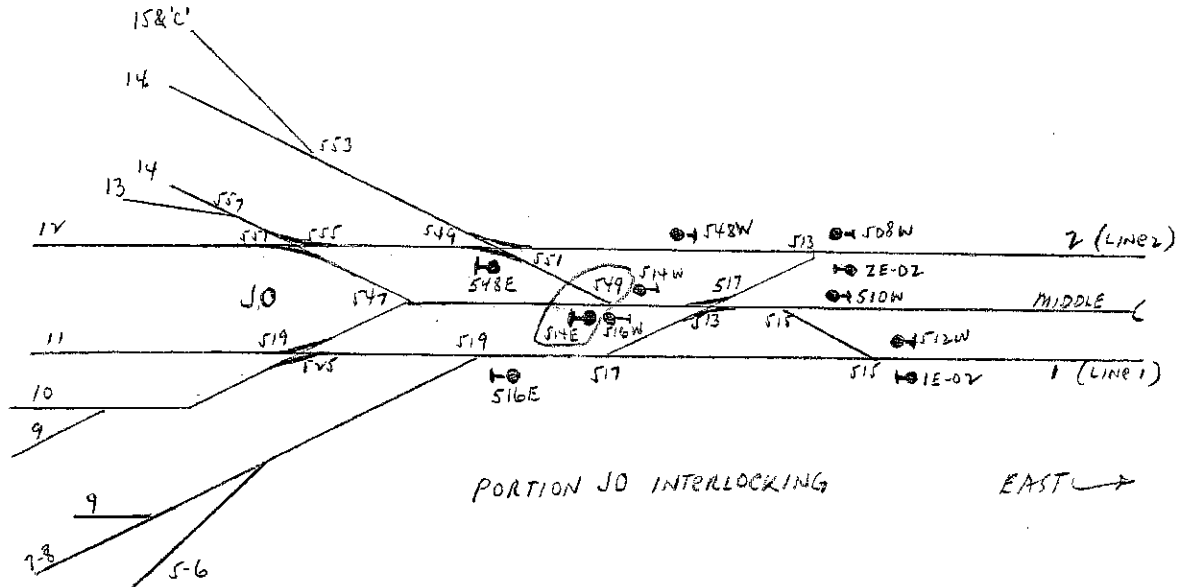


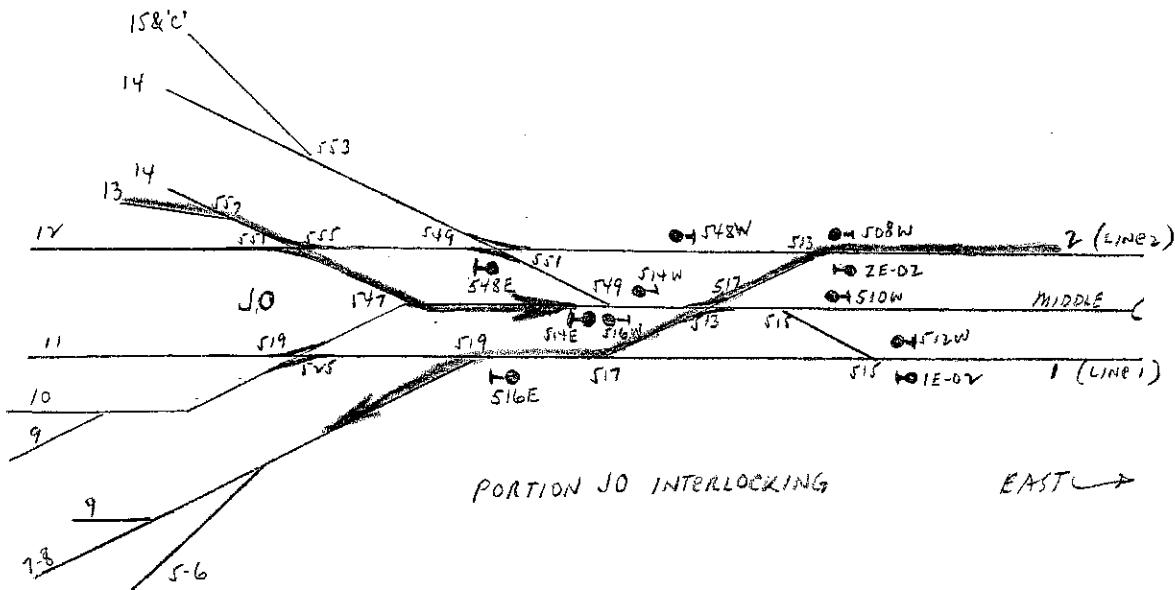
JO Interlocking 514E Signal Review

Engineers have advised of confusion in determining whether JO Interlocking 514E Signal applies to their movements. Although Engineers are not normally required to be qualified on interlocking switch numbers, switch numbers have been included in the following discussion and diagrams to aid in explaining their relationship to the various routes encountered.

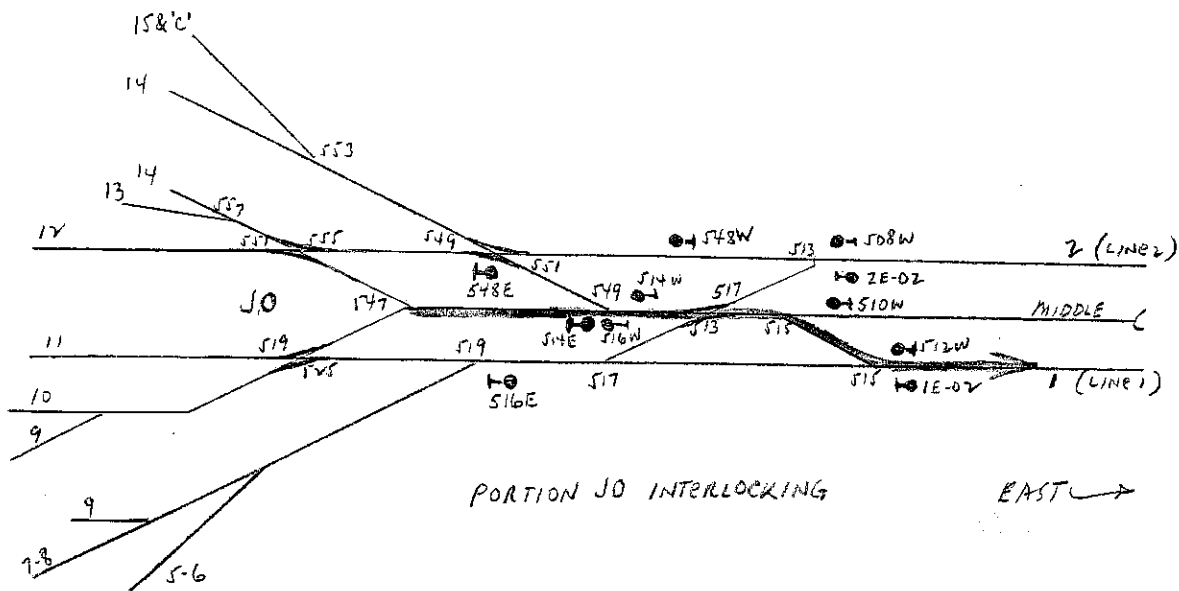


514E signal is essentially in its original, as-built location, although it and a few others were converted to reduced clearance "uni-lens" signals in 1991 in response to introduction by the Long Island Rail Road of bi-level passenger cars requiring changes in the existing clearance diagram. This signal was originally over the double slip switch formed by the east end of JO 549 Switch and the west end of 515 Switch. This double slip switch was eliminated in 2003 as part of the extensive JO Route Restriction Remediation Project that widened track centers to accommodate today's wider equipment. As part of the project, the crossover formed by 515 Switch was moved east to its present location and the former 549/515 double slip switch became the east end of 549 Switch in the form of a trailing point turnout for eastward movement in the Middle Track. 514E Signal is to the right of and over the heel of this switch. Neither the purpose nor the location of this signal was changed.

