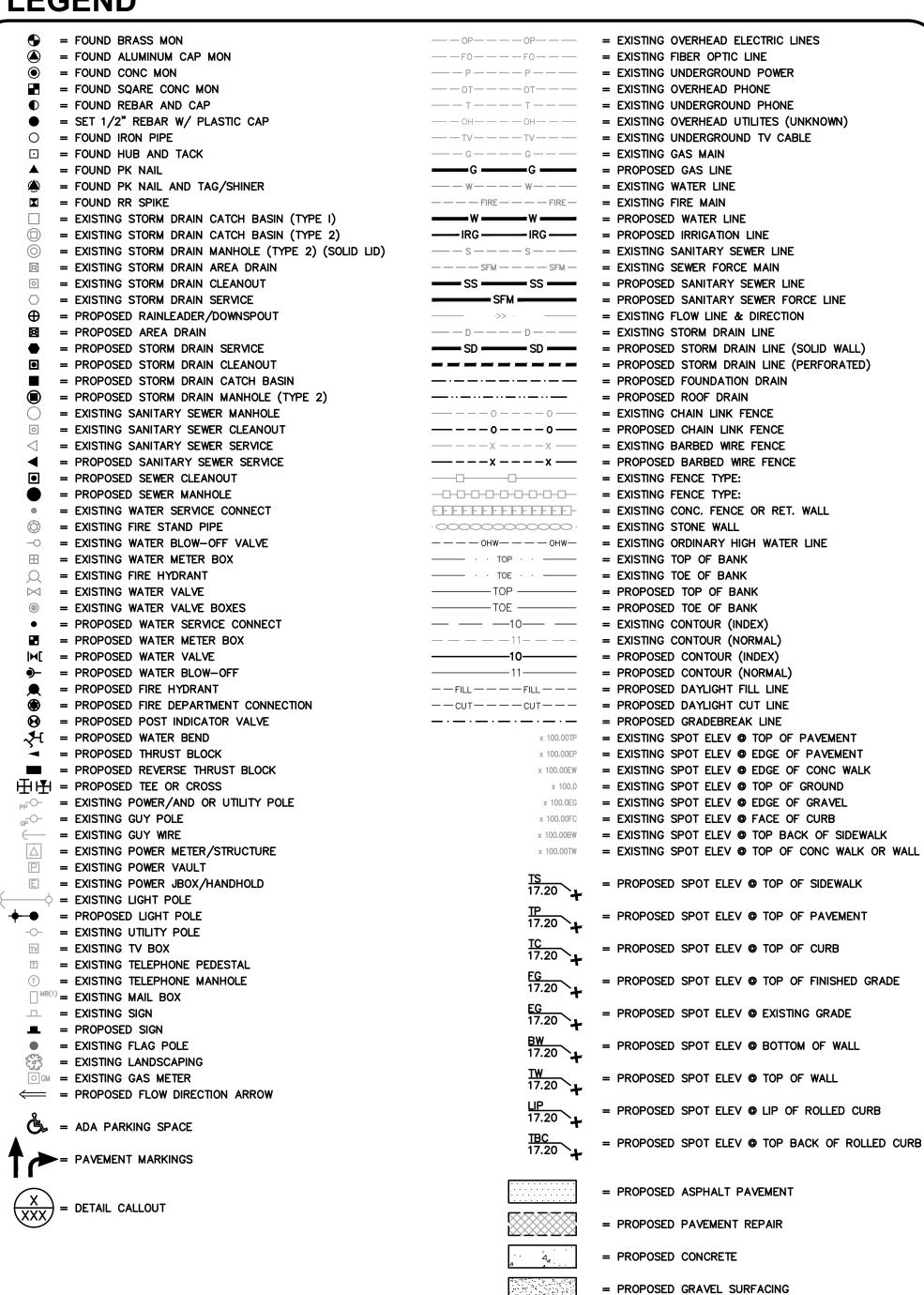
BARRETT ROAD UHAUL FERNDALE

SITUATE IN A PORTION OF THE NORTHEAST QUARTER AND THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 28, TOWNSHIP 39 NORTH, RANGE 2 EAST OF W.M., WHATCOM COUNTY, WASHINGTON

LEGEND



ARCHAEOLOGICAL FINDINGS

SHOULD ARCHAEOLOGICAL MATERIALS (e.g. SHELL MIDDEN, FAUNAL REMAINS, STONE TOOLS) OR HUMAN REMAINS BE OBSERVED DURING THE SCOPE OF OPERATIONS AS APPROVED, ALL WORK IN THE VICINTY SHALL STOP, AND THE AREA SHALL BE SECURED. THE STATE OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION (360-586-3065) AND THE LUMMI NATION TRIBAL HISTORIC PRESERVATION OFFICE (360-384-2298) SHALL BE CONTACTED IMMEDIATELY IN ORDER TO HELP ASSESS THE SITUATION AND DETERMINE HOW TO PRESERVE THE RESOURCE(S). COMPLIANCE WITH ALL APPLICABLE LAWS PERTAINING TO ARCHAEOLOGICAL RESOURCES IS REQUIRED.

SURVEY NOTE

DIGITAL COPIES OF THE CIVIL SITE PLANS WILL BE PROVIDED TO THE CONTRACTOR. ALL BUILDINGS UTILITY STRUCTURES, AND OTHER COMPONENTS NECESSARY FOR CONSTRUCTION SHALL BE STAKED BY A LICENSED SURVEYOR PRIOR TO CONSTRUCTION.

DATE: 9/29/2025

CALL BEFORE YOU DIG FOR BURIED UTILITY LOCATIONS 1-800-424-5555

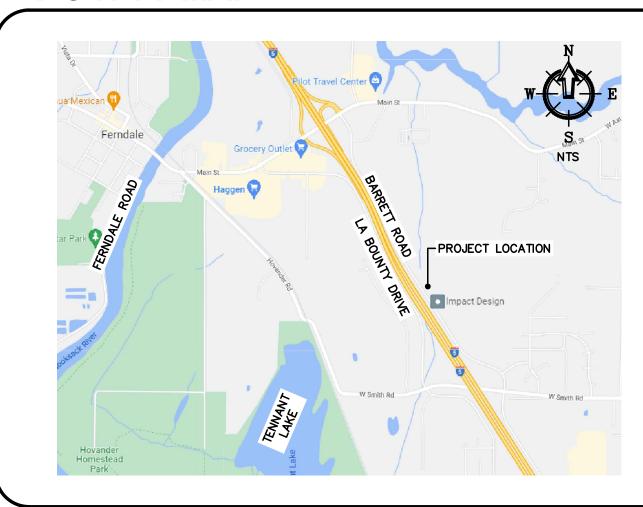
ENGINEER'S CERTIFICATION:

"I HEREBY CERTIFY THAT THE IMPROVEMENTS OF UHAUL FERNDALE HAVE BEEN INSPECTED BY FREELAND & ASSOCIATES, INC. AND CONSTRUCTED IN GENERAL CONFORMANCE WITH THE PLANS APPROVED BY PUBLIC WORKS DIRECTOR FOR SAID DEVELOPMENT AND THE GENERAL SPECIFICATIONS ADOPTED BY THE CITY OF FERNDALE DEPARTMENT OF PUBLIC WORKS."

AS-BUILT DRAWING

AS-BUILT NOTE: ONLY INFORMATION NOTED AS AS-BUILT "(AB)" HAS BEEN PROVIDED BY SURVEYOR

VICINITY MAP



PROJECT CONTACTS

CIVIL ENGINEER FREELAND & ASSOCIATES, INC. JEAN-PAUL SLAGLE, PE

GABBY KINNEY, EIT 2500 ELM STREET BELLINGHAM, WA 98225 (360) 650-1408 jpslagle@freelandengineering.com gkinney@freelandengineering.com

SURVEYOR OWNER TERRAMARK INC.

BRIE BAERG UHC OF NORTH SEATTLE 526 E COLLEGE WAY MOUNT VERNON, WA 98273 (530) 209-9961 Brie_Baerg@uhaul.com

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C2	EXISTING CONDITIONS

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- GRADING AND DRAINAGE PLAN
- WATER MAIN EXTENSION PLAN & PROFILE (STA: 50+00 TO 55+50)
- WATER MAIN EXTENSION PLAN & PROFILE (STA: 55+50 TO 58+50) **C8**
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- FERNDALE GENERAL NOTES & BARRETT ROAD CROSS SECTIONS
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SURVEY NOTES

.AND DESCRIPTION:

THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 28, TOWNSHIP 39 NORTH, RANGE 2 EAST OF W.M., EXCEPT THE FOLLOWING:

MIKE HOFFMAN

(503) 860-2255

8196 SW HALL BOULEVARD

BEAVERTON, OR 97008

mikeh@terramarkinc.com

THE NORTHEAST QUARTER THEREOF AND EXCEPT THE SOUTH 10 ACRES LESS ROAD OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 28. AND A TRIANGULAR TRACT DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT 20 RODS NORTH OF THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 28: THENCE EAST 84 FEET TO THE SOUTHWESTERLY LINE OF THE STATE ROAD: THENCE NORTHWESTERLY ALONG SAID ROAD LINE TO THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION; THENCE SOUTH TO THE PLACE OF BEGINNING; ALL EXCEPT THE RIGHT-OF-WAY FOR BARRETT ROAD AND EXCEPT INTERSTATE HIGHWAY NO. 5.

SITUATE IN WHATCOM COUNTY, WASHINGTON.

THE LEGAL DESCRIPTION SHOWN ABOVE DESCRIBES ALL THAT PROPERTY IN THE PRELIMINARY TITLE REPORT IDENTIFIED AS "FIRST AMERICAN TITLE INSURANCE COMPANY" FILE NUMBER NCS-1063011-PHX1, WITH A COMMITMENT DATE OF APRIL 26, 2021.

