California Underground Facilities Safe Excavation Board ("Dig Safe Board")

April 16, 2019

Agenda Item No. 6 (Information Item) – Staff Report

Discussion on Area of Continual Excavation Ticket Renewal Requirement (Government Code section 4216.10(e))

Presenter

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Summary

Government Code section 4216.10 subsection(e) requires the Dig Safe Board to develop regulations creating a process for a modified or eliminated excavation ticket renewal process for areas of continuing excavation with no subsurface installations present. Staff researched approaches to pre-approve farmland eligible for modified or eliminated renewal processes utilizing available data. These approaches estimated less than one tenth of one percent of agricultural parcels as eligible for modified or eliminated renewal processes. Due to the low number of parcels identified using this approach, implementing §4216.10 subdivision(e) will require excavators submit an initial continual excavation ticket to initiate a modified or automatic renewal ticket ("ART") process. Further complicating this process is the buffer automatically added to areas of excavation by the regional notification centers' software. This can result in operators ordering a locate and mark for facilities outside an area of excavation obfuscating whether a property is free of subsurface installations for the purpose of determining automatic renewal ticket eligibility.

Background

The Dig Safe Act of 2016 tasked the California Underground Facilities Safe Excavation Board (the "Dig Safe Board") with developing a regulatory process, in consultation with the regional notification centers, to allow for a modified or eliminated ticket renewal process in situations involving areas of continual excavation ("ACE") where no subsurface installations are present (Gov't Code section 4216.10, subdivision (e)).

In February, staff presented research into one possible approach to determine ACE where a modified or automatic renewal ticket ("ART") would be feasible. This analysis utilized statewide parcel data, spatial data on farmland derived from the National Land Cover Data Set, and the locations of high priority facilities covering transmission lines for oil, gas, and hazardous waste with a target accuracy of +/- 500 feet. The findings from this analysis estimated that perhaps as few as 5% of farmland parcels have high priority facilities present, leaving 95% of farmland parcels as potentially eligible for the ART process.

Given there are other types of subsurface infrastructure, the 95% figure is the theoretical upper limit. To find a more realistic figure, the regional notification centers provided staff with anonymized service area polygons. Each operator of subsurface infrastructure provides the regional notification centers with a shapefile[1] containing one or more polygons

[1] A shapefile is a computer file containing information on location of shapes, namely lines, points, and polygons

the areas for which operators want to be notified of excavation tickets, also known as an operator's service area polygon. The regional notification centers combined these service area polygons into one large continuous area, or blob, removing the ability to decipher which, if any, portion belonged to any operator. Using these large continuous areas, or service area blobs, an analysis was conducted using the same approach as performed in February to determine the number of farmland parcels where a request for an excavation ticket would result in no transmissions to an operator.

Analysis of the relations between parcels, farmland, and service area blobs found 0.082% of parcels containing farmland to be outside all service area polygons. This is a total of 454 parcels out of almost 556,000 parcels with farmland. Therefore, pre-approving agricultural areas outside of service area polygons for ART status would not be an effective process for implementing §4216.10, subdivision (e). Both a chart breaking down these results and a map detailing the extent of the "service area blobs" are attached to this report.

Due to the low number of candidate ART status properties identified outside of service area polygons, we currently cannot use technology to identify areas in which no buried infrastructure is present from a back office. Therefore, regulations implementing §4216.10(e) will require an initial excavation ticket request.

Discussion

To explore how §4216.10(e) could be implemented it is useful to look at the universe of scenarios that a farmer or flood control operator may encounter when they request an ACE ticket. These scenarios may require a field meeting, may allow for an optional field meeting, or may require some other responses from operators and excavators. To illustrate these scenarios, simple diagrams will be used. While reviewing these scenarios, it is important to consider the following questions:

1. Which scenarios could be eligible for ART status?
2. If a scenario's ART status eligibility is indeterminant, what additional information would be needed to make a determination?
3. When subsurface infrastructure does not cross an ACE, but is nearby, what distance/buffer should exist between the ACE and subsurface infrastructure for a ticket to have ART status?
4. How does the type of facility affect the answer to the previous question?
5. How would an excavator demonstrate their property is eligible for ART status without mandatory positive electronic response?
6. If positive electronic response became mandatory at some time in the future, what types of positive electronic responses would be needed to accurately capture situations where ART status is warranted?

Figure 1 below shows the legend for interpreting the diagrams. Scenario 1 refers to situations already covered by §4216.10, subdivision(c)1 and §4216.10, subdivision(c)2 in which a high-priority or non-high priority subsurface installation is within ten feet of an area of continual excavation. These subsections require an onsite meeting occur to develop a plan regarding activities within 25 feet of the subsurface installation when the subsurface installation is high priority. If the subsurface installation is not high priority an onsite meeting may occur to develop a plan regarding activities within five feet of the subsurface installation. Scenarios 2 through 4 explore other situations that excavators and operators could encounter. A more complete set of spatial relationships between ACE, parcels, roads, and SSI is attached to this report.

