Mississippi Gulf Coast
Metropolitan Planning Organization
Gulf Regional Planning Commission

Beachview Drive Traffic Study

Old Spanish Trail to Lake Mars Avenue

Project No. 106821-101000

BKI

Prepared For

MS Department of Transportation, Gulf Regional Planning Commission and Jackson County, MS

MDOT
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

October 31, 2015

NON-DISCRIMINATION NOTIFICATION:

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NOTATION OF FINANCIAL ASSISTANCE:

This document was prepared and published by Gulf Regional Planning Commission, the Mississippi Gulf Coast Metropolitan Planning Organization (MPO), in cooperation with or with financial assistance from the United States Department of Transportation (USDOT), the Federal Transit Administration (FTA), the Federal Highway Administration (FHWA) and the Mississippi Department of Transportation (MDOT). Assistance notwithstanding, the contents of this document do not necessarily reflect the official view or policies of the funding agencies.

NOTICE OF PUBLIC REVIEW:

In compliance with federal regulation 23 CFR 450, the Mississippi Gulf Coast Metropolitan Planning Organization (MPO) sought public input on this traffic study between September 1, 2015 and September 21, 2015. This public comment period also satisfies the FTA public participation requirements of Section 5307 POP notice. A summary of comments received appears on page 34 of this report. Contact Stephanie Plancich, Public Involvement/Title VI Coordinator with any questions or comments.

ENV-160-LPA
Rev. 8/2009

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
ENVIRONMENTAL CLASS OF ACTION DETERMINATION (LPA)

DISTRICT NO:	6	F.A. NO:	
PROJECT NO:		HIGHWAY NO:	Beachview Dr
SECTION NO:	NA	COUNTY:	Jackson

7. SUBMITTED BY:

☐ MAYOR ☒ CONSULTING ENGINEER
☐ CITY OR COUNTY ENGINEER

SUBMITTED AND APPROVED BY: DATE

DISTRICT ENGINEER DATE

PLANNING ENGINEER DATE

ENVIRONMENTAL ENGINEER / ADMINISTRATOR DATE

8. FHWA CONCURRENCE:
FHWA DIVISION ADMINISTRATOR DATE

1. PROJECT TERMINI:

Begin: Old Spanish Trail;
End: Lake Mars Ave
Project will have several phases of construction, to be programmed by the MPO.

(A.) EXISTING CONDITIONS:

Beachview Drive has a 2011 ADT of 5,000 and is classified as a Major Collector. It has 2-lanes, no shoulders, no turn lanes, no sidewalks and open ditches for drainage (both sides). The posted speed limit is 35 MPH with an estimated ROW of 50 feet.

(B.) PROPOSED IMPROVEMENTS:

Proposed improvement will create dedicated facility for pedestrian and cyclists to use to travel along Beachview Boulevard from Old Spanish Tr to Lake Mars Av. Improvements will connect with existing crosswalks along Old Spanish Tr at the Beachview Dr intersection.

(C.) PRELIMINARY PURPOSE & NEED:

The purpose of this project will be to recommend a series of improvements for Beachview Drive and the surrounding area. These improvements are needed to satisfy neighborhood concerns over lack of pedestrian and bicycle accomodations.

(C.) NEW ROW REQUIRED: ☐ YES ☒ NO

2. ENVIRONMENTAL CONSEQUENCES EVALUATION (CHECK ONE)	SIGN.	MIN.	NONE	COMMENTS IDENTIFYING ISSUES WHICH MAKE IMPACT SIGNIFICANT OR MINIMAL
A. LAND USE IMPACTS	☐	☐	☒	
B. FARMLAND IMPACTS	☐	☐	☒	
C. SOCIAL IMPACTS	☐	☒	☐	Improved access to school and recreation
D. RELOCATION IMPACTS	☐	☒	☒	Mailboxes/driveway aprons within ROW to be modified
E. ECONOMIC IMPACTS	☐	☐	☒	
F. JOINT DEVELOPMENT	☐	☐	☒	
G. CONSIDERATIONS RELATING TO PEDESTRAINS & BICYCLISTS	☒	☐	☐	Improvements include bike/ped facilities
H. AIR QUALITY IMPACTS	☐	☐	☒	
I. NOISE IMPACTS	☐	☐	☒	
J. WATER QUALITY IMPACTS	☐	☐	☒	
K. PERMITS	☐	☐	☒	
L. WETLAND/STREAM IMPACTS	☐	☐	☒	
M. WATER BODY MODIFICATION & WILDLIFE IMPACTS	☐	☐	☒	
N. FLOODPLAIN IMPACTS	☐	☐	☒	
O. WILD & SCENIC RIVERS	☐	☐	☒	
P. COASTAL BARRIERS	☐	☐	☒	
Q. COASTAL ZONE IMPACTS	☐	☐	☒	
R. THREATENED OR ENDANGERED SPECIES	☐	☐	☒	
S. HISTORIC & ARCHAEOLOGICAL PRESERVATION / 4(f) LANDS	☐	☐	☒	
T. HAZARDOUS WASTE SITES	☐	☐	☒	
U. VISUAL IMPACTS	☐	☐	☒	
V. ENERGY	☐	☐	☒	
W. CONSTRUCTION IMPACTS	☐	☒	☐	Driveway and parking access limited during construction
X. ENVIRONMENTAL JUSTICE IMPACTS	☐	☐	☒	

3. PUBLIC INVOLVEMENT RECOMMENDATIONS:

Community concerns to date regard lack of safe bicycling and walking facilities along Beachview Drive. Two public meetings identified a lack of shoulders and sidewalks on Beachview Drive and surrounding streets to allow safe refuge and passage areas for pedestrians and cyclists.

4. ACTIONS REQUIRED:						
	CATEGORICAL EXCLUSION ☒		106 CONSULTATION ☐	ENDANGERED SPECIES ASSESSMENT ☐		
	EA/FONSI ☐	EIS ☐	NOISE STUDY ☐	SHPO LETTER ☐	4(f) STATEMENT ☐	
	CLASS DETERMINATION:					

5. WETLANDS/STREAMS FINDING (CEX ONLY):

National Wetlands Index (NWI) identified potential wetlands at three locations along corridor. Land areas identified mostly vacant residential lots or residential lots with dense landscaping/trees. Majority of land areas along road are landscaped with grass, scrub or brush, or a combination of these with vines, small shrubs or trees.

6. OTHER REMARKS:

Please see attached report for more information about the project and area of the project. Document includes an environmental checklist prepared following field review completed during 4th quarter 2014, as updated during 1st quarter of 2015.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
LPA NON-ROADWAY DESIGN RELATED DATA

REVISED 1/15/2009

DATE: 10/31/2015

LOCAL PUBLIC AGENCY: Jackson County, MS
COUNTY: Jackson County

PROJECT NUMBERS:
L.P.A. 106821-101000
MDOT *
* to be completed by MDOT

PROJECT LOCATION: Beachview Drive, located in unincorporated Jackson County, MS, just east of the City of Ocean Springs, MS

LENGTH: 2.00 MI

HISTORICAL SIGNIFICANCE:

None apparent. Beachview Drive is a 2-lane collector roadway connecting Old Spanish Trail to Lake Mars Avenue. The corridor provides a primary point of access to the Gulf Park Estates community. The roadway includes a crossing of Simmons Bayou, located approximately 1.47 miles south of the Old Spanish Trail intersection.

FUNCTIONAL CATEGORY/RIGHT-OF-WAY/RELOCATION:	YES or NO
PEDESTRIAN/BICYCLE FACILITIES	YES
SAFETY/EDUCATIONAL ACTIVITIES FOR BICYCLISTS AND PEDESTRIANS	NO
ACQUISITION OF SCENIC EASEMENT OR HISTORIC SITE	NO
SCENIC/HISTORIC HIGHWAY PROGRAMS (I.E. TOURIST/WELCOME CENTERS)	NO
LANDSCAPING/SCENIC BEAUTIFICATION	NO
HISTORIC PRESERVATION	NO
TRANSPORTATION RELATED FACILITY RENOVATION	NO
PRESERVATION OF ABANDONED RAILWAY CORRIDORS	NO
CONTROL/REMOVAL OF OUTDOOR ADVERTISING	NO
ARCHAEOLOGICAL PLANNING AND RESEARCH	NO
ENVIRONMENTAL MITIGATION OF POLUTION DUE TO HIGHWAY RUNOFF	NO
ESTABLISHMENT OF TRANSPORTATION MUSEUMS	NO
IS PURCHASE OF RIGHT-OF-WAY REQUIRED?	NO
IS RELOCATION REQUIRED?	NO

DETAILED SCOPE OF WORK: (DESCRIBE WHERE APPLICABLE) (ATTACH ADDITIONAL DATA, PICTURES, ETC.)

PROJECT DESCRIPTION:

Addition of bicycle and pedestrian facilities within existing right-of-way, as defined based upon apparent measurement at time of initial feasibility study (please see attached). Project as defined during feasibility will be refined during design to fully address right-of-way and coordination with required drainage needs.

I. UTILITIES

Utility facilities along the corridor include electricity, sewer, water, telecommunications. Windshield survey indicates line locations appear marked by signs. A survey of utility locations completed along the corridor in July 2014. Details provided in Appendix of attached report.

II. SITE AND PARKING:

Not Applicable

III. LANDSCAPING AND EROSION CONTROL:

Best practices to minimize erosion will be employed during project development and construction. Details to be developed during site design.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
LPA NON-ROADWAY DESIGN RELATED DATA

IV. MODIFICATIONS TO EXISTING STREETS, ROADS: (ATTACH TYPICAL SECTION)

Please see attached report for section options examined. Recommendation to move forward with one section (see Recommendations) and apply to corridor.

V. MODIFICATIONS TO EXISTING SIGNALS AND STREET CROSSINGS:

No modifications to traffic signals proposed. Crosswalks will be added at up to four locations along the corridor. The addition of HAWK signs at these locations suggested to address community comments regarding the need to make crossings highly visible to motorists traveling the corridor.

VI. SIGNAGE:

Recommendation includes provisions for MUTCD approved signage/pavement markings to address specifics regarding street crossings as well as bicycle and pedestrian amenities recommended for implementation (please see attached report).

VII. BUILDING RENOVATION:

A. ARCHITECTURAL:

Not Applicable

B. ELECTRICAL:

Not Applicable

C. MECHANICAL:

Not Applicable

D. PLUMBING:

Not Applicable

VIII. PEDESTRIAN/BICYCLE PROJECTS: (TYPE PROJECT PROPOSED)

Addition of ped/cycle amenities along corridor, including option for shared use path along corridor, separated by grass strip and/or asphalt combined with curb. Options identified allow for potential blending of sections along corridor in response to corridor conditions. Please see report for GRPC/County recommendation.

A. ATTACH TYPICAL SECTION(S) SHOWING: TYPE AND THICKNESS OF PAVEMENT AND BASE, WIDTH OF PAVEMENT, SHOULDERS, SLOPES, ADJACENT ROADWAY, SIDEWALK, ROW, AND THE LIMITS OF EACH SECTION.

B. ATTACH PRELIMINARY PLAN SHOWING: LOCATIONS OF ADJACENT ROADWAY AND SIDEWALK, AND INTERSECTING STREETS AND DRIVEWAYS.

C. ATTACH PRELIMINARY PLANS SHOWING: DETAILS OF STREET CROSSINGS AND TRAFFIC CONTROL PLANS.

SIDEWALKS: (IF THE PROJECT INCLUDES SIDEWALKS, INDICATE THE TOTAL LENGTH IN FEET FOR THE FOLLOWING)

REPLACEMENT FOR EXISTING SIDEWALKS: _____ FT
NEW SIDEWALKS: 5.00 FT

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
LPA NON-ROADWAY DESIGN RELATED DATA

DESIGN STANDARDS AND GUIDELINES: (DESCRIBE APPLICABLE, APPROPRIATE SECTIONS OF EACH)

I. MUTCD GUIDELINES:

Utilized Part 2 Signs, Part 9 Traffic Control for Bicycle, Section 2B.07 Multiway Stop Applications (to complete stop sign warrant review), Manual for Uniform Traffic Control Devices for Streets and Highways, 2009 edition, as referenced at the FHWA website [mutcd.fhwa.dot/pdfs/2009r1r2/mutcd2009r1r2edition.pdf]

II. MDOT DESIGN STANDARDS AND MANUAL:

Chapter 14, Geometric Design for Urban Streets, MDOT 2001 Roadway Design Manual, Mississippi Design Manual, pages 14-1 through 14-31. Regional Complete Streets Policy as applied to LPA projects, adopted by the MS Gulf Coast MPO, September 24, 2015.

III. AASHTO DESIGN STANDARDS:

Chapter 4- Cross Section Elements, A Policy on Geometric Design of Highways and Streets, 2011 Edition, American Association of State Highway and Transportation Officials (AASHTO), 6th Edition

IV. ADA STANDARDS AND REGULATIONS:

Chapter 4 - Accessible Routes, plus other sections as necessary, 2010 ADA Standards for Accessible Design, September 15, 2010, US Department of Justice

V. AIA GUIDELINES:

Not Applicable

VI. DOES PROJECT MEET THESE DESIGN STANDARDS AND GUIDELINES: YES

DESIGN AND CONSTRUCTION PROFESSIONAL:

I. WILL A CONSULTANT BE ENGAGED?

II. WILL FEDERAL-AID PARTICIPATION BE REQUESTED FOR CONSTRUCTION ENGINEERING?

IF "YES", WAS MDOT CONSULTANT SELECTION PROCEDURES FOLLOWED?

III. NAME OF REGISTERED ENGINEER, ARCHITECT, OR LANDSCAPE ARCHITECT WHO WILL BE IN CHARGE:

PREPARED BY : _____ _____

LPA REGISTERED PROFESSIONAL — MISSISSIPPI REGISTRATION NUMBER

ADDRESS: _____

SUBMITTED BY: _____ _____

LPA OFFICER — DATE

APPROVED BY: _____ _____

ROADWAY DESIGN DIVISION ENGINEER — DATE

Table of Contents


Location in MS Gulf Coast Region
Hancock
Harrison
Jackson
10
90
Project Location
Copyright: ©2014 Esri, DeLorme, HERE
Old Spanish Trl
Palmetto Ave
Gulf Park Estates
Marina Ave
Spring Ave
Elm Ave
Beachview Dr
N 10th St
N 1st St
N 22nd St
Fountainbleau Rd
Ridgeview Dr
Pittman Rd
Perryman Rd
Gollott Rd
Government St
Gulf Island National Seashore Pky
Zettle Rd
Dijon
Booth Cir
Magnolia Ln
Eagle Pine Dr
Margueritte Dr
Pickering Forest Dr
Marsh Island Dr
Pointe aux Chenes Rd
Deer St
S 2nd St
S 6th St
S 7th St
S 8th St
S 11th St
Seacliff Blvd
Neptune
Joe Fountain
Simmons Bayou
Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue
Figure 1
Project Area and Vicinity
Gulf Park Estates, Jackson County, MS
BKI Project OS.14.002
Project No. 106821-101000
October 2015
Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom

Project Description and Purpose

BKI, as assigned by the Gulf Regional Planning Commission (GRPC) in partnership with Jackson County, MS, has conducted a study of traffic operations along Beachview Drive, a collector, located within the Gulf Park Estates area of unincorporated Jackson County (See Figure 1). The corridor, which is approximately 2.0 miles long, is located approximately 5.0 miles east of downtown Ocean Springs.

Beachview Dr, looking south toward Palmetto St

Corridor Description

Beachview Drive is 2-lanes, with no shoulders along its length. The posted speed limit is 35 miles per hour for the length of the corridor. There are no sidewalks, although side-paths appear at intermittent locations in the grassy areas along the corridor between the edge of the current road surface and open ditch drainage. The area has no traffic controls (all-way stops or traffic signals) except at the ends of the corridor. A traffic signal is at the northern intersection with Old Spanish Trail and a stop sign at the southern end of the corridor at Neptune Drive.

Pedestrians and cyclists are in evidence along the corridor, as observed during field visits to the corridor. As there are no facilities to accommodate these user groups, their options for using the corridor included sharing space in the travel lanes with passing traffic or using off road areas between the edge of pavement and the adjacent drainage ditches.

An initial project start meeting was held with the community on September 18, 2014 (See Summary of *Community Comments/Input*) identified several needs for the area which should be considerations in looking at improvements along Beachview Drive:

- *Cycling traffic* – several residents indicated that they regularly cycle along the corridor to access nearby businesses and community facilities. During the field review, several cyclists traveled along the western edge of Beachview Drive, using a combination of existing pavement and off-road areas. *Future improvements will need to support area travel patterns, as well as offer opportunities to connect to Old Spanish Trail.*

- *Pedestrian patterns* – several residents indicated that they regularly walk the neighborhood for exercise, with the majority of these movements occurring on the streets surrounding Beachview Drive. *Future improvements will need to support creation of a safer walking environment in the area.*

- *School bus pickups/drop-offs* – buses transporting students to the nearby Ocean Springs School District facilities (Oak Park Elementary, Ocean Springs Middle School and Ocean Springs High School) regularly circulate the area. Students meet these buses at designated stop locations which are interspersed around the neighborhood. *Future improvements will need to incorporate these locations in the planning for improvements to the pedestrian infrastructure in the area.*

- *Speed of traffic* - residents reported that vehicles traveling along Beachview Drive appear to be moving at higher rate of speed than the posted limit. Compounding their concerns about this condition are the road's width, lack of shoulders and lighting and the area's topography which creates rises and falls in the corridor between its start and end. *Future*

Beachview Dr, looking north over Simmons Bayou bridge

improvements will need to offer flexibility in order to address calming of traffic speeds, should further investigation indicate a problem.

• *Lack of street lighting* – residents reported that the lack of lighting along Beachview Drive (and within the surrounding neighborhood) creates pockets of darkness that make walking or cycling not a safe choice during early morning or evening hours. *Future improvements will work within existing county policies and practices in order to outline a method to improve lighting in the general area.*

A final public information meeting (August 27, 2015) and 21-day public review and comment period for the plan (ending on September 21, 2015) provided additional comments and suggestions for potential refinements to the recommended improvement alternatives from the community.

Project Purpose

The purpose of this project is to recommend a series of funded improvements for Beachview Drive and the surrounding area implemented through the GRPC's Transportation Improvement Program (TIP) process. Projects considered for funding through this process must meet with the established criteria for project development outlined in the GRPC's Transportation Improvement Program handbook as well as the region's overall goals for system development, outlined in the call-out box to the right.

In addition, the definition of project alternatives occurred in such a manner as to be consistent with the MDOT Local Public Agencies (LPA) process. This includes a general screening of the area of the project using several environmental indicators as means to identify early items which require additional coordination or consideration as part of the future design and project development process.

MPO Project Goals

The goals identified by the MPO incorporates the input of residents from the Gulf Coast and its jurisdictions. The MPO's transportation program requires all planning and proposed projects achieve the following overall goals as part of its objective.

Goal 1.0 Enhance Transportation System Mobility, Accessibility and Quality for All Roadway Users and Modes

Goal 2.0 Enhance Regional Connectivity and Economic Viability

Goal 3.0 Enhance Public Safety and Security

Goal 4.0 Preserve and Protect Environmental Quality

Goal 5.0 Support Regional Sustainability and Local Values

Goal 6.0 Preserve Existing Community Resources

- From the *Mississippi Gulf Coast Metropolitan Planning Organization (MPO) Transportation Improvement Program Handbook*, GRPC, June 2011

Existing Conditions/Environmental Checklist

Route Beachview Dr City/County: Unincorporated, Jackson County, MS

Begin Old Spanish Trail End Lake Mars Ave Length +/- 2.00 miles

A. Project Description (general description including boundaries of checklist review)

The project consists of a proposed improvement along Beachview Drive, located in the Gulf Park Estates community adjacent to the City of Ocean Springs. This checklist represents the portion of the corridor between Old Spanish Trail and Lake Mars Avenue, a distance of approximately +/- 2.0 miles.* This project does not include lane capacity improvements for Beachview Drive. Information on this checklist covers only Beachview Drive and not conditions observed on any parallel or intersecting streets unless noted. Figure 2 contains locations of key facilities and features identified in the checklist.

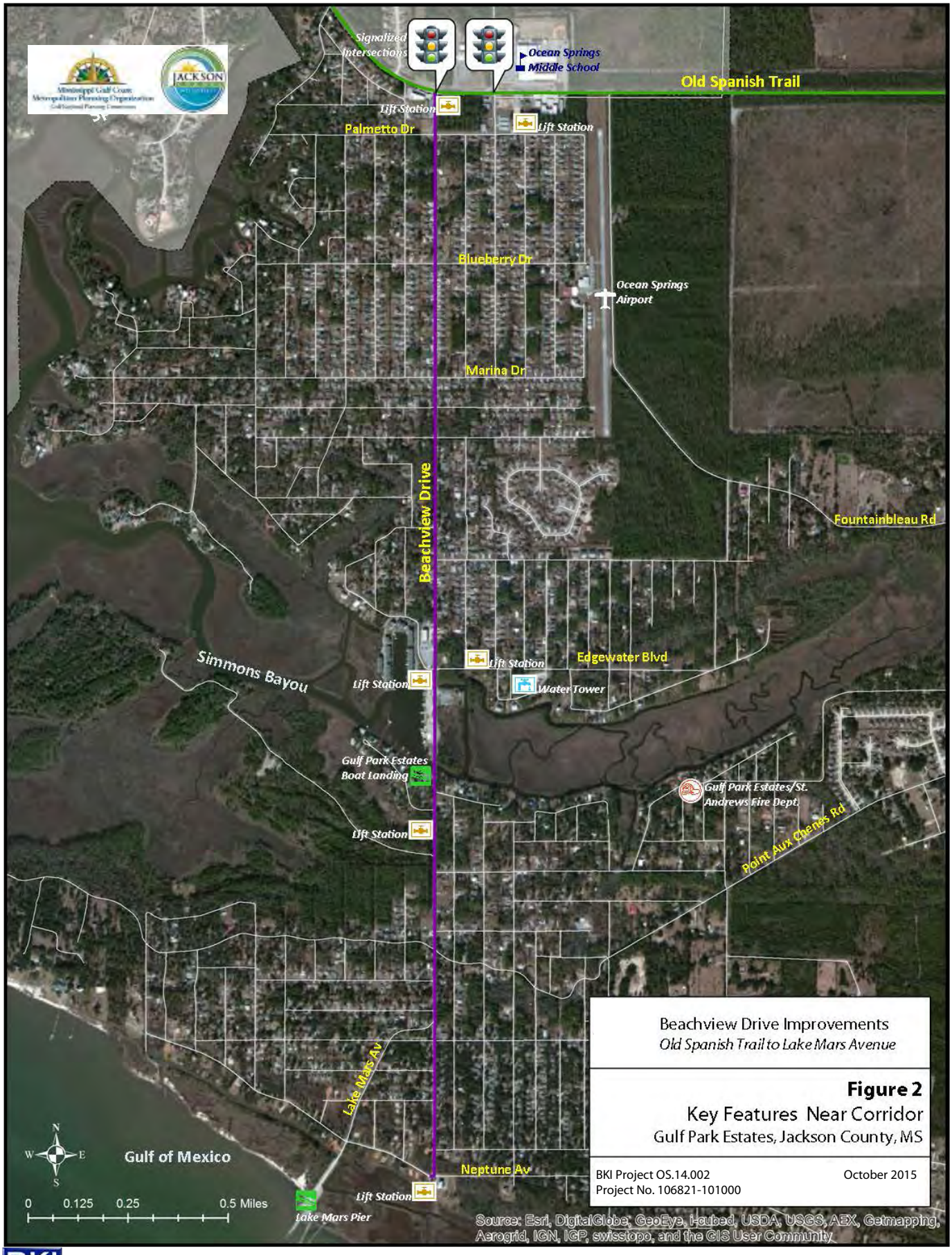
B. Project Concept *(Please See Initial Project Alternatives Section for more details)*

- Description of existing facility (functional class, existing ADT with source, number of lanes, etc) Beachview Drive has an ADT of 5,000 (GRPC, 2011) and is classified as a Major Collector. It has 2- 11 ft travel lanes, no shoulders, no turn lanes, no sidewalks and open ditches for drainage (both sides). The posted speed limit is 35 MPH. There are no speed zones along the corridor for schools or crosswalks. The corridor has an estimated right-of-way (utility pole to utility pole) of 50 feet, based upon right-of-way measurements taken in the field. The width of the apparent roadway sides (pavement to edge of ditch/swale) appears to vary between 13-15 feet, depending on corridor location. There is one signalized intersection on Beachview Drive at Old Spanish Trail. Traffic signal includes pedestrian count-down timer oriented to crosswalks across 2 of the 3 approaches. All corners have ADA cushions.
- Major Design Features/Criteria of the proposed facility Proposed improvement will create dedicated facility for pedestrian and cyclists to use to travel along Beachview Boulevard from Old Spanish Tr to Lake Mars Av. Improvements will connect with existing crosswalks along Old Spanish Tr at the Beachview Dr intersection.
- Results from Technical Analyses Please see attached report. Review of stop sign warrants at one intersection completed. Recommendations accommodate pedestrian movements as documented through review of land use, conversation with community and review corridor traffic and crash data as supplied by GRPC.
- Construction Traffic Management/Property Access Considerations Recommendations include option to construct improvements on one side of the Beachview Dr corridor to minimize impact to existing residences, overhead and underground utilities, driveways and mailboxes. Area of project is residential – options for on-street or side-street parking of vehicles limited. Design will require identification of staging areas and maintenance plan for driveway access and continuity of utility and public services.

C. Initial Order of Magnitude Cost Estimate *(Sum of all improvements on Beachview Dr outlined in Figures 8-10), rounded to closest $100)*

Category	*OPT 1: Separated Shared Use Path*	*OPT 2: Sidewalk with Bikeable Shoulders*	*OPT 3: Complete Street*
Construction Costs[1]	$3,285,200	$3,950,200	$6,795,400
Construction Engineering (5% of Cost)	$164,000	$197,600	$339,900
Testing (5% of Cost)	$164,400	$197,600	$339,900
Contingency (5% of Cost)	$164,400	$197,600	$339,900
Total Project Cost Estimate	**$3,778,400**	**$4,543,000**	**$7,815,100**

Notes: * Project initiation meeting held between representatives of GRPC, Jackson County, MDOT District LPA coordinator, and BKI in July, 2014. 1) See detailed itemized cost table in Appendix for more information about project cost by phase of implementation; 2) All improvements will take place within the public right-of-way and therefore ROW costs assumed to be negligible.



Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue

Figure 2
Key Features Near Corridor
Gulf Park Estates, Jackson County, MS

BKI Project OS.14.002 October 2015
Project No. 106821-101000

BKI

What is the adjacent land use pattern? Residential with some commercial activities located at the Old Spanish Trail intersection. The commercial uses consist of three retail developments, 2 strip centers and a retail store. There is some vacant property along the corridor, along with a recreation facility (Gulf Park Estates Boat Landing), marina and private assembly facility.

Any property owned by a Native American Tribe? (Y or N or Unknown) ***If so, which Tribe?*** Unknown, none observed as marked in the corridor.

Any property enrolled into the Wetland Reserve Program? (Y or N or Unknown) ***If so, give the location.*** Unknown, none observed as marked in the corridor.

Are there any other known wetlands in the area? (Y or N) ***If so, give the location.*** Unknown - National Wetlands Index (NWI) identified potential wetlands at three locations along corridor. Land areas identified mostly vacant residential lots or residential lots with dense landscaping/trees. Majority of landscaped areas along road are grass, scrub or brush, or a combination of these with vines, small shrubs or trees.

COMMUNITY ELEMENTS: Is the project impacting or adjacent to any *(if the answer is yes, list names and locations)*:

- (Y or N) Cemeteries: NO
- (Y or N) Churches NO
- (Y or N) Schools NO
- (Y or N) Public Facilities (i.e., fire station, library, etc.) NO. Closest fire station located at S. 13th St and E Simmons Bayou Dr. (2300 E Simmons Bayou Dr.), approximately +/- 0.5 mi east of Beachview Drive.
- (Y or N) Community water well/supply NO. Elevated water tank approximately +/- 0.2 mi east of Beachview Drive. Five homes along Beachview Drive have individual well houses located in their front yards outside of the apparent right-of-way of Beachview Drive. Of these, two are not accessible from the right-of-way as they are behind fences or inside areas of landscaping.

SECTION 4(F) ISSUE: Is the project impacting or adjacent to any *(if the answer is yes, list names and locations)*:

- (Y or N) Public recreation areas +/- 35 slip marina west of Beachview Drive and Gulf Park Estates Boat Ramp located at 2277 Beachview Drive.
- (Y or N) Public parks NO, there are no county parks in this area as per the county's website: http://www.co.jackson.ms.us/departments/recreation/index.php or the City of Ocean Springs website: http://ci.ocean-springs.ms.us/parks-leisure/.
- (Y or N) Wildlife Refuges NO, as per the US Fish and Wildlife Service website: http://www.fws.gov/refuges/profiles/ByState.cfm?state=MS
- (Y or N) Historic Sites NO, as per the Mississippi Department of Archives and History (http://www.apps.mdah.ms.gov/Public/search.aspx)

Is the project impacting, or adjacent to, a property listed on the National Register of Historic Places? Is the project within a historic district or a national landmark district? (Y or N) ***If the answer is yes to either question, list names and locations below:*** NO –checked Historic Resources Inventory Database of Mississippi Landmarks and National Register of Historic Places listings at the Mississippi Department of Archives and History (http://www.apps.mdah.ms.gov/Public/search.aspx).

Do you know of any threatened or endangered species or critical habitat in the area? (Y or N) *If so, list species and location.* NO

Does the project impact or adjacent to a stream identified as a scenic river or stream? (Y or N) *If yes, name the river/stream.* NO

Are there any significant or protected trees within proposed ROW? (Y or N) *If so, where?* Vegetation adjacent to road in current right-of-way mostly maintained grasses and similar landscaping, scrub grasses, and small brush. Two large trees on private property adjacent to Beachview Drive identified: one near the intersection of Beachview Drive and W. Simmons Circle and another at intersection of Beachview Drive with Pointe Aux Chenes Road.

Does this project include a bridge? (Y or N) What year was the existing bridge built? Yes, Beachview Drive includes a +/- 30ft wide bridge over Simmons Bayou. The bridge is striped for two travel lanes, a 2 foot shoulder on its west side and a 6 foot shoulder on its east side. The exact year of construction is unknown – there are no specific construction dates stamped on the bridge.

Are any waterways impacted by the project considered navigable? (Y, N or Unknown) *If unknown, state so, list the waterways:* Unknown, Simmons Bayou west of Beachview appears to be used for recreational boating. Timber piles and low clearance at the Simmons Bayou bridge on Beachview Drive appears to preclude navigation in the bayou east of this point.

HAZARDOUS MATERIALS: Have you checked the following MDEQ and EPA databases for potential problems? *If the answer is yes, list names and locations.*

- (Y or N) Leaking Underground Storage Tanks Yes, database checked and no records/occurrences identified (Munster.deq.state.ms.us)
- (Y or N) CERCLIS Yes, database checked and no records/occurrences identified (www.epa.gove/superfund/sites/cursites)
- (Y or N) ERNS Yes, database of 2014 reports checked and no records/occurrences identified (www.nrc.uscg.mil)
- (Y or N) Enforcement and Compliance History Yes, databased checked and no records/occurrences identified (echo.epa.gov)

Underground Storage Tanks (UST): Are there any Gasoline Stations or other facilities that may have UST on or adjacent to the project? (Y or N) *If so, give the name and location:* Remnants of a former gas station and store are located east of the corridor at approximately 30°22'31.75"N and 88°45'35.31"W adjacent to the Gulf Park Estates Boat Landing. A review of the MDEQ underground storage tank information located at munster.deq.state.ms.us did not result in any information on the status of tanks (i.e. whether any are still in existence) as of the date of this search (September 10, 2014).

Any chemical plants, refineries or landfills adjacent to the project? (Y or N) NO

Any large manufacturing facilities adjacent to the project? (Y or N) NO

Dry Cleaners? (Y or N) ***If yes to any, give names and locations:*** NO

Oil/Gas wells: Have you checked the appropriate database for registered oil and gas wells? (Y or N) *List the type and location of wells being impacted by the project.* YES – a review of the Mississippi Oil and Gas Board on-line viewer (gis.ogb.state.ms.us) indicated no registered oil and gas wells adjacent to the corridor.

Are there any possible residential or commercial relocations/displacements? (Y or N) How many? NO – project would occur totally within existing right-of-way along the length of the corridor. The project anticipates some modification to driveway aprons along the corridor within the limits of the project to accommodate the proposed sidewalk addition. Should survey indicate utilities or parking spaces at commercial establishments are within the dedicated right-of-way for Beachview Drive, these may require modification, relocation or removal at the time of construction.

In addition, residential mailboxes adjacent to the street, within the right-of-way may, may require relocation as part of this project should an alternative which enhances the shoulder area be implemented. These installations include a mixture of mailbox on single wooden or metal posts, or within brick columns. The number of residential mailboxes potentially relocated is approximately 34 to 45, depending on route chosen. None of the mail boxes identified are centralized letter boxes used by the USPS for centralizing mail collection.

