

8th Avenue Apartments

Preliminary Civil Construction Plans

Parcel # 88135000

Situate in a portion of the SW 1/4 of Section 12,
Township 1 North, Range 3 East,
of the Willamette Meridian
City of Camas
County of Clark
State of Washington

C000

Project: 23005SP
Date: 10/26/2023
Drafted: NVS
Designed: PCW
Page: 1 of 17

Northwest Utilities
1-800-424-5555
"It's the law"
Call 48 hours before you dig.

Revisions:

Sheet List

- 1 C000 Cover Sheet
- 2 C010 General Construction Notes & Details
- 3 C020 Existing Conditions Plan
- 4 C030 Preliminary Site Plan
- 5 C100 Grading & Erosion Control Plan
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- 13 C310 Utility Details
- 14 L100 Landscape Plan
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- 16 L110 Landscape Details
- 17 L110 Landscape Details

Utility Contacts

Sewer: City of Camas
616 NE 4th Ave
Camas, WA 98607
360-817-1563
publicworks@cityofcamas.us

Water: City of Camas
616 NE 4th Ave
Camas, WA 98607
360-817-1563
publicworks@cityofcamas.us

Power: Clark Public Utilities (CPU)
8600 NE 117th Avenue
Vancouver, WA 98668
(360) 992-8808

Gas: NW Natural
220 NW 2nd Avenue
Portland, OR 97209
(503) 220-2427

Cable: Comcast
3075 NE Sandy Boulevard
Portland, OR 97232
(888) 632-2253

Telephone: Century Link / Lumen
Larry McDonald
Larry.McDonald@Lumen.com
(360) 946-2869

Contact

Owner: Pavlo Zhubrbytskyy & Inna Bogoleva
7605 NE 59th Cir
Vancouver, WA 98662
Phone:
Email:

Engineer/ Applicant/ Contact: Engineering Northwest, PLLC
Paul Williams, P.E.
6168 NE Hwy 99 #103
Vancouver, WA 98665
Phone: 360-931-3122
Email: PaulWilliamsPE@gmail.com

Site Information

Address: 1805 SE 8th Ave
Camas, WA 98607

Abbrev. Desc.: Oak Park Addition to Washougal, Lot 8, Block 4

S-T-R: SW 1/4 S12 T1N R3E W.M.

Parcel: 88135000

Area: 1.00 AC (43,557± SF)

Zone: R-18 (MFH)



Fire Note

- a. Minimum 2" water supply line required from meter into house or sized per fire sprinkler contractor.
- b. Address monument provisions required where access drive leaves the public street.

Contact CWFMO (360-834-6191) for more information.

Boundary & Topography

Property boundaries shown hereon are taken from 1999 Oak Park Addition to Washougal filed in Book C, Page 24, of Plats with the Clark County auditor's office. Adjacent property boundaries are shown approximate only. Topographic survey by Engineering Northwest PLLC in 2023.

Project Record Drawings

Contractor shall provide the project engineer with a redlined copy of these construction plans showing as-built elevations, locations, and plan deviations. Redlined as-built drawings shall be submitted to the project engineer one week prior to requesting walk-through and/or acceptance of substantial completion. As built information for sewer systems shall be surveyed for accuracy.

Archeological Note

Should archeological materials (e.g. bones, shell, stone tools, beads, ceramics, old bottles, hearths, etc.) be observed during project activities, all work in the immediate area should stop and contact the State Department of Archaeology and Historic Preservation (360-586-3065.) If human remains are observed, all work should cease and the immediate area be secured. Contact local law enforcement, the County Medical Examiner (360-397-8405,) State Anthropologist, and the Department of Archaeology and Historic Preservation. Compliance with all applicable laws pertaining to archeological resources (RCW 27.53, 27.44 and WAC 25-48) and human remains (RCW 68.50) is required. Failure to comply with this requirement could constitute a Class C Felony.

Engineer's Disclaimer

The existence and location of any underground utilities or structures shown on these plans are obtained by a search of available records or as provided by survey and locate services. The contractor is required to take precautionary measures to protect the utility lines shown on these drawings and verify existing conditions. The contractor further assumes all liability and responsibility for the utility pipes, conduits, or structures shown or not shown on these drawings.

The contractor agrees that he or she shall assume sole and complete responsibility for the job site conditions during the course of construction of this project, including safety of all persons and property; that this shall apply continuously and not be limited to normal working hours; and that the contractor shall defend, indemnify and hold the owner and the engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of the owner or the engineer.

Contractor shall verify all conditions and dimensions and shall report all discrepancies to the engineer prior to the commencement of work.

General Notes

- The contractor shall visit the site and verify all existing conditions and elevations to his or her satisfaction.
- The contractor shall review the site soil and make his or her determination of existing conditions. The contractor shall be responsible for all conditions encountered.
- Contractor shall locate and mark all existing property monuments prior to construction. Any monuments disturbed during construction of this project shall be replaced by a registered land surveyor at the contractor's expense. A survey shall be recorded for any re-set monuments.
- The contractor shall protect and maintain all existing utilities on this site and within the development area. Any damage to existing utilities, whether shown or not shown on these plans, shall be repaired or replaced at the contractor's expense. Existing surface features and fencing shall be replaced in kind.
- Final cleanup, prior to final acceptance and payment, the contractor shall clean the work site and adjacent areas of any debris, discarded asphalt concrete material or other items deposited by the contractor's personnel, to include subcontractors, during the performance of this contract.
- The contractor shall take no advantage of any errors, omissions, or discrepancies in the plans. Where encountered, the engineer shall be notified prior to construction of relevant or associated features. Work performed by the contractor as a result of an error, omission, or discrepancy in the plan shall be at the contractor's risk and expense when such errors, omissions, or discrepancies have not been brought to the attention of the engineer.
- All excavators must comply with all provisions of RCW 19.722, including contacting Northwest Utility Notification Center at 1-800-553-4344 at two (2) business days, but not more than ten (10) business days, prior to excavation activity.

Typical Legend

—————	Grading Contour - Major (5')
—————	Grading Contour - Minor (1')
—————	Contour - Major (5')
—————	Contour - Minor (1')
—————	Project Boundary
—————	Right-of-Way Boundary
—————	Right-of-Way Centerline
—————	Easement Line
—————	Building Setback Line
—————	Sanitary Pipe (Existing)
—————	Sanitary Pipe
—————	Storm Pipe
—————	Water (Existing)
—————	Water
—————	Overhead Utility Line (Existing)
—————	Sanitary Manhole
—————	Sanitary Cleanout
—————	Storm Manhole
—————	Storm Catchbasin
—————	Storm Cleanout
—————	Water Meter Box
—————	Water Valve
—————	Fire Hydrant
—————	Utility Pole
—————	Sign
—————	Mail Box
—————	Deciduous Tree
—————	Coniferous Tree
—————	Existing Asphalt
—————	Existing Concrete
—————	Proposed Asphalt
—————	Proposed Concrete
—————	Pavement Restoration Limits

Typical Abbreviations

AC	Asphalt Concrete	L	Length, Length of Arc
ACP	Asphalt Concrete Pavement	MH	Manhole
AD	Area Drain	MMIN	Minimum
ADA	Americans with Disability Act	MISC	Miscellaneous
AP	Angle Point	MON	Monument
APPROX	Approximately	MUTCD	Manual on Uniform Traffic Control Devices
AVE	Average	N	North
B	Backflow	NO	Number
BO	Blowoff	NST	Not Sleeper Than
BL	Baseline	NTS	Not to Scale
BLDG	Building	O-XING	Overhead Crossing
BLVD	Boulevard	OC	On Center
BM	Benchmark	OD	Outside Diameter
BMP	Best Management Practice	OP	Overhead Power
BRG	Bearing	OT	Overhead Telephone
BVCE	Beginning of Vertical Curve Elevation	P	Power Pole
BVCS	Beginning of Vertical Curve Station	PAVT	Pavement
CB	Catch Basin	PC	Point of Curvature (Tangent Curve Start)
CL	Class	PCC	Point of Compound Curvature
CL	Centerline	PE	Pedestrian
CLR	Clear	PI	Point of Intersection
CJ	Construction Joint	PL	Property Line
CO	Cleanout	POC	Point on Curve
CMP	Corrugated Metal Pipe	POL	Point on Line
COMPT	Compacted	PP	Power Pole
CONC	Concrete	PRC	Point of Reverse Curvature
CONST	Construction	PSI	Pounds per Square Inch
CPE	Corrugated Polyethylene Pipe	PT	Point of Tangent (Tangent Curve End)
CSBC	Crushed Surfacing Base Course	PVC	Polyvinyl Chloride
CSTC	Crushed Surfacing Top Course	PVCC	Point of Vertical Compound Curvature
CU	Cubic	PVI	Point of Vertical Intersection
D	Drainpipe (Storm)	PVRC	Point of Vertical Reverse Curvature
DIAM	Diameter	QTY	Quantity
DIST	Distance	R	Radius
DWG	Drawing	ROW, RW	Right of Way
DWY	Driveway	S	South, Slope
EA	Each	SAN	Sanitary
EJ	Expansion Joint	SCHED	Schedule
EL	Elevation	SD	Storm Drain
ELEC	Electrical	SF	Square Foot
EMB	Embankment	SHLD	Shoulder
EP	Edge of Pavement	SHT	Sheet
EST	E estimate	SS	Sanitary Sewer
EVCE	End of Vertical Curve Elevation	ST	Street
EVCS	End of Vertical Curve Station	STA	Station
EXIST	Existing	STD	Standard
FH	Fire Hydrant	SWK	Sidewalk
FL	Flow-line of Curb (Gutter Line)	TC	Top of Curb (Face)
G	Gas Line, Green	TBC	Top Back of Curb
GB	Grade Break	TEL	Telephone
GL	Gutter Line (Flow-line of Curb)	TEMP	Temporary
GRD	Ground, Grade	TP	Top of Pavement
HDPE	High Density Polyethylene	TYP	Typical
HMAC	Hot Mix Asphalt Concrete	W	Water
IE	Invert Elevation	WM	Water Meter, Water Main
IN	Invert	WV	Water Valve
IRR	Irrigation	WSE	Water Surface Elevation
JB	Junction Box	WDOT	Washington State Department of Transportation
JTS, JT	Joints, Joint		

City of Camas Detail Note

All materials and methods of construction and installation for storm water facilities, erosion control measures, water, and sewer, shall conform to City of Camas Engineering Standards. Construction shall be to the most current standard details.

CITY OF CAMAS			
CITY ENGINEER	DATE		
REVISION NO.	SHEETS AFFECTED	INITIAL APPROVAL	DATE

Cover Sheet

8th Ave Apartments

PRELIMINARY NOT FOR CONSTRUCTION

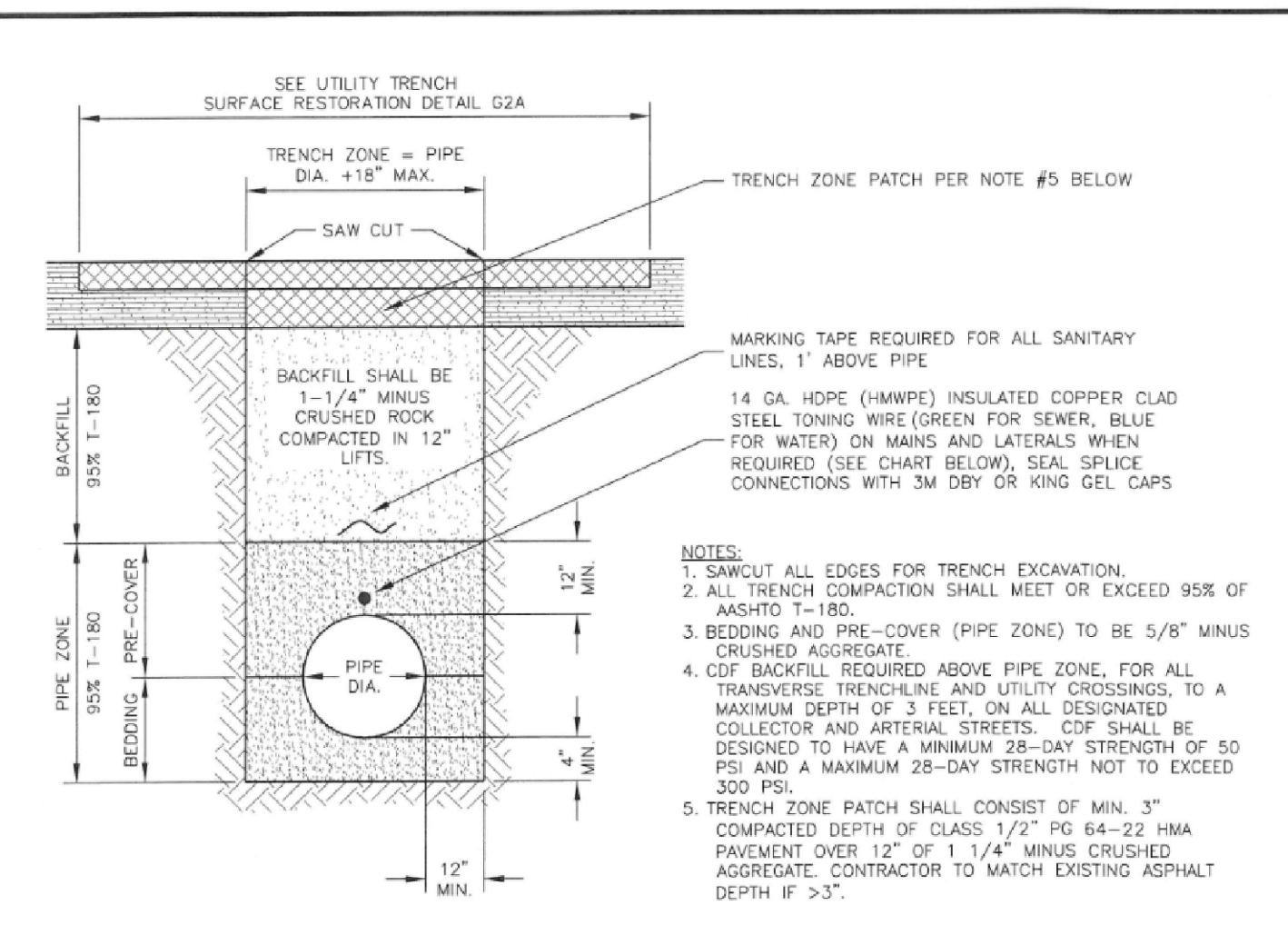
ENGINEERING NORTHWEST
CONSULTING ENGINEERS & PLANNERS
6168 NE HWY 99 STE 103, VANCOUVER 98665
(360) 931-3122

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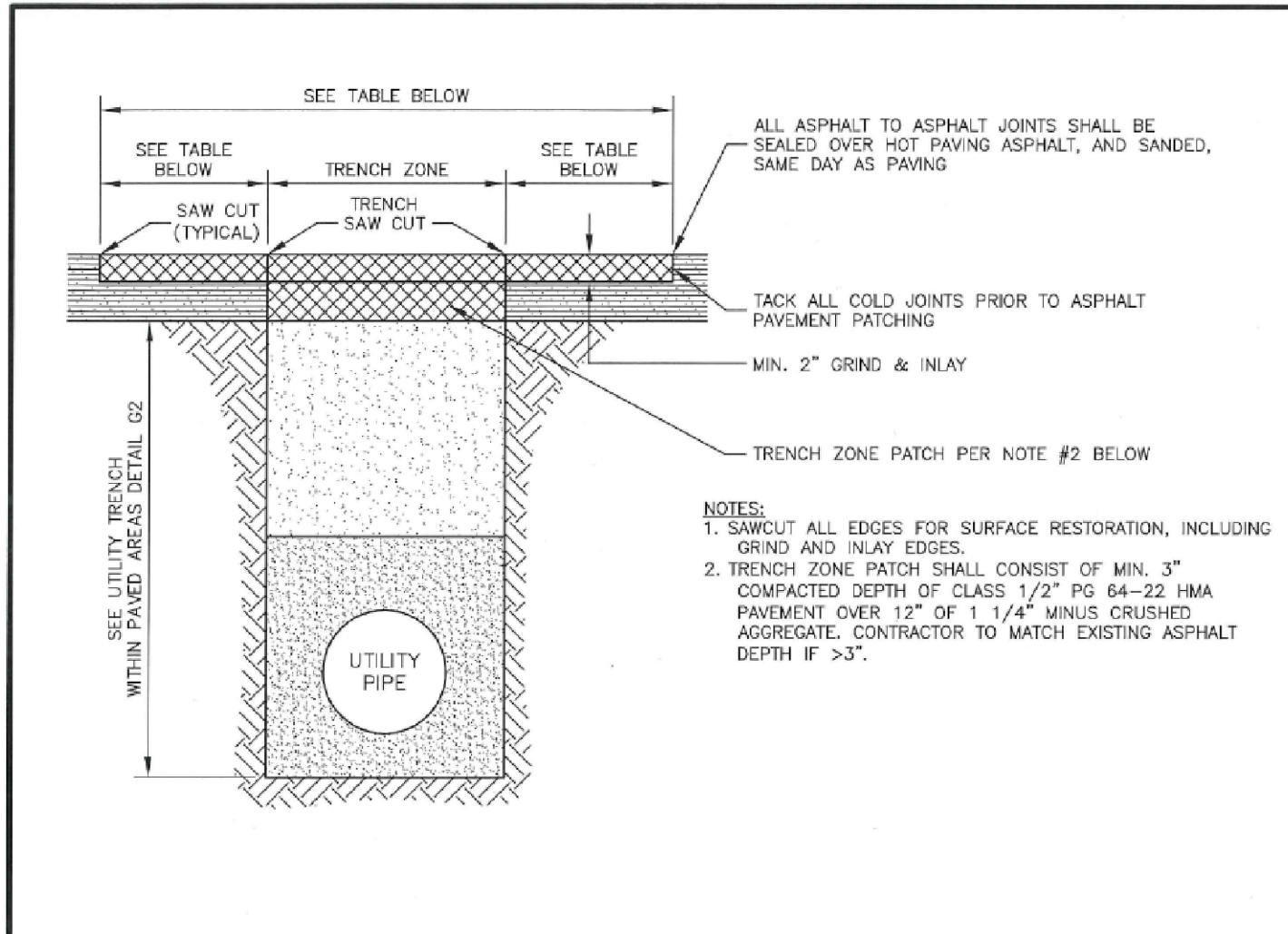
GENERAL CONSTRUCTION NOTES:

- 1. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE WSDOT/APWA "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" AND STANDARD DETAIL SHEETS ATTACHED HEREWITH.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES, INCLUDING THE INVERT AND TOP ELEVATIONS AT CROSSING LOCATIONS, PRIOR TO THE START OF CONSTRUCTION AND TO NOTIFY THE CITY ENGINEER OF ANY POTENTIAL CONFLICTS.
3. CONTRACTOR SHALL CONTACT CLARK COUNTY'S 24-HOUR UTILITY NOTIFICATION CENTER AT CALLBEFOREYOU.DIG.ORG OR CALL (800) 424-5555 (OR 811) TO SUBMIT A REQUEST FOR UTILITY LOCATES, A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
4. ALL EXISTING MONUMENTS, PROPERTY CORNERS AND SURVEY MARKERS SHALL BE PROTECTED. REPLACEMENT OF LOST, DESTROYED OR DAMAGED MARKERS SHALL BE DONE BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH RCW 58.09 AT THE CONTRACTOR'S EXPENSE.
5. THE CONTRACTOR SHALL NOT EXCAVATE OVER FOUR FEET IN DEPTH WITHOUT USING ADEQUATE SAFETY MEASURES. THE CONTRACTOR IS REFERRED TO TITLE 296 WAC, PART N FOR EXCAVATION, TRENCHING AND SHORING REQUIREMENTS.
6. ALL UTILITY TRENCHES SHALL HAVE BEDDING, PRE-COVER AND BACKFILL MATERIAL AS REQUIRED IN GENERAL DETAILS G2 WITHIN PAVED AREAS & G3 WITHIN UNPAVED AREAS.
- WATER SETTLEMENT OF UTILITY TRENCHES IS NOT ALLOWED.
- TRENCH LINES LOCATED WITHIN AN EXISTING ROADWAY SHALL BE PLATED OR TOPPED WITH COLD MIX.
- CRUSHED ROCK BACKFILL OVERNIGHT IS NOT ALLOWED.
- PLATES SHALL HAVE COLD MIX AROUND ALL EDGES.
7. ALL EROSION/SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE EROSION/SEDIMENT CONTROL PLAN AND CITY OF CAMAS EROSION/SEDIMENT CONTROL DETAILS PRIOR TO ANY CLEARING OR THE START OF ANY CONSTRUCTION.
8. IF THE CITY INSPECTOR OR ENGINEER(S) HAS EVIDENCE OF POOR CONSTRUCTION PRACTICES OR EROSION CONTROL TECHNIQUES, A "STOP WORK" ORDER SHALL BE ISSUED UNTIL PROPER MEASURES HAVE BEEN TAKEN AND APPROVED BY THE CITY ENGINEERING STAFF.
9. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CAMAS ENGINEERING DEPARTMENT. APPROVAL SHALL BE OBTAINED PRIOR TO COMMENCING ANY WORK.
10. THE DEVELOPER/CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION MEETING WITH THE CITY OF CAMAS ENGINEERING DEPARTMENT PRIOR TO COMMENCING ANY WORK.
11. ANY SIGNIFICANT DEVIATIONS FROM THE PLANS WILL REQUIRE A SUBMITTAL FROM THE APPLICANT'S ENGINEER AND APPROVAL FROM THE CITY OF CAMAS ENGINEERING DEPARTMENT.
12. AN EROSION/SEDIMENT CONTROL BOND MAY BE REQUIRED BY THE CITY OF CAMAS PRIOR TO WORK COMMENCING.



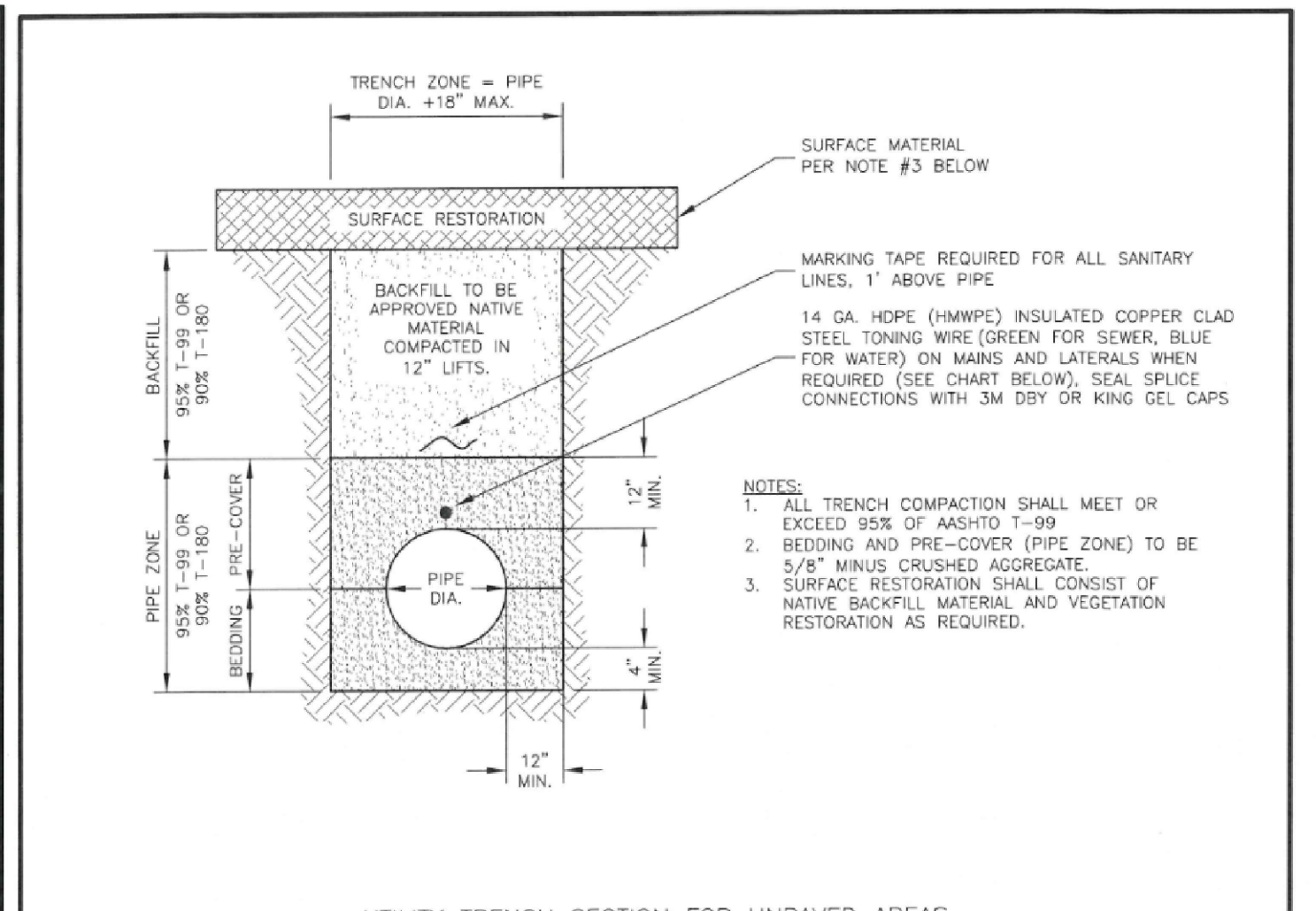
- NOTES:
1. SAWCUT ALL EDGES FOR TRENCH EXCAVATION.
2. ALL TRENCH COMPACTION SHALL MEET OR EXCEED 95% OF AASHTO T-99.
3. BEDDING AND PRE-COVER (PIPE ZONE) TO BE 5/8" MINUS CRUSHED AGGREGATE.
4. TOP BACKFILL REQUIRED ABOVE PIPE ZONE, FOR ALL TRANSVERSE TRENCHLINE AND UTILITY CROSSINGS, TO A MAXIMUM DEPTH OF 3 FEET, ON ALL DESIGNATED COLLECTOR AND ARTERIAL STREETS. CDF SHALL BE DESIGNED TO HAVE A MINIMUM 28-DAY STRENGTH OF 50 PSI AND A MAXIMUM 28-DAY STRENGTH NOT TO EXCEED 300 PSI.
5. TRENCH ZONE PATCH SHALL CONSIST OF MIN. 3" COMPACTED DEPTH OF CLASS 1/2" PG 64-22 HMA PAVEMENT OVER 12" OF 1 1/4" MINUS CRUSHED AGGREGATE. CONTRACTOR TO MATCH EXISTING ASPHALT DEPTH IF >3".

UTILITY TRENCH SURFACE RESTORATION TABLE with columns for STREET CLASSIFICATION, TRANSVERSE TRENCH REQUIREMENTS, and LONGITUDINAL TRENCH REQUIREMENTS.



- NOTES:
1. SAWCUT ALL EDGES FOR SURFACE RESTORATION, INCLUDING GRIND AND INLAY EDGES.
2. TRENCH ZONE PATCH SHALL CONSIST OF MIN. 3" COMPACTED DEPTH OF CLASS 1/2" PG 64-22 HMA PAVEMENT OVER 12" OF 1 1/4" MINUS CRUSHED AGGREGATE. CONTRACTOR TO MATCH EXISTING ASPHALT DEPTH IF >3".

UTILITY TRENCH SURFACE RESTORATION TABLE (repeated) with columns for STREET CLASSIFICATION, TRANSVERSE TRENCH REQUIREMENTS, and LONGITUDINAL TRENCH REQUIREMENTS.



- NOTES:
1. ALL TRENCH COMPACTION SHALL MEET OR EXCEED 95% OF AASHTO T-99.
2. BEDDING AND PRE-COVER (PIPE ZONE) TO BE 5/8" MINUS CRUSHED AGGREGATE.
3. SURFACE RESTORATION SHALL CONSIST OF NATIVE BACKFILL MATERIAL AND VEGETATION RESTORATION AS REQUIRED.

UTILITY TRENCH SECTION FOR UNPAVED AREAS MINIMUM PIPE COVER TABLE with columns for UTILITY TYPE, MAIN TYPE, MIN PIPE (MAIN) COVER, and MIN. LATERAL OR SERVICE COVER.

City of Camas logo and metadata for GENERAL DETAIL CONSTRUCTION NOTES, including revision 6 and date 8/12/2022.

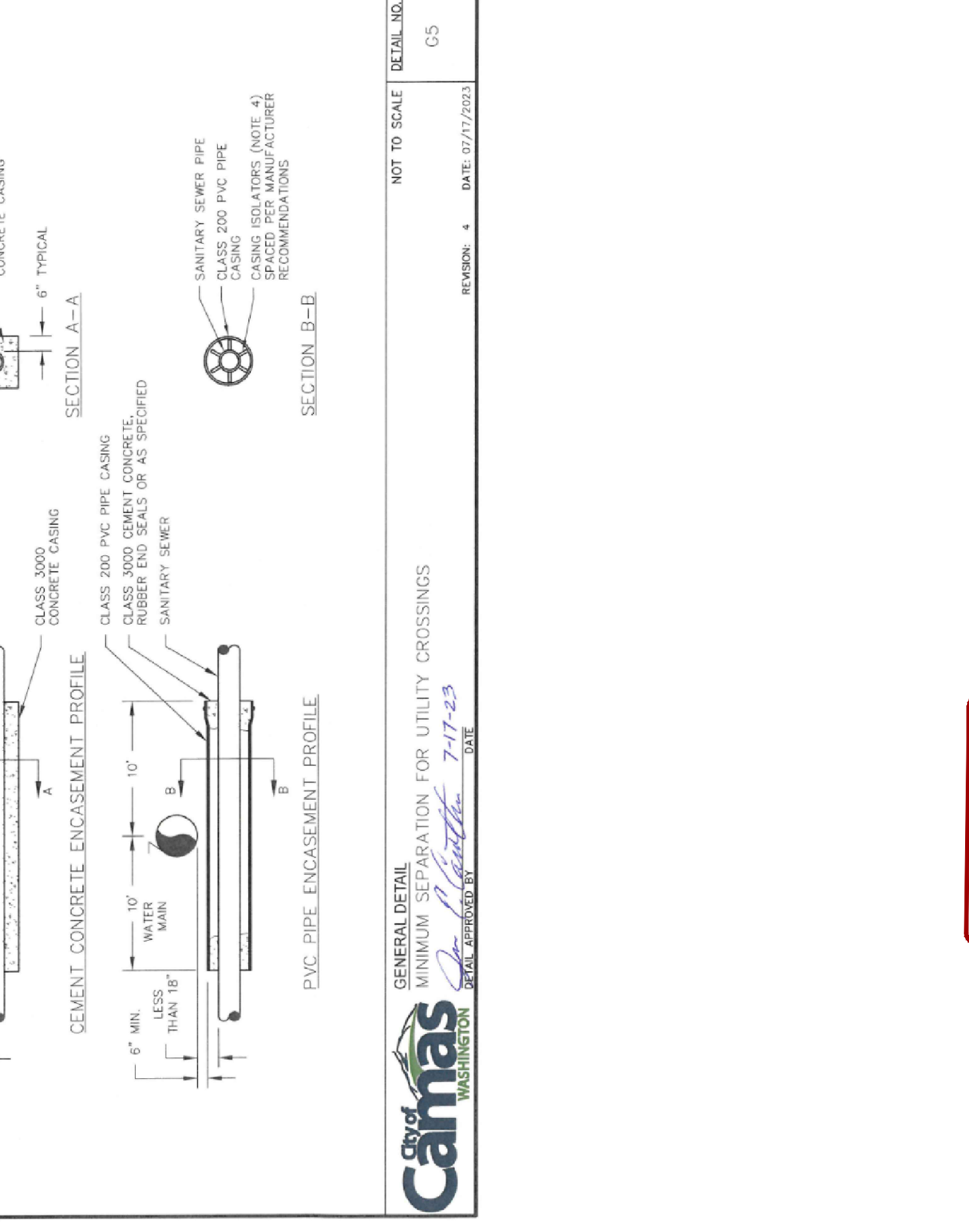
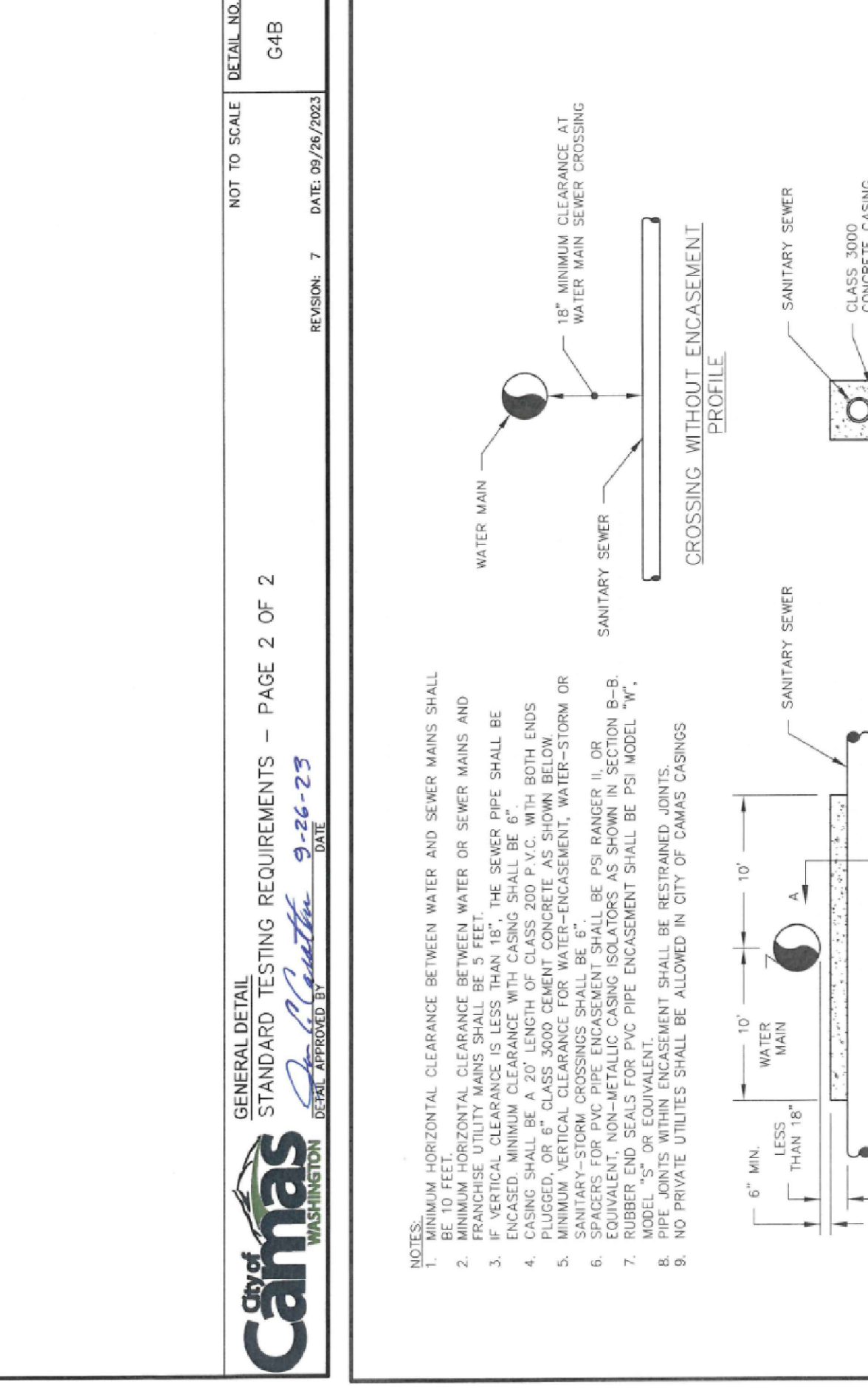
City of Camas logo and metadata for GENERAL DETAIL UTILITY TRENCH WITHIN PAVED AREAS, including revision 8 and date 09/29/2023.

City of Camas logo and metadata for GENERAL DETAIL UTILITY TRENCH SURFACE RESTORATION, including revision 1 and date 4/16/2019.

City of Camas logo and metadata for GENERAL DETAIL UTILITY TRENCH FOR UNPAVED AREAS, including revision 7 and date 09/29/2023.

GENERAL DETAIL STANDARD TESTING REQUIREMENTS - PAGE 1 OF 2 table with columns for CATEGORY, TEST, STANDARD, FREQUENCY, TESTING AGENCY, TIMING, and TEST REQUIREMENTS.

GENERAL DETAIL STANDARD TESTING REQUIREMENTS - PAGE 2 OF 2 table with columns for CATEGORY, TEST, STANDARD, FREQUENCY, TESTING AGENCY, TIMING, and TEST REQUIREMENTS.



General Notes & Details
8th Ave Apartments

PRELIMINARY NOT FOR CONSTRUCTION

ENGINEERING NORTHWEST CONSULTING ENGINEERS & PLANNERS logo and contact information: 6168 NE HWY 99 STE 103, VANCOUVER 98665, (360) 931-3122

C020

Project: 23005SP
 Date: 10/26/2023
 Drafted: NVS
 Designed: PCW
 Page: 3 of 17

Northwest Utilities
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Revisions:

Site Information

Address: 1805 SE 8th Ave
 Camas, WA 98607
 Abbrev. Desc: Oak Park Addition to Washougal, Lot 8, Block 4
 S-T-R: SW 1/4 S12 T1N R3E W.M.
 Parcel: 88135000
 Area: 1.00 AC (43,557± SF)
 Zone: R-18 (MFH)

Boundary & Topography

Property boundaries shown hereon are taken from 1999 Oak Park Addition to Washougal filed in Book C, Page 24, of Plats with the Clark County auditor's office. Adjacent property boundaries are shown approximate only. Topographic survey by Engineering Northwest PLLC in 2023. This is not a boundary survey.

Notes

- On or within 100 feet of the site, there are:
- 1) No known water courses.
 - 2) No known water bodies, areas prone to flooding, or wetlands. A 500-yr floodplain fronts the site on SE 8th Ave, but does not impact the development area.
 - 3) No designated shoreline areas.
 - 4) No known or mapped wetlands.
 - 5) No unstable slopes or landslide areas.
 - 6) No significant wildlife habitat or vegetation, other than as shown hereon.
 - 7) No significant historic sites.
 - 8) No existing pedestrian facilities.
 - 9) No existing bicycle facilities.
 - 10) CTRAN route 41 passes within 600' of the site, but no stops are nearby.
 - 11) No streets providing access to the site in excess of 15% grade.

Site Information and Environmental Constraints

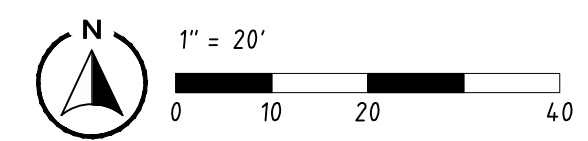
As available from Clark County GIS

Administrative Data Info...	
Jurisdiction	Camas
Land Use Planning	
Comprehensive Plan Designation	MFH
Comprehensive Plan Overlay(s)	none
Urban Growth Area	Camas
Zoning Designation - Codes	Multifamily Residential-18 (R-18)
Zoning Overlay(s)	Gateway Corridor
Miscellaneous	
Census Tract	415.00
Drainage District	n/a
Neighborhood	n/a
Park District	n/a
Public Safety	
Burning Allowed	No
EMS Response Area	Camas Washougal Fire
Fire District	Camas
Increased Wildfire Danger Area	No
Police Jurisdiction	Camas Police Dept
Schools	
School District Name	Camas
Elementary School Attendance Area	Woodburn
Middle School Attendance Area	Liberty
High School Attendance Area	Camas
Transportation	
C-TRAN Public Transportation Benefit Area	Yes
Traffic Impact Fee (TIF) District	Camas
Transportation Analysis Zone	394

Wetlands and Soil Types	
Critical Aquifer Recharge Area:	Category 1 Recharge Areas Category 2 Recharge Areas
FEMA Map / FIRM Panel: Info...	53011C0534E FEMA Flood Map Service Center
Flood Hazard Area: Info...	Outside Flood Area
Shoreline Designation:	none
Soil Types / Class:	Non-Hydric / HoA
Water Resource Inventory Area:	Name: SALMON-WASHOUGAL Sub-Basin: Washougal
Watershed:	Washougal River
Sub Watershed:	Washougal (Lower)
Wetland Class:	No Mapping Indicators
Wetland Inventory: Info...	No Mapping Indicators

Cultural Resources	
Archaeological Probability:	High
Archaeological Site Buffer:	Yes
Historic Site:	No Mapping Indicators
Forest Practice Moratorium Info...	
	none
Geological Hazards Info...	
Geological Hazard:	
Liquefaction:	Very Low
NEHRP Class:	C
Slope Stability:	

Habitat and Species Resources Info...	
Habitat and Species Impacts:	Yes
Habitat Area:	Oak Woodland
Adjacent to Habitat Area:	Oak Woodland



Existing Conditions Plan
8th Ave Apartments



ENGINEERING NORTHWEST
 CONSULTING ENGINEERS & PLANNERS
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C030

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Development Standards (MF-18)

CMC 18.09.030 Table 1	Requirement	Proposed
Max density	18 DU/AC	16.8 DU/AC
Min lot area	2,100 SF	18,168 SF
Min lot width	26'	97'
Min lot depth	60'	188'
Max GFA	none	-
Setbacks:		
Front	10'	26'
Garage	20'	N/A
Side	3'	5'
Rear	10'	10'
Lot Coverage	65%	< 20%
Building Height	50'	< 50'

CMC 18.13.020 Landscaping Regulations

A 5ft L1 buffer is required on the east, west, and north.
A 10ft L3 buffer is required on the south.
Perimeter of the proposed parking areas will be landscaped including a min ratio of one tree per six parking spaces, or at least 3 trees.
A min tree density of 20 tree-units per acre are required and may be incorporated with the proposed landscaping. Tree density is calculated on net acreage, excluding open space, critical areas and their buffers. The oak tree on site is not proposed for removal. It will be retained.

Landscaped areas:

For detailed information, see landscape plan
There is no percentage of site coverage standard required for this project, other than as provided for by buffers and parking lot trees.

CMC 18.11 Parking

Use: Residential, Apartments 1 bed/2+ bed = 15 / 2 stalls
If all 7 units are 2-bed, min 14 stalls required.
15 stalls are proposed, including:
Compact: 0 (0%)
Standard: 15

ADA-1

Van Accessible: 1

Engineering

18.17.030 - Corner lot vision clearance
No impact to the corner lot vision clearance area is proposed.
Utilities, all utilities are proposed underground.
To comply with CDSM Table 1
Aisle widths are min 18' where no parking is adjacent.
Aisle widths are min 24' where adjacent to parking.

Stormwater

See storm plan and Preliminary TIR.

