

Ron Antuma, BSCE, P.Eng.

MUNICIPAL ENGINEER

rantuma@design-plus.co

PERSONAL PROFILE

Ron has over 28 years of civil engineering experience public utility servicing, detailed design, soil erosion and sedimentation control planning and design, stormwater management and drainage design. His transportation experience includes airport engineering, local highway design and project management, public arterial, public and private local road layout and design. His municipal engineering experience includes water system design and analysis, sanitary sewer collection and trunk sewer design, forcemain design, small community wastewater treatment, community storm sewer studies, low impact design and LEED site design initiatives, mass grading, soil erosion and sedimentation control management and design, dam inspections and reports, and emergency action plan development.

RELEVANT EXPERIENCE

MUNICIPAL SERVICING

Project Manager/Engineer, Talbotville Wastewater Servicing, Township of Southwold, Ontario
Provided review, evaluation and recommendations of wastewater servicing options presented by suppliers through directly impacted developer.

Project Manager/Engineer, Talbotville Connection fee Study, Township of Southwold, Ontario
Provided evaluation and recommendations for a connection fee based on costing and timing of anticipated upgrades to the Talbotville Wastewater Treatment Plant

Project Manager/Engineer, Shedden & Fingal Master Servicing and Wastewater Servicing Class C Municipal EA, Township of Southwold, Ontario
The project evaluates the existing conditions and future growth projections of both Shedden and Fingal in an effort to recommend future master servicing (sewers, water) strategy for the communities as well as wastewater servicing.

Project Manager/Engineer, Township of Southwold Official Plan Update, Development Charge Study and water and wastewater connection fee Study, Township of Southwold, Ontario.
The purpose of the project is to update the townships official plan with a more comprehensive evaluation of growth projections and more appropriate land designations. The development charge and water/wastewater connection fee study are an expansion for the Municipality to establish policy based on projections the necessary fee capture to support the new treatment facility and future infrastructure.

EDUCATION

BSCE (ABET Accredited Program)
Calvin College, 1990

REGISTRATIONS/LICENCES

Registered Professional Engineer in
the Province of Ontario (Current)

Registered Professional Engineer in
the State of Michigan 1995
(Dormant)

Registered Professional Engineer in
the State of Illinois 1999 (Dormant)

AFFILIATIONS/ASSOCIATIONS

American Society of Civil Engineers
(Member)

Canadian Society of Civil Engineers
(Member)

Project Engineer, Kilworth Wastewater Outlet Environmental Assessment, County of Middlesex, Ontario

Evaluated various wastewater servicing solutions and recommended a solution for near-term development, intermediate community growth in accordance with the existing official plan and future abandonment of the Komoka wastewater treatment plant. 2014.

Project Manager/Engineer, Hamlet of Florence Wastewater Servicing Environmental Assessment, Township of Dawn Euphemia, Ontario

Developed and evaluated various wastewater servicing solutions and made recommendations for the entire Hamlet of Florence which is experiencing failing septic systems as a result of age. The project is to eliminate potentially hazardous discharge of septic waste into the surrounding ditches and streams. This project was initiated as a Municipal Environmental Assessment. 2014 (completed).

Project Manager, Brick Pond Sanitary Access Road, City of Woodstock, Ontario

Completed the detailed design, contract drawing preparation and tendering for a new sanitary sewer access road along the CNR corridor east and west of Springbank Avenue. The maintenance access road is located within the Brick Pond Provincially Significant Wetland Complex. (ongoing).

Project Manager, Brick Ponds Timber Pile Assembly and Sanitary Sewer Assessment, City of Woodstock/Oxford County, Ontario

Conducted a site investigation and condition assessment of the timber pile assembly supporting the existing sanitary sewer through an environmentally significant wetland and large peat deposit. The evaluation also included evaluations and recommendations to address the near end of lifecycle sewer. (ongoing).

Project Manager/Engineer, Mill Creek Storm Sewer Outlet Environmental Assessment, Detailed Design and Construction, City of St. Thomas, Ontario

Completed a review of Draft Plan of Subdivision application process and the detailed design engineering for the extension of Third Avenue. Specific works included review and contract administration for the new minor/major storm conveyance sewer and channel with drop structure and associated water quality devices from Gladstone Avenue discharging to Mill Creek. 2015 (completed).

