

# *On30 Coalition Module St@nd@rds (OCMODS)*

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By: Ron Wm. Hurlbut

**Website**

*This document contains live HTML links.*

These **On30 Coalition Module St@nd@rds (OCMODS)** formerly known as the **On30 Conspiracy Module Standards (OCMODS)** were developed by a dedicated bunch of guys on the former "On30modules" and "OCMODS" **Yahoo! Groups** as an offshoot of the **On30Conspiracy**. A small group of us (The Coalition Modelers) worked behind the scenes and decided to preserve them.

Sadly, these module standards are no longer endorsed by the **On30Conspiracy**. Their battle cry "Standards, we don't need no stinkin' Standards" has made 'St@nd@rds' a dirty word.

In the past few years the discussions regarding specific universally adopted module Standards have spawned and stimulated several On30 Module Groups. Although they are not all completely compatible, a little rigging or transition modules would allow the different groups to connect.

For a listing of local/regional On30 Module Groups visit the **On30modules Yahoo! Group**.

## *Introduction and Operational/Design Concepts:*

In the interest of promoting the development of **On30 Module St@nd@rds** and facilitating their interconnection, this document establishes the following set of recommendations for the creation of On30 Module Standards for generic/universal, interchangeable On30 modules.

**The On30 Module St@nd@rd** is a free form module system that allows an almost limitless variety of different shaped modules. This flexibility extends to operational design as well by embracing both point-to-point and continuous running. Modules may be any length, straight or curved, and any width or shape between standard interfaces. The minimum requirements of the St@nd@rds will also allow many different existing module types to connect. Local groups and clubs are encouraged to add standards regarding scenic treatment and themes that suit their needs, as long as the additional standards do not interfere with the connection of modules built to the minimum standard.

The St@nd@rds are based on two modular concepts. The single-track system (**Free-Mo**) is designed with point to point running in mind. The double track system(**Bend-track**) is designed to use "balloon" modules at each end to allow for continuous running of trains. The two systems have been combined successfully by the **Narragansett Bay Railway & Navigation Module group (NBR&N)**.

Although the NBR&N Module group is successful, some of the members of the On30 Conspiracy found that the NBR&N Standards were limiting. Therefore, the On30modules group was established on Yahoo Groups to create a set of Generic/Universal On30 Module Standards.

The generic/universal St@nd@rd is designed to interconnect with other types of On30 Modules. It should be apparent that modules built to these specifications may possess any number of compliant interfaces. This capability allows for modules to branch into two or more directions. Module sets are encouraged. A module set is defined as two or more modules or module sections that are always

displayed contiguous with one another that they only conform to the Standard specifications at the outermost interfaces.

This specification defines three interfaces - a single track Free-Mo style, a double track Bend-Track style and a double track for passing.

Module standards very often set out rigid module shapes and/or operational parameters. This specification does not. Certainly, a rectangular module could have a compliant design. However, drawing inspiration from concepts like Free-Mo and Bend-Track, these modules may also be uniquely shaped and encompass significant changes in elevation, helices, switchbacks, etc (elements commonly found on narrow gauge operations).

Some groups or clubs may object to the broad flexibility/looseness guiding this specification. It is left to them to define local standards and practices to customize the modules to their preferences. This gives these groups the autonomy to more fully constrain the scenic, physical appearance, and/or operation of their modules while retaining adherence to the basic interfacing specifications outlined here. We encourage the creation of local module groups that may add additional cosmetic standards.

**\*\* Study Free-Mo - <http://www.free-mo.org/index.html> \*\***  
**\*\* Study Bend-Track - <http://home.alltel.net/ah50902/> \*\***  
**\*\* Study NBR&N - <http://nbrnmodule.tripod.com/> \*\***  
**\*\* Read the rest of this document \*\***  
**\*\* Now, go build a module or two \*\***

#### PREAMBLE:

Firstly: This document is not meant to be a tutorial or how-to. That is left up to other websites like the ones listed above, as well as reference books, magazines and videos that are readily available. If you have questions, or wish to discuss construction materials and techniques [Portable\\_On30 Yahoo Group](#), as well as [The Gauge - Model Train Forum](#) are recommended.

