File No. EA2021-137

CITY OF RICHLAND
Determination of Non-Significance

Description of Proposal: Dutch Bros 490 Wellsian Way.

Proponent: Knutzen Engineering
Attn: Robert McLeod
5401 Ridgeline Dr., Suite 160
Kennewick, WA 99338

Location of Proposal: The project will occur at 490 Wellsian Way, within the City of Richland, Washington.

Lead Agency: City of Richland

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

( ) There is no comment for the DNS.

(**X**) This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for fourteen days from the date of issuance.

( ) This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

Responsible Official: Mike Stevens
Position/Title: Planning Manager
Address: 625 Swift Blvd., MS #35, Richland, WA 99352
Date: October 15, 2021

Signature_____

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. Name of proposed project, if applicable:
   Dutch Bros – Richland

2. Name of applicant:
   Robert McLeod (Knutzen Engineering)

3. Address and phone number of applicant and contact person:
   Robert McLeod (Knutzen Engineering) / 5401 Ridgeline Dr, Suite 160, Kennewick, WA 99338
   509-222-0959

4. Date checklist prepared:
September 25, 2021

5. Agency requesting checklist:
City of Richland

6. Proposed timing or schedule (including phasing, if applicable):
The project is expected to begin in late Fall 2021 and finish in Summer 2022.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
None currently.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
A geotechnical report was prepared for the project site on 05/19/2021 by Baer Testing & Engineering, Inc. (No.21-079) A Critical Aquifer Recharge Report was prepared by Knutzen Engineering on May 19, 2021 and submitted to the City of Richland for review.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.
None known.

10. List any government approvals or permits that will be needed for your proposal, if known.
City of Richland Building, ROW, & Grading permits. An erosivity waiver will be completed through the DOE.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)
The project proposes a 4,500 SF commercial building with associated parking and utility improvements. A portion of the commercial building will be occupied by a drive-thru Dutch Bros Coffee shop. The site will be accessed via two driveways onto Wellsian Way and Stevens Dr.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.
430 Wellsian Way, Richland, WA 99352. Benton County parcel #114982012502004.
NE corner of Wellsian Way and Stevens Dr.

B. Environmental Elements [HELP]

1. *Earth* [help]

a. General description of the site:

(circle one): **Flat**, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

Approximately 3%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Baer Testing identified the on-site soils as Silt(ML), Gravelly Silt with Sand (ML), and Silty Gravel with Sand (GM).

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

None known.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The site will be graded to ensure proper drainage of parking areas with approximately 580 CY of dirt expected to be moved. The site is expected to balance on-site without import or export of materials.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion could occur on-site but will be minimized through implementation of BMP's during construction, including silt fencing, a construction entrance, ground cover, waddles, site watering for dust control, catch basin inserts and protection. All stormwater runoff will be contained and managed on-site.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 85% of the site will be covered with impervious surfaces after project construction.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Standard erosion control methods will be used, such as catch basin protection, silt fencing, and stabilized construction entrances. Dust during construction will be controlled by the use of a water truck as necessary.

2. *Air* [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

During construction, minor amounts of dust and exhaust from equipment activity may occur. The completed project will not affect air quality.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None known.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:
Dust control measures will be implemented in accordance with recommendations by the Department of Ecology and Benton County Clean Air Authority. Measures include, but are not limited to, watering, lowering speed, limit of construction vehicles, and reducing the number of dust-generating activities on windy days.

3. *Water* [help]

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The site is approximately 0.70 miles from the Columbia River. There are no other surface water bodies in the immediate vicinity.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.
No.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.
Not applicable.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.
No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
No.

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.
No waste materials will be discharged into the ground.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The site's impervious surfaces (asphalt, concrete, and roof) will generate stormwater runoff. All stormwater runoff will sheet flow to catch basins connected to underground infiltration trenches. The site's stormwater will be contained and infiltrated on-site.

2) Could waste materials enter ground or surface waters? If so, generally describe.
Pre-treatment facilities will be installed on the proposed stormwater management system in accordance with the Stormwater Management Manual for Eastern Washington. This will limit the amount of oils & pollutants infiltrating into the ground.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No, all run-off will be retained on-site. The site is not expected to receive runoff from off-site sources.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Runoff generated from pervious surfaces will infiltrate into underlying soils or flow to on-site collection points. Stormwater generated from impervious surfaces will be collected in catch basins and treated prior to infiltrating through underground infiltration trenches.

4. *Plants* [help]

a. Check the types of vegetation found on the site:

____deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
____shrubs
____grass
____pasture
____crop or grain
_____Orchards, vineyards or other permanent crops.
_____wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

b. What kind and amount of vegetation will be removed or altered?
The small amount of vegetation on-site consists of weeds, which will be removed during grading activities.

c. List threatened and endangered species known to be on or near the site.
None known.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
Landscaping will be proposed in accordance with City of Richland standards.

e. List all noxious weeds and invasive species known to be on or near the site.

None per the Washington State Noxious Weed Data Viewer.

5. *Animals* [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

b. List any threatened and endangered species known to be on or near the site.

None per the Washington Department of Fish and Wildlife.

c. Is the site part of a migration route? If so, explain.
Yes, Richland is part of the Pacific Flyway.

d. Proposed measures to preserve or enhance wildlife, if any:
None currently.

e. List any invasive animal species known to be on or near the site.
None known.

6. *Energy and Natural Resources* [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Power will be used for lighting, heating, and appliances. Natural gas is not currently available on-site.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
The building will comply with energy efficiency code requirements. Energy efficient lightbulbs will be used for lighting purposes.

7. *Environmental Health* [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.
Small quantities of gas may be stored on-site during construction activities. The completed project is not expected to produce any environmental health hazards.

1) Describe any known or possible contamination at the site from present or past uses.
None known.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.
None known.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.
Small quantities of gas may be stored on-site during construction activities. The completed project is not expected to store any hazardous chemicals.

4) Describe special emergency services that might be required.
The project will utilize normal emergency services provide by the City of Richland.

5) Proposed measures to reduce or control environmental health hazards, if any:
Proper safety procedures will be followed with respect to storing gas on-site.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Traffic noise on Wellsian Way and Stevens Dr. This is not expected to impact the project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.
Short-term: Construction noise.
Long-term: Traffic noise associated with the site during operational hours.

3) Proposed measures to reduce or control noise impacts, if any:
Construction will be limited to operational hours in accordance with the Benton County Noise ordinance.

8. *Land and Shoreline Use* [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The site is currently undeveloped and zoned as C-3 General Business. The site is bordered by similarly zoned properties. Specifically, the site is bordered by a golf cart dealer, a commercial retail building, an outdoor storage facility, and Richland High School's practice fields.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?
No.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:
No.

c. Describe any structures on the site.
There are no existing structures on-site.

d. Will any structures be demolished? If so, what?
No.

e. What is the current zoning classification of the site?
C-3 General Business.

f. What is the current comprehensive plan designation of the site?
GCOM – General Commercial

g. If applicable, what is the current shoreline master program designation of the site?
Not applicable.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
Yes, the site is located within an Aquifer Recharge Area per the City of Richland's critical area mapping.

i. Approximately how many people would reside or work in the completed project?
Approximately 15 people would work in the complete commercial building.

j. Approximately how many people would the completed project displace?
None.

k. Proposed measures to avoid or reduce displacement impacts, if any:
Not applicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The project will be permitted through the City of Richland, in accordance with all applicable zoning ordinances.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:
Not applicable.

9. *Housing* [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
No residential units will be provided.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
No units will be eliminated.

c. Proposed measures to reduce or control housing impacts, if any:
Not applicable.

10. *Aesthetics* [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
24'

b. What views in the immediate vicinity would be altered or obstructed?
None.

c. Proposed measures to reduce or control aesthetic impacts, if any:
Building materials and landscaping setbacks will comply with City of Richland code.

11. *Light and Glare* [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Building and parking lot lighting will be proposed for dark times of the day.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
No.

c. What existing off-site sources of light or glare may affect your proposal?
None known.

d. Proposed measures to reduce or control light and glare impacts, if any:
All outdoor lighting will comply with City of Richland code and will be properly shielded downward to prevent glare.

12. *Recreation* [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?
Richland High School's practice fields are located across the street from site, which are frequently used for sports by a variety of organizations.

b. Would the proposed project displace any existing recreational uses? If so, describe.
No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None currently.

13. *Historic and cultural preservation* [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.
None known. The site is listed as Survey High Advised by the DAHP's WISAARD predictive model. The site has been previous graded at some point, meaning the likelihood of Indian artifacts being present on-site is minimal.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.
Internet search for the project site. Washington State Department of Archeology and Historic Preservation and the National Register of Historic Places in Benton County.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
Upon any discover of potential or known archaeological resources at the project site prior to or during construction, the contractor and/or any other parties involved in construction shall immediately cease all on-site construction, shall act to protect the known historical and cultural resources area from outside intrusion, and shall notify, within a maximum period of twenty-four hours from the time of discover, City of Richland officials of said discover.

14. *Transportation* [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The project site will be accessed off Wellsian Way and Stevens Dr.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?
The site is currently served by a Ben-Franklin Transit bus stop approximately 100 ft from the site on Wellsian Way. Bus stop ID: RC081

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?
The project proposes 44 new parking spaces. No spaces will be eliminated.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?
The site will generate approximately 2,363 trips on a typical weekday per the Trip Generation Volume by the Institute of Traffic Engineers. Land use codes 931 & 938 were used. (Drive-Thru Coffee Shop with no Indoor seating, Quality Restaurant) The great majority of the trips will be generated by the drive-thru coffee shop. Trip Generation calculations may change as three of the tenants for the commercial building have yet to be determined.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.
No.

h. Proposed measures to reduce or control transportation impacts, if any:
A traffic impact fee will be paid per City of Richland code.

15. *Public Services* [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.
The site will utilize typical public services provided by the City of Richland, including fire and police protection. Employees will utilize health care, schools, and public transit.

b. Proposed measures to reduce or control direct impacts on public services, if any.
Developmental impact fees will be paid as determined by the City of Richland.

16. *Utilities* [help]

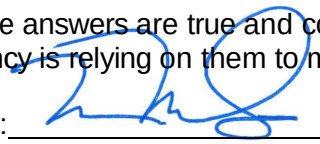
a. Circle utilities currently available at the site:
electricity, natural gas, **water**, **refuse service**, **telephone**, **sanitary sewer**, septic system, other _____

c. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

- *Power – Richland Energy Services*
- *Sewer – City of Richland*
- *Potable water – City of Richland*
- *Internet – Charter / Ziply*

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

Name of signee Nathan Machiela

Position and Agency/Organization Principal/Knutzen Engineering

Date Submitted: 9/28/2021

Critical Aquifer Recharge Area Report

DUTCH BROS - RICHLAND

1347 ELLIOT ST
Richland, WA 99352

Prepared For:

Elite Construction
5804 Road 90 Ste A
Pasco, WA 99301

Prepared By:

Nathan Machiela, PE
Robert McLeod
Project No. 20217

Preparation Date:

May 19, 2021

Table of Contents

Appendices

1.0 Project Overview

The Dutch Bros – Richland project is located at 1347 Elliot St, Richland, WA 99352. The Benton County parcel # is 114982012502001. The existing 0.97-acre site is undeveloped and zoned C-3 – General Business. The site is bordered by similarly zoned properties. The project proposes a new 800-sf Dutch Bros drive-thru, and a 3,360-sf commercial building. Civil improvements include paved drive aisles, parking lots, and utility services. The project would cover approximately 85% of the site with impervious surfaces. The site will be accessed off Stevens Dr and Wellsian Way. Construction for the proposed improvements is expected to take place in Summer of 2021. Refer to Appendix A for the Vicinity Map and Appendix B for the Site Plan.

The site is located completely within an Aquifer Recharge Critical Area, as shown by the City of Richland's online critical area mapping. As identified in the City's Wellhead Protection Program, the site is near the edge of the 1-year time of travel zone for the Wellsian Way Wellfield (SO2). See Appendix C for the map taken from the City's Wellhead Protection Program.

2.0 Site Geology

The existing site topography is flat, with a gradual downslope from east to west with approximately 4' of elevation change across the site. There is no evidence of on-site storm runoff leaving the site. Additionally, there is no evidence of the site receiving storm runoff from off-site sources.

Baer Testing & Engineering, Inc. prepared a geotechnical engineering study for the proposed Dutch Bro's project on April 20, 2021. They performed three test pits, extending 8.5 feet to 9.5 feet below ground surface. They encountered Silt (ML), Gravelly Silt with Sand (ML), and Silty Gravel with Sand (GM). See Appendix D for the Geotechnical Report and additional information. No bedrock was encountered in any of the test pits.

3.0 Groundwater

No groundwater was encountered in the test pit explorations. Baer Testing & Engineering, Inc. identifies the groundwater depth as approximately 13 to 15 feet below the existing surface elevation, based on logs from nearby wells. The groundwater level is likely to rise and fall with the change of seasons and irrigation. A nearby well log provided by the Department of Ecology identified the static water level at 43-feet below ground surface. See Appendix E for the well log.

A report provided by USGS identifies the general hydraulic gradient in the area as towards the northeast. See Appendix F for exhibits showing shallow water table level contours, Saddle Mountain basalt water level contours and Wanapum basalt contours.

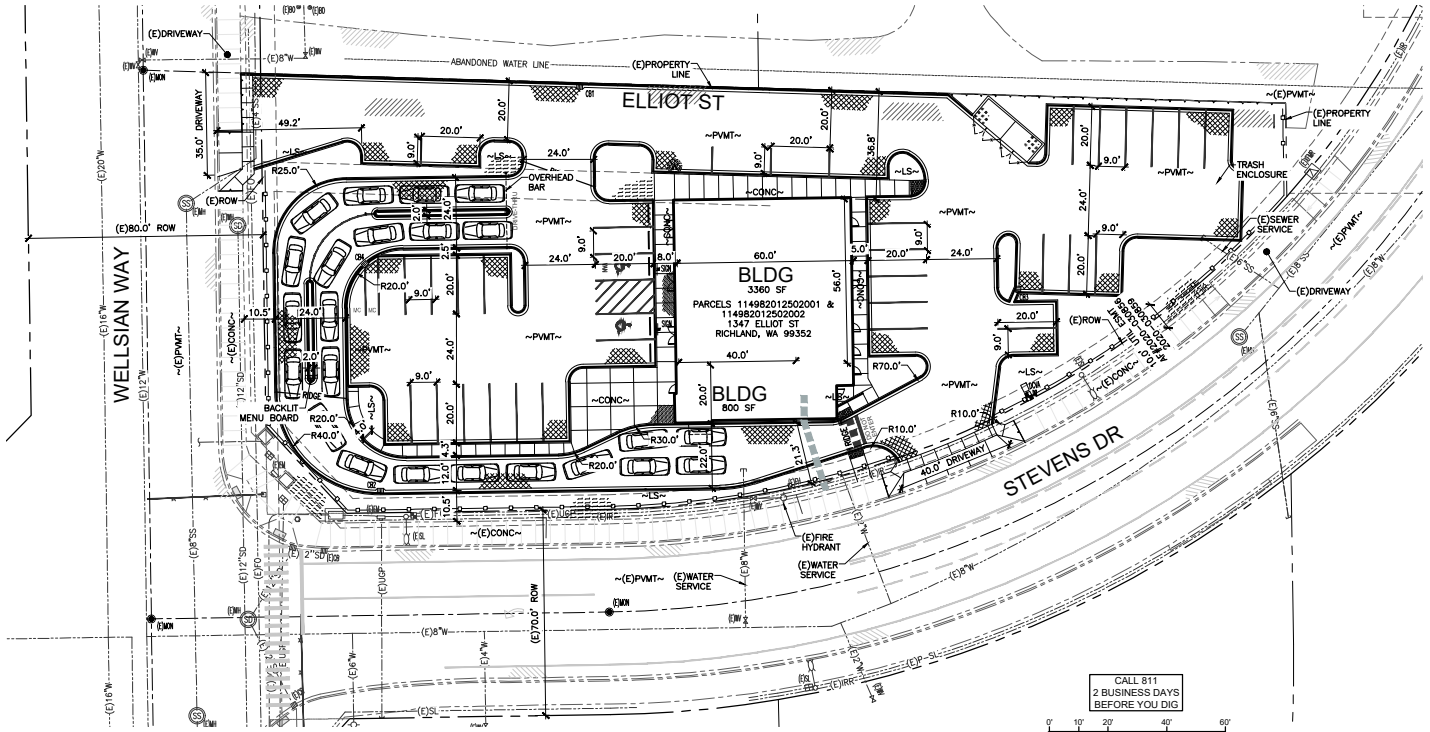
4.0 Project Impact and Mitigation Plan

Due to the presence of shallow groundwater, it is likely that stormwater produced by the site's impervious surfaces could enter the belowground aquifer. No storage or usage of chemicals are proposed on-site. The principal component of the site's mitigation plan is ensuring pollutants do not enter groundwater through the stormwater management plan. The stormwater plan for the site collects and infiltrates all stormwater runoff through conveyance systems and underground infiltration trenches, compliant with the Stormwater Management Manual for Eastern Washington. The site is classified as a low pollutant loading site, per table 5.22 of the SWMMEW. Baer Testing & Engineering, Inc. identifies the site's soils as satisfying a high vadose-zone treatment capacity, per table 5.21 of the SWMMEW. Therefore, per table 5.23 of the SWMMEW, the required pre-treatment is a two-stage drywell. Catch basins with inverted tees are proposed at the entrances of the underground infiltration trenches, satisfying the requirement of a two-stage drywell. Proper stormwater facility maintenance instructions are provided on the corresponding construction drawings for the project. Based on the site conditions found and the proposed stormwater pre-treatment structures, the proposed project should have no significant impact to the Critical Aquifer Recharge Area. No additional plans are proposed to limit the impact on the area at this time.

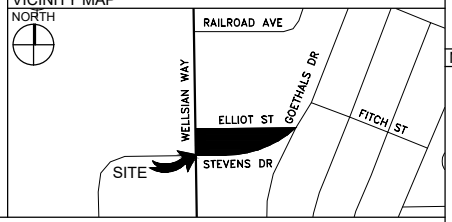
APPENDIX A
Vicinity Map


Free Appliance Recycling
United Floors
Building materials store
Warehouse St
Flatline Towing
Tows R US & Recovery
Fitch St
Stevens Dr
Goethals Dr
Elliot St
Stevens Dr
Duportail St
Wellsian Way
Dutch Bros - Richland
Project Location
Goethals Dr
Douglass Ave
The Folded Pizza Pie
Takeout · Delivery

APPENDIX B
Site Plan



VICINITY MAP



LEGEND

ADA COMPLIANT PATH TO SIDEWALK

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES AND LEGEND.
2. DIMENSIONS ARE TO FACE OF CURB, UNLESS NOTED OTHERWISE.
3. PARKING REQUIRED:
   REQUIRED PER CH.23.54 CITY OF RICHLAND ZONING CODE;
   RESTAURANT; 1 PER 100 SF; 3360 / 100 = 34 STALLS
   DRIVE THRU; 5 PER WINDOW/8 STALLS MIN = 8 STALLS
   42 MINIMUM STALLS REQUIRED

   PARKING PROVIDED:
   36 STANDARD STALLS, 6 PARALLEL STALLS 1 ACCESSIBLE STALL, 1 ACCESSIBLE VAN STALL, 2 MOTORCYCLE STALLS.
   44 TOTAL STALLS PROVIDED
4. 23 CAR DRIVE-THRU STACKING LENGTH.

A1 SITE PLAN
SCALE: 1" = 20'-0"

KNUTZEN ENGINEERING
5401 RIDGELINE DR.
SUITE 160
KENNEWICK, WA 99338
1-509-222-0959
www.knutzenengineering.com

No.	REVISIONS	DATE	DESIGN	CHKD	APPD

02/08/21

PRELIMINARY SITE PLAN

ELITE CONSTRUCTION
DUTCH BROS
1347 ELLIOT ST RICHLAND, WA 99352

APPROVAL		
DESIGN	RAM	02/08/21
CHECKED	NJM	02/08/21
APPROVED	NJM	02/08/21

SCALE: AS NOTED
CADFILE: 20217SP01
JOB No. 20217
REV. 0
DWG. No. SP01

I:\2020\20217-Dutch Bro's\DWG\20217SP01.dwg - May 19,2021 - 10:49am - rmc

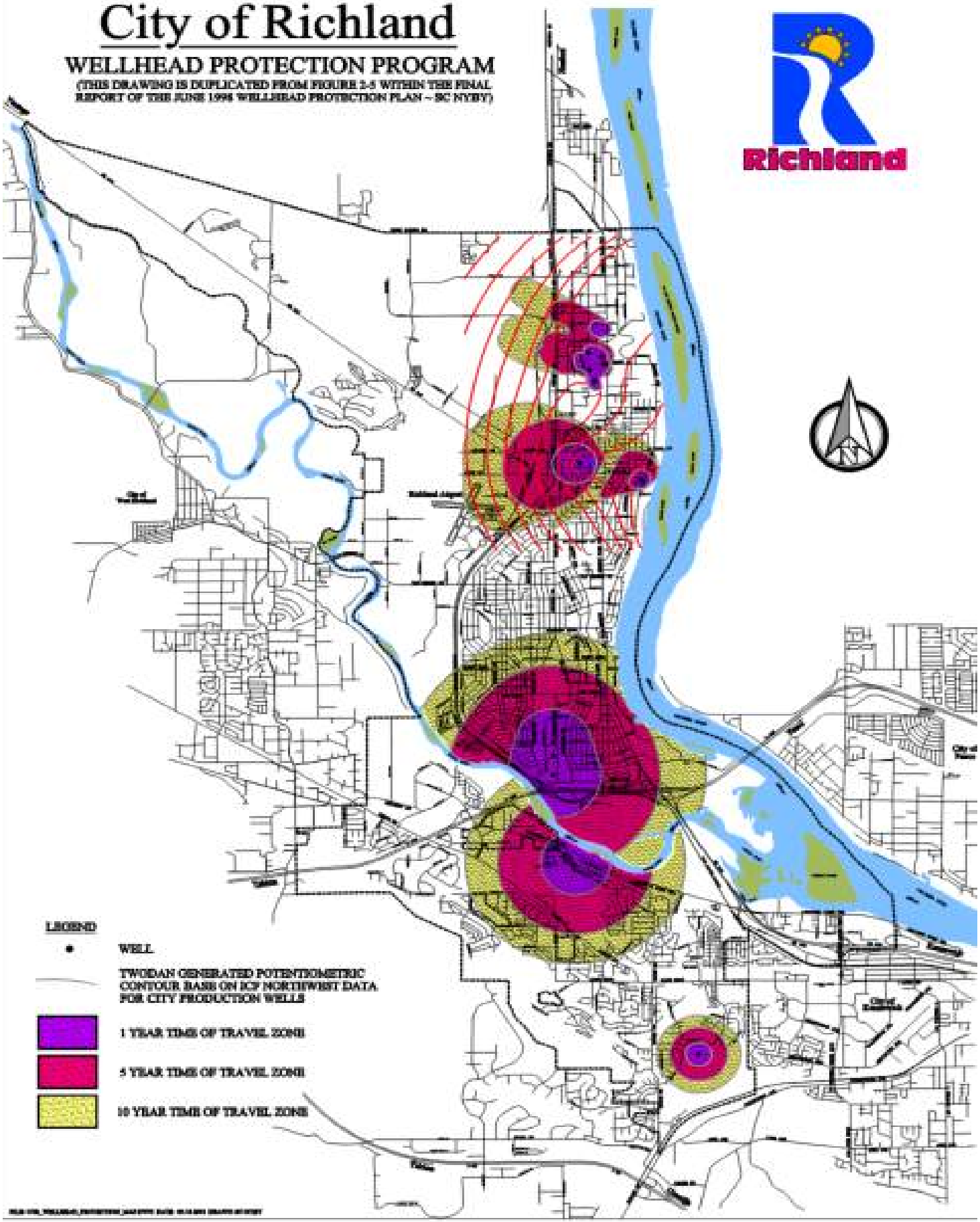
APPENDIX C
Wellhead Map

City of Richland

WELLHEAD PROTECTION PROGRAM

(THIS DRAWING IS DUPLICATED FROM FIGURE 2-5 WITHIN THE FINAL REPORT OF THE JUNE 1998 WELLHEAD PROTECTION PLAN – SC NYBY)

Richland



APPENDIX D
Geotechnical Report

DUTCH BROS
430 WELLSIAN WAY
RICHLAND, WASHINGTON

For:

MR. ANGELO CIULLA
ELITE CONSTRUCTION & DEVELOPMENT
5804 ROAD 90 SUITE A
PASCO, WA 99301

Provided By:

1106 Ledwich Ave.
Yakima, WA 98902
509-469-3068
general@baertesting.com

April 20, 2021 Project No: 21-079

AMENDED 5/19/21

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: (509) 469-3070
: www.baertesting.com

Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

April 20, 2021

Mr. Angelo Ciulla
Elite Construction & Development
5804 Road 90 Suite A
Pasco, WA 99301

RE: GEOTECHNICAL ENGINEERING STUDY; PROPOSED DUTCH BROS. SHOP, 430 WELLSIAN WAY, RICHLAND, WASHINGTON

Dear Mr. Ciulla:

At your request, Baer Testing & Engineering, Inc. conducted a geotechnical engineering study for the proposed Dutch Bros. shop in Richland, Washington. This report presents the results of the field explorations, laboratory testing, and engineering analyses.

This report presents recommendations for site grading, drainage, utility construction, and seismic design. The report also provides recommendations for building foundation design as well as construction recommendations for the various project features.

We appreciate the opportunity to be of service. If you have questions or comments, please contact our office.

Sincerely,

BAER TESTING & ENGINEERING, INC.

Dee J. Burrie, P.E.
Chief Engineer

Enclosures: Geotechnical Engineering Report

TABLE OF CONTENTS

FIGURES

APPENDICIES

1.0 INTRODUCTION

Baer Testing & Engineering, Inc. (BAER) is pleased to present the results of our geotechnical engineering study for the proposed Dutch Bros. facility at 430 Wellsian Way, in Richland, Washington. This geotechnical engineering study provides subsurface information to support site grading, drainage, utility design and construction, and recommendations for foundation design and construction**,** pavements, and IBC seismic design criteria. Our scope of work included:

- observing 3 test pit excavations and field soil sampling;
- performing two infiltration tests;
- conducting laboratory testing to determine soil properties;
- performing engineering analyses; and
- preparing this report.

2.0 PROJECT DESCRIPTION AND PROPOSED DEVELOPMENT

The proposed site is located at 430 Wellsian Way in Richland, Washington (**Figure 1 – Site Location Map**). The lot is in the northeast corner of the Wellsian Way and Stevens Drive intersection in a commercially developing area. Approximate mid-site coordinates are 46°16'15.8"N Latitude; 119°17'03.0"W Longitude.

The approximately 1-acre site is relatively level and currently undeveloped with sparse vegetation. The proposed drive-thru coffee shop will be constructed as a single-story, wood-frame structure with a slab-on-grade. The development will include a paved drive-thru lane, parking lot, underground utilities, landscaping, and on-site stormwater disposal.

3.0 FIELD EXPLORATIONS

The exploration program consisted of excavating three test pits designated TP-1 through TP-3 on the Exploration Plan (**Figure 2 – Exploration Plan**). Double J Excavating, Inc. (Double J), under subcontract with BAER, excavated the test pits on April 6, 2021 using a Deere 50G mini excavator equipped with a 30-inch bucket.

Where possible, soil in situ strength was estimated using a dynamic, mini-cone penetrometer (DCP) and our observations of the relative excavation difficulty. The mini cone uses a 15-pound slide hammer dropped 20 inches to drive a conical tip into the soil. The number of hammer blows required to drive the cone 1¾-inch increments is roughly equivalent to a SPT blow count. The blows per increment provide an indication of the relative soil density. The blow counts are recorded on the logs. The mini-cone penetrometer test method is described in ASTM STP399.

BAER's representative counted the blows required to drive the rod into the ground for each 1¾-inch increment over a given depth. The recorded blow count data was evaluated using correlation charts to estimate the soil bearing capacity. BAER's representative observed the test pits, collected representative soil samples, and prepared test pit logs.

The subsurface conditions are known only at the test pit locations on the date explored and should be considered approximate. Actual subsurface conditions may vary between excavation locations. The test pit locations are presented in Figure 2 and the test pit logs are presented in Appendix A. Our

representative classified the soil in the field and transported the soil samples to the laboratory for further examination and testing.

4.0 LABORATORY TESTING

BAER performed the following laboratory tests on selected soil samples from our explorations.

- Moisture Content (American Society for Testing and Materials (ASTM) Designation: D 2216) for material characterization and soil index properties; and
- Particle Distribution (ASTM Designation: D 422 and ASTM Designation: D 1140) for material characterization and soil index properties.

Northwest Agricultural Consultants performed the following laboratory tests on a selected soil sample.

- Organic Matter Content (ASTM Designation: D 2974) for soil index properties; and
- Cation Exchange Capacity (Environmental Protection Agency (EPA) Designation: 9081) for soil properties

Copies of the laboratory test reports are enclosed in Appendix B.

5.0 SUBSURFACE CONDITIONS

The following discussion is a summary of subsurface conditions encountered during the test pit explorations. Please refer to the enclosed logs (Appendix A) for more detailed information regarding subsurface conditions.

5.1 Regional Geologic Setting

The *Geologic Map of Richland 1:100,000 Quadrangle, Washington*; Washington Division of Geology and Earth Resources, Open File Report 94-8 (1994), shows near-surface geology in the site vicinity is mapped as Q_a – Alluvium (Holocene to Pleistocene) and Q_{fg3} – Reworked outburst flood deposits. Q_a consists of clay, silt, sand, and gravel deposits of varied thickness, sorting, and composition. Q_{fg3} consists of flood gravels with beds of fine sediment. In our opinion, the soil encountered in the test pit excavations are consistent with the mapped geology.

5.2 Soils

Test pits typically encountered a similar profile of gravelly material underlain by a hard, non-plastic ***Silt (ML)*** which extended to the termination depth of each pit. Test Pits 2 and 3 encountered 3 and 5 feet of a hard ***Gravelly Silt with Sand (ML)*** FILL near the surface, which contained various types of construction debris (asphalt, marking tape, and abandoned pipes). Test Pit 1 displayed only 1 foot of this FILL, which was underlain by a medium dense to dense, ***Silty Gravel with Sand (GM)***. The silty gravel with sand contained small horizontal beds of varying amounts of sand and gravel and appears to be a native deposit. Test pits were terminated at approximately 8.5 to 9.5 feet below ground surface (bgs).

5.3 Groundwater

Groundwater was not encountered in the test pit explorations. Based on logs from nearby wells, groundwater approximately13 to 15 feet below the existing surface elevation. Groundwater in this area is influenced by irrigation and seasonal river flows. Depending on the time of construction,

shallow groundwater may be encountered. Historically, some locations on Wellsian Way exhibited standing water during wet periods.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 General

The site is currently vacant. Historical Google Earth images indicate the site has been vacant since at least 1995. The photos also indicate the site was utilized some construction related activities and stockpiles at various times. The latest site changes appear during the Elliot Street closure and Stevens Drive realignment. Minor vegetation and scattered random construction debris are found at the site. The site is approximately 1 to 2 feet above the surrounding roadway. Depending on the final building pad elevation, minor grading may be required.

6.1.1 Test Pit Backfill

Double J used the excavator to backfill each test pit with excavated materials upon completion. The operator compacted the backfill using the excavator bucket. The test pits should be over-excavated and backfilled with compacted structural fill during site grading in accordance with Section "6.2 Earthwork" below.

6.2 Earthwork

FILL materials stripped from the site may be stockpiled and reused in landscape areas but should not be used for structural fill or backfill. The existing native materials free of organics, deleterious debris, and any material larger than 3-inches may be reused for general fill and backfill. These materials may not be used as structural fill under the building.

6.2.1 Subgrade Preparation

Soils at the site were typically dry to moist at the time of our explorations. Depending on conditions at the time of construction, the soils may require moisture conditioning, either by adding moisture or drying, prior to being compacted.

Debris-containing fill within the building footprint should be removed to expose the native subgrade. The exposed site subgrade should be moisture conditioned to within 2 percent of optimum in the upper 12 inches and compacted to a minimum 92 percent of the maximum laboratory dry density as determined by the ASTM Designation: D 1557 – *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort.* If the subgrade soils are too coarse for standard density testing, the area should be compacted to a firm, unyielding condition using heavy equipment. The subgrade should be proof rolled to identify loose or unstable areas. The geotechnical engineer should observe the subgrade proof-rolling to assist in determining loose soils.

The existing fill under pavement areas may remain in-place or be removed and replaced with compacted structural fill. If the fill remains in-place, there is a potential for increased settlement and pavement deformation. To minimize settlement, the fill areas should be proof rolled to identify loose or unstable areas. The geotechnical engineer should observe the fill area proof-rolling to assist in determining loose soils.

6.2.2 Material Reuse

Depending on final site grades, some on-site material may be available for reuse except as noted in 6.2 above. Imported fill should consist of well-graded, 2-inch minus, pit-run sand and gravel with less than 5 percent fines or 5/8-inch minus crushed stone top course (CSTC). All fill should be placed in accordance with Section "6.2.3 Placement and Compaction".

6.2.3 Placement and Compaction

Fill and backfill should be moisture conditioned to within 2 percent of optimum, placed in maximum 8-inch loose lifts, and compacted to a minimum 95 percent of ASTM D 1557.

Structural fill under footings, if used, should consist of 5/8-inch minus CSTC. Structural fill should be compacted to 95 percent of ASTM D 1557.

6.2.4 Slopes

Occupational Safety and Health Administration (OSHA) Type C soil best describes the on-site sand and gravel. Type C soils may have maximum temporary construction slopes of 1.5 Horizontal to 1 Vertical (1.5H:1V). Permanent cut or fill slopes should be no steeper than 2H:1V and must be protected from both wind and water erosion. Erosion protection may consist of vegetative cover or a minimum 3 inches of coarse concrete aggregate conforming to the requirements of WSDOT Specification 9-03.1(4) c, "Concrete Aggregate AASHTO Grading No. 57."

6.2.5 Utility Trenching

Utility trenching should be accomplished in accordance with American Public Works Association (APWA) Standard Specifications. Based on our explorations, we anticipate excavations may be made using standard excavation equipment. Utility piping should be bedded as recommended in the APWA specifications. Utility trenches should be backfilled using structural fill compacted as specified in section "6.2.3 Placement and Compaction". Enough backfill should be placed over the utility before compacting with heavy compactors to prevent damage. On-site materials with gravels smaller than 3 inches may be used for utility trench backfill.

6.2.6 Wet Weather Construction

The site soils near the surface are typically granular; however, the stability of the exposed soils may deteriorate due to change in moisture content. If construction occurs during wet weather, we recommend:

- Fill material consist of clean, granular soil with less than 5 percent fines passing the #200 sieve. Fines should be non-plastic.
- The ground surface in the construction area should be sloped to drain and sealed to reduce water infiltration and to prevent water ponding.
- Work areas and stockpiles should be covered with plastic. Geotextile silt fences, straw bales, straw wattles, and/or other measures should be used as needed to control soil erosion.

6.2.7 Infiltration Rate

We understand stormwater will be managed using infiltration basins. We conducted infiltration tests in Test Pits 1 and 3, at approximately 5 feet bgs. The infiltration test was conducted in general accordance with the Small PIT method described in the 2019 Washington Department of Ecology Stormwater Management Manual Table 6.3 and Appendix 6.B.

We filled both test pits with approximately 2 feet of water. The water was allowed to saturate the underlying soils for approximately 2 hours. The pit was again filled with water and the depth below the reference was measured when filling stopped. We obtained measurements at 15-minute intervals over the following hour. The water surface elevation changes between the 30- and 60-minute readings are used to calculate the infiltration rate. The test results are summarized below:

Table 6.2.7- 1 Infiltration Test Results

Location	TP-1	TP-3
Pre-soak Period (hours)	2	2.5
Initial Test (inches below reference)	36.0	37.0
15 Minutes (inches below reference)	37.25	37.25
30 Minutes (inches below reference)	38.0	37.75
45 Minutes (inches below reference)	38.75	38.0
60 Minutes (inches below reference)	39.5	38.25
Infiltration Rate (inches/minute)	0.05	0.017
Infiltration Rate (minutes/inch)	20	60
Infiltration Rate **(inches/hour)**	**3**	**1**

These rates do not include safety factors. The system designer should incorporate an appropriate factor of safety against slowing rates over time due to biological and sediment clogging.

7.0 FOUNDATION DESIGN RECOMMENDATIONS

7.1 Footings

The proposed structure may be supported on conventional spread or continuous footings bearing on the compacted native subgrade or structural fill extending through the existing fill to the native subgrade. Exterior footings should be embedded a minimum 24 inches below adjacent grades for bearing considerations and frost protection.

Prior to placing structural fill or concrete, footing subgrade should be moisture conditioned and compacted to 92% of ASTM D 1557.

To avoid differential settlement, footings should be supported in consistent materials. To provide a consistent working surface for footing construction, we recommend placing 6 inches of compacted 5/8-inch minus CSTC below the footings on native subgrade. The CSTC should be compacted to a firm, unyielding condition prior to footing concrete placement. The geotechnical engineer should observe subgrade preparation prior to crushed rock placement and concrete placement.

We recommend constructing footings a minimum of 2 feet wide for spread footings and minimum 16 inches wide for continuous footing. Footings constructed in accordance with these recommendations can be designed with an allowable bearing pressure of 2000 pounds per square foot (psf). The allowable bearing pressure may be increased by one-third for short-term transient loading conditions (i.e., seismic and/or wind loads).

We anticipate settlement will be the limiting factor for foundation design. Foundation settlement estimates are based on the soil profile and densities encountered at the site. Foundations designed as outlined above should experience less than ½-inch of settlement. We anticipate differential settlement will be less than half of total settlements between adjacent footings or across approximately 20 feet of continuous footings. Settlement should occur rapidly as loads are applied.

Lateral forces may be resisted using a combination of friction and passive earth pressure against the buried portions of the structure. For design, a coefficient of friction of 0.45 may be assumed along the interface between the footing base and the compacted CSTC. Passive earth pressure from the poorly graded sand or sandy silt backfill may be calculated using an equivalent fluid weight of 250 pounds per square foot (psf) per foot of embedment depth. The recommended coefficient of friction and passive earth pressure values do not include a safety factor.

7.2 Concrete Slab-on-Grade

The exposed subgrade in areas to receive concrete slabs-on-grade should be moisture conditioned and compacted to a minimum of 95 percent of the maximum laboratory dry density as determined by ASTM D 1557.

After compacting the subgrade, we recommend placing a minimum 6-inch layer of 5/8-inch CSTC under the concrete slab. The CSTC should be compacted to a firm, unyielding condition. The geotechnical engineer should observe subgrade preparation prior to gravel placement.

7.3 Pavement Sections

The proposed construction consists of a restaurant, drive-thru lane, and parking. We anticipate traffic will consist of automobile and light truck drive-thru and parking. An occasional garbage or delivery truck will use the main access and hard stand areas. Based on the anticipated traffic, we recommend the following pavement sections.

Table 7.3-1 Recommended Pavement Section

Material Layer	Layer Thickness, inches		Compaction Standard
	Light duty	Main Access & Drive-thru	
Asphaltic Concrete Pavement (HMACP)	3	4	91 percent of Maximum Theoretical Specific Gravity (Rice's)
Crushed Stone Top Course (CSTC) WSDOT 5/8-inch minus Top Course	6	8	95 percent of ASTM D 1557
Compacted Subgrade	12		95 percent of ASTM D 1557

The upper 12 inches of the pavement subgrade should be moisture conditioned and compacted to 95 percent of ASTM D 1557. The geotechnical engineer should observe the subgrade prior to base

course placement. Soft or unstable areas should be stabilized or over-excavated and replaced with compacted structural fill prior to paving.

7.4 Seismic Design

Structures should be designed in accordance with the 2015 International Building Code (IBC). The Site Class is based on the average conditions present within 100 feet of the ground surface. The Site Classification is based on shear wave velocity. To establish a higher site class, additional explorations are required including deep borings and geophysical measurements. Based on the available information, we recommend using the default classification Site Class D (Stiff Soil). Design values determined for the center coordinates of the site using the United States Geological Survey (USGS) *Earthquake Ground Motion Parameters* utility are summarized in Table 7.4-1 below.

Table 7.4-1 Recommended Earthquake Ground Motion Parameters (2015 IBC)

Parameter	Value
Location (Latitude, Longitude), degrees	46.271063; -119.284157
Mapped Spectral Acceleration Values (MCE, Site Class D):	
Short Period, S_s	0.412 g
1.0 Sec. Period, S_1	0.159 g
Soil Factors for Site Class D:	
F_a	1.471 g
F_v	2.164 g
S_{DS}	0.404 g
S_{D1}	0.229 g

7.4.1 Liquefaction

Soil liquefaction occurs when saturated soil deposits temporally lose strength and behave as a liquid in response to earthquake shaking. Liquefaction typically occurs in loose, granular soils located in the upper 50 feet and below the water table. The groundwater depth is approximately 15 feet bgs, and the on-site gravelly silt, silty gravel, and underlying silt are medium dense to dense and hard. In our opinion, the liquefaction potential at this site is low. Additional exploration and analysis would be required to quantify anticipated settlements due to potential liquefaction.

7.4.2 Fault Rupture Potential

Based on our review of available geologic literature, two hidden, northwest - southeast trending hidden thrust faults generally follows the base of the hills (Badger Mountain and Horse Heaven Hills) 1 and 2.5 miles southwest of the site, respectively. We are not aware of any demonstrated movement along these faults in the last 10,000 years. We did not observe any evidence of surface rupture or recent faulting during our field observation. Therefore, we conclude the fault rupture potential is low at this site.

7.4.3 Slope stability

The site is in a relatively level, developed area within the City of Richland. In our opinion, the potential for slope failure impacting the proposed project site is low.

8.0 ADDITIONAL SERVICES

BAER is available to provide further geotechnical consultation during the project design phase. We should review the final design and specifications to verify earthwork and foundation recommendations have been properly interpreted and incorporated into the project design and construction specifications. We are also available to provide geotechnical engineering and special inspection services during construction. Observation during construction provides the geotechnical engineer the opportunity to assist in making engineering decisions if variations in subsurface conditions become apparent. If BAER is not retained to provide construction phase services, we cannot be responsible for soil related construction errors or omissions.

Construction observation and special inspection services are not part of this geotechnical engineering study scope of work. We will be pleased to provide a separate proposal for the construction phase services, if desired.

9.0 UNCERTAINTIES AND LIMITATIONS

This report was prepared for the exclusive use of Elite Construction & Development, LLC. and their design team for the proposed Dutch Bros. on Wellsian Way in Richland, Washington. This report presents the data from observation and field testing and is based on subsurface conditions at the specific locations and depths indicated. No other representation is made. This report should be made available to potential contractors for information on factual data only. Conclusions and interpretations presented in this report should not be construed as a guarantee or warranty of the subsurface conditions. If changes are made to the project components or layout, additional geotechnical data and analyses may be necessary.

Within the limitations of scope, schedule, and budget, BAER attempted to execute these services in accordance with generally accepted professional principles and practices in the field of geotechnical engineering at the time the report was prepared. No warranty, expressed or implied, is made. The scope of our services did not include environmental screening of soil samples retrieved from the explorations completed for this project. Further, we did not complete environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic materials in the soil, rock, surface water, or air in the project area.

We appreciate the opportunity to be of service. If you have questions or comments, please contact our office.

Sincerely,
BAER TESTING & ENGINEERING, INC.

Dee J. Burrie, P.E.
Chief Engineer

4/20/2021

: general@baertesting.com

Notes:
Location Map developed using Images by Google Earth Pro.

0 1/2 2
Approximate Scale in Miles

: (509) 469-3068
: (509) 469-3070
: www.baertesting.com

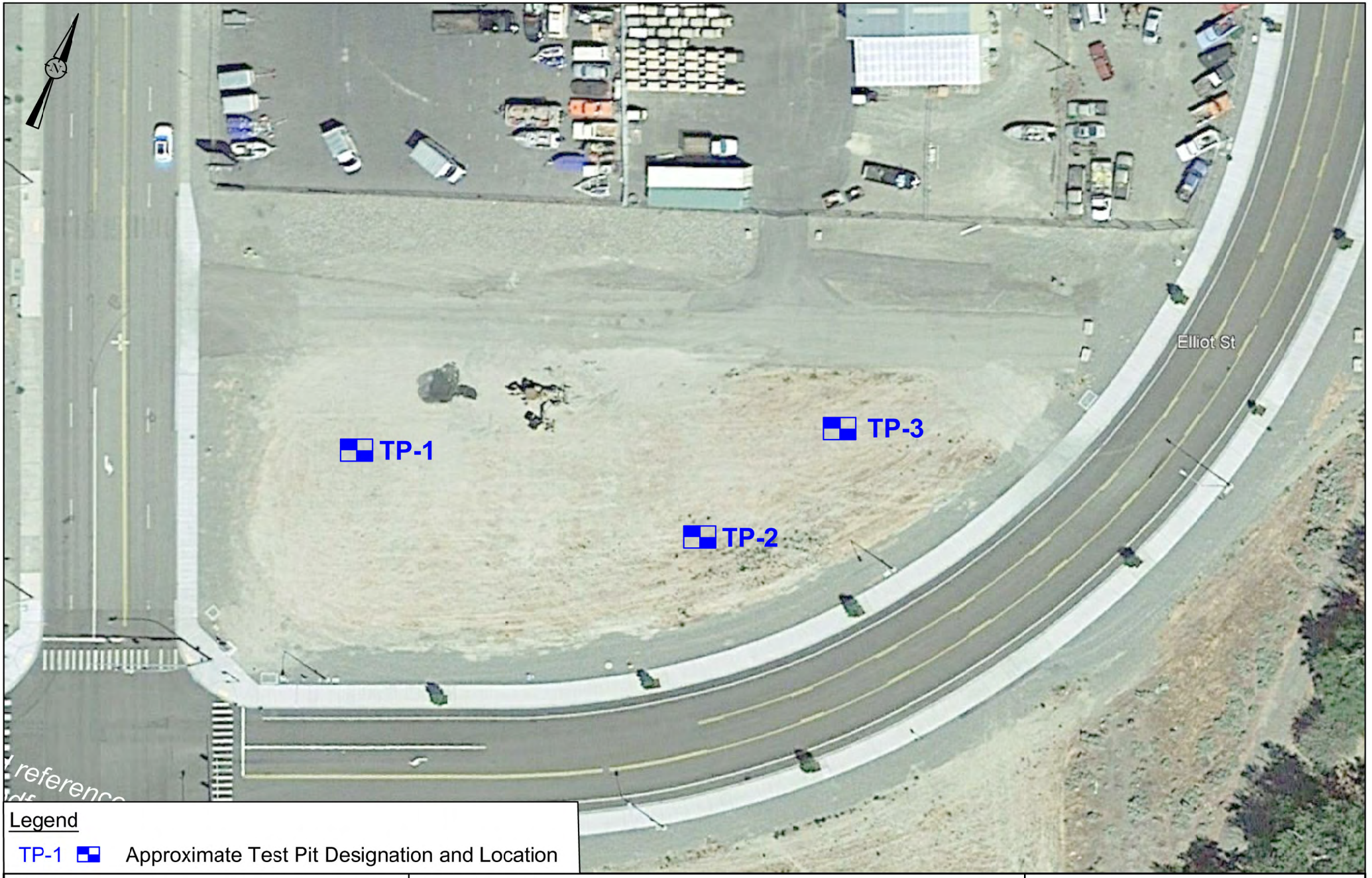
Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

Dutch Brothers Coffee
430 Wellsian Way
Richland, Washington

Site Location Map

21-079	FIG. 1



Legend

TP-1 Approximate Test Pit Designation and Location

Notes:

Location Map developed using Images Provided by Google Earth Pro.

