

DESIGN REVIEW BOARD HEARING

TEP POWER POLES ON SILVERBELL ROAD
DRB-21-18 / C10-21-08

OCTOBER 22, 2021

PRESENTED BY:

KEVIN O'BRIEN – TEP ENVIRONMENTAL LAND USE PLANNER
PROJECT STAKEHOLDERS AND SUBJECT MATTER EXPERTS



AGENDA

- CONTINUATION OF DISCUSSION

- Archaeology –
Presenter Ian Milliken, Pima County Cultural Resources & Historic Preservation Division Manager
Inter-Governmental Agreement (IGA) with City
- Other utilities within project area
- Santa Cruz River floodplain and tributary washes
- Landscaping



ARCHAEOLOGY

BOARD OF ADJUSTMENT – REQUIRED FINDINGS

4. *That, because of special circumstances applicable to the property, including its size, shape, topography, location, and surroundings, the property cannot reasonably be developed in conformity with the provisions of the UDC;*

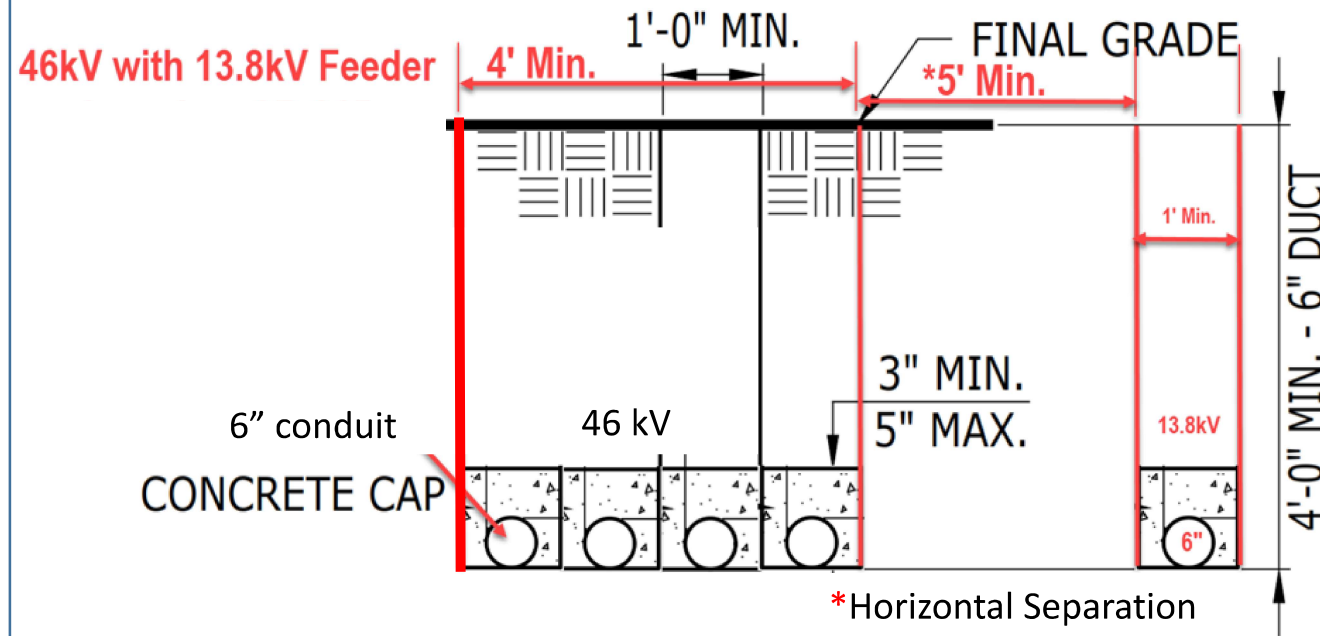
CONTENT to be Presented on separate slides by:

Ian Milliken, Pima County Cultural Resources & Historic Preservation Division Manager



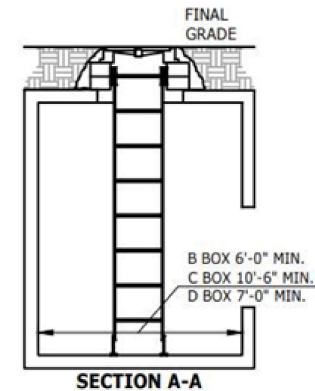
ELECTRIC UTILITY – UNDERGROUND TRENCH

WIDTH of TRENCH: $4' + 5' + 1' = 10'$ WIDE - Plus Communications can add $\sim 5'$ of additional width