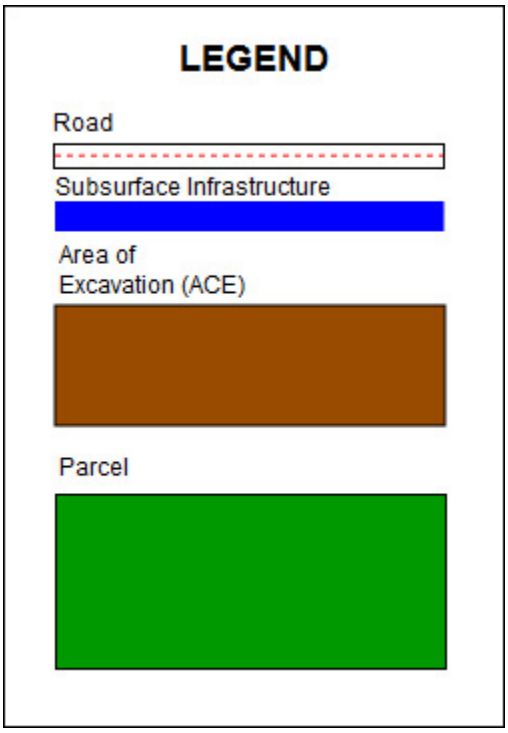
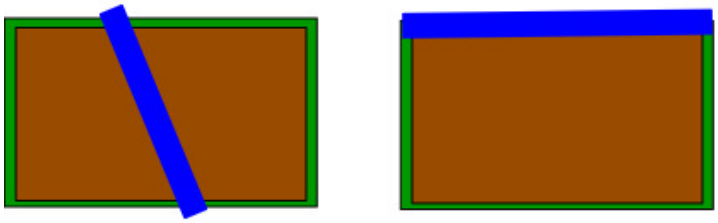


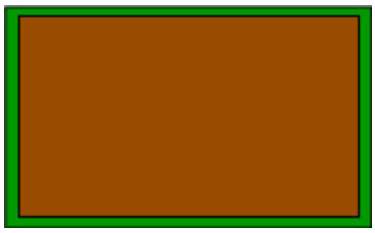
Figure 1 - Legend for Diagrams

Possible scenarios:

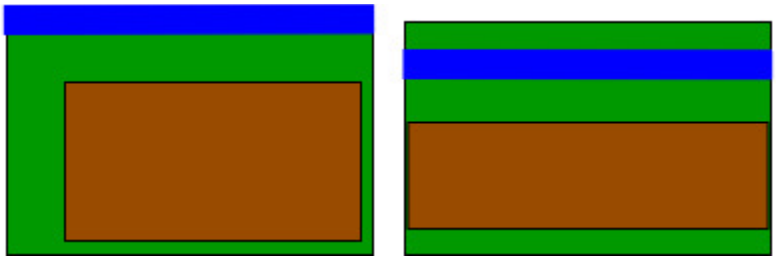
1. Excavator requests an excavation ticket; an operator determines a facility passes through or borders the area of excavation (closer than five feet). In this situation, the excavator will renew the ticket annually, and the type of facility will determine whether an onsite meeting is mandatory. This scenario would never be eligible for an ART.



2. Excavator requests an excavation ticket; all operators receiving a transmission communicate there are no facilities present without sending a locator to the excavation area. The ACE is located within one or more operator's service area polygons but no subsurface installations are present. This scenario would always be eligible for an ART.



3. Excavator requests an excavation ticket; an operator determines a facility is located near the area of excavation. The distance/buffer between the facility and the area of excavation can vary in this situation.



4. Excavator requests an excavation ticket; an operator determines a facility is under or across a road that shares a border with the parcel. The distance/buffer between the facility and the area of excavation can vary in this situation.



The scenarios listed are not exhaustive. Dozens more scenarios could be discussed where both high priority and non-high priority subsurface infrastructure exist near or within a parcel and/or ACE. However, these additional scenarios are not necessary to determine whether an area of continual excavation may be eligible for automatic ticket renewals.

Attachment(s):

Title: Service_Area_Blob_Map

Description: A map showing the extent of the service area polygon blobs for both regional notification centers.

Title: Estimated_Impacted_Parcels_ACE_with_Service_Area_Polygon_Blobs

Description: A county by county breakdown of total parcels, number of parcels outside of service areas blob, percentage of all parcels outside service areas, parcels with farmland, parcels with farmland outside service areas, and the percentage of farmland parcels outside service area polygons.

