

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington

PROJECT DESCRIPTION
 SITE DEVELOPMENT IMPROVEMENTS, INCLUDING CLEARING, GRADING, RETAINING WALLS, PARKING LOT, STORM DRAINAGE, SANITARY SEWER MAIN, WATER MAIN FOR 238 UNIT MULTI-FAMILY DEVELOPMENT.

SITE ADDRESS:
 202 27TH AVE SE

PARCEL NUMBER
 041903-0-006

Inspections are requested through the permitting portal or directly from the Inspector. [CIVIL PLANS, Sheet G1]

ZONING
 RM-CORE

ENGINEER/SURVEYOR
 AZURE GREEN CONSULTANTS
 409 EAST PIONEER
 PUYALLUP, WA 98372
 PHONE: 253.770.3144

OWNER:
 BRADLEY HEIGHTS SS, LLC
 614 BOYLSTON AVE E
 SEATTLE, WA 98102

APPLICANT
 Timberlane Partners
 Contact: Jordan Møllergaard
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 509.899.0326
 jordan@timberlanepartners.com

DATUM
 NAVD88

BENCHMARK
 WSDOT BM 27512-17
 MON ID 244
 PUBLISHED ELEVATION 409.95' NAVD88

TOPOGRAPHIC INFORMATION
 FRONTAGE TOPOGRAPHICAL DATA IS PER PER FIELD SURVEY PERFORMED BY AZURE GREEN CONSULTANTS IN MARCH 2022.
 ONSITE TOPOGRAPHICAL DATA IS PER 2010 LIDAR AS OBTAINED BY PIERCE COUNTY.

100-YEAR FLOOD
 THE SITE DOES NOT CONTAIN A 100-YEAR FLOODPLAIN.

EROSION & SEDIMENT INSPECTION
 PRIOR TO STARTING SITE WORK, REQUEST AN INSPECTION FOR EROSION AND SEDIMENT. INSPECTION CODE #1010, BY CALLING THE INSPECTION REQUEST LINE AT 1-877-232-6456.

BROKEN CURB, GUTTER, OR SIDEWALK
 ANY PUBLIC CURB, GUTTER, OR SIDEWALK BROKEN NOW OR DURING THE COURSE OF CONSTRUCTION SHALL BE REMOVED AND REPLACED PER CITY STANDARDS.

GENERAL NOTES

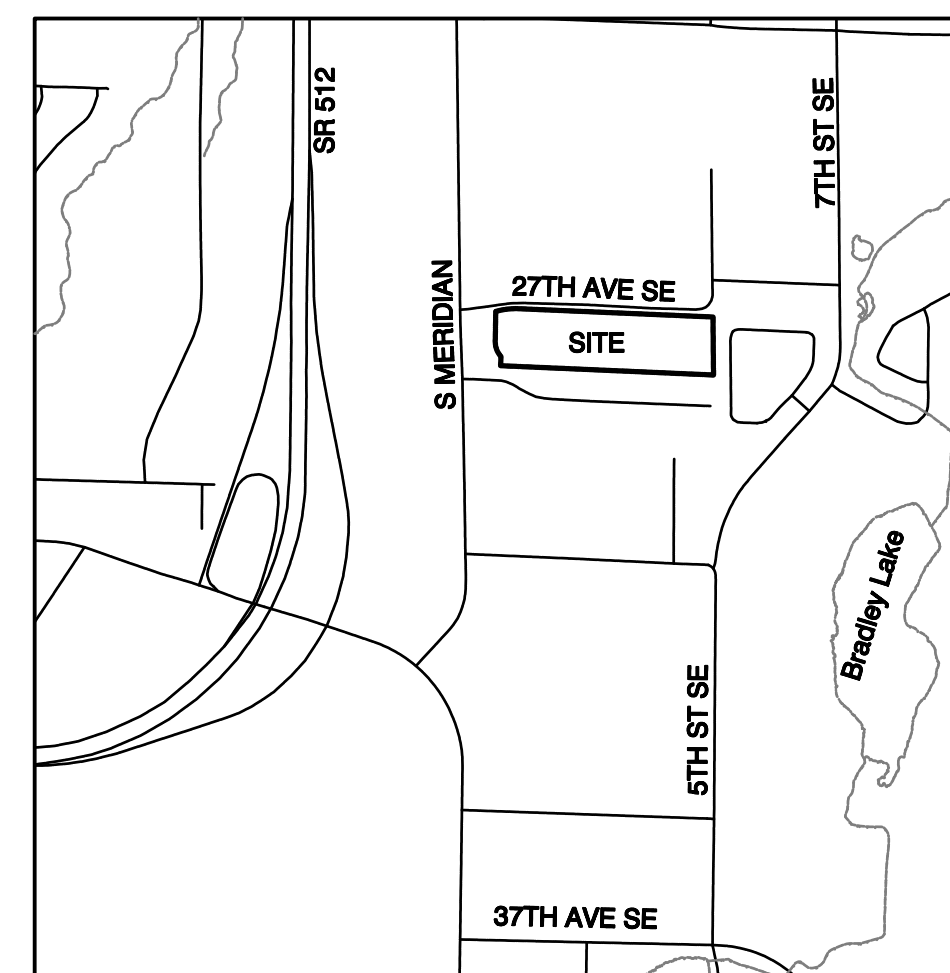
- All work in City right-of-way requires a permit from the City of Puyallup. Prior to any work commencing, the general contractor shall arrange for a preconstruction meeting at the Development Services Center to be attended by all contractors that will perform work shown on the approved engineering plans, representatives from all applicable utility companies, the project owner and appropriate city staff. Contact Engineering Services at (253-841-5568) to schedule the meeting. The contractor is responsible to have their own set of approved plans at the meeting.
- After completion of all items shown on these plans and before acceptance of the project the contractor shall obtain a "punch list" prepared by the City's inspector detailing remaining items of work to be completed. All items of work shown on these plans shall be completed to the satisfaction of the City prior to acceptance of the water system and provision of sanitary sewer service.
- All materials and workmanship shall conform to the Standard Specifications for Road, Bridge, and Municipal Construction (hereinafter referred to as the "Standard Specifications"), Washington State Department of Transportation and American Public Works Association, Washington State Chapter, latest edition, unless superseded or amended by the City of Puyallup City Standards for Public Works Engineering and Construction (hereinafter referred to as the "City Standards").
- A copy of these approved plans and applicable city developer specifications and details shall be on site during construction.
- Any revisions made to these plans must be reviewed and approved by the developer's engineer and the City prior to any implementation in the field. The City shall not be responsible for any errors and/or omissions on these plans.
- The contractor shall have all utilities verified on the ground prior to any construction. Call (811) at least two working days in advance. The owner and his/her engineer shall be contacted immediately if a conflict exists.
- Any structure and/or obstruction that requires removal or relocation relating to this project shall be done so at the developer's expense.
- Locations of existing utilities are approximate. It shall be the contractor's responsibility to determine the true elevations and locations of hidden utilities. All visible items shall be the engineer's responsibility.
- The contractor shall install, replace, or relocate all signs, as shown on the plans or as affected by construction, per City Standards.
- Power, street light, cable, and telephone lines shall be in a trench located within a 10-foot utility easement adjacent to public right-of-way. Right-of-way crossings shall have a minimum horizontal separation from other utilities (sewer, water, and storm) of 5 feet.
- All construction surveying for extensions of public facilities shall be done under the direction of a Washington State licensed land surveyor or a Washington State licensed professional civil engineer.
- During construction, all public streets adjacent to this project shall be kept clean of all material deposits resulting from on-site construction, and existing structures shall be protected as directed by the City.
- Certified record drawings are required prior to project acceptance.
- A NPDES Stormwater General Permit may be required by the Department of Ecology for this project. For information contact the Department of Ecology, Southwest Region Office at (360)407-6300.
- Any disturbance or damage to Critical Areas and associated buffers, or significant trees designated for preservation and protection shall be mitigated in accordance with a Mitigation Plan reviewed and approved by the City's Planning Division. Preparation and implementation of the Mitigation Plan shall be at the developer's expense.

SURVEY MONUMENTS

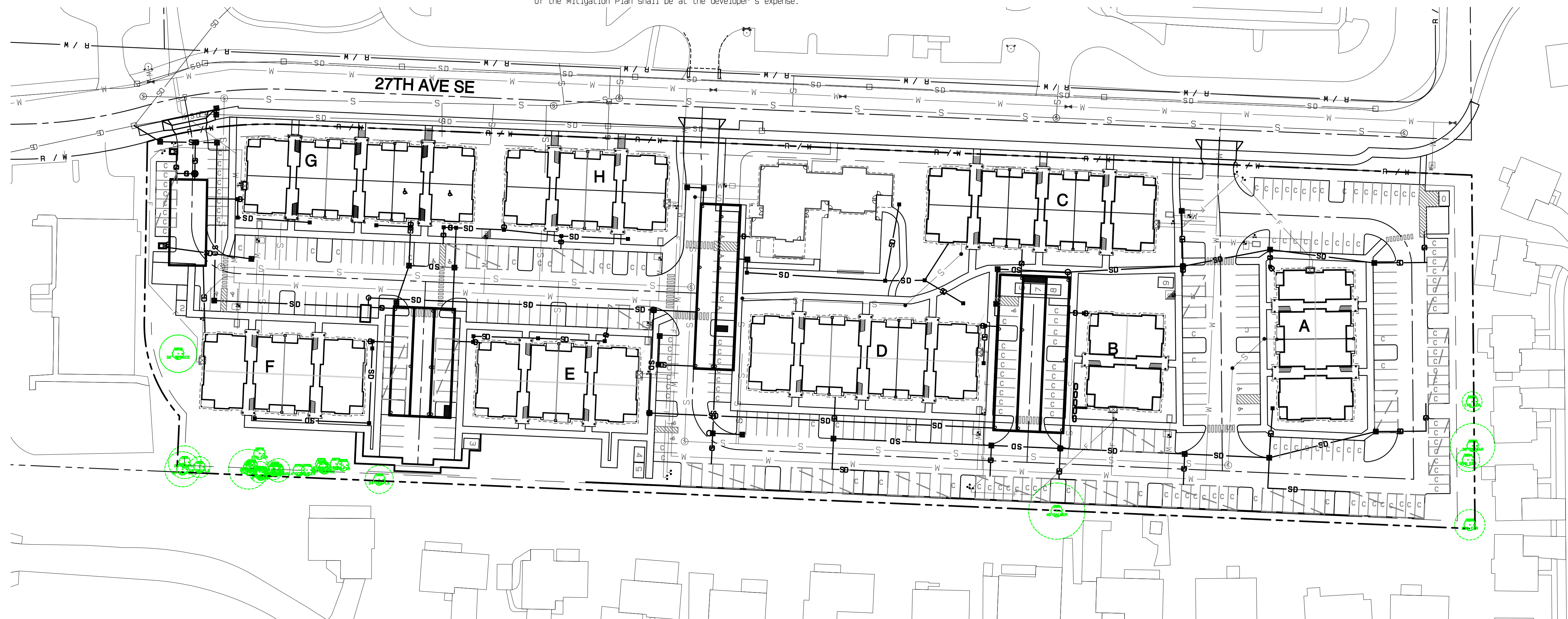
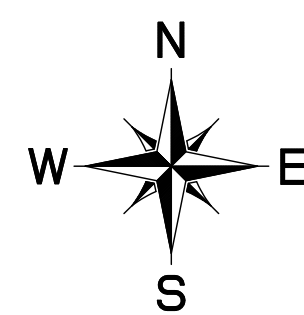
Contractor is responsible for protecting all survey monuments within the area of work. If it is necessary to disturb a survey monument, a permit must be requested in advance from the Department of Natural Resources. The developer must pay the cost of repairing or replacing the survey monument and is responsible for all contractors working for them. Reference WAC 332-120.

SHEET INDEX

1 G-1 Cover Sheet	37 SS-1 Sanitary Sewer Plan
2 G-2 Existing Conditions	38 SS-2 Sanitary Sewer Plan
3 G-3 Horizontal Control	39 SS-3 SS Profiles
4 G-4 Demolition Plan	40 SS-4 SS Profiles
5 G-5 TESC Plan	41 SS-5 SS Details
6 G-6 TESC Notes	
7 G-7 TESC Details	42 W-1 Water Plan
8 G-8 Grading Plan	43 W-2 Water Plan
9 G-9 Grading Cross-Sections	44 W-3 Water Main Profiles
10 G-10 Grading Cross-Sections	45 W-4 FDC Line Profiles
11 G-11 Grading Cross-Sections	46 W-5 Water Details
12 G-12 Retaining Wall A Plan	47 W-6 Water Details
13 G-13 Retaining Wall A Plan	
14 G-14 Retaining Wall B Plan	
15 SD-1 Civil Composite	
16 SD-2 27th Ave SE Plan & Profile	
17 SD-3 Paving Storm Plan	
18 SD-4 Paving Storm Plan	
19 SD-5 Storm Plan	
20 SD-6 Storm Plan	
21 SD-7 Storm Profiles	
22 SD-8 Storm Profiles	
23 SD-9 Roof/Yard Drain Profiles	
24 SD-10 Detention Gallery #1 Plan	
25 SD-11 Vault #2 Plan	
26 SD-12 Vault #2 Cross-Sections	
27 SD-13 Vault #3 Plan	
28 SD-14 Vault #3 Cross-Sections	
29 SD-15 Vault #4 Plan	
30 SD-16 Vault #4 Cross-Sections	
31 SD-17 Details	
32 SD-18 Storm Details	
33 SD-19 Storm Details	
34 SD-20 Storm Tank Details	
35 SD-21 Storm Tank Details	
36 SD-22 Storm Tank Details	



VICINITY MAP
 SCALE: 1"=1000'



CALL BEFORE YOU DIG
 IT IS THE LAW
811

APPROVED
 BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES
 DATE: _____
NOTE:
 THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

Cover Sheet

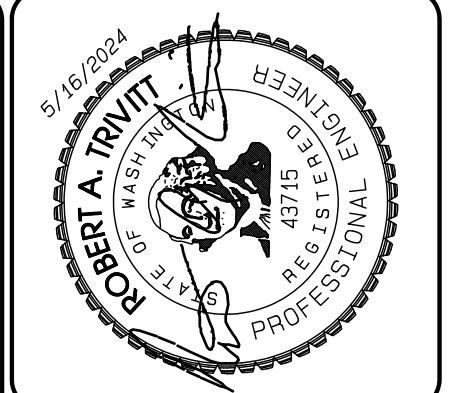
Bradley Heights
 Timberlane Partners
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 Fax jordan@timberlanepartners.com

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G-1
 SHEET 1
 OF 47

AZURE GREEN CONSULTANTS
 *feasibility *planning *engineering *surveying
 409 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

JOB NO. 2327
 DATE: May 14, 2024
 DESIGNED BY: JRM, TRV
 DRAWN BY: JRM, TRV
 CHECKED BY: JRM, TRV
 APPROVED BY: JRM, TRV

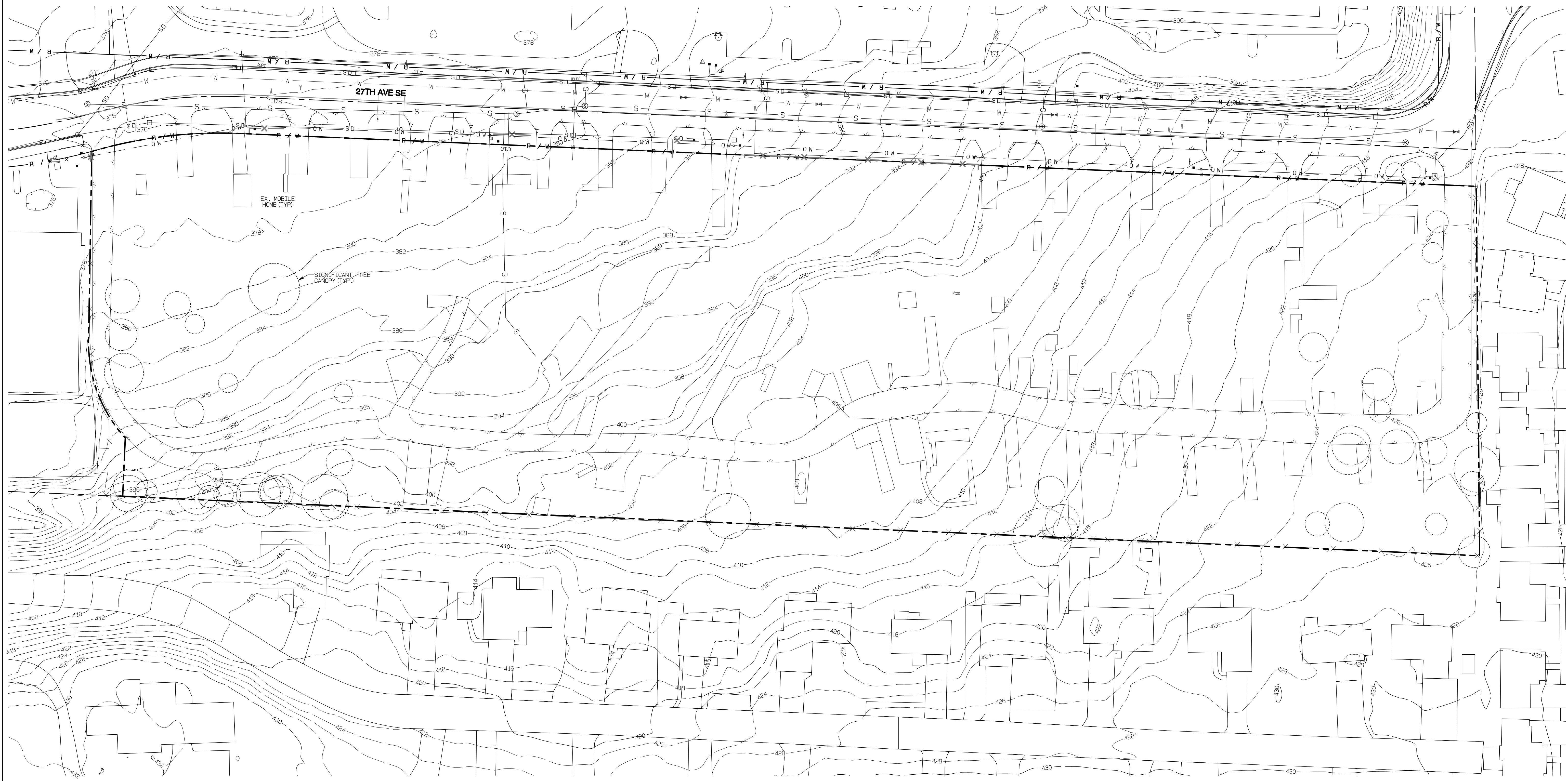
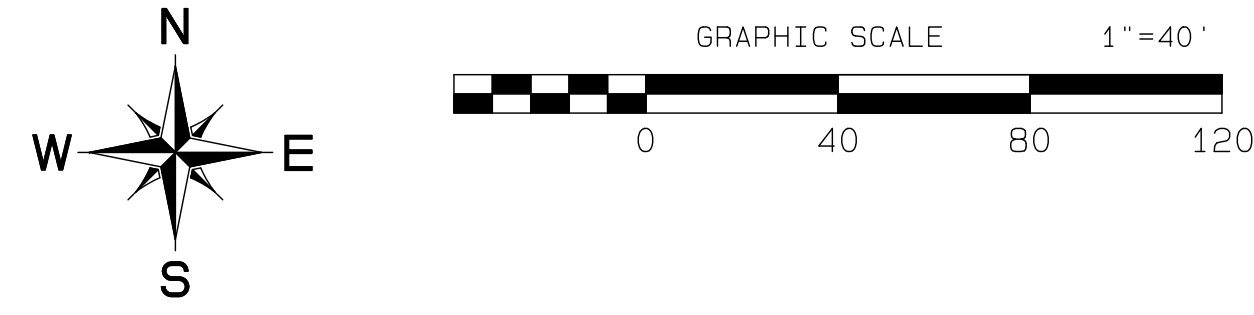
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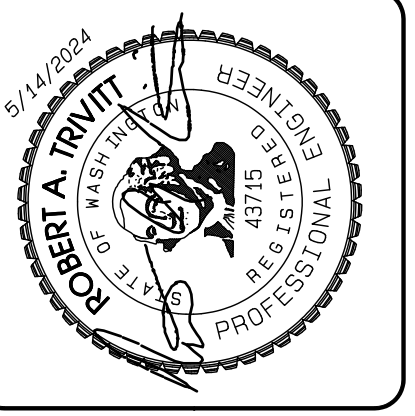
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Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



Project Desc.: Bradley Heights; Plan#: E:\sub3\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg PLOT DATE/TIME: 6/11/2024/8:02:24PM



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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV

AZURE GREEN
 CONSULTANTS
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Existing Conditions
 Bradley Heights
 Timberlane Partners
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 Fax jordan@timberlanepartners.com

APPROVED

BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES

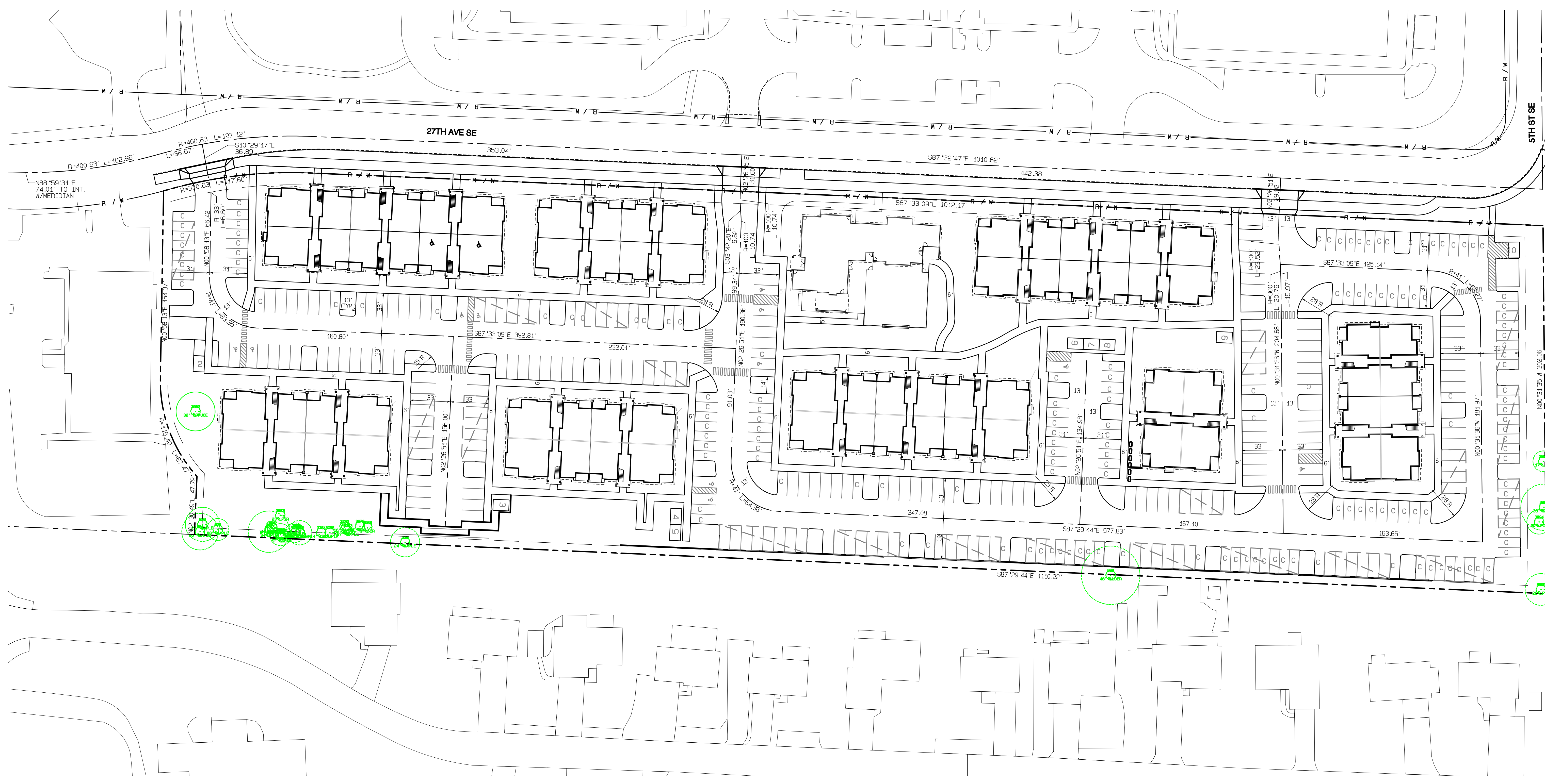
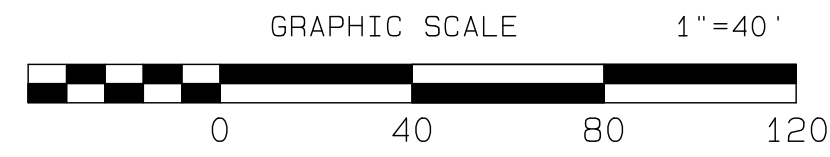
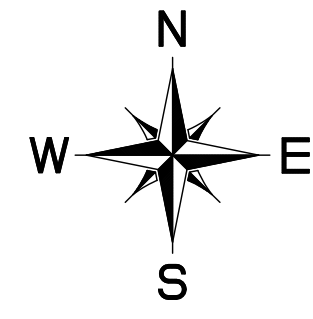
DATE: _____

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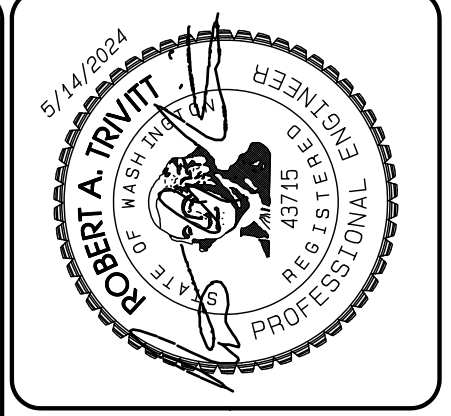
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 OF 47

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: RDT, TRV
 DRAWN BY: RDT, TRV
 CHECKED BY: RDT, TRV
 APPROVED BY: RDT, TRV

AZURE GREEN
 CONSULTANTS

*feasibility *planning *engineering *surveying

409 East Pioneer, Suite A - Puyallup, WA 98372
 Phone: 253.770.3144, Fax: 253.770.3142

APPROVED

BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES

DATE: _____

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Horizontal Control

Bradley Heights

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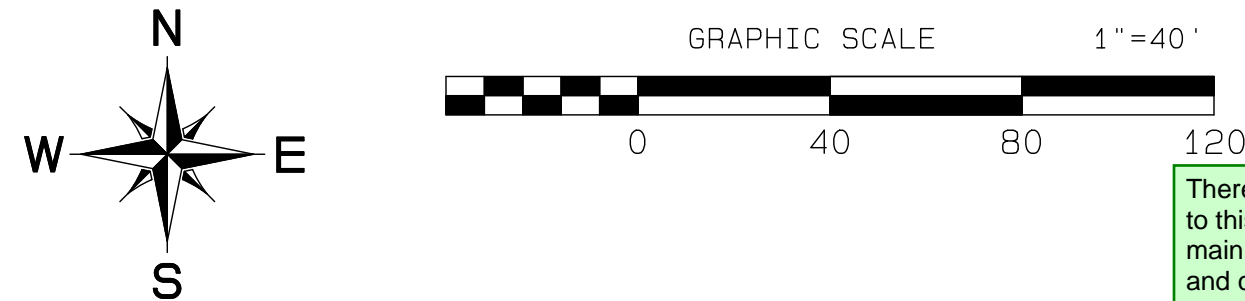
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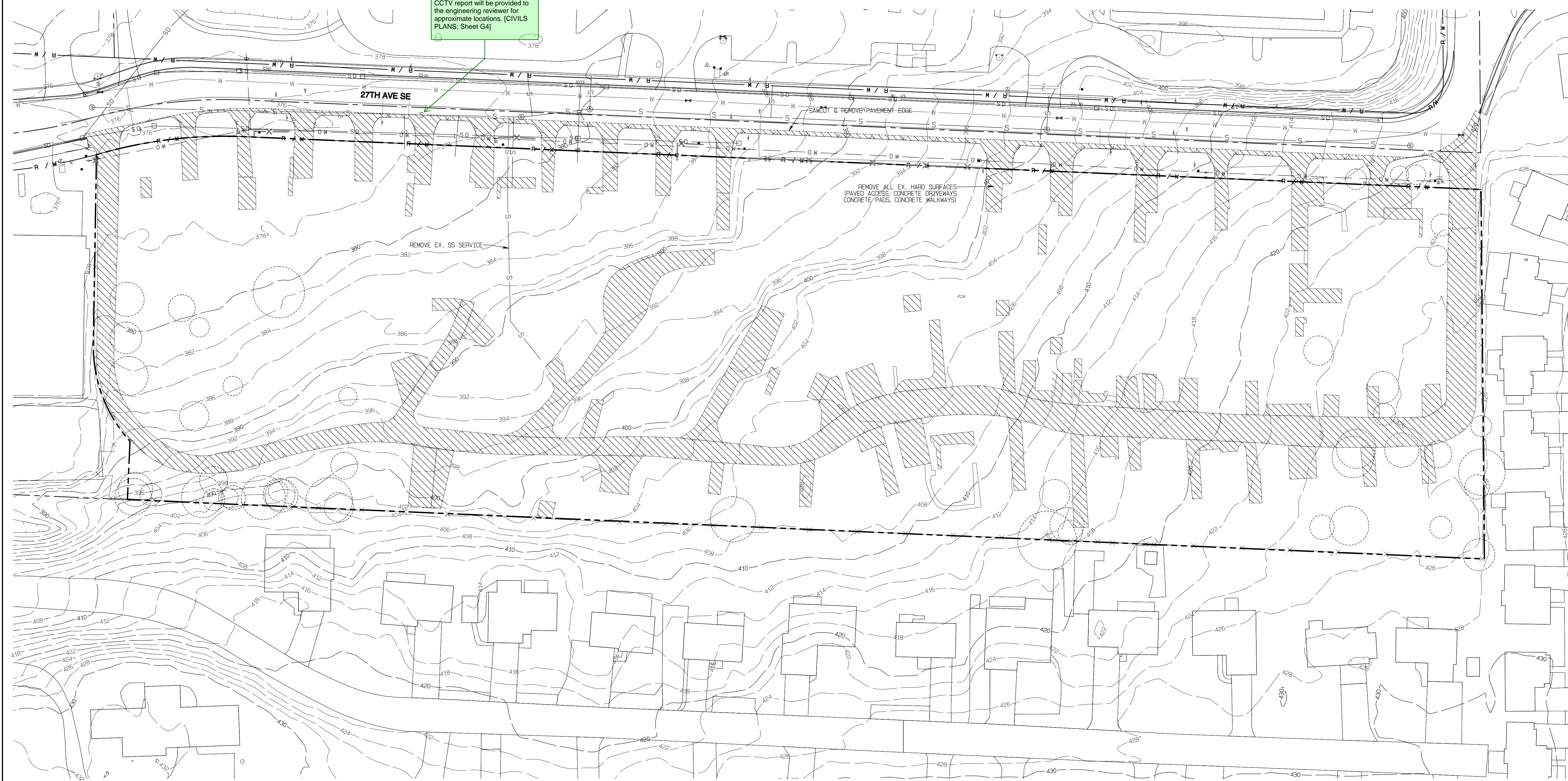
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Bradley Heights

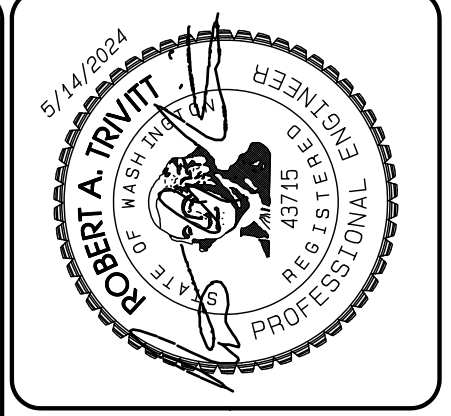
Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



There are 7 lateral connections to this section of existing sanitary main that all will need to be cut and capped at the main. A CCTV report will be provided to the engineering reviewer for approximate locations. [CIVILS PLANS; Sheet G4]



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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: Rob Trivitt
 DRAWN BY: Rob Trivitt
 CHECKED BY: Rob Trivitt
 APPROVED BY: Rob Trivitt

AZURE GREEN
 CONSULTANTS

+ feasibility + planning + engineering + surveying

419 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

APPROVED

BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES

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Demolition Plan

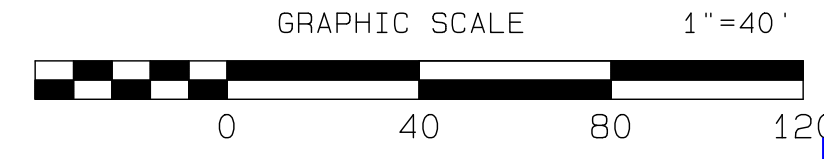
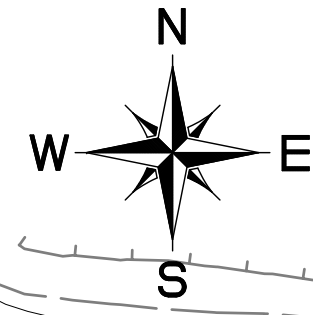
Bradley Heights

Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 206.886.0326
 Fax jordan@timberlanepartners.com

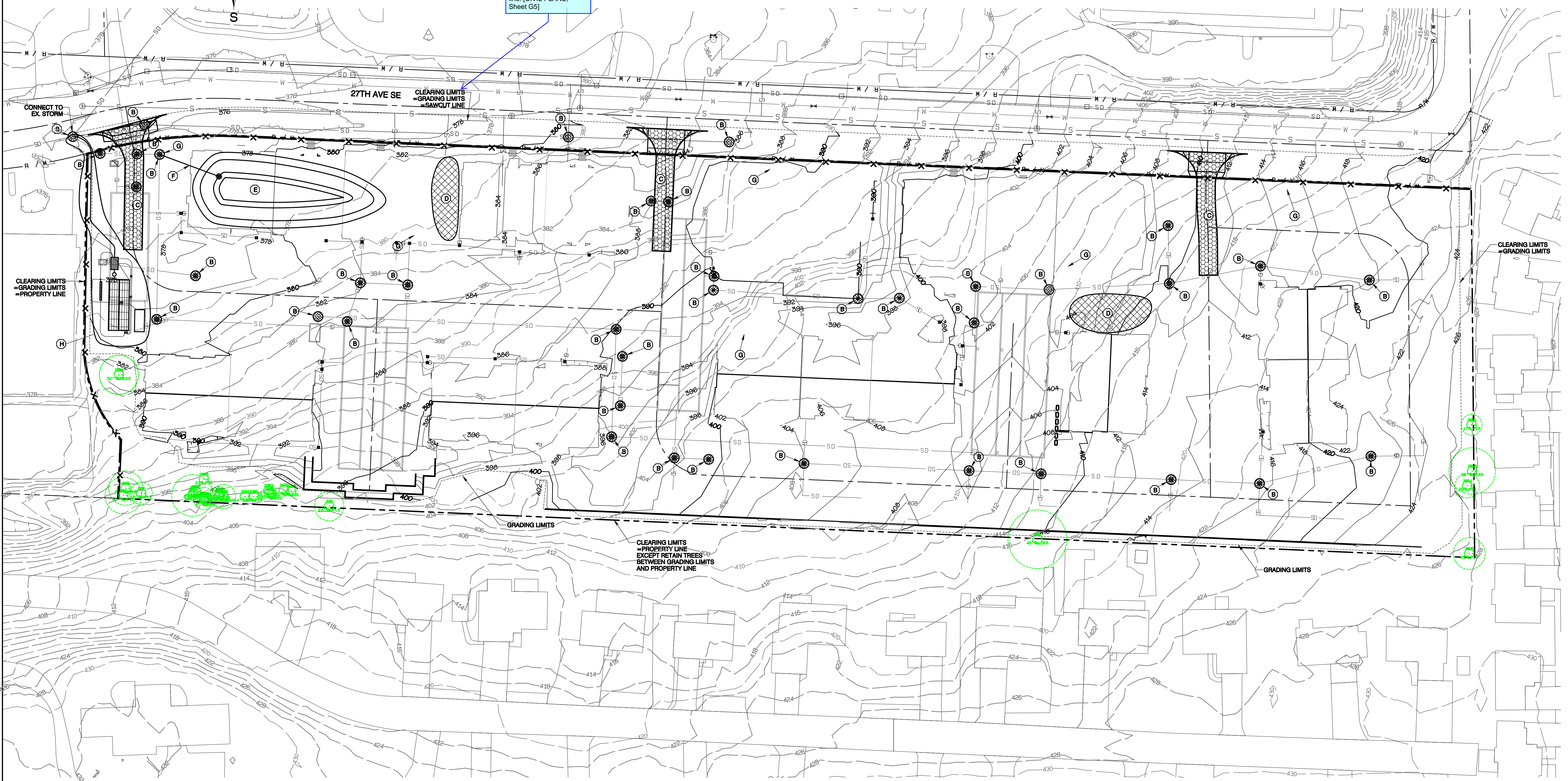
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 SHEET 4
 OF 47

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



Note points at contour line. [CIVIL PLANS, Sheet G5]



ESC KEY NOTES

- (A) INSTALL SILT FENCE PER STD 02.03.02, SHEET G-7
- (B) INSTALL BAG FILTER, SEE DETAIL SHEET G-7
- (C) INSTALL CONSTRUCTION ENTRANCE, SEE STD 05.01.01, SHEET G-7
- (D) STOCKPILE AREA
- (E) SEDIMENT POND
SEE DETAILS SHEET G-7
ORIFICE:
I.E.=372.86
DIA.=3"
RISER
TOP=376.36
DIA.=18"
AREA @ TOP OF RISER=5,117 SF MIN.
- (F) 52LF 12" DIP @ 0.5% MIN.
TEMP CONNECTION TO NEW CB1-3
- (G) TEMPORARY INTERCEPTOR SWALES TO COLLECT AND CONVEY CONSTRUCTION RUNOFF TO SEDIMENT POND EXACT LOCATIONS WILL VARY THROUGHOUT CONSTRUCTION. INSTALL 12" CULVERT AS NEEDED AT ACCESS CROSSINGS
- (H) CONCEPTUAL BAKER TANK SYSTEM WITH SAND FILTER AND RECIRC. TO BE INSTALLED IF IT IS DETERMINED THAT OTHER BMPs ARE NOT ADEQUATE

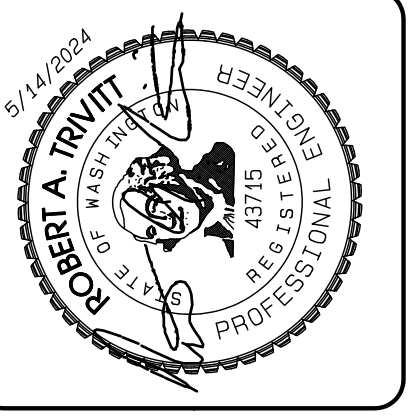
Indicate with Key Note where silt fence is to be installed. [CIVIL PLANS, Sheet G5]

APPROVED

BY: CITY OF PUYALLUP
DEVELOPMENT SERVICES
DATE: _____

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NO.	DATE	REVISION
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JOB NO. 2327
DATE: May 14, 2024
DESIGNED BY: ROB TRIVITT
DRAWN BY: ROB TRIVITT
CHECKED BY: JEFF GREEN
APPROVED BY: PAUL GERR

AZURE GREEN CONSULTANTS
+ feasibility + planning + engineering + surveying
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phone: 253.770.3144 fax: 253.770.3142

TESC Plan
Bradley Heights
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Phone 509.896.0326
Fax jordan@timberlanepartners.com

DRAWING
G-5
SHEET 5
OF 47

Project Desc.: Bradley Heights; Date: E:\sub\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg PLOT Date/Time: 6/12/2024 8:09:00PM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington

GRADING, EROSION & SEDIMENTATION CONTROL NOTES:

- All work in City right-of-way requires a permit from the City of Puyallup. Prior to any work commencing, the general contractor shall arrange for a preconstruction meeting at the Development Services Center to be attended by all contractors that will perform work shown on the engineering plans, representatives from all applicable Utility Companies, the project owner and appropriate City staff. Contact Engineering Services to schedule the meeting (253) 841-5568. The contractor is responsible to have their own approved set of plans at the meeting.
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- All materials and workmanship shall conform to the Standard Specifications for Road, Bridge, and Municipal Construction (hereinafter referred to as the Standard Specifications), Washington State Department of Transportation and American Public Works Association, Washington State Chapter, latest edition, unless superseded or amended by the City of Puyallup City Standards for Public Works Engineering and Construction (hereinafter referred to as the City Standards).
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- Any revisions made to these plans must be reviewed and approved by the developer's engineer and the city engineer prior to any implementation in the field. The City shall not be responsible for any errors and/or omissions on these plans.
- The contractor shall have all utilities verified on the ground prior to any construction. Call (811) at least two working days hours in advance. The owner and his/her engineer shall be contacted immediately if a conflict exists.
- All limits of clearing and areas of vegetation preservation as prescribed on the plans shall be clearly flagged in the field and observed during construction.
- All required sedimentation and erosion control facilities must be constructed and in operation prior to any land clearing and/or other construction to ensure that sediment laden water does not enter the natural drainage system. The contractor shall schedule an inspection of the erosion control facilities PRIOR to any land clearing and/or other construction. All erosion and sediment facilities shall be maintained in a satisfactory condition as determined by the City, until such time that clearing and/or construction is completed and the potential for on-site erosion has passed. The implementation, maintenance, replacement, and additions to the erosion and sedimentation systems shall be the responsibility of the permittee.
- The erosion and sedimentation control system facilities depicted on these plans are intended to be minimum requirements to meet anticipated site conditions. As construction progresses and unexpected or seasonal conditions dictate, facilities will be necessary to ensure complete siltation control on the site. During the course of construction, it shall be the obligation and responsibility of the permittee to address any new conditions that may be created by his activities and to provide additional facilities, over and above the minimum requirements, as may be needed to protect adjacent properties, sensitive areas, natural water courses, and/or storm drainage systems.
- Approval of these plans is for grading, temporary drainage, erosion and sedimentation control only. It does not constitute an approval of permanent storm drainage design, size or location of pipes, restrictors, channels, or retention facilities.
- Any disturbed area which has been stripped of vegetation and where no further work is anticipated for a period of 90 days or more, must be immediately stabilized with mulching, grass planting or other approved erosion control treatment applicable to the time of year in question. Grass seeding alone will be acceptable only during the months of April through September inclusive. Seeding may proceed outside the specified time period whenever it is in the interest of the permittee but must be augmented with mulching, netting, or other treatment approved by the City.
- In case erosion or sedimentation occurs to adjacent properties, all construction work within the development that will further aggravate the situation must cease, and the owner/contractor will immediately commence restoration methods. Restoration activity will continue until such time as the affected property owner is satisfied.
- No temporary or permanent stockpiling of materials or equipment shall occur within critical areas or associated buffers, or the critical root zone for vegetation proposed for retention.

PLASTIC COVERING NOTES:

- Plastic sheeting shall have a minimum thickness of 6 mils and shall meet the requirements of the STATE STANDARD SPECIFICATIONS Section 9-14.5.
- Covering shall be installed and maintained tightly in place by using sandbags or tires on ropes with a maximum 10-foot grid spacing in all directions. All seams shall be taped or weighted down full length and there shall be a least a 12 inch overlap of all seams.
- Clear plastic covering shall be installed immediately on areas seeded between November 1 and March 31 and remain until vegetation is firmly established.
- When the covering is used on un-seeded slopes, it shall be kept in place until the next seeding period.
- Plastic covering sheets shall be buried two feet at the top of slopes in order to prevent surface water flow beneath sheets.
- Proper maintenance includes regular checks for rips and dislodged ends.

CONSTRUCTION SEQUENCE

- OBTAIN REQUIRED PERMITS AND HOLD A PRECONSTRUCTION MEETING WITH THE CITY.
- ESTABLISH CLEARING AND GRADING LIMITS.
- INSTALL SILT FENCE IF REQUIRED.
- INSTALL CB INLET PROTECTION.
- INSTALL CONSTRUCTION ENTRANCE.
- SCHEDULE AN EROSION CONTROL INSPECTION WITH THE CITY.
- IDENTIFY EROSION CONTROL MEASURES WHICH REQUIRE REGULAR MAINTENANCE. ENSURE EROSION CONTROL MEASURES IN PLACE ARE ADEQUATE. INSTALL ADDITIONAL MEASURES IF NECESSARY TO PREVENT SEDIMENT LADEN RUNOFF FROM LEAVING SITE.
- CLEAR AND REMOVE ORGANIC MATERIAL, PREP SUBGRADE FOR FOUNDATION AND PARKING LOT CONSTRUCTION.
- MASS GRADE SITE AND CONSTRUCT RETAINING WALLS.
- INSTALL SANITARY SEWER LINE.
- INSTALL DETENTION WALLS.
- INSTALL STORM LINES.
- INSTALL WATER MAIN.
- INSTALL OTHER UTILITIES.
- INSTALL GASE.
- CONSTRUCT SIDEWALKS.
- INSTALL TOP COURSE.
- CONSTRUCT BUILDINGS.
- PAVE PARKING LOT.
- BRING UTILITIES TO FINAL GRADE.
- VEGETATE EXPOSED AREAS AND STABILIZE STOCKPILES AS SOON AS PRACTICAL AND AS NEEDED TO PREVENT EROSION.
- HYDROSEED AND/OR INSTALL PERMANENT LANDSCAPING TO PROVIDE PERMANENT EROSION CONTROL.
- REMOVE TEMPORARY EROSION CONTROL MEASURES WHEN SITE IS STABLE.

TEMPORARY ESC MEASURES REQUIRED

- Temporary Siltation Fencing.
- Vegetation and Stabilization of exposed surfaces
- Catch Basin Inlet Protection
- Additional measures may be required, see note 9 of Grading, Erosion & Sedimentation Control notes and Stormwater Pollution Prevention Plan (SWPPP) prepared for this project.

PERMANENT ESC MEASURES REQUIRED

- Seeding and/or Landscaping of non-impervious surfaces

SPECIAL NOTES:

- Contractor shall designate an erosion and sediment control leadperson, and shall comply with the stormwater pollution prevention plan prepared for the project.
- Sediment-laden runoff shall not be allowed to discharge beyond the construction limits.
- Exposed areas and soil stockpiles must be stabilized according to the following schedule:
 - From April 1 to October 31 all disturbed areas at final grade and all exposed areas that are scheduled to remain unworked for more than 30 days shall be stabilized within 10 days.
 - From November 1 to March 31 all exposed soils at final grade shall be stabilized immediately using permanent or temporary measures. Exposed soils with an area greater than 5,000 square feet that are scheduled to remain unworked for more than 24 hours and exposed areas of less than 5,000 square feet that will remain unworked for more than seven (7) days shall be stabilized immediately.
- All disturbed areas which are not planned to be constructed on within 90 days from time of clearing and grading shall be revegetated with the native vegetation.
- No clearing, filling, grading or other alteration occurs within any critical areas or associated buffer unless specifically authorized pursuant to Chapter 21.06 Environmentally Critical Areas Management of the Puyallup Municipal Code.
- If dewatering of excavations is required, dewatering must conform to the requirements of Section 504 of Puyallup City Standards.

MULCHING NOTES

- Mulch materials used shall be hay or straw and shall be applied at a rate of 75-100 pounds per 1000 square feet, or 90-120 bales per acre to a min. depth of 2 inches.
- Mulches shall be applied in all areas with exposed slopes greater than 2:1.
- Mulching shall be used immediately after seeding or in areas which cannot be seeded because of the season.
- All areas needed mulch shall be covered by November 1.

SEEDING NOTES (Erosion control seeding):

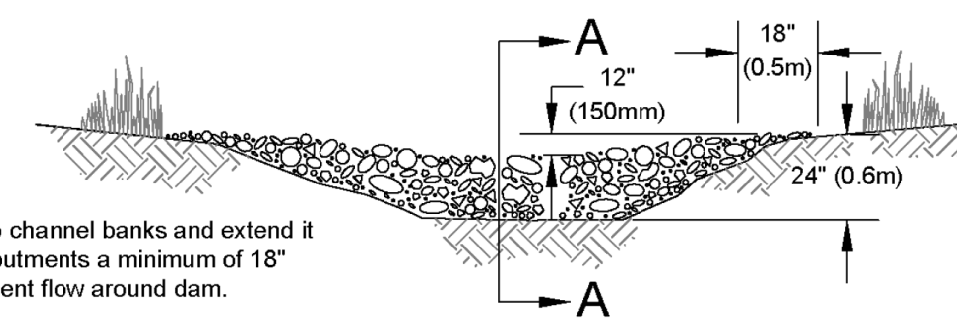
- Seed mixture shall be 10% Redtop (92% purity, 90% germination); 40% Annual Rye (98% purity, 90% germination); 40% Chewing Fescue (97% purity, 90% germination); and 10% White Dutch clover (95% purity, 90% germination) and shall be applied at the rate of 120 pounds per acre.
- Seed beds planted between May 1 and October 31 will require irrigation and other maintenance as necessary to foster and protect the root structure.
- For seed beds planted between October 31 and April 30, amending of the seed bed will be necessary. (e.g., geotextiles, jute mat, clear plastic covering).
- Before seeding, install needed surface runoff control measures such as gradient terraces, interceptor dikes, swales, level spreaders and sediment basins.
- The seedbed shall be firm with a fairly fine surface, following surface roughening. Perform all operation across or at right angles to the slope.
- Fertilizers are to be used according to suppliers recommendations. Amounts used should be minimized, especially adjacent to water bodies and wetlands.
- Erosion control seeding shall not be used in areas subject to wear by construction traffic.
- Erosion control seeding may be used in all areas of 5% or less slope. In areas between 5 and 10% slope, erosion control seeding may be used for a maximum horizontal distance of 100 feet. Use mulch or netting or other treatments for steeper and longer slopes.

SOIL STOCKPILE NOTES:

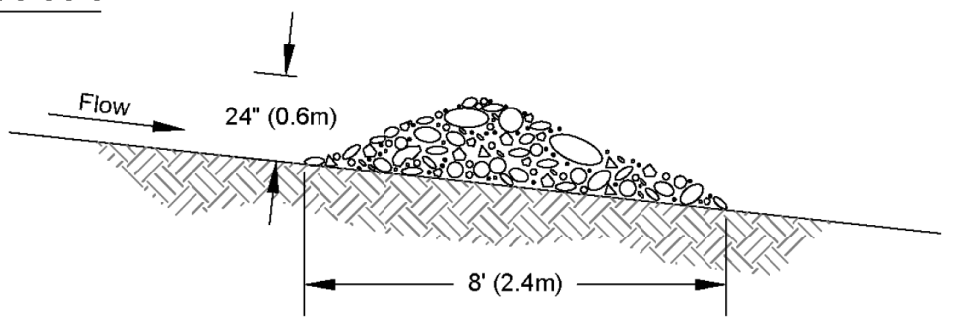
- Stockpiles shall be stabilized (with plastic covering or other approved device) daily between November 1 and March 31.
- In any season, sediment leaching from stock piles must be prevented.
- Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or when conditions exist that may otherwise be detrimental to proper grading or proposed sodding or seeding.
- Previously established grades on the areas to be topsoiled shall be maintained according to the approved plan.
- Stockpiles must be located more than 50 feet from all drainage features.

Figure II-3.16: Rock Check Dam

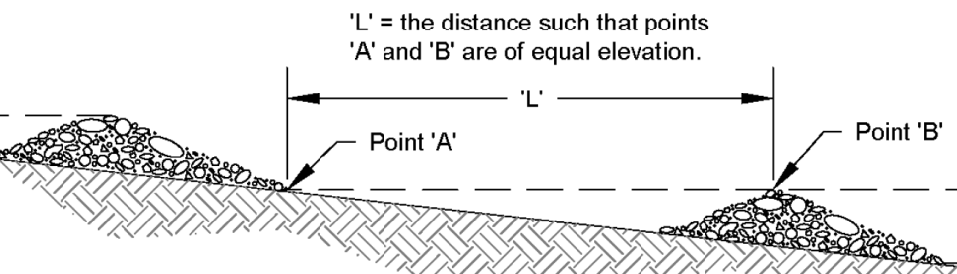
View Looking Upstream



Section A-A



Spacing Between Check Dams



NOT TO SCALE

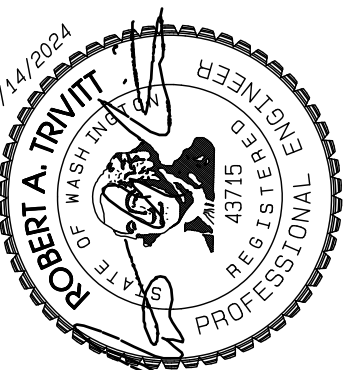


DEPARTMENT OF
ECOLOGY
State of Washington

Rock Check Dam

Revised June 2016

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JOB NO. 2527
DATE: May 14, 2024
DESIGNED BY: Rob Trivitt
DRAWN BY: Rob Trivitt
CHECKED BY: Rob Trivitt
APPROVED BY: Rob Trivitt

AZURE GREEN
CONSULTANTS
+ feasibility + planning + engineering + surveying
409 East Pioneer, Suite A • Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142

TESC Notes

Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.899.0326
Fax jordan@timberlanepartners.com

DRAWING

G-6

SHEET 6
OF 47

APPROVED

BY: _____
CITY OF PUYALLUP
DEVELOPMENT SERVICES

DATE: _____

NOTE:

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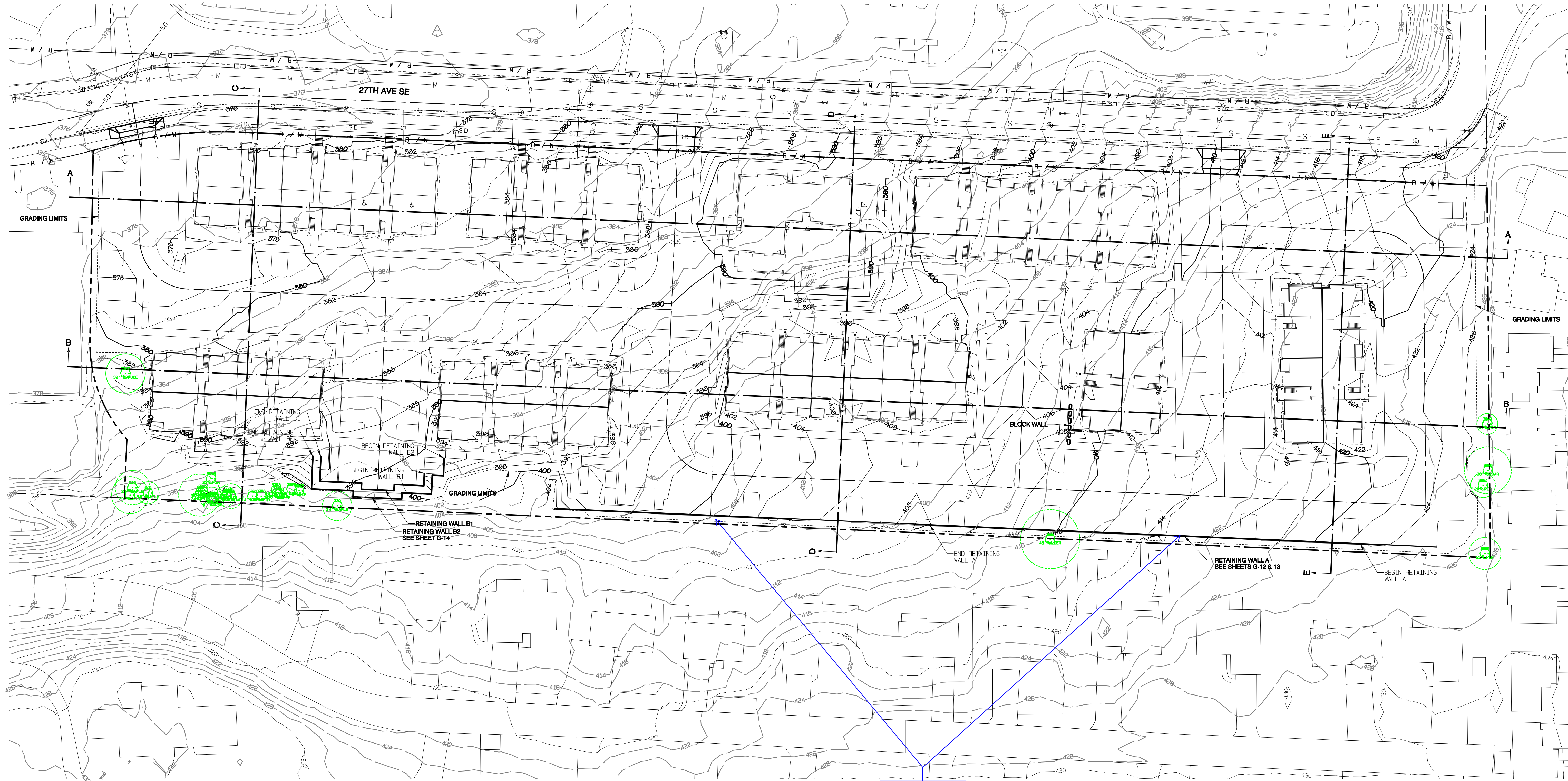
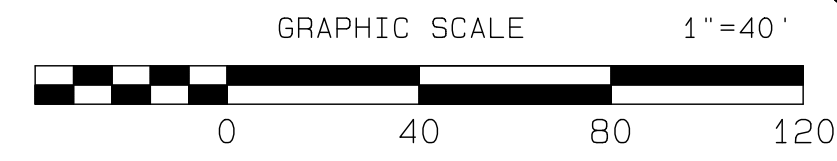
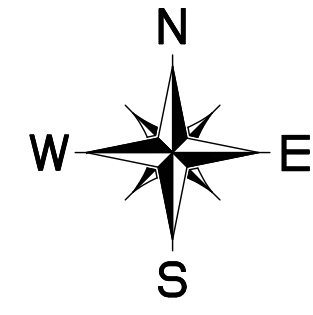
THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

Project Date: 5/14/2024
Project Name: Bradley Heights
Project No: 2527
Project File: E:\Projects\Bradley Heights\2024_0514_Eng.dwg
Plot Date/Time: 5/14/2024 8:09:21 AM

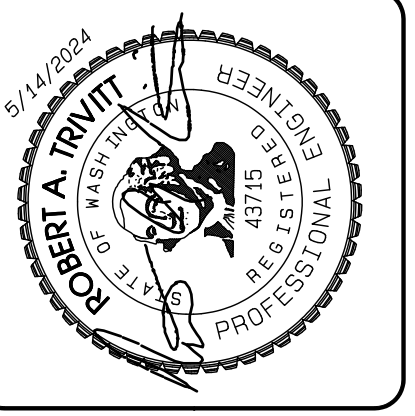
Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



Label walls consistently with details on G12 and G13. Label as wall A, Segment 1 and include label for Wall A, Segment 2. [CIVIL PLANS, Sheet G8]

APPROVED
 BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES
 DATE: _____
 NOTE:
 THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.



