DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE CSSTP-0006-00(049),
Cobb & Paulding Counties
SR 360 FM SR 176/COBB TO
SR 120/PAULDING
P.I. No. 0006049

OFFICE Program Delivery

DATE September 22, 2014

FROM Albert V. Shelby, III, State Program Delivery Engineer

Albert Shelby

TO Lisa Myers, State Project Review Engineer
Attention: Matt Sanders

SUBJECT **Request for VE Reversal**

Please reference the attached VE Implementation letter dated May 29, 2008 for the above referenced project. Attached is a request to reverse implementation of Alternative ROW-3.

Alternative ROW-3 recommended using retaining walls to reduce right of way impacts. The recommendation was based on an estimate that would reduce cost. Four walls were recommended at the following locations: ~sta 21+00 Lt at the Hardy dealership; ~sta 27+00 Rt at Lee Dentistry; ~sta 31+00 Lt Parcels 10/13; and ~sta 60+00 Lt Parcel 41 (Holcomb).

Since the VE study was completed, all four walls have been fully designed and incorporated into the plans. Subsequently, as a result of coordinating with the GDOT Right of Way Office, two of the walls have been re-analyzed for impacts to the properties from a Right of Way negotiations perspective; and determined that there would be a reduction in overall project costs to remove the walls. The design team recommends the removal of the following two walls:

- ~sta 31+00 Lt Parcels 10/13
- ~sta 60+00 Lt Parcel 41 (Holcomb)

If you have any questions, please contact Chandria Brown of this Office at (404) 631-1580.

BW

AVS: BWK: CLB
Attachments

SEP 2014
REC'D

Approve: Lisa L Myers — 9/25/14
State Project Review Engineer — Date

Approve: Glen Bowman — 9/29/14
Director of Engineering — Date

Approve: [illegible] — 9/30/14
Chief Engineer — Date

MULKEY
ENGINEERS & CONSULTANTS

September 8, 2014

Mr. Albert Shelby, III, State Program Delivery Engineer
Georgia Department of Transportation
Office of Program Delivery – 25th Floor
600 West Peachtree Street, NW.
Atlanta, GA 30308
Attn: Ms. Chandria Brown

RE: **VE Study Reversal**
CSSTP-0006-00(049), Cobb/Paulding Counties
PI No. 0006049
SR 360 From SR 176/New Macland Rd to SR 120/Paulding

Dear Mr. Shelby:

Mulkey Engineers requests a Value Engineering (VE) Study Implementation Reversal for PI No 0006049. The VE Implementation Letter was issued by your office on May 29, 2008 for this project.

Mulkey Engineers requests to revise implementation of Alternative ROW-3. This alternative recommended using retaining walls to reduce right of way impacts, The recommendation was based on an estimate that would reduce cost. Four walls were recommended, ~sta 21+00 Lt at the Hardy dealership, ~sta 27+00 Rt at Lee Dentistry, ~sta 31+00 Lt Parcels 10/13, and ~sta 60+00 Lt Parcel 41 (Holcomb)

Since the VE study was completed, all four walls have been fully designed and incorporated into the plans. Subsequently, two of the walls have been re-analyzed and reviewed, and determined that it would be a reduction in project cost to remove the walls. (~sta 31+00 Lt Parcels 10/13, and ~sta 60+00 Lt Parcel 41 (Holcomb) This has been fully coordinated the District 7 RW Office and through the RW negotiation process. Costs have been confirmed accordingly.

It is recommended to remove walls:

- ~sta 31+00 Lt Parcels 10/13
- ~sta 60+00 Lt Parcel 41 (Holcomb)

If you have any questions or require any additional information, please do not hesitate to call me at 678-795-3612.

Ken McDuff, P.E.
Consultant Project Manager

PI No. 0006049
SR 360 from SR 120 to SR 176
Paulding and Cobb Counties
Request for VE reversal

