Robert Matthews, P.E., S.E.

EDUCATION

DEGREE/COURSE	DISCIPLINE	INSTITUTION	DATE
B.S. 'w/High Honor'	Civil Engineering	Michigan State University	1981
Graduate course	Structural Dynamics	University of Michigan	1982

PROFESSIONAL EXPERIENCE

DATE	POSITION	COMPANY
May 1991 to present	Technical Director	DMJM Harris Orange, CA
June 1984 to May 1991	Engineering Specialist	General Dynamics / Convair San Diego, CA
June 1981 to June 1984	Engineer	Bechtel Power Corporation Ann Arbor, MI

PROFESSIONAL REGISTRATION

REGISTRATION	STATE	DATE	NUMBER
Structural Engineer	California	Feb. 10, 1995	S 3953
Professional Engineer	New Mexico	Mar. 17, 1995	12742
Professional Engineer	California	Jan. 27, 1989	44069

KEY SKILLS

Engineering Management	Roadway Bridge Design	Building Design
Construction Support	Railroad Bridge Design	Retaining Wall Design
Technical Instruction	Hydraulic Structure Design	Specification Writing
Computer Software	Utility Structure Design	Seismic Retrofit

PROFESSIONAL ORGANIZATIONS

ORGANIZATION	POSITION
American Railway Engineering and Maintenance of Way Association (AREMA)	Subcommittee 2 Chairman, Committee 9, "Seismic Design for Railway Structures"
Applied Technology Council (ATC), American Institute of Steel Construction (AISC)	Non-contributing member

PROJECT EXPERIENCE

PROJECT: Nogales Street Grade Separation Project, City of Industry, California

DESIGN COMPLETION DATE: Ongoing

CLIENT: Alameda Corridor East (ACE)

POSITION: Lead Structural Engineer

DESCRIPTION: Project to grade separate the existing UPRR and Metrolink railroad tracks by lowering Nogales Street. Structural work includes a new PC/PS concrete box girder railroad bridge, a new roadway bridge, drainage structures and several types of retaining walls.

RESPONSIBILITIES: Supervised the structural work, designed the railroad bridge and retaining walls.

PROJECT: Brea Canyon Road Grade Separation Project, City of Industry, California

DESIGN COMPLETION DATE: Ongoing

CLIENT: Alameda Corridor East (ACE)

POSITION: Lead Structural Engineer

DESCRIPTION: Project to grade separate the existing UPRR and Metrolink railroad tracks by lowering Brea Canyon Road. Structural work includes a new PC/PS concrete I-girder railroad bridge designed to the latest seismic requirements in the AREMA Manual for Railway Engineering, two underground utility structures and several types of retaining walls.

RESPONSIBILITIES: Supervised the structural work, designed most of the railroad bridge and all of the retaining walls while training a new graduate engineer. Wrote Bridge Type Selection Report and prepared structural specifications.

PROJECT: SR60 HOV Widening Project, Moreno Valley, California

DESIGN COMPLETION DATE: 2003

CLIENT: SANBAG

POSITION: Lead Structural Engineer

DESCRIPTION: Project to widen SR60 to accommodate a new HOV lane in each direction. Design responsibilities include widening the existing Pigeon Pass Road UC and Heacock Street UC, and replacing the existing Perris Boulevard UC.

RESPONSIBILITIES: Supervised the structural work, designed the Heacock Street bridge widening and performed seismic assessment and retrofit design, designed portions of the Pigeon Pass Road bridge widening and helped perform seismic assessment. Designed the Perris Boulevard Undercrossing replacement bridge.

PROJECT: Caltrans LARTMC Project, Los Angeles, California

DESIGN COMPLETION DATE: 2001

CLIENT: Caltrans

POSITION: Engineering Specialist

DESCRIPTION: Project to develop a transportation management center for Caltrans and CHP. The TMC is located close to an existing fault and is designed for high seismic accelerations. New retaining walls are required along the access road and periphery of the building site.

RESPONSIBILITIES: Designed all the retaining walls on the project, including cantilevered concrete retaining walls, soil nail walls and tangent pile walls. The walls were all designed for the high seismic ground accelerations. Wrote specifications for the walls. Performed the construction support work during the construction phase of the project.

