

Connecticut Department of Energy and Environmental Protection License*

Flood Management Certification Approval

Licensee(s): Connecticut Department of Transportation

Licensee Address(s): 2800 Berlin Turnpike
Newington, CT 06131-7546

License Number(s): 202112522-FM

Municipality: Statewide

Project Description: Flood Management General Certification for Statewide Minor Activities

Project Address/Location: Statewide

Waters: Statewide

Authorizing CT Statute(s) and/or Federal Law: CGS Section 25-68b to h

Applicable Regulations of CT State Agencies: 25-68h-1 to 3

Agency Contact: Land & Water Resources Division,
Bureau of Water Protection & Land Reuse, 860-424-3019

License Expiration: Ten (10) years from the date of issuance of this license.

Project Site Plan Set: "CTDOT Standard Sheets," 26 Sheets, prepared by CT DOT Office of Engineering, approved 07-14-2020.

License Enclosures: LWRD General Conditions; CTDOT Standard Sheets; Categories of Minor Activities

*Connecticut's Uniform Administrative Procedure Act defines License to include, "the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law . . ."

Authorized Activities:

The Licensee is hereby authorized to conduct the following work as described in application # 202112522 and as depicted on any site plan sheets / sets cited herein:

Conduct, on an as-needed basis, the following activities in accordance with “*Categories of Minor Activities*,” attached hereto:

1. Minor Safety Improvements, Streetscape, and Transportation Facility and Enhancement Projects;
2. Roadway Repair, Repaving, Maintenance and Underground Utilities;
3. Minor Stormwater Drainage Improvements;
4. Removal of Sediment or Debris from a Floodplain;
5. Wetland Restoration, Creation, or Enhancement;
6. Scour Repairs at Structures;
7. Guide Rail Installation;
8. Bridge Deck and Superstructure Replacements;
9. Minor Culvert and Bridge Repairs, Including Proper Containment
10. Fisheries Enhancements;
11. Surveying and Testing;
12. Bicycle / Pedestrian, Multi-Use Trails and Enhancement Projects;
13. Transfer of State Real Property; and
14. Waste Stockpile Area within the 500-year Floodplain.

Failure to comply with the terms and conditions of this license shall subject the Licensee and / or the Licensee’s contractor(s) to enforcement actions and penalties as provided by law.

This license is subject to the following Terms and Conditions:

1. **License Enclosure(s) and Conditions.** The Licensee shall comply with all applicable terms and conditions as may be stipulated within the License Enclosure(s) listed above.
2. **Erosion & Sedimentation Controls.** Proper erosion and sedimentation controls shall be utilized in conjunction with Best Management Practices as outlined in Section 1.10 of the State of Connecticut Department of Transportation *Standard Specifications for Roads, Bridge and Incidental Construction, Form 818*, as revised by the latest supplementals.
3. **Stormwater Quality.** All work shall be consistent with DEEP’s 2004 Stormwater Quality Manual as revised.
4. **Temporary Facilities.** Any temporary facilities, impact activities, or equipment requiring work or placement in a floodplain must be able to be removed in a timely manner from the site in case of a flood warning. Items designed as temporary structures in accordance with the guidelines outlined in the CTDOT Drainage Manual for Temporary Hydraulic Structures shall be exempt from this requirement.

5. **Fish Passage.** Temporary facilities shall allow for the passage of fish with minimal disturbance to the streambed.
6. **Time-of Year Restrictions.** Unconfined in-stream work will be limited to the period indicated by a sign-off from DEEP Fisheries Division. This time frame will be June 1st to September 30th unless a waiver from this restriction has been approved in writing from this Division.
7. **FMC Submittals.** Prior to commencement of any construction authorized under this General Certification, DOT must submit a copy of the completed CT DOT Hydraulics and Drainage Flood Management General Concurrence Request Form.

Issued under the authority of the Commissioner of Energy and Environmental Protection on:

March 22, 2022

Date



Brian P. Thompson
Division Director
Land & Water Resources Division

Categories of Minor Activities

1. Minor Safety Improvements, Streetscape, and Transportation Facility and Enhancement Projects

Description: Projects which include minor grading and safety improvements including traffic signals, signs, sidewalks, rail platform extensions, elevated walkways, boardwalks, landscaping, light poles, and other activities similar in scope and scale. This category does not include sound barriers.

This category includes ancillary work to make rail stations and other Department facilities compliant with ADA standards, as well as allowing for stormwater improvements at such facilities which do not result in any adverse impacts to the floodplain and are compliant with the restrictions set forth in Category #3, "Minor Stormwater Drainage Improvements".

Landscape plantings will be in accordance with the most current version of the Department's *Standard Specifications for Roads, Bridges and Incidental Construction* as revised by the latest supplementals and in accordance with DEEP's "Non- Native Invasive Plant Species Policy".

Obstructions and grade increases shall not be permitted in a FEMA mapped floodway except for the following minor activities that meet the respective conditions:

- Sidewalks placed in the floodway shall be limited to six-inch maximum over the existing ground elevation and shall not reduce the hydraulic conveyance of the floodway. Any loss of conveyance must be compensated for in the same hydraulic cross section and proposed changes shall not require a map revision or require modeling.
- Plantings placed in the floodway shall be limited to a group of 10 or fewer low growing plants and shall be in ground and not increase grade.
- A single row of split rail fencing will be allowed in the floodway provided that it is parallel to flow.
- Signposts in the floodway shall be a single typical U-channel or similar sized posts and the lowest horizontal attachment to the signpost must be above the floodway elevation.
- Pedestal-mounted light posts, signals, pedestrian hybrid beacons (e.g., High-Intensity Activated Crosswalk [HAWK]), and rectangular rapid flashing beacons (RRFB) can be placed in the floodway provided a) there are no more than two, b) the mast(s) must be cylindrical, and c) they are limited to a maximum six-inch

diameter.

Obstructions such as poles, signs, rail platforms, elevated walkways, boardwalks, plantings, and spilt rail fencing may be placed in the floodplain but not in the floodway (unless otherwise allowed as described above) provided:

- Any grade changes in the riverine floodplain will be limited to 2.0 feet maximum over the existing ground elevation.
- Grade changes shall not decrease the flood storage capacity of the riverine floodplain.
- Any fill in the riverine floodplain must be compensated for with an equal cut so that there will be no net fill below the base flood elevation.
- Compensation for the proposed fill shall occur within the same hydraulic cross section and the same reach of stream.
- Flood storage is not required by statute in tidally influenced floodplains; as such fill limitations and compensatory cut requirements are not applicable to these areas.

2. Roadway Repair, Repaving, Maintenance & Underground Utilities

Description: Milling, repaving, and associated regrading to roadsides. Also included in this category are roadway patching and repairs to existing grade and work to the subgrade of the roadway such as utility work, underdrain, and storm drain installation, excluding drainage outfalls.

This category allows up to a 4-inch increase in pavement height in a floodway fringe; no increases in the pavement height are permitted in a floodway. This category allows for the roadside to be graded to match the new pavement grade.

3. Minor Stormwater Drainage Improvements

Description: Placement of new drainage outfalls to reconfigure existing drainage systems where the proposed pipe size is 36" or less.

Activities in this category are permissible provided that a pre- and post- stormwater assessment/analysis indicates that such placement will not cause an increase in peak discharge of the receiving floodplain source, therefore, not increasing the regulatory flood elevation.

This category allows for upgrade of an existing pipe or replacement with equivalent diameter pipe at drainage outfalls, following the requirements set above. Replacement or placement of riprap aprons or preformed scour holes set no higher than existing

grade at existing outfalls are included in this category. The design of riprap aprons and preformed scour holes shall conform to the guidelines in the Department's Drainage Manual. Placement of a flared end section as a replacement for a headwall is acceptable provided the fill matches adjacent slope limits.

4. Removal of Sediment or Debris from a Floodplain

Description: Removal of sediment or debris from a floodplain, including ditch cleaning. Removal of fill also includes the cleaning of ponds.

This category includes pond and ditch cleaning. All necessary Inland and Coastal permits must be approved. Sediment shall be disposed of in accordance with Best Management Practices as outlined in Section 1.10 of the Department's *Standard Specifications for Roads, Bridges, and Incidental Construction – Form 818*, as revised.

5. Wetland Restoration, Creation, or Enhancement

Description: Removal of material and placement of organic soils and wetland plantings. This category may include treatments and excavation to eradicate invasive species.

This category includes wetland restoration and actions necessary for creating wetland mitigation sites, e.g., placement of organic soils and wetland plantings. Any placement of material for soil amendment shall be an amount less than or equal to the material which was removed from the floodplain.

Placement of plantings alone can also be performed under this category to stabilize streambanks or other areas as well as provide plantings to replace non-native vegetation or for wildlife habitat enhancement. Plantings shall not adversely change the character of the bank or the hydraulic capacity of the waterway.

6. Scour Repairs at Structures

Description: Scour repairs which bring the streambed back to original grade. This category includes fill placed to an elevation no higher than the original grade at either bridge face or points beyond the influence of local or contraction scour. Such elevation shall be as depicted on original as-built plans (if available) or as determined in the field by the Engineer.

Unless the CTDEEP Fisheries Division has provided documented approval of plans depicting otherwise, the placement of riprap or alternate countermeasures shall be limited to local scour holes adjacent to the bridge substructure units, retaining walls, wingwalls, or culvert termini.

Designed counter measures may be covered under this category only if the countermeasures do not change the hydraulic capacity of the structure and if CTDEEP

Fisheries Division has provided documented approval of the activity (i.e., plan sets signed by CT DEEP Fisheries staff).

Municipal projects which require no other DEEP LWRD permit approvals will only qualify for the General Certification under this item when accompanied by a completed CTDEEP Fisheries Division sign-off form.

7. Guide Rail Installation

Description: Installation, replacement, or repair of guide rails, including the use of appropriate materials under guiderail to prevent erosion and the necessary clearing and grubbing to place the system and allow for its deflection.

This category allows for installation or upgrade of guide rail systems to bring them into conformance with current safety standards. This item includes upgrades to termini, connections to bridge parapets, and the replacement of existing concrete barriers with solid barriers that are compliant with current design standards. This item includes replacement of existing metal beam rail with timber rail.

Solid safety barriers at a new location may not be placed under this item.

8. Bridge Deck and Superstructure Replacements

Description: Replacement of the superstructure or deck of a structure where both the existing and proposed low chord elevations are above the floodway elevation. This category also covers replacement activities when the low chord is below the floodway elevation when there is no change in the hydraulic opening/capacity, there is no change in the low chord elevation, and there is no change in streambed elevation above the as-built condition (as described in Category #6, "Scour Repairs at Structures").

Temporary impacts for construction include scaffolding, ladders, work platforms, sandbags, cofferdams, sedimentation control devices, and other activities similar in scope and scale necessary to perform the work. This category includes necessary modifications to the substructure to accommodate the new superstructure if the modifications do not result in a change to the hydraulic opening/capacity. No decrease in hydraulic capacity may occur because of any work under this category.

9. Minor Culvert and Bridge Repairs including proper containment.

Description: Repairs to bridges, culverts, or pipes. This category includes the following activities:

- repointing and repairs to spalling concrete and bridge joints, seats, and bearings
- upgrade of parapets or railing (open design only allowed)

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- painting and replacement of wood on wooden bridges
- cleaning, painting, and repair or replacement of steel bridge elements with proper containment to prevent debris from falling to any regulated areas below
- in-kind culvert, cut-off, wingwall, and headwall replacement
- other activities similar in scope and scale which would not diminish the hydraulic capacity of the structure.

Temporary impacts for construction may include, but are not limited to, scaffolding, ladders, cofferdams, sandbags, and sedimentation control devices necessary to perform the work or access the work site. Containment systems and work platforms hung from the bridge may also be utilized such that the temporary system does not extend below the temporary design flood elevation unless the system can be readily removed prior to the anticipated flood event. The design frequency of the temporary design flood shall be determined by the procedures outlined in the Drainage Manual.

10. Fisheries Enhancements

Description: Work in waterways to create or enhance fisheries habitat.

This category includes placement of boulders, riparian plantings, vortex rock weirs, rock vanes, log structures, wing deflectors, channel blocks, cover logs and root wads, bank cribbing, scour pool excavation, stream bank stabilization, and other activities similar in scope and scale. This category includes any temporary impacts necessary for construction.

All enhancements must be approved by the Department's H&D Unit. Boulders or groupings of boulders placed will be no wider than 20% of the stream width and no more than one boulder or boulder grouping per 300 square feet of channel. Boulders will be placed only downstream of any bridge structure. Riparian plantings will be conducted in accordance with DEEP's Non-Native Plant Species Policy. Temporary floodplain impacts for construction necessary to perform the work shall be allowed given provisions for stabilizing and restoring the access way are provided.

This item may not be used for construction of fishways or fish ladders.

11. Surveying and Testing

Description: This category includes activities such as field survey, excavation of utility test pits, physical testing, or the installation of monitoring devices to determine surface or subsurface engineering site data.

Conventional land survey activities will be accomplished in accordance with standard

Department practice. Minor manual clearing of brush or undergrowth will be allowed to establish lines of sight necessary for geodetic survey. Soil borings using mechanical drill rigs will be allowed provided that no fill is placed for access to the drilling site. The excavation of utility test pits using mechanical excavators is acceptable providing that there is no change in the final ground elevation at the test pit site.

The installation or use of temporary or permanent monitoring devices to record or provide real time data relative to bridges, culverts, streams, or subsurface characteristics will be allowed providing that there is no resultant permanent reduction in hydraulic capacity at a waterway crossing site. Any devices shall be approved by the Department's H&D Unit.

12. Bicycle / Pedestrian, Multi Use Trails and Enhancement Projects

Description: Construction of bicycle/pedestrian pathways, multi-modal trails, Rails to Trails, and enhancement projects in a regulated floodplain. These projects may include any or a combination of the activities listed below on the same project. The Project Engineer must indicate in their submission where each proposed activity will take place, along with a corresponding site number.

Projects in this category must comply with all applicable requirements described in Category #1, "Minor Safety Improvements, Streetscape, and Transportation Facility Projects". Independent functionality must be evident in project termini, and/or the project must provide links between or to other existing trails. Proper containment and water handling must be included in the plans for activities involving work in water.

- Rehabilitation or removal of existing structures in a floodplain or floodway such as piers, abutments, crib walls, and retaining walls. No new structures are allowed in a floodway under this category.
- Placement of retaining walls, crib walls, or similar structure in the floodplain with the purpose of decreasing the overall fill in the floodplain. Elevated walkways, boardwalks, and like structures are also permissible under this category. This activity must not have an adverse impact on flood flow conveyance.
- Construction of portions of the trail itself may be within a regulated floodway provided that the path or trail itself is constructed at grade. In these areas, only split rail fencing will be allowed.
- Rehabilitation or re-use of an existing structure to carry the trail where there is no decrease in the hydraulic opening. Work under this category may include a new deck, various concrete repairs, and placement of open type design parapets and railing.

- Minor modifications to structures at the same location with minor re-alignments to better accommodate stream flows. This category allows for replacement or extension of abutments, wingwalls, headwalls, and cutoff walls where there is no adverse effect to the floodway and floodplain
- Placement of new culvert on new location in the floodplain in order to capture drainage or convey a small watercourse which is in conformance with the restrictions set forth in Item #3 — “Minor Stormwater Drainage Improvements”. Culverts deemed to be carrying a watercourse must be depressed one foot below the streambed, meet the ACOE openness ratio, and are limited to an effective opening of 36”.

13. Transfer of State Real Property

Description: Transfer/disposal of State real property.

A proposed transfer of real property belonging to the State and being within or affecting a floodplain must, as part of the property transfer agreement or other legally binding contract, require that the new owner may not construct within or use any part of the property located in the flood zone in such a way as may promote development within the floodplain or could in any way violate the National Flood Insurance Program requirements as administered and enforced by the municipality within which the property resides. A recording that will be added to the property’s land record restricting construction or use as described above shall satisfy this requirement.

14. Waste Stockpile Area within the 500-year Floodplain

Description: Use of a Waste Stockpiles Areas within the 0.2 per cent (500-year) floodplain (but not within 1 per cent [100-year] floodplain) to temporarily manage excess soil that contains concentrations of pollutants above background levels. The soil certified with this category originates within or adjacent to the floodplain.

This category allows for the use, under certain conditions, of a Waste Stockpile Area (WSA) within the 0.2 per cent (500 year) floodplain (the base flood for a critical activity) to temporarily manage excess soil that is derived from transportation construction activities and that is known or suspected to contain concentrations of pollutants above background levels. WSAs are used for temporary stockpiling and confirmation testing of soil prior to it being loaded for transport to appropriate disposal facilities.

The following material may qualify for this category:

- Soil characterized as being from low level areas of environmental concern. Low level areas of environmental concern have detections of pollutants above background levels but below the numerical levels in RCSA 22a-133k-2.

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- Soil characterized as being from areas of environmental concern. Areas of environmental concern have detections of pollutants above the numerical levels in RCSA 22a-133k-2.

Soil stored in WSAs will not be subject to major damage by floods, and such material or equipment shall be firmly anchored, restrained or enclosed to prevent it from floating away. This will be achieved by either:

- Establishing the WSA such that the locations of soil management areas shall be above the 0.2 per cent (500 year) floodplain elevation (i.e., the WSA will be “built up”), or
- Soil shall be managed utilizing roll-off dumpsters that can be more readily mobilized out of the 0.2 per cent (500 year) floodplain in the event a major storm is predicted. A major storm shall be defined as a storm predicted by the NOAA weather service with warnings of flooding, severe thunderstorms, or similarly severe weather conditions or effects. A contingency plan to remove the roll-offs from within the 500-year floodplain at least 24-hours (including weekends and holidays) prior to the start of a predicted major storm shall be included.

All stored material subject to this category will remain covered when not in active use, as defined in 101117A – CONTROLLED MATERIALS HANDLING.

The WSA will be dismantled upon completion of the affiliated project and the area shall be restored to the original or better condition as defined in 0101128A – SECURING, CONSTRUCTION AND DISMANTLING OF A WASTE STOCKPILE AND TREATMENT AREA.

The following practices shall be followed for ALL activities covered under this General Certification:

- Proper erosion and sedimentation controls will be utilized in conjunction with Best Management Practices as outlined in Section 1.10 of the State of Connecticut Department of Transportation *Standard Specifications for Roads, Bridge and incidental Construction, Form 818*, as revised by the latest supplementals.
- All work shall be consistent with DEEP’s *2004 Stormwater Quality Manual*.
- Any temporary facilities, impact activities, or equipment requiring work or placement in a floodplain must be able to be removed in a timely manner from the site in case of a flood warning. Items designed as temporary structures in accordance with the guidelines outlined in the CTDOT Drainage Manual for Temporary Hydraulic Structures

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shall be exempt from this requirement.

- Temporary facilities will allow for the passage of fish with minimal disturbance to the streambed.
- Unconfined in-stream work will be limited to the period indicated by a sign-off from DEEP Fisheries Division. This time frame will typically be June 1st to September 30th.

LWRD General Conditions

- 1. Land Record Filing (for Structures Dredging & Fill, Tidal Wetlands, Certificate of Permission, and Long Island Sound General Permit Licenses only).** The Licensee shall file the Land Record Filing on the land records of the municipality in which the subject property is located not later than thirty (30) days after license issuance pursuant to Connecticut General Statutes (CGS) Section 22a-363g. A copy of the Notice with a stamp or other such proof of filing with the municipality shall be submitted to the Commissioner no later than sixty (60) days after license issuance. If a Land Record Filing form is not enclosed and the work site is not associated with an upland property, no filing is required.
- 2. Contractor Notification.** The Licensee shall give a copy of the license and its attachments to the contractor(s) who will be carrying out the authorized activities prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The Licensee's contractor(s) shall conduct all operations at the site in full compliance with the license and, to the extent provided by law, may be held liable for any violation of the terms and conditions of the license. At the work site, the contractor(s) shall, whenever work is being performed, have on site and make available for inspection a copy of the license and the authorized plans.
- 3. Work Commencement¹.** Not later than two (2) weeks prior to the commencement of any work authorized herein, the Licensee shall submit to the Commissioner, on the Work Commencement Form attached hereto, the name(s) and address(es) of all contractor(s) employed to conduct such work and the expected date for commencement and completion of such work, if any.
 - For water diversion activities authorized pursuant to 22a-377(c)-1 of the Regulations of Connecticut State Agencies, the Licensee shall also notify the Commissioner in writing two weeks prior to initiating the authorized diversion.
 - For emergency activities authorized pursuant Connecticut General Statutes Section 22a-6k, the Licensee shall notify the Commissioner, in writing, of activity commencement at least one (1) day prior to construction and of activity completion no later than five (5) days after conclusion.
- 4. For Coastal Licenses Only - License Notice.** The Licensee shall post the first page of the License in a conspicuous place at the work area while the work authorized therein is undertaken.
- 5. Unauthorized Activities.** Except as specifically authorized, no equipment or material, including but not limited to, fill, construction materials, excavated material or debris, shall be

¹ The Work Commencement condition and the need for a Work Commencement Form is not applicable to Flood Management Certification approvals.

deposited, placed or stored in any wetland or watercourse on or off-site. The Licensee may not conduct work within wetlands or watercourses other than as specifically authorized, unless otherwise authorized in writing by the Commissioner. Tidal wetlands means “wetland” as defined by section 22a-29 and “freshwater wetlands and watercourses” means “wetlands” and “watercourses” as defined by section 22a-38.

6. **Unconfined Instream Work.** Unless otherwise noted in a condition of the license, the following conditions apply to projects in non-coastal waters:
 - Unconfined instream work is limited to the period June 1 through September 30.
 - Confinement of a work area by cofferdam techniques using sand bag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year. The removal of such confinement devices is allowed any time of the year.
 - Once a work area has been confined, in-water work within the confined area is allowed any time of the year.
 - The confinement technique used shall completely isolate and protect the confined area from all flowing water. The use of silt boom/curtain or similar technique as a means for confinement is prohibited.
7. **For State Actions Only - Material or Equipment Storage in the Floodplain.** Unless approved by a Flood Management Exemption, the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood is prohibited. Any other material or equipment stored at the site below said elevation by the Licensee or the Licensee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day. In accordance with the licensee’s Flood Contingency Plan, the Licensee shall remove equipment and materials from the floodplain during periods when flood warnings have been issued or are anticipated by a responsible federal, state or local agency. It shall be the Licensee’s responsibility to obtain such warnings when flooding is anticipated.
8. **Temporary Hydraulic Facilities for Water Handling.** If not reviewed and approved as a part of the license application, temporary hydraulic facilities shall be designed by a qualified professional and in accordance with the *Connecticut Guidelines for Soil Erosion and Sediment Control*, the *2004 Connecticut Stormwater Quality Manual*, or the *Department of Transportation’s ConnDOT Drainage Manual*, as applicable. Temporary hydraulic facilities may include channels, culverts or bridges which are required for haul roads, channel relocations, culvert installations, bridge construction, temporary roads, or detours.
9. **Excavated Materials.** Unless otherwise authorized, all excavated material shall be staged and managed in a manner which prevents additional impacts to wetlands and watercourses.
10. **Best Management Practices.** The Licensee shall not cause or allow pollution of any wetlands or watercourses, including pollution resulting from sedimentation and erosion. In constructing

or maintaining any authorized structure or facility or conducting any authorized activity, or in removing any such structure or facility, the Licensee shall employ best management practices to control storm water discharges, to prevent erosion and sedimentation, and to otherwise prevent pollution of wetlands and other waters of the State. For purposes of the license, “pollution” means “pollution” as that term is defined by CGS section 22a-423. Best Management Practices include, but are not limited, to practices identified in the *Connecticut Guidelines for Soil Erosion and Sediment Control* as revised, *2004 Connecticut Stormwater Quality Manual*, Department of Transportation’s *ConnDOT Drainage Manual* as revised, and the Department of Transportation Standard Specifications as revised.