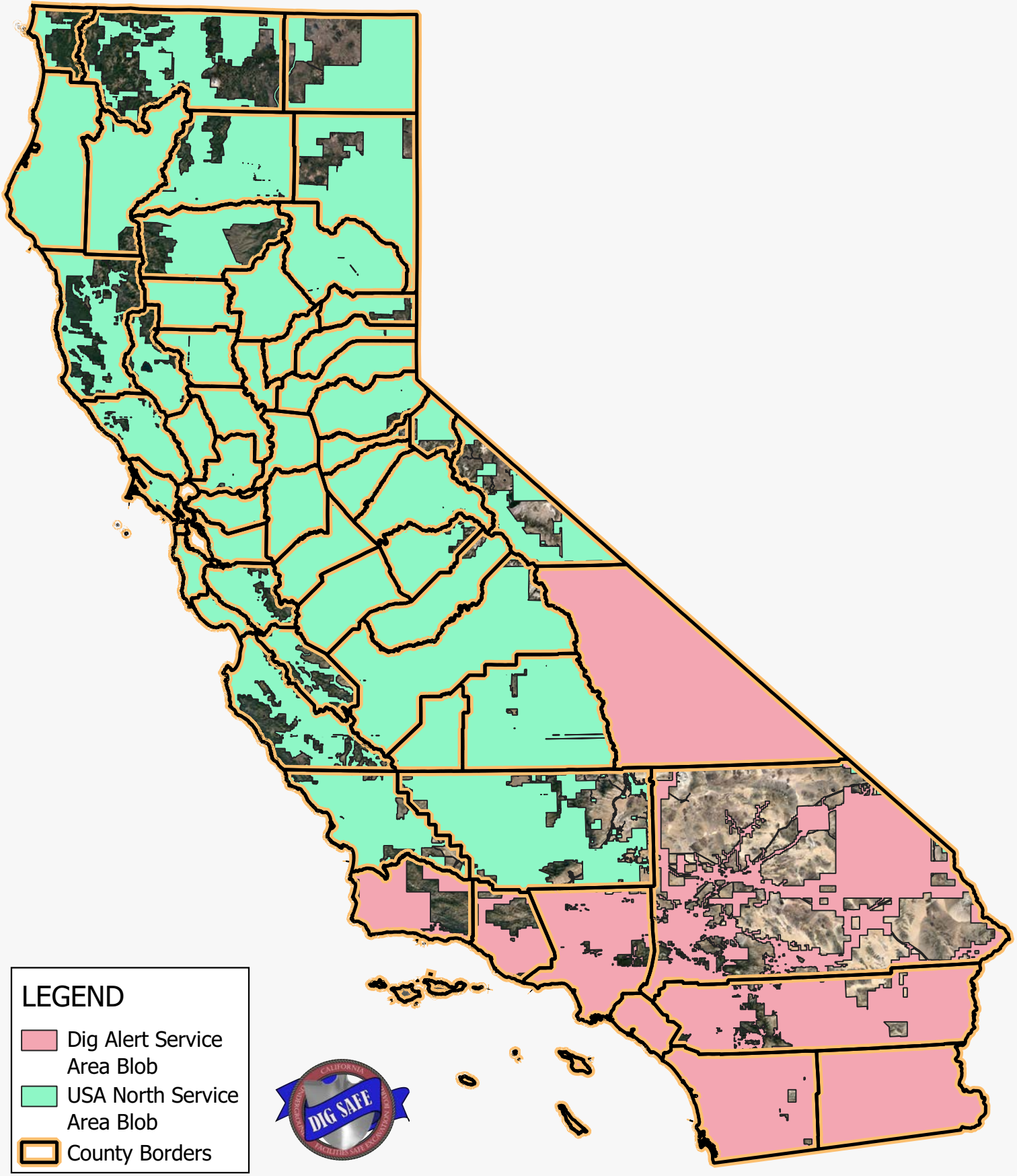
Title: SSI_ACE_Parcel_Intersection_Matrices.pdf

Description: A more complete collection of the spatial relationships between parcels, areas of excavation, and subsurface infrastructures than detailed in figures 2 – 15 within this report.

Title: Positive_Electronic_Response_Codes.pdf

Description: Chart copied from the USA North 811 website (https://usanorth811.org/positive-response).