PROJECT: Terminal Development Project, Toronto, Ontario, Canada

DESIGN COMPLETION DATE: 2000

CLIENT: Pearson Airport

POSITION: Principal Engineer

DESCRIPTION: Project to improve the capacity of the Pearson Airport. Holmes & Narver worked in a joint venture with UMA, Canada. H&N's responsibilities included design of several roadway bridges. Bridge 202 and 506 are cast-in-place prestressed concrete box girder structures supported by extended, cast-in-drilled-hole concrete piers.

RESPONSIBILITIES: Wrote a design guide and developed an in-house class to train engineers how to design bridges in accordance with the Ontario Bridge Design Code. Designed superstructure for bridge 202. Designed substructure for bridge 506. Performed quality assurance reviews for several bridges. Wrote program ONTBEAM for performing reinforced concrete beam design, program OMPOST for post-processing OMBAS output files and program CABLE for calculating post-tensioning cable offsets at any point along the alignment.

PROJECT: Taxiway C over Sepulveda Boulevard, Los Angeles, California

DESIGN COMPLETION DATE: 1999

CLIENT: Los Angeles Airport

POSITION: Project Engineer, Structural

DESCRIPTION: Project to add a new taxiway to the Los Angeles International Airport. Design responsibilities included design of an extension to the existing Sepulveda Boulevard Subway, new retaining walls and partition walls, replacing existing exhaust ventilation ducts, strengthening the existing subway and designing manhole protection structures. The Sepulveda Boulevard Subway extension carries aircraft loading and consists of a precast/prestressed concrete box girder superstructure rigidly framed to reinforced concrete abutments supported on cast-in-drilled-hole (CIDH) concrete piles. The retaining walls are cantilevered concrete walls on spread footings and CIDH concrete piles. The partition walls consist of stud walls with cement board facing supported on a median barrier. The exhaust ventilation ducts are underground reinforced concrete box structures. The manhole protection structures are reinforced concrete walls on spread footings with a roof slab to carry the aircraft loadings. The edge of the existing subway was strengthened for aircraft loads by replacing the existing bridge curb/ductbank with new reinforced concrete deck girders and replacing the existing retaining walls with stronger walls to withstand the aircraft surcharge.

RESPONSIBILITIES: Supervised the structural work, developed the subway extension details, performed independent check on the subway extension, partition walls and existing subway strengthening. Designed the retaining walls on piles and performed quality assurance reviews of all the work.

PROJECT: Henry Ford Avenue Grade Separation Project, Los Angeles, California

DESIGN COMPLETION DATE: 1999

CLIENT: Alameda Corridor Transportation Authority

POSITION: Project Engineer, Structural

DESCRIPTION: Project to grade separate two new mainline railroad tracks from Henry Ford Avenue. Holmes & Narver (H&N) worked as a subcontractor to HNTB. H&N's responsibilities included design of the Mainline Viaduct Segments 1, 5A and 5B, Transfer Yard Connection (TYC) Bridge and some miscellaneous drainage and utility structures. The Mainline Viaduct is a 4590 foot long structure, including 2310 feet of approach walls and 2280 feet of bridge. The bridge for the Mainline Viaduct is made up of several types of structures, including two spans with deck plate girders, two spans with through trusses and several spans with precast/prestressed (PC/PS) concrete box girders. Segment 1 is an approach for the Mainline Viaduct consisting of 1010 feet of back-to-back mechanically stabilized earth (MSE) walls founded on stone columns. Segment 5B is the another approach for the Mainline Viaduct along with approaches for two additional railroad tracks which merge with the Mainline Viaduct tracks prior to crossing the Badger Avenue Bridge. Segment 5B consists of 1300 feet of back-to-back MSE walls for the Mainline Viaduct approach and 1095 feet of right-of-way MSE walls for the Union Pacific track approach. The walls are founded on stone and vibro-concrete columns. A settlement isolation wall was used in Segment 5B to isolate the settlement of the MSE walls from the adjacent Schuyler-Heim Bridge structure. Segment 5A is the last bridge segment of the 2280 foot long Mainline Viaduct and consists of a PC/PS concrete box girder with reinforced concrete bents supported on 42 inch diameter cast-in-steel shell (CISS) concrete piles. The Transfer Yard Connection Bridge supports a single railroad track crossing the Dominguez Channel. The TYC bridge is a steel open deck girder railroad bridge with reinforced concrete pile caps supported on 42 inch diameter CISS concrete piles. The miscellaneous drainage and utility structures include a box culvert, outlet structure and a utility protection structure.