- 11. In-Water Work Vessel Staging and Storage. (for Structures Dredging & Fill, Tidal Wetlands, Certificate of Permission, and Long Island Sound General Permit Licenses only).** For any barge, vessel, skiff or floating work platform (“work vessels”) utilized in the execution of the work authorized herein, the Licensee shall ensure that such work vessels:
 - do not rest on, or come in contact with, the substrate at any time, unless specifically authorized in the license.
 - are not stored over intertidal flats, submerged aquatic vegetation or tidal wetland vegetation or in a location that interferes with navigation. In the event any work vessel is grounded, no dragging or prop dredging shall occur to free it.
- 12. Work Site Restoration.** Upon completion of any authorized work, the Licensee shall restore all areas impacted by construction, or used as a staging area or accessway in connection with such work, to their condition prior to the commencement of such work.
- 13. Inspection.** The Licensee shall allow any representative of the Commissioner to inspect the project location at reasonable times to ensure that work is being or has been conducted in accordance with the terms and conditions of this license.
- 14. Change of Use. (Applies only if a use is specified within the License “Project Description”)**
 - a. The work specified in the license is authorized solely for the purpose set forth in the license. No change in purpose or use of the authorized work or facilities as set forth in the license may occur without the prior written approval of the Commissioner. The Licensee shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this license, request permission from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.
 - b. A change in the form of ownership of any structure authorized herein from a rental/lease commercial marina to a wholly-owned common interest community or dockominium may constitute a change in purpose as specified in paragraph (a) above.
- 15. De Minimis Alteration.** The Licensee shall not deviate from the authorized activity without prior written approval from the Commissioner. The Licensee may request a de minimis change to any authorized structure, facility, or activity. A de minimis alteration means a change in the authorized design, construction or operation that individually and cumulatively has minimal additional environmental impact and does not substantively alter the project as authorized.

- For diversion activities authorized pursuant to 22a-377(c)-2 of the Regulations of Connecticut State Agencies, a de minimis alteration means an alteration which does not significantly increase the quantity of water diverted or significantly change the capacity to divert water.

16. Extension Request. The Licensee may request an extension of the license expiration date. Such request shall be in writing and shall be submitted to the Commissioner at least thirty (30) days prior to the license expiration. Such request shall describe the work done to date, what work still needs to be completed, and the reason for such extension. The Commissioner may extend the expiration date of this license for a period of up to one year, in order for the Licensee to complete the authorized activities. It shall be at the Commissioner's sole discretion to grant or deny such request. No more than three (3) one-year extensions will be granted under this license.

17. Compliance Certification. Not later than 90 days after completion of the authorized work, the Licensee shall prepare and submit to the Commissioner the attached Compliance Certification Form. Such Compliance Certification shall be completed, signed, and sealed by the Licensee and a Connecticut Licensed Design Professional. If non-compliance is indicated on the form, or the Commissioner has reason to believe the activities and/or structures were conducted in non-compliance with the license, the Commissioner may require the Licensee to submit as-built plans as a condition of this license.

18. Maintenance. The Licensee shall maintain all authorized structures or work in optimal condition or shall remove such structures or facility and restore the affected waters to their pre-work condition. Any such maintenance or removal activity shall be conducted in accordance with applicable law and any additional approvals required by law.

19. No Work After License Expiration. Work conducted after the license expiration date is a violation of the license and may subject the licensee to enforcement action, including penalties, as provided by law.

20. License Transfer. The license is not transferable without prior written authorization of the Commissioner. A request to transfer a license shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Licensee's obligations under the license shall not be affected by the passage of title to the license site to any other person or municipality until such time as a transfer is approved by the Commissioner.

21. Document Submission. Any document required to be submitted to the Commissioner under the license or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

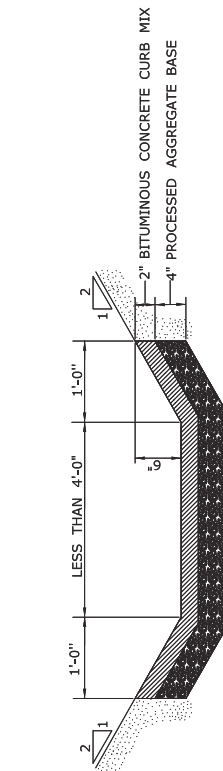
Regulatory Section
Land & Water Resources Division
Department of Energy and Environmental Protection
79 Elm Street
Hartford, Connecticut 06106-5127
860-424-3019

- 22. Date of Document Submission.** The date of submission to the Commissioner of any document required by the license shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under the license, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three (3) days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in the license, the word “day” as used in the license means calendar day. Any document or action which is required by the license to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.
- 23. Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under the license shall be signed by the Licensee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: “I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense.”
- 24. Accuracy of Documentation.** In evaluating the application for the license, the Commissioner has relied on information and data provided by the Licensee and on the Licensee’s representations concerning site conditions, design specifications and the proposed work, including but not limited to representations concerning the commercial, public or private nature of the work or structures, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, the license may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.
- 25. Limits of Liability.** In granting the license, the Commissioner has relied on all representations of the Licensee, including information and data provided in support of the Licensee’s application. Neither the Licensee’s representations nor the issuance of the license shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.
- 26. Reporting of Violations.** In the event that the Licensee becomes aware that they did not or may not comply, or did not or may not comply on time, with any provision of this license or of any document incorporated into the license, the Licensee shall immediately notify the agency contact specified within the license and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the agency contact, the Licensee shall provide, for the agency’s review and written approval, a report including the following information:
- a. the provision(s) of the license that has been violated;
 - b. the date and time the violation(s) was first observed and by whom;

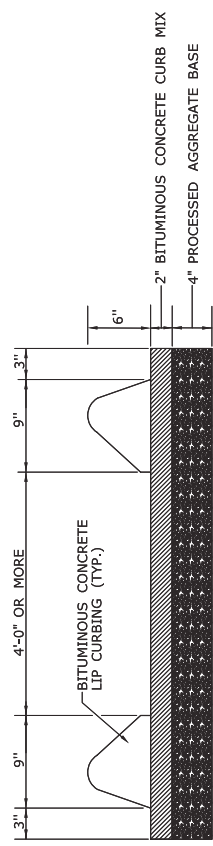
- c. the cause of the violation(s), if known;
- d. if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;
- e. if the violation(s) has not ceased, the anticipated date when it will be corrected;
- f. steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented; and
- g. the signatures of the Licensee and of the individual(s) responsible for actually preparing such report.

If the violation occurs outside of normal business hours, the Licensee shall contact the Department of Energy and Environmental Protection Emergency Dispatch at 860-424-3333. The Licensee shall comply with any dates which may be approved in writing by the Commissioner.

- 27. Revocation/Suspension/Modification.** The license may be revoked, suspended, or modified in accordance with applicable law.
- 28. Other Required Approvals.** License issuance does not relieve the Licensee of their obligations to obtain any other approvals required by applicable federal, state and local law.
- 29. Rights.** The license is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.
- 30. Condition Conflicts.** In the case where a project specific special condition listed on the license differs from, or conflicts with, one of the general conditions listed herein, the project specific special condition language shall prevail. It is the licensee's responsibility to contact the agency contact person listed on the license for clarification if needed prior to conducting any further regulated activities.



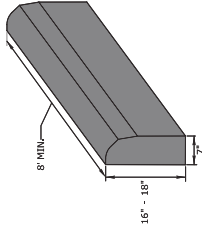
PAVED DITCHES



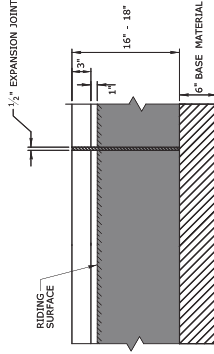
PAVED CHANNELS

DRAWING SHEET NO. HW-803_01b	STANDARD SHEET TITLE PAVED DITCHES AND PAVED CHANNELS	CTDOT STANDARD SHEET	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	APPROVED BY:  James E. P. Loo 09-28-2009/09	DRAWN BY:  Leo Forman, P.E. 09-28-2009/09	DESIGNER/ENGINEER: CHIEF OF ENGINEERING 2000 SOUTH MAIN STREET HARTFORD, CT 06111	NOT TO SCALE ###	PLOTTED DATE: 07/1/2020
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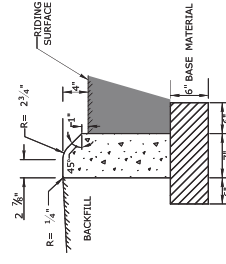
GENERAL NOTE:
 1. PRECAST CONCRETE CURBING MAY BE CAST BY THE MANUFACTURER WITH OPTIONAL LIFTING AND DOWEL BAR HOLES.



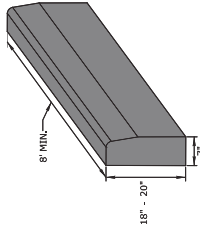
CONCRETE PARK CURBING (4" REVEAL)



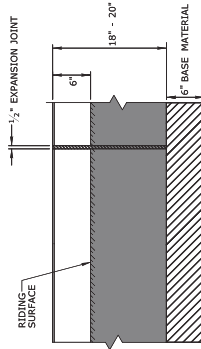
FRONT ELEVATION



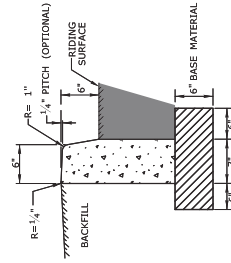
SECTION



CONCRETE CURBING (6" REVEAL)



FRONT ELEVATION

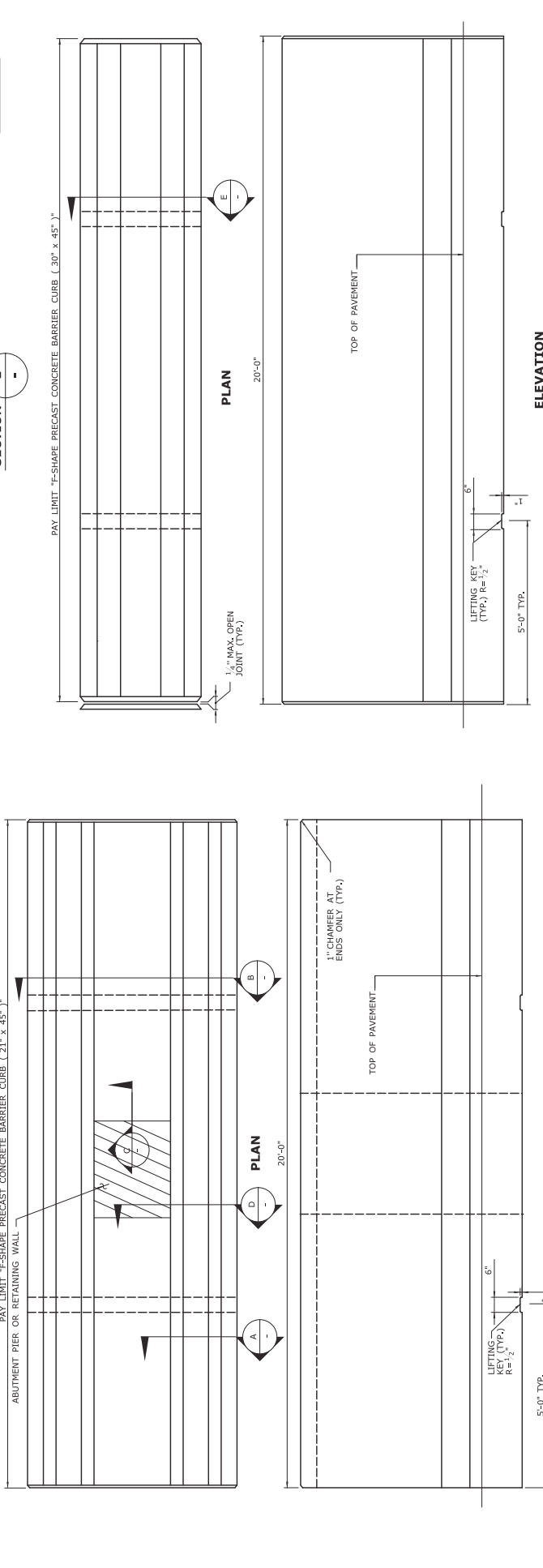
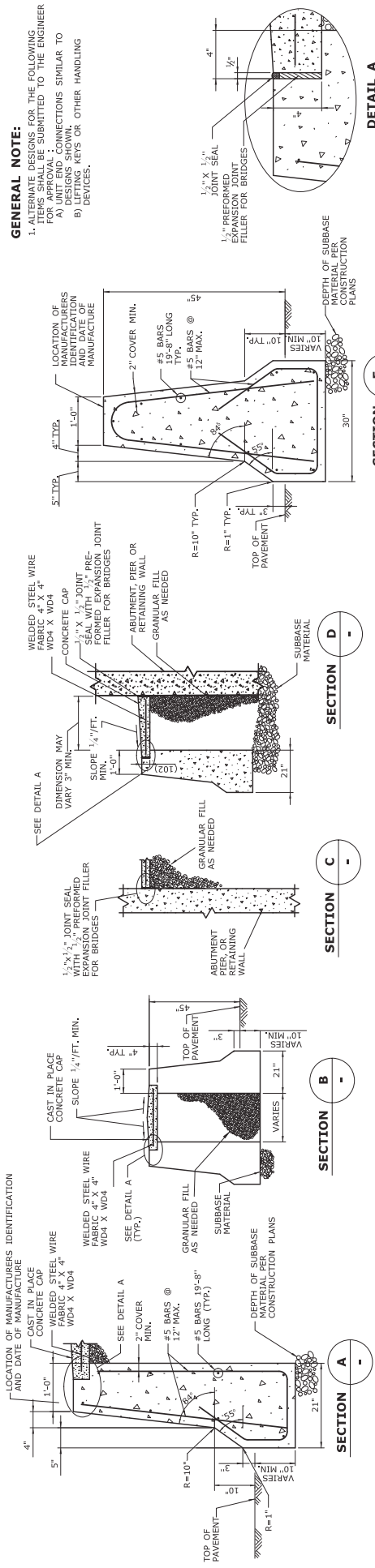


SECTION

STANDARD SHEET NO.	CONCRETE CURBING	CTDOT STANDARD SHEET	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	APPROVED BY: [Signature] P.E. 10.24.07 10.24.07 10.24.07	DESIGNED BY: [Signature] P.E. 14.21.06 14.21.06 14.21.06	NOT TO SCALE
DRAWN BY: [Signature] P.E. 10.24.07 10.24.07 10.24.07	CHECKED BY: [Signature] P.E. 10.24.07 10.24.07 10.24.07	DATE: 10/24/07	PROJECT: [Blank]	SHEET NO. [Blank]	TOTAL SHEETS [Blank]	DRAWN BY: [Blank]

GENERAL NOTE:

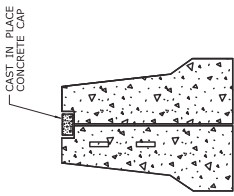
1. ALTERNATE DESIGNS FOR THE FOLLOWING SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL:
 - A) UNIT END CONNECTIONS SIMILAR TO DESIGNS SHOWN.
 - B) UNITS ON OTHER HANDLING DEVICES.



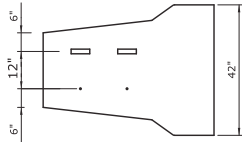
45" HIGH F-SHAPE PRECAST CONCRETE BARRIER CURB UNIT FOR MEDIAN, PIER ABUTMENT OR RETAINING WALL APPLICATION

45" HIGH F-SHAPE PRECAST CONCRETE BARRIER CURB UNIT FOR ROADSIDE APPLICATION

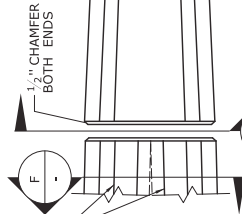
<p>DATE: 07/10/20</p> <p>NOT TO SCALE</p> <p>###</p>	<p>DESIGNED BY: [Signature]</p> <p>CHECKED BY: [Signature]</p> <p>DATE: 07/10/20</p>	<p>APPROVED BY: [Signature]</p> <p>DATE: 07/10/20</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>STANDARD SHEET NO. HW-821_02a</p> <p>CTDOT STANDARD SHEET</p> <p>45" F-SHAPE PRECAST CONCRETE BARRIER CURB SHEET 1</p>
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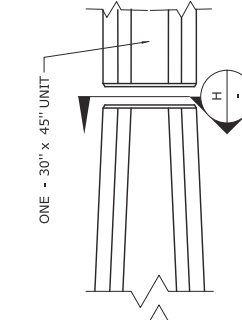
SECTION F -



END VIEW G -



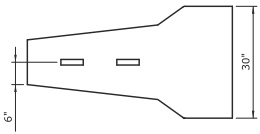
TWO - 21" x 45" UNITS



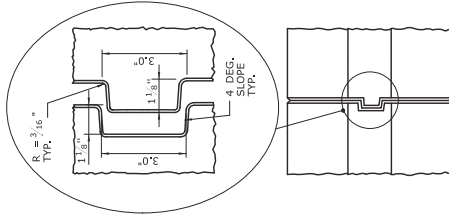
ONE - 30" x 45" UNIT

TRANSITION (PLAN)

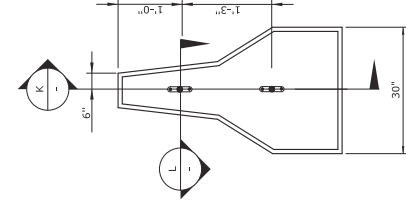
THIS TRANSITION UNIT SHALL BE USED TO TRANSITION FROM TWO 21" x 45" UNITS TO ONE 30" x 45" UNIT. IT SHALL BE PAID FOR AS A 30" x 45" UNIT IN ITS ENTIRETY. REINFORCING THROUGHOUT SHALL CONFORM TO THAT OF A 30" x 45" UNIT.



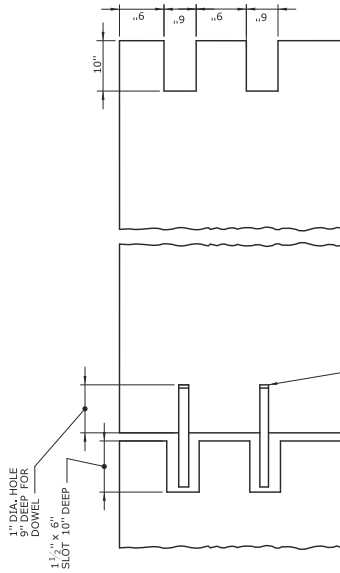
END VIEW H -



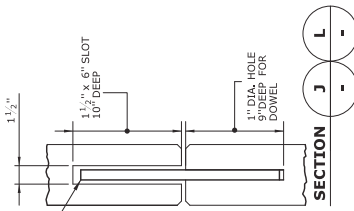
PLAN VIEW 30" x 45" UNIT ALTERNATIVE CONNECTION AT ENDS



21" x 45" UNIT



SECTION J -



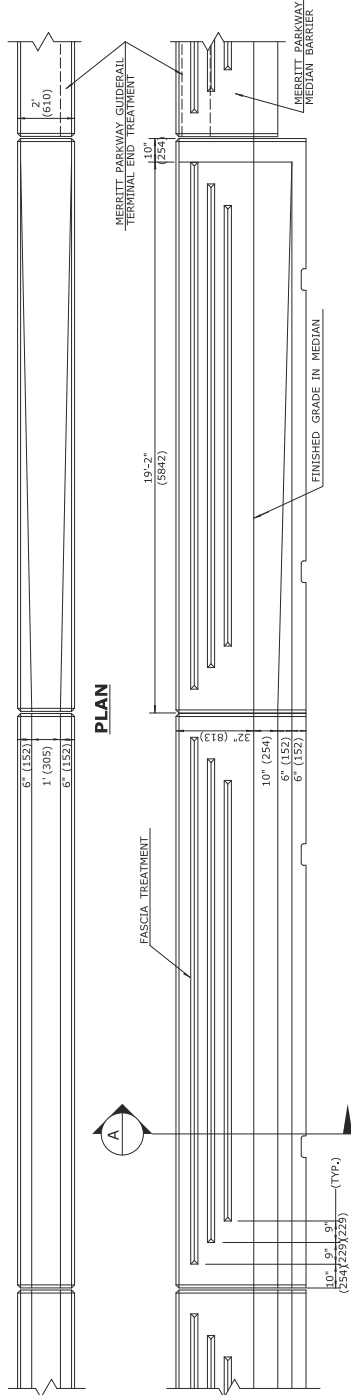
SECTION K -

30" x 45" UNIT

DRAWING NO. HW-821_02b	STANDARD SHEET NO.
STANDARD SHEET NO.	HW-821_02b
STANDARD SHEET NO.	HW-821_02b
STANDARD SHEET NO.	HW-821_02b
STANDARD SHEET NO.	HW-821_02b
STANDARD SHEET NO.	HW-821_02b
STANDARD SHEET NO.	HW-821_02b
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STANDARD SHEET NO.	HW-821_02b
STANDARD SHEET NO.	HW-821_02b
STANDARD SHEET NO.	HW-821_02b
STANDARD SHEET NO.	HW-821_02b

GENERAL NOTES:

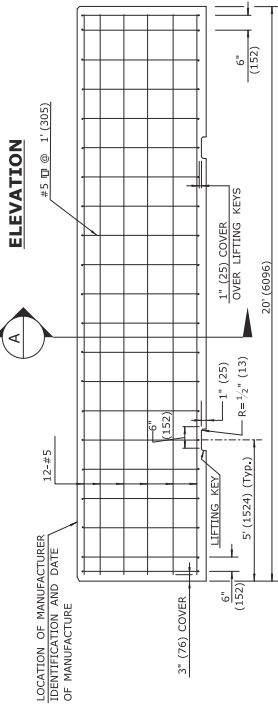
1. ALTERNATE DESIGNS FOR THE FOLLOWING MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL:
 1. UNIT END CONNECTIONS SIMILAR TO THE DESIGN SHOWN.
 2. LIFTING HOLES, KEYS OR OTHER HANDLING DEVICES.
2. TERMINAL END TREATMENTS SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
3. PRECAST UNITS SHALL BE COATED WITH A PENETRATING SEALER.
4. REINFORCING SHALL BE UNCOATED AND CONFORM TO ASTM A615M, GRADE 60 (420).
5. CONCRETE SHALL BE RCC0460 CONCRETE WITH A MINIMUM 28 DAY STRENGTH ($f_c = 4,000\text{psi}(28\text{ Mpa})$).
6. DOWELS SHALL CONFORM TO ASTM A36 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A123. THE FIRST AND LAST SECTIONS SHALL HAVE EXPOSED PROTRUDING DOWELS.