Project Engineer/Reviewer, Third Avenue Extension, City of St. Thomas, Ontario

Completed the preliminary and detailed design, tendering, contract administration and inspection for a new road between Wellington Street and Talbot Street for connection from the Timken Community Centre to the downtown and access for the new St. Thomas Police Services facility. A Draft Plan of Subdivision and property adjustments were also included. Specific works included senior review of the design, north of Wellington Street to Talbot Avenue; roundabout; signalization; multi-use pathway; sanitary, storm and water; preparation of functional servicing report; stormwater collection and management. (ongoing).

Project Manager/Design Engineer, Boxwood Industrial Development, City of Cambridge, Ontario

Provided engineering design assistance and project management for municipal and site utility servicing including trunk watermain design, sanitary sewers and forcemains, stormwater collection, stormwater management facilities, roads, etc. 2014 (completed). Construction valued at \$13M.

Project Manager/Engineer, Commissioner's Road Widening, City of London, Ontario
Completed drainage design including stormwater collection and management. 2014 (completed).

Project Manager/Engineer, Hyde Park Road Widening, City of London, Ontario
Undertook municipal servicing, which included water, sewers and stormwater management design. 2014 (completed).

Project Engineer/Reviewer, Highway 401, Kitchener, Ministry of Transportation, Ontario
Provided quality assurance to the design for the drainage component of this project. The project consisted of 4.6 km of highway widening and reconstruction from Fountain Street to Speedsville Road in Cambridge. 2014 (completed).

Project Engineer/Reviewer, 2014 Infrastructure Project – Dundas Street, City of London, Ontario
Provided quality assurance to the design for the 2014 infrastructure project on Dundas Street. 2014 (completed).

Project Engineer/Reviewer, 2013 Infrastructure Project – Commissioner's Road, City of London, Ontario
Provided quality assurance to the design for the 2013 infrastructure project on Commissioner's Road. 2013 (completed).

Project Manager/Engineer, Oxford Street Widening and Royal York Reconstruction, City of London, Ontario
Undertook municipal servicing, which included water, sewers and stormwater management design. 2013 (completed).

Project Manager/Engineer, Fanshawe Park Road Widening, City of London, Ontario
Undertook municipal servicing, which included water, sewers and stormwater management design. 2012 (completed).

Project Engineer/Reviewer, 2012 Infrastructure Project – Dundas Street, City of London, Ontario
Provided quality assurance to the design for the 2012 infrastructure project on Dundas Street. 2012 (completed).

Assistant Design Engineer, Wyoming 42" Diameter Transmission Main, City of Wyoming, Ontario
Provided engineering design assistance for 40 mi of 42" diameter precast concrete transmission watermain. (completed).

Resident Engineer, Grand Rapids 60" Diameter Transmission Main, City of Grand Rapids, Michigan
Completed Contract Nos. 3 and 5 to design 12 mi of 60" diameter concrete precast transmission watermain. (completed).

Design Engineer, Industrial Drive Extension, City of Allegan, Michigan
Provided engineering services for \$1M extension to Industrial Drive servicing Perrigo's new warehouse and a new industrial park. The project included 0.75 mi of new industrial road, 2,500 ft of 12-42" watermain, sewers and road improvements. (completed).

Design/Drafting Engineer, Shaffer Avenue Extension, City of Kentwood, Michigan
Provided engineering services for 1,000 m of Shaffer Avenue (five-lane local state highway), including watermains, sewers, mass grading, roads, utilities, pavement, striping and signage,

and easements acquisitions in accordance with Michigan Department of Transportation highway requirements. *(completed)*.

Design Engineer, 32nd Street Sidewalk Improvement, City of Kentwood, Michigan

Provided engineering services for 21,366 lineal feet of sidewalk from Breton Avenue to Shaffer Avenue as part of the 32nd Street sidewalk improvement (community block grant program). The project was to alleviate drainage and erosion problems off 32nd Street. *(completed)*.

Construction Engineer, 52nd Street Sidewalk Improvement, City of Kentwood, Michigan

Completed 52nd Street improvements, which included 0.6 mi of local state highway design, construction observation and project closeout in accordance with Michigan Department of Transportation highway requirements. *(completed)*.

Design/Drafting/Construction Engineer, East Paris Avenue, City of Kentwood, Michigan

Provided engineering services for East Paris Avenue, from Broadmoore Avenue to Swank Road. Project included watermains, sewers, a road widening and intersection realignment. *(completed)*.

