





SRF No. 0148483 County Project No. 091101

CSAH 112 – Phase 1 Project Advisory Committee (PAC) Meeting January 21, 2015; 8:00 am – 10:00 am Orono City Hall MEETING RECORD

A project PAC meeting for the referenced project was held at the Orono City Hall on January 21, 2015 from 8:00 a.m. – 10:00 a.m. The following is a summary of the meeting based on the Agenda, which is attached to this record:

Meeting Summary:

1. Introductions:

Nate Will opened the meeting. Introductions were made as several new people were present. A copy of the meeting sign-in sheet is attached to this meeting record.

2. Review of December 17, 2014 Project Advisory Committee Meeting Record

Nate asked that any comments on the Meeting Record from the December 17, 2014, meeting be sent electronically to him at SRF. No specific comments were provided by the PAC. Nate will post the meeting record on the project website at www.CSAH112.com on the status page.

3. Review of Previous Action Items:

The following action items were reviewed. Any items shown in grey require additional action, which is added to the action items from this meeting below.

Task	Responsible	Due	Resolution
	Party	Date	
SRF to explore options for implementing	Nate Will	2/18/15	
screening such as trees along the bike path from			
Mill Street to Martha Lane.			
SRF to prepare memorandum to document	Nate Will	2/13/15	
decision for constructing the Rapid Rectangular-			
Flashing Beacon (RRFB) at intersection of			
CSAH 112 and Mill Street.			

Task	Responsible Party	Due Date	Resolution
SRF to update project website (www.csah112.com) to include meeting record for PAC meeting held on 11/19/14.	Mike Turner	12/23/14	Completed
SRF to review the traffic signal design and guidance for implementing Flashing Yellow Arrow (FYA) traffic signals at Lake Street and Brown Road intersections with 112.	Nate Will	1/21/15	Completed
City of Long Lake to develop and pass resolution to ban parking along both sides of Martha Lane and along Symes Street adjacent to the Nelson Lakeside Park.	Scott Weske	2/28/15	
SRF to review proposed cross sections along the Long Lake bank stabilization area and determine if possible to maintain traffic along CSAH 112 throughout construction.	Nate Will	2/1/15	Ongoing, see Item 4.d below
The City will provide a contact name, phone number and address for the final delivery location of the light poles to be salvaged.	Scott Weske	2/28/15	
SRF to develop lighting design and layout of lighting units to provide recommended lighting along 112.	Nate Will/ Michael Jischke	1/21/15	Completed, see discussion below

4. Discussion Items:

a. Review street lighting layouts and recommendations

Nate Will briefly summarized the lighting discussion from the December 17 PAC meeting and the direction received from the PAC to use the same LED lighting units (25-foot, tear drop style, black, with options to mount flags, banners, planters and electrical outlets) as previously used by the City of Orono along CSAH 15 in Navarre. He mentioned that SRF was charged with developing an initial lighting layout, using the 25-foot LED poles, along the corridor which was divided into three distinct areas from the west termini to the east termini of the Phase 1 project. These areas are Willow Road – Brown Road, Brown Road to Martha Lane, and Martha Lane to Cemetery Road.

Michael Jischke presented the lighting layouts, which include both a typical section and plan view layout for each of the three areas within the Phase 1 project area. He mentioned that the proposed LED lighting will be viewed as "cooler" lighting versus the "warm" lighting emitted by the existing high pressure sodium (HPS) lighting. A copy of the lighting layouts are attached to this meeting record.

1. Area 1 – Willow Road to Brown Road – Intermediate Category (1.0 foot candle) – Michael described the lighting for this section which proposes 25-foot light poles (120watt) with a 280-foot staggered spacing. The proposed location of the light poles is

within the boulevard between the curb and trail/walk. He indicated small refinements of the spacing and pole locations would be completed as the design progresses to reduce impacts to underground utilities and adjust for entrances. The PAC agreed that the design for Area 1 should progress forward based upon the information presented.

2. Area 2 – Brown Road to Martha Lane – Commercial Category (1.4 foot candle) Michael described to the PAC that based upon discussion at the previous Project Management Team (PMT) meeting, the PMT requested SRF to review three options for lighting through Area 2 (Downtown Long Lake) and report the findings to the PAC. SRF focused on a representative area between Lake Street and Mill Street for the three studies:

Option A (25-foot tall lights)

Michael explained this option which proposes 25-foot tall lights (120watt) with a 240-foot staggered spacing. For this city block, four (4) lights are required, excluding the units shown at the intersections of Lake Street and Mill Street. He mentioned this option would match the light pole height proposed in the Intermediate and Residential categories.

Liz Olson mentioned that she believes there may be four (4) existing light poles within this block, which is similar to what is shown in Option A. (Per a follow-up review of survey information, there are four [4] existing HPS acorn 15-foot tall lights, not including lights at intersection, within this block.)

Michael explained that this option meets the roadway lighting design requirements for the commercial category including lighting of the adjacent walks.

Option B (15-foot tall lights)

Michael described the proposed streetscape cross section which shows the 15-foot tall lights (80watt) with a 160-foot staggered spacing. For this block, six (6) lights are required, excluding the units shown at the intersections of Lake Street and Mill Street. He mentioned this option uses a reduced wattage fixture and the actual fixture is slightly smaller as compared to the 25-foot lights. Michael explained that by using a 15-foot tall light, the light fixture will be more visible to people at sidewalk level and would promote a more walkable downtown feeling as opposed to the 25-foot tall lights.

Option C (Alternating 25-foot and 15-foot tall lights)

Michael explained the option of using alternating 25-foot and 15-foot tall lights (hi/low). It was noted that this option proposes the six (6) lights, which is the same as Option B. The PAC ruled out Option C.

The PAC discussed Option B as compared to Option A and favored Option B since it differentiates the height of lighting between the Intermediate (25-foot tall lights) and Residential (25-foot tall lights) and promotes a walkable downtown character. The PAC selected Option B as the preferred option for lighting from Brown Road to Martha Lane.

Nate Will mentioned that the proposed lighting at the intersection of Lake Street and Brown Road would be mounted to the traffic signal poles and would follow the County's LED standards. Based upon subsequent coordination with Hennepin County, the LED luminaries will be mounted at the standard height of 40 feet. The lighting fixture style will be different than the style proposed for use on the 25-foot and 15-foot poles used for roadway lighting in Phase 1. The County's standard luminaire for signals will match a fixture listed on the MnDOT approved products list. Based upon design guidance, there will be luminaries installed on the four signal poles at the Brown Road and Lake Street intersections. He noted that for Options A, B and C, that 25-foot tall lights are shown at the intersection of Mill Street for intersection lighting. The PAC questioned if 15-foot tall lights could be used instead of the 25-foot tall lights at the Mill Street intersection.

3. Area 3 – Martha Lane to Cemetery Road – Residential Category (0.7-foot candle)

Michael briefly described the past discussion and direction received from the both the PAC and PMT to explore two options for lighting in the Residential category.

Option A (25-foot tall lights both side of CSAH 112)

Michael explained this option which proposes having 25-foot tall lights (80watt) with a 240-foot staggered spacing. This option meets the design goal of 0.7-foot candle (Fc) and uniformity of 4:1. He mentioned that using the staggered option (lights on both sides of CSAH 112) may increase the perception that light is more visible on the lake and from across the lake.

Option B (25-foot tall lights Lake side only)

Michael described Option B which proposes 25-foot tall light (80watt) with a 120-foot spacing installed along the lake side only. He explained that by installing the lights along the lake, the majority of the light is cast (south) across the road. To further reduce light spill over to the lake, a shield would be installed on the light fixture to cut off light directed northward.

The PAC discussed both options and selected Option B, lights along the lake only, as the preferred option since it minimizes the perception of lighting on or across the lake. Donny requested technical specifications for the proposed light fixtures including the proposed shield/cut-off device.

Liz Olson mentioned that it would be nice to see lighting along the trail, from Martha Lane to Cemetery Road, to encourage pedestrians to use the trail, especially to the planned new business being constructed at the former Billy's Lighthouse. Nate mentioned there wouldn't be lighting along the trail in the selected option.

Nate mentioned that intersection lighting would be reviewed at the CSAH 112/Wolf Pointe Trail intersection using the 25-foot tall LED lights. It was noted that the lighting in the Phase 2 project (Wolf Pointe Trail east to Wayzata Boulevard/TH 12) would be focused at intersections rather than roadway lighting such as proposed in Phase 1.

The PAC discussed the possibility of light glare or visibility, perceived from residents in the apartments, of the proposed lights along the lake side between Martha Lane and Cemetery Road. It was noted that generally the light will be cast downward and across the road toward the apartments. The proposed light fixture has the LED light source hidden up in the fixture; however, it's possible that someone living on the first or second floor may notice it. There is existing site lighting on the apartment property, and there is a line of trees buffering it from the roadway.

b. Discuss retaining wall locations, wall types, aesthetics, textures and colors.

Nate presented a project layout that showed proposed location of retaining walls in the Phase 1 project area. He described the type of retaining wall (cut or fill) and material type which includes either cast-in-place concrete (CIP) or prefabricated modular block wall (PMBW) units. Mike Turner explained the construction differences for PMBW which includes using either dry-cast or wet-cast concrete mixes cast into various forms to create the textured block units. This project is planning to use the wet-cast, which are less susceptible to freeze/thaw processes, salt damage, and typically, are constructed in larger block units. Nate explained that using PMBW walls, for the shorter exposed walls, construction impacts and costs are minimized for the smaller footing sizes. See copy of retaining wall layout attached to this meeting record.

Mike T. presented a figure showing existing local architectural precedents that SRF used to develop several options for the retaining walls in Phase 1. He described the "fieldstone" formliner used on the Luce Line Trail Bridge and TH 12 structures. Mike T. described how the Phase 1 project area is separated from TH 12 architecture and encouraged the PAC to consider looking at other textures and options instead of the fieldstone surface treatment. It was noted that a realistic fieldstone color treatment can be difficult to do successfully especially where people will see it up close. Most of the TH 12 features are seen from a distance at higher rates of speed. See copy of the preliminary retaining wall patterns and colors attached to this meeting record.

