

# SINGH

Mr. Holt has been involved in the design/development on over 100 different projects throughout the country with a primary focus on facilities. Mr. Holt has designed systems for distribution facilities, food processing facilities, retail stores, commercial and office spaces, ranging in size and complexity from 30,000 sf to 500,000 sf. Mr. Holt has designed systems pertaining to electrical power distribution, lighting and emergency lighting systems, fire alarm systems, telecommunications, security systems, and audio-visual systems. He possesses extensive experience providing coordination with building equipment connections, HVAC, fire protection, refrigeration, plumbing, and architecture.

## Education

Bachelor of Science Double Major: Physics & Electrical Engineering, University of Wisconsin, Milwaukee, 2002

## Licensing, Certifications + Memberships

PE | Illinois #062-068796 (2016)  
PE | Michigan #6201067736 (2018)  
PE | Ohio #PE.82342 (2017)  
PE | Virginia #0402056882 (2016)  
PE | Wisconsin #44953-6 (2016)  
ODOT Traffic Academy Highway Lighting Certification  
Illuminating Engineering Society (IES), Member  
National Fire Protection Association (NFPA), Member

## Industry Experience

17 years

*\*Resume reflects experience gained with a prior employer.*

## JUSTIN HOLT, PE

### SENIOR ELECTRICAL ENGINEER

#### Red and Purple Modernization Program | Phase One for Chicago Transit Authority

Red and Purple Modernization (RPM) Phase One, under the direction of the Walsh-Fluor Design-Build Team, will reconstruct the Lawrence, Argyle, Berwyn, and Bryn Mawr stations and the tracks and support structures for a mile adjacent to the stations. The project will also construct a Red-Purple Bypass to modernize the Clark Junction - the site of congestion where three train lines intersect. As Lead Communications Engineer, Mr. Justin Holt is providing engineering design for wayside communications system design, including temporary/relocation work, new fiber optic backbone. Mr. Holt provided the electrical engineering design for the CTA communications and vital/non-vital signal fiber optic backbone including the redundant fiber optic cabling system along both sides of the track. Developed fiber optic cable routing and conduit transition details. Additionally, Mr. Holt is providing QC review for the following electrical engineering and lighting design scope of work:

- Relay House DC-AC Inverter power supply.
- Manual and Automatic Transfer feeds (in association with inverters, used to provide secondary power source derived from traction power system).
- Switch point lighting at new interlockings.
- Right of Way and Signal monitoring CCTV camera systems.

#### Canal Street Viaduct Rehabilitation, Adams to Jackson | Chicago's Union Station MEP Utility Report for Chicago Dept. of Transportation

As MEP Project Manager, Mr. Justin Holt was responsible for overseeing the MEP design team assigned to the project. Additionally, Mr. Holt served as Lead Electrical Engineer responsible for the assessment of the existing conditions of the electrical systems located directly underneath Canal Street to be replaced by Chicago Department of Transportation. He provided review of As-Built drawings and performed overnight site observations identifying existing conditions and potential utility conflicts. SINGH developed a detailed report with recommendations for CDOT to consider as part of the Canal Street Rehabilitation project.

#### 41st Street and 43rd Street Pedestrian Bridges Aesthetic Lighting for Chicago Dept. of Transportation

Mr. Justin Holt served as Lead Electrical Engineer assigned to research available LED rail lighting products and color changing LED flood lighting systems and controls for the 41<sup>st</sup> and 43<sup>rd</sup> Street Twin Pedestrian Bridges over Lakeshore Drive in Chicago's Oakland neighborhood. 41<sup>st</sup> and 43<sup>rd</sup> Street Pedestrian Bridges won an international design competition held by the City of Chicago. They feature double-curved arch mono-trusses to form large, graceful S-curves. SINGH's scope of work included PS&E document preparation for railing mounted LED lighting design for pedestrian path, architectural light pole design for supplemental lighting along the path, RGB color changing aesthetic bridge structure lighting, Metra medium voltage overhead transmission lines communication lines relocation to avoid conflicts with new bridge, CDOT's medium voltage transclosure design, and modification to Lake Shore Drive highway lighting.

