



September 21, 2022

Brad Widman
1615 Old Samish Road
Bellingham, WA 98229

**Re: Stormwater Qualitative Downstream Analysis
1204 Yew Street, Bellingham, Washington**

Mr. Widman:

On August 26, 2022, our firm performed a stormwater Qualitative Downstream Analysis for the proposed development at 1204 Yew Street (parcel no. 3803330384410000) (Figure 1). There are two basins on the property, the east basin and the west basin. Only the west basin is proposed for development. The east basin is not proposed for development. Both basins drain to the same place, West Cemetery Creek.

The west basin contains the entire proposed development and drains west to Yew Street. The proposed stormwater system would mitigate flows from this west basin and would discharge to the existing Yew Street storm drain pipe. The proposed discharge point to the Yew Street storm drain is in the northwest corner of the project property.

The study for the west basin began at the proposed stormwater discharge point in the northwest corner of the property. The probable surface flow path of the stormwater was followed downhill to identify the receiving body and flow route. Where the downhill route intersected catch basins, the direction of the flow was then assumed to follow the down-gradient storm drain pipes in the catch basins. Each catch basin along the route was photographed.

From the northwest corner of the property, if the proposed storm system connects to the Yew Street storm drain, then the water would flow about 320 feet northward to a catch basin near the intersection of Yew Street and Old Lakeway Drive (Figure 2). The slope along this segment is the steepest grade in the route. The remaining segments are less sloped.

From this first catch basin, the stormwater would drain forty feet to the northwest via a pipe under the street to the sewer catch basin across the street. From that second catch basin, the water would drain about 185 feet to the west-northwest through a pipe under the street to a third catch basin on the north side of Old Lakeway Drive. From this third catch basin, the land slopes downhill to the west toward West Cemetery Creek, which was identified by a sign along the road. The water likely drains about 125 feet through a pipe to the creek area. The thick vegetation obscured the probable discharge point in the creek channel, but it was confirmed on the CityIQ storm drain map (Figure 3).

The east basin drains to the east end of the subject property, then to the south. This basin contains the only on-site wetland. The wetland itself drains to the south via a six-inch clay pipe at the wetland edge. The pipe extends through a drainage easement (Figure 4) to a catch basin on Alvarado Drive. The ten-foot wide by 130-foot long drainage easement is located between Lot 5 (2509 Alvarado





Drive) and Lot 6 (2515 Alvarado Drive). The easement extends northward from Alvarado Drive straddling the property line, then turns to the northeast across the top of Lot 6 to the project parcel, ending at the wetland edge about 180 feet from Alvarado Drive. The drain pipe is in the easement, and is estimated to be 180 feet in length.

From the catch basin on Alvarado Drive, the water drains west via the existing storm drain pipe down the hill about 300 feet to a second catch basin (Figure 2). From the second catch basin, the water drains about 200 feet toward Yew Street to a third catch basin. There is a hill between the last observed catch basin on Alvarado Drive and Yew Street. The CityIQ map of the storm drain system (Figure 3) shows a pipe from this last catch basin going to the south across Alvarado Drive to another catch basin. From there, the pipe then goes northwest under the hill and connects to the Yew Street storm drain, where it would flow downhill to the north, right in front of the project parcel. Here the water meets up with the west basin's proposed stormwater system discharge point in the northwest corner of the property, and follows the path previously described.

If all the roads and improvements were theoretically removed, any surface water flowing from the northwest corner of the project property would follow essentially the same route across the natural landscape to West Cemetery Creek. The pipes appear to direct the water about the same way as the natural landscape would drain.

