



SOUTH CAROLINA HISTORICAL SOCIETY

Harry L. Mills Papers, 1980-2001 SCHS# 0633.00

Description: 6 linear ft. (10 boxes + flat files + two boxes of visual materials)

Biographical/Historical Note: Harry L. Mills, a graduate of the Citadel, is a civil engineer. After serving in the Army Corps of Engineers for twenty years, he went to work for Figg and Muller Engineers as Resident Engineer for the Florida Department of Transportation on the Long Key Segmental Concrete Bridge. He later worked for Misener Marine Construction Company in Tampa, Florida, as Manager of Engineering, supervising the Harbor Island Development in downtown Tampa. After moving back home to Charleston, he worked for the South Carolina Department of Transportation managing the hired consultants overseeing inspections of several notable public works including the I-526 Wando River Bridge, the I-526 Cooper River Bridge, the I-526 Bridge, an urban section composed of concrete and steel girders connecting East Cooper and North Charleston, the Isle of Palms Connector, the James Island Expressway, and the SC 61 Connector. After the completion of these projects, Mr. Mills became the District 6 Bridge Engineer responsible for maintenance of bridges in the district, including the Grace and Pearman Cooper River Bridges and was subsequently promoted to District 6 Administrator.

Scope and content: Collection consists of correspondence, diaries, printed material, drawings, photographs, and other records relating to numerous bridge design and construction projects, mostly in South Carolina, including the Long Key Bridge (Florida), the John F. Limehouse Memorial Bridge, the I-526 Wando River Bridge (aka John B. Edwards Bridge), I-526 Cooper River Bridge (aka Don Holt Bridge), urban section of the I-526 bridge (North Charleston), the Isle of Palms Connector, the James Island Expressway, repairs to the Grace and Pearman bridges over the Cooper River, the Cross Island Connector (Hilton Head), and the Cooper River Bridge (aka Arthur Ravenel, Jr. Bridge).

The following is Mr. Mills' summary description of his papers:

The collection consists of documents spanning the professional career of civil engineer Harry L. Mills from about 1978 to retirement. (The documents do not include, though they mention, any details of work completed as a member of the Army Eng. Corps.)

The early documents relate primarily to work for the Figg and Muller Engineering Company as their resident engineer on the Long Key bridge project in Florida. Related documents include

construction reports, drawings, correspondence to/from contractors and agencies, clippings from print media, budget reports, etc. Also included are journal articles on the technology, “segmental bridge construction.” Some of the items give a snapshot of the contemporary state of the civil engineering art, e.g., early computer aided design technology.

Later documents (from mid-1980s) cover other Figg & Muller projects nationwide briefly; Glenwood Canyon Bridge, Colorado; Escambia Bay Florida rail bridge; Linn Cove Viaduct on the Blue Ridge Parkway, N.C.; and I-526 Wando River bridge in spring 1984; Marta elevated rail, Atlanta. This section ends in 1987.

The South Carolina section covers bridge projects in South Carolina from about 1993 and later. These include Broad Creek bridge, Limehouse Bridge, Grace & Pearman bridges, Isle of Palms connector, Wando Bridge, James Island Expressway, etc. Details are provided for several of these projects by project coordinator’s daily diaries. Diaries discuss events related to construction work including Hurricane Hugo.

Many items are included in the collection that provide general background including training handbooks, inspection manuals, drawings and elevations, bridge studies, conference reports, journal and news articles, legal depositions, photos, booklets, financial & feasibility studies, and others. A how-to is included that shows the steps to be taken for a bridge dedication ceremony.

Photographs and other visual materials have been removed to the Visual Material Collection. See itemized description at the end of the finding aid.

Preferred citation: Mills, Harry L. Harry L. Mills papers, 1980-2001. (0633.00) South Carolina Historical Society.

Search terms:

Bridges -- Florida
Bridges -- South Carolina -- Design and construction
Bridges -- South Carolina -- Charleston County
Civil engineers -- South Carolina
Arthur Ravenel Junior Bridge (Charleston, S.C.)
John P. Grace Memorial Bridge (Charleston, S.C.)

