Perception, stealth, cover, concealment, etc.

1. There are 2 levels of knowledge: accurate location and general direction. Accurate knowledge means an enemy knows your location at the current moment. General direction means that the enemy only knows an approximate direction. Accurate knowledge is generally the same as observation in prd, and applies to vision, blindsight, blindsense, tremorsense, and scent within 1 tile. General direction is (sort of) new and is the usual state for hearing and scent over 1 tile away General direction will also apply in some cases where the enemy has very good reason to believe you are in a particular direction (e.g. you ran around a corner very recently).
2. General direction will be one of the 4 compass directions (N, E, S, W). (Need to make ‘search’ process for the enemy with only general knowledge somewhat random so approaching on a diagonal isn’t so useful)
3. Distinction between hearing and sight, since only perception and stealth. If in line of sight and sufficient light, than any successful perception is visual. If not, then call it hearing. (Add noise levels to characters and monsters, heavy armor is noisy, etc. some baseline noise level for monsters unless sleeping (quieter) or talking (noisier).
4. What is stealth?
   1. A skill that gives you an increased chance of remaining in a state where the enemy doesn’t have accurate knowledge of your location. So stealth can help you move in areas of cover or concealment without the enemy accurately knowing your location.
   2. A mode of movement.
5. Stealth only works against vision and hearing. Not blindsight, blindsense, tremorsense, and scent.
6. A stealth check is only used:
   1. If the enemy doesn’t have accurate knowledge of you, and
   2. If you have cover (not soft cover), concealment, or the enemy isn't capable of observing you due to blindness, Diversion, etc.
7. An enemy gains accurate knowledge of you by passing a perception check during your action while you are in line of sight and in sufficient light (or in blindsight, blindsense, or tremorsense range). This applies whether you are in stealth or not. So you can be in stealth, move out of cover or concealment into line of sight, but if enemy fails perception check (due to lighting, distance, distraction, etc.) they still won’t have accurate knowledge of you even though your stealth isn't involved at all in this check.
   1. Note that DC for perception check when you aren’t in cover or concealment has a baseline of 0; i.e. you don’t get to use your stealth skill. There is no ‘moving silently’ bonus to avoiding detection for having a high stealth skill.
   2. If you start your move in cover or concealment, you can move with stealth to improve your chances of staying out of the enemies accurate knowledge. If you pass this one check and don’t move out of cover or concealment, the enemy won’t obtain accurate knowledge. If you move out of cover or concealment, the enemy gets another perception check for each such tile you move into, this time a basic perception check and you don’t use your stealth skill.
8. Attacking:
   1. If you initiate an attack and the enemy does not have accurate knowledge of your location, then the enemy is denied dex bonus, and sneak attack damage is possible. Easier to do from range, but not impossible that you might be able to get to melee range (step around a corner, enemy fails the 1 or 2 perception checks).
   2. If you initiate multiple attacks and the enemy didn’t have accurate knowledge of your location before first attack, then first attack makes them aware of you and they get dex bonus on subsequent attacks.
   3. If your first attack on an enemy without accurate knowledge of your location is from range and you are in cover or concealment, you are allowed to attempt to make them unaware of you. This is sniping and is a full round action which must be selected before the attack. In other words, you attack from range. After attack, normally the enemy would gain accurate knowledge of your location. If you wish, you are allowed to try to remain unobserved (-20 on your stealth vs their perception).
9. If any enemy has accurate knowledge of your location, then all other enemies have accurate knowledge. If any enemy has general direction knowledge of your location, then all other enemies have general direction knowledge. It would be more realistic to only provide allies with general direction knowledge even if one has accurate knowledge, but this would probably reduce the application of interesting tactics.
10. Scenarios:
    1. Neither party nor monsters know about the other
       1. Party member moves into a location where they might be able to sense a monster and monsters might be able to sense party member. No stealth in use. Party member rolls perception and monster rolls perception. If any pass, phased move mode starts.
       2. Same as above, but party member is using stealth movement. Party member must stay in cover or concealment for entire move action for this to work. Monster’s perception check is now opposed by party member’s stealth skill. Party member’s perception check is normal. Unless party member detects monster, he won’t even know there was a roll using his stealth skill. If party member initially enters monster sight range while in stealth movement, a check is made, and if party member moves out of cover or concealment during same move action, the monster will get to make a second perception check, this time not opposed by stealth skill.
    2. Already in phased move mode (already in combat)
       1. Enemy already has accurate knowledge of you. You move into a tile that gives you cover or concealment from enemy, but not total cover or total concealment. Stealth does nothing for you, since enemy still has accurate knowledge of your location and no perception check is done. If you were to move into a location of total cover or total concealment (and thus the enemy would no longer have accurate knowledge of your location), then the fact that you used stealth provides you with an increased chance of avoiding detection if you continue to be using stealth when you move into cover or concealment that isn’t total.
11. User interface - you can always choose to make a move using stealth, whether you are in cover or concealment at some point during the move or not. Moving with stealth might not have any benefit however...
