping sleeves in accordance with the manufacturer's recommendations. Construct disc and seat ring in a manner that the inside diameter of the ring is at least 3/16 inch larger than nominal size of valve. Block tapping sleeve and valve assembly blocked as indicated.

8.3. **Construction.**

8.3.1. General**.** Furnish and install service taps for 3/4 inch to 2 inch services with service saddle. Direct taps, i.e. without the saddle, are not allowed. For 3 inch and 4 inch services, construct taps using 4 inch tapping sleeve and valve. Insulate copper service pipe attached to metallic water mains at the corporation stop with a dielectric insulator in accordance with Utility Standards for Excavating, Backfilling, and Compacting.

Do not install multiple tapping, two or more taps on a length of pipe, on a common line parallel to the longitudinal axis of the pipe and no closer than 18 inches on the longitudinal axis of the pipe.

Splices are not allowed in any portion of the service pipe run between the main line connection and the meter assembly. Connect all services to new main by means of wet-tapping. Dry or direct taps are not allowed.

Perform meter installations larger than 1-inch with a bypass meter connection as listed:

- 1 1/2 inch and 2 inch meters 1-inch bypass
- 3 inch and 4 inch meters 2-inch bypass
- 6 inch and 8 inch meters 3-inch bypass

8.3.2. Existing Services**.** Where existing water services are indicated on the plans to be replaced, relocated, or reconnected to new water lines, make prior arrangements with each water customer as to the time and length of shutdown necessary. Notify the customer 24 hours before any connections are made. A maximum shut-off time of four (4) hours will be allowed for making connections, after which time supply the customer with potable water from an approved source at no additional cost to Department.

8.3.3. Metallic Tracer Tape**.** For 3-inch services and larger (i.e. PVC), provide a minimum width of 6 inches or twice the line diameter. Do not exceed a burial depth of 36 inches below final grade or be at an elevation of less than 12 inches above the utility line. Follow tape manufacturer's recommended burial depths.

8.3.4. Meter Box Installation**.** Install in accordance with these specifications and Utility Standard Details to grade matching top of curb.

Do not install under sidewalks, driveways, or proposed above-ground structures. Where no curbing exists, install boxes in accessible locations beyond limits of street surfacing, walks, and driveways.

Install standard meter boxes for their respective meter size according to Table 13.

Table 13.
Standard Meter Boxes

METER SIZE	BOX TYPE	CONSTRUCTION	DIMENSIONS W x H
3/4 inch	Type A	Single Unit	19.25 inch O.D. x 17 inch
1 inch	Type B	Single Unit	26 inch O.D. x 17 inch
1 1/2 inch to 2 inch	Type C	Single Unit	50 inch sq. x 24 inch
3 inch and larger	Type D	Modular	7 ft.-8 inch sq. x 4 ft.-6 inch

Where it is necessary to install Type A or B boxes for 3/4 inch or 1 inch meters under roadways or traffic bearing surfaces, encase boxes in 12 inches concrete 3,000 psi minimum.

8.3.5. Testing and Flushing Procedures**.** Pressure test all services for leakage by opening the corporation or service valve at the main service connection point, maintaining the meter angle valve closed, and visually observing all connections and piping for leaks. If no leaks are observed, then flush service line as follows. The angle valve is opened to "full" and then the corporation valve is slowly opened to full capacity. Water is allowed to flow until piping has been thoroughly flushed. Then the angle valve is slowly closed to prevent water hammer or shock pressure, which might rupture the main or adjacent water service connections. If no customer piping is currently connected to the meter outlet connection, use a fitted plug at the end of this connection to prevent the entrance of dirt or muddy water.

8.4. **Measurement.**

8.4.1. **Water Service Replace and Reconnect.** This Item will be measured in place by each water service replaced and reconnected for the size and type indicated.

8.4.2. **New Water Service Installation.** This Item will be measured in place by each new service installed for the size and type indicated.

8.4.3. **Meter Boxes.** This Item will not be measured for individual payment and is subsidiary to the water connection items.

8.5. **Payment**.

8.5.1. **Water Service Replace and Re-connect.** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Water Service Replace & Reconnect" of the size and type specified. This price is full compensation for furnishing all required materials, including all costs associated with: furnishing labor, new materials, equipment, and incidentals to replace and reconnect existing water services of the specific size and type (water service or fire line); complete restoration to its original condition, any disturbed areas associated with the replacement and reconnection of existing water services; coordination; and all appurtenances defined herein to include, but not limited to the following items: concrete meter boxes, all fittings and valves in accordance with EPWU requirements and as indicated on the plans.

8.5.2. **New Water Service Installation.** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "New Water Service Installation" of the size and type specified. This price is full compensation for furnishing all required materials, including all costs associated with: furnishing labor, new materials, equipment, and incidentals to install new water services of the specific size and type (water service or fire line); complete restoration to its original condition, any disturbed area associated with the installation of new water services; coordination; and all appurtenances defined herein to include, but not limited to the following items: concrete meter boxes and vaults, all fittings and valves in accordance with EPWU requirements and as indicated on the plans.

8.5.3. **Meter Boxes.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" are subsidiary to the "Water Service Replace & Reconnect" or "New Water Service Installation" bid items.

9. FIRE HYDRANTS

9.1. **Description.** Furnish labor, materials, equipment and incidentals to install fire hydrants as shown on the plans in accordance with Utility requirements and typical fire hydrant installation.

9.2. **Materials.**

Submittals**.** Submittals include certified drawing showing dimensions and construction details and certification from manufacturers that the products comply with appropriate AWWA Standards and this Specification. Submit catalog data illustrating equipment to be furnished and a schedule of parts and materials. Provide manufacturer guarantee that friction loss meet the requirements of AWWA C-502.

Standards**.** Comply with requirements of AWWA C-502, Dry-Barrel Fire Hydrants, and AWWA C-550, Protective Epoxy Interior Coatings for Valves and Hydrants.

9.2.1. **Manufactured Products**.

General**.** Provide dry-barrel compression type fir hydrants, with the main valve opening against the pressure, in accordance with AWWA C-502. Design hydrant for a minimum working pressure of 150 psi and tested at 300 psi hydrostatic pressure.

Provide hydrant with permanent markings identifying name of manufacturer, size of main valve opening and year of manufacture that are easily located and legible after the hydrant has been installed.

Construct hydrant so that the standpipe may be rotated to eight (8) different positions.

Provide center of the lowest nozzle a minimum ground clearance of 15 inches. Supply with extension sections in multiples of 6 inches with rod and coupling as required to increase barrel length.

The fire hydrant manufacturer must provide local representation and support services, through an established vendor, within the County of El Paso. Acceptable manufacturers and models are listed.

- American Flow Control B84B
- Clow Medallion
- M&H Model 129
- Mueller Centurion

Size**.** Provide a minimum inside barrel diameter of 7 inches with a minimum diameter of the main valve opening of 5 inches.

9.2.2. **Traffic Type**. Design the barrel and operating mechanism that the main valve will remain closed and reasonably tight against leakage in the event of an accident, damage, or breaking of the hydrant above or near the grade level.

Provide manufacturer guarantee that the hydrant valve stem will not be bent when the hydrant is damaged or broken at or near ground level. Provide a safety breaking flange or thimble. Make provisions in the design of the stem to disconnect the stem from the hydrant parts above the standpipe break point in the event of a traffic accident.

If breakable couplings are used, design the barrel safety flange and stem safety collar to break before any other hydrant part in the event of an accident. Design coupling so that no part of the coupling will drop into the hydrant barrel in the event of an accident.

Corrosion Resistant Valve**:** Include a Davidson Anti-Terrorism Corrosion Resistant Valve Kit (DATV) designed to protect against accidental backflow and intentional contamination of drinking water via the

hydrant. The DATV must be a stealth check valve located internal to the upper barrel of the hydrant and consisting of four main parts.

- A sleeve-insert valve seat, made of E-coated or fusion-bonded epoxy steel. Provide a machined slot to the top of the valve seat to accommodate an EPDM quad ring that will provide an impenetrable seal between the seat and the valve and separates the valve from the insert to prevent the chance of galvanic corrosion. The sleeve will have a plug in the drain hole located at the bottom of the sleeve.
- A valve made of brass with machined slots to accommodate a Viton O-ring between the valve and the upper stem.
- A 304 stainless steel machined upper stem to replace the original upper stem. Attach the brass valve to the upper stem in such a manner as to provide free vertical movement along the shaft and be sealed and separated from the stem by a Viton o-ring that prevents contact between dissimilar metals to eliminate the chance of galvanic corrosion.
- A 302 stainless steel spring that fits around the upper stem and is of adequate compression strength and length such that sufficient pressure is placed on the valve to provide an impenetrable seal when the hydrant is not in use and yet allows water to flow freely when the hydrant is flowed.

Provide a technician certified by the DATV manufacturer to install the DATV. The DATV manufacturer or authorized representative must provide both initial and ongoing refresher training, free of charge to governmental entities utilizing their product. Install DATV in a manner that does not alter the standard warranty offered by the hydrant manufacturer, except that such warranty will not cover the DATV itself

The DATV must be shop-installed by the hydrant distributor and be delivered to the project site ready for installation. The hydrant distributor will order the hydrants without the hydrant parts that are to be replaced by the DATV. Provide DATV with a minimum 10 year warranty against defects in workmanship and materials that also guarantees that its installation inside the hydrant will not cause failure of any of the original fire hydrant parts while the hydrant is under warranty, provided that: (a) the hydrant and DATV are installed and maintained in accordance with the corresponding manufacturers' recommendations; (b) the installer of the DATV was certified for such installation by the DATV manufacturer; and (c) that analysis of the failure clearly establishes that installation of the DATV as the primary cause of the failure.

Ensure that the DATV does not interfere with the breakaway functionality of the fire hydrant.

Drain Outlet**.** Provide upper valve plate, seat ring and drain ring or shoe bushing in bronze, to form an all bronze drain way and drains the hydrant properly by opening as soon as the main valve is closed.

Inlet Connections**.** Provide mechanical joint, with accessories, gland, bolts, gaskets, and a 6 inch diameter inlet connection. Provide synthetic rubber main valve facing against seats. Equip top of the stem or bonnet with O-ring seal. Provide oil or grease lubricated hydrant.

Outlet and Pumper Nozzles**.** Provide two hose outlets with two 1/2 inch nozzles with National Standard hose coupling screw threads. Provide outlet nozzles of the caulked type or mechanically connected into the barrel with an O-ring seal and a non-corrosive locking pin to lock the nozzle to the barrel.

Provide pumper Nozzle with an inner diameter of 4 inches with threads conforming to the City of El Paso Standards.

Provide nozzle caps with one, 1 inch square nut, gaskets and non-kinking chains. Provide operating nut and nozzle cap nuts that have one, 1 inch square at the base and tapered to 7/8 inch square at the end and not less than 1 inch deep. Provide nozzle caps with rubber gaskets.

Hydrant Operator**.** Provide operator that is 1 inch square at the base and tapered to 7/8 inch at the end and not less than 1 inch deep. Attachment of the operator nut must not, in any way, hinder operating the hydrant with the wrench and must open by turning left (counterclockwise). Design hydrants with O-ring seals to prevent water from damaging the operating threads.

Tamper Proof Cover**.** Equip hydrant with a tamper proof cover, minimum inside diameter of 2 1/4 inches, with drainage holes, that deters unauthorized operation of the hydrant and provides adequate wrench clearance. The height of the cover ranges from 2 1/4 inches to 2 1/2 inches, measured from the base at the bonnet to the top of the collar.

Painting**.** Prime coat barrels above ground with two coats of aluminum colored paint as approved by EPWU.

Protective Coating**.** Epoxy coat all interior ferrous surfaces of shoe exposed to flow to a minimum dry thickness of 4 mils. Factory- apply epoxy coating by an electrostatic or thermosetting process in accordance with manufacturer's printed instructions. Epoxy materials must be 100 percent powder epoxy or liquid epoxy conforming to AWWA C-550 and to the current requirements of the Food and Drug Administration and the EPA for potable water.

9.3. **Construction.** Install hydrants at locations shown on the plans or in approved standard locations. Touch up paint damaged during installation. Disinfect hydrants with the connecting pipe in accordance with Article 10, "Cleaning, Disinfection and Testing of Water System" in this Specification. Ensure installed hydrants are left in good working order with control valve open.

9.4. **Measurement.**

9.4.1. **Fire Hydrant (Relocate & Reconnect).** This Item will be measured in place by each fire hydrant reconnected to the new or existing water main.

9.4.2. **Fire Hydrant (New).** This Item will be measured in place by each new fire hydrant connected to the new water main.

9.4.3. **Fire Hydrant (Remove and Salvage**). This Item will be measured in place by each fire hydrant removed and salvaged.

9.5. **Payment.**

9.5.1. **Fire Hydrant (Relocate & Reconnect).** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Fire Hydrant (Reconnect Only)" as specified. This price is full compensation for furnishing all required materials, including new piping from the new or existing water main to the fire hydrant, new gate valve with bonnet box, concrete thrust blocking or mechanical joint restraints, Davidson Anti-Terrorism Corrosion Resistant Valve Kit (DATV), new spool extensions as needed, new fittings and appurtenances for a complete installation as shown in plans.

9.5.2. **Fire Hydrant (New).** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Fire Hydrant (New)" as specified. This price is full compensation for furnishing all required materials, installation of new fire hydrant, Davidson Anti-Terrorism Corrosion Resistant Valve Kit (DATV), spool extensions as needed, mechanical joint tee at the main, gate valve with bonnet box and lid, all PVC C900 pipe from the main to the fire hydrant, thrust blocking or mechanical joint restrainers and all fittings and appurtenances for a complete installation as shown in the plans.

9.5.3. **Fire Hydrant (Remove and Salvage).** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Fire Hydrant (Remove and Salvage)" as specified. This price is full compensation for furnishing all required labor, materials, equipment, and incidentals to remove and salvage existing fire hydrants as indicated on the plans in accordance with EPWU's requirements.

10. CLEANING, DISINFECTION, AND TESTING OF WATER SYSTEM

10.1. **Description.** Perform disinfection and testing of all water mains and related appurtenances.

10.2. **Materials.**

Standard**s.** Comply with applicable requirements of AWWA B-300 "Standard for Hypochlorites", AWWA B-301,"Standard for Liquid Chlorine" and AWWA C-651,"Standard for Disinfecting Water Mains".

Water**.** Provide water required for filling, flushing and testing the line at such points along the pipeline as water is available from the existing distribution or supply systems (See "Water for Construction" in Project General Notes). Do not waste water. Such action may require appropriate charges. Provide water, by tank truck or other means, to the points necessary to produce specified test pressure. Coordinate disposal of water with Engineer and El Paso Water Utilities Operations Division. Do not dispose water onto the streets as that will be considered "wasting of water", unless otherwise approved.

Chlorinating Material**.** Provide either liquid chlorine conforming to AWWA B-301 or hypochlorite conforming to AWWA B-300.

10.3. **Construction.**

General**.** After completion of all pipe line section, use the following procedure to clean, sterilize and pressure test the pipeline. Fill the pipeline and flush until all evidence of dirt or debris has been washed from the pipeline, then refill line, if necessary, introducing the chlorinating material. Perform pressure and leakage test at each valved section. After all sections have been approved, clean all valves and leave line full of sterilizing water.

Quality Assurance**.** Exercise special care to keep the interior of the pipe clean during storing, handling, and laying operations in order to reduce the need for flushing to an absolute minimum. In addition, tightly cover all open ends whenever unattended to prevent small animals and dirt from entering the pipeline after it is in place.

10.3.1.1. Sterilization**.** Before acceptance for operation, sterilize each unit of completed water system as specified below or as prescribed by AWWA Standard C-651. (As per C-651, collect two consecutive sets of acceptable samples taken at least 24 hours apart from the new main.)

- Thoroughly flush with water the unit to be sterilized until all entrained dirt and mud have been removed before introducing the chlorinating material.
- Provide all chlorination material for sterilization and introduce the chlorinating material into the water line in an approved manner at a dosage of not less than 50 parts per million.
- Retain treated water in the pipe at least 25 hours to destroy all nonspore-forming bacteria except where a shorter period is approved. Retention time should produce not less than 10 ppm of chlorine at the extreme end of the line at the end of the retention period.
- Open and close all valves on the lines being sterilized several times during the contact period.

10.3.1.2. Hydrostatic Pressure and Leakage Testing**.** Furnish meter, pressure gauges, pump, small piping and hose connections, and all labor necessary for conducting hydrostatic pressure and leakage tests. Check all valves and hydrants for proper operation and pressure. Subject the pipe system to a hydrostatic pressure and leakage test after completion of each valved section and following the filling and disinfection of the section.

After the section of pipeline has been filled, pump water into the section and raise the pressure to 150 psi. Maintain this test pressure for a period of at least two (2) hours. Deliver water required to maintain this pressure through the meter. The amount of water through the meter during the two-hour test period will be the total leakage. Should this leakage exceed the allowable amount, make repairs as may be required until the actual leakage, as determined by succeeding tests, is no greater than the allowable as determined by the following formula:

$L = S \times D \times (P^{1/2}) / 133{,}200$ except that L = 0 in above ground systems and otherwise

L =Allowable Leakage in gallons/hour

S =Length of pipe tested in feet
D =Nominal diameter of pipe in inches
P =Average test pressure during the test, in pounds per square inch, gage; determined by computing the weighted average of actual pressures on various portions of the section

After all sections of the pipeline have been tested, as described above, close all valves and leave line filled with the water used for disinfection and testing.

10.4. **Measurement and Payment.** The work performed and the materials furnished in accordance with this Article will not be measured or paid for individually as it is considered subsidiary to the various water main and related appurtenances bid items.

11. SANITARY SEWER FACILITIES

11.1. **Description.** Furnish all labor, materials, equipment and incidentals required and install sanitary sewer systems and adjustments as shown on the plans and as specified.

Verification of Utilities**.** The data furnished in the plans regarding the size and location of utility lines has been obtained from field surveys and the various utility companies. Verify the location of all utilities prior to commencing sewer construction. Perform all work within public right-of-way. Do not extend into or encroach upon private property including basements, residences, and places of business.

Coordination with El Paso Water Utilities (EPWU). Coordination with EPWU is required for sewer line tie-ins and bypassing, where indicated in the specifications and on the plans, and for CCTV video-inspection of new sewer lines. EPWU will perform video-inspection of all new sewer lines to determine acceptance. Notify EPWU through Engineer, a minimum of 48 hours in advance of any scheduled inspection; and provide a staging area that is free and accessible for TV camera activities.

Water Main Crossing**.** Where gravity or force main sewers are constructed in the vicinity of water mains, ensure that the most current requirements of the Texas Commission on Environmental Quality (TCEQ) are met.

11.2. **Materials.**

11.2.1. **Polyvinyl Chloride (PVC) Flexible Pipe.** These standard specifications designate the requirements for furnishing and installing PVC gravity pipe for sanitary sewage, with a standard dimension ratio (SDR) as shown in the plans and/or specified herein. Furnish all materials, equipment, tools, labor, superintendence, and incidentals required for the complete construction of the work designated.

Quality Assurance**.** Code all PVC pipe to provide positive identification and prevent accidental damage to or interruption of the sanitary sewer facilities. Only provide pipe manufactured in the United States of America. Provide new materials including all pipe, fittings, and accessories. Perform manufacturer's physical and chemical tests according to the ASTM standard applicable to the respective PVC pipe type and diameter herein specified, in order to demonstrate pipe quality.

Submittals**.** Submit documentation on pipe products, fittings, and related materials as may be required by the contract documents or the Engineer. Review all submittals prior to submission. Submit in a timely manner so as not to delay the project. Allow sufficient time for Engineer's review and resubmission, if necessary. Include certifications from manufacturer that the product complies with appropriate ASTM standards.

Standards**.** Comply with applicable following requirements:

- ASTM D-1784 — Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
- ASTM D-2321 — Specification for Underground Installation of Flexible Thermoplastic Sewer Pipe

- ASTM D-3034 — Specification for Type PSM Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
- ASTM D-3212 — Joints for Drain and Sewer Pipes Using Flexible Elastomeric Seals
- ASTM F-477 — Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- ASTM F-679 — Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
- ASTM F-789 — Specification for Type PS-46 Poly (Vinyl Chloride) (PVC) Plastic Gravity Flow Sewer Pipe and Fittings
- ASTM F-794 — Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Ribbed Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter

Delivery and Storage**.** Inspect pipe, fittings, and accessories upon delivery and during progress of the work. Any material found defective will be rejected. Remove rejected material promptly from site.

Replace, at no additional cost to Department, any material found to be defective in manufacture or damaged.

Unload at point of delivery all pipe, fittings, and other accessories, haul to and distribute at the work site. In loading and unloading, lift materials by hoists or rolled on skidways so as to avoid shock or damage. Do not incorporate materials that have been dropped into the work. Do not skid or roll pipe handled on skidways against pipe already on the ground.

Do not store PVC pipe outside exposed to prolonged periods of sunlight. Any discoloration of pipe due to such exposure is an indication of reduced pipe impact strength, and will be sufficient cause for rejection of the pipe. Remove rejected all pipe from the job site.

Pipe Schedule**.** PVC pipe will be designated as gravity sewer conduit and must meet the requirements shown on Table 14.

Table 14.
Gravity Sewer Conduit Dimensions

Pipe Size	ASTM Standard	Material	Wall Type	Minimum Stiffness	Standard Length
8" 12" 15"	D-3034	PVC	Solid SDR-35	46 psi	20'
	F-789	PVC	Solid T1-Wall	46 psi	20'
18"	F-679	PVC	Solid T1-Wall	46 psi	20'
	F-789	PVC	Solid T1-Wall	46 psi	20'
	F-794	Large Dia PVC	Profile Open	46 psi	13'
21"-27"	F-679	PVC	Solid T1-Wall	46 psi	20'
	F-794	Large Dia PVC	Profile Open or Closed	46 psi	13'
30"-36"	F-794	Large Dia PVC	Profile Open or Closed	46 psi	13'
39" - 60"	F-794	Large Dia PVC	Profile Closed	46 psi	13'

Joints**.** Provide push-on, bell and spigot type joints with elastomeric seals that conform to the requirements of ASTM D-3212. Provide factory installed gaskets that are chemically bonded to the bell end of the pipe with gasket material that conforms to the requirements of ASTM F-477.

Pipe Materials**.** Provide pipe and fittings made from polyvinyl chloride compounds that comply with the requirements for minimum cell classification defined by ASTM D-1784. Provide PVC fittings, service risers, and laterals with a SDR 35 rating.

Pipe Trenching, Installation and Backfill**.** Except as noted, Pipe Trenching, Installation and Backfill of PVC gravity sewer pipe will be in accordance with ASTM D-2321 and Article 6 of this specification.

- Trench Width: Refer to Article 6.3.2.1 for FLEXIBLE PIPE
- Pipe Installation: Following the preparation of the trench bottom and trench bracing installed where required, proceed up grade with spigot ends pointing down grade. Lay pipe true to lines and grades as shown on plans. Grade may be established by laser beam, or batter boards (not exceeding 50 foot intervals), and string line may be used with each pipe set to grade, from the string line, with a grade rod equipped with a "shoe" designed to fit into the flow line of the pipe

Testing**.** Inspect PVC and test for leakage and deflection in accordance with Article 11.3.3.

11.2.2. **Ductile Iron Pipe (DIP).** These standard specifications designate the requirements for furnishing and installing DIP for sanitary sewage. Furnish all materials, equipment, tools, labor, superintendence, and incidentals required for the complete construction of the work designated.

Quality Assurance**.** Manufacturer must have a minimum of ten years successful experience in designing and manufacturing DIP, pipe joints of similar design, pipe diameter, and pressure class of the type specified. The entire pipeline will be the product of one manufacturer. Pipe must conform to American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61 “Drinking Water System Components - Health Effects” and be certified by and organization accredited by ANSI. Such compliance will be evidenced by an affidavit from the manufacturer or vendor. If the pipe does not presently conform to this standard, information from the manufacturer regarding action being taken to comply with this standard must be submitted.

Submittal. Submit documentation on pipe products, fittings, and related materials as required by the plans or Engineer. Review all submittals prior to submission. Submit in a timely manner so as not to delay the project. Allow sufficient time for Engineer's review and resubmission, if necessary. Include certifications from manufacturer that the DIP complies with appropriate AWWA Standards and ANSI/NSF Standard 61. Provide by an affidavit from the manufacturer or vendor as evidence of compliance. If the pipe does not presently conform to this standard, information from the manufacturer regarding action being taken to comply with this standard must be submitted. If requested, provide copies of results of factory hydrostatic tests.

Standards. Comply with applicable requirements of the following items listed below:

- ASTM A-746 Specification for Ductile Iron Gravity Sewer Pipe
- AWWA C-104 Standard for Cement Mortar Lining for Ductile Iron Pipe and Fittings
- AWWA C-105 Standard for Polyethylene Encasement for Ductile Iron Piping
- AWWA C-110 Standard for Ductile Iron and Gray Iron Fittings
- AWWA C-111 Standard for Rubber Gasket Joints for Ductile Iron Pipe and Fittings
- AWWA C-150 Standard for Thickness Design of Ductile Iron Pipe
- AWWA C-151 Standard for Ductile Iron Pipe

Pipe Materials**.** Manufacture DIP in accordance with AWWA C-151 and conform to ASTM Specification A-746 with physical properties of Grade 60-40-18 with a minimum pressure class rating of 150 psi, unless otherwise specified. Design pipe for five (5) feet of cover or for the depths shown on the plans, whichever is greater. Provide a standard joint length of 18 or 20 feet and the inside diameter will be industry standard. Replace any material found to be damaged or defective in manufacture at Contractor's expense.

Joints**.** Provide push-on standard joints for DIP manufactured in accordance with AWWA C-111, AWWA C-151. Where indicated on the plans, joints will be mechanical or flanged. Flanged joints will have pressure ratings equal to or greater than adjacent pipe. Flange pattern will match pattern of valve, fitting, or appurtenance to be attached.

Fittings. Provide DIP in accordance with AWWA C-110 and Article 7 of this Specification. Fittings will be rated for a minimum working pressure of 250 psi, unless otherwise specified. Factory welded outlets,

minimum pressure rating 250 psi, may be used in lieu of tee fittings for 18 inch and larger tee fittings. Do not use factory welded outlets near sources of vibration, such as pump stations or roads, unless specifically noted on the plans.

Exterior Coating**.** Provide a standard asphaltic coating in accordance with AWWA C-151, unless otherwise specified. The finished coating will be continuous, and smooth and strongly adherent to the pipe.

For DIP sizes 30 inches and smaller, use a 30 mils minimum thickness polyethylene wrap applied wrap in accordance with AWWA C-105/A21.5.

Tape coat DIP 36 inches and larger. The exterior of the pipe must have a prefabricated cold-applied tape coating system conforming to the requirements of ANSI/AWWA C-214, except as noted herein. Blast clean the surface to achieve a surface preparation at least equal to that specified in SSPC SP6. The blast profile must have an anchor pattern as specified by the tape manufacturer. Hold the coating back from the end of the pipe the minimum distance recommended by the pipe manufacturer for the type of joint used. Taper the tape wrap cut back. Provide a nominal thickness of 80 mils.

Interior Lining. DIP Pipe and fittings will have an epoxy lining in accordance with ASTM D714. Provide epoxy lining appropriate for wastewater pipe application with a minimum lining thickness of 40 mils.

Provisions for Thrust**.** Where indicated and where required for thrust restraint, joints must be restrained. Restrained joints will be mechanically interlocking joints. Provide restrained joints such as U.S. Pipe "TR Flex", American Cast Iron Pipe "Flex Ring", or Clow Corporation "Super-Lock" that are capable of sustaining the specified design pressure. If thrust cannot be accommodated using restrained joints, such as bends adjacent to casing pipe, use approved thrust restraint devices.

Use thrust restraint devices to resist thrust at bends, tees, plugs, or other fittings. Do not use concrete thrust blocks unless approved by the Engineer. Acceptable thrust restraint devices are those as manufactured by EBAA Iron, Ford Uni-Flange, or approved equal.

NOTE: At connection of new sewer force main to existing main, use both concrete thrust blocking and thrust restraint devices as per Article 4.2.5 of this specification.

Use restrained joints for a sufficient distance from each bend, tee, plug, or other fitting to resist thrust which will be developed at the design pressure of the pipe. For the purposes of thrust restraint, design pressure will be 1.5 times the design working pressure class indicated. Pipe manufacturer will determine length of pipe with restrained joints to resist thrust forces in accordance with the Handbook of Ductile Iron Pipe. Use the following parameters:

- Laying condition equal to AWWA C-600 Type 5 soil
- Safety factor of 1.8
- Unit bearing resistance equal to zero
- Factor for polyethylene encasement as recommended by DIPRA, if required.

Pipe Trenching, Installation, and Backfill**.** Except as noted, perform pipe trenching, installation, and backfill for DIP in accordance with AWWA C-600 and Article 6 of this Specification.

General. Repair any damage to polyethylene wrap according to AWWA C-105. Keep pipe clean during installation. Provide two coats of Koppers Bitumastic No. 50, or approved equal to exposed ferrous metal that cannot be protected with field-applied tape coating. Install pipe and fittings to line and grade indicated. In areas where the line and grades indicated cannot be achieved using standard manufactured bends and fittings, make slight adjustments by deflecting joints according to the limitations of AWWA C-600.

Pipe Zone Embedment. Unless otherwise specified, embed DIP in Class II material as defined in Article 6. Native material or imported material meeting or exceeding Class II requirements may be used. Class I material may be acceptable only in groundwater conditions if approved.

Pipe Cutting: When required, machine cut DIP leaving a smooth cut at right angles to the axis of the pipe. Bevel ends of cut pipe to be used with a push-on joint bell to comply with manufactured spigot end. Do not damage cement lining.

Corrosion Protection: As a precaution against corrosion, coat all flanges, bolts, nuts and other exposed metal surfaces underground with Texaco, Koppers, or equal rustproof compound.

Testing**.** Inspect DIP and test for leakage and deflection in accordance with Section 11.3.3.

11.3. **Sanitary Sewer System.** Furnish labor, materials, equipment and incidentals to install sewer service lines as indicated on the plans in accordance with EPWU Standards.

11.3.1. Sewer Service Connections**.**

Materials. Conform to the material requirements of the City of El Paso's Plumbing Code and all amendments thereto. Fittings, service risers, and laterals are as specified for the material type utilized. Where additional service connections are required on an existing main line, install an approved service saddle compatible to the size and type of both the collection line and service lateral. Encase saddles with Class B (2500 psi) concrete where PVC saddles with rubber seals and stainless steel bands are used in accordance with EPWU Standards to protect the steel bands from corrosion and to add stability.

Tees and Riser. Install tee or wye fittings for future house service connections. Use bell-type fittings and seal on the branch outlet with an approved plug that can be easily removed for service riser or lateral line installation.

Where ground water is encountered, install the tee and a sufficient service line RISER, thereby raising the final bell above the ground water level. In deep trenches, extend the RISER to the depth of the intersecting service line, or to within 6 feet of the surface, whichever is designated in the plans or appropriate for field conditions.

Install a maximum of four service connections at manholes located at the ends of street cul-de-sacs. Connect additional services to the main line at a minimum 24 inch spacing.

Service Connections and Laterals. Provide new sewer service laterals and re-connections of all existing sewer service laterals to new lines installed to replace lines to be abandoned where required on the plans. Verify location of laterals indicated on the plans and ensure service is not interrupted to homes or other establishments.

Install wyes, bends, tees, stacks, and other hardware, where required, for service laterals as shown in the plans or as directed. Unless otherwise specified, provide minimum 4 inch diameter lateral service lines. Although the maintenance of service laterals is the responsibility of private property owners, including the portion within public right-of-way, as established by Public Service Board Rules and Regulations, the Contractor is be responsible for the integrity of the installation or re-connection of all such service lines during the warranty period.

Use proper specials and fittings to suit the actual conditions for connections between new work and existing work, where required. When it is necessary to interrupt service to existing facilities in order to make connection to an existing line, connections may need to be made at some time other than during normal working hours at no additional cost to Department.

Prior to service line installation, coordinate with EPWU through Engineer to have EPWU personnel curb mark the locations of proposed service tees. Lay service lines and/or tees that the branch makes an angle of 45° with the vertical on the side of the main facing the lot to be served.

Install and extend new service lines 6 inches beyond existing or proposed improvements such as pavement, curb and gutter, sidewalk, etc. unless otherwise specified or shown in the plans. For standard subdivisions

having curb and gutter for drainage, install new services lines at a minimum slope of 2 percent with a minimum cover at the terminus of 18 inches. For subdivisions with flat terrain and on-site ponding (no curb and gutter), provide a minimum cover of 3 1/2 feet, unless otherwise directed.

Uniformly support service pipe on bedding having a density of not less than 90% of maximum density per ASTM D-1557. Carefully place and compact backfill on service lines in accordance with the requirements of Article 6.3.4. Plug the terminus of the service line with an approved universal end cap compatible with the pipe size and material.

Utilize a qualified licensed plumber who is bonded and approved by the El Paso City Public Inspection Department to install service risers and lateral extensions. Provide evidence that plumber is licensed and insured in accordance with City of El Paso requirements.

Location Marking and Recording. Maintain as-built records of the horizontal and vertical location of installed sewer service lines. In unpaved areas without curb, mark the plugged ends of risers or laterals using a 1" by 2" by 24" wooden stake set vertically at the plugged terminus, and a sufficient length of plastic metallic marking tape extended vertically from the terminus to within 6 inches of ground surface. An electronic marker disk may be used in lieu of metallic tape. EPWU personnel will mark locations of the installed service line or riser ends by chipping an arrowhead mark on top of the curb directly over the service plug.

11.3.2. **Manhole Structures.** Furnish all labor, materials, equipment and incidentals necessary to provide all manholes as required. Provide manholes for the various sized lines as listed.

- Standard Type "A" 48 inch inside diameter
- Standard Type "B" 72inch inside diameter
- Drop Manhole constructed at the designated locations and in accordance with Utility Standard Details, and as otherwise indicated in the project plans.
- Construct pre-cast concrete sections as specified herein

Quality Assurance. Provide manholes free of visible leakage and test each structure for leaks. Repair all leaks in a manner subject to Engineer's approval.

Submittals**.** Provide complete manufacturer's shop drawings on the manhole section(s), to include the joints, for approval. Revise shop drawings that do not meet specifications and re-submit approval. Include manufacturer's specification data and recommendations on the lifters and joint material. Submit documentation of compliance with ASTM C-478. Failure to provide either the detailed shop drawings, specification data and recommendation on lifters and joint material, or the letter certifying that all material provided meets specification is sufficient grounds to reject material.

Standards**.** Comply with the following applicable requirements:

- ASTM A-48 Specification for Gray Iron Castings
- ASTM A-82 Specification for Steel Wire, Plain, for Concrete Reinforcement
- ASTM A-185 Specification for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement
- ASTM A-615 Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- ASTM C-32 Specification for Sewer and Manhole Brick (Made from Clay or Shale)
- ASTM C-33 Specification for Concrete Aggregates
- ASTM C-144 Specification for Aggregate for Masonry Mortar
- ASTM C-150 Specification for Portland Cement
- ASTM C-309 Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- ASTM C-478 Specification for Pre-cast Reinforced Concrete Manhole Sections
- ASTM C-923 Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipe

- ASTM D-1557 Test Methods for Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in (457-mm) Drop

11.3.2.1. Manhole Structure Materials.

Frame and Cover: Provide manhole frame and cover of cast iron of the weight, dimensions, and pattern indicated by the EPWU Standard Details. Provide casting made from superior quality, gray cast iron conforming to the requirements of ASTM A-48 with no holes in the cover, but edge notches for embedded rings used for lifting. Imprint "SEWER" or a suitable designation on the cover. Machine mating surfaces to assure a snug fit of the cover and frame.

Manhole Rings. Provide manhole rings used for a maximum 2 foot final grade in conformance to the applicable requirements of ASTM Specifications C-32, Grade MS.

Cement. Provide Portland Cement conforming to ASTM Specifications C-150, Type V.

Mortar Sand. Provide mortar sand conforming to ASTM Specifications C-144.

Concrete Aggregates. Provide concrete aggregates conforming to ASTM Specifications C-33 except that the requirement for gradation will not apply to concrete manhole conical and riser sections.

Steel Reinforcement. Provide billet-steel bars conforming to ASTM Specifications A-615 and welded steel wire fabric conforming to ASTM Specifications A-82 or to ASTM Specifications A-185.

Water. Provide water that is clean, clear, free from oil, acid or organic matter and injurious amounts of alkali, salts or other chemicals or deleterious materials.

Mortar. Provide mortar that is composed of 1 part Portland Cement Type V and 3 parts mortar sand mixed in an approved manner with water to form a workable mixture.

11.3.2.2. Pre-Cast Concrete Manholes. Design manhole riser and conical section for sewer and water installations in the diameters specified or shown. Provide all manhole sections with 5 inch wall thickness and tongue and groove, unless otherwise specified. Rings will be available in various lengths from one foot to four feet. Design the conical sections to be concentric and adapted to the ring at one end and to El Paso Water Utilities standard cast iron frame at the other. Provide the base ring with a flat bottom joint. Steps or rungs are not required. Manufacture manhole section(s) in conformance with ASTM C-478 and any additional specifications listed here forth.

Concrete. Concrete to have a minimum 28 days compressive strength of 4000 psi. Water cement ratio to be 0.5 or less by weight or not more than 5.5 gallons per sack.

Aggregates. Conform to specifications outlined by ASTM C-33 except for lightweight aggregate. Aggregates will be free of deleterious substances causing reactivity with oxidized hydrogen sulfide. Grade both types of aggregates in order to produce a homogeneous concrete mix. Accurately weight all materials at a central batching facility for mixing.

Cement. Provide Portland Cement conforming to ASTM C-150, Type V (sulfate resistant) for sewer applications and sufficient to produce a minimum strength of 4,000 PSI, or other design strengths required.

Placing. Handled all concrete from the mixer or transport vehicle to the place of final deposit in a continuous manner, as rapidly as practicable, and without segregation or loss of ingredients, until (the approved unit operation) is completed. Place concrete in layers not to exceed two feet deep. Compact each layer by mechanical internal or external vibrating equipment. Limit duration of the vibration cycle to the time necessary to produce satisfactory consolidation without causing objectionable segregation.

Quality Assurance. The Engineer reserves the right to inspect the manufacturing process at any time to make tests on materials used, and to have cores cut out of the completed manholes for compressive strength testing and placement of reinforcement.

Curing. For purposes of early re-use of forms, the concrete may be heated in the mold after the initial set has taken place. Do not exceed a temperature of 160° and raise from normal ambient temperature at a rate not to exceed 40° per hour. Do not remove the cured unit from forms until sufficient strength is obtained for the unit to withstand any structural strain that may be subjected during the form stripping operation. After the stripping of forms, further curing by means of water spraying or a membrane curing compound of a clear or white type, conforming to ASTM C-309-58 may be used.

Steel Reinforcement. Use reinforcing steel as outlined in ASTM C-478 and any additional specifications herein. Apply the minimum steel area of 0.12 square inches to both risers and cone sections and the maximum center to center spacing of 6 inches as well. Place reinforcing steel for one line circumferential reinforcement on the tension side of the wall (the inner half part of the wall with a minimum 1-inch cover) for two lines circular reinforcement, refer to ASTM C-478. Sufficiently tie all reinforcing to withstand any displacement during the pouring operation.

Joint Reinforcement. Both tongue and groove will contain a #4 rebar.

Lifters. Design lifters to handle the imposed weights placed per manufacturer's requirements.

Joint Material. Seal all joints using Ram-Nek joint sealer in sufficient quantities by the vendor as part of the manhole section(s) in sizes per manufacturer's recommendations.

11.3.2.3. Cast-In-Place Concrete Manholes**.** In special circumstances, construct cast-in-place concrete manholes as shown in the plans, and provide the wall thickness not less than 6 inches. Ensure that the concrete is of good quality and well vibrated and the method of construction materials and type of forms used are approved by the EPWU.

11.3.2.4. Manhole Connectors**.** At manholes, a water-tight resilient connection will be made between the wall and the pipe by use of an engineering approved manhole waterstop adaptor such as Indiana Seal Manhole Adaptor, Kor-N-Seal, or approved equal, meeting the requirements of ASTM C-923. The connector must be compatible to both the type of pipe wall and manhole wall, and be installed in strict accordance with the recommendations of the connector manufacturer.

11.3.2.5. Installation**.** Construct manholes at the location and details shown on the plans or as. After the excavation has been completed, pour the concrete base or bottom.

The riser work may proceed when the concrete has sufficiently set. Neatly form the invert in the bottom of the manhole with concrete after the manhole rise has been completed. Construct invert with a true curve of as large a radius as the size of the manhole will permit and with a smooth trowel finish.

11.3.3. **Inspection and Testing.** Test all piping as specified herein unless otherwise directed.

Standards. Adhere to the following requirements when inspecting and testing sewer lines and manholes.

- ASTM C-828 — Recommended Practice for Low-Pressure Air Test of Vitrified Clay Pipe Lines (4-12 Inches)
- ASTM C-1103 — Standard Practice for Joint Testing of Installed Pre-Cast Concrete Pipe Sewer Line
- ASTM D-3034 — Specification for Type PSM Poly(Vinyl Chloride)(PVC) Sewer Pipe and Fittings
- ASTM F-679 — Specification for Poly(Vinyl Chloride)(PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings
- UNI-BELL-6 — Standards and Practices for Low-Pressure Air Testing of Installed Sewer Pipe

- UNI-BELL-9 Polyvinyl Chloride (PVC) Large Diameter Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter (Nominal Pipe Sizes 18-48 Inch)

Manufactured Products**.** Provide all testing apparatus including pumps, compressors, hoses, gauges and fittings, mandrels, and other equipment necessary to perform the required tests.

11.3.3.1. **Television Inspection.** Prior to placing lines into operation, completed sewer lines will be inspected by EPWU personnel with a television camera as a condition of final approval of the installation. Thoroughly clean and flush all lines and notify Engineer that the line is ready for television inspection. Correct any defects discovered in the pipe or construction methods at no additional cost. EPWU will bear cost of the initial TV inspection. Any additional inspection(s) required due to failure of the initial inspection is/are the Contractor's responsibility.

11.3.3.2. **Leakage Testing.** To ensure the integrity of the pipe and joints, test all sewer lines installed under these specifications for leakage using the guidelines established by ASTM C-828 and UNI-BELL B6, and the methods and procedures here forth described.

General. Provide all testing apparatus including pumps, compressors, hoses, gauges and fittings and other equipment necessary to perform the required tests. Acceptable equipment can be as manufactured by Cherne Industries Incorporated or approved equal.

Conduct tests in the presence of the Engineer unless otherwise approved. Notify Engineer 48 hours in advance of testing. Record test results on standard utility forms provided by EPWU.

Low pressure air testing may be conducted by Contractor or an approved independent testing firm with the full understanding to all persons conducting an Air Test that an Air Test may be dangerous if conducted improperly.

Test sewer lines after the "pipe zone" backfilling is completed and prior to construction of finished surfacing.

Where house laterals are included as integral part of the project, perform testing on the main and laterals after the risers or laterals have been completed and backfilled.

Thoroughly clean pipes prior to conducting leakage tests. Repair pipelines that exceed the allowable leakage rate and retest at no additional cost to the Department.

11.3.3.2.1. Exfiltration Air Testing. A Low Pressure Air Test is the standard method for testing sewer lines. Seal test pneumatic plugs above ground using a random pipe section pressurized to 5 psig. Plugs should remain intact without bracing or movement out of the section. Test procedure is as follows:

- Seal off each end of the section of pipe to be tested at a manhole connection. Securely brace test plugs.
- Introduce air slowly into the test section through the test plug until an internal pressure of 4.0 psi is reached. Allow internal air temperature to stabilize. Adjust the internal air pressure to 3.5 psi, disconnect the air supply and begin the test.
- Maintain the test pressure through section without losing more than 1.0 psi for a length of time as determined by Table 15. Sections losing more than 1.0 psi fail test and must be repaired and re-tested for acceptance. If the section being tested includes more than one size of pipe, calculate the test time for each size and add to determine the total test time for the section. .

Table 15.
Total Test Time

Nominal Pipe Size (d)	Time (t).
Inches	Minutes/100 ft.
4	0.3
6	0.7

8	1.2
10	1.5
12	1.8
15	2.1
18	2.4
21	3.0
24	3.6
30	4.8
36	6.0
42	7.3

11.3.3.2.2. Infiltration Test._Infiltration testing of sewer lines under groundwater is mandatory. Perform this test prior to initiating any service connections and after backfilling. At testing time, maintain the level of the groundwater over the entire section of the pipe or near its maximum level.

Measure the allowable infiltration for any portion of the sewer system by a weir or current meter placed in the appropriate manhole and do not exceed 50 gallons per inch of internal pipe diameter per mile per day, including manholes.

Provide suitable plugs or other facilities in order to measure the amount of infiltration. If infiltration is excessive, immediately proceed to locate the source of leakage. Once located, seal the source of leakage by grouting, cementing and rebuilding as required, or by approved methods.

11.3.3.2.3. Joint Testing.__At Engineer's direction, perform individual joint testing of pipe larger than 24 inches in diameter in accordance with ASTM C-1103 for special conditions not covered by other test methods.

11.3.3.2.4. Inspection of Sewer Manholes. Visually inspect manholes installed under groundwater for infiltration leakage through all joints and the manhole base. Repair all leaks or cracks with an approved hydro-cement grout.

11.3.3.3. **Deflection Testing.** As a condition for acceptance of the pipeline, perform a mandrel test (deflection test) to verify the roundness and proper installation of the flexible pipeline. Within 30 days, but not less than 7 days after the installation and backfilling of the flexible sewer line, including any service connections, in the presence of the ENGINEER, test deflection of the pipe with a mandrel (GO-NOGO device).

Mandrel Fabrication. Provide mandrels of high quality fabrication and precision as commercially available by Cherne Industries Incorporated, or approved equal. Mandrels require Engineer's approval and must be equipped with proven rings and meet the following requirements:

- Fabricate mandrel outside diameter (gauge dimension):

  Mandrel O.D. = Pipeline Base I.D. - (% deflection limit x Pipeline Base I.D.) in accordance with ASTM D-3034, F-679, or UNI-BELL-9

- Design mandrel open preventing debris buildup between channels of adjacent fins. Include a minimum of nine fin sets that are removable from the mandrel core. Assemble gauges of various diameters by substituting fin sets of appropriate dimension. Provide a length of the minimum radius portion of the mandrel not less than one-third of the nominal diameter of the pipe being tested.

Execution. Prior to testing, flush pipe and clean. Flow is not permitted in the pipeline throughout the duration of the deflection test. Manually pull mandrel through the pipeline with a suitable rope or cable that is connected to an eyebolt at one end of the gauge. Attach a similar rope or cable to the eyebolt at the opposite end of the mandrel and apply tension to it. This will ensure that the mandrel maintains its correct position during testing, while providing easy removal of the mandrel should it become lodged in an excessively deflected pipeline. Winching or other methods of forcing the mandrel through the pipeline is unacceptable.