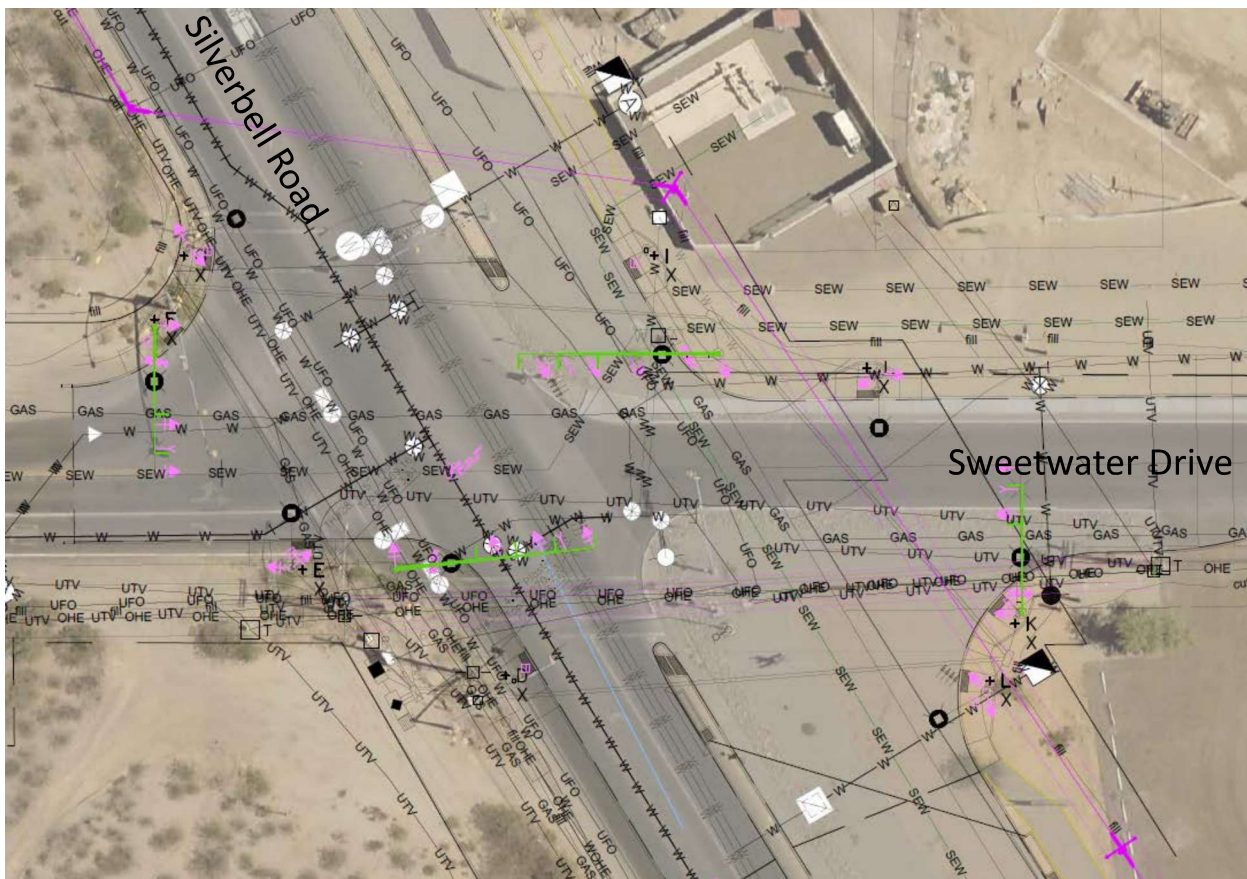
In addition to the trench, there needs to be an underground **vault** every 800' for pulling conduit and operations.

