HARTFORD TRAFFIC CALMING MASTER PLAN

PREPARED FOR:

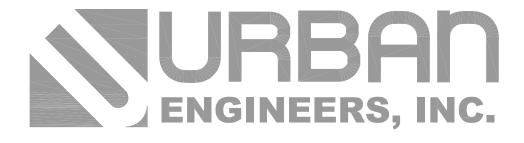
THE HONORABLE EDDIE A. PEREZ MAYOR



BHUPEN N. PATEL
DIRECTOR OF PUBLIC WORKS

CITY OF HARTFORD, CONNECTICUT

PREPARED BY:



IN ASSOCIATION WITH:

CR3, LLP
FITZGERALD AND HALLIDAY, INC.
PATEL ENGINEERING ASSOCIATES, LLC
WALKABLE COMMUNITIE'S, INC.

JULY 2005

A few words from Urban Engineers,

Development of this master plan was a very ambitious undertaking by the City of Hartford. We know of no other city in the country that has approached traffic calming from a citywide perspective the way Hartford has. Tackling the entire city at one time demonstrates that Hartford's leadership is courageous, innovative and resolved to making Hartford a more livable city. Development of a master plan would not have been possible without the involvement of Hartford residents, community organizations and the business community who participated so vibrantly and energetically by sharing concerns and offering solutions.

The master plan represents a beginning – a first step. Because it is a comprehensive plan for all the city's residential neighborhoods, implementation will take many years. But the good news is that the City has already started experimenting with traffic calming devices and recommendations, even before the final master plan had been published. Hartford's Department of Public Works has re-striped several of the city's major arteries to reduce driver confusion, speed and add a bike lane where there was room, built two trial roundabouts, installed a traffic chicane by changing parking patterns and changed the rush hour one-way reversible lanes on Asylum Avenue to two way traffic—a pattern that had existed since 1958! These changes in Hartford streets are an indication the City does not intend for this plan to gather dust on a shelf. It is fully committed to calm traffic in city neighborhoods.

As you look through the master plan there are several things you should keep in mind.

- The master plan was developed largely through a community workshop or charrette process. Participants learned about a wide range of tools that can be used to calm traffic and then applied them to conditions in their neighborhoods. Accompanying the master plan is a report that documents the history of the plan's development including a traffic calming primer, neighborhood descriptions and characteristics, charrette minutes, photographs, sketches and other pertinent information that helped mold the plan.
- The master plan can be a dynamic document. While the plan takes a comprehensive approach to traffic calming, conditions within the City are in constant change. It is expected the plan will provide an approach for slowing traffic that, in time, may evolve into standards that can be transferred to streets that may not have a particular device recommended in the master plan. On streets that are recommended for calming, devices may also be modified to reflect experience gained from earlier deployments. Any changes made, however, should be done with care, so the issue being addressed is not transferred to another street.
- Not all requests or suggestions made by the stakeholders were included in the master plan. Traffic calming recommendations were evaluated by factors such as whether the cost far outweighed the benefit, if the device was perceived as needed by the majority of stakeholders or whether or not the traffic calming treatment could be practically engineered.
- Farmington Avenue and a section of Park Street and New Park Avenue underwent an extensive community involvement process before this project began. This resulted in concept plans that complemented the master plan. Therefore, Urban Engineers with the consent of the affected neighborhoods "adopted" these concepts into the master plan.
- Some of the devices shown in the master plan have never been used in Hartford and will take some getting used to when first implemented. Examples include roundabouts, parking chicanes and raised intersections. Education, practice and patience will help overcome the challenge of getting used to these new features that will become a part of Hartford.
- All the traffic calming devices will not be built at one time. That would be too disruptive and too costly. Rather, building the traffic calming devices is expected to be done as opportunities that will facilitate construction arise, such new development projects, planned major street reconstruction or when special funding becomes available. It is important to point out that street resurfacing only affords opportunities for restriping and does not usually present an opportunity to deploy major improvements.
- The City of Hartford commonly uses high material standards for street construction. In recognition, materials proposed for the construction of traffic calming devices are consistent with these high standards. Less costly alternative do exist for some of the materials. In such cases, the designer should carefully weigh the cost savings, budget and project scope and character to determine the appropriate construction materials.

For the Urban Engineers, it has been a privilege and an honor for us to have been a part of this project. Now, however, the "baton" must be passed – from Urban Engineers to the City and to the many people who volunteered to help move the plan forward. And so, it is with some sadness that we let go of this project but we do so knowing that it is being handed over to a remarkable group of people who will make certain of its full success.

The Urban Engineers Team

July 2005

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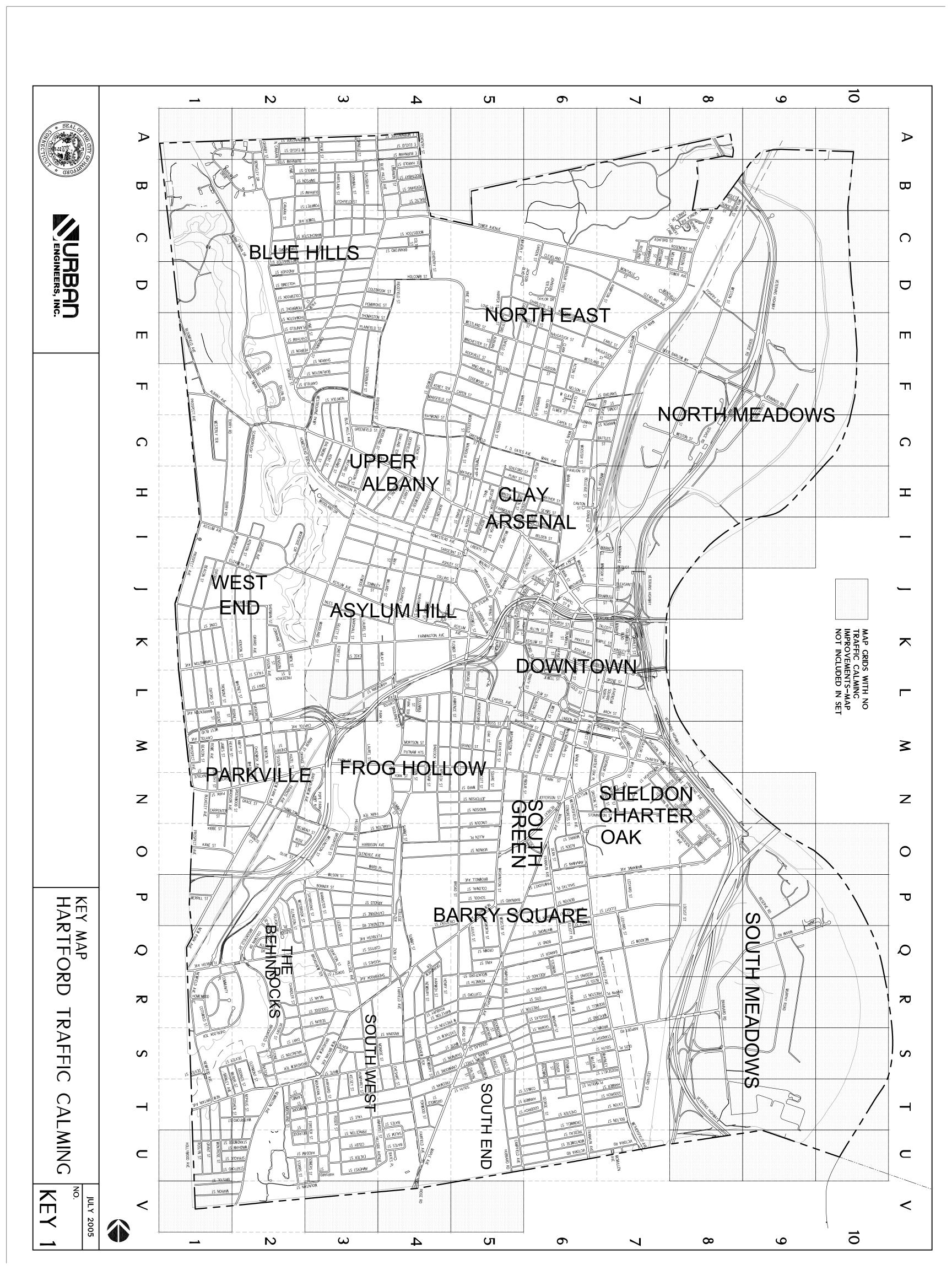


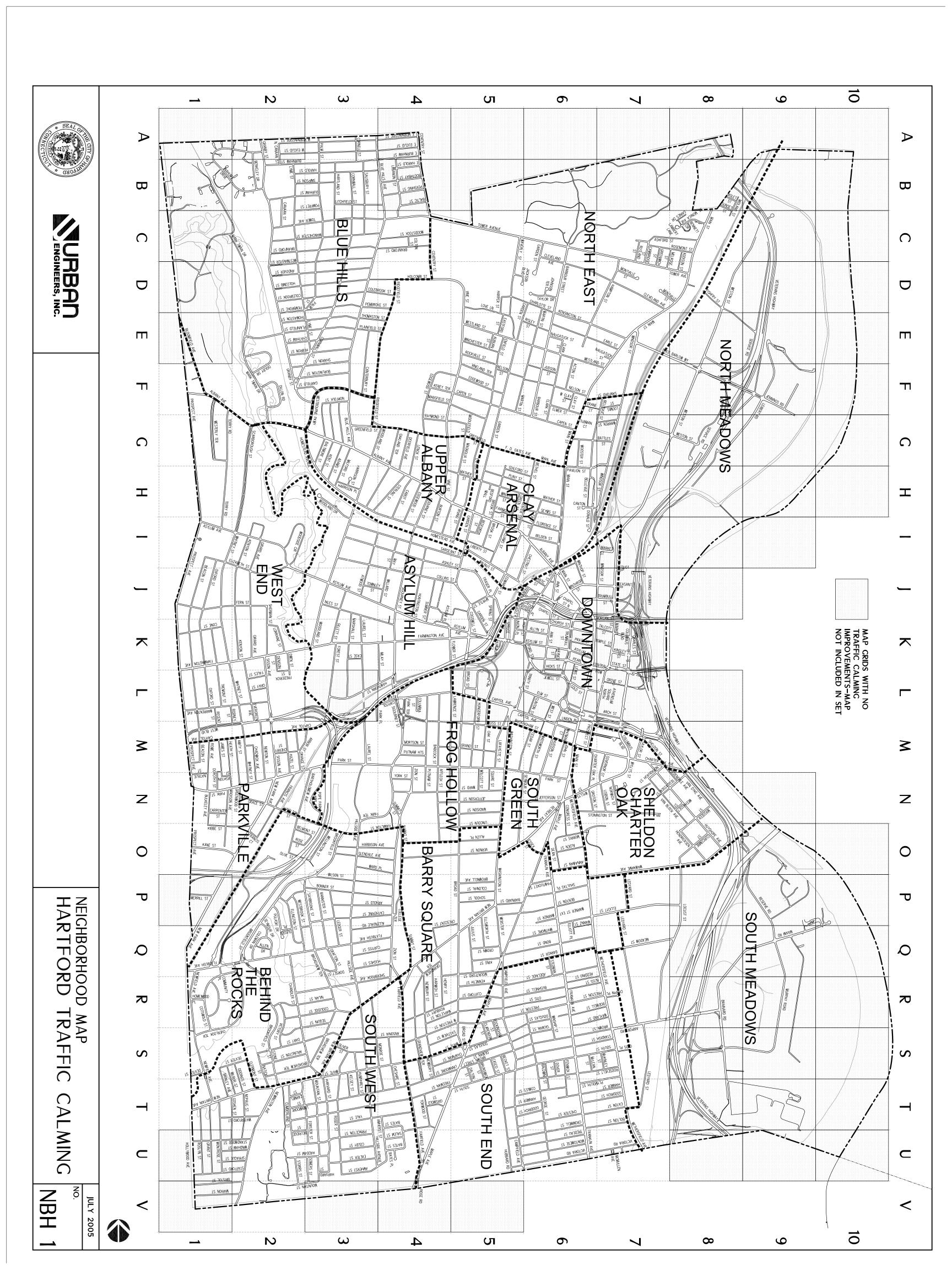
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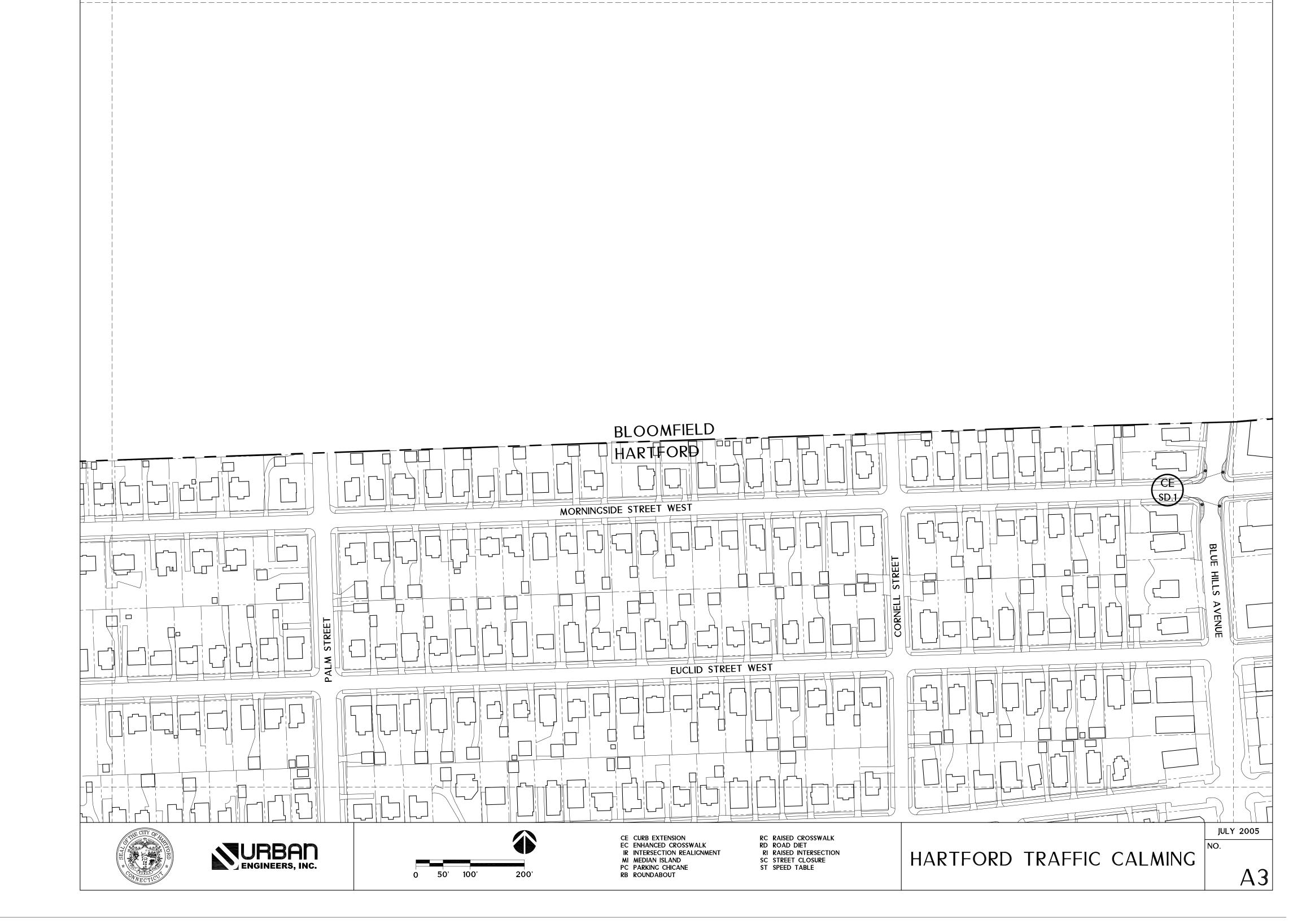
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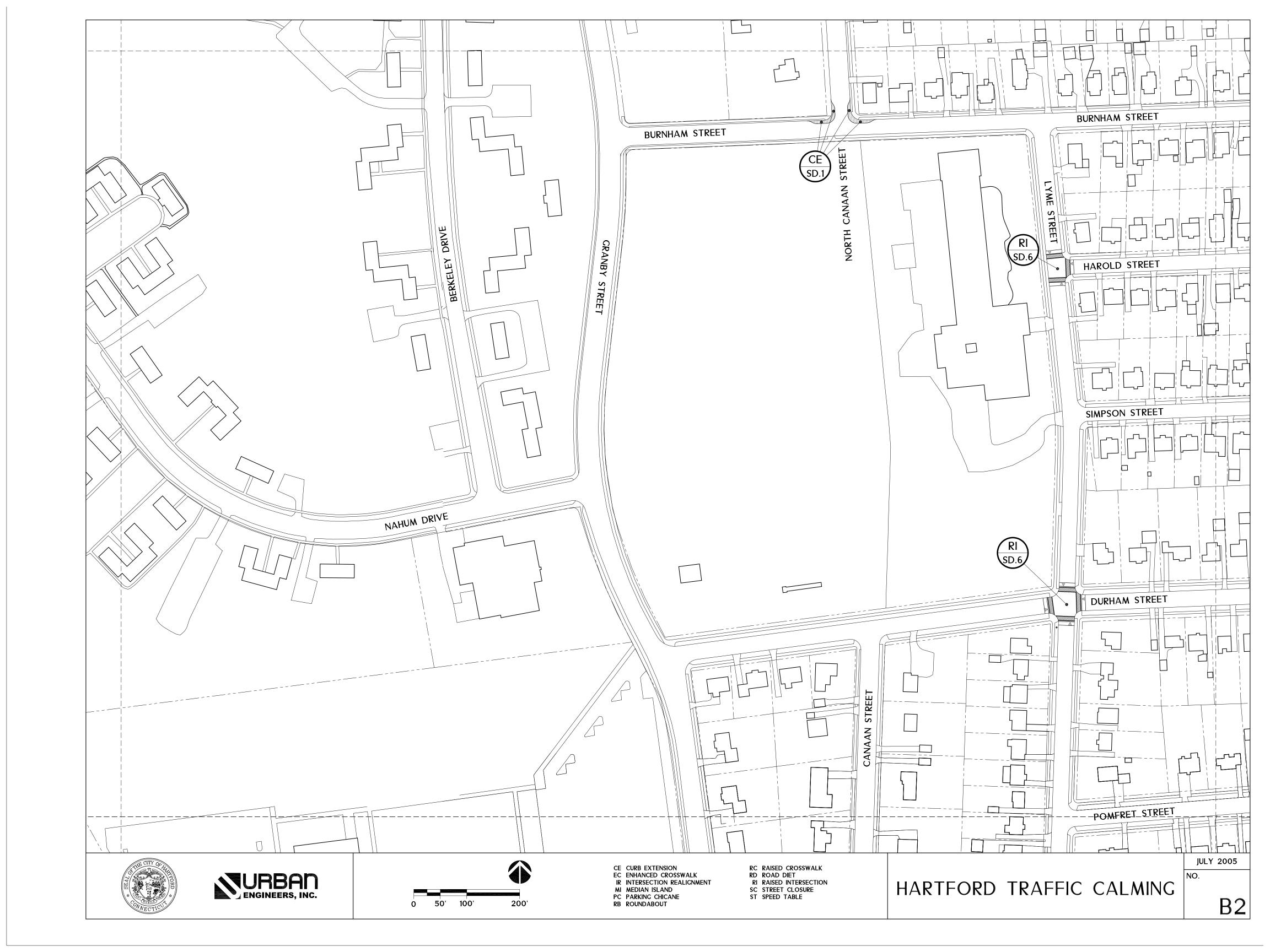
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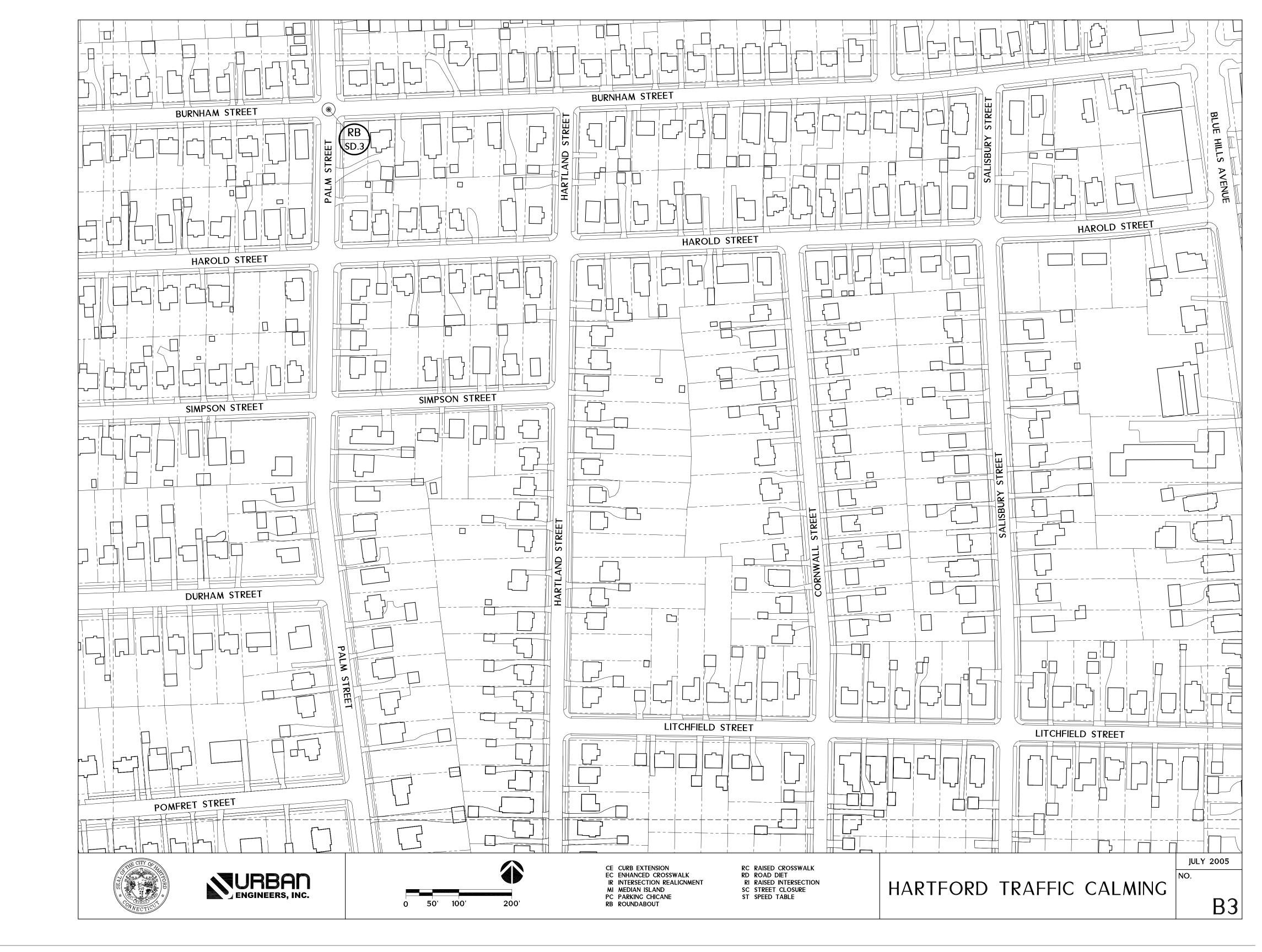
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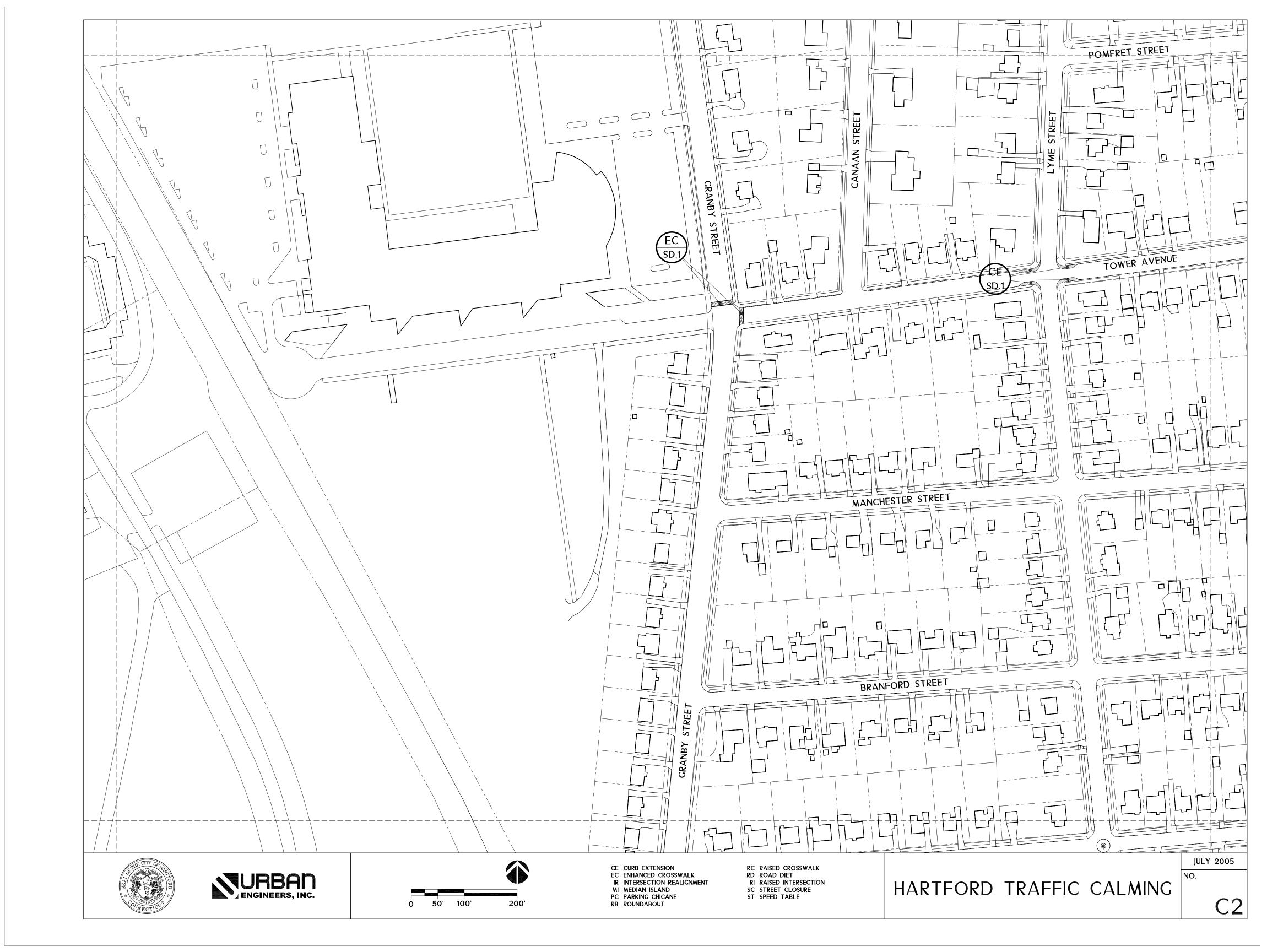


