Texas Department of Transportation
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Binkley & Barfield
TRANSPORTATION ENGINEERS
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TEXAS DEPARTMENT OF TRANSPORTATION
PRELIMINARY - SUBJECT TO CHANGE
FM 521
FORT BEND COUNTY

LIMITS: FROM 0.4 MI SW BRAZORIA COUNTY LINE
TO FM 521 ROUND TRIP
LENGTH: 4.6 MILES

OFFICE OF DISTRICT ENGINEER
HOUSTON DISTRICT

DESIGN SPEED: 45 MPH

Functional Classification: Minor Arterial

Chapter 5, Section 3 Multilane Rural Highways

Superelevation Rate: Tmax = 6%

4-17-2021

AVERAGE DAILY TRAFFIC VOLUMES

2021 (17+10 YRS)
FM 521:

A.M. PEAK	PM PEAK	DAILY
1,175	1,296	14,796

SCHEMATIC LAYOUT
PRELIMINARY - SUBJECT TO CHANGE

These documents are not intended for construction, bidding, or permit purposes. They were prepared by, or under the supervision of:

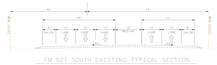
Benjamin Hart, PE PE #120174 4-17-2021 Date

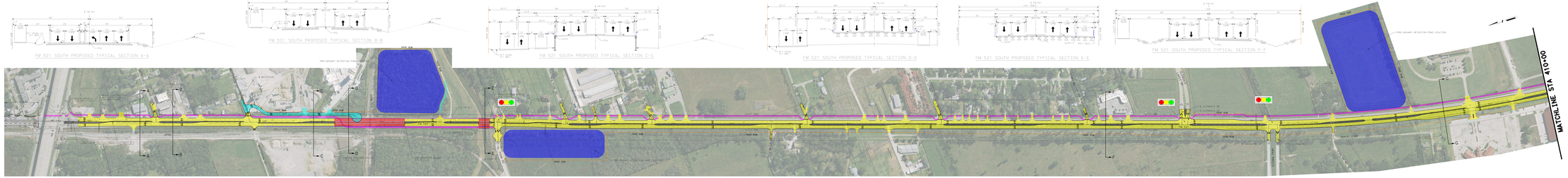
LEGEND

CURB
MAIN LINE CONCRETE PAVEMENT
ACCESS ROAD CONCRETE PAVEMENT
ASPHALT PAVEMENT
CURB
RAILROAD CROSSING
SIDEWALK
CURB RAMP
DETENTION POND
TEMPORARY CONSTRUCTION EASEMENT
RETAINING WALL
TRAFFIC SIGNAL
PROPOSED TRAFFIC FLOW ARROW
EXISTING TRAFFIC FLOW ARROW
PROPOSED RIGHT OF WAY
PROPOSED EASEMENT
EXISTING ROW

PROFILE
EXISTING GROUND
EXIST GROUND @ POL
100 YEAR HYDRAULIC GRADE LINE (WEST)
10 YEAR HYDRAULIC GRADE LINE (WEST)
10 YEAR HYDRAULIC GRADE LINE (EAST)
100 YEAR HYDRAULIC GRADE LINE (EAST)
EXISTING CULVERTS (WEST)
EXISTING CULVERTS (EAST)

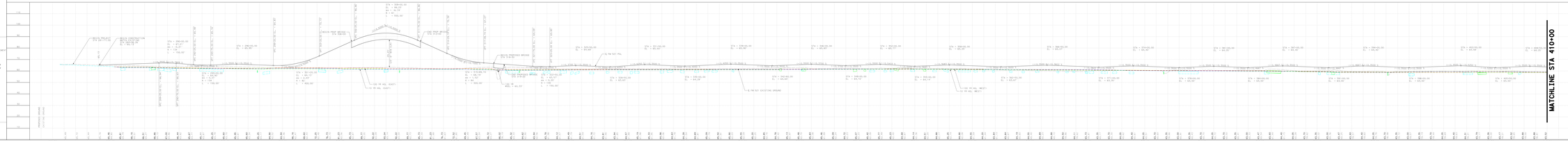
NOTES:
1. ELEVATIONS ARE BASED ON THE NAVD DATA SLAVE
2. ALL DIMENSIONS ARE BASED ON THE NAD83 SPCS TEXAS SOUTH CENTRAL ZONE, SCALE FACTOR OF 0.9999613
3. UNITS ARE IN FEET





