

**MISSISSIPPI RIVER - GULF OUTLET
NEW LOCK AND CONNECTING CHANNELS**

SECTION 4 - FACILITY RELOCATIONS

GENERAL

B.4.1. We present the information contained in this section in detail required for this feasibility report. We gathered data on location of roads, railroads, and utilities by searching permits, visiting sites and initial contacts with owners. We generated inhouse relocation plans from design criteria which we identified and owners gave us. Included are the facility relocation cost estimates for the two lock sizes, i.e., 900feet long and 1200 feet long each with two alternatives, i.e., a barge lock and ship lock, see section 5. The relocations cost estimates are the same for both lock sizes and differ only for the alternative of the barge lock verses ship lock. Affected lengths shown in this report are for the ship lock.

AUTHORITY FOR ACCOMPLISHING RELOCATIONS

B.4.2. The Water Resources Development Act of 1986 (PL 99662), Section 844, identifies the cost sharing of the project. The cost of the project will be funded 50% from the general fund of the U.S. Treasury and 50% from the Inland Waterway Trust Fund for a barge lock. The cost sharing for the ship lock, for depths up to 45 feet deep, for that portion above the cost of the barge lock is 75% Federal cost and 25% State of Louisiana.

B.4.3. With receipt of contributed monies from the Inland Waterways Trust Fund and from the State of Louisiana, we will take ownership on coordinating for and reporting on the facility relocation plans and the appropriate cost responsibility. Specifically, we will prepare a relocation design memorandum (RDM) for each bridge, detour route and the utility relocations. These RDM's will detail the relocation plans, the procedure for accomplishing the relocation, the owner's compensability and the Federal cost responsibility.

DESCRIPTION OF EXISTING FACILITIES AFFECTED BY THE PROJECT

B.4.4. Facilities affected by the project are categorized as roads, railroads and utilities and shown on plates B-104 thru B-106.

Roads

B.4.5. Louisiana State Highway #46. Louisiana State Highway #46 is routed along the city streets of New Orleans, i.e., St. Claude Ave. and includes the St. Claude Ave. Bridge. The bridge only, a low level truss bascule designated B-1, is owned by the Commission of the Port of New Orleans (PNO) and was constructed in 1921. The project only affects Highway #46 in the vicinity of and including the St. Claude Ave. Bridge. The Bridge requires replacement due to direct impacts of the project, i.e., channel widening and horizontal clearance requirements. Other portions of Highway #46 are impacted due to geometry changes to the bridge approach and from the need to provide detour routes.

B.4.6. Louisiana State Highway #39. Louisiana State Highway #39 is routed along the city streets of New Orleans, i.e., Claiborne Ave and Robertson Street, and includes the Claiborne Ave. Bridge. The bridge only, a steel vertical lift designated B-2, is owned by the Louisiana Department of Transportation and Development (LADOTD) and was constructed in 1957.

The project only affects Highway #39 in the vicinity of and including the Claiborne Ave. Bridge. The Bridge requires replacement due to direct impacts of the project, i.e., vertical clearance requirements in the open position. Other portions of Highway #39 are impacted due to the need to provide detour routes.

B.4.7. Detour Routes. Numerous city streets, designated D-1, will be affected. Streets within the project right-of-way will be closed to public use. Streets associated with the detour route will be improved to carry the vehicular traffic normally destined to either one of the above affected bridges to the other, i.e., non-affected bridge, including the new Florida Ave. Bridge.

B.4.8. Florida Ave. Vehicular Bridge. The Florida Ave. Vehicular Bridge (B-3) is not impacted by our project and is addressed in paragraph B.4.37.

Railroads

B.4.9. New Orleans Public Belt (NOPB) owns track on the west side of the lock channel. The track services the Galvez Street Wharf (i.e., Galvez Marginal Tracks and Galvez No. 3, designated R-3 and R-4, respectively) and the marshalling yard (designated R-5) from the main running track/fiber optic cable (designated R-2 and FOC-1). Tracks R-2 and R-5 with FOC-1 are outside the project ROW and are not impacted by our new lock project. The new lock project calls for the demolition of the Galvez Street Wharf resulting in the removal of the tracks, i.e., R3 (2-lines) and R-4 (1-line). The tracks are shown on plates B-104 thru B-106. The project affects approximately 6740 linear feet of the tracks for R3 and affects approximately 2760 linear feet of track for R4.

B.4.10. The Florida Ave. Bridge (R-1) is not impacted by our project and is addressed in paragraph B.4.37.