Design/Residential Engineer, South Airport Road at W. K. Kellogg Airport, City of Battle Creek, Michigan

Provided engineering services for South Airport Road at W. K. Kellogg Airport, from Kal-Aero's facility to Helmer Road. The project included new watermains, sewers and road design vertical and horizontal alignment, grading, and drainage. *(completed)*. Construction valued at \$1M.

Design Engineer, Horton Street Extension and Reconstruction, Kelloggsville Middle School, Kentwood, Michigan

Provided engineering services for Horton Street extension and reconstruction to serve the new middle school, including watermains and sewers. *(completed)*.

LAND DEVELOPMENT

Project Manager – Corunna Seliel Development, 66 Unit VLC, Sifton Properties, Corunna, Ontario

Conducted the design and tender package of this 66-unit vacant land condominium project in Corunna, Ontario.

Project manager – Westwood Trails Development, 73 Unit VLC, Warren Sinclair Construction Ltd., Simcoe, Ontario

Conducted the design and tender package of this 73-unit vacant land condominium project in Simcoe, Norfolk County, Ontario.

Project manager – Meadows of Norfolk, 78 Unit Condominium Development, Bremont Homes Ltd., Simcoe, Ontario

Conducted the design and tender package of this 78-unit vacant land condominium project in Simcoe, Norfolk County, Ontario.

Project Manager – Reflection Shores, 338 Lot Greenfield Development, Sifton Properties Ltd. Lambton Shores, Ontario

Project Manager and engineer for the preliminary design of this 338-lot greenfield development in Lambton Shores, Ontario.

Project Manager – Marigold Developments, 778 lot Greenfield Development and VLC, Coalition of Developers, North Dorchester, Ontario

This project included preliminary engineering and the development of a sustainable cost-effective wastewater servicing solution for several developers in North Dorchester, Ontario.

Project Manager – Ingrox Ltd., Variety of Commercial Site Design Projects, Ingersoll, Woodstock, London, Ontario

Project manager for a variety of commercial projects such as 1771 Trafalgar Car Wash, London Ontario; Site upgrade for material handling facility, Putnam, Ontario; Self-Storage Facility, Ingersoll, Ontario.

Project Management – Block 157 Sheffield – 30 Unit VLC, Sifton Properties, London, Ontario

Conducted the design and construction management of this 30-unit vacant land condominium project within "Victoria on the River" development.

Project Engineer/Reviewer, Ridge Crossing Subdivision, Private Developer, Lucan-Biddulph, Ontario

Prepared the detailed design of water distribution system, sanitary/storm sewers, stormwater management (a pond), road design, street lighting design and lot grading for a 334-unit subdivision, including draft plan approval and a zoning by-law amendment. Also designed a large double barrel precast box culvert, landscaping and an amenity area. Specific works included review of County growth projections for 20-year horizon; developed growth projections based on new builds over the last seven years; made recommendations for developer and Township regarding municipal needs and logic for urban growth boundary adjustment; data review and quality assurance. *(ongoing)*.

Project Manager/Reviewer – Golf Estates Development – 85 lot Greenfield Development, Reeves Land Corporation, Ingersoll, Ontario.

Project manager for this unique 85-lot greenfield development consisting of only Low Impact Development features for stormwater management for both quality and quantity. The project is one of the first of its kind within Southwestern Ontario.

Project Engineer/Reviewer, Creekside Development Environmental Impact Study, Reeves Land Corporation, Ingersoll, Ontario

Conducted a Stage 1 and 2 Environmental Impact Study for future development of the site. Specific works included providing quality assurance to the design of the project. *(ongoing)*.

Project Engineer, Low Impact Development – Whiting Road Development, Reeves Land Corporation, Ingersoll, Ontario

Completed site and engineering site plan for a condominium development from conceptual design to detailed design including water, sanitary servicing, parking lot layout and drainage design using low impact development design for stormwater collection and management. Specific works included quality assurance to the site servicing and low impact development design of the project. *(ongoing)*.

Project Engineer/Reviewer, Bulls Eye Shooting Range Facility, Private Developer, London, Ontario

Designed a new shoot range facility. The project included architectural, structural, mechanical, electrical and civil components from preliminary design to construction administration. Specific works included site and engineering plan development from conceptual design to

detailed design. Included water, sanitary servicing, parking lot layout and drainage design (stormwater collection and management). Also included design review and quality assurance. *(ongoing)*.