For pipeline tested within 30 days of installation, do not exceed a deflection of 5% of the base inside pipe diameter as established by ASTM Standards D-3034 and F-679 listed in Table 16.

Table 16.
Deflection Gauge Dimensions: SDR35 OR RSC 160

Nominal Size	Average I.D.	Base I.D.	5% Deflection Gauge
6”	5.893	5.742	5.46
8”	7.891	7.665	7.28
10”	9.864	9.563	9.08
12”	11.737	11.361	10.79
15”	14.374	13.898	13.20
18”	17.564	16.976	16.13
21”	20.707	20.004	19.00
24”	23.296	22.480	21.36
27”	26.258	25.327	24.06

For pipeline tested beyond 30 days of installation, do not exceed a deflection of 7.5% of the nominal inside diameter or as established otherwise by the applicable governing body. Adjust mandrel gauge for 7.5% and seek Engineer approval. Make every effort to test for deflection prior to the 30 day expiration.

Maintain a permanent record of all testing with locations where excessive pipeline deflections occur and forward to Engineer after completion of testing on each line.

Replace all sections of pipe that deflect more than 5% (or 7.5%). Lay pipelines with acceptable ovality such that the larger diameter is situated in the vertical direction. All expenses for re-trenching, backfill, compaction, paving, and related work necessary due to failure to satisfy deflection test requirements are Contractor's responsibility.

11.4. **Sewer Line Bypassing and Draining.** This section specifies the requirements for temporary bypassing, draining, flushing and abandonment of sewer lines. Keep excavations free from water during construction. Do not damage property or create a public nuisance when disposing water. Provide hand pumping equipment and machinery in good working condition for emergencies and have workers available for its operation.

11.4.1. Requirements. Provide labor, equipment, materials and supervision to temporarily bypass flow around work during sewer construction and/or during work associated with sewer construction when necessary. Drain and flush all sewers to be abandoned with a minimum of twice the sewer's volumes of water. Drain all sewers lines to be abandoned. Coordinate all work with the Engineer.

11.4.2. Submittals. Twenty-one (21) calendar days prior to commencement of construction activities, the submit for review and approval drawings and complete design data showing methods and equipment proposed to utilize in sewer bypassing and draining. Include the following information:

- Drawings indicating the location of temporary sewer plugs and bypass discharge lines
- Schedule times for bypasses
- Capacities of pumps, prime movers, and standby equipment
- Design calculations proving adequacy of the system and selected equipment

11.4.3. Job Conditions. Existing sewer system map of the project area can be obtained from EPWU and are available for review at their office – 1154 Hawkins Blvd., El Paso, TX. 79925, during regular business hours.

Protection**.** Where bypassing or draining of the contents of a line is required, ensure that service for connecting sewer laterals are not disrupted. Discharge all flow into the nearest downstream manhole and only after consultation with EPWU operations to coordinate the discharge. Do not surcharge sewers or interfere with normal operation of related sewer facilities when bypassing and draining of the contents of a line. Discharging to the ground surface, receiving streams, storm drains, or discharging that result in groundwater contamination or potential health hazards is not permitted. In the event accidental discharging is caused by the Contractor's operations, EPWU is immediately entitled to employ others to stop the discharging without giving written notice to the Contractor.

Contractor is responsible for penalties imposed on the EPWU as a result of any discharge by the actions of Contractor's employees or subcontractors including legal fees and other expenses to the EPWU resulting directly or indirectly from the discharge.

Scheduling**.** Do not shut down the bypassing systems between shifts, on holidays or weekends, or during work stoppages without written permission from the ENGINEER. Submit a detailed outage plan and time schedule for operations when necessary to remove a sewer line or structure from service. Coordinate schedule with the Engineer and meet the restrictions and conditions specified in this section. In the detailed plan, describe the method for preventing accidental discharges, the length of time required to complete said operation, the necessary plan and equipment to be used in order to prevent accidental discharges. Observe the following restrictions:

- Systems or individual equipment items will be isolated, drained, decommissioned, de-energized, or depressurized in accordance with the detailed outage plan and schedule.
- Notify Engineer, in writing, at least one week in advance of the planned operation.

11.4.4. Sewer Line Draining**.** Flush sewers to be abandoned with two pipeline volumes of water and allow to drain fully prior to abandoning.

11.4.5. Sewer Bypassing**.** Accomplish sewer bypassing by pumping or diverting the upstream flow around the proposed work and as directed. Provide temporary pumps, conduits, and other equipment to bypass the sewer flow.

Furnish the necessary labor, equipment and material, and supervision to set up and operate the pumping and bypass system. Equip engines with mufflers and/or enclosed to keep the noise level within local ordinance requirements. Provide pumps and bypass lines of adequate capacity and size to handle the flows.

Unless otherwise directed, bypass flow around proposed work whenever the depth of flow, as measured at the inlet pipe to the upstream manhole adjacent to proposed work, exceeds the crown elevation of the pipe; or whenever the equipment operating in the sewer provides an obstruction that restricts flow and causes the depth of flow to exceed the crown elevation.

11.4.6. Standby Equipment**.** Maintain on site sufficient equipment and materials to ensure continuous and successful operation of the bypass and dewatering systems. Maintain standby pumps fueled and operational at all times. Maintain on site a sufficient number of valves, tees, elbows, connections, tools, sewer plugs, piping and other parts or system hardware to ensure immediate repair or modification of any part of the system as necessary.

11.4.7. Damages**.** Repair, without additional cost to the Department, any damage that may result from negligence, inadequate or improper installation, maintenance, and operation of bypassing and draining equipment, including mechanical or electrical failures.

11.5. **Flowable Backfill.** When indicated on the plans, backfill trenches to the elevations shown with stabilized backfill meeting requirements of Item 401.

11.6. **Cutting and Restoring Pavement.** Where sewers must be installed in streets or other paved areas, the work includes saw cutting of the pavement and base to neat lines and prompt replacement of these materials after sewer excavation and backfill are completed. The replacement materials, as to type and thickness, are shown on the plans. Any work done or damage to base and/or pavement outside the limits shown on the plans will not be measured for payment and must be restored at no additional cost to the Department.

11.7. **Measurement.**

11.7.1. **Sanitary Sewer Mains (PVC).** Longitudinal measurement of sanitary sewers will be made along the centerline of the sewer by the linear foot of the various sizes of sewers in place, in accordance with these specifications, complete and approved. The lengths of sewer mains will be measured center of manholes where the installation involves connection of the sewer into a manhole at each end of the line being

measured. Where the installation involves a connection to an existing sewer line, the measurement will be made from the end of the existing sewer line to the center of the manhole on the work being measured.

11.7.2. **Sanitary Sewer Mains (DIP).** Longitudinal measurement of sanitary sewers will be made along the centerline of the sewer by the linear foot of the various sizes of sewers in place, in accordance with these specifications, complete and approved. The lengths of sewer mains will be measured center of manholes where the installation involves connection of the sewer into a manhole at each end of the line being measured. Where the installation involves a connection to an existing sewer line, the measurement will be made from the end of the existing sewer line to the center of the manhole on the work being measured.

11.7.3. **Sanitary Sewer Manhole.** All sanitary sewer manholes satisfactorily completed in accordance with the plans and specifications will be measured by each of the various manhole types based on a standard 6 foot depth.

11.7.4. **Sanitary Sewer Manhole (Extra Depth).** This measurement will be measured by the linear foot and is the distance from the top of the frame to the invert of the manhole minus 6 feet.

11.7.5. **Adjusting Manhole.** Existing manholes remaining in service and required to be adjusted to proposed grade will be measured by each manhole adjusted.

11.7.6. **Remove Existing Manholes.** Existing manhole structures to be completely abandoned and removed as identified in the plans will be measured for each manhole removed.

11.7.7. **Sewer Service Re-Connections (Service Laterals).** Sewer Service Re-Connections (Service Laterals) will be measured by each sewer service re-connection of a particular size installed and accepted.

11.7.8. **New Sewer Service (Service Laterals).** New Sewer Service (Service Laterals) will be measured by each new sewer service connection of a particular size installed and accepted.

11.7.9. **Abandon and Fill Existing Sanitary Sewer Pipe.** This Item will be measured by the linear foot of existing sanitary sewer main that is abandoned in place.

11.7.10. **Remove Existing Sanitary Sewer Pipe.** This Item will be measured by the linear foot of existing sanitary sewer main pipe that is removed as identified in the plans.

11.7.11. **Flowable Backfill.** This Item will be measured by cubic yard as shown under Item 401, “Flowable Backfill”.

11.7.12. **Cutting and Restoring Pavement.** This will be measured by the square yard as shown under Item 400, “Excavation and Backfill for Structures”.

11.8. **Payment.**

11.8.1. **Sanitary Sewer Mains (PVC).** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" herein will be paid for at the unit price bid for "Sanitary Sewer Pipe (PVC)" of the type and size specified, complete in place.

This price is full compensation for furnishing all required materials and labor; potholing; excavation, including hand-digging, if needed, embedment and backfill; compaction and compaction testing for utilities, all fittings; removal and disposal of existing manholes, except where indicated as being covered under a specific bid item; pipe connections to existing manholes; relocation or replacement of existing water and sewer lines required for placement of new sewer line; pipe concrete caps; plugs (temporary and/or permanent); air/vacuum release valves; blow-off valve assemblies; testing; dewatering of groundwater, if needed; bypassing and any work related to the bypass including traffic control related to bypasses; removal and replacement of storm drains; removal and replacement of drainage structures; placing and joining of pipes and fittings; traffic control required for sewer work outside Project limits; coordination with utility companies, EPWU, and Engineer; locating and protecting of existing utilities; and for all other items of material, labor,

equipment, tools and incidentals necessary to complete the work in accordance with the plans and specifications

11.8.2. **Sanitary Sewer Mains (DIP).** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" herein will be paid for at the unit price bid for "Sanitary Sewer Pipe (DIP)" of the size specified, complete in place.

This price is full compensation for furnishing all required materials and labor; potholing; excavation, including hand-digging, if needed, embedment and backfill; compaction and compaction testing for utilities, all fittings; removal and disposal of existing manholes, except where indicated as being covered under a specific bid item; pipe connections to existing manholes; relocation or replacement of existing water and sewer lines required for placement of new sewer line; pipe concrete caps; plugs (temporary and/or permanent); air/vacuum release valves; blow-off valve assemblies; polyethylene wrap; testing; dewatering of groundwater, if needed; bypassing and any work related to the bypass including traffic control related to bypasses; removal and replacement of storm drains; removal and replacement of drainage structures; placing and joining of pipes and fittings; traffic control required for sewer work outside Project limits; coordination with utility companies, EPWU, and ENGINEER; locating and protecting of existing utilities; and for all other items of material, labor, equipment, tools and incidentals necessary to complete the work in accordance with the plans and specifications.

11.8.3. **Sanitary Sewer Manhole.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" herein will be paid for at the unit price bid for "Sanitary Sewer Manhole (6 foot Depth)" of the size and type specified or indicated on the plans". This price is full compensation for furnishing all required materials, labor, gaskets, rings, covers, concrete collars, pipe penetrations, drop connections, grout, groundwater dewatering, testing, concrete, excavation and backfill, grouting of inverts, coating interior and exterior where required, adjustment of new manhole to both temporary and finished grades, and tools and incidentals necessary to complete the work in accordance with the plans and specifications.

11.8.4. **Sanitary Sewer Manhole (Extra Depth).** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" herein will be paid for at the unit price bid for "Sanitary Sewer Manhole (Extra Depth). This price is full compensation for furnishing all required materials labor, equipment and performing all operations necessary to construct the depth of sanitary sewer manhole in excess of 6 feet; including but not limited to providing an external protective bituminous coating, such as coal-tar epoxy.

11.8.5. **Adjusting Manholes.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" herein will be paid for at the unit price bid for "Adjusting Manhole". This price is full compensation for furnishing all required materials and labor, plugs (temporary and permanent), excavation and backfill, cement stabilized backfill, groundwater dewatering, removal, disposal of materials, and all other incidentals necessary to necessary to complete the work in accordance with the plans and specifications.

11.8.6. **Remove Existing Manholes.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" herein will paid for the at the unit price bid for "Remove Existing Manhole". This payment will be for all labor, materials, plugs (temporary and permanent), excavation and backfill, cement stabilized backfill, groundwater dewatering, removal, disposal of materials, and all other incidentals necessary to complete the work in accordance with the plans and specifications.

11.8.7. **Sewer Service Re-Connections (Service Laterals).** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" herein will paid for the at the unit price bid for "Sewer Service Re-Connection" of the particular size installed. This price is full compensation for furnishing all required materials ,labor and materials for the pipe; excavation and backfill; fittings; cutting; bypassing; coordination; testing; and plugging/capping of abandoned utilities; draining of lines; vertical and horizontal adjustments; connections to existing sewers; and all other incidentals necessary to complete the work in accordance with the plans and specifications.

11.8.8. **New Sewer Service (Service Laterals).** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" herein will be paid at the unit price bid for each "New Sewer Service Lateral" of the particular size installed. This price is full compensation for furnishing all required materials and labor; excavation and backfill; fittings; cutting; bypassing; coordination; testing; and plugging/capping of abandoned utilities; draining of lines; vertical and horizontal adjustments; connections to existing sewers; and all other incidentals necessary to complete the work in accordance with the plans and specifications.

11.8.9. **Abandon and Fill Existing Sanitary Sewer Pipe**. The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Abandon and Fill Existing Sanitary Sewer Pipe" of the size specified. This price is full compensation for furnishing all required materials, labor, and equipment, including but not limited to the following items: coordination, traffic control, potholing, excavation, complete flushing and draining (dewatering) of pipe, flowable backfill, cutting, capping/plugging, complete filling with approved flowable backfill of sanitary sewer mains to be abandoned, proper abandonment of all manhole structures with flowable backfill as indicated on the plans, and all other items for the project not indicated as being covered under the other specific bid items.

11.8.10. **Remove Existing Sanitary Sewer Pipe.** The work performed and the materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Remove Existing Sanitary Sewer Pipe" of the size specified. This price is full compensation for furnishing all required materials, labor, and equipment, including but not limited to the following items: coordination, traffic control, potholing, excavation and backfill, complete draining (dewatering) of pipe, groundwater dewatering, flowable backfill, cutting, capping, removal of pipe, disposal of materials, and all other items for the project not indicated as being covered under the other specific bid items.

11.8.11. **Flowable Backfill.** Flowable Backfill will be paid for in accordance with Item 401, "Flowable Backfill".

11.8.12. **Cutting and Restoring Pavement.** Cutting and Restoring Pavement will be paid for in accordance with Item 400, "Excavation and Backfill for Structures".

12. CASINGS

12.1. **Description.** Furnish all labor, materials, equipment and incidentals required to construct steel casings and install approved carrier pipes within the casing of various sizes including all necessary field welding, carrier pipes and accessories as shown on the plans and as specified herein.

12.2. **Materials.** Furnish new, unused steel casing pipe suitable for the purpose intended with a minimum yield strength of 36,000 psi. Provide casing that meets ASTM A-53 or approved equal requirements. Coat and line pipe with coal tar epoxy (15 mils min.) in accordance with AWWA C-210. Weld pipe joints in accordance with AWWA C-206. After pipe is welded, repair coating and lining. Unless specified otherwise, provide the steel casing pipe with a minimum wall thickness of 5/16 inches. Provide required vent piping, casing insulators (casing insulated spacers), end seals, pipe supports and skids, and other incidental features required to complete work described in this section and as shown on the plans.

Construct tunnel liner of cold-formed steel plates of the sizes, thickness, and dimensions required, as indicated on the plans, and as manufactured by Commercial Shearing, Contech, or equal.

Provide reinforced concrete pipe for casing where specified or shown that is straight-wall RCP pipe casing conforming to ASTM C-76 Class IV of the size and length specified.

Provide welded half coupling grout holes. Provide tapped holes with a pipe plug screwed in place.

Provide bolts and nuts with liner plates that are not less than 1/2 inch diameter and conform to ASTM A-307 Grade A.

12.2.1. Submittals. Submit complete working drawings that show details of the proposed method of construction and the sequence of operations to be performed during construction. The plan will show the method of jacking, boring, or tunneling, muck removal and disposal, type and method of installation of the primary casing or tunnel liner, access pit size and construction shoring and bracing, and dewatering methods proposed. Drawings should be sufficiently detailed to allow the ENGINEER to judge whether or not proposed materials and procedures will meet the contract requirements.

Include the design criteria used and a certification that the structural design of the casing or tunnel liner meets these design criteria and that the material meets the required ASTM Standards. The tunnel liner must be capable of carrying H-20 vehicle load distributions in accordance with AASHTO as well as the anticipated dead loads and include an appropriate design factor of safety.

Include the layout and design of the access shafts. Provide a certification that the structural design of the shoring and bracing meets the design criteria as submitted. All structural designs must be sealed by a Professional Engineer licensed in the State of Texas and qualified to perform such work.

12.2.2. Standards. Apply all OSHA regulations and all requirements of the specific private and governmental agencies under whose facilities the casings and pipe area to be installed.

Protect the facilities under which the casings and pipe are installed, provide protection at the excavations, and carry out the trench safety procedures in accordance with all required OSHA regulations.

Referenced within this section is the "Standard Specification for Construction of Highways, Streets and Bridges," most current edition of the Texas Department of Transportation (TxDOT).

12.3. **Construction.**

12.3.1. General. Install casings at the locations and to the lines and grades indicated on the plans, of the sizes indicated, using either jacking, boring, tunneling, or approved open-cut methods.

Provide adequate lights, ventilation, signal systems, fire extinguisher, safety equipment, and other equipment required and maintain such equipment in good repair.

Determining soil conditions at the various locations where casings are to be installed, and make such other investigations to obtain that information as deemed necessary subsidiary to this Item.

The methods of construction, whether by tunnel boring machine or by hand digging, is Contractor's option subject to the approval of the governing agencies and Engineer.

Execute work of excavating, lining, grouting and construction of the casing or tunnel so that ground settlement is minimized.

Where casings are installed by open-cut method, all requirements for trenching and backfilling as described in these specifications apply, except as otherwise required by the plans or supplemental specifications.

Locate access shafts or pits at the beginning and end of each casing or tunnel segment to be constructed.

Unless superseded by the requirements of other governing authorities under whose facilities or right-of-way the casing is to be installed, install the face of any shaft at least 20 feet from existing adjacent roadways or structures. Ensure that the size of shafts or pits provide adequate room to meet operational requirements for tunnel construction.

12.3.2. Installation of Casings. Install casings using either jacking, boring, or tunneling methods. Provide equipment of such size and capacity as to allow the placement of the casings to proceed in a safe and expeditious manner.

Install casing pipe from the end which will create a minimum of access and utility relocation problems. Prior to casing installation, pothole utilities and all other permanent structures within the project area in order to identify potential conflicts. In the event a conflict exists, notify Engineer before proceeding with casing installation so a solution can be formulated.

Permissible lateral or vertical variation in the final position of the pipe casing from the established line and grade established is only to the extent of 1 inch in 10 feet, provided that such variation is regular and only in the direction that will not detrimentally affect the function of the carrier pipe. Remove or abandon casing pipe found to be considerably off-grade or alignment and re-install at no additional cost.

Repair any detectable settlement of the roadway overlying the casing or tunnel immediately. Slight settlement of the roadway, should it occur, will result in cessation of casing/tunneling operations, posting of appropriate highway safety signs, and placement of an asphaltic hot-mix overlay to return the roadway to original grade. For over-cutting in excess of 1 inch, pressure grout the entire length of the bore with 7 sack cement per cubic yard of soil mixture. Where applicable, provide hot-mix in accordance with the requirements of TxDOT Specifications. Prime the surface to receive hot-mix as directed. Submit an emergency road repair procedure plan to the Engineer, prior to beginning any casing/tunneling operations. Labor and equipment necessary for this work is the Contractor's responsibility and will be provided at no additional cost.

When installing casing by boring, install casing, excavate and remove material within the casing simultaneously. Ensure the completed casing is free of dents, bends, weld protrusions, or other obstructions to allow the smooth sliding of the carrier pipe through the casing.

12.3.3. Installation by Tunneling**.** Excavate tunnel of sufficient size to permit efficient excavation operations, to provide sufficient working space for placing the tunnel lining, and to allow for construction of the carrier pipe as shown on the plans and indicated on the specifications. Determine adequate tunnel size and section to meet these requirements. Dimensions shown on the plans represent the acceptable approximate dimensions and do not necessarily represent the size and/or section suitable for the construction methods or operational procedures as may be proposed and/or conducted by the Contractor.

Use structural steel plates assembled from the inside of the tunnel and field bolted to provide a full round casing pipe when installing casing pipe by tunneling method. Hold tunnel excavation to the minimum possible diameter required for installation of liner plate.

Minimize excavation limits as required to prevent caving. Pressure grout the annular space between the tunnel liner and the tunnel bank by providing 2 inch diameter plugs in the liner plates at spacing of 5'-0" or as directed. Remove any excess groundwater encountered in a manner to allow the tunneling operation to proceed according to schedule.

12.3.4. Installation of Carrier Pipe in Casing Pipe or Tunnel Liner**.** Install carrier pipe in the casing in accordance with the recommendations of the pipe manufacturer. After the casing or tunnel liner has been installed and approved, push or pull the carrier pipe through the casing by exerting pressure on the barrel of the pipe in such a manner that the pipe joints are always in compression.

Use insulated spacers when specified for providing cathodic protection consisting of pre-manufactured steel bands with plastic lining and plastic runners. Casing spacers must fit snug over the carrier pipe. Position the carrier pipe approximately in the center of the casing pipe, to provide adequate clearance between the carrier pipe bell and the casing pipe. Use casing spacers that are Model C12G-2, coated for the ultimate in strength, toughness and corrosion resistance, or Model A12G-2, painted for unusually heavy pipe, for long casings or whenever maximum strength and toughness are required for carrier pipes 4" - 56" in diameter and as directed. Casing spacers can be as manufactured by Pipeline Seal and Insulator, Inc. (PSI) or approved equal.

If tunnel liner is used, grout the bottom 120 degrees of the liner to the top of the tunnel liner ribs to aid in the installation of the carrier pipe.

Seal ends of pipe after installation of the carrier pipe inside the casing pipe or tunnel liner to prevent water or other material from entering the casing or liner and causing corrosion by one of the following methods:

- Brick and Mortar Method
- Bulkhead and Grout Method
- Synthetic rubber end seal - type PSI, Inc. Standard Pull-On (Model C), or approved equal, appropriate for the size and type of carrier pipe and casing.

Include a precautionary outlet and bonnet box at each end of the casing as shown on the plans when using steel casings.

12.3.5. Grouting. Use ordinary cement-sand grout, as described in Article 5, unless otherwise specified or directed. Fill all excavation outside the casing or tunnel liner with pressure-applied grout or other approved fill unless otherwise directed.

Exercise care in grouting operations to prevent damage to adjacent utilities or other properties. Ensure that pressure used in grouting is not great enough to distort or imperil any portion of the work.

Completely fill with grout all voids outside the limits of the casing or tunnel excavation created by caving or collapse of earth cover over the excavation, or by other cause. All grouting to eliminate voids outside the casing or tunnel limits is subsidiary to this Item.

When hand-tunneling methods are used, place grout behind the tunnel liner at the end of each day or at every 10 feet of tunnel installed whichever spacing is acceptable.

Treat the annular space between the casing and carrier pipe by one of the following methods as directed or specified. Where applicable, fill the annular space according to the regulations specified by the governing agency for the area where the casing is to be installed.

- Leave annular space open for cathodically protected systems where both casing and carrier pipes are metallic material.
- Fill annular space with pneumatically placed sand as the standard method for pipes in all installations other than groundwater.
- Fill annular space with grout. Do not damage or distort pipe using pressure to install grout. Submit method for approval prior to starting work. This method is mandatory for installations in groundwater, optional on all other dry installations.

12.4. **Measurement.** Casings will be measured by the linear foot complete in place. Casing for temporary water and/or sanitary sewer by-pass lines will not be measured for payment and are incidental to pertinent pay items.

12.5. **Payment**. The work performed and the materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price bid for “Casing” of the type, size and installation method specified. This price is full compensation for coordination; excavation; disposal of excess material; grouting; backfilling; compaction; compaction testing for utilities; furnishing and installing the approved carrier pipe, precautionary outlet with bonnet box, and accessories as per specifications and standard details by means of open cut (where indicated), and bore and jacking methods (where indicated), welding, furnishing and installing steel casing insulators, and all appurtenances described herein to include, but not limited to the following items: locating, protecting, supporting, relocating if required, and repairing damage to any utilities or structures encountered in the process of the work, dewatering and disposal for water where required, paving cut, removal and repair as needed, traffic control plan, excavation for bore pits, and all other items of the project not indicated as being covered under the other specific bid items shown on the Proposal. Such payment is complete compensation for the complete performance of the work in accordance with the plans and the provisions of these specifications.

Special Specification 7251
SUBSURFACE UTILITY LOCATE

1. DESCRIPTION

Perform Quality Level A to locate a subsurface utility facility as shown on the plans or as directed. Locate means to obtain precise horizontal and vertical position, material type, condition, size, and other data that may be obtainable about the utility facility and its surrounding environment through exposure by non-destructive excavation techniques that ensures the integrity of the utility facility. Subsurface Utility Locate Quality Level A are inclusive of Quality Levels B, C, and D.

Quality Levels are defined by ASCE Standard 38-02 titled *Standard Guideline for the Collection and Depiction of Existing Utility Data.*

2. MATERIALS

Use materials that meet the requirements of the following Items.

- Item 132 "Embankment"
- Item 334 "Hot-Mix Cold-Laid Asphalt Concrete Pavement"
- Item 340 "Dense-Graded Hot-Mix Asphalt (Small Quantity)"
- Item 400 "Excavation and Backfill for Structures"
- Item 421 "Hydraulic Cement Concrete"
- Item 700 "Pothole Repair."

3. CONSTRUCTION

3.1. **Surface Locate**. Contact utility owner to verify location of the utility facility before beginning subsurface location.

3.2. **Subsurface Locate**. Provide the locate method and equipment to the Engineer before work begins. Excavate using a method that is nondestructive to the utility facility. Expose and verify, by survey, the precise location of the utility facility.

3.3. **Surface Marking**. For locates within an existing roadbed carrying traffic, furnish and install an aboveground marker directly above centerline of the utility facility. For locates outside an existing roadbed, furnish and install a 4-in. pipe directly above centerline of the utility facility. The pipe should be capped and extend from the top of the utility facility to 4-in. above the surface.

3.4. **Removing Pavement or Concrete.** Remove material as necessary to locate the utility facility. Ensure all loose materials are removed and only sound material is left in place. Increase the cut and restore area to remove loose materials.

3.5. **Backfill.**

3.5.1. **Outside Roadbed.** Backfill minor excavations outside the edges of a proposed roadbed with Type B Embankment in accordance with Item 132, "Embankment." Place 4 in. of topsoil.

3.5.2. **Within Roadbed.** Backfill excavations within a proposed or existing roadbed with Cement-Stabilized Backfill in accordance with Item 400, "Excavation and Backfill for Structures." Replace pavement in accordance with Section 3.6, "Cutting and Restoring Within Roadbed."

3.6. **Cutting and Restoring Within Roadbed.** Saw cut all edges for areas larger than 3 sq. ft.

3.6.1. **Flexible Pavement.** Perform work in accordance with Item 700, "Pothole Repair." Hot-Mix Asphalt (HMA) must be placed at a depth equal to the existing depth of Pavement Structure. Place Hot-Mix Cold-Laid Asphalt Type C for areas equal to or less than 3 sq. ft. Use HMA for areas greater than 3 sq. ft. HMA will be Type B with 2 in. Type D surface.

3.6.2. **Concrete Pavement.** Concrete must be placed at a depth equal to the existing depth of concrete pavement. Repair in accordance with Item 361, "Repair of Concrete Pavement." Repair using half-depth for areas equal to or less than 10 sq. ft. Repair using full-depth for areas greater than 10 sq. ft.

3.6.3. **Concrete**. Concrete must be placed at a depth equal to the existing depth of concrete. Place class of concrete in accordance with Item 421, "Hydraulic Cement Concrete." Areas larger than 3 sq. ft. will require reinforcing bars equal to the adjacent concrete reinforcement with reinforcement doweled 12 in. into existing concrete.

3.7. **Locate Report**. Provide a report of the locate data to the Engineer. Provide survey data to the Engineer in Microsoft Excel or approved alternative. The data should include utility owner name, utility service type, conduit size, conduit type, number of conduits, station, offset, and elevation. The data should be provided for each utility conduit if multiple conduits for the same utility owner are at the locate site. All conduits for the same utility owner at the locate site should be located with data provided in the same report.

3.8. **Utility Damage**. If any damage results from an act or omission on the part of or on behalf of the Contractor, take corrective action to restore the damaged property to a condition similar or equal to that existing before the damage was done. Be responsible for any damage to the utility facility during the locating process. If damage occurs, the Engineer will stop work and notify the appropriate utility facility owner, the State, and appropriate regulatory agencies. The regulatory agencies include but are not limited to the Railroad Commission of Texas and the Texas Commission on Environmental Quality. The Engineer will not resume work until the utility facility owner has determined the corrective action to be taken. The Engineer will be liable for all costs involved in the repair or replacement of the utility facility.

4. MEASUREMENT

This item will be measured by each utility facility locate for each utility owner. Each conduit for the same utility owner at the locate site will not be paid individually. Different utility owners in the same location should be paid separately.

5. 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 the various designations of "Subsurface Utility Locate."

This price is full compensation for utility coordination, surface location, excavation, embankment, removal of concrete and pavement, backfill material, topsoil, disposal of material, saw cutting, cutting and restoring pavement and concrete, survey, traffic control, barricades, equipment, labor, tools, and incidentals.

Special Provision to Item 000
Important Notice to Contractors

The Contractor's attention is directed to the fact that there may be some outstanding utility adjustments as of June 2021 required for the construction of this project. The County anticipates that these utility adjustments will be completed as shown.

The Contractor is invited to review the outstanding utility adjustments with the Engineer assigned to this project and listed in the "Notice to Contractors." An extension of work time may be granted, as necessary, for delays caused by utility interference with this work. It is specifically understood, however, that if the contractor is delayed by virtue of the adjustment of any utilities, that this delay will not be considered as a basis for a claim by the contractor. Any work done by the contractor before utility relocations are complete must not interfere with utility relocation work.

The following utilities are to be adjusted by their owners and are to be completed as shown. The approximate location is based on the project centerline/baseline stationing.

OWNER	APPROX. LOCATION	ESTIMATED DATE OF RELOCATION
PEC	From Station 97+13 12' RT. To Station 105+91 85' RT.	9/30/2021
Frontier	From Station 21+81 38' LT. To Station 23+70 38' LT.	9/30/2021
Frontier	From Station 97+13 12' RT. To Station 105+66 66' RT.	9/30/2021
Charter	From Station 21+81 38' LT. To Station 23+70 38' LT.	8/31/2021
Charter	From Station 97+13 12' RT. To Station 105+66 66' RT.	8/31/2021

Special Provision to Item 132
Embankment

Item 132, "Embankment" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 132.3.4., "Compaction Methods." The last sentence is replaced by the following.

Compact embankments in accordance with Section 132.3.4.1., "Ordinary Compaction," or Section 132.3.4.2., "Density Control," as shown on the plans. The Contractor may use Section 132.3.4.3., "Density Control by Computer-Generated (CG) Curve," as an option for density control.

Article 132.3.4., "Compaction Methods," is supplemented by the following.

3.4.3. **Density Control by Computer-Generated (CG) Curve.** At the Contractor's discretion, CG curves may be used for density control.

Compact each layer to the required density using equipment complying with Item 210, "Rolling." Determine the maximum lift thickness based on the ability of the compacting operation and equipment to meet the required density. Do not exceed layer thickness of 12 in. loose or 10 in. compacted material, unless otherwise approved. Maintain a level layer with consistent thickness to ensure uniform compaction.

When using this method for each source and type of material, or when directed, sample and conduct testing according to the input parameters specified in Table 3 and provide CG field moisture-density curves based on each soil-compactor-lift thickness combination and CG Tex-114-E moisture-density curves based on each lift of soil. The CG field dry density (D_{fcg}) must be greater than or equal to the CG Tex-114-E maximum dry density (D_{acg}). The Engineer may obtain independent soil samples for supplemental Tex-114-E lab tests to check a supplemental maximum dry density (D_a) and optimum moisture content (W_{opt}) for reference when new CG curves are submitted. Provide access to the computer program used to generate the curve, when directed.

Table 3
Computer-Generated Lab and Field Compaction Curve Input Criteria

Input Variables	Test Method
Liquid Limit, %	Tex-104-E
Plasticity Index (PI), %	Tex-106-E
Soil gradation	Tex-110-E Tex-111-E
Soil classification	Tex-112-E
Compaction roller brand, type, and model	N/A
Loose lift thickness, in.	N/A
Soil specific gravity	Use 2.65 for soil type SC. Use 2.68 for soil type CL. Use 2.69 for soil type CH.

Provide a compaction control report showing all input and output parameters and CG compaction curves, including:

- CG Tex-114-E laboratory maximum dry density (D_{acg}),
- CG Tex-114-E laboratory optimum moisture content (W_{optcg}),
- CG field maximum dry density (D_{fcg}),

- CG field optimum moisture content (Wf_{optcg}),
- graph of CG laboratory and field compaction curves and the "Zero Air Voids Line," and
- minimum number of roller passes to achieve the required density and moisture content.

Meet the requirements for field maximum dry density (D_{fcg}) and field optimum moisture content (Wf_{optcg}) specified in Table 4, unless otherwise shown on the plans. Use only the specific roller and soil properties utilized in lift construction as input parameters to generate the CG field curve used to meet moisture-density requirements in construction.

Table 4
Computer-Generated Lab and Field Compaction Curve Input Criteria

Description	Density	Moisture Content
	Tex-115-E	
PI ≤ 15	≥ 98% D_{fcg}	≥ Wf_{optcg}
15 < PI ≤ 35	≥ 98% D_{fcg} and ≤ 102% D_{fcg}	≥ Wf_{optcg}
PI > 35	≥ 95% D_{acg} and ≤ 100% D_{acg}	≥ Wf_{optcg}

Each layer is subject to testing by the Engineer for density and moisture content. During compaction, the moisture content of the soil should be above CG optimum moisture content but should not exceed the value shown on the moisture-density curve, above optimum, required to achieve 98% dry density.

When the CG field maximum dry density (D_{fcg}) is not achieved, perform the following steps in order.

- Verify that construction controls including lift soil properties, minimum number and uniformity of compactor passes, lift thickness, and moisture content are correct.
- If needed, rework the lift with the corrected controls using the original CG curve.
- Generate a new CG field compaction curve based on actual in-place soil properties and rework the lift.
- Generate a non-CG Tex-114-E moisture-density reference standard and rework the material using this reference standard.

When required, remove small areas of the layer to allow for density tests. Replace the removed material and recompact at no additional expense to the Department. Proof-roll in accordance with Item 216, "Proof Rolling," when shown on the plans or as directed. Correct soft spots as directed.

Article 132.3.5., "Maintenance of Moisture and Reworking." The first sentence is replaced by the following.

Maintain the density and moisture content once all requirements in Table 2 or 4 are met.

Special Provision to Item 247
Flexible Base

Item 247, "Flexible Base" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 2.4., "Certification." This section is added.

Personnel certified by the Department-approved soils and base certification program must conduct all sampling, field testing, and laboratory testing required by the following:

- Section 2.1, "Aggregate,"
- Section 2.1.3.2, "Recycled Material (Including Crushed Concrete) Requirements,"
- Section 4.3, "Compaction," for measuring flexible base depth, and
- Section 4.3.2, "Density Control," for determining the roadway density and moisture content.

Supply the Engineer with a list of certified personnel and copies of their current certificates before laboratory and field testing is performed and when personnel changes are made. At any time during the project, the Engineer may perform production tests as deemed necessary in accordance with Item 5, "Control of the Work."

Section 2.5., "Reporting and Responsibilities." This section is added.

Use Department-provided templates to record and calculate all test data. Obtain the current version of the templates at http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/site-manager.html or from the Engineer. The Engineer and the Contractor will provide any available test results to the other party when requested. Record and electronically submit all test results and pertinent information on Department-provided templates.

Section 2.6., "Sampling." This section is added.

The Engineer will sample flexible base from stockpiles located at the production site or at the project location in accordance with Tex-400-A, Section 5.3. The Engineer will label the sample containers as "Engineer," "Contractor" or "Supplier," and "CST/M&P." Witness the sampling and take immediate possession of the sample containers labeled "Contractor" or "Supplier." The Engineer will maintain custody of the samples labeled "CST/M&P" until testing and reporting is completed.

Section 2.7., "Referee Testing." This section is added.

CST/M&P is the referee laboratory. The Contractor may request referee testing when the Engineer's test results fail to meet any of the material requirements listed in Table 1. Make the request via email within 5 working days after receiving test results from the Engineer. Submit test reports signed and sealed by a licensed professional engineer from a commercial laboratory listed on the Department's Material Producer List (MPL) of laboratories approved to perform compaction and triaxial compression testing located at http://ftp.dot.state.tx.us/pub/txdot-info/cmd/mpl/complabs.pdf. Submit completed test reports electronically on Department-provided templates in their original format. The referee laboratory will report test results to the Engineer within the allowable number of working days listed in Table 2 from the time the referee laboratory receives the samples. It is at the discretion of the Engineer or the referee laboratory to deny a referee request upon review of the test reports provided by the Contractor.

Table 2
Number of Allowable Working Days to Report Referee Test Results

Material Property	Test Method	Working Days
Gradation	Tex-110-E, Part I	5
Liquid Limit (Multi-Point Method)	Tex-104-E, Part I	5
Plasticity Index	Tex-106-E	5
Wet Ball Mill Value	Tex-116-E, Parts I and II	5
Wet Ball Mill, % Increase passing #40 sieve		
Compressive Strength[1]	Tex-117-E, Part II	6
Compressive Strength[2]	Tex-117-E	12

1. Moisture-Density curve provided by the District
2. Moisture-Density curve determined by the referee laboratory

Section 4.6., "Ride Quality." This section is voided and replaced by the following.

Measurement of ride quality only applies to the final travel lanes that receive a 1- or 2-course surface treatment for the final riding surface, unless otherwise shown on the plans. Measure the ride quality of the base course either before or after the application of the prime coat, as directed, and before placement of the surface treatment. Use a certified profiler operator from the Department's MPL. When requested, furnish the Engineer documentation for the person certified to operate the profiler.

Provide all profile data to the Engineer in electronic data files within 3 days of measuring the ride quality using the format specified in Tex-1001-S. The Engineer will use Department software to evaluate longitudinal profiles to determine areas requiring corrective action. Correct 0.1-mi.sections for each wheel path having an average international roughness index (IRI) value greater than 100 in. per mile to an IRI value of 100 in. per mile or less, unless otherwise shown on the plans.

Re-profile and correct sections that fail to maintain ride quality, as directed. Correct re-profiled sections until specification requirements are met, as approved. Perform this work at no additional expense to the Department.

Special Provision to Item 300
Asphalts, Oils, and Emulsions

Item 300, "Asphalts, Oils, and Emulsions," of the Standard Specifications, is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 300.2., "Materials." The first paragraph is voided and replaced by the following.

Provide asphalt materials that meet the stated requirements when tested in accordance with the referenced Department, AASHTO, and ASTM test methods. Use asphalt containing recycled materials only if the recycled components meet the requirements of Article 6.9, "Recycled Materials." Provide asphalt materials that the Department has preapproved for use in accordance with Tex-545-C, "Asphalt Binder Quality Program."

Inform the Department of all additives or modifiers included in the asphalt binder as part of the facility quality plan, as required by Tex-545-C, "Asphalt Binder Quality Program," and provide that information to Department personnel. The Department reserves the right to prohibit the use of any asphalt additive or modifier.

Limit the use of polyphosphoric acid to no more than 0.5% by weight of the asphalt binder.

The use of re-refined engine oil bottoms is prohibited.

Section 300.2.2., "Polymer-Modified Asphalt Cement," **Table 3 is supplemented by the following:**

Table 3A
Polymer-Modified Asphalt Cement Non-Tracking Tack Coat – Hot Applied

Property	Test Procedure	NT-HA	
		Min	Max
Viscosity, 275°F, cP	T 316	-	4000
Penetration, 77ºF, 100 g, 5 sec.	T 49	-	25
Softening Point, ºF	T 53	170	-
Dynamic shear, G*/sin δ, 82°C, 10 rad/s, kPa	T 315	1.0	-
Flash Point, C.O.C., ºF	T 48	425	-

Section 300.2.4., "Emulsified Asphalt," Table 10 is voided and replaced by the following:

Table 10
Polymer-Modified Cationic Emulsified Asphalt

Property	Test Procedure	Type-Grade													
		Rapid-Setting								Medium-Setting				Slow-Setting	
		CRS-2P		CHFRS-2P		CRS-2TR		CMS-1P[3]		CMS-2P[3]		CSS-1P	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Viscosity, Saybolt Furol	T 72												
77°F, sec.		–	–	–	–	--	--	10	100	–	–	20	100
122°F, sec.		150	400	100	400	150	500	–	–	50	400	–	–
Sieve test, %	T 59	–	0.1	–	0.1	--	0.1	–	0.1	–	0.1	–	0.1
Demulsibility, 35 ml of 0.8% sodium dioctyl sulfosuccinate, %	T 59	70	–	60	–	40	--	–	–	–	–	–	–
Storage stability, 1 day, %	T 59	–	1	–	1	--	1	–	1	–	1	–	1
Breaking index, g	Tex-542-C	–	–	–	–	--	--	–	–	–	–	–	–
Particle charge	T 59	Positive		Positive		Positive		Positive		Positive		Positive	
Distillation test[1]:	T 59												
Residue by distillation, % by weight		65	–	65	–	65	--	30	–	60	–	62	–
Oil distillate, % by volume of emulsion		–	0.5	–	0.5	--	3	–	0.5	–	0.5	–	0.5
Tests on residue from distillation:													
Polymer content, wt. % (solids basis)	Tex-533-C	3.0	–	3.0	–	5.0[7]	--	–	–	–	–	3.0	–
Penetration, 77°F, 100 g, 5 sec.	T 49	90	150	80	130	90	150	30	–	30	–	55	90
Viscosity, 140°F, poise	T 202	1,300	–	1,300	–	1,000	--	–	-	–	-	–	–
Solubility in trichloroethylene, %	T 44	97.0	–	95.0	–	98	--	–	–	–	–	97.0	–
Softening point, °F	T 53	–	–	130	–	--	--	–	–	–	–	135	–
Ductility, 77°F, 5 cm/min., cm	T 51	–	–	–	–	40	--	–	–	–	–	70	–
Float test, 140°F, sec.	T 50	–	–	1,800	–	--	--	–	–	–	–		
Ductility,[2] 39.2°F, 5 cm/min., cm	T 51	50	–	–	–	--	--	–	–	–	–	–	–
Elastic recovery,[2] 50°F, %	Tex-539-C	55	–	55	–	--	--	-	–	-	–	–	–
Tests on residue from evaporative recovery:	R 78, Procedure B												
Nonrecoverable creep compliance of residue, 3.2 kPa, 52°C, kPa^{-1}	T 350							-	2.0	-	4.0		
Tests on rejuvenating agent:													
Viscosity, 140°F, cSt	T 201	–	–	–	–	--	--	50	175	50	175	–	–
Flash point, C.O.C., °F	T 48	–	–	–	–	--	--	380	–	380	–	–	–
Saturates, % by weight	D 2007	–	–	–	–	--	--	–	30	–	30	–	–
Solubility in n-pentane, % by weight	D 2007	–	–	–	–	--	--	99	–	99	–	–	–
Tests on rejuvenating agent after TFO or RTFO:	T 240 or T 179												
Weight Change, %		–	–	–	–	--	--	–	6.5	–	6.5	–	–
Viscosity Ratio		–	–	–	–	--	--	–	3.0	–	3.0	–	–
Tests on latex[4]:													
Tensile strength, die C dumbbell, psi	D 412[5]	–	–	–	–	--	--	800	–	800	–	–	–
Change in mass after immersion in rejuvenating agent, %	D 471	–	–	–	–	--	--	–	40[6]	–	40[6]	–	–

1. Exception to T 59: Bring the temperature on the lower thermometer slowly to 350°F (±0°F). Maintain at this temperature for 20 min. Complete total distillation in 60 min. (±5 min.) from the first application of heat.
2. CRS-2P must meet one of either the ductility or elastic recovery requirements.
3. With all precertification samples of CMS-1P or CMS-2P, submit certified test reports showing that the rejuvenating agent and latex meet the stated requirements. Submit samples of these raw materials if requested by the Engineer.
4. Preparation of latex specimens: use any substrate and recovery method which produces specimens of uniform dimensions and which delivers enough material to achieve desired residual thickness.
5. Cut samples for tensile strength determination using a crosshead speed of 20 in. per minute.
6. Specimen must remain intact after exposure and removal of excess rejuvenating agent.
7. Modifier type is tire rubber.

Section 300.2.4., "Emulsified Asphalt", is supplemented by the following:

Emulsified Asphalt. Provide emulsified asphalt that is homogeneous, does not separate after thorough mixing, and meets the requirements for the specified type and grade in Tables 7, 8, 9, 10 and 10A.

Table 10A
Non-Tracking Tack Coat Emulsion

Property	Test Procedure	Hard Residue NT-HRE		Regular Residue NT-RRE	
		Min	Max	Min	Max
Viscosity, Saybolt Furol, 77º F,sec	T 72	15	--	15	--
Storage stability, 1 Day, %	T 59	--	1	--	1
Settlement, 5-day, %	T 59	2	5	2	5
Sieve test, %	T 59	--	0.30	--	0.30
Distillation test:[1]	T 59				
Residue by distillation, % by wt.		50	--	50	--
Oil distillate, by volume of emulsion		--	1.0	--	1.0
Test on residue from distillation:					
Penetration, 77ºF, 100 g, 5 sec.	T 49	--	20	20	60
Solubility in trichloroethylene, %	T 44	97.5	--	97.5	--
Softening point, ºF	T 53	150		150	
Dynamic shear, G*/sin(δ), 82°C, 10 rad/s, kPa	T 315	1.0	--	1.0	--

1. Exception to AASHTO T-59: Bring the temperature on the lower thermometer slowly to 350ºF ± 10ºF. Maintain at this temperature for 20 min. Complete total distillation in 60 ± 5 min. from first application of heat.

Section 300.2.5., "Specialty Emulsions." The first sentence is voided and replaced with the following:

Specialty emulsions may be either asphalt-based or resin-based and must meet the requirements of Table 11 or Table 11A.