RESPONSIBILITIES: Supervised all structural work by Holmes & Narver, performed all predesign and type selection work, designed the Transfer Yard Connection Bridge, designed portions of the Mainline Viaduct Segment 5A while training a new engineer to do the rest, checked the stone and vibro-concrete columns, checked the settlement isolation walls, wrote the specifications, and performed quality assurance reviews of all the work. Performed the construction support work during the construction phase of the project, including shop drawing review and response to requests for information (RFI).

PROJECT: Redondo Junction Grade Separation Project, Los Angeles, California

DESIGN COMPLETION DATE: 1998

CLIENT: Alameda Corridor Transportation Authority

POSITION: Project Engineer, Structural

DESCRIPTION: Project to grade separate two new mainline railroad tracks from Washington Boulevard, Soto Street and the Alameda Corridor Mainline tracks. Holmes & Narver (H&N) worked as a subcontractor to HDR. The Mainline Flyover is a 4130 foot long structure, including 1600 feet of approach walls and 2530 feet of bridge. The bridge for the Mainline Flyover is made up of several types of structures, including deck plate girders, deck truss, through girders and precast/prestressed concrete box girders. The approach walls for the Mainline Flyover consist of 1600 feet of back-to-back mechanically stabilized earth (MSE) walls. The right-of-way walls consist of 1095 feet of MSE walls. A sheet pile cut-off wall was used to isolate the settlement of the MSE walls from the adjacent building structures.

RESPONSIBILITIES: Supervised all in-house structural work by Holmes & Narver, performed all predesign and type selection work, checked the sheet pile cut-off wall, wrote the specifications, and performed quality assurance reviews of all the work. Performed the construction support work during the construction phase of the project, including shop drawing review and response to requests for information (RFI).

PROJECT: Highland Avenue Grade Separation Project, Fullerton, California

DESIGN COMPLETION DATE: 1998

CLIENT: City of Fullerton

POSITION: Project Engineer, Structural

DESCRIPTION: Project to grade separate five railroad tracks from Highland Avenue. Design responsibilities included design of the Highland Avenue Overhead, tieback walls, retaining walls, stairs and junction structure. The Highland Avenue Overhead is a cast-in-place prestressed concrete box girder supported on a high cantilever abutment on one end and a tieback abutment on the other. The railroad bridge is supported on 48 inch diameter cast-in-drilled-hole concrete piles. The tieback walls are 156 feet long to facilitate the roadway cut within five feet of an existing cold storage building and consist of structural shotcrete walls that are tied back and covered with a reinforced concrete architectural facing. The retaining walls consist of 2020 feet of cantilevered concrete walls on spread footings that are designed for either roadway or railroad surcharge. A special reinforced concrete stair structure was designed to blend in with the retaining walls and provide access from Highland Avenue to the Amerige Park. A reinforced concrete junction structure was designed to transition the pump station outlet pipes to the downstream outlets.

RESPONSIBILITIES: Supervised the structural work, performed all predesign and type selection work, designed the railroad bridge, checked the railroad retaining walls, designed the junction structure, wrote the specifications, and performed quality assurance reviews of all the work. Performed the construction support work during the construction phase of the project, including shop drawing review and response to requests for information (RFI).

PROJECT: Santa Paula Creek Project, Santa Paula, California

DESIGN COMPLETION DATE: 1998

CLIENT: U.S. Army Corps of Engineers, Los Angeles

POSITION: Project Engineer, Structural

DESCRIPTION: Project to increase the volume of the Santa Paula Creek, which acts as a flood control channel. Design responsibilities included modifications of an existing railroad bridge and design of channel walls and fish ladder. The Railroad Bridge consists of an existing steel open deck through truss that needed a deck replacement and lengthening. The lengthening was performed by designing a new steel through girder structure as an additional span. A reinforced concrete pier wall with nosing was designed as the central support and new reinforced concrete abutments on spread footings were designed as the end supports. The channel walls consist of 1178 feet of reinforced concrete cantilever walls on spread footings. The fish ladder consists of timber stoplogs with steel wide-flange supports constructed on steps leading up to a reinforced concrete debris barrier wall with a slide gate.

RESPONSIBILITIES: Supervised the structural work, performed all predesign and type selection work, designed the railroad bridge, checked the channel walls, designed the fish ladder, wrote the specifications and performed quality assurance reviews of all the work.