Michael described how formliners are used to create textures that are integral to the CIP wall such as the "Random Cut Stone" photo presented to the PAC. He mentioned that most PMBW manufacturers have forms that match similar formliners to create a "uniform" appearance through the Phase 1 project area while allowing the wall types to switch from CIP to PMBW.

Michael presented the proposed CIP wall aesthetics which include an architectural coping, brick veneer accent border (both sides), "Random Cut Stone" formliner texture (8-inch high blocks) and multi-color stain (Minnesota Limestone Appearance). The CIP wall will include an integral concrete parapet to protect vehicles and a railing (black color to match lighting) above the parapet to protect pedestrians. A CIP wall is planned for use along the south side of CSAH 112 at the Long Lake Creek crossing and a second CIP wall is proposed along the north side of CSAH 112 just east of Martha Lane.

Michael presented a graphic showing a proposed PMBW (fill condition) that would be used along CSAH 112 adjacent to the property that includes the Lakeside Wine and Spirits. This wall would not require a parapet, since traffic speeds are considered slow (30mph); however, a full railing connected to precast cap block would be used to closely match the CIP walls. The exposed wall height for this wall is approximately 2-3 feet.

Michael presented another graphic showing a proposed PMBW (cut condition) that is proposed along CSAH 112 adjacent to the Long Lake Town Center Shopping Center. This wall would replace the existing smaller "dry-cast" wall that supports the existing landscape area and parking lot along CSAH 112. He explained how this wall would include a precast cap and suggested a railing above the cap for fall protection. Mike further described how the railing would serve as screening between the parking lot and the roadway. Another benefit of providing the railing along this property would direct pedestrian traffic to use either the proposed pedestrian flasher at Mill Street or the traffic signal at Lake Street; rather than simply crossing CSAH 112 mid-block between the Mill or Lake Street intersections. It was noted that additional right-of-way or permanent easement may be needed for this retaining wall since the right-of-way line is at the face of the existing wall. The PAC was agreeable to considering purchase of the right of way needed along Town Center Shopping Center as this would allow for routine maintenance by the agencies (County or City) rather than by the private landowner. Kristy Morter mentioned that purchase of right of way is covered in the County's Cost Participation Policy at 50/50 split. She mentioned it may be possible to have this covered 100% in the Turnback process.

In summary, the PAC agreed to the proposed wall types and aesthetic appearance. SRF will bring color samples and texture recommendations to the next PAC meeting for further detailed review.

c. Discuss potential streetscape features for consideration in Phase 1

Michael Jischke presented several graphics showing the existing streetscape conditions in downtown Long Lake; streetscape precedents and potential downtown streetscape features. Copies of these graphics are attached to this meeting record.

Michael requested input from the PAC on the types of streetscape features they would like to consider in the Phase 1 project area. He described different streetscape features such as colored concrete, pavers, trees, tree-grates, benches and other items that might be considered for use through downtown Long Lake.

Michael presented streetscape plans for two typical areas that depict streetscape options for downtown. He described the difference between the potential "furnishing zone/tree trench" and the "property frontage/walk" areas. It was noted that the existing right of way line along the northeast side of CSAH 112, from Mill Street to Lake Street, is approximately 4-6 feet from the front of most of the existing buildings.

A general discussion occurred from various members of the PAC. The City of Long Lake is not in favor of proposed trash receptacles, in downtown, since they do have a contract for city collection. The PAC discussed snow removal concerns with potential bicycle racks and planter urns. The City of Long Lake envisions "clean corners" at the intersections of CSAH 112 at Lake Street and Mill Street that minimize visual and physical obstructions. It was noted that there is an existing bus stop at the southeast corner of the CSAH 112/Lake Street intersection.

Jim Cornick asked if this project included options for implementing raingardens in the project area. Mike Turner responded that raingardens offer unique design challenges and require significant maintenance in areas where high pedestrian traffic is expected, such as the downtown area. Mike mentioned that there may be opportunities elsewhere along the project, such as west of Brown Road to maintain or provide rain garden features.

Some of the pros and cons of street trees were discussed including potential visual impacts to adjacent buildings and maintenance requirements. The trees proposed would be planted in structural soils that enable the rooting zone to extend beneath the pavement. Trees would need to be "limbed up" as they grow to provide adequate visibility and prevent obstructions to the roadway.

The PAC requested SRF to layout the lighting based upon 15-foot tall lights and develop a proposed streetscape layout showing how the vertical elements (lighting and trees) would look from Brown Road to Martha Lane. Also, the PAC inquired about the potential of the Brown Road Gateway Area and what proposed streetscape features might be considered at this intersection.

d. Discuss construction staging and road closure

Nate presented a graphic showing a proposed cross section that represents the shoreline restoration along CSAH 112 adjacent to Long Lake. A copy of this graphic is attached to this meeting record.

Nate described the proposed excavation work which includes removal of existing trees, riprap, cable guardrail and existing pavement. He further explained that approximately 18-feet swath of the existing embankment will be excavated and removed in order to construct the engineered reinforced soil slope (RSS) along the south end of Long Lake adjacent to CSAH 112. In order to perform this excavation, the contractor will need to first install steel sheet piling several feet out into the actual lake to serve as a cut off between the lake water and excavation zone. Nate mentioned that this work would likely be done using a large crawler mounted crane and a vibratory hammer to install the sheetpile. Once the sheetpile is installed, the contractor will excavate the embankment using a large excavator "backhoe". The RSS will be constructed in a dry condition; hence, dewatering behind the sheetpile cut off wall will be necessary. Nate explained construction sequence of the RSS which includes layer of geogrid fabric, granular backfill, storm sewer and riprap placement.

Nate explained how these materials will be imported and exported from the project via the remaining roadway width north of the existing trail. He explained that once the RSS is constructed to a specific elevation, the contractor would likely remove the sheetpile cut off wall using the large crane and vibratory hammer. Nate described the minimum staging area needed for the contractor as generally being the existing roadway width. He pointed out potential safety concerns with attempting to convey traffic along the area adjacent to the RSS construction based upon the equipment and work area required by the contractor. Nate mentioned that SRF will continue to review the staging options including potential closure durations and options to allow traffic through the corridor.

5. Update of ongoing design efforts

- i. Geotechnical Investigation/Coordination
- ii. Utility Coordination and Mapping
- iii. Environmental Investigation

Nate reported the three items listed above are underway and the field work and soil borings are expected to be completed in early February 2015.

6. Open Discussion

Speed Limits

Jim Cornick asked about the proposed speed limit reduction indicated on the layout. Mike Turner explained that speed limits cannot be simply changed. Rather, through previous coordination with MnDOT, the County is being allowed to design the CSAH 112 corridor to promote safer and efficient transportation while balancing the needs and desires of the local community. Reduced lane widths, adding walks, increased sightlines and pedestrian

improvements all support reduced speeds. Mike T. explained that Phase 1 will likely post the speed limit signage at the design speed which vary from 30 to 40 mph. After the project is completed and traffic has become acclimated to the corridor, a speed study would be conducted and the 85-percetile speeds will be evaluated.

Trail Lighting along Lake Street and Symes Street

Nate Will asked the PAC for input on considering lighting along Lake Street and Symes Street for the proposed trail that will be constructed along both streets and eventually connect to Martha Lane. He mentioned that there are several existing lights, generally mounted to existing power poles, near the corners of Lake/Symes and Symes/Mill intersections. Nate asked if the PAC wants to consider lighting along the trail. Kristy Morter mentioned lighting specific to trails outside of the County right of way would be 100% local funding, in this case, 100% funded by the City of Long Lake.

7. Follow Up Items/Action Items:

For tracking purposes, we have assigned a responsible party and a due date for completing the following action items, which were identified at the meeting:

Task	Responsible Party	Due Date
SRF to update project website (www.csah112.com) to include meeting record for PAC meeting held on 12/17/14.	Nate Will	1/30/15
SRF to provide copy of technical specifications, to Donny Chillstrom, for the LED light & shield (cut-off) for the proposed fixtures for use on the 15-foot and 25-foot light poles.	Nate Will	2/13/15
PAC members are to think about potential lighting or waypoint lighting for trail along Lake Street/Symes Street and trail connection from Mill Street to Martha Lane. Consider upgrading to LED or using salvaged poles with costs funded 100% by City of Long Lake.	PAC	2/18/15
SRF to bring sample colors and texture recommendations for the proposed retaining walls and concrete walks to the February PAC meeting.	Michael Jischke	2/18/15
SRF to review the Brown Road Gateway Area and be prepared to discuss options for streetscape at the February PAC meeting.	Michael Jischke	2/13/15
Scott Weske to research the tree replacement requirements for the City of Long Lake and report back at the February PAC meeting.	Scott Weske	2/18/15
Review existing private lighting at apartment building entrances to determine if it remains as is or is impacted with construction.	Nate Will	2/18/15
SRF to layout proposed streetscape elements including light poles, potential trees and areas of colored concrete from Brown Road to	Michael Jischke	2/13/15

Task	Responsible Party	Due Date
Martha Lane for presentation to the February PAC meeting.		
SRF to layout lighting design using 25-foot poles from Willow Drive to Brown Road; 15-foot poles from Brown Road to Martha Lane; 25-foot poles from Martha Lane to Cemetery Road; and 25-foot poles at the intersection of CSAH 112/Wolf Pointe Trail	Nate Will/ Michael Jischke	2/6/15

8. Upcoming Meetings:

a. PMT Meeting: TBD

b. PAC Meeting: February 18, 2015; 8:00 am – 10:00 am

Meeting Record Revisions:

The preceding represents SRF Consulting Group's understanding of the referenced meeting. If you identify discrepancies or items that require clarification, please contact Nate Will at SRF, via email at nwill@srfconsulting.com, or via telephone at (763) 249-6761.