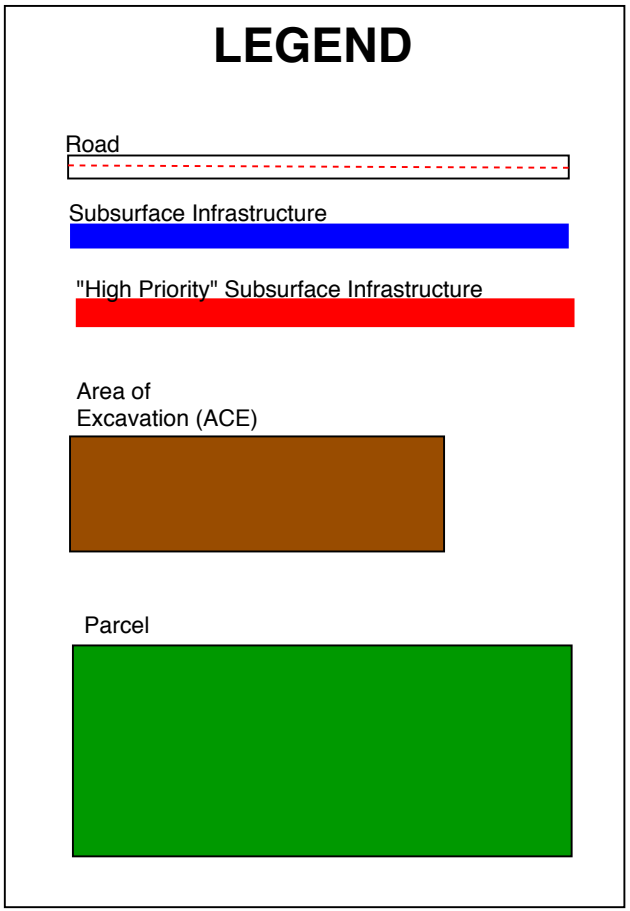
Service Area Polygons Extent



County Name	Total Parcels	Total Parcels Outside Service Area Polygons	Percentage of all Parcels Outside Service Area Polygons	Parcels with Farmland	Farmland Parcels Outside Service Area Polygons	Percentage of Farmland Parcels Outside Service Area Polygons
Alameda	458,691	3	0.001%	719	0	0.000%
Alpine	2,373	10	0.421%	21	0	0.000%
Amador	24,191	83	0.343%	321	0	0.000%
Butte	100,759	0	0.000%	11,157	0	0.000%
Calaveras	43,644	0	0.000%	142	0	0.000%
Colusa	14,842	31	0.209%	6,965	0	0.000%
Contra Costa	377,086	1	0.000%	8,234	0	0.000%
Del Norte	17,081	1,038	6.077%	876	0	0.000%
El Dorado	135,422	79	0.058%	75	0	0.000%
Fresno	304,330	9	0.003%	57,736	0	0.000%
Glenn	15,021	0	0.000%	6,570	0	0.000%
Humboldt	73,453	0	0.000%	4,258	0	0.000%
Imperial	87,798	0	0.000%	11,403	0	0.000%
Inyo	16,095	0	0.000%	1,213	0	0.000%
Kern	412,787	15,045	3.645%	42,443	85	0.200%
Kings	49,185	0	0.000%	17,368	0	0.000%
Lake	65,560	568	0.866%	1,524	0	0.000%
Lassen	33,686	3,098	9.197%	3,968	32	0.806%
Los Angeles	2,421,965	2,816	0.116%	17,530	136	0.776%
Madera	60,668	5	0.008%	12,244	0	0.000%
Marin	96,163	9	0.009%	87	0	0.000%
Mariposa	14,621	0	0.000%	5	0	0.000%
Mendocino	62,069	4,199	6.765%	3,866	0	0.000%
Merced	87,374	0	0.000%	25,824	0	0.000%
Modoc	33,161	1,473	4.442%	4,897	38	0.776%
Mono	20,821	1,675	8.045%	436	39	8.945%
Monterey	122,858	874	0.711%	6,814	5	0.073%
Napa	50,440	7	0.014%	4,732	0	0.000%
Nevada	63,628	9	0.014%	11	0	0.000%
Orange	925,734	0	0.000%	4,152	0	0.000%
Placer	178,878	0	0.000%	4,979	0	0.000%
Plumas	29,289	0	0.000%	646	0	0.000%
Riverside	1,033,483	1,935	0.187%	44,252	4	0.009%
Sacramento	463,861	0	0.000%	14,225	0	0.000%
San Benito	20,551	1,126	5.479%	3,038	1	0.033%
San Bernardino	849,624	29,749	3.501%	8,991	52	0.578%
San Diego	1,067,686	16	0.001%	21,666	0	0.000%
San Francisco	219,889	0	0.000%	0	0	0.000%
San Joaquin	223,172	0	0.000%	36,539	0	0.000%
San Luis Obispo	144,051	1,050	0.729%	8,502	7	0.082%
San Mateo	223,778	15	0.007%	1,684	0	0.000%
Santa Barbara	131,317	725	0.552%	6,921	14	0.202%
Santa Clara	523,639	398	0.076%	5,130	7	0.136%
Santa Cruz	99,243	3	0.003%	1,500	0	0.000%
Shasta	97,161	633	0.651%	9,560	0	0.000%
Sierra	5,072	192	3.785%	114	0	0.000%
Siskiyou	53,878	4,230	7.851%	6,807	22	0.323%
Solano	144,575	12	0.008%	6,510	0	0.000%
Sonoma	190,935	175	0.092%	9,016	0	0.000%
Stanislaus	165,875	1	0.001%	22,878	0	0.000%
Sutter	34,943	0	0.000%	9,906	0	0.000%
Tehama	43,838	1,982	4.521%	9,845	0	0.000%
Trinity	16,250	220	1.354%	28	0	0.000%
Tulare	157,706	82	0.052%	44,560	9	0.020%
Tuolumne	55,833	1	0.002%	106	0	0.000%
Ventura	265,746	592	0.223%	8,769	3	0.034%
Yolo	64,656	0	0.000%	9,453	0	0.000%
Yuba	32,545	0	0.000%	4,613	0	0.000%
TOTAL	**12,728,980**	**74,169**	**0.583%**	**555,829**	**454**	**0.082%**

Relationships between Subsurface Infrastructure, Areas of Excavation, and Parcels

The following pages explore the possible spatial relationships of system components for related to "Areas of Continual Excavation", ACE, with a focus on agricultural operators



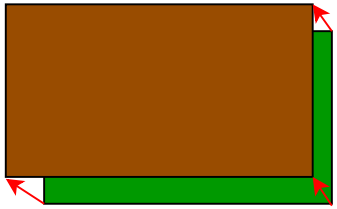
There are 3 relations between one parcel, and one ACE:

Situation 1:
ACE within Parcel,
no borders shared



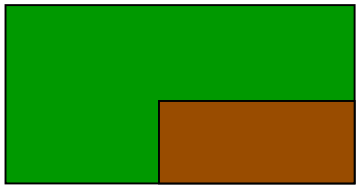
ACE is completely **within** the parcel

Situation 2:
ACE equals Parcel



ACE is the same, **equal**, to the parcel

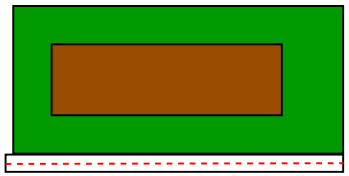
Situation 3:
ACE is within Parcel,
shares a border



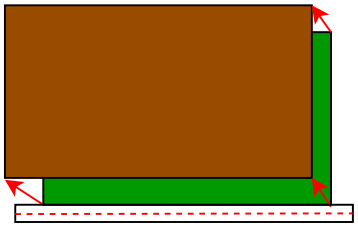
ACE is completely **within** the parcel, and shares a boundary with the parcel

These 3 situations can be extended to include a road to illustrate situations where SSI is located across the street from a situation:

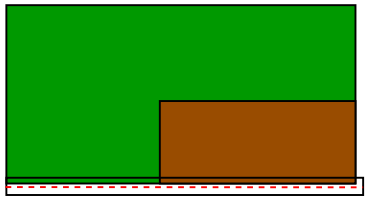
Situation 1R:
ACE within Parcel,
no borders shared,
road borders property