Container listing:

BOX 1

- 1 Resident engineer diary (photocopy), Long Key Bridge, volume 1, July 25, 1979 – Jan. 1, [1980].
- 2 Resident engineer diary (photocopy), Long Key Bridge, volume 2, Jan. 2, 1980 – June 10, 1980.
- 3 Resident engineer diary (photocopy), Long Key Bridge, volume 3, June 11, 1980 – July 31, 1980.

- 4 “Erection procedure” folder, 1978-1980. Long Key Bridge project records include a hiring letter, 2 July 1979, from Figg and Muller to Harry L. Mills, and other correspondence; job descriptions; and notes.
- 5 “Figg & Muller: Long Key.” Folder chiefly contains correspondence and memoranda, 1979-1980.
- 6 “Figg & Muller.” Folder includes correspondence, printed material, and an “Erection Procedure” schedule, 1979-1984. Material pertains to various bridge projects including the Glenwood Canyon Bridge and the Long Key Bridge.
- 7 Figg & Muller records, 1980. Material removed from a binder chiefly pertains to the Long Key Bridge project and includes correspondence, “Construction Administration Procedure” letter, a field construction manual, information on “hot weather concrete,” and drawings.
- 8 Figg & Muller records, 1979-1986. Includes writings about segmental bridge construction, printed material, and “Investigation and Analysis and Recommendations for Seven Mile Bridge Construction” (1980).

BOX 2

- 1 Employee’s diary, April 13, 1987 – Jan. 15, 1988. Diary kept by Harry L. Mills for project identified as “Urban” (the Urban Section, I-526 Bridge, Charleston, S.C.).
- 2 Wando Diary Logs. “This is the diary for Harry L. Mills, Bridge Project Coordinator, for the Cooper River Bridge Project for 1988.” Pertains to the “Cooper and Urban projects.” Jan. 4, 1988 – March 31, 1988.
- 3 Daily diary for Urban project, 1988-1992.
- 4 Diary for James Island Expressway project, Jan. 7, 1988 – March 31, 1988.
- 5 Folder includes newspaper clippings and notes, 1987-1988, about the “East Cooper Expressway” (Mark Clark Expressway) and damages to an 18th century plantation on the Wando River.
- 6 Daily diaries for the James Island Expressway, Wando, Cooper, and Urban projects, 1988-1989.
- 7 Diaries, 1988, for James Island Expressway, Wando, Cooper, and Urban projects.
- 8 Daily diary for Wando, Cooper, Urban, and James Island projects from January – June 1989 (in reverse order).
- 9 Daily diary for Cooper River bridge project, June 1989 – June 1991.
- 10 Daily diary for James Island Expressway project, August 1989 - Dec. 1990 (“JIX 1”), with notes about damages sustained from Hurricane Hugo.

- 11 Daily diary for James Island Expressway project, August 1989 – June 1991 (“JIX 2”).
- 12 Daily diary for James Island Expressway project, July 1989 – Dec. 1990 (“JIX 3”).
- 13 Daily diary for James Island Expressway project, Jan. 1991 – July 1993 (“JIX 3”).
- 14 Daily diary for James Island Expressway project, August 1989 – August 1993 (“JIX 4”).
Note on original folder states: “Original to Cola. Attorney.”
- 15 Daily diary for James Island Expressway project, August 1993 – Sept. 1993 (“JIX 5”).
- 16 List of diaries kept from 1988 to 1992 relating to the James Island Expressway, the urban section of the Cooper River bridge, and the Don Holt Bridge. Also includes information on contractors, HNTB inspections, etc.