~ Sta 31+00 LT, Parcels 10 & 13

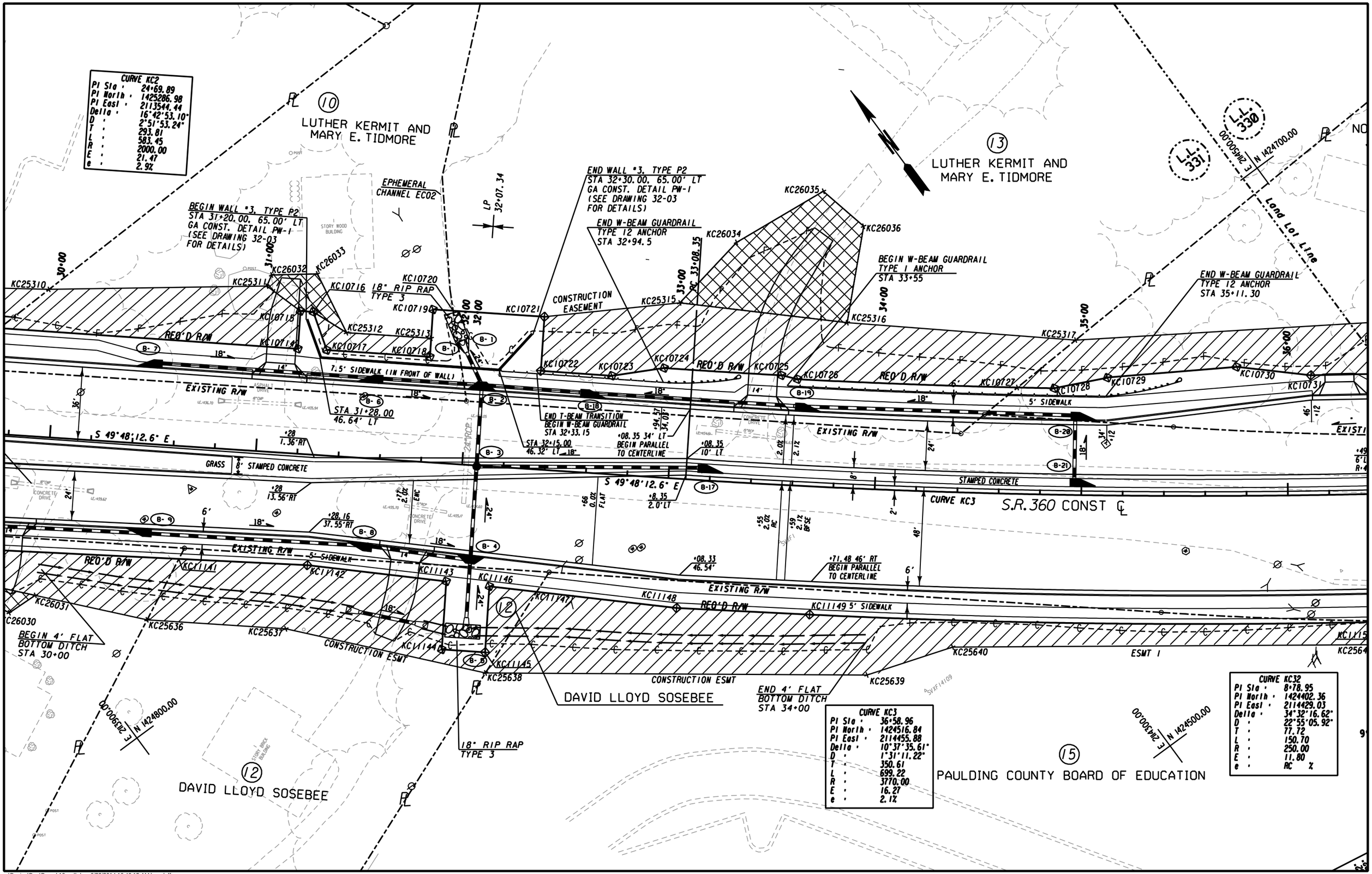
		Without wall			With wall		
Item	units	no of units	Cost/unit	Total	no of units	Cost/unit	Total
embankment (negligable)							
Retaining Wall (P2)	lf	0			77	$450	$34,650
Retaining Wall (P3)	lf	0			35	$590	$20,650
T-beam Guardrail	lf	0		$0	18	$46	$828
W-beam Guardrail	lf	150	$16	$2,400	61	$16	$976
type 12 anchor	ea	1	$1,970	$1,970	1	$1,970	$1,970
type 1 anchor	ea	1	$680	$680	0		
E&C (10%)				$505			$5,907
RW cost	sq ft	4902	$2.50	$12,255	7368	$2.50	$18,420
Easement Cost	sq ft	9029	$1.25	$11,286	5384	$1.25	$6,730
Proximity of slope loss of value (RW and esmt areas calculated from station 30+00 to 33+00)	ea			$25,000	0		$0
TOTAL				$54,096			$90,131

difference
= $36,035

~ Sta 60+00 LT, Parcel 41 (Holcomb)

		Without wall			With wall		
Item	units	no of units	Cost/unit	Total	no of units	Cost/unit	Total
embankment (negligable)							
Retaining Wall (P2)	lf	0			178	$450	$80,100
T-beam Guardrail	lf	0		$0	18	$46	$828
type 12 anchor	ea	0		$0	1	$1,970	$1,970
E&C (10%)				$0			$8,290
RW cost	sq ft			$2,248	5498	$2.50	$13,745
Easement/Demo Cost	sq ft			$0	1376	$1.25	$1,720
Relocation	ls			**$92,235**	0		$0
TOTAL				$94,483			$106,653

difference = $12,170



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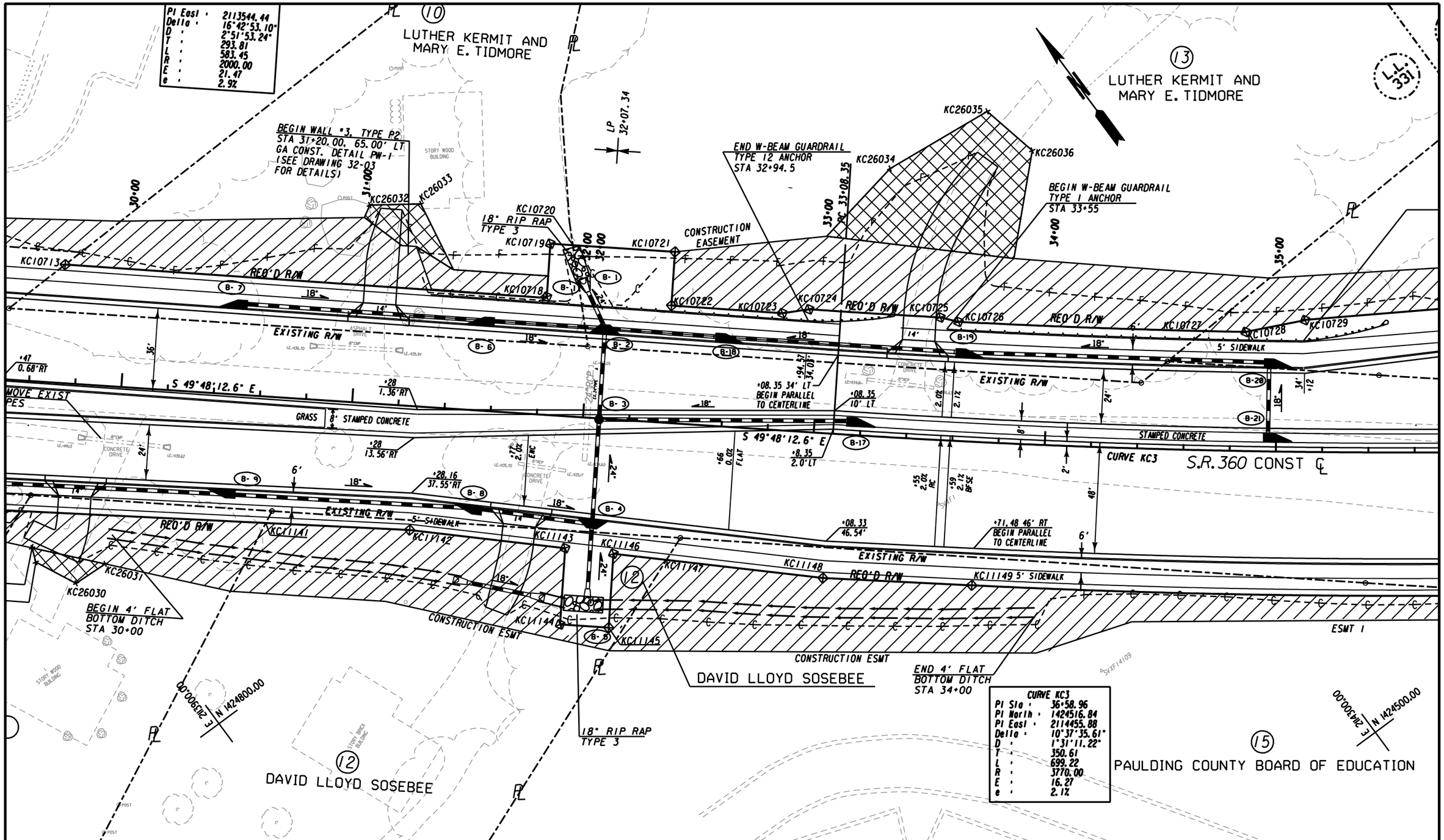