Pullbox is typically 10'Wx20'Lx10H



UNDERGROUND UTILITIES

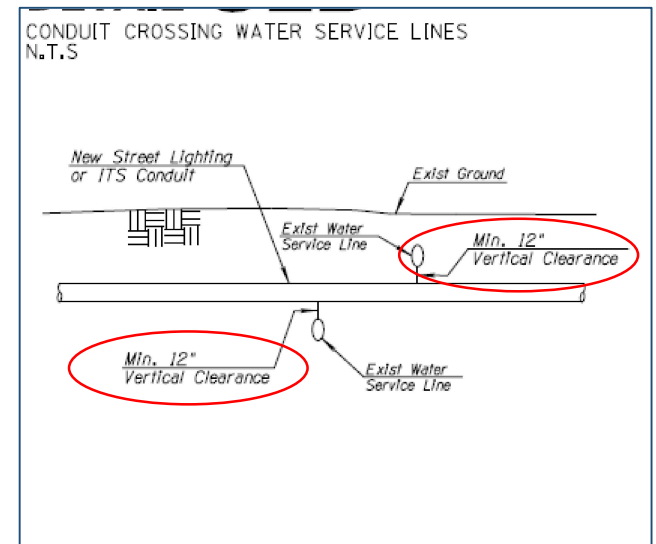
Physical Constraints to bringing existing overhead electric utility underground



Electric DEPTH of Trench:
4' Minimum

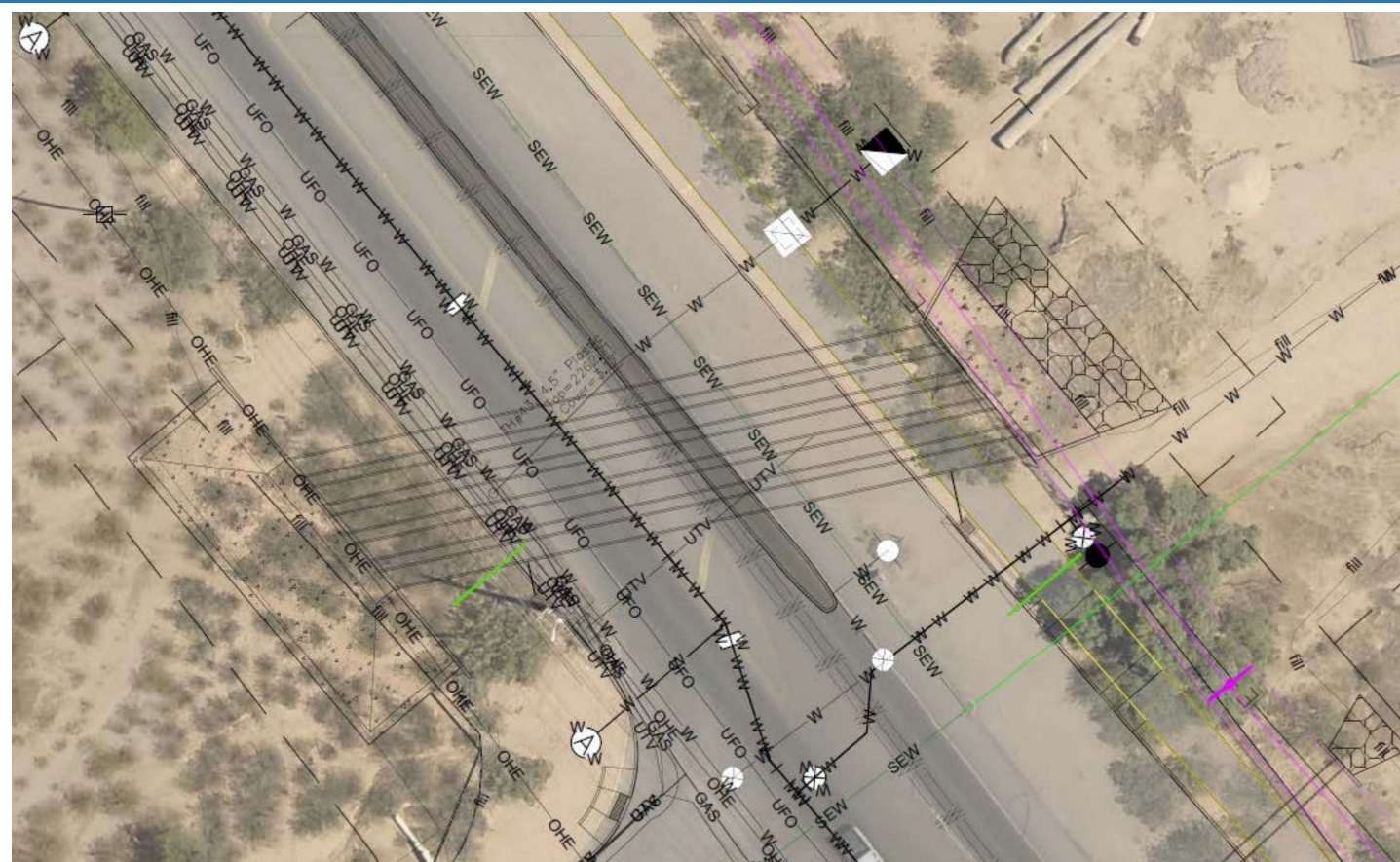
However, **other utilities require vertical separation**, which can force lines deeper