Erosion

See grading & erosion control plan

Water & Sewer

See water & sewer plan

Garbage & Recycling

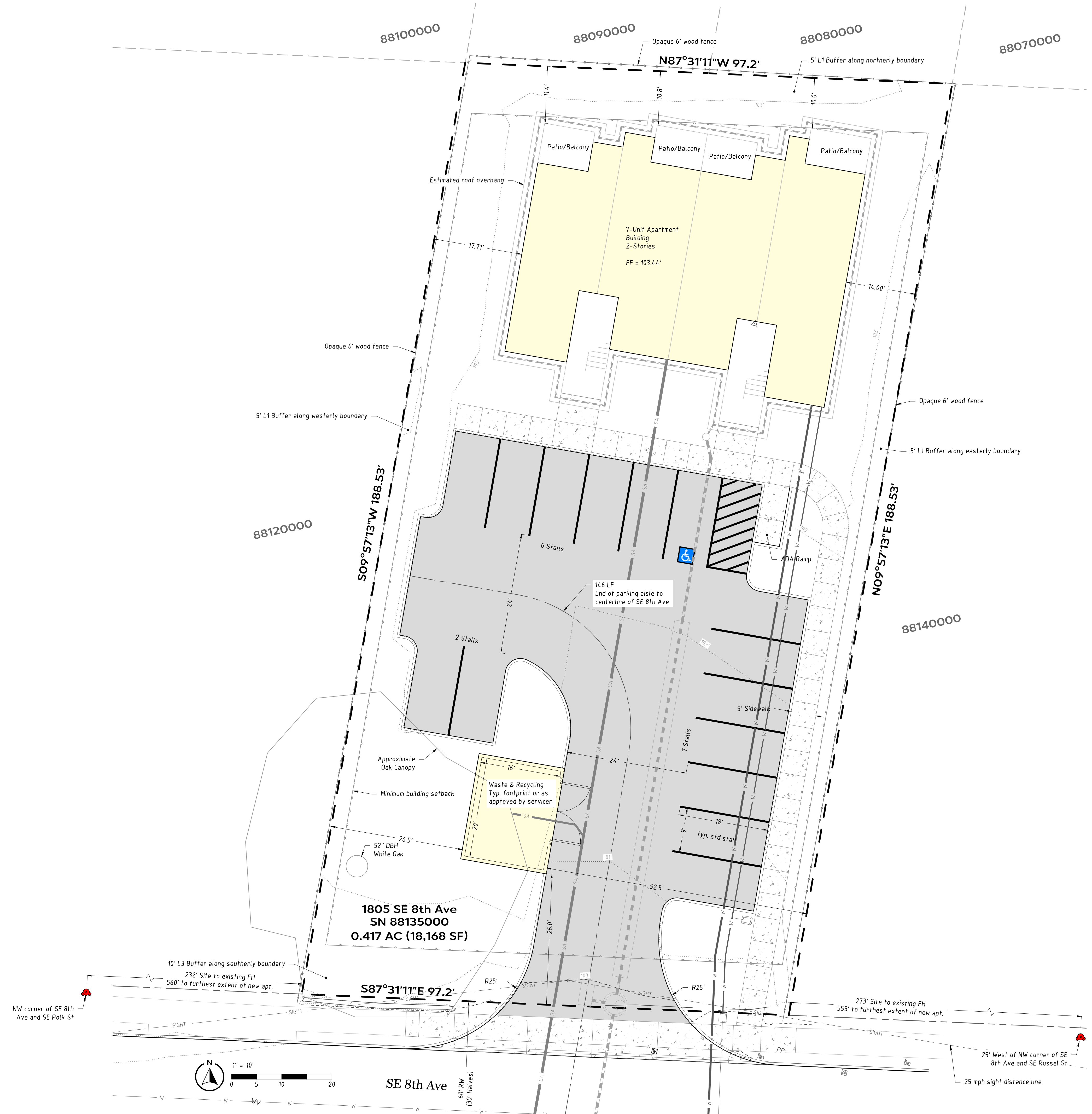
Collection is proposed on site at screened enclosure points as shown hereon.
Proposed movement is to back onto the site so that the collection truck does not back into the public roadway.

Critical Areas

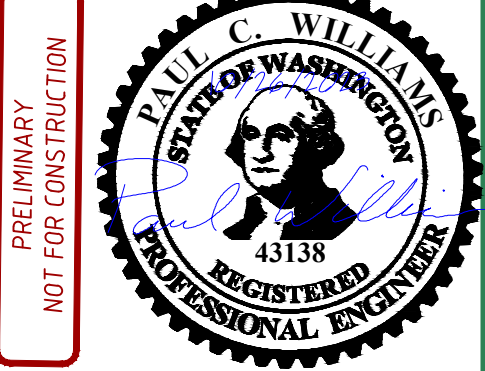
No critical areas are known to exist, except the Oregon White Oak tree shown hereon.

Design Review Manual (Gateway)

- New construction SHALL be placed as close to streets and roads as the zoning code allows. Main entrances to the buildings must be oriented to the street.
- This standard cannot be met due to the restriction of the existing Oregon White Oak tree which must be preserved.
- On-site parking SHALL be located to the rear of the building.
- Due to the lot width and depth, parking is not feasible to be placed behind the building.

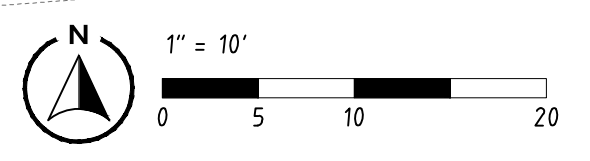


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 S-T-R: SW 1/4 S12 T1N R3E W.M.
 Parcel: 88135000
 Area: 1.00 AC (43,557± SF)
 Zone: R-18 (MFH)

Boundary & Topography

Property boundaries shown hereon are taken from 1999 Oak Park Addition to Washougal filed in Book C, Page 24, of Plats with the Clark County auditor's office. Adjacent property boundaries are shown approximate only. Topographic survey by Engineering Northwest PLLC in 2023. This is not a boundary survey.

Grade Change Legend

Max	Color
-2.4	Red
-2.0	Orange
-1.0	Yellow
+1.0	Light Green
+1.8	Dark Green

Approximate Earthwork Volumes

Disclaimer: These figures represent approximate earthwork quantities calculated from the existing surface to a design surface at 11 volume. No adjustments for pavement or base sections, assumed foundations, storage facilities, trench spoils, over excavation, shrinkage, swell, deleterious materials removal, etc have been factored. Contractors are solely responsible for quantity estimates for bidding purposes. The design surface is typically top of final pavement, finish floor elevations, final grading, etc.

Cut: 240 CY
 Fill: 0 CY
 Disturbed Area: 0.36 AC

Environmental Constraints

As provided by Clark County GIS, no environmental constraints exist on or within 100 feet of the subject site. No critical areas are known to exist on site other than the existing Oregon White Oak shown hereon.

Compaction Specification

See CDSM sewer standard testing requirements, Details G4A&B. Proof rolls with fully loaded dump truck required prior to fill.

Records shall be kept for all compaction testing and these records shall be made available to the engineer and review authority upon request.

Weather Variation

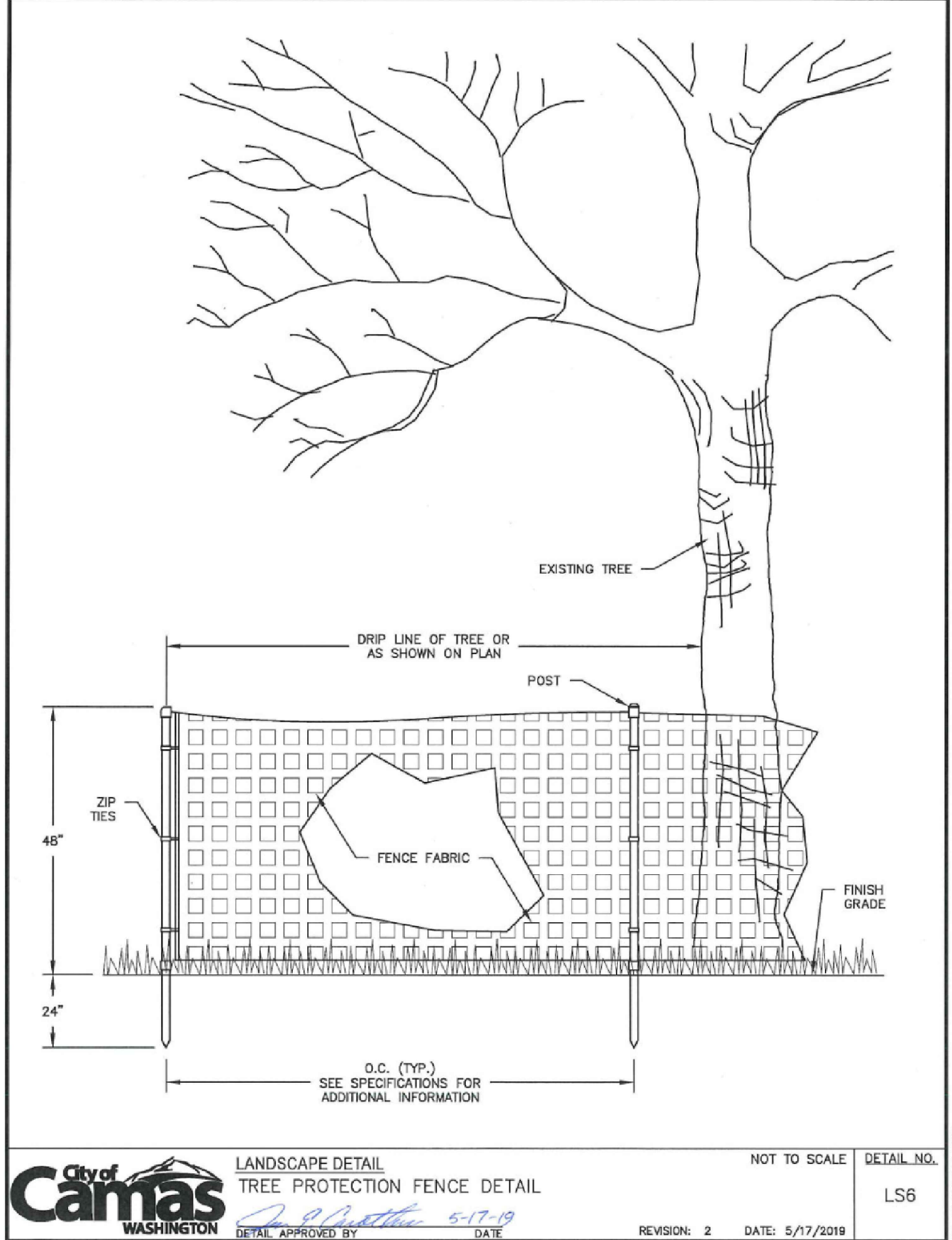
Significant variation and degree of erosion control effort will be dictated by weather conditions. The developer and contractor should be prepared to provide extra erosion control provisions and efforts during winter and wet weather conditions beyond that normally required during summer and dry weather conditions. Fine graded and unconsolidated soils on sloping site may become unstable when subject to excessive moisture.

Archaeological Note

In the event that any item of archaeological interest is uncovered during the course of a permitted ground disturbing action or activity, all ground disturbing activities shall immediately cease, and the applicant shall notify the City and Department of Archaeology and Historic Preservation (DAHP).

General Grading & Erosion Control Notes

- See General Grading and Erosion Notes, std details EC1, EC2, EC3, SHT C110.
- Site must have Certified Erosion and Sediment Control Lead (CESCL) to comply with BMP C160.
- All material handling on site must comply with BMP C150, BMP C151, and BMP C154.
- Place plastic covering complying with BMP C123 over all soil piles or straw complying with BMP C121.
- Sequence construction to comply with BMP C162.
- Permanently stabilize site, re-establish vegetation or landscaping prior to removal of erosion control measures.
- Contractor is responsible for meeting post-construction soil quality and depth (BMP T5.13) per current edition of the Stormwater Management Manual for Western Washington Stormwater Manual (SWMWW) for all disturbed areas.
- Preserve existing vegetation where feasible per BMP C101.
- Use seeding throughout the project on disturbed areas that have reached final grade or that will remain unworked for more than 30 days per BMP C120.
- A wheel wash may be required if the construction entrance is not sufficient in preventing sediment from being tracked onto public roads. Wheel wash per std detail EC7, SHT C110, and the current edition of the SWMMWW. If required, wheel wash to be located in the field by contractor.
- All excavation and grading shall be performed in compliance with CMC 15.50.
- The faces of cut and fill slopes shall be prepared and maintained to control erosion. This control shall generally consist of effective planting. Erosion control for the slopes shall be installed as soon as practicable and prior to calling for final inspection.
- Contractor shall notify engineer immediately and prior to grading activity upon discovery of a bust in existing grade survey. Continuing grading activity upon discovery of a grade bust shall be at contractor's own risk.
- Exposed soil is to be stabilized in accordance with CMC 15.50.0901.
 From October 1st through July 5th, no unworked soils shall remain exposed for more than two (2) days. From July 6th through September 30th, no unworked soils shall remain exposed for more than seven (7) days.



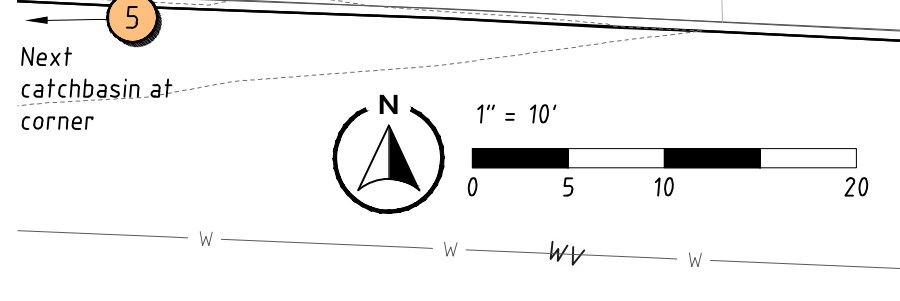
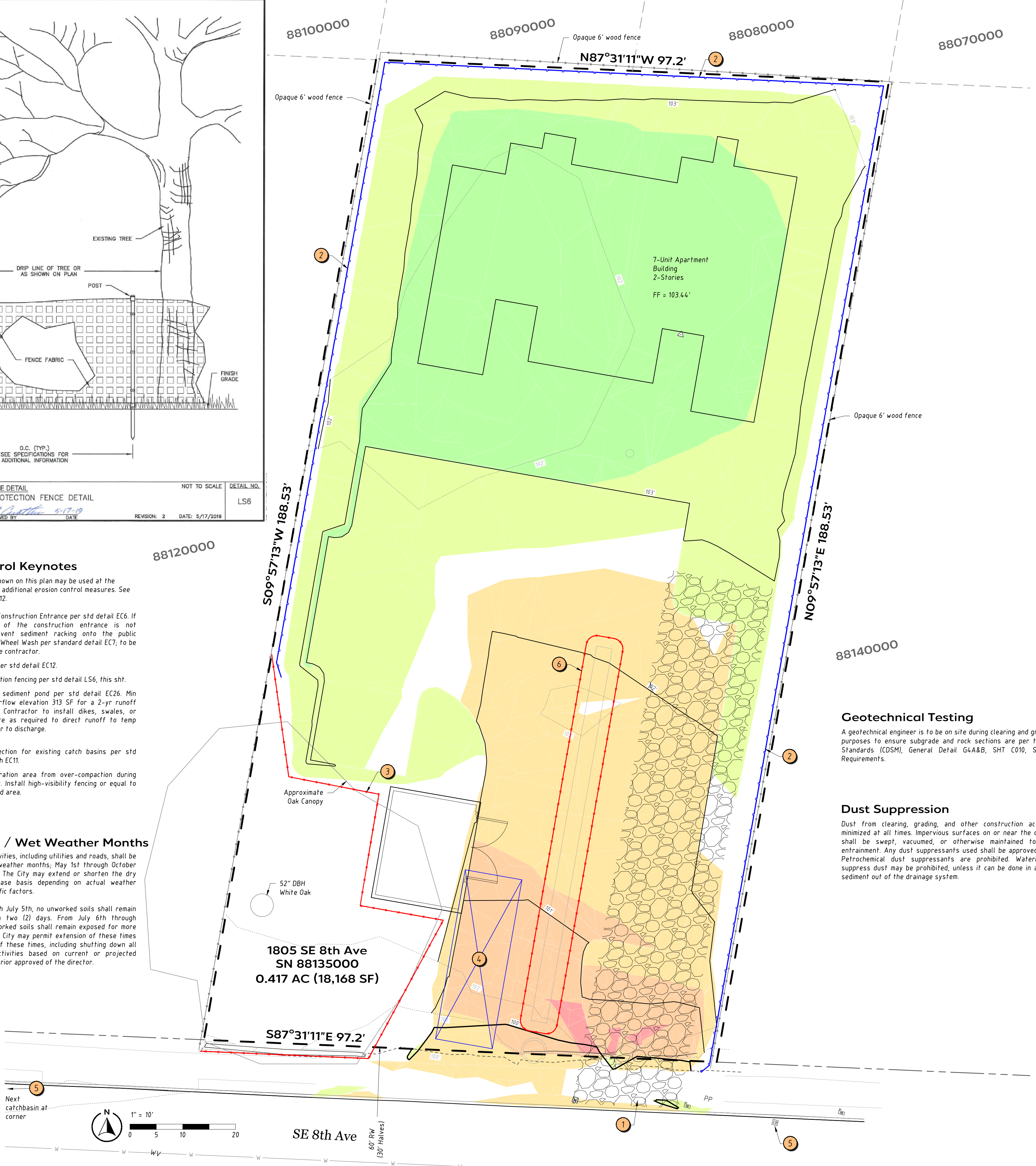
Erosion Control Keynotes

BMPs not called out or shown on this plan may be used at the developer's discretion as additional erosion control measures. See std details SHT C110 & C112.

- Install Stabilized Construction Entrance per std detail EC6. If the performance of the construction entrance is not sufficient to prevent sediment racking onto the public roadway, install a Wheel Wash per standard detail EC7, to be field located by the contractor.
- Install Silt Fence per std detail EC12.
- Install tree protection fencing per std detail LS6, this sht.
- Install temporary sediment pond per std detail EC26. Min pond area at overflow elevation 313 SF for a 2-yr runoff rate of 0.15 cfs. Contractor to install dikes, swales, or drain-pipes on site as required to direct runoff to temp sediment pond prior to discharge.
- Install inlet protection for existing catch basins per std details EC8 through EC11.
- Protect LID infiltration area from over-compaction during earthwork activity. Install high-visibility fencing or equal to delineate protected area.

Dry Weather / Wet Weather Months

Clearing and grading activities, including utilities and roads, shall be allowed during the dry weather months; May 1st through October 1st, per CMC 15.50.090L. The City may extend or shorten the dry season on a case-by-case basis depending on actual weather conditions and site-specific factors.
 From October 1st through July 5th, no unworked soils shall remain exposed for more than two (2) days. From July 6th through September 30th, no unworked soils shall remain exposed for more than seven (7) days. The City may permit extension of these times or require a reduction of these times, including shutting down all clearing and grading activities based on current or projected weather conditions with prior approved of the director.



Grading & Erosion Control Plan
8th Ave Apartments
ENGINEERING NORTHWEST
 CONSULTING ENGINEERS & PLANNERS
 6168 NE HWY 99 STE 103, VANCOUVER 98665
 (360) 931-3122

PRELIMINARY NOT FOR CONSTRUCTION



Project: 23005SP
Date: 10/26/2023
Drafted: NVS
Designed: PCW
Page: 6 of 17

Northwest Utilities
1-800-424-5555
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Call 48 hours before you dig.

Revisions:

GRADING NOTES:

- ALL GRADING SHALL CONFORM TO THE CITY OF CAMAS DESIGN STANDARDS MANUAL AND THE MOST RECENTLY ADOPTED EDITION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.
- THE LIMITS OF CLEARING SHALL BE FLAGGED WITH HIGH-VISIBILITY FENCING PRIOR TO CLEARING AND GRUBBING OF THE SITE.
- ANY EXISTING TREES TO REMAIN WITHIN THE CLEARING LIMITS SHALL BE MARKED AND PROTECTED FROM DAMAGE WITH HIGH VISIBILITY FENCING.
- PRIOR TO ANY FILL PLACEMENT, ALL AREAS WHICH WILL RECEIVE STRUCTURAL FILL SHALL BE EXCAVATED TO FIRM, NON-ORGANIC, UNDISTURBED NATIVE GROUND. THE STRIPPED AREAS SHALL BE OBSERVED AND ACCEPTED BY THE GEOTECHNICAL ENGINEER AND THE CITY OF CAMAS INSPECTOR.
- ALL LOT FILLS SHALL MEET 95% OF AASHTO T-99 COMPACTION.
- ALL RIGHT-OF-WAY FILLS SHALL MEET 95% OF AASHTO T-180 COMPACTION.
- FILLS SHALL BE INSTALLED IN VERTICAL LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS AND SHALL BE COMPACTED AS PREVIOUSLY NOTED.
- FILLS PLACED ON SLOPES EXCEEDING 5H:1V SHALL BE KEYED AND BENCHED, GEOTECHNICAL APPROVAL REQUIRED PRIOR TO ANY FILL PLACEMENT.
- ALL SURFACES SHALL BE GRADED SMOOTH AND BE FREE OF IRREGULARITIES THAT MIGHT ACCUMULATE SURFACE WATER.
- ALL CUT AND FILL SLOPES SHALL NOT EXCEED 2:1 SLOPES.
- ANY EXCESS MATERIAL NOT REQUIRED TO MEET THE GRADES SHOWN ON THE PLANS SHALL BE HAULED FROM THE SITE TO A CONTRACTOR PROVIDED WASTE SITE. IF WASTE SITE IS WITHIN CITY LIMITS, A SEPARATE GRADING PERMIT MAY BE REQUIRED.
- ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY SUITABLE APPLICATION OF EROSION CONTROL BMP'S.
- ALL SURFACES REQUIRING VEGETATION SHALL BE ROUGHENED PRIOR TO SEEDING (I.E. WHEEL TRACKED PERPENDICULAR TO SURFACE FLOW TO REDUCE EROSION AND HELP VEGETATION).
- FINAL GEOTECHNICAL SUMMARY REPORT, INCLUDING ALL COMPACTION TESTING RESULTS, SHALL BE SUBMITTED UPON COMPLETION OF SITE GRADING WORK.

EROSION/SEDIMENT CONTROL NOTES:

- THE EROSION/SEDIMENT CONTROL (ESC) PLAN AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS TO BE UTILIZED AS A GUIDE TO CONTROL THE TRANSPORT OF LOOSE SOILS TO THE PROPERTY OUTSIDE OF THE CONSTRUCTION AREA AND AROUND THE CONSTRUCTION SITE. THE ESC MEASURES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
- THE IMPLEMENTATION OF THE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADE OF THE ESC MEASURES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND PERMANENT VEGETATION/LANDSCAPING IS ESTABLISHED.
- IF THE CITY INSPECTOR OR ENGINEER(S) HAS EVIDENCE OF POOR CONSTRUCTION PRACTICES OR EROSION CONTROL TECHNIQUES, A "STOP WORK" ORDER SHALL BE ISSUED UNTIL PROPER MEASURES HAVE BEEN TAKEN AND APPROVED BY THE CITY ENGINEERING STAFF.
- THE CONTRACTORS SHALL BE RESPONSIBLE TO FAMILIARIZE THEMSELVES WITH THE MOST RECENTLY ADOPTED EDITION OF THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, VOL. II AND THE CITY OF CAMAS MUNICIPAL CODE 14.06 (2011).
- ALL EROSION/SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND IN WORKING CONDITION PRIOR TO DISTURBING AND EXPOSING ANY SOIL SURFACES (I.E. CONSTRUCTION ENTRANCES, FILTER FABRIC SEDIMENT BARRIERS, AND SEDIMENTATION TRAPS) AND MAINTAINED FOR THE DURATION OF THE PROJECT. TRAPPED SEDIMENT IN EXCESS OF 1 FOOT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL AREAS RESULTING FROM VEGETATION REMOVAL SHALL BE PERMANENTLY STABILIZED. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- TO MINIMIZE EROSION AND SEDIMENTATION TRANSPORTATION, EARTHWORK SHALL NOT BE PERFORMED WHILE SOILS ARE IN AN UNSTABLE STATE DUE TO PRECIPITATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE CLEARING LIMITS AND/OR ANY EASEMENTS, SENSITIVE OR CRITICAL AREAS, AND THEIR BUFFERS, TREES, AND DRAINAGE COURSES FLAGGED PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. FLAGGING LIMITS ARE TO BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
- REMOVE ONLY THOSE TREES AND SHRUBS THAT NEED TO BE REMOVED FOR THE CONSTRUCTION OF ROADS, SIDEWALKS, UTILITIES, AND STORMWATER FACILITIES.
- ALL EXISTING AND NEWLY CONSTRUCTED ROAD CATCH BASINS AND CURB INLETS AFFECTED BY CONSTRUCTION SHALL BE PROTECTED AGAINST SEDIMENT DEPOSITS. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSYSTEM SYSTEM.
- ALL POLLUTANTS THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER SYSTEM.
- ALL DISTURBED SOIL SURFACES ARE TO BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES" (BMP'S). DURING THE PERIOD OF OCTOBER 1 THROUGH JULY 5 DISTURBED SOILS MAY REMAIN UNSTABILIZED FOR UP TO TWO DAYS WHEN NOT BEING WORKED. FROM JULY 5 THROUGH OCTOBER 1, DISTURBED SOILS MAY REMAIN UNSTABILIZED FOR UP TO 7 DAYS WHEN NOT BEING WORKED. STABILIZATION OF DISTURBED SOIL AREAS MAY CONSIST OF HYDROSEEDING, HAND-SEEDING AND MULCHING, PLACEMENT OF EROSION CONTROL BLANKETS OR PLASTIC. ALL SEEDED AREAS ARE TO BE FERTILIZED, WATERED, AND MAINTAINED TO ENSURE THAT THE GROWTH OF VEGETATION OCCURS AS SOON AS POSSIBLE.
- ALL TEMPORARY SEDIMENT AND EROSION CONTROL BMP'S SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED.

EROSION/SEDIMENT CONTROL NOTES (CONTINUED):

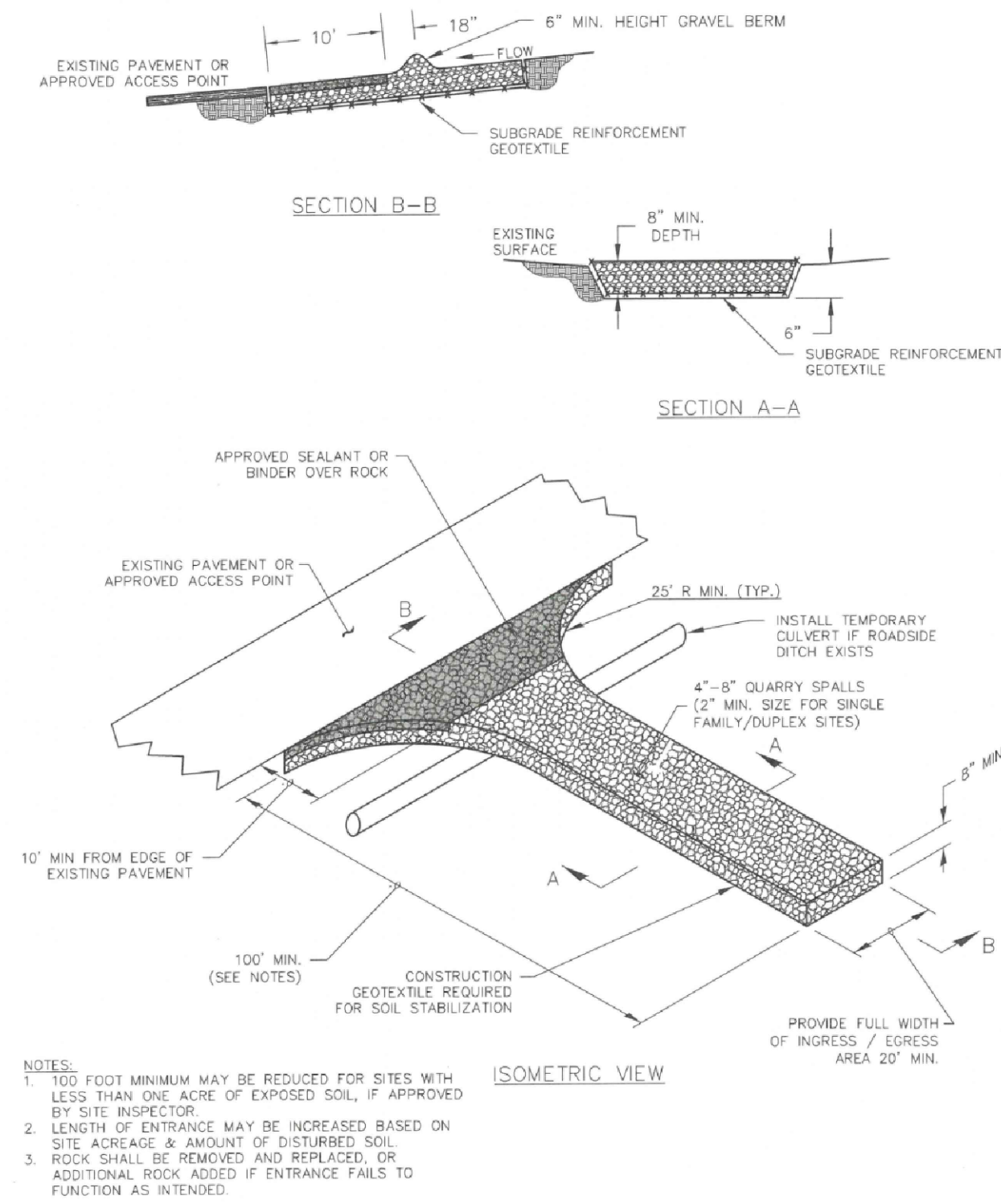
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR POLICING THE JOB SITE DAILY AND MAINTAINING THE EROSION/SEDIMENT CONTROL MEASURES THROUGHOUT ALL PHASES OF CONSTRUCTION. AN INSPECTION LOG SHALL BE KEPT AND MADE AVAILABLE TO THE CITY OF CAMAS. THE POLICING AND MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO:
 - VERIFYING THAT ALL AREAS ARE GRADED SUCH THAT ALL RUNOFF IS DIRECTED TO A SEDIMENTATION DEVICE BEFORE DISCHARGE TO SURFACE.
 - REMOVAL OF TRAPPED SILT AT SILT BARRIERS, SILT TRAPS, OR POINTS OF ACCUMULATION.
 - ADDITIONAL PROTECTIVE MEASURES DUE TO JOB SITE OR WEATHER CONDITIONS AS REQUIRED BY THE CITY OF CAMAS.
 - MONITORING OF VEHICLES LEAVING THE SITE TO MINIMIZE TRANSMISSION OF LOOSE SOILS TO THE PUBLIC ROADWAYS.
 - VERIFY THAT ALL PROPERTIES ADJACENT TO THE PROJECT SITE ARE PROTECTED FROM SEDIMENTATION DEPOSITION. THIS MAY BE ACCOMPLISHED BY INSTALLING PERIMETER CONTROLS SUCH AS SEDIMENTATION BARRIERS, FILTERS OR DIKES, SEDIMENTATION BASINS/TRAPS, OR BY A COMBINATION OF SUCH MEASURES.
- CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES SHALL BE STABILIZED IN ACCORDANCE WITH EROSION/SEDIMENT CONTROL NOTE 11. SLOPES FOUND TO BE ERODING EXCESSIVELY WITHIN TWO YEARS OF CONSTRUCTION MUST BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES. THESE MEASURES MAY CONSIST OF ROUGHENED SOIL SURFACES, INTERCEPTORS, DIVERSIONS OR TERRACES, TEMPORARY OR PERMANENT CHANNELS, ADDITIONAL VEGETATION, OR PIPE SLOPE DRAINS AS REQUIRED BY THE CITY OF CAMAS UNTIL THE PROBLEM IS CORRECTED.
- THE ESC MEASURES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN 24 HOURS FOLLOWING ANY STORM EVENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING UNDERGROUND UTILITIES AS SPECIFIED BELOW:
 - WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME.
 - WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
 - TRENCH DE-WATER DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
- PRIOR TO CONSTRUCTION, THE CITY OF CAMAS REQUIRES AN APPROVED FORM OF SECURITY IN THE AMOUNT OF 200% OF THE ENGINEER'S ESTIMATED COST OF THE ESC MEASURES, INCLUDING ASSOCIATED LABOR, AS SHOWN IN THE APPROVED ESC PLAN AND SWPPP.
- SUGGESTED STANDARD SEED MIXTURE FOR THOSE AREAS WHERE A TEMPORARY VEGETATIVE COVER IS REQUIRED:

SEED VARIETY	% WEIGHT	% PURITY	% GERMINATION
CHEWINGS OR ANNUAL BLUE GRASS	40	98	90
FESTUCA RUBRA VAR. COMMUTATA OR POA ANNA			
PERENNIAL RYE (LOLIUM PERENNE)	50	98	90
REDTOP OR COLONIAL BENTGRASS (AGROSTIS ALATA OR AGROSTIS TENUIS)	5	92	85
WHITE DUTCH CLOVER (TRIFOLIUM REPENS)	5	98	90

 *APPLICATION RATE OF 120 LBS/ACRE AND COVERED WITH STRAW OR MULCH
- SUGGESTED TURF SEED MIXTURE FOR DRY SITUATIONS WHERE THERE IS NO NEED FOR MUCH WATER:

SEED VARIETY	% WEIGHT	% PURITY	% GERMINATION
DWARF TALL FESCUE (SEVERAL VARIETIES) (FESTUCA ARUNDINACEA VAR.)	45	98	90
DWARF PERENNIAL RYE (LOLIUM PERENNE VAR. BARCLAY)	30	98	90
RED FESCUE (FESTUCA RUBRA)	20	98	90
COLONIAL BENTGRASS (AGROSTIS TENUIS)	5	98	90

 *APPLICATION RATE OF 120 LBS/ACRE AND COVERED WITH STRAW OR MULCH

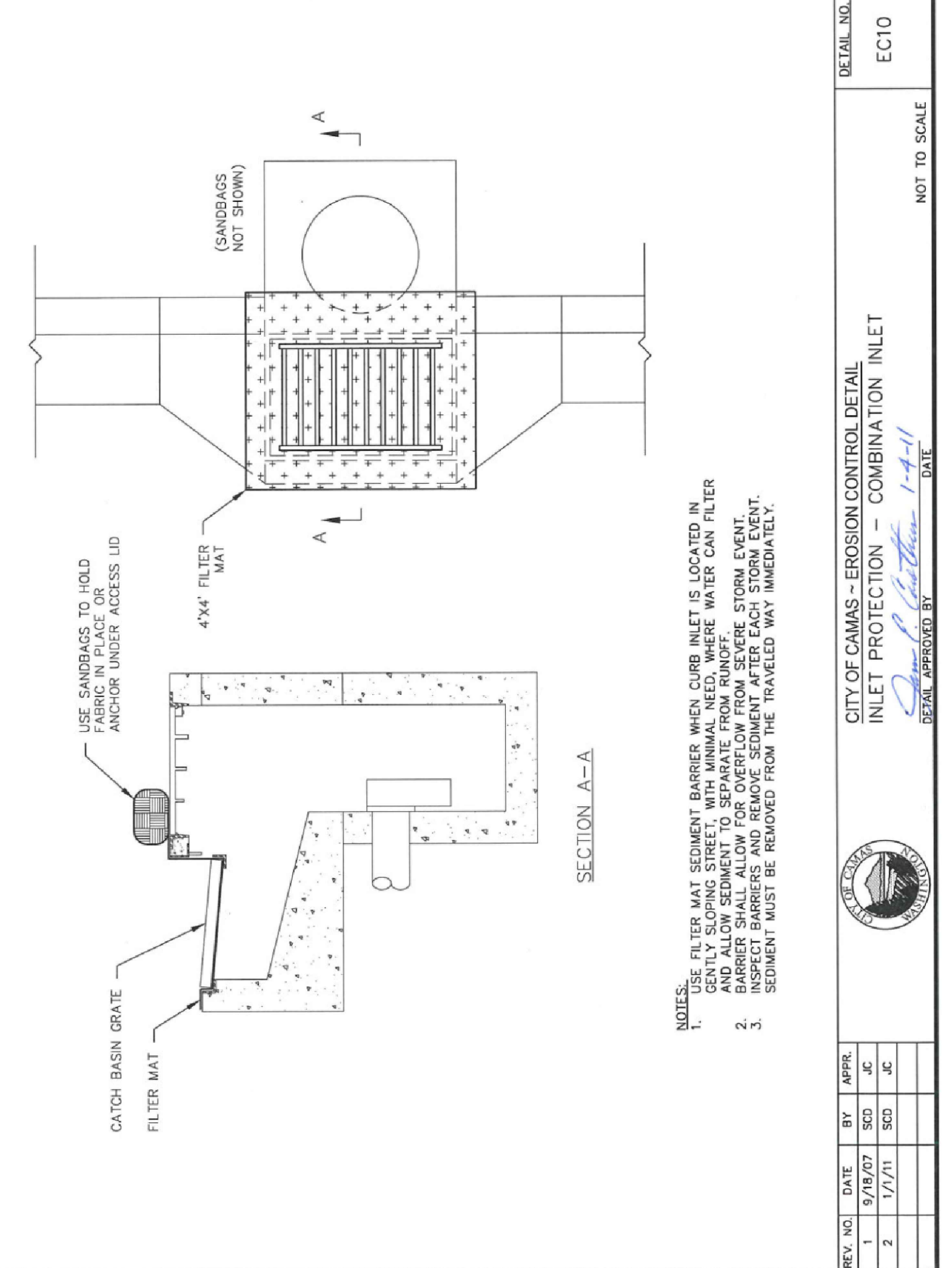
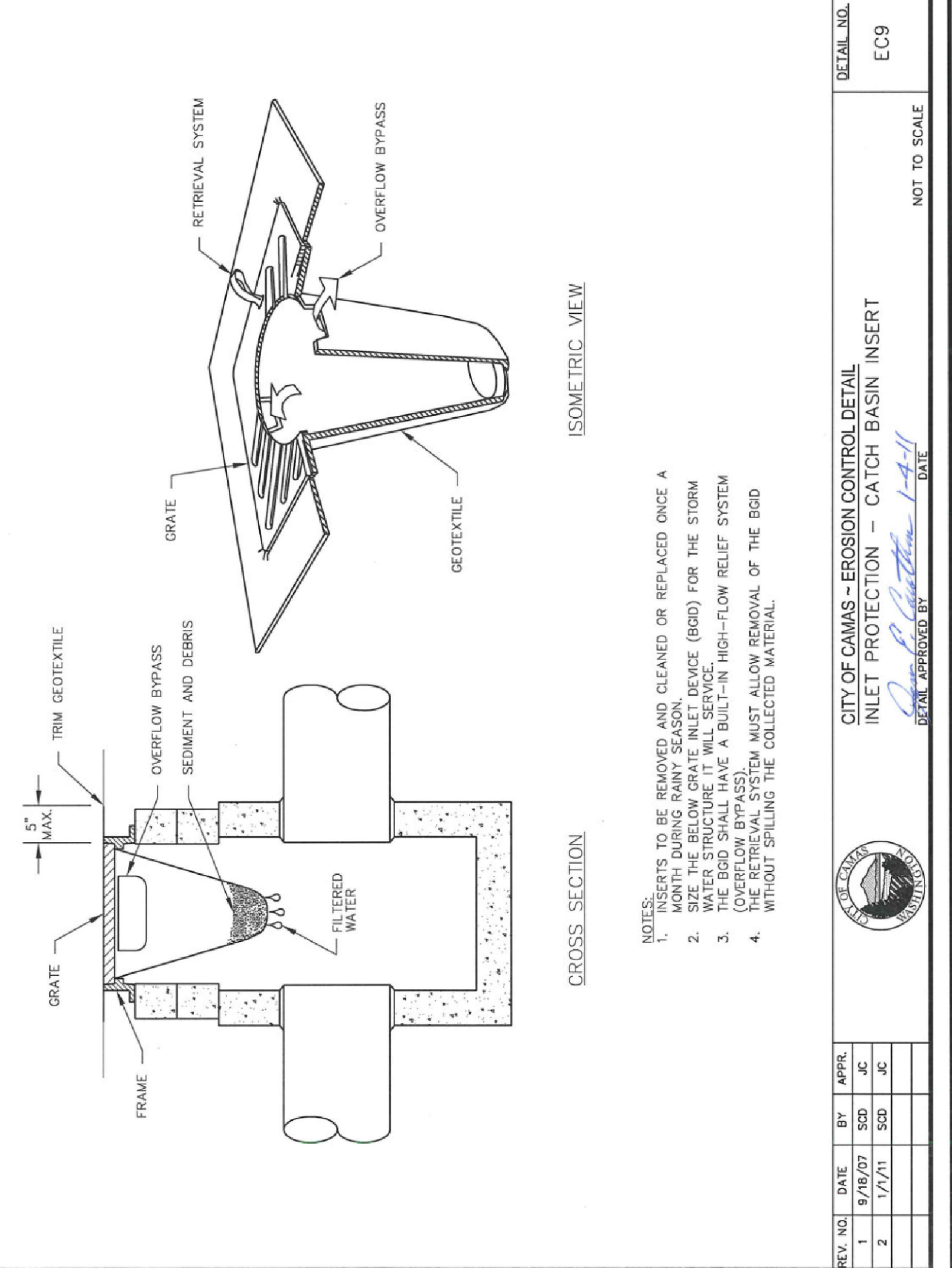
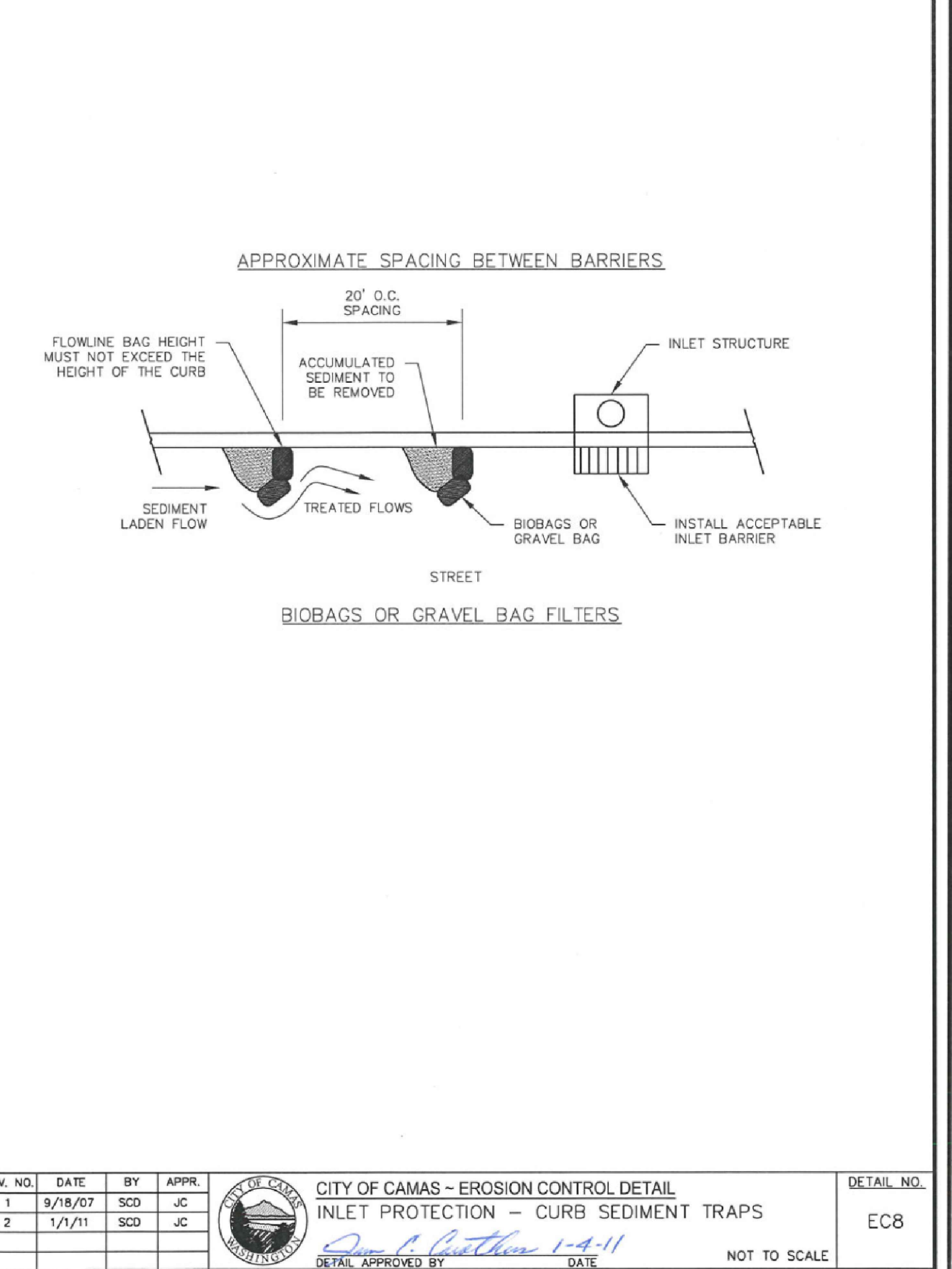
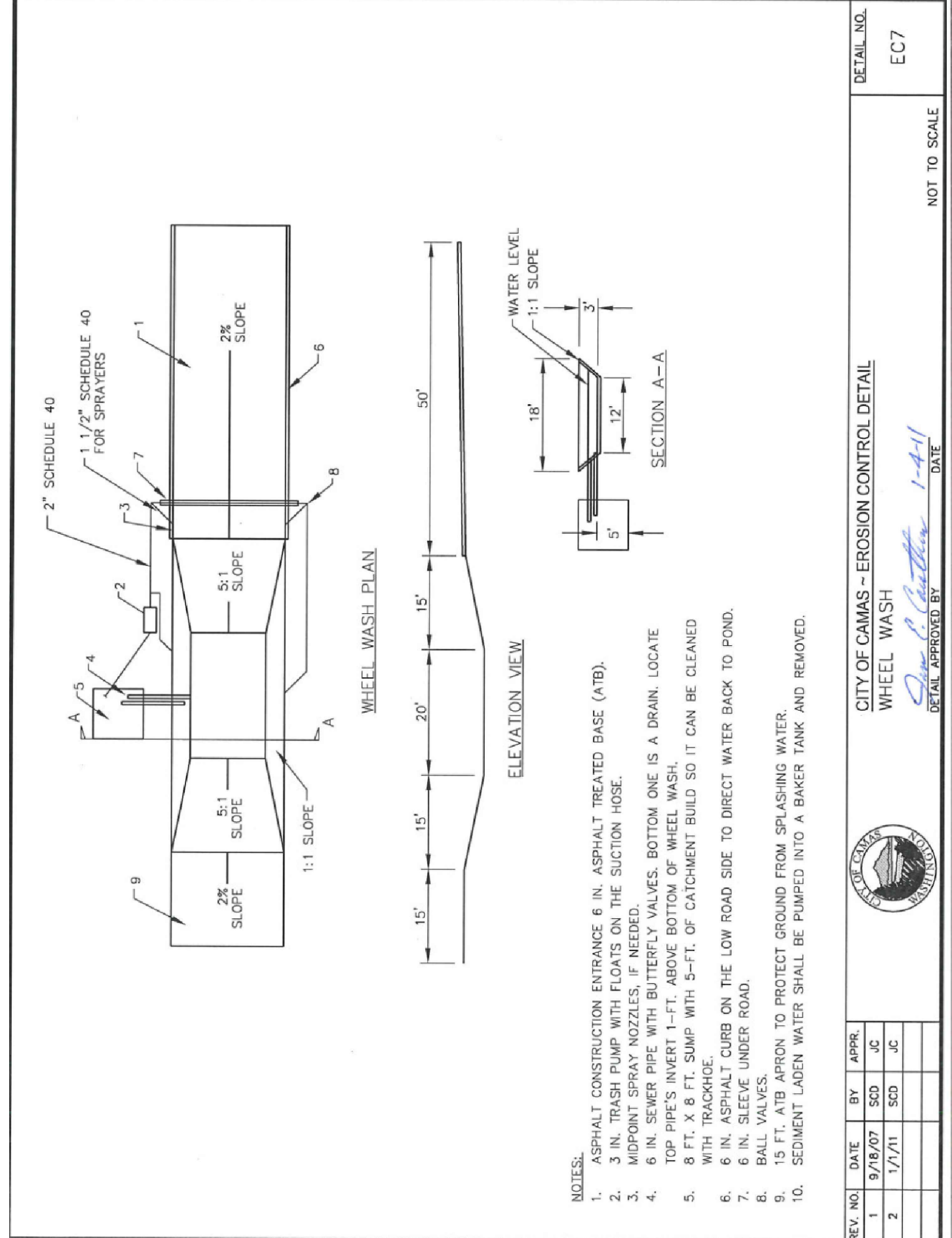


