

# ENGINEERING SET

## FOR BOZARTH MULTIFAMILY WOODLAND, WA

PREPARED FOR:

**BELCORP**

PO BOX 926

LA CENTER, WA 98629

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PREPARED BY:

**WINDSOR ENGINEERS**

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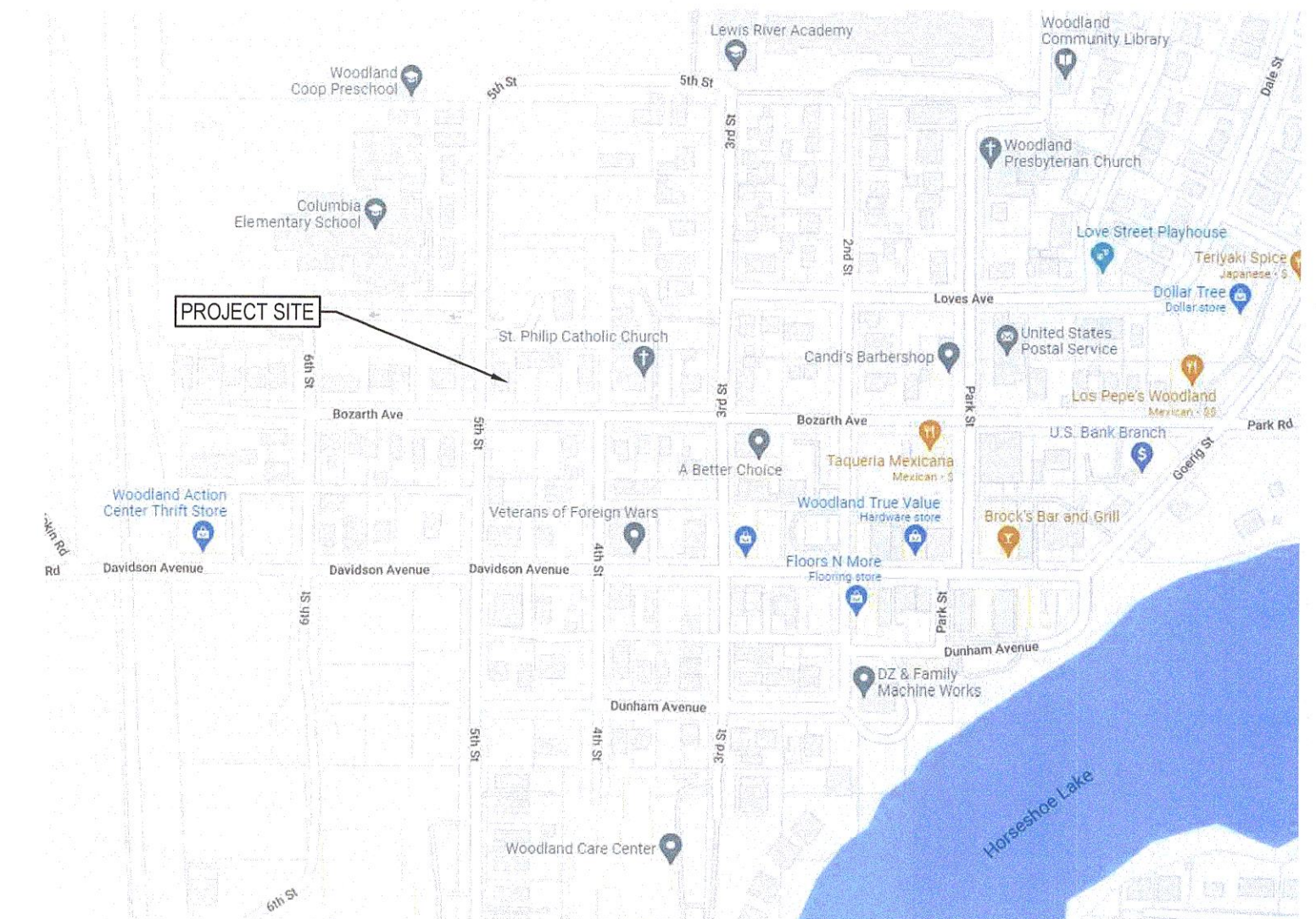
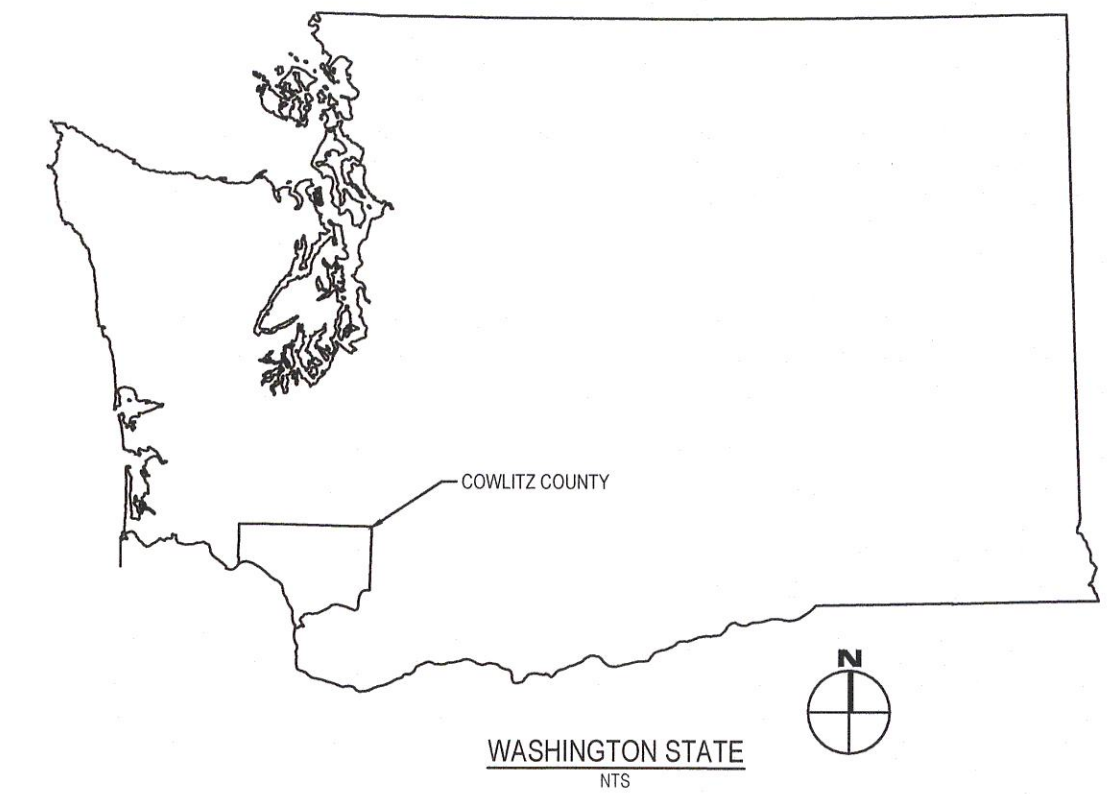
CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF WOODLAND ENGINEERING STANDARDS FOR CONSTRUCTION

PARCEL INFORMATION:  
PARCEL NUMBERS: 505030200 AND 5052501  
LOT SIZE: 0.27 AC AND 0.39 AC  
ZONING RESIDENTIAL (HDR)

LEGAL DESCRIPTION:  
IN THE HANS KRAFT D.L.C. IN THE SW 1/4 OF TH SW 1/4 OF SECTION 24 T. 5 N., R. 1 W., W.M. CITY OF WOODLAND, COWLITZ COUNTY, WASHINGTON

BASIS OF BEARING:  
N 89° 58' 05" E ALONG THE SOUTH LINE OF R.O.S. 35-61

VERTICAL DATUM:  
NAVD 88 BASED ON WSDOT MON. 4081  
EL = 30.07



VICINITY MAP  
NTS

**City of Woodland**  
Public Works Department  
PO Box 9  
236 Ste B Davidson  
Woodland, WA 98674  
www.ci.woodland.wa.us

(360) 225-7999  
(360) 225-7476 fax

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**Plans reviewed for compliance with  
City Standards and Policies**

Permit Number: SPR-22-002

Recommended for Approval:  
  
PUBLIC WORKS DIRECTOR

8-18-22  
DATE

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**Improvement Summary:**

STREET IMPROVEMENTS	150	LF
WATER MAIN FOOTAGE	N/A	LF
SEWER MAIN FOOTAGE	N/A	LF
SEPTIC SYSTEM DECOMMISSIONED	N/A	EA
TRENCHING WITHIN CITY RIGHT-OF-WAY	75	LF
TOTAL IMPERVIOUS SURFACE	10,000	SF
PRIVATE IMPERVIOUS SURFACE	9,000	AC
GRADING: CUT 280 CY	FILL 200	CY

**CITY OF WOODLAND**  
230 DAVIDSON AVE  
PO BOX 9  
WOODLAND, WA 98674  
PHONE:  
360-225-8281

**CITY OF WOODLAND PERSONNEL**  
TRAVIS GODDARD - COMMUNITY DEVELOPMENT  
TRACY COLEMAN - PUBLIC WORKS DIRECTOR  
DEBI CLER - BUILDING OFFICIAL  
MARK NELSON - ENGINEERING  
KATHRYN MYKLEBUST - ENGINEERING AIDE  
MIKE JACKSON - DIVISION FIRE CHIEF



UTILITY	JURISDICTION	PHONE NUMBER
WATER	CITY OF WOODLAND	360-225-8281
SEWER	CITY OF WOODLAND	360-225-8281
WASTE SERVICES	CITY OF WOODLAND	360-225-8281
POWER	COWLITZ PUD	360-423-2210
INTERNET	COMCAST	800-934-6489



Know what's below.  
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CAUTION: UTILITY INFORMATION IS APPROXIMATE.  
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

NO.	DESCRIPTION	DATE

LINE IS 1" ON FULL  
SCALE DRAWING

### WINDSOR ENGINEERS



Vancouver, WA  
Duluth + Minneapolis, MN  
www.windsorengineers.com  
Project No: 21065.1

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**BOZARTH MULTIFAMILY**  
560 BOZARTH AVENUE  
WOODLAND, WA 98674

**ENGINEERING SET**  
Issue Date: 2022/08/15

Project Manager DCK  
Drawn by DCK  
Checked by TWT

COVER SHEET

**G001**

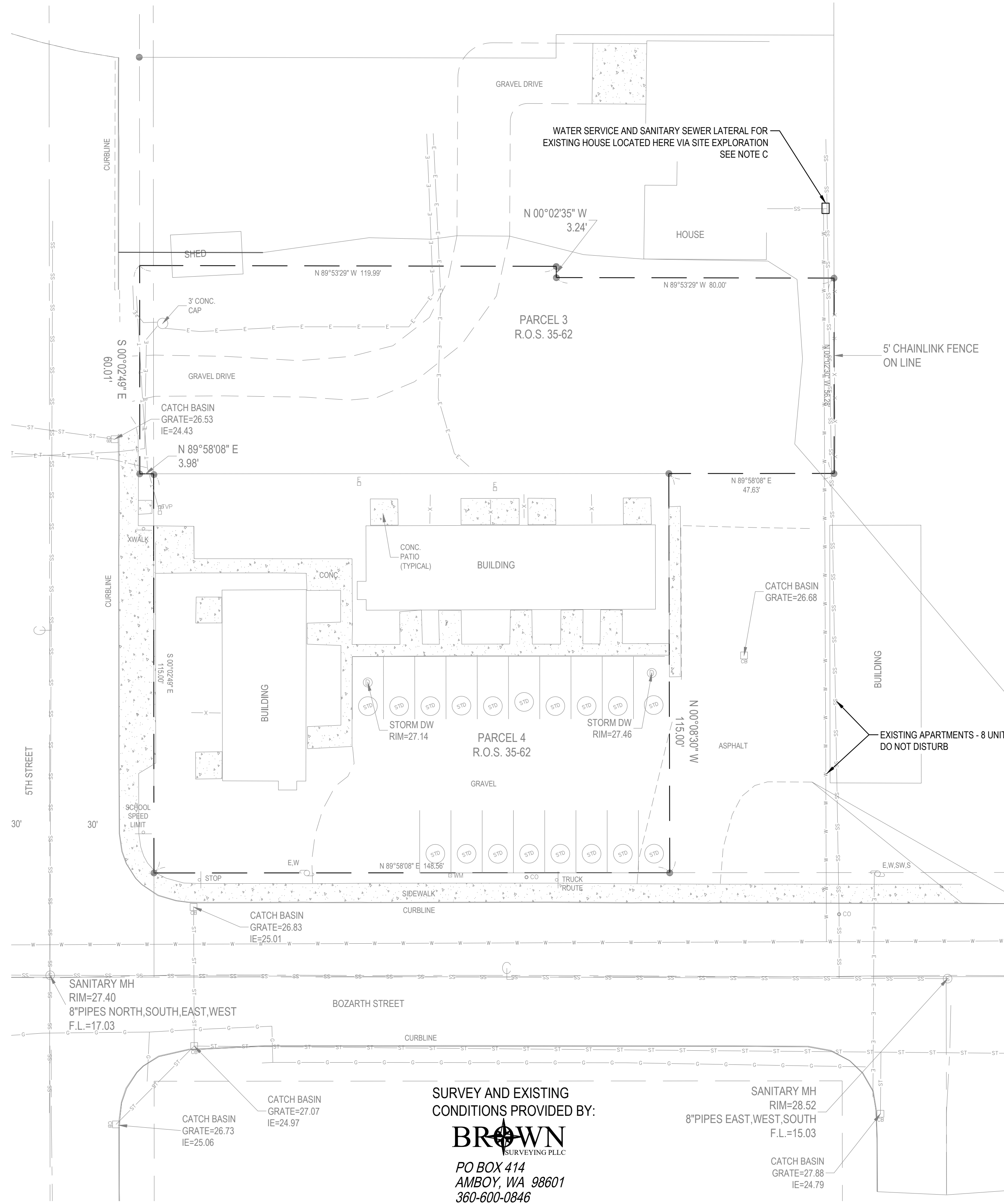
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**GENERAL SHEET NOTES:**

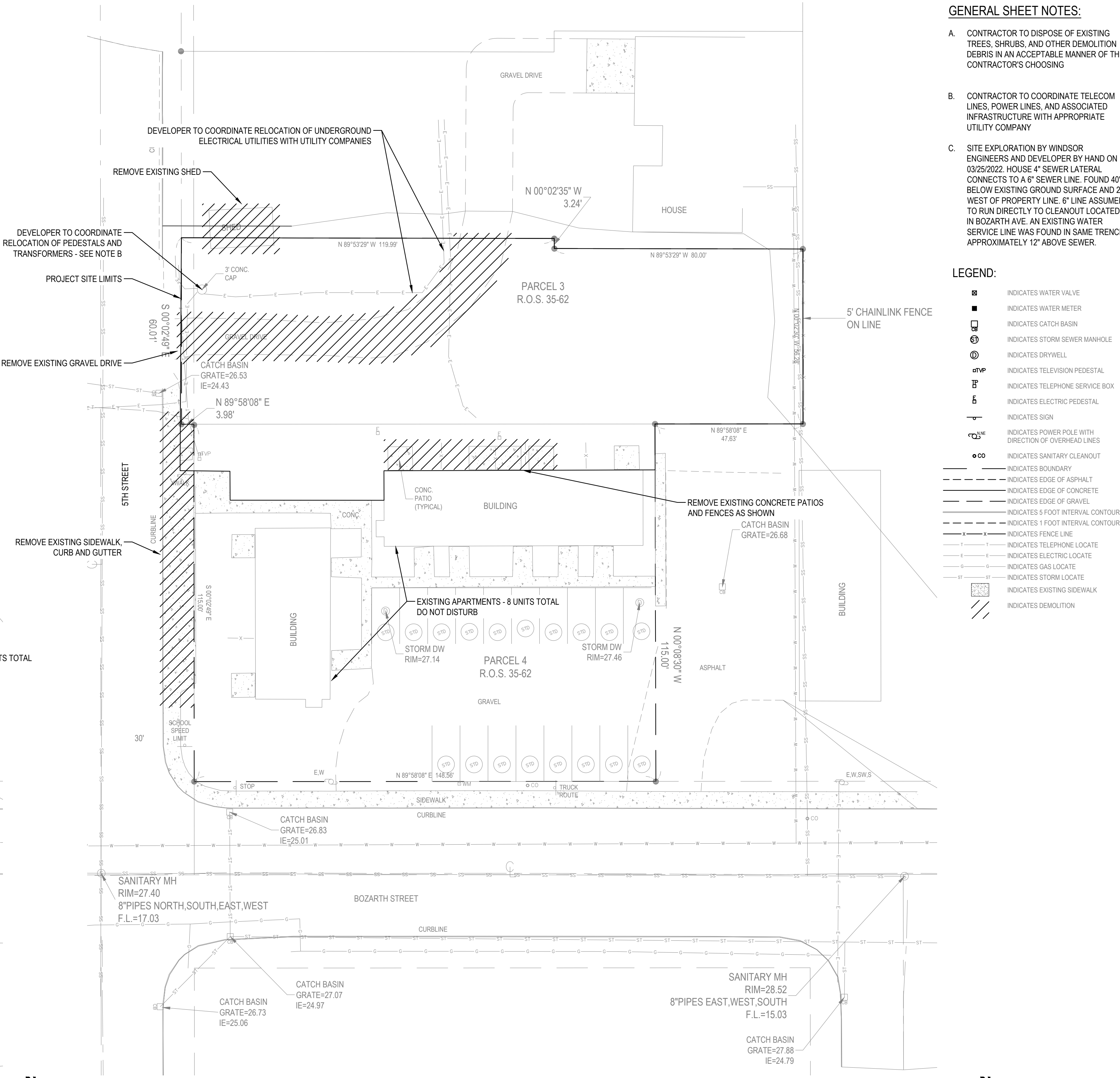
- A. CONTRACTOR TO DISPOSE OF EXISTING TREES, SHRUBS, AND OTHER DEMOLITION DEBRIS IN AN ACCEPTABLE MANNER OF THE CONTRACTOR'S CHOOSING
- B. CONTRACTOR TO COORDINATE TELECOM LINES, POWER LINES, AND ASSOCIATED INFRASTRUCTURE WITH APPROPRIATE UTILITY COMPANY
- C. SITE EXPLORATION BY WINDSOR ENGINEERS AND DEVELOPER BY HAND ON 03/25/2022. HOUSE 4" SEWER LATERAL CONNECTS TO A 6" SEWER LINE. FOUND 40" BELOW EXISTING GROUND SURFACE AND 2' WEST OF PROPERTY LINE. 6" LINE ASSUMED TO RUN DIRECTLY TO CLEANOUT LOCATED IN BOZARTH AVE. AN EXISTING WATER SERVICE LINE WAS FOUND IN SAME TRENCH, APPROXIMATELY 12" ABOVE SEWER.

**LEGEND:**

- INDICATES WATER VALVE
- INDICATES WATER METER
- INDICATES CATCH BASIN
- ⊙ INDICATES STORM SEWER MANHOLE
- ⊙ INDICATES DRYWELL
- ⊙ INDICATES TELEVISION PEDESTAL
- ⊙ INDICATES TELEPHONE SERVICE BOX
- ⊙ INDICATES ELECTRIC PEDESTAL
- ⊙ INDICATES SIGN
- ⊙ INDICATES POWER POLE WITH DIRECTION OF OVERHEAD LINES
- ⊙ INDICATES SANITARY CLEANOUT
- INDICATES BOUNDARY
- - - INDICATES EDGE OF ASPHALT
- - - INDICATES EDGE OF CONCRETE
- - - INDICATES EDGE OF GRAVEL
- - - INDICATES 5 FOOT INTERVAL CONTOUR
- - - INDICATES 1 FOOT INTERVAL CONTOUR
- - - INDICATES FENCE LINE
- - - INDICATES TELEPHONE LOCATE
- - - INDICATES ELECTRIC LOCATE
- - - INDICATES GAS LOCATE
- - - INDICATES STORM LOCATE
- - - INDICATES EXISTING SIDEWALK
- /// INDICATES DEMOLITION



1 EXISTING SITE PLAN  
1" = 20'



1 DEMOLITION PLAN  
1" = 20'

SURVEY AND EXISTING CONDITIONS PROVIDED BY:  
**BROWN SURVEYING PLLC**  
PO BOX 414  
AMBOY, WA 98601  
360-600-0846  
ebrownsurveying@gmail.com

**811**  
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LINE IS 1" ON FULL SCALE DRAWING

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**EXISTING CONDITIONS AND DEMO PLAN**

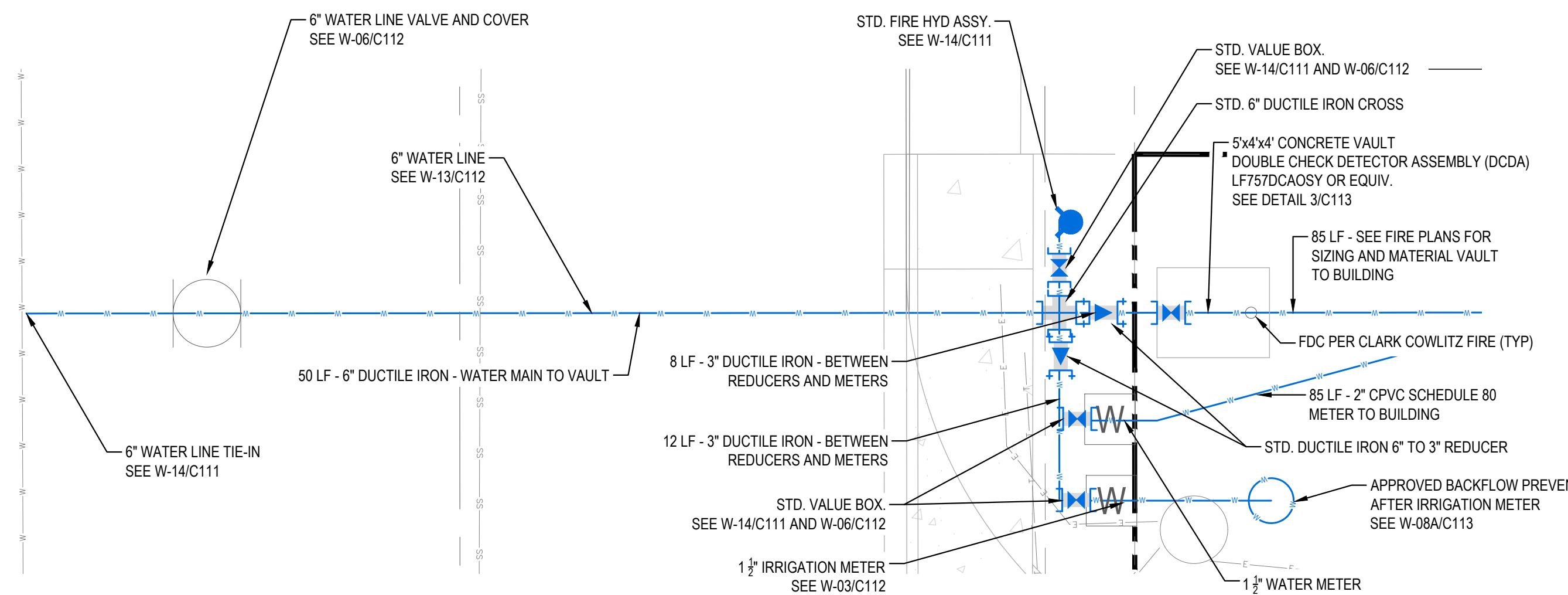
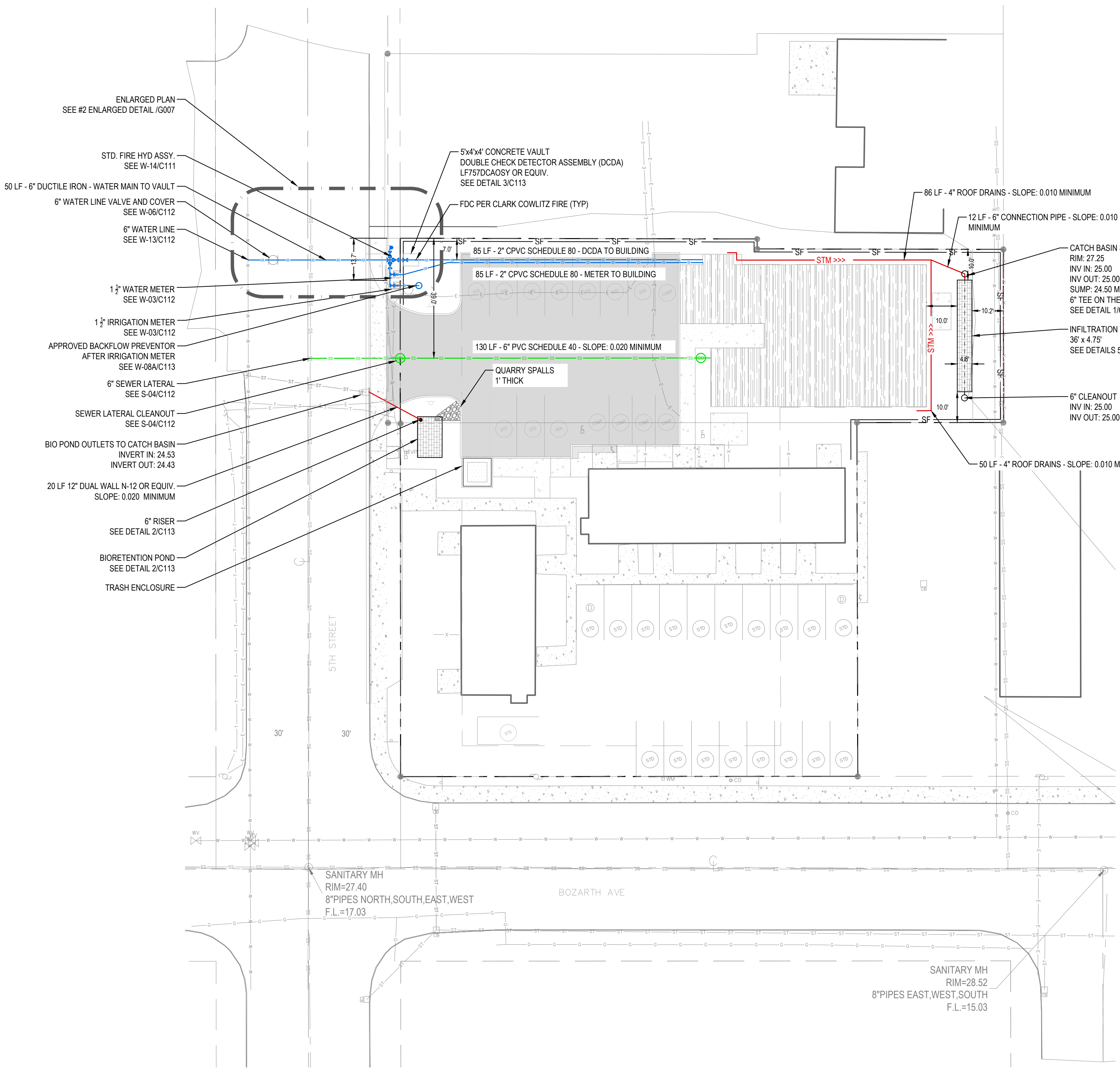
Project Manager: DCK  
Drawn by: DCK  
Checked by: TWT

**G002**

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- GENERAL SHEET NOTES:**
- WATER SERVICE AND SEWER LATERAL
    - CONNECT TO WATER MAIN LINE IN 5TH STREET WITH SINGLE SHARED 3" TAP
      - PROPOSED WATER METER SIZE: 1-1/2"
      - PROPOSED WATER SERVICE LINE: 1-1/2" CPVC SCHEDULE 80
      - PROPOSED FIRE LINE: 3" CPVC SCHEDULE 80
    - PROPOSED SEWER LATERAL SIZE: 6" PVC 3430
  - INFILTRATION TRENCH
    - RAIN DRAINS CONNECTED TO INFILTRATION TRENCH
    - INFILTRATES 100% OF RUNOFF
  - BIORETENTION POND
    - PARKING LOT AND SIDEWALK RUNOFF WILL BE COLLECTED AND TREATED IN BIORETENTION POND
    - OUTLET OF BIORETENTION POND IS CONNECTED TO THE CATCH BASIN LOCATED IN 5TH STREET
  - NEIGHBORING HOUSE TO NORTH ON PARCEL 50503
    - LOCATION OF EXISTING SEWER LATERAL AND WATER SERVICE VERIFIED. NOT LOCATED UNDER PROPOSED BUILDING PAD SEE EXISTING CONDITION SHEET 0002
  - ALL PROPOSED UTILITY CONNECTIONS SHALL MEET WOODLAND MUNICIPAL CODE

- COMPOSITE UTILITY KEYNOTES:**
- ALL STORMWATER FACILITIES ARE PRIVATELY OWNED AND SHALL BE MAINTAINED BY THE LANDOWNER
  - MAINTAIN 18" MIN. VERTICAL SEPARATION AND 10' MIN. HORIZONTAL SEPARATION BETWEEN WATER UTILITY AND SANITARY SEWER (TYP.)
  - SERVICE LATERAL CONSTRUCTION: SERVICE LATERAL CONNECTIONS AND PIPING WITHIN PUBLIC SANITARY SEWER EASEMENTS SHALL BE CONSTRUCTED TO PUBLIC STANDARDS. CONSTRUCTION SERVICES INSPECTIONS REQUIRED.
  - CONTRACTOR TO VERIFY LOCATIONS OF EXISTING UTILITIES USING POT HOLING OR OTHER EQUIVALENT METHODS.
  - ALL SEWER LATERALS ARE PRIVATE BETWEEN THE PROPERTY LINE AND BUILDING.