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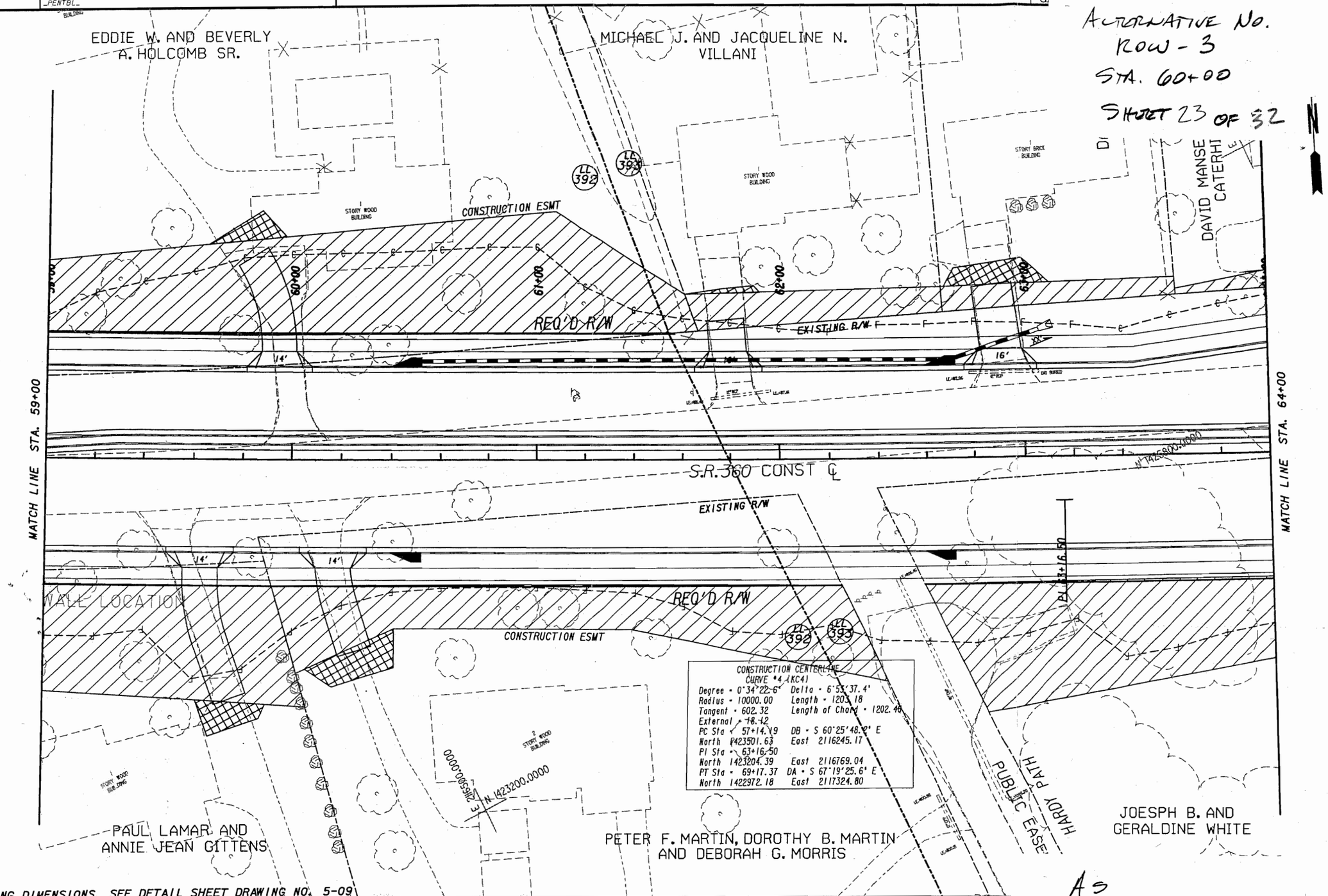
ALTERNATIVE NO.
ROW - 3
STA. 60+00
SHEET 23 OF 32



CONSTRUCTION CENTERLINE
CURVE #4 (KC4)

Degree = 0°34'22.6"	Delta = 6°53'37.4"
Radius = 10000.00	Length = 1203.18
Tangent = 602.32	Length of Chord = 1202.48
External = 18.42	
PC Sta = 57+14.19	DB = S 60°25'48.9" E
North 1423501.63	East 2116245.17
PI Sta = 63+16.50	
North 1423204.39	East 2116769.04
PT Sta = 69+17.37	DA = S 67°19'25.6" E
North 1422972.18	East 2117324.80