NW/gjd

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CSAH 112 Project

Final Design – Phase 1

Project Advisory Committee (PAC) Meeting Sign-In Sheet Wednesday, January 21, 2015 (8:00 – 10:00 a.m.)

Present	Name/Organization	Mailing Address	Phone	Email
\boxtimes	Kristy Morter Hennepin County	1600 Prairie Drive Medina, MN 55340	612-596-0384	Kristy.Morter@hennepin.us
	Mike Turner SRF Consulting Group	1 Carlson Parkway, Suite 150 Minneapolis, MN 55447	763-249-6717	MTurner@SRFConsulting.com
	Jessica Loftus City of Orono	P.O. Box 66 Crystal Bay, MN 55323	952-249-4601	JLoftus@ci.orono.mn.us
\boxtimes	Scott Weske City of Long Lake	P.O. Box 606 Long Lake, MN 55356	952-473-6961x2	SWeske@longlakemn.gov
\boxtimes	Nate Will SRF Consulting Group	1 Carlson Parkway, Suite 150 Minneapolis, MN 55447	763-249-6761	NWill@SRFConsulting.com
\boxtimes	Adam Edwards City of Orono	P.O. Box 66 Crystal Bay, MN 55323	952-249-4661	AEdwards@ci.orono.mn.us
\boxtimes	Liz Olson Long Lake City Council	P.O. Box 606 Long Lake, MN 55356		lolson@longlakemn.gov
\boxtimes	Donny Chillstrom Long Lake Mayor	P.O. Box 606 Long Lake, MN 55356	612-710-0569	dchillstrom@longlakemn.gov
	Tom Skjaret Long Lake Resident			
\boxtimes	Lili McMillan Orono Mayor	P.O. Box 66 Crystal Bay, MN 55323	612-840-8484	lmcmillan@ci.orono.mn.us
	Jeanne Mabusth Orono Resident	740 Brown Road N Orono, MN	952-476-0578	jamabusth@mchsi.com

CSAH 112 Project

Final Design – Phase 1

Project Advisory Committee (PAC) Meeting Sign-In Sheet Wednesday, January 21, 2015 (8:00 – 10:00 a.m.)

Name/Organization	Mailing Address	Phone	Email
Marty Schneider Long Lake City Council	1176 W. Wayzata Blvd. Long Lake, MN 55356	612-237-3843	martyexplore@msn.com
Tim Bruers Hennepin County	1600 Prairie Drive Medina, MN 55340	612-596-0393	Timothy.Bruers@hennepin.us
Michael Jischke SRF Consulting Group	1 Carlson Parkway, Suite 150 Minneapolis, MN 55447	763-267-6600	mjischke@srfconsulting.com
Jim Cornick Orono City Council	Box 66 Crystal Bay, MN 55323	952-300-0954	jcornickjr@ci.orono.mn.us







SRF No. 0148483 County Project No. 091101

CSAH 112 – Phase 1 Project Advisory Committee (PAC) Meeting January 21, 2015; 8:00 am – 10:00 am Orono City Hall AGENDA

1. Introductions: (5 Minutes)

2. Review of December 17, 2014 Project Advisory Committee Meeting Record: (5 Minutes)

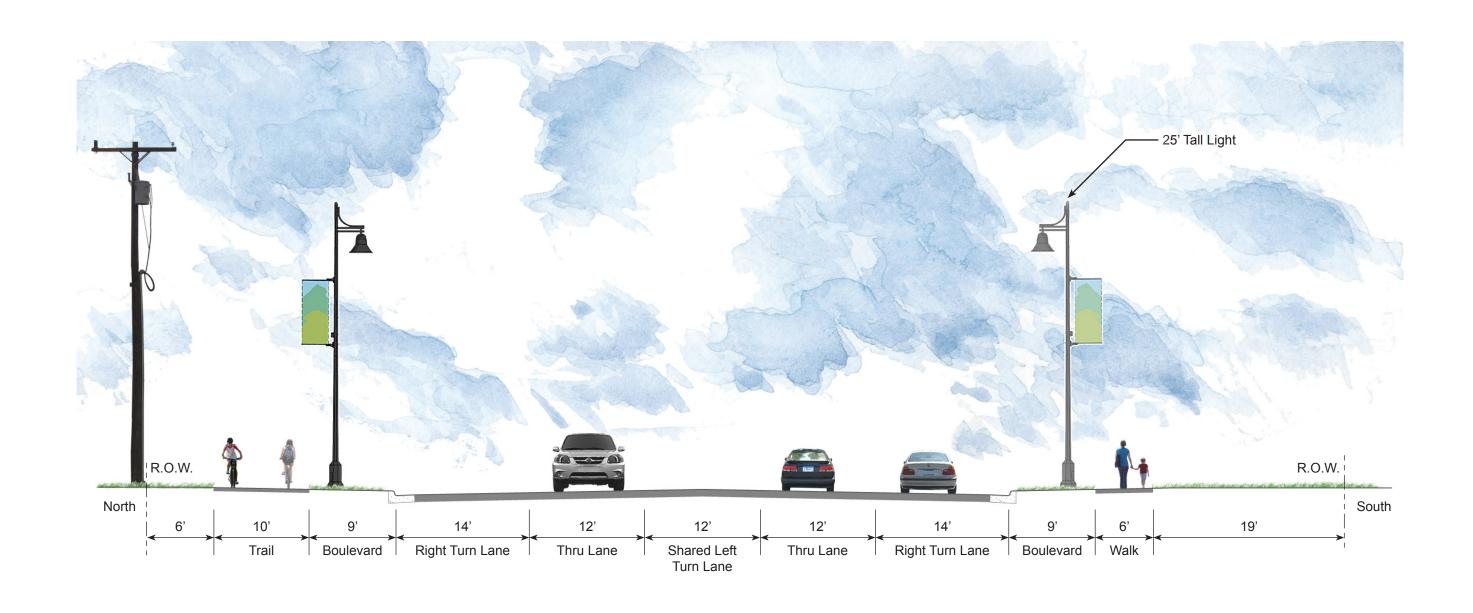
3. Review of Previous Action Items: (5 Minutes)

Task	Responsible Party	Due Date	Resolution
SRF to explore options for implementing screening such as trees along the bike path from Mill Street to Martha Lane.	Nate Will	1/21/15	
SRF to prepare memorandum to document decision for constructing the Rapid Rectangular-Flashing Beacon (RRFB) at intersection of CSAH 112 and Mill Street.	Nate Will	2/1/15	
SRF to update project website (www.csah112.com) to include meeting record for PAC meeting held on 11/19/14.	Mike Turner	12/23/14	Completed
SRF to review the traffic signal design and guidance for implementing Flashing Yellow Arrow (FYA) traffic signals at Lake Street and Brown Road intersections with 112.	Nate Will	1/21/15	Completed
City of Long Lake to develop and pass resolution to ban parking along both sides of Martha Lane and along Symes Street adjacent to the Nelson Lakeside Park.	Scott Weske	2/28/15	
SRF to review proposed cross sections along the Long Lake bank stabilization area and determine if possible to maintain traffic along CSAH 112 throughout construction.	Nate Will	2/1/15	Ongoing
The City will provide a contact name, phone number and address for the final delivery location of the light poles to be salvaged.	Scott Weske	2/1/15	
SRF to develop lighting design and layout of lighting units to provide recommended lighting along 112.	Nate Will/ Michael Jischke	1/21/15	

- 4. Discussion Items: (60 Minutes)
 - a. Review street lighting layouts and recommendations
 - b. Discuss retaining wall locations, wall types, aesthetics, textures and colors.
 - c. Discuss potential streetscape features for consideration in Phase 1
 - d. Discuss construction staging and road closure
- 5. Update of ongoing design efforts (5 Minutes)
 - i. Geotechnical Investigation / Coordination
 - ii. Utility Coordination & Mapping
 - iii. Environmental Investigation
- 6. Open Discussion (5 Minutes)
- 7. Follow Up Items/Action Items: (5 Minutes)

Task	Responsible Party	Due Date	Resolution

- 8. Upcoming Meetings:
 - a. PMT Meeting: March 5, 2015; 1:00 pm 2:30 pm
 - b. PAC Meeting: February 18, 2015; 8:00 am 10:00 am











Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Total Lamp Lumens LLF	Description
	5	DSAP25-4-120VLED-NW-525	SINGLE	N.A. 0.950	US Architectural DSAP25-IV-120VLED-NW-525mA

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	
North End Roadway	Illuminance	Fc	1.12	5.1	0.3	3.73	
North End Sidewalk North	Illuminance	Fc	0.56	4.3	0.2	2.80	
North End Sidewalk South	Illuminance	Fc	0.46	2.3	0.2	2.30	