PROJECT: I-10 HOV Widening, LA County Line to I-15, San Bernardino County, California

DESIGN COMPLETION DATE: 1996

CLIENT: SANBAG

POSITION: Senior Engineer II

DESCRIPTION: Project to add HOV lanes to Interstate 10 from the Los Angeles County line to Interstate 15. Design responsibilities included 10 bridge widenings, 3 bridge replacements, retaining walls, tieback walls, soil nail walls and utility protection structure extensions. Turner Avenue Storm Drain is an at-grade RCB culvert that required extension. Grove Avenue Undercrossing is a precast/prestressed concrete I girder bridge that required widening. Mountain Avenue and Central Avenue Undercrossings are bridges that required replacement with cast-in-place prestressed concrete box girder structures. Due to the low clearance requirements, portions of the bridges had to be constructed above the final profile and lowered into final position. Haven Avenue Overcrossing required replacement with a cast-in-place prestressed concrete box girder structure. Several cantilevered concrete retaining walls and sound walls were designed on the project, along with a special wall on cast-in-drilled-hole concrete piles at the West Cucamonga Channel RCB that had to span horizontally over two buried culverts. Tieback walls were required at Euclid Avenue, Sultana Avenue, Campus Avenue and 6th Street. Several miles of soil nail walls were designed on the project, consisting of structural shotcrete walls with soil nails and finished with reinforced concrete architectural panels. Utility protection structures, consisting of reinforced concrete walls on spread footings with roof were extended at the East and West MWD Aqueducts.

RESPONSIBILITIES: Developed an in-house class to train engineers how to design soil nail walls. Designed the Turner Storm Drain widening, Central Avenue Undercrossing replacement substructure, retaining walls with sound walls, special retaining wall at the West Cucamongo Channel RCB, tieback walls at Euclid Avenue, soil nail walls and utility protection structure extensions. Performed independent check for Grove Avenue Undercrossing widening superstructure, Mountain Avenue Undercrossing replacement substructure, Haven Avenue Overcrossing, tieback walls at Sultana Avenue and Campus Avenue and helped write the specifications.

PROJECT: I-10 Emergency Bridge Reconstruction, Los Angeles, California

DESIGN COMPLETION DATE: 1994

CLIENT: Caltrans

POSITION: Senior Engineer II

DESCRIPTION: Project to replace two collapsed bridges after the January 1994 Northridge Earthquake. Worked as a subcontractor to W. Koo & Associates. Holmes & Narver's design responsibilities included designing the replacement for the Fairfax-Washington Undercrossing. The Fairfax-Washington Undercrossing is a five span, 491 foot long cast-in-place prestressed concrete box girder structure on extended cast-in-drilled-hole concrete piers. This fast-track project was designed in 33 days.

RESPONSIBILITIES: Designed superstructure and bent caps for the Fairfax-Washington Undercrossing.

PROJECT: Railroad from Lomita Blvd to Badger Bridge, Los Angeles, California

DESIGN COMPLETION DATE: 1994

CLIENT: Port of Los Angeles

POSITION: Project Engineer, Structural

DESCRIPTION: Project to add new railroad track from Lomita Boulevard to the Badger Avenue Bridge. Design responsibilities included design of a railroad bridge across the Dominguez Channel and retaining walls. The Dominguez Channel Railroad Bridge is a twelve span, 334 foot long steel open deck girder structure supported on reinforced concrete pile caps and 42" diameter cast-in-steel shell concrete piles. The retaining walls consist of steel H-piles with timber lagging.

RESPONSIBILITIES: Designed the railroad bridge and retaining walls and wrote the specifications. Performed the construction support work during the construction phase of the project, including shop drawing review and response to requests for information (RFI).

PROJECT: Terminal Way Realignment, Los Angeles, California

DESIGN COMPLETION DATE: 1993

CLIENT: Port of Los Angeles

POSITION: Senior Engineer II

DESCRIPTION: Project to add new access roads for the Port of Los Angeles. Design responsibilities included design of three cast-in-place prestressed (CIP/PS) concrete box girder structures -- two of which were ultimately built. Retaining walls were designed consisting of cantilevered concrete walls on spread footings. The Terminal Way Overhead is a four span, 506 foot long, CIP/PS concrete box girder structure supported by reinforced concrete bents and abutments and founded on 14" precast concrete piles. The East and West B Line bridges are single span CIP/PS concrete box girder structures supported by reinforced concrete abutments and founded on 24" precast concrete piles to penetrate an existing, buried rock dike.

RESPONSIBILITIES: Designed the Terminal Way Overhead and retaining walls. Performed independent check of the West B Line Bridge. Performed the construction support work during the construction phase of the project, including shop drawing review and response to requests for information (RFI).