BOX 3

- 1 Handwritten diaries for the James Island Expressway, Wando, Cooper, and Urban projects, 1991. Note on original folder: “91 diaries to be dictated into logs.”
- 2 Handwritten diary, 1992. Note on folder: “Urban.”
- 3 Handwritten diaries, Jan. – July 1993.
- 4 Task force report, 1990: “Independent Evaluation of the Mark Clark and James Island Expressway” submitted to the S.C. Dept. of Highways and Public Transportation.
- 5 “Deposition of Harry L. Mills.” Deposition, 1991, in the case of T. L. James Associates v. South Carolina Department of Highways and Public Transportation and Figg and Muller Engineers, Inc. Note on the document: “Deposition Harry L. Mills, SCDOT Bridge Project Coord. Relative claim on the Wando River Bridge (James B. Edwards).”

BOX 4

- 1 Papers relating to the S.C. State Highway Conference, 1991. Includes a presentation on the “Progress of the Mark Clark Expressway Bridge” by Harry L. Mills, correspondence, biographical information on Mills, and a list of contractors and consultants for various bridge projects.
- 2 Diaries for “Misc. Projects,” 1990-1993. Note on original folder: “Wando, Pearman.”
- 3 Memoranda relating to the James Island Expressway, 1991. Memos concern the appointment of Roger Blanding as chief inspector, and changes in CEI staffing.
- 4 Papers relating to the opening of the James Island Expressway, 1993, including a dedication ceremony program.
- 5 Papers relating to the case of Taylor Brothers, Inc. v. State of South Carolina, including a depositions, 1993-1994, by Harry L. Mills.
- 6 Booklet, 1980: “Mark Clark Expressway Archaeological Survey Final Report.”

- 7 Papers, 1991-1995, relating to the James Island Expressway, including correspondence, budget and staff information, a draft agreement between Wilbur Smith Associates, Inc. and the S.C. Dept. of Highways and Public Transportation, resumes of various individuals, and contract modifications.
- 8 Consultant proposal, 1992, by Wilbur Smith Associates pertaining to the James Island Expressway; and a supplemental agreement, 1992.
- 9 Bridge project coordinator's diary, 1990, for the Isle of Palms connector.
- 10 Bridge project coordinator's diary, 1991, for the Isle of Palms connector.
- 11 Bridge project coordinator's diary, 1993, for the Isle of Palms connector.
- 12 Bridge project coordinator's diary, 1990, for the Grace/Pearman bridges rehabilitation project.
- 13 Bridge project coordinator's diary, 1991-1993, for the Grace/Pearman bridges rehabilitation project.
- 14 Miscellaneous papers from a binder marked "Bridge Data." Includes memoranda, notes, and other information relating to drawbridges in South Carolina, the Wando River Bridge, and the Isle of Palms connector.
- 15 Papers relating to the Broad Creek Bridge and approaches (Hilton Head Island) ,1993, including a booklet, and a presentation title page (with map) by Wilbur Smith Associates.
- 16 Spiral bound pamphlet: "Interview Presentation for Construction Engineering/Inspection (CEI) Services, Broad Creek Bridge, US 278, Cross Island Parkway" 1993, by LPA Transportation Consultants.

BOX 5

- 1 Spiral bound pamphlet: "Expression of Interest" by Wilbur Smith Associates, relating to the bridge over Broad Creek and approaches on to the Cross Island Parkway, 1993.
- 2 Spiral bound pamphlet: letter of interest by the LPA Group relating to the Broad Creek project, 1993.
- 3 Spiral bound pamphlet: "Presentation: Alignment Features, Replacement of the John F. Limehouse Memorial Bridge," 1994. Also, an email, 1999, discussing late changes to the bridge's design.
- 4 Folder marked "Sea Island Expressway" including a SCDOT memo, 1995, about proposals for John's Island connector, a preliminary feasibility study, and a summary report.
- 5 Pages from a desk calendar, 1996-1998.