Situation 2R:
ACE equals Parcel,
road borders property

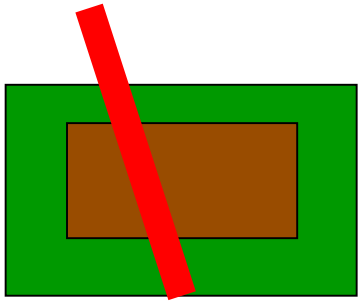


Situation 3R:
ACE is within Parcel,
shares a border,
road borders property

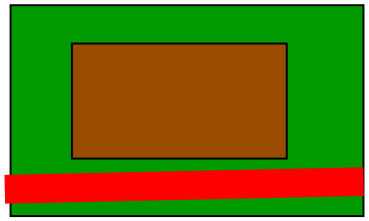


For Situation 1, there are 4 pertinent ways an SSI line can intersect the ACE and Parcel:

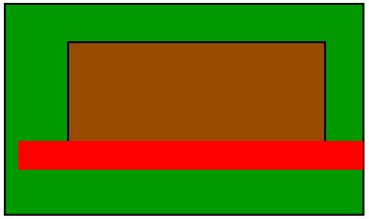
Situation 1-a:
SSI crosses both ACE and the Parcel



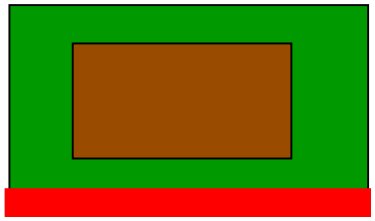
Situation 1-b:
SSI crosses the Parcel, does not contact ACE



Situation 1-c:
SSI crosses the Parcel, shares a border with ACE

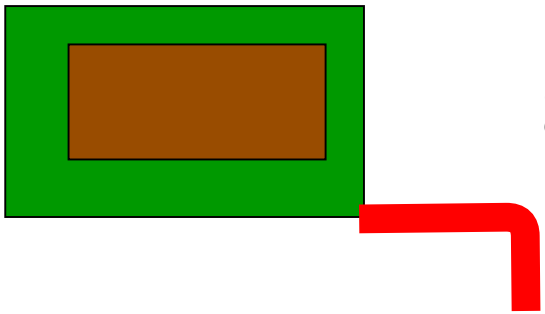


Situation 1-d:
SSI shares a border with the Parcel, does not contact the ACE

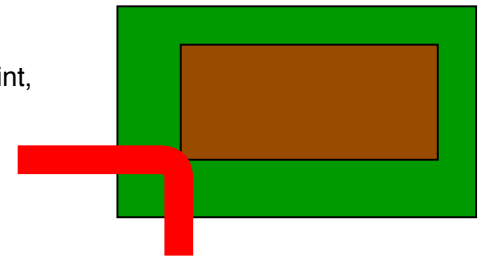


Situations Not Considers:

SSI touches Parcel at point, does not contact ACE

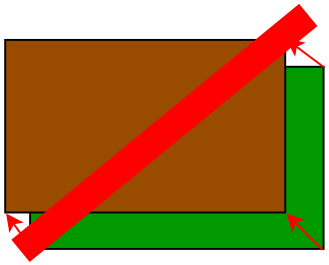


SSI touches ACE at point, crosses the Parcel



For Situation 2, there are 2 pertinent ways an SSI line can intersect the ACE and Parcel:

Situation 2-a:
SSI crosses both ACE and the Parcel

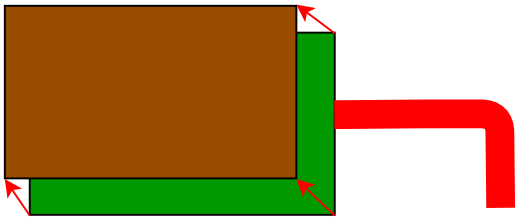


Situation 2-b:
SSI borders both ACE and the Parcel



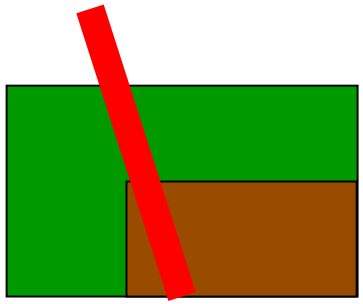
Situations Not Considers:

SSI touches Parcel and ACE at point

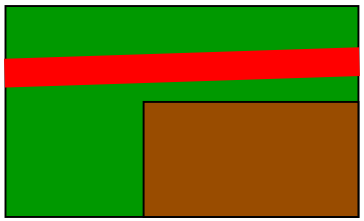


For Situation 3, there are 5 pertinent ways an SSI line can intersect the ACE and Parcel, the first 4 are the same as situation 1:

Situation 3-a:
SSI crosses both ACE and the Parcel



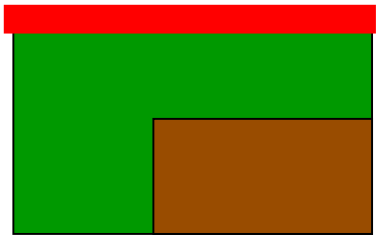
Situation 3-b:
SSI crosses the Parcel, does not contact ACE



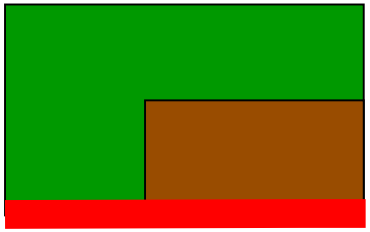
Situation 3-c:
SSI crosses the Parcel, shares a border with ACE