Project Engineer/Reviewer, Low Impact Development, Ingersoll St. Development, Warren Sinclair Homes, Ingersoll, Ontario

Completed a site and engineering plan for a 41-unit condominium development from conceptual design to detailed design; included water, sanitary servicing, road and parking lot layout and drainage design using low impact development design for stormwater collection and management. Specific works included quality assurance to the site servicing and low impact development design of the project. *2016 (completed)*.

Project Engineer/Reviewer, - Fanshawe Ridge Phase III, Sifton Properties, London, Ontario

Completed site and engineering plan development from conceptual to detailed design, including water, sanitary servicing, road layout, drainage design and stormwater collection and management. Specific works included design review and quality assurance. *2014 (completed)*.

Project Engineer/Reviewer, Klomps – UGB Adjustment Study, Sifton Properties, London, Ontario

Conducted a review of City's NE Growth projections for a 20-year horizon; developed growth projections based on new builds over past several years; made recommendations for developer and City regarding municipal needs and logic for urban growth boundary adjustment based on ease of access. Specific works included data review and quality assurance. *2014 (completed)*.

Project Engineer/Reviewer, Music Building Expansion, Western University, London, Ontario

Completed site and engineering plan development from conceptual design to detailed design including water, sanitary servicing, parking lot layout and drainage design (stormwater collection and management). Specific works also include design review and quality assurance. *2013 (completed)*.

Project Engineer/Reviewer, South Valley Sanitary Servicing, Western University, London, Ontario

Completed a sanitary sewer servicing study based on fixture counts of the buildings within the system and planned future building connections. Provided recommendations based on the system analysis and evaluation. Provided quality assurance to the design for the project. *2012 (completed)*.

Project Engineer, Taco-Bell, LDV Development, Schoolcraft, Michigan

Provided site design from conceptual layout to project completion, including site grading and the design of watermains, sewers, parking and community wastewater treatment facilities and coordinating utilities. *(completed)*.

Project Engineer, Greenville Chiropractic, Dr. Dennis Hayes, Greenville, Michigan

Provided site design from conceptual layout to project completion, including site grading and the design of watermains, sewers, parking and community wastewater treatment facilities and coordination of utilities. *(completed)*.

Project Engineer, Aquinas College Student Housing, Design +, Grand Rapids, Michigan

Provided site design from conceptual layout to project completion, including site grading and the design of watermains, sewers, parking and community wastewater treatment facilities and coordination of utilities. *(completed)*.

Project Engineer, Student Housing LEED Green Certified, Design +, Dowagiac, Michigan

Provided site design from conceptual layout to project completion, including site grading and the design of watermains, sewers, roads, parking, low impact development drainage and coordination of utilities at Southwestern Michigan College. *(completed)*.

Project Engineer, Lakewood Elementary High School, Design +, Lakewood, Michigan

Provided site design from concept to completion, including design of watermains, sewers, and roads, sports fields including tennis courts, soccer fields and ball diamonds, bus pick-up and drop-off, traffic logistics, parking lots for staff, students and events. *(completed)*.

Project Engineer, Zion Lutheran Church, Design +, Kalamazoo, Michigan

Evaluated the existing Kalamazoo church parking lot and provided recommendations for improvement. Increased the size of the parking lot as a result of an expansion project. Also included drainage revisions to improve collection attenuation and conveyance. *(completed)*.

Project Engineer, Immanuel Lutheran Church, Design +, Grand Rapids, Michigan

Evaluated traffic movement to improve flow on and off Michigan Avenue in Grand Rapids, particularly during service times, resulting in severe congestion. The project resulted in a complete redesign of the parking lot, including a retaining wall to account for excessive grades and poor drainage. *(completed)*.

Project Engineer, ICC Behar Mosque, ICC Ltd., Grand Rapids, Michigan

Completed site design from concept to completion, including the design of watermains, sewers, site grading, parking lot and wetland mitigation. *(completed)*.

Project Engineer, Hooters Restaurants, Horizon Development, Norton Shores, Michigan

Completed site design from concept to completion designing public services, site grading, drainage design, parking lot layout and design. *(completed)*.