Utilities

B.4.11. South Central Bell (SCB). SCB owns three cable crossings, and no interruption of service will be allowed.

B.4.12. One crossing is in the vicinity of Marais Street and passes through the existing lock's utility gallery. The line provides inter-office (trunk) services to the downriver east bank communities. The date of installation is unknown. The line is a single sheath, 24 single mode fibers in a four duct structure. The line is shown on plate B-104 and designated T-4. The project affects approximately 900 linear feet of the line (excluding the facility length contained in the existing lock gallery).

B.4.13. The second cable crossings is a submarine crossing in the vicinity of North Claiborne Avenue. The line provides telecommunications to the entire lower Ninth Ward Community and provides interoffice (trunk) services to the downriver east bank communities. The date of installation is unknown. The line is a combination of 2 sheaths, 3000 pair 26 gauge; and a 1 sheath, 900 pair 22 gauge in a twelve duct structure. The line is

shown on plate B-106 and designated T-6. The project affects approximately 1060 linear feet of the line.

B.4.14. The third cable crossings is a submarine crossing in the vicinity of North Robertson Street. The line provides telecommunications to the entire lower Ninth Ward Community and provides interoffice (trunk) services to the downriver east bank communities. The date of installation is unknown. The line is a combination of 3 sheaths, 1500-pair 24 gauge; a 1 sheath, 2700-pair 26 gauge; and a 1 sheath, 900-pair 26 gauge in a twelve duct structure. The line is shown on plate B-106 and designated T-7. The project affects approximately 1328 linear feet of the line.

B.4.15. Cox Cable TV of Orleans Parish. COX owns one cable crossing, and no interruption of service will be allowed. The crossing is in the vicinity of Marais Street and passes through the existing lock's utility gallery. The line provides cable television signals to subscribers to the downriver east bank communities. The date of installation is 1982. The line is four 3/4" coaxial cables in a four duct structure. The line is shown on plate B-105 and designated T-3. The project affects approximately 880 linear feet of the line (excluding the facility length contained in the existing lock gallery).

B.4.16. New Orleans Public Service/Louisiana Power and Light Company (NOPSI). NOPSI provides both electric and gas service in the project area. Electric service consists of two active submarine cable crossings. No interruption of this service will be allowed. In addition, our records indicate the presence of two abandoned power cables and one abandoned communication cable. Gas service consisted of two dual natural gas pipeline crossings, one of which is no longer in service.

B.4.17. Electric Service. NOPSI's first electric service crossing is in the vicinity of Marais Street and passes through the existing lock's utility gallery. NOPSI installed this line in 1920 and consists of four 24Kv primary feeders housed in 14 conduits. The primary feeder is constructed of 3-750KCM Al. XPCNXP 24KV. The line is shown on plate B-105 and designated E-2. The project affects approximately 890 linear feet of the line (excluding the facility length contained in the existing lock gallery).

B.4.18. Electric Service. NOPSI's second crossing is a submarine cable, primary feeder #805 and #621. This crossing is in the vicinity of Florida Ave. and passes under the existing navigation channel. NOPSI installed this line in 1943 and upgraded the line in recent years and consists of two 24Kv feeders housed in 2 concrete coated conduits. The primary feeder is constructed of 3-750KCM Al. XPCNXP 24KV. The line is shown on plate B-106 and designated E-13. The project affects approximately 1020 linear feet of the line.

B.4.19. Electric Service. NOPSI's first abandoned submarine power cable is north of the existing lock. The line is shown on plate B-106 and designated E-4. The project affects approximately 1134 linear feet of the line.

B.4.20. Electric Service. NOPSI's second abandoned submarine power cable is south of the Florida Ave. Siphon. The line is shown on plate B-106 and designated E-14. The project affects approximately 890 linear feet of the line.

B.4.21. Electric Service. NOPSI's abandoned submarine communication cable is north of the Florida Ave. Bridge. The line is shown on plate B-106 and designated T-10. The project affects approximately 600 linear feet of the line.

B.4.22. Gas Service. NOPSI's active natural gas pipeline is a dual crossing in the vicinity of North Robertson Street. This dual line passes under the existing navigation channel and no interruption of service will be allowed. NOPSI installed these lines in 1928 and consists of two 16 inch high pressure, steel wrapped, natural gas distribution pipelines with valves in manholes on both banks. The lines are shown on plate B-105 and designated G-3 and G-4. The project affects approximately 994 linear feet of the line for G-3 and approximately 1054 linear feet of the line for G-4.