OF FIVE STAR MINE STORAGE LOT LINE ADJUSTMENT PROPERTY LINE CONSOLIDATION, AS PER THE MAP THEREOF, RECORDED APRIL 4, 1990, IN BOOK 20 OF SHORT PLATS, PAGES 80 AND 81, IN THE AUDITOR'S OFFICE OF WHATCOM COUNTY, WASHINGTON. BEING A PORTION OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 28, TOWNSHIP 39 NORTH, RANGE 2, EAST OF W.M.

SITUATE IN WHATCOM COUNTY, WASHINGTON.

THE LEGAL DESCRIPTION SHOWN ABOVE DESCRIBES ALL THAT PROPERTY IN THE PRELIMINARY TITLE REPORT IDENTIFIED AS "CHICAGO TITLE COMPANY" ORDER NUMBER 245358789, WITH AN EFFECTIVE DATE OF MAY 13, 2013.

SURVEY GENERAL NOTES:

THE LOCATION OF UTILITIES SERVING THE SUBJECT PROPERTY CAN ONLY BE DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH PLANS AND MARKINGS PROVIDED BY CLIENT, UTILITY COMPANIES, AND OTHER APPROPRIATE SOURCES. THE LOCATION OF UTILITIES SURVEY AS "OVERGROWN AREAS". THE AREA WAS DETERMINED TO BE LARGELY TOO REFERENCED ON THIS MAP. EXISTING ON OR SERVING THE SURVEYED PROPERTY FOR THIS SURVEY WAS DETERMINED BY WET/MARSHY AT THE TIME OF THE SURVEY TO NAVIGATE SAFELY, SO DATA GATHERED WAS OBSERVATION OF ABOVE GROUND EVIDENCE. THIS SURVEY WOULD NOT SHOW UTILITIES VERY LIMITED. COVERED BY VEHICLES, OR OVERGROWTH OF FOLIAGE, TREES, BUSH OR SHRUBS.

2. THE BUILDING FOOTINGS WERE NOT EASILY ACCESSIBLE AND THEREFORE THE BUILDING LAND AREA: LIMITS SHOWN HEREON, AND THE BUILDING SQUARE FOOT CALCULATIONS, WERE MEASURED

ITEM NUMBERS SHOWN HEREON ARE STATED AS MATTERS ON REFERENCED COMMITMENT. NO RESPONSIBILITY FOR THE COMPLETENESS, ACCURACY, OR CONTENT OF SAID REPORT IS ASSUMED BY THIS MAP.

THERE IS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION THE LEGAL DESCRIPTION SHOWN HEREON. OR BLDG. ADDITIONS WITHIN RECENT MONTHS.

THERE ARE NO CHANGES IN STREET RIGHT OF WAY LINES EITHER COMPLETED OR FLOOD NOTES PROPOSED TO THE BEST OF OUR KNOWLEDGE, AND AVAILABLE FROM THE CONTROLLING

OR REPAIRS.

7. THERE IS NO OBSERVABLE EVIDENCE OF SITE USE AS A CEMETERY. 8. THIS SURVEY MAP CORRECTLY REPRESENTS THE FACTS FOUND AT THE TIME OF THE CHÂNCE FLOODPLAIN.

THERE ARE NO DISCREPANCIES BETWEEN THE BOUNDARY LINES OF THE PROPERTY AS

10. THE BOUNDARY LINE DIMENSIONS AS SHOWN ON THIS SURVEY MAP FORM A MATHEMATICALLY CLOSED FIGURE WITHIN +/-0.1'.

AS DESCRIBED IN THEIR MOST RECENT RESPECTIVE LEGAL DESCRIPTIONS OF RECORD. 12. EXCEPT AS OTHERWISE NOTED BELOW, IF THE PROPERTY CONSISTS OF TWO OR MORE

PARCELS, THERE ARE NO GAPS OR GORES BETWEEN SAID PARCELS. 13. THE SUBJECT PROPERTY HAS DIRECT ACCESS TO/FROM BARRETT RD. A PUBLIC

14. ANY APPURTENANT EASEMENTS NOTED IN DOCUMENTS PROVIDED TO THE SURVEYOR

15. THE SUBJECT PARCEL IS LANDSCAPED WITH TREES/SHRUBS. THIS SURVEY REFLECTS MEASUREMENTS OF HARDSCAPE ONLY AND THEREFORE LANDSCAPING, LANDSCAPE LIGHTING AND IRRIGATION SYSTEMS ARE NOT SHOWN HEREON.

16. NO PARTY WALLS EXIST BETWEEN THE SUBJECT PROPERTY AND ANY ADJOINING

17. WETLANDS ON SITE WERE DETERMINED AND FLAGGED BY NORTHWEST ECOLOGICAL SERVICES IN JUNE, 2021. AT THE TIME OF THE SURVEY, MANY OF SAID FLAGS WERE INACCESSIBLE DUE TO DENSE BRUSH AND TERRAIN UNSUITABLE FOR THE SURVEYOR'S INSTRUMENTS. AREAS WHERE THE FLAGGING COULD NOT BE LOCATED ARE SHOWN APPROXIMATELY HEREON BASED ON THE EXHIBIT PROVIDED BY NW ECOLOGICAL SERVICES

18. ELEVATIONS SHOWN HEREON ARE BASED ON WASHINGTON STATE DEPARTMENT OF TRANSPORTATION MONUMENT DESIGNATION NO. GP37005-31, WHICH BEARS AN ELEVATION OF 77.293 FEET ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

THE LAND AREA OF THE SUBJECT PROPERTY IS 84,999 SF (19.39 AC) AS DESCRIBED IN THE LEGAL DESCRIPTION SHOWN HEREON.

THE LAND AREA OF THE SUBJECT PROPERTY IS 157,483 SF (3.62 AC.) AS DESCRIBED IN

THE SUBJECT PROPERTY LIES WITHIN ZONES "X"(SHADED) AND "X"(UN-SHADED) OF THE FLOOD INSURANCE RATE MAP 53073C1180E, COMMUNITY PANEL NO. 53002011180E, WHICH 6. THERE IS NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION BEARS AN EFFECTIVE DATE OF JANUARY 18, 2019. ZONE "X"(SHADED) IS DEFINED AS AREAS WITHIN THE 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD. ZONE "X"(UN—SHADED) IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL

BASIS OF BEARING:

SHOWN ON THIS SURVEY MAP AND AS DESCRIBED IN THE LEGAL DESCRIPTION PRESENTED IN THE BEARINGS SHOWN HEREON ARE BASED ON THE NAD 83/91 WASHINGTON STATE PLANE

PROPERTY HAS BEEN TIED TO FERNDALE MONUMENTS #9 AND #12 WITH DISTANCE AND BEARING INFORMATION.

11. THE BOUNDARY LINES OF THE PROPERTY ARE CONTIGUOUS WITH THE BOUNDARY LINES OF ALL ADJOINING STREETS, HWYS., RIGHTS OF WAY AND EASEMENTS, PUBLIC OR PRIVATE, NOTES CORRESPONDING TO SCHEDULE B:

FIRST AMERICAN TITLE INSURANCE COMPANY: FILE NO: NCS-1063011-PHX1; COMMITMENT

THE FOLLOWING SURVEY RELATED ITEMS WERE FOUND IN SAID TITLE REPORT AND ARE REFERENCED ON THIS MAP.

TERMS, COVENANTS, AND CONDITIONS OF A DOCUMENT RECORDED AS REC. NO. SAID ITEM IS BLANKET IN NATURE OVER THE SUBJECT PROPERTY AND IS THEREFORE

TERMS AND CONDITIONS OF ORDINANCE NO. 969 RECORDED MARCH 10, 1992 AS REC. 14 NO. 920310108. SAID ITEM IS BLANKET IN NATURE OVER THE SUBJECT PROPERTY AND IS THEREFORE NOT SHOWN HEREON.

AN EASEMENT FOR UTILITY PURPOSES RECORDED JULY 2, 1997 AS REC. NO. SAID ITEM LIES ON THE SUBJECT PROPERTY AND IS SHOWN HEREON.

TERMS AND CONDITIONS OF AN AGREEMENT RECORDED DECEMBER 18, 1997 AS REC. | 16 | NO. 1971202518. SAID ITEM IS BLANKET IN NATURE OVER THE SUBJECT PROPERTY AND IS THEREFORE NOT SHOWN HEREON.

CHICAGO TITLE COMPANY; ORDER NO: 245358789; EFFECTIVE DATE: MAY 13. 2013 19. AN ATTEMPT WAS MADE TO GATHER ELEVATION DATA IN THE AREAS NOTED ON THE THE FOLLOWING SURVEY RELATED ITEMS WERE FOUND IN SAID TITLE REPORT AND ARE

> CONDITIONS DISCLOSED BY SURVEY DATED JUNE 24, 1994 (REVISED JULY 16, 1996). SAID ITEM WAS NOT PROVIDED TO THE SURVEYOR AND IS THEREFORE NOT SHOWN

RELINQUISHMENT OF RIGHTS RECORDED NOVEMBER 19, 1954 & NOV. 24, 1954 AS RECORDING NOS. 784948 & 785171. SAID ITEM IS BLANKET IN NATURE OVER THE SUBJECT PROPERTY AND IS THEREFORE NOT SHOWN HEREON. AMONG OTHER THINGS, SAID ITEM RESTRICTS ALL ACCESS/LIGHT, VIEW & AIR RIGHTS TO/FROM THE STATE HIGHWAY, BUT PROVIDES FOR ACCESS RIGHTS TO/FROM A FRONTAGE ROAD.

STATEMENT OF POSSIBLE ENCROACHMENTS:

- CHAIN LINK FENCE EXTENDS UP TO 0.5' SOUTHWESTERLY INTO THE PUBLIC
- APPARENT ACCESS OVER & ACROSS A PORTION OF THE SUBJECT PROPERTY TO/FROM THE NORTHERLY ADJOINING PROPERTY.