#### Multi-Modal Facility at O'Hare International Airport for Chicago Dept. of Aviation

SINGH provided concept plans, specifications, and design guidelines for the O'Hare International Multi-Modal Facility that consists of a 5-story parking facility featuring 6,900 parking spaces for public parking, rental car counters and customer lobby, as well as a 3-story, 240,000 sf Quick Turn Around (QTA) facility including wash bays and fueling stations for the rental cars. Located on 37 acres with convenient access to the existing Metra Station and the new station for the extended Airport Transit System (ATS), the design-build project included the

new ATS station, ATS Maintenance and Storage facility, ATS support building, and traction power substation. Mr. Holt provided fire alarm layout and site lighting design for the project, coordinated power requirements with HVAC and plumbing plans, coordinated power requirement for overhead doors, powered sliding doors, signage, and car rental equipment. He reviewed submittals, replied to RFI's, and performed Final Punchlist inspections and project close-out documentation.

### **Electric Bus Study for Ames Transit Agency (CyRide)**

As Project Manager, Mr. Justin Holt is responsible for the evaluation of the cost associated with the construction and installation of heavy-duty battery electric vehicle charging equipment for CyRide. SINGH will review existing conditions, develop conceptual design for modifications needed to accommodate electrical infrastructure to power and install the new charging stations. Additionally, SINGH will prepare cost estimates for two (2) concepts including installing the chargers as a retrofit in the current garage and incorporating the chargers in the design and construction of a new garage facility.

### **Dubuque Maintenance Facilities, Dubuque, IA for Iowa Dept. of Transportation**

Mr. Holt is serving as Project Manager for the full Mechanical, Plumbing, and Fire Protection design for a 35,000 sf Maintenance Garage (with 29 stalls). The project scope includes a Life Cycle Cost Analysis for domestic hot water systems and HVAC systems consisting of up to four (4) energy models of design concepts. The chosen design concept will be engineered including load calculations and equipment layouts through Final PS+E including: HVAC systems, exhaust systems, in-floor radiant heating system, floor drains with oil-water separator, and sprinkler system. Coordinated with Iowa DOT, Architects, and the design team to ensure project schedule and objectives were met.

### **Maintenance Facilities Site Design Upon Request, Various Locations for Illinois Tollway**

Mr. Justin Holt, Project Manager and Lead Electrical Engineer, is responsible for the electrical engineering design services associated with new facilities at Plaza 99 and M-8 (a Greenfield site with a maintenance facility, truck wash building, salt barn and fuel island and additions and renovations at sites M-2 and M-14. Design services included: fiber optic backbone cabling, inter-building telecommunications horizontal cabling, PA system equipment and speakers, Wireless Access Points, Interior and Exterior IP Cameras. SINGH provided complete plans and specifications for construction and construction support. Engineering design services were performed in accordance with NEC and Tollway Design Standards. Additionally, SINGH coordinated with the Lead Civil Engineer, Architect and MEP design team to develop three (3) estimates per project and oversaw the MEP|FP construction cost estimates provided by the in-house Mechanical Team.

### **Naperville Maintenance Yard Vehicle Storage Building for Capital Development Board**

Mr. Justin Holt is serving as Project Manager and Lead Electrical Engineer for the mechanical, electrical, and plumbing (MEP) design of a new Vehicle Storage Building (VSB) at the Naperville Maintenance Yard for the Illinois Department of Transportation. SINGH's provided Final PS+E and construction support including:

### **Airport Maintenance Complex (AMC) Improvements at Midway International Airport for Chicago Dept. of Aviation**

SINGH is providing MEP engineering design services for the AMC located at Chicago's Midway International Airport. SINGH's scope of work included an assessment of the existing HVAC and emergency power system equipment and verification of code

- Provide new electrical service for the VSB. areas and support spaces
- Air compressor, dryers and piping for hangar/service pit and workshop areas for tools, equipment, and aircraft pneumatic system. • Trench drains in the vehicle storage areas with combination sand/oil separator.
- Plumbing design for vehicle storage areas, bathrooms, break-rooms, vending machines, janitor closets and other miscellaneous areas with sinks. • LED interior general lighting and emergency lighting and exit signs and lighting controls.
- Natural gas fired infrared/unit heaters for vehicle storage • General power (duplex receptacles).
- Power connections for all MEP|FP systems and equipment.

compliance. As Electrical Engineer, Mr. Justin Holt provided the following services:

- Electrical load calculations
- Specify new standby generator and switchgear
- Energy efficient MEP design for the new pre-fabricated vehicle storage building that meets Building Code and SAM guidelines

## **McGiffert House Renovation - Phase 2 for University of Chicago**

Mr. Justin Holt, Project Manager, is responsible for the management of the SINGH project team in the development of demolition plans and the design of new HVAC, new fire alarm system; new security system including key card access to the main building, all floors and elevators; and new chiller system for the University of Chicago's McGiffert House. The facility currently houses the Seminary Co-Op Bookstore on the ground floor and is being renovated from its previous use as housing to accommodate classrooms and offices for the Chicago Booth School of Business. SINGH is providing MEP and lighting design engineering services for Phase 2 of the renovation which includes: the demolition plans and Final MEP PS+E for the 1st and 2nd floor renovation, Final MEP PS+E for the 3rd floor renovation, and HVAC system commissioning.

