

SUPPLEMENTAL SPECIFICATIONS

The State of Ohio Department of Transportation Construction and Material Specifications (CMS), including all supplements thereto, most recent edition shall govern this project unless otherwise noted.

Item 253, Pavement Repair Areas: The minimum pavement repair width is 4'-0 on all pavement areas with the exception of the base repairs on William Street and Central Avenue as outlined below. **Repair areas shall be established by the ENGINEER in accordance with 253.02.** See Bid Schedule for depth of repairs.

Base Repair work on William Street between Liberty Street and Penick Avenue and on Central Avenue Between Sandusky Street and Troy Road.

10" Base Repair (Full Depth Asphalt)

Minimum repair width is to be 6'-0 and includes full depth milling, removal of loose material, tack vertical surfaces, compaction of pavement base, 8.75" of item 301 (placed in two (2) lifts), 1.25" item 448 H asphalt wearing course, crack sealant around perimeter of repair using de-tacking agent, all required signage/traffic control per OMUTCD, and two way traffic is to be maintained all times with the use of flaggers.

10" Base Repair (Composite Asphalt/Brick Pavement)

Minimum repair width is to be 6'-0 and includes full depth pavement sawing, removal of loose material, tack vertical surfaces, compaction of pavement base, 8" of item 301 (placed in two (2) 4" lifts), 2" item 448 H asphalt wearing course, crack sealant around perimeter of repair using de-tacking agent, all required signage/traffic control per OMUTCD, and two way traffic is to be maintained all times with the use of flaggers.

Item 254, Pavement Planing, Asphalt Concrete: This item includes pavement planing at depths as per bid schedule. CONTRACTOR shall also plane around all manholes, inlets, valve boxes, etc. to the satisfaction of the ENGINEER. Care shall be taken to prevent the removal of the existing pavement cross-slope (crown) as well as all longitudinal slopes within the existing crosswalks during the planing operations.

Item 423, Crack Sealant, Type II: CONTRACTOR is to apply a de-tacking agent to freshly sealed joints to allow traffic immediate access following crack seal operation. The cost of this is incidental to Item 423.

Item 614, Maintaining Traffic, As Per Plan: The CONTRACTOR shall be responsible for all required traffic control. CONTRACTOR shall maintain two-way, one-lane traffic, in accordance with the Ohio "Manual of Traffic Control for Construction and Maintenance Operations," at all times. All costs including, but not limited to equipment, labor, and materials associated with traffic control shall be included in this item. A Maintenance of Traffic (M.O.T.) Request must be submitted to the PUBLIC WORKS DEPARTMENT for approval no less than five (5) working days in advance of any lane restrictions. Night work may be permissible at the discretion of the CONTRACTOR and upon approval of the ENGINEER. Law enforcement officers may be used for traffic control at Contractor's discretion and cost. All streets shall remain accessible to emergency vehicles at all times.

Item 630, Sign, Double Faced Street Name, As Per Plan: The CONTRACTOR shall install street name signs as per the COD standard drawing RDWD 36.0 Street Sign Detail, see attached.

Item 632, Loop Detector, As Per Plan: This work shall include replacing any loop detectors damaged during planing or paving operations within five (5) working days. The locations, sizes, shapes of proposed loop detectors will be the same as existing unless otherwise noted. It is the CONTRACTOR'S responsibility to verify the location, size and shape of the existing loop detectors listed in the plan before the pavement planing removes them. Item includes sawing pavement slots, providing, installing and sealing detector wire, removing and replacing any concrete and/or brickwork, and performing connection to existing pull box. The CONTRACTOR shall contact the ENGINEER at least 48 hours (excluding Saturday and Sunday) in advance of removing a loop detector to coordinate necessary signal operation modifications with the CITY.

Item 633, Video Detection system, As Per Plan: The following vehicle detection locations shall be replaced with Iteris Versicam video vehicle detection per the attached specifications. The video detection system shall meet all requirements in ODOT Supplemental Specification 907, Video Detection System.