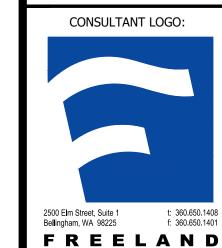
CALL BEFORE YOU DIG 1-800-424-5555

SHEET NOTES:

REVISIONS:

PROFESSIONAL SEAL





AMERCO REAL ESTATE COMPANY

& ASSOCIATES

CONSTRUCTION DEPARTMENT 2727 NORTH CENTRAL AVENUE PHOENIX, ARIZONA PH: (602) 263-6502

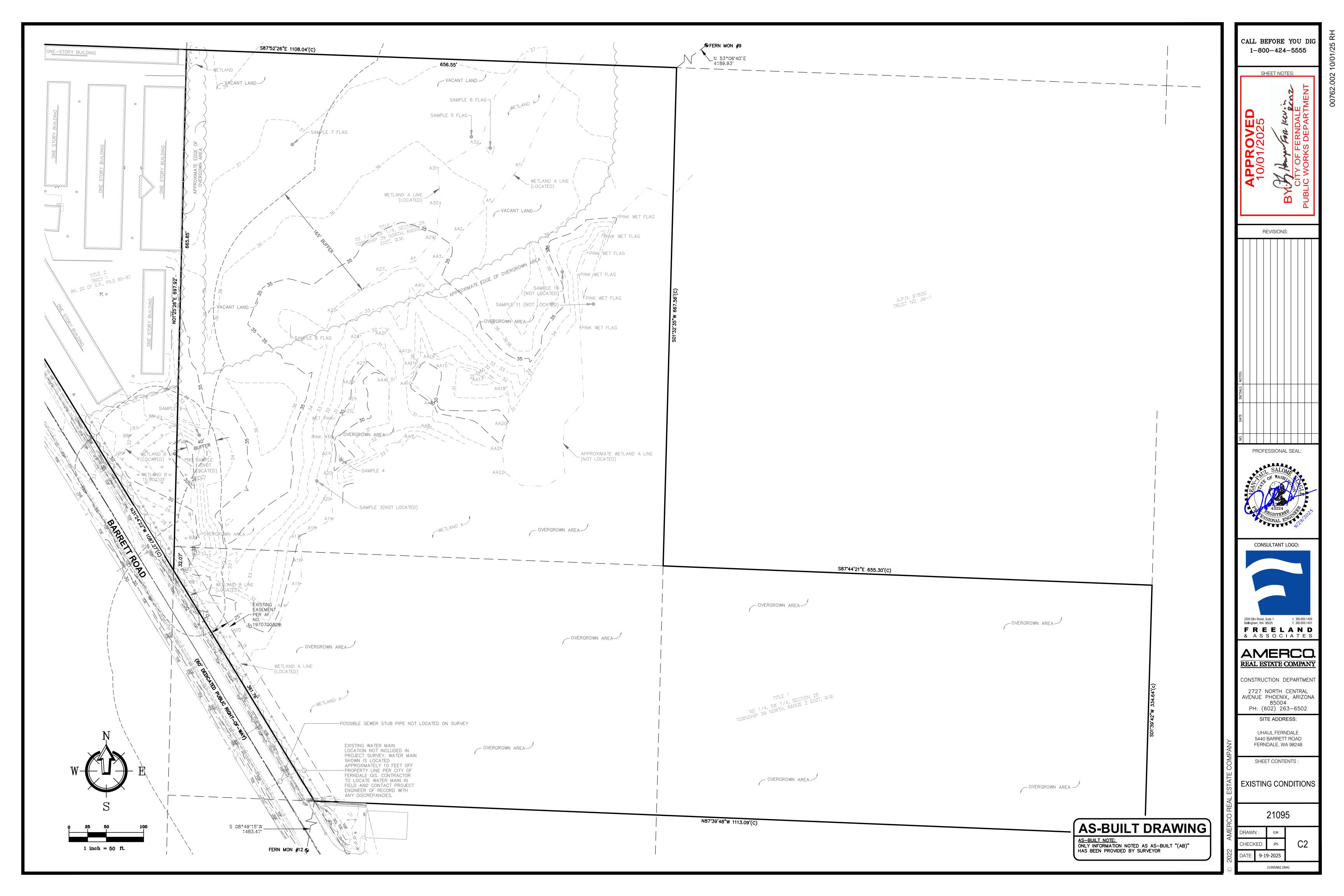
> SITE ADDRESS: UHAUL FERNDALE 5440 BARRETT ROAD

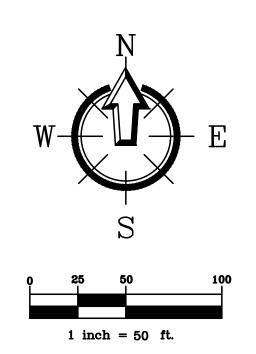
FERNDALE, WA 98248

SHEET CONTENTS:

COVER SHEET

9-19-2025

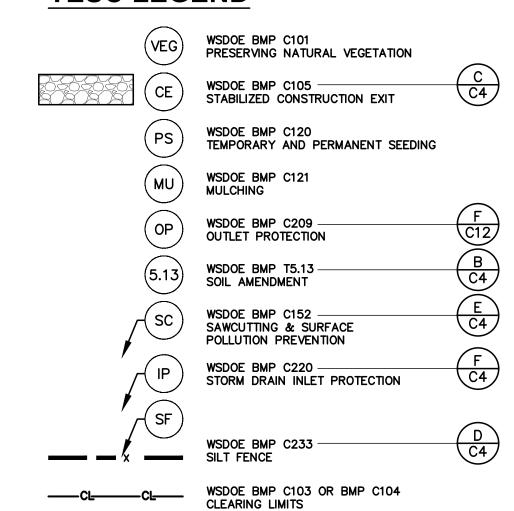




TESC CONTRACTOR RESPONSIBILITY

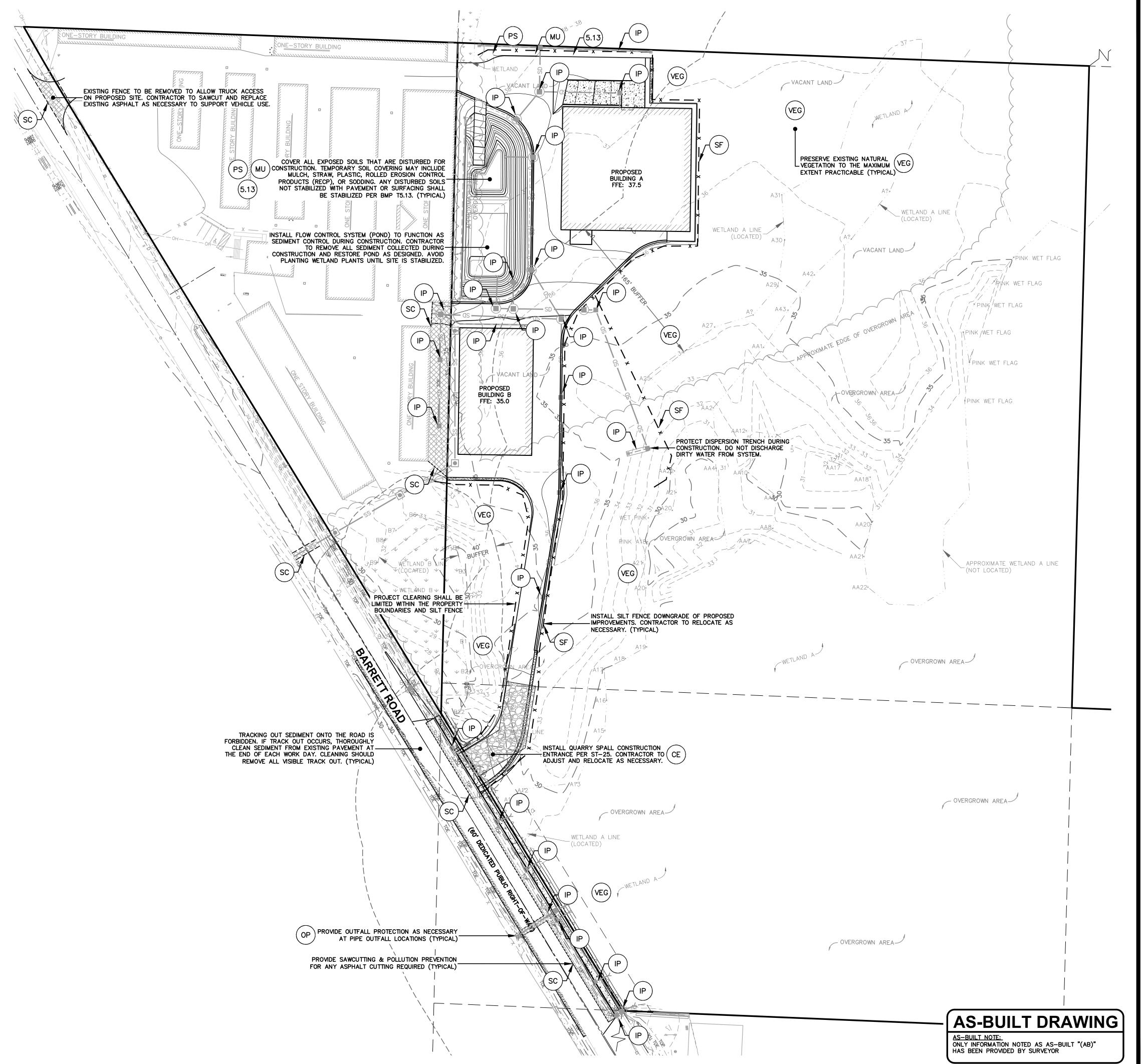
- 1. TEMPORARY EROSION CONTROL BMPs SHOWN IN THESE PLANS ARE THE MINIMUM NECESSARY FOR PERMIT APPROVALS. ADDITIONAL BMPs MAY BE REQUIRED DURING THE COURSE OF CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ADDITIONAL BMPs OR BMP MAINTENANCE THAT MAY BE REQUIRED DURING CONSTRUCTION.
- 2. THIS PROJECT WILL DISTURB MORE THAN ONE ACRE OF SOIL AND WILL REQUIRE A NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT FROM WASHINGTON DOE. THE OWNER WILL OBTAIN THE NPDES PERMIT AND WILL TRANSFER THE PERMIT TO THE CONTRACTOR PRIOR TO CONSTRUCTION.
- 3. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS IN THE NPDES PERMIT. THE CONTRACTOR SHALL PREPARE AND MAINTAIN AN EROSION CONTROL LOG BOOK IN ACCORDANCE WITH NPDES PERMIT REQUIREMENTS. NO ADDITIONAL COMPENSATION WILL BE MADE FOR BMP MAINTENANCE OR REPAIRS THAT RESULT FROM COMPLIANCE WITH THE NPDES PERMIT. LIKEWISE, ANY ADDITIONAL BMP'S THAT MAY BE REQUIRED FOR COMPLIANCE WITH THE NPDES PERMIT DURING CONSTRUCTION SHALL BE IMPLEMENTED AT THE CONTRACTOR'S EXPENSE.

