SCHEMATIC LAYOUT
SH 242

COUNTY: MONTGOMERY
LIMITS FROM: NEEDHAM RD
LIMITS TO: I-69 (US 59)
CSJ: 3538-01-032, etc
DATE: 12/27/2016
APPROVED: __/__/__

NOT A BIDDING DOCUMENT
________________ P.E.
TBPE NO. ________

LEGEND

DESCRIPTION	SYMBOLOGY	WEIGHT	COLOR CODE
PROPOSED MAIN LANES	—	2	BLACK -0
PROPOSED TOLL LANES	—	2	PURPLE -60
PROPOSED FRONTAGE ROADS	—	5	BLUE -1
PROPOSED RAMPS	—	2	BLUE -1
PROPOSED DIRECT CONNECTOR	—	2	ORANGE -6
PROPOSED EMBANKMENT	—	2	RED -3
PROPOSED RETAINING WALL	—	6	RED -3
PROPOSED BRIDGE BENTS	—	2	RED -3
PROPOSED NOISE WALL	—	5	MAGENTA -37
PROPOSED SIDEWALKS	—	2	MAGENTA -200
PROPOSED STRIPING	▨▨▨	1	ORANGE -6
PROPOSED LANE INDICATOR	➡	1	BLACK -0
PROPOSED RIGHT-OF-WAY	▬ ı	5	BLACK -0
CONTROL OF ACCESS	—	2	RED -3
PLANIMETRIC	⌂	1	GREEN -2
EXISTING RIGHT-OF-WAY	— –	1	BLACK -0
EXISTING ROADWAY	—	2	GREEN -2
EXISTING ROADWAY TO BE REMOVED	▨▨▨	1	BLACK -0
EXISTING LANE INDICATOR	⇨	1	BLACK -0
TRAFFIC COUNT YEAR 2016 DHV	(XXXX)	1	BLACK -0
TRAFFIC COUNT YEAR 2040 DHV	<XXXX>		

COLORFILL LEGEND

MAIN LANES	🟨
FRONTAGE ROAD/RAMPS	🟦
SIDEWALK	⬜
BRIDGE	🟪
GRASS MEDIAN	🟩

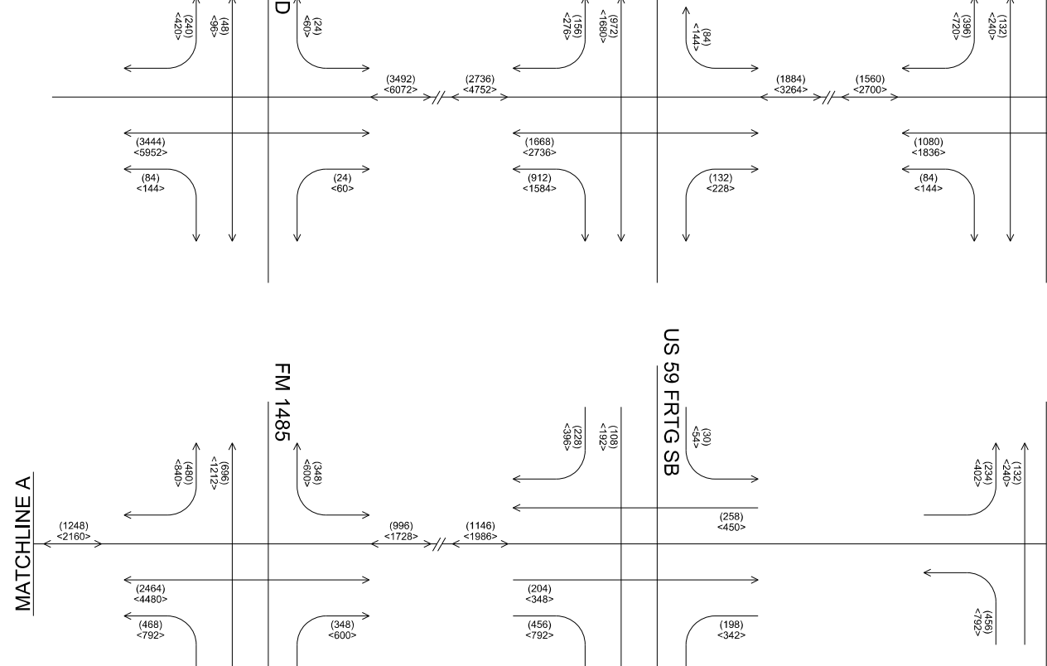
SCALE

0 100 200 300 400

DESIGN CRITERIA

FUNCTIONAL CLASSIFICATION: URBAN ARTERIAL
MAIN LANE DESIGN CRITERIA: HIGH SPEED URBAN (STA 420+00 TO 1151+30)
MAIN LANE DESIGN SPEED: 60 MPH