Section 300.2.5., "Specialty Emulsions," is supplemented by the following:

Table 11A
Hard Residue Surface Sealant

Property	Test Procedure	Min	Max
Viscosity, Krebs unit, 77ºF, Krebs units	D 562	45	75
Softening point, ºF	T 53[1]	250	--
Uniformity	D 2939	Pass[2]	
Resistance to heat	D 2939	Pass[3]	
Resistance to water	D 2939	Pass[4]	
Wet flow, mm	D 2939	--	0
Resistance to Kerosene (optional)[5]	D 2939	Pass[6]	
Ultraviolet exposure, UVA-340, 0.77 W/m^2, 50°C chamber, 8 hours UV lamp, 5 min spray, 3 hours 55 minutes condensation, 1000 hr total exposure[7]	G 154	Pass[8]	
Abrasion loss, 1.6 mm thickness, liquid only, %	ISSA TB-100	--	1.0
Residue by evaporation, % by weight	D 2939	33	--
Tests on residue from evaporation: Penetration, 77ºF, 100 g, 5 sec. Flash point, Cleveland open cup, °F	 T 49 T 48	 15 500	 30
Tests on base asphalt before emulsification Solubility in trichloroethylene, %	 T 44	 98	 --

1. Cure the emulsion in the softening point ring in a 200°F ± 5°F oven for 2 hr.
2. Product must be homogenous and show no separation or coagulation that cannot be overcome by moderate stirring.
3. No sagging or slippage of film beyond the initial reference line.
4. No blistering or re-emulsification.
5. Recommended for airport applications or where fuel resistance is desired.
6. No absorption of Kerosene into the clay tile past the sealer film. Note sealer surface condition and loss of adhesion.
7. Other exposure cycles with similar levels of irradiation and conditions may be used with Department approval.
8. No cracking, chipping, surface distortion, or loss of adhesion. No color fading or lightening.

Section 300.2.10., "Performance-Graded Binders," Table 17 is voided and replaced by the following:

Table 17
Performance-Graded Binders

Property and Test Method	Performance Grade																	
	PG 58			PG 64				PG 70				PG 76				PG 82		
	-22	-28	-34	-16	-22	-28	-34	-16	-22	-28	-34	-16	-22	-28	-34	-16	-22	-28
Average 7-day max pavement design temperature, °C[1]	58			64				70				76				82		
Min pavement design temperature, °C[1]	-22	-28	-34	-16	-22	-28	-34	-16	-22	-28	-34	-16	-22	-28	-34	-16	-22	-28
Original Binder																		
Flash point, T 48, Min, °C	230																	
Viscosity, T 316[2, 3]: Max, 3.0 Pa·s, test temperature, °C	135																	
Dynamic shear, T 315[4]: G*/sin(δ), Min, 1.00 kPa, Max, 2.00 kPa[7], Test temperature @ 10 rad/sec., °C	58			64				70				76				82		
Elastic recovery, D6084, 50°F, % Min[8]	–	–	30	–	–	30	50	–	30	50	60	30	50	60	70	50	60	70
Rolling Thin-Film Oven (Tex-541-C)																		
Mass loss, Tex-541-C, Max, %	1.0																	
Dynamic shear, T 315: G*/sin(δ), Min, 2.20 kPa, Max, 5.00 kPa[7], Test temperature @ 10 rad/sec., °C	58			64				70				76				82		
MSCR, T350, Recovery, 0.1 kPa, High Temperature, % Min[8]	-	-	20	-	-	20	30	-	20	30	40	20	30	40	50	30	40	50
Pressure Aging Vessel (PAV) Residue (R 28)																		
PAV aging temperature, °C	100																	
Dynamic shear, T 315: G*/sin(δ), Max, 5000 kPa Test temperature @ 10 rad/sec., °C	25	22	19	28	25	22	19	28	25	22	19	28	25	22	19	28	25	22
Creep stiffness, T 313[5, 6]: *S*, max, 300 MPa, *m*-value, min, 0.300 Test temperature @ 60 sec., °C	-12	-18	-24	-6	-12	-18	-24	-6	-12	-18	-24	-6	-12	-18	-24	-6	-12	-18
Direct tension, T 314[6]: Failure strain, min, 1.0% Test temperature @ 1.0 mm/min., °C	-12	-18	-24	-6	-12	-18	-24	-6	-12	-18	-24	-6	-12	-18	-24	-6	-12	-18

1. Pavement temperatures are estimated from air temperatures using an algorithm contained in a Department-supplied computer program, may be provided by the Department, or by following the procedures outlined in AASHTO MP 2 and PP 28.
2. This requirement may be waived at the Department's discretion if the supplier warrants that the asphalt binder can be adequately pumped, mixed, and compacted at temperatures that meet all applicable safety, environmental, and constructability requirements. At test temperatures where the binder is a Newtonian fluid, any suitable standard means of viscosity measurement may be used, including capillary (T 201 or T 202) or rotational viscometry (T 316).
3. Viscosity at 135°C is an indicator of mixing and compaction temperatures that can be expected in the lab and field. High values may indicate high mixing and compaction temperatures. Additionally, significant variation can occur from batch to batch. Contractors should be aware that variation could significantly impact their mixing and compaction operations. Contractors are therefore responsible for addressing any constructability issues that may arise.
4. For quality control of unmodified asphalt binder production, measurement of the viscosity of the original asphalt binder may be substituted for dynamic shear measurements of G*/sin(δ) at test temperatures where the asphalt is a Newtonian fluid. Any suitable standard means of viscosity measurement may be used, including capillary (T 201 or T 202) or rotational viscometry (T 316).
5. Silicone beam molds, as described in AASHTO TP 1-93, are acceptable for use.
6. If creep stiffness is below 300 MPa, direct tension test is not required. If creep stiffness is between 300 and 600 MPa, the direct tension failure strain requirement can be used instead of the creep stiffness requirement. The m-value requirement must be satisfied in both cases.
7. Maximum values for unaged and RTFO aged dynamic shear apply only to materials used as substitute binders, as described in specification items, 340, 341, and 344.
8. Elastic Recovery (ASTM D6084) is not required unless MSCR (ASTM 315) is less than the minimum % recovery. Elastic Recovery shall be used for the acceptance criteria in this instance.

Special Provision to Item 340
Dense-Graded Hot-Mix Asphalt (Small Quantity)

For this project, Item 340, "Dense-Graded Hot-Mix Asphalt (Small Quantity)," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 340.2.5., "Tack Coat." The first paragraph is voided and replaced by the following.

Furnish CSS-1H, SS-1H, or a PG binder with a minimum high-temperature grade of PG 58 for tack coat binder in accordance with Item 300, "Asphalts, Oils, and Emulsions." Specialized tack coat materials listed on the Department's MPL are allowed or required when shown on the plans. Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

Section 340.4.1., "Certification." The paragraph is voided and replaced by the following.

Certification. Personnel certified by the Department-approved hot-mix asphalt certification program must conduct all mixture designs, sampling, and testing in accordance with Table 6. Supply the Engineer with a list of certified personnel and copies of their current certificates before beginning production and when personnel changes are made. Provide a mixture design developed and signed by a Level 2 certified specialist. Provide Level 1A certified specialists at the plant during production operations. Provide Level 1B certified specialists to conduct placement tests. Provide Level AGG101 certified specialists for aggregate testing.

Table 6, "Test Methods, Test Responsibility, and Minimum Certification Levels" is voided and replaced by the following.

Table 6
Test Methods, Test Responsibility, and Minimum Certification Levels

Test Description	Test Method	Contractor	Engineer	Level[1]
1. Aggregate and Recycled Material Testing				
Sampling	Tex-221-F	✓	✓	1A/AGG101
Dry sieve	Tex-200-F, Part I	✓	✓	1A/AGG101
Washed sieve	Tex-200-F, Part II	✓	✓	1A/AGG101
Deleterious material	Tex-217-F, Parts I & III	✓	✓	AGG101
Decantation	Tex-217-F, Part II	✓	✓	AGG101
Los Angeles abrasion	Tex-410-A		✓	TxDOT
Magnesium sulfate soundness	Tex-411-A		✓	TxDOT
Micro-Deval abrasion	Tex-461-A		✓	AGG101
Crushed face count	Tex-460-A	✓	✓	AGG101
Flat and elongated particles	Tex-280-F	✓	✓	AGG101
Linear shrinkage	Tex-107-E	✓	✓	AGG101
Sand equivalent	Tex-203-F	✓	✓	AGG101
Organic impurities	Tex-408-A	✓	✓	AGG101
2. Asphalt Binder & Tack Coat Sampling				
Asphalt binder sampling	Tex-500-C, Part II	✓	✓	1A/1B
Tack coat sampling	Tex-500-C, Part III	✓	✓	1A/1B
3. Mix Design & Verification				
Design and JMF changes	Tex-204-F	✓	✓	2
Mixing	Tex-205-F	✓	✓	2
Molding (TGC)	Tex-206-F	✓	✓	1A
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F, Parts I & VI	✓	✓	1A
Rice gravity	Tex-227-F, Part II	✓	✓	1A
Ignition oven correction factors[2]	Tex-236-F, Part II	✓	✓	2
Indirect tensile strength	Tex-226-F	✓	✓	1A
Hamburg Wheel test	Tex-242-F	✓	✓	1A
Boil test	Tex-530-C	✓	✓	1A
4. Production Testing				
Mixture sampling	Tex-222-F	✓	✓	1A/1B
Molding (TGC)	Tex-206-F		✓	1A
Molding (SGC)	Tex-241-F		✓	1A
Laboratory-molded density	Tex-207-F, Parts I & VI		✓	1A
Rice gravity	Tex-227-F, Part II		✓	1A
Gradation & asphalt binder content[2]	Tex-236-F, Part I		✓	1A
Moisture content	Tex-212-F, Part II		✓	1A/AGG101
Hamburg Wheel test	Tex-242-F		✓	1A
Boil test	Tex-530-C		✓	1A
5. Placement Testing				
In-place air voids	Tex-207-F, Parts I & VI		✓	1A
In-place density (nuclear method)	Tex-207-F, Part III	✓		1B
Establish rolling pattern	Tex-207-F, Part IV	✓		1B
Ride quality measurement	Tex-1001-S	✓	✓	Note 3

1. Level 1A, 1B, AGG101, and 2 are certification levels provided by the Hot Mix Asphalt Center certification program.
2. Refer to Section 340.4.8.3., "Production Testing," for exceptions to using an ignition oven.
3. Profiler and operator are required to be certified at the Texas A&M Transportation Institute facility when Surface Test Type B is specified.

Section 340.4.4.2., Mixing and Discharge of Materials." The first paragraph is voided and replaced by the following.

Notify the Engineer of the target discharge temperature and produce the mixture within 25°F of the target. Monitor the temperature of the material in the truck before shipping to ensure that it does not exceed 350°F (or 275°F for WMA). The Department will not pay for or allow placement of any mixture produced above 350°F.

Section 340.4.6.2., "Tack Coat." The paragraph is voided and replaced by the following.

4.6.2.1 **Application.** Clean the surface before placing the tack coat. The Engineer will set the rate between 0.04 and 0.10 gal. of residual asphalt per square yard of surface area. Apply a uniform tack coat at the specified rate unless otherwise directed. Apply the tack coat in a uniform manner to avoid streaks and other irregular patterns. Apply the tack coat to all surfaces the will come in contact with the subsequent HMA placement, unless otherwise directed. Allow adequate time for emulsion to break completely before placing any material. Prevent splattering of tack coat when placed adjacent to curb, gutter, and structures. Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

4.6.2.2 **Sampling.** The Engineer will obtain at least one sample of the tack coat binder per project in accordance with Tex-500-C, Part III, and test it to verify compliance with Item 300, "Asphalts, Oils, and Emulsions." The Engineer will obtain the sample from the asphalt distributor immediately before use.

For emulsions, the Engineer may test as often as necessary to ensure the residual of the emulsion is greater than or equal to the specification requirement in Item 300, "Asphalts, Oils, and Emulsions."

Section 340.5., "Measurement," is voided and replaced by the following.

5.1 **Dense Graded Hot-Mix Asphalt (SQ).** Hot mix will be measured by the ton of composite hot-mix, which includes asphalt, aggregate, and additives. Measure the weight on scales in accordance with Item 520, "Weighing and Measuring Equipment."

5.2 **Tack Coat.** Tack coat will be measured at the applied temperature by strapping the tank before and after road application and determining the net volume in gallons from the calibrated distributor. The Engineer will witness all strapping operations for volume determination. All tack, including emulsions, will be measured by the gallon applied.

The Engineer may allow the use of a metering device to determine asphalt volume used and application rate if the device is accurate within 1.5% of the strapped volume.

Section 340.6., "Payment," the first paragraph is voided and replaced with the following.

The work performed and materials furnished in accordance with this Item and measured as provided under Article 340.5.1, "Measurement," will be paid for at the unit bid price for "Dense Graded Hot-Mix Asphalt (SQ)" of the mixture type, SAC, and binder specified. These prices are full compensation for surface preparation, materials, placement, equipment, labor, tools, and incidentals.

Section 340.6., "Payment," is supplemented by the following.

The work performed and materials furnished in accordance with this Item and measured as provided under Section 340.5.2, "Measurement," will be paid for at the unit bid price for "Tack Coat" of the tack coat provided. These prices are full compensation for materials, placement, equipment, labor, tools, and incidentals.

Special Provision to Item 347
Thin Overlay Mixtures

For this project, Item 347, "Thin Overlay Mixtures," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 347.2.5. "Tack Coat." The first paragraph is voided and replaced by the following.

Unless otherwise shown on the plans, furnish CSS-1H, SS-1H, or a PG binder with a minimum high-temperature grade of PG 58 for tack coat binder in accordance with Item 300, "Asphalts, Oils, and Emulsions." Specialized tack coat materials listed on the Department's MPL are allowed or required when shown on the plans. Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

Section 347.2.6.2., "Warm Mix Asphalt (WMA)," is voided and replaced by the following.

Warm Mix Additive. Warm mix additives are allowed for use on all projects and are required when shown on the plans to facilitate mixing and compaction. When a warm mix additive is required, no reduction in temperature for the PG grade of the binder will be permitted. Department-approved warm mix additives may be used to facilitate mixing and compaction of HMA produced at target discharge temperatures greater than 275°F.

Section 347.4.1., "Certification." The paragraph is voided and replaced by the following.

Certification. Personnel certified by the Department-approved hot-mix asphalt certification program must conduct all mixture designs, sampling, and testing in accordance with Table 4. Supply the Engineer with a list of certified personnel and copies of their current certificates before beginning production and when personnel changes are made. Provide a mixture design developed and signed by a Level 2 certified specialist. Provide Level 1A certified specialists at the plant during production operations. Provide Level 1B certified specialists to conduct placement tests. Provide Level AGG101 certified specialists for aggregate testing.

Table 4, "Test Methods, Test Responsibility, and Minimum Certification Levels" is voided and replaced by the following.

Table 4
Test Methods, Test Responsibility, and Minimum Certification Levels

Test Description	Test Method	Contractor	Engineer	Level[1]
1. Aggregate Testing				
Sampling	Tex-221-F	✓	✓	1A/AGG101
Dry sieve	Tex-200-F, Part I	✓	✓	1A/AGG101
Washed sieve	Tex-200-F, Part II	✓	✓	1A/AGG101
Deleterious material	Tex-217-F, Part I	✓	✓	AGG101
Decantation	Tex-217-F, Part II	✓	✓	AGG101
Los Angeles abrasion	Tex-410-A		✓	TxDOT
Magnesium sulfate soundness	Tex-411-A		✓	TxDOT
Micro-Deval abrasion	Tex-461-A		✓	AGG101
Crushed face count	Tex-460-A	✓	✓	AGG101
Flat and elongated particles	Tex-280-F	✓	✓	AGG101
Linear shrinkage	Tex-107-E	✓	✓	AGG101
Sand equivalent	Tex-203-F	✓	✓	AGG101
Organic impurities	Tex-408-A	✓	✓	AGG101
2. Asphalt Binder & Tack Coat Sampling				
Asphalt binder sampling	Tex-500-C, Part II	✓	✓	1A/1B
Tack coat sampling	Tex-500-C, Part III	✓	✓	1A/1B
3. Mix Design & Verification				
Design and JMF changes	Tex-204-F	✓	✓	2
Mixing	Tex-205-F	✓	✓	2
Molding (TGC)	Tex-206-F	✓	✓	1A
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F, Parts I & VI	✓	✓	1A
Rice gravity	Tex-227-F, Part II	✓	✓	1A
Drain-down	Tex-235-F	✓	✓	1A
Ignition oven correction factors[2]	Tex-236-F, Part II	✓	✓	2
Indirect tensile strength	Tex-226-F	✓	✓	1A
Overlay test	Tex-248-F		✓	TxDOT
Hamburg Wheel test	Tex-242-F	✓	✓	1A
Boil test	Tex-530-C	✓	✓	1A
4. Production Testing				
Selecting production random numbers	Tex-225-F, Part I		✓	1A
Mixture sampling	Tex-222-F	✓	✓	1A/1B
Molding (TGC)	Tex-206-F	✓	✓	1A
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F, Parts I & VI	✓	✓	1A
Rice gravity	Tex-227-F, Part II	✓	✓	1A
Gradation & asphalt binder content[2]	Tex-236-F, Part I	✓	✓	1A
Drain-down	Tex-235-F	✓	✓	1A
Control charts	Tex-233-F	✓	✓	1A
Moisture content	Tex-212-F, Part II	✓	✓	1A/AGG101
Hamburg Wheel test	Tex-242-F	✓	✓	1A
Overlay test	Tex-248-F	✓	✓	TxDOT
Micro-Deval abrasion	Tex-461-A		✓	AGG101
Boil test	Tex-530-C	✓	✓	1A
Abson recovery	Tex-211-F		✓	TxDOT
5. Placement Testing				
Establish rolling pattern	Tex-207-F, Part IV	✓		1B
In-place density (nuclear method)	Tex-207-F, Part III	✓		1B
Control charts	Tex-233-F	✓	✓	1A
Ride quality measurement	Tex-1001-S	✓	✓	Note 3
Thermal profile	Tex-244-F	✓	✓	1B
Permeability	Tex-246-F	✓	✓	1B

1. Level 1A, 1B, AGG101, and 2 are certification levels provided by the Hot Mix Asphalt Center certification program.
2. Refer to Section 347.4.9.2.3., "Production Testing" for exceptions to using an ignition oven.
3. Profiler and operator are required to be certified at the Texas A&M Transportation Institute facility when Surface Test Type B is specified.

Table 7, "Laboratory Mixture Design Properties," is voided and replaced by the following.

Table 7
Laboratory Mixture Design Properties

Mixture Property	Test Method	Requirement
Target laboratory-molded density, % (TGC)	Tex-207-F	97.5[1]
Design gyrations (Ndesign for SGC)	Tex-241-F	50[2]
Hamburg Wheel test, passes at 12.5 mm rut depth for PG 70 mixtures	Tex-242-F	15,000 Min
Hamburg Wheel test, passes at 12.5 mm rut depth for PG 76 mixtures	Tex-242-F	20,000 Min
Drain-down, %	Tex-235-F	0.20 Max

1. Unless otherwise shown on the plans or approved by the Engineer.
2. May be adjusted within the range of 35–100 gyrations when shown on the plans or specification or when mutually agreed between the Engineer and Contractor.

Table 7A
Overlay Test Requirements

Mixture Property	Test Method	TOM-C	TOM-F
Crack Progression Rate[1]	Tex-248-F	0.45 Max	0.45 Max
Critical Fracture Energy, lb.-in/sq. in[1]		1.0 Min	1.5 Min

1. If the requirement is not meet, the Engineer may approve the mix if the average number of cycles is ≥300 cycles.

Section 347.4.4.2.1.13., "Trial Batch Testing," is voided and replaced by the following.

Test the trial batch to ensure the mixture produced using the proposed JMF1 meets the mixture requirements in Table 8. Ensure the trial batch mixture is also in compliance with the Hamburg Wheel test, Overlay test, and drain-down requirements listed in Tables 7 and 7A. Use a Department-approved laboratory listed on the MPL to perform the Hamburg Wheel test on the trial batch mixture or request that the Department perform the Hamburg Wheel test. Obtain and provide approximately 50 lb. of trial batch mixture in sealed containers, boxes, or bags labeled with the CSJ, mixture type, lot, and sublot number in accordance with Tex-222-F for the Overlay test. The Engineer will be allowed 10 working days to provide the Contractor with Hamburg Wheel test and Overlay test results on the trial batch. Provide the Engineer with a copy of the trial batch test results.

Section 347.4.4.2.1.14., "Development of JMF2," is voided and replaced by the following.

Evaluate the trial batch test results after the Engineer grants full approval of JMF1 based on results from the trial batch, determine the optimum mixture proportions, and submit as JMF2. Adjust the asphalt binder content or gradation to achieve the specified target laboratory-molded density. The asphalt binder content established for JMF2 is not required to be within any tolerance of the optimum asphalt binder content established for JMF1; however, mixture produced using JMF2 must meet the voids in mineral aggregates (VMA) requirements for production shown in Table 6. If the optimum asphalt binder content for JMF2 is more than 0.5% lower than the optimum asphalt binder content for JMF1, the Engineer may perform the Overlay test in accordance with Tex-248-F on Lot 1 production to verify compliance with the Overlay test requirements in Table 7A.

Table 8, "Operational Tolerances," is voided and replaced by the following.

Table 8
Operational Tolerances

Description	Test Method	Allowable Difference between Trial Batch and JMF1 Target	Allowable Difference from Current JMF Target	Allowable Difference between Contractor and Engineer[1]
Individual % retained for #8 sieve and larger	Tex-200-F or Tex-236-F	Must be Within Master Grading Limits in Table 6	±3.0[2,3]	±5.0
Individual % retained for sieves smaller than #8 and larger than #200			±3.0[2,3]	±3.0
% passing the #200 sieve			±2.0[2,3]	±1.6
Asphalt binder content, %[4]	Tex-236-F	±0.3	±0.3[3]	±0.3
Laboratory-molded density, %	Tex-207-F	±1.0	±1.0	±1.0
Laboratory-molded bulk specific gravity		N/A	N/A	±0.020
VMA, % Min	Tex-204-F	Note 5	Note 5	N/A
Theoretical maximum specific (Rice) gravity	Tex-227-F	N/A	N/A	±0.020
Drain-down, %	Tex-235-F	Note 6	Note 6	N/A

1. Contractor may request referee testing only when values exceed these tolerances.
2. When within these tolerances, mixture production gradations may fall outside the master grading limits; however, the % passing the #200 will be considered out of tolerance when outside the master grading limits.
3. Only applies to mixture produced for Lot 1 and higher.
4. Binder content is not allowed to be below the limits shown in Table 6. May be obtained from asphalt meter readouts.
5. Verify that Table 6 requirements are met.
6. Test and verify that Table 7 requirements are met.

Section 347.4.4.2.2.3., "Hamburg Wheel and Overlay Testing of JMF1," is voided and replaced by the following.

If the Contractor requests the option to have the Department perform the Hamburg Wheel test on the laboratory mixture, the Engineer will mold samples in accordance with Tex-242-F to verify compliance with the Hamburg Wheel test requirement in Table 7. The Engineer will perform the Overlay test and mold samples in accordance with Tex-248-F to verify compliance with the Overlay test requirements in Table 7A.

Section 347.4.4.2.2.5., "Testing the Trial Batch," is voided and replaced by the following.

Within 1 full working day, the Engineer will sample and test the trial batch to ensure that the mixture meets the requirements in Table 8. The Engineer will mold samples in accordance with Tex-242-F if the Contractor requests the option to have the Department perform the Hamburg Wheel test on the trial batch mixture to verify compliance with Hamburg Wheel test requirements in Table 7. The Engineer will mold samples for the Overlay test in accordance with Tex-248-F to verify compliance with the Overlay test requirement in Table 7A.

The Engineer will have the option to perform the following tests on the trial batch:

- Tex-248-F, to confirm the mixture meets the Overlay test requirement shown in Table 7A; and
- Tex-530-C, to retain and use for comparison purposes during production.

Section 347.4.4.2.2.6., "Full Approval of JMF1," is voided and replaced by the following.

The Engineer will grant full approval of JMF1 and authorize the Contractor to proceed with developing JMF2 if the Engineer's results for the trial batch meet the requirements in Tables 7 and 7A. The Engineer will notify the Contractor that an additional trial batch is required if the trial batch does not meet these requirements.

Section 347.4.4.2.2.7., "Approval of JMF2," is voided and replaced by the following.

The Engineer will approve JMF2 within one working day if the gradation meets the master grading limits shown in Table 6 and is within the operational tolerances of JMF1 listed in Table 8. The asphalt binder content established for JMF2 is not required to be within any tolerance of the optimum asphalt binder content established for JMF1; however, mixture produced using JMF2 must meet the VMA requirements shown in Table 6. The Engineer may perform Tex-248-F on Lot 1 to confirm the mixture meets the Overlay test requirement shown in Table 7 if the optimum asphalt binder content for JMF2 is more than 0.5% lower than the optimum asphalt binder content for JMF1.

Section 347.4.4.2.2.9., "Approval of JMF3 and Subsequent JMF Changes," is voided and replaced by the following.

JMF3 and subsequent JMF changes are approved if they meet the master grading limits shown in Table 6, mixture requirements shown in Tables 7 and 7A, and are within the operational tolerances of JMF2 shown in Table 8.

Section 347.4.5.2., "Mixing and Discharge of Materials," is voided and replaced by the following.

Notify the Engineer of the target discharge temperature and produce the mixture within 25°F of the target. Monitor the temperature of the material in the truck before shipping to ensure that it does not exceed 350°F and is not lower than 275°F. The Department will not pay for or allow placement of any mixture produced above 350°F.

Control the mixing time and temperature so that substantially all moisture is removed from the mixture before discharging from the plant. Determine the moisture content, if requested, by oven-drying in accordance with Tex-212-F, Part II, and verify that the mixture contains no more than 0.2% of moisture by weight. Obtain the sample immediately after discharging the mixture into the truck, and perform the test promptly.

Table 9, "Compacted Lift Thickness," is voided and replaced by the following.

Table 9
Compacted Lift Thickness

Mixture Type	Compacted Lift Thickness[1]	
	Minimum (in.)	Maximum (in.)
TOM-C	0.75	1.25
TOM-F	0.5	1.00

1. Compacted target lift thickness will be specified on the plans.

Section 347.4.7.1.1., "When Using a Thermal Imaging System," is voided and replaced by the following:

The Contractor may pave any time the roadway is dry and the roadway surface temperature is at least 60°F; however, the Engineer may restrict the Contractor from paving surface mixtures if the ambient temperature is likely to drop below 32°F within 12 hr. of paving. Provide output data from the thermal imaging system to demonstrate to the Engineer that no recurring severe thermal segregation exists in accordance with Section 347.4.7.3.1.2., "Thermal Imaging System."

Section 347.4.7.1.2., "When Not Using a Thermal Imaging System," is voided and replaced by the following.

Place mixture when the roadway surface temperature is at or above 70°F unless otherwise approved. Measure the roadway surface temperature with a hand-held thermal camera or infrared thermometer. The Engineer may allow mixture placement to begin before the roadway surface reaches the required temperature requirements if conditions are such that the roadway surface will reach the required temperature within 1 hr. of beginning placement operations. Place mixtures only when weather conditions and moisture conditions of the roadway surface are suitable as determined by the Engineer. The Engineer may restrict the Contractor from paving if the air temperature is 70°F and falling.

Section 347.4.7.2., "Tack Coat." The paragraph is voided and replaced by the following.

4.7.2.1. Application. Clean the surface before placing the tack coat. The Engineer will set the rate between 0.04 and 0.10 gal. of residual asphalt per square yard of surface area. Apply a uniform tack coat at the specified rate unless otherwise directed. Apply the tack coat in a uniform manner to avoid streaks and other irregular patterns. Apply the tack coat to all surfaces the will come in contact with the subsequent HMA placement, unless otherwise directed. Allow adequate time for emulsion to break completely before placing any material. Prevent splattering of tack coat when placed adjacent to curb, gutter, and structures. Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

4.7.2.2. Sampling. The Engineer will obtain at least one sample of the tack coat binder per project in accordance with Tex-500-C, Part III, and test it to verify compliance with Item 300, "Asphalts, Oils, and Emulsions." The Engineer will obtain the sample from the asphalt distributor immediately before use.

For emulsions, the Engineer may test as often as necessary to ensure the residual of the emulsion is greater than or equal to the specification requirement in Item 300, "Asphalts, Oils, and Emulsions."

Section 347.4.7.3.1.3., "Thermal Camera," is voided and replaced by the following.

Take immediate corrective action to eliminate recurring moderate thermal segregation when a hand-held thermal camera is used. Evaluate areas with moderate thermal segregation by performing water flow testing in accordance to Tex-246-F and verify the water flow is greater than 120 sec. Provide the Engineer with the thermal profile of every sublot within one working day of the completion of each lot. When requested by the Engineer, provide the electronic files generated using the thermal camera. Report the results of each thermal profile in accordance with Section 347.4.2., "Reporting and Responsibilities." The Engineer will use a hand-held thermal camera to obtain a thermal profile at least once per project. Suspend operations and take immediate corrective action to eliminate severe thermal segregation unless otherwise directed. Resume operations when the Engineer determines that subsequent production will meet the requirements of this Section. Evaluate areas with severe thermal segregation by performing water flow testing in accordance to Tex-246-F and verify the water flow is greater than 120 sec. Remove and replace the material in any areas that have both severe thermal segregation and a failing result for water flow test unless otherwise directed.

Table 10, "Production and Placement Testing Frequency," is voided and replaced by the following.

Table 10
Production and Placement Testing Frequency

Description	Test Method	Minimum Contractor Testing Frequency	Minimum Engineer Testing Frequency
Individual % retained for #8 sieve and larger	Tex-200-F or Tex-236-F	1 per sublot	1 per 12 sublots
Individual % retained for sieves smaller than #8 and larger than #200			
% passing the #200 sieve			
Laboratory-molded density	Tex-207-F	N/A	1 per sublot
Laboratory-molded bulk specific gravity			
VMA	Tex-204-F		
Moisture content	Tex-212-F, Part II	When directed	
Theoretical maximum specific (Rice) gravity	Tex-227-F	N/A	1 per sublot
Asphalt binder content	Tex-236-F	1 per sublot	1 per lot
Overlay test[1]	Tex-248-F	N/A	1 per project
Hamburg Wheel test	Tex-242-F	N/A	1 per project
Thermal profile	Tex-244-F	1 per sublot	
Asphalt binder sampling and testing[1]	Tex-500-C	1 per sublot (sample only)	
Boil test[2]	Tex-530-C	1 per sublot	
Water flow	Tex-246-F		

1. Testing performed by the Materials and Tests Division or as directed.
2. The Engineer may reduce or waive the sampling and testing requirements based on a satisfactory test history.

Section 347.5., "Measurement," is supplemented by the following.

5.3 **Tack Coat.** Tack coat will be measured at the applied temperature by strapping the tank before and after road application and determining the net volume in gallons from the calibrated distributor. The Engineer will witness all strapping operations for volume determination. All tack, including emulsions, will be measured by the gallon applied.

The Engineer may allow the use of a metering device to determine asphalt volume used and application rate if the device is accurate within 1.5% of the strapped volume.

Section 347.6., "Payment," the first paragraph is voided and replaced with the following.

The work performed and materials furnished in accordance with this Item and measured as provided under Article 347.5.1 and Article 347.5.2, "Measurement," will be paid for at the unit bid price for "TOM (Asphalt)" of the binder specified and for "TOM (Aggregate)" of the grade and SAC specified. These prices are full compensation for surface preparation, materials, placement, equipment, labor, tools, and incidentals.

Section 347.6., "Payment," is supplemented by the following.

The work performed and materials furnished in accordance with this Item and measured as provided under Article 347.5.3, "Measurement," will be paid for at the unit bid price for "Tack Coat" of the tack coat provided. These prices are full compensation for materials, placement, equipment, labor, tools, and incidentals.

Special Provision to Item 421
Hydraulic Cement Concrete

Item 421, "Hydraulic Cement Concrete" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 421.2, "Materials," the second sentence of the first paragraph is voided and replaced by the following.

Provide aggregates from sources listed in the Department's Concrete Rated Source Quality Catalog (CRSQC).

Article 421.2.2, Supplementary Cementing Materials (SCM), is voided and replaced with the following.

Supplementary Cementing Materials (SCM).

- **Fly Ash**. Furnish fly ash, Modified fly ash (MFA), and Ground Bottom Ash (GBA) conforming to DMS-4610, "Fly Ash."
- **Slag Cement**. Furnish Slag Cement conforming to DMS-4620, "Slag Cement."
- **Silica Fume**. Furnish silica fume conforming to DMS-4630, "Silica Fume."
- **Metakaolin**. Furnish metakaolin conforming to DMS-4635, "Metakaolin."

Article 421.3.1.3, "Agitators and Truck and Stationary Mixers," the first paragraph is voided and replaced by the following.

Provide stationary and truck mixers capable of combining the ingredients of the concrete into a thoroughly mixed and uniform mass and capable of discharging the concrete so that the requirements of Tex-472-A are met.

Article 421.3.1.3, "Agitators and Truck and Stationary Mixers," is supplemented with the following.

Truck mixers with automated water and chemical admixture measurement and slump and slump flow monitoring equipment meeting the requirement of ASTM C 94 will be allowed. Provide data every 6 mo. substantiating the accuracy of slump, slump flow, temperature, water, and chemical admixture measurements. The slump measured by the automated system must be within 1 in. of the slump measured in accordance with Tex-415-A. The concrete temperature measured by the automated system must be within 1°F of concrete temperature measured in accordance with Tex-422-A. The Engineer will not use the automated measurements for acceptance.

Article 421.4.2, "Mix Design Proportioning," Table 8 is voided and replaced by the following.

Table 8
Concrete Classes

Class of Concrete	Design Strength,[1] Min f'_c (psi)	Max w/cm Ratio	Coarse Aggregate Grades[2,3,4]	Cement Types	Mix Design Options	Exceptions to Mix Design Options	General Usage[5]
A	3,000	0.60	1–4, 8	I, II, I/II, IL, IP, IS, IT, V	1, 2, 4, & 7	When the cementitious material content does not exceed 520 lb./cu. yd., any fly ash listed in the MPL may be used at a cement replacement of 20% to 50%.	Curb, gutter, curb & gutter, conc. retards, sidewalks, driveways, back-up walls, anchors, non-reinforced drilled shafts
B	2,000	0.60	2–7				Riprap, traffic signal controller foundations, small roadside signs, and anchors
C[6]	3,600	0.45	1–6	I, II, I/II, IP, IL, IS, IT, V	1–8		Drilled shafts, bridge substructure, bridge railing, culverts except top slab of direct traffic culverts, headwalls, wing walls, inlets, manholes, concrete traffic barrier
E	3,000	0.50	2–5	I, II, I/II, IL, IP, IS, IT, V	1–8	When the cementitious material content does not exceed 520 lb./cu. yd., any fly ash listed in the MPL may be used at a cement replacement of 20% to 50%..	Seal concrete
F[6]	Note[7]	0.45	2–5	I, II, I/II, IP, IL, IS, IT, V			Railroad structures; occasionally for bridge piers, columns, bents , post-tension members
H[6]	Note[7]	0.45	3–6	I, II, I/II, III, IP, IL, IS, IT, V	1–4	Do not use Type III cement in mass placement concrete. Up to 20% of blended cement may be replaced with listed SCMs when Option 4 is used for precast concrete. Options 6, 7, & 8 allowed for cast-in-place Class H concrete.	Precast concrete, post-tension members
S[6]	4,000	0.45	2–5	I, II, I/II, IP, IL, IS, IT, V	1–8		Bridge slabs, top slabs of direct traffic culverts, approach slabs
P	See Item 360, "Concrete Pavement."	0.50	2–3	I, II, I/II, IL, IP, IS, IT, V	1–8	When the cementitious material content does not exceed 520 lb./cu. yd., any fly ash listed in the MPL may be used at a cement replacement of 20% to 50%..	Concrete pavement
CO[6]	4,600	0.40	6	I, II, I/II, IP, IL, IS, IT, V	1–8		Bridge deck concrete overlay
LMC[6]	4,000	0.40	6–8				Latex-modified concrete overlay
SS[6]	3,600	0.45	4–6		1-8	Use a minimum cementitious material content of 658 lb./cu. yd. of concrete. Limit the alkali loading to 4.0 lbs./cu. yd. or less when using option 7.	Slurry displacement shafts, underwater drilled shafts
K[6]	Note[7]	0.40	Note[7]	I, II, I/II, III IP, IL, IS, IT, V	1-8		Note[7]
HES	Note[7]	0.45	Note[7]	I, IL, II, I/II, III		Mix design options do not apply. 700 lb. of cementitious material per cubic yard limit does not apply.	Concrete pavement, concrete pavement repair

Class of Concrete	Design Strength,[1] Min f'c (psi)	Max w/cm Ratio	Coarse Aggregate Grades[2,3,4]	Cement Types	Mix Design Options	Exceptions to Mix Design Options	General Usage[5]
"X" (HPC) [6,8, 9]	Note[10]	0.45	Note[10]	I, II, I/II, III IP, IL, IS, IT, V	1–4, & 8	Maximum fly ash replacement for Option 3 may be increased to 50%. Up to 20% of a blended cement may be replaced with listed SCMs for Option 4. Do not use Option 8 for precast concrete.	
"X" (SRC) [6,8, 9]	Note[10]	0.45	Note[10]	I/II, II, IP, IL, IS, IT, V	1–4, & 7	When using fly ash, only use fly ashes allowed for SRC as listed in the Fly Ash MPL. Type III-MS may be used where allowed. Type I and Type III cements may be use when fly ashes allowed for SRC as listed in the Fly Ash MPL are used, and with a maximum w/cm of 0.40. Up to 20% of blended cement may be replaced with listed SCMs when Option 4 is used for precast concrete. Do not use Option 7 for precast concrete[11].	

1. Design strength must be attained within 56 days.
2. Do not use Grade 1 coarse aggregate except in massive foundations with 4 in. minimum clear spacing between reinforcing steel bars, unless otherwise permitted. Do not use Grade 1 aggregate in drilled shafts.
3. Use Grade 8 aggregate in extruded curbs unless otherwise approved.
4. Other grades of coarse aggregate maybe used in non-structural concrete classes when allowed by the Engineer.
5. For information only.
6. Structural concrete classes.
7. As shown on the plans or specified.
8. "X" denotes class of concrete shown on the plans or specified.
9. (HPC): High Performance Concrete, (SRC): Sulfate Resistant Concrete.
10. Same as class of concrete shown on the plans.
11. Option 7 will be allowed for precast concrete products included in Items 462, 464, and 465.

Article 421.4.2.2, "Aggregates," is supplemented by the following.

Use the following equation to determine if the aggregate combination meets the sand equivalency requirement when blending fine aggregate or using an intermediate aggregate:

$$\frac{(SE_1 \times P_1) + (SE_2 \times P_2) + (SE_{ia} \times P_{ia})}{100} \geq 80\%$$

where:
SE_1 = sand equivalency (%) of fine aggregate 1
SE_2 = sand equivalency (%) of fine aggregate 2
SE_{ia} = sand equivalency (%) of intermediate aggregate passing the 3/8 in. sieve
P_1 = percent by weight of fine aggregate 1 of the fine aggregate blend
P_2 = percent by weight of fine aggregate 2 of the fine aggregate blend
P_{ia} = percent by weight of intermediate aggregate passing the 3/8 in. sieve

Article 421.4.2.5, "Slump," the second paragraph is voided and not replaced. Table 9 is voided and replaced with below:

Table 9
Placement Slump Requirements

General Usage	Placement Slump Range,[1,2] in.
Walls (over 9 in. thick), caps, columns, piers	3 to 7
Bridge slabs, top slabs of direct traffic culverts, approach slabs, concrete overlays, latex-modified concrete for bridge deck overlays	3 to 6
Inlets, manholes, walls (less than 9 in. thick), bridge railing, culverts, concrete traffic barrier, concrete pavement (formed)	4 to 6
Precast concrete	4 to 9
Underwater concrete placements	6 to 8-1/2
Drilled shafts, slurry displaced and underwater drilled shafts	See Item 416, "Drilled Shaft Foundations."
Curb, gutter, curb and gutter, concrete retards, sidewalk, driveways, seal concrete, anchors, riprap, small roadside sign foundations, concrete pavement repair, concrete repair	As approved

1. Maximum slump values may be increase above these values shown using chemical admixtures, provided the admixture treated concrete has the same or lower water-to-cementitious ratio and does not exhibit segregation or excessive bleeding. Request approval to increase slump limits in advance for proper evaluation by the Engineer.
2. For fiber reinforced concrete, perform slump before addition of fibers.

Article 421.2.6, "Mix Design Options", is voided and replaced with the following.

Option 1. Replace cement with at least the minimum dosage listed in the Fly Ash MPL for the fly ash used in the mixture. Do not replace more than 50% of the cement with fly ash.

Option 2. Replace 35% to 50% of the cement with slag cement.

Option 3. Replace 35% to 50% of the cement with a combination of fly ash, slag cement, MFAmetakaolin, or at least 3% silica fume; however, no more than 35% may be fly ash, and no more than 10% may be silica fume.

Option 4. Use Type IP, Type IS, or Type IT cement as allowed in Table 8 for each class of concrete. Up to 10% of a Type IP, Type IS, or Type IT cement may be replaced with fly ash, slag cement, or silica fume. Use no more than 10% silica fume in the final cementitious material mixture if the Type IT cement contains silica fume, and silica fume is used to replace the cement.

Option 5. Option 5 is left intentionally blank.

Option 6. Use a lithium nitrate admixture at a minimum dosage determined by testing conducted in accordance with Tex-471-A. Before use of the mix, provide an annual certified test report signed and sealed by a licensed professional engineer, from a laboratory on the Department's MPL, certified by the Construction Division as being capable of testing according to Tex-471-A.

Option 7. Ensure the total alkali contribution from the cement in the concrete does not exceed 3.5 lb. per cubic yard of concrete when using hydraulic cement not containing SCMs calculated as follows:

$$\text{lb. alkali per cu. yd.} = \frac{(\text{lb. cement per cu. yd.}) \times (\%\,Na_2O \text{ equivalent in cement})}{100}$$

In the above calculation, use the maximum cement alkali content reported on the cement mill certificate.

Option 8. Use Table 10 when deviating from Options 1–3 or when required by the Fly Ash MPL. Perform required testing annually, and submit results to the Engineer. Laboratories performing ASTM C1260, ASTM C1567, and ASTM C1293 testing must be listed on the Department's MPL. Before use of the mix, provide a certified test report signed and sealed by a licensed professional engineer demonstrating the proposed mixture conforms to the requirements of Table 10.

Provide a certified test report signed and sealed by a licensed professional engineer, when HPC is required, and less than 20% of the cement is replaced with SCMs, demonstrating ASTM C1202 test results indicate the permeability of the concrete is less than 1,500 coulombs tested immediately after either of the following curing schedules:

- Moisture cure specimens 56 days at 73°F.
- Moisture cure specimens 7 days at 73°F followed by 21 days at 100°F.

Table 10
Option 8 Testing and Mix Design Requirements

Scenario	ASTM C1260 Result		Testing Requirements for Mix Design Materials or Prescriptive Mix Design Options
	Mix Design Fine Aggregate	Mix Design Coarse Aggregate	
A	> 0.10%	> 0.10%	Determine the dosage of SCMs needed to limit the 14-day expansion of each aggregate[1] to 0.10% when tested individually in accordance with ASTM C1567.
B	≤ 0.10%	≤ 0.10%	Use the minimum replacement listed in the Fly Ash MPL, or When Option 8 is listed on the MPL, use a minimum of 40% fly ash with a maximum CaO[2] content of 25%, or Use any ternary combination which replaces 35% to 50% of cement.
	≤ 0.10%	ASTM C1293 1 yr. Expansion ≤ 0.04%	Use a minimum of 20% of any fly ash; or Use any ternary combination which replaces 20% to 50% of cement.
C	≤ 0.10%	> 0.10%	Determine the dosage of SCMs needed to limit the 14-day expansion of coarse and intermediate[1] aggregate to 0.10% when tested individually in accordance with ASTM C1567.
D	> 0.10%	≤ 0.10%	Use the minimum replacement listed in the Fly Ash MPL, or When Option 8 is listed on the MPL, use a minimum of 40% fly ash with a maximum CaO[2] content of 25%, or Use any ternary combination which replaces 35% to 50% of cement.
	> 0.10%	ASTM C1293 1 yr. Expansion ≤ 0.04%	Determine the dosage of SCMs needed to limit the 14-day expansion of each fine aggregate to 0.10% when individually tested in accordance with ASTM C1567.

1. Intermediate size aggregates will fall under the requirements of mix design coarse aggregate.
2. Average the CaO content from the previous ten values as listed on the test certificate.

Article 421.4.2.7, "Optimized Aggregate Gradation (OAG) Concrete," the first sentence of the first paragraph is voided and replaced by the following.

The gradations requirements in Table 4 and Table 6 do not apply when OAG concrete is specified or used by the Contractor unless otherwise shown on the plans.

The fineness modulus for fine aggregate listed in Table 5, does not apply when OAG Concrete is used,

Article 421.4.6.2, Delivering Concrete," the third paragraph is supplemented by the following.

When truck mixers are equipped with automated water or chemical admixture measurement and slump or slump flow monitoring equipment, the addition of water or chemical admixtures during transit is allowed. Reports generated by this equipment must be submitted to the Engineer daily.

Article 421.4.6.2, "Delivering Concrete," the fifth paragraph is voided and replaced with the following. Begin the discharge of concrete delivered in truck mixers within the times listed in Table 14. Concrete delivered after these times, and concrete that has not begun to discharge within these times will be rejected

Article 421.4.8.3, "Testing of Fresh Concrete," is voided and replaced with the following.

Testing Concrete. The Engineer, unless specified in other Items or shown on the plans, will test the fresh and hardened concrete in accordance with the following methods:

- Slump. Tex-415-A;
- Air Content. Tex-414-A or Tex-416-A;
- Temperature. Tex-422-A;
- Making and Curing Strength Specimens. Tex-447-A;
- Compressive Strength. Tex-418-A;
- Flexural Strength. Tex-448-A; and
- Maturity. Tex-426-A.

Flexural strength and maturity specimens will not be made unless specified in other items or shown on the plans.

Concrete with slump less than minimum required after all addition of water withheld will be rejected, unless otherwise allowed by the Engineer. Concrete with slump exceeding maximum allowed may be used at the contractor's option. If used, Engineer will make, test, and evaluate strength specimens as specified in Article 421.5., "Acceptance of Concrete." Acceptance of concrete not meeting air content or temperature requirements will be determined by Engineer. Fresh concrete exhibiting segregation and excessive bleeding will be rejected.