TESC LEGEND



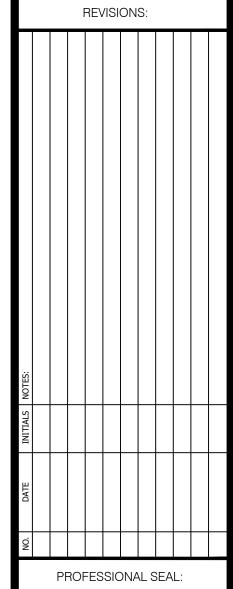
TEMPORARY EROSION/SEDIMENTATION CONTROL

- 1. A COPY OF THE APPROVED TESC PLAN MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
- 2. APPROVAL OF THIS TEMPORARY EROSION & SEDIMENTATION CONTROL (TESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT STRUCTURES, DRIVEWAYS OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
- 3. THE IMPLEMENTATION OF THIS TESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE TESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
- 4. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING CONSTRUCTION, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE CONSTRUCTION.
- 5. TESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, UNLESS REVISED BY A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD. TESC FACILITIES SHALL BE INSTALLED IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS.
- 6. THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD. THESE TESC FACILITIES SHALL BE UPGRADED (E.G., ADDITIONAL SUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC,) AS NEEDED FOR UNEXPECTED STORM EVENTS.
- 7. THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE CESCL AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
- 8. ANY AREA NEEDING TESC MEASURES, NOT REQUIRING IMMEDIATE ATTENTION, SHALL BE ADDRESSED WITHIN FIFTEEN (15) DAYS.
- 9. THE TESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN 24 HOURS FOLLOWING A STORM EVENT THAT PRODUCES RUNOFF FROM THE SITE.
- 10. WASH PADS MAY BE NECESSARY TO ENSURE PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE
- 11. MULCHING OF ANY TYPE SHALL BE INSTALLED PER THE RATES AND STANDARDS PRESENTED IN VOL. II, TABLE 4.1.8 OF THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, 2014 EDITION BY DEPARTMENT OF
- 12. ALL WORK AND MATERIAL SHALL BE IN ACCORDANCE WITH WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
- 13. EROSION & SEDIMENTATION CONTROL FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS ON THIS PLAN. LOCATIONS MAY BE MOVED TO SUIT FIELD CONDITIONS, SUBJECT TO APPROVAL BY THE CONTRACTORS CESCL OR ENGINEER OF RECORD.
- 14. COVER ALL DIRT/TOPSOIL PILES WITH PLASTIC SHEETING (BMP C123) DURING CONSTRUCTION WHEN NOT IN USE.
- 15. NETS AND/OR EROSION CONTROL BLANKETS (BMP C122) MAY BE USED IN LIEU OF TEMPORARY MULCHING.
- 16. CONSTRUCTION SCHEDULE- PENDING APPROVAL OF PLANS FROM THE CITY OF FERNDALE.
- 17. ADDITIONAL BMPs MAY BE USED OR REQUIRED AS CONDITIONS WARRANT. BMPs SHALL BE INSTALLED PER RECOMMENDATIONS IN THE DOE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, CURRENT



CALL BEFORE YOU DIG 1-800-424-5555









AMERCO. REAL ESTATE COMPANY

CONSTRUCTION DEPARTMENT

2727 NORTH CENTRAL

AVENUE PHOENIX, ARIZONA

85004

PH: (602) 263-6502

SITE ADDRESS:

UHAUL FERNDALE 5440 BARRETT ROAD FERNDALE, WA 98248

SHEET CONTENTS :

TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

21095

DRAWN: GJK

CHECKED: JPS

CATE: 9-19-2025

REVISIONS:

PROFESSIONAL SEAL

CONSULTANT LOGO: Bellingham, WA 98225 FREELAND

& ASSOCIATES AMERCO REAL ESTATE COMPANY

CONSTRUCTION DEPARTMENT 2727 NORTH CENTRAL AVENUE PHOENIX, ARIZONA 85004

PH: (602) 263-6502 SITE ADDRESS:

UHAUL FERNDALE 5440 BARRETT ROAD FERNDALE, WA 98248

SHEET CONTENTS :

SWPPP & TEMPORAR\ **EROSION & SEDIMENT** CONTROL DETAILS

9-19-2025 21095AB2.DWG

ELEMENT #1: MARK CLEARING LIMITS CLEARING LIMITS AND NEARBY SENSITIVE AREAS AND THEIR BUFFERS, WILL BE CLEARLY MARKED PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES, WHICH INCLUDES CLEARING AND GRADING. THESE AREAS WILL BE CLEARLY MARKED IN THE FIELD TO PREVENT DAMAGE AND OFFSITE IMPACTS.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMP'S CONSIDERED FOR ELEMENT #1 INCLUDE: BMP C131: PRESERVING NATURAL VEGETATION & BMP C133: HIGH VISIBILITY PLASTIC OR METAL FENCE

A SINGLE ENTRANCE POINT WILL BE INSTALLED FOR CONSTRUCTION ACCESS TO THE PROPOSED ONSITE IMPROVEMENTS FROM BARRETT ROAD. EARTHWORK EQUIPMENT WILL REMAIN WITHIN THE DISTURBED AREA TO THE MAXIMUM EXTENT PRACTICABLE. CONSTRUCTION TRAFFIC THAT WILL ROUTINELY LEAVE THE SITE (E.G. WORK TRUCKS, PERSONAL VEHICLES) SHALL REMAIN ON PAVED SURFACES TO THE MAXIMUM EXTENT PRACTICABLE. PAVED ROADS & PARKING AREAS SHALL BE CLEANED AT THE END OF EACH DAY SEDIMENT TRANSPORTED TO ROADS FROM THE SITE SHALL BE SWEPT AND DISPOSED OF AT A CONTROLLED SEDIMENT DISPOSAL AREA ON SITE OR REMOVED OFF SITE AND DISPOSED AT AN APPROVED FILL SITE. IF STREET WASHING IS NEEDED, IT WILL ONLY OCCUR AFTER SEDIMENT HAS BEEN REMOVED AS DESCRIBED. THE RESULTING WASH WASTEWATER WOULD THEN BE CONTROLLED BY PUMPING IT BACK ON SITE. ALL CONSTRUCTION ACCESS POINTS WILL BE RESTORED TO PRE-CONSTRUCTION OR PROPOSED

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMPS CONSIDERED FOR ELEMENT #2 INCLUDE: BMP C135: STABILIZED CONSTRUCTION ENTRANCE, HOUSEKEEPING/MAINTENANCE BMP: DAILY STREET SWEEPING, & HOUSEKEEPING/MAINTENANCE BMP: BMP C140 DUST

FLOW RATES SHALL BE CONTROLLED TO THE MAXIMUM EXTENT PRACTICAL. INSTALL PROPOSED DETENTION SYSTEM EARLY IN THE CONSTRUCTION PROCESS FOR FLOW AND SEDIMENT CONTROL. CONTRACTOR SHALL PRESERVE VEGETATED AREAS ON OR NEAR THE SITE AS ALLOWABLE THROUGHOUT THE CONSTRUCTION PROCESS. TEMPORARY SEDIMENT TRAPS OR PONDS MAY BE DESIGNED, LOCATED, AND INSTALLED IF THE CONTRACTOR, PROJECT ENGINEER, OR CESCL DEEMS NECESSARY.

ELEMENT #4: INSTALL SEDIMENT CONTROLS
THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL AND EXISTING VEGETATION WILL BE RETAINED IN AN UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICABLE. ELEMENT #1 OF THIS PLAN, INCLUDING IMPLEMENTING PRESERVING NATURAL VEGETATION, WILL HELP RETAIN SOME AREAS IN AN UNDISTURBED STATE. SILT FENCING WILL BE INSTALLED DOWNHILL FROM DISTURBED AREAS TO TRAP AND RETAIN SEDIMENT ON SITE. OTHER SEDIMENT CONTROLS, SUCH AS TEMPORARY SEDIMENT TRAPS, SUMPS, GRAVEL FILER BERMS, STRAW WATTLES, ETC. MAY BE INSTALLED IF WARRANTED AS CONDITIONS CHANGE ON SITE DURING CONSTRUCTION.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMPS CONSIDERED FOR ELEMENT #4 INCLUDE:

BMP C233: SILT FENCE

ELEMENT #5: STABILIZE SOILS IF CONSTRUCTION OCCURS IN THE DRY SEASON (5/1 THROUGH 9/30), SOILS WILL NOT REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS. IF CONSTRUCTION OCCURS IN THE WET SEASON (10/1 THROUGH 4/30) SOILS WILL NOT REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. WHEN ACTIVE GRADING IS IN PROGRESS, THE DEADLINE FOR SOIL STABÍLIZATION MAY BE ÉXTENDED UPON DETERMINING THAT THE LIKELIHOOD OF EROSION IMPACTS IS LOW BASED ON THE TYPE AND AMOUNT OF SOIL EXPOSED, SITE TOPOGRAPHY, POTENTIAL FOR DISCHARGE TO CRITICAL AREAS AND LAKES, AND OTHER FACTORS, IN ADDITION, WEATHER CONDITIONS WILL CONTINUALLY BE MONITORED, INCLUDING BEFORE HOLIDAYS AND WEEKENDS, FOR PURPOSES OF PREPARING THE SITE FOR PREDICTED WEATHER CONDITIONS. BMPS THAT ARE EFFECTIVE I STABILIZING SOILS AND PROTECTING THEM FROM EXPOSURE TO RAIN AND WIND OR OTHER CLIMATIC CONDITIONS WILL BE IMPLEMENTED THROUGHOUT THE PROJECT. EVALUATION AND MONITORING OF BMP EFFECTIVENESS WILL OCCUR ON A DAILY BASIS. IN ADDITION, IN THE EVENT OF FORECASTED PRECIPITATION EVENTS, ADDITIONAL MEASURES TO

BMPS THAT WILL BE CONSIDERED THROUGHOUT CONSTRUCTION INCLUDE BUT ARE NOT LIMITED TO TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, PLASTIC COVERING, EROSION CONTROL FABRICS AND MATTING, THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED, AND DUST CONTROL.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMPS CONSIDERED FOR ELEMENT #5 INCLUDE: BMP C140: TEMPORARY AND PERMANENT SEEDING, BMP C141: MULCHING, BMP C142: NETS AND BLANKETS, BMP C143: PLASTIC COVERING, BMP C144: SODDING, BMP C145: TOPSOILING, & BMP C140: DUST CONTROL

ELEMENT #6: PROTECT SLOPES SIGNIFICANT CUT OR FILL SLOPES ARE NOT PROPOSED AS PART OF THIS PROJECT.

STORM DRAIN INLETS ARE PROPOSED AS PART OF THIS PROJECT. OPERABLE STORM DRAIN INLETS ON THE SITE AND WITHIN 500 FEET DOWNSTREAM OF THE CONSTRUCTION AREA ROADS WILL BE PROTECTED SO THAT STORMWATER RUNOFF DOES NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FILTRATION OR OTHER TREATMENT FOR SEDIMENT. STORM DRAIN INLET PROTECTION WILL BE USED TO DETERMINE THE MOST APPROPRIATE INLET PROTECTION DESIGN FOR THE SITE AND THE DOWNSTREAM AREA.

INLETS WILL BE INSPECTED WEEKLY AT A MINIMUM AND DAILY DURING STORM EVENTS. INLET PROTECTION DEVICES SHALL BE CLEANED OR REMOVED AND REPLACED BEFORE SIX INCHES OF SEDIMENT CAN ACCUMULATE. CONSTRUCTION ACCESS POINTS AND APPROACHES WILL BE MONITORED AND SWEPT TO MINIMIZE THE POTENTIAL OF SEDIMENT TRANSPORT. IF STREET WASHING OCCURS, THE WASH WASTEWATER WILL BE PUMPED BACK ON SITE.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMPS CONSIDERED FOR ELEMENT #7 INCLUDE: BMP C220: STORM DRAIN INLET PROTECTION

NO CHÂNNELS ARE PROPOSED AS PART OF THIS PROJECT. STORMWATER RUNOFF FROM THE PROPOSED PROJECT SITE AND FRONTAGE IMPROVEMENTS WILL BE DISPERSED INTO THE ADJACENT WETLANDS USING A DISPERSION TRENCH. A PORTION OF THE STORMWATER RUNOFF FROM BARRETT ROAD UPSTREAM OF THE PROJECT SITE WILL BE DIVERTED THROUGH THE PROJECT IMPROVEMENTS AND OUTFALL INTO THE ADJACENT, EXISTING DITCHES. OUTLET PROTECTION WILL BE PROVIDED FOR THE PROPOSED OUTFALL. PROVIDE STABILIZATION FOR ADJACENT BANKS, SLOPES, AND DOWNSTREAM REACHES AS NECESSARY AS IDENTIFIED BY THE CONTRACTOR OR CESCL ON SITE.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMPS CONSIDERED FOR ELEMENT #8 INCLUDE: BMP C202: CHANNEL LINING, BMP C122: NETS AND BLANKETS, BMP C207: CHECK DAMS, & BMP C209: OUTLET PROTECTION

ELEMENT #9: CONTROL POLLUTANTS

WASTE MATERIALS GENERATED ON SITE WILL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER; INCLUDING COVERING SOIL STOCKPILES. ROUTINE INSPECTIONS OF THE WASTE MATERIAL STORAGE AREAS WILL BE CONDUCTED TO MAKE SURE THAT LEAKS OR SPILLS DO NOT OCCUR. ANY LEAKAGE

PROVIDE COVER, CONTAINMENT, AND PROTECTION FROM VANDALISM FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND OTHER MATERIALS THAT HAVE THE POTENTIAL TO POSE A THREAT TO HUMAN HEALTH OR THE ENVIRONMENT. ON-SITE FUELING TANKS MUST INCLUDE SECONDARY CONTAINMENT. SECONDARY CONTAINMENT MEANS PLACING TANKS OR CONTAINERS WITHIN AN IMPERVIOUS STRUCTURE CAPABLE OF CONTAINING 110% OF THE VOLUME CONTAINED IN THE LARGEST TANK WITHIN THE CONTAINMENT STRUCTURE. DOUBLE-WALLED TANKS DO NOT REQUIRE ADDITIONAL SECONDARY CONTAINMENT.

MAINTENANCE OF HEAVY EQUIPMENT INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, SOLVENT AND DE-GREASING CLEANING AND/OR OTHER ACTIVITIES THAT MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORMWATER RUNOFF WILL BE CONDUCTED WITH SPILL PREVENTION MEASURES IN PLACE, INCLUDING CONDUCTING MAINTENANCE ON A TEMPORARY PAD THAT CAN BE USED TO CAPTURE LARGE SPILLS AND THE USE OF DRIP PANS. IN THE EVENT THAT EMERGENCY REPAIRS NEED TO BE PERFORMED AND CLIMATIC CONDITIONS MAY RESULT IN A PRECIPITATION EVENT PRIOR TO THE REPAIR BEING COMPLETED, THE REPAIR AREA, WHICH INCLUDES THE VEHICLE, WILL BE COVERED WITH TARPS OR OTHER PLASTIC SHEETING, DISCHARGES, SPILLS, OR LEAKS WILL BE CLEANED IMMEDIATELY. THE NOTIFICATION PROCEDURE OUTLINED IN THE PERMANENT SITE SWPPP IS AS FOLLOWS:

ALL SPILLS WILL BE REPORTED TO THE DEPARTMENT OF ECOLOGY, SPILL RESPONSE PROGRAM: (425) 649-7000.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMPS CONSIDERED FOR ELEMENT #9 INCLUDE: BMP C151: CONCRETE HANDLING & BMP C152: SAWCUTTING AND SURFACE POLLUTION PREVENTION

IF NECËSSARY, CLEAN, NON-TURBID DE-WATERING WATER, SUCH AS WELL-POINT GROUND WATER, CAN BE DISCHARGED TO SYSTEMS TRIBUTARY TO STATE SURFACE WATERS PROVIDED THE DE-WATERING FLOW DOES NOT CAUSE EROSION OR FLOODING OF RECEIVING WATERS. THESE CLEAN WATERS SHOULD NOT BE ROUTED THROUGH A STORMWATER

HIGHLY TURBID OR CONTAMINATED DEWATERING WATER FROM CONSTRUCTION EQUIPMENT OPERATION, CONCRETE TREMIE, POUR, OR WORK INSIDE A COFFERDAM SHALL BE HANDLED SEPARATELY FROM STORMWATER.

OTHER DISPOSAL OPTIONS, DEPENDING ON SITE CONSTRAINTS, MAY INCLUDE:

 INFILTRATION TRANSPORT OFF SITE IN VEHICLE, SUCH AS A VACUUM FLUSH TRUCK, FOR LEGAL DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATERS

ON-SITE TREATMENT USING CHEMICAL TREATMENT OR OTHER SUITABLE TREATMENT TECHNOLOGIES

SANITARY SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL . USE OF A SEDIMENTATION BAG WITH OUTFALL TO A DITCH OR SWALE FOR SMALL VOLUMES OF LOCALIZED DEWATERING.

ELEMENT #11: MAINTAIN BMPS

ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPS WILL BE INSPECTED BY THE CESCL OR CONTRACTOR, AND SHALL BE MAINTAINED, AND REPAIRED B' THE CONTRACTOR TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE WITH THE RELEVANT BMP IDENTIFIED IN ELEMENTS #1 THROUGH #10. TEMPORARY EROSION AND SEDIMENT CONTROLS IDENTIFIED ABOVE WILL BE INSPECTED DAILY DURING THE WET SEASON. NEEDED REPAIRS AND MAINTENANCE WILL OCCUR WITHIN SEVEN (7) DAYS OR, IN THE EVENT OF A FORECAST OF INCLEMENT WEATHER, REPAIRS AND MAINTENANCE WILL OCCUR

TEMPORARY EROSION AND SEDIMENT CONTROL BMPS WILL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT WILL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED.