NO.	REVISION	DATE
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JOB NO. 2327
 DATE: May 14, 2024
 DESIGNED BY: ROB TRIVITT
 DRAWN BY: ROB TRIVITT
 CHECKED BY: ROB TRIVITT
 APPROVED BY: ROB TRIVITT

AZURE GREEN
 CONSULTANTS
 feasibility • planning • engineering • surveying
 409 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144 fax: 253.770.3142

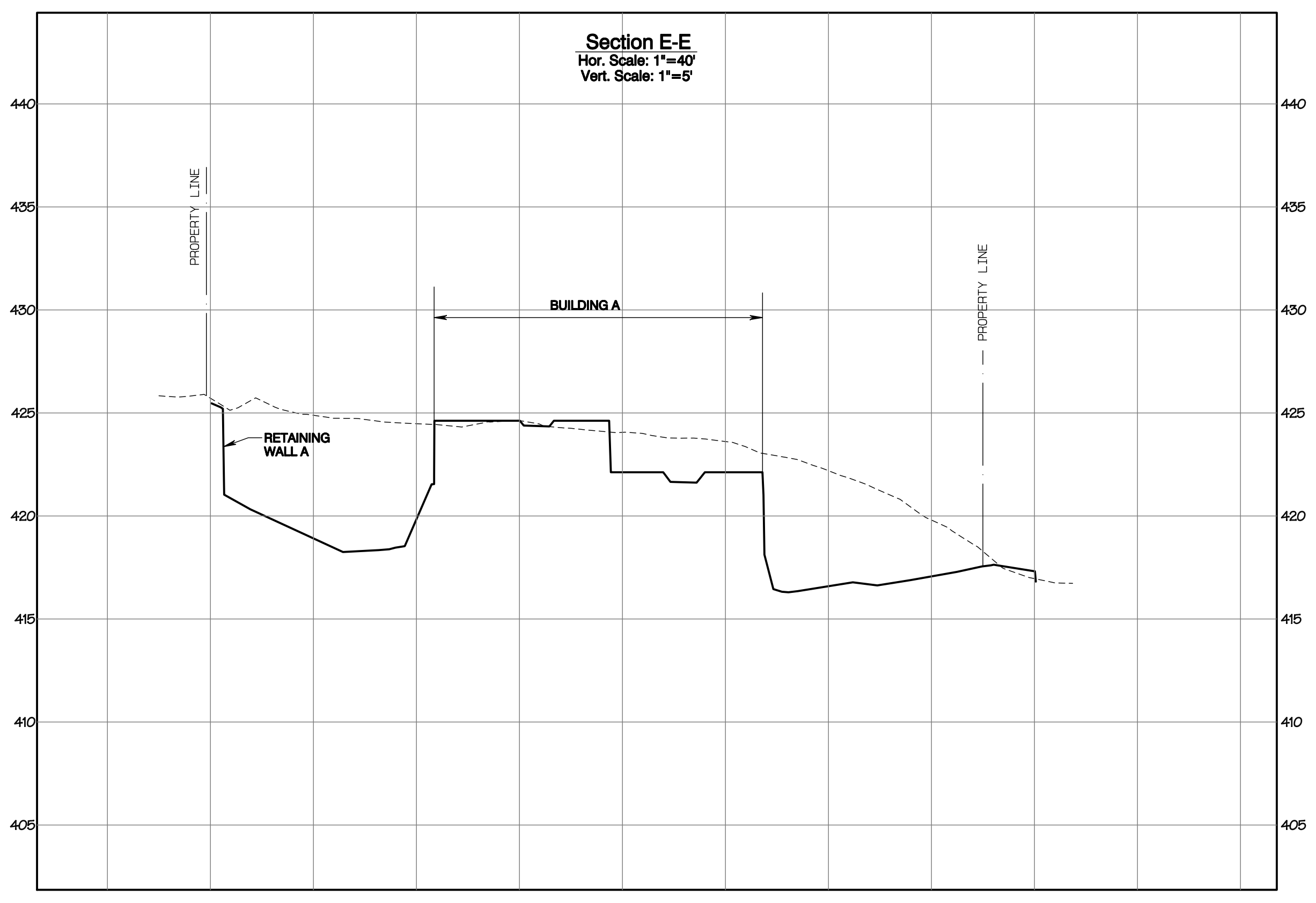
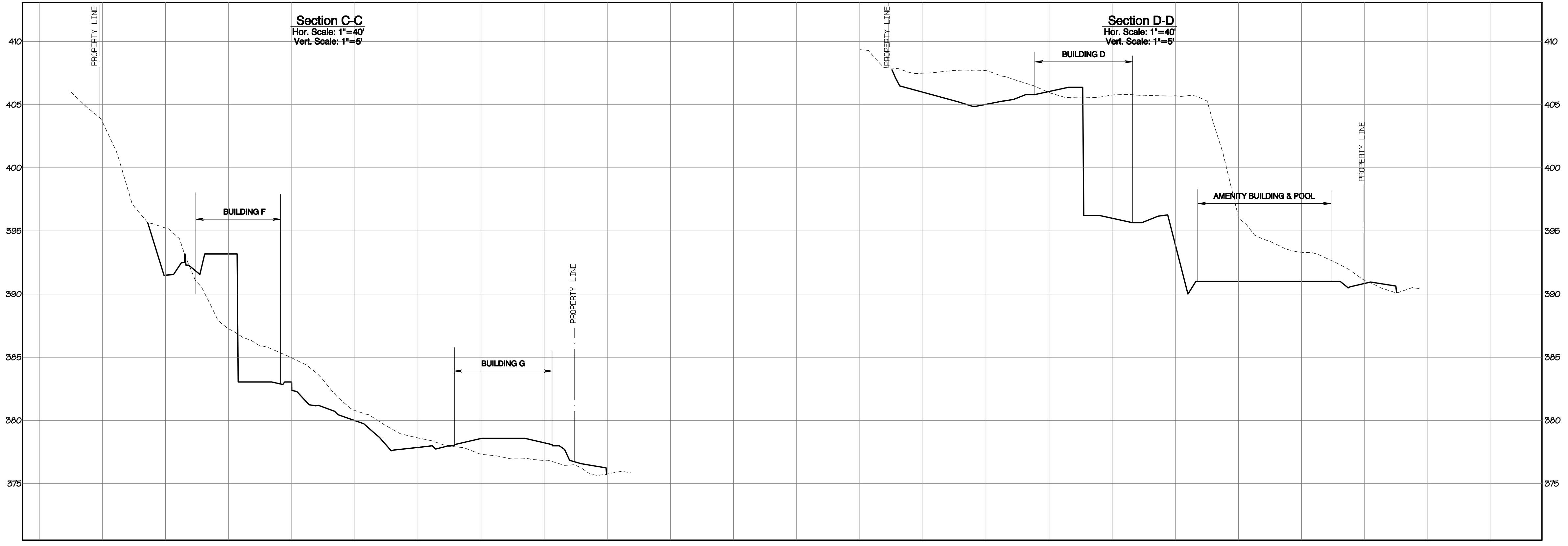
Grading Plan
 Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 206.886.0326
 Fax jordan@timberlanepartners.com

DRAWING
G-8
 SHEET 8
 OF 47

Project Desc.: Bradley Heights; Path: F:\urban\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg; Plot Date/Time: 6/12/2024 8:09:40PM

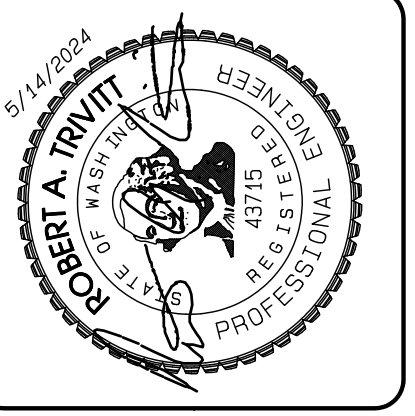
Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



For next submittal refine or clarify proposed (solid line) ground level within these cross-sections. [CIVIL PLANS, Sheet G9]

Project Desc.: Bradley Heights; Path: F:\sub\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg P104 Date Plt: 05/14/2024 08:13:26PM



REVISION	DATE
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JOB NO: 3227
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV

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+feasibility +planning +engineering +surveying

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Grading Cross-Sections

Bradley Heights

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 Phone 509.896.0326
 Fax jordan@timberlanepartners.com

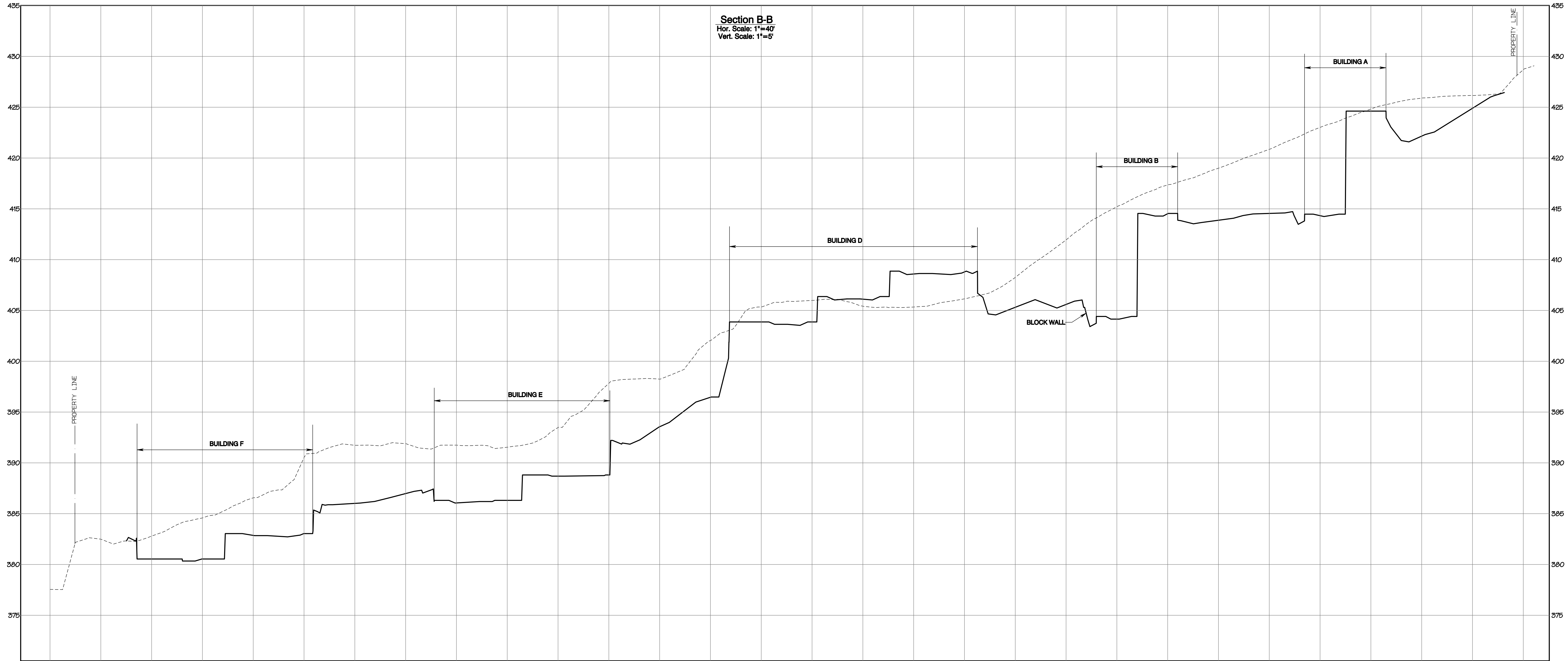
DRAWING

G-9

SHEET 9
OF 47

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



APPROVED

BY: _____ CITY OF PUYALLUP
DEVELOPMENT SERVICES

DATE: _____

NOTE:

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REVISION	DATE
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JOB NO. 2327
DATE: May 14, 2024
DESIGNED BY: Rob Trivitt
DRAWN BY: Rob Trivitt
CHECKED BY: Rob Trivitt
APPROVED BY: Rob Trivitt

AZURE GREEN
CONSULTANTS

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Grading Cross-Sections

Bradley Heights

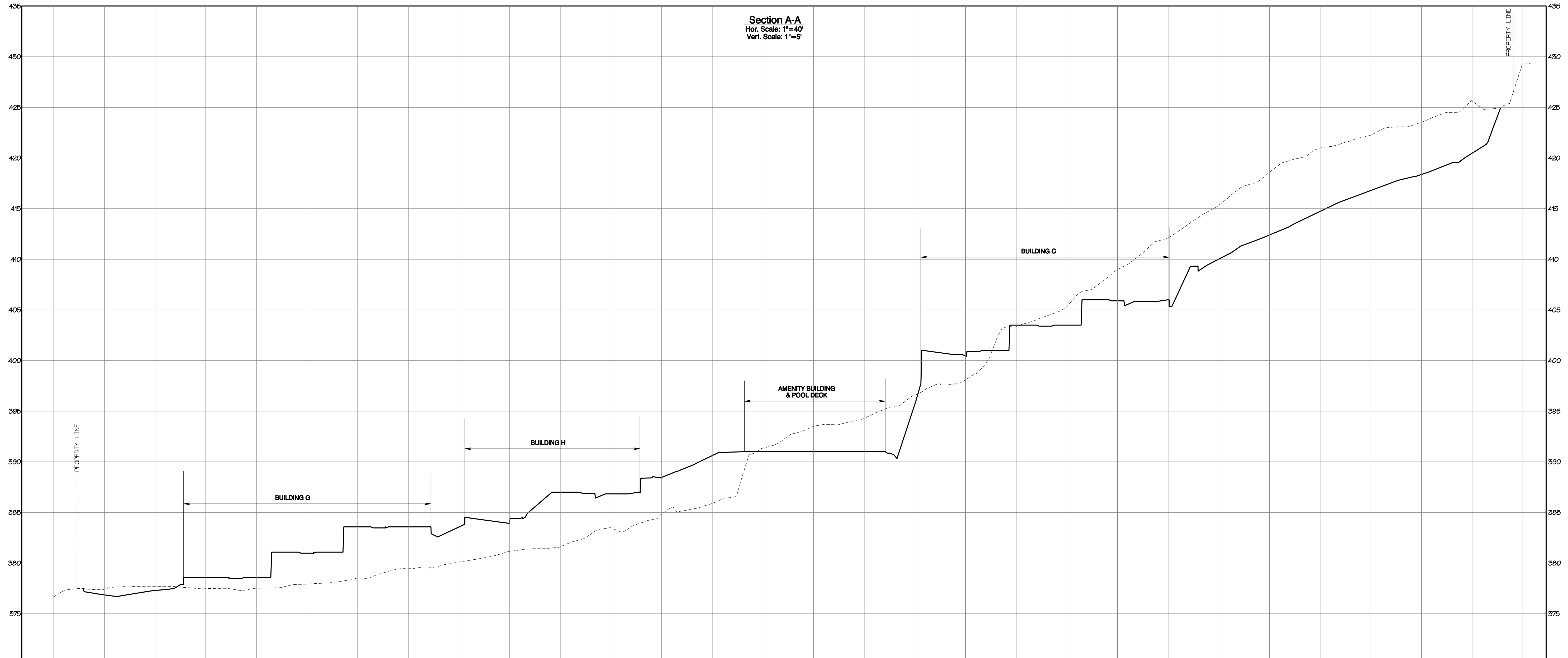
Timberlane Partners
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Seattle, WA 98122
Phone 509.886.0326
Fax jordan@timberlanepartners.com

DRAWING
G-10
SHEET 10
OF 47

Project Desc.: Bradley Heights Path: F:\Jobs\3227 - Bradley Heights\Timberlane\Bradley Heights 2024-05-14 ENG.dwg PLOT Date/Time: 6/12/2024/8:13:39PM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



APPROVED

BY: _____
CITY OF PUYALLUP
DEVELOPMENT SERVICES

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JOB NO. 2327
DATE: May 14, 2024
DESIGNED BY: RDT, TTY:ELT
DRAWN BY: RDT, TTY:ELT
CHECKED BY: RDT, TTY:ELT
APPROVED BY: RDT, TTY:ELT



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Grading Cross-Sections

Bradley Heights

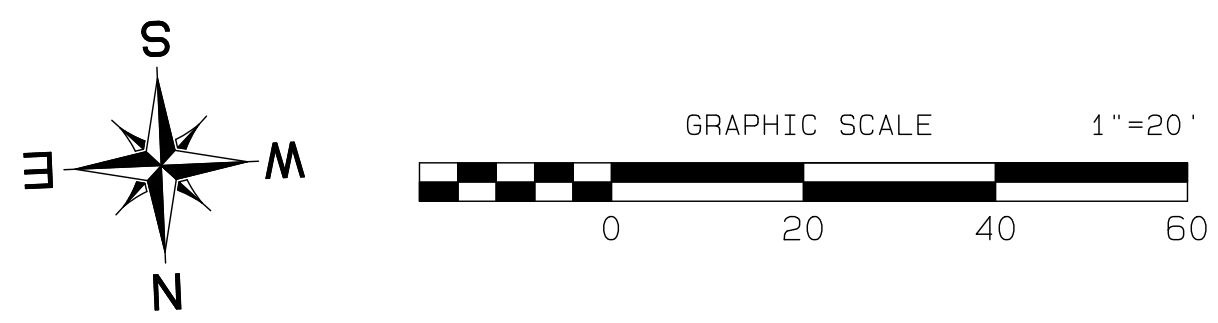
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Seattle, WA 98122
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Fax jordan@timberlanepartners.com

DRAWING

G-11

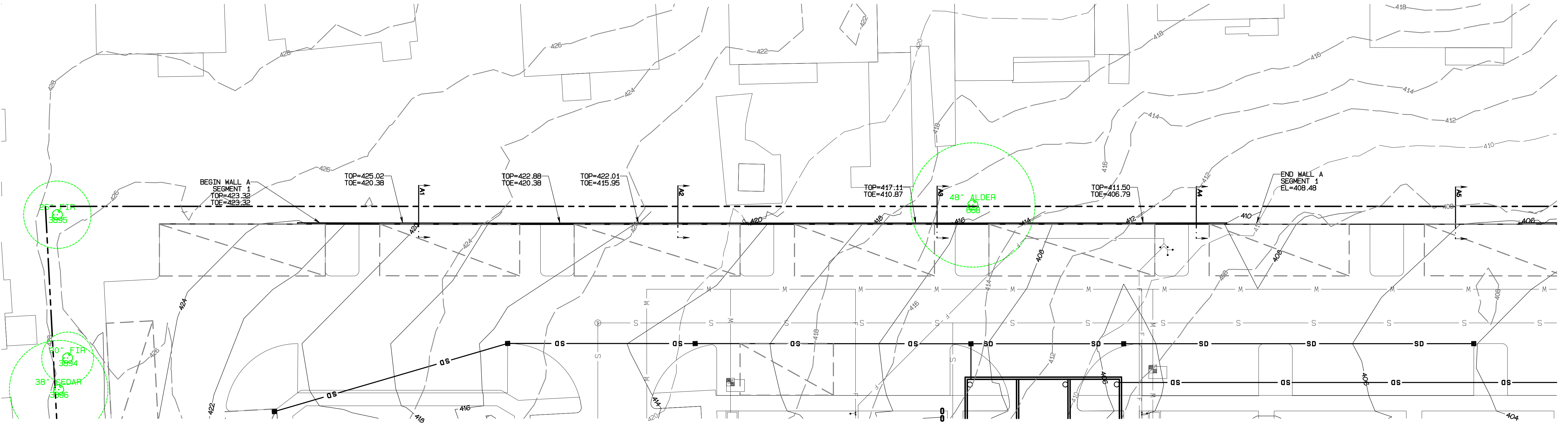
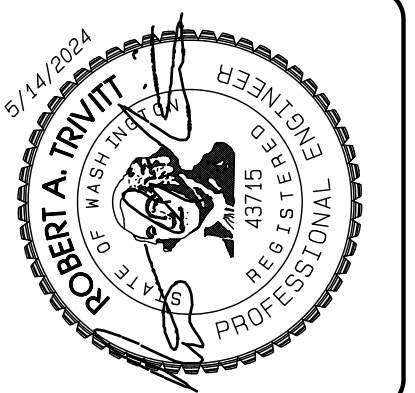
SHEET 11
OF 47

Project Desc.: Bradley Heights Path: F:\sub\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg PLOT Date/Time: 6/11/2024/8:14:09PM



Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



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JOB NO. 2327
 DATE: May 14, 2024
 DESIGNED BY: R.D. Trivitt
 DRAWN BY: R.D. Trivitt
 CHECKED BY: R.D. Trivitt
 APPROVED BY: R.D. Trivitt

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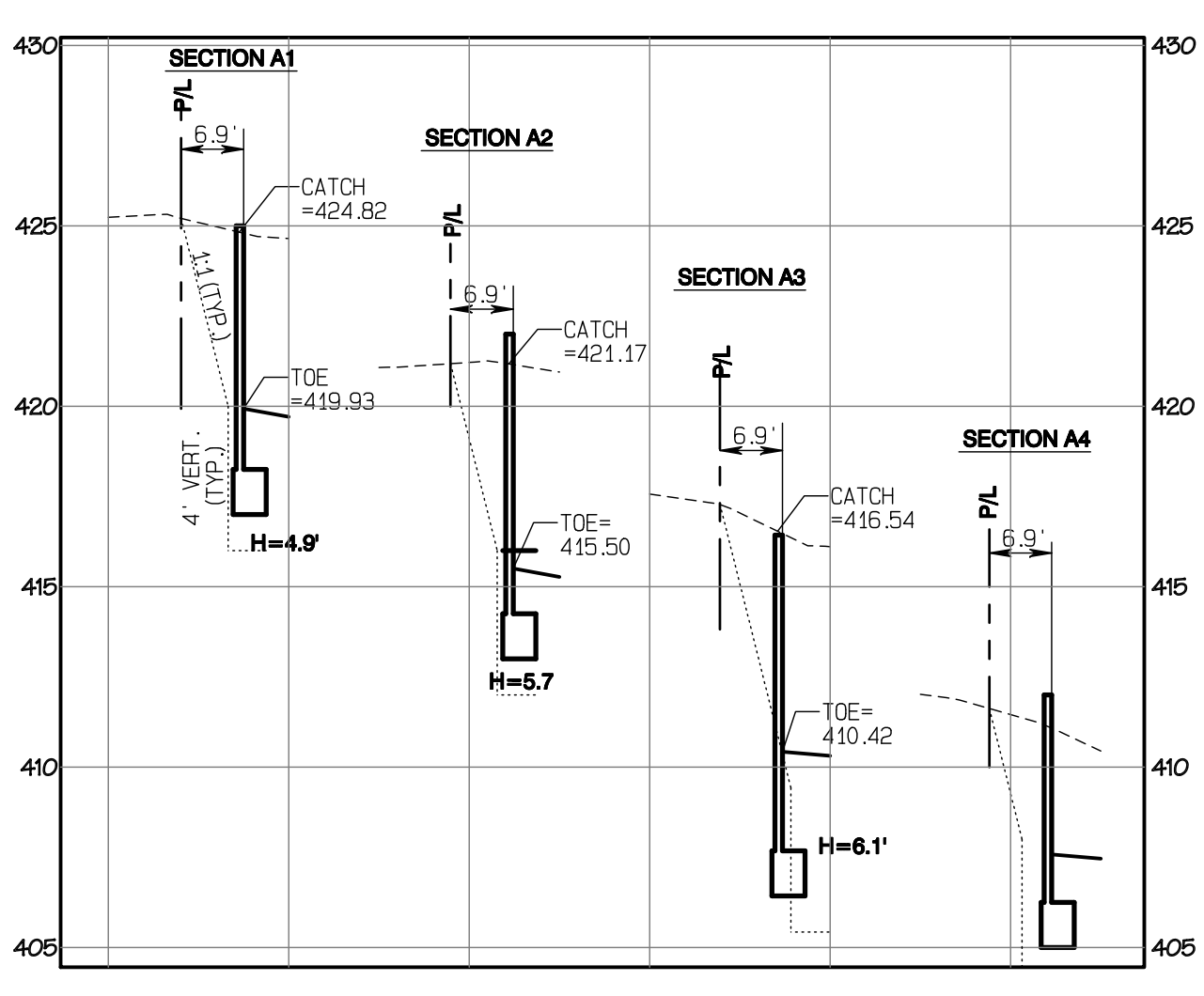
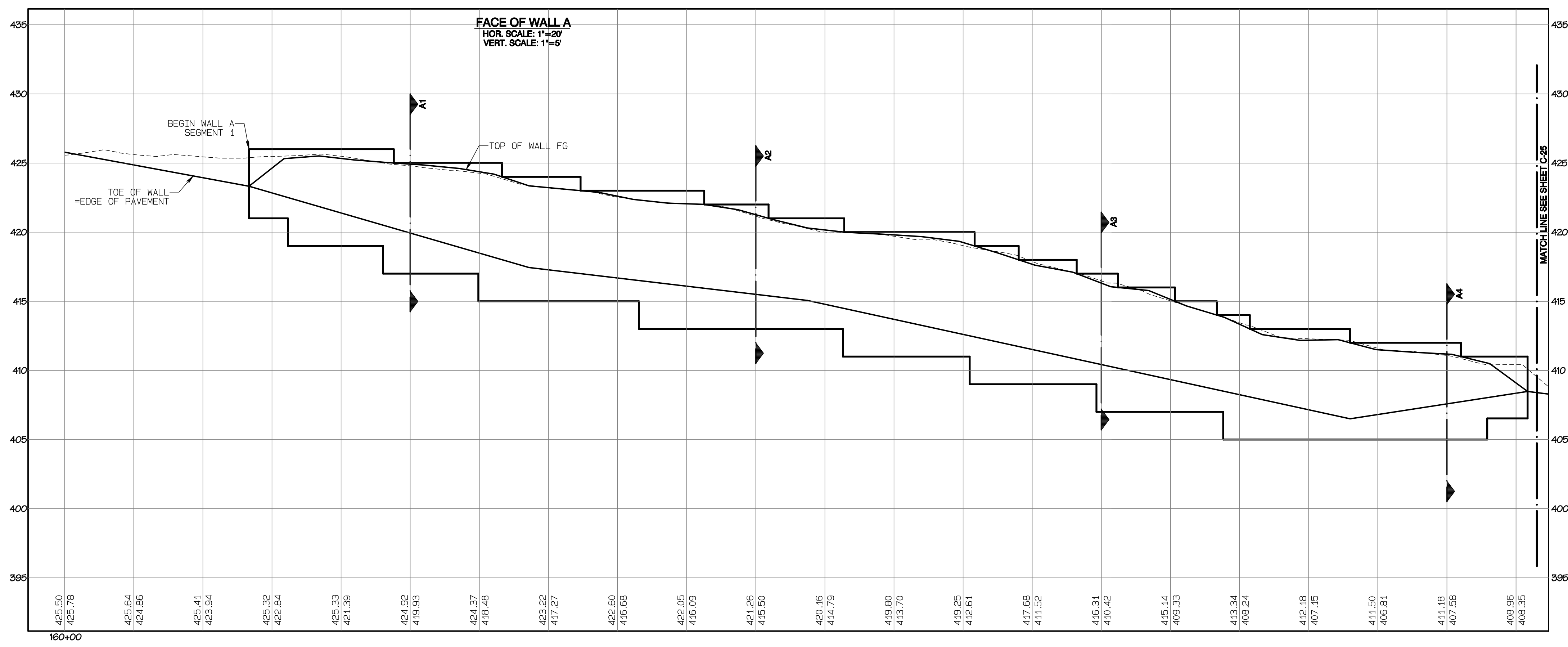
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Retaining Wall A Plan

Bradley Heights

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 Seattle, WA 98122
 Phone 206.886.0326
 Fax jordan@timberlanepartners.com



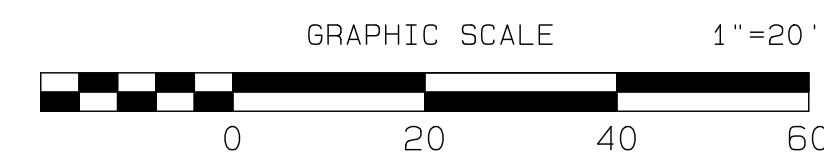
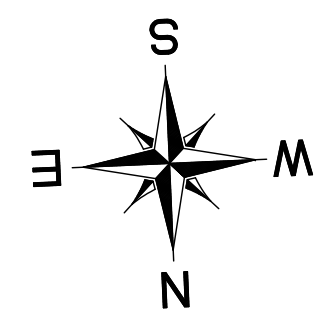
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BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES

DATE: _____

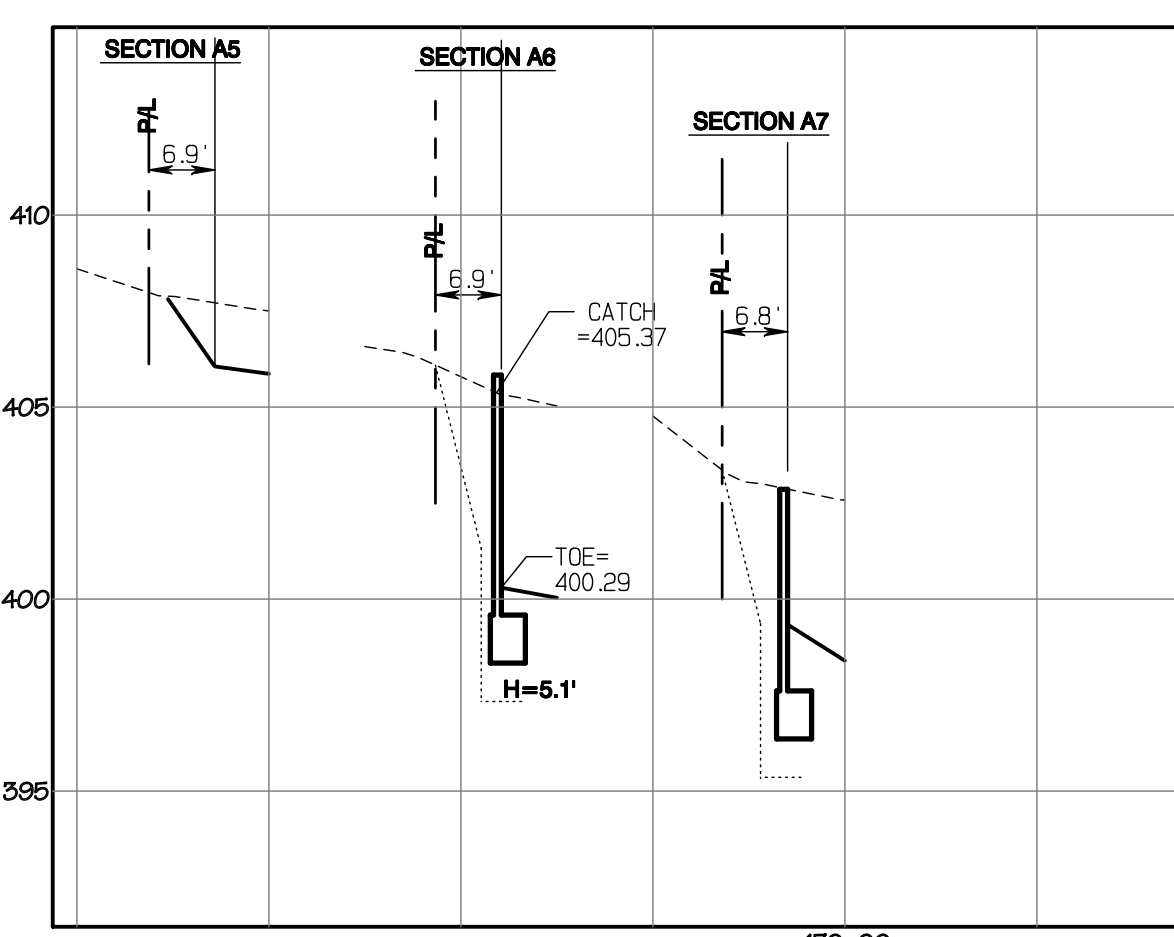
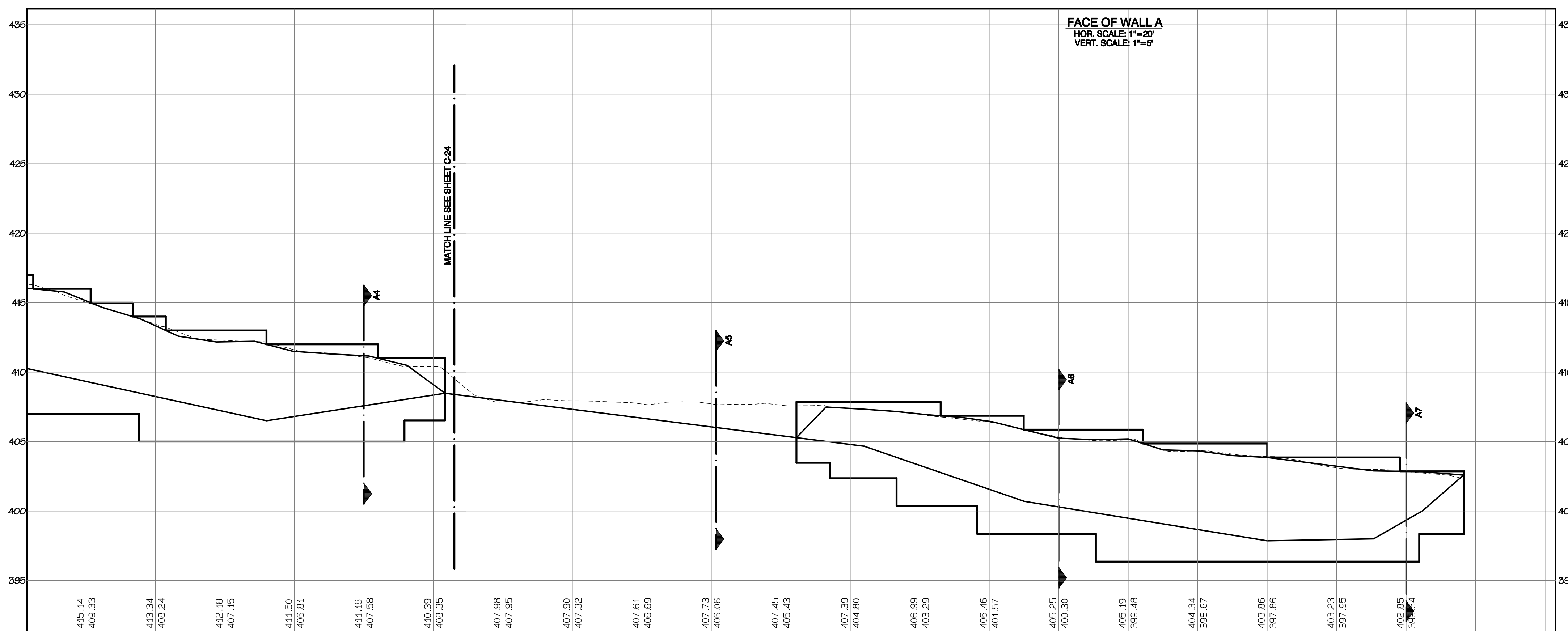
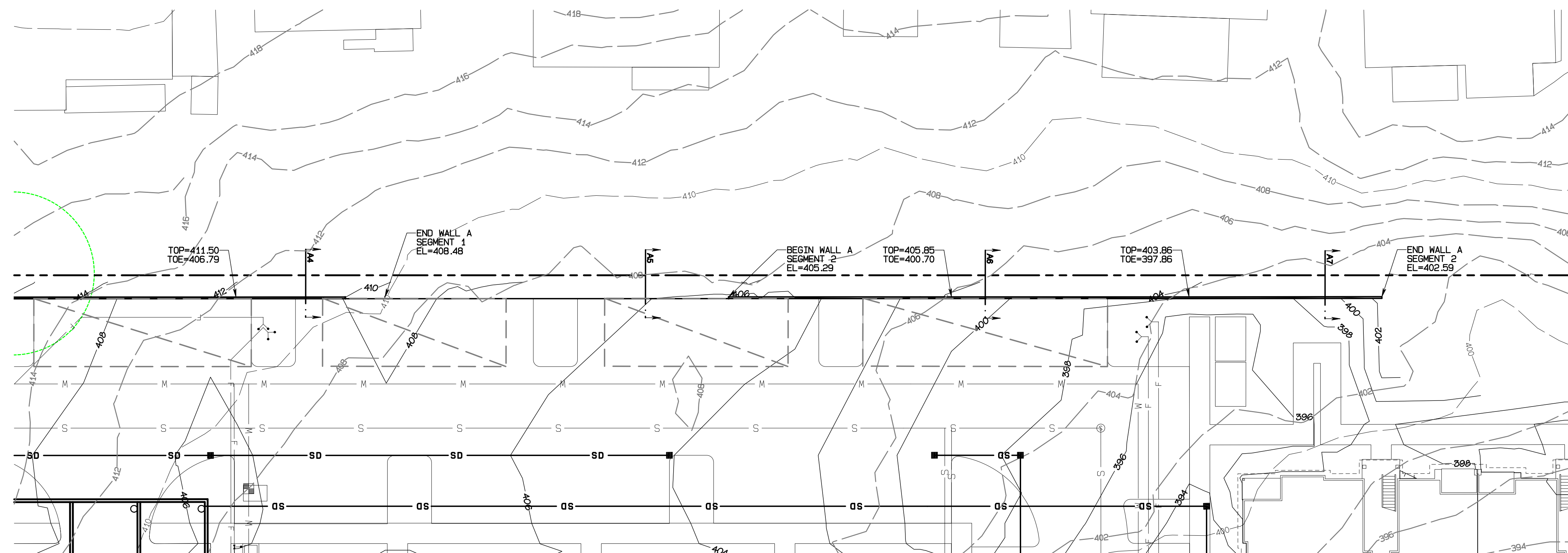
NOTE:
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Project Desc.: Bradley Heights; Path: F:\ubbs\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg; Plot Date/Time: 6/12/2024/8:18:10PM



Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



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BY: CITY OF PUYALLUP
DEVELOPMENT SERVICES
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JOB NO. 3227
DATE: May 14, 2024
DESIGNED BY: Rob Trivitt
DRAWN BY: Rob Trivitt
CHECKED BY: Rob Trivitt
APPROVED BY: Rob Trivitt

409 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142
+feasibility +planning +engineering +surveying

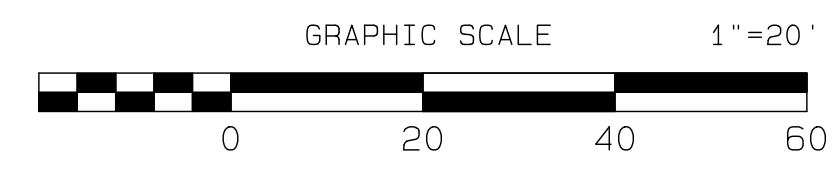
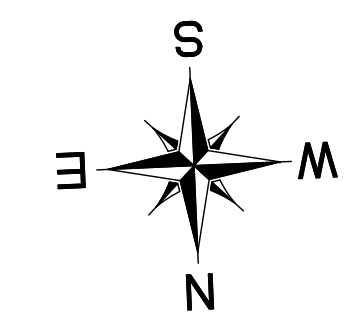
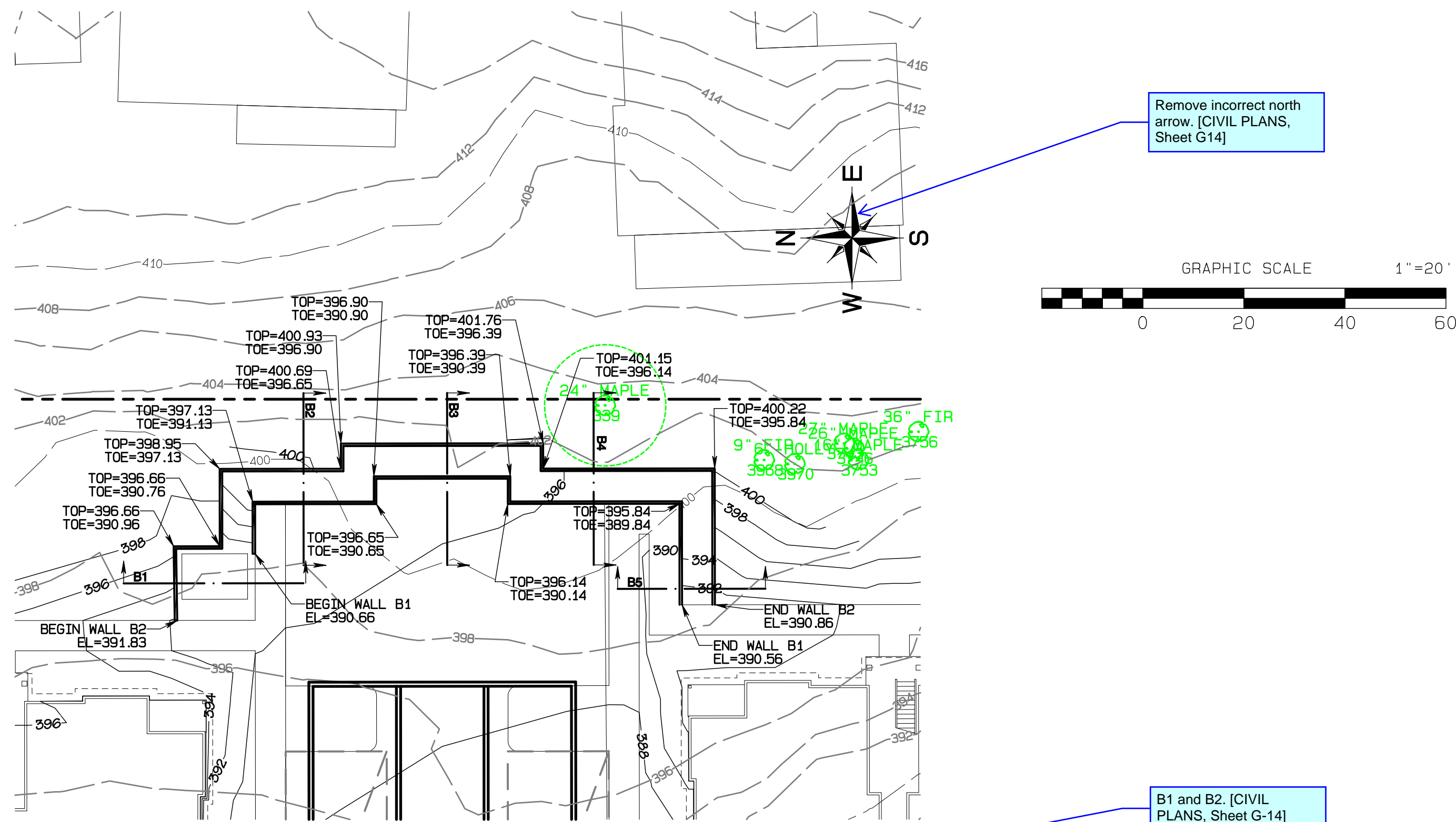
Retaining Wall A Plan
Bradley Heights
Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.889.0326
Fax jordan@timberlanepartners.com

DRAWING
G-13
SHEET 13
OF 47

Project Desc.: Bradley Heights
Plan: E:\sub\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg
Plot Date/Time: 6/12/2024 8:16:58PM

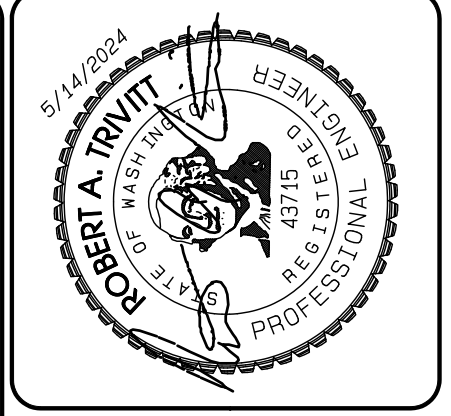
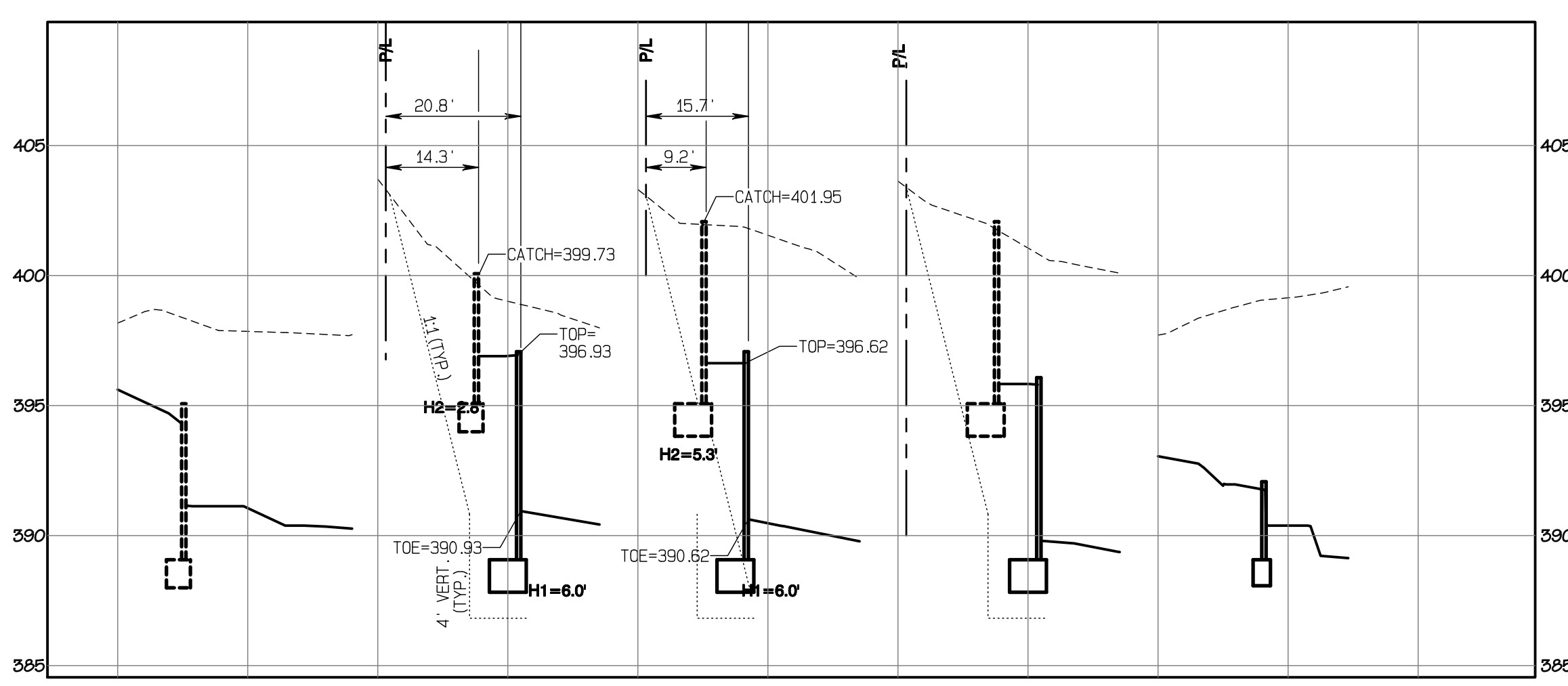
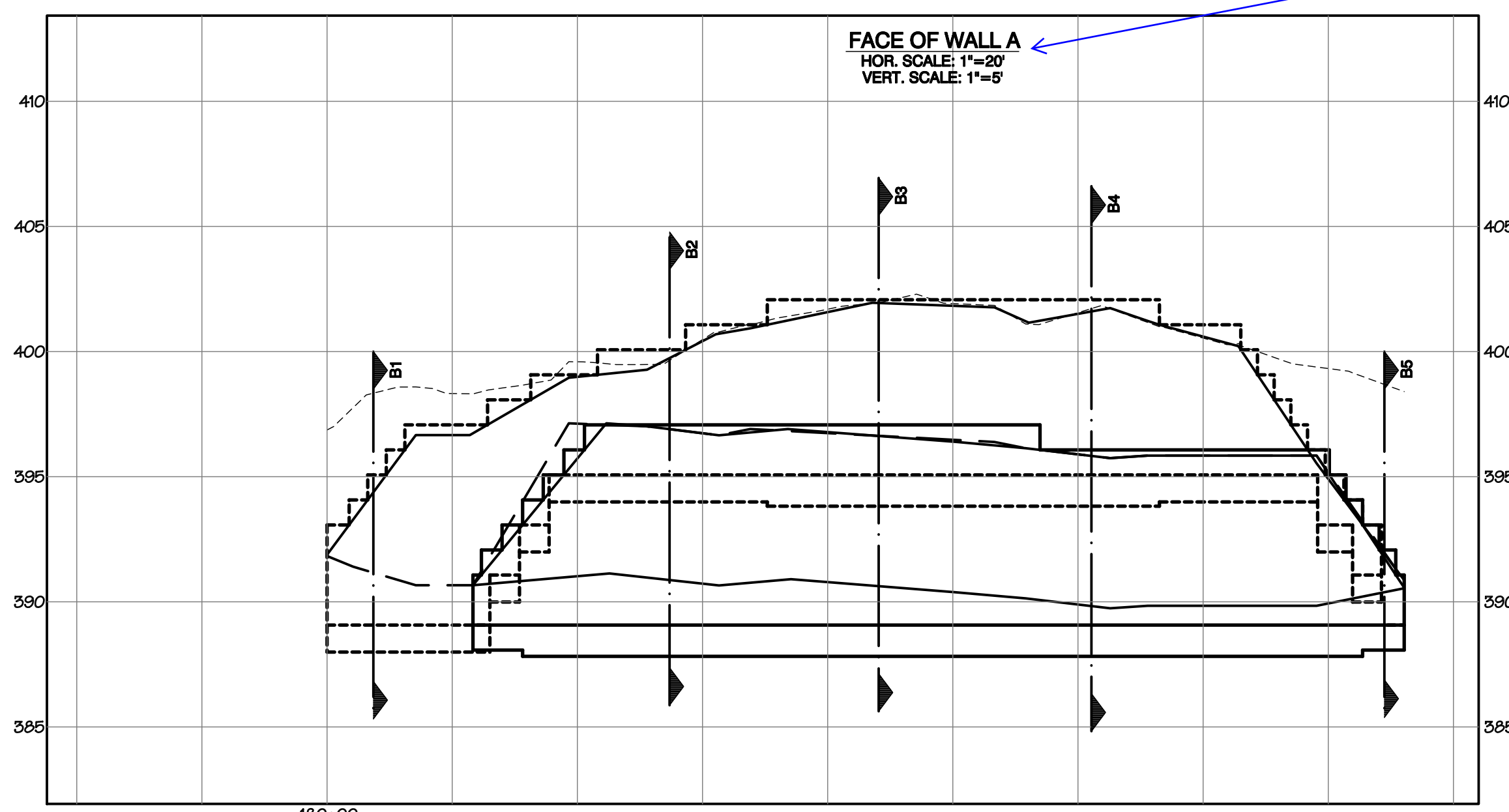
Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



Remove incorrect north arrow. [CIVIL PLANS, Sheet G14]

B1 and B2. [CIVIL PLANS, Sheet G-14]



NO.	REVISION	DATE
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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: Rob Trivitt
 DRAWN BY: Rob Trivitt
 CHECKED BY: Rob Green
 APPROVED BY: Rob Green

AZURE GREEN
 CONSULTANTS
 *feasibility *planning *engineering *surveying
 409 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

Retaining Wall B Plan
 Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 206.886.0326
 Fax jordan@timberlanepartners.com

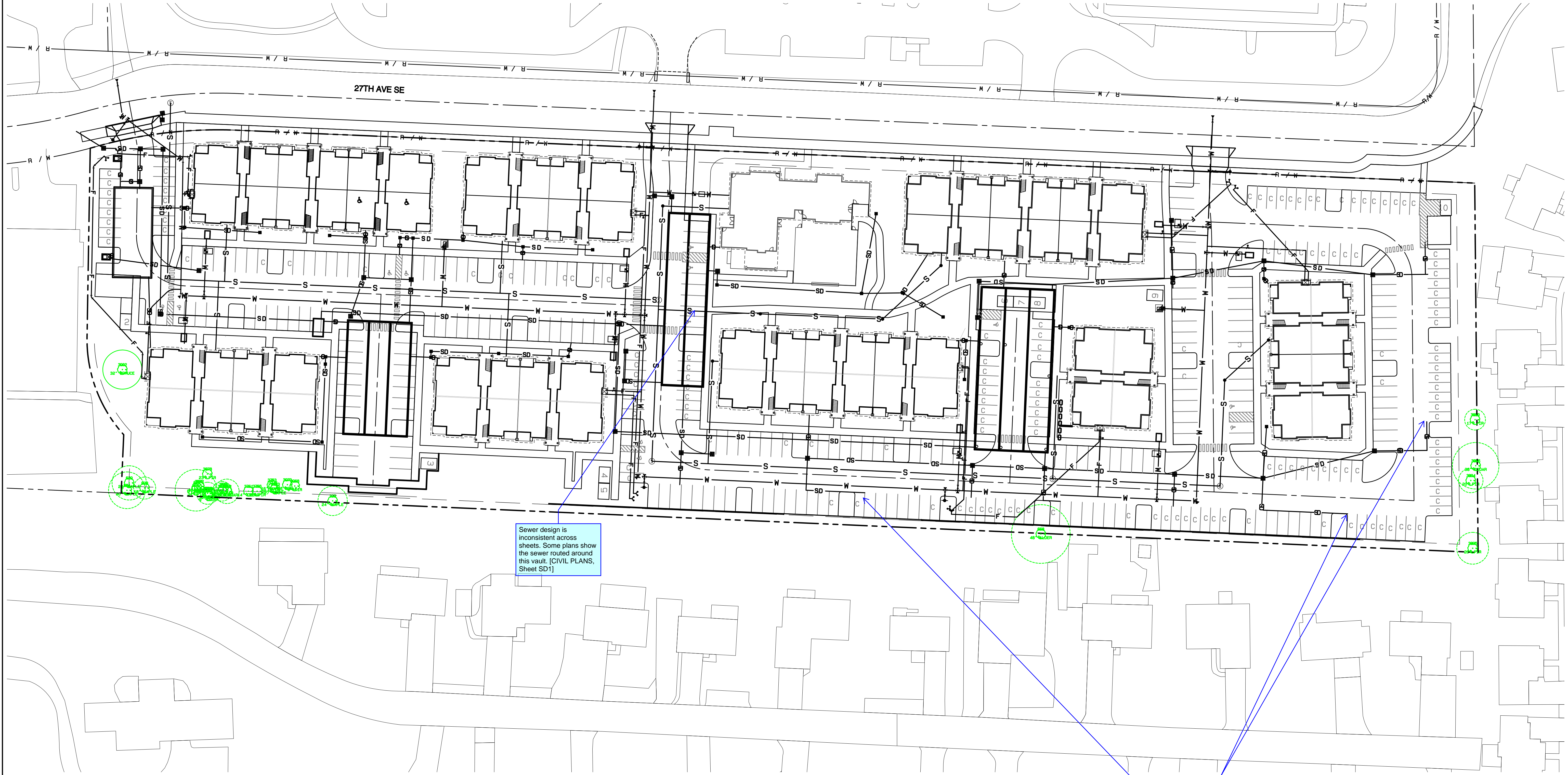
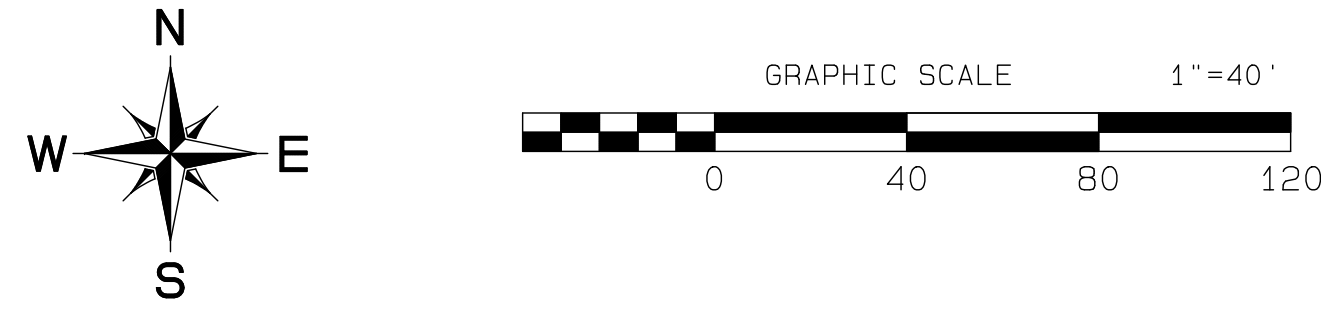
APPROVED
 BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES
 DATE: _____
NOTE:
 THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

DRAWING
G-14
 SHEET 14
 OF 47

Project Desc.: Bradley Heights
 Path: F:\urban\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg PLOT Date/Time: 6/11/2024/8:17:10PM

Bradley Heights

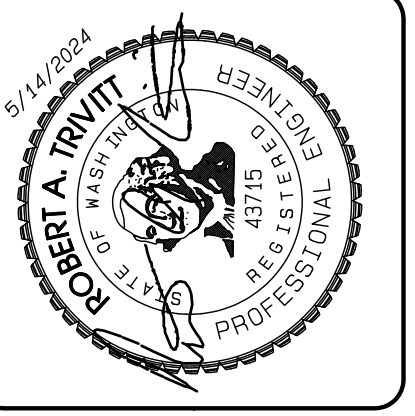
Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



Sewer design is inconsistent across sheets. Some plans show the sewer routed around this vault. [CIVIL PLANS, Sheet SD1]

Storm lines on the east end of the parking lot end with no structure or connection. [CIVIL PLANS, Sheet SD1]

Project Desc.: Bradley Heights; Date: E:\sub\3227 - Bradley Heights\Timberlane\Bradley Heights 2024-0514 ENG.dwg; PLOT Date/Time: 6/12/2024 8:32:47PM



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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: RDT, TRV
 DRAWN BY: RDT, TRV
 CHECKED BY: RGT, TRV
 APPROVED BY: RGT, TRV

AZURE GREEN
 CONSULTANTS

*feasibility *planning *engineering *surveying

409 East Pioneer, Suite A - Puyallup, WA 98372
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Civil Composite

Bradley Heights

Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 509.899.0326
 Fax jordan@timberlanepartners.com

APPROVED

BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES

DATE: _____

NOTE:

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DRAWING

SD-1

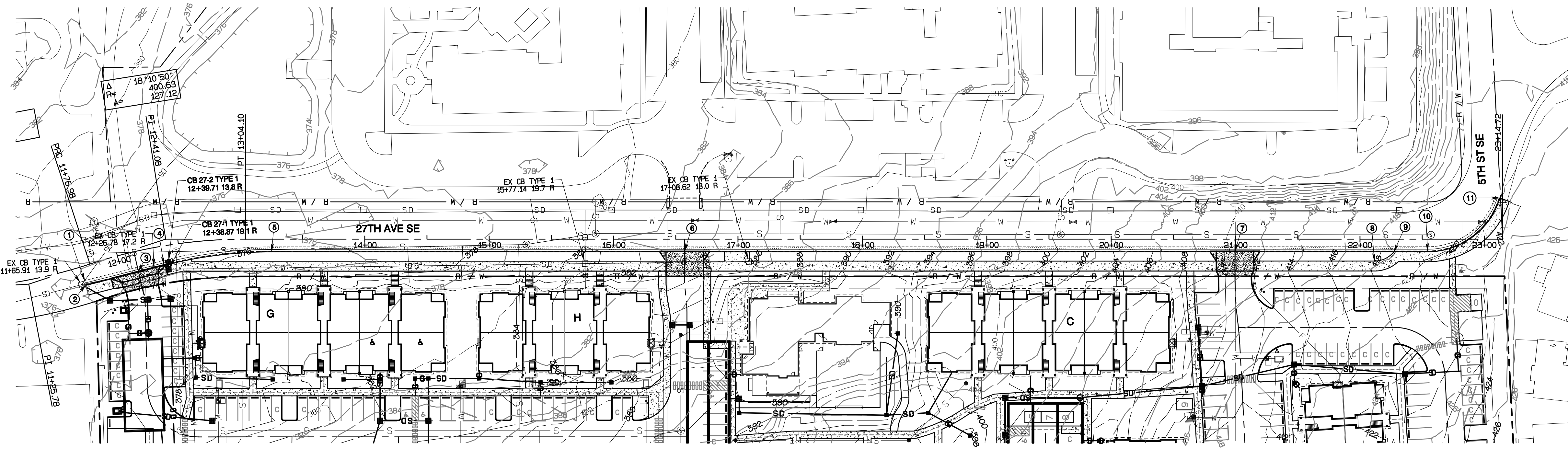
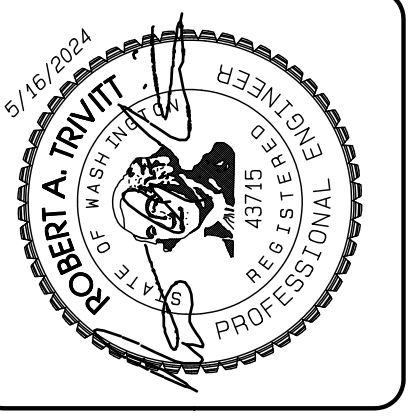
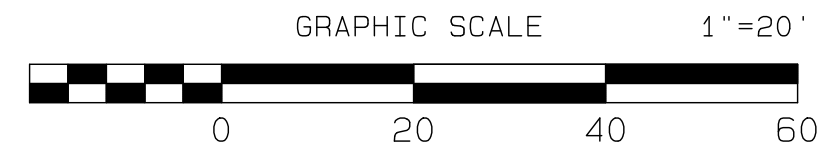
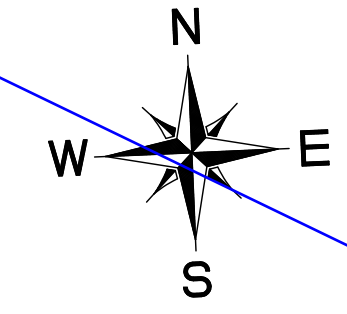
SHEET 15
 OF 47

Plan view is 1"=50'
[CIVIL PLANS, Sheet
SD2]

Show overhead powerlines and poles to identify possible conflicts with the new frontage. [CIVIL PLANS, Sheet SD2]

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington

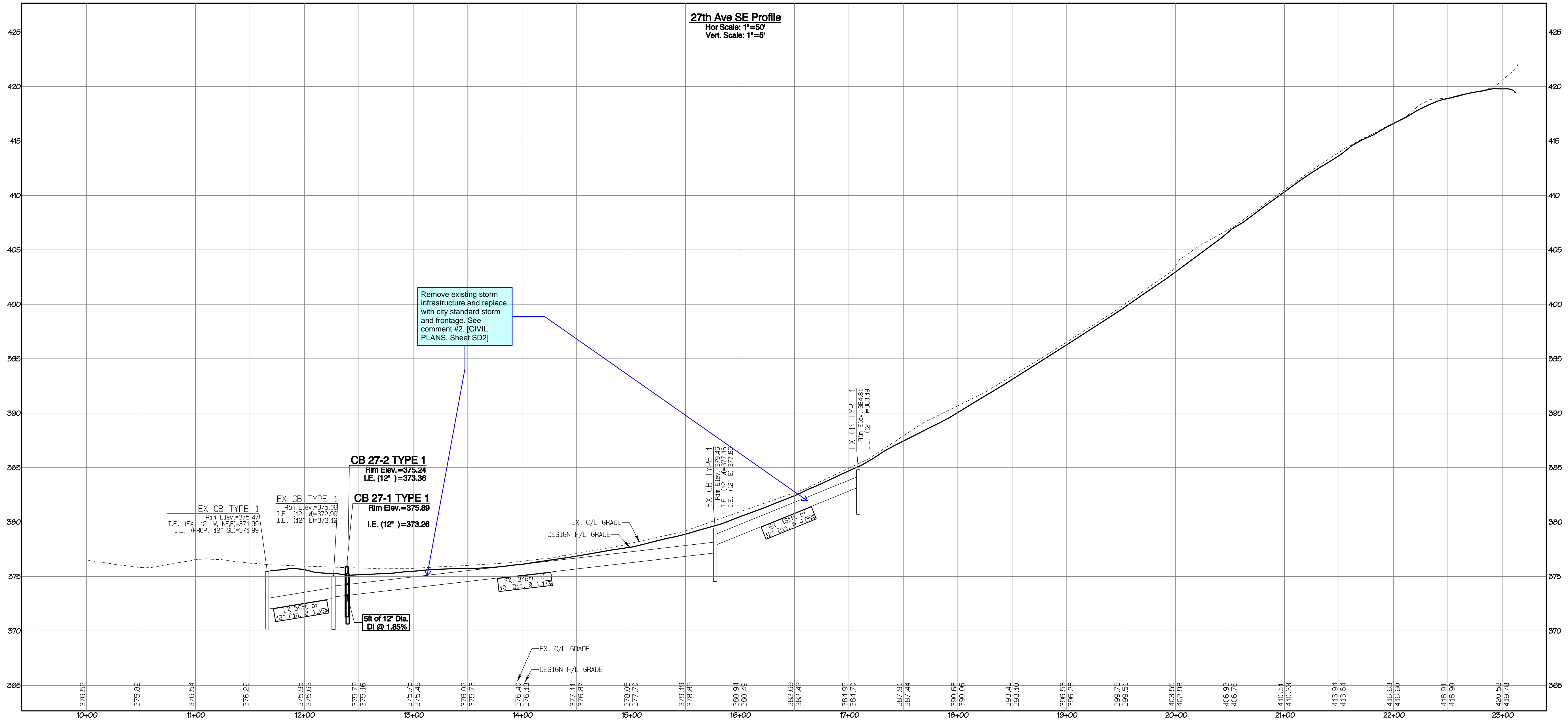


- ### CONSTRUCTION KEY NOTES
- ① 11+89.04 11.4 R
BEGIN SAWCUT, REMOVE EDGE OF PAVING
BEGIN PAVING
 - ② 11+88.88 14.9 R
FLOWLINE, BEGIN CURB & GUTTER
BEGIN 8' SIDEWALK
 - ③ 12+13.66 16.1 R
CENTER 30' WIDE APPROACH
STD 01.02.17
 - ④ 12+35.73 15.0 R
FLOWLINE, PC 350' RAD.
 - ⑤ 13+25.13 9.7 R
FLOWLINE, PT 350' RAD.
BEGIN 7.5' BUFFER
 - ⑥ 16+57.15 9.7 R
CENTER 30' WIDE APPROACH
STD 01.02.17
 - ⑦ 20+99.53 9.7 R
CENTER 30' WIDE APPROACH
STD 01.02.17
 - ⑧ 22+11.64 17.7 R
BEGIN BUFFER TRANSITION
 - ⑨ 22+27.36 10.2 R
BEGIN BUFFER TRANSITION
 - ⑩ 22+54.45 9.6 R
FLOWLINE, PC 60' RAD.
 - ⑪ 23+11.97 33.1 L
FLOWLINE, PT 60' RAD.
END CURB & GUTTER/SIDEWALK
MATCH EXISTING

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JOB NO. 3327
DATE: May 14, 2024
DESIGNED BY: RND, TRIVITT
DRAWN BY: RND, TRIVITT
CHECKED BY: RND, TRIVITT
APPROVED BY: RND, TRIVITT

27th Ave SE Profile
Hor Scale: 1"=50'
Vert. Scale: 1"=5'



Remove existing storm infrastructure and replace with city standard storm and frontage. See comment #2. [CIVIL PLANS, Sheet SD2]

CB 27-2 TYPE 1
Rim Elev.=375.24
I.E. (12")=373.36

CB 27-1 TYPE 1
Rim Elev.=375.89
I.E. (12")=373.26

APPROVED

BY: CITY OF PUYALLUP
DEVELOPMENT SERVICES

DATE: _____

NOTE:
THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.
THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

27th Ave SE Plan & Profile

Bradley Heights
Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.896.0326
Fax jordan@timberlanepartners.com