Best regards,

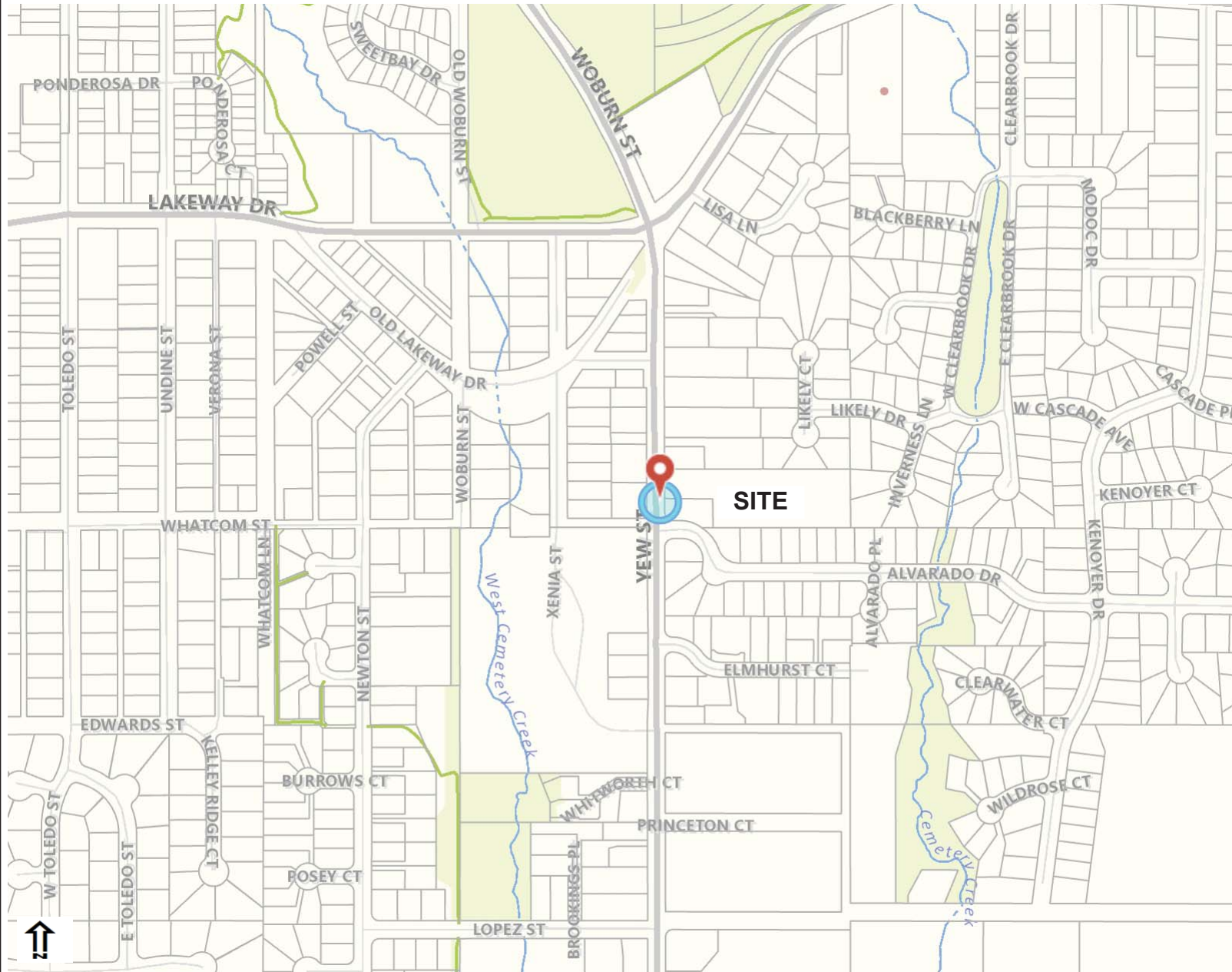
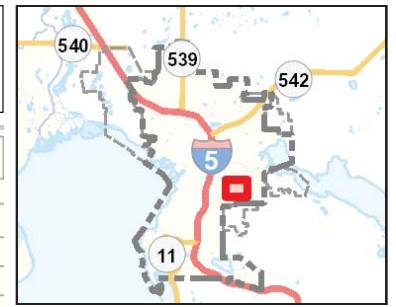
A handwritten signature in blue ink that reads "Darcy Jones".