- 1) Sandusky Street-London Road: Northbound Left Turn Lane
- 2) Sandusky Street-London Road: Westbound Left/Through/Right (McDonald's Access)
- 3) Sandusky Street-Park Avenue: Westbound Left/Through/Right (OWU Parking Lot Access)
- 4) William Street-Sandusky Street: Northbound Left Turn, Through and Right Turn Lanes

Payment for Item 633, Video Detection System shall be made at the contract unit price for each unit, complete and in place including all required cabinet hardware, mounting brackets, cables, conduit, and connections tested and accepted.

Item 644, Thermoplastic Pavement Marking: Prior to the placement of all permanent pavement markings the CONTRACTOR shall notify the ENGINEER a minimum of 48 hours (excluding Saturday and Sunday) before permanent markings are to be placed, to inspect and approve all pre-markings. CONTRACTOR shall follow the details provided regarding railroad crossings and shared roadway symbols.

Item Special: NTSS-1HM Trackless Tack Coat

NTSS-1HM.01	Description
NTSS-1HM.02	Materials
NTSS-1HM.03	Equipment
NTSS-1HM.04	Weather Limitations
NTSS-1HM.05	Preparation of Surface
NTSS-1HM.06	Application of Asphalt Material
NTSS-1HM.07	Method of Measurement
NTSS-1HM.08	Basis of Payment

NTSS-1HM.01 Description. This work consists of preparing and treating a paved surface with a specialized anionic trackless asphalt emulsion. Used primarily for hot mix asphalt construction. All requirements of ODOT 407 Tack Coat specification in the CMS shall be met except as noted below.

NTSS-1HM Material. Conform to the following typical physical properties:

Parameter	Test Method	MIN.	MAX.
Saybolt Furol Viscosity, SFS @ 25°C	ASTM D88	15	100
Storage Stability, 24 hrs, %	ASTM D244	--	1
Storage Stability, 5 days, %	ASTM D244	--	5
Residue by Distillation, %	ASTM D244	50	--
Oil Distillate, %	ASTM D244	--	1
Sieve Test, %	ASTM D244	--	0.3

Test on Residue:

Penetration, @ 25°C,	ASTM D5	--	20
Softening Point Range Deg C	ASTM D36	65	--
Solubility,%	ASTM D2042	97.5	--
Original Binder DSR@82°C			
G*/SIN δ,10 rad/sec	AASHTO T111	1	--

Note: Product should not contain filler such as clay, etc

NTSS-1HM.03 Equipment. Provide adequate cleaning equipment and distributor.

Use distributors designed, equipped, maintained, and operated to apply asphalt material at the specified rate per square yard (square meter) with uniform pressure over the required width of application. Ensure that the distributor includes a tachometer, pressure gauges, accurate volume measuring devices, or a calibrated tank. Mount an accurate thermometer with a range covering the specified application temperature for asphalt material at approximately center height of the tank with

the stem extending into the asphalt material. Ensure that the distributor has a full-circulating system with a spray bar that is adjustable laterally and vertically. Ensure that the spray bar will maintain a constant height above the pavement under variable load conditions. Supply each distributor with suitable charts showing truck and pump speeds and other pertinent application data necessary to obtain the required results. **See manufacture representative for correct distributor settings.**

NTSS-1HM.04 Weather Limitations. Do not apply the asphalt material if the surface temperature is below the minimum placement temperature for the pavement course to be placed, as specified in ODOT 401.06 Specification. **Note: Subject to damage if frozen.**

NTSS-1HM.05 Preparation of Surface. Ensure that the surface is thoroughly clean and dry when the asphalt material is applied. Remove material cleaned from the surface and dispose of it as the Engineer directs.

NTSS-1HM.06 Application of Asphalt Material. Uniformly apply the asphalt material with a distributor. Surface to be clean and dry.

Note: NTSS-1HM not compatible with Cationic emulsions (CRS, CQS, CMS, CSS etc...)

All equipment should be thoroughly if cationic emulsion was previously present. If product is to be stored for an extended period of time the material should be agitated or gently circulated prior to use.