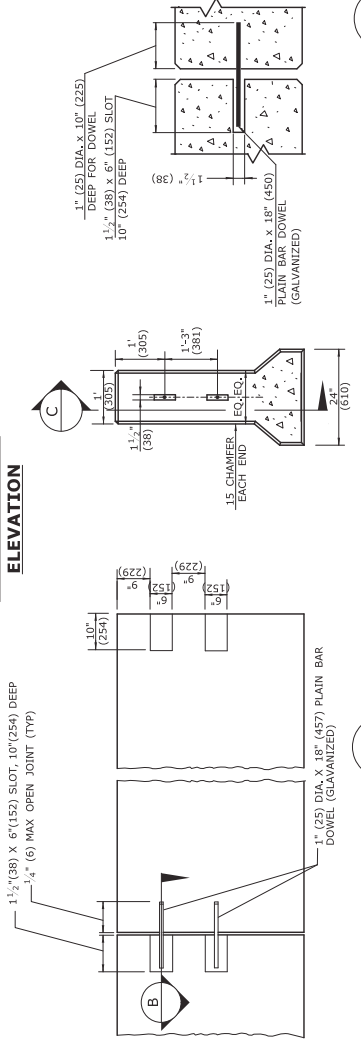
MERRITT PARKWAY MEDIAN BARRIER 1' (0.3 m) WIDE

MERRITT PARKWAY MEDIAN BARRIER TRANSITION SECTION**

** MERRITT PARKWAY MEDIAN BARRIER TRANSITION SECTION SHALL BE PAID FOR UNDER THE ITEM "MERRITT PARKWAY MEDIAN BARRIER"

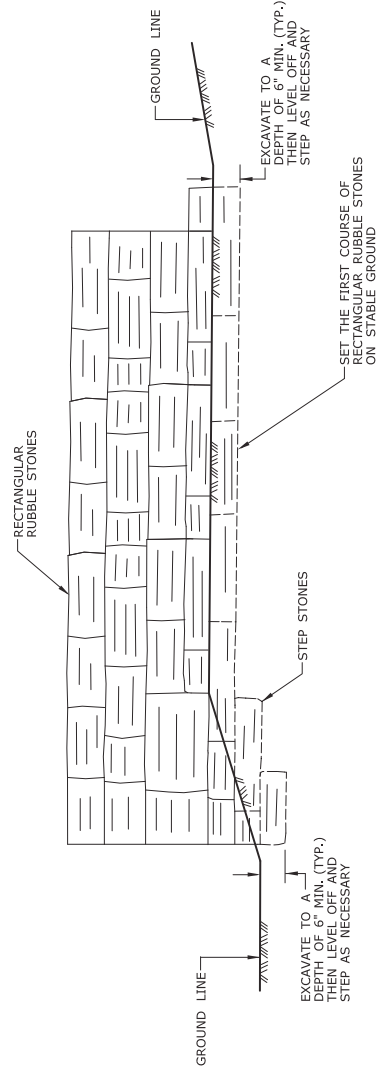


REINFORCEMENT ELEVATION

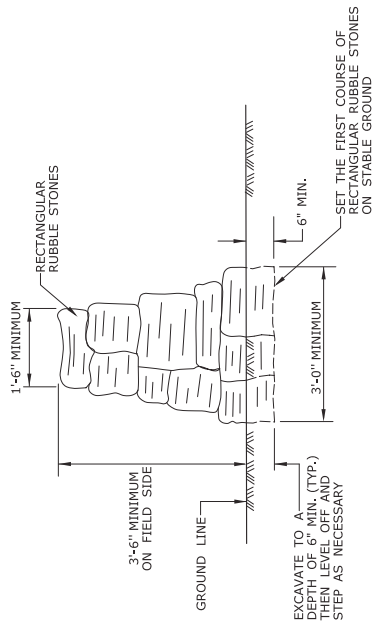


DOWEL DETAILS AT END

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.
 DRAWING DATE: 07/2020
 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION
 APPROVED BY: [Signature]
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 NOT TO SCALE
 MERRITT PARKWAY NARROW MEDIAN BARRIER
 STANDARD SHEET
 HW-821_04c
 PLOTTED DATE: 07/10/20



ELEVATION



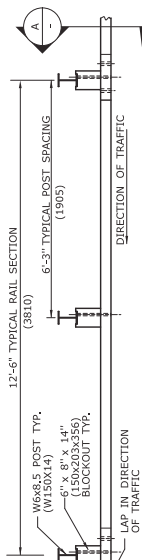
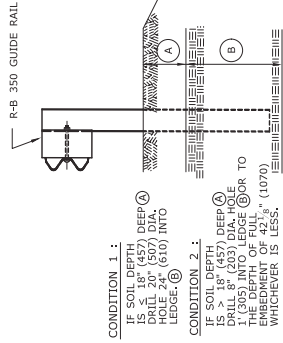
SECTION

STONE WALL FENCE

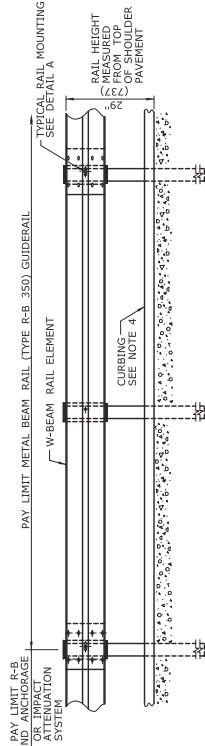
NOT TO SCALE ###	DESIGNER: OFFICE OF ENGINEERING 2000 SOUTH MAIN STREET FORT MONROE, CT 06111	DRAWN BY: Lori Forman, P.E. 09/28/44/007	APPROVED BY: Paul J. Fallon, P.E. 09/28/44/007		CTDOT STANDARD SHEET	STONE WALL FENCE	STANDARD SHEET NO. HW-905_01
				STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION			

GENERAL NOTES:

- SEE SHEET HW-910.01 FOR HARDWARE AND DELINEATOR DETAILS.
- MAXIMUM DESIGN DEFLECTION FOR R-B 350 GUIDERAIL AT THE STANDARD POST SPACING OF 6'-3"(1905) IS 4'-3"(1295). DEFLECTION REQUIREMENT IS MEASURED FROM THE BACK OF POST TO THE FACE OF OBJECT.
- FOR ROADWAYS WITH 60 MPH (97) OR LESS, ALL RAIL ELEMENTS SHALL BE SHOP FABRICATED TO THE PROPER RADIUS AND GALVANIZED AFTER FABRICATION. RADIUS RAIL WHEN REQUIRED AND NOTED ON THE PLANS IS INCLUDED IN THE PAY ITEM FOR GUIDERAIL.
- RAIL HEIGHT WITH CURBING SHALL BE MEASURED FROM THE TOP OF PAVEMENT. ON HIGH SPEED ROADWAYS (>45mph 72.4kph), 4"(102) CURBING MAY BE USED IN CONJUNCTION WITH GUIDERAIL. ON LOW SPEED ROADWAYS (<45mph 72.4kph), 6"(152) CURBING MAY BE USED IN CONJUNCTION WITH GUIDERAIL AND THE RAIL ELEMENT SHALL BE PLACED A MAXIMUM OF 9"(229) BEHIND THE FACE OF CURB.
- THREE BLOCKOUTS MAY BE USED FOR ONE POST ONLY. TWO BLOCKOUTS MAY BE USED FOR A SERIES OF POSTS. THE COST OF ADDITIONAL BLOCKOUTS AND LONGER BOLTS SHALL BE INCLUDED IN THE BIDDING PRICE PER FOOT OF GUIDERAIL. EXTRA BLOCKOUTS AT TRANSITION TO BRIDGE PARAPETS SHOULD BE AVOIDED.
- W-BEAM GUIDERAIL MAY BE PLACED 1"(305) OR MORE FROM THE EDGE OF PAVEMENT ONLY ON SLOPES 10:1 OR FLATTER AND WITHOUT CURBING. IF THE RAIL IS INSTALLED WITHIN 2'(610) OF THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE SHOULDER SLOPE EXTENDED TO THE RAIL. RAIL HEIGHT IS MEASURED FROM THE GROUND DIRECTLY BELOW THE RAIL. RAIL HEIGHT IS MEASURED FROM THE GROUND DIRECTLY BELOW THE RAIL.
- ALL R-B 350 GUIDERAIL TYPES INSTALLED ON EXPRESSWAYS AND RAMP SHALL USE CLASS B, TYPE-II (10 GAUGE) W-BEAM RAIL ELEMENTS.
- 20" (507) DIA. EXCAVATED HOLE SHALL BE BACKFILLED WITH SUITABLE MATERIAL OR GRANULAR FILL. ALL EXCAVATED HOLES SHALL BE BACKFILLED WITH SUITABLE MATERIAL OR GRANULAR FILL AND SHALL BE BACKFILLED WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM), 8" (203) DIA. HOLE SHALL BE BACKFILLED WITH SUITABLE MATERIAL.
- AS DIRECTED BY THE ENGINEER AND WHERE PAVEMENT FOR RAILING IS NOT BEING INSTALLED, A MIN. 6" DEPTH OF PROCESSED AGGREGATE SHALL BE INSTALLED FROM THE PAVEMENT EDGE OR BACK OF CURB TO THE MINIMUM OF 2'(610) BEHIND THE GUIDERAIL POST AND COMPACTED IN (150) LIFTS.
- MINIMUM RAIL HEIGHT FOR NEW CONSTRUCTION SHALL BE 29" (737) 1' 1" (25).

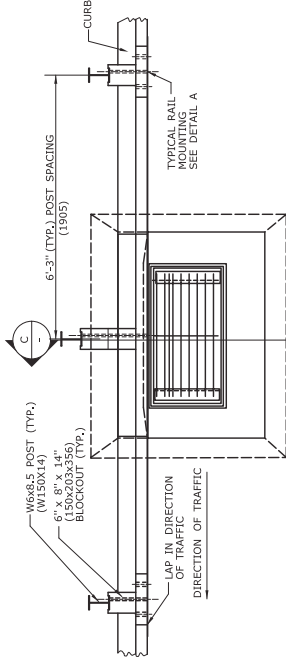


PLAN

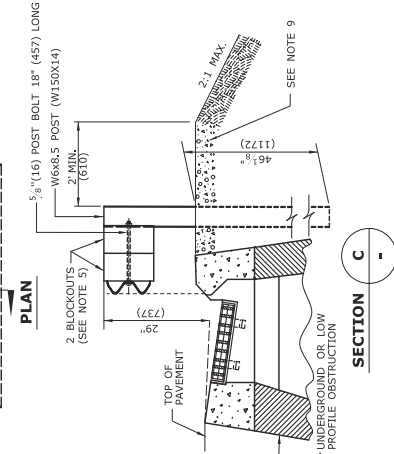
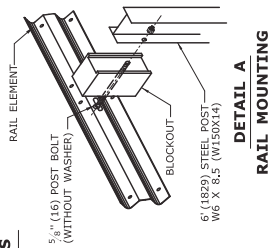


ELEVATION

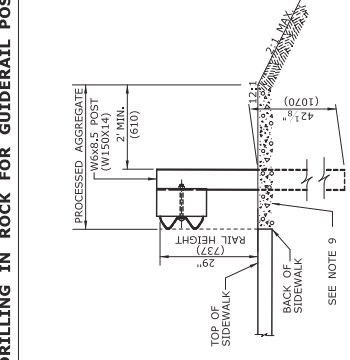
METAL BEAM RAIL (TYPE R-B 350)



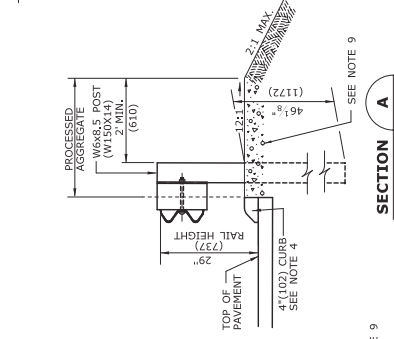
DRILLING IN ROCK FOR GUIDERAIL POSTS



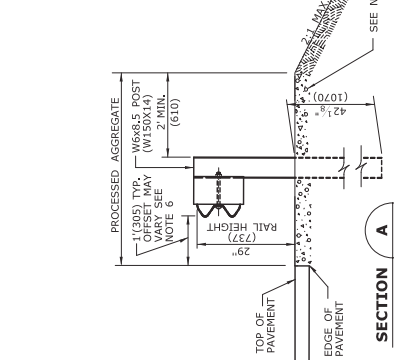
MULTIPLE BLOCKOUT APPLICATION (MAY BE USED TO AVOID UNDERGROUND OR LOW PROFILE OBSTRUCTION)



SIDEWALK APPLICATION



CURB APPLICATION

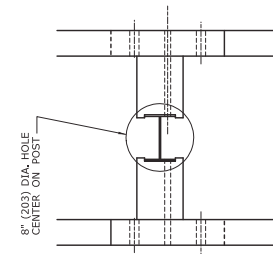


NO CURB APPLICATION

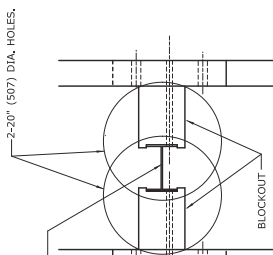
<p>DESIGNED BY: </p>	<p>APPROVED BY: P.E. John P. Faller 09/28/19/007</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>CTDOT STANDARD SHEET</p>	<p>HW-910.02</p>
<p>DESIGNED BY: Leo Fontana, P.E. 09/28/19/007</p>	<p>APPROVED BY: P.E. John P. Faller 09/28/19/007</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>CTDOT STANDARD SHEET</p>	<p>HW-910.02</p>
<p>DESIGNED BY: P.E. John P. Faller 09/28/19/007</p>	<p>APPROVED BY: P.E. John P. Faller 09/28/19/007</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>CTDOT STANDARD SHEET</p>	<p>HW-910.02</p>

GENERAL NOTES:

1. SEE SHEET HW-910.01 FOR HARDWARE AND DELINEATOR DETAILS.
2. MAXIMUM DESIGN DEFLECTION FOR MD-B 350 GUIDERAIL AT THE STANDARD POST SPACING OF 6'-3" (1905) IS 2" (610). DEFLECTION REQUIREMENT IS MEASURED FROM THE BACK OF POST TO THE FACE OF OBJECT.
3. FOR CURVES WITH RADIUS OF 150'(45.7m) OR LESS, ALL RAIL ELEMENTS SHALL BE SHOP FABRICATED TO THE PROPER RADIUS AND GALVANIZED AFTER FABRICATION. RADIUS RAIL WHEN REQUIRED AND NOTED ON THE PLANS, IS INCLUDED IN THE PAY ITEM FOR GUIDERAIL.
4. W-BEAM GUIDERAIL MAY BE PLACED 1" (305) OR MORE FROM THE EDGE OF PAVEMENT ONLY ON LOW-SLOPE PAVEMENT AND NOT CURVING. THE RAIL HEIGHT MEASURED FROM THE SHOULDER TOP TO THE EDGE OF PAVEMENT SHALL BE 14" (355) MINIMUM. THE RAIL HEIGHT MEASURED FROM THE SHOULDER TOP TO THE RAIL, IF THE RAIL IS INSTALLED BEYOND 2" (610) FROM THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE GROUND DIRECTLY BELOW THE RAIL.
5. MD-B 350 DOES NOT REQUIRE 10 GAUGE RAIL ELEMENTS.
6. 2"-20" (507) DIA. EXCAVATED HOLES SHALL BE BACK FILLED WITH SUITABLE MATERIAL OR GRANULAR FILL COMPACTED IN 6" (150) LIFTS BEFORE DRIVING POST OR POSTS MAY BE SET IN EXCAVATED HOLE AND BACK FILLED WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM), 8" (203) DIA. HOLE SHALL BE BACK FILLED WITH SUITABLE MATERIAL.
7. AS DIRECTED BY THE ENGINEER AND WHERE PAVEMENT FOR RAILING IS NOT BEING INSTALLED, A 6" MIN. DEPTH OF SOIL SHALL BE EXCAVATED AND BACK FILLED A MINIMUM OF 2" (51) WIDE UNDER GUIDERAIL CENTERED ON THE POST AND COMPACTED IN 6" (150) LIFTS.
8. MINIMUM RAIL HEIGHT FOR NEW CONSTRUCTION SHALL BE 29" (737) ± 1" (25).

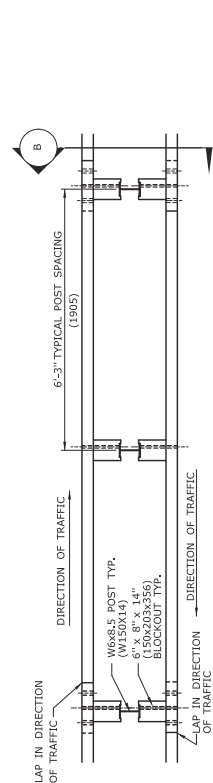


**PLAN
CONDITION 2
(SEE NOTE 6)**

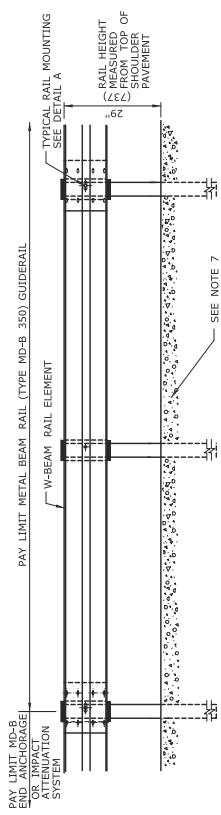


**PLAN
CONDITION 1
(SEE NOTE 6)**

DRILLING IN ROCK FOR GUIDERAIL POSTS

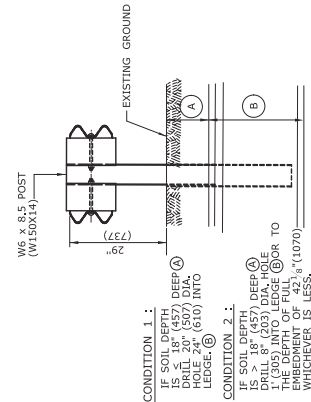


PLAN



ELEVATION

METAL BEAM RAIL (TYPE MD-B 350)

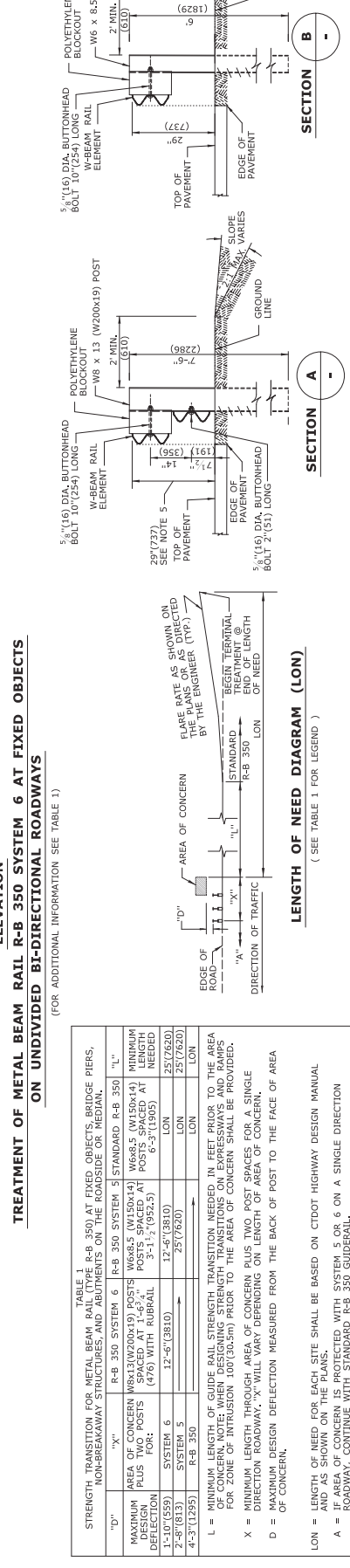
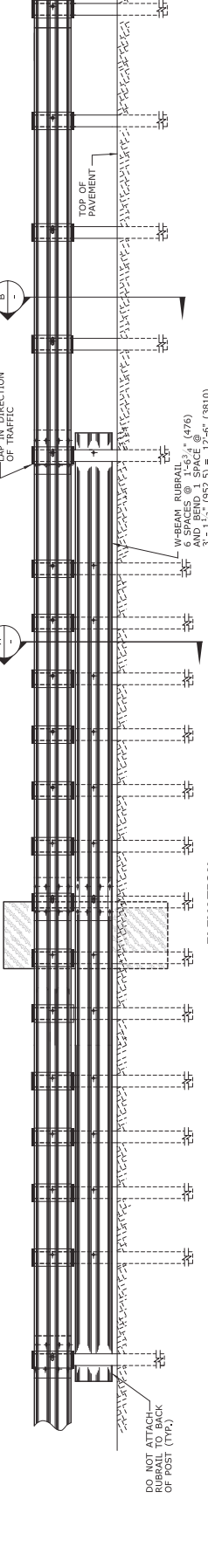
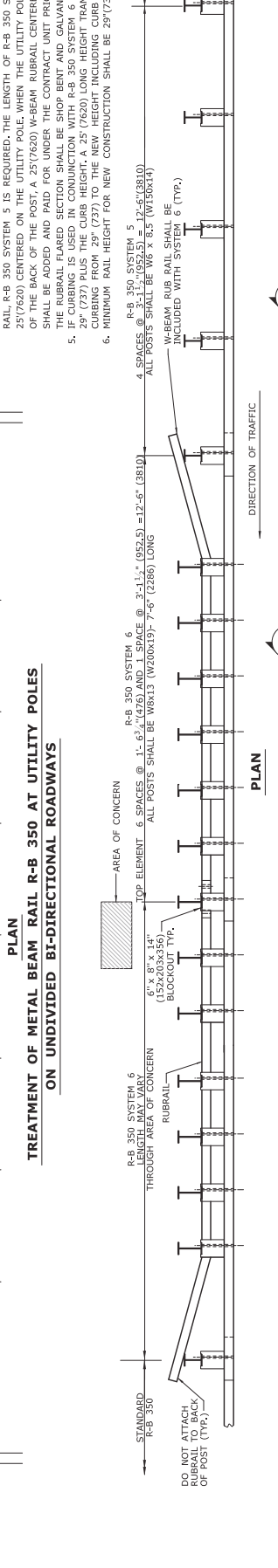
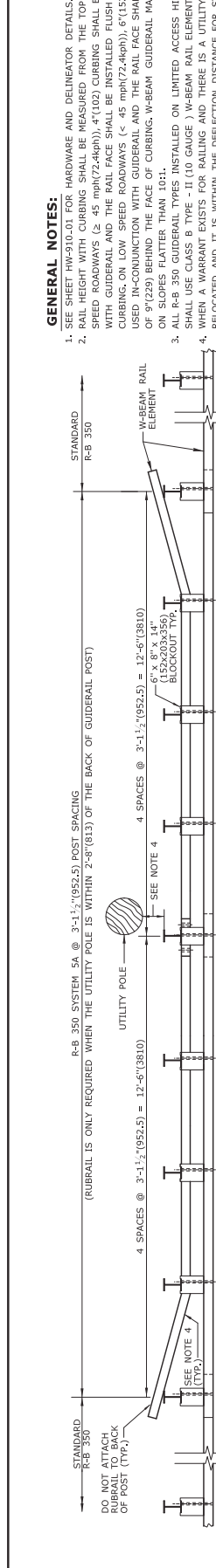


**SECTION
B
-**

**DETAIL A
RAIL MOUNTING**

NOTE: REFER TO DESIGN PLANS FOR LOCATION OF GUIDERAIL IN THE MEDIAN WITH OR WITHOUT CURBING.

