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ADDENDUM NO. 2

Date:	**March 6, 2026**
Project Name:	**Airfield Pavement Rehabilitation**
Airport:	**Gillespie County Airport (T82)**
TxDOT CSJ No.:	**2614FREDB**
Garver Project No.	**23A06150**

This addendum shall be a part of the Plans, Contract Documents and Specifications to the same extent as though it were originally included therein, and it shall supersede anything contained in the Plans, Contract Documents, and Specifications with which it might conflict. Acknowledgement of receipt of this addendum must be noted in the appropriate section of the Bid Form included in the Contract Documents.

This addendum includes additional Contractor questions received after the publication of Addendum No. 1. Questions received during the pre-bid meeting and upto question cutoff date are included in Addendum No. 1.

Bidders can obtain the revised bid form Addendum No. 2 on the TxDOT Website "Plans Online".

Bidders must fill out the bid form electronically, print, sign and submit a hardcopy as part of their bid package.

Revisions or additions made to the Contract Documents and Plans:

A. BIDDER QUESTIONS:

1. Q: Please verify match line between CM-106 & SM-107 is correct?
   A: CM-107 has been revised to correct the match line. See attached CM-107
2. Q: Please verify Engineer's Estimated Quantities for Asphalt Items?
   A: Bidder to bid the quantities as is.
3. Q: Please verify Engineer's Estimated Quantities for Add Alt 1 Pavement Markings?
   A: Bidder to bid the quantities as is.
4. Q: Please clarify Schedule 1 and Schedule 2 quantities issued in Addendum #1?
   A: Schedule 1 – Flexible base is being used to construct base of new pavement
   Schedule 2 – Trimmings from FDR is being used to construction base of new pavement.
   However, Schedule 1 and Schedule 2 only applies to Add Alt 2 work.

5. Q: For Base Bid Schedule 2, was it intentional for the Tied Concrete Block Mat to increase to 5,000 SY? It is 600 SY for Base Bid Sch 1.
   A: Base Bid Schedule 2 was removed from Bid Form. 600 SY Tied Concrete Block Mat remains.
6. Q: During the Full Depth Reclamation operations, is the intent for the contractor to **incorporate all existing millings back into the base course** as part of the reclamation process?
   A: Yes. However, it is understood that FDR process typically generates additional material which shall remain on-site.
7. Q: Based on the pavement sections shown in the plans, it appears the work may result in the **taxiway elevation being raised approximately 4 inches**. Can you please confirm if this is the intended final elevation change?
   A: Confirmed. Transitions to existing surrounding pavement shall be provided utilizing the appropriate Transition Milling and Transition Paving pay items.

B. SPECIFICATIONS
   1. Remove the following specifications sections in their entirety, and replace with the same, attached hereto:
      a. Specifications Table of Contents
      b. Specification TX-460 - MOD
      c. Specification TX-467 – MOD
   2. The following specifications are to be added to the Bidding Documents:
      a. SS-222 – Ditch Grading
      b. Tx-464- MOD
      c. Tx-464 – Reinforced Concrete Pipe
      d. Tx-265 – Junction Boxes, Manholes, and Inlets

C. PLANS
   1. Remove the following drawings in their entirety, and replace with the same, attached hereto:
      a. Drawing No. GI-002 (Sheet 2)
      b. Drawing No. GI-101 (Sheet 3)
      c. Drawing No. CP-002 (Sheet 35)
      d. Drawing No. CP-101 (Sheet 37)
      e. Drawing No. CP-102 (Sheet 38)
      f. Drawing No. CP-103 (Sheet 39)
      g. Drawing No. CM-107 (Sheet 60)

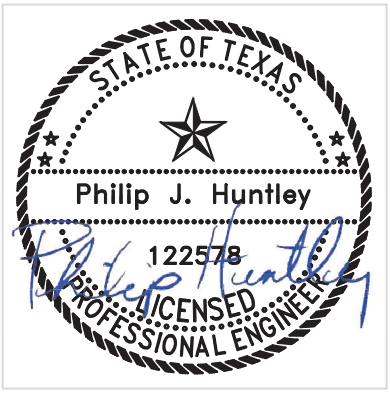
D. BID FORM
   1. Revised Bid form.

March 6, 2026

ADDENDUM NO. 2

By: _____

Philip Huntley, P.E.
Project Manager



Attachments:

A. TxDOT Bid Form 2506 for 2614FREDB
B. Specifications
    1. Specifications Table of Contents
    2. SS-222
    3. TX-460 – MOD
    4. TX-464 - MOD
    5. TX-464
    6. TX-465
    7. TX-467 - MOD
C. Plans
    1. GI-002
    2. GI-101
    3. CP-002
    4. CP-101
    5. CP-102
    6. CP-103
    7. CM-107

END OF ADDENDUM NO. 2

GILLESPIE COUNTY AIRPORT

AIRFIELD PAVEMENT REHABILITATION
(TXDOT CSJ NO. 2614FREDB)

TABLE OF CONTENTS

ITEM SS-222 DITCH GRADING

DESCRIPTION

220-1.1 This item shall consist of regrading existing ditches and surrounding areas or grading new ditches and surrounding areas as shown in the Plans or as directed by the Engineer. The work will include clearing, grubbing, excavating, shaping, compacting the ditch to the lines and grades shown in the Plans or as directed by the Engineer, and restoration of disturbed areas.

MATERIALS

220-2.1 General. Materials used to shape and restore ditch grading areas shall equivalent or better than the existing conditions prior to construction. Materials must be approved by the airport through the RPR prior to beginning construction.

CONSTRUCTION METHODS

220-3.1 Ditch Grading. This work shall include clearing the surface of the ground in the designated areas of all heavy growth of grass or weeds, debris, and rubbish of any nature, including the grubbing of roots, and the disposal as directed of all spoil materials resulting from clearing. The Contractor shall grade the ditch to provide positive drainage as called for in the Plans or as directed by the Engineer. The work shall be completed in a manner that reduces the potential for permanent erosion.

220-3.2 Restoration. The areas disturbed by construction must be restored to meet or exceed the previous conditions. Restoration may include, but is not limited to, placement of seed, topsoil, gravel, or other materials to match surrounding conditions.

METHOD OF MEASUREMENT

220-4.1 Ditch Grading will be measured for payment by the linear foot measured along the centerline of the ditch. Work completed and accepted will be paid for at the contract unit price per linear foot for “Ditch Grading”. This price shall be full compensation for clearing, grubbing, excavating, shaping, and compacting the ditch; for placement of excavated material and restoration; and for all equipment, tools, labor and incidentals necessary to complete the work. All other ditch grading not specifically called out, including grading of surrounding areas as required to meet ditch grades, as being paid for under Item SS-222 “Ditch Grading” shall be considered subsidiary to other items of work.

BASIS OF PAYMENT

220-5.1 For "Ditch Grading" payment shall be made at the contract unit price per linear foot. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item SS-222-5.1 Ditch Grading – per Linear Foot

END OF ITEM SS-222

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Item 460 - MODIFICATIONS
Corrugated Metal Pipe

1. MODIFICATIONS

Item TxDOT 460 Corrugated Metal Pipe is hereby amended with respects to the paragraphs and sections cited below.

2. MATERIALS

2.1. **Fabrication**. Furnish corrugated metal pipe in accordance with Table 1.

Table 1
Specifications for Corrugated Metal Pipe

Pipe Type	AASHTO Specification
Galvanized steel and aluminized steel	M 36
Aluminized Type 2	M 36
Polymer Coated	M 36 & M 245
~~Asphalt Coated~~	~~M 36~~
~~Aluminum~~	~~M 196~~

The pipe type and corresponding AASHTO designations are shown in Table 2.

Table 2
Corrugated Metal Pipe Types

Pipe Type	AASHTO Classification
Circular	Type I
Circular, smooth-lined	Type IA
Circular, spiral rib	Type IR
~~Arch~~	~~Type II~~
~~Arch, smooth-lined~~	~~Type IIA~~
~~Arch, spiral rib~~	~~Type IIR~~

Provide corrugated metal pipe of all types with annular corrugations, helical corrugations, or spiral ribs (corrugations) projecting outward. Provide pipe with helical end corrugations only when necessary to join new pipe to existing pipe with helical end corrugations.

Provide a minimum polymer coating thickness of 10 mils on each side for pre-coated galvanized steel pipe. Galvanized metal sheets and coils used for galvanized corrugated metal pipe may be sampled and tested in accordance with Tex-708-I.

Repair damaged galvanized coating in accordance with Section 445.3.5., “Repairs.” Repair damaged aluminized or polymer coating in accordance with AASHTO M 36 and M 245 respectively.

2.2. **Protective Coating**. Furnish bituminous coating, when required, that meets AASHTO M 190 and that tightly adheres to the metal, does not chip off in handling, and protects the pipe from deterioration as evidenced by samples prepared from the coating material successfully meeting the Shock Test and Flow Test in accordance with Tex-522-C.

Coat the pipe uniformly inside and out to a minimum thickness of 0.05 in. measured on the crests of the corrugations. Coat the pipe with additional material applied to the full inner circumference to form a smooth inside lining with a minimum thickness of 1/8 in. above the crest of the corrugations when smooth lining is specified.

2.3. **Design**. The diameter, permissible corrugations, and required gauges for full-circle pipe will be shown. The design size and permissible corrugations for pipe arch will be shown. The required gauges of the shell and the liner for smooth lined pipe will also be shown. ~~Furnish the shape and minimum gauge for steel pipe arch in accordance with Tables 3, 4, 5, or 6 for the specified design size and corrugation~~. Use Table 7 or 8 for aluminum pipe arch. Refer to U.S. Standard Gauge for uncoated sheets where reference is made to gauge of metal.

Measure dimensions from the inside crests of the corrugations. A tolerance of ±1 in. or 2% of the equivalent circular diameter, whichever is greater, is allowed for span and rise.

~~**Table 3**~~
~~**Steel Pipe Arch**~~
~~**2-2/3 × 1/2-in. Corrugations**~~

~~Design Size~~	~~Span (in.)~~	~~Rise (in.)~~	~~Min Cover (in.)~~	~~Min Gauge Required~~	~~Coated Thickness (in.)~~	~~Equivalent Diameter Full-Circle Pipe (in.)~~
~~1~~	~~17~~	~~13~~	~~12~~	~~16~~	~~0.064~~	~~15~~
~~2~~	~~21~~	~~15~~	~~12~~	~~16~~	~~0.064~~	~~18~~
~~2A~~	~~23~~	~~19~~	~~12~~	~~16~~	~~0.064~~	~~21~~
~~3~~	~~28~~	~~20~~	~~12~~	~~16~~	~~0.064~~	~~24~~
~~4~~	~~35~~	~~24~~	~~12~~	~~16~~	~~0.064~~	~~30~~
~~5~~	~~42~~	~~29~~	~~12~~	~~14~~	~~0.079~~	~~36~~
~~6~~	~~49~~	~~33~~	~~12~~	~~14~~	~~0.079~~	~~42~~
~~7~~	~~57~~	~~38~~	~~12~~	~~12~~	~~0.109~~	~~48~~
~~8~~	~~64~~	~~43~~	~~12~~	~~12~~	~~0.109~~	~~54~~
~~9~~	~~71~~	~~47~~	~~12~~	~~10~~	~~0.138~~	~~60~~

~~**Table 4**~~
~~**Steel Pipe Arch**~~
~~**3 × 1-in. Corrugations**~~

~~Design Size~~	~~Span (in.)~~	~~Rise (in.)~~	~~Min Cover (in.)~~	~~Min Gauge Required~~	~~Coated Thickness (in.)~~	~~Equivalent Diameter Full-Circle Pipe (in.)~~
~~7~~	~~53~~	~~41~~	~~12~~	~~14~~	~~0.079~~	~~48~~
~~8~~	~~60~~	~~46~~	~~12~~	~~14~~	~~0.079~~	~~54~~
~~9~~	~~66~~	~~51~~	~~12~~	~~14~~	~~0.079~~	~~60~~
~~10~~	~~73~~	~~55~~	~~12~~	~~14~~	~~0.079~~	~~66~~
~~11~~	~~81~~	~~59~~	~~12~~	~~14~~	~~0.079~~	~~72~~
~~12~~	~~87~~	~~63~~	~~12~~	~~14~~	~~0.079~~	~~78~~
~~13~~	~~95~~	~~67~~	~~12~~	~~12~~	~~0.109~~	~~84~~
~~14~~	~~103~~	~~71~~	~~18~~	~~12~~	~~0.109~~	~~90~~
~~15~~	~~112~~	~~75~~	~~18~~	~~12~~	~~0.109~~	~~96~~
~~16~~	~~117~~	~~79~~	~~18~~	~~12~~	~~0.109~~	~~102~~
~~17~~	~~128~~	~~83~~	~~24~~	~~10~~	~~0.138~~	~~108~~
~~18~~	~~137~~	~~87~~	~~24~~	~~10~~	~~0.138~~	~~114~~
~~19~~	~~142~~	~~91~~	~~24~~	~~10~~	~~0.138~~	~~120~~

~~**Table 5**~~
~~**Steel Pipe Arch**~~
~~**5 × 1-in. Corrugations**~~

~~Design Size~~	~~Span (in.)~~	~~Rise (in.)~~	~~Min Cover (in.)~~	~~Min Gauge Required~~	~~Coated Thickness (in.)~~	~~Equivalent Diameter Full-Circle Pipe (in.)~~
~~11~~	~~81~~	~~59~~	~~12~~	~~12~~	~~0.109~~	~~72~~
~~12~~	~~87~~	~~63~~	~~12~~	~~12~~	~~0.109~~	~~78~~
~~13~~	~~95~~	~~67~~	~~12~~	~~12~~	~~0.109~~	~~84~~
~~14~~	~~103~~	~~71~~	~~18~~	~~12~~	~~0.109~~	~~90~~

15	112	75	18	12	0.109	96
16	117	79	18	12	0.109	102
17	128	83	24	10	0.138	108
18	137	87	24	10	0.138	114
19	142	91	24	10	0.138	120

