COMMUNITY connectivity program

Bethlehem

Main St. S (Route 61) – Road Safety Audit

September 20, 2016

CONNECTICUT DEPARTMENT OF TRANSPORTATION

AECOM

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Acknowledgements:

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With assistance from AECOM Transportation Planning Group

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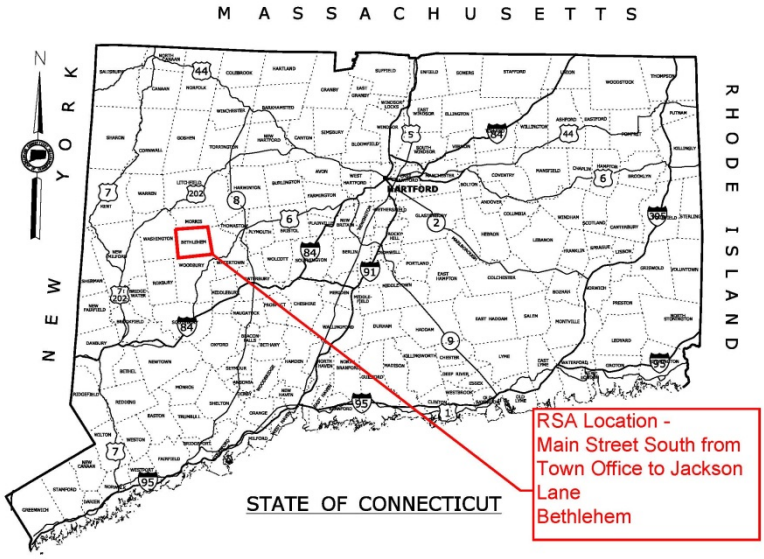
The Connecticut Department of Transportation (CTDOT) is undertaking a Community Connectivity Program that focuses on improving the state's transportation network for all users, with an emphasis on bicyclists and pedestrians. A major component of this program is conducting Road Safety Audits (RSA's) at selected locations. An RSA is a formal safety assessment of the existing conditions of walking and biking routes and is intended to identify the issues that may discourage or prevent walking and bicycling. It is a qualitative review by an independent team experienced in traffic, pedestrian, and bicycle operations and design that considers the safety of all road users and proactively assesses mitigation measures to improve the safe operation of the facility by reducing the potential crash risk frequency or severity.

The RSA team is made up of CTDOT staff, municipal officials and staff, enforcement agents, AECOM staff, and community leaders. An RSA Team is established for each municipality based on the requirements of the individual location. They assess and review factors that can promote or obstruct safe walking and bicycling routes. These factors include traffic volumes and speeds, topography, presence or absence of bicycle lanes or sidewalks, and social influences.

Each RSA was conducted using RSA protocols published by the FHWA. For details on this program, please refer to www.ctconnectivity.com. Prior to the site visit, area topography and land use characteristics are examined using available mapping and imagery. Potential sight distance issues, sidewalk locations, on-street and off-street parking, and bicycle facilities are also investigated using available resources. The site visit includes a "Pre-Audit" meeting, the "Field Audit" itself, and a "Post-Audit" meeting to discuss the field observations and formulate recommendations. This procedure is discussed in the following sections.



1 Introduction to Main Street S, Bethlehem RSA

The Town of Bethlehem submitted an application to complete an RSA on Main Street South to improve safety for pedestrians and bicyclists travelling along the corridor between Jackson Lane and East Street. This corridor, which is designated as State Route 61, experiences moderate traffic volumes and speeds, but has limited sidewalks. This has resulted in concerns for pedestrians and cyclists through this area. Bethlehem Elementary School is located adjacent to Main Street South on East Street. This section of Main Street South contains several of the Town's largest traffic generators and is also an important through road to adjacent towns.

The Town of Bethlehem's application contained background information on the area and a description of the corridor. The application is included in Appendix A.

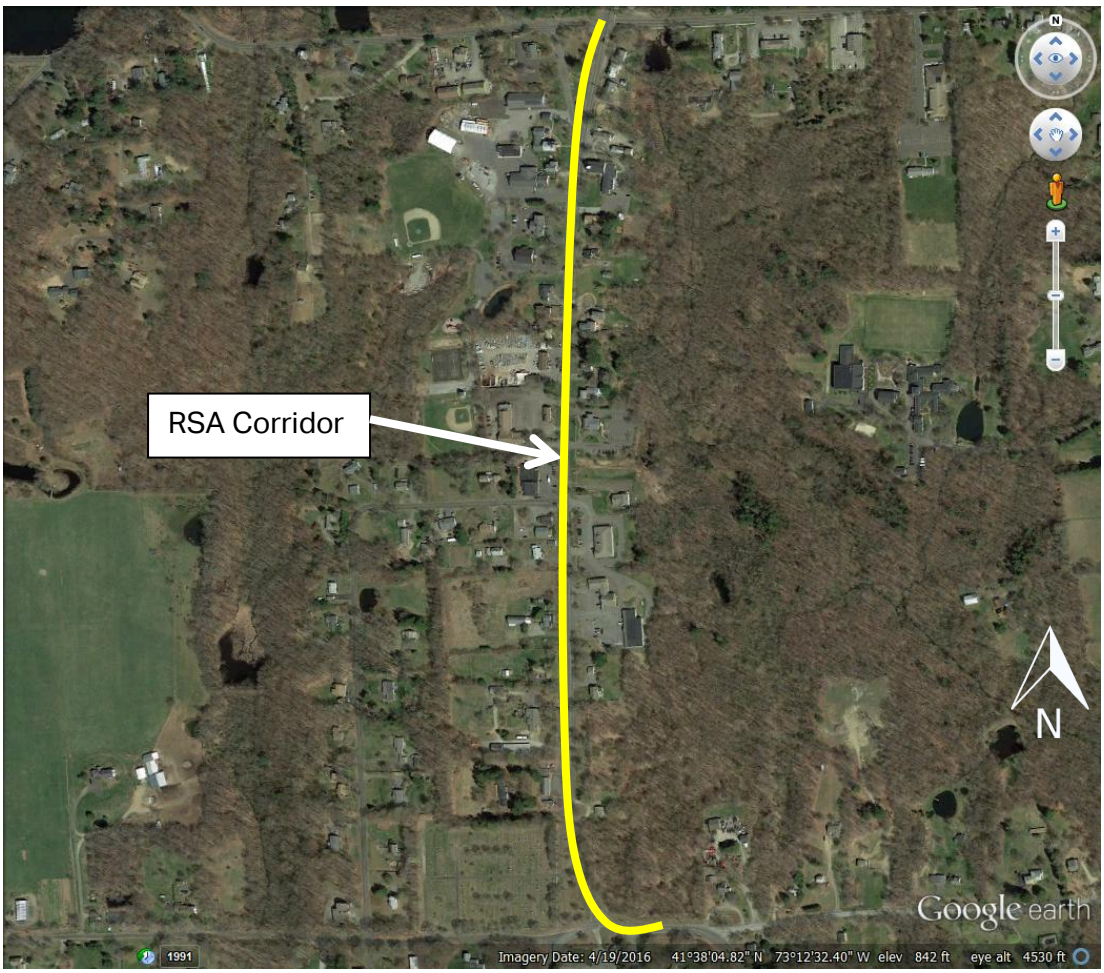


Figure 1. Main Street S. (State Route 61), Bethlehem

1.1 Location

The RSA site is the section of Main Street South (State Route 61) between East Street (State Route 132) and Jackson Lane (Figure 1). The Average Daily Traffic (ADT) on Main Street South near the East Street intersection is 4,700 vehicles per day (vpd) and the ADT on Main Street South near the Jackson Lane intersection is 4,100 vpd. Main Street South consists of a single 11-12 foot wide lane in each direction, separated by a double yellow center line. There are striped shoulders on each side of the road, with widths that vary from three feet to five feet.

All intersections throughout the study area are controlled by side-street stop signs. The intersection of Main Street South and East Street also has a flashing red beacon.

This section of roadway contains a sharp turn with limited sight lines as well as steep roadway embankments in some areas, adding complexity to walking and bicycling maneuvers through the area. Figure 2 shows the study area in a regional context.

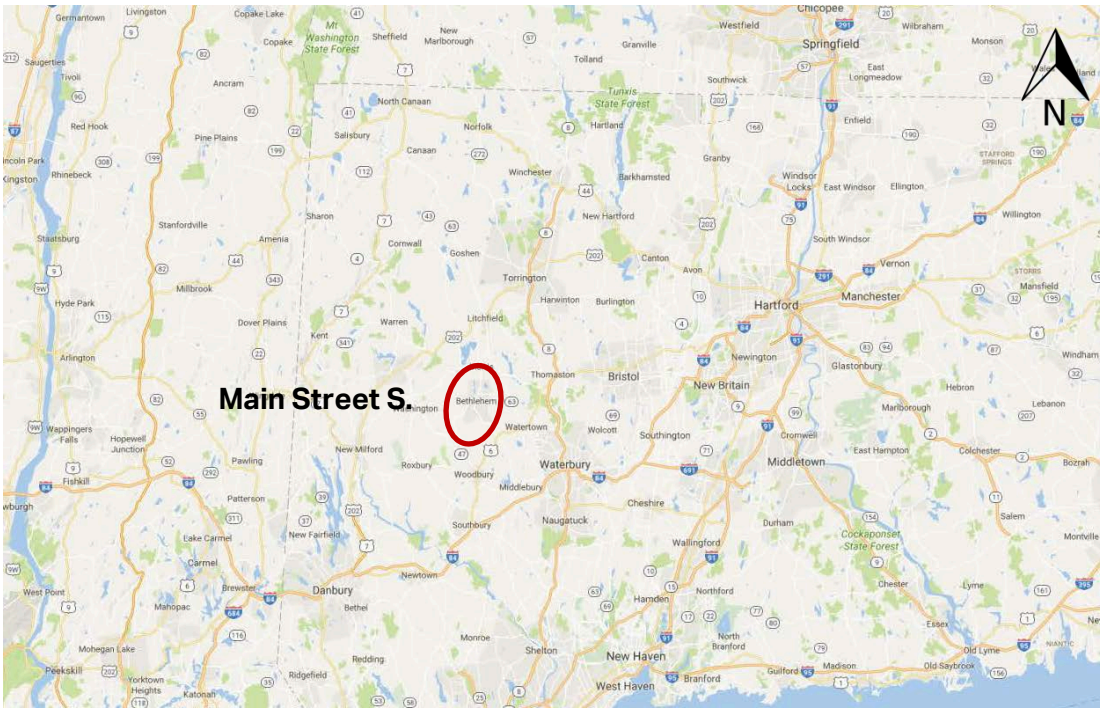


Figure 2. Study Area – Regional Context

2 Pre-audit Assessment

2.1 Pre-audit Information

Main Street South is located in the historic center of Bethlehem. The nearby presence of a large masonry business and through traffic to other towns results in high levels of truck traffic on this road. A church, several popular businesses, the Town Green and municipal offices generate pedestrian traffic in the area.

Severity Type	Number of Crashes	
Property Damage Only	6	86%
Injury (No fatality)	1	14%
Fatality	0	0%
Total	7	

Table 1. Crash Severity 2012-2014

Source: UConn Connecticut Crash Data Repository

Manner of Crash / Collision Impact	Number of Crashes	
Unknown	0	0%
Sideswipe-Same Direction	0	0%
Rear-end	1	14%
Turning-Intersecting Paths	3	43%
Turning-Opposite Direction	0	0%
Fixed Object	3	43%
Backing	0	0%
Angle	0	0%
Turning-Same Direction	0	0%
Moving Object	0	0%
Parking	0	0%
Pedestrian	0	0%
Overturn	0	0%
Head-on	0	0%
Sideswipe-Opposite Direction	0	0%
Miscellaneous- Non Collision	0	0%
Total	7	

Table 2. Crash Type 2012-2014

Source: UConn Connecticut Crash Data Repository

The crash history in this area is relatively low and there were no accidents involving pedestrians and no accidents involving bicyclists between 2012 and 2014 (Table 1 and Table 2). The highest crash types were turning-intersecting paths and fixed objects, with three crashes each. Figure 3 displays crashes that occurred in this area during 2015. In 2015 there was a fatal accident within the corridor that was a single vehicle crash due to driver error in a parking lot.

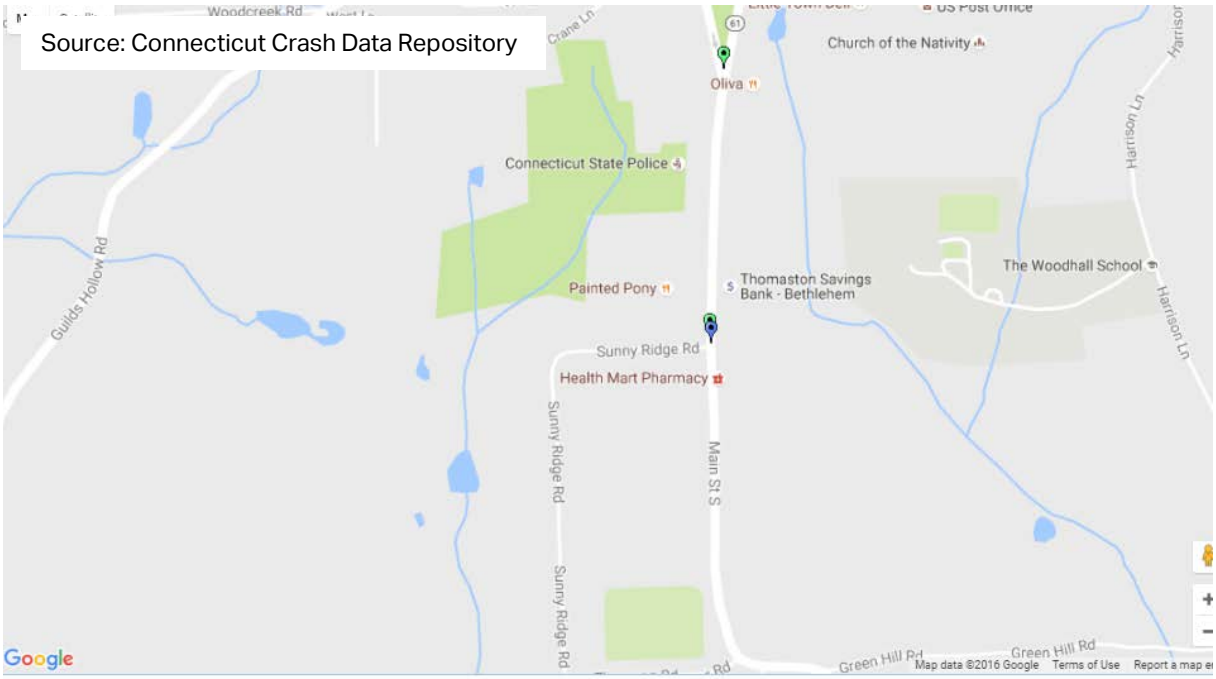


Figure 3.Crashes that Occurred in 2015 (Connecticut Crash Data Repository)

The Town of Bethlehem would like to make the RSA area more accommodating to cyclists and pedestrians. The alignment of the road is straight except for a sharp curve at the southern end of the study area adjacent to Jackson Lane and Flanders Road. This lends itself to high vehicle speeds. There are currently very few pedestrian accommodations in the area. There is a concrete sidewalk on East Street adjacent to the study area and an old paver walkway for a short distance along the east side of Main Street South at the northern limit of the study area. The Town would like to increase its efforts to provide safe pedestrian routes and is in the process of constructing additional sidewalks.

Figure 4 and Table 3. Street Inventory summarize the roadway geometrics in the study area.

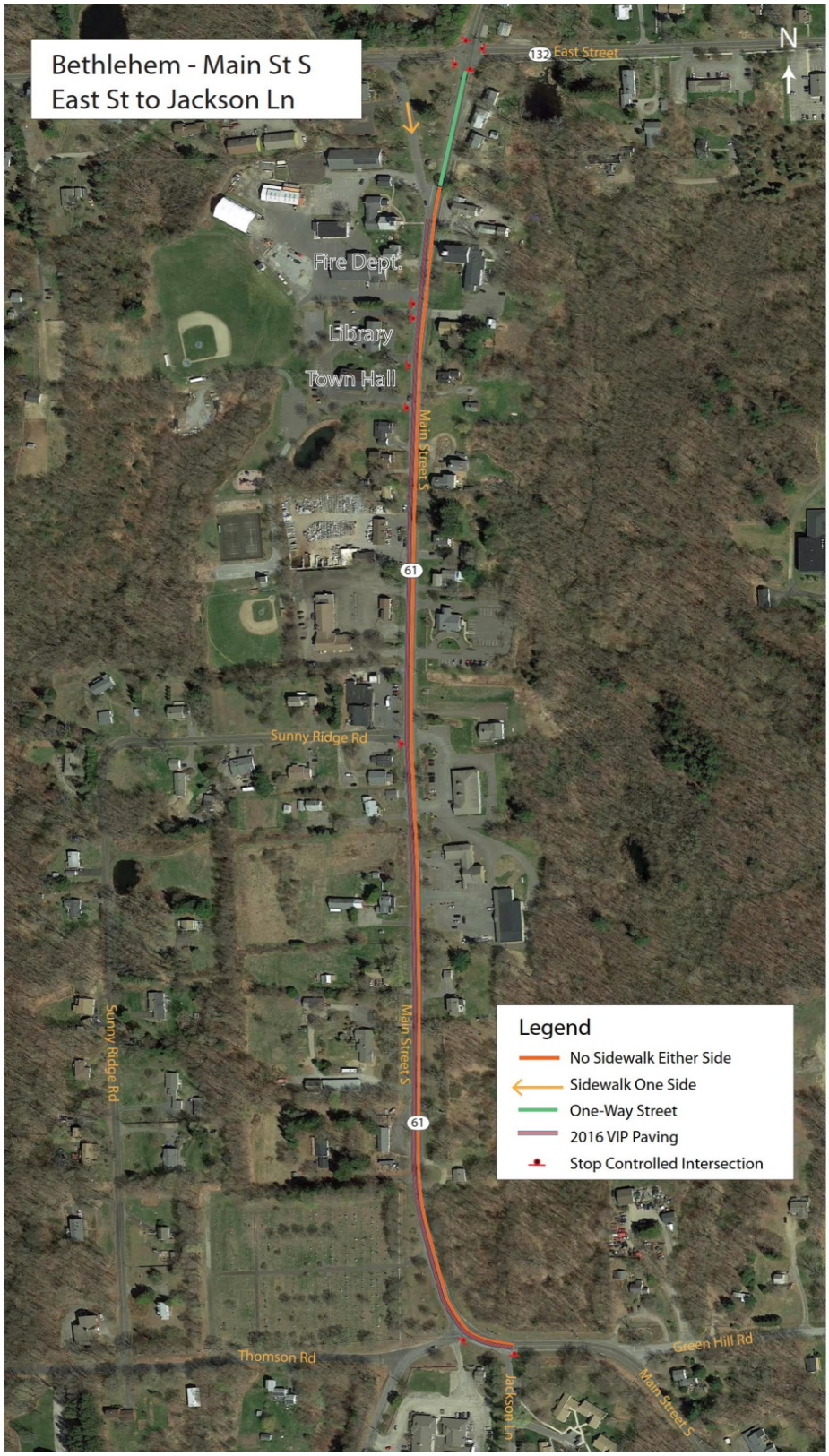


Figure 4. Main Street S. Geometrics

Bethlehem - Main Street S.

Street Inventory

From	To	Distance	Width	Sidewalk				Curb	Parking	Shoulder	Ramps	
				Side	Type	Width	Condition				Exist	Compliant
Jackson Lane	East Street	0.7 miles	11'	NB	No	N/A	N/A	Asphalt	No	3-5'	N/A	N/A
			11-12'	SB	No	N/A	N/A	Asphalt	No	3'	N/A	N/A

***CONDITION – "Good" is Serviceable Condition that meets current design standards. "Fair" is generally serviceable, but may need minor repairs, or may not completely align with current design standards. "Poor" is not serviceable, and generally inadequate for continued long-term use.**

Table 3. Street Inventory

2.2 Prior Successful Effort

The Town currently is in the process of constructing a concrete sidewalk at the north end of the study corridor under a STEAP grant. The project has already been designed and has been put out to bid with the contract expected to be awarded soon. The sidewalk project calls for a five foot concrete sidewalk to be constructed on the east side of Main Street South from East Street to the south end of the Town Green. The Town Green would be extended south by approximately 12 to 15 feet to incorporate a new mid-block crosswalk that would first cross Main Street South to the Town Green and then cross from the Green to the west side of the street. The sidewalk would then continue down the west side of Main Street South and terminate at Town Hall. It is anticipated that this project will be completed in Fall 2016.