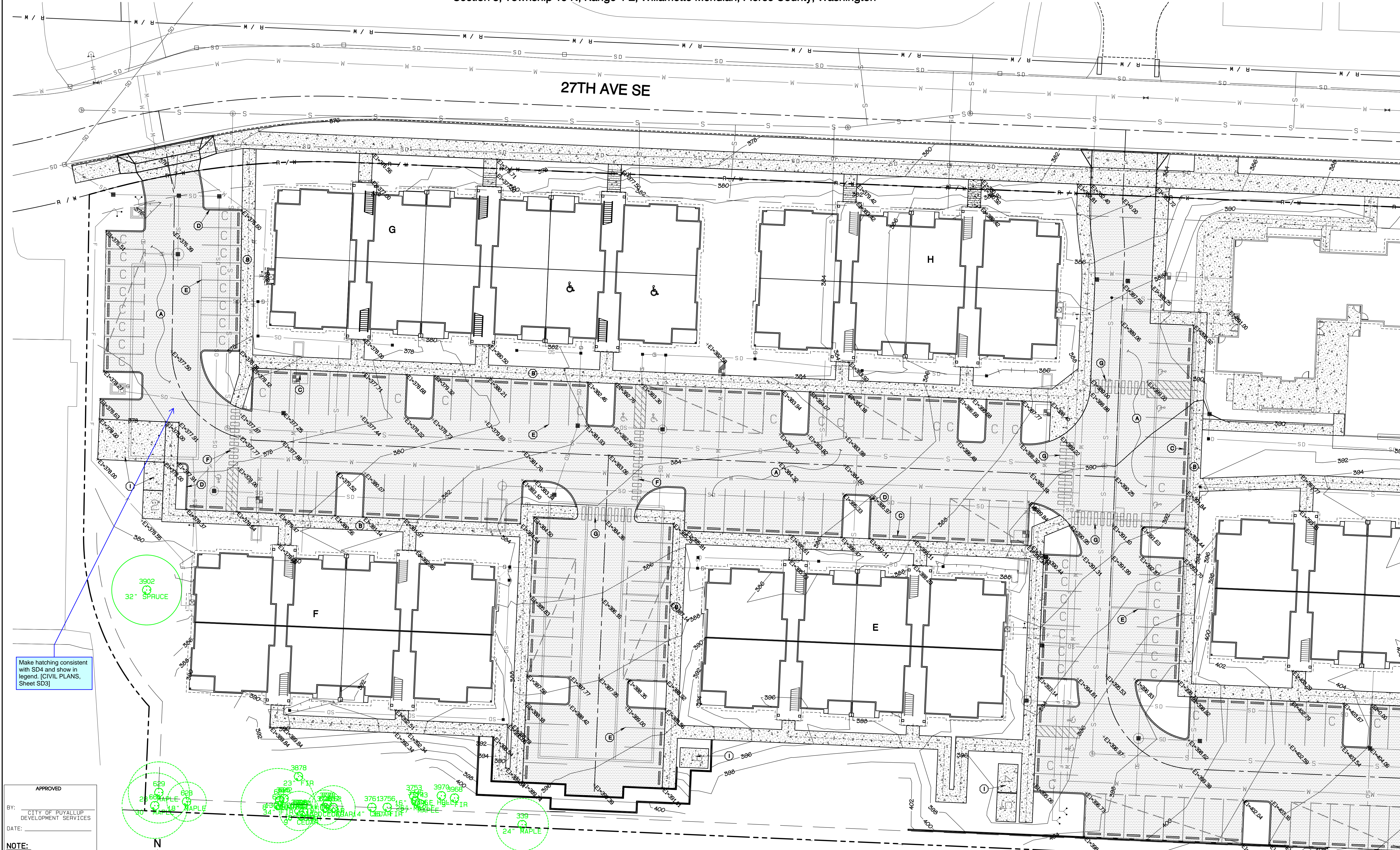
feasibility • planning • engineering • surveying
409 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142

Project Date: Bradley Heights
Date: F:\urban\3327 - Bradley Heights\Timeline\Bradley Heights 2024 0516 ENG.dwg P104 Date/Time: 6/15/2024/11:37:15AM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington

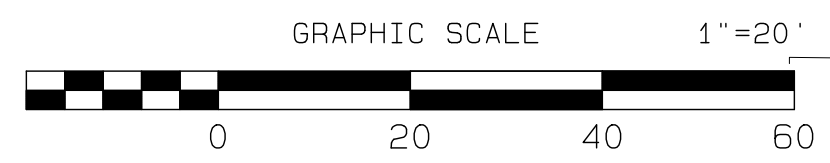
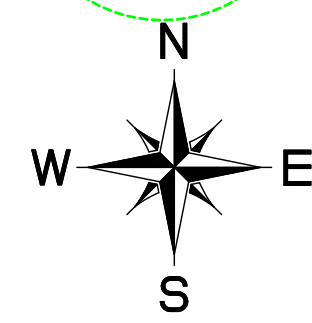
27TH AVE SE



Make hatching consistent with SD4 and show in legend. [CIVIL PLANS, Sheet SD3]

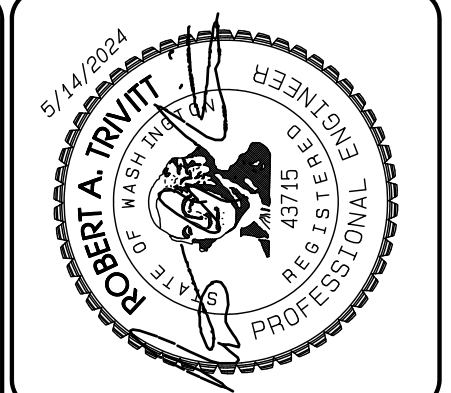
APPROVED
BY: CITY OF PUYALLUP DEVELOPMENT SERVICES
DATE:

NOTE:
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THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
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KEY NOTES

- (A) ASPHALT PAVING - SEE SECTION SHEET SD-17
- (B) CONCRETE SIDEWALK - SEE SECTION SHEET SD-17
- (C) WHEEL STOP - SEE DETAIL SHEET SD-17
- (D) 6" EXTRUDED CURB, SEE DETAIL SHEET SD-17
- (E) 4" WHITE PARKING STRIPE
- (F) 4" WIDE CROSS-WALK MARKINGS
- (G) 8" WIDE CROSS-WALK MARKINGS
- (H) 4" WHITE STRIPES, 45' 2" O.C.
- (I) 6" CONCRETE PAD FOR TRASH/RECYCLING



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JOB NO. 2327
DATE: May 14, 2024
DESIGNED BY: ROB TRIVITT
DRAWN BY: ROB TRIVITT
CHECKED BY: ROB TRIVITT
APPROVED BY: ROB TRIVITT

AZURE GREEN
CONSULTANTS

*feasibility *planning *engineering *surveying

419 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142

Paving Plan

Bradley Heights

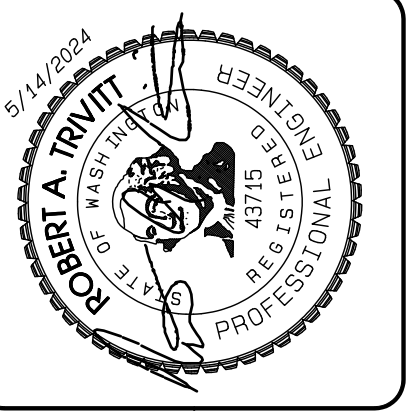
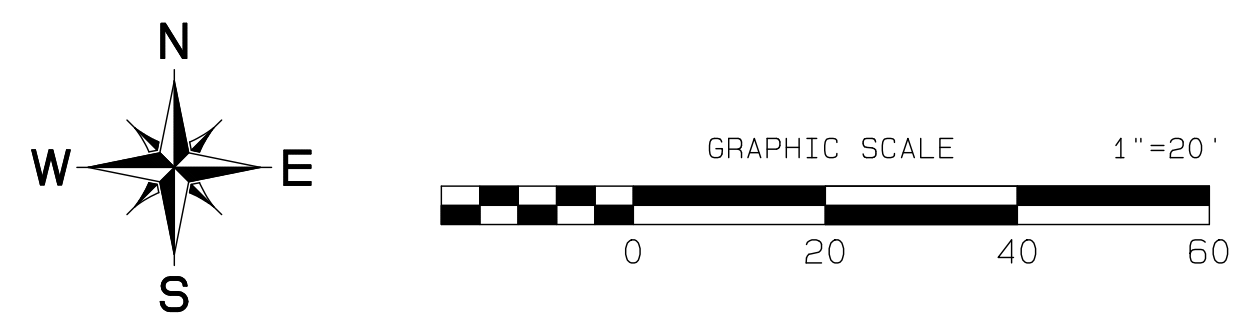
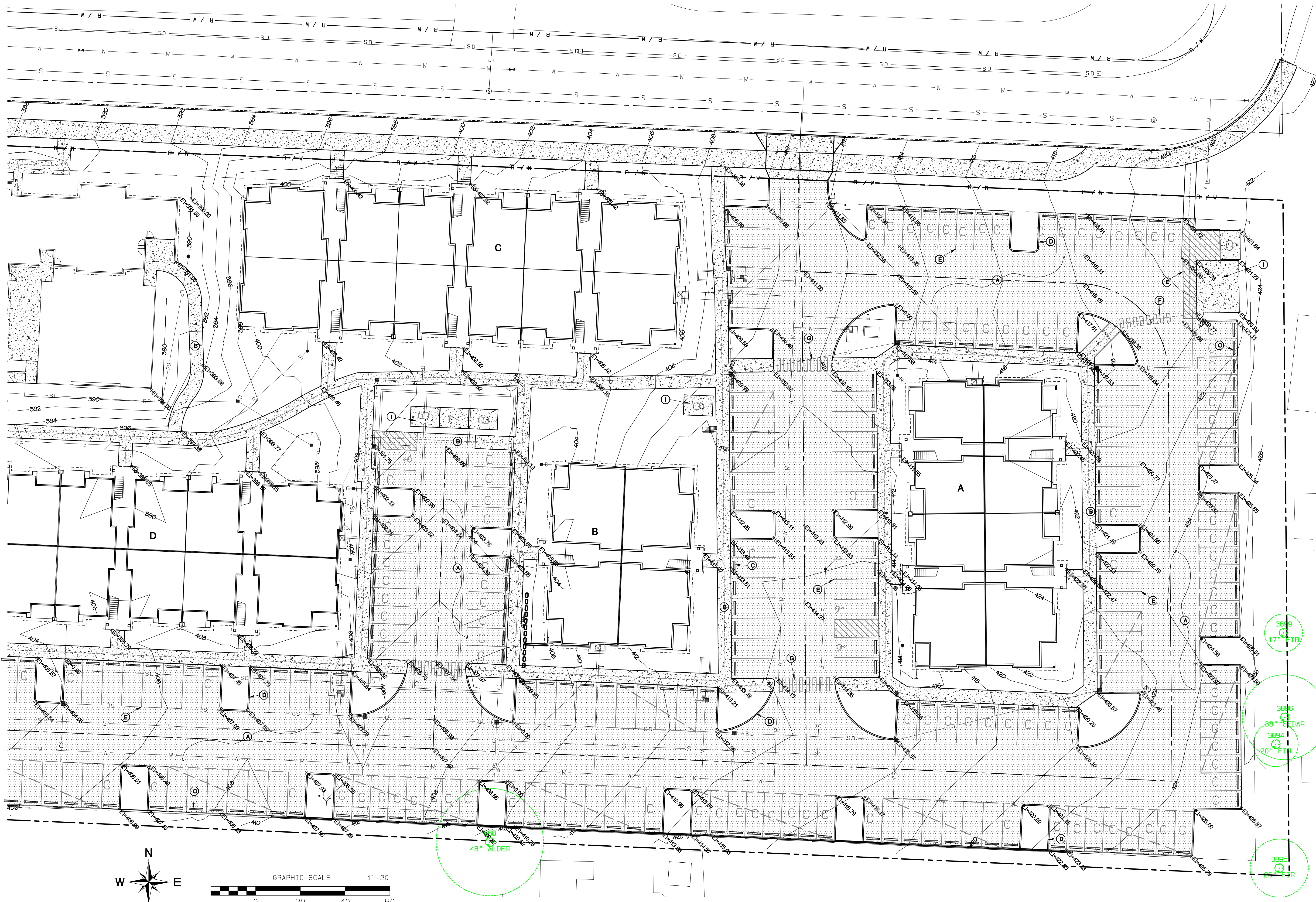
Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.886.0326
Fax jordan@timberlanepartners.com

DRAWING
SD-3
SHEET 17
OF 47

Project: Bradley Heights - Bradley Heights, Pierce County, Washington, 2024-05-14 ENG.dwg P104 Date: 5/14/2024 8:26:12PM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



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JOB NO. 3327
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV

AZURE GREEN
 CONSULTANTS

*feasibility *planning *engineering *surveying

419 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

Paving Plan

Bradley Heights

Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 206.886.0326
 Fax jordan@timberlanepartners.com

APPROVED

BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES

DATE: _____

NOTE:
 THIS APPROVAL IS VOID AFTER 180
 DAYS FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE
 FOR ERRORS AND/OR OMISSIONS
 ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE
 CHANGES TO THESE PLANS AS
 DETERMINED BY THE ENGINEERING
 SERVICES MANAGER.

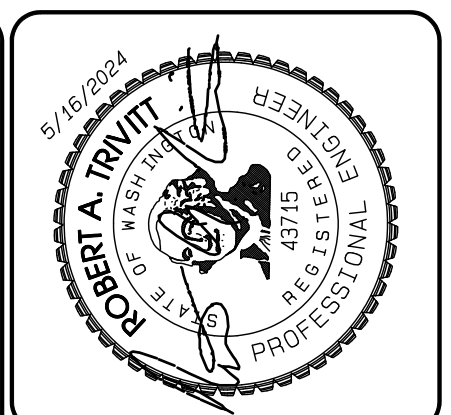
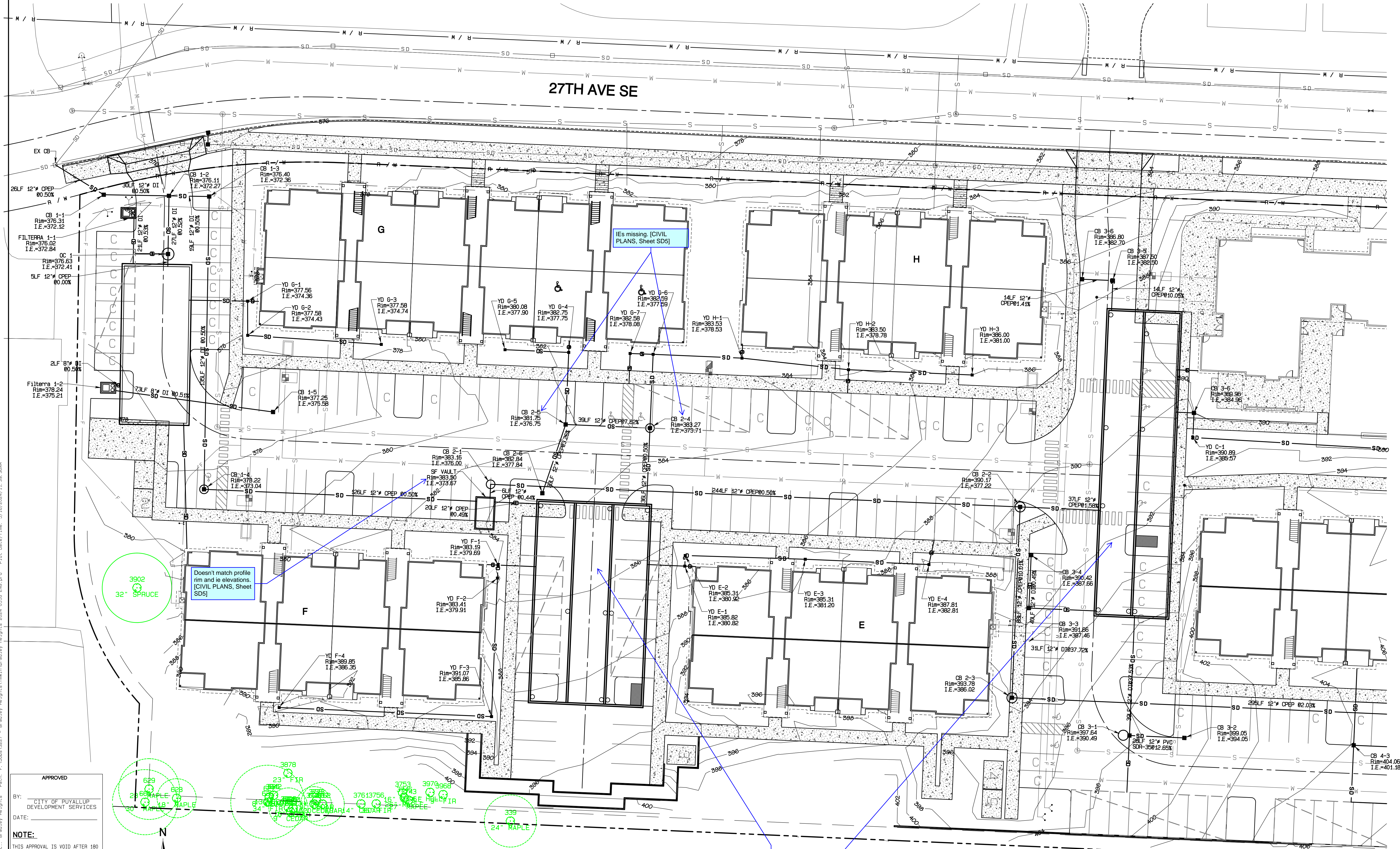
DRAWING

SD-4

SHEET 18
 OF 47

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



NO.	REVISION
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JOB NO. 3327
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV

AZURE GREEN
CONSULTANTS

*feasibility *planning *engineering *surveying
 419 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

Storm Plan
 Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 509.896.0326
 Fax jrd@timberlanepartners.com

Project: Date: 3/Bradley Heights - Bradley Heights\Timberlane\Bradley Heights 2024 0516 ENG.dwg P104 Date/Time: 6/16/2024/11:30:36AM

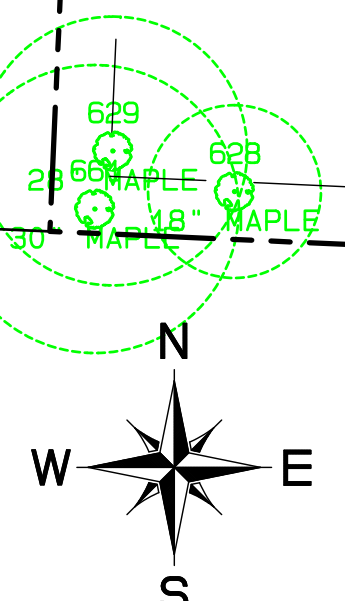
APPROVED
 BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES
 DATE: _____
NOTE:
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 DAYS FROM APPROVAL DATE.
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 DETERMINED BY THE ENGINEERING
 SERVICES MANAGER.

Clearly label each vault
 on plans to match the
 detail sheets and profiles.
 [CIVIL PLANS, Sheet
 SD5]

Doesn't match profile
 rim and ie elevations.
 [CIVIL PLANS, Sheet
 SD5]

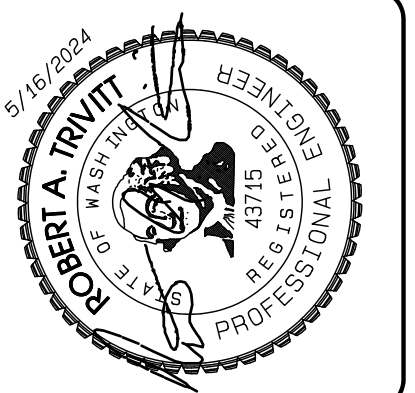
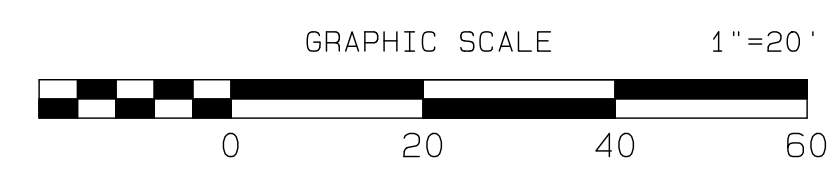
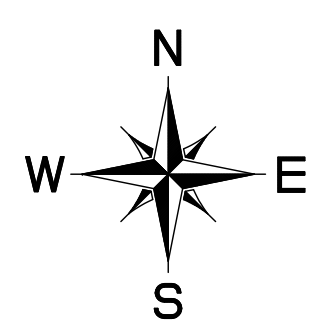
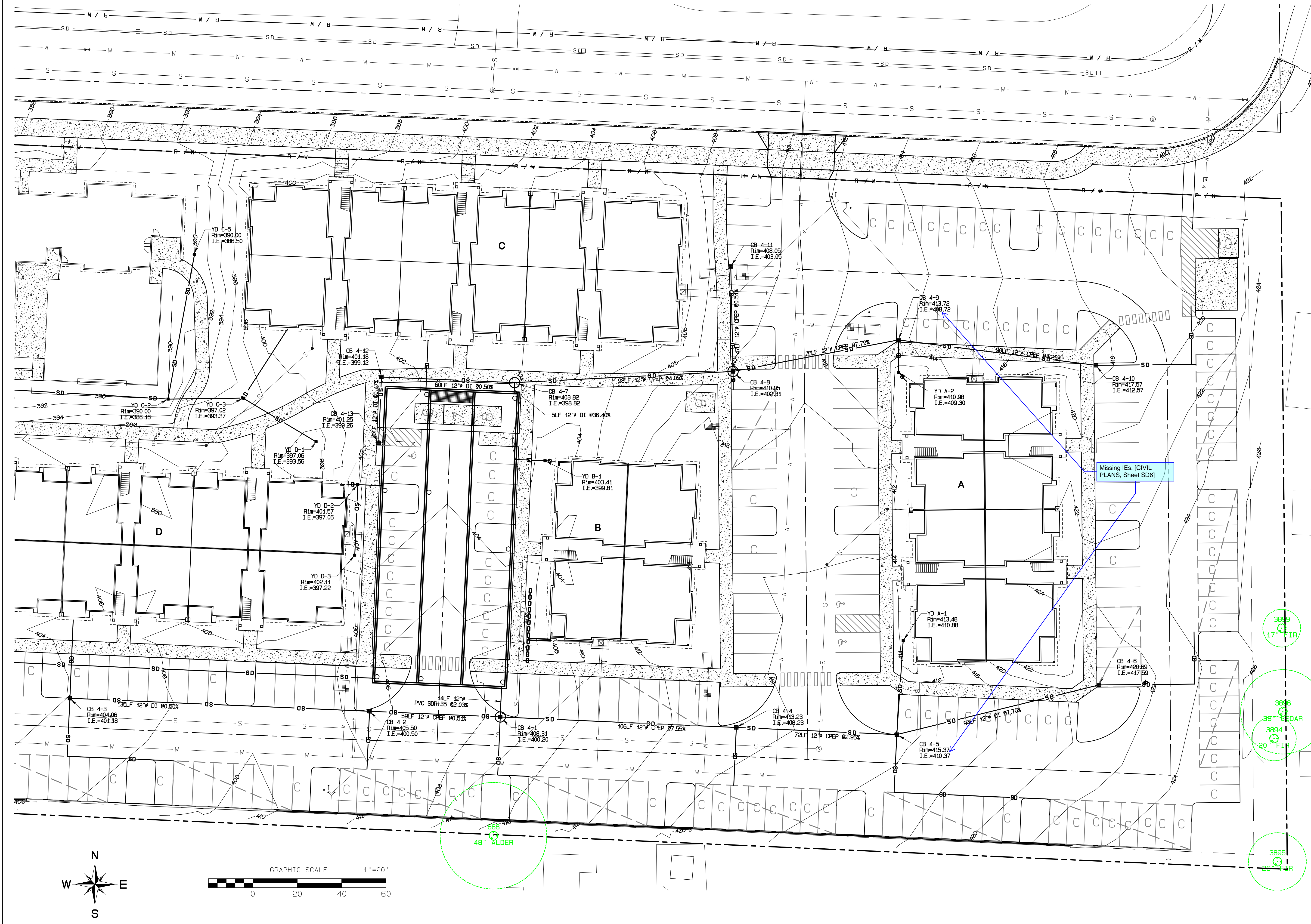
IEs missing. [CIVIL
 PLANS, Sheet SD5]

3902
 32" SPRUCE



Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



NO.	REVISION	DATE
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JOB NO. 2327
 DATE: May 14, 2024
 DESIGNED BY: R.D. TRIVITT
 DRAWN BY: R.D. TRIVITT
 CHECKED BY: R.D. TRIVITT
 APPROVED BY: R.D. TRIVITT

AZURE GREEN
CONSULTANTS

*feasibility *planning *engineering *surveying
 409 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144 fax: 253.770.3142

Storm Plan

Bradley Heights

Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 206.896.0326
 Fax jordan@timberlanepartners.com

DRAWING

SD-6

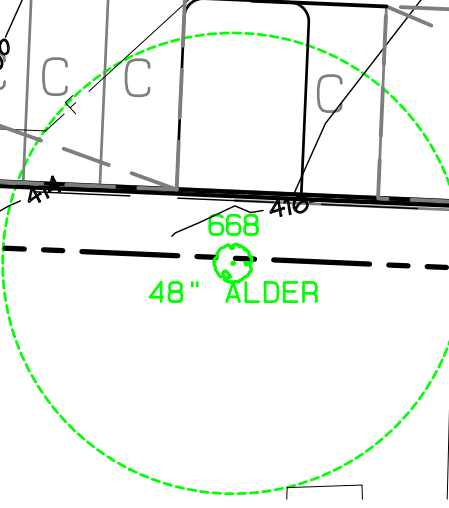
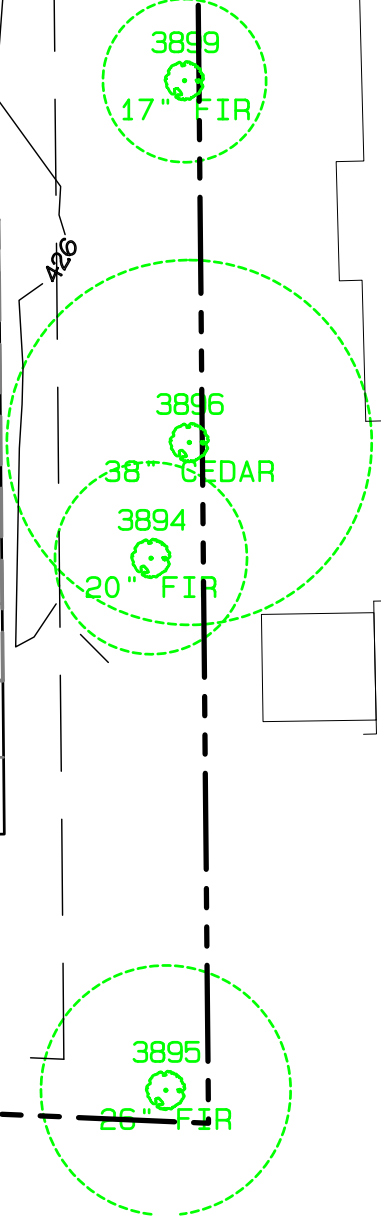
SHEET 20 OF 47

APPROVED

BY: CITY OF PUYALLUP DEVELOPMENT SERVICES

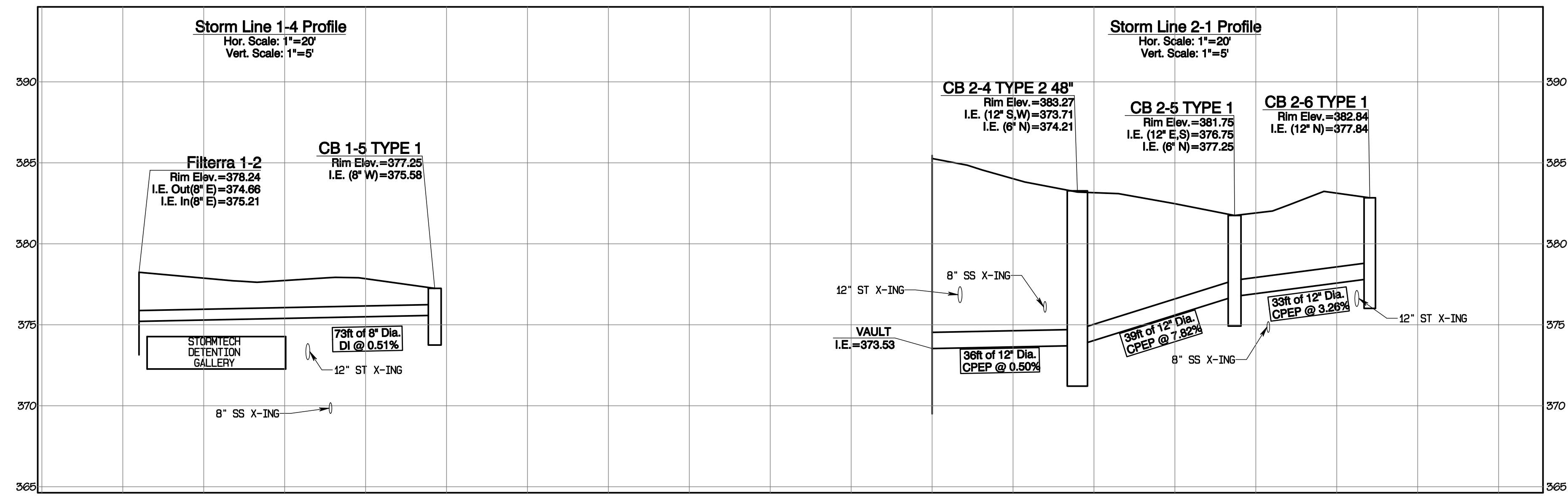
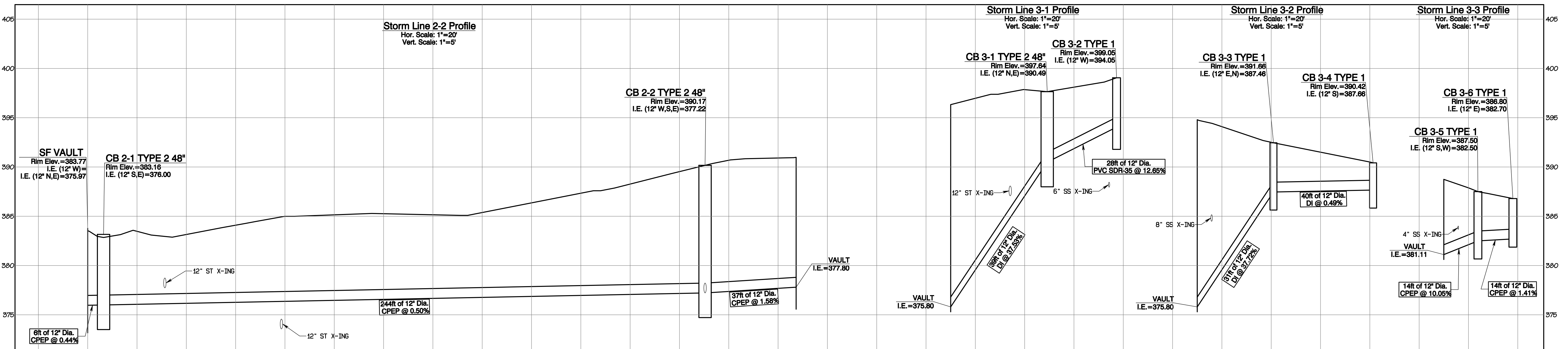
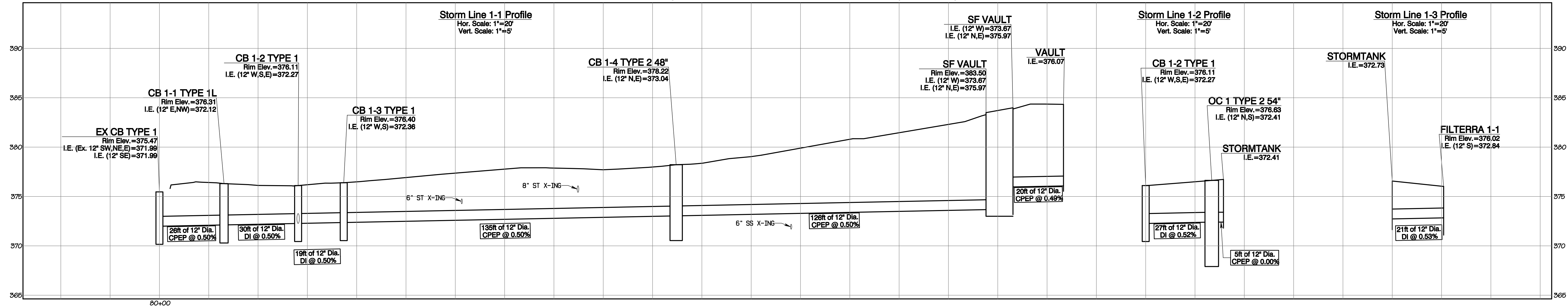
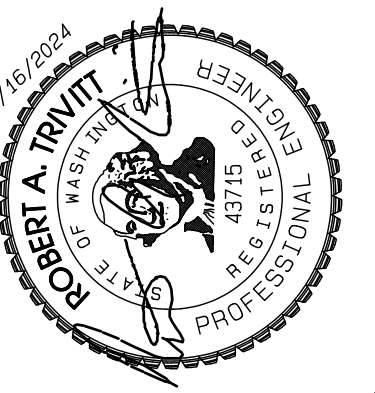
DATE: _____

NOTE:
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Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



APPROVED

BY: CITY OF PUYALLUP
DEVELOPMENT SERVICES

DATE: _____

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JOB NO. 2327
DATE: May 14, 2024
DESIGNED BY: RBT, TRV
DRAWN BY: RBT, TRV
CHECKED BY: RBT, TRV
APPROVED BY: RBT, TRV

AZURE GREEN CONSULTANTS
+ feasibility + planning + engineering + surveying

409 East Pioneer, Suite A - Puyallup, WA 98372
Phone: 253.770.3144, Fax: 253.770.3142

Storm Profiles

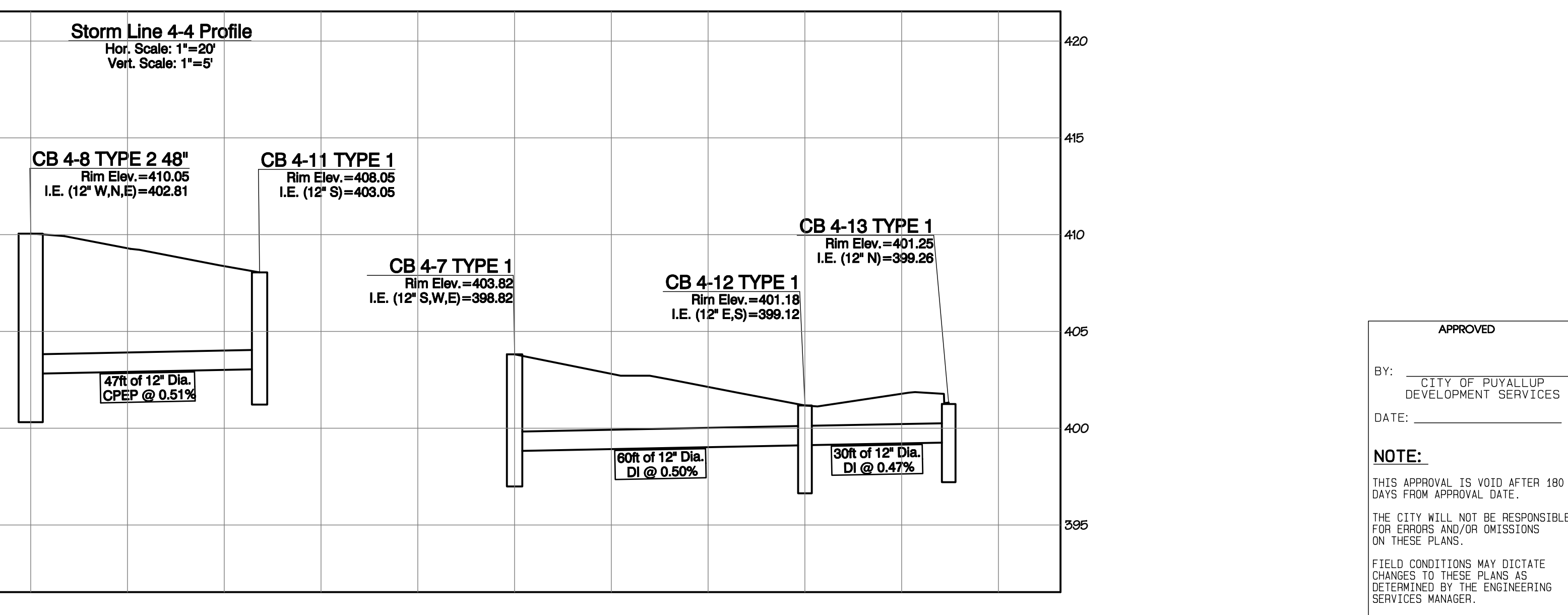
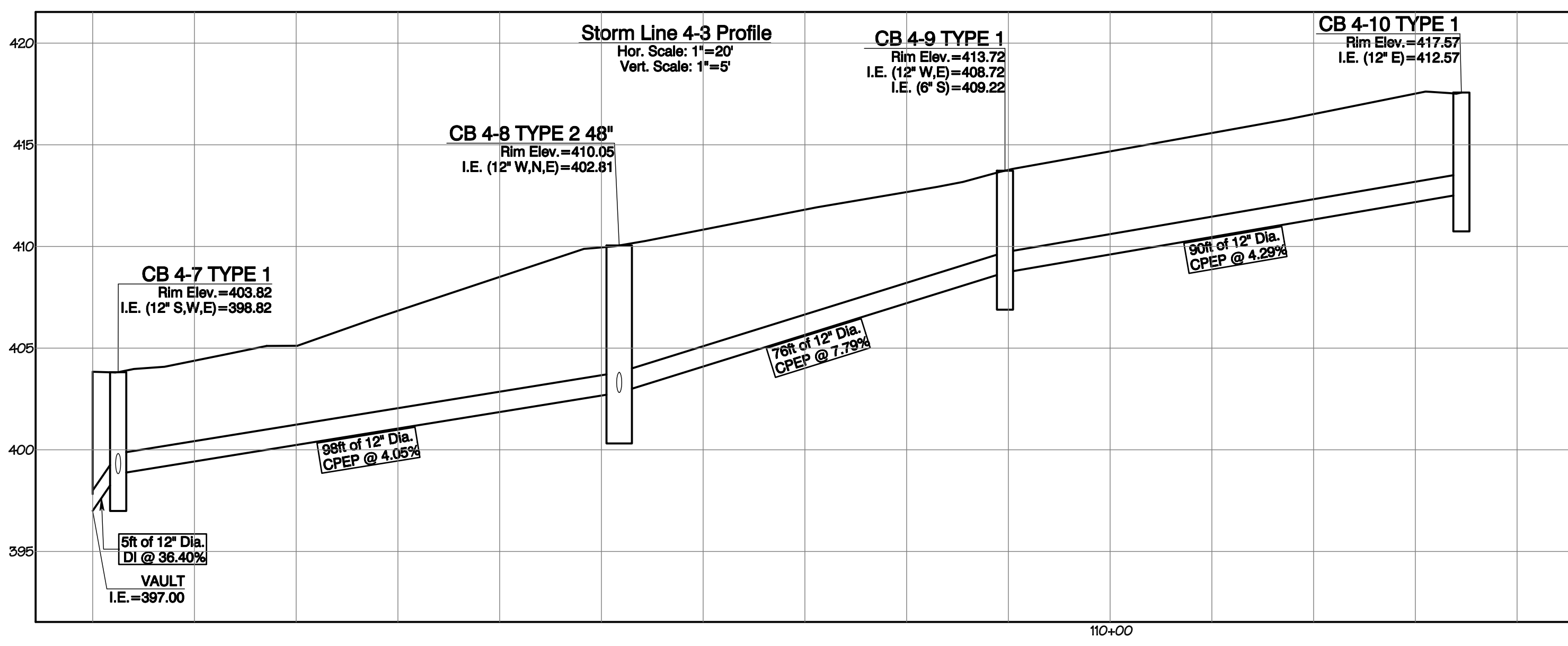
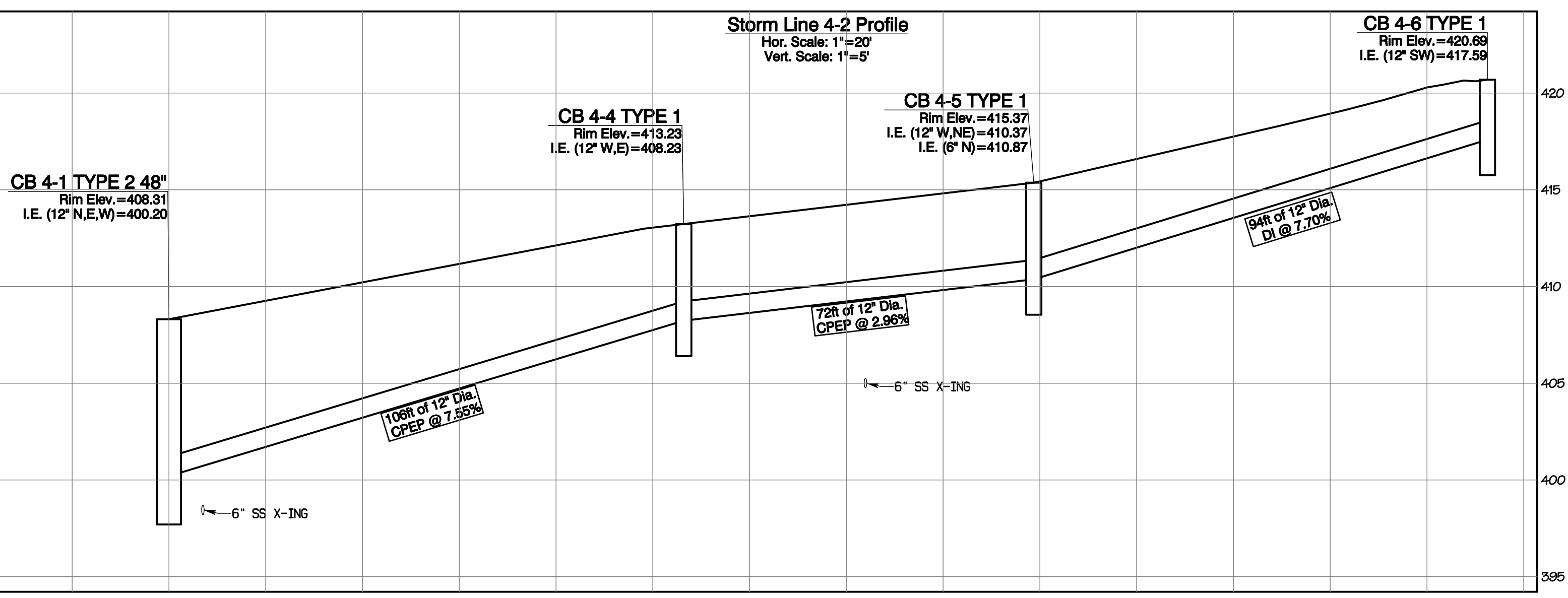
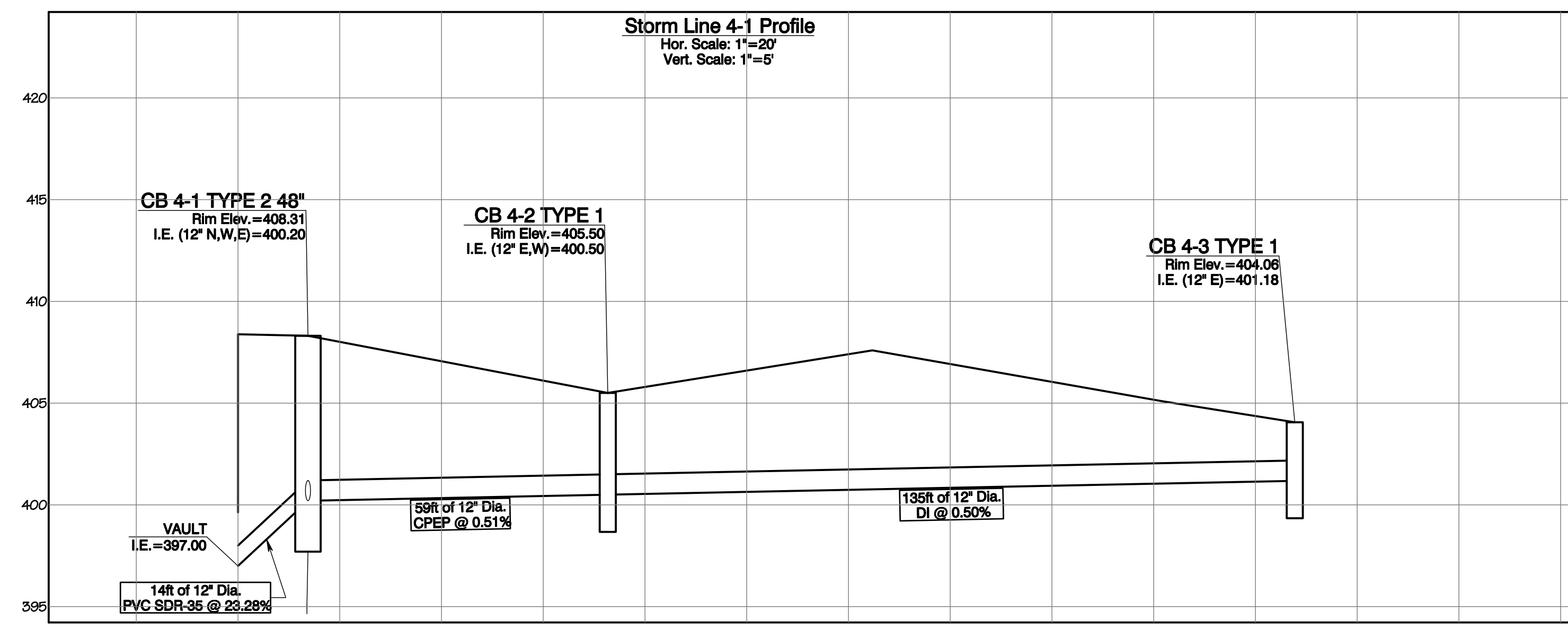
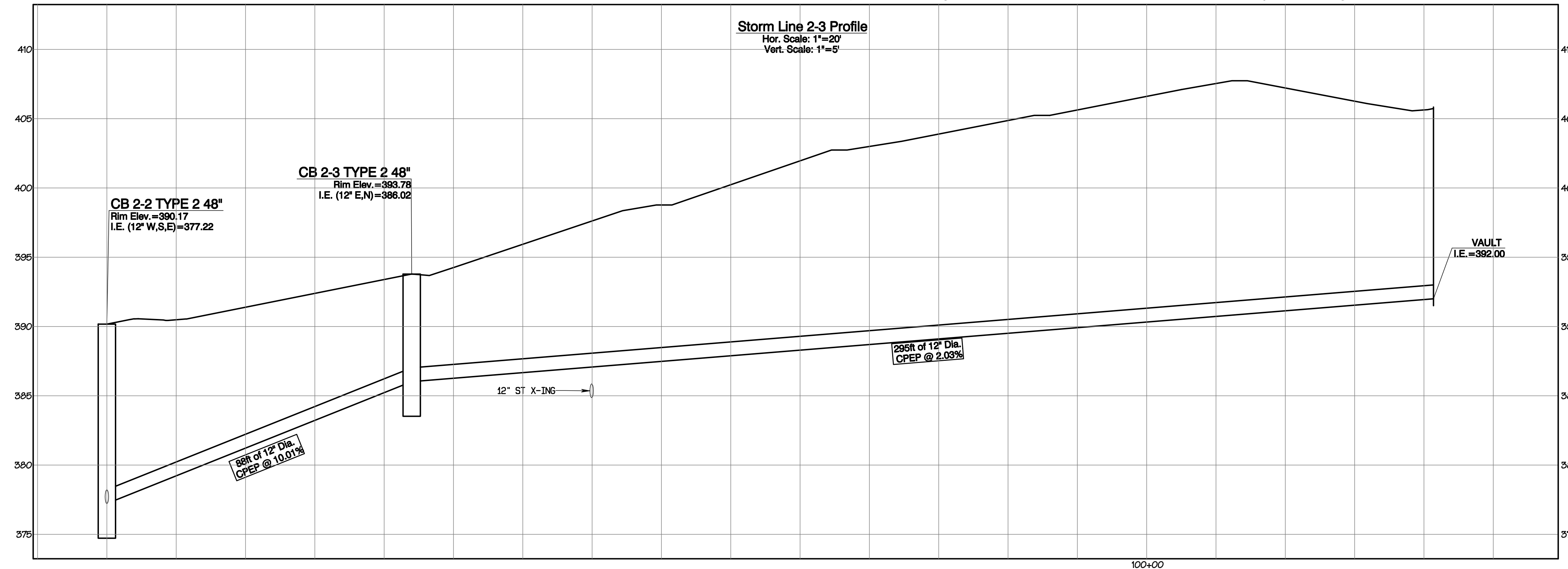
Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.896.0326
Fax jordan@timberlanepartners.com

Project Date: Bradley Heights Date: E:\sub\3227 - Bradley Heights\Time\Bradley Heights 2024 0516 ENG.dwg Plot Date/Time: 5/15/2024/11:40:08AM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington

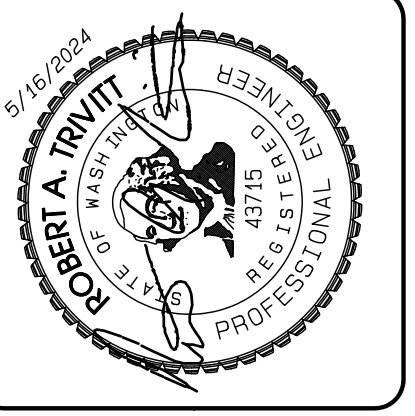


APPROVED

BY: CITY OF PUYALLUP
DEVELOPMENT SERVICES

DATE: _____

NOTE:
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JOB NO. 2327
DATE: May 14, 2024
DESIGNED BY: R.D. TRIVITT
DRAWN BY: R.D. TRIVITT
CHECKED BY: R.D. TRIVITT
APPROVED BY: R.D. TRIVITT

409 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144, fax: 253.770.3142

Storm Profiles

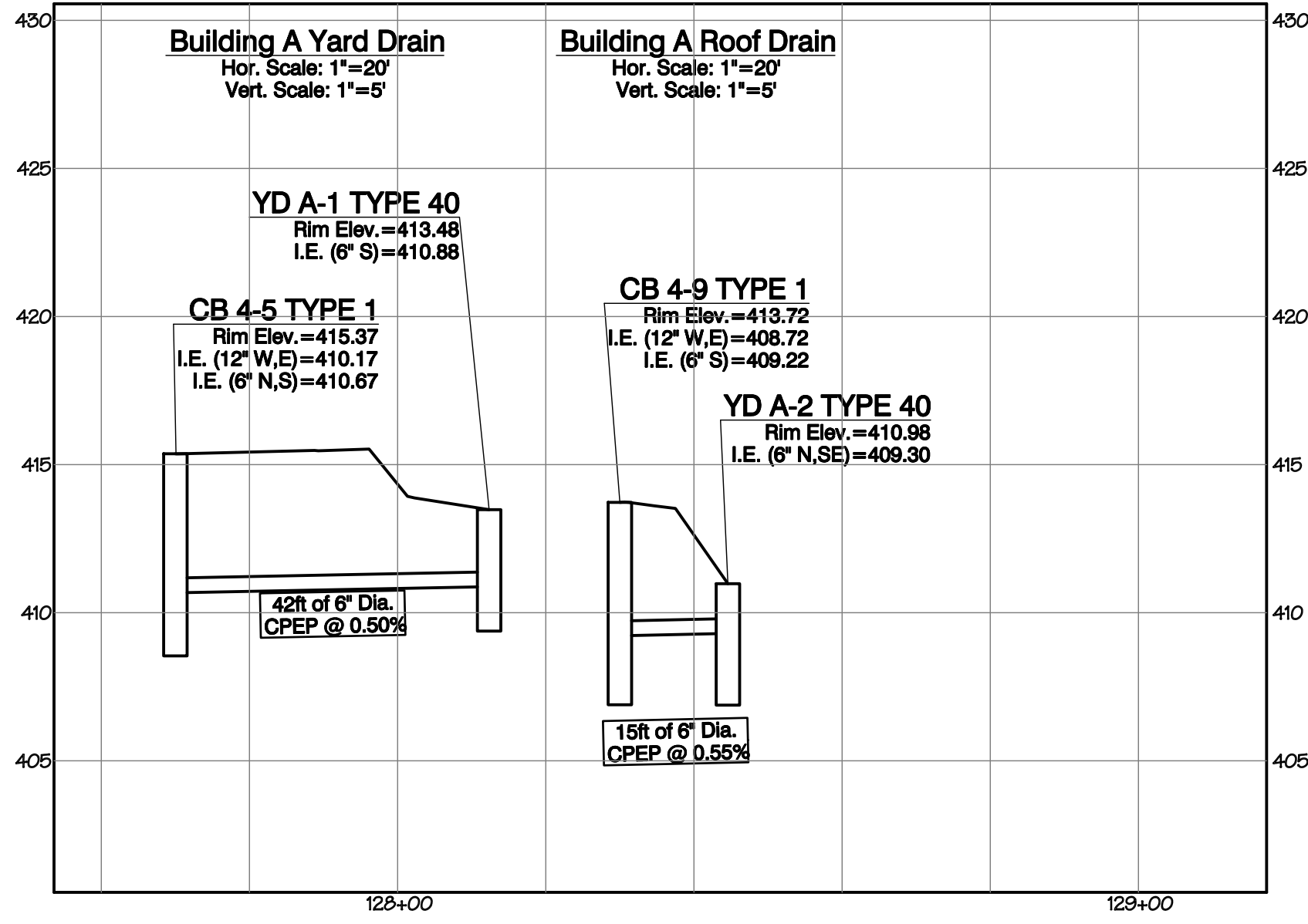
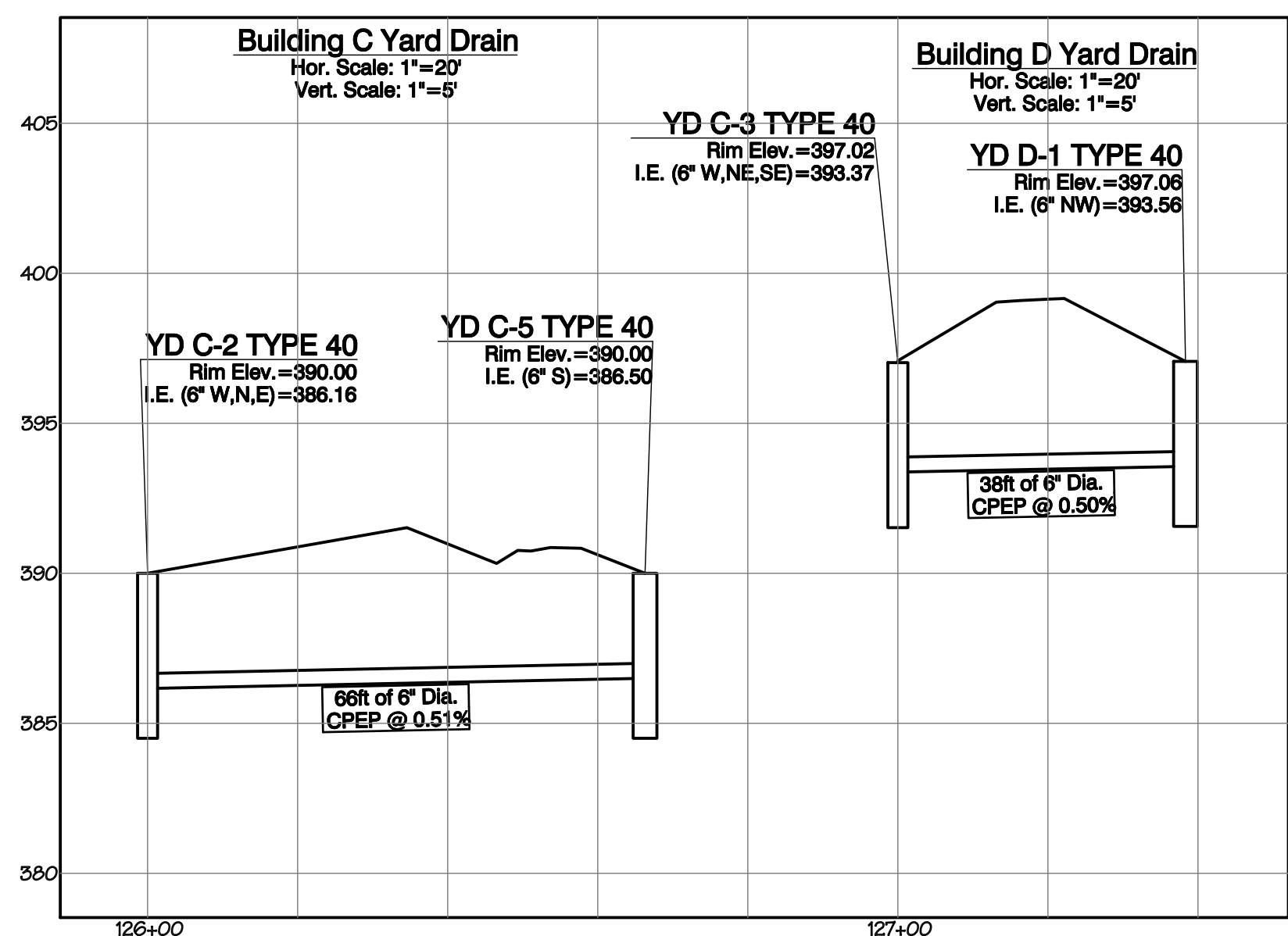
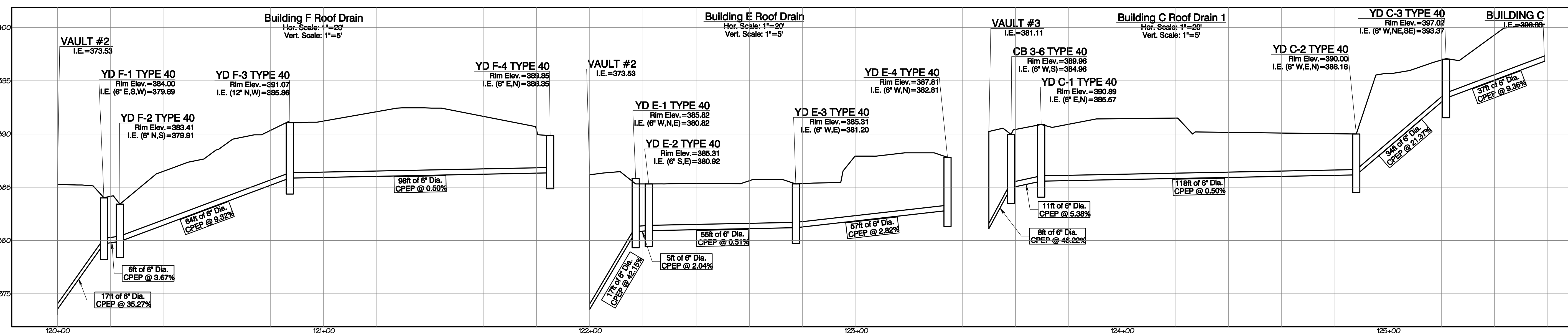
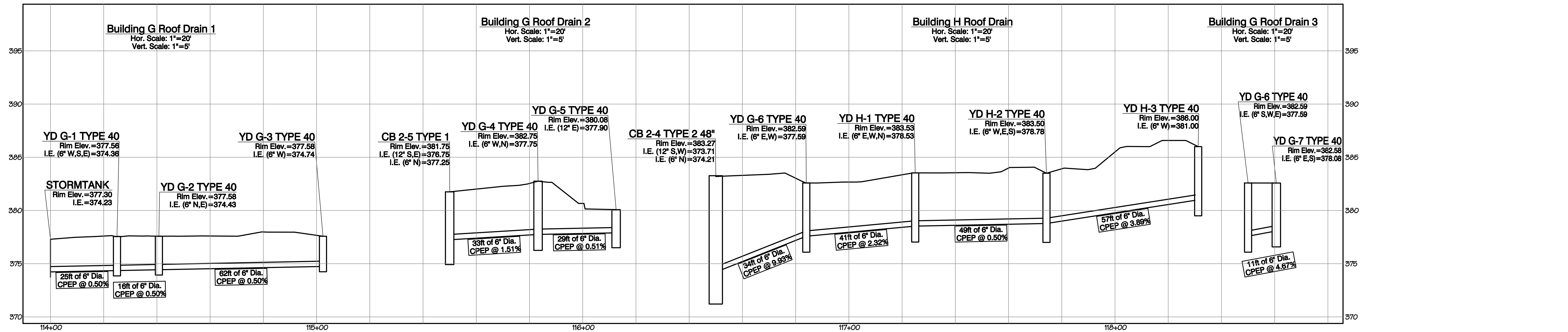
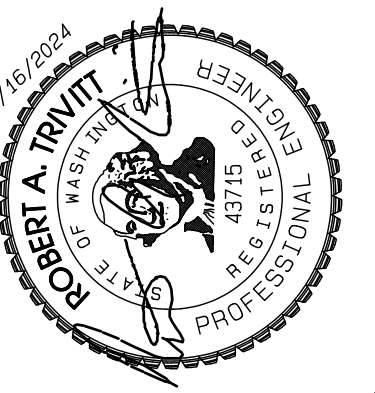
Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.899.0326
Fax jordan@timberlanepartners.com

Project Date: 5/14/2024; Project Name: Bradley Heights; File Path: E:\Projects\Bradley Heights\2024_0516_Eng.dwg; Plot Date/Time: 5/15/2024/11:40:34AM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



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DATE: May 14, 2024
DESIGNED BY: RDT, TRIVITT
DRAWN BY: RDT, TRIVITT
CHECKED BY: RDT, TRIVITT
APPROVED BY: RDT, TRIVITT

AZURE GREEN CONSULTANTS
+ feasibility + planning + engineering + surveying
409 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142

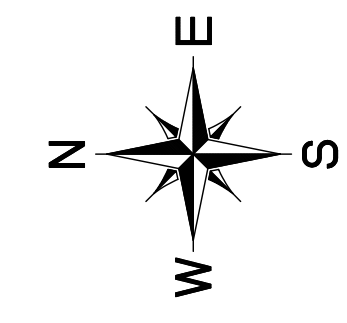
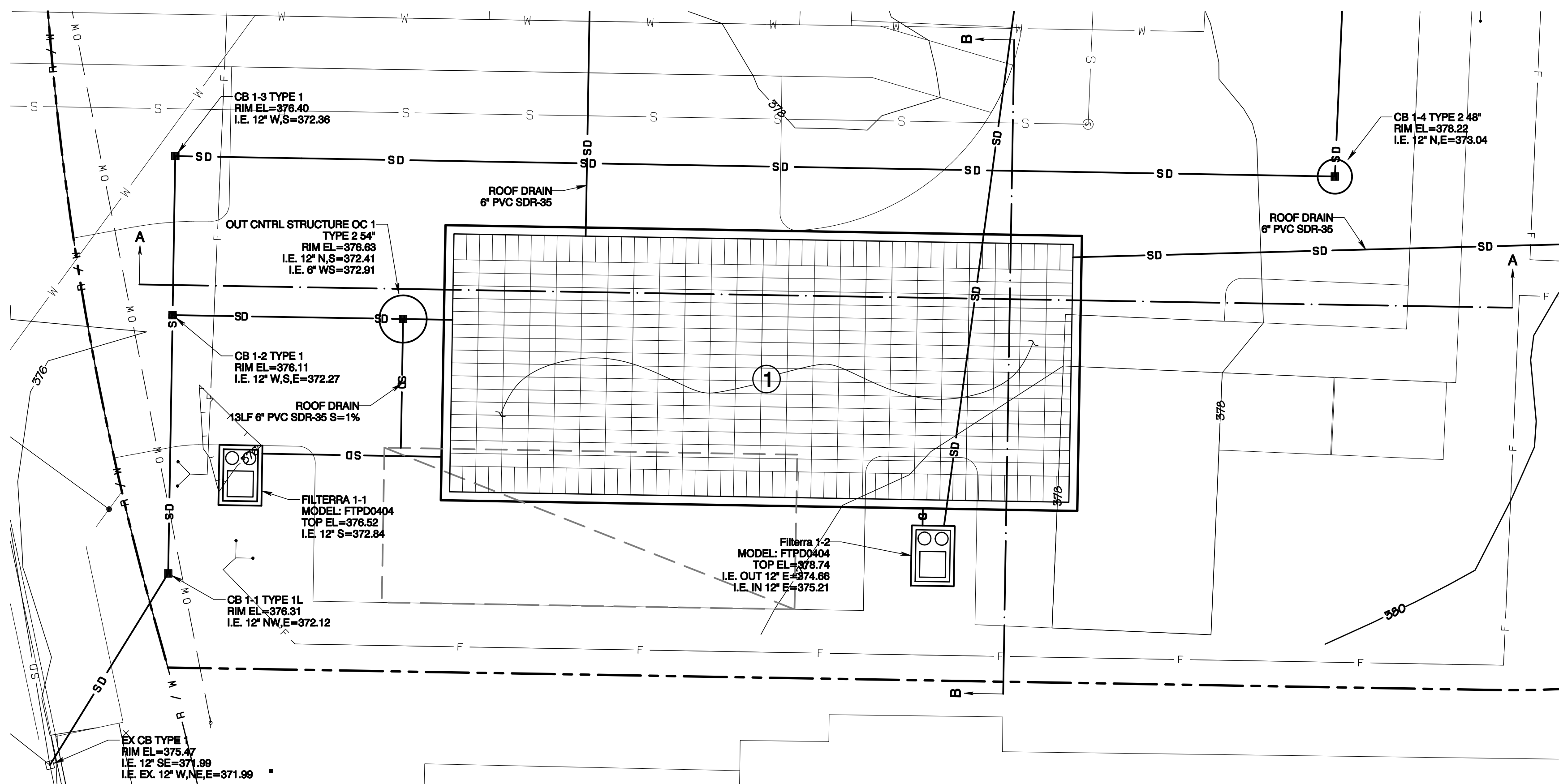
Roof/Yard Drain Profiles
Bradley Heights
Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.899.0326
Fax jordan@timberlanepartners.com

APPROVED
BY: CITY OF PUYALLUP DEVELOPMENT SERVICES
DATE: _____
NOTE:
THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.
THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

Project Desc: Bradley Heights Date: E:\sub3\3227 - Bradley Heights\Drawings\Bradley Heights 2024\0516 ENG.dwg Plot Date/Time: 5/15/2024 11:22:16PM

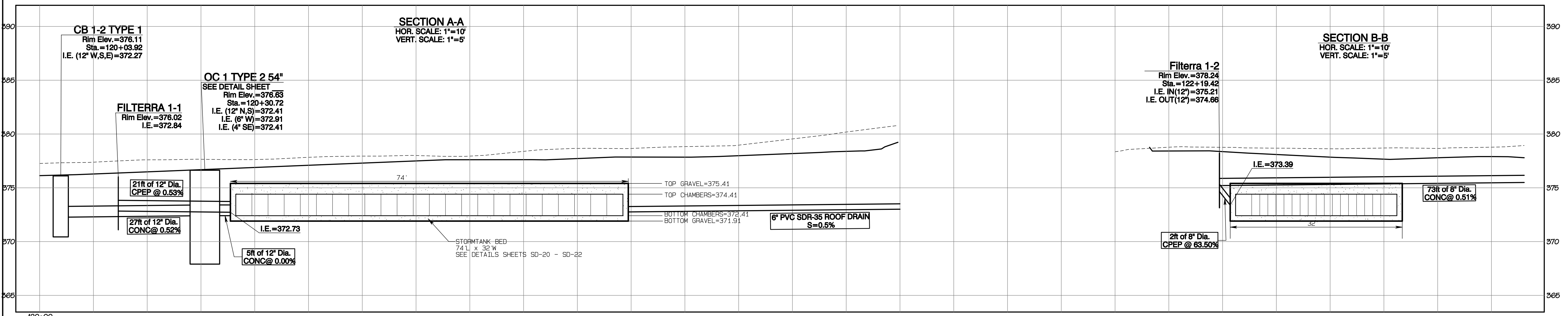
Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



CONSTRUCTION KEY NOTES

- ① STORMTANK UNDERGROUND GALLERY
TOTAL BED=32' W X 74' L
SEE DETAILS SHEETS SD-20 - SD-22



APPROVED

BY: CITY OF PUYALLUP DEVELOPMENT SERVICES

DATE: _____

NOTE:

THIS APPROVAL IS VOID AFTER 90 DAYS FROM APPROVAL DATE.

THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

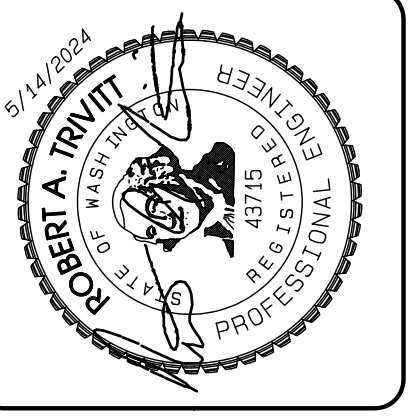
FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

Detention Gallery #1 Plan

Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.896.0326
Fax jordan@timberlanepartners.com

DRAWING
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SHEET 24
OF 47



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JOB NO. 3227
DATE: May 14, 2024
DESIGNED BY: Rob Trivitt
DRAWN BY: Rob Trivitt
CHECKED BY: Paul Green
APPROVED BY: Paul Green

AZURE GREEN
CONSULTANTS

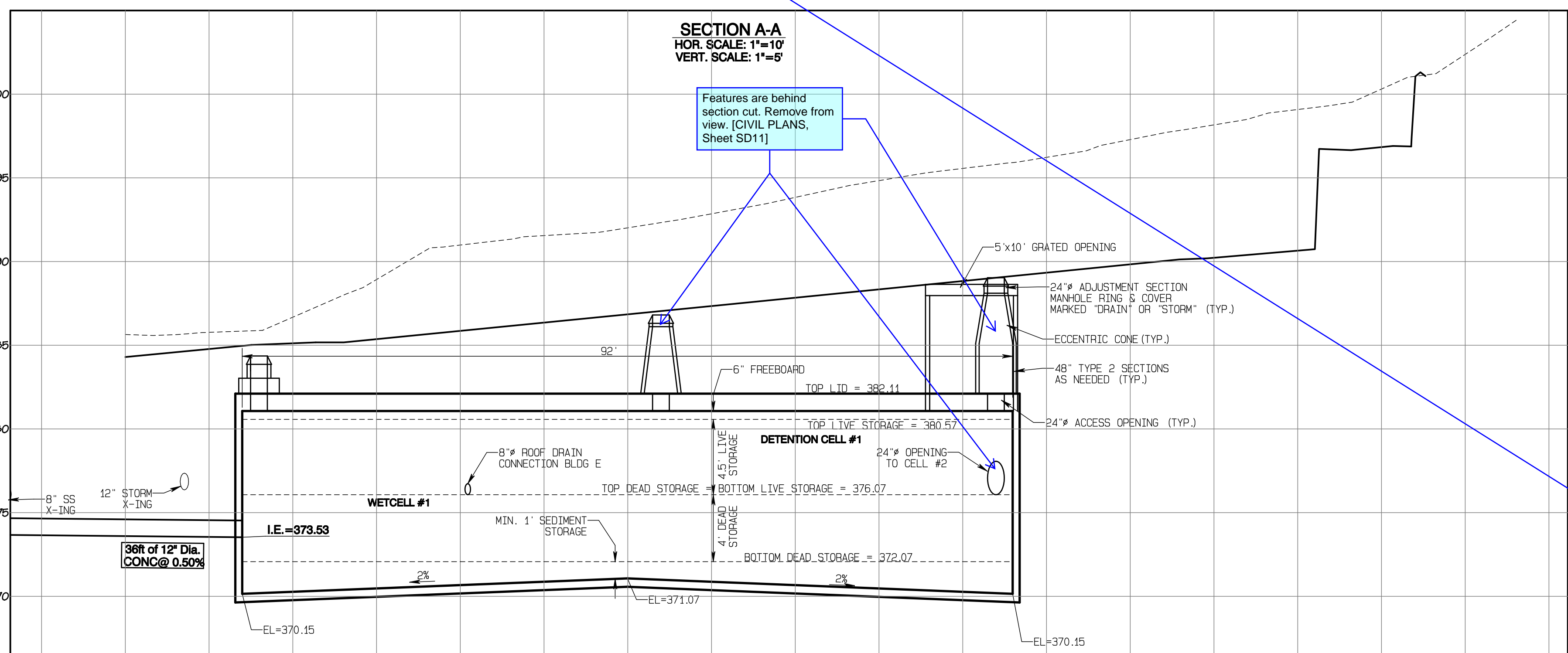
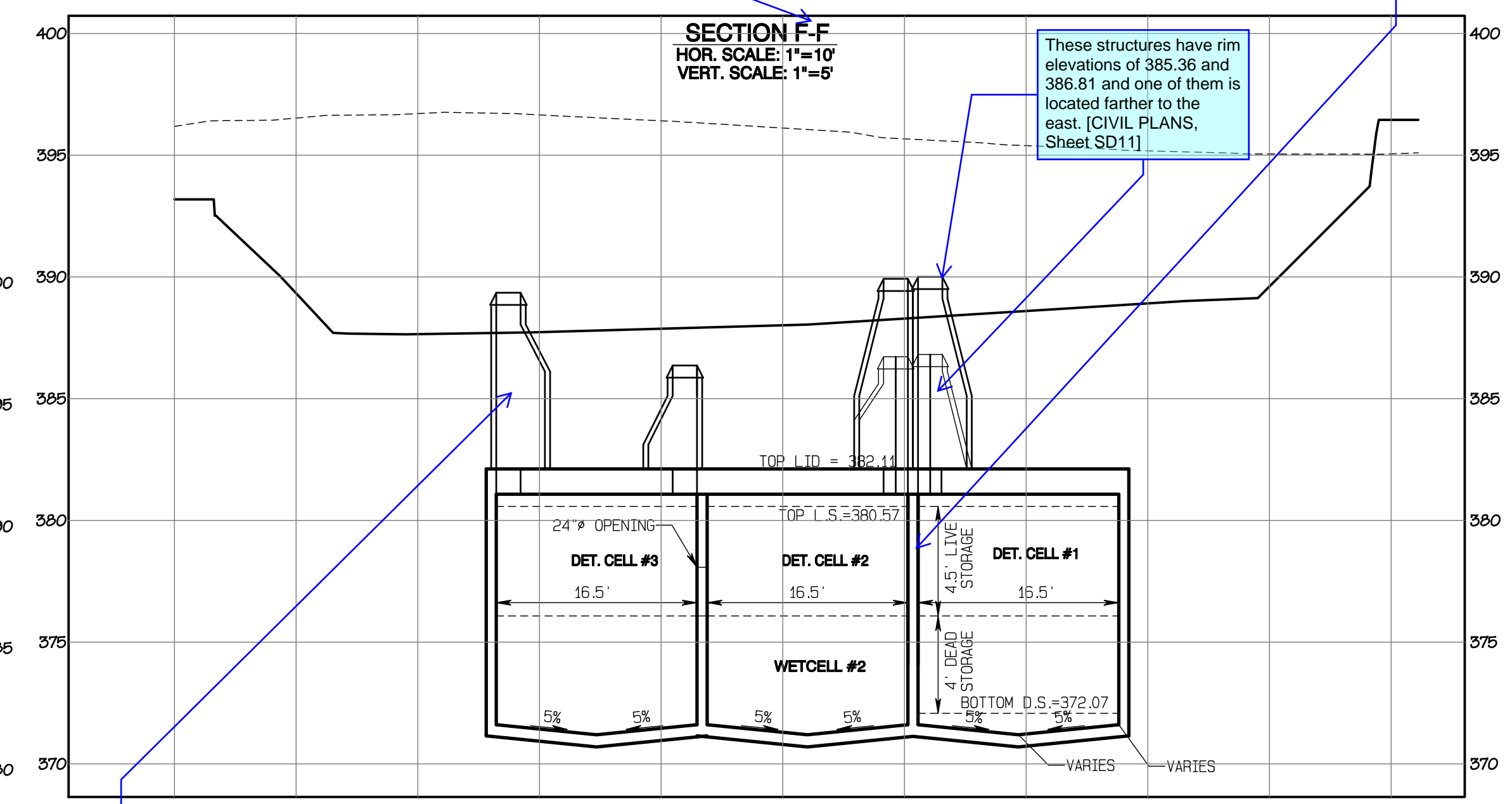
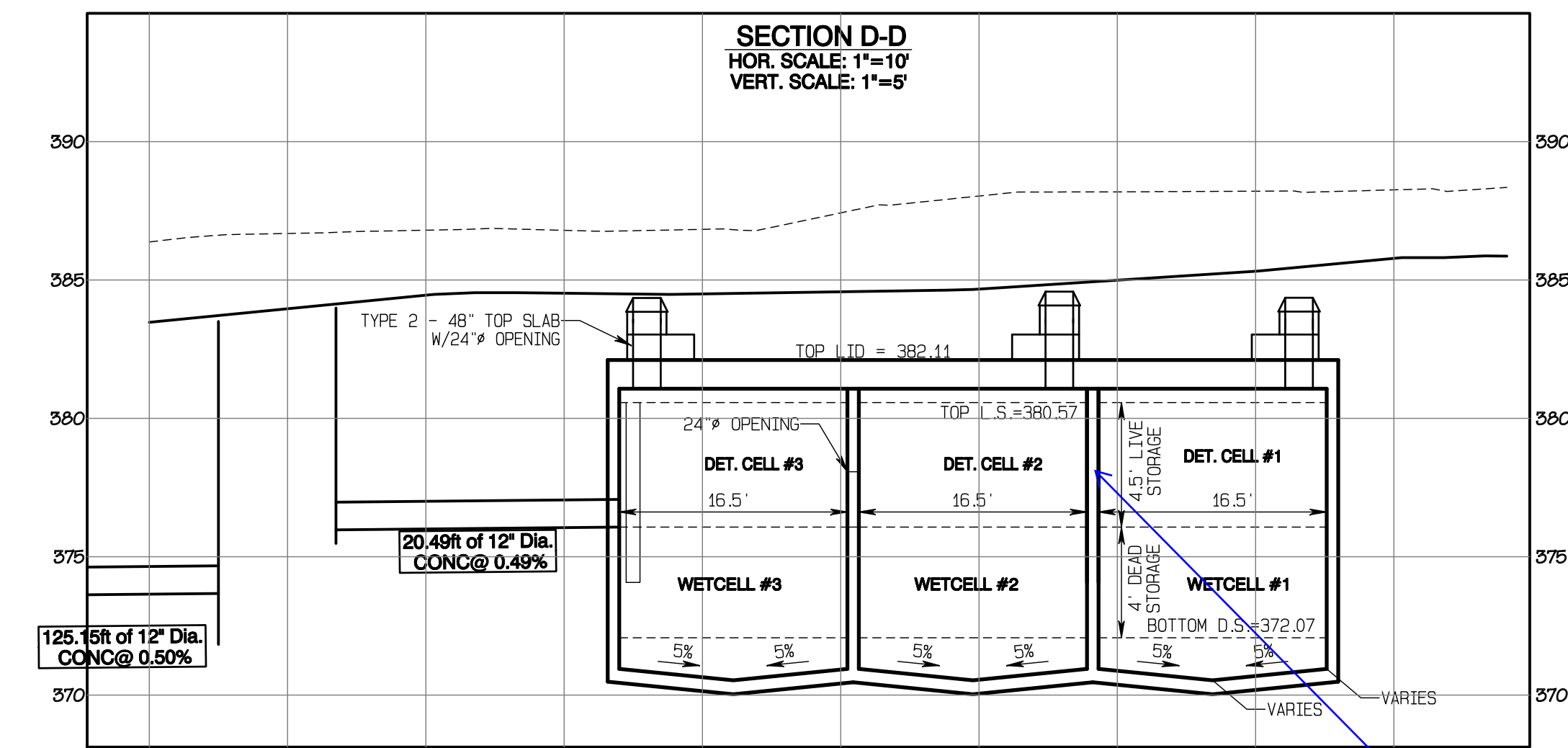
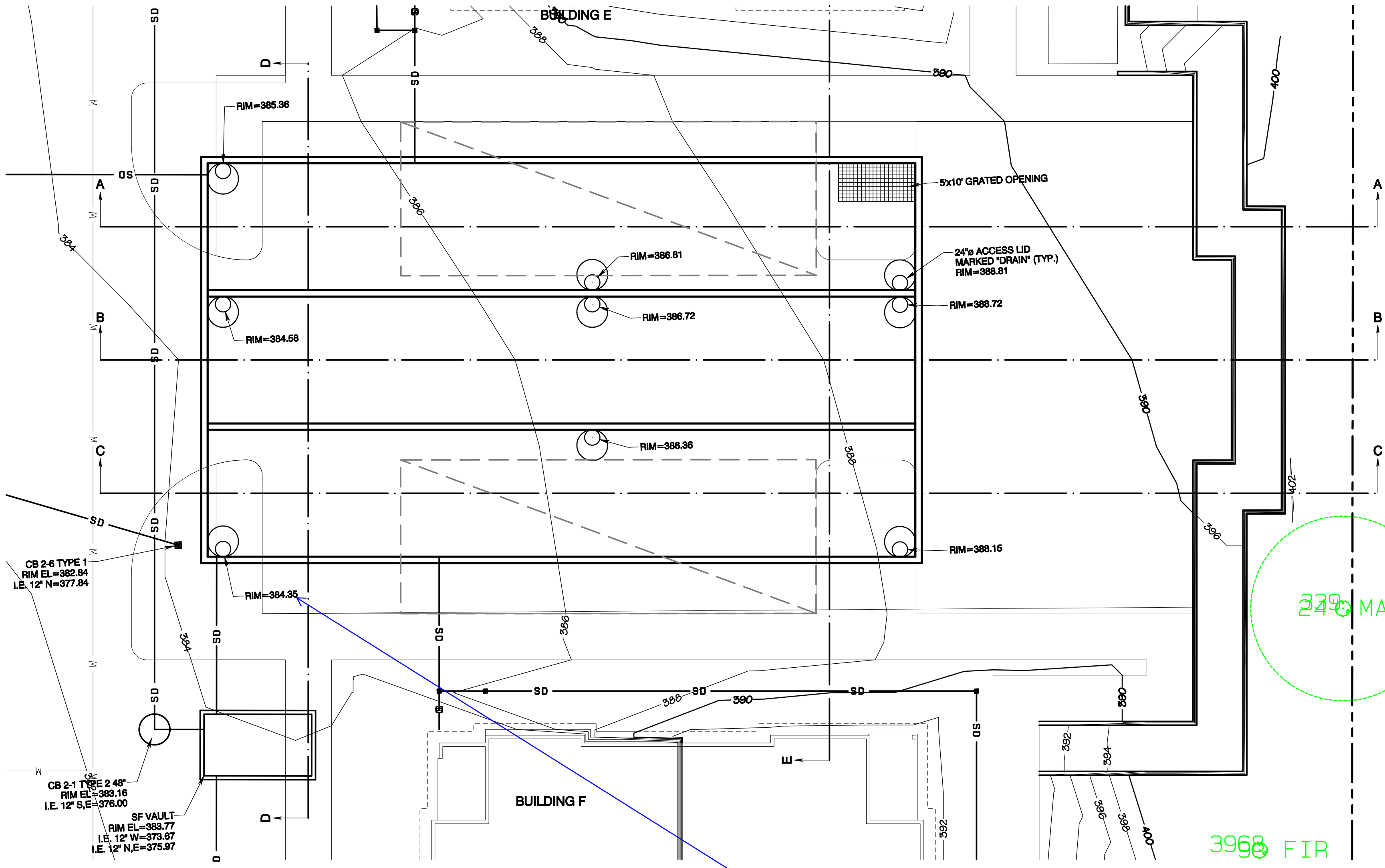
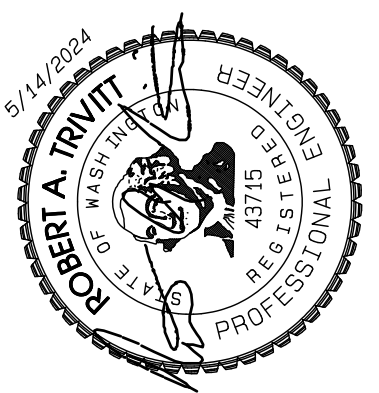
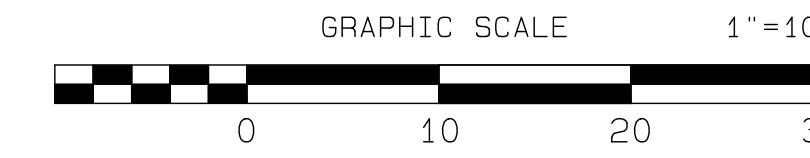
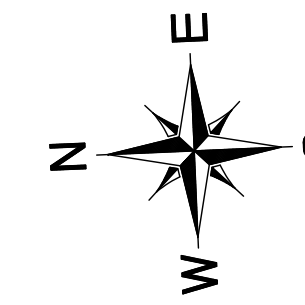
+feasibility +planning +engineering +surveying

409 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142

Project Desc.: Bradley Heights; Plan#: F:\sub\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg P104 Date/Time: 6/11/2024/3:33:25PM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



This structure has a rim elevation of 384.35. [CIVIL PLANS, Sheet SD11]

These structures have rim elevations of 385.36 and 386.81 and one of them is located farther to the east. [CIVIL PLANS, Sheet SD11]

E-E. [CIVIL PLANS, Sheet SD11]

24\"/>

APPROVED
 BY: CITY OF PUYALLUP DEVELOPMENT SERVICES
 DATE: _____
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JOB NO. 2327
 DATE: May 14, 2024
 DESIGNED BY: Bob Trivitt
 DRAWN BY: Bob Trivitt
 CHECKED BY: Paul Green
 APPROVED BY: Paul Green

AZURE GREEN CONSULTANTS
 + feasibility + planning + engineering + surveying
 409 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144 fax: 253.770.3142

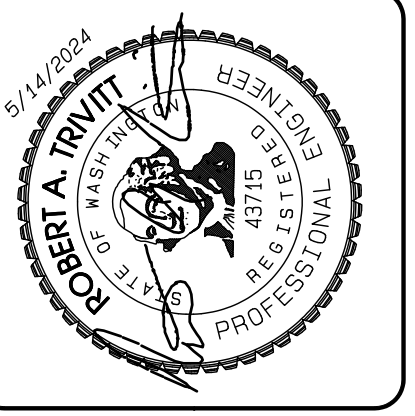
Vault #2 Plan
 Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 509.896.0326
 Fax jordan@timberlanepartners.com

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SD-11
 SHEET 25
 OF 47

Project Desc.: Bradley Heights Date: E:\sub\3227 - Bradley Heights\Time\Drawings\Highways\2024\0514\ENG.dwg PLOT Date/Time: 6/12/2024 2:33:47PM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



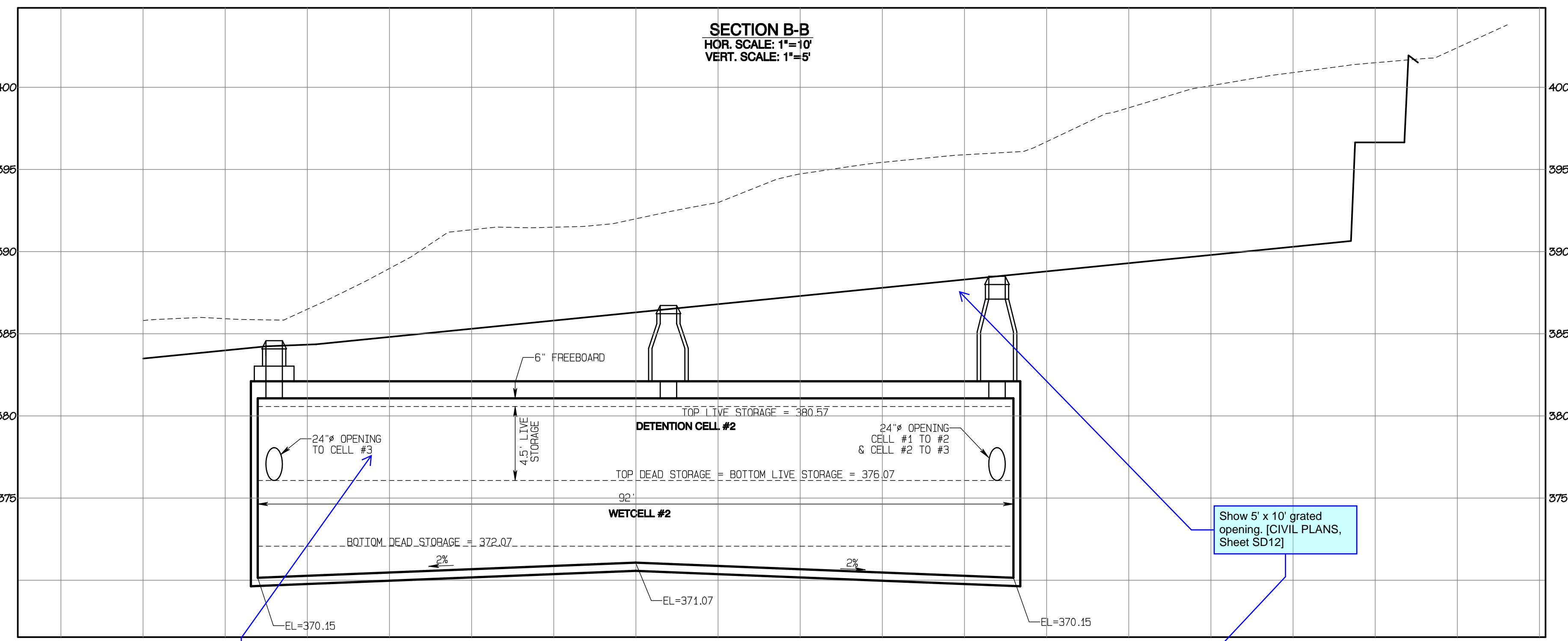
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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: Rob Trivitt
 DRAWN BY: Rob Trivitt
 CHECKED BY: Paul Green
 APPROVED BY: Paul Green

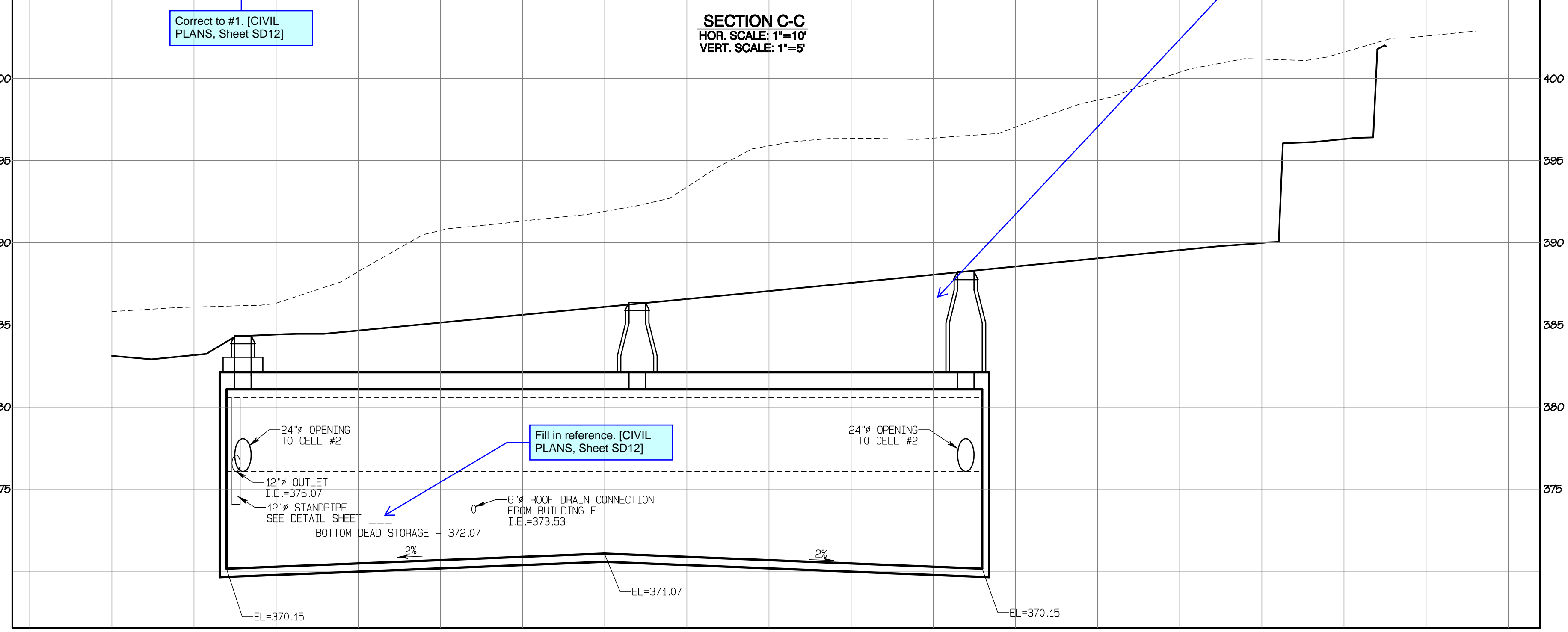
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 CONSULTANTS

+ feasibility + planning + engineering + surveying

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Show 5' x 10' grated opening. [CIVIL PLANS, Sheet SD12]



Correct to #1. [CIVIL PLANS, Sheet SD12]

Fill in reference. [CIVIL PLANS, Sheet SD12]

APPROVED

BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES

DATE: _____

NOTE:
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 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

Vault #2 Cross-Sections

Bradley Heights

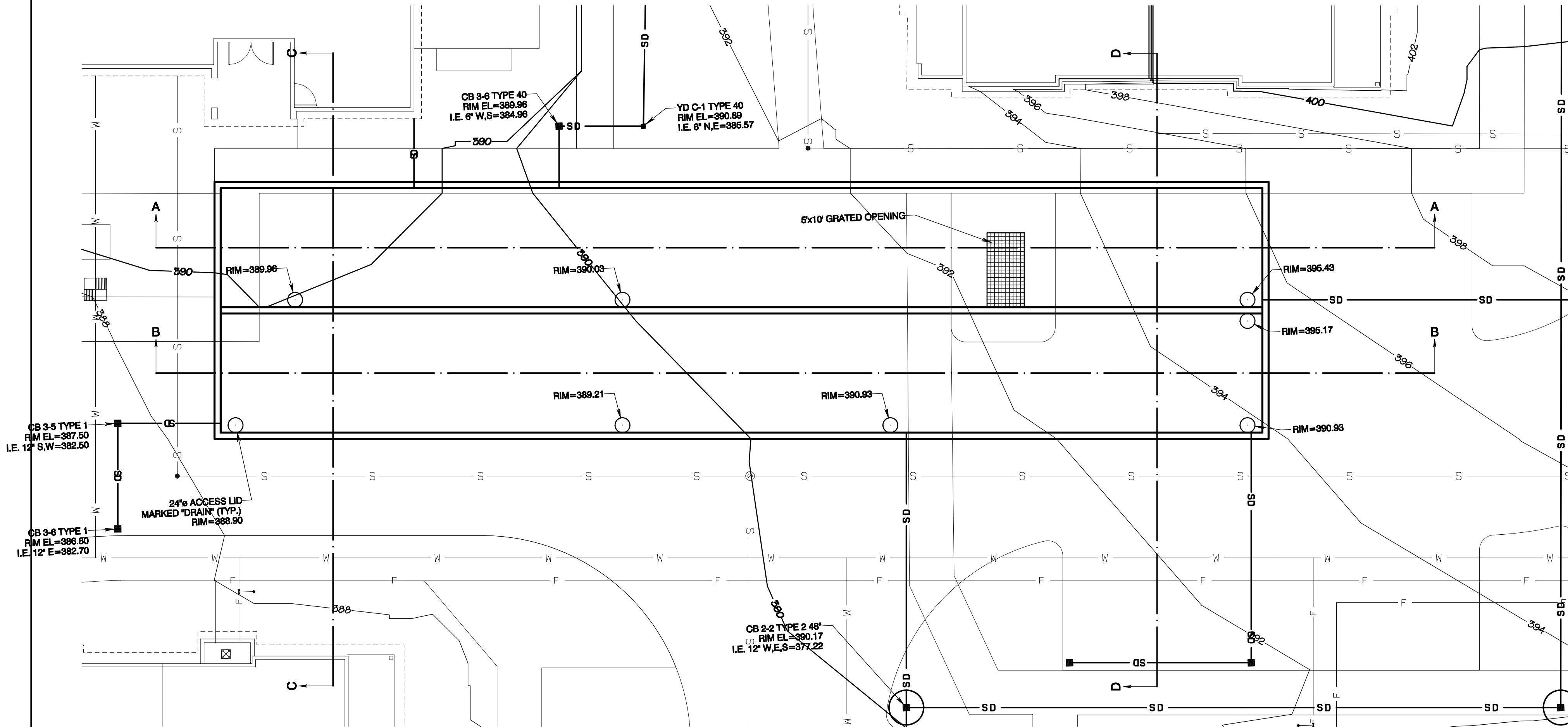
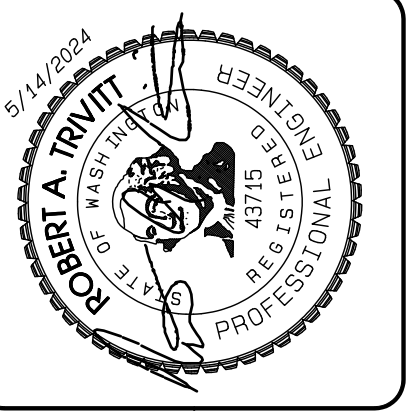
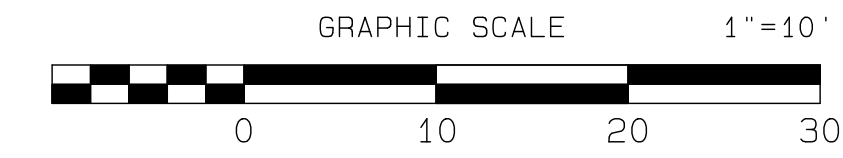
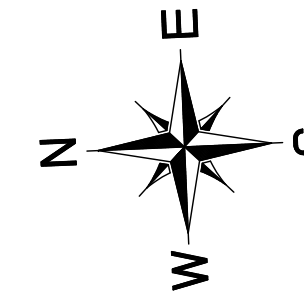
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SD-12
 SHEET 26
 OF 47

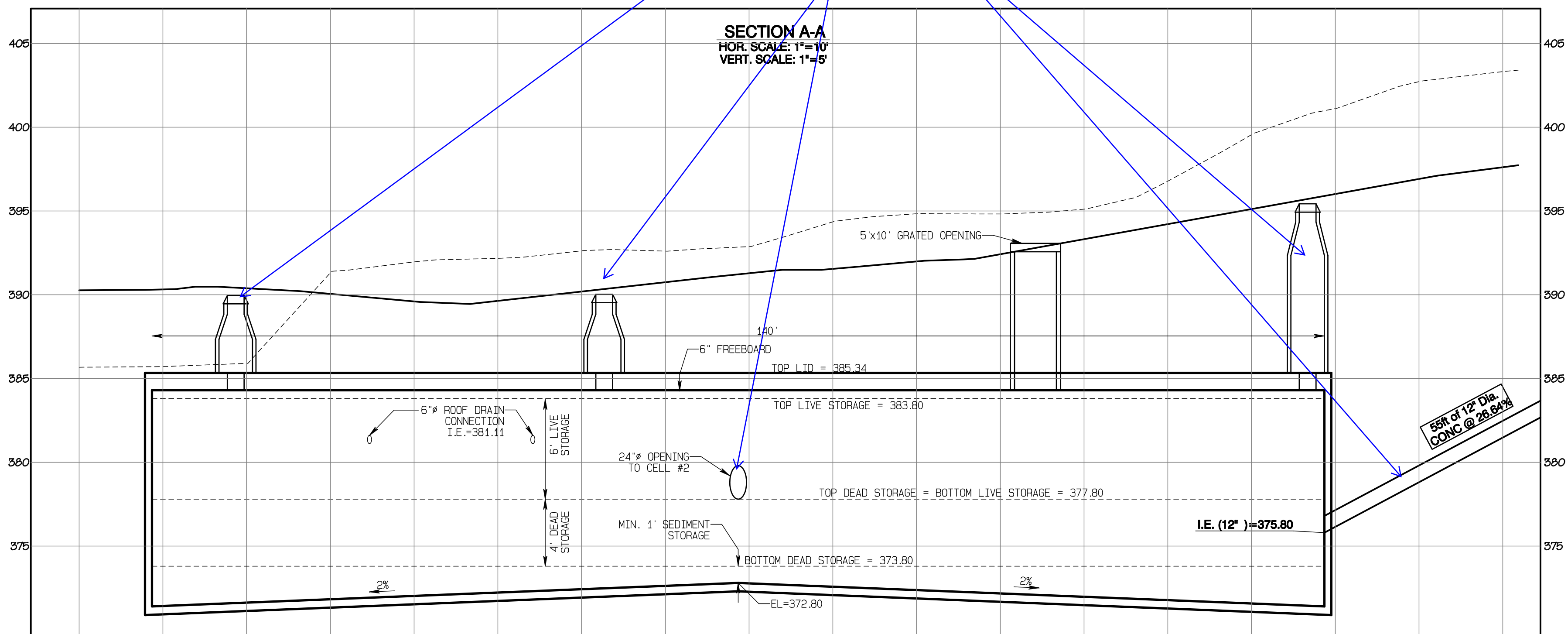
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Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



Features are behind Section Cut A-A. Remove from view. [CIVIL PLANS, Sheet SD13]



APPROVED

BY: _____
CITY OF PUYALLUP
DEVELOPMENT SERVICES

DATE: _____

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JOB NO. 3327
DATE: May 14, 2024
DESIGNED BY: Rob Trivitt
DRAWN BY: Rob Trivitt
CHECKED BY: Rob Green
APPROVED BY: Rob Green

AZURE GREEN
CONSULTANTS

+ feasibility + planning + engineering + surveying

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Phone: 253.770.3144, Fax: 253.770.3142

Vault #3 Plan

Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.886.0326
Fax jordan@timberlanepartners.com

DRAWING

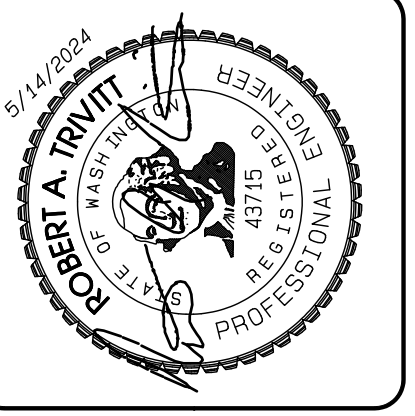
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SHEET 27
OF 47

Project Desc.: Bradley Heights; Date: E:\sub\3327 - Bradley Heights\Timberlane\Drawings\2024\0514 ENG.dwg P104 Date/Time: 6/11/2024 2:36:35PM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



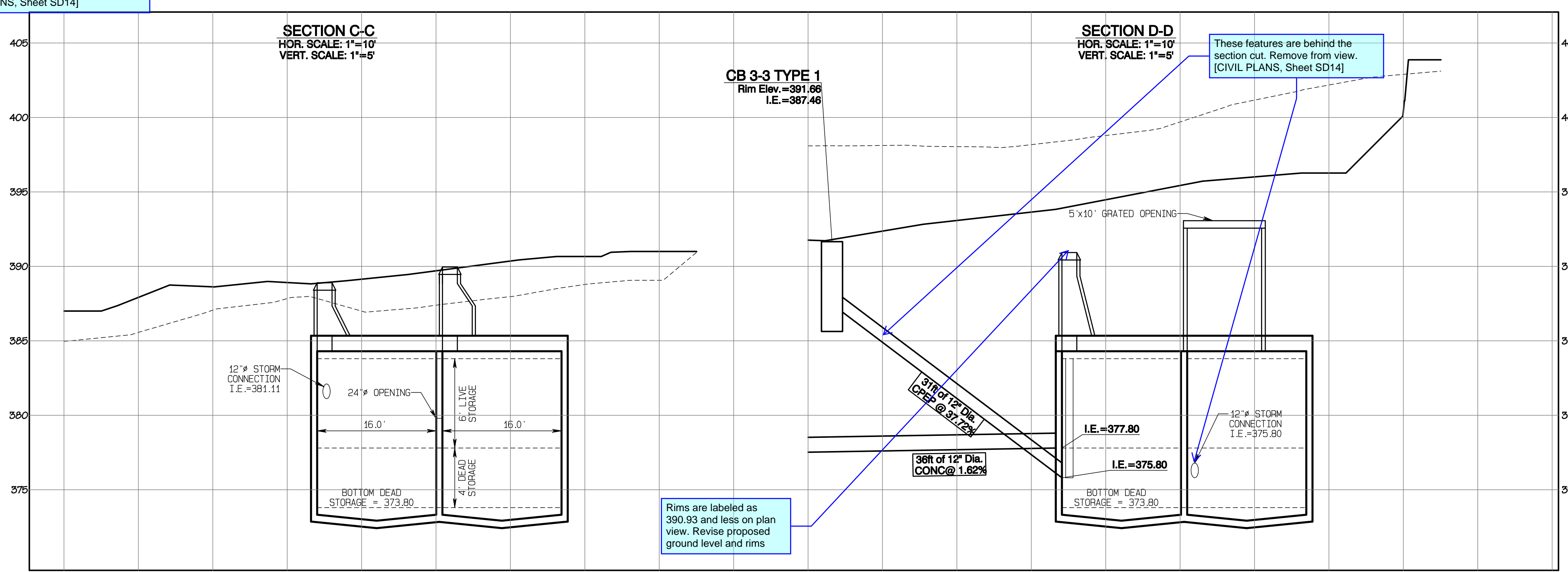
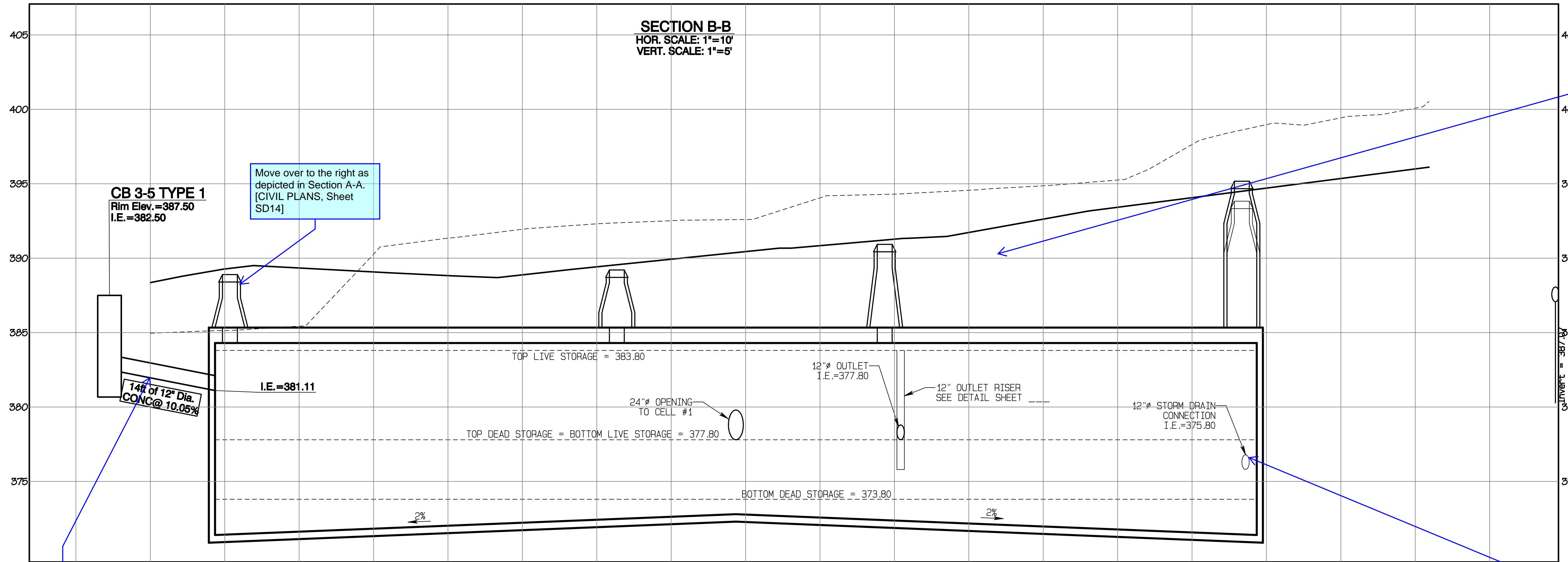
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JOB NO. 2327
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV

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 CONSULTANTS

*feasibility *planning *engineering *surveying

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Project Desc.: Bradley Heights; Date: F:\udba\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0514 ENG.dwg PLOT Date/Time: 6/11/2024 7:36:49PM

APPROVED

BY: _____
 CITY OF PUYALLUP
 DEVELOPMENT SERVICES

DATE: _____

NOTE:
 THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

Vault #3 Cross-Sections

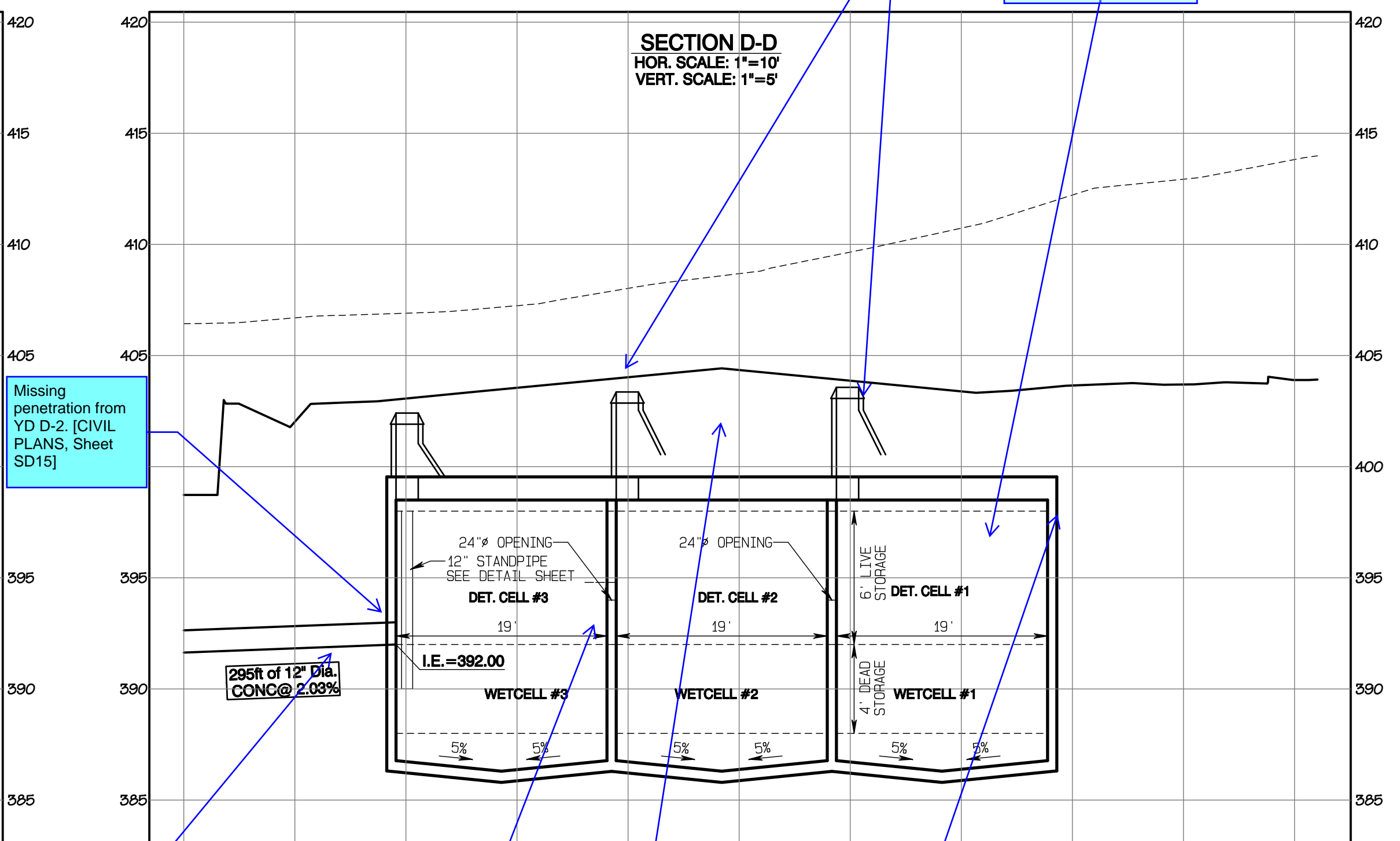
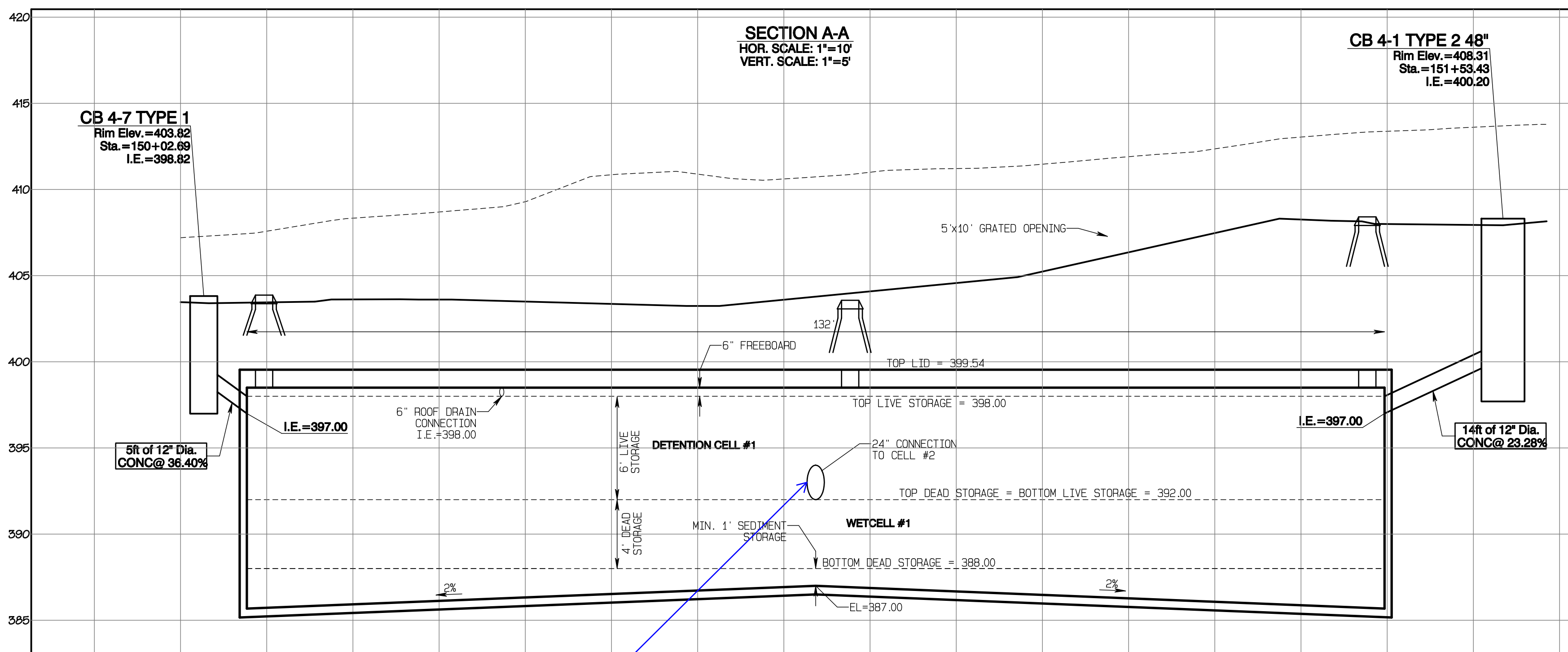
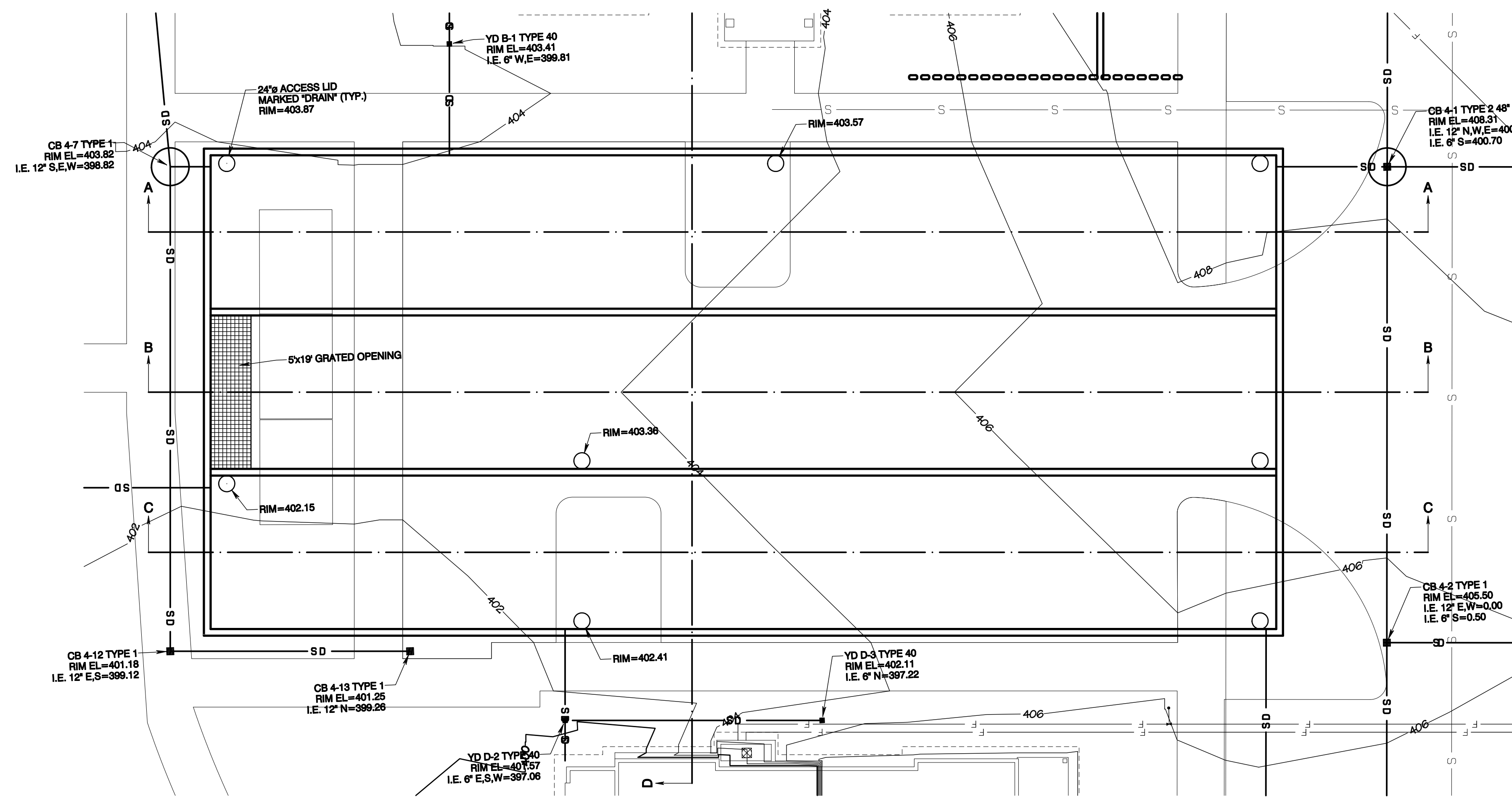
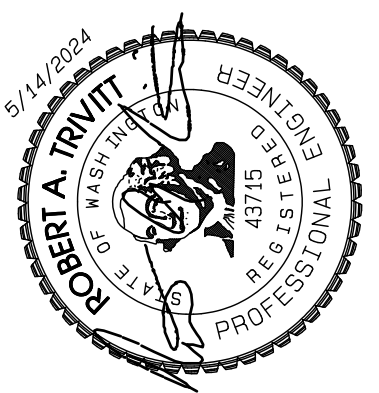
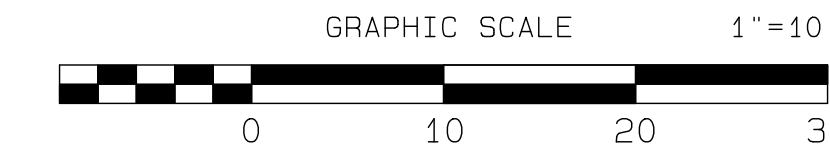
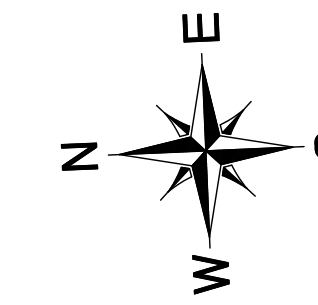
Bradley Heights

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 Phone 509.889.0326
 Fax jordan@timberlanepartners.com

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SD-14
 SHEET 28
 OF 47

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



Feature is behind section cut. Remove from view. [CIVIL PLANS, Sheet SD15]

This feature is behind section cut. Instead show the short run penetration from YD D-2. [CIVIL PLANS, Sheet SD15]

Missing penetration, roof drain Bldg C. [CIVIL PLANS, Sheet SD15]

Missing penetration from YD B-1. [CIVIL PLANS, Sheet SD15]

Show risers in correct locations. Should see 4 total. [CIVIL PLANS, Sheet SD15]

Missing penetration from CB 4-7. [CIVIL PLANS, Sheet SD15]

APPROVED
 BY: CITY OF PUYALLUP DEVELOPMENT SERVICES
 DATE: _____
 NOTE:
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Vault #4 Plan

Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 509.896.0326
 Fax jordan@timberlanepartners.com

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SD-15
 SHEET 29
 OF 47

Project Desc.: Bradley Heights Date: E:\sub\3227 - Bradley Heights\Time\Bradley Heights 2024-05-14 ENG.dwg Plot Date/Time: 6/11/2024 2:34:50PM

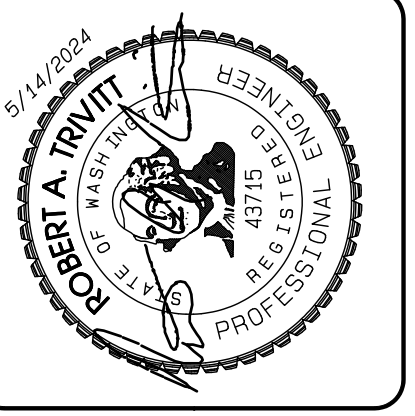
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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: Rnd Trivitt
 DRAWN BY: Rnd Trivitt
 CHECKED BY: Rnd Trivitt
 APPROVED BY: Rnd Trivitt

AZURE GREEN
 CONSULTANTS
 *feasibility *planning *engineering *surveying
 409 East Pioneer, Suite A - Puyallup, WA 98372
 Phone: 253.770.3144 Fax: 253.770.3142

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV

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 CONSULTANTS

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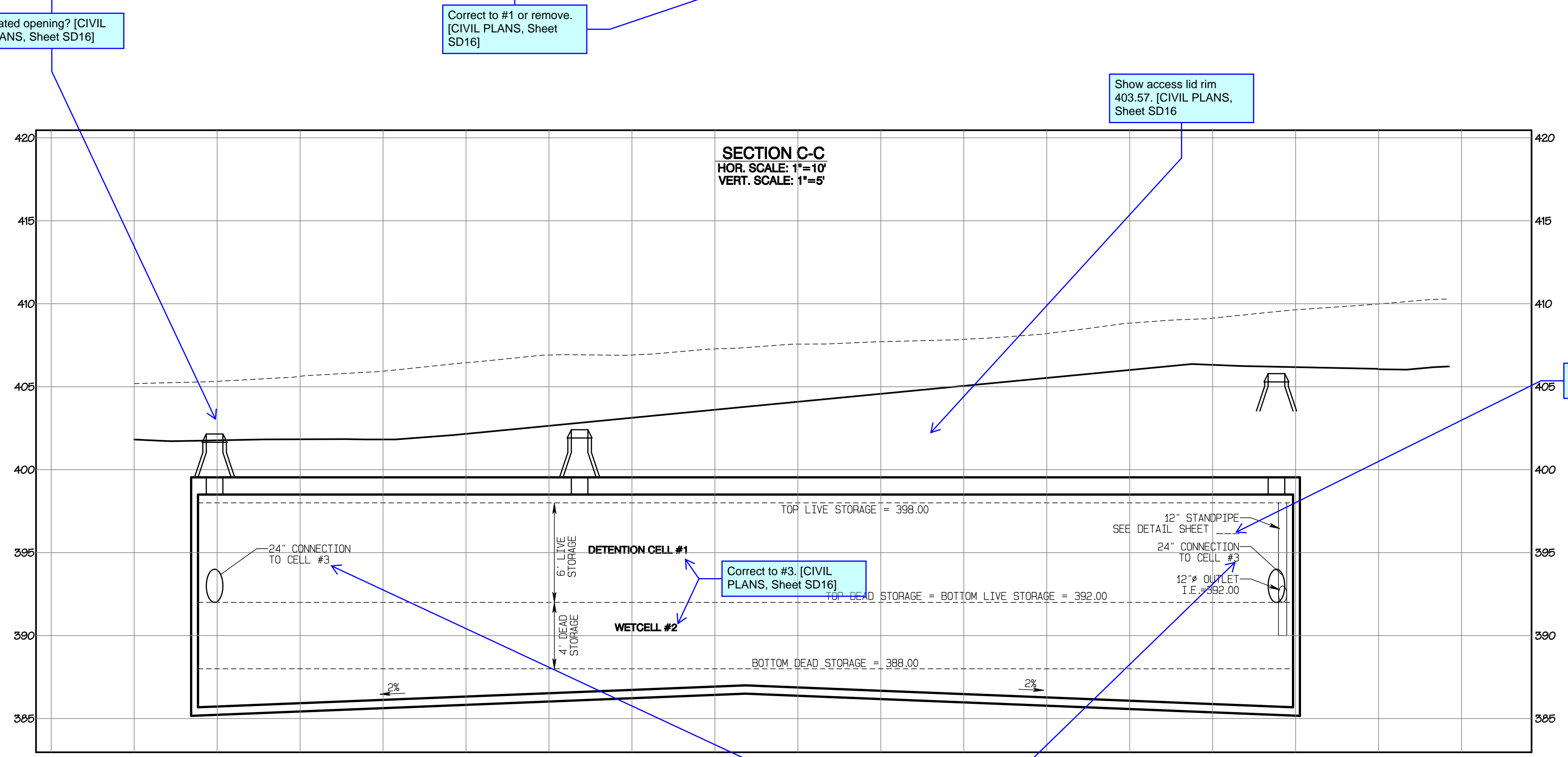
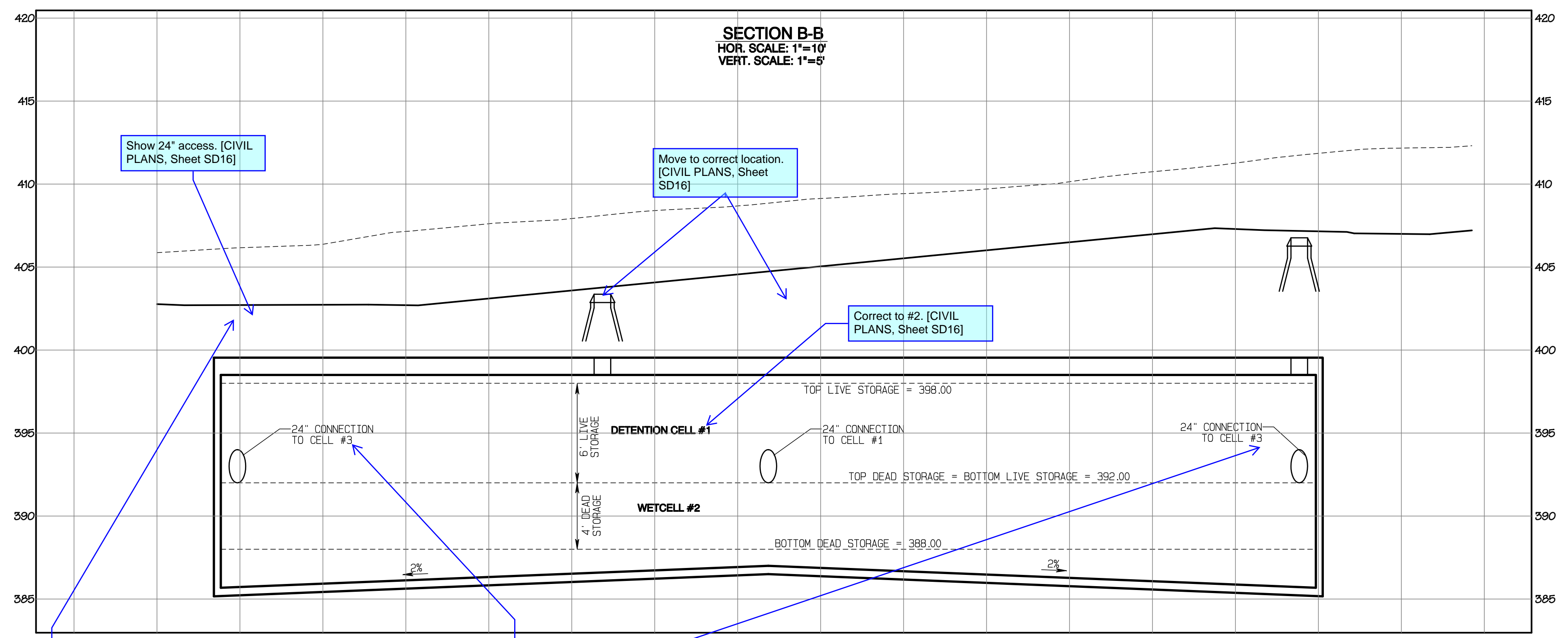
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Vault #4 Cross-Sections