Example from City street light plans



UNDERGROUND UTILITIES

Physical Constraints to bringing existing overhead electric utility underground



Underground electric utilities have potential conflicts with other utilities that run perpendicular to electric utility

AND

There are other potential conflicts such as drainage structures (e.g., culverts)

Water and Sewer seen in example left

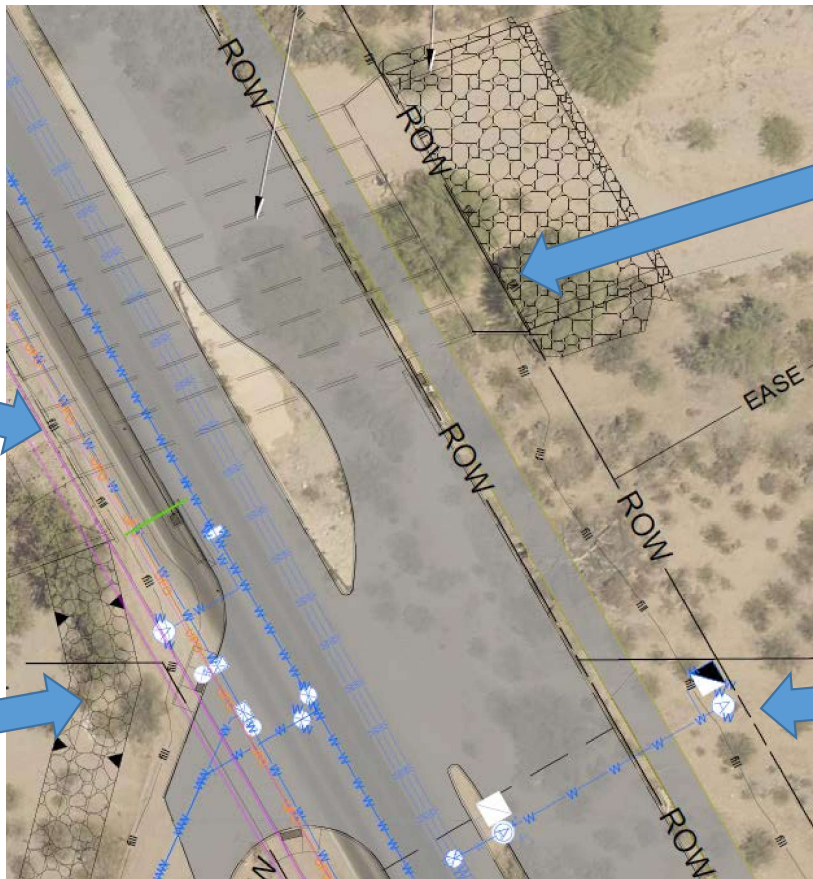
- Electric and Sewer cannot share the same trench
- Electric and Water cannot share the same trench

UNDERGROUND UTILITIES

Physical Constraints to bringing existing overhead electric utility underground

Congested area with other utilities – not enough room for separation. Electric utility could be forced out of ROW