#### 1. MODULES:

Build the modules to what-ever size or shape you like. Either as a single unit, or in sections. Just make sure that trains don't take the express run to the concrete canyon! This means that the modules need to be built to withstand the knocks that they will receive no matter how carefully you move them. It also means that trackwork needs to be done well to prevent derailments. A minimum distance of 4" from track centerline to the edge of the module must be observed. Or, some other method must be employed to act as a barrier.

There are provisions for different types/styles of modules:

A single track or double track [NTrak / NMRA standard](#) module.

A single track or double track [Free-Mo standard](#) module. [Free-MOn30 Module Standards](#).

A double track [Bend-Track standard](#) module. Like the [Narragansett Bay Railway & Navigation Module group \(NBR&N\)](#).

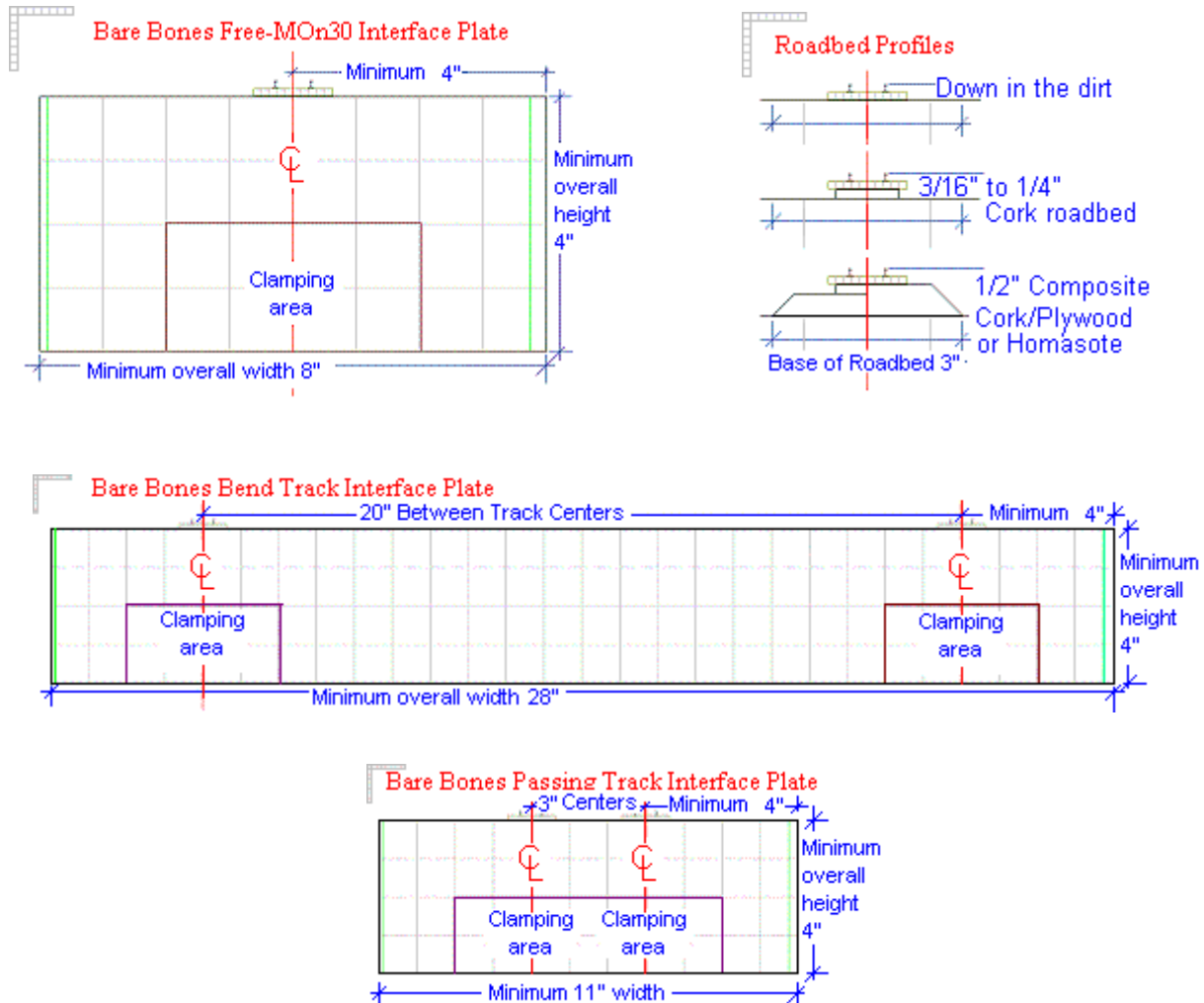
## 2. TRACK, TIES, WIRES AND CLAMPS AT THE INTERFACE:

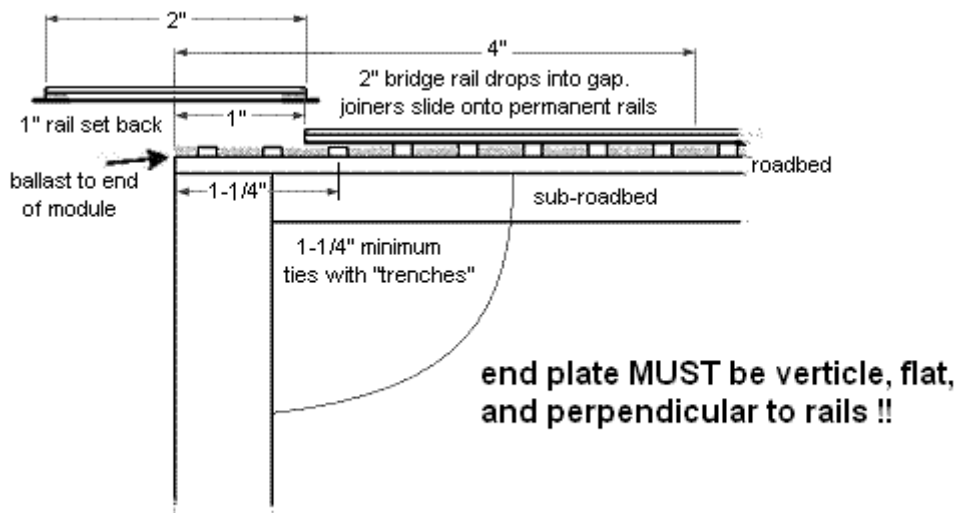
It has been proven that dioramas and modules can be connected and run with scraps of track and some jury rigging. If you desire specific dimensions and tolerances to be observed, it is up to you to set these with a local group. For the most part, these are ultimately cosmetic/aesthetic in nature. The following diagrams set out a bare minimum standard that should give reliable connections and operations. Using clamps to join modules together instead of alignment pins and bolts will allow you to adjust interface plates vertically and horizontally in order to align the track. The most common interface profile is flat. For a rugged narrow gauge railroading appearance a more interesting profile is encouraged.

For track, do not use unmodified HO track.

Use either Peco or Micro Engineering On30 track and turnouts.

For hand-laid track use code 83 or 100 rail spiked to scale 5"x7" or 6"x8" ties 6' to 6.5' long.





### 3. ADJUSTABLE HEIGHT OF MODULES:

Height of rails at the interface is completely adjustable: From 36" to 60". This means that special legs need to be built that are able to adjust the rail height at the interface vertically 24" from rail-head to floor. This is unique to the On30 Module St@nd@rds and is meant to accommodate grades. There are several methods available for building adjustable legs and there is a separate page to describe them [here](#).