Bradley Heights

Timberlane Partners
 1816 11th Ave Unit C
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 Fax jordan@timberlanepartners.com

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 OF 47



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 DEVELOPMENT SERVICES

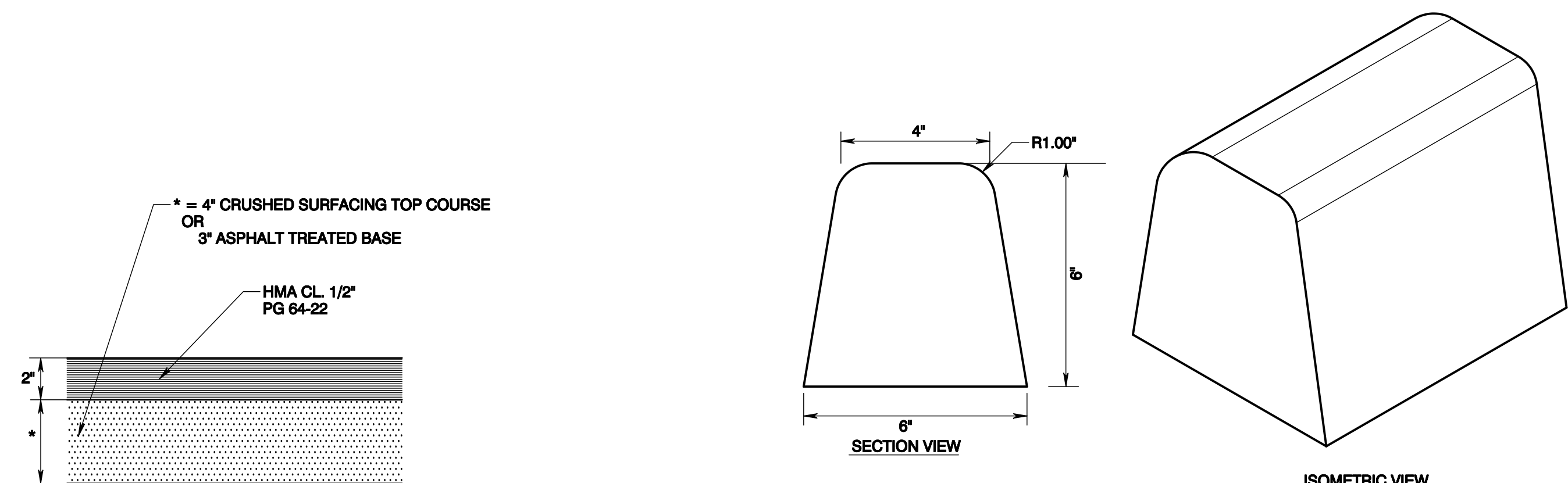
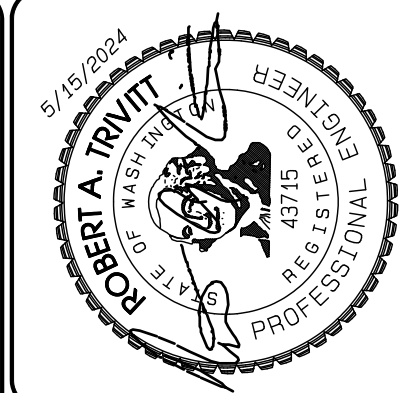
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NOTE:
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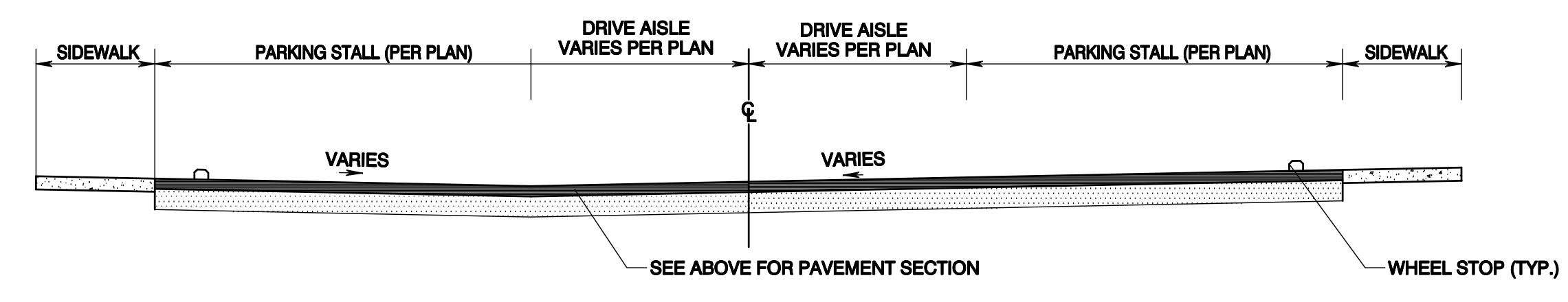
Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington

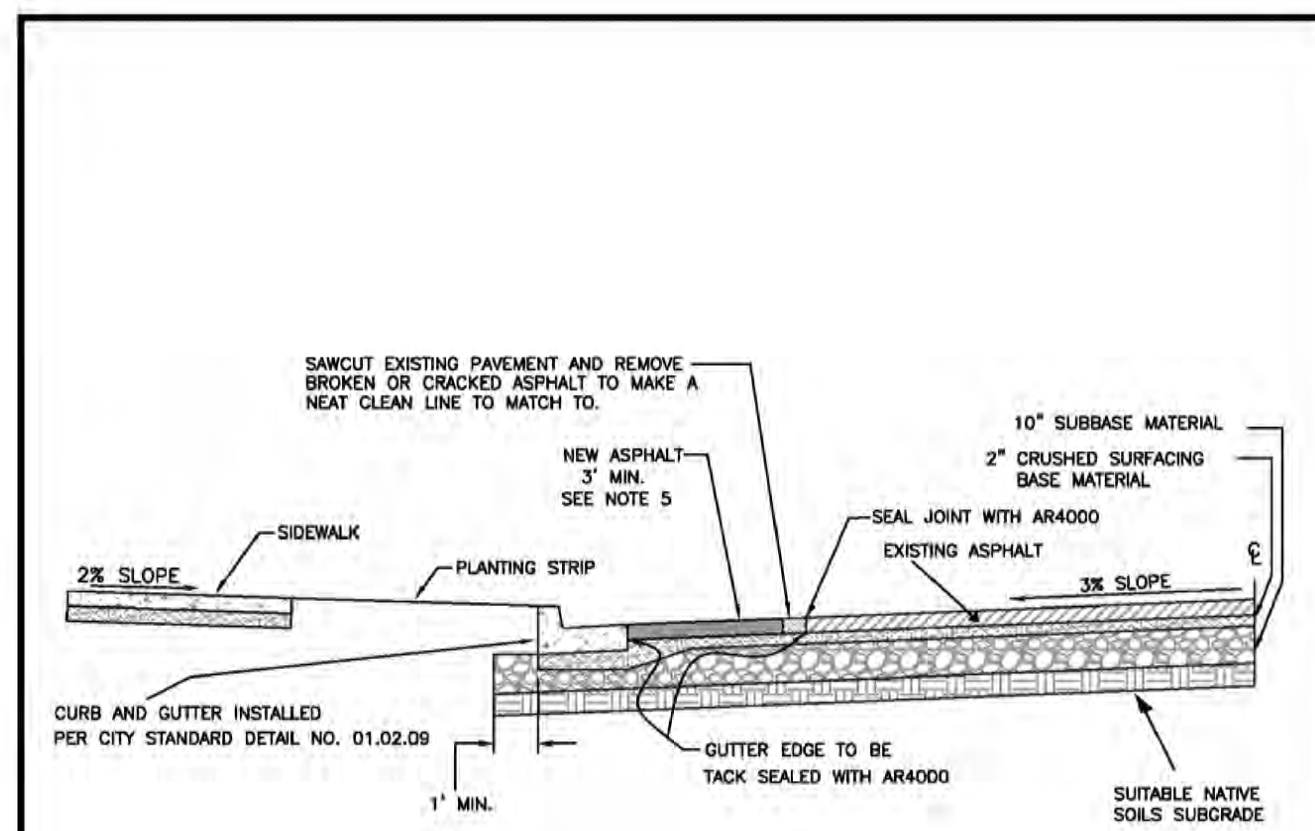


EXTRUDED CURB DETAIL

NOTES:
 1. CONCRETE SHALL BE CLASS 3000 OR COMMERCIAL WITH AIR-ENTRAIMENT.
 2. CONCRETE TO BE ANCHORED WITH ADHESIVE MEETING REQUIREMENTS OF SECTION 9-20 OF THE WSDOT/APWA STANDARD SPECIFICATIONS FOR TYPE II EPOXY RESIN.
 3. CONTROL JOINTS SHALL BE PLACED NOT TO EXCEED 10' CLS.



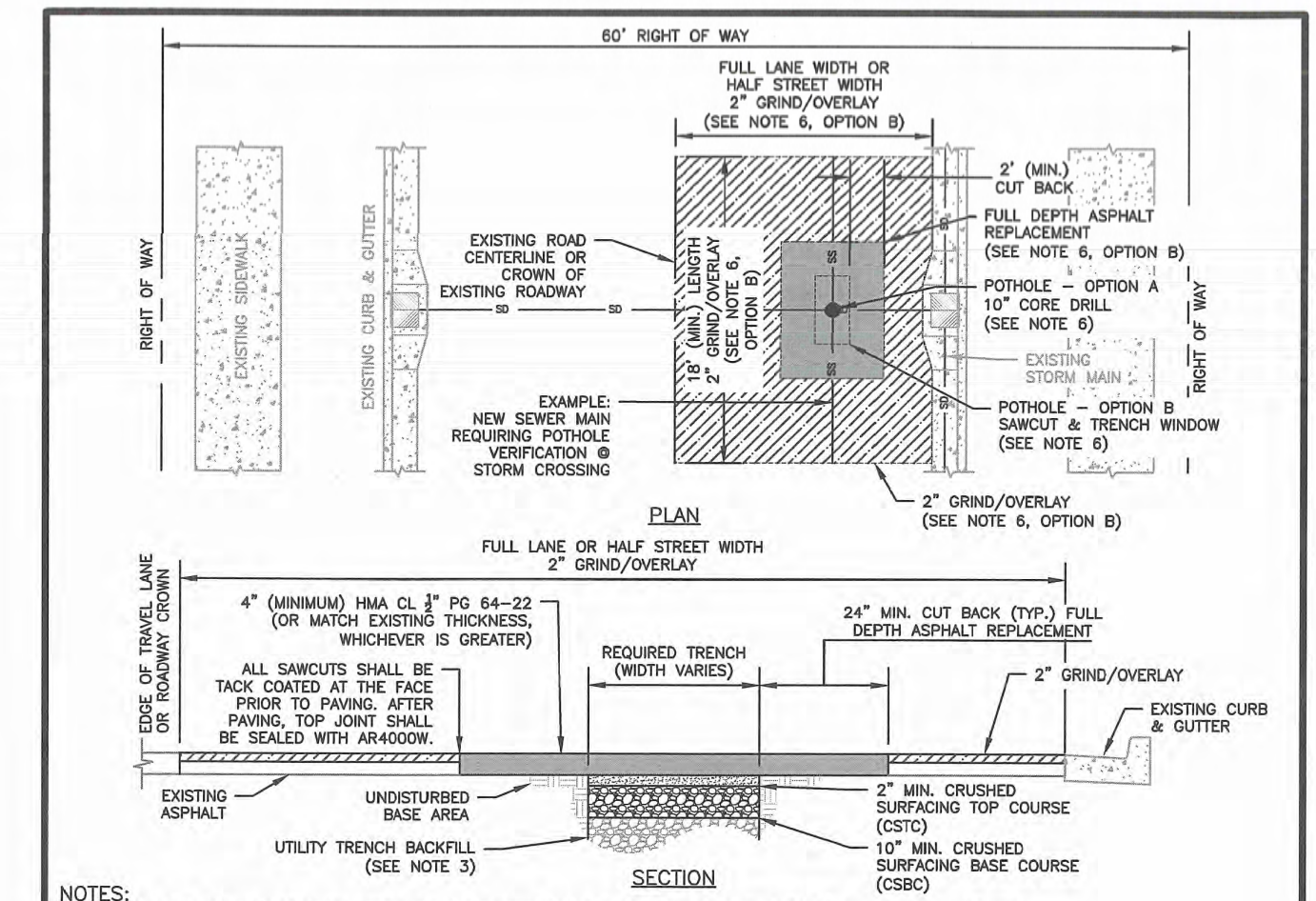
PAVING CROSS-SECTION (NOT TO SCALE)



- THE 36" MINIMUM PAVEMENT PATCH SHALL BE INCREASED IN WIDTH IF THE RESULTING MEET LINE WOULD LIE WITHIN A LANE WHEEL PATH.
- THE ASPHALT SURFACE WITHIN THE NEW SECTION FROM CURB TO CENTERLINE WITHIN THE RANGE OF 2.0 TO 5.0%. IF CROSS SLOPE CANNOT BE ACHIEVED WITHIN THIS RANGE, CONTRACTOR SHALL OVERLAY OR REBUILD FROM CENTERLINE TO NEW GUTTER.
- NEW ASPHALT DEPTH SHALL MATCH EXISTING CONDITION OR DEPTH SPECIFIED IN APPROPRIATE CITY CROSS SECTION DETAIL, WHICHEVER IS GREATEST.
- IF THE BASE IS INADEQUATE OR THE PAVEMENT CONDITION IS SUBSTANDARD, THEN THE ROAD SECTION MUST BE REBUILT TO CENTERLINE.
- ASPHALT SHALL BE HMA CL 1/2", PG64-22

CITY OF PUYALLUP
 ROADWAY WIDENING

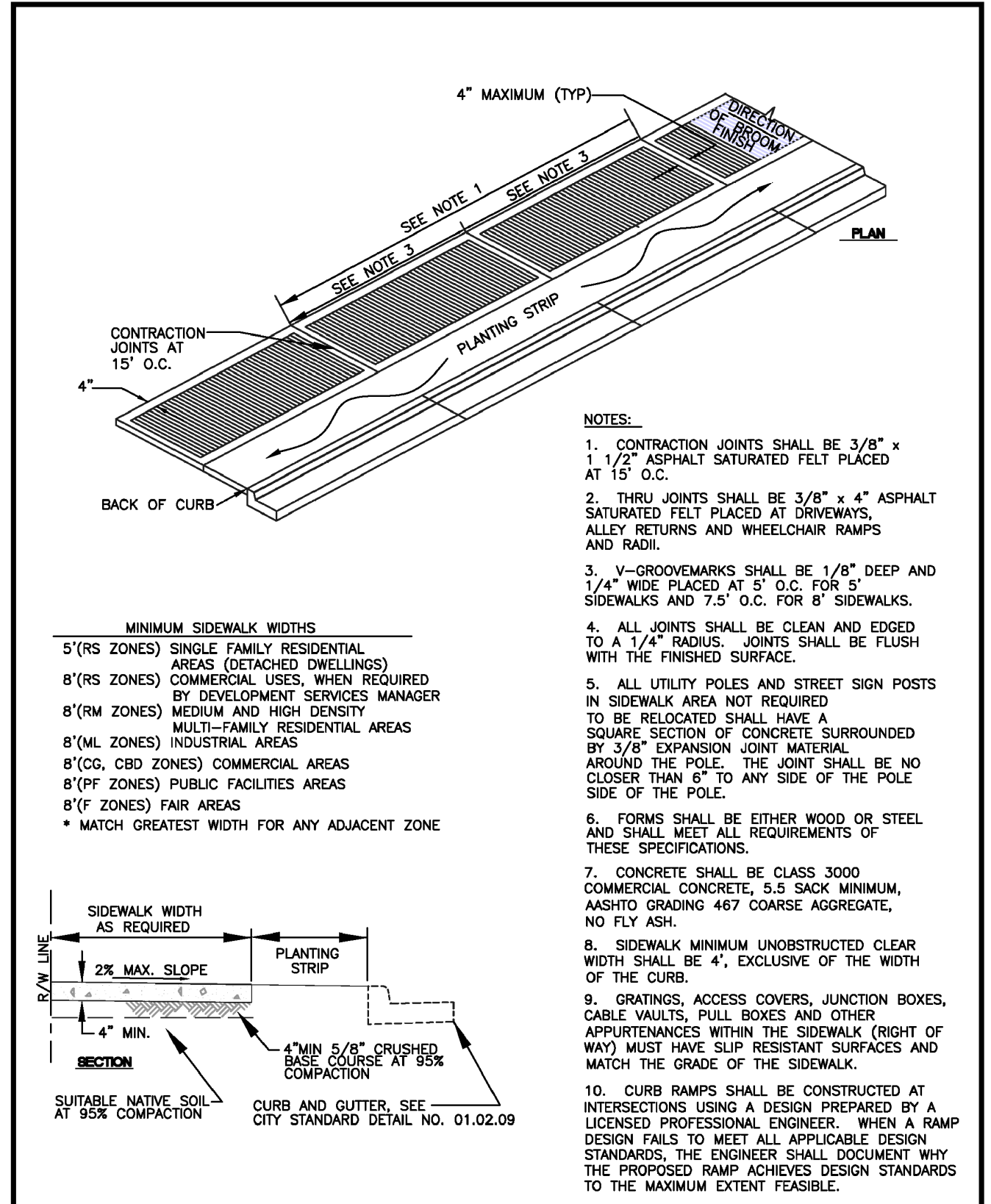
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- STREET PATCH**
- NOTES:
 1. BASE AND SUBBASE MATERIAL SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY.
 2. ALL DEPTHS INDICATED ARE A MINIMUM COMPACTED DEPTH.
 3. INITIAL BACKFILLING SHALL BE PERFORMED ONLY AFTER INSPECTION AND APPROVAL OF THE INSTALLED PIPE OR STRUCTURE. THE TRENCH BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH CITY STANDARD DETAIL NO. 06.01.01.
 4. ALL BACKFILL FOR PIPE TRENCHES SHALL BE MECHANICALLY COMPACTED BY A POWER-OPERATED MECHANICAL TAMPER(S) AS SPECIFIED IN WSDOT STANDARD SPEC. 2-03.3 (14)C, COMPACTING EARTH EMBANKMENTS, METHOD C OF THE WSDOT STANDARD SPECIFICATIONS.
 5. IF PAVING SURFACES ADJACENT TO THE TRENCH OPENING MAY BE DAMAGED WHERE TRENCHES ARE MADE PARALLEL TO THE STREET, OR WHERE A NUMBER OF CROSS TRENCHES ARE LAD IN CLOSE PROXIMITY TO ONE ANOTHER OR WHERE THE EQUIPMENT USED MAY CAUSE SUCH DAMAGE, THE CITY ENGINEER MAY REQUIRE A REDUCED CONTRIBUTION FROM THE PERMITTEE FOR RESURFACING IN LIEU OF PATCHING.
 IF THE TOTAL AREA OF THE PROPOSED PATCH OR PROBABLE DAMAGED AREA EXCEEDS 25 PERCENT OF THE TOTAL PAVEMENT SURFACING BETWEEN CURB FACES OR BETWEEN CONCRETE GUTTER EDGES IN ANY BLOCK, SUCH NEGOTIATIONS SHALL BE CARRIED ON AND CONTRIBUTIONS AGREED UPON PRIOR TO ISSUANCE OF A PERMIT. SUCH CONTRIBUTIONS SHALL BE IN ADDITION TO THE STANDARD PERMIT FEE.
 6. FINISHING FOR UTILITIES:
 OPTION A - UP TO A 10" DIAMETER CORE DRILL IS ALLOWED. CORE HOLES MADE DURING UTILITY POTHOLES SHALL BE BACKFILLED WITH COP TO WITHIN 4" OF FINISHED GRADE. 4" OF HMA SHALL THEN BE PLACED AND COMPACTED, FLUSH WITH EXISTING GRADE.
 OPTION B - FOR POTHOLES LARGER THAN 10" IN DIAMETER OR TRENCHING COMPLETED IN EXISTING ROADWAY, THE CONTRACTOR SHALL MEET CITY STANDARD 06.01.01 FOR PIPE BEDDING AND BACKFILL REQUIREMENTS. PAVEMENT RESTORATION SHALL BE ACCOMPLISHED BY INSTALLING THE TRENCH PATCH, AS SHOWN HEREIN, AND THEN GRINDING/OVERLAYING TO A MINIMUM DEPTH OF 2" THE LIMITS OF THE REQUIRED GRIND/OVERLAY SHALL BE TO THE NEAREST LANE LINE, OR HALF STREET, AND SHALL BE A MINIMUM OF 18 FEET LONG (LONGITUDINALLY ALONG ROADWAY) CENTERED AT LOCATION OF PATCH. NOTES IF EXISTING ASPHALT THICKNESS IS LESS THAN 3", FULL DEPTH PAVEMENT REPLACEMENT, IN LIEU OF GRIND/OVERLAY, TO MEET A MINIMUM ASPHALT THICKNESS OF 4" WILL BE REQUIRED.
 WHERE LOCATION OF TRENCH OR POTHOLE WINDOW INTERSECTS ROAD CENTERLINE, A MINIMUM GRIND AND OVERLAY OF ONE FULL LANE WIDTH (12') IS REQUIRED CENTERED ON ROADWAY. NO LONGITUDINAL JOINTS WILL BE ALLOWED IN THE PATCH.
 7. ALL MANHOLE FRAMES, VALVE FRAMES AND MONUMENT COVERS SHALL BE INSTALLED AFTER PLACEMENT OF ASPHALT. IF MORE THAN ONE LIFT IS NECESSARY, FRAMES AND LIDS WILL BE ADJUSTED TO FINISH GRADE AT FIRST LIFT AS DIRECTED BY THE CITY.

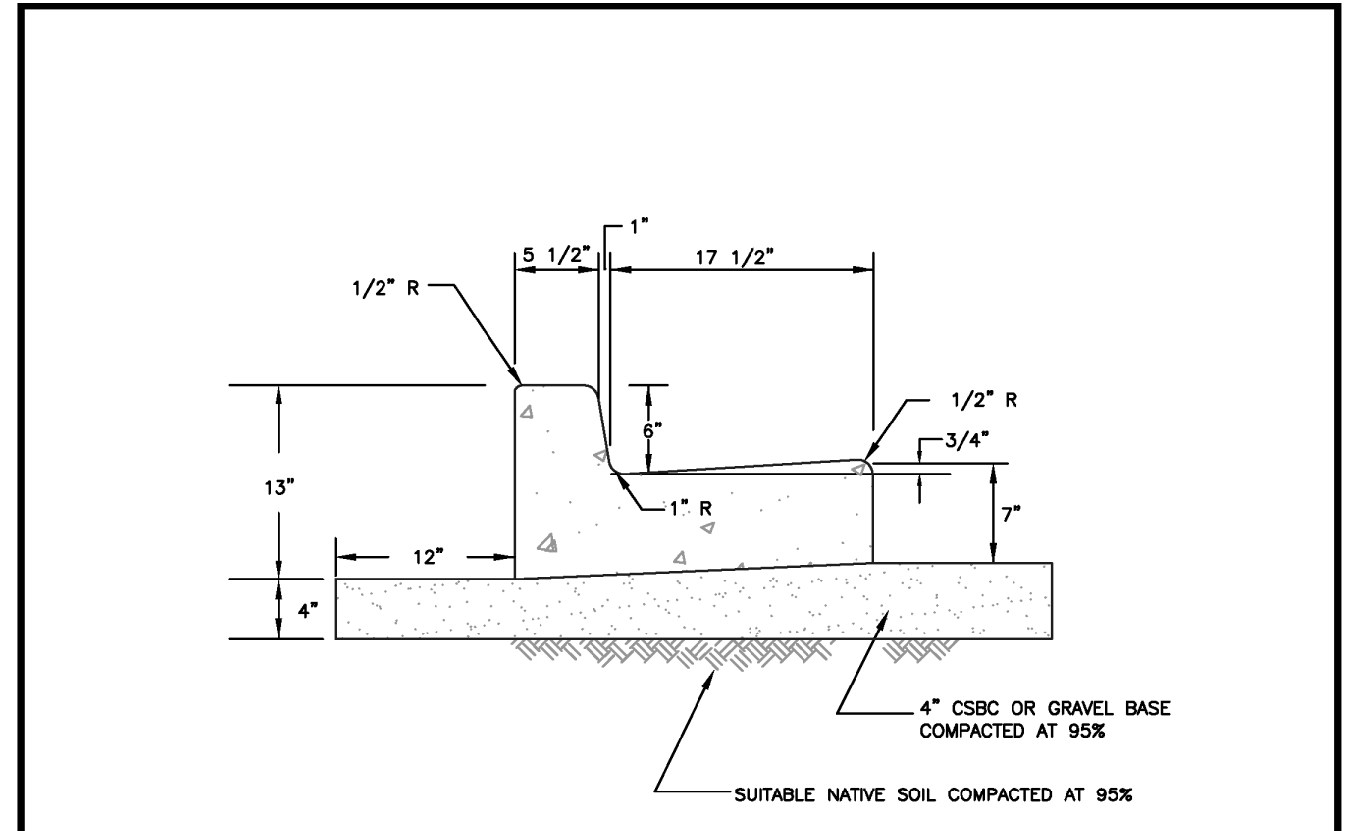
CITY OF PUYALLUP
 STREET PATCH

DESIGNED BY: JIM BROWN	CHECKED BY: LINDA LIAN	APPROVED BY: COLLEEN KASBUS	DATE APPROVED: 01.01.20
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CITY OF PUYALLUP
 SIDEWALK WITH PLANTING STRIP

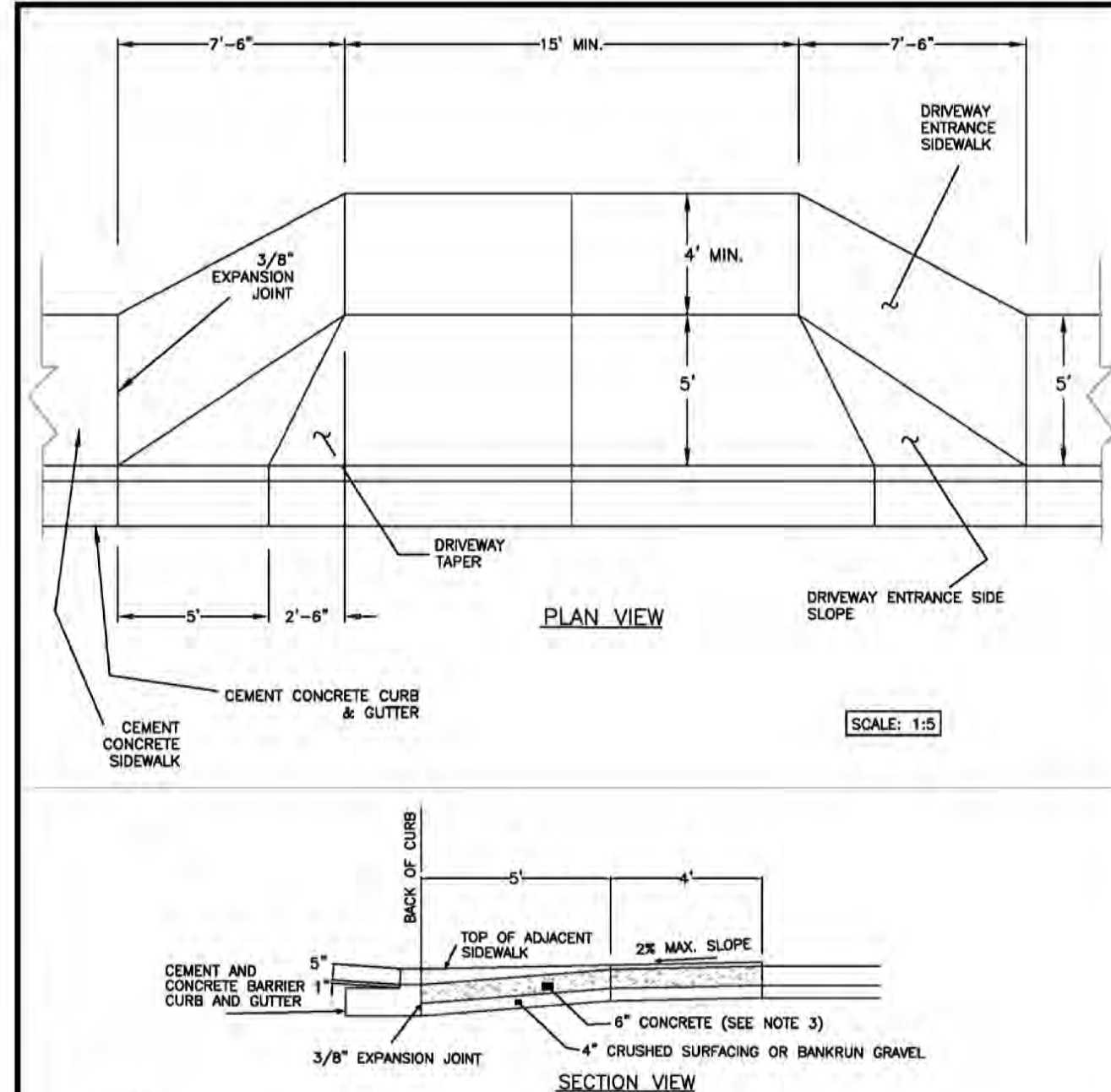
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- CURB AND GUTTER**
- NOTES:
 1. CONTRACTION JOINTS SHALL BE 3/8" x 1/2" ASPHALT SATURATED FELT PLACED IN ALL EXPOSED SURFACES OF CURB AND GUTTER AND SPACED AT 15' MAX. 10' MIN. O.C.
 2. THRU JOINTS SHALL BE 3/8" ASPHALT SATURATED FELT PLACED AT POINTS OF TANGENCY ON CURVES, AT CATCH BASINS, AND AT EDGES OF ALLEY AND DRIVEWAYS. THE MAXIMUM DISTANCE BETWEEN THRU JOINTS SHALL BE 100'.
 3. CONCRETE SHALL BE CLASS 3000 COMMERCIAL CONCRETE, 5.5 SACK MINIMUM, ASHTO GRADING 467 COARSE AGGREGATE, NO FLY ASH.
 4. FORMS SHALL BE STEEL UNLESS PRIOR APPROVAL IS GIVEN BY THE CITY ENGINEER. FORMS SHALL BE SET TRUE TO LINE AND GRADE AND SECURELY STAKED PRIOR TO CONCRETE PLACEMENT. FULL DEPTH DIVISION PLATES ARE ONLY TO BE USED WHERE THRU JOINTS ARE TO BE PLACED.
 5. THE 1" RADIUS ON THE UPPER FACE OF THE CURB MAY BE FORMED BY AN EDGER TOOL OR BUILT INTO THE FACE FORM. THE 1" RADIUS AT THE BOTTOM FACE OF THE CURB SHALL BE FORMED BY THE FACE FORM.

CITY OF PUYALLUP
 CURB AND GUTTER

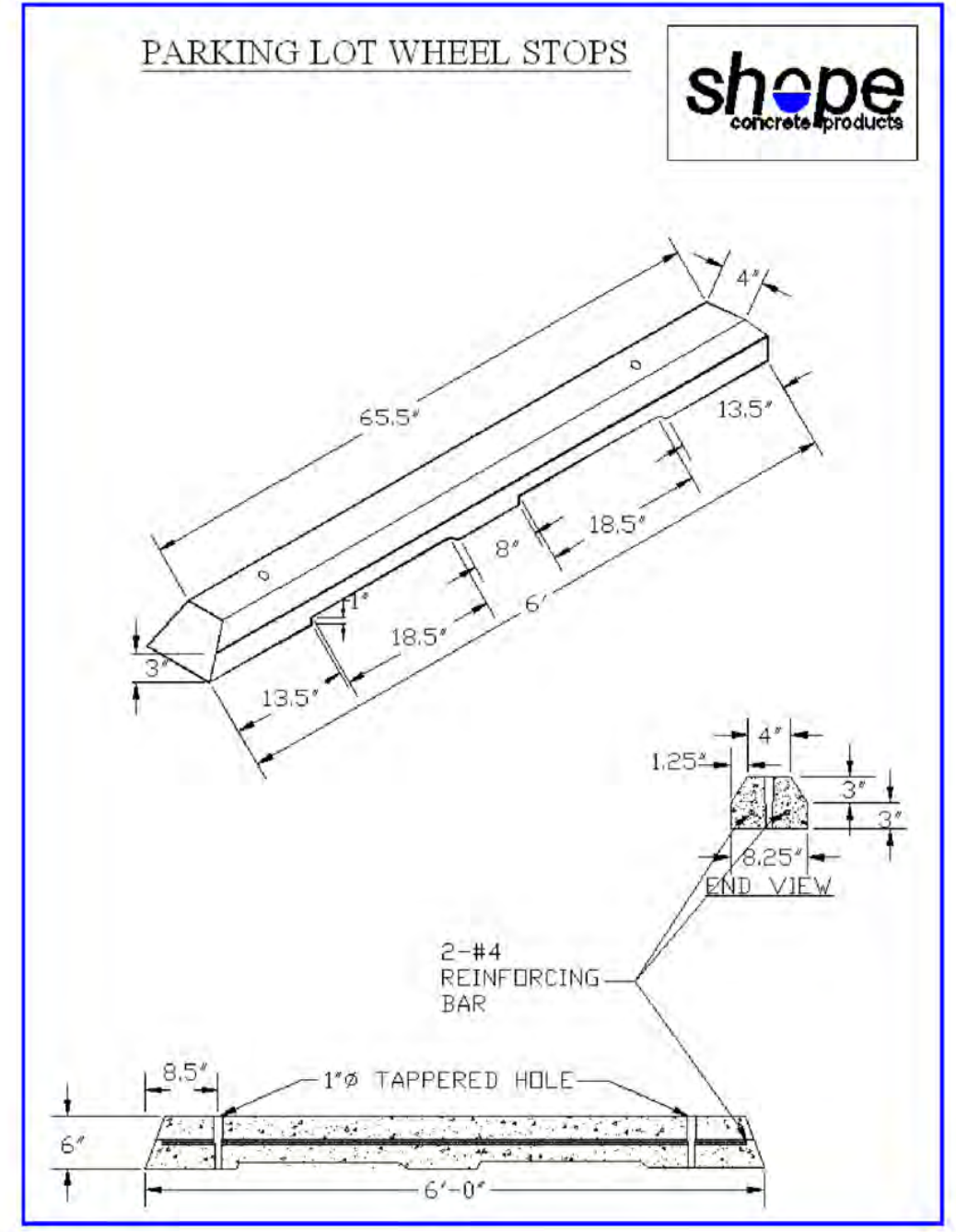
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- URBAN COMMERCIAL APPROACH ALTERNATE 1**
- NOTES:
 1. THIS COMMERCIAL APPROACH TO BE USED WHEN SPEED LIMIT IS LESS THAN 30 MPH. APPROACH SPACING AS SPECIFIED ON CITY STANDARD DETAIL NO. 01.02.16.
 2. JOINTS IN PAVING SLAB SHALL NOT EXTEND INTO DRIVEWAY. ALL JOINTS SHALL BE CLEAN AND EDGED.
 3. CONCRETE SHALL BE COMMERCIAL CONCRETE, 5.5 SACK MINIMUM, ASHTO GRADING 467 COARSE AGGREGATE, NO FLY ASH.
 4. 30 FEET MINIMUM WIDTH FOR TWO WAY TRAFFIC. MAXIMUM WIDTH DEPENDENT ON VEHICLE VOLUME THRU DRIVE AND DESIGN VEHICLE.

CITY OF PUYALLUP
 URBAN COMMERCIAL APPROACH ALTERNATE 1

DESIGNED BY: JIM BROWN	CHECKED BY: LINDA LIAN	APPROVED BY: COLLEEN KASBUS	DATE APPROVED: 01.02.17
SCALE: AS SHOWN	SCALE: AS SHOWN	SCALE: AS SHOWN	SCALE: AS SHOWN



- PARKING LOT WHEEL STOPS**
- NOTES:
 1. THIS APPROVAL IS TO BE USED WHEN SPEED LIMIT IS LESS THAN 30 MPH. APPROACH SPACING AS SPECIFIED ON CITY STANDARD DETAIL NO. 01.02.16.
 2. JOINTS IN PAVING SLAB SHALL NOT EXTEND INTO DRIVEWAY. ALL JOINTS SHALL BE CLEAN AND EDGED.
 3. CONCRETE SHALL BE COMMERCIAL CONCRETE, 5.5 SACK MINIMUM, ASHTO GRADING 467 COARSE AGGREGATE, NO FLY ASH.
 4. 30 FEET MINIMUM WIDTH FOR TWO WAY TRAFFIC. MAXIMUM WIDTH DEPENDENT ON VEHICLE VOLUME THRU DRIVE AND DESIGN VEHICLE.

CITY OF PUYALLUP
 PARKING LOT WHEEL STOPS

DESIGNED BY: JIM BROWN	CHECKED BY: LINDA LIAN	APPROVED BY: COLLEEN KASBUS	DATE APPROVED: 01.02.17
SCALE: AS SHOWN	SCALE: AS SHOWN	SCALE: AS SHOWN	SCALE: AS SHOWN

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DATE: MAY 14, 2024
 DESIGNED BY: JIM BROWN
 DRAWN BY: JIM BROWN
 CHECKED BY: LINDA LIAN
 APPROVED BY: COLLEEN KASBUS

AZURE GREEN CONSULTANTS
 +feasibility +planning +engineering +surveying
 409 East Pioneer Suite A - Puyallup, WA 98372
 phone: 253.770.3144 fax: 253.770.3142

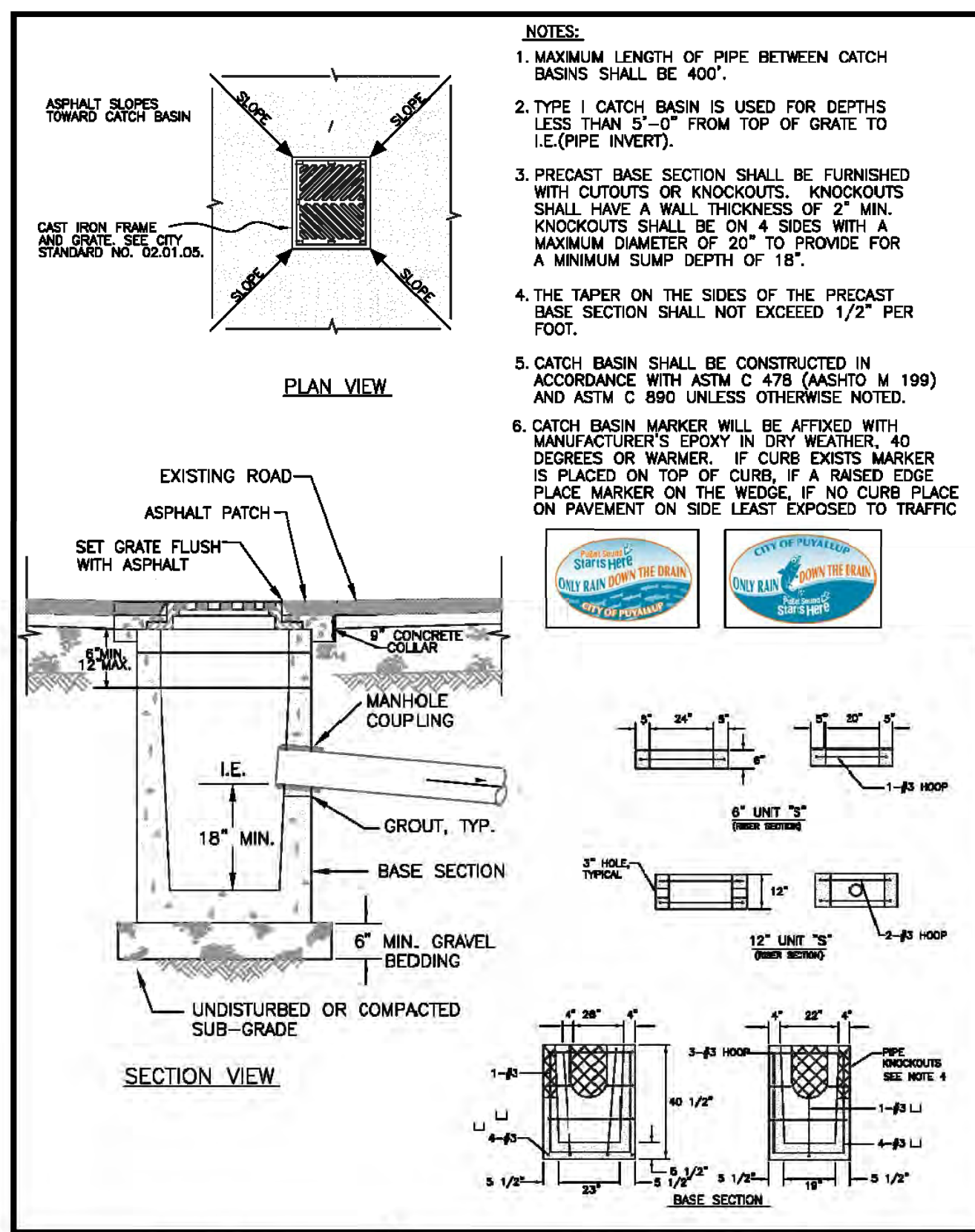
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 Seattle, WA 98122
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 Fax: jordan@timberlanepartners.com

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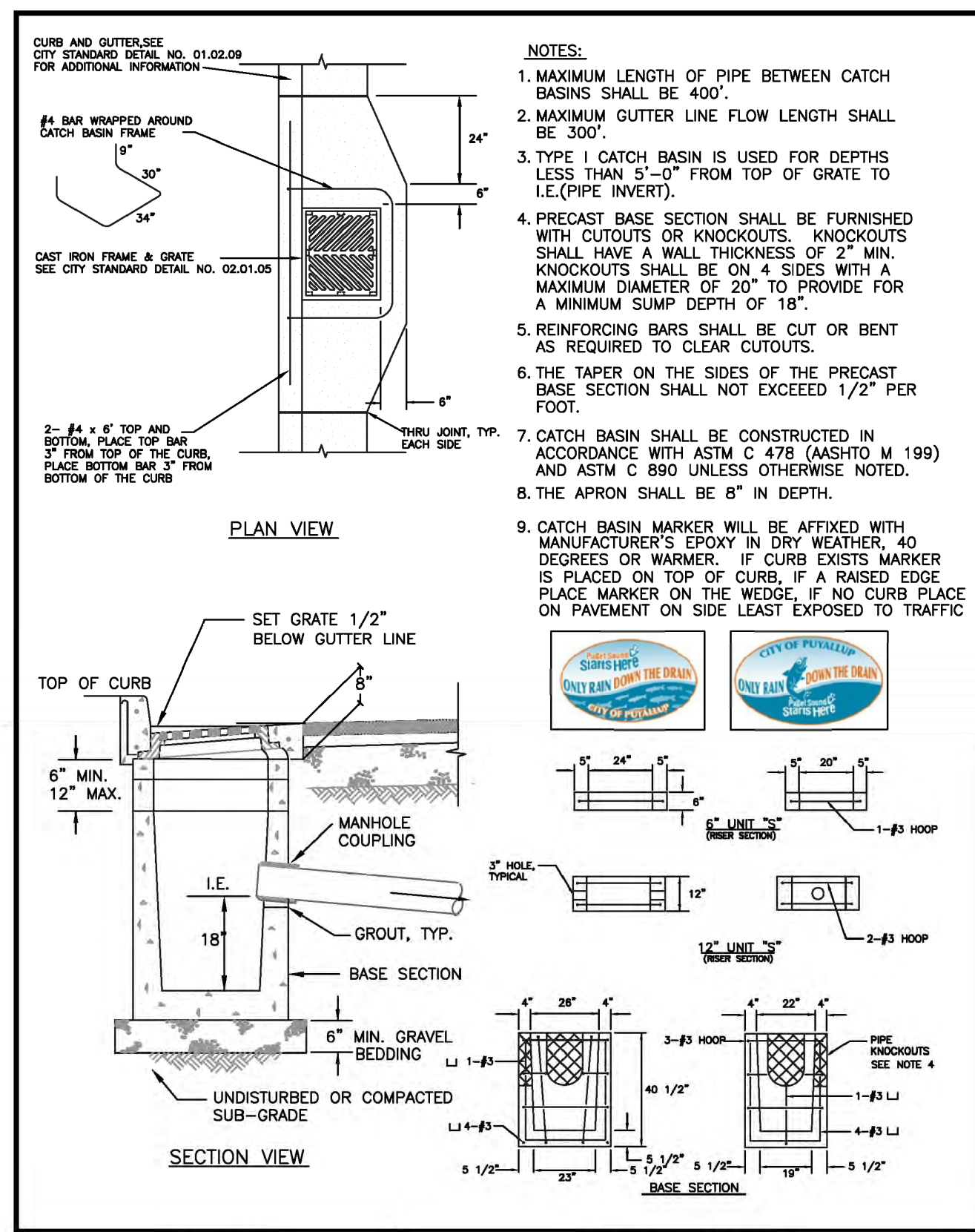
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Bradley Heights

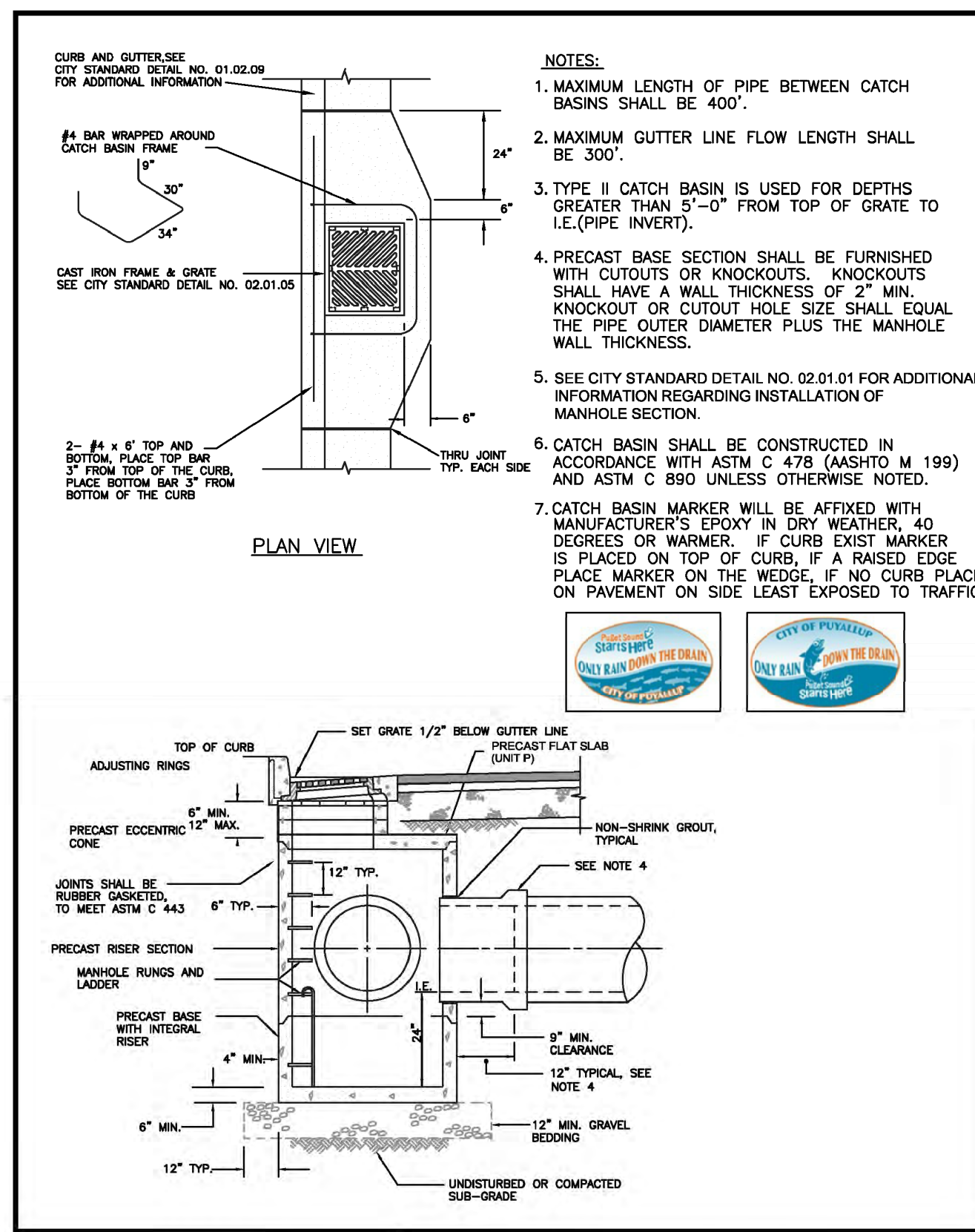
Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



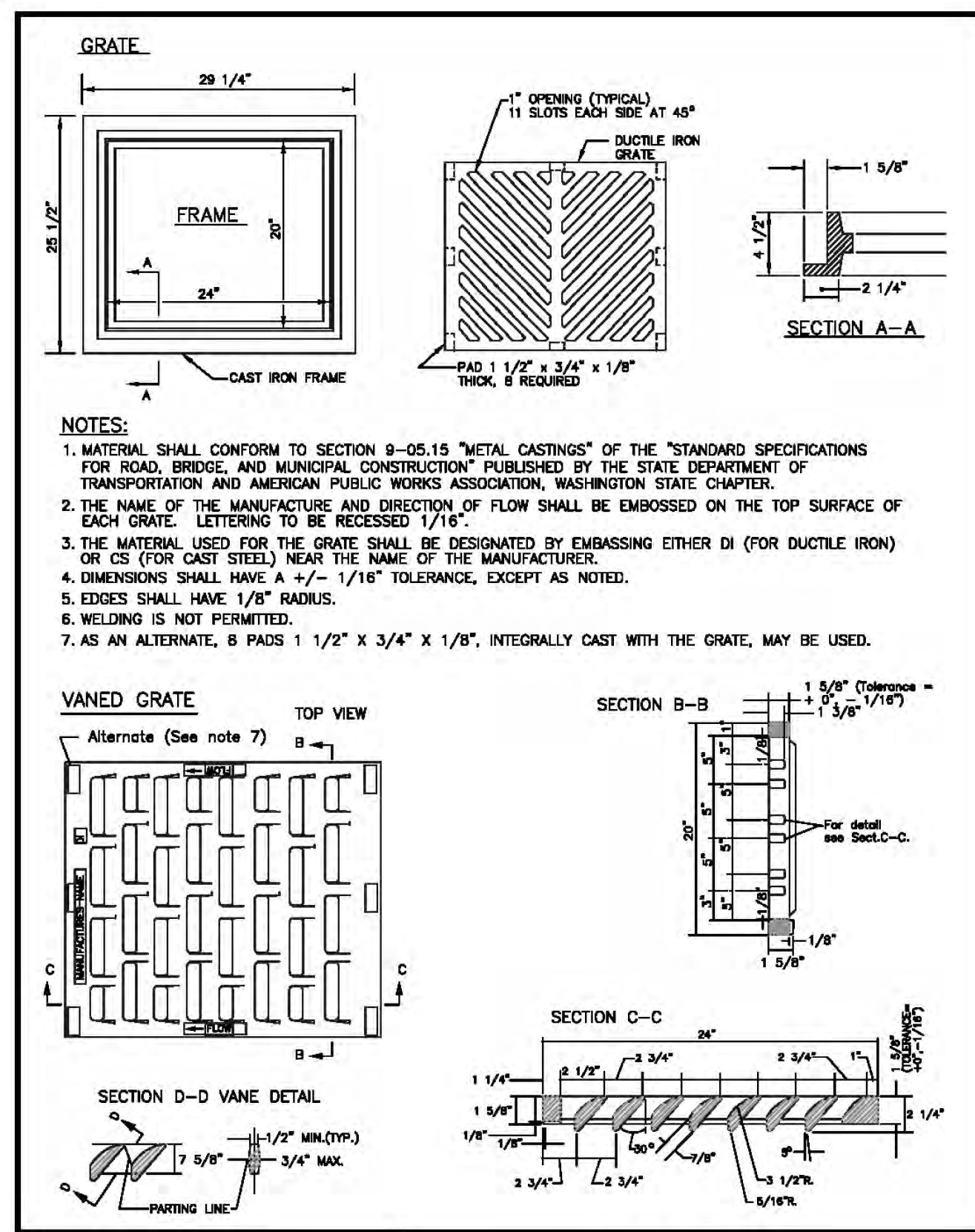
CITY OF PUYALLUP		CATCH BASIN TYPE I (AREA DRAIN)	
DESIGNED BY: LINDA LANSING	CHECKED BY: LINDA LANSING	APPROVED BY: COLLIER HARRIS	DATE APPROVED: 02.01.07
DATE: 02.01.07	SCALE: AS SHOWN	CITY STANDARD: 02.01.05	



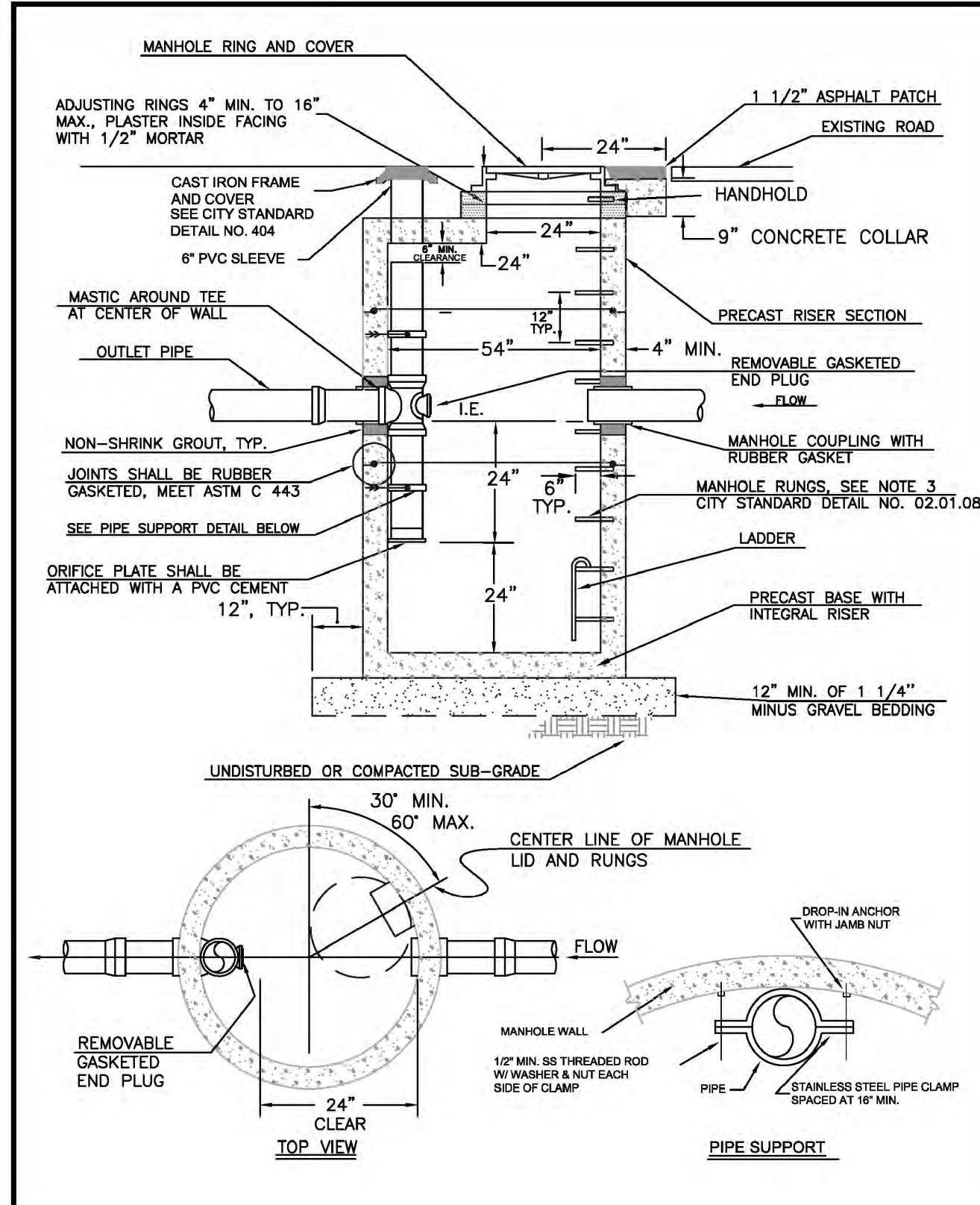
CITY OF PUYALLUP		CATCH BASIN TYPE I (GUTTER DRAIN)	
DESIGNED BY: LINDA LANSING	CHECKED BY: LINDA LANSING	APPROVED BY: COLLIER HARRIS	DATE APPROVED: 02.01.07
DATE: 02.01.07	SCALE: AS SHOWN	CITY STANDARD: 02.01.05	



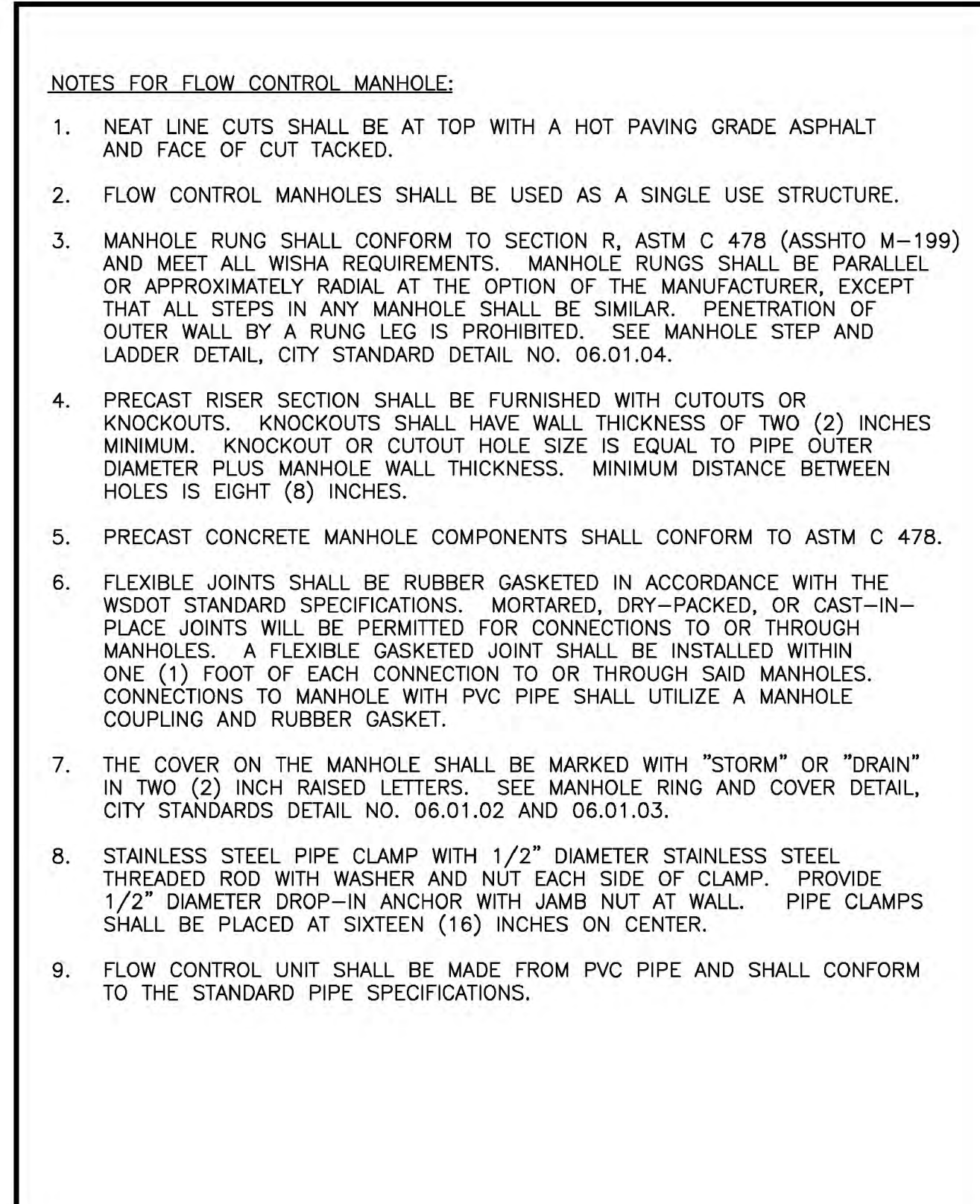
CITY OF PUYALLUP		CATCH BASIN TYPE II	
DESIGNED BY: LINDA LANSING	CHECKED BY: LINDA LANSING	APPROVED BY: COLLIER HARRIS	DATE APPROVED: 02.01.07
DATE: 02.01.07	SCALE: AS SHOWN	CITY STANDARD: 02.01.05	