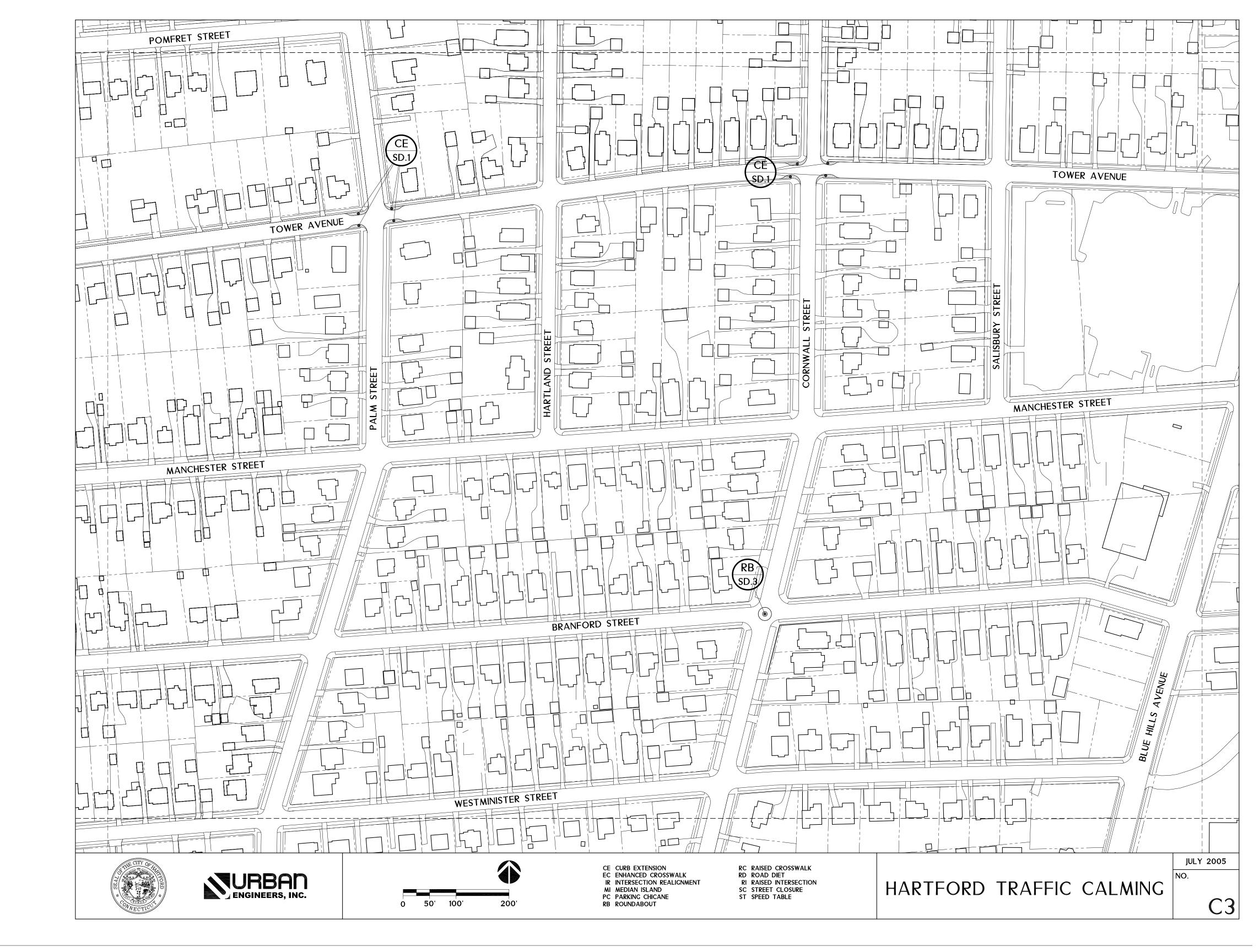


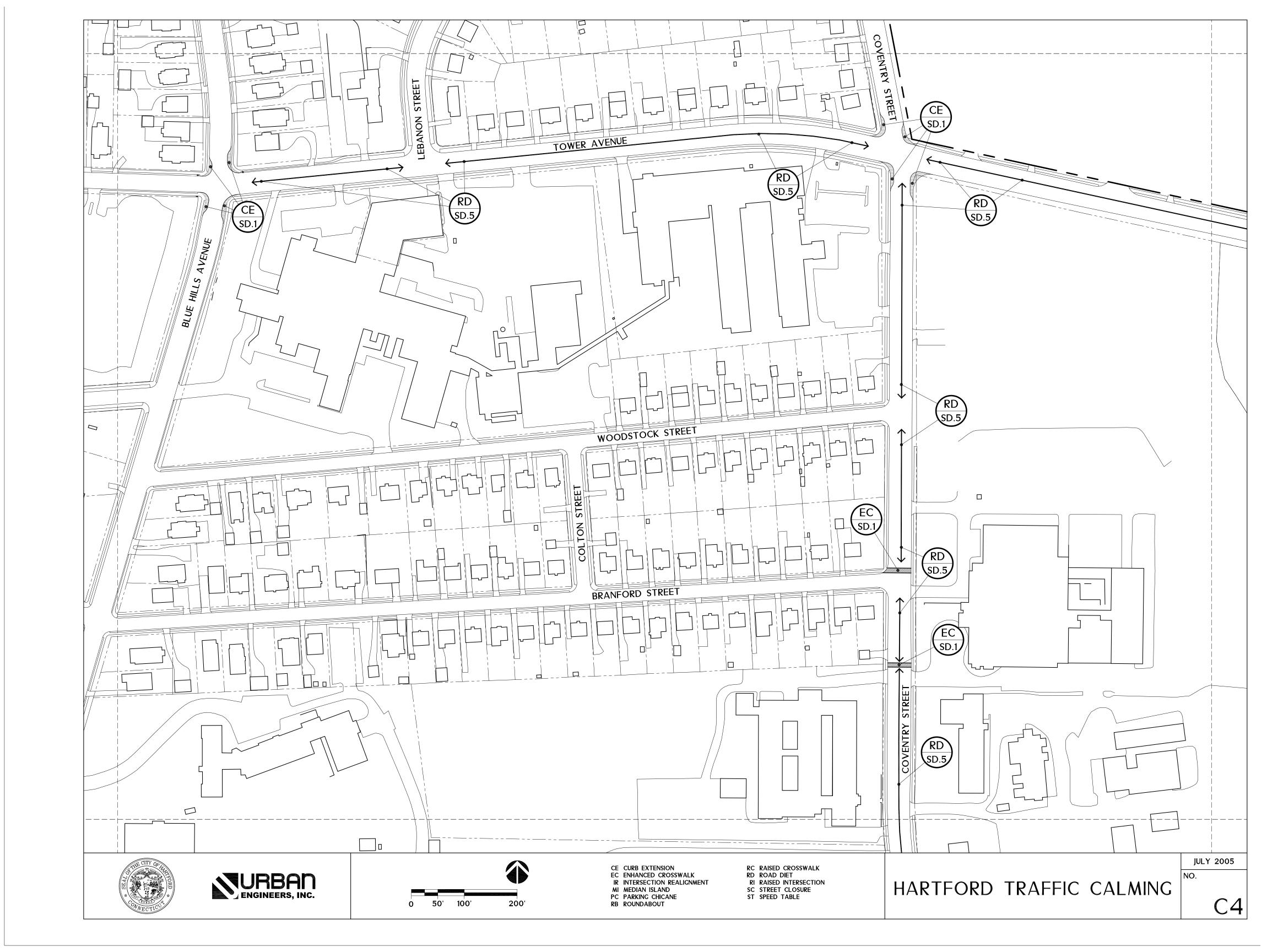


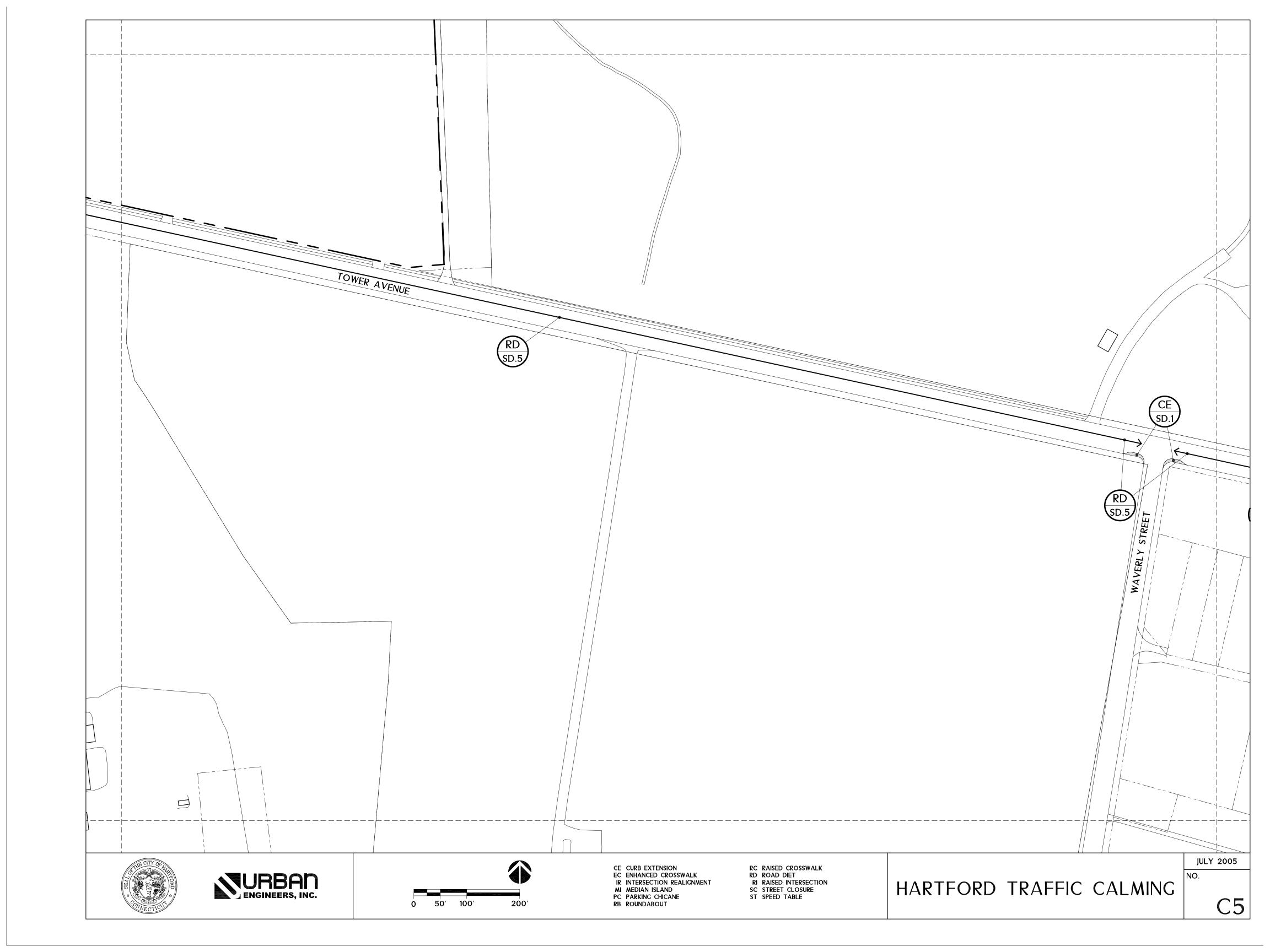


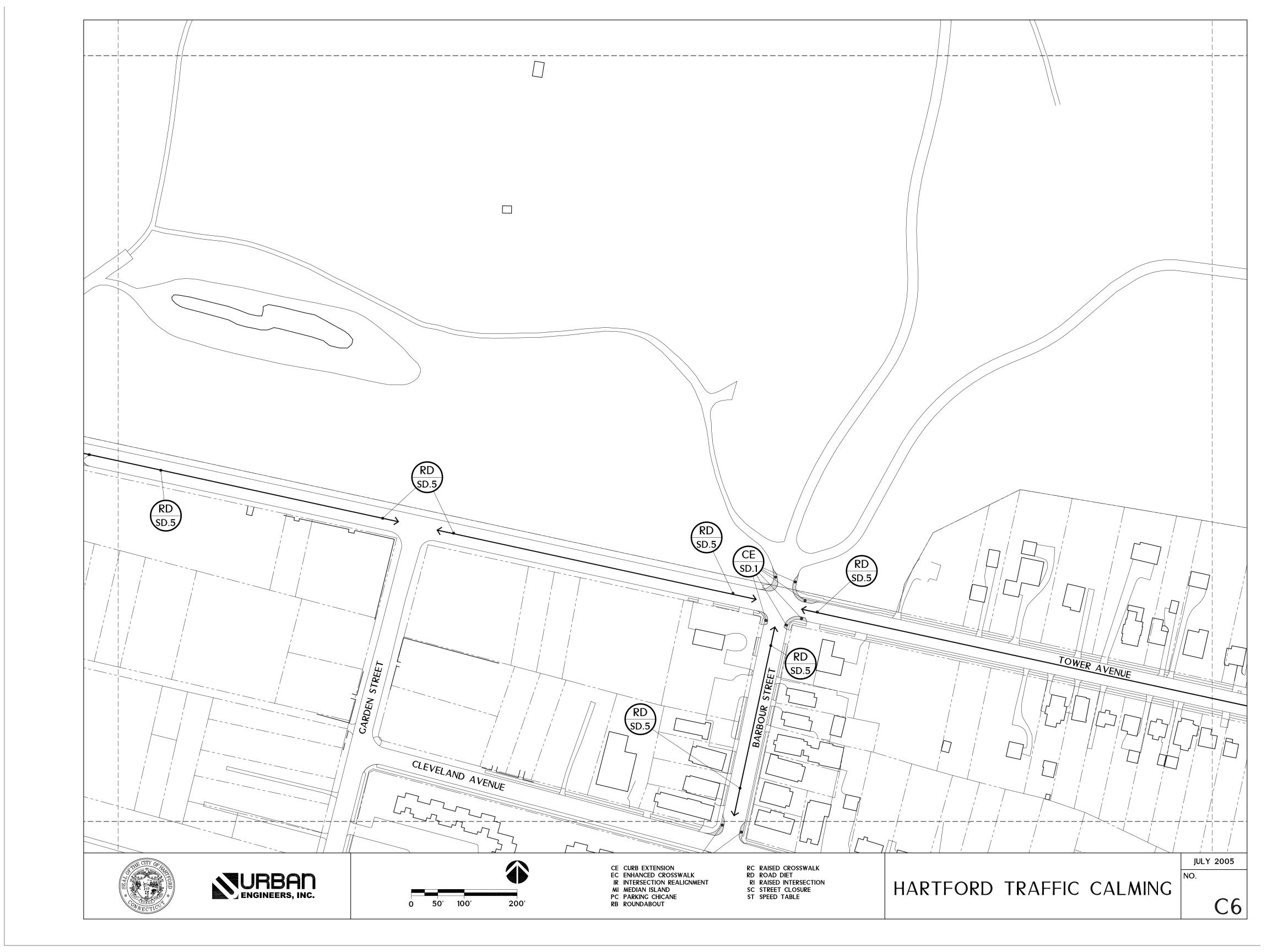


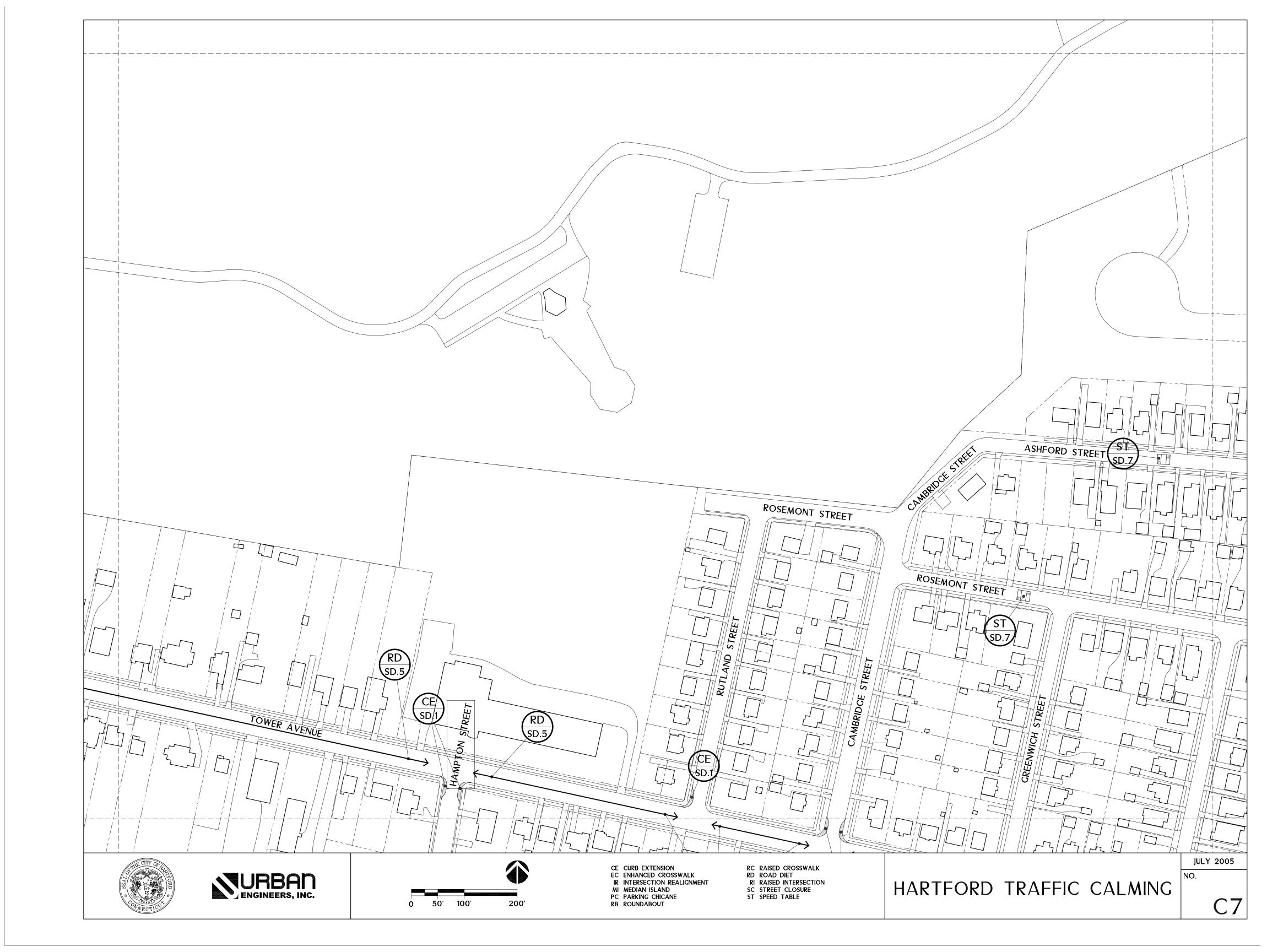


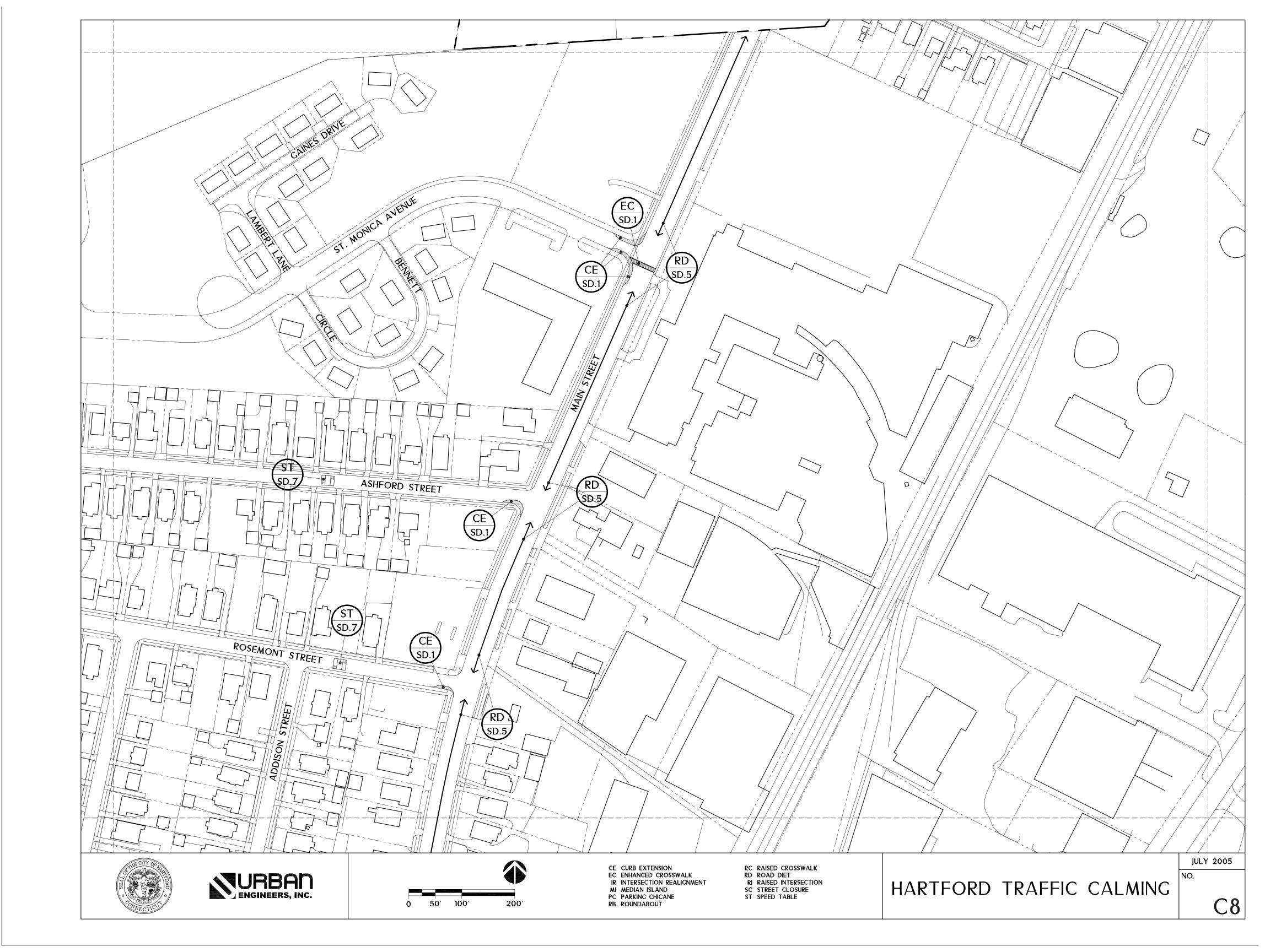


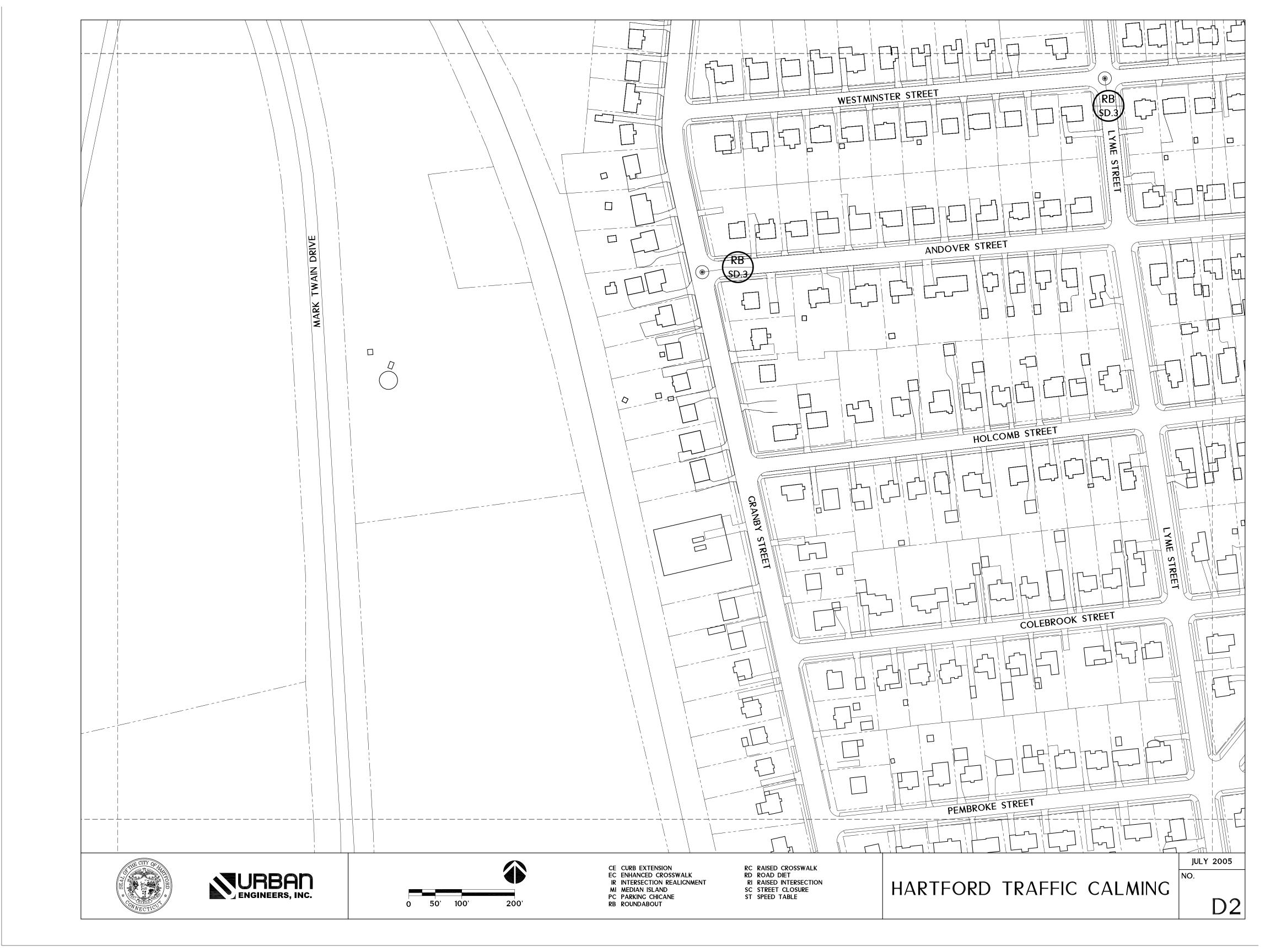


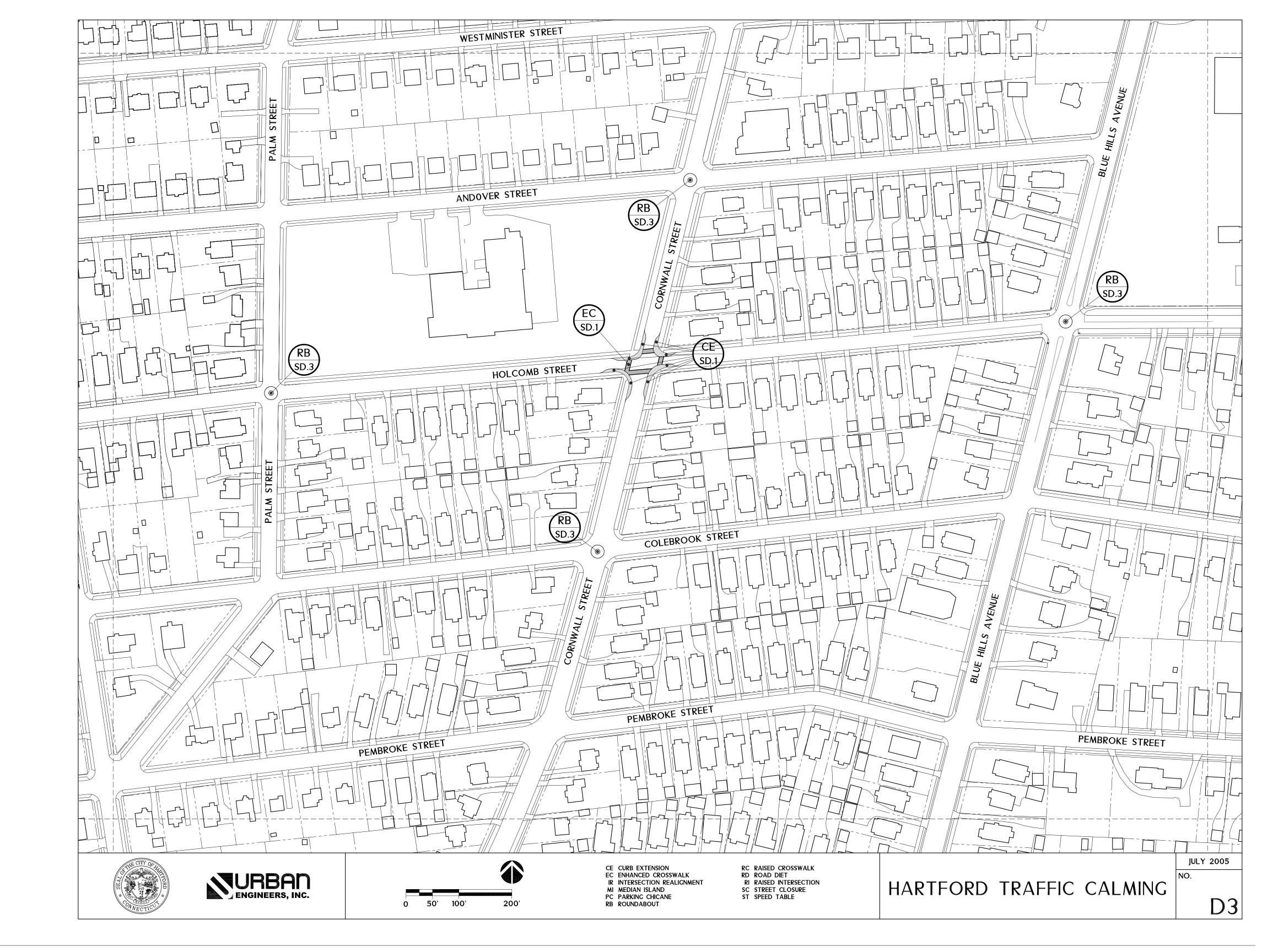


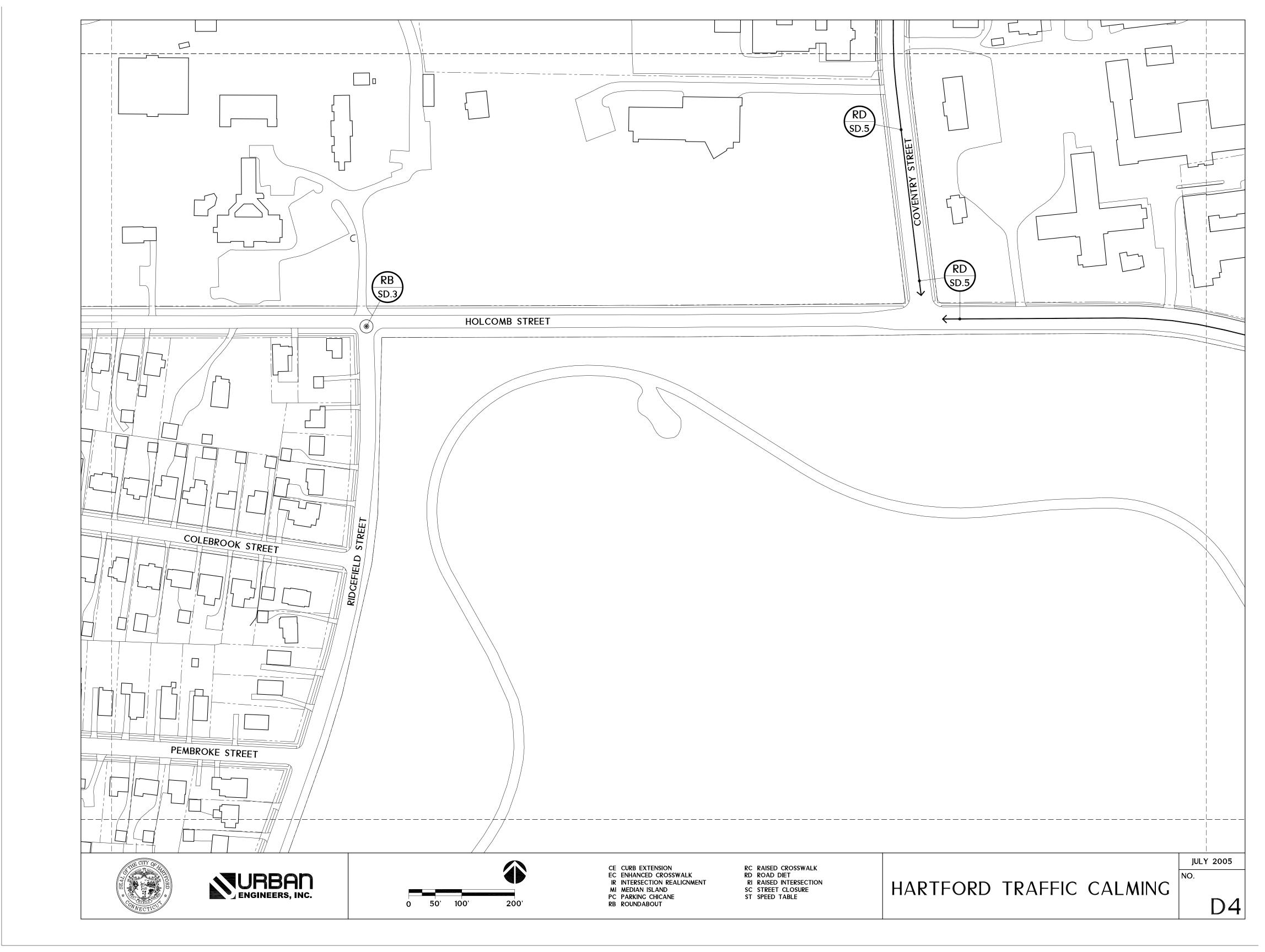


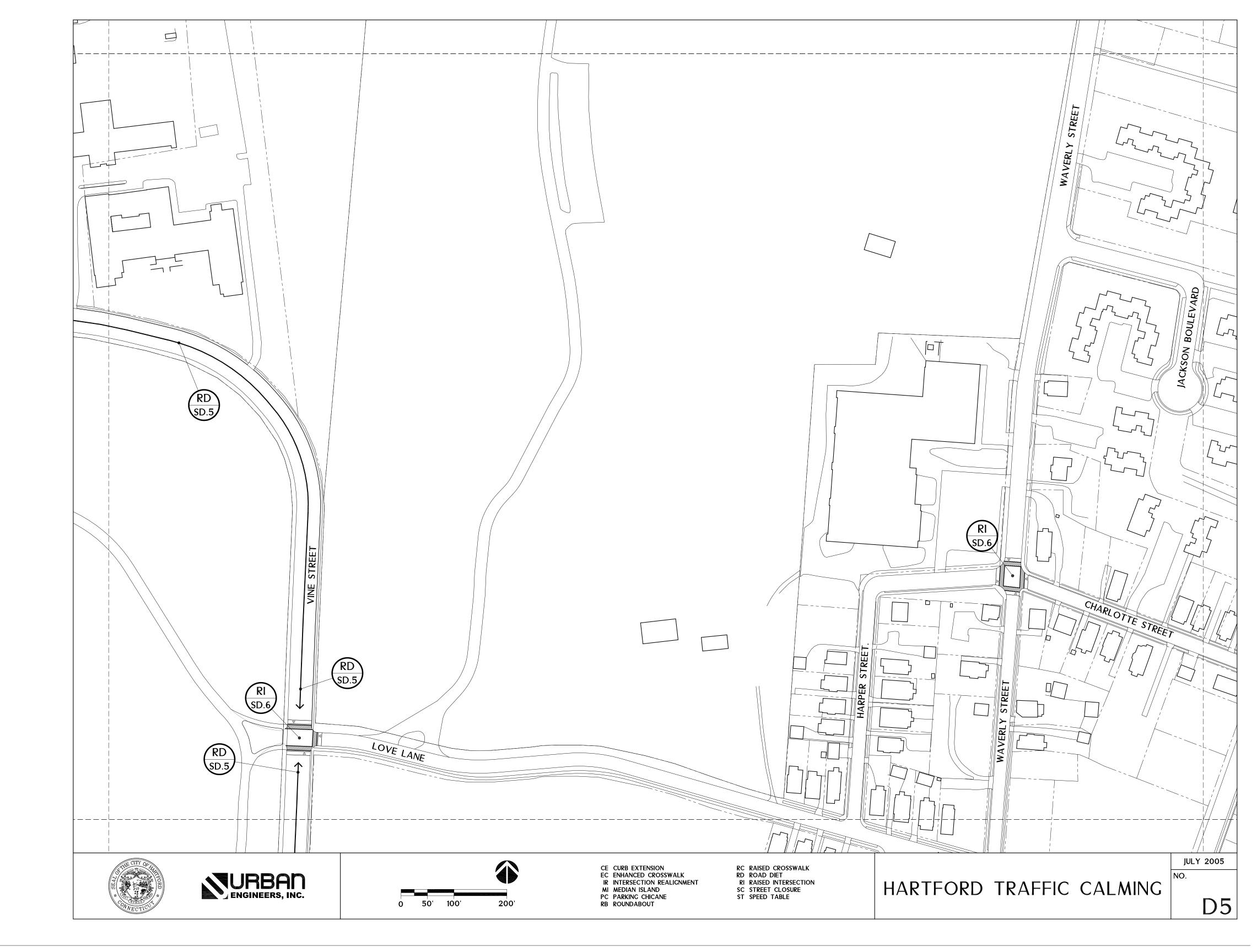


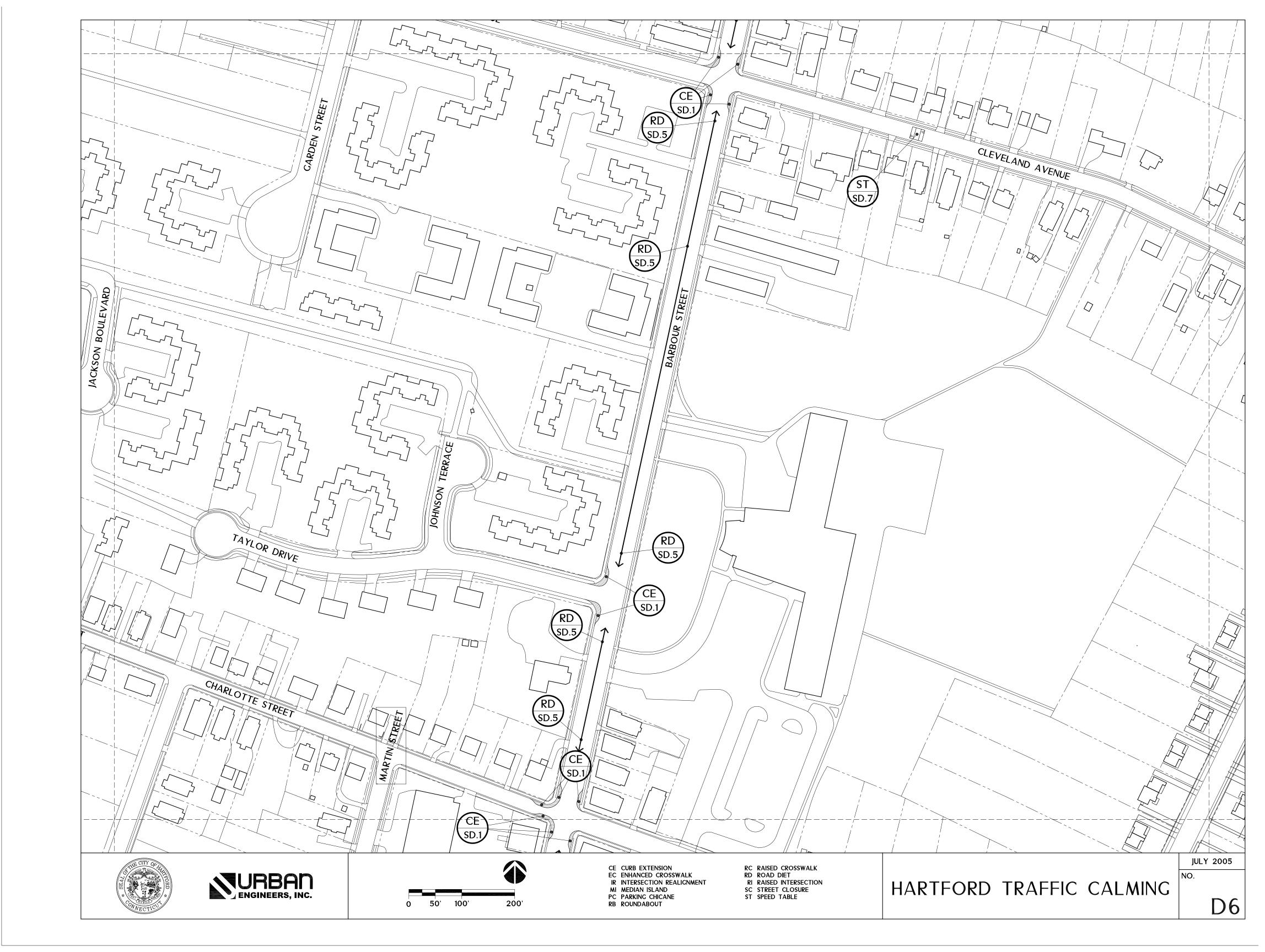


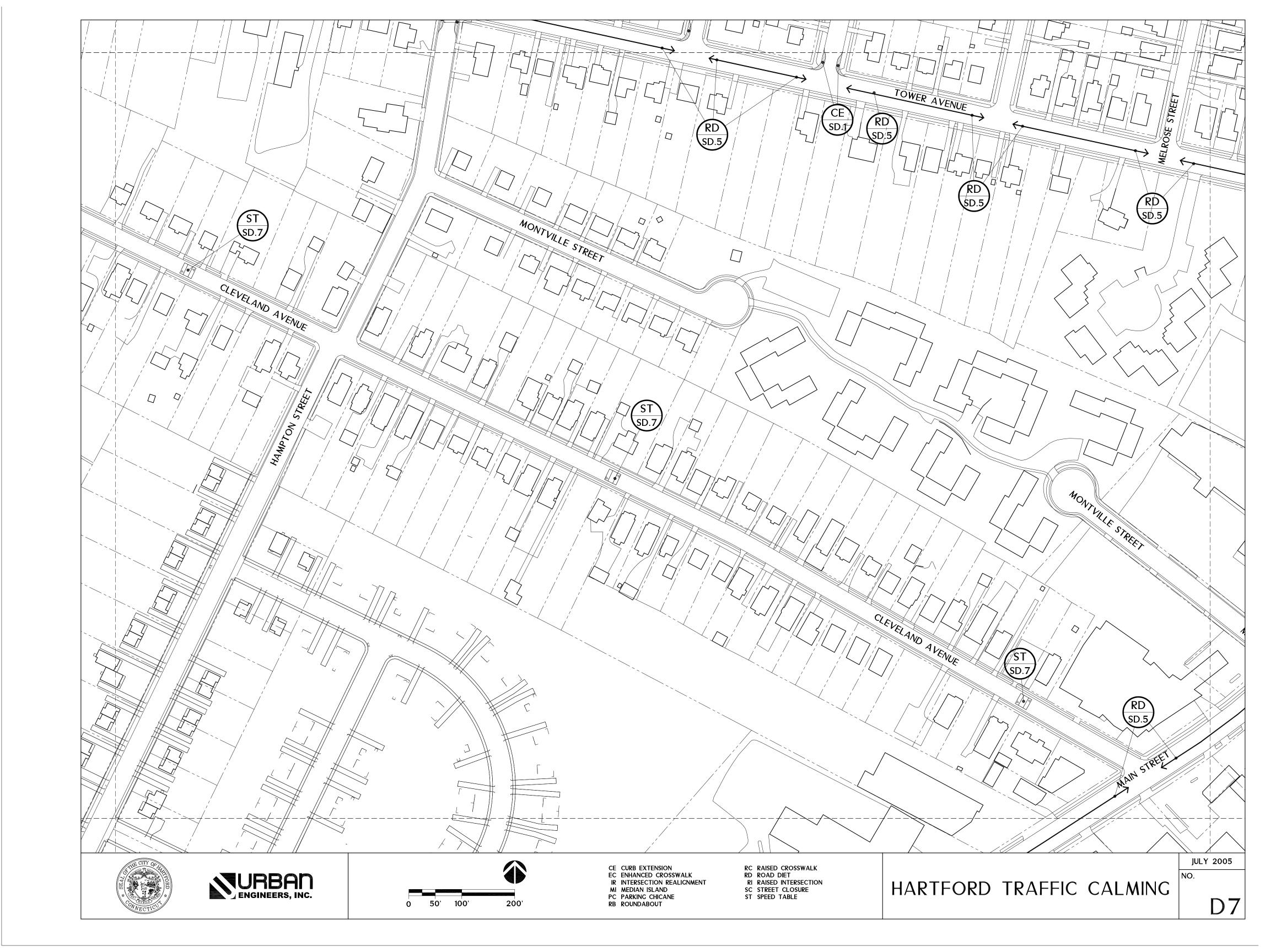


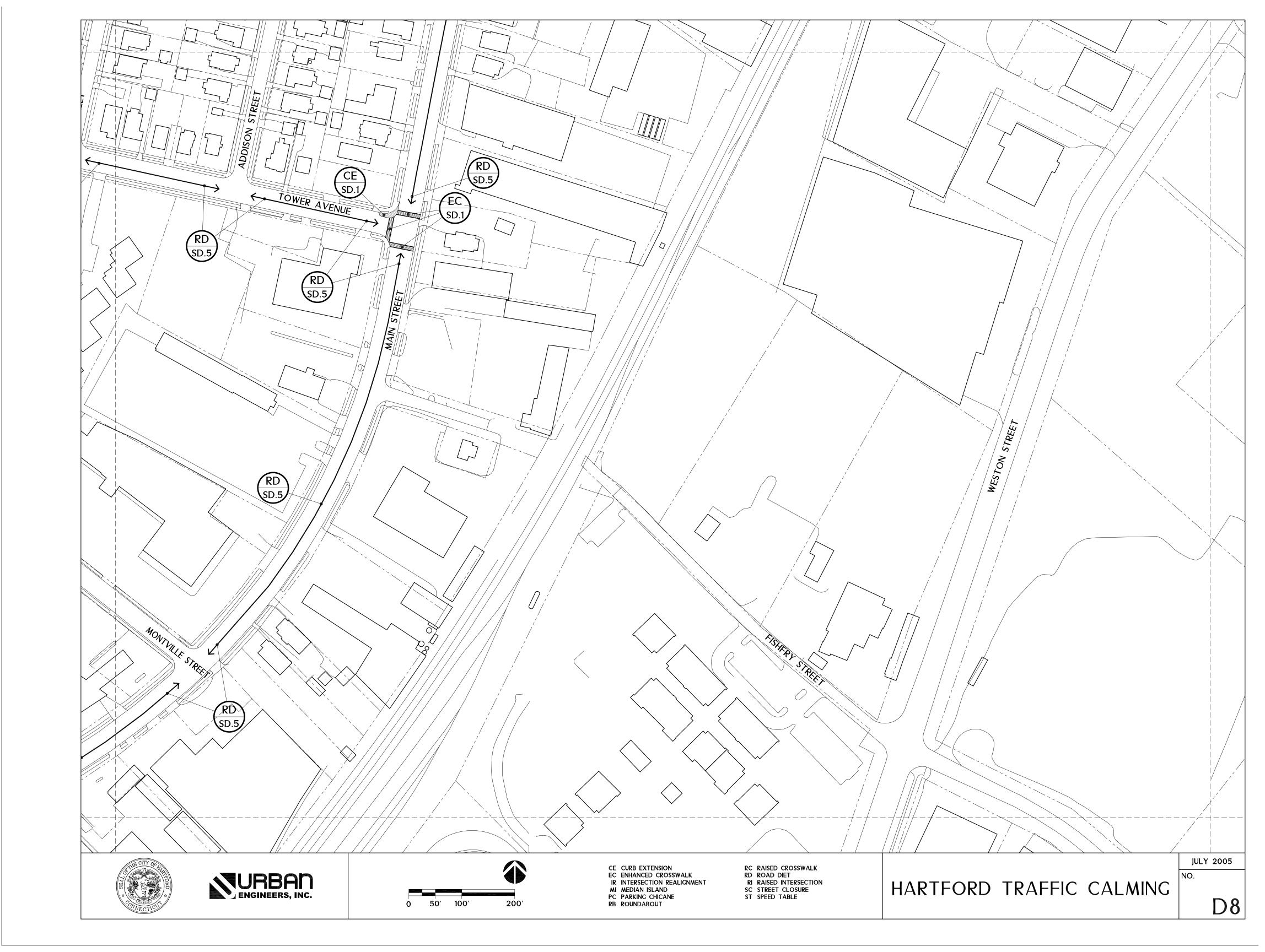


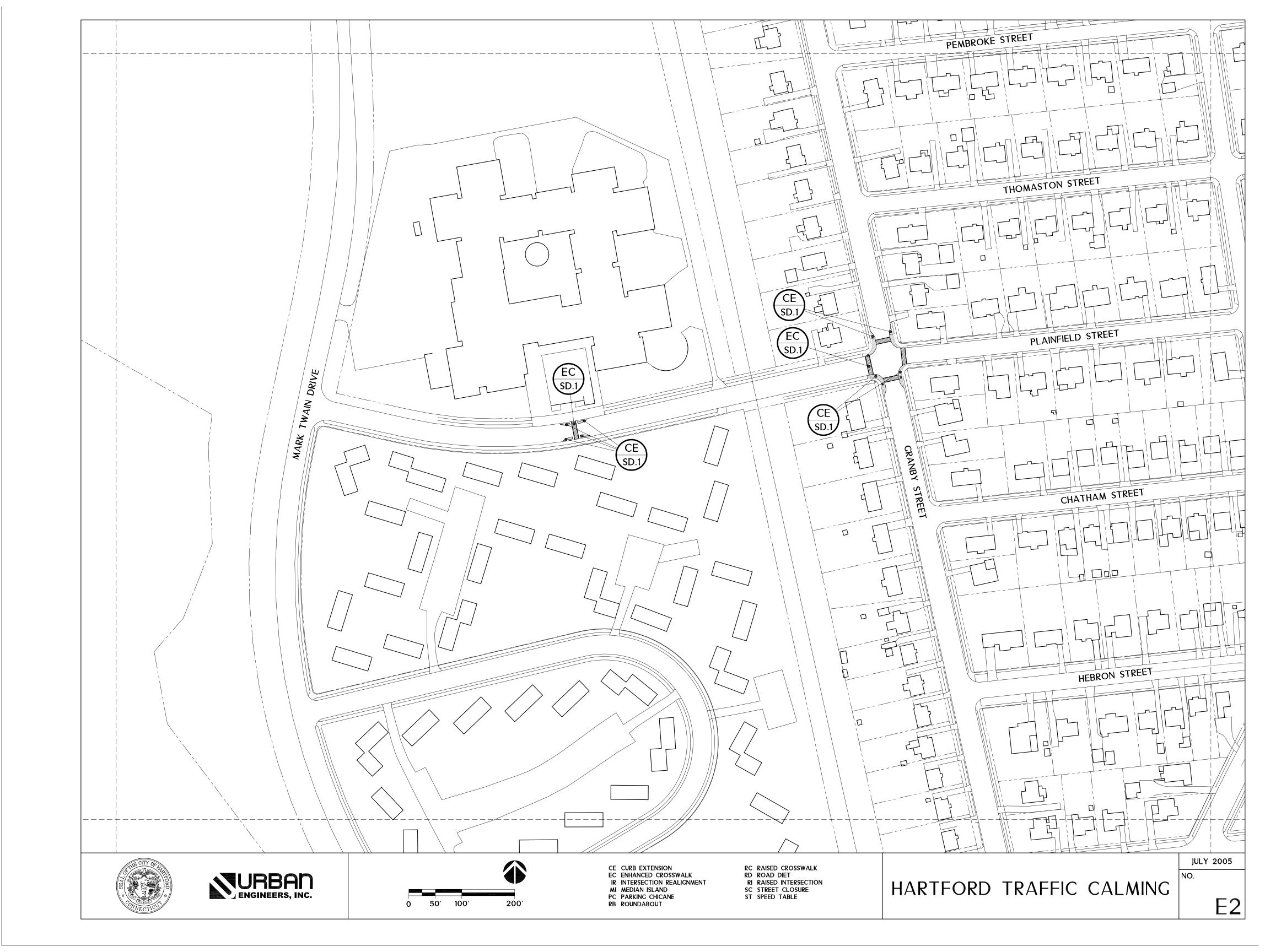


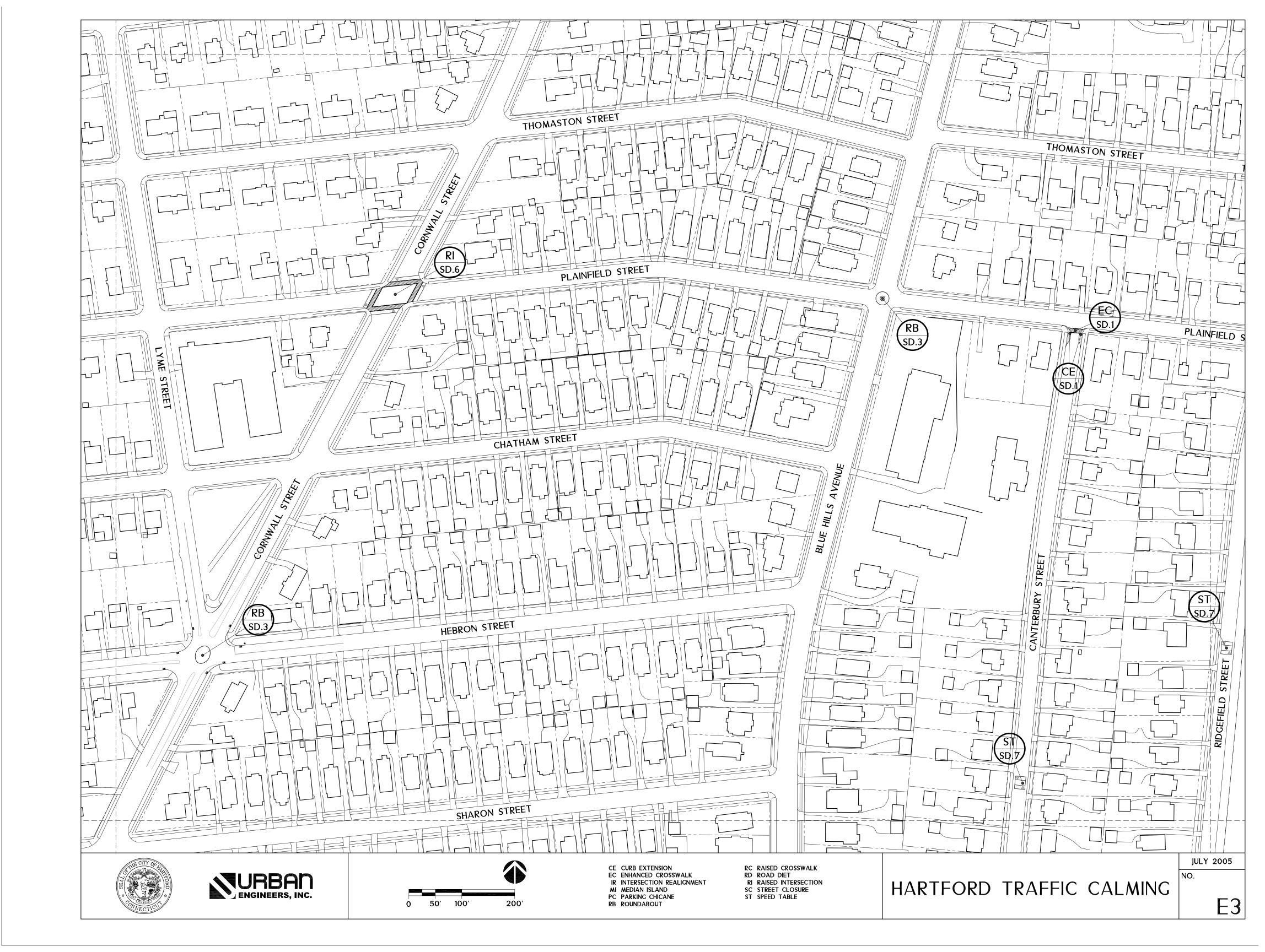


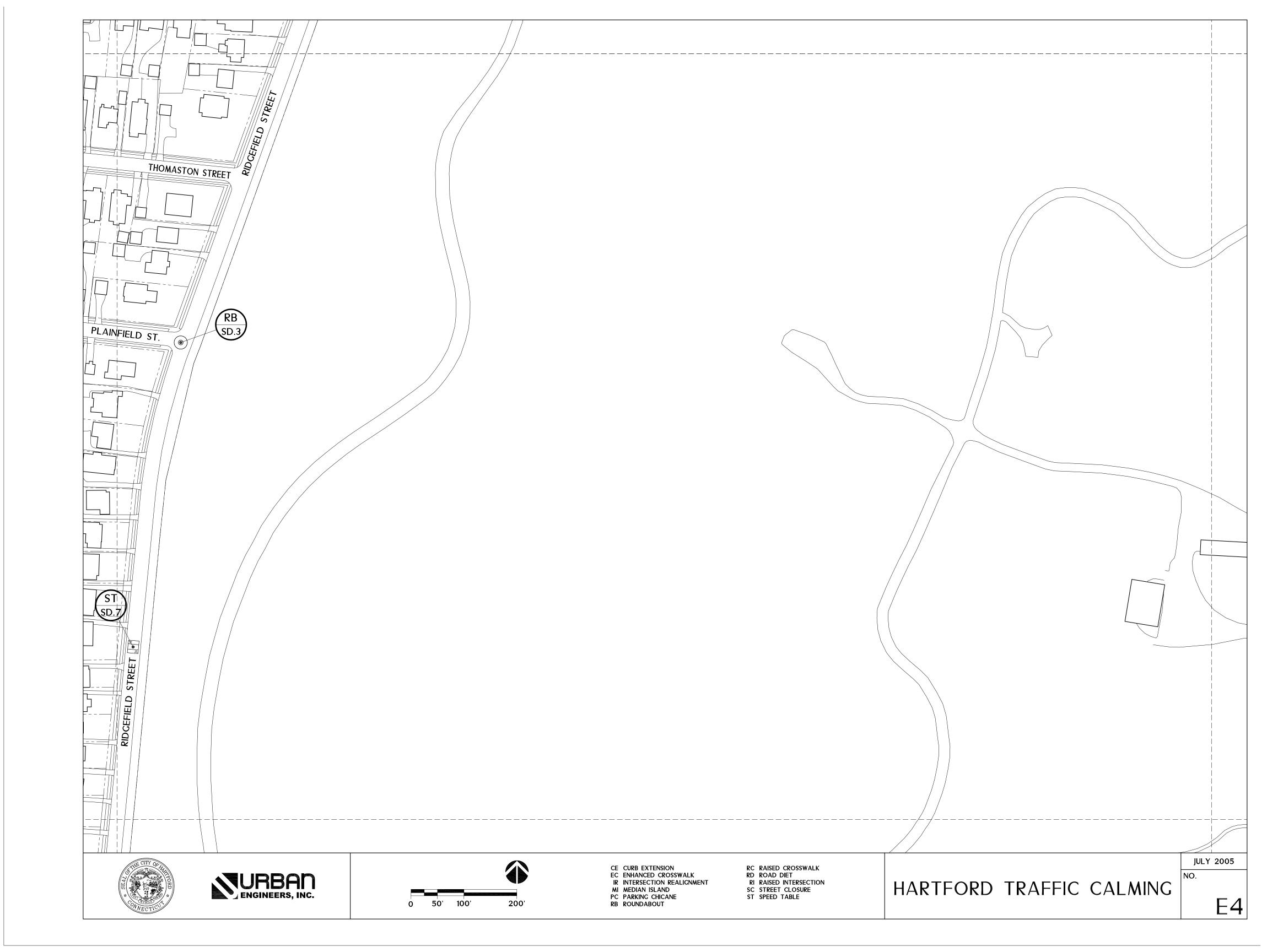


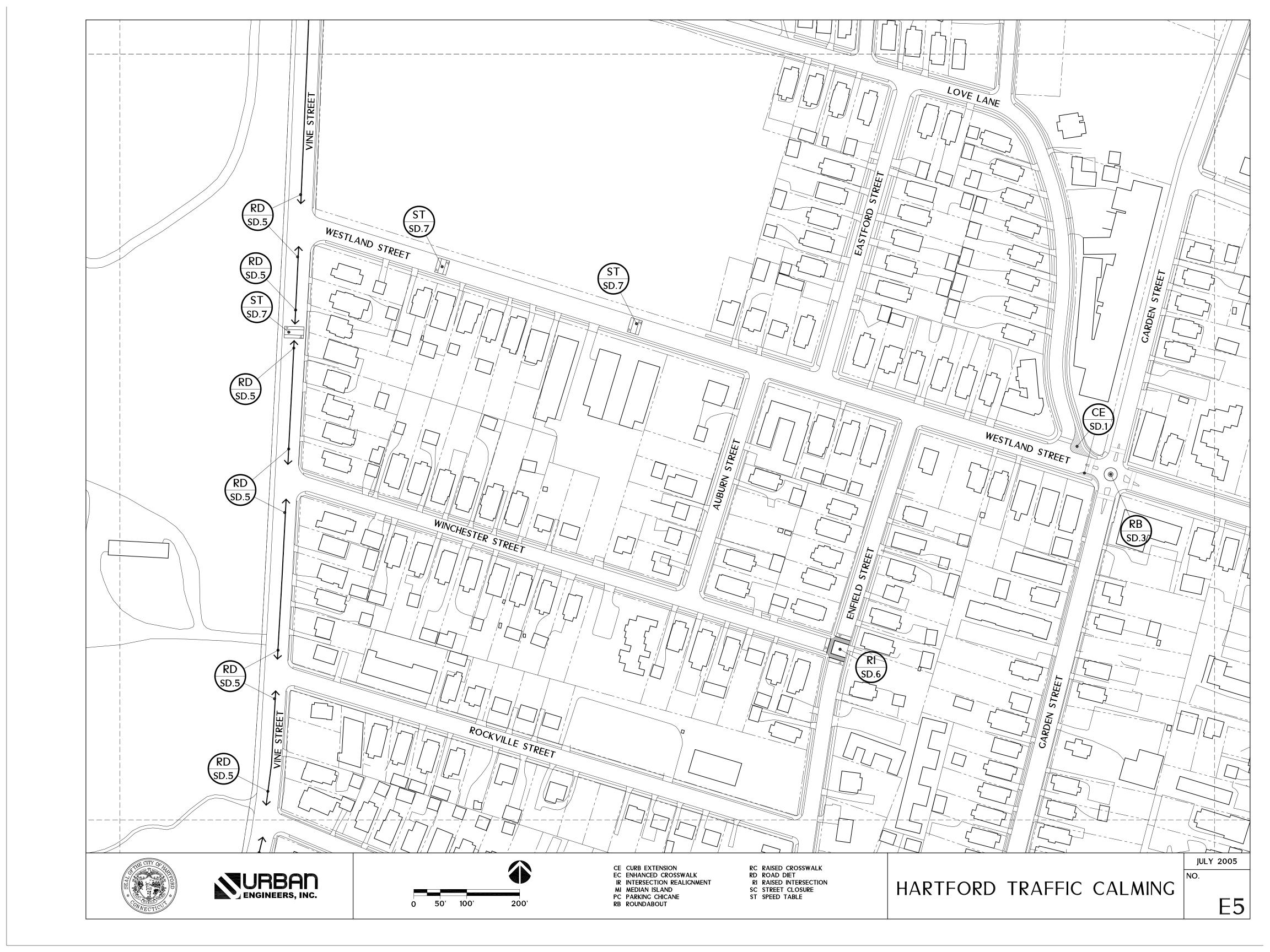


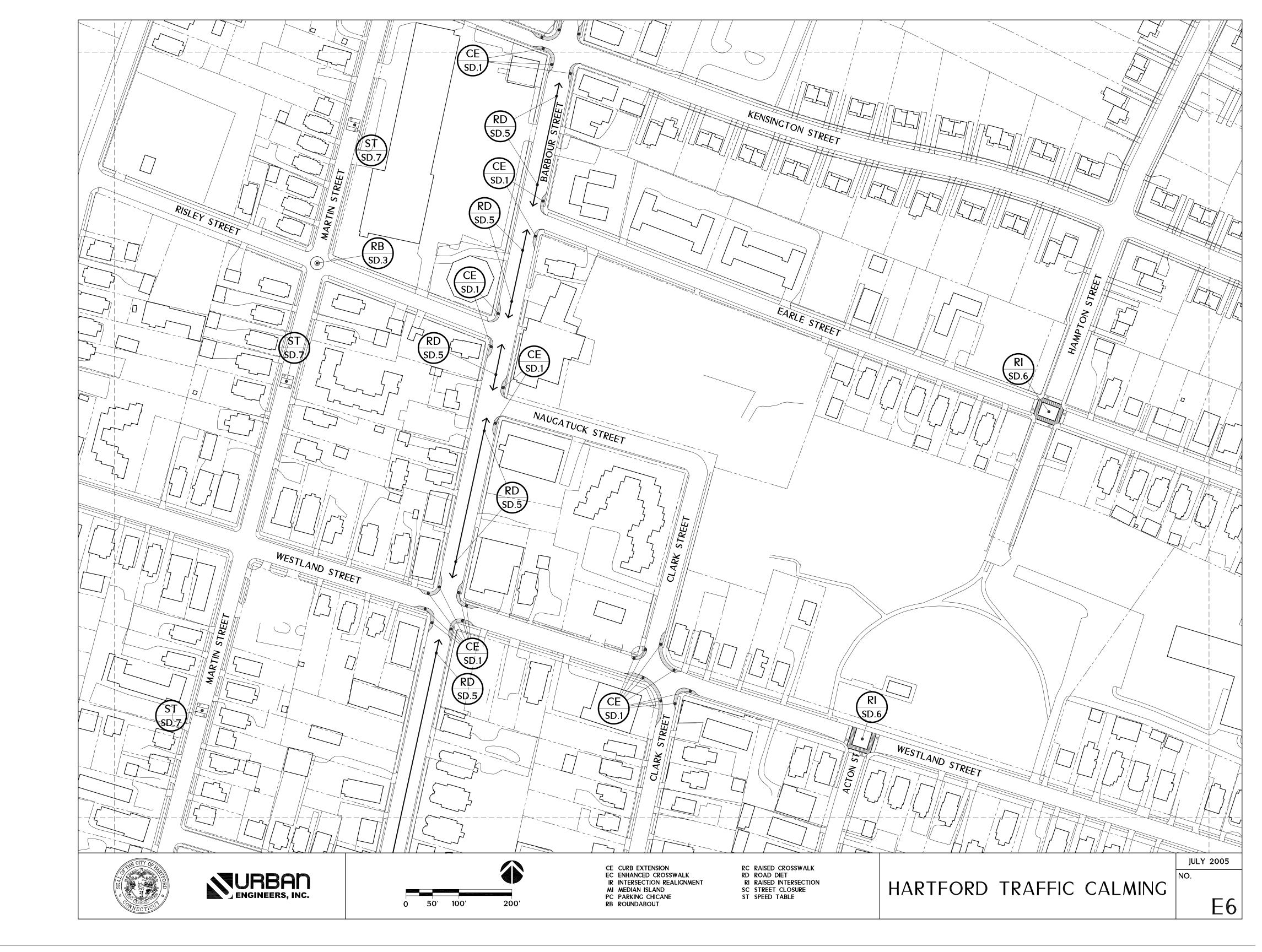


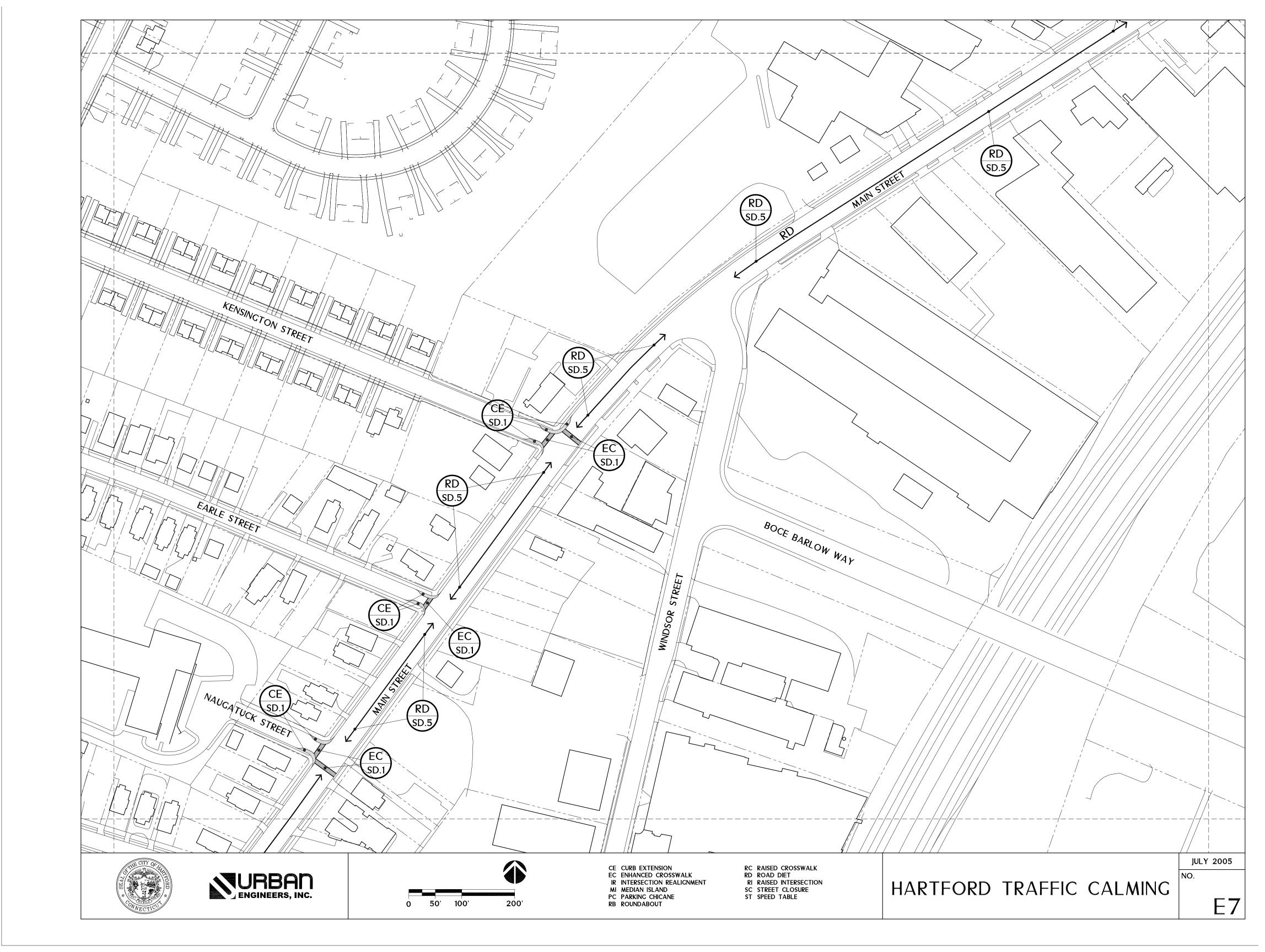


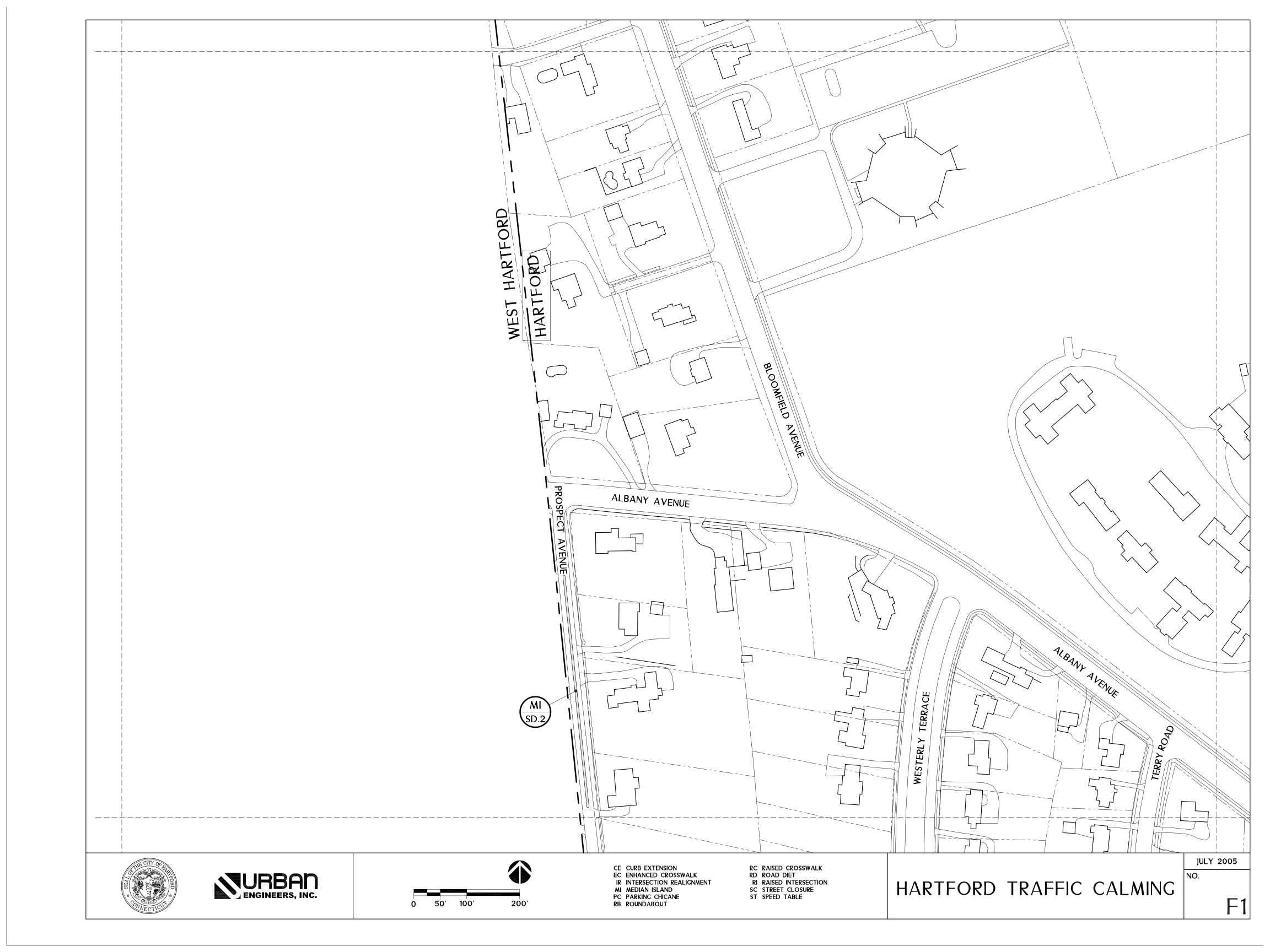


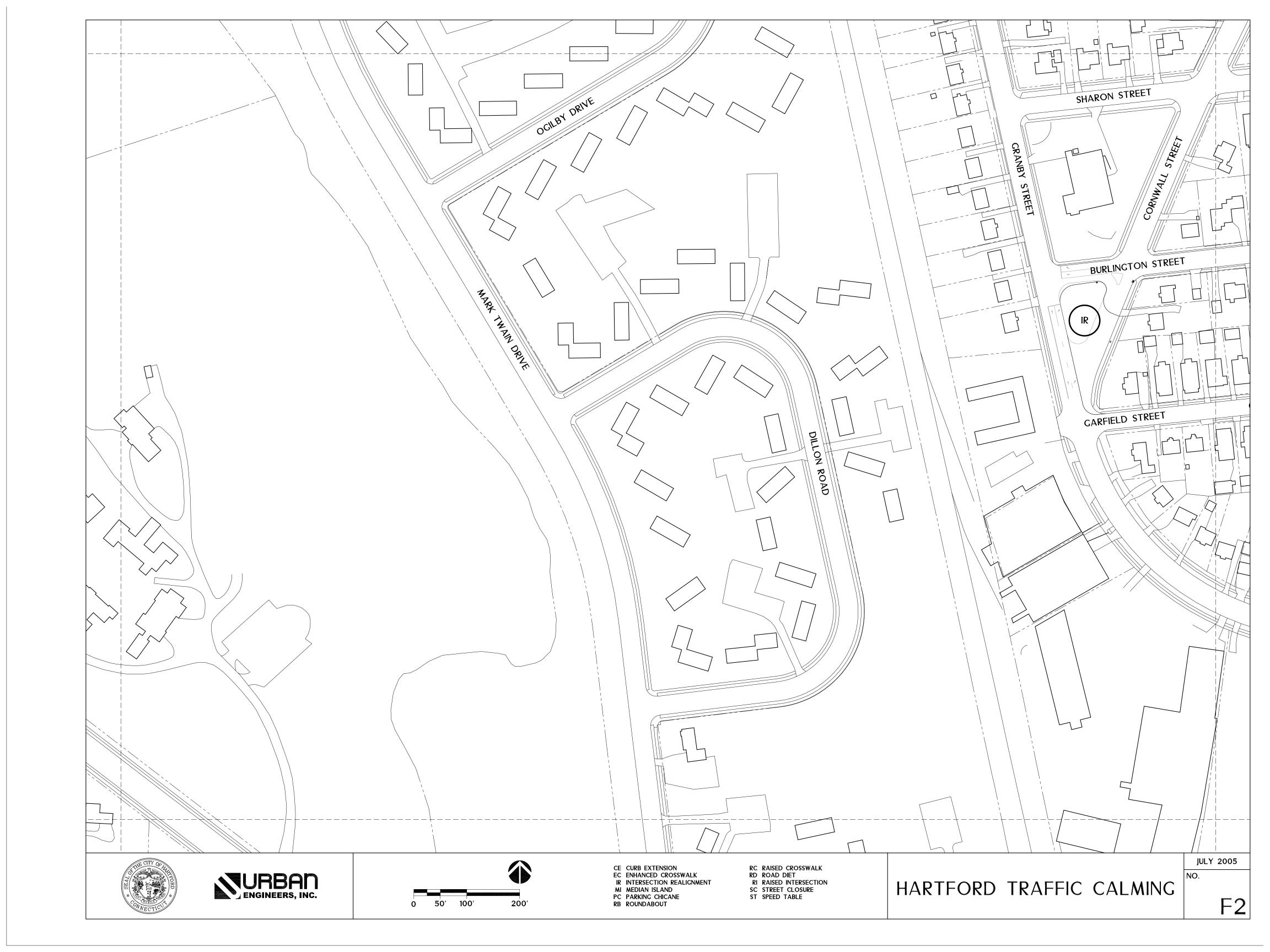