The state re-paved Main Street South as part of its Vendor-in-Place (VIP) paving program in 2016. This project also included new bituminous curbing in some locations. New stop signs were installed throughout the town in December 2015, including some in the study area.

The Town developed a plan in 1998 to provide sidewalks in the town center area.

2.3 Pre-Audit Meeting

The RSA was conducted on September 20, 2016. The Pre-Audit meeting was held at 8:30 AM in the Town Hall located at 36 Main Street South in Bethlehem.

The RSA Team was comprised of staff from AECOM, staff from CTDOT, representatives from several Bethlehem departments including the First Selectmen, Police Department, and Department of Public Works, and a consulting engineer. The complete list of attendees can be found in Appendix B.

Several items were presented for general information prior to conducting the Audit in the field:

- Bethlehem has put out to bid a contract for construction of a concrete sidewalk at the north end of the study area (described above - see Appendix D).
- The Town will be responsible for removing snow from the sidewalks.
- Main Street South was recently re-paved by the state.
- Preliminary plans have been made to continue the sidewalk from Town Hall south to Jackson Lane.
- There is a woman in a motorized wheelchair who regularly travels through this area. There is a desire to improve safety for all users such as her.
    - There used to be a way for this user to pull off the road at the intersection of Main Street South and Flanders Road, to stop and look before crossing, but the recent paving project installed a curb in this area which eliminated the pull off area.

    - The Town is coordinating with the Connecticut Department of Transportation (CTDOT) remove a section of this curbing.
- Bicyclists and joggers use this route. Bike riders range from children to competitive riders and racers.
- The existing shoulders are narrow, with catch basins that are not conducive to a bike friendly road.
- There is nowhere for pedestrians to walk right now so they walk in the street.
- It may be possible to install a crosswalk on Flanders Road.
- There is no Town ordinance prohibiting bicycle riders from using sidewalks, but only children currently do so.
- Flanders Road is an important cut through route. A large amount of traffic splits off from Main Street South.
- There is moderate heavy truck traffic in the area that has increased over time. Traffic often has to stop and wait while large trucks turn in and out of the masonry business.
- A speed study conducted by the Town showed average vehicle speeds of 35 mph at the north end of the study area with speeds 7-8 mph faster at the south end of the study area. Speed trailers have been used to discourage speeding.
- Traffic volumes are higher on the weekend than weekdays due to tourist traffic and the presence of summer residences in the area.
    - There are also three popular restaurants in the area, one of which is in the center of the study area, that generate significant traffic volume on weekends.
- Some tractor trailers pass through the area when following GPS. Attempts to deter this with signage have been unsuccessful.
- The area around the Town Green is closed for vehicle traffic for Christmas celebrations.
    - There is insufficient street lighting for events such as this and additional temporary lights have to be provided.
- The Bethlehem post office also generates significant traffic during December since people want to have Christmas cards stamped with the Bethlehem postmark.
- Other local traffic generators include popular religious organizations, a nearby fairgrounds and the Bellamy House, which hosts weddings and other functions.
    - The need for overflow parking at both the Bellamy House and the First Church of Bethlehem results in significant pedestrian traffic.
    - In the past, the church has requested a mid-block crosswalk to accommodate these pedestrians.
- There is speed enforcement in the area with most drivers being given warnings since they do not realize that the speed limit drops from 45 mph to 30 mph.
- New stop signs were installed in December 2015.
- A senior housing complex is located near the intersection with Jackson Lane.
- Route 61 is used by fire trucks and ambulances.

3 RSA Assessment

3.1 Field Audit Observations

Intersection of Main Street South and The Green:

- The "Do Not Enter" signs are set back from the intersection, essentially allowing vehicles to turn across the one way street (The Green) into Memorial Hall (Figure 5).

- The existing alignment of the intersection is awkward with The Green meeting Main Street South at a skewed angle.

    - The stop sign and stop bar are not aligned close to one another, likely due to the skew (Figure 6).

- The crosswalk that is proposed as a part of the Town's sidewalk project will be behind the stop bar and will intersect with the extended nose of the Town Green.

- There are not many street lights around the Town Green.

Figure 5. "Do Not Enter" Signs at The Green

Figure 6. Stop Sign and Stop Bar not Aligned

Main Street South:

North Section

- A mid-block crosswalk is being constructed as part of the Town's sidewalk project at the south end of the Town Green. The potential to install another new crosswalk across Main Street South connecting to the First Church of Bethlehem would not be recommended due to the close proximity to the new crosswalk planned at the nose of the extended Town Green.

- There is a sidewalk on East Street that ends at the intersection of East Street and Main Street South.
    - There is a handicap ramp and detectable warning strip, but no crosswalk across the intersection.
    - The ramp is misaligned and directs pedestrians out into the intersection instead of directly across the road (Figure 7).
- The sidewalk on East Street extends down the east side of Main Street South and terminates at the fourth house (#17) south of East Street. This sidewalk is five feet wide and in fair condition and will be replaced as part of the planned project in the town center.
- Constructing a sidewalk on either side of Main Street South would be possible, but there are some design challenges due to uneven terrain, etc.
    - Linden tree branches hang low in front of the Christ Episcopal Church and will need to be trimmed when a new sidewalk is installed.
    - There are some drainage issues on the west side of Main Street South, south of Town Hall (#44) that will require grading/fill to construct a new sidewalk.
- There are only two street lights on Main Street South in the town center area.
- The Bellamy House on the northwest corner of Route 61/Route 132 generates pedestrian traffic across the Town Green because people park near the library and walk to functions at the Bellamy House. There is no crosswalk across Route 132 between the Bellamy House and the Town Green.

Figure 7. Sidewalk Ramp at East St. Intersection

- The former restaurant on the west side of The Green is being renovated and is expected to open soon.
- The existing Main Street South roadway widths at the First Church of Bethlehem are 3' SB shoulder, 12' SB lane, 11' NB lane and 5' NB shoulder.

South Section

- A new sidewalk may need to be placed on the east side of Main Street South to avoid grade issues on the west side.
- The intersection with Flanders Road is awkward since it is on a sharp curve (Figure 8, Figure 9).
- Crossing Flanders Road is difficult for wheelchair users (and others) because the sight lines are restricted and there is nowhere to pull off the road.
- The Flanders Road intersection is busy because many motorists use Flanders Road as a cut through to Woodbury.
- The existing Main Street South roadway widths at the masonry supply business are 3' shoulders and 11' lanes in both directions.

Figure 8. Intersection of Main Street South and Flanders Road

Figure 9. Main Street South Looking South at Flanders Road Intersection

3.2 Post Audit Workshop - Key Issues

- The two new connected crosswalks proposed as part of the Town's sidewalk contract at the south end of the Town Green are not currently proposed to have any special lighting or safety features. Flashing beacons or other lighted signage were discussed as options.
- The Town would like to further investigate the possibility of putting a sidewalk at the East Street and Main Street South intersection where the sidewalk currently ends. It may require construction of a landing on the Town Green or

additional sidewalk. (A follow up meeting was held on September 29, 2016, at the request of the Town. Representatives from the Town, CTDOT's Office of Intermodal Planning, and CTDOT District 4 Traffic met at the site to discuss several issues, including this one, due to an impending construction project in this area.)

- Intersection of The Green and Main Street South (A follow up meeting was held on September 29, 2016, at the request of the Town. Representatives from the Town, CTDOT's Office of Intermodal Planning, and CTDOT District 4 Traffic met at the site to discuss several issues, including this one, due to an impending construction" project in this area.) :
    - The Green is on state right of way.
    - There may be a need for additional "One-Way" signs on The Green to clarify traffic movements.
    - The small extension of the Town Green to the south would make the turns across The Green into Memorial Hall more difficult, but would not necessarily prohibit this movement.
    - Several options were discussed on how to improve operations in this area:
        - Construct the sidewalk and crosswalks without extending the Town Green.
        - Extend the Town Green further south than currently proposed to prohibit turns into and out of the Memorial Hall driveway.
        - Extend the Town Green area with striping in the road to discourage turning across The Green.

        - Add/move signage to make turns across The Green illegal.
        - Closing The Green to traffic was briefly discussed but rejected due to the presence of parking and issues of transferring the roadway from the state to the town.
    - The parking spaces at Memorial Hall would need to be re-striped to accommodate traffic coming from The Green.
- Large trucks turning into and out of the masonry supply store disrupt traffic (Figure 10).
- There is currently no signage or emergency call box at the Ambulance building.
- The right of way on Main Street South is wide, which lends itself to installing sidewalks.
- There is significant right of way available at the Flanders Road intersection. Options such as realigning the roadways and intersection, including a roundabout, may be considered.
- There is currently very little street lighting in the area.
- There are several driveways close together near Sunny Ridge Road and the Ambulance building that make turning onto Main Street South difficult.

Figure 10. Masonry Supply Business Entrance

4 Recommendations

From the discussions during the Post-Audit meeting, the RSA team compiled a set of recommendations that are divided into short-term, mid-term, and long-term categories. For the purposes of the RSA, **Short-term** is understood to mean modifications that can be expected to be completed very quickly, perhaps within six months, and certainly in less than a year if funding is available. These include relatively low-cost alternatives, such as striping and signing, and items that do not require additional study, design, or investigation (such as right-of way acquisition). **Mid-term** recommendations may be more costly and require establishment of a funding source, or they may need some additional study or design in order to be accomplished. Nonetheless, they are relatively quick turn-around items, and should not

require significant lengths of time before they can be implemented. Generally, they should be completed within a window of eighteen months to two years if funding is available. **Long-term** improvements are those that require substantial study and engineering, and may require significant funding mechanisms and/or right-of-way acquisition. These projects generally fall into a horizon of two or more years when funding is available.

4.1 Short Term

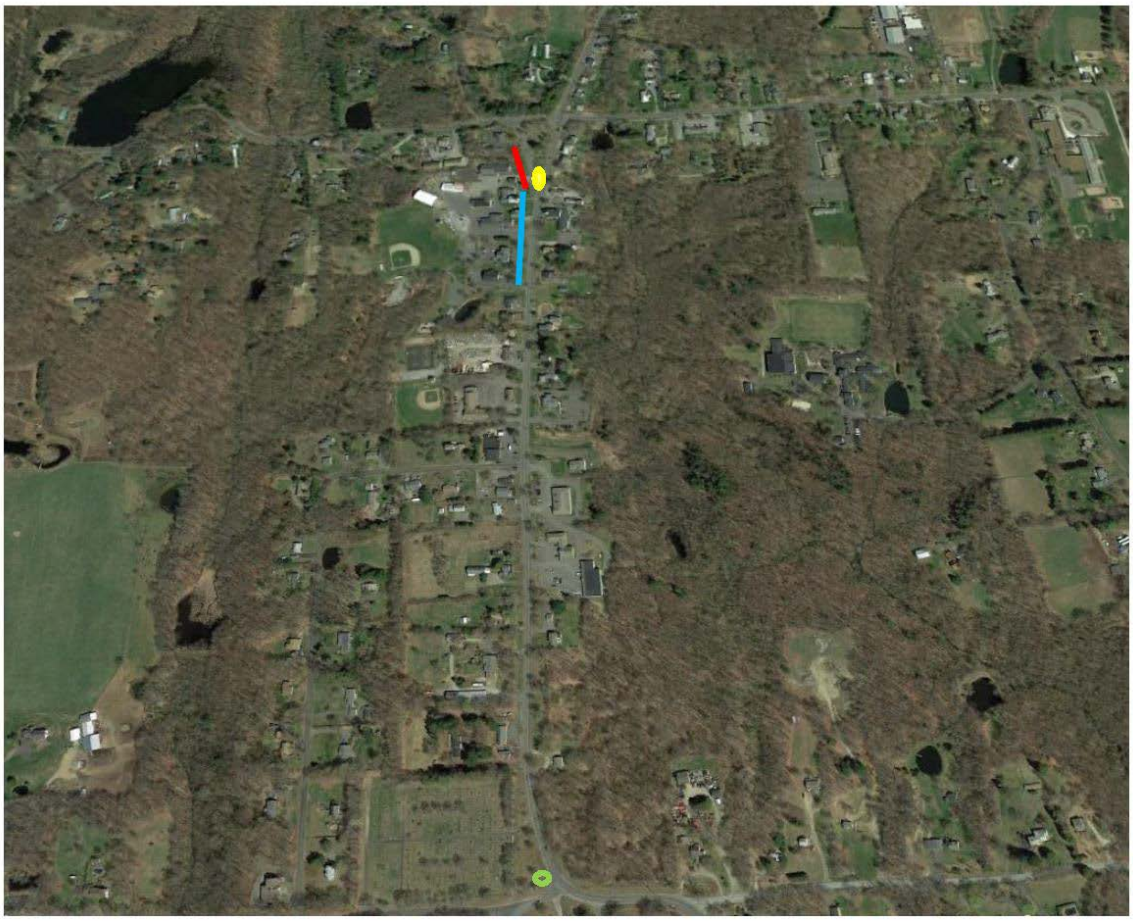
1. Town to coordinate with CTDOT and the sidewalk project contractor to investigate 1) the potential for lengthening the Town Green further to the south; and 2) providing pavement markings for motorists making a left turn out of The Green onto Main Street South northbound as part of the Town's sidewalk project. (A follow up meeting was held on September 29, 2016, at the request of the Town. Representatives from the Town, CTDOT's Office of Intermodal Planning, and CTDOT District 4 Traffic met at the site to discuss several issues, including this one, due to an impending construction project in this area.)
2. Town to trim trees that have grown and interfere with the construction of the proposed sidewalk.
3. Town to contact CTDOT to install intersection ahead and emergency vehicle signage (Figure11 and Figure 12) on Main Street South at the Ambulance building and Fire Department.
4. Town to re-stripe the parking spaces at Memorial Hall in conjunction with the sidewalk construction project.
5. Town to request that CTDOT install "One-Way" signs on The Green to clarify traffic movements (Figure 13). (A follow up meeting was held on September 29, 2016, at the request of the Town. Representatives from the Town, CTDOT's Office of Intermodal Planning, and CTDOT District 4 Traffic met at the site to discuss several issues, including this one, due to an impending construction project in this area.)
6. Town to request that CTDOT move the stop sign on The Green in line with the stop bar. (A follow up meeting was held on September 29, 2016, at the request of the Town. Representatives from the Town, CTDOT's Office of Intermodal Planning, and CTDOT District 4 Traffic met at the site to discuss several issues, including this one, due to an impending construction project in this area.)
7. Town to contact GPS companies about removing truck routes through town.
8. Town to contact CTDOT about providing a pad area for handicap users at the northwest corner of Main Street South and Flanders Road. Additional measures are discussed below in medium term recommendations.

Figure 14 depicts these recommendations.

Figure11. Intersection Ahead Sign

Figure 12. Ambulance Sign

Figure 13. "One Way" Sign



Investigate Green extension and additional pavement markings (#1)

Trim trees that interfere with sidewalk project (#2)

Install "One-Way" signs and reset "Stop" sign (#5,6)

Contact CTDOT about a pad area for handicap users (#8)

Figure 14. Short Term Recommendations

4.2 Medium Term

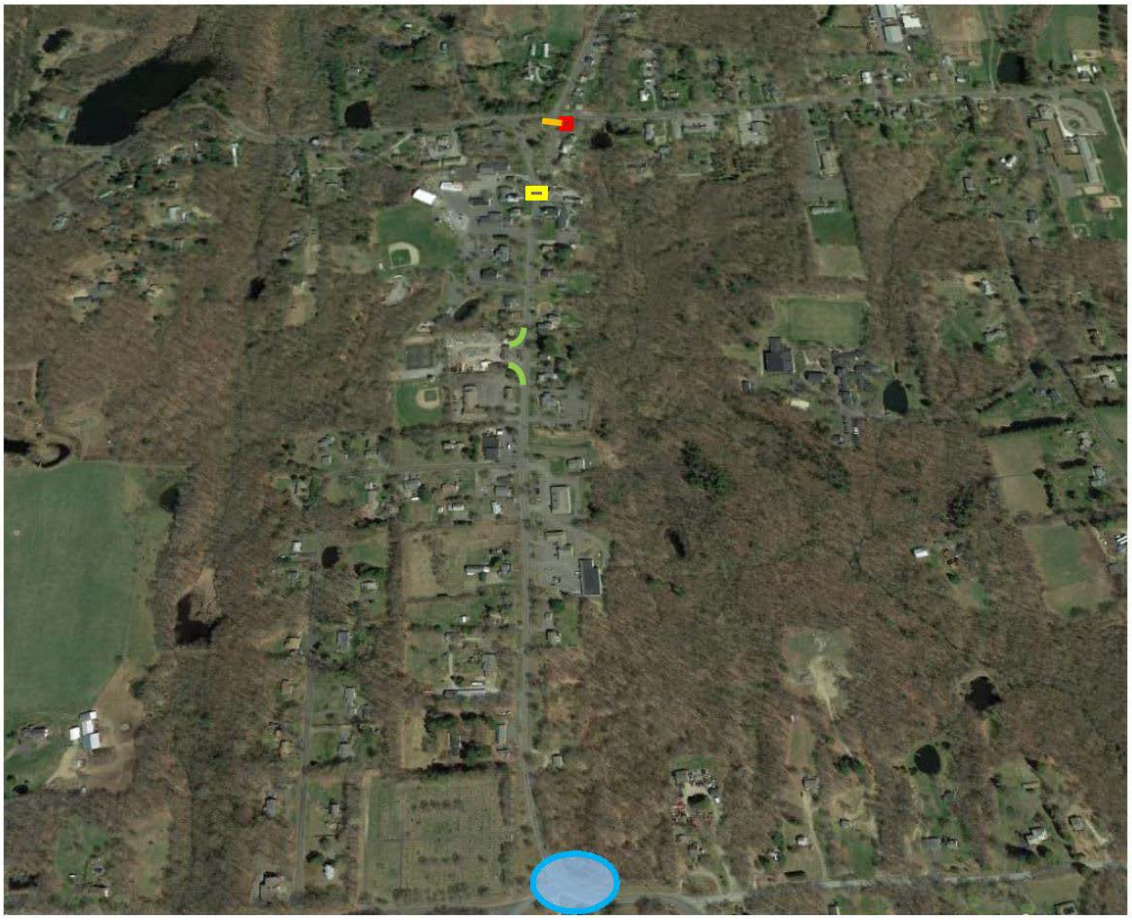
1. Coordinate with CTDOT to evaluate the option of providing a pedestrian flashing beacon or other measures to improve pedestrian safety at the new mid-block crosswalk to be constructed on Main Street South at the Town Green.
2. Town to coordinate with CTDOT to evaluate options to improve operations and alignment at the intersection of Main Street South, Flanders Road, and Jackson Lane. Roadway realignment and roundabout options should be considered.
3. Town to investigate adding street lights along Main Street South, especially in the Town Green area.
4. Town to request that CTDOT re-align the handicap ramp at the intersection of East Street and Main Street South so that it directs pedestrians directly across the intersection instead of into it.
5. Town to coordinate with owners of the masonry supply business to improve curb radii at the driveway to improve access for trucks (Figure 16).
6. Town to coordinate with CTDOT to install an emergency call box at the Ambulance building (Figure 15).
7. Town to coordinate with CTDOT to consider adding a crosswalk across Main Street South northbound approach at East Street and install a handicap ramps and landing on the Town Green side (Figure 17). (A follow up meeting was held on September 29, 2016, at the request of the Town. Representatives from the Town, CTDOT's Office of Intermodal Planning, and CTDOT District 4 Traffic met at the site to discuss several issues, including this one, due to an impending construction project in this area.)