Design Engineer, Corporate Office/Fuel Storage Facility, Crystal Flash Energy, Grand Rapids, Michigan

Completed redesign of existing Crystal Flash corporate office and fuel storage facility, replacing approximately 500,000 ft² of failing flexible pavement with fiber reinforced rigid concrete pavement. Project required minimal subgrade disturbance due to fuel contamination. Groundwater targeted research project was added to reduce required site contamination clean-up time, reducing client clean-up and monitoring costs by 50%. *(completed)*.

AIRPORTS

Design/Resident Engineer, Runway Lighting Design, Duluth International Airport, Minnesota

Completed design of the new centerline and touchdown zone lighting. *(completed)*.

Design/Resident Engineer, Runway and Ramp Rehabilitation, Duluth International Airport, Minnesota

Completed design for main runway, taxiway, and ramp rehabilitation project. *(completed)*.

Resident Engineer, Cable Arrester and Shoulder Repair, Duluth International Airport, Minnesota

Completed observation and recording of construction activities and communication with the Airport Authority as it related to this project. *(completed)*.

Resident Engineer, Apron Expansion, Duluth International Airport, Minnesota

Completed observation and recording of construction activities and communication with the Airport Authority as it related to this project. *(completed)*.

Design Engineer, Airport Upgrades, Pensacola Airport, Florida

Provided engineering design for ramp expansion, perimeter road and security fencing. *(completed)*.

Design Engineer, Airport Systems Improvements, Fernandina Beach Airport, Florida

Provided engineering design for an automated weather observing system and the pilot's remote lighting system for a Florida airport. *(completed)*.

Design Engineer, FedEx Air Cargo and Trade Center Facility, Gerald R. Ford International Airport, Grand Rapids, Michigan

Provided engineering design for new FedEx Air Cargo and trade center facility, including water transmission main, sanitary forcemain, sewage lift station, access road, cement treated base, and drainage. *(completed)*. Construction valued at \$16M.

Design Engineer, Concrete Ramp, Gerald R. Ford International Airport, Grand Rapids, Michigan

Provided engineering design for 97 000 yd³ of concrete ramp and associated grading, drainage and electrical. *(completed)*. Construction valued at \$3.5M.

Design Engineer, Airport Perimeter, Gerald R. Ford International Airport, Grand Rapids, Michigan

Provided engineering design for airport perimeter road project and security fencing. *(completed)*.

Resident Engineer, GIS – Utility Data Input, Gerald R. Ford International Airport, Grand Rapids, Michigan

Provided engineering design for the airport's GIS utility layout and development. *(completed)*.

Resident Engineer, Airport Clearing and Mass Grading, Gerald R. Ford International Airport, Grand Rapids, Michigan

Oversaw clearing and grubbing and mass grading project. *(completed)*.

Design/Resident Engineer, Runway Striping, Gerald R. Ford International Airport, Grand Rapids, Michigan

Provided engineering design for runway and taxiway striping and associated painting project. *(completed)*.

Design/Resident Engineer, New Taxiway Design and Lighting, Gerald R. Ford International Airport, Grand Rapids, Michigan

Provided engineering design for new Taxiway J and associated lighting project. *(completed)*.

Resident Engineer, Airport Signage and Lighting, Gerald R. Ford International Airport, Grand Rapids, Michigan

Provided engineering design for new airport signage and lighting reconstruction. *(completed)*.

Design/Resident Engineer, Runway Extension, Gerald R. Ford International Airport, Grand Rapids, Michigan

Provided engineering design for Runway 18/36 extension and Taxiway J project. *(completed)*.

Design Engineer, Airport Layout Plan, W. K. Kellogg Airport, Battle Creek, Michigan

Developed airports layout plan set base in coordination with Ricondo and Associates. (completed).

Project Engineer/Contract Administrator, Drainage Study, W. K. Kellogg Airport, Battle Creek, Michigan

Developed drainage study report of airports inadequate and aged drainage system. (completed).

Design/Resident Engineer, Drainage Rehabilitation, W. K. Kellogg Airport, Battle Creek, Michigan

Provided engineering design for airport drainage system rehabilitation project, consisting of 19,000 linear feet of new storm sewer. (completed). Construction valued at \$1M.

Design/Resident Engineer, Airport Clearing and Mass Grading, W. K. Kellogg Airport, Battle Creek, Michigan

Oversaw clearing, grubbing and mass grading project. Grading consisted of approximately 150,000 yd³ of excavation. (completed).