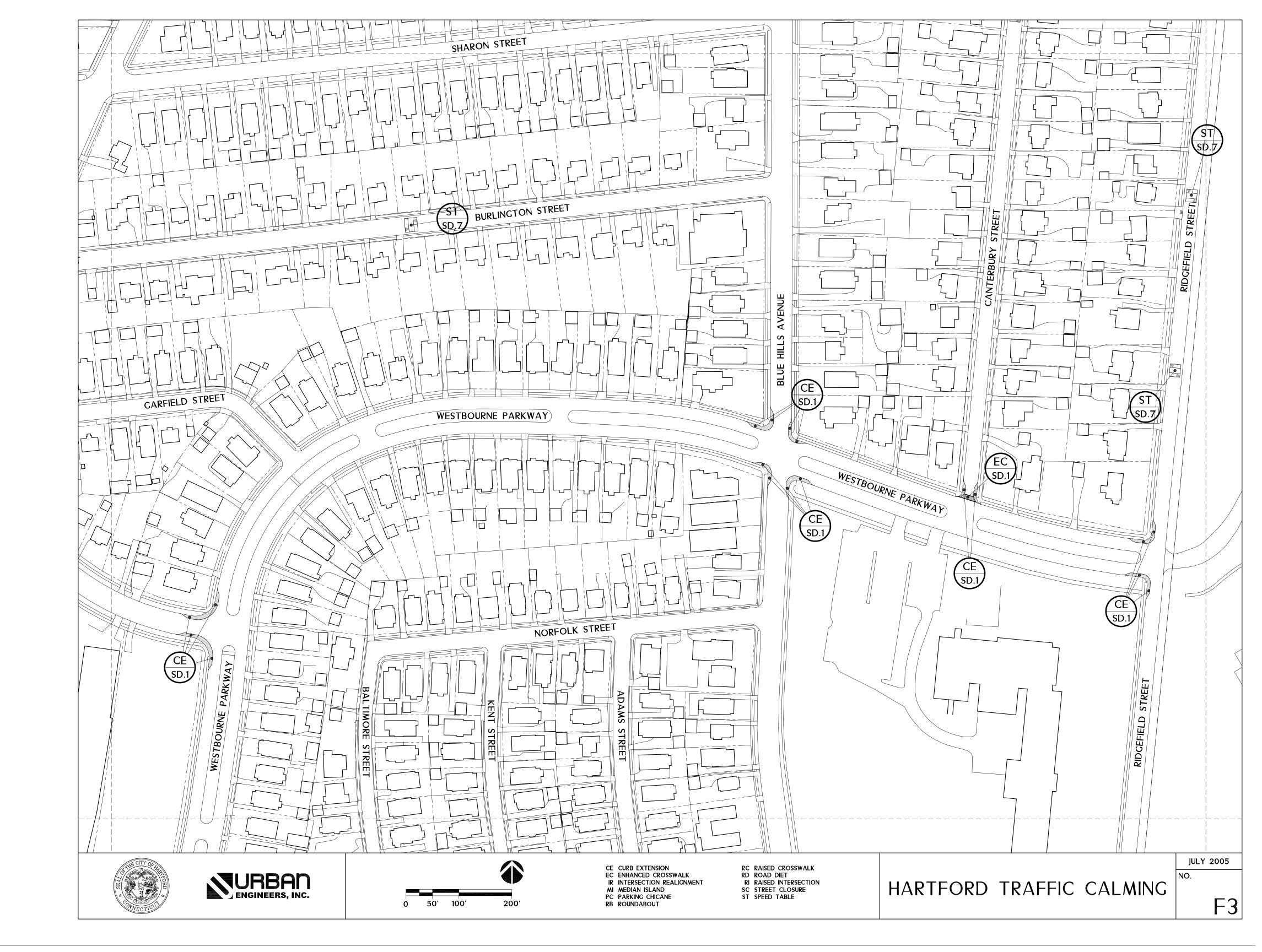


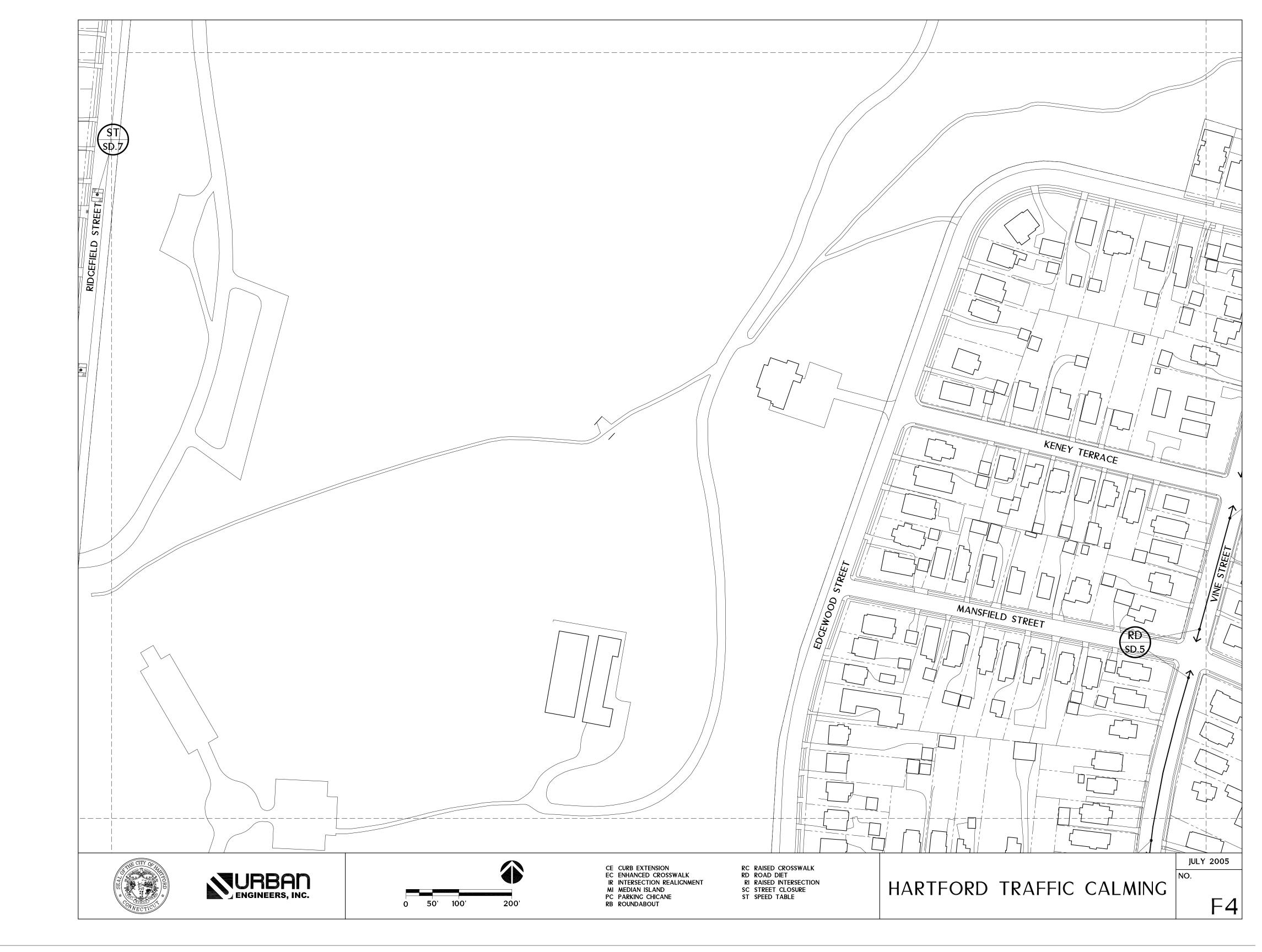


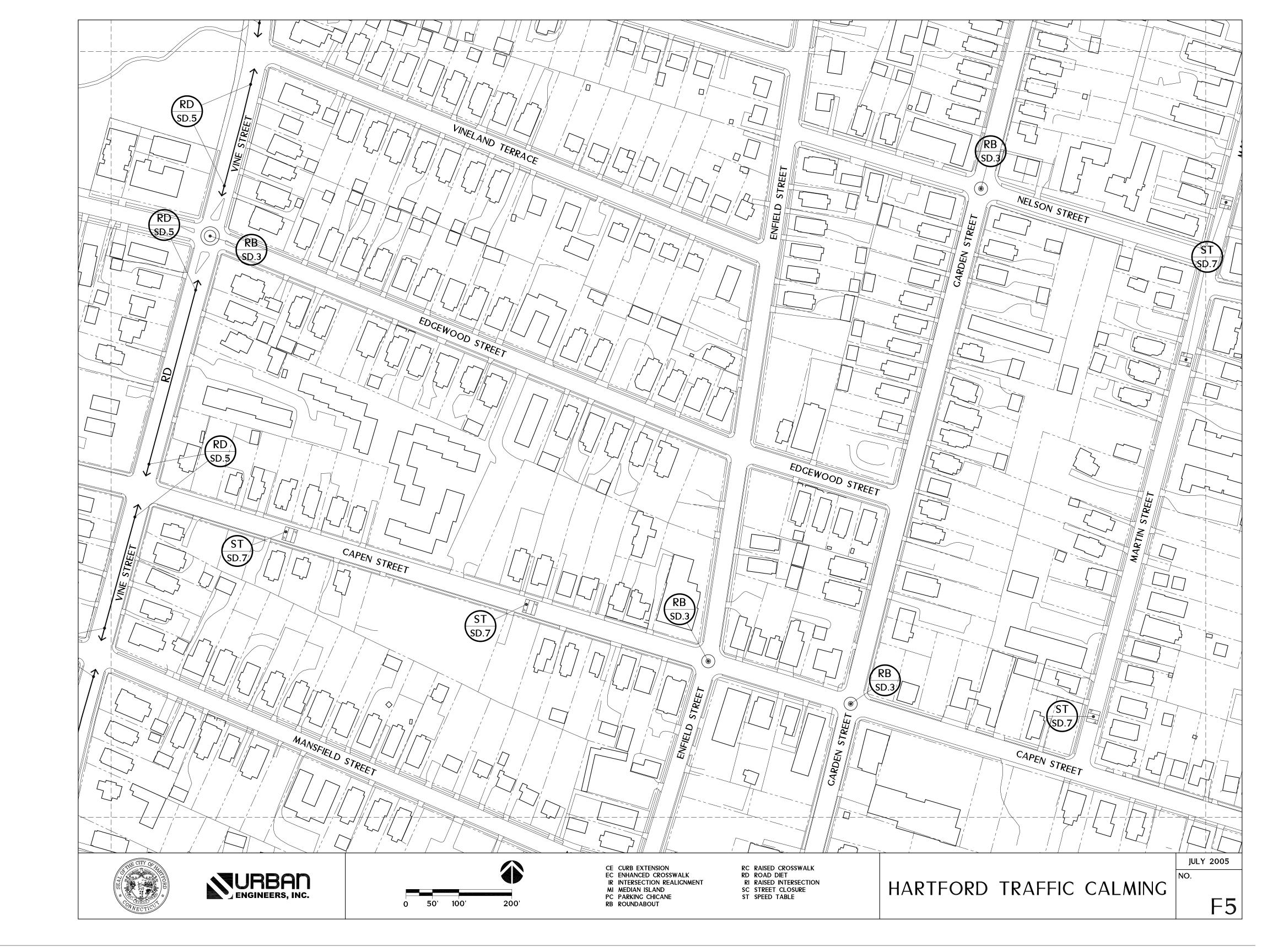


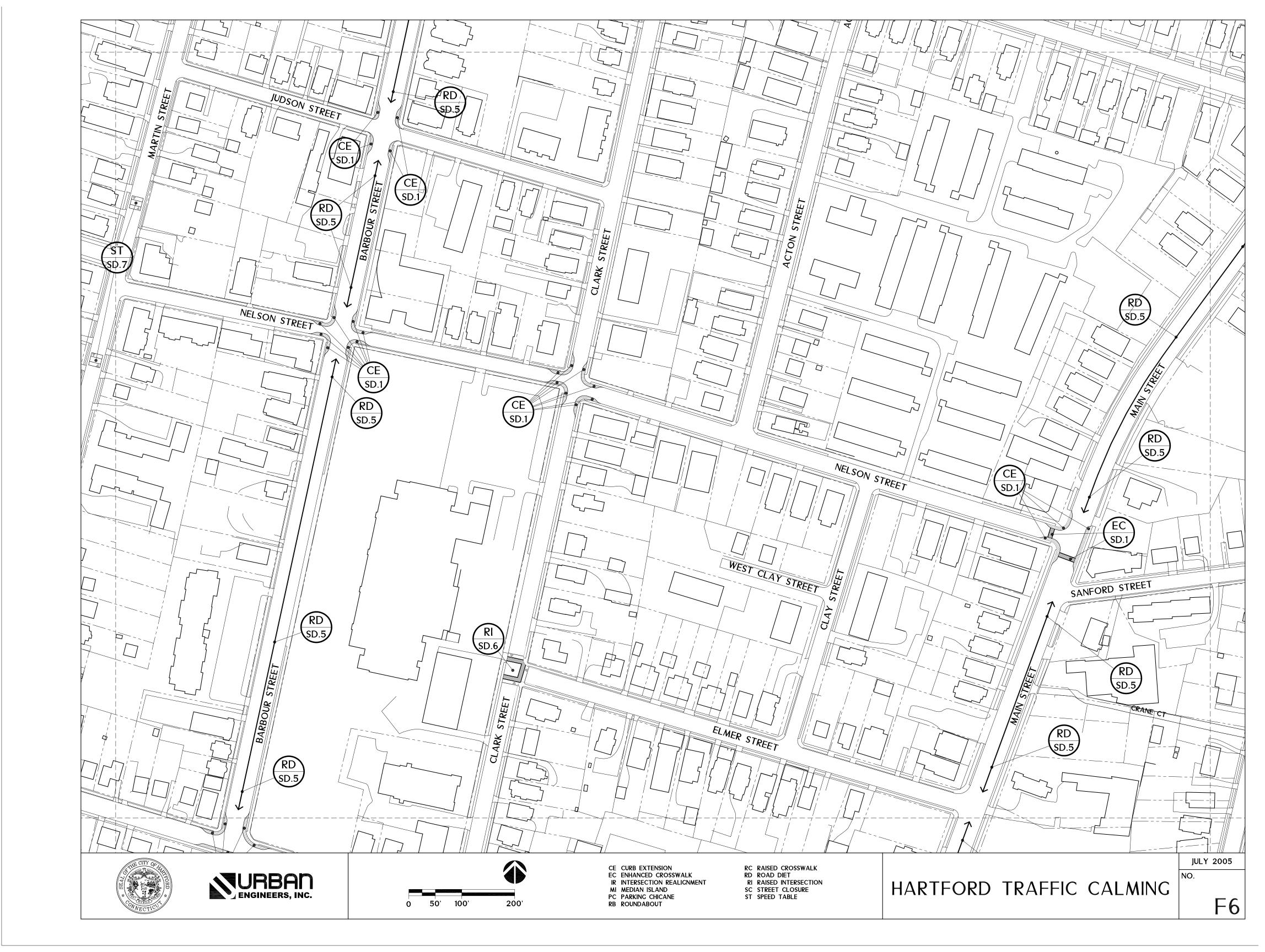


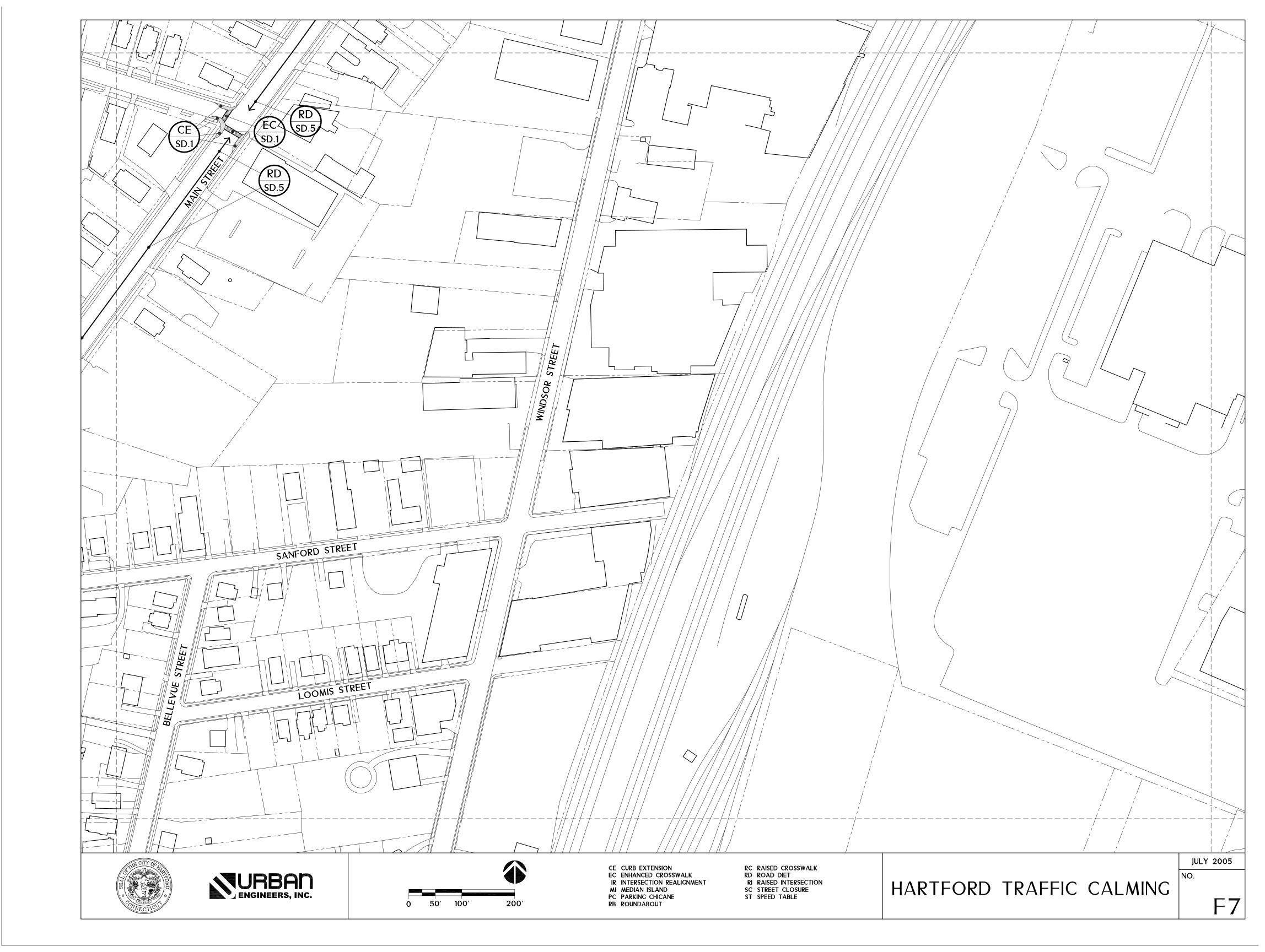


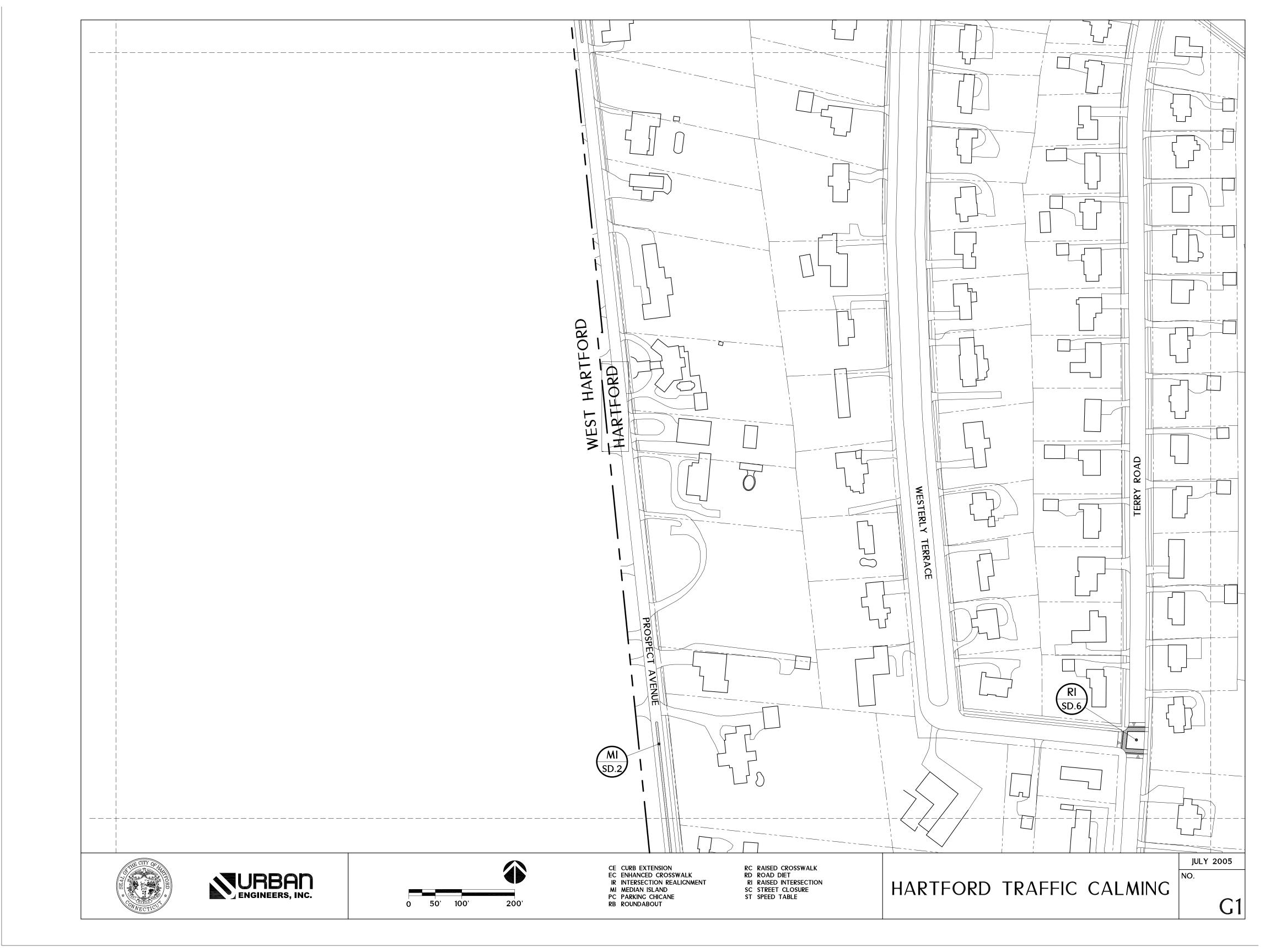


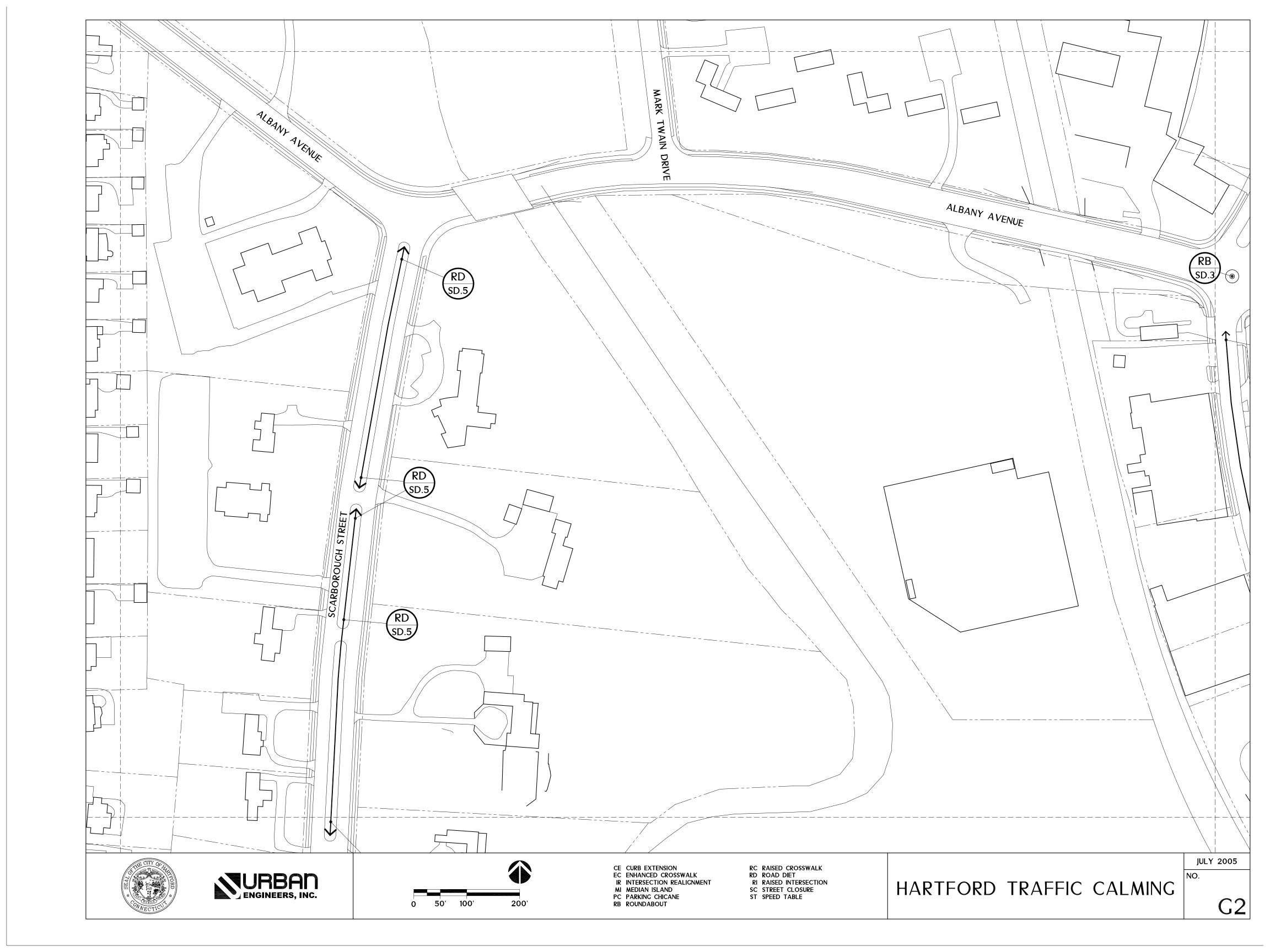


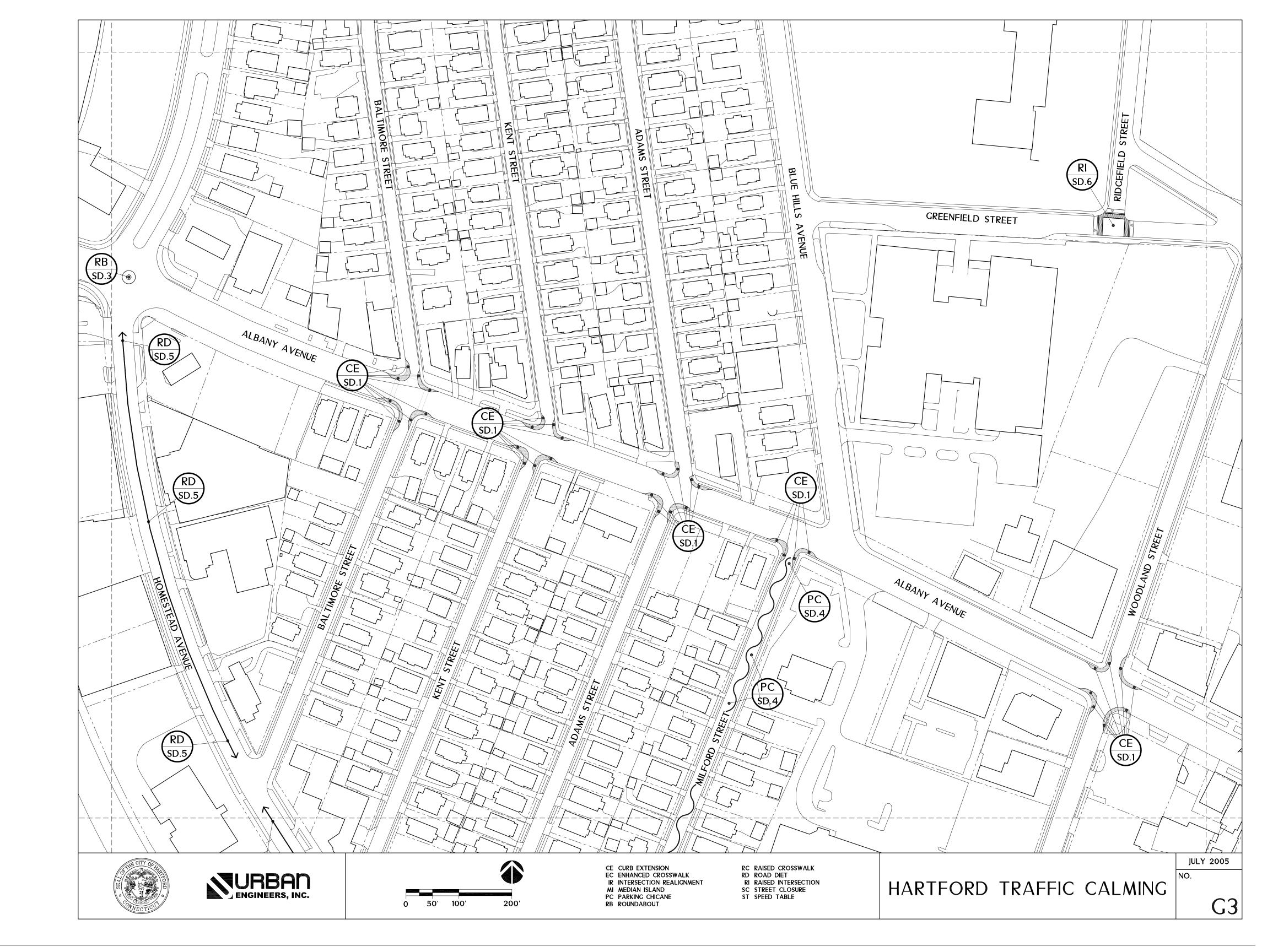


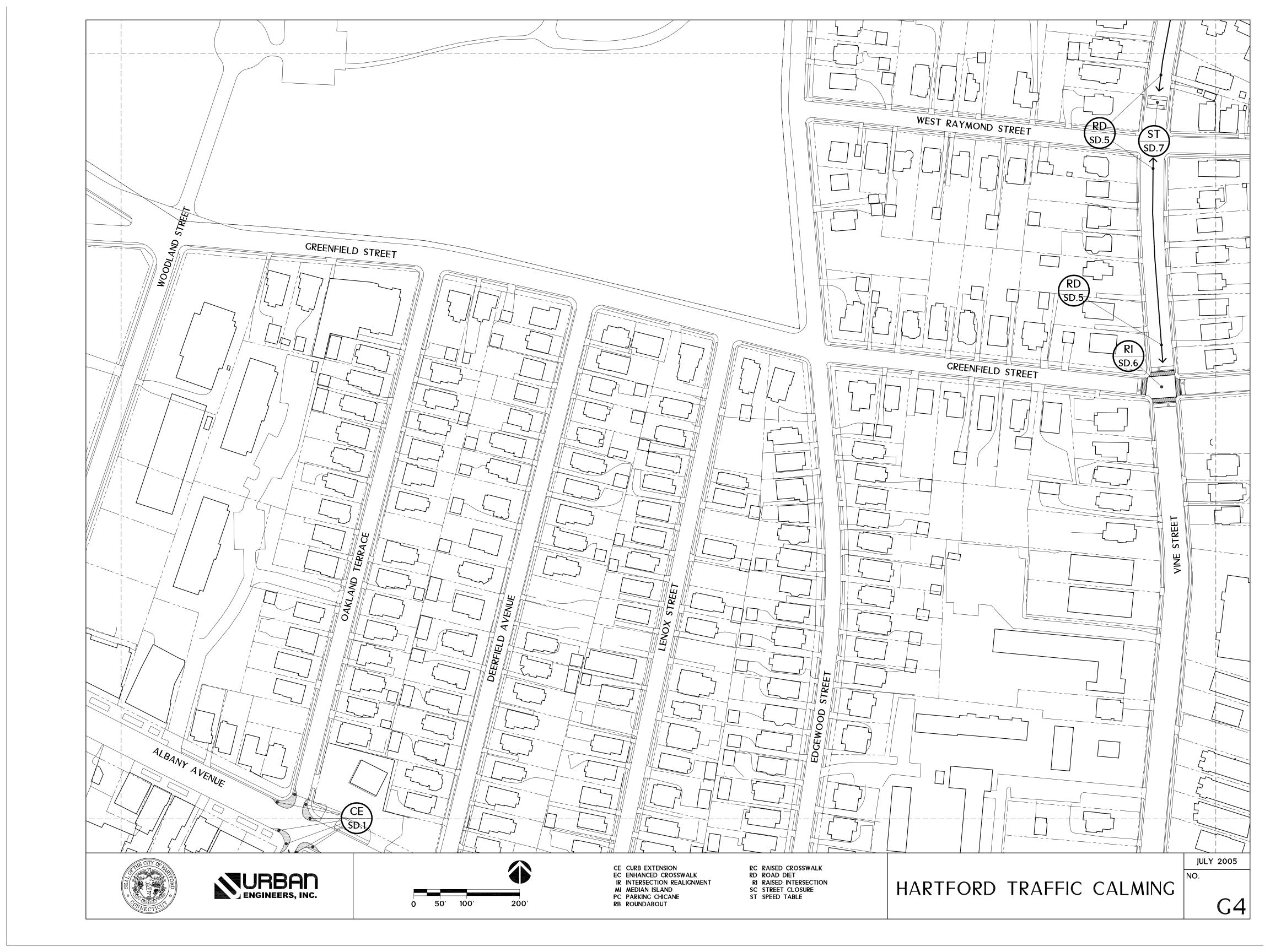


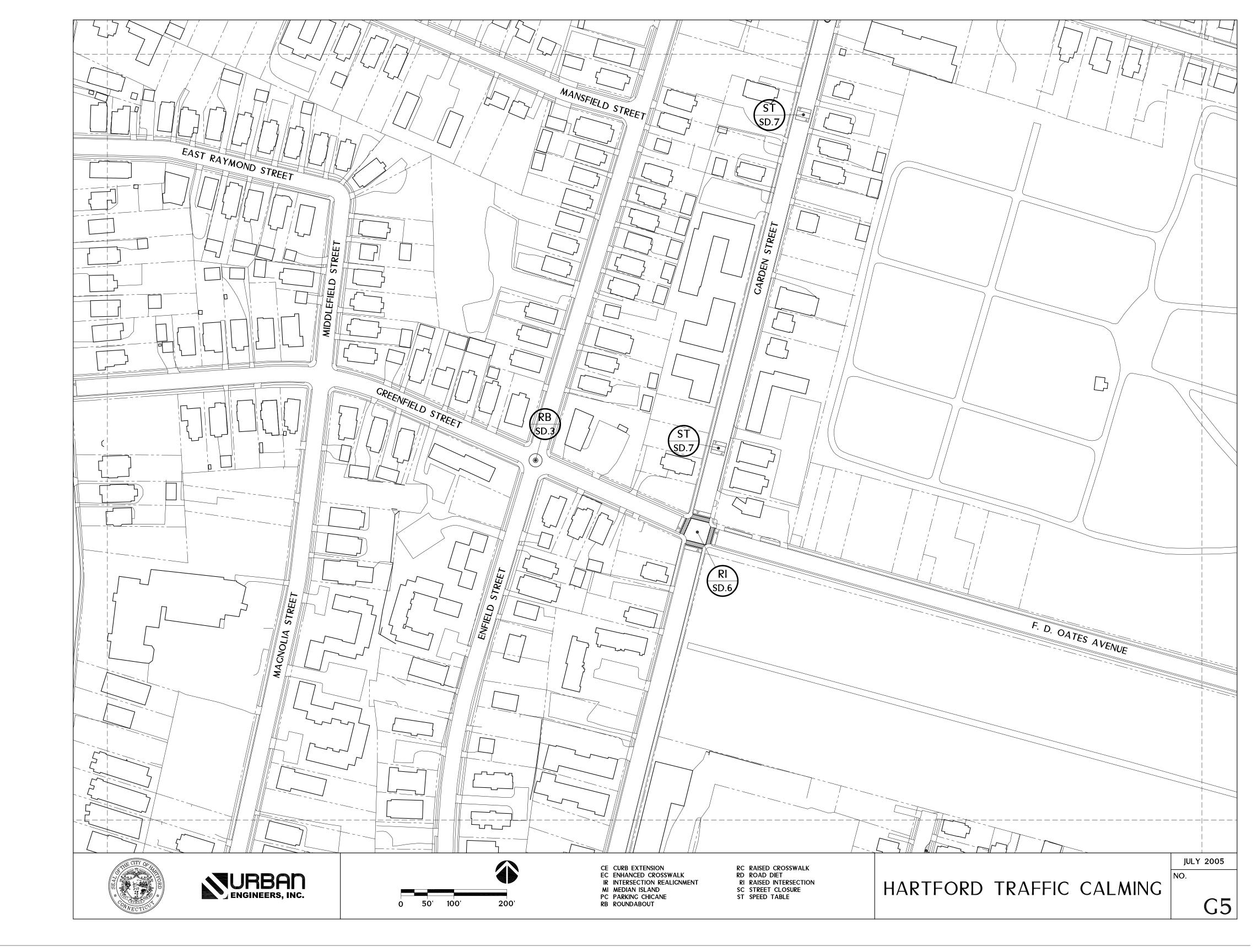


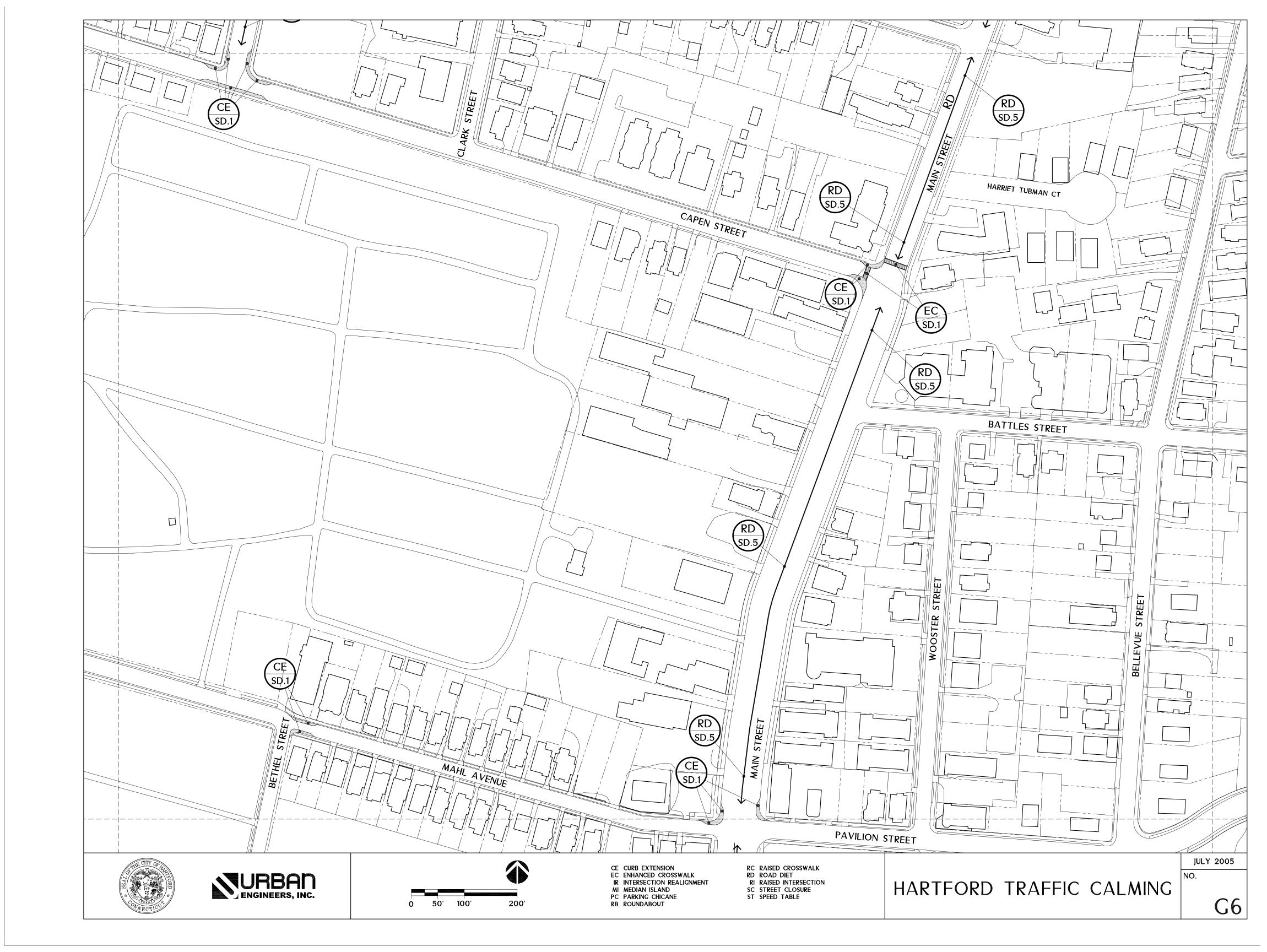


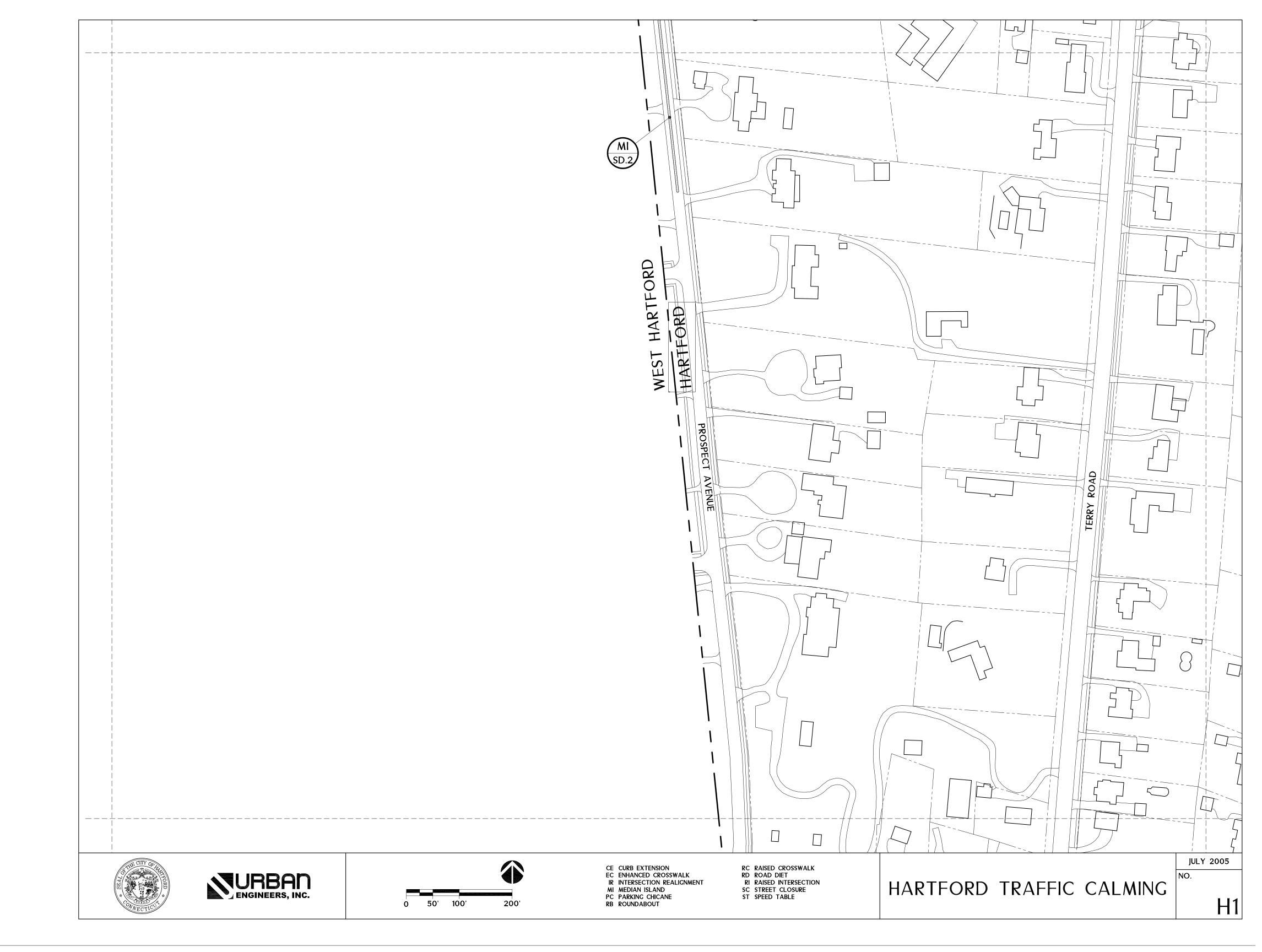


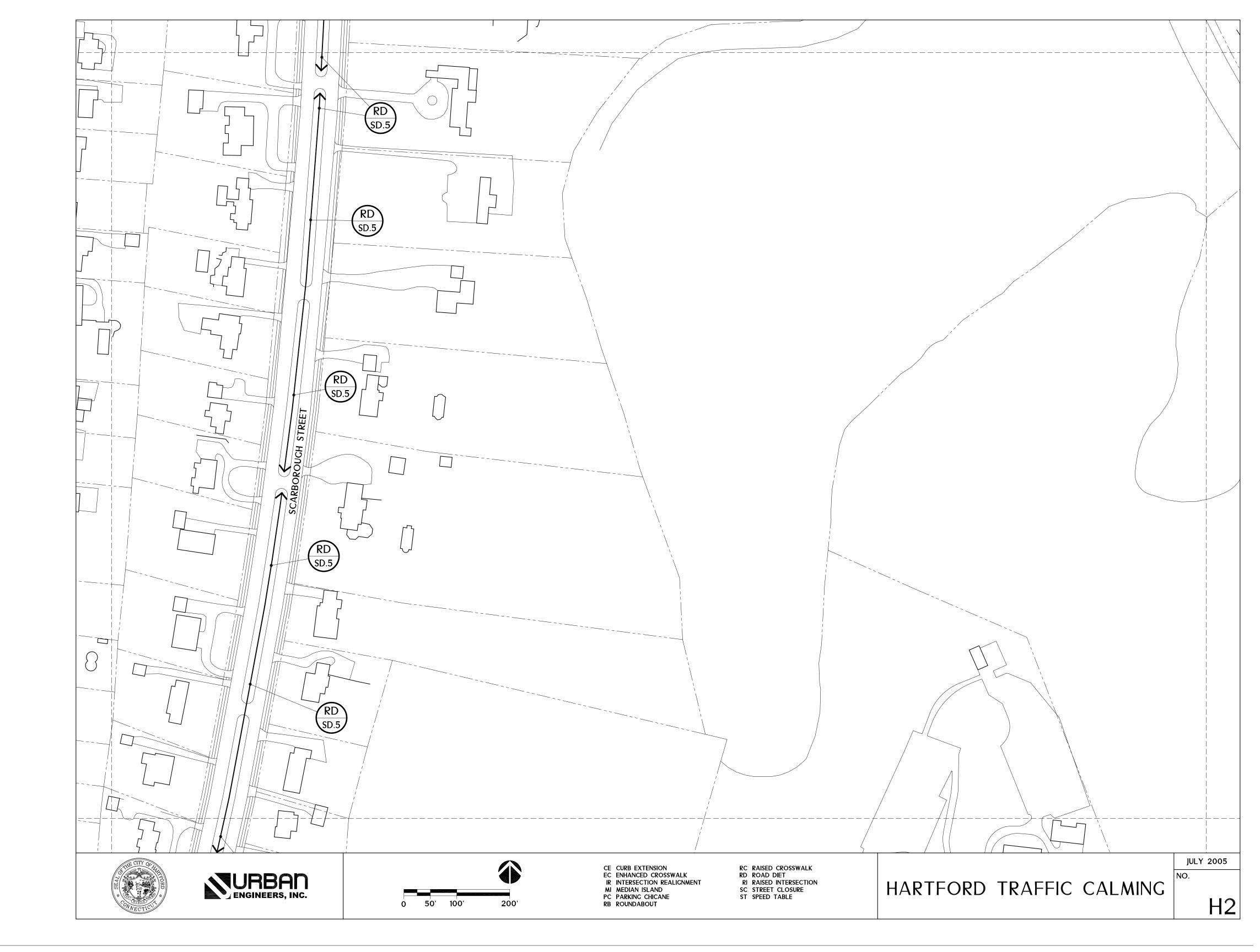


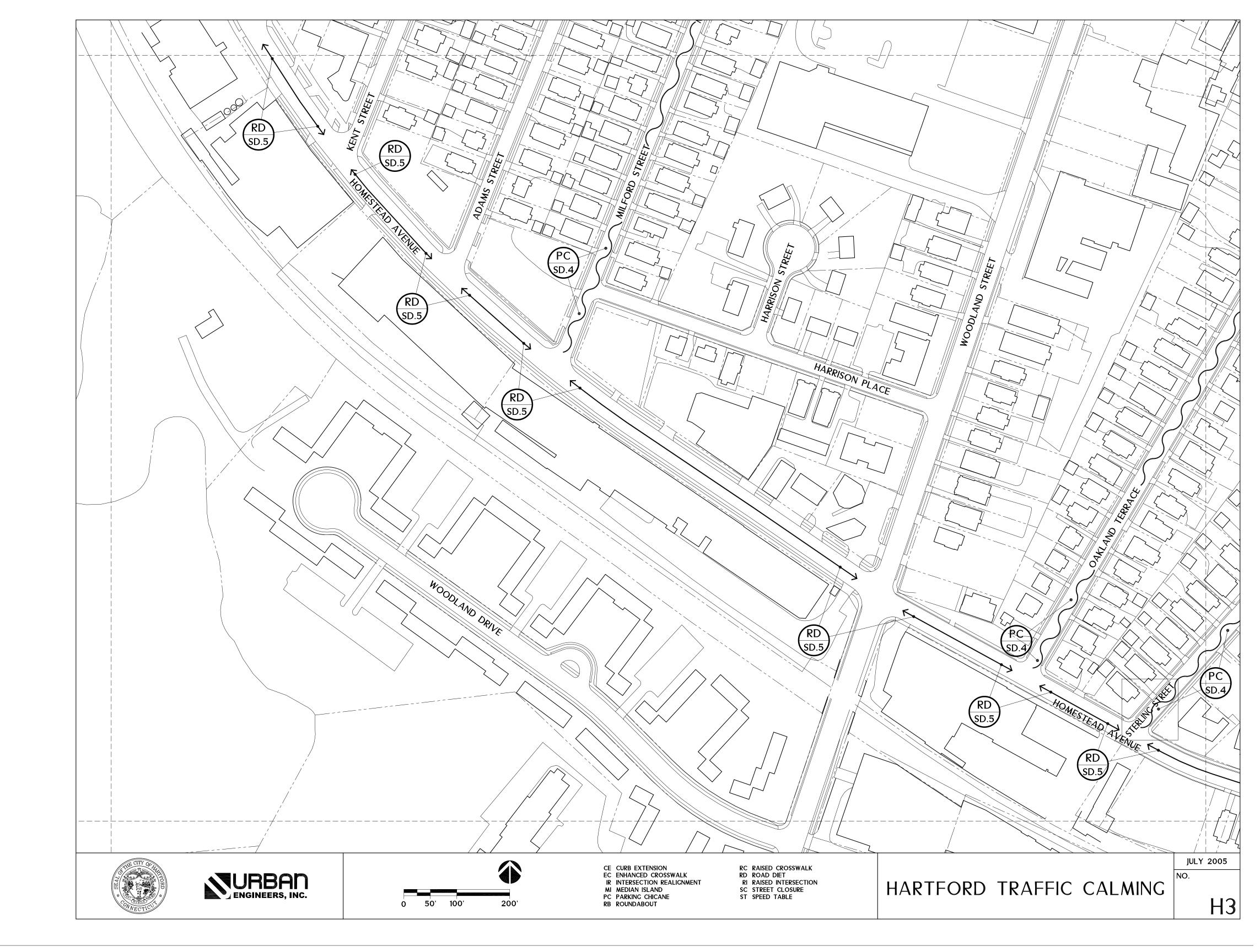






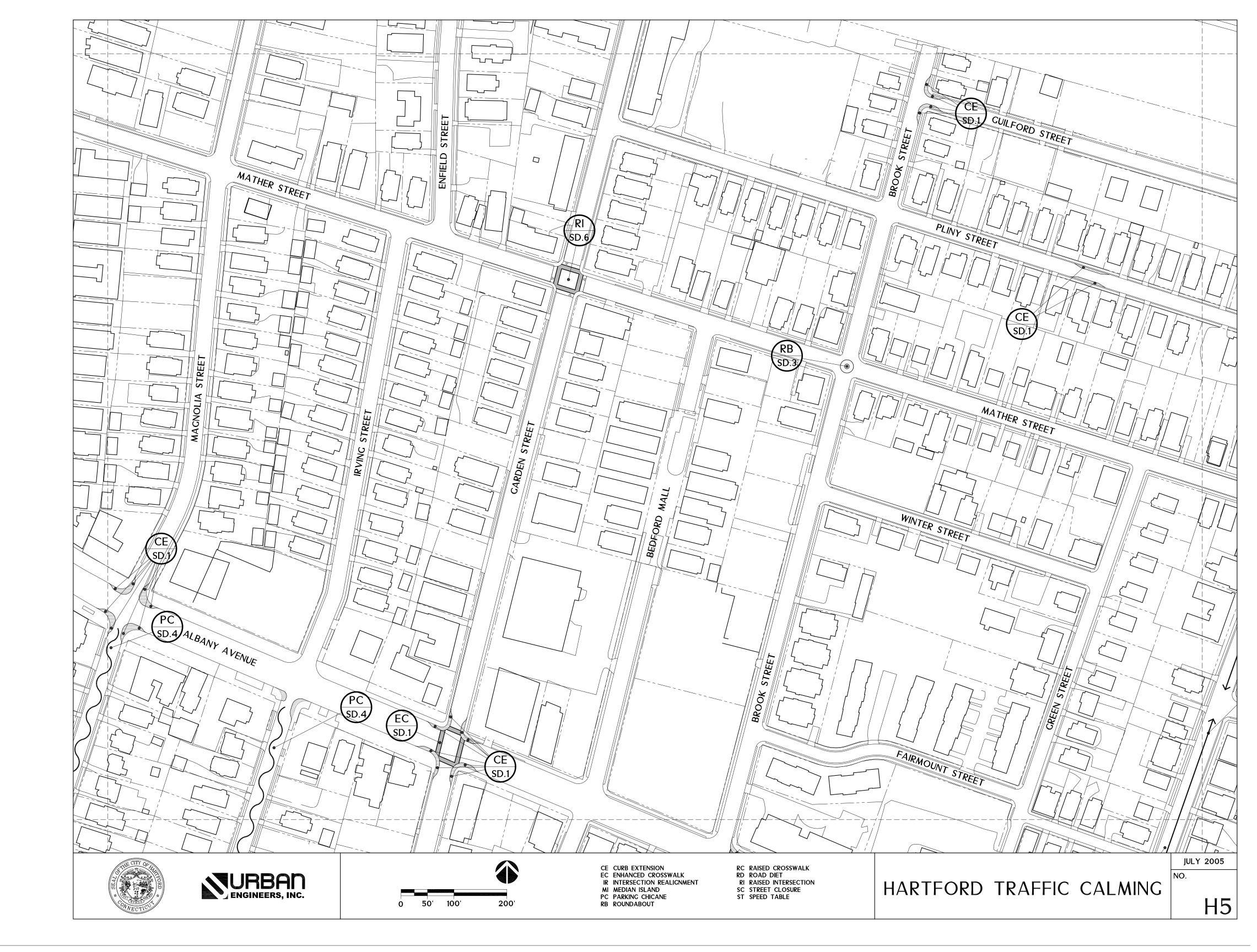


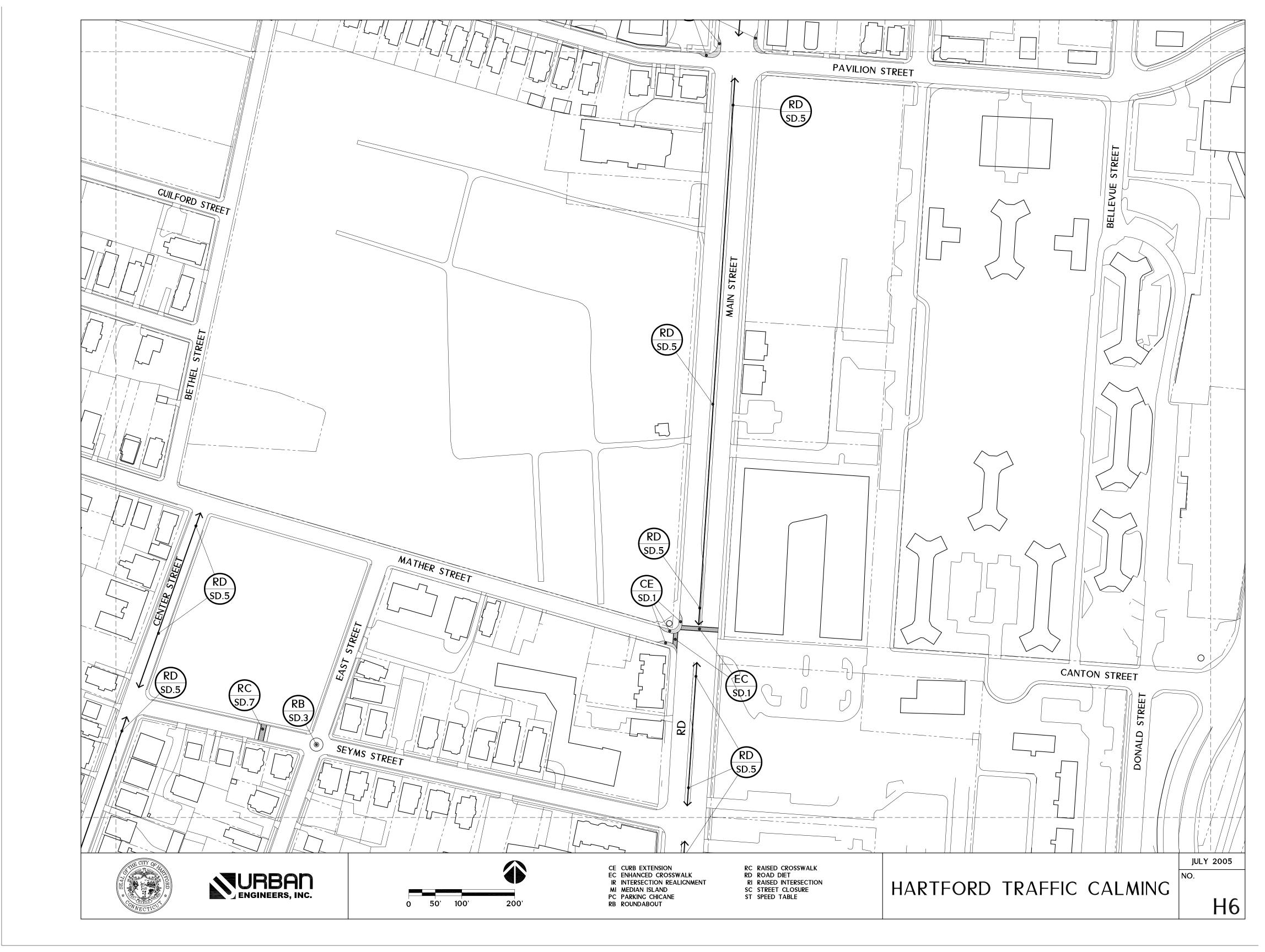


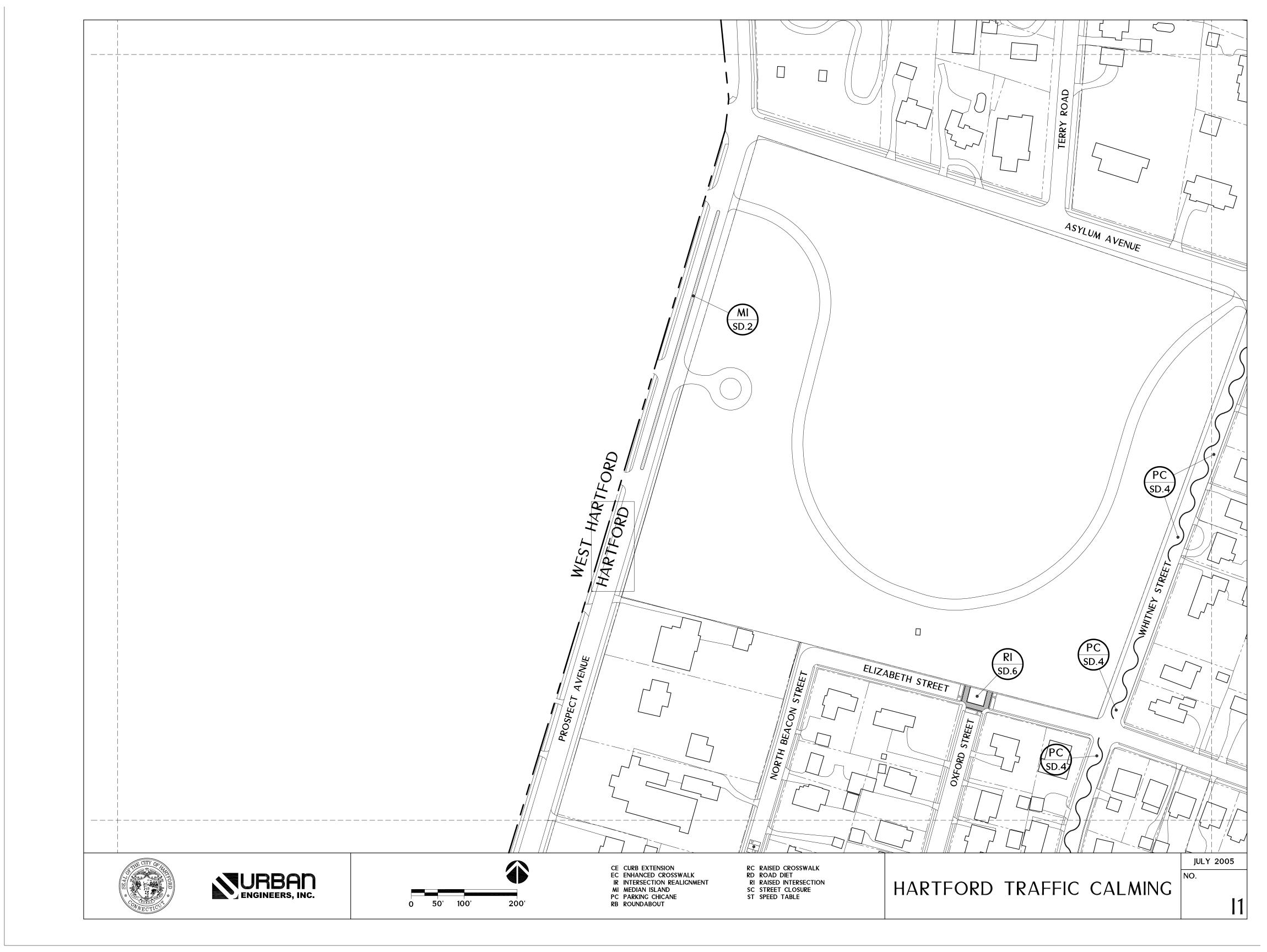


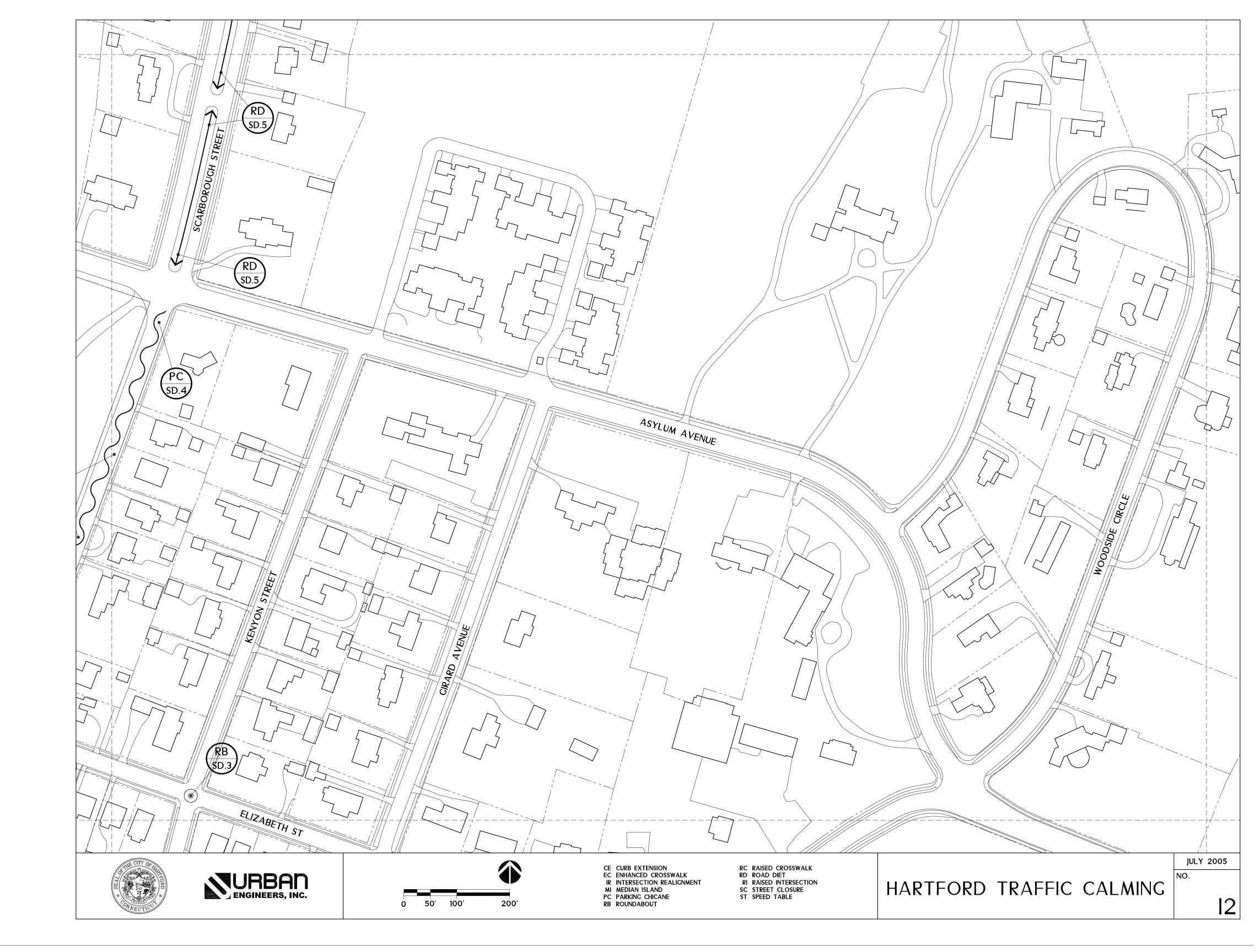


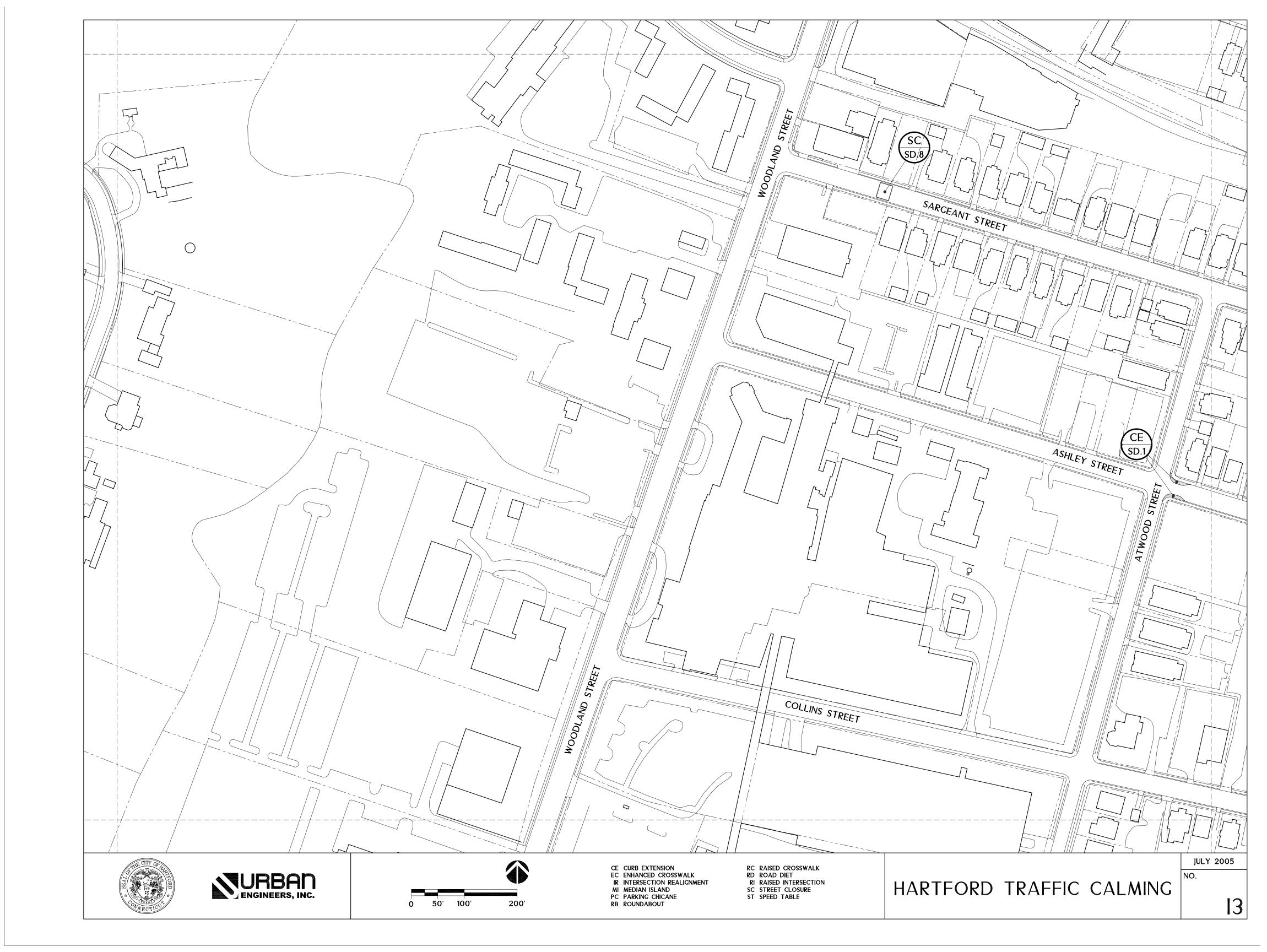
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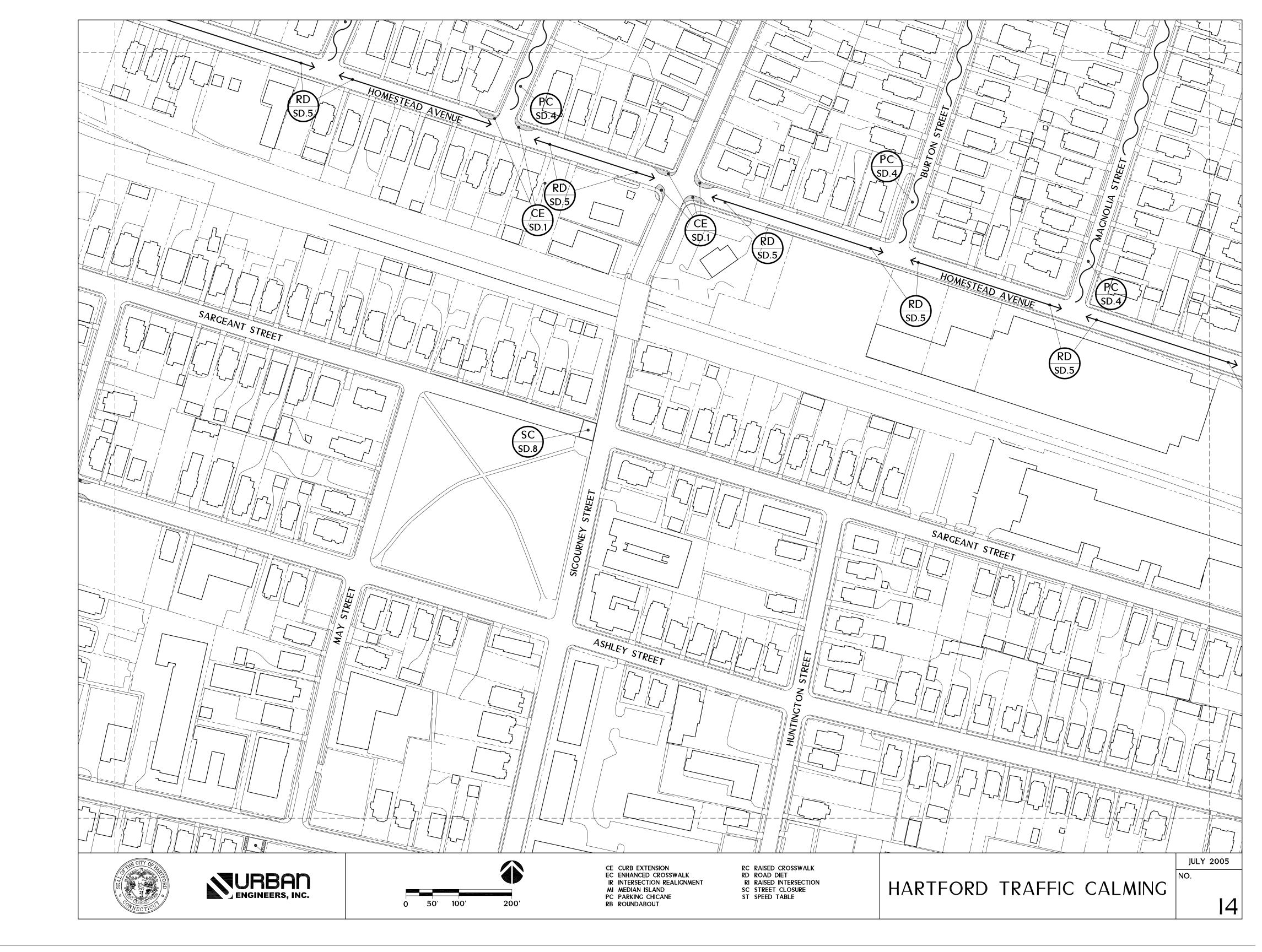