Article 421.4.8.3.1. "Job-Control Testing," is voided and not replaced.

Special Provision to Item 442
Metal for Structures

Item 442, "Metal for Structures" of the Standard Specifications is amended with respect to the clause cited below. No other clauses or requirements of this Item are waived or changed.

Section 442.2.1.3.3., "Fasteners." The first sentence of the first paragraph is replaced by the following:

Fasteners. Provide high-strength bolts that meet ASTM F3125-Grade A325 unless otherwise shown on the plans.

Section 442.2.1.3.3., "Fasteners." The third paragraph is deleted and not replaced.

Special Provision to Item 464
Reinforced Concrete Pipe

Item 464, "Reinforced Concrete Pipe," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 2.1., "Fabrication." The section is voided and replaced with the following.

Fabrication plants must be approved by the Materials and Tests Division in accordance with DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures," before furnishing precast reinforced concrete pipe for Departmental projects. The Department's MPL has a list of approved reinforced concrete pipe plants.

Furnish material and fabricate reinforced concrete pipe in accordance with DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures."

Section 2.3., "Marking." The first paragraph is voided and replaced with the following.

Furnish each section of reinforced concrete pipe marked with the following information specified in DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures."

- Class or D-Load of pipe,
- ASTM designation,
- Date of manufacture,
- Pipe size,
- Name or trademark of fabricator and plant location,
- Designation "TX" for precast units fabricated per DMS-7305;
- Designated fabricator's approval stamp for each approved unit,
- Pipe to be used for jacking and boring (when applicable), and
- Designation "SR" for pipe meeting sulfate-resistant concrete plan requirements (when applicable).

Section 2.5., "Causes for Rejection." The section is voided and replaced with the following.

Individual sections of pipe may be rejected for any of the conditions stated in the Annex of DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures."

Section 2.6., "Repairs." The section is voided and replaced with the following:

Make repairs, if necessary, as stated in the Annex of DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures."

Special Provision to Item 500
Mobilization

For this project, Item 500, "Mobilization," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 500.1., "Description," is supplemented by the following:

Work for this Item includes submissions required by the Contract

Article 500.2., "**Measurement,"** is voided and replaced by the following:

500.2. Measurement. This item will be measured by the each per call out work order.

Article 500.3., "**Payment,"** is voided and replaced by the following:

500.3. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid at the unit price bid for "Mobilization" and "Mobilization (Emergency)." This price shall be full compensation for furnishing all labor, materials, supplies, equipment and incidentals necessary to complete the work specified.

Special Provision to Item 502
Barricades, Signs and Traffic Handling

Item 502, "Barricades, Signs and Traffic Handling" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 502.1., "Description," is supplemented by the following:

Temporary work-zone (TWZ) traffic control devices manufactured after December 31, 2019, must have been successfully tested to the crashworthiness requirements of the 2016 edition of the Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before this date and successfully tested to NCHRP Report 350 or the 2009 edition of MASH may continue to be used throughout their normal service lives. An exception to the manufacture date applies when, based on the project's date of letting, a category of MASH-2016 compliant TWZ traffic control devices are not approved, or are not self-certified after the December 31, 2019, date. In such case, devices that meet NCHRP-350 or MASH-2009 may be used regardless of the manufacture date.

Such TWZ traffic control devices include: portable sign supports, barricades, portable traffic barriers designated exclusively for use in temporary work zones, crash cushions designated exclusively for use in temporary work zones, longitudinal channelizers, truck and trailer mounted attenuators. Category I Devices (i.e., lightweight devices) such as cones, tubular markers and drums without lights or signs attached however, may be self-certified by the vendor or provider, with documentation provided to Department or as are shown on Department's Compliant Work Zone Traffic Control Device List.

Article 502.4., "Payment," is supplemented by the following:

Truck mounted attenuators and trailer attenuators will be paid for under Special Specification, "Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)." Portable Changeable Message Signs will be paid for under Special Specification, "Portable Changeable Message Sign." Portable Traffic Signals will be paid for under Special Specification, "Portable Traffic Signals."

Special Provision to Item 506

Temporary Erosion, Sedimentation, and Environmental Controls

Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 506.1., "Description." The second paragraph is voided and replaced by the following.

Contractor is considered primary operator to have day-to-day operational control as defined in TPDES GP TXR150000.

1.1. For projects with soil disturbance of less than 1 acre, no submittal to TCEQ will be required but Contractor will follow SWP3. For projects with soil disturbance of 1acre to less than 5 acres a small site notice will be posted at the site. For projects with soil disturbance of 5 acres or more a Notice of Intent (NOI) is required and a large site notice posted at site. Postings will be in accordance with TPDES GP TXR150000. Postings not associated with project specific locations will be in same location as Department's postings.

1.2. Notice of Intent (NOI). Submit a NOI, if applicable, with the TCEQ under the TPDES GP TXR150000 at least 7 days prior to commencement of construction activities at the project site. Provide a signed copy to the Engineer and any other MS4 operators at the time of submittal. The Department will submit their NOI prior to contractor submission and will provide a copy for Contractor's use in completing the Contractor's NOI form.

1.3. Notice of Change (NOC). Upon concurrence of the Engineer, submit a NOC, if applicable, to the TCEQ within 14 days of discovery of a change or revision to the NOI as required by the TPDES GP TXR150000. Provide a signed copy of the NOC to the Engineer and any other MS4 operators at the time of submittal.

1.4. Notice of Termination (NOT). Upon concurrence of the Engineer, submit a NOT, if applicable, to the TCEQ within 30 days of the Engineer's approval that 70% native background vegetative cover is met or equivalent permanent stabilization have been employed in accordance with the TPDES GP TXR 150000. Provide a signed copy of the NOT to the Engineer and any other MS4 operators at the time of submittal.

Section 506.3.1, "Contractor Responsible Person Environmental (CRPE) Qualifications and Responsibilities," is supplemented by the following:

3.1. Contractor Responsible Person Environmental (CRPE) Qualifications and Responsibilities. Provide and designate in writing at the preconstruction conference a CRPE and alternate CRPE who have overall responsibility for the storm water management program. The CRPE will implement stormwater and erosion control practices; will oversee and observe stormwater control measure monitoring and management; will monitor the project site daily and produce daily monitoring reports as long as there are BMPs in place or soil disturbing activities are evident to ensure compliance with the SWP3 and TPDES General Permit TXR150000. Daily monitor reports shall be maintained and made available upon request. During time suspensions when work is not occurring or on contract non-work days, daily inspections are not required unless a rain event has occurred. The CRPE will provide recommendations on how to improve the effectiveness of control measures. Attend the Department's preconstruction conference for the project. Ensure training is completed as identified in Section 506.3.3., "Training," by all applicable personnel before employees work on the project. Document and maintain and make available upon request, a list, signed by the CRPE, of all applicable Contractor and subcontractor employees who have completed the training. Include the employee's name, the training course name, and date the employee completed the training.

Section 506.3.3., "Training," is supplemented by the following:

Training is provided by the Department at no cost to the Contractor and is valid for 3 yr. from the date of completion. The Engineer may require the following training at a frequency less than 3 yr. based on environmental needs:

- "Environmental Management System: Awareness Training for the Contractor" (English and Spanish) (Approximate running time 20 min.), and
- "Storm Water: Environmental Requirements During Construction" (English and Spanish) (Approximate running time 20 min.).

The Contractor responsible person environmental (CRPE), alternate CRPE designated for emergencies, Contractor's superintendent, Contractor, and subcontractor lead personnel involved in soil disturbing or SWP3 activities must enroll in and complete the training listed below and maintain and make available upon request the certificate of completion. Training is provided by a third party and is valid for 3 yr. from the date shown on the Certificate of Completion. Coordinate enrollment as prescribed by the Department and pay associated fees for the following training:

- "Revegetation During Construction,"
- "Construction General Permit Compliance," and
- "Construction Stage Gate Checklist (CSGC)."

Training and associated fee will not be measured or paid for directly but are subsidiary to this Item.

Special Provision to Item 520
Weighing and Measuring Equipment

Item 520, "Weighing and Measuring Equipment" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 520.2., "Equipment." The third paragraph is voided and replaced by the following.

Calibrate truck scales using weights certified by the Texas Department of Agriculture (TDA) or an equivalent agency as approved. Provide a written calibration report from a scale mechanic for truck scale calibrations. Cease plant operations during the checking operation. Do not use inaccurate or inadequate scales. Bring performance errors as close to zero as practicable when adjusting equipment.

Article 520.2., "Equipment." The fourth paragraph is amended to include the following:

At the Contractors option, an electronic ticket delivery system (e-ticketing) may be used instead of printed tickets. The use of e-ticketing will require written approval of the Engineer. At a minimum, the approved system will:

- Provide electronic, real-time e-tickets meeting the requirements of the applicable bid items;
- Automatically generate e-tickets using software and hardware fully integrated with the automated scale system used to weigh the material, and be designed in such a way that data input cannot be altered by the Contractor or the Engineer;
- Provide the Engineer access to the e-ticketing data in real-time with a web-based or app-based system compatible with iOS;
- Provide offline capabilities to prevent data loss if power or connectivity is lost;
- Require both the Contractor and the Engineer to accept or reject the e-ticket and provide the ability to record the information required by the applicable bid items, as well as any comments. Record the time of the approval/rejection and include it in the summary spreadsheet described below. Provide each party the capability to edit their respective actions and any entered information;

The Contractor may discontinue use of the e-ticket system and provide printed tickets as needed to meet the requirements of the applicable bid items.

Special Provision to Item 540
Metal Beam Guard Fence

Item 540, “Metal Beam Guard Fence” of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 540.4.7, “Measurement,” is voided and replaced with the following:

> **Long Span System**. Measurement will be by each long span system, complete in place. Each long span system will be from the first CRT to the last CRT in the system.

Special Provision to Item 552
Wire Fence

Item 552, "Wire Fence" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 2.4., "Barbed Wire," is voided and replaced by the following:

Furnish barbed wire in accordance with ASTM A121 and as shown on the plans.

Section 2.5., "Wire Mesh," is voided and replaced by the following:

Furnish wire mesh fabric in accordance with ASTM A116 and as shown on the plans.

Article 3., "Construction," is supplemented by the following:

Unless otherwise directed, T-posts, steel pipe brace posts, steel pipe gate posts, steel pipe post assemblies, and water gap posts are to remain in place.

Posts removed for the convenience of the Contractor due to brush removal or other issues will be replaced at the Contractor's expense.

Remove brush and trees from fence areas where work is performed. Chip brush and trees or remove and dispose of removed materials at locations off the right of way in accordance with local, state, and federal requirements.

Article 4., "Measurement," is voided and replaced by the following:

Fencing will be measured by the foot of wire fence, excluding gates. Gates will be measured by each gate. Posts and post assemblies, which are installed or removed and replaced, will be paid by each post. New brace posts and t-posts will be measured by each post. New hinge sets on existing posts will be paid by each hinge set.

Article 5., "Payment," is voided and replaced by the following:

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 "Wire Fence", "Gate", "Post", "Post Assembly", "Brace Post", "T-Post", and "Hinge Set" of the type specified. This price is full compensation for furnishing, preparing, hauling, and installing fence and gate materials; excavation, backfilling and disposal of surplus material; removing and trimming of brush and tree limbs; and equipment, labor, tools, and incidentals.

Unless otherwise shown on the plans, removal of existing fence will not be paid for directly but will be subsidiary to pertinent Items.

There will be no payment for undamaged posts removed and replaced if removal is for the Contractor's convenience.

Special Provision to Item 636
Signs

Item 636, “Signs” of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 636.3.1, “Fabrication.” is deleted.

Section 636.3.1.2, “Sheeting Application.” The last sentence of the fourth paragraph is voided and replaced by the following.

Do not splice sheeting or overlay films for signs fabricated with ink or with colored transparent films.

Special Provision to Item 643
Sign Identification Decals

Item 643, "Sign Identification Decals," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 2. "Materials." The sign identification decal design shown in Figure 1 and the description for each row in Table 1 are supplemented by the following.

Texas Department of Transportation												
C	**Fabrication Date**										**T**	**1**
J	F	M	A	M	J	J	A	S	O	N	D	**2**
	201		202		203		204		205			**3**
	0	1	2	3	4	5	6	7	8	9		**4**
Sheeting MFR - Substrate												
A	B	C	D	E	F	G	H	J	K	L	M	**5**
Film MFR												
A	B	C	D	E	F	G	H	J	K	L	M	**6**
Sheeting MFR - Legend												
A	B	C	D	E	F	G	H	J	K	L	M	**7**
Installation Date												
				0	1	2	3					**8**
	0	1	2	3	4	5	6	7	8	9		**9**
J	F	M	A	M	J	J	A	S	O	N	D	**10**
	201		202		203		204		205			**11**
	0	1	2	3	4	5	6	7	8	9		**12**
Name of Sign Fabricator Physical Address City, State, Zip Code												**13**

Figure 1
Decal Design (Row numbers explained in Table 1)

Table 1
Decal Description

Row Explanation
1 – Sign fabricator
2 – Month fabricated
3 – First 3 digits of year fabricated
4 – Last digit of year fabricated
5 – Manufacturer of the sheeting applied to the substrate
6 – Film (colored transparent or non-reflective black) manufacturer
7 – Manufacturer of the sheeting for the legend
8 – Tens digit of date installed
9 - Ones digit of date installed
10 – Month installed
11 – First 3 digits of year installed
12 – Last digit of year installed
13 – Name of sign fabricator and physical location of sign shop

Special Provision to Item 666
Retroreflectorized Pavement Markings

Item 666, "Retroreflectorized Pavement Markings," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 2.3., "Glass Traffic Beads." The first paragraph is voided and replaced by the following:

Furnish drop-on glass beads in accordance with DMS-8290, "Glass Traffic Beads," or as approved. Furnish a double-drop of Type II and Type III drop-on glass beads for longitudinal pavement markings where each type bead is applied separately in equal portions (by weight), unless otherwise approved. Apply the Type III beads before applying the Type II beads. Furnish Type II beads for work zone pavement markings and transverse markings or symbols.

Section 4.3.1., "Type I Markings.," is supplemented by the following:

4.3.1.3. Spot Striping. Perform spot striping on a callout basis with a minimum callout quantity as shown on the plans.

Section 4.3.2., "Type II Markings.," is supplemented by the following:

4.3.2.1. Spot Striping. Perform spot striping on a callout basis with a minimum callout quantity as shown on the plans.

Section 4.4., "Retroreflectivity Requirements.," is voided and replaced by the following.

Type I markings for Contracts totaling more than 20,000 ft. of pavement markings must meet the following minimum retroreflectivity values for all longitudinal edgeline, centerline or no passing barrier-line, and lane line markings when measured any time after 3 days, but not later than 10 days after application.

- White markings: 250 millicandelas per square meter per lux (mcd/m^2/lx)
- Yellow markings: 175 mcd/m^2/lx

Retroreflectivity requirements for Type I markings are not required for Contracts with less than 20,000 ft. of pavement markings or Contracts with callout work, unless otherwise shown on the plans.

Section 4.5., "Retroreflectivity Measurements.," is voided and replaced by the following:

Use a mobile retroreflectometer to measure retroreflectivity for Contracts totaling more than 50,000 ft. of pavement markings, unless otherwise shown on the plans. For Contracts with less than 50,000 ft. of pavement markings, mobile or portable retroreflectometers may be used at the Contractor's discretion. Coordinate with and obtain authorization from the Engineer before starting any retroreflectivity data collection.

Section 4.5.1., "Mobile Retroreflectometer Measurements." The last paragraph is voided and replaced by the following.

Restripe again at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the average of these measurements falls below the minimum retroreflectivity requirements. Take measurements every 0.1 miles a minimum of 10 days after this third application within that mile segment for that series of markings. If the markings do not meet minimum retroreflectivity after this third application, the Engineer may require removal of all existing markings, a new application as initially specified, and a repeat of the application process until minimum retroreflectivity requirements are met.

Section 4.5.2., "Portable Retroreflectometer Measurements." The first and second paragraphs are voided and replaced by the following.

Provide portable measurement averages for every 1.0 mile unless otherwise specified or approved. Take a minimum of 20 measurements for each 1-mi. section of roadway for each series of markings (e.g., edgeline, center skip line, each line of a double line) and direction of traffic flow when using a portable reflectometer. Measure each line in both directions for centerlines on two-way roadways (i.e., measure both double solid lines in both directions and measure all center skip lines in both directions). The spacing between each measurement must be at least 100 ft. The Engineer may decrease the mileage frequency for measurements if the previous measurements provide satisfactory results. The Engineer may require the original number of measurements if concerns arise.

Restripe at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the averages of these measurements fail. Take a minimum of 10 more measurements after 10 days of this second application within that mile segment for that series of markings. Restripe again at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the average of these measurements falls below the minimum retroreflectivity requirements. If the markings do not meet minimum retroreflectivity after this third application, the Engineer may require removal of all existing markings, a new application as initially specified, and a repeat of the application process until minimum retroreflectivity requirements are met.

Section 4.6. "Performance Period." The first sentence is voided and replaced by the following:

All longitudinal markings must meet the minimum retroreflectivity requirements within the time frame specified. All markings must meet all other performance requirements of this specification for at least 30 calendar days after installation.

Article 6. "Payment." The first two paragraphs are voided and replaced by the following.

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 "Pavement Sealer" of the size specified; "Retroreflectorized Pavement Markings" of the type and color specified and the shape, width, size, and thickness (Type I markings only) specified, as applicable; "Retroreflectorized Pavement Markings with Retroreflective Requirements" of the types, colors, sizes, widths, and thicknesses specified; "Retroreflectorized Profile Pavement Markings" of the various types, colors, shapes, sizes, and widths specified; or "Reflectorized Pavement Marking (Call Out)" of the shape, width, size, and thickness (Type I markings only) specified, as applicable; or "Pavement Sealer (Call Out)" of the size specified.

This price is full compensation for materials, application of pavement markings, equipment, labor, tools, and incidentals.

Special Provision to Special Specification 6185
Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)

Item 6185, "Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 4. "Measurement", is voided and replaced by the following:

4.1. **Truck Mounted Attenuator/Trailer Attenuator (Stationary).** This Item will be measured by the day. TMA/TAs must be set up in a work area and operational before a calendar day can be considered measureable. A day will be measured for each TMA/TA set up and operational on the worksite.

4.2. **Truck Mounted Attenuator/Trailer Attenuator (Mobile Operation).** This Item will be measured by the hour or by the day. The time begins once the TMA/TA is ready for operation at the predetermined site and stops when notified by the Engineer. When measurement by the hour is specified, a minimum of 4 hr. will be paid each day for each operating TMA/TA used in a mobile operation. When measurement by the day is specified, a day will be measured for each TMA/TA set up and operational on the worksite.

APPENDIX A
QUALITY ASSURANCE PROGRAM
FOR CONSTRUCTION PROJECTS

Quality Assurance Program for Design-Bid-Build Projects

May 2019

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SECTION 1 - INTRODUCTION

1.1 Overview

The Texas Department of Transportation (TxDOT) established the Quality Assurance Program (QAP) for Design-Bid-Build (D-B-B) Projects to ensure that materials and workmanship incorporated into highway construction projects are in reasonable conformity with the requirements of the approved plans and specifications, including any approved changes. This program conforms to the criteria in 23 CFR 637 B, where the Materials and Tests Division (MTD) central laboratory will be accredited under the AASHTO Accreditation Program (AAP) which oversees the statewide qualification program.

It consists of an "Acceptance Program" and "Independent Assurance (IA) Program" based on test results obtained by qualified persons and equipment.

The QAP allows for the use of validated Contractor-performed quality control (QC) test results as part of an acceptance decision. It also allows for the use of test results obtained by commercial laboratories in acceptance decisions. The acceptance of all materials and workmanship is the responsibility of the Engineer.

1.2 Support

For more information regarding the information and procedures in the program, contact the Materials and Tests Division (MTD) Administration at 512/506-5843.

SECTION 2 - ACCEPTANCE PROGRAM

2.1 Overview

The Quality Assurance Program (QAP) assures materials, incorporated into any highway construction project, are subject to verification sampling and testing, as well as quality control (QC) sampling and testing when required by the specifications.

The District Engineer will delegate an individual at the district level for the accountability of certification verification in SiteManager (SM) and at the laboratory for various project delivery options applicable to the DBB program.

The delegation of authority should encompass a mechanism that provides oversight authority and an audit function to ensure compliance. Additional information can be found in Section 6.7 – Dispute Resolution.

2.2 Sampling and Testing Frequency and Location

Verification sampling and testing will be performed at the location and frequency established in the Department's Guide Schedule of Sampling and Testing for Design-Bid-Build (DBB) Projects (DBB Guide Schedule) or specifications specific to each project.

2.3 Documentation

Testing will be documented within SiteManager on the department approved excel templates. When the tester does not enter test results directly into SM, the hardcopy will need to be scanned and attached to the SM sample documenting the tester's name.

2.4 Quality Control Sampling and Testing

Contractor-performed QC sampling and testing may be used as part of an acceptance decision when required or allowed by specification.

QC sampling and testing personnel, laboratories, and equipment will be qualified in accordance with Section 6 – Technician Qualification Program and Section 7 – Laboratory Qualification Program and will be evaluated under the Independent Assurance Program, as described in Section 3 of this document.

QC test results will be validated by verification test results obtained from independently taken samples. Qualified TxDOT personnel or their designated agents will perform verification sampling and testing.

2.5 Dispute Resolution

When QC test results are used in the acceptance decision, the MTD central laboratory or an accredited independent laboratory approved by MTD will perform the referee testing. The referee laboratory decision will be final.

SECTION 3 - INDEPENDENT ASSURANCE PROGRAM

3.1 Overview

The Independent Assurance (IA) program evaluates all sampling and testing procedures, personnel, and equipment used as part of an acceptance decision.

The IA program evaluates the qualified sampling and testing personnel and testing equipment and is established using the system approach. The system approach bases frequency of IA activities on time—regardless of the number of tests, quantities of materials, or numbers of projects tested by the individual being evaluated.

3.2 Required Frequencies and Activities

Table 1 gives the frequencies and activities required for evaluating sampling and testing personnel and equipment under the system approach to IA.

Table 1

Frequencies and Activities Required Under IA System Approach

Time	Activity
Before performing acceptance sampling and testing.	Qualification required under Section 6 and Section 7 of this QAP.
Within 12 months after Observation and Qualification, not to exceed 15 months.	Each qualified technician is required to participate in the first available proficiency or split sample for each test method requiring IA. Results must compare to the IA test results to within the established tolerance.
Within 24 months after Observation and Qualification, not to exceed 27 months.	Each qualified technician is required to participate in one proficiency or split sample test for each test method requiring IA. Results must compare to the IA test results to within the established tolerance.
Within 36 months of Qualification. (Only required for certifications issued by TxDOT or TXAPA with a 3-year cycle.)	Qualification is again required under Section 6 and Section 7 of this QAP.
Within 36 months after Observation and Qualification, not to exceed 39 months. (Only required for ACI, which has a 5-year certification cycle.)	Each qualified technician is required to participate in one proficiency or split sample test for each test method requiring IA. Results must compare to the IA test results to within the established tolerance.
Within 48 months after Observation and Qualification, not to exceed 51 months. (Only required for ACI, which has a 5-year certification cycle.)	Each qualified technician is required to participate in one proficiency or split sample test for each test method requiring IA. Results must compare to the IA test results to within the established tolerance.

Within 60 months of qualification (Only required for certifications issued by ACI with a 5-year cycle.)	Qualification is again required under Section 6 and Section 7 of this QAP.

Maintaining technician qualification under the IA system approach requires continuation of the above cycle of qualification and successful split or proficiency sample testing.

3.3 Testing Equipment

MTD will qualify district laboratory testing equipment used for acceptance sampling and testing, in accordance with Section 7 – Laboratory Qualification Program. Any non-TxDOT commercial laboratory used for acceptance sampling and testing must be accredited in accordance with Section 7.3 – Qualification.

MTD may designate the district laboratory to qualify commercial laboratory testing equipment, used for acceptance sampling and testing, in accordance with corresponding calibration test procedures. MTD or TxDOT district laboratory may hire a third-party entity to perform calibration or verification in accordance with corresponding calibration test procedures.

The qualifying authority will qualify testing equipment in accordance with the following guidelines.

A. Frequency for qualifying sampling and testing equipment must not exceed 1 year.
B. Calibration or verification is required whenever the laboratory or equipment is moved.

The qualifying authority will evaluate any equipment used to perform verification and QC sampling and testing in making an acceptance decision. This evaluation includes calibration checks and split or proficiency sample tests. The Department test procedures referenced in Section 7.4 – Calibration Standards and Frequencies for Laboratory Equipment give the requirements for, and frequency of, equipment calibrations.

3.4 Testing Personnel

MTD will qualify district and commercial laboratory personnel performing IA activities, in accordance with Section 6 – Technician Qualification Program.

MTD may designate a district laboratory to qualify other Department personnel and accredited commercial laboratory personnel performing IA activities. When a district qualifies commercial laboratory personnel, they must notify MTD in writing.

Individuals performing IA activities will be other than those performing verification or QC testing.

IA personnel will evaluate any individual performing verification or QC sampling and testing. This evaluation includes observations and split or proficiency sample testing.

3.5 Comparing Test Results

Comparison of the split sample test results can be used if equipment or procedures issues are suspected. Appendix B gives the acceptable tolerance limits for comparing test results from split and proficiency samples.

If the comparisons of the test results do not comply with the tolerances, an engineering review of the test procedures and equipment will be performed immediately to determine the source of the discrepancy.

3.6 Annual Report of IA Program Results

MTD will compose and submit an annual report to the Federal Highway Administration (FHWA) summarizing the results of TxDOT's systems approach IA program. See Appendix C for the annual report form.

This report identifies:

- number of sampling and testing personnel evaluated by the systems approach IA testing;
- number of IA evaluations found to meet tolerances in Appendix B;
- number of IA evaluations found to not meet tolerances in Appendix B; and
- summary of any significant system-wide corrective actions taken.

SECTION 4 - MATERIALS CERTIFICATION

4.1 Overview

The TxDOT District Area Engineer or Director of Construction will submit a materials certification letter, conforming in substance to the examples shown in Appendix D or E, as applicable.

For projects with federal oversight, submit the materials certification letter (Appendix D) to the FHWA division administrator, with a copy to MTD.

For non-federal oversight projects, submit the material certification letter (Appendix E) to the TxDOT District Engineer, with a copy to MTD.

Either letter must be submitted at final acceptance of the project.

SECTION 5 - CONFLICT OF INTEREST

5.1 Overview

To avoid an appearance of a conflict of interest, any qualified non-TxDOT laboratory will perform only one of the following functions on the same project:

- verification sampling and testing;
- QC sampling and testing;
- IA testing; or
- referee testing.

SECTION 6 - TECHNICIAN QUALIFICATION PROGRAM

6.1 Purpose

This program provides uniform statewide procedures for technician qualification to ensure that tests required by the specifications are performed according to the prescribed sampling and testing methods.

6.2 Technician Qualification

Sampling and testing personnel will be qualified to perform sampling and testing for the acceptance of materials in the areas of soils, bituminous, aggregate, and concrete materials.

The test methods for which individuals can be qualified are included in the following series of the TxDOT Test Procedures.

- 100-E Series (Soils)
- 200-F Series (Bituminous)
- 400-A Series (Aggregates and Concrete)
- 500-C Series (Asphalt – Tex-500-C and Tex-530-C)

6.3 Who Must Be Qualified?

Any individual who performs sampling and testing on the materials listed in Section 6.2 – Technician Qualification, for acceptance, must be qualified in each test procedure they perform.

NOTE—Reciprocity may be granted to individuals who have been successfully qualified under another state's program. These situations will be considered on a case-by-case basis and must meet the approval of the Materials and Tests (MTD) Division Director.

6.4 Who Can Qualify Sampling and Testing Personnel?

The following personnel may qualify an individual to perform the required sampling and testing of materials:

- MTD personnel;
- qualified district materials engineer or laboratory supervisor (except as noted below);
- qualified district laboratory personnel who have been authorized by the district materials engineer or laboratory supervisor to qualify others; and
- department-approved entities such as the Texas Asphalt Pavement Association (TXAPA) and the American Concrete Institute (ACI). Certifications received from these institutions may be used to satisfy the written exam and observation part of the Technician Qualification Program.

NOTE—Each district laboratory will maintain a minimum of one individual qualified by MTD or its designated agent, for each test procedure performed within the district. To perform testing and qualify district personnel for TxDOT concrete test methods, at least one individual from the district laboratory must have the corresponding ACI Field and Strength certifications issued by MTD.

6.5 Required Certifications for Commercial Laboratory and Contractor Personnel

Non-TxDOT laboratory personnel performing sampling and testing for TxDOT, or as required by specification, must obtain and keep current the following certifications pertinent to their scope of testing:

- ACI Concrete Field Testing Technician – Grade I,
- ACI Concrete Strength Testing Technician,
- TXAPA HMA Level 1A – Plant Production Specialist,
- TXAPA HMA Level 1B – Roadway Specialist,
- TXAPA HMA Level 2 – Mix Design Specialist,
- TXAPA SB 101 – Property Specialist,
- TXAPA SB 102 – Field Specialist,
- TXAPA SB 103 – Materials Analysis Specialist,
- TXAPA SB 201 – Strength Specialist,
- TXAPA SB 202 – Compressive Strength Specialist, and
- TXAPA AGG101 -– Aggregate Specialists.

For testing procedures not covered by the above certifications, the following personnel may qualify an individual to perform the required sampling and testing of materials:

- district laboratory personnel who have been authorized by MTD to perform technician qualifications, and
- MTD personnel.

6.6 Qualification Procedure

To qualify, an authorized evaluator must witness an individual successfully perform the specific test and the necessary calculations required to determine specification compliance. Successful performance is defined as demonstrating the ability to properly perform the key elements for each test method. If the individual fails to demonstrate the ability to perform a test, the individual will be allowed one retest per test method at the evaluator's

convenience. The maximum number of attempts cannot exceed three trials in a 90-day period of time.

In addition to successful performance of a test method, the individual must pass a written examination (minimum score of 80%) administered by an authorized evaluator. The maximum amount of time allocated per test will be one hour. If an individual cannot complete the written test in an hour, it will result in failure. An individual failing the written examination may request a retest. The retest must be scheduled and administered within 30 days of notification of failure; however, the maximum number of attempts cannot exceed three trials in a 90-day period of time.

Under unique circumstances, the qualification authority may grant a verbal examination upon request. The reasons for requesting a verbal examination must be presented and documented before the individual is allowed to take the examination. Should the technician fail the retest examination, the technician will not be allowed to test again unless a written notification is received from the technician's employer or supervisor stating that the technician has received additional training. MTD or its representative will determine the adequacy of the additional training. Failure to pass the third written examination will be considered as failing the entire qualification.

Successful qualification is defined as passing both the written and performance examinations.

In addition, the individual must participate in split or proficiency samples administered by the qualifying authority to validate the qualification as defined in Appendix B. MTD determines the qualifying authority for the split or proficiency sample.

Unless otherwise stated, qualification of an individual is valid for not more than 3 years, after which the individual must be re-qualified. Under the IA system approach, annual split or proficiency evaluations will be required as specified in Section 3.2 – Required Frequencies and Activities. Failure to satisfactorily complete annual split or proficiency testing will result in certification revocation.

6.7 Provisional Certifications

If the required certifications, listed in the Section 6.5 – Required Certifications for Commercial Laboratories and Contractor Personnel, cannot be readily obtained due to course availability, schedule conflicts, or other extenuating circumstances, provisional certifications administered by MTD or TxDOT's district laboratory will be allowed, per the following stipulations:

- provisional certifications must be approved by MTD or TxDOT district laboratory supervisor;
- provisional certifications will be valid for one month after the TXAPA and ACI examination dates; and
- the candidate must show evidence of having enrolled in the required ACI or TXAPA course.

6.8 Responsibility and Documentation

MTD and the district materials engineer, laboratory supervisor, or designee are responsible for maintaining documentation of all individuals qualified under their authority who perform required tests for acceptance of materials. The CE&I firm shall identify a coordinator with the responsibility to communicate with the Area Office who will then coordinate with the district level person to satisfy the requirements for qualified testers. SiteManager shall be used to send email notification on certification status to the owner (technician) as well as the district level responsible person. TxDOT's SiteManager will be the official system of record for qualified or certified TxDOT and commercial laboratory personnel.

Issuance of qualification certificates by the TxDOT qualifying authority is not required. A qualification summary listing all tests for which an individual is qualified is available in SiteManager and may be printed and signed at the district's discretion. Documentation is to be maintained through the Object Linking and Embedding (OLE) attachment window. This function allows all qualified personnel supporting documentation to be viewed in SM which includes:

- copies of certificates issued by ACI and TXAPA; or
- copies of certificates issued by MTD or TxDOT district laboratory, if issued;
- Quality Assurance Test (QAT) report with clear identification of technician's name, qualifier's name, score, and date taken; and
- original performance examinations for test procedures administered to each technician by the TxDOT qualifying authority, with clear identification of technician's name, qualifier's name, qualification status, and date.

Documentation retention will be for the life of the qualification, as detailed in the State of Texas Records Retention Schedule.

Results of annual proficiency testing administered by MTD or TXAPA will be stored in their respective central repositories through SharePoint. Annual split sample evaluations should be stored in SiteManager.

6.9 Disqualification

Accusations of misconduct by testing technicians are made to the responsible TxDOT district representative and reported to MTD. Table 2 defines the 3 levels of misconduct: neglect, abuse, and breach of trust.

Table 2

Levels of Misconduct

Term	Definition
Neglect	Unintentional deviations from testing procedures or specifications.
Abuse	Careless or deliberate deviation from testing procedures or specifications.
Breach of Trust	Violation of the trust placed in the certified technician including, but not limited to, acts such as: • falsification of records; • being aware of improprieties in sampling, testing, or production by others and not reporting them to appropriate supervisors involved in the project; • re-sampling or retesting without awareness and consent of appropriate supervisors involved in the project; and • manipulating compensation or production.

The certification steering committee will investigate accusations of misconduct with the assistance of the responsible district. Depending on the severity of the misconduct, MTD may impose penalties ranging from a written reprimand, a temporary suspension, or a permanent revocation of the certification, contingent upon the findings of the investigation. A technician with a revoked certification will be removed from the project and will not be allowed to be employed on any TxDOT project statewide.

SECTION 7 - LABORATORY QUALIFICATION PROGRAM

7.1 Purpose

This program provides uniform statewide procedures to ensure that laboratory facilities and equipment are qualified for the performance of required sampling and testing methods.

7.2 Laboratory Responsibility

The responsibilities are spread among varying roles and are defined below to achieve a level of quality and to maintain program compliance.

7.2.1 CE&I

The CE&I firm shall:

- determine all test methods and certification requirements for a project and submit to the area office coordinator within ten (10) days after the execution of the contract and before the kick off meeting;
- submit required technician certifications and commercial lab requests submittals to the AO; and
- provide a quality plan to the AO that will demonstrate how quality is to be achieved through acceptance testing, per project. Include how the firm will track and ensure that only certified technicians perform acceptance on equipment that is calibrated and in good working order.

7.2.2 District AO Personnel

The Area Engineer will delegate the District AO coordinator. The AO coordinator shall:

- provide the district lab personnel with monthly status of the CE&I projects;
- provide the district lab contacts for CE&I firms and their commercial labs;
- invite the district lab personnel to the kick off and associated preconstruction meetings;
- will forward all CE&I technician certifications and laboratory submittals or requests to the district lab;
- will review the CE&I project specific testing, certification, and equipment needs; and
- submit the CE&I's quality plan to the district lab.

7.2.3 District lab coordinator

The district lab coordinator shall:

- review and make recommendations to the AO coordinator for approval or rejection of the CE&I quality plan;
- coordinate the inspection of the commercial lab facility and equipment once the quality plan has been approved;
- communicate the status of the inspection with the CE&I firm;
- use SM to auto notify the owner (technician) and the district lab designee before certification expiration; and
- conduct an internal review for continual compliance for all levels of certifications annually.

7.3 Qualification

All laboratories performing sampling and testing for TxDOT require qualification. These include, but are not limited to the following:

- Materials and Tests Division (MTD) central laboratory;
- District laboratories;
- area or project laboratories (including field laboratories at hot mix and concrete plants);
- MTD field laboratories; and
- commercial laboratories.

7.3.1 District Lab Accreditation

MTD is responsible for accrediting the district and MTD field laboratories. Upon completion of the laboratory accreditation process, the district lab is assigned a rating. The rating system identified in Table 3 is based on the associated risks to the department.

Table 3
Rating Legend

Number	Rating Legend
1	Excellent review with minor or no deficiencies notated.
2	Several deficiencies or repetitive observation were notated.
3	A level of negligence was found programmatically violating compliance requirements.

Each laboratory inspection summarizes the accreditation visit where a finding is classified as either a deficiency or an observation, defined as follows:

Deficiency: A finding that indicates policy or practice contrary to the requirements of the applicable test methods or documented quality procedures.

Observation: Observations are intended as comments for improvements relating to specific technical information to offer recommendations for best practice. Specifically, observations are noted for any technically related deficiencies where judgment and experience indicate it is not likely to affect the laboratory's ability to produce valid and accurate test results.

Resolution of Findings

A corrective action report (CAR) and supporting documentation is collectively submitted to MTD to address the findings notated in the report. The CAR will document actions that have been taken to prevent reoccurrence and to show a formal resolution to the findings.

Deficiencies:
Deficiencies require a formal written response describing the corrective actions taken or planned and enough documentation, i.e., records, copies of new or revised procedures, equipment invoices, or photographs to substantiate actions taken. Corrective actions should be permanently implemented to prevent recurrence of the problem.

Observations:
No written response is required for findings identified as observations. The laboratory should; however, take necessary corrective action to address the observation to prevent possible recurrence. Repeat observations may result in deficiencies.

The resolution should be completed in 21 days from the issuance of the report. If the laboratory cannot satisfy the findings in the report, an extension may be requested for additional time to resolve any outstanding or pending findings. Additional time extensions may be granted on a case by case scenario but should not exceed 90 days. When the findings cannot be resolved within the 90-day period, the MTD Division Director (DD) will escalate the outstanding issues at his discretion to the DOC or DE as needed. See Section 7.5 – Non-Compliance.

7.3.2 Commercial Lab and CE&I Qualification Process

At the district level, the district laboratory will be the qualifying authority for area office and commercial laboratories, only in the areas for which the district laboratory is accredited. They are also responsible for participating and conducting a peer review that will include a minimum of two projects conducted by CE&I firms to ensure program compliance. The peer review shall be documented and conducted within 12-24 months after MTD conducts the QAP district accreditation.

When a district qualifies a commercial laboratory, they must notify MTD in writing and submit a copy of the laboratory qualification certificate. A directory of all TxDOT-qualified laboratories is available through the MTD crossroads intranet.

The laboratory qualifying authority will use Form 2682, "Quality System Inspection – Commercial Laboratory," to document the following:

- identify the scope of testing to be performed;
- verify that test methods used to perform tests are available and current;
- document that the laboratory has the required equipment to perform the tests;
- check the calibration or verification records for each piece of equipment, to include:
  - description of equipment,
  - identification of any traceable standard used,
  - frequency of calibration,
  - date of calibration,
  - date of last calibration,
  - date of next calibration,
  - calibrating technician,
  - procedure used to calibrate or verify equipment, and
  - detailed results of calibration; and
- verify that the laboratory has qualified or certified technicians to perform required testing.

In addition, all equipment may be subject to calibration verification or other inspection by the qualifying authority. Laboratories performing acceptance sampling and testing should use results from TxDOT's Material Producer List (MPL), and perform materials sampling and testing in accordance with TxDOT's DBB Guide Schedule. Materials that are not monitored or not pre-approved by TxDOT are subject to sampling and testing as part of the acceptance program, except as noted in the DBB Guide Schedule remarks.

NOTE—Project or field laboratories performing Tex-113-E, Tex-117-E, and Tex-242-F tests must be an approved laboratory from TxDOT's MPL.

Laboratories are qualified every 3 years, at a minimum, although accreditation may be an ongoing process. Calibration or verification is required whenever laboratory or equipment is moved or per the minimum laboratory standards defined in Section 7.4 – Calibration Standards and Frequencies for Laboratory Equipment.

An annual internal audit should be conducted by designated staff to ensure continual compliance with technician records and equipment intervals. The following are tools and resources available to aid in managing the program for compliance:

- SM Material Users Query that allows filtering to determine expiring certifications, and
- Form 2682.

7.4 Calibration Standards and Frequencies for Laboratory Equipment

The standards for calibration and the frequencies for laboratory equipment calibrations are shown in:

- Tex-198-E, "Minimum Standards for Acceptance of a Laboratory for Soils and Flexible Base Testing,"
- Tex-237-F, "Minimum Standards for Acceptance of a Laboratory for Hot Mix Testing,"
- Tex-498-A, "Minimum Standards for Acceptance of a Laboratory for Concrete and Aggregate Testing," and
- Tex-900-K Series, procedures for calibrating, verifying, and certifying equipment and devices.

7.5 Non-Compliance

A laboratory that does not meet all the above requirements is subject to disqualification or suspension.
Any equipment in a qualified laboratory failing to meet specified equipment requirements for a specific test method will not be used for that test method. MTD or the TxDOT district laboratory responsible for the certification or audit will immediately notify all applicable Area Offices of non-conformance for those test methods.

7.6 Documentation

The qualifying authority is responsible for verifying that laboratories are qualified to perform sampling and testing. Documentation will be required to be kept by the qualifying authority and the qualified laboratory. Calibration records will be maintained for a minimum of 10 years. Upon satisfactory completion of the laboratory qualification process, the qualifying authority will issue a certificate within 14 days covering the scope of testing in which the laboratory has been qualified, with a copy to MTD.

Laboratory qualification documentation to be maintained by the qualifying authority includes:

- availability and calibration or verification records for each piece of equipment;
- personnel qualified or certified to perform required testing; and

- copy of laboratory qualification certificate issued.

7.7 Dispute Resolution

The next higher qualification authority will resolve disputes concerning calibration and verification of equipment. For disputes that cannot be resolved at the district level, MTD will be the final authority.

Appendix A
Acronyms and Definitions

The following terms and definitions are referenced in this document and have the meanings set forth below.

AAP	AASHTO Accreditation Program (AASHTO re:source and CCRL)
AASHTO	American Association of State Highway Transportation Officials
ACI	American Concrete Institute
AO	Area Office
AQMP	Aggregate Quality Monitoring Program
CAR	Corrective Action Report
CCRL	Concrete and Cement Reference Laboratory
CE&I	Construction Engineering and Inspection
CFR	Code of Federal Regulations
MTD	Materials and Tests Division
CMEC	Construction Materials Engineering Council
FHWA	Federal Highway Administration
HMA	Hot-Mix Asphalt
HMAC	Hot-Mix Asphalt Center
IA	Independent Assurance
L-A-B	Laboratory Accreditation Bureau
MPL	Material Producer List
QAP	Quality Assurance Program
QAT	Quality Assurance Test
QC	Quality Control
SM	SiteManager
TXAPA	Texas Asphalt Pavement Association
TxDOT	Texas Department of Transportation

Abuse—Careless or deliberate deviation from testing procedures or specifications.

Acceptance Program—All factors that comprise TxDOT's program to determine the quality of the product as specified in the contract requirements. These factors include verification sampling, testing, and inspection and may include results of QC sampling and testing.

Accredited Laboratories—Laboratories that are recognized by a formal accrediting body as meeting quality system requirements including demonstrated competence to perform standard test procedures.

Breach of Trust—Violation of the trust placed in the certified technician including, but not limited to, acts such as: falsification of records; being aware of improprieties in sampling, testing, or production by others and not reporting them to appropriate supervisors involved in the project; re-sampling or retesting without awareness and consent of appropriate supervisors involved in the project; and manipulating compensation or production.

Certified Technician—A technician certified by some agency as proficient in performing certain duties.

Independent Assurance (IA) Program—Activities that are an unbiased and independent evaluation of all the sampling and testing procedures, equipment, and personnel qualifications used in the acceptance program.

Material Producer List (MPL)—TxDOT-approved products and materials from various manufacturers and producers are located at:
http://www.txdot.gov/business/resources/producer-list.html

Neglect—Unintentional deviations from testing procedures or specifications.

Proficiency Samples—Homogenous samples that are distributed and tested by 2 or more laboratories or personnel. The test results are compared to assure that the laboratories or personnel are obtaining the same results.

Qualified Laboratories—Laboratories that are capable as defined by appropriate programs established by TxDOT. As a minimum, the qualification program must include provisions for checking testing equipment, and the laboratory must keep records of calibration checks.

Qualified Sampling and Testing Personnel—Personnel who are capable as defined by appropriate programs established by TxDOT.

Quality Assurance (QA)—All planned and systematic actions necessary to provide confidence that a product or service will satisfy given requirements for quality.

Quality Control (QC)—All Contractor operational techniques and activities performed or conducted to fulfill the contract requirements.

TxDOT Standard Specifications—the *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* adopted by the Texas Department of Transportation, including all revisions thereto applicable on the effective date of the contract documents.

Verification Sampling and Testing—Sampling and testing performed to verify the quality of the product.

Appendix B
Test Methods for Split or Proficiency Evaluation

After observation and qualification, each qualified technician is required to participate annually in one proficiency or split sample test for each test method requiring independent assurance. Split sample test results must compare to the independent assurance test results below. Proficiency sample test results must be within ±2 standard deviations of the proficiency sample mean.

Laboratory Testing Procedures and Tolerance Limits

Test Procedure	Description	Tolerance
Tex-104-E	Liquid Limit of Soils	15% of mean[1]
Tex-105-E	Plastic Limit of Soils	15% of mean[1]
Tex-106-E	Plasticity Index of Soils	20% of mean[1]
Tex-107-E	Bar Linear Shrinkage of Soils	± 2%
Tex-110-E	Particle Size Analysis of Soils, Part I	> No. 4 sieve: ± 5% points
		≤ No. 4 sieve: ± 3% points
Tex-113-E	Moisture-Density Relationship of Base Materials	Density ± 2.0 PCF
		Moisture Content ± 0.5%
Tex-117-E	Triaxial Compression for Disturbed Soils and Base Materials, Part II	Strength ± 15 psi
		Moisture Content ± 0.5%
Tex-200-F	Asphaltic Concrete Combined Aggregate	>5/8" sieve: ± 5.0% points (individual % retained)
		≤5/8" sieve–No. 200: ± 3.0% (individual % retained)
		Passing No. 200: ± 1.6% points
Tex-206-F	Compacting Test Specimens of Bituminous Mixtures	± 1.0% laboratory-molded density in accordance with Tex-207-F
Tex-207-F	Determining Density of Compacted Bituminous Mixtures	Laboratory-Molded Density: ± 1.0%
		Laboratory-Molded Bulk Specific Gravity: ± 0.020
		In-place air voids (cores): ± 1.0%
Tex-227-F	Theoretical Maximum Specific Gravity of Bituminous Mixtures	± 0.020
Tex-236-F	Asphalt Content of Asphalt Paving Mixtures by the Ignition Method	± 0.3%

Test Procedure	Description	Tolerance
Tex-241-F	Compacting Bituminous Specimens Using the Superpave Gyratory Compactor (SGC)	± 1.0% laboratory-molded density in accordance with Tex-207-F
Tex-418-A	Compressive Strength of Cylindrical Concrete Specimens	17% of mean[1] (4 × 8" specimen)
		14% of mean[1] (6 × 12" specimen)

1. The difference between compared test results must not exceed the indicated percentage of the mean of the compared test results, where the mean is the average of the two test results.