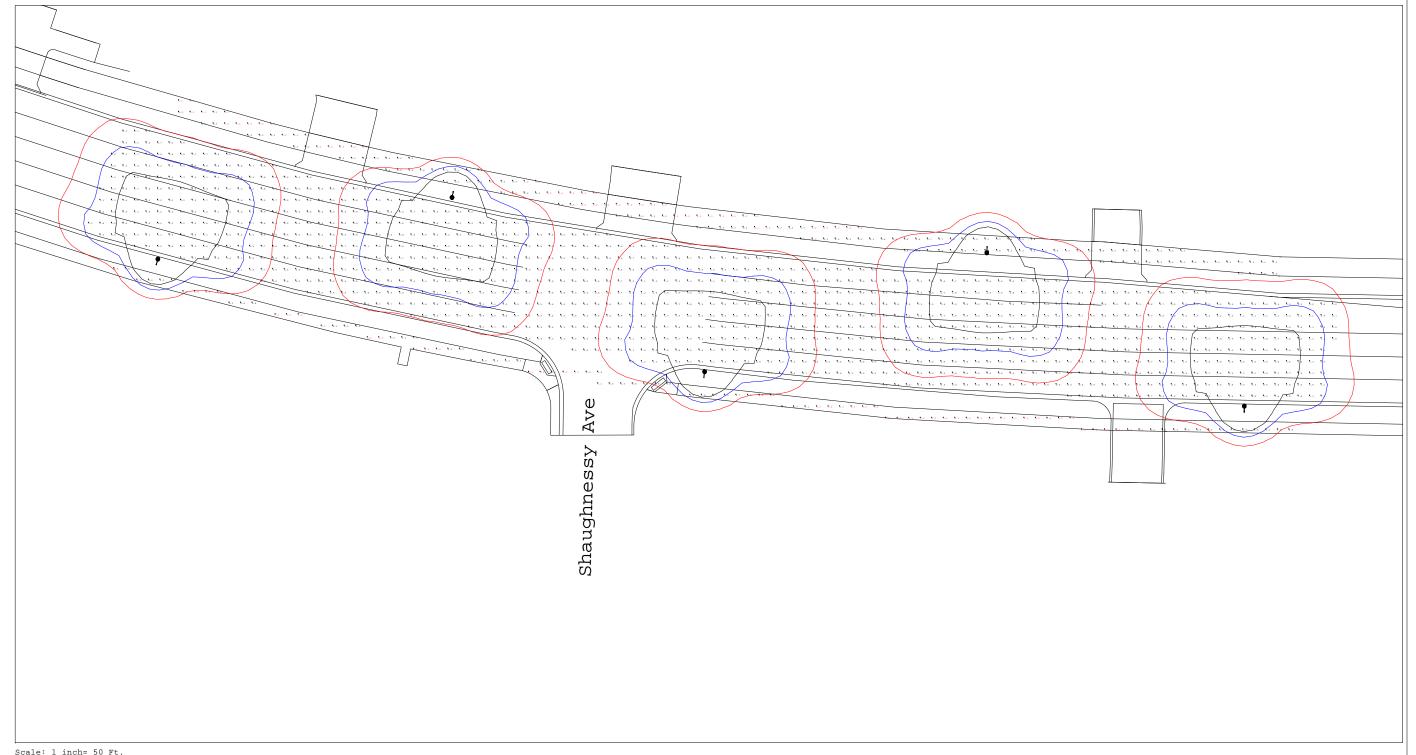
US Architectural DSAP25 LED Series Distribution - Type 4, 120watts

Mounting Height: 25'

Arm Length: 4'

Setback - Curb Face: 4' Spacing: 280' - Staggered

Design Goal: 1.0 Avg, 4:1 Avg/Min

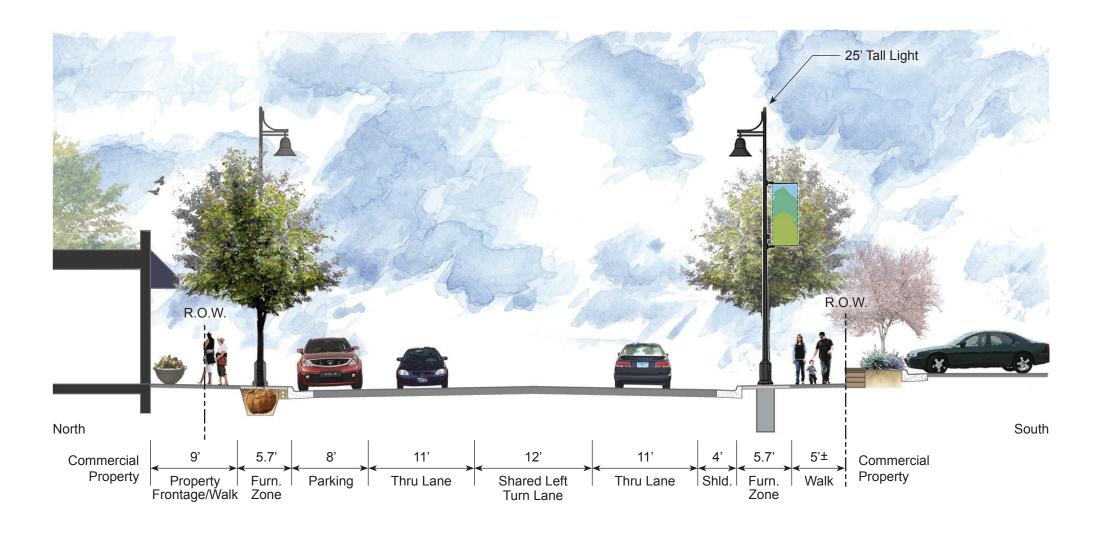


Scale: 1 inch= 50 Ft.
Filename: H:\Projects\8483\EE\Photometrics\8483 CSAH 112 North End US Architect DSAP25 120W 25' MH 280' staggered.AGI



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Date Comments				
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Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens LI	LF I	Description
	8	DSAP25-4-120VLED-NW-525	SINGLE	N.A. 0.	.950 t	US Architectural DSAP25-IV-120VLED-NW-525mA

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
CSAH 112 & Lake Intersection	Illuminance	Fc	2.07	5.2	1.0	2.07
CSAH 112 & Mill Intersection	Illuminance	Fc	2.03	5.1	1.1	1.85
CSAH 112 Downtown	Illuminance	Fc	1.54	5.2	0.7	2.20
Sidewalk East	Illuminance	Fc	1.05	4.6	0.4	2.63
Sidewalk West	Illuminance	Fc	1.12	4.4	0.5	2.24

US Architectural DSAP25 LED Series

Roadway: T4, 120 watt, 25' MH

Intersection: T4, 120 watt, 25' MH

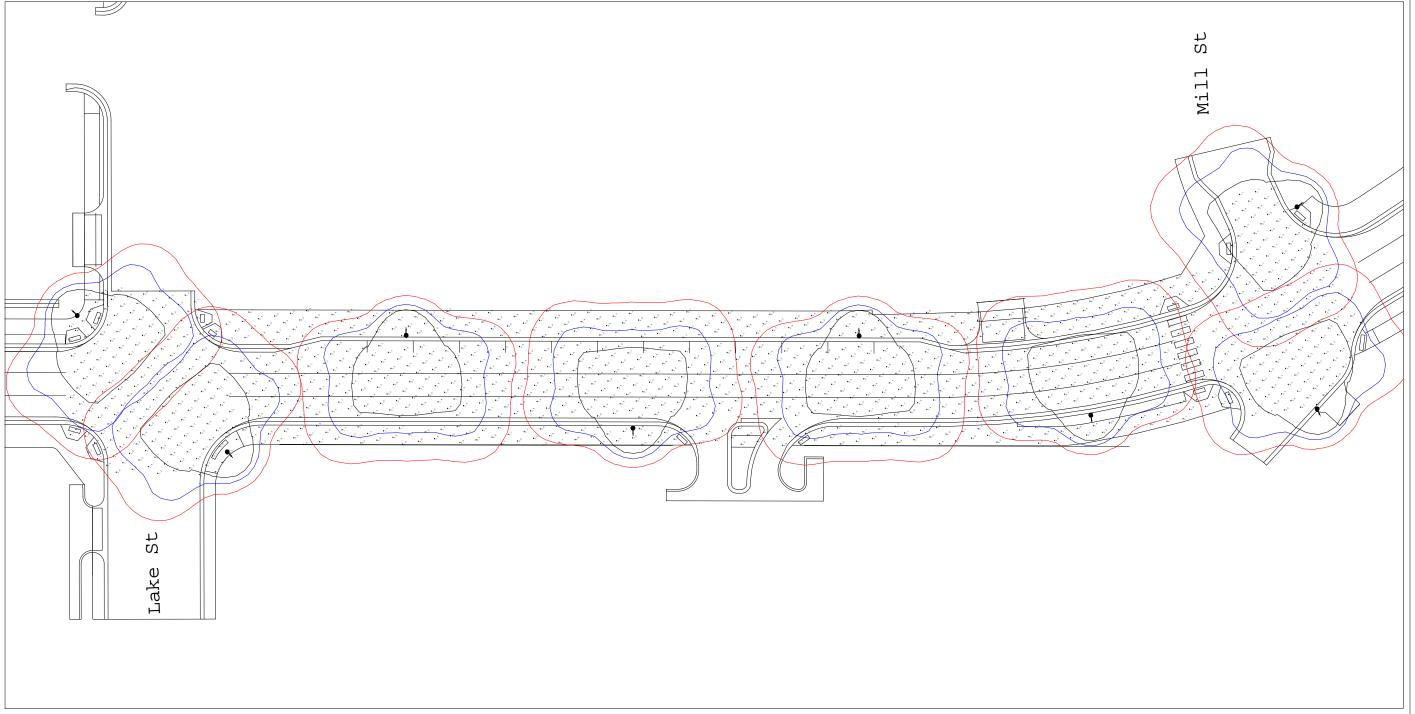
Arm Length: 3'

Setback - Curb Face: 4' Spacing: 240' - Staggered

Design Goal: 4:1 Avg/Min

Roadway 1.4 Avg

Intersections 2.0 Avg



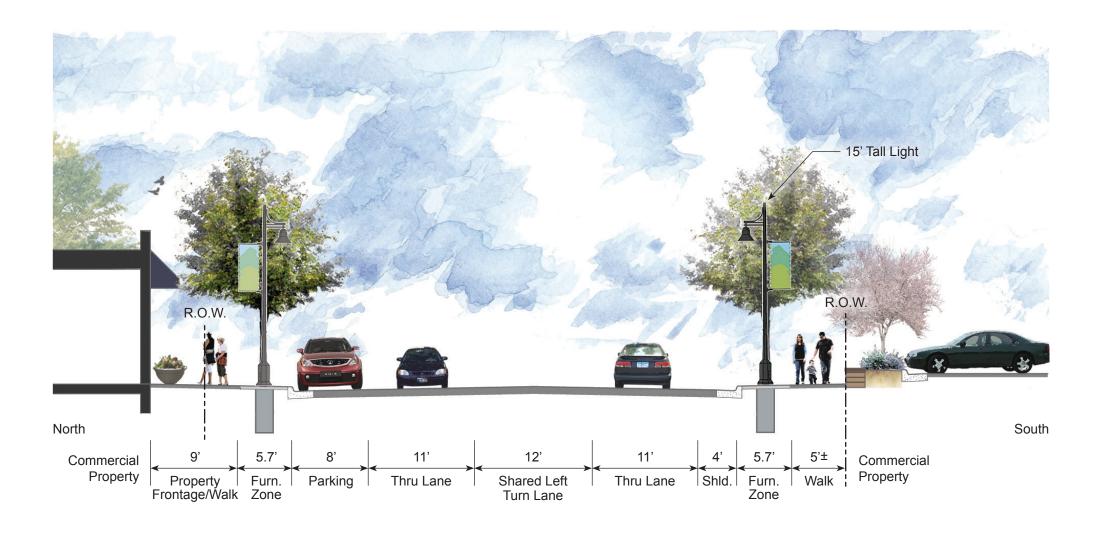
Scale: 1 inch= 50 Ft.