Potential conflicts with drainage easements and drainage areas



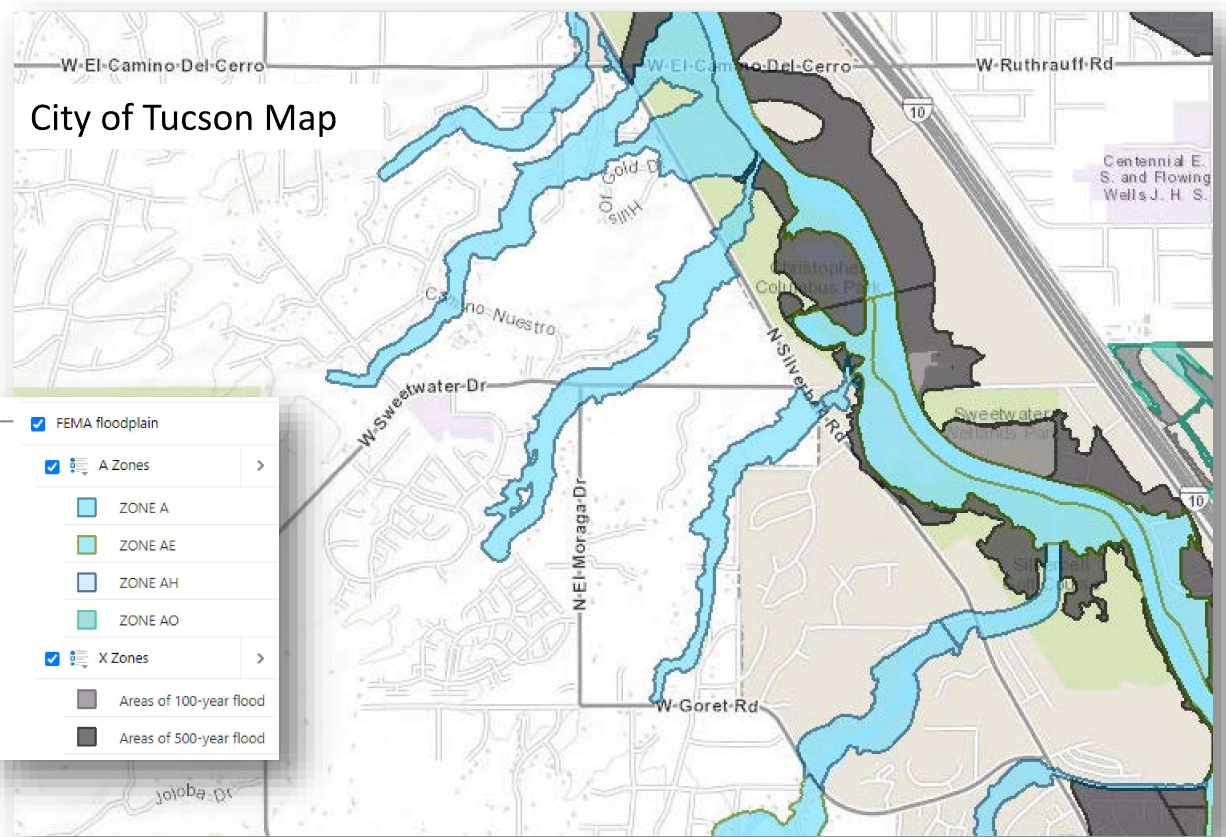
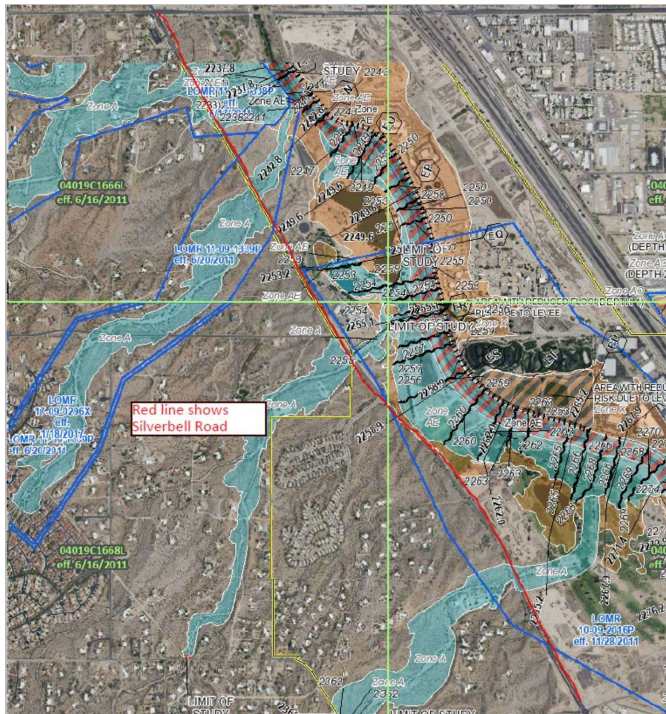
Culverts – not enough fill to route electrical conduit between road and culvert; too deep to go under culvert.