B.4.23. Gas Service. NOPSI's second crossing is in the vicinity of Marais Street and passes through the existing lock's utility gallery. This crossing consists of two 16 inch gas lines but are no longer in service. The lines are shown on plate B-105 and designated G1 and G-2. The project affects approximately 585 linear feet of the line for G1 and approximately 585 linear feet of the line for G2 (excluding the facility length contained in the existing lock gallery).

B.4.24. Sewerage & Water Board of New Orleans (SWB). The SWB owns facilities that carry electric, water and sewer service. These facilities consist of four electric submarine cable crossings, three water main pipeline crossings, four sewer pipeline crossings and a sewer lift station with accompanying pipeline. At various locations small diameter water and sewer lines will be removed. These lines are service lines to the abandoned offices on both sides of the IHNC.

B.4.25. Electric Service. Three of the four crossings are located at Florida Ave. and no interruption of service will be allowed. The fourth line, E-3, is located in the vicinity north of the existing lock and is out of service. Each Florida Ave. line consists of 15Kv- 25Hz service. Each line was designed for a sixty year service life. Manholes are located on each bank line.

B.4.26. Electric Service. Item E-10 installed in 1966, feeder #410 primary power from sewer pumping station D to drainage station number 5. The feeder is a 500 MCM, three-conductor, rubber insulated, lead jacketed, steel wire armored cable. The project affects approximately 1490 linear feet of the line for E-10 and shown on plate B-106.

B.4.27. Electric Service. Item E-11 installed in 1964, feeder #20 primary power from sewer pumping station D to drainage station number 5. The feeder is a 500 MCM, three-conductor, rubber insulated, lead jacketed, steel wire armored cable. The project affects approximately 1520 linear feet of the line for E-11 and shown on plate B-106.

B.4.28. Electric Service. Item E-12 installed in 1963, is feeder #510 primary power from sewer pumping station D to drainage station number 5. The feeder is a 500 MCM, three single conductors, EPR insulation, s/shielded with PVC jacket overall. The project affects approximately 1420 linear feet of the line for E-12 and shown on plate B-106.

B.4.29. Electric Service. SWB's fourth crossings, feeder #502, is a submarine cable no longer in use. This crossing is in the vicinity of Claiborne Ave. and passes under the existing navigation channel. The line

is shown on plate B-105 and designated E-3. The project affects approximately 734 linear feet of the line.

B.4.30. Water Service. SWB owns three water main pipeline crossings, and no interruption of service will be allowed. Two cast iron pipelines, 20 inch diameter each, are located 146 feet and 550 feet lakeside of St. Claude Ave. Both crossings pass through the existing lock's utility gallery. SWB installed these lines in 1928. These lines are shown on plates B-104 and B-105 and designated W-2 and W-3. The project affects approximately 1065 linear feet of the line for W-2 and approximately 830 linear feet of the line for W-3 (excluding the facility length contained in the existing lock gallery).

B.4.31. Water Service. The third water line is a 48 inch diameter main. This pipeline is located 190 feet south of the Florida Ave Siphon. SWB installed this line in 1965. The pipe in the channel is constructed of 48 inch inner diameter steel pipe with a 3/4 inch wall thickness, coal tar lined with an additional 2 inch coating of "WATEKOTE" and on the land the pipe has the same construction except with a 1/2 inch wall thickness. The line is shown on plate B-106 and designated W6. The project affects approximately 1074 linear feet of the line.

B.4.32. Sewer Service. Two of SWB's four lines are reinforced concrete gravity sewer main pipelines, 30 inch diameter each, are located 560 feet lakeside of St. Claude Ave. These two lines cross through the existing lock's utility gallery. SWB installed these lines in 1920. The lines are shown on plate B-105 and designated S-2 and S-3. The project affects approximately 830 linear feet of the line for S-2 and approximately 830 linear feet of the line for S-3 (excluding the facility length contained in the existing lock gallery).

B.4.33. Sewer Service. SWB's third sewer pipeline is a 66 inch diameter steel sewer force main pipeline and is located 225 feet south of the Florida Ave. Siphon. SWB installed this line in 1975. The pipe in the channel is constructed of 66 inch inner diameter concrete steel pipe with a 3/4 inch wall thickness, with an additional 2 inch concrete coating and on the land the pipe has the same construction except with a 3/8 inch wall thickness. This line is shown on plate B-106 and designated S7. The project affects approximately 1104 linear feet of the line.