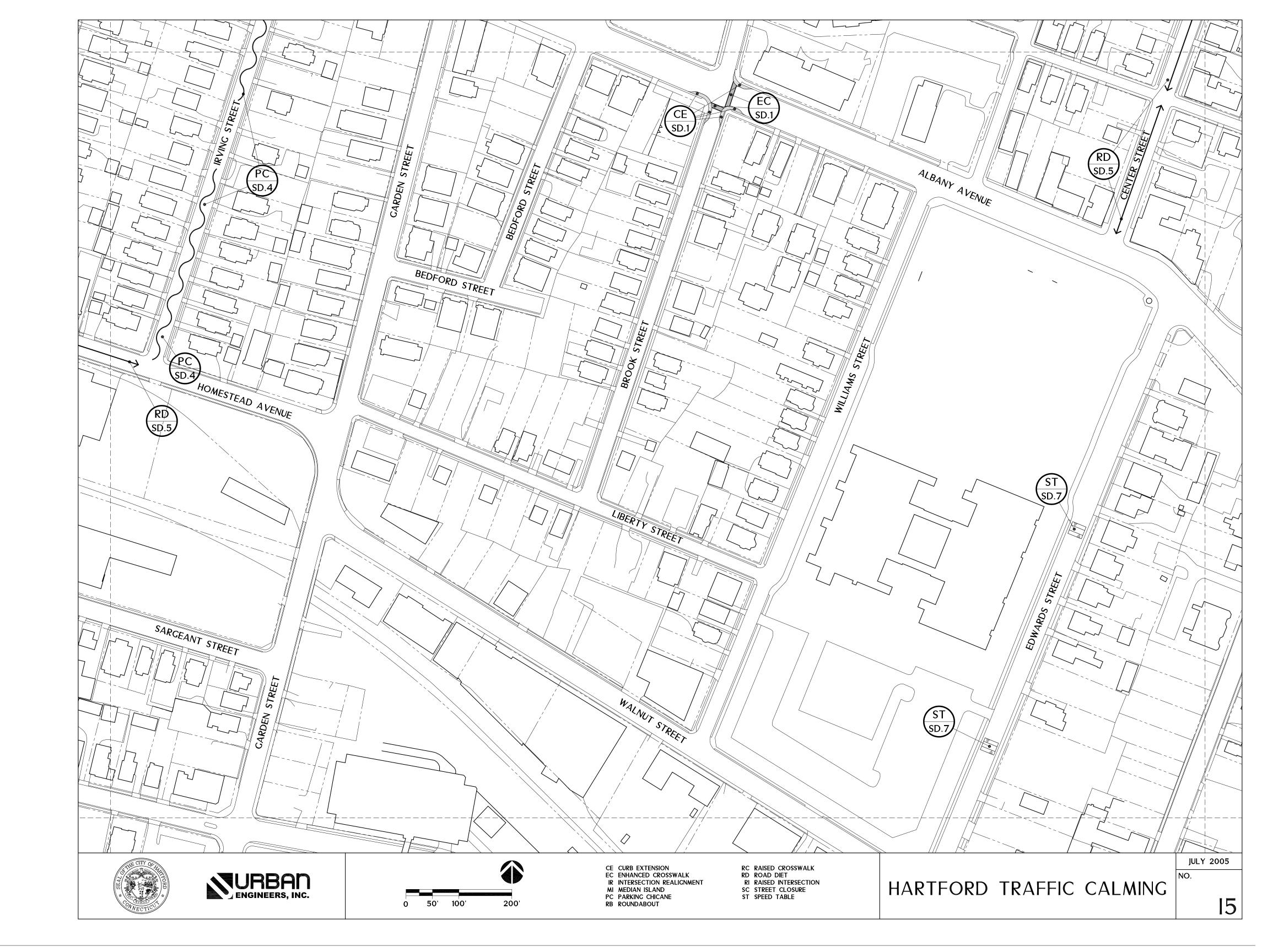


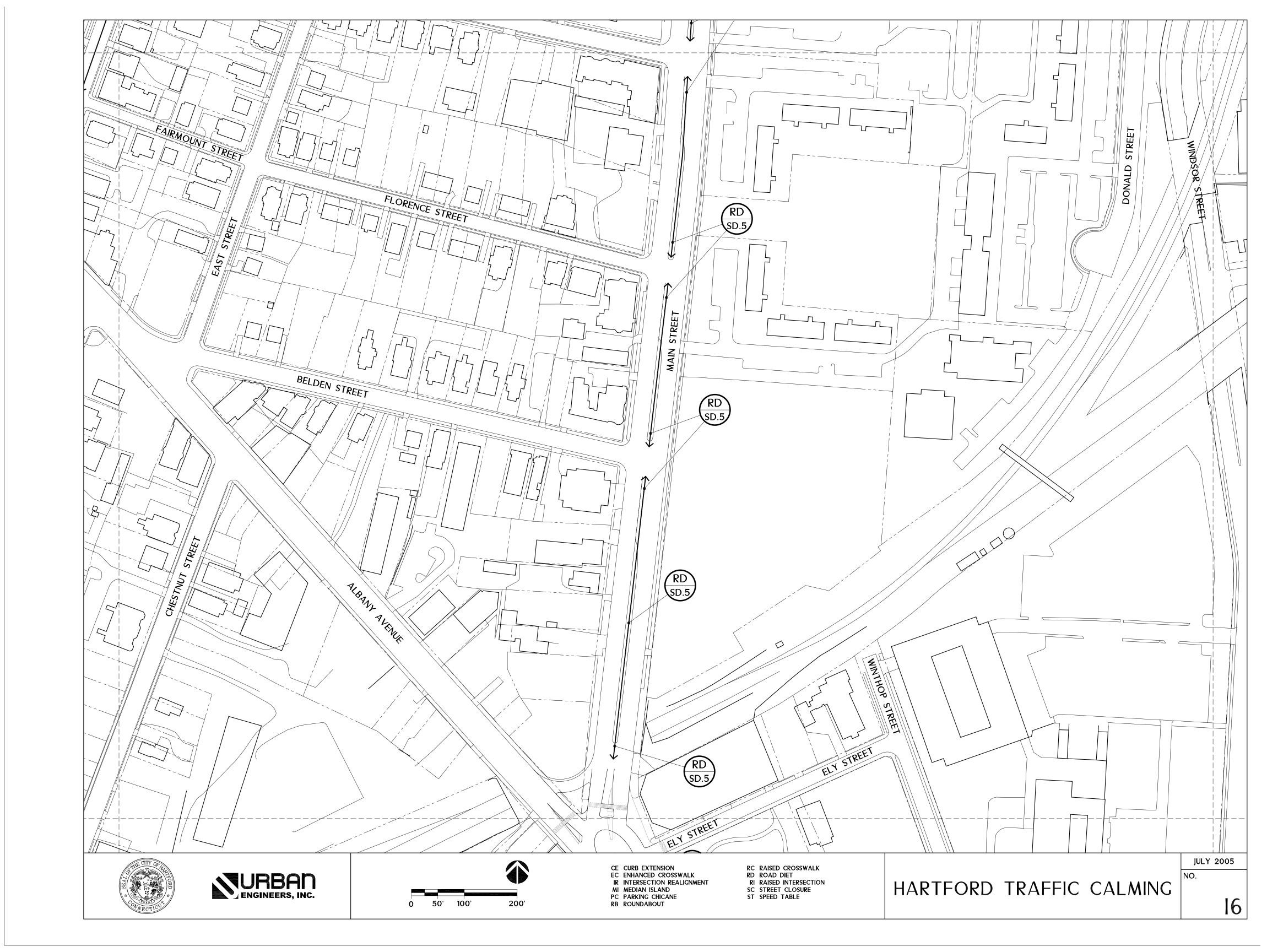


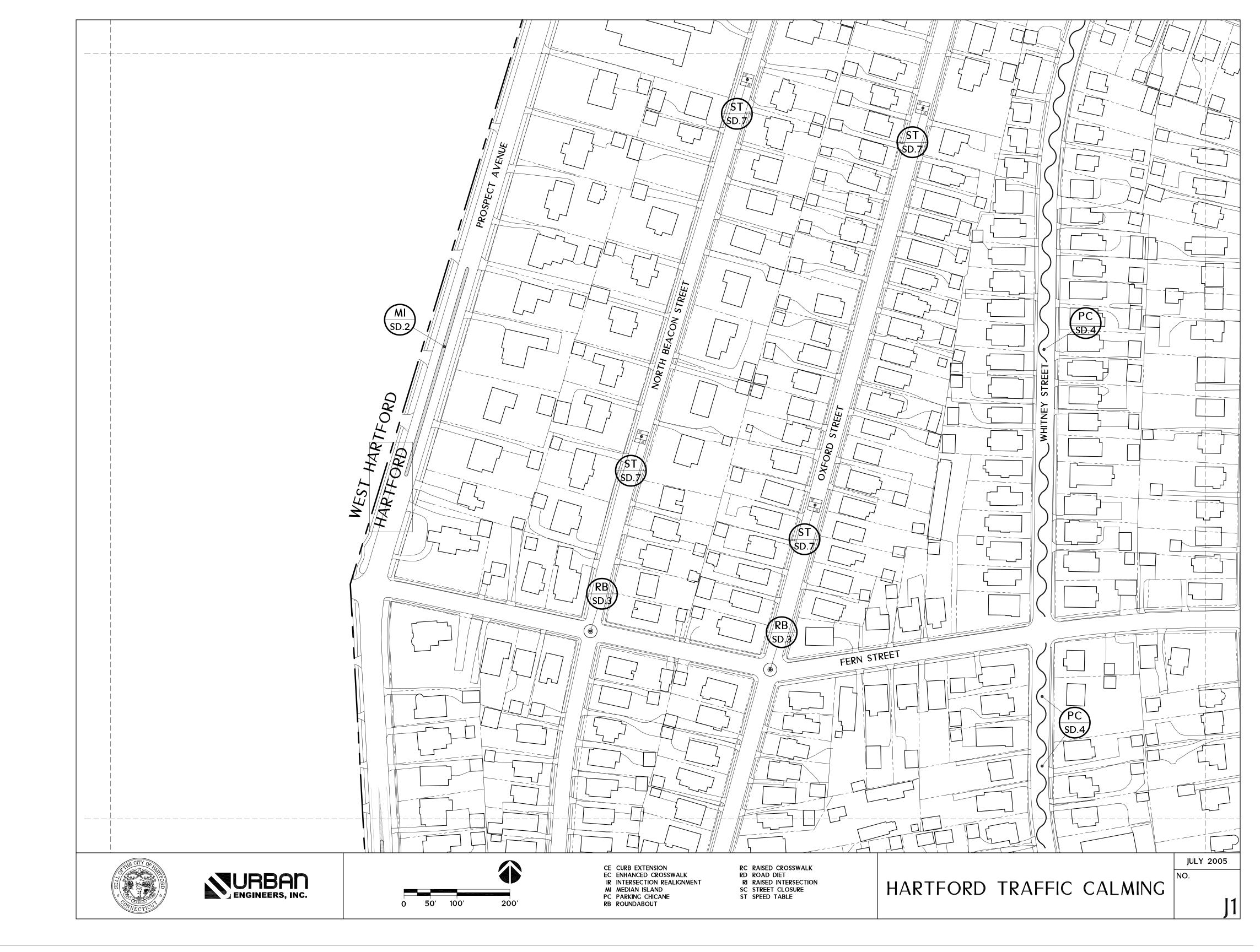


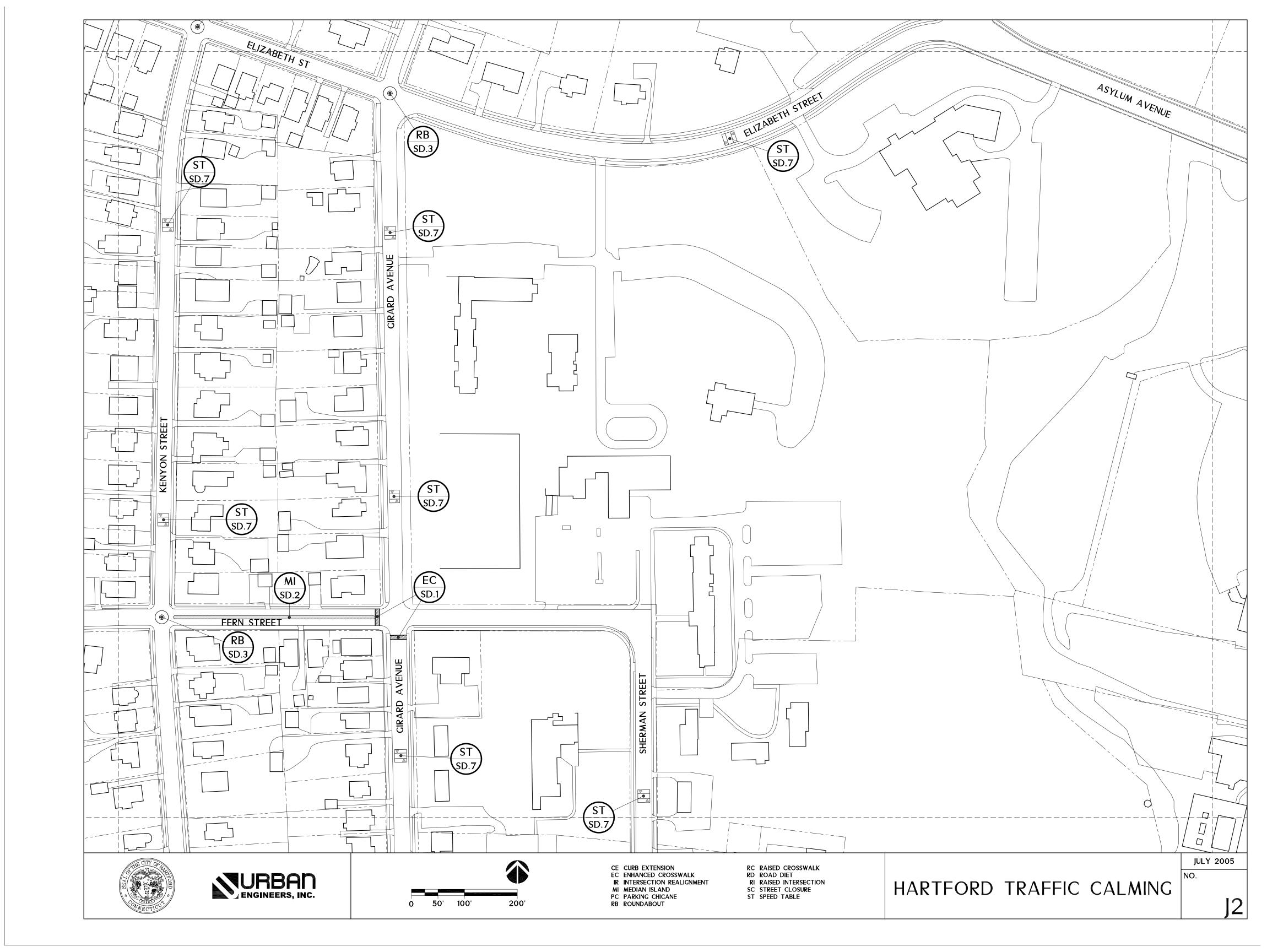


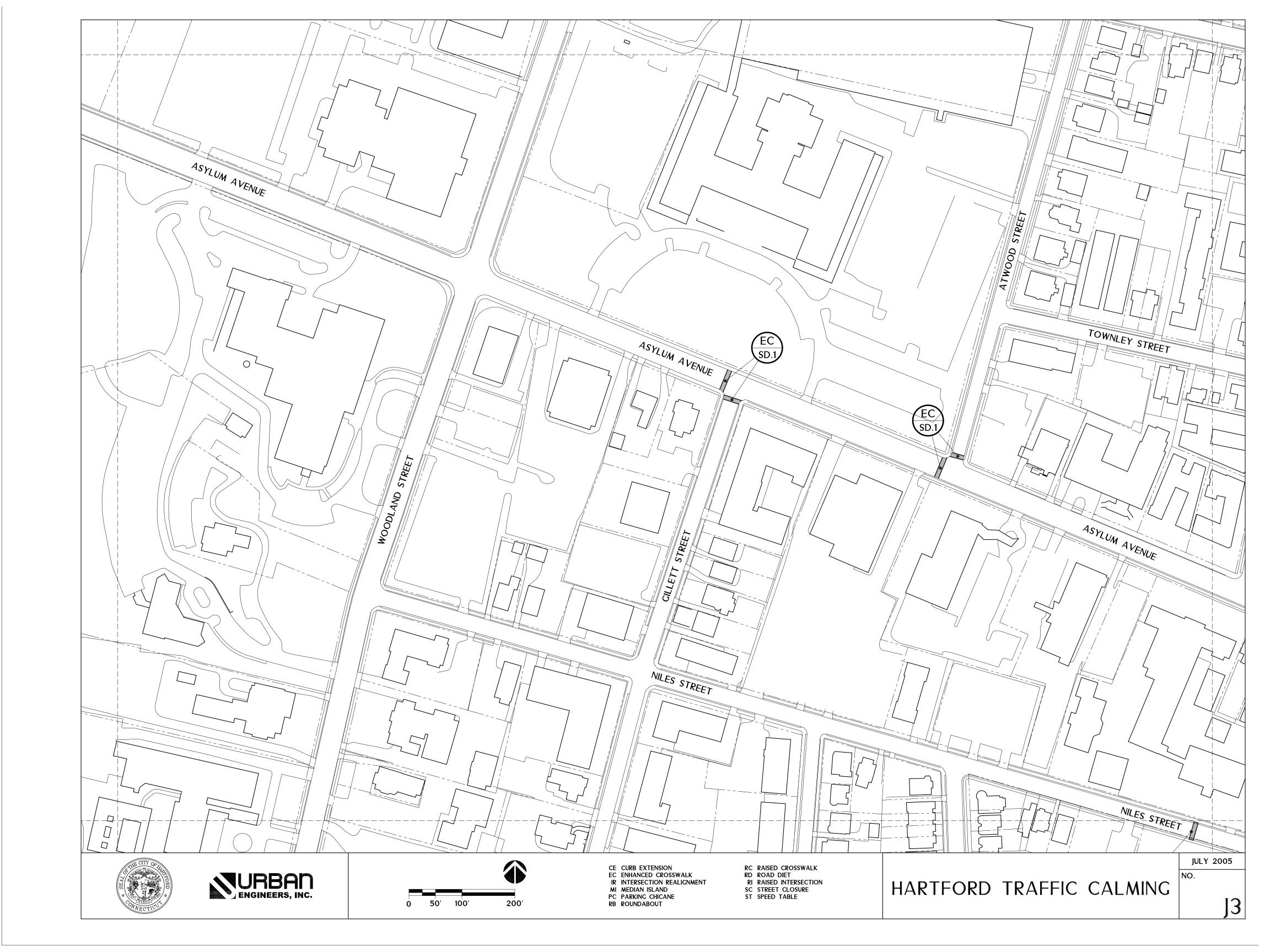


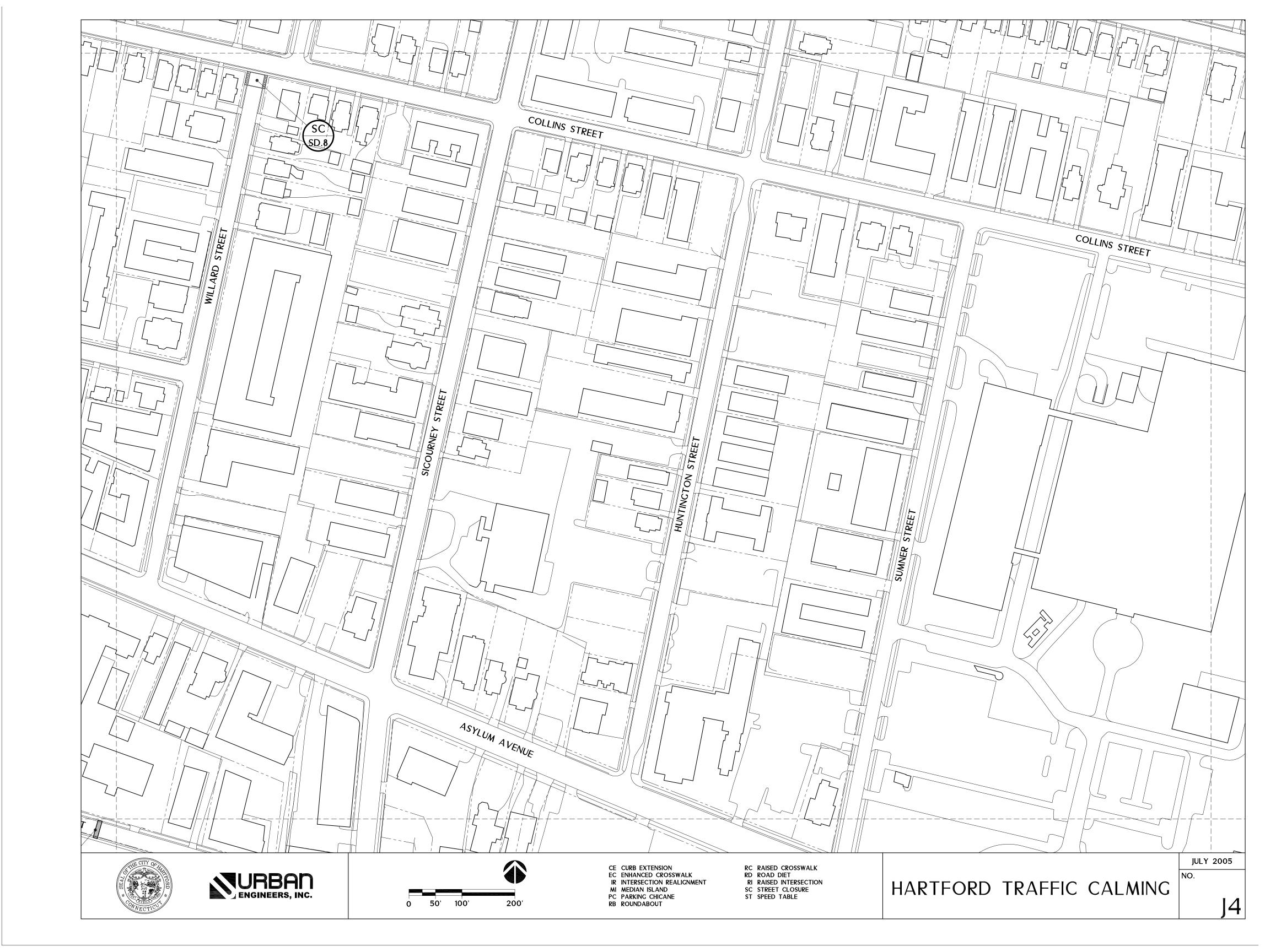


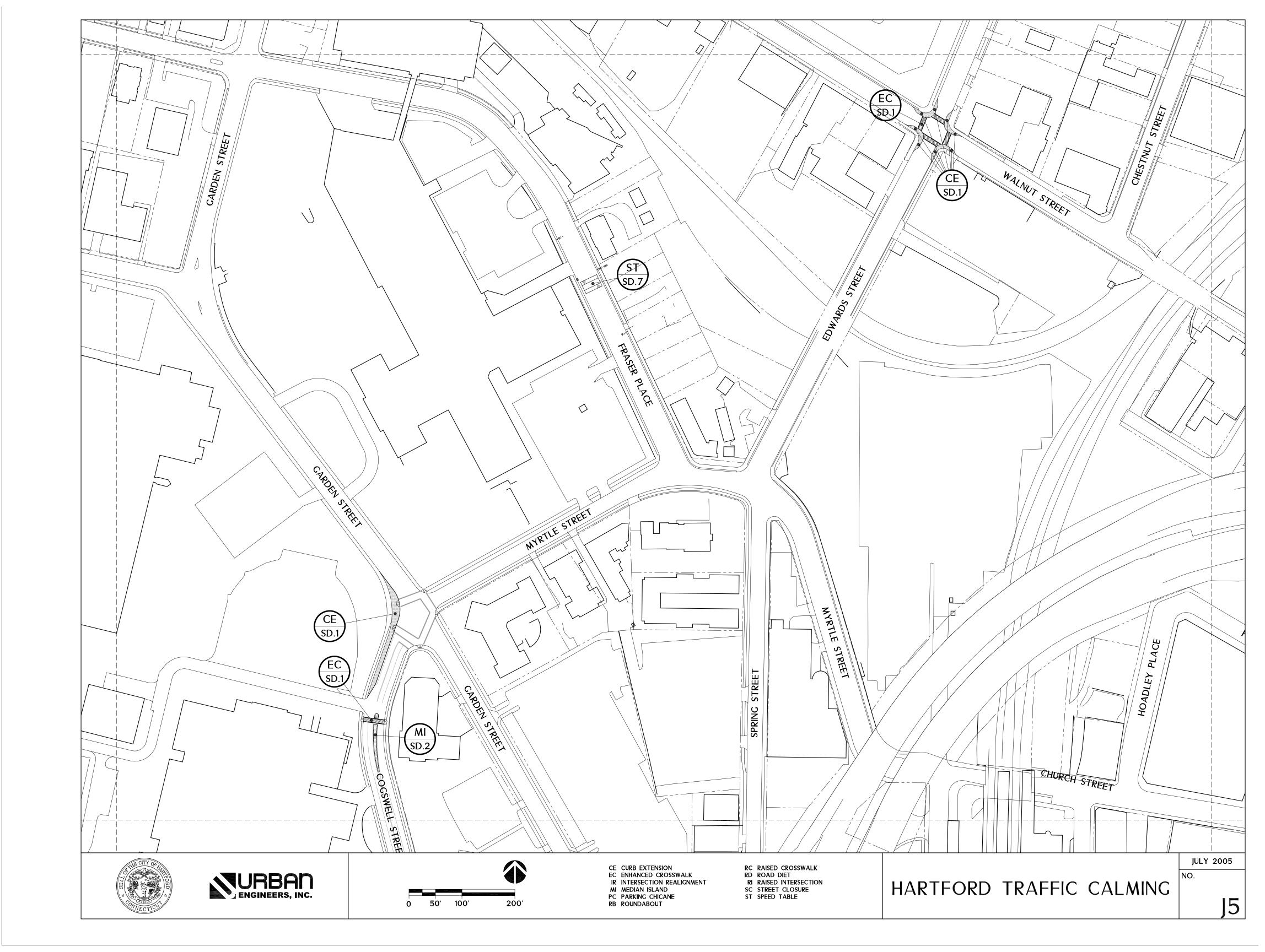


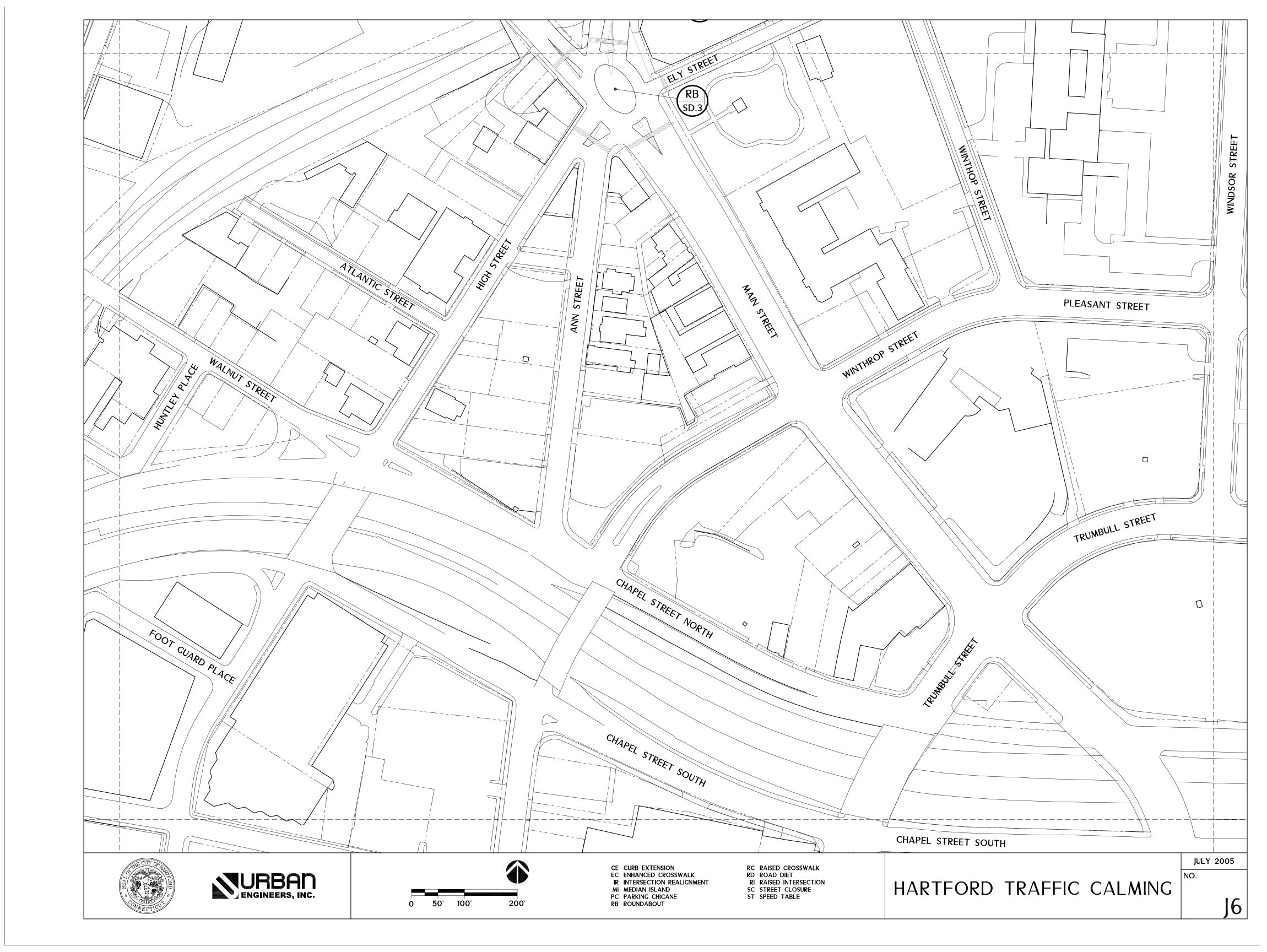


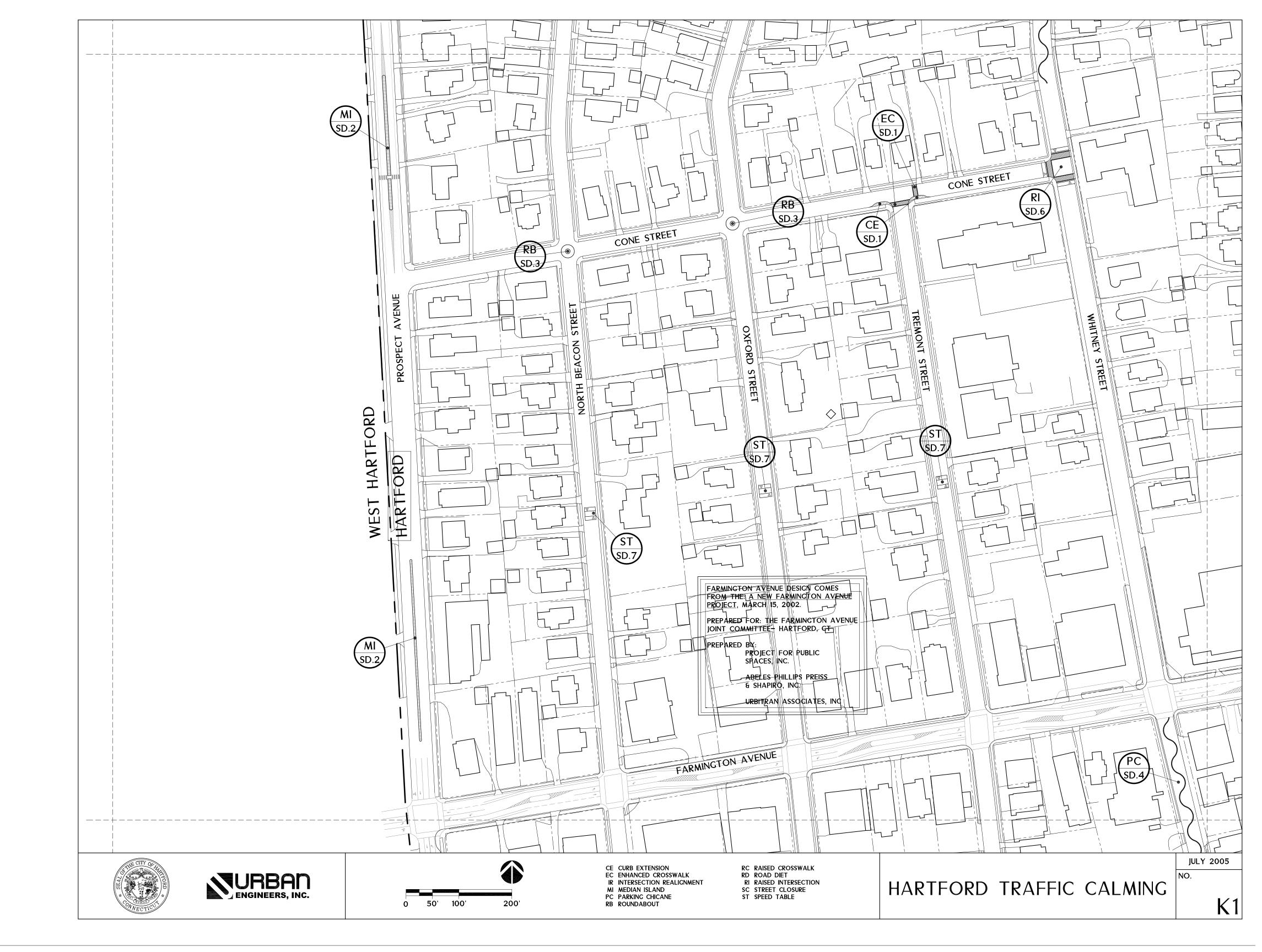


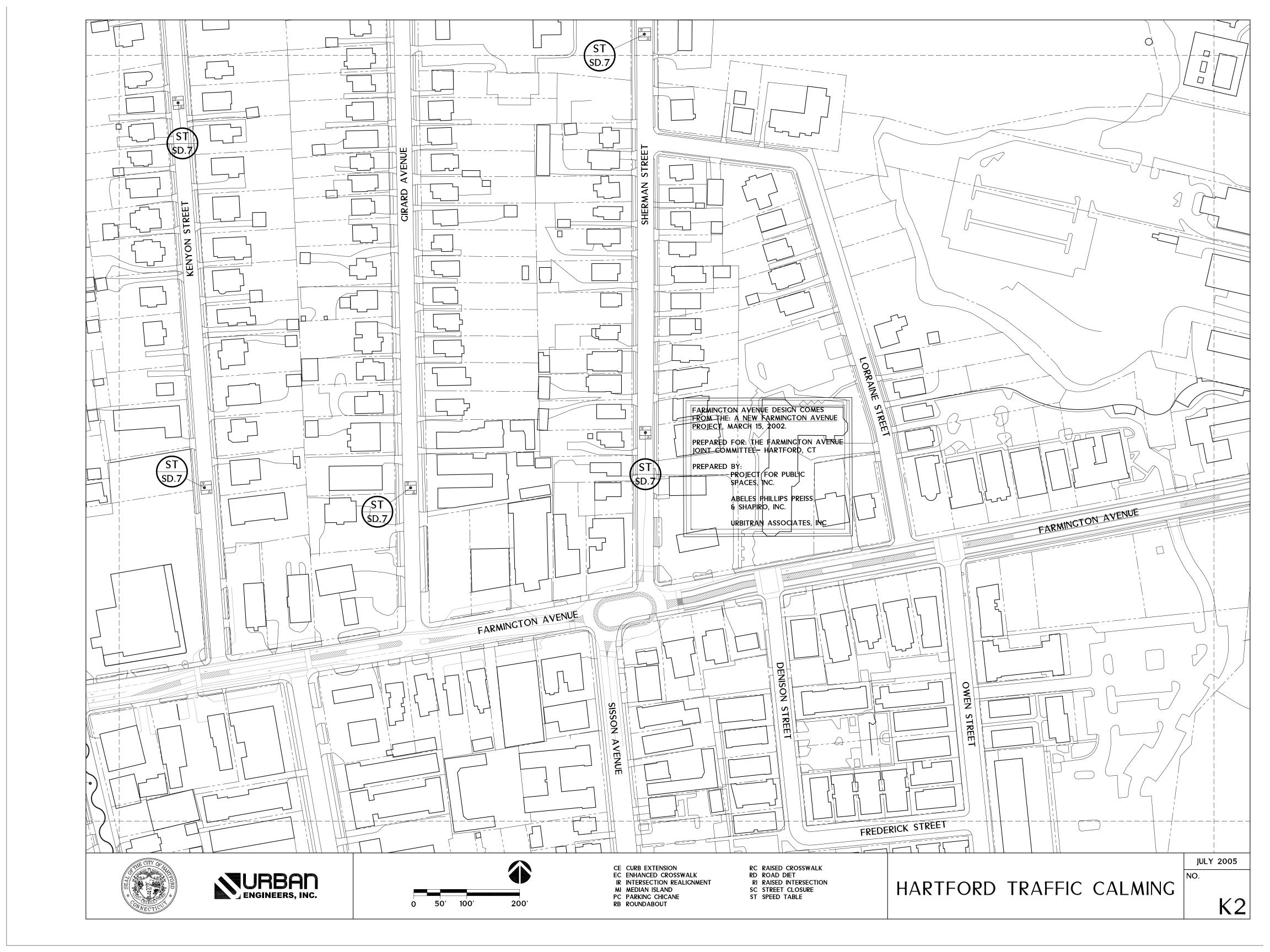


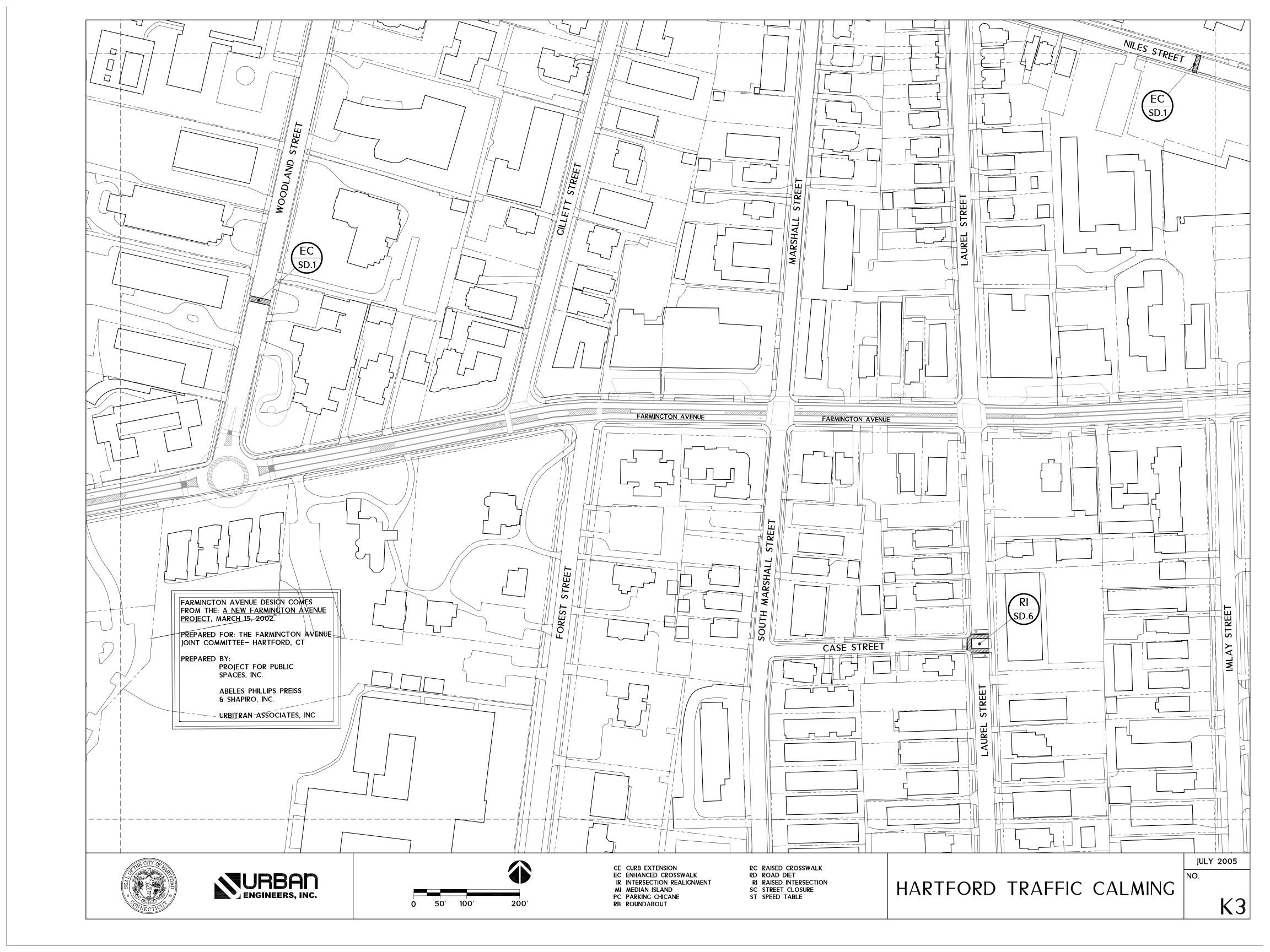


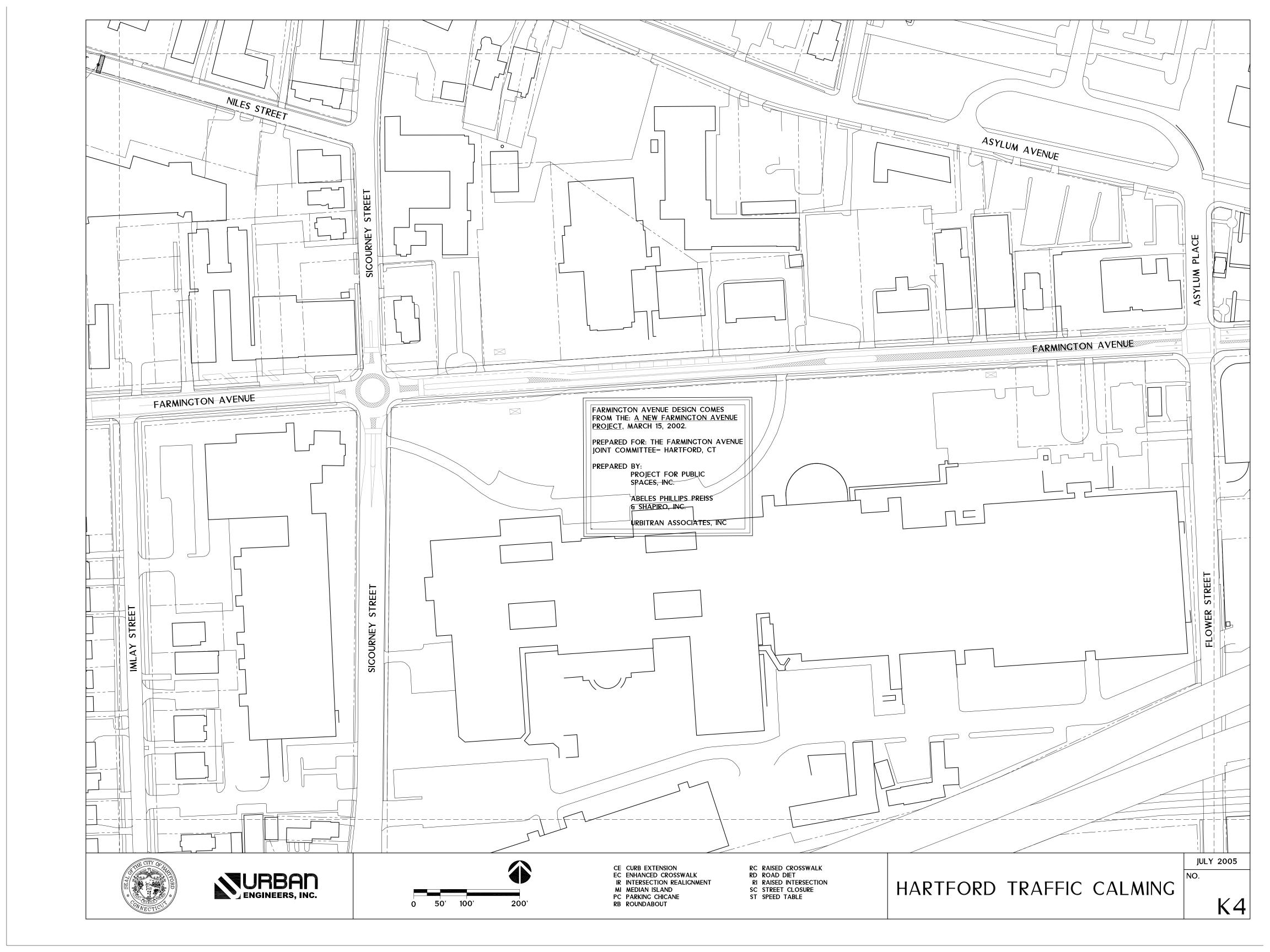


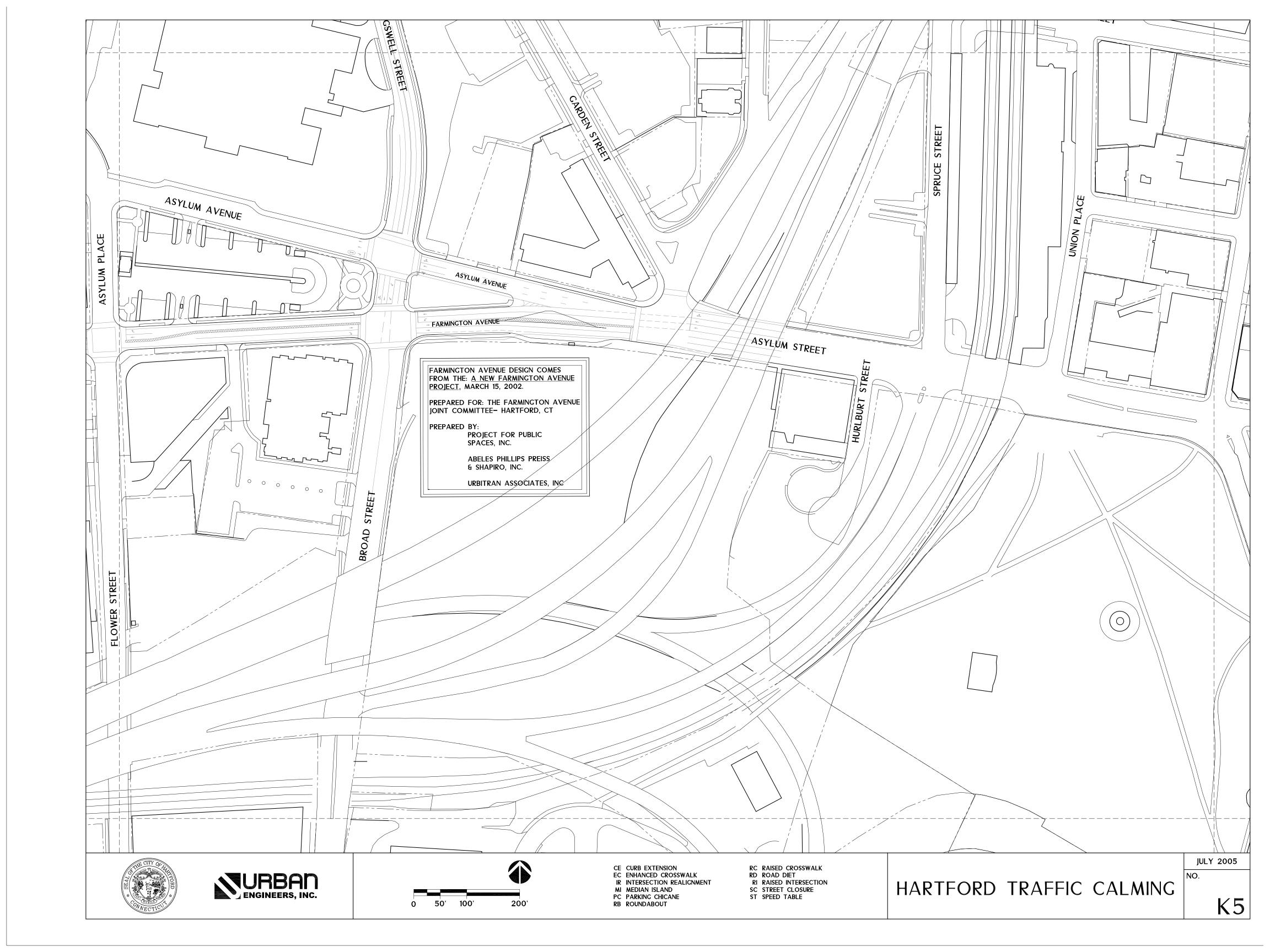


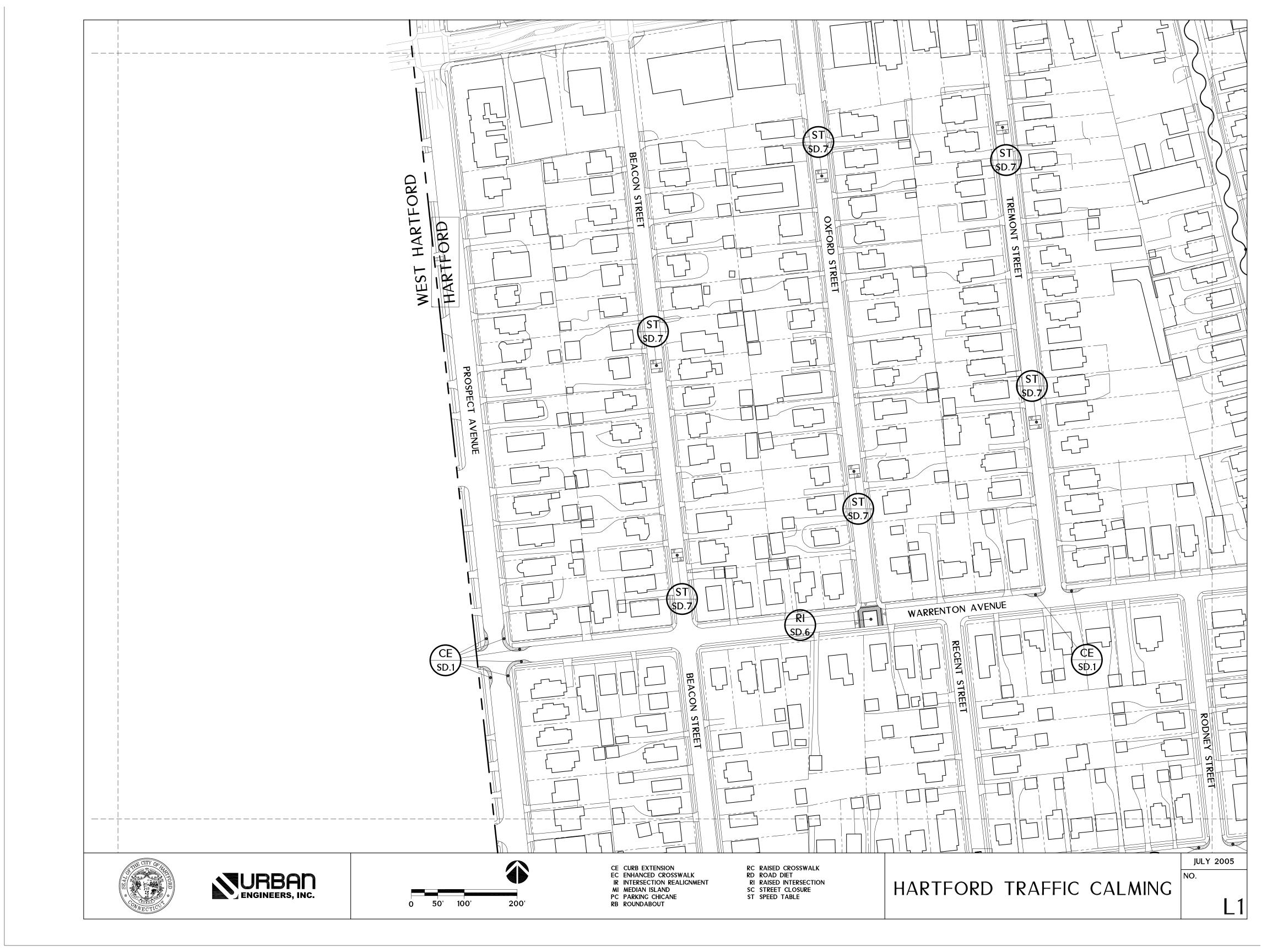


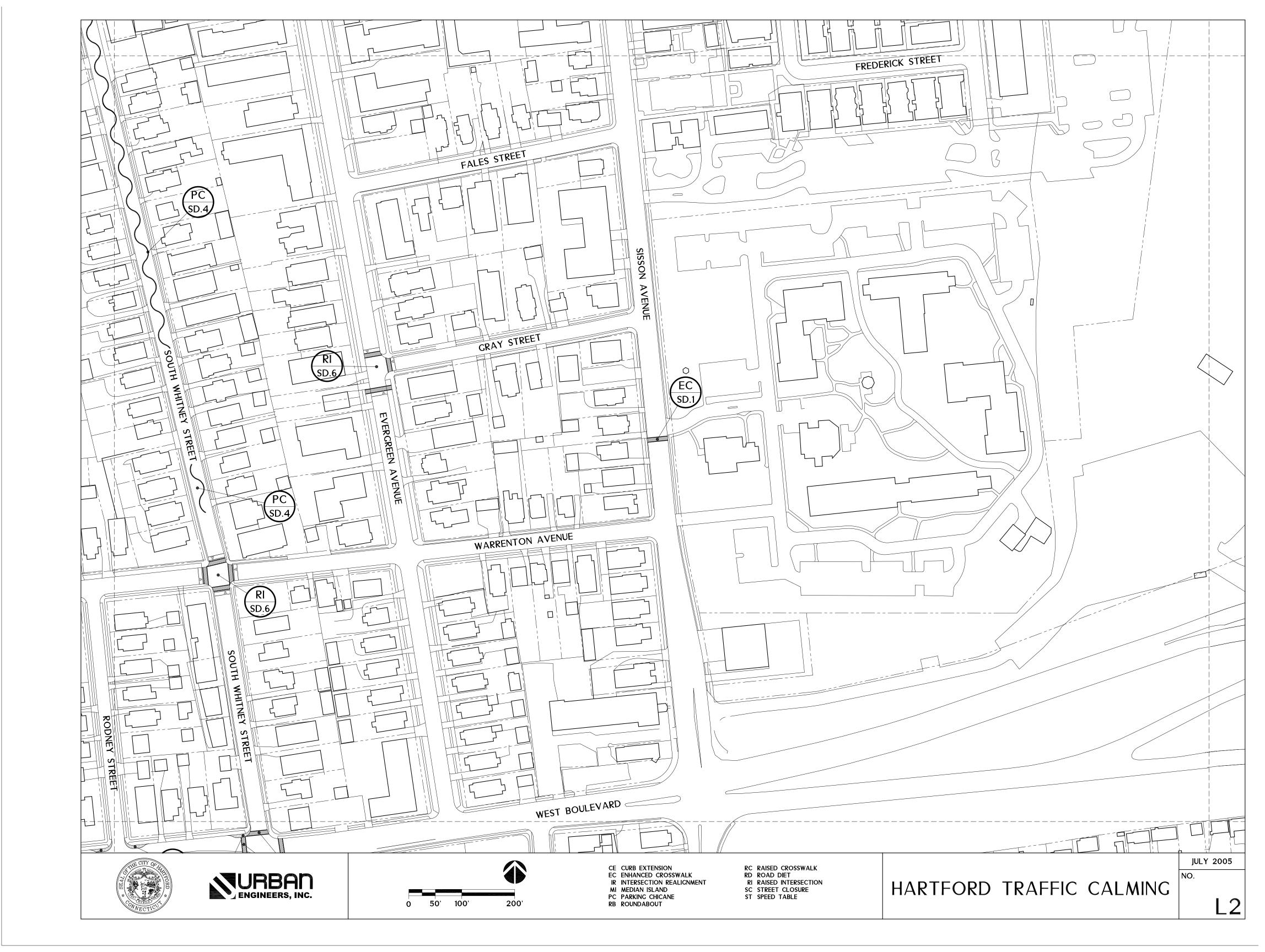


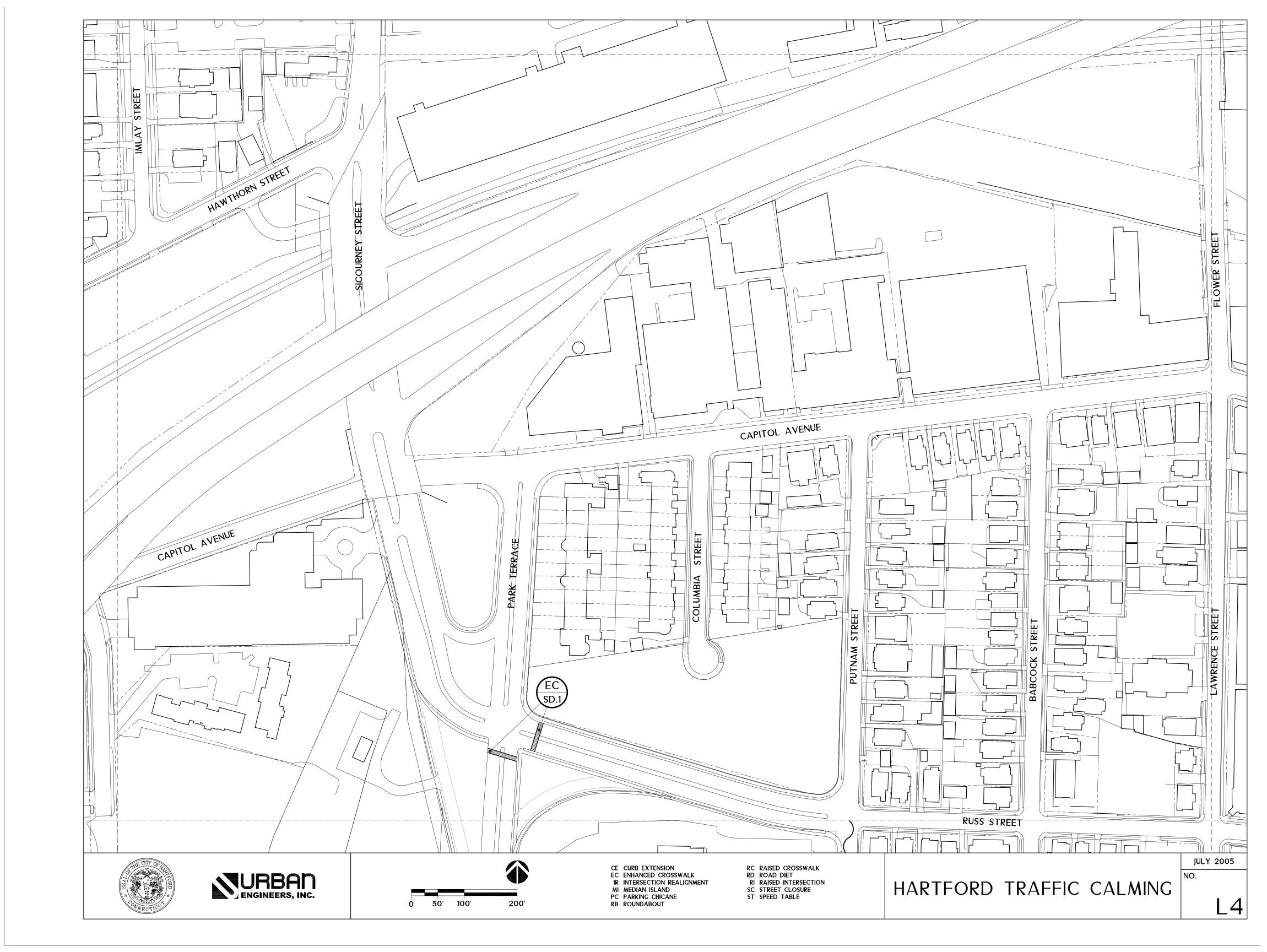


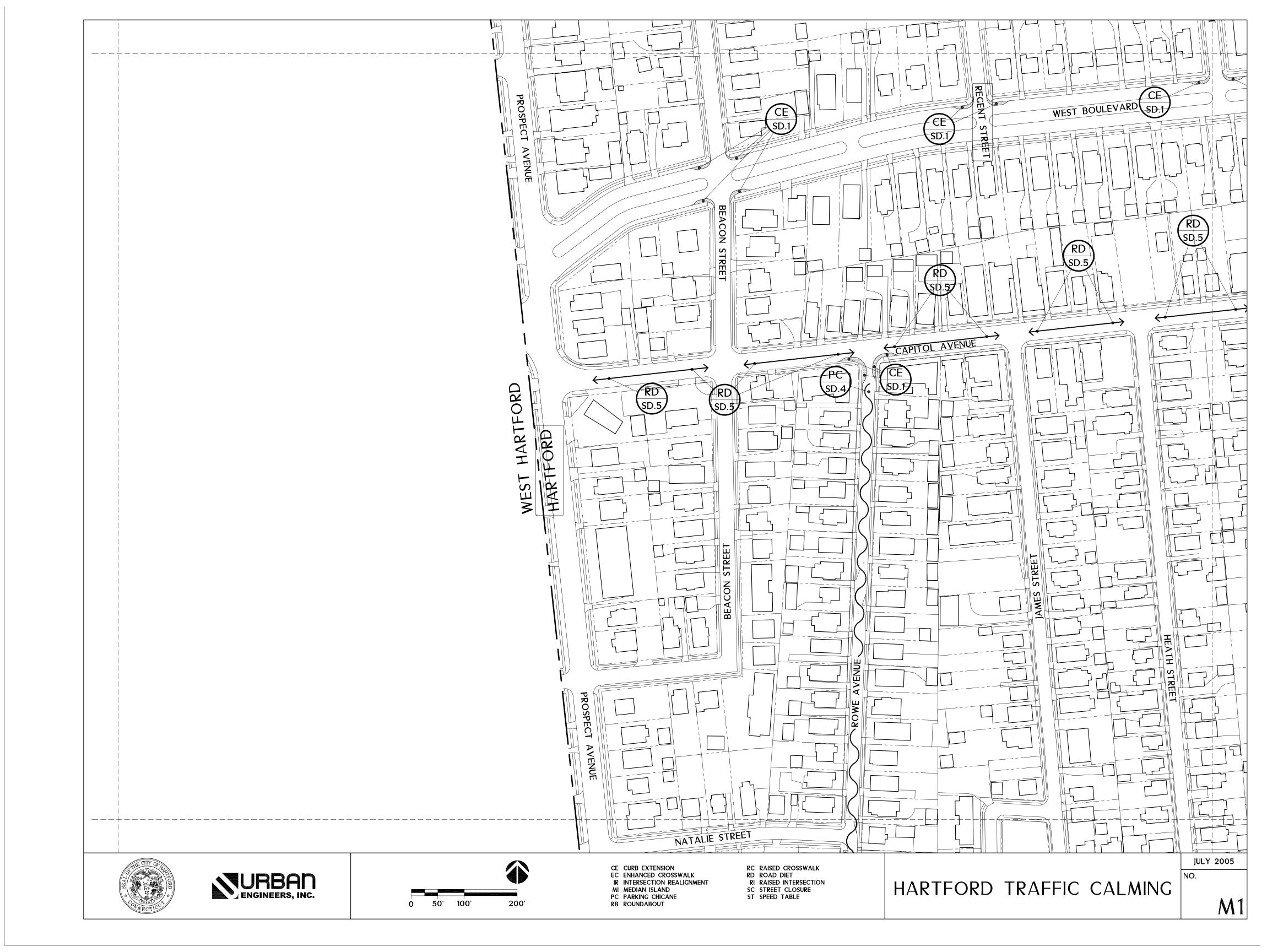


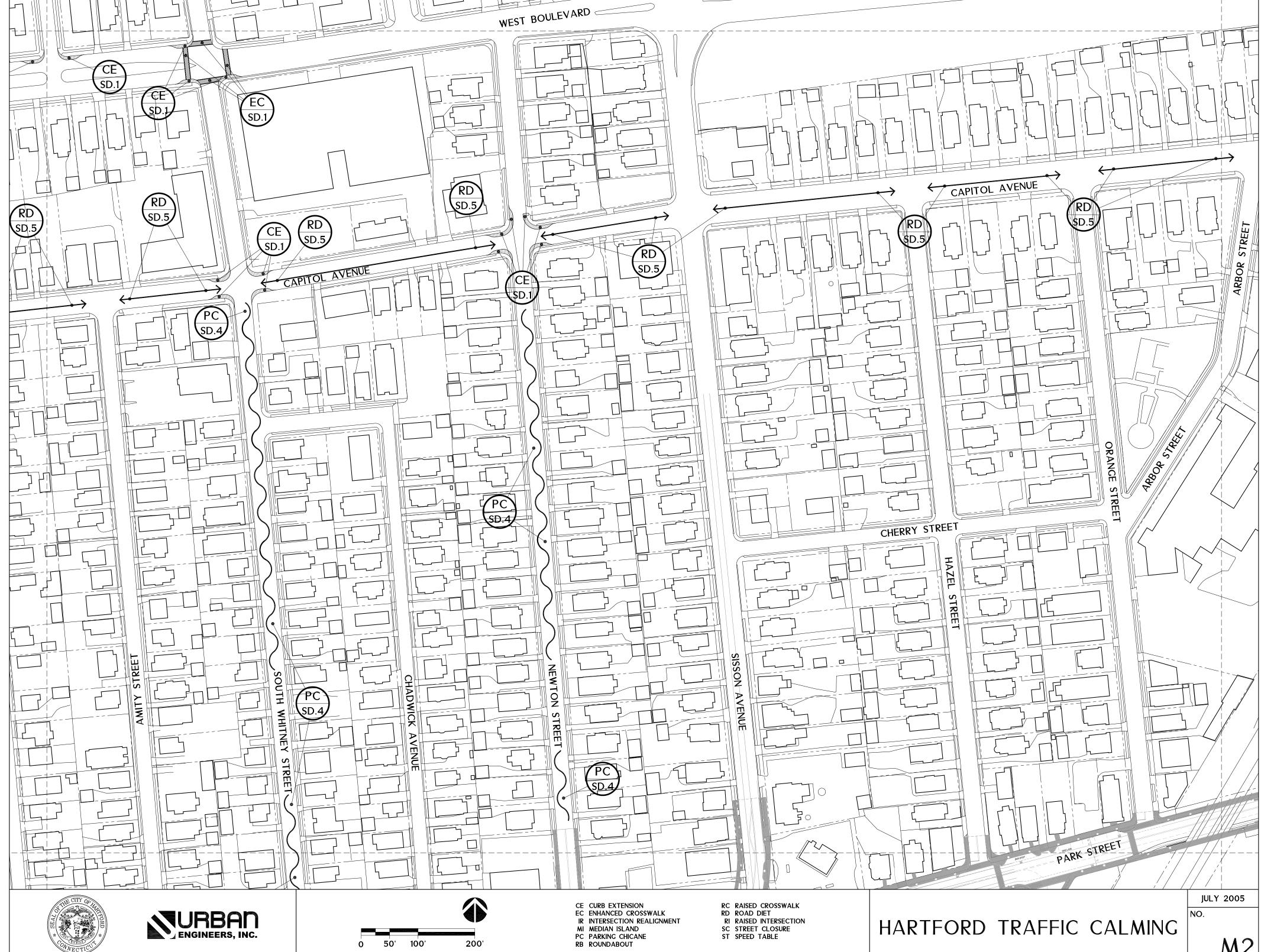




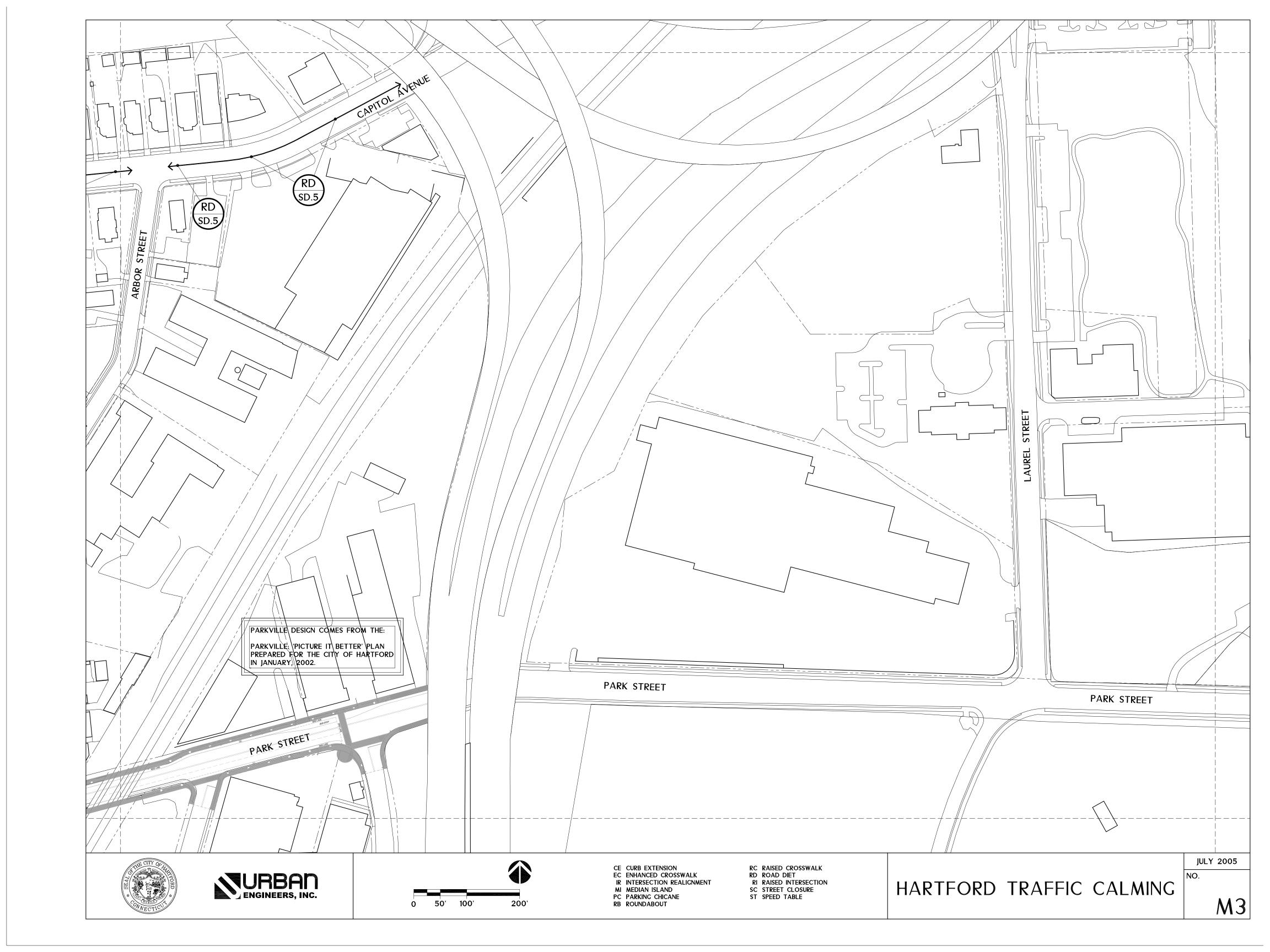


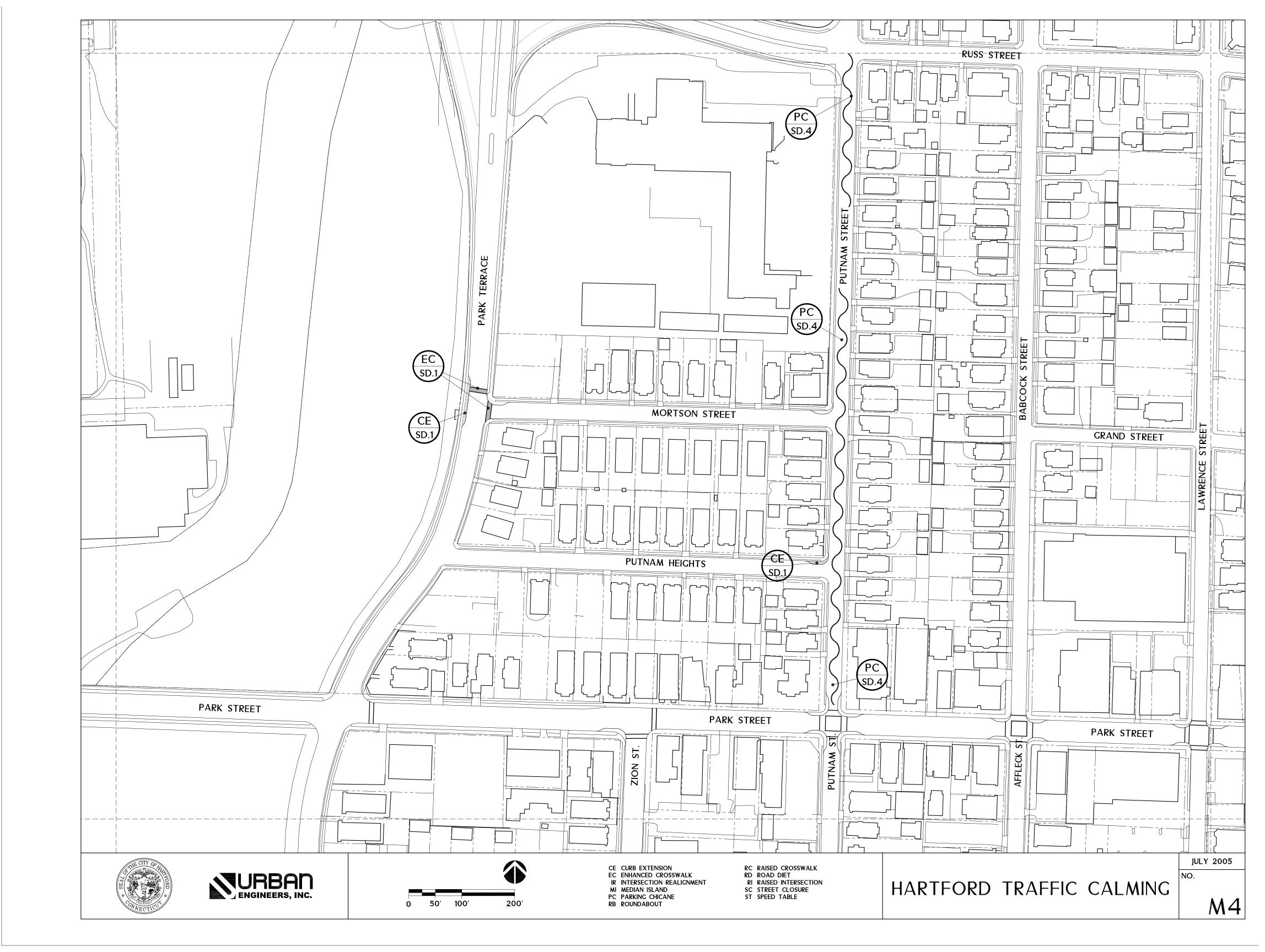


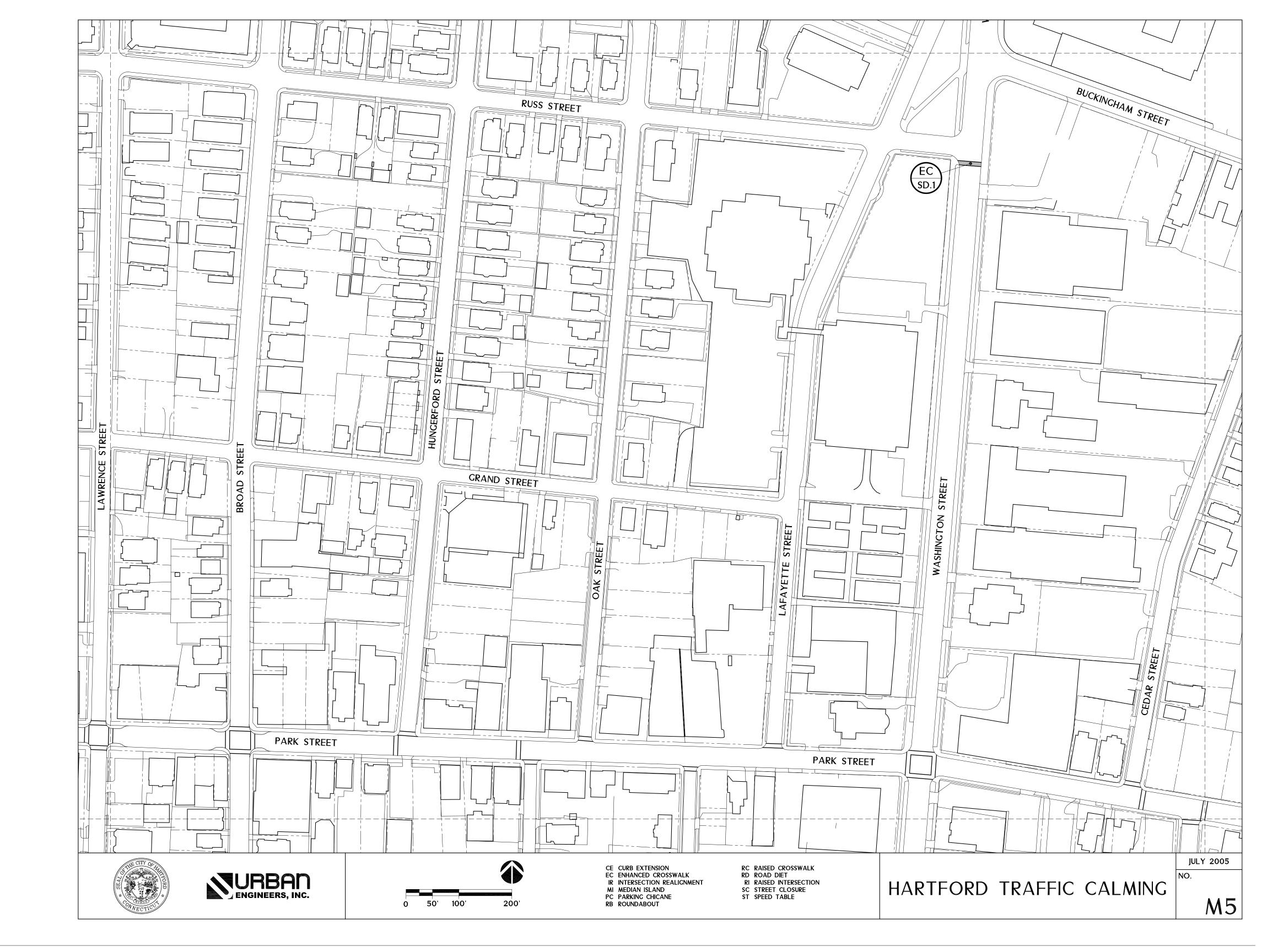


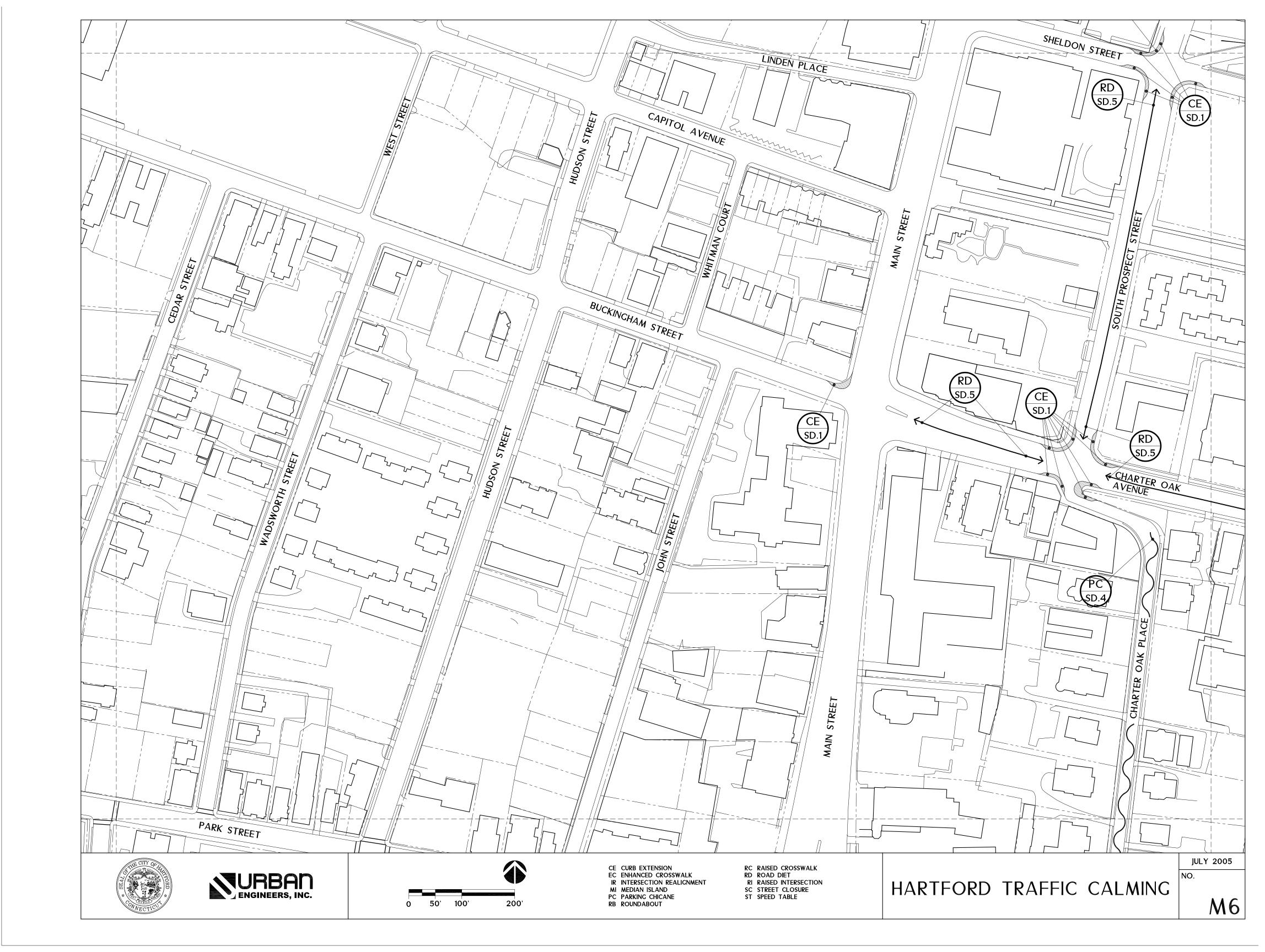


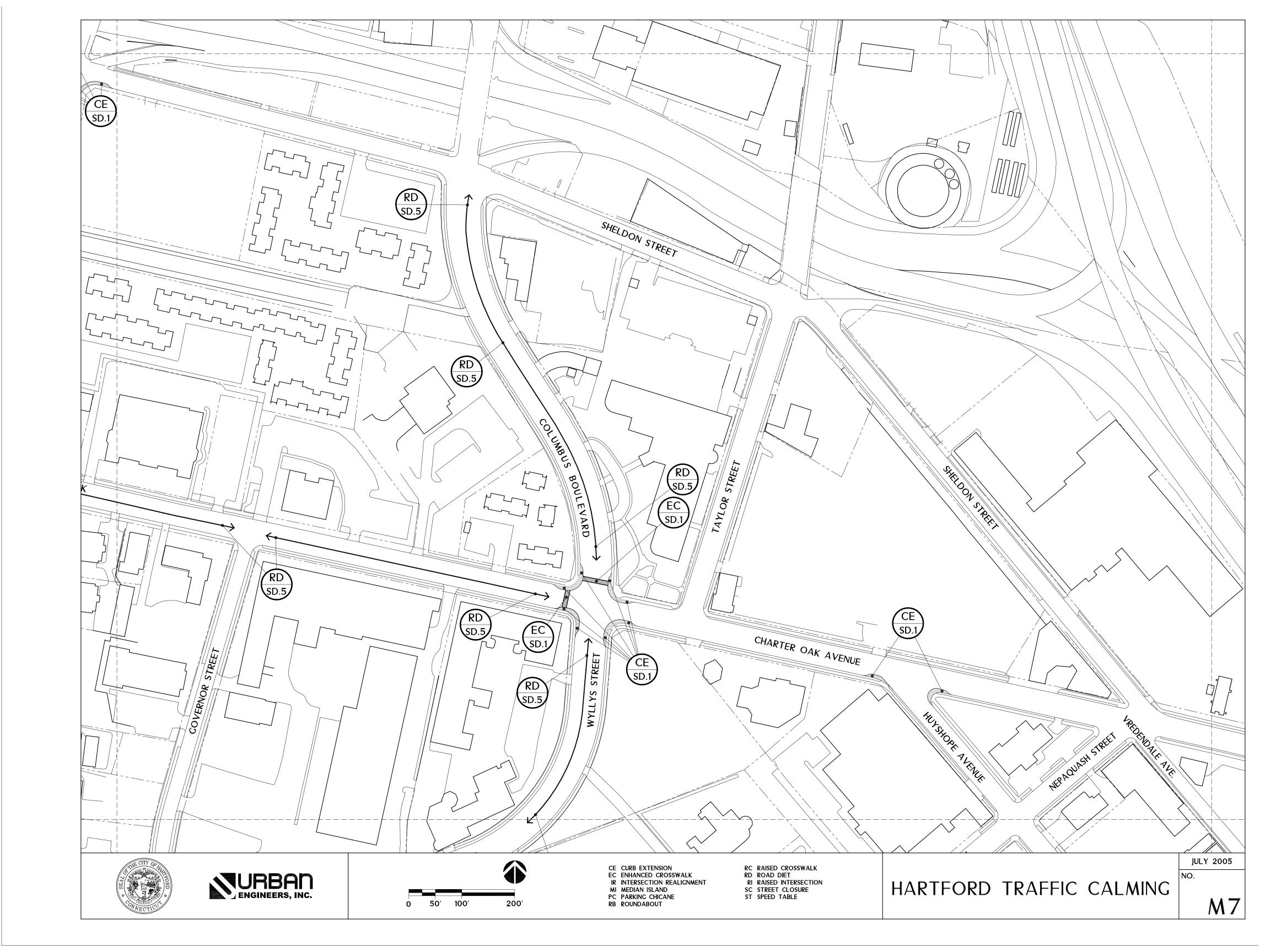
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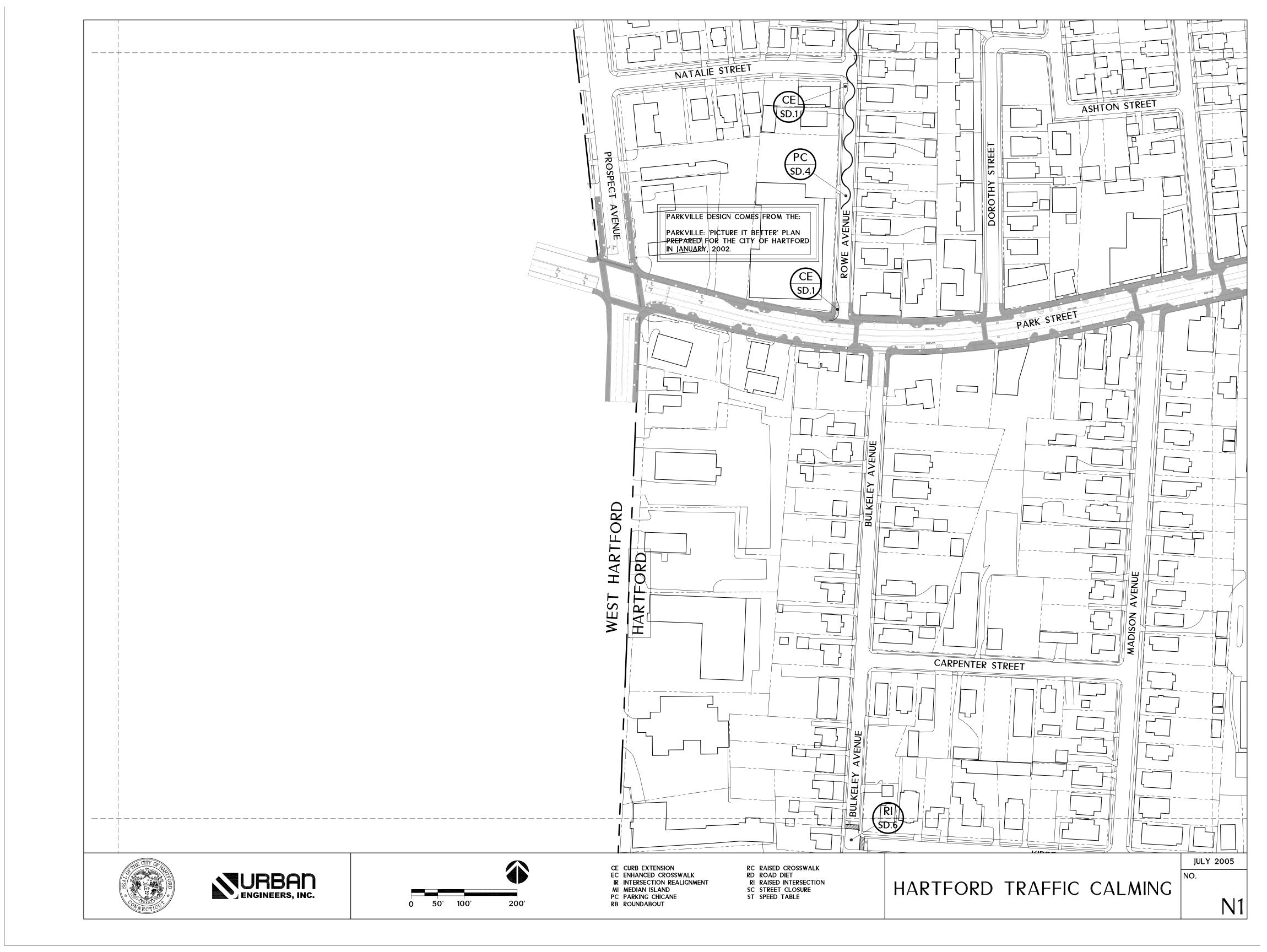