EXAMPLE: Plasticity Index

Tolerance = 20% of the mean

Technician test value	18
IA technician test value	22
Mean	20
20% difference	4

Both values are within 20% of the mean.

Appendix C
IA Annual Report

{Date}

Thomas L. Smith
Independent Assurance Program Manager
Materials and Tests Division (MTD)
Texas Department of Transportation
125 East 11th Street
Austin, TX 78701

RE: Annual Report of Independent Assurance (IA) Program Results – {Project Name}

Dear Mr. Smith:

In accordance with the requirements set forth in the TxDOT Quality Assurance Program for Design-Bid-Build Projects, the information below summarizes the results of system approach independent assurance (IA) testing conducted by our firm on the {Project Name} project for calendar year {XXXX}.

Independent Assurance Program Results – {Year}	
IA Activities	{Project Name}
1. Number of personnel evaluated under system approach.	
2. Number of IA evaluations meeting tolerance.	
3. Number of IA evaluations not meeting tolerance.	
4. Corrective actions:	

cc: Jere A. Williams, P.E.
Materials and Tests, Division Director
TxDOT – MTD

Appendix D
Materials Certification Example Letter for Projects with Federal Oversight

{Date}

Al Alonzi
FHWA Texas Division Administration
FHWA Texas Division Office
300 East 8th Street
Austin, TX 78701

RE: Materials Certification Letter

Project: SH Contract No.:
CSJ:
HWY:
County:
Federal-Aid Project No.:

Dear Mr. Alonzi:

This letter is to certify:

The results of the tests used in the acceptance program indicate that the materials incorporated in the construction work, and in the construction operations controlled by sampling and testing, were in conformity with the approved plans and specifications.

Both the Acceptance and Verification results were evaluated by an independent assurance sampling and testing program, the results of which were submitted to FHWA by the department in the Annual Report of Independent Assurance Program Results and independent of this materials certification.

☐ Exceptions to the plans and specifications are explained on the back hereof (or on attached sheet).
☐ There are no exceptions to the plans and specifications on this project.

Sincerely,
{TxDOT District Area Engineer or Director of Construction}, P.E.
{Title}

cc: Jere A. Williams, P.E.
Materials and Tests, Division Director
TxDOT – MTD

Appendix E
Materials Certification Example Letter for Projects with Non-Federal Oversight

{Date}

{TxDOT District Engineer}
{Title}

RE: Materials Certification Letter

Project: SH Contract No.:
CSJ:
HWY:
County:

Dear Mr. {District Engineer}:

This letter is to certify:

The results of the tests used in the acceptance program indicate that the materials incorporated in the construction work, and in the construction operations controlled by sampling and testing, were in conformity with the approved plans and specifications.

Both the Acceptance and Verification results were evaluated by an independent assurance sampling and testing program, the results of which were submitted to MTD in the Annual Report of Independent Assurance Program Results and independent of this materials certification.

☐ Exceptions to the plans and specifications are explained on the back hereof (or on attached sheet).
☐ There are no exceptions to the plans and specifications on this project.

Sincerely,
{TxDOT District Area Engineer or Director of Construction}, P.E.
{Title}

cc: Jere A. Williams, P.E.
Materials and Tests, Division Director
TxDOT – MTD

Appendix F
Archived Versions

The following archived versions of this document are available.

- Effective January 2016–April 2018:
  ftp://ftp.dot.state.tx.us/pub/txdot-info/cst/qap_dbb_0116.pdf

APPENDIX B
GUIDE SCHEDULE OF SAMPLING AND TESTING

GUIDE SCHEDULE OF SAMPLING & TESTING FOR DESIGN BID-BUILD (DBB) PROJECTS - (DBB Guide Schedule)

JUNE 28, 2019

Using the Guide Schedule

Research of sampling and testing rates, listed for project tests in the following Guide Schedule, show that the Department's and the Contractor's risk of either rejecting "good" material or accepting "bad" material range from 20% to 40%.

To reduce this risk, we recommend that the sampling rate be increased during initial production. A four-fold increase in testing frequency will generally reduce risk to approximately 5%. The intent of increasing testing, at the start of production, is to insure the Contractor's processes are in control and to establish acceptability requirements early.

There is a need to increase the frequency of testing for high-variability materials and when testing results do not meet specifications. The Engineer may require the Contractor to reimburse the Department for costs resulting from failing test results, in accordance with the specifications.

Materials incorporated in TxDOT projects are subjected to various quality assurance procedures such as testing (as outlined in this document), certification, quality monitoring, approved lists, etc. The Engineer and testing staff should familiarize themselves with materials to be used before work begins by reviewing the specifications and this document. Discuss material testing requirements with the Contractor.

Other testing required by the specifications, but not shown in the DBB Guide Schedule, should be performed at a frequency necessary to provide adequate confidence that materials meet specifications.

NOTE—The TxDOT District Area Engineer or Director of Construction must submit a "Materials Certification Letter" at final acceptance of the project. The intent of this letter is to ensure that the quality of all materials incorporated into the project is in conformance with the plans and specifications, thus ensuring a service life equivalent to the design life. Any material represented by an acceptance test, that does not meet the criteria contained in the plans and specifications, is considered an exception. Exceptions must be listed in the materials certification letter. For projects with federal oversight, submit the materials certification letter (See Appendix D of DBB QAP) to the FHWA division administrator, with a copy to the Materials and Tests Division (MTD). For non-federal oversight projects, submit the material certification letter (Appendix E of DBB QAP) to the TxDOT District Engineer, with a copy to MTD. Refer to section 4.1 of the "Quality Assurance Program for Design-Bid-Build Projects" (DBB QAP).

Assuring the quality of the product and proper incorporation of materials into the project begins with proper sampling practices. Sampling, testing, and construction inspection must be performed collaboratively to assure the specific attributes of the finished product reflect quality workmanship. Sampling guidance for hot-mix asphalt is contained in Tex-225-F, "Random Selection of Bituminous Mixture Samples," and the respective specification for that material. All remaining materials are covered by method and materials specifications, to which the following applies.

For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows:

- Soils/flexible base: Vary sampling between stockpiling operations, completed stockpile, windrow, and project site. Vary the time of day sampling is performed.

- Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, belt sampling, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed.

- Concrete (structural and miscellaneous): Always sample as near as practicable to the point of placement. For strength testing, vary the time of day or the number of truck from which the concrete is sampled. Tests for slump, air, and temperature should be done often to ensure the consistent control of the concrete production (not applicable to miscellaneous concrete).

This Guide Schedule is applicable to all contracts associated with the 2014 Standard Specifications.

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
EMBANKMENT (CUTS & FILLS)	Liquid Limit (A)	Tex-104-E	During stockpiling operations, from completed stockpile, or project site (B)	Materials with PI ≤ 15: 10,000 CY	For Type A embankment or when required by the plans. This test may be waived for embankment cuts as directed by the Engineer. Determine a new liquid limit and plasticity index for each different material or notable change in material. Sample in accordance with Tex-100-E.
	Plasticity Index (A)	Tex-106-E		Materials with PI > 15: 5,000 CY	
	Gradation	Tex-110-E		Each 10,000 CY	When shown on plans. This test may be waived for embankment cuts, as directed by the Engineer. Sample in accordance with Tex-100-E.
	Moisture/Density	Tex-114-E		As directed by the Engineer	Not required for ordinary compaction. Determine a new optimum moisture and maximum density for each different material or notable change in material. Sample in accordance with Tex-100-E.
	In-place Density (A)	Tex-115-E	As directed by the Engineer	Fill: each 5,000 CY min. 1 per lift.	Not required for ordinary compaction. Determine a new optimum moisture and maximum density according to Tex-114-E for each different material or notable change in material. Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material and adjust the density accordingly. Materials such as RAP, gypsum, lime, cement, and iron ore tend to bias the counts for nuclear density gauges.
				Cut: each 6,000 LF	
RETAINING WALL (NON-SELECT BACKFILL)	As shown above for Embankment (Cuts and Fills)		As shown above for Embankment (Cuts and Fills)	As shown above for Embankment (Cuts and Fills)	Sample in accordance with Tex-100-E.
RETAINING WALL (SELECT BACKFILL)	Plasticity Index (A)	Tex-106-E	During stockpiling operations, from completed stockpile, or project site (B)	Each 5,000 CY	Required only for Type CS backfill. Test the fraction of material finer than the No. 200 sieve. Sample in accordance with Tex-400-E.
	Gradation	Tex-110-E	During stockpiling operations, from completed stockpile, or project site (B)	Each 5,000 CY	Required only for Drainage Aggregate. Sample in accordance with Tex-400-A.
		Tex-401-A			Required only for Select Backfill. Sample in accordance with Tex-400-A.
	Resistivity (A)	Tex-129-E	During stockpiling operations, from completed stockpile, or project site (B)	Each 5,000 CY	For material with resistivity between 1,500 and 3,000 ohm-cm, determine chloride and sulfate content, as specified in Item 423. Sample in accordance with Tex-400-A.

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
RETAINING WALL (SELECT BACKFILL) (continued)	pH (A)	Tex-128-E	During stockpiling operations, from completed stockpile, or project site (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Magnesium Soundness	Tex-411-A	During stockpiling operations, or from completed stockpile	1 per source, per project	Test when backfill sources appear to contain particles such as shale, caliche, or other soft, poor-durability particles. Sample in accordance with Tex-400-A.
	Micro-Deval	Tex-461-A	During stockpiling operations, or from completed stockpile	1 per source, per project	May be used as an alternate to the magnesium soundness only when the % loss from the micro-deval is not greater than 20%. When the % loss from the micro-deval is greater than 20%, the magnesium soundness governs aggregate verification. Sample in accordance with Tex-400-A.
	In-place Density (A)	Tex-115-E	As directed by the Engineer.	1 per backfill lift, per wall	Not required for rock backfill. For walls greater than 500 ft. in length, perform one test per lift for every 500 ft. in length. (F) Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E for each different material or notable change in material and adjust the density accordingly.
UNTREATED BASE COURSES	Liquid Limit (A)	Tex-104-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Plasticity Index (A)	Tex-106-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	
	Gradation (A)	Tex-110-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Moisture/Density	Tex-113-E	From completed stockpile at the source (E)	Each 20,000 CY	Not required for ordinary compaction. Sample in accordance with Tex-400-A.

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES						
				PROJECT TESTS		
MATERIAL OR PRODUCT		TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
UNTREATED BASE COURSES (Continued)		Wet Ball Mill (A)	Tex-116-E	From completed stockpile at the source (E)	Each 20,000 CY	Required for Grades 1–2 and 5, and as shown on the plans for Grade 4. Sample in accordance with Tex-400-A.
		Strength (A)	Tex-117-E	From completed stockpile at the source (E)	Each 20,000 CY	Required for Grades 1–2 and 5, and as shown on the plans for Grade 4. When base material is from a source where the District has a record of satisfactory triaxial results, the frequency of testing may be reduced to one per 30,000 CY. If any one test falls below the minimum value required, the frequency of testing will return to the original frequency of 20,000 CY. Sample in accordance with Tex-400-A.
		In-place Density (A)	Tex-115-E	As directed by the Engineer	Each 3,000 CY, min. 1 per lift	Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material and adjust the density accordingly. Materials such as RAP, gypsum, lime, cement, and iron ore tend to bias the counts for nuclear density gauges.
		Thickness (A)	Tex-140-E	As directed by the Engineer	Each 3,000 CY	Not required where survey grade control documents are compliant.
		Ride Quality (A)	Tex-1001-S Surface Test, Type B	Final riding surface of travel lanes		This applies to the final travel lanes that receive a 1- or 2-course surface treatment for the final surface, unless otherwise shown on the plans.
TREATED SUBGRADE AND BASE COURSES	SUBGRADE BEFORE TREATMENT	Organic Content	Tex-148-E	As directed by the Engineer	1 per project, per source or as directed by the Engineer	Required for existing subgrade material and material imported from a borrow source. Soil survey and geologic maps may be used to determine sampling locations. Sample in accordance with Tex-100-E.
		Sulfate Content	Tex-145-E	As directed by the Engineer	1 per 500 feet or 5,000 CY	Required for existing subgrade material and material imported from a borrow source. Soil survey and geologic maps may be used to determine sampling locations. Sample in accordance with Tex-100-E.
	NEW BASE MATERIAL	Liquid Limit (A)	Tex-104-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	When central mix site or plant is used, windrow sampling may be waived. Sample in accordance with Tex-400-A.

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES						
				PROJECT TESTS		
MATERIAL OR PRODUCT		TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
TREATED SUBGRADE AND BASE COURSES (Continued)	NEW BASE MATERIAL (Continued)	Plasticity Index (A)	Tex-106-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	
		Gradation (A)	Tex-110-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.
		Wet Ball Mill (A)	Tex-116-E	From completed stockpile at the source (E)	Each 20,000 CY	Required for Grades 1–2 and 5, and as shown on the plans for Grade 4. Sample in accordance with Tex-400-A.
		Strength (A)	Tex-117-E	From completed stockpile at the source (E)	Each 20,000 CY	Required for Grades 1–2 and 5, and as shown on the plans for Grade 4. When base material is from a source where the District has a record of satisfactory triaxial results, the frequency of testing may be reduced to one per 30,000 CY. If any one test falls below the minimum value required, the frequency of testing will return to the original frequency of 20,000 CY.
	LIME	Compliance with DMS-6350	Tex-600-J	During delivery to project	Commercial Lime Slurry: each 200 tons of lime Carbide Lime Slurry: each 100 tons of lime	Sample in accordance with Tex-600-J. Verify the source is listed on the current Material Producer List for Lime. Only materials appearing on the Material Producer List will be accepted. Sample frequency for Carbide Lime Slurry may be increased as directed by the Engineer. For Hydrated Lime and Quick Lime, project testing is not required but it is encouraged to sample and test the material at a rate of 1 per project as a best practice.
	CEMENT	Compliance with DMS-4600		Railroad car, truck, or cement bins		Verify the source is listed on the current Material Producer List for Cement. If not, sample and test in accordance with DMS-4600. (C)
	FLY ASH MATERIAL	Compliance with DMS-4615		Project samples at location directed by the Engineer		Verify the source is listed on the current Material Producer List for Fly Ash. Only materials from MTD approved sources appearing on the Material Producer List for Fly Ash will be accepted. Project testing is not required but it is encouraged to sample and test the material at a rate of 1 per project as a best practice. (C)

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES						
				PROJECT TESTS		
MATERIAL OR PRODUCT		TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
TREATED SUBGRADE AND BASE COURSES (Continued)	COMPLETE MIXTURE	Pulverization Gradation	Tex-101-E, Part III	Roadway, after pulverization and mixing	As necessary for control	At the beginning of the project, one test must be made for each 4,500 CY or 6,000 tons until the Engineer is satisfied that acceptable pulverization results are being obtained. Sample in accordance with Tex-100-E.
		Moisture/Density Curve and Strength	Tex-120-E, Part II, or Tex-121-E, Part II	From roadway windrow after treatment (E)	Each 20,000 CY	Not required for ordinary compaction. Determine a new moisture/density curve for each different or notable change in material. Perform Tex-120-E, Part II, for Cement Treated Material, and Tex-121-E, Part II, for Lime, Lime-Fly Ash, or Fly Ash Treated Material. If Tex-120-E, Part I, Tex-121-E, Part I, or Tex-127-E is performed before the project, this test may be waived. Sample in accordance with Tex-100-E.
		Moisture/Density Curve and Strength	Tex-120-E, Part I, Tex-121-E, Part I, or Tex-127-E	From roadway before treatment	As necessary for control	Perform Tex-120-E, Part I, on cement treated material, and Tex-121-E, Part I, for lime-fly ash or fly ash treated material. Verifies the field strength by comparing results from the mix design. Performed at the direction of the Engineer and when notable change in material, as described above for Part II of the test procedures. Sample in accordance with Tex-100-E.
		In-place Density (A)	Tex-115-E	As directed by the Engineer	Each 3,000 CY, min 1 per lift	Determine the appropriate moisture/density curve for each different material or notable change in material. Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material and adjust the density accordingly. Stabilizers and materials such as RAP, gypsum, and iron ore tend to bias the counts for nuclear density gauges.
		Thickness (A)	Tex-140-E	As directed by the Engineer	Each 3,000 CY	Not required where survey grade control documents are used for compliance.

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
RECLAIMED ASPHALT PAVEMENT (RAP), CRUSHED CONCRETE, and RECYCLED MATERIALS	Sulfate Content	Tex-145-E	During stockpiling operations, from completed stockpile, or windrow	Each 5,000 CY	Required only for contractor furnished recycled material, including crushed concrete. Not required for RAP. Sample in accordance with Tex-400-A.
	Deleterious Material	Tex-413-A		Each 5,000 CY	Required only for contractor furnished recycled material, including crushed concrete. Sample in accordance with Tex-400-A.
	Decantation	Tex-406-A	During stockpiling operations, from completed stockpile, or windrow	Each 5,000 CY	Required only for contractor furnished RAP. Sample in accordance with Tex-400-A.

TABLE I – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager (SM), in the remarks field, and on the end of the Project Materials Certification Letter.
B	Engineer will select any of these locations or any combinations thereof with the provision that the initial sample will be obtained from the completed stockpile at the source and at least one out of ten consecutive samples will be taken at the project site (from the windrow for treated and untreated bases and embankments when possible).
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: • Soils/Flexible Base: For gradation, liquid limit, and plastic limit, vary sampling between stockpiling operations, completed stockpile, windrow, and project site. Vary the time of day sampling is performed. • Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, belt sampling, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed.
E	The Engineer will sample from the completed stockpile at the source and test before placement.
F	Each test performed that is based on a quantity of material is considered “or fraction thereof” for calculating number of tests.

TABLE IA – ASPHALT TREATED BASE (Plant Mix)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (C)	FREQUENCY OF SAMPLING (D)	REMARKS
AGGREGATE	Liquid Limit (A)	Tex-104-E	During stockpiling operations, from completed stockpile, or before mixing	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Plasticity Index (A)	Tex-106-E	During stockpiling operations, from completed stockpile, or before mixing	Each 5,000 CY	
	Wet Ball Mill (A)	Tex-116-E	During stockpiling operations, from completed stockpile, or before mixing	1 per project, per source	Sample in accordance with Tex-400-A. (B)
LIME	Compliance with DMS-6350		During delivery to the project	Hydrated Lime: 1 per project Commercial Lime Slurry: each 200 tons of lime (D) Carbide Lime Slurry: each 100 tons of lime (D) Quick Lime: 1 per project	On projects requiring less than 50 tons, material from MTD approved sources may be accepted on the basis of Producer's Certification without sampling.
RECLAIMED ASPHALT PAVEMENT (RAP), and RECYCLED AGGREGATE	Decantation	Tex-406-A, Part I	During stockpiling operations, from completed stockpile, or before mixing	Each 10,000 CY	Sample in accordance with Tex-400-A.
RECYCLED ASPHALT SHINGLES (RAS)	Decantation	Tex-217-F,Part III	During stockpiling operations, from completed stockpile, or before mixing	Each 10,000 CY	Sample in accordance with Tex-400-A.
ASPHALT BINDER	Compliance with Item 300		Sampling port nearest the storage tank	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample binder in accordance with Tex-500-C, Part II. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SiteManager (SM) Assistant. The Engineer must associate one QM sample per project in SM.

TABLE IA – ASPHALT TREATED BASE (Plant Mix)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (C)	FREQUENCY OF SAMPLING (D)	REMARKS
TACK COAT	Compliance with Item 300		Distributor	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample tack coat in accordance with Tex-500-C, Part III. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample per project in SM.
COMPLETE MIXTURE	Gradation (A)	Tex-200-F, Part I	Plant Mix (C)	20,000 CY (25,000 tons)	Sample in accordance with Tex-222-F. Determine the gradation of the aggregate from the complete mixture tested in accordance with Tex-236-F.
	Laboratory Density (A)	Tex-126-E	Plant Mix (C)	20,000 CY (25,000 tons)	Sample in accordance with Tex-222-F.
	Percent Asphalt (A)	Tex-236-F	Plant Mix (C)	Each 1,500 CY (2,000 tons) or days production	Determine an asphalt content correction factor for ignition oven at a minimum of one per project. Sample in accordance with Tex-222-F.
	Indirect Tensile Strength – Dry	Tex-226-F	Plant Mix	1 per project, per design	Sample in accordance with Tex-222-F.
	Moisture Susceptibility	Tex-530-C	As directed by the Engineer	1 per project, per design	This test may be waived, when shown on the plans. Sample in accordance with Tex-222-F.
ROADWAY	In-Place Air Voids (A)	Tex-207-F	Roadway cores, as directed by the Engineer (C, D)	Each 3,000 CY, min 1 per lift	Not required for ordinary compaction or when air void requirements are waived. Sample in accordance with Tex-222-F.
	Ride Quality	Tex-1001-S Surface Test, Type A	On Finished Surface		Unless otherwise shown on the plans.

TABLE IA – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager (SM), in the remarks field, and on the end of the Project Materials Certification Letter.
B	Engineer will select any of these locations or any combinations thereof with the provision that at least one out of ten consecutive samples will be taken at the project site (from the windrow for treated and untreated bases and embankments when possible).
C	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: • Soils/Flexible Base: Vary sampling between stockpiling operations, completed stockpile, windrow, and project site. Vary the time of day sampling is performed. • Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, belt sampling, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed.
D	Each test performed, that is based on a quantity of material, is considered “or fraction thereof” for calculating number of tests.

TABLE II – SEAL COAT					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (C)	FREQUENCY OF SAMPLING (D)	REMARKS
AGGREGATE	Gradation (A)	Tex-200-F, Part I	Stockpile (At source or at point of delivery)	Each 1,000 CY	Rate may be reduced to each 2,000 CY if the Engineer approves a contractor quality control plan. Sample in accordance with Tex-221-F.
	L. A. Abrasion (A)	Tex-410-A	Stockpile	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC, meets the project specifications. If not, sample and test at 1 per 20,000 CY before use. Sample in accordance with Tex-221-F. (B)
	Magnesium Soundness (A)	Tex-411-A	Stockpile	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC, meets the project specifications. If not, sample and test at 1 per 20,000 CY before use. Sample in accordance with Tex-221-F. (B)
	Surface Aggregate Classification (A)	Tex-612-J, Tex-411-A	Stockpile	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC, meets the project specifications. If not, sample and test at 1 per 20,000 CY before use. Sample in accordance with Tex-221-F. (B)
	Pressure Slake (A)	Tex-431-A	Stockpile	1 per 20,000 CY	Same as above. Required only for lightweight aggregate. Sample in accordance with Tex-221-F.
	Freeze Thaw (A)	Tex-432-A	Stockpile	1 per 20,000 CY	Same as above. Required only for lightweight aggregate. Sample in accordance with Tex-221-F.
	Unit Weight	Tex-404-A	Stockpile	1 per 20,000 CY	Same as above. Required only for lightweight aggregate. Sample in accordance with Tex-221-F.
	24 hr. Water Absorption (A)	Tex-433-A	Stockpile	1 per 20,000 CY	Same as above. Required only for lightweight aggregate. Sample in accordance with Tex-221-F.
	Crushed Face Count	Tex-460-A, Part I	Stockpile	1 per 20,000 CY	Only required for crushed gravel. Sample in accordance with Tex-221-F.
	Deleterious Material (A)	Tex-217-F, Part I	Stockpile	1 per 10,000 CY	Not required for lightweight aggregate. Sample in accordance with Tex-221-F.
	Decantation (A)	Tex-406-A	Stockpile	1 per 10,000 CY	Sample in accordance with Tex-221-F.
	Flakiness Index	Tex-224-F	Stockpile	Frequency as directed by the Engineer	Sample in accordance with Tex-221-F.

TABLE II – SEAL COAT					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (C)	FREQUENCY OF SAMPLING (D)	REMARKS
AGGREGATE (Continued)	Micro Deval	Tex-461-A	Stockpile	1 per project or as necessary for control	Compare result to published value listed on the current Material Producer List for BRSQC. Submit sample to MTD for Soundness and L.A. Abrasion testing when results differ by more than 3% points, unless otherwise directed by the Engineer. Sample in accordance with Tex-221-F.
	White Rock Count	Tex-220-F	Stockpile		Required only for Limestone Rock Asphalt. Not required when MTD provides inspection at the plant. Sample in accordance with Tex-221-F.
	Naturally Impregnated Bitumen Content	Tex-236-F	Stockpile		Required only for Limestone Rock Asphalt. Not required when MTD provides inspection at the plant. Sample in accordance with Tex-221-F.
PRECOATED AGGREGATE	Asphalt Content	Tex-210-F	Stockpile	Frequency as directed by the Engineer when a target value is specified	Sample in accordance with Tex-221-F.
ASPHALT BINDER	Compliance with Item 300		Distributor	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample asphalt binder in accordance with Tex-500-C, Part III. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample per project in SM.

TABLE II – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager, in the remarks field, and on the end of the Project Materials Certification Letter.
B	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
C	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: • Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, belt sampling, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed.
D	Each test performed, that is based on a quantity of material, is considered “or fraction thereof” for calculating number of tests.

TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS)						
				PROJECT TESTS		
MATERIAL OR PRODUCT		TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (E)	REMARKS
MINERAL AGGREGATE	COARSE AGGREGATE	Decantation (B)	Tex-406-A	From stockpile at concrete plant	Each 20,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		Sieve Analysis (A) (B)	Tex-401-A		Each 1,000 CY of concrete (each source)	Test combined aggregate when used. Sample in accordance with Tex-400-A.
		Deleterious Materials (B)	Tex-413-A		1 per project or as necessary for control	Sample in accordance with Tex-400-A.
		Los Angeles Abrasion (A) (B)	Tex-410-A		One, each source	Verify the value of the source, as listed on the current Material Producer list for CRSQC, meets the project specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A. Sample in accordance with Tex-400-A. (C)
		Magnesium Soundness (A) (B)	Tex-411-A		One, each source	Verify the value of the source, as listed on the current CRSQC, meets the project specifications. (C)
	FINE AGGREGATE	Sand Equivalent (B)	Tex-203-F	From stockpile at concrete plant	1 per project or as necessary for control	Test combined aggregate when used. Sample in accordance with Tex-400-A.
		Organic Impurities (B)	Tex-408-A		1 per project, per source	Sample in accordance with Tex-400-A.
		Sieve Analysis (A) (B)	Tex-401-A		Each 1,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		Fineness Modulus (B)	Tex-402-A		1 per project or as necessary for control	Test combined aggregate when used. Test to confirm material variability when strength values are in question. Sample in accordance with Tex-400-A.
		Deleterious Material (B)	Tex-413-A		1 per project or as necessary for control	Test to confirm material variability when strength values are in question. Sample in accordance with Tex-400-A.

TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS)						
				PROJECT TESTS		
MATERIAL OR PRODUCT		TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (E)	REMARKS
MINERAL AGGREGATE (Continued)	FINE AGGREGATE (Continued)	Acid Insoluble Residue (A) (B)	Tex-612-J		Two, each source	Only for concrete subject to direct traffic. Verify the value of the source, as listed on the current CRSQC, meets the project specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A. Sample in accordance with Tex-400-A. (C)
SILICA FUME		Compliance with DMS-4630 (A)		Railroad car, truck, bags or silos	1 per project, per class of concrete (For each type and brand)	Provide MTD with one 4 x 8 concrete sample for silica fume dispersion verification. Verify the source is listed on the Material Producer List for Silica Fume. Sample in accordance with Tex-300-D.
METAKAOLIN		Compliance with DMS-4635 (A)		Railroad car, truck or silos	1 per project, per class of concrete (For each type and brand)	Sample in accordance with Tex-300-D.
MIX DESIGN		Compliance with Standard Specification Item 421.4.A		At source (if not approved)	Min. 1 design per class, per source	Verify if cement, fly ash, slag cement, and chemical admixture sources are listed on the Material Producer Lists. If not, sample and submit to MTD for testing. Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT). Sample in accordance with Tex-300-D for cement and in accordance with Tex-733-I for fly ash.
JOINT MATERIAL		Compliance with DMS-6300				Verify the source is listed on the Material Producer List for Joint Sealers. If not, sample and test before use in accordance with DMS-6310. (C) Sample in accordance with Tex-500-C.
CURING COMPOUND		Compliance with DMS-4650		Sampled at jobsite; tested by MTD. See remarks.	When requested by MTD	Only products listed on the Material Producer List for Concrete Curing Compounds will be allowed. When sample is requested by MTD, sample in accordance with Tex-718-I. Ensure container has been agitated and mixed before sampling. (C)
EVAPORATION RETARDANTS		Compliance with DMS-4650				Only products listed on the Material Producer list for Evaporation Retardants will be allowed. (C)
REINFORCING STEEL		Compliance with the Std. Specifications & Spec. Provisions	As Specified			Only materials from MTD approved sources listed on the Material Producer Lists for Reinforcing Steel Mills and Seven Wire Steel Strand will be allowed. (C)

TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (E)	REMARKS
MECHANICAL COUPLERS	Compliance with DMS-4510	Tex-743-I	Sampled at jobsite; Tested by MTD	3 couplers per lot (500 couplers) for each type, model, bar size, and grade	Only materials from MTD approved sources listed on the Material Producer List for Mechanical Couplers will be allowed. **(C)**
LATEX	Compliance with DMS-4640 for concrete chemical admixtures				Verify the Latex is listed on the Material Producer List for Chemical Admixtures.
EPOXY	Compliance with DMS-6100, unless otherwise specified		Sampled at jobsite if not pre-approved by MTD.	1 per batch or shipment	Verify the source is listed on the Material Producer List for Epoxies and Adhesives. If not, sample and test before use in accordance with DMS-6100. Sample in accordance with Tex-734-I. **(C)**
CONCRETE	Compressive Strength **(A)**	Tex-418-A	At point of concrete placement	4 cylinders for each 60 CY per class, per day (For bridge railing and traffic railing, testing may be reduced to 4 cylinders per 180 CY per class regardless of days)	Sampling must be in accordance with Tex-407-A. Making additional cylinders for 56 day testing should be considered when slow strength gain mixtures are being used, or when the approved mix design has a history of failing to meet design strength at 28 days. Test two cylinders at 7 days, and if the average value is below the design strength, as defined in Item 421, Table 8, test the remaining 2 cylinders at 28 days, or 56 days if additional cylinder were not made. If the average value of the 2 cylinders tested at 7 days meets the minimum design strength, listed in Item 421, Table 8, the remaining cylinders are not required to be tested. If the average value of the 7 and 28 day cylinders are below the design strengths, and 56 day cylinders were made, test the remaining set at 56 days.
	Slump	Tex-415-A		1 test, per 4 strength specimens	Sample in accordance with Tex-407-A. Perform slump and temperature tests on the same load from which strength test specimens are made. Perform entrained air test only when entrained air concrete is specified on the plans. Check temperature of every load for bridge slabs and mass concrete placements. Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.
	Entrained Air **(A)**	Tex-416-A or Tex-414-A			
	Temperature of Concrete **(A)**	Tex-422-A			

TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (E)	REMARKS
CONCRETE (Continued)	Bridge Deck or Culvert Top Slab Thickness and Depth of Reinforcement	Tex-423-A, Part II	During dry run and during concrete placement (Bridge decks and direct traffic culverts)	1 per span	Min 6–Max 18 locations per span.

TABLE III – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager, in the remarks field, and on the end of the Project Materials Certification Letter.
B	These Project Tests may be used for one or more projects being furnished concrete from the same plant during the same period.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: • Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed. • Concrete (structural): Always sample as near as practicable to the point of placement. For strength testing, vary the time of day or the number of truck from which the concrete is sampled. Test often for slump, air, and temperature to ensure the consistent control of the concrete production.
E	Each test performed, that is based on a quantity of material, is considered “or fraction thereof” for calculating number of tests.

TABLE IV – HYDRAULIC CEMENT CONCRETE – NON-STRUCTURAL CONCRETE (Classes: A, B, or E)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (B)	FREQUENCY OF SAMPLING (C)	REMARKS
CONCRETE	Compressive Strength (A)	Tex-418-A	At point of concrete placement	2 cylinders per 180 CY, per class	Sampling must be in accordance with Tex-407-A. Strength will be determined by 7-day specimens.
MIX DESIGN	Compliance with the Standard Specification		At source if not approved	Min. 1 design per class, per source	Verify if cement, fly ash, slag cement, and chemical admixture sources are listed on the Material Producer Lists. If not, sample and submit to MTD for testing. Sample in accordance with Tex-300-D for cement and in accordance with Tex-733-I for fly ash. Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT).
SILICA FUME	Compliance with DMS-4630		Railroad car, truck, bags, or silos	1 test per project, per class (for each type and brand)	Sample in accordance with Tex-300-D. Provide MTD with one 4 x 8 concrete sample for silica fume dispersion verification. Verify the source is listed on the Material Producer List for Silica Fume.
METAKAOLIN	Compliance with DMS-4635		Railroad car, truck, or silos	1 test per project, per class (for each type and brand)	Sample in accordance with Tex-300-D.

TABLE IV – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager, in the remarks field, and on the end of the Project Materials Certification Letter.
B	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: • Concrete (miscellaneous): Always sample as near as practicable to the point of placement. For strength testing, vary the time of day or the number of truck from which the concrete is sampled.
C	Each test performed, that is based on a quantity of material, is considered “or fraction thereof” for calculating number of tests.

TABLE V – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES)						
				PROJECT TESTS		
MATERIAL OR PRODUCT		TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING (D)	REMARKS
MINERAL AGGREGATE	COARSE AGGREGATE	Decantation	Tex-406-A	From stockpile at concrete plant	Each 20,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		Sieve Analysis (A)	Tex-401-A		As necessary for control	Sample in accordance with Tex-400-A. Test combined aggregate when used.
		Deleterious Materials	Tex-413-A		Each 20,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		L.A. Abrasion (A)	Tex-410-A		One, each source	Verify the value of the source, as listed on the current CRSQC, meets the project specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A. Sample in accordance with Tex-400-A. (C)
		Magnesium Soundness (A)	Tex-411-A			
	FINE AGGREGATE	Sand Equivalent	Tex-203-F	From stockpile at concrete plant	Each 3,000 CY of concrete (Each source or combination of sources)	Sample in accordance with Tex-400-A. Test combined aggregate when used. At least one per week's production.
		Organic Impurities	Tex-408-A		1 per project, per source	Sample in accordance with Tex-400-A.
		Sieve Analysis (A)	Tex-401-A		As necessary for control	Sample in accordance with Tex-400-A. Test combined aggregate when used.
		Fineness Modulus (B)	Tex-402-A			
		Deleterious Material (B)	Tex-413-A		Each 20,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		Acid Insoluble (A)	Tex-612-J		1 per project, per source	Verify the value of the source, as listed on the current CRSQC, meets the project specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A. Sample in accordance with Tex-400-A. (C)
MIX DESIGN		Compliance with the Standard Specifications Item 421.4.A		At source, if not approved	Min. 1 design, per class, per source	Verify if cement, fly ash, ground granulated blast furnace slag, and admixture sources are listed on the Material Producer List. If not, sample and submit to MTD for testing. Sample in accordance with Tex-300-D for cement and in accordance with Tex-733-I for fly ash. Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT).
SILICA FUME		Compliance with DMS-4630		Railroad car, truck, bags, or silos	1 per project, per class of concrete (For each type and brand)	Sample in accordance with Tex-300-D. Provide MTD with one 4 x 8 concrete sample for silica fume dispersion verification. Verify the source is listed on the Material Producer List for Silica Fume.

TABLE V – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING (D)	REMARKS
METAKAOLIN	Compliance with DMS-4635		Railroad car, truck, or silos	1 per project, per class of concrete (For each type and brand)	Sample in accordance with Tex-300-D.
JOINT MATERIAL	Compliance with DMS-6310		Sampled at jobsite if not sampled at source by MTD; tested by MTD. See remarks.	1 per batch or shipment	Sample in accordance with Tex-500-C. Sampling may be waived when the source is listed on the Material Producer List for Joint Sealers. **(C)**
CURING COMPOUND	Compliance with DMS-4650		Sampled at jobsite; tested by MTD. See remarks.	When requested by MTD	Only products listed on the Material Producer List for Concrete Curing Compounds will be allowed. When sample is requested by MTD, sample in accordance with Tex-718-I. Ensure container has been agitated and mixed before sampling. **(C)**
EVAPORATION RETARDANTS	Compliance with DMS-4650				Only products listed on the Material Producer List for Evaporation Retardants will be allowed. **(C)**
REINFORCING STEEL	Compliance with the Std. Specifications & Spec. Provisions	As Specified			Only materials from MTD approved sources listed on the Material Producer List for Reinforcing Steel Mills and Seven Wire Steel Strand will be accepted. **(C)**
MULTIPLE PIECE TIE BARS	Compliance with DMS-4515	Tex-712-I	Sampled at jobsite if not sampled at source by MTD; tested by MTD. See remarks.	Refer to Tex-711-I for sampling rates	Only materials from MTD approved sources listed on the Material Producer List for Multiple Piece Tie-bars for Concrete Pavements will be allowed. Sample in accordance with Tex-711-I.
EPOXY	Compliance with DMS-6100		Sampled at jobsite if not pre-approved by MTD. See remarks.	1 batch per shipment	Verify the source is listed on the Material Producer List for Epoxies and Adhesives. If not, sample and test before use in accordance with DMS-6100. Sample in accordance with Tex-734-I. **(C)**
CONCRETE	Strength **(A) (B)**	Tex-448-A or Tex-418-A	At point of concrete placement	2 cylinders for every 10 contractor job control tests	Sample in accordance with Tex-407-A. When the contract requires the project testing to be by the Engineer, the frequency and job control testing will be in accordance with the item of work. Split sample verification testing used when contractor performs job control testing. When job control testing by the contractor is waived by the plans, the frequency of sampling will be one test (2 specimens) for each 3,000 SY of concrete or fraction thereof or per day and split sample verification testing will be waived. Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.

TABLE V – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING (D)	REMARKS
CONCRETE (Continued)	Slump	Tex-415-A	At time and location strength specimens are made	1 test for every 10 contractor job control tests.	Sample in accordance with Tex-407-A. Slump is not required for slip-formed pavement. Perform slump and temperature tests on the same load from which the strength specimens are made. Perform entrained air test only when entrained air concrete is specified on the plans. Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.
	Entrained Air (A)	Tex-416-A or Tex-414-A			
	Temperature	Tex-422-A			
	Pavement Texture	Tex-436-A	Final Riding Surface of travel lanes	1 per day, per driving lane	Perform when carpet drag is the only surface texture required on the plans.
	Thickness	Tex-423-A, Part I	Center of paving machine	Every 500 feet	Methods other than Tex-423-A may be shown on the plans.
	Ride Quality (A)	Tex-1001-S Surface Test, Type B	Final riding surface of travel lanes		Engineer may verify contractor's results for surface test Type B. For traditional design-bid-build TxDOT projects, MTD has contracted with TTI to perform random ride verification at 10% frequency. Results from surface test Type A are not required to be reported.

TABLE V – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager, in the remarks field, and on the end of the Project Materials Certification Letter.
B	When a project test does not meet the specified strength requirements and a reduced pay factor is assigned, document the analysis on the Letter of Certification of Materials Used.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	Each test performed, that is based on a quantity of material, is considered "or fraction thereof" for calculating number of tests.

TABLE VI – HOT-MIX ASPHALT PAVEMENT (Items 341, 342, 344, 346, 347 and 348) (All testing as noted in Table VI may be waived for exempt production as defined by specification.)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION (Per Design)	FREQUENCY OF SAMPLING (E)	REMARKS
COARSE AGGREGATE	L. A. Abrasion (A)	Tex-410-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer list for BRSQC, meets the project specifications. If not, sample in accordance with Tex-221-F and submit to MTD for testing before use in accordance with Tex-499-A. (C)
	Magnesium Soundness (A)	Tex-411-A			
	Surface Aggregate Classification (A)	Tex-499-A		1 per project, per source	
	Micro Deval	Tex-461-A		1 per project, per aggregate source	Not required when the Rated Source Soundness Magnesium loss is 15 or less as listed on the current published BRSQC. If testing is required, sample in accordance with Tex-221-F.
COMBINED AGGREGATE	Sand Equivalent	Tex-203-F	Stockpiles, hot bins, or feeder belts	1 per project, per source, per design	Does not apply to Item 342. Sample in accordance with Tex-221-F. The timing of when the test is performed is at the discretion of the Engineer.
ASPHALT BINDER	Compliance with Item 300 (A)		Sampling port nearest the storage tank	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample binder at hot- mix plant in accordance with Tex-500-C, Part II. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample, per project in SM.
TACK COAT	Compliance with Item 300 (A)		Distributor	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample tack coat in accordance with Tex-500-C, Part III. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample, per project in SM.

TABLE VI – HOT-MIX ASPHALT PAVEMENT (Items 341, 342, 344, 346, 347 and 348) (All testing as noted in Table VI may be waived for exempt production as defined by specification.)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION (Per Design)	FREQUENCY OF SAMPLING (E)	REMARKS
MIX DESIGN	Compliance with applicable specification	Tex-204-F	At source (if not approved)	Min 1 design, per Mix Type and Asphalt Grade	Verify that aggregates, recycled asphalt pavement, recycled asphalt shingles, mineral filler, asphalt binder, anti-stripping additives, and warm mix systems are on the Material Producer List where applicable and that they meet project specification requirements. Project sampling and testing may be conducted on individual materials, as necessary, for control.
COMPLETE MIXTURE	Asphalt Content (A)	Tex-236-F	Engineer Truck Sample (D)	Minimum 1 per Lot	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project. When Tex-236-F does not yield reliable results, use alternative methods for determining asphalt content, such as, Tex-210-F (ASTM D2172/AASHTO T164) and Tex-228-F (ASTM D4125/AASHTO T287).
	Voids in Mineral Aggregates (VMA)	Tex-204-F	Truck Sample Plant Produced (D)	1 per Sublot	Sample in accordance with Tex-222-F. Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #. Does not apply to Items 342 and 348.
	Gradation (A)	Tex-200-F	Engineer Truck Sample (D)	Minimum 1, per 12 Sublots (E)	Sample in accordance with Tex-222-F. Determine correction factors for ignition oven using Tex-236-F at a minimum of one per project.
	Moisture Susceptibility	Tex-530-C	Truck Sample	1 per project	Sample in accordance with Tex-222-F, unless waived by the Engineer.
	Indirect Tensile Strength – Dry	Tex-226-F			Sample in accordance with Tex-222-F, unless waived by the Engineer. Does not apply to Items 342, 346, 347, and 348.
	Moisture Content	Tex-212-F, Part II	Engineer Truck Sample		Sample in accordance with Tex-222-F.
	Lab Molded Density (A)	Tex-207-F, Part I, VI, VIII	Truck Sample (D)	1 per Sublot 1 per Lot for Item 347	Sample in accordance with Tex-222-F. Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.
	Drain Down Test (A)	Tex-235-F	Engineer Truck Sample	1 per 12 Sublots	Sample in accordance with Tex-222-F. Not required for Items 341, 344, and 347.
	Hamburg Wheel Test (A)	Tex-242-F	Engineer Truck Sample	1 per project	Sample in accordance with Tex-222-F. Sample during production. Does not apply to Item 348 PFC-C, PFCR-C, and Thin Bonded Wearing Course –All Types.

TABLE VI – HOT-MIX ASPHALT PAVEMENT (Items 341, 342, 344, 346, 347 and 348) (All testing as noted in Table VI may be waived for exempt production as defined by specification.)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION (Per Design)	FREQUENCY OF SAMPLING (E)	REMARKS
COMPLETE MIXTURE (Continued)	Cantabro Loss (A)	Tex-245-F	Engineer Truck Sample	1 per project	Sample in accordance with Tex-222-F. Sample during production. Does not apply to items 341, 344, 346, and 347.
	Overlay Test (A)	Tex-248-F	Engineer Truck Sample	1 per project	Sample in accordance with Tex-222-F. Does not apply to Items 341, 344, and 348 PFC-C, PFCR-C, and Thin Bonded Wearing Course –All Types.
ROADWAY	In-Place Air Voids (A)	Tex-207-F, Part I, VI, VIII	Roadway (D)	2 cores per Sublot	Two cores taken per Sublot and averaged. Sample in accordance with Tex-222-F. Does not apply to Items 342, 347, and 348.
	Segregation Profile (A)	Tex-207-F, Part V	Roadway	1 per project	Not required when Contractor uses thermal imaging system. Does not apply to Items 342, 347, and 348.
	Joint Density (A)	Tex-207-F, Part VII	Roadway	1 per project	
	Thermal Profile	Tex-244-F	Immediately behind paver	1 per project	Not required when Contractor uses thermal imaging system.
	Ride Quality Test Type B (A)	Tex-1001-S	Final riding surface of travel lanes	1 per project	Engineer may verify Contractor's results for surface test Type B. For traditional design-bid-build TxDOT projects, MTD has contracted with TTI to perform random ride verification at 10% frequency. Results for surface test Type A are not required to be reported.
	Permeability	Tex-246-F	Roadway	1 per project	Permeability is encouraged to use with items 342 and 348. Only applies to Item 347.
FABRIC UNDERSEAL	Compliance with DMS-6220		Sampled, tested, and approved by MTD		Sampling must be in accordance with Tex-735-I. Verify the source is listed on the current Material Producer List for Silt Fence, Filter Fabric, and Fabric Underseals. If not, sample and test before use in accordance with DMS-6220.

TABLE VI – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager, in the remarks field, and on the end of the Project Materials Certification Letter.
B	Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project. These project tests may be used for one or more projects furnishing hot mix with the same aggregate source.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	Perform random sampling as specified in Tex-225-F, "Random Selection of Bituminous Mixture Samples."
E	Each test performed, that is based on a quantity of material, is considered "or fraction thereof" for calculating number of tests.