	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	STANDARD SHEET TITLE: METAL BEAM RAIL (TYPE MD-B 350) GUIDERAIL	DRAWING NUMBER: HW-910.03
	CT DOT STANDARD SHEET	ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.	
DESIGNED BY: LOU FORMAN, P.E. 09/28/2004/097	CHECKED BY: JOHN P. HARRIS, P.E. 09/28/2004/097	APPROVED BY: JOHN P. HARRIS, P.E. 09/28/2004/097	NOT TO SCALE ###



GENERAL NOTES:

- SEE SHEET HW-910.01 FOR HARDWARE AND DETAILER DETAILS.
- STANDARD RUBRAIL SHALL BE MEASURED FROM THE TOP OF PAVEMENT ON HIGH SPEED ROADWAYS (< 45 mph(72.4kph)). 4\"/>
- IN-CONCRETE CURBING MAY BE USED ON LOW SPEED ROADWAYS (< 45 mph(72.4kph)). 4\"/>
- CURBING SHALL BE INSTALLED A MAX. ON SLOPES FLATTER THAN 10:1.
- ALL R-B 350 GUIDERAIL TYPES INSTALLED ON LIMITED ACCESS HIGHWAYS AND RAMPS SHALL USE CLASS B TYPE II (10 GAUGE) W-BEAM RAIL ELEMENTS.
- WHEN A WARRANT EXISTS FOR RAILING AND THERE IS A UTILITY POLE THAT CAN NOT BE RELOCATED AND IT IS WITHIN THE DEFLECTION DISTANCE FOR STANDARD R-B 350 GUIDERAIL, R-B 350 SYSTEM 5 IS REQUIRED. THE LENGTH OF R-B 350 SYSTEM 5 SHALL BE 25'(7620) CENTERED ON THE UTILITY POLE. WHEN THE UTILITY POLE IS WITHIN 2'-8\"/>
- THE RUBRAIL FLARED SECTION SHALL BE SHOP BENT AND GALVANIZED AFTER FABRICATION. CURBING IS USED IN CONNECTION WITH R-B 350 SYSTEM 6 WHERE RAIL HEIGHT SHALL BE 25\"/>
- CURBING SHALL BE INSTALLED TO THE CURBING FROM 29\"/>
- MINIMUM RAIL HEIGHT FOR NEW CONSTRUCTION SHALL BE 29\"/>

TREATMENT OF METAL BEAM RAIL R-B 350 AT UTILITY POLES ON UNDIVIDED BI-DIRECTIONAL ROADWAYS

TREATMENT OF METAL BEAM RAIL R-B 350 AT FIXED OBJECTS ON UNDIVIDED BI-DIRECTIONAL ROADWAYS

LENGTH OF NEED DIAGRAM (LON)
(SEE TABLE 1 FOR LEGEND)

STRENGTH TRANSITION FOR METAL BEAM RAIL R-B 350 AT FIXED OBJECTS, BRIDGE PIERS, NON-BREAKAWAY STRUCTURES AND ABUTMENTS ON THE ROADSIDE OR MEDIAN.	R-B 350 SYSTEM 5	STANDARD R-B 350
MINIMUM AREA OF CONCERN PLUS TWO POSTS SPACED AT 1'-4 1/2\"/>		

STRENGTH TRANSITION FOR METAL BEAM RAIL R-B 350 AT UTILITY POLES ON UNDIVIDED BI-DIRECTIONAL ROADWAYS

"D"	"X"	R-B 350 SYSTEM 5	STANDARD R-B 350
MINIMUM AREA OF CONCERN PLUS TWO POSTS SPACED AT 1'-4 1/2\"/>			

LENGTH OF NEED DIAGRAM (LON)
(SEE TABLE 1 FOR LEGEND)

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

APPROVED BY: [Signature]

DESIGNED BY: [Signature]

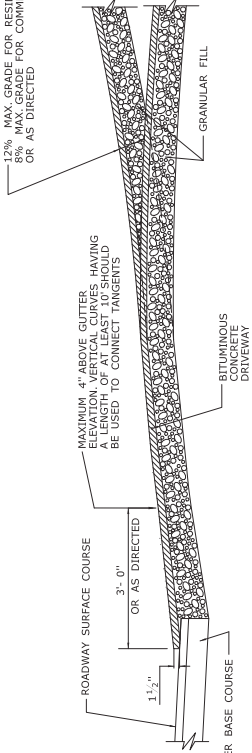
DATE: 09/28/2007

NOT TO SCALE

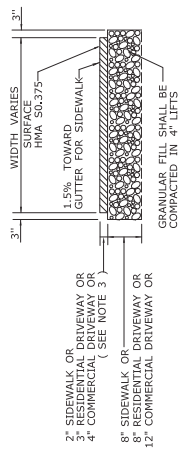
HW-910.04

12% MAX. GRADE FOR RESIDENTIAL OR AS DIRECTED

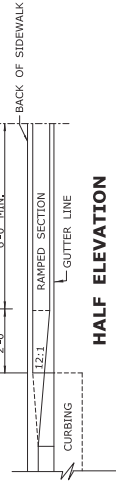
ROADWAY SURFACE COURSE
OR AS DIRECTED
SHOULDER BASE COURSE
MAXIMUM 4" ABOVE GUTTER ELEVATION. VERTICAL CURVES HAVING A LENGTH OF AT LEAST 10' SHOULD BE USED TO CONNECT TANGENTS



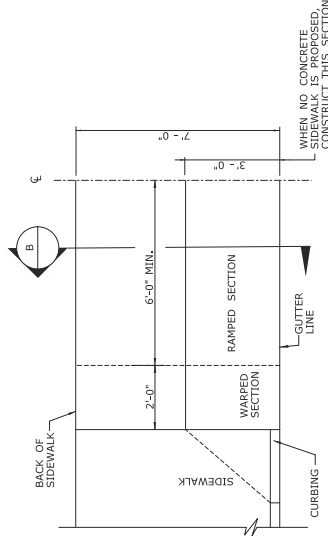
SECTION A



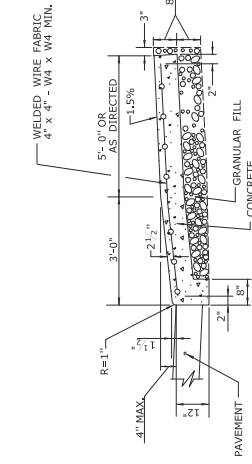
TYPICAL SECTION BITUMINOUS CONCRETE SIDEWALK AND DRIVEWAY



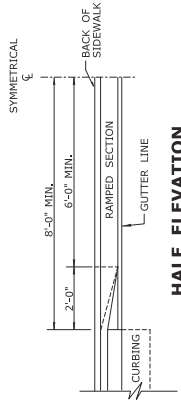
SECTION B



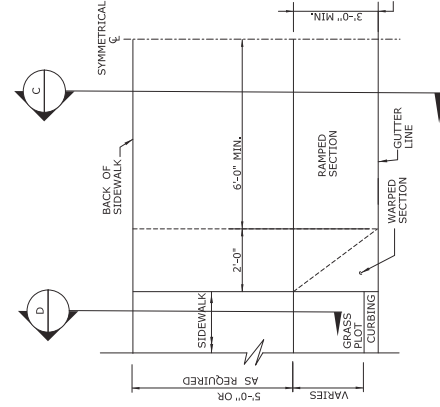
HALF PLAN OF CONCRETE DRIVEWAY RAMP WHERE SIDEWALK ADJOINS CURBING



SECTION C



SECTION D



HALF PLAN OF CONCRETE DRIVEWAY RAMP WHERE CURB IS SEPARATED FROM SIDEWALK BY GRASS PLOT

SECTION D

5' WIDE CONCRETE SIDEWALK WITH GRASS PLOT

- GENERAL NOTES:**
1. DRIVEWAY ENTRANCE SHALL BE A MINIMUM OF 12' WIDE, EXCLUDING CURBING WHEN PRESENT.
 2. WELDED WIRE FABRIC MATS WITH REINFORCING AT CLOSER SPACING MAY BE USED.
 3. SURFACE IMA S0.375 TO BE PLACED IN TWO EQUAL LIFTS FOR BOTH RESIDENTIAL AND COMMERCIAL DRIVEWAYS.

STANDARD SHEET TITLE:

DRIVEWAY RAMPS AND SIDEWALKS



STATE OF CONNECTICUT
DEPARTMENT OF
TRANSPORTATION

APPROVED BY:
P.E. FALLON
P.E. J. FALLON
10-24-2007

DESIGNED BY:
LARRY FALLON, P.E.
10-24-2007

DESIGNER/ENGINEER:
COTR ENGINEERING
1000 BROADWAY
NEW BRITAIN, CT 06111

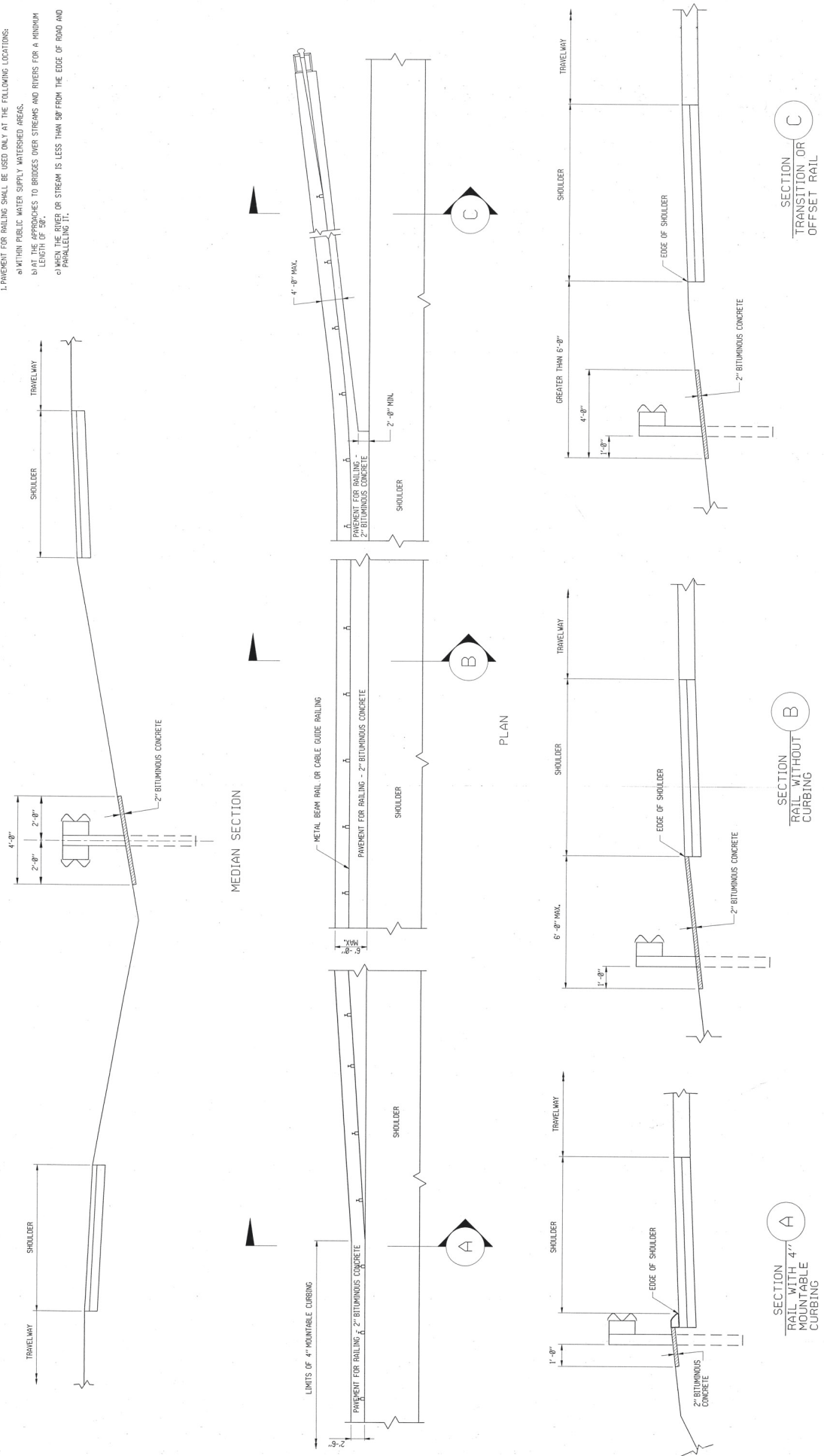
NOT TO SCALE
###

STANDARD SHEET NO.
HW-921.01

PLOTTED DATE: 7/1/2020

GENERAL NOTES:

- 1. PAVEMENT FOR RAILING SHALL BE USED ONLY AT THE FOLLOWING LOCATIONS:
 - a) WITHIN PUBLIC WATER SUPPLY WATERSHED AREAS.
 - b) AT THE APPROACHES TO BRIDGES OVER STREAMS AND RIVERS FOR A MINIMUM LENGTH OF 30'.
 - c) WHEN THE RIVER OR STREAM IS LESS THAN 50' FROM THE EDGE OF ROAD AND PARALLELING IT.



SECTION A
RAIL WITH 4" MOUNTABLE CURBING

SECTION B
RAIL WITHOUT CURBING

SECTION C
TRANSITION OR OFFSET RAIL

TYPICAL CROSS SECTIONS

REVISION NO.	DATE	DESCRIPTION	SUBMITTED BY:	DATE	06/04	CRDD FILE# 925-030
			FORNITY M. WILSON	DATE	4.30.04	DATE: 19-Apr-04
			TRANSPORTATION ENGINEER	DATE	5.20.04	SCALE: NOT TO SCALE
			CONVERTED TO DESIGN	DATE	3 MAY 04	
			APPROVED:	DATE	5-20-04	
			FORNITY M. WILSON			



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



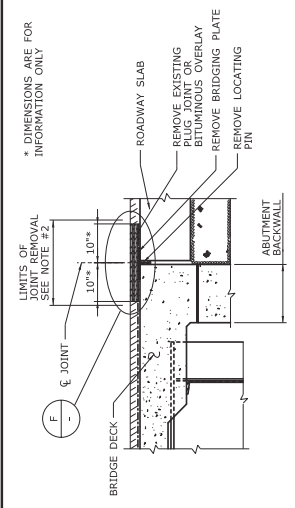
OFFICE OF ENGINEERING

STANDARD DRAWING

PAVEMENT FOR RAILING

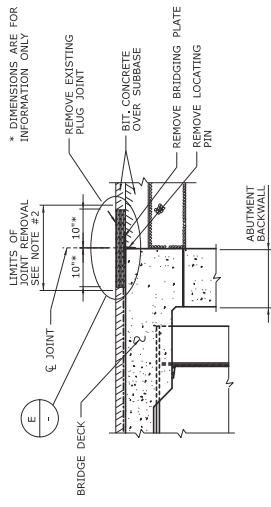
STANDARD NO. 925-A

DRAWING TITLE



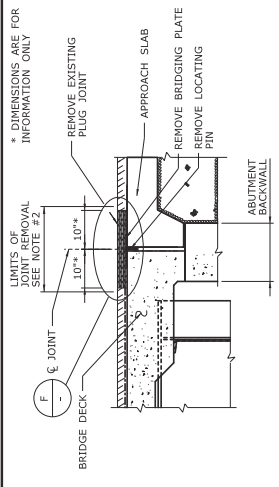
REMOVAL - EXISTING ASPHALTIC PLUG JOINT AT ROADWAY SLAB
SCALE: 3/4" = 1'-0"

SECTION A



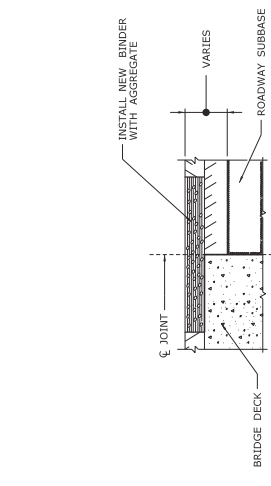
REMOVAL - EXISTING ASPHALTIC PLUG JOINT AT THE SHOULDER
SCALE: 3/4" = 1'-0"

SECTION D



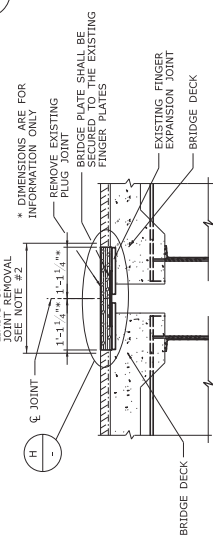
REMOVAL - EXISTING ASPHALTIC PLUG JOINT AT APPROACH SLAB
SCALE: 3/4" = 1'-0"

SECTION B



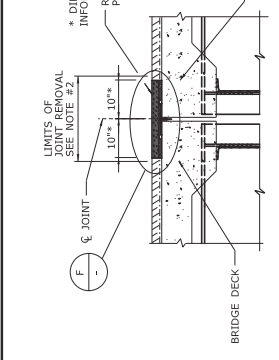
INSTALLATION OF ASPHALTIC PLUG EXPANSION JOINT SYSTEM
SCALE: 1 1/2" = 1'-0"

SECTION E



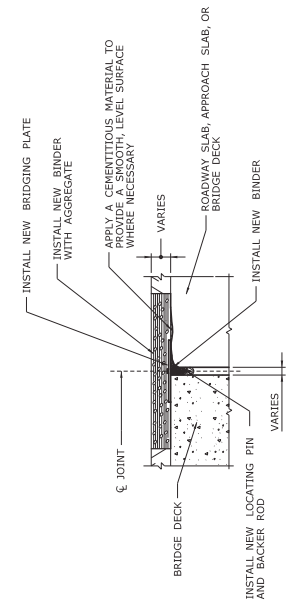
REMOVAL OF EXISTING ASPHALTIC PLUG JOINTS AT PIERS WITH FINGER JOINT PLATES
SCALE: 1 1/2" = 1'-0"

SECTION G



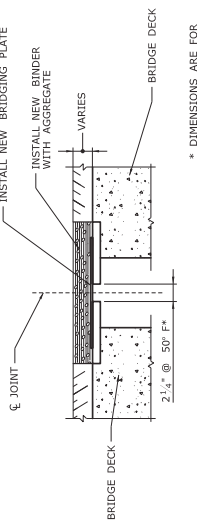
REMOVAL OF EXISTING ASPHALTIC PLUG JOINTS AT PIERS
SCALE: 3/4" = 1'-0"

SECTION C



INSTALLATION OF ASPHALTIC PLUG EXPANSION JOINT SYSTEM
SCALE: 1 1/2" = 1'-0"

SECTION F



INSTALLATION OF ASPHALTIC PLUG JOINTS AT PIERS WITH FINGER JOINT PLATES
SCALE: 3/4" = 1'-0"

SECTION H

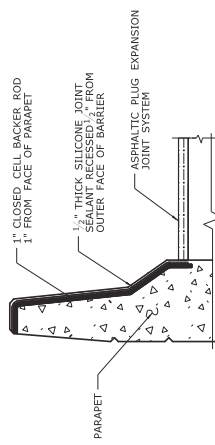
NOTES: 1. REMOVAL OF ALL EXISTING JOINT MATERIAL AND BITUMINOUS CONCRETE WITHIN THE LIMITS OF THE PROPOSED JOINT TO BE PAID FOR UNDER THE ITEM ASPHALTIC PLUG EXPANSION JOINT SYSTEM.

2. WHERE EXISTING BRIDGE DECK JOINTS ARE CONCEALED UNDER THE BRIDGE DECK JOINT LOCATION, CONTRACTOR SHALL VERIFY THE BRIDGE DECK JOINT LOCATION AND HAVE THE LIMITS OF SAW CUTTING APPROVED BY THE ENGINEER.

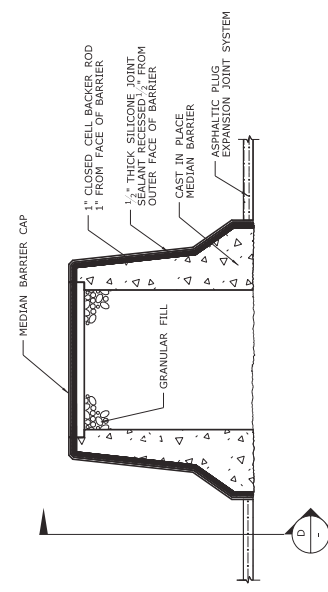
3. LIMITS OF SAW CUTTING (5' MIN. BEYOND EXISTING JOINT LOCATION) SHALL BE PAID FOR UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM (TYP.)"

4. NEW STEEL BRIDGING PLATES SHALL HAVE A MINIMUM THICKNESS OF 3/4" FOR OPENINGS THAT EXCEED 3' 4" IN WIDTH. 1/2" THICK 12" WIDE SHALL BE REQUIRED.

