

COLLIN COUNTY
FRONTIER PARKWAY PAVING AND DRAINAGE IMPROVEMENTS
Dallas North Tollway to S.H. 289 (Preston Road)
Project No. IFB 2020-303

CHANGE ORDER NO. 6

A. INTENT OF CHANGE ORDER

This change order modifies the Construction Plans and the Construction Contract entered between Collin County and MSSEI for construction of the Frontier Parkway Paving and Drainage Improvements project, dated January 4, 2021 (Collin County Project No. IFB 2020-303).

The intent of this change order is to:

1. Provide additional left turn storage bay at the Sage Retail Addition(Celina) from Sta. 86+07.76 to Sta. 88+66.65.
2. Provides for corrective improvements to the DNT Channel to mitigate channel bottom and sidewall erosion developed in the upper reaches of the channel.
3. Final reconciliation of the project Pay Item quantities as actually installed and as-built.

B. DESCRIPTION OF CHANGE

1) Sage Retail Left Turn Storage Bay (Celina)

The City of Celina has requested an additional left turn storage bay for the proposed Sage Retail Addition. The new left turn storage bay is for eastbound Frontier turning north at Sta. 86+07.76 to Sat. 88+65.66. Affected construction plan sheets GC19A, P18A and PM18A, marked "Change Order No. 6" in the lower left-hand corner, are attached hereto and made a part of the construction contract.

2) DNT Channel Improvements (Collin County, Celina, Prosper)

The DNT Channel Corrective Improvements include:

- a) Regrading the channel from the downstream edge of the existing gabion mattress to match the existing channel flowline 300 feet downstream.
- b) Constructing a 15-foot wide by 8-inch thick gabion mattress with 18-inch deep toe walls on all sides in the channel bottom from the downstream edge of the existing gabion mattress for a distance of 100 feet downstream.
- c) Constructing a geogrid material infilled with growth media and a Bermuda grass seed mixture on both side slopes for 28-feet (or a height of 7 feet above the channel bottom). The recommended material for the geogrid and growth media is Futerra 7020 TRM and ProGanics Dual, with Platipus Zip anchors in an 18-inch anchor trench as manufactured by Profile Products, L.L.C., contact Matt Skinner at email MSkinner@profileproducts.com and phone 832-773-4030.
- d) Constructing the geogrid material infilled with growth media and a Bermuda grass seed mixture from the downstream edge of the proposed gabion mattress channel bottom to a distance of 200-feet downstream. The geogrid material infilled with growth media and a Bermuda grass seed mixture shall be 28-feet each side of the channel bottom transitioning to 12-feet each side of the channel bottom 200 feet downstream and shall

extend across the channel bottom for the entire 200-foot length downstream of the proposed gabion channel bottom. All the geogrid areas shall be provided with an 18-inch anchor trench on all sides and recommended anchors.

- e) Construction Plan Sheets D15-D19 marked “Change Order No. 6” in the lower left-hand corner of the sheet are attached hereto and made a part of the construction contract.
- 3) Final Construction Quantity Reconciliation (Collin County, Celina, Prosper)
- a) Reconciliation of Under Run Work Item Quantities
 - b) Reconciliation of Over Run Work Item Quantities

C. EFFECT OF CHANGE ON CONTRACT AMOUNT

This change order will have the following effect on the construction contract amount of this project:

1. Additional Left Turn Bay at Sta. 88+66 (Celina)	Item No.	Description	Previous Quantity (Through CO-5)	Quantity This Change Order No. 6	Revised Quantity	Units	Contract Price	Total Amount of Change
	1-114	Flexible Base Compacted In Place (8" Type A Grade 2)	86,999	416	87,415	S.Y.	\$ 15.00	\$ 6,240.00
	1-121	Construct 48-inch Deep Moisture Treated Subgrade & 8 Ft. PVC Barrier	91,818	341	92,159	S.Y.	\$ 4.00	\$ 1,364.00
	1-122	Construct 6-inch Monolithic Concrete Curb	36,579	274	36,853	L.F.	\$ 1.00	\$ 274.00
	1-131	Construct Stamped & Stained Concrete (Median Noses)	3,441	135	3,576	S.F.	\$ 27.00	\$ 3,645.00
	1-132	Furnish & Place Topsoil (4-inches)	179,495	(362)	179,133	S.Y.	\$ 0.50	\$ (181.00)
	1-133	Furnish, Install & Maintain Straw or Hay Mulch (Urban) (Clay)	146,795	(362)	146,433	S.Y.	\$ 0.27	\$ (97.74)
	1-197	Furnish and Install (100 mil) (W) 8" (SLD) Pavement Marker Line (Left-Right Turn) CO #4	5,670	150	5,820	Ea.	\$ 2.00	\$ 300.00
	1-203	Furnish and Install White Thermoplastic Paint Marking (100 mil) (Turn Arrow) CO #4	27	1	28	Ea.	\$ 130.00	\$ 130.00
	1-206	Furnish and Install Small Roadside Sign Assembly (Type 1P)	138	3	141	Ea.	\$ 525.00	\$ 1,575.00
	1-214	Furnish & Install 2-inch PVC Conduit w/Detectable Tape & Pull String (Lighting)	5,653	24	5,677	L.F.	\$ 11.00	\$ 264.00
	CO-4.1	1-117.A -Construct 9-inch Continuously Reinforced Concrete Pavement (Hand Placement)	3,603	319	3,922	S.Y.	\$ 76.04	24,257
	Subtotal, Bid Schedule No. 1, Change Order No. 6 - Left Turn Bay:							\$ 37,770.02
	New Pay Items, Change Order 6 - Added Left Turn Storage Bay							
	CO-6.1	Saw Cut and Remove Existing Concrete Curb and Gutter	0	317	317	L.F.	\$ 51.52	\$ 16,331.84
	CO-6.2	Unclassified Street Excavation for Left Turn Lanes	0	456	456	C.Y.	\$ 13.13	\$ 5,987.28
	CO-6.3	Longitudinal Butt Joint	0	317	317	L.F.	\$ 20.67	\$ 6,552.39
CO-6.2	Re-mobilize Flatwork Crew	0	1	1	L.S.	\$ 13,500.00	\$ 13,500.00	
Subtotal, New Pay Items, Change Order No. 6 - Left Turn Bay							\$ 42,371.51	
Subtotal- Change Order No. 6 - Left Turn Bay:							\$ 80,141.53	

2. DNT Channel Modifications	Item No.	Description	Previous Quantity (Through CO-5)	Quantity This Change Order No. 6	Revised Quantity	Units	Contract Price	Total Amount of Change
	CO-6.3	DNT Channel Modifications	0	1	1	L.S.	\$ 179,011.40	\$ 179,011.40