Do you know of any sensitive community or cultural issues related to the project? (Y or N) *If so, explain* Community concerns to date regard lack of safe bicycling and walking facilities along Beachview Drive. Observations made on the corridor indicate that motorists traveling the area appear to be near or over the speed limit. A lack of shoulders and sidewalks on Beachview Drive and surrounding streets to allow safe refuge and passage areas for pedestrians and cyclists away from passing motorists has been reported in the local media (newspaper and news broadcasts) and an initial public meeting held by the County Supervisor for this area (John McKay) uncovered the depth of concerns and problem areas. Project incorporates these into the overall planning and design for the project's alternative improvement scenarios.

Is the project area population minority or low income? (Y or N) Yes, there is evidence, according to the 2010 Census data, (NEPAssist Enviromapper, located at nepassisttool.epa.gov) that the total minority within the block groups adjacent to Beachview Drive is approximately 10-20% of the total. According to the same, the total population which is below poverty is between 0-10% of the total. No individual or household income interviews took place along Beachview Drive.

What type of detour/closures could be used on the job? Access might be limited at some driveways and parking areas during construction. Project will not include detours or closures, at this point, to accommodate these actions. During construction driveway access remains maintained to the extent possible, with any closure plans developed with the input of adjacent property owners regarding notification, time of loss of access and provisions for temporary access in instances where changes constitute a hardship. Several vacant and under-utilized hard surfaced lots along the corridor may be used as part of the general staging of equipment, materials and staff, using all best practices to address site runoff and security.

General location and type of utilities in area. If so, location of any markers or installations in area with photos
Please see photo inventory in Appendix C

- (Y or N) Powerlines/Substation Yes, overhead power lines are along both sides of Beachview Drive. There are no substations along the corridor.
- (Y or N) Gas Yes, underground gas service anticipated – no meters or markers found to denote high pressure line or pipeline crossing the corridor.
- (Y or N) Water Yes, water lines along the corridor, as well as pump houses for individual wells (see previous checklist question). Elevated water tank facility located +/- 0.2 mi east of Beachview Drive.
- (Y or N) Sewer Yes, lift stations can found along the corridor as well as in areas adjacent Beachview Drive. A forced sewer main was found along Palmetto Drive, leading to Pump Station 27, located at 8800 Palmetto Drive (marked as owned by the Jackson County Utility Authority). Another is owned by Utility Services, located at in the 8800 block of Edgewater Drive. Other facilities observed along Beachview Drive or within close proximity include lift/pump stations at 2109 Beachview Drive, 2493 Beachview Drive and 9012 Edgewater Boulevard. There is a facility located outside of the project area at the intersection of Beachview Drive and Neptune Avenue and a possible abandoned facility located at 2421 Beachview Drive.
- (Y or N) Fiber Optic/Communications Yes, AT&T markers can found along the east side of Beachview Drive between Old Spanish Trail and Edgewater Boulevard. There are also above ground boxes/vaults along Beachview Drive near some of these markers. A cellular tower is also located east of Beachview Drive near its intersection with Edgewater Drive, just north of the Elks Lodge facility.

Other: None

Did you notice anything of environmental concern during your site/windshield survey of the area? If so, explain below. A barricaded roadway, approximately 0.17 miles south of the Simmons Bayou bridge, leads to the former Gulf Park Estates Golf Course. This golf course appears, based upon review of Google Earth photography, closed. It is not clear that this facility was open to general public use, or the types of facilities provided on the site, such as clubhouse, maintenance and grounds keeping facility, etc. Review of existing databases did not identify the site as containing any hazardous materials. The site appears to have three homes on the site, although occupancy information is unknown.

Ditches near Edgewater Boulevard appear to be sloped to drain toward Simmons Bayou. Some of these ditch areas appear to have standing water which connected to water bodies formed by the inlets to Simmons Bayou. There is one culvert crossing under Beachview Drive near Edgewater Boulevard which allows for flow of water to Simmons Bayou. It is also close to a sewer lift station located at the intersection of Edgewater Blvd and Beachview Drive. The culvert also appears fed by a drain coming from under the parking lot of the Harbor Landing Condominiums, located at 2421 Beachview Drive.

No other specific items identified. Review will include information on accidents, and traffic speeds using data collected/compiled and mapped by GRPC. This review is within the traffic analysis section.

Burk-Kleinpeter, Inc., Edwin E. Elam, AICP, PTP
Completed by/Point of Contact

504/486-5901 xt. 281
Phone Number

August 15, 2015
Date

List of databases/sources consulted: **Please see individual questions for database information.**

Review of Traffic Operations

The traffic operational analysis consisted of a review of network characteristics, traffic speeds on Beachview Drive, a review of accident information to determine potential safety issues and an evaluation of warrant demand for a four-way stop at the mid-point of the corridor at Edgewater Boulevard. Within each section, a summary of data includes specific results provided with supporting details following in the appendix.

Network Characteristics

Traffic Circulation and Flow

All of these roads are two-way, local, 2-lane roads with a posted speed limit of generally between 20-25 miles per hour. All have open ditch drainage, no sidewalks (with the exception of Hanshaw Road) or side paths, asphalt surfacing with numerous intersecting driveways. All streets in the area have two-way directional flow.

There are no school zones in the study area as the zone around Ocean Springs Middle School applies to Old Spanish Trail and Hanshaw Road in front of the campus. As observed, traffic queuing for the school dismissal does use a combination of Palmetto Drive, Hanshaw Road and North 8th Street. These queues begin up to 30 minutes before scheduled dismissal.

Existing Street Conditions

A series of field visits conducted in the area allowed for documentation of the existing conditions and roadway design/geometric assumptions. These visits resulted in the identification of several key roadways. A map of these locations *(Figure 3)* illustrates their location in reference to Beachview Drive.

As noted in the figure, the local roadway network in Gulf Park Estates is comprised of an extended grid pattern. This grid remains interrupted by streets oriented to the local topography. Areas east of Beachview Drive include individual isolated subdivisions developed along small blocks, looping roadways, cul-de-sac streets or internal street networks.

1. Palmetto Drive – Palmetto Drive intersects with Beachview Drive approximately 0.10 mile south of the Old Spanish Trail intersection. Fronting land use includes vacant and residential lots/structures. There is some commercial development at the intersection of North 8th Street which includes a mini storage facility and dentist/orthodontist office.
2. Blueberry Drive – Blueberry Drive intersects with Beachview Drive approximately 0.40 mile south of the Old Spanish Trail intersection. Fronting land uses include residential lots/structures and some vacant lots. This road also leads the terminal facilities of the Ocean Springs Airport, located on the eastern edge of Gulf Park Estates.
3. North 8th Street/Hanshaw Road – North 8th Street and Hanshaw Road are both two lane roadways which run parallel to Beachview Drive. Fronting land uses along North 8th Street include a mixture of residential, with commercial and vacant tracts north of Palmetto Drive along Hanshaw Road. A recently completed Safe Routes to School project has resulted in the construction of sidewalks along Hanshaw Road between Palmetto Drive and Old Spanish Trail. This corridor intersects with Old Spanish Trail at a signalized intersection with pedestrian actuated crosswalk signals approximately 0.13 mile east of Beachview Drive.
4. Fountainbleau Road – Fountainbleu Road is a 2-lane road which is generally parallel to Beachview Drive. It connects Old Spanish Trail to Belle Fontaine Boulevard. The speed limit is 30 MPH for most of its length. Fronting land uses include a mixture of vacant, wooded property, with some houses and institutional/church buildings.


Mississippi Gulf Coast Metropolitan Planning Organization
Gulf Regional Planning Commission
JACKSON COUNTY MISSISSIPPI
City of Ocean Springs
7,100 ADT (2013)
8,500 ADT (2013)
5,400 ADT (2013)
6,700 ADT (2013)
5,100 ADT (2013)
Hanshaw Rd
Old Spanish Trail
Palmetto Dr
Gulf Park Estates
Blueberry Dr
North 8th Street
Fountainbleau Road
Legend
Minor Arterial
Collector
Key Local Streets
#,###/(####) Traffic Count & Year
data from GRPC
6,000 ADT (2011)
1,900 ADT (2013)
6,500 ADT (2014)
6,400 ADT (2014)
Edgewater Blvd
5,500 ADT (2013)
Beachview Drive
Point aux Chenes Rd
1,900 ADT (2013)
120 ADT (2013)
Lake Mars Av
Gulf of Mexico
Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue
Figure 3
Roadway Network
Gulf Park Estates, Jackson County, MS
BKI Project OS.14.002
Project No. 106821-101000
October 2015
0 0.125 0.25 0.5 Miles
Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom

BKI

5. Edgewater Boulevard – Edgewater Boulevard intersects with Beachview Drive approximately 1.25 miles south of the Old Spanish Trail intersection. Fronting land uses include wooded tracts, vacant properties and residential lots/structures. The offices of Utility Services, the local utility company, along with a water tower and lift plant are along this road also.
6. Point Aux Chenes Road – Point Aux Chenes Road intersects with Beachview Drive approximately 1.85 miles south of the Old Spanish Trail intersection. Fronting land uses include mostly wooded tracts with occasional vacant properties and residential lots/structures. This road extends east to Fountainbleau Road, which provides another access point out of Gulf Park Estates area to US Highway 90 corridor via Mississippi Highway 57/Belle Fontaine Road.
7. Lake Mars Avenue - Lake Mars Avenue, the southern-most point of the corridor study, intersects with Beachview Drive approximately 2.0 miles south of the Old Spanish Trail intersection. Fronting land uses include mostly residential lots/structures north of Oyster Shell Avenue. South of this point, the land is mostly wooded and vacant. The road ends at the Lake Mars Boat Launch and Fishing Pier.

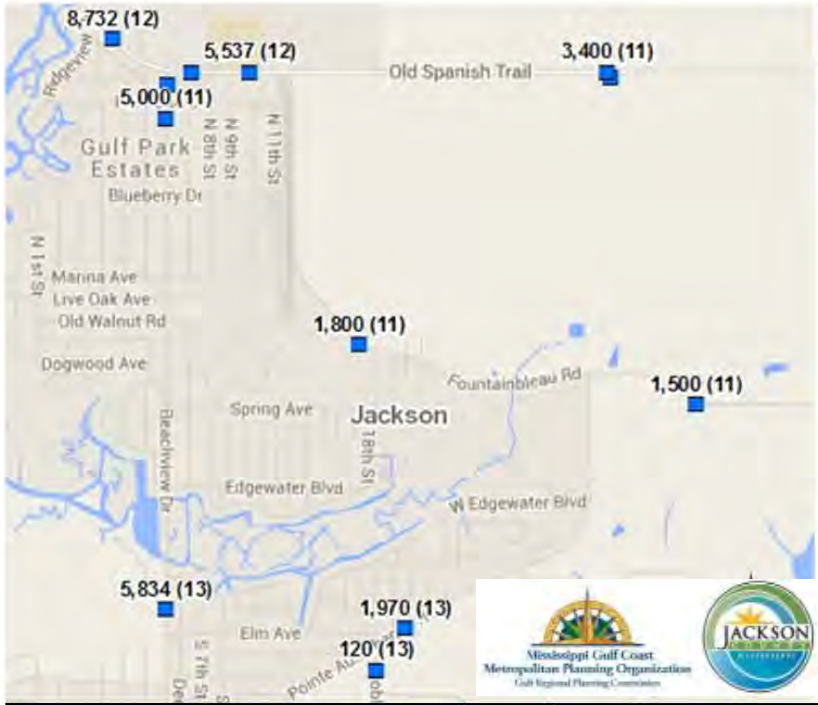
Observed Land Use Occupancy (2014)

The area of the study is mostly developed. Some scattered lots remain in the Gulf Park Estates subdivision, particularly along waterways and some streets where demolition of pre-existing structures damaged by Hurricane Katrina occurred. The largest clusters of these sites apparently ready for development are within a ¼ mile of the Neptune Avenue and Beachview Drive intersection, as well as near Bayou Simmons and west of the Beachview Drive in the former Gulf Park Estates Golf Course.

Changes in land use along Government Street/Old Spanish Trail near Beachview Drive have occurred within the past 5 years resulting in more commercial activity in this section of the corridor. Buildings occupy the two southern quadrants of the existing intersection as well as reaching down North 8th Street south of Old Spanish Trail. These facilities have their main entrances and buildings mostly oriented to Government Street/Old Spanish Trail to take advantage of the visibility offered by the corridor's higher traffic volumes. The merchants occupying these structures are of a size and scale that typically would serve adjacent neighborhoods, rather than attracting a regional or super-regional market. Some traffic from other areas in Ocean Springs and Jackson County could be drawn to the area as well, but the likelihood is low as these types of storefronts and activities can be found within a defined proximity east and west of this general area, where similar node style development has occurred to serve other neighborhood areas oriented to the Government Street/Old Spanish Trail corridor.

Traffic Volumes and Distribution

As noted on Figure 3, average daily traffic volumes on Beachview Drive are approximately 5,000 to 7,000 vehicles per day depending on your location along the corridor. Through their Transportation Data Management System (TDMS), GRPC provides historical data for count stations along the corridor as well as in the general vicinity for key locations along major streets. This information, as contained in Figure 4, indicates that traffic volumes have experienced some decreases, the greatest of which occured on Beachview Drive and Old Spanish Trail. Traffic volume changes remain influenced by factors such as adjustments in population, development patterns, construction, opening of alternative routes or improved corridors, all of which occurred in this corridor and general area. Generally, even with the losses in traffic volumes identified in the area, patterns and distribution can be seen as remaining fairly stable with little growth and change since 2010.



Beachview Drive ADT Trend (2008-2011, Projected 2011-2013*)

**-Dotted line segments represent projection estimated by BKI, 2015 based upon traffic patterns and growth trends in area contained in GRPC database. May not be indicative of actual change in traffic volumes.*

Location	2013	2012	2011	2010	2009	2008	Est. Annual Growth
Old Spanish Trail, *E of Hanshaw Rd*	---	5,540	4,400	4,400	4,300	4,400	5%
Old Spanish Trail, *W of Hanshaw Rd*	---	---	7,000	8,000	9,500	9,700	-13%
Old Spanish Trail, *E of Fountainbleu Rd*	---	---	---	---	3,100	3,200	-3%
Beachview Drive, *S of Old Spanish Tr*	---	---	6,700	5,900	11,000	11,000	-21%
Beachview Drive, *S of Palmetto Dr*	---	---	5,000	5,000	4,900	4,900	1%
Beachview Drive, *N of Point Aux Chenes Rd*	5,800	---	5,400	5,400	4,800	4,900	3%
Point Aux Chenes Rd, *S of Fountainbleu Rd*	1,970	---	2,100	2,100	2,300	2,300	-3%
Fountainbleu Rd, *S of Old Spanish Tr*	---	---	1,800	1,800	1,800	1,800	0%
Fountainbleu Rd, *W of Hammill Farm Rd*	---	---	1,500	1,700	1,700	1,700	-4%

Data source: Gulf Regional Planning Commission, 2015.

Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue

Figure 5
Traffic Volume Review (2008-2013)
Beachview Drive and Vicinity

[BKI Project OS.14.002 October 2015
[Project No. 106821-101000

Roadway Connectivity and Walkability[1]

Walkability is a term which recognizes an area's general ability to support and encourage pedestrian movements. It also describes the quality and coverage of pedestrian facilities, roadway conditions, land use patterns, community support, security and comfort for walking. Measuring it requires using a variety of variables. At the level of the local street block, individual decisions to walk (instead of drive) remain affected by the quality and availability of pathways, sidewalks and related facilities. At a general neighborhood level, it is affected by the existence and connectivity of sidewalks and crosswalks, and adjacent roadway conditions (road widths, traffic volumes and speeds).

From a facilities perspective, the Gulf Park Estates neighborhood is not walkable to a majority of area residents. The only sidewalks located in the area are along Old Spanish Trail between Beachview Drive and Hanshaw Road, a one-block long segment along Hanshaw Road leading to Palmetto Drive and along the streets internal to the Walnut Park Subdivision, located south of Old Walnut Road near the Ocean Springs Airport. Residents participating in project-related meetings report using a combination of local streets for passive recreation activities, cycling, or to walk their children to school or neighborhood bus stops.

Obviously, due to the amount of activity reported in the area, the lack of facilities does not keep the population from walking or cycling through the area. To determine how the existing street network supports walking in the area, the team completed a review of roadway connectivity. The objective is to measure the density of intersections within the neighborhood, looking for a result which indicates that a high number of intersections existing, thus providing multiple opportunities and directions for walking between homes and nearby commercial structures and community facilities. Table 1 presents the results of this analysis using the existing Simmons Bayou bridge as the point of reference. As noted in the table, the relative density of intersections south of Simmons Bayou is higher within a half mile walking radius. Moving the analysis east/west to the ½ mile area increases the footprint for both areas, but includes more developed areas than found south of the bridge.

Higher intersection densities correlate highly with more walkable areas, providing pedestrians and cyclists with more abundant and efficient routing options, sometimes swaying the decision to walk versus drive. Walkable areas have intersection densities higher than 90 intersections/square mile within ½ mile radius of a road segment. The presence of certain land uses (i.e. nearby retail or commuter destinations) along with presence of route safety and available infrastructure impact walkability.[2]

Table 1: Observed Intersection Density
Gulf Park Estates Neighborhood, Ocean Springs, MS

Walking Distance	Area	# of Intersections	Square Miles	Acres	Intersection Density	
					Per Sq Mi	Per Acre
1/4 Mile	North of Simmons Bayou	69	0.81	516	85.60	0.13
	South of Simmons Bayou	54	0.39	284	139.36	0.22
½ Mile	North of Simmons Bayou	151	1.47	637	102.72	0.24
	South of Simmons Bayou	107	1.00	942	107.54	0.11

Analysis completed by BKI using Jackson County Roads shapefile and GIS tools, 2014.

[1] Section developed using *Walkability Improvements, Strategies to Make Walking Convenient, Safe and Pleasant*, TDM Encyclopedia, Victoria Transport Policy Institute, updated 10 September 2014, http://www.vtpi.org/tdm/tdm92.htm.
[2] Ewing, Reid and Cervero, Robert. Travel and the Built Environment. Journal of the American Planning Association, first published on 11 May 2010.

Speed of Traffic

One of the issues identified by community members at the initial public meeting was the perception that the majority of traffic passing on Beachview Drive was traveling at or above the posted speed limit. GRPC established a counting station on Beachview Drive north of Marina Drive to determine the distribution of speeds within traffic passing on the corridor. The results from the data seem to indicate that the majority of travelers on the corridor operate within the speed limit, although some speeding is occurring. Review of the data, as summarized in Table 2, indicates:

- The majority of traffic passing on the corridor consists of passenger cars and trucks.
- Within this stream, only 43.6% of the traffic passing on the corridor was above the posted speed limit of 35 MPH.
- The average 85th percentile speed (i.e. the speed at which 85% of the traffic is at or below) was 38.7 MPH, only 3.7 MPH above the posted limit.

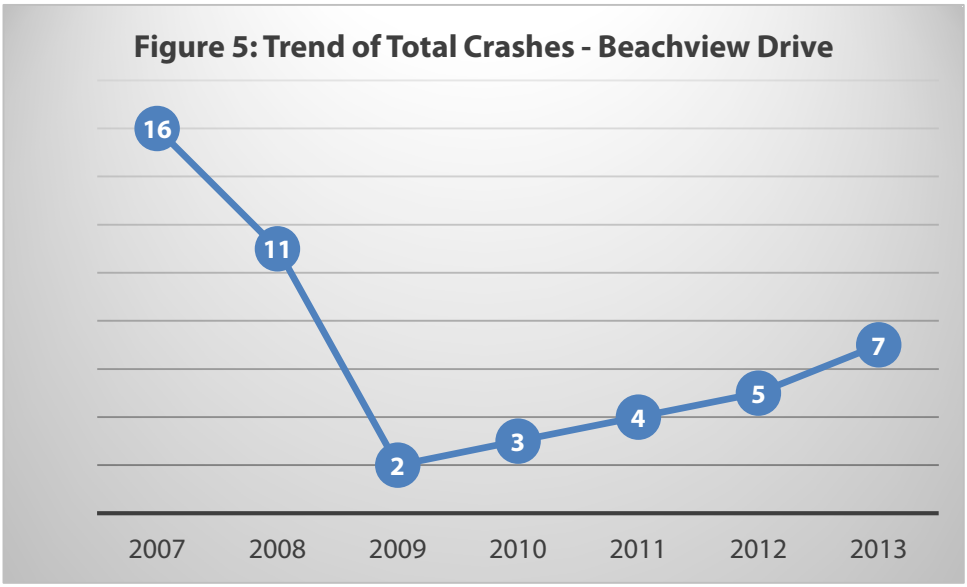
Table 2: Observed Vehicle Operating Speeds
Beachview Drive, North of Marina Drive

	56.4% BELOW SPEED LIMIT			43.6% ABOVE SPEED LIMIT	
	0-15 MPH	16 – 25 MPH	26-35 MPH	>35-40 MPH	>40 MPH
% of Total traffic	0.3%	2.9%	53.2%	33.8%	9.8%

Collection period: typical weekday and non-holiday weekend period - Tuesday, September 9, 2014 through Monday, September 15, 2014. Data Source: Gulf Regional Planning Commission, 2014. Traffic stream contribution: 85.8% passenger cars and trucks; 12.2% school buses; 1.6% multi-axle vehicles (trucks with trailers, service vehicles); 0.4% motorcycles

Crash Review

A review of crash data made available from MDOT through GRPC indicates at total of 48 crashes have occurred along the Beachview Drive corridor between 2007 and 2013 (See Figure 5 and Tables 3 and 4). As shown in Figure 4, the total number of crashes along the corridor has decreased over the past six years, with the total number of reported incidents reduced by 56% since 2007.



Crash data contains information on the location of the accident based upon a set of latitude and longitude coordinates, along with a summary of parties involved, cause and conditions. Maps of the corridor have been prepared to document the general location and orientation of the crashes reported in this database. A summary, as presented in the following tables, reflects the general location/concentration of events, along with the common types.

As noted in the tables, Beachview Drive near Palmetto Drive recorded the highest number of total crashes between 2007 and 2013, with 9 occurring during that period. The most common accidents by type are rear-end slow or stop, with the majority of these occurring in the segment of the Beachview Drive between Old Spanish Trail and Palmetto Drive. During the reporting period, four pedestrians were involved in crashes at the intersections of Blueberry Drive, Live Oak Drive and Old Walnut Road.

Table 3: Study Area Crashes by Location, 2007-2013
Beachview Drive, Old Spanish Trail to Lake Mars Avenue

Intersection/Segment[1]	Total Crashes by Year							Total Crashes by Location
	2007	2008	2009	2010	2011	2012	2013	
Old Spanish Trail	3				1		1	5
Palmetto Drive	2	2	1		2	1	1	9
Blueberry Drive	1	2	1			1		5
Marina Drive	2			1		1		4
Live Oak Avenue	2	2					1	5
Old Walnut Road	4	1		1				6
Spring Avenue	1					1	1	3
W. Edgewater Boulevard		2					1	3
E Simmons Circle				1			1	2
Elm Avenue	1				1			2
Palm Avenue		1						1
Meadowlark Avenue		1				1		2
Warble Avenue								
Lake Mars Avenue							1	1
Total	16	11	2	3	4	5	7	48

Table 4: Study Area Crashes by Type, 2007-2013
Beachview Drive, Old Spanish Trail to Lake Mars Avenue

Intersection/Segment[1]	Types of Crashes						
	Angle	Head-on	Left-turn same roadway	Pedestrian	Rear-end slow or stop	Run-off Road: Left	Run-off Road: Right
Old Spanish Trail					4		1
Palmetto Drive	4				5		
Blueberry Drive	1			1	2		1
Marina Drive	1				3		
Live Oak Avenue	2			2	1		
Old Walnut Road				1	4		1

Table 4: Study Area Crashes by Type, 2007-2013 (*continued*)
Beachview Drive, Old Spanish Trail to Lake Mars Avenue

Intersection/Segment[1]	Types of Crashes						
	Angle	Head-on	Left-turn same roadway	Pedestrian	Rear-end slow or stop	Run-off Road: Left	Run-off Road: Right
Spring Avenue					2		1
W. Edgewater Boulevard					3		
E Simmons Circle						1	1
Elm Avenue		1	1				
Palm Avenue	1						
Meadowlark Avenue			1		1		
Warble Avenue							
Lake Mars Avenue	1						
Total	10	1	2	4	25	1	5

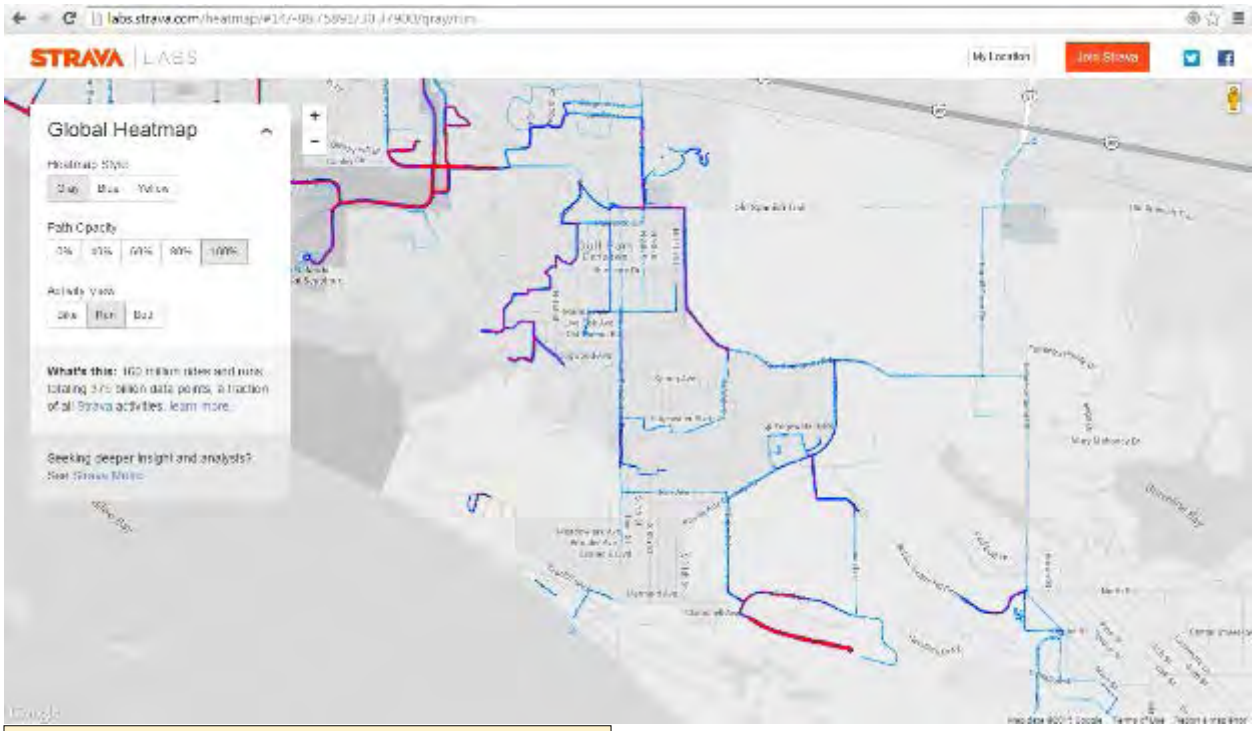
Data source for both tables and Figure: Crash records, Mississippi Department of Transportation through Gulf Regional Planning Commission, 2007-2013.

Documented Travel Demand – Cycling and Walking

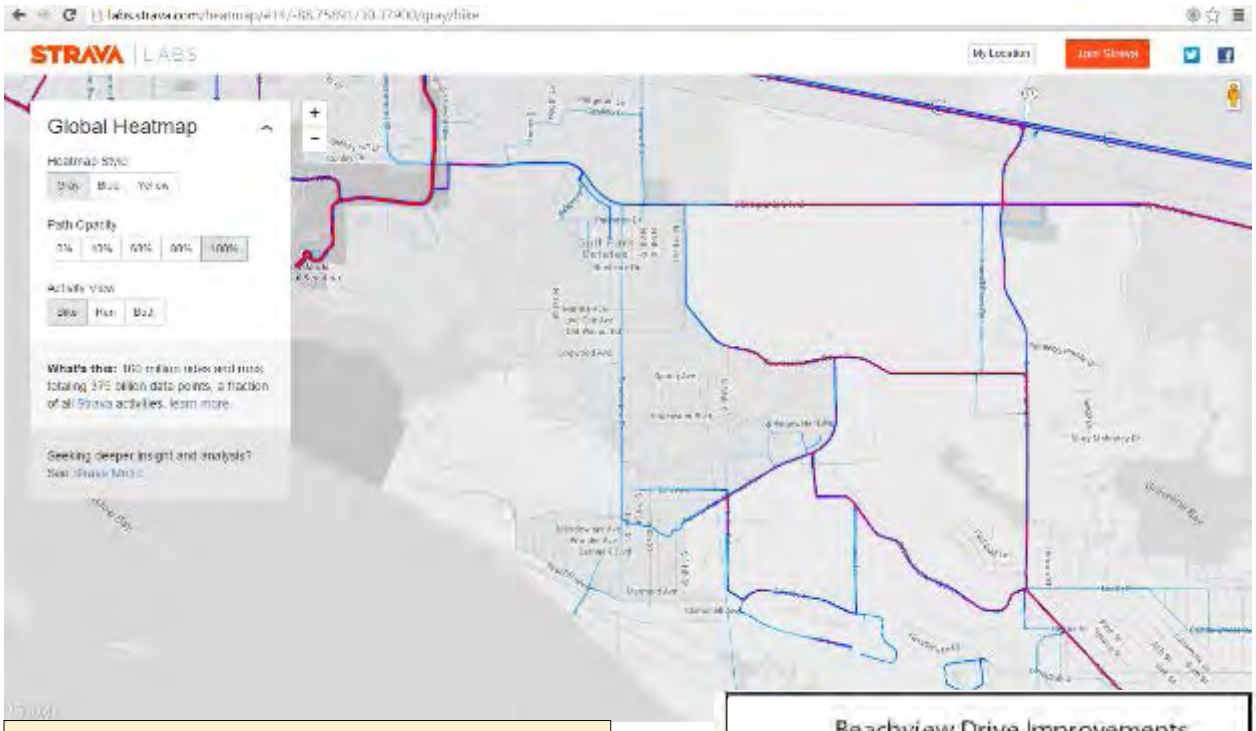
A combination of worn grass/dirt paths along the shoulders of Beachview Drive, along with several informal paths across private property, are indications that residents of Gulf Park Estates partake in these activities within the general area. During the field observations, cyclists shared the travel lanes on Beachview Drive with motorists, moving to shoulder areas where flat ground was available and obstructions minimal. To determine the general patterns for these types of activities in the area, citizens participating in project meetings documented their use patterns with this information tracked on flip charts and maps. Generally, what came of this review was not substantiated data to identify corridors or preferential paths. Rather, observations that current facilities are lacking and those who chose to walk or cycle for exercise or pleasure are doing so in the travel lanes of local streets or along the shoulders of Beachview Drive.

In order to qualify these observations and to provide a map of demand-based data, STRAVA[3], a third party application which tracks user paths for cycling and running, provided its user supplied data in the Ocean Springs and Gulf Park Estates Area. This data, which is available from runners and cyclists using the STRAVA app, indicates several choice routes in the area appear used by these population groups (See Figure 6). This data is basic and available through public domain, and does not provide insight into the general frequency or time of use (i.e. daily, weekly, etc.). However, it does show strong demand oriented to east-west movements along Government Street/Old Spanish Trail, as well as within the campus of the Gulf Islands National Seashore facility located adjacent to Gulf Park Estates.

[3] Strava is a third party application which can track and report user-supplied activities. For more information, please see http://www.strava.com/. For the complete Strava Heat Map which indicates bike, run or both activities on the MS Gulf Coast, http://labs.strava.com/heatmap/#10/-89.17423/30.47298/blue/bike.



