

SECTION S413 - SPEED HUMP

S413-1 DESCRIPTION

Work consists of construction of speed humps as required in Contract Documents and as directed by Project Manager.

References to NYSDOT specifications are to be in accordance with latest edition of *NYSDOT Standard Specifications (US Customary Units)*.

S413-2 MATERIALS

S413-2.01 Asphalt

Asphalt pavement is to be 9.5 F2 top course HMA 80 series compaction in accordance with NYSDOT Section 402 Hot Mix Asphalt (HMA) Pavements.

S413-2.02 Tack Coat

Tack coat is to be straight tack coat in accordance with NYSDOT Section 407 Tack Coat.

S413-2.03 Temporary Speed Hump

Temporary speed hump is to be prefabricated rubber product in accordance with traffic calming safety standards and specifications outlined by Institute of Transportation Engineers (ITE), and capable of being removed and reinstalled numerous times without showing signs of excessive wear and tear.

S413-2.04 Pavement Marking

Directional arrow is to be 60 mils thick 12 inch wide overlaid white plastic preformed permanent pavement marking symbol tape material in accordance NYSDOT Section 727-04 Permanent Pavement Tape.

S413-2.05 Temporary Signage

Temporary signage is to be W8-1 BUMP temporary warning sign mounted on fixed temporary sign support and are to be in accordance with NYSDOT Section 619 Work Zone Traffic Control.

S413-2.06 Asphalt Pavement Joint Adhesive

Asphalt pavement joint adhesive is to be in accordance with NYSDOT Section 705-19 Asphalt Pavement Joint Adhesive.

S413-3 CONSTRUCTION DETAILS

S413-3.01 General

Minimum of 5 days prior to commencing construction of speed hump, Contractor is to provide written notification of planned work to residents and businesses on each street and intersecting streets up to one block away, and to Project Manager. Project Manager will in turn notify Office of Emergency Services, local City NSC Office, City School District and any other interested parties that construction of speed hump is scheduled to take place.

Notification to residents is to be type written, is to contain information informing residents and businesses of planned work, and is to be approved by Project Manager before distribution. Notification is to be placed in plastic bag with handles that have capability of being hung on door knob, and distributed to all residents and businesses in affected area.

During construction of speed hump, street can be closed temporarily on daily basis. Street is to be re-opened and fully accessible daily to vehicular traffic outside of working hours. Closure is to be done with appropriate traffic control signs and devices required to maintain and protect traffic, as directed by Project Manager and in accordance with NYSDOT Section 619 Work Zone Traffic Control.

Adjacent areas disturbed or damaged during construction must be restored within 15 working days after construction of speed hump is completed.

S413-3.02 Signage

Contractor is to contact MCDOT Monday through Friday, between hours of 9:00AM and 3:00PM, (585) 753-7733, minimum of 6 weeks prior to commencing construction of speed hump.

Contractor is to install temporary signage minimum of 10 days prior to commencing construction of speed hump. MCDOT will install permanent signage sometime after construction of speed hump has been completed.

Temporary signage is to be mounted on temporary sign supports in accordance with NYSDOT Section 619 Work Zone Traffic Control. Temporary signage is to be provided on each side of speed hump, and covered until speed hump has been constructed and street re-opened to traffic. Temporary signage is to remain in place and be maintained in good condition until permanent signage is installed by MCDOT. After permanent signage has been installed, Contractor is to remove temporary signage.

Sign post sleeves are to be installed in locations where speed hump signage will fall within paved area.

S413-3.03 Construction Performance Standards

Cross-section and profile of each speed hump is to be surveyed to verify that speed hump has been constructed to required parabolic shape, and that it falls within required tolerance range.

Parabolic shape of speed hump is to be checked by surveying cross-section of speed hump every 18 inches across speed hump, along lines set laterally and starting at 2 feet on each side of centerline of street, thence subsequently every 6 feet until outer edge of speed hump is reached at curb line.

Parabolic shape of speed hump will be acceptable only if parabolic shape is within tolerance range of +0.50 inch, -0.25 inch, at all cross-sections of required theoretical elevations. Take any steps necessary to correct any deficiencies that fall outside of required tolerance range.