C. EFFECT OF CHANGE ON CONTRACT AMOUNT (Continued):

Item No.	Description	Previous Quantity (Through CO-6.2)	Quantity This Change Order No. 6.3a	Revised Quantity	Units	Contract Price	Total Amount of Change
1-114	Flexible Base Compacted In Place (8" Type A Grade 2) CO #3 CO #4 CO #5 CO#6 FC	87,415.000	(27.000)	87,388.00	S.Y.	\$ 15.00	\$ (405.00)
1-118	Construct 9-inch High Early Strength Reinforced Concrete Pavement CO #4	2,300.000	(2,300.000)	0.00	S.Y.	\$ 55.00	\$ (126,500.00)
1-120	Construct 8-inch High Early Strength Reinforced Concrete Pavement CO #4	2,530.000	(2,305.000)	225.00	S.Y.	\$ 53.00	\$ (122,165.00)
1-121	Construct 48-inch Deep Moisture Treated Subgrade & 8 Ft. PVC Barrier CO #3, CO #4	92,159.000	(316.000)	91,843.00	S.Y.	\$ 4.00	\$ (1,264.00)
1-125	Construct Undercut Street Header at Existing Concrete Street Pavement CO #5	524.000	(117.000)	407.00	L.F.	\$ 25.00	\$ (2,925.00)
1-127	Construct Barrier Free Ramps (Type 7) CO #3	24.000	(2.000)	22.00	Ea	\$ 2,000.00	\$ (4,000.00)
1-130	Construct Stamped & Stained Concrete (Behind Curb) FC #6	12,145.000	(2,218.000)	9,927.00	S.F	\$ 17.50	\$ (38,815.00)
1-132	Furnish & Place Topsoil (4-inches) CO #4 CO#6	179,133.000	(34,469.500)	144,663.50	S.Y.	\$ 0.50	\$ (17,234.75)
1-133	Furnish, Install & Maintain Straw or Hay Mulch (Urban) (Clay) CO #4 CO #5 CO#6	146,433.000	(50,723.000)	95,710.00	S.Y.	\$ 0.27	\$ (13,695.21)
1-140	Unclassified Channel and Detention Pond Excavation CO #5	63,240.000	(20.000)	63,220.00	C.Y.	\$ 10.00	\$ (200.00)
1-149	Furnish & Install 30-inch R.C.P. (Class III) by Open Cut w/Class C Embedment CO #4, FC #2	245.000	(61.000)	184.00	L.F.	\$ 118.00	\$ (7,198.00)
1-164	Construct Parallel Wingwalls (PW) with Apron (2-10'x6' Culvert)	2.000	(0.150)	1.85	L.S.	\$ 53,500.00	\$ (8,025.00)
1-171	Construct Steel Pedestrian Rail Along Headwalls	218.000	(68.000)	150.00	L.F.	\$ 150.00	\$ (10,200.00)
1-183	Construct TxDOT (TY F) Grouted Stone Riprap FC #13	2,189.000	(366.000)	1,823.00	S.Y.	\$ 53.00	\$ (19,398.00)
1-184	Construct Gabion Wall	525.000	(317.000)	208.00	C.Y.	\$ 210.00	\$ (66,570.00)
1-185	Construct 12" Gabion Mattress with 18" Toe Wall on All Edges FC #8	390.000	(85.000)	305.00	C.Y.	\$ 369.00	\$ (31,365.00)
1-188	Furnish, Install and Maintain Sediment Control Fence	29,450.000	(21,816.000)	7,634.00	L.F.	\$ 1.25	\$ (27,270.00)
1-189	Remove Sediment Control Fence	29,450.000	(21,816.000)	7,634.00	L.F.	\$ 0.10	\$ (2,181.60)
1-190	Furnish, Install and Maintain Inlet Erosion Protection Device	63.000	(51.000)	12.00	Ea.	\$ 135.00	\$ (6,885.00)
1-191	Remove Inlet Erosion Protection Device	63.000	(51.000)	12.00	Ea.	\$ 10.00	\$ (510.00)
1-192	Furnish, Install and Maintain Rock Filter Dams (Type 1)	360.000	(141.000)	219.00	L.F.	\$ 27.00	\$ (3,807.00)
1-193	Remove Rock Filter Dams (Type 1)	360.000	(141.000)	219.00	L.F.	\$ 1.00	\$ (141.00)
1-194	Furnish, Install and Maintain Construction Entrance/Exit	333.000	(333.000)	0.00	S.Y.	\$ 15.00	\$ (4,995.00)
1-195	Remove Construction Entrance/Exit (Type 2)	333.000	(333.000)	0.00	S.Y.	\$ 1.00	\$ (333.00)
1-201	Furnish and Install (100 mil) (Y) 24" (SLD) Pavement Marker Line (Diagonal) CO #4	2,354.000	(1,674.000)	680.00	L.F.	\$ 6.00	\$ (10,044.00)
1-204	Furnish and Install White Thermoplastic Paint Marking (100 mil) (Railroad Crossing)	2.000	(2.000)	0.00	Ea.	\$ 750.00	\$ (1,500.00)
1-214	Furnish & Install 2-inch PVC Conduit w/Detectable Tape & Pull String (Lighting) CO	5,676.600	(47.000)	5,629.60	L.F.	\$ 11.00	\$ (517.00)
1-216	Adjust Existing Water Valve Box and Cover (<= 3 feet)	18.000	(12.000)	6.00	Ea.	\$ 375.00	\$ (4,500.00)
1-217	Adjust Existing Water Valve Box and Cover With Valve Stem Extension (> 3 feet)	5.000	(5.000)	0.00	Ea.	\$ 575.00	\$ (2,875.00)
1-218	Adjust Existing Fire Hydrant to Grade	10.000	(3.000)	7.00	Ea.	\$ 2,000.00	\$ (6,000.00)
1-220	Connect Existing Flush Valve to Proposed Inlet	1.000	(1.000)	0.00	Ea.	\$ 1,500.00	\$ (1,500.00)
1-222	Furnish Field Office Facilities for Construction Supervisor and Inspection Personnel	28.000	(18.708)	9.29	Mo.	\$ 4,000.00	\$ (74,833.20)
CO-5.1i	Irrigation System Repairs Allowance	1.00	(0.079)	0.92	L.S.	\$10,000.00	\$ (790.21)
N/A	Change Order No. 5 Round-off Correction	0.00	1.000	1	L.S.	(\$43.49)	\$ (43.49)
Total Underrunning Pay Items:							\$ (618,685.46)