Running Routes of Choice Gulf Park Estates and Vicinity



Cycling Routes of Choice Gulf Park Estates and Vicinity

Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue

Figure 6
STRAVA Data for Cyclists and Runners
Beachview Drive and Vicinity

BKI Project OS.14.002
Project No. 106821-101000
October 2015

Warrant for All-Way Stop Control

As part of the traffic study, opportunities to install a four-way stop (also known as all-way stop control) was considered at the intersection of Beachview Drive with Edgewater Boulevard, approximately 1.25 miles south of Old Spanish Trail intersection. The suggestion for improvement came from members of the community based upon their knowledge of the area and the relative traffic circulation patterns in the neighborhood. According to the *Manual for Uniform Traffic Control Devices*[4], consideration of a multiway or all-way stop control occurs in the following circumstances based upon the outcome of an engineering study:

A. Where traffic control signal are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

B. Five or more reported crashes in a 12 month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.

C. Minimum volumes:
   1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
   2. *The combined vehicular, pedestrian and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor street vehicular traffic of at least 30 seconds per vehicle during the highest hour;*
   3. *But if the 85th percentile approach speed of the major street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*

D. Where no single criterion is satisfied, but where Criteria B, C.1 and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

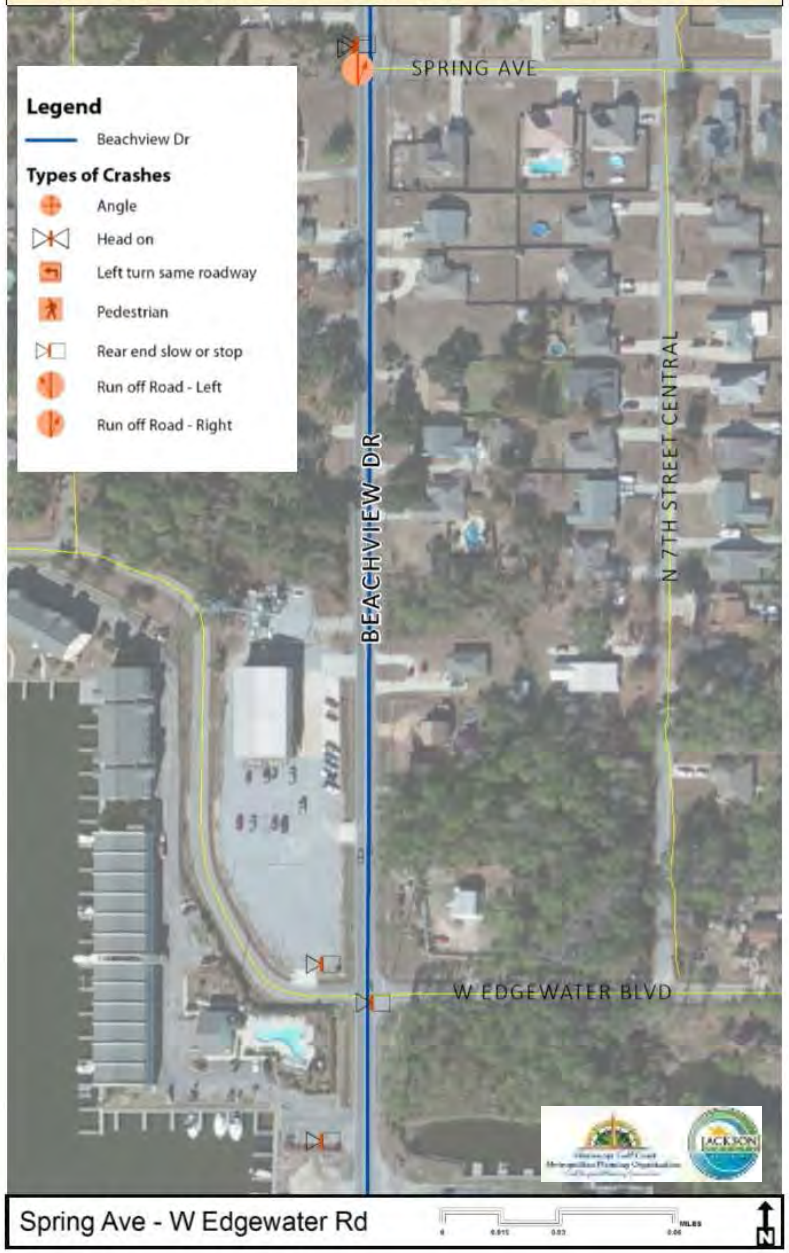
Other criteria that may need to be considered in an engineering study include:

A. The need to control left-turn conflicts;
B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required, to stop; and
D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

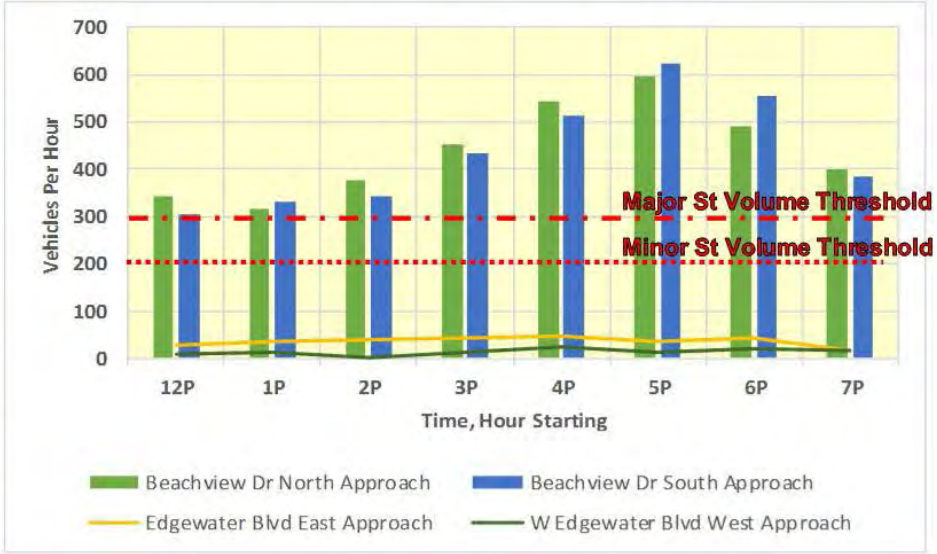
In order to determine if this location meets with the warrants found in the MUTCD, a review was undertaken using traffic volume data collected at the intersection of Beachview Drive at the Edgewater Boulevard by the Gulf Regional Planning Commission, along with accident data from the Mississippi Department of Transportation and speed data shown in Table 2. **As noted by the results shown in Figure 7, this location does not appear to meet the established warrants A-D for installation of an all-way stop control.**

[4]2009 Manual of Uniform Traffic Control Devices, with Revisions 1 and 2, May 2012, available from http://mutcd.fhwa.dot.gov/ Section 2B.07, Multi-Way Stop Applications, pg. 52

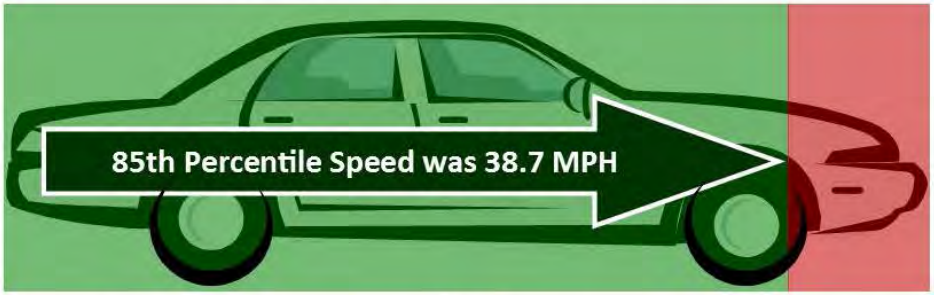
Accident Review, Beachview Drive at Edgewater Boulevard (2010-2013)



Volume Review, Beachview Drive at Edgewater Boulevard (Highest 8 Hours)



Speed Review, Beachview Drive , near Marina Drive



Warrant Review Summary

- 3 Crashes in area reported 2007-2013;
- Major street volume over 300 vehicles per hour for 8 hours (12-7p)
- Minor street volume less than 200 vehicles per hour for same 8 hours
- 85th percentile speed within acceptable range < 40MPH

Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue

Figure 7
All-Way Stop Control Warrant Review
Beachview Drive at Edgewater Boulevard

BKI Project OS.14.002
Project No. 106821-101000

October e 2015

Transportation Improvement Program and Long Range Plan

For the purposes of the future, improvements in the neighborhood need to incorporate connections to projects previously approved and within the MPO's long-range transportation plan process. Although ongoing updates are likely to change project staging or definition in some instances, the focus has been to review the current 2035 plan update for projects suggested for immediate area around Beachview Drive. In addition, the review also examined the TIP, which provides the timing/staging for implementation of projects from the long range plan. Table 5 provides an outline of the projects proposed for the corridor or immediate area within the 2035 Long Range Transportation Plan, while Table 6 provides the same for projects in the TIP.

Table 5: Proposed Long Range Transportation Plan Improvements
Proposed for Roadways/Locations within ¼ mile vicinity of Beachview Drive

Route	Proposed Improvement	Plan Tier
Hanshaw Road to Beachview Drive	Construct 2-lane connector between Hanshaw Rd and Old Spanish Trail at Beachview Drive	Stage 1 (2011-2015)
Government Street	Reconstruct with center turn lane, Ocean Springs Road to Beachview Drive	Stage 2 (2016-2025)
Beachview Drive	Reconstruct with center turn lane, Ocean Springs Road to Spring Avenue	Stage 2 (2016-2025)
Old Spanish Trail	Proposed as a bicycle route	Not specified

Data Source: Mississippi Gulf Coast Area Transportation Study 2035 Long Range Transportation Plan, March 2011.

Table 6: Adopted Transportation Improvement Plan Projects
Proposed for Roadways/Locations within ¼ mile vicinity of Beachview Drive

Route	Proposed Improvement	Phase/Year	Cost
Government Street	Reconstruction, 2.5 miles, improved sidewalks and pedestrian bridge over bayou	FY 2015	$1,112,679

Data Source: Mississippi Gulf Coast Metropolitan Planning Organization Transportation Improvement Program, FY 2014-2018, adopted March 2014.

Initial Project Alternatives

Given the combination of existing low traffic volumes, with relatively steady demand associated with cyclists and pedestrians along the corridor, the team identified a total of three alternative concept types for the Beachview Drive corridor: Separated Shared Use Path, Sidewalk with Bikeable Shoulders, or Complete Street. To address community concerns about visibility of crossing areas, the project incorporates High-intensity Activated Crosswalk Beacons (HAWK) (or similar highly-visible safety measures) at several proposed crosswalk locations, while addressing community concerns regarding speeding with the introduction of variable speed signs.

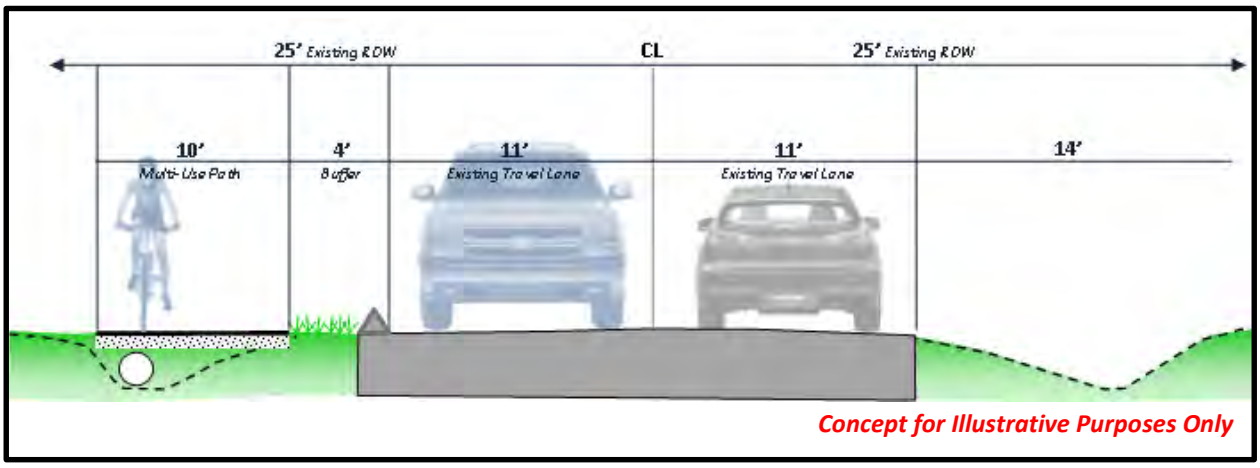
Initial alternatives included options to connect the recommended Beachview corridor improvements east to North 8th Street. This would have connected the proposed alternatives with the existing Safe Route to Schools project completed in the area. These options would have been pursued as individual projects in the future, addressed community comments regarding walkability and would have a comprehensive system of pedestrian facilities connecting Gulf Park Estates and Ocean Springs Middle School. However, in response to a community information survey process, these improvements to neighborhood streets near Beachview Dr will not be pursued. Those responding to the survey revealed that residents do not desire this bicycle and/or pedestrian improvement solution at this time.

The design standards/guidelines used to guide development of these alternatives include:

- *Manual for Uniform Traffic Control Devices* (MUTCD) 2009 edition, Part 2, Signs, Part 9, Traffic Control for Bicycle, Section 2B.07 Multiway Stop Applications;
- *MDOT 2001 Roadway Design Manual,* Chapter 14, Geometric Design for Streets, pages 14-1 through 14-31;
- *A Policy for Geometric Design of Highways and Streets, 2011 Edition, AASHTO,* Chapter 4, Cross Section Elements;
- *Complete Streets Policy,* as applied to LPA projects, MS Gulf Coast MPO, adopted September 24, 2015.

Initial order of magnitude cost estimates for the phased construction for these alternatives follow the descriptions of each alternative in Table 7. Recommendations reflect modifications required to address provisions of the GRPC Complete Streets Policy, adopted September 24, 2015 by the MPO Transportation Policy Committee. In addition, the recommendations reflect those comments received during GRPC and Jackson County review as well as comments received during the final public review meeting. Additionally, there was a 21-day comment period managed through GRPC following submittal of the final draft report. GRPC received no comments from the community during the review period.

Concept Definition #1 – Separated Shared Use Path

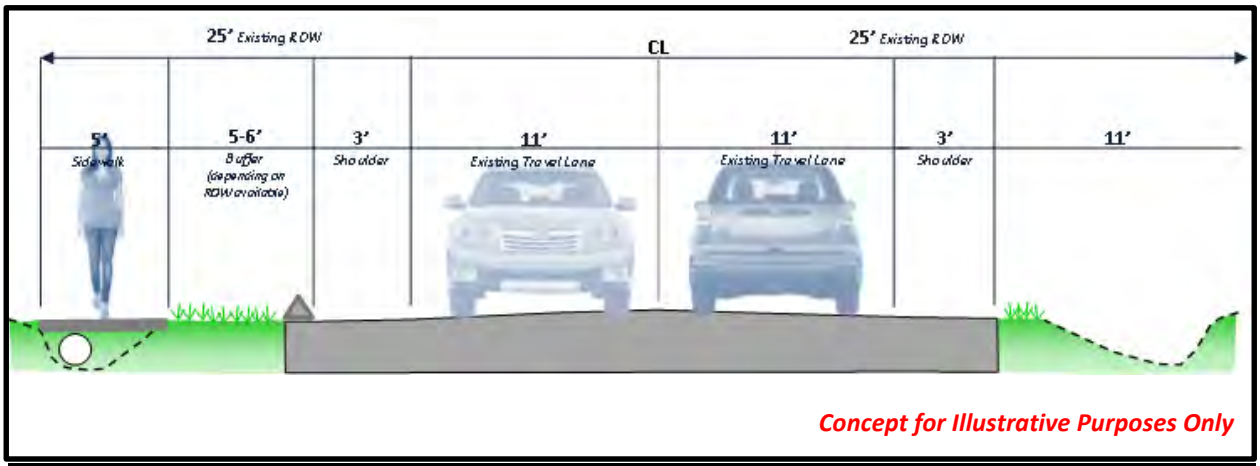


General Description	Pros
• 50 feet of right-of-way (back of swale to back of swale) assumed • Maintain 2 existing travel lanes • 10 ft asphalt shared use path 4 feet from edge of pavement • Slotted curb on edge of roadway • Enclosed drainage ditch/swale with inlets placed at regular intervals to accommodate drainage • Drainage pipe to be sized according to area needs • 4 ft from path to edge of travel lane • Shared use path can be placed on either side of roadway • Posted speed limit 35 MPH	• Provides a dedicated facility for pedestrians and cyclists • Maintains improvement within existing corridor right-of-way
	Cons
	• Will require some earthwork/re-grading of existing drainage ditch
	Conceptual Project Location/Limits (Figure 8)

	• +/- 2.04 miles of multi-use path within the following limits
	  o Old Spanish Tr to Edgewater Blvd, west side of street
	  o Edgewater Blvd to Point Aux Chenes Dr, east side of street
	  o Beachview Dr, Point Aux Chenes Dr to Lake Mars Av, west side of street
	• New crosswalks at Palmetto Dr, Blueberry Dr, Edgewater Blvd, Point Aux Chenes Dr and Lake Mars Av
	• As identified in the GRPC Unified Planning Work Program (*Get to B Safety Improvement Program*), a safety education program could accompany corridor improvements to educate regional drivers about bicycle and pedestrian safety.


Mississippi Gulf Coast Metropolitan Planning Organization
Gulf Regional Planning Commission
JACKSON COUNTY MISSISSIPPI
Old Spanish Trail
Palmetto Dr
Existing Sidewalk and Crosswalk
(Safe Routes to Schools Project)
New Crosswalk
City of Ocean Springs
Blueberry Dr
North 8th Street
Fountainbleau Road
SPEED LIMIT 35
Variable Speed Limit Sign
Install "Share the Road" signs at MUTCD defined intervals along Beachview Drive
SHARE THE ROAD
W11-1/ W16-1P Sign Combo
Edgewater Blvd
New Crosswalk
Beachview Drive
HAWK Signal
New Crosswalk
Lake Mars Av
Gulf of Mexico
N
W
E
S
0
0.125
0.25
0.5 Miles
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Project Concept:
Beachview Dr Separated Shared Use Path
Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue
Figure 8
Improvement Concept #1
Separated Shared Use Path
BKI Project OS.14.002
Project No. 106821-101000
October 2015
BKI

Concept Definition #2 – Sidewalk with Bikeable Shoulders



Concept for Illustrative Purposes Only

General Description

- 50 feet of right-of-way (back of swale to back of swale) assumed
- Maintain 2 existing travel lanes
- 5 ft concrete sidewalk on one-side of corridor
- 3 ft paved shoulder adjacent to both travel lanes provides some on-street space for cyclists
- 5-6 ft grass buffer with slotted curb between sidewalk and bikeable shoulder
- Enclosed drainage ditch/swale with inlets placed at regular intervals to accommodate drainage
- Drainage pipe to be sized according to area needs
- 8-9 feet from sidewalk to edge of travel lane
- Completely utilizes right-of-way on one side of the corridor, while leaving the other side untouched
- Posted speed limit 35 MPH

Pros

- Provides a dedicated facility for pedestrians
- Maintains improvement within existing right-of-way
- Driveway slopes would be updated to meet ADA guidelines

Cons

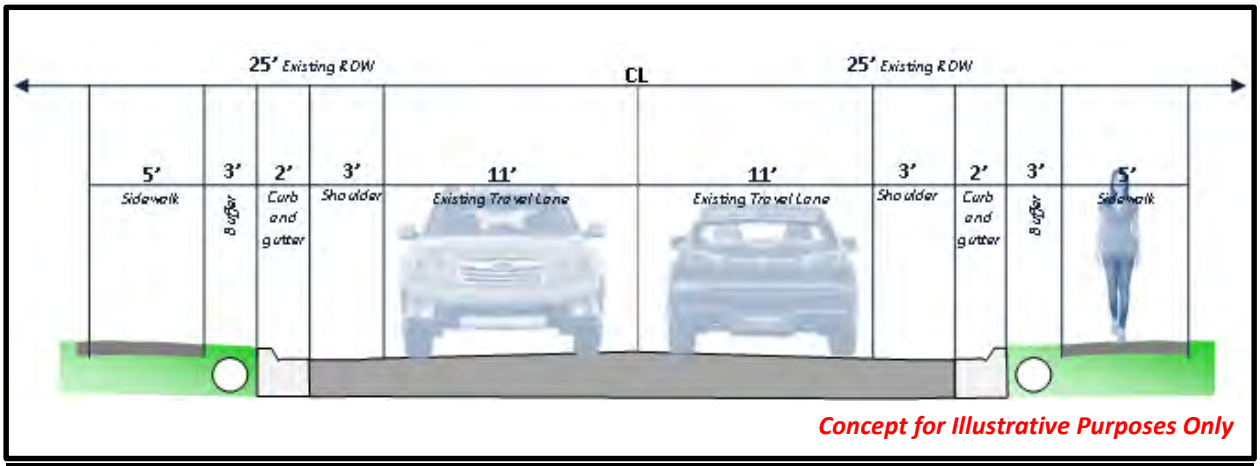
- Concept does not fully address community will for dedicated facility for cyclists away from existing traffic stream

Conceptual Project Limits (Figure 9)

- +/- 2.04 miles of sidewalk along one side of Beachview Dr within the following sections
  - Old Spanish Tr to Edgewater Blvd, west side of street
  - Edgewater Blvd to Point Aux Chenes Dr, east side of street
  - Beachview Dr, Point Aux Chenes Dr to Lake Mars Av, west side of street
- New crosswalks at Palmetto Dr, Blueberry Dr, Edgewater Blvd, Point Aux Chenes Dr and Lake Mars Av
- As identified in the GRPC Unified Planning Work Program (*Get to B Safety Improvement Program*), a safety education program could accompany corridor improvements to educate regional drivers about bicycle and pedestrian safety.


Mississippi Gulf Coast Metropolitan Planning Organization
Gulf Regional Planning Commission
JACKSON COUNTY MISSISSIPPI
Old Spanish Trail
Palmetto Dr
Existing Sidewalk and Crosswalk
(Safe Routes to Schools Project)
New Crosswalk
City of Ocean Springs
Blueberry Dr
North 8th Street
Fountainbleau Road
SPEED LIMIT 35
Variable Speed Limit Sign
Install "Share the Road" signs at MUTCD defined intervals along Beachview Drive
SHARE THE ROAD
W11-1/ W16-1P Sign Combo
Edgewater Blvd
New Crosswalk
Beachview Drive
HAWK Signal
New Crosswalk
Project Concept:
Beachview Dr New Sidewalk with Bikeable Shoulders
Lake Mars Av
Gulf of Mexico
0 0.125 0.25 0.5 Miles
Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue
Figure 9
Improvement Concept #2
New Sidewalk with Bikeable Shoulders
BKI Project OS.14.002
Project No. 106821-101000
October 2015
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
BKI

Concept Definition #3 – Complete Street Option



Concept for Illustrative Purposes Only

General Description

- 50 feet of right-of-way (back of swale to back of swale) assumed
- Maintain 2 existing travel lanes
- 5 ft concrete sidewalk with 3 ft grass buffer along both sides of corridor
- 2 ft curb and gutter with intermittent drainage grates between travel lane and grass buffer
- 3 ft paved shoulder adjacent to both travel lanes provides on-street space for cyclists
- Subsurface drainage along both sides of roadway
- Edge of right-of-way sloped toward roadway surface to facilitate drainage collection
- 8 feet from sidewalk to edge of travel lane
- Completely utilizes assumed right-of-way
- Posted speed limit 35 MPH

Pros

- Provides a dedicated facility for pedestrians
- Maintains improvement within existing corridor right-of-way

Cons

- Concept would fully engage corridor during construction process
- Mailboxes and driveways along corridor would need to be moved and replaced
- Existing overhead utilities may be impacted depending on final location of improvements.
- Coordination with existing utilities required (telecommunication, water, sewer) to determine locations of existing underground items in reference to proposed pipe and sidewalks

Conceptual Project Limits (Figure 10)

- +/- 2.04 miles of complete street improvement on Beachview Drive, Old Spanish Tr to Lake Mars Av
- New crosswalks at Palmetto Dr, Blueberry Dr, Edgewater Blvd, Point Aux Chenes Dr and Lake Mars Av
- As identified in the GRPC Unified Planning Work Program (*Get to B Safety Improvement Program*), a safety education program could accompany corridor improvements to educate regional drivers about bicycle and pedestrian safety.


Mississippi Gulf Coast Metropolitan Planning Organization
Gulf Regional Planning Commission
JACKSON COUNTY MISSISSIPPI
Old Spanish Trail
Existing Sidewalk and Crosswalk
(Safe Routes to Schools Project)
Palmetto Dr
New Crosswalk
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Blueberry Dr
North 8th Street
Fountainbleau Road
SPEED LIMIT 35
Variable Speed Limit Sign
Install "Share the Road" signs at MUTCD defined intervals along Beachview Drive
SHARE THE ROAD
W11-1/ W16-1P Sign Combo
Edgewater Blvd
New Crosswalk
Beachview Drive
HAWK Signal
New Crosswalk
Lake Mars Av
Gulf of Mexico
0 0.125 0.25 0.5 Miles
Project Concepts:
Beachview Dr Complete Street
Beachview Drive Improvements
Old Spanish Trail to Lake Mars Avenue
Figure 10
Improvement Concept #3
Complete Street
BKI Project OS.14.002
Project No. 106821-101000
October 2015
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
BKI

Order of Magnitude Cost Estimate

Using unit costs as a guide, a general order of magnitude cost estimate for each alternative appears in Table 7 below. Details for each cost appear within Appendix E.

Table 7: Initial Order of Magnitude Cost Estimates
Beachview Drive *(Old Spanish Tr to Lake Mars Av)*, By Project Phase, rounded to closest $100

Project Phasing Description/Length	**Option #1** Separated Shared Use Path	**Option #2** Sidewalk with Bikeable Shoulders	**Option #3** Complete Street
Phase I: Beachview Drive, *west side, 3,890 LF* Old Spanish Trail to Old Walnut Road	$1,399,200	$1,690,400	$2,906,200
Phase II: Beachview Drive, *west to east side, 3,660 LF* Old Walnut Road to Simmons Bayou Bridge	$1,324,000	$1,578,500	$2,751,800
Phase III: Beachview Drive, *west to east side, 2,795 LF* Simmons Bayou Bridge to Point Aux Chenes Road, Point Aux Chenes Road to Lake Mars Avenue	$1,055,200	$1,274,100	$2,157,100
Total *(10,345LF)*	$3,778,400 *$366 per lf*	$4,543,000 *$440 per lf*	$7,815,100 *$760 per lf*

Notes:
1. Table and costs organized by potential sequence of construction within defined corridor sections.
2. Please see appendix for more details on individual unit costs and quantities assumed.
3. Order of Magnitude costs shown for initial planning purposes only - additional refinement of design attributes or alternative will have an impact on cost.
4. Unit pricing for materials utilized to develop corridor costs based upon comparable costs of similar MDOT and County projects.
5. Information for utilities on corridor identified during initial and follow-up field review with GRPC and/or Jackson County or during follow-up interviews with local utility providers.
6. Assumes project constructed totally within existing right-of-way, fully defined as a result of a survey completed along the corridor as part of the final design.
7. Drainage improvements assume completion of a hydraulic analysis as part of final project design. Pipe sizes based upon standard rule of thumb for comparable projects. Review and completion of detailed hydraulic analysis will also finalize locations of inlets.
8. Project totals include $195,000 in estimated cost for individual HAWK installation at the following locations on Beachview Dr.: Blueberry Dr., Edgewater Blvd., and Point Aux Chenes Rd. Cost shown is for equipment is $65,000 per location, not including mobilization and installation, based upon the engineers estimate for the Government Street improvement project. Adjusting equipment choices or installation type will change project cost estimates accordingly.
9. Project totals include $6,000 in estimated cost for two post-mounted Variable Speed Limit Signs installed. Location for signs to be determined during final design. These wireless solar flashing LED speed warn drivers of excessive speed.

Compiled by Burk-Kleinpeter, Inc., 2015.

Lighting District Coordination

At the September 14, 2014 public meeting, many of the area residents noted a lack of lighting along area roadways formed an impediment to maintain a safe walking environment. Such appeared more readily during periods of limited daylight, particularly early mornings and late evenings when pedestrian traffic increased in response to school bus traffic patterns and as area residents walked for pleasure and exercise. One of the options presented to the community was for them to consider creating a lighting district, like other neighborhood areas in Jackson County. Such an activity is within a designated Public Improvement District (PID), as outlined under Title 19, Chapter 31 of the Mississippi Code of 1972.[5] PIDs can agree to create funding through millage or bonds to finance all stages of development (i.e. survey, design, and construction) for specifically chartered improvements. The range of activities supported within the PID includes improvements to local utilities networks and systems, lighting, drainage, fire protection, parks and recreation facilities. It requires specific identification of these functions as part of the organization of the district.[6] To encourage and connect a maximum number of walking points (origins and destinations), the boundaries of such a district should consider including populated areas within Gulf Park Estates east of the City of Ocean Springs to Fontainebleau Drive, south of Old Spanish Trail to Neptune Avenue.

Pedestrian Crosswalk Visibility

Review of crash/incident data from MDOT supplied by GRPC indicates four pedestrian/cyclist incidents have occurred on the corridor at the intersections of Live Oak Avenue, Old Walnut Road and Blueberry Drive between 2007 and 2013. The corridor improvement recommendations includes installing marked pedestrian crossings at one of these locations, in addition to several others, which may become high-use locations in the future. This considers current land use and trip generator locations, along with a general review of the area's walking and circulation patterns with community residents at the project's initial September 14, 2014 meeting.

Rectangular Rapid Flashing Beacon (RRFB) with MUTCD Non Vehicular Warning Sign W11-2

As there is no system of crosswalks currently in place along Beachview Drive south of Old Spanish Trail, the recommendation includes reflective pavement markings accompanied with MUTCD non-vehicular warning signage for pedestrians (W11-2) with distance markers or arrows on the approaches to these locations. In addition, concerns about visibility and speed require consideration of a heightened approach/warning signage installation which is consistent with the needs of this low volume corridor. Review of FHWA's Manual of Uniform Traffic Control Devices (MUTCD) identifies both a rectangular rapid flashing beacon (RRFB) and a High-Intensity Activated Crosswalk or Pedestrian Hybrid Beacon (HAWK) as potential measures for employment. The RRPB would be similar in size and installation as the current school zone speed signage on Old Spanish Trail at the North 8th Street/Hanshaw Road intersection. A HAWK installation remains within the Government Street improvements in Ocean Springs occurring near the intersection of Tara Lane[7]. As this project develops, a review of options with the community will take place with a suggestion that initial application of the RRFB take place on Beachview Drive, with a

[5] Title 19, Counties and County Officers, Chapter 31, Public Improvement Districts, Mississippi Code of 1972, as reviewed within Lexis Nexis through courts.ms.gov.
[6] Please see 19-31-5, Definitions, Chapter 31 Public Improvement Districts, Title 19 Counties and County Officers, Mississippi Code of 1972.
[7] FY 2015, MS Gulf Coast MPO Transportation Improvement Program, pg. 13.

transition to the HAWK signal at intersections in the future if and as warranted by the future volume of passing vehicles and crossing pedestrians.

High-Intensity **A**ctivated Cross**W**al**K** or Pedestrian Hybrid Beacon or HAWK installation, www.achdidaho.org

Variable Speed Limit Signs

As described in the review of traffic operations above and as described by residents along the corridor, excessive speeding remains a perceived problem on the corridor. While data collected by GRPC indicates the 85th percentile speed is only 3.5 mph over the posted limit, 10% of cars in this sample travel in excess of 40 mph on this narrow, two lane road. One low-cost solution to providing more information on travel speed in the corridor is a real-time variable speed limit sign. These wireless, solar-powered LED signs display the passing speed of vehicles based upon radar measurements. These electronic signs flash travel speeds in excess of the posted speed and can stop displaying speeds when a vehicle travels extremely fast.[8] Additionally, the embedded electronics collect speed data from passing vehicles for analysis and observation.

Variable Speed Limit Sign installation, www.xwalk.com

Installation locations, determined during final design, should reflect the findings of the crash data presented in Tables 3 and 4. This data indicates the section of the corridor between Live Oak Avenue and Old Walnut Road has the largest share of vehicle accidents recorded within the analysis.

[8] This last feature is available to counteract observed trends at some installations where drivers intentionally drive excessively fast to obtain the highest number on the sign.

Summary of Community Input

Initial Public Information Meeting

Project starts with a public meeting held and hosted by Supervisor John McKay at the Elks Lodge on Beachview Drive at Edgewater Boulevard, 9/14/14

An initial public information meeting held on September 14, 2014, provided input to the overall project objective and definition. Community members present participated in a general discussion of pedestrian and cycling access issues in the general area facilitated by representatives of GRPC, Jackson County and BKI. Results from this meeting, appearing in Appendix D, provided input on observed patterns for both of these traffic streams, along with identification of issues and opportunities. Coming from this meeting, the project incorporated results of the STRAVA modeling to help define overall patterns found within the area, as well as identification of potential choice routes for cyclists. In addition, the commentary provided input to refining overall improvement options, including identification of known obstacles for implementation. Individuals also shared their experiences in the area either as pedestrians, cyclists or motorists – all of which the team used to help flesh out the options presented in Figures 8 through 10.

Community Opinion Survey

As a follow-up to this initial meeting, a survey of the Gulf Park Estates neighborhood east of Beachview Drive focused on testing community response and support for lower-cost and easily implementable options for addressing circulation and access needs. Measures identified looked to provide improved facilities for cyclists along neighborhood streets combined with circulation changes which would not inhibit vehicle mobility or access to property. In addition, survey participants had the option to provide an indication of their support for other ideas, including sidewalks, sidewalk with bicycle lane or other respondent-defined option. The survey, as administered during the July 2015, involved a door-to-door canvassing of 250 homes, seeking resident input and comments on a striped in-street alternative or addition of bicycle "sharrow" pavement markings to existing streets.

Residents had the option to respond to the survey in-person at the time of administration or to follow through via an on-line survey linked through the GRPC website. The survey experienced a response rate of 14%, which meets with a surveying best practice for statistical validity. Of responses received through both survey methods:

- 29% of the neighborhood supports the idea of making changes as defined in the survey (one-way circulation with on-street bicycle lanes);
- Some portion of the residents support installing sidewalks along the edge of the roadway;
- 52% indicated they and/or their children bike/walk in the area at-least once a month. *Some individuals reported a much more frequent incidence of these activities at the time of the initial September 2014 meeting.*

A technical report outlining the survey methodology and results appears in Appendix F.

Final Public Information Meeting

A final public meeting, held on August 27, 2015, allowed interested community residents to review the outcome of the study and provide input to the final project recommendation. The GRPC provided a legal notice for the meeting through the local newspaper of record (*The Sun Herald*). In addition, notification for the meeting went to the community through the office of Supervisor John McKay, Jackson County. Participants reviewed the options and cost estimates outlined previously, along with a summary of the apparent environmental constraints and outcomes of the previously described community opinion survey. Appendix D contains a summary from this meeting, as well as a copy of the legal notice advertising.