B.4.34. Sewer Service. SWB's fourth sewer pipeline is a 54 inch diameter steel sewer force main pipeline and is located 180 feet south of the Florida Ave. Siphon. SWB installed this line in 1964. The pipe in the channel is constructed of 54 inch inner diameter steel pipe with a 3/4 inch wall thickness, coal tar lined with an additional 2 1/2 inch coating of "WATE-KOTE" and on the land the pipe has the same construction except with a 1/2 inch wall thickness. The line is shown on plate B-106 and designated S-8. The project affects approximately 1064 linear feet of the line.

B.4.35. Sewer Service. SWB's sewer lift station and 8 inch diameter forced sewer main pipeline, designated S-11 and shown on plates B-106 and B-106, located at Surekote Road and North Galvez St. This facility is inside the Corps project ROW and requires removal along with 3100 linear feet of pipe. The sewer lift station and pipeline service companies located within the project ROW. These companies and item S-11 are required to permanently relocate to make room for the construction of the by-pass channel, between the Claiborne and Florida Ave. Bridges.

DESCRIPTION OF EXISTING FACILITIES NOT AFFECTED BY THE PROJECT

B.4.36. Facilities not affected by the project are categorized as roads, railroads and utilities.

Roads

B.4.37. Florida Ave. Combination Railroad and Vehicular Bridge The bridge, designated B-3 and R-1, is co-owned by the LADOTD and PNO. Our project will not impact this bridge. Before we start construction of our project the LADOTD and the PNO will replace this bridge. LADOTD will replace the vehicular bridge, as required by needed improvements in its highway system and will fund it under State of Louisiana Highway Funds.

The PNO will replace the railroad bridge, because the bridge horizontal clearance is hazardous to current navigation traffic and will relocate using Truman-Hobbs Act funds. The demolition of the existing bridge is necessary for the plan to float the new lock from the ship yard to the construction site.

Railroads

B.4.38. New Orleans Public Belt (NOPB). See paragraph B.4.9. for track description. There are no impacts to tracks designated R2 and R-5 and fiber optic line FOC-1 since they are outside our ROW. The tracks are shown on plates B-104 thru B-106 .

B.4.39. Florida Ave. Combination Railroad and Vehicular Bridge See paragraph B.4.37. Our project does not impact this bridge designated R1 and B-3. The bridge is shown on plate B-106.

Utilities

Sewerage & Water Board of New Orleans (SWB)

B.4.40. SWB's 8mgd sewage pump station, designated S-1 and shown on plate B-104, located north of the St. Claude Ave. Bridge east approach ramp. This facility is outside of the Corps project ROW and is not impacted.

B.4.41. SWB's Florida Ave. Siphon, designated S-9 and shown on plate B-106, is not impacted by this project. The siphon removal is required by the PNO. A condition of funding of the replacement of Florida Ave. Railroad Bridge is the removal of the siphon, i.e., due to inadequate horizontal clearance. The siphon removal is not funded by this project, but will be accomplished under separate funding through PNO. The demolition of the siphon is necessary for the plan to float the new lock from the ship yard to the construction site.

B.4.42. SWB's storm drain, designated S-10 and shown on plates B-105 and B-106, is a boxed concrete culvert. The storm drain is located near and parallel to the protected side toe, on the east side of the IHNC's hurricane protection along Jordan Ave. This facility is outside the project ROW and is not impacted. The hurricane protection in this area will be redesigned to accommodate MRL flood protection. Upon completion of the project this facility will be at the toe of MRL protection and not be impacted.

New Orleans Public Service/Louisiana Power and Light Company (NOPSI)

B.4.43. NOPSI owns an electrical transmission aerial crossing at Florida Ave. The owner indicates the 40 feet westward shift of the new channel centerline, fairway and channel sideslopes does not impact either of the two tower foundation. The transmission lines' vertical clearance meets the United States Coast Guard requirements. The line is shown on plate B-106 and designated E-15 is outside of the projects ROW.

CRITERIA FOR RELOCATING FACILITIES

B.4.44. The Corps with owner's concurrence will design the roads and bridges using the current standards of LADOTD. The Corps will construct within existing highway rights-of-way or project right of way with the exception of the detour routes.

B.4.45. The Corps with owner's concurrence will design the railroad relocations, i.e., track removal, using the owner's criteria. The owner and the Corps will remove track of the railroad within existing railroad rights-of-way or project right-of-way.

B.4.46. Utility owners will remove all existing facilities except where the work is incidental to lock demolition. Owners will be contacted of our intent to remove their lines contained in the lock gallery and a hold harmless statement will be obtained. Owners will design and construct powerlines, telephone cables, and pipelines to the current capacities of the existing facilities.