### 4. MAIN LINE TRACK THROUGH MODULE:

18" Minimum main line curve radius.

(You are encouraged to use the widest curves possible.)

Maximum 4% grades

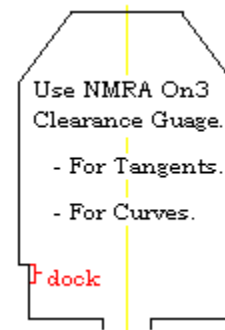
(That's 1" in 25", 2" in 50" or 4" in 100")

Suitable easements are to be incorporated into all main line curves and grades. For reliable operations, make every effort to lay reliable track-work in order to avoid kinks, reverse curves and other track bug-a-boos ....

### 5. MAIN LINE CLEARANCES:

On30 clearance gauge (based on NMRA On3)

On30 clearance gauge for curves (based on NMRA On3)



### 6. MAIN LINE TURNOUTS:

The minimum turnout frog number is a #5, similar to PECO and Micro Engineering On30 medium turnout.

Both point and stub type turnouts are allowed.

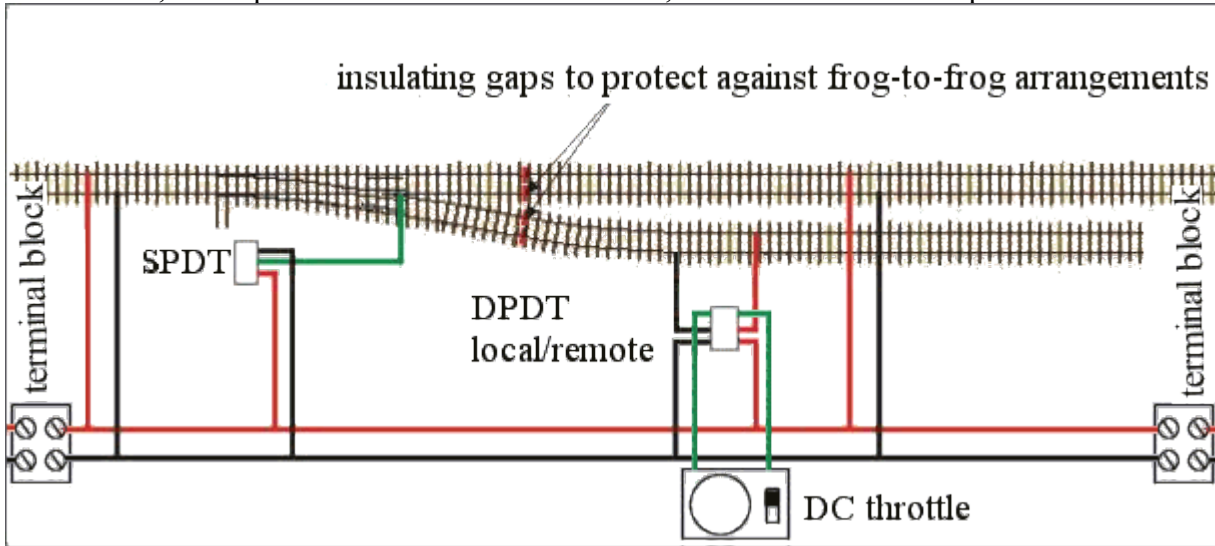
Otherwise use what-ever turnouts you like, providing the main-line gets the straight leg.

Make sure that they work properly and don't shift. (A.K.A. that they are sprung or have "a positive throw mechanism" to maintain position.) Or else, set them to the mainline and disable them (spike in position) until they are repaired or replaced.

Turnout frogs shall be powered.

Both rails of any spur track shall be isolated from mainline.

Accessories, except DCC controlled turnouts, shall not derive power from track power.