FOR MEDIAN OPENING DIMENSIONS, SEE DETAIL SHEET DRAWING NO. 5-09

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

MULKEY ENGINEERS & CONSULTANTS
1255 CANTON STREET, SUITE G
ROSWELL, GEORGIA 30075
(678) 461-3511

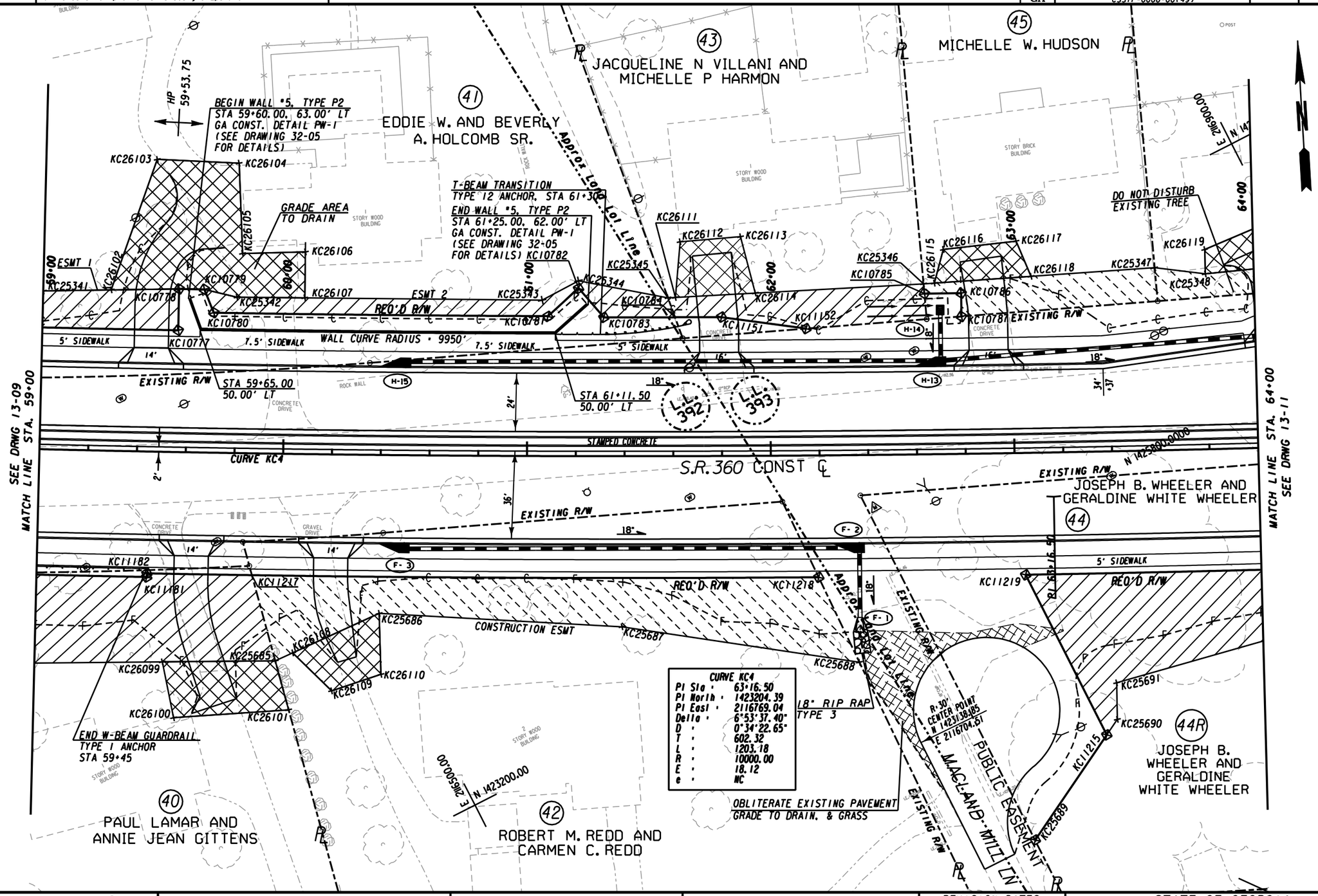
SCALE IN FEET
0 20 40 80

REVISION

AS DESIGNED

TATION

DRAWING No.
13-10



CURVE KC4	
PI Sta =	63+16.50
PI North =	1423204.39
PI East =	2116769.04
Delta =	6°53'37.40"
D =	0°34'22.65"
T =	602.32
L =	1203.18
R =	10000.00
E =	18.12
e =	NC

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

MULKEY ENGINEERS & CONSULTANTS
1255 CANTON STREET, SUITE G
ROSWELL, GEORGIA 30075
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SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PROGRAM DELIVERY

MAINLINE PLAN

DRAWING No. 13-10

VE IMPLEMENTATION LETTER
&
VE STUDY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSTP-0006-00(049) Cobb/Paulding
P.I. No.: 0006049
S.R. 360 Widening

OFFICE: Engineering Services

DATE: May 29, 2008

FROM: Brian K. Summers, PE, Project Review Engineer REW

TO: Babs Abubakari, P.E., State Consultant Design and Program Delivery Engineer

SUBJECT: **IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES**

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
PAVEMENT (P)				
P-1	Use 11-ft.-wide lanes for all lanes in lieu of 12-ft.-wide lanes	$5,586,728	No	Based on traffic counts and accident history.
P-2	Use 11-ft.-wide lanes in lieu of 12-ft.-wide lanes for through lanes only	$4,269,516	N/A	This does not apply since VE Alternative "P-1" will be implemented.
P-3	Use 11-ft.-wide lanes in lieu of 12-ft.-wide lanes for the SR 360 inside through lanes only	$2,134,655	N/A	This does not apply since VE Alternative "P-1" will be implemented.
P-4	Use 11-ft.-wide lanes in lieu of 12-ft.-wide lanes for all turn lanes only	$1,316,765	N/A	This does not apply since VE Alternative "P-1" will be implemented.
P-6	Reduce taper and storage length for left-turn lanes	$781,899	No	Based on Capacity Analysis, the storage lengths shown are what are required based on the turning movements at each intersection.

ALT #	Description	Potential Savings/LCC	Implement	Comments
PAVEMENT (P) - continued				
P-7	Take out U-turn at Station 191+00	$198,417	Yes	This should be done.
P-8	Take out U-turn at Station 53+00	$302,592	No	This U-turn would service six residential properties as well as a church. It would require them to travel another 1233' to make a U-turn.
P-9	Take out U-turn at Station 307+50	$422,560 (proposed) $211,280 (actual)	Yes/partial	The EB to WB U-turn Pavement can be removed but the WB to EB U-turn Pavement needs to be left in place in order to accommodate the seven residential properties that will need to be serviced.
RIGHT-OF-WAY (ROW)				
ROW-1	Use 18-in.-wide curb and gutter sections in lieu of 30-in.-wide sections	$2,798,813	No	Results in a decrease in gutter spread. Since 11' lanes are now being used this would reduce the offset distance from the barrier face to the travel lane.
ROW-2	Use 24-in.-wide curb and gutter sections in lieu of 30-in.-wide sections	$1,399,574 (proposed) $1,051,363 (revised)	No	Results in a decrease in gutter spread. Since 11' lanes are now being used this would reduce the offset distance from the barrier face to the travel lane.
ROW-3	Use retaining walls to reduce right-of-way impacts	$90,179	Yes	This should be done.