C. EFFECT OF CHANGE ON CONTRACT AMOUNT (Continued):

Item No.	Description	Previous Quantity (Through CO-6.2)	Quantity This Change Order No. 6.3b	Revised Quantity	Units	Contract Price	Total Amount of Change
1-102	Remove Exist. Concrete Pvmt. or Walk CO #4 CO #5	6,313.00	42.000	6,355	S.Y.	\$ 8.00	\$ 336.00
1-108	Remove Exist. Chain Link Fence FC#3	590.00	720.000	1,310	L.F.	\$ 2.00	\$ 1,440.00
1-113	Stockpile Excavated Material from DNT Channel	2,500.00	455.000	2,955	C.Y.	\$ 10.00	\$ 4,550.00
1-115	2-Inch Type B HMA (Base Course)	4,950.00	319.000	5,269	S.Y.	\$ 12.35	\$ 3,939.65
1-117	Construct 9-inch Continuously Reinforced Concrete Pavement CO #3 FC #15 FC #17	72,472.00	5,053.000	77,525	S.Y.	\$ 50.00	\$ 252,650.00
1-119	Construct 8-inch Continuously Reinforced Concrete Pavement CO #4 CO #5	3,322.00	381.000	3,703	S.Y.	\$ 48.00	\$ 18,288.00
1-122	Construct 6-inch Monolithic Concrete Curb FC #16 CO #5 CO#6	36,853.00	270.000	37,123	L.F.	\$ 1.00	\$ 270.00
1-126	Construct 6-inch Reinforced Concrete Sidewalk CO #3, FC #1, FC #4, FC #7, FC #9	5,841.00	519.000	6,360	S.Y.	\$ 50.00	\$ 25,950.00
1-129	Construct Steel Pedestrian Rail Along Sidewalk	3,849.00	488.000	4,337	L.F.	\$ 110.00	\$ 53,680.00
1-131	Construct Stamped & Stained Concrete (Median Noses)	3,576.00	215.000	3,791	S.F.	\$ 27.00	\$ 5,805.00
1-135	Remove Temporary HMA Pavement, Flexible Base and Embankment	4,950.00	319.000	5,269	S.Y.	\$ 1.00	\$ 319.00
1-145	Furnish & Install 24-inch R.C.P. (Class III) by Open Cut w/Class C Embedment CO #4, FC	1,153.00	61.000	1,214	L.F.	\$ 95.00	\$ 5,795.00
1-178	Construct 5-ft. Type "B" Storm Sewer Manhole FC #5	2.00	1.000	3	Ea.	\$ 7,000.00	\$ 7,000.00
1-181	Construct Concrete 5" Reinf. Conc. Pilot Channel or Flume FC #11, FC #12	1,495.00	141.000	1,636	S.Y.	\$ 63.00	\$ 8,883.00
1-182	Construct Reinforced Concrete Channel Riprap (RR-8) (5-Inches) FC #10	2,770.00	710.000	3,480	S.Y.	\$ 65.00	\$ 46,150.00
1-197	Furnish and Install (100 mil) (W) 8" (SLD) Pavement Marker Line (Left-Right Turn) CO #4	5,820.00	2,847.000	8,667	L.F.	\$ 2.00	\$ 5,694.00
1-198	Furnish and Install (100 mil) (W) 12" (SLD) Pavement Marker Line (Pedestrian Crossing)	775.00	262.000	1,037	L.F.	\$ 4.00	\$ 1,048.00
1-199	Furnish and Install (100 mil) (W) 24" (SLD) Pvmt. Marker Line (Stop-Diagonal Line-Ped)	792.00	133.000	925	L.F.	\$ 6.00	\$ 798.00
1-200	Furnish and Install (100 mil) (Y) 6" (SLD) Pavement Marker Lane Line with Raised Pav	5,025.00	704.000	5,729	L.F.	\$ 1.70	\$ 1,196.80
1-202	Furnish and Install White Thermoplastic Paint Marking (100 mil) (Straight and Turn Arrow)	2.00	1.000	3	L.F.	\$ 175.00	\$ 175.00
1-203	Furnish and Install White Thermoplastic Paint Marking (100 mil) (Turn Arrow) CO #4 CO#5	28.00	12.000	40	L.F.	\$ 130.00	\$ 1,560.00
1-207	Furnish and Install Small Roadside Sign Assembly (Type 1T)	2.00	2.000	4	Ea.	\$ 600.00	\$ 1,200.00
1-213	Furnish & Install 4-inch PVC Conduit w/Detectable Tape & Pull String (Irrigation)	2,247.00	146.000	2,393	L.F.	\$ 18.60	\$ 2,715.60
2-103	Construct 36-inch Drilled Shaft	2,982.00	19.550	3,001.55	L.F.	\$ 149.00	\$ 2,912.95
2-111	Construct Approach Slab	194.00	30.850	224.85	C.Y.	\$ 427.00	\$ 13,172.95
2-113	Construct Concrete Flume for MSE Wall	3,401.00	1,029.000	4,430	S.F.	\$ 7.00	\$ 7,203.00
2-115	Construct MSE Wall Flex Base Subgrade (TxDOT Item 247 Grade A, B or D)	1,302.00	345.000	1,647	S.Y.	\$ 60.00	\$ 20,700.00
CO-4.1	Change Order No. 4-1-117.4A-Construct 9-Inch Continuously Reinforced Concrete Pavement	3,921.89	1.000	3,923	S.Y.	\$76.04	\$ 76.04
CO-5.2a	Saw Cut and Remove Existing Concrete Curb and Gutter	616.00	308.000	924	L.F.	\$26.51	\$ 8,165.08
CO-5.2b	Unclassified Street Excavation for Left Turn Lanes	456.00	227.939	684	C.Y.	\$13.13	\$ 2,992.84
CO-5.2c	Longitudinal Butt Joint	440.00	220.000	660	L.F.	\$14.90	\$ 3,278.00
N/A	Change Order No. 4 Total Amount Correction	0.00	1.000	1	L.S.	\$4.40	\$ 4.40
Total Overrunning Pay Items:							\$ 507,948.31

C. EFFECT OF CHANGE ON CONTRACT AMOUNT (Continued):

Summary Total, Change Order No. 6:

1. Additonal Left Turn Storage Bay:	\$	80,141.53
2. DNT Channel Modifications:	\$	179,011.40
3. Final Quantity Reconciliation:		
a) Underrunning Pay Items:	\$	(618,685.46)
b) Overunning Pay Items:	\$	507,948.31
Subtotal, Final Quantity Reconciliation:	\$	(110,737.15)
Grand Total, Change Order No. 6:	\$	148,415.78

Original Contract Amount	\$	21,917,967.50
Change Order No. 1	\$	84,516.98
Change Order No. 2	\$	975,536.93
Change Order No. 3	\$	633,962.85
Change Order No. 4	\$	380,138.11
Change Order No. 5	\$	458,659.96
Change Order No. 6	\$	148,415.78
Revised Contact Amount:	\$	24,599,198.11

D. EFFECT OF CHANGE ON CONTRACT TIME

The work required under this change order adds 0 calendar days to this project

Original Contract Amount	633	Calendar Days
Change Order No. 1	0	Calendar Days
Change Order No. 2	0	Calendar Days
Change Order No. 3	0	Calendar Days
Change Order No. 4	0	Calendar Days
Change Order No. 5	51	Calendar Days
Change Order No. 6	0	Calendar Days
Revised Contact Amount:	684	Calendar Days

E. AGREEMENT

By the signatures below of duly authorized agents, Collin County, Texas and Mario Sinacola & Sons Excavation, Inc. do hereby agree to append this Change Order No. 5 to the original contract between themselves, dated January 4, 2021.