Table 6
Steel Pipe Arch, Spiral Rib
7-1/2 × 3/4 × 3/4-in. Corrugations

Design Size	Span (in.)	Rise (in.)	Min Cover (in.)	Min Gauge Required	Coated Thickness (in.)	Equivalent Diameter Full-Circle Pipe (in.)
2	20	16	12	16	0.064	18
2A	23	19	12	16	0.064	21
3	27	21	12	16	0.064	24
4	33	26	12	16	0.064	30
5	40	31	12	14	0.064	36
6	46	36	12	12	0.064	42
7	53	41	12	12	0.079	48
8	60	46	12	12	0.079	54
9	66	51	15	12	0.079	60

Table 7
Aluminum Pipe Arch
2-2/3 × 1/2-in. Corrugations

Design Size	Span (in.)	Rise (in.)	Min Cover (in.)	Min Gauge Required	Coated Thickness (in.)	Equivalent Diameter Full-Circle Pipe (in.)
1	17	13	12	16	0.060	15
2	21	15	12	16	0.060	18
2A	23	19	12	16	0.060	21
3	28	20	12	14	0.075	24
4	35	24	12	14	0.075	30
5	42	29	18	12	0.105	36
6	49	33	18	12	0.105	42
7	57	38	18	10	0.135	48
8	64	43	18	10	0.135	54
9	71	47	18	8	0.164	60

Table 8
Aluminum Pipe Arch, Spiral Rib
7-1/2 × 3/4 × 3/4-in. Corrugations

Design Size	Span (in.)	Rise (in.)	Min Cover (in.)	Min Gauge Required	Coated Thickness (in.)	Equivalent Diameter Full-Circle Pipe (in.)
2	20	16	12	16	0.064	18
2A	23	19	12	16	0.064	21
3	27	21	15	16	0.064	24
4	33	26	18	16	0.064	30
5	40	31	18	14	0.075	36
6	46	36	18	12	0.105	42
7	53	41	21	12	0.105	48
8	60	46	18	10	0.135	54
9	66	51	21	10	0.135	60

2.4. **Coupling Bands**. Furnish coupling bands and other hardware for galvanized or aluminized steel pipe in

accordance with AASHTO M 36 for steel pipe and AASHTO M 196 for aluminum pipe. Use coupling bands that are no more than 3 nominal sheet thicknesses lighter than the thickness of the pipe to be connected or no lighter than 0.052 in. for steel or 0.048 in. for aluminum. Provide coupling bands made of the same base metal and coating as the pipe.

3. MEASUREMENT

This Item will be measured by the foot. Pipe will be measured between the ends of the barrel along the flow line, not including safety end treatments. Safety end treatments will be measured in accordance with Item 467, "Safety End Treatment." ~~Pipe that is required to be jacked, bored, or tunneled will be measured in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box."~~ Where spurs, branches, or connections to existing pipe lines are involved, measurement of the spur or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, the length of pipe tying into the structure wall will be included for measurement but no other portion of the structure length or width will be included. ***Where pavement sawcut and repair is required for installation of pipe, this work shall be considered subsidiary to the pay item.***

For multiple pipes, the measured length will be the sum of the lengths of the barrels.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

4. 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 "Corrugated Metal Pipe," "Corrugated Metal Pipe Arch," "Spiral Rib Corrugated Metal Pipe," or "Spiral Rib Corrugated Metal Pipe Arch" of the type, size, and coating specified. This price is full compensation for furnishing, hauling, placing, and joining of pipes; jointing materials; all connections to new or existing structures; breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; ***where pavement sawcutting and repair is required in the plans, pavement sawcut and repair shall be considered subsidiary to the work,*** and equipment, labor, tools, and incidentals.

~~Protection methods for excavations greater than 5 ft. deep will be measured and paid for as required under Item 402, "Trench Excavation Protection," or Item 403, "Temporary Special Shoring." Excavation, shaping, bedding, and backfill will be paid for in accordance with Item 400, "Excavation and Backfill for Structures."~~ When jacking, boring, or tunneling is used at the Contractor's option, *this shall be considered subsidiary to the item in which it is contained*.~~, payment will be made under this Item. When jacking, boring, or tunneling is required, payment will be made under Item 476, "Jacking, Boring, or Tunneling Pipe or Box."~~

Payment will be made under:

Item TX-460-5.1 Corrugated Metal Pipe (18-Inch) (Complete in Place) – Per Linear Foot
Item TX-460-5.2 Corrugated Metal Pipe (18-Inch) (Complete in Place, Including Pavement Sawcut and Repair) – Per Linear Foot

Item 464 - MODIFICATIONS
Reinforced Concrete Pipe

1. MODIFICATIONS

Item TxDOT 464 Reinforced Concrete Pipe is hereby amended with respects to the paragraphs and sections cited below

2. MATERIALS

2.1. **Fabrication**. Multi-project fabrication plants, as defined in DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures," must be approved by the Materials and Tests Division in accordance with DMS-7305 before furnishing precast reinforced concrete pipe for Department projects. The Department's MPL includes approved multi-project reinforced concrete pipe fabrication plants.

Furnish material and fabricate reinforced concrete pipe in accordance with DMS-7305.

2.2. **Design**.

2.2.1. **General**. The class and D-load equivalents are shown in Table 1. Furnish arch pipe in accordance with ASTM C506 and the dimensions shown in Table 2. Furnish horizontal elliptical pipe in accordance with ASTM C507 and the dimensions shown in Table 3. For arch pipe and horizontal elliptical pipe, the minimum height of cover required is 1 ft.

Table 1
Circular Pipe
ASTM C76 and ASTM C655

Class	D-Load
~~I~~	~~800~~
~~II~~	~~1,000~~
III	1,350
~~IV~~	~~2,000~~
~~V~~	~~3,000~~

~~**Table 2**~~
~~**Arch Pipe**~~

~~Design Size~~	~~Equivalent Diameter (in.)~~	~~Rise (in.)~~	~~Span (in.)~~
~~1~~	~~18~~	~~13-1/2~~	~~22~~
~~2~~	~~21~~	~~15-1/2~~	~~26~~
~~3~~	~~24~~	~~18~~	~~28-1/2~~
~~4~~	~~30~~	~~22-1/2~~	~~36-1/4~~
~~5~~	~~36~~	~~26-5/8~~	~~43-3/4~~
~~6~~	~~42~~	~~31-5/16~~	~~51-1/8~~
~~7~~	~~48~~	~~36~~	~~58-1/2~~
~~8~~	~~54~~	~~40~~	~~65~~
~~9~~	~~60~~	~~45~~	~~73~~
~~10~~	~~72~~	~~54~~	~~88~~

~~Table 3~~
~~Horizontal Elliptical Pipe~~

~~Design Size~~	~~Equivalent Diameter (in.)~~	~~Rise (in.)~~	~~Span (in.)~~
~~0~~	~~15~~	~~12~~	~~19~~
~~1~~	~~18~~	~~14~~	~~23~~
~~2~~	~~24~~	~~19~~	~~30~~
~~3~~	~~27~~	~~22~~	~~34~~
~~4~~	~~30~~	~~24~~	~~38~~
~~5~~	~~33~~	~~27~~	~~42~~
~~6~~	~~36~~	~~29~~	~~45~~
~~7~~	~~39~~	~~32~~	~~49~~
~~8~~	~~42~~	~~34~~	~~53~~
~~9~~	~~48~~	~~38~~	~~60~~
~~10~~	~~54~~	~~43~~	~~68~~

~~2.2.2. **Jacking, Boring, or Tunneling**. Design pipe for jacking, boring, or tunneling considering the specific installation conditions such as the soil conditions, installation methods, anticipated deflection angles, and jacking stresses. Provide design notes and drawings signed and sealed by a Texas licensed professional engineer when requested. Provide steel reinforcement in bell and spigot.~~

2.3. **Marking**. Furnish each section of reinforced concrete pipe marked with the following information in accordance with DMS-7305:

- 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 in accordance with 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).

Clearly mark one end of each section during the process of manufacture or immediately thereafter for pipe with elliptical reinforcement. Mark the pipe on the inside and outside of opposite walls to show the location of the top or bottom of the pipe as it should be installed unless the external shape of the pipe is such that the correct position of the top and bottom is obvious. Mark the pipe section by indenting or painting with waterproof paint.

2.4. **Inspection**. Provide access for inspection of the finished pipe at the project site before and during installation.

2.5. **Causes for Rejection**. Individual sections of pipe may be rejected for any of the conditions stated in the DMS-7305 Annex.

2.6. **Repairs**. Make repairs, if necessary, in accordance with the DMS-7305 Annex.

2.7. **Jointing Materials**. Use any of the following materials for the making of joints unless otherwise shown on the plans. Furnish a manufacturer’s certificate of compliance for all jointing materials except mortar.

2.7.1. **Mortar**. Provide mortar for joints that meets the requirements of Section 464.3.3., “Jointing.”

2.7.2. **Cold-Applied, Plastic Asphalt Sewer Joint Compound**. Provide a material that consists of natural or processed asphalt base, suitable volatile solvents, and inert filler. Ensure the consistency is such that the

ends of the pipe can be coated with a layer of the compound up to 1/2 in. thick by trowel. Provide a joint compound that cures to a firm, stiff plastic condition after application. Provide a material of a uniform mixture. Stir any small separation found in the container into a uniform mix before using.

Provide a material that meets the requirements shown in Table 4 when tested in accordance with Tex-526-C.

Table 4
Cold-Applied, Plastic Asphalt Sewer Joint Compound Material Requirements

Composition	Analysis
Asphalt base, 100%–% volatiles–% ash, % by weight	28–45
Volatiles, 212°F evaporation, 24 hr., % by weight	10–26
Mineral matter, determined as ash, % by weight	30–55
Consistency, cone penetration, 150 q, 5 sec., 77°F	150–275

2.7.3. **Rubber Gaskets**. Provide gaskets that conform to ASTM C1619 Class A or Class C. Meet the requirements of ASTM C443 for design of the pipe joints and permissible variations in dimensions.

2.7.4. **Pre-Formed Flexible Joint Sealants**. Pre-formed flexible joint sealants may be used for sealing joints of tongue-and-groove concrete pipe. Provide flexible joint sealants that meet the requirements of ASTM C990. Use flexible joint sealants that do not depend on oxidizing, evaporating, or chemical action for its adhesive or cohesive strength. Supply in extruded rope form of suitable cross-section. Provide a size of the pre-formed flexible joint sealant in conformance with the manufacturer's recommendations and large enough to properly seal the joint. Protect flexible joint sealants with a suitable wrapper able to maintain the integrity of the jointing material when the wrapper is removed.

3. MEASUREMENT

This Item will be measured by the foot. Measurement will be made between the ends of the pipe barrel along the flow line, not including safety end treatments. Safety end treatments will be measured in accordance with Item 467, "Safety End Treatment." Pipe that will be jacked, bored, or tunneled will be measured in accordance with Item 476. Measurement of spurs, branches, or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, the length of pipe tying into the structure wall will be included for measurement, but no other portion of the structure length or width will be included. ***Where pavement sawcut and repair is required for installation of pipe, this work shall be considered subsidiary to the pay item.***

~~For multiple pipes, the measured length will be the sum of the lengths of the barrels.~~

~~This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.~~

4. 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 "Reinforced Concrete Pipe," ~~"Reinforced Concrete Pipe (Arch)," or "Reinforced Concrete Pipe (Elliptical)"~~ of the size and D-load specified or of the size and class specified. This price is full compensation for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to new or existing structures; breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; ***where pavement sawcutting and repair is required in the plans for installation of pipe, pavement sawcut and repair shall be considered subsidiary to the***

work, and equipment, labor, tools, and incidentals.

Protection methods for excavations greater than 5 ft. deep will be measured and paid for as required under Item 402, “Trench Excavation Protection,” or Item 403, “Temporary Special Shoring.” Excavation, shaping, bedding, and backfill will be paid for in accordance with Item 400. When jacking, boring, or tunneling is used at the Contractor’s option, payment will be made under this Item. When jacking, boring, or tunneling is required, payment will be made under Item 476.

Payment will be made under:

Item TX-464-5.1 Reinforced Concrete Pipe (30-Inch) (Complete In Place, Including Pavement Sawcut and Repair) – Per Linear Foot

Item 464
Reinforced Concrete Pipe

1. DESCRIPTION

Furnish and install reinforced concrete pipe, materials for precast concrete pipe culverts, or precast concrete storm drain mains, laterals, stubs, and inlet leads.

2. MATERIALS

2.1. **Fabrication**. Multi-project fabrication plants, as defined in DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures," must be approved by the Materials and Tests Division in accordance with DMS-7305 before furnishing precast reinforced concrete pipe for Department projects. The Department's MPL includes approved multi-project reinforced concrete pipe fabrication plants.

Furnish material and fabricate reinforced concrete pipe in accordance with DMS-7305.

2.2. **Design**.

2.2.1. **General**. The class and D-load equivalents are shown in Table 1. Furnish arch pipe in accordance with ASTM C506 and the dimensions shown in Table 2. Furnish horizontal elliptical pipe in accordance with ASTM C507 and the dimensions shown in Table 3. For arch pipe and horizontal elliptical pipe, the minimum height of cover required is 1 ft.

Table 1
Circular Pipe
ASTM C76 and ASTM C655

Class	D-Load
I	800
II	1,000
III	1,350
IV	2,000
V	3,000

Table 2
Arch Pipe

Design Size	Equivalent Diameter (in.)	Rise (in.)	Span (in.)
1	18	13-1/2	22
2	21	15-1/2	26
3	24	18	28-1/2
4	30	22-1/2	36-1/4
5	36	26-5/8	43-3/4
6	42	31-5/16	51-1/8
7	48	36	58-1/2
8	54	40	65
9	60	45	73
10	72	54	88

Table 3

Horizontal Elliptical Pipe

Design Size	Equivalent Diameter (in.)	Rise (in.)	Span (in.)
0	15	12	19
1	18	14	23
2	24	19	30
3	27	22	34
4	30	24	38
5	33	27	42
6	36	29	45
7	39	32	49
8	42	34	53
9	48	38	60
10	54	43	68

2.2.2. **Jacking, Boring, or Tunneling**. Design pipe for jacking, boring, or tunneling considering the specific installation conditions such as the soil conditions, installation methods, anticipated deflection angles, and jacking stresses. Provide design notes and drawings signed and sealed by a Texas licensed professional engineer when requested. Provide steel reinforcement in bell and spigot.