ALT #	Description	Potential Savings/LCC	Implement	Comments
RIGHT-OF-WAY (ROW) - continued				
ROW-4	Reduce the width of the median from 24 ft. to 22 ft. wide	$1,655,346	N/A	This does not apply since VE Alternative "ROW-5" will be implemented.
ROW-5	Reduce the width of the median from 24 ft. to 20 ft. wide	$3,310,695	Yes	This should be done.
ROW-7	Delete the 4-ft.-wide buffer strips at the left-turn pockets in the median	$1,698,871	N/A	This does not apply since VE Alternative "ROW-5" will be implemented.
ROW-8	Reduce the width of the urban shoulder from 16 ft. to 12 ft.	$5,157,262	No	The 16' shoulders are needed in order to provide a space for the Utility Companies to relocate their facilities. (See attached list of proposed Utility Companies located along this corridor.) In addition, there are approximately 209 driveways along S.R. 360 and the sidewalks would have to wrap around the back side of the driveways in order to meet ADA requirements.
ROW-10	Reduce the back of outside curb to back of outside curb distance to the minimum (combines P-1, ROW-1 & ROW-7)	$15,435,112	N/A	Does not apply since most of the savings shown has already been accounted for in VE Alternative "P-1", "ROW-1", and "ROW-7".

ALT #	Description	Potential Savings/LCC	Implement	Comments
		GENERAL (G)		
G-1	Improve intersections at Poplar Spring Road with Old Atlanta Road and Macland Circle and remove intersections of Old Atlanta Road and Macland Circle with SR 360	$374,790	No	There is a project by Paulding County to widen Poplar Springs Road. Relocating the Old Atlanta Road/Macland Circle intersection would result in additional R/W impacts. The VE Alternative would not accommodate the widening project.
G-2	Cul-de-sac Bullard Road on south side of SR 360 and delete tee intersection	$525,042	No	A subdivision has been added to the SE quadrant of Bullard Road. If a Cul-de-sac were placed on Bullard Road now if would restrict the access they currently have.
		BRIDGES (B)		
B-1	Use a precast concrete arch culvert in lieu of a bridge at Powder Springs Creek	$1,628,171	No	A culvert was considered but would not work hydraulically. The grade needs to be raised to convey the Design Year storm.
B-2	Use a single-span bridge in lieu of a three-span bridge at each bridge location	$185,341	No	Based on the Hydraulic Study, the 150' long bridge is the shortest bridge that produces acceptable backwater values.

ALT #	Description	Potential Savings/LCC	Implement	Comments
		SIDEWALKS (S)		
S-1	Place sidewalks on one side of road only	$2,148,695	No	There are numerous churches, retail and commercial developments, 165 residential properties on S.R. 360 and many other subdivisions located on side roads that would generate significant pedestrian traffic.
S-2	Use asphalt in lieu of concrete for sidewalks	$2,130,806	No	Would require significantly more future maintenance costs.
S-3	Install a sidewalk on the north side of SR 360 from Bullard Road to SR 176 and along the east side of Bullard Road in lieu of throughout the project	$3,856,191	No	There are numerous churches, retail and commercial developments, 165 residential properties on S.R. 360 and many other subdivisions located on side roads that would generate significant pedestrian traffic.
		EMBANKMENT (E)		
E-1	Use 2:1 cut slopes in lieu of 4:1 cut slopes in selected locations	$1,689,170	Yes	This should be done.
E-3	Use 2:1 fill slopes in lieu of 4:1 fill slopes in selected locations, move the sidewalk closer to the edge of road, and add W-beam guard rail along the edge of the embankment	$2,569,339	Yes	This should be done.

A meeting was held on May 21, 2008 and Scott Gero and Ken McDuff with Mulkey Engineers, Inc., Stanley Hill, and Vinesha Pegram of Consultant Design, and Brian Summers, Ron Wishon and Lisa Myers of Engineering Services were in attendance.

Additional information was provided by the Project Manager on May 28, 2008.

The results above reflect the consensus of those in attendance and those who provided input.

Approved: _____ **Date:** 6/27/08
Gerald M. Ross, P. E., Chief Engineer

BKS/REW

Attachments

c: Gus Shanine, FHWA
Todd Long
Babs Abubakari
Stanley Hill
Vinesha Pegram
James Magnus
Mickey McGee
James Harry
Kenny Beckworth
Paul Liles
Bill Ingalsbe
Bill DuVall
Steve Gaston
Emmanuella Myrthil
Patrick Allen
Lisa Myers

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STATE	PROJECT NUMBER	SHEET
GA	CSSTP-0006-00(49)	

ALTERNATIVE NO. ROW-3
STA. 31+00
SHEET 13 OF 32

AS DESIGNED

LIFETIME PROPERTIES, INC.