Nozzle spray pattern should be identical to one another along the distributor spray bar. The angle of the nozzle should a 15 to 30 degree angle to the spray bar axis to maximize overlap.

NTSS-1HM should be applied at a rate of 0.04 to 0.08 gallons per square yard. Recommended application temperature is 160°F to 180° F. Do not exceed 180°F.

For irregular areas such as driveways and intersections, apply the asphalt material using a method the Engineer approves.

Before placing a surface course onto an intermediate course, apply a tack coat on the intermediate course.

Apply the tack coat in a manner that offers the least inconvenience to traffic and that allows one-way traffic without pickup or tracking. Only apply the tack coat to areas that will be covered by a pavement course during the same day.

The Engineer and Manufactures Representative will approve the quantity, rate of application, temperature, distributor settings and areas to be treated before application of the tack coat. Please contact the manufacture representative for distributor settings and spray nozzles. The engineer will determine the actual application in gallons per square yard (Liters per square meter) by a check on the project. The application is considered satisfactory when the actual rate is within ± 10 percent of the required rate and the material is applied uniformly with no visible evidence of streaking or ridging.

NTSS-1HM.07 Method of Measurement. The Department will measure Tack Coat and Tack Coat for Intermediate Course by the number of gallons (liters) of undiluted asphalt material applied for each according to Item 109.

NTSS-1HM.08 Basis of Payment. The Department will pay for accepted quantities at the contract prices as follows:

Item	Unit	Description
Special NTSS-1HM	Gallon (Liter)	Tack Coat

PROJECT NOTES

Utilities: CONTRACTOR shall be responsible for notifying the Ohio Utilities Protection Service at 1-800-362-2764 at least two (2) working days prior to any work.

Staging Area: The CONTRACTOR is responsible for locating construction staging areas necessary for the storage of equipment during the project. The cost of staging areas is incidental to the project. The CONTRACTOR may not store any equipment within public streets or right of way, unless authorized by the ENGINEER.

Contractor Schedule: Upon award, the CONTRACTOR shall provide the CITY with a written schedule of all construction activities to be performed in advance of mobilization of any operation. The following schedule restrictions apply to this project:

See Bid Schedule for Completion Dates

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

5/25/15 (Memorial Day)
7/4/15 (Independence Day)
8/12/15 (First Day Back to School)
9/17/15 (Brown Jug Day)
9/7/15 (Labor Day)

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

FAIR WEEK (THIRD FULL WEEK IN SEPTEMBER)

Drainage at Intersecting Streets: At intersecting streets where the drainage is toward or into the project, special care shall be taken by the CONTRACTOR to maintain proper grade along the edge of pavement so that water will not pond. At intersecting streets, care shall be taken to feather down and form a neat seam with the proper grade.

Street Posting: CONTRACTOR shall be responsible for posting "No Parking" signs ("for paving work") on all streets 72 hours prior to any operation. Signs shall include no more than three consecutive days of work and be provided by CONTRACTOR to the satisfaction of the ENGINEER. Signs must include specific dates, times and property/driveway restrictions that will be in place during paving operations, and be updated as required for changes in schedule. Signs must meet the City standard and shall be posted every fifty feet (50') on alternating sides of the street. Signs shall be affixed by heavy-duty staples to 2" wood lathe, four foot (4') long, and not to utility poles, parking meter posts, trees, existing signposts, etc. Contractor shall remove all signs as soon as work on any particular street is complete.

Joints in Asphalt Concrete: All asphalt concrete joints created when crossing or abutting adjacent streets shall have a clean, straight vertical face. Any joints created that are a depth of 1.5 inches or less, the CONTRACTOR shall place "Bump" signs at those locations in both directions of travel. Payment for signs shall be considered incidental to Item 254. Any joints created that are greater than 1.5 inches in depth, the CONTRACTOR shall provide a temporary asphalt wedge. Treated paper shall be used under the temporary wedge for clean removal of wedge asphalt prior to placement of permanent asphalt concrete. A temporary wedge shall not be left in place for more than 7 days. The cost of constructing all asphalt wedges shall be considered incidental to the cost of the various asphalt items and no additional compensation shall be made.