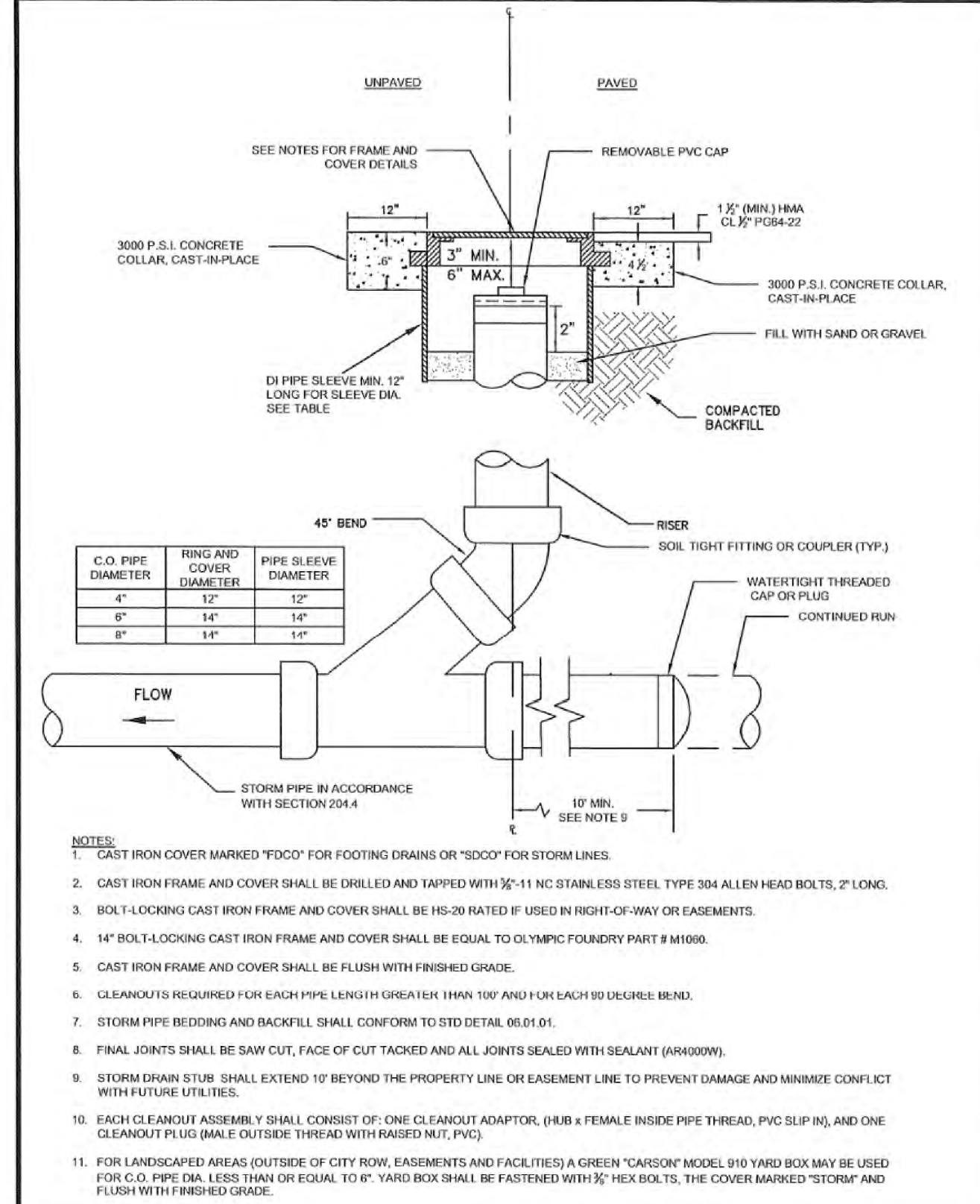
CITY OF PUYALLUP		CATCH BASIN FRAME AND GRATE/VANED GRATE	
DESIGNED BY: LINDA LANSING	CHECKED BY: LINDA LANSING	APPROVED BY: COLLIER HARRIS	DATE APPROVED: 02.01.07
DATE: 02.01.07	SCALE: AS SHOWN	CITY STANDARD: 02.01.05	



CITY OF PUYALLUP		FLOW CONTROL MANHOLE WITH FLAT TOP	
DESIGNED BY: LINDA LANSING	CHECKED BY: LINDA LANSING	APPROVED BY: COLLIER HARRIS	DATE APPROVED: 02.01.07
DATE: 02.01.07	SCALE: AS SHOWN	CITY STANDARD: 02.01.05	



CITY OF PUYALLUP		FLOW CONTROL MANHOLE NOTES	
DESIGNED BY: LINDA LANSING	CHECKED BY: LINDA LANSING	APPROVED BY: COLLIER HARRIS	DATE APPROVED: 02.01.07
DATE: 02.01.07	SCALE: AS SHOWN	CITY STANDARD: 02.01.05	



CITY OF PUYALLUP		STORM DRAIN CLEANOUT	
DESIGNED BY: LINDA LANSING	CHECKED BY: LINDA LANSING	APPROVED BY: COLLIER HARRIS	DATE APPROVED: 02.01.07
DATE: 02.01.07	SCALE: AS SHOWN	CITY STANDARD: 02.01.05	

DATE:	
DESIGNED BY:	LINDA LANSING
DRAWN BY:	LINDA LANSING
CHECKED BY:	COLLIER HARRIS
APPROVED BY:	COLLIER HARRIS
DATE APPROVED:	02.01.07
SCALE:	AS SHOWN
CITY STANDARD:	02.01.05

DATE:	May 14, 2024
DESIGNED BY:	Rob Trevitt
DRAWN BY:	Rob Trevitt
CHECKED BY:	Rob Trevitt
APPROVED BY:	Rob Trevitt
DATE APPROVED:	02.01.07
SCALE:	AS SHOWN
CITY STANDARD:	02.01.05

AZURE GREEN CONSULTANTS

409 East Pioneer Suite A • Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

*surveying *engineering *planning *feasibility

Storm Details

Bradley Heights

Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone: 509.896.0326
 Fax: jordan@timberlanepartners.com

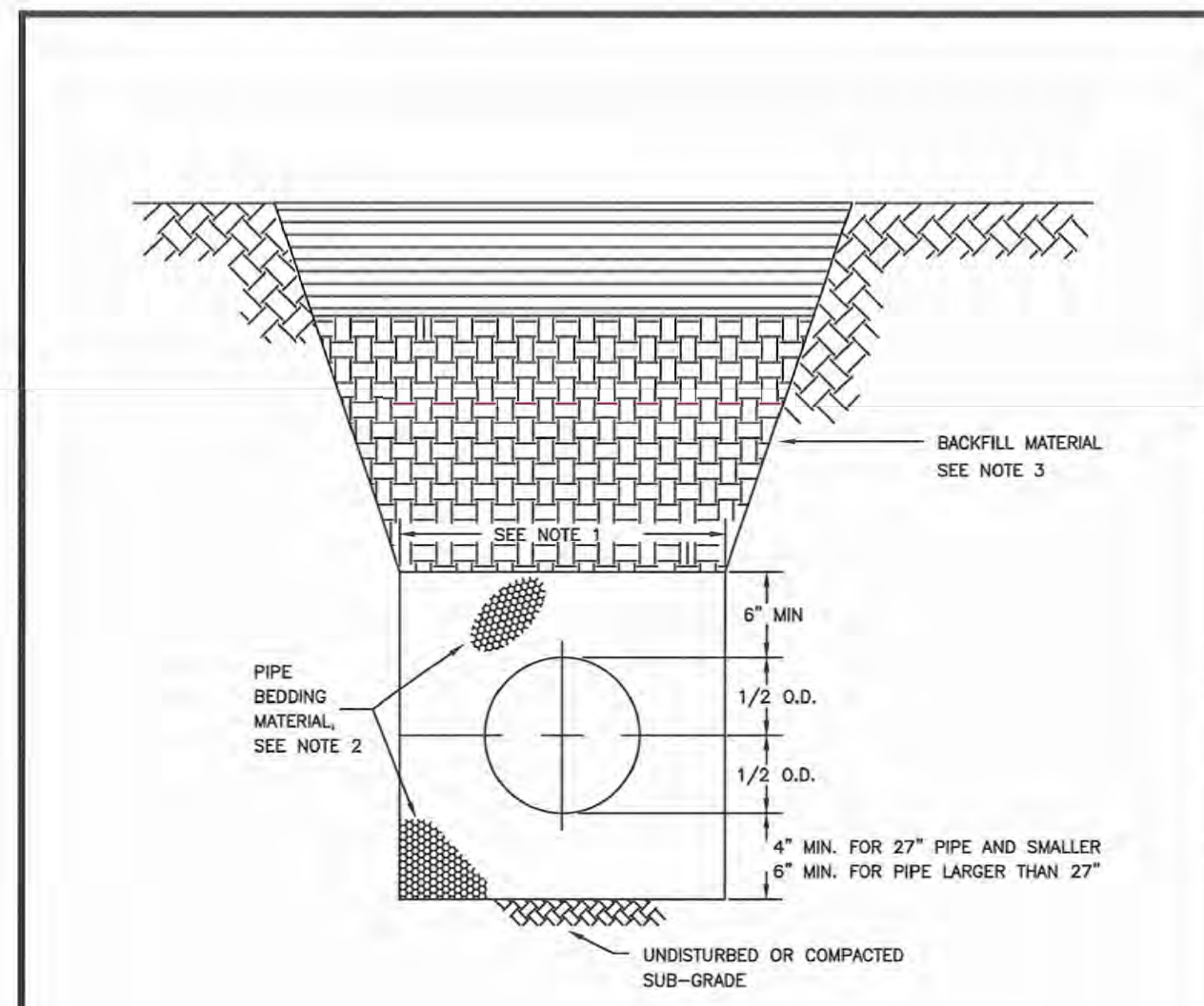
DRAWING SD-18

SHEET OF 32/47

Project Date: 02.01.07, Bradley Heights, E:\Projects\Bradley Heights\Drawings\2024-05-14\2024-05-14.dwg, P114, Date Plotted: 07/12/2024 10:25AM

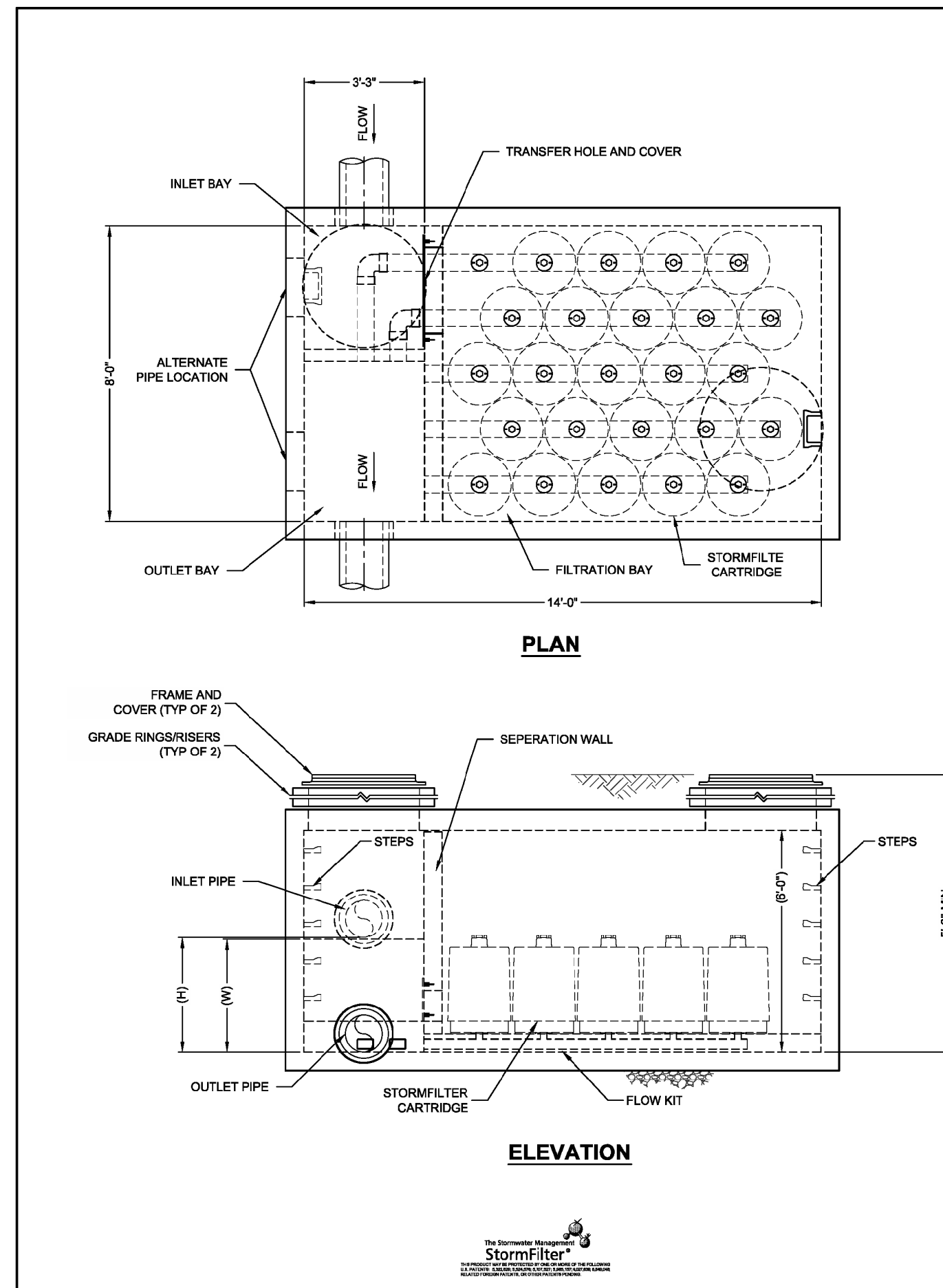
Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



- TRENCHING SHALL MEET THE REQUIREMENTS OF SECTION 7-08.3(1) AND 2-06.3(1) OF THE WSDOT SPECIFICATIONS.
- BEDDING MATERIAL SHALL CONFORM TO 9-03.12(3) GRAVEL BACKFILL FOR PIPE ZONE BEDDING.
- GRAVEL BACKFILL SHALL CONFORM TO 9-03.12(1) GRAVEL BACKFILL FOR FOUNDATIONS, CLASS A.

<p>CITY OF PUYALLUP OFFICE OF THE CITY ENGINEER</p>	PIPE TRENCHING BEDDING AND BACKFILL		<p>DATE: 06.01.01</p>
	<p>DESIGNED BY: [Name]</p> <p>CHECKED BY: [Name]</p> <p>APPROVED BY: [Name]</p>	<p>DATE: [Date]</p> <p>SCALE: [Scale]</p>	



STORMFILTER DESIGN NOTES

THE 8' x 14' PEAK DIVERSION STORMFILTER TREATMENT CAPACITY VARIES BY CARTRIDGE COUNT AND LOCALLY APPROVED SURFACE AREA SPECIFIC FLOW RATE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

THE PEAK DIVERSION STORMFILTER IS AVAILABLE IN A LEFT INLET (AS SHOWN) OR RIGHT INLET CONFIGURATION.

ALL PARTS AND INTERNAL ASSEMBLY PROVIDED BY CONTECH UNLESS OTHERWISE NOTED.

CARTRIDGE SELECTION	27"	18"	LOW DROP
CARTRIDGE HEIGHT	3.05"	2.25"	1.8"
RECOMMENDED HYDRAULIC DROP (H)	3.05"	2.25"	1.75"
HEIGHT OF WEIR (W)	2.00"	1.50"	1.00"
SPECIFIC FLOW RATE (gpm/ft²)	2.00 gpm/ft²	1.67 gpm/ft²	1.00 gpm/ft²
CARTRIDGE FLOW RATE (gpm)	22.5	18.75	15

* 1.67 gpm/ft² SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (cfs)	0.2063
PEAK FLOW RATE (cfs)	
RETURN PERIOD OF PEAK FLOW (yrs)	
CARTRIDGE HEIGHT (27", 18", LOW DROP(LO))	18"
NUMBER OF CARTRIDGES REQUIRED	10
CARTRIDGE FLOW RATE	7.5 gpm
MEDIA TYPE (PERLITE, ZPG, PSORB)	ZPG

PIPE DATA

PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE			
OUTLET PIPE			

UPSTREAM RIM ELEVATION

DOWNSTREAM RIM ELEVATION

ANTI-FLOTATION BALLAST

WIDTH

HEIGHT

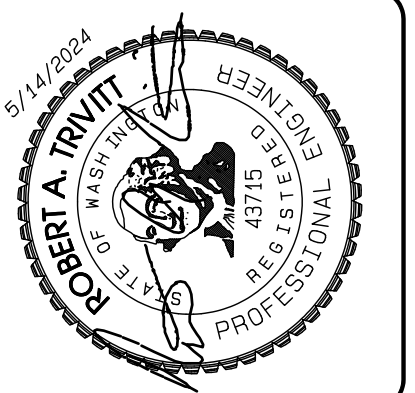
NOTES/SPECIAL REQUIREMENTS:

- PER ENGINEER OF RECORD

CONTECH ENGINEERED SOLUTIONS LLC

9025 Centre Pointe Dr., Suite 400, West Chester, OH 45389
800-338-1122 513-645-7000 513-645-7993 FAX

- STORMWATER NOTES:**
- All work in City right-of-way requires a permit from the City of Puyallup. Prior to any work commencing, the general contractor shall arrange for a preconstruction meeting at the Development Services Center to be attended by all contractors that will perform work shown on the engineering plans, representatives from all applicable Utility Companies, the project owner and appropriate City staff. Contact Engineering Services to schedule the meeting (253) 841-5588. The contractor is responsible to have their own approved set of plans at the meeting.
 - After completion of all items shown on these plans and before acceptance of the project, the contractor shall obtain a "punch list" prepared by the City's inspector detailing remaining items of work to be completed. All items of work shown on these plans shall be completed to the satisfaction of the City prior to acceptance of the water system and provision of sanitary sewer service.
 - All materials and workmanship shall conform to the Standard Specifications for Road, Bridge, and Municipal Construction (hereinafter referred to as the "Standard Specifications"), Washington State Department of Transportation and American Public Works Association, Washington State Chapter, latest edition, unless superseded or amended by the City of Puyallup City Standards for Public Works Engineering and Construction (hereinafter referred to as the "City Standards").
 - A copy of these approved plans and applicable city developer specifications and details shall be on site during construction.
 - Any revisions made to these plans must be reviewed and approved by the developer's engineer and the Engineering Services Staff prior to any implementation in the field. The City shall not be responsible for any errors and/or omissions on these plans.
 - The contractor shall have all utilities verified on the ground prior to any construction. Call (811) at least two working days in advance. The owner and his/her engineer shall be contacted immediately if a conflict exists.
 - Any structure and/or obstruction which require removal or relocation relating to this project, shall be done so at the developer's expense.
 - During construction, all existing and newly installed drainage structures shall be protected from sediments.
 - All storm manholes shall conform to City Standard Detail No. 02.01.01. Flow control manhole/oil water separator shall conform to City Standard Detail No. 02.01.05 and 02.01.07.
 - Manhole ring and cover shall conform to City Standard Detail 06.01.02.
 - Catch basins Type I shall conform to City Standard Detail No.02.01.02 and 02.01.03 and shall be used only for depths less than 5 feet from the grate to the invert of the storm pipe.
 - Catch basins Type II shall conform to City Standard Detail No.02.01.04 and shall be used for depths greater than 5 feet from top of the grate to the invert of the storm pipe.
 - Cast iron or ductile iron frame and grate shall conform to City Standard Detail No.02.01.05. Grate shall be marked with drains to stream. Solid catch basin lids (square unless noted as round) shall conform to WSDOT Standard Plan B-30.20-04 (Olympic Foundry No. SM60 or equal). Vaned grates shall conform to WSDOT Standard Plan B-30.30-03 (Olympic Foundry No. SM60V or equal).
 - Stormwater pipe shall be only PVC, concrete, ductile iron pipe, or dual walled Polypropylene pipe.
 - The use of any other type shall be reviewed and approved by the Engineering Services Staff prior to installation.
 - PVC pipe shall be per ASTM D3034, SDR 35 for pipe size 15-inch and smaller and F679 for pipe sizes 18 to 27 inch. Minimum cover on PVC pipe shall be 3.0 feet.
 - Concrete pipe shall conform to the WSDOT Standard Specifications for concrete underdrain pipe. Minimum cover on concrete pipe shall not less than 3.0 feet.
 - Ductile iron pipe shall be Class 50, conforming to AWWA C151. Minimum cover on ductile iron pipe shall be 10 feet.
 - Polypropylene Pipe (PP) shall be dual walled, have a smooth interior and exterior corrugations and meet WSDOT 9-05.24(d). 12-inch through 30-inch pipe shall meet or exceed ASTM F2736 and AASHTO M330, Type S, or Type D. 36-inch through 60-inch pipe shall meet or exceed ASTM F2884 and AASHTO M330, Type S, or Type D. Testing shall be per ASTM F1417. Minimum cover over Polypropylene pipe shall be 3-feet.
 - Trenching, bedding, and backfill for pipe shall conform to City Standard Detail No. 06.01.01.
 - Storm pipe shall be a minimum of 10 feet away from building foundations and/or roof lines.
 - All storm drain mains shall be tested and inspected for acceptance as outlined in Section 406 of the City of Puyallup Sanitary Sewer System Standards.
 - All temporary sedimentation and erosion control measures, and protective measures for critical areas and significant trees shall be installed prior to initiating any construction activities.



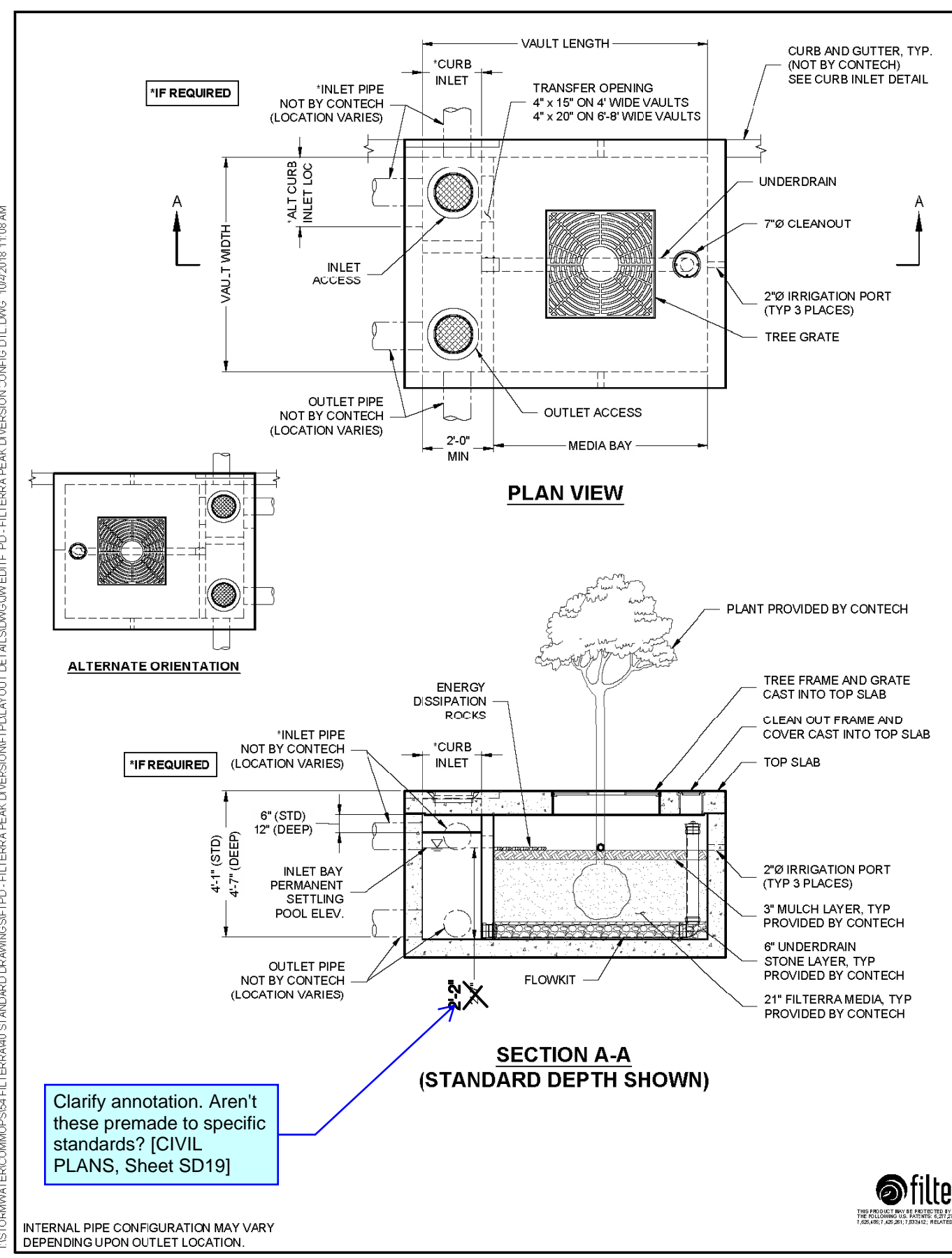
DATE:	06.01.01
DESIGNED BY:	[Name]
CHECKED BY:	[Name]
APPROVED BY:	[Name]
PROJECT NO:	[Number]
DATE:	[Date]

DATE:	May 14, 2024
DESIGNED BY:	[Name]
CHECKED BY:	[Name]
APPROVED BY:	[Name]

AZURE GREEN CONSULTANTS

feasibility • planning • engineering • surveying

409 East Pioneer, Suite A • Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142



FTPD-D DEEP OPTION CONFIGURATION

DESIGNATION (OPTIONS - P, -T, -PT)	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	WEIR LENGTH/ MAX CURB OPENINGS	*MAX BYPASS FLOW (CFS)	INLET/ OUTLET ACCESS DIA.	TREE GRATE QTY & SIZE
FTPD0810-D	N/A CA	4 x 4	4 x 4	1'-6"	4.8	12"12"	(1) 3' x 3'
FTPD0810-D	CA ONLY	4 x 4	4 x 4	1'-6"	4.8	12"12"	(1) 3' x 3'
FTPD0810-D	N/A MID-ATL	4 x 6	4 x 6	1'-6"	4.8	12"12"	(1) 3' x 3'
FTPD0810-D	ALL	4 x 6	4 x 6	1'-6"	4.8	12"12"	(1) 3' x 3'
FTPD0810-D	MID-ATL ONLY	4.5 x 5.83	4.5 x 7.83	1'-6"	4.8	12"12"	(1) 3' x 3'
FTPD0810-D	ALL	6 x 8	6 x 8	1'-6"	4.8	12"12"	(1) 3' x 3'
FTPD0810-D	ALL	6 x 8	6 x 8	1'-6"	4.8	12"12"	(1) 3' x 3'
FTPD0810-D	ALL	6 x 10	6 x 12	1'-6"	4.8	12"12"	(1) 4' x 4'
FTPD0810-D	ALL	6 x 10	6 x 10	1'-6"	4.8	12"12"	(1) 4' x 4'
FTPD0810S-D	ALL	8 x 10.5	8 x 14	3'-0"	8.2	24"24"	(1) 4' x 4'
FTPD0810S-D	ALL	8 x 12.5	8 x 16	3'-0"	8.2	24"24"	(1) 4' x 4'

N/A = NOT AVAILABLE

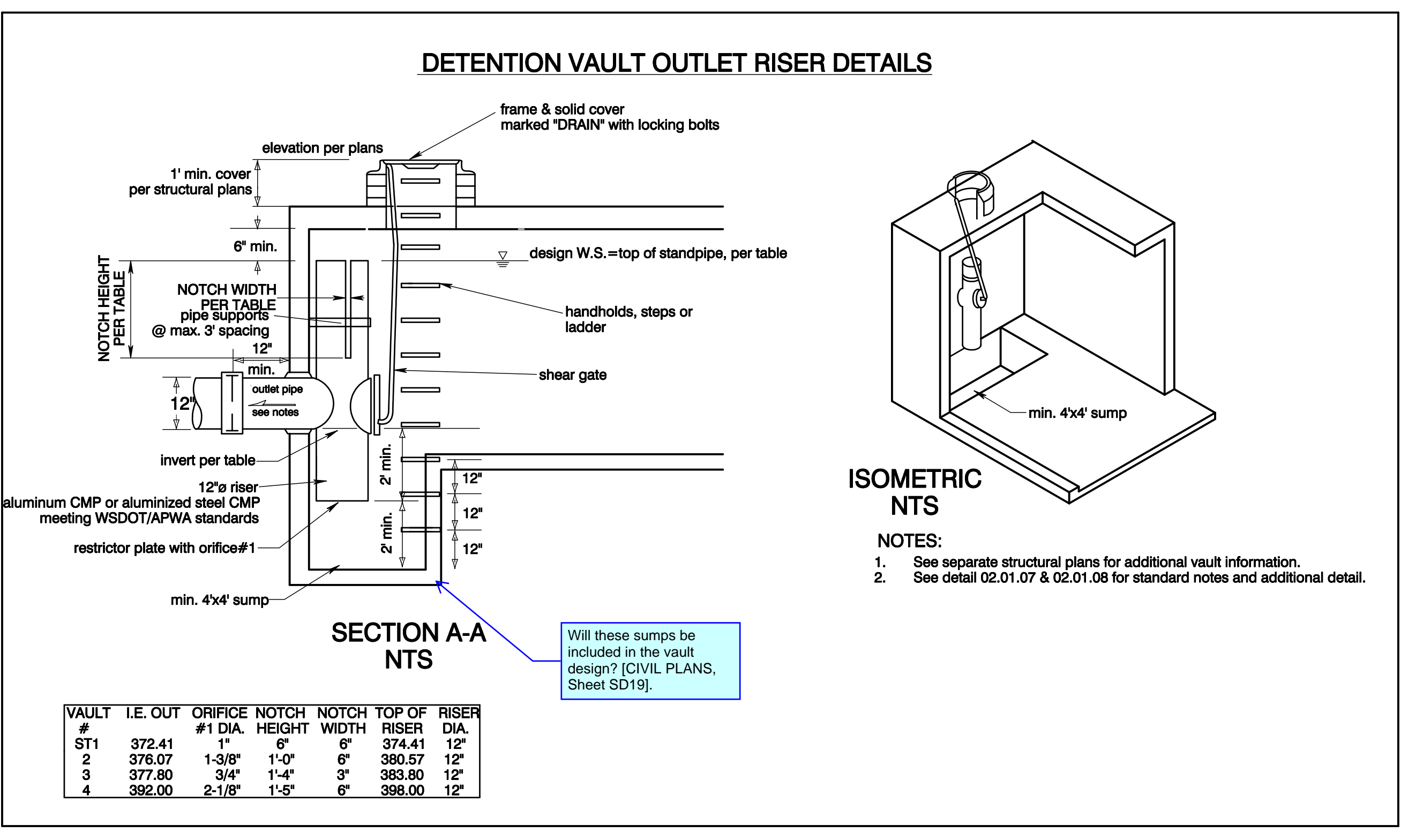
*MAX BYPASS FLOW IS INTERNAL WEIR FLOW. SITE SPECIFIC ANALYSIS IS REQUIRED TO DETERMINE CURB INLET FLOW CAPACITY

CURB INLET DETAIL

FILTERRA PEAK DIVERSION (FTPD) CONFIGURATION DETAIL

CONTECH ENGINEERED SOLUTIONS LLC

9025 Centre Pointe Dr., Suite 400, West Chester, OH 45389
800-338-1122 513-645-7000 513-645-7993 FAX



APPROVED

BY: CITY OF PUYALLUP DEVELOPMENT SERVICES

DATE: _____

NOTE:

THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.

THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

Storm Details

Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.896.0326
Fax jordan@timberlanepartners.com

DRAWING

SD-19

SHEET 33 OF 47

Project Date: 06/01/2024
Project Name: Bradley Heights
Project No: 2024-0514-ENG-010
Date: 06/14/2024 05:11:46PM

Bradley Heights

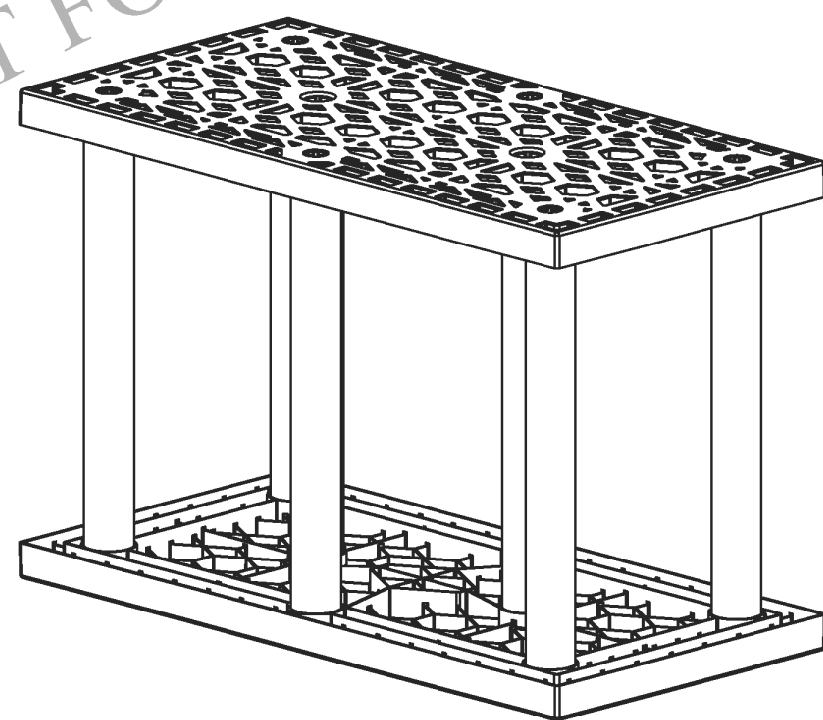
Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



BRENTWOOD STORMTANK MODULE LAYOUT DRAWINGS

Bradley Heights Apartments

Puyallup, WA



THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE CONFIDENTIAL AND PROPRIETARY AND SHALL NOT BE COPIED NOR USED IN ANY MANNER WITHOUT WRITTEN AUTHORIZATION FROM LAYFIELD.

REFER TO STORMTANK
INSTALLATION INSTRUCTIONS

LAYFIELD
1901 Raymond Ave. S.W., Suite B
Renton, WA 98057
Ph: (425) 254-1075
seattle@layfieldgroup.com

SINGLE STACK MODULE SYSTEM

Total Storage Volume	5,141.66 ft ³
Module Storage Volume	5,141.66 ft ³
Stone Storage Volume	0.00 ft ³
System Footprint	2,905.00 ft ²
Estimated Geotextile Fabric	L/P6 820 yd ² L/P8 1,433 yd ²
Estimated Liner	6,446.67 ft ²
Estimated Stone Volume	178.57 yd ³
Excavation Required	484.17 yd ³
Minimum Excavation Depth	4.50 ft
Stone Type	¾" Clear Stone
Stone Void Space	40%
Model Type	25 Series ST-24

REV	Record of Changes	Date	By
△	Preliminary Drawing	19SEP2023	AK

Project Number: OP2023-7367	
Page Name: Cover Page	
Drawn by: AK	Checked by: JF
Scale: NTS	Date: 19SEP2023

THIS LAYOUT DRAWING WAS PREPARED TO SUPPORT THE ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO REVIEW THE INFORMATION AND ENSURE THAT THE LAYOUT AND DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND THAT THE STORMTANK SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH BRENTWOOD'S REQUIREMENTS. LAYFIELD DOES NOT REVIEW OR APPROVE PLANS, SIZING OR DESIGNS.

01 OF 07

Material Quantity (ST-24)

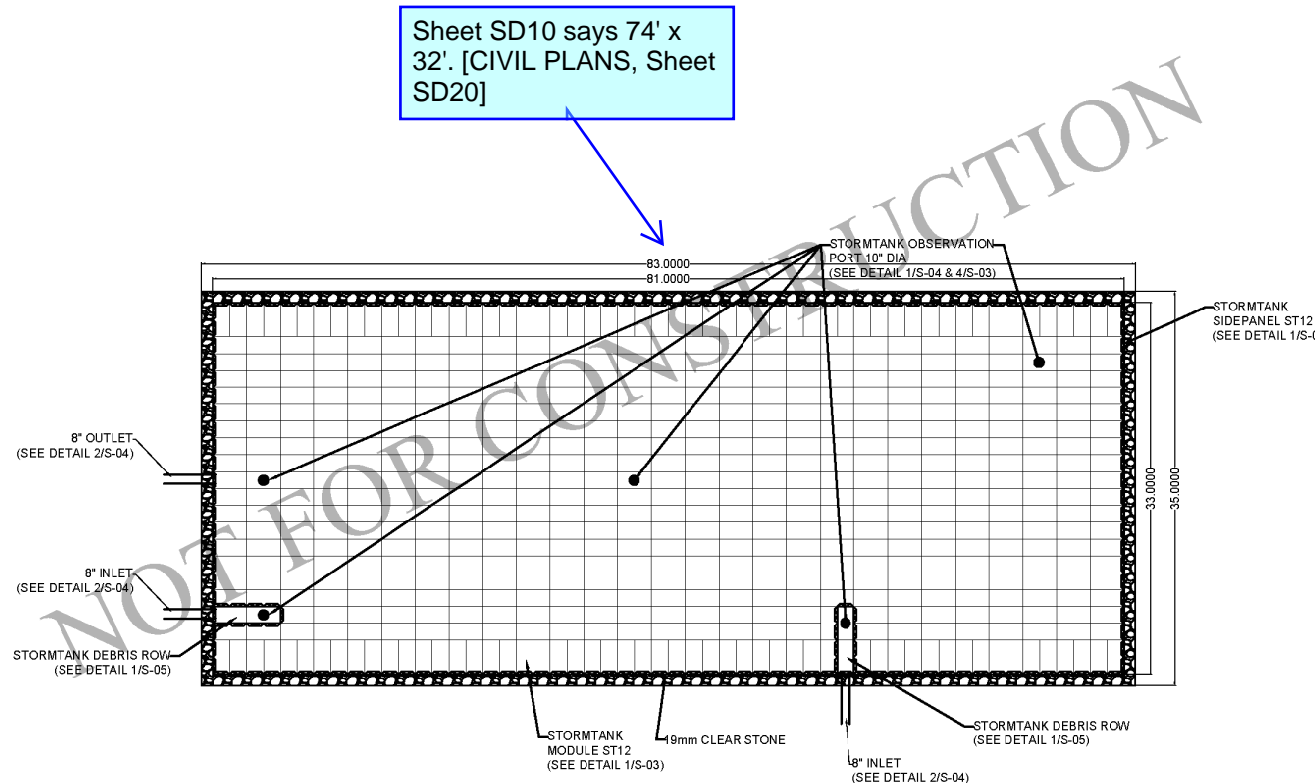
ST-24	594
Platens	1,188
24" Columns	4,752
24" Side Panels	170
10" Observation Port	5
6" Saddle Port	0

Elevations

Leveling Stone Bottom	371.76
Module Invert	372.26
Top of Module	374.26
Top of Stone Backfill	375.26
Minimum Finished Grade	376.26
Maximum Finished Grade	383.26

Contractor to confirm that quantities shipped to site match those listed above. Please report any discrepancy or damage to Layfield immediately.

- NOTES:
- All dimensions are measured in feet unless noted otherwise.
 - Reference Brentwood Industries standard drawings and notes for detailed information.
 - Reference current Brentwood Module installation instructions for proper installation practices. <https://stormwater.brentwoodindustries.com/resources/>
 - Engineer of record to confirm conformance to manufacturer's allowable proximity to other structures and slopes.
 - All inlet and pipe locations and designs by others.
 - The sub-grade and side backfill needs to be compacted to 95%, unless noted otherwise.
 - During and after installation, the Brentwood Module area should be clearly marked and roped off to prevent unauthorized construction and equipment trafficking over the modules.
 - Top of Ground water is to be maintained 610 mm (2 ft) below the module to prevent buoyancy, unless otherwise noted by engineer.
 - The quantities related to stone and geosynthetics are estimated values as the roll size, overlaps, waste, ect. may vary.
 - Materials must be stored in a manner to prevent prolonged exposure to UV light.
 - Materials shall not be handled in temperatures lower than 4.4 °C to prevent damage.
 - Tank System is not considered complete until completely backfilled, including top backfill, to finished grade. Installer must ensure the project site remains dry until top backfill is complete to avoid damage due to buoyancy.



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2
S-02

MODULE LAYOUT
SCALE: NTS

LAYFIELD
1901 Raymond Ave. S.W., Suite B
Renton, WA 98057
Ph: (425) 254-1075
seattle@layfieldgroup.com

SINGLE STACK MODULE SYSTEM

Total Storage Volume	5,141.66 ft ³
Module Storage Volume	5,141.66 ft ³
Stone Storage Volume	0.00 ft ³
System Footprint	2,905.00 ft ²
Estimated Geotextile Fabric	L/P6 820 yd ² L/P8 1,433 yd ²
Estimated Liner	6,446.67 ft ²
Estimated Stone Volume	178.57 yd ³
Excavation Required	484.17 yd ³
Minimum Excavation Depth	4.50 ft
Stone Type	¾" Clear Stone
Stone Void Space	40%
Model Type	25 Series ST-24

REV	Record of Changes	Date	By
△	Preliminary Drawing	19SEP2023	AK

Project Number: OP2023-7367	
Page Name: Module Layout	
Drawn by: AK	Checked by: JF
Scale: NTS	Date: 19SEP2023

THIS LAYOUT DRAWING WAS PREPARED TO SUPPORT THE ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO REVIEW THE INFORMATION AND ENSURE THAT THE LAYOUT AND DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND THAT THE STORMTANK SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH BRENTWOOD'S REQUIREMENTS. LAYFIELD DOES NOT REVIEW OR APPROVE PLANS, SIZING OR DESIGNS.

02 OF 07

NOTES

ANSI B Size Page (Horizontal)

Pages:

Cover Page	01 OF 07
Module Layout	02 OF 07
TYP. Construction Details	03 OF 07
TYP. Pipe Penetration Details	04 OF 07
TYP. Debris Row Details	05 OF 07
Supplementary Notes	06 OF 07
Supplementary Notes	07 OF 07

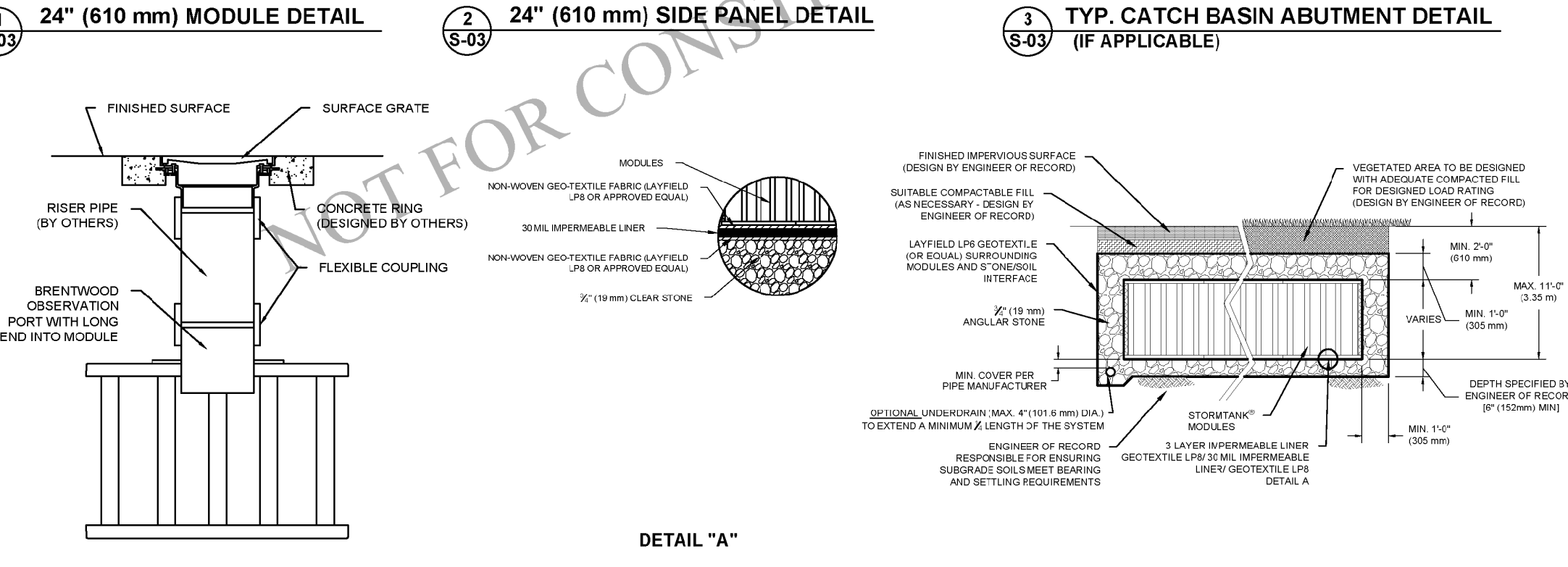
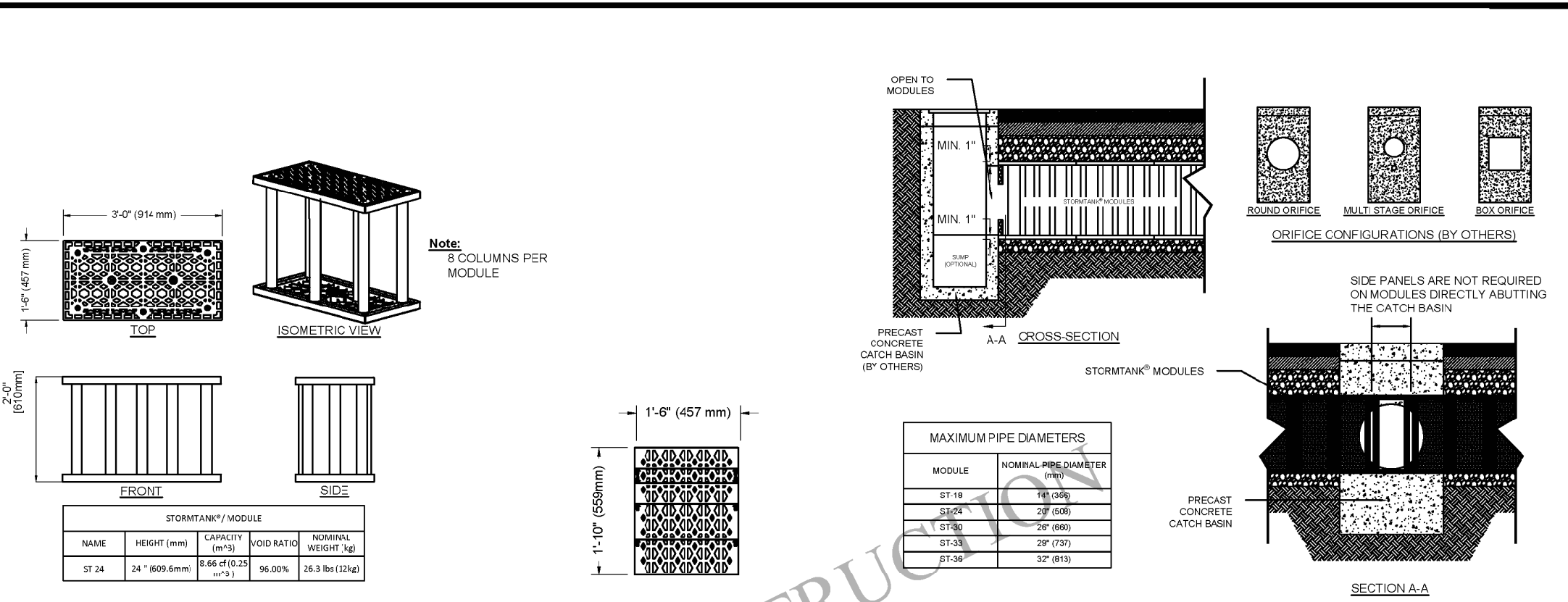


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JOB NO.	3327
DATE:	May 14, 2024
DESIGNED BY:	Rob Trivitt
DRAWN BY:	Rob Trivitt
CHECKED BY:	Rob Trivitt
APPROVED BY:	Rob Trivitt

AZURE GREEN
CONSULTANTS

+ feasibility + planning + engineering + surveying
409 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142



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Stone Type	¾" Clear Stone
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Model Type	25 Series ST-24

REV	Record of Changes	Date	By
△	Preliminary Drawing	19SEP2023	AK

Project Number: OP2023-7367	
Page Name: TYP. Construction Details	
Drawn by: AK	Checked by: JF
Scale: NTS	Date: 19SEP2023

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03 OF 07

ANSI B Size Page (Horizontal)

StormTank Details

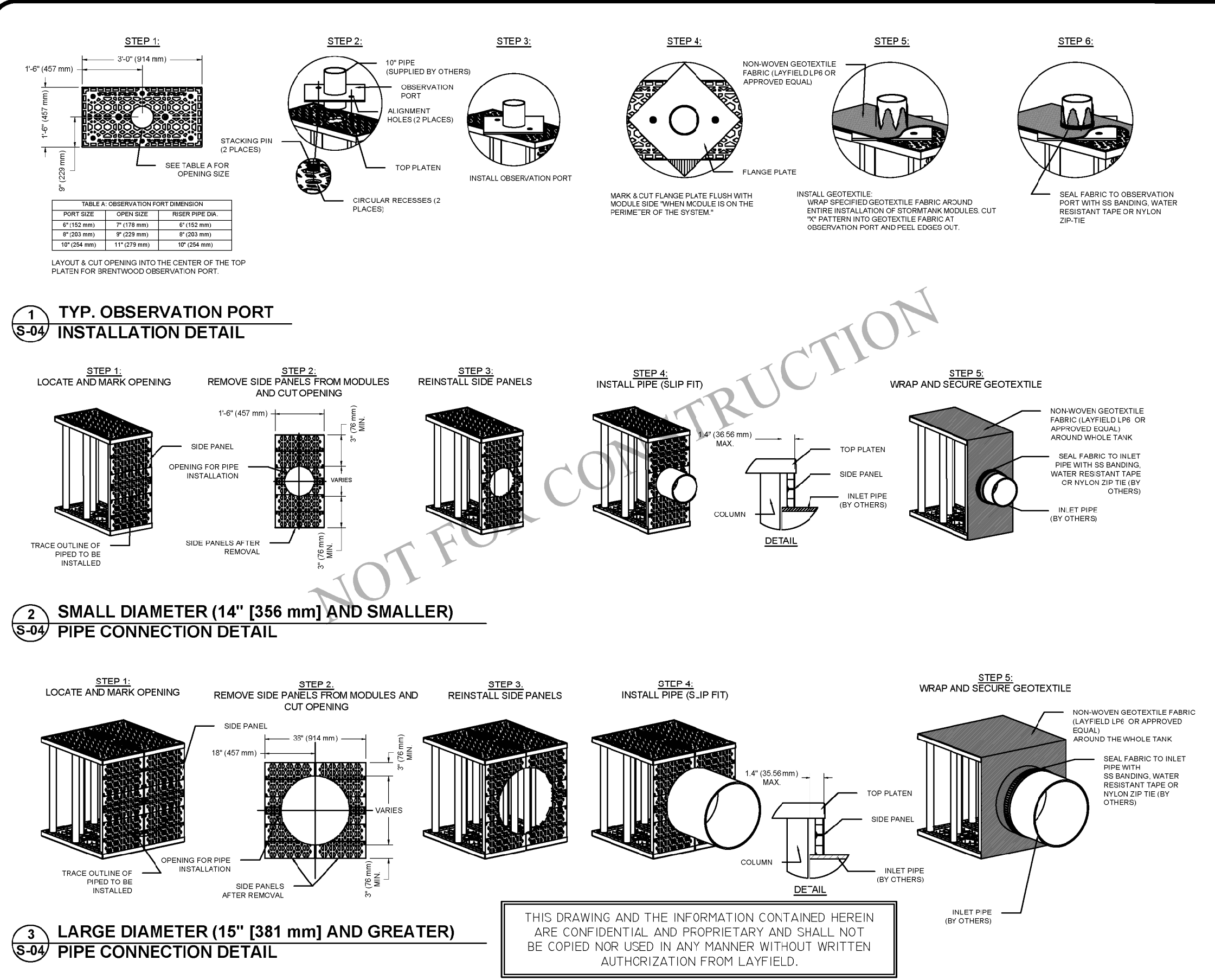
Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.896.0326
Fax jordan@timberlanepartners.com

DRAWING
SD-20
SHEET 34
OF 47

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



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Renton, WA 98057
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Model Type	25 Series ST-24

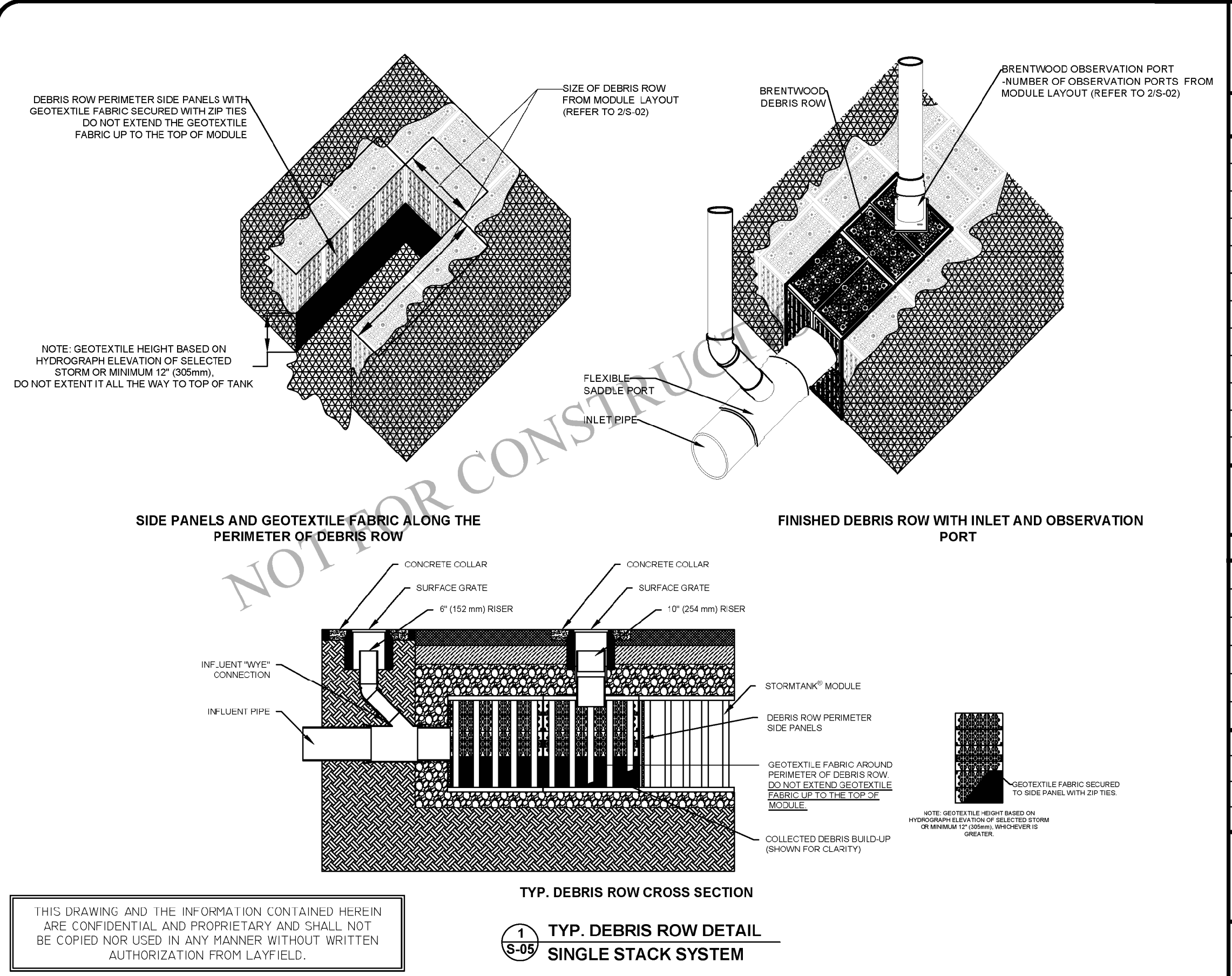
Bradley Heights Apartments
Puyallup, WA

REV	Record of Changes	Date	By
Δ	Preliminary Drawing	19SEP2023	AK

Project Number: OP2023-7367
Page Name: TYP. Pipe Penetration Details
Drawn by: AK Checked by: JF
Scale: NTS Date: 19SEP2023

THIS LAYOUT DRAWING WAS PREPARED TO SUPPORT THE ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO REVIEW THE INFORMATION AND ENSURE THAT THE LAYOUT AND DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND THAT THE STORMTANK SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH BRENTWOOD'S REQUIREMENTS. LAYFIELD DOES NOT REVIEW OR APPROVE PLANS, SIZING OR DESIGNS.

04 OF 07
ANSI B Size Page (Horizontal)



LAYFIELD 1901 Raymond Ave S.W. Suite B
Renton, WA 98057
Ph: (425)-254-1075
seattle@layfieldgroup.com

SINGLE STACK MODULE SYSTEM

Total Storage Volume	5,141.66 ft ³
Module Storage Volume	5,141.66 ft ³
Stone Storage Volume	0.00 ft ³
System Footprint	2,905.00 ft ²
Estimated Geotextile Fabric	1LP6 820 yd ² 1LP8 1,433 yd ²
Estimated Liner	6,446.67 ft ²
Estimated Stone Volume	178.57 yd ³
Excavation Required	484.17 yd ³
Minimum Excavation Depth	4.50 ft
Stone Type	3/4" Clear Stone
Stone Void Space	40%
Model Type	25 Series ST-24

Bradley Heights Apartments
Puyallup, WA

REV	Record of Changes	Date	By
Δ	Preliminary Drawing	19SEP2023	AK

Project Number: OP2023-7367
Page Name: TYP. Debris Row Details
Drawn by: AK Checked by: JF
Scale: NTS Date: 19SEP2023

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05 OF 07
ANSI B Size Page (Horizontal)

General Conditions

- Review installation procedures and coordinate the installation with other construction activities, such as grading, excavation, utilities, construction access, erosion control, etc.
- Engineered Contract Drawings supersede all provided documentation, as the information furnished in this document is based on a typical installation.
- Coordinate the installation with manufacturer's representative/distributor to be on-site to review start up procedures and installation instructions.
- Components shall be unloaded, handled and stored in an area protected from traffic and in a manner to prevent damage.
- Assembled modules may be walked on, but vehicular traffic is prohibited until backfilled per Manufacturer's requirements. Protect the installation against damage with highly visible construction tape, fencing, or other means until construction is complete.

Ensure all construction occurs in accordance with Federal, Provincial and Local Laws, Ordinances, Regulations and Safety Requirements.

- Extra care and caution should be taken when temperatures are at or below 40° F (4.4° C).

NOT FOR CONSTRUCTION

These drawings shall not be used for construction until they have been reviewed for all design aspects (structural, geotechnical, stormwater) and approved by the Engineer of Record for the Project.

It is the Buyer's responsibility to ensure that the design into which the Product will be used has been approved by the Engineer of Record (not Layfield) with a review that may include, but not be limited to, inlet and outlet configurations including inlets and pipe connections, storage volume, system footprint, Stormtank elevations including cover soil requirements, and proximity to structures and slopes.

Site design / engineering elements may include but not be limited to the following:

- Review elevations and if necessary adjust grading to ensure the chamber cover requirements are met.
- Evaluating site-specific information on soil conditions and/or bearing capacity.
- Assessing the bearing resistance (allowable bearing capacity) of the sub-grade soils and the depth of foundation stone with consideration for the range of expected soil moisture conditions.

1.0 StormTank® Assembly

StormTank® Modules:

StormTank® modules are delivered to the site as palletized components requiring simple assembly. No special equipment, tools or bonding agents are required, only a rubber mallet. A single worker can typically assemble a module in two minutes.

ASSEMBLY INSTRUCTIONS:

- Place a platen on a firm level surface and insert the eight (8) columns into the platen receiver cups. Firmly tap each column with a rubber mallet to ensure the column is seated.
- Place a second platen on a firm level surface. Flip the previously assembled components upside down onto the second platen, aligning the columns into the platen receiver cups.
- Once aligned, seat the top assembly by alternating taps, with a rubber mallet at each structural column until all columns are firmly seated.

1.1 Side Panel Installation

- If side panels are required, firmly tap the top platen upward to raise the top platen. Insert the side panel into the bottom platen leveling flat.
- Align the top of the side panel with the top platen and firmly seat the top platen utilizing a rubber mallet.

GENERAL NOTES:

- Remove packaging material and check for any damage. Report any damaged components to a StormTank® Distributor or Brentwood personnel.
- StormTank® components are backed by a one year warranty, when installed per manufacturer's recommendations.

2.0 Basin Excavation

- Stake out and excavate to elevations per approved plans. Excavation Requirements:
 - Sub-grade excavation must be a minimum of 6" (152 mm) below designed StormTank® Module invert.
 - The excavation should extend a minimum of 12" (305 mm) beyond the StormTank® dimensions in each length and width (an additional 24" (610 mm) in total length and total width) to allow for adequate placement of side backfill material.
- Remove objectionable material encountered within the excavation, including protruding material from the walls.
- Furnish, install, monitor and maintain excavation support (e.g., shoring, bracing, trench boxes, etc.) as required by Federal, Provincial and Local Laws, Ordinances, Regulations and Safety Requirements.

3.0 Sub-Grade Requirements

- Sub-grade shall be unfrozen, level (plus or minus 1%), and free of lumps or debris with no standing water, mud or muck. Do not use materials nor mix with materials that are frozen and/or coated with ice or frost.
- Unstable, unsuitable and/or compromised areas should be brought to the Engineer's attention and mitigating efforts determined prior to compacting the sub-grade.
- Sub-grade must be compacted to 95% Standard Proctor Density or as approved by the Engineer of Record. If code requirements restrict subgrade compaction, it is the requirement of the geotechnical Engineer to verify that the bearing capacity and settlement criteria for support of the system are met.

* The Engineer of Record shall reference Brentwood StormTank Module Installation document Appendix A for minimum soil bearing capacity required based on Load Rating and top cover depth. Minimum soil bearing capacity is required so that settlements are less than 1" throughout the entire sub-grade and do not exceed long-term 1/2" differential settlement between any two adjacent units within the system. Sub-grade must be designed to ensure soil bearing capacity is maintained throughout all soil saturation levels.

4.0 Leveling Bed Installation

- Install geotextile fabric and/or liner material, as specified.
 - Geotextile fabric shall be placed per manufacturer's recommendations.

Notes:

- If damage occurs to the geotextile fabric or impermeable liner, repair the material in accordance with the geotextile/liner Manufacturer's recommendations.