## **95th Street/Dan Ryan Terminal Improvement for Chicago Transit Authority**

SINGH provided MEP engineering design services for the 95th Street Terminal Improvement project that will expand and improve the 95th Street Station (located at the south terminal of the CTA Red Line). The station serves thousands of customers a day and is a vital part of intermodal transportation on the South Side of Chicago. Mr. Justin Holt provided MEP QA/QC review.

## **31st Street Parking Lot Expansion for Chicago Park District**

As Lead Electrical Engineer, Mr. Justin Holt researched available analog and IP camera options to replace the out dated parking lot camera system. He contacted multiple manufacturer's to select options to present to the client. Mr. Holt designed the IP camera system to replace the old analog cameras. The project included expanding the parking lot, updating the existing parking lot pole lights to LED fixtures and adding motorized gate operators. Additionally, he performed lighting calculations to ensure customers' requirements were met, including: plans, circuiting, schedules, installation details, specifications and construction cost estimates for proposed lighting, cameras and gate operators.

## **Touhy Avenue Improvements for Cook County Dept. of Transportation & Highways**

Serving as Electrical Engineer, Mr. Justin Holt is providing lighting design for the roadway improvements of Touhy Avenue, between Elmhurst Road and Mt. Prospect Road. The Touhy Avenue (IL-72) corridor construction is associated with the Elgin O'Hare Western Access (EOWA) project as part of the Illinois Tollway's *Move Illinois* Program.

## **Veterans Memorial Tollway (I-355) Roadway Widening; 71st Street - 75th Street for Illinois Tollway**

Mr. Justin Holt served as Electrical Engineer for the preparation of Intelligent Transportation Systems (ITS) concept design and report including analysis and recommendations for the maintenance of existing ITS equipment via relocation/redirection; determination of proposed ITS equipment locations; the construction sequence for proposed equipment and maintenance of existing equipment.

## **Van Buren Street Station Rehabilitation for Metra**

SINGH, as a subconsultant, is providing mechanical, electrical, and plumbing engineering design for the Van Buren Street METRA Station facility, the rehabilitation and reconstruction of the ticket office, and renovations to vendor spaces. As Project Manager/Electrical Engineer, Mr. Holt is responsible for providing engineering design and Final PS+E for electrical replacement systems and lighting design. Lighting design for the terminal will consist of calculations, layout, and circuiting for the station facility and platform as well as coordinating the lighting fixtures with Metra and the historic preservation consultant.

## **I-94/US 41 Smart Highway Corridor Design Preliminary (Phase I) Lighting Assessments for Illinois Dept. of Transportation**

As Electrical Engineer, Mr. Justin Holt assisted with the Preliminary (Phase I) lighting assessment study of the Smart Highway Corridor. The Lighting Study evaluated the existing HPS lighting system and considered the performance measures of an LED system that could meet or exceed HPS standards.

## **MEP|FP Systems Evaluation and Scope Development for Chicago Public Schools**

Mr. Justin Holt, Project Manager, was responsible for the SINGH Project Team for the MEP|FP systems assessment and recommendation reports for Deneen Elementary School and Stevenson Elementary School. Based on the survey of existing systems, SINGH prepared individual Recommendation Report that included a tiered based list of recommendations taking into consideration budget, schedule and the individual school's needs. Included in the Recommendation Report was a detailed renovation scope and detailed Order of Magnitude scope developed by SINGH.

## **Lake View High School for Chicago Public Schools**

As Project Manager and Lead Electrical Engineer, Mr. Justin Holt was responsible for the electrical design associated with the interior renovations of the lunchroom, kitchen, employee breakroom and gyms. He performed photometric calculations for new interior

and exterior LED lighting and developed equipment and fixtures schedules. SINGH provided complete plans and specifications for construction and construction support.

### **Fire Alarm Panel Assessment + Replacement for Chicago Public Schools**

Mr. Justin Holt served as Project Manager for the on-site evaluations, assessment, and Recommendation Report of the existing fire alarm systems for fifteen (15) Chicago Public School campuses. Based on the results of the assessment surveys, SINGH was directed to proceed with the engineering design for fire alarm replacements at Libby Elementary School, Alexander Graham Elementary School, and Budlong Elementary School and Annex1. SINGH provided code evaluation, final PS+E, and construction administration services for the second phase of the project.