**2 ENLARGED PLAN**  
SCALE = 1" = 5'

**LATERAL TABLE**

LOT NO.	D.S. MH #	IE IN @ D.S. MH	DIST. FROM D.S. MH	MAIN SLOPE	MAIN IE	Riser Height	LAT. IE @ MAIN	LAT. LENGTH	LAT. SLOPE	LAT. IE @ BUILDING	LAT. DIA.	FG EL. @ BUILDING	LAT. COVER @ BUILDING
1	MANHOLE- 5th&Boz	17.15'	165.00'	0.45%	17.89'	3.00'	20.89'	130.00'	2.00%	23.49'	0.50'	28.25'	4.26'

**1 COMPOSITE UTILITY PLAN**  
Scale: 1" = 20'

PLOT DATE: 01/20/2022 9:57 AM - FILE: C:\Users\Dan\OneDrive\Work\Drawings\02\_Drawings\01\_Working\Sheets\COMP UTILITY PLAN.dwg

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**COMP UTILITY PLAN**

Project Manager DCK  
Drawn by DCK  
Checked by JWT

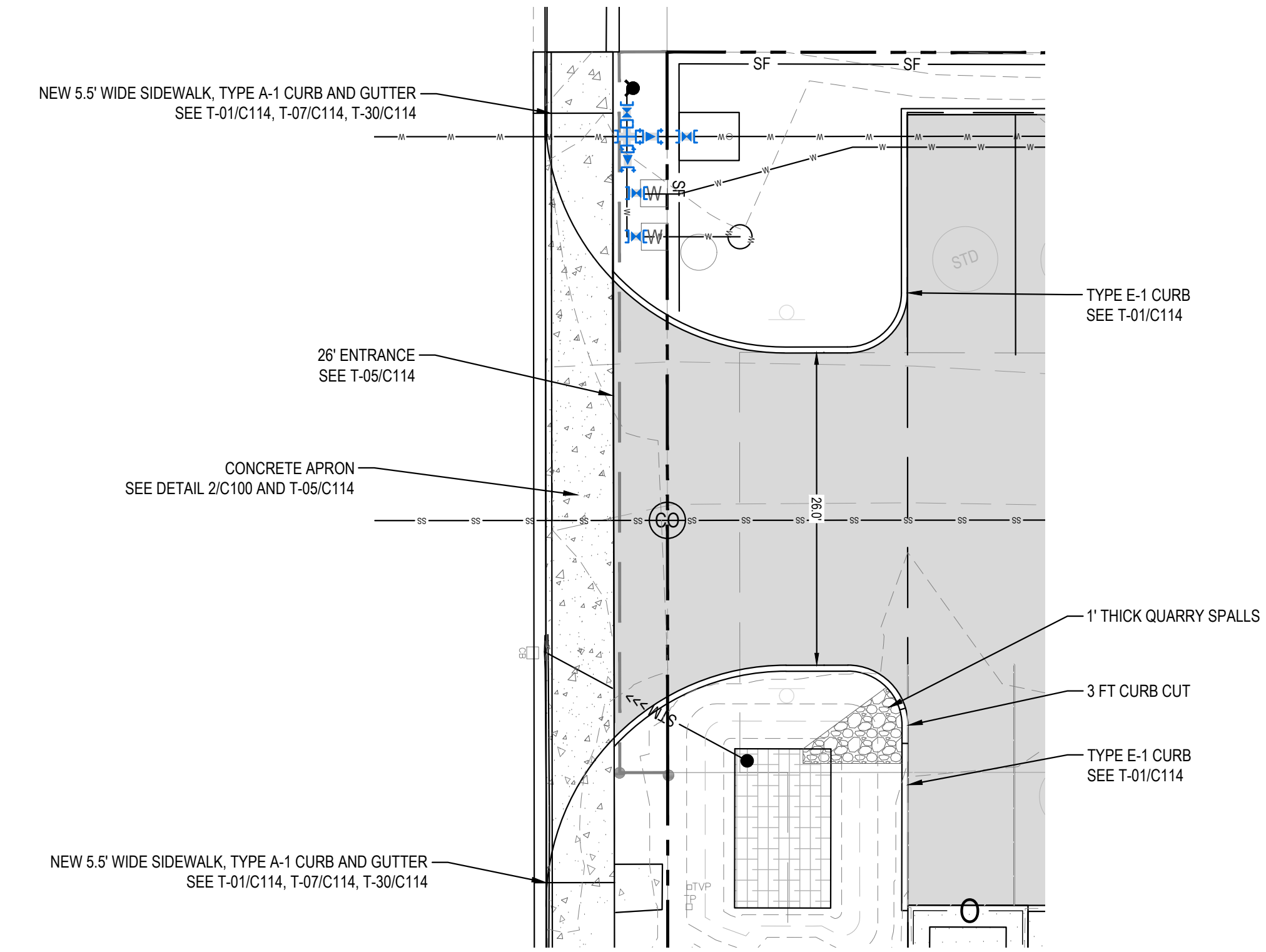
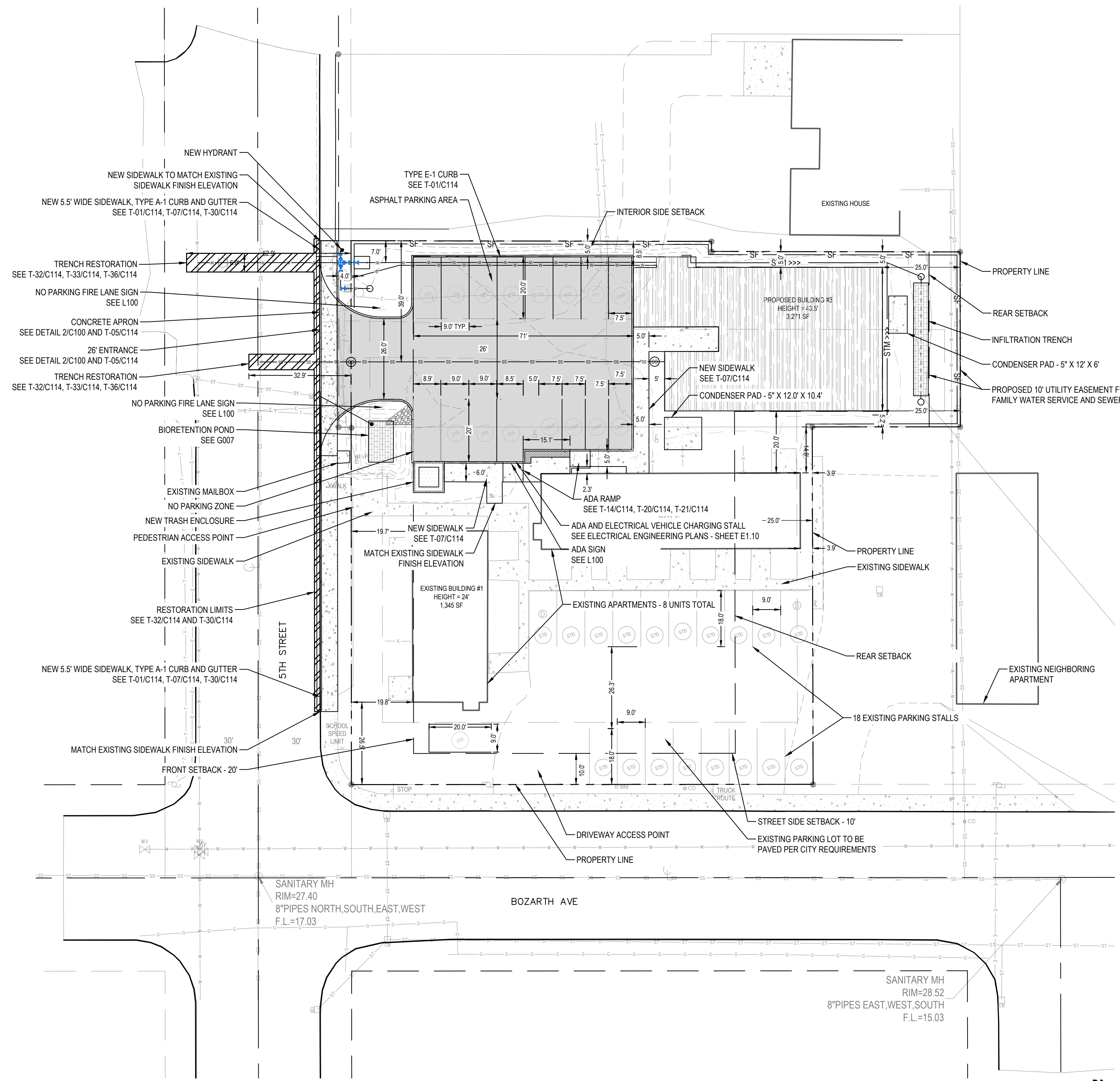
**G007**

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- GENERAL SHEET NOTES:**
1. MAXIMUM ALLOWABLE ZONING DENSITY: 35 UNITS/ACRE
    - 1.1. TOTAL PARCEL DENSITY: 23 UNITS (0.66 ACRES TOTAL)
    - 1.2. 8 EXISTING UNITS ON PARCEL
    - 1.3. LOT DENSITY ALLOWS 15 ADDITIONAL UNITS
  2. BOZARTH AVENUE IMPROVEMENTS:
    - 2.1. CRACK SEAL THE FULL WIDTH OF BOZARTH AVENUE ALONG PROJECT FRONTAGE

PARKING SUMMARY			
PARKING STALLS	EXISTING	PROPOSED	REQUIRED
SHARED ADA/EV CHARGING	0	1	1
STANDARD	18	10	32
COMPACT	0	4	-
EV CHARGING	0	1	1
<b>TOTAL</b>	<b>18</b>	<b>16</b>	<b>34</b>

DESCRIPTION		
DESCRIPTION	SQUARE FEET	% OF LOT
<b>BOTH PARCELS</b>	<b>28,766</b>	<b>100%</b>
<b>BUILDING #3 - PROPOSED</b>	<b>3500</b>	<b>12.2%</b>
CONCRETE/SIDEWALK - PROPOSED	1400	4.9%
PAVEMENT DRIVE LANE/PARKING - PROPOSED	5100	17.7%
LANDSCAPE AREA - PROPOSED	5400	18.8%
<b>BUILDING #1 - EXISTING</b>	<b>1345</b>	<b>4.7%</b>
<b>BUILDING #2 - EXISTING</b>	<b>2039</b>	<b>7.1%</b>
SIDEWALK - EXISTING	1455	5.1%
GRAVEL DRIVE LANE/PARKING - EXISTING	6187	21.5%
LANDSCAPE AREA - EXISTING	2340	8.1%
<b>TOTAL</b>	<b>28766</b>	<b>100%</b>



**1 SITE PLAN**  
Scale: 1" = 20'

**2 ENLARGED APPROACH PLAN**  
Scale: 1" = 10'



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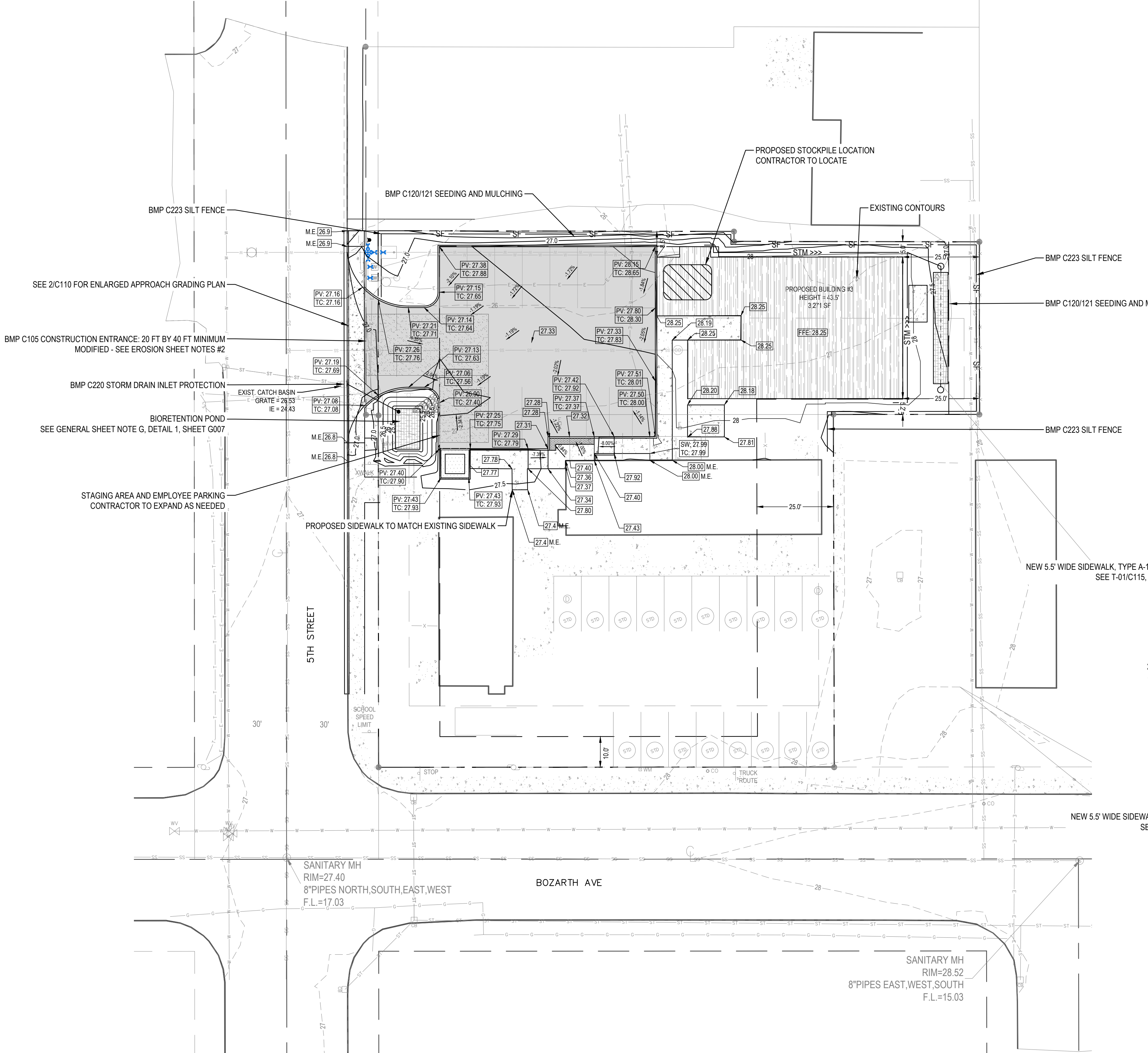
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Project Manager DCK  
Drawn by DCK  
Checked by TWT

**SITE PLAN**

**C100**

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**1 GRADING AND EROSION CONTROL PLAN**  
Scale: 1" = 20'

- EROSION SHEET NOTES:**
- WOODLAND GENERAL EROSION NOTES - SEE SHEET C111, DETAIL E-03
  - BMP C105 - CONSTRUCTION ENTRANCE - SEE SHEET C111, DETAIL E-05
    - LENGTH MODIFIED FROM STANDARD DETAIL DUE TO SITE SIZE. LENGTH MODIFIED TO 40 FT.
    - A WHEEL WASH OR STREET SWEEPING PER STANDARD SET BY THE CITY OF WOODLAND MAY BE REQUIRED IF TRACKING OCCURS DUE TO MODIFIED CONSTRUCTION ENTRANCE. SEE SHEET C111, DETAIL E-06
  - BMP C233 - SILT FENCE - SEE SHEET C111, DETAIL E-20
  - BMP C120/121 - TEMP/PERM SEEDING AND MULCHING, FOLLOW WASHINGTON STATE DEPARTMENT OF ECOLOGY STANDARDS
  - BMP C220 STORM DRAIN INLET PROTECTION SEE SHEET C111, DETAILS E-16 & E-17

**SITE STABILIZATION**  
THE PROJECT CESCL IS SOLELY RESPONSIBLE FOR SELECTION, INSTALLATION, AND MAINTENANCE OF THE CHOSEN BMPs.

SITE STABILIZATION TO OCCUR DURING AND AFTER CONSTRUCTION, TO PREVENT EROSION, EXPOSED AND UNWORKED SOILS SHALL NOT REMAIN UNWORKED AND EXPOSED FOR MORE THAN THE TIME PERIODS DESCRIBED IN THE TABLE BELOW. SOILS MUST BE STABILIZED AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. THIS APPLIES TO ALL SOILS WITHIN THE SITE, REGARDLESS OF FINAL GRADE OR NOT. EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED THROUGHOUT THE LIFE OF THE PROJECT BY APPLICATION OF BMP C120/C121 SEEDING AND MULCHING. A TOTAL LIST OF POSSIBLE BMPs FOR STABILIZATION INCLUDE THE FOLLOWING BUT OTHER BMPs NOT INCLUDED ON THIS LIST MAY BE CHOSEN BY THE PROJECT CESCL AS APPROPRIATE.

BMP C120:	TEMP. AND PERMANENT SEEDING
BMP C121:	MULCHING
BMP C122:	NETS AND BLANKETS
BMP C123:	PLASTIC COVERING
BMP C125:	TOPSOILING
BMP C130:	SURFACE ROUGHENING

AFTER CONSTRUCTION IS COMPLETE, THE ENTIRE SITE SHALL BE PERMANENTLY STABILIZED. PERMANENT STABILIZATION CAN BE COMPLETED BY ANY COMBINATION OF THE ABOVE OR OTHER APPROPRIATE METHODS AS CHOSEN BY THE PROJECT CESCL.

Season	Dates	Number of Days Soils Can be Left Exposed
During the Dry Season	May 1 - September 30	7 days
During the Wet Season	October 1 - April 30	2 days

- GENERAL SHEET NOTES:**
- CITY OF WOODLAND CODE - WMC
  - "WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON" LATEST EDITION. AVAILABLE ON THE WASHINGTON DOE WEBSITE.
  - ALL SOILS SHALL BE AMENDED TO MEET THE STANDARD SET BY BMP T5.13 POST CONSTRUCTION SOIL QUALITY AND DEPTH
  - SHOULD ANY ITEM OF ARCHAEOLOGICAL INTEREST (VMC 20.710.090) BE FOUND DURING DEVELOPMENT, YOU ARE REQUIRED TO STOP WORK AND NOTIFY THE PLANNING CASE MANAGER IN DEVELOPMENT REVIEW SERVICES AT (360) 487-7800, AND THE WASHINGTON STATE OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION AT (360) 753-4011 IMMEDIATELY. FAILURE TO DO SO COULD RESULT IN A FELONY CONVICTION.
  - ANY PUBLIC, OR PRIVATE, CURB, GUTTER, SIDEWALK, OR ASPHALT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO CITY OF WOODLAND STANDARDS.
  - IF ANY FILL IS PROPOSED WITHIN CURRENT, OR FUTURE, RIGHT-OF-WAY THE CONTRACTOR SHALL PLACE SUCH FILL IN ACCORDANCE WITH WMC.
  - THE PROPOSED STORMWATER FACILITY MUST REMAIN OFFLINE UNTIL THE PROJECT IS COMPLETE AND VEGETATION THROUGHOUT THE SITE HAS BEEN ESTABLISHED. IF AT ANY TIME THE FACILITY BECOMES INUNDATED WITH SEDIMENT FILLED RUNOFF, THE TOP 2" OF MATERIAL MUST BE REMOVED AND REPLACED PRIOR TO PROJECT COMPLETION.

**GRADING NOTES**  
NO GRADING WITHIN 2' OF ADJACENT PARCELS PER IBC.

STRIP ORGANICS PER GEOTECH REPORT.

FINISH GRADE CONTOURS ARE TO TOP OF FINISHED SURFACE IN IMPERVIOUS AREAS AND TOP OF REPLACED STRIPPINGS IN PERVIOUS AREAS.

STRIPPINGS TO REMAIN ON SITE AND BE REDISTRIBUTED OVER LANDSCAPE AREAS AFTER ALL GRADING ACTIVITIES ARE COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE FOR HAUL-OFF EXCESS MATERIAL.

CUT AND FILL QUANTITIES ARE BASED ON GENERAL SITE GRADING ESTABLISHED FROM THE STRIPPED GRADE TO THE FINISHED PROPOSED SUBGRADE AND TRENCH SPOOLS. THESE VOLUMES DO NOT TAKE INTO ACCOUNT ANY UNKNOWN SOIL DEPOSITS OR OVER-EXCAVATION OF NON-ORGANIC MATERIALS THAT ARE DISCOVERED ON SITE, NOR WET WEATHER CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE TO PRODUCE INDEPENDENT GRADING VOLUMES AS WELL AS ACCOUNT FOR OBSERVATION OF MEASURES DIRECTED WITHIN THE GEOTECHNICAL REPORT OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER DURING THE COURSE OF CONSTRUCTION.

SITE SLOPES ARE 2% OR LESS  
IMPORTED FILL AND COMPACTION PER GEOTECH REPORT

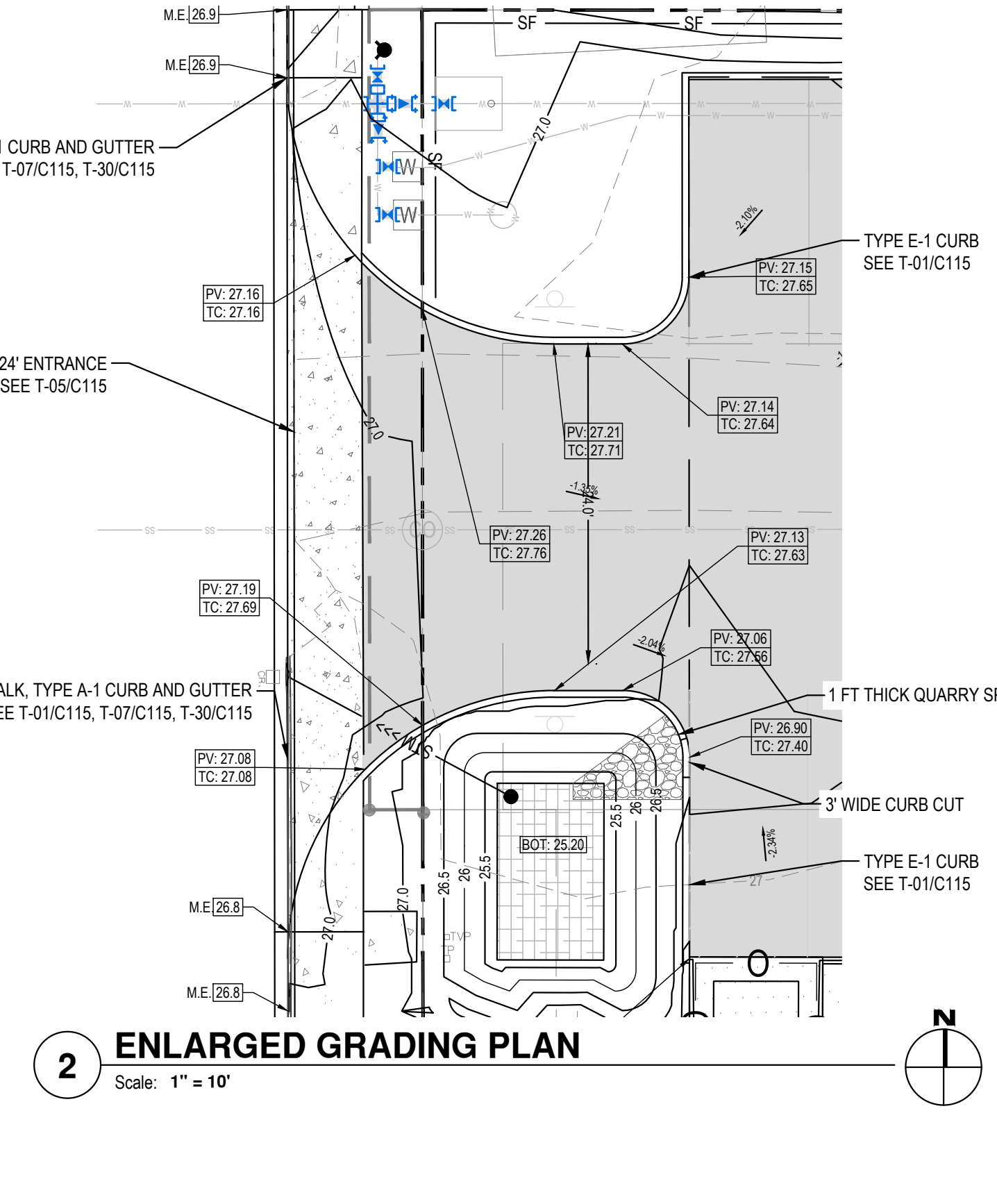
**GRADING QUANTITIES**  
CUT: 280 CY  
FILL: 200 CY  
5" STRIPPINGS: 220 CY (CUT)

1804.1 EXCAVATION NEAR FOUNDATION  
EXCAVATION NEAR FOUNDATIONS. EXCAVATION FOR ANY PURPOSE SHALL NOT REDUCE LATERAL SUPPORT FROM ANY FOUNDATION OR ADJACENT FOUNDATION WITHOUT FIRST UNDERPINNING OR PROTECTING THE FOUNDATION AGAINST DETRIMENTAL LATERAL OR VERTICAL MOVEMENT, OR BOTH.

18.04.4 SITE GRADING  
THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN ONE UNIT VERTICAL IN 20 UNITS HORIZONTAL (5-PERCENT SLOPE) FOR A MINIMUM OF 10 FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET OF HORIZONTAL DISTANCE, A 5-PERCENT SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER AWAY FROM THE FOUNDATION. SWALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF 2 PERCENT WHERE LOCATED WITHIN 10 FEET OF THE BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF 2 PERCENT AWAY FROM THE BUILDING.

EXCEPTION: WHERE CLIMATIC OR SOILS CONDITIONS WARRANT, THE SLOPE OF THE GROUND AWAY FROM THE BUILDING SHALL BE PERMITTED TO BE REDUCED TO NOT LESS THAN ONE VERTICAL IN 48 UNITS HORIZONTAL (2-PERCENT SLOPE).