If, there was enough fill to go on top of culvert then challenges would exist for sequencing of operations – electric relocation scheduled to happen before roadway construction and culvert installation

Perpendicular utilities force electrical trench deeper and pose challenges for maintenance

Silverbell Road Power Line Relocation Floodplain

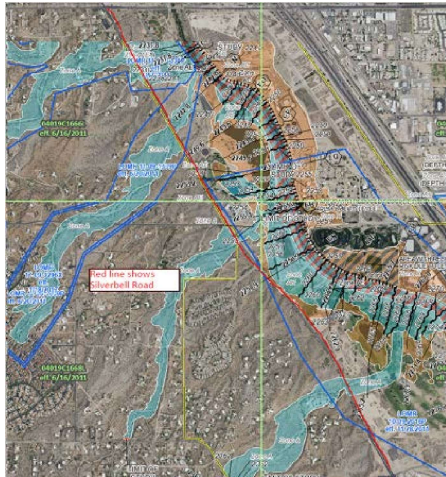
FLOODPLAIN IN PROJECT AREA



Source: <https://maps2.tucsonaz.gov/Html5Viewer/?viewer=maptucson>

Public Comment re: Floodplain

'Attached Map' – referenced in comment

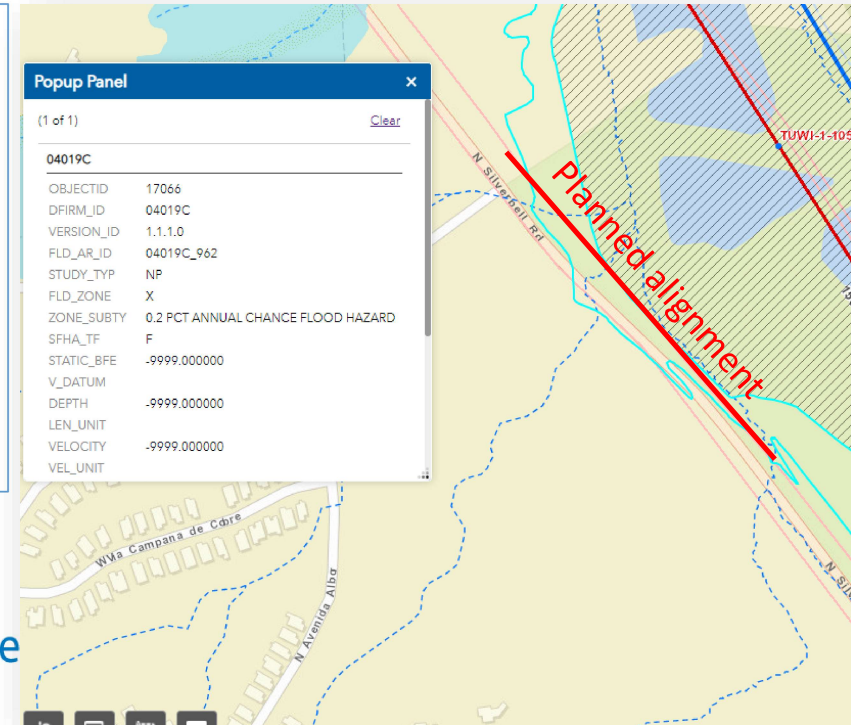


Public Comment:

"Please see the attached map of the FEMA floodplain mapping along Silverbell Road. A few locations are within tributary floodplains but none are within the Santa Cruz River floodplain. The mere passage of a powerline through a floodplain area is not sufficient reason to place the line overhead. I am a Civil Engineer who specializes in drainage/flood control and I have worked on numerous roadway projects **where utilities are successfully placed and protected within the roadway prism**, even where the roadway crosses a floodplain. **Typically** the roadway drainage crossings are designed to convey the 100-year flow under the road and it is **possible to place the powerline underground such that it is protected by the drainage crossing structure**. Cost alone cannot be considered a reason not to comply with the scenic route requirements of the City code."