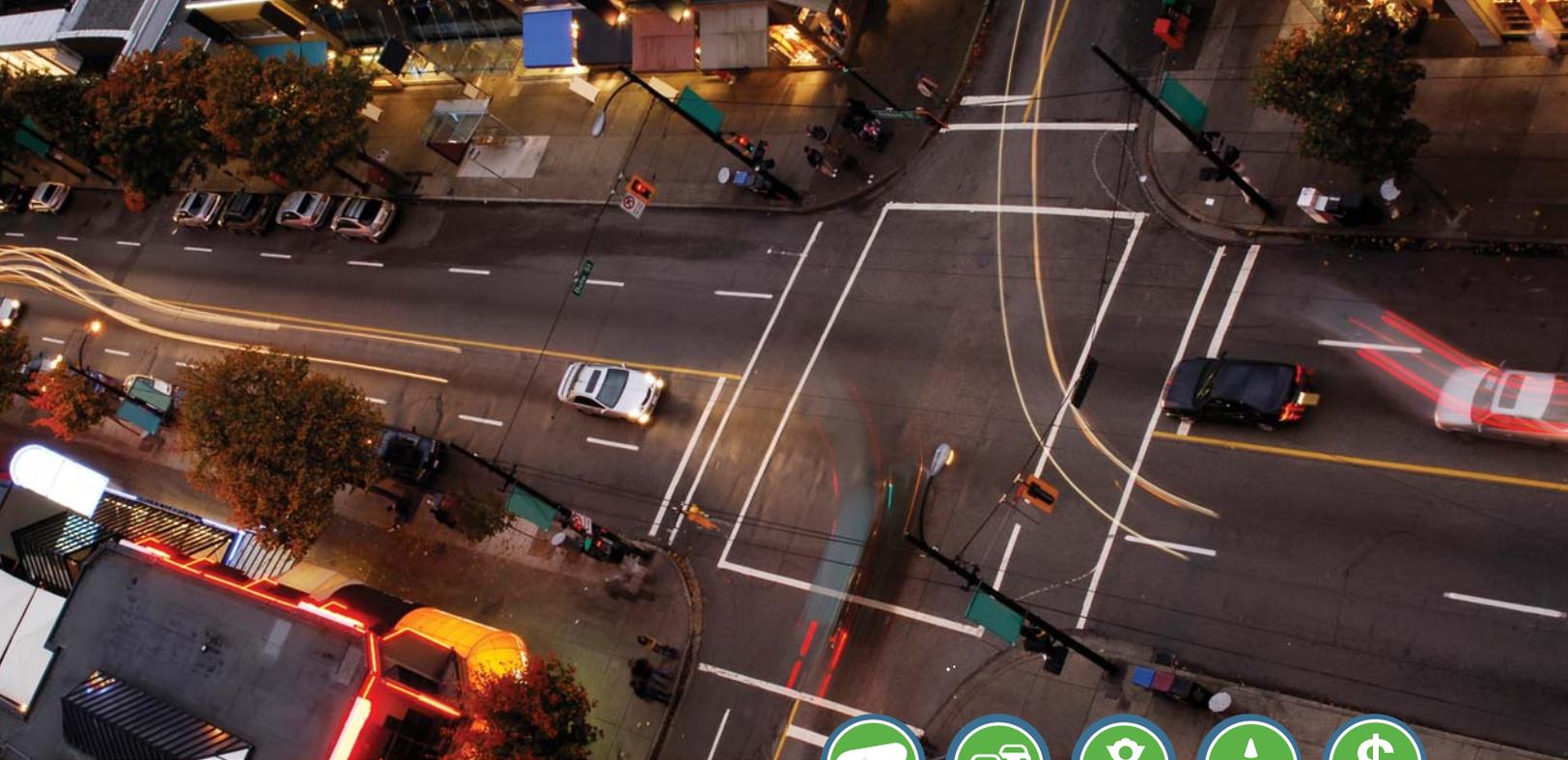
CONTRACTOR shall trim trees, under direction of the Engineer, which may be in conflict with equipment prior to commencing operations, and repair any vegetation damaged during construction immediately as directed by the ENGINEER.