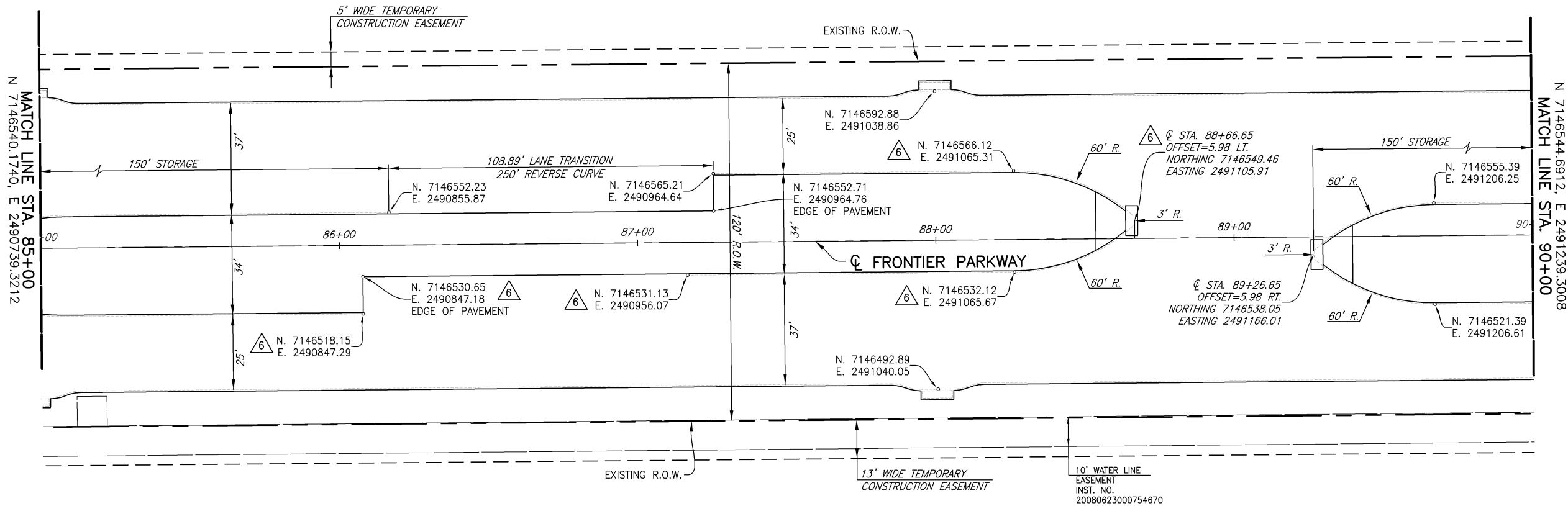
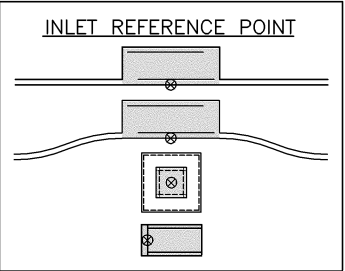
<u>COLLIN COUNTY, TEXAS</u> Owner	<u>MARIO SINACOLA & SONS EXCAVATION, INC.</u> Contractor
By: _____ (signature)	By: _____ (signature)
Name: _____ (print name)	Name: <u>Brenden S. Missell</u> (print name)
Title: _____	Title: <u>VICE PRESIDENT OF OPERATIONS</u>
Date: _____	Date: _____
Attest: _____	Attest: _____

ATTACHMENTS:

1. Construction plan sheets GC19A, P18A and PM18A, marked "Change Order No. 6" in the lower left-hand corner.
2. Construction Plan Sheets D15-D19 marked "Change Order No. 6" in the lower left-hand corner

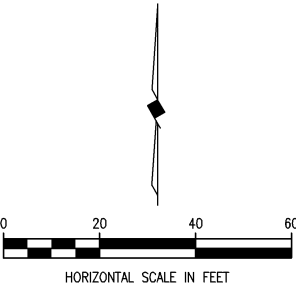
LFC LAND COMPANY II, L.L.C.

INST. NO. 20121113001449460



FRISCO TOLLWAY
PARTNERS LTD.
INST. NO. 20040309000331760

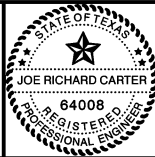
- NOTES:
- TEXAS STATE PLANE GRID COORDINATES, NAD 83, NORTH CENTRAL ZONE US FOOT, TX83-NCF, ESPG CODE 2276. TO CONVERT FROM GRID COORDINATES TO SURFACE COORDINATES MULTIPLY TIMES THE COLLIN COUNTY ADJUSTMENT FACTOR OF 1.00015271.
 - ALL COORDINATES, DIMENSIONS AND RADII SHOWN AT CURB LOCATIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
 - COORDINATES SHOWN AT INLET LOCATIONS ARE TO THE CENTER OF THE FACE OF INLET.



6 CHANGE ORDER NO. 6 - ADD LEFT TURN LANE (150' STORAGE) (04/06/2023)

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900

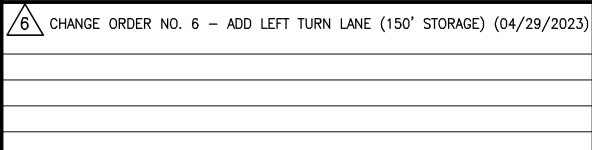
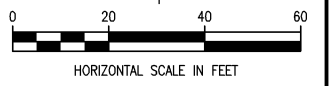
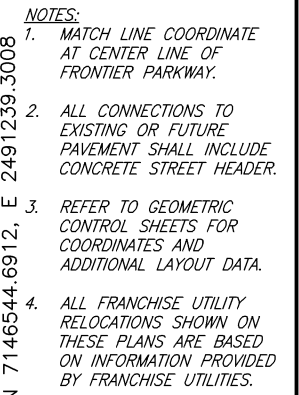


Joe Richard Carter
Sept. 4, 2020

COLLIN COUNTY, TEXAS
FRONTIER PARKWAY PAVING AND DRAINAGE IMPROVEMENTS
PROPOSED PAVEMENT
GEOMETRIC CONTROL
STA. 85+00 TO STA. 90+00

BHC
PROJECT NO.
2016-137
April 2023

SHEET NO.
GC19A



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

A circular professional engineer seal for the State of Texas. The outer ring contains the text "STATE OF TEXAS" at the top and "REGISTERED PROFESSIONAL ENGINEER" at the bottom, separated by stars. The center of the seal features a five-pointed star above the name "JOE RICHARD CARTER" and the license number "64008".