THE PROCEDURE USED TO ESTABLISH THE FINAL GROUND LEVEL ADJACENT TO THE FOUNDATION SHALL ACCOUNT FOR ADDITIONAL SETTLEMENT OF THE BACKFILL



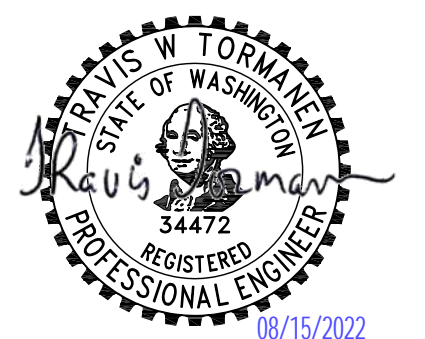
**2 ENLARGED GRADING PLAN**  
Scale: 1" = 10'

Revisions:

No.	Description	By	Date

LINE IS 1" ON FULL SCALE DRAWING

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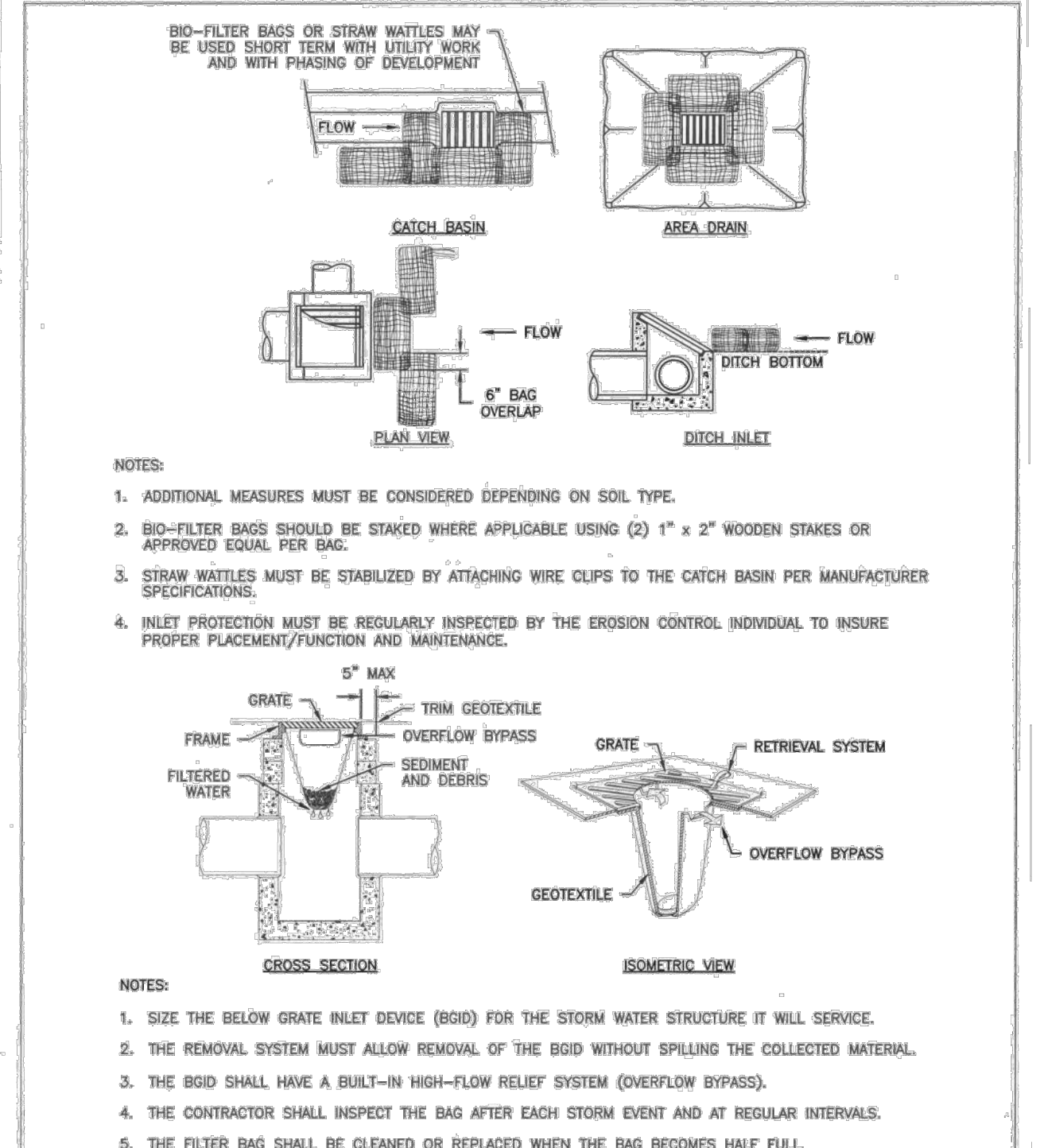
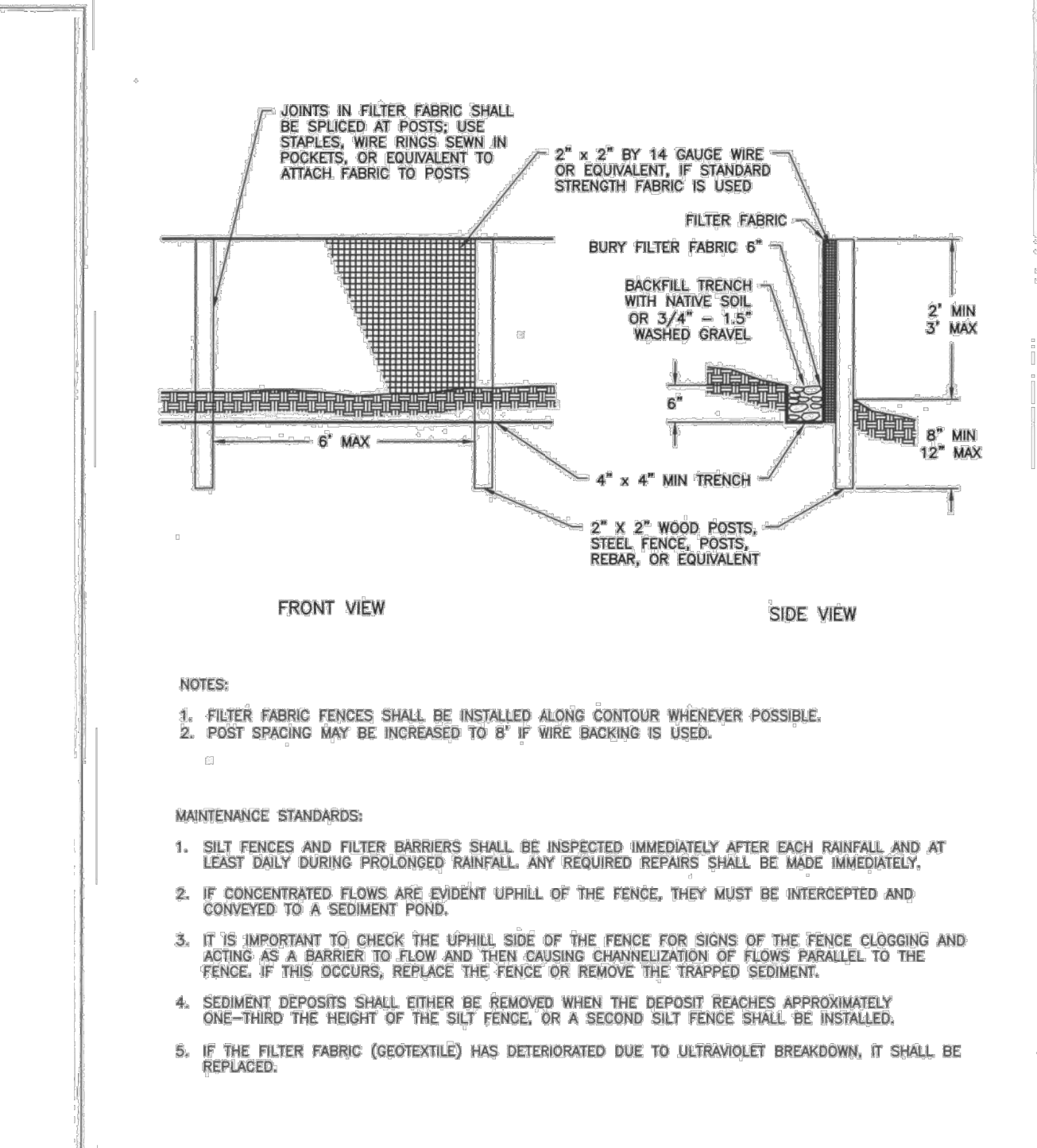
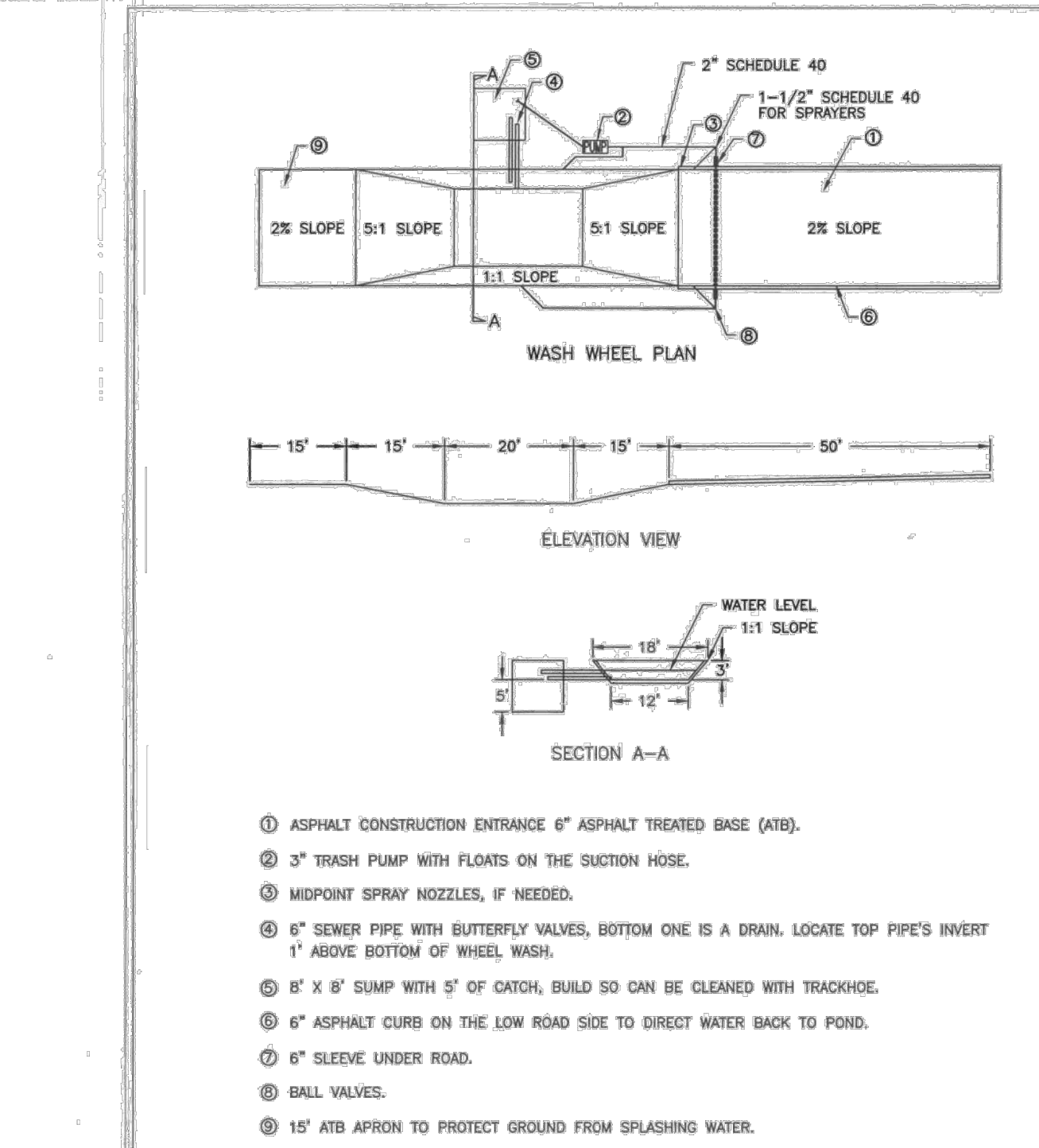
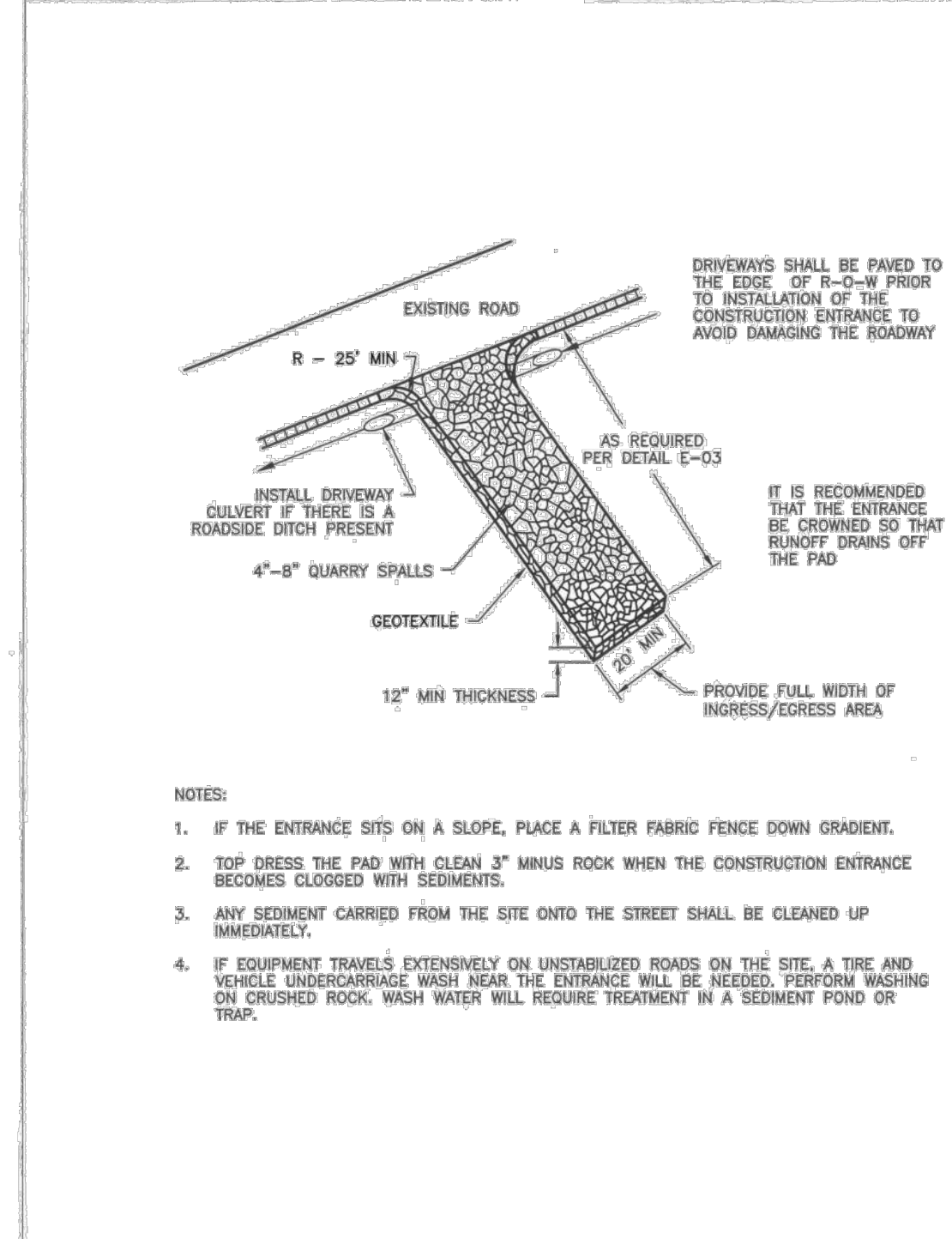
**C110**

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**GENERAL EROSION PREVENTION & SEDIMENT CONTROL NOTES**

- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND IN WORKING CONDITION PRIOR TO ANY LAND DISTURBING ACTIVITY CAUSED BY CLEARING OR GRADING. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE APPROVED BY THE CITY EROSION CONTROL SPECIALIST PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL CALL FOR AN ON-SITE INSPECTOR WHEN EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND PRIOR TO COMMENCEMENT OF WORK.
- THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE SITED, DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS IN THE CITY OF WOODLAND LATEST EROSION AND SEDIMENT CONTROL MANUAL. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL TAKE PRECEDENCE OVER THE CITY OF WOODLAND GENERAL REQUIREMENTS SHALL TAKE PRECEDENCE.
- THE DEVELOPER IS RESPONSIBLE FOR MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROL MEASURES DURING AND AFTER INSTALLATION OF ALL UTILITY WORK ASSOCIATED WITH UTILITY TRUNKS.
- PRIOR TO ANY SITE EXCAVATION, ALL STORM DRAINAGE INLETS SHALL BE PROTECTED DOWN SLOPE FROM ANY DISTURBED OR CONSTRUCTION AREAS PER THE STANDARD DETAILS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREAS. CLEAR THE FILTER FABRIC AS NECESSARY TO MAINTAIN DRAINAGE. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITEWORK.
- THE CONTRACTOR SHALL NOT ALLOW SEDIMENT OR DEBRIS TO ENTER NEW OR EXISTING PIPES, CATCH BASINS OR INFILTRATION SYSTEMS.
- NEWLY CONSTRUCTED OR MODIFIED INLETS AND CATCH BASINS ARE TO BE PROTECTED IMMEDIATELY UPON INSTALLATION.
- TEMPORARY SEEDING AND MULCHING OF FILL SLOPES AND DIMENSION DRESSES SHALL BE COMPLETED WITHIN ONE WEEK AFTER ROUGH GRADING.
- ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMPs). DURING THE PERIOD FROM OCTOBER 1 TO APRIL 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN SEVEN (7) DAYS.
- MATERIAL STOCKPILES ARE TO BE PROTECTED BY THE FOLLOWING MEANS:  
TEMPORARY COVER PILES WITH TAPPS OR PLASTIC SHEETING REINFORCED WITH CONCRETE BLOCKS, LIMBS OR TRIPS.  
PERMANENT COVER PILES WITH TAPPS OR PLASTIC OR RESEED. FORMER AREAS AROUND PILES ARE TO BE SURROUNDED WITH EROSION CONTROL.  
FILTER FABRIC FENCES UNTIL SOIL SURFACE IS STABILIZED WITH RESEEDING.
- THE CONTRACTOR SHALL MAINTAIN ON SITE A WRITTEN DAILY LOG OF EROSION CONTROL BMP MAINTENANCE.
- IF THE CITY INSPECTOR OR ENGINEER(S) HAS EVIDENCE OF POOR CONSTRUCTION PRACTICES OR IMPROPER EROSION PREVENTION BMPs, CITATIONS AND/OR A STOP WORK ORDER SHALL BE ISSUED UNTIL PROPER MEASURES HAVE BEEN TAKEN AND APPROVED BY THE CITY OF WOODLAND. IF THE BMPs APPLIED TO A SITE ARE INSUFFICIENT TO PREVENT SEDIMENT FROM REACHING WATER BODIES, ADJACENT PROPERTIES, OR PUBLIC RIGHT-OF-WAY, THEN THE PUBLIC WORKS DIRECTOR SHALL REQUIRE ADDITIONAL BMPs.
- PROHIBITION OF HAZARDOUS WASTES, SOLIDS, AND LIQUIDS:  
12. PROVIDE A 12-INCH DEEP PAD OF CRUSHED ROCK FOR A DISTANCE OF 100 FEET INTO THE SITE FOR ALL ACCESS POINTS UTILIZED BY CONSTRUCTION EQUIPMENT AND TRUCKS. WIDTH OF THE PAD SHALL BE A MINIMUM OF 20 FEET. ALL TRUCKS LEAVING THE SITE SHALL CROSS THE PAD. ACCUMULATED SOIL SHALL BE PERIODICALLY REMOVED OR RESEED. FURNITURE ROCK SHALL BE CLEAN & WASH TO 8-INCH QUARRY SPALLS. ALL MATERIALS SPILLED, DROPPED, OR TRACKED FROM VEHICLES ON ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.  
13. PAVEMENT SWEEPING AND SHOVELING IS REQUIRED. WASHING THE PAVEMENT INTO THE STORM SYSTEM IS NOT PERMITTED.  
14. AT SITES WITH LESS THAN 1 ACRE OF EXPOSED SOIL, PAD LENGTH MAY BE REDUCED TO 50 FEET. SINGLE FAMILY LOT ENTRANCES MAY HAVE THE PAD LENGTH REDUCED TO 25 FEET. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS WITH THE SAME OWNER DURING CONSTRUCTION, ONE LOT ENTRANCE MAY BE USED FOR THE ADJACENT LOTS.  
15. INSTALL SEDIMENT FENCE IN ACCORDANCE WITH THIS DETAIL SHEET PRIOR TO BUILDING CONSTRUCTION AND/OR EXCAVATION TO PREVENT SILT INTRUSION UPON ADJACENT LOTS. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS AND THE LOTS HAVE THE SAME OWNER DURING CONSTRUCTION, THE SILT FENCE ALONG THE COMMON LOT LINE MAY BE ELIMINATED.  
16. CONSTRUCTION ROADS AND PARKING AREAS SHALL BE STABILIZED WHETHER THEY ARE CONSTRUCTED, WHETHER PERMANENT OR TEMPORARY, FOR THE USE OF CONSTRUCTION TRAFFIC.  
**MAINTENANCE OF SEDIMENT CONTROL BMPs**  
17. MAINTAIN AND REMOVE ALL SEDIMENT CONTROLS AS SPECIFIED IN THE STANDARD DETAILS. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT FROM THE CATCH BASINS, DITCHES, DRAINAGE, UTILITY TRENCHES AND STORM PIPES PRIOR TO ACCEPTANCE BY THE CITY.  
18. SEDIMENT CONTROL BARS SHALL BE INSPECTED WEEKLY AND AFTER ANY STORM EVENT PROCEEDING RUNOFF. THE INSPECTION FREQUENCY FOR STABILIZED, INACTIVE SITES SHALL BE ONCE EVERY TWO WEEKS OR MORE FREQUENTLY AS DETERMINED BY THE LOCAL PERMITTING AUTHORITY BASED ON THE LEVEL OF SOIL STABILITY AND POTENTIAL FOR EXCESS ENVIRONMENTAL IMPACT.  
19. ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMPs ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY RESEED.  
**DUST CONTROL**  
20. IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST ONE OR MORE OF THE FOLLOWING PREVENTATIVE MEASURES SHALL BE TAKEN FOR DUST CONTROL:  
A. MINIMIZE THE PERIOD OF SOIL EXPOSURE THROUGH THE USE OF TEMPORARY GROUND COVER AND OTHER TEMPORARY STABILIZATION PRACTICES.  
B. SPRINKLE THE SITE WITH WATER UNTIL THE SURFACE IS WET.  
C. SPRAY EXPOSED SOIL AREAS WITH A DUST PALMATIVE. NOTE: USE OF PETROLEUM PRODUCTS OR POTENTIALLY HAZARDOUS MATERIALS ARE PROHIBITED.  
**TEMPORARY SEEDING**  
21. EXPOSED SURFACES THAT WILL NOT BE BROUGHT TO FINAL GRADE OR GIVEN A PERMANENT COVER TREATMENT WITHIN 30 DAYS OF THE EXPOSURE SHALL HAVE SEED MIX AND WHICH SHALL BE PLACED TO STABILIZE THE SOIL AND REMOVE EROSION. SEEDING MIXES SHALL BE CHECKED REGULARLY TO ASSURE A GOOD STAND OF GRASS IS BEING MAINTAINED. AREAS THAT FAIL TO ESTABLISH VEGETATION COVER ADEQUATE TO PREVENT EROSION WILL BE RESEED AS SOON AS SUCH AREAS ARE IDENTIFIED.  
22. APPLY AN APPROVED TEMPORARY SEEDING MIXTURE TO THE PREPARED SEED BED AT A RATE OF 120 LBS/ACRE. NOTE: "HYDROSEEDING" APPLICATIONS WITH APPROVED SEED-MULCH-FERTILIZER MIXTURES MAY ALSO BE USED.