B.4.47. Utility relocations will be constructed within project ROW or public servitude within the city streets. If the criteria furnished by the owner results in a betterment, we will discuss the betterment with the owner and we will not allow payment for betterments as a Federal expense.

DESCRIPTION OF PROPOSED RELOCATIONS

Roads

B.4.48. General. All roads and bridges are presented and designed by contract provided A-E's. Bridge designs are currently based on our overall project design goals and cooperation with the local communities. The detour routes were reviewed by the A-E and alternative routes provided for our evaluation. Owners for these impacted facilities have not endorsed our plan but do recognize the potential severe social impacts associated with other plans. Studies we have conducted and will conduct will be used to resolve differences and provide solutions as required with the owners.

St. Claude Ave. Bridge.

B.4.49. We studied the design of both mid-level and low level height bridges at St. Claude Ave. During our neighborhood working group meetings we found the low level bridge to be preferred by the communities. The low level bridge is preferred because there are no unsightly towers, can allow pedestrian crossing and does not encourage higher traffic volumes into the neighborhoods. We considered the low level bridge at St. Claude as the only implementable design.

B.4.50. We will temporarily detour traffic from highway #39 at the St. Claude Bridge (B-1) while the lock demolition is in progress and the replacement bridge is under construction. The existing bridge substructure is part of the lock walls and foundation. Construction of a lock demolition by-pass channel will cut the eastside bridge approach and stop vehicular traffic. We plan to construct a low level double bascule bridge using the current LADOTD standards. The current design and maximum industry standard horizontal clearance for this bridge type is approximately 200 feet. The vehicular detour route will be in operation prior to the disruption of any bridge traffic and St. Claude bridge work will commence only after the Claiborne Bridge is completed. Only one bridge will be out of service at a time. The Corps contracted with NY Associates to study the bridge design. For additional information see paragraphs B.2.73 through B.2.90.

Claiborne Ave. Bridge.

B.4.51. In an effort not to impact residences in the area we investigated different bridge designs. The alignment of our new project channel cross section does not impact the bridge. However, the new lock location places the Claiborne Ave. Bridge on the Mississippi River side of the lock, subjecting the bridge to Mississippi River stages which are normally higher than the MRGO side of the lock. Therefore an economical design, short construction duration and no residential impact, bridge solution is to replace the piers, towers, lift span and machinery. The approach grade would remain intact.

B.4.52. The Claiborne Bridge (B-2) construction will commence prior to St. Claude Bridge (B-1) and after the completion of the detour route. The detour route will be used during this closure to allow for the modification of the bridge towers, foundation, machinery and lift span. The modifications are required to provide the U.S. Coast Guard required vertical clearance of 156 feet above the MRL project design flow line of 17.4 feet NGVD. The Claiborne Ave Bridge was influenced by the hurricane mean high water of 5.0 feet NGVD with the existing lock. The LADOTD has expressed concern as to the effect of the higher stages reducing the bridge's vertical clearance, with the lift span in the lowered position, on the increased frequency of openings. The Corps contracted with Parson Brinckerhoff to study the bridge design. For additional information see paragraphs B.2.91 through B.2.113.

Detour Route Plan

B.4.53. General. A detour route plan is necessitated by the relocation of the new bridges (B-1) and (B-2). As a bridge is taken out of service, severe demands will be placed on the existing local streets. The detour route plan is designed to minimize the inconveniences in the neighborhoods and to reduce commuter driver time delays. The detour route will be constructed by enhancing existing city streets (see plate B-117). The detour route will incorporate the new Florida Ave Vehicular Bridge (B3).

The purpose of the detour route is to shift the traffic patterns during a bridge shutdown to the remaining two bridges. The Corps contracted with the Regional Planning Commission (RPC) to study the detour route design.

The RPC provided us with details and several alternative routes. The following assumptions were provided the RPC as a basis for their analysis:

- a. Bridge construction scheduled sequentially.
- b. New Florida Ave. vehicular four lane bridge completed.

- c. Florida Ave. Expressway not constructed.
- d. The new St. Claude Bridge is low level.
- e. The new Claiborne Ave. Bridge is midlevel.

Details of Detour Route Common to the Areas East and West of the IHNC

B.4.54. The RPC provided us with specific details and location for signage and signalization, shown on plates B-117 thru B-120. Periodic traffic patrols are provided for security on routes in high crime areas. Truck route designation will be used to eliminate impacts to residents. The incident management plan (IMP) is a method to reduce delays resulting from accidents and breakdowns in this congested corridor. The IMP will consist of tow trucks and police patrols in the vicinity of each bridge on each side of the IHNC.