Project ends with a public information meeting to present options and collect community input to a recommendation, held and hosted by Supervisor John McKay at the Fontainebleau Community Center, 8/27/2015

During this meeting, GRPC received the following general comments on the plan and initial recommendations from the public:

Date	Comment	Response
8/27/15	1. I like the wider bike path (Option #1), but my suggestion is to have the drainage closer to the road with greenery on top to act as a barrier between the road and the bikepath. 2. I would like to see a raised curb on both sides of the street.	Project team looked at potential adjustments including a lane delineator between the travel lane and shoulder. Team will examine ideas presented for feasibility as part of a general review of the cross section for Option #1 (and #2) in order to move the pedestrian and bicycle facilities further away from the travel lane.
8/27/15	1. Like the wider bike path (Option #1) option, but traffic moves too fast, in my opinion, on the corridor for these to be as close as shown in the drawing	Team will examine ideas presented for feasibility as part of a general review of the cross section for Option #1 (and #2) in order to move the pedestrian and bicycle facilities further away from the travel lane.

21-Day Public Review Period

Following the public meeting, a final draft of this plan appeared on-line at www.grpc.com before the public between September 1 and September 21, 2015 for a 21-day open comment period, as per the guideline for planning studies administered through GRPC. GRPC provided notification of the document's availability and invited comments with a legal notice in the local newspaper of record (*The Sun Herald*) and an email blast to community stakeholders and MPO members. Copies of the legal notice and responses to the same are within the public participation files of the GRPC. GRPC received no comments from the public during the 21-day comment period.

Recommendation

An initial phase of implementation of the shared use path alternative (Option #1) for the Beachview Drive Improvement project *(Project No. 106821-101000 • Jackson County, MS)*, between Old Spanish Trail and Edgewater Boulevard/Simmons Bayou is recommended by staff of the GRPC and Jackson County Commissioner McKay, with the benefit of a review of the analysis, discussion of the project area, population and community comments. Additionally, it is recommended a subsequent phased implementation for the shared use path alternative (Option #1) continuing south of Edgewater Boulevard to the terminus at Lake Mars Avenue and the Lake Mars Boat Launch could be accomplished using this cross section as well, pending available funds and the outcome of further survey on the corridor to establish the final right-of-way limits. This option provides pedestrian and cycling facilities, primarily for families, young and inexperienced riders (in their opinion) as well as helping to address perceived and real speeding concerns while working within existing right-of-way limitations.

This concept remains flexible by providing the community with a walking area, which includes buffer space between the adjacent travel lanes. In addition, the off-street path provides a dedicated facility for use by novices and experienced cyclists alike. An education campaign managed through the GRPC will aid in the education of the community on how to use the shared use facility. Radar speed limit signs, combined with routine enforcement, help to address concerns about excessive speed on the corridor. GRPC staff has noted in its decision to support this alternative the need to make this shared use path as wide as possible (given accepted design standards and policies[9]) and to use accepted MUTCD pavement markings to identify the path for two-way travel. Additionally, the current Option #1 cross section, given the constraints for budget, shows a grassed section between the path and edge of the roadway, separated from the street by a slotted curb. Opportunities to incorporate additional surfacing between the street and shared use path, should be accommodated where practicable along with an accepted method of demarcation (i.e. compliant with all applicable roadway design standards) which clearly indicates this as a safety/transition zone between the path and road, and not an on-street parking area. Population growth in the area, particularly at or near the Simons Bayou area and adjacent marina, will increase traffic in the area and demand for recreational users to walk and ride to the area.

Community comments initially identified street side lighting as an element which needs improvement in the area. Accomplishing this installation through the County and a local lighting district (see page 31) should continue on a parallel track to this project's development. Development of a specific lighting strategy and plan for installation occurs through Jackson County.

Project implementation funds come from a combination of 80% federal funds allocated through the Surface Transportation Program >200K (STP >200K) and Transportation Enhancement (ENH) programs, with a 20% match of local funds from a project sponsor, i.e. Jackson County.

[9] AASHTO and MDOT design standards should be referenced during the design phase.

A. List of Preparers

Gulf Regional Planning Commission (GRPC)

Key Personnel:	David Taylor, Jeff Loftus, Stephanie Plancich
Focus Areas:	Long Range Plan Coordination, Data (Traffic, Crashes), Public Participation, Title VI Review of Study Area, MPO Coordination
Address:	1635 Popps Ferry Road, Suite G, Biloxi, MS 39540 www.grpc.com

Burk-Kleinpeter, Inc.

Key Personnel:	Michael G. Jackson, PE; Wendy Barnes, PE; Nikhil Sonawani; George Zorn; Paul L. Waidhas, AICP; Ed E. Elam, III, AICP PTP; Carl Seifert, AICP
Focus Areas:	Review of Built Environment, Environmental Review, Traffic Analysis, Engineering Review, Order of Magnitude Cost Estimate,
Office Address:	2113 Government Street, Building B, Suite B-1, Ocean Springs, MS 39564 4176 Canal Street, New Orleans, LA 70119 www.bkiusa.com

B. Existing Traffic (2014)

Gulf Regional Planning Commission
Weekly Event Counts

Datasets:
Site: **[BVS] Beachview Dr N of Edgewater St 9-26-14**
Attribute: 0
Survey Duration: 8:30 Monday, September 29, 2014 => 8:28 Thursday, October 02, 2014
File: [BeachviewN)02Oct2014.EC0 (Plus)

Profile:
Filter time: **13:00 Monday, September 29, 2014 => 13:00 Wednesday, October 01, 2014**
Scheme: Count events divided by two
In profile: Events = 12672 / 14224 (89.09%)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
	29 Sep	30 Sep	01 Oct	02 Oct	03 Oct	04 Oct	05 Oct	1 - 5	1 - 7
Hour									
0000-0100	*	45	48	*	*	*	*	45.5	45.5
0100-0200	*	23	23	*	*	*	*	23.0	23.0
0200-0300	*	17	28	*	*	*	*	22.5	22.5
0300-0400	*	25	35	*	*	*	*	30.0	30.0
0400-0500	*	57	60	*	*	*	*	57.5	57.5
0500-0600	*	126	140	*	*	*	*	132.5	132.5
0600-0700	*	349	332	*	*	*	*	340.0	340.0
0700-0800	*	**424<**	**443<**	*	*	*	*	**433.0<**	**433.0<**
0800-0900	*	318	326	*	*	*	*	321.5	321.5
0900-1000	*	284	313	*	*	*	*	297.5	297.5
1000-1100	*	299	287	*	*	*	*	292.5	292.5
1100-1200	*	291	280	*	*	*	*	284.5	284.5
1200-1300	*	343	311	*	*	*	*	327.0	327.0
1300-1400	300	316	*	*	*	*	*	307.5	307.5
1400-1500	412	377	*	*	*	*	*	394.0	394.0
1500-1600	453	452	*	*	*	*	*	452.0	452.0
1600-1700	510	542	*	*	*	*	*	526.0	526.0
1700-1800	524	**596<**	*	*	*	*	*	**559.0<**	**559.0<**
1800-1900	446	492	*	*	*	*	*	468.0	468.0
1900-2000	373	401	*	*	*	*	*	387.0	387.0
2000-2100	237	247	*	*	*	*	*	241.5	241.5
2100-2200	186	238	*	*	*	*	*	211.0	211.0
2200-2300	104	122	*	*	*	*	*	112.5	112.5
2300-2400	53	76	*	*	*	*	*	64.0	64.0
Totals									
0700-1900	*	4731	*	*	*	*	*	4662.5	4662.5
0600-2200	*	5965	*	*	*	*	*	5842.0	5842.0
0600-0000	*	6163	*	*	*	*	*	6018.5	6018.5
0000-0000	*	6455	*	*	*	*	*	6329.5	6329.5
AM Peak	*	0700	0700	*	*	*	*		
	*	424	443	*	*	*	*		
PM Peak	*	1700	*	*	*	*	*		
	*	596	*	*	*	*	*		

* - No data.

Gulf Regional Planning Commission
Weekly Event Counts

Datasets:
Site: **[BVS] Beachview Dr S of Edgewater St 9-26-14**
Attribute: X
Survey Duration: 14:38 Monday, September 22, 2014 => 11:28 Friday, September 26, 2014
File: [BVS]26Sep2014.EC0 (Plus)

Profile:
Filter time: **7:00 Tuesday, September 23, 2014 => 7:00 Thursday, September 25, 2014**
Scheme: Count events divided by two
In profile: Events = 11948 / 19464 (61.38%)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
	22 Sep	23 Sep	24 Sep	25 Sep	26 Sep	27 Sep	28 Sep	1 - 5	1 - 7
Hour									
0000-0100	*	*	39	50	*	*	*	44.5	44.5
0100-0200	*	*	22	27	*	*	*	24.5	24.5
0200-0300	*	*	24	24	*	*	*	23.0	23.0
0300-0400	*	*	30	24	*	*	*	26.5	26.5
0400-0500	*	*	55	50	*	*	*	52.0	52.0
0500-0600	*	*	138	131	*	*	*	134.5	134.5
0600-0700	*	*	313	332	*	*	*	**322.5<**	**322.5<**
0700-0800	*	0	**396<**	*	*	*	*	197.5	197.5
0800-0900	*	2	335	*	*	*	*	167.5	167.5
0900-1000	*	22	291	*	*	*	*	155.5	155.5
1000-1100	*	236	276	*	*	*	*	255.5	255.5
1100-1200	*	291	317	*	*	*	*	303.5	303.5
1200-1300	*	324	303	*	*	*	*	312.5	312.5
1300-1400	*	383	330	*	*	*	*	356.0	356.0
1400-1500	*	362	341	*	*	*	*	351.5	351.5
1500-1600	*	481	432	*	*	*	*	456.5	456.5
1600-1700	*	553	512	*	*	*	*	531.5	531.5
1700-1800	*	**591<**	**624<**	*	*	*	*	**606.5<**	**606.5<**
1800-1900	*	521	555	*	*	*	*	538.0	538.0
1900-2000	*	431	383	*	*	*	*	406.5	406.5
2000-2100	*	310	293	*	*	*	*	301.0	301.0
2100-2200	*	198	186	*	*	*	*	191.0	191.0
2200-2300	*	121	135	*	*	*	*	127.5	127.5
2300-2400	*	74	91	*	*	*	*	82.5	82.5
Totals									
0700-1900	*	3763	4709	*	*	*	*	4232.0	4232.0
0600-2200	*	*	5883	*	*	*	*	5453.0	5453.0
0600-0000	*	*	6108	*	*	*	*	5663.0	5663.0
0000-0000	*	*	6415	*	*	*	*	5968.0	5968.0
AM Peak	*	*	0700	*	*	*	*		
	*	*	396	*	*	*	*		
PM Peak	*	1700	1700	*	*	*	*		
	*	591	624	*	*	*	*		

* - No data.

Gulf Regional Planning Commission
Weekly Event Counts

Datasets:
Site: **[EDGEE] Edgewater St E of Beachview Dr 9-26-14**
Attribute: X
Survey Duration: 14:35 Monday, September 22, 2014 => 11:30 Friday, September 26, 2014
File: [EDGEE]26Sep2014.EC0 (Plus)

Profile:
Filter time: **7:00 Tuesday, September 23, 2014 => 7:00 Thursday, September 25, 2014**
Scheme: Count events divided by two
In profile: Events = 1151 / 1916 (60.09%)

	Mon 22 Sep	Tue 23 Sep	Wed 24 Sep	Thu 25 Sep	Fri 26 Sep	Sat 27 Sep	Sun 28 Sep	Averages 1 - 5	1 - 7
Hour									
0000-0100	*	*	7	6	*	*	*	6.0	6.0
0100-0200	*	*	1	1	*	*	*	1.0	1.0
0200-0300	*	*	1	0	*	*	*	0.5	0.5
0300-0400	*	*	1	3	*	*	*	2.0	2.0
0400-0500	*	*	4	4	*	*	*	4.0	4.0
0500-0600	*	*	14	19	*	*	*	16.0	16.0
0600-0700	*	*	32	37	*	*	*	34.0	34.0
0700-0800	*	0	40	*	*	*	*	20.0	20.0
0800-0900	*	12	34	*	*	*	*	23.0	23.0
0900-1000	*	5	42	*	*	*	*	23.0	23.0
1000-1100	*	21	**45<**	*	*	*	*	32.5	32.5
1100-1200	*	43	37	*	*	*	*	**39.5<**	**39.5<**
1200-1300	*	57	27	*	*	*	*	42.0	42.0
1300-1400	*	40	34	*	*	*	*	36.5	36.5
1400-1500	*	35	39	*	*	*	*	36.5	36.5
1500-1600	*	45	45	*	*	*	*	44.0	44.0
1600-1700	*	**73<**	**46<**	*	*	*	*	**59.5<**	**59.5<**
1700-1800	*	38	36	*	*	*	*	36.5	36.5
1800-1900	*	24	45	*	*	*	*	33.5	33.5
1900-2000	*	39	18	*	*	*	*	28.0	28.0
2000-2100	*	31	14	*	*	*	*	22.0	22.0
2100-2200	*	10	12	*	*	*	*	10.5	10.5
2200-2300	*	8	20	*	*	*	*	13.0	13.0
2300-2400	*	6	10	*	*	*	*	7.0	7.0
Totals									
0700-1900	*	391	467	*	*	*	*	426.5	426.5
0600-2200	*	*	542	*	*	*	*	521.0	521.0
0600-0000	*	*	571	*	*	*	*	541.0	541.0
0000-0000	*	*	599	*	*	*	*	570.5	570.5
AM Peak	*	*	1000	*	*	*	*		
	*	*	45	*	*	*	*		
PM Peak	*	1600	1600	*	*	*	*		
	*	73	46	*	*	*	*		

* - No data.

Gulf Regional Planning Commission
Weekly Event Counts

Datasets:

Site: **[EDGEW] Edgewater St W of Beachview Dr 9-26-14**
Attribute: X
Survey Duration: 0:00 Monday, September 22, 2014 => 11:30 Friday, September 26, 2014
File: [EDGEW]26Sep2014.EC0 (Plus)

Profile:

Filter time: **7:00 Tuesday, September 23, 2014 => 7:00 Thursday, September 25, 2014**
Scheme: Count events divided by two
In profile: Events = 401 / 698 (57.38%)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
	22 Sep	23 Sep	24 Sep	25 Sep	26 Sep	27 Sep	28 Sep	1 - 5	1 - 7
Hour									
0000-0100	*	*	0	0	*	*	*	0.0	0.0
0100-0200	*	*	2	0	*	*	*	1.0	1.0
0200-0300	*	*	0	0	*	*	*	0.0	0.0
0300-0400	*	*	0	0	*	*	*	0.0	0.0
0400-0500	*	*	2	2	*	*	*	2.0	2.0
0500-0600	*	*	4	4	*	*	*	3.0	3.0
0600-0700	*	*	17	10	*	*	*	12.5	12.5
0700-0800	*	0	13	*	*	*	*	6.0	6.0
0800-0900	*	0	3	*	*	*	*	1.5	1.5
0900-1000	*	11	12	*	*	*	*	10.5	10.5
1000-1100	*	11	12	*	*	*	*	11.0	11.0
1100-1200	*	10	**18<**	*	*	*	*	**14.0<**	**14.0<**
1200-1300	*	7	9	*	*	*	*	7.0	7.0
1300-1400	*	14	14	*	*	*	*	13.5	13.5
1400-1500	*	17	2	*	*	*	*	9.0	9.0
1500-1600	*	8	12	*	*	*	*	9.5	9.5
1600-1700	*	20	**23<**	*	*	*	*	20.5	20.5
1700-1800	*	19	12	*	*	*	*	15.5	15.5
1800-1900	*	16	19	*	*	*	*	16.5	16.5
1900-2000	*	**30<**	17	*	*	*	*	**22.5<**	**22.5<**
2000-2100	*	4	12	*	*	*	*	7.5	7.5
2100-2200	*	5	4	*	*	*	*	4.5	4.5
2200-2300	*	4	4	*	*	*	*	3.5	3.5
2300-2400	*	4	4	*	*	*	*	4.0	4.0
Totals									
0700-1900	*	130	146	*	*	*	*	134.5	134.5
0600-2200	*	*	194	*	*	*	*	181.5	181.5
0600-0000	*	*	202	*	*	*	*	189.0	189.0
0000-0000	*	*	209	*	*	*	*	195.0	195.0
AM Peak	*	*	1100	*	*	*	*		
	*	*	18	*	*	*	*		
PM Peak	*	1900	1600	*	*	*	*		
	*	30	23	*	*	*	*		

* - No data.

Gulf Regional Planning Commission
Class Speed Matrix

Datasets:

Site: **[BVSpecMatrix] Beachview Dr N of Marina Dr 9-17-14**
Attribute: X
Survey Duration: 13:21 Tuesday, September 09, 2014 => 11:24 Wednesday, September 17, 2014
File: [BVSpec]17Sep2014.EC0 (Plus)

Profile:

Filter time: **14:00 Tuesday, September 09, 2014 => 14:00 Monday, September 15, 2014**
Scheme: Vehicle classification (ARX)
In profile: Vehicles = 47396 / 63936 (74.13%)

Speed (mph)	Class 1	2	3	4	5	6	7	8	9	10	11	12	Speed Totals	
5 - 10	6	15	.	5	.	.	.	.	.	.	.	.	26	0.1%
10 - 15	7	75	.	5	1	.	.	.	.	.	.	.	88	0.2%
15 - 20	18	252	3	24	1	.	.	.	.	.	.	.	298	0.6%
20 - 25	25	889	17	138	2	1	3	10	.	.	.	.	1085	2.3%
25 - 30	48	4855	95	559	22	22	19	52	5	1	.	1	5679	12.0%
30 - 35	54	16886	254	2007	50	33	51	187	7	6	.	1	19536	41.2%
35 - 40	37	13676	124	1989	24	20	54	99	4	6	.	.	16033	33.8%
40 - 45	9	2956	23	809	2	2	10	16	.	.	.	.	3827	8.1%
45 - 50	1	456	.	217	.	.	2	3	.	.	.	.	679	1.4%
50 - 55	1	75	.	40	.	1	.	.	.	.	.	.	117	0.2%
55 - 60	.	14	.	4	.	.	.	.	.	.	.	.	18	0.0%
60 - 65	.	4	.	2	.	.	.	.	.	.	.	.	6	0.0%
65 - 70	.	.	.	1	.	1	.	.	.	.	.	.	2	0.0%
70 - 75	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
75 - 80	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
80 - 85	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
85 - 90	.	2	.	.	.	.	.	.	.	.	.	.	2	0.0%
90 - 95	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
95 - 100	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
	206	40155	516	5800	102	80	139	367	16	13	0	2	47396	
	0.4%	84.7%	1.1%	12.2%	0.2%	0.2%	0.3%	0.8%	0.0%	0.0%	0.0%	0.0%		
	Class Totals													

Gulf Regional Planning Commission
Speed Statistics by Hour

Datasets:

Site: **[BVSpecHour] Beachview Dr N of Marina Dr 9-17-14**
Attribute: X
Survey Duration: 13:21 Tuesday, September 09, 2014 => 11:24 Wednesday, September 17, 2014
File: [BVSpec]17Sep2014.EC0 (Plus)

Profile:

Filter time: **14:00 Tuesday, September 09, 2014 => 14:00 Monday, September 15, 2014**
Scheme: Vehicle classification (ARX)
In profile: Vehicles = 47396 / 63936 (74.13%)

Vehicles = 47396
Posted speed limit = 35 mph, Exceeding = 20684 (43.64%), Mean Exceeding = 38.39 mph
Maximum = 86.9 mph, **Minimum** = 6.6 mph, **Mean** = 34.3 mph
85% Speed = 38.7 mph, **95% Speed** = 42.1 mph, **Median** = 34.2 mph
10 mph Pace = 29 - 39, **Number in Pace** = 35920 (75.79%)
Variance = 23.85, **Standard Deviation** = 4.88 mph

Hour Bins

Time	Bin		Min	Max	Mean	Median	85%	95%	>PSL 35 mph	
0000	462	1.0%	12.0	56.6	35.9	35.6	41.4	45.0	265	57.4%
0100	316	0.7%	21.7	60.5	36.5	35.8	41.4	47.0	185	58.5%
0200	193	0.4%	24.0	57.4	37.0	36.5	41.8	46.5	118	61.1%
0300	242	0.5%	15.8	56.0	36.1	35.3	41.4	45.6	133	55.0%
0400	405	0.9%	10.7	61.4	36.0	35.3	41.2	45.4	211	52.1%
0500	749	1.6%	15.6	56.7	35.7	35.6	39.8	43.2	420	56.1%
0600	1678	3.5%	11.4	63.6	34.0	33.8	37.4	40.3	635	37.8%
0700	2387	5.0%	6.6	52.6	33.0	33.6	37.4	40.5	833	34.9%
0800	2405	5.1%	8.0	54.5	34.1	34.2	38.3	41.2	1026	42.7%
0900	2463	5.2%	8.4	58.5	34.4	34.4	38.3	41.4	1107	44.9%
1000	2688	5.7%	10.7	57.1	34.4	34.4	38.5	41.8	1192	44.3%
1100	2887	6.1%	11.7	54.3	34.3	34.2	38.5	41.2	1271	44.0%
1200	2999	6.3%	9.1	54.8	34.6	34.7	38.9	42.3	1414	47.1%
1300	2989	6.3%	15.0	57.0	34.6	34.7	38.9	42.3	1399	46.8%
1400	2628	5.5%	8.9	69.5	34.6	34.4	39.1	42.5	1209	46.0%
1500	3101	6.5%	9.6	52.1	34.3	34.2	38.7	42.3	1376	44.4%
1600	3489	7.4%	7.5	62.4	33.9	34.0	38.5	41.6	1468	42.1%
1700	3713	7.8%	11.1	51.9	34.3	34.2	38.3	41.2	1613	43.4%
1800	3348	7.1%	11.0	54.9	34.1	34.0	38.5	41.4	1344	40.1%
1900	2764	5.8%	10.6	52.0	33.4	33.1	37.6	40.7	929	33.6%
2000	2101	4.4%	15.4	86.9	34.2	34.0	38.9	42.3	885	42.1%
2100	1611	3.4%	6.6	57.5	34.5	34.4	38.9	42.5	736	45.7%
2200	1036	2.2%	11.4	64.1	35.2	34.9	39.8	44.1	515	49.7%
2300	742	1.6%	11.4	53.9	35.7	35.3	40.5	44.1	400	53.9%
----	47396	100.0%	6.6	86.9	34.3	34.2	38.7	42.1	20684	43.6%

Gulf Regional Planning Commission
Speed Statistics

Datasets:

Site:	**[BVSpecStats] Beachview Dr N of Marina Dr 9-17-14**
Attribute:	X
Survey Duration:	13:21 Tuesday, September 09, 2014 => 11:24 Wednesday, September 17, 2014
File:	[BVSpec]17Sep2014.EC0 (Plus)

Profile:

Filter time:	**14:00 Tuesday, September 09, 2014 => 14:00 Monday, September 15, 2014**
Scheme:	Vehicle classification (ARX)
In profile:	Vehicles = 47396 / 63936 (74.13%)

Vehicles = 47396
Posted speed limit = 35 mph, Exceeding = 20684 (43.64%), Mean Exceeding = 38.39 mph
Maximum = 86.9 mph, **Minimum** = 6.6 mph, **Mean** = 34.3 mph
85% Speed = 38.7 mph, **95% Speed** = 42.1 mph, **Median** = 34.2 mph
10 mph Pace = 29 - 39, **Number in Pace** = 35920 (75.79%)
Variance = 23.85, **Standard Deviation** = 4.88 mph

Speed Bins

Speed	Bin		Below		Above		Energy	vMult	n * vMult
0 - 5	0	0.0%	0	0.0%	47396	100.0%	0.00	0.00	0.00
5 - 10	26	0.1%	26	0.1%	47370	99.9%	0.00	0.00	0.00
10 - 15	88	0.2%	114	0.2%	47282	99.8%	0.00	0.00	0.00
15 - 20	298	0.6%	412	0.9%	46984	99.1%	0.00	0.00	0.00
20 - 25	1085	2.3%	1497	3.2%	45899	96.8%	0.00	0.00	0.00
25 - 30	5679	12.0%	7176	15.1%	40220	84.9%	0.00	0.00	0.00
30 - 35	19536	41.2%	26712	56.4%	20684	43.6%	0.00	0.00	0.00
35 - 40	16033	33.8%	42745	90.2%	4651	9.8%	0.00	0.00	0.00
40 - 45	3827	8.1%	46572	98.3%	824	1.7%	0.00	0.00	0.00
45 - 50	679	1.4%	47251	99.7%	145	0.3%	0.00	0.00	0.00
50 - 55	117	0.2%	47368	99.9%	28	0.1%	0.00	0.00	0.00
55 - 60	18	0.0%	47386	100.0%	10	0.0%	0.00	0.00	0.00
60 - 65	6	0.0%	47392	100.0%	4	0.0%	0.00	0.00	0.00
65 - 70	2	0.0%	47394	100.0%	2	0.0%	0.00	0.00	0.00
70 - 75	0	0.0%	47394	100.0%	2	0.0%	0.00	0.00	0.00
75 - 80	0	0.0%	47394	100.0%	2	0.0%	0.00	0.00	0.00
80 - 85	0	0.0%	47394	100.0%	2	0.0%	0.00	0.00	0.00
85 - 90	2	0.0%	47396	100.0%	0	0.0%	0.00	0.00	0.00
90 - 95	0	0.0%	47396	100.0%	0	0.0%	0.00	0.00	0.00
95 - 100	0	0.0%	47396	100.0%	0	0.0%	0.00	0.00	0.00

Total Speed Rating = 0.00
Total Moving Energy (Estimated) = 0.00

Speed limit fields

	Limit	Below		Above	
0	35 (PSL)	26712	56.4%	20684	43.6%

C. Photo Inventory (2014)

Beachview Drive Improvements Old Spanish Trail to Lake Mars Avenue, Jackson County	BKI BURK-KLEINPETER, INC. ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS				
Project No. 106821-101000 • Gulf Regional Planning Commission	OS.14.002	10-Sep-14	Compiled by EEE	Checked by	Page 1

Beachview Dr, looking north at Old Spanish Trail

Beachview Dr, looking south toward Palmetto St

Beachview Dr, looking north from near Blueberry Dr

Beachview Dr, looking north from near Marina Dr

Beachview Dr, looking north from near Spring Av

Beachview Dr, looking north from Edgewater Blvd

Photos of corridor taken by GRPC and BKI on September 9, 2014. Photos from Google Earth used to fill gaps between photos taken on corridor. Posted date for Google Earth photos of the area is March 13, 2013.

Beachview Dr, looking north from Simmons Bayou

Beachview Dr, looking north at Simmons Bayou Bridge

Beachview Dr, looking north at Simmons Bayou Bridge

Beachview Dr Bridge over Simmons Bayou

Beachview Dr, looking south from Simmons Bayou Bridge

Gulf Park Estates Boat Landing from Beachview Dr

Beachview Dr, looking south at Pointe Aux Chenes Dr

Beachview Dr, looking south at Lake Mars Dr

Photos of corridor taken by GRPC and BKI on September 9, 2014. Photos from Google Earth used to fill gaps between photos taken on corridor. Posted date for Google Earth photos of the area is March 13, 2013.

Beachview Dr, looking south from Old Spanish Trail

Old Spanish Trail, looking west from Beachview Dr

Old Spanish Trail EB Approach at Beachview Dr

Looking north on Old Spanish Trail at Beachview Dr

Looking south on Beachview Dr from Old Spanish Tr (Utilities)

Looking south from Old Spanish Trail to Beachview Dr

Photos of intersection taken by GRPC and BKI on September 9, 2014. Photos from Google Earth used to fill gaps between photos taken on corridor. Posted date for Google Earth photos of the area is March 13, 2013.

D. Community Meeting Summary

Meeting Summary

Initial Public Outreach Meeting – Elks Lodge, Ocean Springs, MS
Beachview Drive Traffic Study ● Project 106821-101000

On Thursday, September 18, 2014, Jackson County Supervisor John McKay hosted a community meeting during which the Beachview Drive traffic study was introduced and discussed. On hand for the project were GRPC Staff Jeff Loftus, Stephanie Plancich and BKI Staff George Zorn, Wendy Barnes and Ed Elam.

The following is a list of notes collected by the project team during the general discussion. Photos of the meeting and copies of oversized map exhibits developed by GRPC have been retained by them for the purpose of documenting input and this meeting activity. Attendance information attached to this summary was collected by Jackson County Supervisor John McKay's office.

1. There were 25 local resident stickers placed on the project map. They were very evenly distributed throughout the project area.

11 - West side of Beachview	13 - South of Elks Lodge
14 - East side of Beachview	12 - North of Elks Lodge

2. GRPC will overlay the project map with our traditionally underserved maps. They should be updated and ready for use in the next week or so. If any protected populations need to be considered for targeted outreach, GRPC will make this information available to BKI.

3. There were 4 people that expressed concern to GRPC staff about students crossing Beachview (West to East) for school. It was suggested that the intersection of Blueberry and Beachview be improved with crosswalks, lighting and some type of "as occupied" signalization, or a four way stop, etc. The parents like that their children would then connect with the new Blueberry/8th street sidewalks already planned. They noted that without some significant electronic signalization of the crossing or a mandatory stop of some kind they would not feel comfortable allowing their children to walk/bike to school. BKI received the same comment and made note to look at options for an automated crossings signal (known as a HAWK) at this location.

4. One person asked GRPC to consider doing a similar consideration for the Palmetto/Beachview intersection (they are coming from 1st street where they say a lot of kid and vehicle traffic is present)

5. GRPC received a comment that concerns exist that parents will use non-curbed sidewalks on 8th street as a parking area before and after school thus eliminating the benefits of off street facilities to the children. Here are a few suggestions to consider:
   - Install a curb, landscaping or other barrier to keep sidewalks free of resident and parent parking
   - 2. Turn 8th street into a one way road travelling north only - this would leave one travel lane, one parking lane and adequate sidewalks for students who walk or ride to school.
   - BKI received the comment regarding traffic generated by parents queuing northbound on 8th Street to reach the Ocean Springs Middle School. One option may be to include one-way as part of system of managing traffic circulation at the school and limit this to a specific time of the day to minimize impact on area residents.
   - An existing improvement (installed by resident/property owner) at corner of 8th and Blueberry allows students waiting for buses a place to gather off-street. More areas like this may be required, particularly to protect students if they must wait in the dark.

6. Community residents participating in the discussion noted a considerable concern about the speeding on Beachview. Several discussed options to slow traffic include:
   - Bulb-outs and other lane narrowing techniques with priority at and near crosswalk locations as well as within neighborhood areas
   - Speed bumps/intersection tables
   - Stop signs at bigger intersections – Edgewater/West Edgewater Boulevard at Beachview Dr. will be counted for at-least two days by GRPC, allowing BKI to look at the hourly traffic warrants. Data provided to BKI will need to be hourly summaries.
   - More enforcement on the roadway was also mentioned, particularly on Beachview, between Blueberry and the boat landing near Simmons Bayou

7. Visibility was mentioned as an issue in the group discussion and again in the one-on-one discussion at the map table:
   - Is there a solar light option to consider?
   - If the community is interested in pursuing a lighting council - would the infrastructure for future lighting be built into the sidewalk project
   - BKI noted that citizens commented on the need for lights to address safety concerns on the corridor, especially with any projected increase in walking or cycling. Specific areas identified included Beachview between Simmons Bayou and Lake Mars Avenue

8. There were accident complaints/comments at Edgewater, Simmons Circle and Spring intersections – at least two fatalities noted at Edgewater intersection by area resident.

9. Other measures/items to consider include:
   - It was suggested to coordinate with the school district with bus route, particularly to see how many students walk, ride and are dropped off (BKI to follow-up).
   - Would like to see the study consider all of Beachview through Neptune instead of or in addition to Lake Mars
   - Families often walk and bike on Neptune itself and would appreciate consideration of facilities there
   - Along Mermaid, speed is a concern and there is some sink hole type repair needed
   - Maple is in need of paving - maybe strip a shoulder for safer bike/ped travel
   - Improve sidewalk connectivity along Palmetto across Beachview to 8th street
   - Improved crosswalks and/or landings, extend sidewalks at Old Spanish Trail and Beachview
   - Resident at corner of Point Aux Chenes and Beachview noted the large live oaks at the corner as a consideration. These trees are not a live oak or tree registry, but are quite old and healthy.
   - Residents had questions about the setback from the edge of the road to any sidewalk or shared use path options. Trucks with extended mirrors can reach beyond the edge of pavement, for example, creating a potentially hazardous situation for pedestrians/cyclists. What is optimum distance required between the edge of travel lane and edge of sidewalk to minimize conflicts?[1]

[1] As noted following the meeting by GRPC, MDOT requires at least a 2 foot buffer for a sidewalk. I learned this last week while attending MDOT's training and certification for the LPA process. The 2004 AASHTO Guide for the Pedestrian Facilities recommends 2 to 4 feet for local and collector streets although MDOT did not indicate a referral to the 2004 AASHTO Pedestrian design guide. For a shared-use path, as I have mentioned before MDOT refers to the 2012 AASHTO Guide for the Development of Bicycle Facilities. A minimum of 5ft between path and roadway curb is recommended for a two-way sidepath. The shoulder is not included in the buffer width or separation distance. Other conditions are recommended if it is less than 5 ft. such as physical barrier or rumble strips.