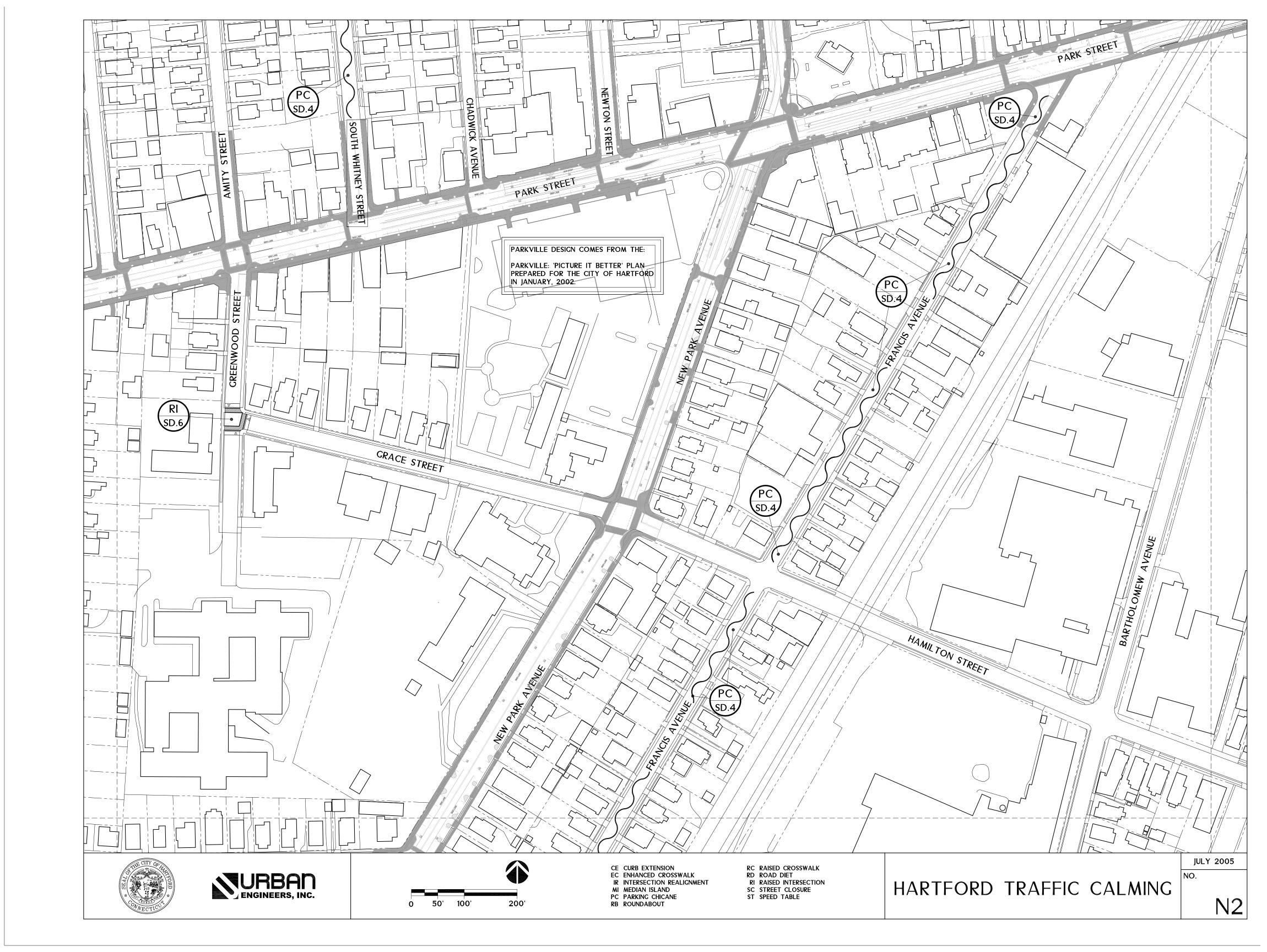


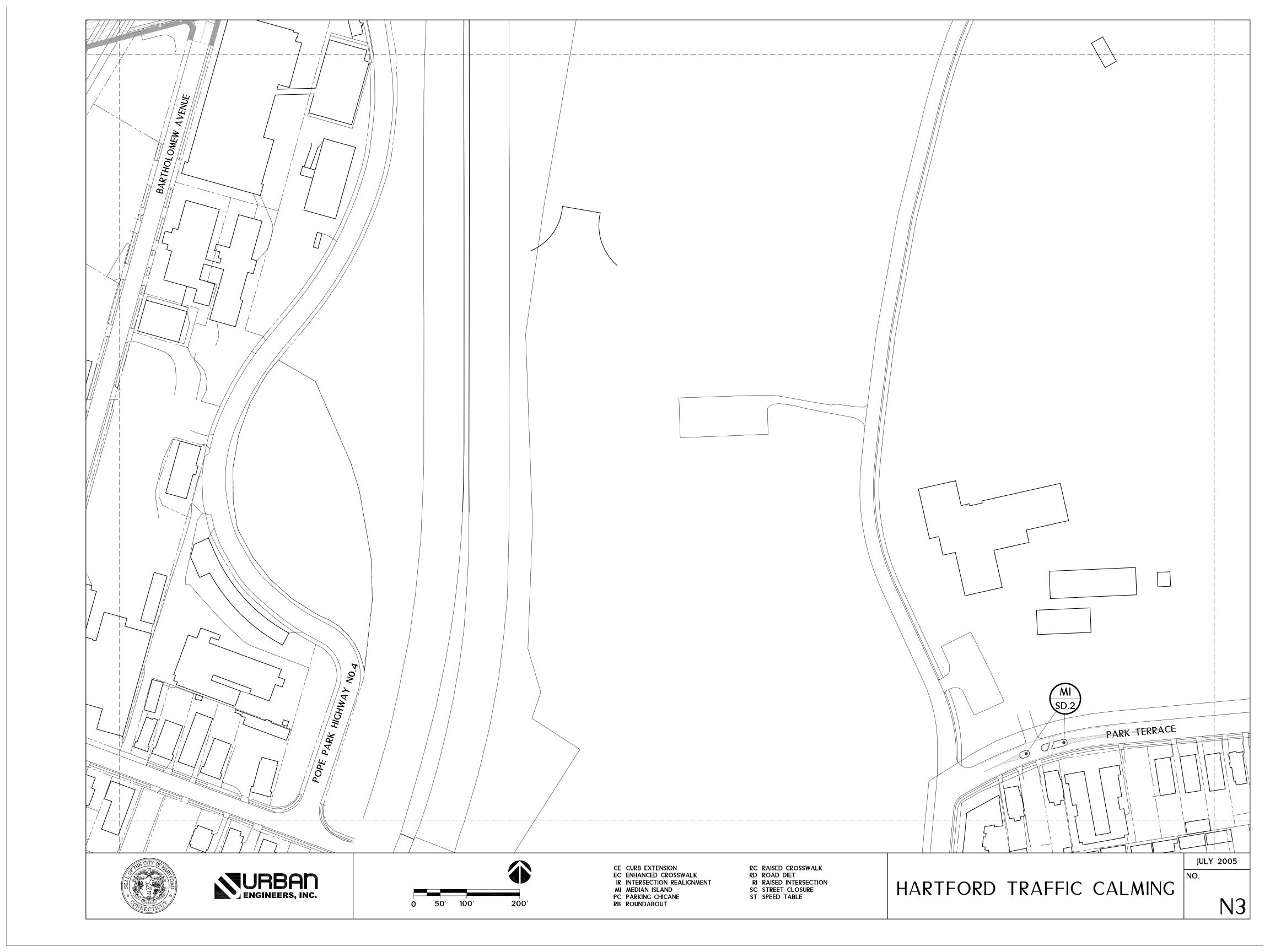


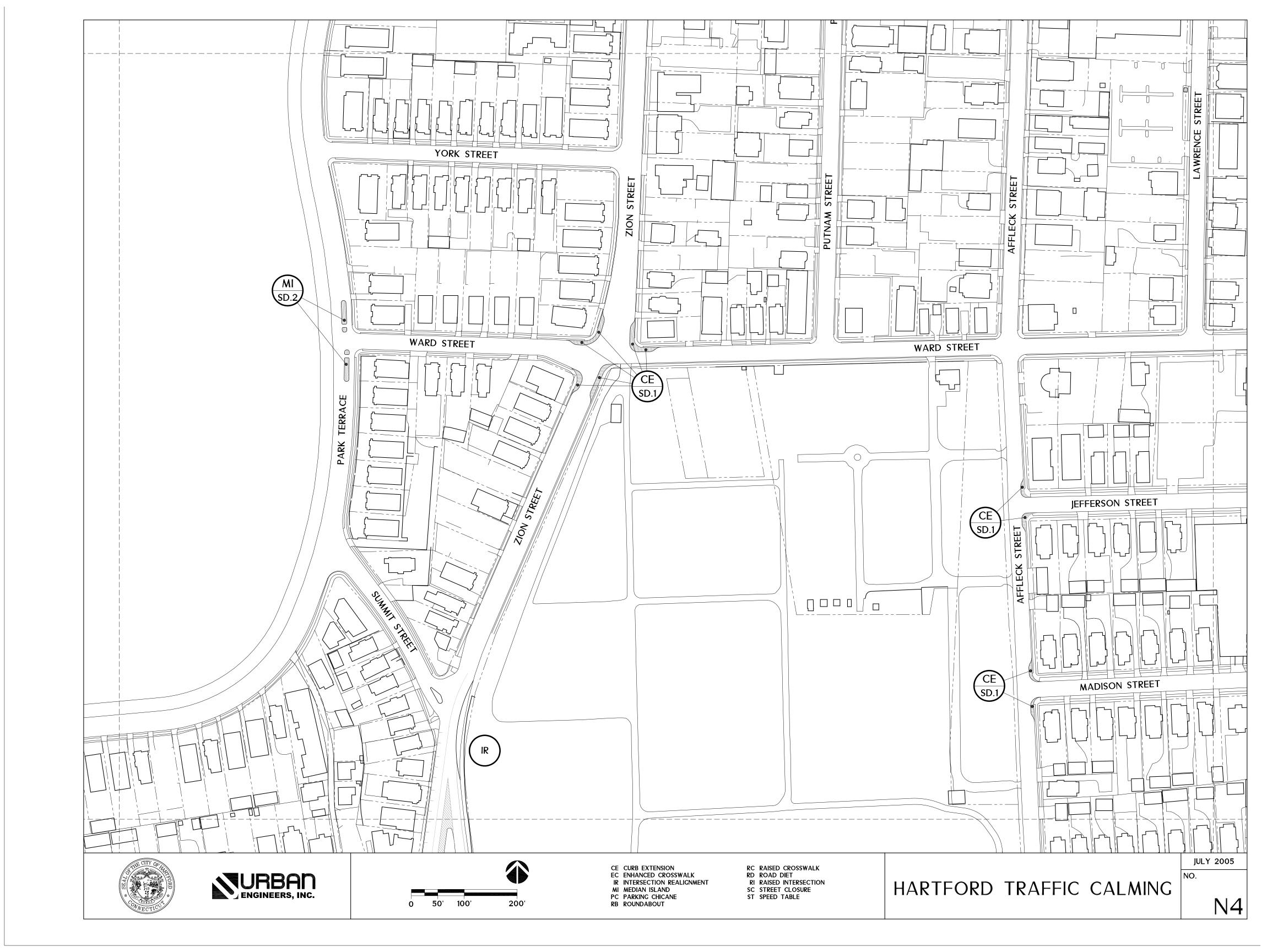


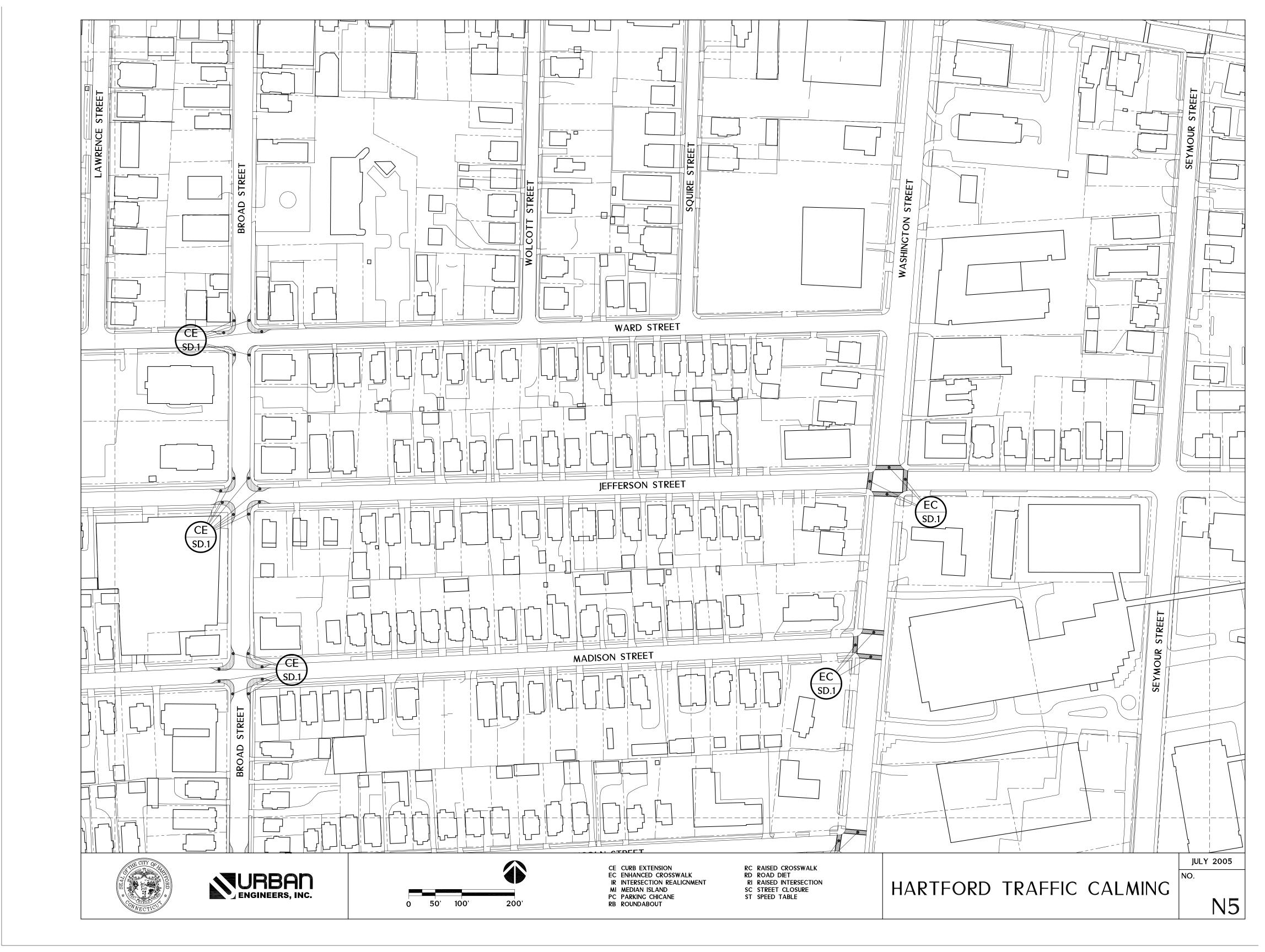


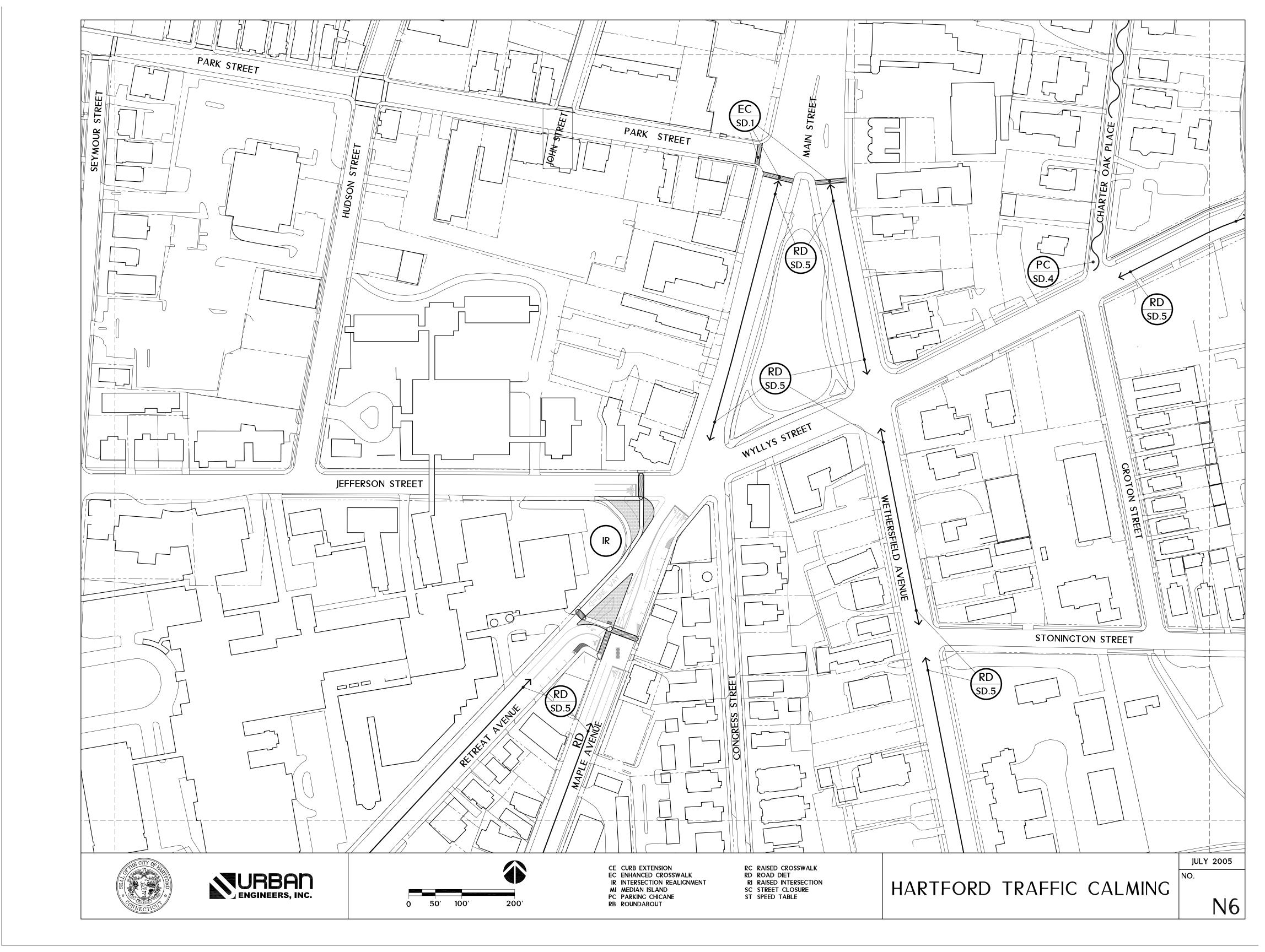


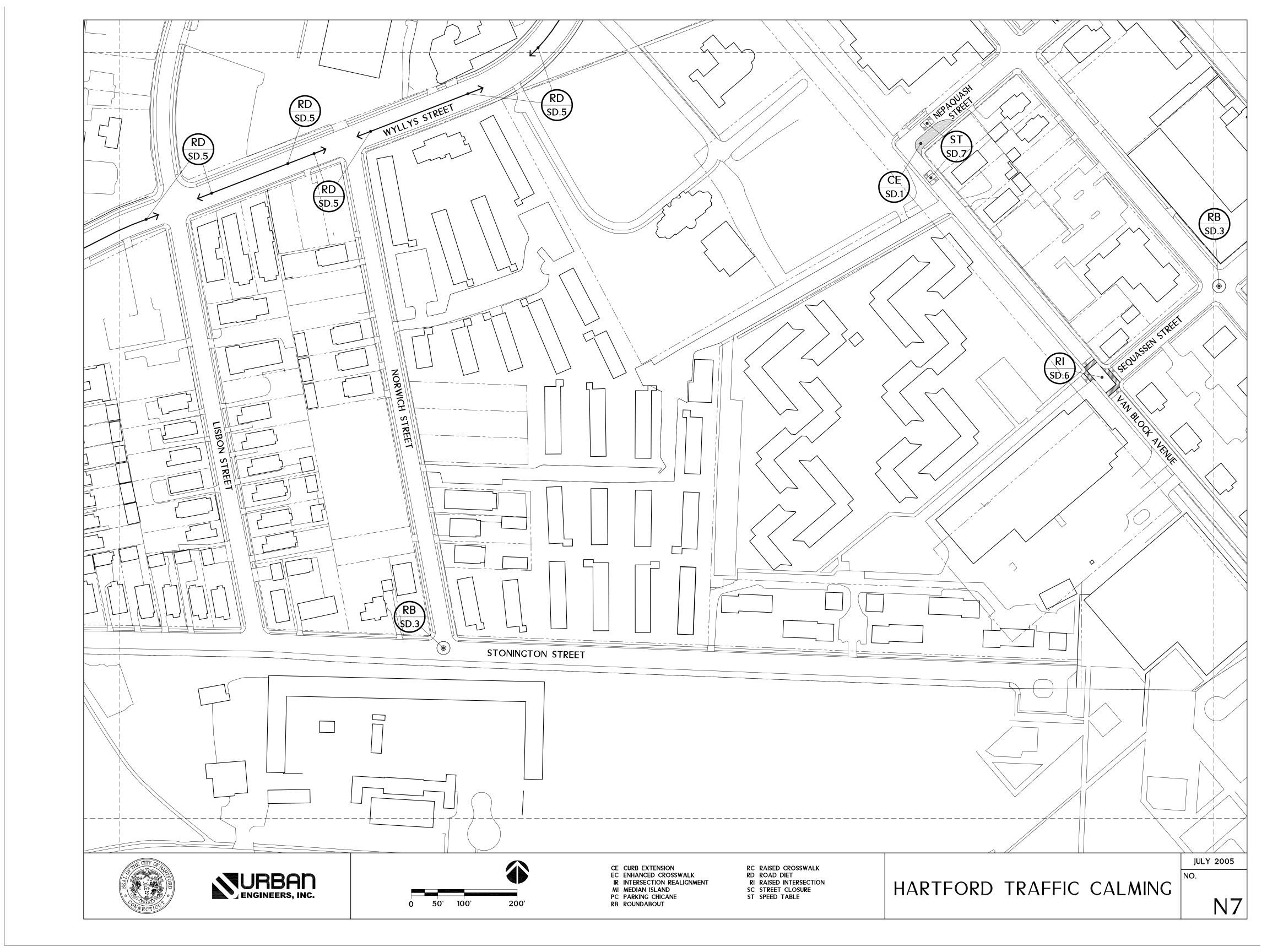


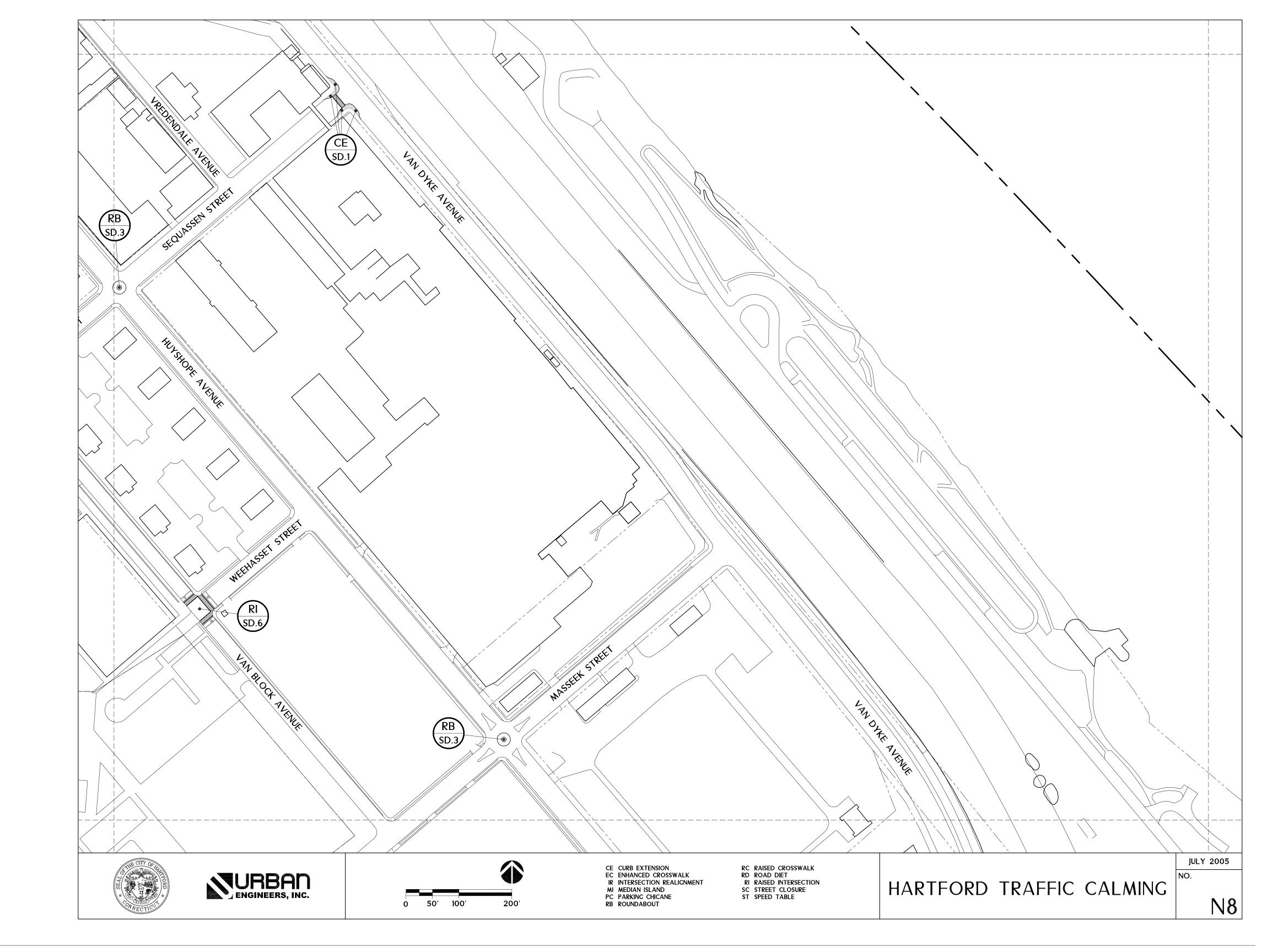


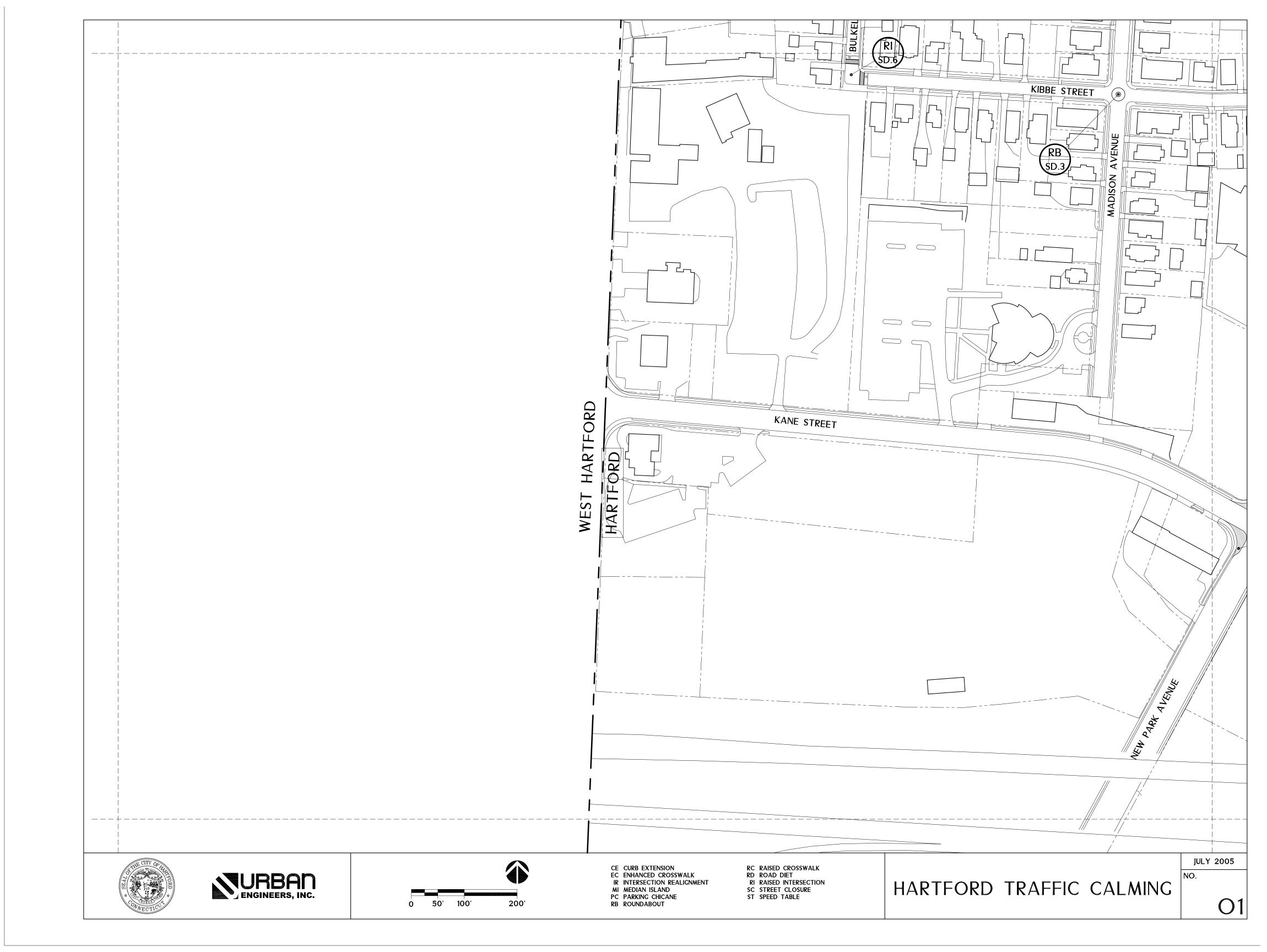


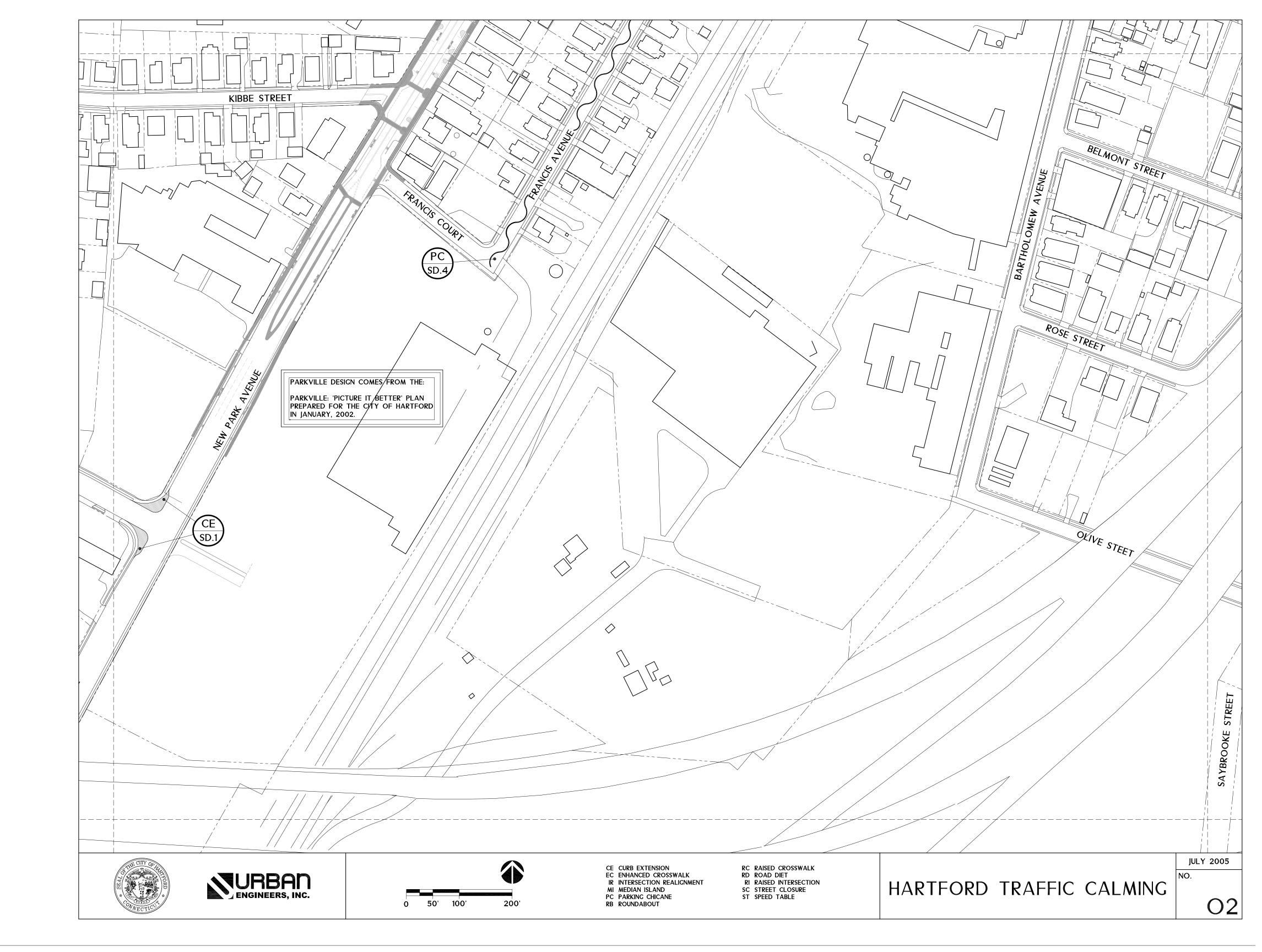


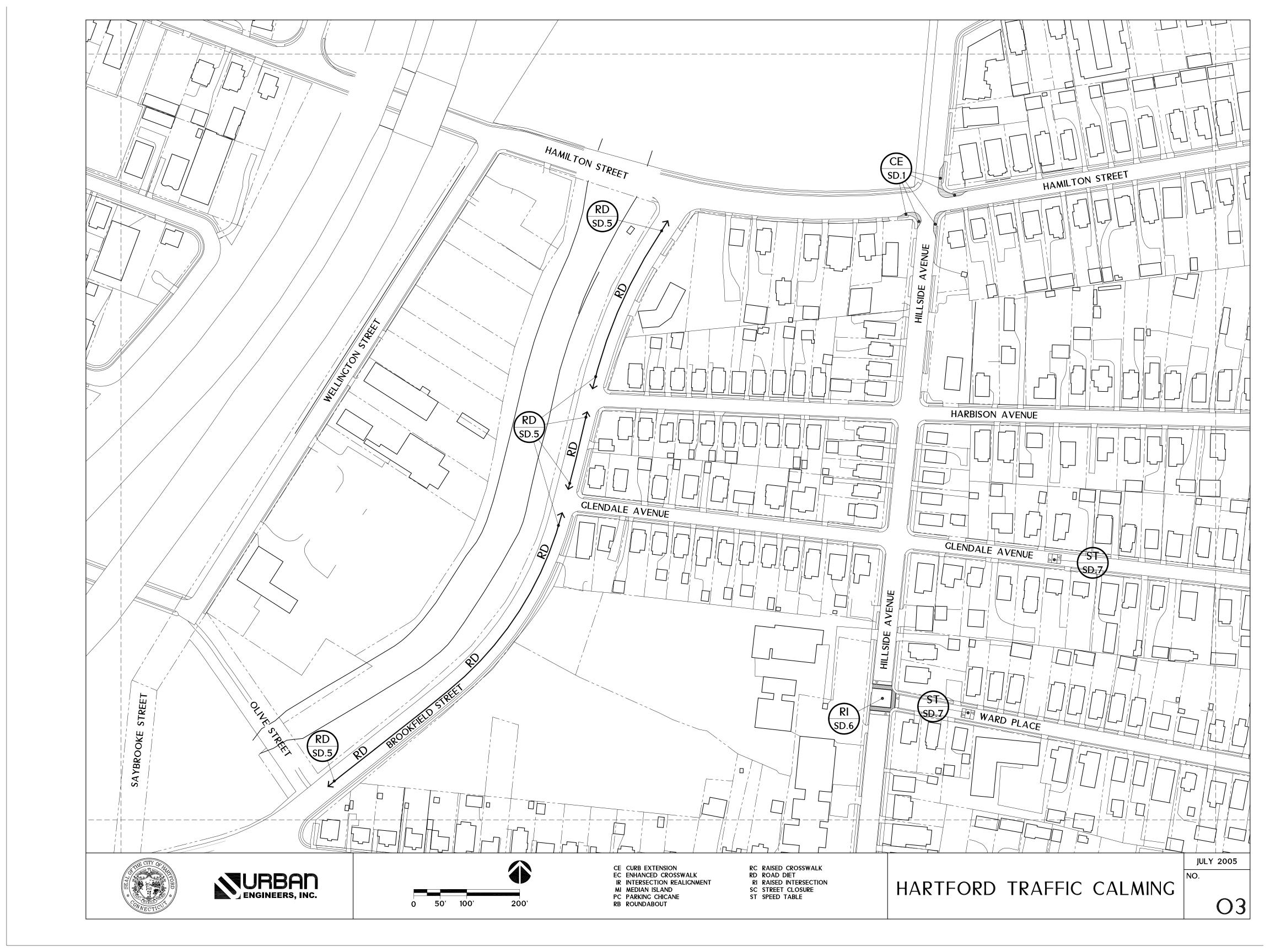


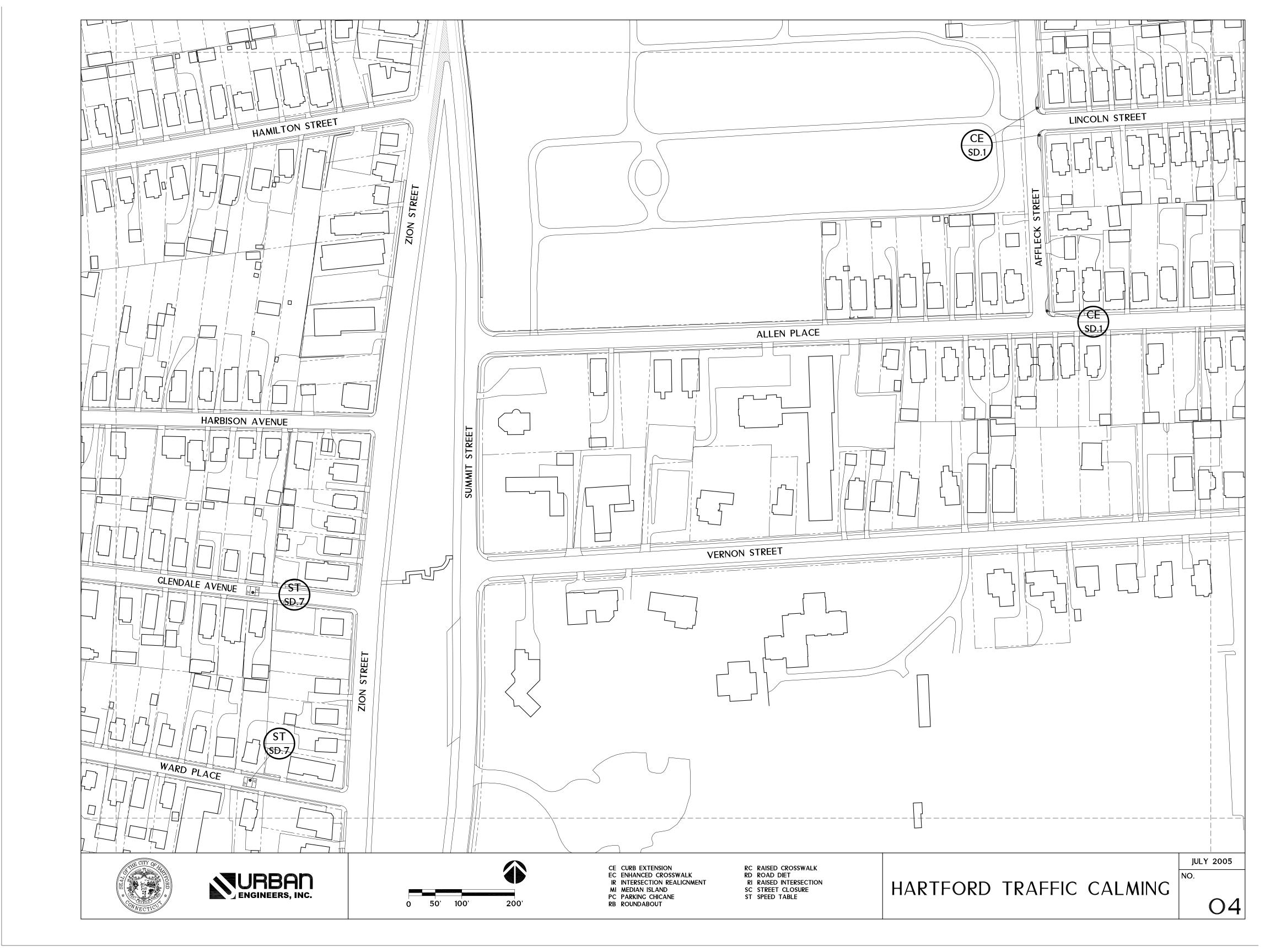


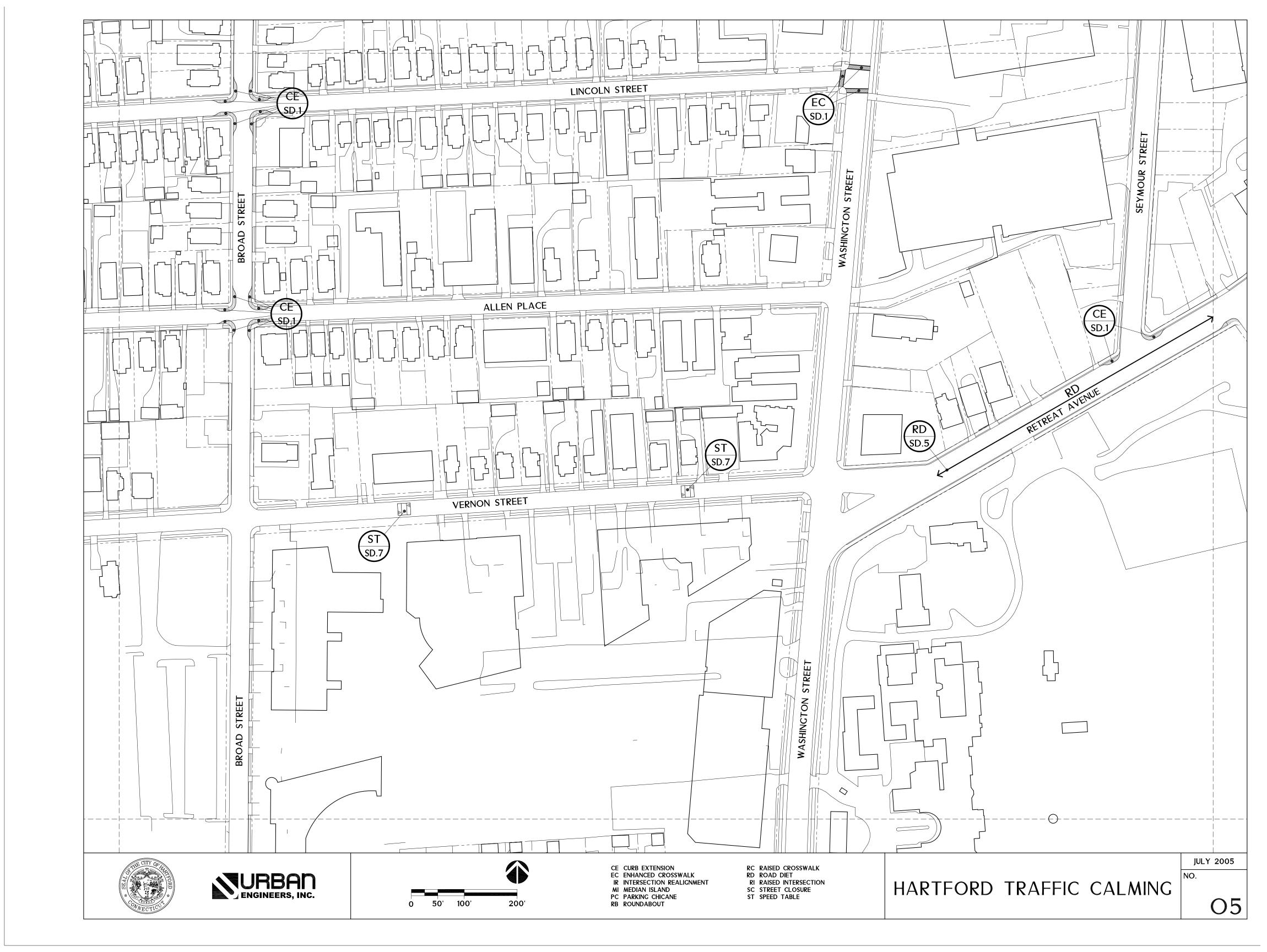


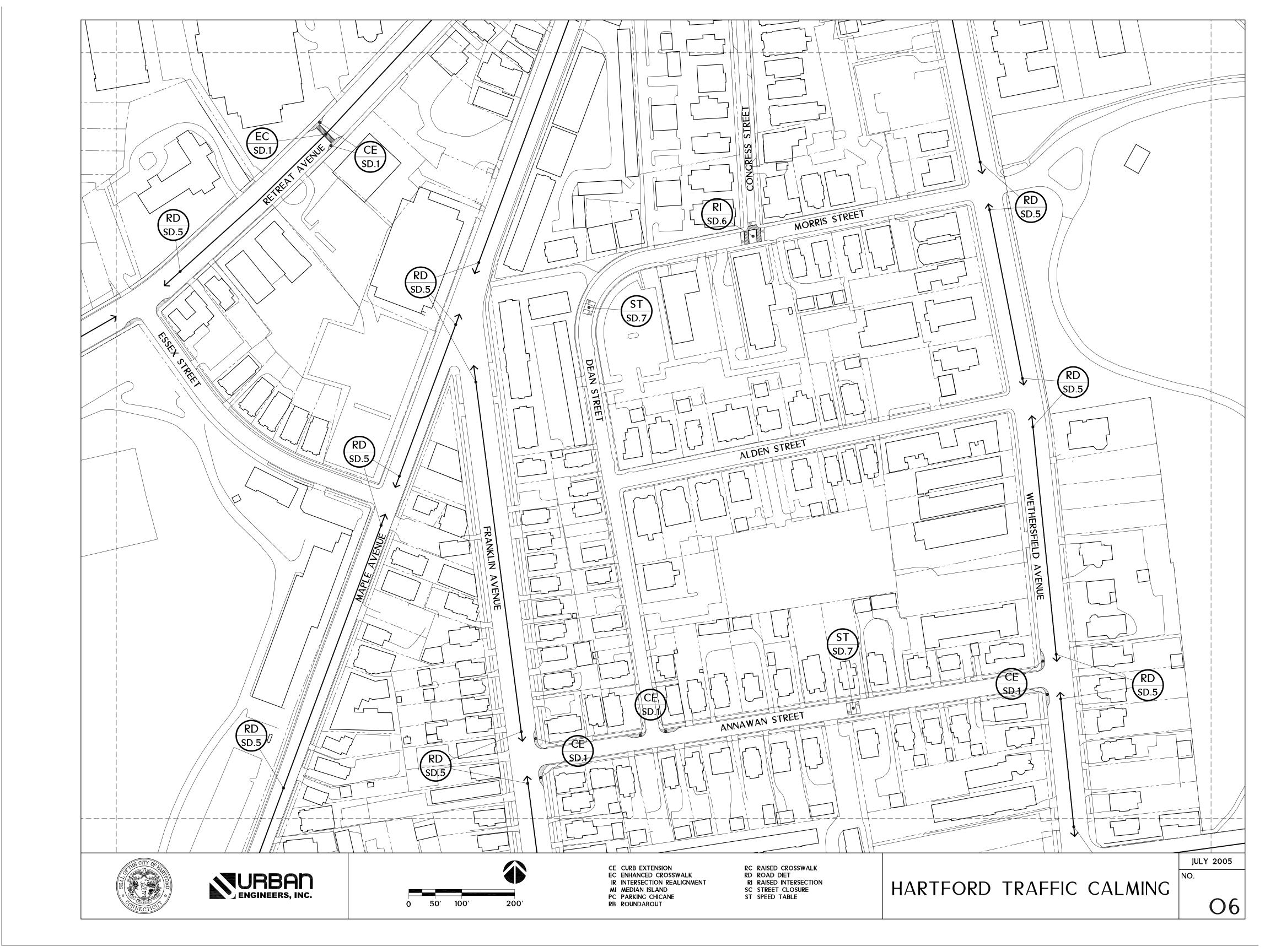


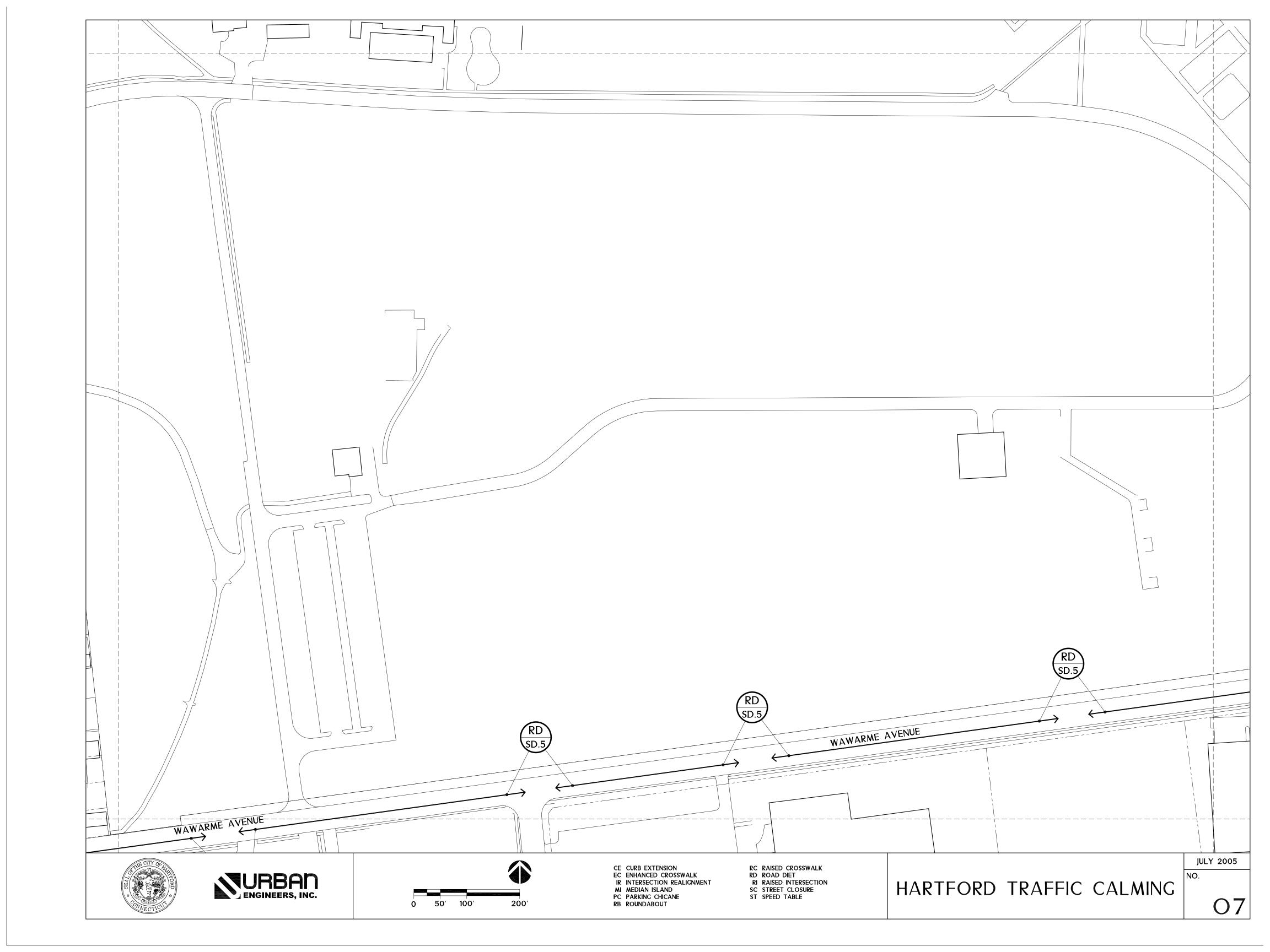


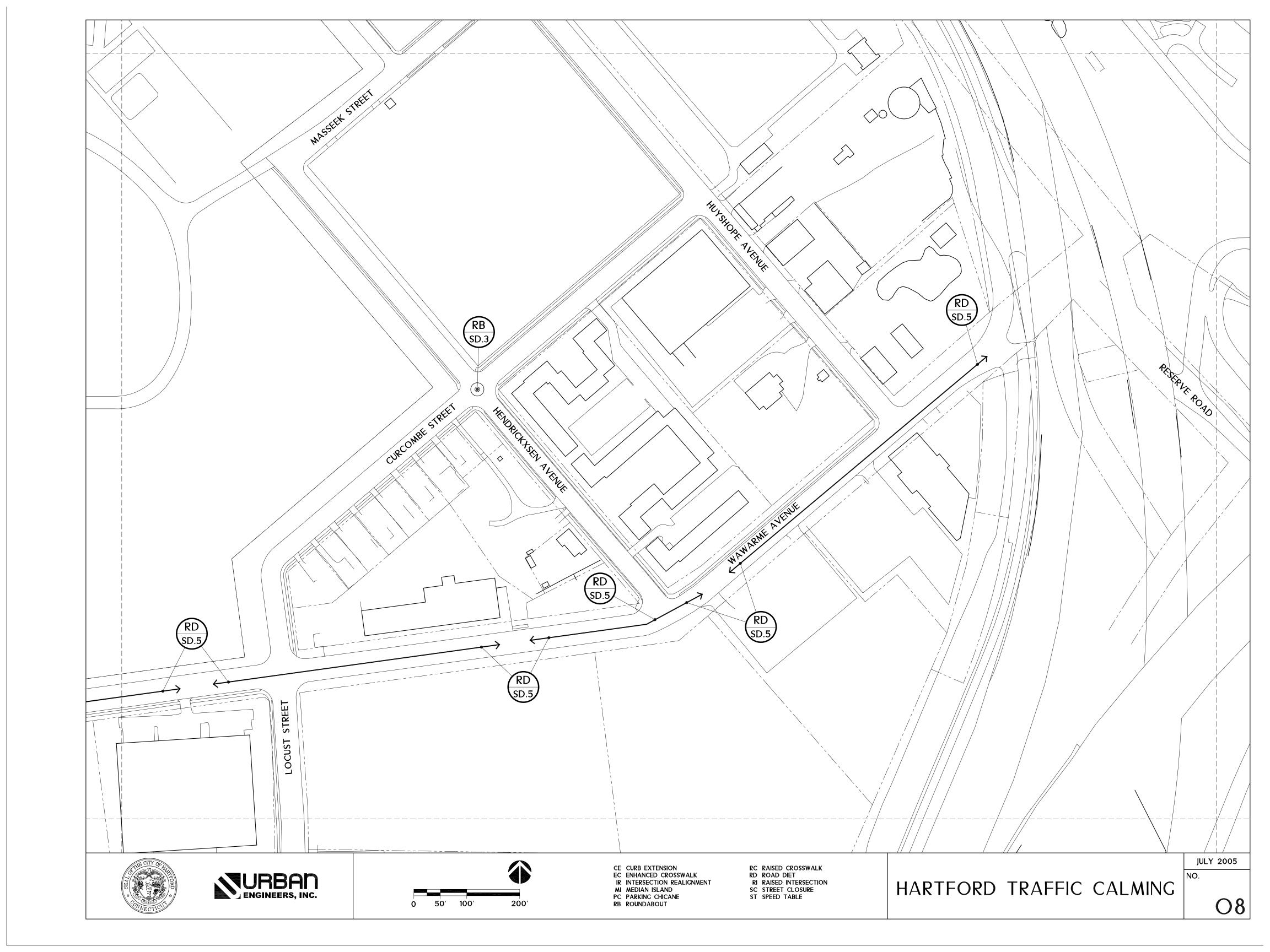


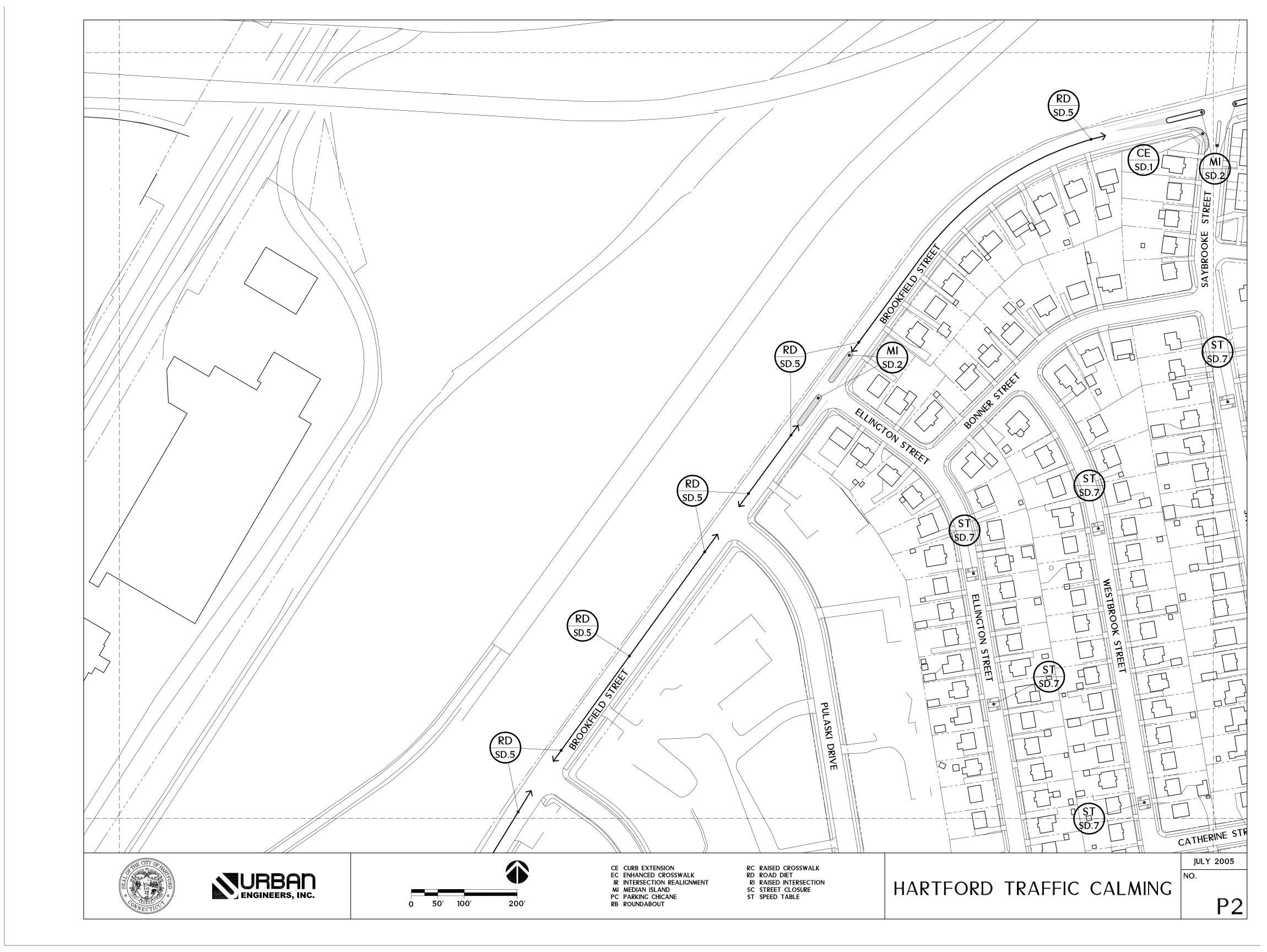


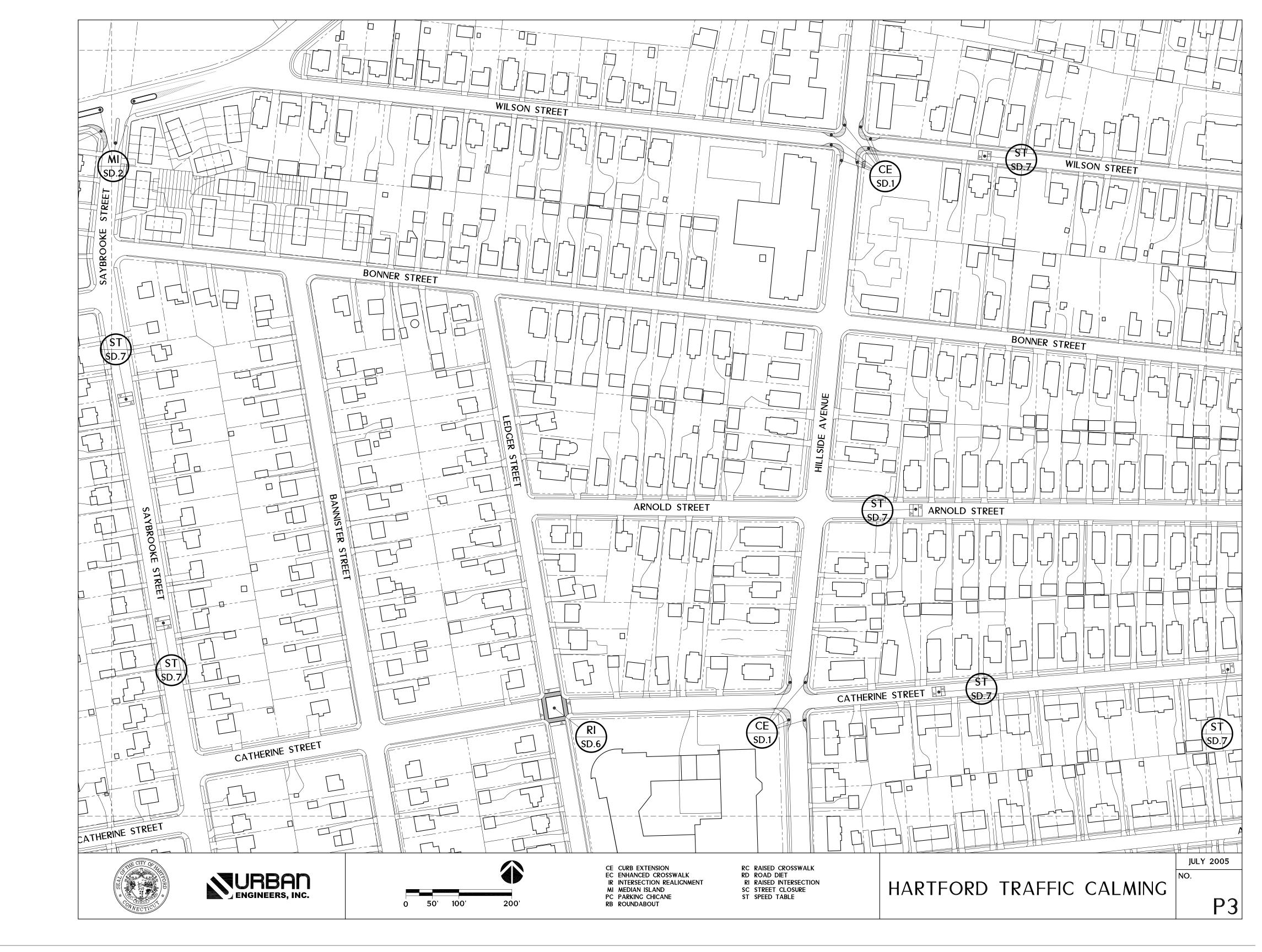


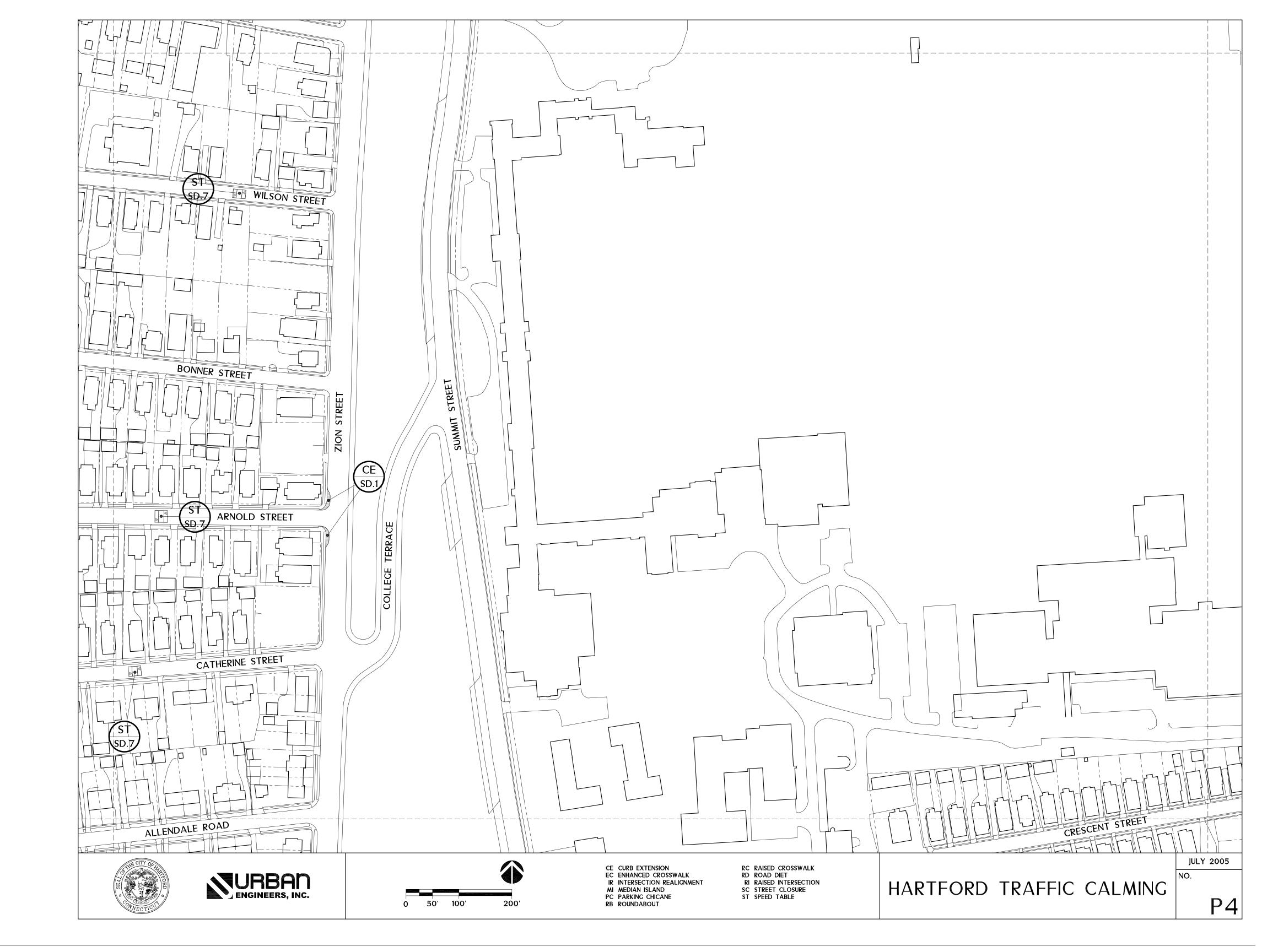


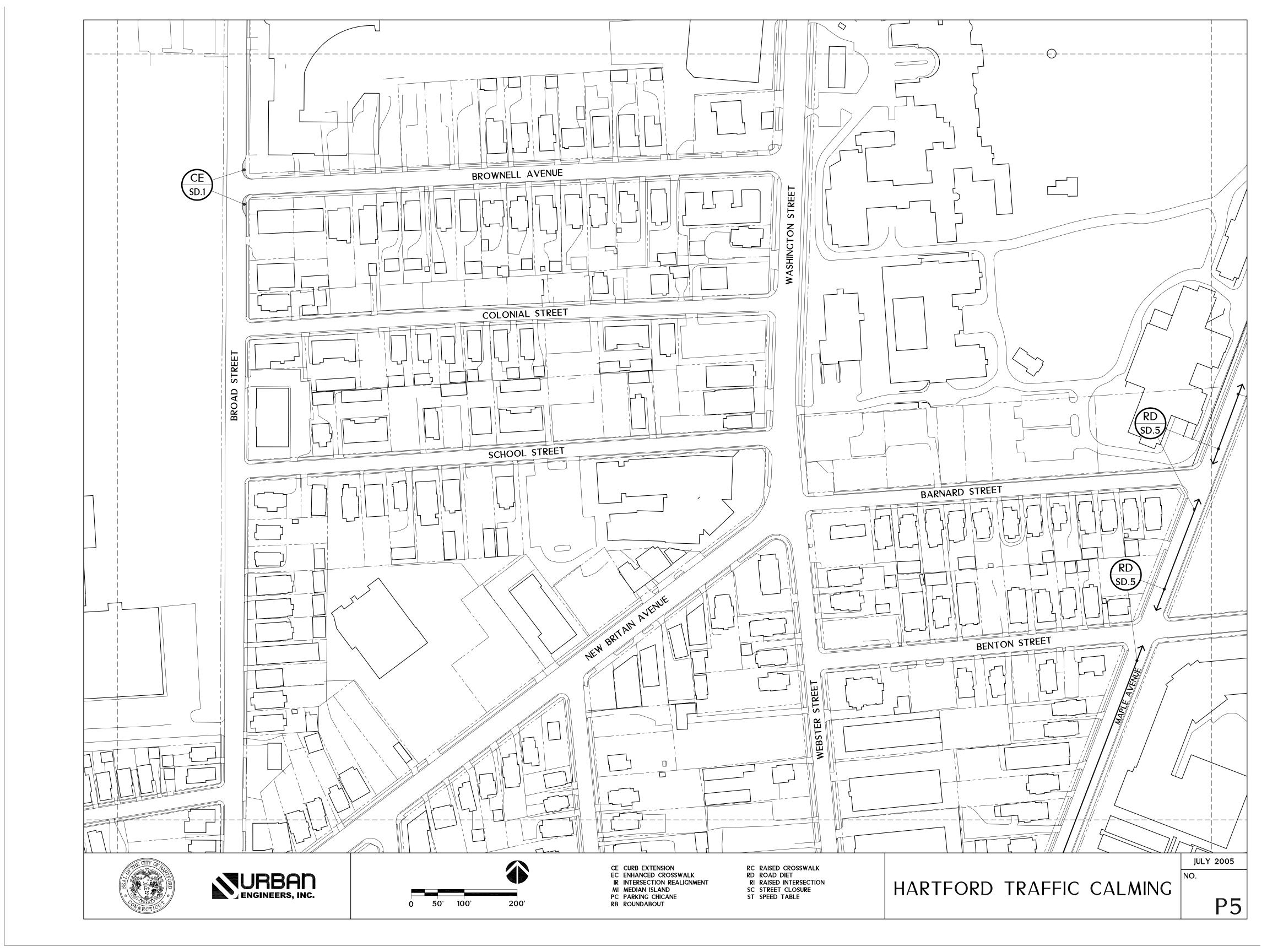


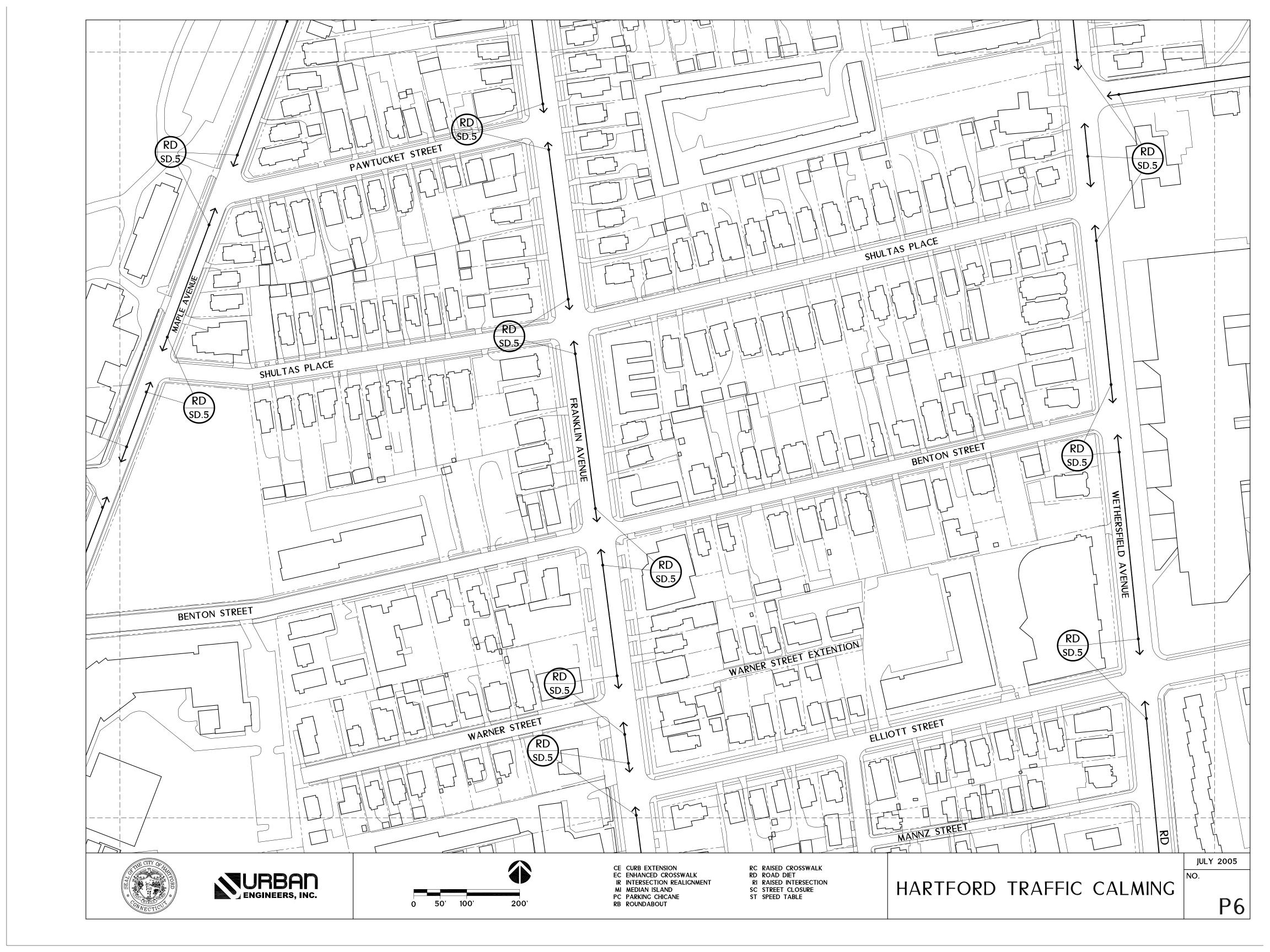


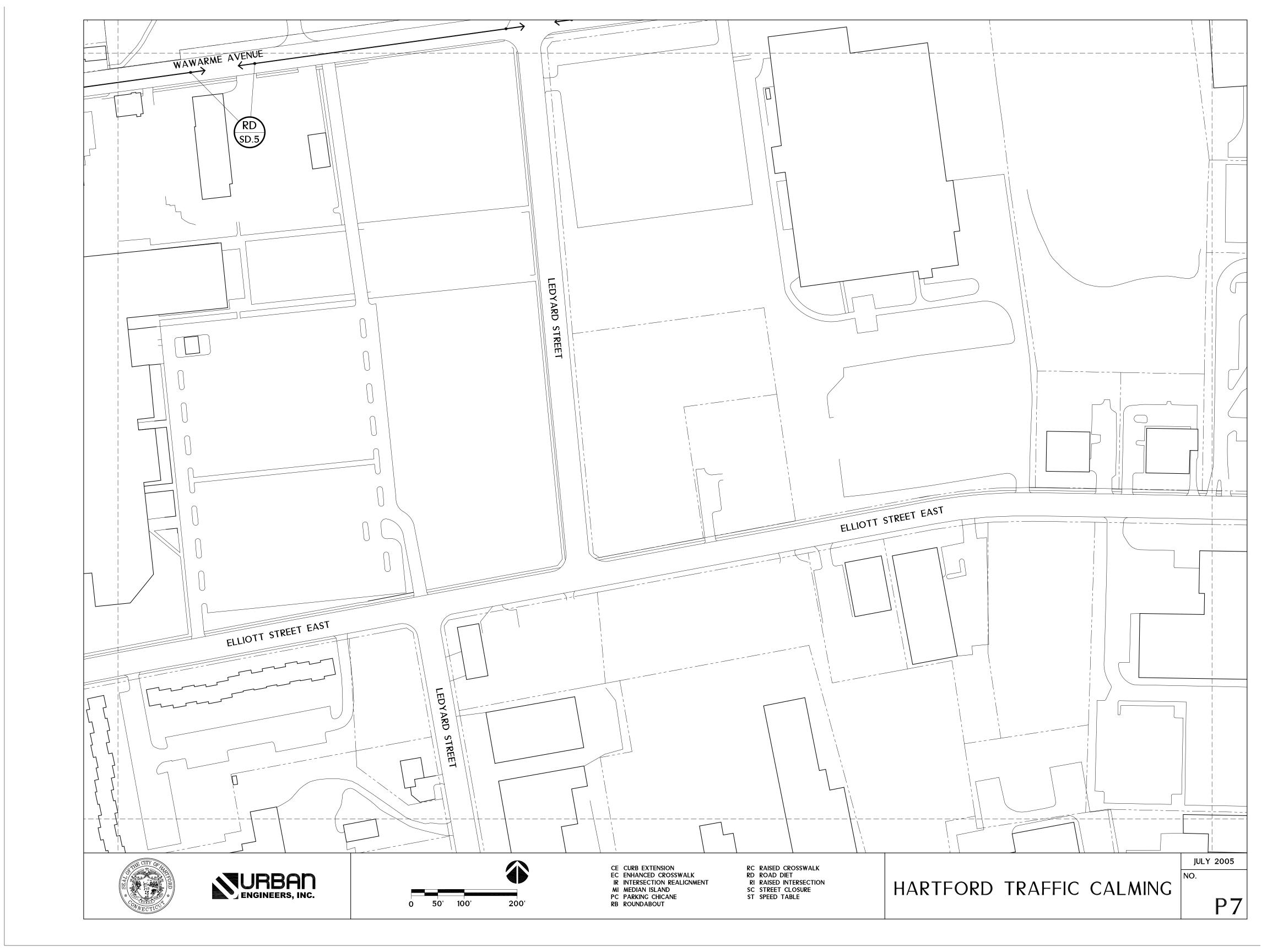


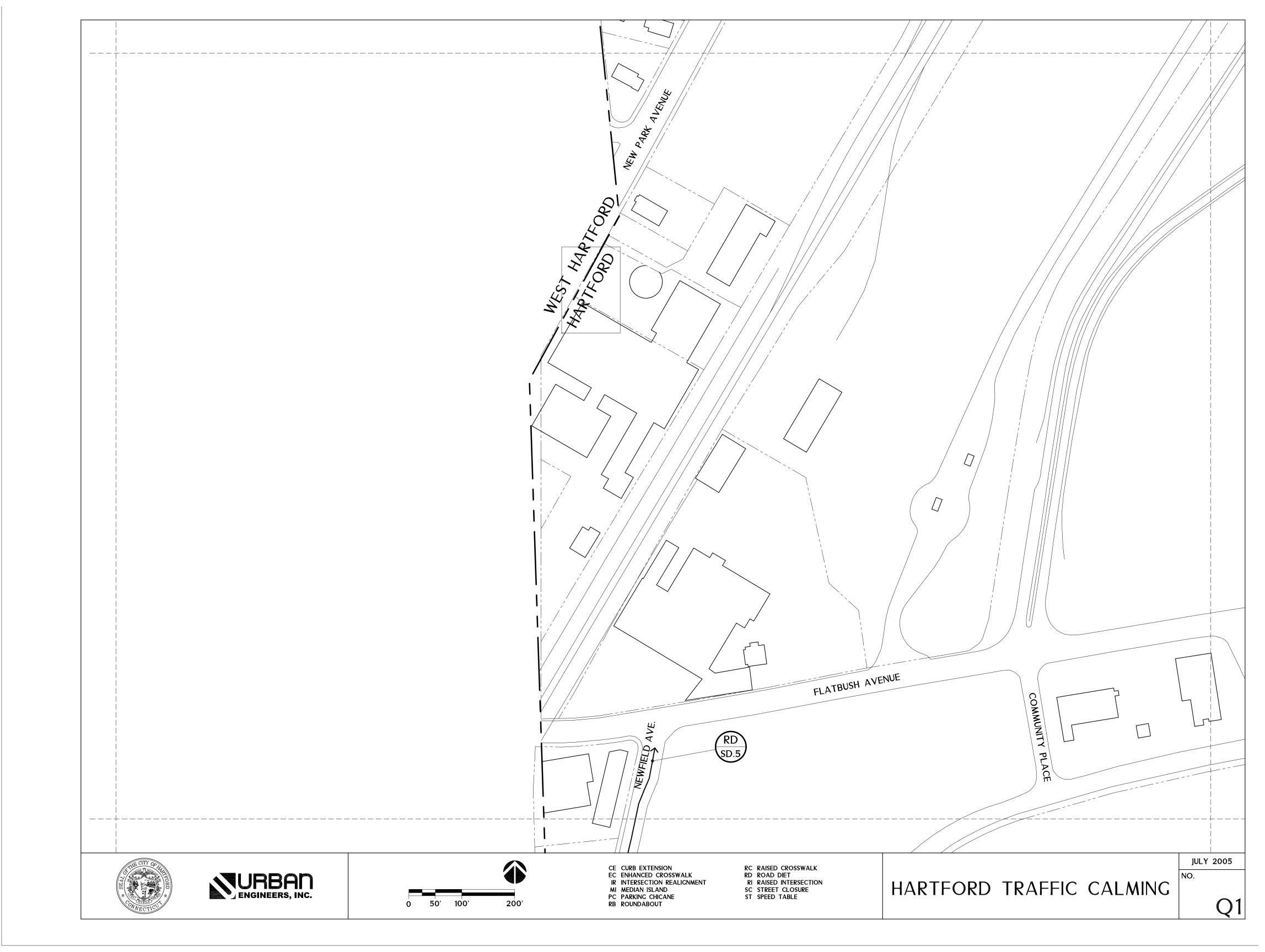


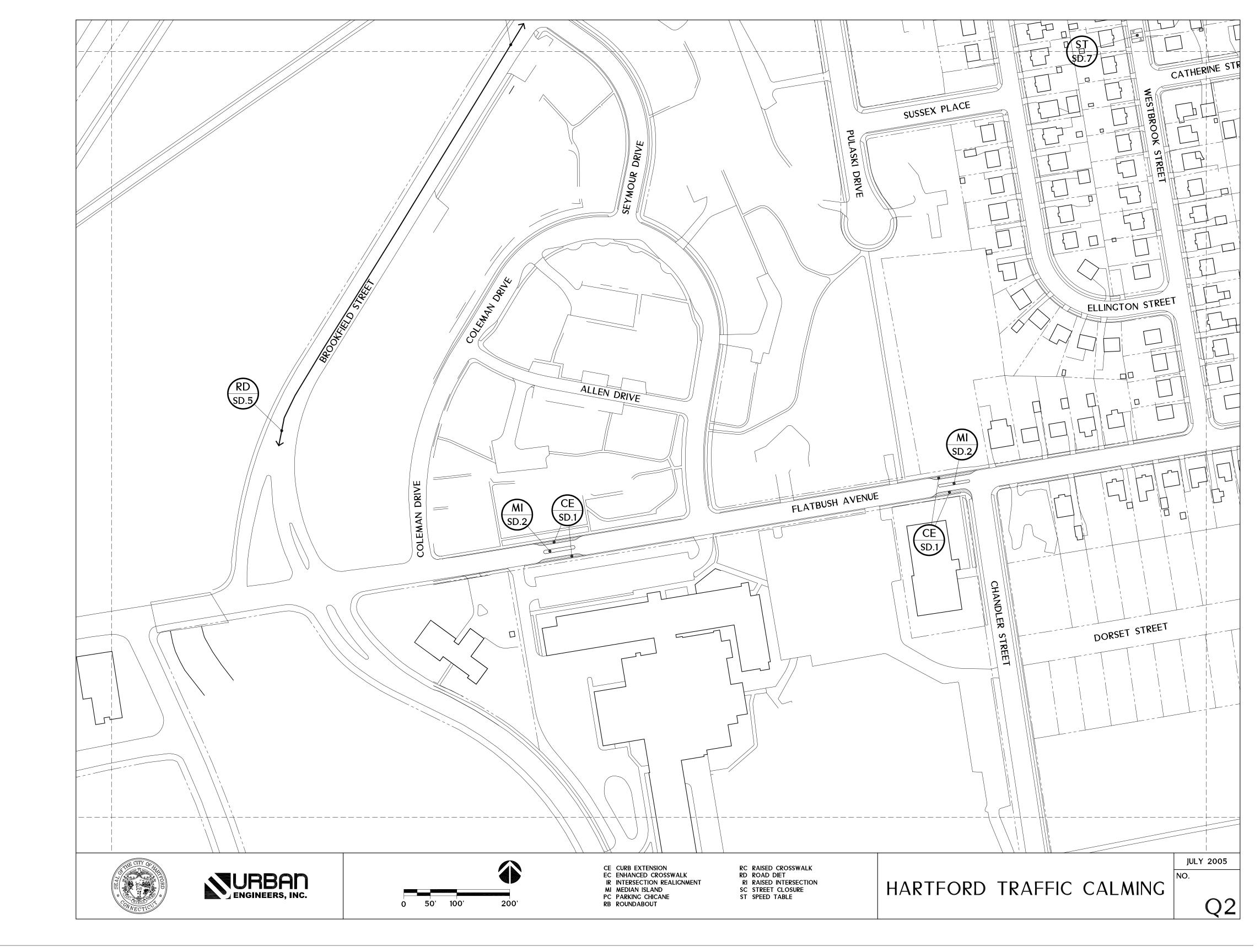


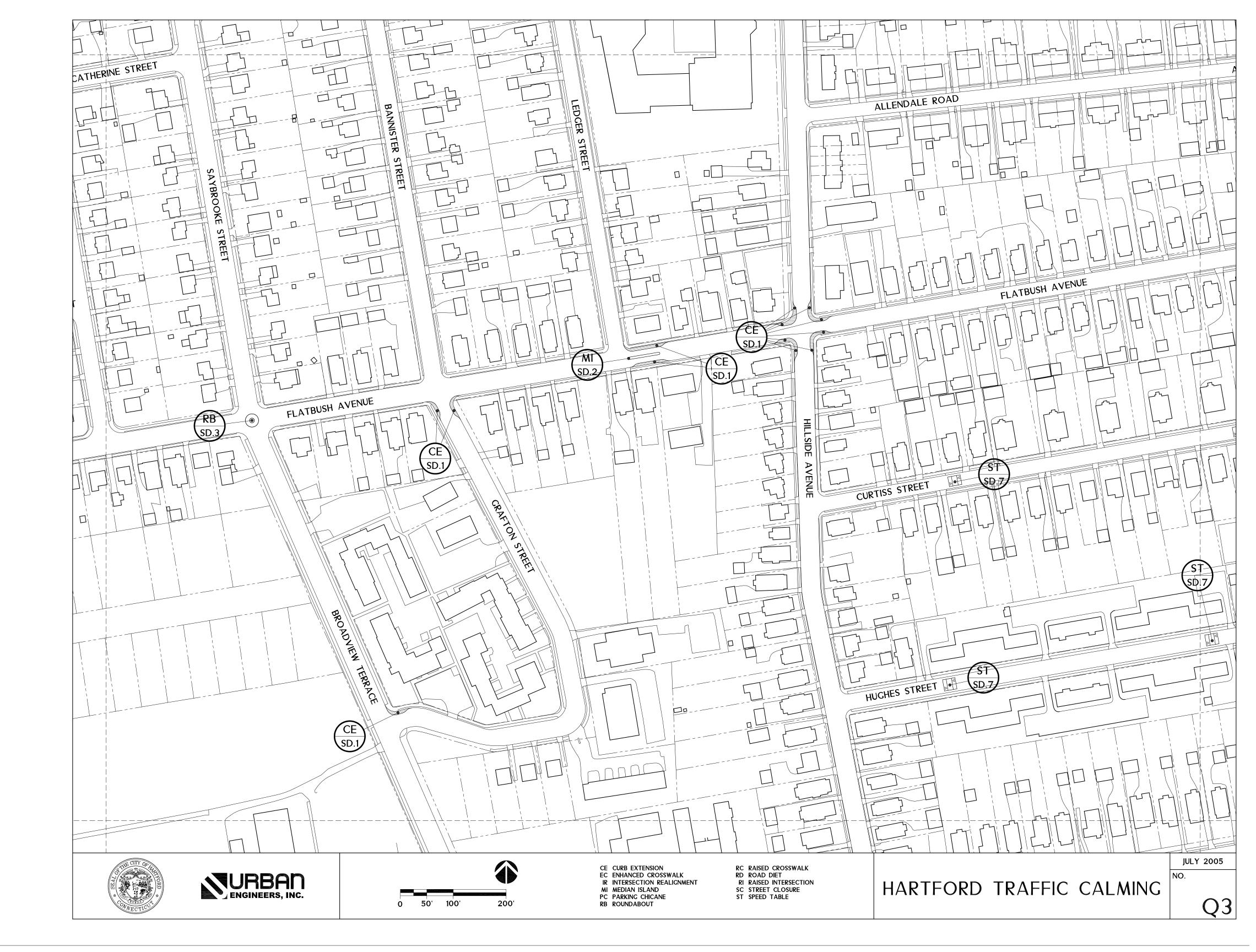


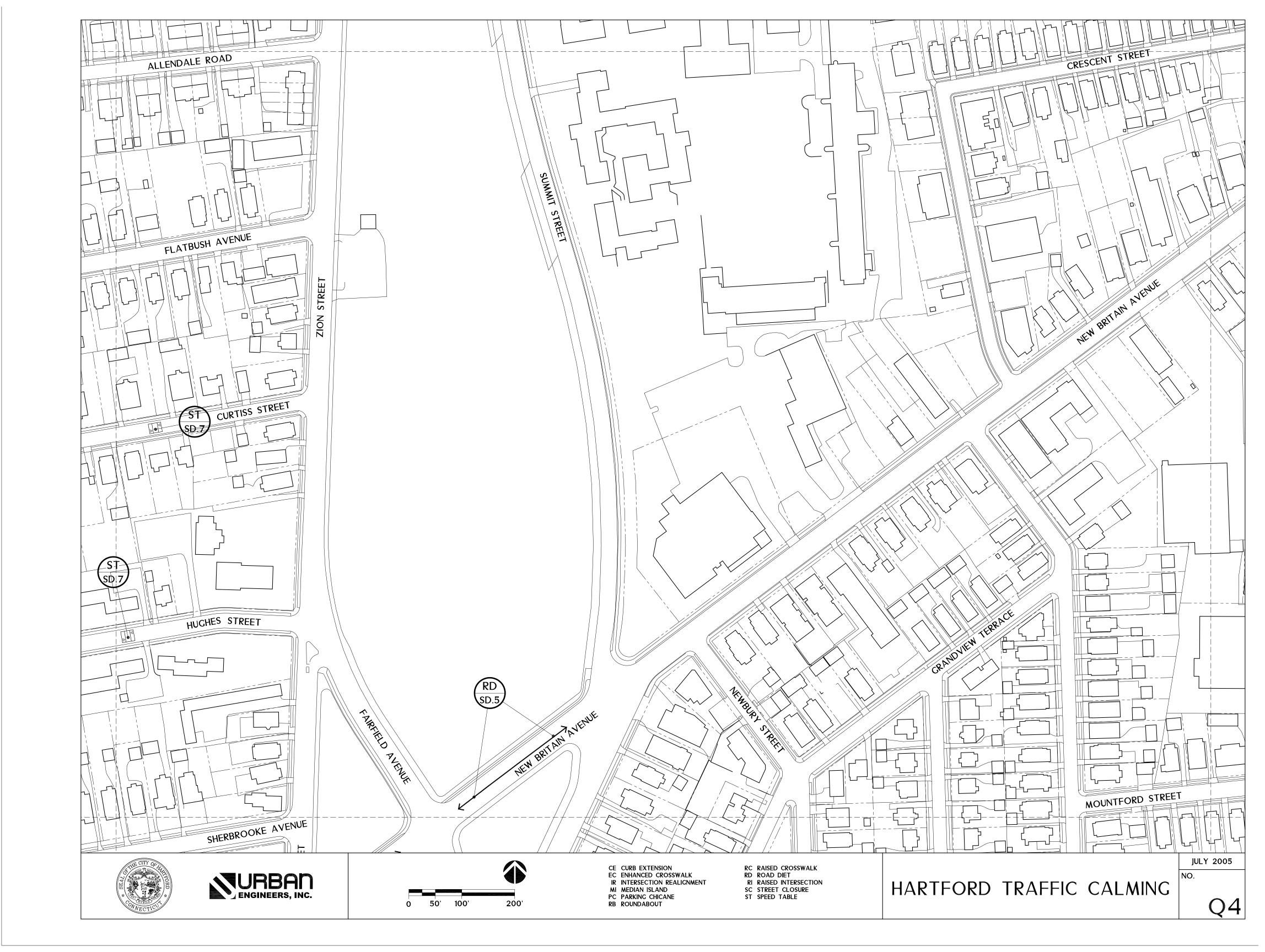


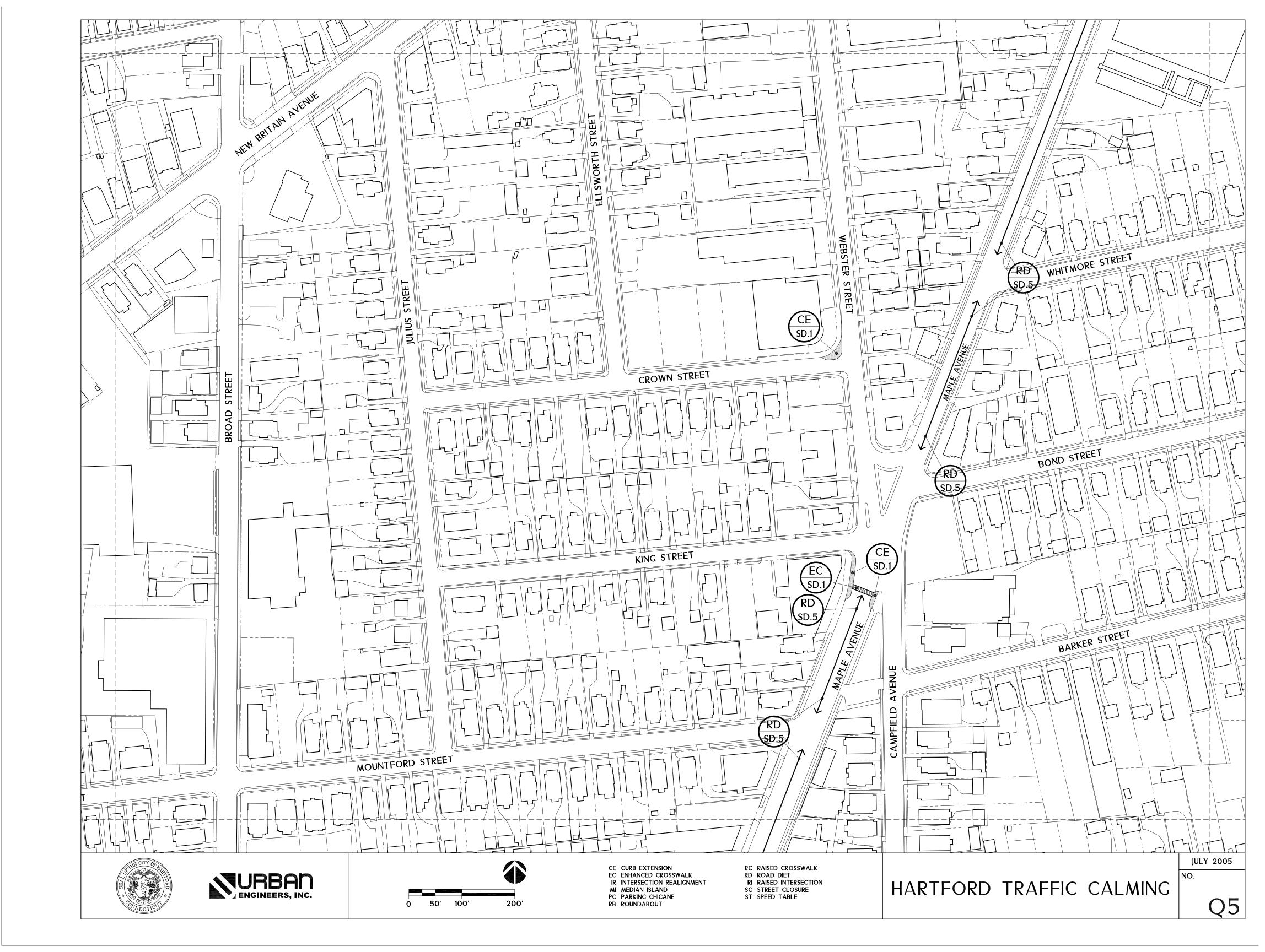


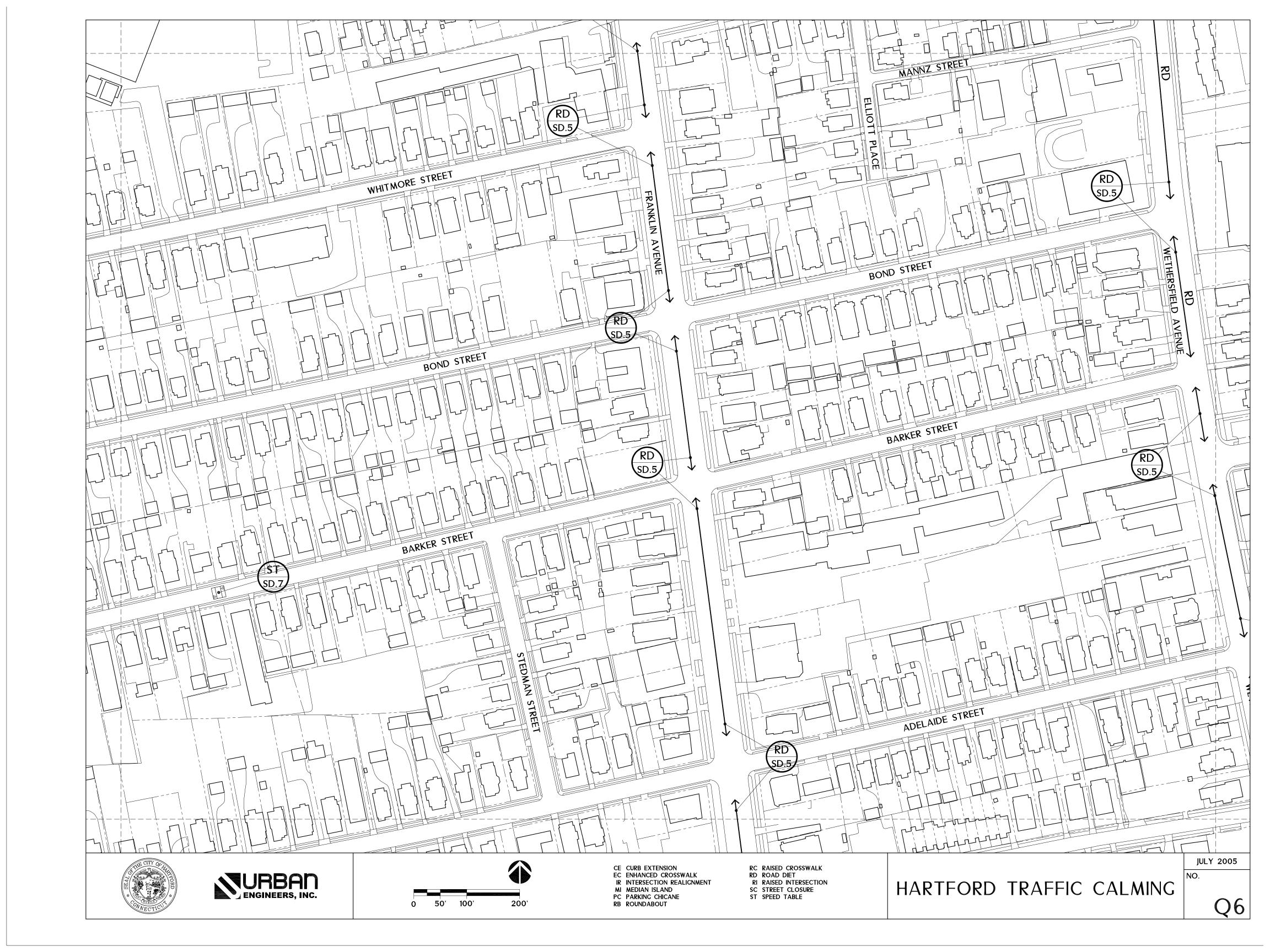


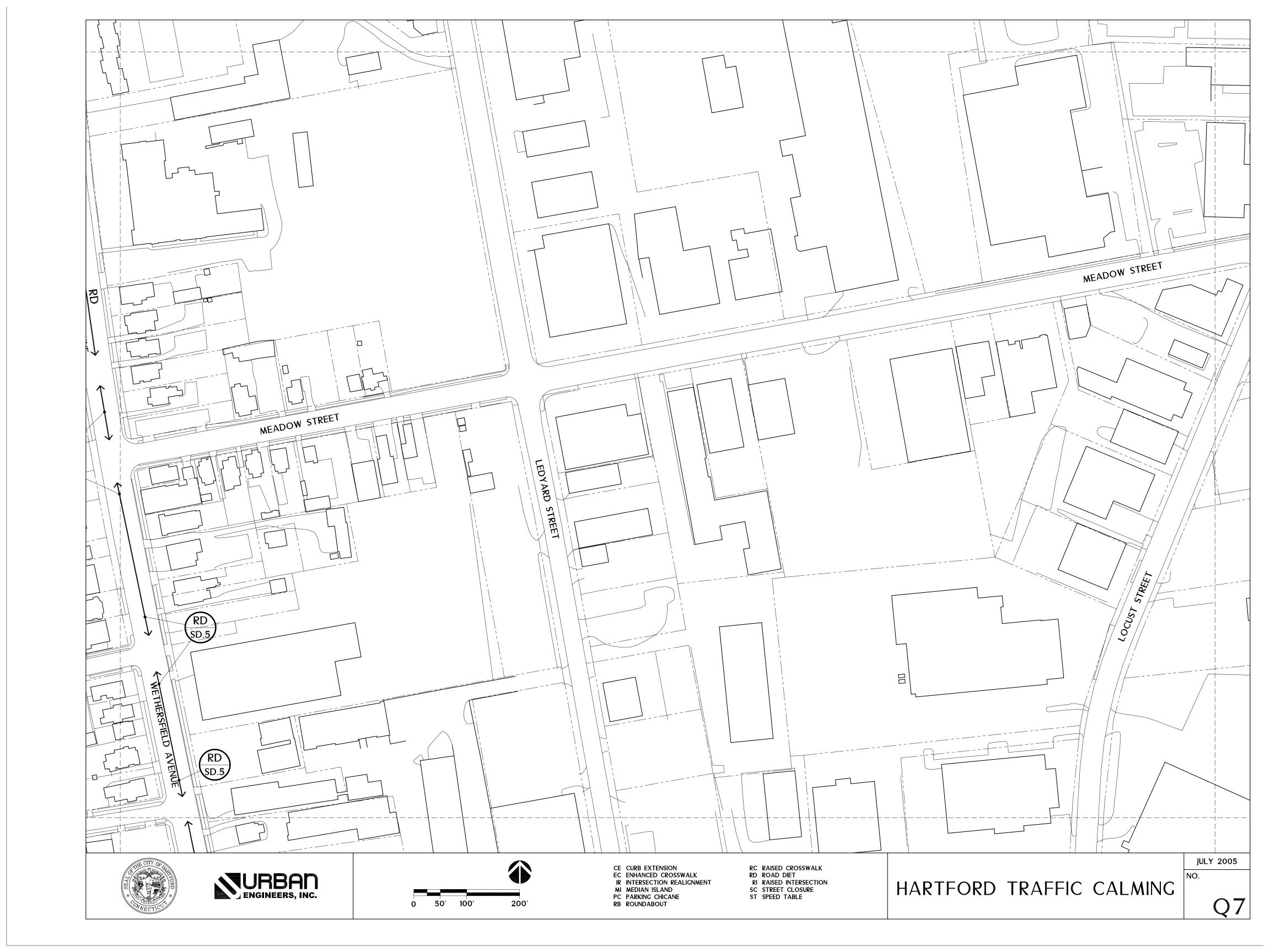


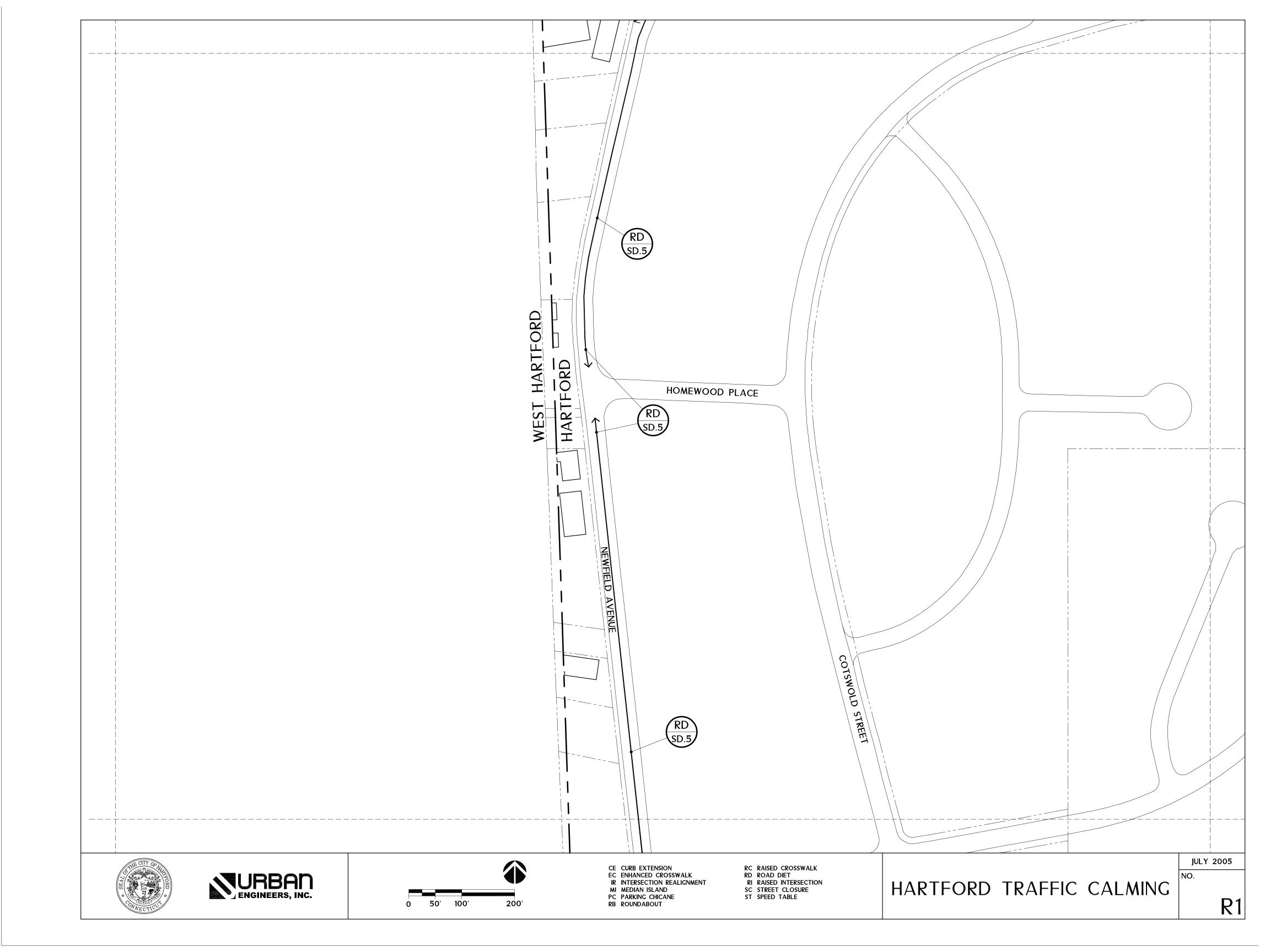


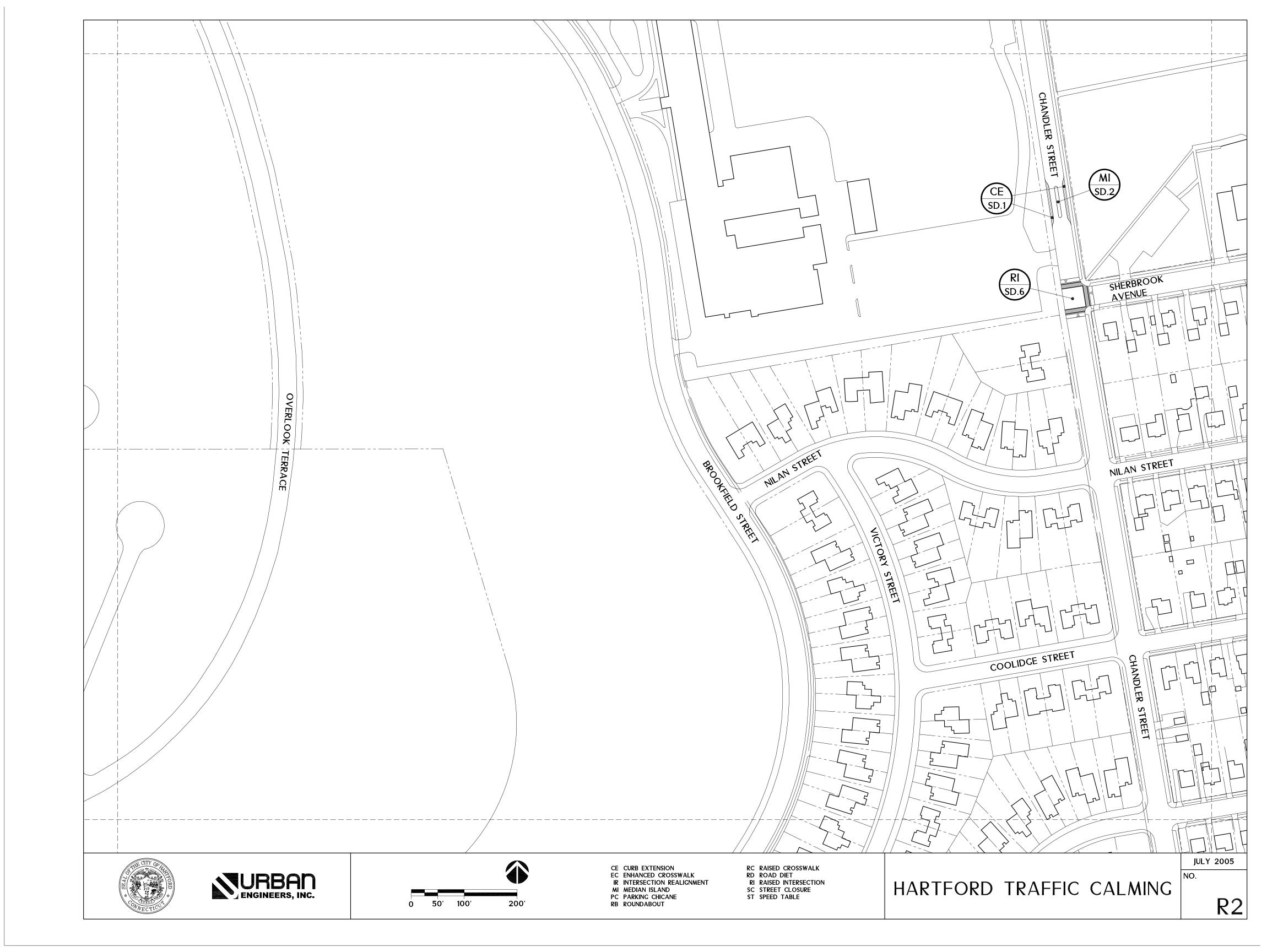


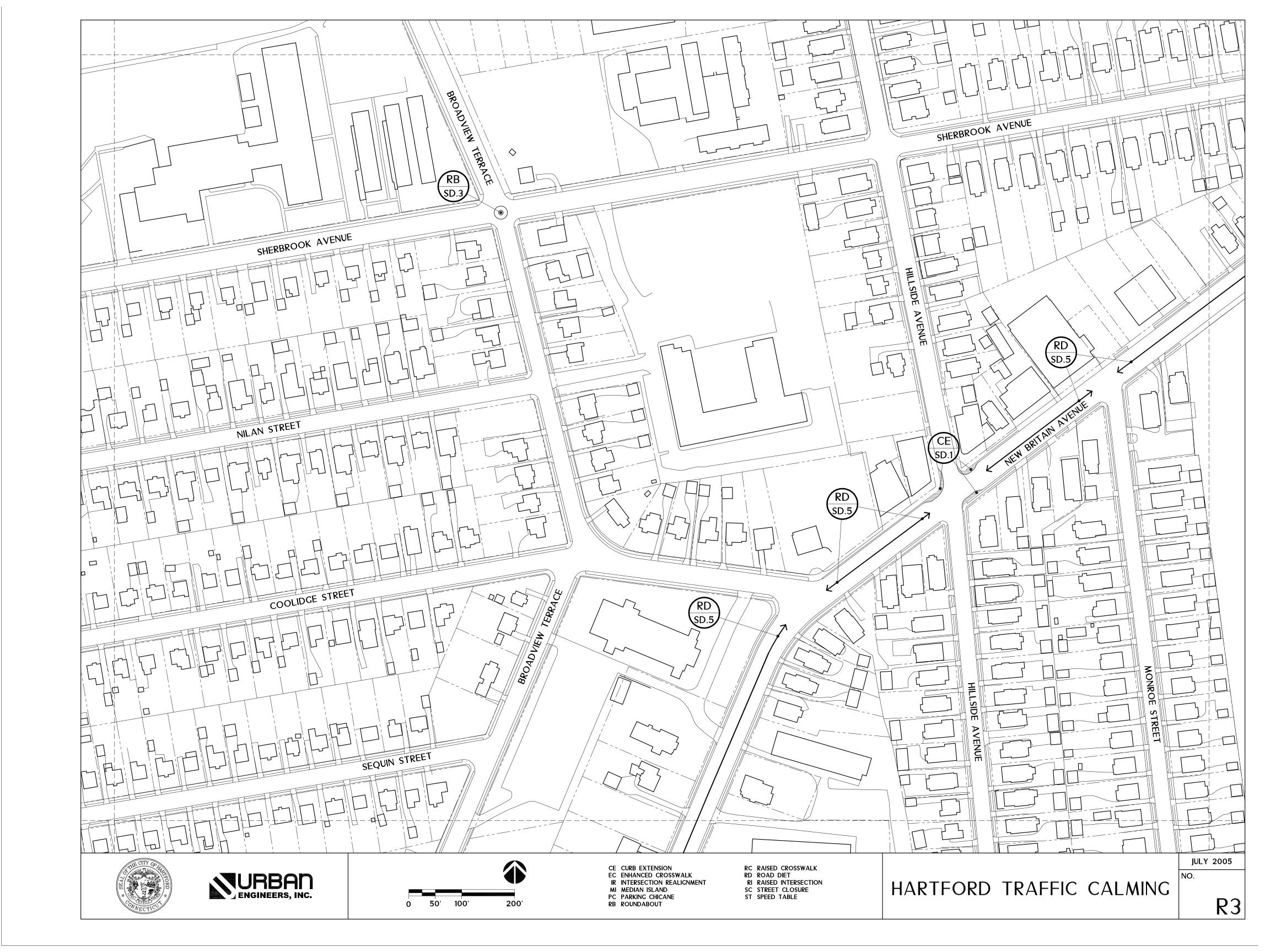


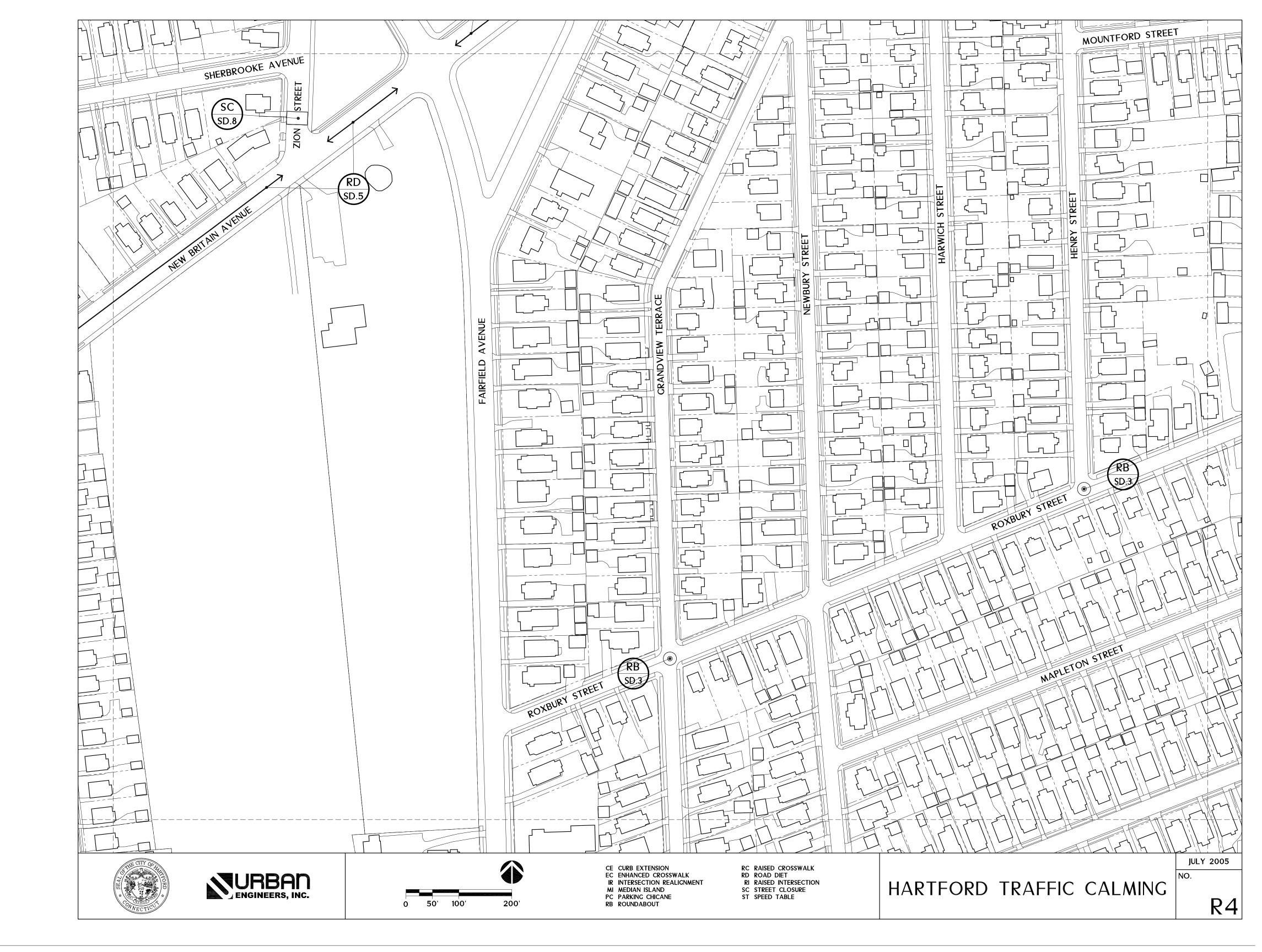


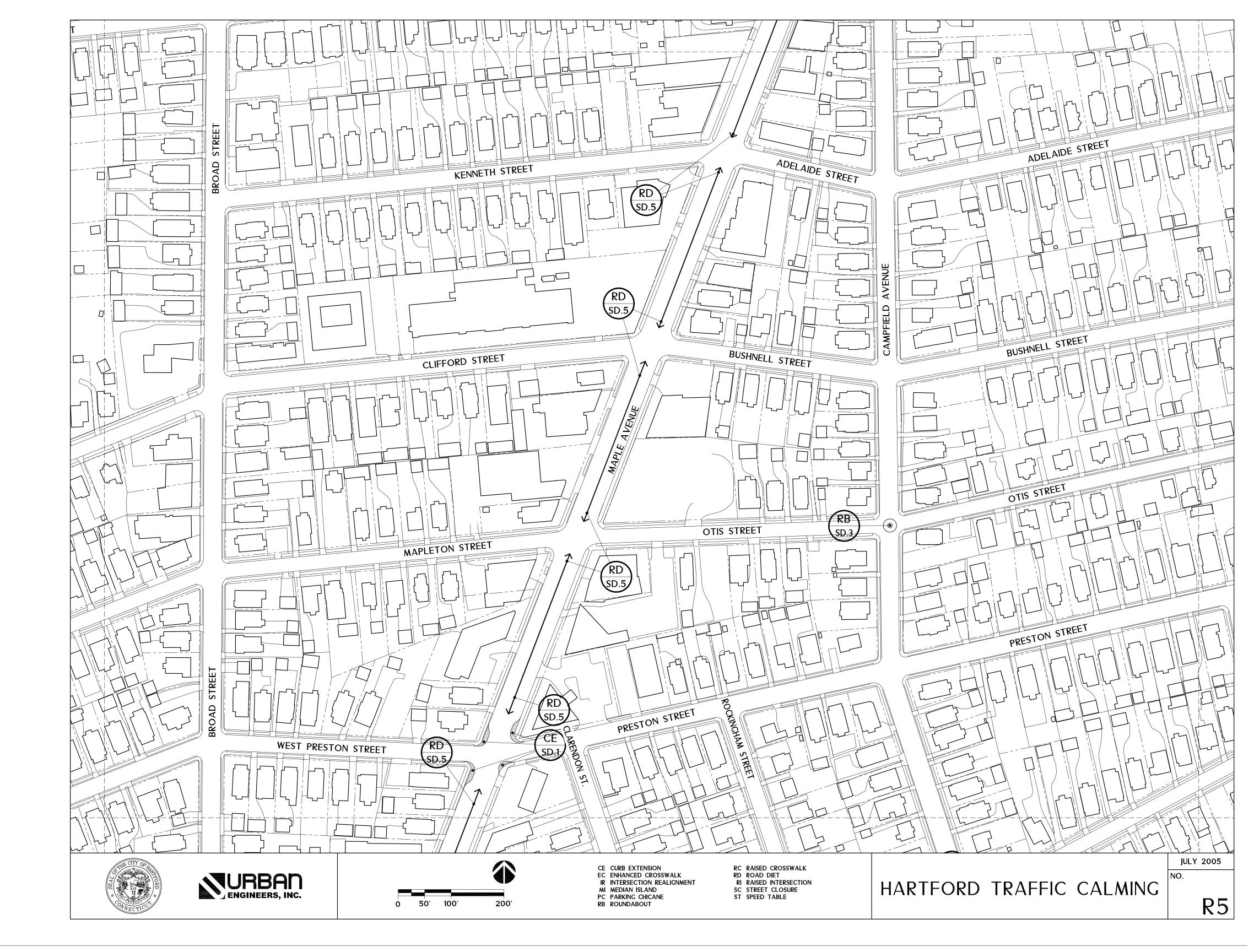


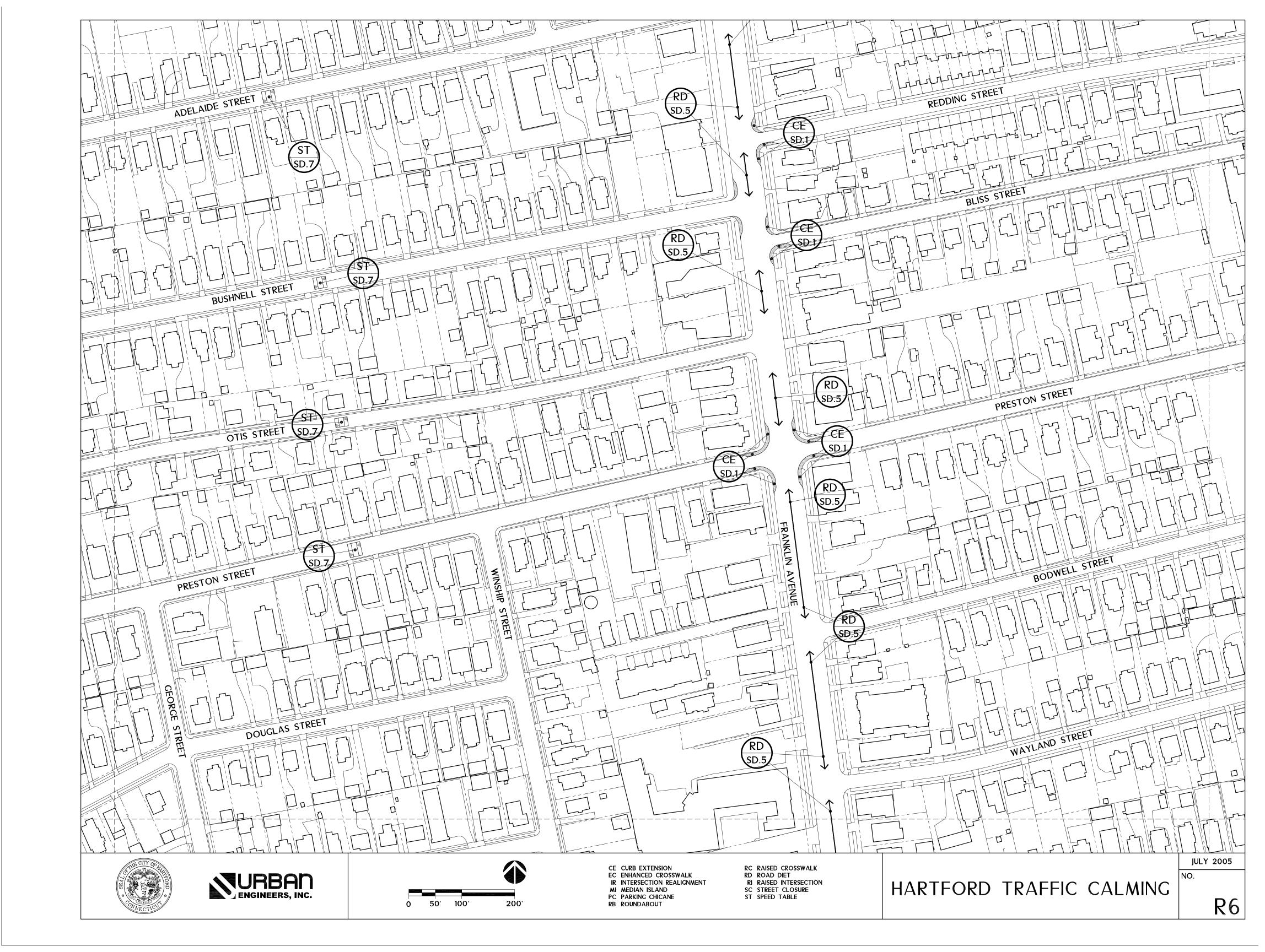


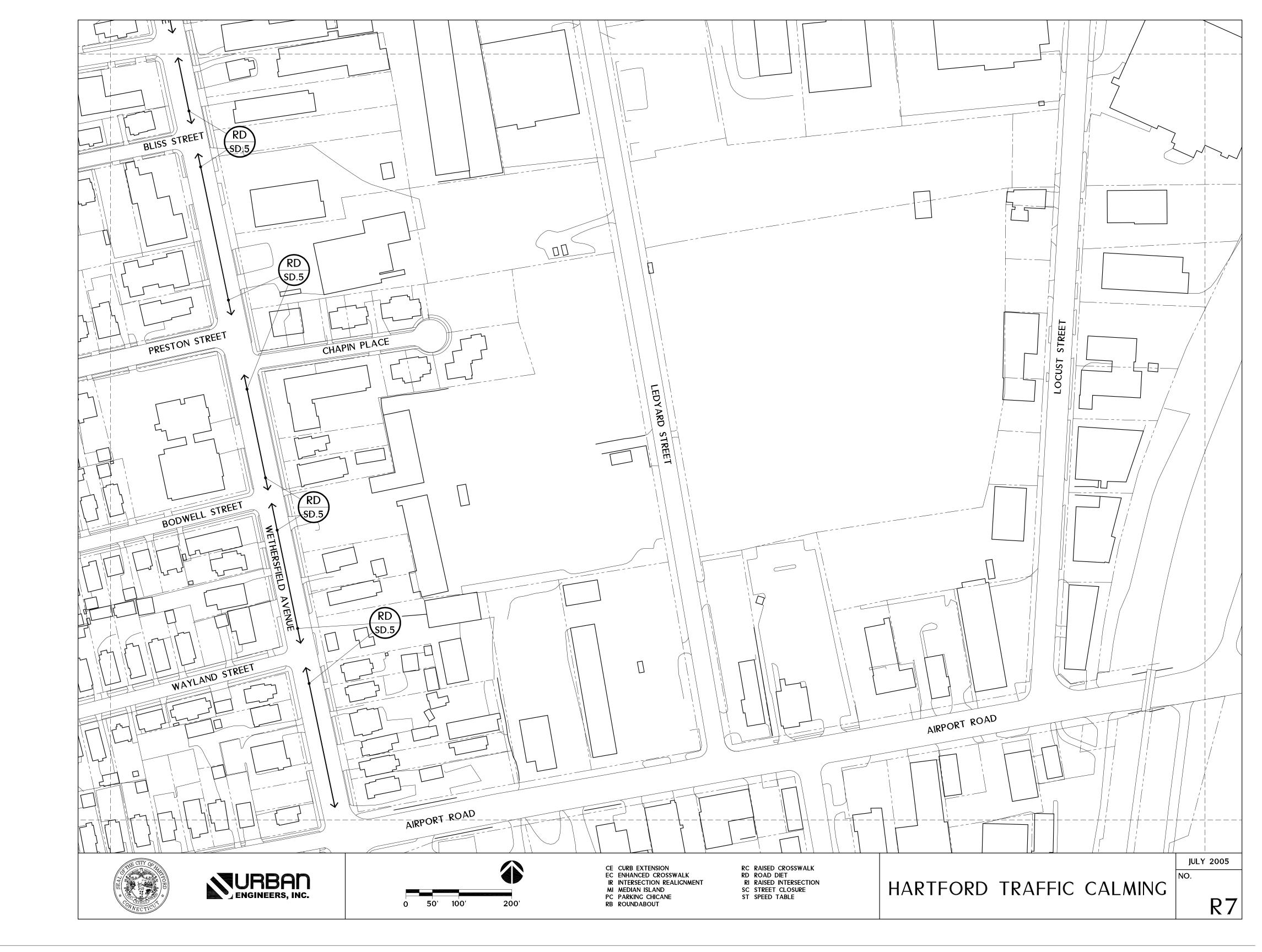


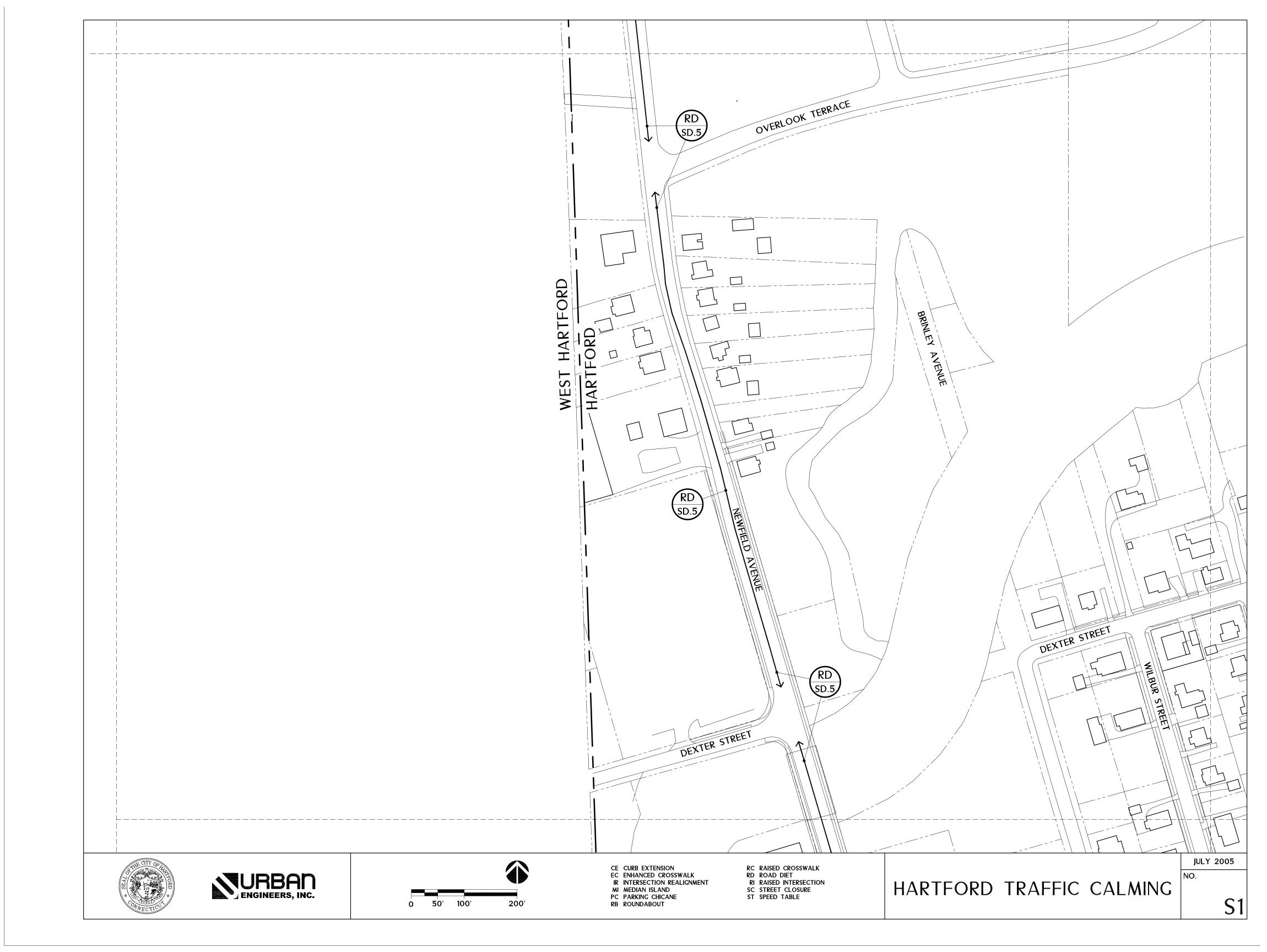


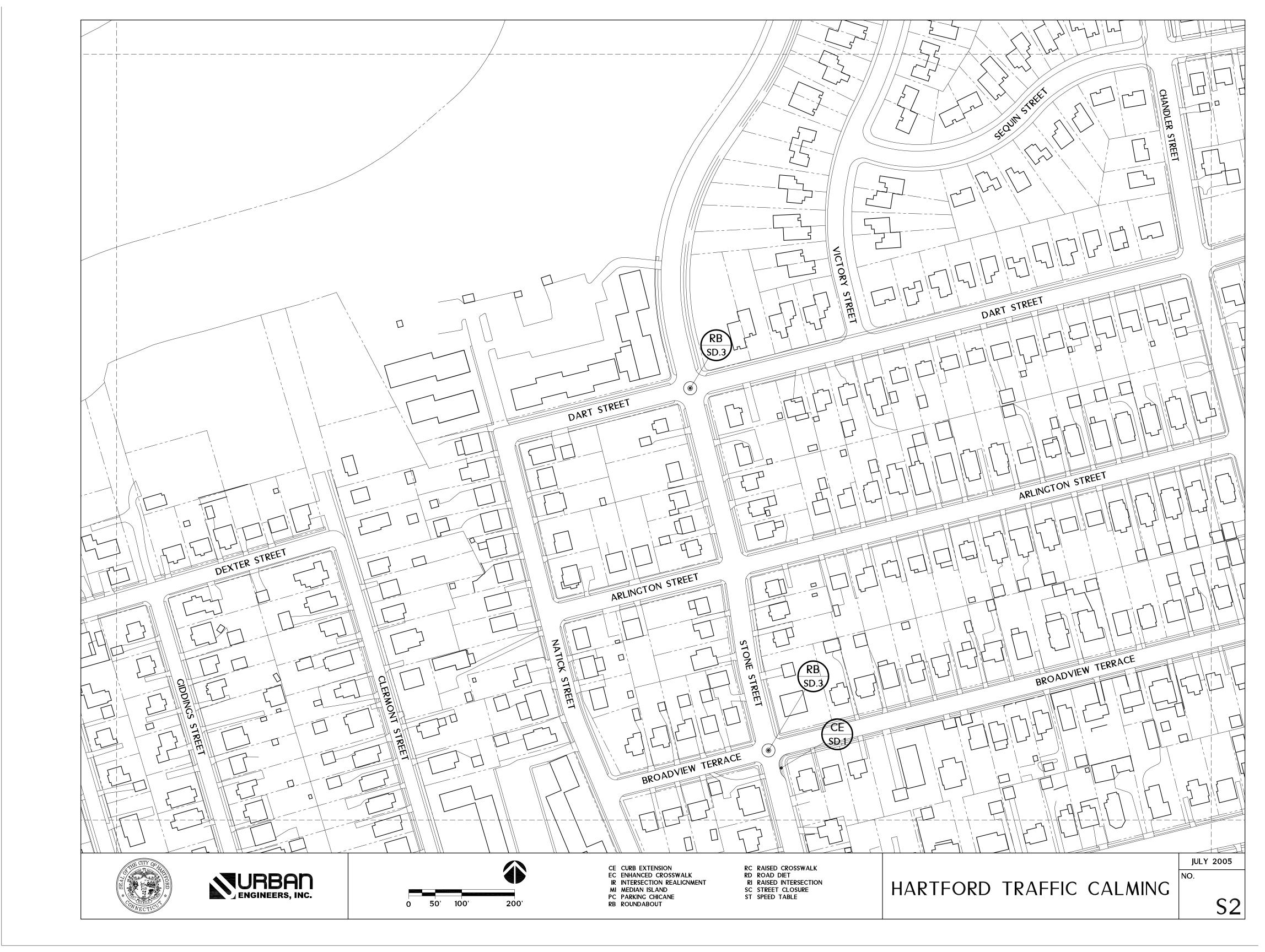


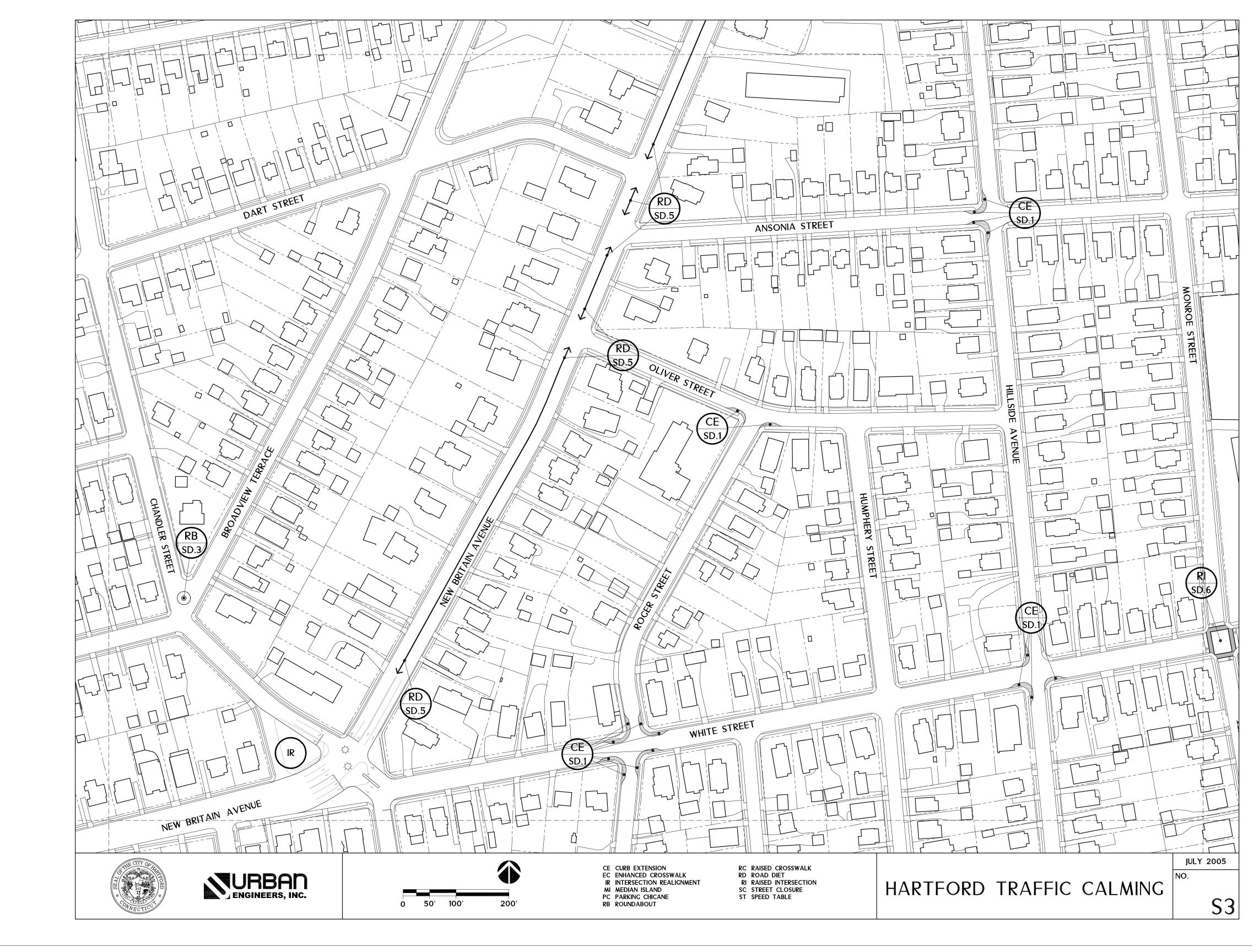