0 50 100

Approximate Scale in Feet

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Dutch Brothers Coffee
430 Wellsian Way
Richland, Washington

Exploration Map

21-079 | FIG. 2

APPENDIX A
TEST PIT LOGS

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Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

JOB NO: 21-079 EX. DATE: 4/6/2021 LOCATION: West Parking Area

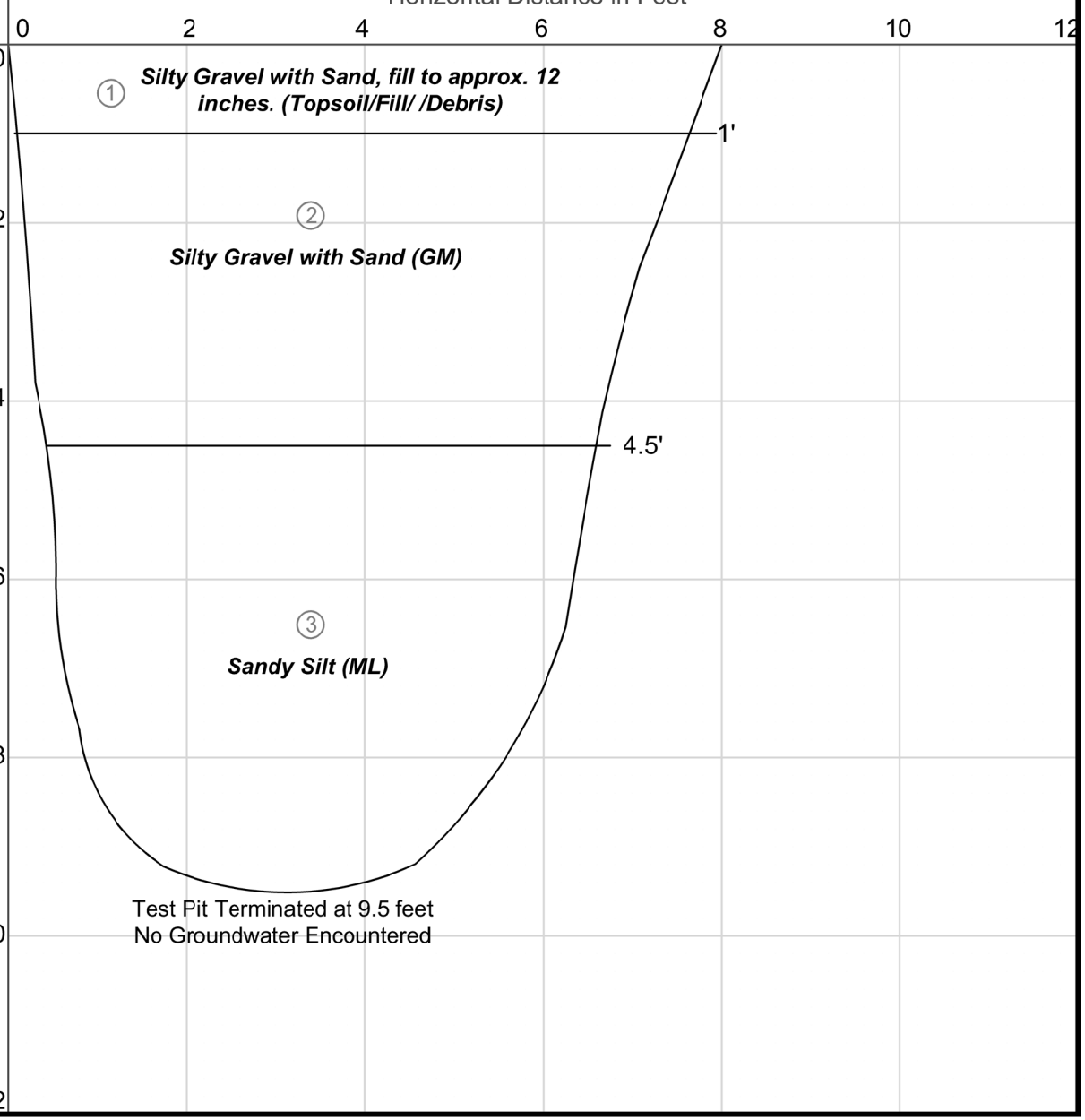
PROJECT: Dutch Brothers Coffee, 430 Wellsian Way, Richland, WA

LOG OF Test Pit TP-1

Logged By: BD GPS Coordinates: N 46.271036 E -119.284540

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP399	Samples	Depth, Ft.
Surface Description: Light Grass				
① 0-1.0' Silty Gravel with Sand, fill to approx. 12 inches. (Topsoil/Fill/ /Debris)	None Observed			0
② 1.0-4.5' Dense, brown, ***Silty Gravel with Sand (GM)***; Moist; subrounded to rounded gravel and cobbles, maximum diam. approx. 9 inches; fine to coarse sand; nonplastic silt. (NATIVE?)			S-1 ☒	2
③ 4.5-9.5' Very Stiff, brown, ***Sandy Silt (ML)***; Moist to dry; fine sand; nonplastic silt.				4
				6
				8
Test Pit Terminated at ±9.5 feet No Groundwater Encountered				10
				12

Sketch of West Pit Side Surface Elevation:



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Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

JOB NO: 21-079 EX. DATE: 4/6/2021 LOCATION: Approx. Building Location

PROJECT: Dutch Brothers Coffee, 430 Wellsian Way, Richland, WA

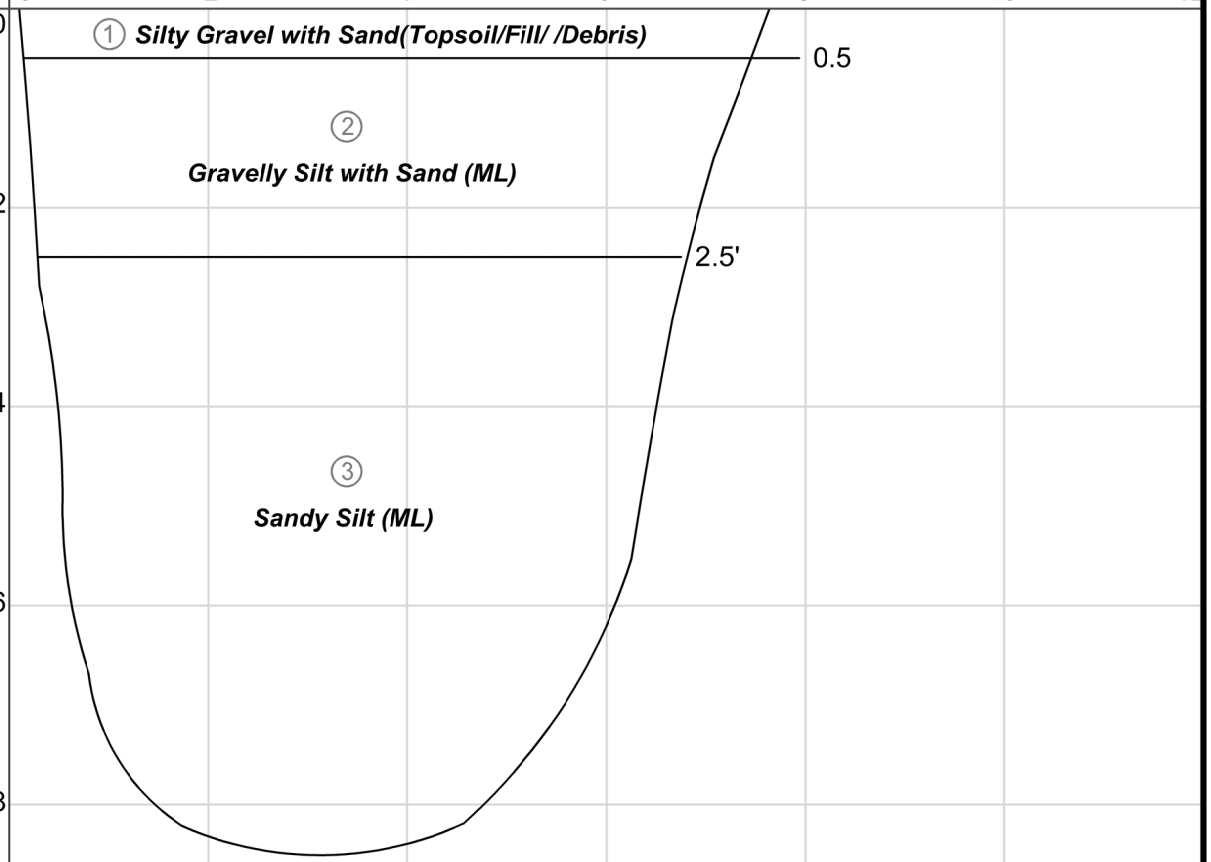
LOG OF Test Pit TP-2

Logged By: BD GPS Coordinates: N 46.271006 E -119.283964

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP399	Samples	Depth, Ft.
Surface Description: Light Grass				
① 0-1.0' Silty Gravel with Sand (Topsoil/Fill/ /Debris)	None Observed	20-47-50/1"	S-1	0
② 0.5-2.5' Very stiff, brown, ***Gravelly Silt with Sand (ML)***; Moist; subrounded to rounded gravel and cobbles, maximum diam. approx. 6 inches; fine to coarse sand; nonplastic silt. (FILL?) * 4" Asphalt layer at approx. 2 feet.				2
③ 2.5-8.5' Very Stiff, brown, ***Sandy Silt (ML)***; Moist; fine sand; nonplastic silt; moderately cemented. (NATIVE?)				4
				6
				8
Test Pit Terminated at ±8.5 feet No Groundwater Encountered				10
				12

Sketch of West Pit Side Surface Elevation:

Horizontal Distance in Feet



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Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

JOB NO: 21-079 EX. DATE: 4/6/2021 LOCATION: East Parking Area

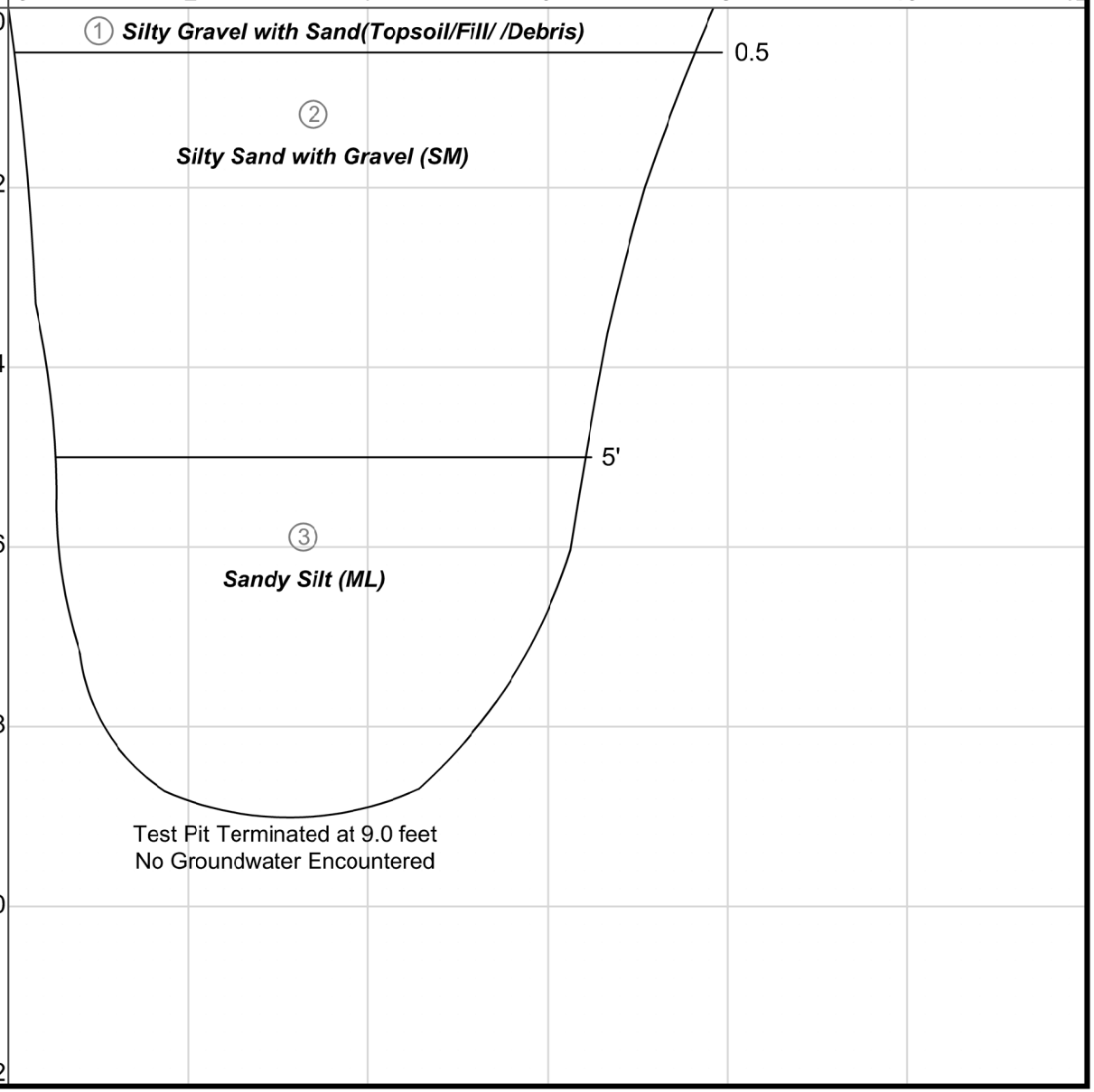
PROJECT: Dutch Brothers Coffee, 430 Wellsian Way, Richland, WA

LOG OF Test Pit TP-3

Logged By: BD GPS Coordinates: N 46.271149 E -119.283681

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP399	Samples	Depth, Ft.
Surface Description: Light Grass				
① 0-1.0' Silty Gravel with Sand (Topsoil/Fill/ /Debris)	None Observed	26-28-34	S-1	0
② 0.5-5.0' Dense, brown, ***Silty Sand with Gravel (SM)***; Dry to moist; subrounded to rounded gravel, maximum diam. approx. 2 inches; fine sand; nonplastic silt. (FILL?) * Debris/Wood/Pipe at 5',				2
				4
③ 5.0-9.0' Very Stiff, brown, ***Sandy Silt (ML)***; Moist; fine sand; nonplastic silt; moderately cemented. (NATIVE?)				6
				8
Test Pit Terminated at ±9.0 feet No Groundwater Encountered				10
				12

Sketch of West Pit Side Surface Elevation:



APPENDIX B
LABORATORY TEST RESULTS

: (509) 469-3068
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: www.baertesting.com

Baer Testing & Engineering, Inc.

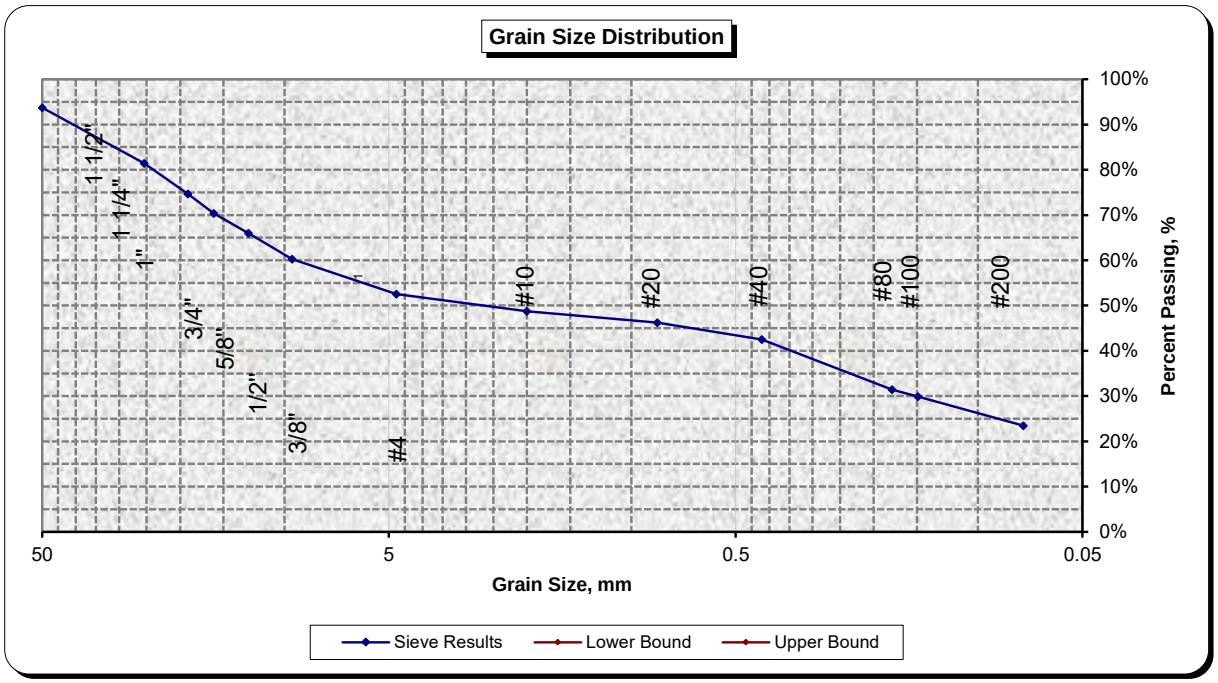
1106 Ledwich Ave.
Yakima, WA 98902

CLIENT:	Elite Construction & Development, LLC	**PROJECT NUMBER:**	21-079
PROJECT:	Dutch Bros - Wellsian Way	**WORK ORDER #:**	21-0484
SAMPLE SOURCE:	TP-1 @ 2 ft	**SAMPLE NUMBER:**	21-0484-1
DATE SAMPLED:	4/6/2021	**DATE TESTED:**	4/7/2021
MATERIAL TYPE:	Silty Gravel with Sand	**TESTED BY:**	AH

Sampled in Accordance with ASTM D 75 and reduced in accordance with ASTM C 702 or D 421 unless otherwise noted.

SIEVE ANALYSIS COARSE AND FINE AGGREGATES ASTM C 136/C 117

Sieve Size:	Percent Passing:	Specs:	Sieve Size:	Percent Passing:	Specs:
4"			#4	53%	
3"			#8		
2 1/2"	100%		#10	49%	
2"	94%		#16		
1 1/2"			#20	46%	
1 1/4"			#30		
1"	81%		#40	42%	
3/4"	75%		#50		
5/8"	70%		#60		
1/2"	66%		#80	31%	
3/8"	60%		#100	30%	
1/4"			#200	23.5%	



REVIEWED BY:
Dee Burrie, Technical Director

: (509) 469-3068
: (509) 469-3070
: www.baertesting.com

Baer Testing & Engineering, Inc.

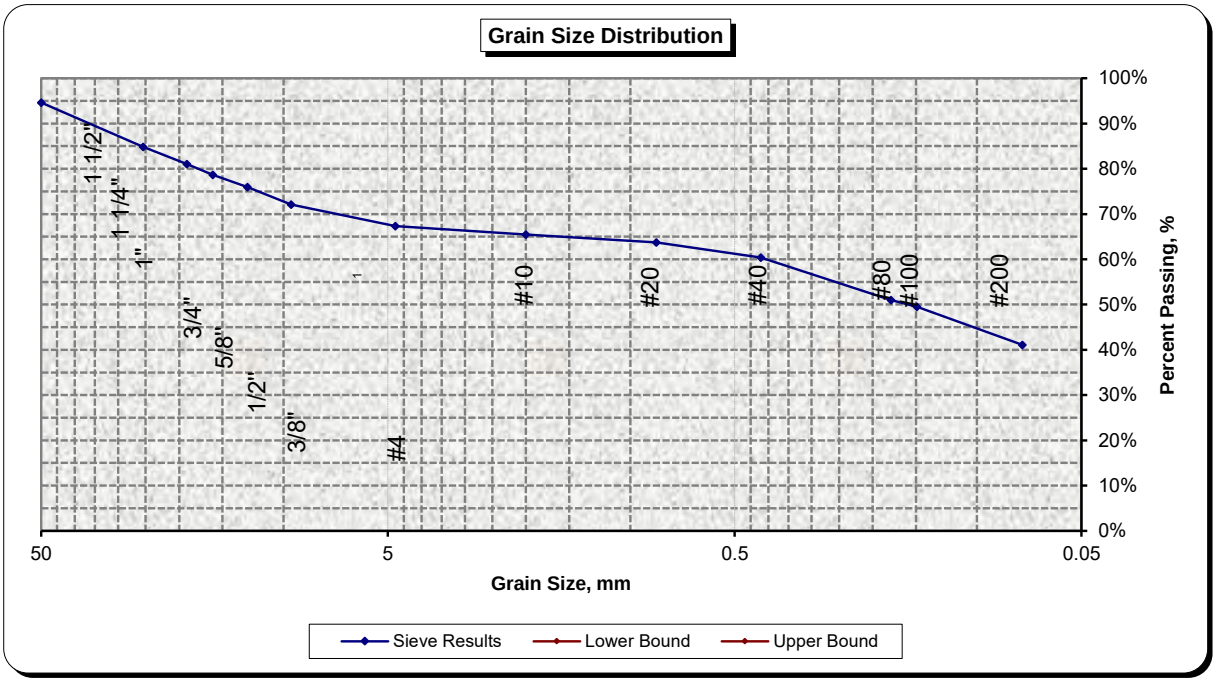
1106 Ledwich Ave.
Yakima, WA 98902

CLIENT:	Elite Construction & Development, LLC	**PROJECT NUMBER:**	21-079
PROJECT:	Dutch Bros - Wellsian Way	**WORK ORDER #:**	21-0484
SAMPLE SOURCE:	TP-2 @ 2 ft	**SAMPLE NUMBER:**	21-0484-2
DATE SAMPLED:	4/6/2021	**DATE TESTED:**	4/7/2021
MATERIAL TYPE:	Gravelly Silt with Sand - Previous Fill	**TESTED BY:**	AH

Sampled in Accordance with ASTM D 75 and reduced in accordance with ASTM C 702 or D 421 unless otherwise noted.

SIEVE ANALYSIS COARSE AND FINE AGGREGATES ASTM C 136/C 117

Sieve Size:	Percent Passing:	Specs:	Sieve Size:	Percent Passing:	Specs:
4"			#4	67%	
3"			#8		
2 1/2"	100%		#10	65%	
2"	95%		#16		
1 1/2"			#20	64%	
1 1/4"			#30		
1"	85%		#40	60%	
3/4"	81%		#50		
5/8"	79%		#60		
1/2"	76%		#80	51%	
3/8"	72%		#100	50%	
1/4"			#200	41.1%	



REVIEWED BY:
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: (509) 469-3070
: www.baertesting.com

Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

CLIENT:	Elite Construction & Development, LLC	**PROJECT NUMBER:**	21-079
PROJECT:	Dutch Bros - Wellsian Way	**WORK ORDER #:**	21-0484
SAMPLE SOURCE:	TP-3 @ 9 ft	**SAMPLE NUMBER:**	21-0484-3
DATE SAMPLED:	4/6/2021	**DATE TESTED:**	4/7/2021
MATERIAL TYPE:	Silt	**TESTED BY:**	AH

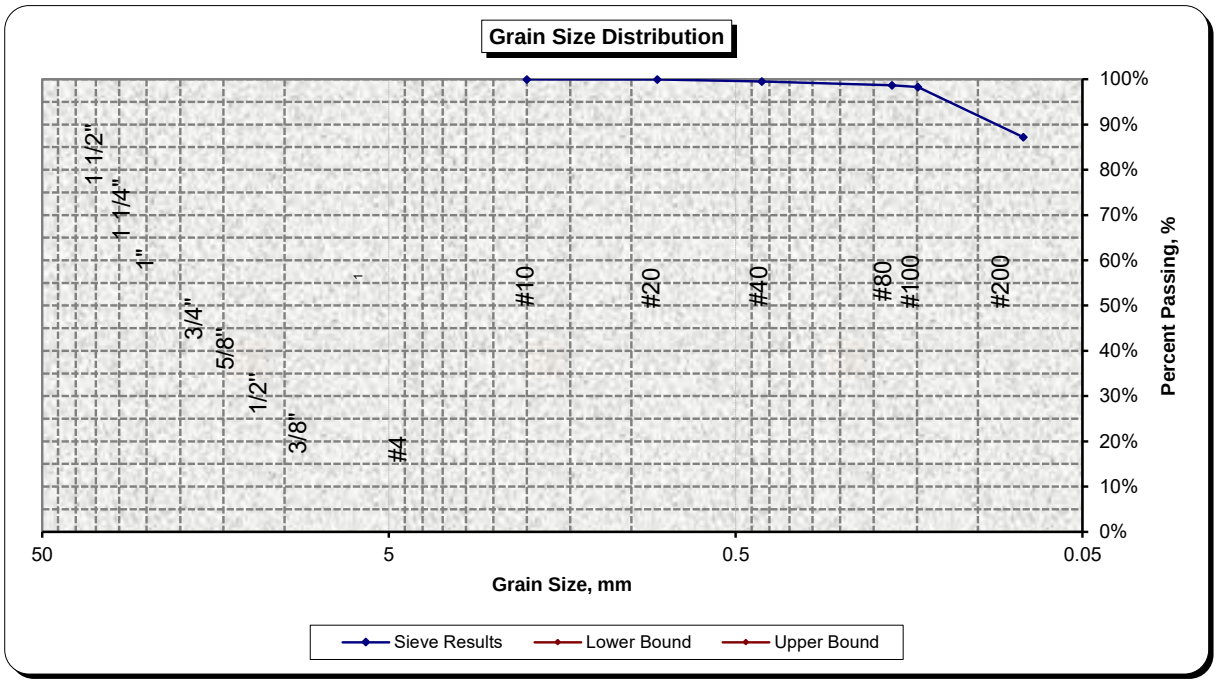
Sampled in Accordance with ASTM D 75 and reduced in accordance with ASTM C 702 or D 421 unless otherwise noted.

SIEVE ANALYSIS OF SOILS
ASTM C 136/D 1140

Sieve Size:	Percent Passing:	Specs:	Sieve Size:	Percent Passing:	Specs:
4"			#4		
3"			#8		
2 1/2"			#10	100%	
2"			#16		
1 1/2"			#20	100%	
1 1/4"			#30		
1"			#40	99%	
3/4"			#50		
5/8"			#60		
1/2"			#80	99%	
3/8"			#100	98%	
1/4"			#200	87.2%	

SOIL MOISTURE DETERMINATION
ASTM D 2216

14.7%



REVIEWED BY:
Dee Burrie, Technical Director

Northwest Agricultural Consultants

2545 W Falls Avenue
Kennewick, WA 99336
509.783.7450
www.nwag.com
lab@nwag.com

PAP-Accredited
NAPT

BAER Testing Inc.
1106 Ledwich Ave.
Yakima, WA 98902

Report: 54850-1-1
Date: April 6, 2021
Project Name: Dutch Bros-Wellsian
Project Number:

Sample ID	Organic Matter	Cation Exchange Capacity
TP-1 @ 9.5’	1.86%	19.3 meq/100g
TP-3 @ 9.0’	0.93%	12.7 meq/100g
Method	**ASTM D2974**	**EPA 9081**

Sample ID	Sand	Silt	Clay	Texture Class
TP-1 @ 9.5’	42.5%	50.0%	7.5%	Silt Loam
TP-3 @ 9.0’	32.5%	55.0%	12.5%	Silt Loam

APPENDIX E
Well Log

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

3456

Start Card No. 036305

Water Right Permit No. A

(1) **OWNER:** Name Molly Thruson   Address Valleyview

(2) **LOCATION OF WELL:** County Benton   NE ¼ NE ¼ Sec. 15 T. 9 N., R. 28 W.M.

(2a) **STREET ADDDRESS OF WELL** (or nearest address)

(3) **PROPOSED USE:** ☒ Domestic ☐ Irrigation ☐ DeWater   Industrial ☐ Test Well ☐   Municipal ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one)
Abandoned ☐   New well ☒ Deepened ☐ Reconditioned ☐   Method: Dug ☐ Cable ☐ Rotary ☒   Bored ☐ Driven ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 205 feet. Depth of completed well 205 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 6" Diam. from -1 ft. to 37 ft.
Welded ☒ Liner installed ☒ Threaded ☐   5" Diam. from 20 ft. to 205 ft.
" Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used Torch
SIZE of perforations 1/8 in. by 6 in.
73 perforations from 195 ft. to 205 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 26 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP:** Manufacturer's Name
Type: H.P.

(8) **WATER LEVELS:** Land-surface elevation above mean sea level ft.
Static level 43 ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.))

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 150 gal./min. with stem set at 180 ft. for 2 hrs.
Artesian flow g.p.m. Date
Temperature of water   Was a chemical analysis made? Yes ☐ No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Ash	0	20
Redish Brocken Basalt	20	32
Hard Black Basalt	32	126
Blue clay	126	147
Hard Black Basalt	147	190
Brocken Black Basalt water Bearing	190	205

RECEIVED
AUG - 1 1990
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

ENTERED

Work started 6/26/90, 19 . Completed 6/27, 1990

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME ST George Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 701 S 1st Ave
(Signed) [signature] (WELL DRILLER) License No. 0483
Contractor's Registration No. 601-018-715 Date 6/27, 1990

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

APPENDIX E
USGS Maps

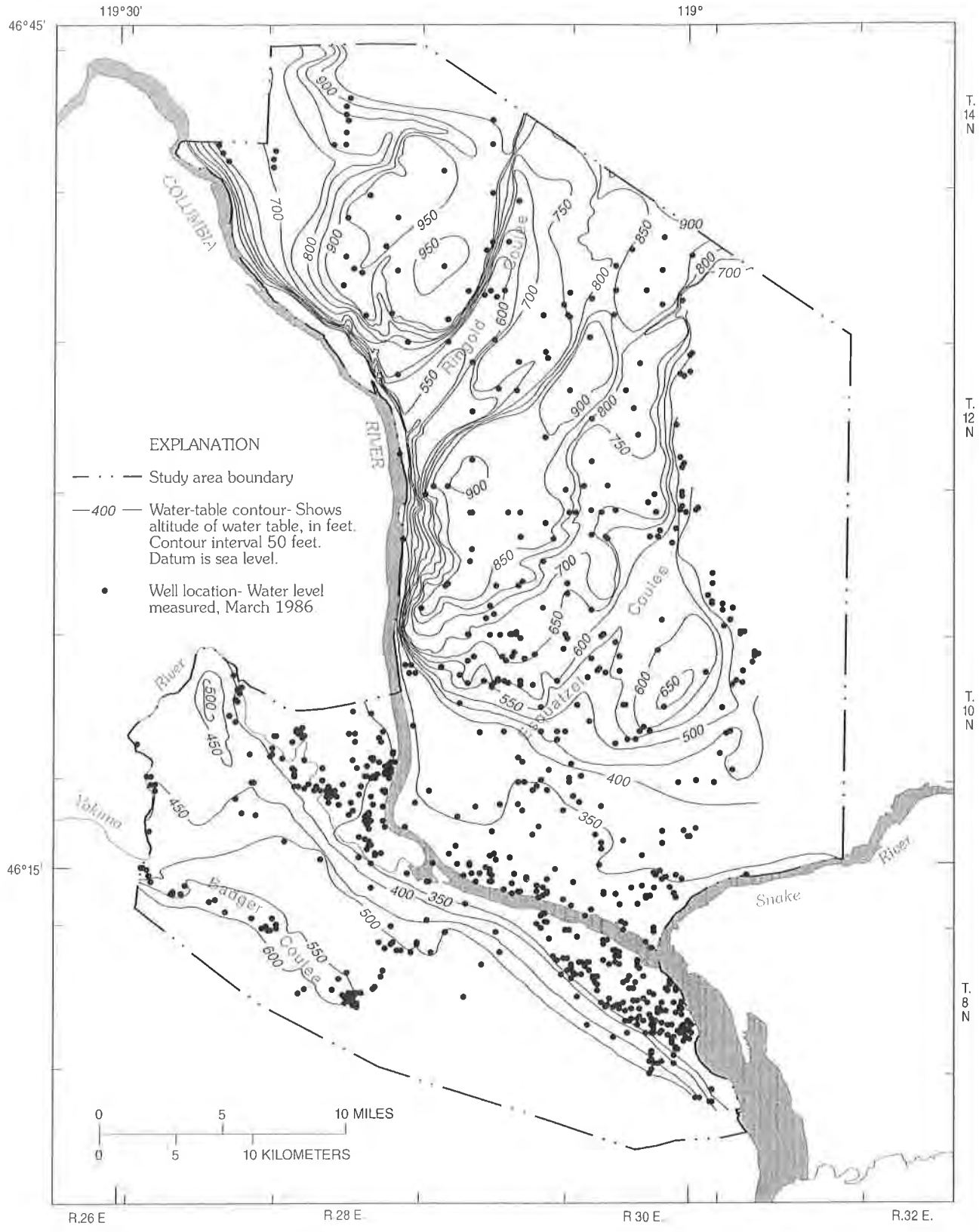


Figure 26.--Water-table altitude, March 1986

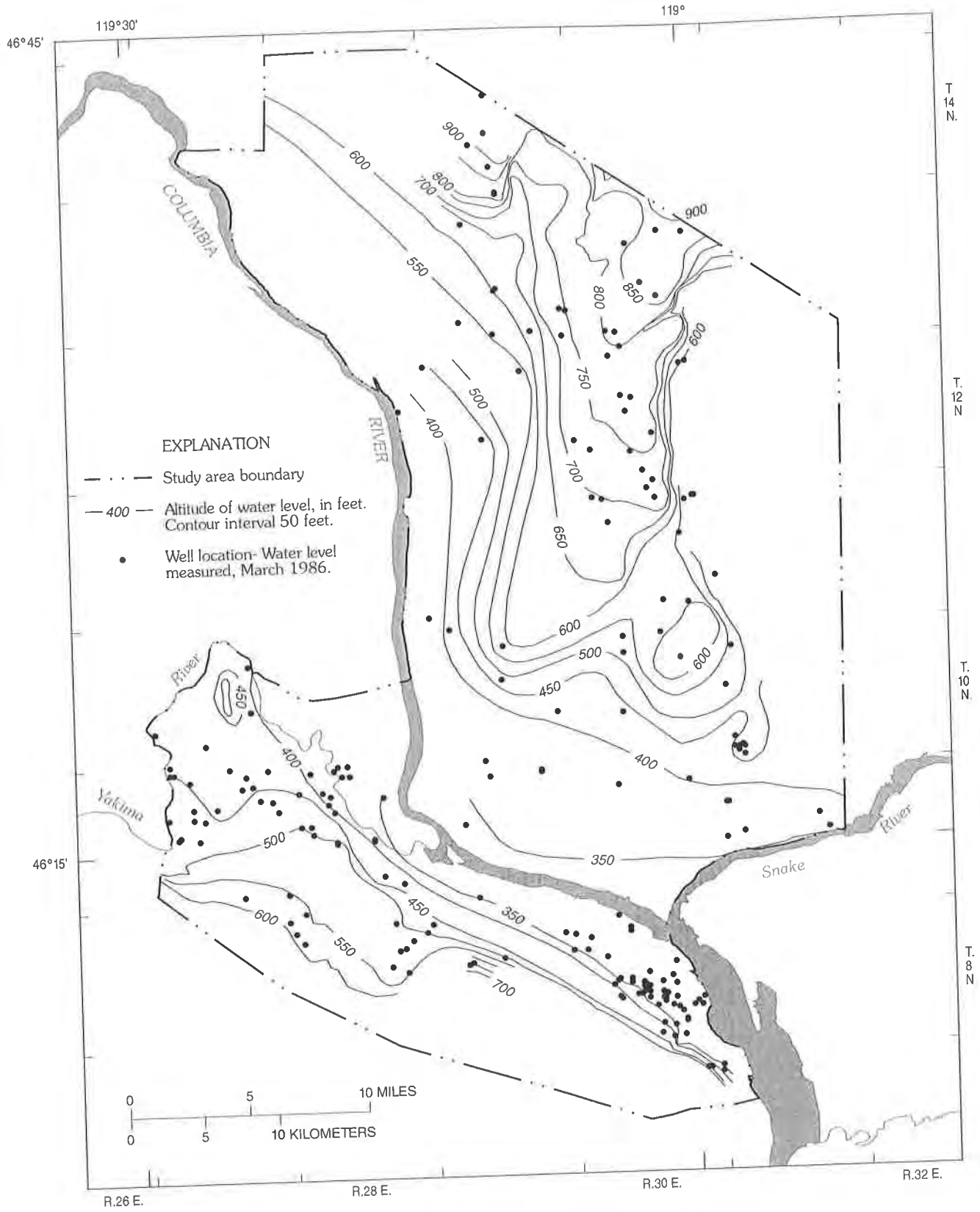


Figure 27.--Water-level altitudes in the Saddle Mountains Basalt, March 1986.

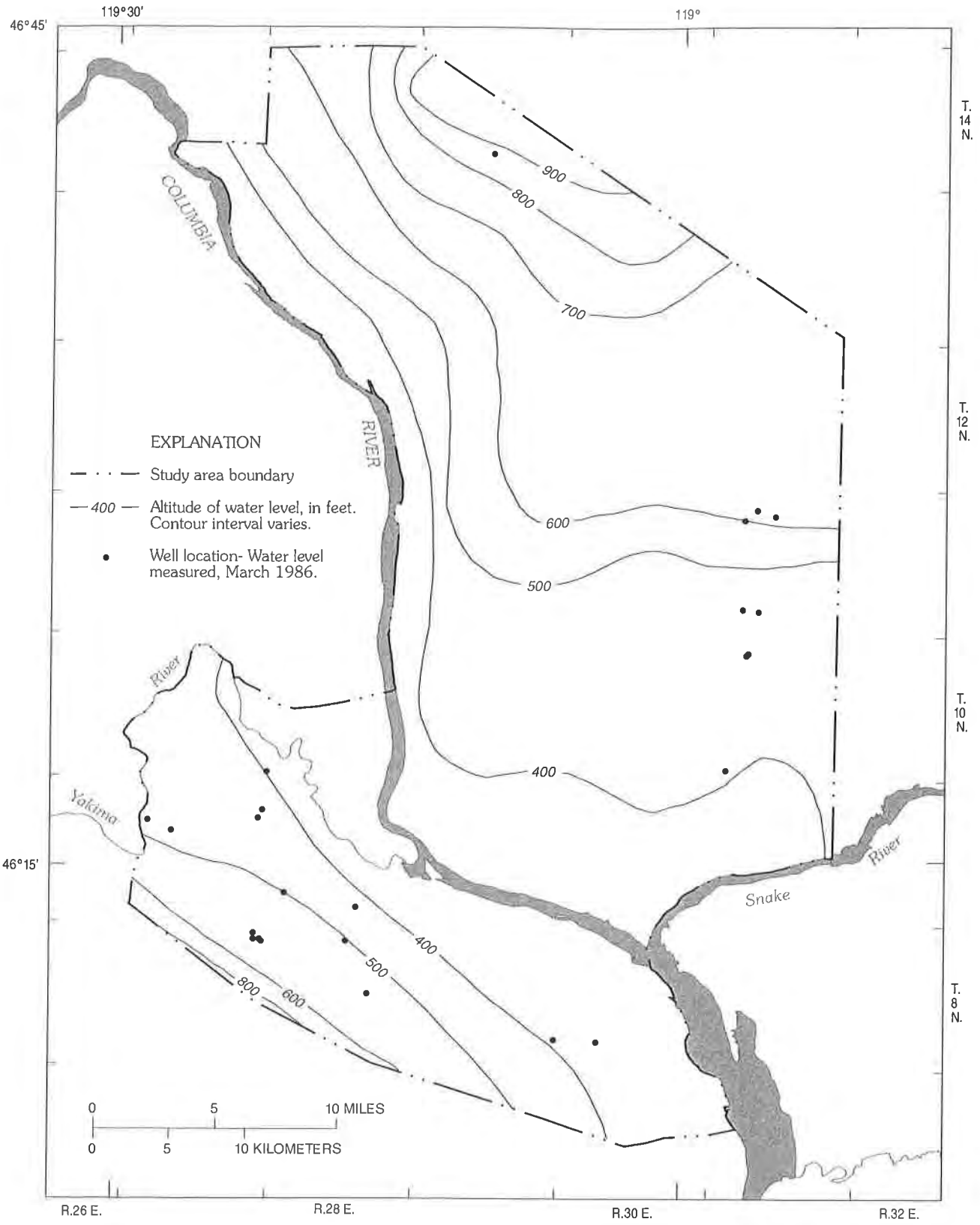


Figure 28.--Water-level altitudes in the Wanapum Basalt, March 1986 (Modified from Bauer, Vaccaro, and Lane, 1985).

Stormwater Management Design Report

DUTCH BROS - RICHLAND

1347 ELLIOT ST

Richland, WA 99352

Prepared For:

Elite Construction
5804 Road 90 Ste A
Pasco, WA 99301

Prepared By:

Nathan Machiela, PE
Robert McLeod
Project No. 20217

Preparation Date:

May 19, 2021

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1.0 PROJECT AND SITE INFORMATION

The Dutch Bros – Richland project site is located at 1347 Elliot St, Richland WA 99352, see figures 1 and 2 below. The existing site is undeveloped and zoned as C-3 – General Business. The site is bordered by similarly zoned properties. The project proposes a new 800 sf Dutch Bros drive thru, and a 3,360-sf commercial building. Civil improvements include paved drive aisles, parking lots, and utility services. The site will be accessed off Stevens Dr and Wellsian Way. The existing topography is flat with a very gradual downslope from east to west with approximately 4 feet of elevation change. Construction for the proposed improvement is expected to take place in Spring of 2021.

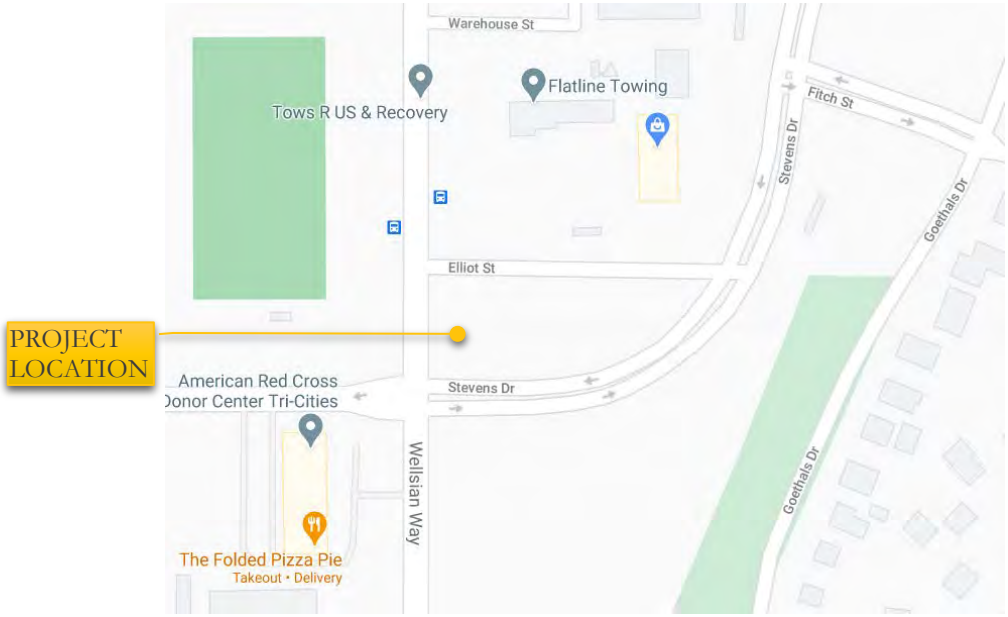


Figure 1. Vicinity Map.
(Google Maps Image)

Figure 2. Existing Site Conditions.
(Google Earth Image)

Baer Testing & Engineering, Inc. prepared a Geotechnical Engineering Study for the project on April 20, 2021. (Project No: 21-079) They performed three test pits and encountered Silt (ML), Gravelly Silty with Sand (ML), and Silty Gravel with Sand (GM). No groundwater or bedrock was encountered in any of the test pits. They also performed two infiltration tests and found infiltration rates of 3 in/hr and 1 in/hr. See Appendix B for the Geotech Report.

Design infiltration rates of 1.5 and 0.5 in/hr were used, depending on the location of the infiltration tests in relation to the proposed infiltration facilities, and employing a safety factor of 2. The 0.5 in/hr rate was used, unless the infiltration facility was in the immediate vicinity of the infiltration test that returned a rate of 3 in/hr.

See Table 1 for a summary of the sub-catchments.

2.0 METHODOLOGY

The Stormwater Management Plan was developed in accordance with City of Richland Stormwater Design Requirements and the Stormwater Management Manual for Eastern Washington (SMMEW).

The stormwater modeling was performed using HydroCAD 10.0 and all stormwater calculations were completed utilizing the SCS TR-20 method. The on-site design storm event was the 25-Year, Type IA Design Storm having a 24-hour rainfall total of 1.6 inches per the 25-Year 24-Hour Isopluvials by NOAA Atlas 2 as referenced in the SMMEW.

Based on the soil classification, all impervious areas have a CN value of 98. An assumed time of concentration (TC) of 5.0 minutes was used as a minimum value.

3.0 STORMWATER MANAGEMENT PLAN AND DESIGN

The stormwater produced by the design storm event will be managed by the on-site storm-water system which includes rain leaders, catch basins and storm-piping to convey all stormwater to 3 underground infiltration trenches. The stormwater calculations anticipate that all on-site water will be directed to the infiltration systems.

Refer to Table 1 and 2 for the summary of the sub-catchments and infiltration systems and Appendix A for the stormwater calculations in the HydroCAD Report. The scope of this report includes stormwater runoff only. Refer to the summary below on how the stormwater management plan meets the Core Elements of the SMMEW:

1. Stormwater Site Plan
   The corresponding construction drawings for the Dutch Bros – Richland project include a detailed stormwater site plan. The HydroCAD Report in Appendix A specifically addresses the sub-catchment areas.

2. Construction Stormwater Pollution Prevention
   The corresponding construction drawings for the Dutch Bros - Richland project provide directions related to a construction stormwater pollution prevention plan.