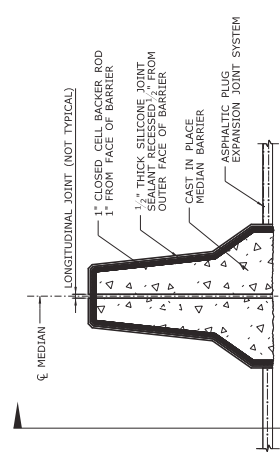
REVISION: ... ASPHALTIC PLUG JOINTS-600 SHEET NO. \$\$\$	PROJECT TITLE: ASPHALTIC PLUG JOINT DETAILS 1	PROJECT NO.: DRAWING NO.: SHEET NO.:
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES, IS BASED ON THE INFORMATION PROVIDED BY THE CLIENT AND IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES AND CONDITIONS OF WORK WHICH WILL BE REQUIRED.	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	PROJECT NO.: DRAWING NO.: SHEET NO.:
ESTIMATOR: CHECKED BY: SCALE AS NOTED	OFFICE OF ENGINEERING DEPARTMENT OF TRANSPORTATION	PROJECT TITLE: ASPHALTIC PLUG JOINT DETAILS 1
REVISION: ... ASPHALTIC PLUG JOINTS-600 SHEET NO. \$\$\$	PROJECT TITLE: ASPHALTIC PLUG JOINT DETAILS 1	PROJECT NO.: DRAWING NO.: SHEET NO.:



A
JOINT TREATMENT AT PARAPET
 SCALE: 3/4" = 1'-0"

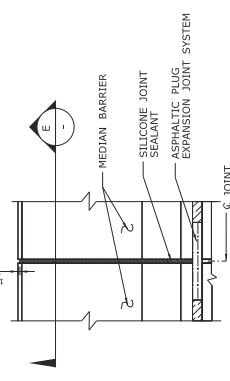


B
JOINT TREATMENT AT CONCRETE MEDIAN BARRIER WITH CAP
 SCALE: 3/4" = 1'-0"

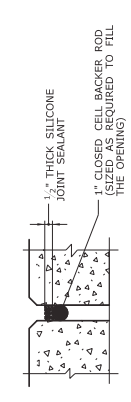


C
JOINT TREATMENT AT CONCRETE MEDIAN BARRIER
 SCALE: 3/4" = 1'-0"

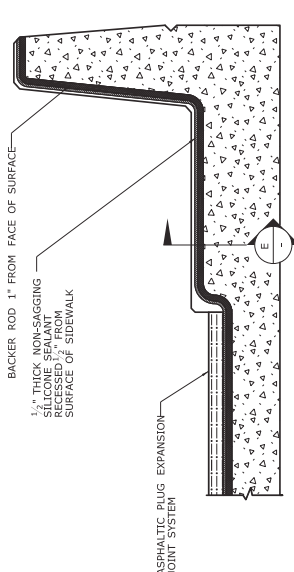
NOTE:
 PRIOR TO INSTALLING THE NEW BACKER ROD AND SILICONE JOINT SEALANT, THE EXISTING JOINT SEALANT SHALL BE REMOVED BY THE METHOD APPROVED BY THE ENGINEER. THIS WORK WILL BE UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM".



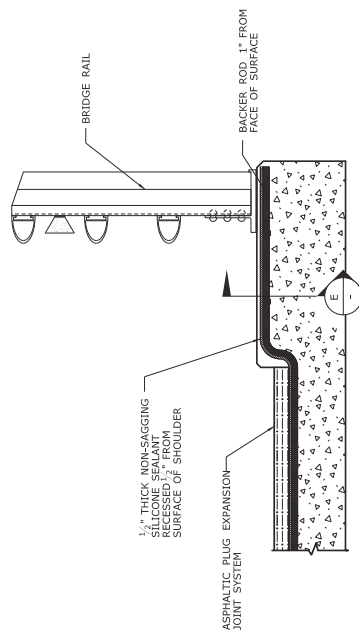
D
VIEW
 SCALE: 3/4" = 1'-0"



E
SECTION THROUGH MEDIAN/SHOULDER BARRIER JOINT
 NTS

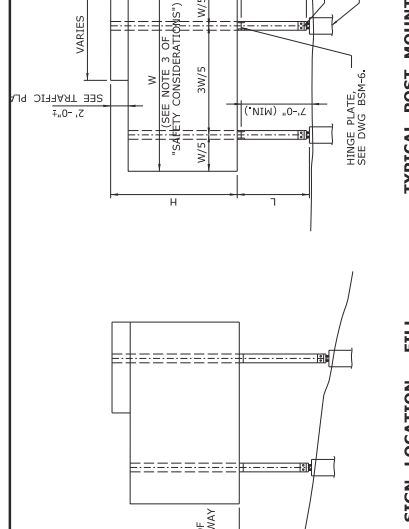


F
JOINT TREATMENT AT SIDEWALK
 NTS
 (SIMILAR DETAILS APPLY AT RAISED CONCRETE MEDIANS)

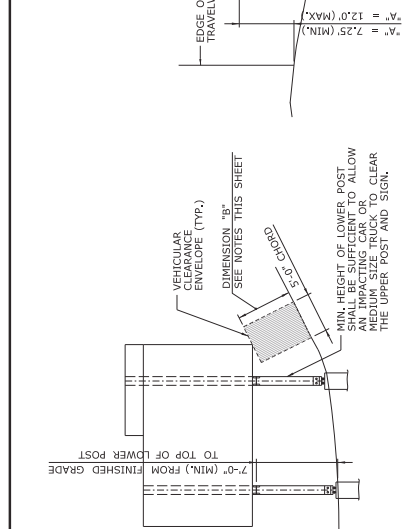


G
JOINT TREATMENT AT RAISED SHOULDER
 NTS

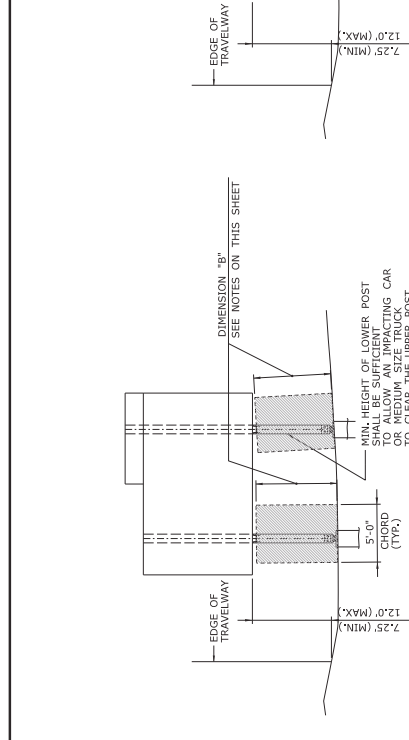
PROJECT NO.	PROJECT TITLE	DESIGNED BY	DATE
DRAWING NO.	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CHECKED BY	
SHEET NO.	ASPHALTIC PLUG JOINTS-60	APPROVED BY	
REVISION DESCRIPTION		SHEET NO.	REVISION DATE
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES, IS BASED ON THE ASSUMPTIONS AND IS SUBJECT TO CHANGE WITHOUT NOTICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES OF WORK WHICH WILL BE REQUIRED.		SHEET NO.	REVISION DATE
REVISION NO. 1: 10/2018		SHEET NO.	REVISION DATE
SIGNATURE: _____ TITLE: _____ OFFICE OF ENGINEERING		PROJECT TITLE: _____ DRAWING TITLE: ASPHALTIC PLUG JOINT DETAILS 2	
\$\$\$\$			



SIGN LOCATION - FILL



SIGN LOCATION - CUT



LEVEL TO SHALLOW SLOPES



SLEEPER SLOPES

SELECTING A POST SIZE, BRACKET NUMBER, AND HINGE TYPE

1. DETERMINE THE REQUIRED SIGN DIMENSIONS AND POST HEIGHTS (SEE "TYPICAL POST MOUNTED SIGN" DETAIL, THIS SHEET).

W = SIGN WIDTH (HORIZONTAL DIMENSION)
 H = SIGN HEIGHT (VERTICAL DIMENSION) (ADD CROWN HEIGHT WHEN APPLICABLE)
 L = POST HEIGHT (THE DISTANCE BETWEEN THE TOP OF THE FOUNDATION AND THE BOTTOM OF THE SIGN MEASURED AT THE TALLER POST)

2. ENTER POST SELECTION TABLE 1 AND 2 ON DWG BSM-2 AND BSM-3 WITH THE DESIRED VALUES FOR W, H, AND L TO LOCATE THE SIGN DIMENSIONS AND POST SIZE AND HINGE REQUIREMENTS. REFER TO DWG BSM-5 FOR BRACKET TYPE AND BSM-6 FOR TYPICAL HINGE REQUIREMENTS.

EXAMPLE: W = 8', L = 10', H = 14'

ENTER "POST SELECTION TABLE 1" ON DWG BSM-2 SINCE TABLE 1 IS APPLICABLE FOR SIGN WIDTH ≤ 15'. LOCATE THE FOLLOWING CELL:
 SIGN WIDTH ≤ 15', LOCATE THE FOLLOWING CELL:
 IF "S" APPEARS
 "HINGE SHIT" IS REQUIRED (SEE DWG BSM-4)
 POST SIZE
 W6 x 20 #15
 BRACKET NUMBER
 (SEE DWG BSM-5)

SAFETY CONSIDERATIONS

1. THE HINGE BETWEEN THE UPPER AND LOWER POSTS SHALL BE AT LEAST 7 FT. ABOVE THE GROUND.
 2. NO SUPPLEMENTARY SIGNS SHALL BE ATTACHED BELOW THE HINGES.
 3. THE POST SPACING SHALL BE 3/5 W EXCEPT AS NOTED BELOW:
 UNIT WEIGHT OF POST POST SPACING REQUIREMENTS
 LESS THAN 17 P/F NO RESTRICTIONS ON POST SPACING **
 FROM 17 P/F TO 44 P/F PROVIDE AT LEAST 7 FT. CLEAR DISTANCE BETWEEN POSTS ***
 EXCEEDS 44 P/F RELOCATE SIGN OUTSIDE OF CLEAR ZONE OR SHIELD SIGN FROM VEHICULAR IMPACT AS DIRECTED BY THE ENGINEER
 ** IF THE TOTAL COMBINED WEIGHT OF ONE LOWER POST AND TWO BRACKETS EXCEEDS 600 LBS OR THE COMBINED WEIGHT OF TWO POSTS AND FOUR BRACKETS LOCATED WITHIN THE CLEAR ZONE, THE SIGN SHALL BE RELOCATED OUTSIDE OF THE CLEAR ZONE OR SHALL BE PROPERLY SHIELDED FROM VEHICULAR IMPACT AS DIRECTED BY THE ENGINEER. SEE "TABLE 1 - BRACKET DATA" ON BSM-5 FOR BRACKET WEIGHT.
 *** IF THE REQUIRED CLEAR DISTANCE CANNOT BE ATTAINED, THE ENGINEER MAY DIRECT THAT THE SIGN BE RELOCATED OUTSIDE THE CLEAR ZONE OR THAT IT BE PROPERLY SHIELDED FROM VEHICULAR IMPACT.

NOTES FOR DETERMINING DIMENSION "B"

1. DIMENSION "B" IS THE SMALLER OF:
 A. THE CLEAR DISTANCE BETWEEN THE BOTTOM OF SIGN AND THE FINISHED GRADE BETWEEN THE BOTTOM OF UPPER POST AND THE FINISHED GRADE.
 B. AN IMPACTING CAR OR MEDIUM SIZE TRUCK.
 2. DIMENSION "B" SHALL TYPICALLY BE A MINIMUM OF 7'-0" TO CLEAR
 3. WHEN DIMENSION "A" WOULD EXCEED 12'-0", CONSIDERATION MAY BE GIVEN TO REDUCING DIMENSION "B" IN ACCORDANCE WITH PROVISIONS OF NOTE 3.
 4. DIMENSION "B" MAY BE LESS THAN 7'-0".
 A. IF THE POST IS OUT OF THE CLEAR ZONE.
 B. IF THE POST IS WITHIN THE CLEAR ZONE BUT SHIELDED BY AN IMPACTING CAR OR MEDIUM SIZE TRUCK.
 C. IN NO CASE SHALL DIMENSION "B" BE LESS THAN 2'-6".
 5. IF FIELD CONDITIONS EXCEED THESE REQUIREMENTS, CONTACT THE ENGINEER FOR DIRECTION.

NOTES ON TOTAL HEIGHT OF SIGN POSTS

1. UPPER SIGN POSTS SHALL EXTEND TO THE TOP OF FULL WIDTH SIGN PANEL OR THE TOP OF CROWN WHICHEVER IS HIGHER.
 2. FOR SIGN OR CROWN PANEL RETROFIT THE EXISTING SIGN POSTS SHALL BE REPLACED WITH NEW POSTS OR EXTENDED WITH ADDITIONAL SECTIONS USING HINGE ASSEMBLIES. REFER TO TRAFFIC TYPICAL SHEETS "EXTRUDED SIGN PANEL - RETROFIT DETAIL".

TABLE OF CONTENT

DWG. NO.	DESCRIPTION
BSM-1	GENERAL NOTES
BSM-2	POST SELECTION TABLE 1 (W ≤ 15 FT.)
BSM-3	POST SELECTION TABLE 2 (W > 15 FT.)
BSM-4	FOUNDATION DETAILS
BSM-5	BRACKET DETAILS
BSM-6	HINGE DETAILS

FOR METRIC PROJECTS: CUSTOMARY POST SIZE FROM THE POST SELECTION TABLE. CALCULATE THE WEIGHT OF POSTS IN US CUSTOMARY UNITS AND CONVERT TO KILOGRAMS. 1 CWT = 45.36 KG. EXAMPLE: 120 CWT x 45.36 KG/CWT = 5443 KG

BREAKAWAY SIGN SUPPORT TYPICAL SHEETS ARE IN US CUSTOMARY UNITS

GENERAL NOTES

1. IF NO POST SIZE IS SHOWN FOR THE COMBINATION OF DIMENSIONS W, L AND H, THE ENGINEER SHALL PROVIDE A DESIGN FOR THE POST AND FOUNDATION OR RELOCATE THE SIGN.

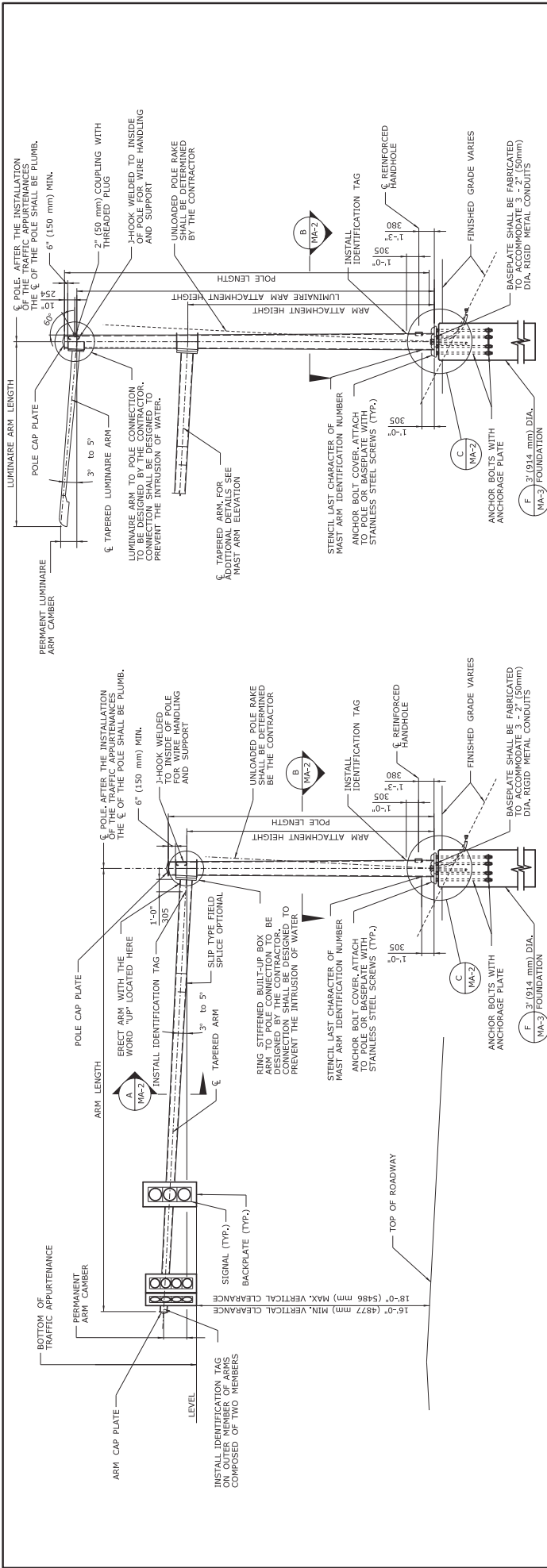
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: _____
 DRAWING TITLE: **BREAKAWAY SIGN SUPPORTS**
 SHEET NO.: **\$\$\$**

REV. DATE	REVISION DESCRIPTION	SHEET NO.	RECORD DATE: 1/25/2018

ESTIMATOR/BLD:	PROJECT TITLE:
DRAWN BY:	DATE:
CHECKED BY:	SCALE AS NOTED
APPROVED BY:	

STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION
 OFFICE OF ENGINEERING
 BREAKAWAY SIGN SUPPORTS



MAST ARM ASSEMBLY NOTES

THE MAST ARM, INCLUDING THE ANCHORAGE TO THE FOUNDATION, SHALL BE DESIGNED TO SUPPORT TRAFFIC APPURTENANCES WITH THE SPAN SPECIFIED IN ACCORDANCE WITH THE SPECIAL PROVISION "XX STEEL MAST ARM ASSEMBLY" OR "XX STEEL COMBINATION MAST ARM ASSEMBLY".

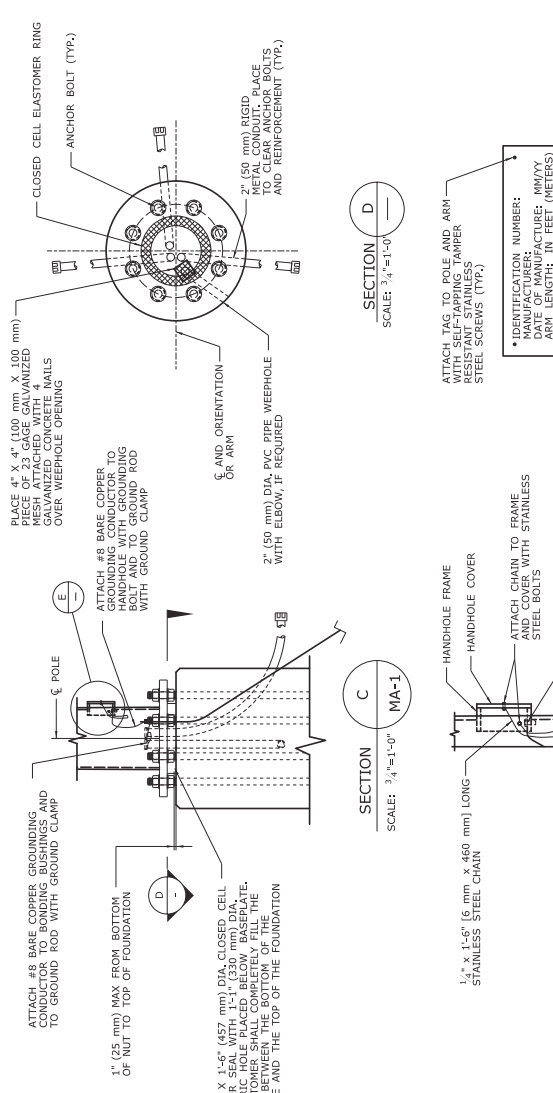
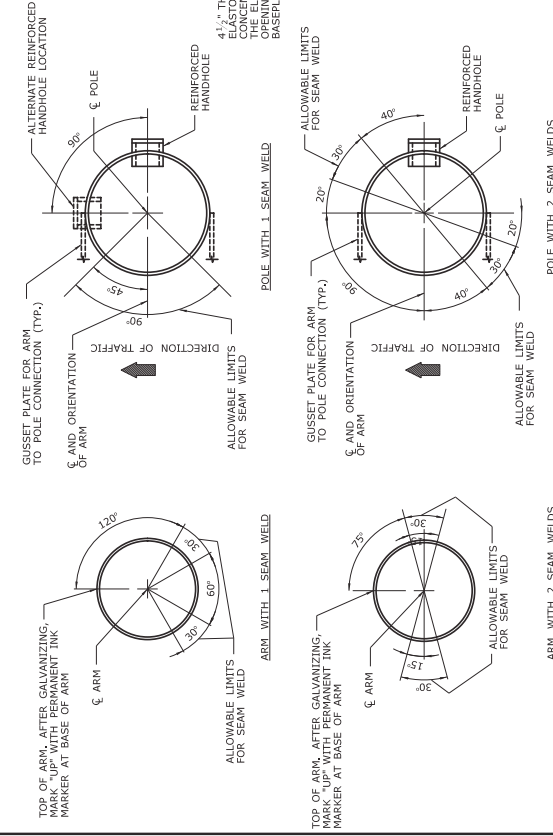
THE DIMENSIONS OF THE MAST ARM ASSEMBLY AND DETAILS OF THE TRAFFIC APPURTENANCES SUPPORTED BY THE MAST ARM ASSEMBLY ARE SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL VERIFY THAT THE DIMENSIONS, PROVISIONS, THE ARM AND POLE LENGTHS AND THE ATTACHMENT HEIGHTS SHALL BE VERIFIED BY THE CONTRACTOR BASED ON THE FINISHED GRADE AT THE SITE, AND THE TRAFFIC APPURTENANCE MOUNTING HEIGHTS, IF EITHER THE ARM OR POLE LENGTH IS INADEQUATE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

THE MAST ARMS SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL STEEL FOR HIGHWAY BRIDGES AND STRUCTURES. THE CONTRACTOR SHALL VERIFY THAT THE MAST ARM ASSEMBLY OR "XX STEEL COMBINATION MAST ARM ASSEMBLY", AS AMENDED BY THE AS SPECIAL PROVISION "XX STEEL MAST ARM ASSEMBLY" OR "XX STEEL COMBINATION MAST ARM ASSEMBLY", MEETS ALL STAGES OF CONSTRUCTION THAT MAY EXIST DURING THE PROJECT UNDER WHICH THE MAST ARMS ARE INSTALLED.

THE MAST ARMS SHALL BE DESIGNED FOR THE LOAD EFFECTS DUE TO THE ACTUAL TRAFFIC APPURTENANCES. THE CONTRACTOR SHALL VERIFY THAT THE TRAFFIC APPURTENANCES SHALL ALSO BE DESIGNED FOR THE EFFECTS OF TRAFFIC APPURTENANCES DURING ALL STAGES OF CONSTRUCTION THAT MAY EXIST DURING THE PROJECT UNDER WHICH THE MAST ARMS ARE INSTALLED.

THE MAST ARMS SHALL BE DESIGNED TO SUPPORT TRAFFIC APPURTENANCES WITH THE DIMENSIONS AND DETAILS SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL VERIFY THAT THE TRAFFIC APPURTENANCES MEET THE MINIMUM DESIGN VALUES.