PROJECT: Pico Avenue Grade Separation, Long Beach, California

DESIGN COMPLETION DATE: 1993

CLIENT: Port of Long Beach

POSITION: Senior Engineer II

DESCRIPTION: Project to improve roadway access at the Port of Long Beach. Design responsibilities included design of the Pico Avenue Overhead with MSE wall approaches. The Pico Avenue Overhead is a 5 span, 1006 foot long, cast-in-place prestressed concrete box girder structure supported on reinforced concrete bents and abutments.

RESPONSIBILITIES: Performed independent check of the Pico Avenue Overhead and MSE wall approaches.

PROJECT: Harbor Plaza and Pier G Avenue Overheads, Long Beach, California

DESIGN COMPLETION DATE: 1993

CLIENT: Port of Long Beach

POSITION: Senior Engineer II

DESCRIPTION: Project to improve roadway access at the Port of Long Beach. Design responsibilities included design of the Harbor Plaza Bridge and seismic retrofit of the Van Camp Street Bridge. The Harbor Plaza Bridge is a three span, 240 foot long, cast-in-place prestressed concrete box girder structure supported on reinforced concrete bents and abutments. Van Camp Street Bridge is an existing three span precast/prestressed concrete box girder structure that was retrofitted with a seismic anchor slab and in-fill walls at the bent.

RESPONSIBILITIES: Designed the Harbor Plaza Bridge and Van Camp Street Bridge retrofit. Performed the construction support work during the construction phase of the project, including shop drawing review and response to requests for information (RFI).

PROJECT: Albertsons Stores, Ridgecrest, Poway and Ramona, California

DESIGN COMPLETION DATE: 1993

CLIENT: Albertsons

POSITION: Senior Engineer I

DESCRIPTION: Project to design new Albertsons stores at various locations in California. Design responsibilities included design of the Albertsons Ridgecrest, Poway and Ramona stores. Stores are one story wood roof buildings with masonry walls. The three stores all had unique features, including storefronts and loading docks.

RESPONSIBILITIES: Designed the Albertsons Ridgecrest, Poway and Ramona store structures. Performed the construction support work during the construction phase of the project, including shop drawing review and response to requests for information (RFI).

PROJECT: Los Angeles International Airport Air Traffic Control Tower and Base Building, Los Angeles, California

DESIGN COMPLETION DATE: 1992

CLIENT: Federal Aviation Administration

POSITION: Senior Engineer I

DESCRIPTION: Project to design new Air Traffic Control Tower and Base Building for the Los Angeles International Airport. The Base Building consists of a five-story rigid steel frame with reinforced concrete ground floor and basement.

RESPONSIBILITIES: Designed the Base Building structure.

PROJECT: Chicago O'Hare International Airport Air Traffic Control Tower and Base Building, Chicago, Illinois

DESIGN COMPLETION DATE: 1992

CLIENT: Federal Aviation Administration

POSITION: Senior Engineer I

DESCRIPTION: Project to design new Air Traffic Control Tower and Base Building for the Chicago O'Hare International Airport. The Base Building consists of a three-story combination rigid and concentrically braced steel frame with reinforced concrete ground floor and basement.

RESPONSIBILITIES: Designed the Base Building structure.

PROJECT: Elgin TRACON, Elgin, Illinois

DESIGN COMPLETION DATE: 1991

CLIENT: FAA

POSITION: Project Engineer

DESCRIPTION: Project to design a TRACON facility by site-adapting a standard facility design.

RESPONSIBILITIES: Responsible for site adaptation of the Environmental Support Building. The building is a one story concentrically-braced steel frame with penthouse. Analyzed the structure for snow and wind loads. Modified design of roof framing.

PROJECT: Disney Tommorrowland, Anaheim, California

DESIGN COMPLETION DATE: 1991

CLIENT: Disney

POSITION: Project Engineer

DESCRIPTION: Project to design a new facility at Disneyland.

RESPONSIBILITIES: Performed lateral load analysis of terrace for earthquake loads using STAAD program. The structure is a one story steel frame with concrete floor.

PROJECT: Tomahawk Cruise Missile

DESIGN COMPLETION DATE: 1991

CLIENT: DOD

POSITION: Engineering Specialist

DESCRIPTION: Project to maintain and develop the Tomahawk Cruise Missile System.