TABLE VII – HOT-MIX ASPHALT PAVEMENT (Items 334) (Refer to DMS-9210, "Limestone Rock Asphalt (LRA)," for testing requirements for Item 330.)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY (Per Design) (F)	REMARKS
COARSE AGGREGATE	L. A. Abrasion (A)	Tex-410-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC, meets the project specifications. If not, sample in accordance with Tex-221-F and submit to MTD for testing before use in accordance with Tex-499-A. (D)
	Magnesium Soundness (A)	Tex-411-A			
	Micro Deval	Tex-461-A			Sample in accordance with Tex-221-F. Testing frequency may be reduced or eliminated based on a satisfactory test history.
	Surface Aggregate Classification (A)	Tex-499-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC, meets the project specifications. If not, sample in accordance with Tex-221-F and submit to MTD for testing before use in accordance with Tex-499-A. SiteManager Quality Monitoring test documentation is accomplished by attaching an approved mix design.
COMBINED AGGREGATE	Sand Equivalent	Tex-203-F	Stockpiles, hot bins, or feeder belts	1 per project, per source	Sample in accordance with Tex-221-F. The timing of when the test is performed is at the discretion of the Engineer.
ASPHALT BINDER	Compliance with Item 300 (A)		Sampling port nearest the storage tank	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample binder in accordance with Tex-500-C, Part II. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample, per project in SM.
TACK COAT	Compliance with Item 300 (A) (C)		Distributor	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample tack coat in accordance with Tex-500-C, Part III. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample, per project in SM.

TABLE VII – HOT-MIX ASPHALT PAVEMENT (Items 334) (Refer to DMS-9210, "Limestone Rock Asphalt (LRA)," for testing requirements for Item 330.)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY (Per Design) (F)	REMARKS
MIX DESIGN	Compliance with applicable specification	Tex-204-F	At source (if not approved)	Min 1 design per Mix Type and Asphalt Grade	Verify that aggregates, recycled asphalt pavement, recycled asphalt shingles, mineral filler, asphalt binder, anti-stripping additives, and warm mix systems are on the Material Producer List where applicable and that they meet project specification requirements. Project sampling and testing may be conducted in individual materials as necessary for control.
COMPLETE MIXTURE	Asphalt Content (A)	Tex-236-F	Engineer Truck Sample (E)	Minimum of 1 per 5,000 tons	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Voids in Mineral Aggregates (VMA)	Tex-204-F	Truck Sample Plant Produced (E)	1 per 5,000 tons	Sample in accordance with Tex-222-F.
	Gradation (A)	Tex-236-F	Truck Sample	Minimum 1 per 5,000 tons	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Boil Test	Tex-530-C		1 per project	Sample in accordance with Tex-222-F. The timing of when the test is performed is at the discretion of the Engineer.
	Moisture Content	Tex-212-F, Part II	Truck Sample	1 per 5,000 tons	Sample in accordance with Tex-222-F. Performed by MTD at the point of production for payment calculations.
	Hydrocarbon-Volatile Content	Tex-213-F		1 per 5,000 tons	Sample in accordance with Tex-222-F. The timing of when the test is performed is at the discretion of the Engineer.
	Lab Molded Density (A)	Tex-207-F		1 per 5,000 tons	Sample in accordance with Tex-222-F.
	Hveem Stability (A)	Tex-208-F		1 per 5,000 tons	Sample in accordance with Tex-222-F. The timing of when the test is performed is at the discretion of the Engineer.
ROADWAY	Ride Quality Test Type B (A)	Tex-1001-S	Final riding surface of travel lanes		Engineer may verify Contractor's results for surface test Type B. For traditional design-bid-build TxDOT projects, MTD has contracted with TTI to perform random ride verification at 10% frequency. Results from surface test Type A are not required to be reported.

TABLE VII – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager, in the remarks field, and on the end of the Project Materials Certification Letter.
B	Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project.
C	Or as called for in the Specifications.
D	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
E	Perform random sampling as specified in Tex-225-F, “Random Selection of Bituminous Mixture Samples.”
F	Each test performed, that is based on a quantity of material, is considered “or fraction thereof” for calculating number of tests.

TABLE VIII – HOT-MIX ASPHALT PAVEMENT (Item 340)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY	REMARKS
COARSE AGGREGATE	L. A. Abrasion (A)	Tex-410-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC, meets the project specifications. If not, sample in accordance with Tex-221-F and submit to MTD for testing before use in accordance with Tex-499-A. (C)
	Magnesium Soundness (A)	Tex-411-A			
	Micro Deval	Tex-461-A	Stockpile (B)	1 per project, per source	Sample in accordance with Tex-221-F. Testing frequency may be reduced or eliminated based on a satisfactory test history.
	Surface Aggregate Classification (A)	Tex-499-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer list for BRSQC, meets the project specifications. If not, sample in accordance with Tex-221-F and submit to MTD for testing before use in accordance with Tex-499-A. (C)
COMBINED AGGREGATE	Sand Equivalent	Tex-203-F	Stockpiles, hot bins, or feeder belts	1 per project, per design	Sample in accordance with Tex-221-F.
ASPHALT BINDER	Compliance with Item 300 (A)		Sampling port nearest the storage tank	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample binder in accordance with Tex-500-C, Part II. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample, per project in SM.
TACK COAT	Compliance with Item 300 (A)		Distributor	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample tack coat in accordance with Tex-500-C, Part III. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample, per project in SM.
MIX DESIGN	Compliance with applicable specification	Tex-204-F	At source (if not approved)	Min. 1 design per Mix Type and Asphalt Grade	Verify that aggregates, recycled asphalt pavement, recycled asphalt shingles, mineral filler, asphalt binder, anti-stripping additives, and warm mix systems are on the Material Producer List where applicable and that they meet project specification requirements. Project sampling and testing may be conducted in individual materials as necessary for control.

TABLE VIII – HOT-MIX ASPHALT PAVEMENT (Item 340)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY	REMARKS
COMPLETE MIXTURE	Asphalt Content	Tex-236-F	Truck Sample (D)	Minimum of 1 per day	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Voids in Mineral Aggregates (VMA)	Tex-204-F	Truck Sample Plant Produced (D)	1 per day	Sample in accordance with Tex-222-F.
	Gradation (A)	Tex-236-F	Truck Sample	Minimum 1 per day	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Boil Test	Tex-530-C		1 per project	Sample in accordance with Tex-222-F, unless waived by the Engineer.
	Indirect Tensile Strength – Dry	Tex-226-F		1 per project, per design	Sample in accordance with Tex-222-F, unless waived by the Engineer.
	Lab Molded Density (A)	Tex-207-F	Truck Sample	1 per day	Sample in accordance with Tex-222-F.
	Hamburg Wheel Tracker (A)	Tex-242-F		1 per project	Sample in accordance with Tex-222-F. Sample during production.
ROADWAY	Air Voids (A)	Tex-207-F	Selected by the Engineer (D)	1 per day (2 Cores)	Sample in accordance with Tex-222-F.
	Ride Quality Test Type B (A)	Tex-1001-S	Final riding surface of travel lanes		Engineer may verify Contractor's results for surface test Type B. For traditional design-bid-build TxDOT projects, MTD has contracted with TTI to perform random ride verification at 10% frequency. Results from surface test Type A are not required to be reported.
FABRIC UNDERSEAL	Compliance with DMS-6220		Sampled, tested, and approved by MTD		Sample in accordance with Tex-735-I. Verify the source is listed on the current Material Producer List for Silt Fence, Filter Fabric, and Fabric Underseals. If not, sample and submit to MTD for testing before use in accordance with DMS-6220.

TABLE VIII – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager, in the remarks field, and on the end of the Project Materials Certification Letter.
B	Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project. These project tests may be used for one or more projects furnishing hot mix with the same aggregate source.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	Perform random sampling as specified in Tex-225-F, “Random Selection of Bituminous Mixture Samples.”

TABLE IX – MICROSURFACING (Item 350)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OF SAMPLING	FREQUENCY (Per Design)	REMARKS
AGGREGATE	Magnesium Soundness (A)	Tex-411-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer list for BRSQC meets the project specifications. If not, sample in accordance with Tex-221-F and submit to MTD for testing at 1 per project, per source. (C)
	Gradation	Tex-200-F, Part II		1 per project, per source	Sample in accordance with Tex-221-F.
	Crushed Face Count	Tex-460-A		1 per project, per source	Sample in accordance with Tex-221-F.
	Acid Insoluble (A)	Tex-612-J		1 per project, per source	Verify the value of the source, as listed on the current BRSQC, meets the project specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A. Sample in accordance with Tex-221-F. (C)
	Surface Aggregate Classification	Tex-499-A	Stockpile, or BRSQC (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer list for BRSQC meets the project specifications. If not, sample in accordance with Tex-221-F and submit to MTD for testing at 1 per project, per source. (C)
COMBINED BLEND	Sand Equivalent	Tex-203-F	Stockpile (B)	1 per project, per source	Sample in accordance with Tex-221-F.
ASPHALT BINDER	Compliance with Item 300 (A)		Sampling port nearest the storage tank	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample binder in accordance with Tex-500-C, Part II. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample, per project in SM.
TACK COAT	Compliance with Item 300 (A)		Distributor	1 per project, per grade, per source	Test a minimum of one sample taken from the project. Sample tack coat in accordance with Tex-500-C, Part III. Verify that the binder is from a preapproved source when it arrives on the project, and that the lab number on the shipping ticket is within the valid dates shown on the MTD QM test report or in the SM Assistant. The Engineer must associate one QM sample, per project in SM.

TABLE IX – MICROSURFACING (Item 350)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OF SAMPLING	FREQUENCY (Per Design)	REMARKS
MIX DESIGN	Compliance with applicable specification	Tex-204-F	At source (if not approved)	Min. 1 design per project	Submit to MTD for approval.
CEMENT	Compliance with DMS-4600				Verify the source is listed on the current Material Producer List for Cement. If not, sample and submit to MTD for testing before use in accordance with DMS-4600.
COMPLETE MIX	Asphalt Content	Tex-236-F	During production	1 per day	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Gradation	Tex-200-F, Part II Tex-236-F			Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven use at a minimum of one per project.

TABLE IX – FOOTNOTES	
A	When this project acceptance test fails, but the product is accepted, document the reasons for acceptance in SiteManager, in the remarks field, and on the end of the Project Materials Certification Letter.
B	Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project. These project tests may be used for one or more projects furnishing hot mix with the same aggregate source.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	Each test performed, that is based on a quantity of material, is considered “or fraction thereof” for calculating number of tests.

APPENDIX C
AASHTO ACCREDITED LABORATORIES

AASHTO Accredited CMT Laboratories in Texas

* Directory of accredited laboratories and scope of testing is maintained on the AASHTO Materials Reference Laboratory website at: http://www.amrl.net. Laboratory must be accredited for each specific test performed.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Authorize the Hays County Commissioner's Court to submit a request for funds to the Texas Comptroller's Office for unclaimed capital credits pursuant to the Texas Property Code, Section 74.602 and certify any available funding will be used per Texas Local Government Code, Section 381.004.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
CONSENT	June 22, 2021	N/A

LINE ITEM NUMBER

N/A

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Marisol Villarreal-Alonzo	BECERRA	N/A

SUMMARY

The County Auditor's office has received the annual notification from the Texas Comptroller of Public Accounts regarding possible available funding through unclaimed capital credits received from electric cooperatives in this area. The County must request these funds and certify that funds will be used for purposes as specified under section 381.004 of the Local Government Code. See attached notification.

Attachment: Unclaimed Capital Credits Form

County Request for Capital Credits

County Name Hays County County FEIN 74-6002241

Authorized by ☐ Judge ☑ Commissioners Court

Name of County Judge Ruben Becerra Approved Date 06/22/2021

Send the requested funds to:

Address 111 E. San Antonio St., #300 City San Marcos State TX Zip 78666

I acknowledge that the purpose of the funds complies with provisions of Texas Local Government Code, Section 381.004.

Name (printed) Ruben Becerra Title County Judge

Signature _____ Date 06/22/2021

Email Address judge.becerra@co.hays.tx.us Phone 512-393-2205

Submit signed and completed form by either mail, email or fax by July 31, 2020.

Mail Texas Comptroller of Public Accounts
Unclaimed Property Division
Holder Education and Reporting section
P.O. Box 12019
Austin, Texas 78711-2019

Email up.holder@cpa.texas.gov
Fax 512-463-3569

FOR COMPTROLLER'S USE ONLY: We are authorized to release ____% of the total amount available to your county. We will send a $_____ payment to the address provided above. By requesting funds, you have certified that they will be used in compliance with the provisions of Texas Local Government Code, Section 381.004.

Comptroller's Representative _____ Date _____

This publication is intended as a general guide and not as a comprehensive resource on the subjects covered.
It is not a substitute for legal advice.

In compliance with the Americans with Disabilities Act, this document may be requested in alternative formats by calling **800-252-1382**, or by sending a fax to **512-475-0900**.

98-1013 (04/20)

APRIL 2021

Unclaimed Property Capital Credits for Counties

Glenn Hegar

Texas Comptroller of Public Accounts

In conjunction with Local Government Code, Section 381.004, Texas Property Code, Section 74.602 authorizes the Texas Comptroller of Public Accounts (Comptroller's office) to allocate a portion of the unclaimed capital credits received from electric cooperatives back to the counties in the cooperatives' service area.

What are unclaimed capital credits?

Electric cooperatives that have lost contact with a previous customer sometimes report capital credits to the Comptroller's office as unclaimed property. Texas law allows counties to claim a portion of unclaimed capital credits originating from their county and use them for specific programs.

How are funds divided among counties?

- Electric cooperatives report unclaimed capital credits and the county of service from which they originated.
- Electric Cooperatives must use the numeric Federal Information Processing Standard (FIPS) county code of the service address. This code must be entered in the country code field of the remittance report.
- A county may or may not receive funds in a given year.

Who qualifies?

- Any county can request a portion of these funds.
- The county must follow instructions in Local Government Code, Section 381.004 to request funds.
- The commissioners court is the primary governing body and ultimate decision-making authority on the legitimacy of fund requests.

General uses of capital credits

The county commissioners court may use capital credits to develop and administer a program:*

- for state or local economic development
- for small or disadvantaged business development
- to stimulate, encourage and develop business location and commercial activity in the county
- to promote or advertise the county and its vicinity or conduct a solicitation program to attract conventions, visitors and businesses
- to improve the extent to which women and minority businesses are awarded county contracts
- to support comprehensive literacy programs that benefit county residents
- for the encouragement, promotion, improvement and application of the arts
- to support a children's advocacy center

*Review Local Government Code, Section 381.004 before starting a program.

How to request capital credits

The county judge and/or commissioners court must complete and submit the form on the back of this notice.

- The form must be signed by a representative of the commissioners court or the county judge.
- The form must include the complete name, address and federal tax identification number of the commissioners court. Funds will be paid directly to the court.

For more information, visit our website at ClaimItTexas.org.

For questions on Capital Credits, contact our Holder Education and Reporting section at 800-321-2274, option 2 or up.holder@cpa.texas.gov

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to call for a public hearing on July 13, 2021 to establish a 4-way stop at the intersection of Darden Hill Road, Sawyer Ranch Road, and the entrance for the new Cypress Springs Elementary School opening Fall 2021.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

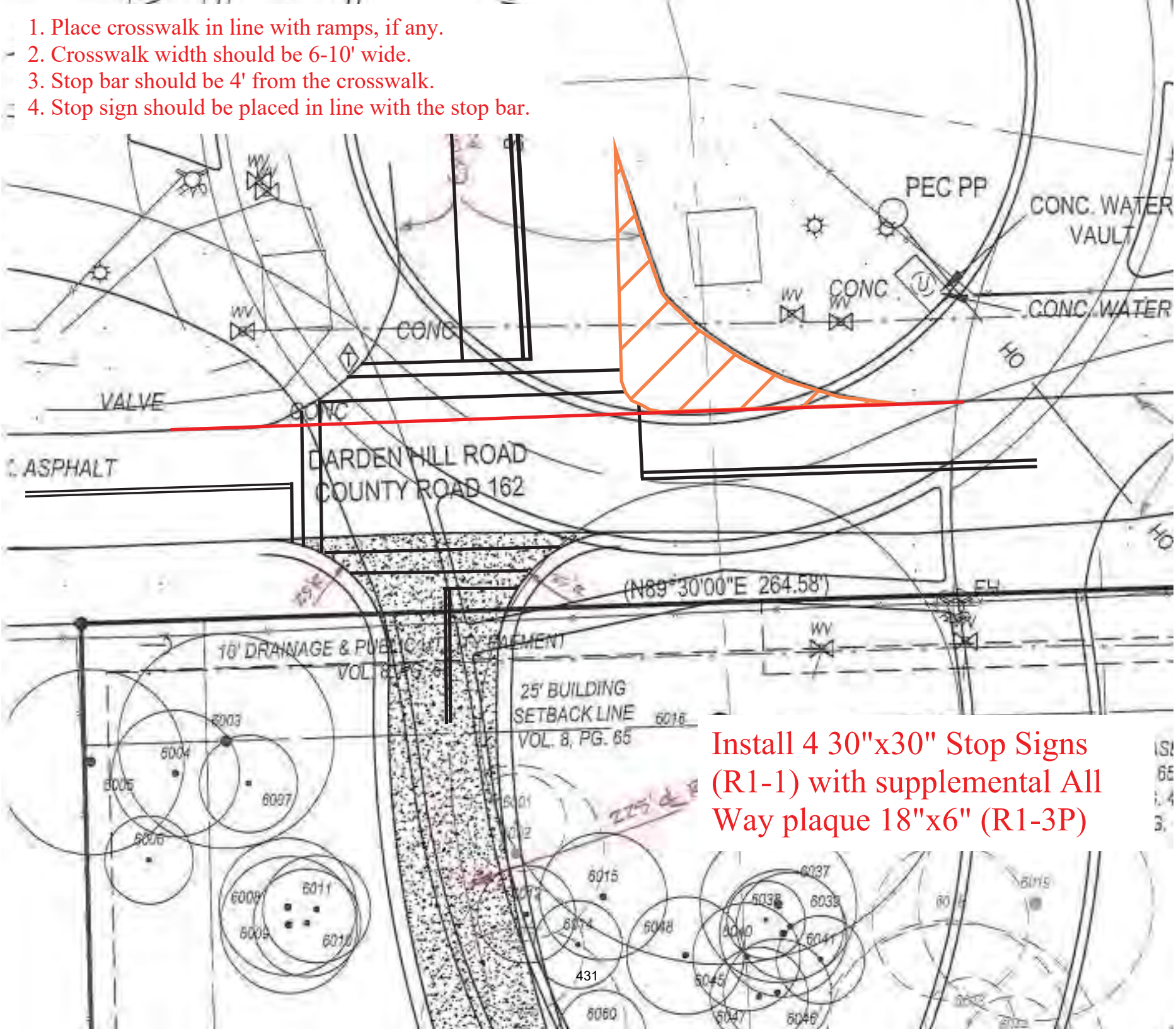
PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding	SMITH	N/A

SUMMARY

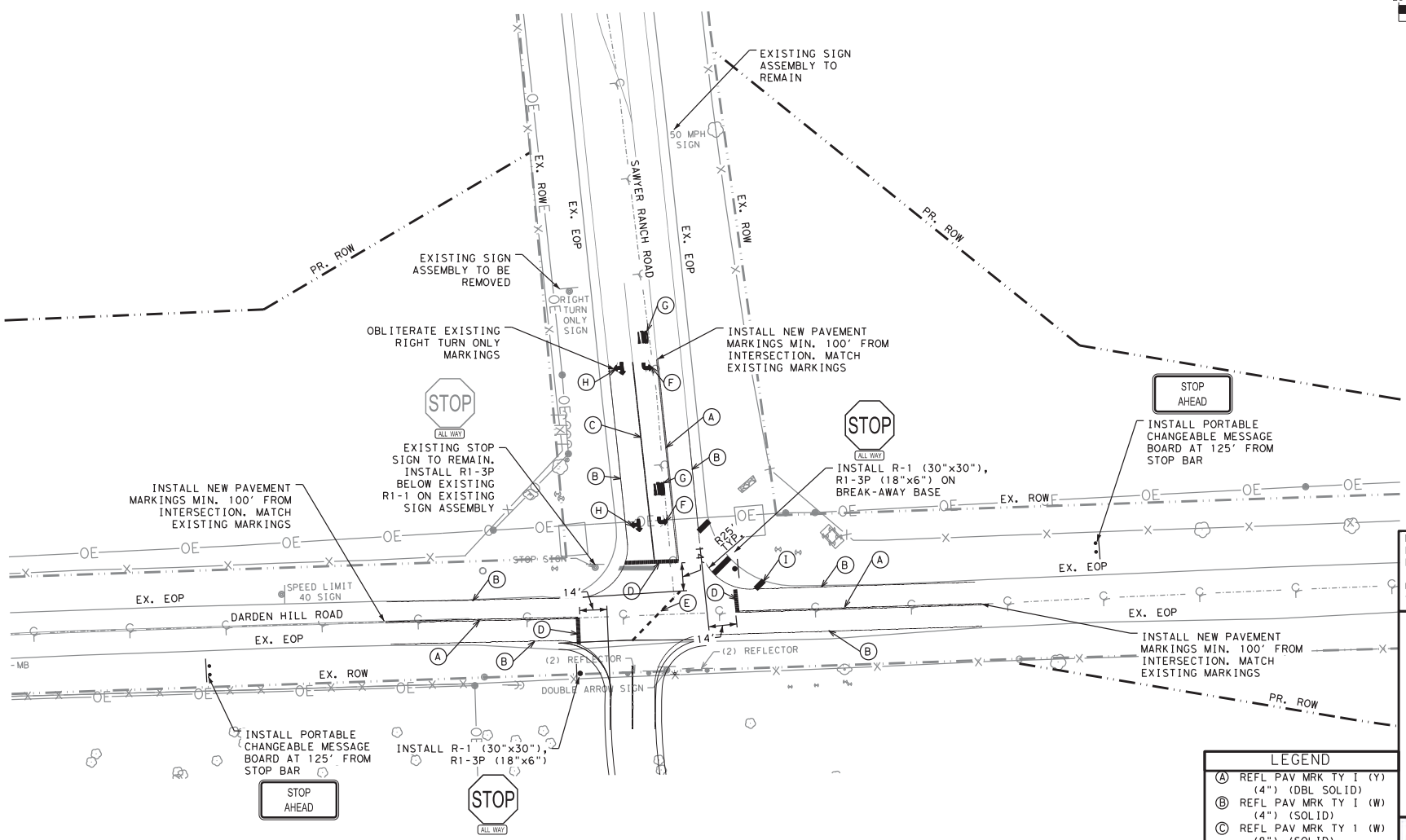
Darden Hill Road does not currently have stop signs at Sawyer Ranch Road, so as a result of the new school entrance at the same location, a 4-way stop is necessary to control traffic at this intersection.

1. Place crosswalk in line with ramps, if any.
2. Crosswalk width should be 6-10' wide.
3. Stop bar should be 4' from the crosswalk.
4. Stop sign should be placed in line with the stop bar.



Proposed 4-way Stop location

Write a description for your map.



25 0 12.5 25 50
(IN FEET)
GRAPHIC SCALE 1"=50'

NOTE: ALL SIGNS ARE TO BE INSTALLED AT A DISTANCE OF 12' FROM THE EDGE OF TRAVELWAY UNLESS OTHERWISE STATED IN THE PLANS.

LEGEND

- (A) REFL PAV MRK TY I (Y) (4") (DBL SOLID)
- (B) REFL PAV MRK TY I (W) (4") (SOLID)
- (C) REFL PAV MRK TY 1 (W) (8") (SOLID)
- (D) REFL PAV MRK TY 1 (W) (24")
- (E) REFL PAV MRK TY I (W) (8") (DOTTED) WITH 2' STRIPING AND 6' SPACING
- (F) REFL PAV MRK TY I (W) (ARROW)
- (G) REFL PAV MRK TY I (W) (WORD)
- (H) REFL PAV MRK TY I (W) (DBL ARROW)
- (I) REFL PAV MRK TY I (Y) (24") AT 45° AND 20' SPACING

95% REFERENCE PLANS PRELIMINARY: THIS DOCUMENT FOR REFERENCE ONLY, UNDER THE AUTHORITY OF P.E.: CHARLES LEROY MYNIER 82039 6/14/2021 IT IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.

DARDEN HILL ROAD (CR 162)

4-WAY STOP CONDITION PAVEMENT MARKING PLAN

HAYS COUNTY DEPARTMENT OF ENGINEERING
2171 YARRINGTON RD
SAN MARCOS, TEXAS 78666
PHONE: 512-393-7385
FAX: 512-393-7393

DOUCET & ASSOCIATES
Civil Engineering • Planning • Geospatial
7401 B. Highway 71 W. Suite 160
Austin, Texas 78735, Phone: (512)-583-2600
www.DoucetEngineers.com
Firm Registration Number: 3937

PROJECT: 025-013
HORIZ. SCALE:
VERT. SCALE:
FILE: 025-013-STOP-PVMRK
SHEET NO.

DATE: 6/14/2021 11:32:06 AM
FILE: pw:\\doucet-pw.bentley.com:doucet-pw-01\Documents\Active Projects\025-013\60.0 CADD Engineering\60.4 Sheet Files\60.4.1 CD\95% SHEETS\025-013-STOP-PVMRK

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to call for a public hearing on July 13, 2021 to establish a One-Way traffic zone (eastbound only) for the eastern segment of Tiger Lane as a result of new school traffic routes for the Dripping Springs Middle School for Fall 2021.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

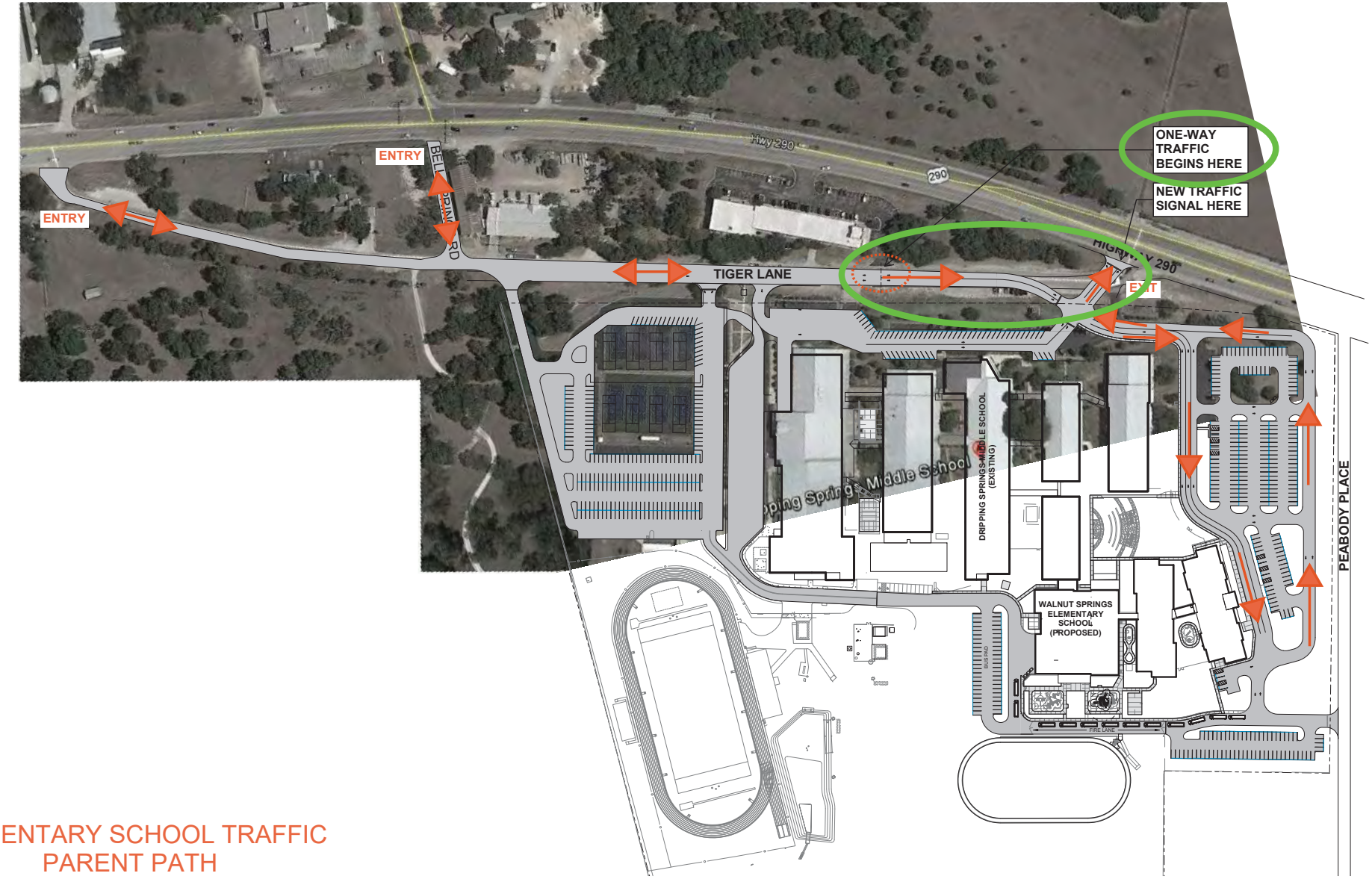
AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding	SMITH	N/A

SUMMARY

Tiger Lane will be reconstructed over the summer 2021 along with the improvements to Dripping Springs Middle School. New traffic routes will be enforced when school begins in the Fall, including the need for a One-Way traffic route on the eastern-most segment of Tiger Lane (approx. 500 ft. long) for eastbound traffic as they approach a new traffic signal at US 290.



ELEMENTARY SCHOOL TRAFFIC PARENT PATH

OVERALL TRAFFIC PLAN - WSES

CORGAN

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to accept the maintenance bond rider extension #PB03016800273M in the amount of $32,600.00 until December 3, 2021 for Sunfield subd., Phase 3, Section 2.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding	JONES	N/A

SUMMARY

The completion of construction of the roads and drainage improvements within the County ROW for Sunfield subd., Phase 3, Section 2 has been delayed and the contractor is requesting more time to complete. This bond extends the life of the maintenance bond until December 3, 2021.

DNT CONSTRUCTION

P.O. Box 6210
Round Rock, Texas 78683

LETTER OF TRANSMITTAL

DATE: 6/14/2021 JOB NO.

ATTENTION: Jerry Borcherding

RE: Sunfield Ph 3 Sec 2
Sunfield Ph 3 Sec 4

TO: Hays County Transportation Dept.
2171 Yarrington Rd
San Marcos, TX 78666

WE ARE SENDING YOU: X ATTACHED UNDER SEPARATE COVER VIA _____
THE FOLLOWING ITEMS

ITEM		DATE		NO	
1		6/14/2021		1	Sunfield 3-2 Maintenance Bond Extension # PB03016800273M
2		6/14/2021		2	Sunfield 3-4 Maintenance Bond Extension # PB03016800240M

THESE ARE TRANSMITTED AS CHECKED BELOW:

_____ *FOR APPROVAL* _____ *AS REQUESTED*

_____ *FOR YOUR USE* _____ *FOR REVIEW AND COMMENT*

REMARKS

Delivered via FedEx 7739 8867 7461

Received By: _____

SIGNED: Kristyne Watley

Kristyne Watley, Contract Administrator
Phone: 512.660.6632 / Email: kwatley@dntconstruction.com

COPY TO:

Philadelphia Indemnity Insurance Company

Endorsement (Rider)

It is hereby understood and agreed that Bond No.: PB03016800273M (312)

Principal: DNT Construction, LLC

Obligee: Hays County, TX

In that the Surety **is changing this bond effective** June 3rd, 2019 **in the following manner:**

The Maintenance Bond expiration date is being extended to the date of: December 3, 2021

All terms and conditions of said bond, except as above changed, to remain the same.

Signed and sealed this 10th day of June, 20 21.

Philadelphia Indemnity Insurance Company
Surety

Jeremy Farque, Attorney-In-Fact

PHILADELPHIA INDEMNITY INSURANCE COMPANY
One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004-0950

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: That **PHILADELPHIA INDEMNITY INSURANCE COMPANY** (the Company), a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, does hereby constitute and appoint **Tom Mulanax, Michael Whorton, David Whorton, Rachel Martinez, Pollyanna Lengel, Jeremy Farque and/or Noe Moreno of Whorton Insurance Services** its true and lawful Attorney-in-fact with full authority to execute on its behalf bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, issued in the course of its business and to bind the Company thereby, in an amount not to exceed **$25,000,000**.

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of PHILADELPHIA INDEMNITY INSURANCE COMPANY on the 14th of November, 2016.

RESOLVED: That the Board of Directors hereby authorizes the President or any Vice President of the Company: (1) Appoint Attorney(s) in Fact and authorize the Attorney(s) in Fact to execute on behalf of the Company bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof and to attach the seal of the Company thereto; and (2) to remove, at any time, any such Attorney-in-Fact and revoke the authority given. And, be it

FURTHER RESOLVED: That the signatures of such officers and the seal of the Company may be affixed to any such Power of Attorney or certificate relating thereto by facsimile, and any such Power of Attorney so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN TESTIMONY WHEREOF, PHILADELPHIA INDEMNITY INSURANCE COMPANY HAS CAUSED THIS INSTRUMENT TO BE SIGNED AND ITS CORPORATE SEALTO BE AFFIXED BY ITS AUTHORIZED OFFICE THIS 27TH DAY OF OCTOBER, 2017.

(Seal)

Robert D. O'Leary Jr., President & CEO
Philadelphia Indemnity Insurance Company

On this 27th day of October, 2017, before me came the individual who executed the preceding instrument, to me personally known, and being by me duly sworn said that he is the therein described and authorized officer of the **PHILADELPHIA INDEMNITY INSURANCE COMPANY**; that the seal affixed to said instrument is the Corporate seal of said Company; that the said Corporate Seal and his signature were duly affixed.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Morgan Knapp, Notary Public
Lower Merion Twp., Montgomery County
My Commission Expires Sept 25, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

(Notary Seal)

Notary Public: Morgan Knapp

residing at: Bala Cynwyd, PA

My commission expires: September 25, 2021

I, Edward Sayago, Corporate Secretary of PHILADELPHIA INDEMNITY INSURANCE COMPANY, do hereby certify that the foregoing resolution of the Board of Directors and this Power of Attorney issued pursuant thereto on this 27th day of October, 2017 are true and correct and are still in full force and effect. I do further certify that Robert D. O'Leary Jr., who executed the Power of Attorney as President, was on the date of execution of the attached Power of Attorney the duly elected President of PHILADELPHIA INDEMNITY INSURANCE COMPANY,

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 10th day of June, 20 21.

Edward Sayago, Corporate Secretary
PHILADELPHIA INDEMNITY INSURANCE COMPANY

Philadelphia Indemnity Insurance Company

Endorsement (Rider)

It is hereby understood and agreed that Bond No.: PB03016800240M (3:4)

Principal: DNT Construction, LLC

Obligee: Hays County, TX

In that the Surety **is changing this bond effective** June 3rd, 2019 **in the following manner:**

The Maintenance Bond expiration date is being extended to the date of: December 3, 2021

All terms and conditions of said bond, except as above changed, to remain the same.

Signed and sealed this 10th day of June, 20 21.

Philadelphia Indemnity Insurance Company
Surety

Jeremy Farque, Attorney-In-Fact

PHILADELPHIA INDEMNITY INSURANCE COMPANY
One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004-0950

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: That **PHILADELPHIA INDEMNITY INSURANCE COMPANY** (the Company), a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, does hereby constitute and appoint **Tom Mulanax, Michael Whorton, David Whorton, Rachel Martinez, Pollyanna Lengel, Jeremy Farque and/or Noe Moreno of Whorton Insurance Services** its true and lawful Attorney-in-fact with full authority to execute on its behalf bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, issued in the course of its business and to bind the Company thereby, in an amount not to exceed **$25,000,000**.

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of PHILADELPHIA INDEMNITY INSURANCE COMPANY on the 14th of November, 2016.

RESOLVED: That the Board of Directors hereby authorizes the President or any Vice President of the Company: (1) Appoint Attorney(s) in Fact and authorize the Attorney(s) in Fact to execute on behalf of the Company bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof and to attach the seal of the Company thereto; and (2) to remove, at any time, any such Attorney-in-Fact and revoke the authority given. And, be it

FURTHER RESOLVED: That the signatures of such officers and the seal of the Company may be affixed to any such Power of Attorney or certificate relating thereto by facsimile, and any such Power of Attorney so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN TESTIMONY WHEREOF, PHILADELPHIA INDEMNITY INSURANCE COMPANY HAS CAUSED THIS INSTRUMENT TO BE SIGNED AND ITS CORPORATE SEALTO BE AFFIXED BY ITS AUTHORIZED OFFICE THIS 27TH DAY OF OCTOBER, 2017.

(Seal)

Robert D. O'Leary Jr., President & CEO
Philadelphia Indemnity Insurance Company

On this 27th day of October, 2017, before me came the individual who executed the preceding instrument, to me personally known, and being by me duly sworn said that he is the therein described and authorized officer of the **PHILADELPHIA INDEMNITY INSURANCE COMPANY**; that the seal affixed to said instrument is the Corporate seal of said Company; that the said Corporate Seal and his signature were duly affixed.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Morgan Knapp, Notary Public
Lower Merion Twp., Montgomery County
My Commission Expires Sept 25, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

(Notary Seal)

Notary Public: Morgan Knapp

residing at: Bala Cynwyd, PA

My commission expires: September 25, 2021

I, Edward Sayago, Corporate Secretary of PHILADELPHIA INDEMNITY INSURANCE COMPANY, do hereby certify that the foregoing resolution of the Board of Directors and this Power of Attorney issued pursuant thereto on this 27th day of October, 2017 are true and correct and are still in full force and effect. I do further certify that Robert D. O'Leary Jr., who executed the Power of Attorney as President, was on the date of execution of the attached Power of Attorney the duly elected President of PHILADELPHIA INDEMNITY INSURANCE COMPANY,

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 10th day of June, 20 21.

Edward Sayago, Corporate Secretary
PHILADELPHIA INDEMNITY INSURANCE COMPANY

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to accept the maintenance bond rider extension #PB03016800240M in the amount of $22,000.00 until December 3, 2021 for Sunfield subd., Phase 3, Section 4.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding	JONES	N/A

SUMMARY

The completion of construction of the roads and drainage improvements within the County ROW for Sunfield subd., Phase 3, Section 4 has been delayed and the contractor is requesting more time to complete. This bond extends the life of the maintenance bond until December 3, 2021.

DNT CONSTRUCTION

P.O. Box 6210
Round Rock, Texas 78683

LETTER OF TRANSMITTAL

DATE: 6/14/2021 JOB NO.

ATTENTION: Jerry Borcherding

RE: Sunfield Ph 3 Sec 2
Sunfield Ph 3 Sec 4

TO: Hays County Transportation Dept.
2171 Yarrington Rd
San Marcos, TX 78666

WE ARE SENDING YOU: X ATTACHED UNDER SEPARATE COVER VIA _____
THE FOLLOWING ITEMS

ITEM		DATE		NO	
1		6/14/2021		1	Sunfield 3-2 Maintenance Bond Extension # PB03016800273M
2		6/14/2021		2	Sunfield 3-4 Maintenance Bond Extension # PB03016800240M

THESE ARE TRANSMITTED AS CHECKED BELOW:

_____ *FOR APPROVAL* _____ *AS REQUESTED*

_____ *FOR YOUR USE* _____ *FOR REVIEW AND COMMENT*

REMARKS

Delivered via FedEx 7739 8867 7461

Received By: _____

SIGNED: Kristyne Watley

Kristyne Watley, Contract Administrator
Phone: 512.660.6632 / Email: kwatley@dntconstruction.com

COPY TO:

Philadelphia Indemnity Insurance Company

Endorsement (Rider)

It is hereby understood and agreed that Bond No.: PB03016800273M (312)

Principal: DNT Construction, LLC

Obligee: Hays County, TX

In that the Surety **is changing this bond effective** June 3rd, 2019 **in the following manner:**

The Maintenance Bond expiration date is being extended to the date of: December 3, 2021

All terms and conditions of said bond, except as above changed, to remain the same.

Signed and sealed this 10th day of June, 20 21.

Philadelphia Indemnity Insurance Company
Surety

Jeremy Farque, Attorney-In-Fact

PHILADELPHIA INDEMNITY INSURANCE COMPANY
One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004-0950

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: That **PHILADELPHIA INDEMNITY INSURANCE COMPANY** (the Company), a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, does hereby constitute and appoint **Tom Mulanax, Michael Whorton, David Whorton, Rachel Martinez, Pollyanna Lengel, Jeremy Farque and/or Noe Moreno of Whorton Insurance Services** its true and lawful Attorney-in-fact with full authority to execute on its behalf bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, issued in the course of its business and to bind the Company thereby, in an amount not to exceed **$25,000,000**.

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of PHILADELPHIA INDEMNITY INSURANCE COMPANY on the 14th of November, 2016.

RESOLVED: That the Board of Directors hereby authorizes the President or any Vice President of the Company: (1) Appoint Attorney(s) in Fact and authorize the Attorney(s) in Fact to execute on behalf of the Company bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof and to attach the seal of the Company thereto; and (2) to remove, at any time, any such Attorney-in-Fact and revoke the authority given. And, be it

FURTHER RESOLVED: That the signatures of such officers and the seal of the Company may be affixed to any such Power of Attorney or certificate relating thereto by facsimile, and any such Power of Attorney so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN TESTIMONY WHEREOF, PHILADELPHIA INDEMNITY INSURANCE COMPANY HAS CAUSED THIS INSTRUMENT TO BE SIGNED AND ITS CORPORATE SEALTO BE AFFIXED BY ITS AUTHORIZED OFFICE THIS 27TH DAY OF OCTOBER, 2017.

(Seal)

Robert D. O'Leary Jr., President & CEO
Philadelphia Indemnity Insurance Company

On this 27th day of October, 2017, before me came the individual who executed the preceding instrument, to me personally known, and being by me duly sworn said that he is the therein described and authorized officer of the **PHILADELPHIA INDEMNITY INSURANCE COMPANY**; that the seal affixed to said instrument is the Corporate seal of said Company; that the said Corporate Seal and his signature were duly affixed.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Morgan Knapp, Notary Public
Lower Merion Twp., Montgomery County
My Commission Expires Sept 25, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

(Notary Seal)

Notary Public: Morgan Knapp

residing at: Bala Cynwyd, PA

My commission expires: September 25, 2021

I, Edward Sayago, Corporate Secretary of PHILADELPHIA INDEMNITY INSURANCE COMPANY, do hereby certify that the foregoing resolution of the Board of Directors and this Power of Attorney issued pursuant thereto on this 27th day of October, 2017 are true and correct and are still in full force and effect. I do further certify that Robert D. O'Leary Jr., who executed the Power of Attorney as President, was on the date of execution of the attached Power of Attorney the duly elected President of PHILADELPHIA INDEMNITY INSURANCE COMPANY,

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 10th day of June, 20 21.

Edward Sayago, Corporate Secretary
PHILADELPHIA INDEMNITY INSURANCE COMPANY

Philadelphia Indemnity Insurance Company

Endorsement (Rider)

It is hereby understood and agreed that Bond No.: PB03016800240M (3:4)

Principal: DNT Construction, LLC

Obligee: Hays County, TX

In that the Surety **is changing this bond effective** June 3rd, 2019 **in the following manner:**

The Maintenance Bond expiration date is being extended to the date of: December 3, 2021

All terms and conditions of said bond, except as above changed, to remain the same.

Signed and sealed this 10th day of June, 20 21.

Philadelphia Indemnity Insurance Company
Surety

Jeremy Farque, Attorney-In-Fact

PHILADELPHIA INDEMNITY INSURANCE COMPANY
One Bala Plaza, Suite 100
Bala Cynwyd, PA 19004-0950

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: That **PHILADELPHIA INDEMNITY INSURANCE COMPANY** (the Company), a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, does hereby constitute and appoint **Tom Mulanax, Michael Whorton, David Whorton, Rachel Martinez, Pollyanna Lengel, Jeremy Farque and/or Noe Moreno of Whorton Insurance Services** its true and lawful Attorney-in-fact with full authority to execute on its behalf bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, issued in the course of its business and to bind the Company thereby, in an amount not to exceed **$25,000,000**.

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of PHILADELPHIA INDEMNITY INSURANCE COMPANY on the 14th of November, 2016.

RESOLVED: That the Board of Directors hereby authorizes the President or any Vice President of the Company: (1) Appoint Attorney(s) in Fact and authorize the Attorney(s) in Fact to execute on behalf of the Company bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof and to attach the seal of the Company thereto; and (2) to remove, at any time, any such Attorney-in-Fact and revoke the authority given. And, be it

FURTHER RESOLVED: That the signatures of such officers and the seal of the Company may be affixed to any such Power of Attorney or certificate relating thereto by facsimile, and any such Power of Attorney so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN TESTIMONY WHEREOF, PHILADELPHIA INDEMNITY INSURANCE COMPANY HAS CAUSED THIS INSTRUMENT TO BE SIGNED AND ITS CORPORATE SEALTO BE AFFIXED BY ITS AUTHORIZED OFFICE THIS 27TH DAY OF OCTOBER, 2017.

(Seal)

Robert D. O'Leary Jr., President & CEO
Philadelphia Indemnity Insurance Company

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COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Morgan Knapp, Notary Public
Lower Merion Twp., Montgomery County
My Commission Expires Sept 25, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

(Notary Seal)

Notary Public: Morgan Knapp

residing at: Bala Cynwyd, PA

My commission expires: September 25, 2021

I, Edward Sayago, Corporate Secretary of PHILADELPHIA INDEMNITY INSURANCE COMPANY, do hereby certify that the foregoing resolution of the Board of Directors and this Power of Attorney issued pursuant thereto on this 27th day of October, 2017 are true and correct and are still in full force and effect. I do further certify that Robert D. O'Leary Jr., who executed the Power of Attorney as President, was on the date of execution of the attached Power of Attorney the duly elected President of PHILADELPHIA INDEMNITY INSURANCE COMPANY,

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 10th day of June, 2021.

Edward Sayago, Corporate Secretary
PHILADELPHIA INDEMNITY INSURANCE COMPANY

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to approve the selection of Pape Dawson Engineers, Inc. to perform Construction Engineering & Inspection (CE&I) services for the Fischer Store Road Safety Improvements project in Precinct 3; and to authorize staff and counsel to negotiate a Work Authorization under their On-Call CE&I contract.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	$0.00

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding, P.E., Transportation Director	SHELL	N/A

SUMMARY

The Fischer Store at RM 2325, CSJ 0285-02-014, Safety Improvements Project has a Construction Letting scheduled for July 2021, authorized by TxDOT, and is to be advertised by County staff. The letter of Authority was received from TxDOT on 5/11/2021 for this project to go to construction. The County would like to begin negotiations with Pape-Dawson for construction engineering and inspection to have them under contract before construction begins.