3. Source Control of Pollution
   Source control for the site includes operational source control to prevent and cleanup spills and maintaining the stormwater treatment facilities in accordance with the Stormwater System Operation and Maintenance notes provided on the corresponding construction drawings. Furthermore, all runoff will be kept and infiltrated onsite.

4. Preservation of Natural Drainage Systems
   All post-development stormwater runoff will be kept and disposed of on-site to preserve the natural drainage system.

5. Runoff Treatment
   Baer Testing & Engineering, Inc had lab tests performed on soil samples taken from the site. The tests identified the catch exchange capacities of the soils to be 12.7 meq/100g and 19.3 meq/100g. The sand to silt/clay ratio was 0.74 and 0.48. See Appendix B for the Geotech Report. Based on these parameters, the vadose zone treatment capacity is classified as high per table 5.21 of the Stormwater Management Manual for Eastern Washington. The Trip Generation Manual of the ITE identifies the site's peak hour trip generation as 37 trips for the parking lots. The peak # of trips passing through the drive thru is identified as 310 trips per hour. (Codes 932 and 938 were used) Based on the trip count, the site is classified as a low pollutant loading site. Per table 5.23, the required treatment is a two-stage dry well. The proposed catch basins with down-turned elbows at the entrances of the infiltration trenches satisfy the two-stage drywell requirement.

6. Flow Control
   All site runoff will be captured and disposed of on-site via subsurface infiltration systems, therefore flow control criteria has been met.

7. Operation and Maintenance
   Control of oil and solids in the stormwater entering the infiltration infrastructure is the critical component of sustained operation. The inverted tees in the catch basins limit the amount of oil and solids entering the subsurface infiltration trenches. The geotextile fabric placed around the infiltration trench rock pockets protects from external sediments clogging the system. The infiltration trenches are accessible from the catch basins installed at their entrances for sediment removal, in the event of decreased performance. Stormwater System Operation and Maintenance notes are included on the corresponding construction sheets.

8. Local Requirements
   No additional requirements known.

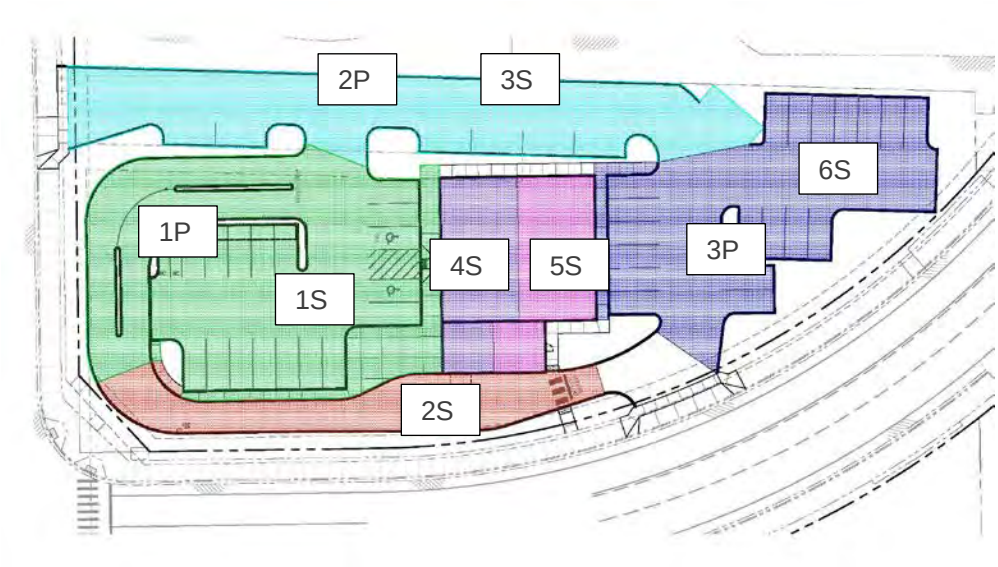


Figure 3. Site Plan and Sub-catchment Map.

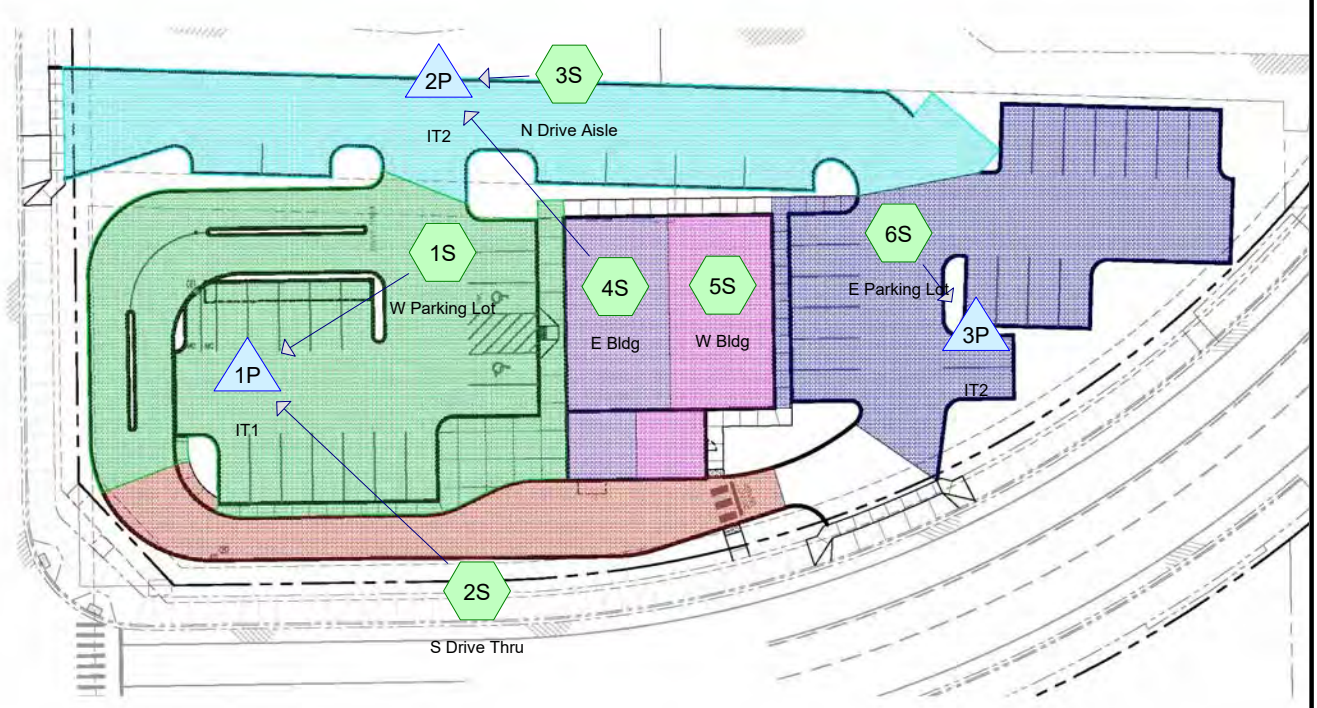
Table 1. Subcatchment Summary.

Subcatchment		Description	Impervious Area	CN	Routed to
	1S	Pavement / Concrete	11,703 sf	98	1P
	2S	Pavement / Concrete	3,354 sf	98	1P
	3S	Pavement / Concrete	7,300 sf	98	2P
	4S	Roof	2,080 sf	98	2P
	5S	Roof	2,080 sf	98	3P
	6S	Pavement / Concrete	7,893 sf	98	3P

Table 2. Infiltration System Summary.

Infiltration System	Description	Storage Description	Subcatchments	Available Storage	Peak Storage	Peak Elevation
1P	Infiltration Trench	14.0'W x 30.0'L x 4.0'H w/ (3)20Lf 8" PDP	1S, 2S	519 cf	427 cf	3.38'
2P	Infiltration Trench	10.0'W x 45.0'L x 4.0'H w/ (2)35Lf 8" PDP	3S, 4S	557 cf	456 cf	3.38'
3P	Infiltration Trench	8.0'W x 45.0'L x 4.0'H w/ 35Lf 8" PDP	5S, 6S	441 cf	372 cf	3.44'

APPENDIX A
HydroCAD Report



Subcat Reach Pond Link

Routing Diagram for 20217 HydroCAD
Prepared by Knutzen Engineering, Printed 5/19/2021

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Type 1A 25yr	Type IA 24-hr		Default	24.00	1	1.60	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
30,250	98	Pvmt / Conc (1S, 2S, 3S, 6S)
4,160	98	Roof (4S, 5S)
34,410	**98**	**TOTAL AREA**

Time span=0.00-40.00 hrs, dt=0.05 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: W Parking Lot Runoff Area=11,703 sf 100.00% Impervious Runoff Depth=1.38"
Tc=5.0 min CN=98 Runoff=0.10 cfs 1,345 cf

Subcatchment 2S: S Drive Thru Runoff Area=3,354 sf 100.00% Impervious Runoff Depth=1.38"
Tc=5.0 min CN=98 Runoff=0.03 cfs 385 cf

Subcatchment 3S: N Drive Aisle Runoff Area=7,300 sf 100.00% Impervious Runoff Depth=1.38"
Tc=5.0 min CN=98 Runoff=0.06 cfs 839 cf

Subcatchment 4S: E Bldg Runoff Area=2,080 sf 100.00% Impervious Runoff Depth=1.38"
Tc=5.0 min CN=98 Runoff=0.02 cfs 239 cf

Subcatchment 5S: W Bldg Runoff Area=2,080 sf 100.00% Impervious Runoff Depth=1.38"
Tc=5.0 min CN=98 Runoff=0.02 cfs 239 cf

Subcatchment 6S: E Parking Lot Runoff Area=7,893 sf 100.00% Impervious Runoff Depth=1.38"
Tc=5.0 min CN=98 Runoff=0.07 cfs 907 cf

Pond 1P: IT1 Peak Elev=103.38' Storage=427 cf Inflow=0.12 cfs 1,730 cf
Outflow=0.02 cfs 1,730 cf

Pond 2P: IT2 Peak Elev=103.38' Storage=456 cf Inflow=0.08 cfs 1,078 cf
Outflow=0.01 cfs 1,061 cf

Pond 3P: IT2 Peak Elev=103.44' Storage=372 cf Inflow=0.07 cfs 907 cf
Outflow=0.01 cfs 905 cf

Total Runoff Area = 34,410 sf Runoff Volume = 3,953 cf Average Runoff Depth = 1.38"
0.00% Pervious = 0 sf 100.00% Impervious = 34,410 sf

Summary for Subcatchment 1S: W Parking Lot

[49] Hint: Tc<2dt may require smaller dt

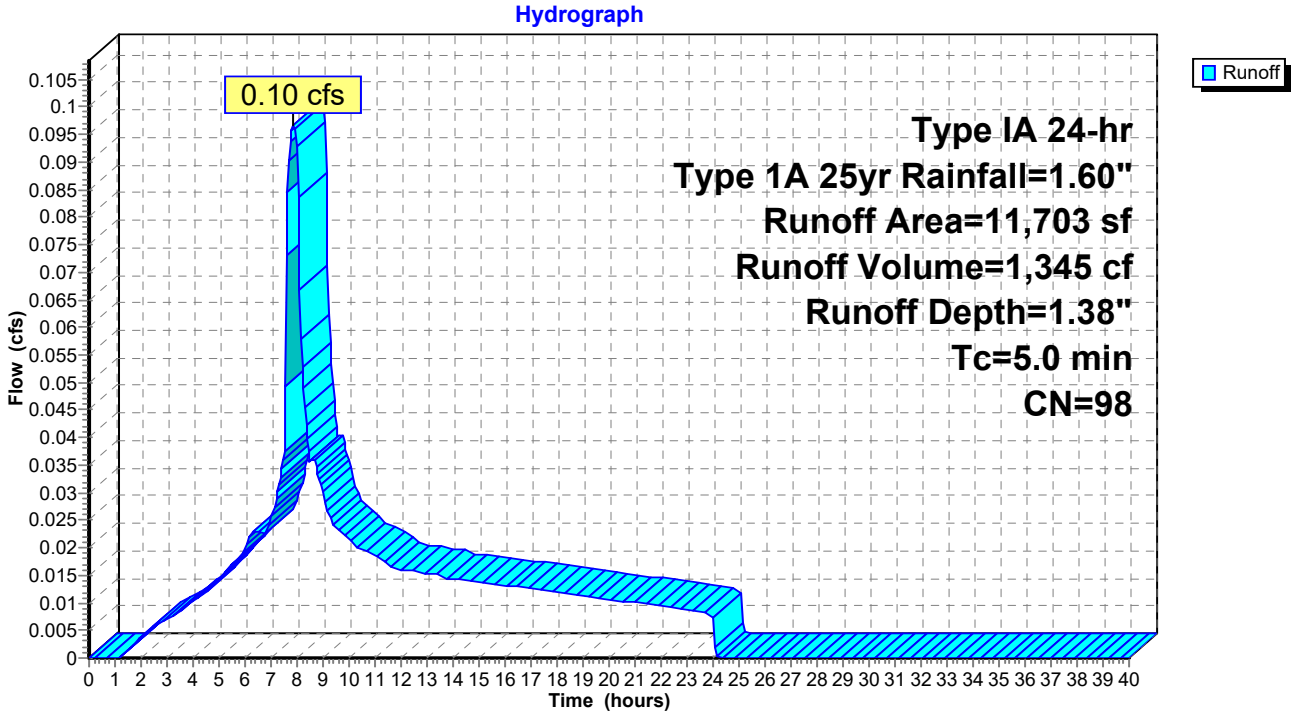
Runoff = 0.10 cfs @ 7.87 hrs, Volume= 1,345 cf, Depth= 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

	Area (sf)	CN	Description
*	11,703	98	Pvmt / Conc
	11,703		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1S: W Parking Lot



Summary for Subcatchment 2S: S Drive Thru

[49] Hint: Tc<2dt may require smaller dt

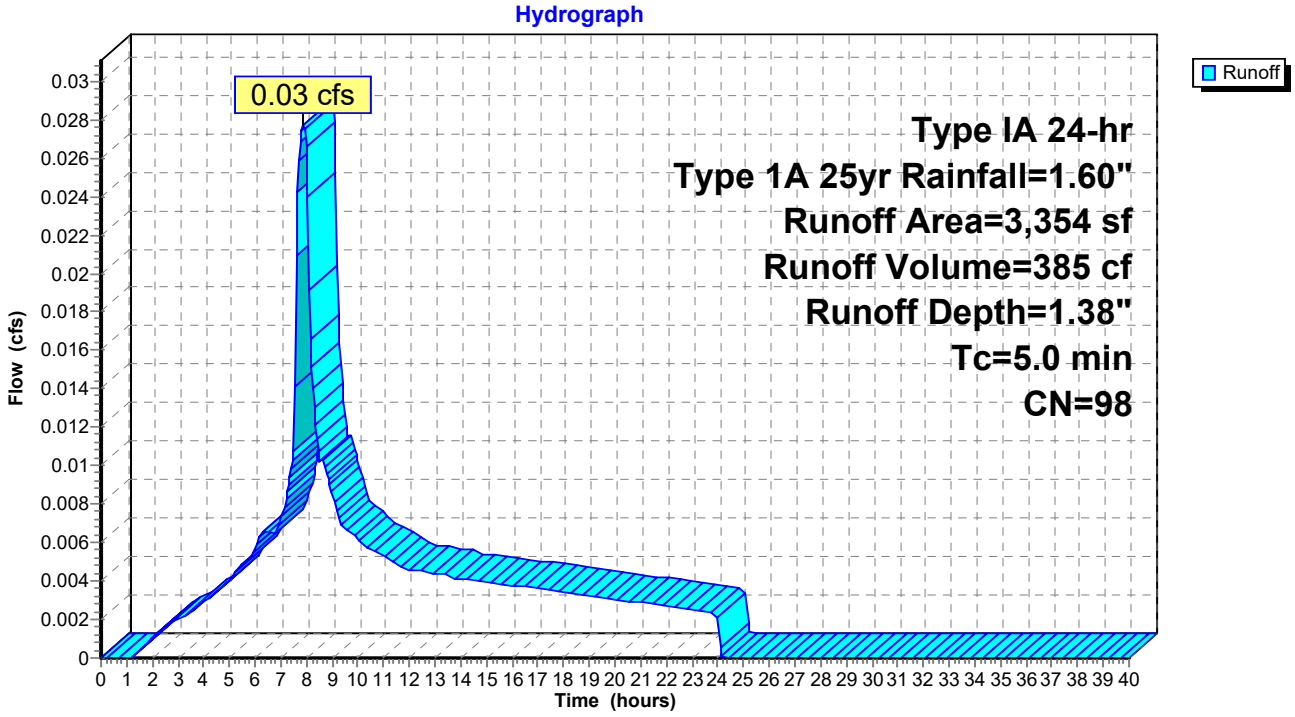
Runoff = 0.03 cfs @ 7.87 hrs, Volume= 385 cf, Depth= 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

	Area (sf)	CN	Description
*	3,354	98	Pvmt / Conc
	3,354		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: S Drive Thru



Summary for Subcatchment 3S: N Drive Aisle

[49] Hint: Tc<2dt may require smaller dt

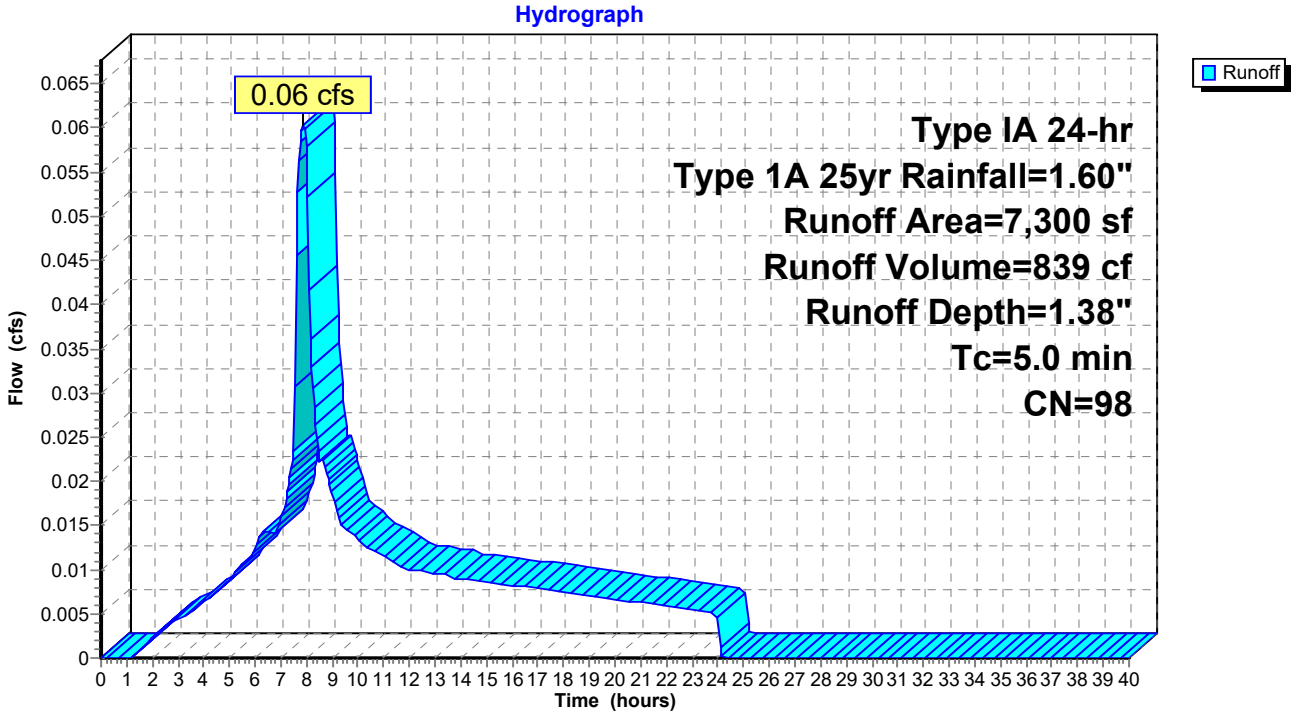
Runoff = 0.06 cfs @ 7.87 hrs, Volume= 839 cf, Depth= 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

	Area (sf)	CN	Description
*	7,300	98	Pvmt / Conc
	7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3S: N Drive Aisle



Summary for Subcatchment 4S: E Bldg

[49] Hint: Tc<2dt may require smaller dt

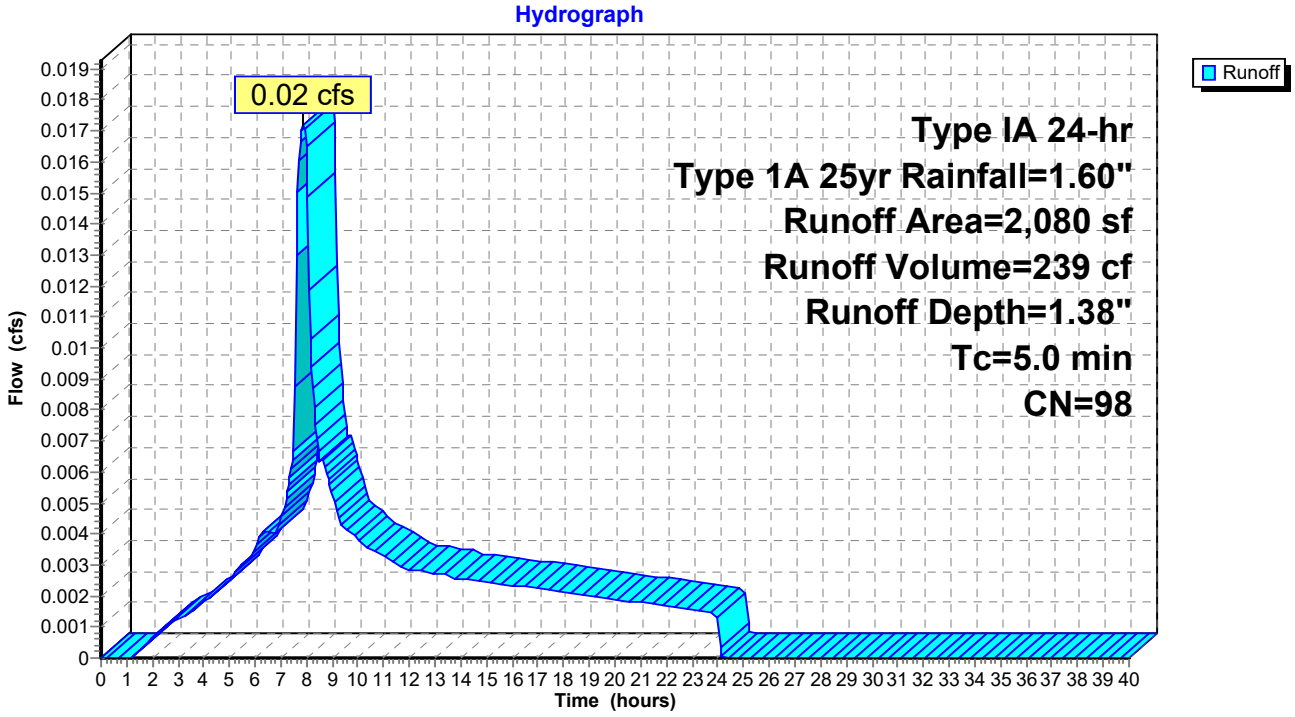
Runoff = 0.02 cfs @ 7.87 hrs, Volume= 239 cf, Depth= 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

	Area (sf)	CN	Description
*	2,080	98	Roof
	2,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 4S: E Bldg



Summary for Subcatchment 5S: W Bldg

[49] Hint: Tc<2dt may require smaller dt

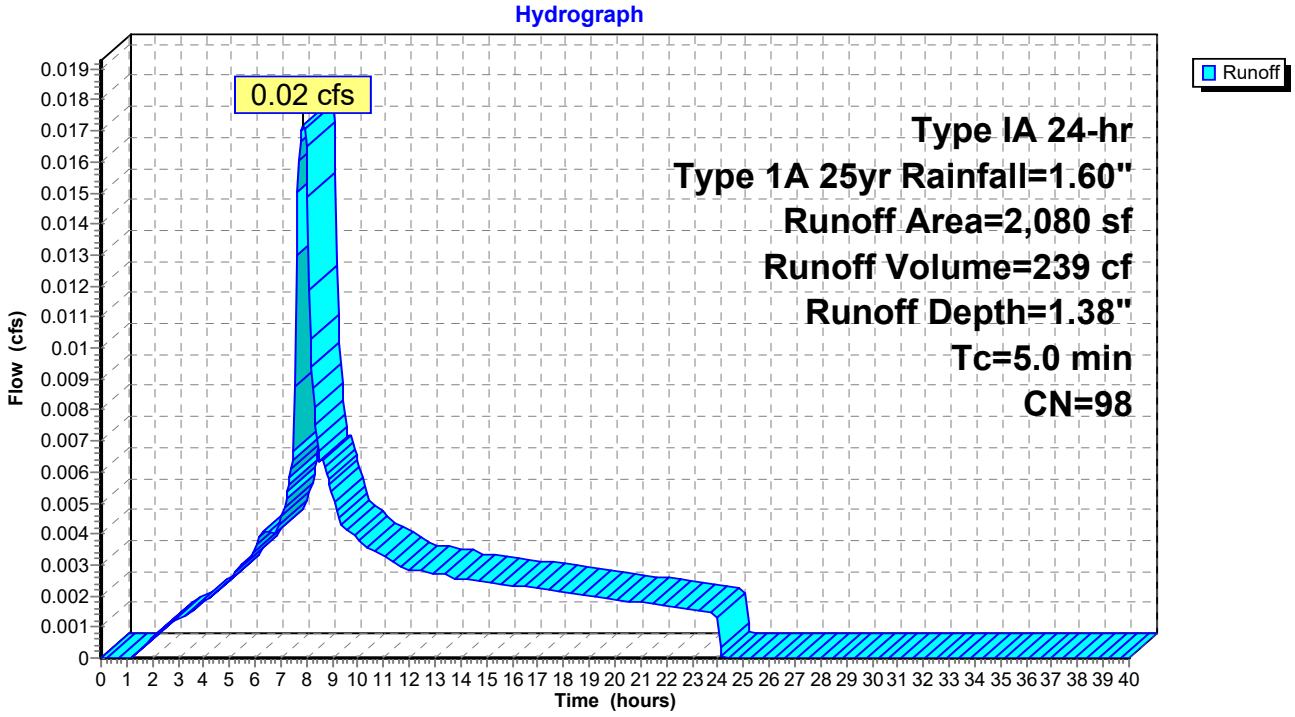
Runoff = 0.02 cfs @ 7.87 hrs, Volume= 239 cf, Depth= 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

	Area (sf)	CN	Description
*	2,080	98	Roof
	2,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 5S: W Bldg



Summary for Subcatchment 6S: E Parking Lot

[49] Hint: Tc<2dt may require smaller dt

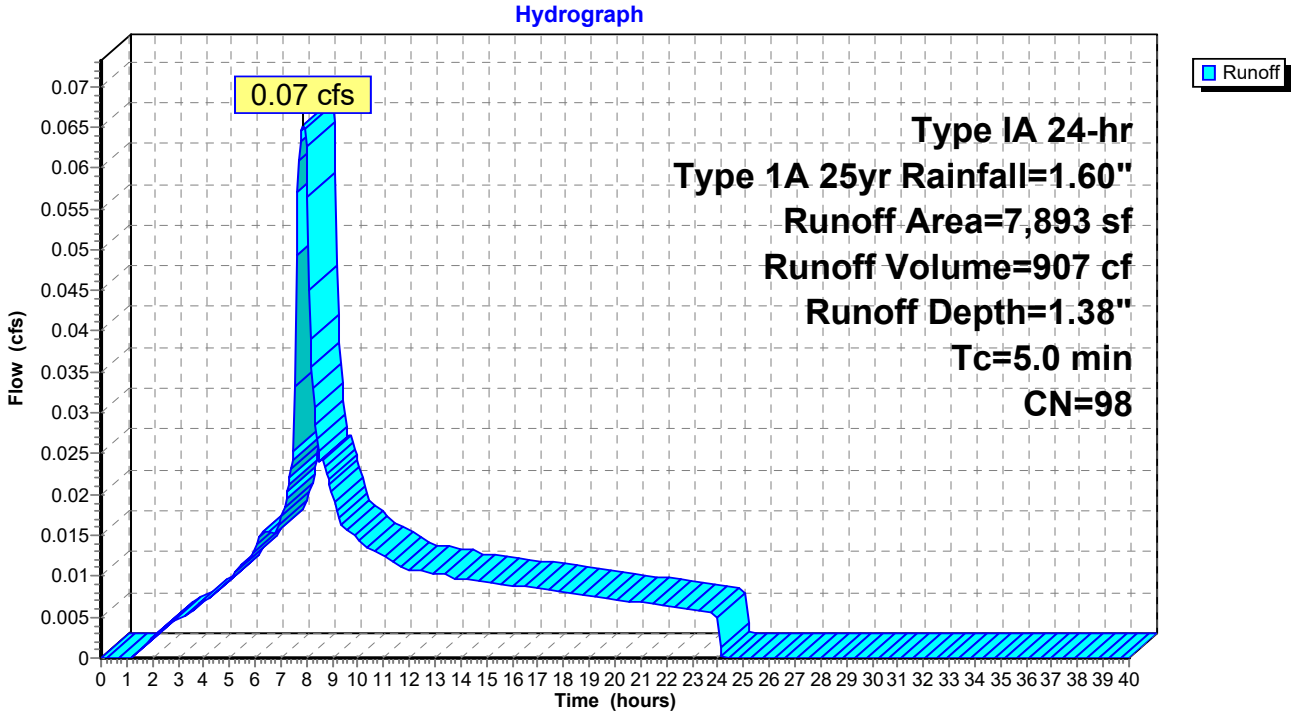
Runoff = 0.07 cfs @ 7.87 hrs, Volume= 907 cf, Depth= 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

	Area (sf)	CN	Description
*	7,893	98	Pvmt / Conc
	7,893		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 6S: E Parking Lot



Summary for Pond 1P: IT1

Inflow Area = 15,057 sf,100.00% Impervious, Inflow Depth = 1.38" for Type 1A 25yr event
Inflow = 0.12 cfs @ 7.87 hrs, Volume= 1,730 cf
Outflow = 0.02 cfs @ 10.81 hrs, Volume= 1,730 cf, Atten= 80%, Lag= 176.3 min
Discarded = 0.02 cfs @ 10.81 hrs, Volume= 1,730 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Peak Elev= 103.38' @ 10.81 hrs Surf.Area= 420 sf Storage= 427 cf

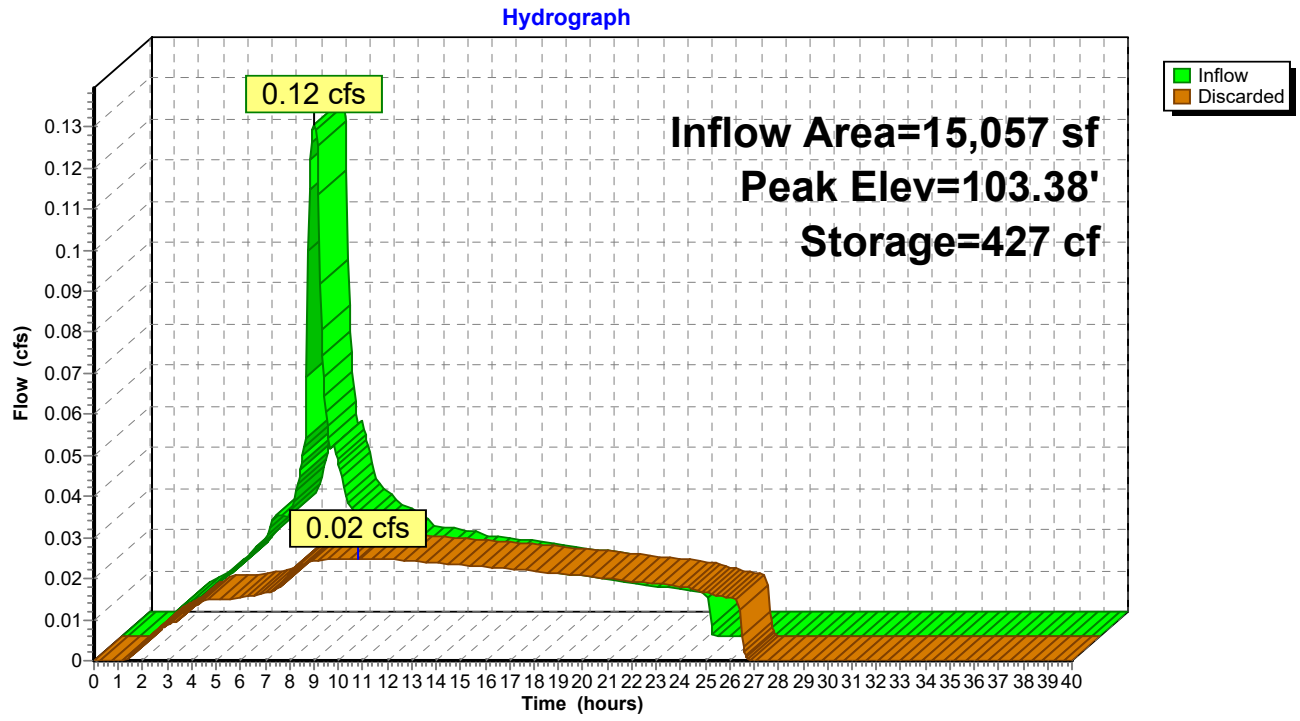
Plug-Flow detention time= 192.0 min calculated for 1,728 cf (100% of inflow)
Center-of-Mass det. time= 192.0 min (880.7 - 688.7)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	498 cf	**14.00'W x 30.00'L x 4.00'H Prismatoid** 1,680 cf Overall - 21 cf Embedded = 1,659 cf x 30.0% Voids
#2	103.33'	21 cf	**8.0" Round Pipe Storage** x 3 Inside #1 L= 20.0'
		519 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	100.00'	**1.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.02 cfs @ 10.81 hrs HW=103.38' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.02 cfs)

Pond 1P: IT1



Hydrograph for Pond 1P: IT1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	100.00	0.00
1.00	0.00	0	100.00	0.00
2.00	0.00	1	100.01	0.00
3.00	0.01	3	100.02	0.01
4.00	0.01	4	100.04	0.01
5.00	0.02	9	100.07	0.01
6.00	0.03	32	100.26	0.02
7.00	**0.03**	80	100.63	0.02
8.00	**0.12**	280	102.22	0.02
9.00	0.04	400	103.17	0.02
10.00	0.03	**424**	**103.36**	**0.02**
11.00	0.02	**426**	**103.38**	**0.02**
12.00	0.02	416	103.30	0.02
13.00	0.02	400	103.18	0.02
14.00	0.02	383	103.04	0.02
15.00	0.02	363	102.88	0.02
16.00	0.02	342	102.72	0.02
17.00	0.02	321	102.54	0.02
18.00	0.02	298	102.36	0.02
19.00	0.01	274	102.18	0.02
20.00	0.01	250	101.98	0.02
21.00	0.01	224	101.78	0.02
22.00	0.01	198	101.57	0.02
23.00	0.01	172	101.36	0.02
24.00	0.01	144	101.15	0.02
25.00	0.00	85	100.67	0.02
26.00	0.00	27	100.22	0.02
27.00	0.00	0	100.00	0.00
28.00	0.00	0	100.00	0.00
29.00	0.00	0	100.00	0.00
30.00	0.00	0	100.00	0.00
31.00	0.00	0	100.00	0.00
32.00	0.00	0	100.00	0.00
33.00	0.00	0	100.00	0.00
34.00	0.00	0	100.00	0.00
35.00	0.00	0	100.00	0.00
36.00	0.00	0	100.00	0.00
37.00	0.00	0	100.00	0.00
38.00	0.00	0	100.00	0.00
39.00	0.00	0	100.00	0.00
40.00	0.00	0	100.00	0.00

Summary for Pond 2P: IT2

Inflow Area = 9,380 sf,100.00% Impervious, Inflow Depth = 1.38" for Type 1A 25yr event
Inflow = 0.08 cfs @ 7.87 hrs, Volume= 1,078 cf
Outflow = 0.01 cfs @ 18.12 hrs, Volume= 1,061 cf, Atten= 88%, Lag= 615.0 min
Discarded = 0.01 cfs @ 18.12 hrs, Volume= 1,061 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Peak Elev= 103.38' @ 18.12 hrs Surf.Area= 450 sf Storage= 456 cf

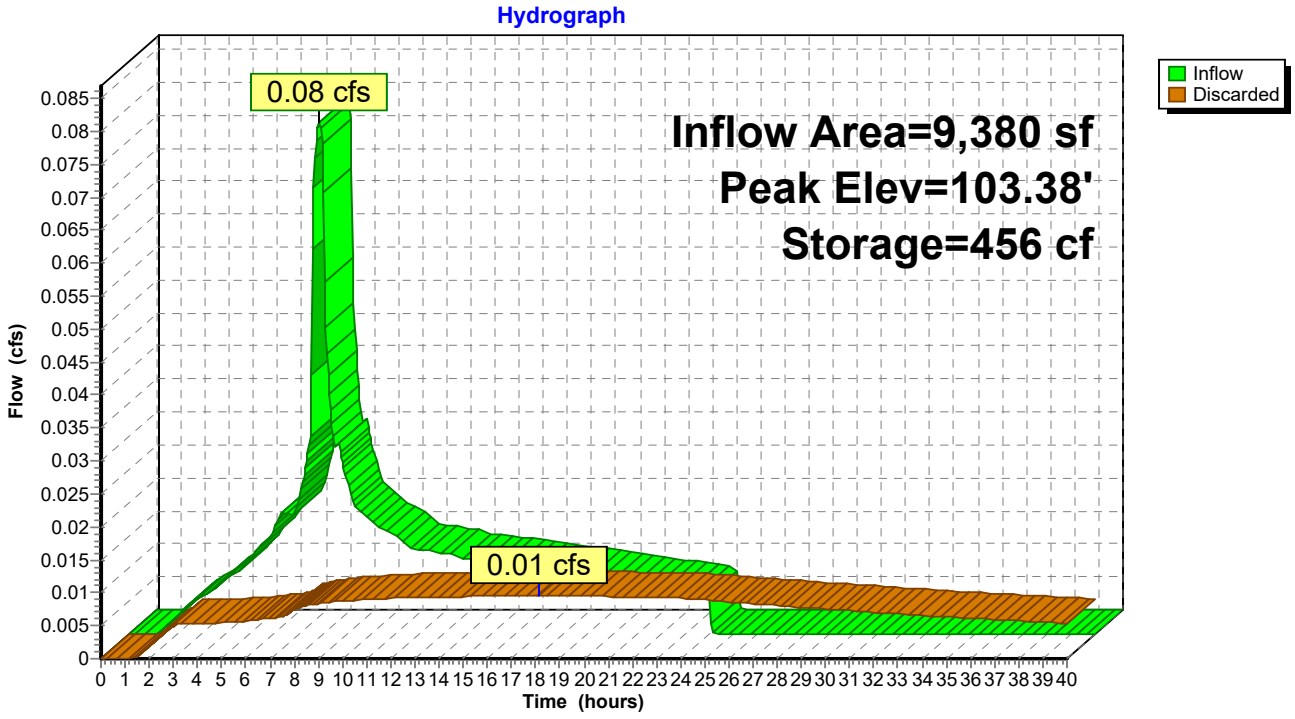
Plug-Flow detention time= 570.2 min calculated for 1,060 cf (98% of inflow)
Center-of-Mass det. time= 559.1 min (1,247.8 - 688.7)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	533 cf	**10.00'W x 45.00'L x 4.00'H Prismatoid** 1,800 cf Overall - 24 cf Embedded = 1,776 cf x 30.0% Voids
#2	103.33'	24 cf	**8.0" Round Pipe Storage** x 2 Inside #1 L= 35.0'
		557 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	100.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.01 cfs @ 18.12 hrs HW=103.38' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.01 cfs)

Pond 2P: IT2



Hydrograph for Pond 2P: IT2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	100.00	0.00
1.00	0.00	0	100.00	0.00
2.00	0.00	2	100.01	0.00
3.00	0.01	5	100.04	0.00
4.00	0.01	11	100.08	0.01
5.00	0.01	26	100.19	0.01
6.00	0.02	55	100.40	0.01
7.00	**0.02**	98	100.73	0.01
8.00	**0.07**	240	101.78	0.01
9.00	0.02	338	102.50	0.01
10.00	0.02	377	102.79	0.01
11.00	0.02	403	102.98	0.01
12.00	0.01	419	103.10	0.01
13.00	0.01	431	103.19	0.01
14.00	0.01	440	103.26	0.01
15.00	0.01	447	103.31	0.01
16.00	0.01	452	103.35	0.01
17.00	0.01	455	103.37	0.01
18.00	0.01	**456**	**103.38**	**0.01**
19.00	0.01	**456**	**103.37**	**0.01**
20.00	0.01	453	103.36	0.01
21.00	0.01	449	103.33	0.01
22.00	0.01	443	103.28	0.01
23.00	0.01	436	103.23	0.01
24.00	0.01	427	103.16	0.01
25.00	0.00	396	102.93	0.01
26.00	0.00	364	102.70	0.01
27.00	0.00	333	102.47	0.01
28.00	0.00	304	102.25	0.01
29.00	0.00	275	102.04	0.01
30.00	0.00	248	101.83	0.01
31.00	0.00	221	101.64	0.01
32.00	0.00	195	101.45	0.01
33.00	0.00	170	101.26	0.01
34.00	0.00	146	101.08	0.01
35.00	0.00	123	100.91	0.01
36.00	0.00	100	100.74	0.01
37.00	0.00	78	100.58	0.01
38.00	0.00	57	100.42	0.01
39.00	0.00	37	100.27	0.01
40.00	0.00	17	100.13	0.01

Summary for Pond 3P: IT2

Inflow Area = 7,893 sf,100.00% Impervious, Inflow Depth = 1.38" for Type 1A 25yr event
Inflow = 0.07 cfs @ 7.87 hrs, Volume= 907 cf
Outflow = 0.01 cfs @ 17.22 hrs, Volume= 905 cf, Atten= 87%, Lag= 561.0 min
Discarded = 0.01 cfs @ 17.22 hrs, Volume= 905 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Peak Elev= 103.44' @ 17.22 hrs Surf.Area= 360 sf Storage= 372 cf

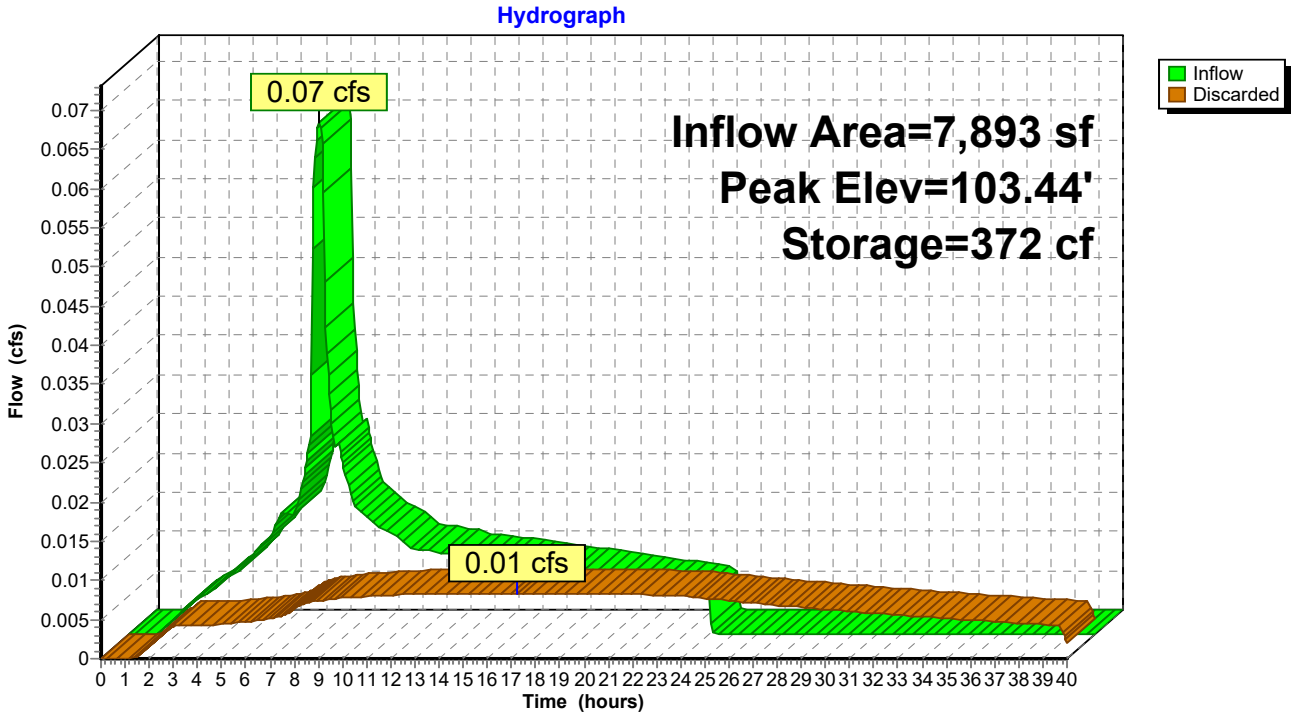
Plug-Flow detention time= 546.6 min calculated for 905 cf (100% of inflow)
Center-of-Mass det. time= 545.1 min (1,233.8 - 688.7)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	428 cf	**8.00'W x 45.00'L x 4.00'H Prismatoid** 1,440 cf Overall - 12 cf Embedded = 1,428 cf x 30.0% Voids
#2	103.33'	12 cf	**8.0" Round Pipe Storage** Inside #1 L= 35.0'
		441 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	100.00'	**0.500 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.01 cfs @ 17.22 hrs HW=103.44' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.01 cfs)

Pond 3P: IT2



Hydrograph for Pond 3P: IT2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	100.00	0.00
1.00	0.00	0	100.00	0.00
2.00	0.00	2	100.02	0.00
3.00	0.00	4	100.04	0.00
4.00	0.01	10	100.09	0.00
5.00	0.01	23	100.22	0.00
6.00	0.01	48	100.44	0.00
7.00	**0.02**	85	100.79	0.01
8.00	**0.06**	204	101.89	0.01
9.00	0.02	285	102.64	0.01
10.00	0.01	317	102.93	0.01
11.00	0.01	337	103.12	0.01
12.00	0.01	349	103.23	0.01
13.00	0.01	358	103.31	0.01
14.00	0.01	364	103.37	0.01
15.00	0.01	368	103.41	0.01
16.00	0.01	371	103.43	0.01
17.00	0.01	**372**	**103.44**	**0.01**
18.00	0.01	**372**	**103.43**	**0.01**
19.00	0.01	370	103.42	0.01
20.00	0.01	366	103.39	0.01
21.00	0.01	362	103.35	0.01
22.00	0.01	356	103.29	0.01
23.00	0.01	348	103.22	0.01
24.00	0.01	340	103.14	0.01
25.00	0.00	313	102.90	0.01
26.00	0.00	285	102.64	0.01
27.00	0.00	259	102.40	0.01
28.00	0.00	234	102.17	0.01
29.00	0.00	210	101.95	0.01
30.00	0.00	187	101.73	0.01
31.00	0.00	165	101.53	0.01
32.00	0.00	144	101.33	0.01
33.00	0.00	123	101.14	0.01
34.00	0.00	103	100.96	0.01
35.00	0.00	85	100.78	0.01
36.00	0.00	67	100.62	0.00
37.00	0.00	49	100.46	0.00
38.00	0.00	33	100.30	0.00
39.00	0.00	17	100.15	0.00
40.00	0.00	2	100.02	0.00

APPENDIX B
Geotech Report

DUTCH BROS
430 WELLSIAN WAY
RICHLAND, WASHINGTON

For:

MR. ANGELO CIULLA
ELITE CONSTRUCTION & DEVELOPMENT
5804 ROAD 90 SUITE A
PASCO, WA 99301

Provided By:

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509-469-3068
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April 20, 2021
Project No: 21-079

: (509) 469-3068
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Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

April 20, 2021

Mr. Angelo Ciulla
Elite Construction & Development
5804 Road 90 Suite A
Pasco, WA 99301

RE: GEOTECHNICAL ENGINEERING STUDY; PROPOSED DUTCH BROS. SHOP, 430 WELLSIAN WAY, RICHLAND, WASHINGTON

Dear Mr. Ciulla:

At your request, Baer Testing & Engineering, Inc. conducted a geotechnical engineering study for the proposed Dutch Bros. shop in Richland, Washington. This report presents the results of the field explorations, laboratory testing, and engineering analyses.