CONTRACTOR shall direct all adjustable exhaust stacks of equipment toward street centerline to avoid damage to street trees from hot equipment exhaust.

Any debris resulting from work shall be removed daily by CONTRACTOR as directed by the ENGINEER.

CONTRACTOR shall be responsible for adjusting valve boxes to grade with riser rings supplied by the ENGINEER at commencement of paving operations. Additional riser rings will be supplied as needed, and all unused riser rings to be returned by CONTRACTOR to the ENGINEER upon completion of the project. All work associated with this item shall be considered incidental to the paving bid items.

The ENGINEER will issue a Utility Deficiency List to CONTRACTOR within seven days after paving of each street. CONTRACTOR shall correct all items within thirty (30) days of list issuance.



VERSICAM™

Powerful yet affordable

Versatility with value

VersiCam™ is an integrated machine vision processor and camera solution, designed for small or semi-actuated intersections. VersiCam offers the same high performance as our Vantage® video detection products in a low-cost package.

VersiCam is a versatile, high resolution video traffic camera specially optimized for machine vision processor technology. The camera offers remote zoom and focus functions to simplify setup and includes a high sensitivity color imager (CCD) to ensure accurate vehicle detection in all lighting conditions.

The VersiCam solution includes the Interface Communication Controller (ICC) that resides in the roadside cabinet. All user interface functions are performed through the ICC such as virtual zone placement, detector output assignment, and video monitoring.

Affordable and accurate

VersiCam complements the existing Vantage range of Edge®2 video detection products by providing entry-level video detection and output presence detection at a cost-efficient price. Your investment is future-proofed by VersiCam's flexible design that can support simple firmware upgrades.



Innovation for better mobility





BENEFITS

- Optimized for outdoor traffic situations that aids video detection
- Integrated mounting brackets reduce installation and setup time
- Connectors located on back faceplate simplifies cable connection
- Proportional power-controlled internal heater prevents ice and condensation resulting in improved video detection performance in adverse weather conditions.



ICC Module

- ICC Card – fits in all 170 input files, NEMA TS-1 and TS-2 cabinets
- ICC Shelf-mount - available for non-rack applications
- Bracket – flexible and adaptable camera mounting bracket
- Cabinet set-up using monitor and mouse

VERSICAMTM

Powerful yet affordable

The Iteris VersiCam is a complete video vehicle detection solution that is a cost effective replacement to inductive loops and other sensor technologies for many smaller intersections. Other applications include advance detection, highway, ramp metering, and construction-work zones.