City of Camas
WASHINGTON
EROSION CONTROL DETAIL
GRADING NOTES
NOT TO SCALE
DETAIL NO. EC1
DATE: 8/12/22
REVISION: 3
DATE: 8/13/2022

CITY OF CAMAS - EROSION CONTROL DETAIL
EROSION/SEDIMENT CONTROL NOTES
NOT TO SCALE
DETAIL NO. EC2
DATE: 1/4/11

CITY OF CAMAS - EROSION CONTROL DETAIL
EROSION/SEDIMENT CONTROL NOTES
NOT TO SCALE
DETAIL NO. EC3
DATE: 1/4/11

City of Camas
WASHINGTON
EROSION CONTROL DETAIL
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE
DETAIL NO. EC6
DATE: 8/17/2022
REVISION: 4



CITY OF CAMAS - EROSION CONTROL DETAIL
WHEEL WASH
NOT TO SCALE
DETAIL NO. EC7
DATE: 1/4/11

CITY OF CAMAS - EROSION CONTROL DETAIL
INLET PROTECTION - CURB SEDIMENT TRAPS
NOT TO SCALE
DETAIL NO. EC8
DATE: 1/4/11

CITY OF CAMAS - EROSION CONTROL DETAIL
INLET PROTECTION - CATCH BASIN INSERT
NOT TO SCALE
DETAIL NO. EC9
DATE: 1/4/11

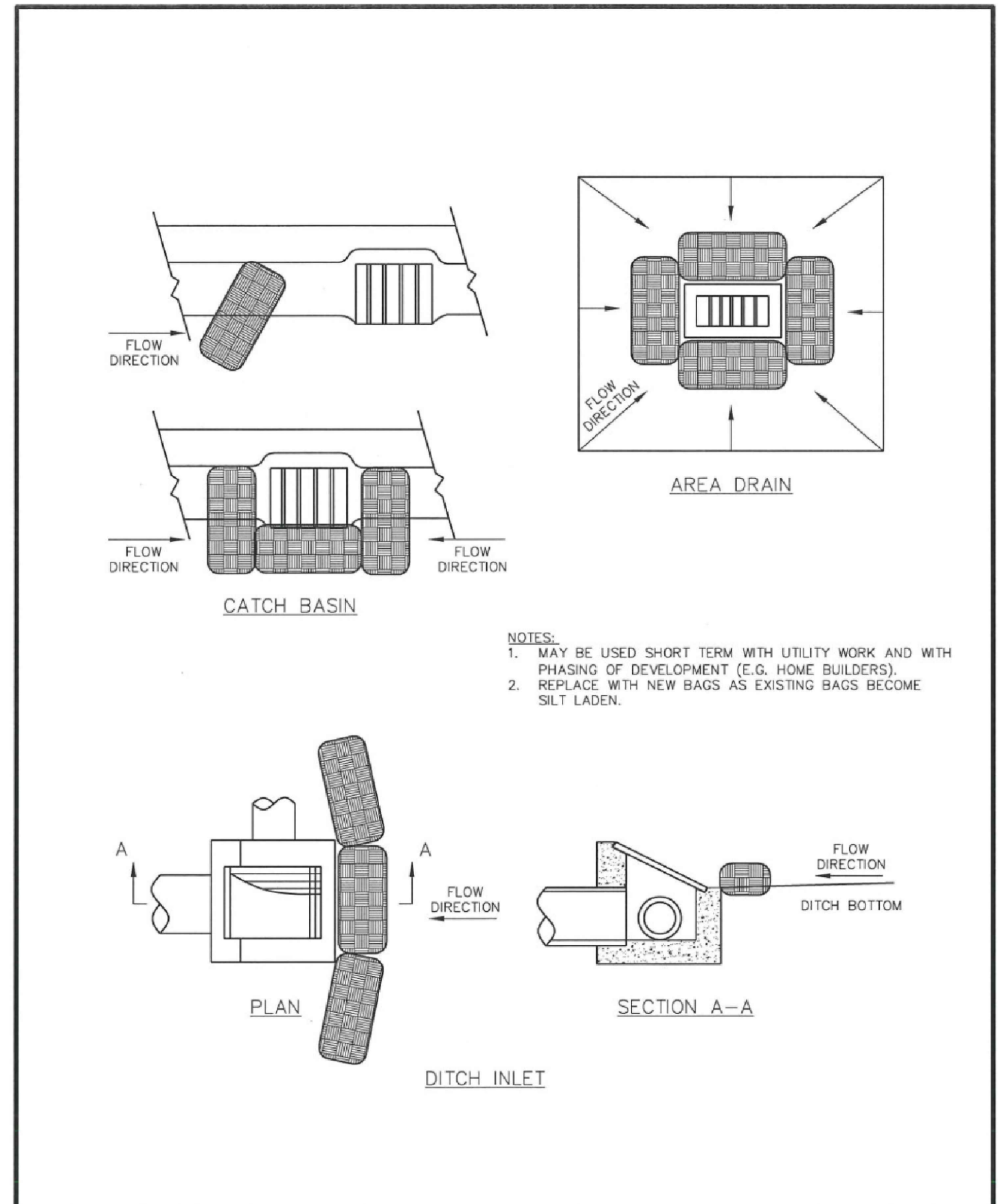
CITY OF CAMAS - EROSION CONTROL DETAIL
INLET PROTECTION - COMBINATION INLET
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DETAIL NO. EC10
DATE: 1/4/11

Grading & Erosion Control Details
8th Ave Apartments

PRELIMINARY
NOT FOR CONSTRUCTION

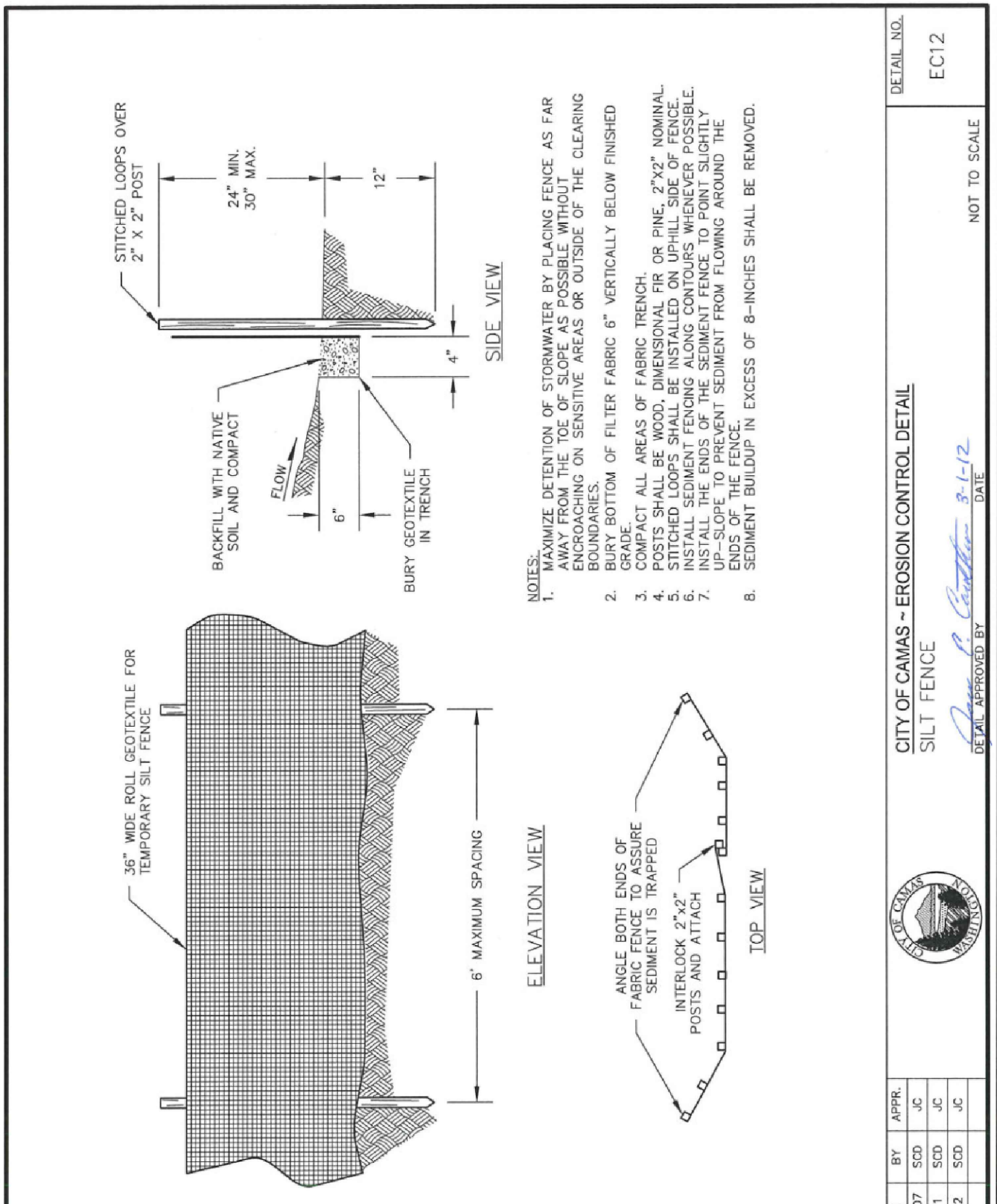
ENGINEERING NORTHWEST
CONSULTING ENGINEERS & PLANNERS
6168 NE HWY 99 STE 103, VANCOUVER 98665
(360) 931-3122

Revisions:



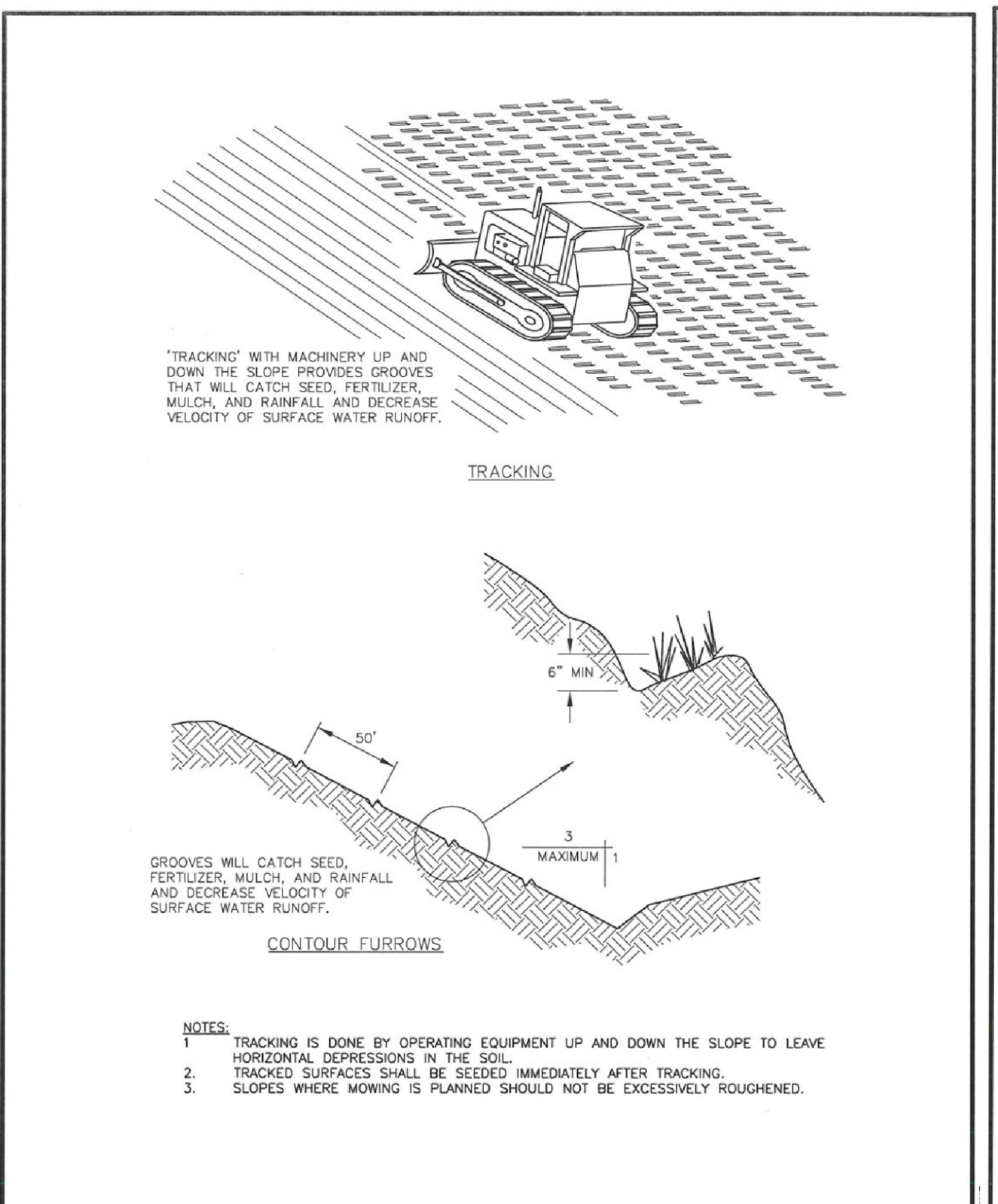
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2	1/1/11	SCD	JC

CITY OF CAMAS - EROSION CONTROL DETAIL
INLET PROTECTION - BIOBAGS
DETAIL APPROVED BY: *Paul R. Cothran 1-4-11* DATE: NOT TO SCALE



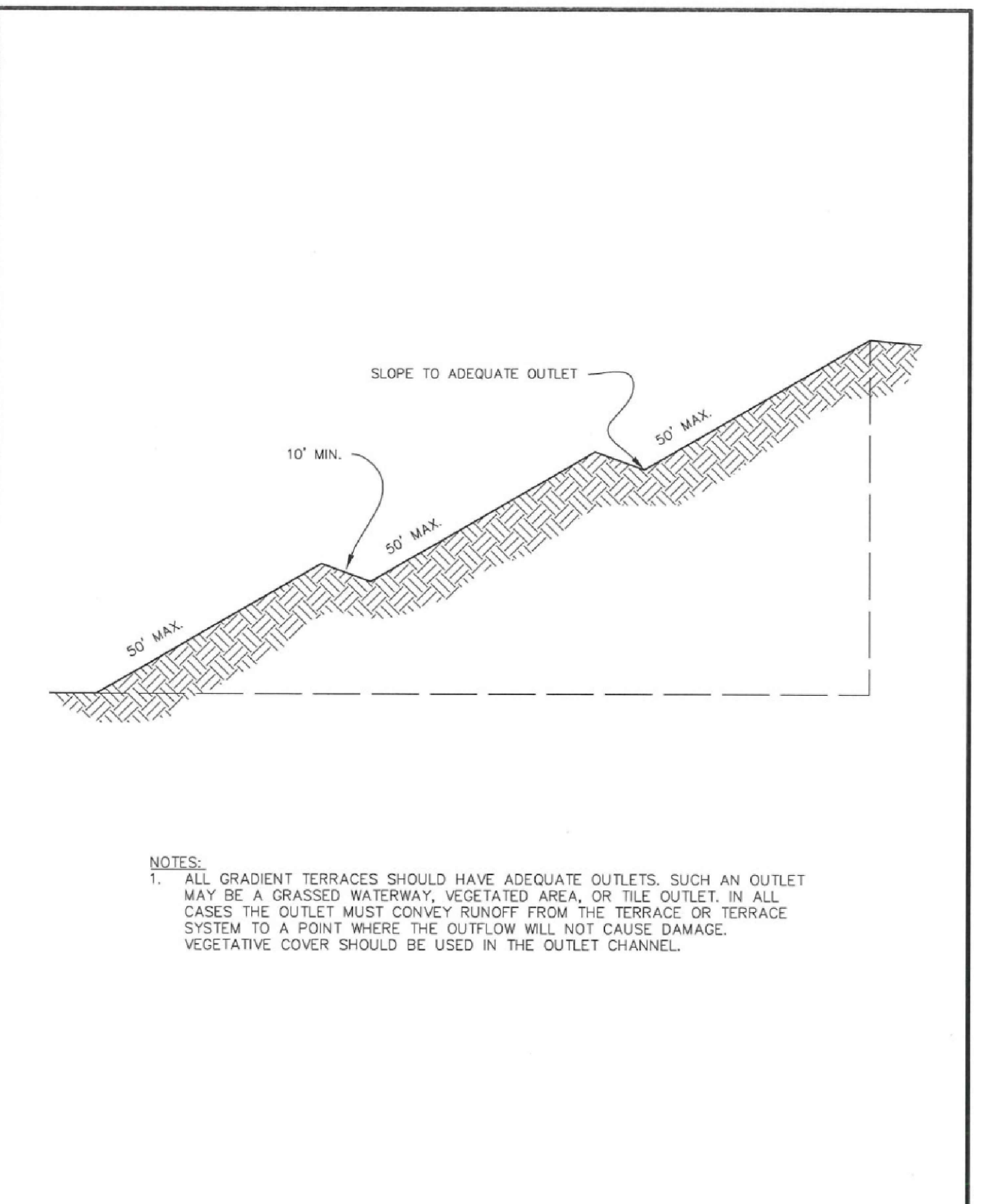
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3	3/1/12	SCD	JC

CITY OF CAMAS - EROSION CONTROL DETAIL
CITY FENCE
DETAIL APPROVED BY: *Paul R. Cothran 3-1-12* DATE: NOT TO SCALE



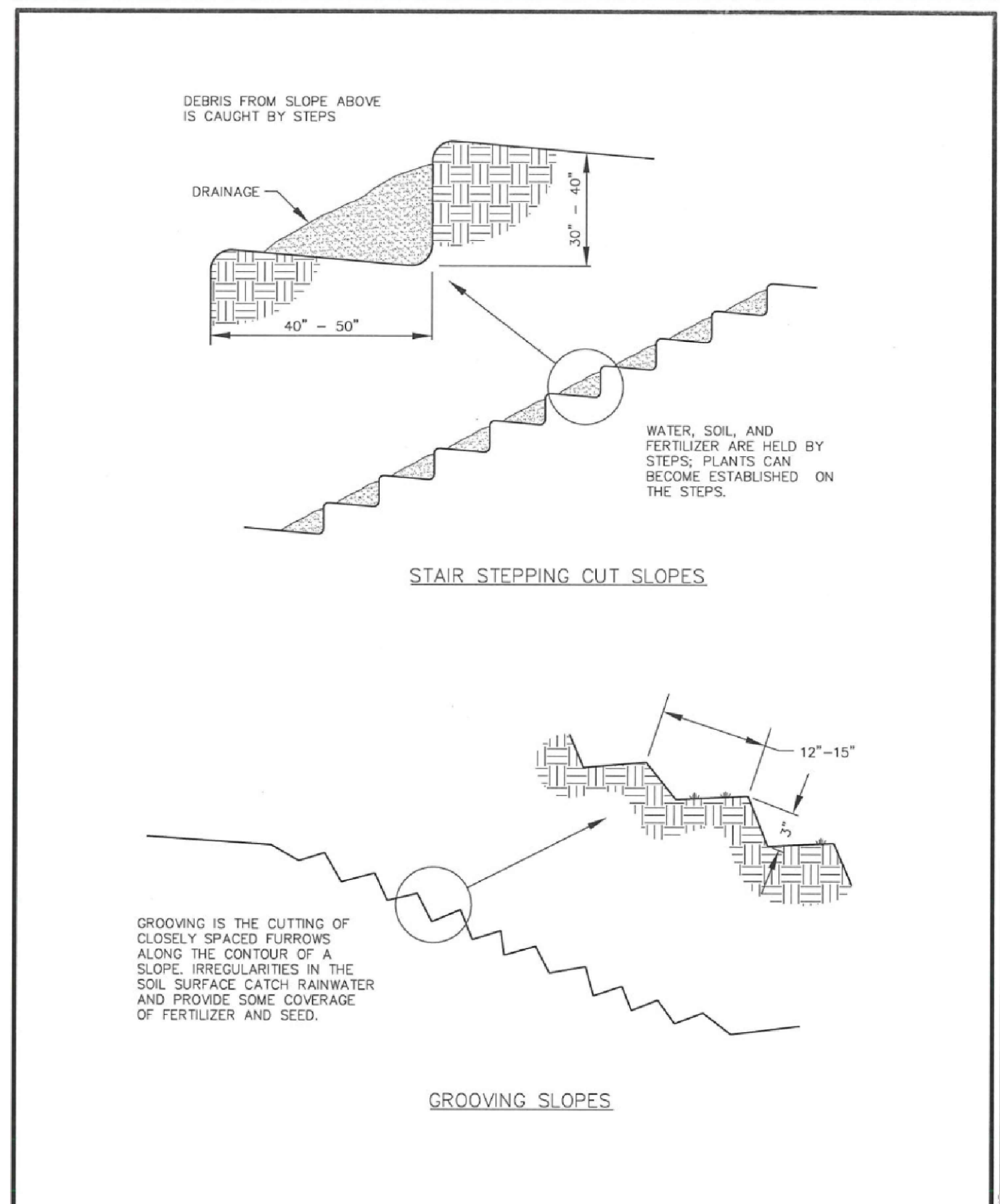
REV. NO.	DATE	BY	APPR.
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2	1/1/11	SCD	JC

CITY OF CAMAS - EROSION CONTROL DETAIL
SURFACE ROUGHENING - TRACKING & FURROWS
DETAIL APPROVED BY: *Paul R. Cothran 1-4-11* DATE: NOT TO SCALE



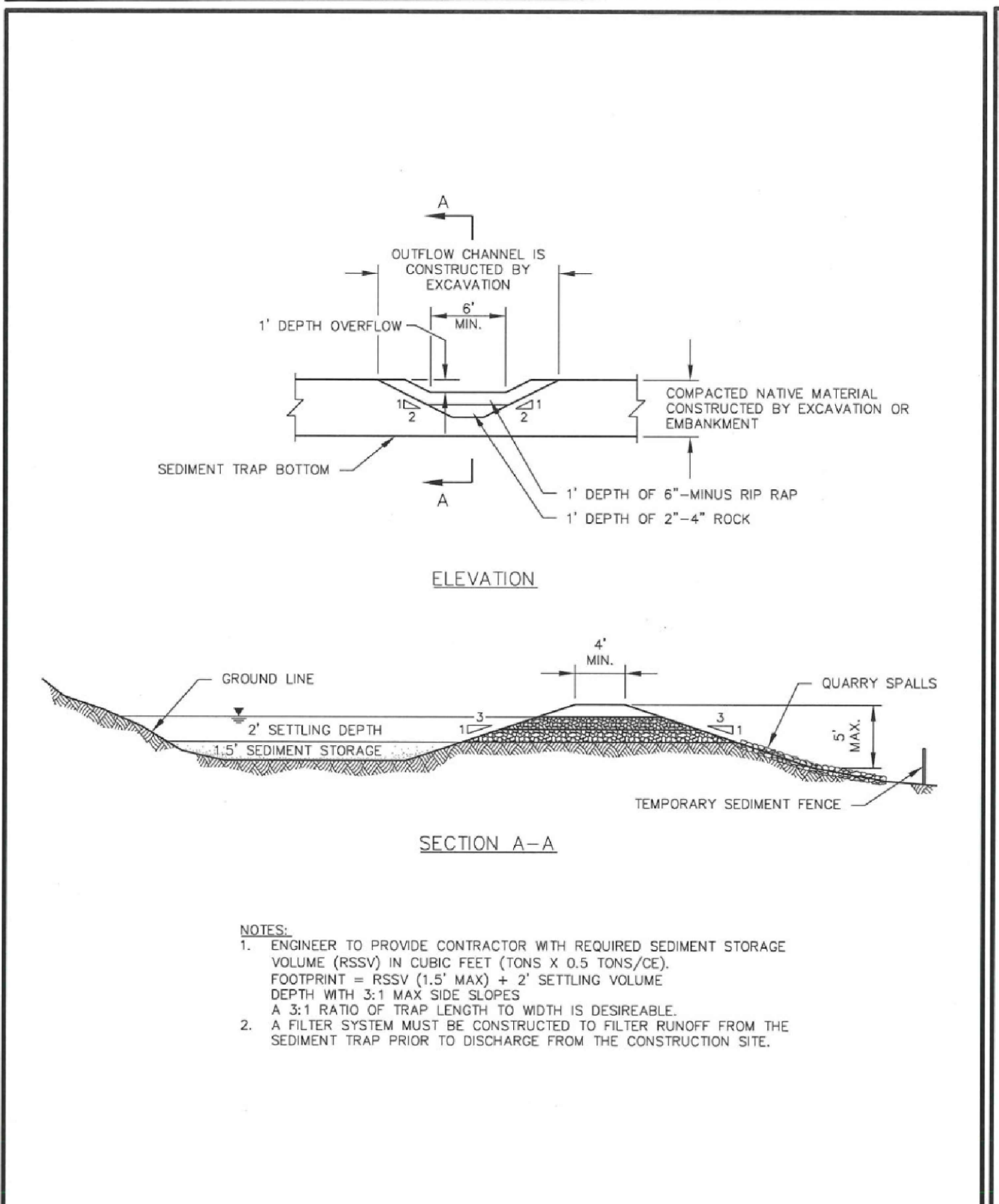
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2	1/1/11	SCD	JC

CITY OF CAMAS - EROSION CONTROL DETAIL
SURFACE ROUGHENING - GRADIENT TERRACES
DETAIL APPROVED BY: *Paul R. Cothran 1-4-11* DATE: NOT TO SCALE



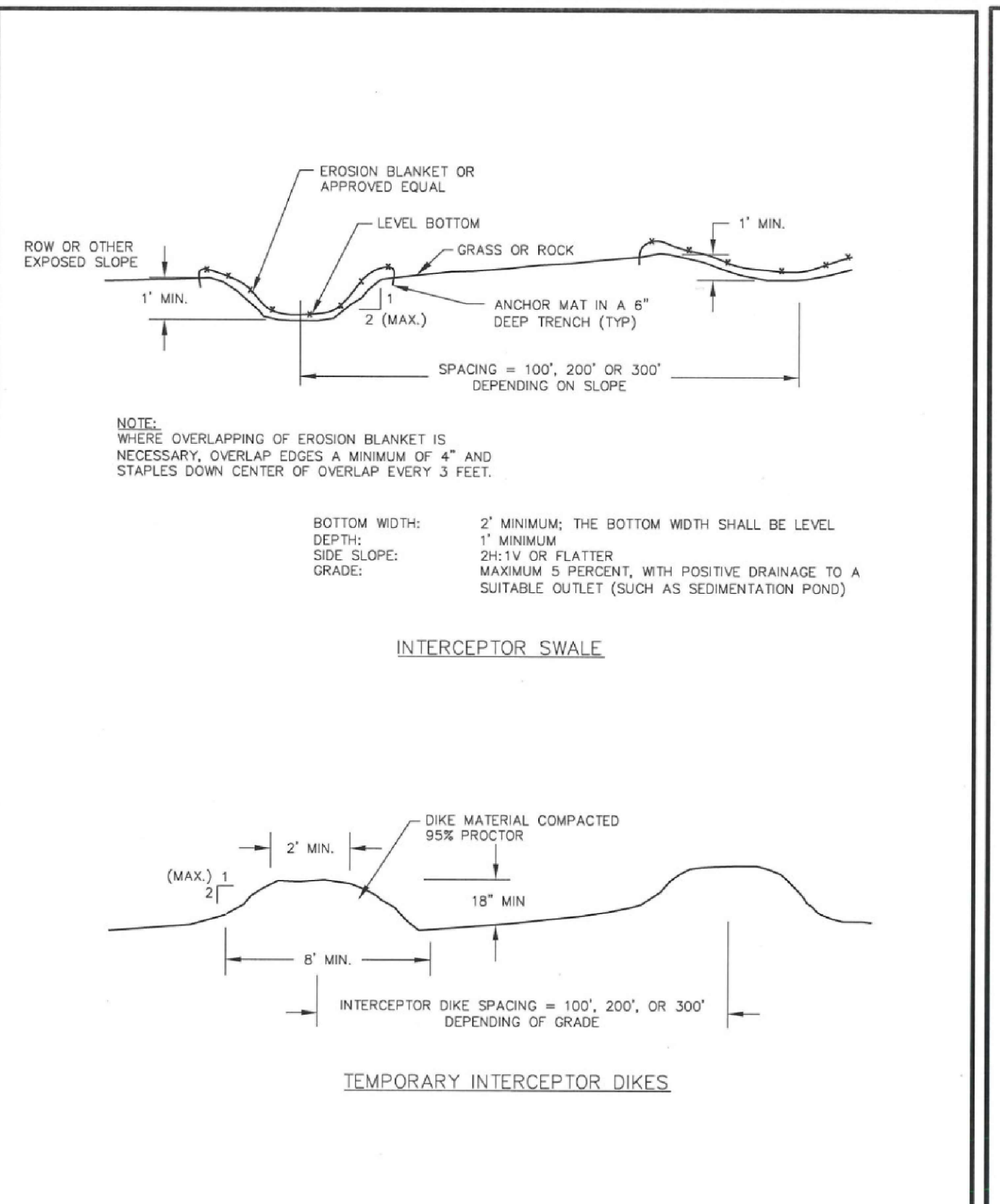
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1	9/18/07	SCD	JC
2	1/1/11	SCD	JC

CITY OF CAMAS - EROSION CONTROL DETAIL
SURFACE ROUGHENING - STAIR STEPS & GROOVES
DETAIL APPROVED BY: *Paul R. Cothran 1-4-11* DATE: NOT TO SCALE



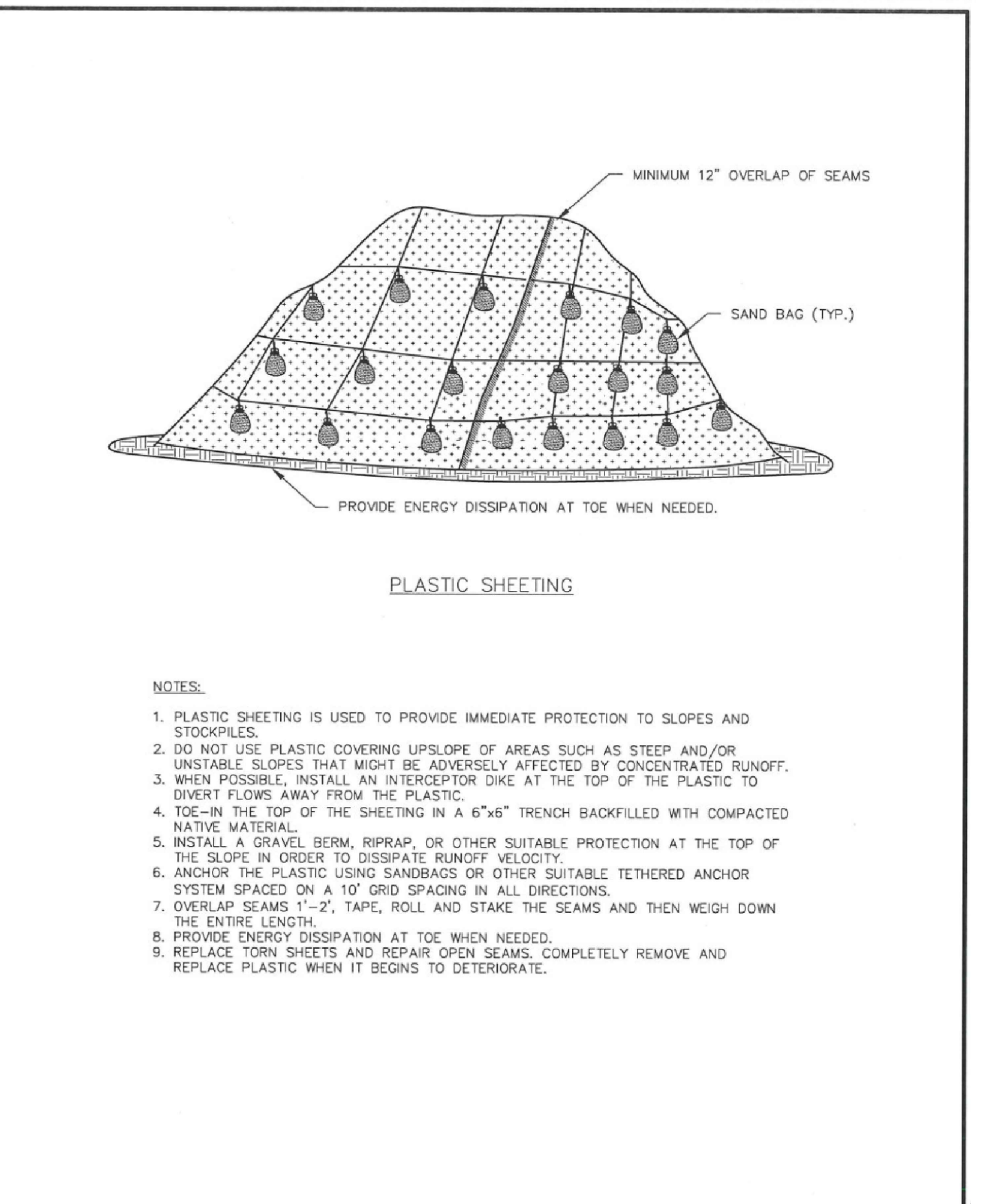
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2	1/1/11	SCD	JC

CITY OF CAMAS - EROSION CONTROL DETAIL
TEMPORARY SEDIMENT TRAP
DETAIL APPROVED BY: *Paul R. Cothran 1-4-11* DATE: NOT TO SCALE



REV. NO.	DATE	BY	APPR.
1	9/18/07	SCD	JC
2	1/1/11	SCD	JC

CITY OF CAMAS - EROSION CONTROL DETAIL
INTERCEPTOR SWALE AND DIKE
DETAIL APPROVED BY: *Paul R. Cothran 1-4-11* DATE: NOT TO SCALE



REV. NO.	DATE	BY	APPR.
1	1/1/11	SCD	JC

CITY OF CAMAS - EROSION CONTROL DETAIL
STOCKPILE PROTECTION
DETAIL APPROVED BY: *Paul R. Cothran 1-4-11* DATE: NOT TO SCALE

Grading & Erosion Control Details
8th Ave Apartments

PRELIMINARY
NOT FOR CONSTRUCTION

ENGINEERING NORTHWEST
CONSULTING ENGINEERS & PLANNERS
6168 NE HWY 99 STE 103, VANCOUVER 98665
(360) 931-3122

C200

Project: 23005SP
 Date: 10/26/2023
 Drafted: NVS
 Designed: PCW
 Page: 8 of 17

Northwest Utilities
1-800-424-5555
 "It's the law"
 Call 48 hours before you dig.

Revisions:

Site Information

Address: 1805 SE 8th Ave
 Camas, WA 98607
 Abbrev. Desc: Oak Park Addition to Washougal, Lot 8, Block 4
 S-T-R: SW 1/2 S12 T1N R3E W.M.
 Parcel: 88135000
 Area: 1.00 AC (43,557± SF)
 Zone: R-18 (MFH)

Boundary & Topography

Property boundaries shown hereon are taken from 1999 Oak Park Addition to Washougal filed in Book C, Page 24, of Plats with the Clark County auditor's office. Adjacent property boundaries are shown approximate only. Topographic survey by Engineering Northwest PLLC in 2023. This is not a boundary survey.

Street Callout Notes

- See City of Camas std details sht C230.
- 1 Install Commercial Driveway Approach per detail sht C210.
 - 2 Install Traffic Curb per std detail ST12.
 - 3 Install pavement section; Typ. 3" HMA over 2" CSTC and 9" CSBC. Material shall meet all requirements of Section 9-03.9(3) of the standard specifications.
 - 4 Install 5' private sidewalks per std detail ST18. Direct cross slope toward parking lot.
 - 5 Install sidewalk ADA ramp per detail sht C230.

Stormwater Callout Notes

- See City of Camas std details sht C220.
- 10 Install SD3 48" Storm Sewer Manhole per std detail SD9. Design information per plan.
 - 11 Install SD4 flow splitter manhole per detail sht C210.
 - 12 Install proprietary filter structure. Design information per plan and detail sht C210.
 - 13 Install 72 LF BMP R5.11 Infiltration Trench per typical section this sheet.
 - 14 Install Storm Drain Sump per detail sht C210 for downspout collection.
 - 15 Install downspout collection; minimum 4" PVC or approved equal with min. 1% fallout from downspouts. Provide cleanouts at maximum 100' intervals and for each aggregate horizontal change in direction exceeding 135° to comply with plumbing code.
 - 16 Install maintenance & inspection sump per detail sht C210.