10. No clear consensus on which side of Beachview is best for sidewalks. It was noted by utility representatives that a forced sewer main and AT&T cable are on the east side of the road. Crossing the Simmons Bayou bridge is accomplishable on the current span using the widened shoulder on the east side. A crossing of Beachview will be required to take foot/cycling traffic to the east side of the bridge.

MEETING PHOTOS

Report prepared with notes from GRPC (S Plancich, J Loftus) and BKI (E Elam)
Meeting photo sources GRPC (S Plancich) and BKI (E Elam)
Date: September 18-22, 2014
Attachment: Meeting Sign-in form from Jackson County, MS

SIGN IN SHEET

Public Meeting- OS Elks Lodge 09/18/14

Guest Speakers: Sheriff Britt / Lee Purvis, Utility Services

Please Print

Name	Address / City	Phone	Email
Ronald Rimmel	105 BRAEBURN Dr OS	875-3009	rrmael_ganvi@bellsouth.net
Patty Hammons	7500 Joe Fountain OS	2169772	PJGREER3@yahoo.com
George Zorn	813 Cinchbrace	219-1390	gzorn@bcius9.com
David Peto Gulf Park Estates FD	1401 Elm St. OS	872-5341	gulfparkestatesfd@cableone.net
Jeff Loftus	Gulf Regional Planning Com.	864-1167	jol2grpc.com
Valerie Damanjo	Sheriff's Dept.	769-3153	valerie_damanjo@co.jackson.ms.us
Woody Jefferson	9408 Marina Dr O.S.	2975555	jeffersonwg@cableone.net
John E Guica Sr	2624 N 13th St O.S	219-5377	

SIGN IN SHEET

Public Meeting- OS Elks Lodge 09/18/14

Guest Speakers: Sheriff Britt / Lee Purvis, Utility Services

Please Print

Name	Address O.S. City	Phone	Email
RAY BROUSSARD	9025 WEST SIMMONS CIR	251-591-7603	
Jason ROSS	110 Glen Eagles DR	228-669-8870	JRoss
Dan Penne Anthony Dent.	8300 Campbell Ave OS 8828 Point. Ave Clinton	2384559	
BO Bell	202 TROON CIR OS	901 351 7836	
DONNIE MOORE		875-4195	
Bob & Patti Erskine	217 St. Andrews Dr., OS	875-7940	bobandpattie@att.net
Leslie Segrest	9421 Live Oak OS	818-0008	
SONYA RAMSEY	3517 N. 8th St. OS, Ms.	3264874	
Bruce Milbrath	8825 Live Oak Ave	327-6706	milbrath40@gmail.com
Robert Cosby	2421 Beach View		
JAMES Cupps	2312 BLUEBERRY	872-3246	

SIGN IN SHEET

Public Meeting- OS Elks Lodge 09/18/14

Guest Speakers: Sheriff Britt / Lee Purvis, Utility Services

Please Print

Name	Address / City	Phone	Email
Sherry Milbrath	5825 Live Oak Ave OS		
Marc Emile	2700 North 5th St OS		
Irving Sanders	2517 North 10th OS		

SIGN IN SHEET

Public Meeting- OS Elks Lodge 09/18/14

Guest Speakers: Sheriff Britt / Lee Purvis, Utility Services

Please Print

Name	Address / City	Phone	Email
Barky Bacwell	9364 Ridgeview Dr. OS	228 875-9852	
Ann Shirley	9025 W. Simmons Cir. OS	872-3158	annshirley@yahoo.com
Wendy Barnes	2113 Govt St, Bldg B Suite B-1	875-1919	Wbarnes@bkiusa.com
Tim Anderson	3304 N 8th St. O.S	697-8926	fire905safety@gmail.com
Sally Greuling	8516 Mermaid Ave OS	215-1610	SGreuling@yahoo.com
Rob Griffiths	8516 Mermaid OS	228 215 6261	rgreuling@yahoo.com
Ellen Kirkpatrick	9036 W Seminary Cir	872-3357	
Greg A. Mabary	2205 Beachview	297-5745	bayouself169@GmaiL.com
Arlene Hawley	1413 Ash St	818-2985	
Jennifer & Chris Markham	3208 Beachview Dr.	327-[illegible]5623	jenmark1@live.com
BRAD & KEELY PEARCE	8405 CLAMSHELL AVE	238 0867	Pearce3891@Gmail
Harriet Fullerton	2010 S 15th St OS	215-1300	MAWMAWS200@YAHOO.COM
MARY ANN D'ALGO	8817 Live Oak [illegible] AVE OS	875-2911	VOSCREDROSE@MSN.COM

SIGN IN SHEET

Public Meeting- OS Elks Lodge 09/18/14

Guest Speakers: Sheriff Britt / Lee Purvis, Utility Services

Please Print

Name	Address / City	Phone	Email
Mr & Mrs Manuel Masaudis	9000 Edgewater OCEAN SPRING	228-875-9555	
Michelle Moody	3505 N. 8th Street	818-0633	
Kate Peters	3505 N 8th Street	8180633	
Jane Foreman	2009 Shelby Lane	382 2089	
Billy Ray HAMMONS	7500 Joe Fayard Rd.	216-9772	
DANE R. REID II	9104 MARINA AVE O.S.	369 8993	GREATK9 @ AOL.com
Michael Bezeon	3901 Hwy 57 OS	875-0620	
Central Jackson Co VFD			
Lee Purvis	8717 Edgewater blvd	228-282-3617	
JESSICA ALEXANDER	19191 11th St PASC. MS	627-8375	
Michelle Fussner	9409 Pointe Aux Cheres	282-5179	
Billy Emile	2700 North 5th St	447-3461	
Gary & Valerie Ballard	9032 W. Simmons CR		
Karin Wilson	9017 W Simmons CIR	303-940-5598	
Craig Miller	1 11		

SIGN IN SHEET

Public Meeting- OS Elks Lodge 09/18/14

Guest Speakers: Sheriff Britt / Lee Purvis, Utility Services

Please Print

Name	Address / City	Phone	Email
LARENCE G DOFFING	8821 Elm Ave. OS. MS		larenced@yahoo.com
CHARLES BUSBY	907 GRANT PASS	990-2200	
JANET WRIGHT	5901 MARY MAHONEY DR OS		jwright01@colleone.net
Rusty Moye	6130 Old Spanish Trail	872-8775	rustymoye91@gmail.com
EARL Ethridge	600 Convent Ave, Pascagoula	769-3111	

SIGN IN SHEET

Public Meeting- OS Elks Lodge 09/18/14

Guest Speakers: Sheriff Britt / Lee Purvis, Utility Services

Please Print

Name	Address / City	Phone	Email
Irvin Pierce	8920 Mermaid Ave, OS MS	228-217-2788	Pierce5554@Hotmail.com
John/Terry Deckelman	3321 N. 4th St OS		
Irene Lehane	929 Lime St OS	228-382-6770	Reenie102@gmail.com
Dillon Lehane	929 Lime St, OS	520-982-9807	Dillone191@gmail.com
Marge & Larry Bitler	1504 Plover St. O.S.	872-3233	lbitler@cableone.net
ED Evans	BKI		eelans@bkiusa.com
William Paul	1517 South 8th St	872-3482	bp990@bellsouth.net
William Dunne	8720 Maple Ave OS	382-7614	
Vincent Doble	1748 Noble Rd OJ	243-1965	N/A
John Nosiel	2333 E. Simmons Bayou OS	990-1312	NA
Deondra King	613 Peach St. O.S.	601-750-7128	
Lin Calhoun	9216 Warbler Ave	228-327-6541	lincreates@cableone.net
Linda Hughes	3000 Sweetgum Ave	818-0285	lindahug12@gmail.com

SIGN IN SHEET

Public Meeting- OS Elks Lodge 09/18/14

Guest Speakers: Sheriff Britt / Lee Purvis, Utility Services

Please Print

Name	Address / City	Phone	Email
James L Cook	3705 Birch AVE, OS	2282384861	
DON REYES	1408-STH 8TH ST	228-875-3144	
Mark-Hare	600/SWITZER COVE	228-875-5780	
STAN ELLIS	1300 BAILEY LANE.		
Robert Reno	6720 Maple ALR.	228-382-7614	
B D ROOT	2724 N 19TH ST	218-1845	
LINDA ROOT	" " "	424-1	

Meeting Summary

Public Information Meeting – Fontainebleau Community Center, Ocean Springs, MS
Beachview Drive Traffic Study ● Project 106821-101000

On Thursday, August 27, 2015, GRPC and Jackson County Supervisor John McKay hosted a second community meeting for the Beachview Drive traffic study. On hand for the project were GRPC Staff David Taylor and BKI Staff George Zorn, Ed Elam and Carl Seifert.

The following is a list of notes collected by the project team during the general discussion. Photos of the meeting and copies of oversized map exhibits developed by BKI are within this summary. Copies of the exhibits are within the project files with RPC. Also attached to this summary is a copy of the sign-in list from the meeting.

Doors to the meeting facility opened at 6 pm. As of 6:30 pm, a total of two area residents were in attendance for the meeting. In lieu of a formal presentation, BKI staff conducted a walk-through of the exhibits and responded to individual questions. A review of the project work tasks and analyses completed started the discussion. A review of the project concepts followed.

Generally, the comments received identified option #1 (bikeable shoulder) as a preferred option. However specific input to this alternative focused on increasing the distance between the edge of the travel lane and the edge of the bikeable shoulder. Discussion with the public included receipt of recommendations including a curb, additional shoulder width and grass landscaping between the bike shoulder and travel lane. Those from the public making verbal comments did not express specific support the adjacent sidewalk (#2) and complete street (#3) cross sections.

Staff announced to the public in attendance the posting of the study document for 21 days starts on September 1. The document posting will occur on the GRPC website (www.grpc.com). This information is also on the project comment form.

Staff directed members of the public to provide their written comments and suggestions on the project comment form. Copies of the blank forms given to Jackson County (Commissioner McKay's Office) and GRPC remain available for use during the upcoming 21 day document comment period. Copies of forms collected in-meeting are within this summary.

MEETING PHOTOS

MEETING PHOTOS

Report prepared with notes from BKI (E Elam)
Meeting photo sources BKI (E Elam)
Date: August 28, 2015
Attachments: Meeting Sign-in form from meeting

Sign-In Sheet

Public Meeting – Fontainebleau Community Center, Thursday, August 27, 2015
Speaker: Beachview Drive Traffic Study

Please Print

Name	Address/City	Phone	Email
Carl Seifert	BKI	—	cseifert@gmail.com
Ed Elam	BKI	—	eelam@bkiusa.com
John McKay	FCBOS		johnmckay@cableone.net
David Taylor	GRPC		dtaylor@grpc.com

Sign-In Sheet

Public Meeting – Fontainebleau Community Center, Thursday, August 27, 2015
Speaker: Beachview Drive Traffic Study

Please Print

Name	Address/City	Phone	Email
Gayle Manning Dist 5 Sec.	9420 Point Aux Chenes 05.	769 3378	Gayle_Manning@co.jackson.ms.us
GEORGE ZORN	9320 Alcove Ln	219-1390	gZORN@bkiusa.com
Cynthia Russell	2600 Villa Venezia Ct	282-3498	Sailingcindy@yahoo.com

Project Comment Form

Beachview Drive Traffic Study ● Old Spanish Trail to Lake Mars Avenue
Project No. 106281-101000

To ensure your comments become part of the project record, please mail, email, call or fax them no later than Monday, September 21, 2015:

Gulf Regional Planning Commission
Attention: Stephanie Plancich, Public Involvement/Civil Rights Coordinator
Mail: 1635-G Popps Ferry Road, Biloxi, MS 39531
Email: contactus@grpc.com
Phone: 228-864-1167
Fax: 228-864-1149

A copy of the draft report will be available for a 21 day public public review between September 1 and September 21 at the website of the Gulf Regional Planning Commission, www.grpc.com.

My comments regarding the Beachview Drive Traffic Study are as follows:

I like the wider bike path, (opt 1) but my suggestion is to have the drainage next to the road with greenery on top to act as a barrier btwn ther road and bike path. I would like to see a raised curb on both sides of the street.

Name Cynthia Russell Date 8/27/2015

Address (Street, City, State, Zip):

2800 Villa Venezia Ct, Ocean Springs, MS 39564

Proof of Publication

STATE OF MISSISSIPPI

COUNTY OF HARRISON

Before me, the undersigned Notary of Harrison County, Mississippi personally appeared Crista Brackett who, being by me first duly sworn, did depose and say that she is a clerk of The Sun Herald, a newspaper published in the city of Gulfport, in Harrison County, Mississippi, and the publication of the notice, a copy of which is hereto attached, has been made in said paper 1 times in the following numbers and on the following dates of such paper, viz:

Vol. 131 No., 333 dated 1 day of Sept, 2015

Vol. ____ No., _____ dated ____ day of _____, 20____

Vol ____ No., _____ dated ____ day of _____, 20____

Vol. ____ No., _____ dated ____ day of _____, 20____

Vol. ____ No., _____ dated ____ day of _____, 20____

Vol. ____ No., _____ dated ____ day of _____, 20____

Vol. ____ No., _____ dated ____ day of _____, 20____

Affiant further states on oath that said newspaper has been established and published continuously in said county for a period of more than twelve months next prior to the first publication of said notice.

Crista Brackett

SEP 02 2015

Clerk

Sworn to and subscribed before me this 1 day of Sept, A.D., 2015

Kandi Berkley

Notary Public

*The Sun Herald has been deemed eligible for publishing legal notices in Jackson County to meet the requirements of Miss. Code 1972 Section 13-3-31 and 13-3-32

STATE OF MISSISSIPPI
KANDI A BERKLEY
NOTARY PUBLIC
ID No. 80799
Comm. Expires
April 5, 2018
HARRISON COUNTY

NOTICE of Public Review Period for Beachview Drive Transportation Study Jackson County and Gulf Regional Planning Commission are providing notice that a public comment period is open from September 1st - 21st to review the materials and recommendations related to the Beachview Drive transportation study conducted in Ocean Springs. Previously submitted comments have been considered and incorporated into the final report as appropriate. If you have any further questions or comments please contact Stephanie at 228-864-1167 on or before September 21st. GRPC prohibits discrimination in all of its programs, services and activities. Public participation is solicited without regard to race, color, national origin, age, sex, religion, disability, or other protected status. Persons who require assistance under the Americans with Disabilities Act should contact us at 228-864-1167 or contactus@grpc.com at least five (5) business days prior to the close of the review period.
ADV1,1TUE

1563848

E. Itemized Order of Magnitude Cost Summary by Discrete Project within Each Option

Option #1 Shared Use Path

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
West Side
Separated Shared Use Path
Phase 1A: Old Spanish Trial to Old Walnut - 3890 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$9,132.16	L.S.	1.00	$9,132
2	Cold Planing Asphaltic Concrete Pavement (6" Wide)	$7.00	S.Y.	206.11	$1,443
3	Asphaltic Concrete (2" Thk.)	$95.00	TON	379.19	$36,023
4	Limestone Base (8" thk.)	$65.00	C.Y.	724.59	$47,098
5	18" R.C.P.	$100.00	L.F.	3,890.00	$389,000
6	Excavation	$15.00	C.Y.	1,319.11	$19,787
7	Select Fill	$15.00	C.Y.	2,739.61	$41,094
8	Slotted Curb and Gutter	$20.00	L.F.	3,890.00	$77,800
9	Drain Inlets	$3,000.00	EACH	36.00	$108,000
10	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	731.00	$7,310
11	6" Driveway	$75.00	S.Y.	731.00	$54,825
12	Hydroseed	$4,000.00	Acre	1.25	$5,000
13	Erosion Control	$7.00	L.F.	4,000.00	$28,000
14	Plastic Pavement Edge Marking (White Solid 4" Wide)	$1.00	L.F.	3,710.00	$3,710
15	Cross Walk/Signal	$65,000.00	EACH	2.00	$130,000
16	Stop Line	$4.00	L.F.	60.00	$240
17	Maintenance of Traffic (for this section of Beachview)	$17,793.44	L.S.	1.00	$17,793
18	Relocation of Utilities (20%)	$177,934.35	L.S.	1.00	$177,934
19	Mobilization (5%)	$44,483.59	L.S.	1.00	$44,484
20	Construction Layout (2%)	$17,793.44	L.S.	1.00	$17,793
		Construction Subtotal			**$1,216,467**
		Contingency (5%)			$60,823
		Engineering (5%)			$60,823
		Testing (5%)			$60,823
		TOTAL			**$1,399,000**
		COST PER LINEAR FOOT			**$375.00**

Notes:

1 Cost assumes a slotted curb and gutter between edge of the pavement.
2 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
3 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
4 Cost assumes improvements within existing right-of-way with replacement to existing driveways.
5 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
6 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

Option #1 Shared Use Path

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
East Side to Edge Water then West Side
Separated Shared Use Path
Phase 2: Old Walnut to Bridge- 3660 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$8,423.69	L.S.	1.00	$8,424
2	Cold Planing Asphaltic Concrete Pavement (6" Wide)	$7.00	S.Y.	199.33	$1,395
3	Asphaltic Concrete (2" Thk.)	$95.00	TON	372.75	$35,411
4	Limestone Base (8" thk.)	$65.00	C.Y.	712.28	$46,298
5	18" R.C.P.	$100.00	L.F.	3,660.00	$366,000
6	Excavation	$15.00	C.Y.	1,295.73	$19,436
7	Select Fill	$15.00	C.Y.	2,165.40	$32,481
8	Drain Inlets	$3,000.00	EACH	34.00	$102,000
9	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	556.89	$5,569
10	6" Driveway	$75.00	S.Y.	556.89	$41,767
11	Wooden Deck Shoulder	$40,000.00	EACH	1.00	$40,000
12	Mobilization/Demobilization (For Piles)	$8,000.00	L.S.	1.00	$8,000
13	Class B Treated Timber Piles 40 Ft. Long	$14.00	L.F.	600.00	$8,400
14	Structural Concrete for Shoulder Abutment	$500.00	C.Y.	20.00	$10,000
15	Wooden Shoulder Deck Installation	$10,000.00	L.S.	1.00	$10,000
16	Hydroseed	$4,000.00	Acre	0.80	$3,200
17	Erosion Control	$7.00	L.F.	3,700.00	$25,900
18	Slotted Curb and Gutter	$20.00	L.F.	3,660.00	$73,200
19	Plastic Pavement Edge Marking (White Solid 4" Wide)	$1.00	L.F.	3,558.00	$3,558
20	Cross Walk/Signal	$65,000.00	EACH	1.00	$65,000
21	Stop Line	$4.00	L.F.	30.00	$120
22	Maintenance of Traffic (for this section of Beachview)	$17,532.58	L.S.	1.00	$17,533
23	Relocation of Utilities (20%)	$168,473.79	L.S.	1.00	$168,474
24	Mobilization (5%)	$42,118.45	L.S.	1.00	$42,118
25	Construction Layout (2%)	$16,847.38	L.S.	1.00	$16,847
		Construction Subtotal			**$1,151,131**
		Contingency (5%)			$57,557
		Engineering (5%)			$57,557
		Testing (5%)			$57,557
		TOTAL			**$1,323,900**
		COST PER LINEAR FOOT			**$376.00**

Notes:

1 Cost assumes a slotted curb and gutter between edge of the pavement.
2 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
3 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
4 Cost assumes improvements within existing right-of-way with replacement to existing driveways.
5 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
6 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

Option #1 Shared Use Path

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
East Side to Pt. Aux Chene then West Side
Separated Shared Use Path
Phase 3: Bridge to Lake Mars- 2795 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$6,647.95	L.S.	1.00	$6,648
2	Cold Planing Asphaltic Concrete Pavement (6" Wide)	$7.00	S.Y.	149.27	$1,045
3	Asphaltic Concrete (2" Thk.)	$95.00	TON	279.14	$26,518
4	Limestone Base (8" thk.)	$85.00	C.Y.	533.41	$45,340
5	18" R.C.P.	$100.00	L.F.	2,795.00	$279,500
6	Excavation	$15.00	C.Y.	955.37	$14,331
7	Select Fill	$15.00	C.Y.	1,621.63	$24,324
8	Drain Inlets	$3,000.00	EACH	26.00	$78,000
9	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	413.78	$4,138
10	6" Driveway	$75.00	S.Y.	413.78	$31,034
11	Hydroseed	$4,000.00	Acre	1.00	$4,000
12	Erosion Control	$7.00	L.F.	3,000.00	$21,000
13	Slotted Curb and Gutter	$20.00	L.F.	2,795.00	$55,900
14	Plastic Pavement Edge Marking (White Solid 4" Wide)	$1.00	L.F.	2,723.00	$2,723
15	Cross Walk/Signal	$65,000.00	EACH	2.00	$130,000
16	Stop Line	$4.00	L.F.	30.00	$120
17	Maintenance of Traffic (for this section of Beachview)	$13,295.91	L.S.	1.00	$13,296
18	Relocation of Utilities (20%)	$132,959.07	L.S.	1.00	$132,959
19	Mobilization (5%)	$33,239.77	L.S.	1.00	$33,240
20	Construction Layout (2%)	$13,295.91	L.S.	1.00	$13,296
	Construction Subtotal				**$917,411**
	Contingency (5%)				$45,871
	Engineering (5%)				$45,871
	Testing (5%)				$45,871
	TOTAL				**$1,055,100**
	COST PER LINEAR FOOT				**$393.00**

Notes:

1 Cost assumes a slotted curb and gutter between edge of the pavement.
2 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
3 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
4 Cost assumes improvements within existing right-of-way with replacement to existing driveways.
5 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
6 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

Option #2 - Sidewalk on One Side

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
West Side
New Sidewalk with Bike-able Shoulders
Old Spanish Trail to Old Walnut - 3890 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$9,471.14	L.S.	1.00	$9,471
2	Asphalt Concrete 5"	$95.00	TON	713.16	$67,750
3	18" R.C.P.	$100.00	L.F.	3,980.00	$398,000
4	Excavation	$15.00	C.Y.	2,597.78	$38,967
5	Select Fill	$15.00	C.Y.	2,851.92	$42,779
6	Base Course	$65.00	C.Y.	1,300.00	$84,500
7	Drain Inlets	$3,000.00	EACH	36.00	$108,000
8	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	731.00	$7,310
9	4" Concrete Sidewalk	$65.00	S.Y.	2,027.78	$131,806
10	6" Driveway	$75.00	S.Y.	731.00	$54,825
11	6" Handicap Ramp and Gutter Bottom	$150.00	S.Y.	96.32	$14,448
12	Hydroseed	$4,000.00	Acre	1.25	$5,000
13	Erosion Control	$7.00	L.F.	4,000.00	$28,000
14	Slotted Curb and Gutter	$20.00	L.F.	3,710.00	$74,200
15	Cross Walk/Signal	$65,000.00	EACH	2.00	$130,000
16	Stop Line	$4.00	L.F.	40.00	$160
17	Maintenance of Traffic (for this section of Beachview)	$18,942.28	L.S.	1.00	$18,942
18	Relocation of Utilities (20%)	$189,422.84	L.S.	1.00	$189,423
19	Mobilization (5%)	$47,355.71	L.S.	1.00	$47,356
20	Construction Layout (2%)	$18,942.28	L.S.	1.00	$18,942
	Construction Subtotal				**$1,469,879**
	Contingency (5%)				$73,494
	Engineering (5%)				$73,494
	Testing (5%)				$73,494
	TOTAL				**$1,690,400**
	COST PER LINEAR FOOT				**$460.00**

Notes:

1 3' pavement added on both sides of the street for bike path.
2 Replacement of one driveway (14'x14') is assumed for each property.
3 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
4 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
5 Cost assumes improvements within existing right-of-way with minimal disturbance to existing mailboxes.
6 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
7 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

Option #2 - Sidewalk on One Side

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
West and East Side - Crosswalk at Edgewater
New Sidewalk with Bike-able Shoulders
Phase 2: Old Walnut to Bridge- 3660 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$8,760.03	L.S.	1.00	$8,760
2	Asphalt Concrete 5"	$95.00	TON	680.00	$64,600
3	18" R.C.P.	$100.00	L.F.	3,660.00	$366,000
4	Excavation	$15.00	C.Y.	2,504.40	$37,566
5	Base Course	$65.00	C.Y.	1,250.00	$81,250
5	Select Fill	$15.00	C.Y.	2,781.21	$41,718
6	Drain Inlets	$3,000.00	EACH	34.00	$102,000
7	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	556.89	$5,569
8	4" Concrete Sidewalk	$65.00	S.Y.	2,033.33	$132,166
9	6" Driveway	$75.00	S.Y.	556.89	$41,767
10	6" Handicap Ramps and Gutter Bottom	$150.00	S.Y.	96.32	$14,448
11	Pre-Fabricated Alluminium Pedestrian Bridge	$28,000.00	EACH	1.00	$28,000
12	Mobilization/Demobilization (For Piles)	$4,000.00	L.S.	1.00	$4,000
13	Class B Treated Timber Piles 40 Ft. Long	$14.00	L.F.	320.00	$4,480
14	Structural Concrete for Shoulder Abutment	$500.00	C.Y.	10.00	$5,000
15	Pedestrian Bridge Installation	$10,000.00	L.S.	1.00	$10,000
16	Hydroseed	$4,000.00	Acre	0.80	$3,200
17	Erosion Control	$7.00	L.F.	3,700.00	$25,900
18	Slotted Curb and Gutter	$20.00	L.F.	3,660.00	$73,200
19	Plastic Pavement Marking (White Solid 4" Wide)	$1.00	L.F.	3,660.00	$3,660
20	Cross Walk/Signal	$65,000.00	EACH	1.00	$65,000
21	Maintenance of Traffic (for this section of Beachview)	$17,520.05	L.S.	1.00	$17,520
22	Relocation of Utilities (20%)	$175,200.53	L.S.	1.00	$175,201
23	Mobilization (5%)	$43,800.13	L.S.	1.00	$43,800
24	Construction Layout (2%)	$17,520.05	L.S.	1.00	$17,520
	Construction Subtotal				**$1,372,325**
	Contingency (5%)				$68,616
	Engineering (5%)				$68,616
	Testing (5%)				$68,616
	TOTAL				**$1,578,200**
	COST PER LINEAR FOOT				**$450.00**

Notes:

1 3' pavement added on both sides of the street for bike path.
2 Replacement of one driveway (14'x14') is assumed for each property.
3 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
4 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
5 Cost assumes improvements within existing right-of-way with minimal disturbance to existing mailboxes.
6 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
7 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

Option #2 - Sidewalk on One Side

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
East Side to Pt. Aux Chene then West Side
New Sidewalk with Bike-Able Shoulders
Phase 3: Bridge to Lake Mars- 2795 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$7,169.95	L.S.	1.00	$7,170
2	Asphalt Concrete 5"	$95.00	TON	525.00	$49,875
3	18" R.C.P.	$100.00	L.F.	2,795.00	$279,500
4	Excavation	$15.00	C.Y.	1,911.78	$28,677
5	Select Fill	$15.00	C.Y.	2,132.42	$31,986
6	Base Course	$65.00	C.Y.	950.00	$61,750
7	Drain Inlets	$3,000.00	EACH	26.00	$78,000
8	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	413.78	$4,138
9	4" Concrete Sidewalk	$65.00	S.Y.	1,502.78	$97,681
10	6" Driveway	$75.00	S.Y.	413.78	$31,034
11	6" Handicap Ramps and Gutter Bottom	$150.00	S.Y.	120.40	$18,060
12	Hydroseed	$4,000.00	Acre	1.00	$4,000
13	Erosion Control	$7.00	L.F.	3,000.00	$21,000
14	Slotted Curb and Gutter	$20.00	L.F.	2,705.00	$54,100
15	Plastic Pavement Marking (White Solid 4" Wide)	$1.00	L.F.	2,705.00	$2,705
16	Cross Walk/Signal	$65,000.00	EACH	2.00	$130,000
17	Stop Line	$4.00	L.F.	50.00	$200
18	Maintenance of Traffic (for this section of Beachview)	$14,339.90	L.S.	1.00	$14,340
19	Relocation of Utilities (20%)	$143,398.98	L.S.	1.00	$143,399
20	Mobilization (5%)	$35,849.75	L.S.	1.00	$35,850
21	Construction Layout (2%)	$14,339.90	L.S.	1.00	$14,340
	Construction Subtotal				**$1,107,803**
	Contingency (5%)				$55,390
	Engineering (5%)				$55,390
	Testing (5%)				$55,390
	TOTAL				**$1,274,000**
	COST PER LINEAR FOOT				**$510.00**

Notes:

1 3' pavement added on both sides of the street for bike path.
2 Replacement of one driveway (14'x14') is assumed for each property.
3 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
4 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
5 Cost assumes improvements within existing right-of-way with minimal disturbance to existing mailboxes.
6 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
7 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

Option #3 - Complete Streets

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
West Side
Complete Street With Shoulders
Phase 1A: Old Spanish Trial to Old Walnut - 3890 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$18,524.91	L.S.	1.00	$18,525
2	Asphaltic Concrete (5" Thk.)	$95.00	TON	725.00	$68,875
3	Base Course	$65.00	C.Y.	1,300.00	$84,500
4	18" R.C.P.	$100.00	L.F.	7,780.00	$778,000
5	Excavation	$15.00	C.Y.	3,938.22	$59,073
6	Select Fill	$15.00	C.Y.	5,849.37	$87,741
7	Drain Inlets	$3,000.00	EACH	72.00	$216,000
8	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	1,840.22	$18,402
9	Curb and Gutter	$15.00	L.F.	7,420.00	$111,300
10	4" Concrete Sidewalk	$65.00	S.Y.	4,122.22	$267,944
11	6" Driveway	$75.00	S.Y.	980.00	$73,500
12	6" Handicap Ramps and Gutter Bottom	$150.00	S.Y.	48.16	$7,224
13	Hydroseed	$4,000.00	Acre	1.25	$5,000
14	Erosion Control	$7.00	L.F.	8,000.00	$56,000
15	Plastic Pavement Edge Marking (White Solid 4" Wide)	$1.00	L.F.	7,420.00	$7,420
16	Cross Walk/Signal	$65,000.00	EACH	2.00	$130,000
17	Stop Line	$4.00	L.F.	50.00	$200
18	Maintenance of Traffic (for this section of Beachview)	$37,049.82	L.S.	1.00	$37,050
19	Relocation of Utilities (20%)	$370,498.22	L.S.	1.00	$370,498
20	Mobilization (5%)	$92,624.56	L.S.	1.00	$92,625
21	Construction Layout (2%)	$37,049.82	L.S.	1.00	$37,050
	Construction Subtotal				**$2,526,927**
	Contingency (5%)				$126,346
	Engineering (5%)				$126,346
	Testing (5%)				$126,346
	TOTAL				**$2,906,000**
	COST PER LINEAR FOOT				**$780.00**

Notes:

1 3' pavement added on both sides of the street for bike path.
2 Replacement of one driveway (14'x14') is assumed for each property.
3 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
4 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
5 Cost assumes improvements within existing right-of-way with minimal disturbance to existing mailboxes.
6 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
7 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

Option #3 - Complete Streets

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
East Side to Edge Water then West Side
5' Concrete Sidewalk with Curb and Gutter
Phase 2: Old Walnut to Bridge- 3660 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$17,548.19	L.S.	1.00	$17,548
2	Asphaltic Concrete (5" Thk.)	$95.00	TON	671.00	$63,745
3	Base Course	$65.00	C.Y.	1,250.00	$81,250
4	18" R.C.P.	$100.00	L.F.	7,320.00	$732,000
5	Excavation	$15.00	C.Y.	3,758.80	$56,382
6	Select Fill	$15.00	C.Y.	4,778.44	$71,677
7	Drain Inlets	$3,000.00	EACH	68.00	$204,000
8	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	765.33	$7,653
9	Curb and Gutter	$15.00	L.F.	7,056.00	$105,840
10	4" Concrete Sidewalk	$65.00	S.Y.	3,920.00	$254,800
11	6" Driveway	$70.00	S.Y.	609.78	$42,685
12	6" Handicap Ramps and Gutter Bottom	$150.00	S.Y.	96.32	$14,448
13	Pre-Fabricated Alluminium Pedestrian Bridge	$28,000.00	EACH	2.00	$56,000
14	Mobilization/Demobilization (For Piles)	$8,000.00	L.S.	1.00	$8,000
15	Class B Treated Timber Piles 40 Ft. Long	$14.00	PH	640.00	$8,960
16	Structural Concrete for Shoulder Abutment	$500.00	C.Y.	20.00	$10,000
17	Pedestrian Bridge Installation	$10,000.00	L.S.	2.00	$20,000
18	Hydroseed	$4,000.00	Acre	1.18	$4,704
19	Erosion Control	$7.00	L.F.	7,400.00	$51,800
20	Plastic Pavement Edge Marking (White Solid 4" Wide)	$1.00	L.F.	7,176.00	$7,176
21	Cross Walk/Signal	$65,000.00	EACH	1.00	$65,000
22	Stop Line	$4.00	L.F.	20.00	$80
23	Maintenance of Traffic (for this section of Beachview)	$35,096.38	L.S.	1.00	$35,096
24	Relocation of Utilities (20%)	$350,963.76	L.S.	1.00	$350,964
25	Mobilization (5%)	$87,740.94	L.S.	1.00	$87,741
26	Construction Layout (2%)	$35,096.38	L.S.	1.00	$35,096
		Construction Subtotal			**$2,392,645**
		Contingency (5%)			$119,632
		Engineering (5%)			$119,632
		Testing (5%)			$119,632
		TOTAL			**$2,751,600**
		COST PER LINEAR FOOT			**$785.00**

Notes:

1 3' pavement added on both sides of the street for bike path.
2 Replacement of one driveway (14'x14') is assumed for each property.
3 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
4 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
5 Cost assumes improvements within existing right-of-way with minimal disturbance to existing mailboxes.
6 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
7 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

Option #3 - Complete Streets

Estimate of Probable Construction Costs - For Planning Purposes

Beachview Drive
East Side to Pt. Aux Chene then West Side
5' Concrete Sidewalk with Curb and Gutter
Phase 3: Bridge to Lake Mars- 2795 LF

Item No	DESCRIPTION	UNIT PRICE	UNITS	QUANTITY	COST
1	Removal and Replacement of Obstruction/Clearing	$15,926.41	L.S.	1.00	$15,926
2	Asphaltic Concrete (5" Thk.)	$95.00	TON	515.00	$48,925
3	Base Course	$65.00	C.Y.	950.00	$61,750
4	18" R.C.P.	$100.00	L.F.	5,590.00	$559,000
5	Excavation	$15.00	C.Y.	1,605.98	$24,090
6	Select Fill	$15.00	C.Y.	3,663.73	$54,956
7	Drain Inlets	$3,000.00	EACH	52.00	$156,000
8	Removal of Concrete Driveways and Culverts	$10.00	S.Y.	196.00	$1,960
9	Curb and Gutter	$15.00	L.F.	5,410.00	$81,150
10	4" Concrete Sidewalk	$65.00	S.Y.	3,005.56	$195,361
11	6" Driveway	$75.00	S.Y.	196.00	$14,700
12	6" Handicap Ramps and Gutter Bottom	$150.00	S.Y.	144.48	$21,672
13	Hydroseed	$4,000.00	Acre	0.87	$3,468
14	Erosion Control	$7.00	L.F.	5,590.00	$39,130
15	Plastic Pavement Marking (White Solid 4" Wide)	$1.00	L.F.	5,410.00	$5,410
16	Cross Walk/Signal	$65,000.00	EACH	2.00	$130,000
17	Stop Line	$4.00	L.F.	60.00	$240
18	Maintenance of Traffic (for this section of Beachview)	$31,852.82	L.S.	1.00	$31,853
19	Relocation of Utilities (20%)	$318,528.19	L.S.	1.00	$318,528
20	Mobilization (5%)	$79,632.05	L.S.	1.00	$79,632
21	Construction Layout (2%)	$31,852.82	L.S.	1.00	$31,853
	Construction Subtotal				**$1,875,604**
	Contingency (5%)				$93,780
	Engineering (5%)				$93,780
	Testing (5%)				$93,780
	TOTAL				**$2,157,000**
	COST PER LINEAR FOOT				**$800.00**

Notes:

1 3' pavement added on both sides of the street for bike path.
2 Replacement of one driveway (14'x14') is assumed for each property.
3 Unit costs from comparable municipal or county projects as compiled by Burk-Kleinpeter, Inc., 2015
4 For initial estimates only - cost refinement anticipated in response to fluctuations in commodity/materials pricing.
5 Cost assumes improvements within existing right-of-way with minimal disturbance to existing mailboxes.
6 Cost assumes maintenance of traffic flow and access to adjacent properties during construction.
7 Total rounded to closest $100.