Figure 15. Emergency Call Box

Figure 16. Masonry Supply Curb Radius

Figure 17. East Street/Main Street South Intersection Without Crosswalk

Figure 18 depicts some of the recommendations along Main Street South.



Investigate the possibility of a flashing pedestrian beacon or other measures (#1)

Evaluate options to improve operations and alignment of the intersection (#2)

Re-align handicap ramp to direct pedestrians across the intersection (#4)

Coordinate with property owner to improve curb radii (#5)

Consider adding a crosswalk and handicap ramp (#7)

Figure 18. Medium Term Recommendations

4.3 Long Term

1. Town to design and construct the southern section of sidewalk from Town Hall to Jackson Lane to improve connectivity.

Figure 19 depicts this recommendation.

Figure 19. Long Term Recommendations

4.4 Summary

This report documents the observations, discussions and recommendations developed during the successful completion of the Town of Bethlehem RSA. It provides Bethlehem with an outlined strategy to improve the transportation network for all road users between East Street and Jackson Lane on Main Street South within the town center, particularly focusing on pedestrians and cyclists. Moving forward, Bethlehem may use this report to prepare strategies for funding and implementing the improvements, and as a tool to plan for including these recommendations into future development.

COMMUNITY
connectivity program

Appendix A

AECOM
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Welcome to the Community Connectivity Program Application

Please fill in the following information to provide the Audit team leaders with a comprehensive description of the area contained in this application.

1. Applicant contact information

Name	Leonard J. Assard
Title	First Selectman
Email Address	lassard@bethlehemct.org
Telephone Number	(203) 266-7510

2. Location information

Address	Main Street South from Town office to Judson Lane
Description	Improve safety for cyclists and pedestrians
City / Town	Bethlehem

3. Roadway type
(Please select all that apply)

- [x] **State road**
- [ ] **Local road**
- [ ] **Private Road**
- [ ] **Other (please specify)**

4. Zoning
(Please select all that apply)

- [ ] **Industrial**
- [ ] **Residential**
- [ ] **Commercial**
- [ ] **Mixed Use**
- [ ] **Retail**
- [x] **N/A (not applicable)**
- [ ] **Other (please specify)**

5. Approximate mile radius around the location

Other (Please Specify)
The length of the road involved is approximately 2700'

6. Community Sites
(Please select all that apply)

- [x] **Community Centers**
- [x] **Business Districts**
- [x] **Restaurant/Bar Districts**
- [ ] **Churches**
- [x] **Housing Complexes**
- [ ] **Proximity to Schools**
- [x] **Tourist Locations (examples – Casino, Malls, Parks, Aquarium, etc...)**
- [ ] **N/A (not applicable)**
- [ ] **Other (please specify)**

7. Employment Facilities
(Retail, Industrial, etc...)

- [x] **Yes**
- [ ] **No**

If Yes please describe (please specify)

The employment opportunities include those associated with the businesses located along Main Street.

8. Educational facilities
(Please select all that apply)

- [ ] Public, Parochial, Private Schools (more than 1 school within a ½ mile)
- [ ] University / Community Colleges
- [x] N/A (not applicable)
- [ ] Other (please specify)

9. Transit facilities
(Please select all that apply)

- [ ] Bus
- [ ] Rail
- [ ] Ferry
- [ ] Airport
- [ ] Park and Ride Lot
- [x] N/A (not applicable)
- [ ] Other (please specify)

10. Safety Concerns
(Please select all that apply)

- [x] **Traffic (volumes & speed)**
- [ ] **Collisions**
- [x] **Sidewalks**
- [ ] **Traffic Signals**
- [ ] **Traffic Signs**
- [ ] **Parking Restrictions / Additions**
- [ ] **Drainage**
- [x] **ADA Accommodations**
- [ ] **Agricultural & Live Stock crossing**
- [ ] **Maintenance issues (cutting grass, leaves, snow removal)**
- [ ] **N/A (not applicable)**
- [x] **Other (please specify)**

Safe travel for cyclists and pedestrians

11. Are there any past, current or future transportation/economic development projects near this location (i.e. Federal, State or local projects)?

Yes

If Yes please describe and list all projects.

Past and ongoing sidewalk construction projects have and will improve safety concerns for cyclists, pedestrians and wheelchair bound residents.

12. Environmental Concerns:

N/A not applicable

If Yes please describe and list.

13. Please explain why this location should be considered for an RSA

This is the location of most of the traffic in Bethlehem because of the facilities located within this corridor including restaurants, banks, dentist, grocery store, hardware store, pharmacy, senior center, Town Hall, library and churches.

14. Are there plans to expand the area?
(Transportation Oriented Development, Economic Development, housing, etc...)

N/A not applicable

15. Any other pertinent information that is unique to this location?

Yes

This stretch of Route 61, from the Green to the intersection of Jackson Lane is the location in Bethlehem which separates the most traffic with the possible exception of the Elementary School. In addition to the vehicle traffic generated, it also is the location that is subject to the most pedestrian, cyclist and powered wheelchair traffic.

Thank you for completing the Community Connectivity application.

Please click on the "submit button" below and include the following attachments

1. Location map (google, GIS) **(Required)**
2. Collision data (If available)
3. Traffic data (ADT or VMT) (If available)
4. Pedestrian/bicycle data (If available)

Submit Application

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connectivity program

Appendix B

AECOM
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Road Safety Audit

Town: Bethlehem
RSA Location: Main St S (Town Hall) to Jackson Ln
Meeting Location: Bethlehem Town Hall
Address: 36 Main St S, Bethlehem, CT 06751
Date: 9/20/2016
Time: 8:30 AM

Participating Audit Team Members

Audit Team Member	Agency/Organization
Brad Sabean	Aecom
Jeff Maxtutis	Aecom
Melanie Zimyeski	CTDOT
Gary Giordano	GGPELS LLC
George P. Romano	Beth P.D.
John swendsen	Bethlehem Public Works
Leonard Assoud	First Selectman
Cono D'Elia	CT State Police
David Deakin	Selectman

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Appendix C

AECOM
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Road Safety Audit – Bethlehem

Meeting Location: Bethlehem Town Hall
Address: 36 Main St S, Bethlehem, CT 06751
Date: 9/20/2016
Time: 8:30 AM

Agenda

Type of Meeting: **Road Safety Audit – Pedestrian Safety**

Attendees: **Invited Participants to Comprise a Multidisciplinary Team**

Please Bring: **Thoughts and Enthusiasm!!**

8:30 AM **Welcome and Introductions**

- Purpose and Goals
- Agenda

8:45 AM **Pre-Audit**

- Definition of Study Area
- Review Site Specific Data:
  - Average Daily Traffic
  - Crash Data
  - Geometrics
- Issues
- Safety Procedures

10:00 AM **Audit**

- Visit Site
- As a group, identify areas for improvements

12:00 PM **Post-Audit Discussion / Completion of RSA**

- Discussion observations and finalize findings
- Discuss potential improvements and final recommendations
- Next Steps

2:30 PM **Adjourn for the Day – but the RSA has not ended**

Instruction for Participants:

- Before attending the RSA, participants are encouraged to observe the intersection and complete/consider elements on the RSA Prompt List with a focus on safety.
- All participants will be actively involved in the process throughout. Participants are encouraged to come with thoughts and ideas, but are reminded that the synergy that develops and respect for others' opinions are key elements to the success of the overall RSA process.
- After the RSA meeting, participants will be asked to comment and respond to the document materials to assure it is reflective of the RSA completed by the multidisciplinary team.

Audit Checklist

Pedestrians and Bicycles	Comment

Pedestrian Crossings
• Sufficient time to cross (signal)
• Signage
• Pavement Markings
• Detectable warning devices (signal)
• Adequate sight distance
• Wheelchair accessible ramps
  o Grades
  o Orientation
  o Tactile Warning Strips
• Pedestrian refuge at islands
• Other	

Pedestrian Facilities
• Sidewalk
  o Width
  o Grade
  o Materials/Condition
  o Drainage
  o Buffer
• Pedestrian lighting
• Pedestrian amenities (benches, trash receptacles)
• Other	

Bicycles • Bicycle facilities/design • Separation from traffic • Conflicts with on-street parking • Pedestrian Conflicts • Bicycle signal detection • Visibility • Roadway speed limit • Bicycle signage/markings • Shared Lane Width • Shoulder condition/width • Traffic volume • Heavy vehicles • Pavement condition • Other	

Roadway & Vehicles	

• Speed-related issues
  o Alignment;
  o Driver compliance with speed limits
  o Sight distance adequacy
  o Safe passing opportunities	

• Geometry
  o Road width (lanes, shoulders, medians);
  o Access points;
  o Drainage
  o Tapers and lane shifts
  o Roadside clear zone /slopes
  o Guide rails / protection systems	

• Intersections
  o Geometrics
  o Sight Distance
  o Traffic control devices
  o Safe storage for turning vehicles
  o Capacity Issues	

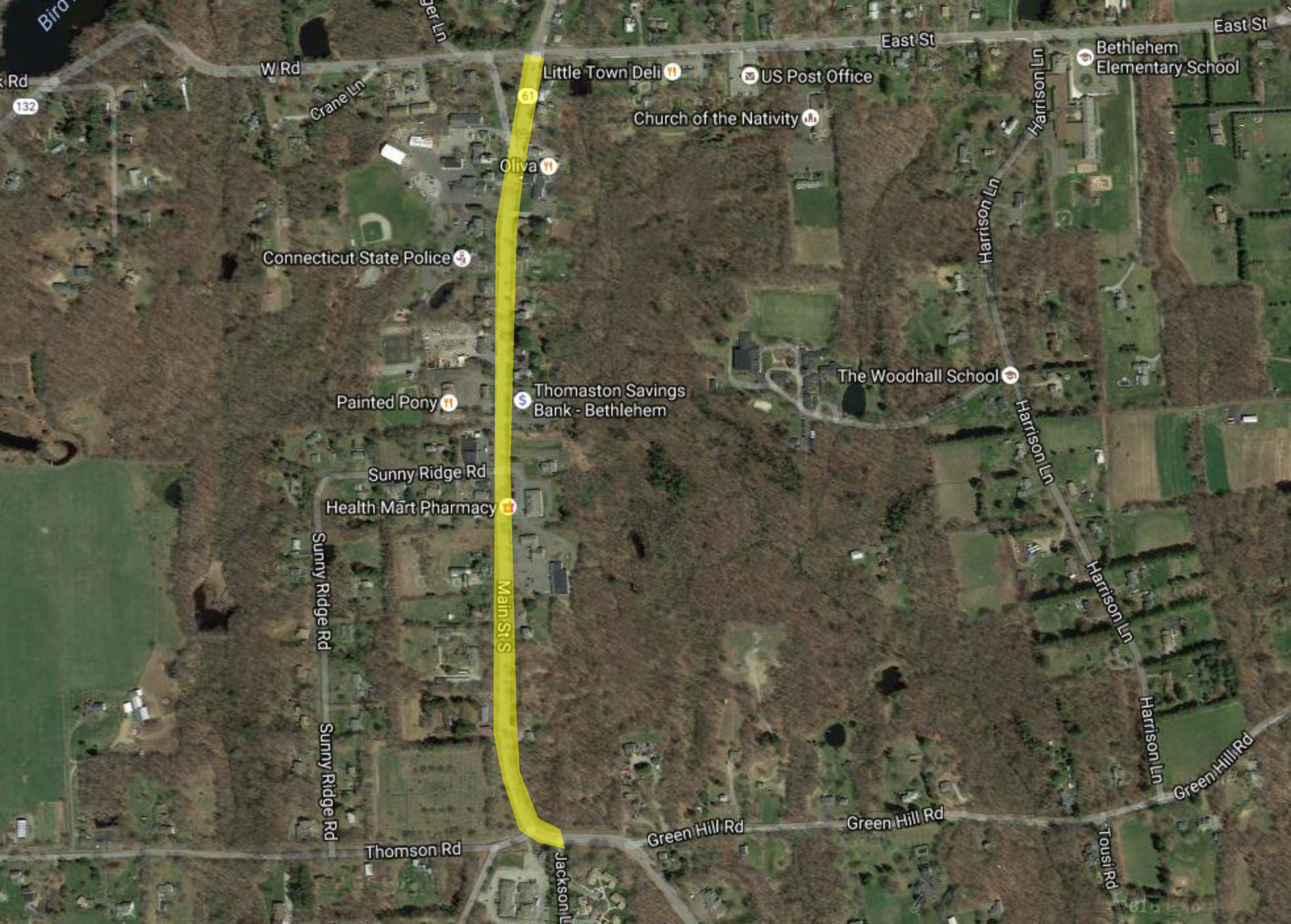
• Pavement
  o Pavement Condition (excessive roughness or rutting, potholes, loose material)
  o Edge drop-offs
  o Drainage issues
• Lighting Adequacy	

• Signing
  • Correct use of signing
  • Clear Message
  • Good placement for visibility
  • Adequate retroreflectivity
  • Proper support	

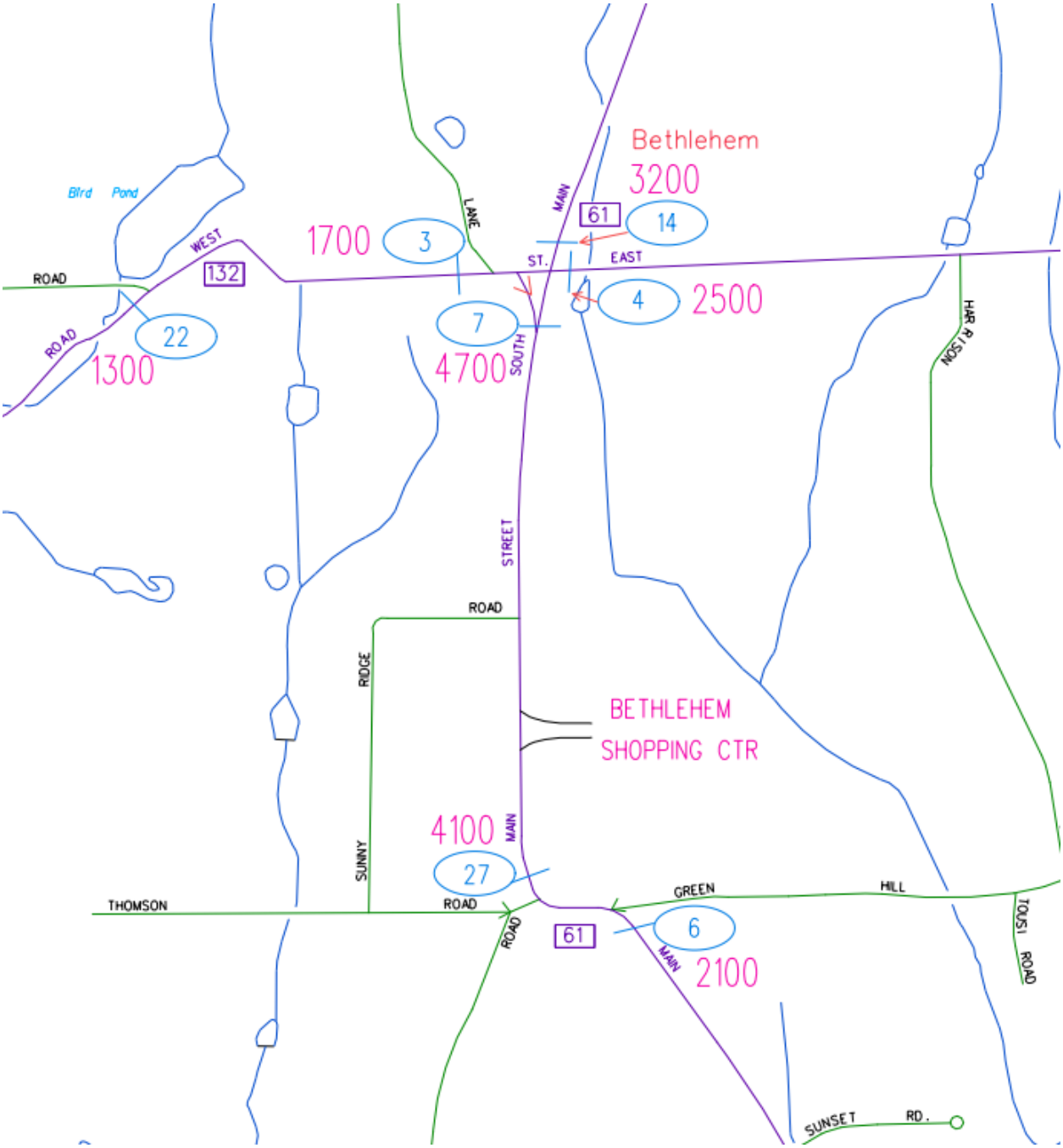
• Signals
  o Proper visibility
  o Proper operation
  o Efficient operation
  o Safe placement of equipment
  o Proper sight distance
  o Adequate capacity	

• Pavement Markings
  o Correct and consistent with MUTCD
  o Adequate visibility
  o Condition
  o Edgelines provided	

• Miscellaneous
  o Weather conditions impact on design features.
  o Snow storage	


East St
East St
Bethlehem Elementary School
W Rd
Little Town Deli
US Post Office
Crane Ln
Church of the Nativity
Harrison Ln
Oliva
Connecticut State Police
The Woodhall School
Thomaston Savings Bank - Bethlehem
Painted Pony
Sunny Ridge Rd
Health Mart Pharmacy
Main St S
Sunny Ridge Rd
Harrison Ln
Green Hill Rd
Green Hill Rd
Green Hill Rd
Thomson Rd
Jackson Ln
Tousi Rd
132
61

Average daily traffic (ADT)

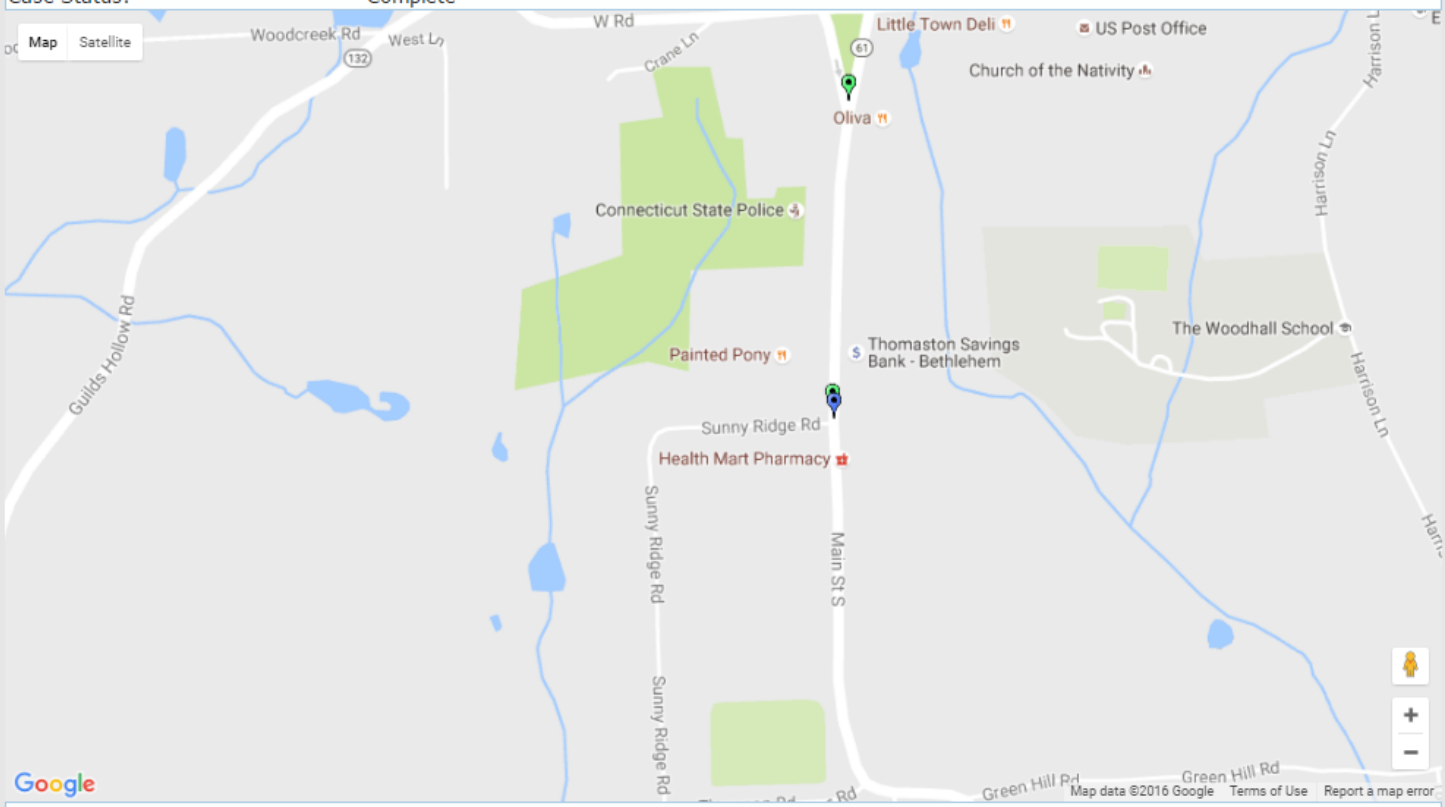


2015 Crashes

UCONN Connecticut Crash Data Repository

Search Criteria:

Dataset:	mmucc
Date From:	01/01/2015
Date To:	12/31/2015
Towns:	Bethlehem
Town & Route:	Town:10 Route:61 Intersection:undefined Milepost:-
Crash Severity:	Injury of any type (Serious, Minor, Possible), Fatal (Kill), Property Damage Only
Case Status:	Complete



Markers | Heatmap | Select & Query | Query Selection

Injury of any type (Serious, Minor, Possible) **Fatal (Kill)** **Property Damage Only**

Select All | Deselect All

This web site is exempt from discovery or admission under 23 U.S.C. 409.