ELEMENT #12: MANAGE THE PROJECT CONSTRUCTION:

- EXPOSED AREAS DURING THE CLEARING AND GRADING PROCESS WILL BE MULCHED AS PART OF THE CLEARING AND GRADING ACTIVITIES. CLEARING AND GRADING ACTIVITIES WILL OCCUR AFTER THE APPLICABLE PERMITS HAVE BEEN OBTAINED. REVEGETATION OF EXPOSED AREAS AND MAINTENANCE OF THAT VEGETATION WILL OCCUR AS PART OF THE PLANTING PHASE OF THE PROJECT TO BE INSTALLED AFTER SUB-GRADE ROAD BASE MATERIAL HAS BEEN INSTALLED AND PRIOR TO FINAL GRAVEL

- FROM MAY 1 THROUGH SEPTEMBER 30, SOIL WILL NOT BE EXPOSED/UNWORKED FOR 7 DAYS. FROM OCTOBER 1 THROUGH APRIL 30, SOIL WILL NOT REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. IN ADDITION, WEATHER CONDITIONS WILL CONTINUALLY BE MONITORED INCLUDING BEFORE HOLIDAYS AND WEEKENDS FOR PURPOSES OF PREPARING THE SITE FOR PREDICTED WEATHER CONDITIONS. BMPS THAT ARE EFFECTIVE IN STABILIZING SOILS AND PROTECTING THEM FROM EXPOSURE TO RAIN AND WIND OR OTHER CLIMATIC CONDITIONS WILL BE IMPLEMENTED THROUGHOUT THE PROJECT. INSPECTION AND EVALUATION OF THE EFFECTIVENESS OF THE BMPS WILL OCCUR ON A DAILY BASIS. IN ADDITION, IN THE EVENT OF FORECASTED PRECIPITATION EVENTS, ADDITIONAL MEASURES TO STABILIZE SOILS WILL BE TAKEN.

COORDINATION WITH UTILITIES AND OTHER CONTRACTORS:

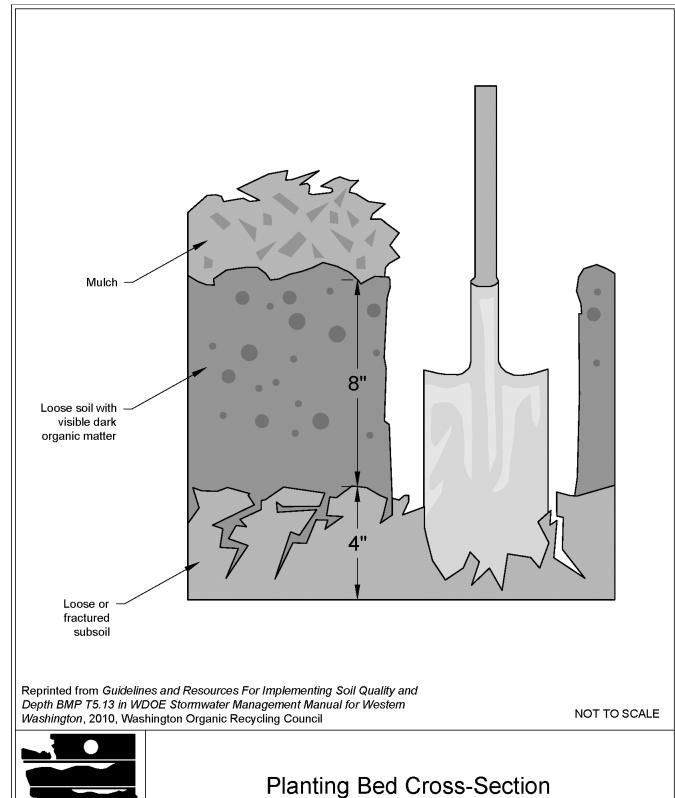
- THE STORMWATER MANAGEMENT REQUIREMENTS FOR ALL ASPECTS OF THE CONSTRUCTION PROJECT, INCLUDING UTILITIES, WERE CONSIDERED IN PREPARING THE

INSPECTION AND MONITORING - AS PREVIOUSLY MENTIONED, ALL BMPS WILL BE INSPECTED, MAINTAINED, AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION IN THE EVENT THAT INSPECTION AND/OR MONITORING REVEALS THAT THE BMPS IDENTIFIED IN THIS CONSTRUCTION SWPPP ARE INADEQUATE, DUE TO THE ACTUAL DISCHARGE OF OR POTENTIAL TO DISCHARGE A SIGNIFICANT AMOUNT OF ANY POLLUTANT, THIS SWPPP SHALL BE MODIFIED, AS APPROPRIATE, IN A TIMELY MANNER.

MAINTENANCE OF THE CONSTRUCTION SWPPP: - THE CONSTRUCTION SWPPP WILL BE RETAINED ON-SITE AND WILL BE UPDATED ON A REGULAR BASIS. MODIFICATIONS TO THE CONSTRUCTION SWPPP WILL BE MADE WHENEVER THERE IS A SIGNIFICANT CHANGE IN THE DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF ANY BMP.

ELEMENT #13: PROTECT LOW IMPACT DEVELOPMENT BMPS BMP TS.13 IS PROPOSED FOR THIS PROJECT. PROTECT COMPLETED LAWN AND LANDSCAPE AREAS FROM COMPACTION DUE TO CONSTRUCTION EQUIPMENT.

STORMWATER POLLUTION PREVENTION PLAN



ESTABLISHING A MINIMUM SOIL QUALITY AND DEPTH IS NOT THE SAME AS PRESERVATION OF NATURALLY OCCURRING SOIL AND VEGETATION. HOWEVER, ESTABLISHING A MINIMUM SOIL QUALITY AND DEPTH WILL PROVIDE IMPROVED ON-SITE MANAGEMENT OF STORMWATER FLOW AND WATER QUALITY. SOIL ORGANIC MATTER CAN BE ATTAINED THROUGH NUMEROUS MATERIALS SUCH AS COMPOST. COMPOSTED WOODY MATERIAL. BIOSOLIDS, AND FOREST PRODUCT RESIDUALS. IT IS IMPORTANT THAT THE MATERIALS USED TO MEET THE SOIL QUALITY AND DEPTH BMP BE APPROPRIATE AND BENEFICIAL TO THE PLANT COVER TO BE ESTABLISHED. LIKEWISE, IT IS IMPORTANT THAT IMPORTED TOPSOILS IMPROVE SOIL CONDITIONS AND DO NOT HAVE AN EXCESSIVE PERCENT OF CLAY FINES. THIS BMP CAN BE CONSIDERED INFEASIBLE ON TILL SOIL SLOPES GREATER THAN 33

DESIGN GUIDELINES SOIL RETENTION: RETAIN, IN AN UNDISTURBED STATE, THE DUFF LAYER AND NATIVE TOPSOIL TO THE MAXIMUM EXTENT PRACTICABLE. IN ANY AREAS REQUIRING GRADING REMOVE AND STOCKPILE THE DUFF LAYER AND TOPSOIL ON SITE IN A DESIGNATED, CONTROLLED AREA, NOT ADJACENT TO PUBLIC RESOURCES AND CRITICAL AREAS, TO BE REAPPLIED TO OTHER PORTIONS OF THE SITE WHERE

SOIL QUALITY: ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY IMPERVIOUS SURFACE. INCORPORATED INTO A DRAINAGE FACILITY OR ENGINEERED AS STRUCTURAL FILL OR SLOPE SHALL, AT PROJECT COMPLETION,

DEMONSTRATE THE FOLLOWING: 1. A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 10% DRY WEIGHT IN PLANTING BEDS, AND 5% ORGANIC MATTER CONTENT IN TURF AREAS, AND A PH FROM 6.0 TO 8.0 OR MATCHING THE PH OF THE UNDISTURBED SOIL. THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF EIGHT INCHES EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA. SUBSOILS BELOW THE TOPSOIL LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES WITH SOME INCORPORATION OF THE UPPER

MATERIAL TO AVOID STRATIFIED LAYERS, WHERE FEASIBLE. 2.MULCH PLANTING BEDS WITH 2 INCHES OF ORGANIC MATERIAL

3.USE COMPOST AND OTHER MATERIALS THAT MEET THESE ORGANIC CONTENT a. THE ORGANIC CONTENT FOR

"PRE-APPROVED" AMENDMENT RATES CAN BE MET ONLY USING COMPOST MEETING THE COMPOST SPECIFICATION THE EXCEPTION THAT THE COMPOST MAY HAVE UP TO 35% BIOSOLIDS OR MANURE. THE COMPOST MUST ALSO HAVE AN ORGANIC MATTER CONTENT OF 40% TO 65%, AND A CARBON TO NITROGEN RATION BELOW 25:1. THE CARBON TO NITROGEN RATION MAY BE AS HIGH 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND

LOWLANDS REGION. **b.CALCULATED AMENDMENT RATES MAY** BE MET THROUGH USE OF COMPOSTED MATERIALS MEETING (A.) ABOVE; OR OTHER ORGANIC MATERIALS AMENDED TO MEET THE CARBON TO NITROGEN RATIO REQUIREMENTS. AND MEETING THE CONTAMINANT STANDARDS OF GRADE A COMPOST.

THE RESULTING SOIL SHOULD BE CONDUCIVE TO THE TYPE OF VEGETATION TO BE ESTABLISHED.

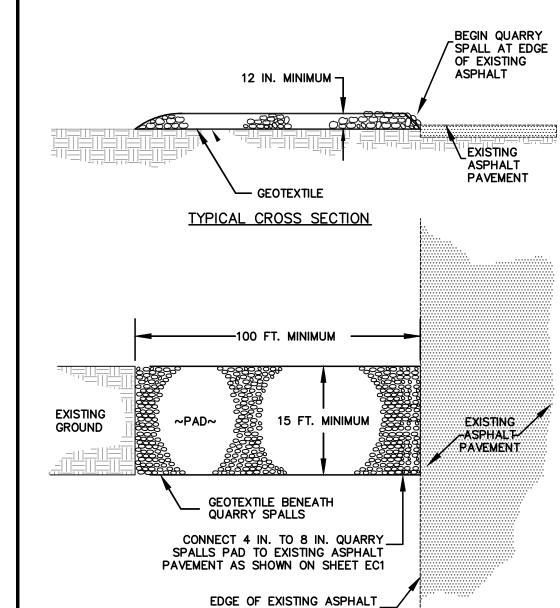
IMPLEMENTATION OPTIONS: THE SOIL QUALITY DESIGN GUIDELINES LISTED ABOVE CAN BE MET BY USING ONE OF THE METHODS LISTED

1. LEAVE UNDISTURBED NATIVE VEGETATION AND SOIL, AND PROTECT FROM COMPACTION DURING CONSTRUCTION. 2. AMEND EXISTING SITE TOPSOIL OR SUBSOIL EITHER AT DEFAULT "PRE-APPROVED" RATES, OR AT CUSTOM CALCULATED RATES BASED ON TESTS OF THE SOIL AND AMENDMENT

3.STOCKPILE EXISTING TOPSOIL DURING GRADING, AND REPLACE IT PRIOR TO PLANTING. STOCKPILED TOPSOIL MUST ALSO BE AMENDED IF NEEDED TO MEET THE ORGANIC MATTER OR DEPTH REQUIREMENTS, EITHER AT A DEFAULT "PRE-APPROVED" RATE OR AT A CUSTOM CALCULATED RATE. 4.IMPORT TOPSOIL MIX OF SUFFICIENT

ORGANIC CONTENT AND DEPTH TO MEET

THE REQUIREMENTS. MORE THAN ONE METHOD MAY BE USED ON DIFFERENT PORTIONS OF THE SAME SITE. SOIL THAT ALREADY MEETS THE DEPTH AND ORGANIC MATTER QUALITY STANDARDS, AND IS NOT COMPACTED, DOES NOT NEED TO BE AMENDED.