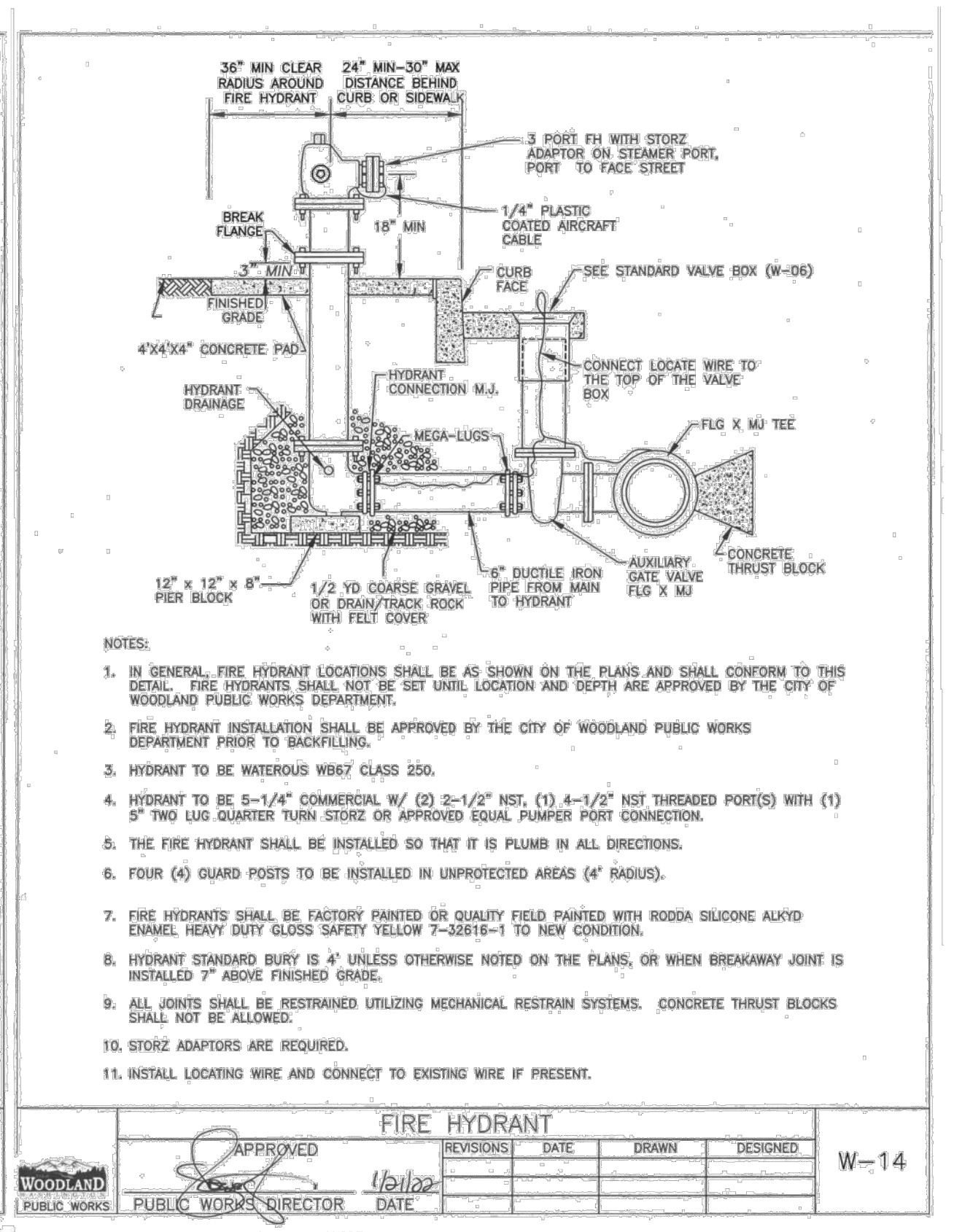
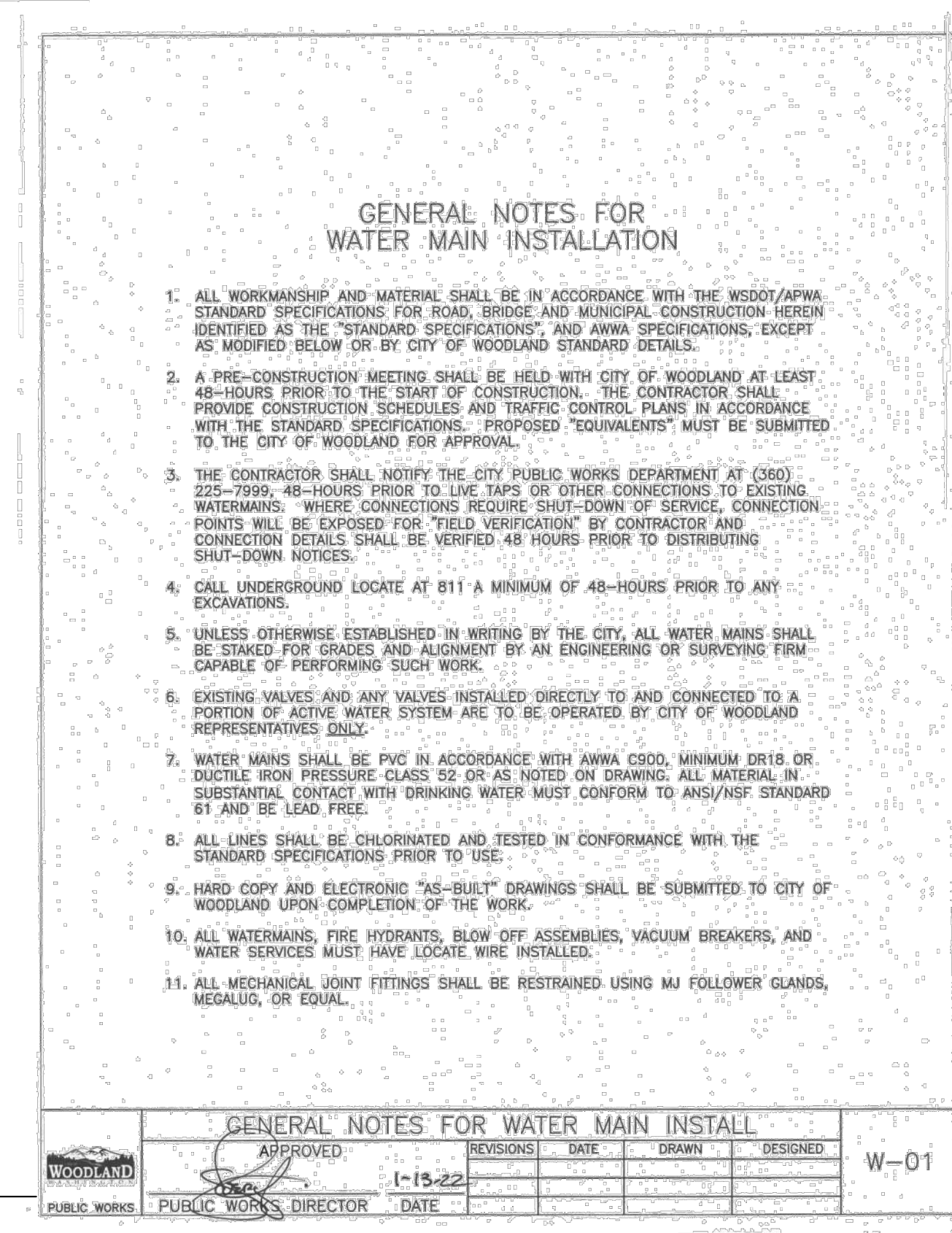
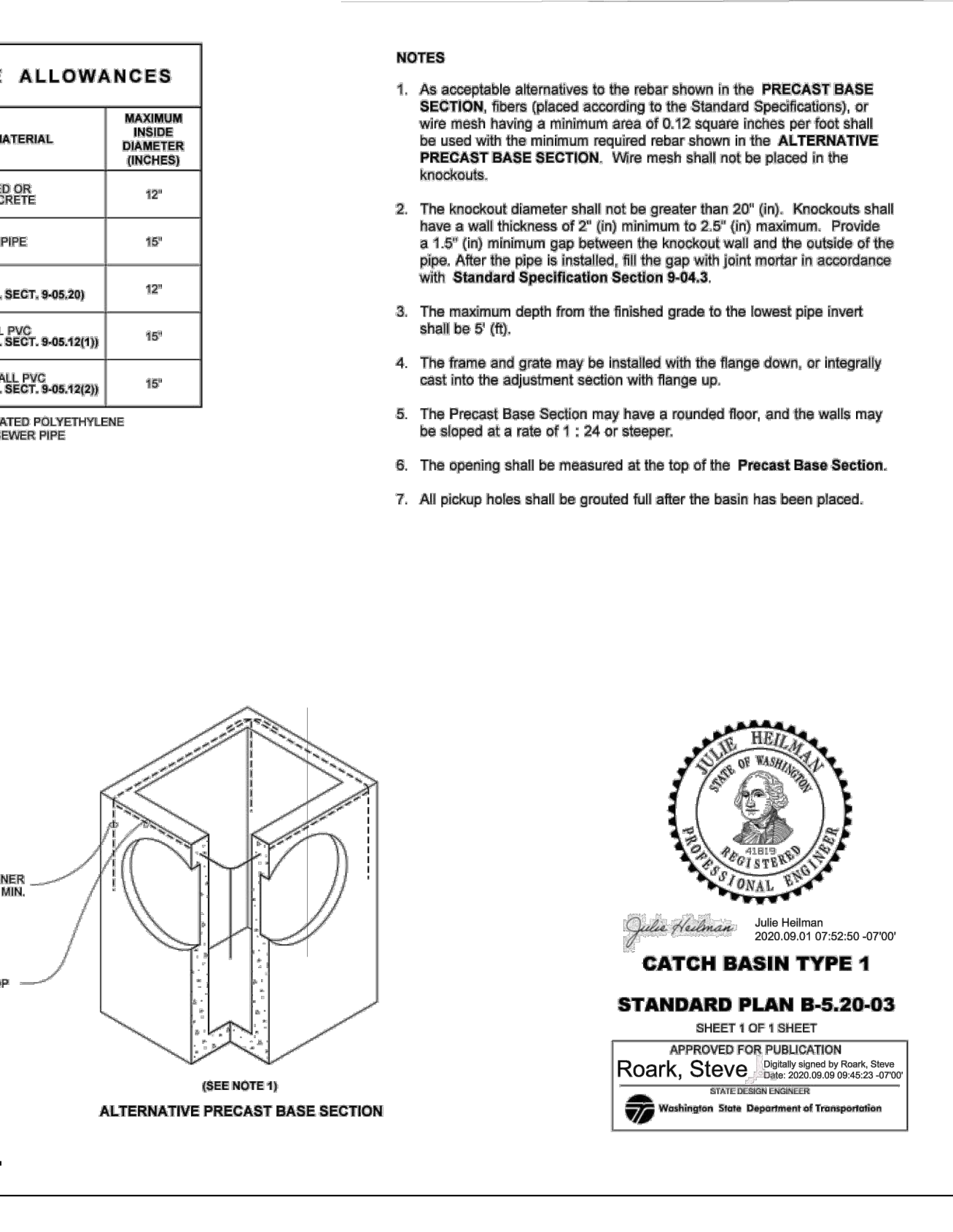
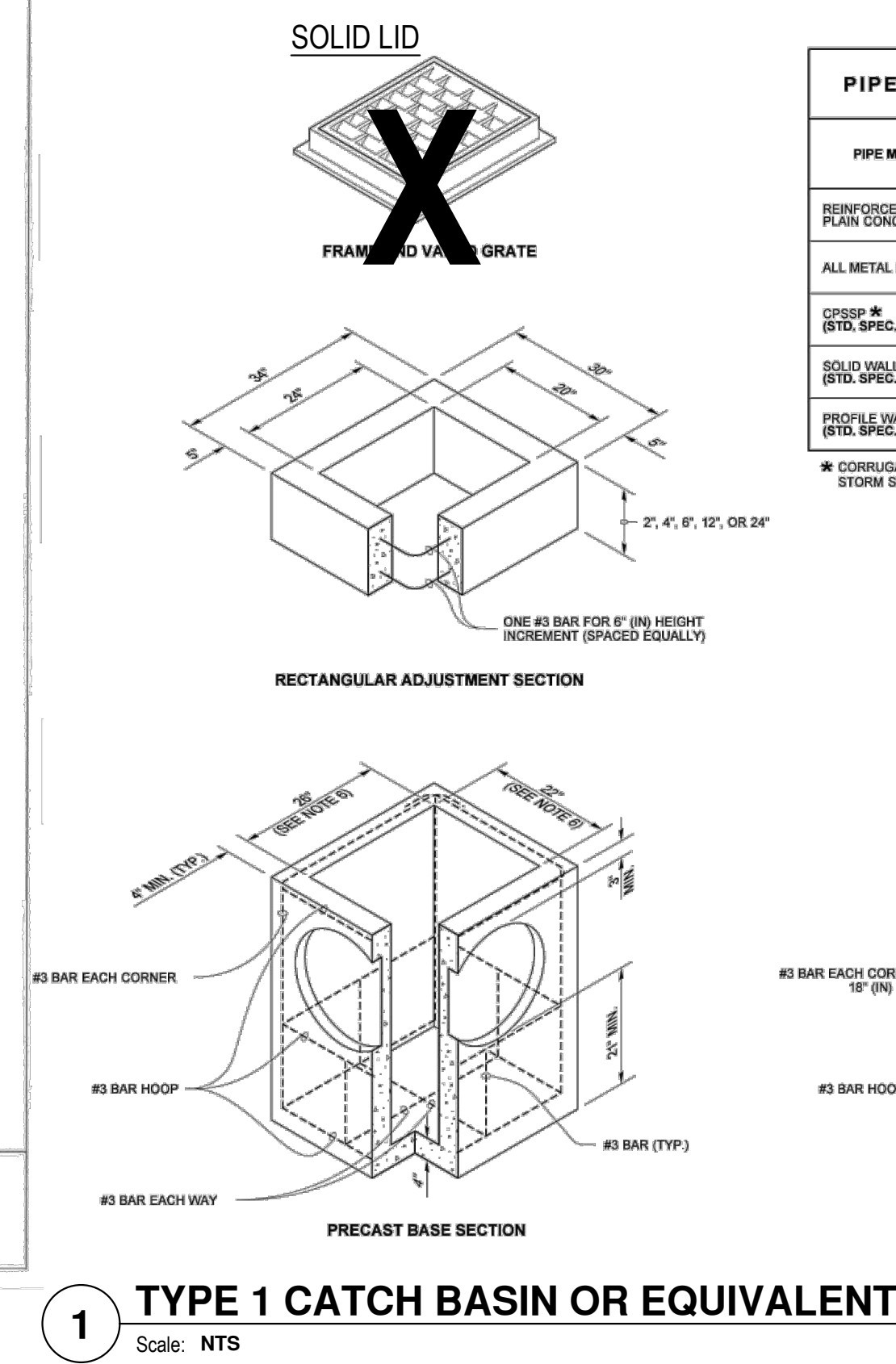
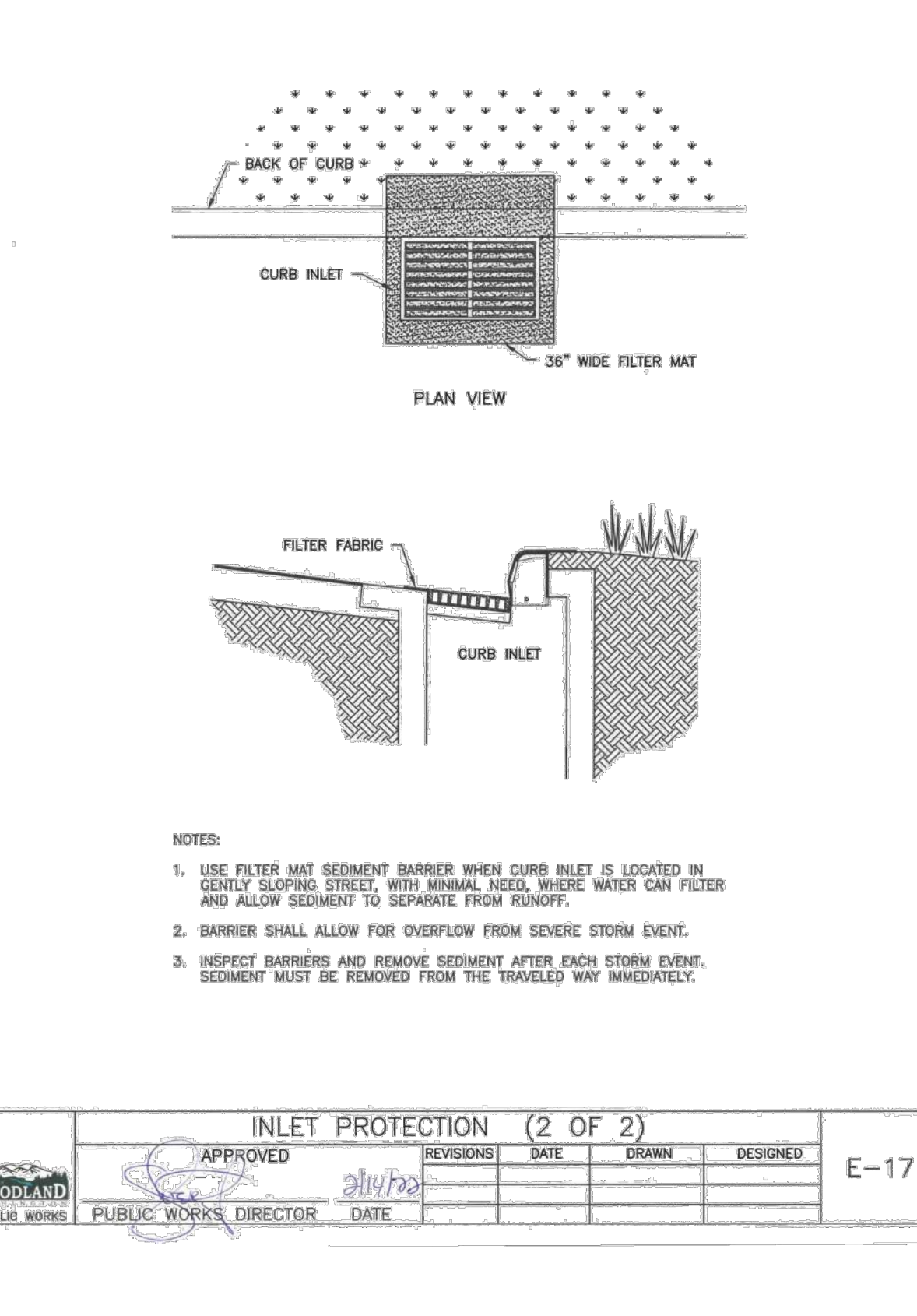
EROSION PREVENTION AND SEDIMENT CONTROL				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
WOODLAND PUBLIC WORKS				

STABILIZED CONSTRUCTION ENTRANCE				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
WOODLAND PUBLIC WORKS				

WHEEL WASH				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
WOODLAND PUBLIC WORKS				

SILT FENCE				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
WOODLAND PUBLIC WORKS				

INLET PROTECTION (1 OF 2)				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
WOODLAND PUBLIC WORKS				



**811**

Know what's below.  
Call before you dig.

CALL 2 BUSINESS DAYS BEFORE YOU DIG.  
CAUTION: UTILITY INFORMATION IS APPROXIMATE.  
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

1	
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LINE IS 1" ON FULL SCALE DRAWING

**WINDSOR ENGINEERS**

Vancouver, WA  
Duluth + Minneapolis, MN  
www.windsorengineers.com

Project No: 21065.1

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**TRAVIS W. TORJAMAN**

REGISTERED PROFESSIONAL ENGINEER

34472

08/15/2022

**BOZARTH MULTIFAMILY**

560 BOZARTH AVENUE  
WOODLAND, WA 98674

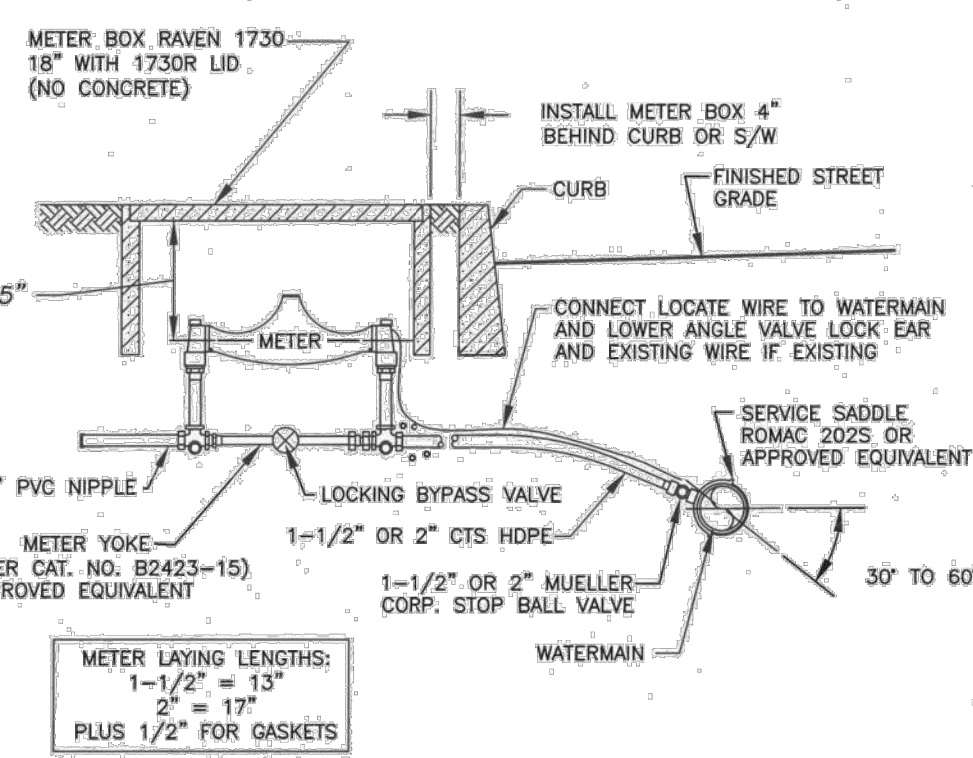
**ENGINEERING SET**

Issue Date: 2022/08/15

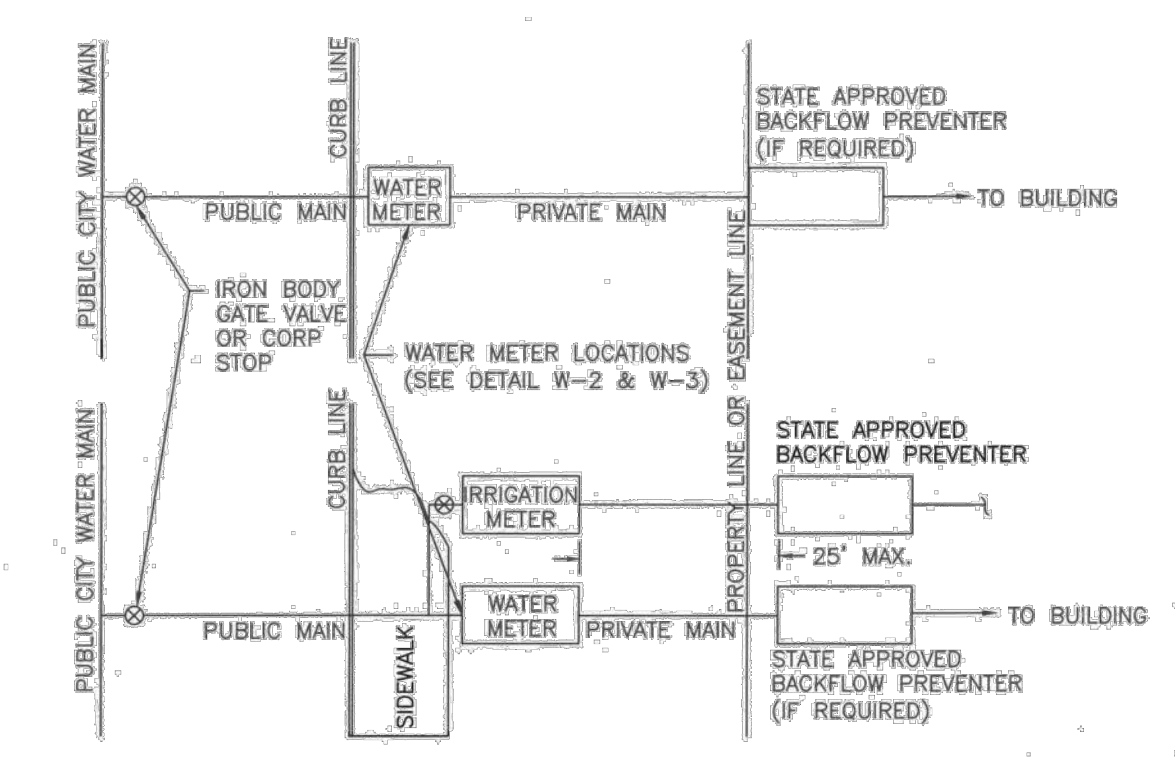
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Project Manager: DCK  
Drawn by: DCK  
Checked by: TWT

ISSUED FOR ENGINEERING SUBMITTAL ONLY



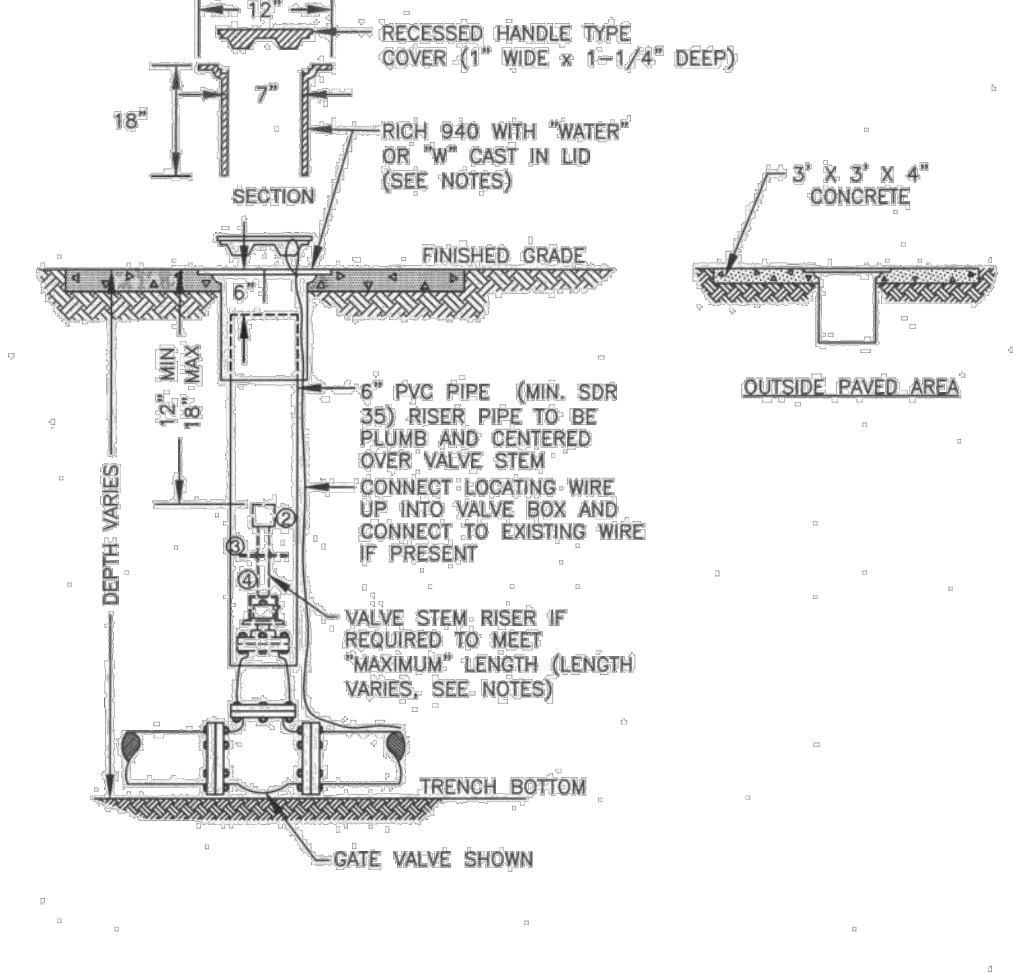
- NOTES:**
1. ALL DOMESTIC AND IRRIGATION METERS SHALL BE SUPPLIED, OWNED, AND INSTALLED BY THE CITY OF WOODLAND.
  2. PRIOR TO CITY INSTALLATION OF METERS, ALL SERVICE APPLICATIONS MUST BE COMPLETED AND APPROVED, SERVICE FEES PAID IN FULL AND AS-BUILTS SUBMITTED AND APPROVED.
  3. CONTRACTOR SHALL CONTACT THE CITY OF WOODLAND PUBLIC WORKS OFFICE (360) 225-7999 48-HOURS PRIOR TO INSTALLING ANY WATER SERVICE CONNECTIONS.
  4. METERS WILL NOT BE SET BY THE CITY PRIOR TO DISINFECTION OF THE MAIN AND SERVICE, AND PRIOR TO A SUCCESSFUL BACTERIOLOGICAL TEST.
  5. SERVICE LINES ON NEW WATERMANS SHALL BE PRESSURE TESTED UP TO THE LOCKING ANGLE BALL VALVE AS PART OF THE WATERMAIN TESTING.
  6. DURING THE PRESSURE TEST, THE MAIN SHALL BE OPEN FOR INSPECTION OF ALL CORPORATION STOPS.
  7. USE 1-7/8" BIT FOR ALL 2" SADDLE TAPS AND 1-3/8" BIT FOR 1-1/2" SADDLE TAPS.
  8. METER BOXES ARE NOT ALLOWED IN HARD SURFACED AREAS WITHOUT PRIOR WRITTEN APPROVAL. METER BOXES IN HARD SURFACE AREAS SHALL BE SLIGHTLY HIGHER (1/8" MAX) THAN SURROUNDING GRADE AND BOTH THE BOX AND LID MUST BE TRAFFIC RATED.
  9. 1 1/2" METER CAN BE INSTALLED IN A 2" SETTING WITH ADAPTORS.



- NOTES:**
1. ALL NON-SINGLE FAMILY DOMESTIC SERVICES SHALL BE TAPPED SEPARATELY FROM ANY FIRE PROTECTION AND FIRE HYDRANT LEAD PIPING.
  2. ALL IRRIGATION METERS SHALL BE PER APPROVED PLAN.
  3. IRRIGATION METERS SHALL BE PLACED IN A STANDARD METER BOX WITH READER LID ACCORDING TO METER SIZE (SEE DETAIL W-02 & W-03).
  4. EXCEPTIONS TO THESE REQUIREMENTS MAY BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL.
  5. IRRIGATION METERS WILL BE READ DURING REGULAR BILLING CYCLES.

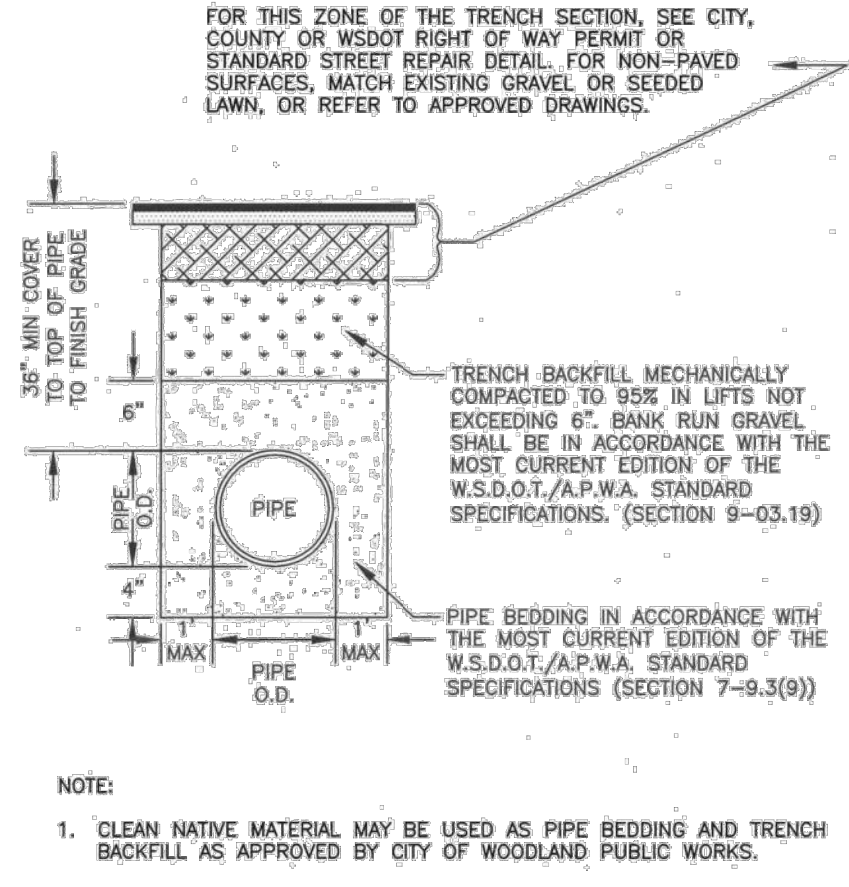
1-1/2" AND 2" WATER SERVICE				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
W-03		1/2/22	al/22	W-03

STANDARD METER LOCATIONS				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
W-04		1/2/22	al/22	W-04



- NOTES:**
1. VALVE STEM EXTENSION TO INCLUDE THE FOLLOWING WELDS TO BE 1/4" FILLET WELD ALL AROUND.
  2. VALVE OPERATING NUT OR 1-7/8" x 1-7/8" x 2" HIGH GRADE STEEL.
  3. 3/16" THICK x 5-1/8" DIA STEEL GUIDE PLATE SHAFT.
  4. 2" x 2" x 3/16" SQUARE STRUCTURAL STEEL TUBING TO FIT OPERATING NUT.
  5. FOR NEW VALVES IN EXISTING STREET, RESTORE PAVEMENT PER CITY OF WOODLAND STANDARDS.