Connecticut Crash Data Repository | User Guide | Contact Us

Road Safety Audit – Bethlehem

Crash Summary

Data: 3 years (2012-2014)

There were no crashes that involved pedestrians.

There were no crashes involving bicyclists.

Severity Type	Number of Crashes	
Property Damage Only	6	86%
Injury (No fatality)	1	14%
Fatality	0	0%
Total	7	

Manner of Crash / Collision Impact	Number of Crashes	
Unknown	0	0%
Sideswipe-Same Direction	0	0%
Rear-end	1	14%
Turning-Intersecting Paths	3	43%
Turning-Opposite Direction	0	0%
Fixed Object	3	43%
Backing	0	0%
Angle	0	0%
Turning-Same Direction	0	0%
Moving Object	0	0%
Parking	0	0%
Pedestrian	0	0%
Overturn	0	0%
Head-on	0	0%
Sideswipe-Opposite Direction	0	0%
Miscellaneous- Non Collision	0	0%
Total	7	

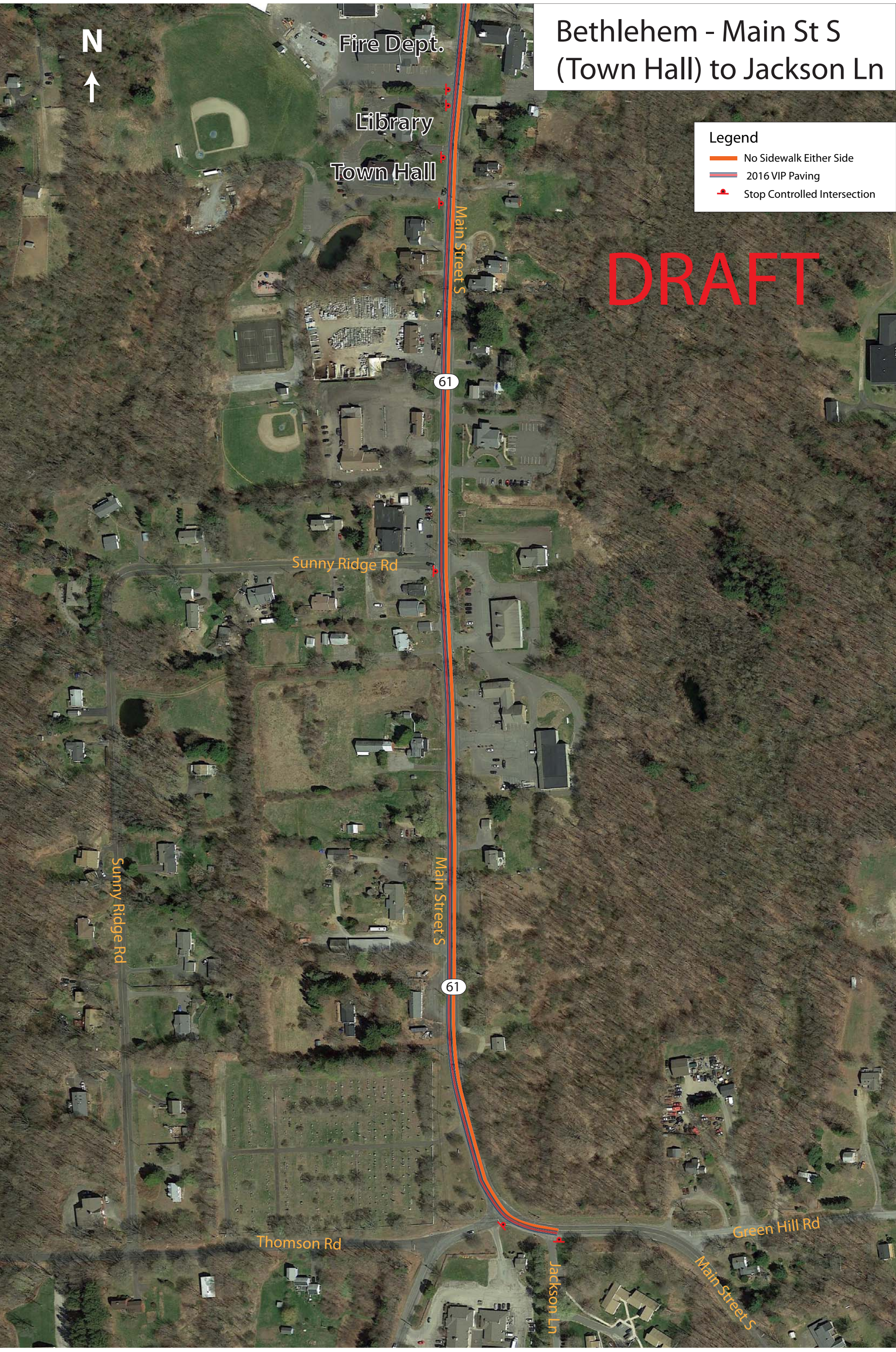
Weather Condition	Number of Crashes	
Snow	0	0%
Rain	0	0%
No Adverse Condition	6	86%
Unknown	0	0%
Fog	1	14%
Other	0	0%
Blowing Sand, Soil, Dirt or Snow	0	0%
Severe Crosswinds	0	0%
Sleet, Hail	0	0%
Total	7	

Light Condition	Number of Crashes	
Dark-Not Lighted	1	14%
Dark-Lighted	2	29%
Daylight	4	57%
Dusk	0	0%
Unknown	0	0%
Dawn	0	0%
Total	7	

Road Surface Condition	Number of Crashes	
Snow/Slush	0	0%
Wet	1	14%
Dry	6	86%
Unknown	0	0%
Ice	0	0%
Other	0	0.0%
Total	7	

Time		Number of Crashes	
0:00	0:59	0	0%
1:00	1:59	0	0%
2:00	2:59	0	0%
3:00	3:59	0	0%
4:00	4:59	0	0%
5:00	5:59	0	0%
6:00	6:59	1	14%
7:00	7:59	0	0%
8:00	8:59	0	0%
9:00	9:59	0	0%
10:00	10:59	0	0%
11:00	11:59	0	0%
12:00	12:59	0	0%
13:00	13:59	1	14%
14:00	14:59	1	14%
15:00	15:59	1	14%
16:00	16:59	0	0%
17:00	17:59	0	0%
18:00	18:59	0	0%
19:00	19:59	0	0%
20:00	20:59	1	14%
21:00	21:59	0	0%
22:00	22:59	1	14%
23:00	23:59	1	14%
Total		7	

Bethlehem - Main St S (Town Hall) to Jackson Ln



Post-Audit Discussion Guide

Safety Issues

- Confirmation of safety issues identified during walking audit

Potential Countermeasures

- Short Term recommendations

- Medium Term recommendations

- Long Term recommendations

Next Steps

- Discussion regarding responsibilities for implementing the countermeasures (including funding)

Road Safety Audit – Bethlehem

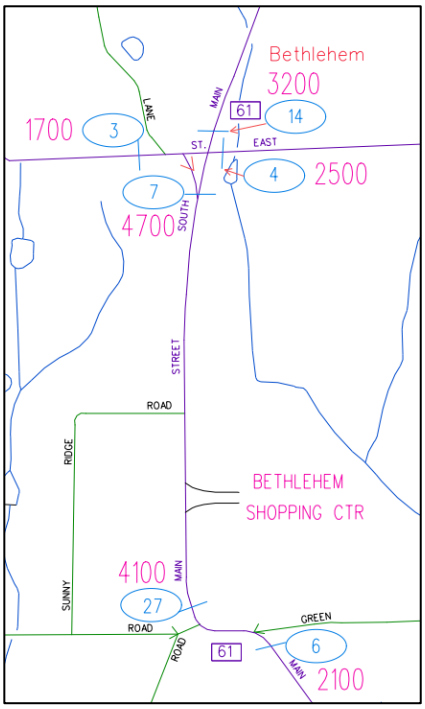
Fact Sheet

Functional Classification:

- Main Street South is classified as a Major Collector

ADT

- ADT on Main Street South is 2,100 – 4,700



Population and Employment Data (2014):

- Population: 3,551
- Employment: 707

Urbanized Area

- Bethlehem is not in an Urbanized Area

Demographics

- The statewide average percentage below the poverty line is 10.31%. There are no areas in Bethlehem exceeding the state average.

- The statewide average percentage minority population is 30.53%. There are no areas in Bethlehem exceeding the state average.

Air Quality

- Bethlehem's CIPP number is 302
- Bethlehem is within the Greater CT Marginal Ozone Area
- Bethlehem is within a CO Maintenance Area

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Appendix D

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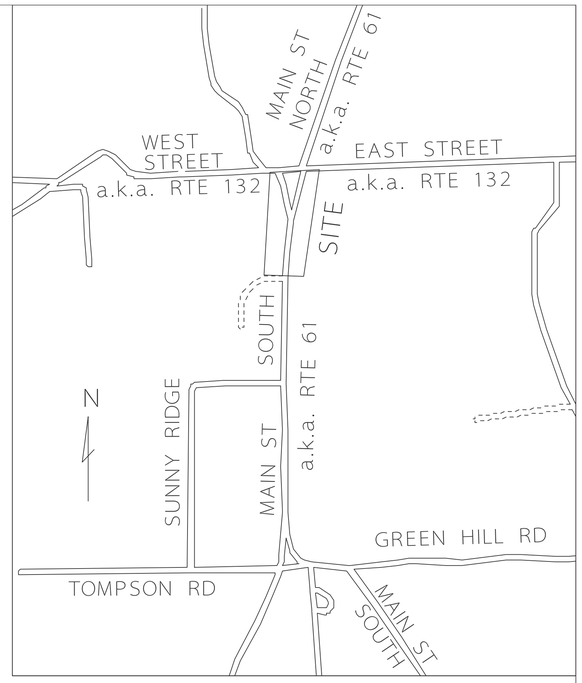
TOWN OF BETHLEHEM
MAIN STREET SOUTH SIDEWALK PROJECT
MAIN STREET SOUTH
BETHLEHEM, CT. 06751



LOCATION MAP
SCALE 1" = 1,000'

CONTRACT DOCUMENTS
FOR
UPGRADE AND NEW SIDEWALKS
STATE PROJECT NUMBER 10-086

LIST OF DRAWINGS

PAGE	TITLE
1,	SITE PLAN
2,	TOPOGRAPHIC SURVEY MAP
3,-10	DETAIL SHEETS

NOT VALID
UNLESS EMBOSSED
SEAL AFFIXED HEREON

LEONARD J. ASSARD, P.E.

TOWN OF BETHLEHEM
MAIN STREET SOUTH SIDEWALK PROJECT
MAIN STREET SOUTH
BETHLEHEM, CT. 06751

JULY 2016

TITLE	DATE*
CONCRETE STEPS	02-10
CONCRETE PAVEMENT REPLACEMENT (FULL DEPTH)	02-10
REINFORCED CONC. PAVEMENT FOR PRESSURE RELIEF JOINT	02-10
SIDEWALK RAMPS SHEET 1	06-14
SIDEWALK RAMPS SHEET 2	06-14
SIDEWALK RAMPS SHEET 3	06-14
SIDEWALK RAMPS SHEET 4	06-14

TITLE	DATE*

*REVISED OR ADDED

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	6/1/10	Removed Sedimentation Control Sheets and archived them.	
2	10/10	Converted all railing sheets and barrier sheets to standards sheets.	

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/14/2010

NOT TO SCALE

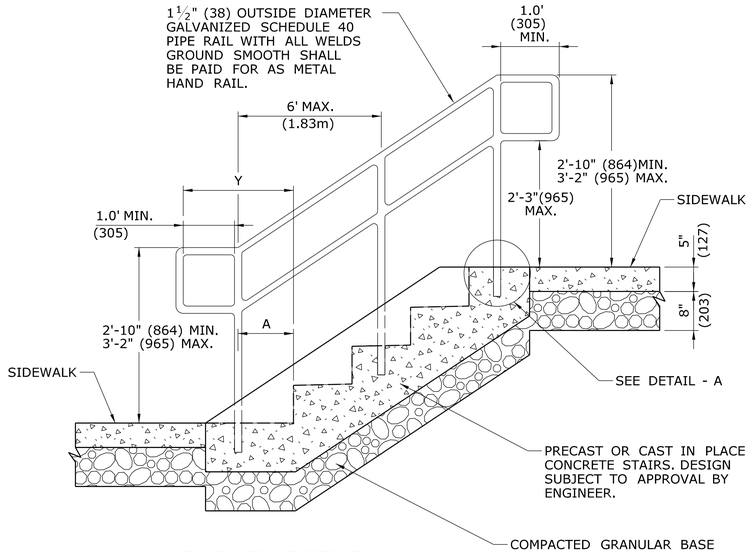
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: CTDOT_GUIDE_SHEETS_OCT2010.dgn Model: 1-HW-GDS_INDEX

OFFICE OF ENGINEERING

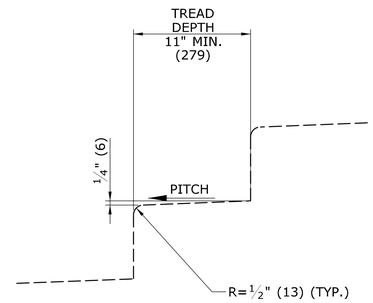
HIGHWAYS
GUIDE SHEET INDEX

GUIDE SHEET NO.:
HW-GD_INDEX



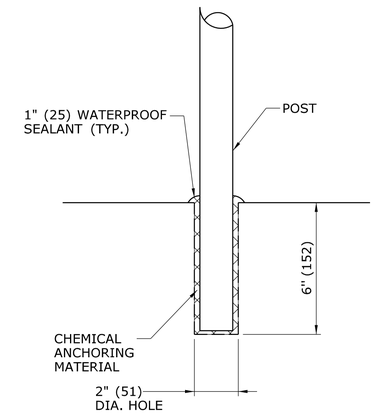
HAND RAIL DETAIL

A = WIDTH OF ONE TREAD REQUIRED AT EACH BOTTOM RISER.
Y = THE MINIMUM HANDRAIL EXTENSON OF 1'-0" (305) + A.



TYPICAL STEP DETAIL

ALL TREADS SHALL BE PITCHED ¼" (6)
(SEE NOTE 5)



DETAIL A
POST HOLE AT LANDINGS

(TYPICAL FOR ALL POSTS)

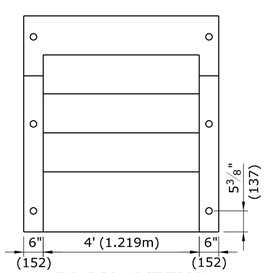
GENERAL NOTES:

1. A HAND RAIL IS REQUIRED ON BOTH SIDES OF STEPS WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE HIGHEST WALKING SURFACE AND THE LOWEST WALKING SURFACE IS GREATER THAN 30" (762).
2. POSTS SHALL BE NO MORE THAN 6' (1.83m) APART.
3. THE RAILING BASE CONNECTIONS SHALL BE DESIGNED TO PROVIDE STRENGTH FOR A 251.8 POUND (114.2kg) FORCE APPLIED IN ANY LOCATION OR DIRECTION ON THE RAIL.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL STEEL POSTS AND HANDRAIL ELEMENTS INCLUDING A LAYOUT FOR REVIEW AND APPROVAL.
5. ALL STEPS SHALL HAVE UNIFORM RISER HEIGHTS AND UNIFORM TREAD DEPTHS. RISERS SHALL BE A MINIMUM OF 4" (102) HIGH TO A MAXIMUM OF 7" (178) HIGH. TREADS SHALL BE A MINIMUM OF 11" (279) DEEP MEASURED FROM RISER TO RISER.
6. THESE DETAILS WERE DEVELOPED IN CONFORMANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) HANDBOOK DATED 1998 AND 2000.