### **Vel R. Phillips Juvenile Justice Center Parking Lot for Milwaukee County**

SINGH was responsible for the preliminary lighting layout, photometric evaluation, lighting calculations, and production of Final Lighting PS+E. Mr. Holt provided electrical submittal review.

### **Luminaires Auto Dimming Pilot Project - College Avenue Park N Ride Lot for Wisconsin Dept. of Transportation**

As part of this pilot project, the Wisconsin Department of Transportation is exploring options to retrofit existing HPS luminaires with LED lights with auto dimming capabilities for the College Avenue Park N Ride Lot. Mr. Holt served as Project Engineer providing research of available wireless lighting control products for exterior pole lights. He prepared photometric calculations and prepared technical reports and supporting documents.

### **Mitchell Interchange and Tunnel Lighting + Statewide Tunnel Lighting Policy for Wisconsin Dept. of Transportation**

As Project Engineer, Mr. Holt provided research, field investigation, and calculations to determine if the Mitchell Interchange Tunnel lighting system was operating as designed. He investigated alternative lighting options to improve operations and maintenance. The project scope also included the development of a statewide tunnel lighting policy based on an investigation of existing tunnel lighting systems currently in use in Wisconsin and under the jurisdiction of WisDOT. SINGH will draft the Statewide Lighting Policy in coordination with WisDOT preferences.

### **Hoan Bridge Rehabilitation, I-794 for Wisconsin Dept. of Transportation**

Mr. Holt was the Lead Electrical Engineer assigned to review the Hoan Bridge original aesthetic lighting flood light design and the proposed linear color changing LED options. The Hoan Bridge Rehabilitation project consisted of the evaluation and design of free-way and structure lighting. Mr. Holt was responsible for researching the feasibility of changing the design from the proposed LED flood lights to linear LED fixtures mounted along the bridge's arch. Additional project responsibilities included: coordination with a local lighting designer regarding the proposed linear concept, preparation of revised plans and specifications, and preparation of construction cost estimates for the proposed linear LED fixtures.

### **US 101 | Arch Cape Tunnel Lighting Replacement for Oregon Dept. of Transportation**

Mr. Justin Holt served as Electrical Engineer for the repair and replacement of existing lighting, fixture supports and mountings for the Arch Cape Tunnel located on the Oregon Coast Highway (US 101). The project included: complete replacement of the existing tunnel (1,228 feet) lighting system within tunnel portals including luminaires, wiring, wire-ways, support systems, and anchors attached to the structure; replacement of the flashing beacon light and signage system and relocation of push-button for pedestrian and bicyclist travelers; and electrical engineering design for the utility service and power cabinet.

### **Structured Cabling Upgrade at Southern Wisconsin Center (SWC) Campus for WI Dept. of Facilities Development**

As Project Manager, Mr. Justin Holt is providing engineering design services for the interior structured communication cabling upgrade at several facilities located at the SWC campus in Dover, WI. The project scope of work includes a detailed assessment of the existing Electrical, HVAC, and Communications systems to identify the required modifications associated with upgrade. Based on the results of the assessment SINGH will provide Preliminary Plans, Specifications and Estimates (PS+E), Design Report, and Final PS+E for the project.

### **14th Street (STH 28) Bridge over Sheboygan River for City of Sheboygan**

As Electrical Engineer, Mr. Justin Holt was responsible for the evaluation of the existing lighting and design of roadway lighting system for 14th Street Bridge that complied with WisDOT requirements and City of Sheboygan Standards. He performed photometric evaluation of the roadway, walkway, and under deck lighting to verify proper layout. Additionally, Mr. Holt performed voltage drop, wire size, and equipment size computations and developed Final Lighting Plans and Details.

## **Power/Fiber Underwater Feeder – Norfolk, VA for Naval Facilities Engineering Command (NAVFAC)**

Mr. Holt served as the Lead Electrical Engineer and Assistant Project Manager for the development of plans, installation details, specifications, and construction cost estimates to re-feed an existing exterior panelboard with a new underwater feeder. The new feeder was underwater rated with combined power/fiber in a single bundled cable. The fiber was designed to be utilized in a future camera project.