STANDARD VALVE BOX AND COVER				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
W-06		1/2/22	al/22	W-06



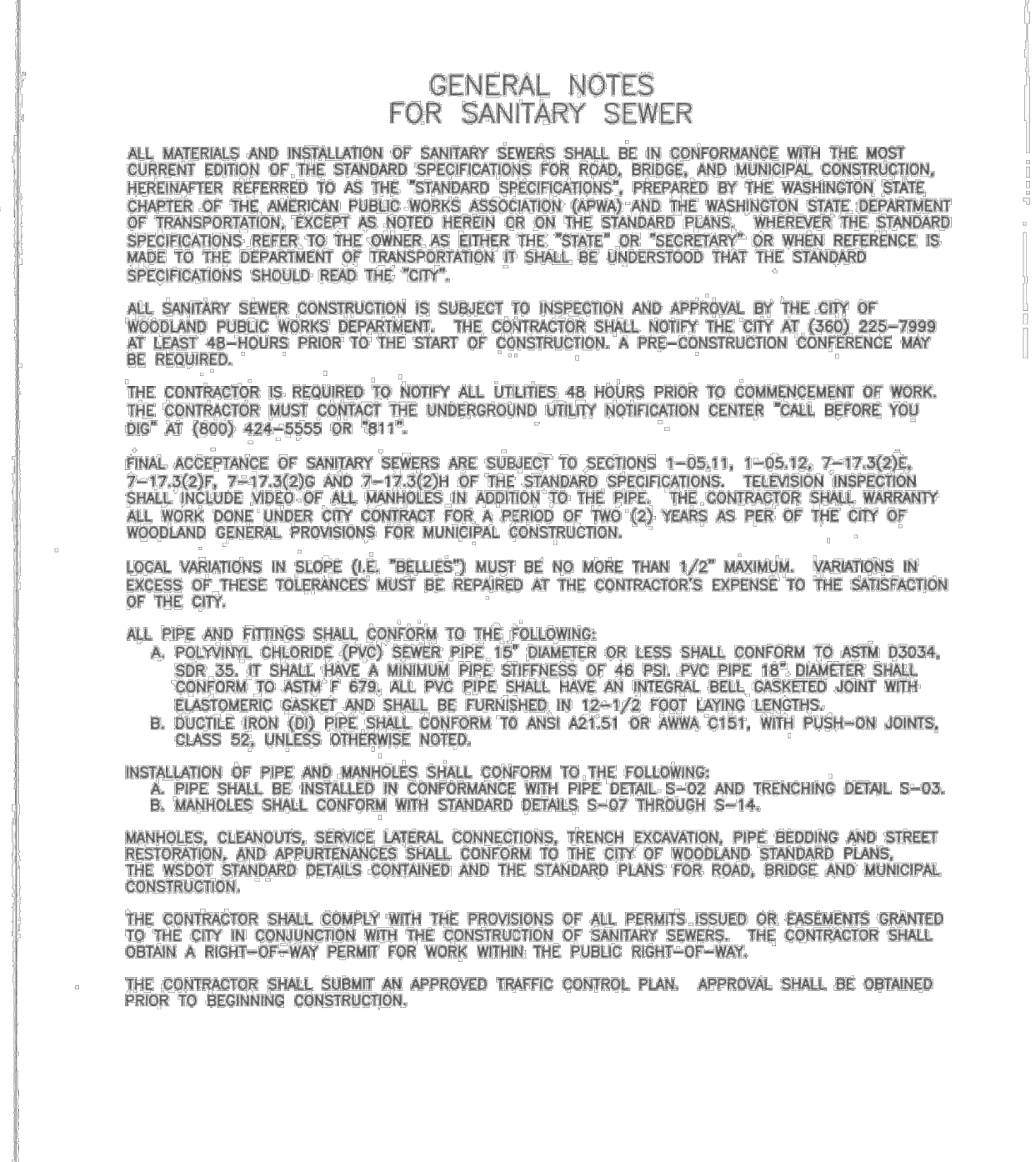
- NOTE:**
1. CLEAN NATIVE MATERIAL MAY BE USED AS PIPE BEDDING AND TRENCH BACKFILL AS APPROVED BY CITY OF WOODLAND PUBLIC WORKS.

WATER PIPE TRENCH BEDDING & BACKFILL				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
W-13		1/2/22	al/22	W-13

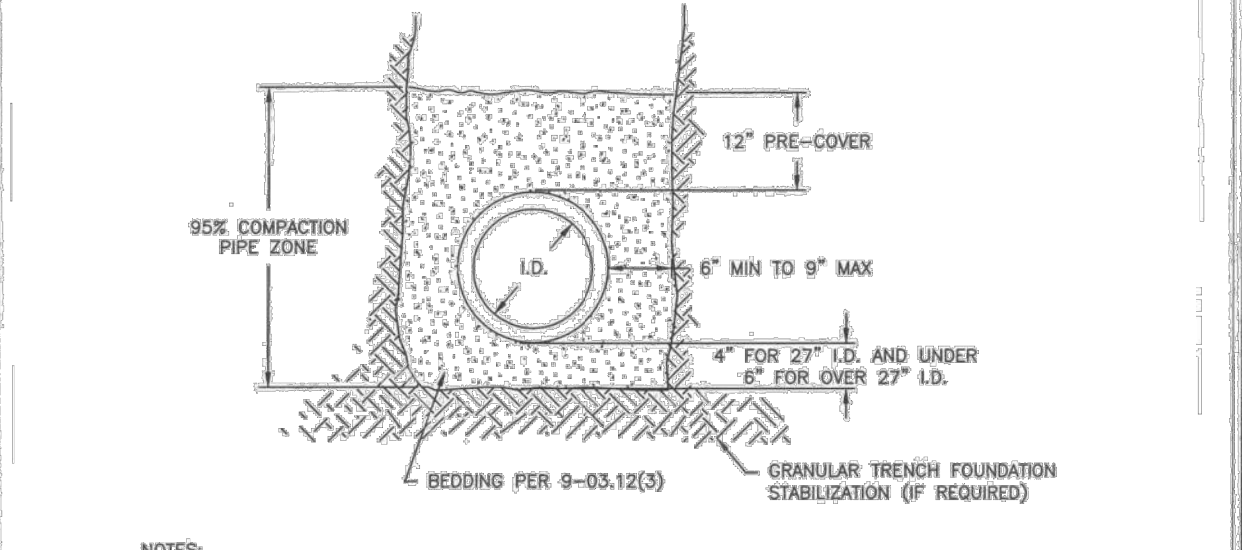
**GENERAL NOTES FOR BACKFLOW PROTECTION**

1. ALL REDUCED PRESSURE AND BACKFLOW DEVICES SHALL BE WASHINGTON STATE APPROVED, PER WAQ 246-290.
  2. FIRE SPRINKLER AND IRRIGATION SYSTEMS SHALL BE PROTECTED WITH STATE APPROVED BACKFLOW PROTECTION AS DESCRIBED IN WAQ 246-290. IRRIGATION SYSTEMS ARE PROTECTED COMMENSURATE WITH THE DEGREE OF HAZARD AS DEFINED BELOW:
    - A. HIGH HEALTH HAZARD - IS ASSESSED TO ANY IRRIGATION SYSTEM THAT CONTAINS PUMPS OR INFECTORS FOR THE ADDITION OF CHEMICALS. THIS RISK ASSESSMENT IS ALSO BASED ON THE ADDITIONAL HAZARD POSED BY BACTERIAL CONTAMINANTS FOUND ON LAWNS, AND ON THE POSSIBILITY OF CHANGES BEING MADE TO THE IRRIGATION SYSTEM BY THE CUSTOMER. AN APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY, OR AN APPROVED AIR GAP SEPARATION, SHALL BE REQUIRED IN ALL CASES WHERE MEANS ARE PROVIDED FOR CHEMICALS OR HERBICIDES TO BE INJECTED INTO THE IRRIGATION SYSTEM, OR WHERE AN AUXILIARY SUPPLY IS ALSO PROVIDED FOR IRRIGATION WATER.
    - B. LOW HEALTH HAZARD - IS ASSESSED TO ALL IRRIGATION SYSTEMS NOT OTHERWISE ASSESSED AS A HIGH HEALTH HAZARD. THIS RISK ASSESSMENT IS BASED ON THE HAZARD POSED BY BACTERIAL AND CHEMICAL CONTAMINANTS FOUND ON LAWNS, AND ON THE POSSIBILITY OF CHANGES BEING MADE TO THE IRRIGATION SYSTEM BY THE CUSTOMER. AN APPROVED DOUBLE CHECK VALVE ASSEMBLY IS REQUIRED.
  3. ALL COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY FACILITIES SHALL BE PROTECTED WITH WASHINGTON STATE APPROVED BACKFLOW PROTECTION.
  4. FURTHER BACKFLOW PREVENTION SHALL BE REQUIRED BY THE CITY OF WOODLAND DEPENDENT UPON ACTIVITY (BOILERS, CHILLERS, CHEMICAL ADDITION, BOOSTER PUMPS, WELLS, MEDICAL EQUIP., SODA POP MACHINES, ETC.).
  5. ALL HOSEBIDS SHALL BE PROTECTED WITH VACUUM BREAKERS.
  6. IF A WELL IS NOW EXISTING ON-SITE OR IS DRILLED IN THE FUTURE, A REDUCED PRESSURE BACKFLOW ASSEMBLY WILL BE REQUIRED AT EACH METER.
  7. WHERE A WALL IS REQUIRED, A GALL. STEEL WALL MOUNTED CHAMBER LADDER W/EXTENSIONS IS REQUIRED AND SHALL BE CENTERED UNDER THE ACCESS DOOR.
  8. DOUBLE CHECK ASSEMBLIES SHALL BE INSTALLED IN EITHER AN APPROVED VALVE INSIDE THE BUILDING IN A MAINTAINABLE LOCATION.
  9. REDUCED PRESSURE ASSEMBLIES SHALL BE INSTALLED EITHER OUTSIDE ABOVE GROUND OR INSIDE THE BUILDING.
  10. ALL BACKFLOW DEVICES SHALL BE PROTECTED FROM FREEZING.
  11. BACKFLOW PREVENTION ASSEMBLY VAULTS (I.E. FIRE AND SERVICE PROTECTION) MUST BE INSTALLED AT THE CUSTOMER'S SIDE OF THE EASEMENT OR PROPERTY LINE. ALTERNATE LOCATIONS MUST BE REQUESTED IN WRITING AND APPROVED BY CITY OF WOODLAND PUBLIC WORKS PRIOR TO INSTALLATION.
  12. NO PART OF BACKFLOW PREVENTION ASSEMBLY SHALL BE SUBMERGED IN WATER OR INSTALLED IN A LOCATION SUBJECT TO FLOODING. IF A BACKFLOW PREVENTION ASSEMBLY IS INSTALLED IN A VAULT OR BASEMENT, ADEQUATE DRAINAGE OR DEWATERING SHALL BE PROVIDED.
  13. ALL FIRE PROTECTION SERVICES SHALL HAVE A IRON BODY GATE VALVE AT THE PUBLIC MAIN AND SHALL BE PRIVATE AFTER THAT VALVE.
  14. ALL DOMESTIC SERVICES WITH BACKFLOW PROTECTION SHALL BE PRIVATE AFTER THE DOMESTIC WATER METER.
  15. BACKFLOW PREVENTION DEVICES SHALL BE TESTED AFTER INSTALLATION PRIOR TO ACCEPTANCE AND ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. A PARTIAL LIST OF WASHINGTON STATE APPROVED TESTERS IS AVAILABLE UPON REQUEST. TEST RESULTS SHALL BE SENT TO THE CITY OF WOODLAND PUBLIC WORKS DEPARTMENT.
- MAIL TEST RESULTS TO: CITY OF WOODLAND PUBLIC WORKS P.O. BOX 9 WOODLAND, WA 98674  
 EMAIL TEST RESULTS TO: PWCLEKRC@WOODLAND.WA.GOV  
 FAX TEST RESULTS TO: 360-225-7336

GENERAL NOTES FOR BACKFLOW PROTECTION				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
W-07		1/2/22	al/22	W-07

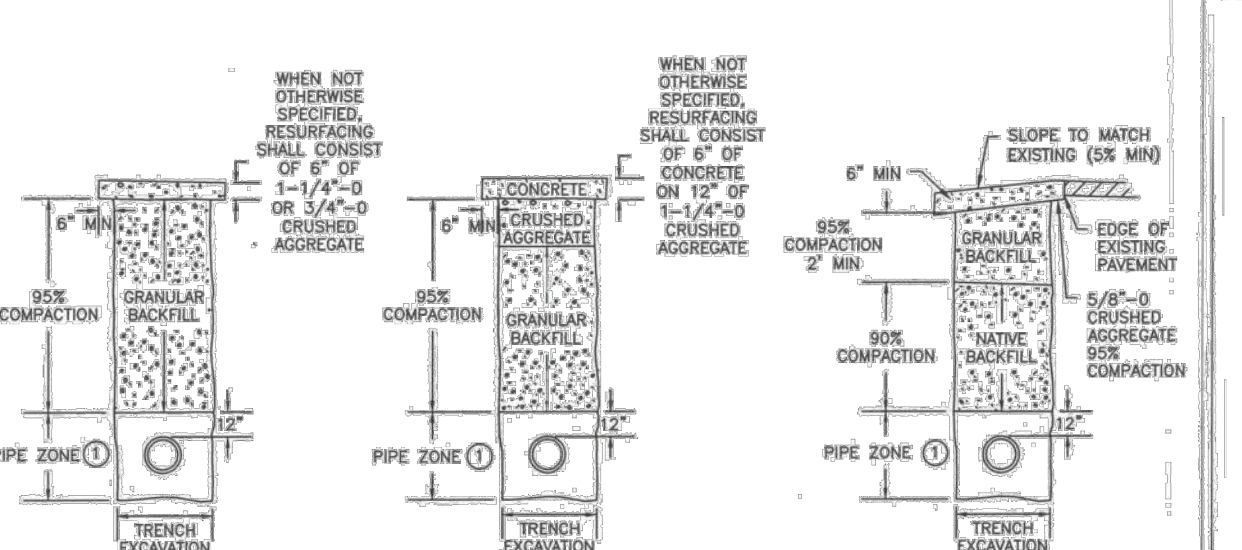


GENERAL NOTES FOR SANITARY SEWER				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
S-01		2/1/22	al/22	S-01



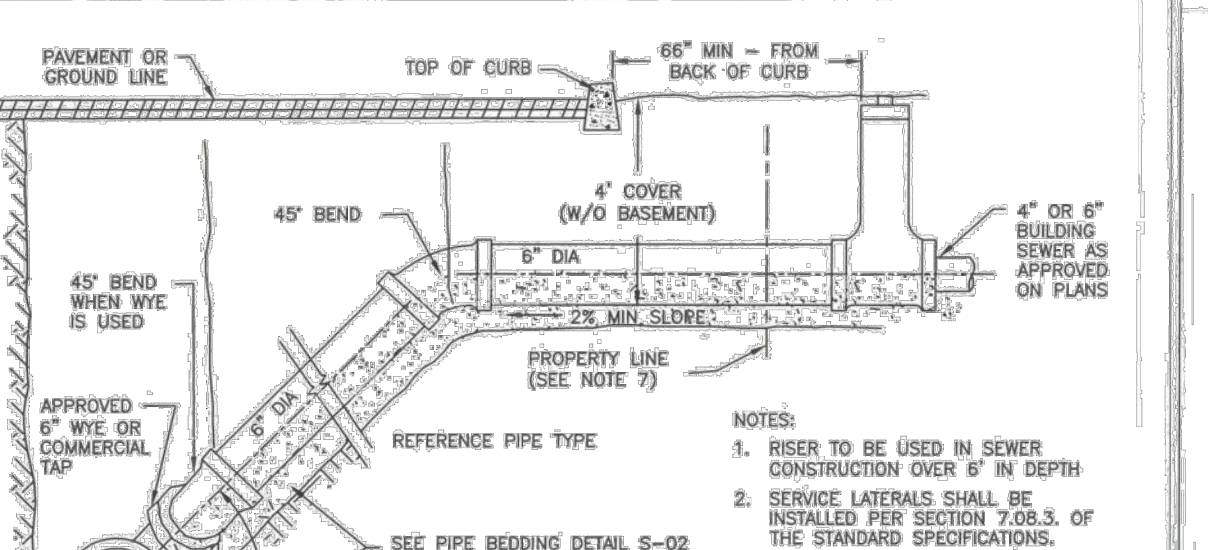
- NOTES:**
1. WHERE DIRECTED BY THE ENGINEER GRANULAR TRENCH FOUNDATION STABILIZATION SHALL BE PLACED PRIOR TO PLACEMENT OF THE BEDDING. SIZE AND DEPTH ARE DEPENDENT ON SOIL CONDITIONS.
  2. BEDDING AND BACKFILL MATERIALS IN THE PIPE ZONE SHALL BE COMPACTED AS SPECIFIED PRIOR TO BACKFILLING THE REMAINDER OF THE TRENCH.
  3. FOR ROCK AND OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVER-EXCAVATED A MINIMUM OF 6" AND REFILLED WITH GRANULAR MATERIALS AS DIRECTED BY THE ENGINEER.
  4. BACKFILL AND COMPACTION ABOVE THE PIPE ZONE SHALL BE AS SHOWN IN TRENCHING DETAIL S-03.
  5. PVC PIPE INSTALLATION SHALL CONFORM TO UNIBELL PLASTIC PIPE ASSOCIATION STANDARD SPEC. UNH-5-5 (LATEST EDITION) EXCEPT AS NOTED.
  6. FINAL INSTALLATION TO BE TESTED PER SECTION 7-17.3 OF THE STANDARD SPECIFICATIONS.
  7. ALTERNATIVE PRE-COVER MATERIALS ARE ALLOWABLE FROM PIPE CENTERLINE TO ONE FOOT ABOVE THE TOP OF PIPE. ALTERNATIVE PRE-COVER MATERIALS MUST BE PRE-APPROVED BY THE INSPECTOR AND MAY BE SAND, CRUSHER SCREENINGS, GRAVEL, OR OTHER CLEAN GRANULAR MATERIAL CONTAINING NO ROCK LARGER THAN 1-1/4" IN LENGTH.
  8. APPROVAL FOR ALTERNATE MATERIALS WILL BE GRANTED UPON CONFIRMATION BY TEST OF ITS COMPLIANCE WITH THESE REQUIREMENTS. SUBMIT 50 LB SAMPLE FOR TESTING TO THE CITY INSPECTOR AND OBTAIN MATERIAL PRIOR TO STARTING PIPE INSTALLATION WORK. THE TEST REQUIRES A MINIMUM OF FIVE BUSINESS DAYS TO COMPLETE.
  9. TRENCH WIDTH SHALL NOT EXCEED ONE AND ONE-HALF THE INSIDE DIAMETER OF THE PIPE PLUS 18" AT THE TOP OF THE PIPE ZONE. ANY SUBSEQUENCE OF SURROUNDING PAVEMENT DUE TO TRENCHING SHALL BE EXCAVATED BEYOND ORIGINAL PAVEMENT OR TRENCH LIMITS AND REPAIRED TO SATISFACTION OF THE CITY OF WOODLAND.
  10. NATIVE MATERIAL MAY BE USED OUTSIDE OF THE ROAD PRISM FOR DUCTILE IRON IN LIEU OF IMPORTED MATERIAL FOR BEDDING SPECIFIED, PROVIDED THAT THE NATIVE MATERIAL CONFORMS TO SECTION 9-03.13 OF THE STANDARD SPECIFICATIONS, AND AS APPROVED BY THE CITY OF WOODLAND. THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE NATIVE MATERIAL TO THE CITY OF WOODLAND AT LEAST 72-HOURS PRIOR TO USE. THE CITY MAY APPROVE, REJECT, OR REQUIRE LABORATORY TESTING OF THE MATERIAL.

PIPE BEDDING				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
S-02		2/1/22	al/22	S-02



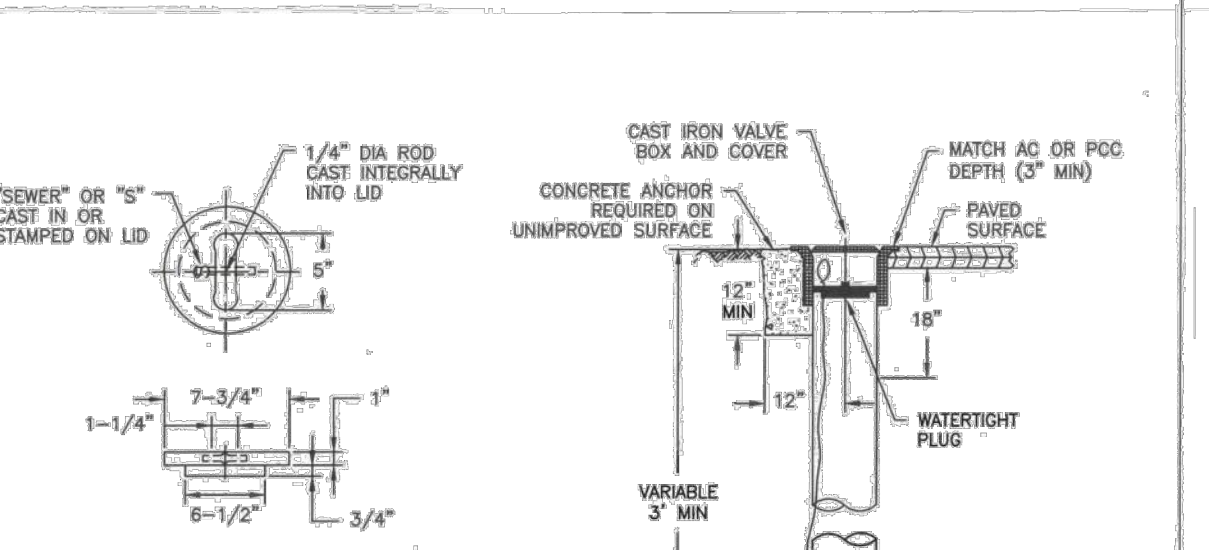
- NOTES:**
1. FOR PIPE ZONE BEDDING, BACKFILL AND COMPACTION REQUIREMENTS, SEE PIPE BEDDING DETAIL S-02.
  2. COMPACTION PERCENTAGES REFER TO RELATIVE DRY DENSITY AS DETERMINED BY STANDARD PROCTOR (ASTM 9 698)
  3. CONTRACTOR MAY USE UP TO 2-1/2" OF 5/8"-0 OR 3/4"-0 CRUSHED AGGREGATE IN LIEU OF 1-1/4"-0 BASE ROCK UNDER SURFACING FOR LEVELING COURSE.
  4. ALL EXISTING PAVED SURFACES SHALL BE SAW CUT A MINIMUM OF 6" OUTSIDE OF EDGE OF TRENCH TO PROVIDE A NEAT STRAIGHT EDGE.
  5. THE EDGES OF ALL EXISTING ASPHALT SURFACES SHALL BE CLEANED AND A TACK COAT SHALL BE APPLIED PER STD. SECTION 9-04.50. ALL JOINTS SHALL BE SEALED WITH TACK AND SAND.
  6. ALL BACKFILL SHALL BE MECHANICALLY COMPACTED IN LIFTS WHICH DO NOT EXCEED RATED CAPABILITY OF EQUIPMENT USED, BUT IN NO CASE EXCEED 12" LOOSE.
  7. GRANULAR BACKFILL SHALL MEET REQUIREMENTS OF SECTION 9-03.10 UNLESS OTHERWISE SPECIFIED.

TRENCH: RESTORE, BACKFILL, BEDDING, SURFACING				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
S-03		2/1/22	al/22	S-03



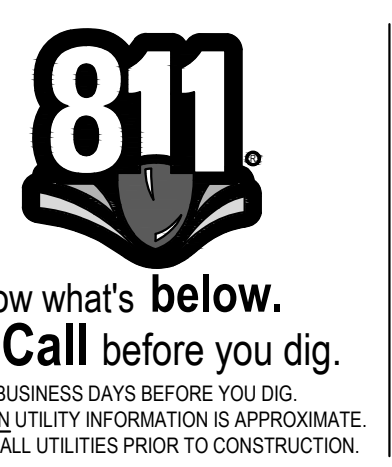
- NOTES:**
1. RISER TO BE USED IN SEWER CONSTRUCTION OVER 6" IN DEPTH
  2. SERVICE LATERALS SHALL BE INSTALLED PER SECTION 7-08.3, OF THE STANDARD SPECIFICATIONS.
  3. SERVICE LATERALS SHALL BE PLUGGED PER SECTION 7-08.3(2)(f) OF THE STANDARD SPECIFICATIONS. SERVICE LATERALS SHALL BE CLEARLY MARKED PER SECTION 7-18.1(5) OF THE STANDARD SPECIFICATIONS.
  4. ALL SERVICE LATERALS SHALL BE 3034 PVC AND A MINIMUM OF 6" IN DIAMETER.
  5. APPROVED COMMERCIAL TAPS:
    - SEALTIGHT TYPE "U" OR "E"
    - SEWER SADDLE
    - ROMAC STYLE "CB" SEWER SADDLE
    - "INSERTA TEE"
  6. TRANSITIONS BETWEEN DISSIMILAR PIPE MATERIALS OR SIZES SHALL BE MADE WITH APPROVED ADAPTORS (FERRODO, CHALLENGER, OR APPROVED EQUAL).
  7. IN NEW SUBDIVISIONS AND OTHER CONSTRUCTION INVOLVING NEW ROADS, INSTALL LATERALS TO 6" BEYOND PROPERTY LINE FOR SEWERS IN STREET RIGHT-OF-WAY. INSTALL TWO WAY CLEANOUT BEHIND SIDEWALK.
  8. FOLLOWING TAPPING OF MAINS FOR LATERALS, CONTRACTOR SHALL TRY THE MAIN TO VERIFY THAT THE TAP WAS PROPERLY MADE AND IS NOT PROTRUDING INTO THE PIPE. A VIDEO TAPE OR DVD/CD OF THE TAP SHALL BE SUBMITTED TO THE CITY FOR APPROVAL OF THE TAP.

SERVICE LATERAL CONNECTIONS				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
S-04		2/1/22	al/22	S-04



- NOTES:**
1. RISER TO BE USED IN SEWER CONSTRUCTION OVER 6" IN DEPTH
  2. SERVICE LATERALS SHALL BE INSTALLED PER SECTION 7-08.3, OF THE STANDARD SPECIFICATIONS.
  3. SERVICE LATERALS SHALL BE PLUGGED PER SECTION 7-08.3(2)(f) OF THE STANDARD SPECIFICATIONS. SERVICE LATERALS SHALL BE CLEARLY MARKED PER SECTION 7-18.1(5) OF THE STANDARD SPECIFICATIONS.
  4. ALL SERVICE LATERALS SHALL BE 3034 PVC AND A MINIMUM OF 6" IN DIAMETER.
  5. APPROVED COMMERCIAL TAPS:
    - SEALTIGHT TYPE "U" OR "E"
    - SEWER SADDLE
    - ROMAC STYLE "CB" SEWER SADDLE
    - "INSERTA TEE"
  6. TRANSITIONS BETWEEN DISSIMILAR PIPE MATERIALS OR SIZES SHALL BE MADE WITH APPROVED ADAPTORS (FERRODO, CHALLENGER, OR APPROVED EQUAL).
  7. IN NEW SUBDIVISIONS AND OTHER CONSTRUCTION INVOLVING NEW ROADS, INSTALL LATERALS TO 6" BEYOND PROPERTY LINE FOR SEWERS IN STREET RIGHT-OF-WAY. INSTALL TWO WAY CLEANOUT BEHIND SIDEWALK.
  8. FOLLOWING TAPPING OF MAINS FOR LATERALS, CONTRACTOR SHALL TRY THE MAIN TO VERIFY THAT THE TAP WAS PROPERLY MADE AND IS NOT PROTRUDING INTO THE PIPE. A VIDEO TAPE OR DVD/CD OF THE TAP SHALL BE SUBMITTED TO THE CITY FOR APPROVAL OF THE TAP.