State: I inch 50 Ft. Filename: H:\Projects\8483\EE\Photometrics\8483 CSAH 112 Downtown US Architect 120watt 25' MH staggered.AGI



3 CSAH 112 Option B	Drawn By: SJM	Re	#	Date	Date Comments	
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ntown	Date:1/15/2015	sic				
6+00 to 1131+00	Scale:	ns				

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Luminaire	Schedu	ıle				
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	4	DSAP25-4-120VLED-NW-525	SINGLE	N.A.	0.950	US Architectural DSAP25-IV-120VLED-NW-525mA
	6	DSAP25-4-80VLED-NW-350	SINGLE	N.A.	0.950	US Architectural DSAP25-IV-80VLED-NW-350mA

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
CSAH 112 & Lake Intersection	Illuminance	Fc	2.05	5.2	1.0	2.05
CSAH 112 & Mill Intersection	Illuminance	Fc	2.00	5.1	1.0	2.00
CSAH 112 Downtown	Illuminance	Fc	1.44	4.5	0.5	2.88
Sidewalk East	Illuminance	Fc	0.73	5.7	0.1	7.30
Sidewalk West	Illuminance	Fc	0.79	5.6	0.2	3.95

US Architectural DSAP25 LED Series

Roadway: T4, 80 watt, 15' MH

Intersection: T4, 120 watt, 25' MH

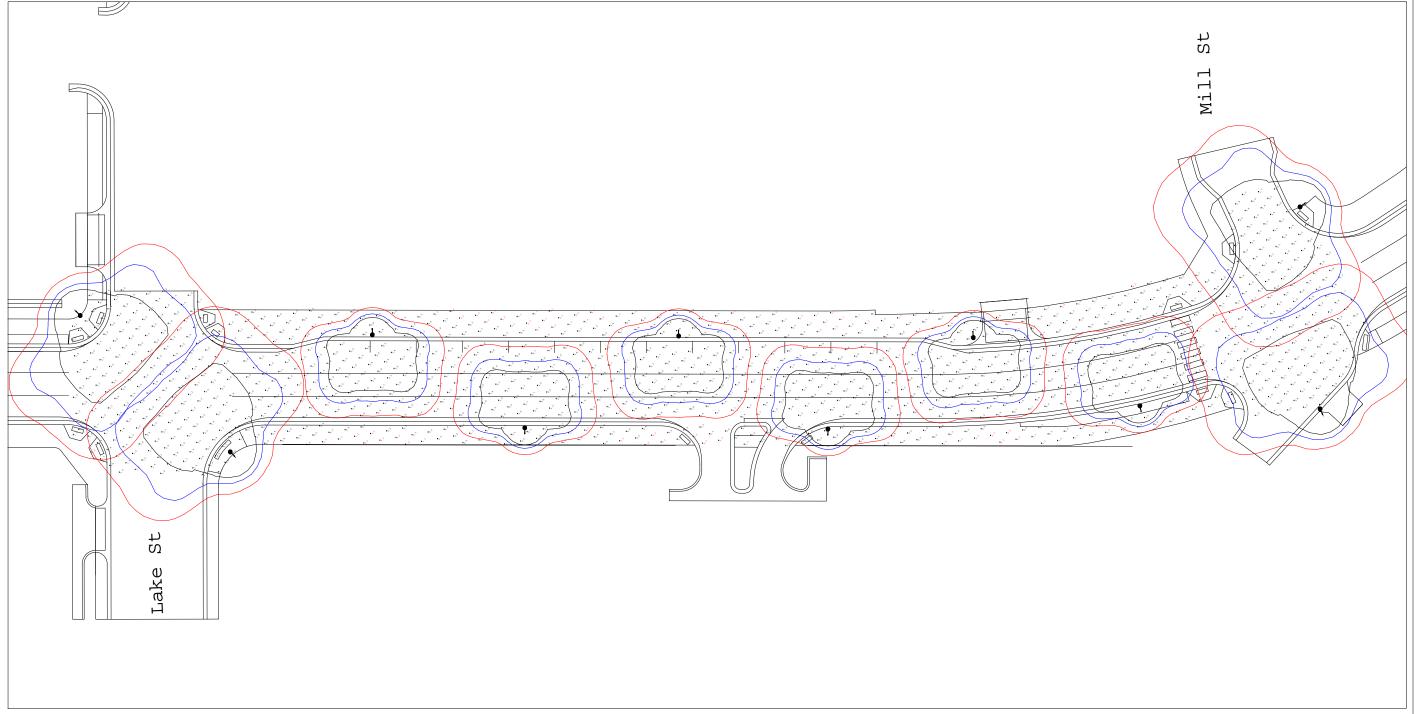
Arm Length: 3'

Setback - Curb Face: 4' Spacing: 160' - Staggered

Design Goal: 4:1 Avg/Min

Roadway 1.4 Avg

Intersections 2.0 Avg

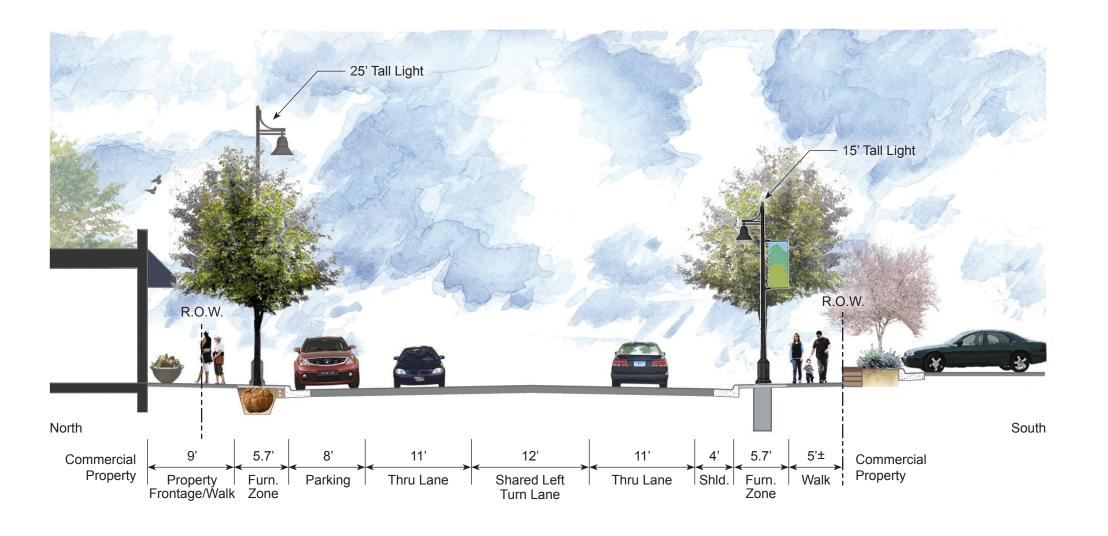


Scale: 1 inch= 50 Ft.
Filename: H:\Projects\8483\EE\Photometrics\8483 CSAH 112 Downtown US Architect 80watt15' MH staggered.AGI



3 CSAH 112 Option A	Drawn By: SJM	Re	#	Jate	# Date Comments	
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Luminaire	Schedu	ıle				
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	4	DSAP25-4-120VLED-NW-525	SINGLE	N.A.	0.950	US Architectural DSAP25-IV-120VLED-NW-525mA
	3	DSAP25-4-80VLED-NW-350	SINGLE	N.A.	0.950	US Architectural DSAP25-IV-80VLED-NW-350mA
	3	DSAP25-4-120VLED-NW-350	SINGLE	N.A.	1.000	US Architectural DSAP25-IV-120VLED-NW-350mA

Calculation Summary

2						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
CSAH 112 & Lake Intersection	Illuminance	Fc	2.05	5.2	1.0	2.05
CSAH 112 & Mill Intersection	Illuminance	Fc	2.10	5.1	1.3	1.62
CSAH 112 Downtown	Illuminance	Fc	1.57	4.6	0.6	2.62
Sidewalk East	Illuminance	Fc	0.99	5.7	0.1	9.90
Sidewalk West	Illuminance	Fc	1.00	5.7	0.2	5.00