SPECIFICATIONS

	VERSICAM	ICC-MODULE	ICC-SHELF MOUNT
Features	<ul style="list-style-type: none"> • Color imager • 768 x 494 effective pixels • 530 TV Lines • Automatic white balance • >50dB S/N ratio • 1.0 to 10,000 lux 	<ul style="list-style-type: none"> • 170 input file compatible • TS-1 and TS-2 compatible • 2 open collector outputs • 8 zones 	<ul style="list-style-type: none"> • Compact enclosure • 2 open collector outputs • 8 zones
Lens	Focal length and focus adjustable for horizontal FOV ranging from 4.6° wide to 46.0° wide (65° wide for VersiCam Flex)		
Connections	Pluggable terminal–6 way <ul style="list-style-type: none"> • 2 x DC Power • 2 x Differential video • 2 x Differential control 	Connector (6-way) for camera & 3-way for optional AC power input <ul style="list-style-type: none"> BNC video output, NTSC composite 1V p-p@75 Ohm USB mouse port RS-232 serial port 	Connector (6-way) for camera & 3-way for optional AC power input <ul style="list-style-type: none"> BNC video output, NTSC composite 1V p-p@75 Ohm USB mouse port RS-232 serial port
Mechanical			
Dimensions	13.5" (L) x 4" (D) 34.3cm x 10.2cm Without bracket	7" (L) x 4.5" (H) x 2.31" (W) 17.78cm x 11.43cm x 5.85cm	8.3" (L) x 5" (H) x 2.8" (W) 21cm x 12.7cm x 7.2cm
Weight	4.25lb (1.92kg)	1.05lbs /0.48Kgs	2.40lbs /1.09Kg
Environment			
Temperature	-31°F to +165°F (-35°C to +74°C)	-35°F to +165°F (-37°C to +74°C)	-35°F to +165°F (-37°C to +74°C)
Humidity	0 – 100% relative	0 – 95% relative	0 – 95% relative
Vibration	0.5G, 3 axes, 5-30Hz	0.5G, 3 axes, 5-30Hz	0.5G, 3 axes, 5-30Hz
Shock	10G, all 3 axes	10G, all 3 axes	10G, all 3 axes
Power			
Input	24 to 48VDC, 11W typical, 22W max	100-240VAC 50/60Hz 0.7A	100-240VAC 50/60Hz 0.7A

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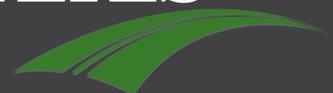
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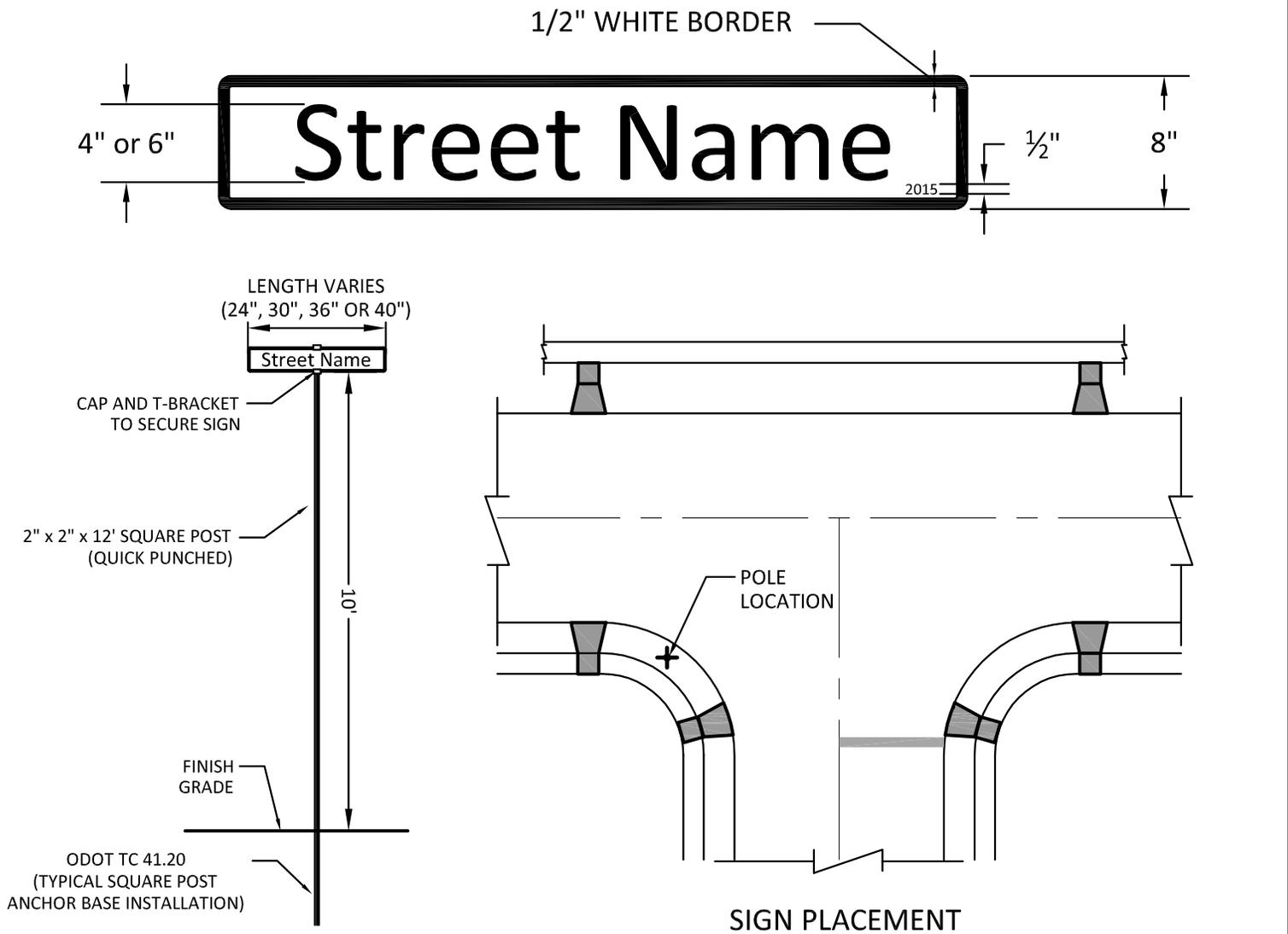