HORIZONTAL CURVE DATA

CURVE #1	
PI STATION	287+44.57
DELTA	00°14'13.5" (RT)
DEGREE OF CURVE	0°30'00"
RADIUS	11,459.16'
TANGENT	47.49'
PC STATION	287+44.57 - 47.49 = 287+97.07
PT STATION	287+97.07 + 94.17 = 288+91.24
CURVE #2	
PI STATION	297+44.57
DELTA	00°14'13.5" (RT)
DEGREE OF CURVE	0°30'00"
RADIUS	11,459.16'
TANGENT	47.49'
PC STATION	297+44.57 - 47.49 = 297+97.07
PT STATION	297+97.07 + 94.17 = 298+91.24
CURVE #3	
PI STATION	307+44.57
DELTA	00°14'13.5" (RT)
DEGREE OF CURVE	0°30'00"
RADIUS	11,459.16'
TANGENT	47.49'
PC STATION	307+44.57 - 47.49 = 307+97.07
PT STATION	307+97.07 + 94.17 = 308+91.24
CURVE #4	
PI STATION	317+44.57
DELTA	00°14'13.5" (RT)
DEGREE OF CURVE	0°30'00"
RADIUS	11,459.16'
TANGENT	47.49'
PC STATION	317+44.57 - 47.49 = 317+97.07
PT STATION	317+97.07 + 94.17 = 318+91.24



FM 521

Texas Department of Transportation

CSJ: 0911-03-064

ROLL 1 OF 3

Scale:

Date: 4/17/2021

BEGIN PROJECT
STA 281+77

END PROJECT
STA 545+08

Texas Department of Transportation
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TEXAS DEPARTMENT OF TRANSPORTATION
PRELIMINARY - SUBJECT TO CHANGE
FM 521
FORT BEND COUNTY

LIMITS: FM90 IN S TO FM 521/FORT BEND COUNTY LINE

G.R.H.: 0+00 (S)=0+00
BEGIN: 281+77.00
LENGTH: 4.6 MILE

OFFICE OF DISTRICT ENGINEER
HOUSTON DISTRICT

DESIGN SPEED: 45 MPH

Functional Classification: Minor Arterial

Chapter 5, Section 7 Multi-Lane Rural Highway

Superelevation Rate: Tangent = 0%

6-17-2021

AVERAGE DAILY TRAFFIC VOLUMES

(Base 2017-2021 AADT)

FM 521

YEAR	ESTIMATED TRAFFIC
2021	17,000
2041	26,000

SCHEMATIC LAYOUT
PRELIMINARY - SUBJECT TO CHANGE

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Benjamin Hart, PE — PE #120774 — 6-17-2021 Date

LEGEND

CURB
- MAIN LANE CONCRETE PAVEMENT
- ACCESS ROAD CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- SIDEWALK
- RAILROAD CROSSING
- CONCRETE DRIVEWAY
- TRAFFIC ISLAND
- DETECTOR PAD
- PROFILE GRADE/FACE OF CURB
- PROPERTY LINE
- EXISTING ROW
- TEMPORARY CONSTRUCTION EASEMENT
- RETAINING WALL
- TRAFFIC SIGNAL
- TRAFFIC SIGNS
- PROPOSED TRAFFIC FLOW ARROW
- EXISTING TRAFFIC FLOW ARROW

PROFILE
- EXISTING GROUND
- EXISTING GROUND @ POL
- 100 YEAR HYDRAULIC GRADE LINE (WEST)
- 100 YEAR HYDRAULIC GRADE LINE (EAST)
- 10 YEAR HYDRAULIC GRADE LINE (WEST)
- 10 YEAR HYDRAULIC GRADE LINE (EAST)
- PROPOSED GRADE
- EXISTING CULVERTS (EAST)

NOTES:
1. ELEVATIONS ARE BASED ON THE NGVD DATA SLAVE
2. ALL DIMENSIONS ARE FROM THE BEGINNING OF PROJECT UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS ARE IN FEET.

HORIZONTAL CURVE DATA

CURVE #1
PI STATION = 287+38.75
DEGREE OF CURVE = 0° 30' 00.00" (S.T.)
DELTA = 0° 00' 00.00" (RT)
TANGENT = 0.00
PC STATION = 287+38.75
PT STATION = 287+38.75

CURVE #2
PI STATION = 293+96.74
DEGREE OF CURVE = 0° 30' 00.00"
DELTA = 0° 00' 00.00"
TANGENT = 0.00
PC STATION = 293+96.74
PT STATION = 293+96.74

CURVE #3
PI STATION = 300+54.73
DEGREE OF CURVE = 0° 30' 00.00"
DELTA = 0° 00' 00.00"
TANGENT = 0.00
PC STATION = 300+54.73
PT STATION = 300+54.73