- 6 “Design/Build Proposal by R. R. Dawson Bridge Company and Wilbur Smith Associates, Bridge Replacement Project, S.C. Route 700 over Stono River” and SCDOT “Design-Build Replacement of the S.C. Route 700 Bridge over the Stono River” [1997-1998]. Proposals chiefly consist of transparencies of maps and other drawings. Also a SCDOT “Request for Proposals” 1997.
- 7 Spiral bound pamphlet: “Request for Proposals: Replacement of the Maybank Highway (SC 700) Bridge and Highway Widening over the Stono River,” 1997.
- 8 Pamphlet: “Request for Proposals: Design-Build Bridge Replacement, US 1/601 Southbound Bridge over the Wateree River, Kershaw County, SC,” 1997.
- 9 Spiral bound pamphlet, draft environmental impact statement and evaluation, 1992, relating to the replacement of the Cooper River bridges on US 17.
- 10 Papers relating to the Cooper River Bridge replacement project including transparencies and notes, 1996-1998.
- 11 Correspondence and other documents, 1997, relating to a proposed “U.S. 17 Cooper River Bridge Replacement.”
- 12 Transparencies relating to the Cooper River Bridge, 1997.
- 13 Papers, 1997, relating to the reorganization of the SCDOT; and correspondence, 1998, about the opening of the “Cross Island Parkway.”
- 14 Spiral bound pamphlet: “Application to the South Carolina Infrastructure Bank Board for Funding the Replacement of the Cooper River Bridges,” 1997.

BOX 6

- 1 Correspondence and other documents, 1997-1999, including proposals, relating to the design and construction of the Ravenel (Cooper River) Bridge.
- 2 Working file on Cooper River Bridges replacement project, 1997-1999.
- 3 Working file on Cooper River Bridges replacement project, 1998-2001.
- 4 Booklet: “The New Market Alternative: The Planning of the Future,” 1998, with related correspondence, 1997. This is a thesis by a high school student concerning the replacement of the old Cooper River bridges.
- 5 Correspondence, clippings, and other documents, 1999, relating to the Ravenel Bridge.
- 6 Correspondence and other documents, 2000, relating to a “CEI program” for the Ravenel Bridge project.
- 7 Correspondence, news releases, and a “Pre-Selection Strategy Plan,” relating to the Ravenel Bridge, 2000.

8 Papers, mostly correspondence, 2000-2001, relating to the selection of a CEI for the Ravenel Bridge project.

BOX 7

- 1 Papers concerning the “design/build” of the Ravenel Bridge project, 2000-2001, including correspondence, and a request for proposals. Original folder marked “Grace Proposal II, 6/2000.”
- 2 Correspondence and other documents, 2000-2001, concerning the “design/build” of the Ravenel Bridge project. Original folder marked “Confidential.”
- 3 Correspondence and other documents, 2000-2001, relating to the CEI (Construction, Engineering and Inspection) of the Ravenel Bridge project. Original folder marked “Cooper Bridge CEI Back-up.”
- 4 Correspondence and other documents relating to the “design/build” and bids for the Ravenel Bridge project, 2000-2001. Original folder marked: “Cooper Bridge Phase II.”
- 5 Miscellaneous papers relating to the Ravenel Bridge project, 2000-2001, and undated. Includes correspondence and color photographs of proposed design charts.
- 6 Spiral bound pamphlet with color illustrations: “New Cooper River Bridge: Presentation to SCDOT...” A presentation at the end of Phase I of the “Design Build Competition” 2000, by the Cooper River Bridge Constructors, LLC.
- 7 Miscellaneous material: mostly newspaper and magazine clippings, 1993-2001, relating to road workers’ safety as well as various bridge projects, including the Wando River bridge, the Broad Creek bridge, the Ravenel bridge, and the James Island connector.
- 8 Miscellaneous material: folder marked “CHATS – National Highway” includes financial summaries; critical needs list (1993?); a SCDOT letter, 1996; and map of James Island and Mount Pleasant.
- 9 Miscellaneous material: folder marked “Dedication Files (Sample)” includes programs for various bridge opening ceremonies, and photocopies of a program and brochure (1929) relating to the Cooper River Bridge (Grace bridge).
- 10 Miscellaneous material: papers removed from a binder marked “Bridge Repair Req.” (which contains mostly photographs). Includes a “Flagged Bridge Report” (1995) about a bridge in Berkeley County near St. Stephens; and a memo, 1994, with the subject “Fast Track Bridge Replacements for 1995, with a list of “Structurally Deficient Bridges” in South Carolina.
- 11 Miscellaneous material: Harry L. Mills’ handwritten notes on the files in this collection (listed by original arrangement, with later added processing notes).