for Richard Carter
Sept. 4, 2020

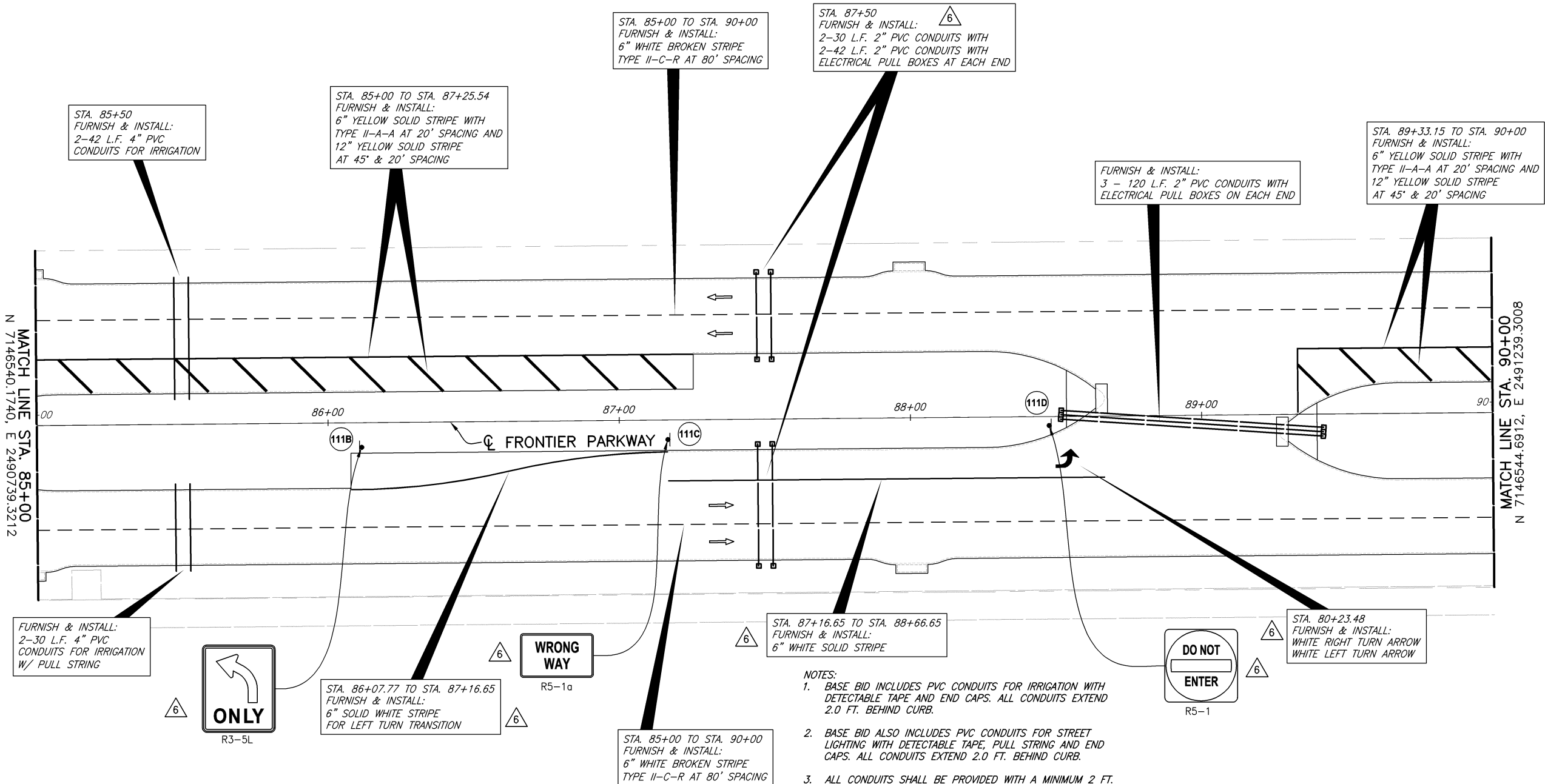
COLLIN COUNTY, TEXAS
FRONTIER PARKWAY PAVING AND DRAINAGE IMPROVEMENTS

PAVING PLAN AND PROFILE
STA. 85+00 TO STA. 90+00

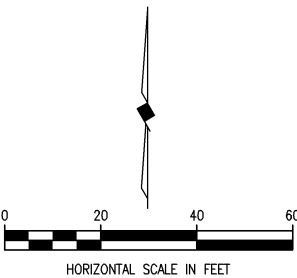
BHC PROJECT NO. 2016-137 April 2023	SHEET NO. P18A
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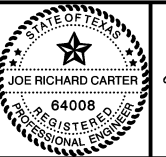
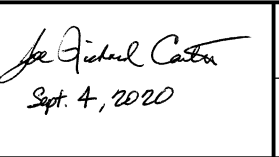
LEGEND

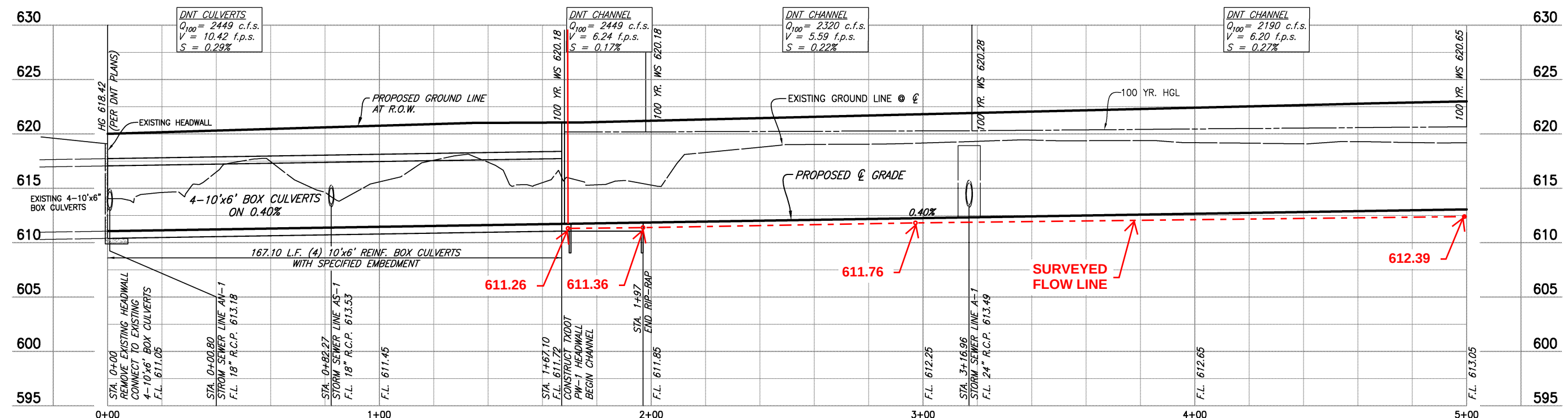
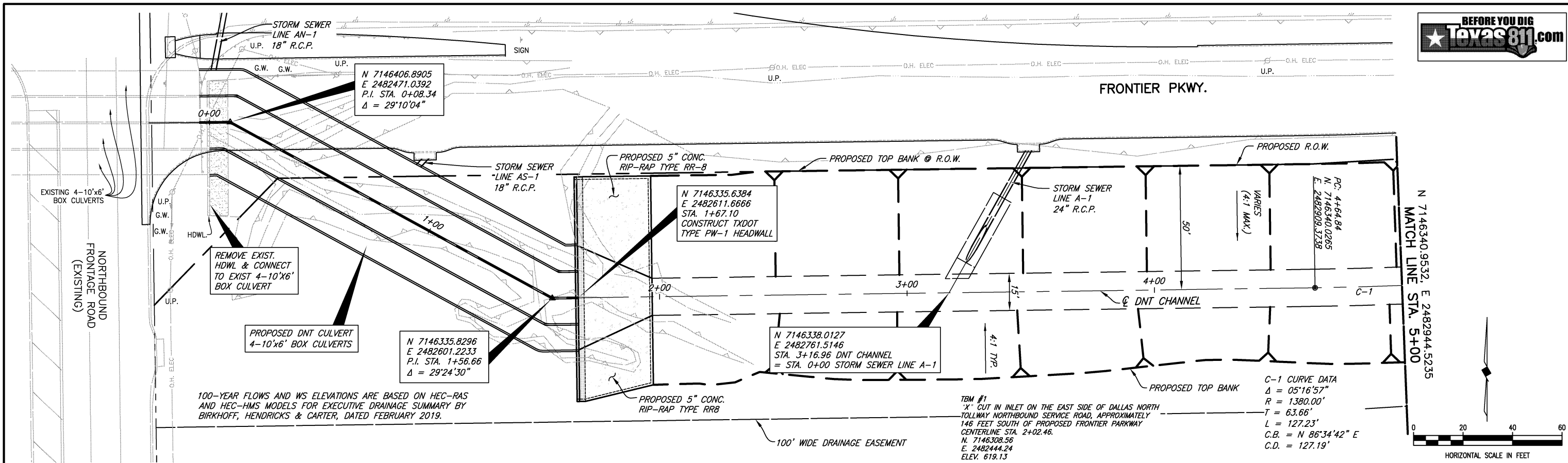
TRAFFIC FLOW DIRECTION
SIGN