Darcy Jones
Jones Engineers, Inc.



Vicinity Map

1204 Yew Street



Legend

- Tax Parcels
 - Care Facility
 - Hospital
 - Schools
 - <all other values>
- Schools
 - Colleges/Universities
 - Elementary, Middle, High Schools
 - Private School or Preschool
- Fire Stations
- City Boundary
- Urban Growth Area
- Trails
- Railroads
- Ferries
- Interstate Polygons
 - Street
 - Interstate
- Airport
- Open Channel Streams
- Parks

Notes

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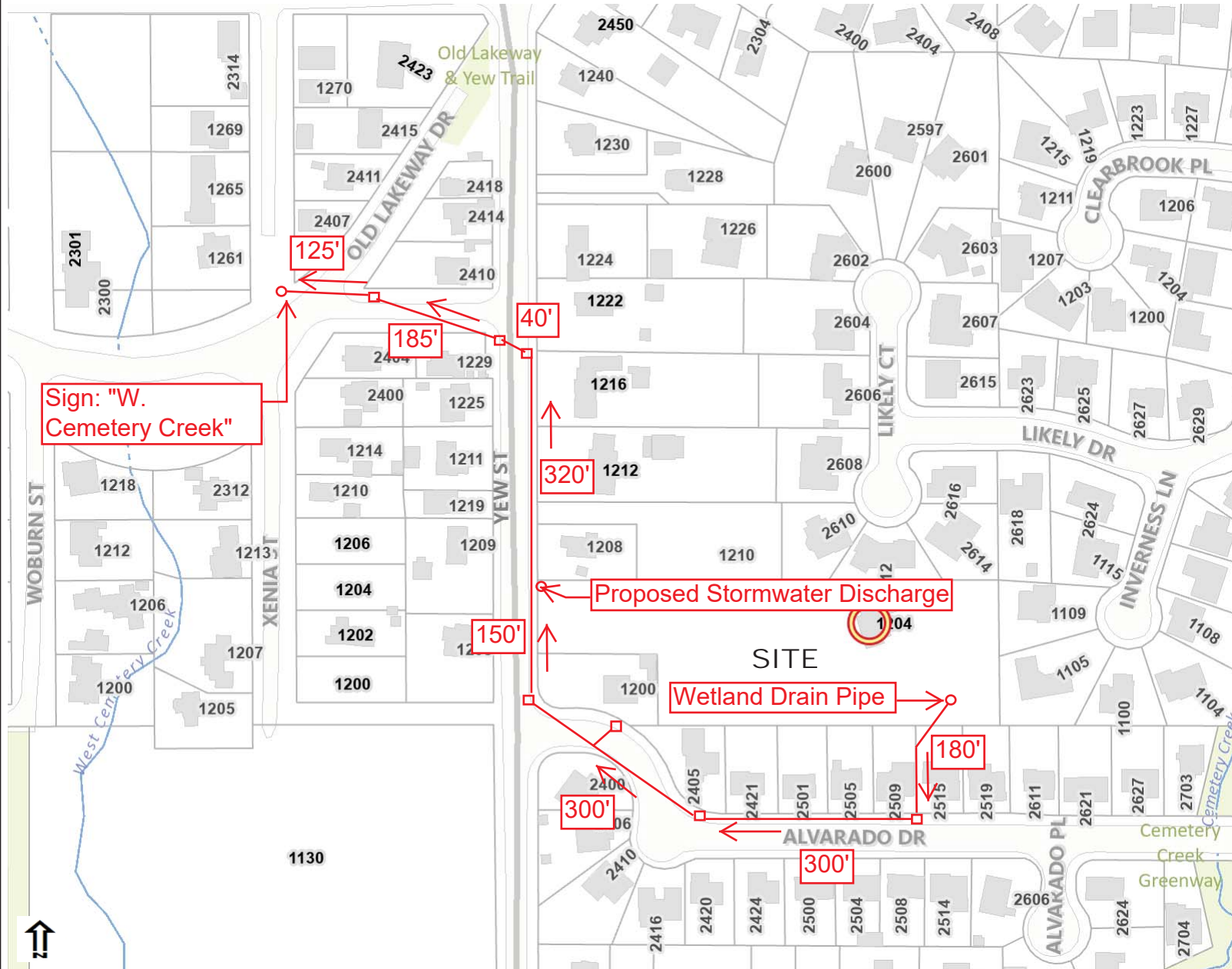
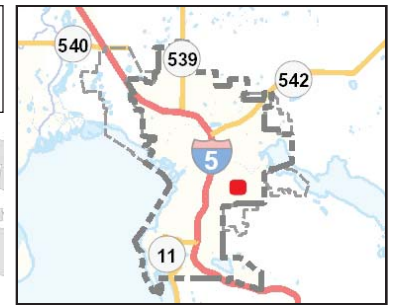
FIGURE 1