S413-3.04 Speed Hump Installation

Speed hump is to be constructed with 9.5 F2 top course HMA 80 series compaction in accordance with NYSDOT Section 402 Hot Mix Asphalt (HMA) Pavements.

Asphalt tack coat must be applied before placement of any new asphalt material, and between any and all subsequent lifts of asphalt courses, in accordance with NYSDOT Section 407 Tack Coat.

All exposed edges of existing adjacent pavement are to be treated with asphalt pavement joint adhesive in accordance with NYSDOT Section 418 Asphalt Pavement Joint Adhesive.

Speed hump is to be perpendicular to centerline of street, across and 2 feet narrower than full width of existing pavement. Leave 12 inch wide open area on both sides of street between edge of pavement and edge of speed hump to permit free flow of storm water runoff.

Speed hump is to be parabolic in shape, with top of speed hump at its apex being 3.50 inches above theoretical finished grade.

Use any method necessary to form parabolic shape of speed hump.

Proven method for forming parabolic shape of speed hump is to use profile template constructed from 16 feet long metal channel piece or wooden 2x10, with center portion of bottom of profile template 12 foot wide cut into basic parabolic shape of speed hump, leaving flat area at each end of profile template. To stiffen and minimize any bending of wooden profile template, attach length of metal channel to top portion of profile template. During compaction it may be necessary to add additional or remove excess asphalt material to attain proper shape and elevation.

Do not perform final rolling operation until proper parabolic shape of speed hump has been verified in accordance with Subsection S413-3.03 Construction Performance Standards.

Directional arrow pavement marking symbols are to be installed using overlay method in accordance with NYSDOT Section 688 Preformed Reflectorized Pavement Markings, and as recommended by manufacturer.

Keyway is to be provided around perimeter of speed hump. Keyway is to be constructed by saw cutting existing pavement 1.50 inches deep along outside edges of speed hump, milling on bias to 0 inch at inner most edge of keyway, width of keyway is 24 inches.

Thoroughly clean asphalt surface, apply tack coat making sure to completely cover entire surface area. Tack coat is to be applied before placement of any new asphalt material, and between any and all subsequent asphalt courses.

S413-3.05 Temporary Speed Hump

Temporary speed hump is to be installed within 45 days after Notice to Proceed has been issued, and removed after substantial completion of Project, as determined by Project Manager.

No more than 10 days after removal of temporary speed hump, re-notification is to be done in accordance with Subsection S413-3.01 General, stating that temporary speed humps have been removed.

Prior to installation of temporary speed hump, existing pavement area is to be thoroughly cleaned. Installation of temporary speed humps is to be in accordance with manufacturer's instructions. Maintain temporary speed humps, making any adjustments or re-installation necessary to ensure that temporary speed humps remain properly situated and are set firmly in place.

Directional arrow pavement markings are to be installed on temporary speed humps that are not pre-marked, using overlay method in accordance with NYSDOT Section 688 Preformed Reflectorized Pavement Markings, and as recommended by manufacturer.

When project extends for more than one construction season requiring winter shutdown, temporary speed humps, hardware and signage are to be removed during first week of October, and re-installed at same location(s) during week immediately preceding April 15th of following year. Before re-installation of temporary speed humps, re-notification is to be done in accordance with Subsection S413-3.01 General.

For winter shutdown, upon removal of temporary speed humps existing pavement is to be restored, filling in all holes necessitated for installation of temporary speed hump anchoring system. Properly store and protect temporary speed humps, hardware and signage during winter shutdown.

After final removal of temporary speed humps and hardware, permanently restore existing pavement, permanently filling in all holes necessitated for installation of temporary speed hump anchoring system.

After final removal, temporary speed hump and hardware is to be turned over to City of Rochester. Any material that is damaged is to be repaired, or if beyond repair, replaced with new material.

Temporary speed hump and hardware is to be delivered to City's Street Maintenance Division, 945 Mt. Read Boulevard, Rochester, New York, Monday through Friday, between hours of 8:00AM and 3:00PM, (585) 428-7479. Street Maintenance Division requires minimum of 2 working days advance notice to make arrangements for delivery of salvaged materials.