This report presents recommendations for site grading, drainage, utility construction, and seismic design. The report also provides recommendations for building foundation design as well as construction recommendations for the various project features.

We appreciate the opportunity to be of service. If you have questions or comments, please contact our office.

Sincerely,

BAER TESTING & ENGINEERING, INC.

Dee J. Burrie, P.E.
Chief Engineer

Enclosures: Geotechnical Engineering Report

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APPENDICIES

1.0 INTRODUCTION

Baer Testing & Engineering, Inc. (BAER) is pleased to present the results of our geotechnical engineering study for the proposed Dutch Bros. facility at 430 Wellsian Way, in Richland, Washington. This geotechnical engineering study provides subsurface information to support site grading, drainage, utility design and construction, and recommendations for foundation design and construction**,** pavements, and IBC seismic design criteria. Our scope of work included:

- observing 3 test pit excavations and field soil sampling;
- performing two infiltration tests;
- conducting laboratory testing to determine soil properties;
- performing engineering analyses; and
- preparing this report.

2.0 PROJECT DESCRIPTION AND PROPOSED DEVELOPMENT

The proposed site is located at 430 Wellsian Way in Richland, Washington (**Figure 1 – Site Location Map**). The lot is in the northeast corner of the Wellsian Way and Stevens Drive intersection in a commercially developing area. Approximate mid-site coordinates are 46°16'15.8"N Latitude; 119°17'03.0"W Longitude.

The approximately 1-acre site is relatively level and currently undeveloped with sparse vegetation. The proposed drive-thru coffee shop will be constructed as a single-story, wood-frame structure with a slab-on-grade. The development will include a paved drive-thru lane, parking lot, underground utilities, landscaping, and on-site stormwater disposal.

3.0 FIELD EXPLORATIONS

The exploration program consisted of excavating three test pits designated TP-1 through TP-3 on the Exploration Plan (**Figure 2 – Exploration Plan**). Double J Excavating, Inc. (Double J), under subcontract with BAER, excavated the test pits on April 6, 2021 using a Deere 50G mini excavator equipped with a 30-inch bucket.

Where possible, soil in situ strength was estimated using a dynamic, mini-cone penetrometer (DCP) and our observations of the relative excavation difficulty. The mini cone uses a 15-pound slide hammer dropped 20 inches to drive a conical tip into the soil. The number of hammer blows required to drive the cone 1¾-inch increments is roughly equivalent to a SPT blow count. The blows per increment provide an indication of the relative soil density. The blow counts are recorded on the logs. The mini-cone penetrometer test method is described in ASTM STP399.

BAER's representative counted the blows required to drive the rod into the ground for each 1¾-inch increment over a given depth. The recorded blow count data was evaluated using correlation charts to estimate the soil bearing capacity. BAER's representative observed the test pits, collected representative soil samples, and prepared test pit logs.

The subsurface conditions are known only at the test pit locations on the date explored and should be considered approximate. Actual subsurface conditions may vary between excavation locations. The test pit locations are presented in Figure 2 and the test pit logs are presented in Appendix A. Our

representative classified the soil in the field and transported the soil samples to the laboratory for further examination and testing.

4.0 LABORATORY TESTING

BAER performed the following laboratory tests on selected soil samples from our explorations.

- Moisture Content (American Society for Testing and Materials (ASTM) Designation: D 2216) for material characterization and soil index properties; and
- Particle Distribution (ASTM Designation: D 422 and ASTM Designation: D 1140) for material characterization and soil index properties.

Northwest Agricultural Consultants performed the following laboratory tests on a selected soil sample.

- Organic Matter Content (ASTM Designation: D 2974) for soil index properties; and
- Cation Exchange Capacity (Environmental Protection Agency (EPA) Designation: 9081) for soil properties

Copies of the laboratory test reports are enclosed in Appendix B.

5.0 SUBSURFACE CONDITIONS

The following discussion is a summary of subsurface conditions encountered during the test pit explorations. Please refer to the enclosed logs (Appendix A) for more detailed information regarding subsurface conditions.

5.1 Regional Geologic Setting

The *Geologic Map of Richland 1:100,000 Quadrangle, Washington*; Washington Division of Geology and Earth Resources, Open File Report 94-8 (1994), shows near-surface geology in the site vicinity is mapped as Q_a – Alluvium (Holocene to Pleistocene) and Q_{fg3} – Reworked outburst flood deposits. Q_a consists of clay, silt, sand, and gravel deposits of varied thickness, sorting, and composition. Q_{fg3} consists of flood gravels with beds of fine sediment. In our opinion, the soil encountered in the test pit excavations are consistent with the mapped geology.

5.2 Soils

Test pits typically encountered a similar profile of gravelly material underlain by a hard, non-plastic ***Silt (ML)*** which extended to the termination depth of each pit. Test Pits 2 and 3 encountered 3 and 5 feet of a hard ***Gravelly Silt with Sand (ML)*** FILL near the surface, which contained various types of construction debris (asphalt, marking tape, and abandoned pipes). Test Pit 1 displayed only 1 foot of this FILL, which was underlain by a medium dense to dense, ***Silty Gravel with Sand (GM)***. The silty gravel with sand contained small horizontal beds of varying amounts of sand and gravel and appears to be a native deposit. Test pits were terminated at approximately 8.5 to 9.5 feet below ground surface (bgs).

5.3 Groundwater

Groundwater was not encountered in the test pit explorations. Based on logs from nearby wells, groundwater approximately13 to 15 feet below the existing surface elevation. Groundwater in this area is influenced by irrigation and seasonal river flows. Depending on the time of construction,

shallow groundwater may be encountered. Historically, some locations on Wellsian Way exhibited standing water during wet periods.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 General

The site is currently vacant. Historical Google Earth images indicate the site has been vacant since at least 1995. The photos also indicate the site was utilized some construction related activities and stockpiles at various times. The latest site changes appear during the Elliot Street closure and Stevens Drive realignment. Minor vegetation and scattered random construction debris are found at the site. The site is approximately 1 to 2 feet above the surrounding roadway. Depending on the final building pad elevation, minor grading may be required.

6.1.1 Test Pit Backfill

Double J used the excavator to backfill each test pit with excavated materials upon completion. The operator compacted the backfill using the excavator bucket. The test pits should be over-excavated and backfilled with compacted structural fill during site grading in accordance with Section "6.2 Earthwork" below.

6.2 Earthwork

FILL materials stripped from the site may be stockpiled and reused in landscape areas but should not be used for structural fill or backfill. The existing native materials free of organics, deleterious debris, and any material larger than 3-inches may be reused for general fill and backfill. These materials may not be used as structural fill under the building.

6.2.1 Subgrade Preparation

Soils at the site were typically dry to moist at the time of our explorations. Depending on conditions at the time of construction, the soils may require moisture conditioning, either by adding moisture or drying, prior to being compacted.

Debris-containing fill within the building footprint should be removed to expose the native subgrade. The exposed site subgrade should be moisture conditioned to within 2 percent of optimum in the upper 12 inches and compacted to a minimum 92 percent of the maximum laboratory dry density as determined by the ASTM Designation: D 1557 – *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort.* If the subgrade soils are too coarse for standard density testing, the area should be compacted to a firm, unyielding condition using heavy equipment. The subgrade should be proof rolled to identify loose or unstable areas. The geotechnical engineer should observe the subgrade proof-rolling to assist in determining loose soils.

The existing fill under pavement areas may remain in-place or be removed and replaced with compacted structural fill. If the fill remains in-place, there is a potential for increased settlement and pavement deformation. To minimize settlement, the fill areas should be proof rolled to identify loose or unstable areas. The geotechnical engineer should observe the fill area proof-rolling to assist in determining loose soils.

6.2.2 Material Reuse

Depending on final site grades, some on-site material may be available for reuse except as noted in 6.2 above. Imported fill should consist of well-graded, 2-inch minus, pit-run sand and gravel with less than 5 percent fines or 5/8-inch minus crushed stone top course (CSTC). All fill should be placed in accordance with Section "6.2.3 Placement and Compaction".

6.2.3 Placement and Compaction

Fill and backfill should be moisture conditioned to within 2 percent of optimum, placed in maximum 8-inch loose lifts, and compacted to a minimum 95 percent of ASTM D 1557.

Structural fill under footings, if used, should consist of 5/8-inch minus CSTC. Structural fill should be compacted to 95 percent of ASTM D 1557.

6.2.4 Slopes

Occupational Safety and Health Administration (OSHA) Type C soil best describes the on-site sand and gravel. Type C soils may have maximum temporary construction slopes of 1.5 Horizontal to 1 Vertical (1.5H:1V). Permanent cut or fill slopes should be no steeper than 2H:1V and must be protected from both wind and water erosion. Erosion protection may consist of vegetative cover or a minimum 3 inches of coarse concrete aggregate conforming to the requirements of WSDOT Specification 9-03.1(4) c, "Concrete Aggregate AASHTO Grading No. 57."

6.2.5 Utility Trenching

Utility trenching should be accomplished in accordance with American Public Works Association (APWA) Standard Specifications. Based on our explorations, we anticipate excavations may be made using standard excavation equipment. Utility piping should be bedded as recommended in the APWA specifications. Utility trenches should be backfilled using structural fill compacted as specified in section "6.2.3 Placement and Compaction". Enough backfill should be placed over the utility before compacting with heavy compactors to prevent damage. On-site materials with gravels smaller than 3 inches may be used for utility trench backfill.

6.2.6 Wet Weather Construction

The site soils near the surface are typically granular; however, the stability of the exposed soils may deteriorate due to change in moisture content. If construction occurs during wet weather, we recommend:

- Fill material consist of clean, granular soil with less than 5 percent fines passing the #200 sieve. Fines should be non-plastic.
- The ground surface in the construction area should be sloped to drain and sealed to reduce water infiltration and to prevent water ponding.
- Work areas and stockpiles should be covered with plastic. Geotextile silt fences, straw bales, straw wattles, and/or other measures should be used as needed to control soil erosion.

6.2.7 Infiltration Rate

We understand stormwater will be managed using infiltration basins. We conducted infiltration tests in Test Pits 1 and 3, at approximately 5 feet bgs. The infiltration test was conducted in general accordance with the Small PIT method described in the 2019 Washington Department of Ecology Stormwater Management Manual Table 6.3 and Appendix 6.B.

We filled both test pits with approximately 2 feet of water. The water was allowed to saturate the underlying soils for approximately 2 hours. The pit was again filled with water and the depth below the reference was measured when filling stopped. We obtained measurements at 15-minute intervals over the following hour. The water surface elevation changes between the 30- and 60-minute readings are used to calculate the infiltration rate. The test results are summarized below:

Table 6.2.7- 1 Infiltration Test Results

Location	TP-1	TP-3
Pre-soak Period (hours)	2	2.5
Initial Test (inches below reference)	36.0	37.0
15 Minutes (inches below reference)	37.25	37.25
30 Minutes (inches below reference)	38.0	37.75
45 Minutes (inches below reference)	38.75	38.0
60 Minutes (inches below reference)	39.5	38.25
Infiltration Rate (inches/minute)	0.05	0.017
Infiltration Rate (minutes/inch)	20	60
Infiltration Rate **(inches/hour)**	**3**	**1**

These rates do not include safety factors. The system designer should incorporate an appropriate factor of safety against slowing rates over time due to biological and sediment clogging.

7.0 FOUNDATION DESIGN RECOMMENDATIONS

7.1 Footings

The proposed structure may be supported on conventional spread or continuous footings bearing on the compacted native subgrade or structural fill extending through the existing fill to the native subgrade. Exterior footings should be embedded a minimum 24 inches below adjacent grades for bearing considerations and frost protection.

Prior to placing structural fill or concrete, footing subgrade should be moisture conditioned and compacted to 92% of ASTM D 1557.

To avoid differential settlement, footings should be supported in consistent materials. To provide a consistent working surface for footing construction, we recommend placing 6 inches of compacted 5/8-inch minus CSTC below the footings on native subgrade. The CSTC should be compacted to a firm, unyielding condition prior to footing concrete placement. The geotechnical engineer should observe subgrade preparation prior to crushed rock placement and concrete placement.

We recommend constructing footings a minimum of 2 feet wide for spread footings and minimum 16 inches wide for continuous footing. Footings constructed in accordance with these recommendations can be designed with an allowable bearing pressure of 2000 pounds per square foot (psf). The allowable bearing pressure may be increased by one-third for short-term transient loading conditions (i.e., seismic and/or wind loads).

We anticipate settlement will be the limiting factor for foundation design. Foundation settlement estimates are based on the soil profile and densities encountered at the site. Foundations designed as outlined above should experience less than ½-inch of settlement. We anticipate differential settlement will be less than half of total settlements between adjacent footings or across approximately 20 feet of continuous footings. Settlement should occur rapidly as loads are applied.

Lateral forces may be resisted using a combination of friction and passive earth pressure against the buried portions of the structure. For design, a coefficient of friction of 0.45 may be assumed along the interface between the footing base and the compacted CSTC. Passive earth pressure from the poorly graded sand or sandy silt backfill may be calculated using an equivalent fluid weight of 250 pounds per square foot (psf) per foot of embedment depth. The recommended coefficient of friction and passive earth pressure values do not include a safety factor.

7.2 Concrete Slab-on-Grade

The exposed subgrade in areas to receive concrete slabs-on-grade should be moisture conditioned and compacted to a minimum of 95 percent of the maximum laboratory dry density as determined by ASTM D 1557.

After compacting the subgrade, we recommend placing a minimum 6-inch layer of 5/8-inch CSTC under the concrete slab. The CSTC should be compacted to a firm, unyielding condition. The geotechnical engineer should observe subgrade preparation prior to gravel placement.

7.3 Pavement Sections

The proposed construction consists of a restaurant, drive-thru lane, and parking. We anticipate traffic will consist of automobile and light truck drive-thru and parking. An occasional garbage or delivery truck will use the main access and hard stand areas. Based on the anticipated traffic, we recommend the following pavement sections.

Table 7.3-1 Recommended Pavement Section

Material Layer	Layer Thickness, inches		Compaction Standard
	Light duty	Main Access & Drive-thru	
Asphaltic Concrete Pavement (HMACP)	3	4	91 percent of Maximum Theoretical Specific Gravity (Rice's)
Crushed Stone Top Course (CSTC) WSDOT 5/8-inch minus Top Course	6	8	95 percent of ASTM D 1557
Compacted Subgrade	12		95 percent of ASTM D 1557

The upper 12 inches of the pavement subgrade should be moisture conditioned and compacted to 95 percent of ASTM D 1557. The geotechnical engineer should observe the subgrade prior to base

course placement. Soft or unstable areas should be stabilized or over-excavated and replaced with compacted structural fill prior to paving.

7.4 Seismic Design

Structures should be designed in accordance with the 2015 International Building Code (IBC). The Site Class is based on the average conditions present within 100 feet of the ground surface. The Site Classification is based on shear wave velocity. To establish a higher site class, additional explorations are required including deep borings and geophysical measurements. Based on the available information, we recommend using the default classification Site Class D (Stiff Soil). Design values determined for the center coordinates of the site using the United States Geological Survey (USGS) *Earthquake Ground Motion Parameters* utility are summarized in Table 7.4-1 below.

Table 7.4-1 Recommended Earthquake Ground Motion Parameters (2015 IBC)

Parameter	Value
Location (Latitude, Longitude), degrees	46.271063; -119.284157
Mapped Spectral Acceleration Values (MCE, Site Class D):	
Short Period, S_s	0.412 g
1.0 Sec. Period, S_1	0.159 g
Soil Factors for Site Class D:	
F_a	1.471 g
F_v	2.164 g
S_{DS}	0.404 g
S_{D1}	0.229 g

7.4.1 Liquefaction

Soil liquefaction occurs when saturated soil deposits temporally lose strength and behave as a liquid in response to earthquake shaking. Liquefaction typically occurs in loose, granular soils located in the upper 50 feet and below the water table. The groundwater depth is approximately 45 feet bgs, and the on-site gravelly silt, silty gravel, and underlying silt are medium dense to dense and hard. In our opinion, the liquefaction potential at this site is low. Additional exploration and analysis would be required to quantify anticipated settlements due to potential liquefaction.

7.4.2 Fault Rupture Potential

Based on our review of available geologic literature, two hidden, northwest - southeast trending hidden thrust faults generally follows the base of the hills (Badger Mountain and Horse Heaven Hills) 1 and 2.5 miles southwest of the site, respectively. We are not aware of any demonstrated movement along these faults in the last 10,000 years. We did not observe any evidence of surface rupture or recent faulting during our field observation. Therefore, we conclude the fault rupture potential is low at this site.

7.4.3 Slope stability

The site is in a relatively level, developed area within the City of Richland. In our opinion, the potential for slope failure impacting the proposed project site is low.

8.0 ADDITIONAL SERVICES

BAER is available to provide further geotechnical consultation during the project design phase. We should review the final design and specifications to verify earthwork and foundation recommendations have been properly interpreted and incorporated into the project design and construction specifications. We are also available to provide geotechnical engineering and special inspection services during construction. Observation during construction provides the geotechnical engineer the opportunity to assist in making engineering decisions if variations in subsurface conditions become apparent. If BAER is not retained to provide construction phase services, we cannot be responsible for soil related construction errors or omissions.

Construction observation and special inspection services are not part of this geotechnical engineering study scope of work. We will be pleased to provide a separate proposal for the construction phase services, if desired.

9.0 UNCERTAINTIES AND LIMITATIONS

This report was prepared for the exclusive use of Elite Construction & Development, LLC. and their design team for the proposed Dutch Bros. on Wellsian Way in Richland, Washington. This report presents the data from observation and field testing and is based on subsurface conditions at the specific locations and depths indicated. No other representation is made. This report should be made available to potential contractors for information on factual data only. Conclusions and interpretations presented in this report should not be construed as a guarantee or warranty of the subsurface conditions. If changes are made to the project components or layout, additional geotechnical data and analyses may be necessary.

Within the limitations of scope, schedule, and budget, BAER attempted to execute these services in accordance with generally accepted professional principles and practices in the field of geotechnical engineering at the time the report was prepared. No warranty, expressed or implied, is made. The scope of our services did not include environmental screening of soil samples retrieved from the explorations completed for this project. Further, we did not complete environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic materials in the soil, rock, surface water, or air in the project area.

We appreciate the opportunity to be of service. If you have questions or comments, please contact our office.

Sincerely,
BAER TESTING & ENGINEERING, INC.

Dee J. Burrie, P.E.
Chief Engineer

4/20/2021

: general@baertesting.com

Notes:
Location Map developed using Images by Google Earth Pro.

0 1/2 2
Approximate Scale in Miles

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: (509) 469-3070
: www.baertesting.com

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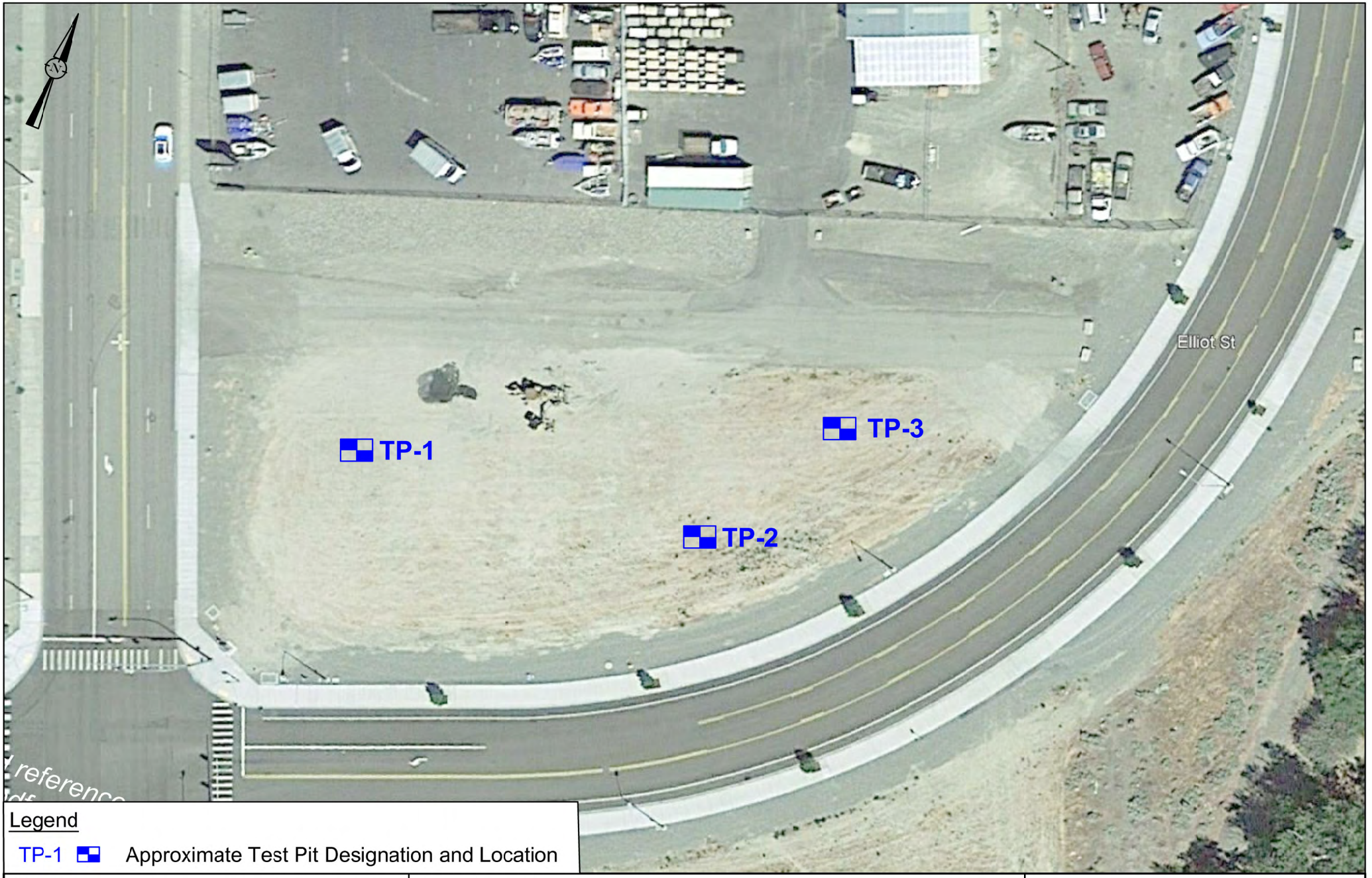
1106 Ledwich Ave.
Yakima, WA 98902

Dutch Brothers Coffee
430 Wellsian Way
Richland, Washington

Site Location Map

21-079	FIG. 1



Legend

TP-1 Approximate Test Pit Designation and Location

Notes:

Location Map developed using Images Provided by Google Earth Pro.

0 50 100

Approximate Scale in Feet

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Dutch Brothers Coffee
430 Wellsian Way
Richland, Washington

Exploration Map

21-079 | FIG. 2

APPENDIX A
TEST PIT LOGS

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Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

JOB NO: 21-079 EX. DATE: 4/6/2021 LOCATION: West Parking Area

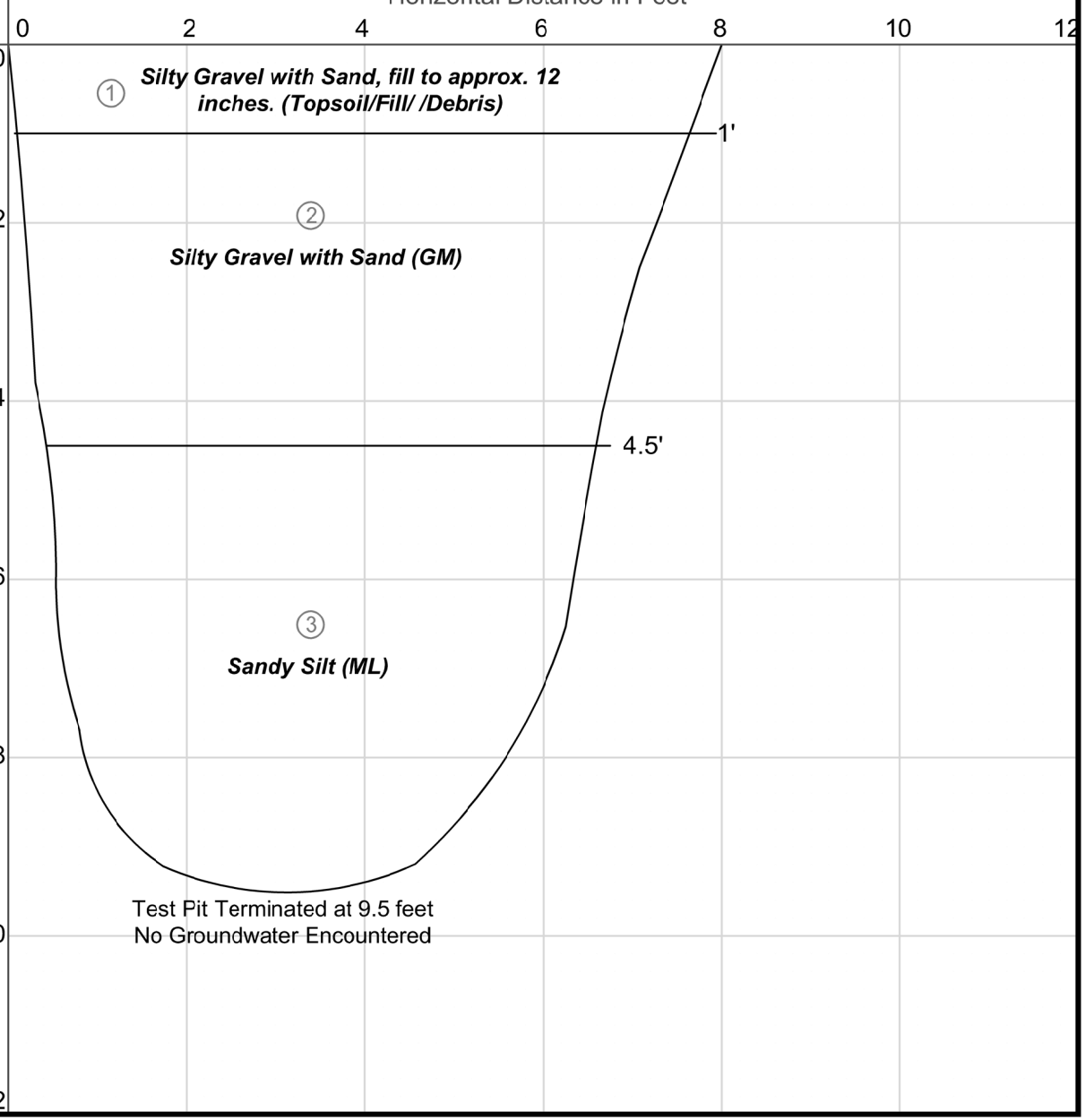
PROJECT: Dutch Brothers Coffee, 430 Wellsian Way, Richland, WA

LOG OF Test Pit TP-1

Logged By: BD GPS Coordinates: N 46.271036 E -119.284540

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP399	Samples	Depth, Ft.
Surface Description: Light Grass				
① 0-1.0' Silty Gravel with Sand, fill to approx. 12 inches. (Topsoil/Fill/ /Debris)	None Observed			0
② 1.0-4.5' Dense, brown, ***Silty Gravel with Sand (GM)***; Moist; subrounded to rounded gravel and cobbles, maximum diam. approx. 9 inches; fine to coarse sand; nonplastic silt. (NATIVE?)			S-1 ☒	2
③ 4.5-9.5' Very Stiff, brown, ***Sandy Silt (ML)***; Moist to dry; fine sand; nonplastic silt.				4
				6
				8
Test Pit Terminated at ±9.5 feet No Groundwater Encountered				10
				12

Sketch of West Pit Side Surface Elevation:



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Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

JOB NO: 21-079 EX. DATE: 4/6/2021 LOCATION: Approx. Building Location

PROJECT: Dutch Brothers Coffee, 430 Wellsian Way, Richland, WA

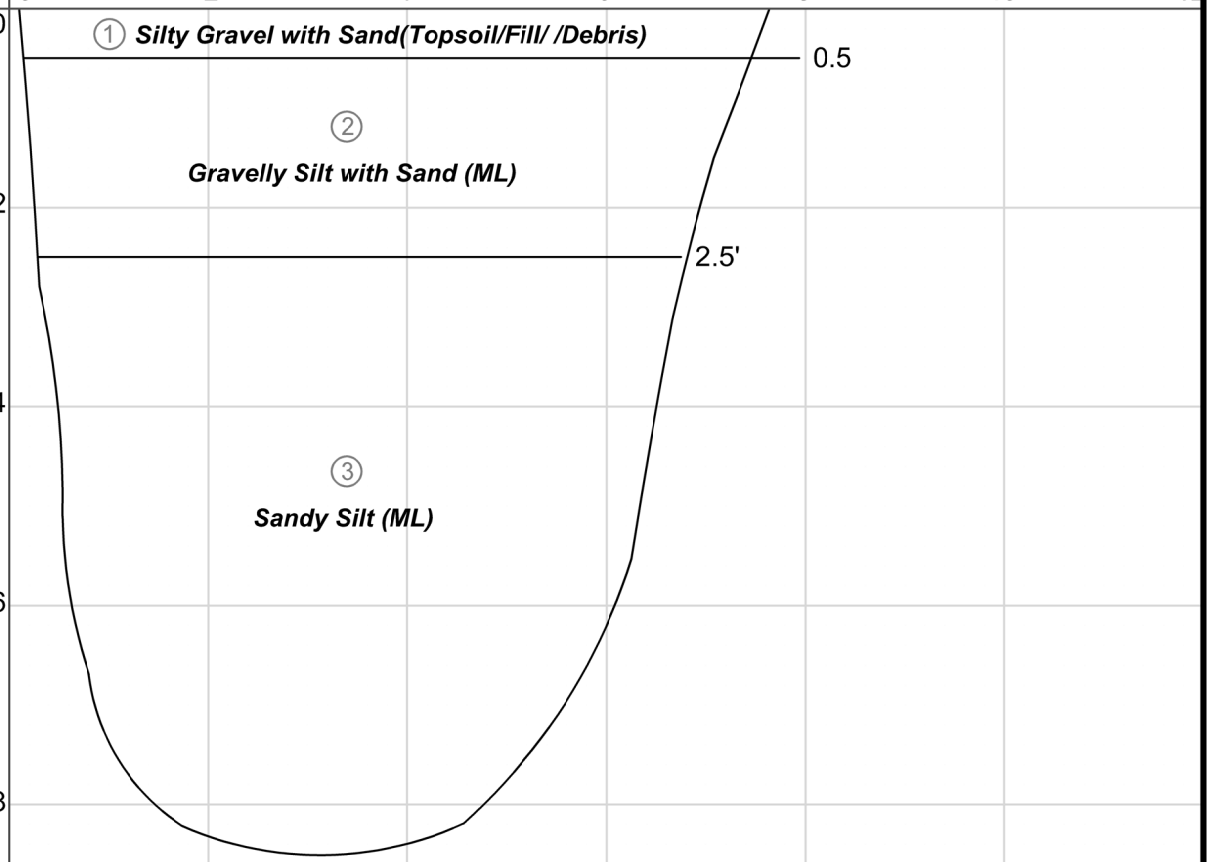
LOG OF Test Pit TP-2

Logged By: BD GPS Coordinates: N 46.271006 E -119.283964

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP399	Samples	Depth, Ft.
Surface Description: Light Grass				
① 0-1.0' Silty Gravel with Sand (Topsoil/Fill/ /Debris)	None Observed	20-47-50/1"	S-1	0
② 0.5-2.5' Very stiff, brown, ***Gravelly Silt with Sand (ML)***; Moist; subrounded to rounded gravel and cobbles, maximum diam. approx. 6 inches; fine to coarse sand; nonplastic silt. (FILL?) * 4" Asphalt layer at approx. 2 feet.				2
③ 2.5-8.5' Very Stiff, brown, ***Sandy Silt (ML)***; Moist; fine sand; nonplastic silt; moderately cemented. (NATIVE?)				4
				6
				8
Test Pit Terminated at ±8.5 feet No Groundwater Encountered				10
				12

Sketch of West Pit Side Surface Elevation:

Horizontal Distance in Feet



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Baer Testing & Engineering, Inc.

1106 Ledwich Ave.
Yakima, WA 98902

JOB NO: 21-079 EX. DATE: 4/6/2021 LOCATION: East Parking Area

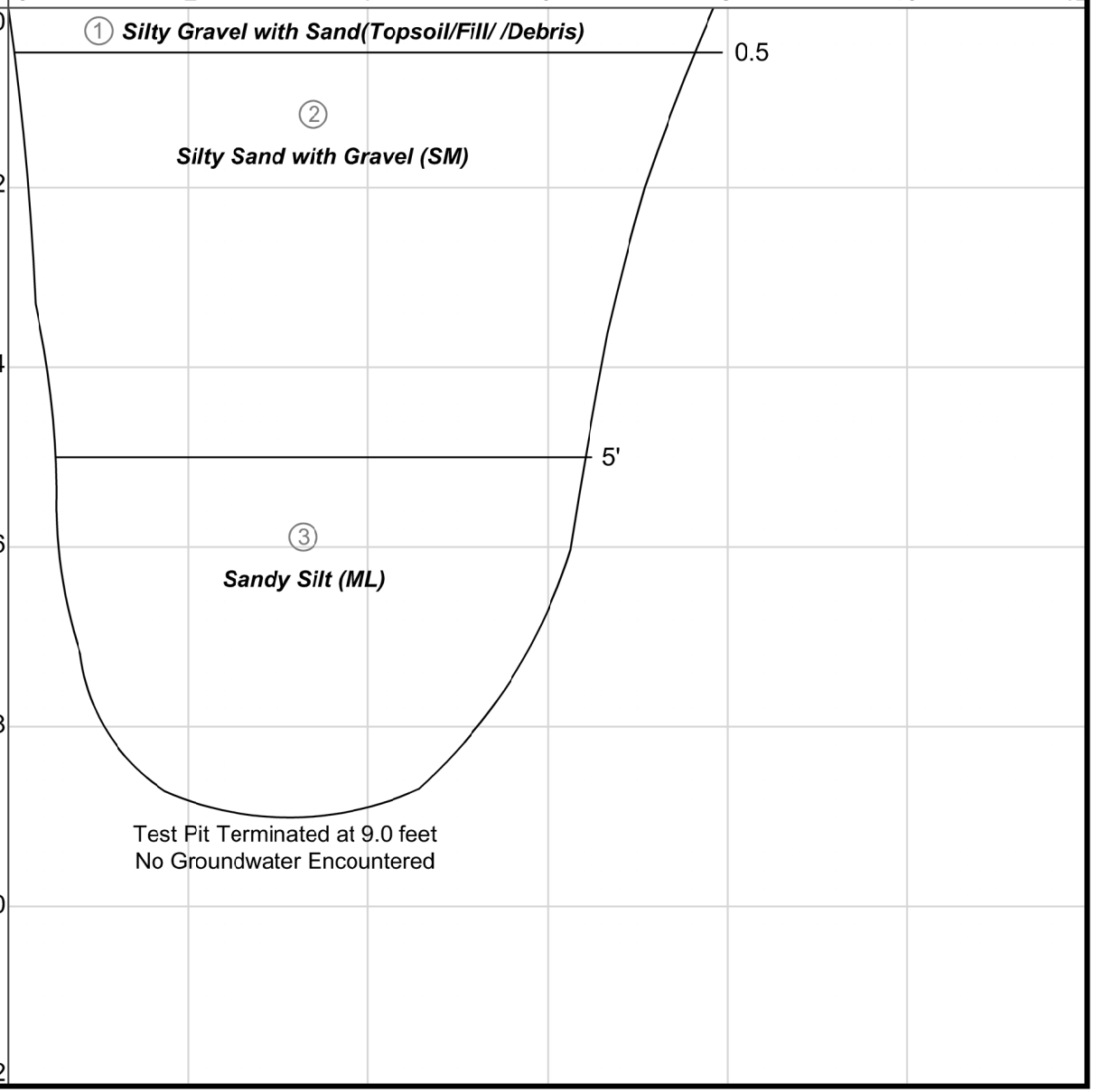
PROJECT: Dutch Brothers Coffee, 430 Wellsian Way, Richland, WA

LOG OF Test Pit TP-3

Logged By: BD GPS Coordinates: N 46.271149 E -119.283681

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP399	Samples	Depth, Ft.
Surface Description: Light Grass				
① 0-1.0' Silty Gravel with Sand (Topsoil/Fill/ /Debris)	None Observed	26-28-34	S-1	0
② 0.5-5.0' Dense, brown, ***Silty Sand with Gravel (SM)***; Dry to moist; subrounded to rounded gravel, maximum diam. approx. 2 inches; fine sand; nonplastic silt. (FILL?) * Debris/Wood/Pipe at 5',				2
				4
③ 5.0-9.0' Very Stiff, brown, ***Sandy Silt (ML)***; Moist; fine sand; nonplastic silt; moderately cemented. (NATIVE?)				6
				8
Test Pit Terminated at ±9.0 feet No Groundwater Encountered				10
				12

Sketch of West Pit Side Surface Elevation:



APPENDIX B
LABORATORY TEST RESULTS

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Baer Testing & Engineering, Inc.

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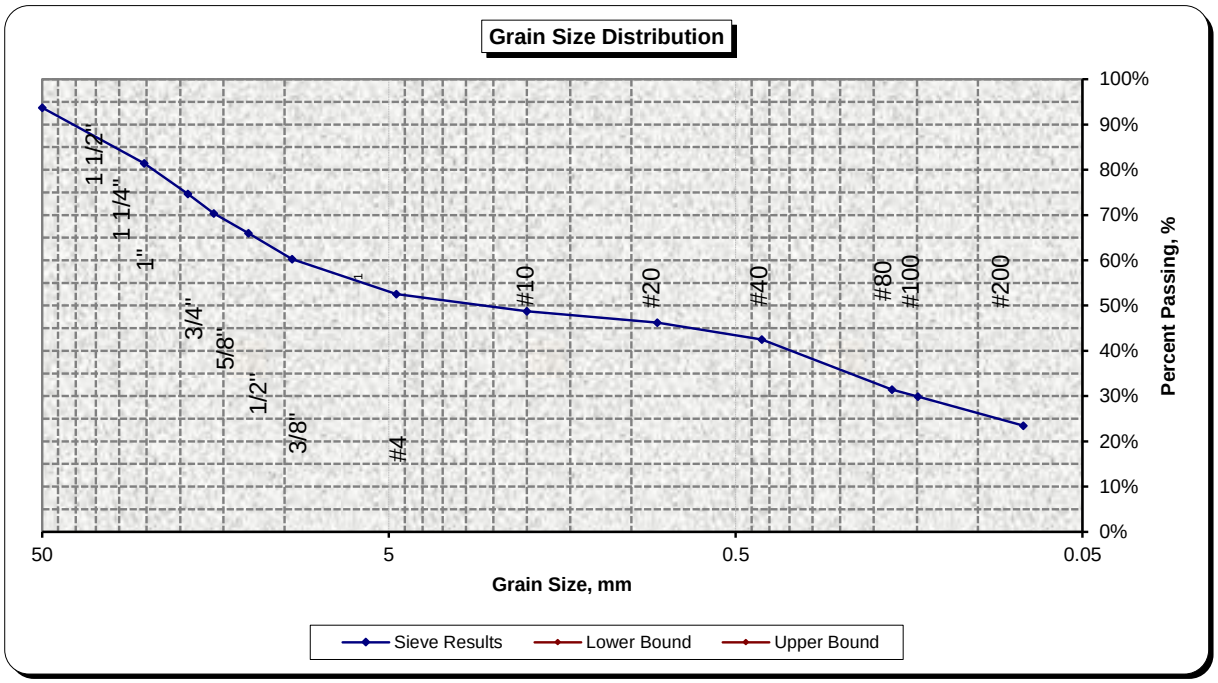
Yakima, WA 98902

CLIENT:	Elite Construction & Development, LLC	**PROJECT NUMBER:**	21-079
PROJECT:	Dutch Bros - Wellsian Way	**WORK ORDER #:**	21-0484
SAMPLE SOURCE:	TP-1 @ 2 ft	**SAMPLE NUMBER:**	21-0484-1
DATE SAMPLED:	4/6/2021	**DATE TESTED:**	4/7/2021
MATERIAL TYPE:	Silty Gravel with Sand	**TESTED BY:**	AH

Sampled in Accordance with ASTM D 75 and reduced in accordance with ASTM C 702 or D 421 unless otherwise noted.

SIEVE ANALYSIS COARSE AND FINE AGGREGATES ASTM C 136/C 117

Sieve Size:	Percent Passing:	Specs:	Sieve Size:	Percent Passing:	Specs:
4"			#4	53%	
3"			#8		
2 1/2"	100%		#10	49%	
2"	94%		#16		
1 1/2"			#20	46%	
1 1/4"			#30		
1"	81%		#40	42%	
3/4"	75%		#50		
5/8"	70%		#60		
1/2"	66%		#80	31%	
3/8"	60%		#100	30%	
1/4"			#200	23.5%	



REVIEWED BY:
Dee Burrie, Technical Director

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Baer Testing & Engineering, Inc.

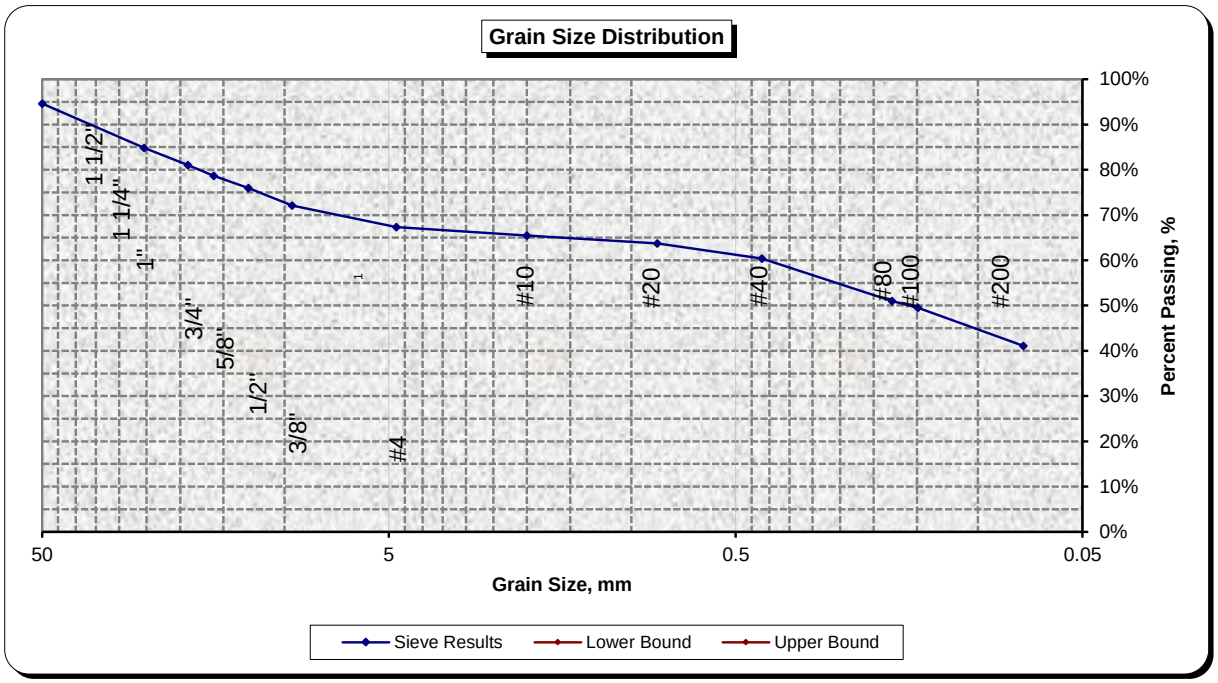
1106 Ledwich Ave.
Yakima, WA 98902

CLIENT:	Elite Construction & Development, LLC	**PROJECT NUMBER:**	21-079
PROJECT:	Dutch Bros - Wellsian Way	**WORK ORDER #:**	21-0484
SAMPLE SOURCE:	TP-2 @ 2 ft	**SAMPLE NUMBER:**	21-0484-2
DATE SAMPLED:	4/6/2021	**DATE TESTED:**	4/7/2021
MATERIAL TYPE:	Gravelly Silt with Sand - Previous Fill	**TESTED BY:**	AH

Sampled in Accordance with ASTM D 75 and reduced in accordance with ASTM C 702 or D 421 unless otherwise noted.