- NOTES:
1. BASE BID INCLUDES PVC CONDUITS FOR IRRIGATION WITH DETECTABLE TAPE AND END CAPS. ALL CONDUITS EXTEND 2.0 FT. BEHIND CURB.
 2. BASE BID ALSO INCLUDES PVC CONDUITS FOR STREET LIGHTING WITH DETECTABLE TAPE, PULL STRING AND END CAPS. ALL CONDUITS EXTEND 2.0 FT. BEHIND CURB.
 3. ALL CONDUITS SHALL BE PROVIDED WITH A MINIMUM 2 FT. OF COVER TO FINISHED GRADE ON EACH END OF THE CONDUIT AND SHALL BE FURNISHED AND INSTALLED WITH SELECT MATERIAL EMBEDMENT 4-INCHES MINIMUM ON ALL SIDES.
 4. THERE SHALL BE NO SEPARATE PAYMENT FOR CONNECTIONS OF MBGF TO BRIDGE TRAFFIC RAIL.
 5. SIGN LOCATIONS ARE APPROXIMATE SEE NOTES ON SIGN SUMMARY SHEETS.
 6. ALL SIGN PLACEMENT AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE TEXAS MUTCD AND DETAILS INCLUDED IN THE PLANS.



6 CHANGE ORDER NO. 6 - ADD LEFT TURN LANE (150' STORAGE) (04/29/2023)	These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.	BIRKHOFF, HENDRICKS & CARTER, L.L.P. PROFESSIONAL ENGINEERS TBPE Firm No. 526; TBPLS Firm No. 10031800 11910 Greenville Ave., Suite 600 Dallas, Texas 75243 (214) 361-7900		 Sgt. 4, 2020	COLLIN COUNTY, TEXAS FRONTIER PARKWAY PAVING AND DRAINAGE IMPROVEMENTS PERMANENT SIGNING, MARKINGS, BARRIERS & CONDUITS STA. 85+00 TO STA. 90+00	BHC PROJECT NO. 2016-137 April 2023	SHEET NO. PM18A
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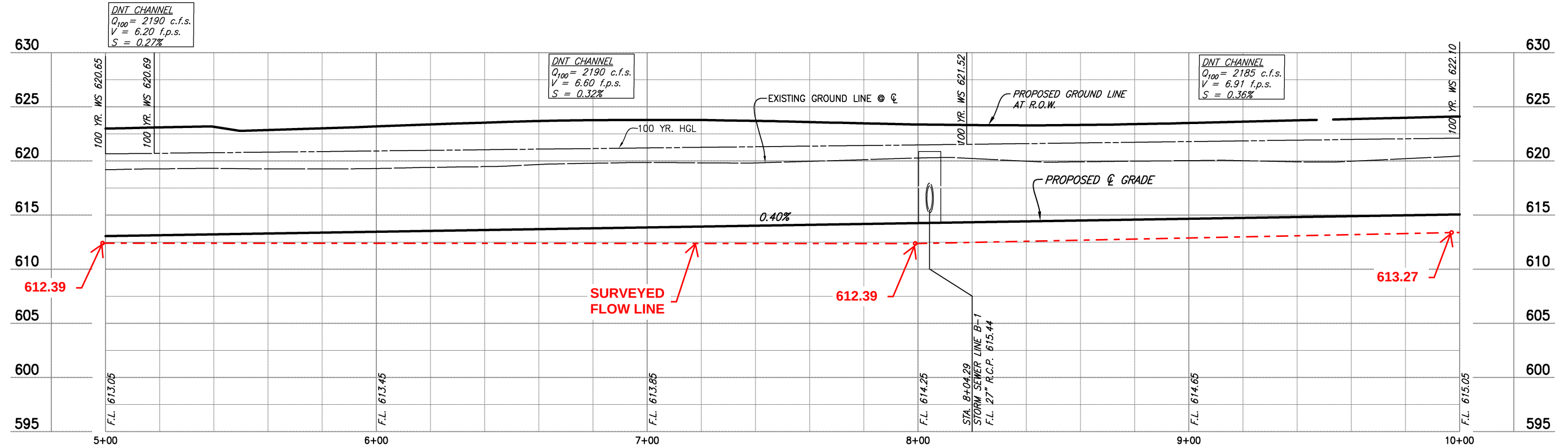
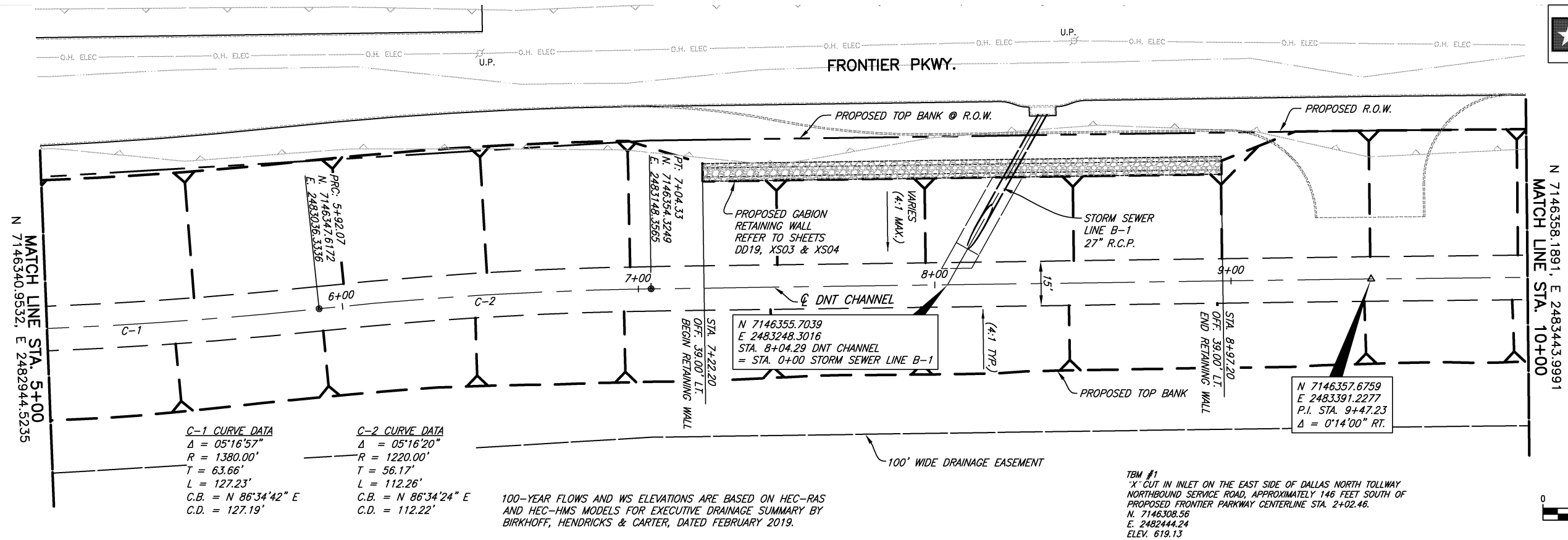