THE PAD SHALL BE REMOVED AND REPLACED WHEN SOIL IS EVIDENT ON THE SURFACE OF THE PAD.

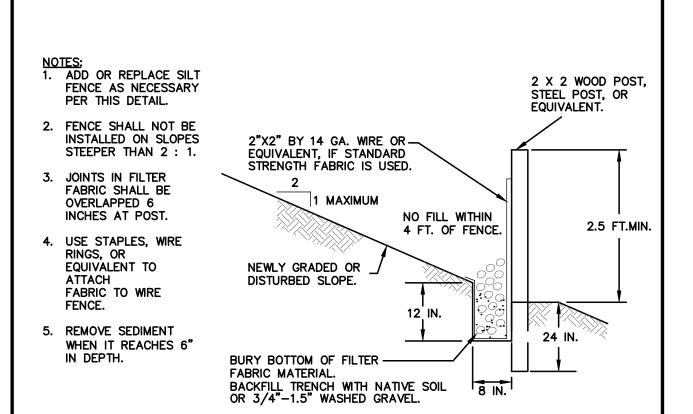
- 2. PAD THICKNESS SHALL BE INCREASED IF SOIL CONDITIONS DICTATE OR PER THE DIRECTION OF ENGINEER OF RECORD OR THE CERTIFIED EROSION & SEDIMENTATION CONTROL LEAD (CESCL).
- 3. MINIMUM DIMENSIONS MAY BE MODIFIED AS REQUIRED BY SITE CONDITIONS UPON APPROVAL OF WHATCOM COUNTY.

(BEGIN QUARRY SPALL)

4. SHAKER PLATS MAY BE SUBSTITUTED FOR QUARRY SPALL ENTRANCE OF DETERMINED APPROPRIATE BY PROJECT CESCL.

CONSTRUCTION ENTRANCE

POST-CONSTRUCTION TOPSOIL QUALITY & DEPTH

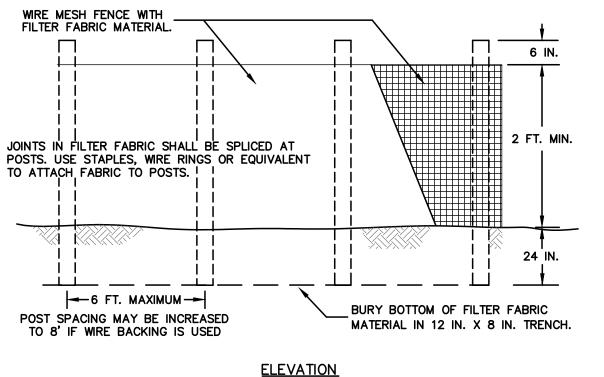


limitation of liability, and disclaimer.

DEPARTMENT OF

TYPICAL CROSS SECTION

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BMP C152: Sawcutting and Surfacing Pollution Prevention

Sawcutting and surfacing operations generate slurry and process water that contains fine particles and high pH (concrete cutting), both of which can violate the water quality standards in the receiving water. Concrete spillage or concrete discharge to surface waters of the State is prohibited. Use this BMP to minimize and eliminate process water and slurry created

through sawcutting or surfacing from entering waters of the State. Conditions of Use Utilize these management practices anytime sawcutting or surfacing operations take place. Sawcutting and surfacing operations include, but

temporarily blocking catch basins.

- are not limited to, the following: Sawing
- Coring
- Grinding
- Roughening Hydro-demolition
- Bridge and road surfacing Design and

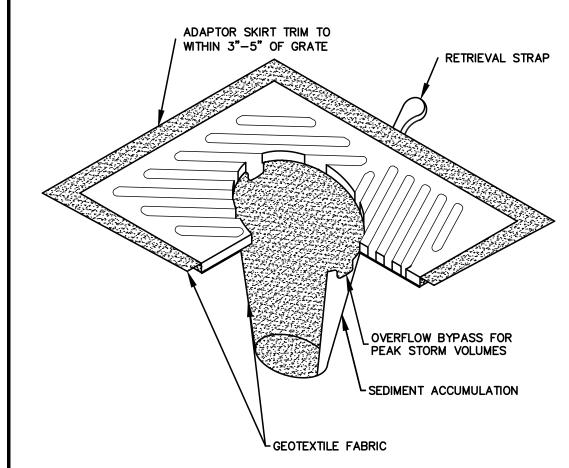
Installation

- Vacuum slurry and cuttings during cutting and surfacing operations. Slurry and cuttings shall not remain on permanent concrete or asphalt Specifications
 - Slurry and cuttings shall not drain to any natural or constructed drainage conveyance including stormwater systems. This may require
 - Dispose of collected slurry and cuttings in a manner that does not violate ground water or surface water quality standards.
 - Do not allow process water generated during hydro-demolition. surface roughening or similar operations to drain to any natural or constructed drainage conveyance including stormwater systems. Dispose process water in a manner that does not violate ground water or surface water quality standards.
 - Handle and dispose cleaning waste material and demolition debris in a manner that does not cause contamination of water. Dispose of sweeping material from a pick-up sweeper at an appropriate disposal

Continually monitor operations to determine whether slurry, cuttings, or Standards process water could enter waters of the state. If inspections show that a violation of water quality standards could occur, stop operations and immediately implement preventive measures such as berms, barriers, secondary containment, and vacuum trucks.

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SAWCUTTING POLLUTION PREVENTION