BMP R5.11 Infiltration Trench Construction Criteria

- Trench preparation:** Place excavated materials away from the trench sides to enhance trench wall stability. Take care to keep this material away from slopes, neighboring property, sidewalks, and streets.
- Drain rock placement:** Place stone aggregate (material per gravel backfill note this sheet) in lifts and compact using plate compactors. Generally, max loose lift thickness of 12 inches. The compaction process ensures geotextile conformity to the excavation sides, reducing potential piping and geotextile clogging, as well as settlement issues.
- Void behind fabric:** Voids between the geotextile and excavation sides must be avoided. Remove boulders or other obstacles from the trench walls. This remedial process will reduce potential piping, geotextile clogging, and possible surface subsidence.
- Unstable excavation:** Vertically excavated walls may be difficult to maintain where soil moisture is high or where soft or cohesionless soil is predominate. Trapezoidal, rather than rectangular, cross-sections may be required. In this case, the base width of the trapezoidal section shall be at minimum the design width of the rectangular section specified hereon and depths shall not be reduced.
- Setbacks:** A geotechnical memorandum is included in the Final TIR addressing reduced setbacks as follows:

Geotextile Filter Fabric Specification

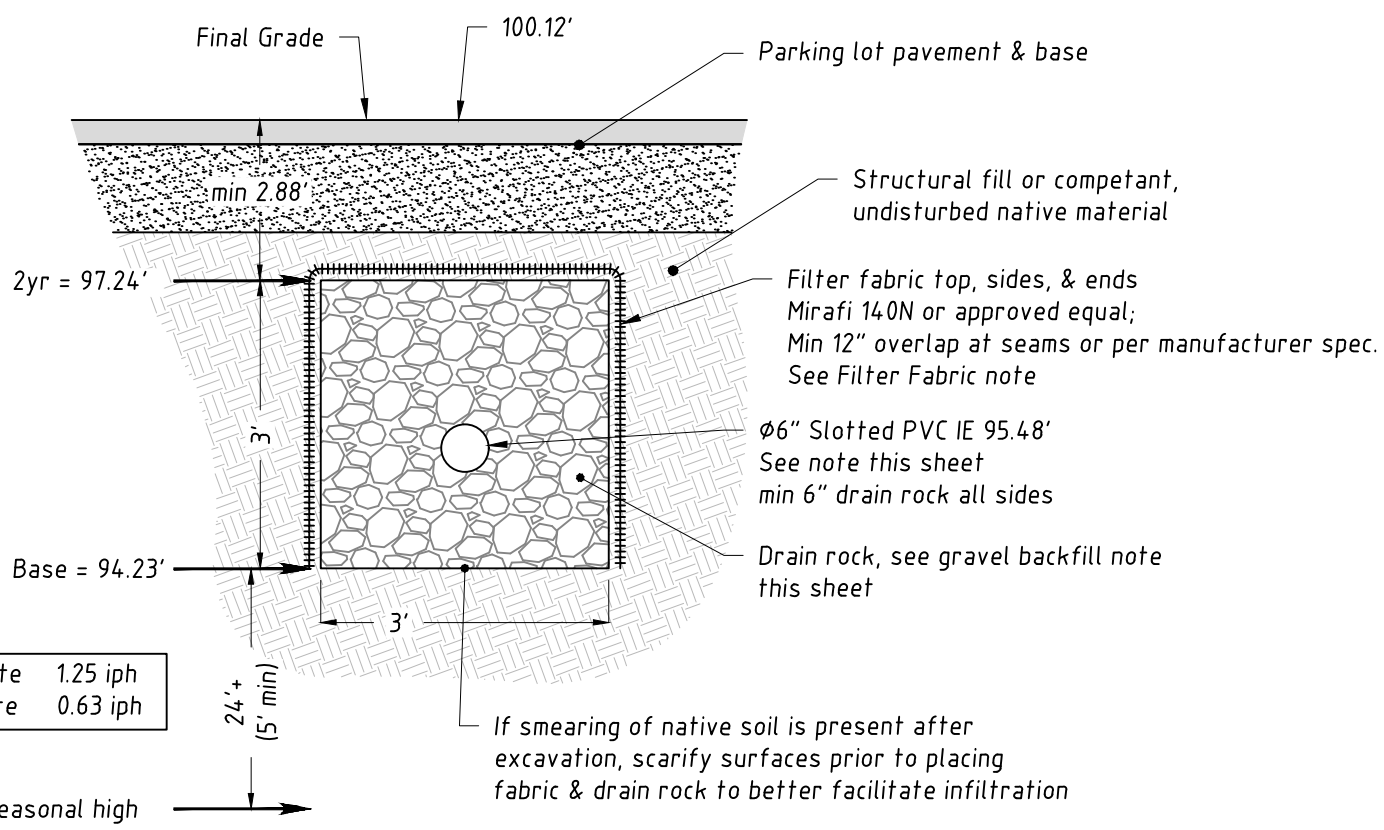
Required geotextile properties for underground drainage. All geotextile properties are minimum average roll values. The test result for any sampled roll in a lot shall meet or exceed the values shown in the table below.

Property	Test Method	Woven/Nonwoven
Grab tensile strength, in machine and x-machine direction.	ASTM D4632	min 250/160 lbs
Grab failure strain, in machine and x-machine direction.	ASTM D4632	<50% / >=50%
Seam breaking strength (if present) with seam located in the center of 8-in long specimen oriented parallel to grip faces.	ASTM D4632	min 220/140 lbs
Puncture resistance.	ASTM D6241	min 495/310 lbs
Tear strength, in machine and x-machine direction.	ASTM D4533	min 80/50 lbs
Ultraviolet (UV) ray stability.	ASTM D4355	min 50% strength retained after 500 hrs in a xenon arc device.

Drain Rock Specification

The aggregate material for the drain rock sections shall meet WSDOT Specification 9-03.12(5) that ranges from 3/4" to 1-1/2" diameter. Void spaces shall be approximately 40 percent. See grading table below.

Sieve Size	% Passing
1-1/2"	99 - 100
1"	50 - 100
3/4"	0 - 20
3/8"	0 - 2
#200	0 - 15

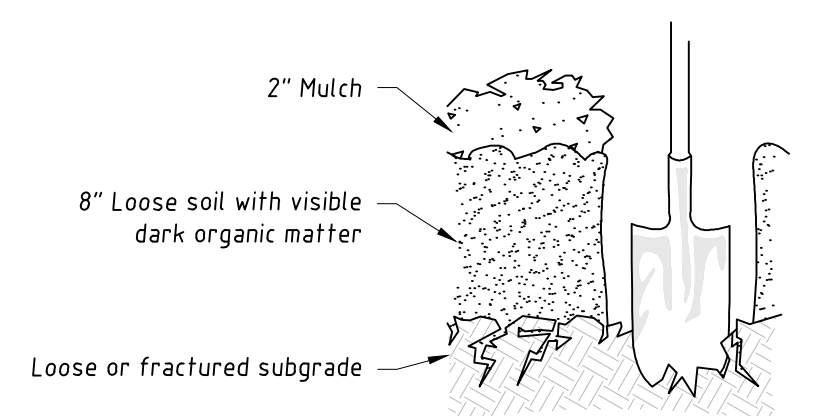
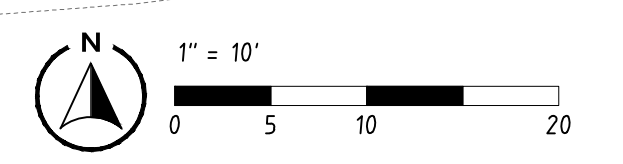
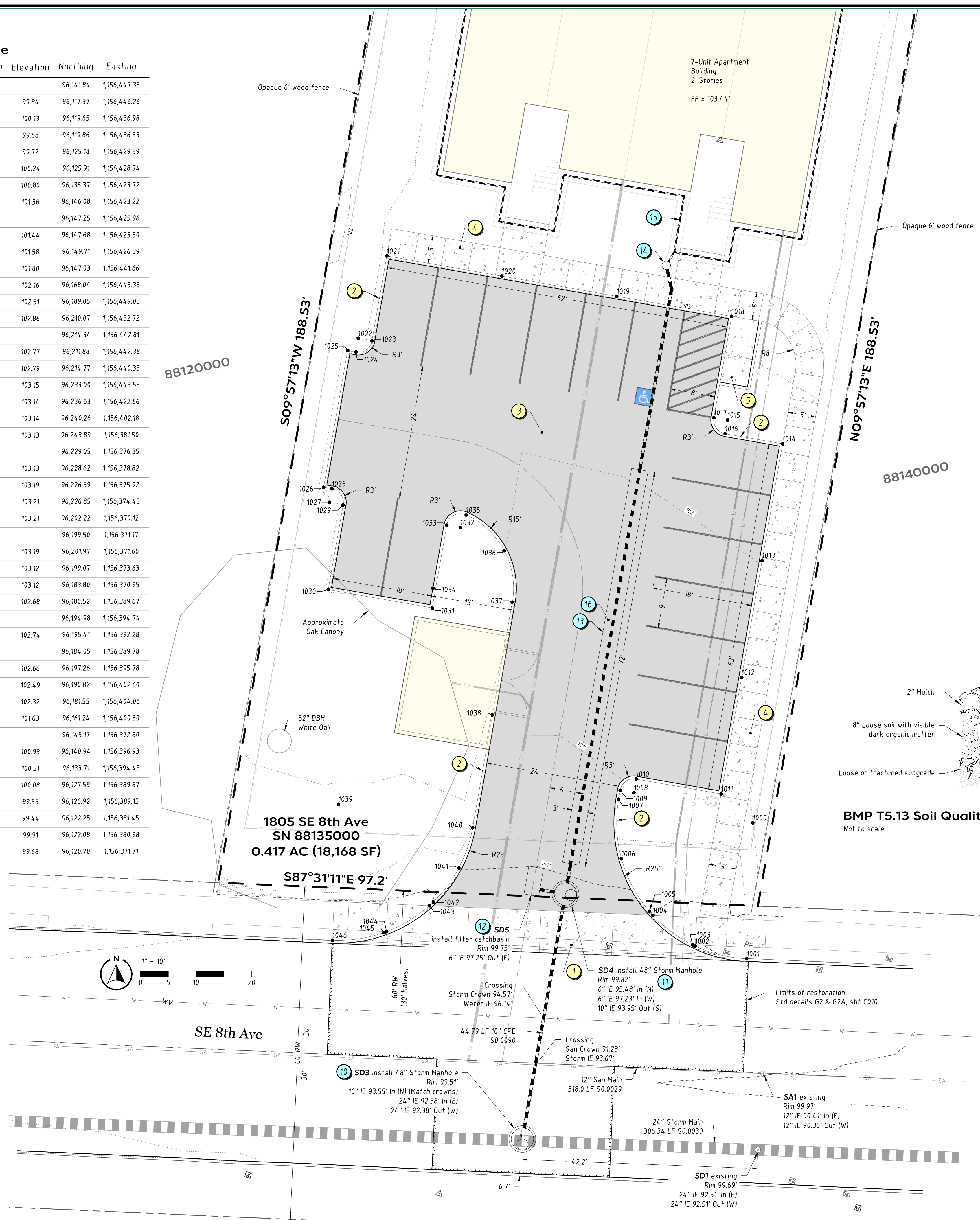


Typical Infiltration Trench Detail

Not to scale, Privately owned & maintained; See infiltration construction criteria

Curb Point Table

Point #	Raw Description	Elevation	Northing	Easting
1000	24 SRP TBC		96,141.84	1,156,447.35
1001	TBC BEG/PC	99.84	96,117.37	1,156,446.26
1002	TBC GB	100.13	96,119.65	1,156,436.98
1003	TBC GB	99.68	96,119.86	1,156,436.53
1004	TBC GB	99.72	96,125.18	1,156,429.39
1005	TBC GB	100.24	96,125.91	1,156,428.74
1006	TBC MC	100.80	96,135.37	1,156,423.72
1007	TBC PT	101.36	96,146.08	1,156,423.22
1008	2 SRP TBC		96,147.25	1,156,425.96
1009	TBC PC	101.44	96,147.68	1,156,423.50
1010	TBC PT	101.58	96,149.71	1,156,426.39
1011	TBC AP	101.80	96,147.03	1,156,441.66
1012	TBC POL	102.16	96,168.04	1,156,445.35
1013	TBC POL	102.51	96,189.05	1,156,449.03
1014	TBC AP	102.86	96,210.07	1,156,452.72
1015	2 SRP TBC		96,214.34	1,156,442.81
1016	TBC PC	102.77	96,211.88	1,156,442.38
1017	TBC PT	102.79	96,214.77	1,156,440.35
1018	TBC AP	103.15	96,233.00	1,156,443.55
1019	TBC POL	103.14	96,236.63	1,156,422.86
1020	TBC POL	103.14	96,240.26	1,156,402.18
1021	TBC AP	103.13	96,243.89	1,156,381.50
1022	2 SRP TBC		96,229.05	1,156,376.35
1023	TBC PC	103.13	96,228.62	1,156,378.82
1024	TBC PT	103.19	96,226.59	1,156,375.92
1025	TBC AP	103.21	96,226.85	1,156,374.45
1026	TBC AP	103.21	96,202.22	1,156,370.12
1027	2 SRP TBC		96,199.50	1,156,371.17
1028	TBC PC	103.19	96,201.97	1,156,371.60
1029	TBC PT	103.12	96,199.07	1,156,373.63
1030	TBC AP	103.12	96,183.80	1,156,370.95
1031	TBC AP	102.68	96,180.52	1,156,389.67
1032	2 SRP TBC		96,194.98	1,156,394.74
1033	TBC PC	102.74	96,195.41	1,156,392.28
1034	14 SRP TBC		96,184.05	1,156,389.78
1035	TBC AP	102.66	96,197.26	1,156,395.78
1036	TBC MC	102.49	96,190.82	1,156,402.60
1037	TBC PT	102.32	96,181.55	1,156,404.06
1038	TBC POL	101.63	96,161.24	1,156,400.50
1039	24 SRP TBC		96,145.17	1,156,372.80
1040	TBC PC	100.93	96,140.94	1,156,396.93
1041	TBC MC	100.51	96,133.71	1,156,394.45
1042	TBC GB	100.08	96,127.59	1,156,389.87
1043	TBC GB	99.55	96,126.92	1,156,389.15
1044	TBC GB	99.44	96,122.25	1,156,381.45
1045	TBC GB	99.91	96,122.08	1,156,380.98
1046	TBC END/PT	99.68	96,120.70	1,156,371.71



Street & Storm Plan

8th Ave Apartments



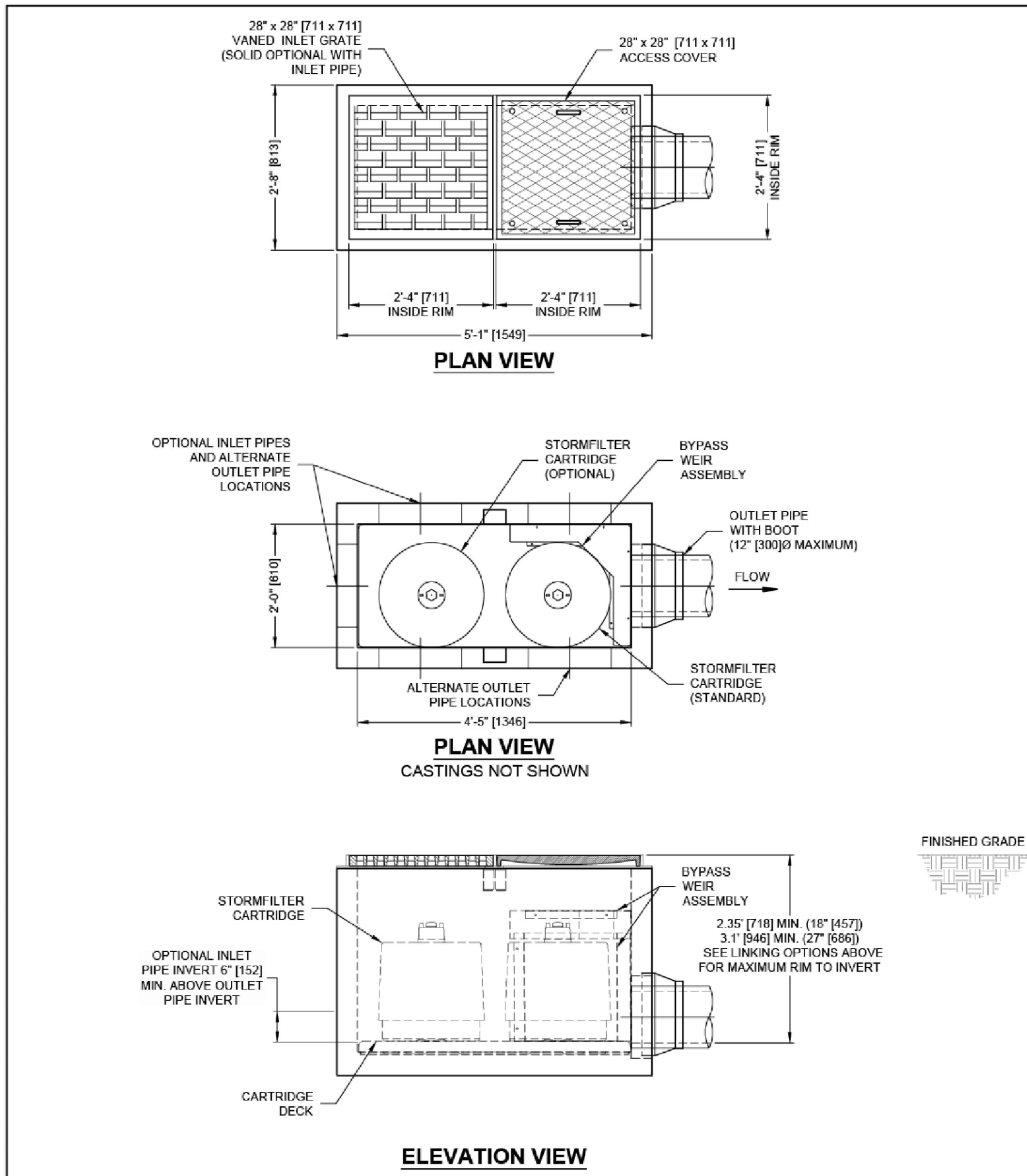
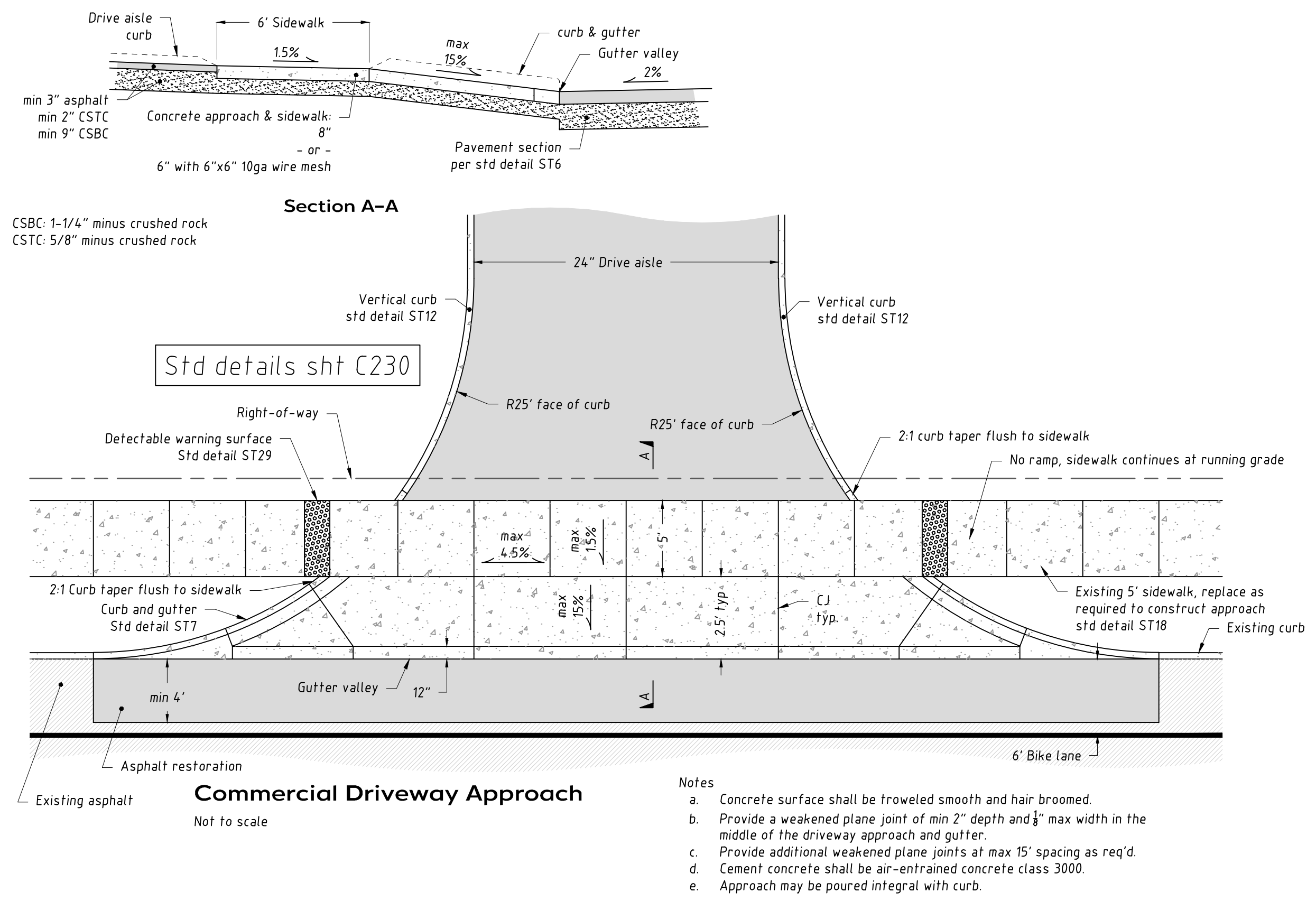
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 CONSULTING ENGINEERS & PLANNERS
 6168 NE HWY 99 STE 103, VANCOUVER 98665
 (360) 931-3122

C210

Project: 23005SP
 Date: 10/26/2023
 Drafted: NVS
 Designed: PCW
 Page: 9 of 17

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Revisions:



GENERAL NOTES
 1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
 3. ALTERNATE DIMENSIONS ARE MILLIMETERS (mm) UNLESS NOTED OTHERWISE.
 4. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
 5. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
 6. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 7 INCHES (178). FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
 7. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM [L/S]) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF [m²]).
 8. STRUCTURE SHALL MEET AASHTO H20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 0" 2' [51] AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M208 AND BE CAST WITH THE CONTECH LOGO.

INSTALLATION NOTES
 1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
 3. CONTRACTOR TO PROVIDE AND INSTALL PIPES. MATCH PIPE INVERTS SHOWN ON PROJECT SPECIFIC DRAWINGS.
 4. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

SITE SPECIFIC DATA REQUIREMENTS

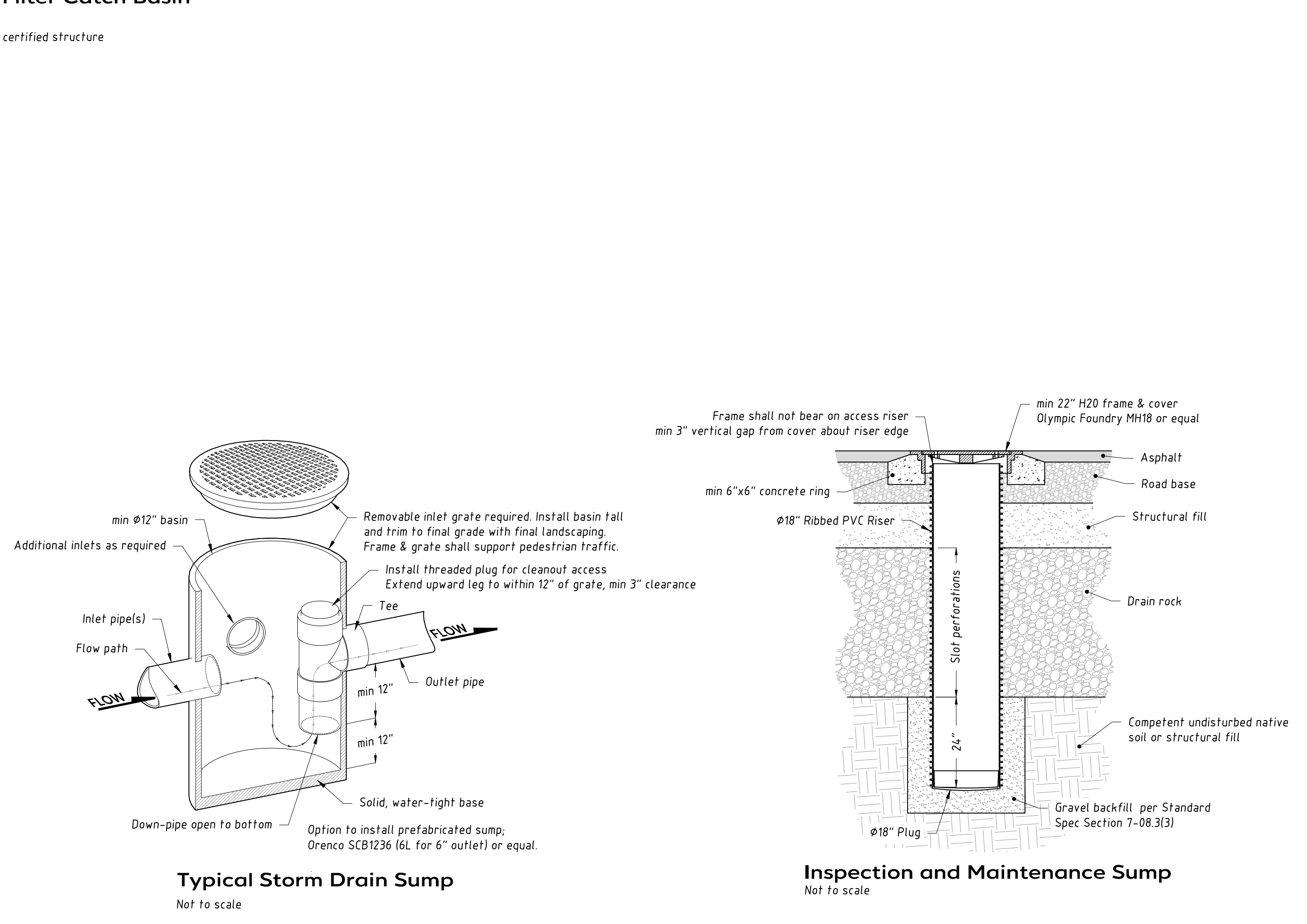
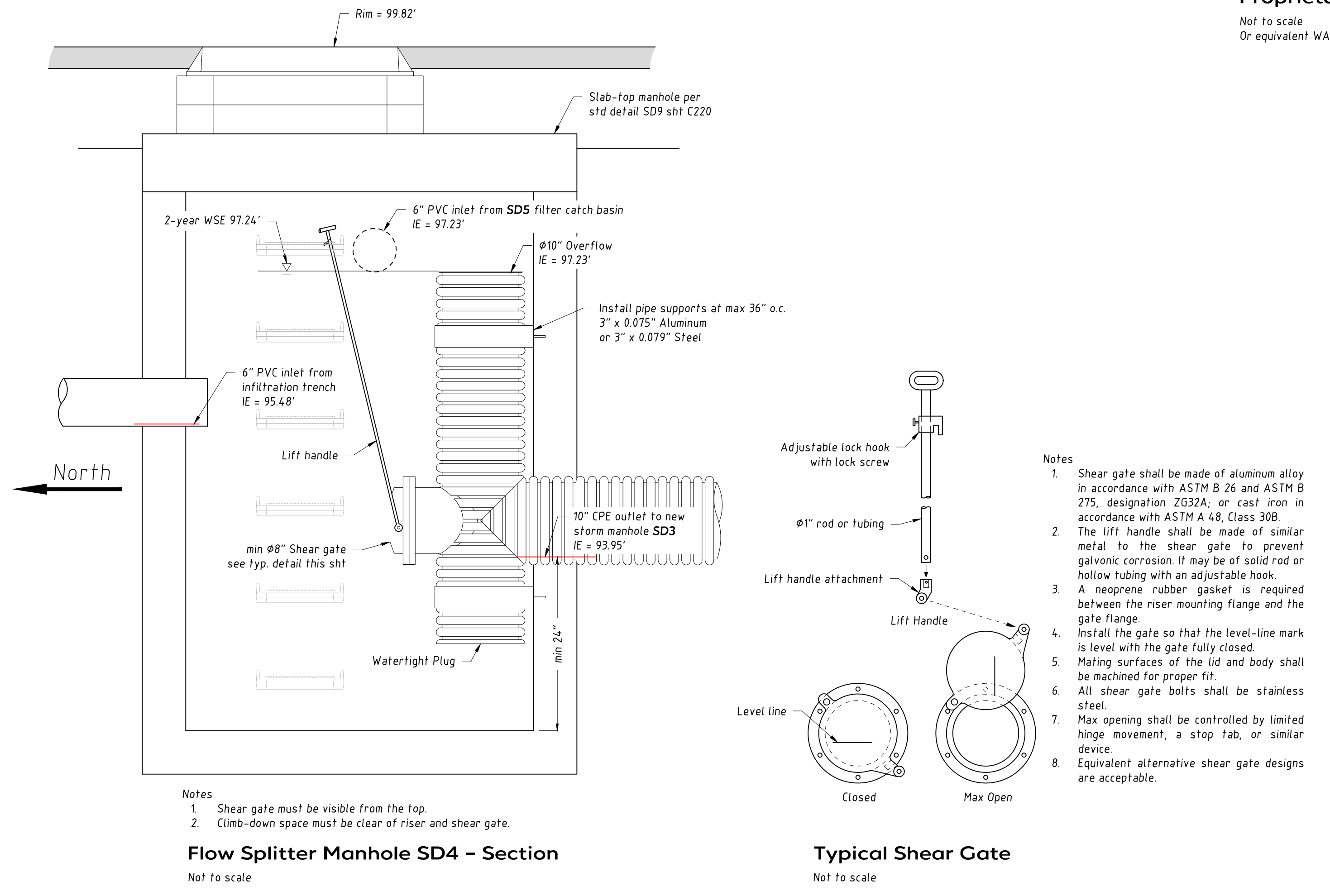
STRUCTURE ID	SD5		
WATER QUALITY FLOW RATE (cfs [L/s])	0.014		
PEAK FLOW RATE (cfs [L/s])	0.176		
RETURN PERIOD OF PEAK FLOW (yrs)	100		
CARTRIDGE SIZE (27, 18)	18		
CARTRIDGE FLOW RATE			
MEDIA TYPE (PERLITE, ZPG, PSORB)			
NUMBER OF CARTRIDGES REQUIRED	99.75		
RIM ELEVATION	99.75		
PIPE DATA	INVERT	MATERIAL	DIAMETER
INLET PIPE 1	-	-	-
INLET PIPE 2	-	-	-
OUTLET PIPE	97.25	PVC	6"

NOTES/SPECIAL REQUIREMENTS:

CONTECH
 ENGINEERED SOLUTIONS LLC
 www.ContechES.com
 11815 NE Glenn Widing Drive, Portland, OR 97220
 800-548-4667 503-240-3393 800-561-1271 FAX

CONCRETE CATCHBASIN
 STORMFILTER
 STANDARD DETAIL

Proprietary Filter Catch Basin
 Not to scale
 Or equivalent WA GULD certified structure



Street & Storm Details
8th Ave Apartments
 PRELIMINARY NOT FOR CONSTRUCTION

ENGINEERING NORTHWEST
 CONSULTING ENGINEERS & PLANNERS
 6168 NE HWY 99 STE 103, VANCOUVER 98665
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Project: 23005SP
 Date: 10/26/2023
 Drafted: NVS
 Designed: PCW
 Page: 10 of 17

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Revisions:

STORM CONSTRUCTION NOTES:

- ALL TRENCH EXCAVATION AND PIPE INSTALLATION SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T. STANDARD SPECIFICATIONS SECTION 7-08.3(1) AND SECTION 7-08.3(2). ALL EXCESS MATERIAL FROM THE TRENCH EXCAVATION SHALL BE DISPOSED OF ON AN APPROVED SITE.
- PIPE BEDDING AND PRE-COVER (PIPE ZONE) MATERIAL SHALL BE 5/8 INCH MINUS CRUSHED ROCK.
- TRENCH BACKFILL MATERIAL SHALL BE 1-1/4 INCH MINUS CRUSHED ROCK.
- TRENCH COMPACTION SHALL BE PER THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T. STANDARD SPECIFICATIONS SECTION 7-08.3(3). CONTRACTOR TO DETERMINE THE TYPE OF EQUIPMENT AND METHOD TO USE TO ACHIEVE THE REQUIRED COMPACTION. EACH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY THE A.A.S.H.T.O. T-180 TEST METHOD.
- SETTLEMENT OF THE FINISHED SURFACE WITHIN THE WARRANTY PERIOD SHALL BE CONSIDERED TO BE A RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE CITY.
- ALL STORM MAIN PIPE SHALL BE A MINIMUM 12 INCHES DIAMETER.
- ALL STORM PIPE LATERALS SHALL BE A MINIMUM 10 INCHES DIAMETER.
- STORM PIPE MATERIALS SHALL BE AS INDICATED IN TABLE 7-1 IN THE CAMAS STORMWATER DESIGN STANDARDS MANUAL (CSDSM).
- STORM PIPE MINIMUM SLOPE SHALL BE AS INDICATED IN TABLE 7-2, AND MAXIMUM SLOPE SHALL BE AS INDICATED IN TABLE 7-3 IN THE CSDSM.
- ALL MANHOLES LOCATED IN UNIMPROVED EASEMENTS AND RIGHT OF WAYS SHALL BE PROVIDED WITH TAMPER PROOF LIDS AND SHALL BE SET 8 INCHES ABOVE FINISHED GRADE. MANDREL TESTING MAY BE REQUIRED AT THE CITY'S DISCRETION.
- VIDEO INSPECTION TAPES AND REPORTS MAY BE REQUIRED AT THE CITY'S DISCRETION. MANDREL TESTING MAY BE REQUIRED AT THE CITY'S DISCRETION.
- INSTALL STORMWATER MEDALLION ON CURB AT EACH CATCH BASIN OR CURB INLET.

City of Camas WASHINGTON
 STORM SEWER DETAIL
 STORM CONSTRUCTION NOTES
 NOT TO SCALE
 DETAIL NO. SD1
 DATE: 7/17/2018

SECTION VIEW A-A
 PLAN VIEW

NOTES:
 1. ALL PIPE OPENINGS SHALL BE CORED AND SEALED WITH NON-SHRINK GROUT INSIDE AND OUTSIDE MANHOLE.
 2. MASTIC SEAL REQ'D IN ALL KEYLOCK JOINTS.
 3. MANHOLES SHALL CONFORM TO ASTM C-478.
 4. FLAT TOP SECTION MAY BE USED FOR SHALLOW MANHOLES.
 5. INSIDE JOINTS SHALL BE STRUCK SMOOTH & EVEN WITH THE INSIDE WALLS.
 6. MANHOLE BASE TO HAVE SHAPED CHANNELS. FLOW LINE & INSIDE SURFACES SHALL BE TROWLED SMOOTH & UNIFORM.

City of Camas WASHINGTON
 CITY OF CAMAS - STORM DETAIL
 48" STORM SEWER MANHOLE
 NOT TO SCALE
 DETAIL NO. SD9
 DATE: 8-12-21

RISER RING & COLLAR DETAIL
 PLAN VIEW
 SECTION VIEWS A-A
 SECTION B-B
 CAST IRON SUBURBAN COVER & FRAME

NOTES:
 1. MANHOLES SHALL CONFORM TO ASTM C-478.
 2. NON-SHRINK GROUT SHALL BE USED BETWEEN FRAME, RISER RINGS, AND MANHOLE.
 3. 3" TALL FRAME IS STANDARD, 7" TALL FRAME (NOT SHOWN) IS OPTIONAL.
 4. ANY COMBINATION OF RISER RING THICKNESS, GROUT, AND FRAME SHALL BE USED TO ACHIEVE THE 12" MAXIMUM DEPTH FROM FINISH GRADE TO TOP OF CONE OR TOP OF FLAT TOP.
 5. 8" THICK FLAT TOP FOR 48" MANHOLE.
 12" THICK FLAT TOP FOR 60" MANHOLE.

City of Camas WASHINGTON
 CITY OF CAMAS - STORM DETAIL
 MANHOLE COVER & RISERS
 NOT TO SCALE
 DETAIL NO. SD12
 DATE: 8-12-21

STORM SEWER CLEAN OUT

NOTES:
 1. CLEAN OUT PIPE AND FITTINGS MAY BE THE SAME AS THE MAIN PIPE, OR MAY BE ADAPTED TO CONNECT THE MAIN PIPE TO GASKETED 3054 SDR26 PVC FOR THE CLEAN OUT.
 2. PROVIDE 3" SQ. x 6" DEEP CONCRETE COLLAR AROUND VALVE BOX FOR CLEANOUTS WHEN LOCATED OUT OF ROADWAY.
 3. SEE TRENCH DETAIL FOR BACKFILL/BEDDING AND SEWER UTILITY MARKING TAPE REQUIREMENTS.

City of Camas WASHINGTON
 STORM SEWER DETAIL
 STORM SEWER CLEAN OUT
 NOT TO SCALE
 DETAIL NO. SD20
 DATE: 5-17-19

Street & Storm Details
8th Ave Apartments

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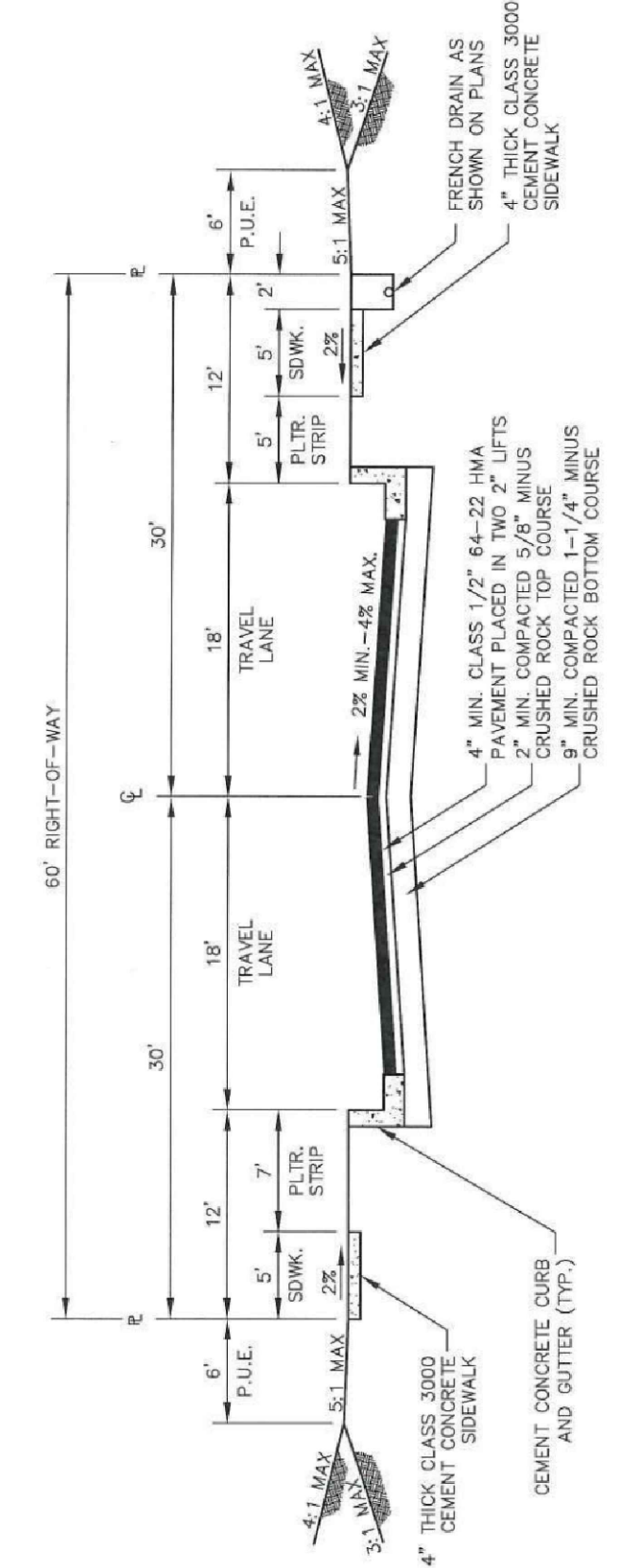
C230

Project: 23005SP
 Date: 10/26/2023
 Drafted: NVS
 Designed: PCW
 Page: 11 of 17

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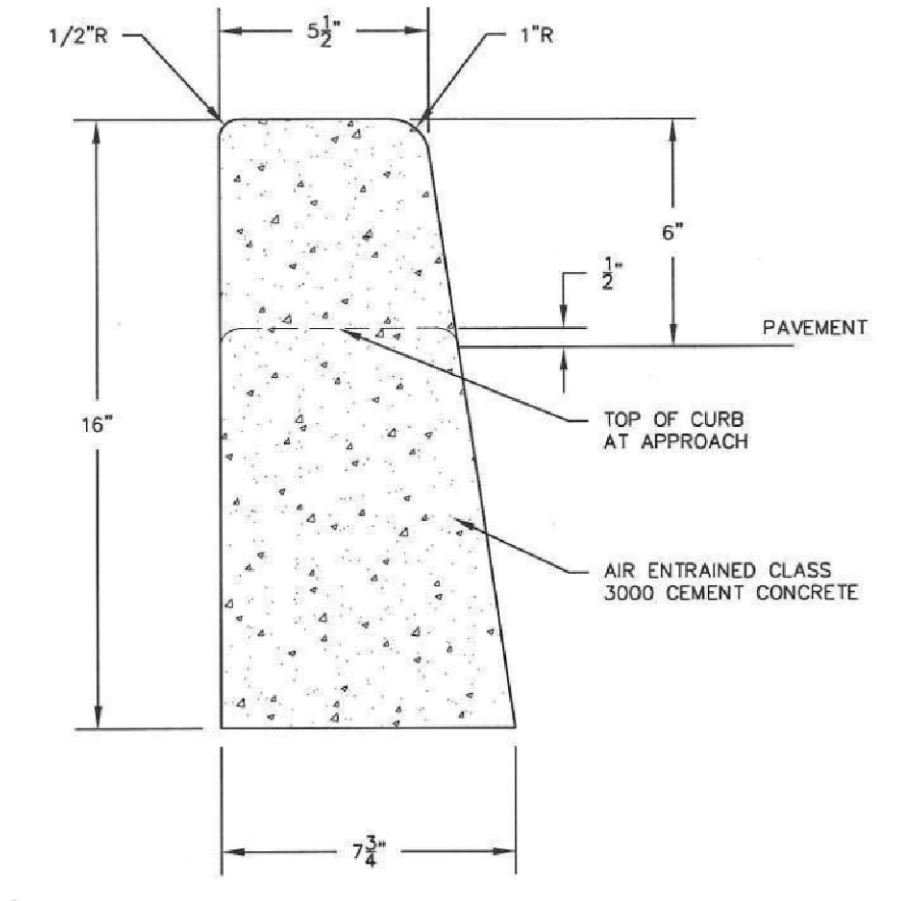
Revisions:

- STREET CONSTRUCTION NOTES:**
- ENGINEERED FILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T STANDARD SPECIFICATIONS SECTION 2-03.3(14). FOR FILL AREAS WITHIN ROADWAYS, METHOD C OF (14)C SHALL BE USED. FOR FILL AREAS OUTSIDE OF ROADWAYS METHOD B SHALL BE USED. ALL FILL PLACED SHALL BE VERIFIED BY GEOTECHNICAL TESTING. TEST RESULTS SHALL BE FORWARDED TO THE CITY OF CAMAS PROJECT ENGINEER.
 - MATERIALS IN SOFT SPOTS WITHIN THE ROADWAY SHALL BE REMOVED TO THE DEPTH REQUIRED TO PROVIDE A FIRM FOUNDATION AND SHALL BE BACKFILLED WITH 1-1/2 INCH MINUS CRUSHED ROCK.
 - ALL SUBGRADE TO BE PROOF ROLLED AND APPROVED BY THE CITY INSPECTOR AND/OR BY A GEOTECHNICAL ENGINEER WITH THE CONSENT OF THE CITY ENGINEER. SUBGRADE FILLS ARE TO BE TESTED USING THE A.A.S.H.T.O. T-180 TEST METHOD.
 - ALL TRENCH LINES, FILL AREAS AND BASE COURSE LOCATED IN THE RIGHT-OF-WAY SHALL BE PER TRENCH DETAIL G2 AND THE STREET SECTION DETAILS AND SHALL MEET 95% OF A.A.S.H.T.O. T-180 COMPACTION. TRENCH LINES LOCATED WITHIN AN EXISTING ROADWAY SHALL BE PLATED OR TOPPED WITH COLD MIX GRANULAR BACKFILL OVERNIGHT IS NOT ALLOWED. PLATES SHALL HAVE COLD MIX AROUND ALL EDGES.
 - THE CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO SUBGRADE PROOF ROLL OR GRADE CHECK INSPECTIONS.
 - THE AGGREGATE ROAD BASE SHALL BE COMPACTED IN ACCORDANCE WITH THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T STANDARD SPECIFICATIONS SECTION 4-04.3. THE CONTRACTOR SHALL SUBMIT TEST RESULTS TO THE ENGINEER AND CITY INSPECTOR. MAXIMUM DENSITY (95%) AS DETERMINED BY A.A.S.H.T.O. T-180 TEST METHOD.
 - ASPHALT CONCRETE PAVEMENT MIX SHALL BE DESIGNED FROM A MIX FORMULA APPROVED BY W.S.D.O.T. FOR MATERIAL USED. CONTRACTOR TO PROVIDE THE CITY WITH CERTIFICATE OF COMPLIANCE FROM THE ASPHALT PAVEMENT PLANT, UNLESS OTHERWISE INDICATED.
 - THE ASPHALT CONCRETE PAVEMENT MIX SHALL BE COMPACTED IN ACCORDANCE WITH THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T STANDARD SPECIFICATIONS SECTION 5-04.3(10). CONTRACTOR SHALL SUBMIT TEST RESULTS TO THE ENGINEER AND THE CITY INSPECTOR.
 - ALL STORM SYSTEM IMPROVEMENTS AND STORMWATER DETENTION AND TREATMENT FACILITIES SHALL BE COMPLETED AND PROPERLY FUNCTIONING PRIOR TO ANY PAVING.
 - HALF STREET IMPROVEMENTS SHALL INCLUDE AN ANALYSIS OF THE EXISTING STRUCTURAL SECTION OUT TO CENTERLINE. IF FOUND TO BE SUBSTANDARD, THE DEVELOPER SHALL BE REQUIRED TO PROVIDE AN ADEQUATE STRUCTURAL SECTION TO CENTERLINE. THIS MAY CONSIST OF A STRUCTURAL OVERLAY OR A COMPLETE STREET RECONSTRUCTION AS DETERMINED BY A GEOTECHNICAL ANALYSIS AND AS APPROVED BY THE CITY ENGINEER.
 - ALL SIDEWALK AND CURB RAMPS SHALL COMPLY WITH THE MOST RECENT EDITION OF THE W.S.D.O.T. FIELD GUIDE FOR ACCESSIBLE PUBLIC RIGHTS OF WAY.