Joe Richard Carter
Sept. 4, 2020

COLLIN COUNTY, TEXAS
FRONTIER PARKWAY PAVING AND DRAINAGE IMPROVEMENTS
DNT CHANNEL PLAN-PROFILE
STA. 0+00 TO STA. 5+00

BHC
PROJECT NO.
2016-137
September 2020

SHEET NO.
D15



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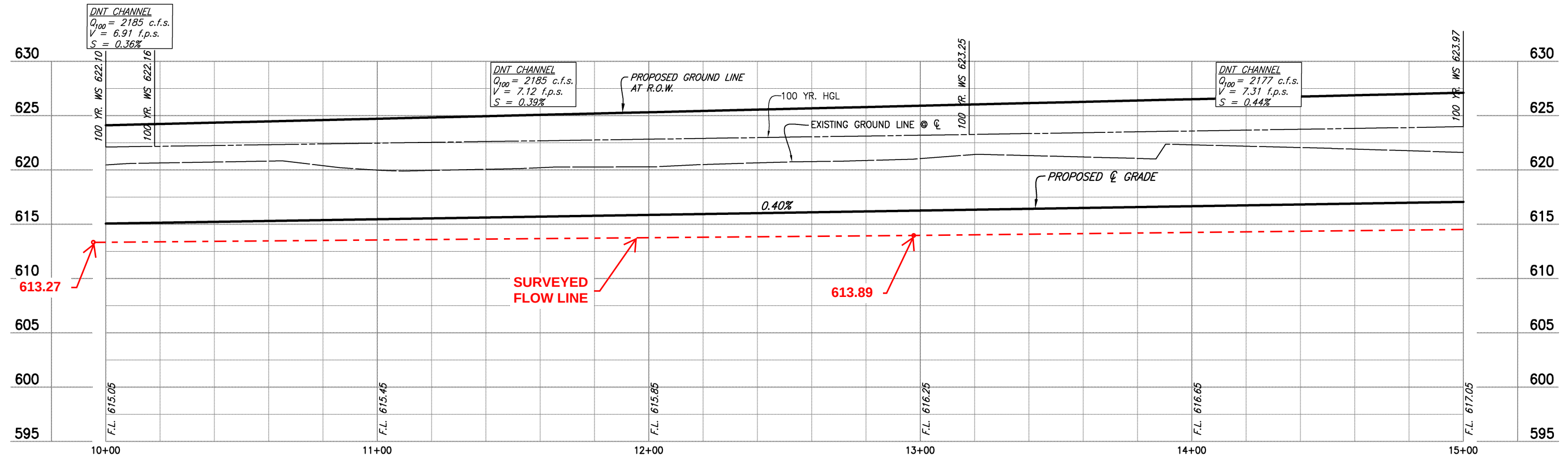
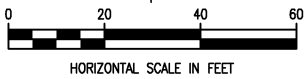
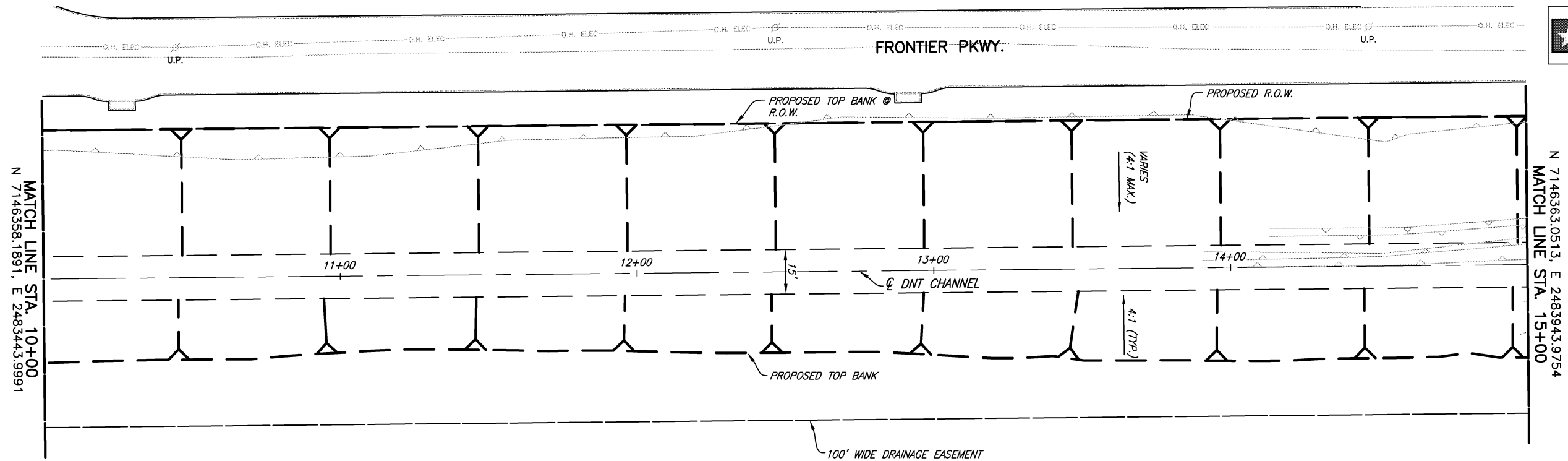


Joe Richard Carter
Sept. 4, 2020

COLLIN COUNTY, TEXAS
FRONTIER PARKWAY PAVING AND DRAINAGE IMPROVEMENTS
DNT CHANNEL PLAN-PROFILE
STA. 5+00 TO STA. 10+00

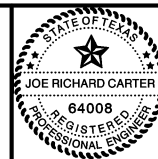
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PROJECT NO.
2016-137
September 2020

SHEET NO.
D16



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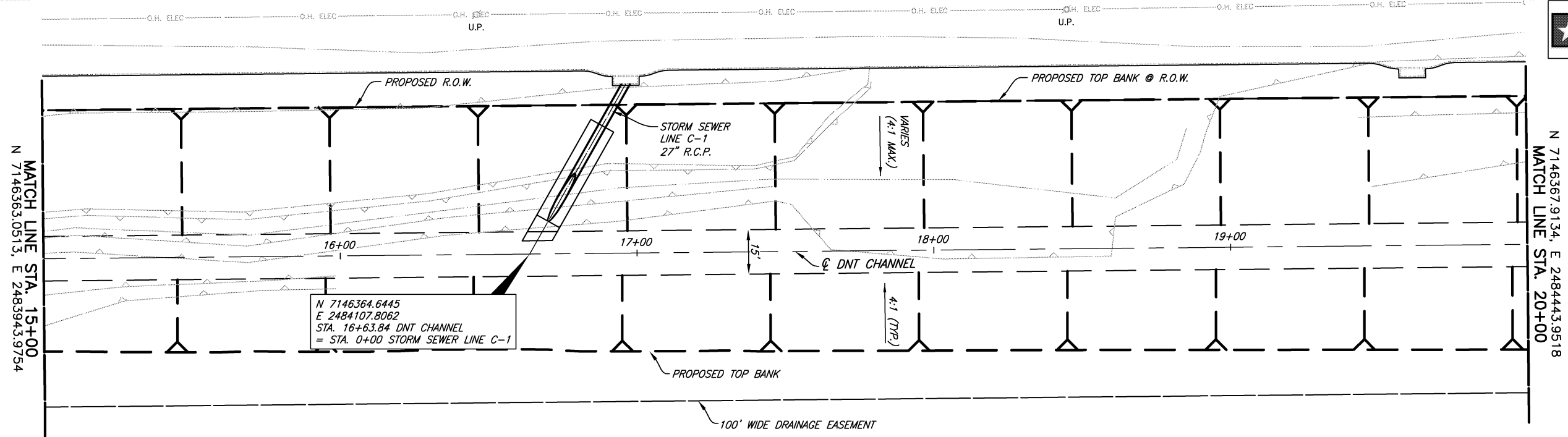