Details of Detour Route for the Area East of the IHNC

B.4.55. The east side detour route includes street work in both Orleans and St. Bernard Parishes. Movement of traffic in the east-west direction will be accomplished on existing streets. The key to the success of the Eastside Detour Route is the north-south roads providing access to the Florida Ave. Bridge interchange at Florida Ave. and Tupelo Ave. The north-south movement of local traffic in close proximity to the IHNC will be directed towards Tupelo and Caffin Avenues. The RPC provided three alternative routes for the north-south movement of traffic originating in St. Bernard Parish. One alternative utilizes the existing Angela and Mehle Streets. The second alternative was along Aycock Street and existing railroad right-of-way. The third alternative is through the undeveloped, privately owned Meraux Tract. Each of these three alternatives require acquisition of new ROW for these roads.

B.4.56. The Angela/Mehle alternative, primarily consists of asphalt overlay on existing city streets. New ROW for the road is required at the north end of the route through the St. Bernard School Bus facility. This alternative is the least costly but is considered not implementable due to its heavily residential characteristics. The Aycock railroad ROW and the Meraux Tract are nearly comparable in cost. However, the Aycock route passes behind a heavily residential neighborhood and requires extensive construction. The Aycock alternative consists of constructing new roadway by covering a drainage canal using a seven feet diameter culvert running adjacent to Norfolk Southern Railway tracks. New ROW for the road is required at the north end of the route through the St. Bernard School Bus facility and Browning Ferris Incorporated (BFI). This alternative is considered not implementable because of the residential impacts and difficulties likely to be imposed by the railroad. The Meraux Tract is undeveloped private land and should have the least objections towards roadway development. We are aware of interest in developing this north-south route by St. Bernard Parish for their port expansion. The new roadway in the Meraux Tract is likely to be implementable but is the most costly. This route is the furthest from the IHNC and would require development of a new Florida Ave east-west route. The new route would extend from Meraux, the east limit, to approximately the Orleans/St. Bernard Parish border, the west limit. This new roadway connects at its west limit with the existing Florida Avenue. New ROW for the road is required at the Meraux Tract, for the north-south road, and at the St. Bernard Drainage back levee, and Browning Ferris Incorporated

(BFI) for the east-west road. We have included in our cost estimate the Meraux Tract road alternate.

B.4.57. The new access road will be constructed generally parallel to the Guerenger Canal in St. Bernard Parish (See plate B-116) in an essentially undeveloped area of land known as the Meraux tract. The road starts at St. Bernard Highway near the St. Bernard Port, Harbor and Terminal District access road from the Chalmette Slip. The new road then extends northerly to Judge Perez Drive, where a new at-grade, signalized crossing will be constructed. The road continues northerly to a new bridge across the Florida Walk Canal and then ties into the east-west extension of Florida Avenue. A second bridge crossing is required across the canal flowing into the marsh and located near a curve in the Norfolk Southern Railroad tracks adjacent to Aycock Street.

B.4.58. The roadway will be four-lane, urban arterial and will have two 12-foot travel lanes in each direction. The roadway cross-section includes an 8-foot shoulder on each side with a median Jersey barrier in a 90-foot right of way. The bridges will have two 12-foot travel lanes in each direction without shoulders. Barrier curbs will be provided in areas without shoulders. A cross-section of the roadway is shown on plate B-116.

B.4.59. The new St. Bernard access road is a temporary road, but it must be in place for approximately three to four years during bridge construction. An asphalt type roadway surface was considered by the Corps as adequate for this duration. The cost estimate includes a 1-inch asphalt base course with a 1½-inch surface course underlain by a 12-inch crushed stone base and 12-inch sand subbase. A maintenance course of 1-inch surfacing will be completed at some point during the 3-4 year period, whenever resurfacing is needed. Lighting, drainage and roadway safety features such as signage, signalization and guardrail are also included. The canal crossings will be constructed of two-lane, commercial precast deck slab founded on precast concrete cap beams and timber piling.

B.4.60. Preliminary discussions with the LADOTD District office indicate that the a 3-4 year duration requires a permanent roadway. They suggested that the Corps consider such a roadway, of concrete or asphaltic concrete. The additional costs might be justified as a mitigation measure. This cost should be studied in post-feasibility stages. Also, LADOTD indicates that the Norfolk-Southern railroad crossings and the Guerenger Canal crossing on Judge Perez Drive are requirements, with which the Corps must also comply.