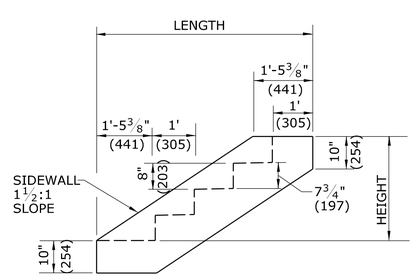
STEPS CONFORMING TO 1½:1 SLOPE							
HEIGHT	LENGTH	NUMBER RISERS	VOLUME OF STEPS (CU.YDS.) (m^3)	HEIGHT	LENGTH	NUMBER RISERS	VOLUME OF STEPS (CU.YDS.) (m^3)
0'-8" (203)	2'-5⅜" (746)	1	0.474 (0.436)	6'-0" (1829)	10'-5⅜" (3186)	9	2.564 2.316
1'-4" (406)	3'-5⅜" (1051)	2	0.718 (0.671)	6'-8" (2032)	11'-5⅜" (3489)	10	2.831 (2.551)
2'-0" (610)	4'-5⅜" (1356)	3	0.962 (0.906)	7'-4" (2235)	12'-5⅜" (3794)	11	3.098 (2.768)
2'-8" (813)	5'-5⅜" (1661)	4	1.229 (1.141)	8'-0" (2438)	13'-5⅜" (4101)	12	3.365 (3.021)
3'-4" (1016)	6'-5⅜" (1965)	5	1.496 (1.376)	8'-8" (2642)	14'-5⅜" (4404)	13	3.632 (3.256)
4'-0" (1219)	7'-5⅜" (2270)	6	1.763 (1.611)	9'-4" (2845)	15'-5⅜" (4709)	14	3.899 (3.491)
4'-8" (1422)	8'-5⅜" (2575)	7	2.030 (1.846)	10'-0" (3048)	16'-5⅜" (5013)	15	4.166 (3.726)
5'-4" (1626)	9'-5⅜" (2880)	8	2.297 (2.081)	10'-8" (3251)	17'-5⅜" (5318)	16	4.433 (3.961)

ADD 0.244 CU.YDS. (0.18 CU.MS.) FOR EACH ADDITIONAL RISER

STEPS WITH 1 1/2 : 1 SIDEWALL SLOPE

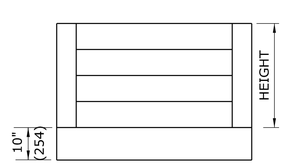


PLAN VIEW



SIDE VIEW

ALL TREADS SHALL BE PITCHED ¼" (6)

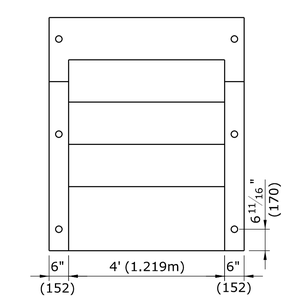


FRONT VIEW

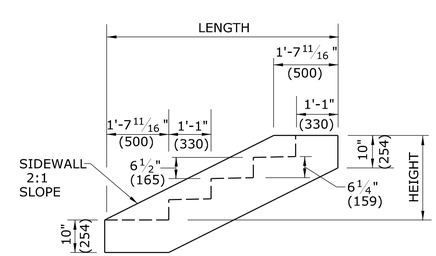
STEPS WITH 2:1 SIDEWALL SLOPE							
HEIGHT	LENGTH	NUMBER RISERS	VOLUME OF STEPS (CU.YDS.) (m^3)	HEIGHT	LENGTH	NUMBER RISERS	VOLUME OF STEPS (CU.YDS.) (m^3)
0'-6½" (165)	2'-8 11/16" (830)	1	0.494 (0.346)	4'-10½" (1486)	11'-4 11/16" (3472)	9	2.580 (2.098)
1'-1" (330)	3'-9 11/16" (1160)	2	0.736 (0.565)	5'-5" (1651)	12'-5 11/16" (3802)	10	2.847 (2.317)
1'-7½" (495)	4'-10 11/16" (1491)	3	0.978 (0.784)	5'-11½" (1816)	13'-6 11/16" (4132)	11	3.114 (2.536)
2'-2" (660)	5'-11 11/16" (1821)	4	1.245 (1.003)	6'-6" (1981)	14'-7 11/16" (4462)	12	3.381 (2.755)
2'-8½" (825)	7'-0 11/16" (2151)	5	1.512 (1.222)	7'-0½" (2146)	15'-8 11/16" (4792)	13	3.648 (2.974)
3'-3" (990)	8'-1 11/16" (2481)	6	1.779 (1.441)	7'-7" (2311)	16'-9 11/16" (5123)	14	3.915 (3.193)
3'-9½" (1156)	9'-2 11/16" (1811)	7	2.046 (1.660)	8'-1½" (2476)	17'-10 11/16" (5453)	15	4.182 (3.412)
4'-4" (1321)	10'-3 11/16" (3141)	8	2.313 (1.879)	8'-8" (2642)	18'-11 11/16" (5783)	16	4.449 (3.631)

ADD 0.242 CU.YDS. (0.18 CU.MS.) FOR EACH ADDITIONAL RISER

STEPS WITH 2 : 1 SIDEWALL SLOPE

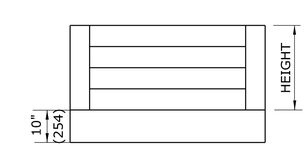


PLAN VIEW



SIDE VIEW

ALL TREADS SHALL BE PITCHED ¼" (6)



FRONT VIEW

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

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Plotted Date: 10/8/2010

DESIGNER/DRAFTER:

CHECKED BY:

NTS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\CTDOT_HIGHWAY_GD.dgn

SIGNATURE/ BLOCK:

OFFICE OF ENGINEERING

APPROVED BY: DATE:

PROJECT TITLE:

TOWN:

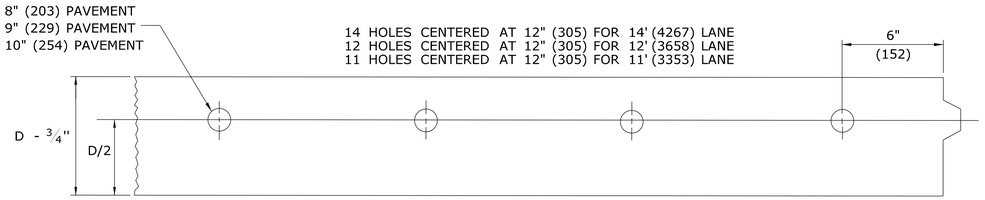
DRAWING TITLE:

CONCRETE STEPS

PROJECT NO.

DRAWING NO.

SHEET NO.



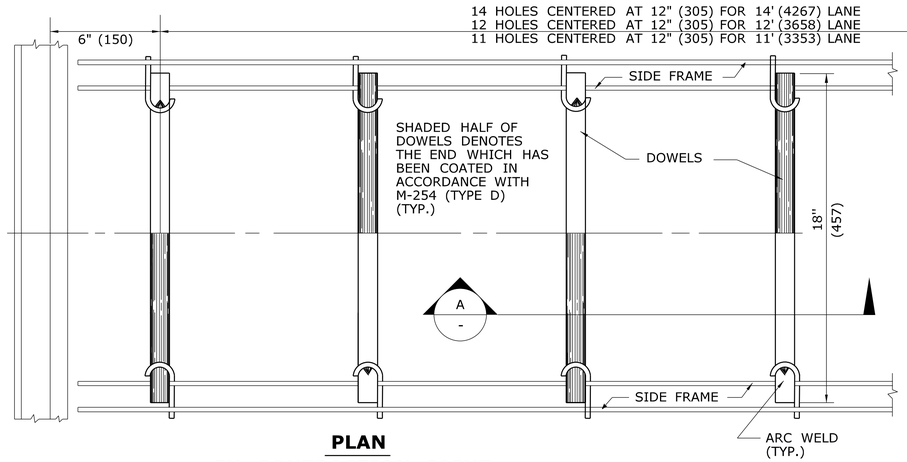
DETAIL OF JOINT FILLER IN EXPANSION JOINT

GENERAL NOTES:

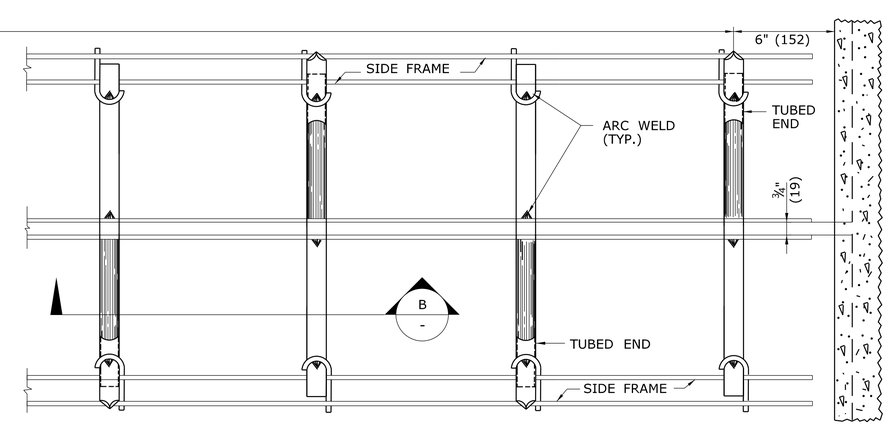
1. MATERIALS FOR SIDE FRAMES AND CENTER SUPPORTS SHALL MEET THE REQUIREMENTS OF AASHTO M-31. ALTERNATE FRAME DESIGN MAY BE APPROVED BY THE ENGINEER.
2. DOWEL BAR DIAMETER SIZES ARE EXCLUSIVE OF COATINGS. ALL DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.
3. LENGTH OF LOAD TRANSFER UNIT AND NUMBER OF DOWELS FOR VARIOUS LANE WIDTHS SHALL BE AS FOLLOWS:

LANE WIDTH	OVERALL LENGTH	NO. OF DOWELLS
11'-0" (3353)	10'-9" (3277)	11
12'-0" (3658)	11'-9" (3581)	12
14'-0" (4267)	13'-6" (4115)	14

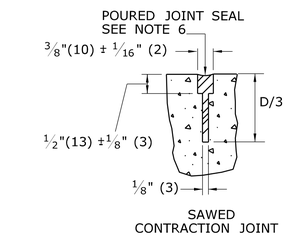
4. D = DEPTH OF PAVEMENT
5. ALL SIDE FRAMES AND CENTER SUPPORTS SHALL BE 1 GAUGE WIRE OR 5/16" (8) BARS THROUGHOUT.
6. AT FIRST POURING, THE JOINT SEAL MATERIAL SHALL FILL THE JOINT FLUSH WITH THE PAVEMENT SURFACE. AFTER THIS MATERIAL HAS COOLED AND CONTRACTED, THE REMAINING JOINT OPENING SHALL BE FILLED TO WITHIN ⅛" (3) OF THE PAVEMENT SURFACE.
7. WHEN AN EXISTING TRANSVERSE CONTRACTION OR EXPANSION JOINT FALLS WITHIN THE LIMITS OF THE PATCH, THE CONTRACTION OR EXPANSION JOINT SHALL BE REPLACED WITH A JOINT OF THE SAME TYPE, ALONG THE SAME PLANE AS THE ADJACENT TRANSVERSE JOINTS.
8. WHEN IT IS DETERMINED BY THE ENGINEER THAT A PATCH GREATER THAN 12' (3658) IN LENGTH IS NECESSARY, THE CONTRACTOR SHALL SUBMIT A PLAN FOR THE PROPOSED METHOD OF OPERATIONS FOR APPROVAL BY THE ENGINEER.
9. WHERE DISTRESS IS LIMITED TO ONLY ONE SIDE OF THE TRANSVERSE JOINT, EXTEND PATCH BOUNDARY 3' (914) ON GOOD SIDE OF JOINT TO REMOVE AND REPLACE EXISTING DOWEL BAR SYSTEM.
10. WHERE DISTRESS IN ADJACENT LANES IS SIMILAR, THE PATCH BOUNDARY SHALL BE EXTENDED TO AVOID OFFSETS < 2' (610) BETWEEN PATCHES IN ADJACENT LANES.
11. THE TERMS: CONCRETE PAVEMENT REPLACEMENT FOR ROADWAY (FULL DEPTH), CONCRETE PATCH, AND PATCH SHALL BE USED INTERCHANGEABLY.



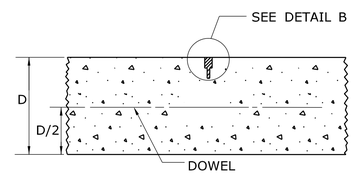
PLAN IN CONTRACTION JOINT



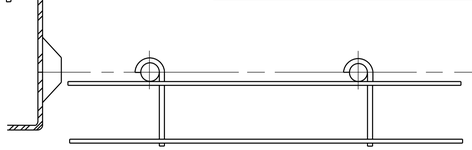
PLAN IN EXPANSION JOINT



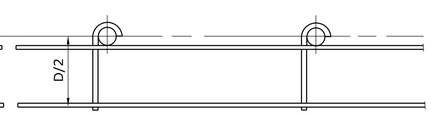
DETAIL B



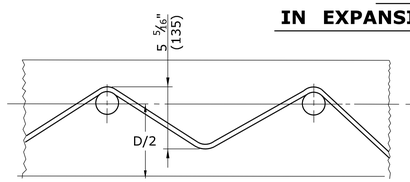
SECTION THRU TRANSVERSE CONTRACTION JOINT



SIDE VIEW



SECTION A
-



SECTION B
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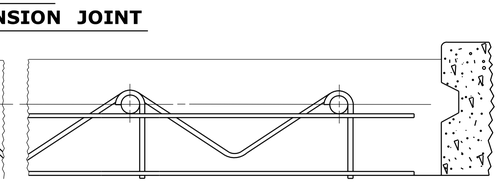
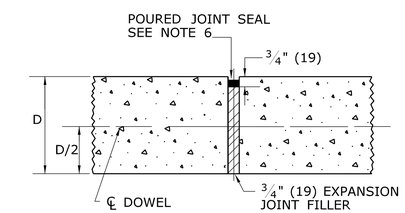
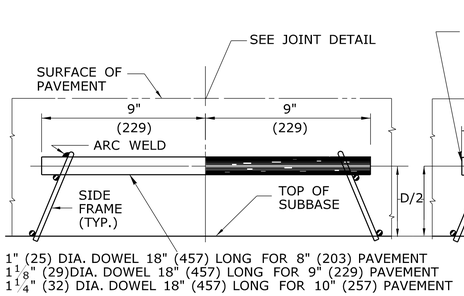


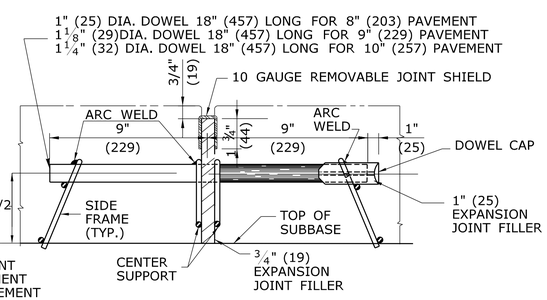
SIDE VIEW



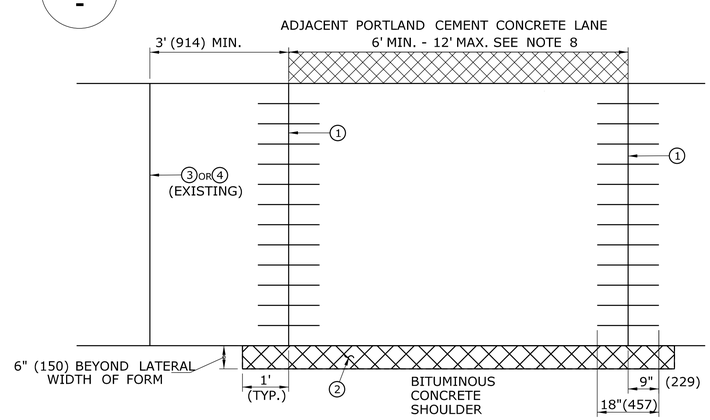
SECTION THRU TRANSVERSE EXPANSION JOINT



HALF SIZE SECTION THRU UNIT IN CONTRACTION



HALF SIZE SECTION THRU UNIT IN EXPANSION JOINT



REPAIR METHOD FOR MID-SLAB DISTRESS (ONE LANE TYPICAL)

LEGEND:

1. SAW CUT CONCRETE PAVEMENT FULL DEPTH
2. SAW CUT AND REMOVE BITUMINOUS SHOULDER ANDINSTALL FORM
3. TRANSVERSE CONTRACTION JOINT
4. TRANSVERSE EXPANSION JOINT

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/8/2010

DESIGNER/DRAFTER:

CHECKED BY:

NTS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\CTDOT_HIGHWAY_GD.dgn

SIGNATURE/ BLOCK:

OFFICE OF ENGINEERING

APPROVED BY: DATE:

PROJECT TITLE:

TOWN:

PROJECT NO.

DRAWING NO.

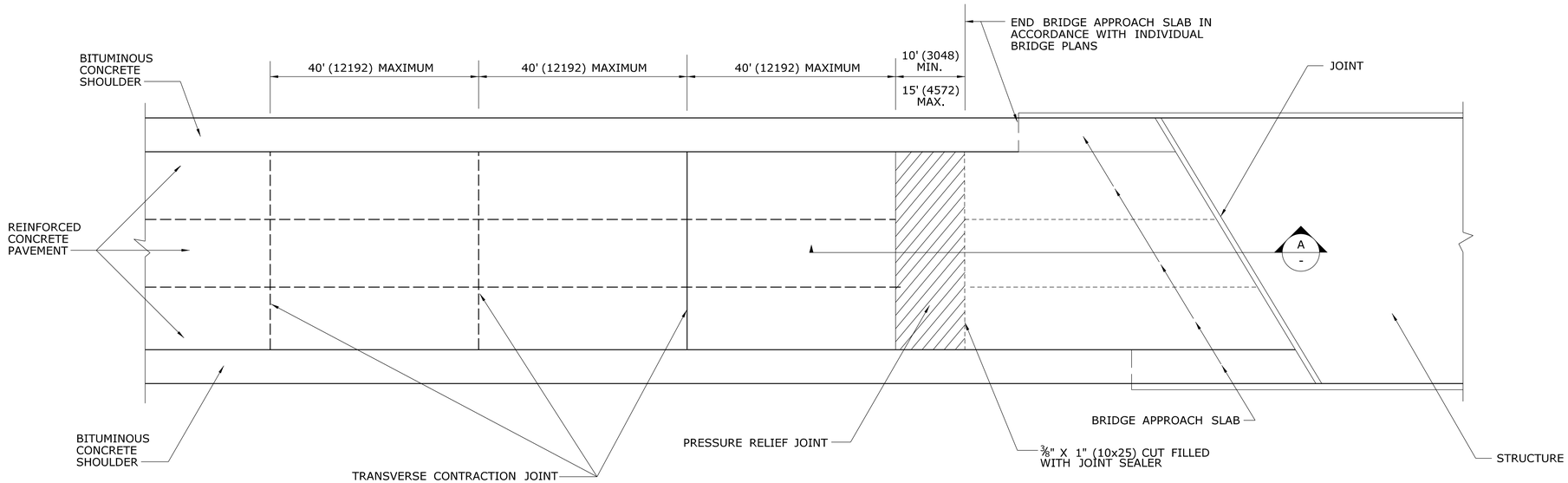
DRAWING TITLE:

CONCRETE PAVEMENT REPLACEMENT (FULL DEPTH)

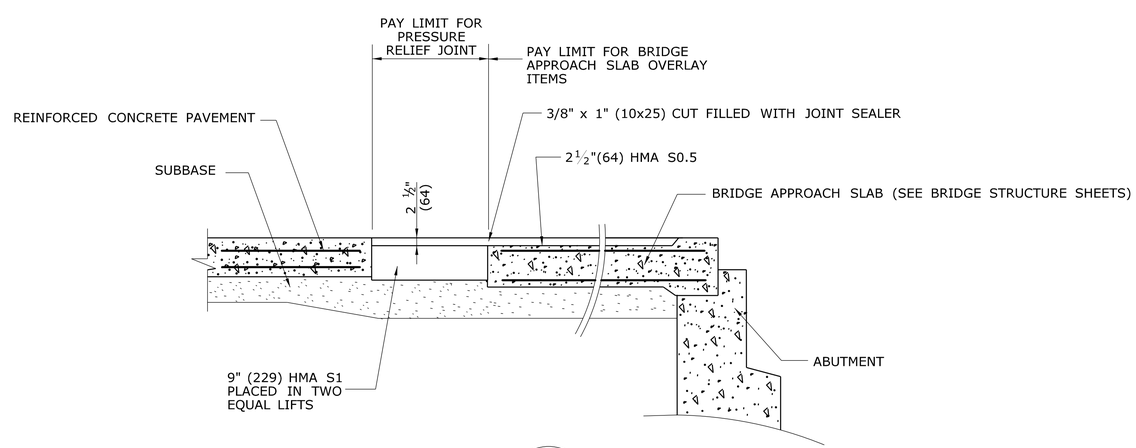
SHEET NO.

GENERAL NOTES:

1. APPROACH SLABS SHALL BE TREATED OVERALL WITH MATERIAL FOR TACK COAT AND OVERLAID WITH $2\frac{1}{2}$" (64) HMA S0.5.
2. THE COST OF CUT AND JOINT SEALER SHALL BE INCLUDED IN THE PRICE FOR THE PRESSURE RELIEF JOINT.
3. SEE CONSTRUCTION PLANS FOR SUPERPAVE DESIGN LEVELS.



PLAN AND GENERAL JOINT ARRANGEMENT



SECTION A -

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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-	-	-	-
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/8/2010

DESIGNER/DRAFTER:

CHECKED BY:

NTS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\CTDOT_HIGHWAY_GD.dgn

SIGNATURE/ BLOCK:

OFFICE OF ENGINEERING

APPROVED BY: DATE:

PROJECT TITLE:

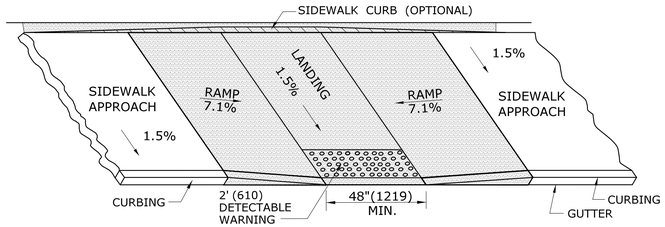
TOWN:

DRAWING TITLE:
REINFORCED CONC. PAVEMENT FOR PRESSURE RELIEF JOINT

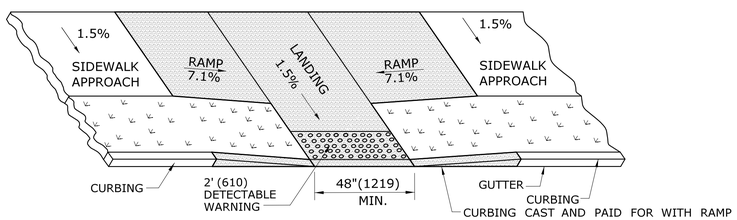
PROJECT NO.