RESPONSIBILITIES: Supported design of a submunition module, a resin transfer molded composite structure, by performing finite element analysis with Nastran and I-DEAS. Supported design and development testing of the Lightweight Torpedo Tube Launch (LTTL) Canister, a filament-wound composite structure. Performed miscellaneous design tasks in support of the cruise missile fabrication. Supported development of a new explosive tube separation system for the missile submunition covers, including preliminary design and support of the test program. Wrote numerous stress reports. Evaluated canister for small arms threats using DYNA2D program.

PROJECT: Atlas Launch Vehicle

DESIGN COMPLETION DATE: 1990

CLIENT: NASA

POSITION: Stress Analyst

DESCRIPTION: Project to maintain and develop the Atlas Launch Vehicle.

RESPONSIBILITIES: Performed analysis in support of the Solid Rocket Booster (SRB) version of the Atlas Launch Vehicle. Performed iterative nonlinear buckling analysis of launch vehicle body using Nastran. Wrote program to automate the iterative nonlinear buckling analysis.

PROJECT: Hypersonic Glide Vehicle

DESIGN COMPLETION DATE: 1988

CLIENT: DARPA

POSITION: Stress Analyst

DESCRIPTION: Project to develop a hypersonic vehicle made of a carbon-carbon composite airframe that is capable of performing at atmosphere reentry temperatures.

RESPONSIBILITIES: Performed analysis in support of the airframe and antenna design. Supported a test program on buckling of carbon-carbon panels and co-authored a paper on the subject.

PROJECT: F-16 Aircraft

DESIGN COMPLETION DATE: 1986

CLIENT: DOD

POSITION: Stress Analyst

DESCRIPTION: Project to maintain and develop the F-16 Aircraft System.

RESPONSIBILITIES: Wrote F-16 Common Engine Bay (CEB) stress report for forward fuselage. Performed design support tasks for F-16 CEB static and dynamic test articles.

PROJECT: Northern States Power Steam Line, St. Paul, Minnesota.

DESIGN COMPLETION DATE: 1984

CLIENT: Northern States Power

POSITION: Engineer

DESCRIPTION: A five mile long, high temperature/pressure steamline designed to provide power for a paper mill. Support for the steamline was provided by structural steel bridges that crossed over roadways and railways. Existing highway and railway bridges were used to provide support along the system. The underground portion of the steamline incorporated concrete vaults for the expansion joints.

RESPONSIBILITIES: Designed several structural steel bridges and performed assessment and retrofit of all existing highway and railway bridges. Checked several underground vault designs. Designed the supports inside buildings, which required field measurement and assessment of existing steel members.

PROJECT: Midland Nuclear Power Plant, Midland, Michigan.

DESIGN COMPLETION DATE: 1983

CLIENT: Consumers Power

POSITION: Engineer

DESCRIPTION: Project to design a nuclear power plant.

RESPONSIBILITIES: Analyzed existing steel framing for new pipe and equipment loads. Designed reinforcing for existing framing as needed. Designed shields for tornado-generated missiles using energy balance approach.

PROJECT: Monroe Fuels and Emissions Project, Monroe, Michigan.

DESIGN COMPLETION DATE: 1983

CLIENT: Detroit Edison

POSITION: Engineer

DESCRIPTION: Project to maintain and develop an existing coal power plant. Supported design of a new coal feed system to transport fuel from ships to power plant. Overhead conveyors supported on steel truss structures with overhead tower bents were used to distribute the coal to the stockpiles. An underground reclaim tunnel system with conveyors was used to transport the coal from the stockpiles towards the boilers.

RESPONSIBILITIES: Supported design of various structures. Performed finite element analysis of the reinforced concrete bents for differential settlement due to different coal pile loadings. Designed platform system around the receiving bin. Designed equipment maintenance crane system in the braker house. Designed reinforcement for the cascade room steel floor framing. Checked a pedestrian tunnel system. Designed equipment foundations, enclosures and other miscellaneous structures.

ENGINEERING MANAGEMENT EXPERIENCE

ENGINEERING MANAGEMENT: Have held several management positions with DMJM Harris. The positions are listed below along with a listing of some accomplishments in each position.

TITLE: Technical Director

DATE: Oct-2002 to present

DESCRIPTION: Served as Technical Director for the Southern California operations of DMJM Harris, which included offices in Orange, Los Angeles, Long Beach, Ontario and San Diego as well as several temporary project offices. The Technical Director role is similar to a unit Chief Engineer.