2.3. **Marking**. Furnish each section of reinforced concrete pipe marked with the following information in accordance with DMS-7305:

- 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 in accordance with 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).

Clearly mark one end of each section during the process of manufacture or immediately thereafter for pipe with elliptical reinforcement. Mark the pipe on the inside and outside of opposite walls to show the location of the top or bottom of the pipe as it should be installed unless the external shape of the pipe is such that the correct position of the top and bottom is obvious. Mark the pipe section by indenting or painting with waterproof paint.

2.4. **Inspection**. Provide access for inspection of the finished pipe at the project site before and during installation.

2.5. **Causes for Rejection**. Individual sections of pipe may be rejected for any of the conditions stated in the DMS-7305 Annex.

2.6. **Repairs**. Make repairs, if necessary, in accordance with the DMS-7305 Annex.

2.7. **Jointing Materials**. Use any of the following materials for the making of joints unless otherwise shown on the plans. Furnish a manufacturer's certificate of compliance for all jointing materials except mortar.

2.7.1. **Mortar**. Provide mortar for joints that meets the requirements of Section 464.3.3., "Jointing."

2.7.2. **Cold-Applied, Plastic Asphalt Sewer Joint Compound**. Provide a material that consists of natural or processed asphalt base, suitable volatile solvents, and inert filler. Ensure the consistency is such that the ends of the pipe can be coated with a layer of the compound up to 1/2 in. thick by trowel. Provide a joint

compound that cures to a firm, stiff plastic condition after application. Provide a material of a uniform mixture. Stir any small separation found in the container into a uniform mix before using.

Provide a material that meets the requirements shown in Table 4 when tested in accordance with Tex-526-C.

Table 4
Cold-Applied, Plastic Asphalt Sewer Joint Compound Material Requirements

Composition	Analysis
Asphalt base, 100%–% volatiles–% ash, % by weight	28–45
Volatiles, 212°F evaporation, 24 hr., % by weight	10–26
Mineral matter, determined as ash, % by weight	30–55
Consistency, cone penetration, 150 q, 5 sec., 77°F	150–275

2.7.3. **Rubber Gaskets**. Provide gaskets that conform to ASTM C1619 Class A or Class C. Meet the requirements of ASTM C443 for design of the pipe joints and permissible variations in dimensions.

2.7.4. **Pre-Formed Flexible Joint Sealants**. Pre-formed flexible joint sealants may be used for sealing joints of tongue-and-groove concrete pipe. Provide flexible joint sealants that meet the requirements of ASTM C990. Use flexible joint sealants that do not depend on oxidizing, evaporating, or chemical action for its adhesive or cohesive strength. Supply in extruded rope form of suitable cross-section. Provide a size of the pre-formed flexible joint sealant in conformance with the manufacturer's recommendations and large enough to properly seal the joint. Protect flexible joint sealants with a suitable wrapper able to maintain the integrity of the jointing material when the wrapper is removed.

3. CONSTRUCTION

3.1. **Excavation, Shaping, Bedding, and Backfill**. Excavate, shape, bed, and backfill in accordance with Item 400, "Excavation and Backfill for Structures," except where jacking, boring, or tunneling methods are permitted. Jack, bore, or tunnel the pipe in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box." Immediate backfilling is permitted if joints consist of materials other than mortar. Take special precautions in placing and compacting the backfill to avoid any movement of the pipe or damage to the joints. Do not use heavy earth-moving equipment to haul over the structure until at least 4 ft. of permanent or temporary compacted fill has been placed over the structure, unless otherwise shown on the plans or permitted in writing. Remove and replace pipe damaged by the Contractor at no expense to the Department.

3.2. **Laying Pipe**. Start the laying of pipe on the bedding at the outlet end with the spigot or tongue end pointing downstream and proceed toward the inlet end with the abutting sections properly matched, true to the established lines and grades unless otherwise authorized. Fit, match, and lay the pipe to form a smooth, uniform conduit. Cut cross trenches in the foundation to allow the barrel of the pipe to rest firmly on the bedding where bell-and-spigot pipe is used. Cut cross trenches no more than 2 in. larger than the bell ends of the pipe. Lower sections of pipe into the trench without damaging the pipe or disturbing the bedding and the sides of the trench. Carefully clean the ends of the pipe before the pipe is placed. Prevent earthen or bedding material from entering the pipe as it is laid. Lay the pipe in the trench, when elliptical pipe with circular reinforcing or circular pipe with elliptical reinforcing is used, so the markings for the top or bottom are not more than 5° from the vertical plane through the longitudinal axis of the pipe. Remove and re-lay, without extra compensation, pipe that is not in alignment or shows excessive settlement after laying.

Lay multiple lines of reinforced concrete pipe with the centerlines of the individual barrels parallel. Use the clear distances between outer surfaces of adjacent pipes shown in Table 5 unless otherwise shown on the plans. Use the equivalent diameter from Table 2 or Table 3 for arch pipe or horizontal elliptical pipe to determine the clear distance requirement shown in Table 5.

Table 5
Minimum Clear Distance Between Pipes

Equivalent Diameter	Min Clear Distance
18 in.	9 in.
24 in.	11 in.
30 in.	1 ft. 1 in.
36 in.	1 ft. 3 in.
42 in.	1 ft. 5 in.
48 in.	1 ft. 7 in.
54 in.	1 ft. 11 in.
60–84 in.	2 ft.

3.3. **Jointing**. Make available an appropriate rolling device similar to an automobile mechanic's "creeper" for conveyance through small-size pipe structures.

3.3.1. **Joints Sealed with Hydraulic Cement Mortar**. Use Type S mortar meeting the requirements of ASTM C270. Clean and wet the pipe ends before making the joint. Plaster the lower half of the bell or groove and the upper half of the tongue or spigot with mortar. Pack mortar into the joint from both inside and outside the pipe after the pipes are tightly jointed. Finish the inside smooth and flush with adjacent joints of pipe. Form a bead of semicircular cross-section over tongue-and-groove joints outside the pipe, extending at least 1 in. on each side of the joint. Form the mortar for bell-and-spigot joints to a 45° fillet between the outer edge of the bell and the spigot. Cure mortar joints by keeping the joints wet for at least 48 hr. or until the backfill has been completed, whichever is first. Place fill or backfill once the mortar jointing material has cured for at least 6 hr. Conduct jointing only when the atmospheric temperature is above 40°F. Protect mortared joints against freezing by backfilling or other approved methods for at least 24 hr.

Driveway culverts do not require mortar banding on the outside of the pipe.

Furnish pipes, with approval, that are large enough for a person to enter with the groove between 1/2 in. and 3/4 in. longer than the tongue. Such pipe may be laid and backfilled without mortar joints. Clean the space on the interior of the pipe between the end of the tongue and the groove of all foreign material, thoroughly wet and fill with mortar around the entire circumference of the pipe, and finish flush after the backfilling has been completed.

3.3.2. **Joints Using Cold-Applied, Plastic Asphalt Sewer Joint Compound**. Ensure both ends of the pipes are clean and dry. Trowel or otherwise place a 1/2-in. thick layer of the compound in the groove end of the pipe covering at least 2/3 of the joint face around the entire circumference. Shove home the tongue end of the next pipe with enough pressure to make a tight joint. Remove any excess mastic projecting into the pipe after the joint is made. Backfill after the joint has been inspected and approved.

3.3.3. **Joints Using Rubber Gaskets**. Make the joint assembly in conformance with the recommendations of the gasket manufacturer. Make joints watertight when using rubber gaskets. Backfill after the joint has been inspected and approved.

3.3.4. **Joints Using Pre-Formed Flexible Joint Sealants**. Install pre-formed flexible joint sealants in conformance with the manufacturer's recommendations. Place the joint sealer so no dirt or other deleterious materials contact the joint sealing material. Pull or push home the pipe with enough force to properly seal the joint. Remove any joint material pushed out into the interior of the pipe that would tend to obstruct the flow. Store pre-formed flexible joint sealants in an area warmed naturally or artificially to above 70°F in an approved manner when the atmospheric temperature is below 60°F. Apply flexible joint sealants to pipe joints immediately before placing pipe in trench, and connect pipe to previously laid pipe. Backfill after the joint has been inspected and approved.

3.4. **Connections and Stub Ends**. Make connections of concrete pipe to existing pipes, pipe storm drains, or storm drain appurtenances as shown on the plans.

Mortar or concrete the bottom of existing structures if necessary to eliminate any drainage pockets created by the connections. Repair any damage to the existing structure resulting from making the connections.

Make connections between concrete pipe and corrugated metal pipe with a suitable concrete collar and a minimum thickness of 4 in. unless otherwise shown on the plans.

Finish stub ends for connections to future work not shown on the plans by installing watertight plugs into the free end of the pipe.

Fill lift holes with concrete, mortar, or precast concrete plugs after the pipe is in place.

4. MEASUREMENT

This Item will be measured by the foot. Measurement will be made between the ends of the pipe barrel along the flow line, not including safety end treatments. Safety end treatments will be measured in accordance with Item 467, “Safety End Treatment.” Pipe that will be jacked, bored, or tunneled will be measured in accordance with Item 476. Measurement of spurs, branches, or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, the length of pipe tying into the structure wall will be included for measurement, but no other portion of the structure length or width will be included.

For multiple pipes, the measured length will be the sum of the lengths of the barrels.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2., “Plans Quantity Measurement.” Additional measurements or calculations will be made if adjustments of quantities are required.

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 “Reinforced Concrete Pipe,” “Reinforced Concrete Pipe (Arch),” or “Reinforced Concrete Pipe (Elliptical)” of the size and D-load specified or of the size and class specified. This price is full compensation for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to new or existing structures; breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

Protection methods for excavations greater than 5 ft. deep will be measured and paid for as required under Item 402, “Trench Excavation Protection,” or Item 403, “Temporary Special Shoring.” Excavation, shaping, bedding, and backfill will be paid for in accordance with Item 400. When jacking, boring, or tunneling is used at the Contractor’s option, payment will be made under this Item. When jacking, boring, or tunneling is required, payment will be made under Item 476.

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Item 465
Junction Boxes, Manholes, and Inlets

1. DESCRIPTION

Construct junction boxes, manholes, and inlets, complete in place or to the stage detailed, including furnishing and installing frames, grates, rings, and covers.

2. MATERIALS

Furnish materials in accordance with the following.

- Item 420, "Concrete Substructures"
- Item 421, "Hydraulic Cement Concrete"
- Item 440, "Reinforcement for Concrete"
- Item 471, "Frames, Grates, Rings, and Covers"

Cast-in-place junction boxes, manholes, inlets, risers, and appurtenances are acceptable unless otherwise shown on the plans. Alternate designs for cast-in-place items must be acceptable to the Engineer and must conform to functional dimensions and design loading. Alternate designs must be designed and sealed by a licensed professional engineer.

2.1. **Concrete**. Furnish concrete in accordance with DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures," for formed and machine-made precast junction boxes, manholes, and inlets. Furnish Class C concrete for cast-in-place junction boxes, manholes, and inlets unless otherwise shown on the plans.

2.2. **Mortar**. Furnish mortar conforming to DMS-4675, "Cementitious Grouts and Mortars for Miscellaneous Applications."

2.3. **Timber**. Provide sound timber that is at least 3-in. nominal thickness and reasonably free of knots and warps for temporary covers when used with Stage I construction. (Refer to Article 465.3., "Construction.")

2.4. **Other Materials**. Use commercial-type hardware as approved.

3. CONSTRUCTION

Construct all types of junction boxes, manholes, and inlets either complete or in two stages, described as Stage I and Stage II.

Construct the Stage I portion of junction boxes, manholes, and inlets as shown on the plans or as specified in this Item. Furnish and install a temporary cover as approved.

Furnish and install the storm drain pipe and a temporary plug for the exposed end of the storm drain pipe from the storm drain to a point below the top of curb indicated on the plans for Stage I construction of cast iron or steel inlet units.

Construct Stage II after the pavement structure is substantially complete, unless otherwise approved.

Construct the remaining wall height and top of junction box, manhole, or inlet for Stage II, and furnish and install any frames, grates, rings and covers, curb beams, or collecting basins required.

Construct cast-in-place junction boxes, manholes, and inlets in accordance with Item 420. Forms are required for all concrete walls. Outside wall forms for cast-in-place concrete may be omitted with approval if the surrounding material can be trimmed to a smooth vertical face.

3.1. **Precast Junction Boxes, Manholes, and Inlets**. Construct formed and machine-made precast junction boxes, manholes, and inlets in accordance with DMS-7305 and as shown on the plans, except as otherwise specified in this Item.

Multi-project fabrication plants as defined in DMS-7305 that produce junction boxes, manholes, and inlets will be approved by the Materials and Tests Division in accordance with DMS-7305. The Department's MPL has a list of approved multi-project junction box, manhole, and inlet fabrication plants.

3.1.1. **Marking**. Clearly mark each precast junction box, manhole, and inlet unit with the following information:

- name or trademark of fabricator and plant location,
- product designation,
- ASTM designation (if applicable),
- date of manufacture,
- designation "TX" for precast units fabricated in accordance with DMS-7305,
- designated fabricator's approval stamp for each approved unit, and
- designation "SR" for product meeting sulfate-resistant concrete plan requirements (when applicable).

3.1.2. **Defects and Repair**. Repair precast junction boxes, inlets, and manholes, if necessary, in accordance with the Annex of DMS-7305. Precast junction boxes, inlets, and manholes may be rejected for any of the conditions stated in this Annex.

3.1.3. **Storage and Shipment**. Store precast units on a level surface. Do not ship units until design strength requirements have been met.

3.2. **Excavation, Shaping, Bedding, and Backfill**. Excavate, shape, bed, and backfill in accordance with Item 400, "Excavation and Backfill for Structures." Immediate backfilling is permitted for all junction box, manhole, and inlet structures where joints consist of rubber boots, rubber gaskets, or bulk or preformed joint sealant. Take precautions in placing and compacting the backfill to avoid any movement of junction boxes, manholes, and inlets. Remove and replace junction boxes, manholes, and inlets damaged by the Contractor at no expense to the Department.