SEWER CLEANOUT				
APPROVED	REVISIONS	DATE	DRAWN	DESIGNED
S-16		2/1/22	al/22	S-16



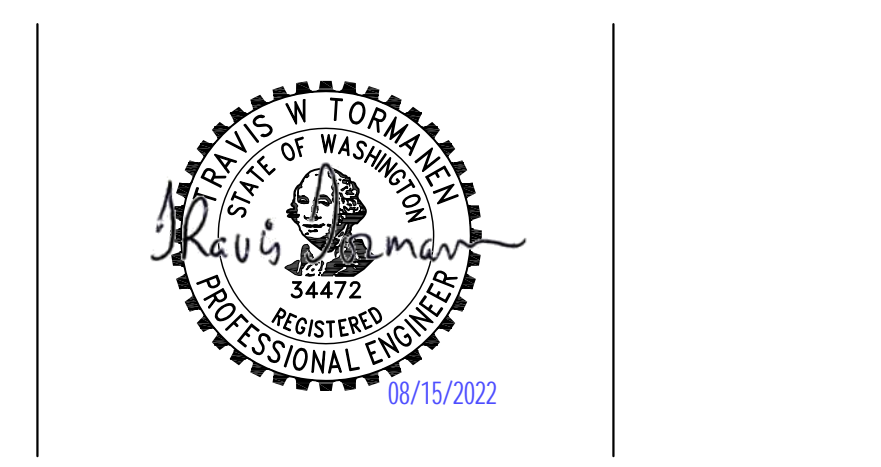
Revisions:

NO.	DATE	DESCRIPTION
1	2/1/22	al/22

LINE IS 1" ON FULL SCALE DRAWING

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**BOZARTH MULTIFAMILY**

560 BOZARTH AVENUE  
 WOODLAND, WA 98674

**ENGINEERING SET**  
 Issue Date: 2022/08/15

**DETAILS**

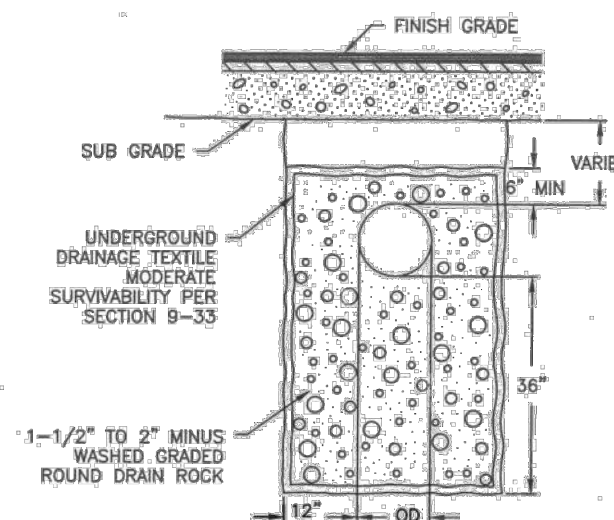
Project Manager: DCK  
 Drawn by: DCK  
 Checked by: TWT

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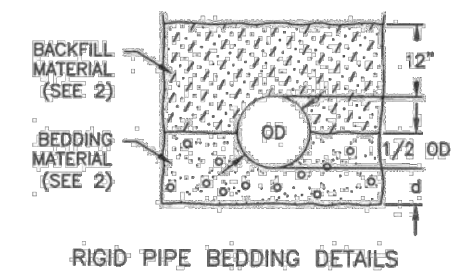
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**GENERAL NOTES FOR STORM SEWERS**

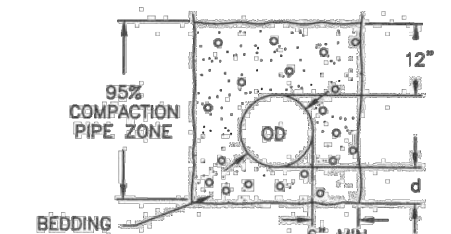
- ALL MATERIALS AND INSTALLATION OF STORM SEWERS AND DRAINAGE SYSTEMS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS IN THE CITY OF WOODLAND'S LATEST VERSION OF STANDARD DETAILS, THE PUBLIC WORKS ENGINEERING STANDARDS, AND THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA) AND THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, WHERE THE CITY OF WOODLAND REQUIREMENTS SHALL TAKE PRECEDENCE. WHEREVER THE STANDARD SPECIFICATIONS REFER TO THE OWNER AS EITHER THE "STATE" OR "SECRETARY" OR WHEN REFERENCE IS MADE TO THE DEPARTMENT OF TRANSPORTATION IT SHALL BE UNDERSTOOD THAT THE STANDARD SPECIFICATIONS SHOULD READ "CITY".
- ALL STORM SEWER AND DRAINAGE SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE CITY OF WOODLAND'S PUBLIC WORKS DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS OFFICE (360) 225-7999 AT LEAST 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION. THE CITY MAY REQUIRE THAT A PRECONSTRUCTION CONFERENCE BE HELD.
- THE CONTRACTOR IS REQUIRED TO NOTIFY ALL UTILITIES 48 HOURS PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MAY CONTACT THE UTILITY NOTIFICATION CENTER BY DIALING 811 IN LIEU OF CONTACTING INDIVIDUAL UTILITIES.
- IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO PROCURE AND COMPLY WITH THE PROVISIONS OF ALL APPLICABLE PERMITS, EASEMENTS, LICENSES AND CERTIFICATES IN CONJUNCTION WITH THE CONSTRUCTION OF STORM SEWERS AND DRAINAGE SYSTEMS. COMPLIANCE SHALL BE AT ALL LEVELS: FEDERAL, STATE, AND CITY, RELATING TO THE PERFORMANCE OF THIS WORK. THE CONTRACTOR SHALL OBTAIN A STREET CUT PERMIT FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- THE CONTRACTOR SHALL OBTAIN AND SUBMIT AN APPROVED TRAFFIC CONTROL PLAN PRIOR TO BEGINNING CONSTRUCTION. THE PLAN SHALL BE APPROVED BY THE PUBLIC WORKS DIRECTOR.
- ALL EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND EROSION CONTROL DETAILS, PRIOR TO START OF ANY CONSTRUCTION OR LAND DISTURBING ACTIVITY.
- THE DEVELOPER OR CONTRACTOR SHALL OBTAIN ALL OFFSITE CONSTRUCTION/EASEMENTS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THAT ALL OFFSITE UTILITIES/EASEMENTS HAVE BEEN OBTAINED BY THE OWNER PRIOR TO THE COMMENCEMENT OF ANY OFFSITE CONSTRUCTION.
- THE CONTRACTOR IS TO VERIFY AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER. ITEMS TO VERIFY INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
  - INVERT AND TOP ELEVATIONS OF EXISTING STORM SEWERS
  - CENTERLINE AND TOP OF CURB ELEVATIONS
- WATER QUALITY DEVICES WILL BE INSTALLED AND FUNCTIONING PRIOR TO COMMENCING WITH INSTALLATION OF PAVEMENT FOR ALL AREAS DRAINING INTO THE WATER QUALITY SYSTEM. VEGETATION IN BIO-FILTRATION SWALE AND POND SYSTEMS SHALL BE ESTABLISHED AND MECHANICAL DEVICES AND FILTER MEDIA SHALL BE INSTALLED. SWALES AND FILTER STRIPS WILL BE SEEDED WITH AN APPROVED SEED MIX, PER THE WESTERN WASHINGTON MANUAL. TURF IS ALLOWED FOR VEGETATED FILTERS PROVIDED THE TURF AREA IS OVERSEEDDED WITH THE EQUIVALENT GRASS SEED MIX.
- ALL CATCH BASINS SHALL BE STENCILED: "PROTECT STREAMS" OR "PROTECT GROUNDWATER."
- ROOF DOWNSPOUT RUNOFF MUST BE RETAINED ON EACH SPECIFIC SITE. DOWNSPOUTS SHALL NOT DRAIN TO THE STREET OR ANY ADJACENT PROPERTIES UNLESS SPECIFIC APPROVAL HAS BEEN SHOWN ON APPROVED CIVIL ENGINEERING PLANS.
- THE CONTRACTOR WILL PROVIDE A TELEVISION REPORT, TAPE, AND TABULAR AS-BUILT OF ALL PUBLIC STORM MAINS AND LATERALS PRIOR TO PAVING. THIS INFORMATION WILL BE SUBMITTED TO THE CITY INSPECTOR FOR REVIEW. APPROVAL AND ACCEPTANCE OF THE TV INSPECTION WILL BE BASED UPON MANUFACTURING AND INSTALLATION DETAILS, AS WELL AS RESULTS IN THE LINES. FINAL ACCEPTANCE AND CONSTRUCTION OF STORM SEWERS ARE SUBJECT TO INSPECTION AND TESTING IN ACCORDANCE WITH SECTIONS 1-05.11, 1-05.12, AND 7-04.3 OF THE STANDARD SPECIFICATIONS.



STANDARD PERFORATED PIPE SECTION  
STORM SEWER TRENCH - MAIN LINE ONLY  
(ALL LATERALS TO BE NON-PERFORATED)



RIGID PIPE BEDDING DETAILS

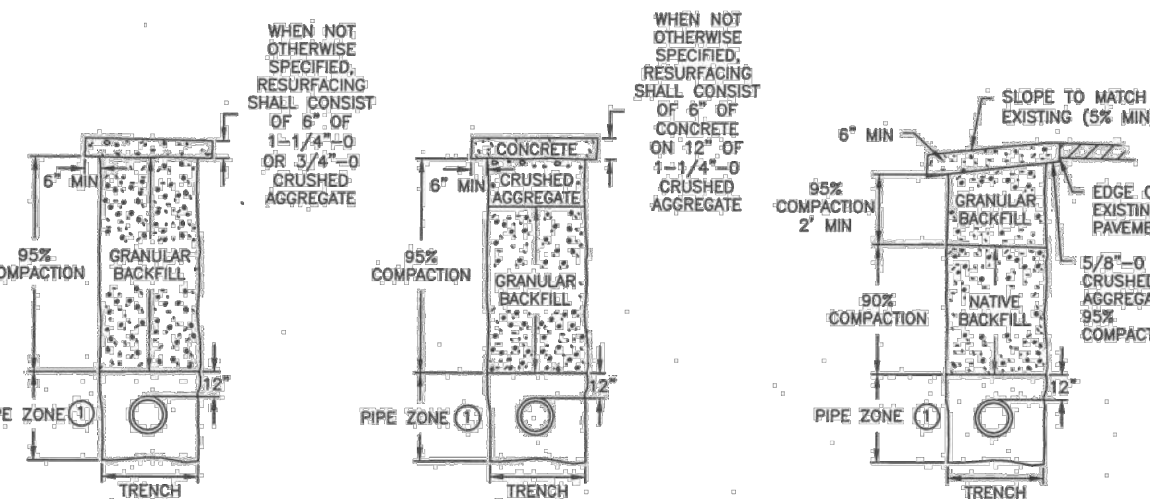


FLEXIBLE PIPE BEDDING DETAILS

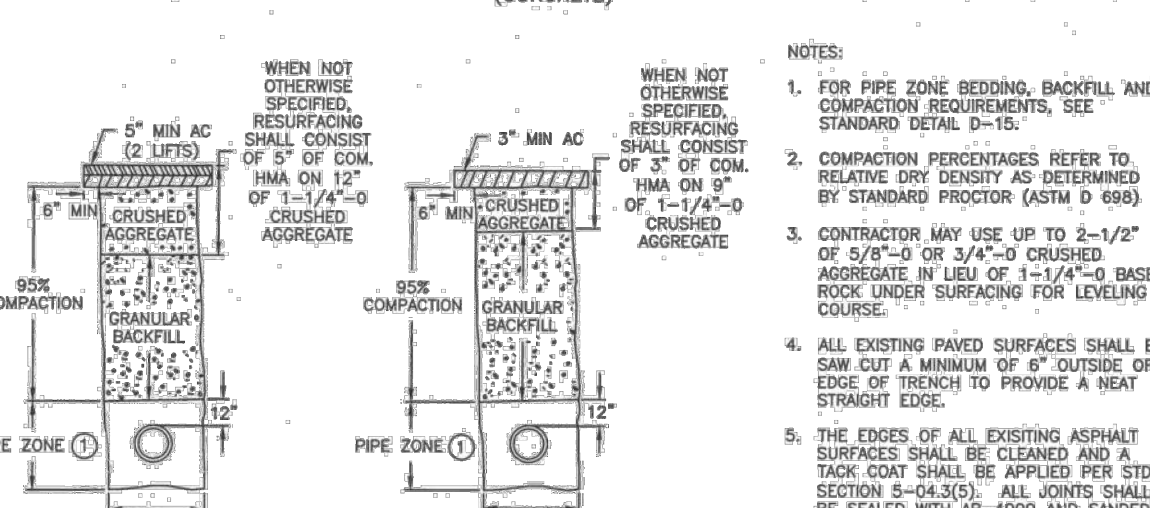
**NOTES:**

- PROVIDE UNIFORM SUPPORT UNDER BARREL HAND TAMP UNDER HAUNCHES.
- BEDDING MATERIALS SHALL CONFORM TO SECTION 9-03.12(3) OF THE STANDARD SPECIFICATIONS.
- FOR ROCK AND OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVER EXCAVATED A MINIMUM OF 6 INCHES AND REFILLED WITH GRANULAR MATERIAL AS DIRECTED BY THE ENGINEER.
- BEDDING AND BACKFILL MATERIALS IN THE PIPE ZONE SHALL BE COMPACTED TO 95%.
- NATIVE MATERIAL MAY BE USED IN LIEU OF IMPORTED MATERIAL FOR BEDDING SPECIFIED, PROVIDED THAT THE NATIVE CONFORMS TO SECTION 9-03.12(3) OF THE STANDARD SPECIFICATIONS, AND IS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE MATERIAL TO THE ENGINEER AT LEAST 72 HOURS PRIOR TO USE. THE ENGINEER MAY APPROVE, REJECT OR REQUIRE LAB TESTING OF THE MATERIAL.
- TRENCH WIDTH SHALL NOT EXCEED 1-1/2 TIMES THE ID OF THE PIPE PLUS 18 INCHES AT THE ID OF THE PIPE ZONE.
- ALL JOINTS SHALL BE AIR-TIGHT FOR NON-PERFORATED PIPE. THE ENGINEER MAY REQUIRE TESTING OF ANY OR ALL JOINTS AND CONNECTIONS.

DEPTH OF BEDDING MATERIAL BELOW PIPE	
OD	d (MIN)
27" & SMALLER	4"
LARGER THAN 27"	6"



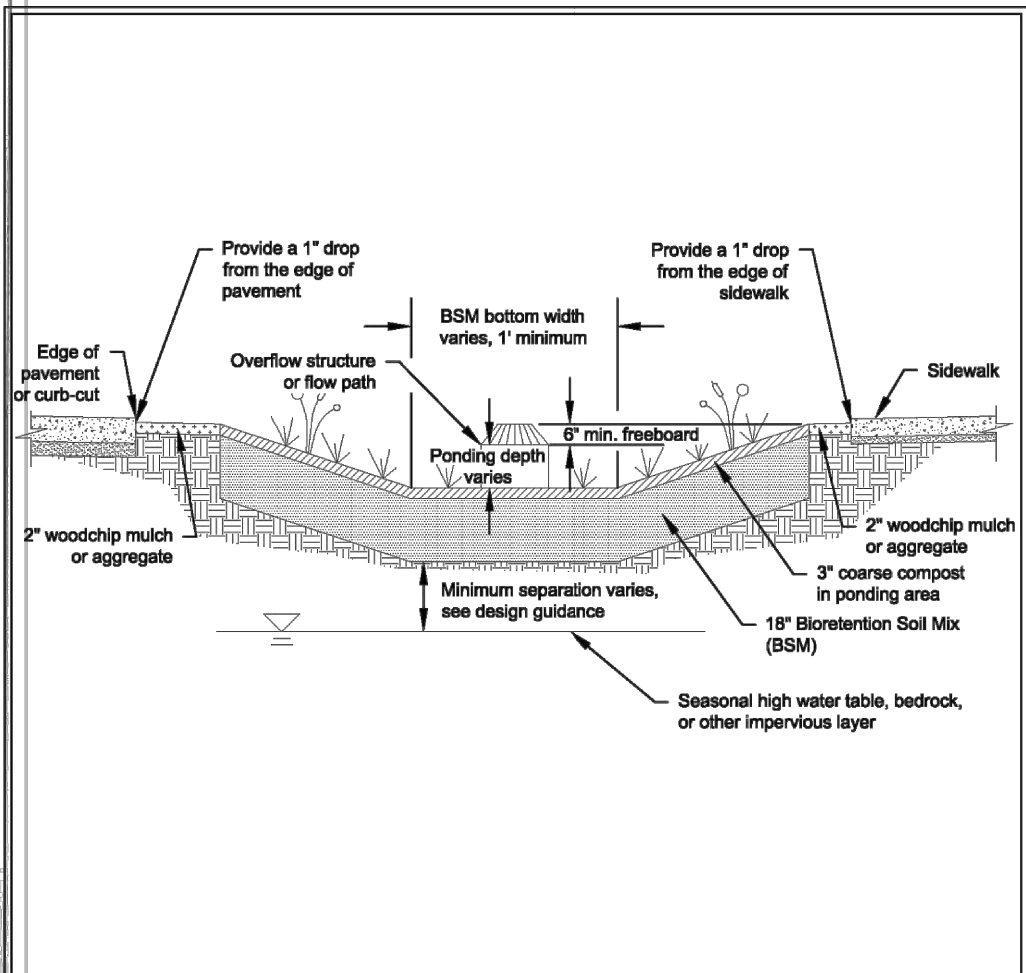
TRENCH BACKFILL



TRENCH SECTION

DEPARTMENT OF ECLOGY  
State of Washington

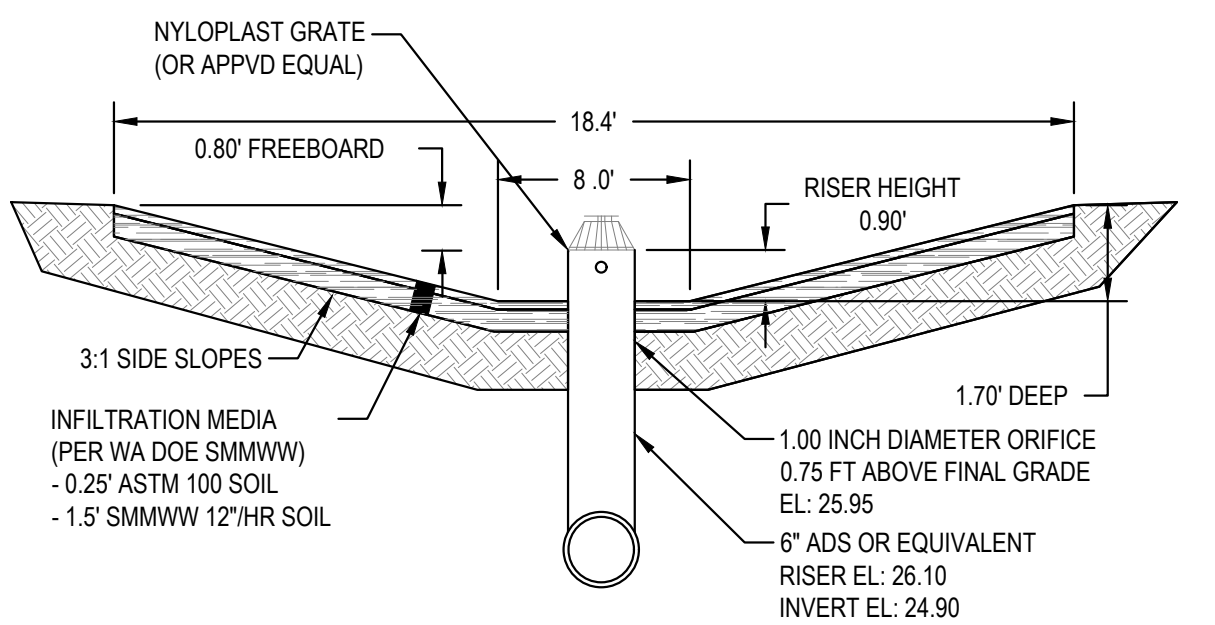
**Figure V-5.12: Typical Bioretention**



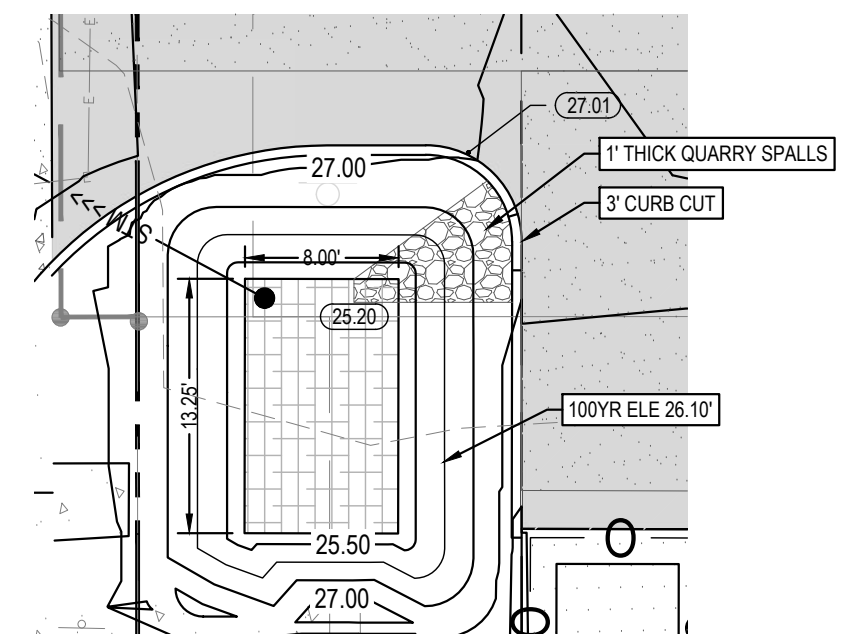
- FOR PIPE ZONE BEDDING, BACKFILL AND COMPACTION REQUIREMENTS, SEE STANDARD DETAIL D-15.
- COMPACTION PERCENTAGES REFER TO RELATIVE DRY DENSITY AS DETERMINED BY STANDARD PROCTOR (ASTM D 698).
- CONTRACTOR MAY USE UP TO 2-1/2" OF 5/8"-0 OR 3/4"-0 CRUSHED AGGREGATE IN LIEU OF 1-1/4"-0 BASE ROCK UNDER SURFACING FOR LEVELING PURPOSES.
- ALL EXISTING PAVED SURFACES SHALL BE SAW CUT A MINIMUM OF 6" OUTSIDE OF EDGE OF TRENCH TO PROVIDE A NEAT STRAIGHT EDGE.
- THE EDGES OF ALL EXISTING ASPHALT SURFACES SHALL BE CLEANED AND A TACK COAT SHALL BE APPLIED PER STD. SECTION 5-04.3(5). ALL JOINTS SHALL BE SEALED WITH 481-6000 (AND SANDES).
- ALL BACKFILL SHALL BE MECHANICALLY COMPACTED IN LIFTS WHICH DO NOT EXCEED MAXIMUM CAPABILITY OF EQUIPMENT USED, BUT IN NO CASE EXCEED 12" LOOSE.
- GRANULAR BACKFILL SHALL MEET REQUIREMENTS OF SECTION 9-30.7(3) UNLESS OTHERWISE SPECIFIED.

NOT TO SCALE

Typical Bioretention  
Revised January 2019



**1 BIORETENTION POND SECTION**  
Scale: NTS



**2 BIORETENTION POND PLAN**  
Scale: NTS

**GENERAL NOTES FOR STORM SEWERS**

APPROVED	REVISIONS	DATE	DRAWN	DESIGNED	D-01
WOODLAND PUBLIC WORKS DIRECTOR	3-11-20				

**PIPE BEDDING**

APPROVED	REVISIONS	DATE	DRAWN	DESIGNED	D-15
WOODLAND PUBLIC WORKS DIRECTOR	3-11-20				

**TRENCH BACKFILL**

APPROVED	REVISIONS	DATE	DRAWN	DESIGNED	D-16
WOODLAND PUBLIC WORKS DIRECTOR	3-11-20				

**BACKFLOW PREVENTER SCHEDULE**

ID	LOCATION	SERVICE	MANUFACTURER	MODEL	FLOW PARAMETERS			NOTES
					DESIGN FLOW (GPM)	PRESSURE DROP @ DESIGN FLOW (PSIG)	SIZE	
DCDA-1	VAULT AT CURB	FIRE	WATTS	757DCDAOSY	80	6	2-1/2"	1

**GENERAL NOTES: 1P**

- INSTALL PER CITY OF WOODLAND REQUIREMENTS.

**4 WATER METER AND BACKFLOW SCHEDULE**

ID	LOCATION	SERVICE	MANUFACTURER	MODEL	DESIGN FLOW (GPM)	PRESSURE DROP @ DESIGN FLOW (PSIG)	SIZE	NOTES
WM-1	VAULT AT STREET	DOMESTIC WATER	MASTER METER	OCTAVE	250	75	1-1/2"	1, 2

**GENERAL NOTES: 1P**

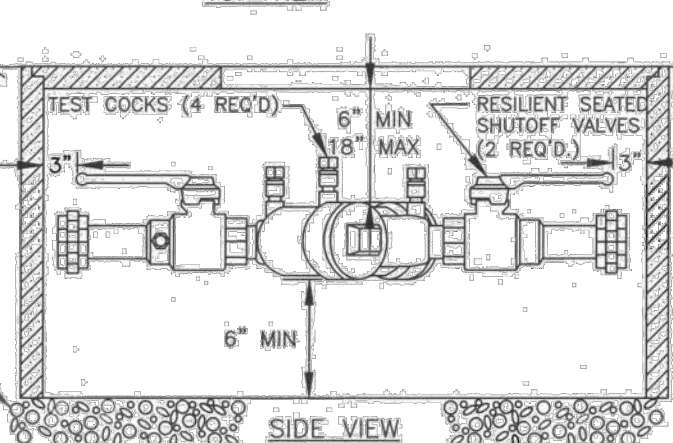
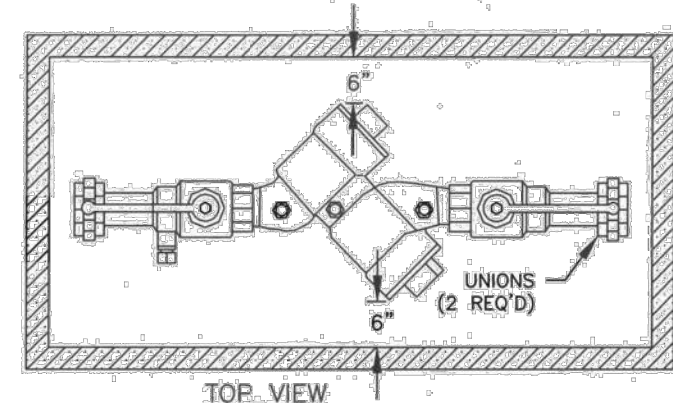
- INSTALL PER CITY OF WOODLAND REQUIREMENTS.
- REMOTE READOUT PER CITY OF WOODLAND REQUIREMENTS.
- INSTALL METER PER CITY OF WOODLAND REQUIREMENTS.

**WATER METER SCHEDULE**

ID	LOCATION	SERVICE	MANUFACTURER	MODEL	METER PARAMETERS			NOTES	
					MAX FLOW (GPM)	DESIGN FLOW (GPM)	PRESSURE DROP @ DESIGN FLOW (PSIG)		
WM-1	VAULT AT STREET	DOMESTIC WATER	MASTER METER	OCTAVE	250	75	5	1-1/2"	1, 2

**GENERAL NOTES: 1P**

- INSTALL PER CITY OF WOODLAND REQUIREMENTS.
- REMOTE READOUT PER CITY OF WOODLAND REQUIREMENTS.
- INSTALL METER PER CITY OF WOODLAND REQUIREMENTS.



- DOUBLE CHECK VALVE ASSEMBLY (DCVA) SHALL BE APPROVED BY THE STATE OF WASHINGTON. APPROVED DCVA TO BE INSTALLED IN THE ORIENTATION (VERTICAL OR HORIZONTAL) FOR WHICH THEY ARE APPROVED.
- DCVA MAY BE INSTALLED ABOVE OR BELOW GROUND PROVIDED ALL CLEARANCES ARE MET.
- DESIGN FOR BACK SIPHONAGE AND BACK PRESSURE.
- ALL INSTALLATIONS SHALL HAVE TWO UNIONS.
- TEST COCKS TO EITHER FACE OUTWARDS OR UPWARDS FROM ASSEMBLY.
- THE WATER LINE SHALL BE DISINFECTED, FLUSHED AND PRESSURE TESTED PRIOR TO INSTALLATION OF THE BACKFLOW ASSEMBLY.
- DCVA SHALL BE ACCESSIBLE AND PROTECTED FROM FREEZING AND FLOODING.
- A PLUMBING PERMIT IS REQUIRED, CONTACT THE WOODLAND BUILDING DEPARTMENT AT (360) 225-7299.
- DCVA SHALL BE TESTED AFTER INSTALLATION, THEN ANNUALLY BY A WASHINGTON STATE CERTIFIED BACKFLOW TESTER. DCVA SHALL BE RETESTED IF MOVED OR REPAIRED. RESULTS SHALL BE SUBMITTED TO THE CITY OF WOODLAND PUBLIC WORKS DEPARTMENT.