## **Replace Existing Cameras System – Norfolk, VA for Naval Facilities Engineering Command (NAVFAC)**

Mr. Holt was the Lead Electrical Engineer and Assistant Project Manager assigned to research available IP cameras to replace an out dated analog camera system. He performed a site visit to assess the existing conditions and coordinated with multiple manufacturers to identify products to meet the Client's requirements. Mr. Holt designed an IP camera system to replace the old analog cameras and prepared plans, circuiting, schedules, installation details, specifications and construction cost estimates.

## **Freistadt All-Temp Warehouse/Office Building, Germantown, WI\***

Mr. Justin Holt was responsible for a complete electrical design including electrical power distribution, fire alarm system and the exterior site lighting, interior office and warehouse lighting design and general building power connections for the 58,000 sq warehouse. The design included coordination for a 2000A service with WE Energies. Service was designed as 2000A switchboard with an exterior generator termination cabinet to provide provisions for a future portable generator. Coordination was provided with the local telecom utility and owners IT representative to provide incoming telephone/data and rough-in locations throughout the facility. Emergency lighting design included a 6KW, 277V single phase inverter. Warehouse lighting consisted of 6-lamp 54WT5HO Highbay fluorescent fixtures. Final coordination was provided with HVAC, plumbing, refrigeration and fire protection designers.

## **Sargento Foods – Plymouth, WI\***

Mr. Justin Holt has been involved on five (5) design projects from 2004 to 2013 for Sargento Foods. Projects consisted of interior remodels and additions. Over the years new lighting technologies have been introduced into their facility. The lighting system has progressed from PSMH Highbay/Lowbay fixtures to induction Highbay fixtures and LED fixtures. Projects have included the design for two (2) inverter systems to provide emergency lighting throughout warehouse. The most recent project included the designed of a new 2000A switchboard to service the automated storage and retrieval system (ASRS) addition. The addition consisted of two (2) ASRS systems; one was 75 feet tall the other was 40 feet tall. Multidiscipline coordination has been required on all projects.

## **Reinhart Foodservice – Essex, VT : 124,800 sf Greenfield – Warehouse/Office Building\***

Mr. Justin Holt was responsible for the coordinated with Green Mountain Power to provide a 2500A 277/480V 3 phase service. The service was designed as a 2500A switchboard with automatic throw-over interlocked to a 1000KW backup generator. The project also included the electrical design for the exterior site lighting and interior office and warehouse lighting, general building power and fire alarm. Coordination was required for power connections for HVAC, plumbing, refrigeration and fire protection equipment. This facility was designed as a LEED project. The lighting system consists of all LED fixtures throughout the facility including the site lighting.

## **US Foods – Presentation Kitchen Remodel Project\***

Mr. Justin Holt was the lead electrical engineer involved on ten (10) kitchen remodels across the United States. He performed preliminary site surveys to assess the existing electrical conditions and available capacity. The project consisted of creating a corporate wide standard for their presentation kitchens around the country. The standard included the design development for decorative lighting around the demonstration kitchen hood which consisted of pendant lights, spot lights, downlights and under counter LED strip lights. The project also included redesigning the existing fire alarm systems, telecommunications, security systems and audio-visual systems. Internal coordination was required for power connections for HVAC, plumbing and kitchen equipment. Final construction drawings and specifications for five (6) of the kitchens have been delivered to US Food.

## **US- Foods – Zebulon, NC – 130,000 sf Warehouse addition\***

Mr. Justin Holt surveyed the existing facility to field verify existing conditions and investigate spare capacity to accommodate the addition. Coordination was required with the local utility to relocating the transformers primary underground power feed to accommodate the expansion. The project included the design for the power distribution for the addition, new exterior and interior lighting to match existing. The emergency lighting was designed with battery units to match existing. Coordination was required for power connections for new HVAC, plumbing, refrigeration and fire protection equipment. This project also required modifications to the existing fire alarm, telecommunications, and security systems for the addition.

**Martin Brower – Conroe, TX: 161,000 sf Greenfield – Warehouse/Office Building and Truck Maintenance Facility\***

Mr. Justin Holt was responsible for the electrical design including interior and exterior lighting, fire alarm general building power. Coordination was required to provide all power connections as required from all HVAC, plumbing and refrigeration systems. He assisted on the design and coordination for a 4000A service. Stand-by power was provided with two parallel generators. The project also included a 60KW emergency generator with automatic transfer switch to provide emergency lighting. Exterior and interior photometric calculations were performed to meet design guideline specifications. Interior warehouse lighting system utilized 6-lamp 54WT5HO Highbay fluorescent fixtures. Lighting control panels were provided to control the all exterior and interior lighting.