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- SIGNS SHALL BE TWO SIDED MADE ON 8" ALUMINUM BLADES WITH RADIUS CORNERS AND STANDARD LENGTHS OF 24", 30", 36" OR 40"
- FOR LOCAL STREETS WITH POSTED SPEED LIMITS AT 25 MPH OR LESS, LETTERING SHALL INCLUDE UPPER CASE LETTERS AT 4" AND LOWER CASE AT 3". FOR STREETS WITH POSTED SPEED LIMITS GREATER THAN 25 MPH, LETTERING SHALL BE 6" FOR UPPER CASE 4.5" FOR LOWER CASE.
- STREET NAME SIGNS SHALL BE COVERED ON BOTH SIDES WITH BLUE PRISMATIC SHEETING (3M SCOTCHLITE FILM - #3875 BLUE), MEETING THE RETROREFLECTIVITY REQUIREMENTS OF THE OMUTC SECTION 2A.07 AND HAVE A 10 YEAR WARRANTY.
- SIGN LETTERING SHALL BE OF WHITE PRISMATIC SHEETING, MEETING THE RETROREFLECTIVITY REQUIREMENTS OF THE OMUTCD 2A.07
- LETTERING SHALL BE MADE IN THE FHWA STANDARD APPROVED "CLEARVIEW FONT"
- SIGNS SHALL INCLUDE A WHITE 1/2-INCH WHITE BORDER AT THE EDGE OF THE SIGN MADE OF WHITE PRISMATIC SHEETING.
- SIGN POSTS SHALL BE MADE OF 2" SQUARE CONDUIT, WITH A MINIMUM CLEARANCE FROM GRADE TO BOTTOM OF SIGN OF 10'-0"
- SIGNS SHALL BE SECURED TO POLE WITH A GALVANIZED CAP AND TEE BRACKETS
- SIGN POLES SHALL BE INSTALLED ON THE LEFT SIDE OF THE STREET, OPPOSITE FROM THE STOP SIGN WITHIN THE TREE LAWN RADIUS AREA, AND WITH THE EDGE OF THE SIGN 2'-0" FROM THE BACK OF CURB
- ALL STREET SIGNS SHALL BE INSTALLED AS REQUIRED IN ADVANCE OF OPENING ANY STREET TO PUBLIC ACCESS
- THE YEAR OF INSTALLATION SHALL BE 1/2 -INCH WHITE LETTERING LOCATED IN BOTTOM RIGHT CORNER OF ONE SIDE



DEPARTMENT OF ENGINEERING SERVICES

STANDARD DETAIL
STREET SIGN DETAIL

ROADWAY

RDWD 36.0

Rev. 1/9/2015