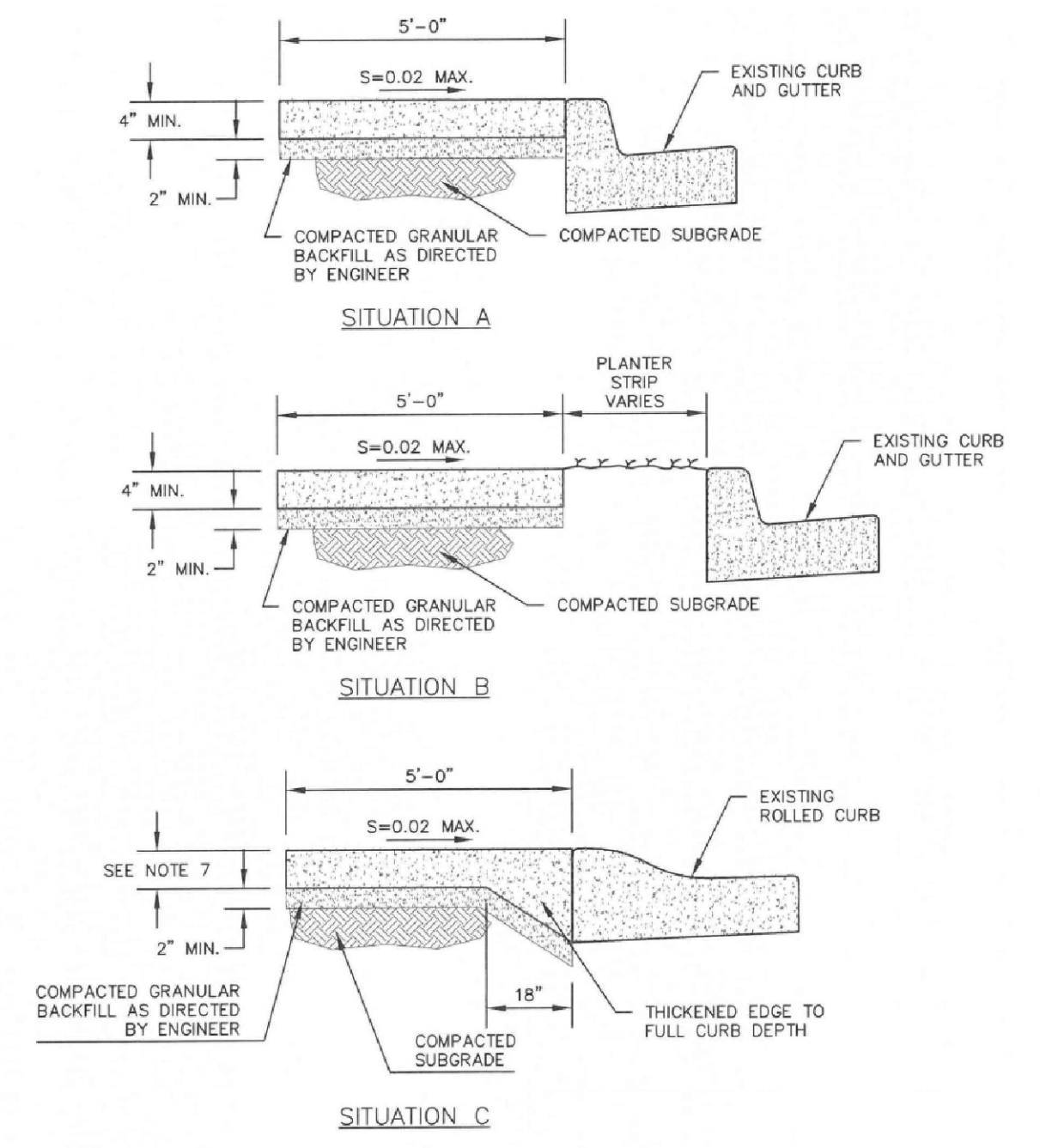
- NOTES:**
- STREET SECTION DEPTHS SHOWN ARE ABSOLUTE MINIMUMS.
 - CROSS-SLOPE APPLIES TO CROWN OR SHED STREETS.

NOT TO SCALE
 DETAIL NO. ST12
 REVISION: 5 DATE: 7/17/2018
 CITY OF CAMAS WASHINGTON
 STREET DETAIL
 2 LANE LOCAL (60' R.O.W.)
 TRAFFIC CURB
 DETAIL APPROVED BY: [Signature] DATE: 7-22-18



- NOTES:**
- THERE SHALL BE EXPANSION JOINTS EVERY 45' & FALSE JOINTS EVERY 15'
 - STAMP A "W" OR "S" IN FACE OF CURB AT WATER AND SEWER SERVICE LOCATIONS.
 - SEE CURB TRANSITION DETAIL FOR TRANSITION TO TRAFFIC CURB & GUTTER

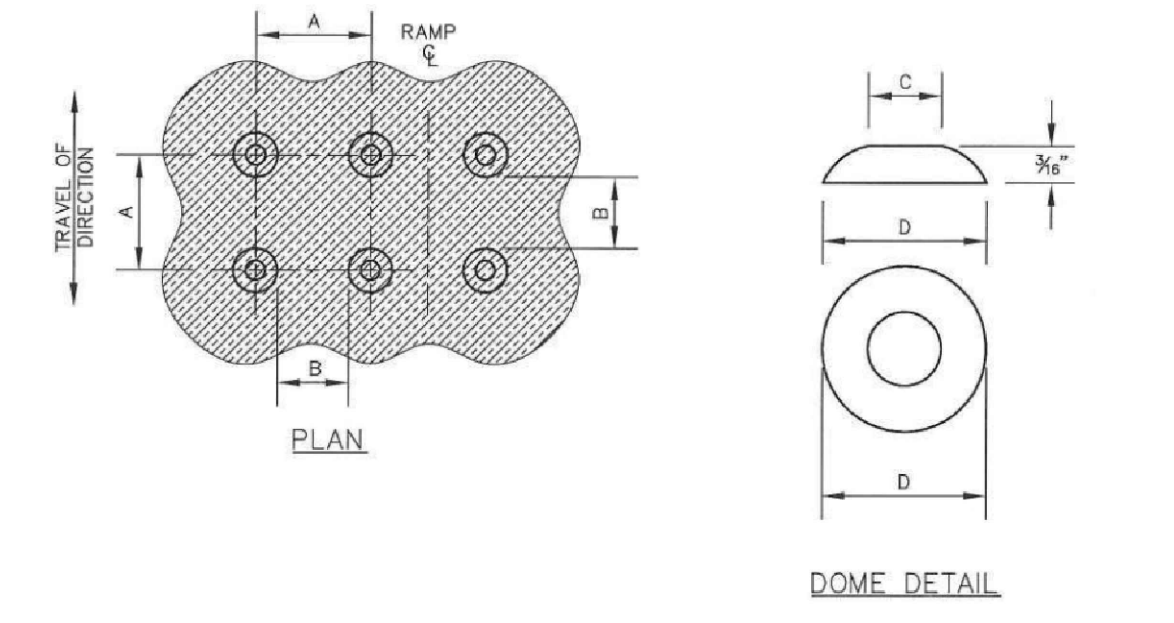
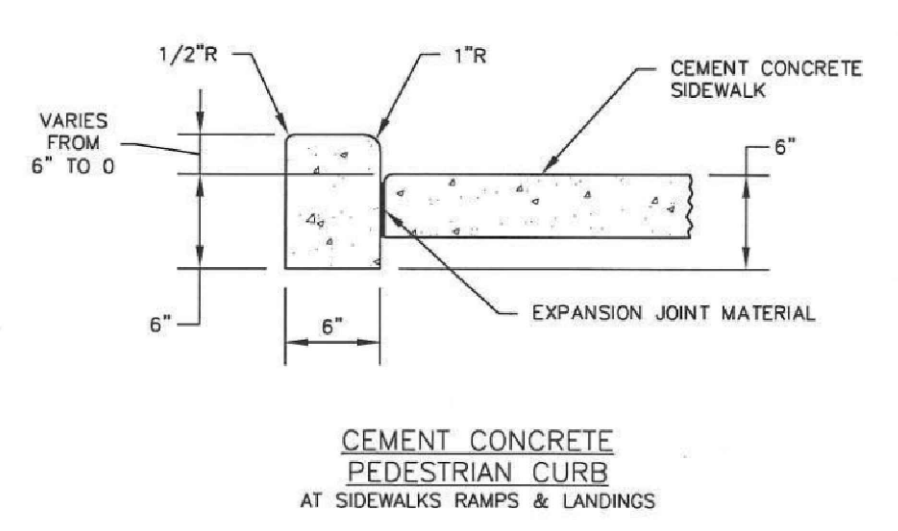
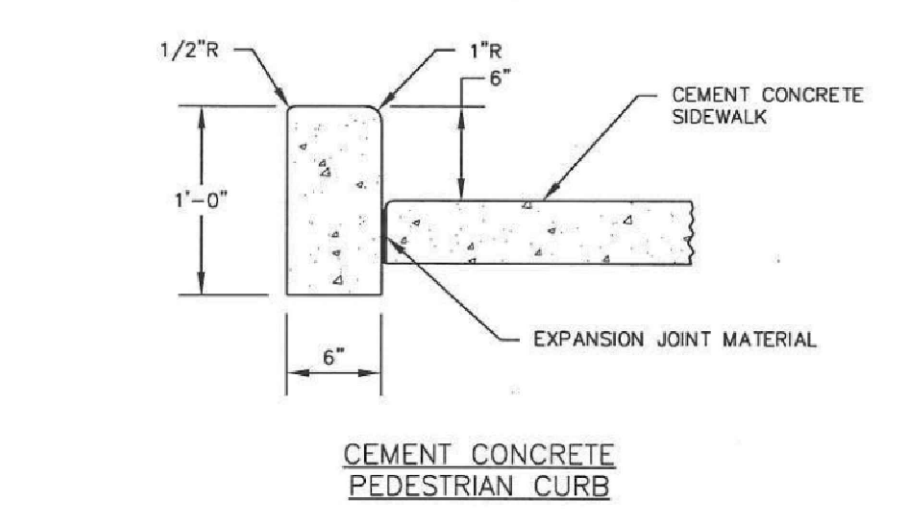
REV. NO. DATE BY APPR.
 1 5/1/07 SCD JC
 2 9/18/07 SCD JC
 3 1/1/11 SCD JC
 CITY OF CAMAS - STREET DETAIL
 TRAFFIC CURB
 DETAIL APPROVED BY: [Signature] DATE: 1-4-11
 NOT TO SCALE
 DETAIL NO. ST12



- NOTES:**
- NOTIFY CITY INSPECTOR 24 HOURS PRIOR TO CONCRETE POUR FOR APPROVAL OF FORMS.
 - SUBGRADE SHALL BE SHAPED AND COMPACTED TO A FIRM EVEN SURFACE.
 - ALL SOFT AND YIELDING MATERIAL SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIAL.
 - CONCRETE FOR SIDEWALKS SHALL BE AIR ENTRAINED CONCRETE CLASS 3000.
 - PROVIDE EXPANSION JOINTS EVERY 15 FEET AND DUMMY JOINTS EVERY 5 FEET.
 - CONCRETE SURFACE SHALL BE BROWELED SMOOTH AND HAIR BROOMED.
 - DRIVEWAY APPROACHES AND SIDEWALKS = 6"
 - WEEP HOLES NOT PERMITTED ON ROLLED CURB

NOT TO SCALE
 DETAIL NO. ST18
 REVISION: 5 DATE: 03/22/2022
 CITY OF CAMAS WASHINGTON
 STREET DETAIL
 SIDEWALKS
 DETAIL APPROVED BY: [Signature] DATE: 3-24-22

NOT TO SCALE
 DETAIL NO. ST11
 REVISION: 3 DATE: 7/17/2018
 CITY OF CAMAS WASHINGTON
 STREET DETAIL
 STREET CONSTRUCTION NOTES
 DETAIL APPROVED BY: [Signature] DATE: 7-22-18

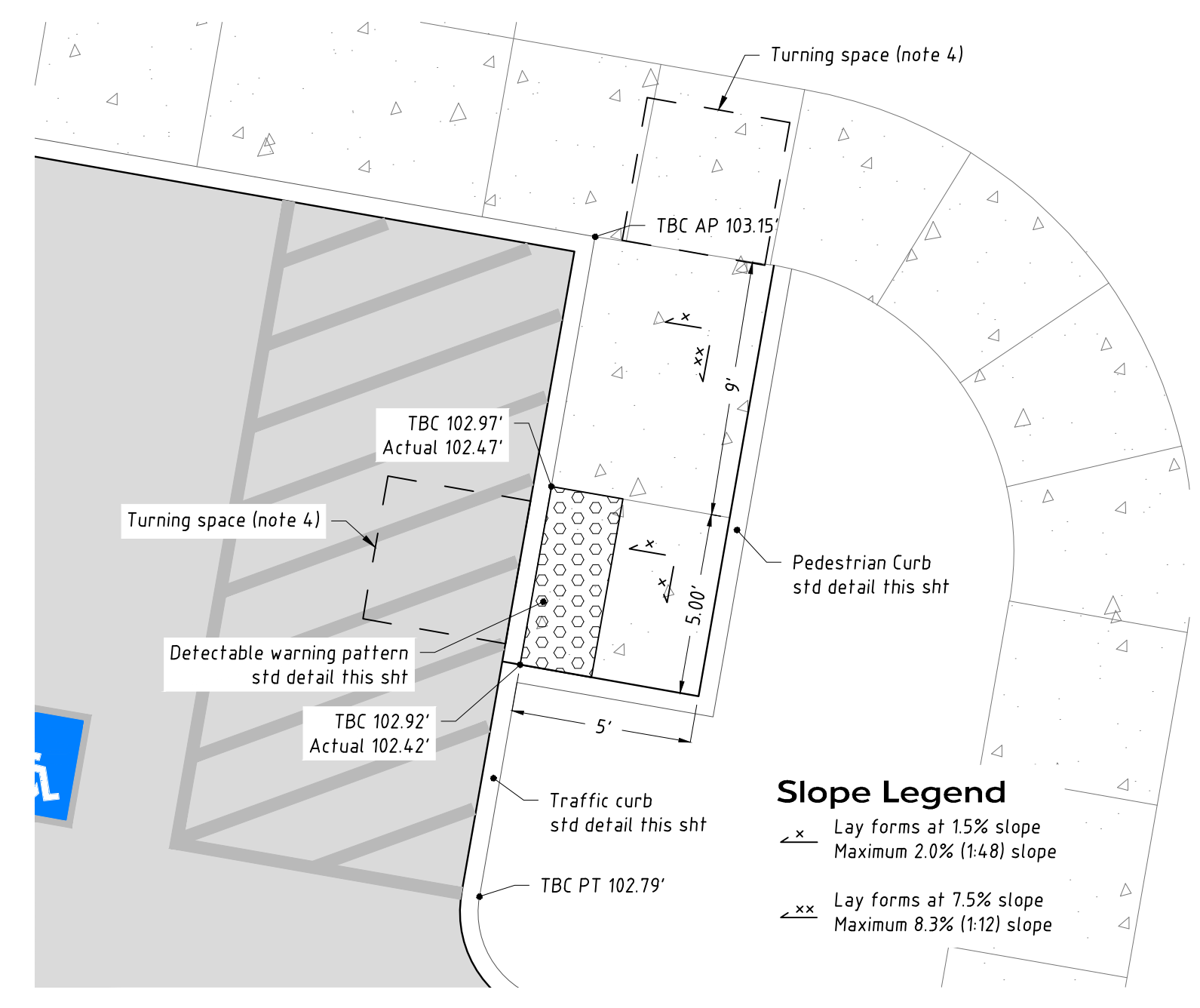


DIMENSIONS	
A	1 5/8" 2 3/8"
B	5/8" 1 1/2"
C	7/16" 3/4"
D	7/8" 1 7/16"

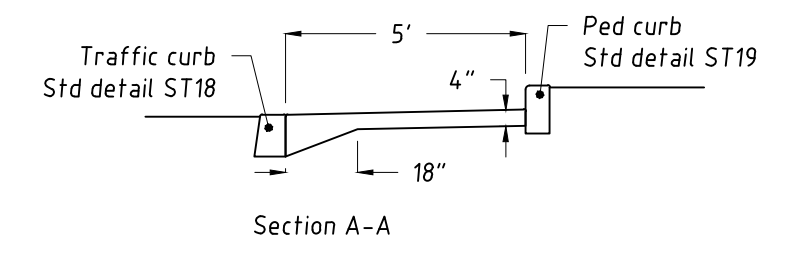
- NOTES:**
- TRUNCATED DOMES SHALL BE IN COMPLIANCE WITH WSDOT STANDARD PLAN F-45.10.
 - DETECTABLE WARNING PATTERN AREA SHALL BE YELLOW, IN COMPLIANCE WITH WASHINGTON STATE STD. SPEC. 8-14.3(5).

REV. NO. DATE BY APPR.
 1 1/1/11 SCD JC
 CITY OF CAMAS - STREET DETAIL
 PEDESTRIAN CURB
 DETAIL APPROVED BY: [Signature] DATE: 1-4-11
 NOT TO SCALE
 DETAIL NO. ST19

REV. NO. DATE BY APPR.
 1 5/1/07 SCD JC
 2 1/1/11 SCD JC
 3 10/21/14 SCD JC
 CITY OF CAMAS - STREET DETAIL
 DETECTABLE WARNING PATTERN
 DETAIL APPROVED BY: [Signature] DATE: 10-21-14
 NOT TO SCALE
 DETAIL NO. ST29



- Slope Legend**
- x Lay forms at 15% slope
Maximum 2.0% (1:48) slope
 - xx Lay forms at 7.5% slope
Maximum 8.3% (1:12) slope



- Notes**
- Truncated domes shall be in compliance with WSDOT standard plan F-45.10. See std detail ST29 this sht.
 - All sidewalk, turning spaces, ramps, wings, and curbs shall be CL3000 cement concrete.
 - Ramp grade shall not exceed 1:12 (8.3%) and not exceed 1:48 (2%) cross slope. Recommend laying out forms at 7.5% and 15% respectively.
 - Turning space shall be min 4'x4' and not exceed 1:48 (2%) slope in any direction.
 - Ramps to be constructed separately from sidewalks and isolated by expansion joint material.

Street & Storm Details 8th Ave Apartments

PRELIMINARY
 NOT FOR CONSTRUCTION



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 CONSULTING ENGINEERS & PLANNERS
 6168 NE HWY 99 STE 103, VANCOUVER 98665
 (360) 931-3122

C300

Project: 23005SP
 Date: 10/26/2023
 Drafted: NVS
 Designed: PCW
 Page: 12 of 17

Northwest Utilities
 1-800-424-5555
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Revisions:

Site Information

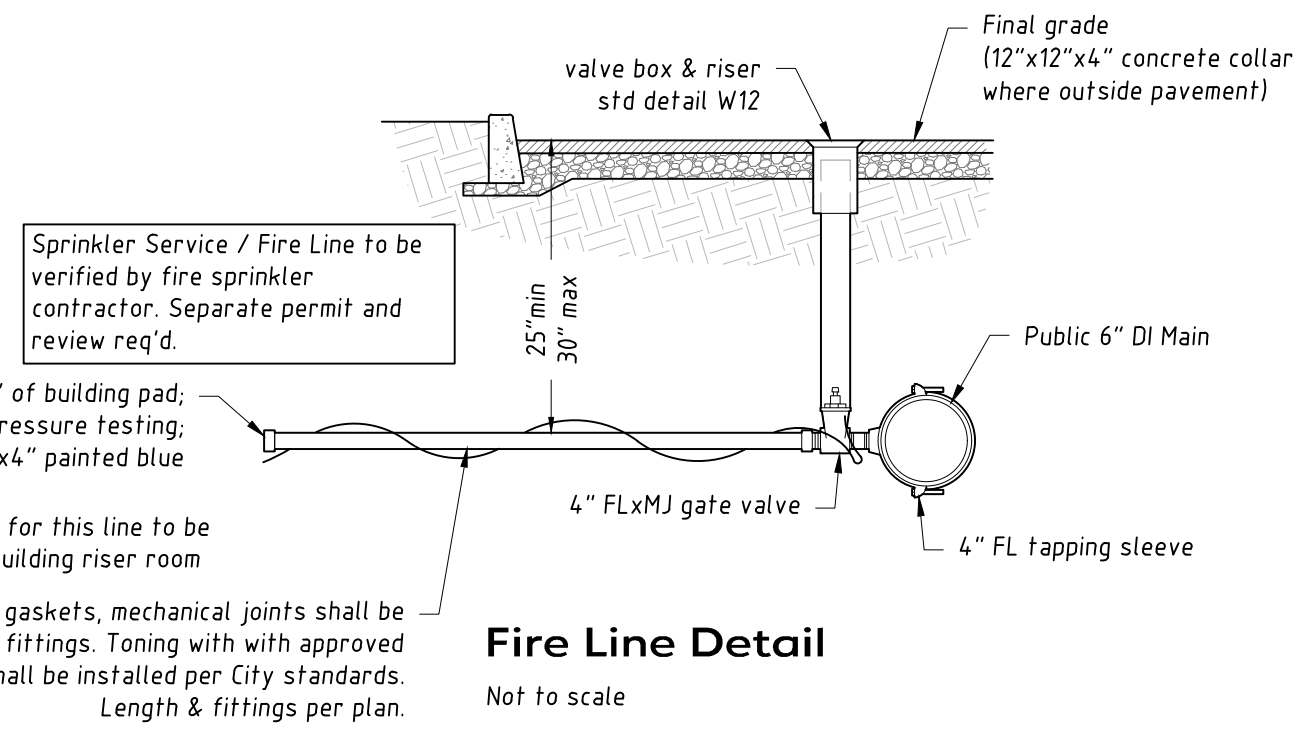
Address: 1805 SE 8th Ave
 Camas, WA 98607
 Abbrev. Desc: Oak Park Addition to Washougal, Lot 8, Block 4
 S-T-R: SW 1/2 S12 T1N R3E W.M.
 Parcel: 88135000
 Area: 1.00 AC (43,557± SF)
 Zone: R-18 (MFH)

Boundary & Topography

Property boundaries shown hereon are taken from 1999 Oak Park Addition to Washougal filed in Book C, Page 24, of Plats with the Clark County auditor's office. Adjacent property boundaries are shown approximate only. Topographic survey by Engineering Northwest PLLC in 2023. This is not a boundary survey.

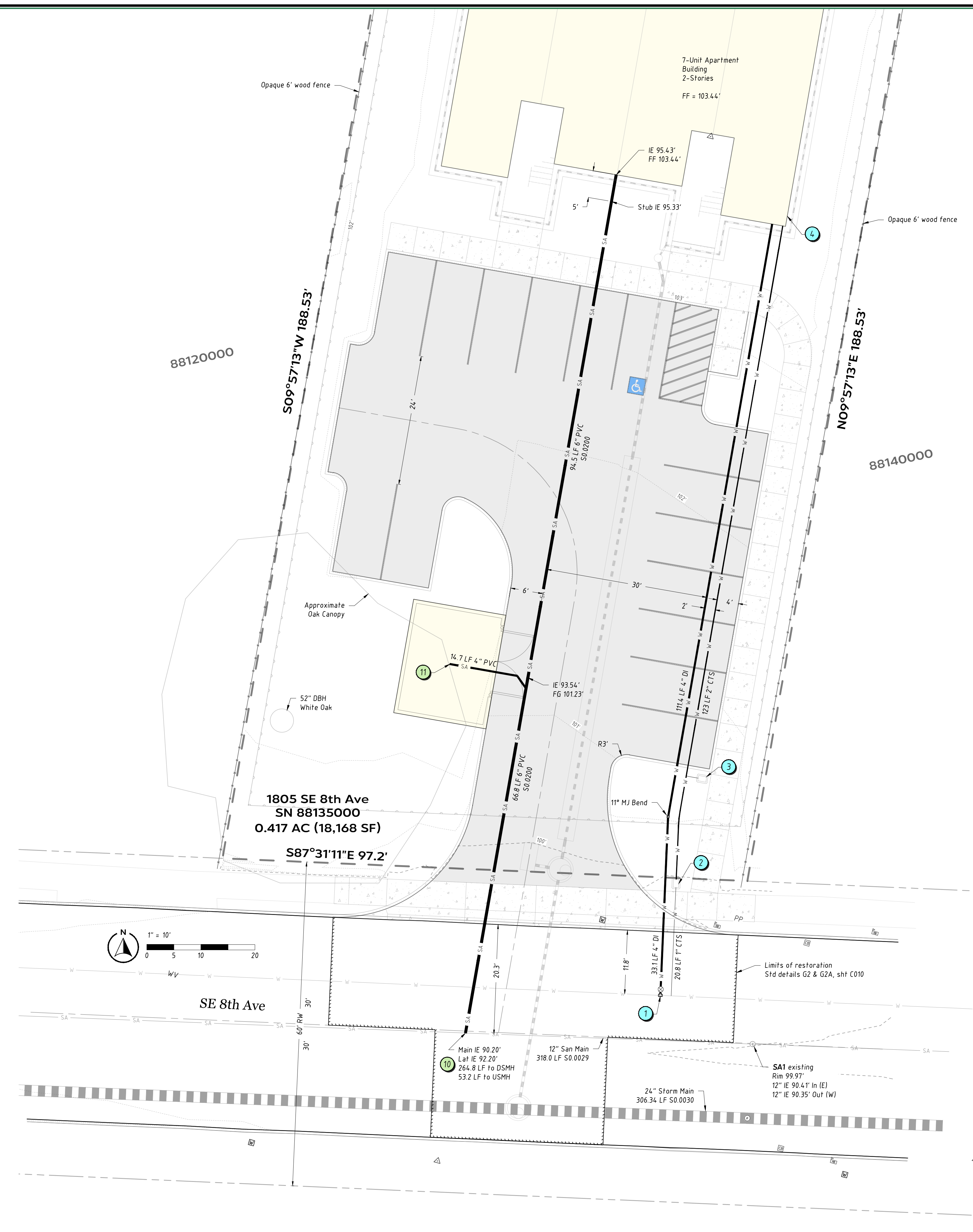
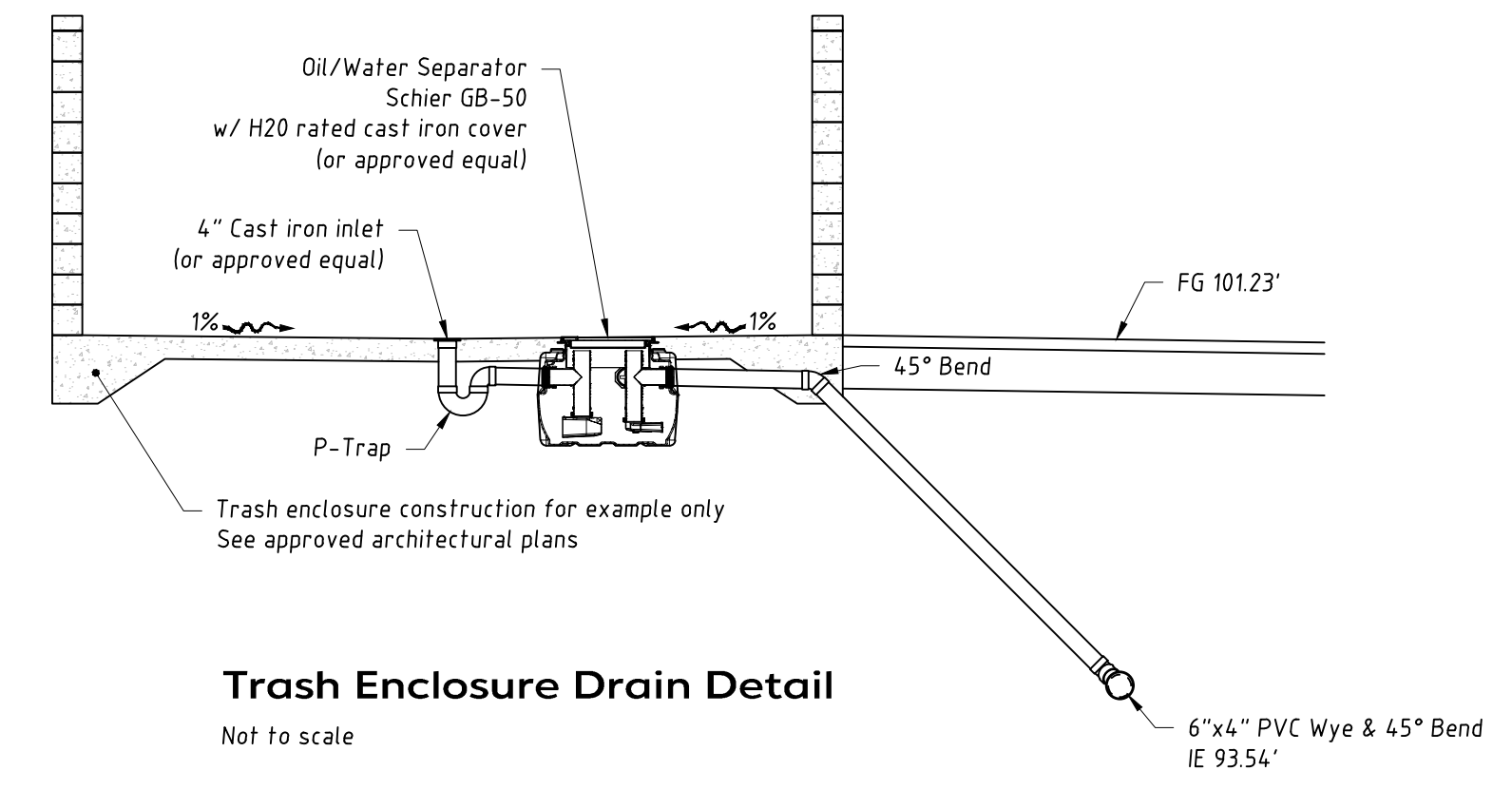
Water Callout Notes

- Details shts C010, C310
- See City of Camas Water Construction Notes, std detail W1.
 - See trench backfill sections per std details G2 and G3.
 - All materials and methods of construction and installation for water shall conform to the City of Camas "Design Standards Manual". Construction shall be as per the most current standard details contained therein.
 - Maintain min 10' horizontal separation between sewer and water main lines. Maintain min 18" vertical separation for sanitary sewer and 6" for other utilities.
 - Private water lines shall be CTS Municep Blue ASTM F876 SDR9 unless otherwise noted (or approved equal).
 - All components of the onsite private water system and fire line(s) shall be privately owned and maintained by the property owner(s) with right-of-entry granted to the City for inspection purposes.
 - Coordinate tie-in activities with the City of Camas 48-hrs min prior to construction.
- (1 location) Install 4" fire line per detail this sheet.
 - (1 location) Install 1" service with 1" meter per std detail W2, and 1" RPBA per std detail W2t.
 - (1 location) 3/4" DCVA IRR supply; Std detail IR13 (Irrigation network not shown; design build by others)
 - Install building-mounted FDC. Location and design by sprinkler contract.



Sanitary Callout Notes

- Details shts C010, C310
- See City of Camas Gravity Sewer Construction Notes per std detail SG1.
 - All components of the onsite private sanitary sewer system shall be privately owned and maintained by the property owner(s) with a right-of-entry granted to the City for inspection purposes.
 - Coordinate tie-in activities with the City of Camas 48-hrs min prior to construction.
- Install 6" 3034 PVC gravity sewer service per std detail SG2. Extend stub to within 5' of building. Building sewers shall comply with City of Camas plumbing code.
 - Install trash enclosure sewer drain per detail this sht. Maintenance agreement, operation and maintenance manual, required. Service frequency must be specified.



Utility Plan
8th Ave Apartments
PAUL C. WILLIAMS
 STATE OF WASHINGTON
 REGISTERED PROFESSIONAL ENGINEER
 43138
ENGINEERING NORTHWEST
 CONSULTING ENGINEERS & PLANNERS
 6168 NE HWY 99 STE 103, VANCOUVER 98665
 (360) 931-3122

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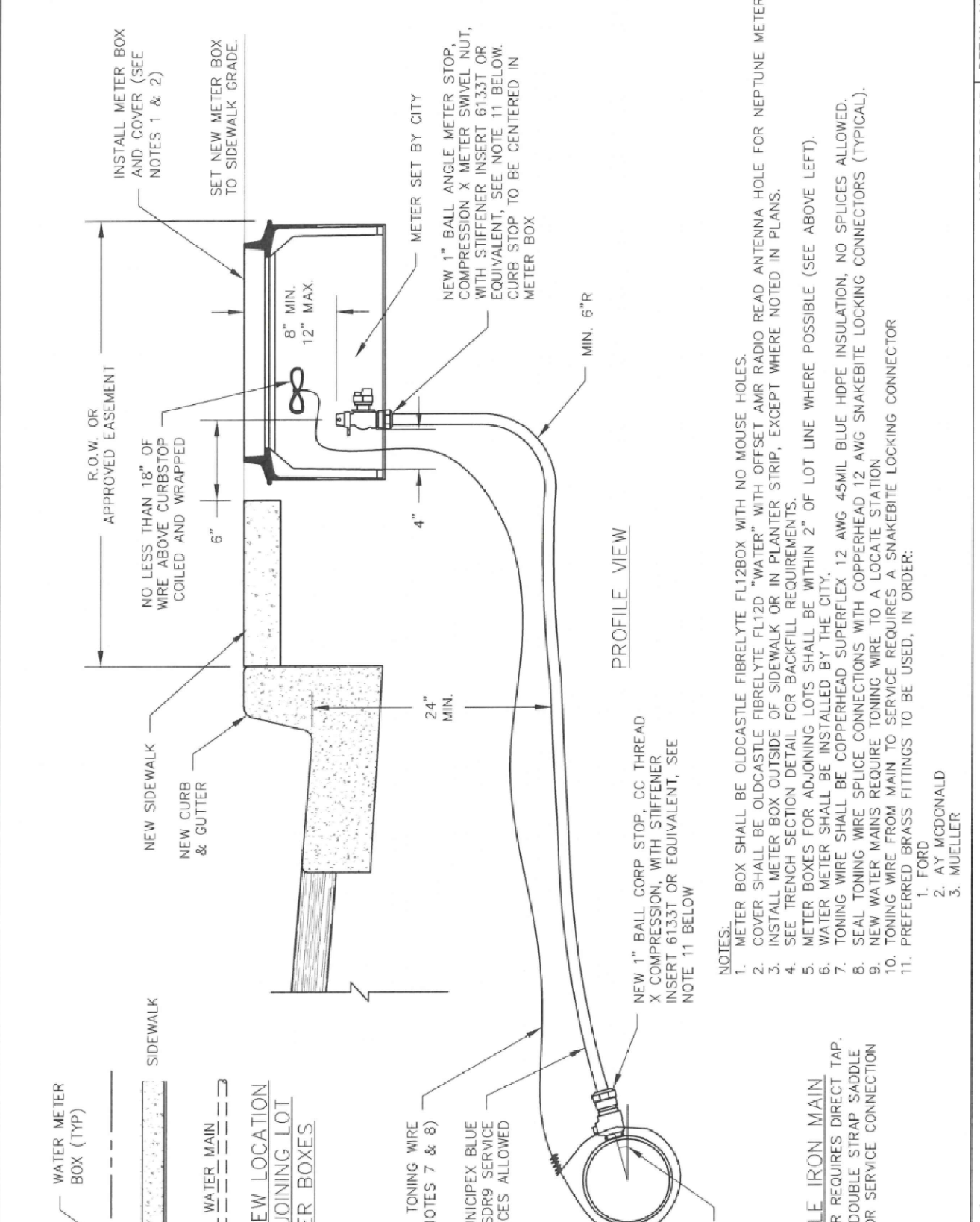
C310

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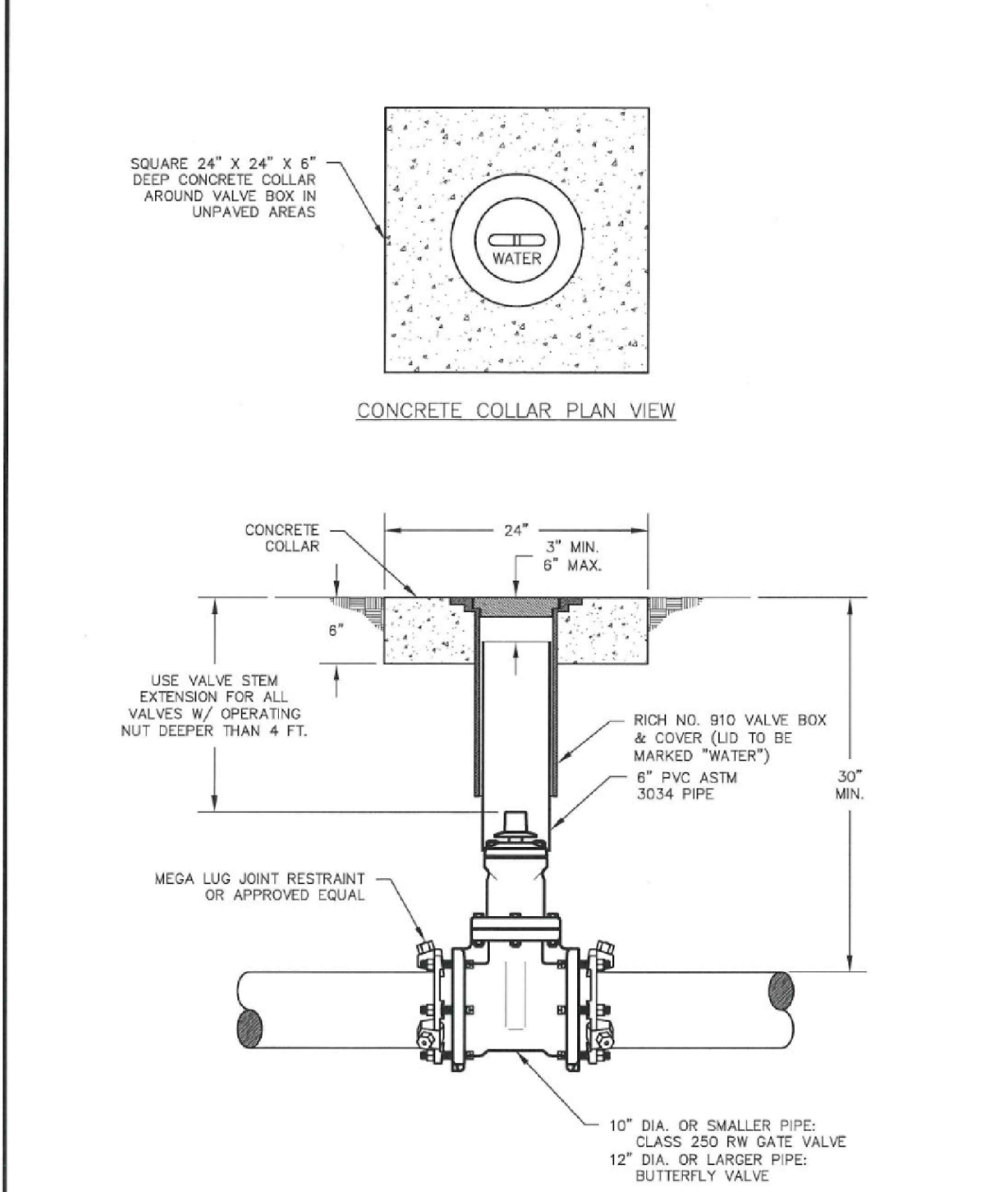
Revisions:

- WATER CONSTRUCTION NOTES:**
- ALL TRENCH EXCAVATION AND PIPE INSTALLATION SHALL CONFORM TO THE MOST CURRENT A.W.W.A. STANDARDS, AND THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T. STANDARD SPECIFICATIONS SECTION 7-08.3(1) AND SECTION 7-08.3(2). ALL EXCESS MATERIAL FROM THE TRENCH EXCAVATION SHALL BE LOADED DIRECTLY INTO A DUMP TRUCK AND DISPOSED OF AT AN APPROVED SITE.
 - PIPE BEDDING AND PRE-COVER (PIPE ZONE) MATERIAL SHALL BE 5/8 INCH MINUS CRUSHED ROCK.
 - TRENCH BACKFILL MATERIAL SHALL BE 1-1/4 INCH MINUS CRUSHED ROCK.
 - TRENCH COMPACTION SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T. STANDARD SPECIFICATIONS SECTION 7-08.3(3). CONTRACTOR TO DETERMINE THE TYPE OF EQUIPMENT AND METHOD USED TO ACHIEVE THE REQUIRED COMPACTION AND BE APPROVED BY THE CITY OF CAMAS. EACH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY THE A.A.S.H.T.O. T-180 TEST METHOD.
 - SETTLEMENT OF THE FINISHED SURFACE WITHIN THE WARRANTY PERIOD SHALL BE CONSIDERED TO BE A RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE CITY.
 - ALL VALVES 10 INCHES OR LESS IN DIAMETER SHALL BE A.W.W.A. APPROVED RESILIENT WEDGE GATE VALVES, BUBBLE TIGHT AT 200PSI, HAVE NON RISING STEMS, AND OPEN BY TURNING TO THE LEFT. PROVIDE A 2 INCH SQUARE NUT TO CONFORM TO A.W.W.A. C-504. ALL VALVES 12 INCHES OR LARGER IN DIAMETER SHALL BE A.W.W.A. APPROVED BUTTERFLY VALVES.
 - ALL WATER PIPE 12 INCHES OR LESS IN DIAMETER SHALL BE DUCTILE IRON CLASS 52 PIPE. ALL WATER PIPE 14 INCHES IN DIAMETER AND LARGER SHALL BE DUCTILE IRON CLASS 51 PIPE. RUBBER GASKET TYPE SHALL BE U.S. PIPE, TYTON OR APPROVED EQUAL. ALL FITTINGS SHALL BE DUCTILE IRON AND SHALL CONFORM TO THE A.W.W.A. STANDARD C-110.
 - ALL TEES, FLANGES, CAPS, BENDS AND OFFSETS, AS WELL AS ALL OTHER APPURTENANCES WHICH ARE SUBJECT TO UNBALANCED THRUST, SHALL BE PROPERLY BRACED BY ONE OF THE FOLLOWING METHODS:
 - PRIMARY METHOD IS MECHANICAL JOINT RESTRAINT, AS SHOWN IN DETAIL W1 - USE T88A IRON SERIES 1000 MEGA LUG MECHANICAL JOINT THRUST RESTRAINT OR APPROVED EQUAL. CONTRACTOR TO RESTRAIN THE MINIMUM REQUIRED PIPE LENGTH WITH "FIELD-LOK" GASKETS OR APPROVED EQUAL.
 - ALTERNATE METHOD IS CONCRETE THRUST BLOCKING, AS SHOWN IN DETAIL W5 - BLOCKING SHALL BE 3000 PSI CONCRETE POURED IN PLACE. THRUST BLOCKING SHALL ONLY BE USED WHEN OTHER MEANS OF RESTRAINT CANNOT BE USED, OR EXISTING PIPE BEING CONNECTED IS NOT RESTRAINED.
 - ALL WATER MAINS SHALL BE TESTED AT 200PSI IN ACCORDANCE WITH SECTION 7-09.3(23) OF THE STANDARD SPECIFICATIONS. THE CITY SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ACCEPTANCE TESTING. MAXIMUM LENGTH OF PIPE TO BE TESTED AT ONE TIME IS 1000 FT.
 - CHLORINATION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 7-09.3(24) OF THE STANDARD SPECIFICATIONS. CITY INSPECTOR WILL TAKE SAMPLES AND DELIVER TO LABORATORY FOR BACTERIA TESTING. NEGATIVE SAMPLE RESULTS SHALL BE CONFIRMED, PRIOR TO PRESSURE TESTING, DECHLORINATION OR DISPOSAL TO SANITARY MAIN MAY BE REQUIRED.
 - APPROPRIATE DISPOSAL AND/OR DECHLORINATION OF FLUSHED WATER DURING BLOWOFF IS THE RESPONSIBILITY OF THE CONTRACTOR. METHOD USED SHALL BE APPROVED BY CITY AND OTHER REGULATING AUTHORITIES.
 - WATER MAIN TO HAVE A MINIMUM COVER OF 30 INCHES. WATER SERVICES TO HAVE A MINIMUM 24" OF COVER.
 - ALL EXISTING VALVES TO BE OPERATED BY CITY OF CAMAS WATER/SEWER DEPARTMENT PERSONNEL ONLY.
 - NO CONNECTIONS TO EXISTING WATER MAINS SHALL BE MADE PRIOR TO SATISFACTORY PRESSURE TESTING, DISINFECTION, AND THE CONFIRMATION OF A NEGATIVE BACTERIA TEST.
 - WATER MAINS SHALL BE LOOPED WHEREVER POSSIBLE.
 - WATER MAINS SHALL BE 6" DIAMETER MINIMUM LINE SIZE. LARGER LINE SIZES MAY BE REQUIRED.
 - SEE IRRIGATION CONSTRUCTION NOTES, DETAIL IR1, FOR APPROVED BACKFLOW PREVENTION DEVICES.

