$\vec{D}$ at some point, say l'. By Property 4, there is a path M from s' to s'' on the q dent line that is either a staircase or a 1-bend path with s as the bend point. Since $s'' \notin B_l(D)$, M crosses $\vec{D}$ at m', such that m' is to the west of l'. Hence, $r \equiv m'$, implying that $r \wedge s$.

Q.E.D.

Lemma 10. Let $r \in Cons(p,q)$, such that $r \wedge p$ and $r \wedge q$. Let $R = (p\, r_1, r_1 r_2, \cdots, r_k - 1\, r_k, r_k\, q)$ be a sequence of 1-bend paths. Then, $\exists\ i \in \{1, \cdots, k\}$ such that $r \wedge r_i$.

Proof: By a proof very similar to that of Lemma 9, we can establish that r sees some point, say m', of R such that $m' \in Cons(p,q)$. Since R is a sequence of 1-bend paths, and $m' \in Cons(p,q)$, there exists $r_i \in \{r_1, \cdots, r_k\}$, such that $r_i \equiv m'$, implying that $r \wedge r_i$.

Q.E.D.

Lemma 11. Let $Cons(p,q)$ be of type II. Let $r \notin Cons(p,q)$, such that $r \wedge p$ and $r \wedge q$. Let $R = (p\, r_1, r_1 r_2, \cdots, r_k - 1\, r_k, r_k\, q)$ be a sequence of 1-bend paths. Then, $\exists\ i \in \{1, \cdots, k\}$ such that $r \wedge r_i$.

Proof: Let r be on the same side of $Cons(p,q)$ as p (the other case is symmetrical). Without loss of generality, assume that the p dent line is vertical and the q dent line is horizontal. By Property 4, there is a staircase path L (southeast, say) from r to r'' on the q dent line that meets the p dent line at r'. Clearly, r sees every point of the p dent line below r' and every point of the q dent line to the right of r'' (see Figure 9). For r not to see some point of R inside $Cons(p,q)$, R has to meet the p dent line above r', and the q dent line to the left of r''. Thus, R meets L inside $Cons(p,q)$, implying that $r \wedge r_i$, for some $r_i \in \{r_1, \cdots, r_k\}$.

Q.E.D.

5. Weakly Triangulated Graphs and the Star Graph

In this section, we assert that the star graph introduced in the previous section belongs to a special class of graphs called perfect graphs [9, 15]. In a perfect graph G, the size of a minimum clique cover of every induced subgraph G' is equal to the size of a maximum independent set of G'. A minimum clique cover of a perfect graph can be found in polynomial time [10]. We first need the following definition.

Definition 4. A graph G is *weakly triangulated* [11] if neither G nor G^c, the complement of G contain induced cycles of length greater than four.