ACCOMPLISHMENTS: Provided technical guidance and support necessary for the conduct of business. Oversaw Project Managers to assure quality and reduce risk with deliverables. Organized and developed training programs for staff. Approved and developed Project Work Plans. Took a lead role in the organization of software control for the corporation. Developed technical guidelines and procedures to improve quality of work.

TITLE: Regional Quality Manager

DATE: Apr-2002 to Feb-2004
Jun-2005 to present

DESCRIPTION: Served as Regional Quality Manager for the West Coast operations of DMJM Harris, which included offices in Orange, Los Angeles, Long Beach, Ontario, San Diego, Sacramento, Oakland and Seattle as well as several temporary project offices.

ACCOMPLISHMENTS: Helped develop corporate QMS procedures. Lead implementation of the DMJM Harris Quality Management System (QMS) for the Southern California operations. Maintained and enforced Quality Management System (QMS) for the West Coast. Performed training and auditing. Developed local procedures for Document Checking, Local Audit Program and Review Comments. Developed a local standard for a Project Directory Structure (electronic files) and helped develop a local standard for a Project Filing Index (paper files).

TITLE: Structural Department Manager

DATE: Oct-2001 to Oct-2003

DESCRIPTION: Served as Structural Department Manager for the Southern California operations of DMJM Harris, which included offices in Orange, Los Angeles, Long Beach and San Bernardino as well as several temporary project offices.

ACCOMPLISHMENTS: Organized the Department into one cohesive operation after the merger of DMJM (Los Angeles), F.R. Harris (Long Beach) and Holmes & Narver (Orange and San Bernardino). Promoted and mentored Deputy Department Managers to oversee the operations in the individual offices. Developed Department Standards for Calculations and Design Task Protocols. Developed technical training program that provided a pertinent course to staff every quarter and offered individuals the opportunity to develop their skills in technical instruction.

TECHNICAL INSTRUCTION EXPERIENCE

TECHNICAL INSTRUCTION: Have developed several courses to provide in-house technical instruction for staff. These courses are listed below.

TITLE: SAP2000 Response Spectra Analysis	DESCRIPTION: A one hour class which shows how to perform response spectra analysis with SAP2000.
TITLE: Seismic Design of Railroad Bridges	DESCRIPTION: An all-day workshop designed to introduce the AREMA Chapter 9 seismic design criteria and present a complete bridge design example.
TITLE: Nonlinear Static Analysis	DESCRIPTION: A 4-hour class designed to get the engineer productive in moment-curvature analysis and pushover analysis techniques. The course includes moment-curvature examples with XSECTION and CONSEC and pushover examples with wFRAME and SAP2000 Nonlinear.
TITLE: Caltrans Seismic Design Criteria	DESCRIPTION: A 4-hour class designed to help familiarize the engineer with Caltrans Seismic Design Criteria (SDC). The class provides an overview of the SDC requirements and how to satisfy these requirements in design.
TITLE: Ontario Highway Bridge Design	DESCRIPTION: A 4-hour class on Ontario Highway Bridge design includes a description of the Ontario, Canada highway bridge design code and the OMBAS program.
TITLE: Soil Nail Wall Design	DESCRIPTION: An all-day workshop which focuses on training engineers how to design soil nail walls. The course includes a general description of soil nail wall construction and conditions where soil nailing is applicable. Exercises are provided to familiarize the engineer with the SNAIL Program used by Caltrans.
TITLE: Composite Materials Analysis	DESCRIPTION: A multi-session course designed to introduce composite materials and analysis techniques to the engineer.

COMPUTER SOFTWARE EXPERIENCE

SOFTWARE DEVELOPMENT: Have written numerous computer programs to expedite the structural analysis tasks. Two examples are described below.

PROGRAM: RETAIN LANGUAGE(S): Visual Basic / Fortran

DESCRIPTION: Program RETAIN may be used to design or review cantilevered concrete retaining walls and bridge abutments with either spread footing or pile foundations. Concrete design may be performed using either the ultimate strength design procedure or the working stress design method. For working stress design and ultimate strength design the specified load factors are used for calculation of material stress. The load factors for working stress design should be reduced below 1.0 to account for allowable stress increases (ie. use load factor = 0.75 for 33% stress increase). For external stability calculations (sliding, overturning, bearing pressure, etc.), the load factors are internally changed to 1.0 for each specified load. For further information refer to the Load Combinations section. The soil configuration may either be constant sloped backfill with a uniform surcharge loading or an irregular backfill and surcharge load. The constant sloped backfill uses the user-input lateral pressure coefficients to calculate the force on the wall. The irregular backfill option uses the trial wedge solution procedure with the user-input soil friction angle to calculate the wall forces. A variety of loads may be specified on the wall, including axial dead and live load at the top which allows the program to simulate a bridge abutment loading. Other top-of-wall loads include moment and shear from wind and earthquake, which allow the program to simulate sound wall loadings. A seismic lateral earth pressure coefficient may be included for use using the Mononabe-Okabe method for constant slope backfill, or an acceleration in G's may be specified to accelerate the trial wedge for the irregular backfill configuration. Safety factors for external stability and soil parameters such as friction coefficients and allowable bearing pressure may be specified separately for regular load, wind loads and seismic loads.