DRAWING NO.

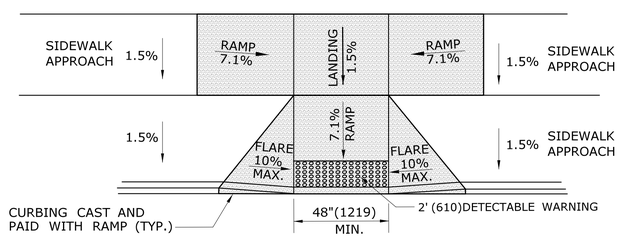
SHEET NO.



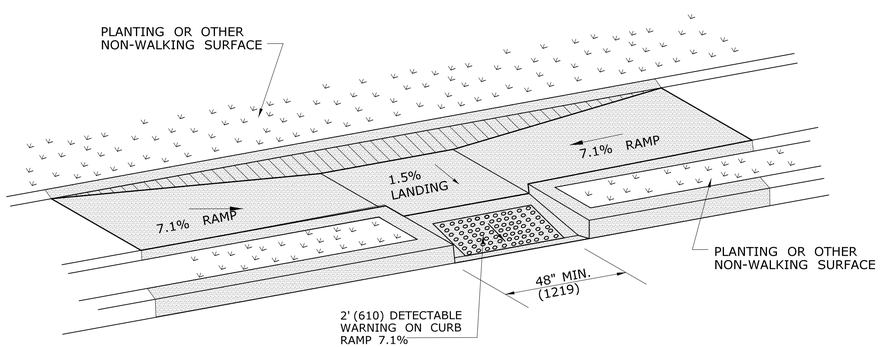
PARALLEL SIDEWALK RAMP (TYPE 1) NO UTILITY STRIP



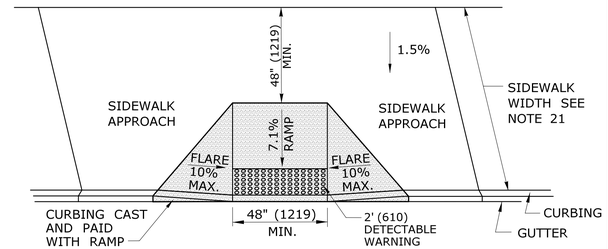
PARALLEL SIDEWALK RAMP (TYPE 1a)
WITH UTILITY / GRASS STRIP



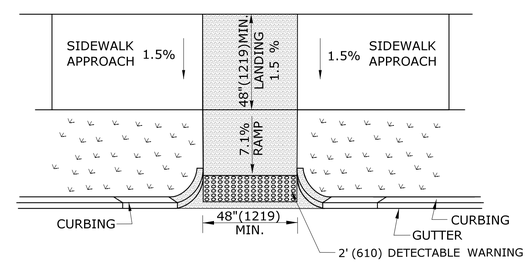
PARALLEL/PERPENDICULAR SIDEWALK RAMP
NO UTILITY/GRASS STRIP (TYPE 1b)



PARALLEL SIDEWALK RAMP (TYPE 1c)
WITH UTILITY / GRASS STRIP

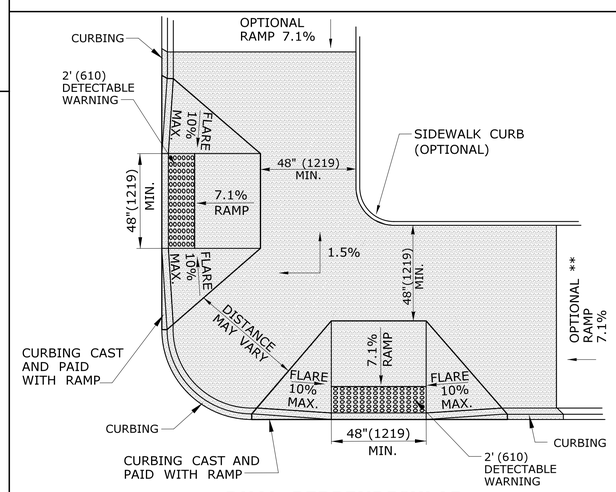


PERPENDICULAR SIDEWALK RAMP
W/ 48" (1219) MIN. BY PASS LANDING (TYPE 2)



PERPENDICULAR SIDEWALK RAMP
W/CURB RETURNS / UTILITY GRASS STRIP (TYPE 2a)

* OPTIONAL FLARE ONE SIDE OF RAMP

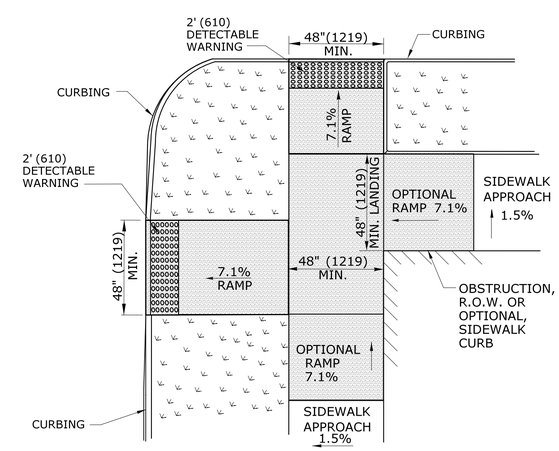


DUAL PERPENDICULAR
SIDEWALK RAMPS (TYPE 3)

SEE NOTES 19
* OPTIONAL CURB RETURN ON ONE SIDE OF RAMP
** SEE NOTE 23

GENERAL NOTES:

1. MAXIMUM SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE SIDEWALK RAMP SHOULD NOT EXCEED 5%. THE MAXIMUM GRADE DIFFERENCE BETWEEN THE GUTTER AND CURB RAMP SHALL NOT EXCEED 13%. SEE DETAIL 1 ON SHEET 4.
2. RAMP GRADE SHALL BE UNIFORM, FREE OF SAGS AND ABRUPT GRADE CHANGES. RUNNING SLOPES OF RAMPS SHALL NOT EXCEED 8.33% AND SHALL NOT EXCEED 15' (4.5m) WITHOUT PROVIDING A LANDING.
3. ALL RAMPS SHALL BE CONSTRUCTED OF CLASS "F" CONCRETE IN ACCORDANCE WITH CONNECTICUT STANDARD SPECIFICATIONS.
4. SIDEWALK RAMPS SHALL HAVE A COARSE BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP. THE SURFACE OF ALL SIDEWALK RAMPS SHALL BE STABLE, FIRM AND SLIP RESISTANT. SURFACE DISCONTINUITIES SHALL NOT EXCEED ½" (13) MAX. VERTICAL DISCONTINUITIES BETWEEN ¼" (6.4) AND ½" (13) MAX. SHALL BE BEVELED 1:2 MINIMUM APPLIED ACROSS THE ENTIRE LEVEL CHANGE.
5. DIAGONAL SIDEWALK RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES. DIAGONAL AND PERPENDICULAR RAMPS SHALL HAVE THE RAMP CUT PERPENDICULAR TO THE TANGENT OF THE CURB RADIUS FOR THE DESIGNATED ACCESSIBLE ROUTE. BOTH LONGITUDINAL SIDES OF THE RAMP SHOULD BE THE SAME LENGTH. SKEWED RAMPS SHOULD BE AVOIDED. FLARES ARE NOT CONSIDERED PART OF PEDESTRIAN ACCESS ROUTE. DIAGONAL RAMPS SHOULD NOT BE INSTALLED WHERE CURB RADII IS LESS THAN 20'(6096).
6. REMOVAL OF EXISTING SIDEWALK FOR NEW RAMP INSTALLATIONS SHALL BE TO THE NEAREST EXPANSION OR CONTRACTION JOINT. 8.3% MAXIMUM SLOPE MAY NOT BE ACHIEVABLE DUE TO EXISTING SIDEWALK GRADE. IN RECOGNITION OF THIS, A LIMIT OF 15' (4572) FOR REMOVAL SHALL BE USED UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. SAW CUT REQUIRED FOR DUMMY JOINTS SHALL BE INCLUDED IN THE COST OF "CONCRETE SIDEWALK RAMP" OR "CONCRETE SIDEWALK".
7. EXPANSION JOINTS IN CONCRETE SHALL MATCH THOSE IN ADJACENT SIDEWALKS BUT IN NO CASE SHALL THE SPACING BETWEEN EXPANSION JOINTS EXCEED 12' (3658) UNLESS OTHERWISE NOTED.
8. CONCRETE SIDEWALK RAMPS, SHALL BE PAID FOR UNDER THE ITEM "CONCRETE SIDEWALK RAMP", AS DEFINED BY THE CONSTRUCTION LIMITS ON THE PLANS AND SHALL BE FIELD VERIFIED.
9. SIDEWALK RAMPS SHALL BE CONSTRUCTED WITH THE TOE AT THE GUTTER CAST INTEGRALLY WITH RAMP UNLESS DIRECTED OTHERWISE BY THE ENGINEER (SEE TYPICAL SECTION ON SHEET 3). CURB REMOVAL AND CAST IN PLACE CURBING REQUIRED FOR THE RAMP, SHALL BE INCLUDED WITH PAY ITEM "CONCRETE SIDEWALK RAMP". CURBING OUTSIDE LIMITS OF RAMP OR LANDING SHOWN ON SHEET 3 SHALL BE CONSTRUCTED AND PAID FOR IN ACCORDANCE WITH CONNECTICUT STANDARD SPECIFICATIONS.
10. PREFERRED LOCATION TO INSTALL DETECTABLE WARNING STRIP SHALL BE 6" (152) FROM THE EDGE OF ROAD ALONG THE FULL WIDTH OF THE RAMP. FOR ALTERNATE LOCATIONS, REFER TO DETECTABLE WARNING PLACEMENT DETAILS ON SHEET 4.
11. TO PERMIT WHEELCHAIR WHEELS TO ROLL BETWEEN DOMES, ALIGN DOMES ON A SQUARE GRID IN THE DIRECTION OF RUNNING SLOPE (PERPENDICULAR TO CURB OR SLOPE BREAK). THE TRANSITION FROM RAMP TO GUTTER SHALL BE FLUSH WITHOUT A LIP.
12. WHERE COMMERCIAL DRIVEWAYS ARE PROVIDED WITH TRAFFIC SIGNALS AND THE SIDEWALK IS CONTINUOUS THROUGH DRIVEWAY, DETECTABLE WARNINGS ARE REQUIRED AT THE JUNCTION BETWEEN THE PEDESTRIAN ROUTE AND DRIVEWAY.
13. CONSTRUCT A SIDEWALK CURB WHEN THERE IS INSUFFICIENT BUFFER AVAILABLE TO GRADE OR WHEN CALLED FOR IN PLANS. PAID FOR WITH SIDEWALK RAMP WHEN REQUIRED FOR RAMP.
14. THE TOP AND BOTTOM OF RAMPS SHOULD BE PROVIDED WITH A 4' x 4' (1219 x 1219) MINIMUM LEVEL LANDING AREA WITH A CROSS SLOPE LESS THAN OR EQUAL TO 2% IN ANY DIRECTION.
15. UTILITY POLES, LUMINAIRE, PEDESTRIAN OR SIGNAL POLES, GRATES, ACCESS COVERS, AND OTHER APPURTENANCES SHALL NOT BE LOCATED ON RAMPS, LANDINGS, BLENDED TRANSITIONS, AND @ GUTTERS WITHIN THE PEDESTRIAN ACCESS ROUTE.
16. APPROACH SIDEWALK WIDTHS, GRASS STRIP OR UTILITY STRIP WIDTHS MAY VARY.
17. APPROACH SIDEWALK AND LANDING CROSS SLOPE SHALL NOT EXCEED 2%.
18. THE RUNNING OR CROSS SLOPES ON LANDINGS AT MID BLOCK CROSSING MAY BE WARPED TO MEET STREET OR HIGHWAY GRADE.
19. FOR PERPENDICULAR CURB RAMPS A MIN. 4'(1.2m) x 4'(1.2m) LEVEL LANDING SHALL BE PROVIDED AT THE TOP OF CURB RAMP. WHERE THE LEVEL LANDING IS RESTRICTED AT THE BACK OF SIDEWALK THE LEVEL LANDING SHALL BE 4'(1.2m) x 5'(1.5m) WITH THE 5'(1.5m) DIMENSION PROVIDED IN THE DIRECTION OF THE RAMP RUN.
20. FOR PARALLEL CURB RAMPS, A MIN. 4'(1.2m) x 4'(1.2m) LEVEL LANDING SHALL BE PROVIDED AT THE BOTTOM OF CURB RAMP. IF THE LEVEL LANDING IS RESTRICTED ON 2 OR MORE SIDES, THE LEVEL LANDING SHALL BE 4'(1.2m)x 5'(1.5m) WITH THE 5' (1.5m) DIMENSION PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.
21. WHEN WIDTH OF SIDEWALK IS ≥48" AND A PERPENDICULAR SIDEWALK RAMP IS INSTALLED, THE FLARED SIDES SHALL BE 10% MAX. IF WIDTH OF SIDEWALK IS <48" THE FLARED SIDES MUST NOT EXCEED 8.33% (12:1).
22. SHADED AREAS ARE TYPICAL PAY LIMITS FOR CONCRETE SIDEWALK RAMP BUT, MAY VARY AS DIRECTED BY THE ENGINEER.
23. OPTIONAL RAMP, WHEN REQUIRED, SHALL BE PAID FOR AS PART OF CONCRETE SIDEWALK RAMP.



DUAL PERPENDICULAR SIDEWALK RAMPS (TYPE 3a)
WITH UTILITY / GRASS STRIP

SEE NOTE 20

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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1	7/13	Created new sheets (4 total).	-

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 6/17/2014

DESIGNER/DRAFTER: **MGB/EMK**
CHECKED BY: **LLF**

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\SIDEWALK RAMP 1_GD.dgn

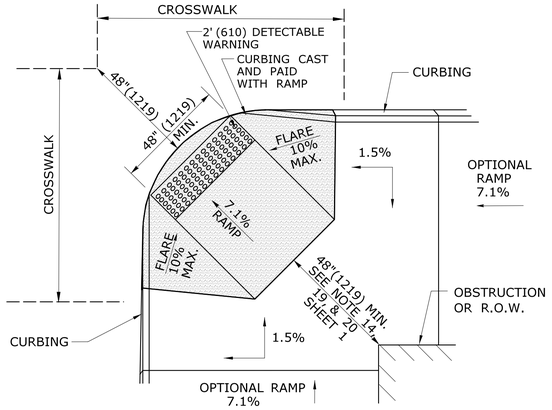
SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:

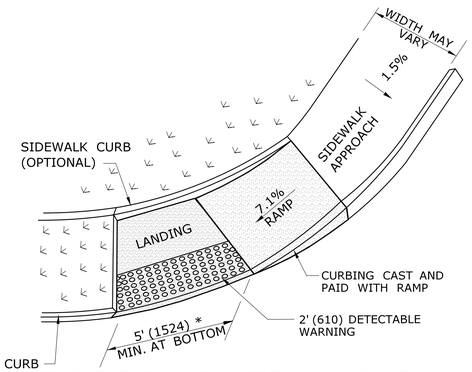
TOWN:

DRAWING TITLE:
SIDEWALK RAMPS SHEET 1

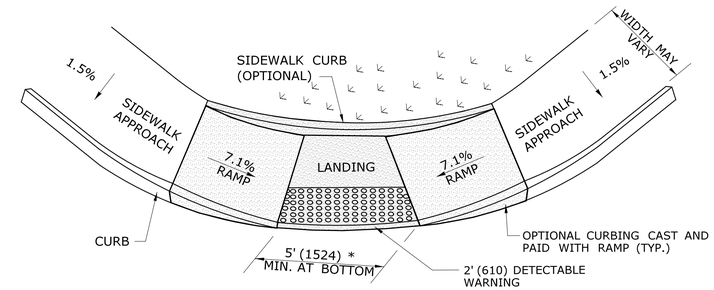
PROJECT NO.
DRAWING NO.
SHEET NO.



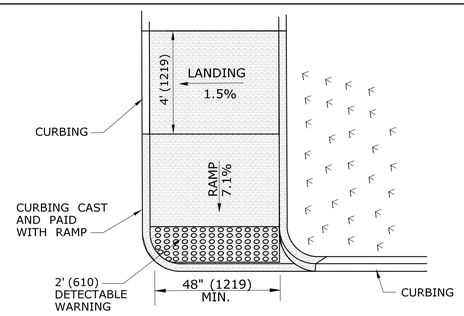
DIAGONAL SIDEWALK RAMP (TYPE 4)
W/LANDING AT TOP



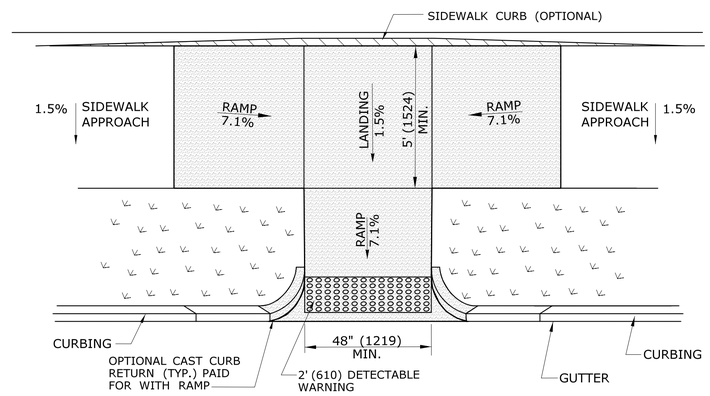
SINGLE PARALLEL SIDEWALK RAMP
W/LANDING AT BOTTOM ON
CORNER (TYPE 4c)
* SEE NOTE 20 SHEET 1



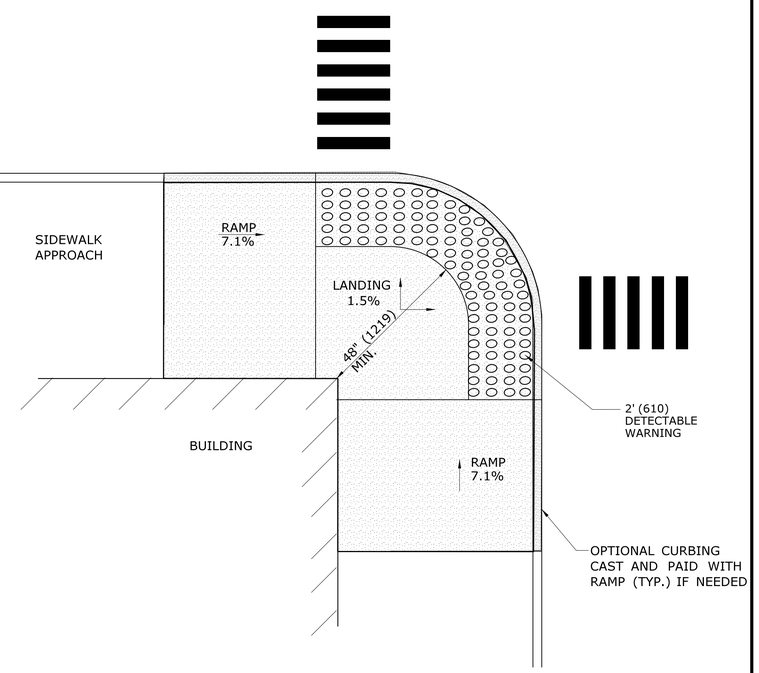
DOUBLE PARALLEL SIDEWALK RAMP
W/LANDING AT BOTTOM ON CORNER (TYPE 4f)
* SEE NOTE 20 SHEET 1



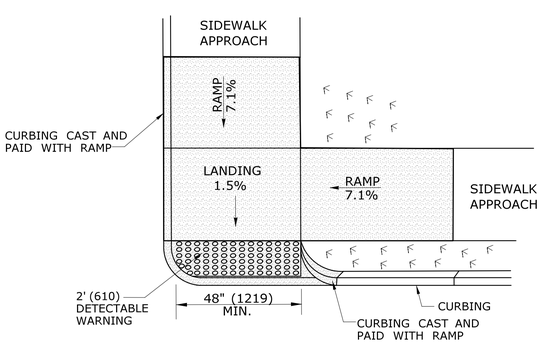
SINGLE DIRECTION
PERPENDICULAR SIDEWALK RAMP
NO / UTILITY GRASS STRIP
(TYPE 4a)