TRAFFIC DATA


NEEDHAM RD
FM 1314
OLD HOUSTON RD
MATCHLINE A
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(48) <96>
(24) <60>
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(3444) <5952>
(84) <144>
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(2736) <4752>
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(132) <228>
(1884) <3264>
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FM 1485
US 59 FRTG SB
US 59 FRTG NB
MATCHLINE A
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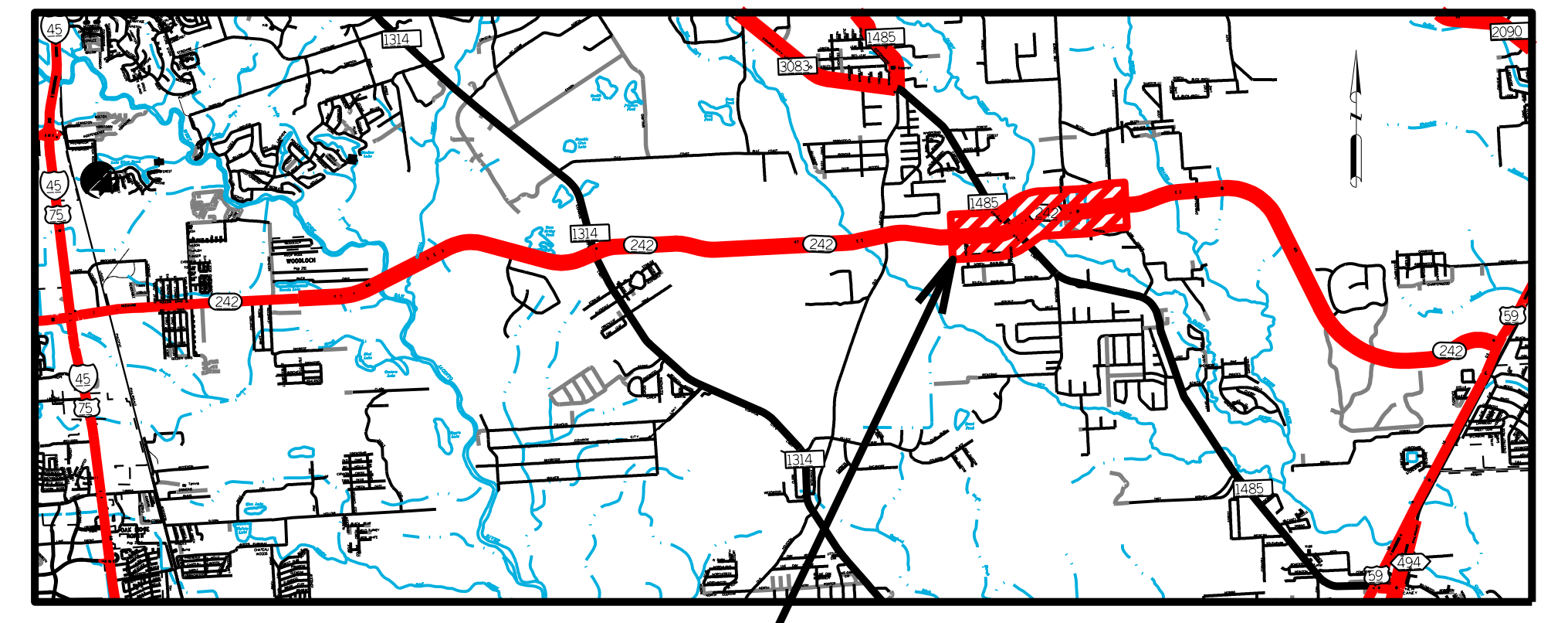
(198) <342>
(234) <402>
(132) <240>
(456) <792>