PROGRAM: CONSEC LANGUAGE(S): Visual Basic

DESCRIPTION: Program CONSEC may be used to perform concrete section analysis of reinforced concrete members with or without embedded steel shapes. Options are available to calculate section properties, interaction diagram, slenderness effects and perform section analysis and/or moment-curvature analysis for given loads. Concrete section analysis may be performed using either ACI-318, AASHTO (Caltrans), AREMA, AASHTO LRFD, CSA A23.3, CAN/CSA-S6 or OHBDC design criteria. Slenderness effects may be computed using moment magnification per the selected design criteria or per ACI-318's slender wall analysis procedure. The member length and effective length factor must be specified to calculate slenderness effects. Moment magnification of sway frames may be performed by unchecking the shear restraint at End i under the boundary conditions. An initial deflection may be provided under the load conditions to more accurately calculate the Q-based magnification factor for some criteria. If this option is desired, the user must also specify a shear value with the section loads. Moment-curvature analysis may be performed using user-defined stress strain relationships for the concrete and reinforcing steel. Default stress-strain relationships are supplied for the most common materials. The concrete may be idealized with a linear relationship to determine the working stress moment-curvature distribution. A simple concrete model is provided which can be used for unconfined beam sections or poorly-confined columns. The so-called Mander stress-strain model is also provided for confined column sections that account for spalling outside the confinement. If the Mander stress-strain model is used, the user must supply the confinement reinforcing arrangement to calculate the confined stress and ultimate strain. The reinforcing steel and/or structural steel may be modeled with either a bi-linear relationship or the so-called Park stress-strain model that incorporates a complex strain hardening region. The user may modify the Park model to a use a simple parabolic strain hardening region from the Define Control Parameters menu if desired. The program will also calculate the local member ductility if the member length and boundary conditions are entered..

SOFTWARE REHOST: Have managed and/or performed the rehosting of software from different computer operating systems as described below.

FROM SYSTEM: PC/DOS TO SYSTEM: PC/Windows

DESCRIPTION: Performed rehost effort for several in-house structural programs at Holmes & Narver, Inc. written in Fortran for DOS (This is an ongoing effort based on need). Modified code as required for Windows, including designing Visual Basic front ends or translating from Fortran to Visual Basic. Performed testing to verify the program results.

FROM SYSTEM: PRIME/PRIMOS TO SYSTEM: PC/DOS

DESCRIPTION: Performed rehost effort for in-house structural programs at Holmes & Narver, Inc. written in Fortran IV and 77. All of the programs had been written by others who had long since left the company. Modified code as required and recompiled using Microsoft Fortran for DOS. Performed testing to verify the program results.

FROM SYSTEM: Cyber/NOS TO SYSTEM: DECStation/Ultrix (Unix)

DESCRIPTION: Managed rehost effort for in-house structural programs at General Dynamics Convair Division written in Fortran. Supervised programmer, who modified code as required and recompiled for the DECStation. Supplied test problems to verify the program results.

SOFTWARE USED: Have experience with several software programs, including those described below.

PROGRAM	DESCRIPTION
NASTRAN	General finite element analysis
ADINA	Nonlinear finite element analysis
SAP 2000	General finite element analysis
STAAD III	General finite element analysis
SEISAB	Seismic Analysis for Bridges
BDS	Bridge superstructure design
RECOL	Column design
ABUD	Abutment design
FAD	Footing design
LPILE	Lateral single pile analysis
GROUP	Lateral pile group analysis
SNAIL	Soil Nail wall design
XSTABL	Slope stability
MS Frontpage	Web development
MS Visual Basic	Visual Basic development
Compaq Visual Fortran	Visual Fortran development
MS Word	Word processing program
MS Excel	Spreadsheet program
Microstation	Computer aided design (CAD) program