Situation 3-d:
SSI shares a border with the Parcel, does not contact the ACE

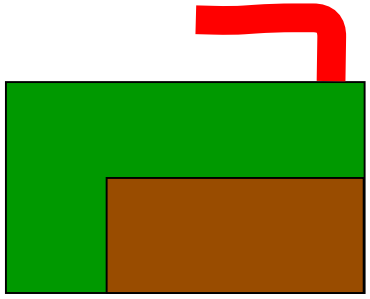


Situation 3-e:
SSI shares a border with the Parcel and ACE

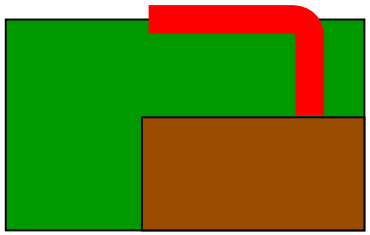


Situations Not Considers:

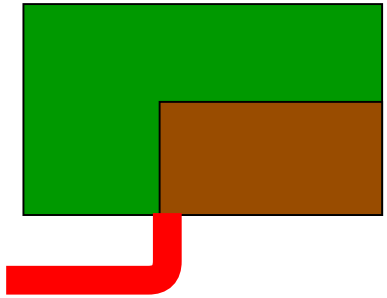
SSI touches Parcel at point, does not contact ACE