BOX 8

- 1 Miscellaneous printed material: Bridge Inspector's Training Manual, 1970 (U.S. Dept. of Transportation).
- 2 Miscellaneous printed material: "Concrete Segmental Bridges, Figg and Muller Engineers, Inc." 1989. Includes images and information on various bridge projects including the Seven Mile Bridge (Florida Keys), the Long Key Bridge (Florida Keys), the Lynn Cove Viaduct (North Carolina), and the Glenwood Canyon Bridge (Colorado).
- 3 Miscellaneous printed material: South Carolina publications, consisting of the "Flagger's Handbook" (1993) and "Highways and You" (undated).
- 4 Miscellaneous printed material: "A Study of Pre-1951 Non-metal Truss Highway Bridges of South Carolina" (1993).
- 5 Miscellaneous printed material: "Engineering Guidelines for Metrication" (SCDOT) 1994.
- 6 Miscellaneous printed material: "Fourth International Bridge Engineering Conference, Volume 1" (1995).
- 7 Miscellaneous printed material: "The 25th Annual South Carolina State Highway Conference" (1996).
- 8 Miscellaneous printed material: "Design Council, Figg Engineering Group, July 1997" (binder).

BOX 9

- 1 Miscellaneous printed material: "Twenty-eighth Annual South Carolina State Highway Conference" (1999).
- 2 Miscellaneous printed material: illustrated desk calendar, "2000 Figg Engineering Group."
- 3 Miscellaneous printed material: undated illustrated brochure, "Bridges," Figg and Muller Engineers, Inc., presenting eight completed bridges including the Long Key Bridge.
- 4 Miscellaneous printed material: undated promotional booklet for Misener Marine Construction, Inc.
- 5 Biographical information on Harry L. Mills, and his summary description of his papers.

BOX 10

Audio-visual and digital media:

VHS tape, "Original – flyover 5/24/90"

VHS tape, "Long Key"

VHS tape, "Grace Bridge Run" 1994

VHS tape: "Raising Ben Sawyer Bridge, Aerial View" 1989

VHS tape: "Flight of All Projects" 1991

VHS tape: "Wando Cooper"

Floppy disks: 3 floppy disks ("Verbatim" brand) containing diaries, 1988-1999 and undated

Floppy disks: one disk is labelled "Before & After Visualization of Grace Memorial Bridge" 1997; four additional floppy disks appear to pertain to the new Cooper River (Ravenel) bridge project

OVERSIZE MATERIAL

Engineering plans and drawings housed by collection number (0633) with the 33's include:

"Preliminary Exhibits used in the Schedule Evaluation of the Cooper River Bridge Urban Section" (1995)

"Plans, Specifications & Estimates" for the Ben Sawyer Bridge replacement, [1997]. Includes copies of the original 1941 plans.

"HTNB Design Build Layout" for the Cooper River (Ravenel) Bridge project, 2000

Color images of the Ashley River bridges (US 17), no date

Maps and drawings housed in flat file drawer in vault include:

"Hydrographic Survey" of the Grace Memorial and Silas N. Pearman Bridges, 1996.

"Existing Utilities on Proposed Highway, Charleston County, Cooper River Bridge Project (Charleston & Mt. Pleasant Interchanges" 2001 (16 sheets)

VISUAL MATERIALS

Visual materials, in two boxes, are mostly photographs, slides, and negatives pertaining to various bridge projects:

BOX 1 VM

1 "Feb. '88 - J. I. Preconst. Site photos / Cooper Pier 34 / cracked beams"

2 "Cooper River 526 const."