3.3. **Junction Boxes, Manholes, and Inlets for Precast Concrete Pipe Storm Drains**. Construct junction boxes, manholes, and inlets for precast concrete pipe storm drains before completion of storm drain lines into or through the junction box, manhole, or inlet. Neatly cut all storm drains at the inside face of the walls of the junction box, manhole, or inlet.

3.4. **Junction Boxes, Manholes, and Inlets for Box Storm Drains**. Place bases or risers of junction boxes, manholes, and inlets for box storm drains before or in conjunction with placement of the storm drain. Backfill the junction box, manhole, or inlet and storm drain as a whole.

3.5. **Inverts**. Shape and route floor inverts passing out or through the junction box, manhole, or inlet as shown on the plans. Shape by adding and shaping mortar or concrete after the base is placed or by placing the required additional material with the base.

3.6. **Finishing Complete Junction Boxes, Manholes, and Inlets**. Complete junction boxes, manholes, and inlets as shown on the plans. Backfill to original ground elevation in accordance with Item 400.

3.7. **Finishing Stage I Construction**. Complete Stage I construction by constructing the walls to the elevations shown on the plans and backfilling to required elevations in accordance with Item 400.

3.8. **Stage II Construction**. Construct subgrade and base course or concrete pavement over Stage I junction box, manhole, or inlet unless otherwise approved. Excavate to expose the top of Stage I construction andcomplete the junction box, manhole, or inlet as shown on the plans and in accordance with these specifications, including backfill and cleaning of all debris from the bottom of the junction box, manhole, or inlet.

3.9. **Inlet Units**. Install cast iron or steel inlet units in conjunction with the construction of concrete curb and gutter. Set the inlet units securely in position before placing concrete for curb and gutter. Form openings for the inlets and recesses in curb and gutter as shown on the plans. Place and thoroughly consolidate concrete for curb and gutter adjacent to inlets and around the inlet castings and formed openings and recesses without displacing the inlet units.

4. MEASUREMENT

All junction boxes, manholes, and inlets satisfactorily completed as shown on the plans and in conformance with specifications will be measured by each junction box, manhole, or inlet complete, or by each junction box, manhole, or inlet completed to the stage of construction required by the plans.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for as follows.

5.1. **Complete Manholes**. Payment for complete manholes will be made at the unit price bid for "Manhole (Complete)" of the type specified.

5.2. **Complete Inlets**. Payment for inlets will be made at the unit price bid for "Inlet (Complete)" of the type specified.

5.3. **Complete Junction Boxes**. Payment for junction boxes will be made at the unit price bid for "Junction Box (Complete)" of the type specified.

5.4. **Manholes Stage I**. Payment for manholes, Stage I, will be made at the unit price bid for each "Manhole (Stage I)" of the type specified.

5.5. **Manholes Stage II**. Payment for manholes, Stage II, will be made at the unit price bid for each "Manhole (Stage II)" of the type specified.

5.6. **Inlets Stage I**. Payment for inlets, Stage I, will be made at the unit price bid for each "Inlet (Stage I)" of the type specified.

5.7. **Inlets Stage II**. Payment for inlets, Stage II, will be made at the unit price bid for each "Inlet (Stage II)" of the type specified.

5.8. **Junction Boxes Stage I**. Payment for junction boxes, Stage I, will be made at the unit price bid for each "Junction Box (Stage I)" of the type specified.

5.9. **Junction Boxes Stage II**. Payment for junction boxes, Stage II, will be made at the unit price bid for each "Junction Box (Stage II)" of the type specified.

These prices are full compensation for concrete, reinforcing steel, mortar, frames, grates, rings and covers, excavation, and backfill, and for all other materials, tools, equipment, labor, and incidentals.

Item 467 - MODIFICATIONS
Safety End Treatment

1. MODIFICATIONS

Item TxDOT 467 Safety End Treatment is hereby amended with respects to the paragraphs and sections cited below.

2. MATERIALS

2.1. **General**. Furnish materials in accordance with the following.

- Item 420, “Concrete Substructures,”
- Item 421, “Hydraulic Cement Concrete,”
- Item 432, “Riprap,”
- Item 440, “Reinforcement for Concrete,”
- Item 442, “Metal for Structures,”
- Item 445, “Galvanizing,”
- Item 460, “Corrugated Metal Pipe,” and
- Item 464, “Reinforced Concrete Pipe.”

Use Class C concrete for cast-in-place and precast concrete units unless otherwise shown on the plans. Furnish cast-in-place or precast safety end treatments unless otherwise shown on the plans. Furnish Class B concrete for concrete riprap unless otherwise shown on the plans. Provide galvanized steel for prefabricated metal end sections in accordance with Item 460, “Corrugated Metal Pipe.”

Furnish pipe runners in accordance with the following:

- ASTM A1085;
- ASTM A53, Type E or S, Grade B;
- ASTM A500, Grade B; or
- API 5L, Grade X42.

Furnish plates and angles in accordance with ASTM A36. Furnish nuts and bolts in accordance with ASTM A307. Galvanize pipes, plates, angles, nuts, and bolts in accordance with Item 445, “Galvanizing.”

2.2. **Fabrication**. Fabricate cast-in-place concrete units and precast units in accordance with Item 420, “Concrete Substructures.” Provide either prefabricated metal end sections or mitered CMP when specified for the pipe structure unless otherwise shown on the plans.

Provide one of the following when reinforced concrete pipe (RCP) is specified for the pipe structure, unless otherwise shown on the plans:

- mitered RCP or
- precast safety end treatment (SET) units. Provide riprap only if the plans specifically require it for this alternative.

2.2.1. **SET Types**.

2.2.1.1. ~~**Type I**. Provide Type I SET consisting of reinforced concrete headwalls or wingwalls and pipe runners in accordance with the details shown on the plans when required.~~

2.2.1.2. **Type II**. Provide Type II SET in accordance with the details shown on the plans consisting of the following:

- ~~CMP or RCP mitered to the proper slope, concrete riprap and pipe runners, when required;~~
- ~~prefabricated metal end sections, concrete riprap and pipe runners, when required; or~~
- precast SET units, concrete riprap, ~~when required, and pipe runners, when required.~~

2.2.2. **Lifting Holes**. Provide no more than 4 lifting holes in each section for precast units. Lifting holes may be cast, cut into fresh concrete after form removal, or drilled. Provide lifting holes large enough for adequate lifting devices based on the size and weight of the section. The maximum hole diameter is 3 in. at the inside surface of the wall and 4 in. at the outside surface. Cut no more than 1 longitudinal wire or 2 circumferential wires per layer of reinforcing steel when locating lift holes. Repair spalled areas around lifting holes.

2.2.3. **Marking**. Clearly mark the following on each precast unit, mitered CMP, mitered RCP, or metal end section before shipment from the casting or fabrication yard:

- the date of manufacture,
- the name or trademark of the manufacturer, and
- the type and size designation.

2.2.4. **Storage and Shipment**. Store precast units on a level surface. Do not place any loads on precast units until the design strength is reached. Do not ship units until design strength requirements have been met.

2.2.5. **Causes for Rejection**. Precast units may be rejected for not meeting any one of the specification requirements. Individual units may also be rejected for fractures or cracks passing through the wall or surface defects indicating honeycombed or open texture surfaces. Remove rejected units from the project and replace with acceptable units meeting the requirements of this Item.

2.2.6. **Defects and Repairs**. Occasional imperfections in manufacture or accidental damage sustained during handling may be repaired. The repaired units will be acceptable if they conform to the requirements of this Item and the repairs are sound and properly finished and cured in conformance with pertinent specifications. Repair damaged galvanizing in accordance with Section 445.3.5., “Repairs.”

3. CONSTRUCTION

3.1. **General**. Remove portions of existing structures in accordance with Section 420.4.8., “Extending Existing Substructures.” Drill, dowel, and grout in accordance with Item 420, “Concrete Substructures.” Furnish concrete riprap in accordance with Item 432, “Riprap.”

Provide riprap on all prefabricated metal end sections.

3.2. **Excavation, Shaping, Bedding, and Backfill**. Excavate, shape, bed, and backfill in accordance with Item 400, “Excavation and Backfill for Structures.” Take special precautions in placing and compacting the backfill to avoid any movement or damage to the units. Bed precast units on foundations of firm and stable material accurately shaped to conform to the bases of the units.

3.3. **Placement of Precast Units**. Provide adequate means to lift and place the precast units. Fill lifting holes with mortar or concrete and cure. Precast concrete or mortar plugs may be used.

3.4. **Connections**. Make connections to new or existing structures in accordance with the details shown on the plans. Furnish jointing material in accordance with Item 464, “Reinforced Concrete Pipe.”

Also remove a length of the existing pipe from the headwall to the joint when removing existing headwalls as shown on the plans or as approved. Re-lay the removed pipe if approved, or furnish and lay a length of new pipe.

~~3.5. **Install or Replace Pipe Runners or Assemblies**. Install or replace individual pipe runners or pipe runner assemblies on existing drainage structures as indicated on the plans.~~

4. 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 "Safety End Treatment" specified as follows:

- ~~SET (Type I) (Barrel Span) (Wall Height) (Slope, Horizontal:Vertical) (Orientation, Cross or Parallel)~~
- ~~SET (Type I) (Pipe Diameter or Design) (Slope, Horizontal:Vertical) (Orientation, Cross or Parallel)~~
- SET (Type II) (Pipe Diameter or Design) (Pipe Material) (Slope, Horizontal:Vertical) (Orientation, Cross or Parallel)
- ~~SET (Pipe Runner)~~
- ~~SET (Pipe Runner Assembly)~~

~~For payment purposes, the wingwall heights of Type I SETs for box culverts will be rounded to the nearest foot.~~

This price is full compensation for constructing, furnishing, transporting, and installing the end treatments; ~~pipe runners, or pipe runner assemblies~~, connecting to existing structure; breaking back, removing and disposing of portions of the existing structure~~, removing and disposing of existng pipe runner or pipe runner assemblies~~, and replacing portions of the existing structure as required to make connections; excavation and backfill; furnishing concrete, reinforcing steel, corrugated metal pipe or reinforced concrete pipe, and pipe runners; and concrete riprap, nuts, bolts, plates, angles, equipment, labor, tools, and incidentals.

The removal and re-laying of existing pipe or the furnishing of new pipe to replace existing pipe will not be paid for directly but will be considered subsidiary to this Item.

The mitered length of CMP or RCP that is a part of the SET (Type II) will not be paid for directly but will be considered subsidiary to this Item. The limits for payment for pipe will be as shown on the plans and paid for in accordance with the pertinent bid item.

~~The limits of riprap to be included in the price bid for each SET will be shown on the plans. Any riprap placed beyond the limits shown will be paid in accordance with Item 432, "Riprap." Riprap between multiple precast SET units will be required as shown on the plans and is included in the price bid for SET.~~

When precast SETs are provided as an option to mitered RCP, riprap aprons will not be required unless the plans specifically require riprap aprons for precast SET units. The plans will show the limits of the riprap to be included with the precast SET for payment.

Payment will be made under:

Item TX-467-5.1 Safety End Treatment (Type II) (18") (4:1) (Cross) – Per Each
Item TX-467-5.2 Safety End Treatment (Type II) (30") (4:1) (Cross) – Per Each

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SHEET INDEX

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		GENERAL
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2	GI-002	SHEET INDEX AND SUMMARY OF QUANTITIES
3	GI-101	PROJECT LAYOUT PLAN
4	GI-201	SURVEY CONTROL PLAN
5	GC-001	CONSTRUCTION SAFETY AND PHASING NOTES 1
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8	GC-101	CONSTRUCTION SAFETY AND PHASING PLAN - PHASE 1
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15	GC-108	CONSTRUCTION SAFETY AND PHASING PLAN - PHASE 8
16	GC-109	CONSTRUCTION SAFETY AND PHASING PLAN - PHASE 9 (ADD. ALT. 1)
17	GC-501	CONSTRUCTION SAFETY AND PHASING DETAILS
		GEOTECHNICAL
18	BL-101	BORING LOCATION PLAN
		CIVIL
19	CV-100	EXISTING CONDITIONS OVERVIEW
20	CV-101	EXISTING CONDITIONS 1
21	CV-102	EXISTING CONDITIONS 2
22	CV-103	EXISTING CONDITIONS 3
23	CE-001	EROSION CONTROL NOTES
24	CE-100	EROSION CONTROL OVERVIEW
25	CE-101	EROSION CONTROL PLAN 1
26	CE-102	EROSION CONTROL PLAN 2
27	CE-103	EROSION CONTROL PLAN 3
28	CE-501	EROSION CONTROL DETAILS
29	CD-100	DEMOLITION PLAN OVERVIEW
30	CD-101	DEMOLITION PLAN 1
31	CD-102	DEMOLITION PLAN 2
32	CD-103	DEMOLITION PLAN 3
33	CD-501	DEMOLITION DETAILS
34	CP-001	TYPICAL SECTIONS 1
35	CP-002	TYPICAL SECTIONS 2
36	CP-100	PLAN AND PROFILE - OVERVIEW
37	CP-101	PLAN AND PROFILE 1 - TW A CONNECTOR
38	CP-102	PLAN AND PROFILE 2
39	CP-103	PLAN AND PROFILE 3
40	CP-104	PLAN AND PROFILE 4
41	CP-105	PLAN AND PROFILE 5
42	CP-106	PLAN AND PROFILE 6
43	CP-107	PLAN AND PROFILE 7
44	CP-108	PLAN AND PROFILE 8 - TW B
45	CP-109	PLAN AND PROFILE 9 - TW C
46	CP-110	PLAN AND PROFILE 10 - TW D
47	CP-111	TERMINAL APRON ELEVATION PLAN (BASE BID & ADD ALT 3)
48	CP-112	TERMINAL APRON (ADD ALT 4) ELEVATION PLAN
49	CP-113	PAVEMENT REHABILITATION PLAN 1
50	CP-114	PAVEMENT REHABILITATION PLAN 2
51	CP-115	PAVEMENT REHABILITATION PLAN 3
52	CP-501	PAVING DETAILS
53	CM-100	PAVEMENT MARKING PLAN OVERVIEW
54	CM-101	PAVEMENT MARKING REMOVAL PLAN
55	CM-102	PAVEMENT MARKING PLAN 1
56	CM-103	PAVEMENT MARKING PLAN 2
57	CM-104	PAVEMENT MARKING PLAN 3
58	CM-105	PAVEMENT MARKING PLAN 4
59	CM-106	PAVEMENT MARKING PLAN 5
60	CM-107	PAVEMENT MARKING PLAN 6
61	CM-108	PAVEMENT MARKING PLAN 7
62	CM-501	PAVEMENT MARKING DETAILS 1
63	CM-502	PAVEMENT MARKING DETAILS 2
64	CM-503	PAVEMENT MARKING DETAILS 3
		ELECTRICAL
65	EN001	ELECTRICAL NOTES
66	ED101	ELECTRICAL REMOVAL PLAN
67	ED501	ELECTRICAL REMOVAL DETAILS
68	EL101	ELECTRICAL INSTALLATION PLAN
69	EL501	ELECTRICAL INSTALLATION DETAILS 1
70	EL502	ELECTRICAL INSTALLATION DETAILS 2
71	EL503	ELECTRICAL INSTALLATION DETAILS 3
		CROSS SECTIONS
72	XS-101	TAXIWAY A CROSS SECTIONS 1
73	XS-102	TAXIWAY A CROSS SECTIONS 2
74	XS-103	TAXIWAY A CROSS SECTIONS 3
75	XS-104	TAXIWAY A CROSS SECTIONS 4
76	XS-105	TAXIWAY A CROSS SECTIONS 5
77	XS-106	TAXIWAY A CROSS SECTIONS 6
78	XS-107	TAXIWAY A CROSS SECTIONS 7
79	XS-108	TAXIWAY A CROSS SECTIONS 8
80	XS-109	TAXIWAY A CROSS SECTIONS 9
81	XS-110	TAXIWAY A CROSS SECTIONS 10
82	XS-111	TAXIWAY A CROSS SECTIONS 11
83	XS-112	TAXIWAY A CROSS SECTIONS 12
84	XS-113	TAXIWAY A CROSS SECTIONS 13
85	XS-114	TAXIWAY A CROSS SECTIONS 14
86	XS-115	TAXIWAY A CROSS SECTIONS 15
87	XS-116	TAXIWAY A CROSS SECTIONS 16
88	XS-117	TAXIWAY A CROSS SECTIONS 17