SSI touches ACE at point, crosses the Parcel

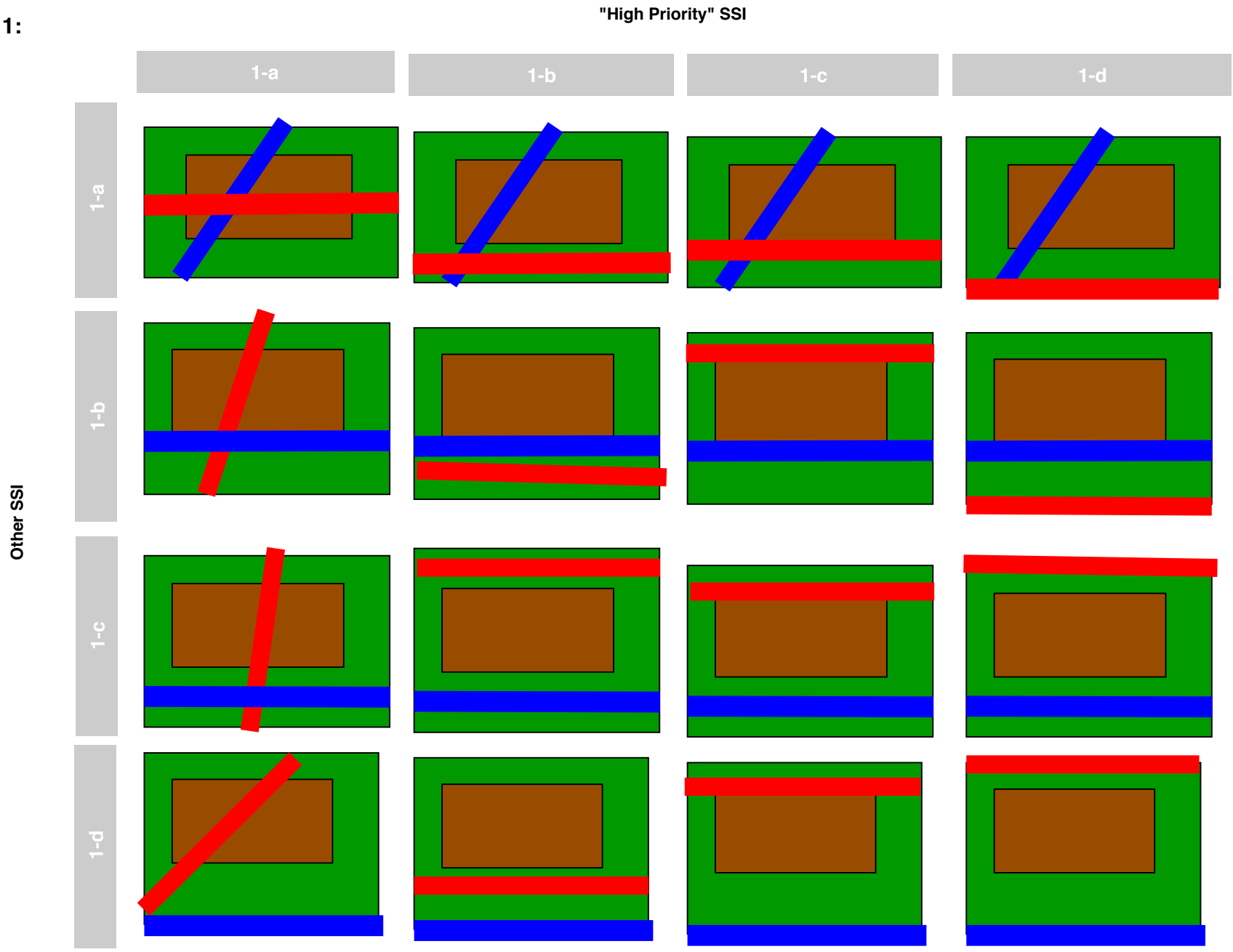


SSI touches ACE and Parcel at point

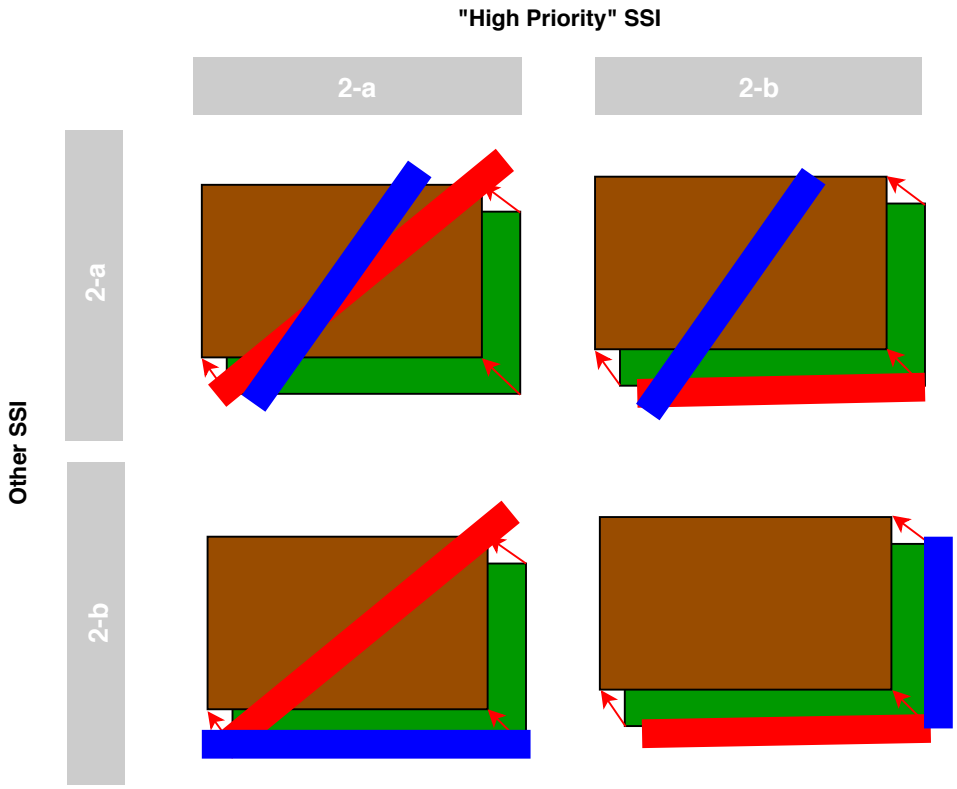


Situations 1-3 can be expanded to include the combinations when dealing with both "high priority" SSI and other SSI using a matrix approach:

For Situation 1:



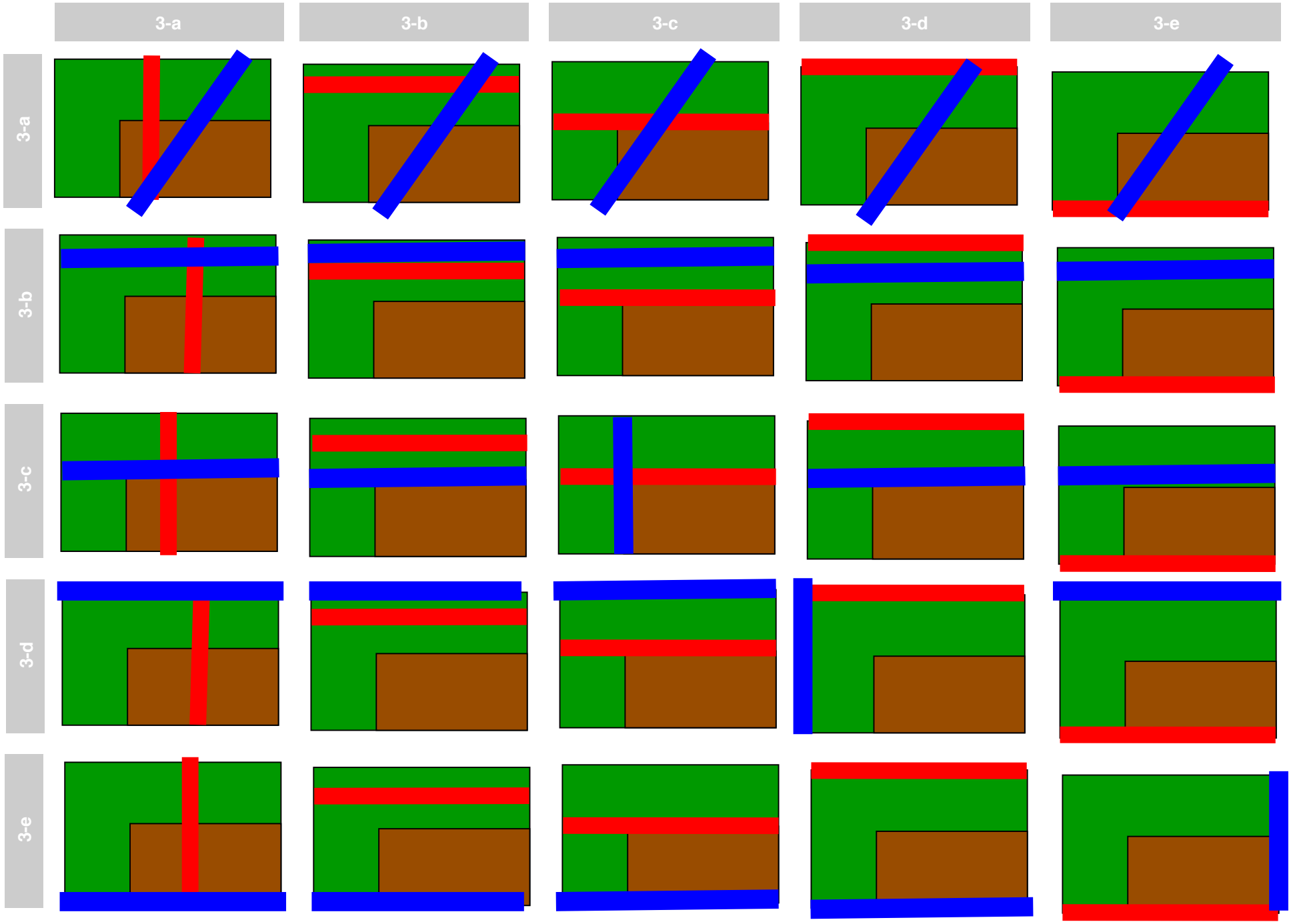
For Situation 2:



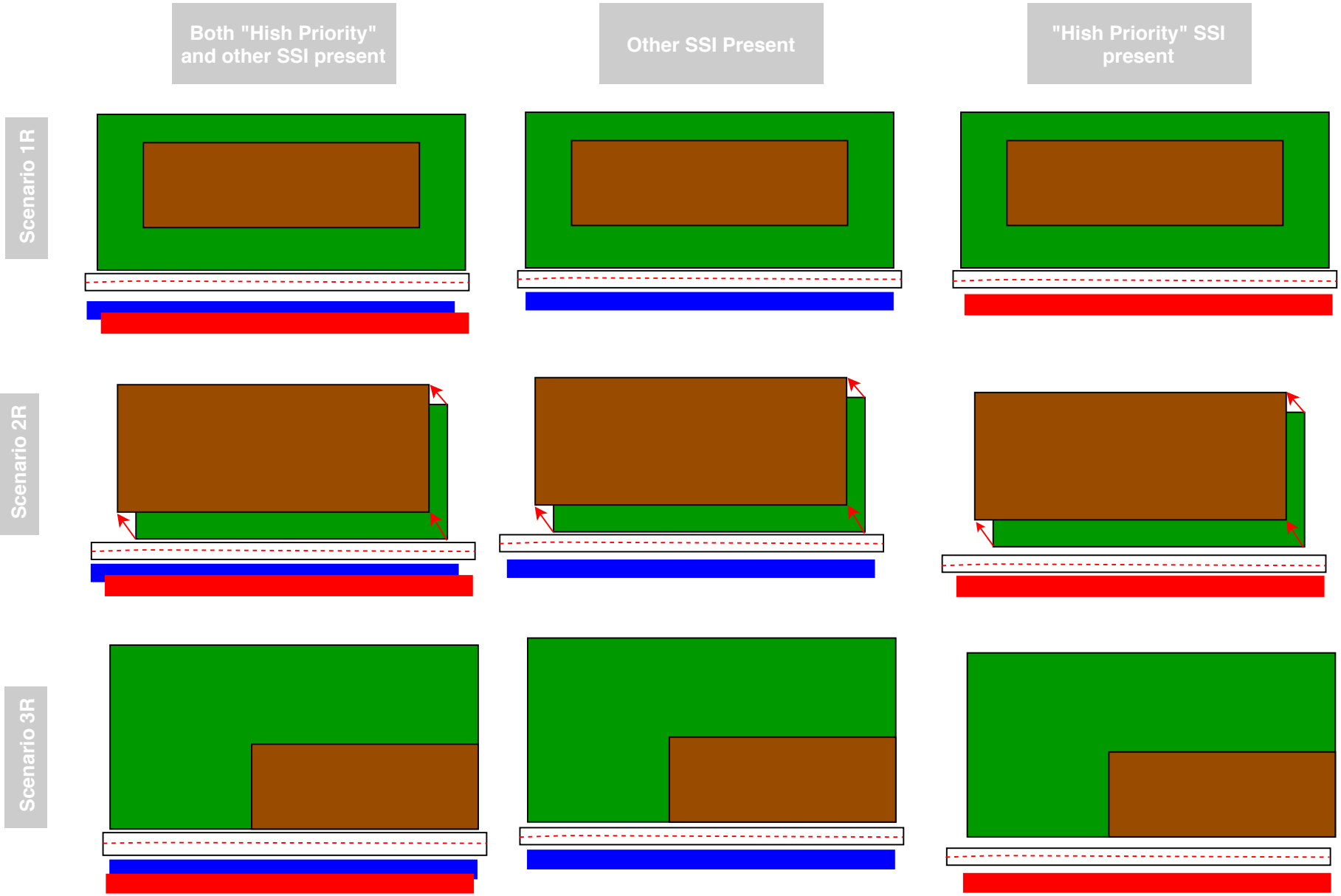
For Situation 3:

"High Priority" SSI

Other SSI



Situations 1R, 2R, and 3R with SSI Located beyond road



Positive Response Codes copied from https://usanorth811.org/positive-response

Positive Response Codes	Meaning
1	Clear – No Conflict
2	Clear – No Conflict But Privately Owned Utility On Property – Contact Private Utility Owner For Locate
3	Existing Markings Adequate
4	No Markings Requested
10	Locate Area Marked
11	Locate Area Marked But Abandoned Facilities May Be In The Area
12	Locate Area Marked Up To Private Owned Utility – Contact Private Utility Owner For Locate
13	Locate Area Marked Up To Private Property
14	Partially Marked – More Time is Needed
20	Bad Address/Incorrect Street/Location Info – Resend Ticket Requested
21	No Access To Locate Area – Resend Ticket Requested
22	No Delineation – Resend Ticket Requested
23	Delineated Area Does Not Match Location Request – Resend Ticket Requested
30	Contact Facility Owner For Further Info
31	Requires Stand By At Time Of Excavation – Contact Facility Owner
32	Visible Or Exposed Facility – Contact Facility Owner If Crossing
33	High Priority Line in Area – On Site Meeting Required
34	Field Meet Required – Contact Facility Owner to Schedule
40	Excavator Completed Work Prior To Due Date
41	Excavator No Show For Meet
42	Excavator Canceled Request
80	Extraordinary Circumstances Exist – No Locate Due To Weather/Emergency Conditions