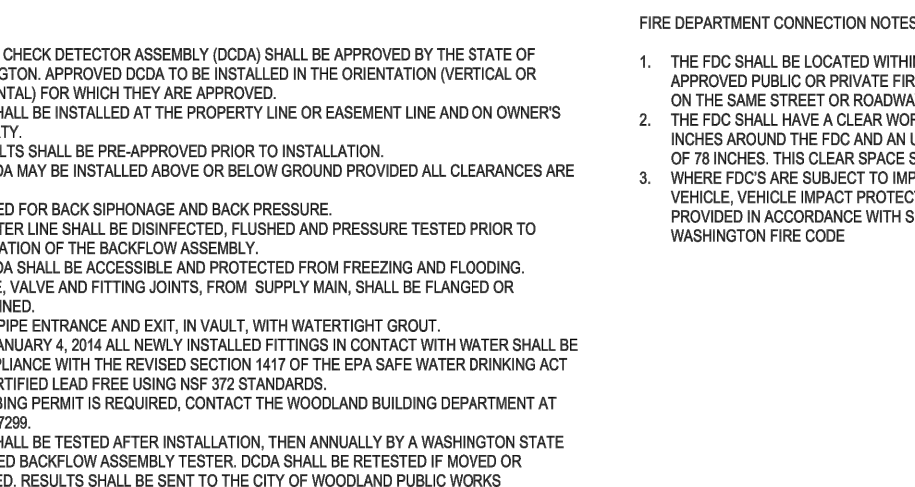
**DOUBLE CHECK VALVE ASSEMBLY 2" & SMALLER**

APPROVED	REVISIONS	DATE	DRAWN	DESIGNED	W-08A
WOODLAND PUBLIC WORKS DIRECTOR	1/21/22				

**3 DOUBLE CHECK DETECTOR ASSEMBLY (DCDA)**

Scale: NTS

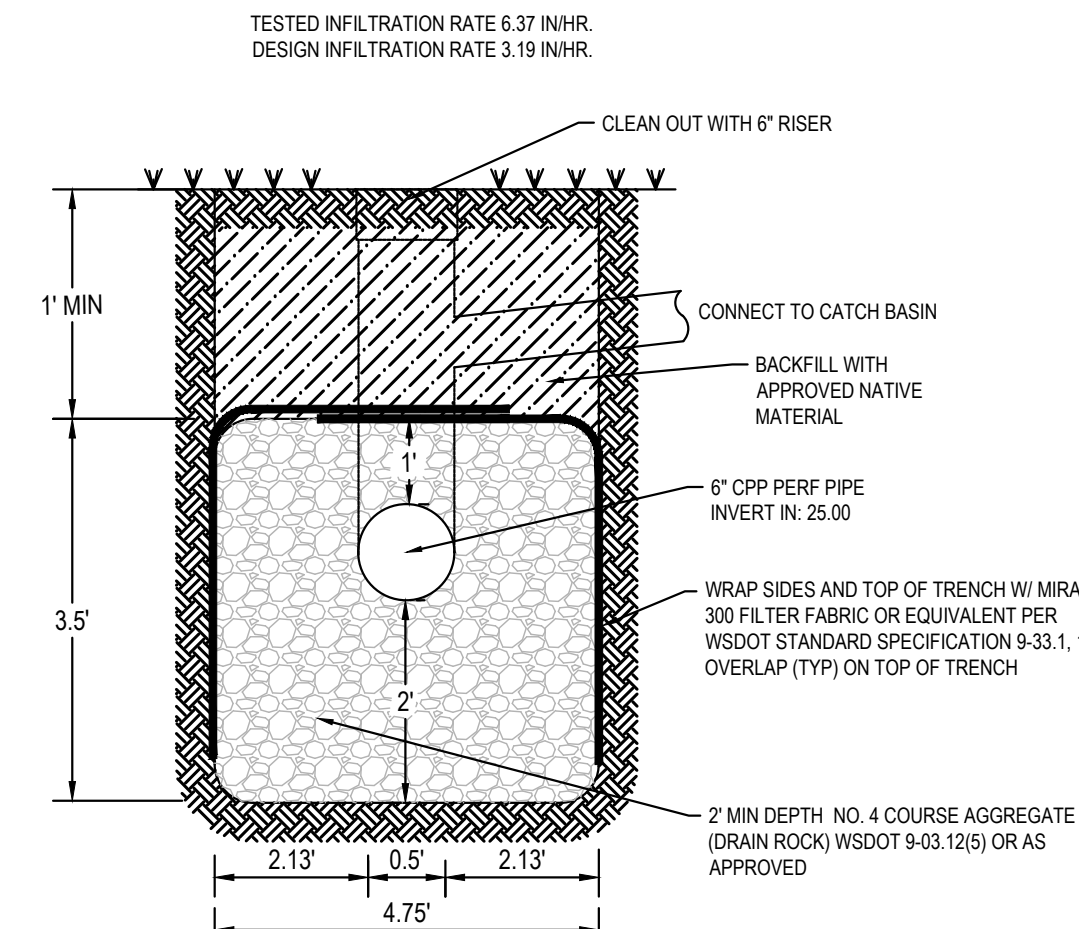
- DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) SHALL BE APPROVED BY THE STATE OF WASHINGTON. APPROVED DCDA TO BE INSTALLED IN THE ORIENTATION (VERTICAL OR HORIZONTAL) FOR WHICH THEY ARE APPROVED.
- DCDA SHALL BE INSTALLED AT THE PROPERTY LINE OR EASEMENT LINE AND ON OWNERS PROPERTY.
- ALL VALVES SHALL BE PRE-APPROVED PRIOR TO INSTALLATION.
- THE DCDA MAY BE INSTALLED ABOVE OR BELOW GROUND PROVIDED ALL CLEARANCES ARE MET.
- DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE.
- THE WATER LINE SHALL BE DISINFECTED, FLUSHED AND PRESSURE TESTED PRIOR TO INSTALLATION OF THE BACKFLOW ASSEMBLY.
- THE DCDA SHALL BE ACCESSIBLE AND PROTECTED FROM FREEZING AND FLOODING.
- ALL PIPE, VALVE AND FITTING JOINTS, FROM SUPPLY MAIN, SHALL BE FLANGED OR RESTRAINED.
- GROUT PIPE ENTRANCE AND EXIT, IN VAULT, WITH WATER TIGHT GROUT.
- AS OF JANUARY 4, 2014 ALL NEWLY INSTALLED FITTINGS IN CONTACT WITH WATER SHALL BE IN COMPLIANCE WITH THE REVISED SECTION 1417 OF THE EPA SAFE WATER DRINKING ACT AND CERTIFIED LEAD FREE USING NSF 372 STANDARDS.
- A PLUMBING PERMIT IS REQUIRED, CONTACT THE WOODLAND BUILDING DEPARTMENT AT 360-225-7299.
- DCDA SHALL BE TESTED AFTER INSTALLATION, THEN ANNUALLY BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. DCDA SHALL BE RETESTED IF MOVED OR REPAIRED. RESULTS SHALL BE SENT TO THE CITY OF WOODLAND PUBLIC WORKS DEPARTMENT.



- THE FDC SHALL BE LOCATED WITHIN 100 FEET OF AN APPROVED PUBLIC OR PRIVATE FIRE HYDRANT LOCATED ON THE SAME STREET OR ROADWAY AS THE FDC.
- THE FDC SHALL HAVE A CLEAR WORKING SPACE OF 36 INCHES AROUND THE FDC AND AN UNOBSTRUCTED HEIGHT OF 78 INCHES. THIS CLEAR SPACE SHALL BE MAINTAINED WHERE FDC'S ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE. VEHICLE IMPACT PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 312, WASHINGTON FIRE CODE.

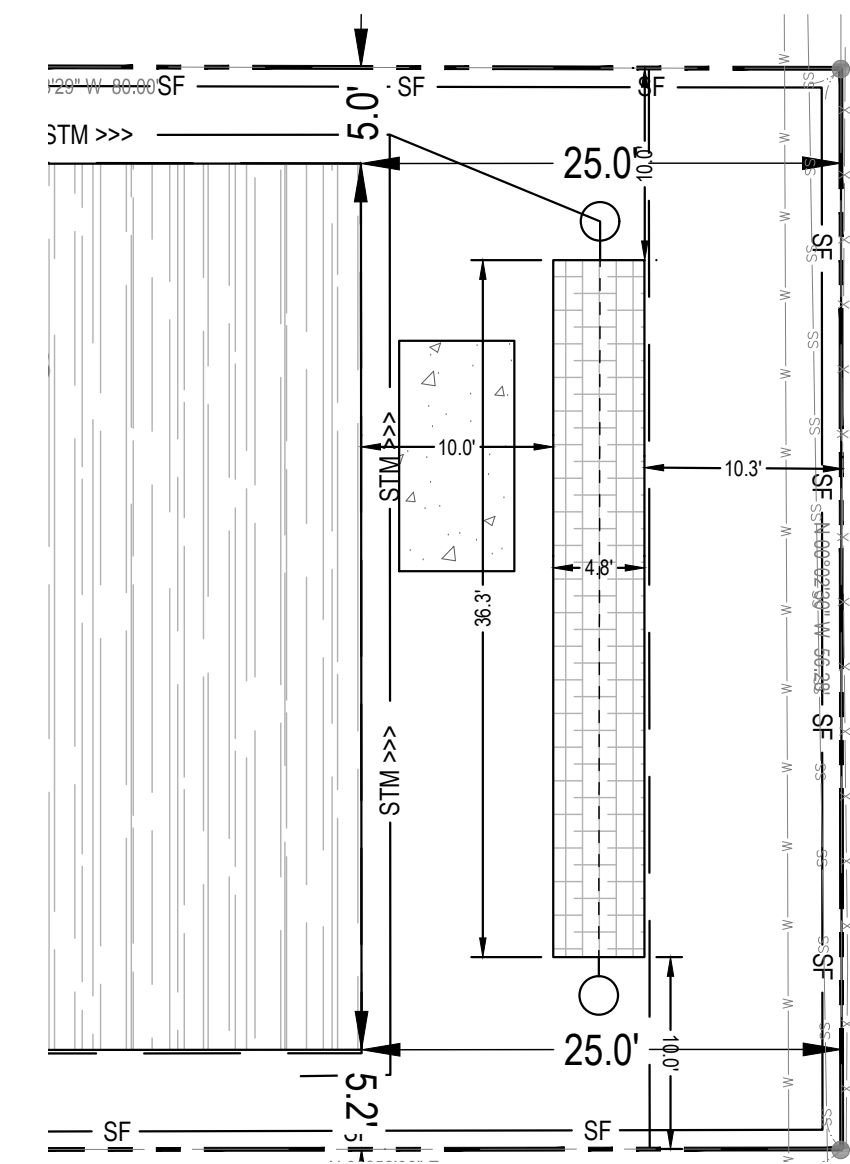
**5 INFILTRATION TRENCH SECTION**

Scale: NTS



**6 INFILTRATION TRENCH PLAN**

Scale: NTS



Know what's below.  
Call before you dig.  
CALL 2 BUSINESS DAYS BEFORE YOU DIG.  
CAUTION: UTILITY INFORMATION IS APPROXIMATE.  
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

NO.	DATE	DESCRIPTION

LINE IS 1" ON FULL SCALE DRAWING

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**BOZARTH MULTIFAMILY**  
560 BOZARTH AVENUE  
WOODLAND, WA 98674  
**ENGINEERING SET**  
Issue Date: 2022/08/15

Project Manager: DCK  
Drawn by: DCK  
Checked by: TWT

**C113**

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LANDSCAPE NOTES

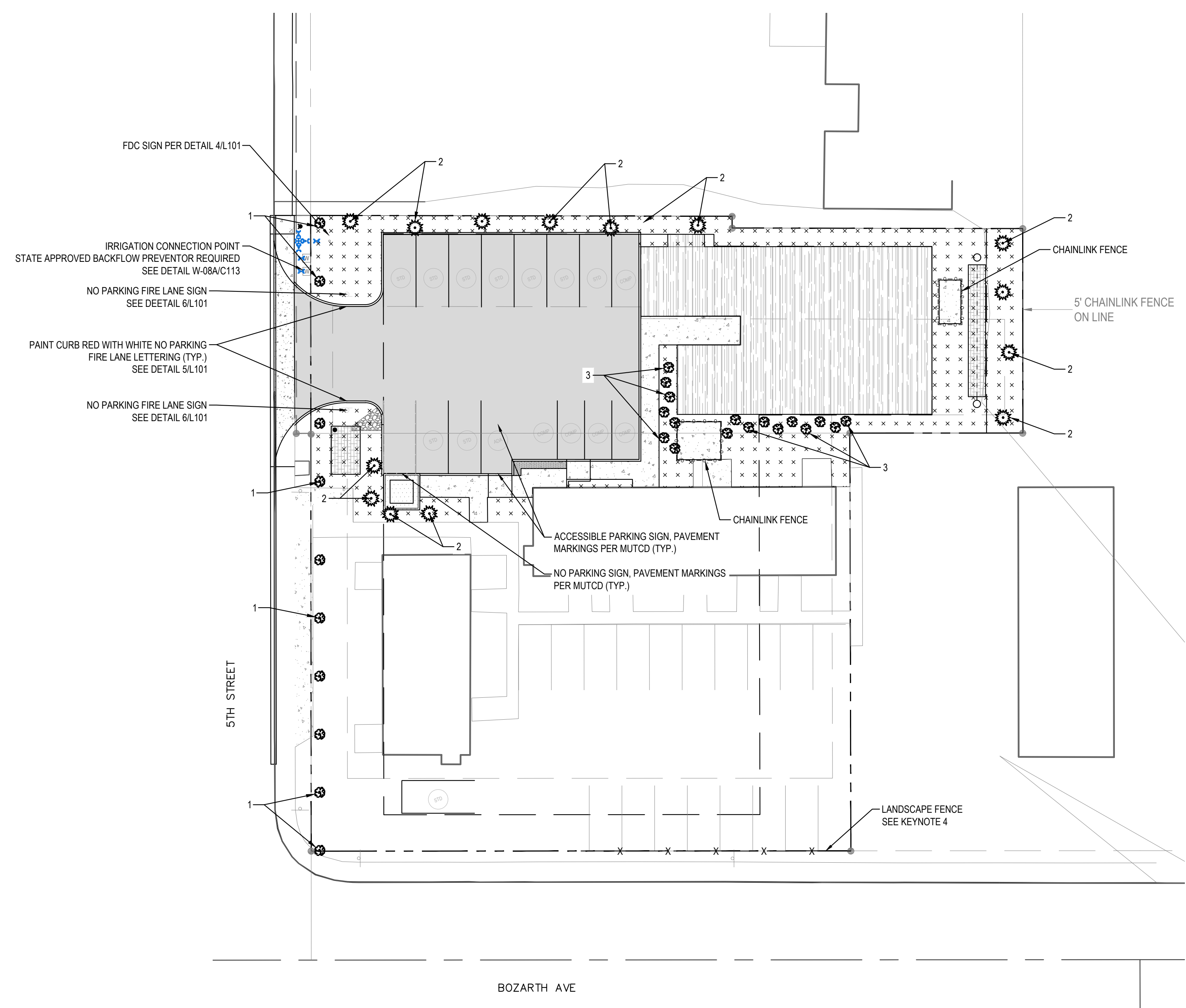
- DURING SITE PREPARATION SOIL MUST BE LOOSENEED OR UNCOMPACTED IN LANDSCAPE AREAS WHERE NECESSARY DUE TO COMPACTION. SOIL MUST BE UNCOMPACTED, AT MINIMUM, DOWN TO 24" BELOW SURFACE GRADE IN ANY LANDSCAPE BUFFER, STREET FRONTAGE, OR PARKING LOT LANDSCAPE AREAS. DEPTH OF SOIL LOOSENEED OR UNCOMPACTED MAY BE LESS IF RECOMMENDED BY QUALIFIED LANDSCAPE PROFESSIONAL. WHERE NECESSARY SOIL AMENDMENTS MAY BE ADDED FROM A VERIFIED SOURCE.
- TREES PLANTED WITHIN 10' OF A PUBLIC STREET, SIDEWALK, PAVED TRAIL OR WALKWAY MUST BE DEEP-ROOTED SPECIES AND MUST BE SEPARATED FROM HARDSCAPES BY A ROOT BARRIER TO PREVENT PHYSICAL DAMAGE TO PUBLIC IMPROVEMENTS.
- TREES AND SHRUBS TO BE IRRIGATED WITH DRIP LINES AND GREEN AREAS TO BE IRRIGATED. IRRIGATION SYSTEM TO BE DESIGNED BY INSTALLER.
- LANDSCAPE FENCE SHALL BE A SOLID 3 FT HIGH FENCE TO REDUCE HEADLIGHT GLARE FROM PARKING LOT ADJACENT TO BOZARTH.

LEGEND

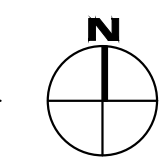
	PARKING
	CONCRETE
	GRASS
	ROOF
	STORM FACILITY

TREE LEGEND

CALLOUT NUMBER	PLANT PLACEMENT	COMMON NAME	BOTANICAL NAME	SIZE REQUIRED	SPACING
1	FRONTAGE	LEPRECHAUN ASH	FRAXINUS PENNSYLVANICA 'JOHNSON'	2.00" CALIPER, BRANCHED	16 FT
2	LOT DENSITY	WEeping ALASKA CEDAR	CHAMAECYPARIS NOOTKATENSIS 'PENDULA'	4 FT TALL	10 FT
3	LOT DENSITY	SKIP LAUREL	PRUNUS LAUROCERASUS 'SCHIPKAENSIS'	5 GALLON	



**1 LANDSCAPE PLAN**  
Scale: 1" = 20'



Revisions:

NO.	DATE	DESCRIPTION

LINE IS 1" ON FULL SCALE DRAWING

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**BOZARTH MULTIFAMILY**  
560 BOZARTH AVENUE  
WOODLAND, WA 98674

**ENGINEERING SET**  
Issue Date: 2022/08/15

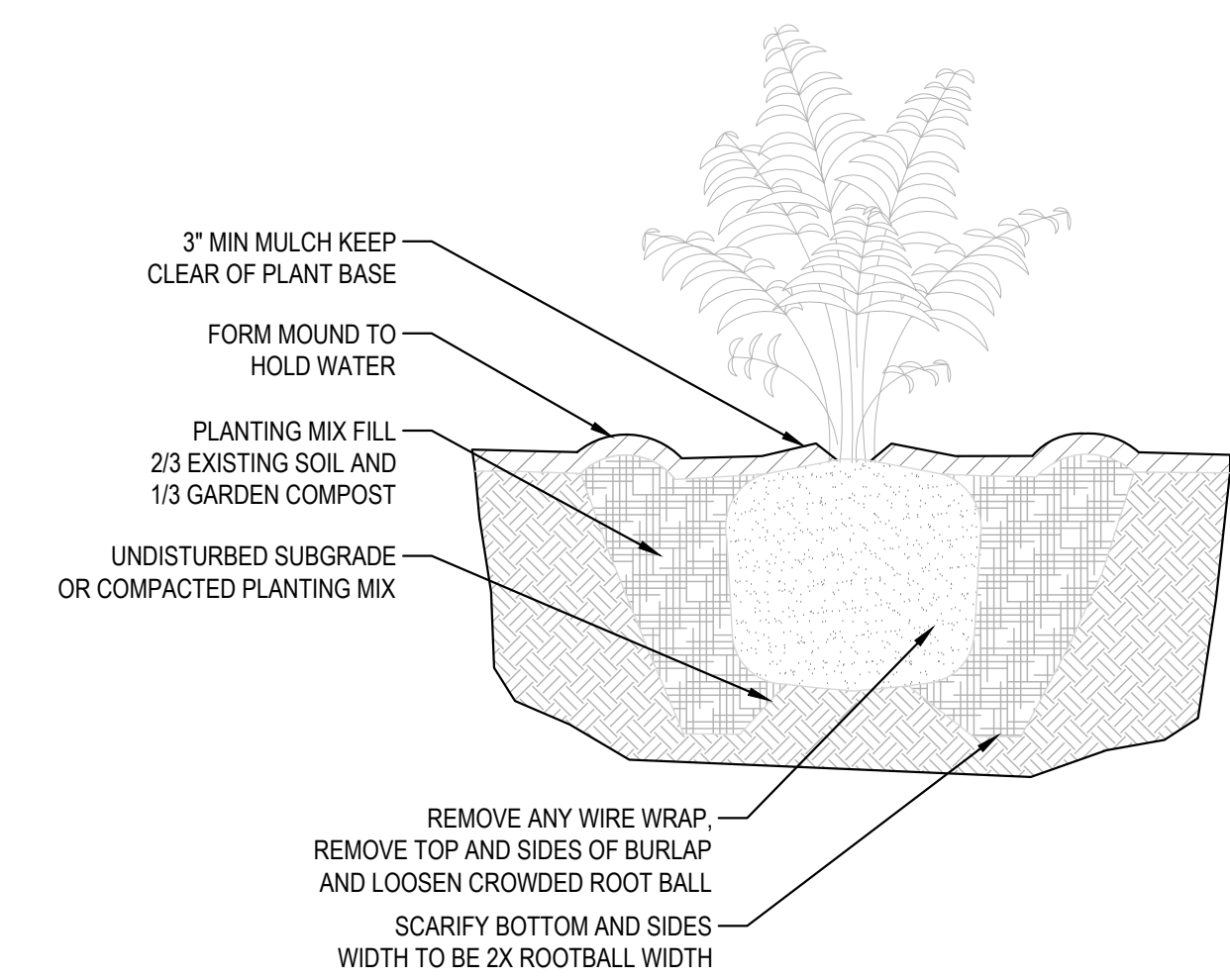
**LANDSCAPE & SIGNAGE PLAN**

Project Manager DCK  
Drawn by DCK  
Checked by TWT

**L100**

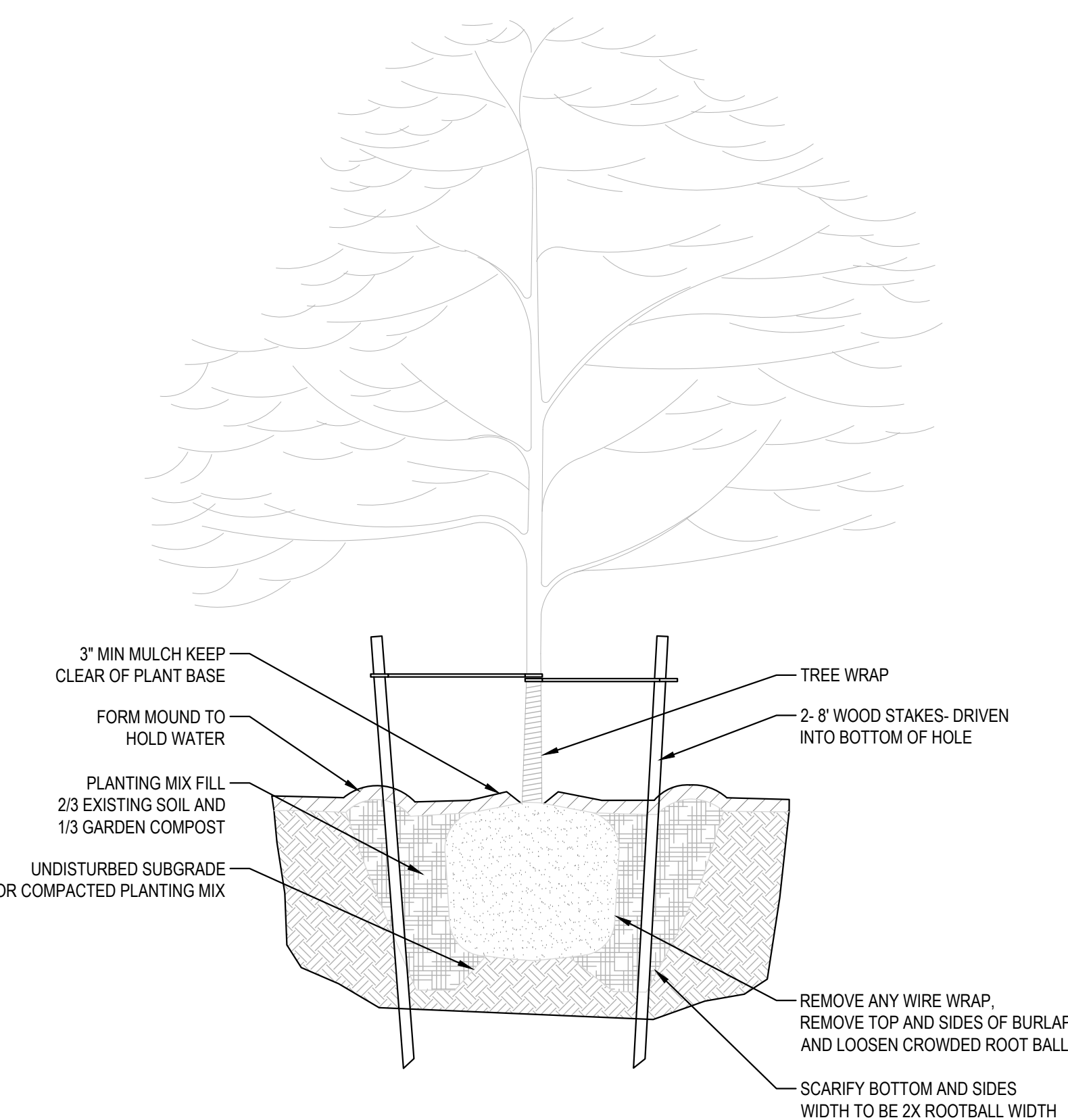
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PLOT DATE: 08/15/2022 9:55 AM - FILE: C:\Users\Dan\OneDrive\Desktop\811\Drawings\02\_Drawings\01\_Working\Sheets\LANDSCAPE PLAN.dwg



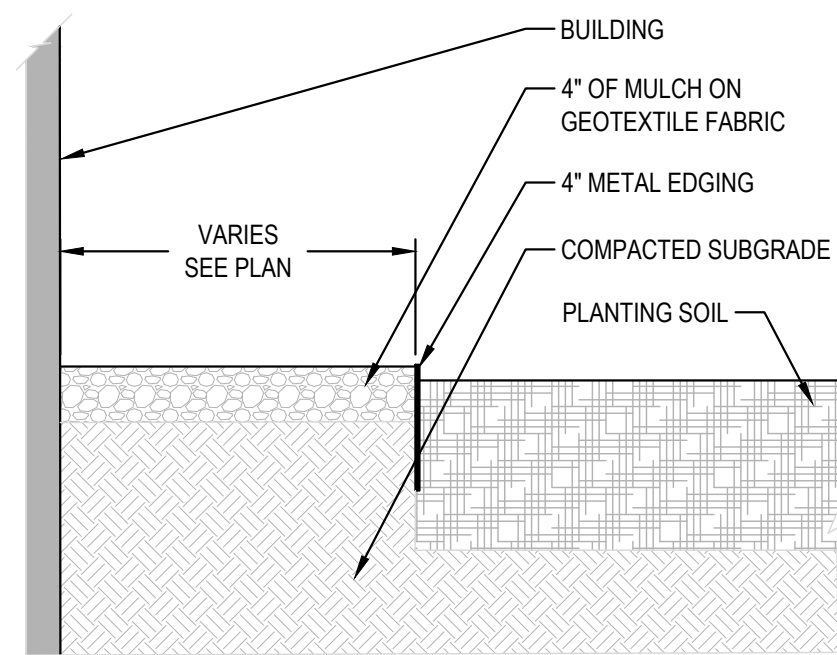
**1 SHRUB PLANTING DETAIL**

Scale: NTS



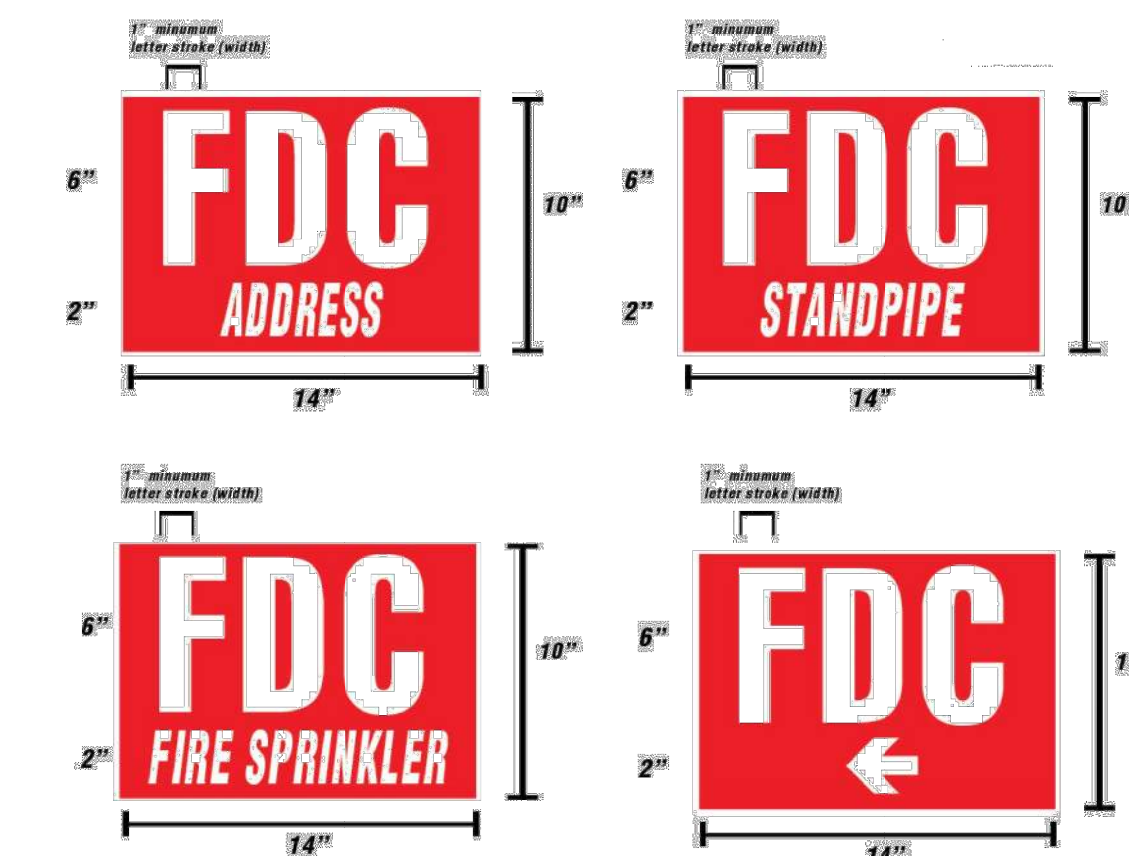
**2 TREE PLANTING DETAIL**

Scale: NTS



**3 MULCH / EDGING DETAIL**

Scale: NTS



**Construction Requirements**

**Materials**

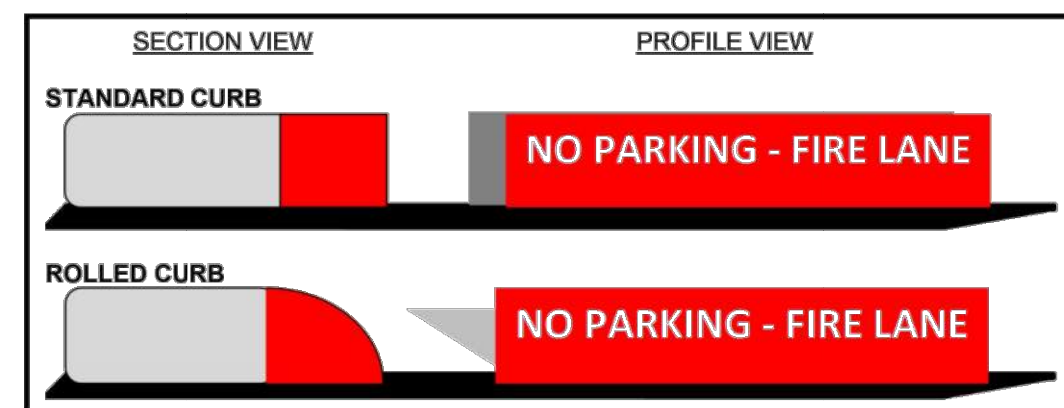
All piping materials and fittings shall be listed for use and meet the requirements of NFPA Standard 24, *Installation of Private Fire Service Mains*.