MATCH LINE 810+00
EXISTING ROW
PROPOSED WESTBOUND MAINLANES
HICKORY ROAD
TEXAS 242
EXISTING ROADWAY TO BE CONVERTED TO EASTBOUND MAINLANES
D
D
FM 1485
CANEY CREEK
PORTMAN HAYDEN ROAD
PROPOSED WESTBOUND MAINLANES
EXISTING ROADWAY TO BE CONVERTED TO EASTBOUND MAINLANES
TEXAS 242
EXISTING ROW
FIRETOWER ROAD
MATCH LINE 940+00
℄
190' EXISTING ROW
95'
95'
3' 5' 29' 10' 12' 12' 4' 20' 16' 8' 12' 12' 10' 29' 5' 3'
SDWLK
3:1
4:1
2%
PGL
10:1
10:1
PGL
6:1
6:1
SDWLK
TYPICAL SECTION
D-D
℄
190' EXISTING ROW
95'
95'
16' 8' 12' 12' 10' 37'
EXISTING TYPICAL SECTION

170
150
130
110
90
WESTBOUND MAINLANE PROPOSED PROFILE
EXISTING GROUND AT WESTBOUND MAINLANE PGL
EXISTING GROUND AT EASTBOUND MAINLANE PGL
EXISTING GROUND AT CENTERLINE
VPC 821+95.00 EL. = 133.99'
VPT 824+05.00 EL. = 134.25'
STA = 823+00.00 EL = 133.73' K = 280 L = 210.00'
(-)0.2500 %
(+)0.5000
STA = 830+00.00 EL = 137.23' K = 210 L = 210.00'
(+)0.5000 %
(-)0.5000 %
VPC 828+95.00 EL. = 136.70'
VPT 831+05.00 EL. = 136.70'
(-)0.5000 %
(-)0.2500 %
STA = 839+99.98 EL = 132.23'
(-)0.2500 %
(+)0.2500 %
STA = 855+00.00 EL = 128.48'
STA = 860+00.00 EL = 129.73'
(+)0.2500 %
(-)0.2500 %
VPC 868+95.00 EL. = 127.49'
VPT 871+05.00 EL. = 127.59'
(-)0.2500 %
(+)0.3500 %
STA = 870+00.00 EL = 127.23' K = 350 L = 210.00'
STA = 882+29.89 EL = 131.53' K = 300 L = 210.00'
(+)0.3500 %
(-)0.3500 %
VPC 881+24.89 EL. = 131.16'
VPT 883+34.89 EL. = 131.16'
STA = 890+00.05 EL = 128.83'
(-)0.3500 %
(-)0.7000 %
(-)0.7000 %
(-)0.5000 %
STA = 895+00.00 EL = 125.33'
(-)0.5000 %
(+)0.2500 %
STA = 900+00.00 EL = 122.84'
(+)0.2500 %
(-)0.2500 %
STA = 905+00.00 EL = 124.09'
VPC 913+95.13 EL. = 121.85'
VPT 916+05.13 EL. = 122.63'
(-)0.2500 %
(+)1.0000 %
STA = 915+00.13 EL = 121.58' K = 168 L = 210.00'
(+)1.0000 %
(+)0.5000 %
VPC 918+95.00 EL. = 125.53'
VPT 921+05.00 EL. = 127.11'
STA = 920+00.00 EL = 126.58' K = 420 L = 210.00'
(+)0.5000 %
(-)0.2500 %
STA = 925+00.00 EL = 129.08' K = 280 L = 210.00'
VPC 923+95.00 EL. = 128.56'
VPT 926+05.00 EL. = 128.82'
(-)0.2500 %
(-)0.0000 %
STA = 940+00.00 EL = 125.33' K = 600 L = 210.00'
VPC 938+95.00 EL. = 125.60'
VPT 941+05.00 EL. = 124.70'
810+00
815+00
820+00
825+00
830+00
835+00
840+00
845+00
850+00
855+00
860+00
865+00
870+00
875+00
880+00
885+00
890+00
895+00
900+00
905+00
910+00
915+00
920+00
925+00
930+00
935+00
940+00