PROJECT NO.	13320000	TOWN	
DRAWING NO.	MA-1	PROJECT TITLE	OFFICE OF ENGINEERING
SHEET NO.		DRAWING TITLE	MAST ARM ASSEMBLY ELEVATION
DESIGNER/DRIVER		DATE	
CHECKED BY		APPROVED BY	
SCALE AS NOTED			
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES, IS BASED ON THE INFORMATION PROVIDED BY THE CLIENT AND IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.			
REV. DATE	REVISION DESCRIPTION	SHEET NO.	DATE



TRAFFIC APPURTENANCE PROPERTIES MINIMUM DESIGN VALUES

SECTION	WEIGHT, INCLUDING MOUNTING HARDWARE	PROJECTED AREA, FRONT FACE	PROJECTED AREA, BOTTOM FACE	WEIGHT, INCLUDING MOUNTING HARDWARE	PROJECTED AREA, FRONT FACE	PROJECTED AREA, BOTTOM FACE	WEIGHT, INCLUDING MOUNTING HARDWARE	PROJECTED AREA, FRONT FACE	PROJECTED AREA, BOTTOM FACE	WEIGHT, INCLUDING MOUNTING HARDWARE	PROJECTED AREA, FRONT FACE	PROJECTED AREA, BOTTOM FACE
3-SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	65 LBS (29.48 kg)	28.04 SQ. FT. (2.61 m ²)	1.18 SQ. FT. (0.11 m ²)	5 SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	105 LBS (47.63 kg)	41.04 SQ. FT. (3.81 m ²)	1.18 SQ. FT. (0.11 m ²)	5 SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	105 LBS (47.63 kg)	41.04 SQ. FT. (3.81 m ²)	1.18 SQ. FT. (0.11 m ²)	4 LBS/SQ.FT. (19.53 kg/m ²)
4-SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	80 LBS (36.29 kg)	35.46 SQ. FT. (3.29 m ²)	1.18 SQ. FT. (0.11 m ²)	5 SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	105 LBS (47.63 kg)	41.04 SQ. FT. (3.81 m ²)	1.18 SQ. FT. (0.11 m ²)	5 SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	105 LBS (47.63 kg)	41.04 SQ. FT. (3.81 m ²)	1.18 SQ. FT. (0.11 m ²)	4 LBS/SQ.FT. (19.53 kg/m ²)
5-SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	95 LBS (43.09 kg)	45.16 SQ. FT. (4.20 m ²)	1.18 SQ. FT. (0.11 m ²)	5 SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	105 LBS (47.63 kg)	41.04 SQ. FT. (3.81 m ²)	1.18 SQ. FT. (0.11 m ²)	5 SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	105 LBS (47.63 kg)	41.04 SQ. FT. (3.81 m ²)	1.18 SQ. FT. (0.11 m ²)	4 LBS/SQ.FT. (19.53 kg/m ²)
6-SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	110 LBS (49.90 kg)	54.86 SQ. FT. (5.08 m ²)	1.18 SQ. FT. (0.11 m ²)	5 SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	105 LBS (47.63 kg)	41.04 SQ. FT. (3.81 m ²)	1.18 SQ. FT. (0.11 m ²)	5 SECTION 12" (305) DIA. TRAFFIC SIGNAL W/ BACKPLATE	105 LBS (47.63 kg)	41.04 SQ. FT. (3.81 m ²)	1.18 SQ. FT. (0.11 m ²)	4 LBS/SQ.FT. (19.53 kg/m ²)

NOTES:
THE TABULATED VALUES ARE THE MINIMUM VALUES THAT SHALL BE USED FOR THE DESIGN.
MAST ARMS SHALL BE DESIGNED ASSUMING ALL TRAFFIC SIGNALS ARE COMPOSED OF 12" (305 mm) DIAMETER SECTIONS WITH BACKPLATES.
THE PROJECTED FRONT FACE AREA IS IN A PLANE PARALLEL TO THE PLANE FORMED BY THE ARM AND THE POLE.
IF MULTIPLE APPURTENANCES ARE ATTACHED AT THE SAME LOCATION, THE MINIMUM DESIGN VALUE SHALL BE NO LESS THAN THE SUM OF THE CORRESPONDING TRAFFIC APPURTENANCE PROPERTIES.
FOR TRAFFIC APPURTENANCES NOT SHOWN, THE PROPERTIES SHALL BE DETERMINED BY THE CONTRACTOR AND SUBMITTED FOR REVIEW WITH THE WORKING DRAWING SUBMITTAL.

**STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION**

Electronic: 1.800.453.5899, Stn. No: 1003, 1003, 1003

PROJECT NO.: **MA-2**

DRAWING NO.: **MA-2**

SHEET NO.: **\$\$\$**

PROJECT TITLE:

DESIGNER:

DATE:

DESIGNATION:

SCALE AS NOTED

PROJECTED BY:

THE INFORMATION, INCLUDING ESTIMATED WEIGHTS AND DIMENSIONS, IS BASED ON UNIFORMITY AND IS SUBJECT TO CHANGE WITHOUT NOTICE OF WORK WHICH WILL BE REQUIRED.

SHEET NO. **MA-2**

DATE: 11/14/2010

FOUNDATION NOTES

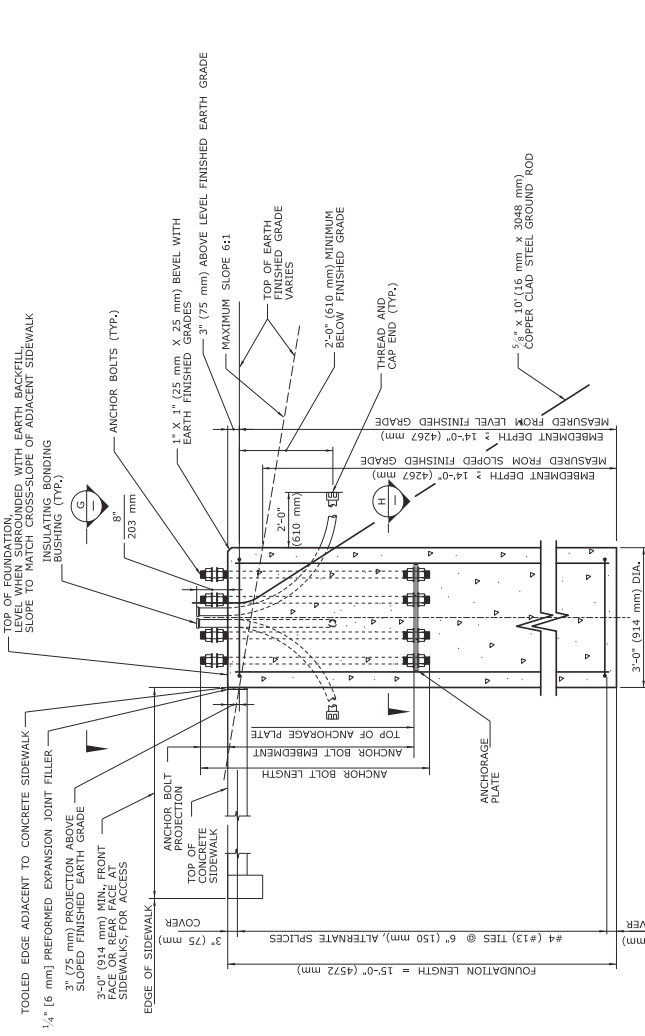
THE MAST ARM FOUNDATION IS DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE ASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, WITH THE LATEST INTERIM SPECIFICATIONS. THE FOUNDATION EMBEDMENT IS DESIGNED FOR MAXIMUM LOAD EFFECTS, APPLIED AT THE TOP OF THE FOUNDATION, NO GREATER THAN THE FOLLOWING:

- AXIAL COMPRESSIVE FORCE: K (KN)
- TORSION: K (KN)
- RESULTANT BENDING MOMENT: FT - K (KN - m)

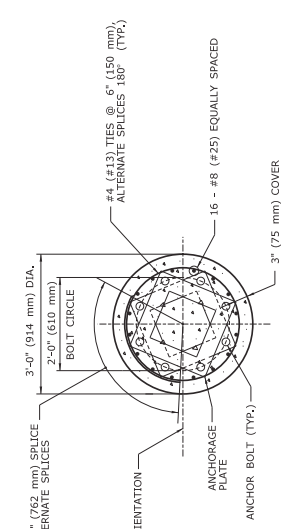
THE USE OF THE FOUNDATION IS NOT PERMITTED IF THE COMPUTED REACTIONS FROM THE CONTRACTOR DESIGNED "MAST ARM" ASSEMBLY EXCEED THE ABOVE LOAD EFFECTS. THE ENGINEER SHALL BE NOTIFIED IF THE SLOPE OF THE FINISHED GRADE AT THE FOUNDATION EXCEEDS THE MAXIMUM PERMITTED SLOPE.

THE CONCRETE FOR THE FOUNDATION SHALL CONFORM TO "CLASS "A" CONCRETE". THE REINFORCEMENT SHALL BE UNCOATED AND CONFORM TO ASTM A615, GRADE 60 (ASTM A615M, GRADE 420). THE REINFORCEMENT SHALL BE ASSEMBLED WITH WIRE TIES. ALL REINFORCEMENT SHALL BE PERMITTED, UNLESS OTHERWISE NOTED.

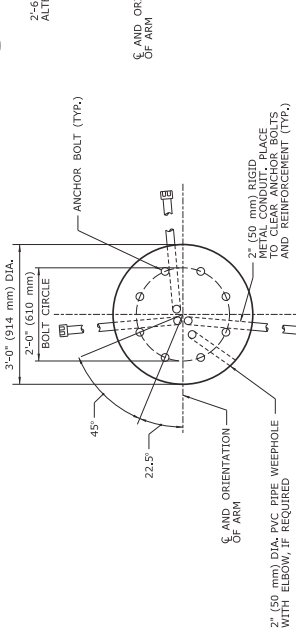
THE CONCRETE SHALL BE PLACED IN A AUGERED HOLE AGAINST UNDISTURBED EARTH. THE MAST ARM SHALL NOT BE ERECTED ON THE FOUNDATION UNTIL AFTER THE CONCRETE HAS ATTAINED A 28 DAY COMPRESSIVE STRENGTH, f_c , GREATER THAN OR EQUAL TO 3000 PSI (21 MPa). THE COST OF THE FOUNDATION, INCLUDING THE EXCAVATION, CONCRETE AND REINFORCEMENT, SHALL BE PAID FOR UNDER THE ITEM "TRAFFIC CONTROL FOUNDATION - MAST ARM".



SECTION F
SCALE: 3/4" = 1'-0"



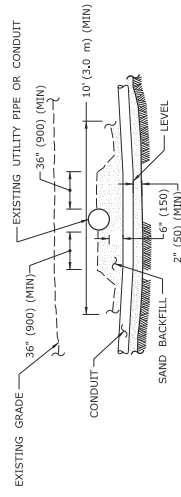
SECTION H
SCALE: 3/4" = 1'-0"



SECTION G
SCALE: 3/4" = 1'-0"

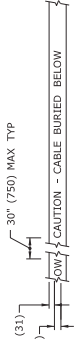
ATTENTION USER:
THE USER OF THESE FOUNDATION DETAILS IS RESPONSIBLE FOR DETERMINING THE VALUES FOR THE MAXIMUM LOAD EFFECTS APPLIED AT THE TOP OF THE FOUNDATION. THE CONTRACTOR SHALL ENSURE THAT THE FOUNDATION IS ONLY USED FOR MAST ARM ASSEMBLIES WITH COMPUTED REACTIONS THAT DO NOT EXCEED THESE MAXIMUM LOAD EFFECTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING THESE FOUNDATION DETAILS INTO THE CONTRACT DOCUMENTS.

PROJECT NO.	TOWN	PROJECT TITLE	DATE
DRAWING TITLE: MAST ARM ASSEMBLY FOUNDATION DETAILS			
DRAWING NO. MA-3			
SHEET NO.			
PRICE: \$55			
DESIGNER: OFFICE OF ENGINEERING			
APPROVER: STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION			
SCALE AS NOTED			
REVISION DESCRIPTION			
REVISION			
DATE			



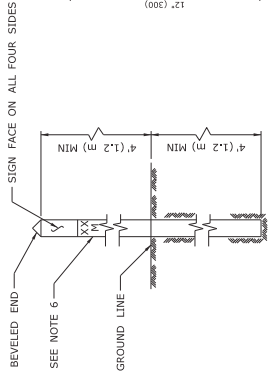
CROSSING UNDER EXISTING UTILITY

- NOTES:
1. WHEN ENCOUNTERED AT APPROXIMATELY THE SAME DEPTH, CROSS BENEATH.
 2. PROTECT & SUPPORT EXPOSED EXISTING UTILITY.



DETECTABLE WARNING TAPE

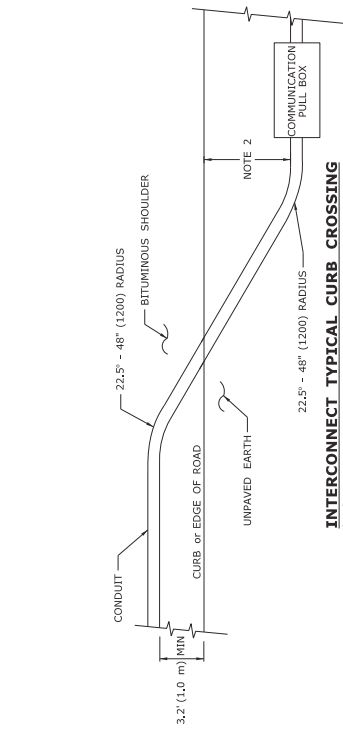
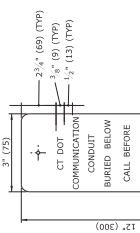
- NOTE:
- STANDARD SPECIFICATIONS, ARTICLE 1.05.15
1. TAPE COLORS:
 COMMUNICATION - ORANGE BACKGROUND / BLACK LEGEND
 POWER - RED BACKGROUND / BLACK LEGEND



INTERCONNECT POST IDENTIFICATION POST

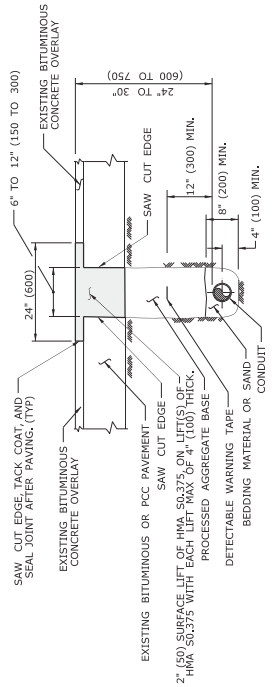
- NOTES:
1. 4" x 4" (100 x 100) NOMINAL, PRESSURE TREATED WOOD POST.
 2. ATTACH SIGN TO POST WITH 1/4" x 1 1/4" (6 x 31) STAINLESS STEEL LAG SCREW WITH NYLON WASHER ON FACE OF SIGN.
 3. SIGN COLORS: BACKGROUND - ORANGE (RETROREFLECTIVE) LEGEND - BLACK (OPAQUE).
 4. INSTALL POST APPROX 24" (600) FROM RMC IN VICINITY OF EACH PULL BOX.
 5. SPACE POSTS 1500' (460 m) APART.
 6. PERMANENTLY ATTACH STAINLESS STEEL NUMBERS INDICATING DISTANCE TO TRENCH IN FEET (METERS) CONTAINING COMMUNICATION CABLE. INCLUDE "M" SUFFIX IF METERS.

SIGN FACE DETAIL



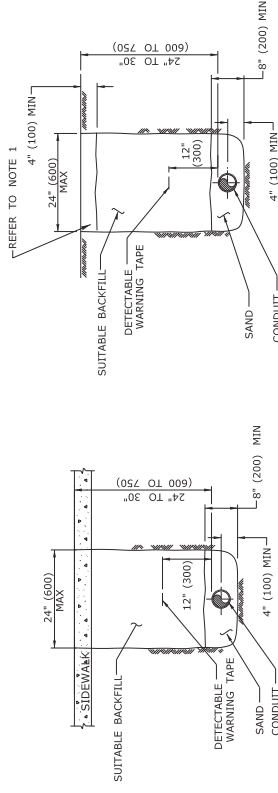
INTERCONNECT TYPICAL CURB CROSSING

- NOTES:
1. RESTORE AREAS DISTURBED BY TRENCH TO ORIGINAL CONDITION.
 2. INSTALL PULL BOX A MINIMUM OF 10' (3.0 m) FROM CURB UNLESS OTHERWISE SHOWN ON PLANS OR DIRECTED BY ENGINEER.



PAVEMENT - BITUMINOUS CONCRETE OR OVERLAYED PORTLAND CEMENT CONCRETE

- NOTES:
- STANDARD SPECIFICATIONS, ARTICLE: 3.04 & 4.05.03
1. TOTAL HOT MIX ASPHALT (HMA) THICKNESS TO MATCH EXISTING BITUMINOUS CONCRETE OVERLAY (C.O.) SHALL BE MAINTAINED.
 2. WHEN ALLOWED BY ENGINEER, USE CONTROLLED LOW STRENGTH MATERIAL (CLSM) AS BEDDING MATERIAL TOP OF CLSM AT LEAST 20" (500) BELOW SURFACE.



SIDEWALK

- NOTES:
- STANDARD SPECIFICATIONS, ARTICLE: 9.21 & 9.22
1. WHERE CONCRETE SIDEWALK DAMAGED OR CUT, REPLACE THE SIDEWALK WITH CONCRETE MATCHING EXISTING MATERIAL (CLSM) PAID FOR AT THE CONTRACT UNIT PRICE FOR "CONCRETE SIDEWALK".

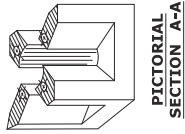
EARTH

- NOTES:
- STANDARD SPECIFICATIONS, ARTICLE: 9.50
1. IN MOWED AREAS: PLACE TOPSOIL, FERTILIZER, SEED, & MULCH.

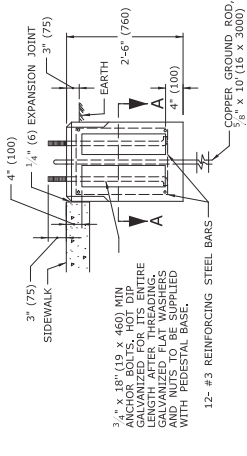
- GENERAL NOTES:
1. TOP OF CONDUIT NO LESS THAN 24" (600) DEEP.
 2. COMPACT BACKFILL IN 6" (150) LIFTS. HAND COMPACTION NOT PERMITTED.

LEGEND AS SHOWN ON TRAFFIC CONTROL SIGNAL PLAN
 --- RMC (RIGID METAL CONDUIT)

THE INFORMATION INCLUDING ESTIMATED QUANTITIES AND PRICES FOR THIS PROJECT IS BASED ON THE INFORMATION PROVIDED IN THE BIDDING DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL INFORMATION AND PRICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.		STANDARD SHEET NO.: TR-1001_01
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION		STANDARD SHEET TITLE: TRENCHING & BACKFILLING, ELECTRICAL CONDUIT
SUBMITTED BY: APPROVED BY: DATE: 2012.05.09 12:34:00		CTDOT STANDARD SHEET OFFICE OF ENGINEERING
MODEL: TR-1001.01 DRAWN: CTDOT/EMERIT/STD.BP		PROJECT NO.: 2012.05.09 12:34:00
NOT TO SCALE		REVISION DESCRIPTION: 1. 2012 REVISIONS TO CONDUIT TRENCHING & BACKFILLING

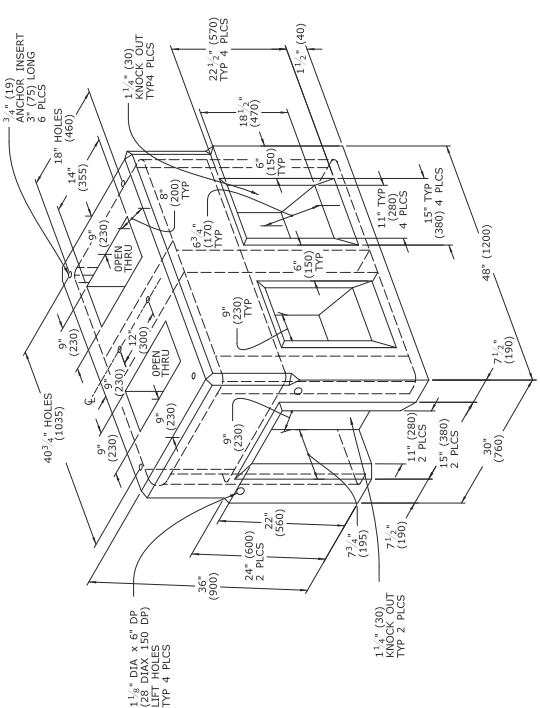


PICTORIAL SECTION A-A



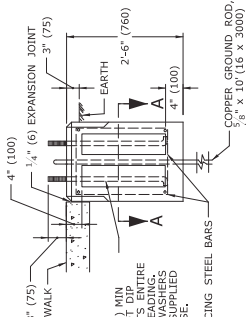
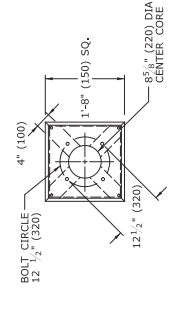
TRAFFIC CONTROL FOUNDATION PEDESTAL - TYPE I - PRECAST

NOTES:
PLACE NO. 6 CRUSHED STONE IN CENTER OPENING AFTER CONDUITS AND GROUND ROD HAVE BEEN INSTALLED.



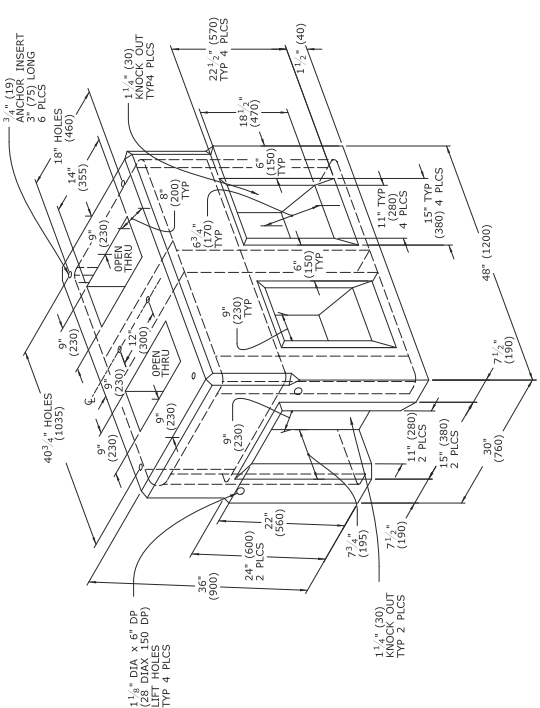
TRAFFIC CONTROL FOUNDATION CONTROLLER - TYPE IV - PRECAST

NOTES:
DIMENSIONS ARE IN PARENTHESIS () IN METRIC UNITS. UNITS BOLDED: SHEETS ARE BASED ON PARENTHESIS UNITS. UNITS IN PARENTHESIS ARE TO BE USED IN THE WORK AREA. DIMENSIONS OF WORK WHICH WILL BE REQUIRED.



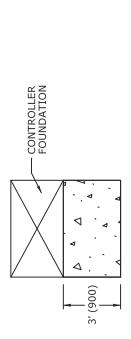
TRAFFIC CONTROL FOUNDATION PEDESTAL - TYPE I - PRECAST

NOTES:
PLACE NO. 6 CRUSHED STONE IN CENTER OPENING AFTER CONDUITS AND GROUND ROD HAVE BEEN INSTALLED.



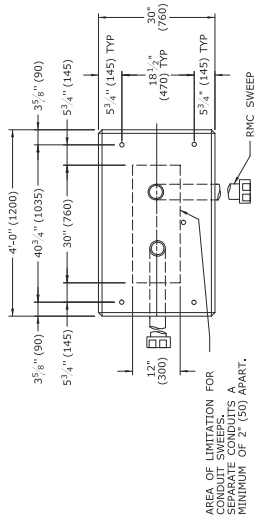
TRAFFIC CONTROL FOUNDATION CONTROLLER - TYPE IV - PRECAST

NOTES:
DIMENSIONS ARE IN PARENTHESIS () IN METRIC UNITS. UNITS BOLDED: SHEETS ARE BASED ON PARENTHESIS UNITS. UNITS IN PARENTHESIS ARE TO BE USED IN THE WORK AREA. DIMENSIONS OF WORK WHICH WILL BE REQUIRED.