SIEVE ANALYSIS COARSE AND FINE AGGREGATES ASTM C 136/C 117

Sieve Size:	Percent Passing:	Specs:	Sieve Size:	Percent Passing:	Specs:
4"			#4	67%	
3"			#8		
2 1/2"	100%		#10	65%	
2"	95%		#16		
1 1/2"			#20	64%	
1 1/4"			#30		
1"	85%		#40	60%	
3/4"	81%		#50		
5/8"	79%		#60		
1/2"	76%		#80	51%	
3/8"	72%		#100	50%	
1/4"			#200	41.1%	



REVIEWED BY:
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CLIENT:	Elite Construction & Development, LLC	**PROJECT NUMBER:**	21-079
PROJECT:	Dutch Bros - Wellsian Way	**WORK ORDER #:**	21-0484
SAMPLE SOURCE:	TP-3 @ 9 ft	**SAMPLE NUMBER:**	21-0484-3
DATE SAMPLED:	4/6/2021	**DATE TESTED:**	4/7/2021
MATERIAL TYPE:	Silt	**TESTED BY:**	AH

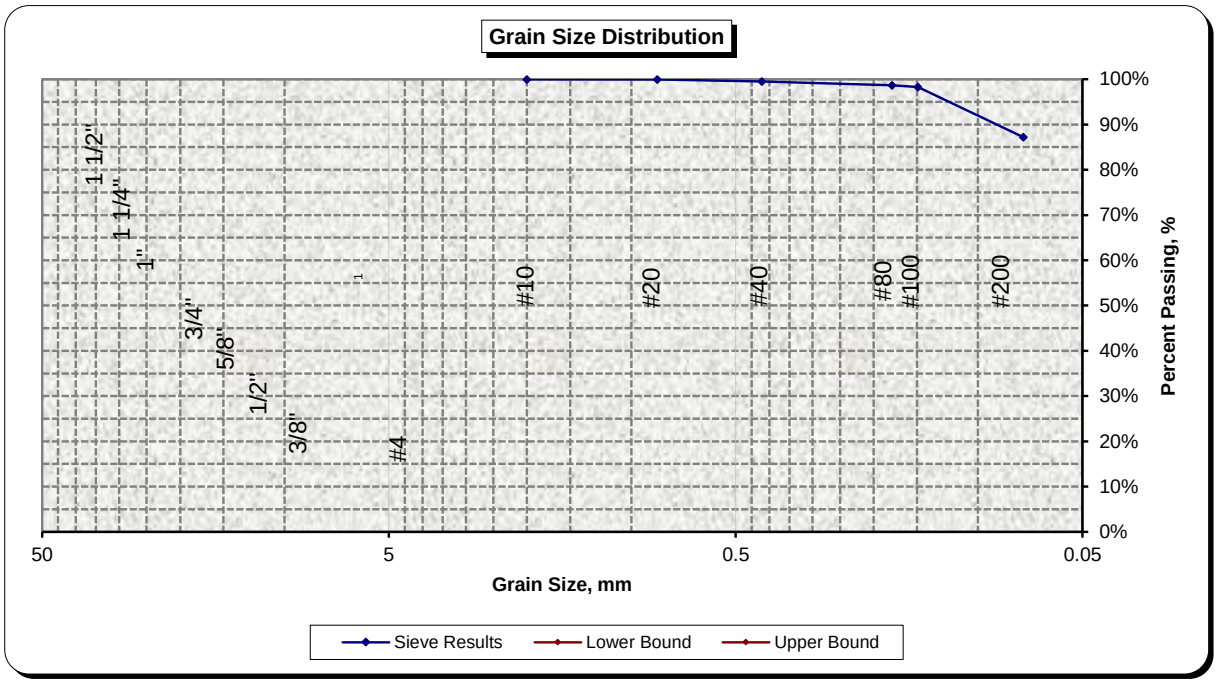
Sampled in Accordance with ASTM D 75 and reduced in accordance with ASTM C 702 or D 421 unless otherwise noted.

SIEVE ANALYSIS OF SOILS
ASTM C 136/D 1140

Sieve Size:	Percent Passing:	Specs:	Sieve Size:	Percent Passing:	Specs:
4"			#4		
3"			#8		
2 1/2"			#10	100%	
2"			#16		
1 1/2"			#20	100%	
1 1/4"			#30		
1"			#40	99%	
3/4"			#50		
5/8"			#60		
1/2"			#80	99%	
3/8"			#100	98%	
1/4"			#200	87.2%	

SOIL MOISTURE DETERMINATION
ASTM D 2216

14.7%



REVIEWED BY:
Dee Burrie, Technical Director

Northwest Agricultural Consultants

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Kennewick, WA 99336
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lab@nwag.com

PAP-Accredited
NAPT

BAER Testing Inc.
1106 Ledwich Ave.
Yakima, WA 98902

Report: 54850-1-1
Date: April 6, 2021
Project Name: Dutch Bros-Wellsian
Project Number:

Sample ID	Organic Matter	Cation Exchange Capacity
TP-1 @ 9.5’	1.86%	19.3 meq/100g
TP-3 @ 9.0’	0.93%	12.7 meq/100g
Method	**ASTM D2974**	**EPA 9081**

Sample ID	Sand	Silt	Clay	Texture Class
TP-1 @ 9.5’	42.5%	50.0%	7.5%	Silt Loam
TP-3 @ 9.0’	32.5%	55.0%	12.5%	Silt Loam

New Construction

20.28 - Dutch Bros - Richland

430 Wellsian Way

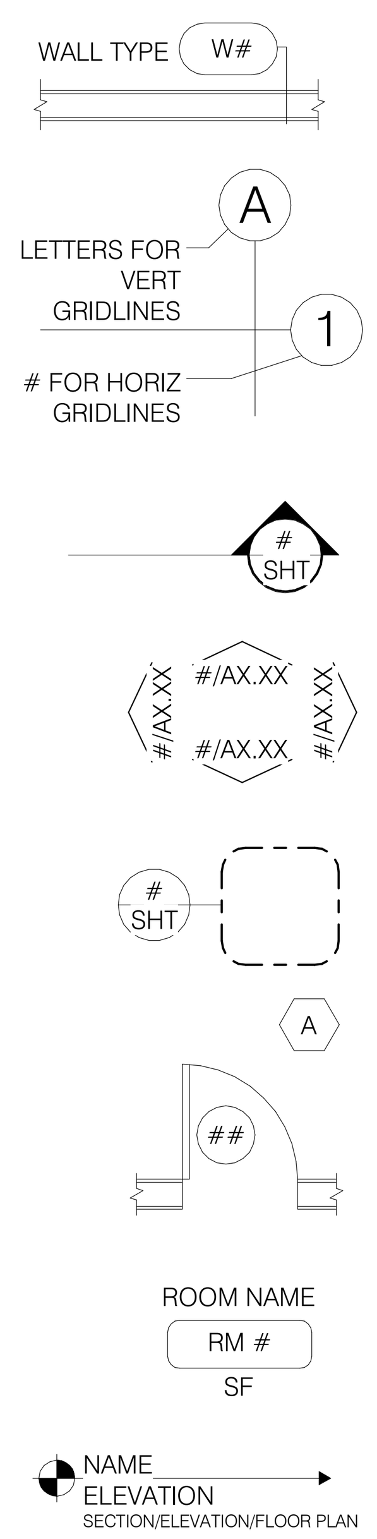
Richland, WA 99352

n VICINITY MAP

ARCHITECTURAL ABBREVIATIONS

&	AND
∠	ANGLE
@	AT
#	POUNDS or NUMBER
x	TIMES
℄	CENTERLINE
'A'	
ACT	ACOUSTICAL TILE
ADJ	ADJUSTABLE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
A.F.F.	ABOVE FINISH FLOOR
'B'	
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
B.O.	BOTTOM OF
BOF	BOTTOM OF FOOTING
BOT	BOTTOM
'C'	
C.F.C.I.	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED
C.F.O.I.	CONTRACTOR FURNISHED/ OWNER INSTALLED
CG	CORNER GUARD
CJ	CONTROL/CONSTRUCTION JOINT
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT(S)
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
'D'	
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLISH/DEMOLITION
DEPT	DEPARTMENT
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DWG	DRAWING
'E"	
E	EAST
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
ELEV	ELEVATION
ELECT	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EXT	EXTERIOR
'F'	
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FIO	FURNISH AND INSTALLED BY OWNER
FLR	FLOOR
FOB	FACE OF BRICK
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR
FOS	FACE OF STUD
FRP	FIBER REINFORCED POLYESTER
FTG	FOOTING
'G'	
GA	GAUGE
GALV	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLU LAM	GLU-LAMINATED BEAM/WOOD
GYP BD	GYPSUM BOARD
'H'	
HC	HOLLOW CORE
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING VENTILATING AIR CONDITIONING
'I'	
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
'J'	
JT	JOINT
J-BOX	JUNCTION BOX
'K'	
KIT	KITCHEN
'L'	
LAM	LAMINATE
LAV	LAVATORY
'M'	
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURE(R)
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
'N'	
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
'O'	
OC	ON CENTER
OCC	OCCUPANCY
O.F.C.I.	OWNER FURNISHED/ CONTRACTOR INSTALLED
O.F.O.I.	OWNER FURNISHED/ OWNER INSTALLED
OH	OPPOSITE HAND
'P'	
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLY	PLYWOOD
PRELIM	PRELIMINARY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT
PTBD	PARTICLE BOARD
'Q'	
QT	QUARRY TILE
QTY	QUANTITY
QUAL	QUALITY
'R'	
R	RISER
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REBAR	REINFORCING STEEL BARS
REC	RECESSED
REF	REFERENCE
REINF	REINFORCE(D)
REM	REMOVE(ABLE)
REST	RESTROOM
RM	ROOM
RO	ROUGH OPENING
RT	RUBBER TILE
RB	RUBBER BASE
'S'	
S	SOUTH
SC	SOLID CARE
SCHED	SCHEDULE
SD	SMOKE DETECTOR, STORM DRAIN,
SECT	SECTION
SF	SQUARE FOOT (FEET)
SHT	SHEET
SHTHG	SHEATHING
SIM	SIMILAR
SM	SHEET METAL, SMALL
SPEC	SPECIFICATION
SPKLR	SPRINKLER
SQ	SQUARE
SS	SANITARY SEWER, STORM SEWER
ST	STAIR(S), STREET, STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STL LNTL	STEEL LINTEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPEND(ED)
SV	SHEET VINYL
SYMM	SYMMETRICAL
'T'	
T&G	TONGUE & GROOVE
TEMP	TEMPORARY
T.O.	TOP OF
TOPO	TOPOGRAPHY
TS	TUBE STEEL
TYP	TYPICAL
'U'	
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
'V'	
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VG	VERTICAL GRAIN
VIF	VERIFY IN FIELD
VT	VINYL TILE
VWC	VINYL WALLCOVERING
'W'	
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WP	WATERPROOF
WT	WEIGHT
W.R.	WATER RESISTANT

DRAWING SYMBOLS



WALL TAG

GRIDLINES

SECTION REFERENCE

ELEVATION REFERENCE

DETAIL & ENLARGED PLAN REFERENCE

WINDOW REFERENCE

DOOR REFERENCE

ROOM NAME & NUMBER REFERENCE

ELEVATION/CEILING TAG

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL PROVIDED INFORMATION; DRAWINGS, WRITTEN, AND VERBAL FOR COMPLETENESS AND COORDINATION BETWEEN DISCIPLINES. ANY INCONSISTENCIES, IRREGULARITIES, ERRORS AND OMISSIONS HE/SHE MAY DISCOVER ON SITE THAT MAY BE CONTRARY TO THE PROVIDED INFORMATION PRIOR TO THE START OF WORK ARE TO BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING WITH WORK.
2. ALL CONSTRUCTION DIMENSIONS AND DETAILS SHALL CONCUR WITH AND BE DETERMINED FROM THESE DRAWINGS ONLY. DRAWINGS SHALL NOT BE SCALED, NOTED DIMENSIONS GOVERN OVER SMALL SCALE DETAILS/PLANS.
3. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING ANY MISTAKES OR INCONSISTENCIES AT THE JOBSITE TO THE SATISFACTION OF THIS OFFICE.
4. THE CONTRACTOR SHALL VERIFY ALL INFORMATION BEFORE ORDERING ANY MATERIALS OR PERFORMING ANY WORK; DRAWINGS, WRITTEN, VERBAL AND SITE CONDITION AND SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS. ANY DIFFERENCES BETWEEN ACTUAL SITE CONDITIONS AND INFORMATION SHALL BE SUBMITTED TO THIS OFFICE FOR INSTRUCTIONS AND CONSIDERATIONS BEFORE PROCEEDING WITH WORK.
5. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE RELIABILITY AND COMPLIANCE OF ALL MATERIALS AND BUILDING COMPONENTS INTRODUCED AS ALTERNATES.
6. EXCEPT WHERE OTHERWISE SPECIFIED, THE CONTRACTOR SHALL AT ALL TIMES PROVIDE PROTECTION AGAINST WEATHER TO MAINTAIN ALL WORK, MATERIALS, APPARATUS AND FIXTURES FROM DAMAGE. AT THE END OF DAYS WORK ALL NEW WORK LIKELY TO BE DAMAGED SHALL BE COVERED OR OTHERWISE PROTECTED AS REQUIRED.
7. THE CONTRACTOR SHALL MAINTAIN AT ALL TIMES ADEQUATE SAFETY BARRICADES AND CLEAR ACCESS IN AND OUT OF THE WORK SITE SO AS TO FACILITATE DAILY TRAFFIC, MOVEMENT, DELIVERIES AND SAFETY. WORK SHALL BE PERFORMED IN COMPLIANCE WITH O.S.H.A. REQUIREMENTS.
8. CITY/COUNTY APPROVED PLANS SHALL BE KEPT IN A SECURE PLACE AND SHALL NOT BE USED BY WORKERS. THE CONTRACTOR SHALL BE RESPONSIBLE THAT ALL SUBCONTRACTORS' CONSTRUCTION SETS REFLECT THE SAME INFORMATION AND ISSUE ANY SUPPLEMENTAL INFORMATION AS THE PROJECT PROGRESSES. THE CONTRACTOR SHALL ALSO MAINTAIN IN GOOD CONDITION ONE SET OF PLANS WITH ALL REVISIONS, ADDENDA, CHANGE ORDERS, AND ANY OTHER REVISIONS, AT ALL TIMES. THESE ARE TO BE UNDER THE CARE OF THE JOB SUPERINTENDENT AND ARE TO BE GIVEN TO THE OWNER UPON COMPLETION OF THE JOB.
9. ALL COMPONENTS CONSTRUCTED OFF SITE ARE REQUIRED TO BE CONSTRUCTED BY AN APPROVED FABRICATOR. PROVIDE VERIFICATION.
10. ALL WORK PERFORMED BY THE CONTRACTOR AND IT'S SUBCONTRACTORS SHALL BE IN ACCORDANCE WITH THE PREVAILING INTERNATIONAL BUILDING CODES AND THE RULES AND REGULATIONS OF AGENCIES, DEPARTMENTS AND/OR COMMISSIONS HAVING JURISDICTION.
11. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC. AS REQUIRED TO COMPLETE THE WORK. PROVIDE DESIGN/BUILD ENGINEERING WHERE REQUIRED AND NOT INCLUDED IN THE DOCUMENTS.
12. PROVIDE EXIT LIGHTS, EMERGENCY LIGHTING, AND VISUAL/AUDIBLE FIRE ALARM DEVICES AS REQUIRED BY CODE AND/OR AS DIRECTED BY THE LOCAL FIRE MARSHALL.
13. PROVIDE A LIST OF SUBMITTALS PRIOR TO BEGINNING THE WORK. SUBMIT ALTERNATE REQUESTS, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES OF MATERIALS FOR APPROVAL PRIOR TO INSTALLATION. ALLOW 14 WORKING DAYS FOR EACH REVIEW. NON-CONFORMING SUBMITTALS SHALL BE MODIFIED AND RESUBMITTED.
14. MODIFICATIONS TO STRUCTURAL MEMBERS SHALL BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER PRIOR TO THE BEGINNING OF WORK.
15. PROVIDE BLOCKING AS REQUIRED TO SUPPORT MILLWORK, FURNITURE, SHELVING, ETC.
16. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED (MEANS AND METHODS) BUT NECESSARY FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THESE WERE INDICATED IN THE DRAWINGS.
17. IT IS THE CONTRACTORS RESPONSIBILITY TO FACILITATE AN ASBESTOS TEST TO VERIFY ITS EXISTENCE AND COORDINATE ITS REMOVAL AS REQUIRED PRIOR TO PERFORMING ANY WORK OUTLINED IN THESE DOCUMENTS.
18. REFERENCING OF DRAWINGS IS FOR CONVENIENCE ONLY AND DOES NOT LIMIT APPLICATION OF ANY DRAWINGS.
19. EXPOSED STEEL, WOOD AND CONCRETE SURFACES THAT ARE NOT INDICATED TO RECEIVE FINISHES SHALL BE SEALED TO RESIST MOISTURE. VERIFY WITH ARCHITECT.
20. PROVIDE CONCEALED ACCESS PANELS AT LOCATIONS WHERE MAINTENANCE MAY BE REQUIRED, SUCH AS VALVES, CLEANOUTS, DAMPERS, DRAINS, ETC. COORDINATE LOCATION WITH ARCHITECT.
21. NOTIFY THE ARCHITECT WHEN WORK IS NEARING SUBSTANTIAL COMPLETION. CONTRACTOR SHALL PROVIDE A PUNCHLIST TO ARCHITECT PRIOR TO SCHEDULING ARCHITECT'S REVIEW.
22. PROVIDE INTERFACE AND COORDINATION OF ALL TRADES, CRAFTS, AND SUBCONTRACTORS AS REQUIRED TO PROVIDE CORRECT AND ACCURATE CONNECTION OF ABUTTING, ADJOINING, OVERLAPPING, AND RELATED WORK AND PROVIDE ALL ANCHORS, FASTENERS, ACCESSORIES, APPURTENANCES, AND INCIDENTAL ITEMS AS REQUIRED TO COMPLETE THE WORK PROPERLY, FULLY AND CORRECTLY IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
23. PROVIDE ADDITIONAL STRUCTURAL COMPONENTS MISCELLANEOUS METAL, BRACING, METAL OR CODE APPLICABLE FIRE RETARDANT TREATED WOOD BLOCKING, BACKING, CLIPS, ANCHORS, FASTENERS AND INSTALLATION ACCESSORIES AS REQUIRED TO PROPERLY ANCHOR, FASTEN, OR ATTACH MATERIALS, EQUIPMENT, APPLIANCES, HARDWARE, SYSTEMS, ASSEMBLIES, CABINET, AND ARCHITECTURAL FEATURES TO THE STRUCTURE.
24. INSULATE THE BUILDING THERMALLY AND ACOUSTICALLY. INCLUDE CAULKING, SEALING, FLASHING AND RELATED WORK AS REQUIRED TO PREVENT MOISTURE INTRUSION, AIR INFILTRATION, AND LIGHT LEAKAGE.
25. WHERE EQUIPMENT, APPLIANCES, FIXTURES AND SYSTEMS REQUIRE ELECTRICAL, PLUMBING, MECHANICAL AND/OR FIRE PROTECTION SERVICES, ROUGH-IN, AND CONNECTIONS OR OTHER UTILITIES AND SERVICES. OBTAIN ALL FIELD MEASUREMENTS REQUIRED FOR THE ACCURATE FABRICATION AND INSTALLATION OF THE WORK. EXACT MEASUREMENTS ARE THE CONTRACTOR'S RESPONSIBILITY.
26. THE CONTRACTOR SHALL BE IN CHARGE OF THIS CONTRACT AND THE SITE, AS WELL AS THE DIRECTING AND SCHEDULING OF ALL WORK.
27. FINAL RESPONSIBILITY FOR THE PERFORMANCE, INTERFACE AND COMPLETION OF THE WORK AND THE PROJECT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
28. CONTRACTOR TO PRESERVE AND PROTECT ALL EXISTING FIRE RATINGS, INCLUDING, BUT NOT LIMITED TO PENETRATIONS, COLUMNS AND PARTITIONS.
29. CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THE PROTECTION AND SAFEKEEPING OF STORED PRODUCTS, SUCH THAT ALL INNATE QUALITIES OF THE MATERIALS ARE MAINTAINED AND WILL REMAIN FIT FOR THEIR INTENDED USES.
30. SUBSTITUTION AND ALTERNATE REQUESTS MUST BE EQUIVALENT IN QUALITY, SERVICEABILITY AND DESIGN INTENT AS THE SPECIFIED PRODUCT, MUST INCUR NO ADDITIONAL COST AND SHALL NOT RESULT IN CONSTRUCTION DELAYS OR EXTENSIVE REVISIONS OF THE CONSTRUCTION DOCUMENTS. THE BURDEN OF PROOF IS ON THE CONTRACTOR. THE ARCHITECT HAS THE RIGHT TO REJECT ANY NON-SPECIFIED PRODUCT AND NON-COMPLIANT WORK.
31. PRIOR TO FINAL INSPECTION AND OWNER'S ACCEPTANCE OF THE WORK, THE CONTRACTOR IS TO CLEAN ALL AREAS OF WORK IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS. CLEAN EACH SURFACE AND UNIT TO THE CONDITION EXPECTED IN A NORMAL COMMERCIAL BUILDING CLEANING AND MAINTENANCE PROGRAM.
32. PROVIDE INSULATION AT HOT WATER AND/OR DRAIN PIPES AND ENSURE THAT THERE ARE NO SHARP, ABRASIVE, OR HOT SURFACES UNDER SINKS AND LAVATORIES.
33. ADJOINING PUBLIC AND PRIVATE PROPERTY SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION, REMODELING AND DEMOLITION WORK. PROTECTION SHALL BE PROVIDED FOR FOOTINGS, FOUNDATIONS, PARTY WALLS, CHIMNEYS, SKYLIGHTS, ROOFS, ETC. PROVISIONS SHALL BE MADE TO CONTROL WATER RUNOFF AND EROSION DURING CONSTRUCTION OR DEMOLITION.

PROJECT TEAM

OWNER
BRAD AND MEGHAN BARNES
5110 HERSHEY LN
WEST RICHLAND, WA 99353
971.404.6166
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bradbarnes@dutchbros.com

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DRAWING INDEX

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Spokane, WA 99201
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StudioHDG.com

REGISTERED ARCHITECT
10820
ARMANDO S HURTADO
STATE OF WASHINGTON

REV DATE DESCRIPTION

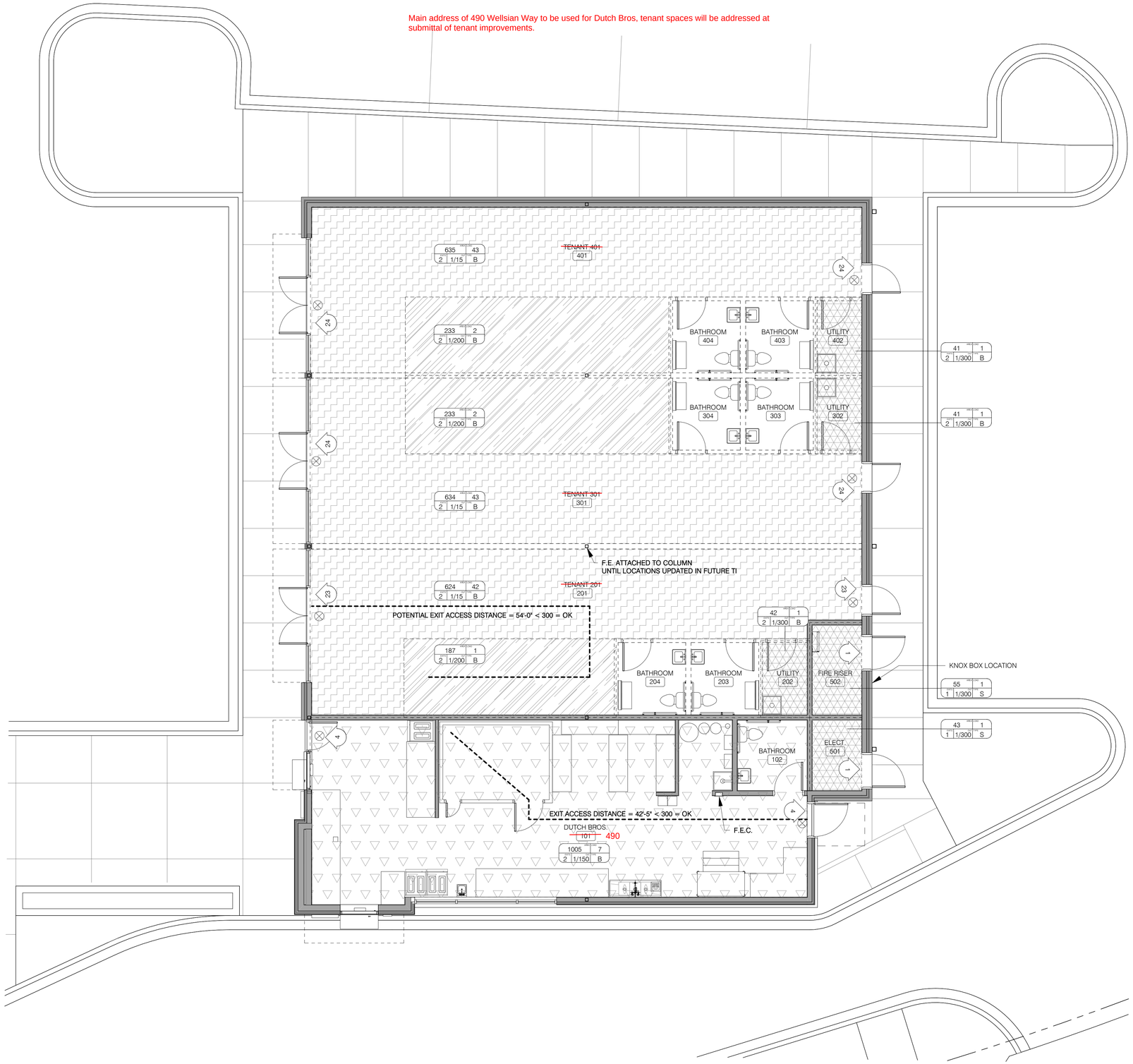
New Construction
—
20.28 - Dutch Bros - Richland
430 Wellsian Way
Richland, WA 99352

Project: 20.28
Drawn By: NMR
Date: 10/05/2021

G0.01
—
COVER SHEET

FOR PERMIT
THESE DRAWINGS ARE SUFFICIENTLY COMPLETE FOR SUBMISSION TO THE JURISDICTION HAVING AUTHORITY FOR PERMIT. THE CONTRACTOR SHALL NOT USE THESE DRAWINGS FOR CONSTRUCTION UNTIL THE CONTRACTOR RECEIVES WRITTEN APPROVAL FOR USE IN CONSTRUCTION BY THE JURISDICTION HAVING AUTHORITY.

Main address of 490 Wellsian Way to be used for Dutch Bros, tenant spaces will be addressed at submittal of tenant improvements.



1 CODE PLAN

SCALE : 3/16" = 1'-0"

BUILDING INFORMATION

1.	NAME OF PROJECT:	DUTCH BROS. - RICHLAND
2.	ADDRESS:	430 WELLSIAN WAY, RICHLAND, WA 99352
3.	PROJECT DESCRIPTION:	NEW CONSTRUCTION OF A SINGLE OCCUPANCY, SINGLE STORY BUILDING
4.	CODES:	2018 IBC 2018 IMC 2018 UPC 2018 WSEC 2018 IFC 2020 NEC ANSI 117.1
5.	ZONING:	C-3 (GENERAL BUSINESS)
6.	SETBACKS REQUIRED:	5'-0" FRONT YARD (TO EQUAL 40'-0" FROM CENTERLINE OF STREET) 0'-0" SIDE YARD, 0'-0" REAR YARD
7.	SETBACKS PROVIDED:	179'-1/2" TO CENTERLINE OF WELLSIAN WAY, 56'-1" TO CENTERLINE OF STEVENS DR, 36'-5" TO NORTH PROPERTY LINE, 149'-1" TO EAST PROPERTY LINE.
8.	LOT AREA:	41,977 SF
9.	ALLOWABLE HEIGHT (ZONING C-3):	80'-0"
10.	ALLOWABLE AREA & HEIGHT (IBC):	42,750 SF / 40'-0" / 2 STORY (FULL FRONTAGE INCREASE 506.3) 36,000 SF + 6750 SF = 42,750 SF
11.	BUILDING AREA & HEIGHT (IBC):	4,190 SF / 24'-2" HIGH / 1 STORY
12.	FIRE SEPARATION:	NON-SEPARATED OCCUPANCY
13.	OCCUPANCY:	B OCCUPANCY
14.	CONSTRUCTION TYPE:	V-B
15.	AUTO SPRINKLER EXT. SYSTEM:	YES - NFPA 13
16.	FIRE ALARM:	YES

17. OCCUPANT LOADS:

(TENANTS 1, 2, 3 ARE HYPOTHETICAL FOR ANTICIPATED HIGHEST OCCUPANT COUNT/USE, ACTUAL OCCUPANT LOADS BASED ON FUTURE TENANT TI LAYOUTS, TBD).

TENANT 201:	23 SF / 15 (NET) =	42 OCC.
	187 SF / 200 (GROSS) =	2 OCC.
	42 SF / 300 (GROSS) =	1 OCC.
	SUBTOTAL =	45 OCC.
TENANT 301:	633 SF / 15 (NET) =	43 OCC.
	233 SF / 200 (GROSS) =	2 OCC.
	41 SF / 300 (GROSS) =	1 OCC.
	SUBTOTAL =	46 OCC.
TENANT 401:	635 SF / 15 (NET) =	43 OCC.
	233 SF / 200 (GROSS) =	2 OCC.
	41 SF / 300 (GROSS) =	1 OCC.
	SUBTOTAL =	46 OCC.
DUTCH BROS:	1005 SF / 150 (GROSS) =	7 OCC.
ELECTRICAL:	43 SF / 300 (GROSS) =	1 OCC.
FIRE RISER:	55 SF / 300 (GROSS) =	1 OCC.
TOTAL BUILDING OCC. =		147 OCC.

18. EXITS REQUIRED:

		EXITS PROVIDED	
TENANT 201:	1	TENANT 201:	2
TENANT 301:	1	TENANT 301:	2
TENANT 401:	1	TENANT 401:	2
DUTCH BROS.:	1	DUTCH BROS:	2

19. EXIT WIDTH REQUIRED:

TENANT 201	47 OCC. X 0.2 (DOORS) = 9.4" (32" MIN.)
TENANT 301	47 OCC. X 0.2 (DOORS) = 9.4" (32" MIN.)
TENANT 401	47 OCC. X 0.2 (DOORS) = 9.4" (32" MIN.)
DUTCH BROS.	7 OCC. X 0.2 (DOORS) = 1.4" (32" MIN.)

20. EXIT WIDTH PROVIDED:

TENANT 201	103.0" - OK
TENANT 301	103.0" - OK
TENANT 401	103.0" - OK
DUTCH BROS.	66.0" - OK

21. SERVICE SINK: 1 REQUIRED PER TENANT SPACE, 1 PROVIDED PER TENANT SPACE

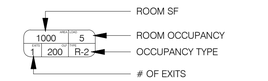
22. DRINKING FOUNTAIN: NOT REQUIRED - CAFE / DRINK ESTABLISHMENTS
IF TENANTS 201, 301, AND 401 ARE NOT CAFE / DRINK ESTABLISHMENT IN FUTURE, DRINKING FOUNTAINS TBD BASED ON ACTUAL OCCUPANCY USE AND COUNT.

23. PLUMBING FIXTURES:

(TENANTS 1, 2, AND 3 ARE HYPOTHETICAL FOR ANTICIPATED HIGHEST OCCUPANT COUNT/USE, ACTUAL OCCUPANT LOADS BASED ON FUTURE TENANT TI LAYOUTS, TBD.)

TENANT 201:	FUTURE REQUIRED:	MEN: 1 WATER CLOSET, 1 LAVATORY WOMEN: 1 WATER CLOSET, 1 LAVATORY
	FUTURE PROPOSED:	MEN: 1 WATER CLOSET, 1 LAVATORY WOMEN: 1 WATER CLOSET, 1 LAVATORY
TENANT 301:	FUTURE REQUIRED:	MEN: 1 WATER CLOSET, 1 LAVATORY WOMEN: 1 WATER CLOSET, 1 LAVATORY
	FUTURE PROPOSED:	MEN: 1 WATER CLOSET, 1 LAVATORY WOMEN: 1 WATER CLOSET, 1 LAVATORY
TENANT 401:	FUTURE REQUIRED:	MEN: 1 WATER CLOSET, 1 LAVATORY WOMEN: 1 WATER CLOSET, 1 LAVATORY
	FUTURE PROPOSED:	MEN: 1 WATER CLOSET, 1 LAVATORY WOMEN: 1 WATER CLOSET, 1 LAVATORY
DUTCH BROS:	REQUIRED:	1 WATER CLOSET, 1 LAVATORY
	PROVIDED:	1 WATER CLOSET, 1 LAVATORY

CODE LEGEND



XX — EXIT FROM ROOMS AND DIRECTION OF EGRESS

EXIT SIGNAGE

F.E. = FIRE EXTINGUISHER - 2A10BC

F.E.C. = FIRE EXTINGUISHER CABINET - 2A10BC & TYPE 'K' IN KITCHEN

ASSEMBLY 15 NET

KITCHEN 200 GROSS

BUSINESS 100 GROSS

STORAGE 300 GROSS

HDG Architecture
230 S. Washington St. 509-321-5064
Spokane, WA 99201 StudioHDG.com

REGISTERED ARCHITECT
10820
ARMANDO S HURTADO
STATE OF WASHINGTON

REV | DATE | DESCRIPTION

New Construction
—
20.28 - Dutch Bros - Richland
430 Wellsian Way
Richland, WA 99352

Project: 20.28
Drawn By: NMR
Date: 10/05/2021

21-02826

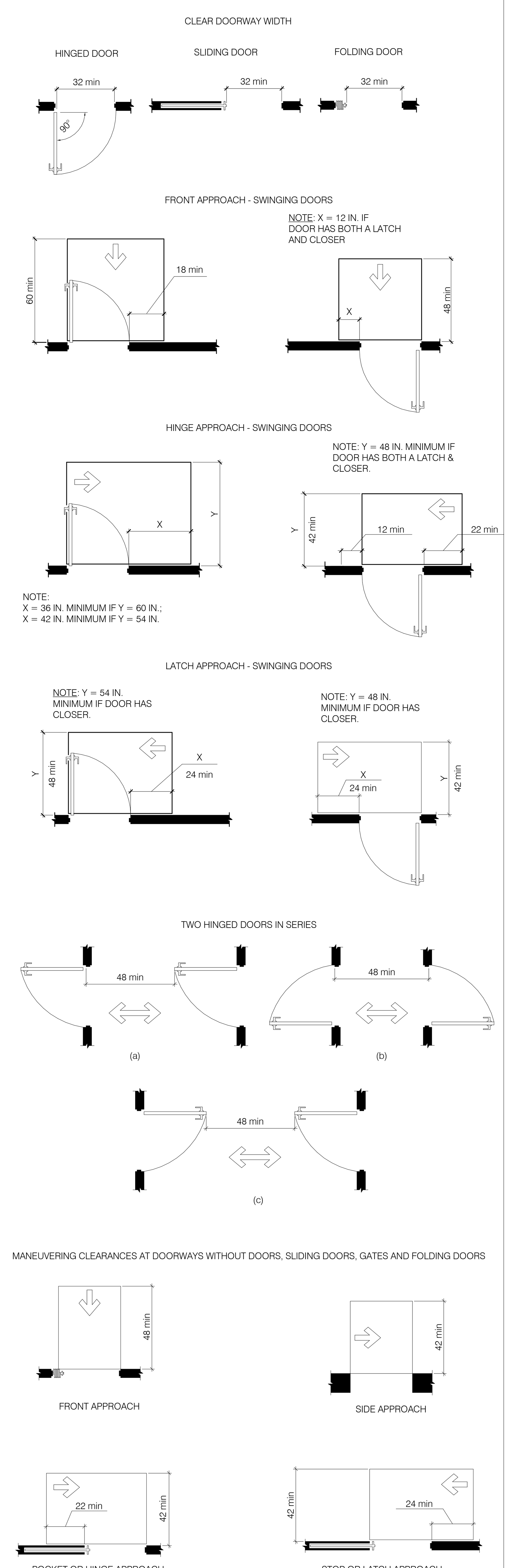
490 Wellsian Way

G0.02
—
CODE/EXITING PLAN & PROJECT INFORMATION

FOR PERMIT

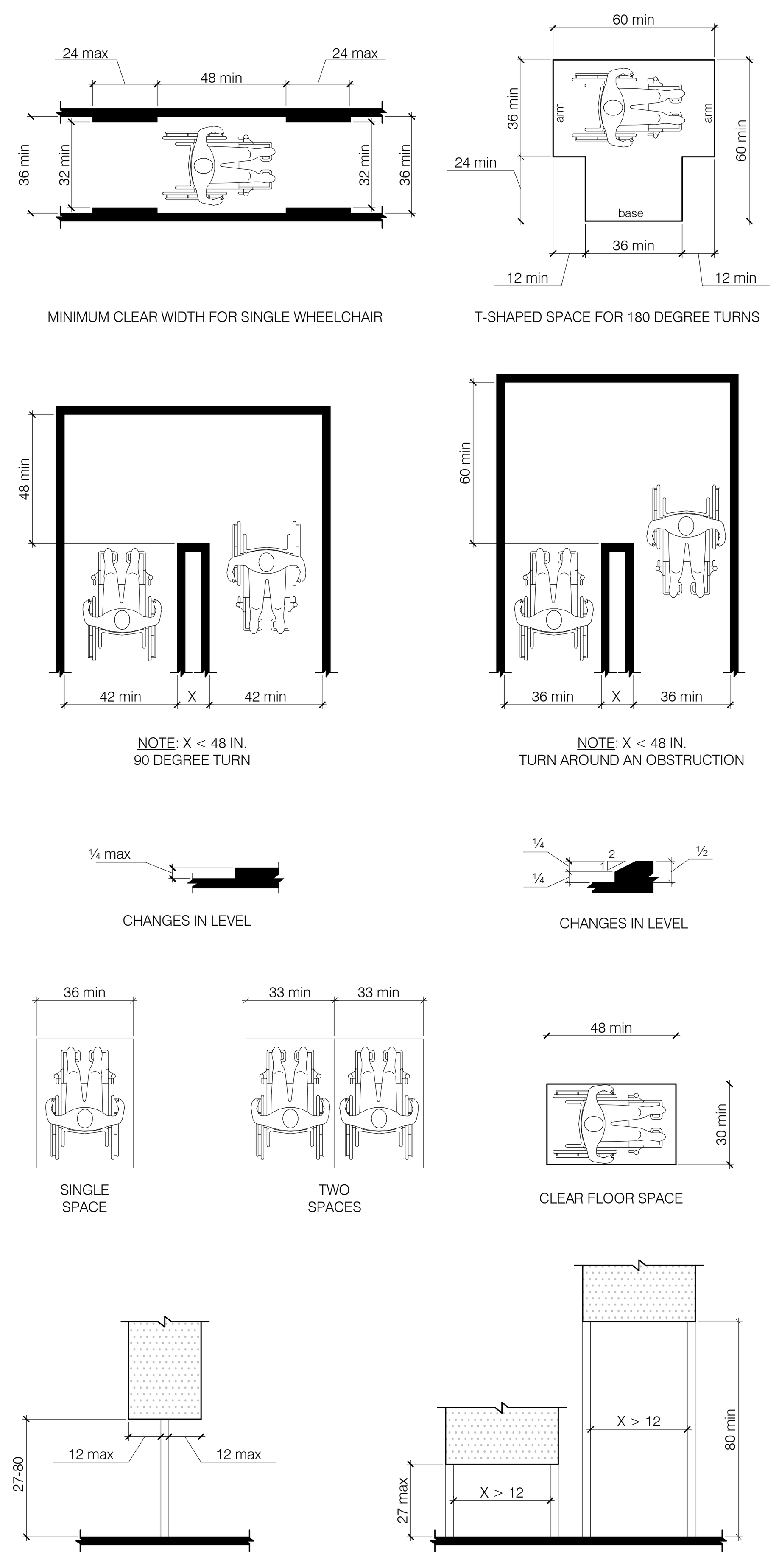
DOORS & CLEARANCES

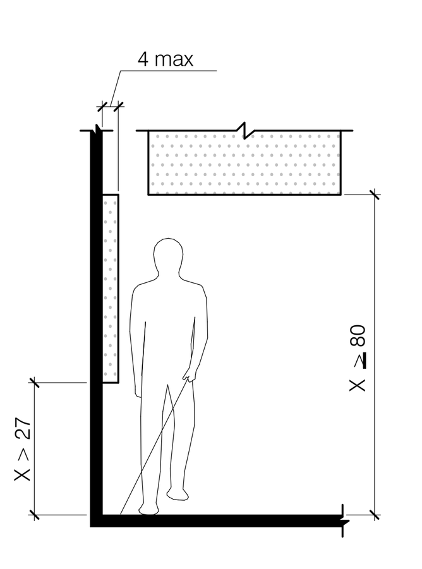
1. ACCESSIBLE DOORS SHALL COMPLY WITH ICC A117.1 - 2017 SECTION 404.
2. THRESHOLD AT DOORWAYS SHALL NOT EXCEED 3/4" IN HEIGHT FOR EXTERIOR SLIDING DOORS OR 1/2" IN HEIGHT FOR OTHER TYPES OF DOORS. RAISED THRESHOLDS AND FLOOR LEVEL CHANGES AT DOORWAYS SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2 (SEE ICC A117.1-2017 SECTION 404.2.4).
3. DOOR AND GATE CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM (PER ICC A117.1-2017 SECTION 404.2.7).
4. DOOR AND GATE SPRING HINGES SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 70 DEGREES, THE DOOR OR GATE WILL TAKE AT LEAST 1.5 SECONDS MINIMUM TO MOVE TO THE CLOSED POSITION.
5. ACCESSIBLE DOORS THAT ARE NOT FIRE DOORS OR EXTERIOR HINGED DOORS SHALL HAVE A MAXIMUM FORCE FOR PUSHING OR PULLING THE DOOR OPEN OF 5 LBF. THIS FORCE DOES NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT MAY HOLD A DOOR IN A CLOSED POSITION.
6. HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE. LEVER-OPERATED MECHANISMS, PUSH-TYPE MECHANISMS, AND U-SHAPED HANDLES ARE ACCEPTABLE DESIGNS. HARDWARE REQUIRED FOR ACCESSIBLE DOOR PASSAGE SHALL BE MOUNTED NO HIGHER THAT 48" ABOVE FINISHED FLOOR AND NOT LOWER THAN 34" ABOVE FINISH FLOOR.



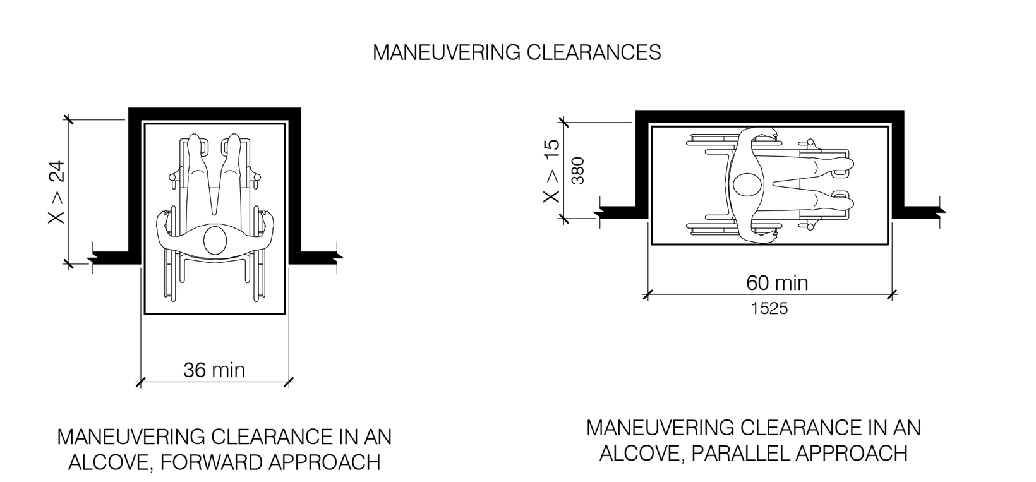
PATH OF TRAVEL

1. ALL WALKS, HALLS, CORRIDORS, AISLES, SKYWALKS, TUNNELS, AND OTHER SPACES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH ICC A117.1 - 2017 SECTIONS 401, 402, 403.
2. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDING OR FACILITY ENTRANCES WITH ALL ACCESSIBLE SPACES AND ELEMENTS.
3. THE CLEAR WIDTH OF AN INTERIOR ACCESSIBLE ROUTE SHALL BE 36 INCHES MINIMUM. THE CLEAR WIDTH OF AN EXTERIOR ACCESSIBLE ROUTE SHALL BE 48 INCHES MINIMUM.
4. AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 1:20 IS A RAMP AND SHALL COMPLY WITH ICC A117.1 - 2017 SECTION 405. NOWHERE SHALL THE CROSS SLOPE OF AN ACCESSIBLE ROUTE EXCEED 1:48.
5. IBC 2018 SECTION 1003.4 - SLIP-RESISTANT SURFACE: CIRCULATION PATHS OF A MEANS OF EGRESS SHALL HAVE A SLIP-RESISTANT SURFACE AND BE SECURELY ATTACHED.





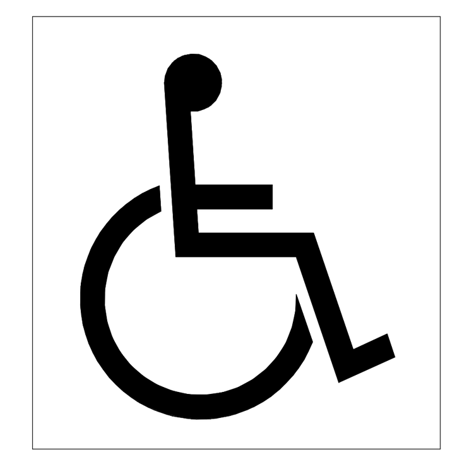
1. PROTRUDING OBJECTS SHALL COMPLY WITH ICC A117.1 - 2017 SECTION 307.
2. OBJECTS WITH LEADING EDGES MORE THAN 27 INCHES AND NOT MORE THAN 80 INCHES ABOVE FINISH FLOOR OR GROUND SHALL PROTRUDE 4 INCHES MAXIMUM HORIZONTALLY INTO THE CIRCULATION PATH. EXCEPTION: HANDRAILS SHALL BE PERMITTED TO PROTRUDE 4 1/2 INCHES MAXIMUM.
3. VERTICAL CLEARANCE SHALL BE 80 INCHES HIGH MINIMUM. GUARDRAILS OR OTHER BARRIERS SHALL BE PROVIDED WHERE THE VERTICAL CLEARANCE IS LESS THAN 80 INCHES HIGH. THE LEADING EDGE OF SUCH GUARDRAIL OR BARRIER SHALL BE LOCATED 27 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. EXCEPTION: DOOR CLOSERS AND DOOR STOPS SHALL BE PERMITTED TO BE 78 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND.
4. PROTRUDING OBJECTS SHALL NOT REDUCE THE CLEAR WIDTH REQUIRED FOR ACCESSIBLE ROUTES.