LUTHER KERMIT AND MARY E. TIDMORE

STORY WOOD BUILDING

LP 32+07.34

CONSTRUCTION ESMT

28+00 29+00 30+00 31+00 32+00 33+00 34+00

EXISTING R/W

REQ'D R/W

FLAT 0.0% +46

BRC 2.0% +35

CONST ℄ S.R. 360

S 49°48'12.6" E

548.82'

PC 33+08.35

RC 2.0% +55

BFSE 2.1% +59

EMC 2.0% +77

EXISTING R/W

REQ'D R/W

CONSTRUCTION ESMT

CONSTRUCTION CENTERLINE
CURVE #2 (KC2)

Degree = 2°51'53.2"	Delta = 16°42'53.7"
Radius = 2000.00	Length = 583.45
Tangent = 293.81	Length of Chord = 581.39
External = 21.47	S.E. RATE = 2.9%
PC Sta = 21+76.07	DB = S 66°31'06.7" E
North 1425404.05	East 2113274.95
PI Sta = 24+69.89	
North 1425286.98	East 2113544.44
PT Sta = 27+59.53	DA = S 49°48'12.6" E
North 1425097.35	East 2113768.86

CONSTRUCTION CENTERLINE
CURVE #3 (KC3)

Degree = 1°31'11.2"	Delta = 10°37'35.6"
Radius = 3770.00	Length = 699.22
Tangent = 350.61	Length of Chord = 698.21
External = 16.27	
PC Sta = 33+08.35	DB = S 49°48'12.6" E
North 1424743.13	East 2114188.07
PI Sta = 36+58.96	
North 1424516.84	East 2114455.88
PT Sta = 40+07.57	DA = S 60°25'48.2" E
North 1424343.82	East 2114760.83

E 2123900.0000 N 1424800.0000

STORY WOOD BUILDING

STORY BRICK BUILDING

HOLCOMBE

JAMES R. AND KATERINE BRANCH

SAM AND HAZEL ATCHESON, JR.

DAVID LLOYD SOSEBEE

EASEMENT AGREEMENT
WILLIAM T & SANDRA SNYDER,
JERRI HOLCOMBE, R ALAN &
BETH HOLCOMBE
30' WIDE FOLLOWING DRIVE
DB 591 PG 79

VING NO. 5-09

MULKEY ENGINEERS & CONSULTANTS
1255 CANTON STREET, SUITE G
ROSWELL, GEORGIA 30075
(678) 461-3511

SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:
MAINLINE PLAN

EXISTING R/W LINE
LINE
LIMITS
CONSTR
OF SLOPES
CONSTR OF SLOPES
CONSTR OF DRIVES

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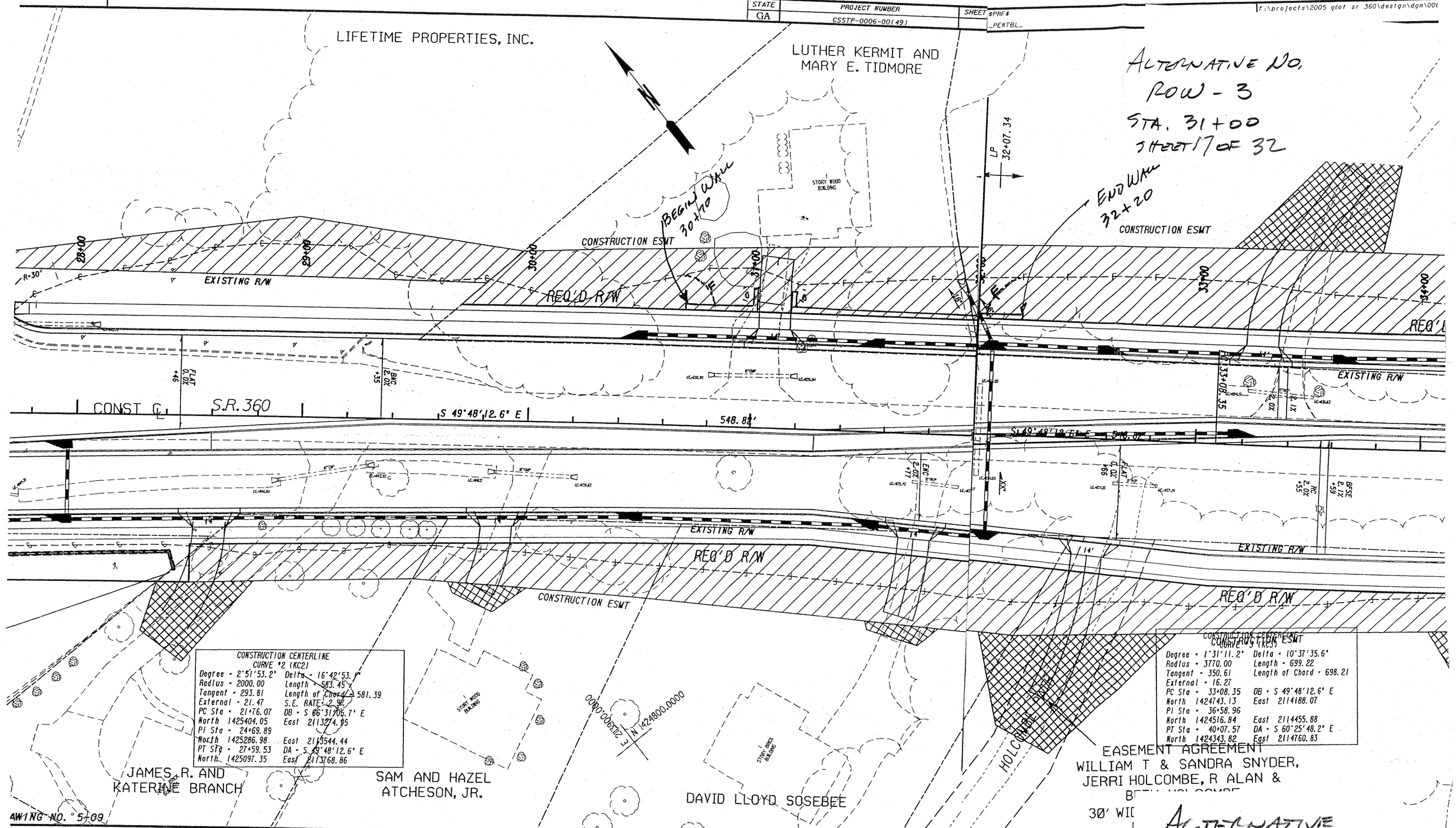
STATE	PROJECT NUMBER	SHEET
GA	CSSTP-0006-00(49)	PRF _PENTBL_



CONSTRUCTION CENTERLINE
CURVE #2 (KC2)

Degree - 2°51'53.2"	Delta - 16°42'53.1"
Radius - 2000.00	Length - 583.45
Tangent - 293.81	Length of Chord - 581.39
External - 21.47	S.E. RATE - 2.9%
PC Sta - 21+76.07	DB - S 66°31'05.7" E
North 1425404.05	East 2113274.95
PI Sta - 24+69.89	
North 1425286.98	East 2113544.44
PT Sta - 27+59.53	DA - S 49°48'12.6" E
North 1425097.35	East 2113768.86