Details of Detour Route for the Area West of the IHNC

B.4.61. The west side route utilizes all existing streets. The primary east-west routes are St. Claude Ave and Claiborne and Robertson Avenues. The primary north-south routes include Poland Ave, Almonaster Blvd, Franklin Ave. and Elysian Fields. The Florida Ave Bridge touches down near Louisa Street. Florida Ave extends westward beyond Louisa with, one lane of traffic in each direction, to Almonaster Blvd, Franklin Ave and Elysian Fields. We investigated widening Florida Ave to two lanes of traffic in each direction from Louisa Street of each of the primary north-south routes. Just to the west of the first primary route, Florida and Almonaster Blvd, is a complex interchange of rail lines and drainage canals. The cost to provide a widened Florida Ave roadway through this area was obviously prohibitive. Therefore, to disperse traffic, we recommend traveling north on Louisa St. from Florida Ave to Higgins, Almonaster and I-10. The Florida Ave Bridge also has an interchange at Poland/Alvar St. The Interchange does not cloverleaf to include all direction access, but street level Uturns can accommodate this deficiency. The recommended north-south truck route is the Poland/Alvar exit of the Florida bridge, to I-10 eastbound or westbound.

Railroads

B.4.62. The new MRL floodwall designs have been accomplished with no impacts to the main running line/fiber optic cable or the marshalling yard (R-2/FOC-1 & R-5). Track removal, i.e., Galvez Marginal Tracks (R-3) and Galvez No.3 (R-4), including switches from the main line is required. Tracks R-3 and R-4 service the Galvez Street Wharf. The project requires the demolition of the wharf; rail service on and to the wharf will no longer be required and we propose removing the tracks because there is no need for them. No other track relocations is required.

Utilities

B.4.63. General. We developed conceptual relocation plans. Owners have been individually contacted for their preliminary input. All owners have independently accepted our conceptual plan. The conceptual plan is a development from our anticipation of conflicts and coordination problems both the Corps and owners are likely to experience. Some of the difficulties result from the narrow channel crossing, congested construction corridor, owners' need for non-interruption of existing service and sequence of project construction. The plan consists of constructing three utility corridors, each containing one trench, crossing the channel. Corridor/trench locations, indicated on plates xx-yy, are at section A-A, south of St. Claude Ave; section G-C, north of the Claiborne Ave Bridge; and section E-E, south of the Florida Ave Bridge. These trenches, shown in typical profile on plates B-107 thru B-109, will be shared with different owners; i.e., gas, electric, water, sewage and communications. The utility lines in the trench, will be in close proximity to each other. Details of construction compatibility and spacing of the lines will be addressed in RDM's. The Corps will coordinate with owners and determine the "how and who" will construct the trenches and "gang" lay the utilities. Other coordination between owners and the Corps for the land based relocation of utilities through our new flood protection will require the use of pipe sleeves. The sequence of construction permits the use of "no work areas" during the construction of new floodwalls at the location of existing facilities. Prior to the dredging the south (existing lock) bypass channel, all relocations will be completed and existing facilities abandoned and removed by their

owners, thereby allowing the construction of the floodwalls in the above mentioned "no work areas". This sequence eliminates the need for temporary relocations and the inconveniences associated with their construction. Owner surveys of existing facilities were either not available or of such poor detail, we assumed all facility crossings require relocation. Owners will be asked for as-built or current surveys of their facilities prior to the RDM. The owners relocation plan is the same for the ship lock and barge lock, with differences in relocation costs resulting from differences in effected lengths of utilities and dredge quantities. All owners will be responsible for the removal of all lines in service after relocations are complete. A brief summary of the projects construction sequence and relocations is as follows:

- a. Dredge channel to design grade.
- b. Cut utility corridors to receive utilities.
- c. Gang together utilities for each corridor and lay into corridor.
- d. Corps constructs new flood protection. Corps will provide "no work areas" at the location of existing utilities.
- e. Owners complete new utility hook-ups, debugging and place new lines in service.
- f. Owners remove existing utilities.
- g. Corps constructs floodwalls at the location of "no work areas" (prior to dredging the south by-pass channel).

South Central Bell (SCB)

B.4.64. SCB plans to relocate their three crossings into two of our corridor/trenches. SCB provides the following elements in their preliminary relocation plan:

- a. Needs a two year construction interval
- b. A three foot separation from any other utility
- c. Non-interruption of service
- d. A desire to upgrade to fiber optic cable and electronics in lieu of existing copper cable. Input provided is for an in-kind replacement.