US Architectural DSAP25 LED Series

Roadway: T4, 80 watt, 15' MH T4, 120 watt, 25' MH

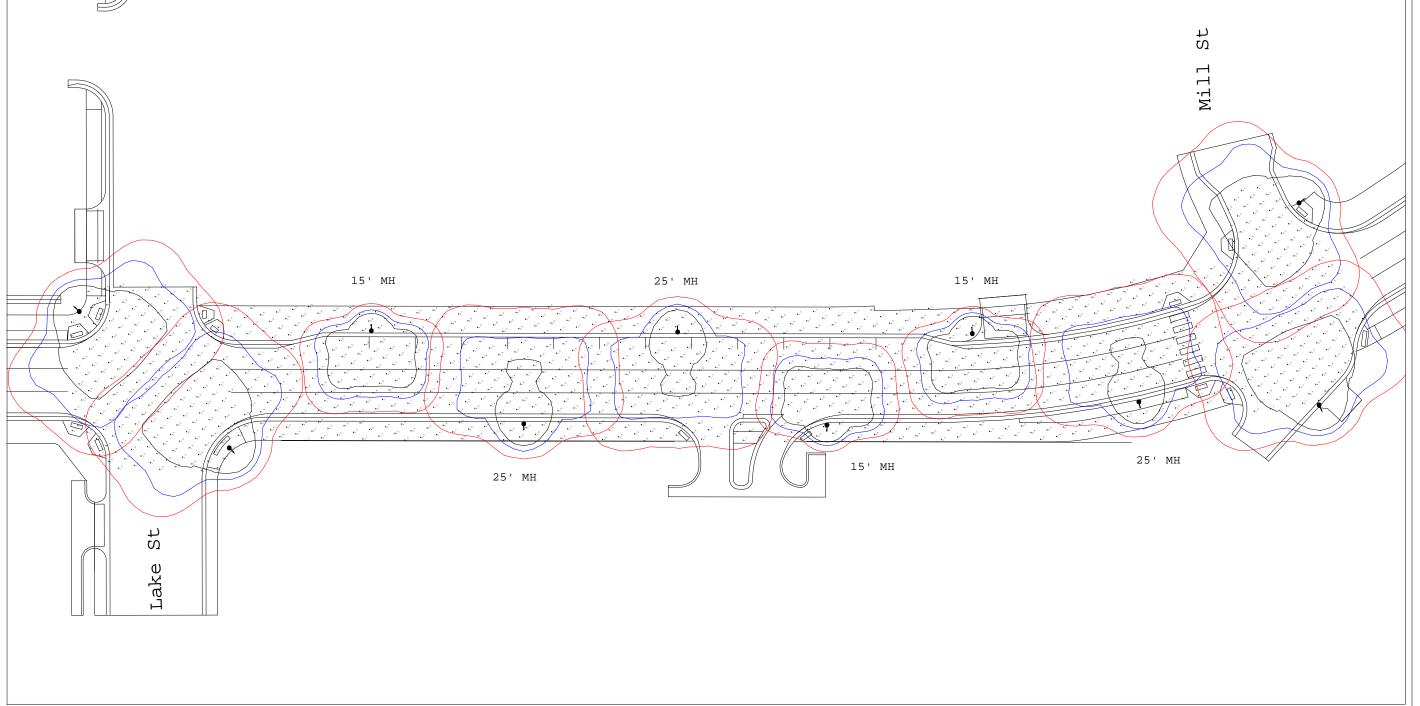
Intersection: T4, 120 watt, 25' MH

Arm Length: 3'

Setback - Curb Face: 4'
Spacing: 160' - Staggered
Design Goal: 4:1 Avg/Min

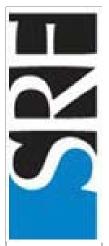
Roadway 1.4 Avg

Intersections 2.0 Avg



Scale: 1 inch= 50 Ft.

Filename: H:\Projects\8483\EE\Photometrics\8483 CSAH 112 Downtown US Architect 80 watt15'-25' MH staggered.AGI



CSAH 112 Option A	Drawn By: SJM	Re	# De	Date	Comments
4	Checked By:	vi			
town	Date:1/16/2015	sic			
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Luminaire	Schedu	ıle		Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description						
	8	DSAP25-4-80VLED-NW-350	SINGLE	N.A.	0.950	US Archtectural DSAP25-IV-80VLED-NW-350mA						

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
Segment 2 - Long Lake	Illuminance	FC	0.74	2.45	0.32	2.31
Trail	Illuminance	FC	0.40	1.34	0.13	3.08

US Architectural DSAP25 LED Series Distribution - Type 4, 80 watts

Mounting Height: 25'

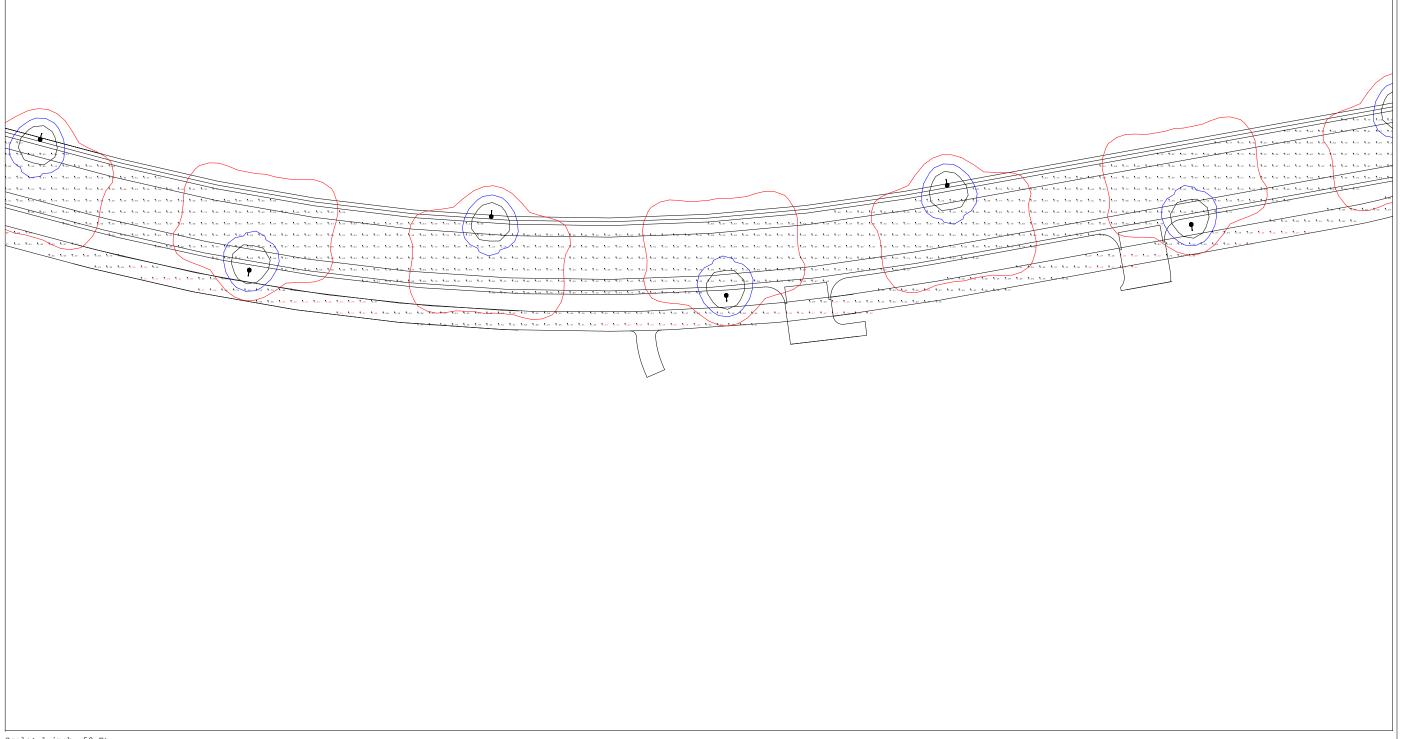
Arm Length: 3'

Setback - 2' behind guard rail

2' in front of path

Spacing: 240' - Staggered

Design Goal: .7 FC Ave, 4:1 Ave/Min



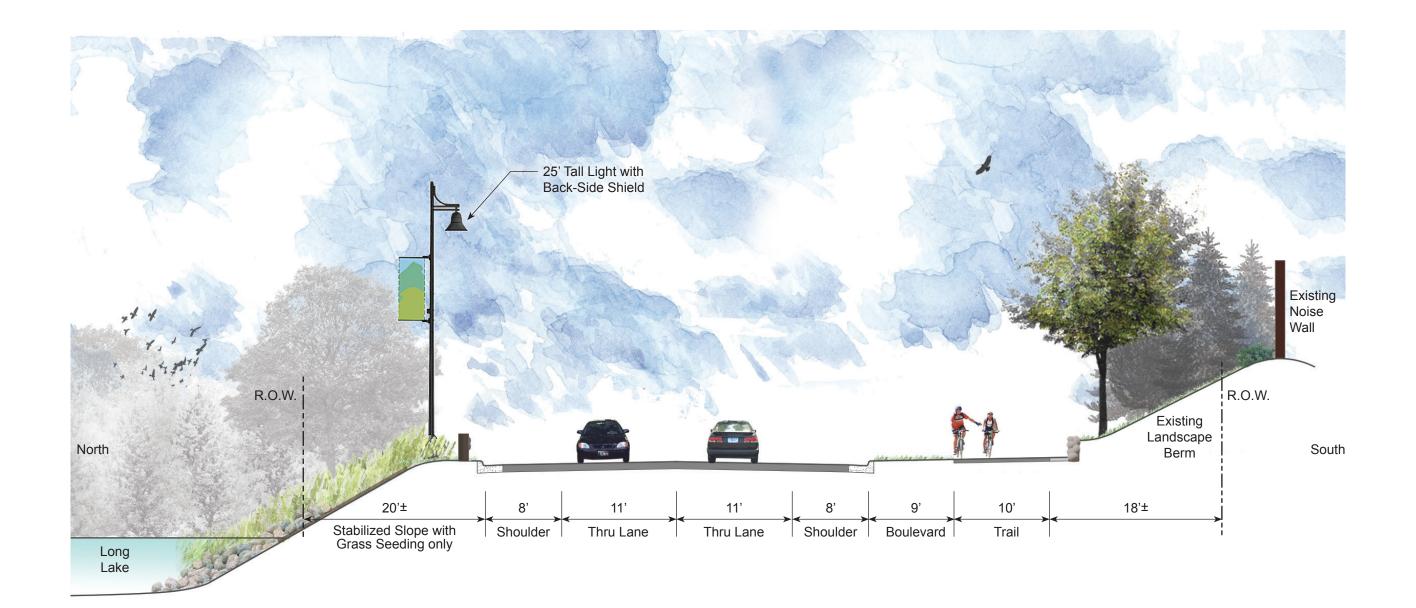
Filename: H:\Projects\8483\EE\Photometrics\8483 CSAH 112 Long Lake US Architect DSAP25 80watt 25 MH 240' staggered.AGI