CONSTRUCTION CENTERLINE
CURVE #3 (KC3)

Degree - 1°31'11.2"	Delta - 10°37'35.6"
Radius - 3770.00	Length - 699.22
Tangent - 350.61	Length of Chord - 698.21
External - 16.27	
PC Sta - 33+08.35	DB - S 49°48'12.6" E
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PI Sta - 36+58.96	
North 1424516.84	East 2114455.88
PT Sta - 40+07.57	DA - S 60°25'48.2" E
North 1424343.82	East 2114760.83

ALTERNATIVE DESIGN

MULKEY ENGINEERS & CONSULTANTS
1255 CANTON STREET, SUITE G
ROSWELL, GEORGIA 30075
(678) 461-3511

SCALE IN FEET
0 20 40 80

REVISION DATES

STATE OF GEORGI
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COST WORKSHEET

PROJECT: **WIDENING OF SR 360 FROM SR 120/CHARLES HARDY PARKWAY TO SR 176/LOST MOUNTAIN ROAD**

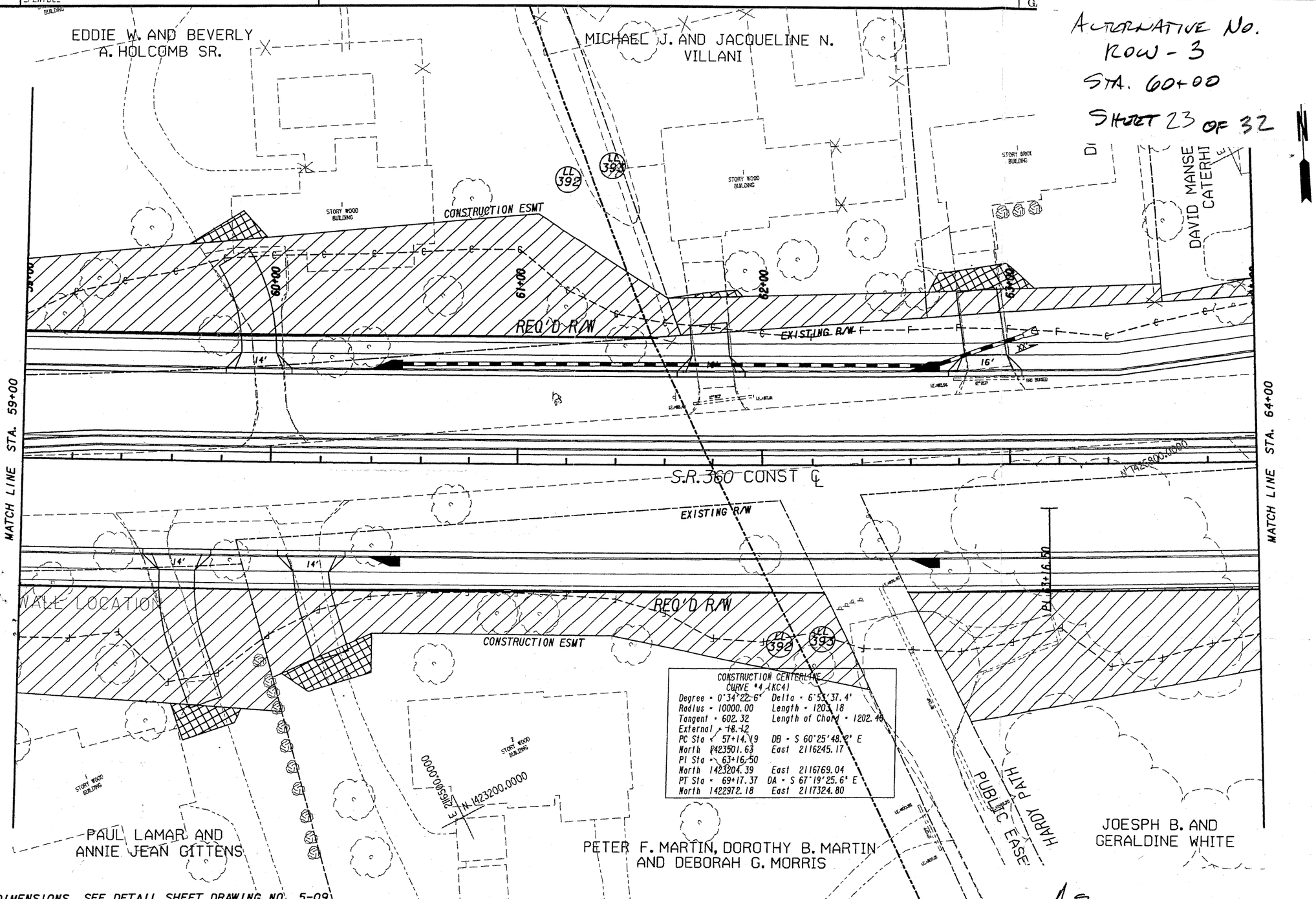
Georgia Department of Transportation

ALTERNATIVE NO. ROW - 3 STA. 31+00 LT

SHEET NO. 22 of 32

CONSTRUCTION ITEM		ORIGINAL ESTMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
EMBANKMENT	CY	450	15	6,750	0	—	—
RET. WALL	SF	0	—	—	1290	50.00	64,500
CONST SUBTOTAL				6,750			64,500
CONST. MARKUP 237.5%				16,031			153,188
CONST TOTAL				22,781			217,688
R/W COST	LS	1	60,000	60,000			
RELOCATION COST	LS	1	20,000	20,000			
R/W SUBTOTAL				80,000			
R/W MARKUP 247%				197,600			
R/W TOTAL				277,600			0
Sub-total				300,381			217,688
Mark-up at INCLUDED ABOVE %				—			—
TOTAL				300,381			217,688