Pape Dawson Engineers, Inc. has been pre-qualified by Hays County for the requested services through RFQ 2018-P08 and has an On-Call contract for CE&I services approved June 30, 2020.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to consider the acceptance of road construction & drainage improvements, accept the 2-year maintenance bond #107434401 in the amount of $135,377.94, and accept the 1-year revegetation bond #107434402 in the amount of $56,853.00 for Parten Ranch subd., Phase 5.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding	SMITH	N/A

SUMMARY

Staff recommends acceptance of construction of roads and drainage improvements within the County ROW, and all regulatory signage as posted. An engineer's concurrence letter and as-built construction plans have been received. The Transportation Department has inspected and approved the improvements.

HAYS COUNTY
TRANSPORTATION DEPARTMENT

P.O. BOX 906
San Marcos, TX 78667

512/393-7385
FAX: 512/393-7393

June 15, 2021

Honorable Ruben Becerra
111 E. San Antonio Street
San Marcos, Texas 78666

RE: Parten Ranch subdivision, Phase 5

Dear Commissioners and Judge:

Lauren Crone, P.E. with LJA Engineering, is requesting that Hays County accept construction of the roads and drainage improvements for Parten Ranch subdivision, Phase 5, accept the 2-year maintenance bond #107434401 in the amount of $135,377.94, and accept the 1-year revegetation bond #107434402 in the amount of $56,853.00. A concurrence letter and as-built plans have been received as required by Hays County.

I recommend that construction be accepted per staff recommendations under Hays County specifications.

Respectfully,

Jerry Borcherding, P.E.
Director
Hays County Transportation

LJA ENGINEERING

7500 Rialto Boulevard, Building II, Suite 100, Austin, Texas 78735
t 512.439.4700 LJA.com TBPE F-1386

ENGINEER'S CONCURRENCE FOR PROJECT ACCEPTANCE

PROJECT: Parten Ranch Phase 5

SCOPE OF WORK: W____ WW____ S/D____ ALL__X__

Owner/Developer's Name and Address	Consultant Engineer's Name and Address
HM Parten Ranch Development, Inc. 1011 North Lamar Boulevard Austin, Texas 78701	LJA Engineering, Inc. 7500 Rialto Blvd, Bldg II, Suite 100 Austin, Texas 78735

This is to certify that I, the undersigned professional engineer, or my representative, have reviewed construction progress reports, logs, shop drawings, and test reports. On this date, I, or my representative, made an on-site inspection of the referenced project. No discrepancy or deviation from the approved construction plans exist which may materially effect the usefulness of the work for purpose and life intended for the project by design, except those listed below. I, therefore, recommend acceptance of this project, upon satisfactory correction of the following items:

Revegetate Disturbed Areas

STATE OF TEXAS
LAUREN CRONE
128018
LICENSED
PROFESSIONAL ENGINEER

Lauren Crone
Signature

6/3/2021
Date

128018
Texas Registration Number

Hays County
Maintenance
Bond

MAINTENANCE BOND

Bond No.: 107434401

KNOWN ALL BY THESE PRESENTS: That we Cash Construction Company, Inc., as Principal, and Travelers Casualty and Surety Company, a corporation organized and existing under the Laws of the State of Connecticut, as Surety, are held and firmly bound unto Hays County, as Obligee, in the total sum of One Hundred Thirty-five Thousand Three Hundred Seventy-seven & 94/100 U.S. Dollars ($135,377.94) for the payment whereof said Principal and Surety bind themselves, jointly and severally, as provided herein.

WHEREAS, the Principal entered into a contract with the Obligee dated July 24, 2020 for 930 - Parten Ranch Phase 5 ("Work").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall maintain and remedy said Work free from defects in materials and workmanship for a period of 2 year(s) commencing on The Official Date of Acceptance (the "Maintenance Period"), then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that any suit under this bond shall be commenced no later than one (1) year from the expiration date of the Maintenance Period; provided, however, that if this limitation is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law, and said period of limitation shall be deemed to have accrued and shall commence to run on the expiration date of the Maintenance Period.

SIGNED this 13th day of May, 2021.

Cash Construction Company, Inc.
(Principal)

By: _____

Travelers Casualty and Surety Company

By: _____
Camille M. Cruz, Attorney-In-Fact

TRAVELERS	Travelers Casualty and Surety Company of America Travelers Casualty and Surety Company St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint Camille M. Cruz, of Atlanta, Georgia, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **3rd** day of **February, 2017.**

State of Connecticut

City of Hartford ss.

By: Robert L. Raney, Senior Vice President

On this the **3rd** day of **February, 2017**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June, 2021**

Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 13th day of May, 2021.

Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.

Marsh

Hays County
Reveg.
Bond

MAINTENANCE BOND

Bond No.: 107434402

KNOWN ALL BY THESE PRESENTS: That we Cash Construction Company, Inc., as Principal, and Travelers Casualty and Surety Company, a corporation organized and existing under the Laws of the State of Connecticut, as Surety, are held and firmly bound unto Hays County, as Obligee, in the total sum of Fifty-six Thousand Eight Hundred Fifty-three & 00/100 U.S. Dollars ($56,853.00) for the payment whereof said Principal and Surety bind themselves, jointly and severally, as provided herein.

WHEREAS, the Principal entered into a contract with the Obligee dated July 24, 2020 for 930 - Parten Ranch Phase 5 Revegetation ("Work").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall maintain and remedy said Work free from defects in materials and workmanship for a period of 1 year(s) commencing on The Official Date of Acceptance (the "Maintenance Period"), then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that any suit under this bond shall be commenced no later than one (1) year from the expiration date of the Maintenance Period; provided, however, that if this limitation is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law, and said period of limitation shall be deemed to have accrued and shall commence to run on the expiration date of the Maintenance Period.

SIGNED this 13th day of May, 2021.

Cash Construction Company, Inc.
(Principal)

By: _____

Travelers Casualty and Surety Company

By: _____
Camille M. Cruz, Attorney-in-Fact

TRAVELERS	Travelers Casualty and Surety Company of America Travelers Casualty and Surety Company St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint Camille M. Cruz, of Atlanta, Georgia, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **3rd** day of **February, 2017.**

HARTFORD, CONN. — TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA — HARTFORD, CONN. — TRAVELERS CASUALTY AND SURETY COMPANY — CORPORATE SEAL — ST. PAUL FIRE AND MARINE INSURANCE COMPANY

State of Connecticut

City of Hartford ss.

By: Robert L. Raney, Senior Vice President

On this the **3rd** day of **February, 2017**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June, 2021**

MARIE C. TETREAULT — NOTARY PUBLIC — CONNECTICUT

Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 13th day of May, 2021.

HARTFORD, CONN. — TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA — HARTFORD, CONN. — TRAVELERS CASUALTY AND SURETY COMPANY — CORPORATE SEAL — ST. PAUL FIRE AND MARINE INSURANCE COMPANY

Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.

Marsh

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to authorize the County Judge to execute a Contract Amendment No. 1 for a time extension on the Public Involvement Services Agreement with Concept Development & Planning, LLC. for the RM 150 West Alignment project as part of the 2016 Hays County Road Bond Program.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	$0.00

LINE ITEM NUMBER

035-804-96-871.5448

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** MARISOL VILLARREAL-ALONZO

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding, Transportation Director	SMITH	N/A

SUMMARY

This Contract Amendment corrects the contract language under section 3.1 of the agreement to authorize a total period of the agreement, including all extensions, for a combined period of sixty (60) months - rather than the 36-month initial term. This will allow the Public Involvement firm, CD&P, to continue working on the project through 11/14/2022 as long as 12-month Supplemental Work Authorization extensions are approved.

AMENDMENT NO. 1
TO
PUBLIC INVOLVEMENT SERVICES AGREEMENT

STATE OF TEXAS §
COUNTY OF HAYS §

This Amendment No. 1 to Public Involvement Services Agreement ("Amendment No. 1") is by and between Hays County, Texas, a political subdivision of the State of Texas, (the "County") and Concept Development & Planning, LLC, a limited liability company organized and existing under the laws of the State of Texas, (the "Firm").

RECITALS

WHEREAS, the County and the Firm executed the Public Involvement Services Agreement effective as of November 14, 2017 (the "Agreement"),

WHEREAS, the total period of this Agreement in Section 3.1, including all extensions, requires an increase in maximum combined period; and,

WHEREAS, it has become necessary to amend the Agreement.

AMENDMENTS

NOW, THEREFORE, premises considered, the County and the Firm agree the Agreement is amended as follows:

I. Section 3.1 of the Agreement shall be amended as follows:

> 3.1 This Agreement will have an initial term of 36 months commencing as of the date of the last party's execution hereof unless terminated earlier as set out herein. The County reserves the right to extend this Agreement, by mutual agreement of both parties, as it deems to be in the best interest of the County. Any extension of this Agreement will be in twelve (12) month increments for up to an additional twenty-four (24) months, with the terms and conditions remaining the same. The total period of this Agreement, including all extensions, will not exceed a maximum combined period of sixty (60) months.

II. Each party represents and warrants that it has due power and lawful authority to execute and deliver this Amendment No. 1 and to perform its obligations under the Agreement; and, furthermore, the Agreement and this Amendment No. 1 are the valid, binding and enforceable obligations of such party.

III. All other terms of the Agreement and any prior amendments thereto which have not been specifically amended herein shall remain the same and shall continue in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment No. 1 to be signed by their duly authorized representatives on behalf of such party, to be effective as of the date of the last party's execution hereof.

HAYS COUNTY, TEXAS:

By:_____
Signature

_____
Printed Name

_____
Title

_____ ____, 20___
Date

CONCEPT DEVELOPMENT & PLANNING, LLC:

By:___ _____
Signature

_____Arin Gray _____
Printed Name

_____President_____
Title

_____June_____ _15, 2021___
Date

6/15/2021

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to authorize the County Judge to execute Supplemental No. 8 in the amount of $6,002 to the Professional Services Agreement for General Engineering Consultant (GEC)/Program Management services with HNTB Corporation for the Hays County/TxDOT Partnership Program; an authorize a discretionary exemption pursuant to Texas Local Government Code Ch. 262.024(a)(4).

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	$6,002

LINE ITEM NUMBER

Fund 033

AUDITOR USE ONLY

AUDITOR COMMENTS:
Requires a discretionary exemption pursuant to Texas Local Government Code Ch. 262.024(a)(4) for professional services.

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** MARISOL VILLARREAL-ALONZO

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding, Transportation Director	INGALSBE	N/A

SUMMARY

This action would amend the current HNTB contract for the Hays County/TxDOT Partnership program, assigned April 1, 2020, by increasing the Compensation Cap by $6,002. This additional budget would be allocated to Work Authorization #81 through Supplemental #1 for the FM 110 North project to allow the sub-consultant SWCA to prepare a final report document and curation of field records, per stipulations of the ACT, to be submitted to TxDOT. Since the proposed project would occur on land owned by TxDOT and may use funds from the FHWA, therefore requiring a permit from the U.S. Army Corps of Engineers prior to construction, the project is subject to the ACT and Section 106, as well as TxDOT Standards of Uniformity (SOU).

CONTRACT FOR ENGINEERING SERVICES
SUPPLEMENTAL AGREEMENT NO. 8
TO THE PROFESSIONAL SERVICES AGREEMENT

STATE OF TEXAS §
COUNTY OF HAYS §

THIS SUPPLEMENTAL AGREEMENT to contract for engineering services is by and between Hays County, Texas, a political subdivision of the State of Texas, *(the "County")* and HNTB Corporation *(the "Program Manager")* and becomes effective when fully executed by both parties.

WHEREAS, the *County* and the *Program Manager* executed a contract on July 23, 2013 and Supplemental #1 on November 12, 2013, Supplemental #2 on September 6, 2016, Supplemental #3 on September 30, 2016, Supplemental #4 on October 3, 2017, Supplemental #5 on February 5, 2019, and Supplemental #6 on September 24, 2019; and Supplement #7 on October 20, 2020; and,

WHEREAS, the not-to-exceed fee in Exhibit II, Section 1, Item 1.1 in the agreement is set at $250,000.00 and was amended to $2,474,000.00 through Supplemental #1 and was amended to $2,509,000.00 through Supplemental #2 and was amended to $3,696,500.00 through Supplemental #3 and was amended to $4,896,500.00 through Supplemental #4 and was amended to $5,973,500.00 through Supplemental #5 and was amended to $6,673,500.00 through Supplemental #6; and was amended to $7,193,500.00 through Supplemental #7; and,

WHEREAS, the contract for engineering services between Hays County, Texas and Prime Strategies, Inc. was assigned to HNTB Corporation on April 1, 2020; and,

WHEREAS, it has become necessary to amend the agreement.

AGREEMENT

NOW, THEREFORE, premises considered, the *County* and the *Engineer* agree that said contract is amended as follows:

I. The not-to-exceed fee in Exhibit 1, Section 1, Item 1. I is hereby increased from $7,193,500.00 to $7,199,502, reflecting an increase of $6,002.00

All other provisions are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, the ***County*** and the ***Program Manager*** have executed this supplemental agreement in duplicate,

PROGRAM MANAGER:
HNTB Corporation

By: DocuSigned by: Daniel J. Kellerman 6DAA031B30F74CA...
Signature

Daniel J. Kellerman, PE
Printed Name

Vice President
Title

6/2/2021
Date

COUNTY:
Hays County, Texas

By:_____
Signature

Ruben Becerra
Printed Name

Hays County Judge
Title

_____
Date

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday

AGENDA ITEM

Discussion and possible action to authorize the selection of Pape-Dawson Engineers to provide engineering design services related to improvements to Beback Inn Road and authorize staff and counsel to negotiate a contract.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	TBD

LINE ITEM NUMBER

TBD

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry H. Borcherding	INGALSBE	N/A

SUMMARY

This project will provide for a schematic design of needed improvments to Beback Inn. This effort will include ROW preservation and coordination with Guadalupe County.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to call for a public hearing on July 13, 2021 to establish a 4-way stop at the intersection of Centerpoint Road and CR 266.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-ROADS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
Jerry Borcherding	INGALSBE	N/A

SUMMARY

Crash data at this intersection indicate a 4-Way Stop is warranted.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

PLN-1646-NP Anthem Phase 2 and 3 Preliminary Plan (153 Lots). Discussion and possible action to approve preliminary plan.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-SUBDIVISIONS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
PACHECO	JONES	N/A

SUMMARY

Anthem Phase 2 and 3 Preliminary Plan is a 153 lot subdivision across 39 acres located off of FM 150 in Precinct 2. Out of the 153 total lots, 145 will be intended for single family residential, 5 will be intended for open space, and 3 will be intended for other uses.

All residential lots will be served by City of Kyle for Water and Wastewater.

PRELIMINARY PLAN
ANTHEM
PHASE 2 & PHASE 3

UTILITIES

WATER & WASTEWATER
CITY OF KYLE, TEXAS
520 E. RR. 150
KYLE, TX 78640
512.262.3024

GAS
CENTERPOINT ENERGY
PHONE: 1.800.752.8036

ELECTRIC
PEDERNALES ELECTRIC COOP, INC.
P.O. BOX 100
1819 FM 150 WEST
KYLE, TX 78640
512.262.2161

ONE-CALL
UTILITY LOCATING SERVICE
CONTRACTOR TO CALL BEFORE DIGGING!!!
PHONE: 1.800.245.4545

CONSULTANTS/CONTRACTORS

CIVIL ENGINEER
ATWELL
3815 S. CAPITAL OF TEXAS HIGHWAY, SUITE 300
AUSTIN, TX 78704
CONTACT: JOHN PICKENS, P.E
PHONE: 512.904.0500

SURVEYOR
ATWELL, LLC
3815 S. CAPITAL OF TEXAS HIGHWAY, SUITE 300
AUSTIN, TEXAS 78704
CONTACT: ROBERT GERTSON, R.P.L.S.
PHONE: 512.904.0500

OWNER/DEVELOPER

KYLE 150 LP
5312 PARK HOLLOW LN
AUSTIN, TX 78746
CONTACT: CLARK WILSON
PHONE: 512.423.6262

FLOODPLAIN INFORMATION

NO PORTION OF THIS TRACT LIES WITHIN THE FLOODPLAIN. ALL PORTIONS OF THIS TRACT LIE WITHIN ZONE X, AREAS OUTSIDE OF THE 0.2% SHADED AREA ACCORDING TO FEMA FIRM PANEL 48209C0270F EFFECTIVE SEPTEMBER 2, 2005.

GROUNDWATER DISTRICT INFORMATION

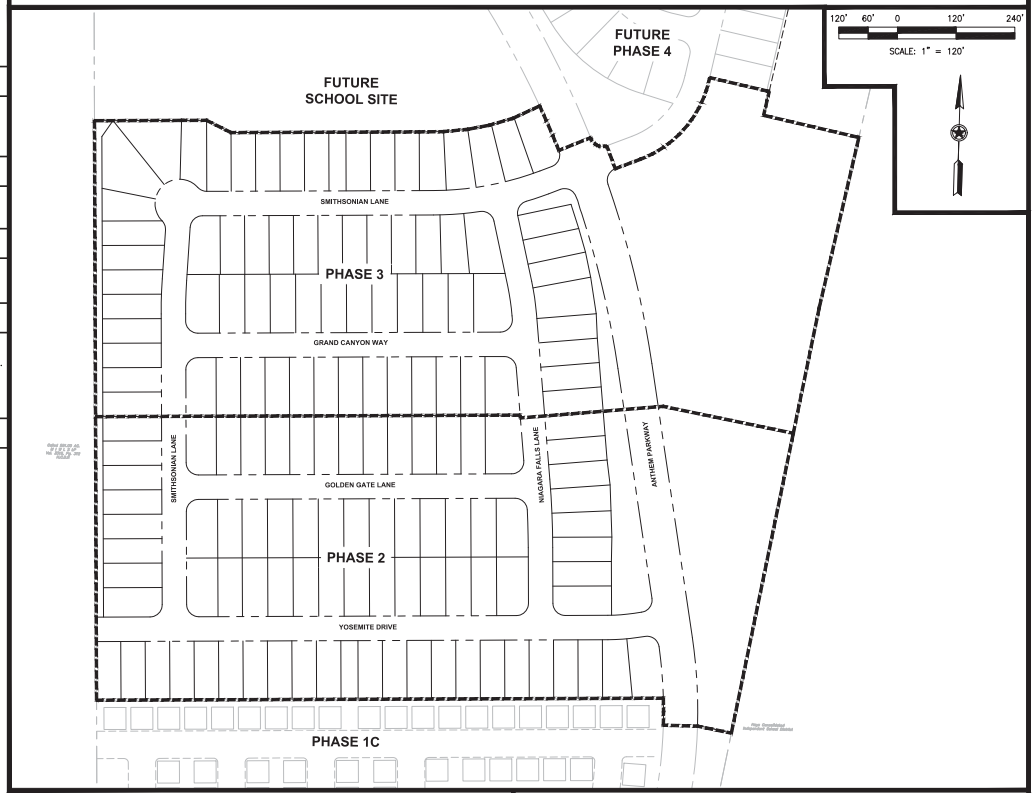
THIS SITE IS LOCATED WITHIN THE BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT.

LEGAL DESCRIPTION

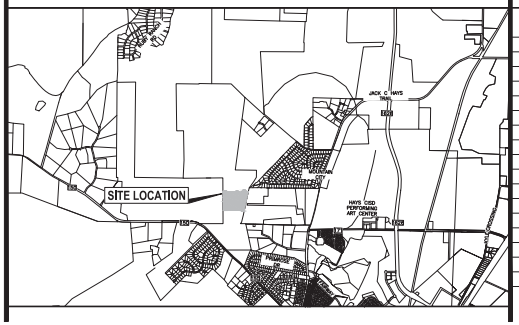
38.82 ACRE TRACT OF LAND OUT OF THE 673.272 ACRE ANDREW DUNN LEAGUE, ABSTRACT NO. 4, JOHN COOPER SURVEY NO. 13, ABSTRACT NO. 100, JESSE DAY SURVEY, ABSTRACT NO. 152, NANCE RANCH, LP VOLUME 4078, PAGE 224; VOLUME 5272 PAGE 368 & VOLUME 4295 PAGE 756 O.P.R.H.C.TX.

NOTES

1. THIS SITE IS LOCATED IN HAYS COUNTY.
2. THIS SITE IS LOCATED WITHIN THE EXTRATERRITORIAL JURISDICTION OF MOUNTAIN CITY.
3. A PORTION OF THIS SITE IS LOCATED WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE AND A PORTION OF THIS SITE IS LOCATED WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.
4. THIS SITE IS LOCATED IN HAYS COUNTY EMERGENCY DISTRICT #5.
5. WATER SERVICE WILL BE PROVIDED TO EACH LOT BY THE CITY OF KYLE.
6. THE SIDEWALKS WITHIN ANTHEM SUBDIVISION WILL BE MAINTAINED BY THE ANTHEM MUD.
7. ORGANIZED WASTEWATER SERVICE WILL BE PROVIDED TO EACH LOT BY THE CITY OF KYLE.
8. RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.
9. MINIMUM FRONT AND REAR SETBACKS ARE 20' AND MINIMUM SIDEYARD SETBACKS ARE 5' PER THE DEVELOPMENT AGREEMENT.
10. SIDEWALKS IN FRONT OF RESIDENTIAL LOTS TO BE CONSTRUCTED WITH THE HOME CONSTRUCTION. SIDEWALKS IN FRONT OF OPEN SPACE/GREENBELT/COMMERCIAL LOTS TO BE CONSTRUCTED WHEN THE ADJOINING STREETS ARE CONSTRUCTED.
11. THIS PROJECT IS LOCATED WITHIN THE HAYS CISD BOUNDARY.
12. TYPICAL LANDSCAPE MAINTENANCE, CUTTING AND TRIMMING, WITHIN THE SUBDIVISION, ALL EASEMENTS, DETENTION PONDS AND RIGHT OF WAYS TO THE PAVEMENT TO BE THE RESPONSIBILITY OF PROPERTY OWNERS AND/OR PROPERTY OWNER ASSOCIATIONS.
13. NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED STATE APPROVED COMMUNITY WATER SYSTEM.
14. NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A STATE APPROVED ORGANIZED WASTEWATER SYSTEM.
15. NO CONSTRUCTION OR OTHER DEVELOPMENT WITHIN THIS SUBDIVISION MAY BEGIN UNTIL HAYS COUNTY DEVELOPMENT PERMIT REQUIREMENTS HAVE BEEN MET.
16. ONE CALL NOTE: CONTRACTOR MUST CALL CITY OF KYLE (512-262-3024) FOR LOCATION OF CITY UTILITIES.
17. NO OBSTRUCTIONS ARE TO BE PLACED WITHIN THE DRAINAGE EASEMENTS.
18. 15' UTILITY EASEMENT SHALL BE LOCATED ALONG EACH SIDE OF DEDICATED RIGHT OF WAY.
19. STREET NAMES TO BE APPROVED WITH FINAL PLAT.
20. DRIVEWAYS SHALL COMPLY WITH CHAPTER 721 OF HAYS COUNTY DEVELOPMENT REGULATIONS AND BE PERMITTED THROUGH THE TRANSPORTATION DEPARTMENT OF HAYS COUNTY UNDER CHAPTER 751.
21. ADEQUATE DETENTION WILL BE CONSTRUCTED SIMULTANEOUSLY WITH PHASE ONE. DETENTION DESIGNS WILL BE INCLUDED IN THE CONSTRUCTION PLANS.
22. POST DEVELOPMENT CONDITIONS RUNOFF RATE SHALL BE NO GREATER THAN THE PRE-DEVELOPED CONDITION FOR 2, 5, 10, 25, AND 100-YEAR STORM EVENTS. PRE AND POST DEVELOPMENT RUNOFF CALCULATIONS SHALL BE INCLUDED WITH THE CONSTRUCTION DRAWINGS FOR THIS SUBDIVISION.
23. POST-CONSTRUCTION STORMWATER CONTROL MEASURES SHALL HAVE A MAINTENANCE PLAN. THE MAINTENANCE PLAN MUST BE FILED IN THE REAL PROPERTY RECORDS OF HAYS COUNTY. THE OWNER OPERATOR OF ANY NEW DEVELOPMENT OR REDEVELOPMENT SITE SHALL DEVELOP AND IMPLEMENT A MAINTENANCE PLAN ADDRESSING MAINTENANCE REQUIREMENTS FOR ANY STRUCTURAL CONTROL MEASURES INSTALLED ON SITE. OPERATION AND MAINTENANCE PERFORMED SHALL BE DOCUMENTED AND RETAINED AND MADE AVAILABLE FOR REVIEW UPON REQUEST.
24. ALL ROADWAYS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH APPLICABLE HAYS COUNTY STANDARDS.
25. THE ROADWAYS IN THIS PRELIMINARY PLAN SHALL BE DEDICATED TO THE PUBLIC.
26. EACH LOT SHOWN ON THE CORRESPONDING PLATS HAS ADEQUATE FRONTAGE TO ALLOW FOR COMPLIANCE WITH HAYS COUNTY DRIVEWAY SPACING REQUIREMENTS.



VICINITY MAP



REVISION BLOCK

NO.	REVISION DESCRIPTION	REVISE (R), ADD (A), VOID (V), SHEET #	TOTAL # SHEETS	NET CHANGE IMP. COVER SQ. FT.	TOTAL SITE IMP. COVER SQ. FT./ %	APPROVED/ DATE

SHEET LIST INDEX

REVIEWED BY:

HAYS COUNTY DATE

Know what's **below.** **Call** before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF PERSONS OR PROPERTY EMPLOYED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
www.atwell-group.com
3815 S. CAPITAL OF TEXAS HIGHWAY, SUITE 300
AUSTIN, TX 78704
O: 512.904.0500 F: 512.904.0509
TBPE No. 12242

PRELIMINARY PLAN
ANTHEM PHASE 2 & 3

MOUNTAIN CITY, ETJ
HAYS COUNTY, TEXAS

CLIENT
KYLE 150, LP
5312 PARK HOLLOW LANE
AUSTIN, TX 78746

COVER SHEET

DATE
June 4, 2021

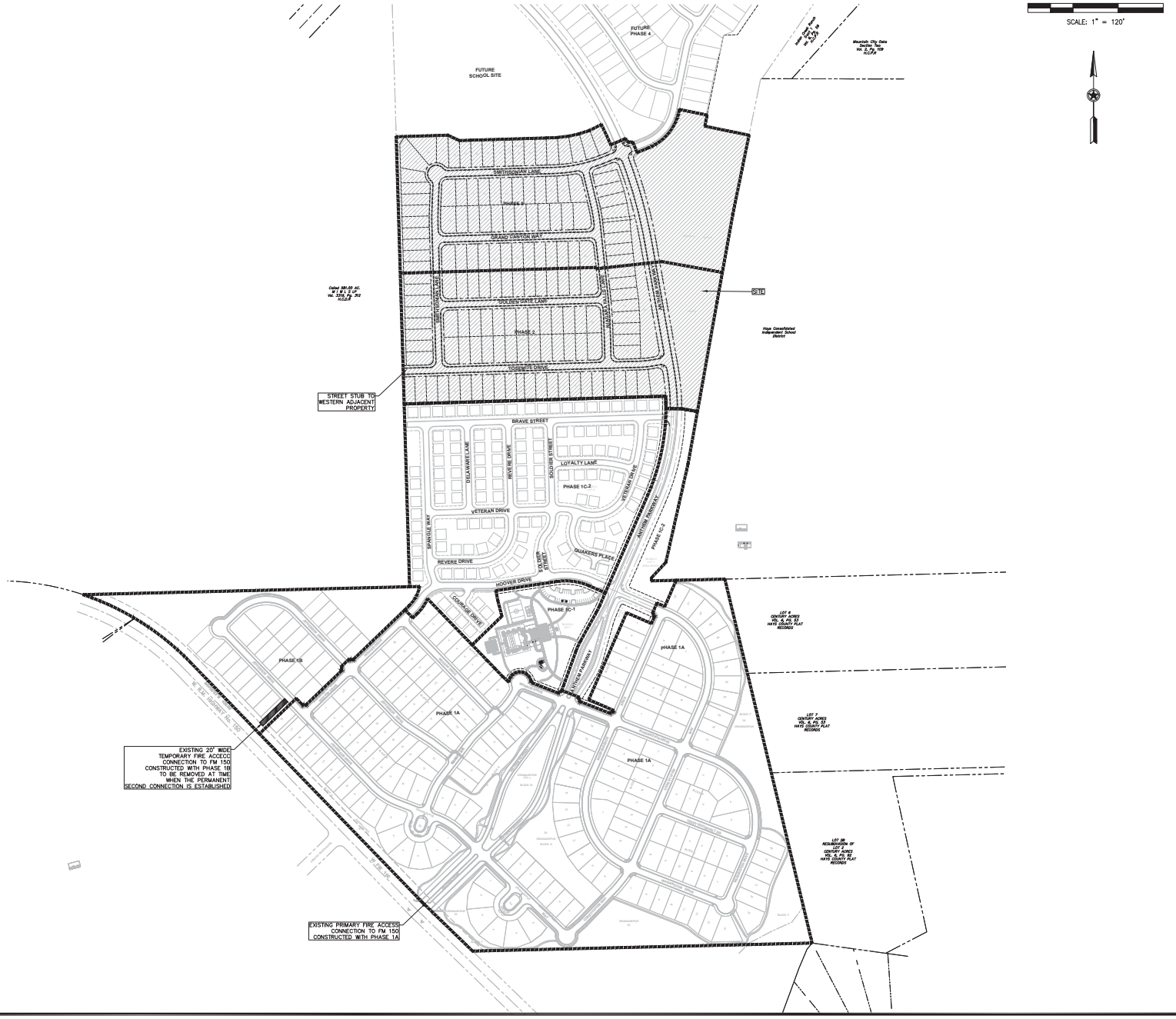
REVISIONS

SCALE 0

DR. XX CH. XX
P.M. XX
BOOK –
JOB XXXXXXXX
SHEET NO. 1 OF 8

K:\2001636\DWG\PLAN SETS\PLAT-FINAL PRELIM\PHASE 2 & 3 PP\P ANTHEM 1C-PH2_3 COVR.DWG 6/4/2021 9:20 AM JOHN PICKENS

CAD FILE: P-ANTHEM 1C-PH2_3 COVR.DWG



04/28/2021
STATE OF TEXAS
JOHN A. PICKENS
110631
LICENSED
PROFESSIONAL ENGINEER

811
Know what's **below.**
Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE ALL UTILITIES AND AVOID ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR THE SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
www.atwell-pllc.com
3815 S. CAPITAL OF TEXAS HIGHWAY, SUITE 300
AUSTIN, TX 78704
O: 512-904-0059 F: 512-904-0309
TBPE No. 12242

PRELIMINARY PLAN
ANTHEM PHASE 2 & 3

MOUNTAIN CITY, ETJ
HAYS COUNTY, TEXAS

CLIENT
KYLE 150, LP
5312 PARK HOLLOW LANE
AUSTIN, TX 78746

MASTER PHASING & FIRE ACCESS PLAN

DATE
April 28, 2021

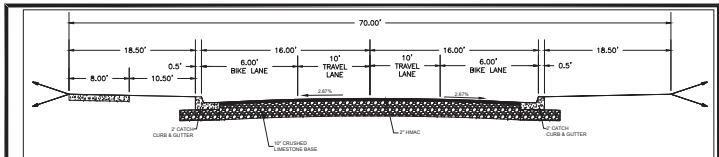
REVISIONS

SCALE 0

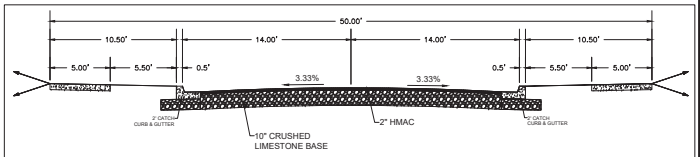
DR. XX CH. XX
P.M. XX
BOOK –
JOB XXXXXXXX
SHEET NO. 2 OF 8

K:\2020\163\6\DWG\PLAN SETS\PLAT-FINAL PRELIM\PHASE 2 & 3 PPP ANTHEM 1C-PH2_3 STE.DWG 4/28/2021 9:40 AM JOHN PICKENS

CAD FILE: P-ANTHEM 1C-PH2_3 STE.DWG



70' STREET SECTION
ANTHEM PARKWAY



50' STREET SECTION
COLLECTOR STREET

LIST OF PUBLIC ROADS			
ROAD NAMES	CLASSIFICATION	LENGTH (LF)	ROW WIDTH
ANTHEM PARKWAY	COLLECTOR	1,214 LF	70 FT
SMITHSONIAN LANE	LOCAL	1,690 LF	50 FT
GRAND CANYON WAY	LOCAL	722 LF	50 FT
GOLDEN GATE LANE	LOCAL	745 LF	50 FT
YOSEMITE DRIVE	LOCAL	1,179 LF	50 FT
NIAGARA FALLS LANE	LOCAL	891 LF	50 FT

LOT SUMMARY			
LOT SIZE		COUNT	LOT TYPE
MINIMUM	MAXIMUM		
LESS THAN 1 ACRE		151	RESIDENTIAL LOT & OS
1 ACRE	2 ACRES	0	N/A
2 ACRES	5 ACRES	0	N/A
5 ACRES	10 ACRES	2	ROW & OS/DRAINAGE EASEMENT
TOTAL LOTS & ROW		153	152 (EXCLUDING ROW)

LOT ACREAGE SUMMARY		
LOT	BLOCK	ACRE
LOT 1	BLOCK A	0.18 AC
LOT 2	BLOCK A	0.15 AC
LOT 3	BLOCK A	0.14 AC
LOT 4	BLOCK A	0.14 AC
LOT 5	BLOCK A	0.14 AC
LOT 6	BLOCK A	0.14 AC
LOT 7	BLOCK A	0.14 AC
LOT 8	BLOCK A	0.14 AC
LOT 9	BLOCK A	0.14 AC
LOT 10	BLOCK A	0.14 AC
LOT 11	BLOCK A	0.14 AC
LOT 12	BLOCK A	0.14 AC
LOT 13	BLOCK A	0.10 AC
LOT 14	BLOCK A	0.14 AC
LOT 15	BLOCK A	0.14 AC
LOT 16	BLOCK A	0.14 AC
LOT 17	BLOCK A	0.14 AC
LOT 18	BLOCK A	0.14 AC
LOT 19	BLOCK A	0.14 AC
LOT 20	BLOCK A	0.14 AC
LOT 21	BLOCK A	0.14 AC
LOT 22	BLOCK A	0.14 AC
LOT 23	BLOCK A	0.14 AC
BLOCK B		
LOT 1	BLOCK B	0.36 AC
LOT 2	BLOCK B	0.16 AC
LOT 3	BLOCK B	0.14 AC
LOT 4	BLOCK B	0.14 AC
LOT 5	BLOCK B	0.14 AC
LOT 6	BLOCK B	0.14 AC
LOT 7	BLOCK B	0.14 AC
LOT 8	BLOCK B	0.14 AC
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LOT 11	BLOCK B	0.14 AC
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LOT 13	BLOCK B	0.14 AC
LOT 14	BLOCK B	0.14 AC
LOT 15	BLOCK B	0.14 AC
LOT 16	BLOCK B	0.14 AC
LOT 17	BLOCK B	0.15 AC
LOT 18	BLOCK B	0.14 AC
LOT 19	BLOCK B	0.27 AC
LOT 20	BLOCK B	0.25 AC
LOT 21	BLOCK B	0.16 AC
LOT 22	BLOCK B	0.15 AC
LOT 23	BLOCK B	0.14 AC
LOT 24	BLOCK B	0.14 AC
LOT 25	BLOCK B	0.14 AC
LOT 26	BLOCK B	0.14 AC
LOT 27	BLOCK B	0.10 AC
LOT 28	BLOCK B	0.14 AC
LOT 29	BLOCK B	0.14 AC
LOT 30	BLOCK B	0.14 AC
LOT 31	BLOCK B	0.14 AC
LOT 32	BLOCK B	0.15 AC
LOT 33	BLOCK B	0.14 AC
LOT 34	BLOCK B	0.15 AC
LOT 35	BLOCK B	0.19 AC
BLOCK C		
LOT 1	BLOCK C	0.92 AC
LOT 2	BLOCK C	0.13 AC
LOT 3	BLOCK C	0.14 AC
LOT 4	BLOCK C	0.14 AC
LOT 5	BLOCK C	0.19 AC
LOT 6	BLOCK C	0.14 AC
LOT 7	BLOCK C	0.14 AC
LOT 8	BLOCK C	0.14 AC
LOT 9	BLOCK C	0.14 AC
LOT 10	BLOCK C	0.14 AC
LOT 11	BLOCK C	0.14 AC
LOT 12	BLOCK C	0.14 AC
LOT 13	BLOCK C	0.14 AC
LOT 14	BLOCK C	0.14 AC
LOT 15	BLOCK C	0.14 AC
LOT 16	BLOCK C	0.14 AC
LOT 17	BLOCK C	0.16 AC
BLOCK D		
LOT 1	BLOCK D	0.18 AC
LOT 2	BLOCK D	0.14 AC
LOT 3	BLOCK D	0.14 AC
LOT 4	BLOCK D	0.14 AC
LOT 5	BLOCK D	0.14 AC
LOT 6	BLOCK D	0.14 AC
LOT 7	BLOCK D	0.14 AC
LOT 8	BLOCK D	0.14 AC
LOT 9	BLOCK D	0.14 AC
LOT 10	BLOCK D	0.14 AC
LOT 11	BLOCK D	0.14 AC
LOT 12	BLOCK D	0.14 AC
LOT 13	BLOCK D	0.17 AC
LOT 14	BLOCK D	0.17 AC
LOT 15	BLOCK D	0.14 AC
LOT 16	BLOCK D	0.14 AC
LOT 17	BLOCK D	0.14 AC
LOT 18	BLOCK D	0.14 AC
LOT 19	BLOCK D	0.14 AC
LOT 20	BLOCK D	0.14 AC
LOT 21	BLOCK D	0.14 AC
LOT 22	BLOCK D	0.14 AC
LOT 23	BLOCK D	0.14 AC
LOT 24	BLOCK D	0.14 AC
LOT 25	BLOCK D	0.14 AC
LOT 26	BLOCK D	0.17 AC
BLOCK E		
LOT 1	BLOCK E	0.21 AC
LOT 2	BLOCK E	0.14 AC
LOT 3	BLOCK E	0.14 AC
LOT 4	BLOCK E	0.14 AC
LOT 5	BLOCK E	0.14 AC
LOT 6	BLOCK E	0.14 AC
LOT 7	BLOCK E	0.14 AC
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LOT 10	BLOCK E	0.14 AC
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LOT 12	BLOCK E	0.14 AC
LOT 13	BLOCK E	0.17 AC
LOT 14	BLOCK E	0.17 AC
LOT 15	BLOCK E	0.14 AC
LOT 16	BLOCK E	0.14 AC
LOT 17	BLOCK E	0.14 AC
LOT 18	BLOCK E	0.14 AC
LOT 19	BLOCK E	0.14 AC
LOT 20	BLOCK E	0.14 AC
LOT 21	BLOCK E	0.14 AC
LOT 22	BLOCK E	0.14 AC
LOT 23	BLOCK E	0.14 AC
LOT 24	BLOCK E	0.14 AC
LOT 25	BLOCK E	0.14 AC
LOT 26	BLOCK E	0.18 AC
BLOCK F		
LOT 1	BLOCK F	0.20 AC
LOT 2	BLOCK F	0.14 AC
LOT 3	BLOCK F	0.14 AC
LOT 4	BLOCK F	0.14 AC
LOT 5	BLOCK F	0.14 AC
LOT 6	BLOCK F	0.14 AC
LOT 7	BLOCK F	0.14 AC
LOT 8	BLOCK F	0.14 AC
LOT 9	BLOCK F	0.14 AC
LOT 10	BLOCK F	0.14 AC
LOT 11	BLOCK F	0.14 AC
LOT 12	BLOCK F	0.19 AC
LOT 13	BLOCK F	0.17 AC
LOT 14	BLOCK F	0.14 AC
LOT 15	BLOCK F	0.14 AC
LOT 16	BLOCK F	0.14 AC
LOT 17	BLOCK F	0.14 AC
LOT 18	BLOCK F	0.14 AC
LOT 19	BLOCK F	0.14 AC
LOT 20	BLOCK F	0.14 AC
LOT 21	BLOCK F	0.14 AC
LOT 22	BLOCK F	0.14 AC
LOT 23	BLOCK F	0.15 AC
LOT 24	BLOCK F	0.19 AC
BLOCK G		
LOT 1	BLOCK G	8.00 AC

LOT TYPE SUMMARY	
LOT TYPE	COUNT
SINGLE FAMILY	145
OPEN SPACE	5
OPEN SPACE/ DRAINAGE EASEMENT	2
RIGHT OF WAY	1
TOTAL	153

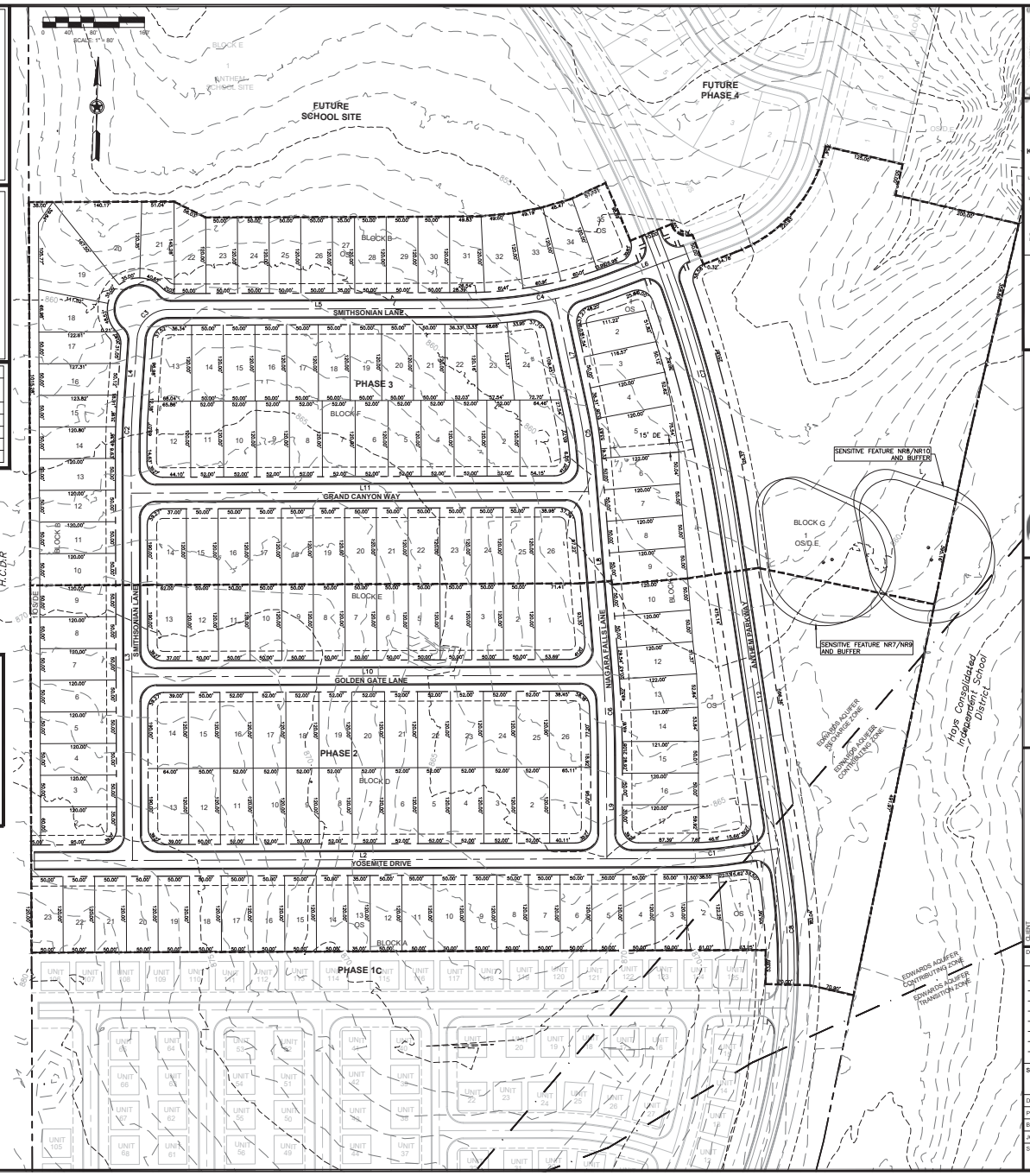
PHASE ACREAGE SUMMARY	
PHASE	ACRE
PHASE 2	18.51 ACRES
PHASE 3	20.31 ACRES
TOTAL	38.82 ACRES

NOTES:
1. ALL STREET WITH WIDTHS LESS THAN 32' CURB TO CURB WILL REQUIRE NO PARKING SIGNAGE ALONG ONE SIDE OF THE STREET.
2. ALL STREETS WITH WIDTHS LESS THAN 26' CURB TO CURB WILL REQUIRE NO PARKING SIGNAGE ON BOTH SIDES OF THE STREET.