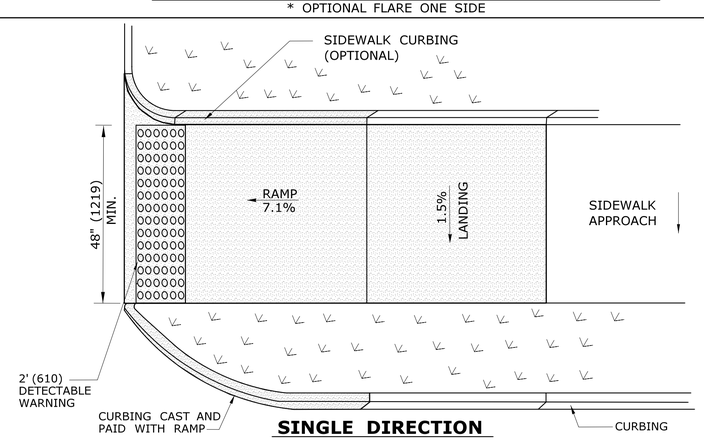
PARALLEL/PERPENDICULAR SIDEWALK RAMP
COMBINATION W/ CURB RETURNS (TYPE 4d)
* OPTIONAL FLARE ONE SIDE



RESTRICTED CONDITION
DIAGONAL SIDEWALK RAMP
(TYPE 4g)



DOUBLE DIRECTION
PARALLEL SIDEWALK RAMP
NO / UTILITY GRASS STRIP
(TYPE 4b)
SEE NOTE 20 SHEET 1



SINGLE DIRECTION
PERPENDICULAR SIDEWALK RAMP
W/ UTILITY GRASS STRIP (TYPE 4e)
REFER TO DETECTABLE WARNING PLACEMENT ON SHEET 4

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 5/27/2014

DESIGNER/DRAFTER: MGB/EMK
CHECKED BY: LLF

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\SIDEWALK RAMP 2_GD.dgn

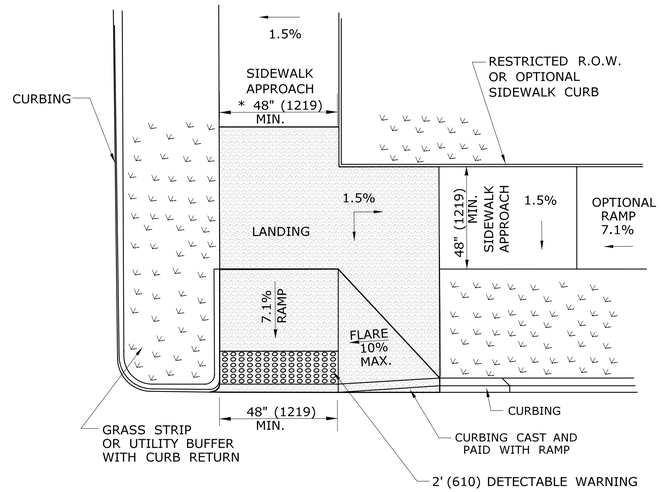
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:

TOWN:

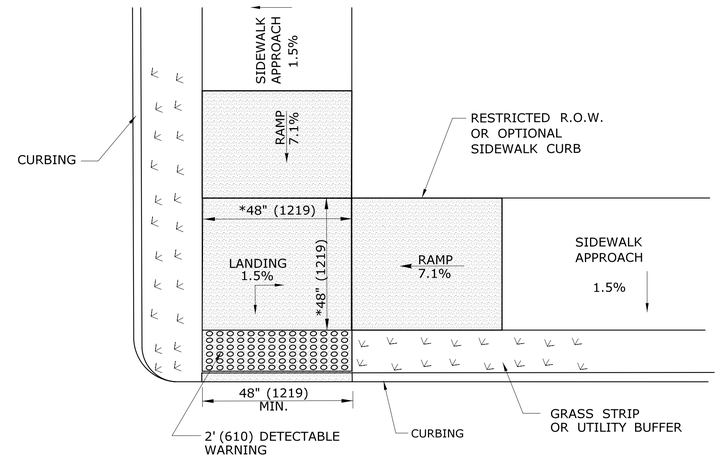
DRAWING TITLE: SIDEWALK RAMP SHEET 2

PROJECT NO.
DRAWING NO.
SHEET NO.



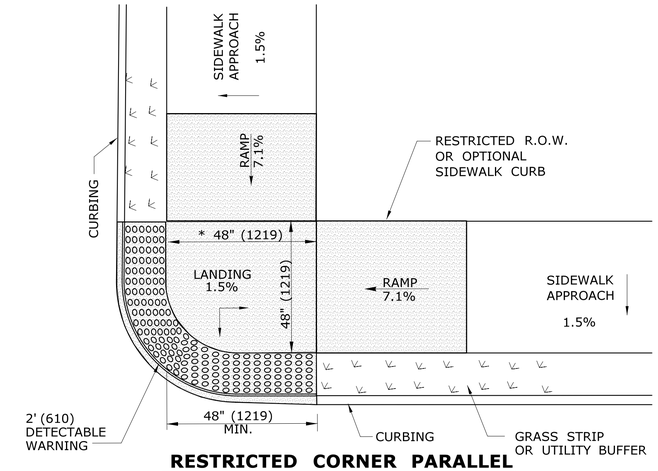
RESTRICTED CORNER PERPENDICULAR SIDEWALK RAMP (TYPE 5)

* SEE NOTE 19 SHEET 1



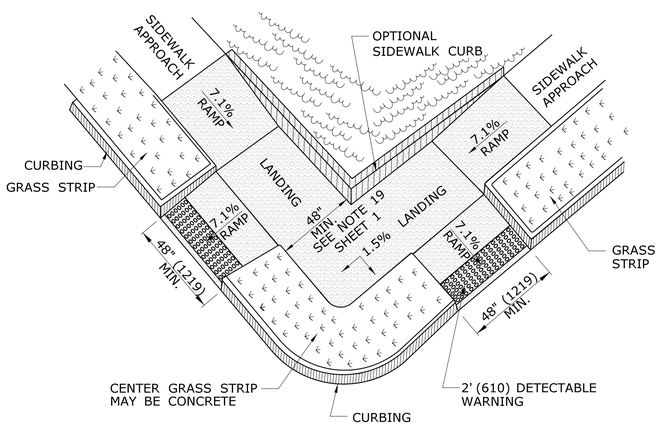
RESTRICTED CORNER PARALLEL DOUBLE SIDEWALK RAMPS W/CENTER LANDING AND UTILITY GRASS STRIP (TYPE 5a)

* SEE NOTE 20 SHEET 1



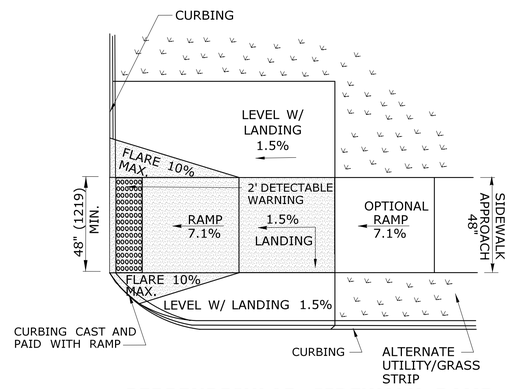
RESTRICTED CORNER PARALLEL SIDEWALK RAMPS W/ CENTER LANDING TWO DIRECTION AND UTILITY GRASS STRIP (TYPE 5b)

* SEE NOTE 20 SHEET 1

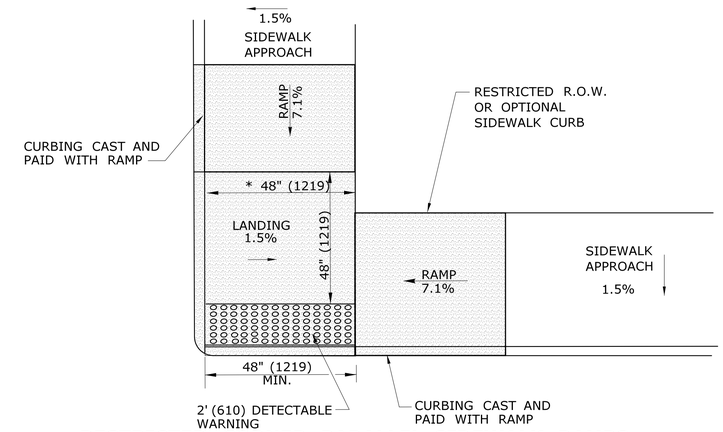


COMBINATION SIDEWALK RAMP (TYPE 6)

* SEE NOTE 19 SHEET 1

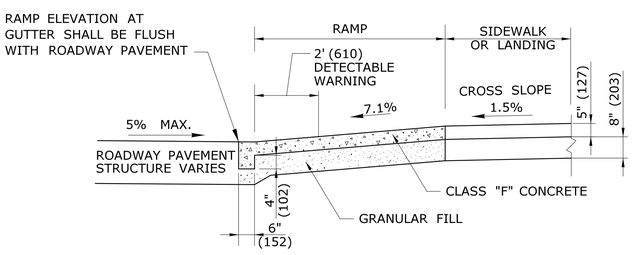


PERPENDICULAR SIDEWALK RAMP ONE DIRECTION ON CORNER (TYPE 6a)



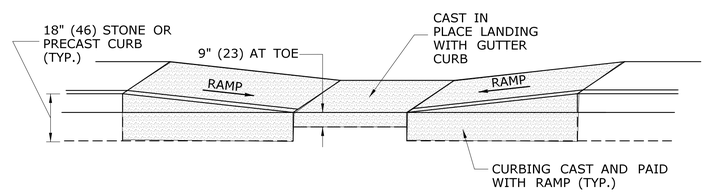
RESTRICTED CORNER PARALLEL SIDEWALK RAMPS W/CENTER LANDING NO GRASS STRIP (TYPE 5c)

* SEE NOTE 20 SHEET 1

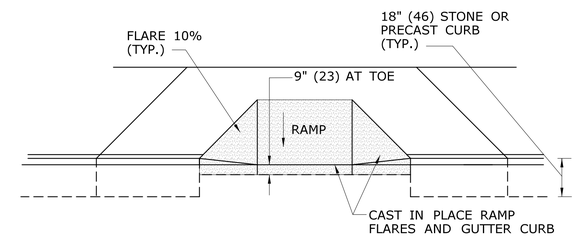


TYPICAL SECTION THRU SIDEWALK RAMP

SEE NOTE 2 AND 17 SHEET 1



TYPICAL ELEVATION PARALLEL SIDEWALK RAMP WITH CAST IN PLACE GUTTER



TYPICAL ELEVATION PERPENDICULAR SIDEWALK RAMP WITH CAST IN PLACE GUTTER

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 5/27/2014

DESIGNER/DRAFTER: MGB/EMK
CHECKED BY: LLF

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ..\SIDEWALK RAMP 3_GD.dgn

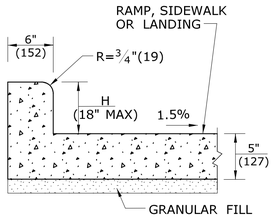
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:

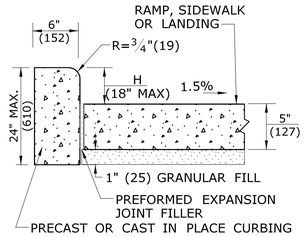
TOWN:

DRAWING TITLE: SIDEWALK RAMP SHEET 3

PROJECT NO.
DRAWING NO.
SHEET NO.

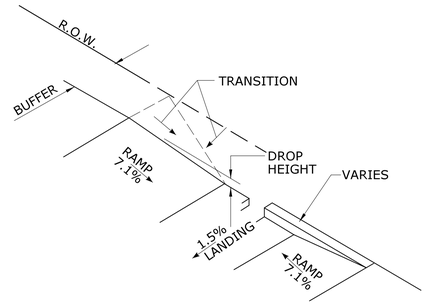


MONOLITHIC CAST CURB

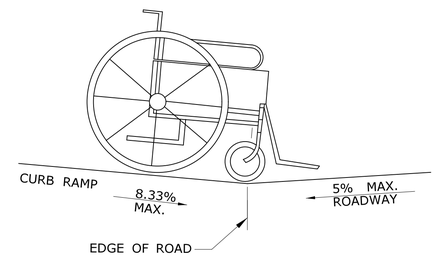


SEPARATELY CAST CURB

SIDEWALK CURB OPTIONS AT BACK OF SIDEWALK



BACK OF SIDEWALK CURB OR BUFFER TRANSITION



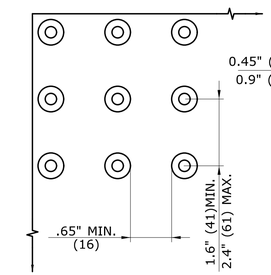
DETAIL 1

SEE GRADE CHANGE AT ROADWAY INTERFACE

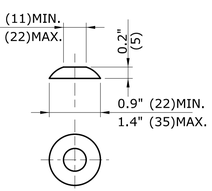
SEE NOTE 1 SHEET HW-921 02a

GENERAL NOTES:

1. RAMPED MEDIANS SHALL HAVE A CURB RAMP AT EITHER END AND LEVEL LANDING A MINIMUM OF 5' x 5' (1.5m x 1.5m) IN BETWEEN. CUT-THROUGH MEDIANS SHALL BE A MINIMUM OF 6' (1.8m) LONG AND 5' (1.5m) WIDE. FOR ALL MEDIANS, CUT-THROUGH OR RAMPED, A 2' (610) STRIP OF DETECTABLE WARNINGS SHALL BE INSTALLED AT THE ENTRANCE AND EXIT.
2. SEE GENERAL NOTES ON SHEET 1.

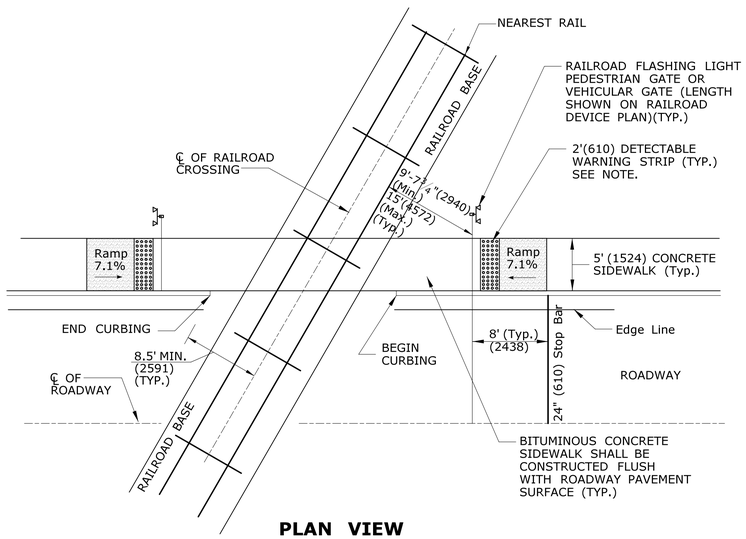


DOME SPACING

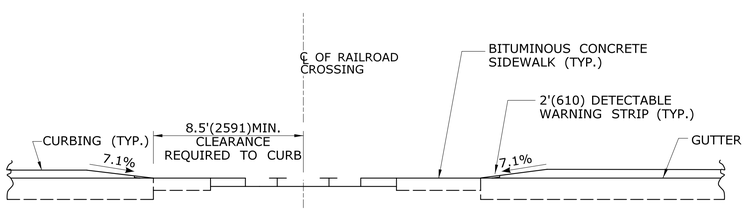


DOME SECTION

STANDARD DOME ON DETECTABLE WARNING TILES



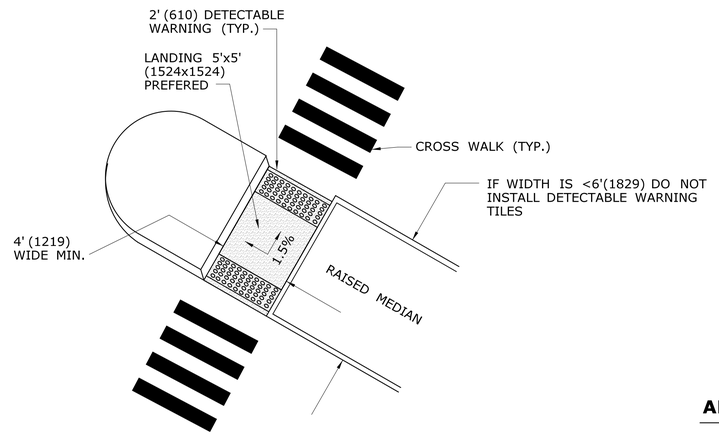
PLAN VIEW



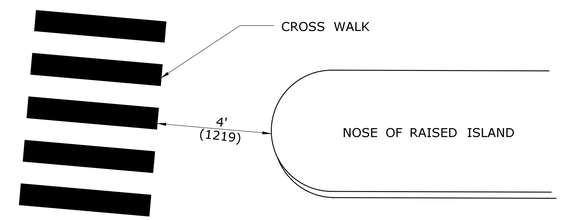
ELEVATION VIEW

DETECTABLE WARNINGS AT RAILROAD CROSSING

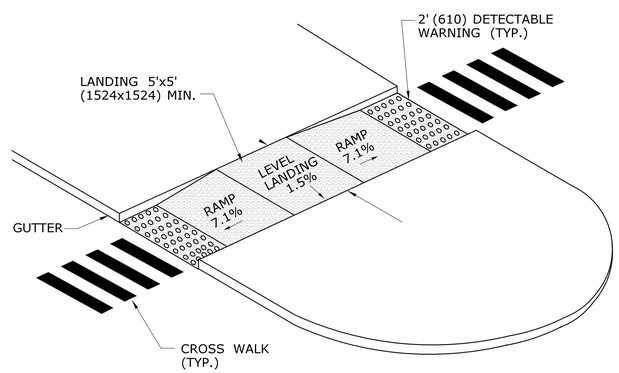
NOTE: WHEN NO GATE IS PRESENT, INSTALL DETECTABLE WARNING SURFACE 12' (3.6m) FROM THE NEAREST RAIL. IF GATE IS PRESENT, INSTALL DETECTABLE WARNING 2' (610) PRIOR TO GATE. THE ROWS OF TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL BE INSTALLED PARALLEL WITH THE DIRECTION OF PEDESTRIAN TRAVEL.



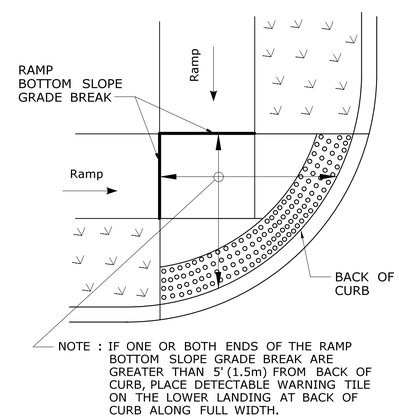
CUT-THROUGH MEDIAN ISLAND



ALTERNATE CROSSWALK WITH MEDIAN ISLAND PULLED BACK



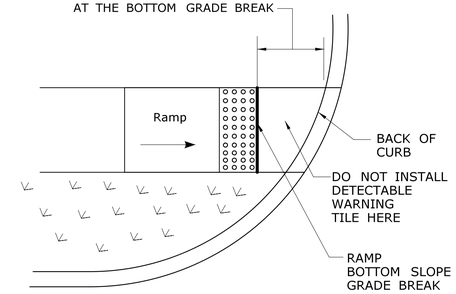
RAISED MEDIAN ISLAND WITH LANDING AND RAMPS



NOTE : IF ONE OR BOTH ENDS OF THE RAMP BOTTOM SLOPE GRADE BREAK ARE GREATER THAN 5' (1.5m) FROM BACK OF CURB, PLACE DETECTABLE WARNING TILE ON THE LOWER LANDING AT BACK OF CURB ALONG FULL WIDTH.