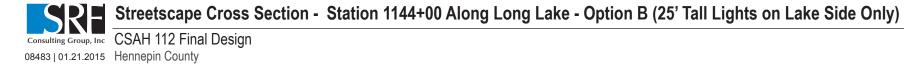


Comments			
Date			
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Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description		
-	8	DSAP25-4-80VLED-NW-350	SINGLE	N.A.	0.950	US Architectural DSAP25-IV-80VLED-NW-350mA		

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min		
Segment 2 - Long Lake	Illuminance	Fc	0.76	2.50	0.28	2.62		
Trail	Illuminance	Fc	0.44	0.63	0.24	1.83		

Sun Valley DSAP25 Series

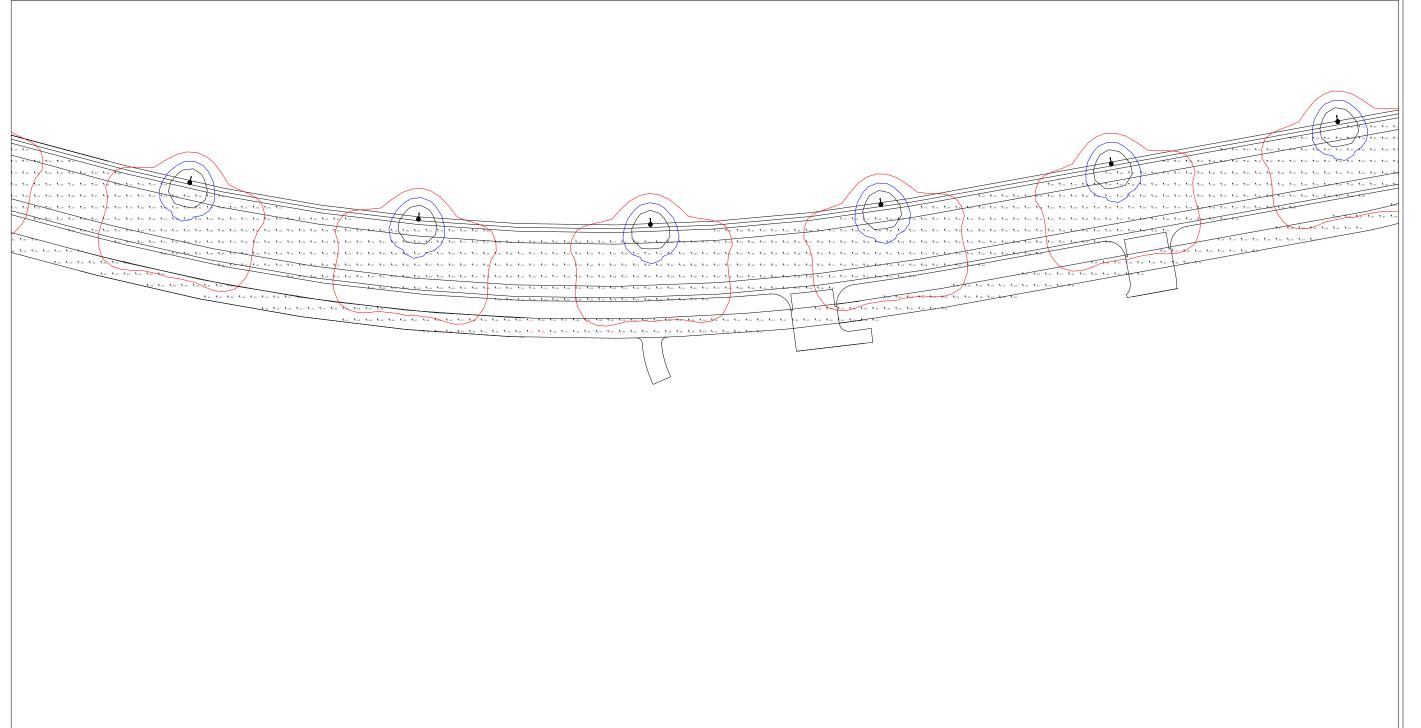
Distribution - Type 4, 80 watts

Mounting Height: 25'

Arm Length: 3'

Setback - 2' behind guard rail Spacing: 120' - Lakeside only

Design Goal: 0.7 Avg, 4:1 Avg/Min



Scale: 1 inch= 50 Ft.

Filename: H:\Projects\8483\EE\Photometrics\8483 CSAH 112 Long Lake US Architect DSAP25 80watt 25 MH 120' spacing lakeside only.AGI

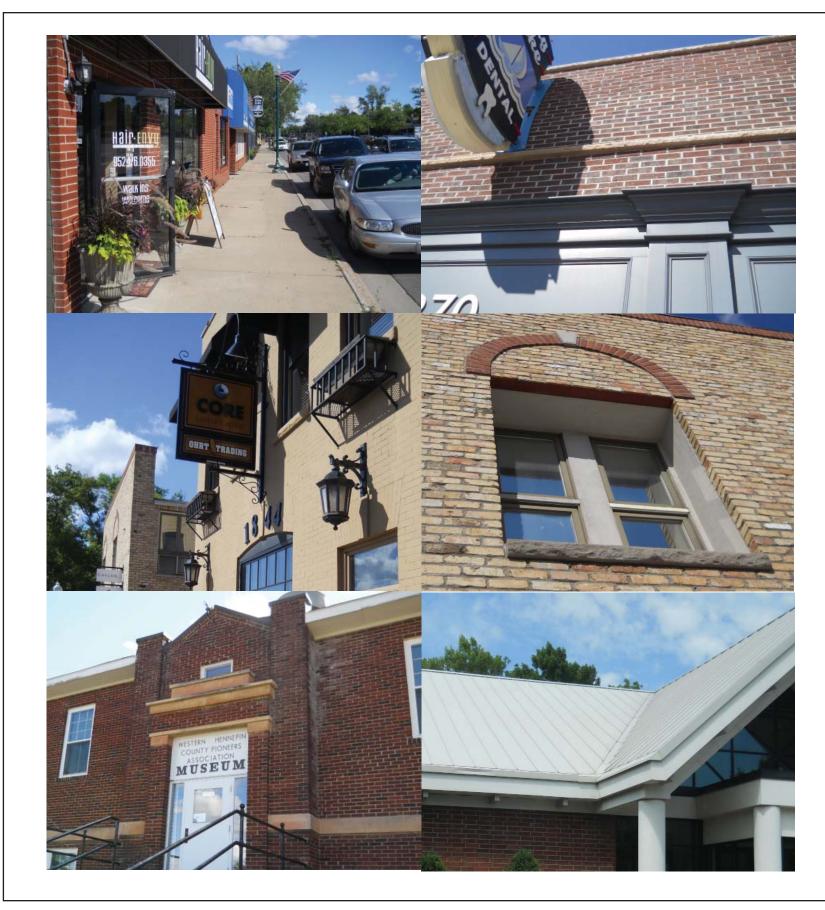


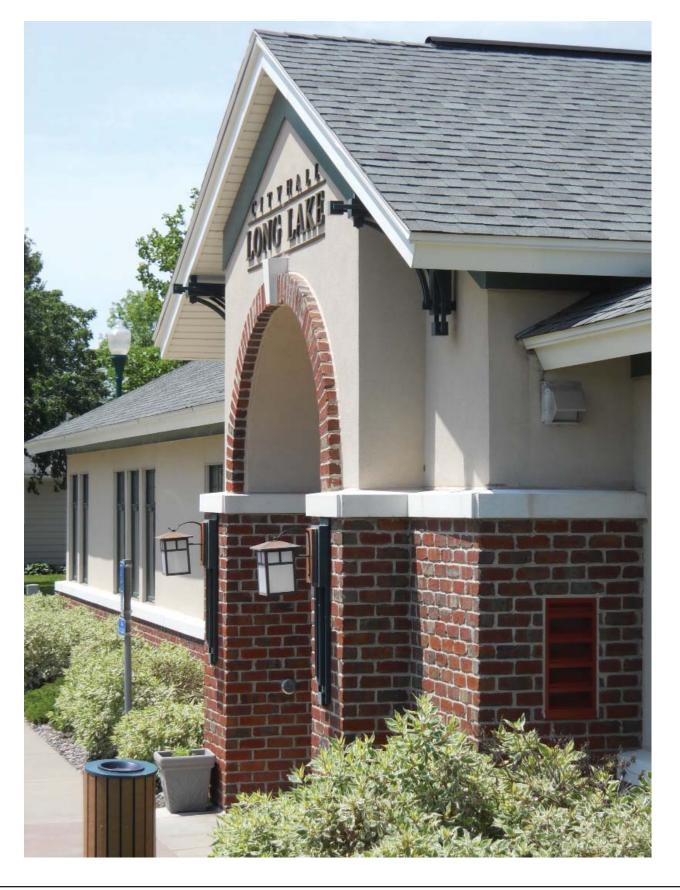
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2 Option B Checked Oreline Date:1/1

3483 CSAH 112 Optio

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"Fieldstone" Formliner on Luce Line Trail Bridge and TH 12 Structures







Thin Brick Veneer



"Random Cut Stone" (horizontal course pattern)