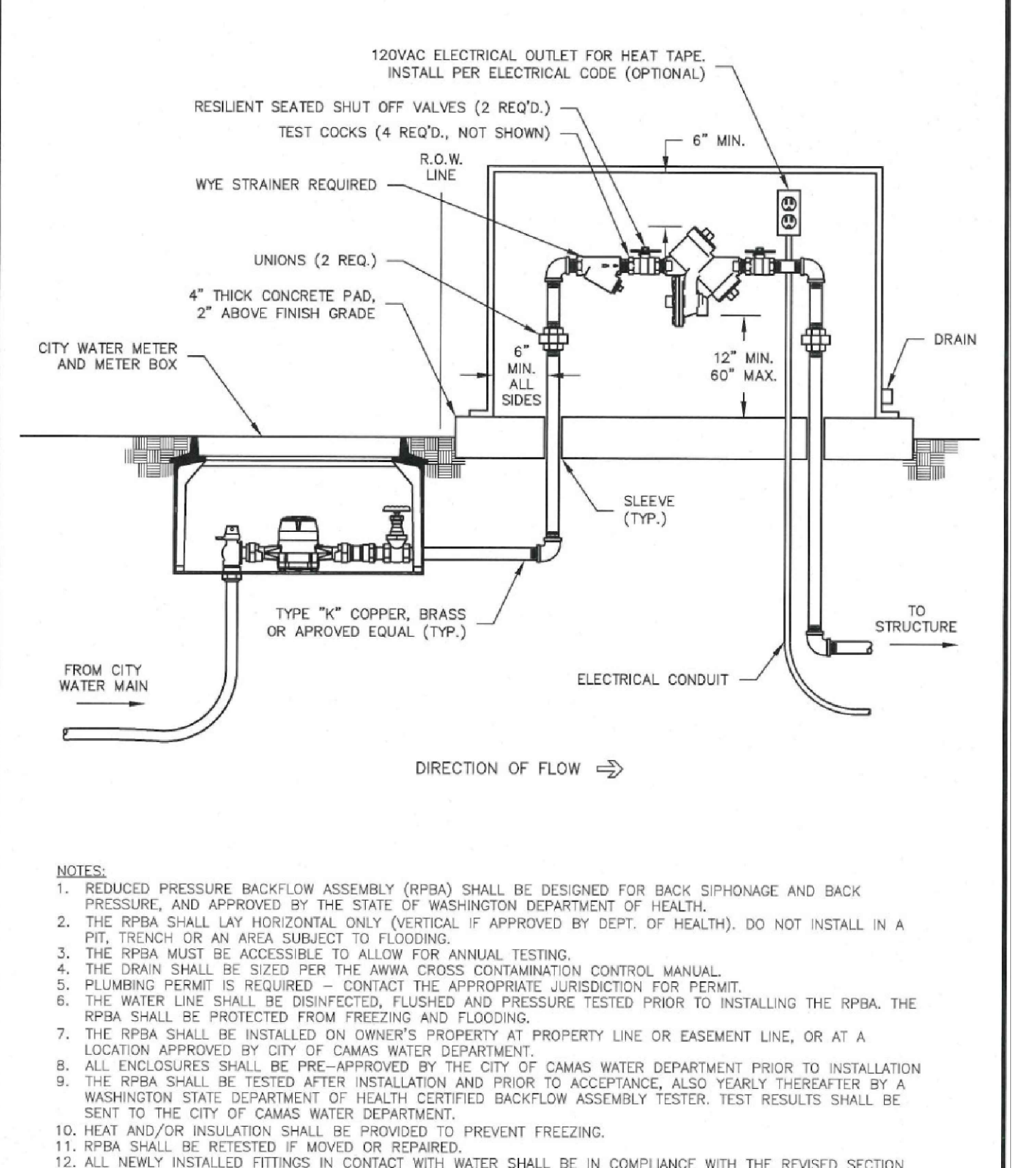


NOT TO SCALE
DETAIL NO. W2
REVISION: 9 DATE: 03/02/2022

City of Camas WATER DETAIL WATER CONSTRUCTION NOTES
DETAIL APPROVED BY: *J.P. Gauthier* DATE: 9-2-22
REVISION: 7 DATE: 03/02/2022

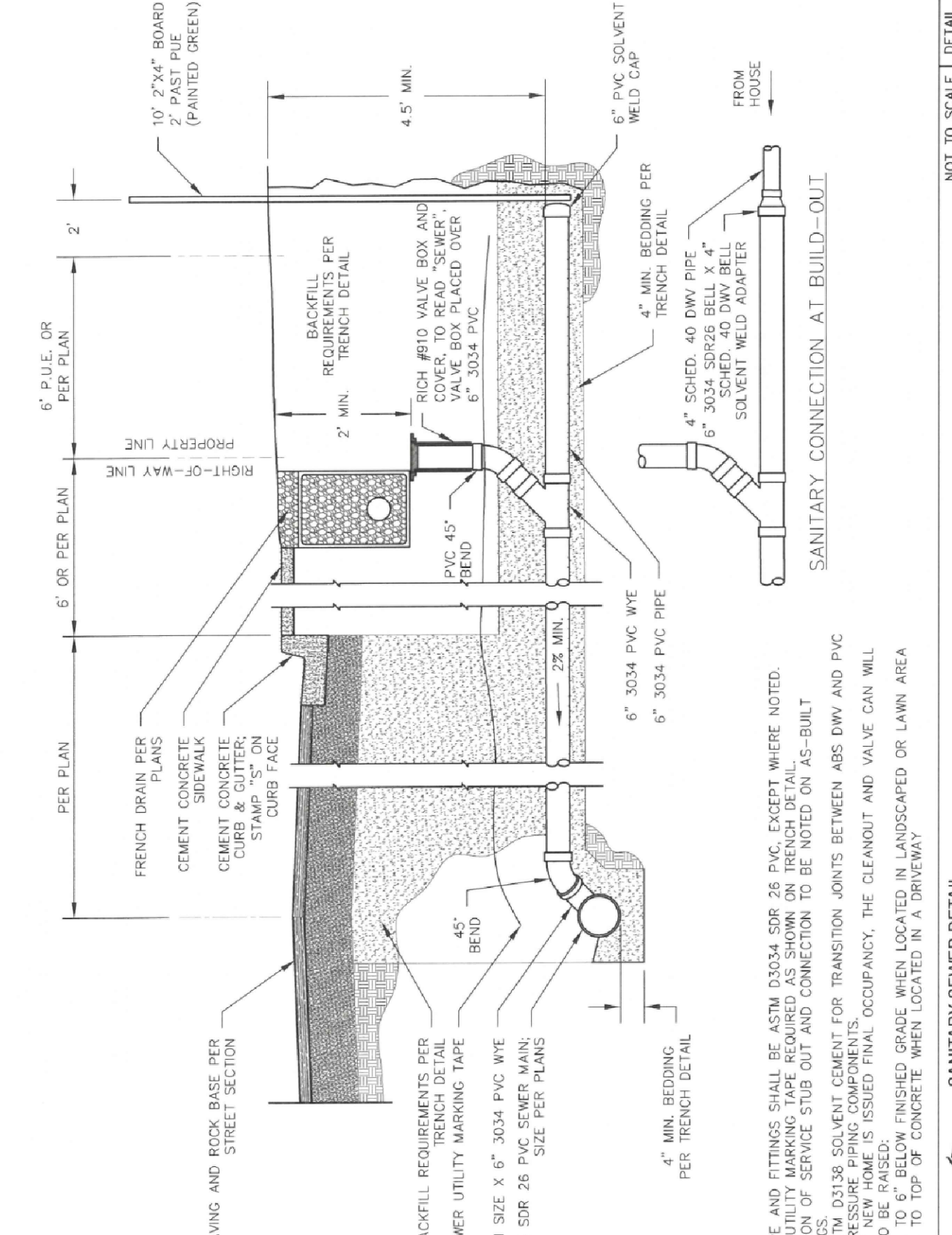


NOT TO SCALE
DETAIL NO. W12
REVISION: 9 DATE: 03/02/2022



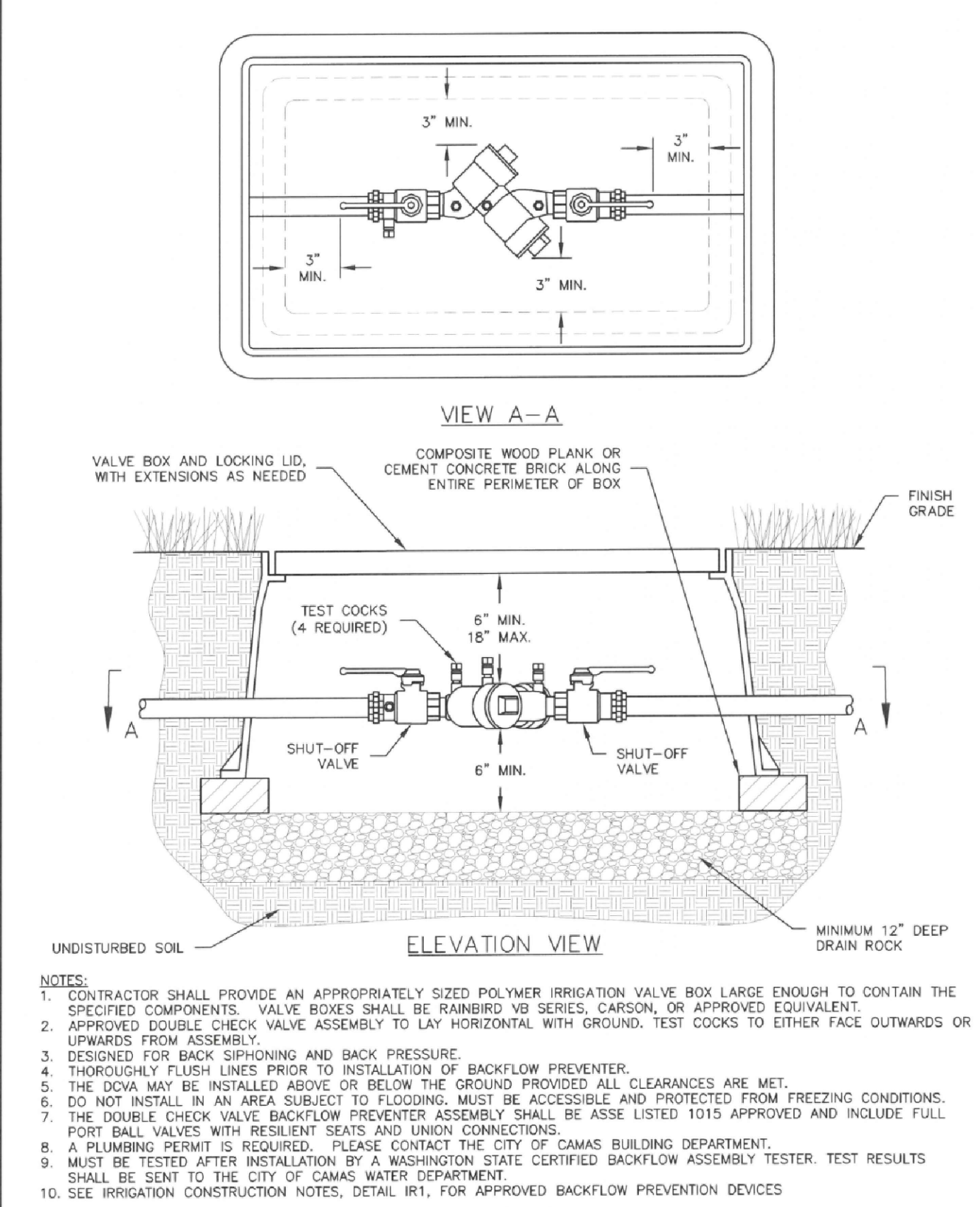
City of Camas WATER DETAIL REDUCED PRESSURE BACKFLOW ASSEMBLY, 1" AND 2"
DETAIL APPROVED BY: *J.P. Gauthier* DATE: 9-28-17
REVISION: 1 DATE: 09/20/17

- CONVENTIONAL GRAVITY SEWER CONSTRUCTION NOTES:**
- ALL TRENCH EXCAVATION AND PIPE INSTALLATION SHALL CONFORM TO THE MOST RECENTLY ADOPTED VERSION OF W.S.D.O.T. STANDARD SPECIFICATIONS SECTION 7-08.3(1) AND SECTION 7-08.3(2). ALL EXCESS MATERIAL FROM THE TRENCH EXCAVATION SHALL BE DISPOSED OF ON AN APPROVED SITE.
 - PIPE BEDDING & PRE-COVER (PIPE ZONE) MATERIAL SHALL BE 5/8 INCH MINUS CRUSHED ROCK.
 - TRENCH BACKFILL MATERIAL SHALL BE 1-1/4 INCH MINUS CRUSHED ROCK.
 - TRENCH COMPACTION SHALL BE PER CITY OF CAMAS STANDARD TEST REQUIREMENTS DETAIL G4. CONTRACTOR TO DETERMINE THE TYPE OF EQUIPMENT AND METHOD TO USE TO ACHIEVE THE REQUIRED COMPACTION. EACH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY THE A.A.S.H.T.O. T-180 TEST METHOD.
 - SETTLEMENT OF THE FINISHED SURFACE WITHIN THE WARRANTY PERIOD SHALL BE CONSIDERED TO BE A RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE CITY.
 - ALL PIPE AND FITTINGS SHALL CONFORM TO THE MOST RECENTLY ADOPTED VERSION OF W.S.D.O.T. STANDARD SPECIFICATIONS SECTION 7-17.2. PIPE SIZES UP TO 15 INCHES SHALL CONFORM TO ASTM D3034 SDR26. PIPE SIZES FROM 18 TO 48 INCHES SHALL CONFORM TO ASTM F879 PS115.
 - ALL PIPE CONNECTIONS AT MANHOLES SHALL BE CORED AND RUBBER BOOTED.
 - VACUUM TESTING OF MANHOLES IS REQUIRED PRIOR TO APPLICATION OF AN APPROVED HYDROGEN SULFIDE RESISTANT LINER.
 - ALL MANHOLES SHALL BE COATED WITH A HYDROGEN SULFIDE RESISTANT LINING. MATERIAL SUBMITTAL REQUIRED. LINING SHALL ALSO BE APPLIED TO EXISTING MANHOLES WHEN A NEW LINE ENTRY IS TIED-IN TO THE MANHOLE.
 - ALL PIPE AND FITTINGS SHALL BE AIR TESTED AT FOUR P.S.I. FOR ONE MINUTE PER EVERY 100 FEET OF MAINLINE.
 - SANITARY SERVICE LATERAL SHALL BE 6 INCHES IN DIAMETER AND THE ENDS SHALL EXTEND 8 FEET PAST THE STREET RIGHT-OF-WAY LINE OR AS SHOWN ON THE PLANS AND MARKED WITH A 10 FOOT LONG 2" X 4".
 - ALL SANITARY LINES SHALL BE INSTALLED WITH A MINIMUM COVER OF 6 FEET AND A MINIMUM GRADE OF 0.4% UNLESS OTHERWISE SHOWN ON THE PLANS.



NOT TO SCALE
DETAIL NO. SG2
REVISION: 1 DATE: 03/02/2022

City of Camas SANITARY SEWER DETAIL GRAVITY SEWER CONSTRUCTION NOTES
DETAIL APPROVED BY: *J.P. Gauthier* DATE: 7-23-18
REVISION: 4 DATE: 7/17/2018



NOT TO SCALE
DETAIL NO. IR13
REVISION: 3 DATE: 03/02/2022

City of Camas LANDSCAPE DETAIL IRRIGATION DOUBLE CHECK VALVE ASSY.
DETAIL APPROVED BY: *J.P. Gauthier* DATE: 3-2-22
REVISION: 3 DATE: 03/02/2022

Utility Details
8th Ave Apartments

PRELIMINARY
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ENGINEERING NORTHWEST
CONSULTING ENGINEERS & PLANNERS
6168 NE HWY 99 STE 103, VANCOUVER 98665
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L100

Project: 23005SP
 Date: 10/26/2023
 Drafted: PCW
 Designed: PCW
 Page: 14 of 17

Northwest Utilities
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Revisions:

Site Information

Address: 1805 SE 8th Ave
 Camas, WA 98607
 Abbrev. Desc: Oak Park Addition to Washougal, Lot 8, Block 4
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Boundary & Topography

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Landscape Notes

- See std landscape details sht L110.
- Lot owners shall be responsible for damage to a street, curb, or sidewalk caused by landscaping.
 - Landscaping and trees shall be selected and located to deter sound, filter air contaminants, curtail erosion, minimize stormwater run-off, contribute to living privacy, reduce the visual impacts of large buildings and paved areas, screen, and emphasize or separate outdoor spaces of different uses or character.
 - Street trees shall be compliant with the CDSM. Unless otherwise specified, trees must generally be spaced 30 feet apart. Substitute varieties are subject to approval by the City of Camas.
 - Proposed vegetation cannot be an invasive species as listed with the most current edition of the Clark County Noxious Weed List (for example, English Ivy cultivars.)
 - Appropriate measures shall be taken, such as installation of irrigation systems, to assure landscaping success for a minimum of three (3) years after issuance of certificate of occupancy. If plantings fail to survive, it is the responsibility of the property owner to replace them within the warranty period.
 - Required trees, as they grow, shall be pruned in accordance with the international society of arboriculture. The pruned tree will provide at least eight feet of clearance above sidewalks and fourteen feet above street roadway surfaces.
 - Street trees and other required landscaping which dies or is removed must be replaced within one year of death or removal. Replacement street trees may be an alternative species from the City's approved list, and may be in a different location, as specifically approved by the City.
 - Landscape, parking, and building lighting shall be low voltage, non-glare, and indirect lighting if directed, hooded, or shielded away from neighboring properties.
 - Irrigation to be design/build by landscape or irrigation contractor. Irrigation supply identified hereon. Sleeve locations to be identified prior to pouring curbs. See std irrigation details shts L120, L130.
 - Applicant is required to maintain all vegetation at a height not to exceed 42 inches within the sight distance triangles as shown on the site plans and landscape plans.

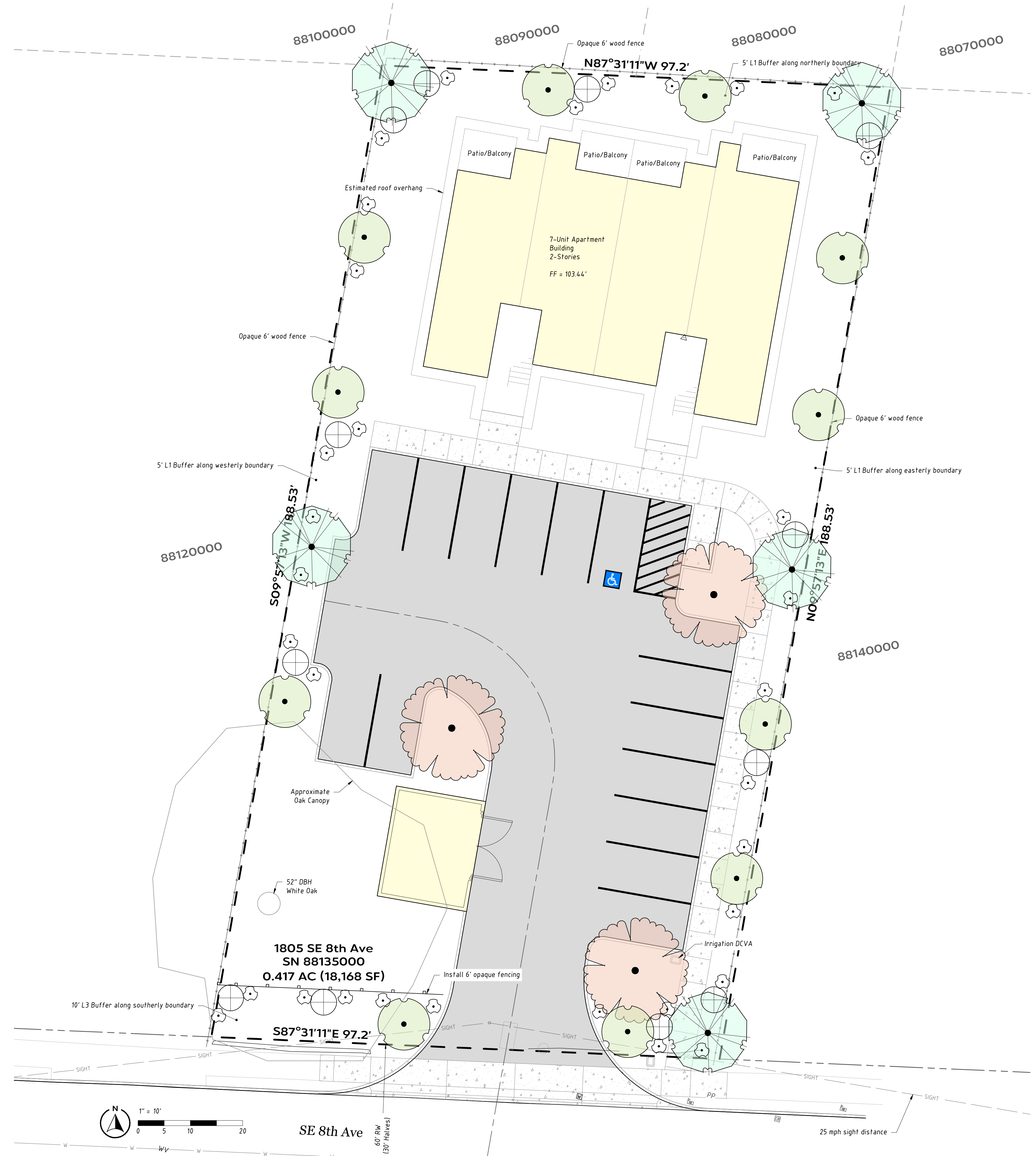
Landscape Schedule (OR APPROVED EQUALS)

Symbol	Common Name	Species	Height x Width	Container	Qty
	Engelmann Spruce (Native Evergreen)	<i>Picea engelmannii</i>	100 x 30	2" cal.	5
	Fastigiate White Pine (Native Evergreen)	<i>Pinus strobus 'Fastigiata'</i>	40 x 10	2" cal.	11
	Autumn Flame Red Maple	<i>Acer Rubrum 'Autumn Flame'</i>	50 x 40	2" cal.	3
	Inkberry Holly (Evergreen, Non-native)	<i>Ilex glabra</i>	3' x 3'	3gal	33
	Oregon Grape (Evergreen, Native)	<i>Malonia aquifolium</i>	5' x 5'	3gal	12

Remaining landscaping area shall be groundcover grass mix.
 Final species selection shall consist of min 60% native vegetation and min 50% evergreen.
 Evergreen calculation: 16 / 19 = 84%
 Native calculation: 16 / 19 = 84%
 Deciduous trees shall have straight trunks, be fully branched, and have a min caliper of 2 inches with an equivalent 5-gallon container size and be adequately staked for planting.
 Evergreen trees shall be a min 5 ft height, fully branched, and adequately staked for planting.

Tree Density

min 20 tree units per acre are required for new development.
 Net acreage (excluding open space or critical areas and their buffers): 0.417 AC
 Required tree units: 0.417 AC x 20 TU/AC = 9 tree units
 Retained tree units: = 22 tree units (1x 52" DBH)
 Proposed tree units: = 19 tree units
 Total: = 41 tree units
 Tree density is met.



LANDSCAPE PLAN
8th Ave Apartments

ENGINEERING NORTHWEST
 CONSULTING ENGINEERS & PLANNERS
 6168 NE HWY 99 STE 103, VANCOUVER 98665
 (360) 931-3122

PRELIMINARY NOT FOR CONSTRUCTION

L110

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Revisions:

LANDSCAPING GENERAL NOTES:

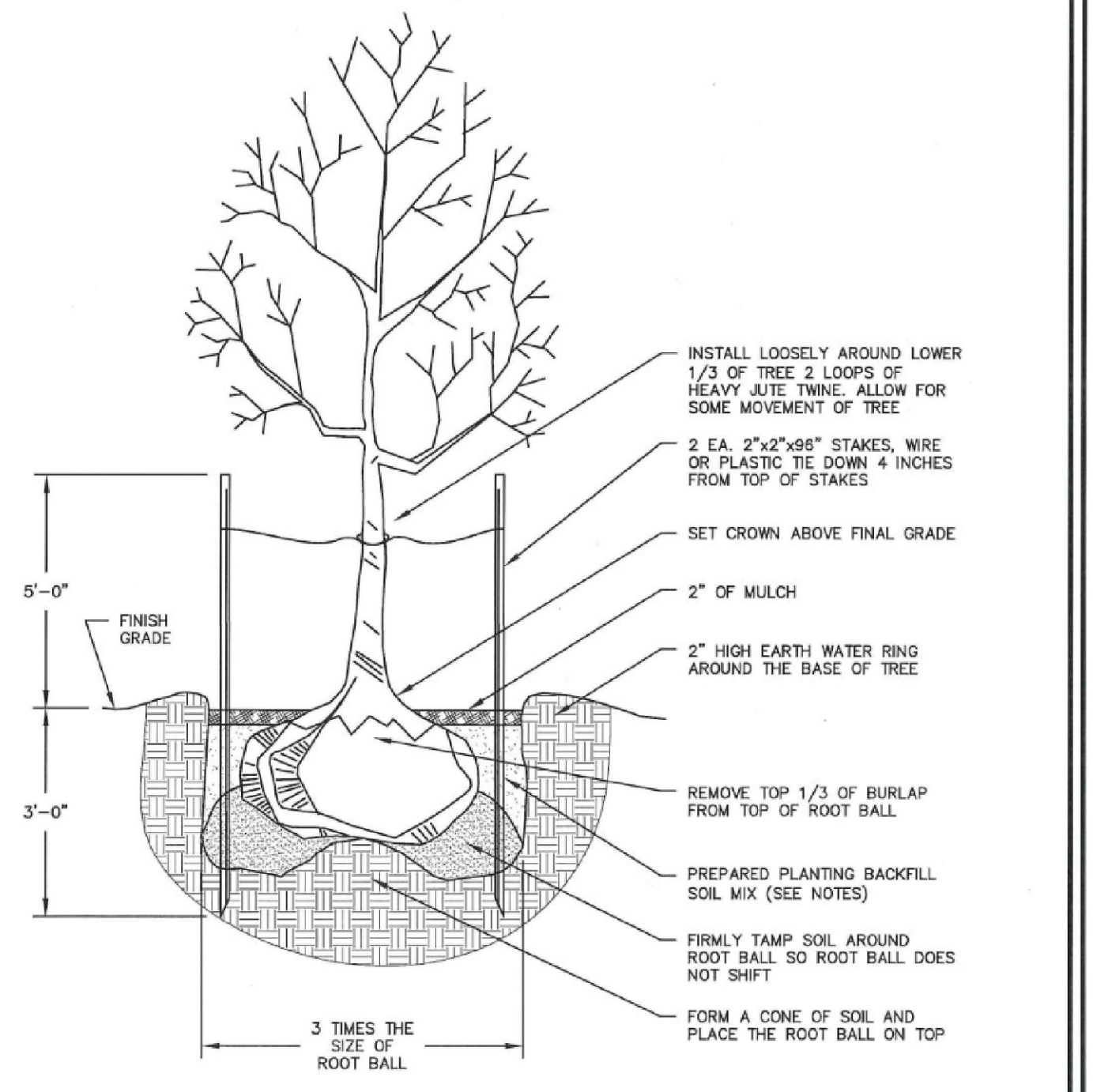
- 1. DEVELOPER SHALL SUBMIT A LANDSCAPE PLAN SHOWING PLANT TYPE, LOCATION, AND QUANTITY OF PLANTS, THAT IS DESIGNED BY A QUALIFIED LANDSCAPE DESIGNER.
2. SHOW THE LOCATION OF SIDEWALK, LIGHT POLES, MAIL BOXES, DRIVEWAYS, FIRE HYDRANTS, INTERSECTIONS, AND ANY OTHER APPURTENANCE THAT MAY INFLUENCE THE PLACEMENT OF PLANTS.
3. LANDSCAPING SHALL BE SELECTED AND LOCATED TO DETERMINE SOIL, FILTER AIR CONTAMINANTS, CURTAIN EROSION, MINIMIZE STORM WATER RUN-OFF, CONTRIBUTE TO LIVING PRIVACY, REDUCE THE VISUAL IMPACTS OF BUILDINGS/EQUIPMENT AND PAVED AREAS, SCREEN, REDUCE GLARE, AND EMPHASIZE OR SEPARATE OUTDOOR SPACES OF DIFFERENT USES OR CHARACTER.
4. LANDSCAPING SHALL BE DESIGNED TO BE HARMONIOUS WITH THE LOCAL SETTING AND WITH NEIGHBORING DEVELOPMENTS.
5. PLANTS AND TREES SHALL COMPLEMENT OR SUPPLEMENT SURROUNDING NATURAL VEGETATION.
6. PLANTS AND TREES CHOSEN SHALL BE IN SCALE WITH THE STRUCTURES AND EQUIPMENT DEVELOPMENT, KEEPING IN MIND THE MATURE SIZE OF PLANTINGS.
7. MINIMUM LANDSCAPING AS A PERCENT OF GROSS SITE AREA SHALL BE 15%.
8. DEVELOPER SHALL PROVIDE AN IRRIGATION PLAN.
9. APPROPRIATE IRRIGATION SYSTEMS SHALL BE INSTALLED WHERE NEEDED TO ASSURE LANDSCAPING SUCCESS.
10. DESIGN OF LANDSCAPING THAT INCLUDES XERISCAPE PRINCIPLES IS ENCOURAGED TO REDUCE LONG-TERM MAINTENANCE DEMANDS AND TO CONSERVE WATER.
11. XERISCAPE IS DEFINED AS LANDSCAPE DESIGN, WHICH WOULD INCORPORATE PLANT MATERIALS THAT REQUIRE LITTLE OR NO IRRIGATION AND RELY ON NATURAL MOISTURE AND RAINFALL FOR SURVIVAL ONCE ESTABLISHED.
12. LANDSCAPE SHALL BE DESIGNED WITH MAINTENANCE IN MIND:
12.1 DEVELOPER SHALL PROVIDE A MAINTENANCE PLAN DESCRIBING FUNDING, RESPONSIBILITY, AND FREQUENCY OF MAINTENANCE.
12.2 PLANTS AND TREES THAT MINIMIZE WEEDP AND MAINTENANCE SHALL BE SELECTED.
12.3 TREES, AS THEY GROW, SHALL BE PRUNED TO THEIR NATURAL FORM TO PROVIDE AT LEAST 10 FEET OF CLEARANCE ABOVE SIDEWALKS AND 12 FEET ABOVE STREET ROADWAY SURFACES.
12.4 SHRUBS SHALL BE MAINTAINED TO A MAXIMUM HEIGHT OF 42 INCHES FROM TOP OF CURB TO TOP OF PLANT. ENSURE THAT SHRUBS ARE TRIMMED BACK FROM FACE OF CURB.
13. WHERE THERE ARE OVERHEAD UTILITY LINES, TREE SPECIES THAT WILL NOT INTERFERE WITH THOSE LINES SHALL BE CHOSEN. DEVELOPER IS TO VERIFY WITH UTILITY ON SPECIES SELECTION.
14. TREES SHALL NOT BE PLANTED WITHIN 2 FEET OF ANY PERMANENT HARD SURFACE PAVING OR WALKWAY.
15. PARKING AND LOADING AREAS SHALL BE SCREENED FROM HORIZONTAL VIEW WITH THE USE OF DENSE LANDSCAPING, MOUNDS OR BERMS.
16. PERMITTER AND SECURITY FENCING SHALL BE CONSTRUCTED TO MINIMIZE VISUAL IMPACT. WALLS OR FENCES SEPARATING ADJACENT PARCELS MAY BE LOCATED AT THE PROPERTY LINE. SECURITY FENCING SHALL BLEND INTO AND BE COMPATIBLE WITH LANDSCAPING AND SURROUNDING ENVIRONMENT. FENCING SHALL HAVE EARTH TONE COLORS OF BROWN, TAN GRAY, OR GREEN. WALLS SHALL BE CONSTRUCTED OF MATERIALS COMPATIBLE WITH THE BUILDING ARCHITECTURE, LANDSCAPING, AND SURROUNDING ENVIRONMENT.
17. SITE AND BUILDING LIGHTING SHALL BE DESIGNED TO MINIMIZE GLARE OR OBSTRUCTIONABLE EFFECTS TO THE ADJACENT PROPERTIES. SITE LIGHTING POLES SHALL NOT EXCEED 30 FEET IN HEIGHT AND SHALL DIRECT THE LIGHT DOWNWARD. LIGHTING SOURCES VIEWED FROM ABOVE OR BELOW ON ADJACENT PROPERTY SHALL BE SHIELDED. BUILDING LIGHTING IS TO BE CONCEALED AND INDIRECT. SITE LIGHTING IS TO BE DESIGNED TO PROVIDE UNIFORM DISTRIBUTION AND THE LIGHT LEVELS SHALL BE ADEQUATE FOR REASONABLE SAFETY AND SECURITY ON THE PREMISES.
18. EARTH BERMS MAY BE USED TO PROVIDE VARIATION IN THE GROUND PLANE AND FOR SCREENING INTERIOR PORTIONS OF THE SITE. CARE MUST BE TAKEN IN THEIR DESIGN TO AVOID CREATING AN ARTIFICIAL APPEARING LANDSCAPE. THE BERMED AREAS SHALL BE AS LONG, AS GRADUAL, AND AS GRACEFUL AS SPACE WILL ALLOW, AND SHOULD HAVE A MINIMUM HEIGHT ABOVE SURROUNDING GRADE OF THREE FEET. MAXIMUM SLOPES FOR BERMED AREAS SHALL BE 3:1 FOR TURF AREAS AND 2:1 FOR GROUNDCOVER AREAS.

LANDSCAPING W/N R.O.W. NOTES:

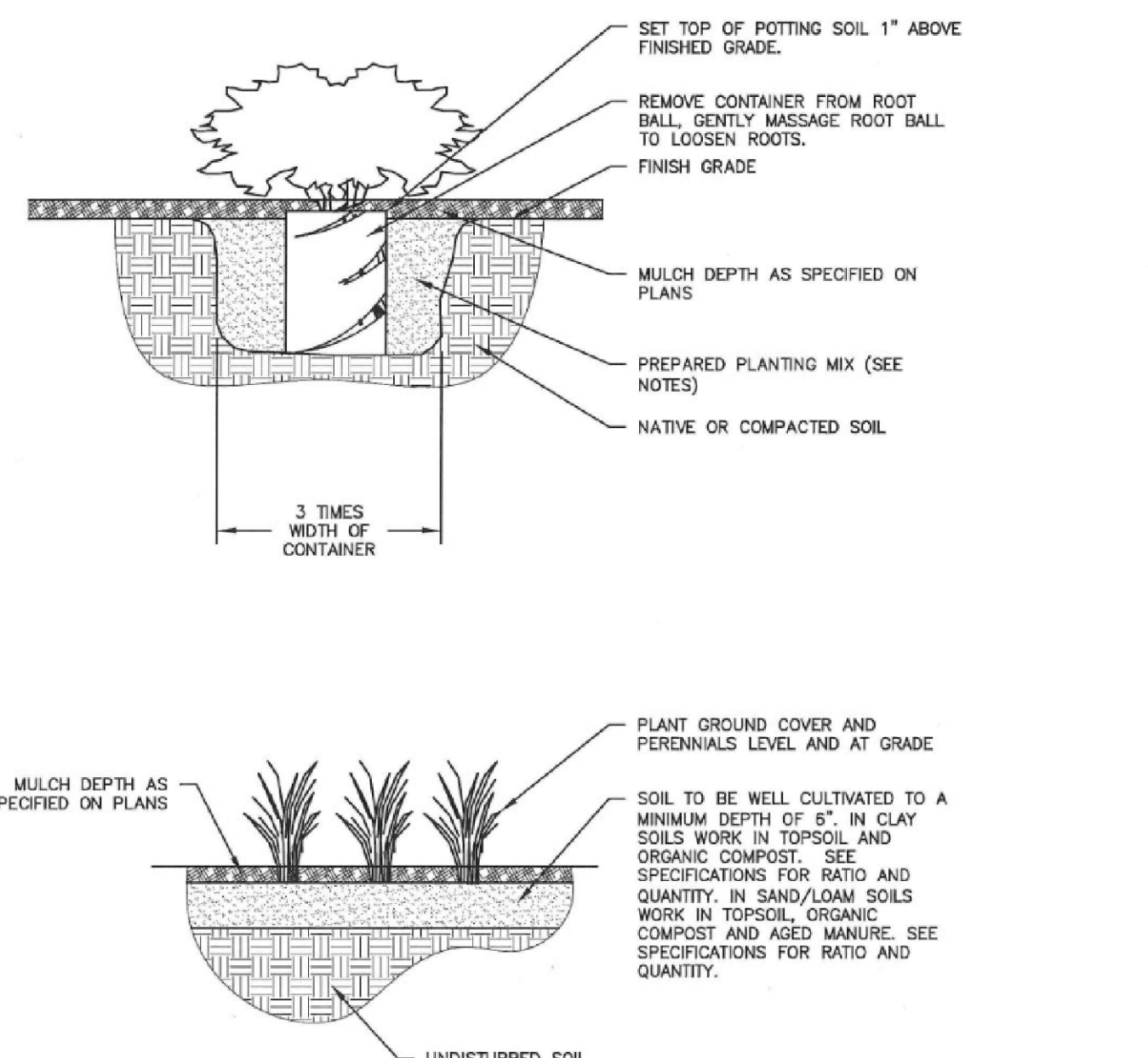
- 1. TREES SHALL NOT BE PLANTED CLOSER THAN 25 FEET FROM THE CURB LINE OF THE INTERSECTIONS OF STREETS OR ALLEYS, AND NOT CLOSER THAN 10 FEET FROM DRIVEWAYS, FIRE HYDRANTS, OR UTILITY POLES.
2. STREET TREES SHALL NOT BE PLANTED CLOSER THAN 20 FEET TO LIGHT STANDARDS, EXCEPT FOR PUBLIC SAFETY, NO NEW LIGHT STANDARDS SHOULD BE POSITIONED CLOSER THAN 10 FEET TO ANY EXISTING STREET TREE, AND PREFERABLY SUCH LOCATIONS WILL BE AT LEAST 20 FEET DISTANCE.
3. TREES SHALL NOT BE PLANTED CLOSER THAN 2-1/2 FEET FROM THE FACE OF THE CURB EXCEPT AT INTERSECTIONS, WHERE IT SHOULD BE 25 FEET FROM THE CURB ON A CURB RETURN AREA.
4. EXISTING TREES MAY BE USED AS STREET TREES IF THERE WILL BE NO DAMAGE FROM THE DEVELOPMENT WHICH WILL KILL OR WEAKEN THE TREE.
5. VISION CLEARANCE HAZARDS SHALL BE AVOIDED AND VISION CLEARANCE STANDARDS SHALL BE ADHERED TO.