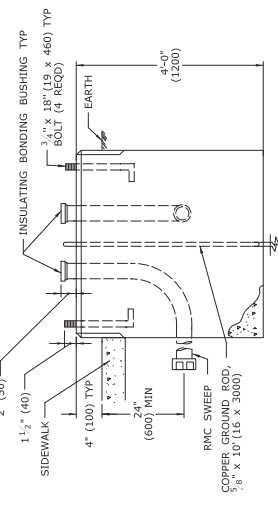


INSTALL PRECAST OR CAST IN PLACE CONCRETE SIDEWALK ON CABINET DOOR SIDE OF CONTROLLER FOUNDATION.
PITCH SIDEWALK 1/4" PER FOOT (20 PER METER) AWAY FROM THE CONTROLLER FOUNDATION.
REFER TO HIGHWAY STANDARD SHEET HW-921-01 FOR SIDEWALK CONSTRUCTION.

TYPICAL CONCRETE SIDEWALK AT CONTROLLER FOUNDATION



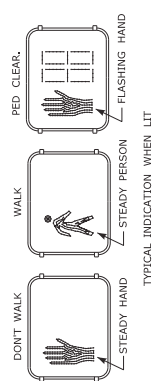
AREA OF LIMITATION FOR CONTROLLER FOUNDATION. SEPARATE CONDUITS A MINIMUM OF 2" (50) APART.



TRAFFIC CONTROL FOUNDATION CONTROLLER - TYPE IV - CAST IN PLACE

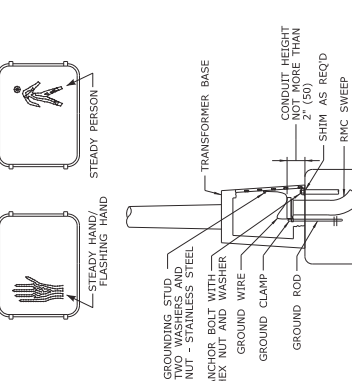
NOTES:
INSTALL FOUNDATION ON 6" (150) OF COMPACTED GRAVEL IN ACCORDANCE WITH SECTION 2.14.
INSTALL COPPER GROUND ROD WITH A PROJECTION OF 4" (100) ABOVE FINISHED GRADE.
COPPER GROUND ROD: 3/8" x 10 (16 x 3000).
CONDUITS SHALL BE INSTALLED AFTER THE CONDUITS AND GROUND ROD HAVE BEEN INSTALLED. THE OPENINGS SHALL BE CAPPED WITH A 2" (50) GROUT LEVEL WITH THE TOP OF THE FOUNDATION AND NEATLY FINISHED. THE GROUT SHALL CONFORM WITH THE REQUIREMENTS OF ARTICLE M.3.0-1-12.
CONDUITS SHALL BE INSTALLED AT 2" (50) MIN COVER AROUND ALL OPENINGS. 3-#4 REBARS IN EACH CORNER. #4 REBAR 2" (50) MIN COVER AROUND ALL OPENINGS. 3-#4 REBARS IN EACH CORNER. CONDUITS SHALL NOT PROJECT MORE THAN 2" (50) ABOVE FOUNDATION.

<p>LEGEND AS SHOWN ON TRAFFIC CONTROL SIGNAL PLAN.</p> <p>PROPOSED CONTROLLER</p> <p>PROPOSED SIDEWALK AT CONTROLLER FOUNDATION.</p> <p>PROPOSED STEEL SPAN POLE</p> <p>EXISTING STEEL SPAN POLE</p>		<p>DATE: 1/7/2014</p> <p>SCALE: NOT TO SCALE</p> <p>PROJECT: CTDOT-TRAFFIC-SIG-008</p> <p>FIG. NO.: TR-1002-01</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>TRAFFIC CONTROL FOUNDATIONS</p>	<p>STANDARD SHEET NO. TR-1002-01</p>
<p>REVISION</p> <p>DATE</p> <p>DESCRIPTION</p> <p>1 4-2012 MINOR REVISIONS TO CONCRETE SIDEWALK AT CONTROLLER FOUNDATION.</p> <p>2 1-2014 REMOVED SPAN POLE FOUNDATION DETAILS, REVISED TYPICAL CONCRETE SIDEWALK AT CONTROLLER FOUNDATION.</p>	<p>CTDOT STANDARD SHEET</p> <p>OFFICE OF ENGINEERING</p>	<p>APPROVED BY: <i>Charles S. Hefow</i></p> <p>DATE: 20/01/01 09:05:54-0007</p>	<p>APPROVED BY: <i>Tom J. Emery</i></p> <p>DATE: 20/01/07 16:12:06-0000</p>	<p>STANDARD SHEET TITLE: TRAFFIC CONTROL FOUNDATIONS</p>

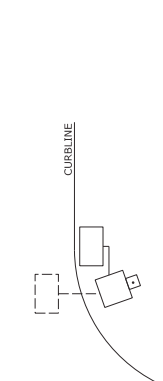


TYPICAL INDICATION WHEN LIT

NON-COUNTDOWN DISPLAY, ONLY WHEN SHOWN ON PLAN, DONT WALK/RED CLEAR.



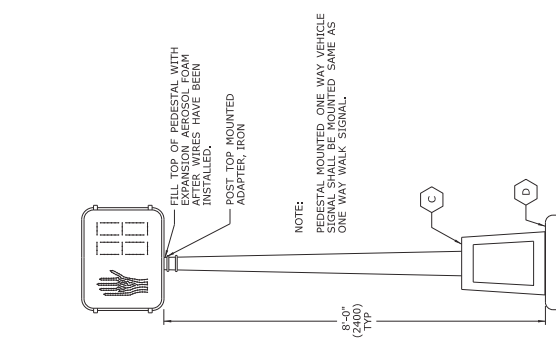
ALUMINUM PEDESTAL INSTALLATION DETAIL



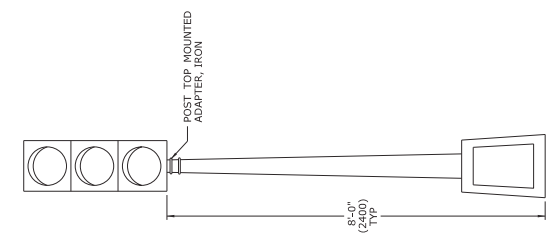
WHEN PEDESTALS OR SPAN POLES ARE INSTALLED CLOSE TO THE CURB, SIGNALS OR TRAFFIC SIGNALS TO AVOID VISOR DAMAGE FROM TURNING VEHICLES.

- NOTES:
- A SECURE LOWER HUB PLATE WITH STAINLESS STEEL SET SCREW OR PIN PRIOR TO BANDING TO PREVENT MOVEMENT. INSTALL CABLE THROUGH BOTTOM OF HUB PLATE.
 - B REFER TO CTDOT TRAFFIC STANDARD SHEET, TRAFFIC SIGNALS & CABLE ASSIGNMENTS.
 - C IF THE SIGNAL HUB IS 1.8" THICK, USE 1.8" DIA. THREADED INTO BASE SECURED WITH STAINLESS STEEL SET SCREWS.
 - D BASE DESIGNED AS BREAK-AWAY.

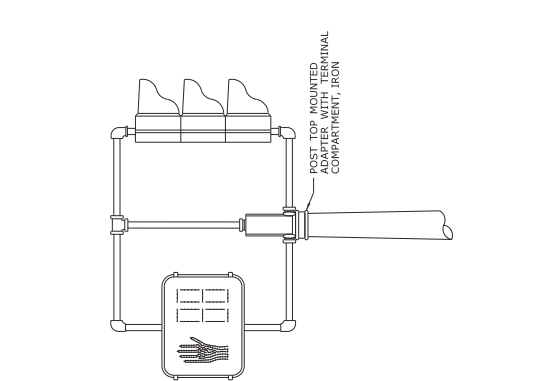
INCANDESCENT WALK SIGNAL LAMPS ARE 67 WATTS, RATED AT 8000 HOURS LAMP LIFE. LED WALK SIGNAL LAMPS ARE MAXIMUM 15 WATTS, WARRANTED AT 5 YEAR LIFE.



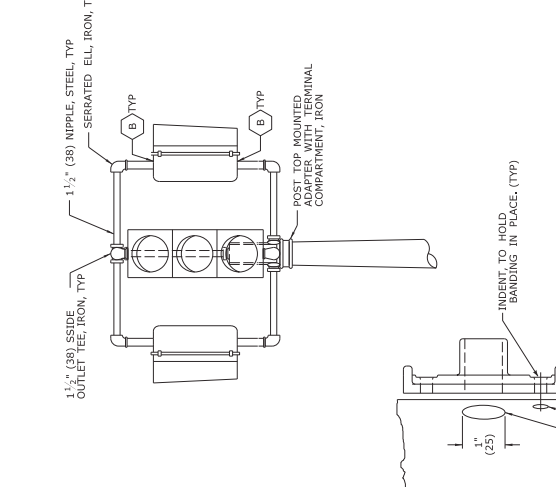
ONE WAY WALK SIGNAL PEDESTAL MOUNTED



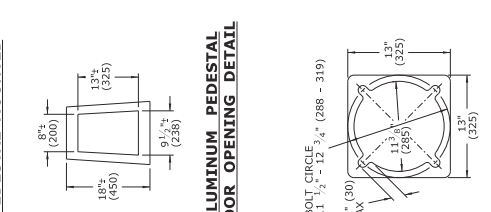
ONE WAY TRAFFIC SIGNAL PEDESTAL MOUNTED



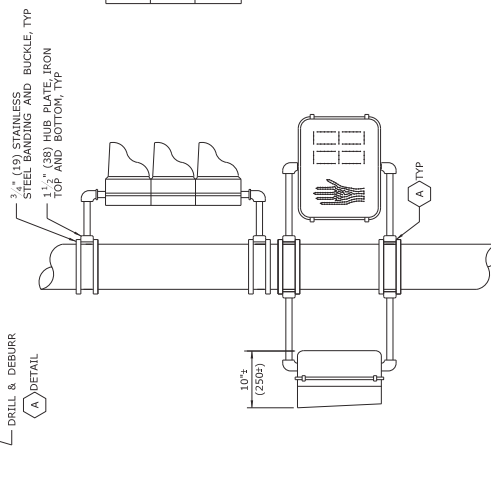
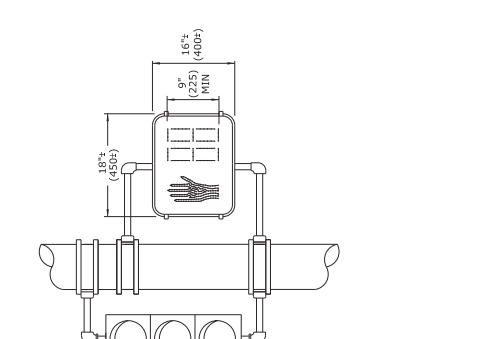
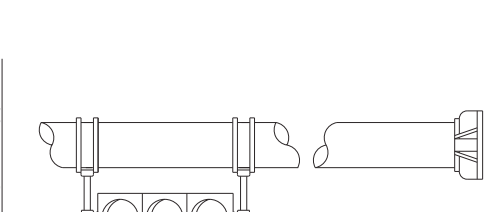
ONE WAY TRAFFIC SIGNAL POLE MOUNTED



ONE WAY TRAFFIC SIGNAL POLE MOUNTED



ALUMINUM PEDESTAL DOOR OPENING DETAIL



PEDESTAL BASE PLAN

ONE WAY TRAFFIC SIGNAL POLE MOUNTED

LEGEND AS SHOWN ON TRAFFIC CONTROL SIGNAL PLAN

- PEDESTAL SIGNAL
- STEEL SPAN POLE, W/ST AIR ASSEMBLY SHIRT
- ALUMINUM PEDESTAL
- TRAFFIC SIGNAL
- PEDESTAL SIGNAL
- POLE MOUNTED, TRAFFIC & PEDESTAL SIGNALS

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES, IS BASED ON THE INFORMATION PROVIDED BY THE CLIENT. THE CONTRACTOR SHALL VERIFY THE QUANTITIES AND CONDITIONS OF WORK WHICH WILL BE REQUIRED.

REVISIONS:

NO.	DATE	DESCRIPTION
2	4-2012	INFORM REVISIONS.
1		FOR INCLUSIVE COUNTDOWN PEDESTAL SIGNALS.
		REVISION DISCUSSION.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

CTDOT TRAFFIC CONTROL

CTDOT STANDARD SHEET
OFFICE OF ENGINEERING

MANUFACTURER: TRAFFIC SIGNALS, INC.
TIMOTHY M. WILSON
2012.05.01 12:55:27-04007

APPROVED BY: Timothy M. Wilson
2012.05.09 10:24:06-04007

STANDARD SHEET TITLE: PEDESTALS, PEDESTRIAN SIGNALS

STANDARD SHEET NO.: TR-1102_01

TRAFFIC SIGNAL CABLE COLOR ASSIGNMENTS			
SIGNAL ASSEMBLY FUNCTION & CABLE USED	ARTERY 1	ARTERY 2	SIDE STREET 1 SIDE STREET 2
RED	RED		BLACK
YELLOW	ORANGE		WHITE \ BLACK
GREEN	GREEN		BLUE
SPARE	GREEN/BLACK		RED \ BLACK
9 CONDUCTOR	NEUTRAL		
	RED	RED \ BLACK	BLACK
3 - WAY	ORANGE	ORANGE \ BLACK \ WHITE \ BLACK	
	GREEN	GREEN \ BLACK \ BLUE	
12 CONDUCTOR	BLUE/BLACK	BLACK \ WHITE	
	WHITE	RED \ BLACK	RED \ WHITE
	RED	ORANGE \ BLACK \ WHITE \ BLACK	BLACK \ WHITE
4 - WAY	ORANGE	ORANGE \ BLACK	BLACK \ WHITE
	GREEN	GREEN \ BLACK	GREEN \ WHITE
15 CONDUCTOR	BLUE/BLACK	BLUE \ WHITE	
	WHITE		

PEDESTRIAN SIGNAL CABLE COLOR ASSIGNMENTS			
SIGNAL ASSEMBLY SIGNAL FUNCTION & CABLE USED	SIGNAL FUNCTION	WIRE COLOR	
WALK SIGNAL	DON'T WALK	RED	
W/ PUSHBUTTON	WALK	GREEN	
NEUTRAL FOR WALK SIGNAL	NEUTRAL FOR WALK SIGNAL	WHITE	
7 CONDUCTOR	PEDESTRIAN PUSHBUTTON	BLACK	
	NEUTRAL FOR PUSHBUTTON	ORANGE	
	SPARE CONDUCTOR	WHITE \ BLACK	
	SPARE CONDUCTOR *	BLUE \ BLACK	
	WALK SIGNAL	RED	
	W/ PUSHBUTTON	GREEN	
	NEUTRAL FOR TRAFFIC SIGNAL	WHITE	
7 CONDUCTOR	PEDESTRIAN PUSHBUTTON	BLACK	
	NEUTRAL FOR PUSHBUTTON	ORANGE	
	SPARE CONDUCTOR *	WHITE \ BLACK	
	SPARE CONDUCTOR *	BLUE \ BLACK	

ITEM DESCRIPTION, FOR ASSEMBLY DETAILS

- 1 - SERRATED TABBED LOCKRING, ALUMINUM (TAB MUST BE FULL WIDTH OF RING)
- 2 - GASKET, NEOPRENE
- 3 - WASHER, STEEL
- 4 - HEX NUT, STEEL
- 5 - CONDUIT LOCKNUT, STEEL
- 6 - BUSHING PLASTIC (ONLY IN JUNCTION BOX OR NIPPLED DOWN TRAFFIC SIGNAL)
- 7 - OCTAGONAL CAP, ALUMINUM
- 8 - SPAN WIRE CLAMP
- 9 - NIPPLE, STEEL
- 10 - NIPPLE, STEEL
- 11 - HEX NUT, STEEL, NOTCHED W/SETSCREWS

NOTES:

1. INSTALL SEPARATE CABLE BETWEEN CLOSURE AND EACH TRAFFIC SIGNAL ASSEMBLY. WIRE EACH TRAFFIC SIGNAL SECTION SEPARATELY BACK TO CABLE CLOSURE. JUMPERS BETWEEN TERMINALS ARE NOT ALLOWED EXCEPT ON NEUTRAL CONDUCTORS.
2. WIRE ALL SIGNALS, SAME DIRECTION FROM CONTROLLER, SEPARATELY WITH CONDUCTORS IN 21 CONDUCTOR CABLE. EVEN IF INDICATIONS ARE IDENTICAL, BYPASSES CABLE CLOSURE.
3. CABLES THAT FEED PEDESTRIAN INDICATIONS, PUSH BUTTONS, AND DETECTORS BYPASS CABLE CLOSURE.
4. REFER TO STANDARD SHEET TR-1113.01 FOR CABLE CLOSURE - TYPE A.

NOTES:

SERVICE CONDUCTORS: THW, THWN OR XHHW. INDIVIDUAL WIRES MAY BE USED IN LIEU OF MULTI-CONDUCTOR CABLE.

ALL WORK ON UTILITY POLES MUST COMPLY WITH CURRENT PURA REGULATIONS AND NESC RULES.

(A) ATTACH SPAN AT LEAST 12" (300) BELOW LOWEST POWER COMPANY ATTACHMENT, AND AT LEAST 40" (1000) ABOVE HIGHEST COMMUNICATIONS ATTACHMENT, UNLESS OTHERWISE DIRECTED ON PLANS.

(B) ELBOW OR "T" FITTING MUST HAVE NOTCH FOR SERRATED TABBED LOCKRING.

(C) TOP BRACKET CENTER HUB SHALL BE MIN 4" (100) ROUND AND 3" (75) DEEP OR EQUAL VOLUME. SERRATION CAST IN HUB OR TABBED OR SERRATED LOCKRING, TOP OPENING NOT THREADED.

(D) NIPPLE LENGTH DEPENDS ON SPAN HEIGHT.

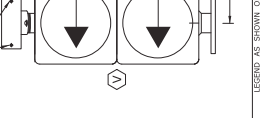
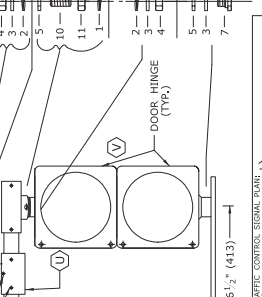
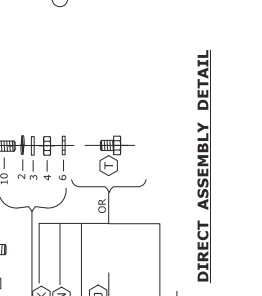
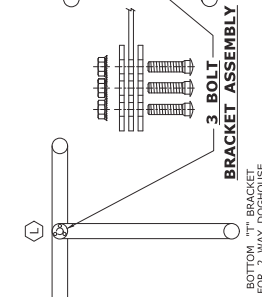
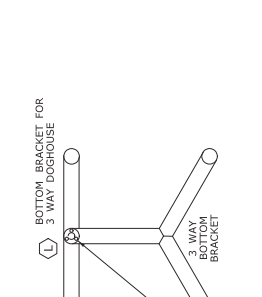
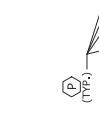
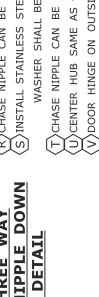
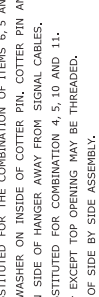
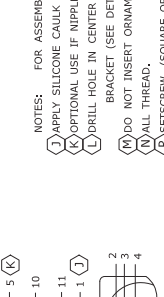
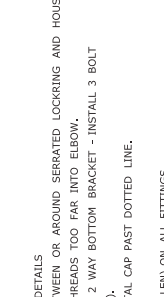
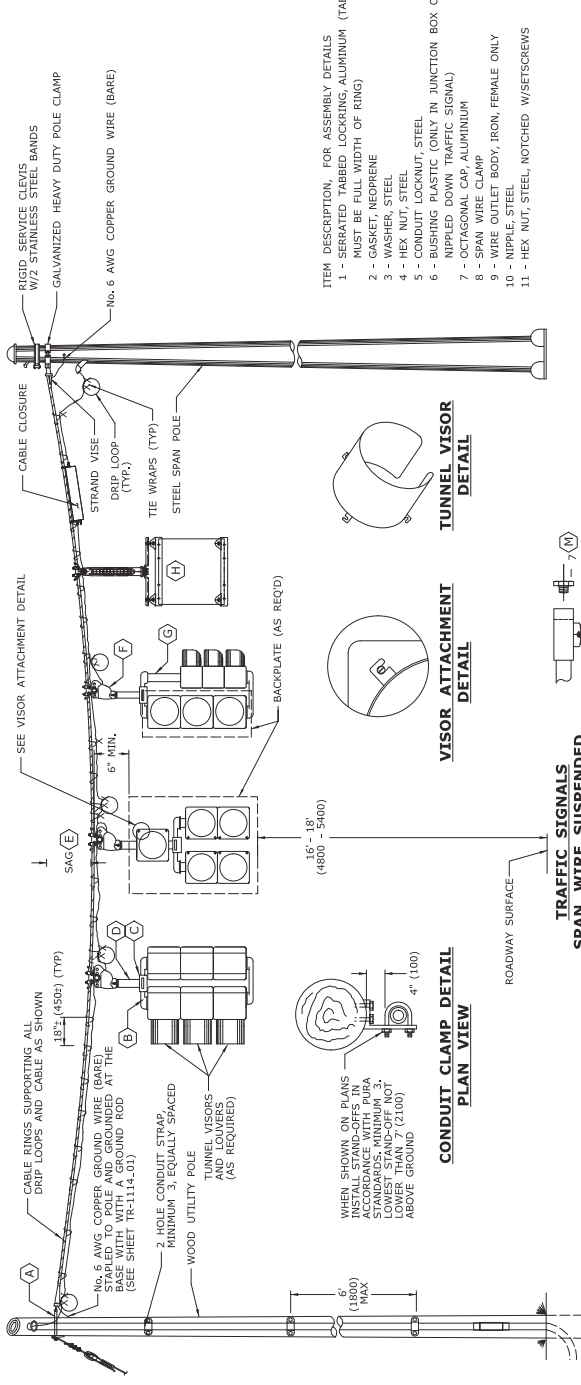
(E) SAG OF SPAN TO BE 5% LENGTH, UNLESS OTHERWISE ALLOWED BY ENGINEER.

(F) FACE ALL ENTRANCE FITTINGS TOWARD CABLE CLOSURE.

(G) INSTALL EXTENSION NIPPLE ON TOP OF SIGNAL HOUSING 50 BOTTOM OF ALL SIGNALS ARE EVEN.

(H) REFER TO TR-05.01 "SIGN FACE SHEET ALUMINUM, P-SERIES SIGNS TYPICAL DETAILS", AND TO TR-1114.01 FOR SIGN HANGER ASSEMBLY.