THIS MAP IS NOT TO BE USED FOR NAVIGATION

993 0 497 993 Feet

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Qualitative Downstream Analysis 1204 Yew Street



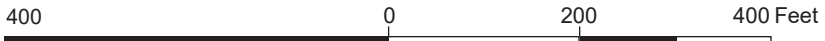
Legend

- Buildings
- Docks
- Tax Parcels
- Care Facility
- Hospital
- Schools
- <all other values>
- Schools**
- Colleges/Universities
- Elementary, Middle, High Schools
- Private School or Preschool
- Fire Stations
- City Boundary
- Urban Growth Area
- Trails
- Railroads
- Ferries
- Street
- Interstate
- Airport
- Open Channel Streams
- Parks
- Stormwater Discharge Point
- Existing Catch Basin
- Existing Storm Drain Pipe

Notes

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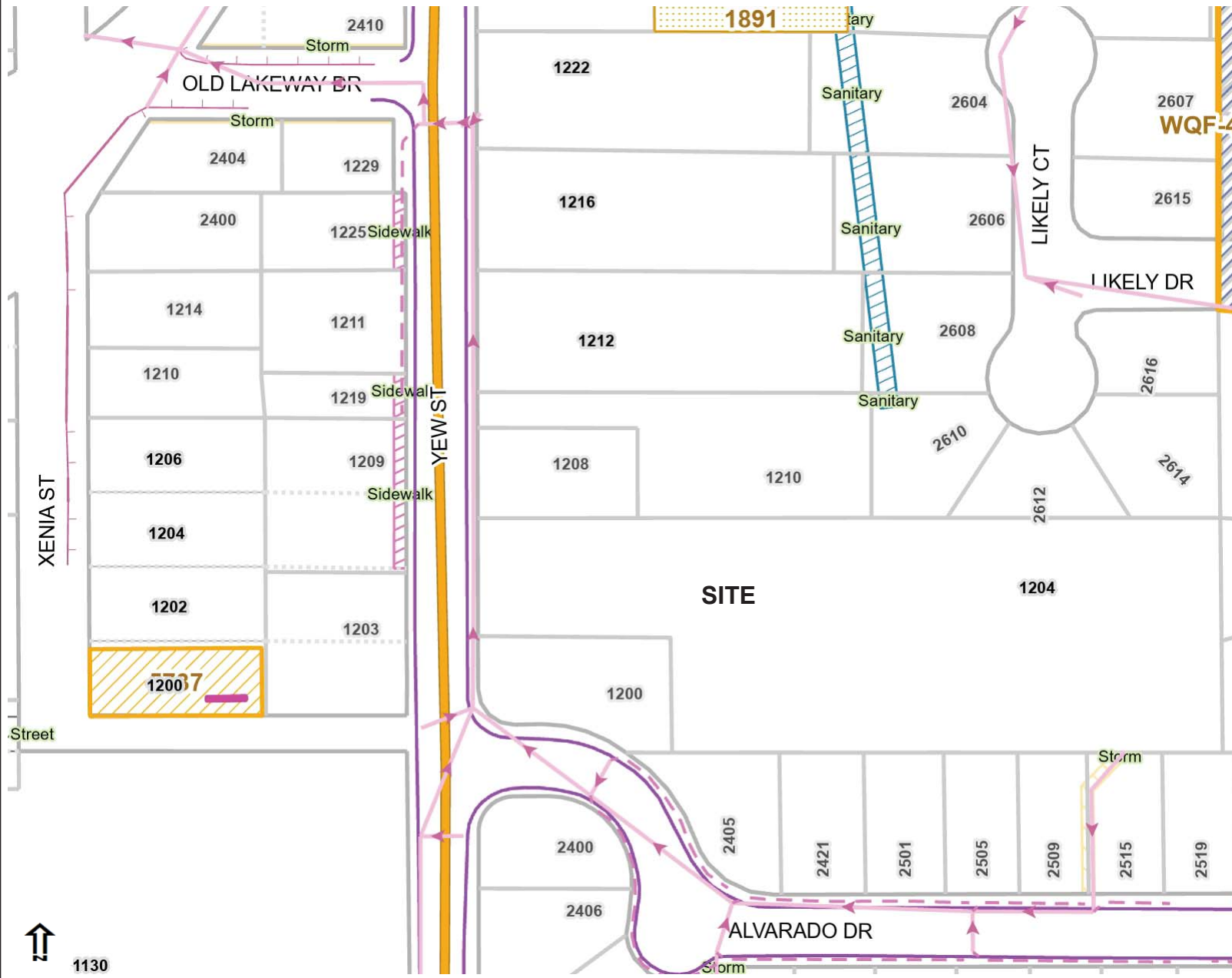
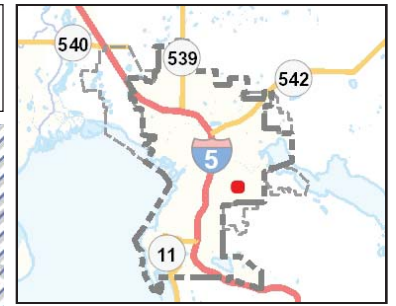
FIGURE 2



THIS MAP IS NOT TO BE USED FOR NAVIGATION

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Storm Drain Map



Legend

- City and UGA
 - City Boundary
 - Urban Growth Area
- Lateral Lines
 - Collector
 - Domestic
 - Drain
 - Culvert
- Storm Main
 - City Mains, Active
 - City Mains, Under Construction
 - Private Mains, Active
 - Private Mains, Under Construction
- Ditch
- Storm Access Points
 - Access Cover
 - Observation Well
- Storm Control Structures
- Storm Other Components
 - COB - Public Works
- Storm Water Sites
 - Active Inspection
 - Inactive Inspection
 - NPDES
 - Public Works
- Open Channel Streams
- Washington Roads Labels
- Bellingham Streets Street View
- Bellingham Streets Detail View
- County Roads Detail
- Streets by Classification (Small scale)
 - Principal Route
 - Secondary Route
 - Collector Route
- Pedestrian Master Plan
 - YES, Complete
 - YES, Incomplete