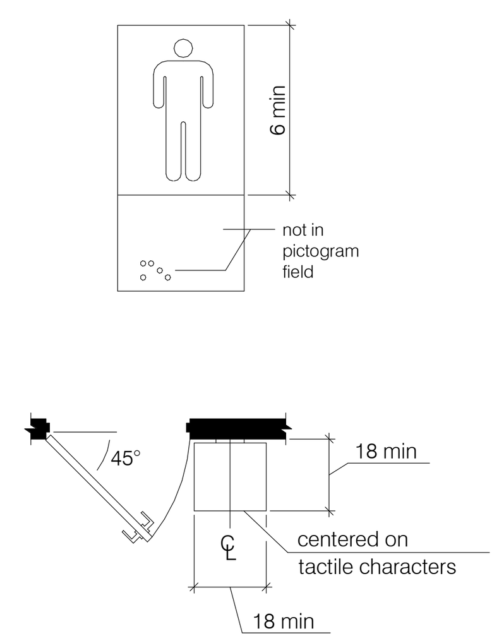
1. WHERE A CLEAR FLOOR OR GROUND SPACE IS LOCATED IN AN ALCOVE OR OTHERWISE CONFINED ON ALL OR PART OF THREE SIDES, ADDITIONAL MANEUVERING CLEARANCE SHALL BE PROVIDED IN ACCORDANCE WITH ICC A117.1 - 2017 SECTION 305.7.1 AND 305.7.2.
2. FORWARD APPROACH: ALCOVES SHALL BE 36 INCHES WIDE MINIMUM WHERE THE DEPTH EXCEEDS 24 INCHES.
3. PARALLEL APPROACH: ALCOVES SHALL BE 60 INCHES WIDE MINIMUM WHERE THE DEPTH EXCEEDS 15 INCHES.

SIGNAGE

1. ACCESSIBLE SIGNAGE SHALL COMPLY WITH ICC A117.1 SECTION 703.
2. CHARACTER WIDTH: CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 55 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE LETTER "I".
3. CHARACTER HEIGHT: MINIMUM CHARACTER HEIGHT SHALL COMPLY WITH TABLE 703.2.4. VIEWING DISTANCE SHALL BE MEASURED AS THE HORIZONTAL DISTANCE BETWEEN THE CHARACTER AND AN OBSTRUCTION PREVENTING FURTHER APPROACH TOWARDS THE SIGN. CHARACTER HEIGHT SHALL BE BASED ON THE UPPERCASE LETTER "I".
4. LETTERS AND NUMERALS SHALL BE RAISED 1/32", UPPER-CASE SANS SERIF OR SIMPLE SERIF TYPE, AND SHALL BE ACCOMPANIED WITH GRADE 2 BRAILLE. RAISED CHARACTERS SHALL BE AT LEAST 5/8" HIGH, BUT NO HIGHER THAN 2". PICTOGRAMS SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE BORDER DIMENSION OF THE PICTOGRAM SHALL BE 6" MINIMUM IN HEIGHT.
5. THE CHARACTERS AND BACKGROUND OF THE SIGN SHALL BE EGGSHELL, MATTE, OR OTHER NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND - EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.
6. WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR, INCLUDING DOUBLE-LEAF DOORS. SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL. MOUNTING HEIGHT SHALL BE 60" ABOVE FINISHED FLOOR TO THE CENTERLINE OF THE SIGN. MOUNTING LOCATION TO HEIGHT ABOVE FINISH FLOOR OR GROUND. TACTILE CHARACTERS ON SIGNS SHALL BE LOCATED 48" MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE LOWEST TACTILE CHARACTER AND 60" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST TACTILE CHARACTER.



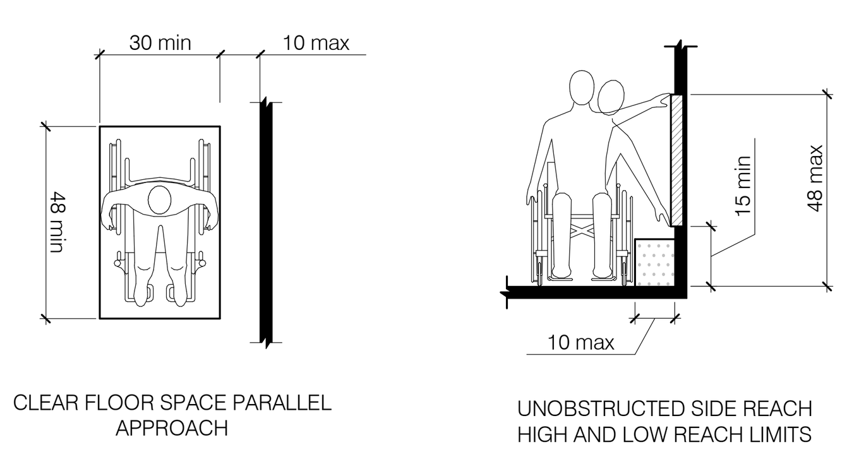
INTERNATIONAL SYMBOL OF ACCESSIBILITY



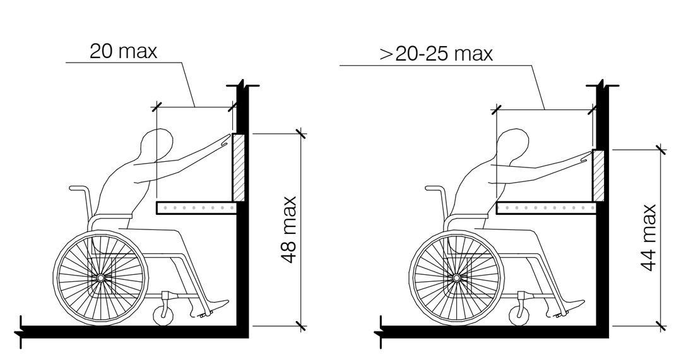
TACTILE SIGN LOCATION AT DOORS

CONTROLS & REACH RANGES

1. CONTROLS & OPERATING MECHANISMS SHALL COMPLY WITH ICC A117.1 SECTION 309.
2. THE REACH RANGES SHALL COMPLY WITH ICC A117.1 SECTION 308 AND BE PROVIDED WITH CLEAR GROUND FLOOR OR GROUND SPACE COMPLYING WITH SECTION 305.
3. WHERE A FORWARD REACH IS UNOBSTRUCTED, THE HIGH FORWARD REACH SHALL BE 48 INCHES MAXIMUM AND THE LOW FORWARD REACH SHALL BE 15 INCHES MINIMUM ABOVE THE FLOOR.
4. WHERE A HIGH FORWARD REACH IS OVER AN OBSTRUCTION, THE CLEAR FLOOR SPACE SHALL EXTEND BENEATH THE ELEMENT FOR A DISTANCE NOT LESS THAN THE REQUIRED REACH DEPTH OVER THE OBSTRUCTION. THE HIGH FORWARD REACH SHALL BE 48 INCHES MAXIMUM WHERE THE REACH DEPTH IS 20 INCHES MAXIMUM. WHERE THE REACH DEPTH EXCEEDS 20 INCHES, THE HIGH FORWARD REACH SHALL BE 44 INCHES MAXIMUM AND THE REACH DEPTH SHALL BE 25 INCHES MAXIMUM.
5. WHERE A CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE SIDE REACH IS UNOBSTRUCTED, THE HIGH SIDE REACH SHALL BE 48 INCHES MAXIMUM AND THE LOW SIDE REACH SHALL BE 15 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND.



WHERE A HIGH FORWARD REACH IS OVER AN OBSTRUCTION, THE CLEAR FLOOR SPACE SHALL EXTEND BENEATH THE ELEMENT FOR A DISTANCE NOT LESS THAN THE REQUIRED REACH DEPTH OVER THE OBSTRUCTION. THE HIGH FORWARD REACH SHALL BE 48 INCHES MAXIMUM FROM WHERE THE REACH DEPTH IS 20 INCHES MAXIMUM. WHERE THE REACH DEPTH EXCEEDS 20 INCHES, THE HIGH FORWARD REACH SHALL BE 44 INCHES MAXIMUM AND THE REACH DEPTH SHALL BE 25 INCHES MAXIMUM.

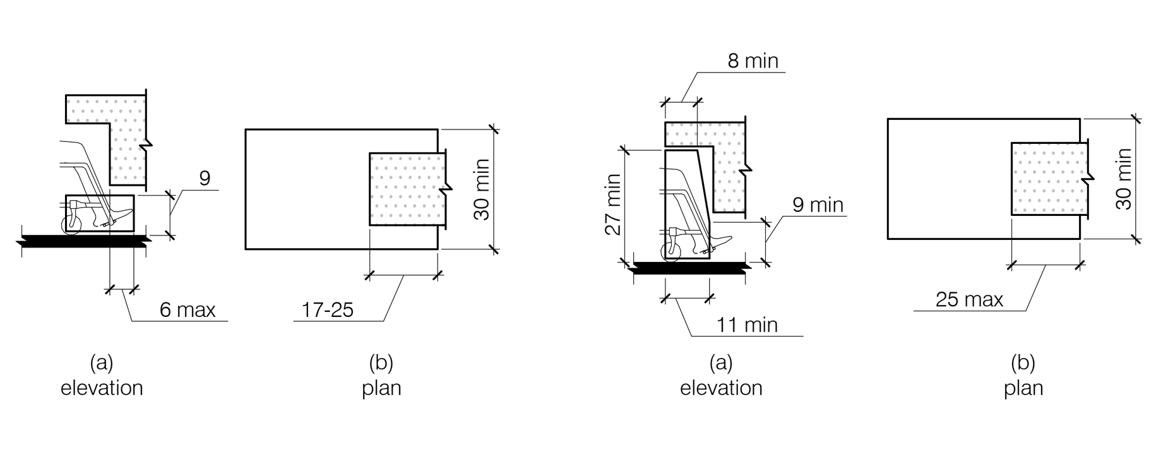


OBSTRUCTED HIGH FORWARD REACH

TOE & KNEE CLEARANCES

1. SPACE UNDER AN ELEMENT BETWEEN THE FINISH FLOOR OR GROUND AND 9 INCHES ABOVE THE FINISH FLOOR OR GROUND SHALL BE CONSIDERED TOE CLEARANCE AND SHALL COMPLY WITH ICC A117.1 SECTION 306.2.
2. THE MINIMUM DEPTH REQUIRED FOR TOE CLEARANCE SHALL BE 17 INCHES MINIMUM UNDER THE ELEMENT AND SHALL EXTEND 25 INCHES MAXIMUM UNDER THE ELEMENT.

1. SPACE UNDER AN ELEMENT BETWEEN 9 AND 27 INCHES ABOVE THE FINISH FLOOR OR GROUND SHALL BE CONSIDERED KNEE CLEARANCE AND SHALL COMPLY WITH ICC 117.1 SECTION 306.3.
2. THE MINIMUM DEPTH REQUIRED FOR KNEE CLEARANCE SHALL BE 11 INCHES MINIMUM AT 9 INCHES AFF, AND 8 INCHES DEEP MINIMUM AT 27 INCHES AFF.
3. KNEE CLEARANCE SHALL EXTEND 25 INCHES MAXIMUM UNDER AN ELEMENT AT 9 INCHES ABOVE THE FINISH FLOOR OR GROUND.

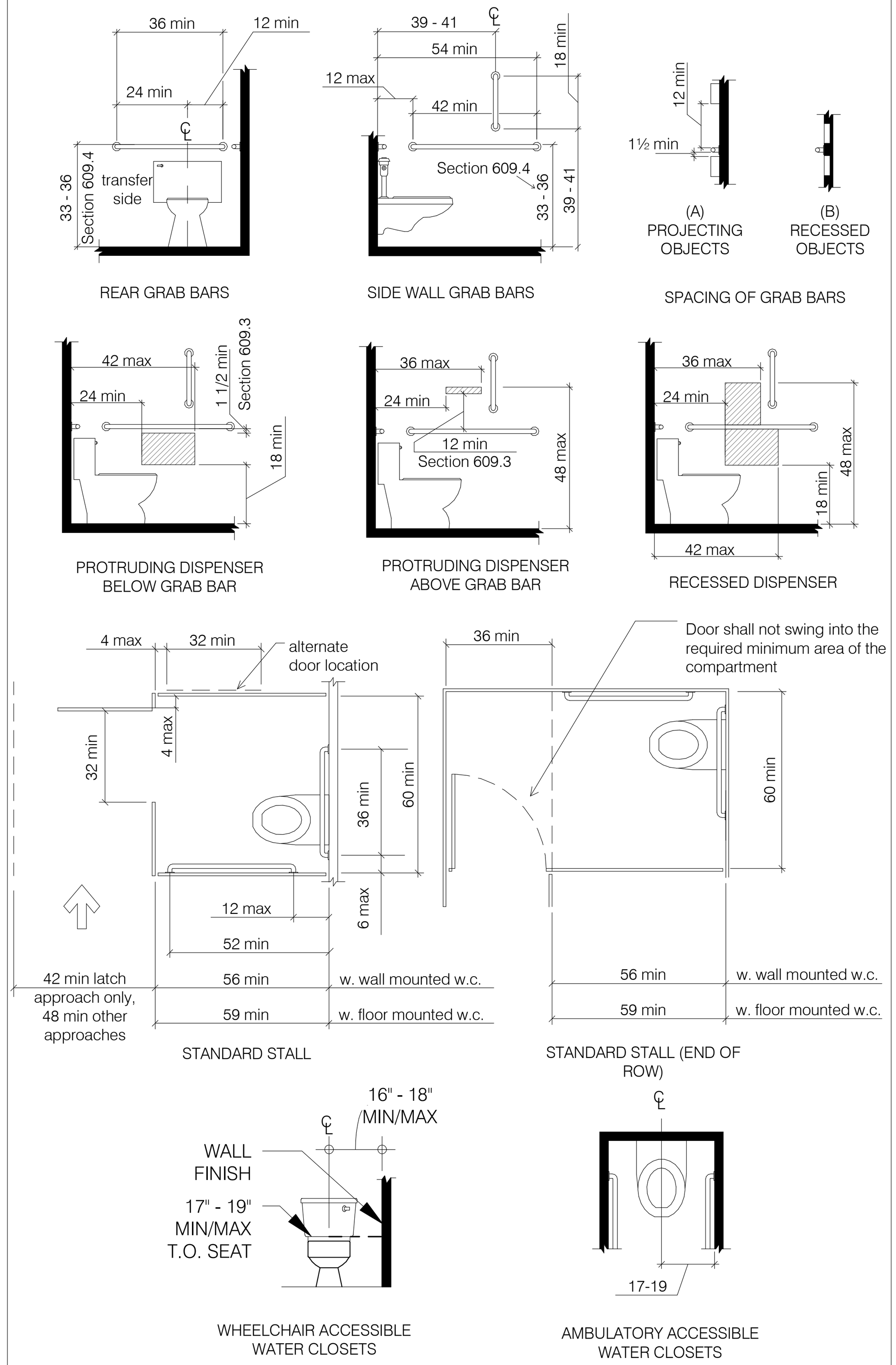


TOE CLEARANCE PER ICC A117.1 SECTION 306.2

KNEE CLEARANCE PER ICC A117.1 SECTION 306.3

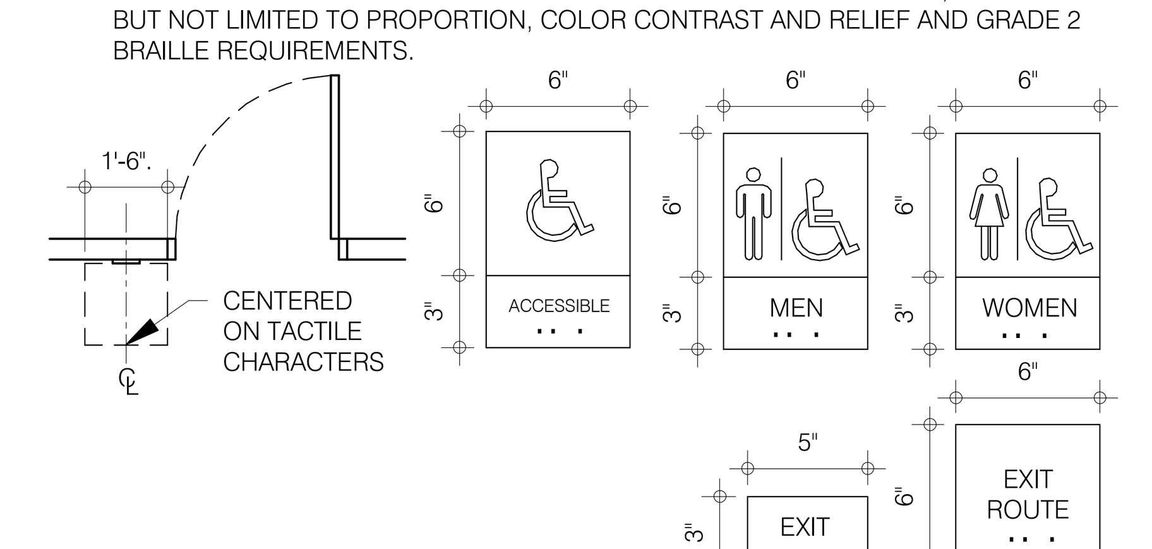
RESTROOMS

1. ELEMENTS OF ACCESSIBLE RESTROOMS SHALL COMPLY WITH ICC 117.1 SECTIONS 603, 604, 605, AND 606.
2. URINALS SHALL BE WALL-HUNG TYPE WITH AN ELONGATED RIM 17 INCHES MAXIMUM ABOVE FINISH FLOOR OR GROUND.
3. URINALS SHALL BE 13 1/2 INCHES DEEP MINIMUM, MEASURED FROM THE OUTER FACE OF THE URINAL RIM TO THE BACK OF THE FIXTURE. URINALS SHALL HAVE A 30" X 48" CLEAR FLOOR SPACE TO ALLOW A FRONT APPROACH AND THE FLUSH CONTROLS SHALL BE HAND-OPERATED WITH THE CONTROLS INSTALLED NO HIGHER THAN 44 INCHES ABOVE FINISH FLOOR.
4. WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES AND SINKS.
5. EXAMPLES OF ACCESSIBLE FAUCETS INCLUDE LEVER OPERATED, PUSH-TYPE, AND ELECTRONICALLY CONTROLLED. HAND-OPERATED METERING FAUCETS SHALL REMAIN OPEN FOR AT LEAST 10 SECONDS. CONTROLS FOR FAUCETS SHALL COMPLY WITH SECTION 309.
6. THE DIAMETER OR WIDTH OF THE GRIPPING SURFACES OF A GRAB BAR SHALL BE 1-1/4" TO 1-1/2" OR THE SHAPE TO PROVIDE EQUIVALENT GRIPPING SURFACE. THE SPACE BETWEEN THE WALL AND THE GRAB BAR SHALL BE 1-1/2". THE GRAB BAR ASSEMBLY SHALL BE CAPABLE OF WITHSTANDING BENDING STRESSES, SHEAR STRESSES, SHEAR FORCES, AND TENSILE FORCES OF UP TO 250 LBF. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.
7. MOUNTING HEIGHTS TO OPERATING CONTROLS FOR RESTROOM ACCESSORIES NOT SPECIFICALLY CALLED OUT IN THE ICC A117.1 - 2017 STANDARDS SHALL COMPLY WITH THE REACH RANGES SPECIFIED IN SECTION 308.
8. HEIGHT OF LAVATORIES AND SINKS SHALL BE INSTALLED WITH THE FRONT OF THE HIGHER OF THE RIM OR COUNTER 34 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.



SIGNAGE NOTES:

1. PROVIDE (2) 6" x 6" ACCESSIBILITY SIGN, w/ PLASTIC, SCREW ANCHORAGE W/ STAINLESS STEEL SCREWS. "MEN" AND "WOMEN" SIGNS SHALL HAVE 2" HIGH TACTILE WHITE LETTERS ON BLACK BACKGROUND. BRAILLE SHALL BE 48" MINIMUM AND 60" MAXIMUM ABOVE FLOOR MEASURED TO THE BASELINE OF THE BRAILLE.
2. PICTOGRAMS SHALL HAVE A FIELD 6" MINIMUM IN HEIGHT. CHARACTERS OR BRAILLE SHALL NOT BE LOCATED IN THE PICTOGRAM FIELD. PICTOGRAMS AND THEIR FIELDS SHALL HAVE A NON-GLARE FINISH. PICTOGRAMS SHALL CONTRAST WITH THEIR FIELDS, WITH EITHER A LIGHT PICTOGRAM ON A DARK FIELD OR A DARK PICTOGRAM ON A LIGHT FIELD.
3. GENERAL CONTRACTOR TO PROVIDE NEW ACCESSIBLE SIGNAGE AS REQUIRED TO COMPLY WITH APPLICABLE BUILDING CODES. COLORS TO BE: BLACK BACKGROUND WITH WHITE LETTERING, TYPICAL.
4. ALL SIGNAGE SHALL CONFORM WITH ADA ACCESSIBILITY GUIDELINES, INCLUDING BUT NOT LIMITED TO PROPORTION, COLOR CONTRAST AND RELIEF AND GRADE 2 BRAILLE REQUIREMENTS.



SIGNAGE:

AFFIX AN INTERNATIONAL ACCESSIBILITY SYMBOL ON ALL ACCESSIBLE ENTRANCES PER APPLICABLE BUILDING CODE.

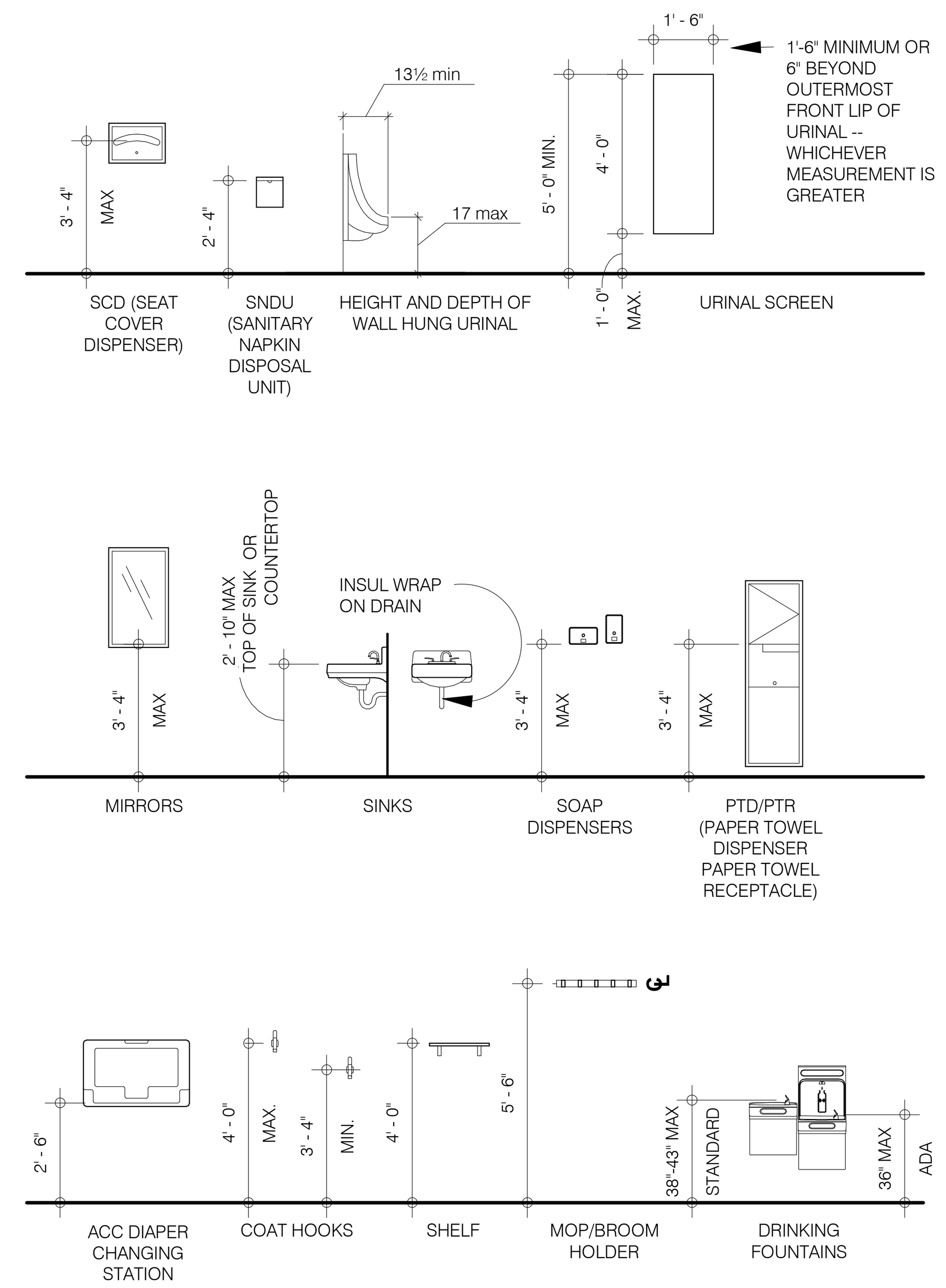
STRIKE EDGE CLEARANCE AT DOORWAY:

1. PROVIDE AN 18" STRIKE EDGE CLEARANCE ON THE PULL SIDE OF INTERIOR DOORS.
2. PROVIDE A 24" STRIKE EDGE CLEARANCE ON THE PULL SIDE OF THE EXTERIOR DOORS.
3. PROVIDE A 12" STRIKE EDGE CLEARANCE ON THE PUSH SIDE OF ALL DOORS WHICH HAVE BOTH A LATCH AND A CLOSER.

TACTILE EXIT SIGNAGE:

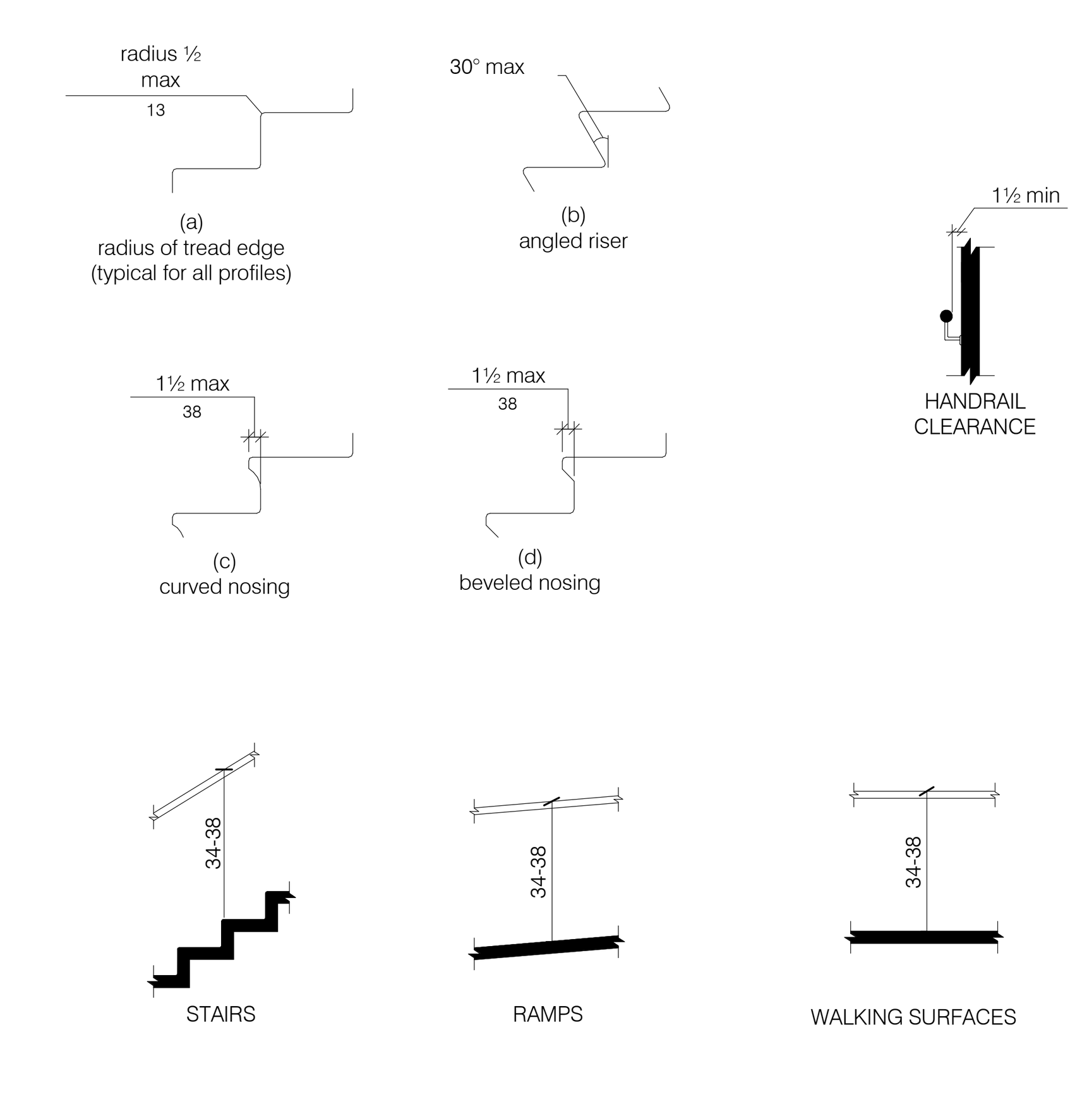
1. A TACTILE EXIT SIGN WITH THE WORD "EXIT" SHALL IDENTIFY EACH GRADE LEVEL EXTERIOR EXIT DOOR.
2. A TACTILE EXIT SIGN WITH THE WORDS "EXIT ROUTE" SHALL IDENTIFY EACH EXIT. ACCESS DOOR FROM AN INTERIOR ROOM OR AREA TO A CORRIDOR OR HALLWAY THAT IS REQUIRED TO HAVE A VISUAL EXIT SIGN.
3. GENERAL CONTRACTOR TO VERIFY EXISTING SIGNAGE INSTALLATIONS AND PROVIDE NEW AS REQUIRED.
4. CHARACTERS, SYMBOLS, AND BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THE BACKGROUND. EITHER LIGHT ON DARK BACKGROUND OR DARK ON LIGHT BACKGROUND.
5. SIGNS TO INCLUDE BRAILLE AND CHARACTERS AS DEFINED BY CODE.
6. MOUNT SIGNAGE AT 60" A.F.F. TO THE BOTTOM OF THE TOP ROW OF LETTERS ON THE SIGN.
7. MOUNTING LOCATION SHALL BE SO THAT A PERSON APPROACHING WITHIN 3" OF THE SIGN DOES NOT ENCOUNTER PROTRUDING OBJECTS OR WITHIN THE SWING OF A DOOR.

RESTROOMS / EQUIPMENT



STAIRWAYS AND HANDRAILS

1. ELEVATION CHANGES SHALL CONFORM WITH 2018 IBC SECTION 1003.5 ELEVATION CHANGE.
2. ALL STEPS ON A FLIGHT OF STAIRS SHALL HAVE UNIFORM RISER HEIGHTS AND UNIFORM TREAD DEPTHS. RISERS SHALL BE 4 INCHES HIGH MINIMUM AND 7 INCHES HIGH MAXIMUM. TREADS SHALL BE 11 INCHES DEEP MINIMUM.
3. OPEN RISERS SHALL NOT BE PERMITTED.
4. TREAD SURFACE SHALL COMPLY WITH ICC A117.1 SECTION 504.4.
5. NOSINGS SHALL COMPLY WITH ICCC A117.1 SECTION 504.5.
6. HANDRAILS PROVIDED ALONG WALKING SURFACES SHALL COMPLY WITH ICC A117.1 SECTION 403, REQUIRED AT RAMPS COMPLYING WITH SECTION 4058, AND REQUIRED AT STAIRS COMPLYING WITH SECTION 504.6.
7. HANDRAILS SHALL BE PROVIDED ON BOTH SIDES OF STAIRS AND RAMPS.
8. HANDRAILS SHALL BE CONTINUOUS WITHIN THE FULL LENGTH OF EACH STAIR FLIGHT OR RAMP RUN. INSIDE HANDRAILS ON SWITCHBACK OR DOGLEG STAIRS AND RAMPS SHALL BE CONTINUOUS BETWEEN FLIGHTS OR RUNS. OTHER HANDRAILS SHALL COMPLY WITH ICC A117.1 SECTIONS 307 & 505.10.
9. TOP OF GRIPPING SURFACES OF HANDRAILS SHALL BE 34 INCHES MINIMUM AND 38 INCHES MAXIMUM VERTICALLY ABOVE WALKING SURFACES, STAIR NOSINGS, AND RAMP SURFACES. HANDRAILS SHALL BE AT A CONSISTENT HEIGHT ABOVE WALKING SURFACES, STAIR NOSINGS, AND RAMP SURFACES.
10. CLEARANCE BETWEEN HANDRAIL GRIPPING SURFACES AND ADJACENT SURFACES SHALL BE 1-1/2 INCHES MINIMUM.
11. HANDRAIL GRIPPING SURFACES SHALL EXTEND BEYOND AND IN THE SAME DIRECTION OF STAIR FLIGHTS AND RAMP RUNS IN ACCORDANCE WITH ICC A117.1 SECTION 505.10.



RAMPS

1. ACCESSIBLE RAMPS SHALL COMPLY WITH ICC A117.1 - 2017 STANDARDS SECTION 405.
2. IF A RAMP HAS A RISE GREATER THAN 6 INCHES OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES. HANDRAILS ARE NOT REQUIRED ADJACENT TO ASSEMBLY SEATING AREAS. CLEARANCE BETWEEN A HANDRAIL GRIPPING SURFACE AND AN ADJACENT SURFACE SHALL BE 1-1/2 INCHES MINIMUM.
3. THE CROSS SLOPE OF RAMP SURFACES SHALL BE NO GREATER THAN 1:48.

ADDITIONAL ACCESSIBILITY COMPONENTS

1. IN ADDITION TO ALL ICC 117.1 - 2017 STANDARDS REQUIREMENTS, THIS FACILITY SHALL MEET THE REQUIREMENTS OF THE LOCAL JURISDICTION FOR ACCESSIBILITY AS LISTED BELOW.

* WHERE INFORMATION LISTED/SHOWN IN THIS SECTION CONFLICTS WITH THE ICC 117.1 - 2017STANDARDS INTERIOR ACCESSIBILITY COMPONENTS, THE MORE RESTRICTIVE OF THE TWO REQUIREMENTS SHALL BE FOLLOWED.

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REGISTERED ARCHITECT
10820
ARMANDO S HURTADO
STATE OF WASHINGTON

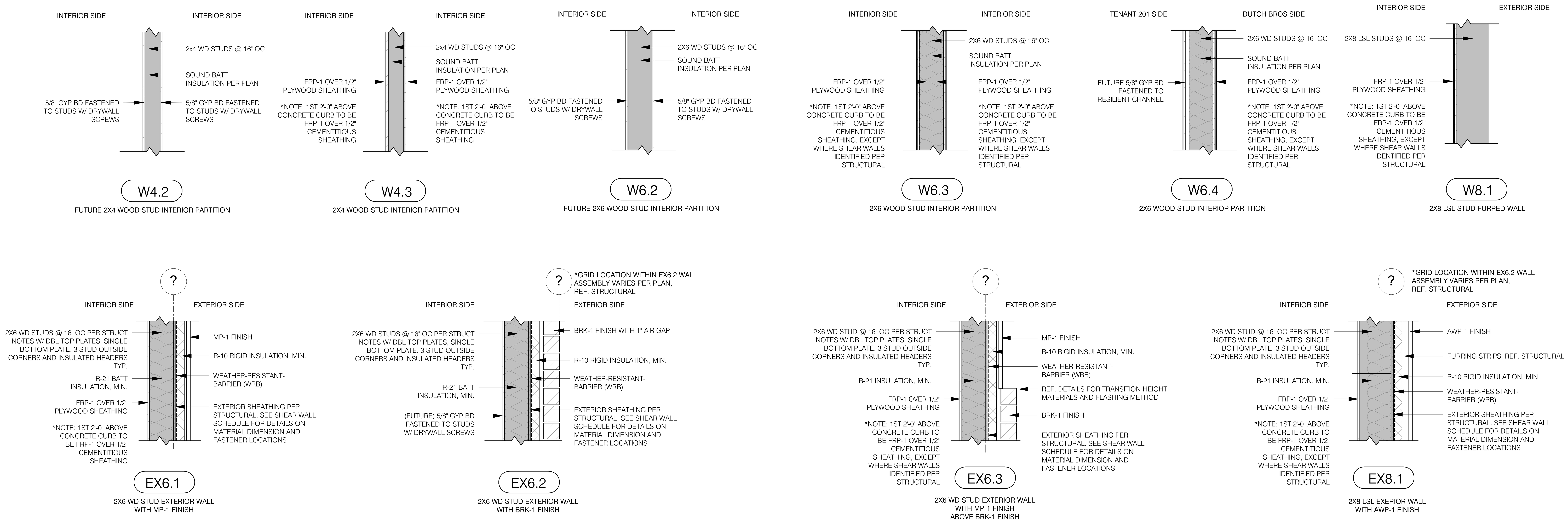
REV | DATE | DESCRIPTION

New Construction
—
20.28 - Dutch Bros - Richland
430 Wellsian Way
Richland, WA 99352

Project: 20.28
Drawn By: NMR
Date: 10/05/2021

G0.03
—
ACCESSIBILITY INFORMATION

FOR PERMIT
THESE DRAWINGS ARE SUFFICIENTLY COMPLETE FOR SUBMISSION TO THE JURISDICTION HAVING AUTHORITY FOR PERMIT. THE CONTRACTOR SHALL NOT USE THESE DRAWINGS FOR CONSTRUCTION UNTIL THE CONTRACTOR RECEIVES WRITTEN APPROVAL FOR USE IN CONSTRUCTION BY THE JURISDICTION HAVING AUTHORITY.



WALL TYPES

ENERGY CODE COMPLIANCE

PER WAC | C406.1 BUILDINGS SHALL ACHIEVE A MINIMUM OF SIX CREDITS THROUGH THE FOLLOWING:

CODE SECTION (3)	REDUCED LIGHTING POWER IN ACCORDANCE WITH SECTION C406.3.2	GROUP B: 4.0 CREDITS
CODE SECTION (10)	ENHANCED ENVELOPE PERFORMANCE IN ACCORDANCE WITH SECTION C406.10	GROUP B: 3.0 CREDITS

DUTCH BROS TENANT 101 WILL ACHIEVE BOTH WITH THIS SUBMITTAL.
TENANTS 201, 301, AND 401 WILL ACHIEVE CODE SECTION 10 IN THIS SUBMITTAL AND DEFER CODE SECTION 3 TO FUTURE TI'S.

PER WAC | C402.2 SPECIFIC BUILDING THERMAL ENVELOPE INSULATION REQUIREMENTS

INSULATION IN BUILDING THERMAL ENVELOPE OPAQUE ASSEMBLIES SHALL COMPLY WITH SECTIONS C402.2.1 THROUGH C4.02.2.6 AND TABLE C4.02.1.3

PER WAC | C402.5.1 A CONTINUOUS AIR BARRIER SHALL BE PROVIDED THROUGHOUT THE BUILDING THERMAL ENVELOPE.

AIR BARRIER JOINTS AND SEAMS SHALL BE SEALED, INCLUDING SEAL TRANSITIONS IN PLACES AND CHANGES IN MATERIALS IN ACCORDANCE WITH C402.5.1.1.2, AND PENETRATIONS SHALL BE CAULKED, GASKETED OR OTHERWISE SEALED IN ACCORDANCE WITH C402.5.1.1.3.

THE COMPLETED BUILDING SHALL BE TESTED PER C402.5.1.2 AND THE AIR LEAKAGE RATE OF THE BUILDING ENVELOPE SHALL NOT EXCEED 0.25 CFM/FT^2. THIS REPORT IS TO INCLUDE THE TESTED SURFACE AREA, FLOOR AREA, AIR BY VOLUME, STORIES ABOVE GRADE, AND LEAKAGE RATES AND SHALL BE SUBMITTED TO THE BUILDING OWNER AND CODE OFFICIAL. IF THE TEST RATE EXCEEDS THAT DEFINED HERE BY UP TO .015 CFM/FT^2, A VISUAL INSPECTION OF THE AIR BARRIER SHALL BE CONDUCTED AND ANY LEAKS NOTED SHALL BE SEALED TO THE EXTENT PRACTICAL. AN ADDITIONAL REPORT IDENTIFYING THE CORRECTIVE ACTIONS TAKEN TO SEAL AIR LEAKS SHALL BE SUBMITTED TO THE BUILDING OWNER AND THE CODE OFFICIAL AND ANY FURTHER REQUIREMENT TO MEET THE LEAKAGE AIR RATE WILL BE WAIVED. IF THE TESTED RATE EXCEEDS 0.04 CFM/FT^2, CORRECTED ACTIONS MUST BE MADE AND THE TEST COMPLETED AGAIN. A TEST ABOVE 0.40 CFM/FT^2 WILL NOT BE ACCEPTED.

PER WAC | C408 SYSTEM COMMISSIONING.

A BUILDING COMMISSIONING PROCESS LED BY A CERTIFIED COMMISSIONING PROFESSIONAL SHALL BE PERFORMED AND COMPLETED IN ACCORDANCE WITH SECTION C408.

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230 S. Washington St. Spokane, WA 99201
509-321-5064 StudioHDG.com

REGISTERED ARCHITECT
10820
ARMANDO S HURTADO
STATE OF WASHINGTON

REV DATE DESCRIPTION

New Construction
—
20.28 - Dutch Bros - Richland
430 Wellsian Way
Richland, WA 99352

Project: 20.28
Drawn By: NMR
Date: 10/05/2021

G0.04
—
FLOOR AND WALL TYPES

FOR PERMIT
THESE DRAWINGS ARE SUFFICIENTLY COMPLETE FOR SUBMISSION TO THE JURISDICTION HAVING AUTHORITY FOR PERMIT. THE CONTRACTOR SHALL NOT USE THESE DRAWINGS FOR CONSTRUCTION UNTIL THE CONTRACTOR RECEIVES WRITTEN APPROVAL FOR USE IN CONSTRUCTION BY THE JURISDICTION HAVING AUTHORITY.

GENERAL NOTES

GENERAL NOTES

FOR CITY OF RICHLAND NOTES SEE SHEET C501

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE INTERNATIONAL BUILDING CODE (IBC), THE CURRENT EDITION OF WSDOT STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION M41-10, THE CITY STANDARDS AND SPECIFICATIONS, AND LOCAL RULES AND STANDARDS OF GOVERNING AGENCIES HAVING JURISDICTION.
2. PRIOR TO DIGGING VERIFY LOCATION AND DEPTH OF UTILITIES AND ANY OTHER UNDERGROUND INTERFERENCE. CALL TWO BUSINESS DAYS BEFORE YOU DIG AT 811.
3. STATEMENT OF ERRORS, AMBIGUITIES AND OMISSIONS: ANY ERRORS, AMBIGUITIES, AND OMISSION IN DRAWINGS AND/OR SPECIFICATIONS SHALL BE REPORTED TO KNUTZEN'S ENGINEERING FOR CORRECTION BEFORE ANY PART OF THE WORK IS STARTED. UNLESS EXPRESSLY STIPULATED NO ADDITIONAL ALLOWANCE WILL BE MADE IN THE CONTRACTOR AND/OR MANUFACTURE'S FAVOR BY VIRTUE OF ERRORS, AMBIGUITIES, AND/OR OMISSIONS WHICH SHOULD HAVE BEEN DISCOVERED DURING THE PREPARATION OF BID ESTIMATE AND DIRECTED TO THE ATTENTION OF KNUTZEN'S ENGINEERING IN A TIMELY MANNER. KNUTZEN'S ENGINEERING ACCEPTS NO RESPONSIBILITY FOR WORK DONE BY THE CONTRACTOR OR SUBCONTRACTORS CONTRARY TO THE PLANS OR SPECIFICATIONS. SUBSTITUTION OR CHANGES WILL NOT BE ACCEPTED UNLESS APPROVED IN WRITING. THE SUBCONTRACTOR SHALL REVIEW ALL SECTIONS OF SPECIFICATIONS AND ALL SHEETS OF THE PLANS FOR ANY INFORMATION OR DETAILS PERTAINING TO THEIR SPECIFIC TRADE.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF SITE CONDITIONS, INSTALLATION STANDARDS AND CONSTRUCTION CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO SHOP FABRICATION AND/OR FIELD ERECTION. DISCREPANCIES BETWEEN SITE CONDITIONS AND THE CONSTRUCTION DRAWINGS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER. WORK DONE WITHOUT THE ENGINEERS APPROVAL IS THE RESPONSIBILITY OF THE CONTRACTOR. LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE APPROXIMATE ONLY. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE WHICH MIGHT OCCUR TO EXISTING UTILITIES.
5. CONTRACTOR IS TO PROVIDE A METHOD OF CONSTRUCTION OF OFF-SITE WORK THAT WILL ALLOW MINIMAL DISTURBANCE TO TRAFFIC FLOWS ON PUBLIC AND PRIVATE WAYS.
6. ALL SPECIAL INSPECTION AND TESTING SHALL BE PERFORMED BY AN INDEPENDENT INSPECTION AND TESTING AGENCY HIRED BY THE OWNER. CONTRACTOR TO COORDINATE WITH INSPECTION AND TESTING AGENCY FOR REQUIRED CONSTRUCTION INSPECTIONS AND MATERIAL TESTING.
7. CONTRACTOR SHALL PROTECT EXISTING PROPERTY CORNERS, IF CORNERS ARE DISTURBED THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING A PROFESSIONAL LAND SURVEYOR TO RE-ESTABLISH THE PROPERTY CORNER(S).
8. THE CONTRACTOR SHALL REFERENCE RECOMMENDATIONS OF THE GEO-TECHNICAL ENGINEERS SOILS REPORT.
9. CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED CURBING OR SIDEWALK WITH IN THE RIGHT OF WAY PER CITY SPECIFICATIONS.
10. ALL ACCESSIBLE ACCESS PATHS, RAMPS, PARKING, AND SIGNAGE SHALL BE TO CURRENT ACCESSIBLE CODES.