BASE BID - SCHEDULE 1

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	SS-120-3.1	Construction Safety and Security	LS	1
2	SS-220-5.1	Pavement Edge Grading	LF	8,600
3	SS-262-5.1	Tiedown Anchors	EA	6
4	TX-SS-2001-5.1	Tied Concrete Block Mat (Complete In Place)	SY	600
5	TX-247-6.1	Flexible Base (Complete In Place)	SY	5,000
6	TX-250-5.1	Geogrid Base Reinforcement	SY	5,000
7	TX-464-5.1	Reinforced Concrete Pipe (30-Inch) (Complete In Place) (Including Pavement Sawcut and Repair)	LF	125
8	TX-465-5.1	Inlet (Complete)(PAZD-CZ)(FG)(8FTx8FT-4FTX4FT)	EA	1
9	TX-467-5.3	Safety End Treatment (Type II) (30") (4:1) (Cross)	EA	1
10	TX-341-6.1	Dense-Graded Hot-Mix Asphalt, Type D, SAC B, PG 64-22 (4-Inch Thickness, 2 Lift)	TON	6,300
11	TX-341-6.2	Dense-Graded Hot-Mix Asphalt, Type D, SAC B, PG 64-22 (4-Inch Thickness, 2 Lift) - Transition Area	TON	1,600
12	TX-341-6.3	Dense-Graded Hot-Mix Asphalt, Type B, SAC B, PG 64-22 (6-Inch Thickness, 2 Lift)	TON	220
13	C-100-14.1	Contractor Quality Control Program (CQCP)	LS	1
14	C-102-5.1	Temporary Erosion Control	LS	1
15	C-105-6.1	Mobilization - Base Bid (Maximum 10% of Base Bid)	LS	1
16	P-101-5.1	Asphalt Transition Milling	SY	7,000
17	P-101-5.2	Crack Repair (Less than 1.5")	LF	41,700
18	P-101-5.3	Crack Repair (Greater than 1.5")	LF	12,600
19	P-101-5.4	Pavement Section Removal	SY	5,000
20	P-152-4.1	Unclassified Excavation	CY	3,100
21	P-207-5.1	8" In Place Full Depth Recycled (FDR) Asphalt Aggregate Base Course	SY	24,400
22	P-207-5.2	Cement	TON	450
23	P-620-5.1	Pavement Marking with Reflective Media	SF	10,800
24	P-620-5.2	Pavement Markings without Reflective Media	SF	15,900
25	P-620-5.3	Pavement Markings Removal	SF	4,400
26	P-631-7.1	Refined Coal Tar Emulsion with Additives for Slurry Coat	SY	52,000
27	T-901-5.1	Seeding	AC	2
28	T-905-5.1	Topsoil	SY	9,440

ADD ALT 1: RUNWAY 14-32 REHABILITATION

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	P-101-5.2	Crack Repair (Less than 1.5")	LF	31,100
2	P-101-5.3	Crack Repair (Greater than 1.5")	LF	12,500
3	P-620-5.1	Pavement Marking with Reflective Media	SF	49,100
4	P-620-5.2	Pavement Markings without Reflective Media	SF	13,100
5	P-620-5.3	Pavement Markings Removal	SF	30,000
6	P-631-7.1	Refined Coal Tar Emulsion with Additives for Slurry Coat	SY	47,700

ADD ALT 2 - SCHEDULE 1: TDG 2B PAVEMENT FILLETS AT TAXIWAY A AND D RUNWAY APPROACH

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	SS-140-5.1	Demolition and Disposal of Existing Safety End Treatments	EA	2
2	SS-220-5.1	Pavement Edge Grading	LF	500
3	SS-222-5.1	Ditch Grading	LF	1,040
4	TX-247-6.1	Flexible Base (Complete In Place)	SY	1,400
5	TX-250-5.1	Geogrid Base Reinforcement	SY	1,400
6	TX-341-6.1	Dense-Graded Hot-Mix Asphalt, Type D, SAC B, PG 64-22 (4-Inch Thickness, 2 Lift)	TON	1,100
7	TX-341-6.2	Dense-Graded Hot-Mix Asphalt, Type D, SAC B, PG 64-22 (4-Inch Thickness, 2 Lift) - Transition Area	TON	400
8	TX-460-5.1	Corrugated Metal Pipe (18-Inch) (Complete in Place)	LF	40
9	TX-460-5.2	Corrugated Metal Pipe (18-Inch) (Complete in Place, Including Pavement Sawcut and Repair)	LF	85
10	TX-467-5.1	Safety End Treatment (Type II) (18") (4:1) (Cross)	EA	4
11	P-101-5.4	Pavement Section Removal	SY	350
12	P-152-4.1	Unclassified Excavation	CY	800
13	T-901-5.1	Seeding	AC	1
14	T-905-5.1	Topsoil	SY	2,420
15	SS-300-5.1	Lockout/Tagout and Constant Current Regulator Calibration Procedures	L.S.	1
16	SS-301-5.1	Existing Base Mounted Guidance Sign, Removed	EA	1
17	L-108-5.1	No. 8 AWG, 5 kV, L-824, Type C Cable, Installed in Trench, Duct Bank or Conduit	LF	350
18	L-108-5.2	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed Above the Duct Bank or Conduit, Including Connections/Terminations	LF	150
19	L-110-5.1	Non-Encased Electrical Conduit, 1-Way, 2-Inch, Installed	LF	150
20	L-125-5.1	L-858(L) Base Mounted, 3-Module Guidance Sign, Installed	EA	1

ADD ALT 2 - SCHEDULE 2: TDG 2B PAVEMENT FILLETS AT TAXIWAY A AND D RUNWAY APPROACH

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	SS-140-5.1	Demolition and Disposal of Existing Safety End Treatments	EA	2
2	SS-220-5.1	Pavement Edge Grading	LF	500
3	SS-222-5.1	Ditch Grading	LF	1,040
4	TX-250-5.1	Geogrid Base Reinforcement	SY	1,400
5	TX-251-6.1	Place and Compact FDR Trimmings	CY	350
6	TX-341-6.1	Dense-Graded Hot-Mix Asphalt, Type D, SAC B, PG 64-22 (4-Inch Thickness, 2 Lift)	TON	1,100
7	TX-341-6.2	Dense-Graded Hot-Mix Asphalt, Type D, SAC B, PG 64-22 (4-Inch Thickness, 2 Lift) - Transition Area	TON	400
8	TX-460-5.1	Corrugated Metal Pipe (18-Inch) (Complete in Place)	LF	40
9	TX-460-5.2	Corrugated Metal Pipe (18-Inch) (Complete in Place, Including Pavement Sawcut and Repair)	LF	85
10	TX-467-5.1	Safety End Treatment (Type II) (18") (4:1) (Cross)	EA	4
11	P-101-5.4	Pavement Section Removal	SY	350
12	P-152-4.1	Unclassified Excavation	CY	350
13	T-901-5.1	Seeding	AC	1
14	T-905-5.1	Topsoil	SY	2,420
15	SS-300-5.1	Lockout/Tagout and Constant Current Regulator Calibration Procedures	L.S.	1
16	SS-301-5.1	Existing Base Mounted Guidance Sign, Removed	EA	1
17	L-108-5.1	No. 8 AWG, 5 kV, L-824, Type C Cable, Installed in Trench, Duct Bank or Conduit	LF	350
18	L-108-5.2	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed Above the Duct Bank or Conduit, Including Connections/Terminations	LF	150
19	L-110-5.1	Non-Encased Electrical Conduit, 1-Way, 2-Inch, Installed	LF	150
20	L-125-5.1	L-858(L) Base Mounted, 3-Module Guidance Sign, Installed	EA	1

ADD ALT 3 - SCHEDULE 1: TERMINAL APRON PAVEMENT REHABILITATION (NORTH PORTION) (RECONSTRUCTION)

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	SS-262-5.1	Tiedown Anchors	EA	21
2	TX-247-6.1	Flexible Base (Complete In Place)	SY	2,500
3	TX-250-5.1	Geogrid Base Reinforcement	SY	2,500
4	TX-341-6.1	Dense-Graded Hot-Mix Asphalt, Type D, SAC B, PG 64-22 (4-Inch Thickness, 2 Lift)	TON	615
5	P-101-5.4	Pavement Section Removal	SY	2,500
6	P-152-4.1	Unclassified Excavation	CY	1,400
7	P-620-5.3	Pavement Marking Removal	SF	(500)
8	P-631-7.1	Refined Coal Tar Emulsion with Additives for Slurry Coat	S.Y.	(2,500)

ADD ALT 4 - SCHEDULE 1: TERMINAL APRON PAVEMENT RECONSTRUCTION (WEST TAXILANE)

ITEM NO.	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	TX-247-6.1	Flexible Base (Complete In Place)	SY	4,900
2	TX-341-6.1	Dense-Graded Hot-Mix Asphalt, Type D, SAC B, PG 64-22 (4-Inch Thickness, 2 Lift)	TON	1,280
3	TX-250-5.1	Geogrid Base Reinforcement	SY	4,900
4	P-101-5.4	Pavement Section Removal	SY	4,900
5	P-152-4.1	Unclassified Excavation	CY	2,500
6	P-620-5.3	Pavement Marking Removal	S.F.	(690)
7	P-631-7.1	Refined Coal Tar Emulsion with Additives for Slurry Coat	S.Y.	(4,900)

REGISTRATION NO. F-5713

STATE OF TEXAS
Philip J. Huntley
122578
LICENSED PROFESSIONAL ENGINEER

Digitally Signed 03/06/2026

REV.	DATE	DESCRIPTION	BY
1	2/26/26	ADDENDUM 1	PJH
2	3/06/26	ADDENDUM 2	PJH

GILLESPIE COUNTY AIRPORT
FREDERICKSBURG, TX

AIRFIELD PAVEMENT REHABILITATION

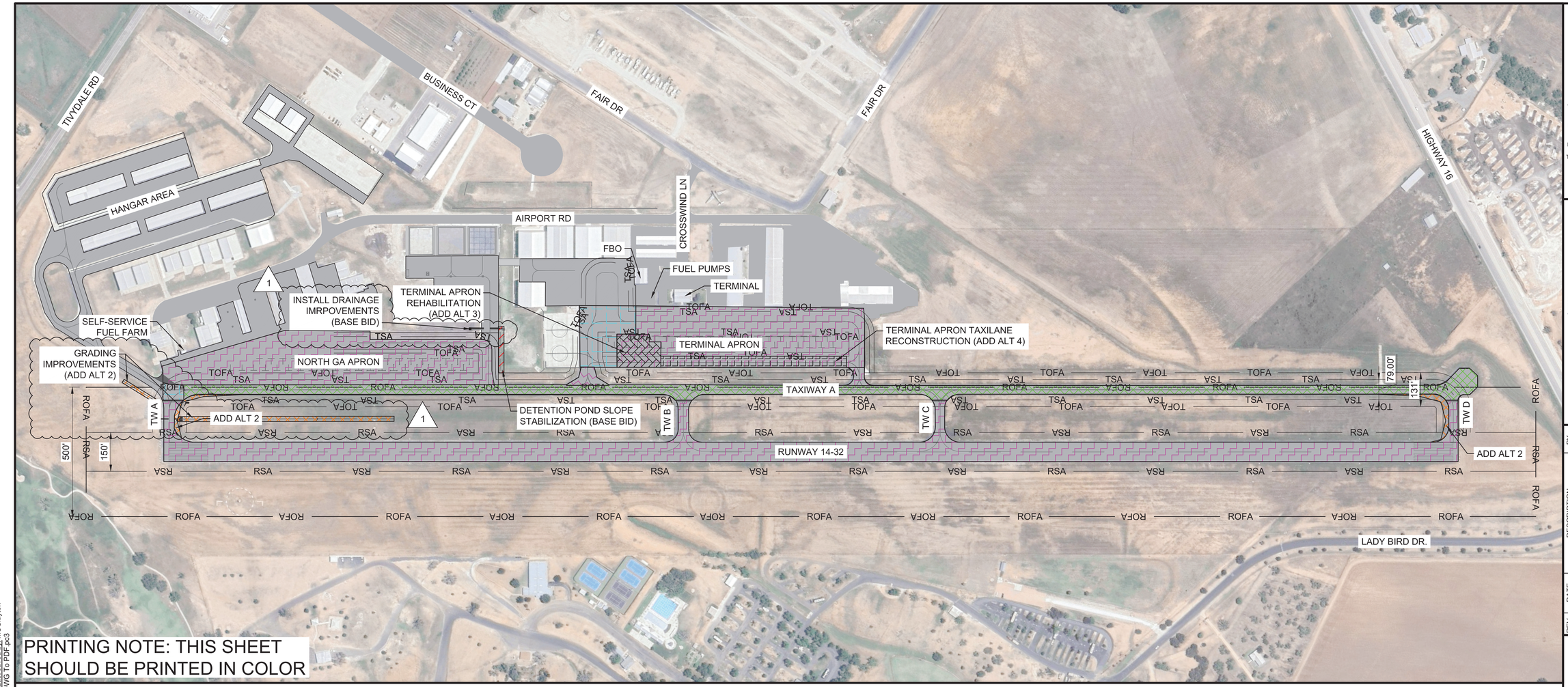
SHEET INDEX AND SUMMARY OF QUANTITIES

JOB NO.: 23A06150
DATE: JULY 2025
DESIGNED BY: PJH
DRAWN BY: MCC

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
GI-002

SHEET NUMBER **2**



PRINTING NOTE: THIS SHEET SHOULD BE PRINTED IN COLOR

LEGEND

- ASPHALT PAVEMENT CRACK SEAL & SEAL COAT
- FULL-DEPTH ASPHALT PAVEMENT RECLAMATION
- FULL DEPTH PAVEMENT RECONSTRUCTION
- DETENTION POND SLOPE STABILIZATION
- ADD ALT 2: ASPHALT PAVEMENT CONSTRUCTION AND GRADING
- ADD ALT 3: FULL DEPTH PAVEMENT RECONSTRUCTION
- ADD ALT 4: FULL DEPTH PAVEMENT RECONSTRUCTION
- RSA — RUNWAY SAFETY AREA
- ROFA — RUNWAY OBJECT FREE AREA
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA

0 100' 200' 400' 600'

(IN FEET)

ITEMS OF WORK

1

BASE BID:
PERFORM FULL-DEPTH RECLAMATION ON TAXIWAY A, FULL DEPTH PAVEMENT RECONSTRUCTION ON LARGE AIRCRAFT APRON AT TERMINAL APRON, APPLY CRACK SEAL AND SEAL COAT AT NORTH GA APRON AND TERMINAL APRON AREAS, AND INSTALL PAVEMENT MARKINGS. DETENTION POND SLOPE STABILIZATION. DRAINAGE IMPROVEMENTS AT MIDFIELD HANGAR ACCESS TAXILANE, INCLUDING PAVEMENT SAW-CUTTING AND REPAIR, INSTALLATION OF DRAINAGE PIPE, HEADWALL, AND CATCH BASIN.

ADD. ALTERNATE 1: RUNWAY 14-32 REHABILITATION
REMOVAL OF PAVEMENT MARKINGS, APPLICATION OF CRACK SEAL AND SEAL COAT, AND INSTALLATION OF PAVEMENT MARKINGS ON RUNWAY 14-32.

1

ADD. ALTERNATE 2: TDG 2B PAVEMENT FILLETS AT TAXIWAY A AND D RUNWAY APPROACH
PERFORM EARTHWORK AND INSTALLATION OF AGGREGATE BASE COURSE, ASPHALT PAVEMENT, AND PAVEMENT MARKINGS TO PROVIDE TDG 2 FILLET PAVEMENT FOR TAXIWAY A AND D ENTRANCE/EXIT TAXIWAYS. INCLUDING GRADING AND DRAINAGE IMPROVEMENTS AT TAXIWAY A APPROACH TO RUNWAY 14, INCLUDING SAW-CUTTING PAVEMENT REPAIR, INSTALLATION OF DRAINAGE PIPE AND HEADWALLS.

ADD. ALTERNATE 3: TERMINAL APRON PAVEMENT REHABILITATION (NORTH PORTION) (RECONSTRUCTION)
RECONSTRUCTION OF TERMINAL APRON IN LIEU OF ASPHALT PAVEMENT CRACK SEAL AND SEAL COATING.

ADD. ALTERNATE 4: TERMINAL APRON PAVEMENT RECONSTRUCTION (WEST TAXILANE)
RECONSTRUCTION OF TERMINAL APRON TAXILANE IN LIEU OF ASPHALT PAVEMENT CRACK SEAL AND SEAL COATING.

CAUTION - UNDERGROUND UTILITIES:
UNDERGROUND UTILITIES MAY EXIST WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION. AN ATTEMPT HAS BEEN MADE TO LOCATE THESE UTILITIES ON THE PLANS. ALL EXISTING UTILITIES MAY NOT BE SHOWN ON THE PLANS, AND THE LOCATION OF THE UTILITIES SHOWN MAY VARY FROM THE LOCATION SHOWN ON THE PLANS. PRIOR TO BEGINNING ANY TYPE OF EXCAVATION, THE CONTRACTOR SHALL CONTACT AIRPORT MAINTENANCE AND LOCAL UTILITY COMPANIES TO MAKE ARRANGEMENTS FOR THE LOCATION OF THE UTILITY ON THE GROUND. THE CONTRACTOR SHALL MAINTAIN THE UTILITY LOCATION MARKINGS UNTIL THEY ARE NO LONGER NECESSARY.

REGISTRATION NO. F-5713

STATE OF TEXAS
Philip J. Huntley
122578
LICENSED PROFESSIONAL ENGINEER

Digitally Signed 03/06/2026

REV.	DATE	DESCRIPTION	BY
1	3/06/26	ADDENDUM 2	PJH

GILLESPIE COUNTY AIRPORT
FREDERICKSBURG, TX

AIRFIELD PAVEMENT REHABILITATION

PROJECT LAYOUT PLAN

JOB NO.: 23A06150
DATE: JULY 2025
DESIGNED BY: PJH
DRAWN BY: MCC

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DRAWING NUMBER
GI-101

SHEET NUMBER 3

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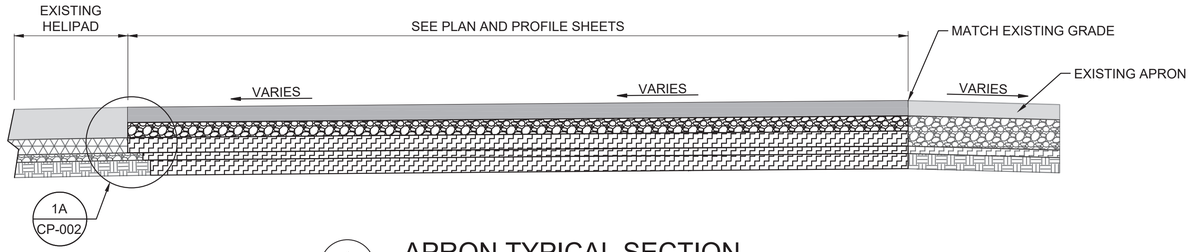

1 CP-002 **APRON TYPICAL SECTION**
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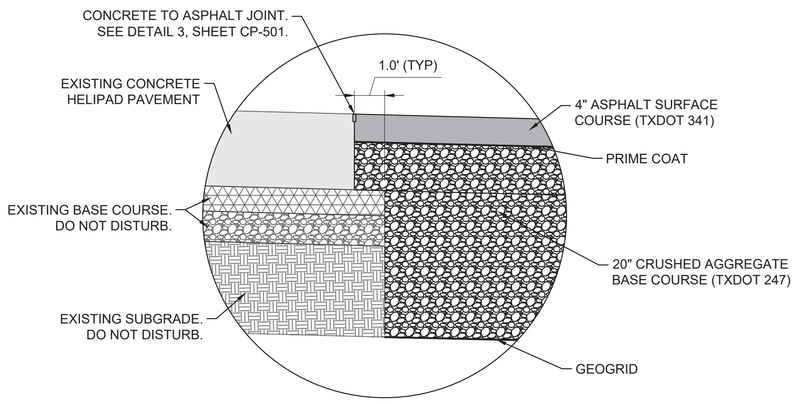
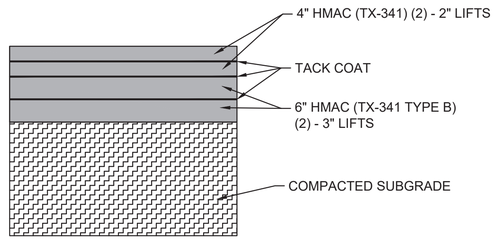
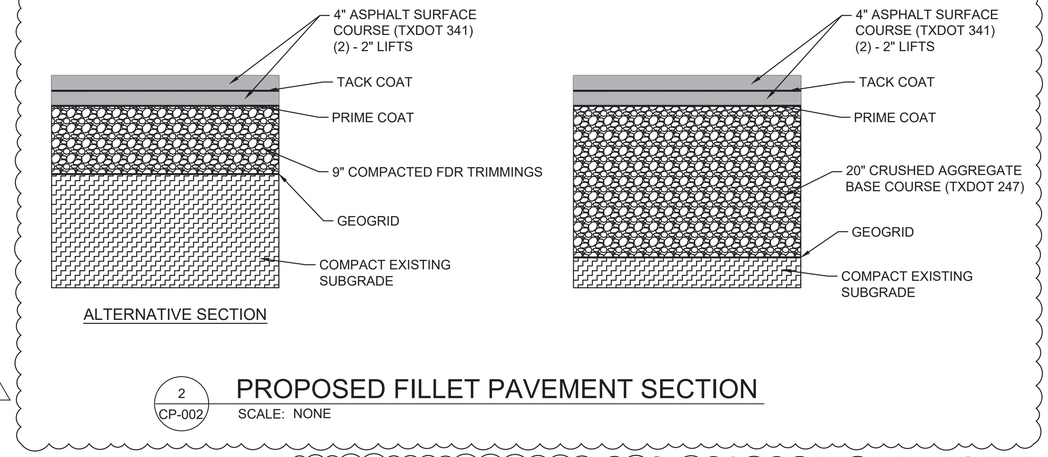


1A CP-002 **APRON SECTION DETAIL**
SCALE: NONE



3 CP-002 **PHASE 3B FULL DEPTH PAVEMENT SECTION DETAIL**
SCALE: NONE



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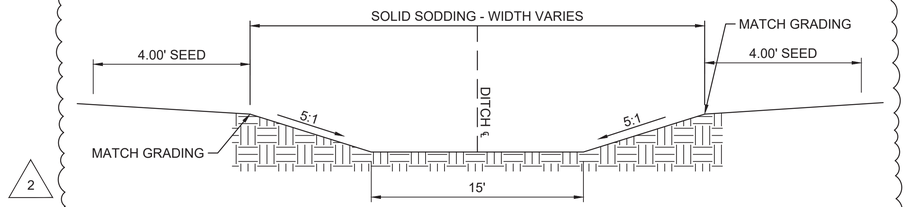
2 CP-002 **PROPOSED FILLET PAVEMENT SECTION**
SCALE: NONE



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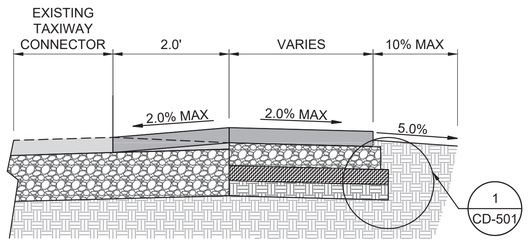
5 CP-002 **GRASS-LINED DITCH**
SCALE: NONE



4 CP-002 **ADD ALT 2 FILLET TYPICAL SECTION**
SCALE: NONE

REGISTRATION NO. F-5713

STATE OF TEXAS
Philip J. Huntley
122578
LICENSED PROFESSIONAL ENGINEER

Digitally Signed 03/06/2026

REV.	DATE	DESCRIPTION	BY
1	2/26/26	ADDENDUM 1	PJH
2	3/06/26	ADDENDUM 2	PJH

GILLESPIE COUNTY AIRPORT
FREDERICKSBURG, TX

AIRFIELD PAVEMENT REHABILITATION

TYPICAL SECTIONS 2

JOB NO.: 23A06150
DATE: JULY 2025
DESIGNED BY: PJH
DRAWN BY: MCC

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DRAWING NUMBER
CP-002

SHEET NUMBER **35**

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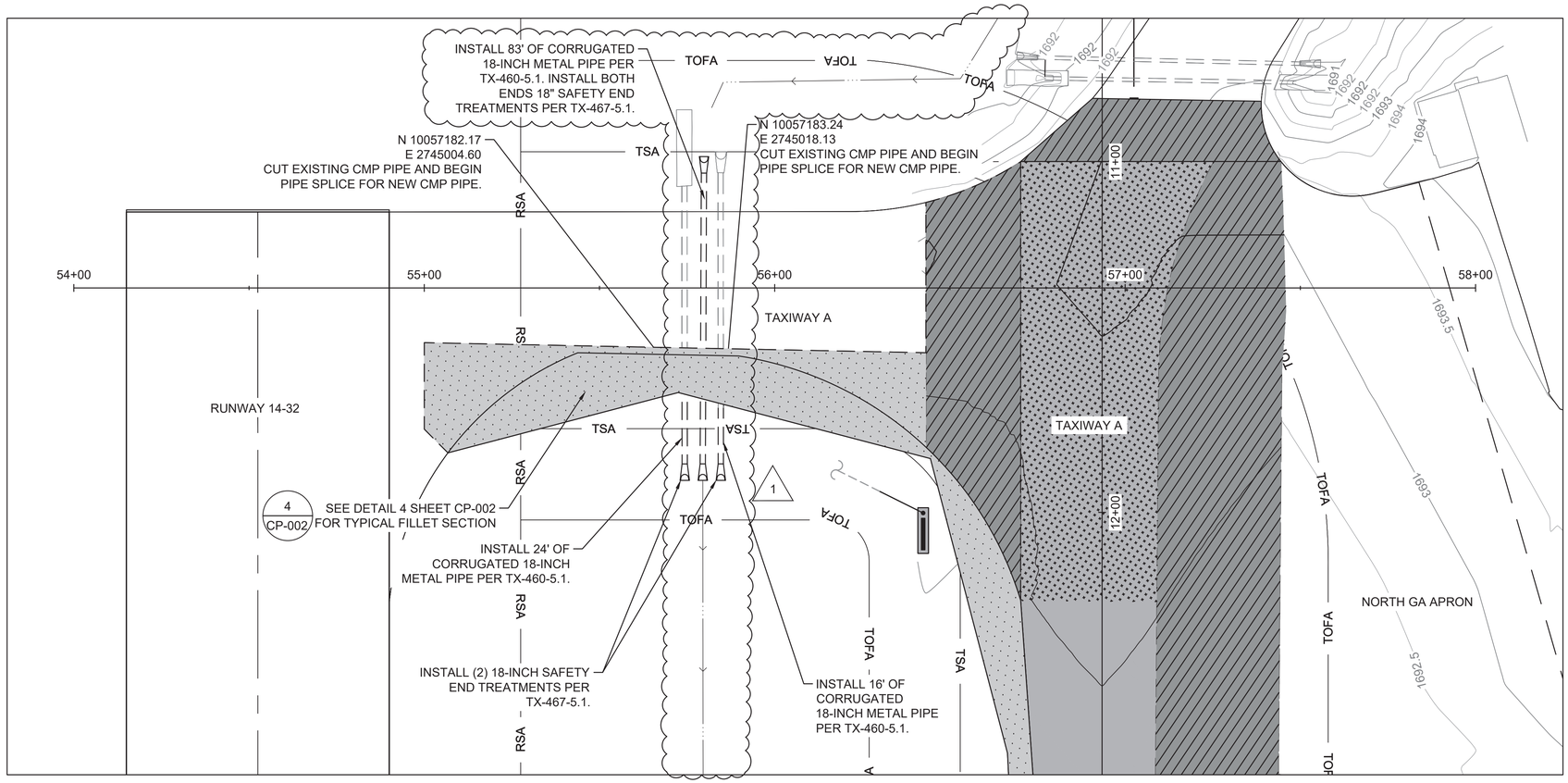