Design Engineer, Runway 5/23 Lighting, W. K. Kellogg Airport, Battle Creek, Michigan

Provided engineering design for Runway 5/23 PAPI lighting project. (completed).

Design/Resident Engineer, Runway 5/23 Rehabilitation, W. K. Kellogg Airport, Battle Creek, Michigan

Provided engineering design for rehabilitation of Runway 5/23. (completed). Construction valued at \$600K.

Design Engineer, Taxiway "G", W. K. Kellogg Airport, Battle Creek, Michigan

Provided engineering design for Taxiway "G" reconstruction project. (completed).

Design/Resident Engineer, Airport Perimeter, W. K. Kellogg Airport, Battle Creek, Michigan

Provided engineering design for perimeter road and security fencing project. (completed). Construction valued at \$400K.

Design/Resident Engineer, Glide Slope Clearance, W. K. Kellogg Airport, Battle Creek, Michigan

Provided engineering design for glide slope clearance project, including clear or cut trees and remove objects within runway glide slopes and approach. (completed).

Design/Construction Engineer, Airport Facilities Improvements, W. K. Kellogg Airport, Battle Creek, Michigan

Provided engineering design for new parallel nested T-hangar project, Taxiway "D" and apron expansion project. (completed).

Design Engineer, Airport Layout Plan, Battle Creek International Airport, Michigan

Provided engineering design for a Kalamazoo airport layout plan set update in cooperation with Transportation Solutions, Inc. (completed).

Design Engineer, Airport Facility Improvements, Muskegon County Airport, Michigan

Provided engineering design new nested T-hangar, corporate hangars, and taxiway project. (completed).

Design Engineer, T-Hangar Apron, Muskegon County Airport, Michigan

Provided engineering design for aircraft parking apron, taxiway and the airport entrance drive extension. *(completed)*.

Design Engineer, Obstruction Clearing, Muskegon County Airport, Michigan

Provided engineering design for approach and touchdown zone obstruction clearing project. *(completed)*.

Design Engineer, Airport Layout Plan, Oceana County Airport, Shelby, Michigan

Provided engineering design for developing airport layout plan for Oceana County and for obstruction removal project. *(completed)*.

Design Engineer, Runway 8/26 Reconstruction, Oceana County Airport, Shelby, Michigan

Provided engineering design for reconstruction and widening of Runway 8/26. *(completed)*.

Design Engineer, Helipad Design, Cannon Township, Michigan

Provided engineering design for emergency helipad (Aeromed) and associated emergency access road at the township hall in Rockford. *(completed)*.

EMPLOYMENT HISTORY**DESIGN+, PROFESSIONAL ENGINEERING SERVICES, INC.**

April 7, 2019 – Present President

DILLON CONSULTING LIMITED

2014 – April 6, 2019 Project Manager

DELCAN CORPORATION

2010 - 2014 Project Manager, Water Division

PROCIVIL GROUP

2004 - 2010 Owner

ROOSIEN & ASSOCIATES

2001 - 2004 Project Manager

FOCUS ENGINEERING/FOCUS WASTEWATER MANAGEMENT SERVICES

2000 - 2001 Project Manager

REYNOLDS SMITH & HILLS INC.

1998 - 2000 Midwest Marketing Assistant/Project Manager, Airports

PREIN&NEWHOF P.C.

1990 - 1998 Project Engineer

PROFESSIONAL DEVELOPMENT

PCSWMM and SWMM 5.0 – Urban Drainage modelling, Delcan Corporation, 2013

Low Pressure Sewer Design, ProCivil Group 2004

Small Community Wastewater Treatment Design, Procivil Group, 2004

LEED Design Solutions (Civil), ProCivil Group, 2004

Mediation in the Construction Industry, Roosien & Associates, 2003

MDNR (MDEQ) and USACE Permit Training, Roosien & Associates, 1999

Municipal and Environmental Applications of GIS Using Arcview, Milwaukee Wisconsin, Prein&Newhof, P.C., 1998

Trenchless Technologies, Prein&Newhof, P.C., 1997

Metric Highway Design, Prein&Newhof, P.C., 1997

Highway Site Distance Design, Prein&Newhof, P.C., 1996

Transportation Software Certification (CPERKS), Prein&Newhof, P.C., 1995