5.0 StormTank® Module Placement

- Install geotextile fabric and/or liner material, as specified.
 - Geotextile fabric shall be placed per manufacturer's recommendations.
 - Additional material to be utilized for wrapping above the system must be protected from damage until use.
- Mark the footprint of the modules for placement.
 - Ensure module perimeter outline is square or similar prior to Module placement.
 - Care should be taken to note any connections, ports or other irregular units to be placed.
- Install the individual modules by hand, as detailed below.
 - The modules should be installed as shown in the StormTank® submittal drawings with the short side of perimeter modules facing outward, except as otherwise required.
 - Make sure the top/bottom platens are in alignment in all directions to within a maximum 1/4" (6.4 mm).
 - For double stack configurations:
 - Install the bottom module first. **DO NOT INTERMIX VARIOUS MODULE HEIGHTS ACROSS LAYERS.** Backfilling prior to proceeding to second layer is optional.
 - Insert stacking pins (2 per module) into the top platen of the bottom module.
 - Place the upper module directly on top of the bottom module in the same direction, making sure to engage the pins.
- Install the modules to completion, taking care to avoid damage to the geotextile and/or liner material.
- Locate any ports or other penetration of the StormTank®.
 - Install ports/penetrations in accordance with the approved submittals, contract documents and manufacturer's recommendations.
 - Upon completion of module installation, wrap the modules in geotextile fabric and/or liner.
 - Geotextile fabric shall be wrapped and secured per manufacturer's recommendations.
 - Ensure all ports/penetrations per Manufacturer's requirements.

LAYFIELD 1901 Raymond Ave S.W. Suite B
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seattle@layfieldgroup.com

SINGLE STACK MODULE SYSTEM

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Model Type	25 Series ST-24

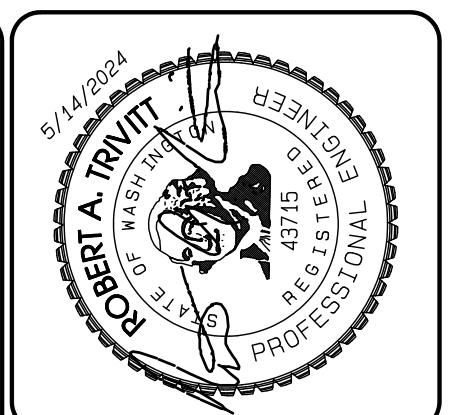
Bradley Heights Apartments
Puyallup, WA

REV	Record of Changes	Date	By
Δ	Preliminary Drawing	19SEP2023	AK

Project Number: OP2023-7367
Page Name: Supplementary Notes
Drawn by: AK Checked by: JF
Scale: NTS Date: 19SEP2023

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06 OF 07
ANSI B Size Page (Horizontal)



DATE: _____
DESIGNER: _____
DRAWN BY: _____
CHECKED BY: _____
APPROVED BY: _____

JOB NO: 3307
DATE: May 14, 2024
DESIGNED BY: RND, TTV, JEL
DRAWN BY: RND, TTV, JEL
CHECKED BY: RND, TTV, JEL
APPROVED BY: RND, TTV, JEL

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AZURE GREEN CONSULTANTS

*feasibility *planning *engineering *surveying

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StormTank Details

Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.898.0326
Fax jordan@timberlanepartners.com

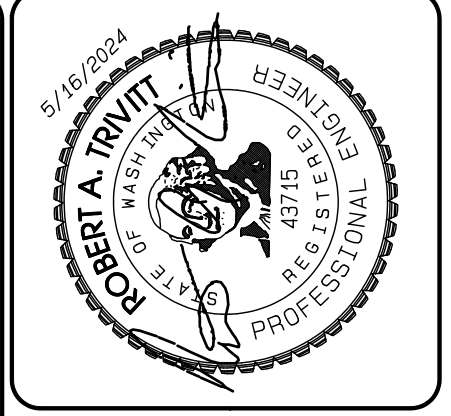
DRAWING

SD-21

SHEET 35
OF 47

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



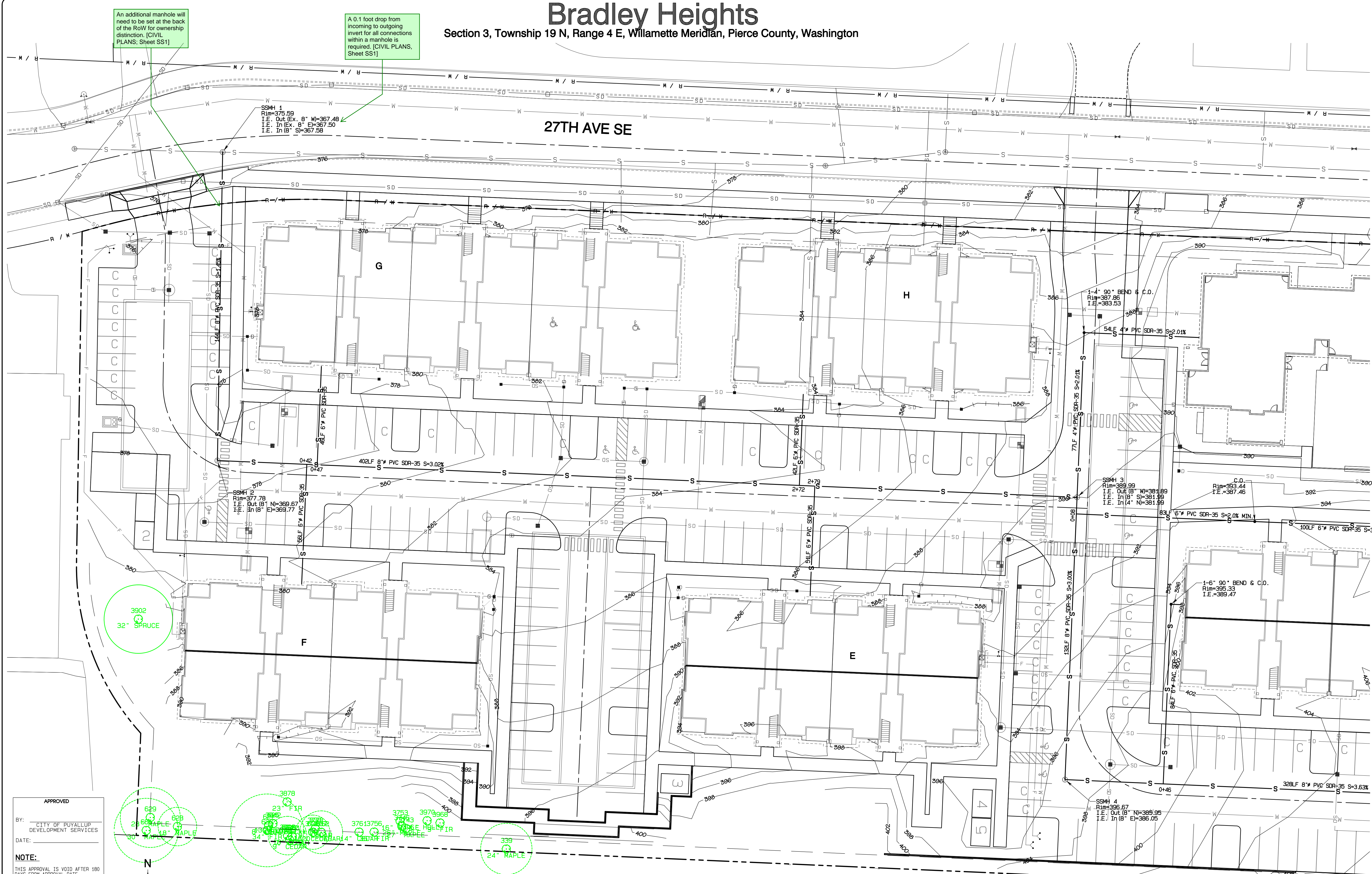
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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: ROB TRIVITT
 DRAWN BY: ROB TRIVITT
 CHECKED BY: JEFF GREEN
 APPROVED BY: PAUL GREER

AZURE GREEN CONSULTANTS
 *feasibility *planning *engineering *surveying
 419 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144 fax: 253.770.3142

Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 206.886.0326
 Fax jordan@timberlanepartners.com

DRAWING
SS-1
 SHEET 37
 OF 47



An additional manhole will need to be set at the back of the RoW for ownership distinction. [CIVIL PLANS; Sheet SS1]

A 0.1 foot drop from incoming to outgoing invert for all connections within a manhole is required. [CIVIL PLANS; Sheet SS1]

SSMH 1
 Rim=375.59
 I.E. Out (6" N)=367.48
 I.E. In (6" S)=367.50
 I.E. In (8" S)=367.58

1-4 90° BEND & C.O.
 Rim=387.86
 I.E.=383.53

SSMH 3
 Rim=389.99
 I.E. Out (8" N)=381.89
 I.E. In (6" S)=381.89
 I.E. In (4" N)=381.89

C.O.
 Rim=393.44
 I.E.=387.46

1-6 90° BEND & C.O.
 Rim=395.33
 I.E.=389.47

SSMH 4
 Rim=396.67
 I.E. Out (8" N)=388.95
 I.E. In (8" E)=386.05

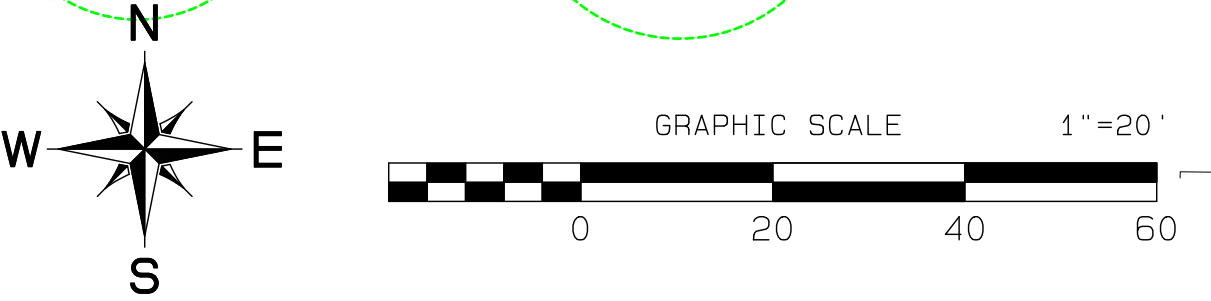
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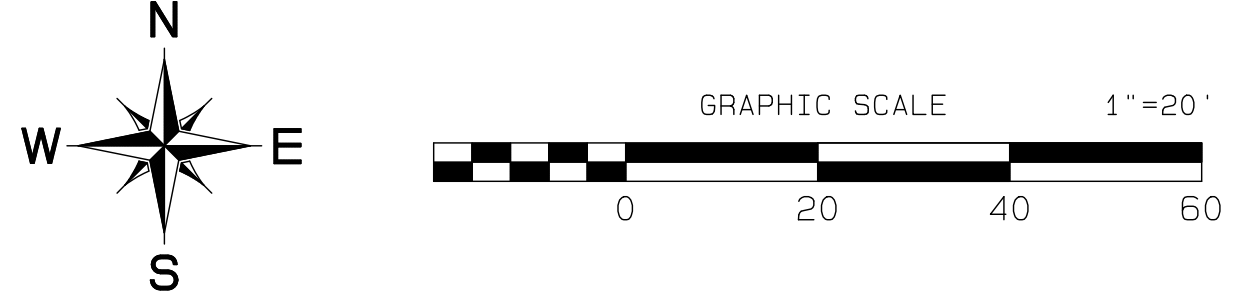
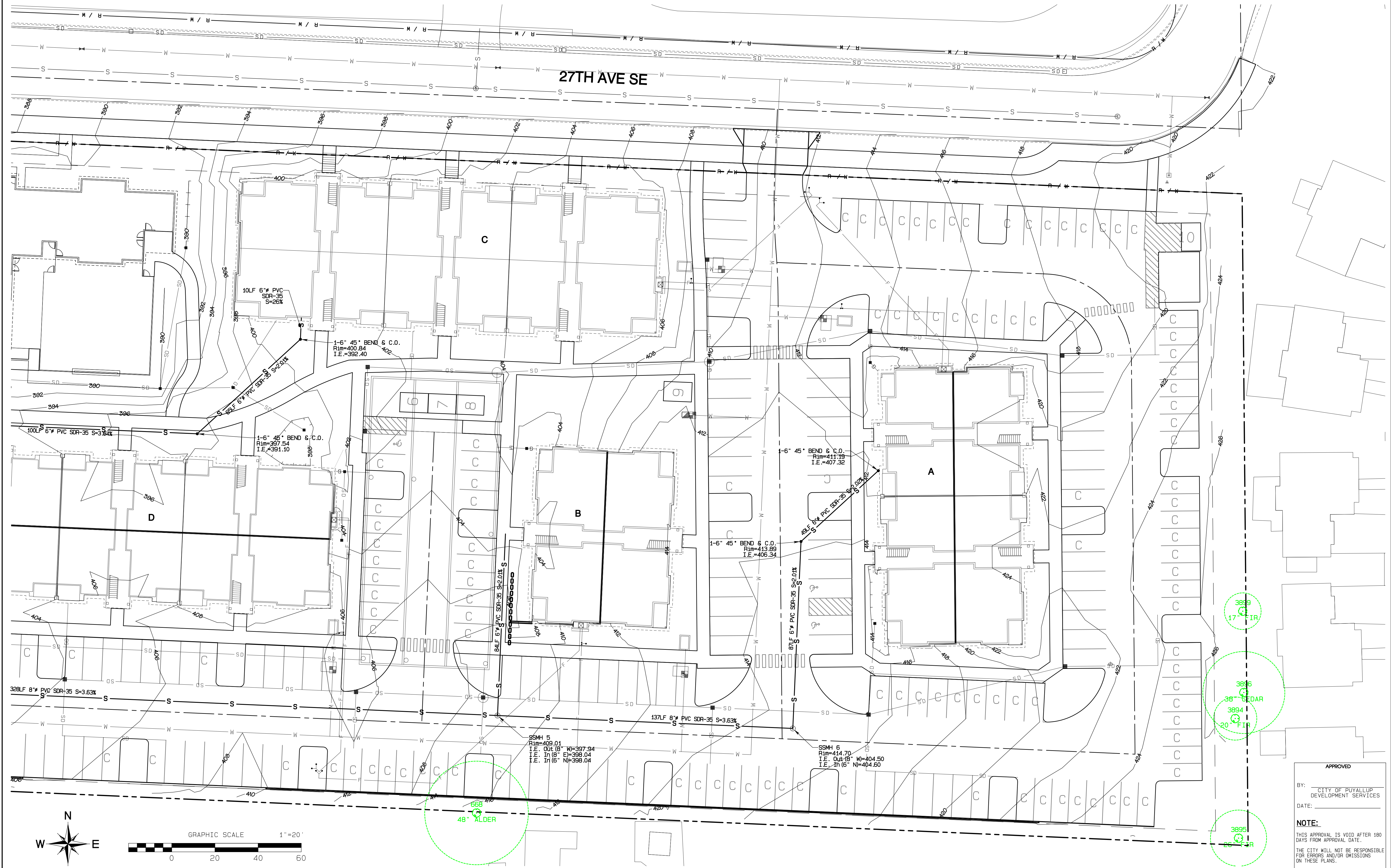
APPROVED
 BY: CITY OF PUYALLUP DEVELOPMENT SERVICES
 DATE: _____
 NOTE:
 THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.



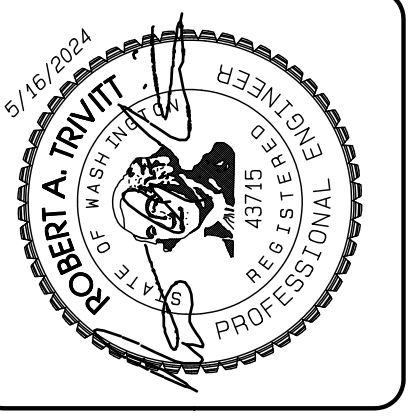
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Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



Project Desc: Bradley Heights; Date: E:\sub\3227 - Bradley Heights\Time\Drawings\2024-0516 ENG.dwg; Plot Date/Time: 6/15/2024 11:30:42AM



NO.	REVISION	DATE
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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: RDT, TRV
 DRAWN BY: RDT, TRV
 CHECKED BY: RDT, TRV
 APPROVED BY: RDT, TRV

AZURE GREEN
 CONSULTANTS
 *feasibility *planning *engineering *surveying
 419 East Pioneer, Suite A - Puyallup, WA 98372 phone: 253.770.3144 fax: 253.770.3142

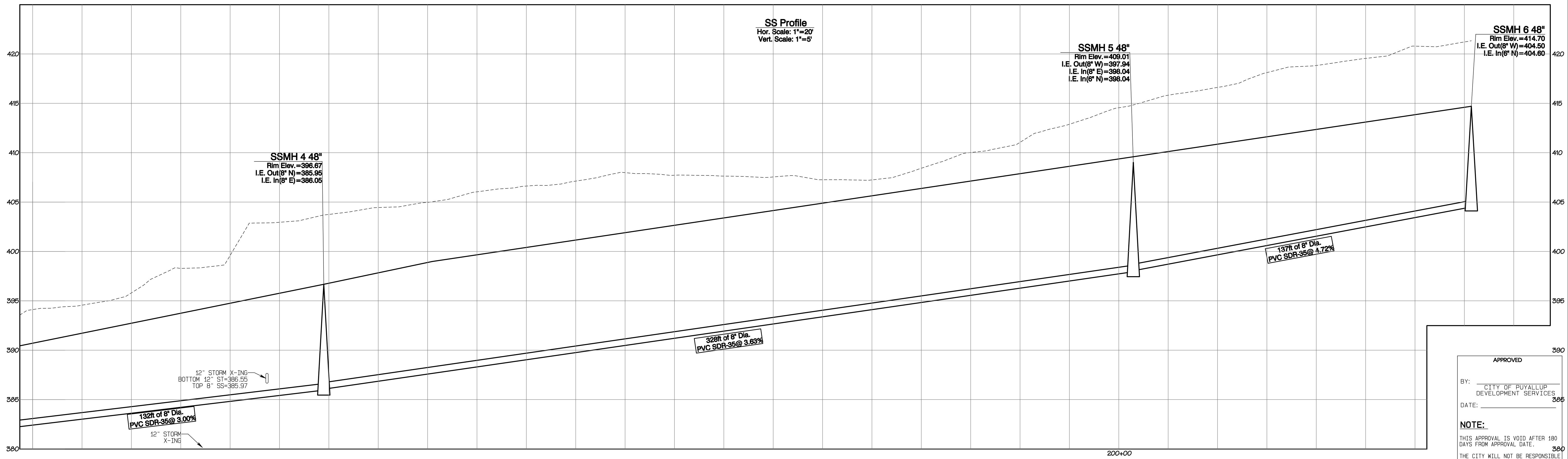
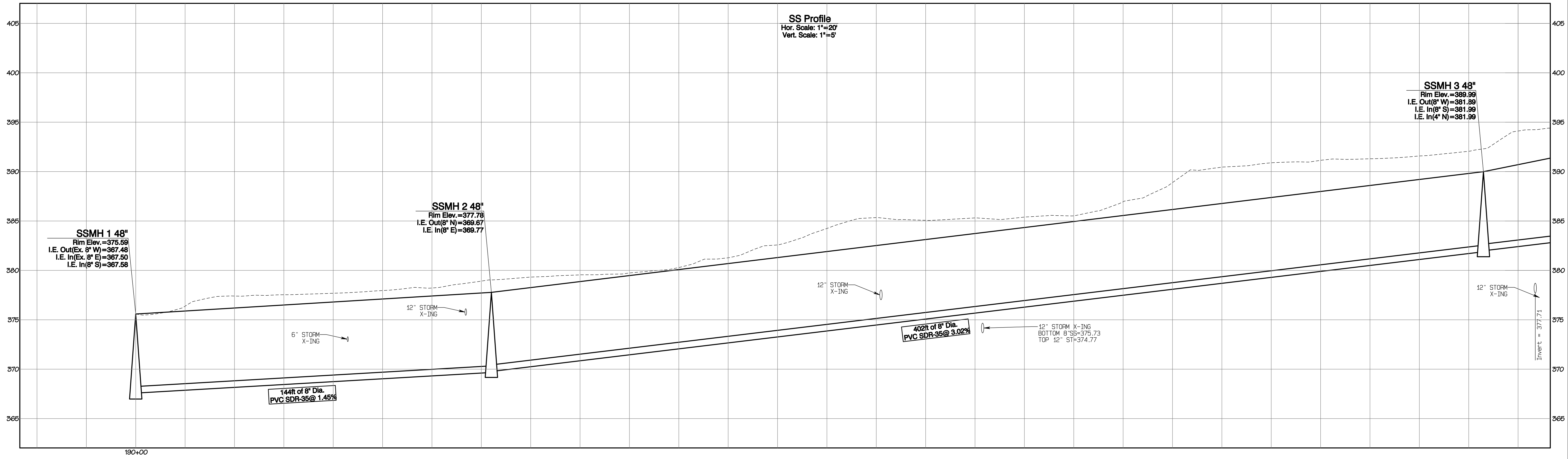
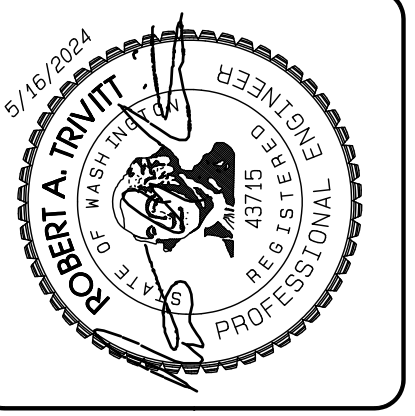
SS Plan
 Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 509.896.0326
 Fax jordan@timberlanepartners.com

DRAWING
SS-2
 SHEET 38
 OF 47

APPROVED
 BY: CITY OF PUYALLUP
 DEVELOPMENT SERVICES
 DATE: _____
NOTE:
 THIS APPROVAL IS VOID AFTER 180
 DAYS FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE
 FOR ERRORS AND/OR OMISSIONS
 ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE
 CHANGES TO THESE PLANS AS
 DETERMINED BY THE ENGINEERING
 SERVICES MANAGER.

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



APPROVED

BY: _____
CITY OF PUYALLUP
DEVELOPMENT SERVICES

DATE: _____

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NO.	DATE	REVISION
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JOB NO. 3527
DATE: May 14, 2024
DESIGNED BY: RDT, TRIVITT
DRAWN BY: RDT, TRIVITT
CHECKED BY: RDT, TRIVITT
APPROVED BY: RDT, TRIVITT

AZURE GREEN
CONSULTANTS

*feasibility *planning *engineering *surveying

409 East Pioneer, Suite A - Puyallup, WA 98372 phone: 253.770.3144 fax: 253.770.3142

SS Profiles

Bradley Heights

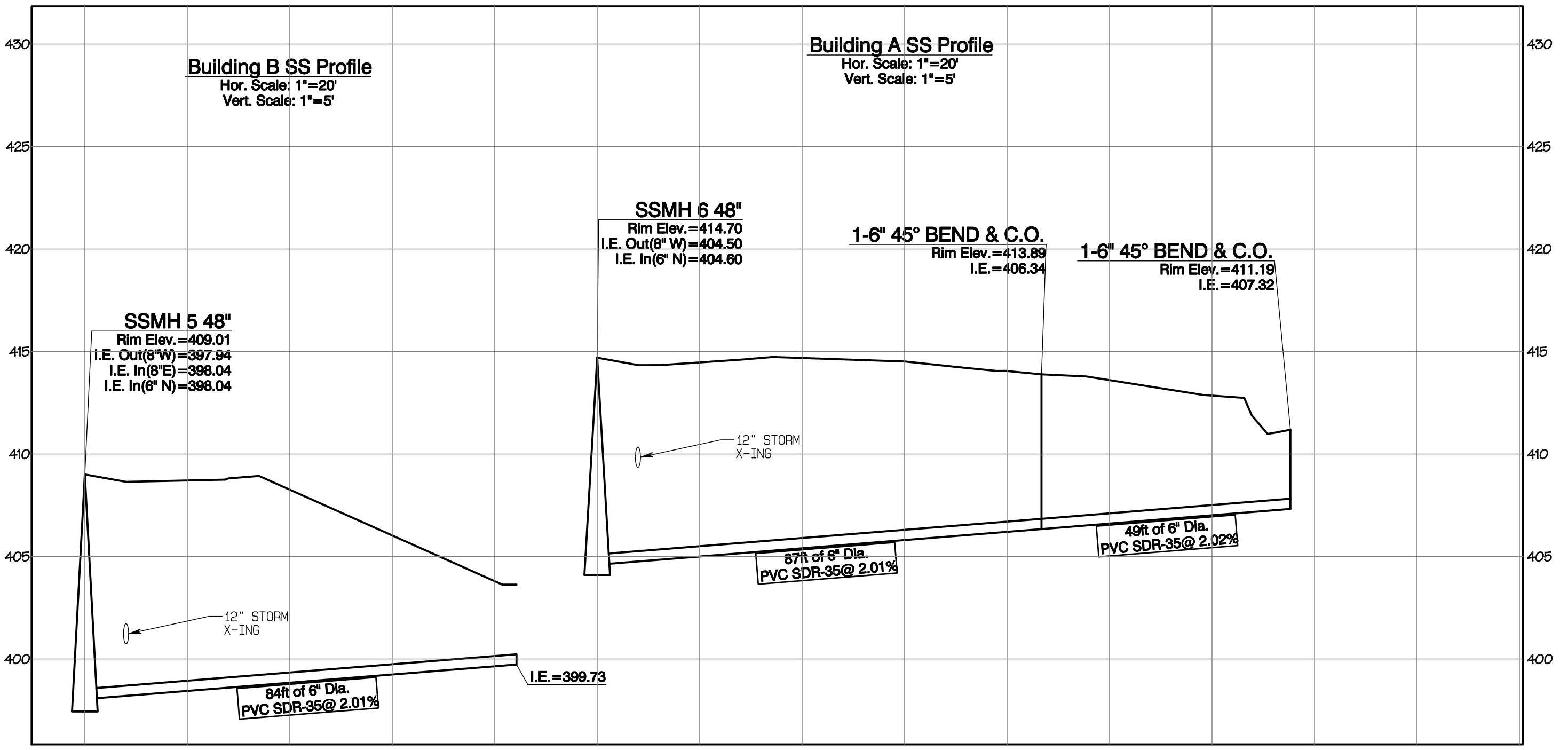
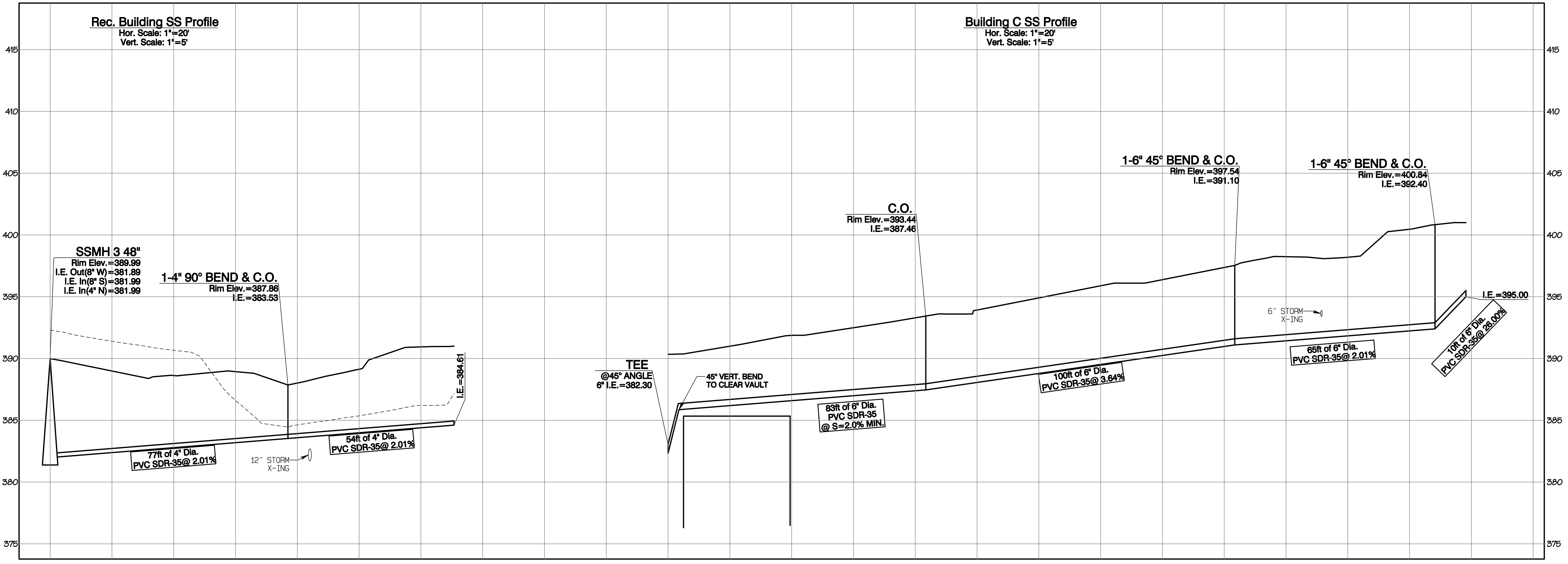
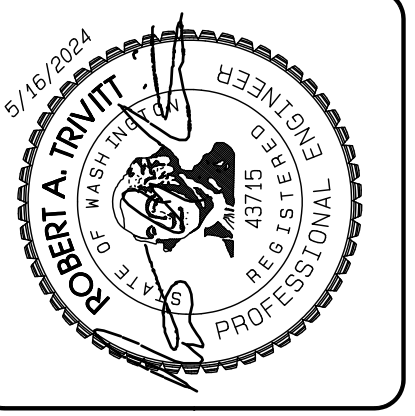
Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.899.0326
Fax jordan@timberlanepartners.com

DRAWING
SS-3
SHEET 39
OF 47

Project Desc.: Bradley Heights; Path: F:\urban\3527 - Bradley Heights\Time\In\Bradley Heights 2024 0516 ENG.dwg PLOT Date/Time: 5/15/2024/11:26:01AM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



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JOB NO. 3227
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV

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 CONSULTANTS

*feasibility *planning *engineering *surveying

409 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

APPROVED

BY: _____
 CITY OF PUYALLUP
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DATE: _____

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SS Profiles

Bradley Heights

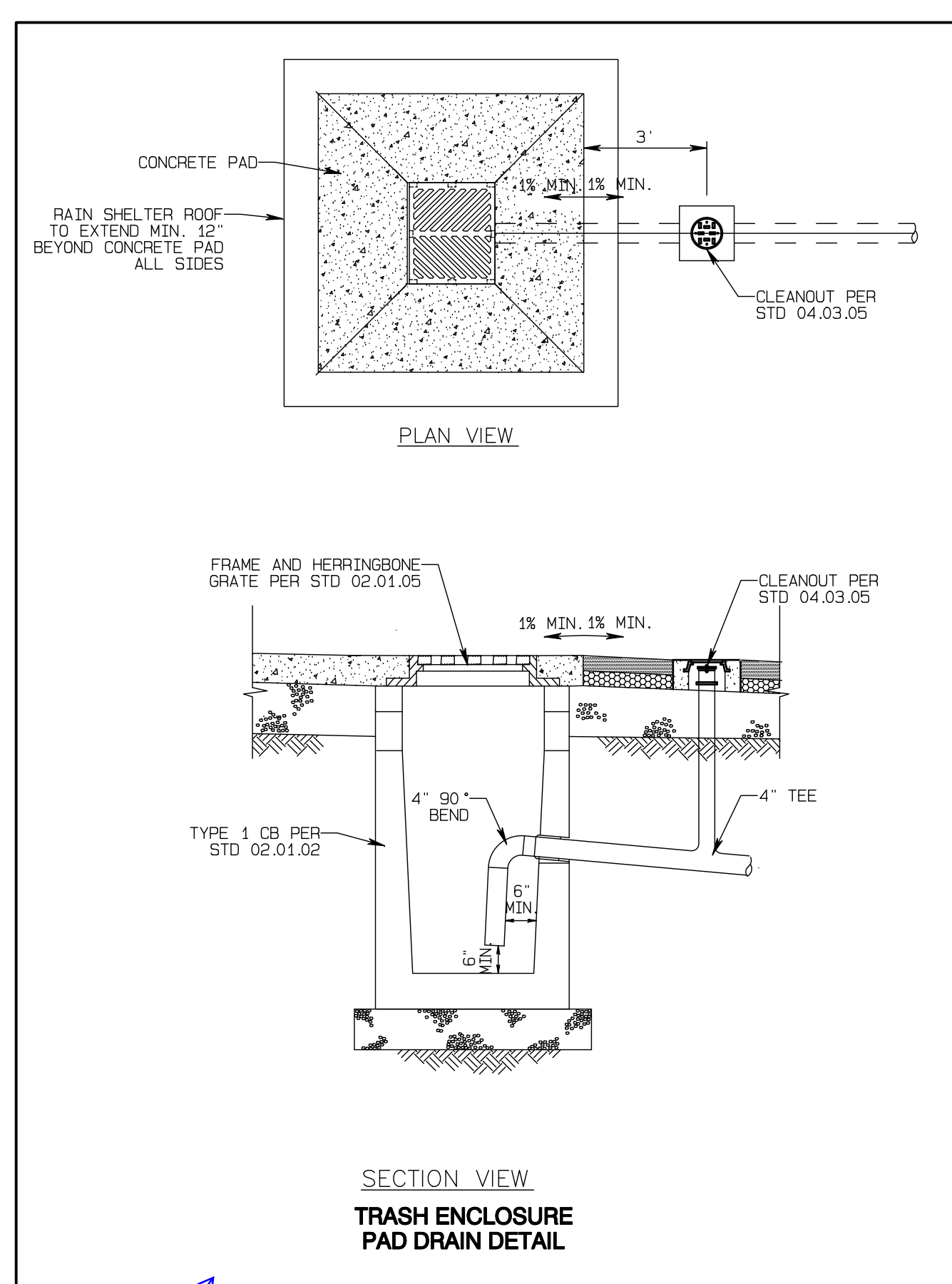
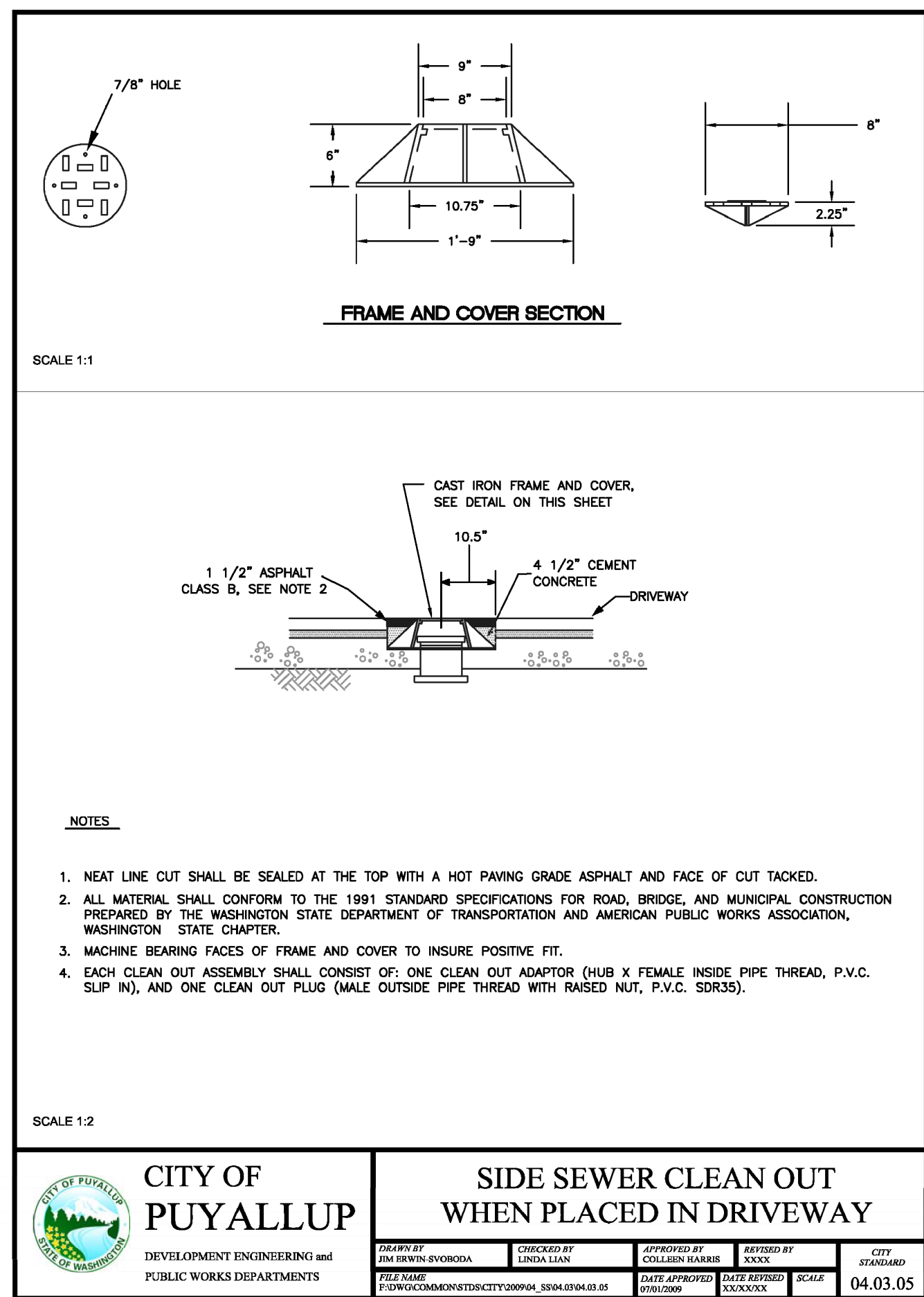
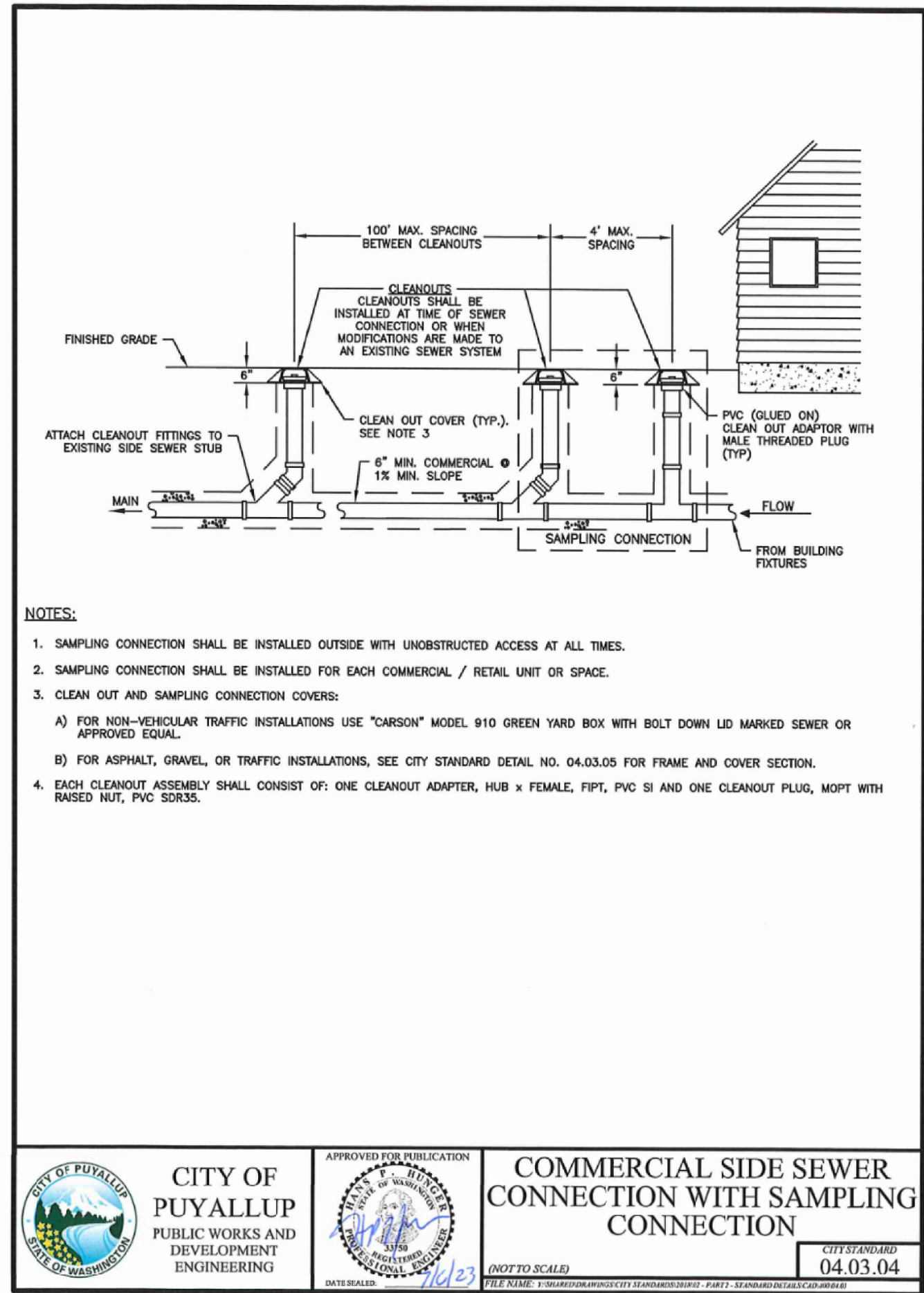
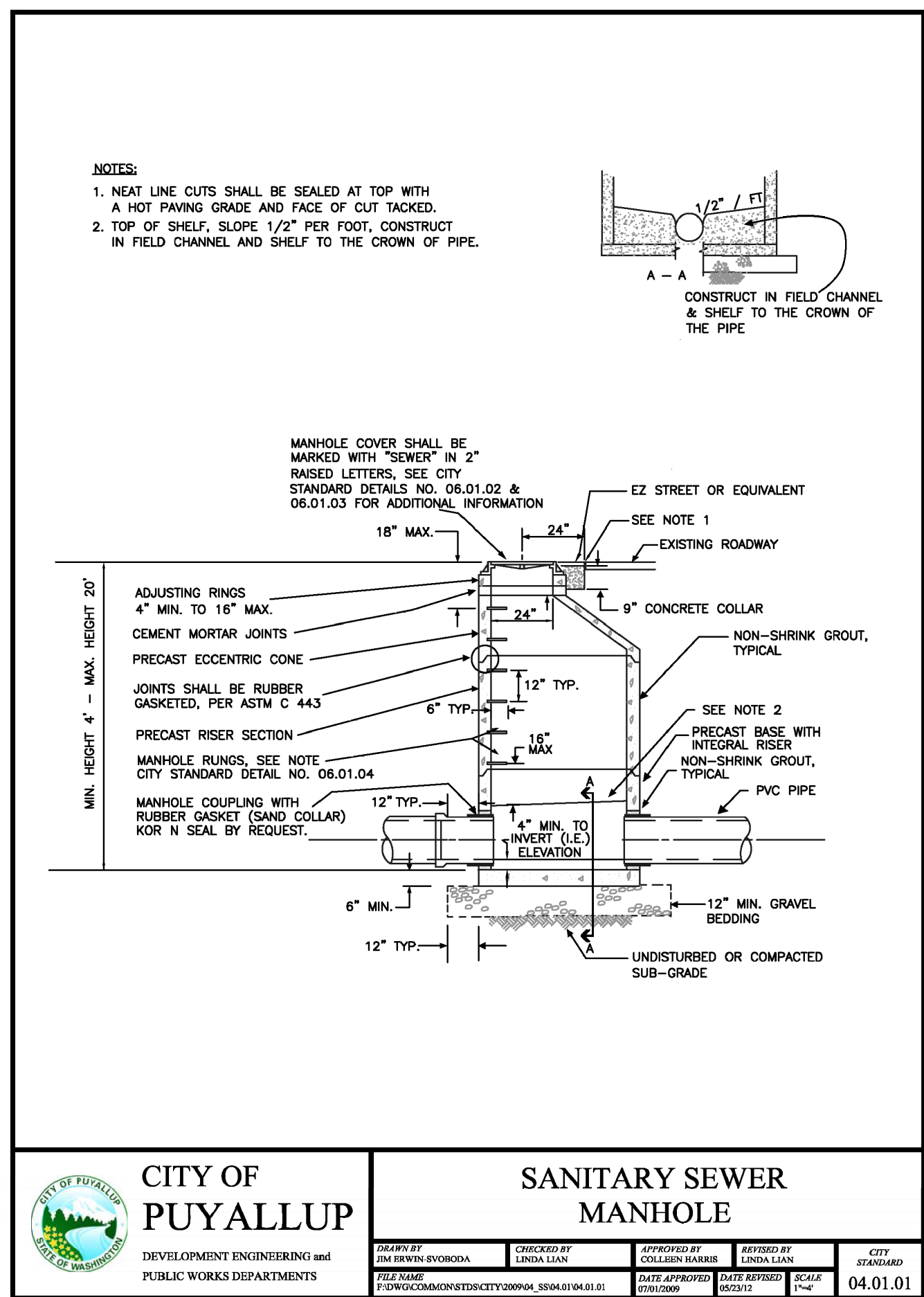
Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 509.899.0326
 Fax jordan@timberlanepartners.com

DRAWING
SS-4
 SHEET 40
 OF 47

Project Desc.: Bradley Heights - Bradley Heights, Township 19 North, Range 4 East, Willamette Meridian, Pierce County, Washington
 Date: 5/14/2024
 File: 2024-0516-ENG-010
 Plot Date/Time: 5/15/2024/11:28:21AM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



- SANITARY SEWER NOTES:**
- All work in City right-of-way requires a permit from the City of Puyallup. Prior to any work commencing, the general contractor shall arrange for a preconstruction meeting at the Development Services Center to be attended by all contractors that will perform work shown on the engineering plans, representatives from all applicable Utility Companies, the project owner and appropriate City staff. Contact Engineering Services to schedule the meeting (253) 841-9568. The contractor is responsible to have their own approved set of plans at the meeting.
 - After completion of all items shown on these plans and before acceptance of the project, the contractor shall obtain a "punch list" prepared by the City's inspector detailing remaining items of work to be completed. All items of work shown on these plans shall be completed to the satisfaction of the City prior to acceptance of the sewer system and provision of sanitary sewer service.
 - All materials and workmanship shall conform to the Standard Specifications for Road, Bridge, and Municipal Construction (hereinafter referred to as the "Standard Specifications"), Washington State Department of Transportation and American Public Works Association, Washington State Chapter, latest edition, unless superseded or amended by the City of Puyallup City Standards for Public Works Engineering and Construction (hereinafter referred to as the "City Standards").
 - A copy of these approved plans and applicable city developer specifications and details shall be on site during construction.
 - Any revisions made to these plans must be reviewed and approved by the developer's engineer and the Engineering Services Staff prior to any implementation in the field. The City shall not be responsible for any errors and/or omissions on these plans.
 - The contractor shall have all utilities verified on the ground prior to any construction. Call (811) at least two working days in advance. The owner and his/her engineer shall be contacted immediately if a conflict exists.
 - Any structure and/or obstruction which require removal or relocation relating to this project shall be done so at the developer's expense.
 - Minimum grade on all 4 inch residential side sewers shall be 2 percent and 6 inch commercial side sewers shall be 1 percent; maximum shall be 8 percent. All side sewers shall be 6 inches within City right-of-way.
 - Side sewers shall be installed in accordance with City Standard Nos. 04.03.01, 04.03.02, 04.03.03 and 04.03.04. Side sewer installation work shall be done in accordance with the Washington Industrial Safety and Health Act (WISHA).
 - All sewer pipe shall be PVC, Polypropylene, or Ductile Iron. PVC sewer pipe shall conform to ASTM D-3034, SDR35 for pipe sizes 15-inch and smaller and ASTM F679 for pipe sizes 18- to 27-inch ductile iron pipe shall be Class 51 or greater, lined with Protecto 401M epoxy lining or equivalent, unless otherwise noted. 12-inch through 30-inch Polypropylene Pipe (PP) shall be dual walled, have a smooth interior and exterior corrugations and meet WSDOT 9-05.24(2). It shall meet or exceed ASTM F2764. 36-inch through 60-inch PP pipe shall be triple walled and meet WSDOT 9-05.24(2). It shall meet or exceed ASTM F2764. PP shall have a minimum pipe stiffness of 46 pii when tested in accordance with ASTM D2412. Testing shall be per ASTM F1417. Trenching, bedding, and backfill shall be in accordance with City Standard No. 06.01.01. Minimum cover on PVC and PP pipe shall be 3.0 feet. Minimum cover on ductile iron pipe shall be 1.0 foot.
 - Sanitary sewer manhole frames and covers shall conform to City Standard No. 06.01.02.
 - Sanitary sewer manholes shall conform to City Standard Nos. 04.01.01, 04.01.02, 04.01.03 and 04.01.04. All manholes shall be channeled for future lines as specified on these plans. Manhole steps and ladder shall conform to Standard No. 06.01.03.
 - Sanitary sewer pipe and side sewers shall be 10 feet away from building foundations and/or roof lines with the exception of side sewers that provide service to a single-family residence. At the discretion of the review engineer, a Licensed Professional Engineer will be required to stamp the design to account for depth or proximity to foundation, steep slopes, or other factors.
 - No side sewers shall be connected to any house or building until all manholes are adjusted to the finished grade of the completed asphalt roadway and the asphalt patch and seal around the ring are accepted.
 - For commercial developments in which sources of grease and/or oils may be introduced to the City sanitary sewer system, a City approved grease interceptor shall be installed downstream from the source.
 - Once sewer and all other utility construction is completed, all sanitary sewer mains and side sewers shall be tested per Section 406 of the City Standards.

Add standard 06.01.02. [CIVIL PLANS, sheet SS5]

Trash enclosure pad drain sewer connections not shown on plans. Covered dumpster areas or raised pads shall be used to ensure that no SW can enter dumpster sumps. [CIVIL PLANS, Sheet SS5]

APPROVED

BY: _____ CITY OF PUYALLUP
DEVELOPMENT SERVICES

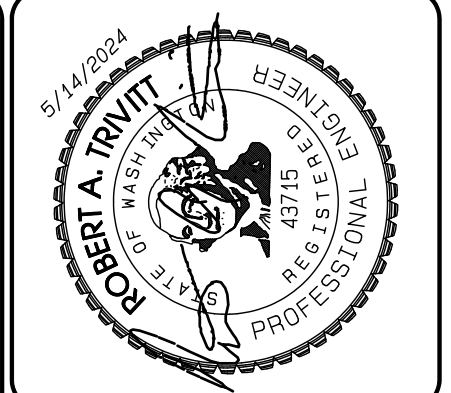
DATE: _____

NOTE:

THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.

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FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.



NO.	REVISION	DATE
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JOB NO. 23027
DATE: May 14, 2024
DESIGNED BY: Rnd. Trivitt
DRAWN BY: Rnd. Trivitt
CHECKED BY: Rnd. Trivitt
APPROVED BY: Rnd. Trivitt

<p>CITY OF PUYALLUP DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS</p>	<p>SIDE SEWER CLEAN OUT WHEN PLACED IN DRIVEWAY</p>				<p>CITY STANDARD 04.03.04</p>
	<p>DESIGNED BY: RND. TRIVITT DRAWN BY: RND. TRIVITT CHECKED BY: RND. TRIVITT APPROVED BY: RND. TRIVITT</p>	<p>DATE APPROVED: 04.03.05</p>	<p>DATE APPROVED: 04.03.05</p>	<p>SCALE: 1:1</p>	

<p>CITY OF PUYALLUP PUBLIC WORKS AND DEVELOPMENT ENGINEERING</p>	<p>COMMERCIAL SIDE SEWER CONNECTION WITH SAMPLING CONNECTION</p>				<p>CITY STANDARD 04.03.04</p>
	<p>DESIGNED BY: RND. TRIVITT DRAWN BY: RND. TRIVITT CHECKED BY: RND. TRIVITT APPROVED BY: RND. TRIVITT</p>	<p>DATE APPROVED: 04.03.05</p>	<p>DATE APPROVED: 04.03.05</p>	<p>SCALE: 1:1</p>	

<p>CITY OF PUYALLUP DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS</p>	<p>SANITARY SEWER MANHOLE</p>				<p>CITY STANDARD 04.01.01</p>
	<p>DESIGNED BY: RND. TRIVITT DRAWN BY: RND. TRIVITT CHECKED BY: RND. TRIVITT APPROVED BY: RND. TRIVITT</p>	<p>DATE APPROVED: 04.03.05</p>	<p>DATE APPROVED: 04.03.05</p>	<p>SCALE: 1:1</p>	

AZURE GREEN CONSULTANTS

+ feasibility + planning + engineering + surveying

409 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144 fax: 253.770.3142

SS Details

Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.898.0326
Fax jordan@timberlanepartners.com

DRAWING

SS-5

SHEET 41
OF 47

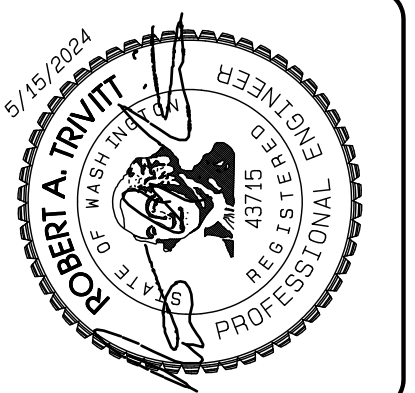
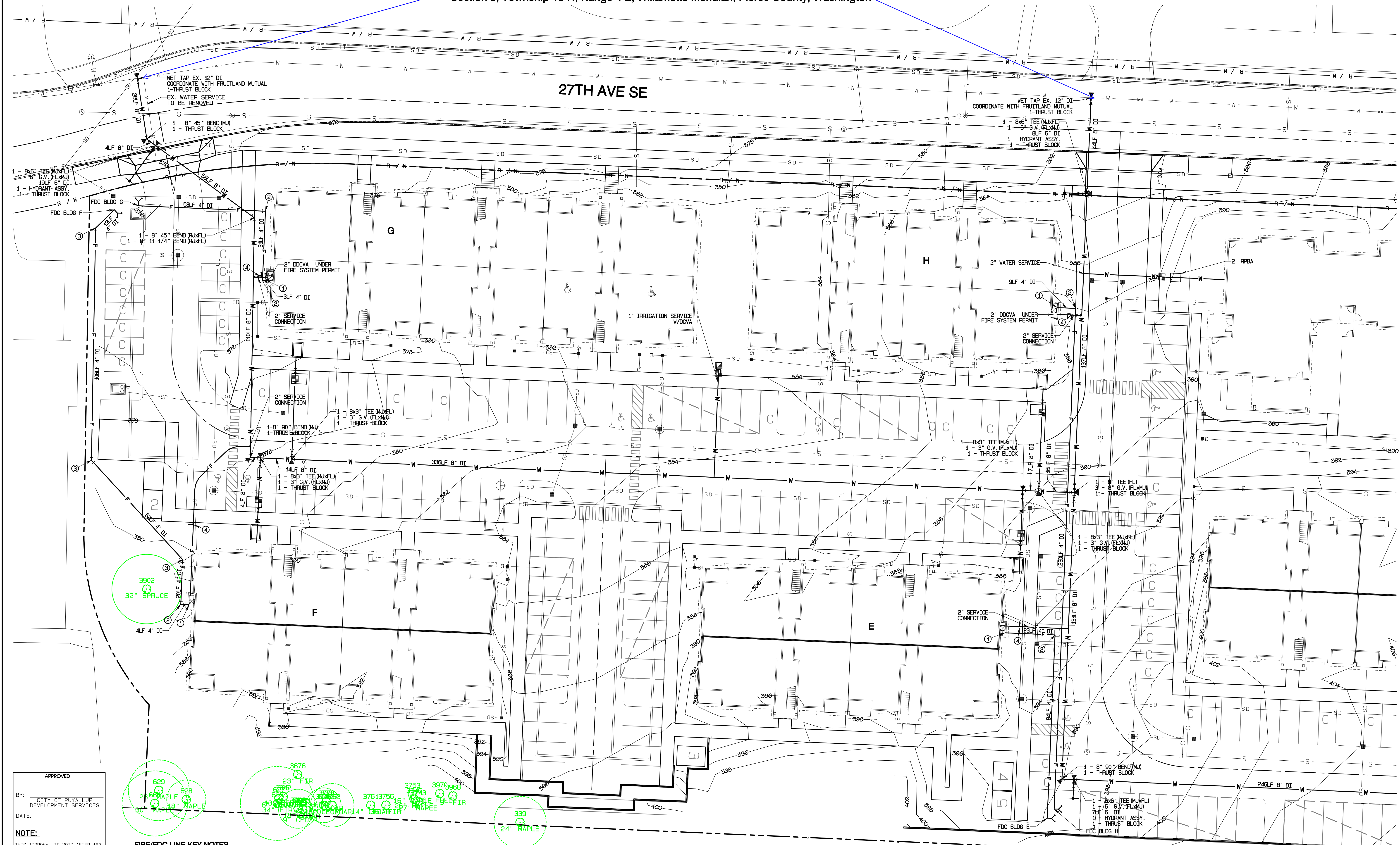
Project Date: Bradley Heights Date: E:\urban\3227 - Bradley Heights\Time\Bradley Heights 2024_0514 ENG.dwg PLOT Date: 7/1/2024 7:30:19PM

Show extents of pavement repair (TYP). Refer to City Standard Detail 01.01.20, [CIVIL PLANS, Sheet W1]

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington

27TH AVE SE



NO.	DATE	REVISION
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JOB NO. 2327
 DATE: May 14, 2024
 DESIGNED BY: Bob Trivitt
 DRAWN BY: Bob Trivitt
 CHECKED BY: Bob Trivitt
 APPROVED BY: Bob Trivitt

AZURE GREEN CONSULTANTS
 feasibility • planning • engineering • surveying
 419 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

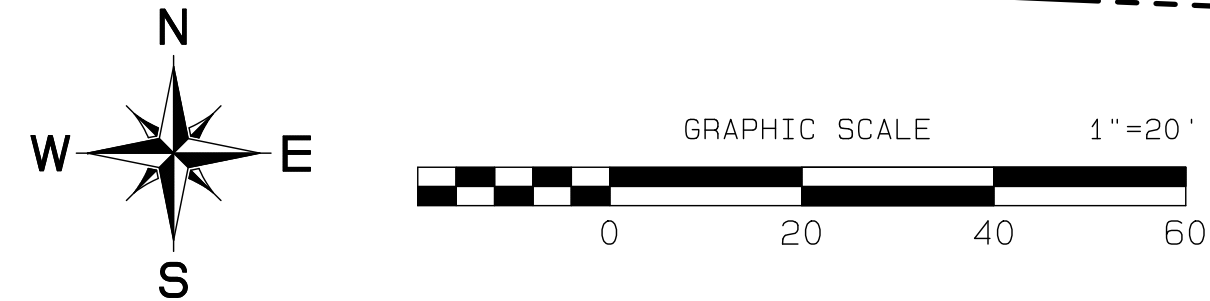
Water Plan
 Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 206.886.0326
 Fax jordan@timberlanepartners.com

DRAWING
W-1
 SHEET 49
 OF 47

Project Desc.: Bradley Heights; Date: E:\sub\3227 - Bradley Heights\Timberlane\Drawings\2024\0515 ENG.dwg; Plot Date/Time: 6/12/2024 4:36:03PM

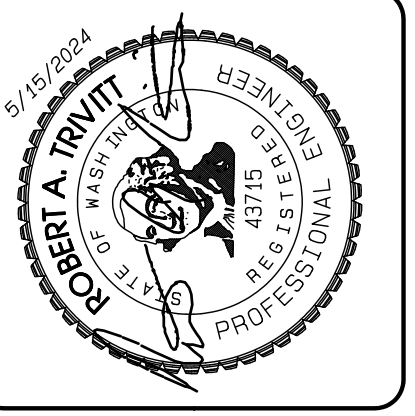
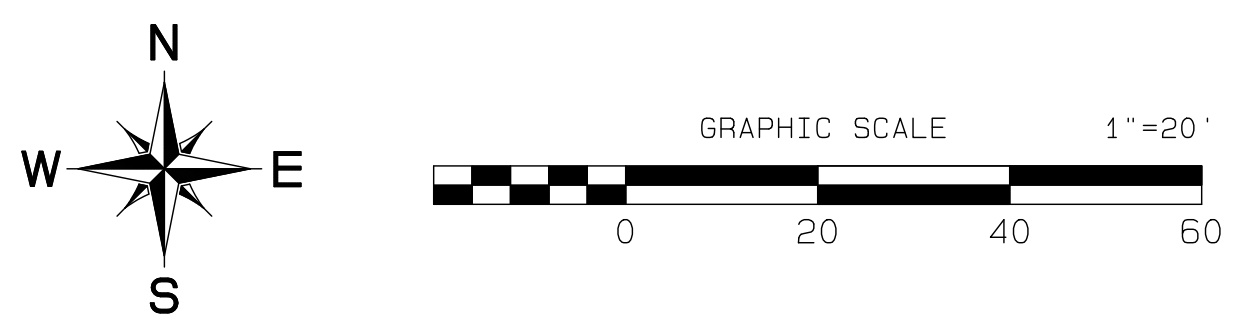
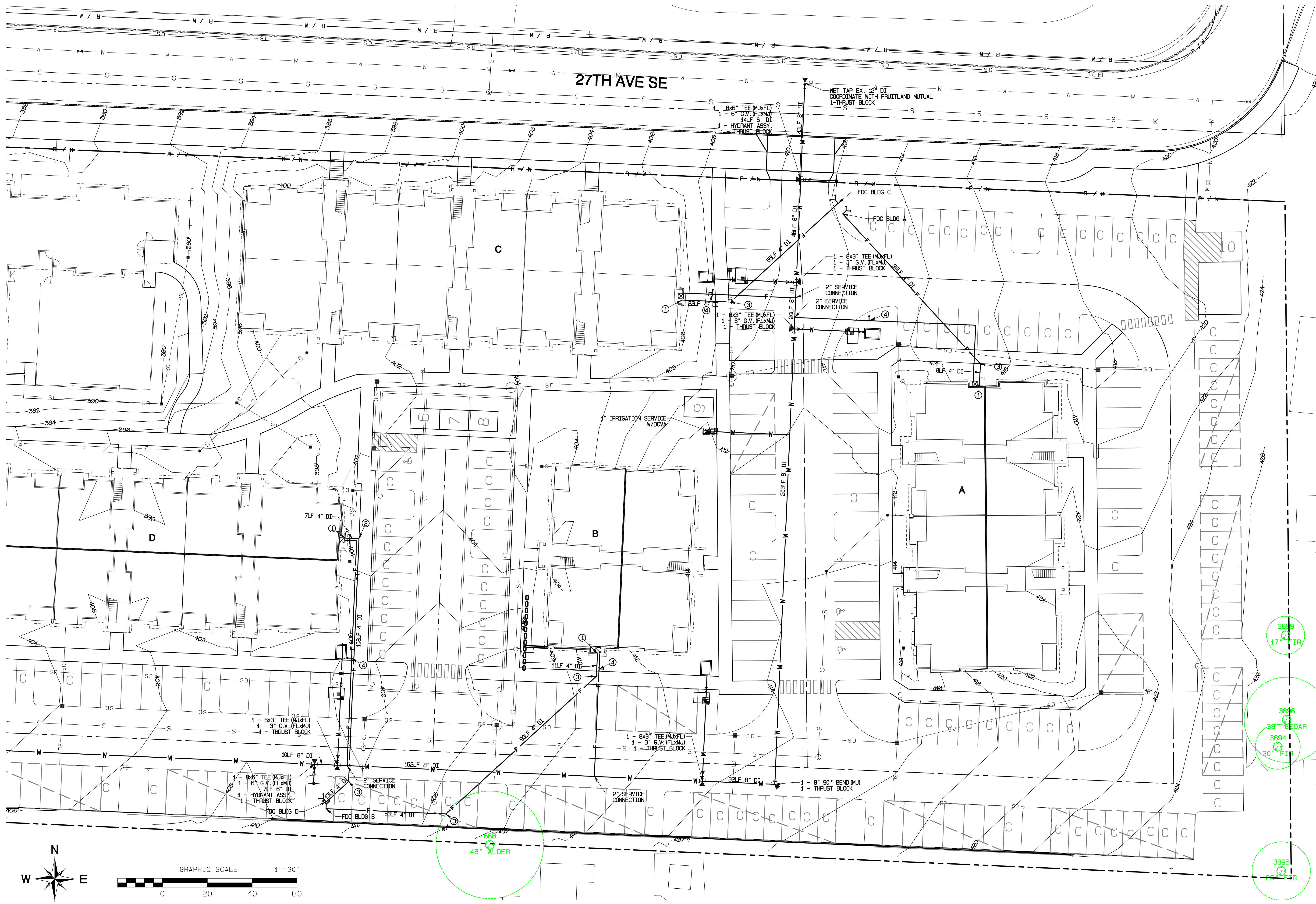
APPROVED
 BY: CITY OF PUYALLUP DEVELOPMENT SERVICES
 DATE: _____
NOTE:
 THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