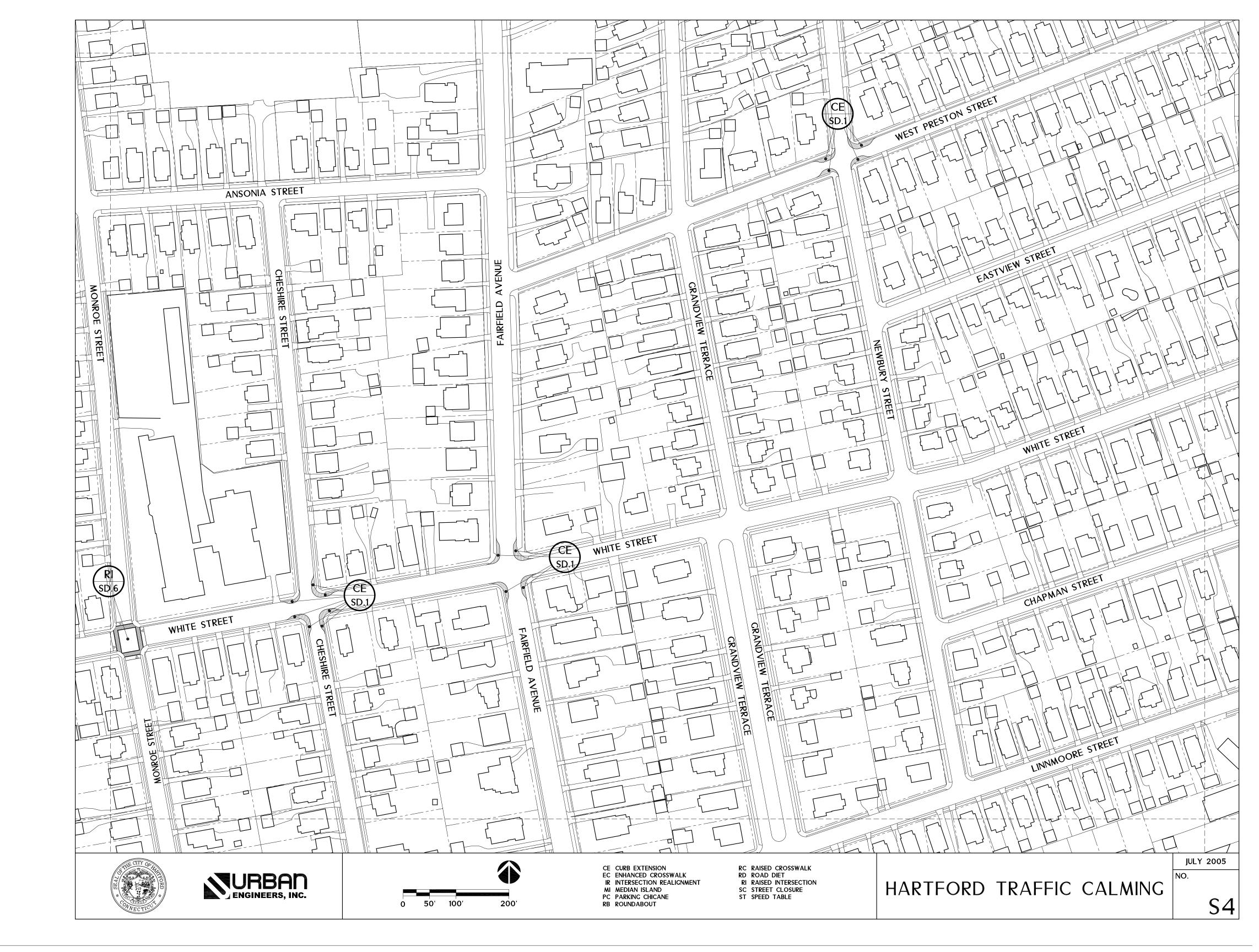


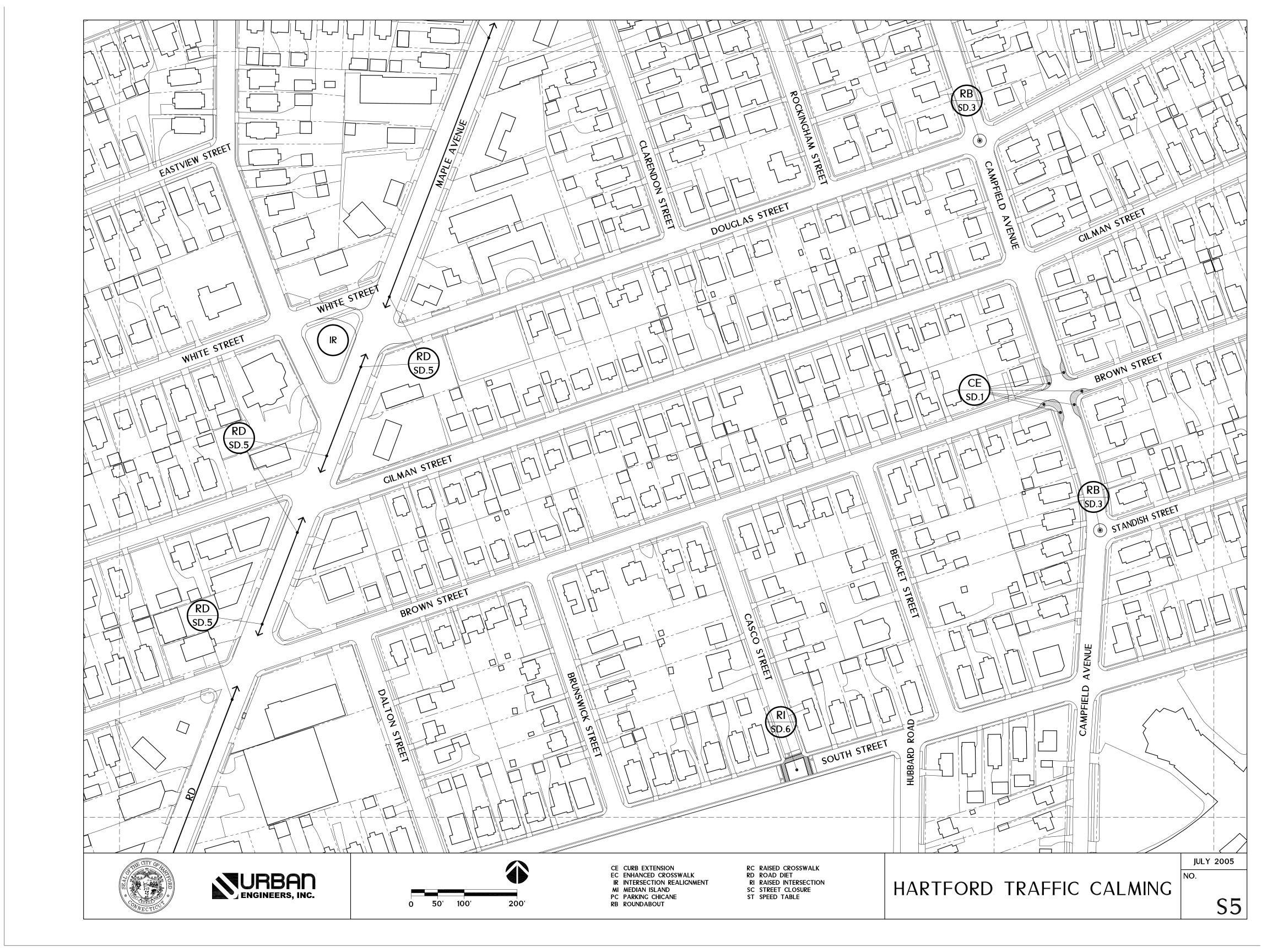


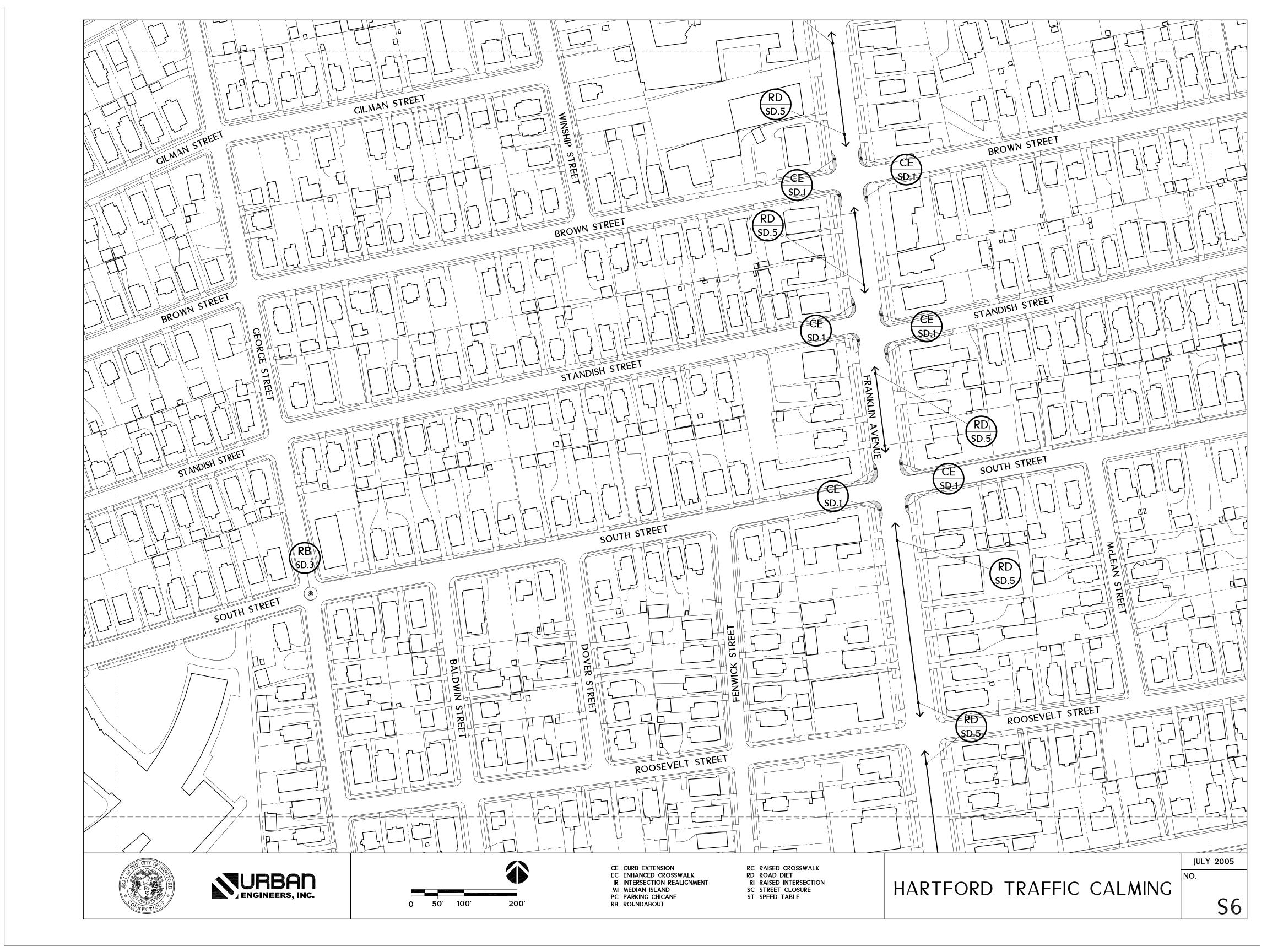


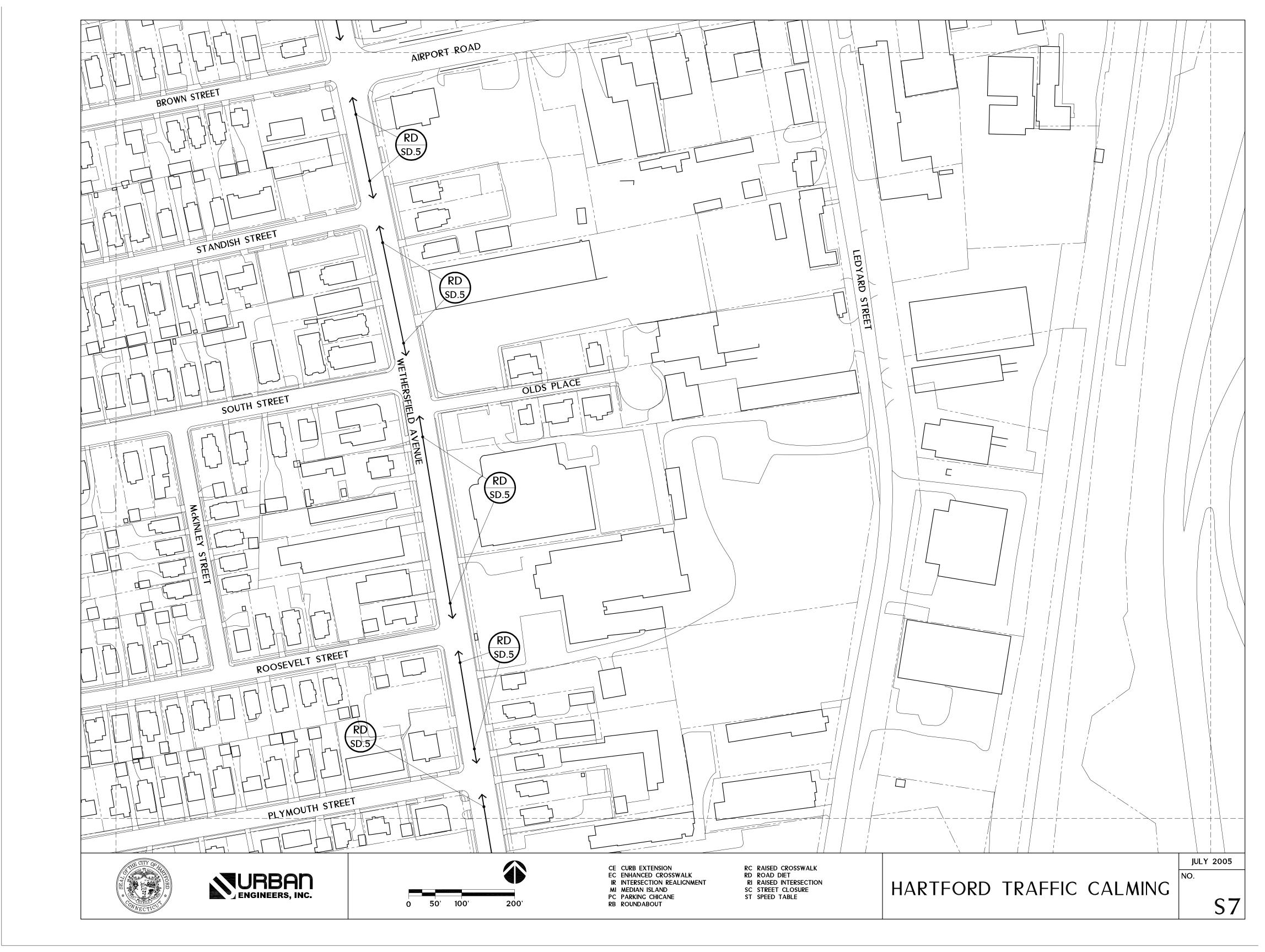


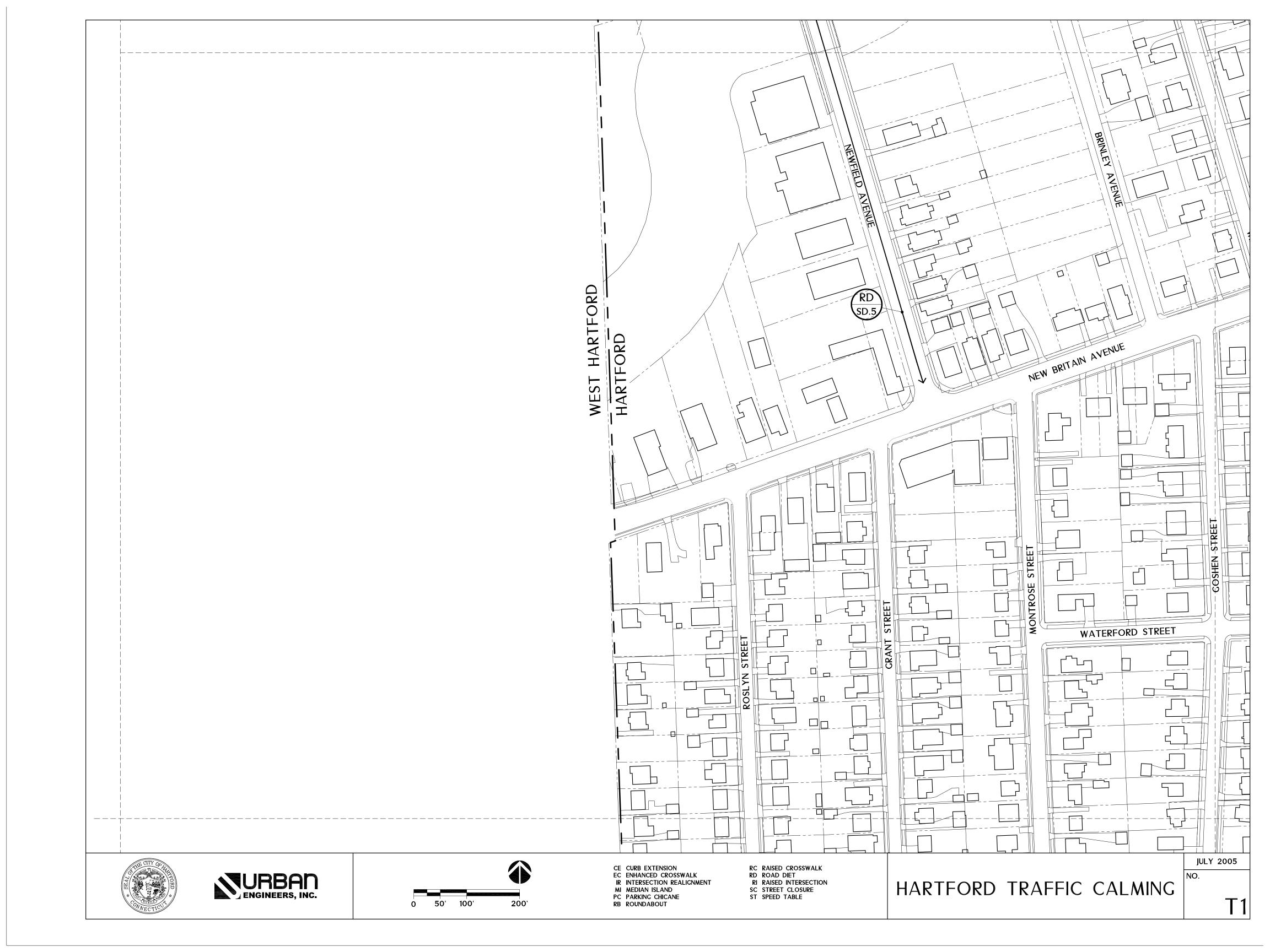


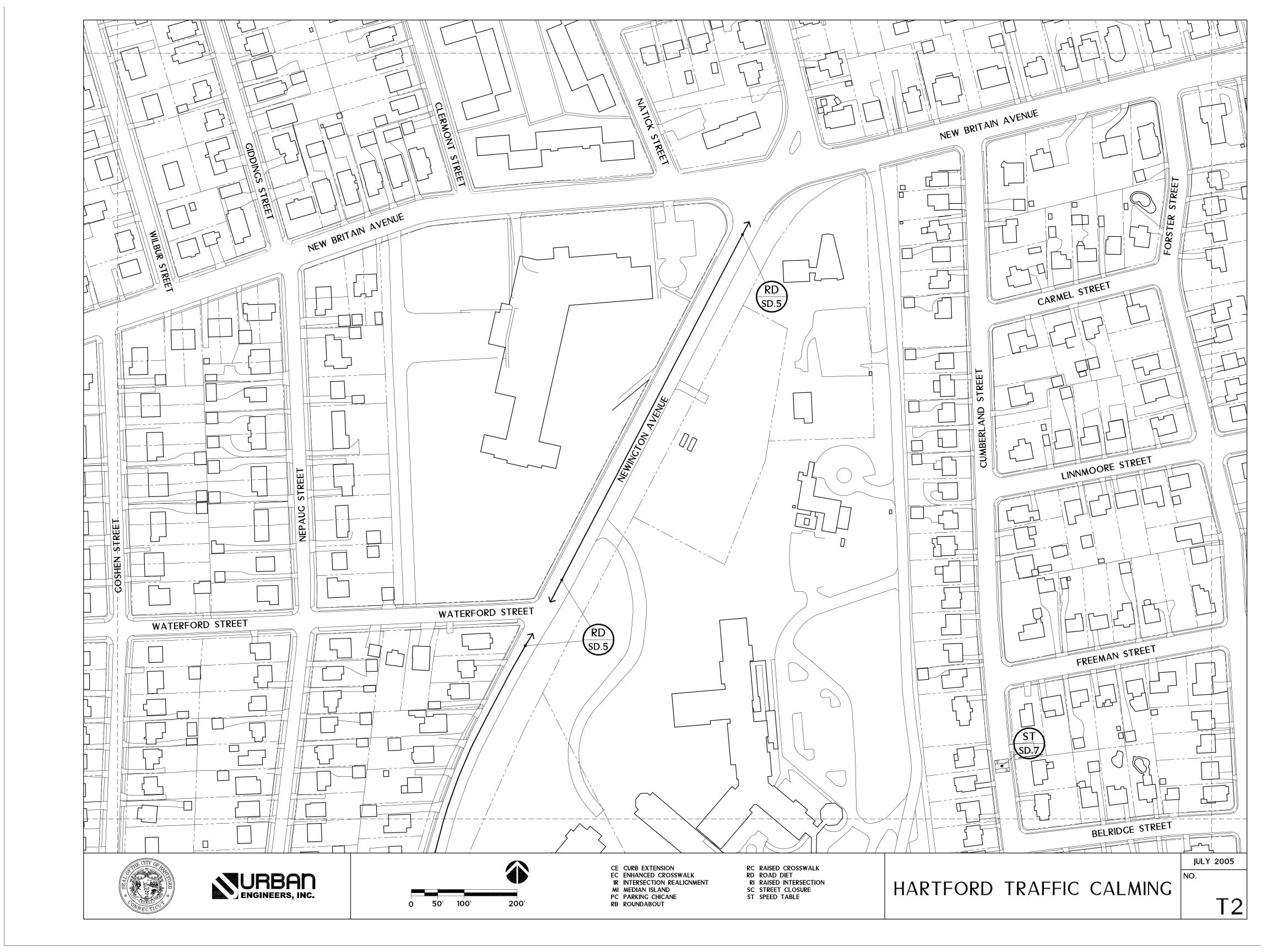


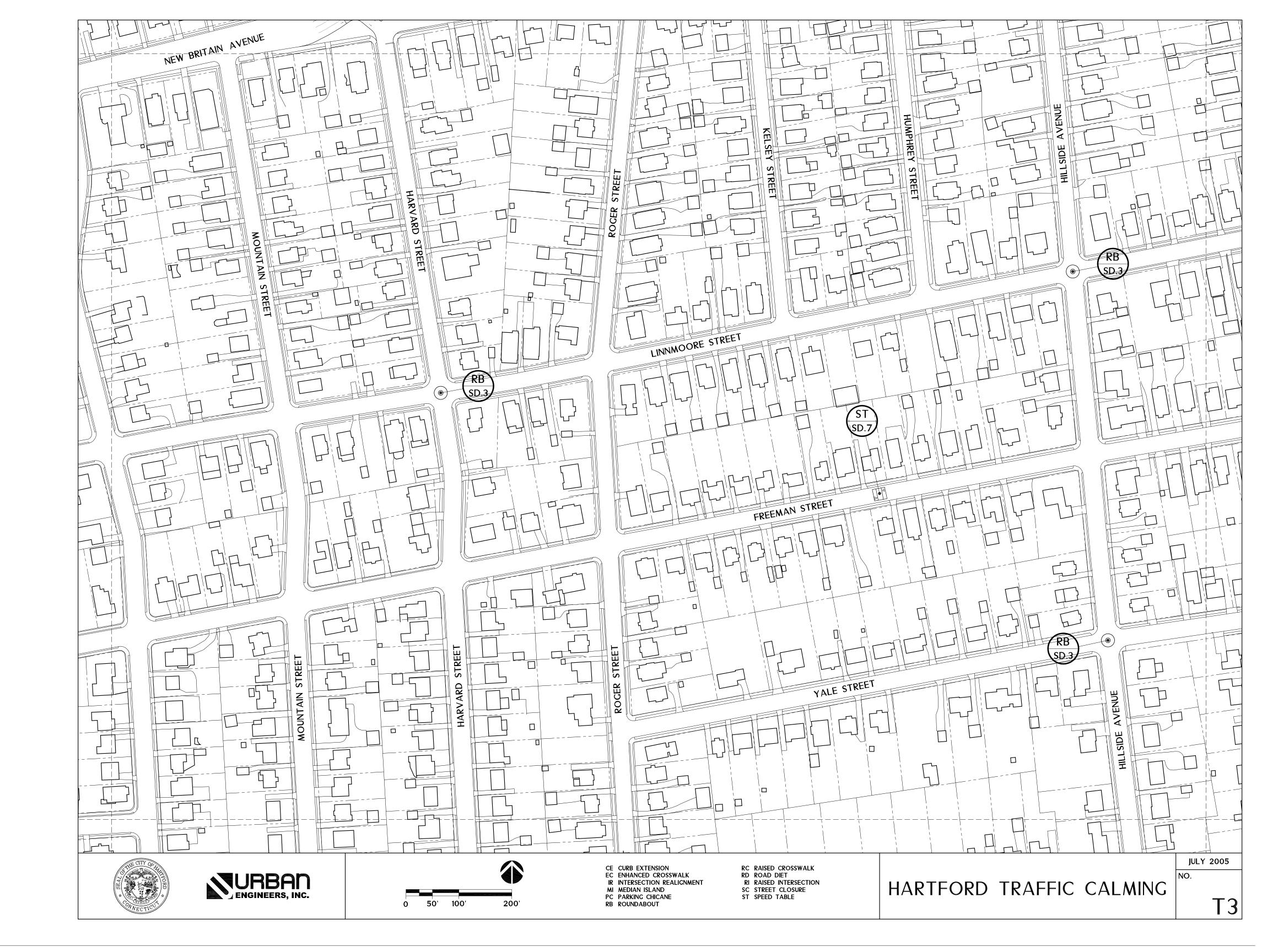


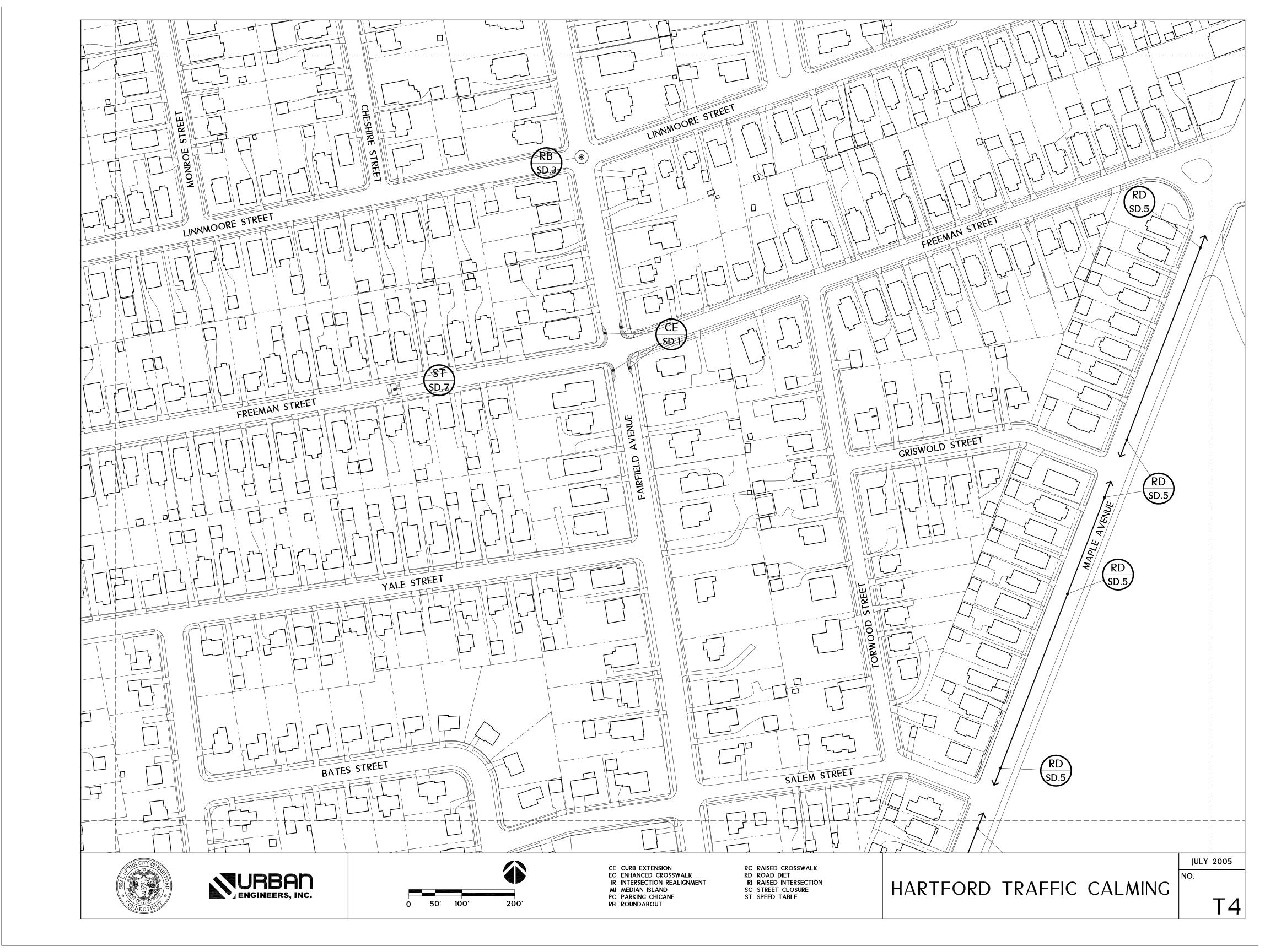


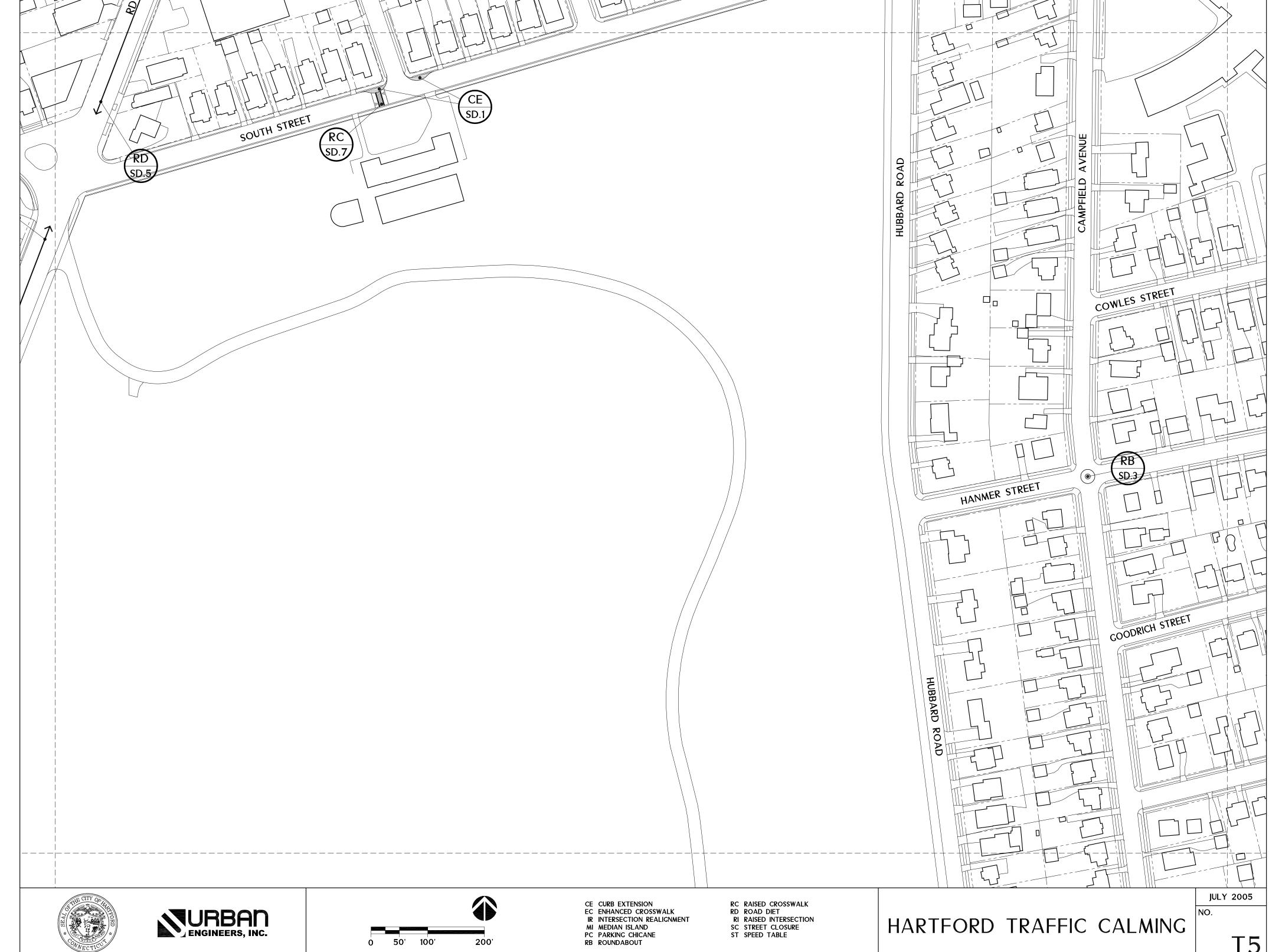




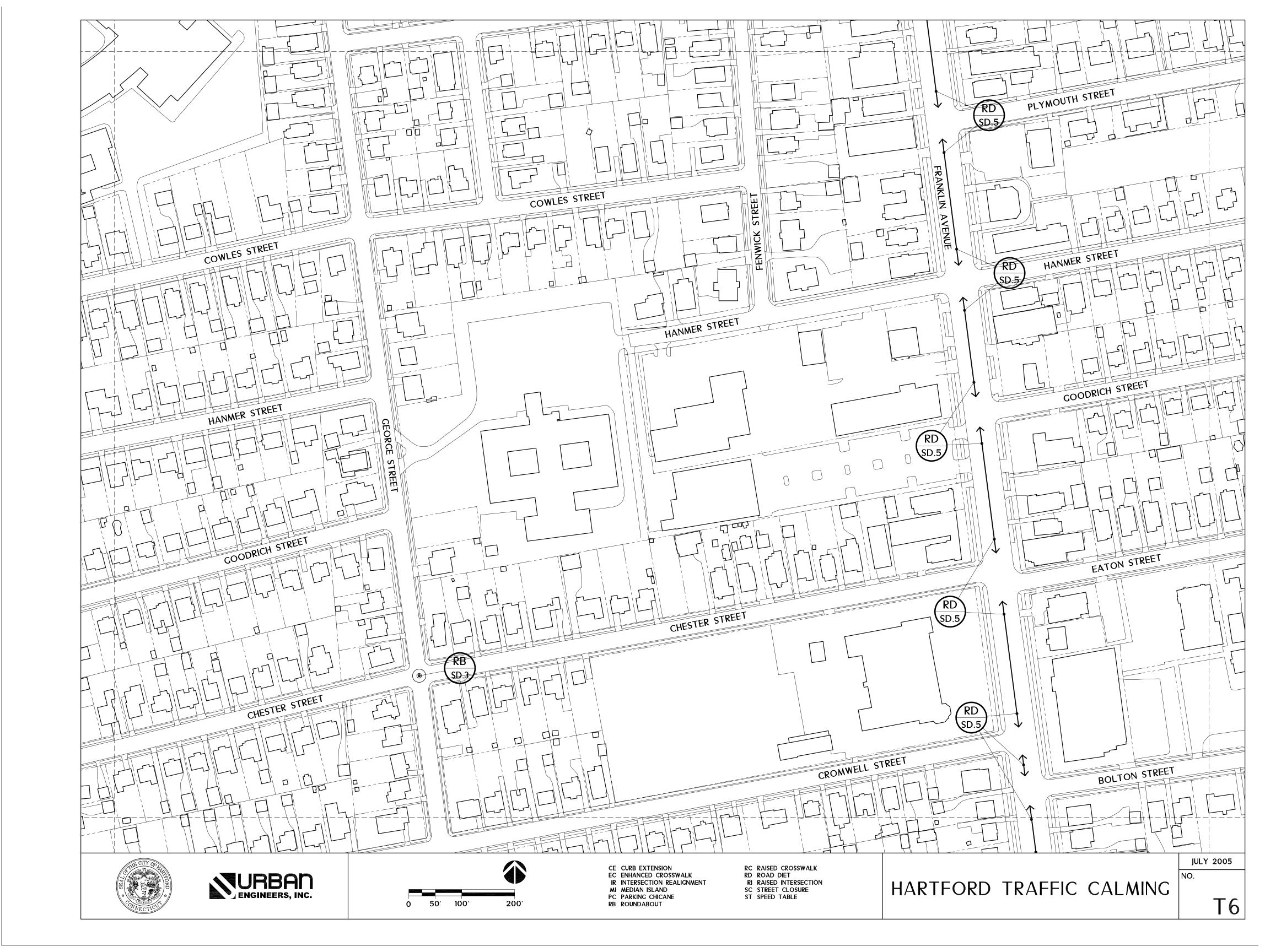


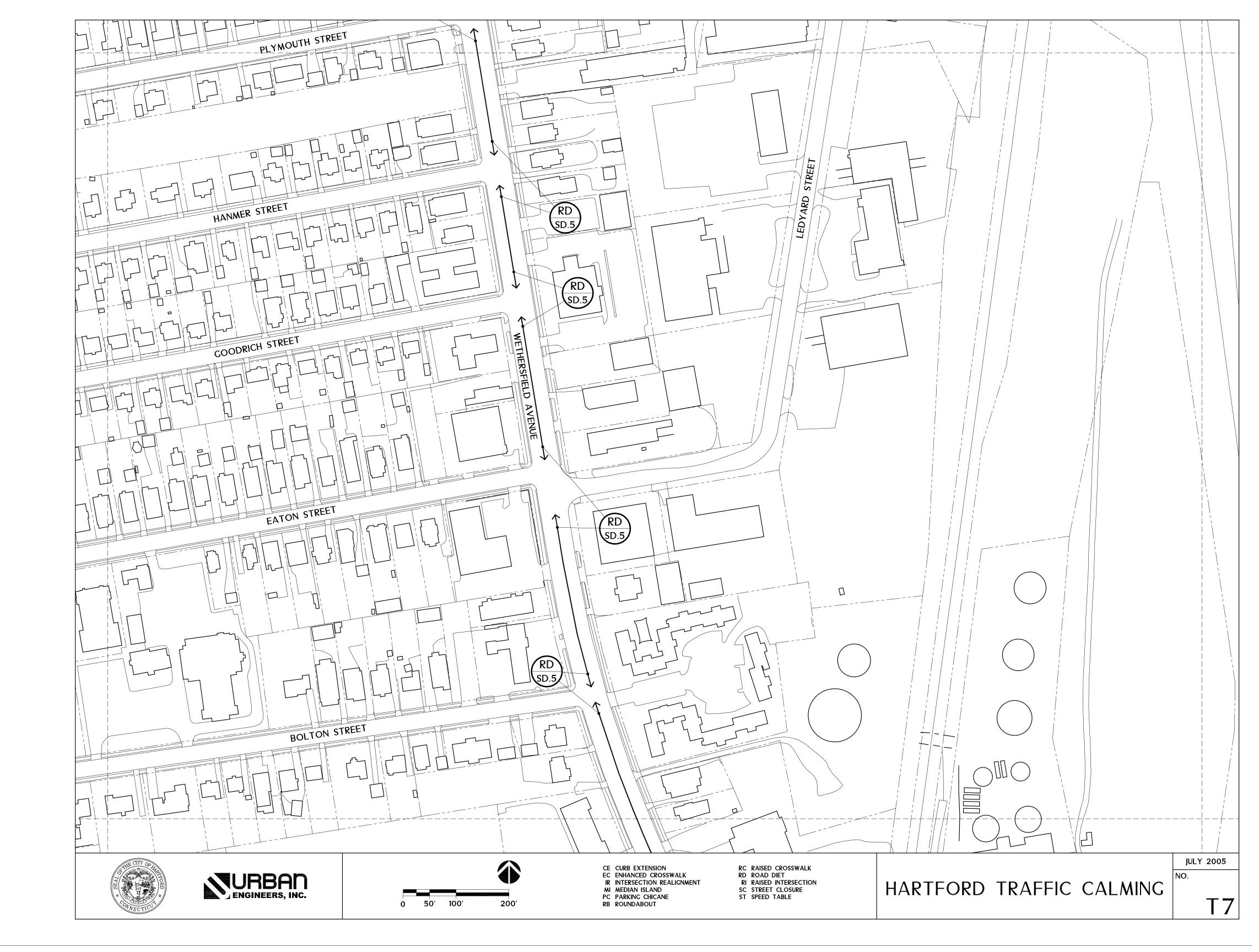


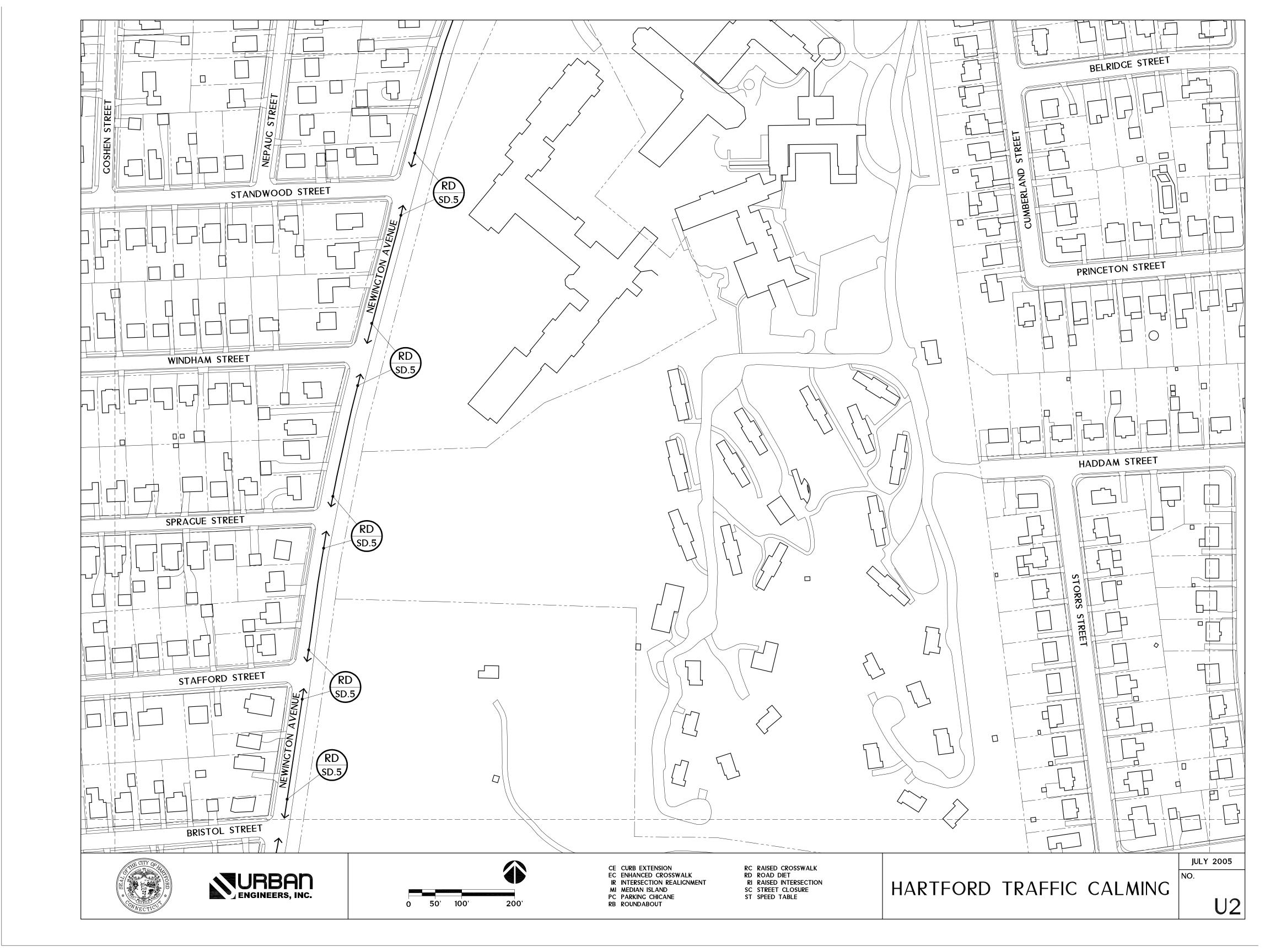


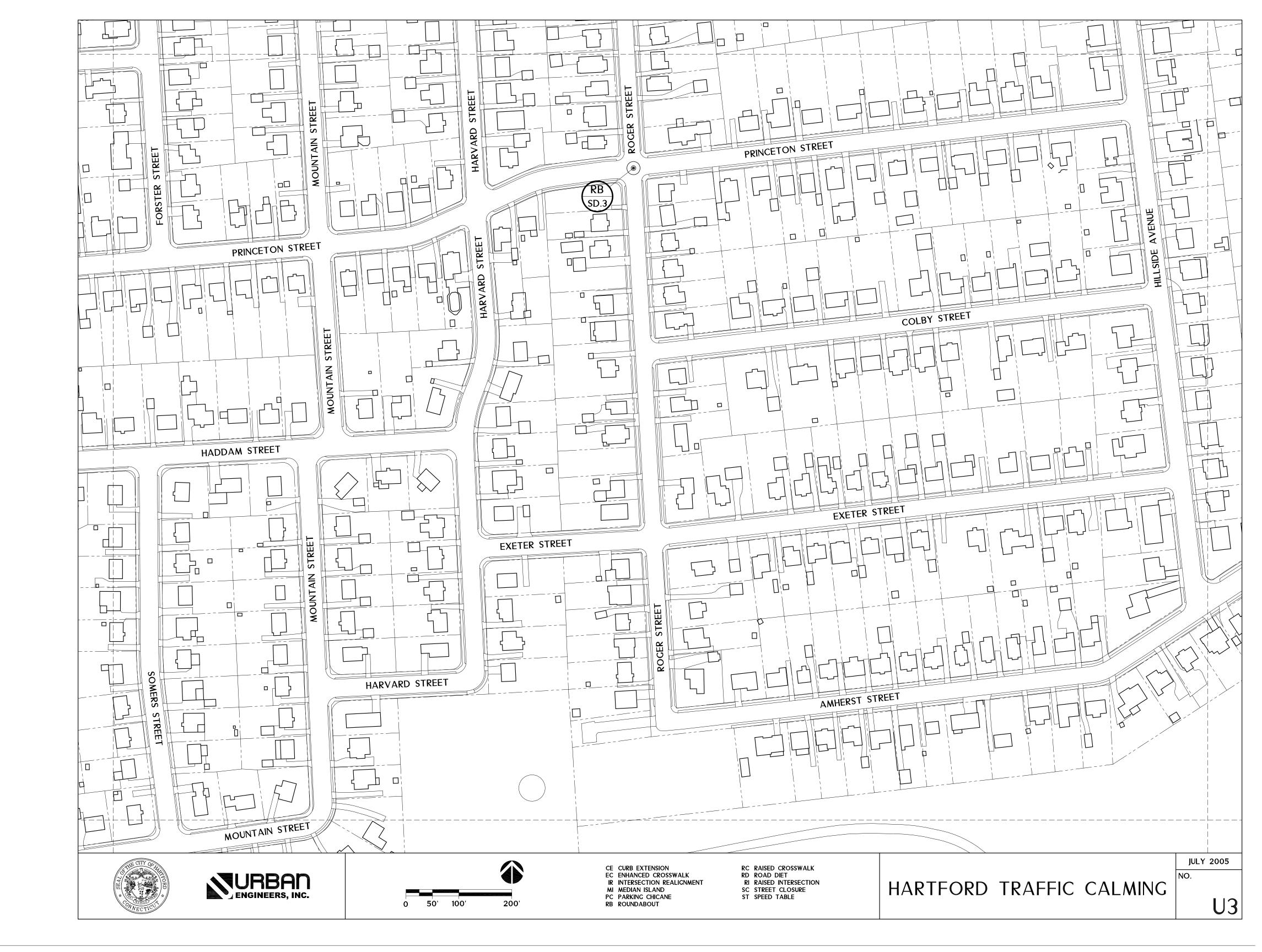


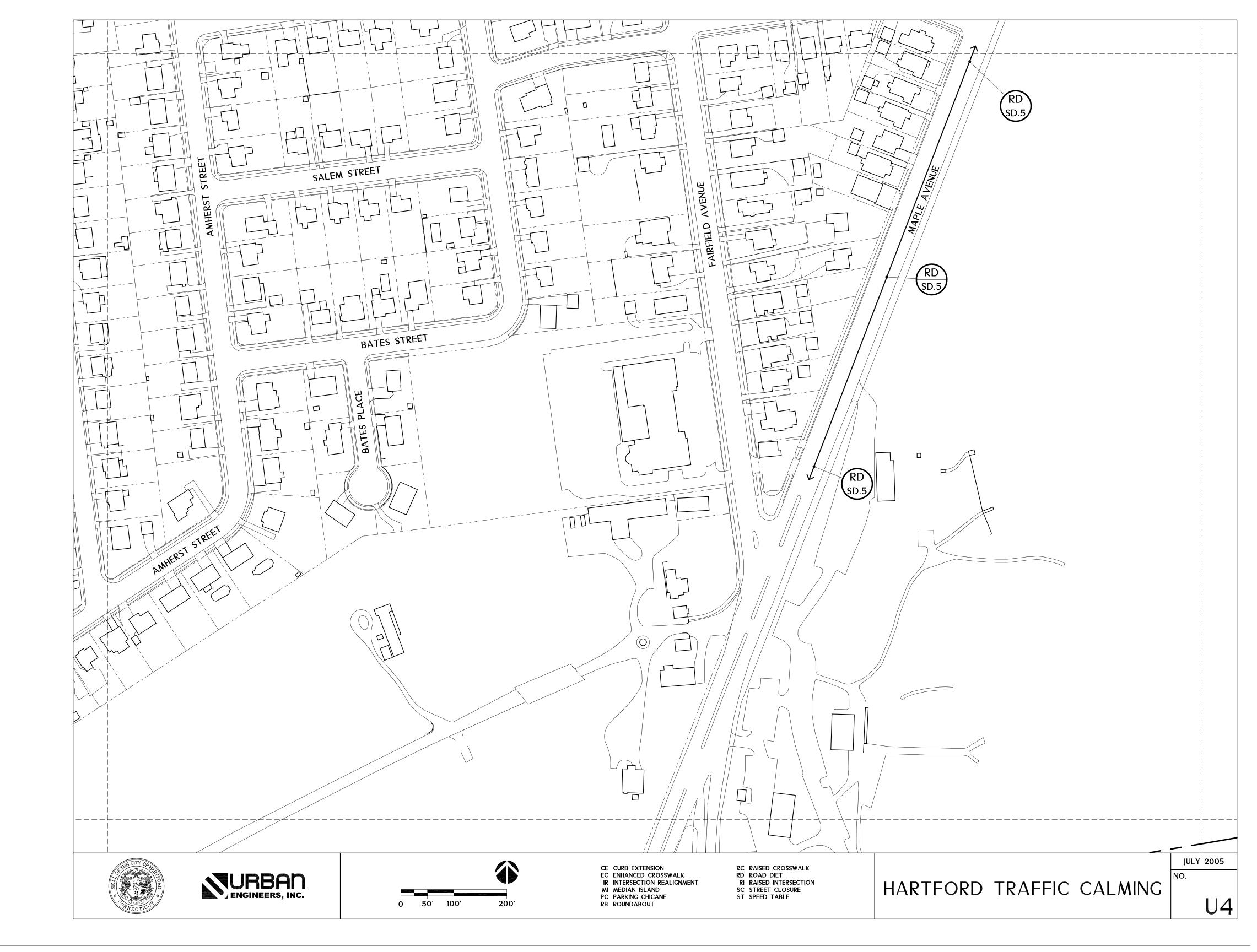
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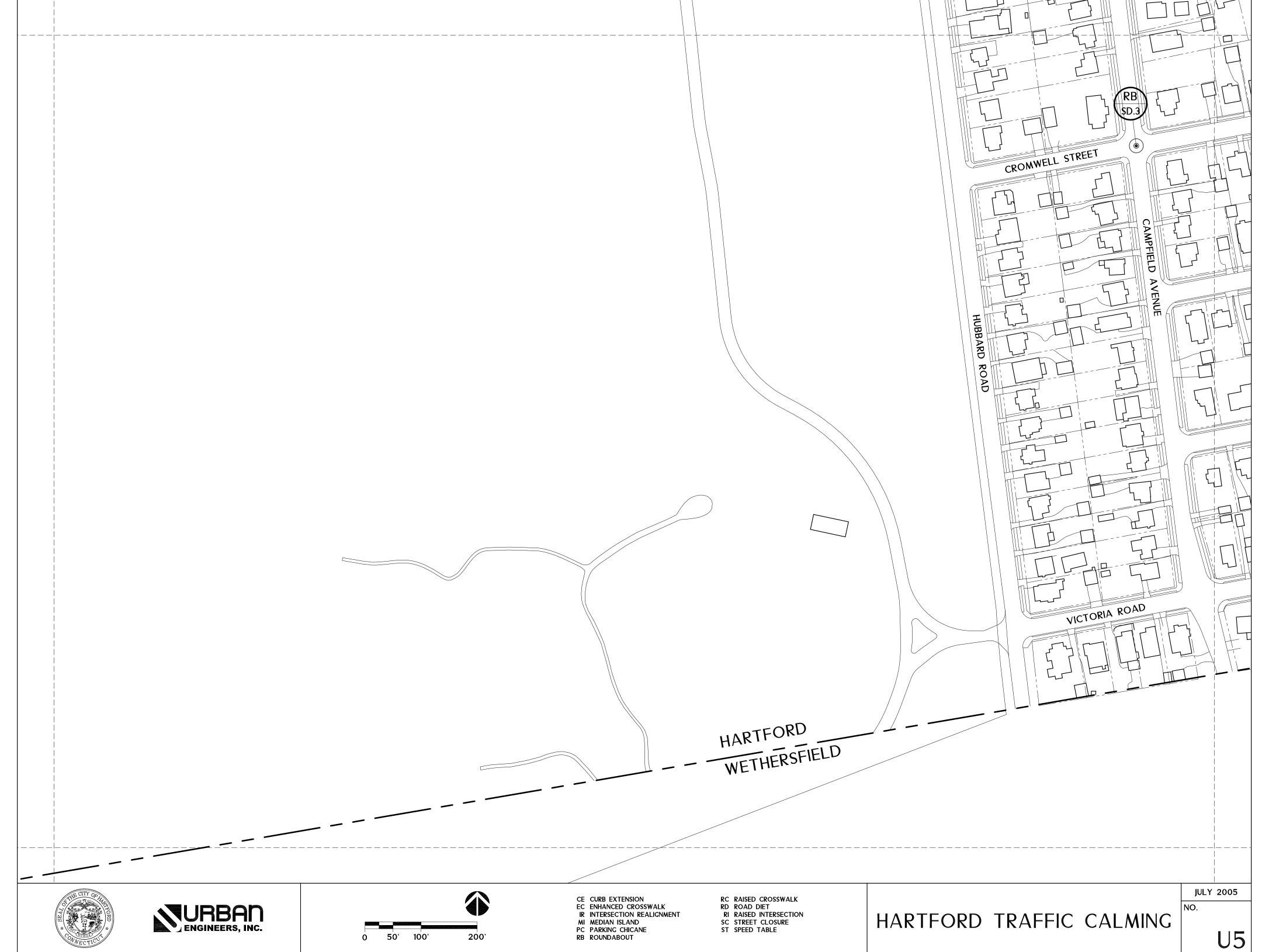


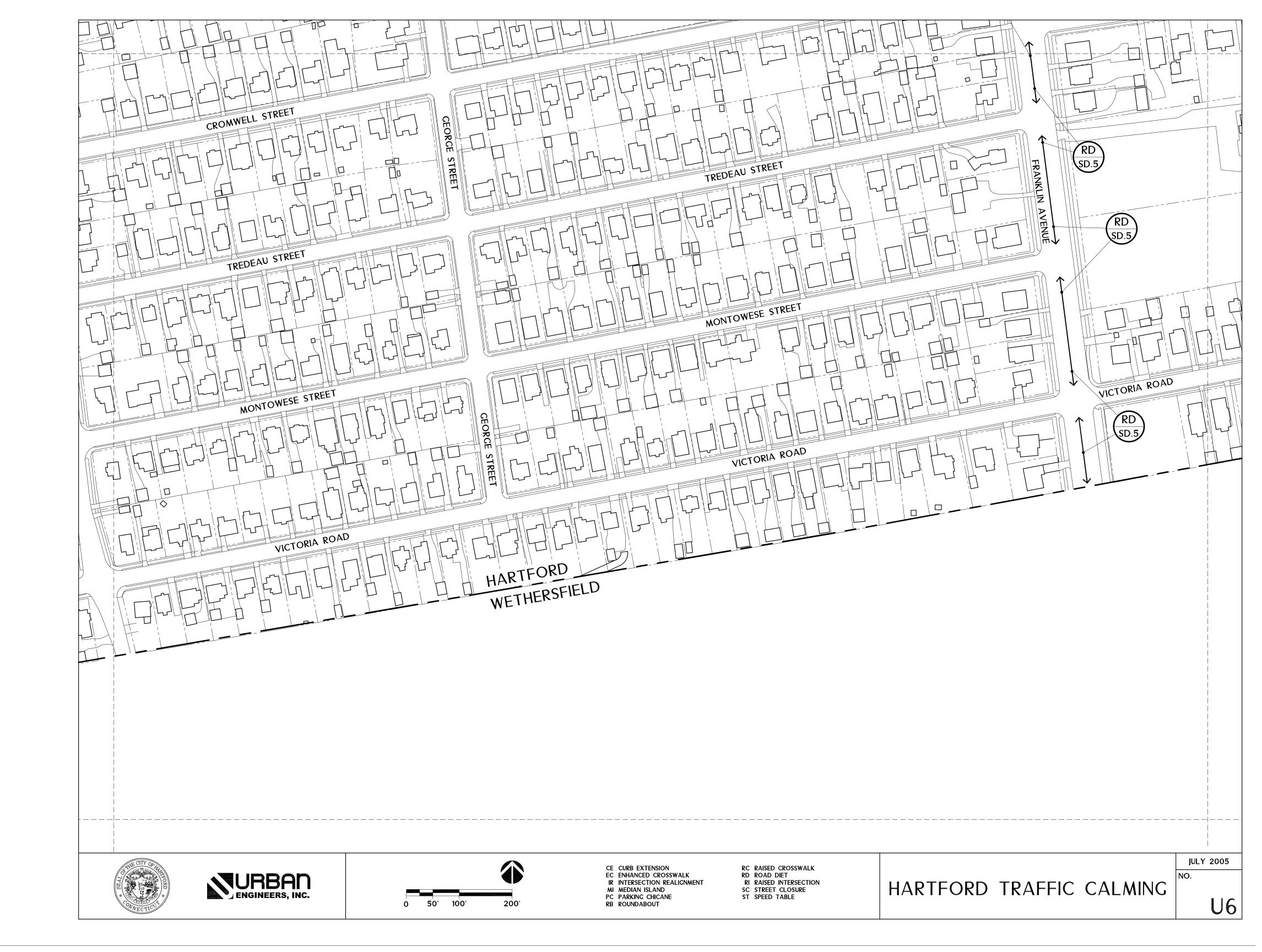


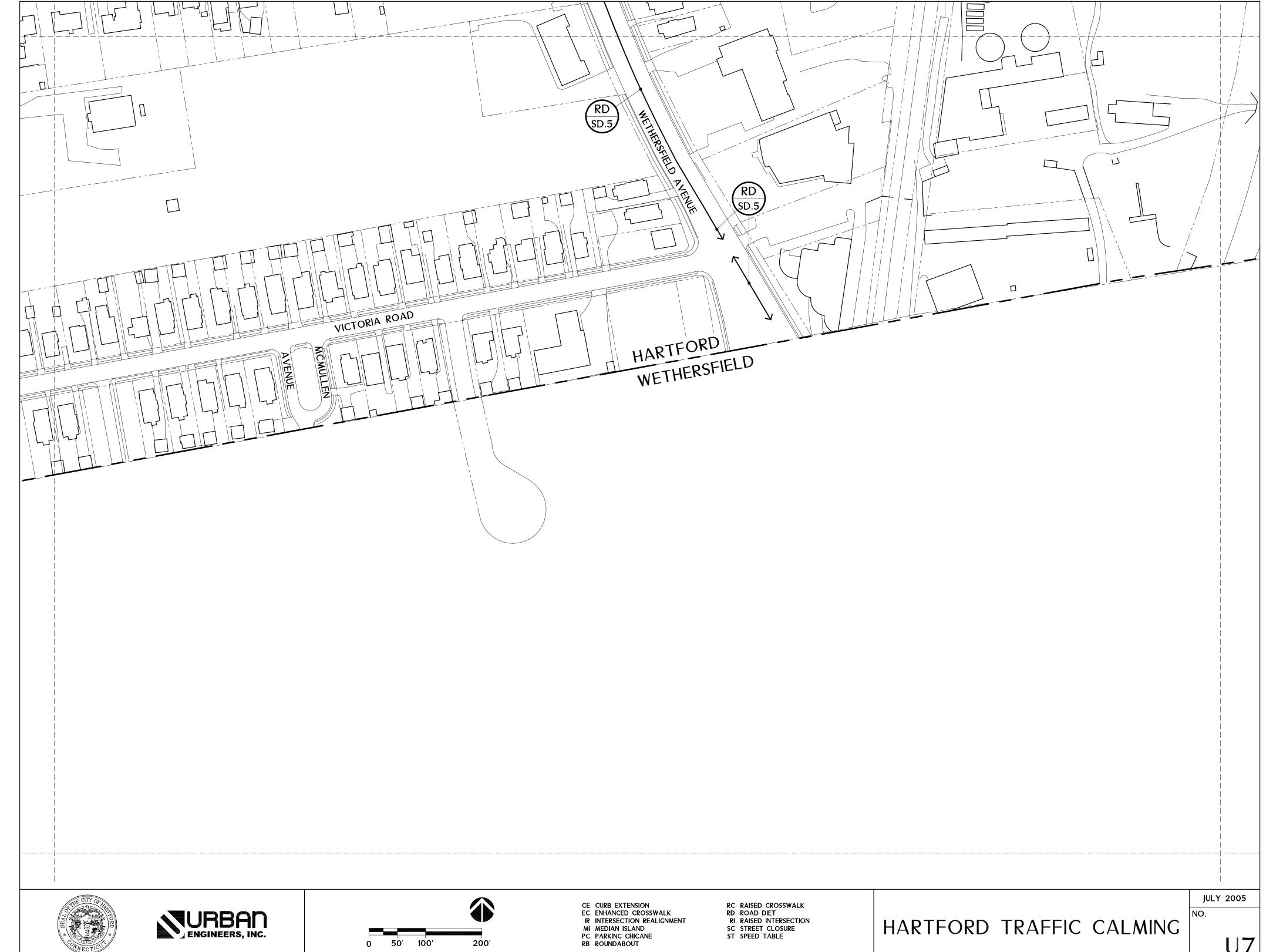


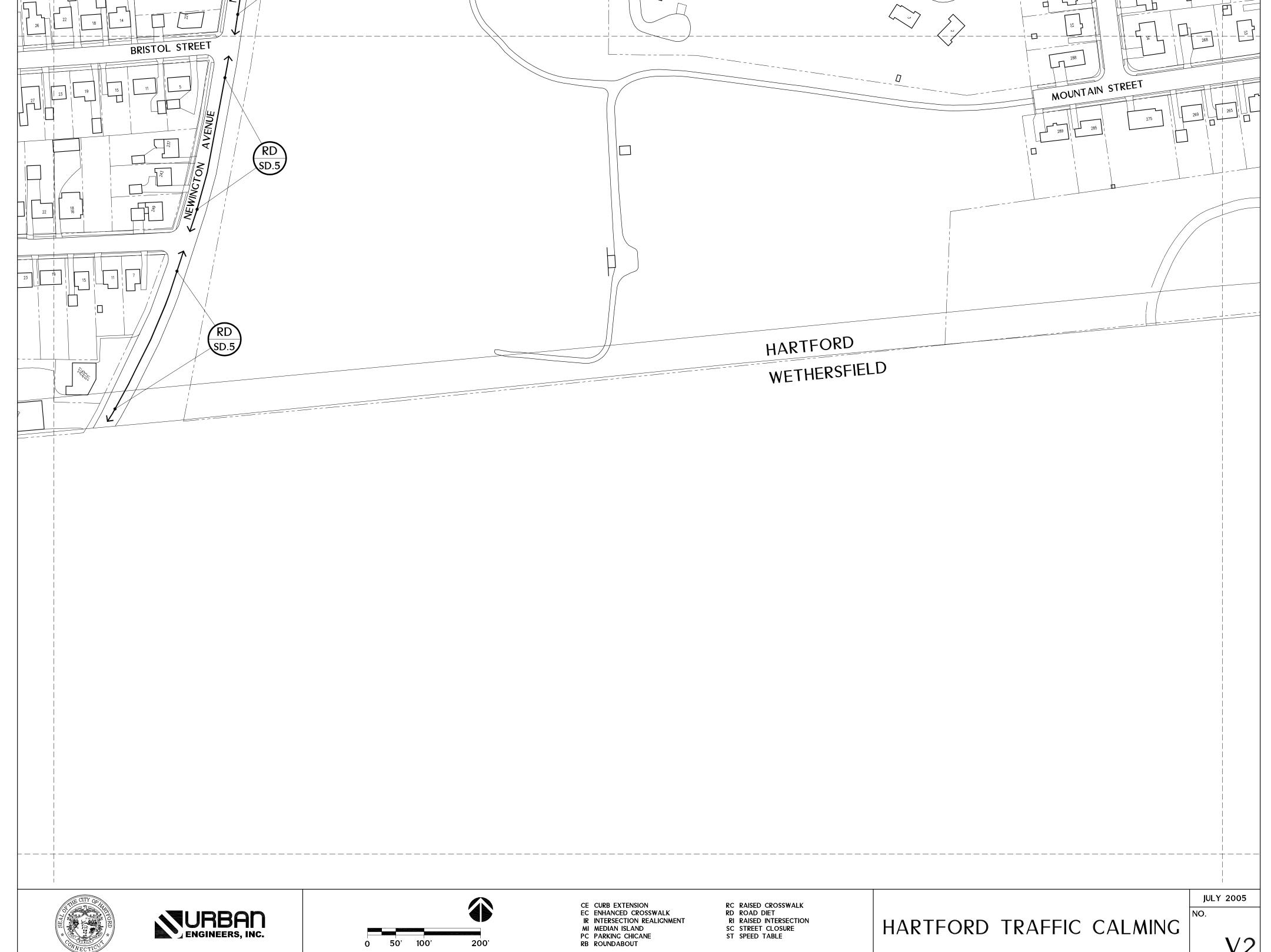


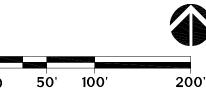


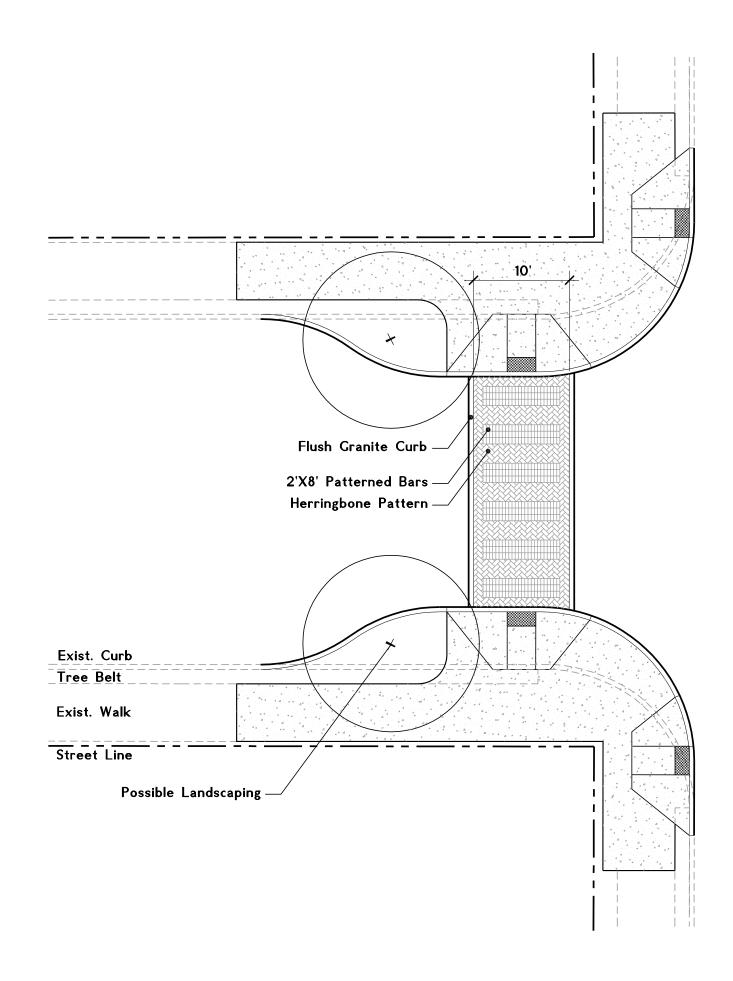








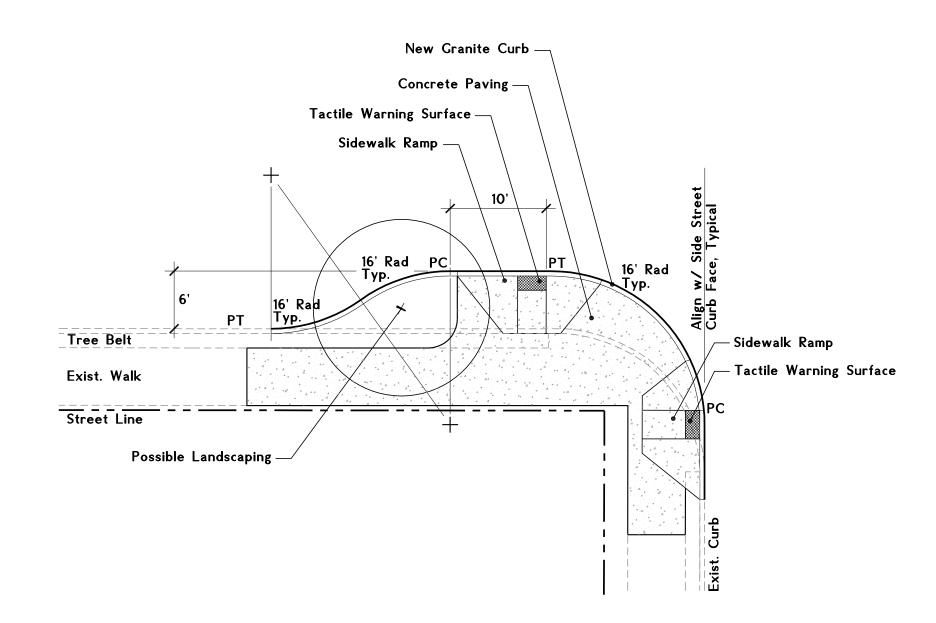




Typical Enhanced Crosswalk (shown w/ curb extensions) Not to Scale

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Typical Curb Extension

Not to Scale





CE CURB EXTENSION EC ENHANCED CROSSWALK

IR INTERSECTION REALIGNMENT

MI MEDIAN ISLAND

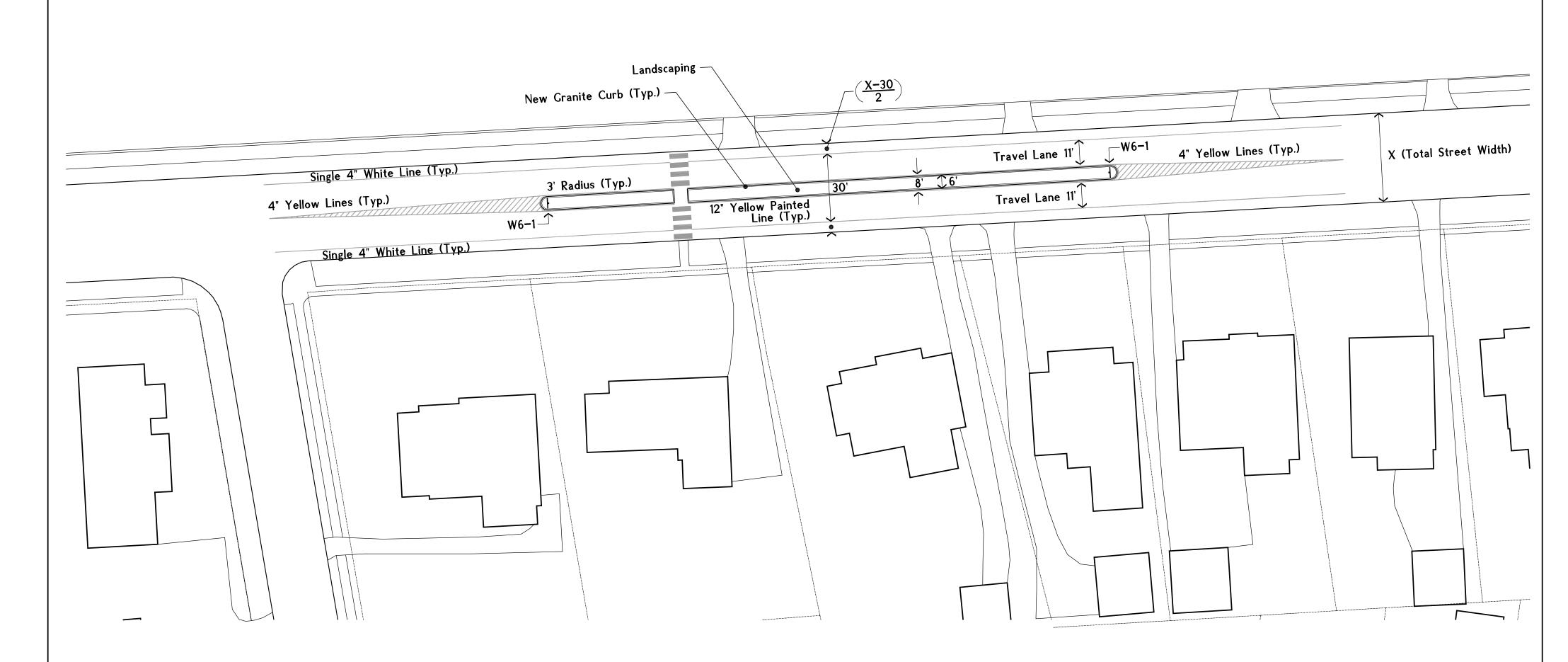
PC PARKING CHICANE RB ROUNDABOUT

RC RAISED CROSSWALK RD ROAD DIET RI RAISED INTERSECTION SC STREET CLOSURE

ST SPEED TABLE

STANDARD DETAILS HARTFORD TRAFFIC CALMING TYPICAL ENHANCED CROSSWALK/ CURB EXTENSION

JULY 2005



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Typical Median Island

Not to Scale





CE CURB EXTENSION

EC ENHANCED CROSSWALK

IR INTERSECTION REALIGNMENT