DETECTABLE WARNING PLACEMENT DETAIL 1

NOTE : IF BOTH ENDS OF THE RAMP BOTTOM SLOPE GRADE BREAK ARE LESS THAN 5' (1.5m) FROM BACK OF CURB, PLACE DETECTABLE WARNING TILE ON THE RAMP RUN AT THE BOTTOM GRADE BREAK



DETECTABLE WARNING PLACEMENT DETAIL 2

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 5/27/2014

DESIGNER/DRAFTER: **MGB/EMK**

CHECKED BY: **LLF**

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\SIDEWALK RAMP 4_GD.dgn

SIGNATURE/BLOCK: **OFFICE OF ENGINEERING**

APPROVED BY:

PROJECT TITLE:

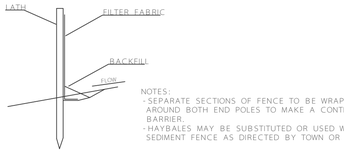
TOWN:

DRAWING TITLE: **SIDEWALK RAMP SHEET 4**

PROJECT NO.

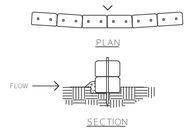
DRAWING NO.

SHEET NO.



NOTES:
- SEPARATE SECTIONS OF FENCE TO BE WRAPPED AROUND BOTH END POLES TO MAKE A CONTINUOUS BARRIER.
- HAYBALES MAY BE SUBSTITUTED OR USED WITH SEDIMENT FENCE AS DIRECTED BY TOWN OR ENGINEER.

SEDIMENT FENCE DETAIL

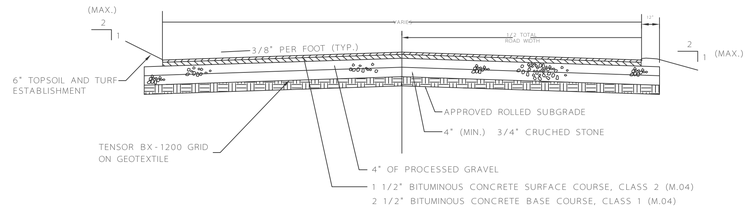


HAY BALE SEDIMENT BARRIER

NOT TO SCALE

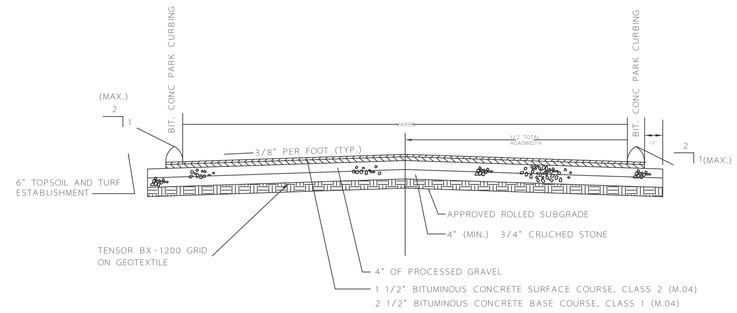
1. EXCAVATE 4" DEEP TRENCH FOR LENGTH OF BALES.
2. PLACE AND STAKE BALES. TWO (2) STAKES PER BALE.
3. WEDGE LOOSE STRAW BETWEEN BALES.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL ON UPHILL SIDE OF BARRIER.

1. INSPECT BALES AFTER EACH STORM EVENT.
2. REMOVE ACCUMULATED SEDIMENT FROM BALES WHEN IT REACHES 1/2 THE HEIGHT OF THE BARRIER.



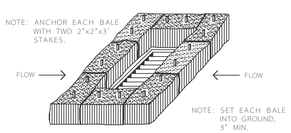
DRIVEWAY CROSS SECTION WITHOUT CURBING

N.T.S.



DRIVEWAY CROSS SECTION WITH CURBING

N.T.S.

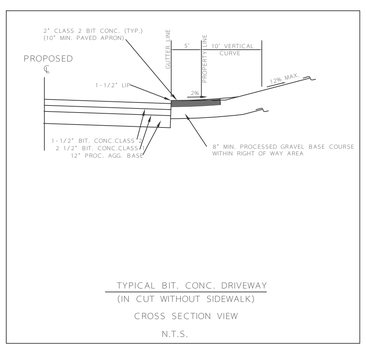


NOTE: ANCHOR EACH BALE WITH TWO 2"x2"x3' STAKES.

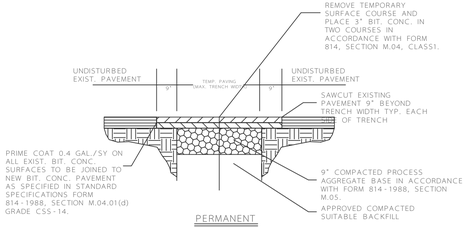
NOTE: SET EACH BALE INTO GROUND, 3" MIN.

HAY BALE INSTALLATION AT CATCH BASINS

NOT TO SCALE



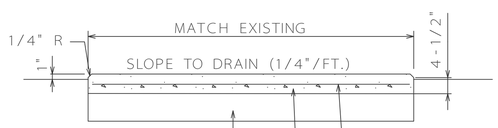
TYPICAL BIT. CONC. DRIVEWAY
(IN CUT WITHOUT SIDEWALK)
CROSS SECTION VIEW
N.T.S.



PERMANENT

PAVEMENT REPAIR DETAIL

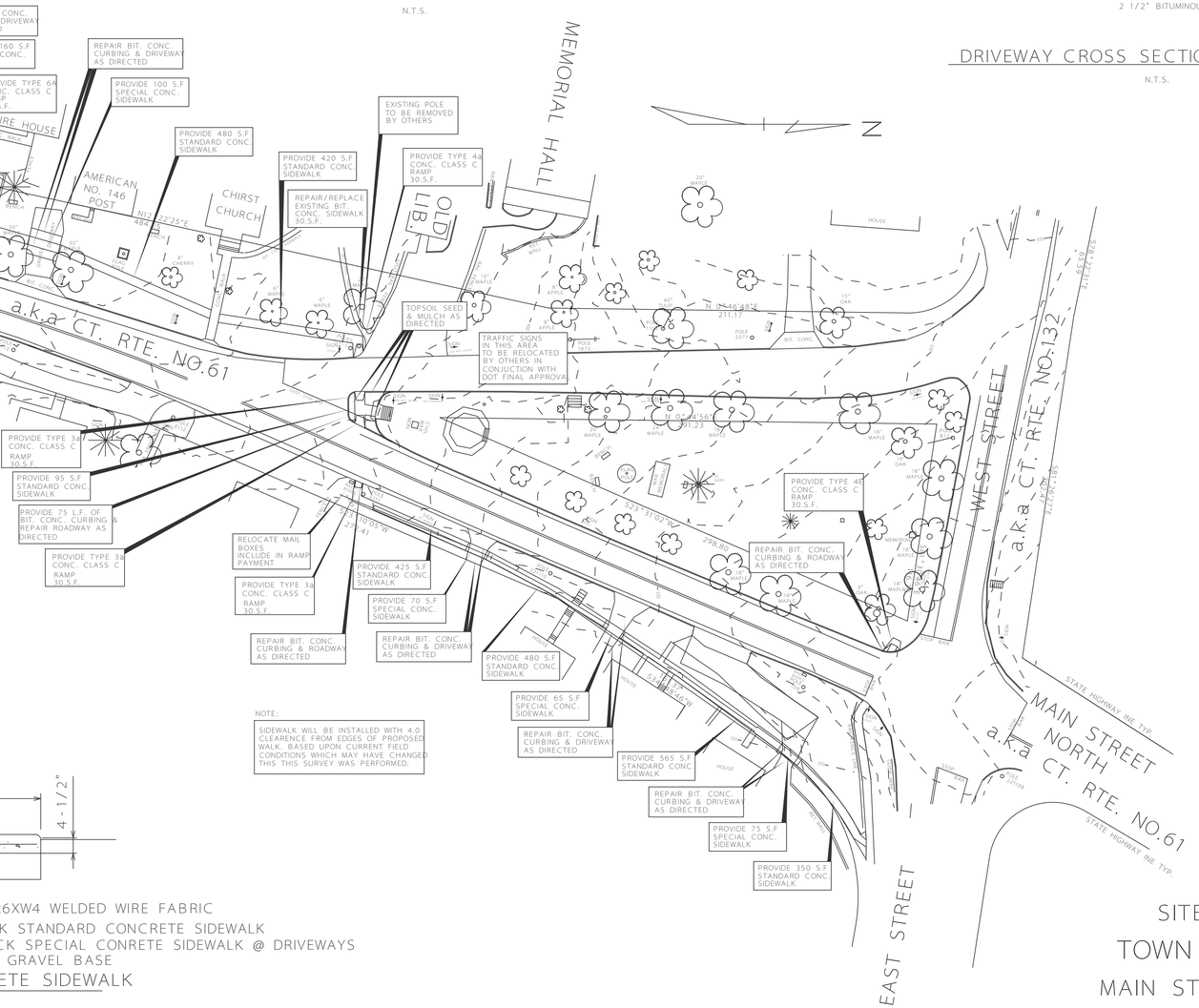
N.T.S.



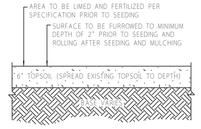
6x6XW4 WELDED WIRE FABRIC
5" THICK STANDARD CONCRETE SIDEWALK
10" THICK SPECIAL CONRETE SIDEWALK @ DRIVEWAYS
8" COMPACTED GRAVEL BASE

CONCRETE PAD/CONCRETE SIDEWALK

N.T.S.



NOTE:
SIDEWALK WILL BE INSTALLED WITH 4.0 CLEARENCE FROM EDGES OF PROPOSED WALK, BASED UPON CURRENT FIELD CONDITIONS WHICH MAY HAVE CHANGED THIS THIS SURVEY WAS PERFORMED.



GRASS REPAIR
NO SCALE

MANHOLE/PIPE TABLE

STRUCTURE & TYPE	TOP OF FRAME/GRATE	INVERT	PIPE SIZE & TYPE	GRADE & L.F.	DIRECTION
CATCH BASIN TYPE CL	ALL INVERTS & T.F. TO BE DETERMINED IN				
	THE FIELD BY PROJECT ENGINEER				

LEGEND

- B1 — TEST BORING & NUMBER
- EDGE OF WOODS
- EDGE OF TRAVELWAY
- POLE
- OHW — OVER HEAD WIRES
- BIT. CONC. CURBING
- GRASS SWALE
- W 1 — WETLANDS FLAG & NUMBER
- DOUBLE YELOW TRAFFIC LINE
- SINGLE WHITE TRAFFIC LINE

NOT VALID
UNLESS EMBOSSED
SEAL AFFIXED HEREON

SITE PLAN
TOWN CENTER
MAIN STREET SOUTH
BETHLEHEM CONNECTICUT

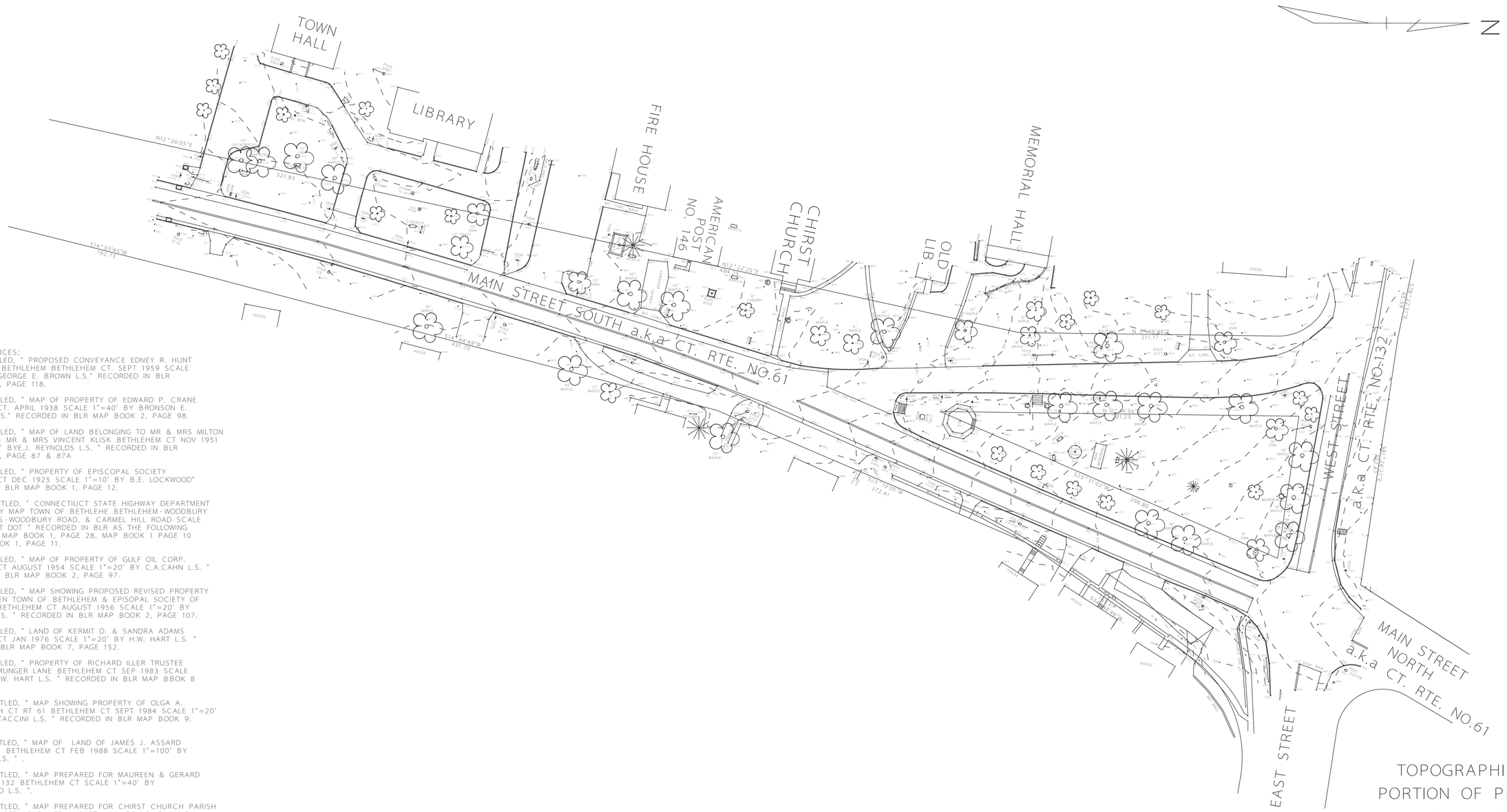
SCALE 1"= 40' MARCH 30, 2016

REVISED 6/28/16 PER DOT COMMENTS

SCALE IN FEET
40 0 20 40

GARY GIORDANO PROFESSIONAL ENGINEER & LAND SURVEYOR, LLC
19 TERRELL FARM RD. BETHLEHEM CT
(203) - 266 - 6760

SHEET 1



MAP REFERENCE;

MAP REFERENCES;
1, MAP ENTITLED, " PROPOSED CONVEYANCE EDNEY R. HUNT TO TOWN OF BETHLEHEM BETHLEHEM CT, SEPT 1959 SCALE 1"= 60' BY GEORGE E. BROWN L.S." RECORDED IN BLR MAP BOOK 2, PAGE 118.

2, MAP ENTITLED, " MAP OF PROPERTY OF EDWARD P. CRANE BETHLEHEM CT. APRIL 1938 SCALE 1"=40' BY BRONSON E. LOCKWOOD L.S." RECORDED IN BLR MAP BOOK 2, PAGE 98.

3, MAP ENTITLED, " MAP OF LAND BELONGING TO MR & MRS MILTON L. GRABOW & MR & MRS VINCENT KLISK BETHLEHEM CT NOV 1951 SCALE 1"=60' BYE.J. REYNOLDS L.S. " RECORDED IN BLR MAP BOOK 2, PAGE 87 & 87A

4, MAP ENTITLED, " PROPERTY OF EPISCOPAL SOCIETY BETHLEHEM CT DEC 1925 SCALE 1"=10' BY B.E. LOCKWOOD" RECORDED IN BLR MAP BOOK 1, PAGE 12.

5, MAPS ENTITLED, " CONNECTIUCT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF BETHLEHE BETHLEHEM-WOODBURY ROAD, MORRIS-WOODBURY ROAD, & CARMEL HILL ROAD SCALE 1"=40' BY CT DOT " RECORDED IN BLR AS THE FOLLOWING LISTED MAPS MAP BOOK 1, PAGE 28, MAP BOOK 1 PAGE 10 AND MAP BOOK 1, PAGE 11.

6, MAP ENTITLED, " MAP OF PROPERTY OF GULF OIL CORP. BETHLEHEM CT AUGUST 1954 SCALE 1"=20' BY C.A.CAHN L.S. " RECORDED IN BLR MAP BOOK 2, PAGE 97.

7, MAP ENTITLED, " MAP SHOWING PROPOSED REVISED PROPERTY LINES BETWEEN TOWN OF BETHLEHEM & EPISOPAL SOCIETY OF BETHLEHEM BETHLEHEM CT AUGUST 1956 SCALE 1"=20' BY M.S. SMITH L.S. " RECORDED IN BLR MAP BOOK 2, PAGE 107.

8, MAP ENTITLED, " LAND OF KERMIT D. & SANDRA ADAMS BETHLEHEM CT JAN 1976 SCALE 1"=20' BY H.W. HART L.S. " RECORDED INBLR MAP BOOK 7, PAGE 152.

9, MAP ENTITLED, " PROPERTY OF RICHARD ILLER TRUSTEE WEST RD & MUNGER LANE BETHLEHEM CT SEP 1983 SCALE 1"=20' BY H.W. HART L.S. " RECORDED IN BLR MAP BBOK 8 PAGE 93.

10, MAP ENTITLED, " MAP SHOWING PROPERTY OF OLGA A. REICHENBACH CT RT 61 BETHLEHEM CT SEPT 1984 SCALE 1"=20' BY S.P. BERTACCINI L.S. " RECORDED IN BLR MAP BOOK 9, PAGE 19.

11, MAP ENTITLED, " MAP OF LAND OF JAMES J. ASSARD THOMSON RD. BETHLEHEM CT FEB 1988 SCALE 1"=100' BY C.B. SMITH L.S. " .

12, MAP ENTITLED, " MAP PREPARED FOR MAUREEN & GERARD JOHNSON RT 132 BETHLEHEM CT SCALE 1"=40' BY A.H. HOWLAND L.S. ".

13, MAP ENTITLED, " MAP PREPARED FOR CHIRST CHURCH PARISH MAIN STREET BETHLEHEM CT AUGUST 1995 SCALE 1"=20' BY C.B. SMITH L.S. ", RECORDED IN BLR MAP BOOK 11 PAGE 30.

SURVEY NOTES

THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - " MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC.

THE TYPE OF SURVEY PERFORMED IS A TOPOGRAPHIC SURVEY

THIS SURVEY IS BASED ON A DEPENDENT RESURVEY OF THE SUBJECT PROPERTY.

THIS MAP AND SURVEY ARE INTENDED TO BE USED TO DEPICT OR NOTE THE POSITIONS OF TOPOGRAPHIC FEATURES ON THE SUBJECT PROPERTIES.

THIS SURVEY CONFORMS TO A-2 & T-2 ACCURACIES.

THIS SURVEY WAS PERFORMED IN THE FIELD MAY 2013

VERTICAL DATA BASED UPON NAD 83.

" TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON "

GARY GIORDANO L.S. 15161

NOT VALID
UNLESS EMBOSSED
SEAL AFFIXED HEREON

LEGEND

- EDGE OF WOODS
- POLE & NUMBER
- BIT. CONC. CURBING
- EDGE OF TRAVELWAY
- GRASS SWALE
- W 1 WETLANDS FLAG & NUMBER

TOPOGRAPHIC SURVEY
PORTION OF PROPERTY OF
TOWN CENTER
MAIN STREET SOUTH
BETHLEHEM CONNECTICUT

SCALE 1"=40' MAY 30, 2013

SCALE IN FEET
40 0 20 40

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SHEET 2