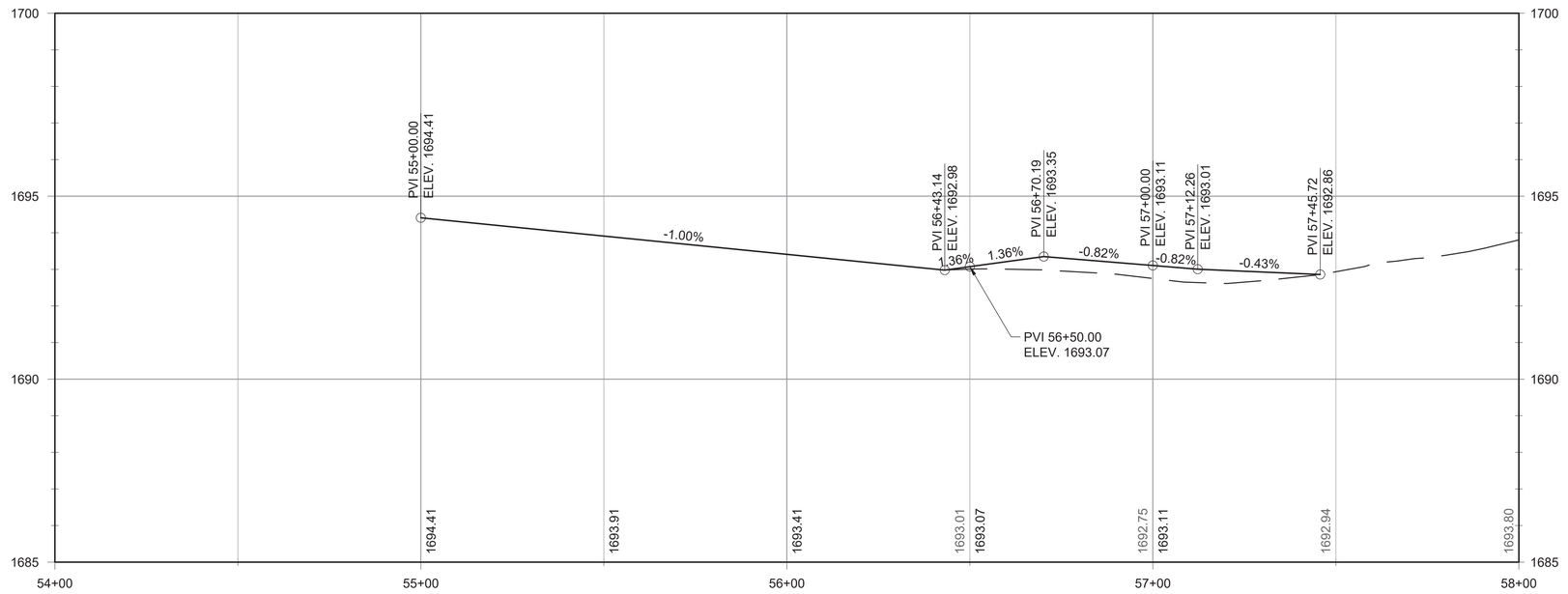

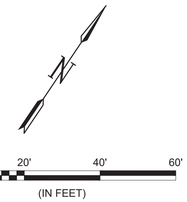

LEGEND

- EXISTING ASPHALT PAVEMENT
- FULL DEPTH ASPHALT PAVEMENT RECLAMATION
- FULL DEPTH ASPHALT PAVEMENT RECONSTRUCTION
- ADD ALT 2: ASPHALT PAVING CONSTRUCTION AND GRADING
- ASPHALT TRANSITION
- RSA — RUNWAY SAFETY AREA
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- EXISTING PROFILE
- PROPOSED PROFILE

NOTES:

1. PROFILE VERTICAL EXAGGERATION = 10.
2. SEE SHEET CP-100 FOR PLAN AND PROFILE NOTES.
3. SEE SHEETS CP-001 & CP-002 FOR TYPICAL SECTIONS.
4. CONTRACTOR SHALL SAWCUT A CLEAN VERTICAL EDGE AT ALL PAVEMENT TIE-INS.
5. SEE SHEETS XS-101 - XS-117 FOR CROSS SECTIONS.

KEYMAP

GARVER

REGISTRATION NO.
F-5713

STATE OF TEXAS
Philip J. Huntley
122578
LICENSED PROFESSIONAL ENGINEER

Digitally Signed 03/06/2026

REV.	DATE	DESCRIPTION	BY
1	3/06/26	ADDENDUM 2	PJH

GILLESPIE COUNTY AIRPORT
FREDERICKSBURG, TX

AIRFIELD PAVEMENT REHABILITATION

PLAN AND PROFILE 1 - TW A CONNECTOR

JOB NO.: 23A06150
DATE: JULY 2025
DESIGNED BY: PJH
DRAWN BY: MCC

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
CP-101

SHEET NUMBER **37**

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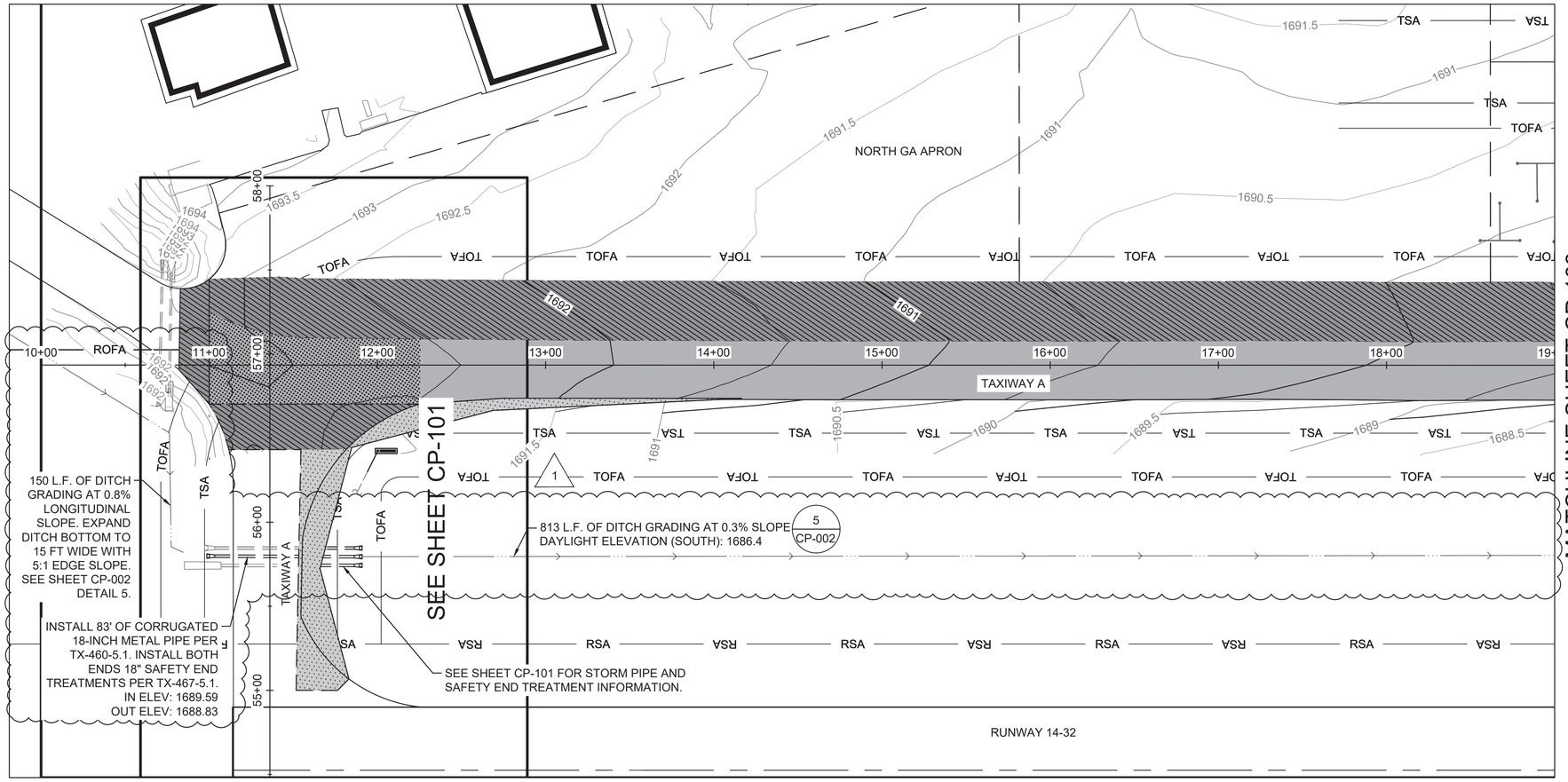
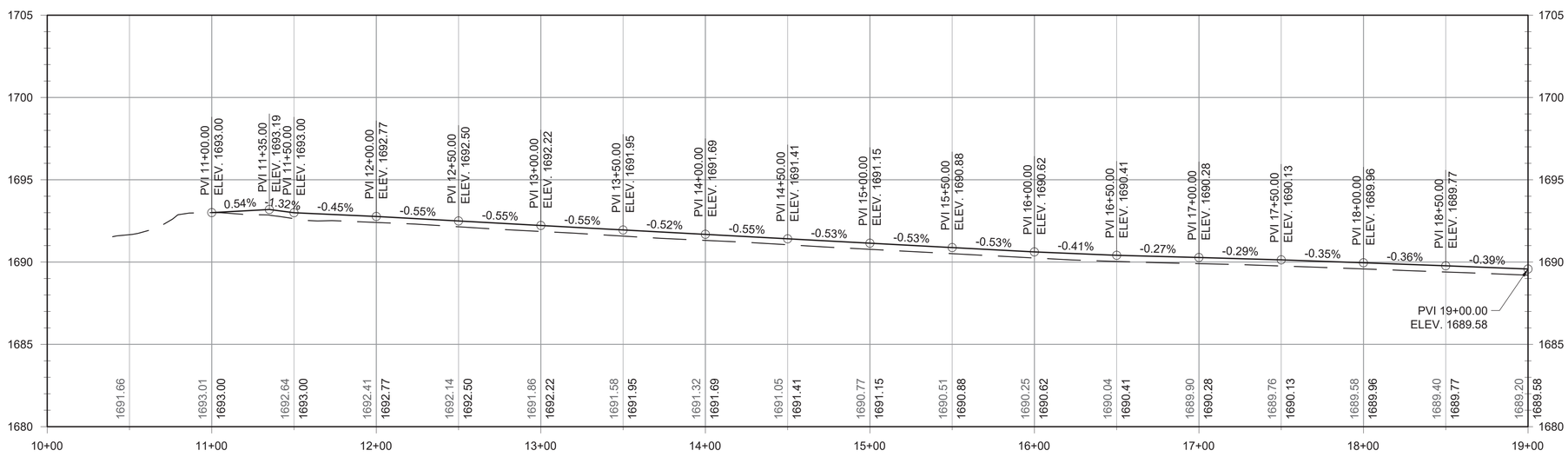
Last plotted by: Clayton, Michael C. Plot Style: AECmono.ctb Plot Scale: 1:1 Plot Date: 3/9/2026 1:06 PM Plotter used: DWG To PDF.pc3





0 20' 40' 80' 120'
(IN FEET)

LEGEND

- EXISTING ASPHALT PAVEMENT
- FULL DEPTH ASPHALT PAVEMENT RECLAMATION
- FULL DEPTH ASPHALT PAVEMENT RECONSTRUCTION
- ADD ALT 2: ASPHALT PAVING CONSTRUCTION AND GRADING
- ASPHALT TRANSITION
- RSA — RUNWAY SAFETY AREA
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- EXISTING PROFILE
- PROPOSED PROFILE

NOTES:

1. PROFILE VERTICAL EXAGGERATION = 10.
2. SEE SHEET CP-100 FOR PLAN AND PROFILE NOTES.
3. SEE SHEETS CP-001 & CP-002 FOR TYPICAL SECTIONS.
4. CONTRACTOR SHALL SAWCUT A CLEAN VERTICAL EDGE AT ALL PAVEMENT TIE-INS.
5. SEE SHEETS XS-101 - XS-117 FOR CROSS SECTIONS.