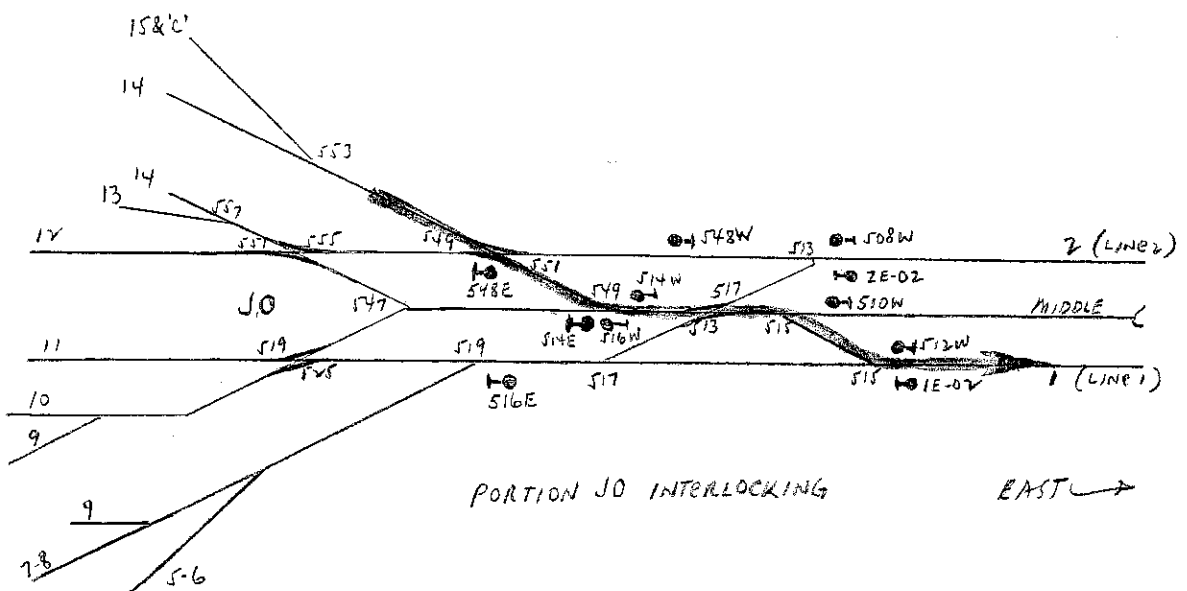
514E Signal provides a holding point to protect movements crossing from Line 2 or the Kelly Track to 11-5 Trks over 513/517 Switches. It is located to protect the fouling points of these switches.



Despite the many origination points possible, 514E Signal governs movements converging on it from two sides, depending on the positions of two switches (549 and 551). Eastward movements may operate through the 'X' or Middle to 514E Signal over 549 Switch in Normal position or from 548E Signal over 549 and 551 Switches in Reverse position. **In both cases, 514E Signal is part of the route and is required to be in passing position.** Due to the very short distance of approximately 40 feet between the signals, *when switch positions require both signals to be displayed for the same route*, the interlocking machine will cause 548E Signal to be displayed in passing position at the same time 514E Signal is displayed if the movement is eastward to the Kelly Track or Line 1. (Engineers would see 548E and 514E Signals displayed independently of each other if a parallel eastward movement was destined to Line 2 – over 549 Switch in Normal position. Thanks to the "flanking protection" designed into the interlocking, both ends of this switch would direct the movements away from each other.)



514E Signal is required to be in passing position for the route shown in the above diagram. 548E Signal is not part of this route. The next diagram shows a route requiring that both 548E and 514E Signals be in passing position.



We previously spoke of the short distance between 548E and 514E Signals. Due to this short distance, the interlocking will not permit 548E Signal to display an indication more favorable than Stop Signal distant to 514E Signal at Stop. Hence, if these signals are both part of a route and cannot be displayed, such as in the case of movement into an out of service track or a signal system failure, Rule 241(a) authority will be required to pass **each** of them, since Rule 241 authority cannot be granted for more than one signal at the same time.

Confusion has arisen when Rule 241 verbal authority is required to pass both 548E and 514E Signals at Stop because the location of 514E Signal at the east end of the east end of 549 Switch places the signal slightly to the right of the sight line after observing 548E Signal. In both of the previous examples, 514E Signal was shown to be required for movements. **The signal was located here to govern movements approaching it from either side of the turnout, as was shown in the two previous diagrams. It is located in the ceiling at a point to the right of the east end of 549 Switch between the heel and the points the switch. As long as 514E Signal is to the immediate right of the track you are on, Rule 241(a) authority is required to pass it when it is indicating Stop.**