Joe Richard Carter
Sept. 4, 2020

COLLIN COUNTY, TEXAS
FRONTIER PARKWAY PAVING AND DRAINAGE IMPROVEMENTS
DNT CHANNEL PLAN-PROFILE
STA. 10+00 TO STA. 15+00

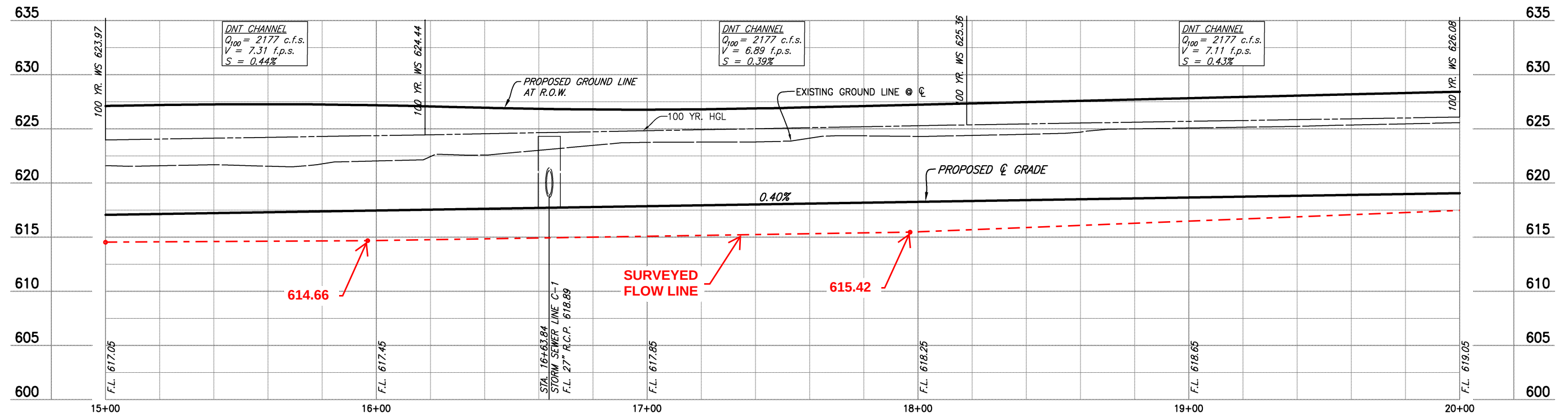
BHC
PROJECT NO.
2016-137
September 2020

SHEET NO.
D17



100-YEAR FLOWS AND WS ELEVATIONS ARE BASED ON HEC-RAS AND HEC-HMS MODELS FOR EXECUTIVE DRAINAGE SUMMARY BY BIRKHOFF, HENDRICKS & CARTER, DATED FEBRUARY 2019.

BM #3
"X" CUT IN INLET ON THE WEST SIDE OF BRIDGewater BLVD., APPROXIMATELY 280 FEET NORTH OF PROPOSED FRONTIER PARKWAY CENTERLINE STA. 27+48.39.
N. 7146763.06
E. 2484985.27
ELEV. 629.29



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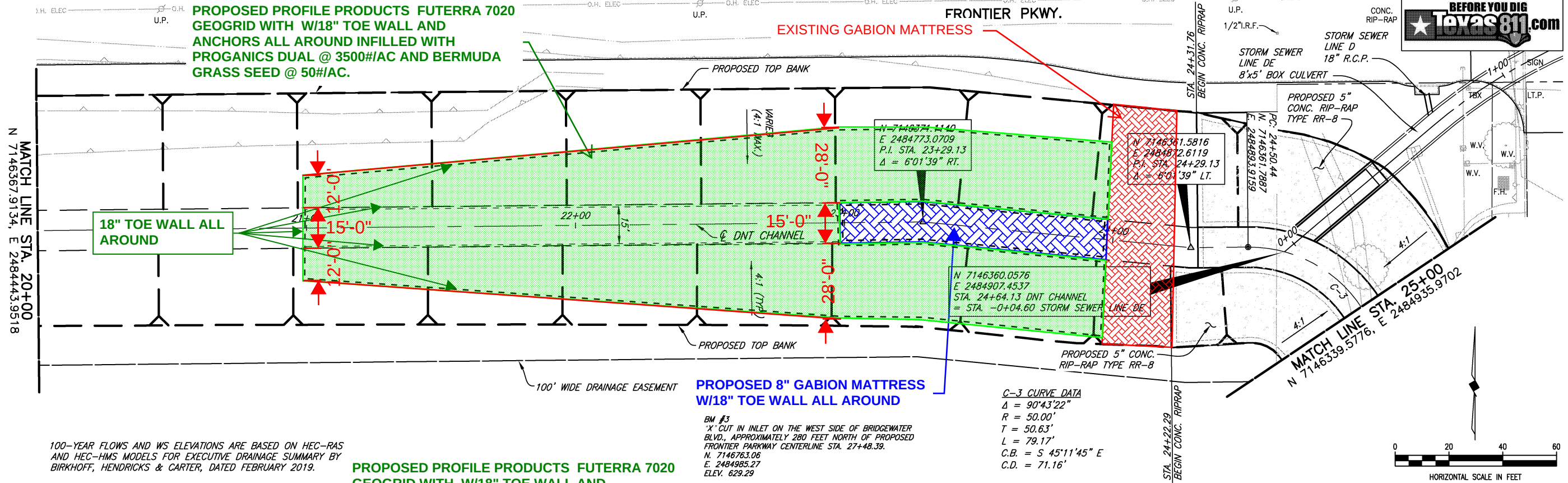


Joe Richard Carter
Sept. 4, 2020

COLLIN COUNTY, TEXAS
FRONTIER PARKWAY PAVING AND DRAINAGE IMPROVEMENTS
DNT CHANNEL PLAN-PROFILE
STA. 15+00 TO STA. 20+00

BHC
PROJECT NO.
2016-137
September 2020

SHEET NO.
D18



100-YEAR FLOWS AND WS ELEVATIONS ARE BASED ON HEC-RAS AND HEC-HMS MODELS FOR EXECUTIVE DRAINAGE SUMMARY BY BIRKHOFF, HENDRICKS & CARTER, DATED FEBRUARY 2019.

PROPOSED PROFILE PRODUCTS FUTERRA 7020 GEOGRID WITH W/18" TOE WALL AND ANCHORS ALL AROUND INFILLED WITH PROGANICS DUAL @ 3500#/AC AND BERMUDA GRASS SEED @ 50#/AC.

PROPOSED 8" GABION MATTRESS W/18" TOE WALL ALL AROUND

BM #3
X CUT IN INLET ON THE WEST SIDE OF BRIDGEWATER BLVD., APPROXIMATELY 280 FEET NORTH OF PROPOSED FRONTIER PARKWAY CENTERLINE STA. 27+48.39.
N. 7146763.06
E. 2484985.27
ELEV. 629.29

C-3 CURVE DATA
 $\Delta = 90^\circ 43' 22''$
 $R = 50.00'$
 $T = 50.63'$
 $L = 79.17'$
 $C.B. = S 45^\circ 11' 45'' E$
 $C.D. = 71.16'$

DNT CHANNEL
 $Q_{100} = 2032$ c.f.s.
 $V = 6.49$ f.p.s.
 $S = 0.11\%$