Compiled by Burk-Kleinpeter, Inc., 2015

F. Technical Review, Supplement #1, Off-Street Pedestrian and Cyclist Improvements, Beachview Drive

Introduction

During the community engagement process for the Beachview Drive Traffic Study, more than a few attendees expressed safety concerns about bicycling and walking on neighborhood roads. In particular, residents described feeling unsafe allowing their children to walk or ride bicycles to/from Ocean Springs Middle School (located adjacent to the neighborhood) for fear that a driver might unintentionally hit them.

The typical residential street in Gulf Park Estates is around 20 feet wide with a drainage swale on either side of the road. There are no sidewalks; therefore, residents routinely walk, exercise, and ride bicycles in the street. During many times of the day these streets contain low-volumes of both vehicles and bicycles/pedestrians, so mode conflicts vary in nature depending on the time of day. However residents have anecdotally observed vehicles traveling well in excess of the speed limit.

In response to these resident concerns, the project team began a process to understand community willingness to support potential solutions.

Methodology

The project team wanted to present residents of the community with a survey featuring potential solutions to the bicycle and pedestrian safety concerns. This survey would allow residents to provide feedback in several areas. The survey should allow residents to share:

1) feelings about current safety conditions as drivers, pedestrians, and cyclists;
2) feelings about a variety of types of improvements;
3) feedback on a particular solution in response to graphic depictions of the solution; and
4) demographic information about the resident respondent.

In order to get resident opinions on these topics, the project team developed alternatives, designed a survey, and directly engaged residents to administer the survey and receive feedback.

Alternatives development

Input from GRPC and Jackson County staff was critical in developing alternatives. Given the constrained fiscal environment along the MS Gulf Coast and previous discussions with residents and public officials alike, it was recommended that any solution brought to the community must be affordable. Additionally, alternatives should encourage safe bicycling and pedestrian movements along neighborhood streets while not inhibiting vehicle mobility or access to property.

Given these constraints, two alternatives were developed. Alternative A featured a striped in-street bicycle lane on four streets and Alternative B featured markings designating a shared lane (sharrow). Both alternatives allowed free flow of vehicle traffic and did not impede drivers' ability to access any properties. The original concept of Alternative A featured a barrier dividing vehicle traffic from other modes. This barrier was originally thought to provide pedestrians space to safely walk on-street as it would provide physical separation from vehicles; however, this barrier would limit access to driveways. Additionally, traffic engineers did not support any solution in which pedestrians were on-street with automobiles. Consequently, the revised/ final Alternative A concept featured reflective raised elements within the

striped boundary between the bicycle lane and the vehicle lane. Colloquially called "*jiggle-markers*," these elements would provide drivers an additional sensory warning that their vehicle exited a vehicle area.

Alternative A

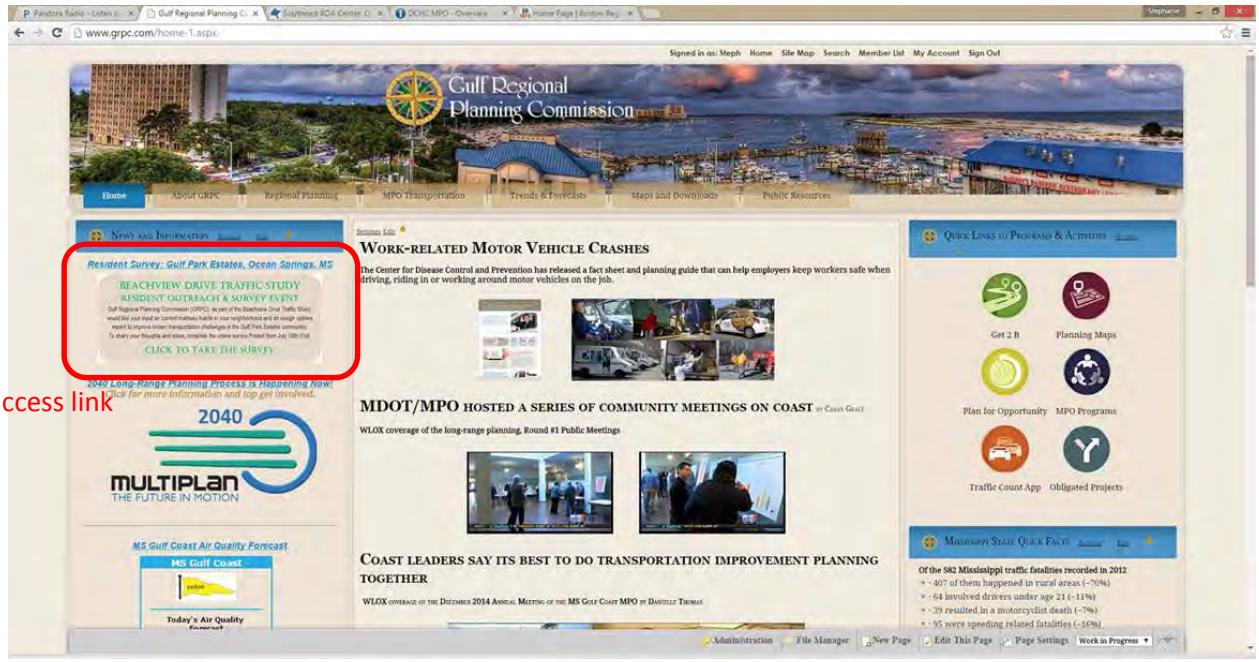
Alternative B

Alternative refinement

After consulting with GRPC, it was decided to only present one alternative for the residents to respond to in the community survey. GRPC decided to remove Alternative B as it did not provide a significant change from the current condition. Alternative B did not significantly change safety conditions for young bicyclists and provided no pedestrian amenities.

Final survey creation

BKI produced several versions of the survey which were jointly refined by GRPC, Jackson County, and BKI. The final version of the survey included a separate flier to be dropped off with residents. This flier would feature several graphic depictions of elements of the design including 1) a rendering of what Alternative A would might look like installed, 2) several graphics of the markings and signs to be added, and 3) a map describing the areas of implementation. This flier also included directions to fill out the survey electronically, directing residents to the GRPC homepage. As Figure 1 below shows, the GRPC website featured a link to the survey. The survey questions were inserted into the online survey interface surveymonkey.com. A sample survey and flier are attached to this Appendix.



Survey access link

***Figure 1**: Screenshot of GRPC homepage during the survey period (July 17th - July 31st).*

Survey administration

Survey administration included an in-person survey effort supported by an electronic survey. The survey area included the ten blocks east of Beachview Dr and between Marina Ave and Palmetto Dr. This area includes roughly 250 homes. On July 17th, 2015, project team members canvased the area, knocking on doors and leaving the flier at every home in this area. While many residents were not home, the flier was left behind describing the project and directing residents to the GRPC homepage. As seen in Figure 1, this link remained on the homepage for fourteen calendar days, allowing residents to respond.

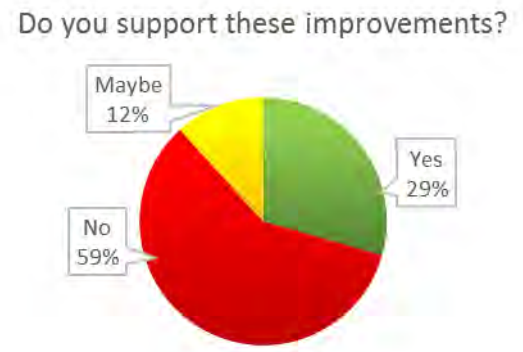
If personal contact was made, project team members identified themselves and briefly described: the project, the survey, the importance of resident participation, and how to access the survey online.

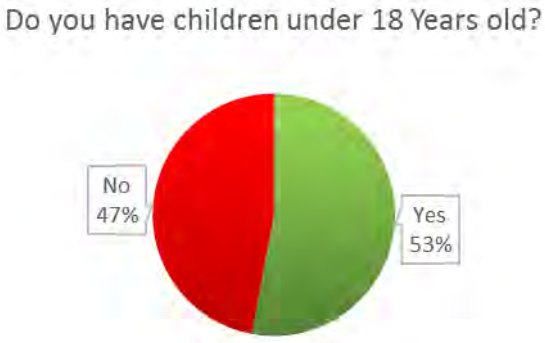
Community Survey Results

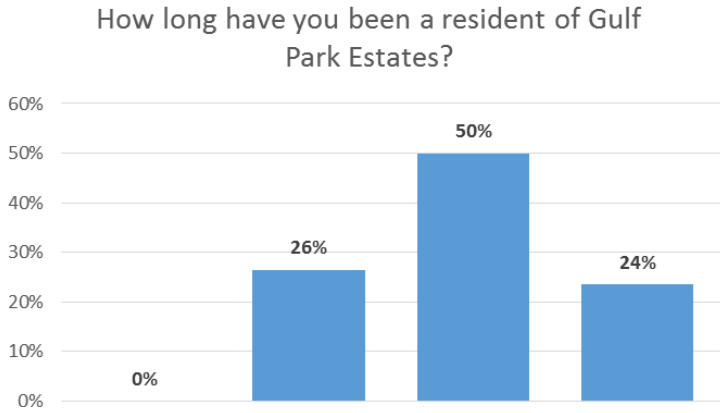
Response rate: The survey had a 14% response rate, which meets a surveying best practice for statistical validity. There were 35 responses (34 complete, 1 incomplete) out of the 250 survey area households. There were three households with multiple responses on the same computer (as identified by identical IP addresses). However, these responses were not carbon copy responses and appeared to reflect a separate opinion entirely. It is likely these were reflected different opinions within the household.

Opinions on Alternative A:

- 59% of respondents did not support the potential solution with another 12% saying "Maybe". **Only 29% of the neighborhood supports the idea.**
- Reasons against were varied, but the most frequent was "*I do not approve of one-way streets for this neighborhood.*" Other responses included:
    - o "*There is not enough bicycle traffic to support this project*" (written in comment section);
    - o "*I don't think this project is important given other funding priorities*"; and
    - o "*I do not like that my ability to park on the street is taken away*"
- **While the proposed solution appears to have insufficient support, it does appear that a portion of residents approve of the more expensive and traditional approach of installing sidewalks along the edge of the roadway.** This is evidenced by:
    - o 12% of respondents claiming they prefer this by checking a box in the survey;
    - o 12% writing that sidewalks would be preferred in the comment section; and
    - o When asked how comfortable they were with providing sidewalks, the average resident response was 3.1 out of 4.

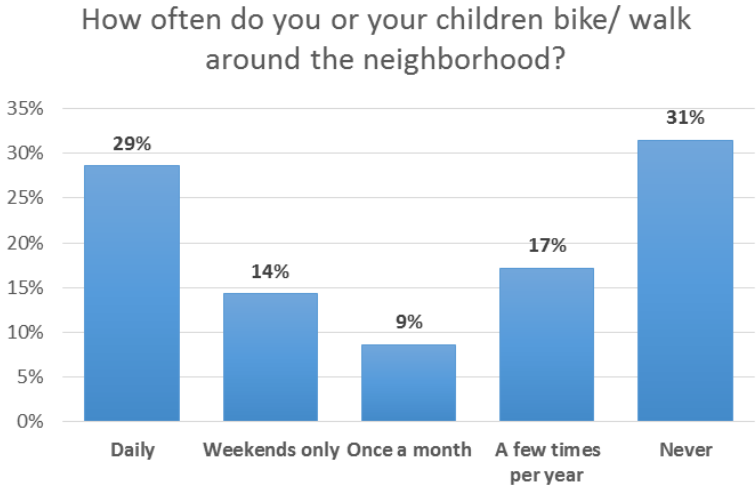






Demographics and usage:

- 52% of respondents or their children bike/walk at least once a month;
- 64% of respondents had children under 18 living in the house;
- 74% had been living in Gulf Park Estates at least 5 years; and
- Survey responses were well dispersed geographically around the survey area/ neighborhood. No responses obtained from residents on 11th St, and limited responses from south of



Blueberry on Beachview, 7th, 9th, and 10th. This is not as surprising considering these residents may have perceived that the project may have a limited impact on them.

Opinions on safety conditions in the neighborhood:

Respondents were asked to rate their satisfaction with six safety conditions from Very Satisfied (4) to Unhappy (1). A higher number represents the greater satisfaction with safety conditions. As seen below in Table 1, the responses of each resident to the six prompts were averaged to provide an aggregate opinion of these neighborhood safety conditions. As seen below, the lowest safety conditions relate to bicycle and pedestrian safety conditions.

***Table 1**: Community opinions on safety conditions*

How satisfied are you or your family with the following safety conditions?	
2.3	Driving in and around Gulf Park
2.2	Ability to cross the street or walk in and around Gulf Park
1.8	Riding my bicycle in and around Gulf Park
2.5	Ability to get to local schools near Gulf Park
1.5	Ability to cross and/or walk along Beachview Dr
1.9	Walking or riding my bicycle in and around Gulf Park early in the morning, early evening, and/or late at night

Opinions on solutions to safety concerns:

Respondents were asked to rate their comfort level with five potential solutions to safety concerns on neighborhood streets from *I fully support it* (4) to *It won't work* (1). A higher number represents a greater comfort level with implementation of the solutions. As seen below in Table 2, the neighborhood residents most agree with provision of sidewalks and "flashing, marked, well-lit cross walks". Slightly less favored are stop signs and providing a waiting area parent vehicles at Ocean Springs Middle School. Least favored by respondents was restricting streets to one-way flow to facilitate pedestrian and cyclist movements.

***Table 2**: Community opinions on safety solutions*

How comfortable are you with the following solutions to safety concerns?	
2.9	Stop signs
3.2	Flashing, marked, well-lit cross-walks
2.8	Providing separate waiting area for parent vehicles waiting to pick-up students at Ocean Springs Middle School
3.1	Provide sidewalks for walking and/or jogging separate from vehicle lanes
1.7	Restrict surrounding streets to one-way flow to facilitate pedestrians & cyclists

Circulation Analysis/ Plan

According to the respondents of the survey, neighborhood sentiment is not favor of implementing on-street bike lanes with the associated one-way vehicular flow. However, the survey respondents did indicate the following:

- **Bicycle and pedestrian conditions along streets, at intersections, and in low-light conditions are poor, especially in comparison to driving conditions during those periods.** This is evidenced by all sentiments related to walking and biking receiving average support levels ranging from 1.5 to 1.9 out of 4.
- **There is some support of sidewalks.** As summarized earlier, three responses reflected some level of support for sidewalk implementation. These include:
  - 12% of respondents claiming they prefer this by checking a box in the survey;
  - 12% writing that sidewalks would be preferred in the comment section; and
  - When asked how comfortable they were with providing sidewalks, the average resident response was 3.1 out of 4.
- **There is support for flashing, marked, well-lit cross-walks.** When asked how comfortable they were with providing cross-walks, the average resident response was 3.2 out of 4.

Circulation Plan Alternatives

As exemplified by the survey results, there remains no clear consensus for a solution to the reported pedestrian and bicycle safety concerns in the neighborhood streets east of Beachview Drive. While it can be concluded that the majority of residents perceive a problem, it is not clear that a majority of residents perceive the use of public funds to implement a solution to be wise. If and when public officials choose to respond to the pedestrian and bicycle safety concerns along these neighborhood streets, it is suggested to pursue a phased implementation of sidewalks as funds become available.

One major resources available to local governments to achieve pedestrian and bicycle safety in relation to passage to and from nearby Ocean Springs Middle School is the *Safe Routes to School (SRTS)*[1] program. This national effort organized through federal transportation spending bills is represented locally by a SRTS Coordinator at the Mississippi Department of Transportation MDOT. This coordinator can help identify available funding sources for infrastructure projects that:

- Enable and encourage children, including those with disabilities, to walk and bicycle to school;
- Make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and
- Facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (approximately 2 miles) of primary and middle schools (Grades K-8).

[1] Safe Routes to School –Mississippi - *http://mdot.ms.gov/safetyeducation/programs/safe-routes-to-school/default.aspx*
Cookie Leffler, Safe Routes to School Coodinator

Eligible infrastructure-related projects include but are not limited to: sidewalk improvements, pedestrian and bicycle crossing improvements, and off-street bicycle and pedestrian facilities. Additionally, education, enforcement, evaluation, and encouragement activities to support healthy alternative transportation can be supported with funding from SFTS.

Funding is available through the Transportation Alternatives Program (TAP) through a competitive application process. The grant requires a 20% local match for all projects and are typically awarded once per year.

Future Operational Adjustments

Separate from any infrastructure improvements for cyclists/ pedestrians, several survey respondents suggested that operational changes might also improve the outcomes of pedestrian and bicycle safety concerns. Excessive speeding was cited by several residents as a perceived problem that may discourage pedestrian and bicycle usage along neighborhood streets. While this concern has been observed by residents, it is recommended to complete a small traffic analysis to analyze these claims and produce quantifiable evidence of an excessive speeding problem. A traffic analysis can also help target the times of day most effective for enforcement measures

Speed Display Sign

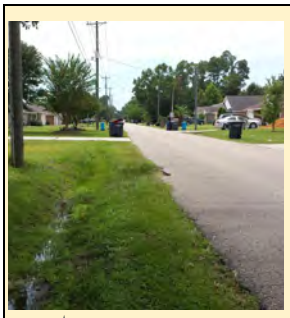
If an excessive speeding problem is observed, several efforts can be undertaken to mitigate the problem.

- Speed enforcement: Active patrolling for unsafe driving conditions by Sherriff's Deputies for only a few short weeks can be a valuable deterrent to unsafe driving conditions of all kinds. This may prove effective at mitigating speeding conditions. However, unsafe drivers may persist their dangerous habits during off-peak hours (late at night or early in the morning).
- Speed Display Sign: An effective technology for curbing excessive speed behavior has been the radar speed sign (aka: driver-feedback sign, radar speed display, traffic calming sign, or dynamic speed display). This interactive sign features a series of LED lights that displays vehicle speeds as the motorist approaches. These can be implemented with small solar power arrays and are approved by the Federal Highway Administration.
- Traffic Calming measures: If speed enforcement and other passive measures for emphasizing excessive speeding are ineffective at mitigating excessive speed, some communities chose

Speed Cushion

Speed Table

physical impediments to excessive speed. There a variety of types of physical elements designed to force drivers to slow down. Many people are familiar with speed bumps, but other measures can be implemented which can be effective as well. Speed cushions and speed tables, shown here, can be installed and reinstalled easily by local public works employees. Additionally, their implementation does not impact emergency vehicle response times due to the positioning of the cushions within the travel path and the width of emergency vehicle wheel bases.



Gulf Park Community Opinion Survey

The Gulf Regional Planning Commission (GRPC) as part of the Beachview Drive Traffic Study would like your input. We want your opinions on transportation habits and new infrastructure solutions in your community.

Please go to the GRPC website (www.grpc.org) to fill out the survey. Completing this survey should take no more than eight (8) minutes.

Mississippi Gulf Coast Metropolitan Planning Organization
Gulf Regional Planning Commission

Survey will be available online for two-weeks (until 7/30/2015). Results will be shared at a future community meeting. For more information, please contact either Stephanie Plancich, GRPC — 228-864-1167 or Carl Seifert, BKI — 504-486-5901. Thanks for your help!

Resident Concerns-

During the process of developing the Beachview Drive Traffic Study, residents expressed safety concerns regarding walking and cycling around the neighborhood. In particular, parents didn't feel safe having their children walk to school.

We want your opinions on an infrastructure solution/ pilot program designed to have **minimal cost**, **limited property impacts**, **minimal construction time** and still provide safe designated areas for cycling to occur in the neighborhood.

Potential Solution

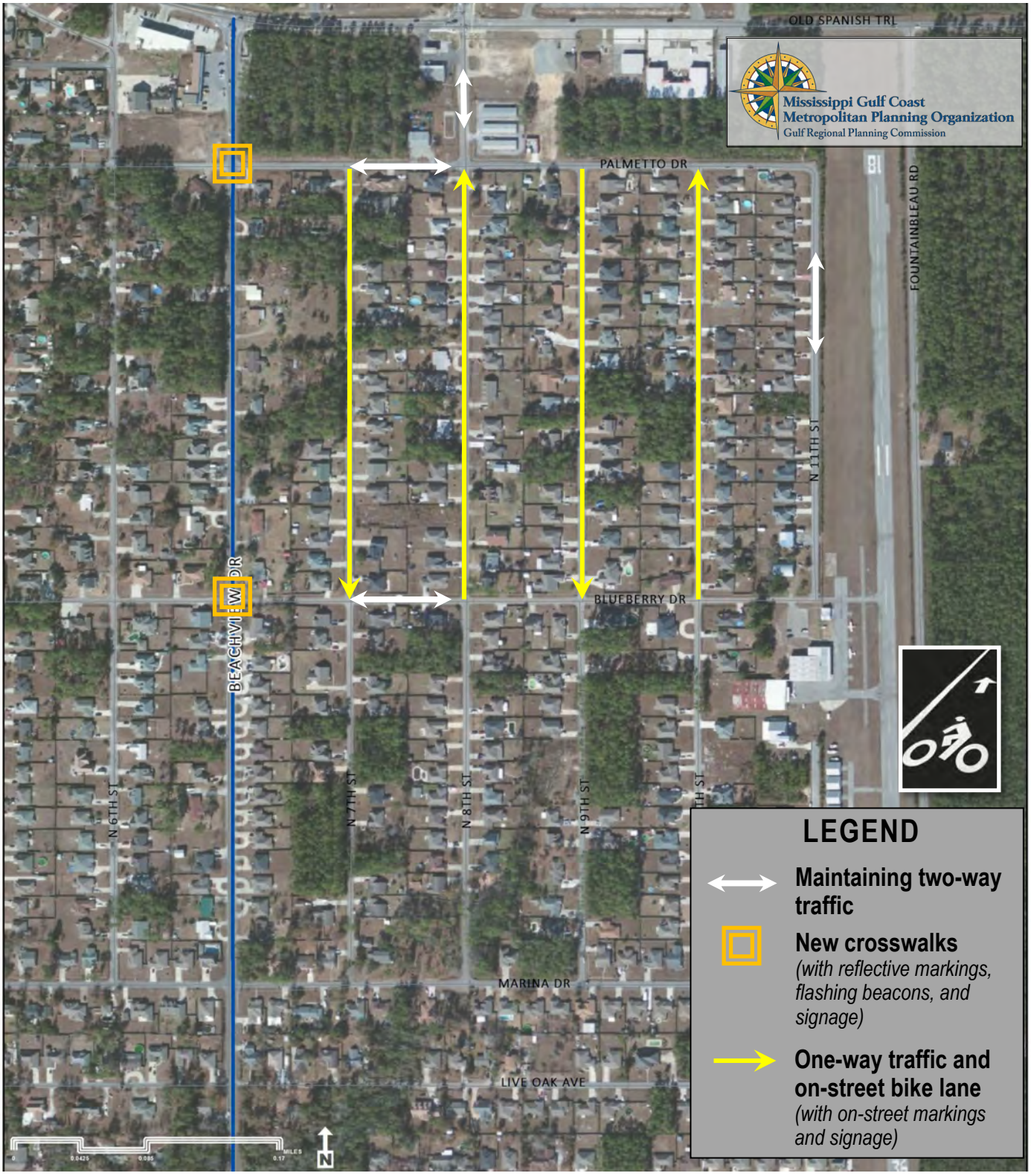
Designate half of the road for bicycle and pedestrian usage.

- One-way traffic on certain streets (N 7th, N 8th, N 9th, N 10th) *[See reverse]*
- Lane striping and rumble markers separate vehicles from bicycles
- Traffic signage identifies the bike lane
- Two-way traffic remains on Beachview Dr, Palmetto Dr, N 11th St, and Blueberry Dr.

Why is this solution safer?

- Separating vehicles from cyclists defines road space for both bicycle and vehicular traffic, creating a more orderly flow of traffic and making users feel more secure. Bicyclists are twice as likely to feel endangered riding without a bike lane as riding with a bike lane. *US DOT Bureau of Transportation Statistics,* June 2004. Issue Brief
- Bike lanes limit interaction between users and opportunities for crashes.
- One-way streets are required because residential streets are not wide enough for two lanes and a bike lane.

Project Area Map



Q&As-

Will this solution block my driveway or impact my mailbox?	NO. The solution is only on-street and will not affect private property.
How long will this solution take to install?	60-90 days after authorization.
How will one-way streets affect my commute?	Additional travel around the block will be required by residents traveling down yellow streets above.
Can I offer other ideas?	Yes. Feel free to offer these in the survey comment section.

Gulf Park Community Opinion Survey

This survey is being completed by the Gulf Regional Planning Commission (GRPC) as part of the Beachview Drive Traffic Study. During the initial phase of work, GRPC and consultants conceptually designed improvements to the priority project (Beachview Dr). This phase investigates outstanding concerns about pedestrian/ bicycle safety on surrounding streets (between Beachview and N 11th St). This survey allows your opinion to be heard on one possible solution to these concerns.

Please do not put your name on the survey and your responses will remain confidential. This survey will collect some information on the location of your residence, but that is only used to help us make sure all parts of the community are represented.

Completing this survey should take no more than eight (8) minutes. Thanks for your help!

Mississippi Gulf Coast Metropolitan Planning Organization
Gulf Regional Planning Commission

How satisfied are you or your family with the following safety conditions? Please circle on a scale of 4 to 1, where 4 means "excellent" and 1 means "poor."	Very Satisfied	Satisfied	Not Satisfied	Unhappy	Don't Know
Driving in and around Gulf Park	4	3	2	1	8
Ability to cross the street or walk in and around Gulf Park	4	3	2	1	8
Riding my bicycle in and around Gulf Park	4	3	2	1	8
Ability to get to local schools near Gulf Park	4	3	2	1	8
Ability to cross and/or walk along Beachview Dr	4	3	2	1	8
Walking or riding my bicycle in and around Gulf Park early in the morning, early evening, and/or late at night	4	3	2	1	8

How comfortable are you with the following solutions to safety concerns? **Please circle on a scale of 4 to 1, where 4 means "excellent" and 1 means "poor."**	I fully support it / its perfect	I support it	It might work/ its a partial fix	It won't work	Don't know/ don't understand this solution
Stop signs	4	3	2	1	8
Flashing, marked, well-lit cross-walks	4	3	2	1	8
Providing separate waiting area for parent vehicles waiting to pick-up students at Ocean Springs Middle School	4	3	2	1	8
Provide sidewalks for walking and/or jogging separate from vehicle lanes	4	3	2	1	8
Restrict surrounding streets to one-way flow to facilitate pedestrians & cyclists	4	3	2	1	8

How often do you or your children bike/ walk in or around the neighborhood?
Please choose one.

- ☐ Daily
- ☐ Weekends only
- ☐ Once a month
- ☐ A few times per year
- ☐ Never

(more survey questions on reverse)

Potential Improvement to Secondary Streets

Overview:

- These potential improvements would not impact mailboxes or driveways along any streets and could be implemented rapidly without the delays associated with excavation, construction, and property impacts.
- Palmetto Dr, Blueberry Dr. and N 11th would remain two-way and not receive any improvements. Beachview Dr would remain two-ways, but will have a variety of bicycle/pedestrian improvements implemented.
- Pedestrian safety solutions must come in future phases of work as separating pedestrians from vehicular traffic is required.

Specifics:

- This potential infrastructure solution would convert a portion of the roadway for dedicated cycling use, thus limiting the vehicle traffic to one-direction of travel. As seen on the flier, N 7th and N 9th would be southbound only and N 8th and N 10th would be northbound only.
- By separating bicycle and vehicle traffic, a more orderly flow of traffic is created and road users feel more comfortable.

Looking at the drawings on the flyer, would you support these improvements?

☐ Yes ☐ No ☐ Maybe (see comments below)

Why did you select this solution?

☐ It improves pedestrian and bicycle safety.

☐ It improves traffic flow, making the street safer.

☐ I prefer sidewalks and a bicycle lane to be constructed along the side of the roadway and the additional costs they would incur.

☐ I do not approve of one-way streets for this neighborhood.

☐ I don't think this project is important given other funding priorities.

☐ Other: _____

☐ I do not like that my freedom to park on the street is taken away.

☐ I would prefer sidewalks and the additional costs they would incur.

Any other comments to share?

_____

_____

_____

_____

_____

_____

_____

_____

Would you mind telling us a little about yourself?

I am (Circle one)	Male	Female	
I am a (Circle one)	Homeowner	Renter	No answer
My age is		years	
Do you have children under 18 living at my home in Gulf Park Estates?	YES	NO	
I have been a resident of Gulf Park Estates Area for (Circle one)	I don't live there	0 to 5 years	
	Between 5 and 15 years	More than 15 years	

My residence is on: _____ Street or Drive; and

closest to _____ Street or Drive.

Mississippi Gulf Coast Metropolitan Planning Organization
Gulf Regional Planning Commission

Thanks for your Time and Participation!

G. Planning Survey, Beachview Drive, Gulf Park Estates
completed July, 2014 (NBS Surveying LLC)

LEGENDS

- TELEPHONE PEDESTAL
- FIBER OPTIC MARKER
- POWER POLE
- SEWER CLEAN OUT
- CABLE TV BOX
- ELECTRICAL BOX
- FIRE HYDRANT
- BRICK MAILBOX
- LIGHT POLE
- WATER VALVE
- SEWER VALVE
- SEWER MANHOLE
- CROSSWALK SIGNAL
- TRAFFIC SIGNAL POLE
- WOOD FENCE
- OVERHEAD POWERLINES
- CONCRETE
- INLET
- RIGHT-OF-WAY
- OVERHEAD ELECTRICAL/COMMUNICATION LINES
- TOP BANK OF DITCHES

THIS SURVEY WAS DONE WITHOUT THE BENEFIT OF A TITLE REPORT AND SHOULD NOT BE USED AS ONE. LOT LINES ARE SHOWN BY APPROXIMATION AND SHOULD NOT BE CONSIDERED EXACT. ALL LOT CONERS NEED TO BE FIELD VERFIED BEFORE AND PROVED BEFORE USING THEM AS REFERENCE POINTS.

ALL COURSES ARE GRID NORTH, NAD 83 MS EAST ZONE, NAVD 1988 2012 GEOID BASED ON GPS REMOTE MODEM CONNECTION TO EARL DUDLEY & ASSO. VIRTUAL REFERENCE NETWORK.