S413-3.06 Temporary Speed Hump (Furnished)

Temporary speed hump and hardware, will be as furnished by City of Rochester.

To make arrangements for pick-up, Contractor is to call City's Street Maintenance Division, 945 Mt. Read Boulevard, Rochester, New York, Monday through Friday, between hours of 8:00AM and 3:00PM, (585) 428-7479. Street Maintenance Division requires minimum of 2 working days advance notice to make arrangements for pick-up of furnished materials.

Check all furnished materials for condition, noting any pre-existing deficiencies or damage.

Installation, removal, salvaging and repair or replacement of temporary speed hump and hardware is to be done in accordance with Subsection S413-3.05 Temporary Speed Hump. Contractor is not responsible for repair or replacement of pre-existing deficiencies or damage of furnished materials.

Upon final removal, temporary speed humps and hardware are to be returned to City's Street Maintenance Division, 945 Mt. Read Boulevard, Rochester, New York, Monday through Friday, between hours of 8:00AM and 3:00PM, (585) 428-7479. Street Maintenance Division requires minimum of 2 working days advance notice to make arrangements for delivery of salvaged materials.

S413-4 METHOD OF MEASUREMENT

Quantity to be measured for payment will be number of speed humps constructed, or number of temporary speed humps installed.

S413-5 BASIS OF PAYMENT

S413-5.01 General All Items

Unit price bid for all items includes cost of: preparation and distribution of written notification; providing plastic bags; notifying and coordinating with MCDOT for signage installation; cleaning pavement; additional pavement preparation; and furnishing all labor, material and equipment necessary to complete work.

Restoration of adjacent areas disturbed or damaged during construction by Contractor's operations, will be paid for by Contractor.

Furnishing and installing sign post sleeves; and maintenance and protection of traffic will be paid for under separate bid items.

Furnishing, installing, maintaining and removing temporary signage will be paid for under lump sum bid item for Basic Work Zone Traffic Control per NYSDOT Section 619 Work Zone Traffic Control.

S413-5.02 Speed Hump

Unit price bid also includes cost of: construction of keyway; saw cutting; milling; construction of speed hump; furnishing and installing asphalt; profile template; tack coat; survey of cross-section and profile to verify parabolic shape of speed humps for quality control measures; correction of any deficiencies that fall outside of required tolerance range; directional arrow pavement marking symbols; asphalt pavement joint adhesive.

S413-5.03 Temporary Speed Hump

Unit price bid also includes cost of: furnishing, installing, maintaining and removing temporary speed hump and hardware; furnishing and installing directional arrow pavement marking symbols where required; repairing or replacement of materials damaged by Contractor's operations; coordinating with and delivery of temporary speed hump and hardware to City Street Maintenance Division; permanent restoration of existing pavement, including filling in all holes necessitated for installation of temporary speed hump anchoring system.

For installation of temporary speed hump including winter layover, unit price bid also includes cost of: re-notification; removing, storing, protecting and reinstalling temporary speed hump; temporary pavement restoration, including filling in all holes necessitated for installation of temporary speed hump anchoring system.

S413-5.04 Temporary Speed Hump (Furnished)

Unit price bid also includes cost of: picking-up, inspecting for pre-existing deficiencies or damage, installing, maintaining and removing furnished materials; furnishing and installing directional arrow pavement marking symbols where required; repairing or replacement of materials damaged by Contractor's operations; coordinating with and delivering of furnished materials to City Street Maintenance Division; permanent restoration of existing pavement, including filling in all holes necessitated for installation of temporary speed hump anchoring system.

For installation of temporary speed hump (furnished) including winter layover, unit price bid also includes cost of: removing, storing, protecting and re-installing temporary speed hump; re-notification; temporary pavement restoration, including filling-in all holes necessitated for installation of temporary speed hump anchoring system.

Payment will be made under:

ITEM NO.	ITEM	PAY UNIT
S413.0102	Speed Hump	Each
S413.03	Temporary Speed Hump	Each
S413.04	Temporary Speed Hump (Winter Layover)	Each
S413.05	Temporary Speed Hump (Furnished)	Each
S413.06	Temporary Speed Hump (Furnished) (Winter Layover)	Each