VICINITY MAP



WESTBOUND CURVE DATA (PROPOSED)	CENTER LINE CURVE DATA	EASTBOUND CURVE DATA (EXISTING)
PI STATION = 1822+58.91 DELTA = 9° 19' 25.00" (LT) DEGREE OF CURVE = 2° 01' 31.63" TANGENT = 230.67 LENGTH = 460.32 RADIUS = 2,828.79 PC STATION = 1820+28.24 PT STATION = 1824+88.56 SUPERELEVATION RATE 4.48%	PI STATION = 822+86.50 DELTA = 9° 19' 25.00" (LT) DEGREE OF CURVE = 2° 00' 00.00" TANGENT = 233.61 LENGTH = 466.18 RADIUS = 2,864.79 PC STATION = 820+52.89 PT STATION = 825+19.07	PI STATION = 2822+54.96 DELTA = 9° 19' 25.00" (LT) DEGREE OF CURVE = 1° 58' 30.64" TANGENT = 236.54 LENGTH = 472.04 RADIUS = 2,900.79 PC STATION = 2820+18.42 PT STATION = 2824+90.46 SUPERELEVATION RATE: MATCH EXISTING
PI STATION = 1860+36.55 DELTA = 33° 09' 27.86" (LT) DEGREE OF CURVE = 3° 03' 27.48" TANGENT = 557.87 LENGTH = 1,084.42 RADIUS = 1,873.86 PC STATION = 1854+78.68 PT STATION = 1865+63.10 SUPERELEVATION RATE 5.54%	PI STATION = 860+77.78 DELTA = 33° 09' 27.86" (LT) DEGREE OF CURVE = 3° 00' 00.00" TANGENT = 568.59 LENGTH = 1,105.26 RADIUS = 1,909.86 PC STATION = 855+09.19 PT STATION = 866+14.45	PI STATION = 2860+59.88 DELTA = 33° 09' 27.86" (LT) DEGREE OF CURVE = 2° 56' 40.19" TANGENT = 579.30 LENGTH = 1,126.09 RADIUS = 1,945.86 PC STATION = 2854+80.58 PT STATION = 2866+06.67 SUPERELEVATION RATE: MATCH EXISTING
PI STATION = 1881+35.42 DELTA = 32° 39' 58.86" (RT) DEGREE OF CURVE = 2° 56' 40.19" TANGENT = 570.23 LENGTH = 1,109.40 RADIUS = 1,945.86 PC STATION = 1875+65.19 PT STATION = 1886+74.60 SUPERELEVATION RATE 5.46%	PI STATION = 881+76.22 DELTA = 32° 39' 58.86" (RT) DEGREE OF CURVE = 3° 00' 00.00" TANGENT = 559.68 LENGTH = 1,088.88 RADIUS = 1,909.86 PC STATION = 876+16.54 PT STATION = 887+05.42	PI STATION = 2881+57.89 DELTA = 32° 39' 58.86" (RT) DEGREE OF CURVE = 3° 03' 27.48" TANGENT = 549.13 LENGTH = 1,068.35 RADIUS = 1,873.86 PC STATION = 2876+08.76 PT STATION = 2886+77.12 SUPERELEVATION RATE: MATCH EXISTING
PI STATION = 1913+70.27 DELTA = 11° 13' 01.00" (LT) DEGREE OF CURVE = 2° 01' 31.63" TANGENT = 277.79 LENGTH = 553.80 RADIUS = 2,828.79 PC STATION = 1910+92.49 PT STATION = 1916+46.28 SUPERELEVATION RATE 4.48%	PI STATION = 914+04.63 DELTA = 11° 13' 01.00" (LT) DEGREE OF CURVE = 2° 00' 00.00" TANGENT = 281.32 LENGTH = 560.85 RADIUS = 2,864.79 PC STATION = 911+23.31 PT STATION = 916+84.16	PI STATION = 2913+79.86 DELTA = 11° 13' 01.00" (LT) DEGREE OF CURVE = 1° 58' 30.64" TANGENT = 284.86 LENGTH = 567.90 RADIUS = 2,900.79 PC STATION = 2910+95.01 PT STATION = 2916+62.90 SUPERELEVATION RATE: MATCH EXISTING
PI STATION = 1926+32.90 DELTA = 11° 39' 32.00" (RT) DEGREE OF CURVE = 1° 58' 30.64" TANGENT = 296.16 LENGTH = 590.27 RADIUS = 2,900.79 PC STATION = 1923+36.74 PT STATION = 1929+27.01 SUPERELEVATION RATE 4.42%	PI STATION = 926+67.10 DELTA = 11° 39' 32.00" (RT) DEGREE OF CURVE = 2° 00' 00.00" TANGENT = 292.48 LENGTH = 582.94 RADIUS = 2,864.79 PC STATION = 923+74.62 PT STATION = 929+57.56	PI STATION = 2926+42.17 DELTA = 11° 39' 32.00" (RT) DEGREE OF CURVE = 2° 01' 31.63" TANGENT = 288.81 LENGTH = 575.62 RADIUS = 2,828.79 PC STATION = 2923+53.36 PT STATION = 2929+28.98 SUPERELEVATION RATE: MATCH EXISTING