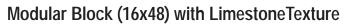














Modular Block (16x48) with False Joints



Modular 16x48) with Smooth Texture

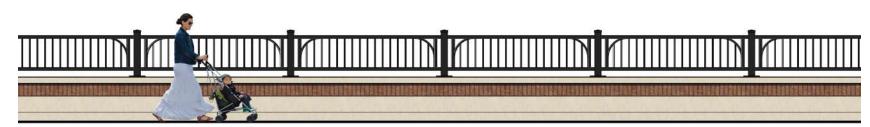








Cross Section



Wall Elevation View from CSAH 112



Wall Elevation View from Adjacent Property



Detail View

- Architectural Copings
- Thin Brick Veneer Accent Border on Barrier (both sides)
- "Random Cut Stone" Formliner Texture (8" Tall Blocks)
- Multi-color Stain (Minnesota Limestone Appearance)







Cross Section



Wall Elevation View from CSAH 112



Wall Elevation View from Adjacent Property



Detail View

- Architectural Precast Cap
- Modular Block with Limestone Texture and 8" Tall False Joints (16" Tall x 48" Long Blocks)
- Multi-color Stain (Minnesota Limestone Appearance)









Cross Section



Wall Elevation View from CSAH 112



Wall Elevation View from Adjacent Property



Detail View

- Architectural Precast Cap
- Modular Block with Limestone Texture and 8" Tall False Joints (16" Tall x 48" Long Blocks)
- Multi-color Stain (Minnesota Limestone Appearance)









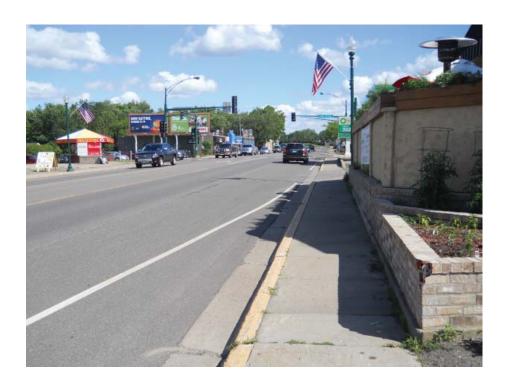




North Side of CSAH 112 Looking East

















Linden Hills Neighborhood, Minneapolis



Excelsior



50th and France, Edina



Wayzata







Sidewalk Paving

- Standard Gray Concrete in Walk Zone
- Colored Concrete in Furnishing Zone

Street Trees

- Canopy Trees in Furnishing Zone
- Decorative Cast-iron Tree Grates
- Structural Soils Trench

• Furnishings

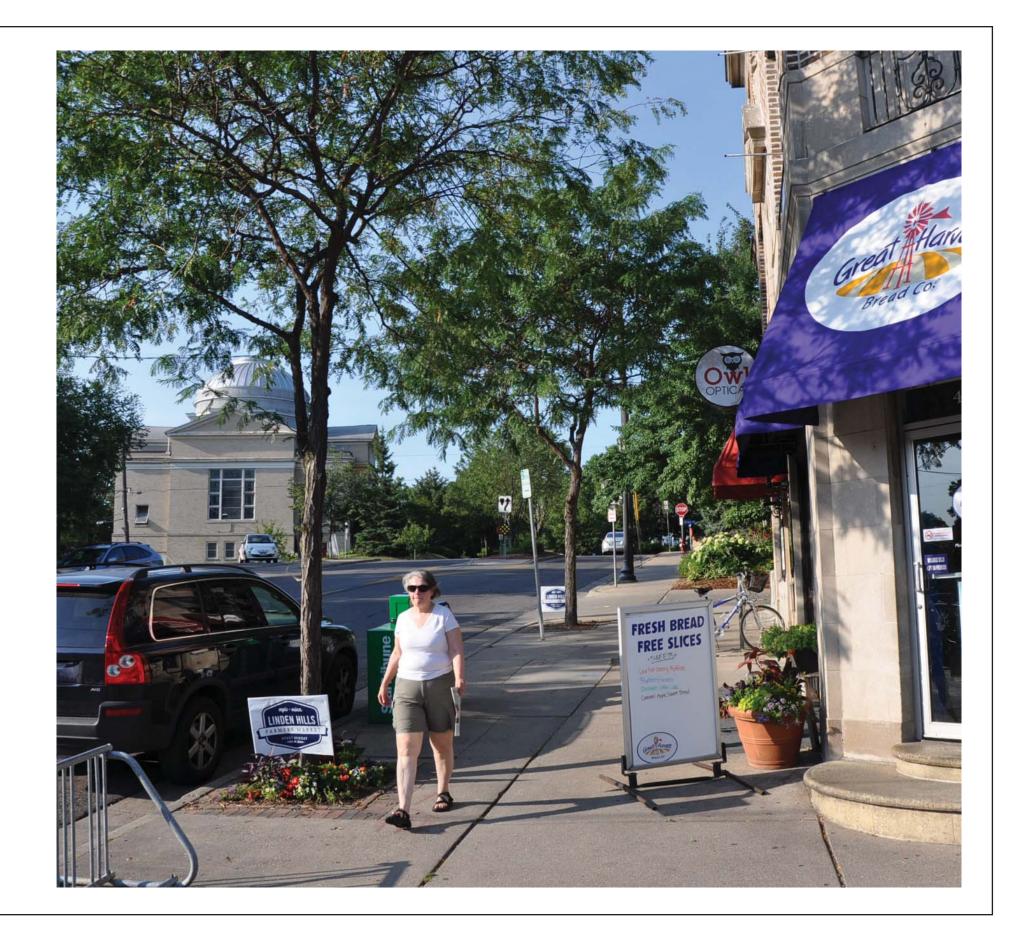
- Bike Racks
- Benches
- Waste Receptacles
- Planter Urns with Annual Plantings

Railings/Fencing

- Retaining Walls
- Parking Lot Frontages

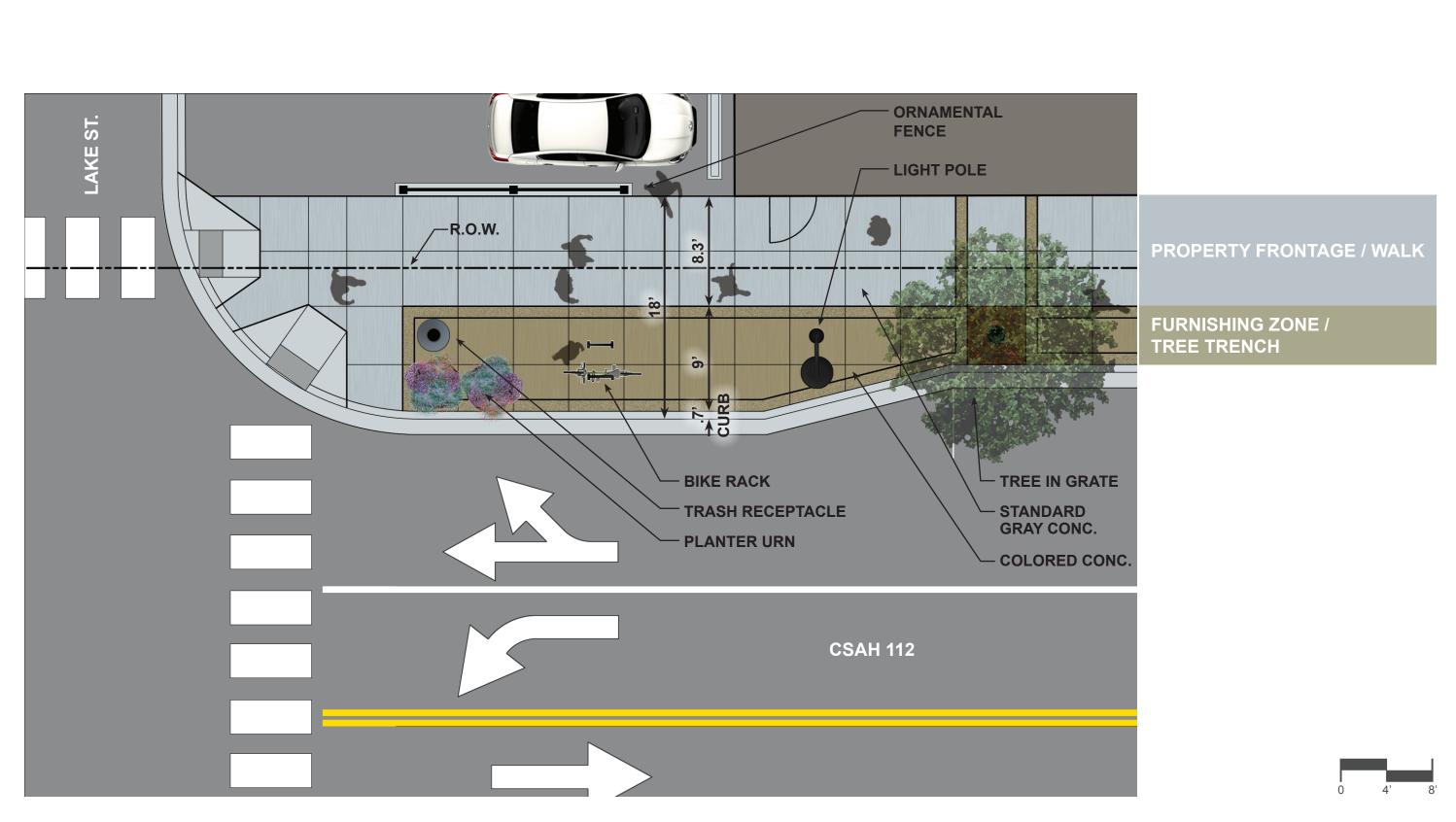
Lighting Amenities

- Banners
- Flagholders
- Outlets

















DRAFT



Streetscape Illustrative Plan - Typical Downtown Sidewalk