PLANTING NOTES:

- 1. ALL PLANTING TO BE OF NURSERY STOCK GRADE NO. 1 OR BETTER AND MUST BE APPROVED PRIOR TO PLANTING.
2. ALL PLANTING HOLES SHALL BE EXCAVATED THREE TIMES THE DIAMETER OF THE TREE ROOT BALL OR ROOT SYSTEM.
3. DECIDUOUS TREES SHALL HAVE STRAIGHT TRUNKS, BE FULL BRANCHED, HAVE A MINIMUM CALIPER OF 2 INCHES AND BE ADEQUATELY STAKED FOR PLANTING. CALIPER OF TREES SHALL BE LARGER WHEN REQUIRED BY OTHER CITY STANDARDS OR PLANS.
4. EVERGREEN TREES SHALL BE A MINIMUM OF THREE FEET IN HEIGHT, FULLY BRANCHED AND ADEQUATELY STAKED FOR PLANTING.
5. DECIDUOUS TREES SHALL BE A MINIMUM 2" CALIPER UNLESS APPROVED BY THE CITY.
6. POTTED OR B&B PLANTS SHALL BE A MINIMUM SIZE OF 3 GALLONS UNLESS APPROVED BY THE CITY.
7. SHRUBS SHALL BE PLANTED ACCORDING TO RECOGNIZED LANDSCAPE STANDARD PRACTICE FOR MAINTENANCE, APPEARANCE, HEALTH OF THE PLANTS, AND OVERALL AESTHETICS.
8. PLANT UPRIGHT AND FACE TO GIVE BEST APPEARANCE OR RELATIONSHIP TO OTHER PLANTS AND STRUCTURES.
8.1. LOOSEN AND REMOVE TWINE BINDING AND BURLAP FROM AROUND THE TOP OF EACH ROOT BALL.
8.2. SET TREES AN INCH ABOVE FINISH GRADE.
8.3. STAKE OR GUY TREES IMMEDIATELY AFTER PLANTING (SEE DETAIL PL3, PL4, & PL5)
8.4. REMOVE STAKES OR GUY WIRES ONE YEAR AFTER INSTALLATION.
9. PLACE AND COMPACT BACKFILL SOIL MIXTURE CAREFULLY TO AVOID INJURY TO ROOTS, AND TO FILL ALL Voids. BACKFILL MIX SHALL CONSIST OF 1/4 APPROVED HUMUS MATERIAL TO 3/4 TOPSOIL, PLUS SOIL AMENDMENTS/FERTILIZERS AS PER SOIL ANALYSIS (TO BE PERFORMED PRIOR TO PLANTING TREES).
10. WHEN HOLE IS NEARLY FILLED, COMPLETELY SOAK AND ALLOW WATER TO DRAIN AWAY. FILL HOLE TO FINISH GRADE. PROVIDE 2 INCH HIGH BERM WATER RING AT THE BASE OF EACH TREE. REMOVE BERM AT THE END OF CONTRACT MAINTENANCE PERIOD.
11. GROUND COVER, SHALL BE PLANTED ACCORDING TO RECOGNIZED LANDSCAPE STANDARD PRACTICE FOR MAINTENANCE, APPEARANCE, OVERALL AESTHETICS, AND HEALTH OF THE PLANTS.
12. TREES, AS THEY GROW SHALL BE PRUNED TO THEIR NATURAL FORM TO PROVIDE AT LEAST 10 FEET OF CLEARANCE ABOVE SIDEWALKS AND 14 FEET ABOVE STREET ROADWAY SURFACES.
13. TREE MAINTENANCE - IN ORDER TO INSURE ESTABLISHMENT, SURVIVAL AND GROWTH, TREES SHALL BE MULCHED WITH 4" DEEP COMPOST AND WATERED AS NECESSARY DURING THE FIRST TWO GROWING SEASONS. PRUNING TO BE AS FOLLOWS:
13.1. YEAR 1 - ONLY DEAD, BROKEN, OR CROSSING BRANCHES SHALL BE PRUNED.
13.2. YEAR 2 - A CLASS 1 PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/OVERWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
13.3. YEAR 3 - A CLASS 1 PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED. THE PURPOSE OF THIS PRUNING IS TO CONTINUE TO ESTABLISH THE PROPER SCAFFOLD BRANCHING, CONTINUE TO RAISE THE CROWN FOR ROAD/OVERWALK CLEARANCE, AND TO REMOVE ANY DEAD, DYING, OR CROSSING BRANCHES.
14. DEFINITIONS:
14.1. BALDED AND BURLAPPED (B&B) - TREES AND SHRUBS WITH A LARGE BALL OF SOIL AROUND THE ROOTS WRAPPED IN BURLAP.
14.2. BARE-ROOT - OFFERED BY NURSERIES IN WINTER AND EARLY SPRING WITH ALL THE SOIL REMOVED FROM THEIR ROOTS.
14.3. CALIPER - THE DIAMETER OF THE TRUNK MEASURED AT 4'-FEET FROM THE GROUND.
14.4. GROUND COVER - LIVING MATERIAL THAT DOES NOT INCLUDE BARK CHIPS OR OTHER MULCH.



- NOTES:
1. A ROOT BARRIER SHOULD BE INSTALLED AT THE EDGE OF PAVEMENT OR 4 FEET WIDE AND 6 FEET WIDE RECTANGLE AROUND THE TREE. SEE DETAILS PL7, PL8 & PL9
2. BACKFILL MIX SHALL CONSIST OF THE FOLLOWING: 0.75 PART TOPSOIL, 0.25 PART APPROVED HUMUS MATERIAL, SOIL AMENDMENTS/FERTILIZERS AS PER SOIL ANALYSIS (TO BE PERFORMED BEFORE PLANTING TREES).



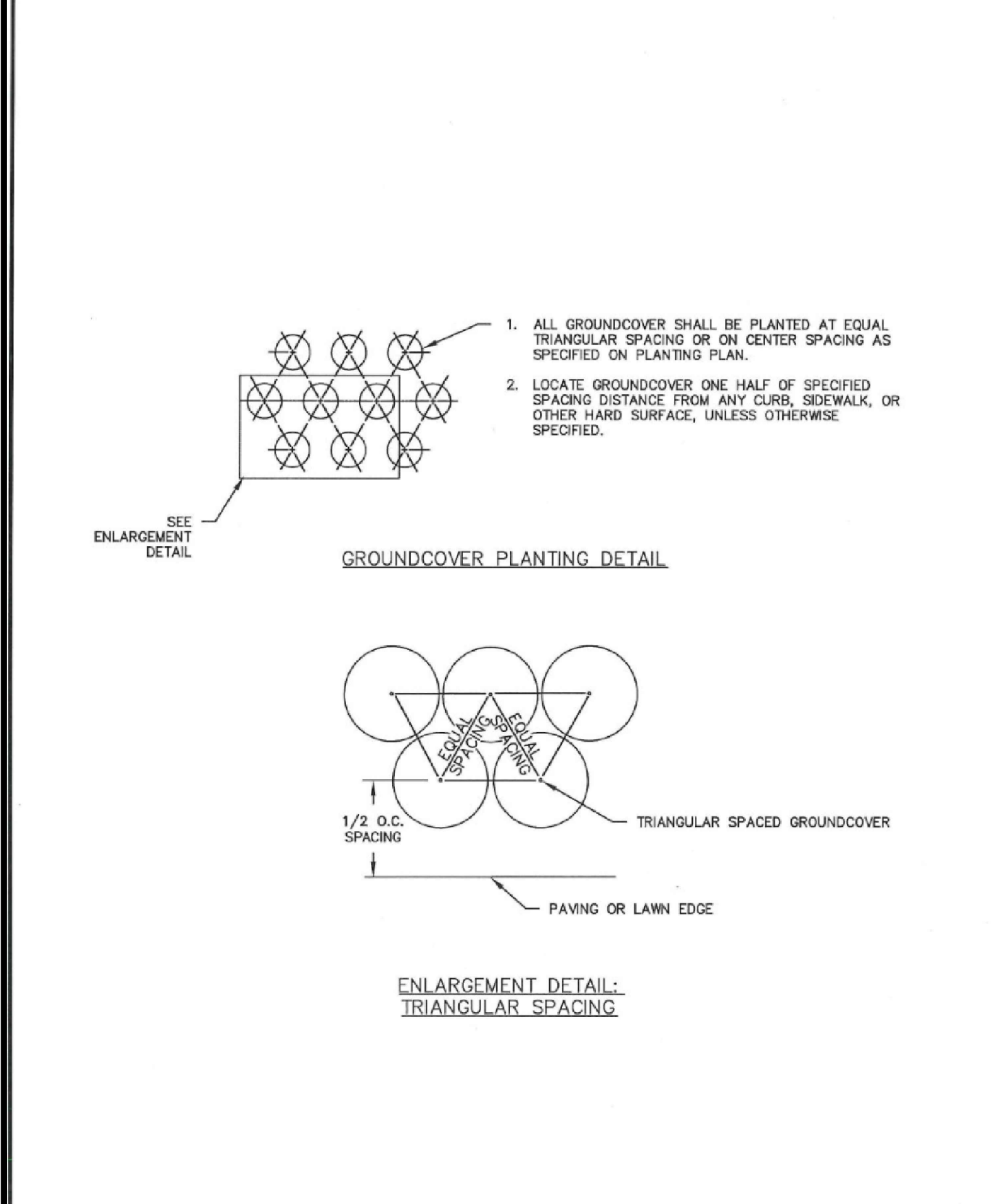
- NOTES:
1. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
2. KEEP PLANTS MOIST AND SHADED UNTIL PLANTING.
3. BACKFILL MIX SHALL CONSIST OF THE FOLLOWING: 0.75 PART TOPSOIL, 0.25 PART APPROVED HUMUS MATERIAL, SOIL AMENDMENTS/FERTILIZERS AS PER SOIL ANALYSIS (TO BE PERFORMED BEFORE PLANTING).

City of Camas WASHINGTON LANDSCAPE DETAIL LANDSCAPING NOTES NOT TO SCALE DETAIL NO. LS1

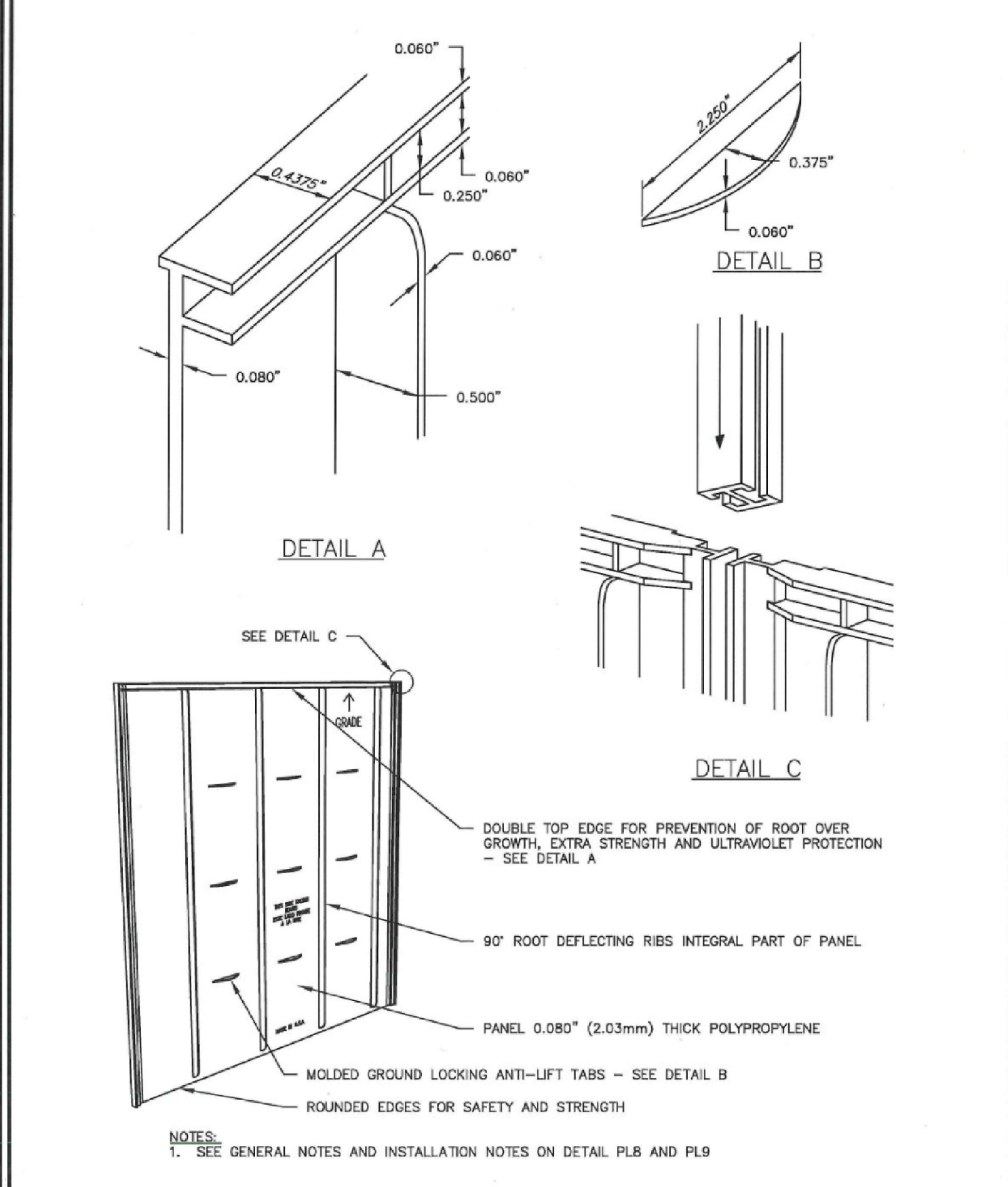
City of Camas WASHINGTON LANDSCAPE DETAIL PLANTING NOTES NOT TO SCALE DETAIL NO. LS2

City of Camas WASHINGTON LANDSCAPE DETAIL DECIDUOUS BALDED/BURLAP TREE PLANTING NOT TO SCALE DETAIL NO. LS4

City of Camas WASHINGTON LANDSCAPE DETAIL SHRUB CONTAINER PLANTING NOT TO SCALE DETAIL NO. LS5



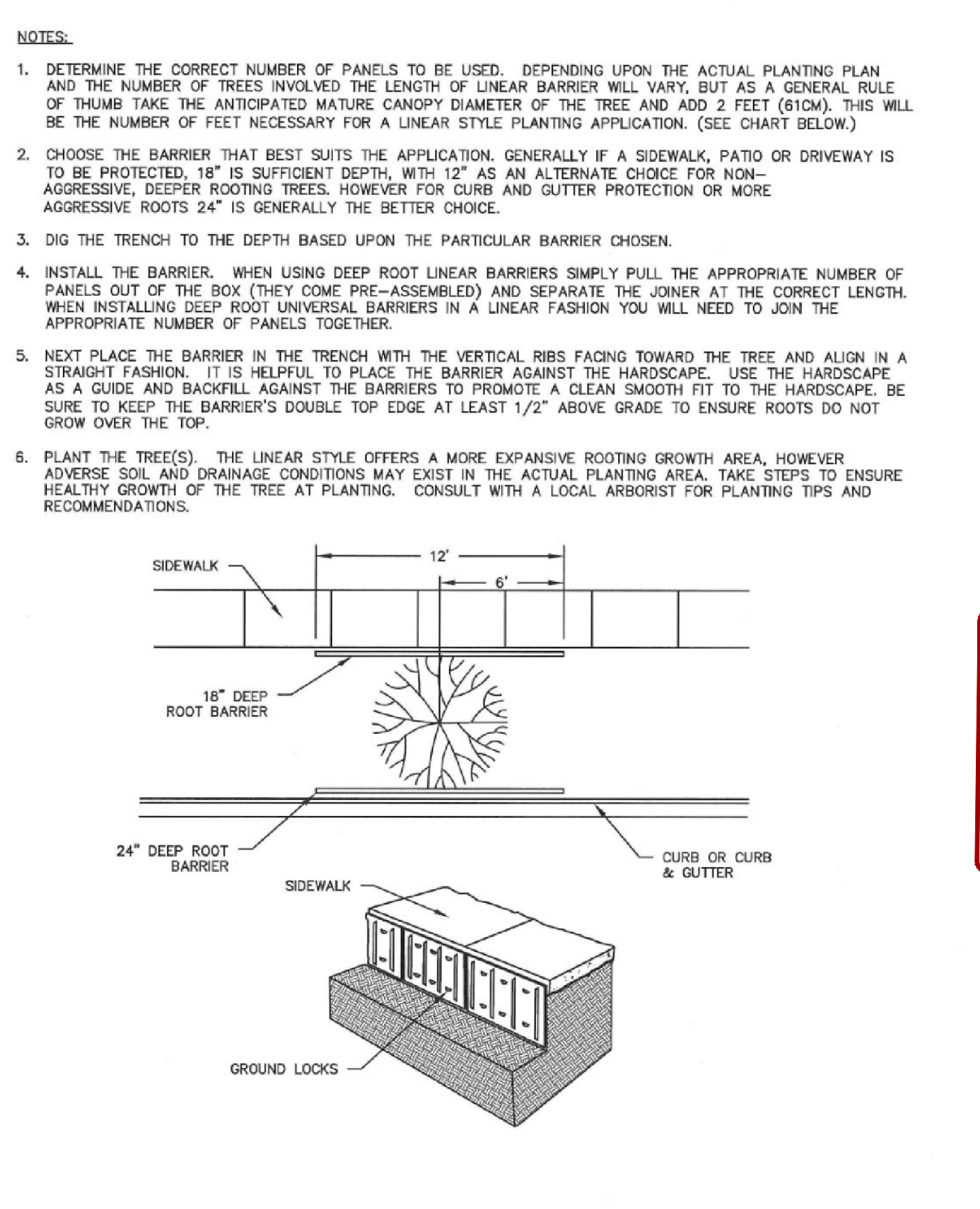
City of Camas WASHINGTON LANDSCAPE DETAIL GROUNDCOVER PLANTING DETAIL NOT TO SCALE DETAIL NO. LS7



City of Camas WASHINGTON LANDSCAPE DETAIL ROOT BARRIER DETAIL NOT TO SCALE DETAIL NO. LS8

ROOT BARRIER GENERAL NOTES:
1. SPECIFIED TREE ROOT BARRIERS ARE A MECHANICAL BARRIER AND ROOT DEFLECTOR TO PREVENT TREE ROOTS FROM DAMAGING HARDSCAPES AND LANDSCAPES...
2. DIMENSIONS ARE APPROXIMATE, SUBMIT SAMPLE FOR ENGINEERS APPROVAL PRIOR TO INSTALLATION.
A. MATERIALS
1. THE CONTRACTOR SHALL FURNISH AND INSTALL TREE ROOT BARRIERS AS SPECIFIED...
B. CONSTRUCTION AND INSTALLATION
1. THE CONTRACTOR SHALL INSTALL THE TREE ROOT BARRIERS WITH THE NUMBER OF PANELS AND IN THE MANNER SHOWN ON THE DRAWINGS...
2. EXCAVATION AND SOIL PREPARATION SHALL CONFORM TO THE DRAWINGS.
3. THE TREE ROOT BARRIERS SHALL BE BACKFILLED ON THE OUTSIDE WITH 3/4" TO 1 1/2" GRAVEL OR CRUSHED ROCK AS SHOWN ON THE DRAWINGS. NO GRAVEL BACKFILL IS REQUIRED FOR A LINEAR PLANTING.

City of Camas WASHINGTON LANDSCAPE DETAIL ROOT BARRIER GENERAL NOTES NOT TO SCALE DETAIL NO. LS9



City of Camas WASHINGTON LANDSCAPE DETAIL ROOT BARRIER INSTALLATION NOT TO SCALE DETAIL NO. LS10

Landscape Details
8th Ave Apartments

PRELIMINARY NOT FOR CONSTRUCTION

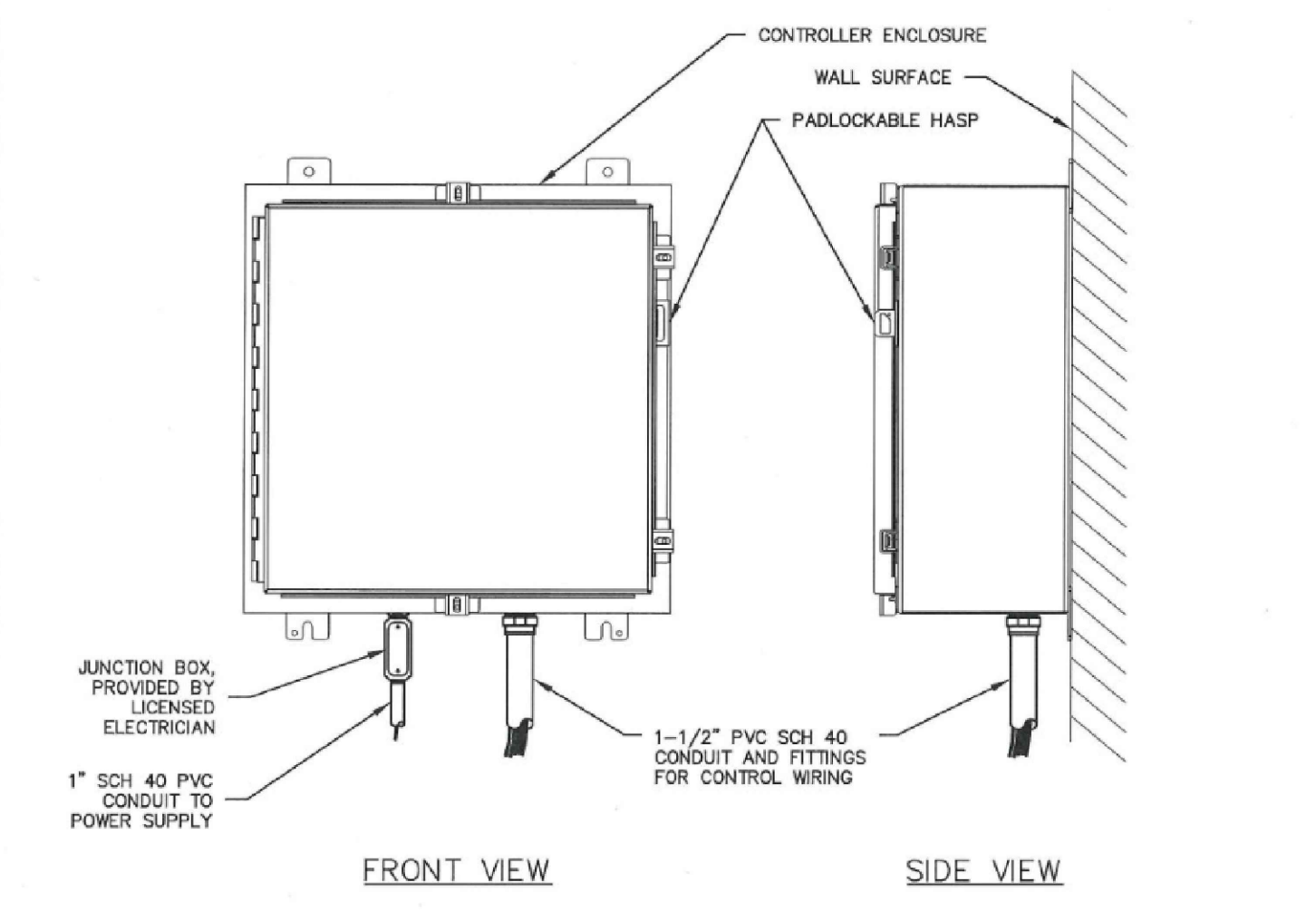
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Project: 23005SP
Date: 10/26/2023
Drafted: NVS
Designed: PCW
Page: 16 of 17

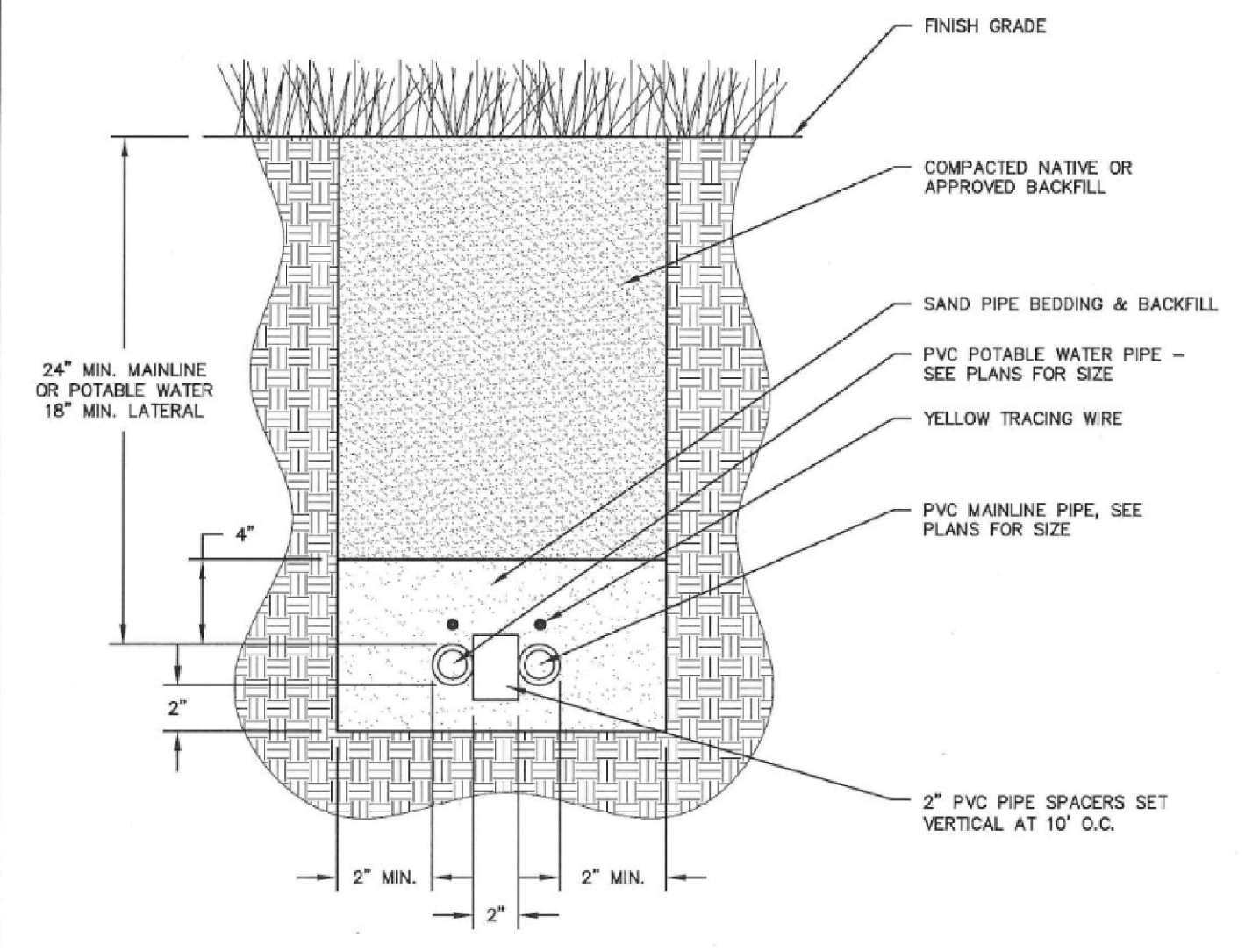
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Revisions:

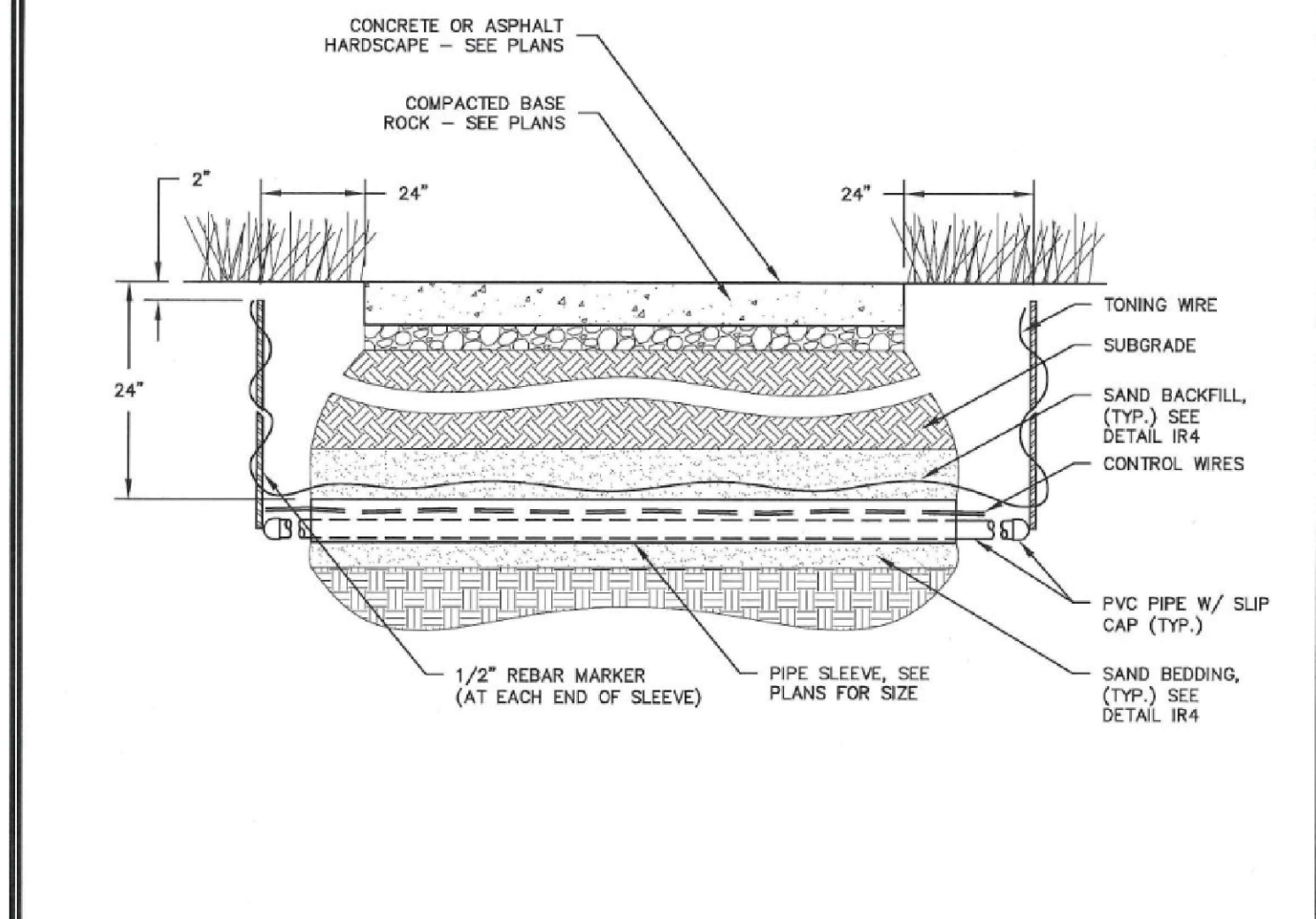
- IRRIGATION CONSTRUCTION NOTES:**
- THE CONTRACTOR SHALL INSPECT THE SITE AND VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
 - IRRIGATION PLANS ARE SCHEMATIC REPRESENTATIONS ONLY. PLACE LINES IN A COMMON TRENCH WHENEVER POSSIBLE. FIELD ADJUST LINES TO AVOID CONFLICT WITH UTILITIES.
 - IRRIGATION IS COORDINATED WITH THE PLANTING PLAN AND SITE IMPROVEMENTS AND IS DESIGNED WITH TRIANGULAR SPACING GIVING HEAD TO HEAD COVERAGE. COORDINATE IRRIGATION HEAD LAYOUT WITH NEW PLANT MATERIALS. LOCATE SPRAY HEADS 30" FROM BASE OF TREE. DO NOT ALTER HEAD LOCATION, PIPE LAYOUT, OR VALVE LOCATION WITHOUT WRITTEN APPROVAL FROM THE CITY ENGINEER. NOTIFY THE CITY ENGINEER IF DISCREPANCIES OCCUR BETWEEN THE PLANS AND FIELD CONDITIONS.
 - ALL COMPONENTS OF IRRIGATION SYSTEM SHALL BE INSTALLED AND PROPERLY ADJUSTED TO PROVIDE ADEQUATE COVERAGE AND MINIMIZATION OF OVER SPRAY ONTO WALKS, BUILDINGS, PARKING AREAS, ETC.
 - ALL PIPE SIZES INDICATED ARE MINIMUMS. CONTRACTOR MAY NOT DECREASE PIPE SIZE. LARGER PIPE SIZES MAY BE USED AT NO ADDITIONAL COST TO OWNER. IRRIGATION LATERALS ARE SIZED BEGINNING AT THE AUTOMATIC VALVE AND CONTINUING IN DIRECTION OF FLOW. REDUCTIONS IN PIPE SIZE ARE LABELED BEGINNING DOWNSTREAM OF NEAREST FITTING. ALL LATERALS NOT SIZED ARE MINIMUM 3/4".
 - INSTALL ALL IRRIGATION PIPE AND CONTROL WIRES IN MINIMUM 4" PVC SLEEVE BELOW ALL PAVED SURFACES UNLESS OTHERWISE INDICATED ON THE PLANS. INSTALL SLEEVES PRIOR TO PLACEMENT OF PAVEMENTS AND PAVEMENT SUB-BASE. SEE PIPE SLEEVING DETAIL FOR FURTHER REQUIREMENTS.
 - COORDINATE IRRIGATION POINTS OF CONNECTION AND LOCATION OF AUTOMATIC CONTROL VALVES WITH THE ENGINEER. COORDINATE ALL WORK WITH OTHER TRADES, I.E. ELECTRICAL, MASONRY, ETC.
 - CONTRACTOR TO PROGRAM AUTOMATIC CONTROLLER TO ALLOW FOR THE EQUIVALENT OF 1" OF WATER PER WEEK.
 - ALL PIPES SHALL BE TRENCHED. PROVIDE POSITIVE DRAINAGE OF MAINLINE. PLACE MANUAL DRAIN AT LOW POINTS IN MAINLINE. IDENTIFY LOCATIONS ON AS-BUILTS.
 - USE 45° ELBOWS INSTEAD OF 90° ELBOWS ON ALL MAINLINES 2-1/2" AND LARGER. INSTALL CONCRETE THRUST BLOCKS AT ALL MAINLINE CHANGES IN DIRECTION. FOUR MINIMUM OF 1 CUBIC FOOT OF CONCRETE ON UNDISTURBED SOIL. WRAP PIPE IN PLASTIC PRIOR TO COVERING WITH CONCRETE.
 - CONTRACTOR TO INSTALL CONTROLLER, CPU ELECTRICAL, PHONE AND ACCESSORIES AS REQUIRED. CONTRACTOR TO FURNISH CONTROL WIRES FROM VALVES TO CONTROLLER. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING 110 VOLT SERVICE FROM BUILDING TO EXISTING JUNCTION BOX IN CONTROLLER HOUSING AND CONNECT CONTROLLER SERVICE.
 - ALL TONING WIRE, WHERE REQUIRED, SHALL BE 14 GAUGE COPPER CLAD STEEL WITH HDPE DIRECT BURY INSULATION. SEAL SPLICE CONNECTIONS WITH 3M DBY OR KING GEL CAPS.
 - ALL DIRECT BURY CONTROL WIRING AND CABLING SHALL HAVE SPLICE CONNECTIONS SEALED WITH 3M DBY OR RAIN BIRD DB SERIES WIRE CONNECTORS IN A SPLICE BOX.
 - SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
 - WATER METER SHALL BE INSTALLED BY THE CITY. CONTRACTOR RESPONSIBLE FOR CONNECTIONS DOWNSTREAM OF WATER METER.
 - CONTRACTOR TO VERIFY WATER PRESSURE TO ENSURE THAT PRESSURE MATCHES THE SYSTEM DESIGN PRESSURE.
 - WHERE REQUIRED, CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED POLYMER IRRIGATION VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.
 - ALL IRRIGATION METERS REQUIRE INSTALLATION OF A STATE-APPROVED BACKFLOW PREVENTION DEVICE, WHICH ARE TO BE INSTALLED AFTER THE IRRIGATION METER.
 - DOUBLE CHECK VALVE ASSEMBLIES (DCVA);
 - PRESSURE VACUUM BREAKER ASSEMBLIES (PVBA), OR
 - REDUCED PRESSURE BACKFLOW ASSEMBLIES (RPBA).
 - ATMOSPHERIC VACUUM BREAKERS (AVB) ARE NOT PERMITTED.
 - FAILURE TO MEET TESTING REQUIREMENTS FOR THE BACKFLOW PREVENTION DEVICE ARE GROUNDS FOR TERMINATION OF WATER SERVICE FOR IRRIGATION. THE FOLLOWING ARE THE STATE-APPROVED BACKFLOW PREVENTION DEVICES:
 - DOUBLE CHECK VALVE ASSEMBLIES (DCVA);
 - PRESSURE VACUUM BREAKER ASSEMBLIES (PVBA), OR
 - REDUCED PRESSURE BACKFLOW ASSEMBLIES (RPBA).
 - ATMOSPHERIC VACUUM BREAKERS (AVB) ARE NOT PERMITTED.



- NOTES:**
- IRRIGATION CONTROLLER SHALL BE A RAINBIRD ESP-LXME PROGRAMMABLE CONTROLLER, OR APPROVED EQUAL.
 - INTERIOR INSTALLATIONS DO NOT REQUIRE AN ENCLOSURE WHEN MOUNTED WITHIN THE UTILITY ROOM OF A RESTROOM OR OTHER FACILITY WHERE THE PUBLIC HAS NO ACCESS. SEE DETAIL IR2.
 - EXTERIOR WALL MOUNTED ENCLOSURE SHALL BE STAINLESS STEEL, NEMA 4X RATED, 20"H x 20"W x 8"D SIZE, WITH BUILT-IN PADLOCKABLE HASP AND PLASTIC DATA POCKET. HOFFMAN, HAMMOND, WEGMANN OR APPROVED EQUAL MANUFACTURER.
 - MOUNTING HARDWARE SHALL BE AS RECOMMENDED BY THE ENCLOSURE MANUFACTURER.
 - FOR INSTALLATIONS WITHIN THE RIGHT-OF-WAY WHERE THERE IS NO WALL MOUNTING SURFACE, THE ENCLOSURE MAY BE PIPE MOUNTED TO A 3 INCH DIAMETER GALVANIZED POST, OR OTHER PERMANENT INSTALLATION, AT A HEIGHT NOT TO EXCEED 3 FEET TO TOP OF ENCLOSURE AND SHALL BE HIDDEN BY VEGETATION.



- NOTES:**
- ALL TONING WIRE SHALL BE 14 GAUGE YELLOW HDPE INSULATED COPPER CLAD STEEL. SEAL SPLICE CONNECTIONS WITH 3M DBY OR KING GEL CAPS.
 - PROVIDE A 48 INCH COIL OF TONING WIRE IN EACH VALVE BOX.



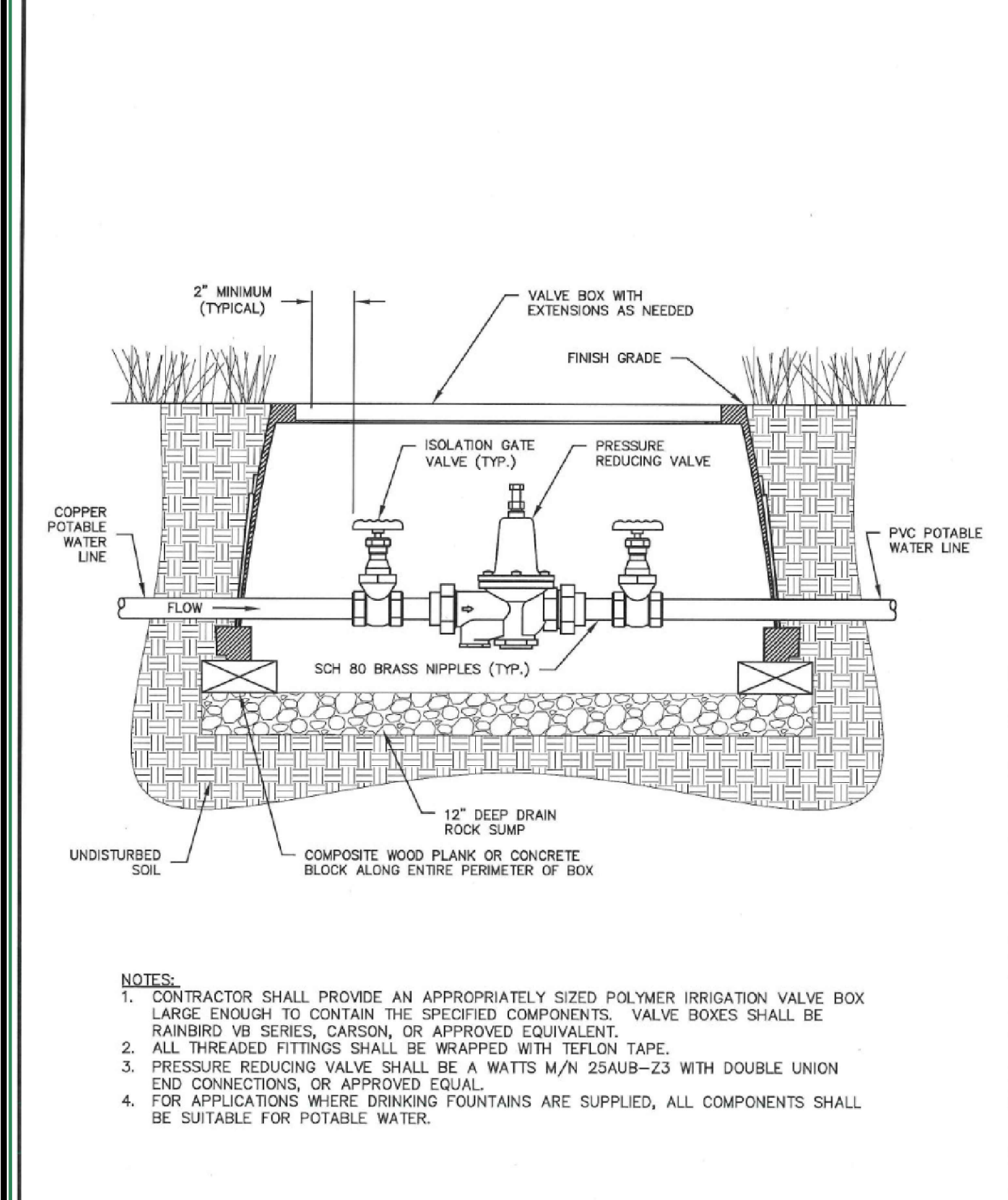
- NOTES:**
- CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED IRRIGATION POLYMER VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.
 - PROVIDE TONING WIRE ALONG ALL PIPE SLEEVING.
 - ALL TONING WIRE SHALL BE 14 GAUGE YELLOW HDPE INSULATED COPPER CLAD STEEL. SEAL SPLICE CONNECTIONS WITH 3M DBY OR KING GEL CAPS.