GPS CONTROL POINT #1 CAPPED NO. 4 REBAR (NOT SHOWN)
N=310,284.88'
E=1,021,743.37'
Z=16.70'
CONVERGENCE=0°03'36.24784"
COMBINED FACTOR=0.99995034
SCALE FACTOR=0.99995161

CLASS "C" SURVEY

REFERENCE MATERIAL

PLEASE CONTACT MISSISSIPPI ONE CALL AT 1-800-227-6477 BEFORE BEGINNING ANY EXCAVATION WORK

ONLY VISIBLE, ABOVE GROUND IMPROVEMENTS WERE LOCATED AS PART OF THIS SURVEY. THIS SURVEY MAY NOT SHOW ANY EASEMENTS OR CHANGES IN TITLE BOTH RECORDED AND UNRECORDED THAT WOULD BE SHOWN WITH THE BENEFIT OF A TITLE REPORT.

FLOOD ZONES WERE NOT SHOWN HEREON

SURVEYOR'S CERTIFICATE:

I, Nathan B. Smith, a Registered Land Surveyor in the State of Mississippi, do hereby certify that the foregoing plat and description are true and correct to the best of my knowledge and belief.

Witness my signature this 18th day of March, 2008.

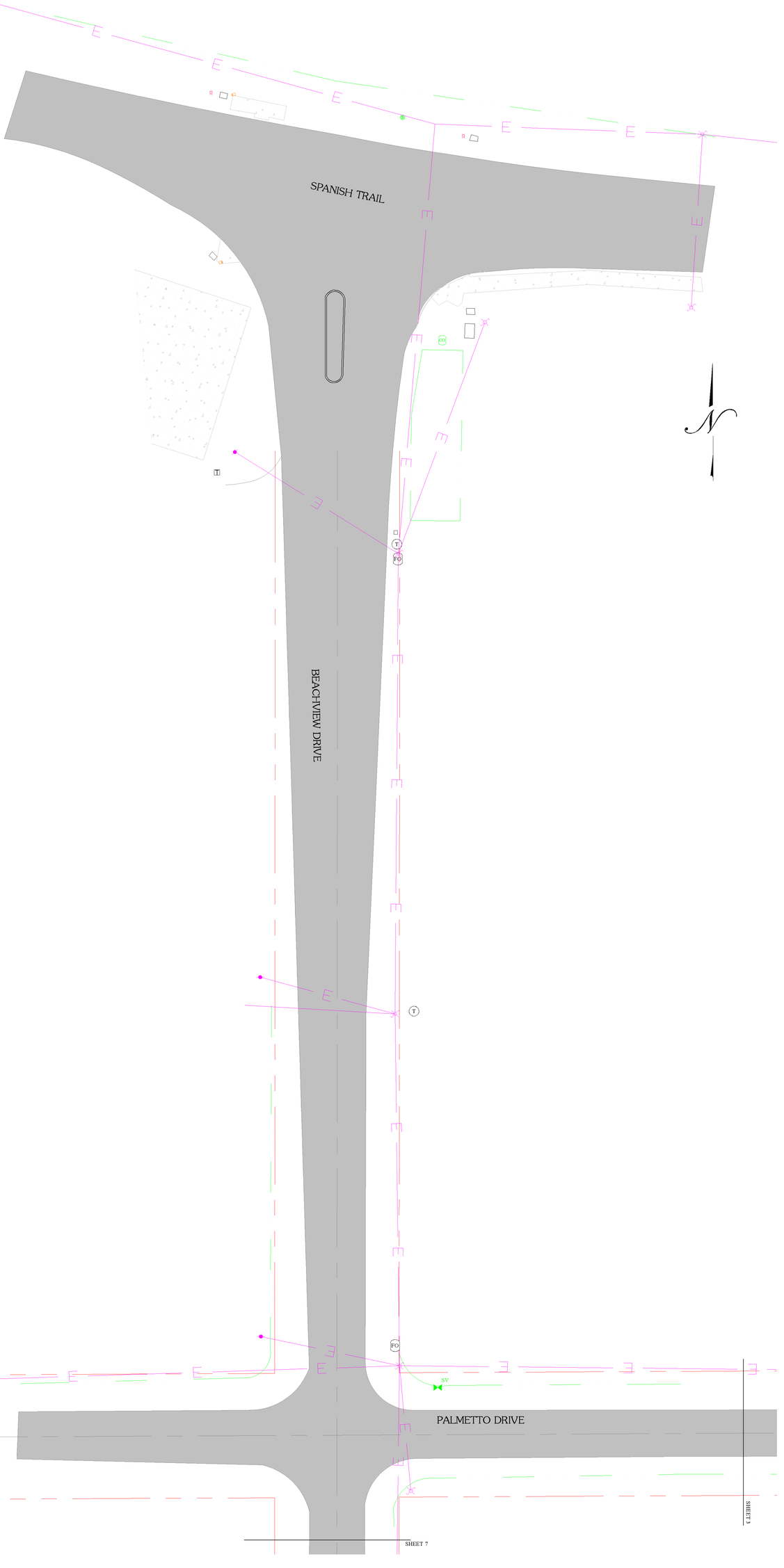
_____.
NATHAN B. SMITH
MISSISSIPPI P.L.S. #02943

NBS SURVEYING, LLC
516 PEACH STREET
OCEAN SPRINGS, MS
PHONE (228)818-4763
NBSSURVEYINGLLC@
BELLSOUTH.NET

JOB NAME: JACKSON COUNTY
LOCATION:
BEACHVIEW DRIVE
JACKSON COUNTY, MS
DESCRIPTION: PLANNING SURVEY

DRAWN BY: NBS | CHECKED BY: NBS
SCALE: 1" = 20'
DATE: 7/22/2014 | FW: JULY 2014
JOB NUMBER: 14-036 | SHEET: 1 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI



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14-036	2 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI

PALMETTO DRIVE

N 8TH STREET

WV

SHEET 3

SHEET 4

SHEET 5

PLANNING SURVEY FOR

BKI ENGINEERING, INC

GULF PARK ESTATES

JACKSON COUNTY, MISSISSIPPI

DRAWN BY: NBS | CHECKED BY: NBS

SCALE: 1" = 20'

DATE: 3/11/2014

JOB NUMBER: 14-036

FW: MARCH 2014

SHEET: 3 OF X

JOB NAME: JACKSON COUNTY

LOCATION: BEACHVIEW DRIVE
JACKSON COUNTY, MS

DESCRIPTION: PLANNING SURVEY

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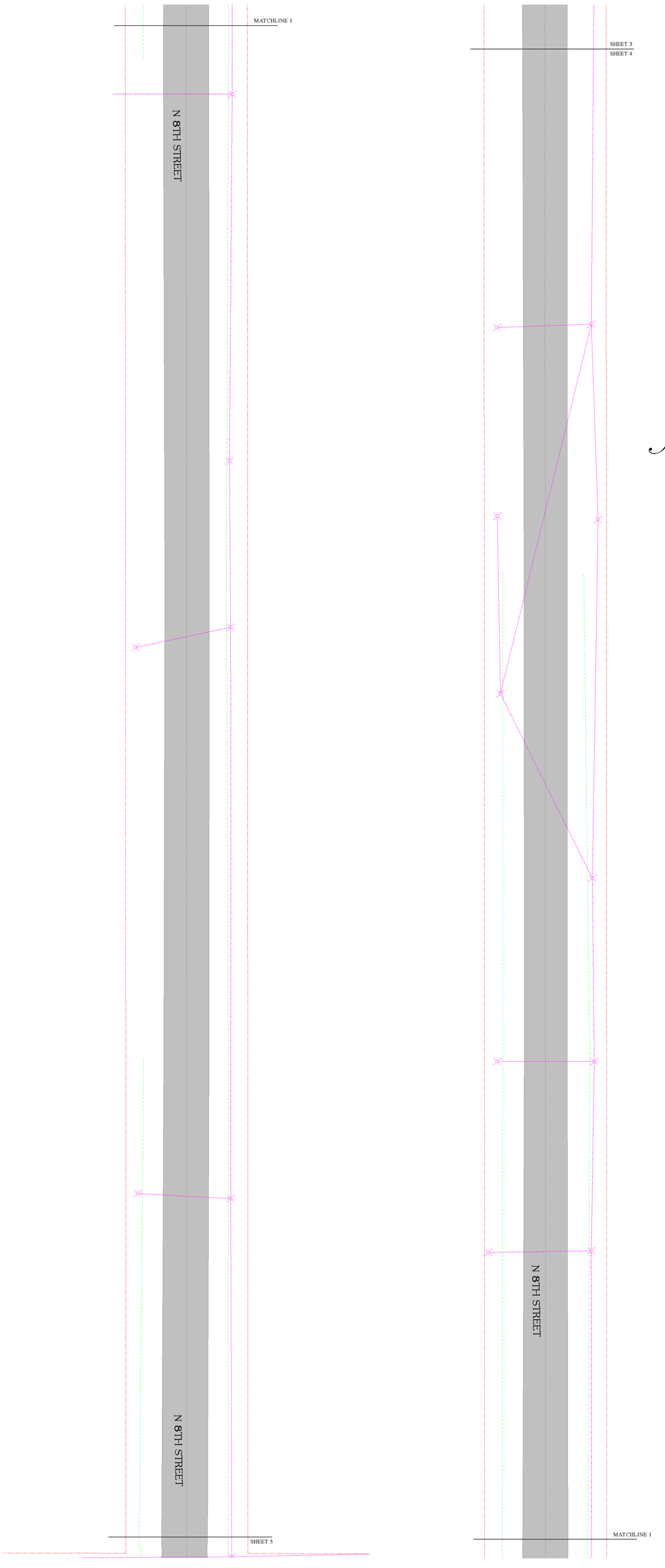

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14-036	4 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
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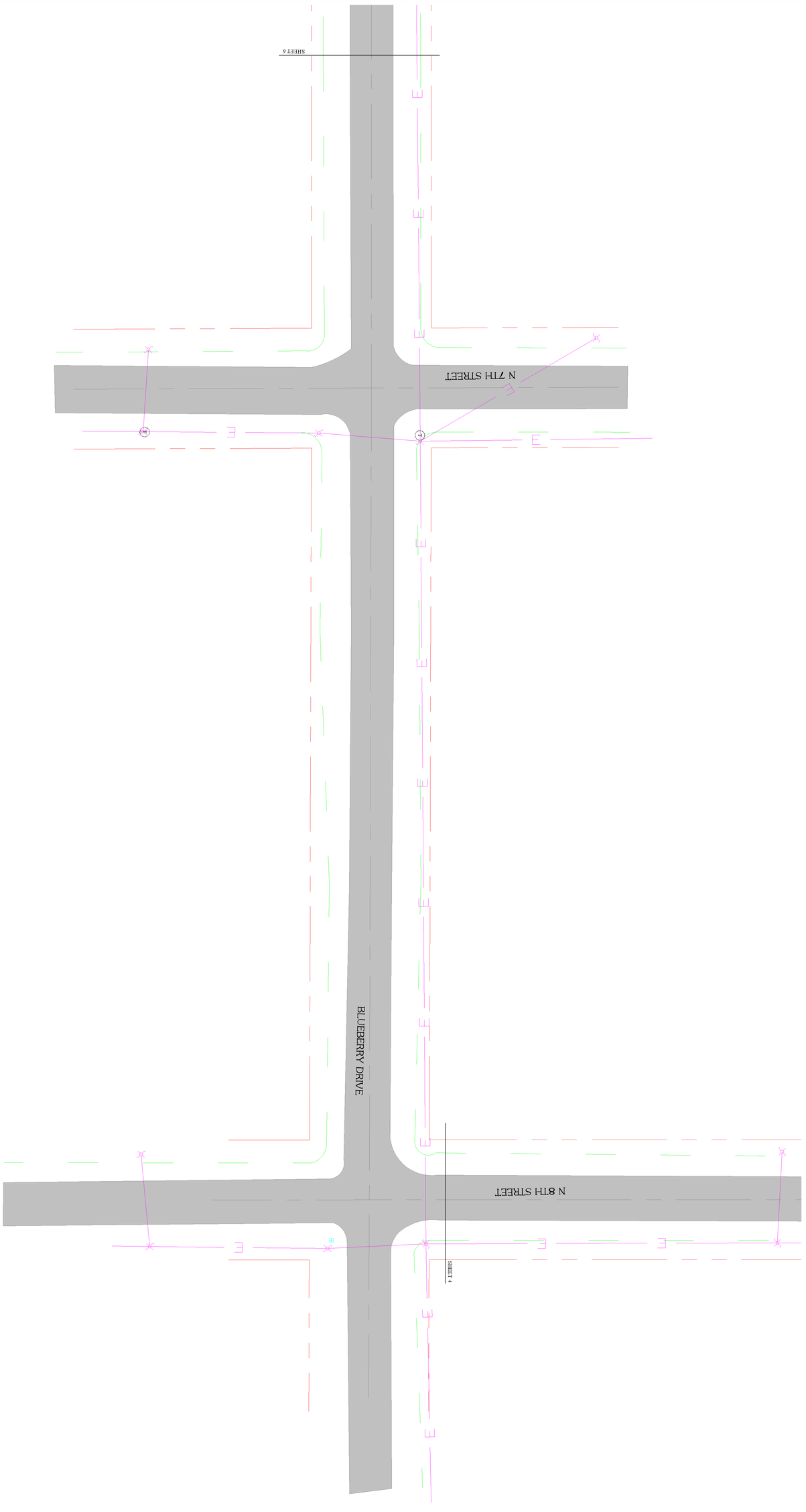
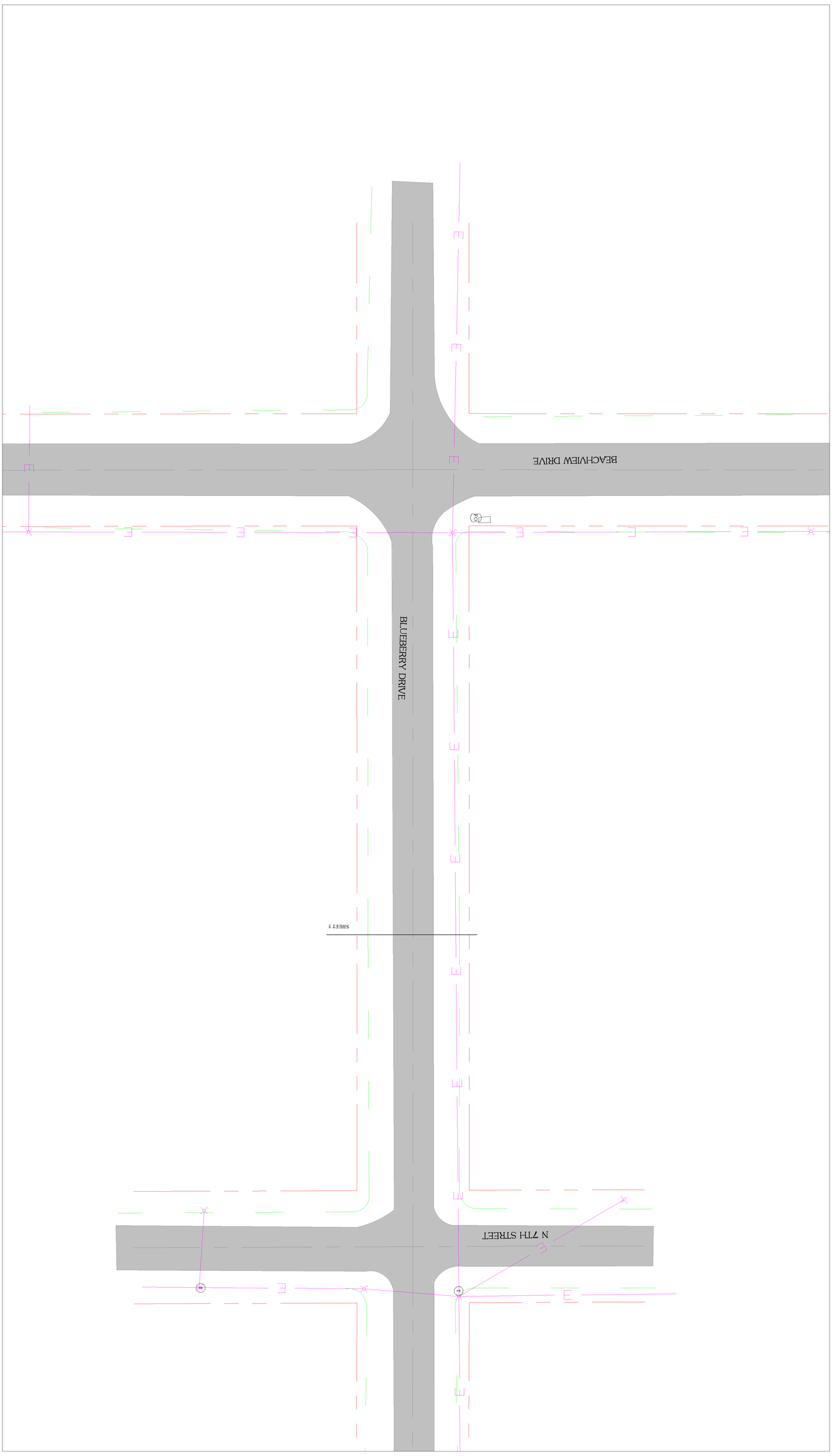


NBS SURVEYING, LLC 516 PEACH STREET OCEAN SPRINGS, MS PHONE (228)818-4763 NBSSURVEYINGLLC@ BELLSOUTH.NET	JOB NAME: JACKSON COUNTY LOCATION: BEACHVIEW DRIVE JACKSON COUNTY, MS DESCRIPTION: PLANNING SURVEY	DRAWN BY: NBS SCALE: 1" = 20' DATE: 7/22/2014 JOB NUMBER 14-036	CHECKED BY: NBS FW: JULY 2014 SHEET 5 OF X	PALNNING SURVEY FOR BKI ENGINEERING, INC GULF PARK ESTATES JACKSON COUNTY, MISSISSIPPI



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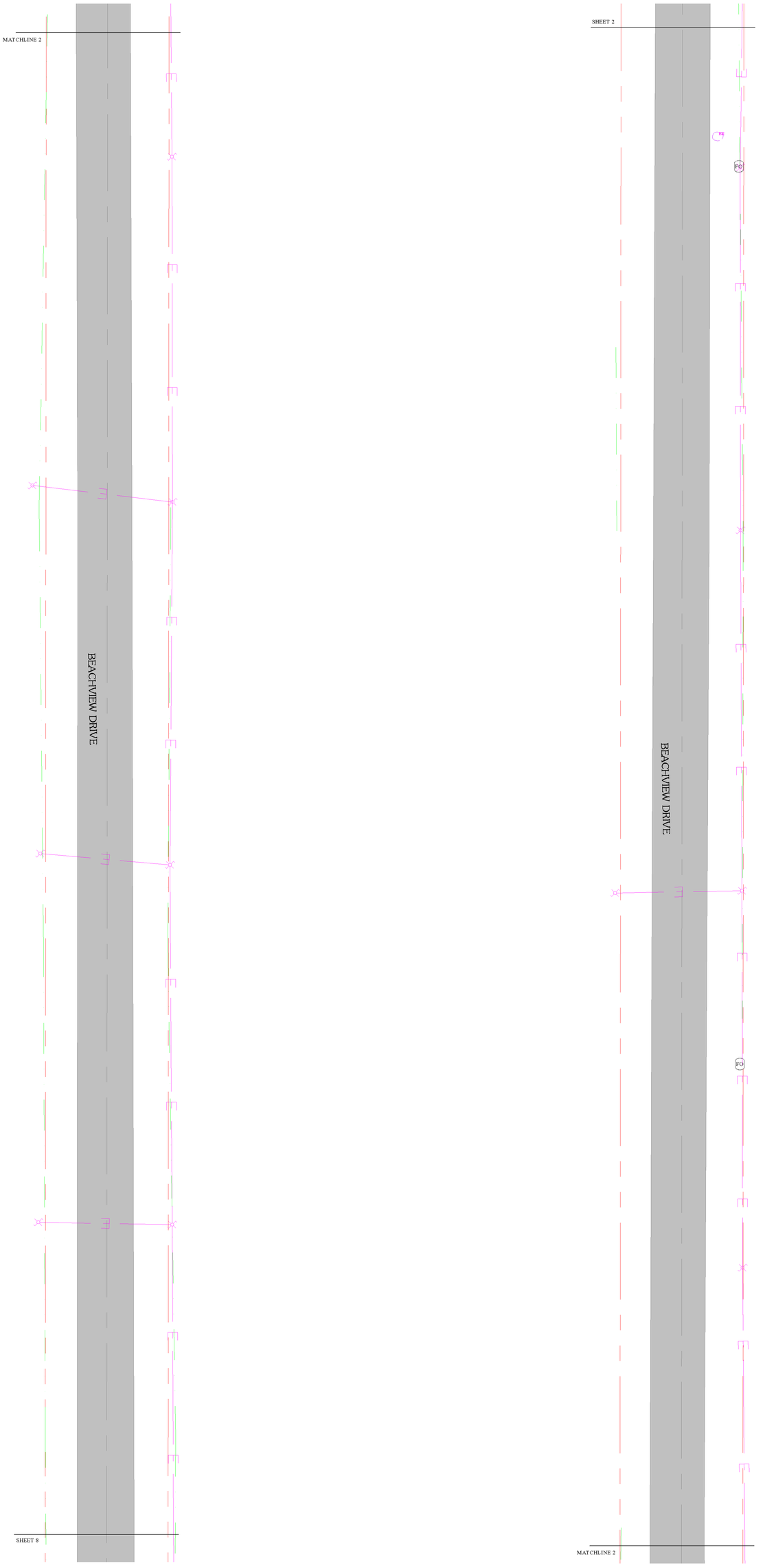
JOB NAME: JACKSON COUNTY	DRAWN BY: NBS	CHECKED BY: NBS	PLANNING SURVEY FOR
LOCATION: GULF PARK ESTATES JACKSON COUNTY, MS	SCALE: 1" = 20'		BKI ENGINEERING, INC
	DATE: 7/22/2014	FW: JULY 2014	GULF PARK ESTATES
	JOB NUMBER	SHEET	JACKSON COUNTY, MISSISSIPPI
DESCRIPTION: PLANNING SURVEY	14-036	6 OF X	



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14-036	7 OF X

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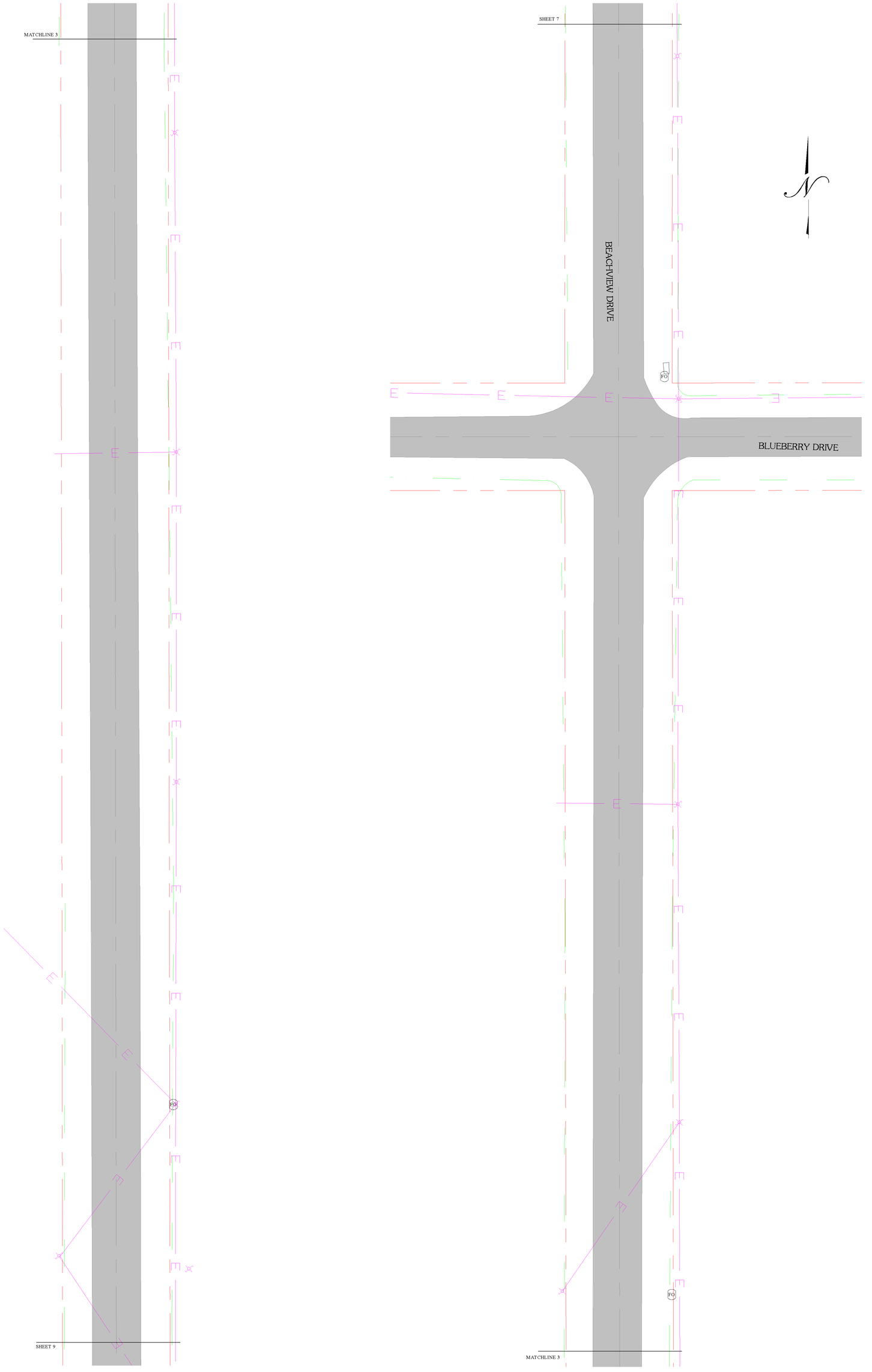

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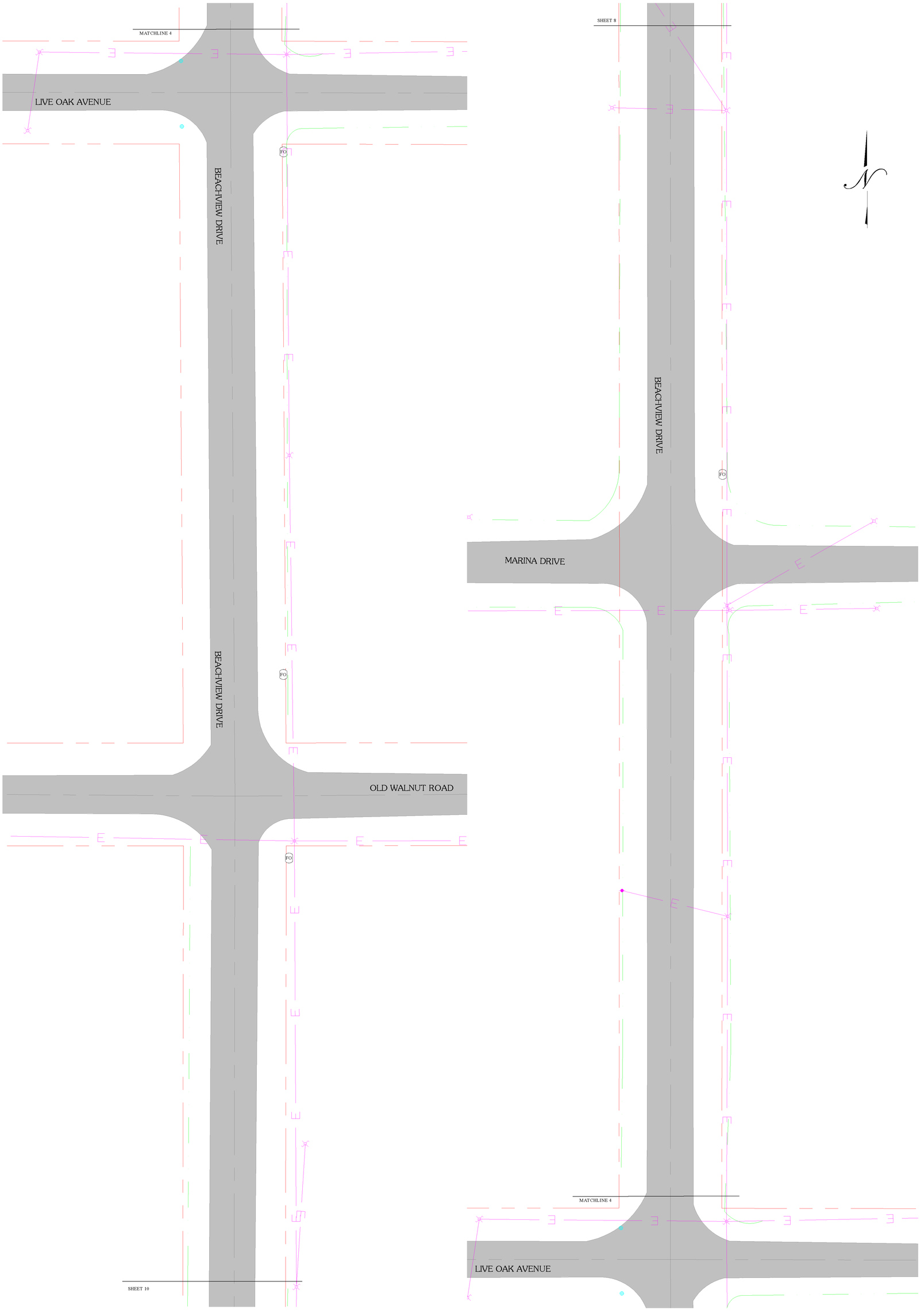

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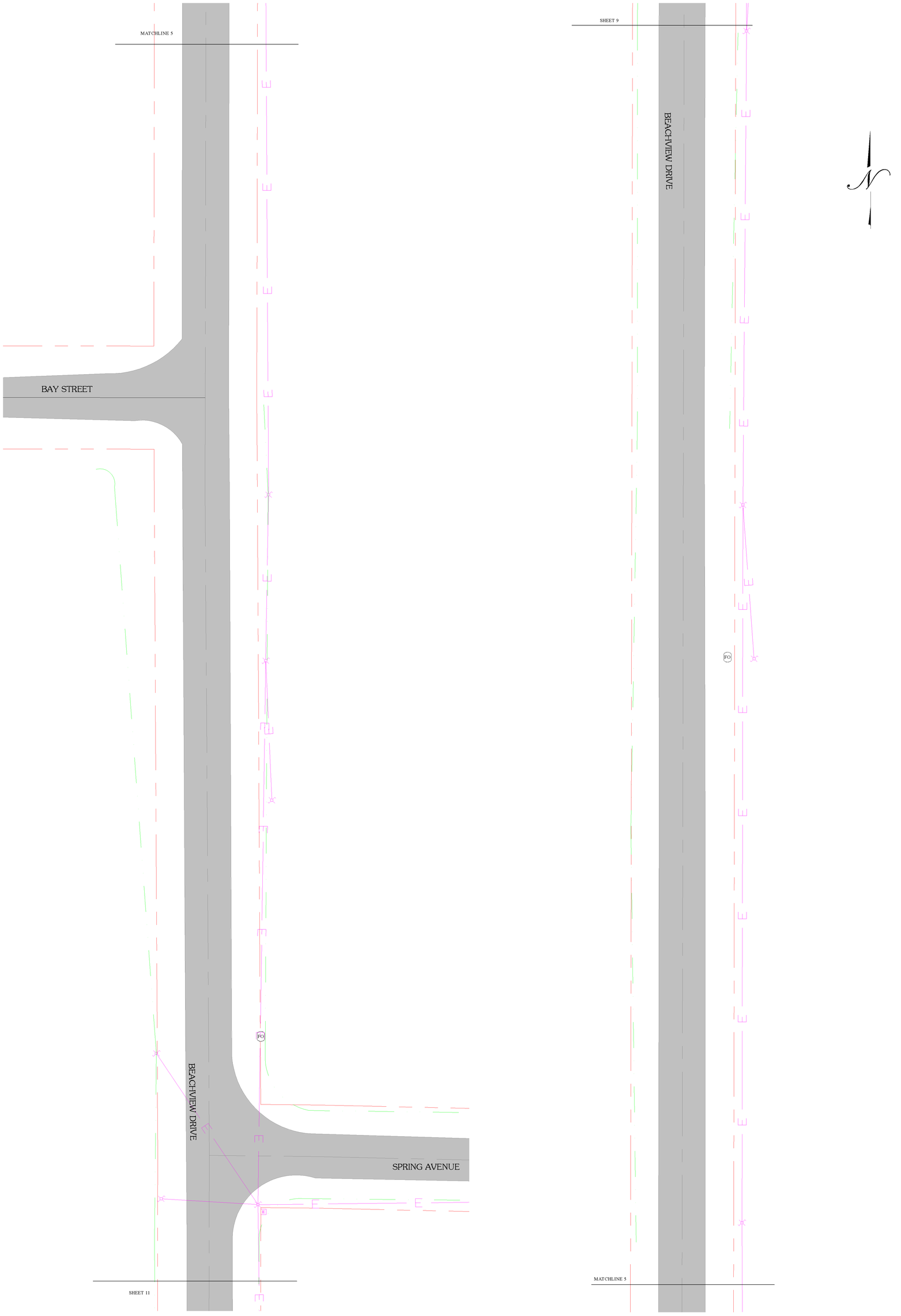