CURVE #4
PI STATION = 307+12.72
DEGREE OF CURVE = 0° 30' 00.00"
DELTA = 0° 00' 00.00"
TANGENT = 0.00
PC STATION = 307+12.72
PT STATION = 307+12.72

CURVE #5
PI STATION = 313+70.71
DEGREE OF CURVE = 0° 30' 00.00"
DELTA = 0° 00' 00.00"
TANGENT = 0.00
PC STATION = 313+70.71
PT STATION = 313+70.71

CURVE #6
PI STATION = 320+28.70
DEGREE OF CURVE = 0° 30' 00.00"
DELTA = 0° 00' 00.00"
TANGENT = 0.00
PC STATION = 320+28.70
PT STATION = 320+28.70

FM 521 SOUTH EXISTING TYPICAL SECTION

FM 521 SOUTH PROPOSED TYPICAL SECTION A-A

FM 521 SOUTH PROPOSED TYPICAL SECTION B-B

FM 521 SOUTH PROPOSED TYPICAL SECTION C-C

MATCHLINE STA 410+00

MATCHLINE STA 410+00

FM 521

ROLL 2 OF 3

Date: 6/17/2021

CSJ: 0011-03-064

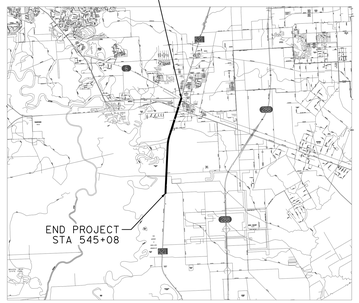
Scale:

ROLL 3 OF 3

Scale: 0" 5" 10"

Date: 6/17/2021

CSJ: 0111-03-064



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Binkley & Barfield consulting engineers

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TEXAS DEPARTMENT OF TRANSPORTATION
PRELIMINARY DESIGN SCHEMATIC
FM 521
FORT BEND COUNTY

LIMITS: FROM SH 6 TO THE BRAZORIA COUNTY LINE

C-S-J-: 0111-03-064
FED. AID PROJECT NO.:
LENGTH: 4.8 MILES

OFFICE OF DISTRICT ENGINEER
HOUSTON DISTRICT

DESIGN SPEED: 45 MPH

Functional Classification: Urban Arterial

Superelevation Rate e_{max} = 6%

Chapter 3, Section 5 Multi-Lane Rural Highways

6/17/2021

AVERAGE DAILY TRAFFIC VOLUMES

CSJ: 0111-03-064

FM 521

EXIST	OPENING	DESIGN
2020	2024	2044
19,215	23,356	48,785

SCHEMATIC LAYOUT
PRELIMINARY - SUBJECT TO CHANGE

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Benjamin Hart, PE **PE #107376** **6/17/2021 Date**