**Corrosion Protection**

All unprotected bolted joints and accessories shall be cleaned and coated with a corrosion-retarding material after installation. All above-ground piping shall be painted a red color, excluding hose connection adapters.

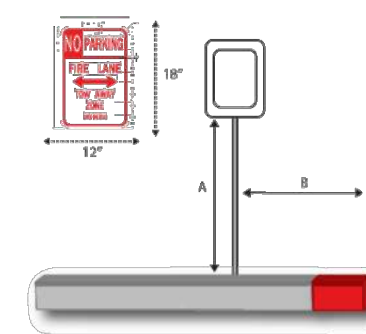
**4 FDC EXAMPLE DETAIL**

Scale: NTS



**5 NO PARKING CURB DETAIL**

Scale: NTS



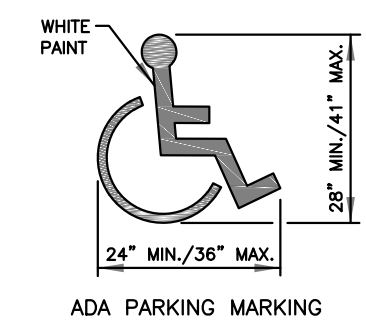
A - Seven feet in height from sidewalk or pedestrian area  
 B - 18-inches from standard curb to post; 24-inches from rolled curb to post

Signs shall be mounted so the face of the sign is oriented parallel to the street/curb. Signs may be mounted on existing posts or light poles.



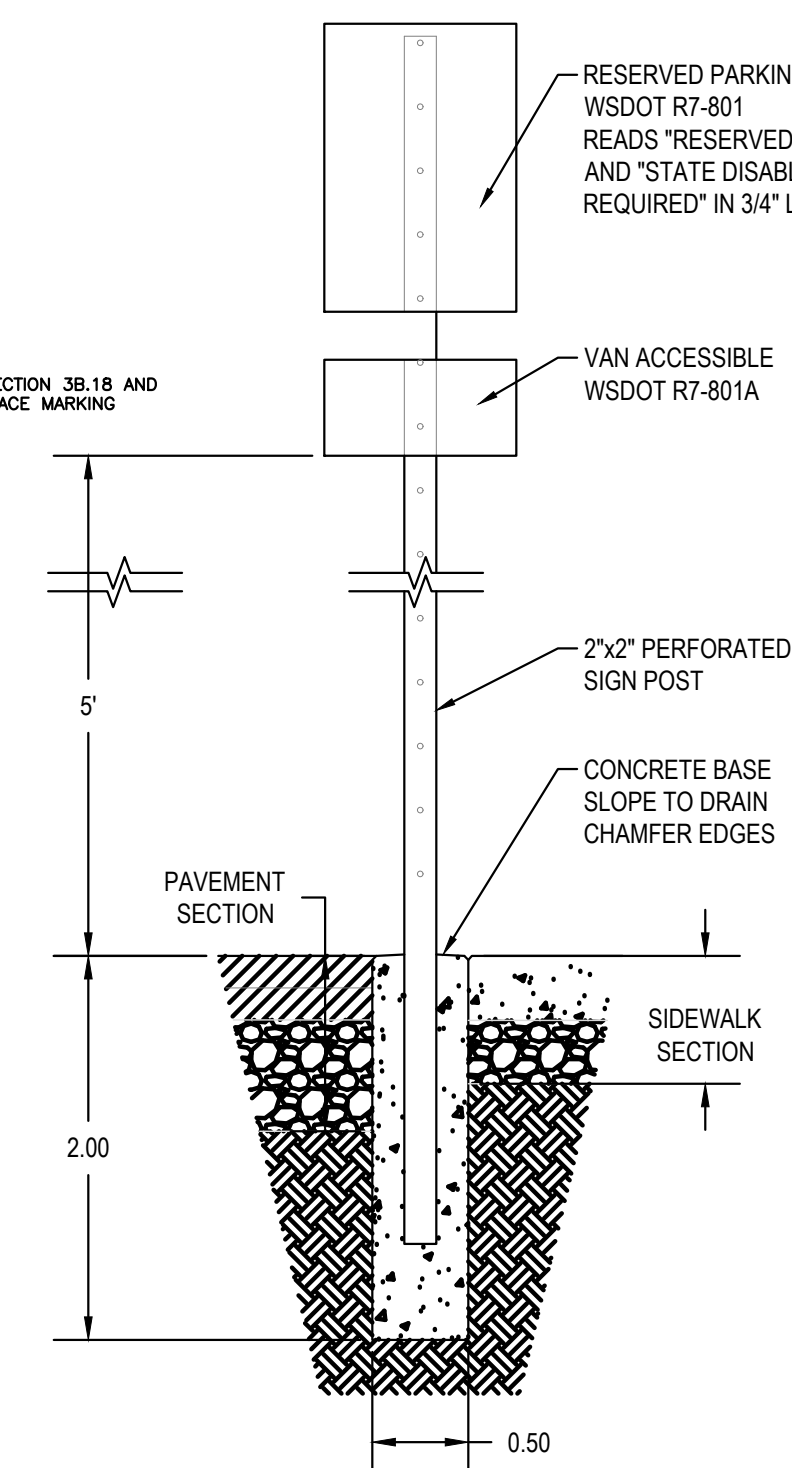
**6 NO PARKING SIGN DETAIL**

Scale: NTS



**NOTES:**

1. SEE THE MILLENNIUM EDITION OF MUTCD, SECTION 5B.18 AND FIGURE 3B-18 FOR ADDITIONAL PARKING SPACE MARKING.



**7 ADA SIGN DETAIL**

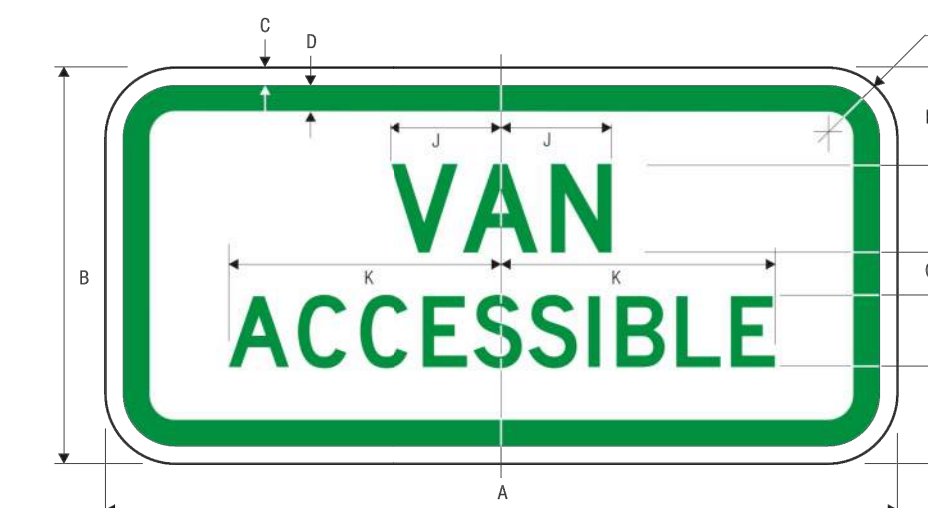
Scale: NTS

**GENERAL SHEET NOTES:**

- A. CONTRACTOR TO DISPOSE OF EXISTING TREES, SHRUBS, AND OTHER DEMOLITION DEBRIS IN AN ACCEPTABLE MANNER OF THE CONTRACTOR'S CHOOSING
- B. THE CONTRACTOR/OWNER SHALL BE RESPONSIBLE FOR MAINTAINING THE HEALTH OF ALL STREET TREES ASSOCIATED WITH THIS PROJECT BY WATERING AND ALL OTHER NECESSARY CARE UNTIL PROJECT IS ACCEPTED BY THE CITY OF WOODLAND.

**KEYNOTE :**

- 800 STREET TREES TO BE PLANTED PER WOODLAND CODE
- 801 SIGHT DISTANCE TRIANGLE



R7-8a  
VAN ACCESSIBLE



R7-8b  
VAN ACCESSIBLE

A	B	C	D	E	F	G	H	J	K	L
300	150	10	15	37	40 D	11	25 D	50	97	40
450	225	10	15	55	50 D	25	40 D	62.5	155	40

PARKING APPLICATION	DIRECTIONAL APPLICATION									
	LEGEND - GREEN (RETROREFLECTIVE) OR BLACK BACKGROUND - WHITE (RETROREFLECTIVE)					LEGEND - WHITE (RETROREFLECTIVE) BACKGROUND - BLUE (RETROREFLECTIVE)				
A	B	C	D	E	F	G	H	J	K	L



R7-8 NO PARKING  
 LEGEND - GREEN (RETROREFL.), WHITE SYMBOL ON BLUE (RETROREFL.)  
 BACKGROUND - WHITE (RETROREFL.)

\*See page 6-2 for arrow design.  
 \*\*See page 6-31 for symbol design.

1-92



Know what's below.  
 Call before you dig.

CALL 2 BUSINESS DAYS BEFORE YOU DIG.  
 CAUTION: UTILITY INFORMATION IS APPROXIMATE.  
 VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

NO.	DATE	DESCRIPTION

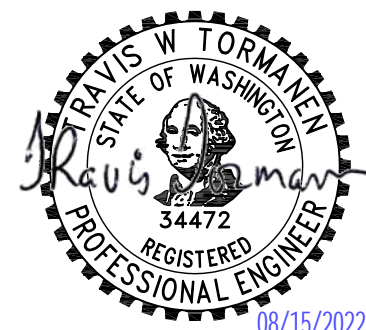
LINE IS 1" ON FULL SCALE DRAWING



**WINDSOR ENGINEERS**

Vancouver, WA  
 Duluth + Minneapolis, MN  
 www.windsorengineers.com  
 Project No: 21065.1

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**BOZARTH MULTIFAMILY**  
 560 BOZARTH AVENUE  
 WOODLAND, WA 98674

**ENGINEERING SET**  
 Issue Date: 2022/08/15

**LANDSCAPE & SIGNAGE DETAILS**  
 DETAILS

**L101**

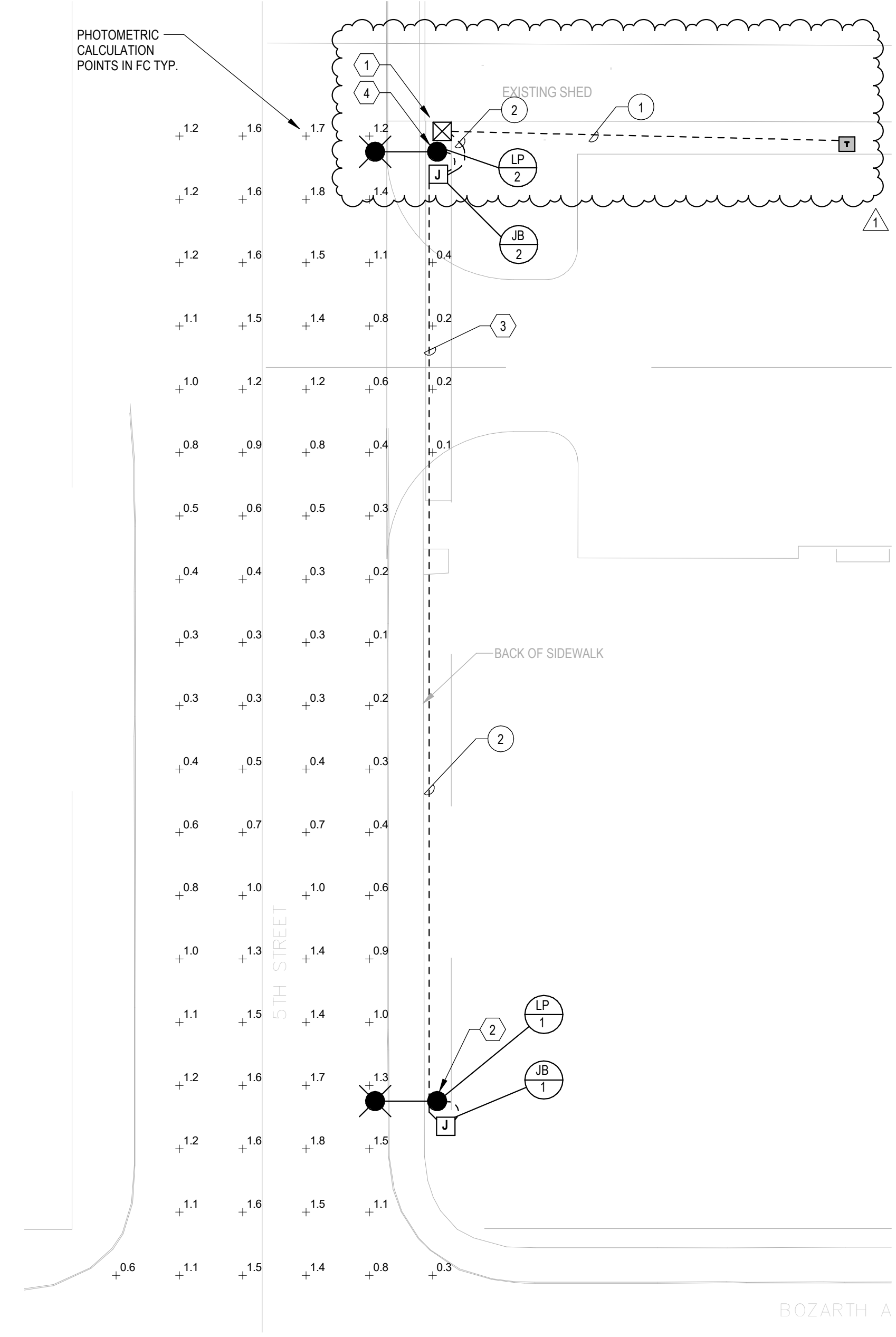
Project Manager:   DCK    
 Drawn by:   DCK    
 Checked by:   JTW  

ISSUED FOR ENGINEERING SUBMITTAL ONLY

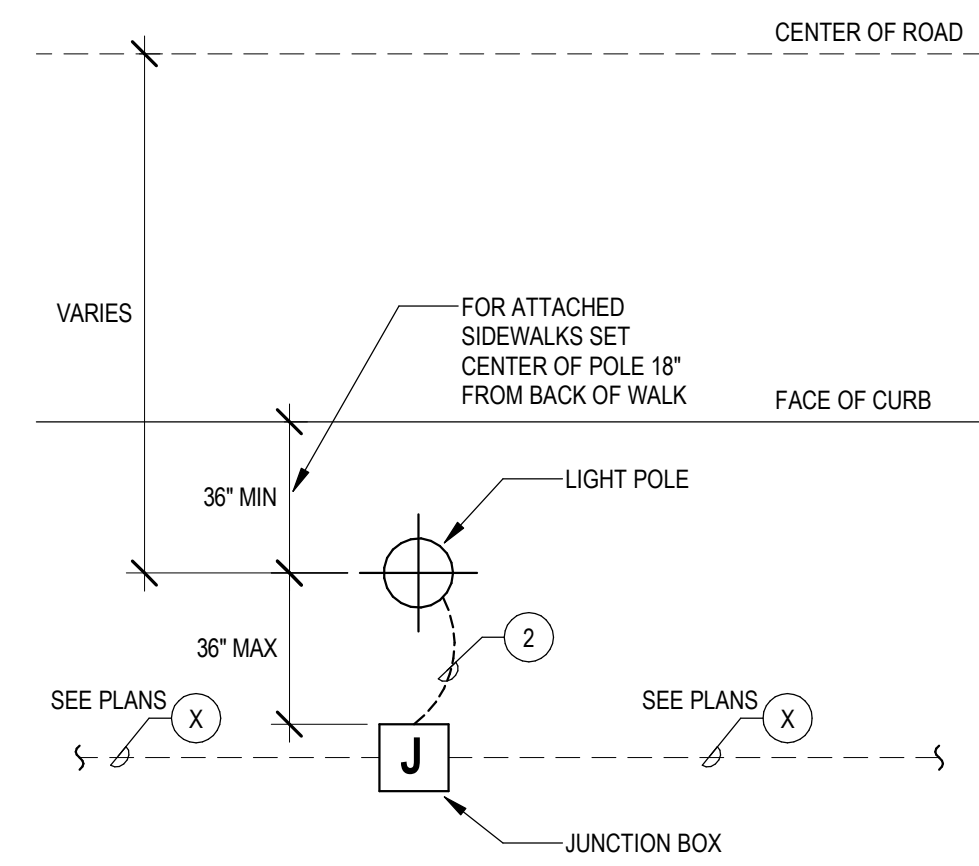
LUMINAIRE SCHEDULE											
TYPE	LUMINAIRE DESCRIPTION	MOUNTING	MOUNTING HEIGHT	LAMP	COLOR TEMP	LUMEN OUTPUT	POWER SUPPLY	MANUFACTURER & MODEL	INPUT VOLTAGE	INPUT WATTS	NOTES
A	POLE MOUNT ROADWAY LIGHT, TYPE R3 DISTRIBUTION WITH 6' ARM	POLE	25'	LED	5700K	12,000	INTEGRAL ELECTRONIC DRIVER	CREE XSP SERIES OR APPROVED	240 V	50 W	

**GENERAL LUMINAIRE SCHEDULE NOTES**  
 A. POLE TYPE: ROUND TAPERED BRUSHED ALUMINUM, HAPCO RTA25D6B4M1601 OR APPROVED EQUAL.  
 B. FINISH FOR ALL LUMINAIRES LISTED ABOVE SHALL BE PER CITY OF WINLOCK STANDARDS.  
 C. LUMEN OUTPUT LISTED ABOVE IS DELIVERED LUMENS.  
 D. SEE SL3 FOR FIXTURE CUT SHEET.  
**LUMINAIRE SCHEDULE NOTES**  
 1. NOT USED.

CONDUIT AND WIRE SCHEDULE					
RUN NUMBER	CONDUIT	WIRE (CU)	CIRCUIT	FUNCTION	
1	1-1/2" PVC SCH 40	(3) #1 (CU)	NA	SECONDARY SERVICE CONDUCTORS	
2	1" PVC SCH 40	(2) #8 (CU), (1) #8 CU GND	1,3	STREET LIGHTING	



1 STREET LIGHTING  
SCALE: 1/16" = 1'-0"



2 CONDUIT RUN INTO POLE BASE  
NOT TO SCALE

**GENERAL SHEET NOTES**

- COMPLETED INSTALLATION SHALL COMPLY WITH NEC AND ALL LOCAL LAWS, ORDINANCES, AND REGULATIONS.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND THE CITY OF WOODLANDS STANDARDS AND SPECIFICATIONS CURRENT EDITION. THE LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR AS NECESSARY.
- ALL WORK SHALL BE CONSISTENT WITH THE UTILITY AGENCY REQUIREMENTS. THE CONTRACTOR SHALL CONTACT ALL PERTINENT UTILITY AGENCIES 48 HOURS BEFORE COMMENCING WORK, AND SHALL COORDINATE WITH AFFECTED UTILITY AGENCIES THROUGHOUT THE PROJECT.
- CODE BASIS OF DESIGN: 2020 NATIONAL ELECTRICAL CODE (NEC) WITH WASHINGTON STATE MODIFICATIONS (NFPA 70).
- PLANS ARE DIAGRAMMATIC IN NATURE TO COMMUNICATE SCOPE OF WORK AND GENERAL INTENT. CONTRACTOR SHALL PROVIDE ALL FITTINGS, BOXES, AND APPURTENANCES NECESSARY FOR A COMPLETE AND OPERABLE ELECTRICAL SYSTEM.
- COORDINATE UNDERGROUND CONDUIT ROUTING WITH CIVIL AND STRUCTURAL PLANS.
- PLAN VIEW REPRESENTS CONDITIONS AFTER CIVIL IMPROVEMENTS HAVE BEEN COMPLETED. REFER TO CIVIL IMPROVEMENT DRAWINGS.
- EXISTING / NEW UNDERGROUND UTILITIES NOT ALWAYS SHOWN IN PLAN, REFER TO CIVIL IMPROVEMENT DRAWINGS, REQUEST LOCATES PRIOR TO CONSTRUCTION.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE POWER SOURCE OF EACH STREET LIGHT PRIOR TO COMMENCING WORK. COORDINATE WITH THE CITY OF WOODLAND AND COWLITZ COUNTY PUD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANY AND THE CITY OF WINLOCK IMMEDIATELY UPON DAMAGE.
- A CLEARLY MARKED SERVICE DISCONNECT WILL BE PROVIDED FOR EVERY LIGHTING CIRCUIT. THE LOCATION AND INSTALLATION OF THE DISCONNECT WILL CONFORM TO THE NEC AND THESE STANDARDS. THE PHOTO CONTROLS WINDOW WILL FACE NORTH UNLESS OTHERWISE DIRECTED BY THE CITY. THE SERVICE DISCONNECT WILL NOT BE MOUNTED ON THE LUMINAIRE POLE. THE SERVICE DISCONNECT WILL BE A TYPE EQUAL TO A TESCO CLASS 26-000 SERVICE, 120/240V, 1PH, 3W. ALL SERVICE DISCONNECTS WILL BE USED TO FULLEST CAPACITY, I.E. MAXIMUM NUMBER OF LUMINAIRES PER CIRCUIT.
- ALL LIGHTING WIRE WILL BE COPPER WITH A MINIMUM SIZE OF #8. ALL WIRE WILL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT WITH A MINIMUM DIAMETER OF 1 INCHES. A BUSHING OR BELL-END WILL BE USED AT THE END OF A CONDUIT THAT TERMINATES AT A JUNCTION BOX OR LUMINAIRE POLE. CONDUCTOR IDENTIFICATION WILL BE AN INTEGRAL PART OF THE INSULATION OF THE CONDUCTORS THROUGHOUT THE SYSTEM I.E. COLOR-CODED WIRE. EQUIPMENT GROUNDING CONDUCTOR WILL BE #8 COPPER. ALL SPLICES WILL BE MADE BY APPROVED METHODS UTILIZING EPOXY KITS RATED AT 600V, MINIMUM (I.E., 3-M 82-A2). ALL SPLICES WILL BE MADE WITH PRESSURE TYPE CONNECTORS (WIRE NUTS WILL NOT BE ALLOWED). DIRECT BURIAL WIRE WILL NOT BE ALLOWED. ALL OTHER INSTALLATION WILL CONFORM TO NEC, WSDOT/APWA, AND MUTCD STANDARDS.
- EACH LUMINAIRE POLE WILL HAVE AN IN-LINE, FUSED, WATER TIGHT ELECTRICAL DISCONNECT LOCATED AT THE BASE OF THE POLE. ACCESS TO THESE FUSED DISCONNECTS WILL BE THROUGH THE HAND-HOLE ON THE POLE. THE HAND-HOLE WILL BE FACING AWAY FROM ON-COMING TRAFFIC. ADDITIONAL CONDUCTOR LENGTH WILL BE LEFT INSIDE THE POLE AND PULL OR JUNCTION BOX EQUAL TO A LOOP HAVING DIAMETER OF ONE FOOT. LOAD SIDE OF IN-LINE FUSE TO LUMINAIRE HEAD WILL BE CABLE AND POLE BRACKET WIRE, 2 CONDUCTOR, 19-STRAND COPPER #10 AND WILL BE SUPPORTED AT THE END OF THE LUMINAIRE ARM BY AN APPROVED MEANS. FUSE SIZE, DISCONNECT INSTALLATION AND GROUNDING IN POLE WILL CONFORM TO NEC STANDARDS.
- A PULL BOX OR JUNCTION BOX WILL BE LOCATED WITHIN 10 FEET OF EACH LUMINAIRE AND AT EVERY ROAD CROSSING. BOXES WILL BE CLEARLY AND INDELIBLY MARKED AS LIGHTING BOXES BY THE LEGEND, "L.T." OR "LIGHTING". SEE WSDOT STANDARD PLAN J40.10-04.
- CEMENT CONCRETE BASES WILL FOLLOW CITY OF WOODLAND DRAWING T-45. CONDUIT WILL EXTEND BETWEEN THREE AND 6 INCHES ABOVE THE CONCRETE BASE.

**CONSTRUCTION NOTES**

- PROVIDE NEW STREET LIGHTING PEDESTAL, REFER TO DETAILS T-46 AND T-47 ON SHEET SL3.
- COORDINATE LOCATION WITH COWLITZ PUD TO MAINTAIN REQUIRED CLEARANCES FROM POWER LINE.
- PROVIDE RIGID STEEL CONDUIT UNDER DRIVEWAY CROSSING PER WOODLAND STANDARD T-40.
- INSTALL BASE 3' BEHIND BACK OF SIDEWALK REFER TO DETAIL T-42 ON SHEET SL2.

**LEGEND**

- NEW STREET LUMINAIRE PER CONSTRUCTION NOTES
- JUNCTION BOX TYPE 1 REFER TO DETAIL ON SHEET SL3.
- CONSTRUCTION NOTE
- CONDUIT & WIRE NOTE
- INSTALL LUMINAIRE AND POLE PER SCHEDULE. X=POLE NUMBER, REFER TO SHEET SL2 FOR DETAILS.
- INSTALL TYPE 1 JUNCTION BOX PER WSDOT STANDARD PLAN J-40.10. SHEET SL3 CONTRACTOR SHALL TACK WELD LID AFTER ELECTRICAL SYSTEM HAS BEEN CERTIFIED BY CITY INSPECTOR. X = JUNCTION BOX NUMBER.
- NEW CONDUIT INSTALLED BY DEVELOPER

LINE IS 1" ON FULL SCALE DRAWING

**Revisions:**

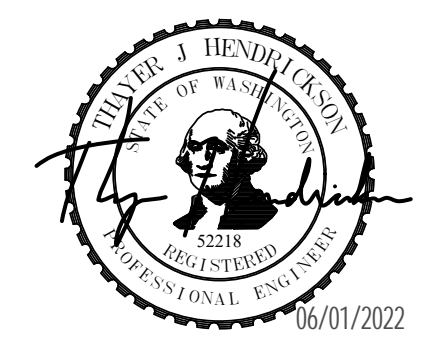
- |   |            |                   |
|---|------------|-------------------|
| 1 | 05/26/2022 | PER CITY COMMENTS |
|---|------------|-------------------|



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**BOZARTH MULTIFAMILY**  
BOZARTH AVENUE  
5TH STREET AND 560 BOZARTH AVENUE  
WOODLAND, WA 98674

**ENGINEERING SET**  
Issue Date: 04/29/2022

ILLUMINATION SYSTEM  
PLAN

**SL1**