ALTERNATIVE NO.
ROW - 3
STA. 60+00
SHEET 23 OF 32



CONSTRUCTION CENTERLINE CURVE #4 (KC4)	
Degree = 0°34'22.6"	Delta = 6°53'37.4"
Radius = 10000.00	Length = 1203.18
Tangent = 602.32	Length of Chord = 1202.48
External = 18.12	
PC Sta = 57+14.19	DB = S 60°25'48.2" E
North 1423501.63	East 2116245.17
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PT Sta = 69+17.37	DA = S 67°19'25.6" E
North 1422972.18	East 2117324.80

FOR MEDIAN OPENING DIMENSIONS, SEE DETAIL SHEET DRAWING NO. 5-09

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

MULKEY ENGINEERS & CONSULTANTS
1255 CANTON STREET, SUITE G
ROSWELL, GEORGIA 30075
(678) 461-3511

SCALE IN FEET
0 20 40 80

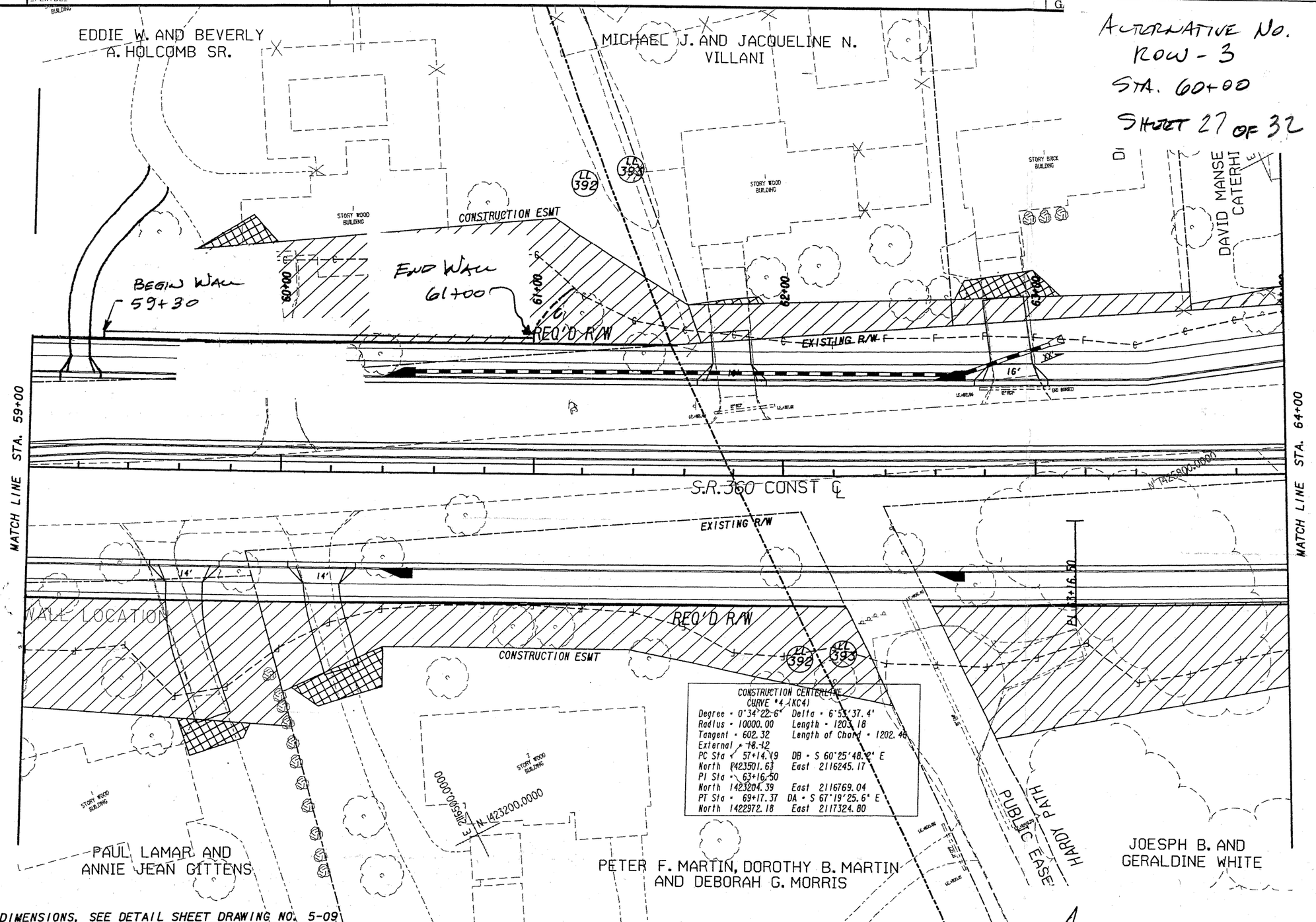
REVISION

As DESIGNED

TATION

DRAWING NO. 13-10

ALTERNATIVE NO.
ROW - 3
STA. 60+00
SHEET 27 OF 32



FOR MEDIAN OPENING DIMENSIONS, SEE DETAIL SHEET DRAWING NO. 5-09

PROPERTY AND EXISTING R/W LINE	—R—
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	—C—F—
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR OF DRIVES	

MULKEY ENGINEERS & CONSULTANTS
1255 CANTON STREET, SUITE G
ROSWELL, GEORGIA 30075
(678) 461-3511

SCALE IN FEET
0 20 40 80

REVISION

ALTERNATIVE DESIGN

TATION

DRAWING No. 13-10

COST WORKSHEET

PROJECT: **WIDENING OF SR 360 FROM SR 120/CHARLES HARDY PARKWAY TO SR 176/LOST MOUNTAIN ROAD**

Georgia Department of Transportation

ALTERNATIVE NO. ROW-3 STA 60+00

SHEET NO. 32 of 32

CONSTRUCTION ITEM		ORIGINAL ESTMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
RETAINING WALL	CY	0	—	—	119	547.82	65,191
CONST MARKUP @ 37.5%							154,828
CONST TOTAL							220,019
RIGHT-OF-WAY	LS	1	60,000	60,000			
DISPLACEMENT	LS	1	20,000	20,000			
R/W SUBTOTAL				80,000			
R/W MARKUP 247%				197,600			
R/W TOTAL				277,600			
Sub-total				277,600			220,019
Mark-up at INCLUDED ABOVE %				0			0
TOTAL				277,600			220,019