LEGEND

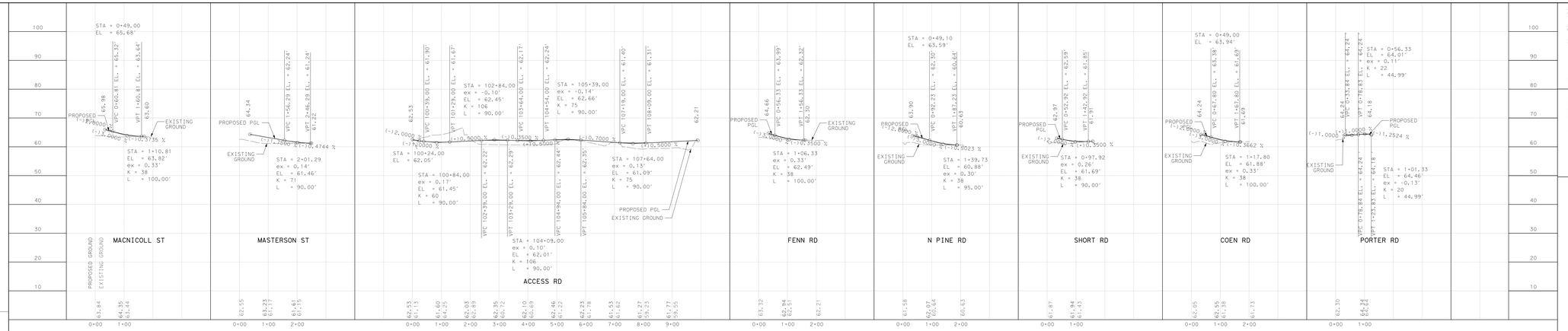
PLAN

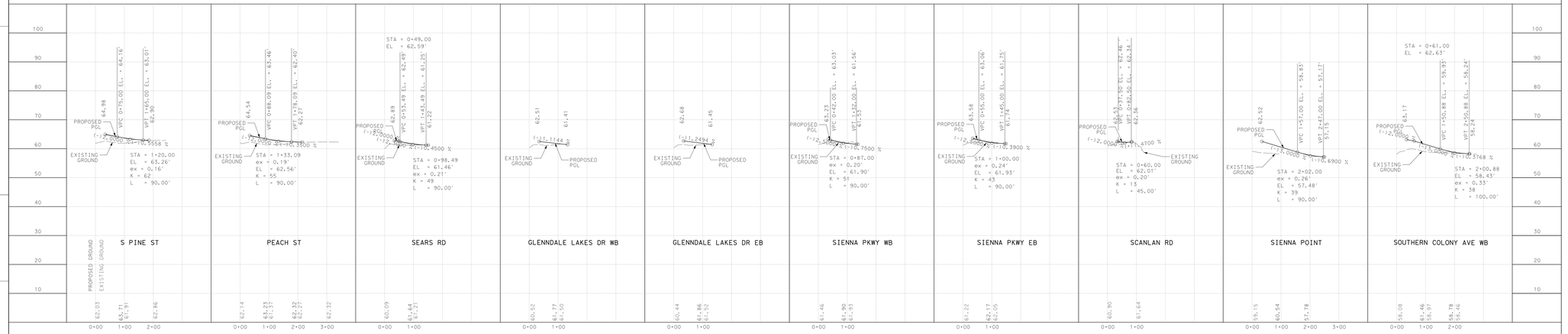
- MAIN LANE CONCRETE PAVEMENT
- ACCESS ROAD CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- BRIDGE
- RAILROAD CROSSING
- RAISED MEDIAN
- SIDE PATH
- DETENTION POND
- EDGE OF PAVEMENT/FACE OF CURB
- PROPOSED ROW
- EXISTING ROW
- TEMPORARY CONSTRUCTION EASEMENT
- RETAINING WALL
- BARRIER
- TRAFFIC SIGNAL
- PROPOSED TRAFFIC FLOW ARROW
- EXISTING TRAFFIC FLOW ARROW

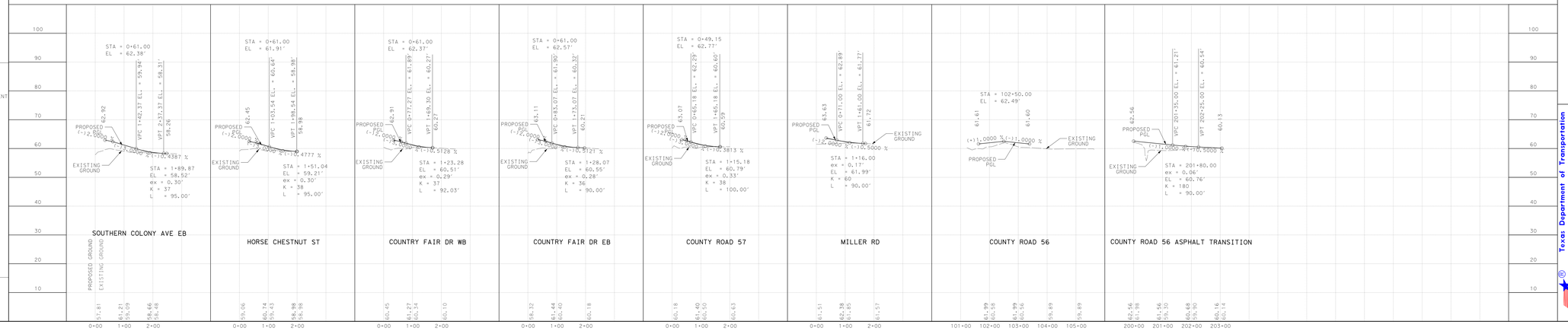
PROFILE

- MAINLANE PGL
- EXIST GROUND @ PGL
- 100 YEAR HYDRAULIC GRADE LINE (WEST)
- 100 YEAR HYDRAULIC GRADE LINE (EAST)
- 10 YEAR HYDRAULIC GRADE LINE (WEST)
- 10 YEAR HYDRAULIC GRADE LINE (EAST)
- EXISTING CULVERTS (WEST)
- EXISTING CULVERTS (EAST)

NOTES:
1. ALL BEARINGS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, FIPS 4204 AND ADJUSTED TO SURFACE USING A COMBINED SCALE FACTOR OF 1.00013. UNITS ARE US SURVEY FEET.







ROLL 3 OF 3
Scale: 0" 5" 10"
Date: 6/17/2021
CSJ: 0111-03-064

Texas Department of Transportation
FM 521
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