MAXIMUM SIGN SIZE 36" X 36" (900 X 900). ALL STAINLESS STEEL HARDWARE. SECURE LOUVERS TO TUNNEL VISORS WITH 3 STAINLESS STEEL SCREWS.



LEGEND	
	RIGID SERVICE STEEL W/2 STAINLESS STEEL BANDS
	GALVANIZED HEAVY DUTY POLE CLAMP
	No. 6 AWG COPPER GROUND WIRE (BARE)
	STRAND VISE
	DRIP LOOP (TYP.)
	TIE WRAPS (TYP.)
	STEEL SPAN POLE
	CABLE CLOSURE
	SEE VISOR ATTACHMENT DETAIL
	SAG (E)

TRAFFIC SIGNALS & CABLE ASSIGNMENTS	
DATE	2018.08.21
DESIGNED BY	Mark F. Carro, P.E.
CHECKED BY	Mark F. Carro, P.E.
APPROVED BY	Mark F. Carro, P.E.
DATE	2018.08.21

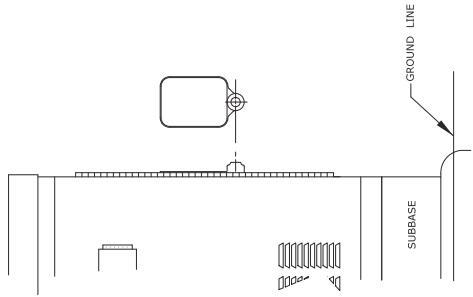
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	
PROJECT NO.	TR-1113.01
DATE	2018.08.21
SCALE	NOT TO SCALE

REVISION DESCRIPTION	
4	1-2018 REVISIONS: INCLUDING RETIRED ENGINEERS, THIS SHEET IS BASED ON THE LATEST AND IS THE MOST CURRENT AND COMPLETE SET OF WORK WHICH WILL BE REQUIRED.
3	3-2015 REMOVED STRAIN RELIEVERS.
2	5-2013 MINOR REVISIONS.
1	4-2012 MINOR REVISIONS.

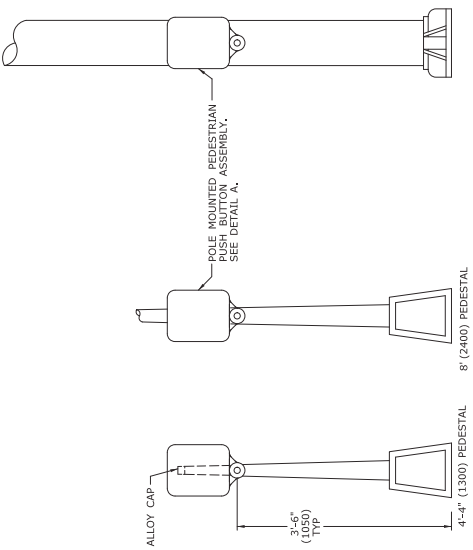
STANDARD SHEET	
CTDOT	OFFICE OF ENGINEERING
DATE	2018.08.21

TRAFFIC SIGNALS & CABLE ASSIGNMENTS	
DATE	2018.08.21
DESIGNED BY	Mark F. Carro, P.E.
CHECKED BY	Mark F. Carro, P.E.
APPROVED BY	Mark F. Carro, P.E.
DATE	2018.08.21

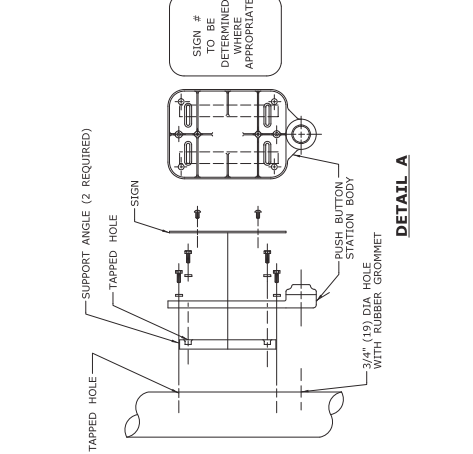
TRAFFIC SIGNALS & CABLE ASSIGNMENTS	
DATE	2018.08.21
DESIGNED BY	Mark F. Carro, P.E.
CHECKED BY	Mark F. Carro, P.E.
APPROVED BY	Mark F. Carro, P.E.
DATE	2018.08.21



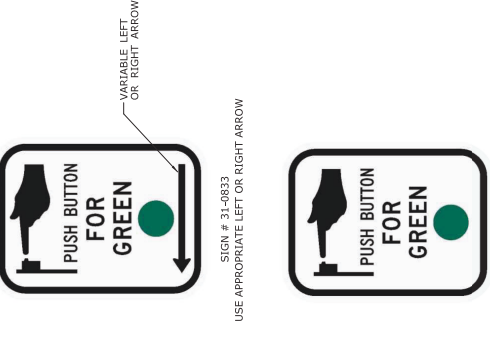
SURFACE MOUNTED



PEDESTAL MOUNTED



SPAN POLE/MAST ARM MOUNTED



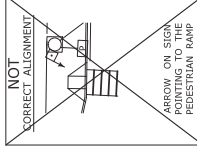
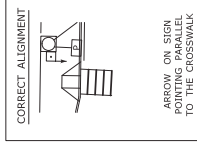
SIGN # 31-0853
USE APPROPRIATE LEFT OR RIGHT ARROW

SIGN # 31-0853

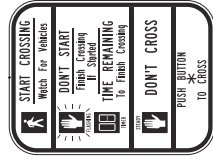
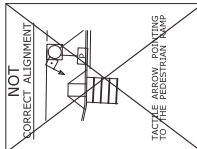
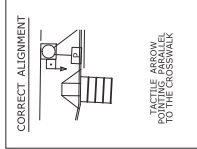
FOR CROSSING WITH SIDE STREET GREEN

GENERAL NOTES:

- 3'-6" (1050) FROM FINISHED GRADE SUCH AS SIDEWALK TO CENTER OF PUSH BUTTON.
- PUSH BUTTON INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN, CURRENT EDITION GOVERNS.
- 4'-4" (1300) PEDESTAL TO INCLUDE ALLOY CAP SECURED WITH STAINLESS STEEL SET SCREW.



EXAMPLE ALIGNMENTS FOR EXCLUSIVE PEDESTRIAN PHASE



* USE APPROPRIATE ARROW UNLESS OTHERWISE NOTED ON PLAN.

FOR NEW PUSHBUTTON HOUSING, USE 9" X 15" SIGN NO. 31-0856.

FOR EXISTING PUSHBUTTON HOUSING, USE 9" X 12" SIZE, USE SIGN NO. 31-0845.

LEGEND AS SHOWN ON TRAFFIC CONTROL SIGNAL PLAN

□	PEDESTRIAN PUSH BUTTON
□	PEDESTRIAN PUSH BUTTON, PEDESTAL MOUNTED
□	PEDESTRIAN PUSH BUTTON, POLE MOUNTED

REV.	DATE	DESCRIPTION
3	8-2018	UPDATED PEDESTRIAN SIGNAL LEGENDS AND NOTICES.
2	4-2014	ADDED PEDESTRIAN SIGNAL LEGENDS AND NOTICES.
1	4-2012	MINOR REVISIONS TO LEGENDS AND NOTICES.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES, IS BASED ON THE INFORMATION PROVIDED BY THE CLIENT AND IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. THE ENGINEER'S LIABILITY IS LIMITED TO THE WORK WHICH WILL BE REQUIRED.

NUMBERS ARE IN FRACASION (1"=1' IN METRIC UNITS, UNLESS OTHERWISE NOTED). DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.

NOT TO SCALE

DATE: 08/21/2018

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT: CTDOT TRAFFIC SIG. 2018-12-05-001

DATE: 08/21/2018

DESIGNED BY: [Signature]

APPROVED BY: [Signature]

NAME: Mark F. Carro, P.E.

DATE: 2018.08.21 07:46:57-0400

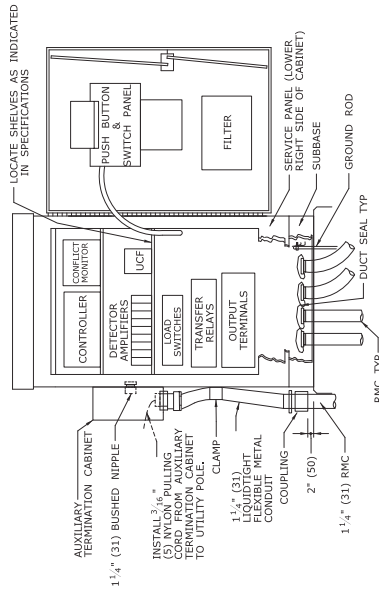
CTDOT STANDARD SHEET

OFFICE OF ENGINEERING

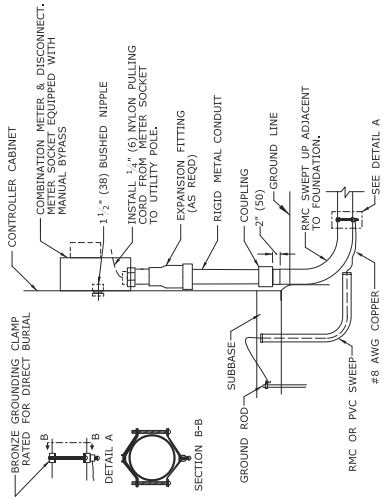
DATE: 08/21/2018

TR-1107_01

PEDESTRIAN PUSH BUTTONS



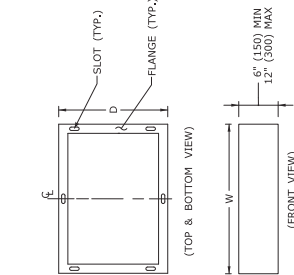
TYPICAL BASE MOUNTED CONTROLLER ON TYPE IV FOUNDATION



CONTROLLER CABINET WITH METERED SERVICE

AUXILIARY EQUIPMENT CABINET (AEC) AUXILIARY TERMINATION CABINET (ATC)

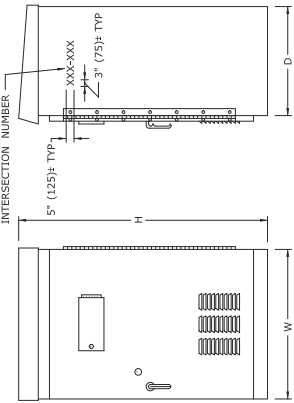
CABINET TYPE	HEIGHT	WIDTH	DEPTH
ATC	16" (400)	12" (300)	6" (150)
AEC	14" (350)	11" (275)	11" (275)



SUBBASE

SLOT AND FLANGE DIMENSIONS TO BE PER MANUFACTURER.

BASE MOUNTED TRAFFIC CONTROLLER (TYPE B, D & E)



CABINET TYPE	DEPTH		WIDTH		HEIGHT	
	MIN	MAX	MIN	MAX	MIN	MAX
B	17"	19"	30"	34"	52"	56"
D	25"	27"	42"	45"	54"	59"
E	17"	19"	30"	32"	49"	52"
	(425)	(675)	(1050)	(800)	(1225)	(1300)

GENERAL NOTES:

- 1. GROUT ALL BASES AFTER MOUNTING ON FOUNDATIONS WHERE NECESSARY.
- 2. 3'-0" (900) FROM SIDEWALK TO BOTTOM OF CONTROLLER.
- 3. INSTALL PEDESTALS AND POLES SO THAT DOORS AND COVERS ARE ON THE SIDE AWAY FROM THE STREET, UNLESS OTHERWISE SPECIFIED.
- 4. INSTALL CABINET SO THAT DOOR OPENS FIELD SIDE UNLESS OTHERWISE NOTED ON PLANS.
- 5. CAULK SEAM BETWEEN SUBBASE AND FOUNDATION.
- 6. STENCIL SIX DIGIT INTERSECTION NUMBER, USING BLACK PAINT ON SIDE, FRONT OR BACK OF CABINET MUST BE VISIBLE FROM THE ROAD.

LEGEND AS SHOWN ON TRAFFIC CONTROL SIGNAL PLAN:
 [Symbol] CONTROLLER ASSEMBLY
 [Symbol] CONTROLLER CABINET
 [Symbol] AUXILIARY TERMINATION CABINET

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES, IS BASED ON THE ASSUMPTIONS AND CONDITIONS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS OF WORK WHICH WILL BE REQUIRED.

DIMENSIONS ARE IN FEET AND INCHES (1" = 12" METRIC UNITS). UNLESS OTHERWISE NOTED:
 - DIMENSIONS ARE TO FACE UNLESS NOTED OTHERWISE.
 - DIMENSIONS ARE TO CENTER UNLESS NOTED OTHERWISE.

NOT TO SCALE

STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION

PROJECT: CTDOT TRAFFIC CONTROL PLAN
 DRAWING: TR-1108.01

DATE: 01/15/2013
 REVISIONS:
 1. 4-2012 REVISED CABINET TYPES & MINOR REVISIONS.
 2. 5-2013 REVISED SUBBASE.
 3. 1-2012 REVISED CABINET TYPES & MINOR REVISIONS.

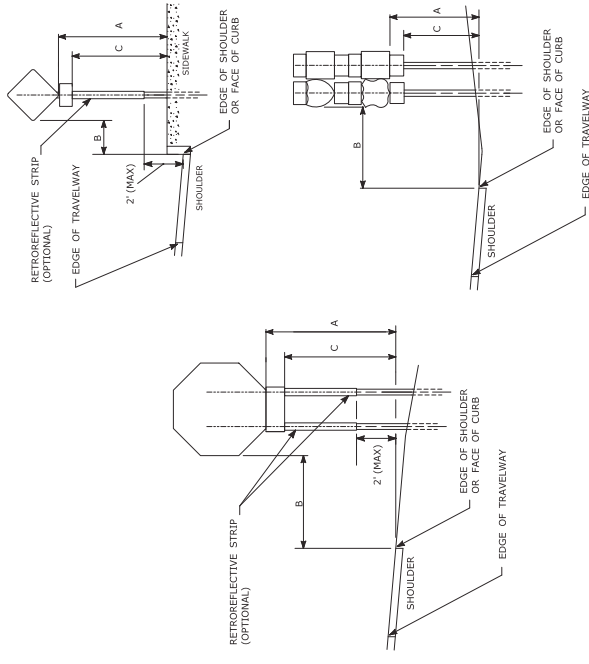
CTDOT
 STANDARD SHEET
 OFFICE OF ENGINEERING

STANDARD SHEET TITLE:

CONTROLLERS

TR-1108_01

STANDARD SHEET NO.:



TYPICAL SIGN PLACEMENT DETAIL

NOTES:
 1) ALL SIGNS AND SHIELDS ON DIRECTIONAL ASSEMBLIES SHALL MOUNT VERTICALLY.
 2) REFER TO STANDARD SHEET NO. TR-208-02 "METAL SIGN POSTS AND SIGN MOUNTING DETAILS" FOR SIGN POSTS AND SIGN MOUNTING.
 3) IF A RETROREFLECTIVE STRIP IS USED ON SIGN SUPPORT, IT SHALL BE PLACED FOR THE FULL LENGTH OF THE SUPPORT FROM THE BOTTOM OF THE SIGN TO WITHIN 2 FT ABOVE THE EDGE OF THE ROADWAY. PARKING SIGNS TYPICALLY USE 45° MOUNTING BRACKET.

DIM."A" MINIMUM HEIGHT	DIM."B" MINIMUM HEIGHT	DIM."C" MINIMUM OFFSET	ASSEMBLY LOCATION
7' ②	6' ③ 12' ④	5'	SIGNS ON FREEWAYS AND EXPRESSWAYS EXCEPT CURB/CHANGING ALIGNMENT SIGNS, AND WIDING WAY SIGNS.
5'	2'	4'	- SIGNS IN RURAL AREAS - DO NOT ENTER AND WRONG WAY SIGNS ALONG EXIT RAMP - DO NOT ENTER AND WRONG WAY SIGNS ON LIMITED ACCESS HIGHWAYS
5'	2'	N/A	- ONE-DIRECTION LARGE ARROW SIGNS LOCATED ON FREEWAYS, EXPRESSWAYS, RAMP, AND IN RURAL AREAS - CENTRAL ISLANDS OF ROUNDABOUTS
4'	6' ⑥ 12' ⑦	N/A	INCIDENT MANAGEMENT SIGNS AND MILE POST MARKER ASSEMBLIES LOCATED ON FREEWAYS AND EXPRESSWAYS
4'	2'	4'	CENTRAL ISLANDS OF ROUNDABOUTS
7'	2' ⑤	6'	BUSINESS & RESIDENTIAL AREAS WHERE PARKING OR OTHER OBSTRUCTIONS LIMIT VISIBILITY
7'	2' ⑤	7'	SIDEWALKS ⑧

- ① OR AS DIRECTED BY THE ENGINEER
- ② 8 FT MINIMUM HEIGHT REQUIRED IF A SUPPLEMENTAL PLAQUE IS SUBPOINTED BELOW THE MAIN SIGN.
- ③ 6 FT FROM EDGE OF SHOULDER, WHEN SHOULDER IS OVER 6 FT WIDE
- ④ 12 FT FROM EDGE OF TRAVELWAY, WHEN SHOULDER IS LESS THAN 6 FT WIDE
- ⑤ 12 FT FROM EDGE OF TRAVELWAY, WHEN SHOULDER IS LESS THAN 6 FT WIDE. SIDEWALK WIDTH IS LIMITED OR WHERE EXISTING UTILITY POLES ARE CLOSE TO THE CURB.
- ⑥ A CLEAR PATH OF NOT LESS THAN 4 FT SHALL BE PROVIDED IN SIDEWALK AREAS.

FOR MAXIMUM EFFECTIVENESS, POSITION SIDE MOUNTED SIGNS ON STRUCTURAL STEEL BREAKAWAY SIGN SUPPORTS AS FOLLOWS:

ON A TANGENT SECTION, POSITION THE SIGN SO THE VERTICAL AXIS IS PLUMB AND THE SIGN SERVES SIGNS LOCATED 30 FT OR MORE FROM THE EDGE OF THE ROAD SHALL BE TURNED APPROXIMATELY 3° TOWARD THE ROAD.

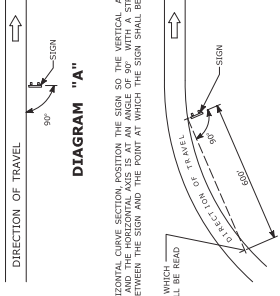


DIAGRAM "A"

ON A CURVED SECTION, POSITION THE SIGN SO THE VERTICAL AXIS IS PLUMB AND THE HORIZONTAL AXIS IS AT AN ANGLE OF 90° WITH A STRAIGHT LINE BETWEEN THE SIGN AND THE POINT AT WHICH THE SIGN SHALL BE READ.

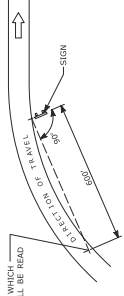
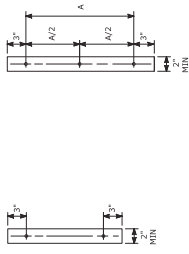


DIAGRAM "B"

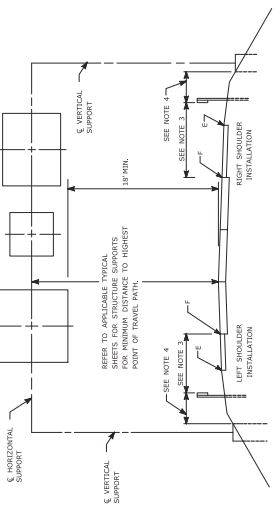
SIGN ORIENTATION DETAILS FOR SIDE MOUNTED SIGNS ON STRUCTURAL STEEL BREAKAWAY SIGN SUPPORTS

RETROREFLECTIVE STRIPS OVER 48" LONG:



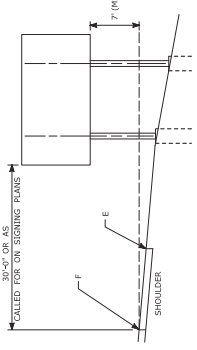
RETROREFLECTIVE STRIP DETAIL

NOTES:
 1) RETROREFLECTIVE STRIPS WHICH ARE 48 IN. LONG OR LESS SHALL BE ATTACHED USING 3 BOLTS AND RETROREFLECTIVE STRIPS OVER 48 IN. LONG SHALL BE ATTACHED USING 3 BOLTS AS SHOWN ON REFER TO STANDARD SHEET NO. TR-1208-02 "METAL SIGN POSTS AND SIGN MOUNTING DETAILS" FOR MOUNTING DETAILS.
 2) THE COLOR OF THE STRIP SHALL BE THE SAME AS THE BACKGROUND COLOR OF THE SIGN, EXCEPT THAT THE COLOR OF THE STRIP FOR "YIELD AND "DO NOT ENTER" SIGNS SHALL BE RED.



TYPICAL PLACEMENT OF OVERHEAD SIGNS ON SIGN SUPPORTS

- 1) FOR PLACEMENT OF CANTILEVER SIGN SUPPORT USE APPLICABLE PORTION OF ABOVE DETAIL.
- 2) BARRIER SYSTEMS MAY BE REQUIRED FOR BOTH SIDES OF SUPPORTS IN MEDIANS.
- 3) IMPACT PROTECTION SHALL BE PROVIDED FOR THE SIGN SUPPORTS LOCATED WITHIN CLEAR ZONE.
- 4) SIGN SUPPORT FOUNDATIONS SHALL BE LOCATED OUTSIDE OF BARRIER SYSTEMS DEFLECTION AREA.
- 5) ALL SIGNS ARE TO BE LEVEL, REGARDLESS OF CAMBER IN SUPPORT.



TYPICAL PLACEMENT OF SIDE MOUNTED SIGNS ON STRUCTURAL STEEL BREAKAWAY SIGN SUPPORTS

- 1) MIN. VERTICAL CLEARANCE ABOVE SIDEWALKS SHALL BE 7'.
- 2) WHEN GUIDE RAIL IS USED, THE OFFSET TO THE NEAR EDGE OF SIGN FACE SHALL BE AS SHOWN ELSEWHERE IN THE CONTRACT PLANS.
- 3) ON INTERSECTING ROADS AT RAMP TERMINI, THE OFFSET TO THE NEAR EDGE OF SIGN FACE SHALL BE AS SHOWN ELSEWHERE IN THE CONTRACT PLANS.
- 4) IF 30'-0" MIN. CANNOT BE MET, PLEASE CONTACT THE ENGINEER.

STANDARD SHEET NO.: TR-1208-01

SIGN PLACEMENT AND RETROREFLECTIVE STRIP DETAILS

CTDOT STANDARD SHEET OFFICE OF ENGINEERING

MARK F. CAHILL, P.E.
 2016.08.21 07:48:06-0400

MARK F. CAHILL, P.E.
 2016.08.17 09:08:17 0000

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

NOT TO SCALE

REV. DATE	REVISION DESCRIPTION
3	8-2018 INCLUDED INCIDENT MANAGEMENT AND MILE MARKER SIGNS.
2	4-2017 MINOR REVISIONS.
1	2-2017