EARTHWORK

1. ALL STRUCTURAL FILL OR BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D1557. ALL STRUCTURAL FILL AND BACKFILL SHALL BE PLACED IN MAXIMUM 8" LIFTS. MOISTURE CONDITIONED TO WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
2. REMOVE ALL DEBRIS FROM THE AREA TO BE BACKFILLED PRIOR TO BACKFILLING.
3. SATISFACTORY NATIVE SOILS SHALL BE FREE OF ROCK OR GRAVELS LARGER THAN 3" IN ANY DIMENSION, DEBRIS, WASTE OR FROZEN MATERIAL, NATIVE VEGETATION, OR OTHER DELETERIOUS MATTER.
4. PLACE LOAD BEARING BACKFILL IN LAYERS NOT MORE THAN 8" THICK, LOOSE MEASUREMENT. SPREAD AND COMPACT EACH LAYER UNIFORMLY TO THE REQUIRED DENSITY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE IN KIND ANY UTILITIES AND OR IRRIGATION PIPING DISTURBED AND OR DAMAGED DURING WORK.
6. ALL AREAS TO RECEIVE STRUCTURAL IMPROVEMENTS, PARKING IMPROVEMENTS, AND ROADWAY IMPROVEMENTS SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATERIAL, DEMOLITION DEBRIS, THE SOIL SHALL BE SCARIFIED TO A DEPTH OF 12 INCHES AND COMPACTED TO 92% MDD IN ACCORDANCE WITH ASTM D1557.
7. ALL EXPOSED CUT SLOPES SHALL BE STABILIZED WITH HYDROMULCH TO PREVENT EROSION.
8. STORM PONDS/SWALES SIDEWALLS SHALL BE COMPACTED TO 85% MDD PER ASTM D1557. THE POND BOTTOM SHALL BE SCARIFIED TO A DEPTH OF 18 INCHES WITH A RIPPER UPON COMPLETION OF THE PONDS/SWALES PUSH OUT.
9. ALL EARTHWORK SHALL COMPLY WITH THE GEOTECH REPORT PREPARED BY BAER TESTING & ENGINEERING, INC. ON APRIL 20, 2021 FOR THE PROJECT. (PROJECT NO: 21-079)

SITE UTILITIES

1. A PRE-CONSTRUCTION CONFERENCE SHALL BE SCHEDULED WITH THE CONTRACTOR, ENGINEER, ARCHITECT, CITY PERSONNEL, AND ANY AFFECTED UTILITIES PRIOR TO START OF UTILITY WORK.
2. MAINTAIN A MINIMUM OF 5' HORIZONTAL SEPARATION OF WATER LINE FROM BURIED POWER LINES. MAINTAIN 1' HORIZONTAL SEPARATION OF GAS LINES FROM BURIED POWER LINES.
3. FOR BUILDING SERVICES MAINTAIN A MINIMUM OF 1' HORIZONTAL AND VERTICAL SEPARATION OF WATER SERVICE AND SANITARY SEWER SERVICE LINES. WATER SERVICE SHALL BE PLACED ABOVE SANITARY SEWER SERVICE.
4. MAINTAIN A MINIMUM OF 10' HORIZONTAL AND 1.5' VERTICAL SEPARATION OF WATER AND SANITARY SEWER MAIN LINES. WATER MAINS SHALL BE PLACED ABOVE SANITARY SEWER MAIN.
5. POLYVINYL CHLORIDE (PVC) WATER PIPE SHALL BE AWWA C900 CLASS 235.
6. DUCTILE IRON (DI) WATER PIPE SHALL BE AWWA C151 CLASS 52. PIPE SHALL BE CEMENT MORTAR LINED PER AWWA C104.
7. FIRE WATER LINE INSTALLER SHALL BE LEVEL U INSTALLER PER WAC 212-80.
8. PIPE FITTINGS FOR PVC AND DI PIPE SHALL BE MORTAR LINED CAST OR DUCTILE IRON AND SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C110. FITTING CLASS AND JOINTS SHALL BE COMPATIBLE TO CONNECTING PIPE.
9. POLYETHYLENE TUBING (PE) WATER SERVICE LINE SHALL BE AWWA C901 RATED AT 200 PSI WITH COPPER TUBING OUTSIDE DIAMETER PER ASTM D 2737.
10. GATE VALVES 2" TO 8" SHALL CONFORM TO AWWA C515. VALVES SHALL BE DESIGNED FOR A MINIMUM OF 200 PSI, WITH IRON BODY, RESILIENT WEDGES, NRS 2" SQUARE WRENCH NUT WITH O-RING SEALS, AND SHALL OPEN WHEN THE STEM IS ROTATED COUNTERCLOCKWISE.
11. VALVE BOXES SHALL BE ADJUSTABLE CAST IRON SLIDING TYPE. VALVE BOXES SHALL BE IN ACCORDANCE WITH AWWA C600, SECTION 10.3.
12. FIRE HYDRANTS SHALL CONFORM TO AWWA C502. HYDRANTS SHALL HAVE 5 1/4" MAIN OPERATING VALVE WITH TWO 2 1/2" NST NOZZLES AND ONE 4" NST PUMPER NOZZLE. HYDRANT OPERATING NUT SHALL BE A 1 1/2" PENTAGON. FIRE HYDRANT MODELS SHALL BE PER COUNTY/CITY FIRE DISTRICT STANDARDS. HYDRANTS SHALL HAVE A MINIMUM BURY DEPTH OF 42" AND SHALL BE PAINTED SAFETY YELLOW.
13. CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
14. SANITARY SEWER PIPE SHALL BE PVC MANUFACTURED TO ASTM D3034-SDR 35 WITH RUBBER GASKETED JOINTS.
15. STORM DRAINAGE PIPE SHALL BE PVC OR CORRUGATED POLYETHYLENE (PE). PVC PIPE SHALL BE MANUFACTURED TO ASTM D3034-SDR 35 WITH RUBBER GASKETED JOINTS. PE PIPE SHALL BE MANUFACTURED TO AASHTO M252 OR M294 WITH SMOOTH INTERIOR.
16. ALL BEDDING AND BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D1557. REMOVE ALL DEBRIS FROM THE AREA TO BE BACKFILLED PRIOR TO BACKFILLING. PLACE BACKFILL IN LAYERS NOT MORE THAN 12 INCHES THICK, LOOSE MEASUREMENT. SPREAD AND COMPACT EACH LAYER UNIFORMLY TO THE REQUIRED DENSITY.
17. COSTS FOR GENERAL CONSTRUCTION ITEMS WHICH ARE NOT SHOWN ON THESE DRAWINGS, BUT ARE NECESSARY AND NORMAL FOR COMPLETION OF THIS PROJECT, SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE CONTRACTORS BID FOR THIS PROJECT.
18. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE ON THE CURRENT UNIVERSITY OF SOUTHERN CALIFORNIA LIST OF APPROVED ASSEMBLIES.

ASPHALT PAVEMENT

1. PRIOR TO BEGINNING WORK, CONTACT THE OWNER/CITY OR COUNTY OFFICIAL TO COORDINATE TRAFFIC FLOW, WORK SCHEDULES AND UTILITY INTERFACES.
2. PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS M41-10, SECTION 8-22. CONTRACTOR SHALL USE WSDOT APPROVED MATERIALS, PREPARE THE SURFACES, APPLY THE PAINT, AND BE WITHIN THE TOLERANCES AS SPECIFIED IN THE WSDOT STANDARD SPECIFICATIONS.
3. ASPHALT PLACEMENT SHALL BE IN ACCORDANCE WITH CURRENT WSDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION M41-10, SECTION 5-04.
4. ASPHALT MATERIAL SHALL CONFORM TO CURRENT WSDOT STANDARD SPECIFICATION M41-10, SECTION 9-02.1(4), AGGREGATE SHALL CONFORM TO CURRENT WSDOT STANDARD SPECIFICATION M41-10 SECTIONS 9-03.8(1), (2), (3)A AND (3)B.
5. ALL ASPHALT AND BASE THICKNESSES NOTED ARE COMPACTED THICKNESS.
6. ONE DAY PRIOR TO PLACEMENT OF BITUMINOUS MATERIAL ON THE BASE, THE SURFACE SHALL BE STERILIZED WITH A SOIL HERBICIDE APPLIED AT MANUFACTURER'S RECOMMENDED RATE.
7. ALL ROADWAY IMPROVEMENTS WITHIN THE PUBLIC RIGHT OF WAY SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS, SPECIFICATIONS AND AMENDMENTS.

CONCRETE

1. CONCRETE FOR WALKS, CURBS AND GUTTERS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
2. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED. FABRICATE REINFORCEMENT PER ACI 318, CLASS "B" SPLICES UNLESS NOTED OTHERWISE.
3. WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185.
4. TOOL ALL EXPOSED EDGES WITH A 3/8" RADIUS UNLESS OTHERWISE INDICATED.
5. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 301 AND ACI 305 OR 306 FOR HOT AND COLD WEATHER CONCRETING.
6. TOLERANCES FOR CONCRETE CONSTRUCTION SHALL BE BASED ON A 10'-0 STRAIGHT EDGE. GRADE SHALL NOT DEVIATE MORE THAN 1/8" AND ALIGNMENT SHALL NOT VARY MORE THAN 1/4".
7. PROVIDE SEALED EXPANSION JOINTS BETWEEN BUILDING FOUNDATION WALL AND ALL ADJACENT SIDEWALK.

SPECIAL INSPECTION

1. PER IBC 1705.6, PRIOR TO PLACEMENT OF PREPARED FILL, THE SPECIAL INSPECTOR SHALL DETERMINE THAT THE SITE HAS BEEN PREPARED IN ACCORDANCE WITH THE APPROVED SOILS REPORT.
2. PER IBC 1705.6, WHERE FILL EXCEEDS 12" IN DEPTH, THE SPECIAL INSPECTOR SHALL HAVE CONTINUOUS INSPECTION OF FILL PLACEMENT AND COMPACTION.
3. TESTING AGENCY WILL TEST COMPACTION OF SOILS IN PLACE ACCORDING TO ASTM D 1557, ASTM D 2167, ASTM D 2937, ASTM D 6938, AS APPLICABLE. TESTS WILL BE PERFORMED AT THE FOLLOWING LOCATIONS AND FREQUENCIES:
   A. FOUNDATION, PAVING, AND ADJACENT: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, AT LEAST 1 TEST FOR EVERY 5,000 SQ. FT. OR LESS OF PAVED AREA OR BUILDING SLAB, BUT IN NO CASE FEWER THAN 1 TEST PER DAY.
   B. TRENCH BACKFILL: AT EACH COMPACTED INITIAL AND FINAL BACKFILL LAYER, AT LEAST 1 TEST FOR EACH 150 FEET OR LESS OF TRENCH LENGTH, BUT NO LESS THAN 1 TEST PER DAY.
4. COMPACTION TESTING IS REQUIRED AT THE ABOVE SCHEDULE UNLESS GREATER TESTING IS RECOMMENDED BY STRUCTURAL DRAWINGS. LESS TESTING WOULD BE ACCEPTABLE IF APPROVED IN WRITING BY GEOTECHNICAL ENGINEER, SPECIAL INSPECTOR, FOUNDATION ENGINEER, AND KNUTZEN'S ENGINEERING.

EROSION CONTROL

1. PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES, WALKWAYS, AND DESIGNATED STORMWATER SWALES ACCORDING TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
2. ESTABLISH CONSTRUCTION ACCESS.
   A. CONSTRUCTION VEHICLE ACCESS AND EXIT SHALL BE LIMITED TO ONLY NECESSARY LOCATIONS. ACCESS POINTS SHALL BE STABILIZED WITH QUARRY SPALL OR CRUSHED ROCK TO MINIMIZE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS, MINIMUM 100 FEET LONG.
   B. PUBLIC ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING WILL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
   C. WHENEVER POSSIBLE, THE ENTRANCE SHALL BE CONSTRUCTED ON A FIRM, COMPACTED SUBGRADE. THIS CAN SUBSTANTIALLY INCREASE THE EFFECTIVENESS OF THE PAD AND REDUCE THE NEED FOR MAINTENANCE.
   D. QUARRY SPALLS SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.
   H. IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH.
   I. ANY QUARRY SPALLS THAT ARE LOOSENED FROM THE PAD, WHICH END UP ON THE ROADWAY, SHALL BE REMOVED IMMEDIATELY.
   J. UNTIL PROJECT COMPLETION AND SITE STABILIZATION, ALL CONSTRUCTION ACCESSES INTENDED AS PERMANENT ACCESS FOR MAINTENANCE SHALL BE PERMANENTLY STABILIZED.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SILT FENCING TO PREVENT ANY WATER RUNOFF FROM ANY DISTURBED AREAS. AT A MINIMUM, SILT FENCE WILL BE ALONG THE DOWN SLOPE PROPERTY LINES. THE SILT FENCES SHALL BE CONSTRUCTED IN THE AREAS OF CLEARING, GRADING, OR DRAINAGE PRIOR TO STARTING THOSE ACTIVITIES. THE SILT FENCE SHALL PREVENT SOIL CARRIED BY RUNOFF WATER FROM GOING BENEATH, THROUGH, OR OVER THE TOP OF THE SILT FENCE, BUT SHALL ALLOW THE WATER TO PASS THROUGH THE FENCE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND MAINTAINING A DUST CONTROL PLAN. DUST CONTROL SHALL BE IN ACCORDANCE WITH ALL LOCAL ORDINANCES. ALL DUST CONTROL MEASURES SHALL BE DONE WITH A PERSON OPERATED WATERING DEVICE (E.G. WATER TRUCK, WATER WAGON, ETC.) NO UNATTENDED WATERING ALLOWED. NO IRRIGATION LINES OR OTHER IRRIGATION/SPRINKLER TYPE WATERING DEVICES ALLOWED.
5. CONTRACTOR SHALL PROTECT EXISTING STORMWATER INLETS BY INSTALLING INLET PROTECTION.
6. INSPECT, REPAIR, AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
7. REMOVE EROSION AND SEDIMENTATION CONTROLS ONCE THEY ARE NO LONGER NEEDED AND RESTORE AND STABILIZE AREAS DISTURBED DURING REMOVAL.

STORMWATER SYSTEM OPERATION AND MAINTENANCE

1. CATCH BASINS
   A. REMOVE SEDIMENT, TRASH AND DEBRIS WHEN GRATE BECOMES CLOGGED MORE THAN 10%.
   B. REMOVE SEDIMENT, TRASH AND DEBRIS IN SUMP THAT EXCEEDS 60% OF SUMP DEPTH AS MEASURED FROM BOTTOM OF BASIN TO INVERT OF LOWEST PIPE, BUT IN NO CASE SHALL THE CLEARANCE FROM TOP OF DEBRIS TO INVERT OF LOWEST PIPE BE LESS THAN 6". NO VEGETATION SHALL BE ALLOWED TO GROW IN SUMP. AT A MINIMUM, REMOVE SEDIMENT, TRASH AND DEBRIS IN SUMP ANNUALLY.
   C. STRUCTURAL DAMAGE TO FRAME, GRATE, TOP SLAB, OR SUMP, SHALL BE REPAIRED OR REPLACED. STRUCTURAL DAMAGE INCLUDES CRACKS GREATER THAN 1/4" OR HOLES GREATER THAN 2" IN TOP SLAB, FRAME NOT SITTING FLUSH ON TOP SLAB (MORE THAN 3/4" SEPARATION) OR NOT SECURELY ATTACHED, CRACKS GREATER THAN 1/4" IN SUMP WALLS, SOIL ENTERING SUMP, CRACKS AT GROUT FILLET AROUND PIPES IN EXCESS OF 1/2", SETTLEMENT OF ENTIRE BASIN SUCH THAT IT CREATES A SAFETY, FUNCTION OR DESIGN PROBLEM.
   D. REPLACE ANY MISSING GRATE OR REPAIR IF GRATE IS DIFFICULT TO REMOVE. REPLACE GRATE IF OPENINGS GREATER THAN 7/8" OR GRATE HAS MISSING OR BROKEN BARS.

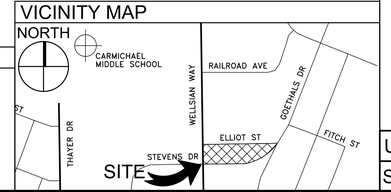
STORMWATER PREVENTION POLLUTION PLAN

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND IMPLEMENTING A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH STORMWATER MANAGEMENT MANUAL FOR EASTERN WASHINGTON (SWMMEW).
2. WHENEVER INSPECTION AND OR MONITORING REVEALS THAT THE BMP'S IDENTIFIED IN THE CONSTRUCTION SWPPP ARE INADEQUATE, DUE TO THE ACTUAL DISCHARGE OF OUR POTENTIAL TO DISCHARGE A SIGNIFICANT AMOUNT OF ANY POLLUTANT, THE SWPPP SHALL BE MODIFIED, AS APPROPRIATE AND IN A TIMELY MANNER.

REFERENCE SOURCES

1. EASTERN WASHINGTON STORMWATER MANUAL CAN BE FOUND AT: (https://fortress.wa.gov/ecy/publications/documents/1810044.pdf).
2. THE CITY OF RICHLAND STANDARD SPECIFICATIONS AND DRAWINGS CAN BE FOUND AT: (https://www.ci.richland.wa.us/departments/public-works/engineering-and-private-development/standard-details).
3. THE CITY OF RICHLAND MUNICIPAL CODE CAN BE FOUND AT: (https://www.codepublishing.com/WA/Richland/).

VICINITY MAP



LEGEND AND ABBREVIATIONS

NEW	EXISTING	
		ACCESSIBLE PARKING MARKER
AVR	(E)AVR	AIR VAC RELIEF
AD	(E)AD	AREA DRAIN
GUY	(E)GUY	GUY WIRE
BOA	(E)BOA	BLOW OFF ASSEMBLY
BO	(E)BO	BOLLARD
		CAP
CB	(E)CB	CATCH BASIN ROUND/SQUARE
CB		CATCH BASIN SOLID
CO	(E)CO	CLEAN OUT
CDS	(E)CDS	CONTINUOUS DEFLECTIVE SEPARATION UNIT
DS	(E)DS	DOWN SPOUT
DW	(E)DW	DRY WELL
EM	(E)EM	ELECTRICAL METER
EV	(E)EV	ELECTRICAL VAULT
GM	(E)GM	GAS METER
FDC	(E)FDC	FIRE DEPARTMENT CONNECTION
FH	(E)FH	FIRE HYDRANT
FP	(E)FP	FLAG POLE
IV	(E)IV	IRRIGATION VALVE
LP	(E)LP	LIGHT POLE
MH	(E)MH	MANHOLE
		PAVEMENT ARROWS
PIV	(E)PIV	POST INDICATOR VALVE
PP	(E)PP	POWER POLE
		REDUCER
		SHRUB
		SLOPE DIRECTION/PIPE SLOPE
SB	(E)SB	STORM BUBBLER
SIGN	(E)SIGN	STREET SIGN
SL	(E)SL	STREET LIGHT
TP	(E)TP	TELEPHONE PEDESTAL
		THRUST BLOCK
XFMR	(E)XFMR	TRANSFORMER
		TREE
UTILITY BOX	UTILITY BOX	UTILITY BOX
VAN	VAN	VAN PAVEMENT MARKING
WV	(E)WV	WATER VALVE
WM/IM	(E)WM/IM	WATER/IRRIGATION METER
WP	MON	WORK/MONUMENT POINT
YH	YH	YARD HYDRANT
NEW ASPHALT	EXISTING ASPHALT	
NEW HEAVY ASPHALT	EXISTING CONCRETE	
NEW HEAVY CONCRETE	EXISTING GRAVEL	
NEW CONCRETE	EXISTING LAWN	
NEW GRAVEL	EXISTING LANDSCAPE	
NEW LAWN	EXISTING UNDEVELOPED	
NEW LANDSCAPE	REMOVE LANDSCAPE	
NEW PLAY ASPHALT	REMOVE ASPHALT	
NEW NATIVE	REMOVE CONCRETE	
NEW TRUNCATED DOMES	REMOVE GRAVEL	
NEW RIP RAP	REMOVE LAWN	
ABAND ABANDONED	REMOVE UNDEVELOPED	

BOT	BOTTOM	PDP	PERFORATED DRAIN PIPE
BW	BOTTOM OF WALL ELEVATION	PE	POLYETHYLENE
COM	COMMUNICATIONS	PS	PRESSURE SEWER
(E)	EXISTING	ROW	RIGHT-OF-WAY
FO	FIBER OPTICS LINE	R	RADIUS
FF	FINISH FLOOR	RWL	RAIN WATER LEADER
FG	FINISH GRADE	SS	SANITARY SEWER
FR	FIRE RISER	SLV	PIPE SLEEVE
FW	FIRE WATER	XXX.XX	SPOT ELEVATION
GL	GUTTER LINE	SD	STORM DRAIN
IE	INVERT ELEVATION	T	TELEPHONE
IR	IRRIGATION	TV	TELEVISION
LS	LANDSCAPE	TA	TOP OF ASPHALT ELEVATION
MON	MONUMENT	TC	TOP OF CONCRETE ELEVATION
NG	NATURAL GAS	TG	TOP OF GRAVEL ELEVATION
NIC	NOT IN CONTRACT	TW	TOP OF WALL ELEVATION
NTS	NOT TO SCALE	TYP	TYPICAL
OHP	OVERHEAD POWER	W	WATER
P	POWER		

	SAWCUT LINE
	NEW EASEMENT LINE
	PROPERTY LINE
100	EXISTING CONTOUR
100	NEW CONTOUR
	EXISTING FENCE
	NEW FENCE
	REMOVE FENCE
	REMOVE SURFACE FEATURE
	REMOVE UNDERGROUND UTILITY
	ABANDONED UNDERGROUND UTILITY
	EXISTING UNDERGROUND UTILITY
	NEW UNDERGROUND UTILITY
	RAIL ROAD TRACKS

DRAWING INDEX

UNDERGROUND INJECTION CONTROL

SITE NUMBER: TO BE DETERMINED

KNUTZEN ENGINEERING
5401 RIDGELINE DR.
SUITE 160
KENNEWICK, WA 99338
1-509-222-0959
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No.	REVISIONS	DATE	DESIGN	CHKD	APPD

NATHAN J. MACHELA — STATE OF WASHINGTON — 19872 — REGISTERED PROFESSIONAL ENGINEER
09/03/21

GENERAL NOTES AND LEGEND

ELITE CONSTRUCTION
DUTCH BROS
430 WELLSIAN WAY, RICHLAND, WA 99352

APPROVAL		
DESIGN	RAM	09/03/21
CHECKED	NJM	09/03/21
APPROVED	NJM	09/03/21

SCALE: AS NOTED
CADFILE: 20217C01
JOB No. 20217 — REV. 0
DWG. No. C001

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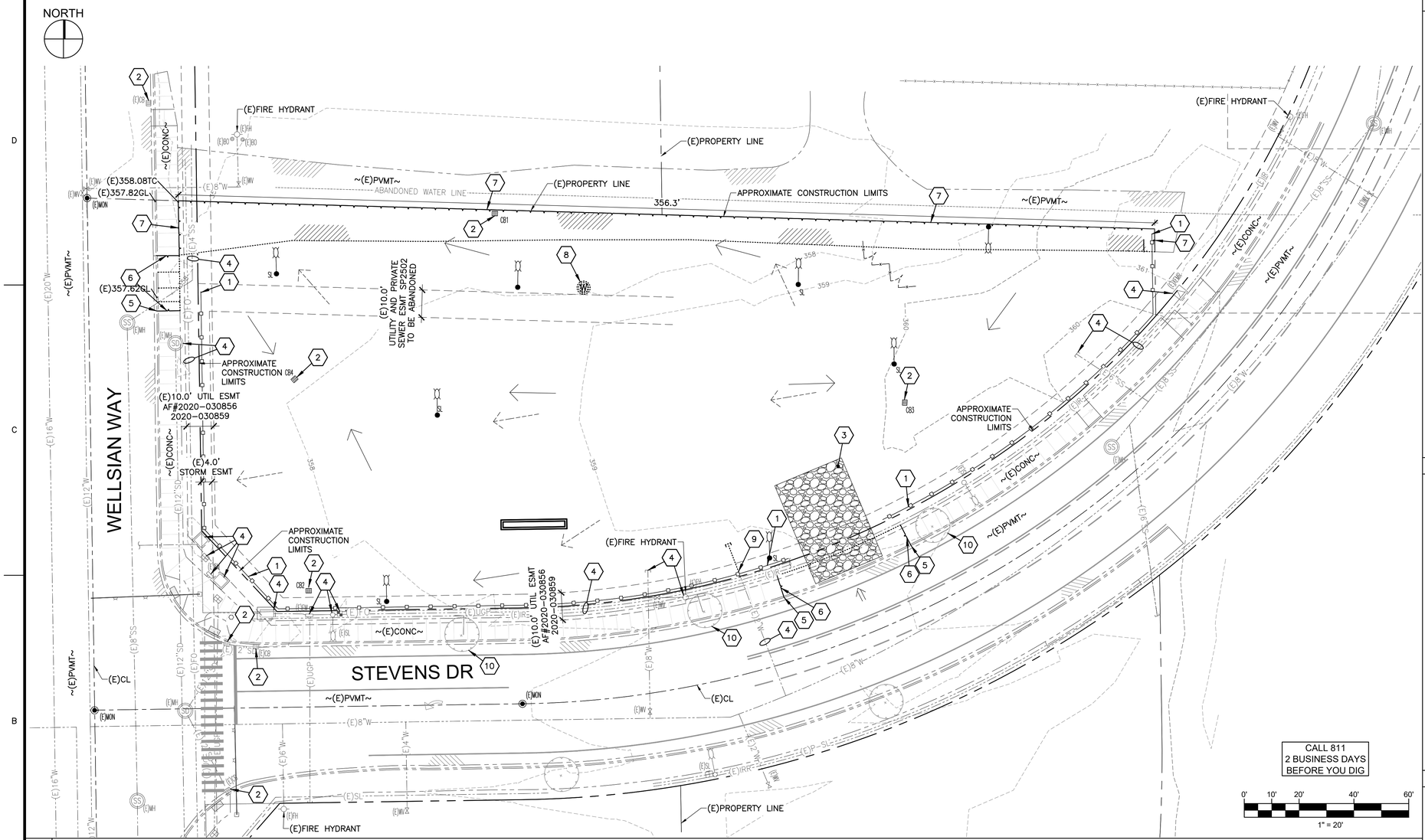


B1 EROSION CONTROL AND DEMOLITION PLAN
SCALE: 1" = 20'-0"

KEY NOTES

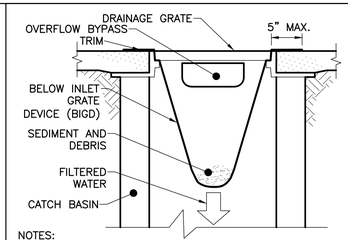
1. SILT FENCING SHALL BE INSTALLED AT LOCATIONS SHOWN AND AS NEEDED AT ANY LOCATIONS OF SITE WHERE SURFACE RUNOFF MAY ERODE SOILS AWAY FROM SITE, CONTRACTOR SHALL INSTALL ADDITIONAL SILT FENCING AS NECESSARY, REFER TO DETAIL A5/-
2. EXISTING AND PROPOSED DRAINAGE STRUCTURE TO BE PROTECTED WITH INLET PROTECTION, SEE DETAIL A4/-
3. CONSTRUCTION ACCESS, SEE GENERAL NOTES ON SHEET C001
4. PROTECT EXISTING UTILITY IN PLACE.
5. SAWCUT CONCRETE CURBING FOR NEW DRIVEWAY, PROVIDE NEAT CUT EDGE. REMOVE CONCRETE AND DISPOSE OF PROPERLY.
6. SAWCUT CONCRETE SIDEWALK AT NEAREST EXPANSION JOINT, PROVIDE NEAT CUT EDGE. REMOVE CONCRETE AND DISPOSE OF PROPERLY.
7. SAWCUT ASPHALT, PROVIDE NEAT CUT EDGE. REMOVE ASPHALT AND DISPOSE OF PROPERLY.
8. REMOVE EXISITNG WELL STRUCTURE AND DISPOSE OF PROPERLY. IF NOT PREVIOUSLY ABANDONED, CITY OF RICHLAND TO ABANDON (E)WELL IN ACCORDANCE WITH DOH AND DOE REGULATIONS.
9. REMOVE (E)WATER PIPE AFTER WATER METER TIE IN LOCATION SHOWN ON SHEET C121
10. PROTECT EXISTING TREE

LEGEND

- EXISTING STORMWATER FLOW PATH
- NEW STORMWATER FLOW PATH
- LIMITS OF CONSTRUCTION LINE
- SILT FENCE
- CONSTRUCTION VEHICLE ACCESS POINTS TO PUBLIC ROADS
- CONSTRUCTION ACCESS EROSION CONTROL

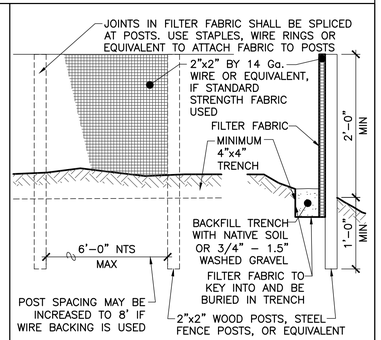
NOTES

1. SEE SHEET C001 FOR GENERAL NOTES AND LEGEND.
2. SEE SHEET C111 FOR PROPOSED GRADES.
3. MOST SUITABLE LOCATION FOR CONSTRUCTION ENTRANCE TO BE DETERMINED BY GENERAL CONTRACTOR. CONSTRUCTION ENTRANCE SHOWN ON DRAWING IS A SUGGESTED LOCATION ONLY.
4. FINAL CONSTRUCTION LAY-DOWN AREA AND STOCKPILE AREA LOCATION AND SIZE TO BE DETERMINED BY THE GENERAL CONTRACTOR WITH APPROVAL OF OWNER.
5. CUT & FILL SLOPES SHOULD BE CONSTRUCTED WITH INCLINATION NO STEEPER THEN 2H:1V AND MUST BE PROTECTED FROM WIND AND EROSION.
6. PLACE TOPSOIL, COMPACT, AND PROVIDE TEMPORARY SOIL STABILIZATION. PERMANENT LANDSCAPING CAN BE INSTALLED ONCE LIKELIHOOD OF SEDIMENTATION DURING CONSTRUCTION IS REDUCED, UPSTREAM AREAS ARE FULLY STABILIZED, AND IRRIGATION SYSTEM IS OPERATIONAL.
7. EROSION, SEDIMENT, AND AIR QUALITY CONTROL SHALL COMPLY WITH THE COUNTY AND CITY AIR QUALITY CONTROL ORDINANCES, AND THE NOTES AND DETAILS ON THESE PLANS.
8. PROVIDE INLET PROTECTION ON ALL STORM DRAIN INLETS SURROUNDING SITE, INSPECT FABRIC REGULARLY AND REPLACE AS NECESSARY IF FOUND TO BE RIPPED OR TORN.
9. ANYTIME AN OPEN TRENCH AND DEMOLITION AREAS ARE PRESENT DURING NON WORK HOURS THE CONTRACTOR SHALL HAVE PORTABLE 6.0' CHAIN LINK CONSTRUCTION FENCE IN PLACE AROUND THE WORK AREA.



NOTES:
1. SIZE THE BELOW INLET GRATE DEVICE (BIGD) FOR THE STORMWATER STRUCTURE IT WILL SERVE.
2. THE BIGD SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
3. THE RETRIEVAL SYSTEM MUST ALLOW REMOVAL OF BIGD WITHOUT SPILLING THE COLLECTED MATERIAL.
4. PERFORM MAINTENANCE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 8.01.3.

A4 INLET PROTECTION
SCALE: 1" = 1'-0" REF: -



A5 SILT FENCE
SCALE: 1" = 1'-0" REF: -

KNUTZEN ENGINEERING
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KENNEWICK, WA 99338
1-509-222-0959
www.knutzenengineering.com

No.	REVISIONS	DATE	DESIGN	CHKD	APPD

NATHAN J. MACHELA
STATE OF WASHINGTON
19372
REGISTERED
PROFESSIONAL ENGINEER
09/03/21

EROSION CONTROL AND DEMOLITION PLAN

ELITE CONSTRUCTION
DUTCH BROS
430 WELLSIAN WAY, RICHLAND, WA 99352

APPROVAL		
DESIGN	RAM	09/03/21
CHECKED	NJM	09/03/21
APPROVED	NJM	09/03/21
SCALE: AS NOTED		
CADFILE: 20217C01		
JOB No. 20217	REV. 0	

DWG. No. C005

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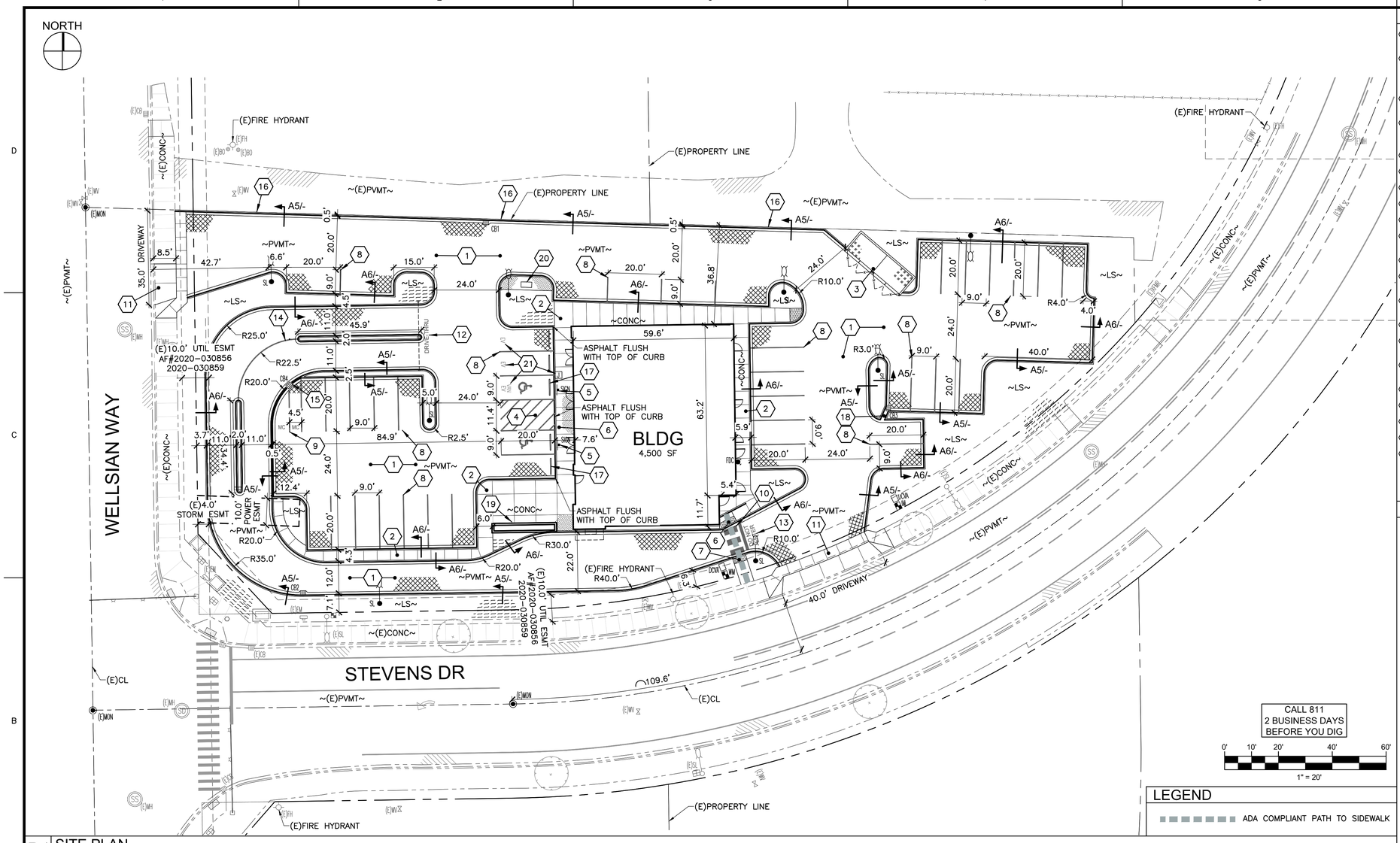


B1 SITE PLAN
SCALE: 1" = 20'-0"

KEY NOTES

1. STANDARD ASPHALT SECTION – 2-1/2" THICK ASPHALT OVER 6" TOP COURSE PER WSDOT 9-03.9(3)
2. STANDARD CONCRETE SECTION – 4" THICK CONCRETE SIDEWALK OVER 4" TOP COURSE PER WSDOT 9-03.9(3). TROWEL CONTROL JOINTS AT 5' O.C. AND INSTALL EXPANSION JOINTS AT 30' O.C.
3. SOLID WASTE CONTAINER PAD PER COR STD SW2B AND SW3
4. PAINT WHITE 4" WIDE PARKING STRIPING, LETTERING, AND ACCESSIBLE PARKING SYMBOLS PER ADA REQUIREMENTS AS SHOWN ON PLAN. SEE DETAIL A1/-
5. ACCESSIBLE PARKING SIGN, SEE DETAIL A2/-
6. ACCESSIBLE RAMP, SEE DETAIL A3/-
7. ACCESSIBLE RAMP, SEE DETAIL A4/-
8. PAINT 4" WHITE PARKING STRIPE, TYP
9. PAINT 4" WIDE WHITE MOTORCYCLE STALLS AND MARKINGS
10. PAINT 24" WIDE WHITE CROSS WALK STRIPE, WITH 48" SPACE.
11. DRIVEWAY, PER CITY STD DETAIL ST3A
12. PAINT "DRIVE THRU" WHITE LETTERING AND INSTALL DRIVE THRU CLEARANCE SIGN, CONTACT OWNER FOR DETAILS.
13. PAINT "DO NOT ENTER" WHITE LETTERING AND 12" STOP BAR.
14. PAINT 4" WHITE DRIVE AISLE STRIP
15. CURB CUT FOR CATCH BASIN AND STORMWATER FLOW, SEE DETAIL A2/C501
16. EXTEND BACK OF CURB TO MATCH EXISTING GRADE AT PROPERTY LINE.
17. CONCRETE WHEEL STOP PER DETAIL A1/C501
18. CONCRETE VALLEY WITH CURBS. SEE SECTION A3/C501
19. WALL, REFER TO ARCHITECTURAL FOR DETAILS.
20. 4 TENANT MAILBOX CLUSTER
21. PARKING STALLS DESIGNATED FOR FUTURE EV CHARGING

NOTES

1. SEE SHEET C001 FOR GENERAL NOTES AND LEGEND.
2. CURB RETURN RADII ARE 5.0' RADIUS UNLESS NOTED OTHERWISE.
3. DIMENSIONS ARE TO FACE OF CURB, UNLESS NOTED OTHERWISE. FIELD VERIFY ALL MEASUREMENTS AND INVERTS PRIOR TO START OF WORK.
4. A SEALED EXPANSION JOINT MATERIAL SHALL BE USED AT JOINTS WHERE NEW CONCRETE ABUTS EXISTING CONCRETE (TYP), SEE WSDOT STD PLAN A-40.10-04 FOR REINFORCEMENT BAR SPACING AND JOINTS.
5. WHERE NEW SIDEWALK, DRIVEWAY OR ACCESSIBLE RAMP TIES INTO (E)SIDEWALK, REMOVE AND REPLACE ADDITIONAL SIDEWALK PANEL FOR ADA TRANSITION IF REQUIRED.
6. REFER TO LANDSCAPE FOR FENCING, GATES AND/OR MOW STRIP.
7. 23 CAR DRIVE-THRU STACKING LENGTH
8. PARKING REQUIRED:
   REQUIRED PER CH.23.54 CITY OF RICHLAND ZONING CODE:
   RESTAURANT; 1 PER 100 SF: 3360 / 100 = 34 STALLS
   DRIVE THRU; 5 PER WINDOW/8 STALLS MIN = 8 STALLS
   42 MINIMUM STALLS REQUIRED

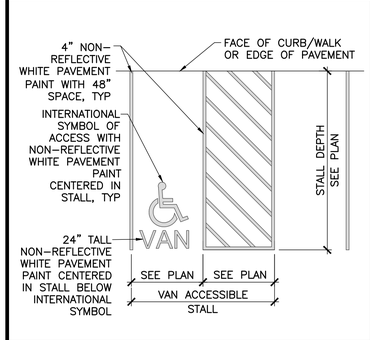
   PARKING PROVIDED:
   42 STANDARD STALLS, 1 ACCESSIBLE STALL, 1 ACCESSIBLE VAN STALL, 2 MOTORCYCLE STALLS, 44 TOTAL STALLS.
9. AREA:
   35,627 IMPERVIOUS AREA, 6,350 SF PERVIOUS AREA (15%), 41,977 SF TOTAL PROPERTY AREA.

CALL 811
2 BUSINESS DAYS
BEFORE YOU DIG

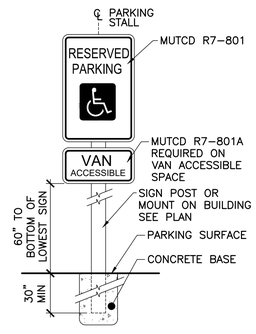
0' 10' 20' 40' 60'
1" = 20'

LEGEND

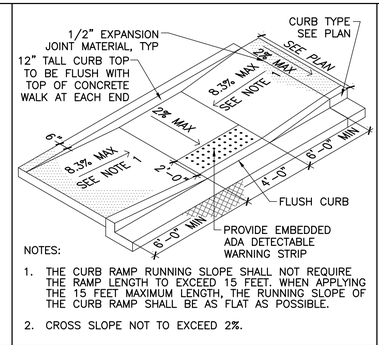
ADA COMPLIANT PATH TO SIDEWALK



A1 ACCESSIBLE PARKING STRIPING
SCALE: 1/8" = 1'-0" REF: –

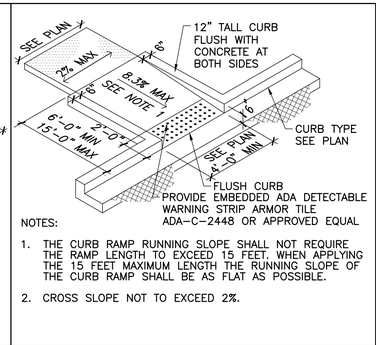


A2 ACCESSIBLE PARKING SIGN
SCALE: 1" = 1'-0" REF: –



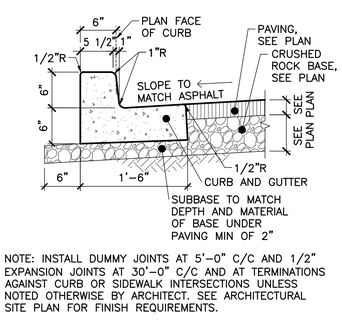
NOTES:
1. THE CURB RAMP RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET. WHEN APPLYING THE 15 FEET MAXIMUM LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS POSSIBLE.
2. CROSS SLOPE NOT TO EXCEED 2%.

A3 ACCESSIBLE RAMP
SCALE: 1/4" = 1'-0" REF: –



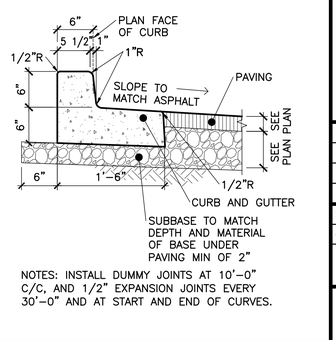
NOTES:
1. THE CURB RAMP RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET. WHEN APPLYING THE 15 FEET MAXIMUM LENGTH THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS POSSIBLE.
2. CROSS SLOPE NOT TO EXCEED 2%.

A4 ACCESSIBLE RAMP
SCALE: 1/4" = 1'-0" REF: –



NOTE: INSTALL DUMMY JOINTS AT 5'-0" C/C AND 1/2" EXPANSION JOINTS AT 30'-0" C/C AND AT TERMINATIONS AGAINST CURB OR SIDEWALK INTERSECTIONS UNLESS NOTED OTHERWISE BY ARCHITECT. SEE ARCHITECTURAL SITE PLAN FOR FINISH REQUIREMENTS.

A5 CONCRETE CURB SECTION
SCALE: 1" = 1'-0" REF: –



NOTES: INSTALL DUMMY JOINTS AT 10'-0" C/C, AND 1/2" EXPANSION JOINTS EVERY 30'-0" AND AT START AND END OF CURVES.

A6 CONCRETE CURB SECTION
SCALE: 1" = 1'-0" REF: –

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No.	REVISIONS	DATE	DESIGN	CHKD	APPD

NATHAN J. MACHELA
STATE OF WASHINGTON
19372
REGISTERED
PROFESSIONAL ENGINEER
09/03/21

SITE PLAN

ELITE CONSTRUCTION
DUTCH BROS
430 WELLSIAN WAY, RICHLAND, WA 99352

APPROVAL		
DESIGN	RAM	09/03/21
CHECKED	NJM	09/03/21
APPROVED	NJM	09/03/21

SCALE: AS NOTED
CADFILE: 20217C01
JOB No. 20217
REV. 0
DWG. No. C101

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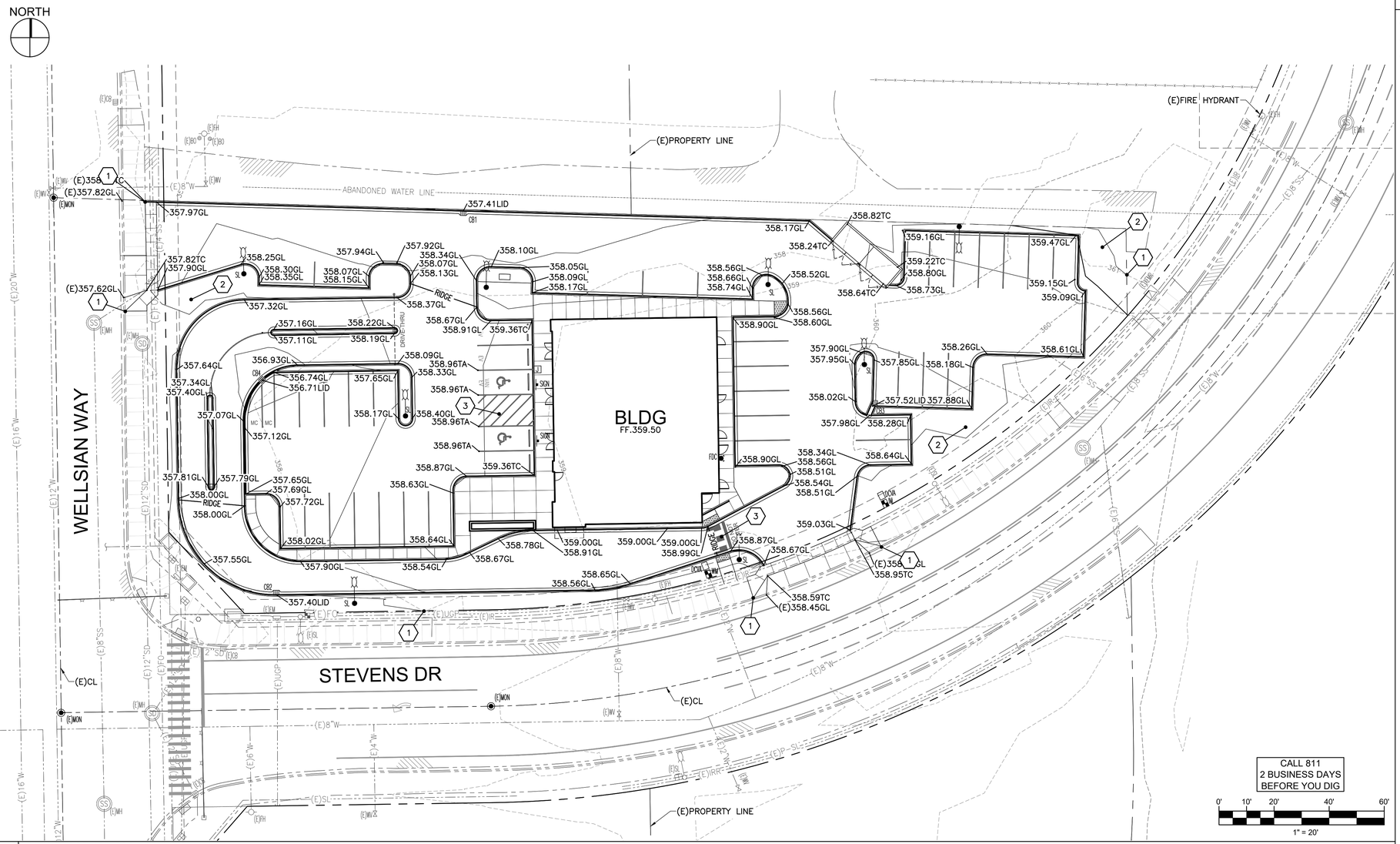

B1 GRADING PLAN
SCALE: 1" = 20'-0"

KEY NOTES

1. MEET AND MATCH EXISTING ELEVATION
2. MAXIMUM 2:1 SLOPE IN LANDSCAPE AREAS
3. MAXIMUM 2% SLOPE IN ANY DIRECTION IN ACCESSIBLE PARKING OR CROSS WALK AREAS.