City of Camas WASHINGTON
LANDSCAPE DETAIL IRRIGATION CONSTRUCTION NOTES
NOT TO SCALE
DETAIL NO. IR1
DATE: 03/02/2022
REVISION: 3

City of Camas WASHINGTON
LANDSCAPE DETAIL IRRIGATION CONTROLLER - EXTERIOR MOUNT
NOT TO SCALE
DETAIL NO. IR3
DATE: 6/19/2019
REVISION: 2

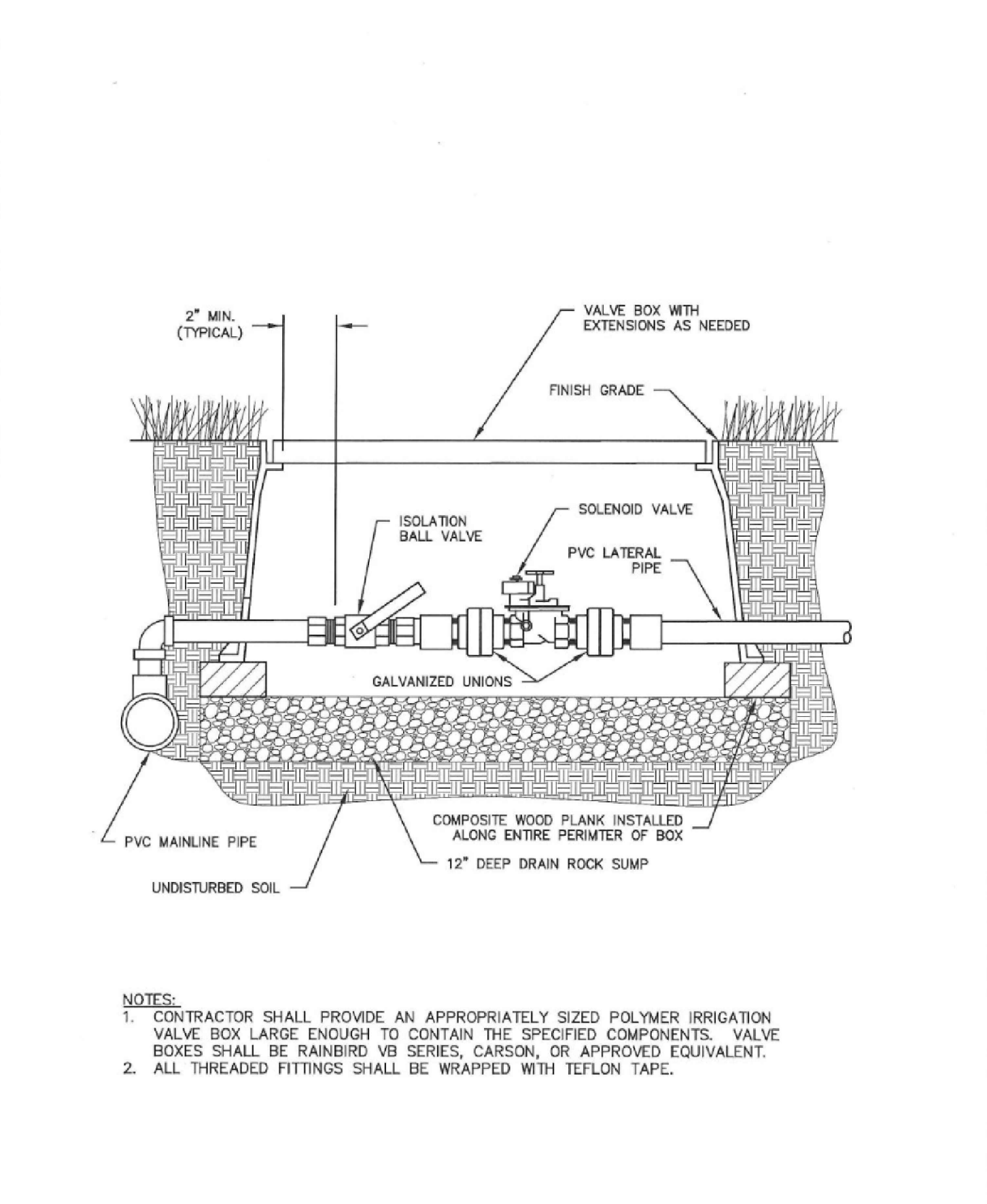
City of Camas WASHINGTON
LANDSCAPE DETAIL IRRIGATION TRENCH
NOT TO SCALE
DETAIL NO. IR4
DATE: 6/19/2019
REVISION: 2

City of Camas WASHINGTON
LANDSCAPE DETAIL IRRIGATION PIPE SLEEVE
NOT TO SCALE
DETAIL NO. IR5
DATE: 6/19/2019
REVISION: 2



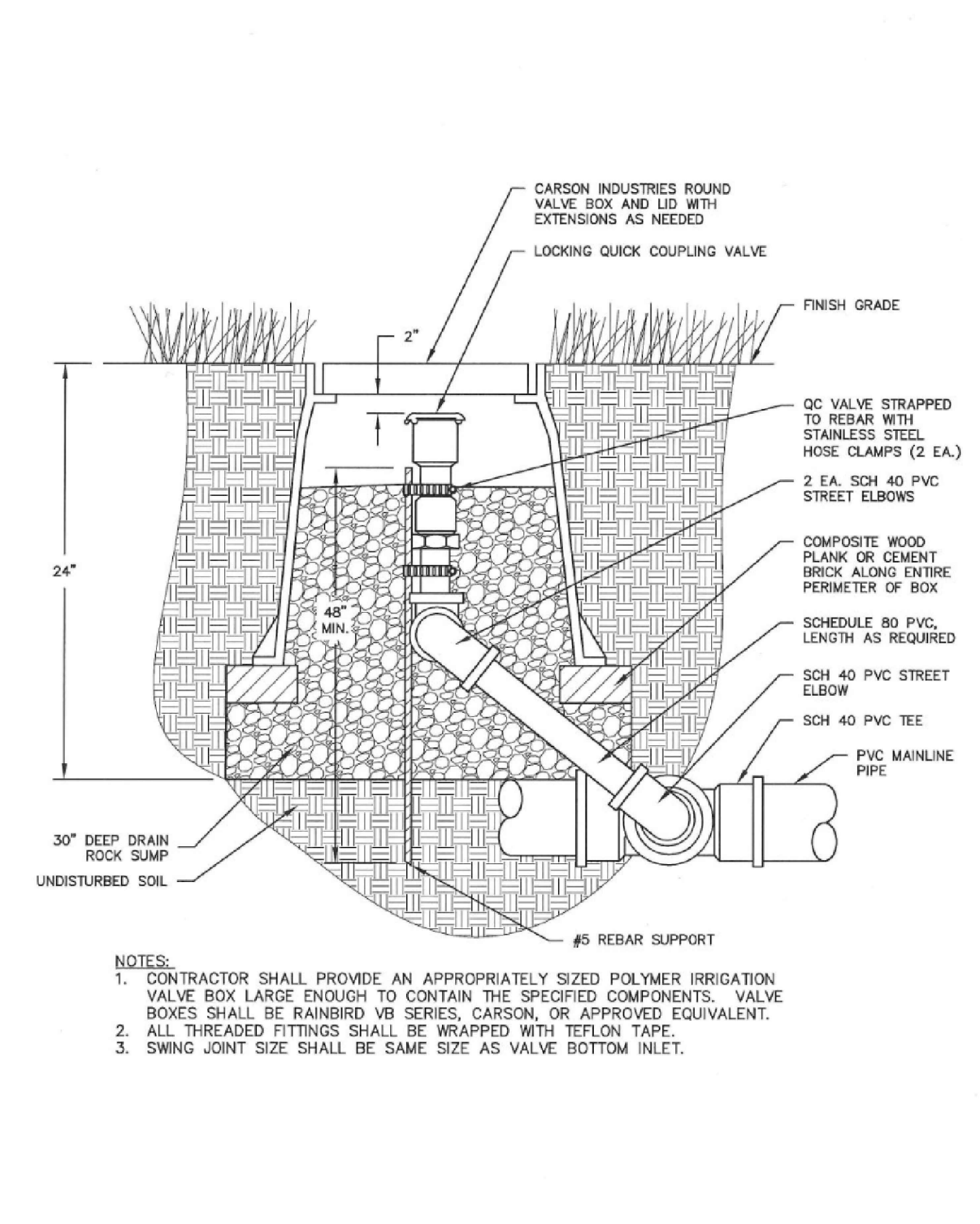
- NOTES:**
- CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED POLYMER IRRIGATION VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.
 - ALL THREADED FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE.
 - PRESSURE REDUCING VALVE SHALL BE A WATTS M/N 25AUB-23 WITH DOUBLE UNION END CONNECTIONS, OR APPROVED EQUAL.
 - FOR APPLICATIONS WHERE DRINKING FOUNTAINS ARE SUPPLIED, ALL COMPONENTS SHALL BE SUITABLE FOR POTABLE WATER.

City of Camas WASHINGTON
LANDSCAPE DETAIL IRRIGATION PRESSURE REGULATOR
NOT TO SCALE
DETAIL NO. IR6
DATE: 6/19/2019
REVISION: 2



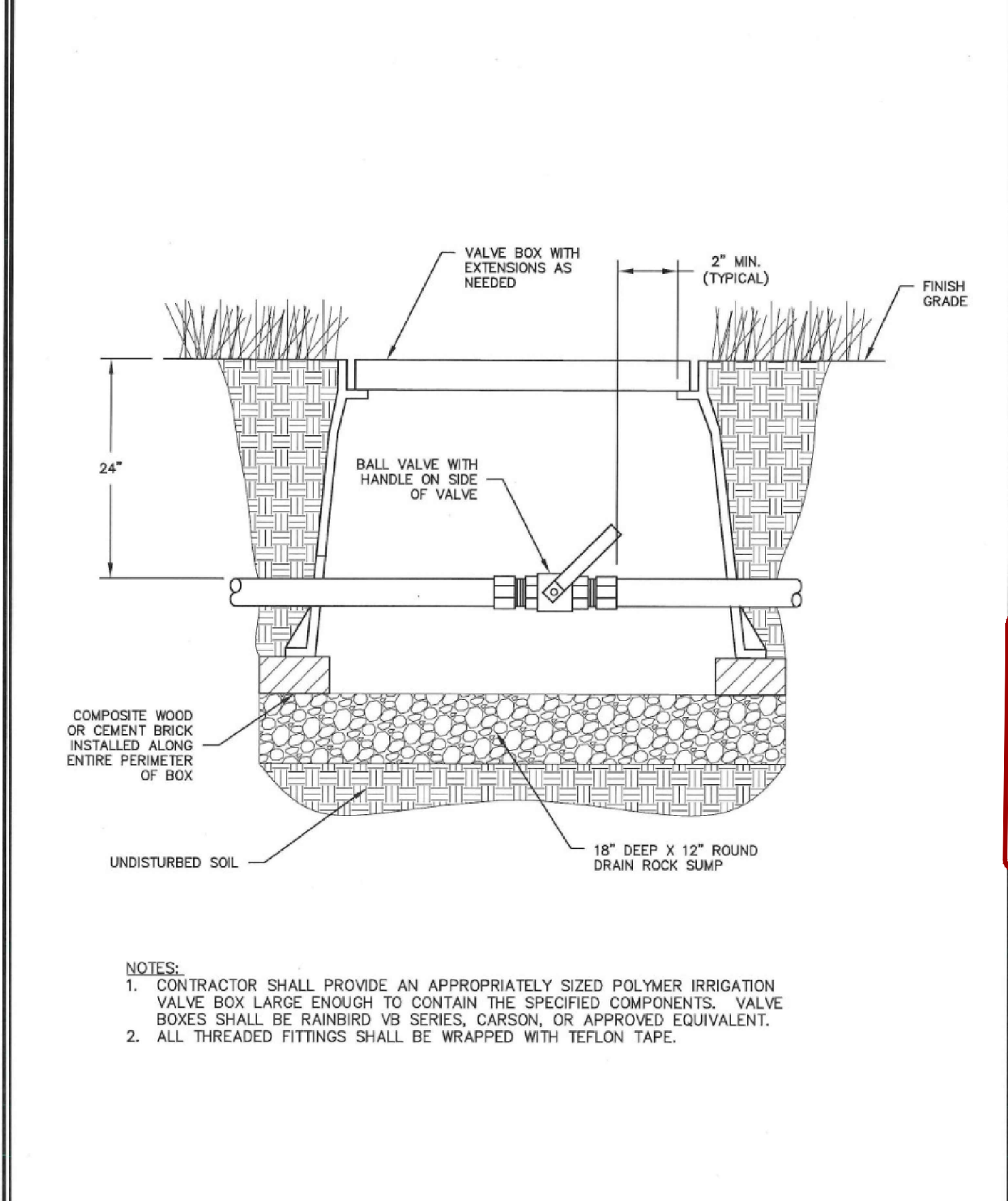
- NOTES:**
- CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED POLYMER IRRIGATION VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.
 - ALL THREADED FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE.

City of Camas WASHINGTON
LANDSCAPE DETAIL IRRIGATION SOLENOID VALVE
NOT TO SCALE
DETAIL NO. IR7
DATE: 6/19/2019
REVISION: 2



- NOTES:**
- CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED POLYMER IRRIGATION VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.
 - ALL THREADED FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE.
 - SWING JOINT SIZE SHALL BE SAME SIZE AS VALVE BOTTOM INLET.

City of Camas WASHINGTON
LANDSCAPE DETAIL IRRIGATION QUICK COUPLING VALVE
NOT TO SCALE
DETAIL NO. IR9
DATE: 6/19/2019
REVISION: 2



- NOTES:**
- CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED POLYMER IRRIGATION VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.
 - ALL THREADED FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE.

City of Camas WASHINGTON
LANDSCAPE DETAIL IRRIGATION ISOLATION BALL VALVE
NOT TO SCALE
DETAIL NO. IR10
DATE: 6/19/2019
REVISION: 2

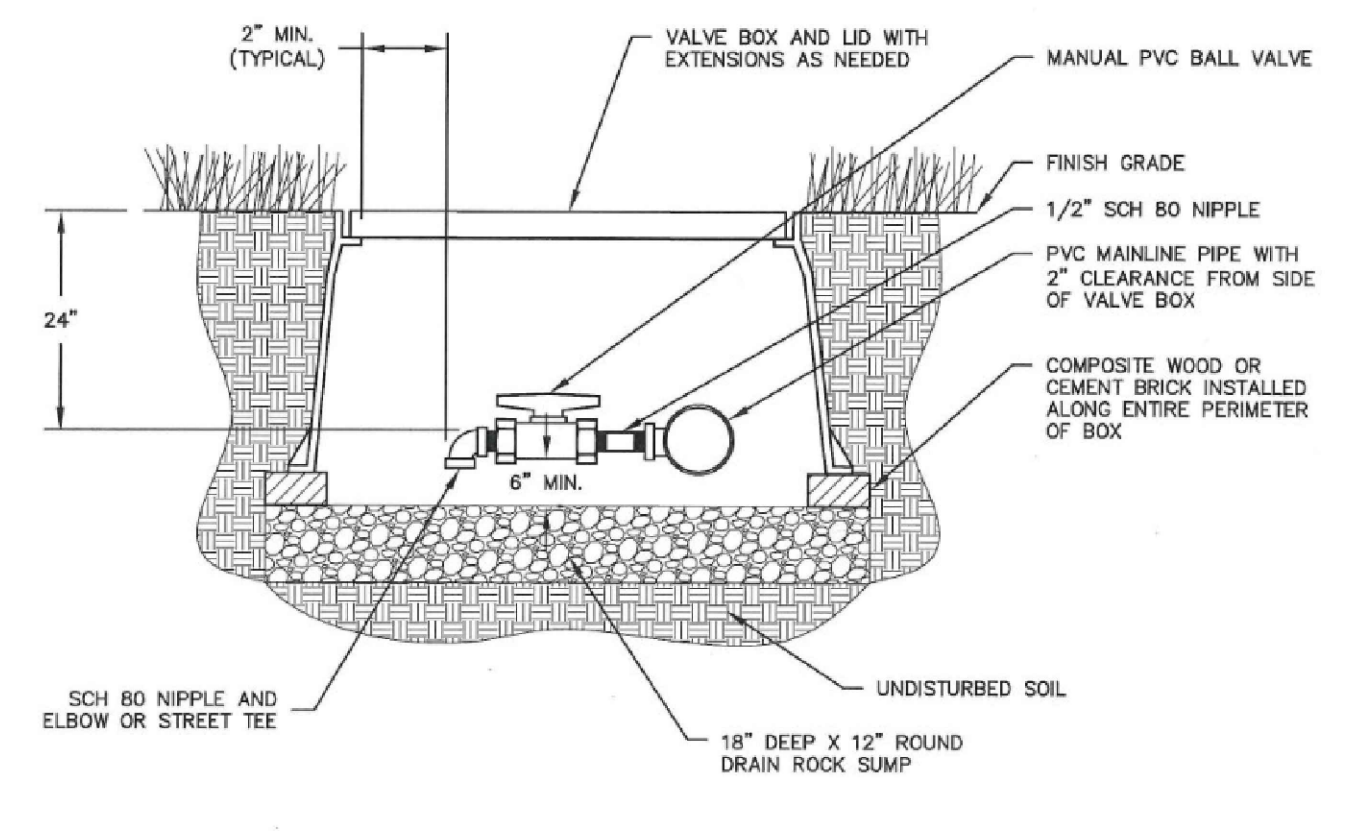
Landscape Details
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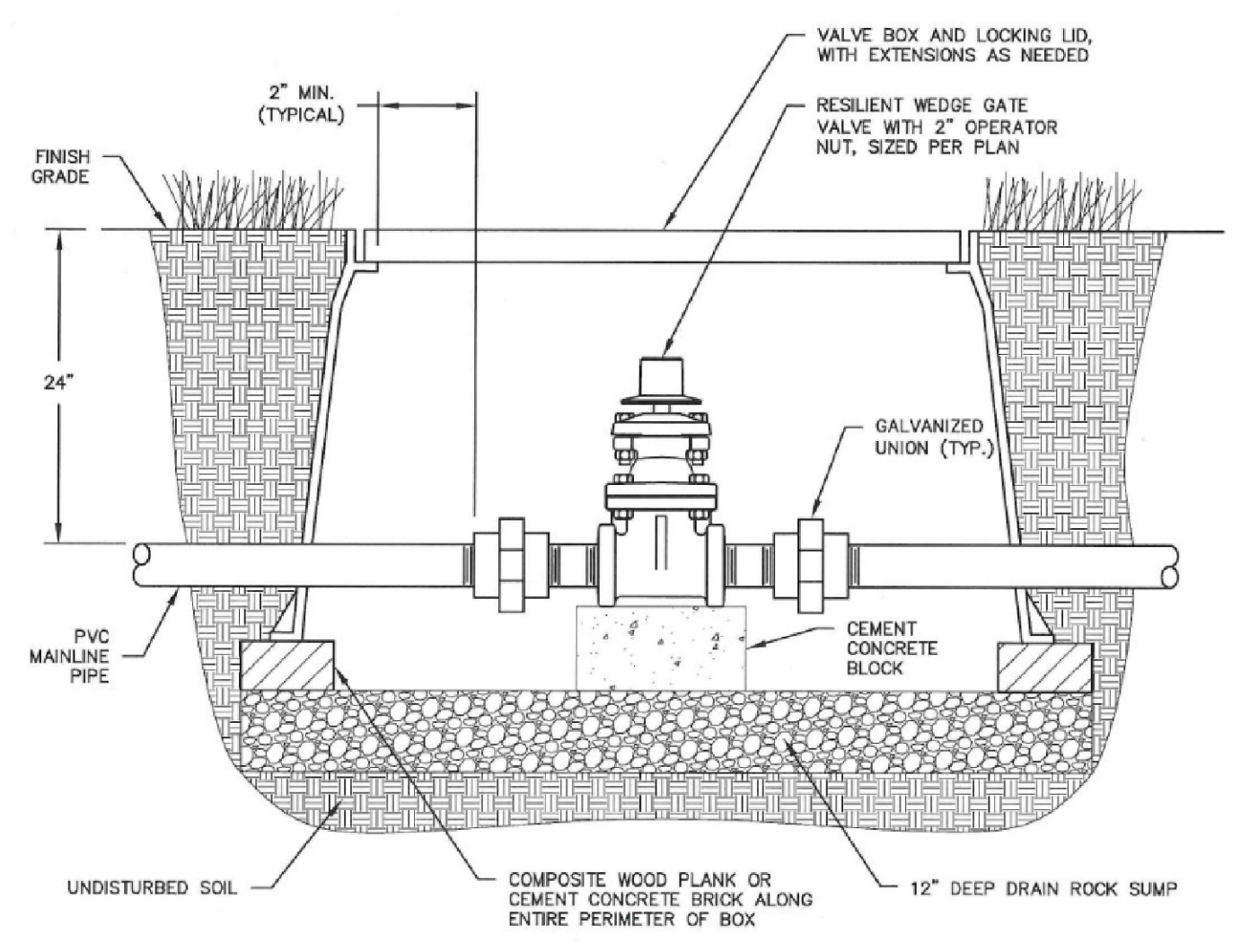
Project: 23005SP
Date: 10/26/2023
Drafted: NVS
Designed: PCW
Page: 17 of 17

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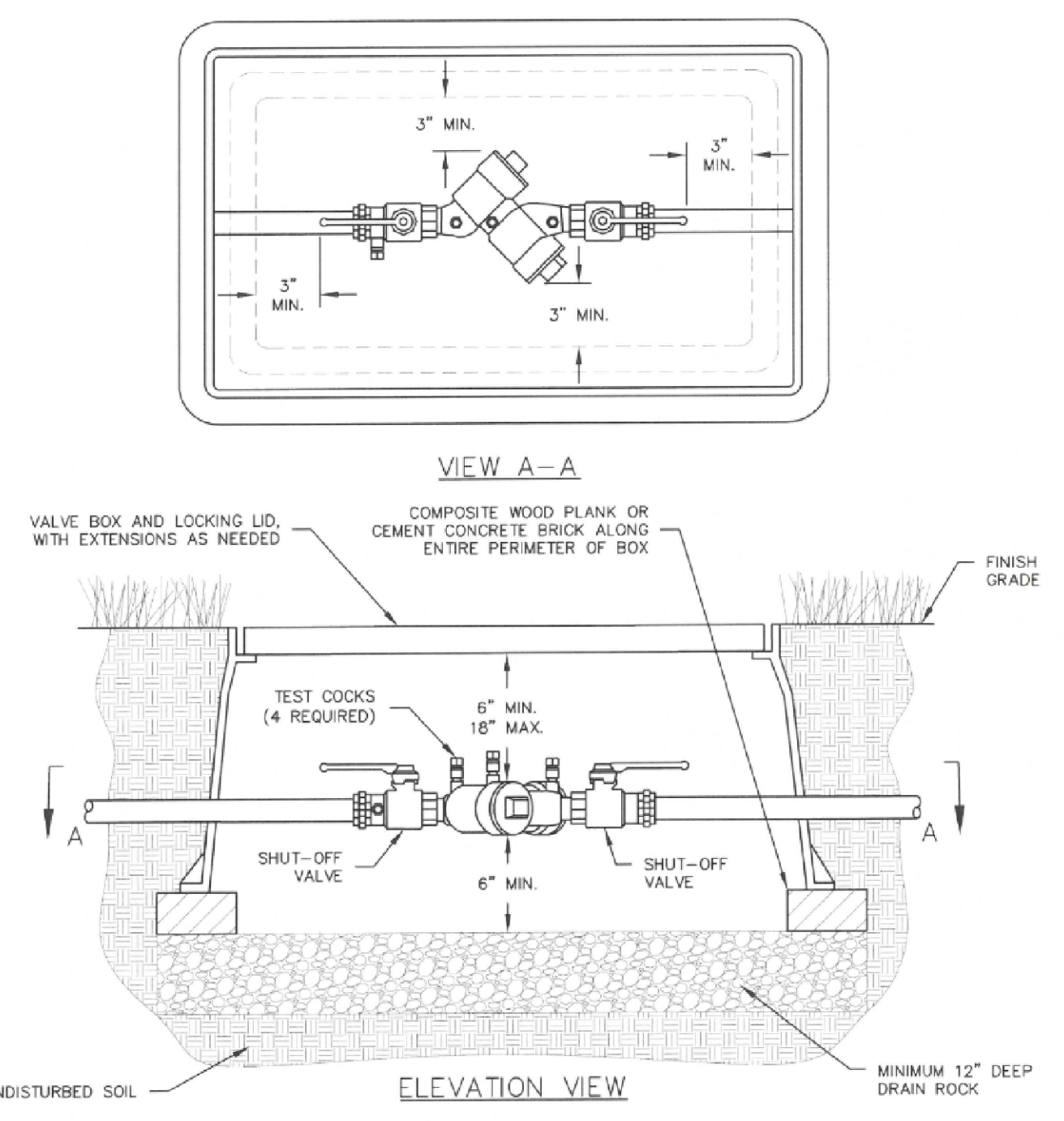
Revisions:



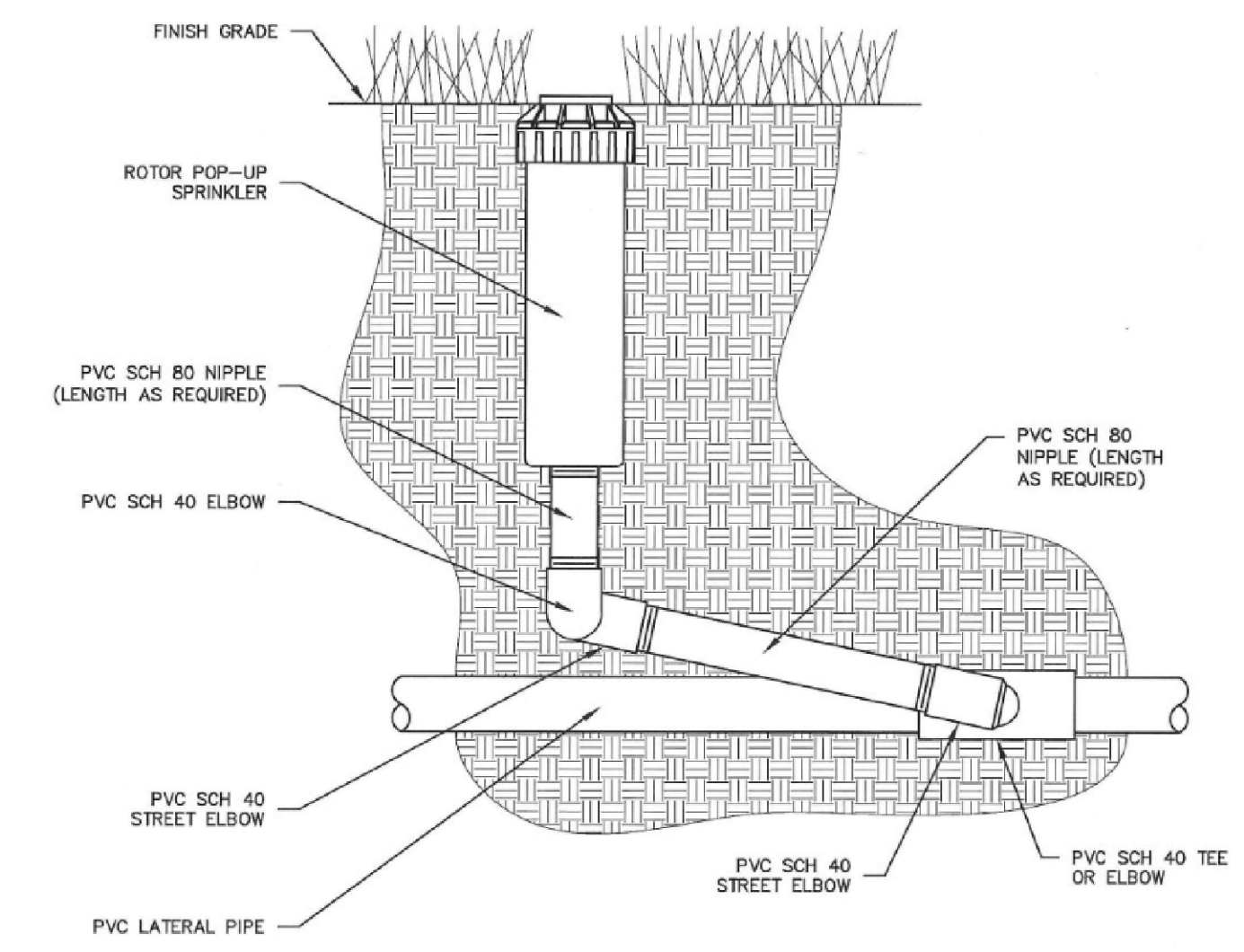
- NOTES:
1. CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED POLYMER IRRIGATION VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.
 2. ALL THREADED FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE.
 3. CONTRACTOR RESPONSIBLE FOR LOCATING DRAIN VALVE AT LOWEST POINT OF MAINLINE TO ENSURE POSITIVE DRAINAGE.
 4. ALLOW FOR 1" CLEARANCE FROM HOLE IN BOX TO TOP OF PIPE.



- NOTES:
1. CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED POLYMER IRRIGATION VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.



- NOTES:
1. CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED POLYMER IRRIGATION VALVE BOX LARGE ENOUGH TO CONTAIN THE SPECIFIED COMPONENTS. VALVE BOXES SHALL BE RAINBIRD VB SERIES, CARSON, OR APPROVED EQUIVALENT.
 2. APPROVED DOUBLE CHECK VALVE ASSEMBLY TO LAY HORIZONTAL WITH GROUND. TEST COCKS TO EITHER FACE OUTWARDS OR UPWARDS FROM ASSEMBLY.
 3. DESIGNED FOR BACK SIPHONING AND BACK PRESSURE.
 4. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER.
 5. THE DOVA MAY BE INSTALLED ABOVE OR BELOW THE GROUND PROVIDED ALL CLEARANCES ARE MET.
 6. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING. MUST BE ACCESSIBLE AND PROTECTED FROM FREEZING CONDITIONS.
 7. THE DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY SHALL BE ASSE LISTED 1015 APPROVED AND INCLUDE FULL PORT BALL VALVES WITH RESILIENT SEATS AND UNION CONNECTIONS.
 8. A PLUMBING PERMIT IS REQUIRED. PLEASE CONTACT THE CITY OF CAMAS BUILDING DEPARTMENT.
 9. MUST BE TESTED AFTER INSTALLATION BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SENT TO THE CITY OF CAMAS WATER DEPARTMENT.
 10. SEE IRRIGATION CONSTRUCTION NOTES, DETAIL IR1, FOR APPROVED BACKFLOW PREVENTION DEVICES.



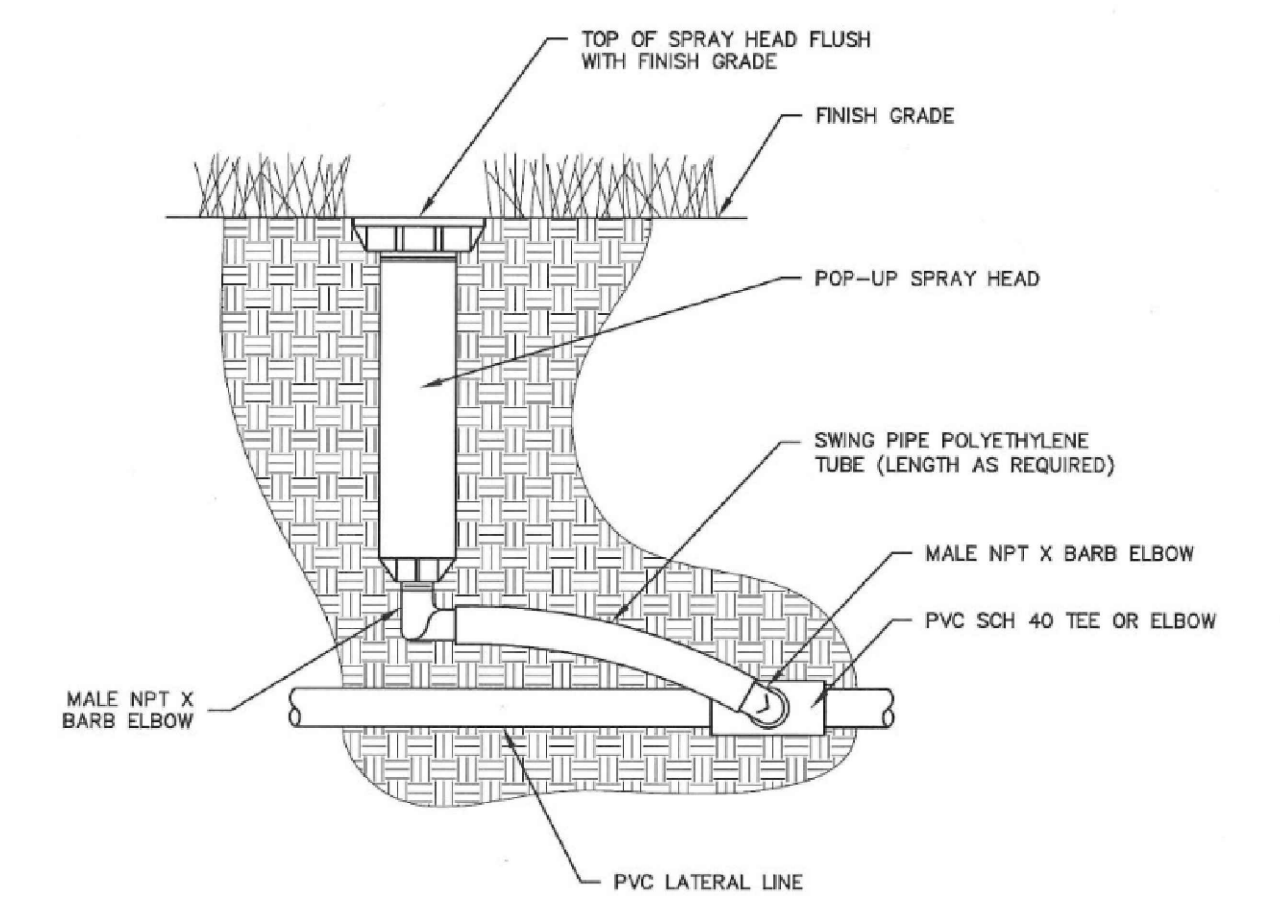
- NOTES:
1. ALL THREADED FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE.
 2. SWING JOINT SIZE SHALL NOT BE LESS THAN HEAD INLET SIZE.
 3. ROTARY SPRAY HEADS SHALL BE HUNTER 1-40, 1-25, OR APPROVED EQUAL. SUBMITTAL REQUIRED.
 4. WHEN SPRAY HEADS ARE LOCATED ALONG SIDEWALK OR CURBING THE HEADS SHALL BE MINIMUM 3" FROM HARDSCAPE AND PIPES MINIMUM 6" FROM HARDSCAPE.
 5. PRE-FABRICATED SWING JOINT ASSEMBLY WITH O-RINGS MAY BE USED INSTEAD OF INDIVIDUAL PARTS AS SHOWN.

City of Camas WASHINGTON
LANDSCAPE DETAIL
IRRIGATION MANUAL DRAIN VALVE
NOT TO SCALE
DETAIL NO. IR11
DATE: 6/19/2019

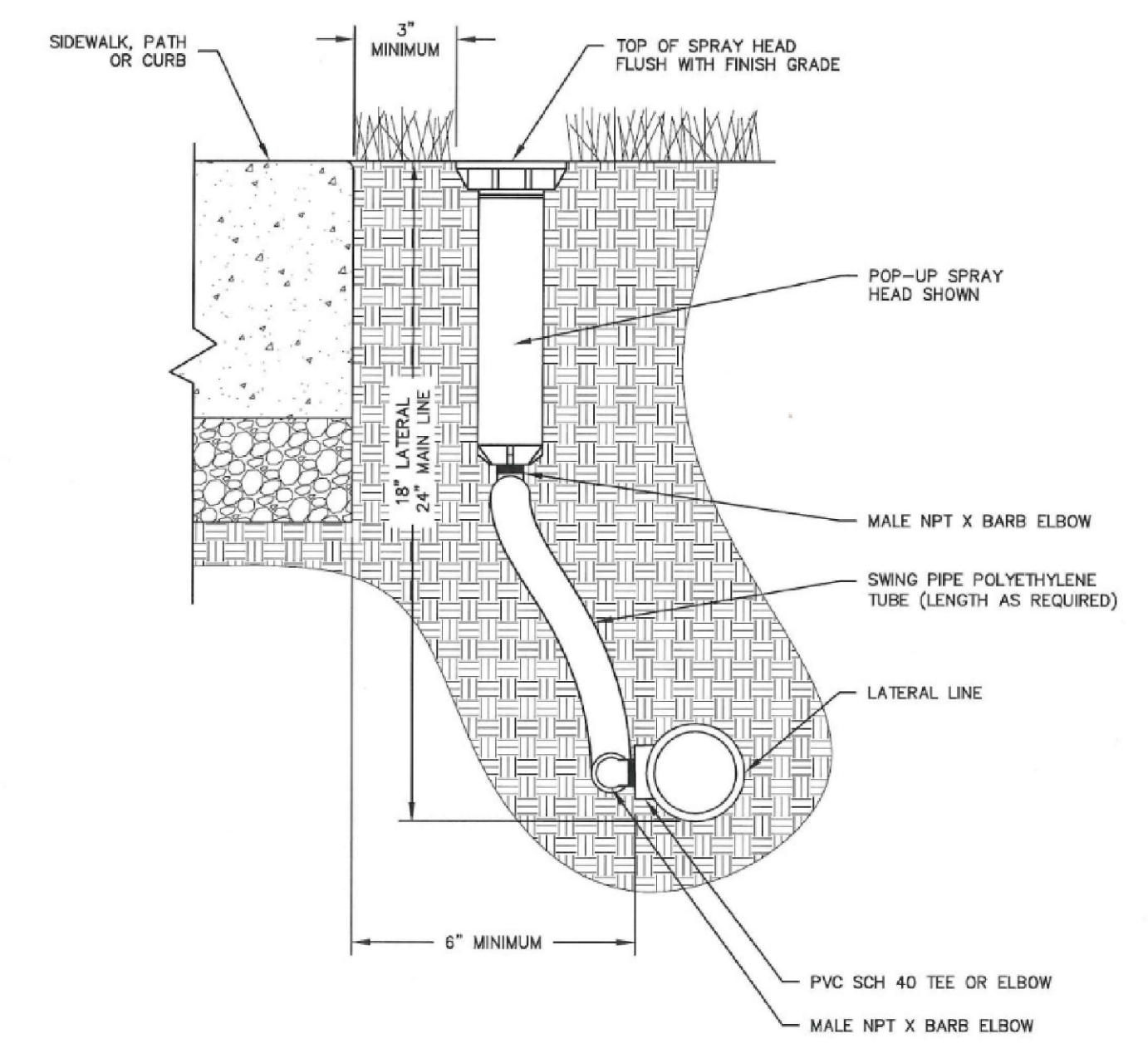
City of Camas WASHINGTON
LANDSCAPE DETAIL
IRRIGATION MANUAL GATE VALVE
NOT TO SCALE
DETAIL NO. IR12
DATE: 6/19/2019

City of Camas WASHINGTON
LANDSCAPE DETAIL
IRRIGATION DOUBLE CHECK VALVE ASSY.
NOT TO SCALE
DETAIL NO. IR13
DATE: 03/02/2022

City of Camas WASHINGTON
LANDSCAPE DETAIL
IRRIGATION ROTARY SPRAY HEAD
NOT TO SCALE
DETAIL NO. IR14
DATE: 6/19/2019



- NOTES:
1. ALL THREADED FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE.
 2. SWING PIPE SHALL BE POLYETHYLENE AND SIZE SHALL NOT BE LESS THAN HEAD INLET SIZE.
 3. POP-UP SPRAY HEADS SHALL BE RAIN BIRD 1800 OR APPROVED EQUAL. SUBMITTAL REQUIRED.
 4. WHEN SPRAY HEADS ARE LOCATED ALONG SIDEWALK OR CURBING THE HEADS SHALL BE MINIMUM 3" FROM HARDSCAPE AND PIPES MINIMUM 6" FROM HARDSCAPE.



- NOTES:
1. ALL THREADED FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE.
 2. SWING PIPE SHALL BE POLYETHYLENE AND SIZE SHALL NOT BE LESS THAN HEAD INLET SIZE.
 3. WHEN SPRAY HEADS ARE LOCATED ALONG SIDEWALK OR CURBING THE HEADS SHALL BE MINIMUM 3" FROM HARDSCAPE AND PIPES MINIMUM 6" FROM HARDSCAPE.

City of Camas WASHINGTON
LANDSCAPE DETAIL
IRRIGATION POP-UP SPRAY HEAD
NOT TO SCALE
DETAIL NO. IR15
DATE: 6/19/2019

City of Camas WASHINGTON
LANDSCAPE DETAIL
IRRIGATION HEAD PLACEMENT ALONG HARDSCAPE
NOT TO SCALE
DETAIL NO. IR16
DATE: 6/19/2019

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