12. What can you do if the enemy already has accurate knowledge of your location?
    1. The fact that you are trying to be stealthy won't have any benefit until one of two situations arise: (1) you moved to a location of total concealment or total cover, and thus the enemy lost its accurate knowledge of your location; or (2), you successfully used a diversion to hide and moved into a tile with cover or concealment, even if not total cover or concealment. After the enemy loses accurate knowledge of you, when you enter back into a tile with cover or concealment that isn't total at some point in the future, and you are still using stealth movement, the enemy must make a perception check opposed by your stealth.
    2. What about a situation where the enemy has accurate knowledge of you, you initiate a stealth movement that passes through a location where you have total cover or concealment, but you end up back in cover or concealment that isn't total during the same move action? Always, a perception check will be made when you enter back into a tile that doesn't have total cover or concealment. If this tile has some cover or concealment (but not total), stealth will be used and thus your (possibly brief) time in total cover or concealment was useful.
13. Code
    1. Sometimes have enemies do a perception check of a creature that they don't have accurate knowledge of at the end of a creature's turn, or every 6 sec if in free move mode. When to do this check:
       1. If creature is in line of sight of enemy and lighting is sufficient and the creature didn't take any actions. A successful perception provides accurate knowledge of creature's location.
       2. If creature is not in line of sight or lighting is not sufficient. A successful perception provides general direction knowledge only. Usually this is due to hearing. The actions and equipment of a creature will affect his 'noise' level.
    2. During a creature’s turn and move isn’t stealthy:
       1. Do perception checks for enemies that don't already have accurate knowledge of the creature doing the action (usually movement), but could have accurate knowledge due to sufficient lighting and line-of-sight. Do a perception roll for each enemy creature each time a new tile is moved into or for each detectable action (e.g., casting a spell with a somatic or verbal component).
       2. For each tile creature moves into, creature does a perception check for each enemy that creature doesn’t already have accurate knowledge but that creature could have accurate knowledge of. **houserule:** If enemy is in cover or concealment (any level), only 1 check per action, and it is opposed by enemies stealth rating.
    3. If I'm doing a stealthy move, things are slightly different.
       1. Do perception checks for enemies that don't already have accurate knowledge of me (unless enemy is bluffed), but could have accurate knowledge due to sufficient lighting and line-of-sight. However, for the contiguous part of movement that I'm in cover or concealment (but not total cover or concealment), only a single perception roll per enemy creature, not a roll per tile moved into, opposed by my stealth. One stealth roll for this part of a stealthy move. Possibly several perception rolls (one for each enemy creature) opposing this stealth roll. If leave cover or concealment, back to a perception roll per tile moved into and no opposed stealth roll.
       2. My perception check same as if my move weren’t stealthy.
    4. A successful Bluff leaves the enemy in a 'bluffed' condition, so that if I enter a tile with cover or concealment, even if not total, the enemy must roll a perception check vs. my stealth in order to maintain accurate knowledge of my position. My stealth roll is at -10.
    5. During free move mode, all stealth movement is at half speed. During free move mode, moving while invisible is at normal speed. During phased move mode, need to determine how many tiles moved during each action (move, standard) in order to determine penalties to stealth and perception dc.
14. Terrain
    1. 5 types of walls:
       1. regular walls (terrain type: 'wall', subtype: any)
       2. walls with holes larger than 1 square foot (terrain type: 'wall with big hole', subtype: any)
       3. walls with holes smaller than 1 square foot (arrow slits) (terrain type: 'wall with small hole', subtype: any)
       4. walls with glass window (terrain type: 'wall with window', subtype: any)
       5. clear walls (terrain type: 'clear wall', subtype: any)
    2. 2 temporary (usually) terrain effects:
       1. fog
       2. spell illusory wall
    3. 1 related terrain feature:
       1. low obstacles (terrain type: 'low obstacle', subtype: any)
    4. My intention is to have each 5 foot tile be entirely 1 type of terrain. This won't look so good on the map (a window is 5 feet thick), but otherwise I would have to code for sub-tile elements (a 3 inch thick wooden door on the east side of the 5'x5' tile).
    5. los = line of sight, loe = line of effect
    6. regular walls, block both los and loe
    7. walls with holes larger than 1 square foot - blocks neither los nor loe. Does provide cover from effects coming from other side of wall.
    8. walls with holes smaller than 1 square foot
       1. **houserule:** but more than a few square inches
       2. **houserule:** If adjacent to such a tile, and some effect is coming from other side of tile, then you have improved cover against enemy
       3. **houserule:** enemy does have loe and los *into* the adjacent tile, but neither loe nor los *through* the adjacent tile and into tiles farther behind the small opening (unless enemy is adjacent to wall with small opening, see next item).
       4. **houserule:** if you are adjacent to the wall with small opening, you have los and loe through the wall
    9. windows, clear walls: block loe but not los.
    10. fog: blocks los but not loe. You can see into the outermost tile in a fog, but never through any tile with fog.
    11. spell illusory wall: block los for any but caster
    12. low obstacles, say under 4 feet high. Block neither los nor loe. They do provide cover to defender if defender is within 30 feet of low obstacle and is closer to obstacle than attacker