- FIRE/FDC LINE KEY NOTES**
- 1 ENTRY TO BUILDING, COORDINATE WITH SPRINKLER SYSTEM DESIGN
 - 2 1-4" 90° BEND (RJ)
 - 3 1-4" 45° BEND (RJ)
 - 4 PTV



Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



NO.	REVISION	DATE
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JOB NO. 3327
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV


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 CONSULTANTS
 *feasibility *planning *engineering *surveying
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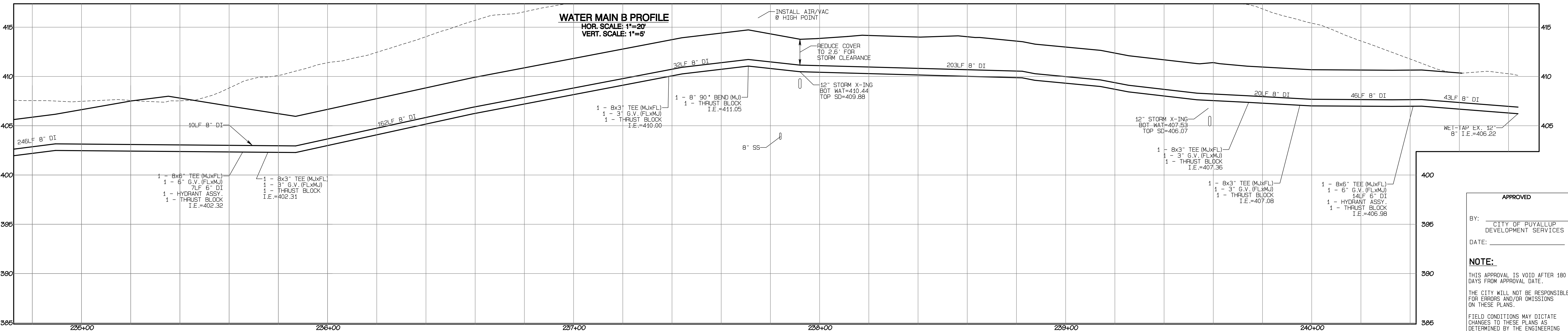
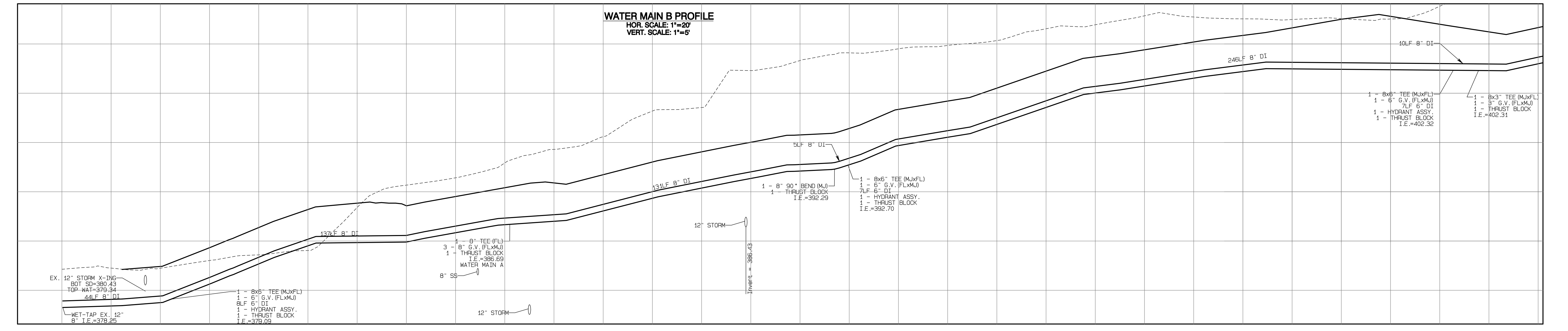
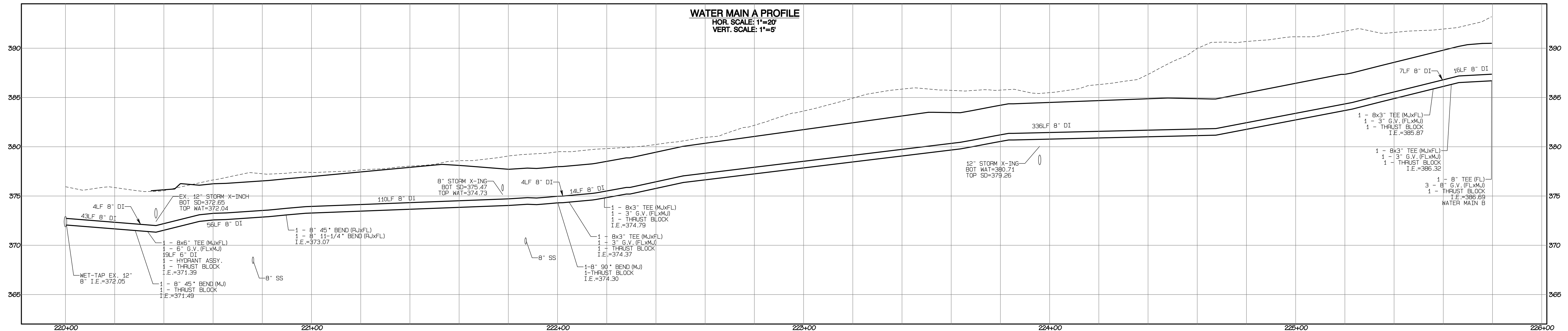
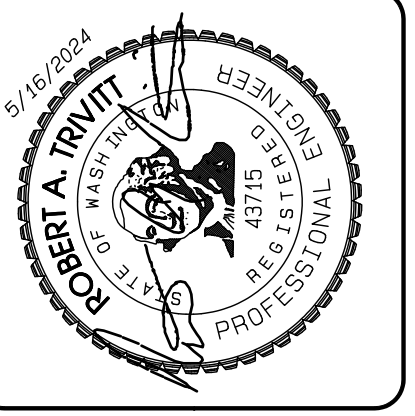
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Water Plan
Bradley Heights
 Timberlane Partners
 1816 11th Ave Unit C
 Seattle, WA 98122
 Phone 509.886.0326
 Fax jordan@timberlanepartners.com

DRAWING
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 SHEET 50
 OF 47

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



APPROVED

BY: CITY OF PUYALLUP
DEVELOPMENT SERVICES

DATE: _____

NOTE:

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REVISION	DATE	DESCRIPTION
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JOB NO. 2327
DATE: May 14, 2024
DESIGNED BY: RDT, TRIVITT
DRAWN BY: RDT, TRIVITT
CHECKED BY: RDT, TRIVITT
APPROVED BY: RDT, TRIVITT

409 East Pioneer, Suite A - Puyallup, WA 98372
phone: 253.770.3144, fax: 253.770.3142

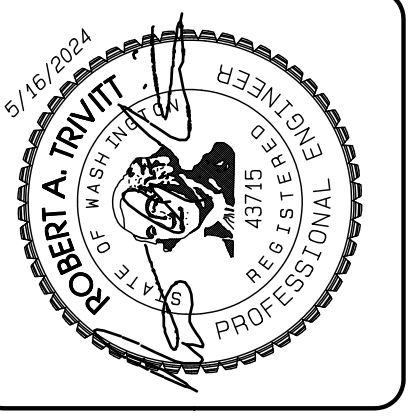
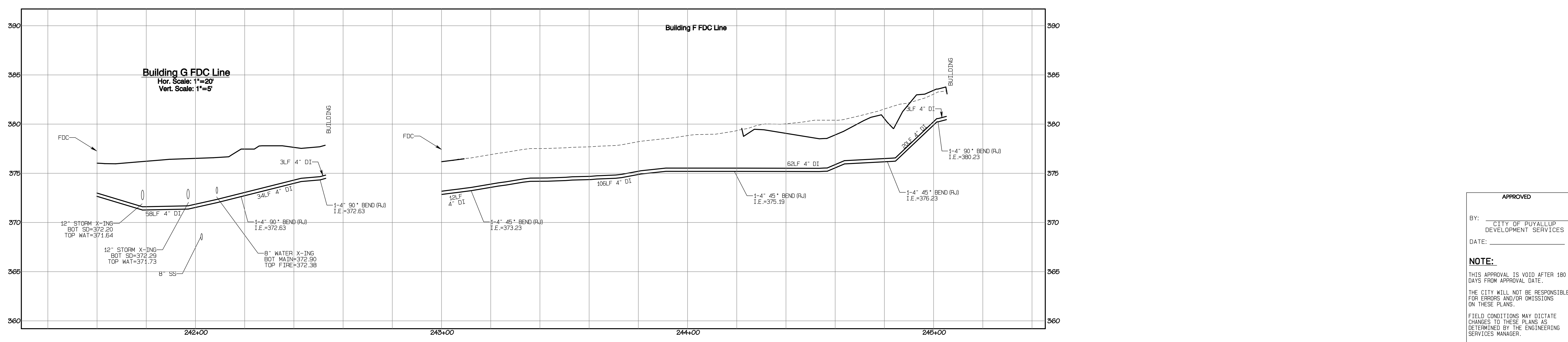
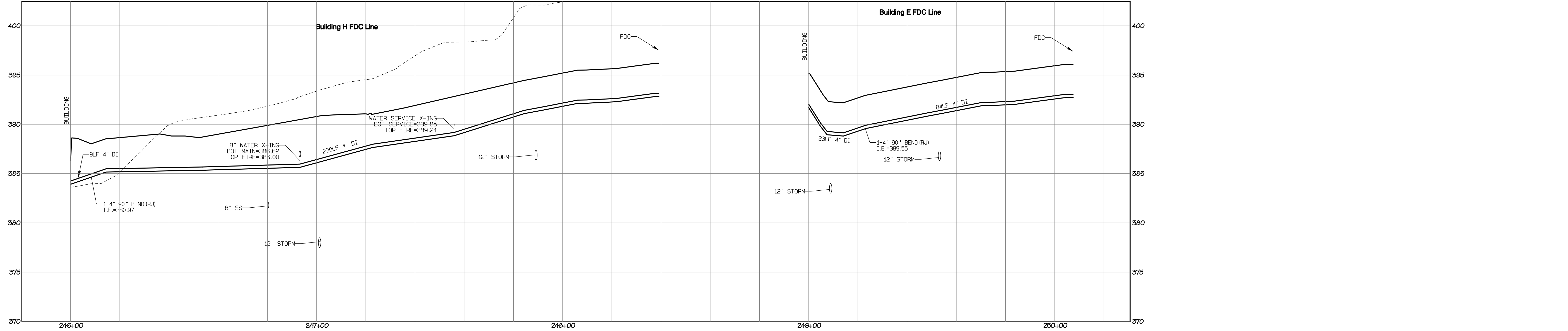
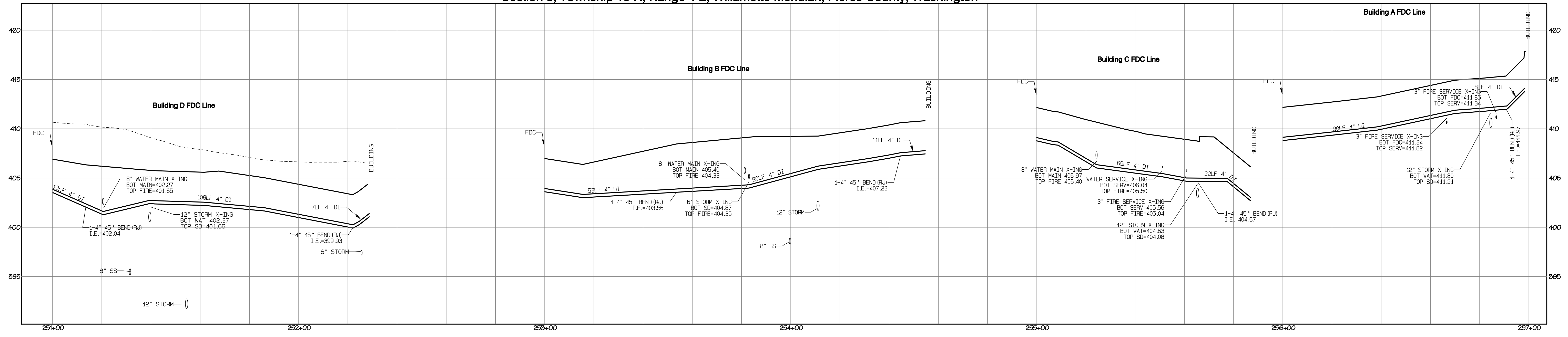
Water Main Profiles
Bradley Heights

Timberlane Partners
1816 11th Ave Unit C
Seattle, WA 98122
Phone 509.899.0326
Fax jordan@timberlanepartners.com

Project Desc.: Bradley Heights; Plan: F:\urban\3227 - Bradley Heights\Time\Drawings\Highways 2024\0516 ENG.dwg; Plot Date/Time: 6/15/2024/11:24:38AM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



REVISION	DATE
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JOB NO. 2327
 DATE: May 14, 2024
 DESIGNED BY: RBT, TRV
 DRAWN BY: RBT, TRV
 CHECKED BY: RBT, TRV
 APPROVED BY: RBT, TRV

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FDC Profiles
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Project Date: Bradley Heights Date: E:\sub\3227 - Bradley Heights\Timberlane\Bradley Heights 2024 0516 ENG.dwg Plot Date/Time: 5/15/2024/11:25:00AM

Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington

WATER VALVES AND MAINS

APPROVED FOR PUBLICATION: 4/5/2018

CITY STANDARD: 03.01.01

CITY OF PUYALLUP OFFICE OF THE CITY ENGINEER

HORIZONTAL THRUST BLOCKING

APPROVED FOR PUBLICATION: 1/5/17

CITY STANDARD: 03.02.01-1

CITY OF PUYALLUP OFFICE OF THE CITY ENGINEER

VERTICAL THRUST BLOCKING

APPROVED FOR PUBLICATION: 2/5/2018

CITY STANDARD: 03.02.01-2

CITY OF PUYALLUP OFFICE OF THE CITY ENGINEER

THRUST BLOCKING TABLE

APPROVED FOR PUBLICATION: 2/5/2018

CITY STANDARD: 03.02.01-3

CITY OF PUYALLUP OFFICE OF THE CITY ENGINEER

1" WATER SERVICE CONNECTION

APPROVED FOR PUBLICATION: 1/13/13

CITY STANDARD: 03.03.01-2

CITY OF PUYALLUP PUBLIC WORKS AND DEVELOPMENT ENGINEERING

1-1/2" AND 2" WATER SERVICE CONNECTION

APPROVED FOR PUBLICATION: 1/13/13

CITY STANDARD: 03.03.02

CITY OF PUYALLUP PUBLIC WORKS AND DEVELOPMENT ENGINEERING

PRIVATE WATER SERVICE LINES

APPROVED FOR PUBLICATION: 1/13/13

CITY STANDARD: 03.03.04

CITY OF PUYALLUP PUBLIC WORKS AND DEVELOPMENT ENGINEERING

TABLE 2: THRUST AT FITTINGS AT 200 PSI

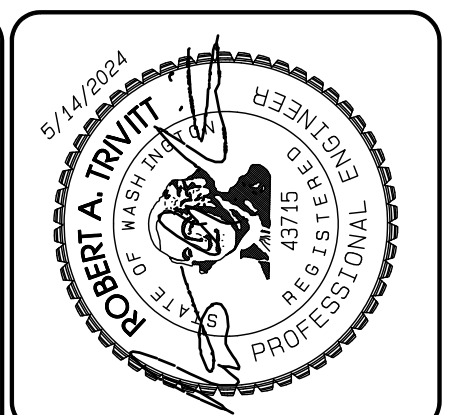
SIZE	TEST PRESSURE (PSI)	THRUST FITTINGS AT 200 PSI				
		A TEE AND DEAD ENDS	B 90° BEND	C 45° BEND	D 22.5° BEND	E 11.25° BEND
4"	200	3,140	4,440	2,405	1,225	615
6"	200	7,070	9,995	5,410	2,760	1,385
8"	200	12,565	17,770	9,820	4,905	2,465
10"	200	19,835	27,770	15,030	7,660	3,850
12"	200	28,275	39,985	21,840	11,030	5,545
14"	200	38,465	54,025	29,455	15,015	7,545
16"	200	50,265	71,065	38,470	19,615	9,805

TABLE 3: BEARING VALUE OF SOIL

SOIL TYPE	SAFE BEARING LOAD (LBS/SF)
MUCK, PEAT, ETC.	0
SOFT CLAY/ALLUVIAL SOIL	1,000
SAND	2,000
SAND AND GRAVEL	3,000
SAND AND GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

SEE CITY STANDARDS 03.02.01-1 AND 03.02.01-2 FOR ADDITIONAL INFORMATION.

- NOTES:**
- TO DETERMINE THRUST AT PRESSURES OTHER THAN PSI SHOWN, MULTIPLY THE THRUST OBTAINED IN TABLE 2 BY THE RATIO OF THE PRESSURE TO 200 PSI.
 - EXAMPLE: THRUST ON A 12 INCH, 90° BEND AT 300 PSI. $300 \text{ PSI} \times \frac{9,995}{200} = 59,978 \text{ LBS}$
 - TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (SF):
EXAMPLE: FOR SAND AND GRAVEL BEARING VALUE FROM TABLE 3 IS 3,000 LBS/SF
 $59,978 \text{ LBS} \div 3,000 \text{ LBS/SF} = 20 \text{ SF OF AREA}$
 - CONTRACTOR TO PROVIDE BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE.
 - AREAS SHALL BE ADJUSTED FOR OTHER PRESSURE CONDITIONS.
 - NO WATER MAIN SHALL DEAD END AGAINST A MAIN LINE VALVE. DEAD END WATER MAINS SHALL BE BLOCKED AGAINST A RESTRAINED MECHANICAL JOINT (M.J.) PLUG OR CAP.



DATE: _____

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JOB NO: 2027
 DATE: May 14, 2024
 DESIGNED BY: RND, TRV
 DRAWN BY: RND, TRV
 CHECKED BY: RND, TRV
 APPROVED BY: RND, TRV

Azure Green Consultants

409 East Pioneer, Suite A - Puyallup, WA 98372
 phone: 253.770.3144, fax: 253.770.3142

services: feasibility, planning, engineering, surveying

Water Details

Bradley Heights

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 1816 11th Ave Unit C
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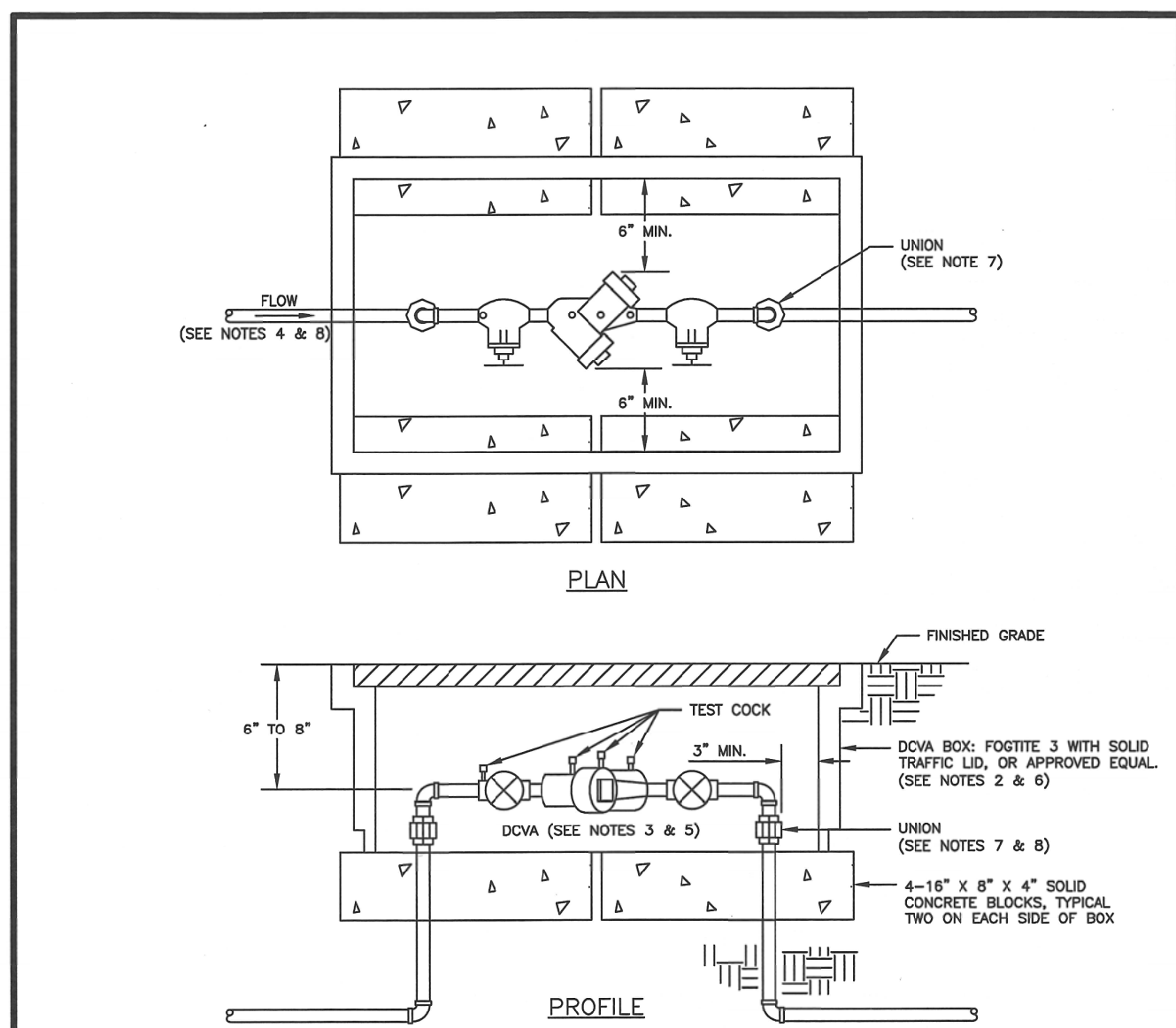
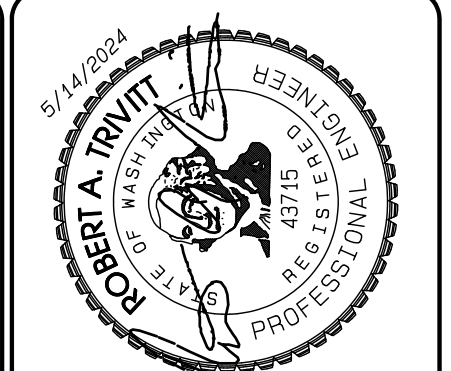
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SHEET 46 OF 47

Project Date: Bradley Heights Date: 05/14/2024 05:14 ENG: RND P116 Date: 6/12/2024 7:44:15 PM

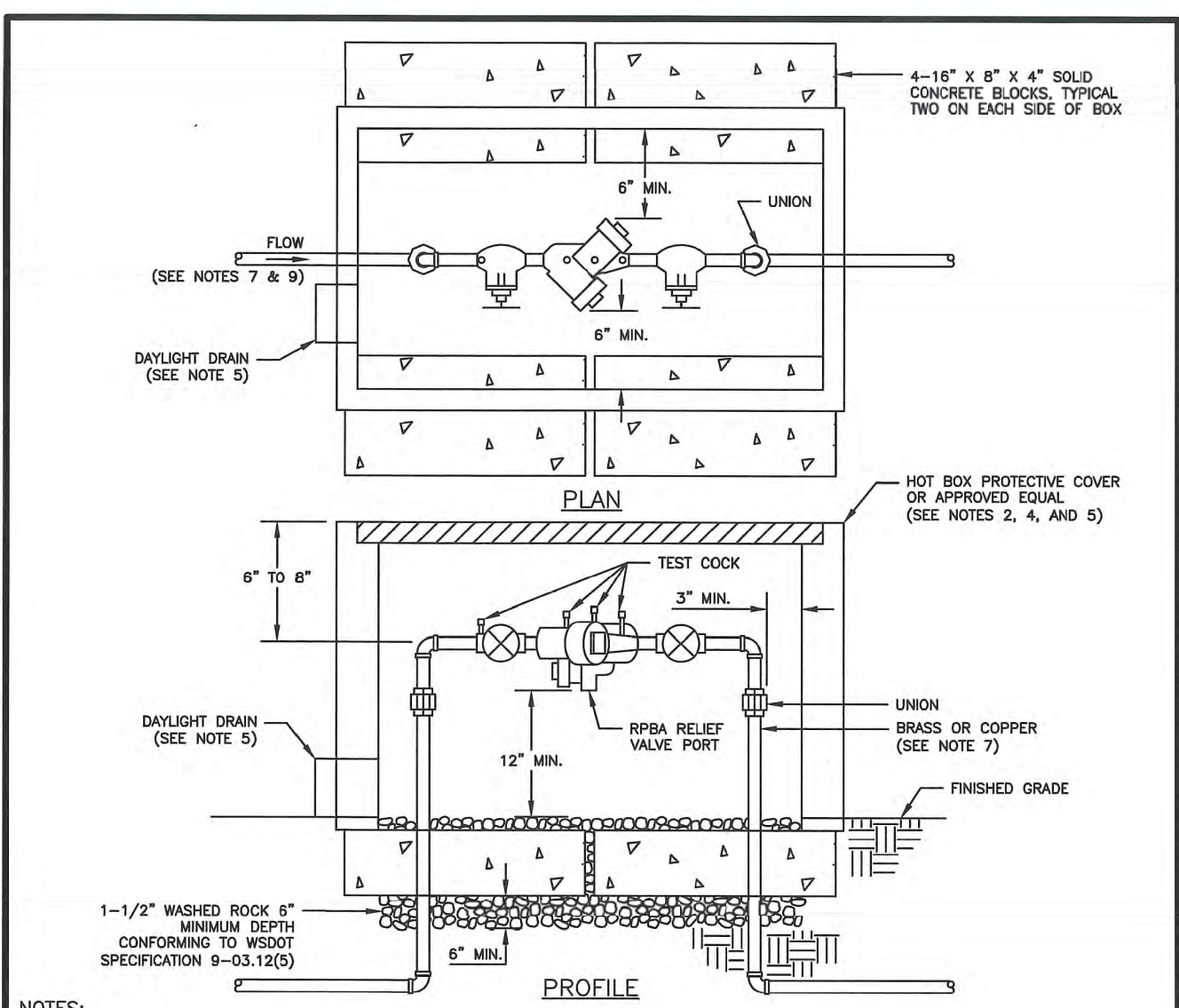
Bradley Heights

Section 3, Township 19 N, Range 4 E, Willamette Meridian, Pierce County, Washington



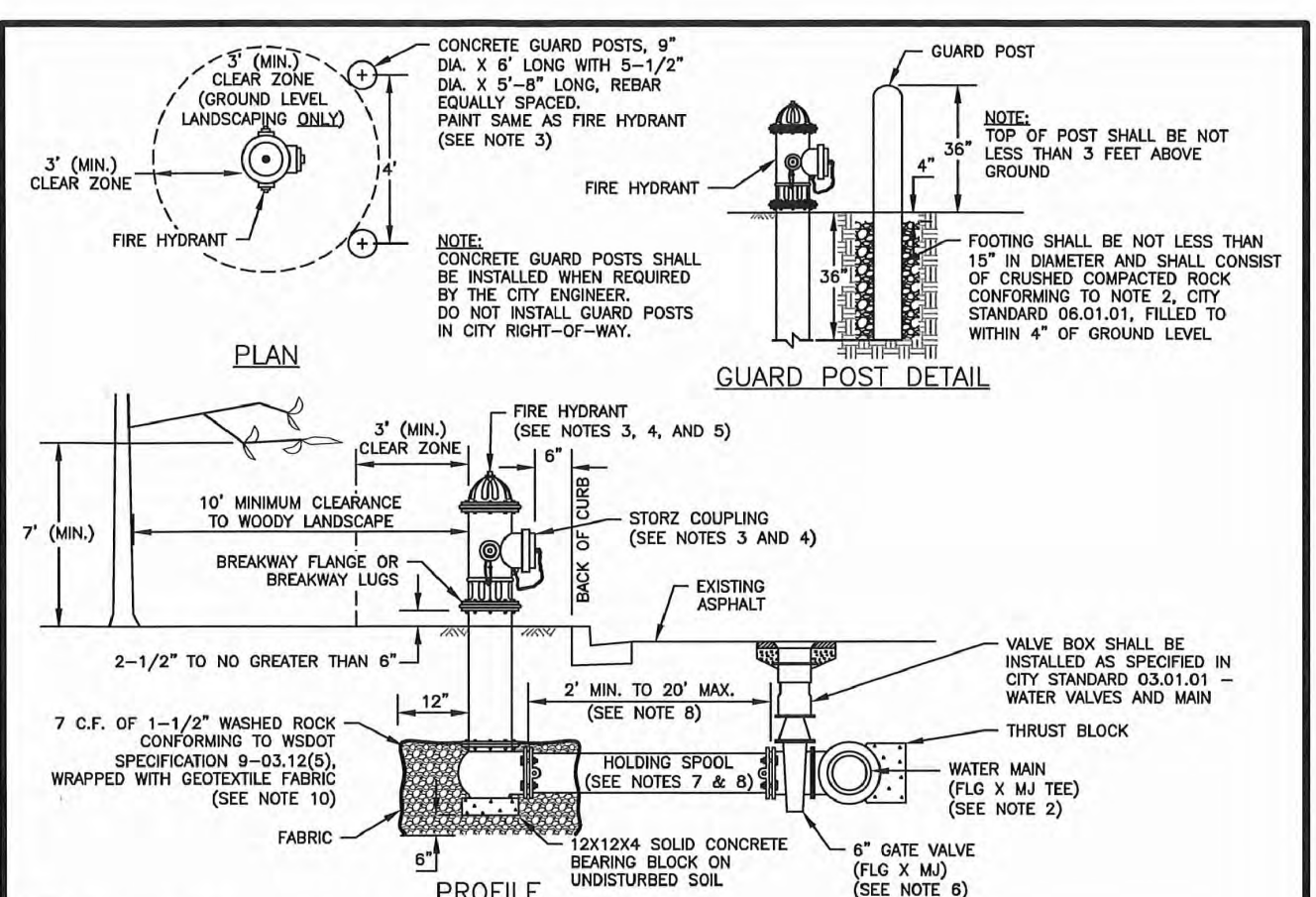
- NOTES:**
- BACKFLOW ASSEMBLY MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH'S LIST OF BACKFLOW PREVENTION ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE, LATEST EDITION.
 - THE DOVA SHALL BE INSTALLED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING. IT SHALL BE TESTED AFTER INSTALLATION, BY A WASHINGTON STATE CERTIFIED BACK-FLOW ASSEMBLY TESTER, TO INSURE ITS SATISFACTORY OPERATION BEFORE OCCUPANCY, AND ANNUALLY THEREAFTER. SEND TEST RESULTS TO: CITY OF PUYALLUP, WATER QUALITY OPERATIONS, 1100 39TH AVE SE, PUYALLUP, WA 98374.
 - DOVA MUST BE PURCHASED AS A UNIT. NO MODIFICATIONS TO THE ASSEMBLY ARE ALLOWED.
 - DOVA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF WATER METER. WHEN IRRIGATION SYSTEM IS CONNECTED OFF DOMESTIC WATER LINE, IRRIGATION DOVA SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF THE BRANCH CONNECTION.
 - DOVA SHALL BE SIZED EQUAL OR COMPARABLE TO METER SIZE.
 - METER BOX SHALL BE LARGE ENOUGH TO ALLOW THE MINIMUM SETBACKS ILLUSTRATED ABOVE. METER BOX LID SHALL BE A TRAFFIC LID WITH A H-20 LOADING.
 - ELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
 - USE ONLY BRASS OR COPPER BETWEEN THE METER AND THE UNION ON THE CUSTOMER'S SIDE OF THE DOVA.

CITY OF PUYALLUP
OFFICE OF THE CITY ENGINEER
APPROVED FOR PUBLICATION
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CITY STANDARD 03.04.01
(NOT TO SCALE)



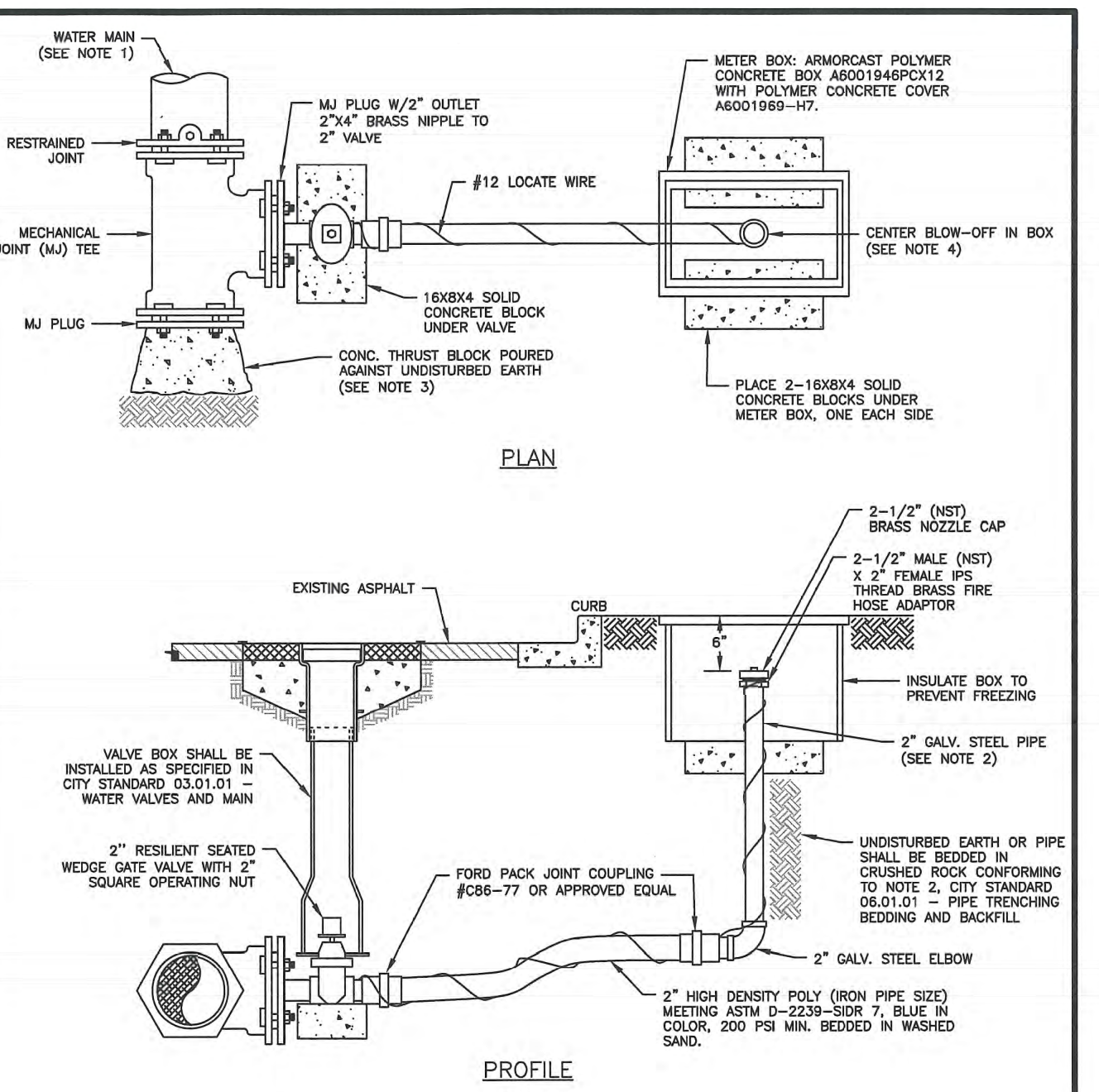
- NOTES:**
- BACKFLOW ASSEMBLY MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH'S LIST OF BACKFLOW PREVENTION ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE, LATEST EDITION.
 - THE RPBA SHALL BE INSTALLED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING. IT SHALL BE TESTED AFTER INSTALLATION, BY A WASHINGTON STATE CERTIFIED BACK-FLOW ASSEMBLY TESTER, TO INSURE ITS SATISFACTORY OPERATION BEFORE OCCUPANCY, AND ANNUALLY THEREAFTER. SEND TEST RESULTS TO: CITY OF PUYALLUP, WATER QUALITY OPERATIONS, 1100 39TH AVE SE, PUYALLUP, WA 98374.
 - THE RPBA MUST BE PURCHASED AS A UNIT. NO MODIFICATIONS TO THE ASSEMBLY ARE ALLOWED.
 - THE RPBA SHALL NOT BE INSTALLED IN A PIT BELOW GROUND LEVEL.
 - THE PROTECTIVE COVERING FOR THE RPBA, WHICH PROTECTS THE ASSEMBLY FROM FREEZING, MUST INCLUDE A DAYLIGHT DRAIN. THE DRAIN MUST BE INSTALLED ABOVE GROUND OR ABOVE THE MAXIMUM FLOOD LEVEL, WHICHEVER IS HIGHER. THE DRAIN MUST BE A MINIMUM OF TWICE THE SIZE OF THE RPBA, TO BE ABLE TO HANDLE THE VOLUME OF WATER THAT POTENTIALLY COULD BE DISCHARGED FROM THE RELIEF VALVE PORT.
 - THE RPBA SHALL BE SIZED EQUAL OR COMPARABLE TO THE METER SIZE.
 - USE ONLY BRASS OR COPPER BETWEEN THE METER AND THE BOTTOM VERTICAL, 90 DEGREE BEND ON THE CUSTOMER'S SIDE OF THE RPBA.
 - ELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
 - THE RPBA SHOULD BE LOCATED IMMEDIATELY DOWN STREAM OF THE METER, AND SHOULD NOT BE INSTALLED INSIDE A BUILDING.
 - AN RPBA INSTALLED MORE THAN FIVE (5) FEET ABOVE FLOOR LEVEL MUST HAVE A PLATFORM UNDER IT FOR THE TESTER OR MAINTENANCE PERSON TO STAND ON. THE PLATFORM MUST BE OSHA APPROVED AND MEET ALL APPLICABLE SAFETY STANDARDS AND CODES.

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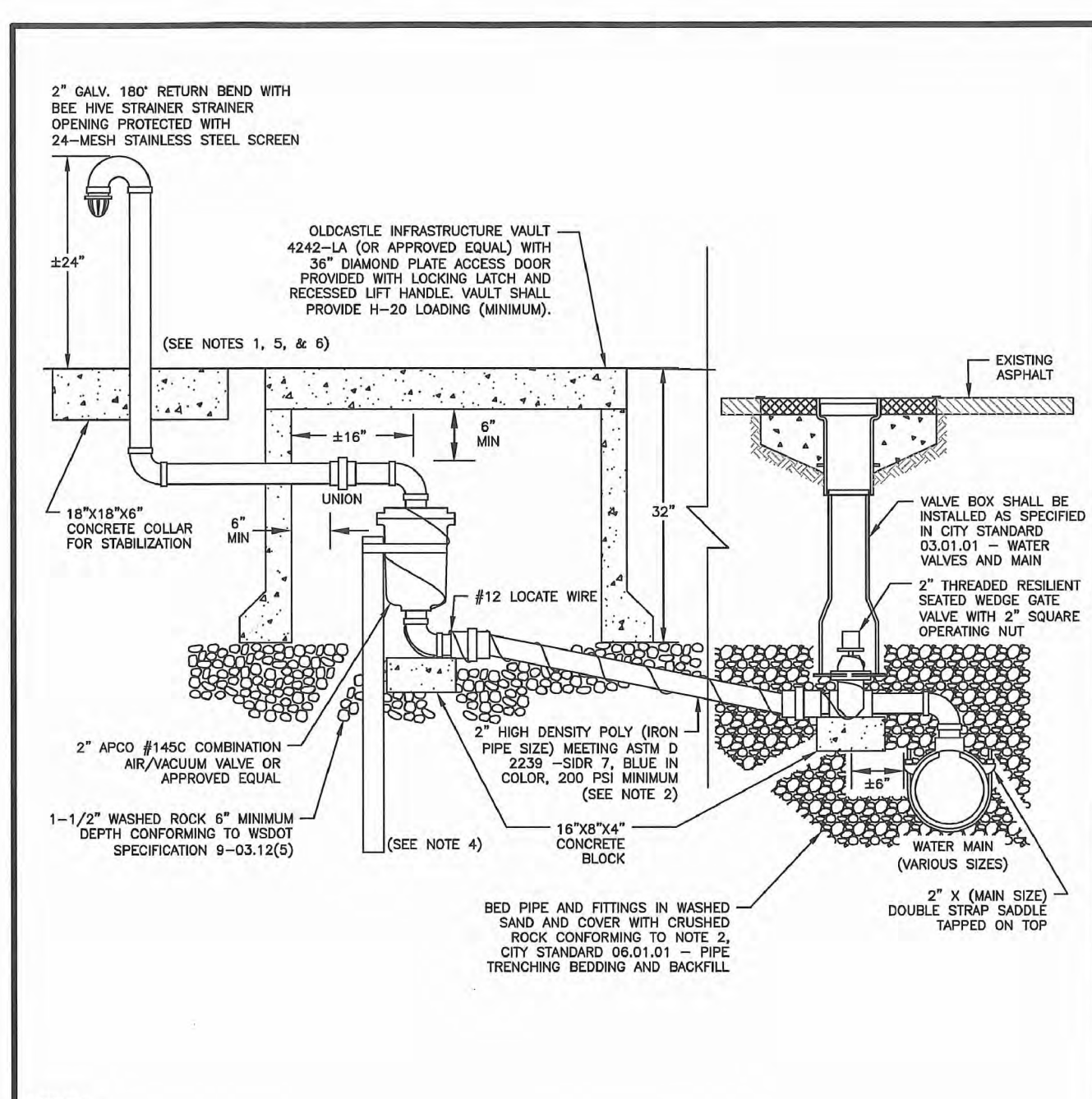
- NOTES:**
- ALL MATERIALS AND FITTINGS SHALL BE AS SPECIFIED OR APPROVED EQUAL.
 - WATER MAINS SHALL HAVE A MINIMUM COVER OF 36" IN IMPROVED RIGHT-OF-WAY AND IMPROVED EASEMENTS, AND A MINIMUM 48" IN UNIMPROVED RIGHT-OF-WAY AND UNIMPROVED EASEMENTS.
 - THE FIRE HYDRANT AND CONCRETE GUARD POSTS SHALL BE PAINTED, RUST-OLEUM SAFETY YELLOW #7543 (TWO COATS) OR AN APPROVED EQUAL. THE STAKE FITTING SHALL NOT BE PAINTED.
 - FIRE HYDRANTS SHALL HAVE TWO 2-1/2" HOSE PORTS (NATIONAL STANDARD THREAD) WITH CAPS AND CHANGS AND ONE 4" PUMPER PORT (8B TACOMA STEAMER PORT THREAD) WITH A 5" STORZ COUPLING AND BLEND CAP INSTALLED ON THE STEAMER PORT. (STEAMER PORT SHALL FACE THE STREET). 1-1/4" PENTAGONAL OPERATING NUT (COUNTER-CLOCKWISE OPENING), G-RING TYPE STUFFING BOX, AUTOMATIC BARREL DRAINS AND 2-1/4" MAIN VALVE OPENING. HYDRANTS SHALL BE DESIGNED IN A MANNER THAT WILL PREVENT BARREL BREAKAGE WHEN STRUCK BY A VEHICLE. HYDRANTS SHALL CONFORM TO THE LATEST REVISION OF ANSA SPECIFICATIONS NO. C-503-73 FOR FIRE HYDRANTS FOR ORDINARY WATER SERVICE. FIRE HYDRANTS SHALL INCLUDE THE ENTIRE ASSEMBLY COMPLETE, INCLUDING HYDRANT, GATE VALVE AND BOX, CONNECTING PIPING, FITTINGS AND ACCESSORIES.
 - FIRE HYDRANTS SHALL BE AWC, FLOW MEDIUM, M & H 1200, MUELLER CENTURION, OR WATERLOO.
 - GATE VALVES SHALL CONFORM TO THE LATEST ANSA SPECIFICATIONS FOR COLD WATER, RESILIENT SEATED WEDGE GATE VALVES, 200 PSI WORKING PRESSURE. THEY SHALL BE IRON-BODIED BRONZE-MOUNTED, NON-REISING STEEL, COUNTER-CLOCKWISE OPENING, MECHANICAL JOINT BY FLANGED. VALVE STEMS SHALL BE PROVIDED WITH O-RING SEALS AND SHALL BE AS MANUFACTURED BY THE MUELLER COMPANY OR APPROVED EQUAL.
 - THE HOLDING SPOOL SHALL BE A MECHANICAL-JOINT (M.J.) HOLDING SPOOL, WITH THE USE OF MEGA-LUG CONNECTORS OR APPROVED EQUAL WITH CLASS 52 DUCTILE IRON PIPE.
 - IF DISTANCE BETWEEN WATER MAIN AND FIRE HYDRANT IS GREATER THAN 17 FEET, RESTRAINED JOINTS ARE REQUIRED ON ANY ADDITIONAL JOINTS. THE MAXIMUM 6-INCH HYDRANT RUN ALLOWED IS 20 FEET. ANY PROPOSED HYDRANT RUN EXCEEDING 20' IN LENGTH SHALL BE SIZED USING AN ENGINEERED HYDRANT FIRE FLOW MODEL. ANY HYDRANT RUN EXCEEDING 50 FEET IN LENGTH SHALL BE NO LESS THAN 8-INCHES IN DIAMETER.
 - FIRE HYDRANTS SHALL BE LOCATED A MINIMUM OF 50 FEET FROM A BUILDING OR STRUCTURE.
 - THE CONTRACTOR SHALL PLACE A 6 OZ. GEOTEXTILE FABRIC AROUND THE WASHED ROCK AREA, ENDS TO OVERLAP.
 - A FLUORESCENT ORANGE BND MUST COVER AND BE SECURED TO THE FIRE HYDRANT UNTIL APPROVED FOR USE BY CITY ENGINEER.
 - A MINIMUM THREE FOOT (3') RADIUS UNRESTRICTED CLEAR ZONE (WORK AREA) SHALL BE PROVIDED AROUND ALL FIRE HYDRANTS. ADDITIONALLY, NO WOODY LANDSCAPE SHALL BE PLANTED WITHIN TEN FEET (10') OF ANY FIRE HYDRANT. OVERHANGING BRANCHES OF TREES ADJACENT TO HYDRANTS SHALL HAVE A MAINTAINED VERTICAL CLEARANCE OF SEVEN (7) FEET ABOVE FINISHED GRADE OF THE FIRE HYDRANT.

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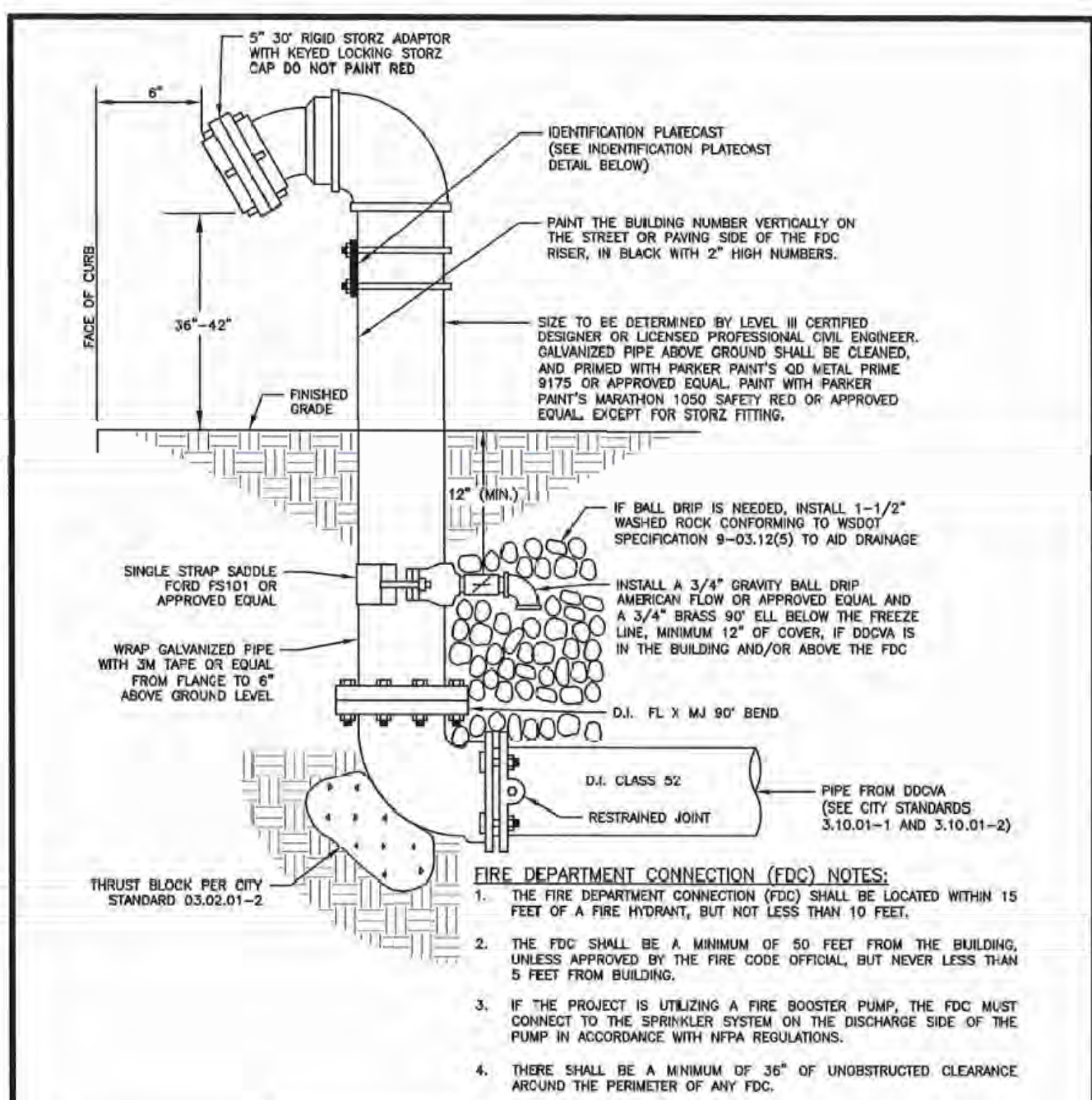
- NOTES:**
- WATER MAINS SHALL HAVE A MINIMUM COVER OF 36" IN IMPROVED RIGHT-OF-WAY AND IMPROVED EASEMENTS, AND A MINIMUM OF 48" IN UNIMPROVED RIGHT-OF-WAY AND UNIMPROVED EASEMENTS.
 - OVERALL LENGTH OF RISER IS 6" SHORTER THAN NORMAL DEPTH OF BURIAL.
 - THE PIPE JOINT AND BOLTS MUST BE ACCESSIBLE. WRAP IN PLASTIC BEFORE POURING CONCRETE BLOCKING.
 - PLACE BLOW-OFF ASSEMBLY IN CENTER OF UTILITY STRIP. IF NO UTILITY STRIP, PLACE BLOW-OFF ASSEMBLY 2' OFF EDGE OF ROAD. THE BLOW-OFF BOX SHALL NOT BE LOCATED IN WALK SURFACES.

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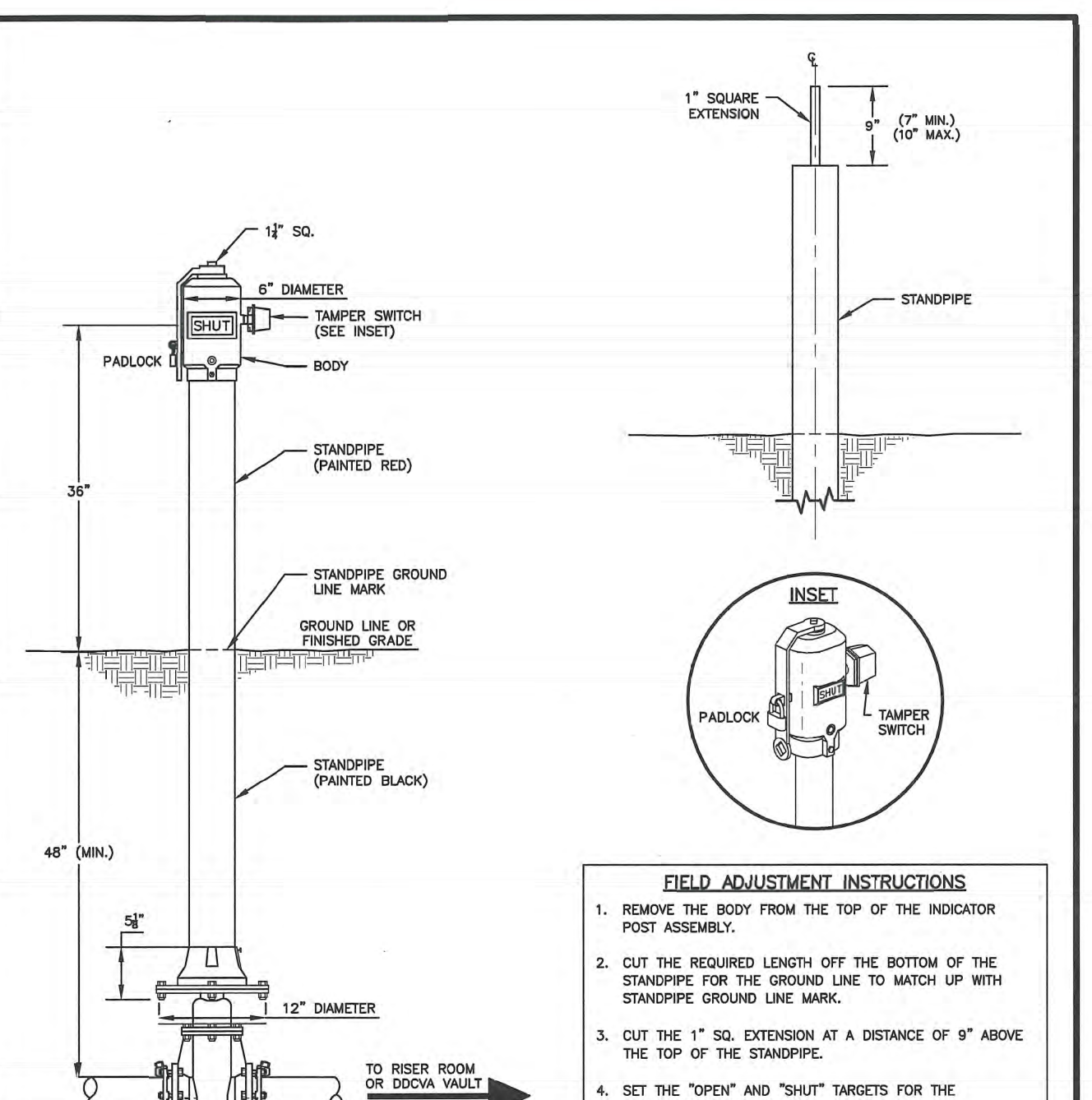
- NOTES:**
- ALL FITTINGS FROM THE WATER MAIN TO THE BOTTOM OF THE AIR/VACUUM VALVE SHALL BE BRASS. ALL FITTINGS ABOVE THE AIR/VACUUM VALVE SHALL BE GALVANIZED STEEL. WRAP GALVANIZED PIPE BELOW GROUND WITH 3M TAP OR EQUAL TO 1" ABOVE GROUND LEVEL.
 - 2" HIGH DENSITY POLY PIPE SHALL MAINTAIN A MINIMUM ONE-DEGREE RISE FROM THE WATER MAIN TO THE AIR/VACUUM VALVE.
 - AIR/VACUUM VALVE VAULT AND VENT RISER TO BE INSTALLED OUT OF THE STREET. EXACT LOCATION TO BE DETERMINED BY THE CITY ENGINEER.
 - TO STABILIZE AIR/VACUUM VALVE, BURY A 4 FOOT LONG 2" GALVANIZED PIPE ALONG SIDE VALVE. SECURE WITH STAINLESS STEEL STRAP. SET TOP OF GALVANIZED PIPE 2" BELOW AIR/VACUUM FLANGE.
 - VENT RISER AND RETURN BEND SHALL BE PAINTED, RUST-OLEUM SAFETY YELLOW #7543 OR APPROVED EQUAL.
 - IF NEW PLAT, INCLUDE EASEMENT BEHIND SIDEWALK FOR VENT RISER. VENT RISER SHALL BE NO MORE THAN 2 FOOT BEHIND SIDEWALK.

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- FIRE DEPARTMENT CONNECTION (FDC) NOTES:**
- THE FIRE DEPARTMENT CONNECTION (FDC) SHALL BE LOCATED WITHIN 15 FEET OF A FIRE HYDRANT, BUT NOT LESS THAN 10 FEET.
 - THE FDC SHALL BE A MINIMUM OF 50 FEET FROM THE BUILDING, UNLESS APPROVED BY THE FIRE CODE OFFICIAL, BUT NEVER LESS THAN 5 FEET FROM BUILDING.
 - IF THE PROJECT IS UTILIZING A FIRE BOOSTER PUMP, THE FDC MUST CONNECT TO THE SPRINKLER SYSTEM ON THE DISCHARGE SIDE OF THE PUMP IN ACCORDANCE WITH NFPA REGULATIONS.
 - THERE SHALL BE A MINIMUM OF 36" OF UNRESTRICTED CLEARANCE AROUND THE PERIMETER OF ANY FDC.
 - SEE STANDARD DETAIL 03.05.01 FOR GUARD POST DETAIL AND SPACING.
- IDENTIFICATION PLATECAST DETAIL NOTES:**
- IDENTIFICATION PLATECAST WILL BE BRASS.
 - IDENTIFICATION PLATECAST WILL BE 1/4" THICK.
 - LETTERS WILL BE ONE INCH HIGH AND RAISED.
 - USE TWO (2) STAINLESS STEEL U-BOLTS TO AFFIX TO PIPE.

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- FIELD ADJUSTMENT INSTRUCTIONS:**
- REMOVE THE BODY FROM THE TOP OF THE INDICATOR POST ASSEMBLY.
 - CUT THE REQUIRED LENGTH OFF THE BOTTOM OF THE STANDPIPE FOR THE GROUND LINE TO MATCH UP WITH STANDPIPE GROUND LINE MARK.
 - CUT THE 1" SQ. EXTENSION AT A DISTANCE OF 8" ABOVE THE TOP OF THE STANDPIPE.
 - SET THE "OPEN" AND "SHUT" TARGETS FOR THE APPROPRIATE VALVE SIZE.
 - RE-ATTACH THE BODY TO THE TOP OF THE INDICATOR POST ASSEMBLY.
 - ALL POST INDICATOR VALVES SHALL BE INSTALLED WITH AN ELECTRONIC UL LISTED TAMPER SWITCH.
 - THERE SHALL BE 36" OF UNRESTRICTED CLEARANCE AROUND THE PERIMETER OF ALL POST INDICATOR VALVES.
 - POST INDICATOR VALVE SHALL BE LOCATED AT A MINIMUM 5-1/2' FROM BUILDING.

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- WATER NOTES CONTINUED FROM SHEET S-5
- Connections to existing water mains typically shall be wet taps through a tapping tee and tapping valve and shall be made by a city approved contractor. The tapping sleeve shall be Romac SST all stainless steel tapping sleeve or approved equal. A two-piece epoxy coated on ductile iron tapping sleeve may be used on ductile iron pipe, when the tap is smaller than the water main size i.e. 6 inch tap on 8 inch pipe. The City (or FMWC, VW or TCW when served by that purveyor) shall approve the time and location for these connections.
 - All water mains and appurtenances shall be hydrostatically tested at 200 psi in accordance with Standard Specification 7-09.3(23). Pressure testing shall not be performed until satisfactory purity samples have been received, except when new water mains are installed independently from the water system piping.
 - Fire hydrants shall be installed in accordance with City Standard Detail 03.05.01 and as directed by the City of Puyallup Fire Code Official.
 - Valve marker posts shall be installed where valve boxes are hidden from view or in unpaved areas. The installation shall be in accordance with City Standard Detail 03.01.02.
 - Resilient seated wedge gate valves shall be used for 10-inch mains and smaller. Butterfly valves shall be used for mains greater than 10 inches.
 - Pipe fitting for water mains shall be ductile iron and shall be mechanical joint conforming to AWWA Specification C111-72.
 - Water main pipe and service connections shall be a minimum of 10 feet away from building foundations and/or roof lines.
 - Where a water main crosses the Northwest Gas pipeline, the water line shall be cased with PVC pipe a minimum of 10 feet beyond each side of the gas line easement. Contact Williams Northwest Pipeline before the crossing is made.
 - Trenching, bedding, and backfill for water mains shall be installed in accordance with City Standard Detail 06.01.01.
 - All commercial and industrial developments, irrigation systems, and multi-family water service connections shall be protected by a reduced pressure backflow assembly as directed by the City (or FMWC, VW or TCW when served by that purveyor) conforming to City Standard Details 03.04.01, 03.04.02, and 03.04.03.
 - Any lead joint fitting disturbed during construction shall be replaced with a mechanical joint fitting at the contractor's expense.
 - When hydraulic fire flow modeling is required for a project, the City will issue a permit. The hydraulic modeling criteria is based on the projected 2030 water demand, while maintaining a minimum system pressure of 20 pounds per square inch and a maximum velocity of 10 feet per second.
 - When filling a new water main for purity with highly concentrated chlorine water, that super chlorinated water cannot sit inside the new water main for greater than 5 days.
 - When using a fire hydrant for non-firefighting purposes, a city hydrant meter must be used. Coordinate the acquisition of the hydrant meter with the City's Utility Billing Division at Puyallup City Hall. A city approved backflow protection assembly shall be installed by the person requesting use of a fire hydrant. The assembly shall be accompanied by a current backflow assembly test report. The test report shall be available at the site for the duration of the hydrant use.

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DATE:	
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DRAWN BY:	Rob Trivitt
CHECKED BY:	Rob Trivitt
APPROVED BY:	Rob Trivitt
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DESIGNED BY:	Rob Trivitt
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DRAWING
W-6
SHEET 47
OF 47

Project Name: Bradley Heights
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