Notes
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FIGURE 3

THIS MAP IS NOT TO BE USED FOR NAVIGATION

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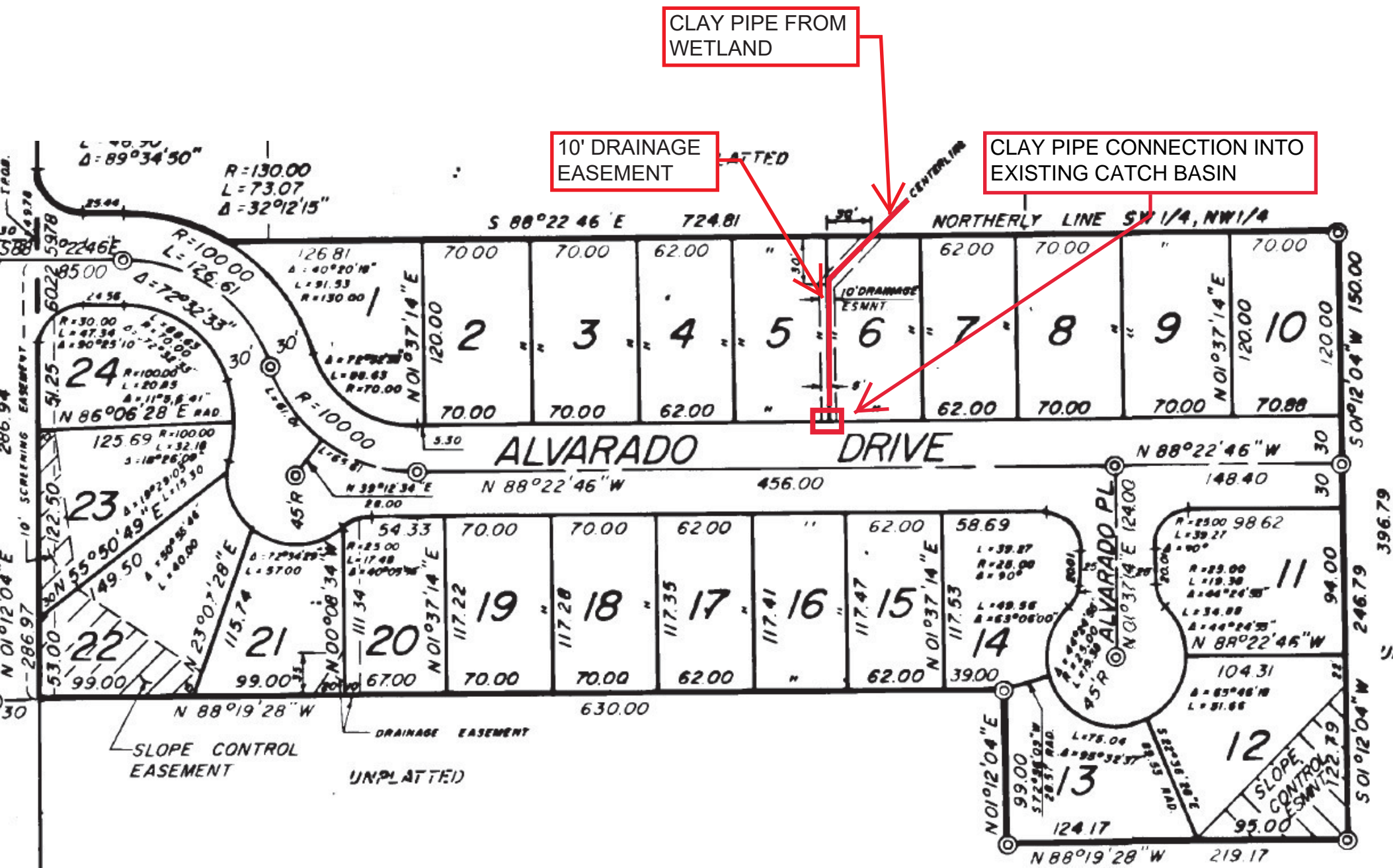


FIGURE 4

PHOTOGRAPHS



Photo 1. View east of the existing driveway at 1204 Yew Street.



Photo 2. View southeast from northwest property corner.



Photo 3. View north on Yew Street of northwest property corner, sidewalk, curb, and gutter.



Photo 4. View northwest from Yew Street at Old Lakeway Drive of the first two grates.



Photo 5. View west on Old Lakeway Dr. from the second grate.



Photo 6. View east on Old Lakeway Dr. from third grate.



Photo 7. View west of third grate, across Old Lakeway Dr. at the creek channel.



Photo 8. View west and downward at water in the West Cemetery Creek channel.