#### 7. MAIN LINE ELECTRICAL STANDARDS:

A 12AWG stranded two conductor wire bus shall extend full module length under mainline.

Individual rail lengths shall have a 18AWG feeder from the rail bus.

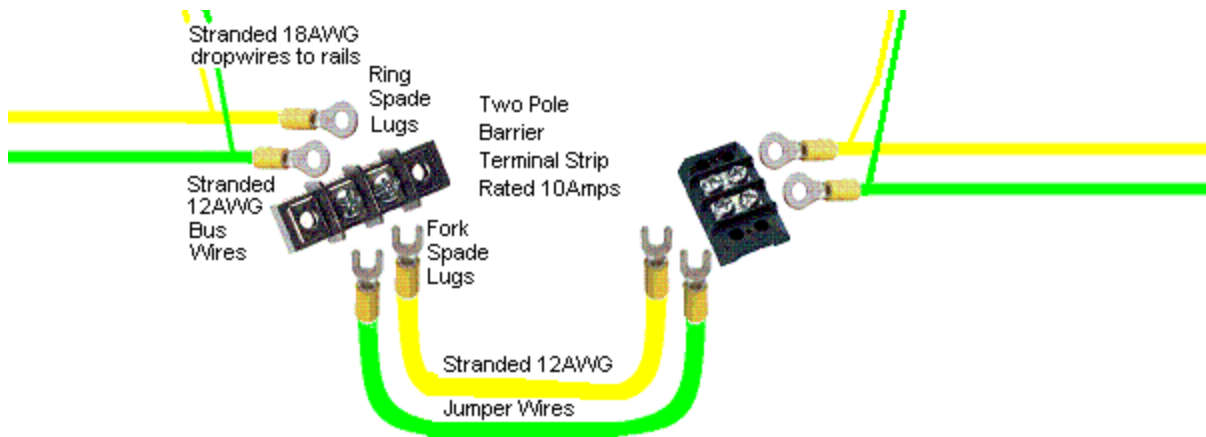
Barrier style terminal blocks minimum rated 10A shall be installed at each interface.

Terminal blocks shall accept 12AWG wire with soldered spade tongue lugs.

Inter-module connector wires shall be 12AWG, 12" long with soldered spade lugs.

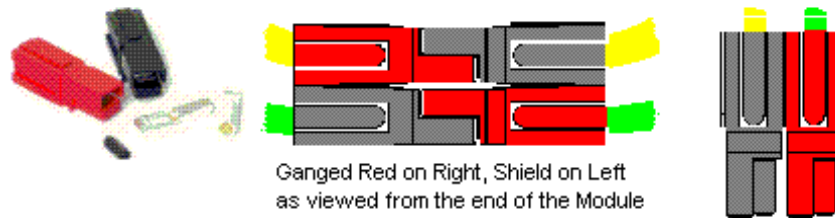
Shrink tubing shall be required as necessary to prevent shorts.

*18AWG to 16AWG wire used to be sufficient for bus wires and jumpers, with 24AWG to 20AWG drop wires when modular layouts were operated with DC power broken into separate blocks. In order to ensure an adequate power supply and the integrity of the DCC signal over a large modular layout without the need for multiple power districts and the use of extra boosters, use the heavier gauge wires outlined here.*



Basic module to module jumper wires can be connected with Fork Spade Lugs screwed to terminal blocks but it is recommended that plugs are used for speed and ease. Cinch-Jones or Molex connectors can be used, but **Anderson PowerPoles** have been found to be superior and are recommended here.

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**30 Amp Red/Black Anderson Powerpole**

## 8. DCC:

The DCC pass through Throttle bus designed by Geren W. Mortensen, Jr. is excellent and we encourage everyone to use it.

However:

1. Not every one will be using DCC.
2. The throttle bus doesn't work for EasyDCC.
3. It's not needed if you are using R/F, I/F or R/C Throttles.
4. It's easy to add a DCC Throttle Bus if it is needed later.