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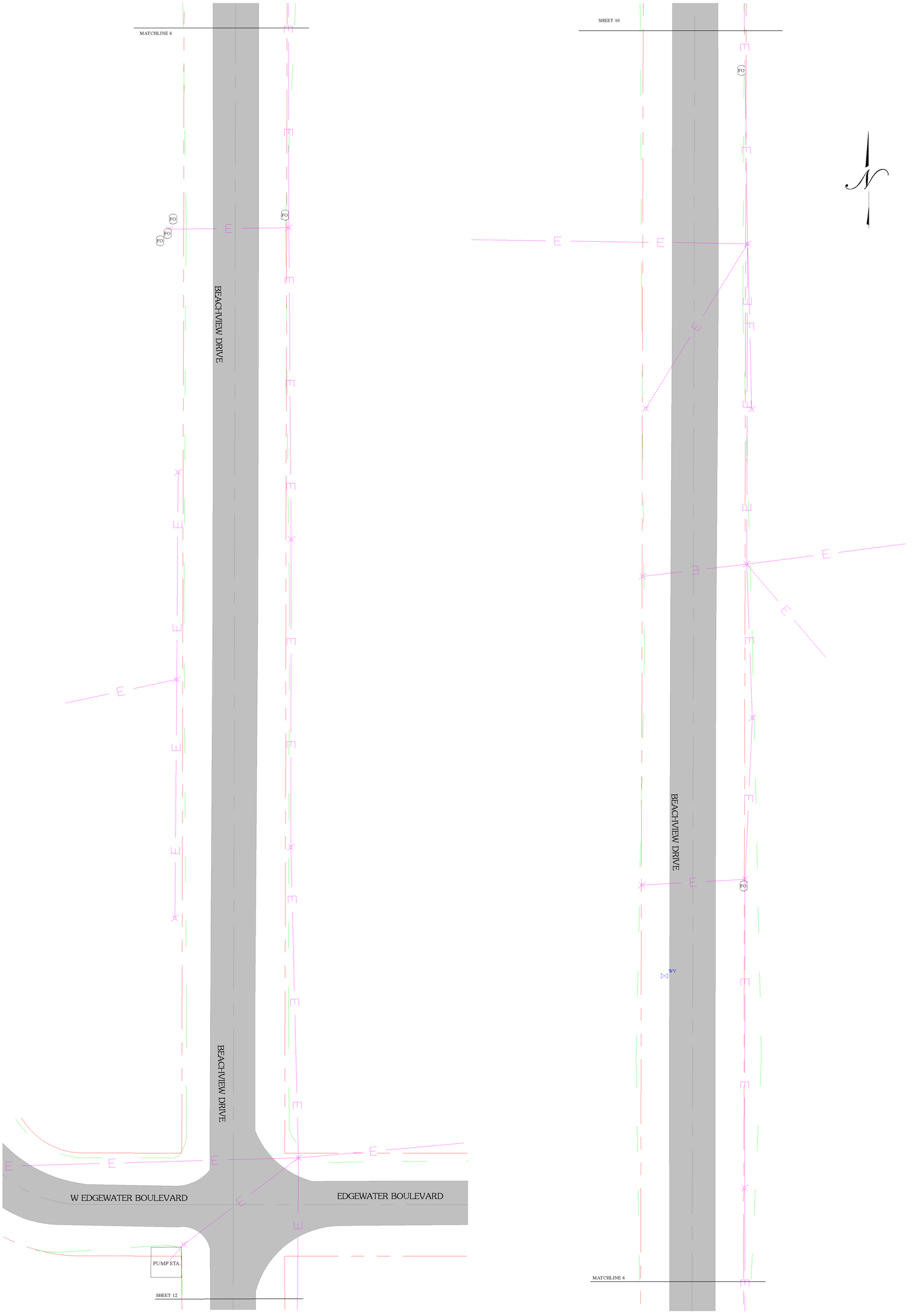
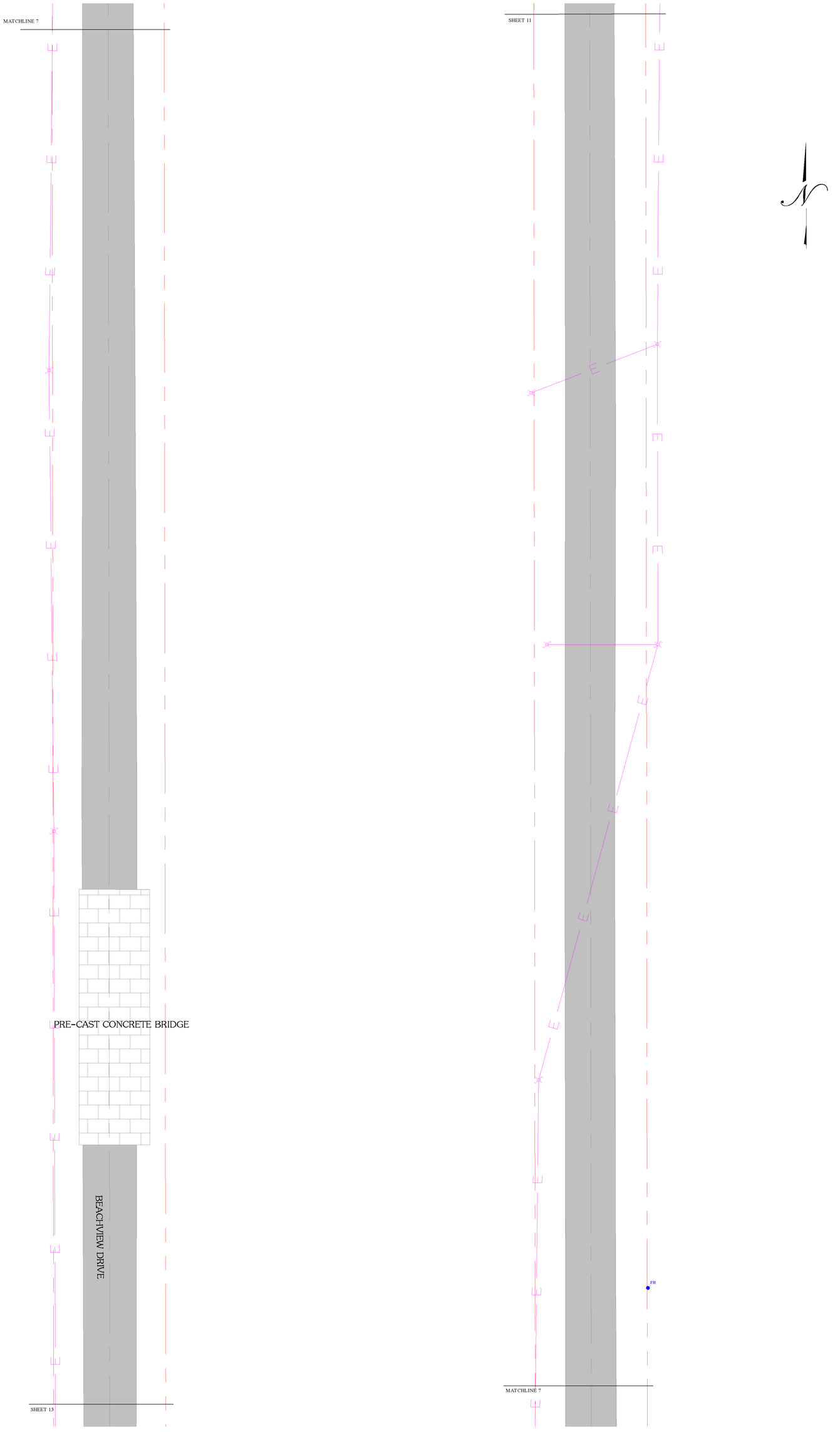
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI



NBS SURVEYING, LLC
516 PEACH STREET
OCEAN SPRINGS, MS
PHONE (228)818-4763
NBSSURVEYINGLLC@
BELLSOUTH.NET

JOB NAME:	JACKSON COUNTY
LOCATION:	BEACHVIEW DRIVE JACKSON COUNTY, MS
DESCRIPTION:	PLANNING SURVEY
DRAWN BY: NBS	CHECKED BY: NBS
SCALE: 1" = 20'	
DATE: 7/22/2014	FW: JULY 2014
JOB NUMBER	SHEET
14-036	11 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI



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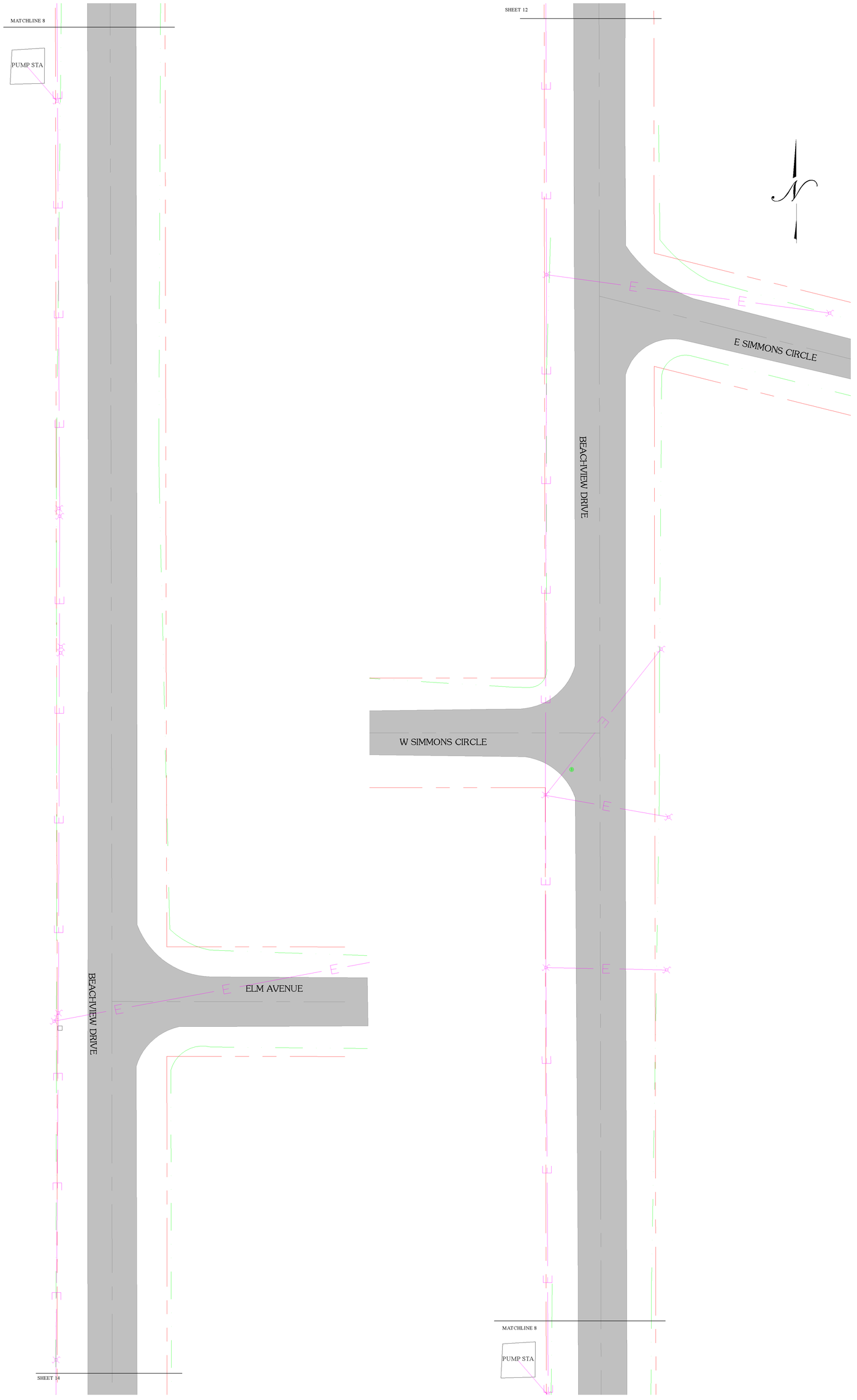
DATE: 7/22/2014	FW: JULY 2014
JOB NUMBER	SHEET
14-036	12 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI



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JOB NAME:	JACKSON COUNTY
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DESCRIPTION:	PLANNING SURVEY

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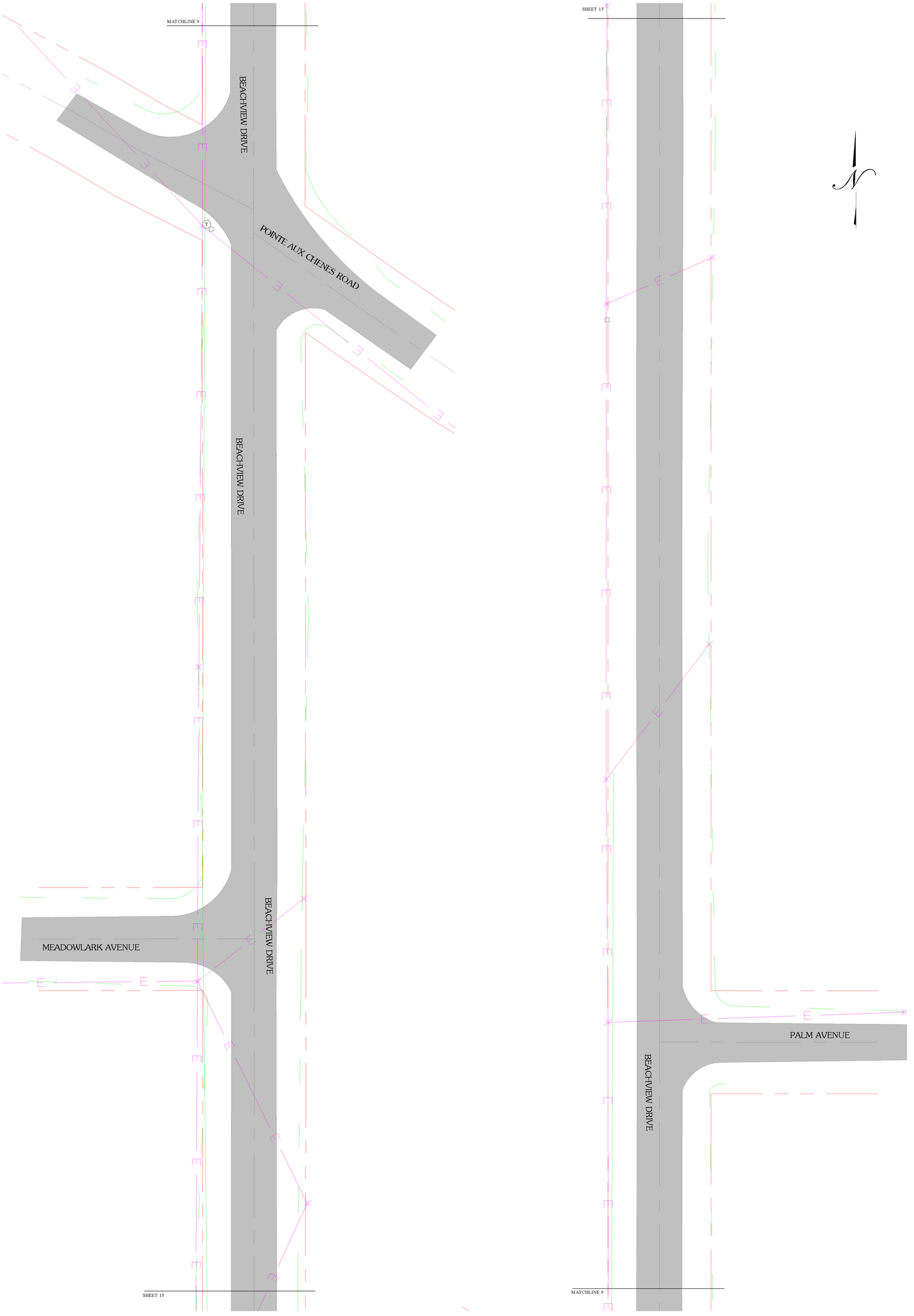
JOB NUMBER	SHEET
14-036	13 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI



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JOB NAME: JACKSON COUNTY

LOCATION:
BEACHVIEW DRIVE
JACKSON COUNTY, MS

DESCRIPTION: PLANNING SURVEY

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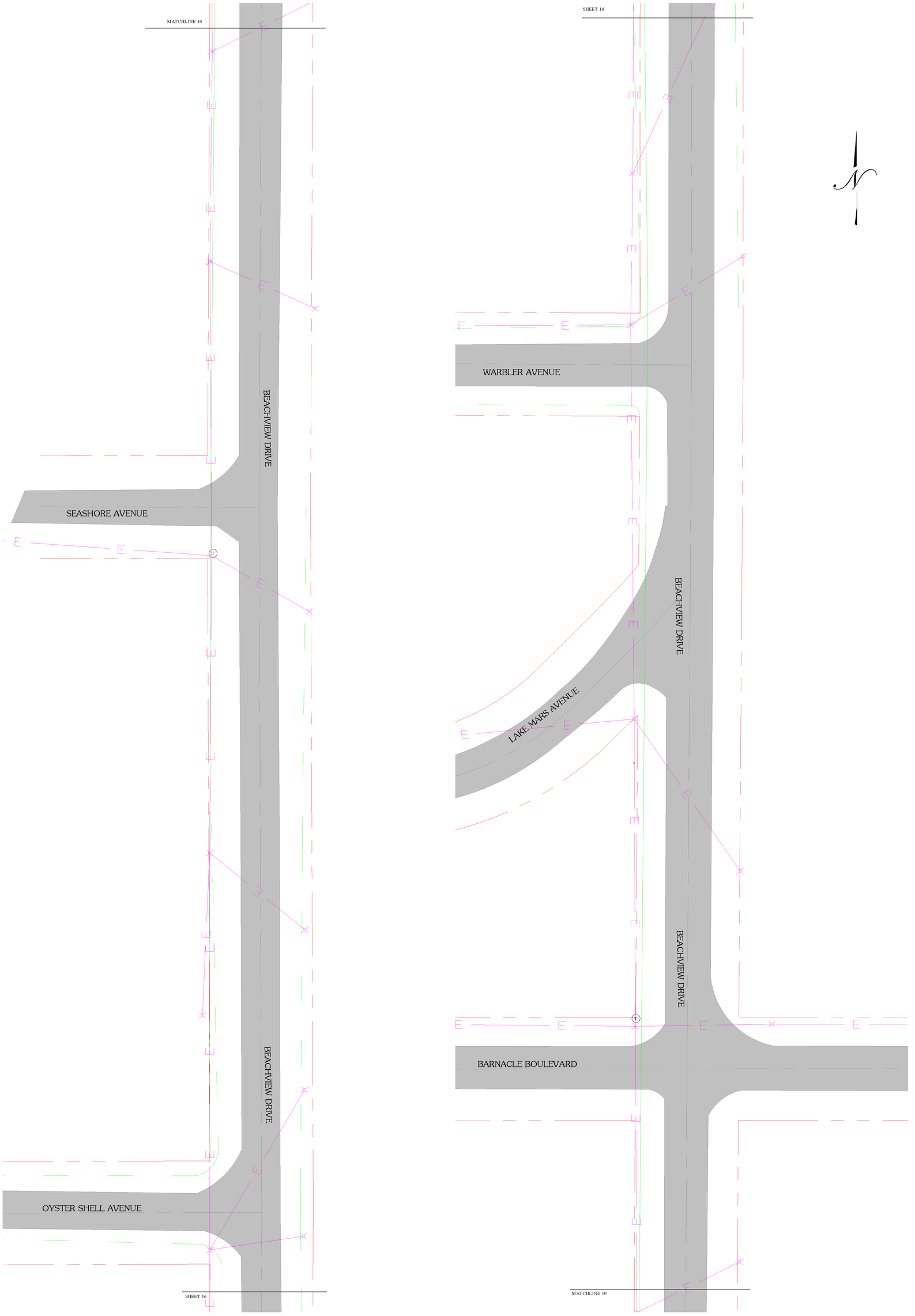
DATE: 7/22/2014	FW: JULY 2014
JOB NUMBER	SHEET
14-036	14 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI



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JOB NAME: JACKSON COUNTY
LOCATION: BEACHVIEW DRIVE
JACKSON COUNTY, MS
DESCRIPTION: PLANNING SURVEY

DRAWN BY: NBS | CHECKED BY: NBS
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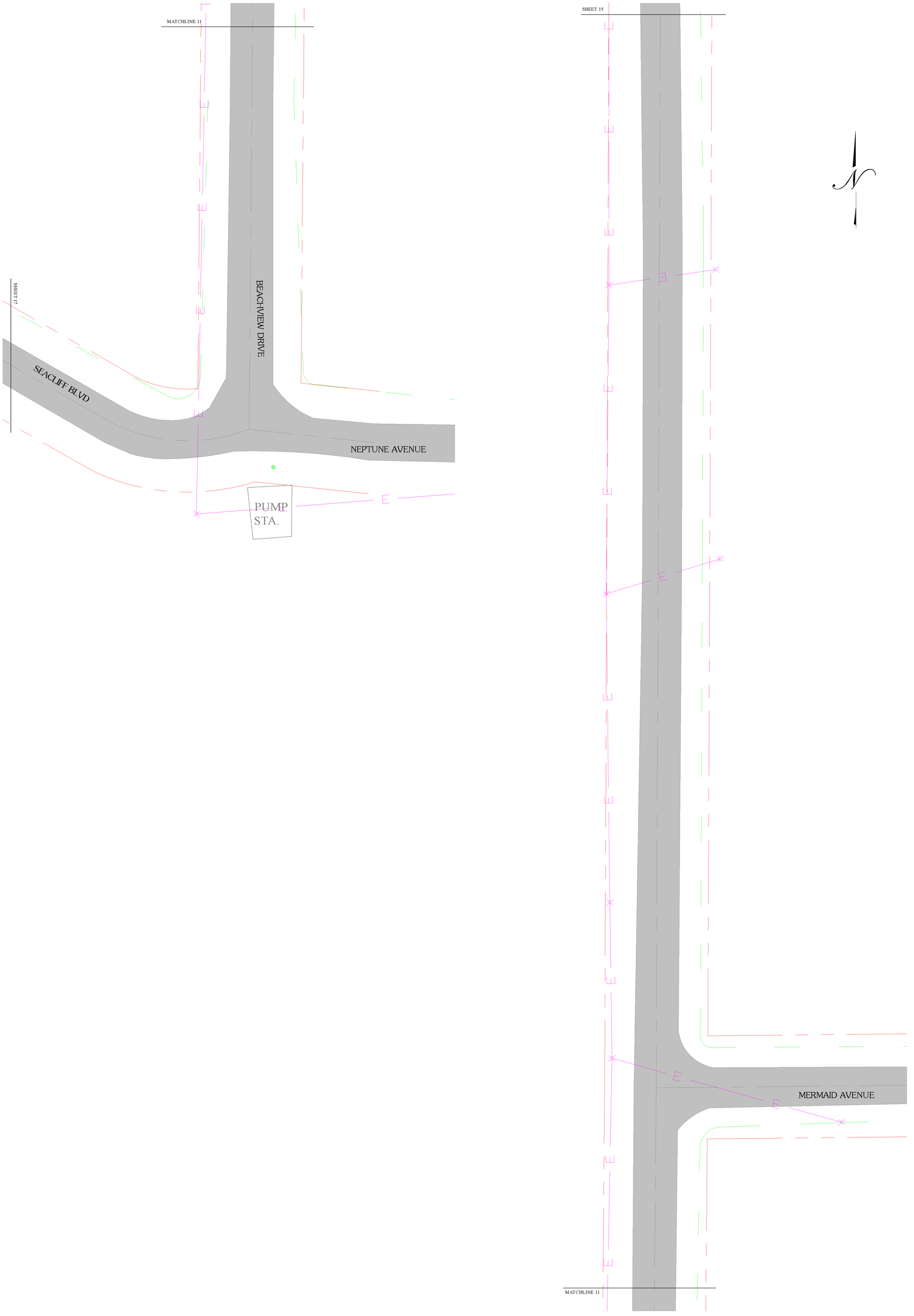
DATE: 7/22/2014 | FW: JULY 2014
JOB NUMBER: 14-036 | SHEET: 15 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI



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JOB NAME: JACKSON COUNTY
LOCATION: BEACHVIEW DRIVE
JACKSON COUNTY, MS
DESCRIPTION: PLANNING SURVEY

DRAWN BY: NBS | CHECKED BY: NBS
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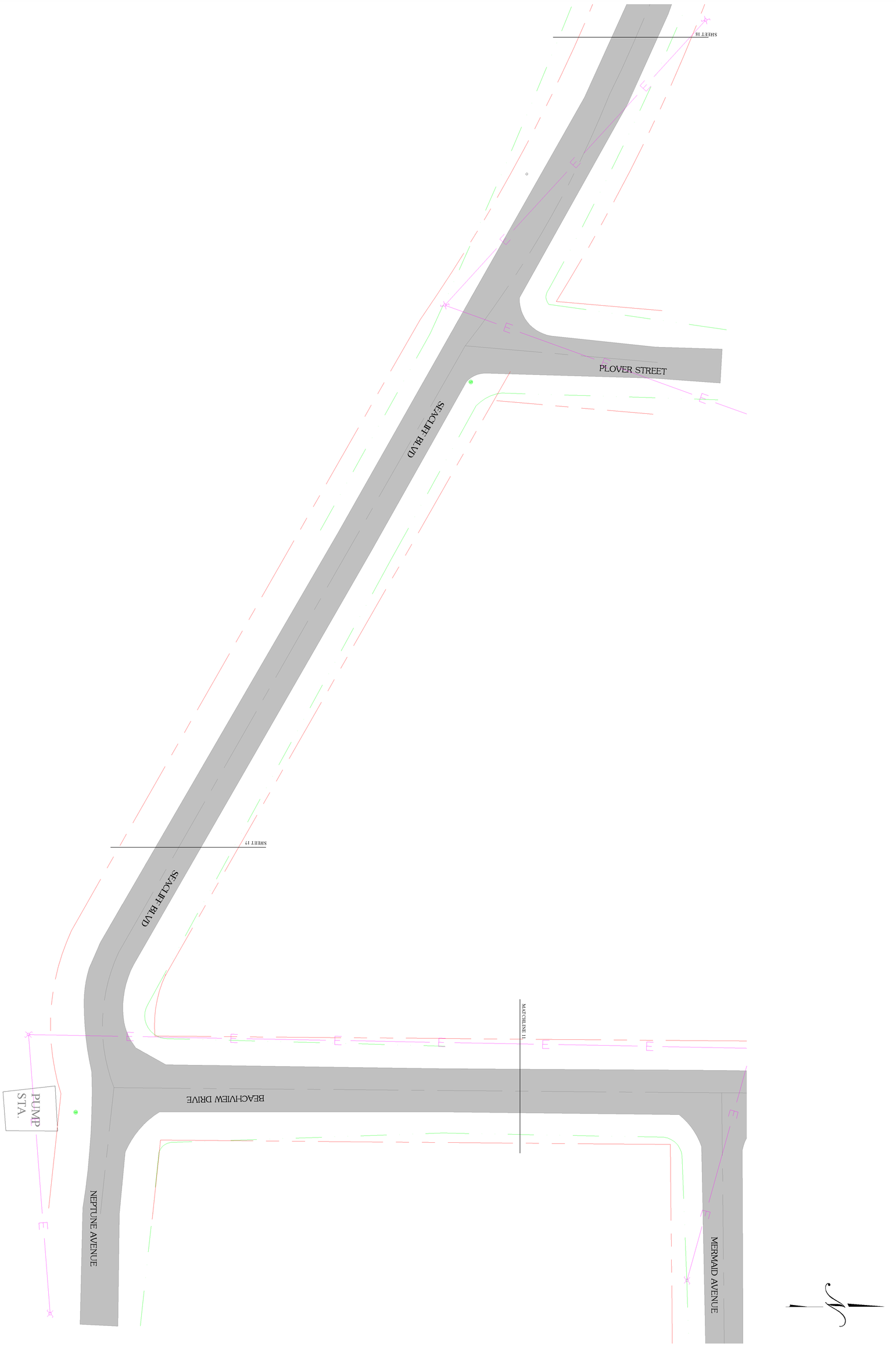
DATE: 7/22/2014 | FW: JULY 2014
JOB NUMBER: 14-036 | SHEET: 16 OF X

PLANNING SURVEY FOR
BKI ENGINEERING, INC
GULF PARK ESTATES
JACKSON COUNTY, MISSISSIPPI



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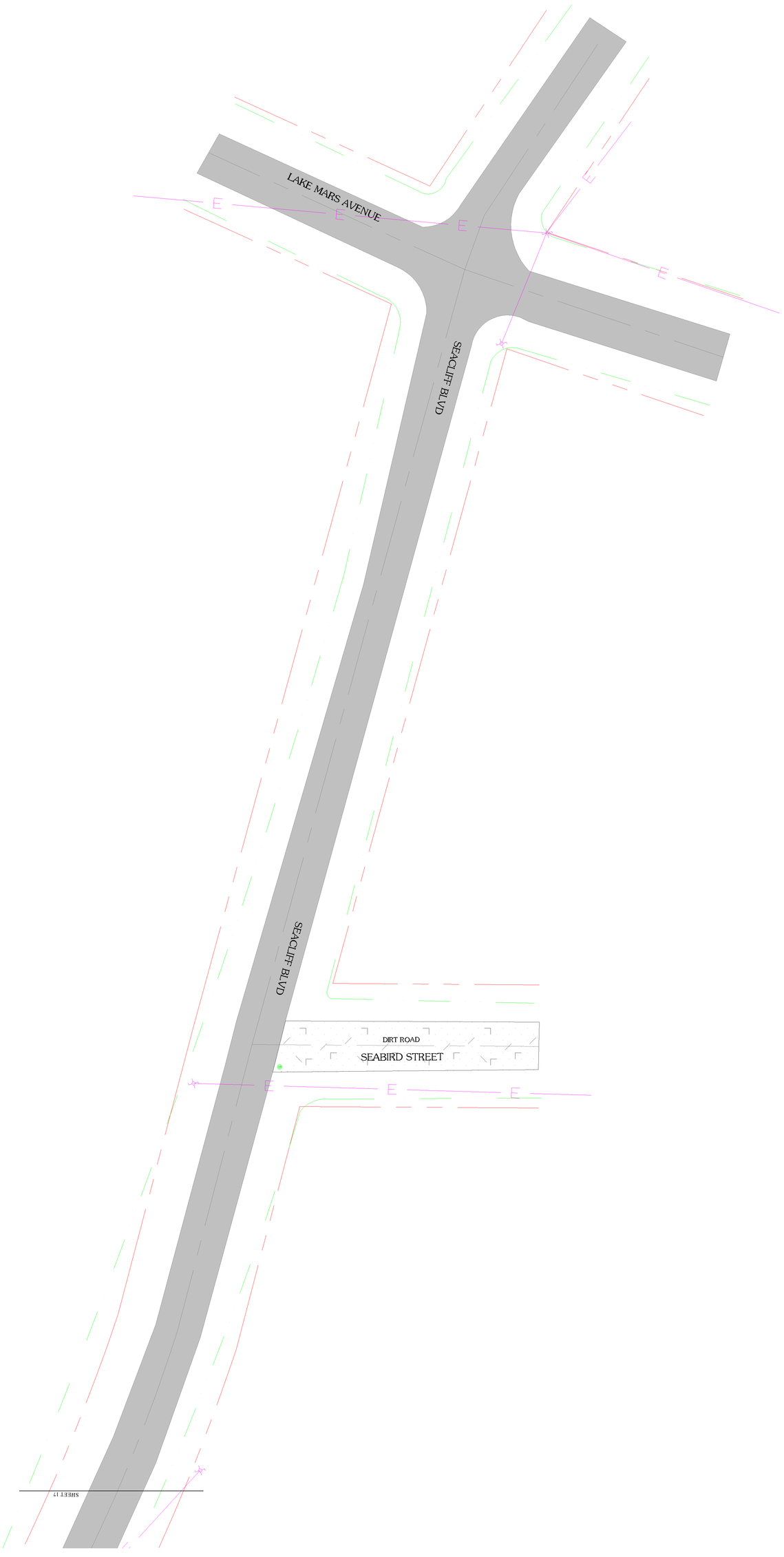
JOB NAME: JACKSON COUNTY	DRAWN BY: NBS	CHECKED BY: NBS	PALNNING SURVEY FOR
LOCATION: BEACHVIEW DRIVE, JACKSON COUNTY, MS	SCALE: 1" = 20'		BKI ENGINEERING, INC
	DATE: 7/22/2014	FW: JULY 2014	GULF PARK ESTATES
	JOB NUMBER	SHEET	JACKSON COUNTY, MISSISSIPPI
DESCRIPTION: PLANNING SURVEY	14-036	17 OF X	



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LOCATION: BEACHVIEW DRIVE, JACKSON COUNTY, MS	SCALE: 1" = 20'		
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	JOB NUMBER	SHEET	
DESCRIPTION: PLANNING SURVEY	14-036	18 OF X	

PALNNING SURVEY FOR

BKI ENGINEERING, INC

GULF PARK ESTATES

JACKSON COUNTY, MISSISSIPPI

BKI BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

2113 Government Street
Building B, Suite B-1
Ocean Springs, MS 39564
Tel: (228) 875-1919 • Fax: (228) 875-1072
BKI Job OS.14.002 • October 31, 2015