B.4.65. The T-1 crossing, replacing T-4, is proposed to be relocated to section A-A. The relocation of this line requires the following elements:

- a. 1-4 duct structure 2055 linear feet
- b. 1-5 inch casing with 4 ducts channel crossing (900 linear feet)
- c. 3 1-inch innerducts in 1 duct of new structure (8,985 linear feet)
- d. 3-manholes.

B.4.66. SCB proposes to combine the T-8 & T-9, replacing T-6 and T-7, crossings to section C-C. The relocation of these lines requires the following elements:

- a. 1-20 duct structure 1600 linear feet
- b. 1-8 duct structure 410 linear feet
- c. 1-8 duct structure reinforcement 650 linear feet
- d. 1-30 inch casing with 24 ducts channel crossing (1000 linear feet)
- e. 1-30 inch casing with 24 ducts railroad crossing (120 linear feet).
- f. 6-manholes.

Cox Cable TV of Orleans Parish

B.4.67. COX will reroute their existing lines, T3, from the existing lock gallery to section "A-A". This new line is identified as T2, constructed of 3/4 inch coaxial cable. COX proposes to run a 1/2" fiber optic cable.

New Orleans Public Service/Louisiana Power and Light Company (NOPSI)

B.4.68. Electric Service. For different owners to share corridor/trenches, NOPSI and other must comply with the National Electric Safety Code. NOPSI's proposed relocation plan follows:

a. The owner will install, at section A-A, 4-5 inch conduits, designated E-1 and replaces E-2, will house 2-24KV feeders. Other pertinent structures include 2-10 feet by 10 feet manholes located at the ROW limits.

b. The owner will install, at section C-C, 4-5 inch conduits, designated E-5 and replaces E-2, will house 2-24KV feeders. Other pertinent structures include, 4-10 feet by 10 feet manholes; 2 located at the ROW limits and 2 located at intermediate points.

c. The owner will install, at section E-E, 4-5 inch conduits, designated E-9 and replaces E-13, and house 2-24KV feeders. Other pertinent structures include 3-10 feet by 10 feet manholes; 2 located at the ROW limits and 1 located at an intermediate point.

d. Rearrangement of existing overhead facilities on both sides of the IHNC in order to realign the existing system ties with the new crossings.

B.4.69. Gas Service. The owner will install at section C-C, dual high pressure, steel, gas distribution pipeline, designated G5 & G-6, are lines from the approach main and connect to existing distribution system on both sides of the channel. The installation includes a new valve on each bank. The new lines will replace G3 and G-4.

Sewerage & Water Board of New Orleans (SWB)

B.4.70. Electric Service. The owner will install items E-6, E-7 and E-8, replacing items E-10, E-11 and E-12, will be relocated to corridor "E"

located near Florida Ave. Manholes associated with these crossings on each bankline will require enlargement.

B.4.71. Water Service.

a. At section A-A, SWB plans to relocate item W-1 a 20 inch water main pipeline and replaces item W-2, from the approach main and connects to existing system on both sides of the channel.

b. At section C-C, SWB plans to relocate item W-4, a 20 inch water main pipeline and replaces item W-3, from the approach main and connects to existing system on both sides of the channel.

c. At section E-E, SWB plans to relocate item W-5, a 48 inch water main pipeline and replaces item W-6, from the approach main and connect to existing system on both sides of the channel.

B.4.72. Sewer Service.

a. The owner will install, item S-6 and replaces items S-2 and S-3, is a 20 inch forced sewer main and pump station on the west side of the IHNC. Adequate land, i.e., at least 4000 square feet, with a 50 foot frontage and 7060 linear feet of 20 inch forced sewer main. The sewer main will run on the west side of the IHNC, north from the existing line crossing to the Florida Ave. corridor's 66 inch sewer forced sewer main (S-4). The required sewer pump station capacity is 13,000gpm.

b. At section E-E, SWB plans to relocate item S-4, a 66 inch sewer forced main pipeline and replaces item S-7, from the approach main and connect to existing system on both sides of the channel.

c. At section E-E, SWB plans to relocate item S-5, a 54 inch sewer forced main pipeline and replaces item S-8, from the approach main and connect to existing system on both sides of the channel.

FACILITY RELOCATION COST ESTIMATES

B.4.73. We developed cost estimates in-house from the owners' preliminary input. Owners did submit material types and utility routings. We modified the routing to fit our project. Included in our construction cost estimates Relocations 02 Account are the utility owners' engineering design (12%) and contract administration and supervision (10%) and owners' administrative costs (2%, only for bridges and detour routes). See section 5 for relocation cost estimates for roads, railroads and utilities.