LINE & CURVE

LINE TABLE	
LINE #	LENGTH
L1	75.66
L2	1046.50
L3	644.63
L4	109.36
L5	472.67
L6	86.46
L7	185.63
L8	336.87
L9	163.92
L10	744.66
L11	722.26
L12	566.36

CURVE TABLE		
CURVE #	LENGTH	RADIUS
C1	57.30	400.00
C2	69.81	1000.00
C3	75.05	50.00
C4	231.76	650.00
C5	63.92	500.00
C6	138.25	1790.00
C7	471.37	2000.00
C8	175.89	1000.00



STATE OF TEXAS
JOHN A. PICKENS
110631
LICENSED
PROFESSIONAL ENGINEER
04/29/2021

811 Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL INDEPENDENTLY VERIFY THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
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ATWELL
www.atwell-group.com
3815 S. CAPITAL OF TEXAS HIGHWAY, SUITE 300
AUSTIN, TX 78704
O: 512-904-0050 F: 512-904-0309
TBPE No. F-2242

PRELIMINARY PLAN
ANTHEM PHASE 2 & 3

MOUNTAIN CITY, ETJ
HAYS COUNTY, TEXAS

CLIENT
KYLE 150, LP
5312 PARK HOLLOW LANE
AUSTIN, TX 78746

PHASE 2 & 3
PRELIMINARY PLAN

DATE
June 4, 2021

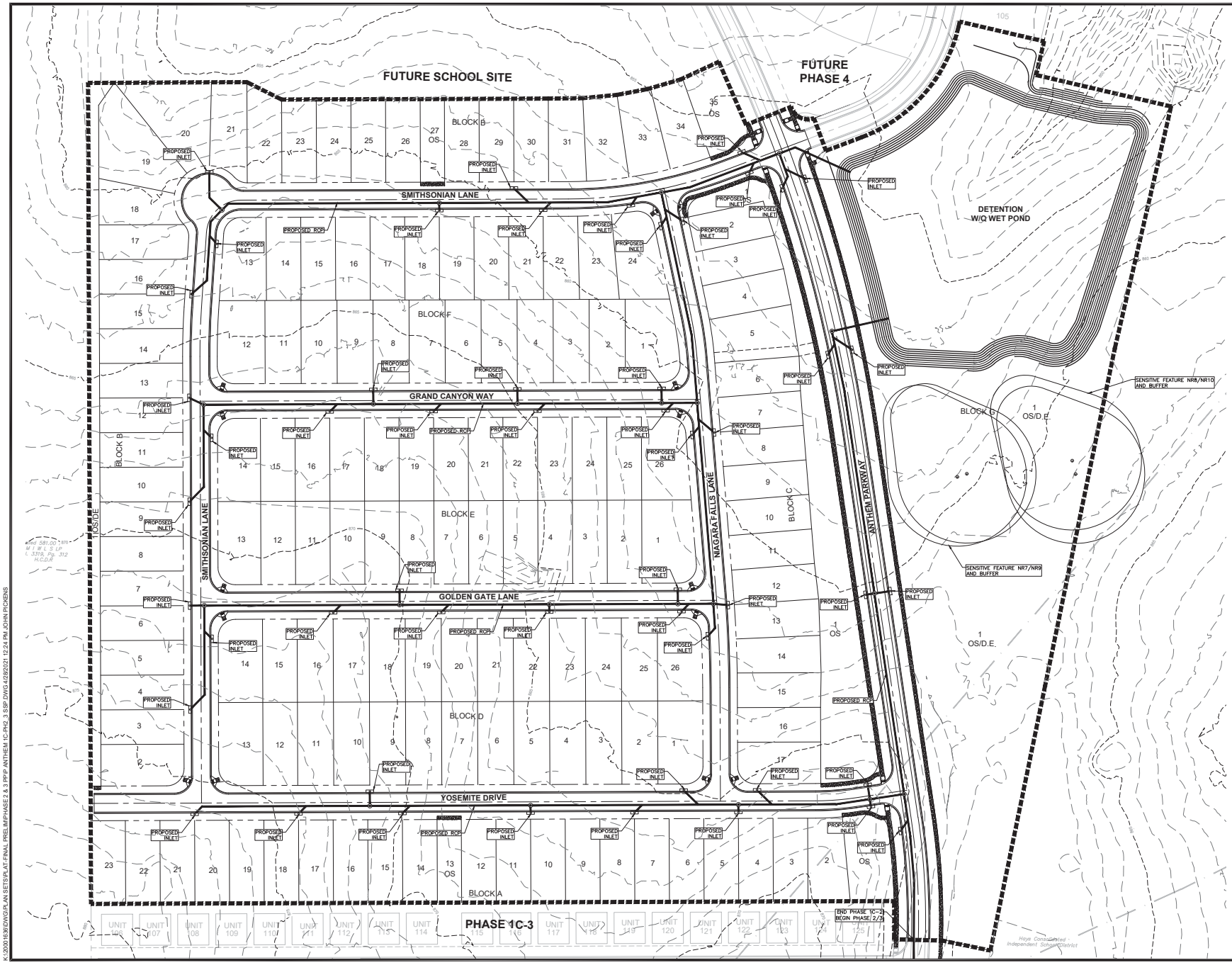
REVISIONS

SCALE 0

DR. XX CH. XX
P.M. XX
BOOK –
JOB XXXXXXXX
SHEET NO. 3 OF 8

K:\2000163\6\DWG\PLAN SETS\PLAT-FINAL PRELIM\PHASE 2 & 3 PPP ANTHEM 1C-PH2_3 MPLAN.DWG 6/4/2021 9:14 AM JOHN PICKENS

CAD FILE: P-ANTHEM 1C-PH2_3_MPLAN.DWG



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O: 512-904-9050 / F: 512-904-9509
TBPE No. F2242

PRELIMINARY PLAN
ANTHEM PHASE 2 & 3

MOUNTAIN CITY, ETJ
HAYS COUNTY, TEXAS

CLIENT
KYLE 150, LP
5312 PARK HOLLOW LANE
AUSTIN, TX 78746

PRELIMINARY STORM SEWER PLAN

DATE
April 28, 2021

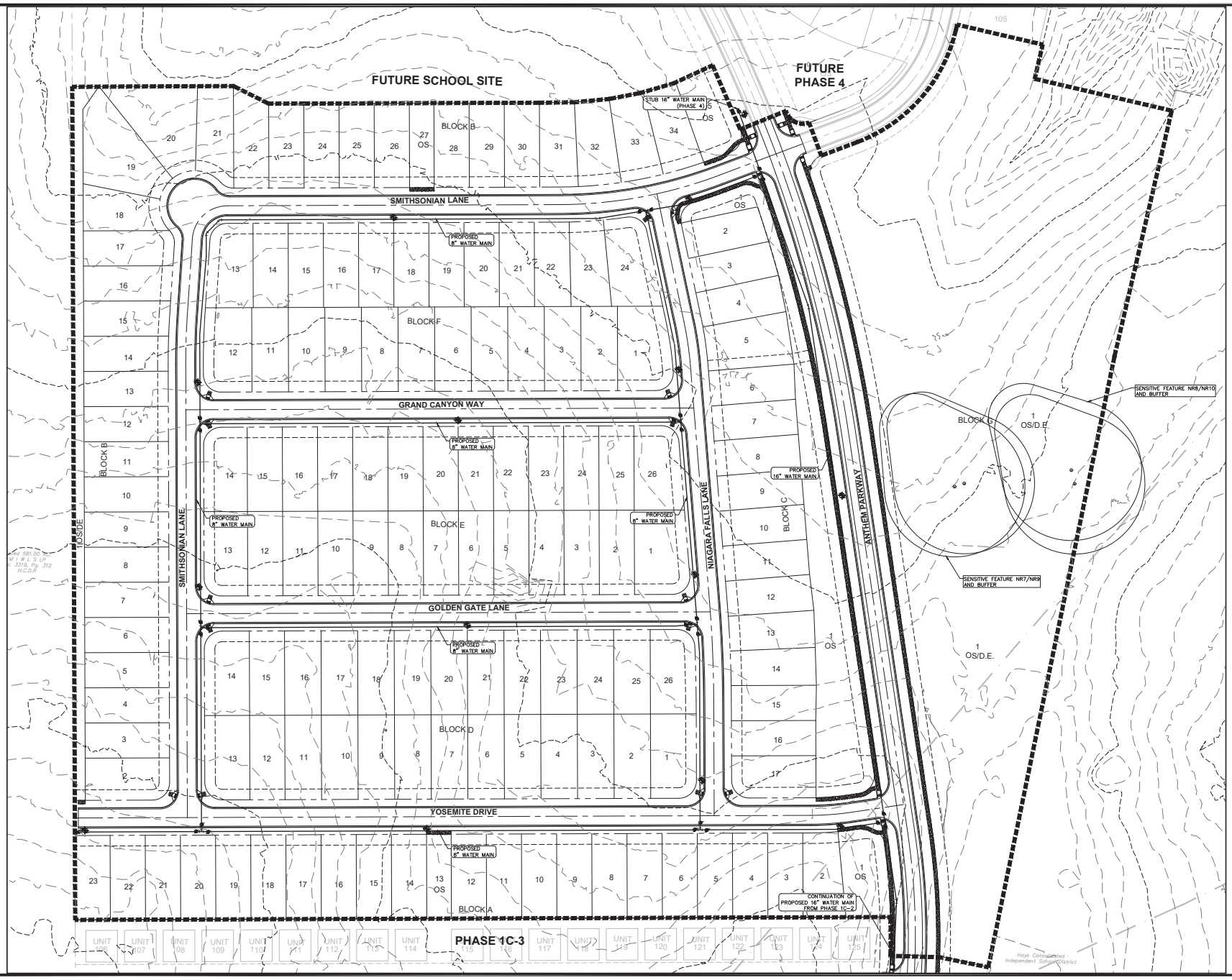
REVISIONS

SCALE 0

DR. XX CH. XX
P.M. XX
BOOK –
JOB XXXXXXXX
SHEET NO. 4 OF 8

K:\20016361\DWG\PLAN SETS\PLAT-FINAL PRELIM\PHASE 2 & 3 PP\P ANTHEM 1C-PH2_3 SSP.DWG 4/28/2021 12:24 PM JOHN PICKENS

CAD FILE: P ANTHEM 1C-PH2_3 SSP.DWG



SCALE 1" = 60'

04/28/2021
STATE OF TEXAS
JOHN A. PICKENS
110831
LICENSED
PROFESSIONAL ENGINEER

811
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TBPE No. 12242

PRELIMINARY PLAN
ANTHEM PHASE 2 & 3

MOUNTAIN CITY, ETJ
HAYS COUNTY, TEXAS

CLIENT
KYLE 150, LP
5312 PARK HOLLOW LANE
AUSTIN, TX 78746

PRELIMINARY WATER PLAN

DATE
April 28, 2021

REVISIONS

SCALE 0

DR. XX CH. XX
P.M. XX
BOOK --
JOB XXXXXXXX
SHEET NO. 5 OF 8

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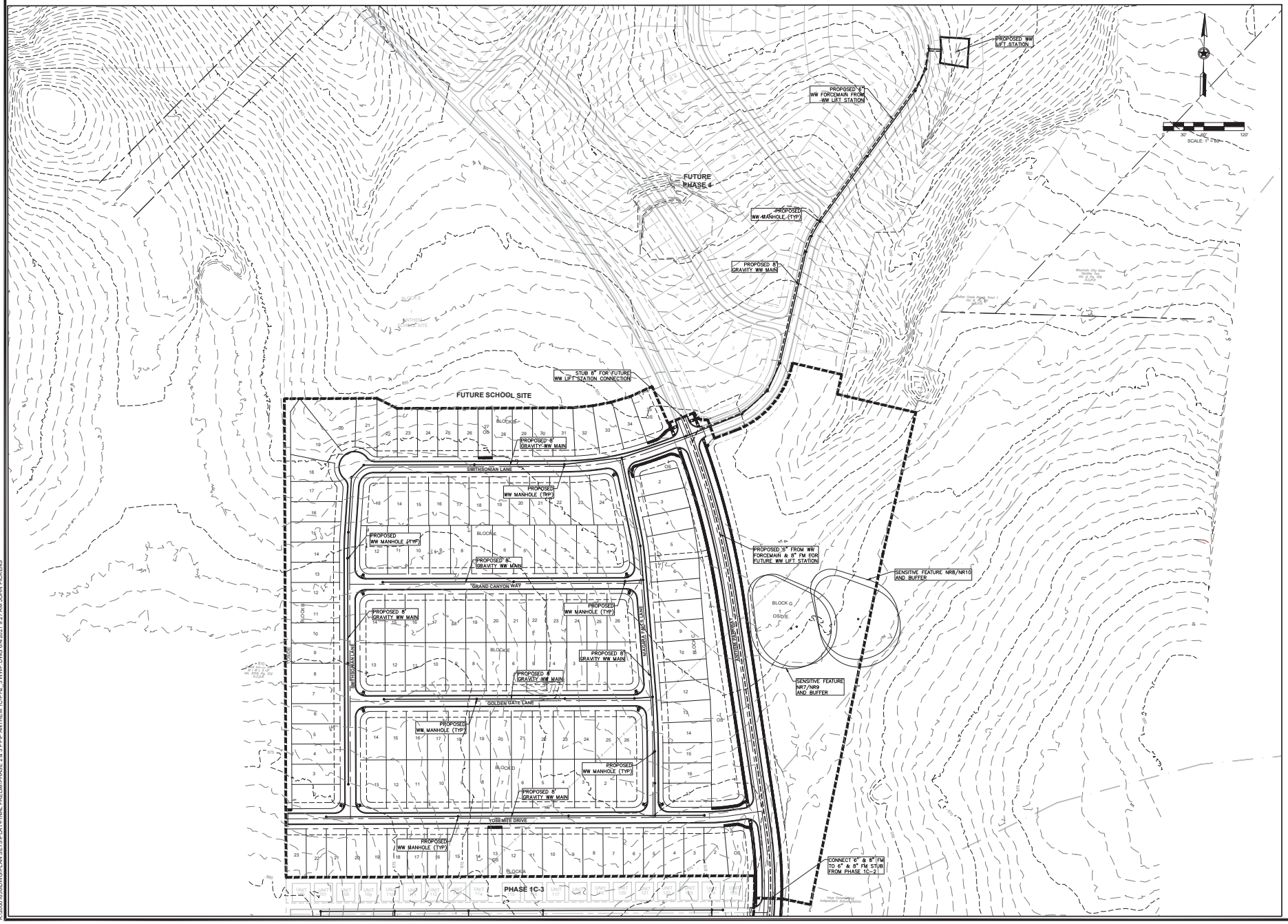

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TBPE No. F2242

PRELIMINARY PLAN
ANTHEM PHASE 2 & 3

MOUNTAIN CITY, ETJ
HAYS COUNTY, TEXAS

CLIENT
KYLE 150, LP
5312 PARK HOLLOW LANE
AUSTIN, TX 78746

PRELIMINARY WASTEWATER PLAN

DATE
June 4, 2021

REVISIONS

SCALE 0

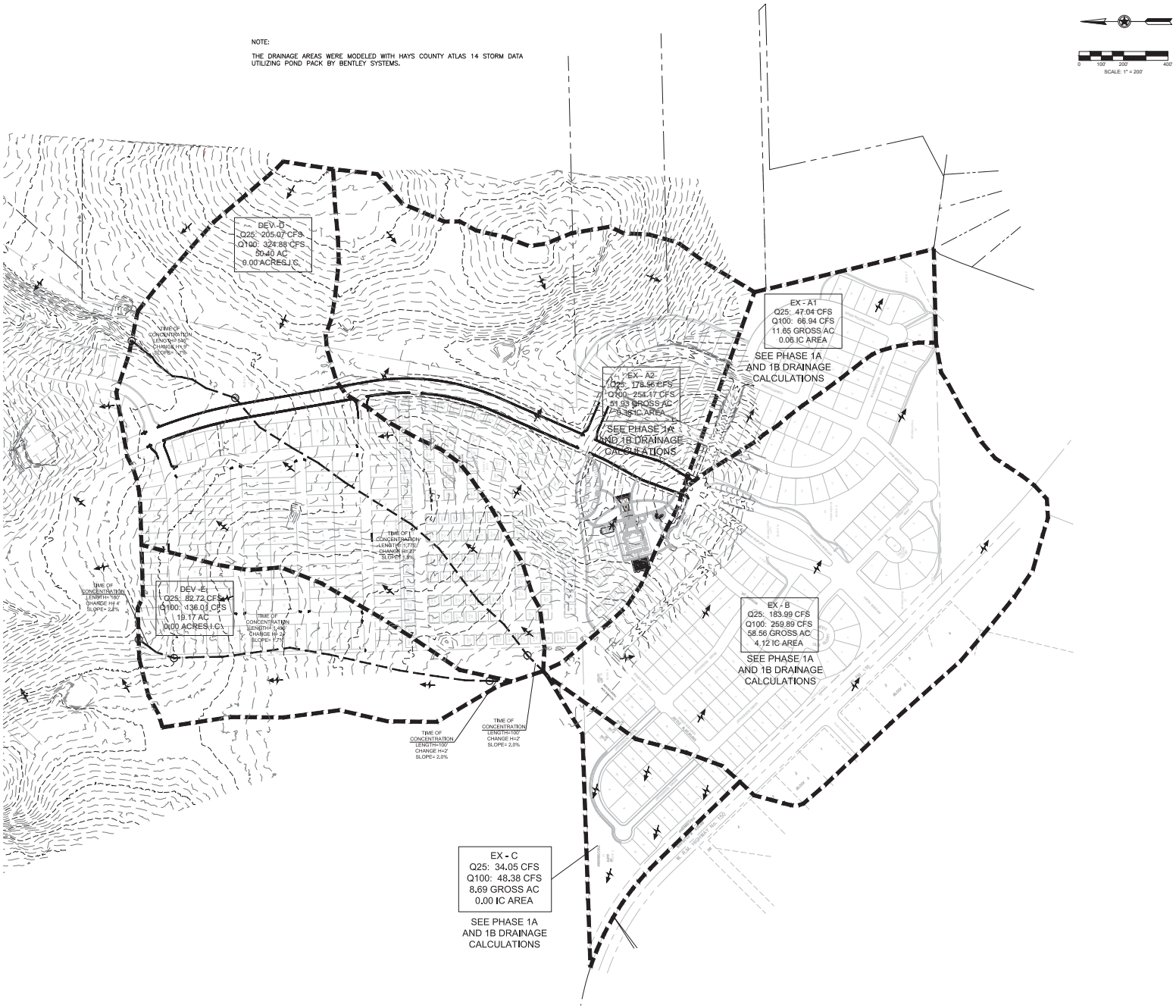
DR. XX CH. XX
P.M. XX
BOOK –
JOB XXXXXXXX
SHEET NO. 6 OF 8

K:\2000163\6\DWG\PLAN SETS\PLAT-FINAL PRELIM\PHASE 2 & 3 PPP ANTHEM 1C-PH2_3 WWP.DWG 6/4/2021 9:27 AM JOHN PICKENS

CAD FILE: P-ANTHEM 1C-PH2_3 WWP-2.DWG

NOTE:

THE DRAINAGE AREAS WERE MODELED WITH HAYS COUNTY ATLAS 14 STORM DATA UTILIZING POND PACK BY BENTLEY SYSTEMS.



04/28/2021
STATE OF TEXAS
JOHN A. PICKENS
110631
LICENSED
PROFESSIONAL ENGINEER

811
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AUSTIN, TX 78704
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TBPE No. 12242

PRELIMINARY PLAN
ANTHEM PHASE 2 & 3

MOUNTAIN CITY, ETJ
HAYS COUNTY, TEXAS

CLIENT
KYLE 150, LP
5312 PARK HOLLOW LANE
AUSTIN, TX 78746

PRE-DEVELOPED DRAINAGE AREA MAP

DATE
June 4, 2021

REVISIONS

SCALE 0

DR. XX CH. XX
P.M. XX
BOOK –
JOB XXXXXXXX
SHEET NO. 7 OF 8

K:\2020\1636\DWG\PLAN SETS\PLAT-FINAL PRELIM\PHASE 2 & 3 PP\P ANTHEM 1C-PH2_3 DAM.DWG 6/4/2021 10:24 AM JOHN PICKENS

CAD FILE: P-ANTHEM 1C-PH2_3 DAM.DWG

NOTE:

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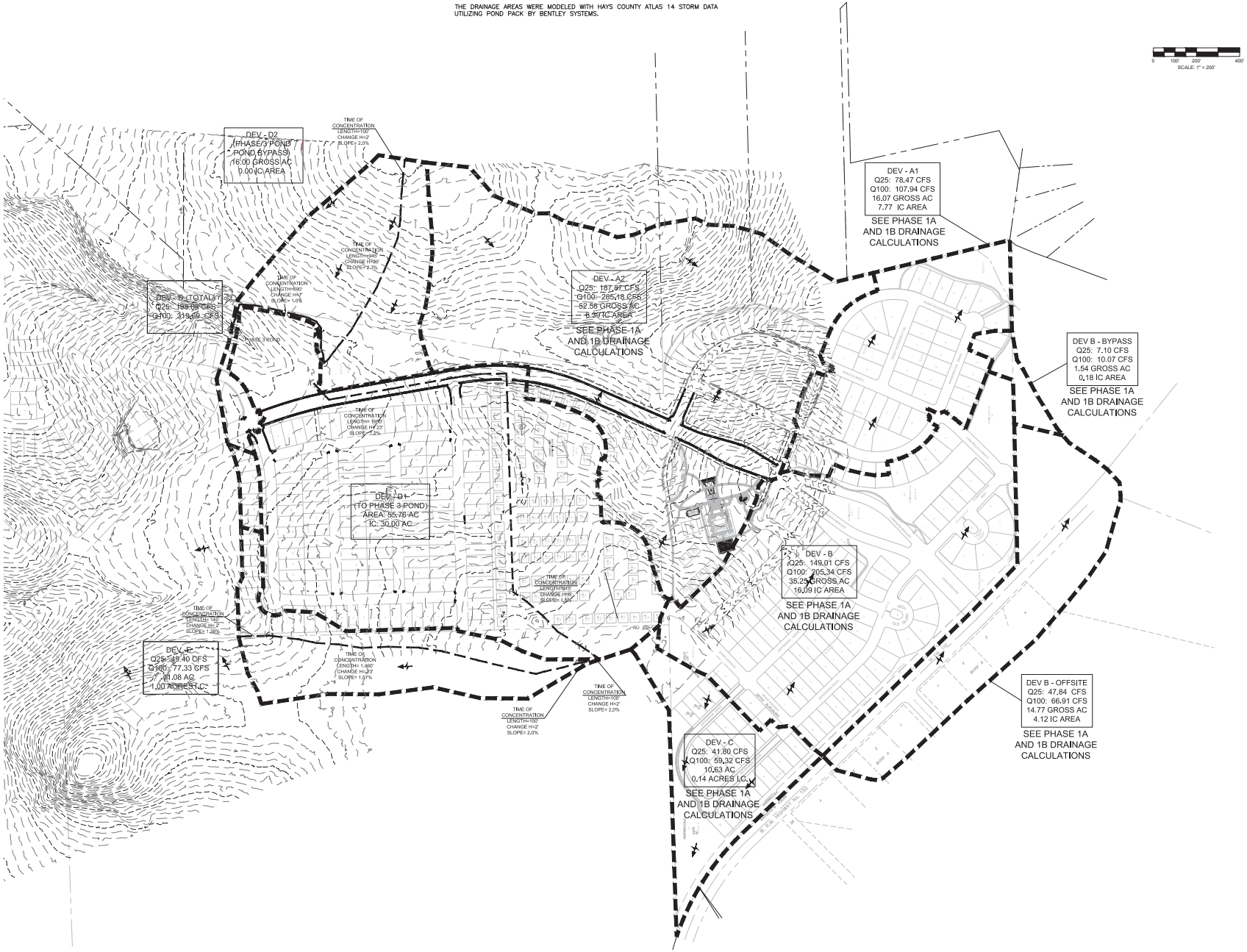

04/28/2021
JOHN A. PICKENS
110631
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS

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ATWELL
~~SUR-ARO WHYLAND~~
3815 S. CAPITAL OF TEXAS HIGHWAY, SUITE 300
O: 512-264-0050 F: 512-264-0059
TBPE No. 12242

PRELIMINARY PLAN
ANTHEM PHASE 2 & 3

MOUNTAIN CITY, ETJ
HAYS COUNTY, TEXAS

CLIENT
KYLE 150, LP
5312 PARK HOLLOW LANE
AUSTIN, TX 78746

DEVELOPED DRAINAGE AREA MAP

DATE
June 4, 2021

REVISIONS

SCALE 0

DR. XX CH. XX
P.M. XX
BOOK --
JOB XXXXXXXX
SHEET NO. 8 OF 8

K:\2000163\6\DWG\PLAN SET\SP\LAT-FINAL PREL IM\PHASE 2 & 3 PP\P-ANTHEM 1C-PH2_3 DAM.DWG 6/4/2021 10:23 AM JOHN PICKENS

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

PLN-1549-PC; Call for a Public Hearing on July 13th, 2021 to discuss approval of the final plat of the Pico Ranch 1, Replat.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-SUBDIVISIONS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

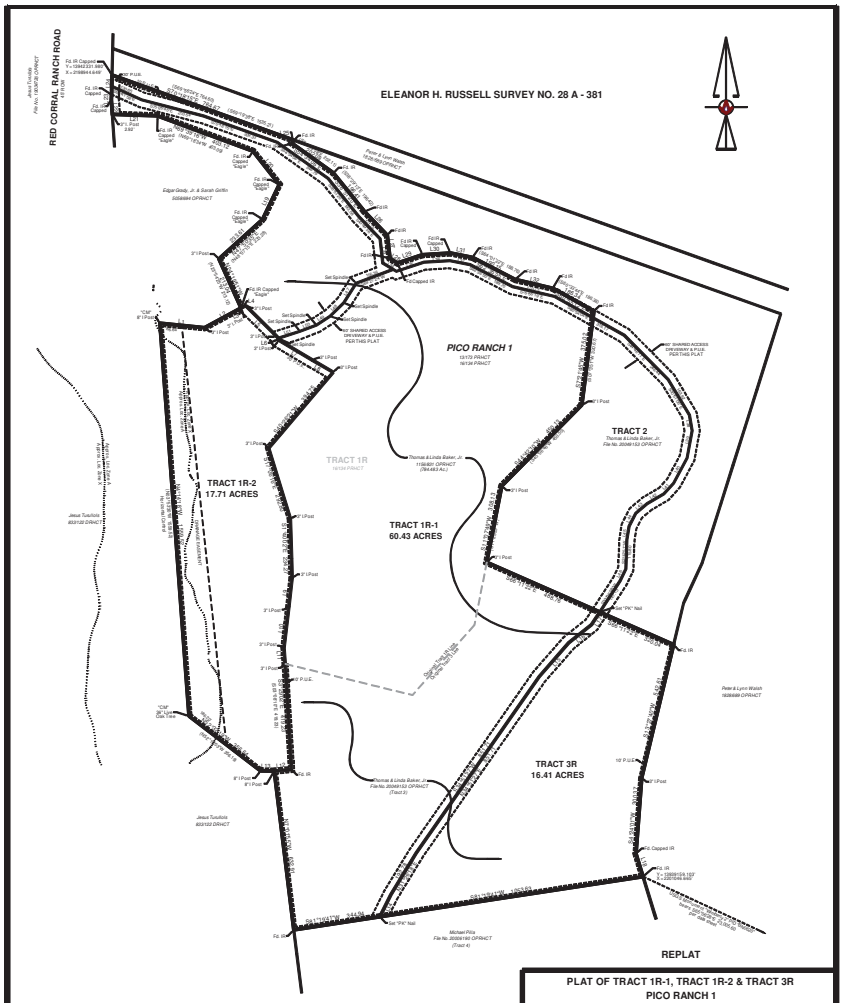
PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
MACHACEK	SHELL	N/A

SUMMARY

Pico Ranch 1 is a recorded subdivision located off of Red Corral Ranch Rd in Precinct 3.

The proposed re-plat will divide the 59.62 acre lot 1R into 2 lots, Lot 1R-1 and Lot 1R-2. Water service will be provided by individual wells. Wastewater treatment will be accomplished by individual on-site sewage facilities.



( ) = Record Call
"CM" = Control Monument
Bearings based on State Plane Coordinates - Texas South Central Zone 4204 - NAD83
Set IR = Set 5/8" Iron Rod with cap marked "Walters Surveying"
Set "PK" Nail in Center Line of Shared Drive at all corners unless otherwise noted

PAGE 1 OF 2

PLAT OF TRACT 1R-1, TRACT 1R-2 & TRACT 3R
PICO RANCH 1

BEING ALL OF TRACT 1R & TRACT 3
PICO RANCH 1

SCALE 1" = 200'	WALTERS LAND SURVEYING COMPANY, LLC	DRAWN BY C. L. W.
PLAT NO. 12-23-2020	REGISTERED PROFESSIONAL LAND SURVEYORS 105 North Mason Street BOWIE, TEXAS	JOB NO. 1473-3531

ELEANOR H. RUSSELL SURVEY NO. 28 A - 381
HAYS COUNTY - TEXAS

REVISED 03-21-2021
SURVEY DATE 07-23-2020 FB EF 24
FIRM NO. 10130600
OFFICE PHONE (940) 872-4718

LI NE	DI STANCE	BEARI NG	
L1	177. 36	S84°17' 51" E	(S86°12'33"E 177.36)
L2	164. 53	N61°32' 16" E	(N61°56'33"E 164.44)
L3	1. 08	S19°18' 55" E	
L4	20. 59	N60°22' 47" E	
L5	174. 01	S45°20' 58" E	
L6	115. 55	S28°14' 28" E	
L7	193. 29	S59°14' 28" E	
L8	114. 28	S59°48' 49" E	
L9	161. 74	S6°45' 38" W	
L10	66. 16	S3°45' 19" E	
L11	68. 57	S84°42' 08" W	(S83°07'40"W 68.57)
L12	54. 26	N89°03' 18" W	(S88°37'40"W 54.33)
L13	97. 29	N26°19' 08" E	
L14	177. 25	N41°11' 20" E	
L15	15. 33	N51°02' 35" E	
L16	93. 80	N31°26' 25" E	
L17	94. 92	S17°12' 30" E	
L18	152. 86	N25°28' 40" E	(N26°09'55"E 152.58)
L19	167. 66	N28°17' 56" W	(N27°53'07"W 167.60)
L20	178. 70	N88°08' 29" W	(N87°47'44"W 178.70)
L21	58. 19	N4°03' 57" W	(N5°11'58"W 58.42)
L22	19. 91	N0°58' 44" E	(N0°55'02"E 19.89)
L23	77. 40	S34°57' 31" W	(N80°35'32"E 77.40)
L24	77. 40	S34°57' 31" W	(S80°35'32"W 77.40)
L25	130. 91	S43°49' 56" E	(S45°20'58"E 130.64)
L26	92. 43	S6°24' 06" E	(S4°04'55"E 92.45)
L27	34. 43	S58°48' 05" E	(S56°36'36"E 34.35)
L28	104. 80	N71°39' 56" E	(N72°05'01"E 104.71)
L29	110. 92	N86°29' 55" E	(N84°16'05"E 110.91)
L30	88. 98	S78°37' 47" E	(S76°17'25"E 88.91)
L31	152. 86	S76°56' 19" E	(S74°20'06"E 152.96)
L32	97. 03	S6°24' 06" E	
L33	63. 04	S58°48' 05" E	
L34	103. 10	N86°29' 55" E	
L35	103. 10	N86°29' 55" E	
L36	80. 85	S78°37' 47" E	
L37	62. 75	S9°56' 36" E	
L38	110. 57	S10°27' 37" W	
L39	112. 83	S28°19' 02" W	
L40	57. 53	S42°07' 49" W	
L41	76. 27	S59°40' 46" W	
L42	58. 88	S50°11' 17" W	
L43	58. 27	S9°56' 36" E	
L44	53. 67	S9°15' 11" W	
L45	52. 76	S25°32' 50" W	
L46	92. 52	S32°23' 22" W	
L47	76. 11	S45°34' 44" W	
L48	63. 77	S57°31' 09" W	
L49	69. 16	S68°47' 46" W	
L50	91. 86	S72°25' 23" W	

Number of tracts: 3
TRACT 1R-1 = 60.43 Acres
TRACT 1R-2 = 17.71 Acres
TRACT 3R = 16.41 Acres
Category: 3 Tracts - 10 Acres or larger

There is hereby dedicated a 30' utility easement along the front of all lots and a 10' utility easement along the side of all lots. If the same person owns two or more adjacent lots,then the 10' utility easement will only affect the outer boundaries of said lot.

Water provided by: Onsite water well
Sewer provided by: Onsite septic system
Electric provided by: Pedernales Electric Coop

These lots are limited to Single Family Residences and no TCEQ regulated businesses.

STATE OF TEXAS)
)
HAYS COUNTY)

CERTIFICATE OF RECORDING

I, Elaine H. Cardenas, County Clerk of Hays County, do hereby certify that the foregoing instrument of writing with its certificate of authentication was filed for record in my office on the _____ day of _____, A.D. 20__ . at _____o'clock __m in the Plat Records, Hays County, Texas in Instrument Number _____.

WITNESS my hand and seal of office this the _____ day of _____A.D. 20__ .

Elaine H. Cardenas
County Clerk, Hays County, Texas

STATE OF TEXAS)
)
HAYS COUNTY)

CERTIFICATE OF COUNTY APPROVAL

I, Elaine H. Cardenas, County Clerk of Hays County, Texas do hereby certify that on the _____ day of _____, A.D. 20__, the Commisioners Court of Hays County, Texas passed an order authorizing the filing for record of this plat, and said order has been duly entered in the minutes of the said Court.
Instrument Number _____.

WITNESS MY HAND AND SEAL OF OFFICE this the _____ day of _____, A.D. 20__.

Ruben Becerra
County Judge, Hays County, Texas

Elaine H. Cardenas
County Clerk, Hays County, Texas

NOTE:
In approving this plat by the Commissioners Court of Hays County, Texas it is understood that all roads shown hereon are private roads and shall remain the property of the Subdivision and/or subsequent owners of the property. The construction, repair and maintenance of these roads and any associated drainage improvements will be the responsibility of the Subdivider and/or subsequent owners of the subdivision and will not be the responsibility of Hays County.

STATE OF TEXAS)
)
HAYS COUNTY)

CERTIFICATION OF HAYS COUNTY DEVELOPMENT SERVICES

Sewage Disposal/Individual Water Supply Certification, to wit:
No structure in this subdivision shall be occupied until connected to an individual water supply or a state approved community water system. Due to declining water supplies and diminishing water quality, prospective property owners are cautioned by Hays County to question the seller concerning ground water availability. Rain water collection is encouraged and in some areas may offer the best renewable water resource.
No structure in this subdivision shall be occupied until connected to a public sewer system or to an on-site wastewater system which has been approved and permitted by Hays County Development Series.
No construction or development within the subdivision my begin until all Hays County Development permit requirements have been met.

Eric Van Gasbeek, R.S., C. F. M. Date
Hays County Floodplain Administrator

Marcus Pacheco Date
Director, Hays County Development Services

According to the 2015 Countywide Floodplain Study for Hays County, a portion of this tract lies in Zone A "No base flood elevations determined".

This property lies in the Blanco Independent School District.

This property does not lie in the ETJ of any city of municipality.

This property lies within the Hays County Emergency Service Districts 1 & 6

This property lies within the Hays Trinity Groundwater Conservation District

This property, as depicted, lies in the Edwards Aquifer Constributing Zone

"Under Department Regulations, this Subdivision is exempt from the requirements to demonstrate the availability of water service. Further subdivision is prohibited for a duration of five (5) years, following the filing of the plat"

DRIVEWAY PERMIT NOTE:

"In order to promote safe use of roadways and perserve the conditions of public roadways, no driveway constructed on any lot within this subdivision shall be permitted to access onto a public roadway unless (a) a permit for use of the County Roadway right-of-way has been issued under Chapter 751, and, (b) the driveway satifies the minimum spacing requirement set forth in chapter 721 of the Hays County Development Regulations."

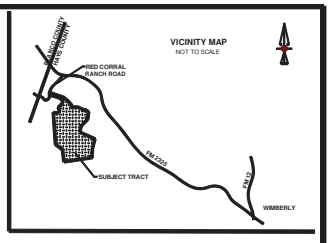
CULVERT NOTE:

"All culverts, when required, shall comply with the current Hays County Standard, per Hays County Development Regulations, Chapter 705, Subchapter 8.03."

MAILBOX NOTE:

"All mailboxes located in the right-of-way shall be of an approved TxDot or FHWA approved design, per Hays County Development Regulations, Chapter 721, Subchapter 2.01."

PAGE 2 OF 2



STATE OF TEXAS)
)
HAYS COUNTY)

OWNER'S ACKNOWLEDGEMENT & DEDICATION

KNOW ALL MEN BY THESE PRESENTS: That we, Thomas B. Baker, Jr. & Linda Rae Baker, owners of 384.463 acres of land out of the Eleanor H. Russell Survey A-28, Hays County, Texas as conveyed to us by deed dated June 26, 1995, recorded in Volume 1156, Page 831-836, Official Public Records, Hays County, Texas and conveyed to us by deed dated October 28, 2020, recorded in File No. 20040153, Official Public Records, Hays County, Texas do hereby subdivide 94.55 acres being all of TRACT 1R PICO RANCH 1 AND TRACT 3 PICO RANCH 1, to be known as TRACT 1R-1, TRACT 1R-2 AND TRACT 3R PICO RANCH 1, Hays, County, Texas, in accordance with the plat shown hereon, subject to any and all easements or restrictions heretofore granted, and do hereby dedicate to the future land owners the use and benefit of the easements shown hereon.

WITNESS OUR HAND, this the _____ day of _____, A.D. 20__.

Thomas B. Baker Jr
1111 Red Corral Ranch Road
Wimberley, Texas 78676
Date

Linda Rae Baker
1111 Red Corral Ranch Road
Wimberley, Texas 78676
Date

BEFORE ME, the undersigned authority, on this day personally appeared Thomas B Baker, Jr. & Linda Rae Baker, known to me to be the persons whose names are subscribed to the foregoing instrument and acknowledged to me that they executed the same for the purposes and consideration therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, A.D. 20__.

Notary Public, State of Texas

BEFORE ME, the undersigned authority, on this day personally appeared Michael Pitts, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, A.D. 20__.

Notary Public, State of Texas

STATE OF TEXAS)
)
HAYS COUNTY)

CERTIFICATE OF SURVEYOR

I, the undersigned, a Registered Professional Land Surveyor in the State of Texas hereby certify that this plat is true and correct and was prepared from an actual survey of the property made under my supervision on the ground.

Patrick L. Walters
Registered Professional Land Surveyor
No. 4614

REPLAT

PLAT OF TRACT 1R-1, TRACT 1R-2 & TRACT 3R
PICO RANCH 1

BEING ALL OF TRACT 1R & TRACT 3
PICO RANCH 1

SCALE 1" = 200'	WALTERS LAND SURVEYING COMPANY, LLC REGISTERED PROFESSIONAL LAND SURVEYORS 105 North Mason Street BOWIE, TEXAS	DRAWN BY C. L. W.
PLAT NO. 12-23-2020		JOB NO. 1473-3531

ELEANOR H. RUSSELL SURVEY NO. 28 A - 381
HAYS COUNTY - TEXAS

REVISED 03-21-2021
SURVEY DATE 07-23-2020 FB EF 24 FIRM NO. 10130600
OFFICE PHONE (940) 872-4718

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court

Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to authorize the Office of Emergency Services to purchase Pix4Dmapper Software through Granite Defense Technologies related to UAV mapping software for disaster and recovery efforts.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-MISCELLANEOUS	June 22, 2021	$5,800.60

LINE ITEM NUMBER

001-656-00.5429 Software Maintenance and Licensing

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: YES **AUDITOR REVIEW:** MARISOL VILLARREAL-ALONZO

REQUESTED BY	SPONSOR	CO-SPONSOR
Mike Jones	BECERRA	N/A

SUMMARY

Pix4Dmapper/React is a fast mapping software for first responders using UAVs to quickly capture photo data and render measurable 2D maps. Used primarily in disaster response to flooding, wildfire, and search and rescue, as well as mapping inundated areas during recovery efforts after a disaster. Funds were budgeted during the budget process for this software.

Attachment: Granite Defense Technologies Quote #GDTQ1709
Buy Board Contract #603-20

QUOTE

QUOTE #:	GDTQ1709
DATE:	Jun 10, 2021

GRANITE DEFENSE TECHNOLOGIES

Prepared For:

Kristen Jones
Hays County Emergency Manageme
712 S. Stagecoach Trail
San Marcos, Texas 78666
United States

Phone 512-393-7337

Remit to: Granite Defense & Technologies, LLC
P.O. 1016
Burnet, TX 78611

GDT Contact:

Tom Prentice

Mobile: 2819358972
Email: tom.prentice@granitedefense.com

Account Number	Payment Terms	Valid Through
	NET 30	

Part Number	Description	Qty	Unit Price	Ext. Price
P4D-AP-MAPPD	Pix4dDMapper Perpetual	1	$4,840.30	$4,840.30
P4D-AP-RCTPD	Pix4DReact Perpetual	1	$960.30	$960.30

Granite Defense & Technologies, is an authorized dealer for PIX4D products and passes through all software end user license agreements.

SubTotal	$5,800.60

Buyboard 603-20

Please contact me if I can be of further assistance.

Tax	$0.00
Shipping	$0.00
TOTAL	$5,800.60

PRICING INFORMATION
All prices are displayed in USD.
Product, available inventory, additional fees and pricing data are updated frequently and may change without notice.

RETURNS
All sales of UAV systems are final. Returns of unopened items in the original packaging are subject to a 20% restocking fee.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to approve a resolution providing comments to Groundwater Management Area (GMA) 9 regarding joint planning efforts to adopt desired future conditions.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-MISCELLANEOUS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
	SHELL	N/A

SUMMARY

See attached Resolution.

RESOLUTION PROVIDING COMMENTS TO GROUNDWATER MANAGEMENT AREA 9 REGARDING JOINT PLANNING EFFORTS TO ADOPT DESIRED FUTURE CONDITIONS

WHEREAS, Chapter 36, Section 108 of the Texas Water Code provides for the joint planning by the Texas Water Development Board (TWDB) of various Groundwater Management Areas consisting of Groundwater Conservation Districts; and

WHEREAS, Hays County contains the full boundaries of the Hays Trinity Groundwater Conservation District (HTGCD), which participates in Groundwater Management Area 9 (GMA 9); and

WHEREAS, GMA 9 districts shall every five years consider groundwater availability models and other data or information for the management area and shall propose for adoption Desired Future Conditions (DFCs) for the relevant aquifers within the management area; and

WHEREAS, the year 2021 represents a joint planning year for TWDB to update its 2016 DFCs for GMA 9; and

WHEREAS, state law allows the County to offer comments on behalf, and in the best interests, of its citizens to inform and influence the determination of DFCs by HTGCD and fellow districts within GMA 9, and

WHEREAS, the Trinity Aquifer is the relevant aquifer that feeds and interacts with the Blanco River and serves as the primary water supply source for many citizens of Hays County, and is managed by GMA 9; and

WHEREAS, Texas Water Code Sec. 36.108 requires that GMA 9 districts shall consider aquifer uses or conditions, water supply needs, hydrological conditions, environmental impacts including spring flow and other interactions between groundwater and surface water, impact on subsidence, socioeconomic impacts, interests and rights in private property, DFC feasibility, and any other relevant information; and

WHEREAS, the comment period for the 2021 joint planning effort of GMA 9 districts continues through June 30, 2021;

NOW, THEREFORE, BE IT RESOLVED by the Commissioners Court of Hays County:

The Desired Future Condition for the Trinity Aquifer stated as an "increase in average drawdown of approximately 30 feet through 2060" does not adequately protect availability of groundwater in GMA 9, as evidenced by declining groundwater levels over the last decade. With no new demographics until Census 2020 is released later this year and no update of groundwater modeling, the GMA districts should take a more conservative view and reduce the drawdown toward zero to protect the aquifer until new and more refined data can be incorporated.

During the five years since the 2016 DFC update, population growth and rapid development in the eastern and southeastern districts have raised serious questions about modeled available groundwater, as wells fall to historic lows in mild drought conditions. Disparity in groundwater drawdowns across districts argues for greater attention to specific measures and additional DFCs related to spring flows. Health of spring flow is a measure of overall groundwater system health and directly observable to use as a drought trigger to protect groundwater resources.

Modeling to create the Blanco River Aquifer Assessment Tool (BRAAT) comes as a response to dye trace and other studies that have established much more complicated groundwater and surface water interactions. Until the BRAAT is completed, GMA 9 should account for obvious stresses on the groundwater system and the recent historical record of drawdowns greater than 100 feet in pockets near Blanco, Boerne, and Kerrville, during severe drought.

Mining the aquifer according to outdated modeling of drawdown effects is unsustainable. The baseline trend of groundwater health argues instead for reasonable steps to reduce pumping and preserve access to groundwater for essential use. Replacements for groundwater exist—rainwater harvesting, graywater reuse, aquifer storage and recovery, and direct potable reuse—and deserve greater focus and potential promotion through incentives.

The Hays County Commissioners Court respectfully asks the districts of GMA 9 to reconsider hydrological conditions rather than continuing an unsustainable status quo. The adverse environmental impacts of current DFCs on spring flow and interactions between groundwater and surface water have become clearer and more frequent and severe of late. Socioeconomic hardship will follow, compounded by a pace of development that only seems to be increasing.

The Blanco River, Onion Creek, and Cypress Creek depend on support from healthy groundwater. The time has come to preserve and protect groundwater, take steps to use less and reuse more, and earnestly seek sustainable alternatives. Significantly reducing the average drawdown for the Trinity Aquifer as a GMA 9 DFC is the reasonable and prudent opportunity today.

ADOPTED THIS THE 22nd DAY OF JUNE 2021

Ruben Becerra
Hays County Judge

Debbie Gonzales Ingalsbe
Commissioner, Pct. 1

Mark Jones
Commissioner, Pct. 2

Lon A. Shell
Commissioner, Pct. 3

Walt Smith
Commissioner, Pct. 4

ATTEST:

Elaine H. Cárdenas, MBA, PhD
Hays County Clerk

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Discussion and possible action to provide direction to staff and to identify a Hays County approach to the prospective allocation under the American Rescue Plan Act of 2021 (H.R. 1319).

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
ACTION-MISCELLANEOUS	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
	SMITH	N/A

SUMMARY

To be provided in Open Court

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Executive Session pursuant to Sections 551.071 and 551.072 of the Texas Government Code: consultation with counsel and deliberation regarding the purchase, exchange, lease and/or value of real property associated with the POSAC-recommended 2020 Parks and Open Space Bond Projects. Possible discussion and/or action may follow in open court.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
EXECUTIVE SESSION	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
	INGALSBE	N/A

SUMMARY

Summary to be provided in Executive Session.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Executive Session pursuant to Sections 551.071 and 551.072 of the Texas Government Code: consultation with counsel and deliberation to consider a resolution determining the necessity and authorizing the use of the County's power of eminent domain to acquire approximately 1.2596 acres in fee simple and 0.7610 acres of permanent utility easement from property located along Old Bastrop Hwy (CR266) south of Rattler Road, owned SHC Holdings, LLC, and which is required for the construction of the proposed CR 266 roadway improvements, and take other appropriate action (CR266 Centerpoint to Rattler, Parcel20). Possible action to follow in open court.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
EXECUTIVE SESSION	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
	INGALSBE	N/A

SUMMARY

Summary to be provided in Executive Session.

AGENDA ITEM REQUEST FORM

Hays County Commissioners Court
Tuesdays at 9:00 AM

Request forms are due in Microsoft Word Format via email by 2:00 p.m. on Wednesday.

AGENDA ITEM

Executive Session pursuant to Section 551.071 of the Texas Government Code: consultation with counsel regarding the County Retiree Policy, including but not limited to Retiree Insurance. Deliberation and/or possible action may follow in Open Court.

ITEM TYPE	MEETING DATE	AMOUNT REQUIRED
EXECUTIVE SESSION	June 22, 2021	

LINE ITEM NUMBER

AUDITOR USE ONLY

AUDITOR COMMENTS:

PURCHASING GUIDELINES FOLLOWED: N/A **AUDITOR REVIEW:** N/A

REQUESTED BY	SPONSOR	CO-SPONSOR
	BECERRA	N/A

SUMMARY

Additional information will be presented in Executive Session