NOTES

1. SEE DRAWING C001 FOR GENERAL NOTES AND LEGEND.
2. SPOT ELEVATIONS AND CONTOURS ARE TO THE TOP OF SIDEWALK, CURB, OR PAVEMENT FINISHED SURFACE UNLESS NOTED OTHERWISE.
3. FIELD VERIFY ALL MEASUREMENTS AND INVERTS PRIOR TO START OF WORK. IMMEDIATELY NOTIFY ARCHITECT OF DISCREPANCIES BEFORE WORK COMMENCES.
4. SEE DRAWING C121 FOR CATCH BASIN LOCATION DIMENSIONS.
5. DO NOT EXCEED MAXIMUM SLOPE OF 4:1 IN ALL AREAS OF SITE.
6. DO NOT COMPACT SOILS IN SWALE AREAS BEYOND 85% OF MDD PER ASTM D1557.

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NATHAN J. MACHELA
STATE OF WASHINGTON
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PROFESSIONAL ENGINEER
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GRADING PLAN

ELITE CONSTRUCTION
DUTCH BROS
430 WELLSIAN WAY, RICHLAND, WA 99352

APPROVAL		
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SCALE: AS NOTED
CADFILE: 20217C01

JOB No.	REV.
20217	0

DWG. No.
C111

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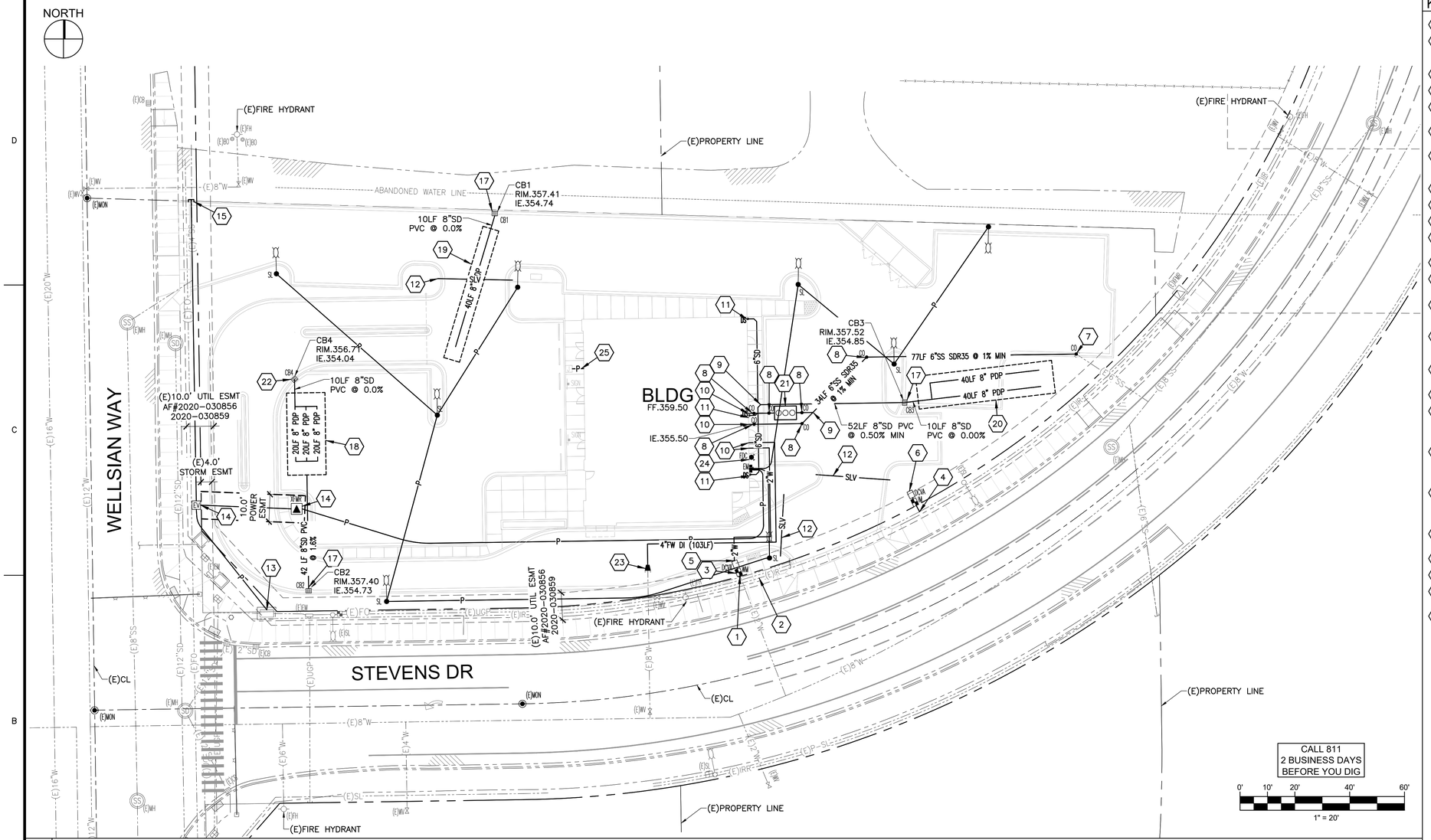
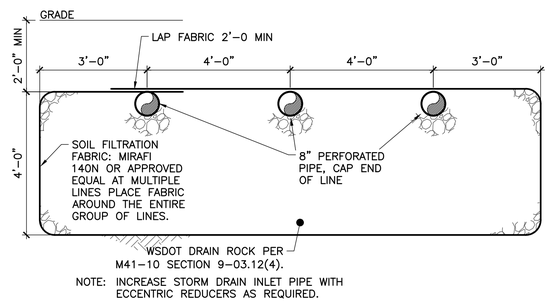


A1 UTILITY PLAN
SCALE: 1" = 20'–0"

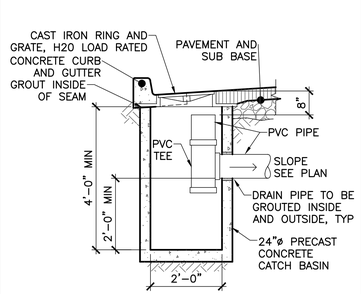
KEY NOTES

1. CONNECT TO EXISTING 2" WATER STUB.
2. CONNECT TO EXISTING IRRIGATION MAIN PER IRRIGATION COMPANY STANDARDS. COORDINATE WITH IRRIGATION COMPANY.
3. 1" WATER METER, PER COR STD DETAIL W3
4. 1" IRRIGATION METER, PER COR STD DETAIL W3
5. 1–1/2" DOUBLE CHECK VALVE ASSEMBLY, PER COR STD DETAIL W20
6. 1" IRRIGATION DOUBLE CHECK VALVE ASSEMBLY, PER COR STD DETAIL W20
7. CONNECT TO EXISTING 6" SEWER SERVICE STUB. CONTRACTOR TO CONFIRM SUFFICIENT DEPTH AND LOCATION.
8. SEWER CLEANOUT TO GRADE, SEE DETAIL A5/-
9. WYE CONNECTION
10. FOR PIPE CONTINUATION REFER TO MECHANICAL
11. RAINWATER DOWNSPOUT. REFER TO ARCHITECTURAL FOR LOCATIONS.
12. 4" IRRIGATION SLEEVE (SLV).
13. ROUTE POWER FROM EXISTING SWITCH. COORDINATE WITH RICHLAND ENERGY SERVICES FOR DETAILS.
14. CONNECT POWER INTO NEW TRANSFORMER/VAULT. COORDINATE WITH RICHLAND ENERGY SERVICES FOR DETAILS
15. PROVIDE POWER STUB TO NORTHERN EDGE OF PROPERTY. COORDINATE WITH RICHLAND ENERGY SERVICES FOR DETAILS.
16. COORDINATE WITH TELEPHONE COMPANIES TO BRING SERVICE TO NEW BUILDING.
17. CATCH BASIN, SEE DETAIL A4/-
18. 14.0'Wx30.0'Lx4.0'DEEP ROCK POCKET
    TOP=354.71 BOTTOM=350.71
    (3)20 LF 8" PDP @ 0.0% IE=354.04
    REFER TO SECTION A2/-
19. 6.0'Wx50.0'Lx4.0'DEEP ROCK POCKET
    TOP=355.41 BOTTOM=351.41
    (1)40LF 8" PDP @ 0.0% IE=354.74
    REFER TO SECTION B1/C501
20. 12.0'Wx50.0'Lx4.0'DEEP ROCK POCKET
    TOP=355.52 BOTTOM=351.52
    (2)40LF 8" PDP @ 0.0% IE=354.85
    REFER TO SECTION C1/C501
21. 1,000 GAL GREASE INTERCEPTOR, SEE DETAIL PER COR STD DETAILS S20 AND S20A.
22. CATCH BASIN WITH CURB CUTS. SEE DETAIL A2/C501
23. 8"x4" REDUCER ON (E)8" STUB
24. FIRE DEPARTMENT CONNECTION LOCATED ON EXTERIOR WALL OF FIRE RISER ROOM. REFER TO ARCHITECTURAL.
25. ELECTRICAL VEHICLE CHARGING J–BOX AND CONDUIT.

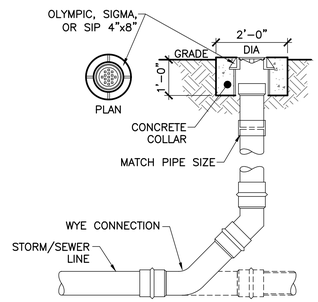


NOTE: INCREASE STORM DRAIN INLET PIPE WITH ECCENTRIC REDUCERS AS REQUIRED.

A2 INFILTRATION TRENCH
SCALE: 1/2" = 1'–0" REF: –



A4 CATCH BASIN IN CURB
SCALE: 1/2" = 1'–0" REF: –



A5 CLEAN OUT TO GRADE
SCALE: 1/2" = 1'–0" REF: –

NOTES

1. SEE DRAWING C001 FOR GENERAL NOTES AND LEGEND.
2. ALL UNDERGROUND UTILITIES ON THE SITE MAY NOT BE SHOWN. FIELD LOCATE AND VERIFY ALL UNDERGROUND UTILITIES. COORDINATE ALL RELOCATION WORK WITH THE APPROPRIATE UTILITY COMPANY AND/OR OWNER PRIOR TO ANY EXCAVATION WORK.
3. FIELD VERIFY ALL MEASUREMENTS AND INVERTS PRIOR TO START OF WORK. IMMEDIATELY NOTIFY ARCHITECT OF DISCREPANCIES BEFORE WORK COMMENCES.
4. ALL SITE ELECTRICAL WORK MAY NOT BE SHOWN ON THE CIVIL SITE DRAWINGS, SITE ELECTRICAL IS SHOWN FOR REFERENCE PURPOSES ONLY. REFER TO ELECTRICAL PLANS IN THIS CONSTRUCTION PACKAGE FOR ELECTRICAL DEMOLITION, RELOCATION, AND NEW INSTALLATION.
5. REFER TO ELECTRICAL PLANS FOR TELEPHONE, FIBER OPTICS EQUIPMENT AND CONDUIT, FOR LOCATIONS, DETAILS AND SPECIFICATIONS. COORDINATE WITH UTILITY COMPANY FOR TIE IN LOCATION AND SPECIFICATIONS.
6. REFER TO MECHANICAL FOR GAS METER AND COORDINATE WITH GAS COMPANY FOR CONDUIT LOCATION AND SPECIFICATIONS.

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NATHAN J. MACHIELA
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UTILITY PLAN

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DWG. No. C121

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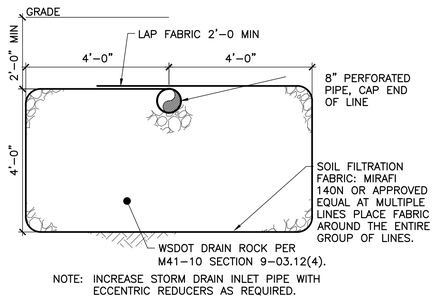
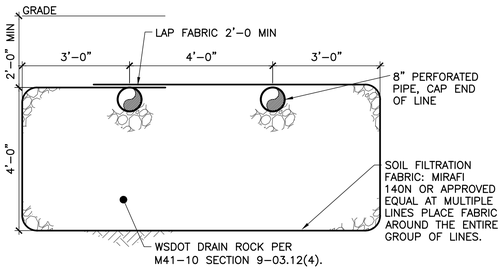


NOTE: INCREASE STORM DRAIN INLET PIPE WITH ECCENTRIC REDUCERS AS REQUIRED.

C1 INFILTRATION TRENCH

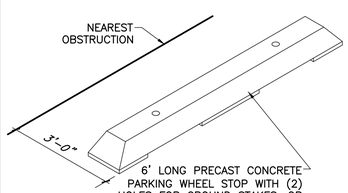
SCALE: 1/2" = 1'-0" REF: C121



NOTE: INCREASE STORM DRAIN INLET PIPE WITH ECCENTRIC REDUCERS AS REQUIRED.

B1 INFILTRATION TRENCH

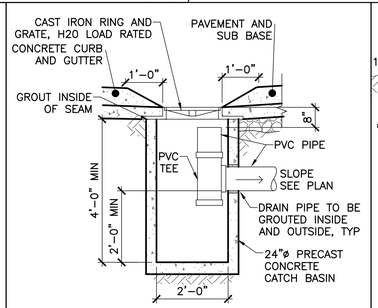
SCALE: 1/2" = 1'-0" REF: C121



6' LONG PRECAST CONCRETE PARKING WHEEL STOP WITH (2) HOLES FOR GROUND STAKES, OR 6' LONG RUBBER WHEEL STOP WITH (3) HOLES FOR GROUND STAKES. GROUND STAKES #5 REBAR, 2' LONG

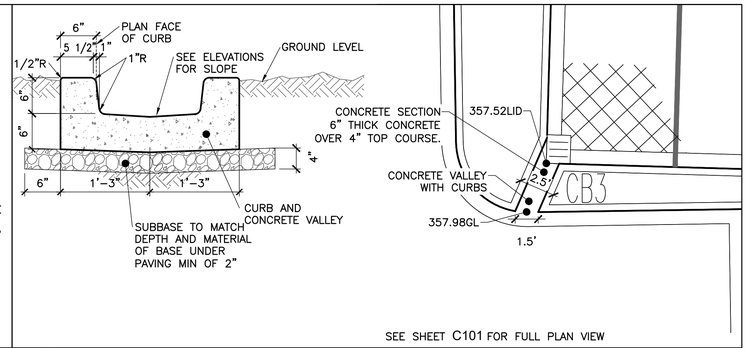
A1 CONCRETE WHEEL STOP

SCALE: 1/2" = 1'-0" REF: C101



A2 CATCH BASIN WITH CURB CUTS

SCALE: 1/2" = 1'-0" REF: C101, C121



SEE SHEET C101 FOR FULL PLAN VIEW

A3 CONCRETE VALLEY WITH CURBS

SCALE: 1" = 1'-0" REF: C101

CITY OF RICHLAND NOTES

THE FOLLOWING NOTES SHALL BE USED WHEN THEY ARE APPLICABLE TO THE PROJECT. ADDITIONAL NOTES SHALL BE ADDED BY THE DESIGN ENGINEER OR MAY BE REQUIRED BY THE CITY TO ADDRESS SPECIFIC CONCERNS FOR EACH PROJECT.

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST REVISION OF THE CITY OF RICHLAND STANDARD SPECIFICATIONS AND DETAILS AND THE CURRENT EDITION OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION. PLEASE CONFIRM THAT YOU HAVE THE LATEST SET OF STANDARD SPECS AND DETAILS BY VISITING THE CITY'S WEB PAGE
2. ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, UTILITY EASEMENT, OR INVOLVING THE CONSTRUCTION OF PUBLIC INFRASTRUCTURE WILL REQUIRE THE APPLICANT TO OBTAIN A RIGHT-OF-WAY PERMIT PRIOR TO CONSTRUCTION. A PLAN REVIEW AND INSPECTION FEE IN THE AMOUNT EQUAL TO 5% OF THE CONSTRUCTION COSTS OF THE WORK THAT WILL BE ACCEPTED AS PUBLIC INFRASTRUCTURE OR IS WITHIN THE RIGHT-OF-WAY OR EASEMENT WILL BE COLLECTED AT THE TIME THE PERMIT IS ISSUED. A STAMPED ITEMIZED ENGINEERS ESTIMATE (OPINION OF PROBABLE COST) SHALL BE SUED TO CALCULATE THE 5% FEE.
3. ONCE THE PLANS HAVE BEEN ACCEPTED BY THIS DEPARTMENT, A PRE-CONSTRUCTION CONFERENCE WILL BE REQUIRED PRIOR TO THE START OF ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENT. CONTACT THE PUBLIC WORKS ENGINEERING DIVISION AT 942-7500 OR 942-7742 TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE.
4. WHEN CONSTRUCTION IS SUBSTANTIALLY COMPLETE A PAPER SET OF "RECORD DRAWINGS" SHALL BE PREPARED BY A LICENSED SURVEYOR AND INCLUDE ALL CHANGES AND DEVIATIONS. PLEASE REFERENCE THE PUBLIC WORKS DOCUMENT "RECORD DRAWING REQUIREMENTS & PROCEDURES" FOR A COMPLETE DESCRIPTION OF THE RECORD DRAWING PROCESS. AFTER APPROVAL BY THE CITY OF THE PAPER COPY, A MYLAR COPY OF THE RECORD DRAWINGS SHALL BE SUBMITTED ALONG WITH A CAD COP OF THEM.
5. NO WORK ON THIS PROJECT SHALL COMMENCE UNTIL A CITY OF RICHLAND RIGHT-OF-WAY CONSTRUCTION PERMIT HAS BEEN ISSUED.
6. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."
7. THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL BE LICENSED BY THE STATE OF WASHINGTON AND BONDED TO DO WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL PROVIDE THE CITY A CERTIFICATE OF INSURANCE PRIOR TO ISSUANCE OF THE RIGHT-OF-WAY CONSTRUCTION PERMIT. THE MINIMUM COVERAGES SHALL COMPLY WITH CITY'S INSURANCE REQUIREMENTS.
8. THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL HAVE A CURRENT CITY OF RICHLAND BUSINESS LICENSE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CONSTRUCTION DEFICIENCIES FOR A PERIOD OF ONE-YEAR FROM THE DATE OF ACCEPTANCE BY THE CITY OF RICHLAND.
10. THE CONTRACTOR SHALL BE REQUIRED TO CALL 1-800-424-5555 OR "811" A MINIMUM OF TWO WORKING DAYS PRIOR TO COMMENCING ANY EXCAVATION ACTIVITIES TO DETERMINE FIELD LOCATIONS OF ALL UNDERGROUND UTILITIES.
11. ANY CHANGES OR MODIFICATIONS TO THE PROJECT PLANS SHALL FIRST BE APPROVED BY THE CITY ENGINEER OR HIS REPRESENTATIVE.
12. THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED WITH THE FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
13. THE FACE OF CURB SHALL BE STAMPED AT ALL UTILITY CROSSINGS, MAIN LINES AND SERVICE LINES AS FOLLOWS:
    "S" – SANITARY SEWER, "I" – IRRIGATION, "G" – GAS
    "W" – WATER, "C" – CONDUITS, "D" STORM DRAIN
14. ALL FIRE HYDRANTS AND GUARD POSTS SHALL BE PAINTED OSHA SAFETY YELLOW, QUICKSET ENAMEL NO. 3472 HYDRANT YELLOW AS MANUFACTURED BY FARWEST PAINT MANUFACTURING COMPANY OR APPROVED EQUAL.
15. FIRE HYDRANTS AND STREET LIGHTS SHALL BE INSTALLED AT 2-FEET BEHIND THE BACK OF SIDEWALK TO THE FACE OF EQUIPMENT WHERE THE SIDEWALK IS ADJACENT TO THE CURB AND 6 FEET BEHIND THE BACK OF CURB WHERE THE SIDEWALK IS NOT ADJACENT TO THE CURB UNLESS OTHERWISE NOTED ON THE PLANS.
16. ANY DAMAGED OR BADLY DETERIORATED CONCRETE CURB, GUTTER AND SIDEWALK WITHIN PUBLIC RIGHT OF WAY SHALL BE REMOVED AND REPLACED. THIS INCLUDES ANY CURB DAMAGED BY CONSTRUCTION EQUIPMENT DURING THE PROJECT.
17. 2-INCHES OF CRUSHED GRAVEL SHALL BE PLACED AND COMPACTED BENEATH ALL SIDEWALKS PRIOR TO PLACEMENT OF CONCRETE.
18. ALL STORM DRAINAGE MANHOLES WITH A GRATED LID SHALL BE CONSTRUCTED WITH "SUMP" IN THE BOTTOM OF THEM, AND ALL STORM MANHOLES WITH SOLID LIDS SHALL HAVE CHANNELED BASES, IN ACCORDANCE WITH THE STANDARD DETAILS.
19. IRRIGATION VALVE BOXES OR LIDS WITHIN THE ROADWAY OR PUBLIC RIGHT-OF-WAY NEED TO BE PER CITY OF RICHLAND SPEC: "RICH 931" CAST IRON LID SHALL HAVE "IRR" CAST INTO TOP.
20. A MINIMUM HORIZONTAL SEPARATION OF 10-FEET SHALL BE MAINTAINED BETWEEN WATER MAINS AND SEWER MAINS AND SERVICE LINES. WATER MAINS SHOULD CROSS OVER THE TOP OF SEWER MAINS WITH A MINIMUM VERTICAL SEPARATION OF 18-INCHES. ANY CROSSING WITH A VERTICAL SEPARATION OF LESS THAN 18-INCHES OR ANY CROSSING IN WHICH THE WATER MAIN CROSSES BELOW THE SEWER MAIN SHALL BE IN ACCORDANCE WITH WASHINGTON STATE DEPARTMENT OF ECOLOGY STANDARDS. PRESSURIZED SEWER MAINS SHALL NOT CROSS OVER POTABLE WATER MAINS IN ANY CASE. IF A MINIMUM VERTICAL SEPARATION OF 12-INCHES CANNOT BE MAINTAINED BETWEEN PIPES, CDF OR CONCRETE SHALL BE USED AS BACKFILL IN PLACE OF SOIL OR GRAVEL.
21. RESIDENTIAL SEWER SERVICES SHALL BE 4-INCH DIAMETER AND SHALL EXTEND 10-FEET BEYOND THE RIGHT-OF-WAY INTO THE LOT. THE END SHALL BE MARKED WITH MARKER POST INSTALLED IN ACCORDANCE WITH CITY STANDARD DETAILS
22. RESIDENTIAL WATER SERVICES SHALL BE 1-INCH IN DIAMETER AND SHALL EXTEND 1-FOOT BEYOND THE BACK OF SIDEWALK THROUGH THE CURB STOP. THE END SHALL BE MARKED WITH A BLUE MARKER POST INSTALLED IN ACCORDANCE WITH CITY STANDARD DETAILS.
23. THE CONTRACTOR SHALL TAKE ANY NECESSARY MEANS TO KEEP FROM TRACKING MUD AND DEBRIS OUT ONTO THE EXISTING STREETS, AND SHALL KEEP MUD AND ANY OTHER DEBRIS FROM HIS SITE FROM ENTERING THE EXISTING PUBLIC STORM DRAINAGE SYSTEM.
24. THE CONTRACTOR SHALL SUPPLY A DUST CONTROL PLAN PRIOR TO STARTING WORK IN ACCORDANCE WITH TRMC CHAPTER 9.16.046, SECTION J

2.5 ALL DISTURBED AREAS SHALL BE HYDRO-SEEDED AT THE COMPLETION OF THE PROJECT.

26. THE CONTRACTOR SHALL TAKE CARE TO PREVENT CONSTRUCTION SITE RUNOFF FROM THE ENTERING INTO THE CITY'S STORMWATER SYSTEM, IN ACCORDANCE WITH RMC CHAPTER 16.05. CONSTRUCTION MATERIALS THAT MAY INTRODUCE SEDIMENT INTO THE STORM SYSTEM MAY NOT BE STOCKPILED IN THE STREET. SUCH MATERIALS MAY INCLUDE BUT NOT BE LIMITED TO: CONSTRUCTION MATERIALS, SOIL, SAND, GRAVELS, ECT.

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No.	REVISIONS	DATE	DESIGN	CHKD	APPD

NATHAN J. MACHELA — STATE OF WASHINGTON — 19572 — REGISTERED PROFESSIONAL ENGINEER

09/03/21

COR STANDARD NOTES

ELITE CONSTRUCTION
DUTCH BROS
430 WELLSIAN WAY, RICHLAND, WA 99352

APPROVAL		
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SCALE: AS NOTED

CADFILE: 20217C01

JOB No. 20217 | REV. 0

DWG. No. C501

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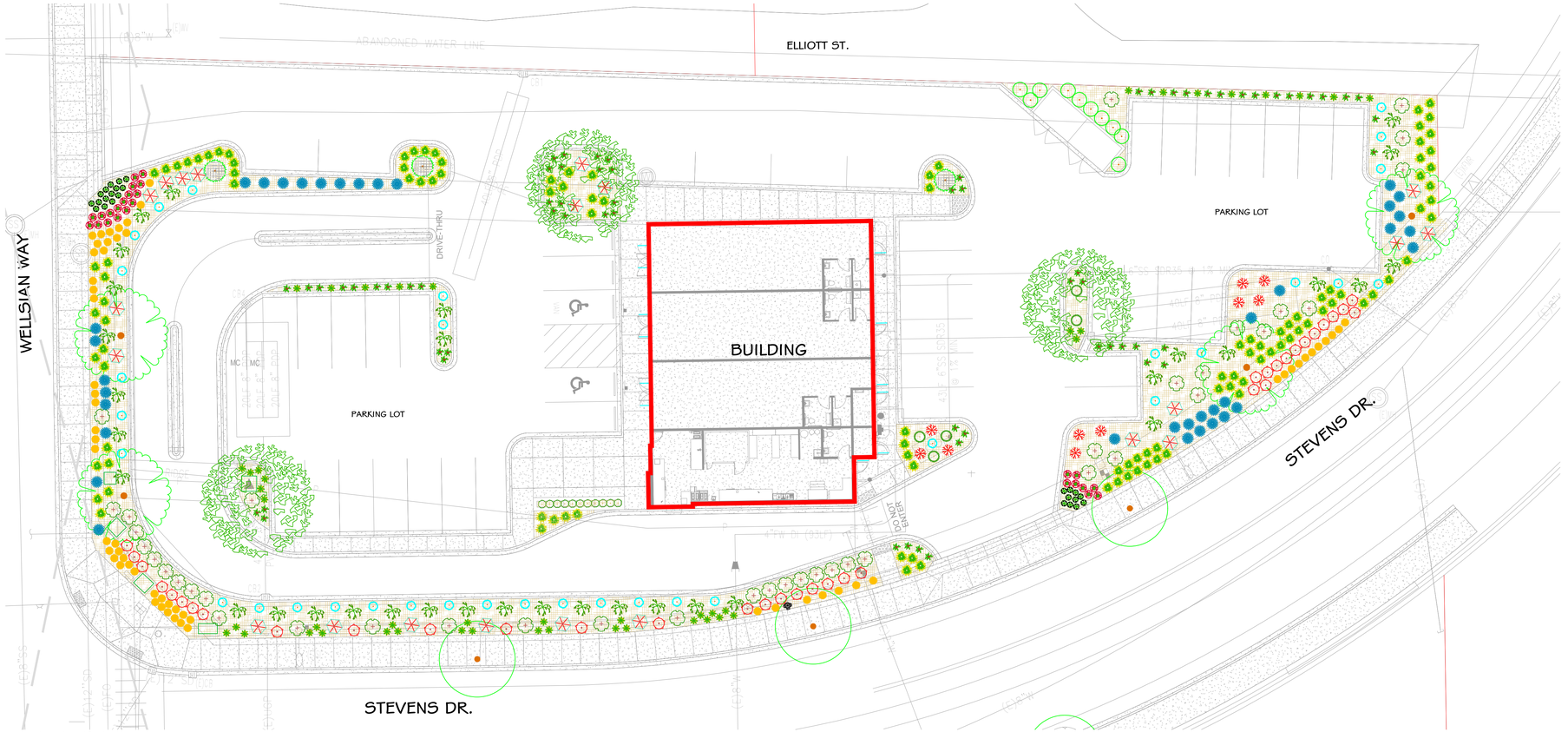


PLANT SCHEDULE 1

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
	Existing Tree	Existing Tree	---	Existing	3
	Juniperus Scopulorum 'Blue Arrow'	Blue Arrow Juniper	5`-6` Ht.	Pot	33
	Picea abies `Columnaris`	Columnar Norway Spruce	5`-6` Ht.	Pot	3
	Thuja x `Green Giant`	Green Giant Arborvitae	5` Ht.	B&B	10
	Tilia cordata `Greenspire`	Greenspire Linden	1.75" Cal.	Pot	4
	Zelkova serrata `Green Vase`	Green Vase Sawleaf Zelkova	1.75" Cal.	Pot	3

SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
	Berberis thunbergii 'Crimson Pygmy'	Crimson Pygmy Japanese Barberry	1 gal.		36
	Buxus sempervirens `Suffruticosa`	True Dwarf Boxwood	2 gal.	Pot	11
	Cornus sericea `Arctic Fire`	Arctic Fire Dogwood	1 gal.	Pot	10
	Cornus sericea `Ivory Halo`	Variegated Redtwig Dogwood	2 gal.	Pot	21
	Pinus mugo `Compacta`	Dwarf Mugo Pine	---	Existing	5
	Prunus laurocerasus `Otto Luyken`	Otto Luyken Laurel	5 gal.	B&B	40
	Spiraea japonica `Walbuma`	Magic Carpet Spirea	1 gal.	Pot	61

GRASSES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass	1 gal.	Pot	47
	Miscanthus sinensis `Morning Light`	Morning Light Eulalia Grass	5 gal.		33
	Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	1 gal.	Pot	37
	Pennisetum alopecuroides `Hameln`	Hameln Fountain Grass	1 gal.		114

PERENNIALS	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
	Hemerocallis x `Pardon Me`	Pardon Me Daylily	1 gal.	Pot	66
	Iberis sempervirens	Evergreen Candytuft	1 gal.	Pot	25
	Sedum x `Autumn Joy`	Autumn Joy Sedum	1 gal.	Pot	25

LANDSCAPE LEGEND

7,960 SQ. FT. | BED AREA (3/8" PEA GRAVEL)

GreenLife
Landscape Design

Richland, Wa. 99354

Phone (509) 554-2617
esser.designs@gmail.com
Creating Unique Landscapes

CONSULTANT

DUTCH BROS
WELLSIAN WAY
RICHLAND, WA

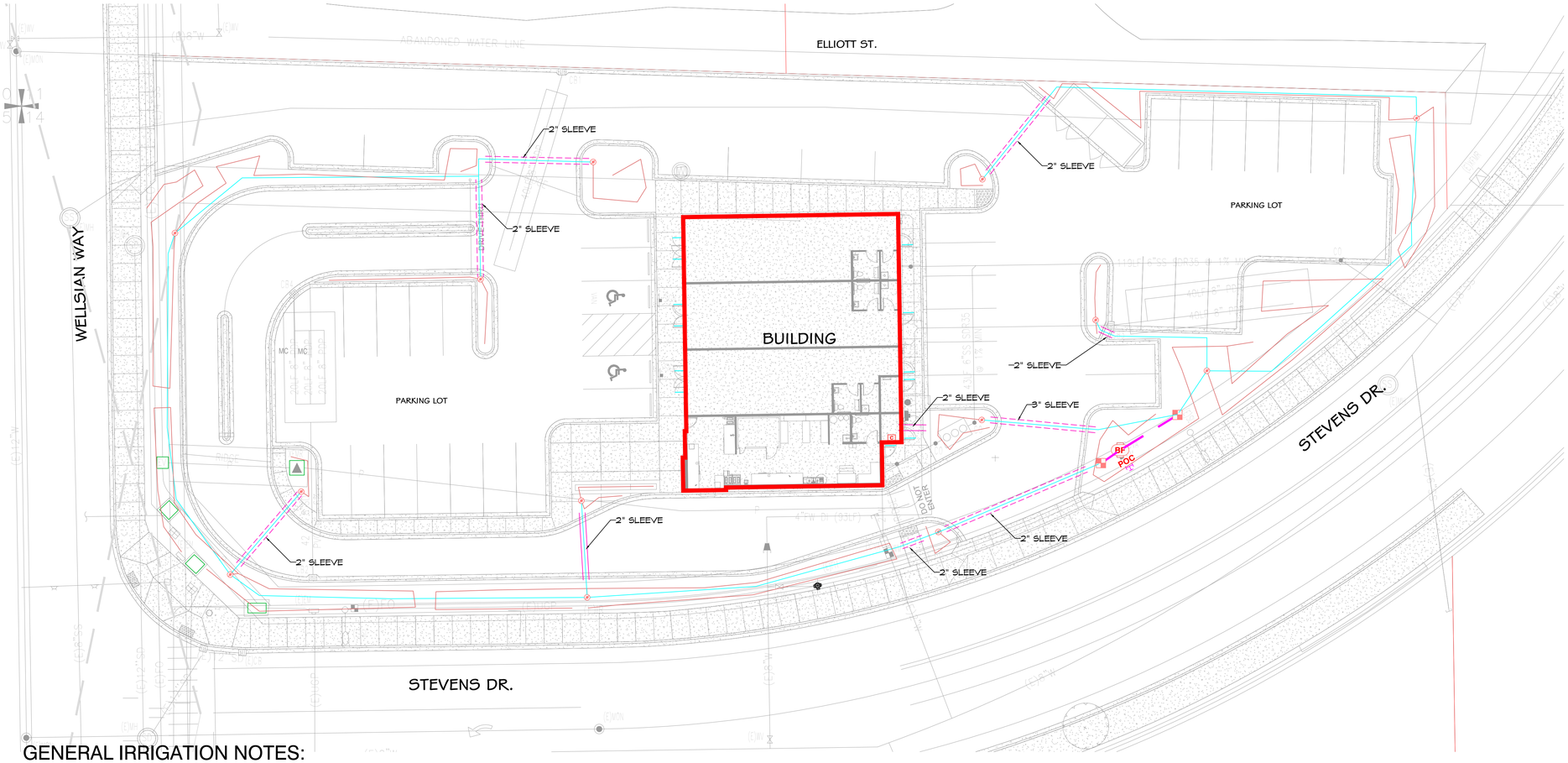
DRAWN BY: DSE | APPROVED BY: DSE
SCALE: 1" = 16" | DATE: 8/23/2021
JOB NUMBER: XXXXX

REVISIONS
1
2
3
4
5

SHEET NAME
LANDSCAPE PLAN

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

SHEET NO.
L1



GENERAL IRRIGATION NOTES:

1. Supplement these notes with the City of Richland Irrigation Standards. City of Richland Standards will take precedence.
2. Call for underground locates two (2) days prior to trenching.
3. Layout sprinkler head and / or drip stub-out locations.
4. Install the controller and any required expansion modules.
5. Tie into existing main line and / or valve box as the point-of-connection for new work.
6. Machine / hand trench main and lateral lines. 18" depth for main and 12" depth for laterals.
7. Install irrigation control wire in common trench below main or laterals. run one (1) spare common wire.
8. Install automatic control valve(s) in standard size irrigation valve boxes with paver support "footings". limit of (3) per residential installation or (1) per commercial installation.
9. Install a 35 psi pressure regulator and in-line filter for each automatic drip valve.
10. Install (1) 3/4" drip stub-out in each individual formal planting bed area.
11. Install irrigation pipe, backfill, compact, and water settle trenches.
12. Flush pipe and irrigation heads before installing nozzles.
13. Install 1/2" drip pipe. flush supply pipe and drip pipe before installing emitters / drip tube caps / flushouts. install emitters per the following: (4)-tree, (1)-#1 gallon sized shrubs, (2)-#2 gallon sized shrubs, and (2) #5 gallon sized shrubs.
14. Install 1/2" in-line drip pipe. flush supply pipe and drip pipe before installing drip tube caps/flush outs.
15. Adjust irrigation heads to final grade and fine tune watering patterns.
16. Clean up to a broom clean condition.

IRRIGATION SCHEDULE 1

SYMBOL	MANUFACTURER/MODEL	QTY
	Rain Bird XCZ-100-PRB-COM 1"	2
	Pipe Transition Point above grade	13

SYMBOL	MANUFACTURER/MODEL	QTY
BF	Febco 825Y 1"	1
C	Rain Bird TM2-4-120V	1
POC	Point of Connection 1"	1
	Irrigation Lateral Line: PVC Class 200 SDR 21	888.2 l.f.
	Irrigation Lateral Line: Blank Drip Tubing	1,504 l.f.
	Irrigation Mainline: PVC Class 200 SDR 21	24.9 l.f.
	Pipe Sleeve: PVC Class 200 SDR 21	212.3 l.f.

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SHEET NAME
IRRIGATION PLAN

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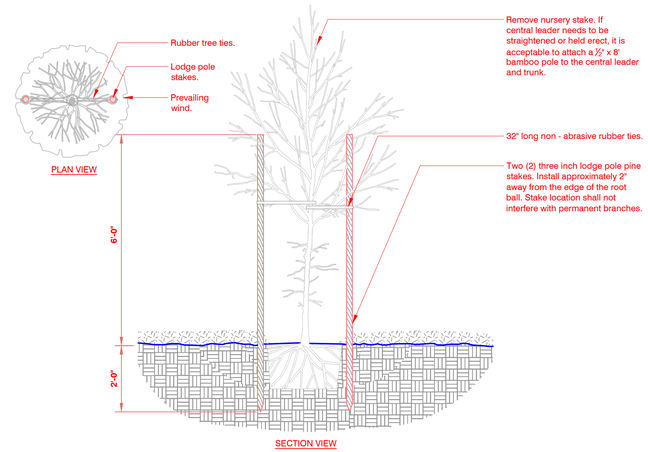
SHEET NO.
L2

GENERAL LANDSCAPE & PLANTING NOTES

1. Plant material to be installed and maintained by a qualified and experienced landscape installer.
2. All materials are subject to the approval of the Landscape Designer and Owner at any time. Landscape Designer has the right to inspect all plant locations and plant bed conditions prior to installation. Stake all plant locations for review and approval by the Landscape Designer or Owner before planting. On-site adjustments may be required. Plants are to be freshly dug. Transporting of plants shall be done in a manner as to not destroy the natural shape, compromise the health, or alter the characteristics of plant materials.
3. Rootballs shall meet or exceed size standards as set forth in 'American Standards for Nursery Stock'. MAIN LEADERS OF ALL TREES SHALL REMAIN INTACT. Remove from the site any plant material that turns brown or defoliates within five (5) days after planting. Replace immediately with approved, specified material.
4. Plant counts indicated on drawings are for Landscape Designer's use only. Contractor shall make own plant quantity takeoffs using drawings, specifications, and plant schedule requirements (i.e., spacing), unless otherwise directed by Landscape Designer. Contractor to verify bed measurements and install appropriate quantities as governed by plant spacing per schedule.
5. All plant beds shall receive 3" minimum of mulch specified on plan (unless otherwise noted). Apply pre-emergent herbicide as directed by the manufacturer prior to installing mulch. Seed all areas disturbed by construction activities that are not otherwise noted to receive pavement, planting bed, or other treatment. 6. The Contractor shall install and/or amend topsoil in all proposed bed areas to meet ASTM D5268 standards. Landscaper shall verify depth and quality of topsoil prior to plant installation.Topsoil sources (if needed) shall include the reuse of surface soil stockpiled on site, clean of roots, plants, sod, stones, clay lumps, and other extraneous or foreign materials larger than 1". Supplement with imported topsoil from off-site sources when quantities are insufficient. Do not obtain supplemental topsoil from agricultural land, bogs, or marshes. Inorganic amendments, organic amendments, and fertilizers shall be used to amend topsoil as needed for long-term plant health.
7. Verify all utility locations in the field prior to beginning work. Repair all damaged utilities to satisfaction of the Owner and Operating Authority at no additional cost.
8. Install all plant material in accordance with all local codes and ordinances. Coordinate with the Owner to obtain any required permits necessary to complete work. All workmanship and materials shall be guaranteed by the Contractor for a period of one (1) calendar year after Final Acceptance.
9. Maintain all plant material for a three (3) month period from date of Substantial Completion. Maintenance shall include pruning, cultivating, watering, weeding, fertilizing, restoring plant saucers, spraying for disease and insects, and replacing tree wrappings. Recommended long-term maintenance procedures shall be provided to the Owner before expiration of this period.



1 TREE STAKING - LODGE POLES (2)

1/2" = 1'-0"

FX-PL-FX-TREE-27

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DSE	DSE
SCALE:	DATE:
N.T.S.	8/23/2021

JOB NUMBER: XXXXXX

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SHEET NAME

NOTES
PLAN

ONE INCH
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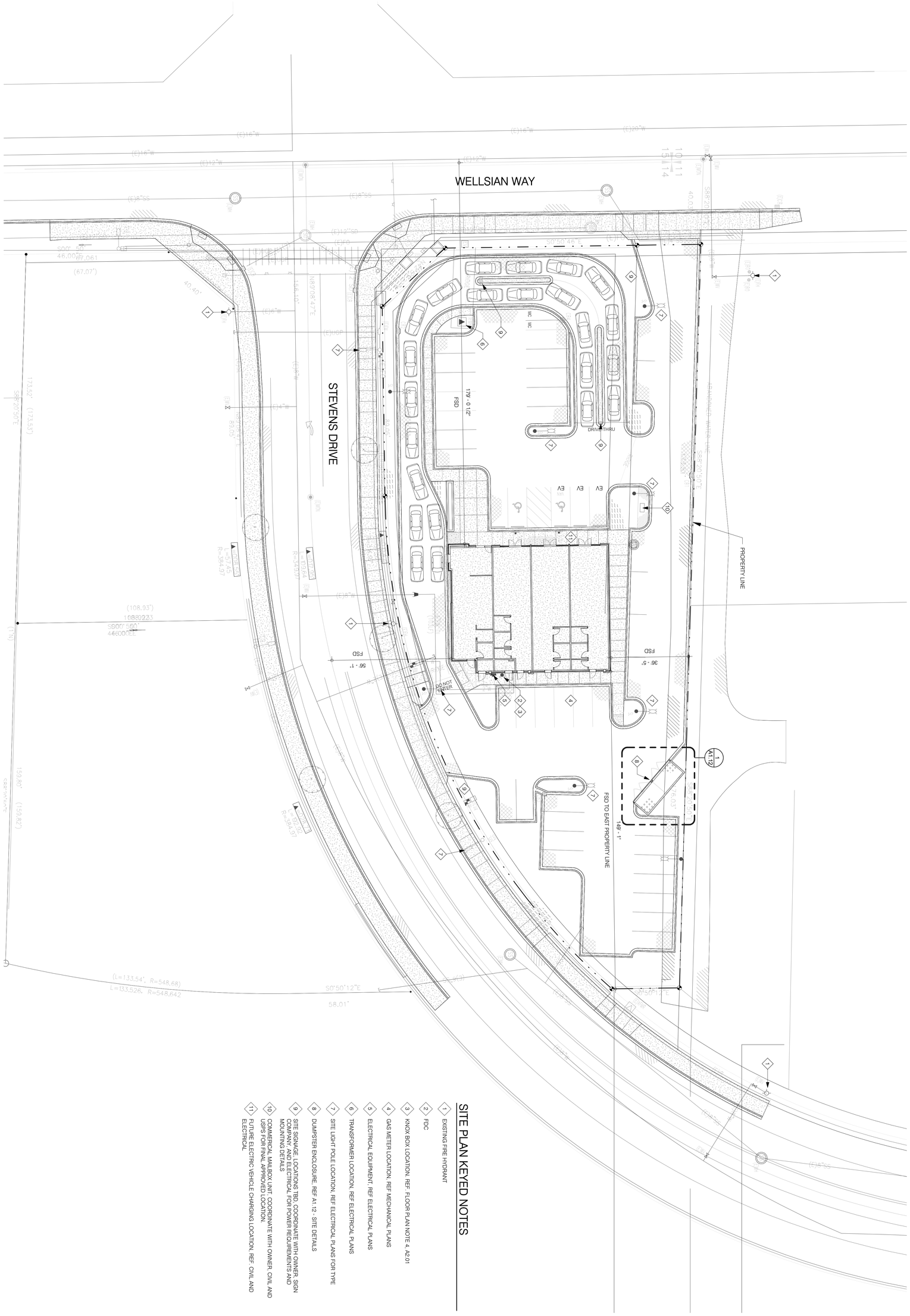
SHEET NO.

L3



SITE PLAN KEYED NOTES

1. EXISTING FIRE HYDRANT
2. FDC
3. KNOX BOX LOCATION. REF.: FLOOR PLAN NOTE 4, A2.01
4. GAS METER LOCATION. REF. MECHANICAL PLANS
5. ELECTRICAL EQUIPMENT. REF ELECTRICAL PLANS
6. TRANSFORMER LOCATION. REF ELECTRICAL PLANS
7. SITE LIGHT POLE LOCATION. REF ELECTRICAL PLANS FOR TYPE
8. DUMPSTER ENCLOSURE. REF A1.12 - SITE DETAILS
9. SITE SIGNAGE LOCATIONS TBD. COORDINATE WITH OWNER, SIGN COMPANY AND ELECTRICAL FOR POWER REQUIREMENTS AND MOUNTING DETAILS
10. COMMERCIAL MAIL BOX UNIT. COORDINATE WITH OWNER, CIVIL AND USPS FOR FINAL APPROVED LOCATION
11. FUTURE ELECTRIC VEHICLE CHARGING LOCATION. REF. CIVIL AND ELECTRICAL

1 SITE PLAN
SCALE: 1" = 20'-0"

A1.01

SITE PLAN

Project: 20.28
Drawn By: NMR
Date: 10/05/2021

New Construction

20.28 - Dutch Bros - Richland
430 Wellsian Way
Richland, WA 99352

REV	DATE	DESCRIPTION

10820 REGISTERED ARCHITECT
ARMANDO S HURTADO
STATE OF WASHINGTON

HDG
Architecture
230 S. Washington St. 509-321-5064
Spokane, WA 99201 StudioHDG.com

FOR PERMIT