Santa Cruz River Floodplain

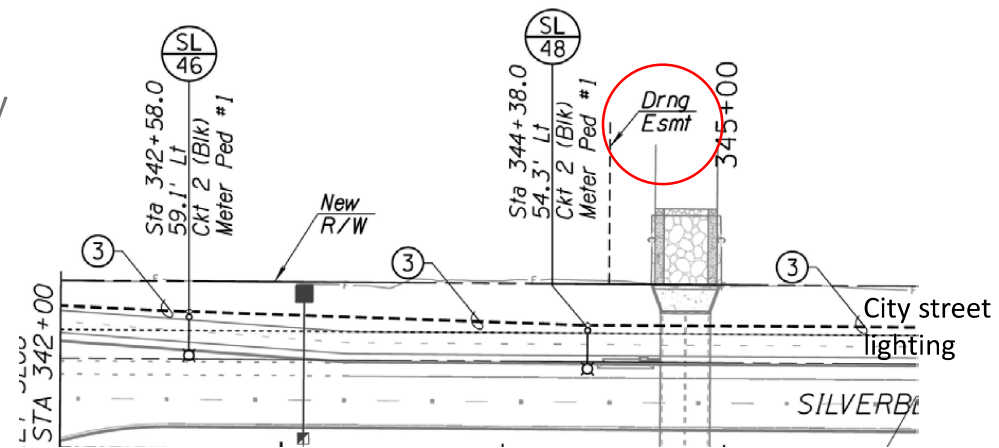


UNDERGROUND UTILITIES

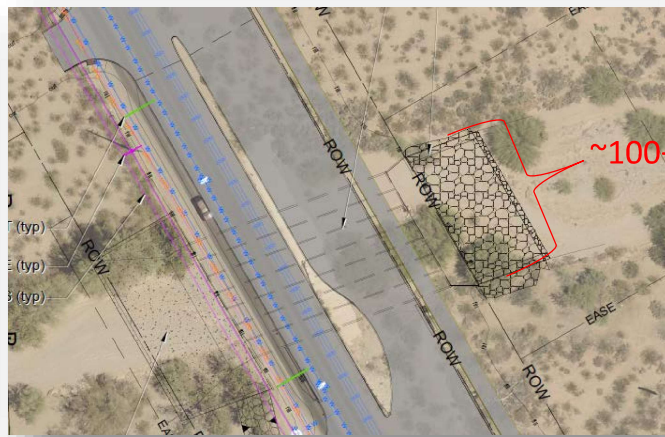
Physical Constraints to bringing existing overhead electric utility underground

Electric utility crossing Drainage Easement

- May not have enough room between culvert and roadway
- May be too deep to go under culvert
- Area of scour protection may be too deep for utility to go underneath; could be forced out of ROW & into active channel
- Underground facilities offer less efficient maintenance (i.e., experience longer outages and impacted reliability)



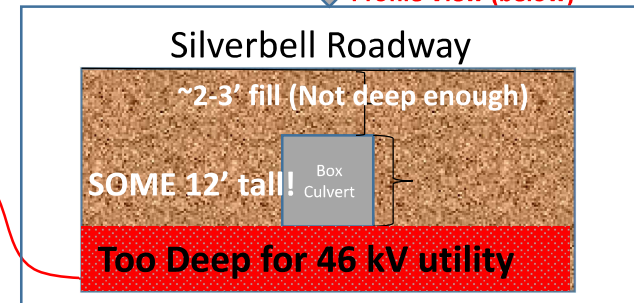
Plan View (above) to Profile View (below)



Top of road

Cable can't bend too sharply

Underground



Vegetation illustrated in visual simulation

Note – underground design would require substantially change Native Plant Preservation Plan and Landscaping Plan
Landscaping Plan submitted by the City for review by Design Review Board



CURRENT



DESIGNED

CLOSING

THANK YOU FOR YOUR CONSIDERATION AND CONTINUED DISCUSSION ABOUT THIS IMPORTANT PROJECT

- Project stakeholders have worked collaboratively to develop an integrated project plan
- Planned work will greatly improve the safety, functionality, and aesthetics of Silverbell Road
- Electric utility infrastructure is integrated with transportation design for a more cohesive, consistent, and modernized Silverbell Road corridor





Tucson Electric Power