KEYMAP

GARVER

REGISTRATION NO. F-5713

STATE OF TEXAS
Philip J. Huntley
122578
LICENSED PROFESSIONAL ENGINEER
Digitally Signed 03/06/2026

REV.	DATE	DESCRIPTION	BY
1	3/06/26	ADDENDUM 2	PJH

GILLESPIE COUNTY AIRPORT
FREDERICKSBURG, TX

AIRFIELD PAVEMENT REHABILITATION

PLAN AND PROFILE 2

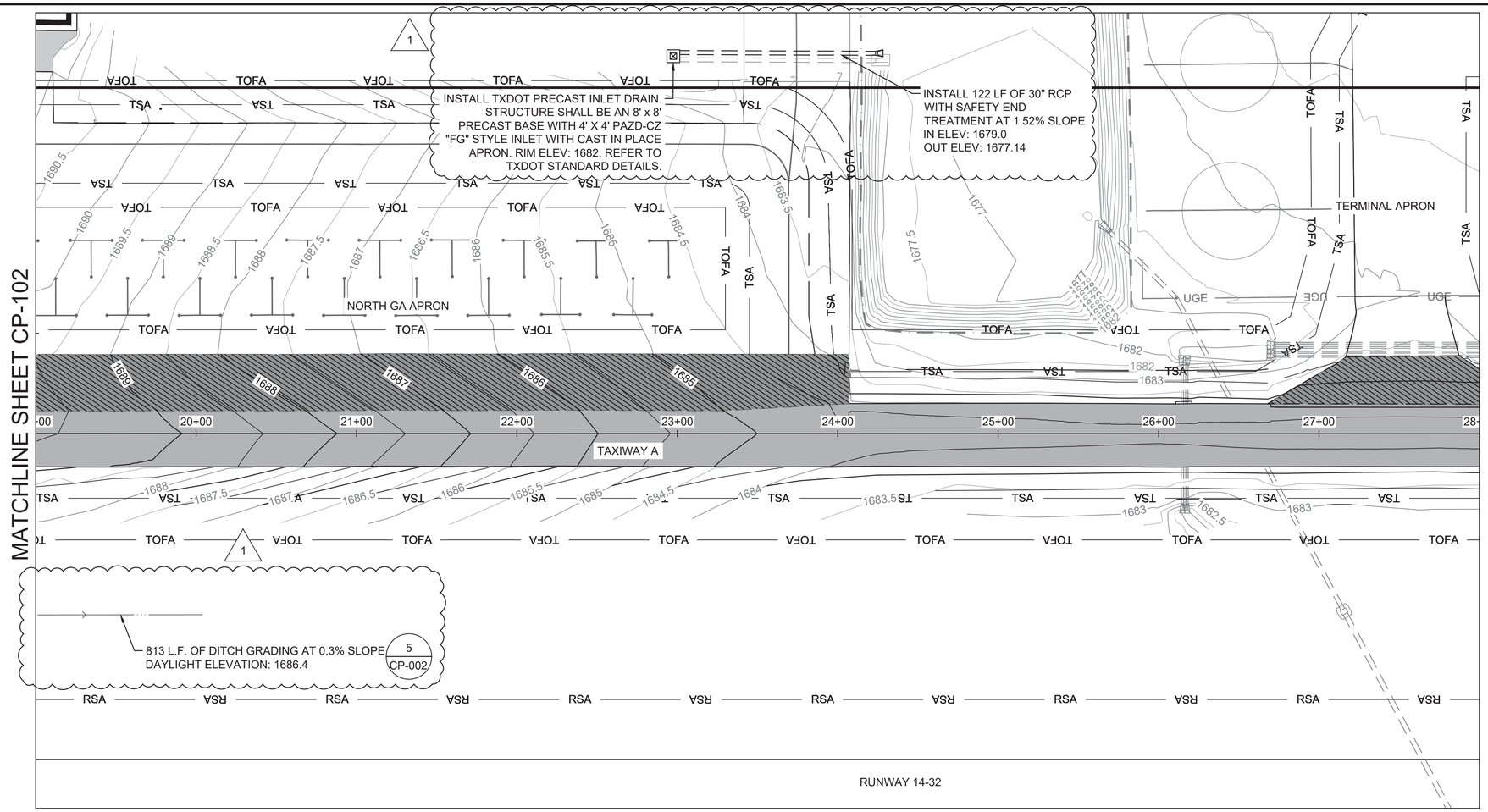
JOB NO.: 23A06150
DATE: JULY 2025
DESIGNED BY: PJH
DRAWN BY: MCC

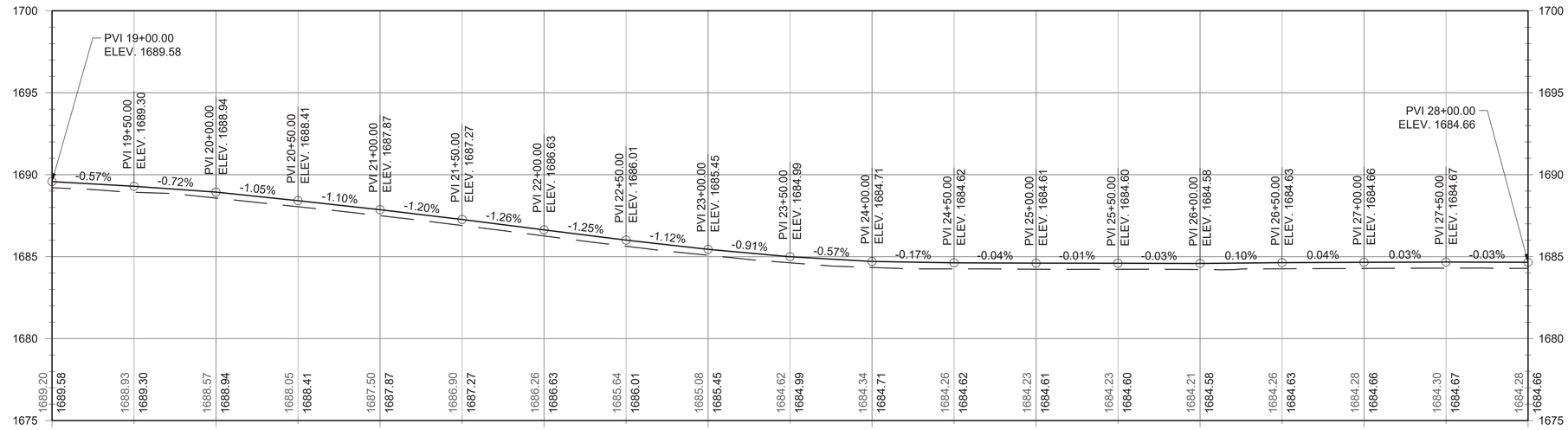
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NUMBER
CP-102

SHEET NUMBER **38**

File: L:\2023\23A06150 - TB2 Airfield Pavement Rehab\Drawings\TB2_PVMT-CP-101.dwg Last Save: 3/9/2026 1:05 PM Last saved by: MCClayton
Last plotted by: Clayton, Michael C. Plot Style: AECmono.ctb Plot Scale: 1:1 Plot Date: 3/9/2026 1:06 PM Plotter used: DWG To PDF.pc3





LEGEND

- EXISTING ASPHALT PAVEMENT
- PROPOSED ASPHALT PAVEMENT
- ASPHALT TRANSITION
- RSA — RUNWAY SAFETY AREA
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- EXISTING PROFILE
- PROPOSED PROFILE

NOTES:

1. PROFILE VERTICAL EXAGGERATION = 10.
2. SEE SHEET CP-100 FOR PLAN AND PROFILE NOTES.
3. SEE SHEETS CP-001 & CP-002 FOR TYPICAL SECTIONS.
4. CONTRACTOR SHALL SAWCUT A CLEAN VERTICAL EDGE AT ALL PAVEMENT TIE-INS.
5. SEE SHEETS XS-101 - XS-117 FOR CROSS SECTIONS.

KEYMAP

GARVER

REGISTRATION NO. F-5713

STATE OF TEXAS
Philip J. Huntley
122578
LICENSED PROFESSIONAL ENGINEER

Digitally Signed 03/06/2026

REV.	DATE	DESCRIPTION	BY
1	3/06/26	ADDENDUM 2	PJH

GILLESPIE COUNTY AIRPORT
FREDERICKSBURG, TX

AIRFIELD PAVEMENT REHABILITATION

PLAN AND PROFILE 3

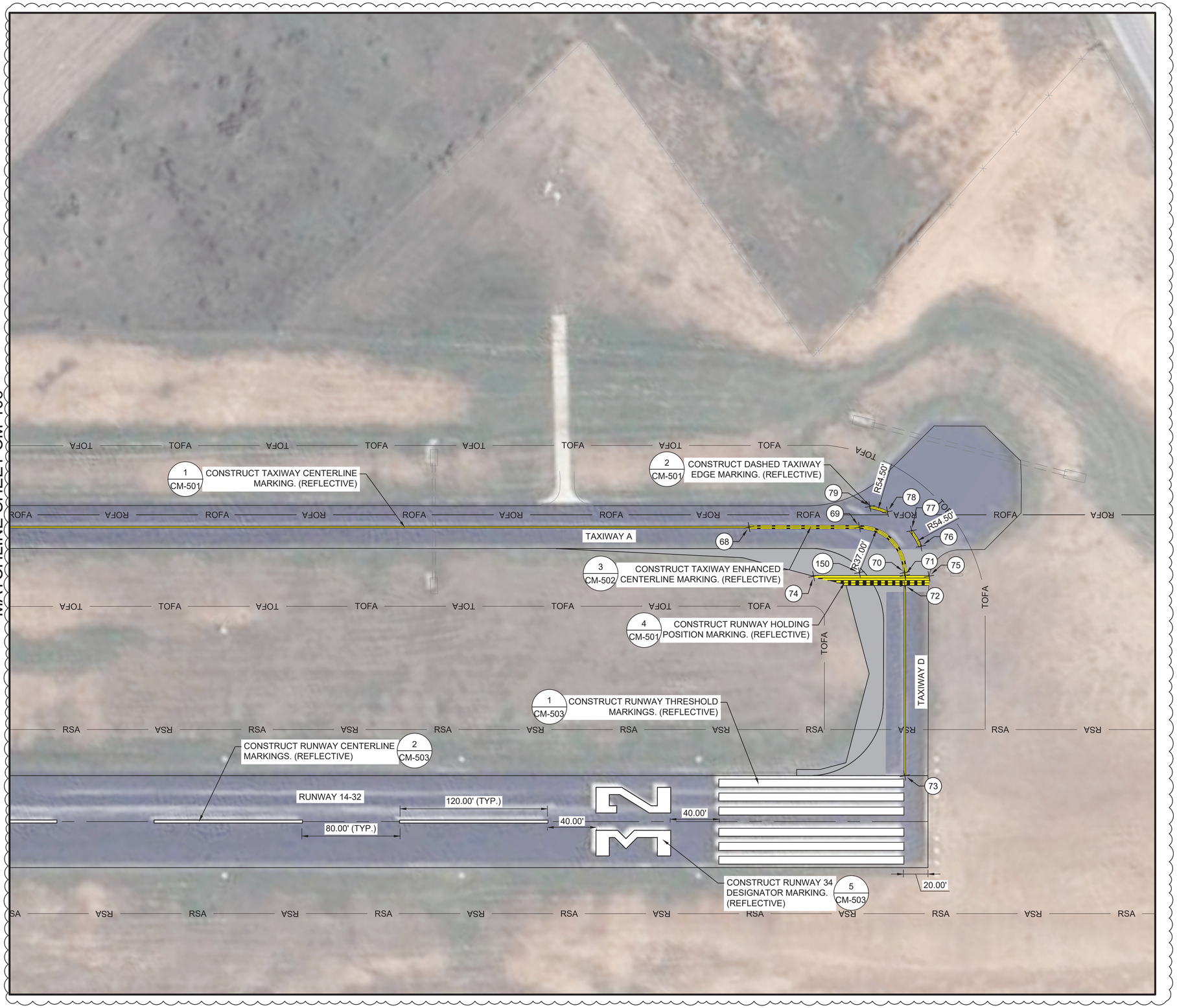
JOB NO.: 23A06150
DATE: JULY 2025
DESIGNED BY: PJH
DRAWN BY: MCC

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NUMBER
CP-103

SHEET NUMBER **39**

File: L:\2023\23A06150 - TB2 Airfield Pavement Rehab\Drawings\TB2_PVMT-CP-101.dwg Last Save: 3/9/2026 1:05 PM Last saved by: MCClayton
Last plotted by: Clayton, Michael C. Plot Style: AECmono.ctb Plot Scale: 1:1 Plot Date: 3/9/2026 1:06 PM Plotter used: DWG To PDF.pc3



1

0 20' 40' 80' 120'
(IN FEET)

LEGEND

- EXISTING MARKINGS
- PROPOSED YELLOW MARKINGS
- PROPOSED WHITE MARKINGS
- ROFA — RUNWAY OBJECT FREE AREA
- RSA — RUNWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- # — MARKING LOCATION POINT

NOTES:

1. SEE SHEET CM-102 FOR PAVEMENT MARKING NOTES.
2. SEE SHEET CM-108 FOR PAVEMENT MARKING POINT TABLE.

KEYMAP

REGISTRATION NO. F-5713

STATE OF TEXAS
Philip J. Huntley
122578
LICENSED PROFESSIONAL ENGINEER

Digitally Signed 03/06/2026

REV.	DATE	DESCRIPTION	BY
1	2/26/26	ADDENDUM 2	PJH

GILLESPIE COUNTY AIRPORT
FREDERICKSBURG, TX

AIRFIELD PAVEMENT REHABILITATION

PAVEMENT MARKING PLAN 6

JOB NO.: 23A06150
DATE: JULY 2025
DESIGNED BY: PJH
DRAWN BY: MCC

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NUMBER
CM-107

SHEET NUMBER **60**

File: L:\2023\23A06150 - T82 Airfield Pavement Rehab\Drawings\T82_PVMT-CM-101.dwg Last Save: 3/9/2026 1:13 PM Last saved by: MCClayton
Last plotted by: Clayton, Michael C. Plot Style: AECmono.ctb Plot Scale: 1:1 Plot Date: 3/9/2026 1:14 PM Plotter used: DWG To PDF.pc3