3 “Broad River, Beaufort city”
4 Unidentified
5 “Traffic marking > Cooper/Cooper & Wando brg.”
6 “SCDOT” 1996
7 “Cooper River bridges”
8 “Urban [beams] visit to Gary [Plant]” April 5, 1988
9 “9/95 Jasper Rt. 336”
10 “4/88 Cooper, JIX, Wando”
11 “Aerial Photos, IOP, JIX & Grace” 1990
12 “Hilton Head Cross Island...”
13 “I 96, DS @ SC 61 Edisto River”
14 “James Island Expressway”
15 “Project renderings, HTNB”
16 “Urban”
17 Various projects
18 Long Key Bridge
19 “Grace Pictures”
20 “Slides – segmental” / “Long Key”
21 Various projects
22 “Wando”
23 Unidentified
24 “Cooper River bridges replacement file”
25 “[Dawes] Point Bridge Const. JAX Fla.”
26 Binder (with spine label: “Bridge Repair Req.”) containing photographs of various bridges including the Great Swamp Bridge (Jasper County), a Folly Island bridge (SC 171), an overpass titled “Dorchester I-26 W,” an overpass at “I-26 at Baker & Dorchester,” a bridge at Rantowles Creek (Hwy 175), “Wappo Creek, Edgewater Park,” “Tea Farm” (creek) bridge, the Ben Sawyer Bridge, and the “Harbor River” bridge (Beaufort). These photographs were accompanied by a “Flagged Bridge Report” (1995) about a bridge in Berkeley County near St. Stephens; and a memo, 1994, with the subject

“Fast Track Bridge Replacements for 1995, with a list of “Structurally Deficient Bridges” in South Carolina.

BOX 2 VM

- 1 “Cooper”
- 2 “Urban – Cooper – James Island”
- 3 “1/22/92” Cooper & JIX
- 4 1989
- 5 “Tea Farm Creek – Broad River – Harbor River Bridge, Beaufort”
- 6 “Edisto Bridge”
- 7 Cross Island, Hilton Head
- 8 Unidentified
- 9 Isle of Palms, 1993-1994
- 10 James Island Expressway
- 11 Unidentified
- 12 “James Island Expressway”
- 13 “Battery Creek, Beaufort, S.C., Port Royal”
- 14 “Wando River Bridge”
- 15 “I-26 & 526 Interchange”
- 16 “June 88 – Aerials, Wando, James Island, Cooper Urban”
- 17 “SCDOT”
- 18 “JIX 89”
- 19 “Site Photos” Mark Clark
- 20 “Old Bridge, F & M”
- 21 “Post Hugo” (various projects)
- 22 Unidentified
- 23 “1987 Cooper River / Bridge & Clouter Creek, March 1987”
- 24 “HTNB 24 May 90”
- 25 “Urban Wando, Cooper DIS & Progress , Sept. 14, 1987”
- 26 “Cooper June 26 to July 22”

- 27 “Harbor River, Beaufort
- 28 “Pier 32 Truss IOP, 5/22/90”
- 29 “Wando – [Dawes] Point”
- 30 Hilton Head bridge
- 31 Florida project, Harbour Island
- 32 Cooper River 1992
- 33 “1/30/89 – 3/18/89”
- 34 “Mixed 1/30/89 – 3/18/89”
- 35 “June-July 1994, Battery Creek, 526 – Drainage”
- 36 “March 1994 – Bridge problems”
- 37 “Wando River Bridge 86”
- 38 Urban & Cooper, Nov. 1989”
- 39 “Cooper River 5/23”
- 40 “Flight 2/25/88, Wando Cooper Urban”
- 41 Miscellaneous
- 42 Unidentified
- 43 “3/16/93 – Wando”
- 44 “5/24/90 – I-26 Interchange Cooper Wando”
- 45 “James Island preconst. of site – 1988”
- 46 “James Island Bridge
- 47 “March 88 – Cooper Urban 1st deck pour / Wando 4/1/88 segment packing & chipping”
- 48 “Dec-July 95 – Wando, Lenud Ferry (17 A), Colleton & Berkeley bridges”