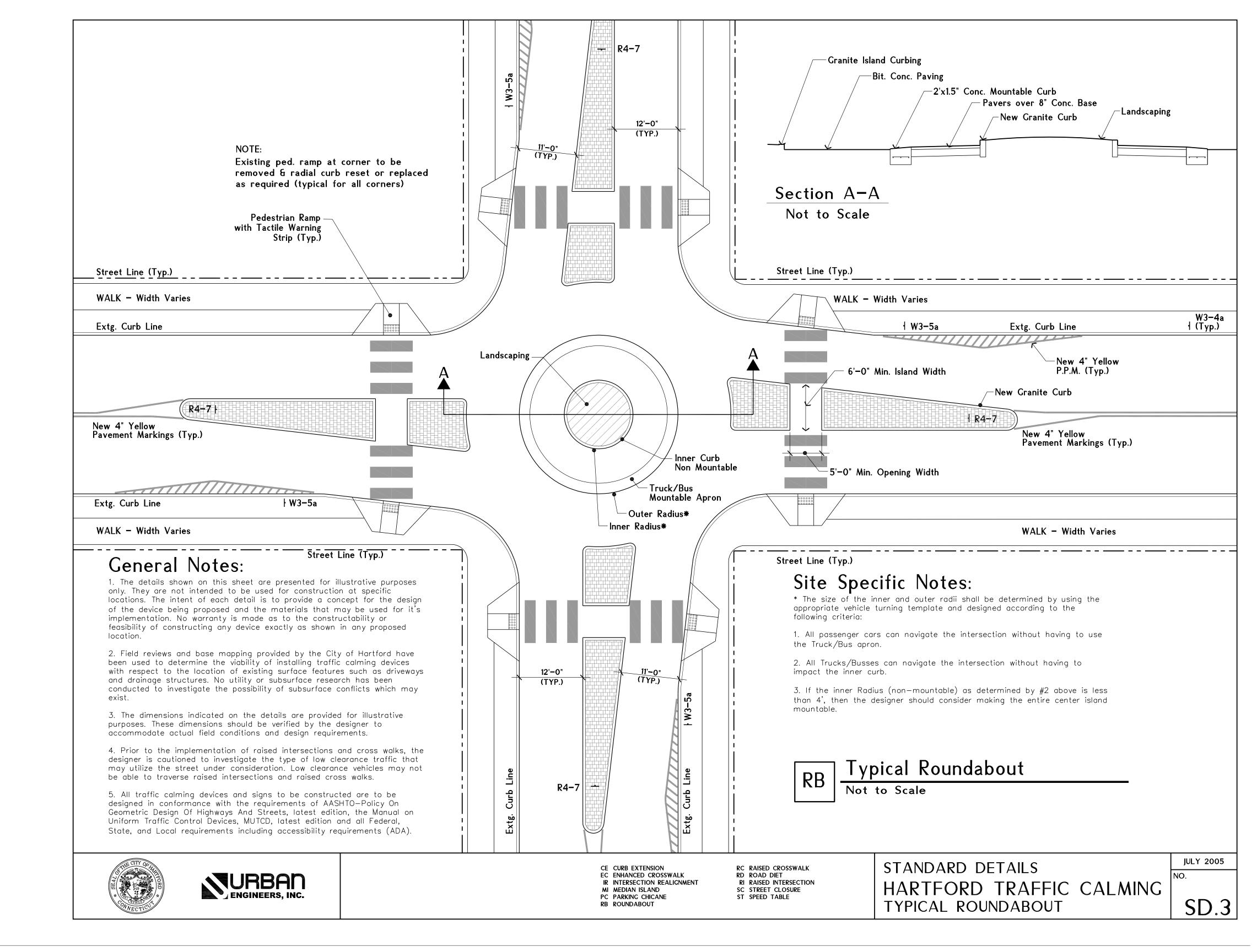
MI MEDIAN ISLAND PC PARKING CHICANE RB ROUNDABOUT

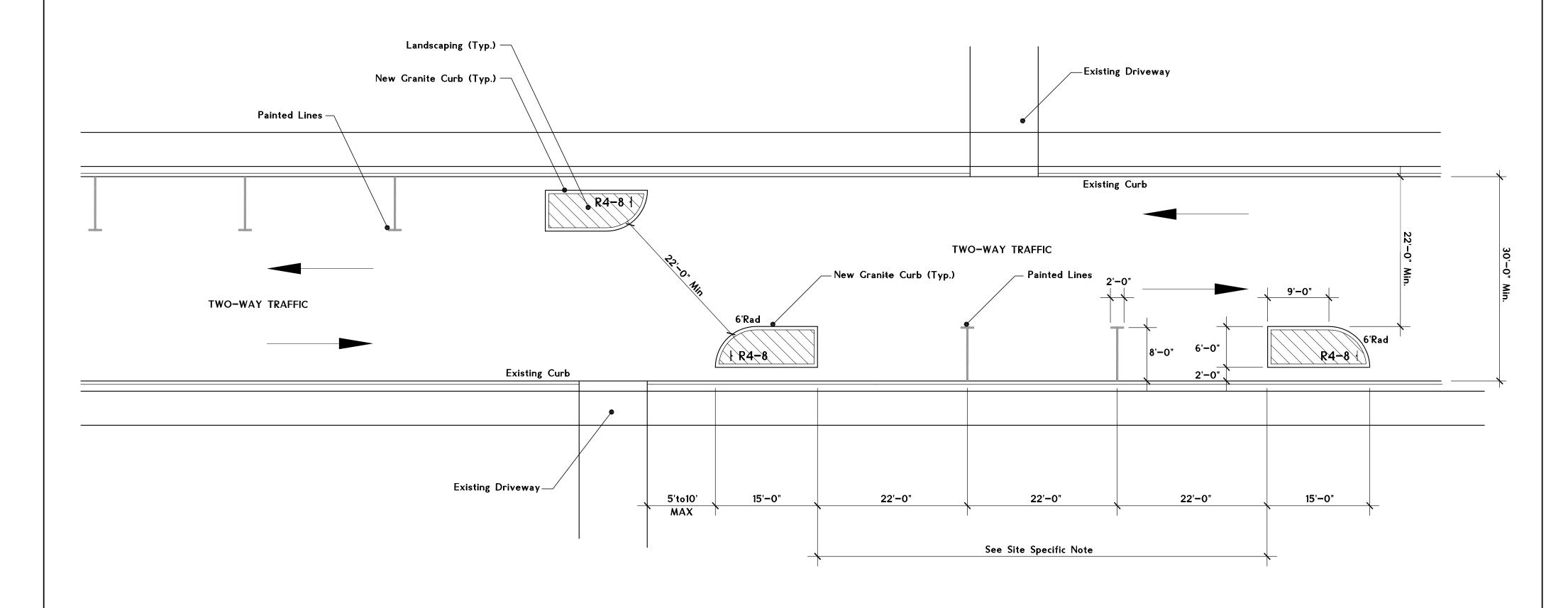
RC RAISED CROSSWALK RD ROAD DIET

RI RAISED INTERSECTION
SC STREET CLOSURE
ST SPEED TABLE

STANDARD DETAILS HARTFORD TRAFFIC CALMING TYPICAL MEDIAN ISLAND

JULY 2005





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Site Specific Note:

The number of parking spaces shall be determined by the distance between driveway openings. Angular parking may be utilized where street width permits.



Typical Parking Chicane for Parallel Parking

Not to Scale





CE CURB EXTENSION
EC ENHANCED CROSSWALK

IR INTERSECTION REALIGNMENT
MI MEDIAN ISLAND
PC PARKING CHICANE
RB ROUNDABOUT

RC RAISED CROSSWALK
RD ROAD DIET
RI RAISED INTERSECTION
SC STREET CLOSURE

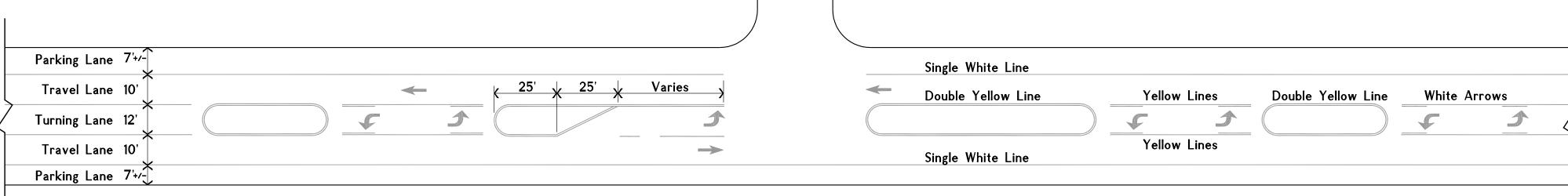
ST SPEED TABLE

STANDARD DETAILS

HARTFORD TRAFFIC CALMING
TYPICAL PARKING CHICANE (PARALLEL)

JULY 2005

NO.



Road Diet

Typical Markings @ 3-Way Intersection

(Signalized or Non Signalized)

Parking Lane 7'+/-Travel Lane 10' Turning Lane 12' Travel Lane 10' Parking Lane 7'+/-

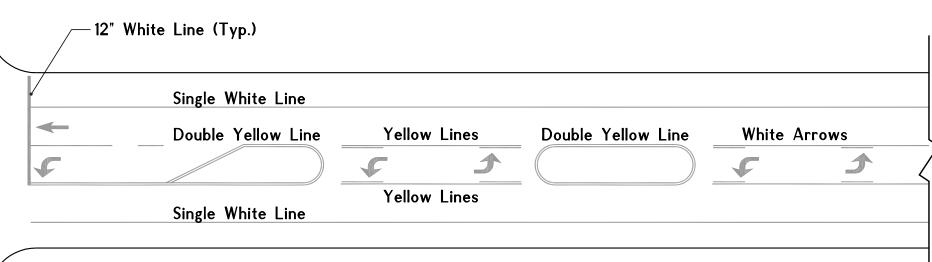
Road Diet

Typical Markings @ 4-Way Intersection

(Signalized or Non Signalized)

Site Specific Notes:

- 1. Storage lengths and refuge islands to be determined during final design.
- 2. Existing parking to be maintained.
- 3. Defined (marked) parking stalls. 8' width on one side and 8' + /- on the other side.
- 4. The final design should be drawn to scale to determine exact locations of pavement arrows & signing. Lane width to be adjusted accordingly.
- 5. Pavement marking lines are 4" wide.



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CE CURB EXTENSION

EC ENHANCED CROSSWALK IR INTERSECTION REALIGNMENT

MI MEDIAN ISLAND

PC PARKING CHICANE RB ROUNDABOUT

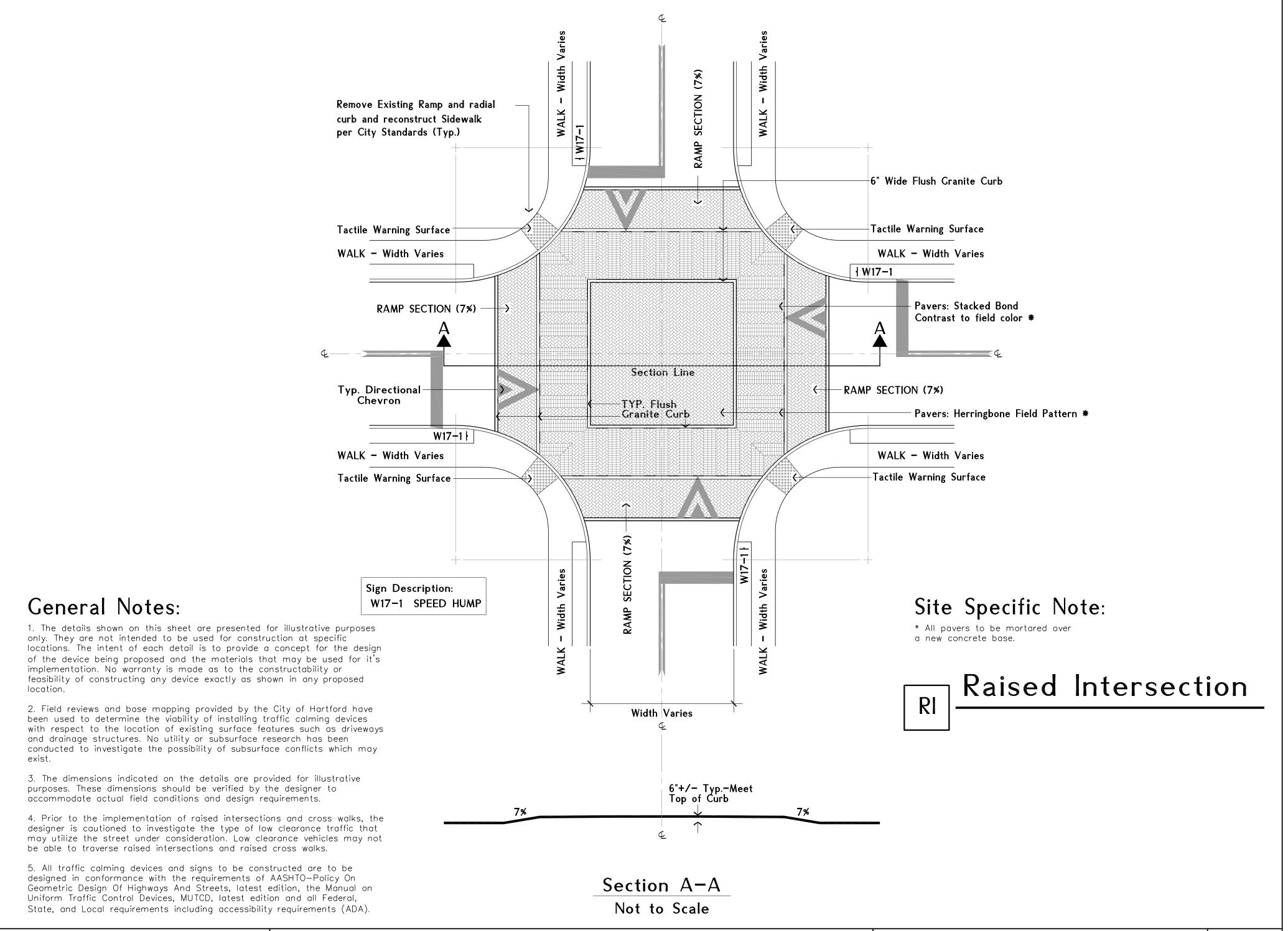
RC RAISED CROSSWALK RD ROAD DIET RI RAISED INTERSECTION

ST SPEED TABLE

SC STREET CLOSURE

STANDARD DETAILS HARTFORD TRAFFIC CALMING TYPICAL ROAD DIET (3-WAY & 4-WAY INTERSECTION)

JULY 2005







CE CURB EXTENSION
EC ENHANCED CROSSWALK
IR INTERSECTION REALIGNMENT

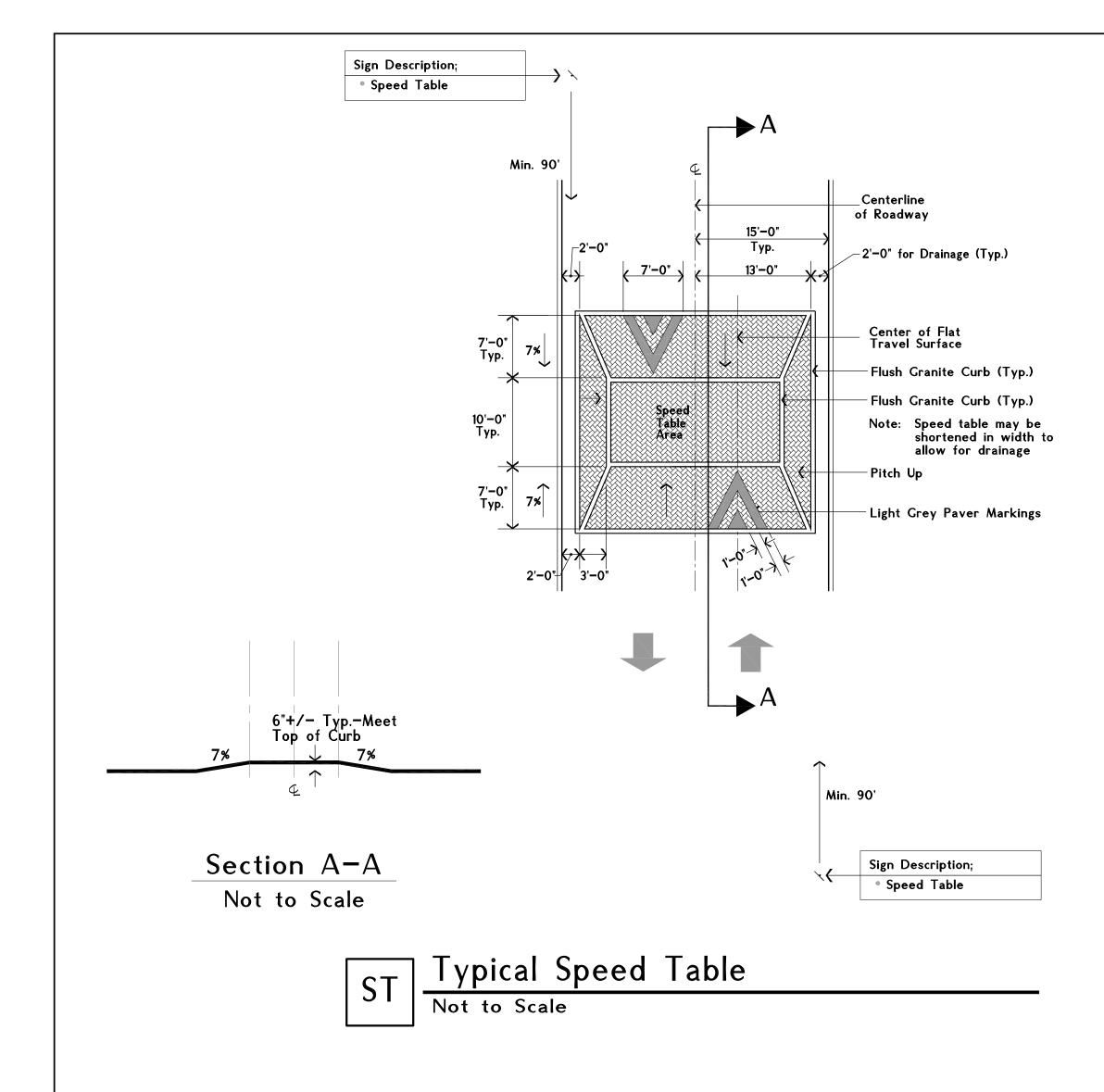
IR INTERSECTION REALIGNM
MI MEDIAN ISLAND
PC PARKING CHICANE
RB ROUNDABOUT

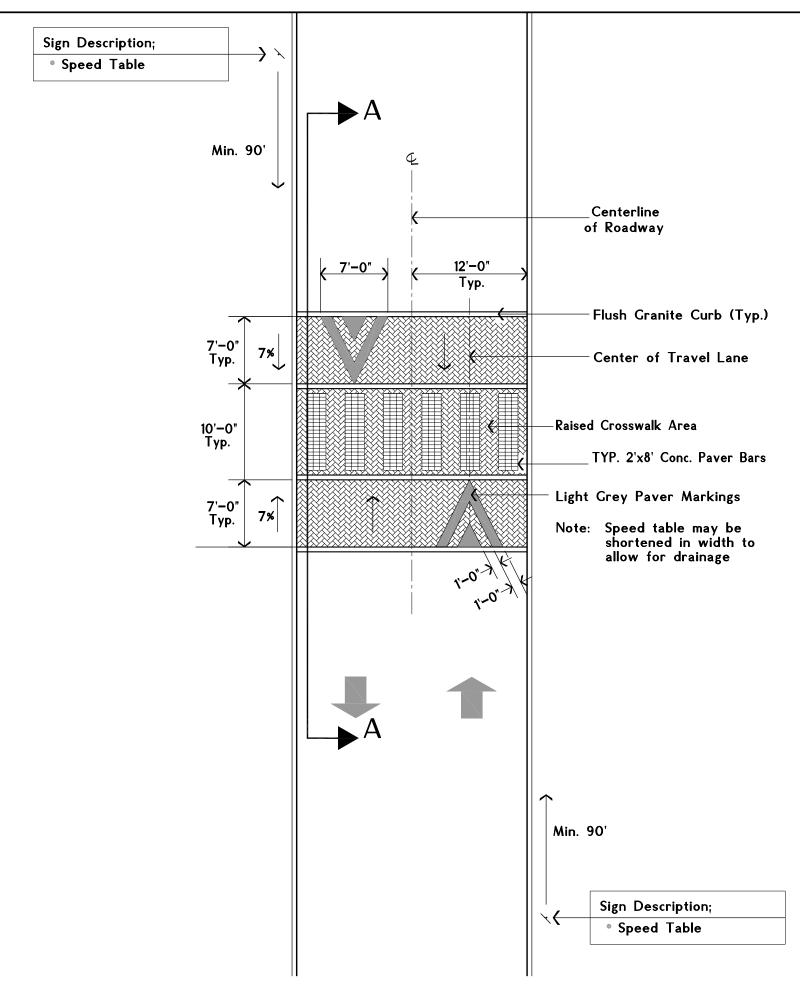
RC RAISED CROSSWALK
RD ROAD DIET
RI RAISED INTERSECTION
SC STREET CLOSURE

ST SPEED TABLE

STANDARD DETAILS
HARTFORD TRAFFIC CALMING
TYPICAL RAISED INTERSECTION

JULY 2005





Typical Raised Crosswalk Not to Scale

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CE CURB EXTENSION

EC ENHANCED CROSSWALK IR INTERSECTION REALIGNMENT

MI MEDIAN ISLAND

PC PARKING CHICANE RB ROUNDABOUT

RC RAISED CROSSWALK RD ROAD DIET

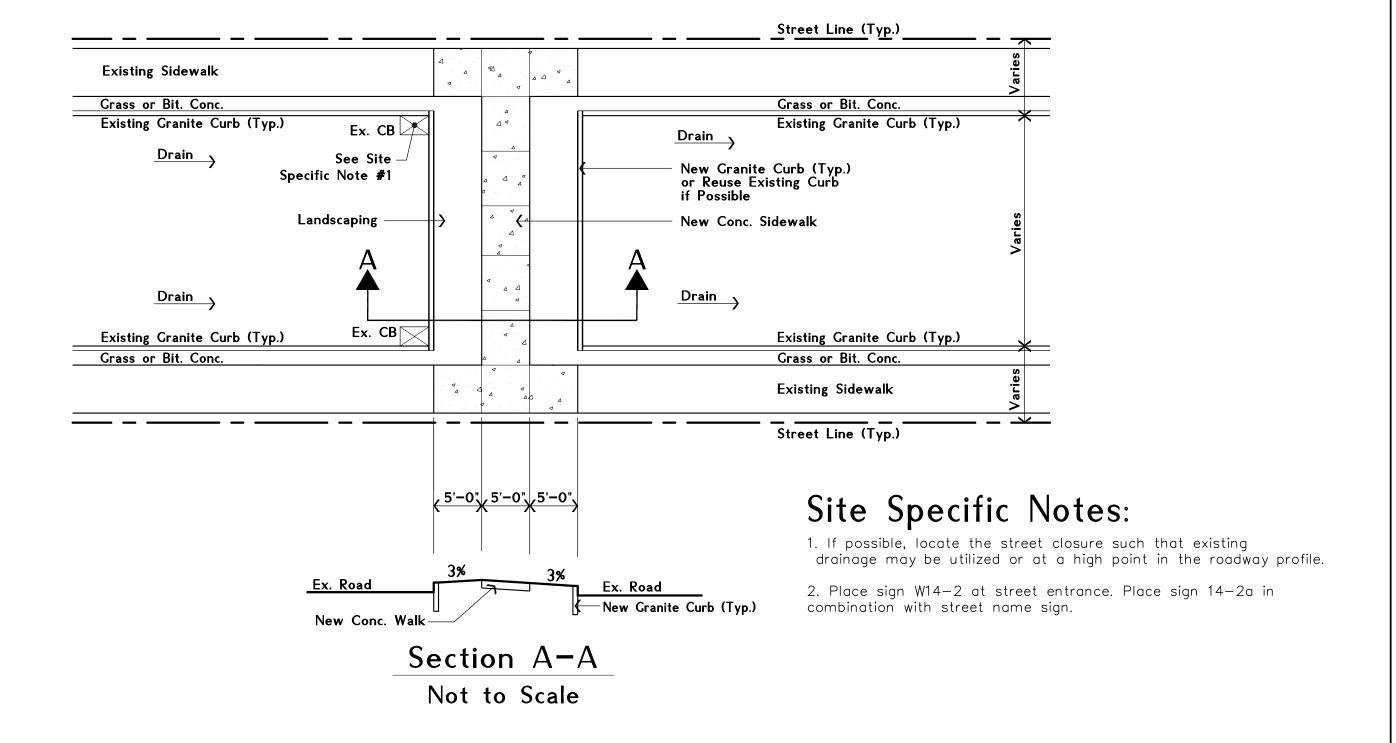
RI RAISED INTERSECTION SC STREET CLOSURE ST SPEED TABLE

STANDARD DETAILS HARTFORD TRAFFIC CALMING TYPICAL SPEED TABLE/ RAISED CROSSWALK

JULY 2005

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SC Typical Street Closure Not to Scale





EC ENHANCED CROSSWALK

IR INTERSECTION REALIGNMENT

MI MEDIAN ISLAND PC PARKING CHICANE

RB ROUNDABOUT

RC RAISED CROSSWALK RD ROAD DIET

RI RAISED INTERSECTION SC STREET CLOSURE ST SPEED TABLE

STANDARD DETAILS HARTFORD TRAFFIC CALMING TYPICAL STREET CLOSURE

JULY 2005