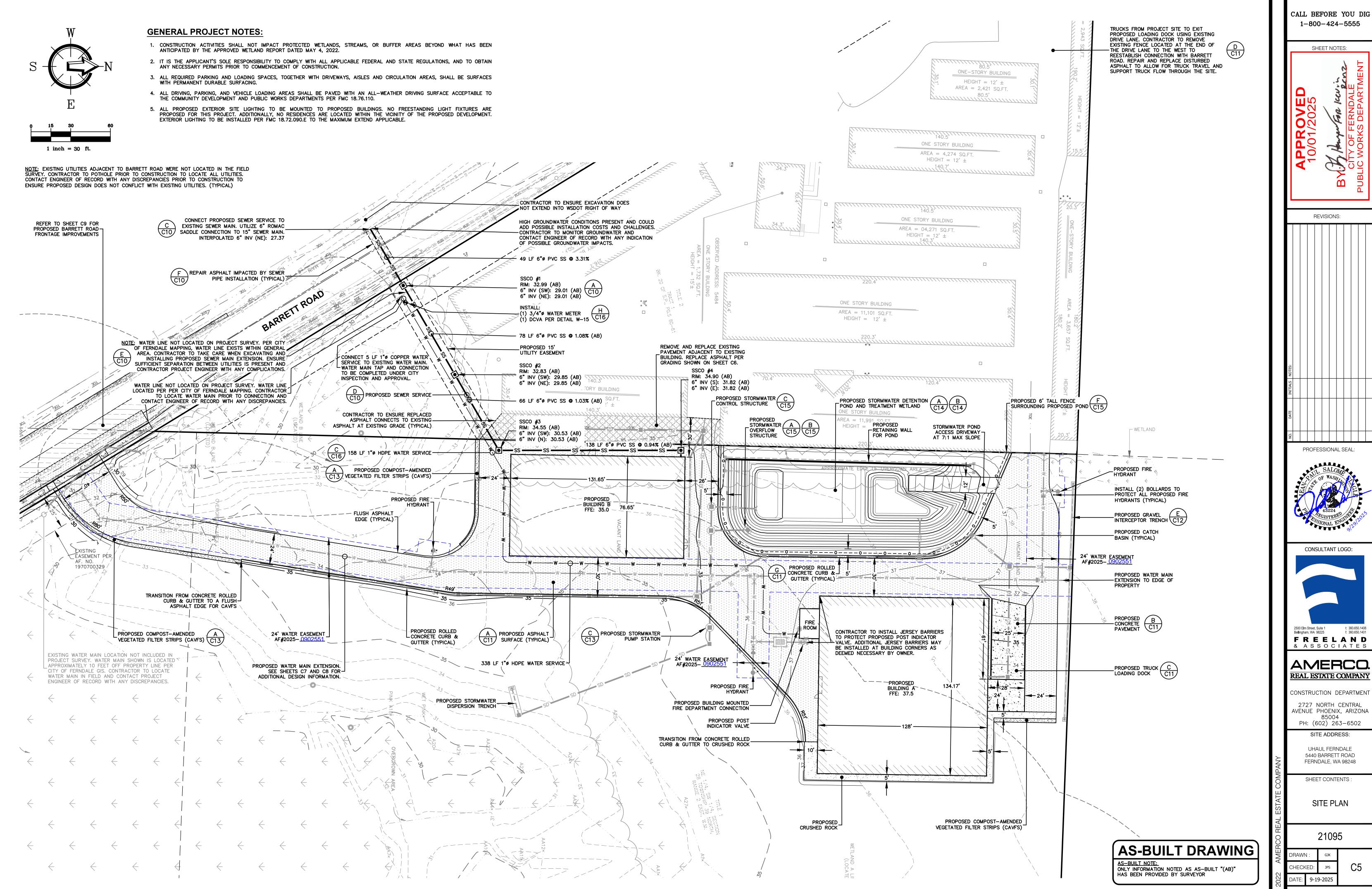


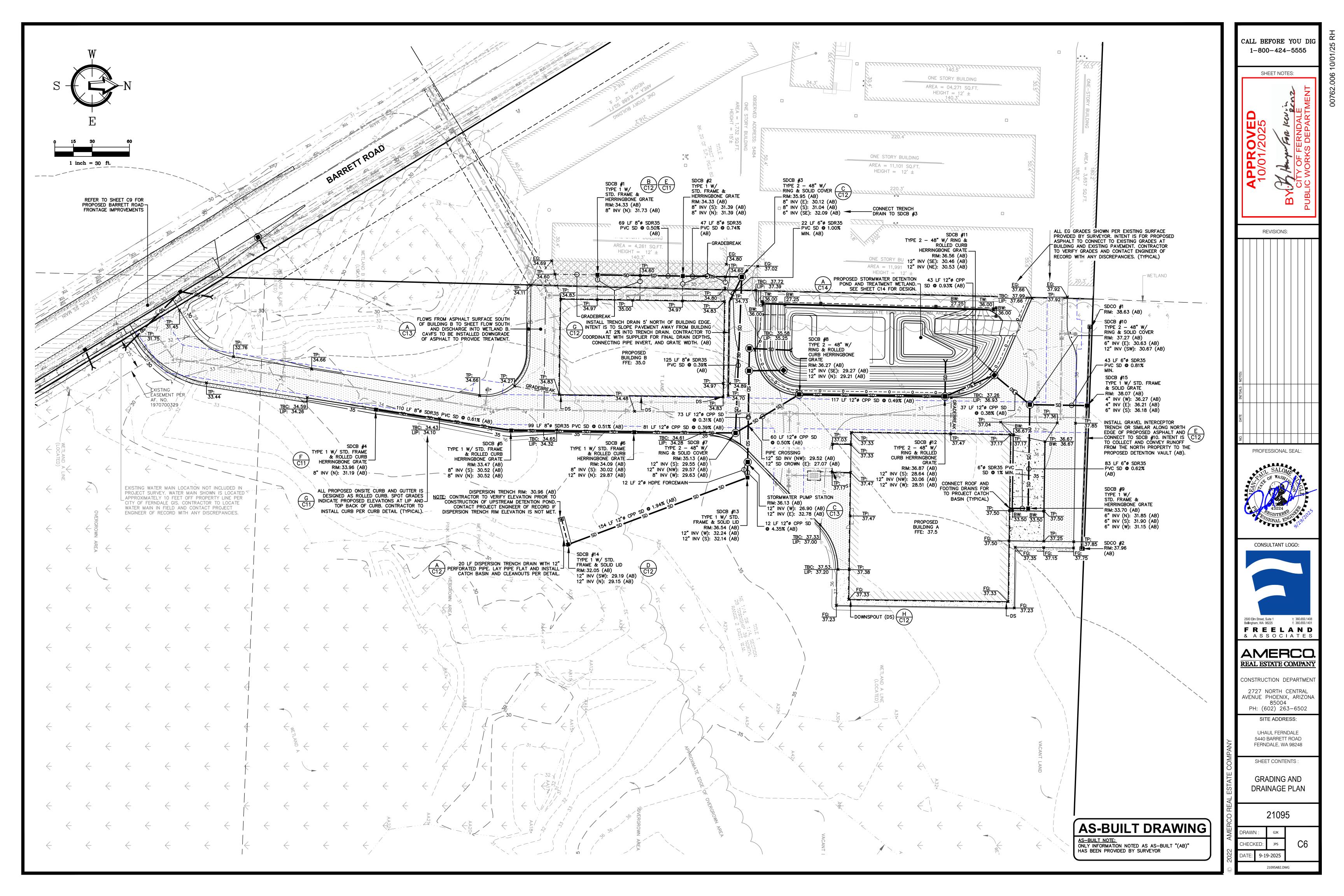
- INSERT SHALL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
- 2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES HALF FULL.
- 3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, AND RE-INSERTING IT INTO THE CATCH BASIN.

AS-BUILT DRAWING AS-BUILT NOTE: ONLY INFORMATION NOTED AS AS-BUILT "(AB)"

HAS BEEN PROVIDED BY SURVEYOR

TEMPORARY INLET PROTECTION





FIRE SERVICE LINE

INSTALL PERFORATED STORM DRAIN SURROUNDING

VAULT TO COLLECT GROUNDWATER. CONNECT DRAIN

TO BUILDING FOUNDATION AND ROOF DRAINS.

_PROPOSED DOUBLE CHECK VALVE ASSEMBLY (__G__)

FIRE VAULT WITH TRAFFIC RATED LID.

16 LF 10" DI RESTRAINED

JOINT FIRE SERVICE LINE

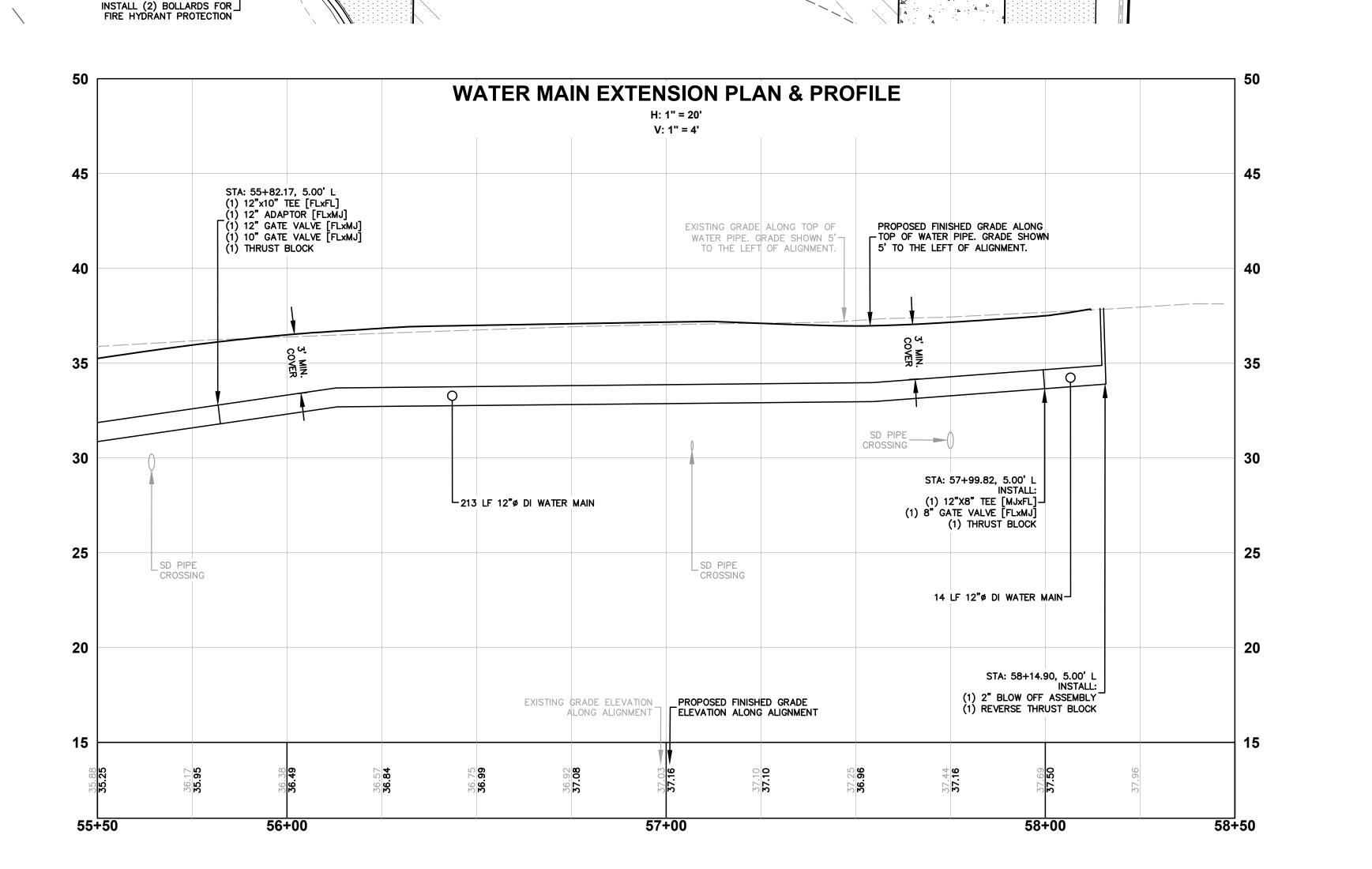
(1) REVERSÉ THRUST BLOCK

23 LF 6"ø DI WATER MAIN-

STA: 55+82.17, 67.90' R

(1) FIRE HYDRANT ASSEMBLY

INSTALL: →



FIRE SERVICE INSTALLATION NOTES

-3 LF 8"ø DI WATER MAIN

STA: 58+09.88, 72.13 L'

(1) FIRE HYDRANT ASSEMBLY

INSTALL (2) BOLLARDS FOR FIRE HYDRÁNT PROTECTION

24' WIDE WATER

MAIN EASEMENT

AF#2025-<u>090</u>2

—INSTALL:

_11 LF 6"ø DI WATER MAIN

-14 LF 12"Ø DI WATER MAIN

LINSTALL:

STA: 58+14.90, 5.00' L

(1) 2" BLOW OFF ASSEMBLY C16

- INSTALLATION WORK SHALL BE PPERFORMED BY FULLY EXPERIENCED AND RESPONSIBLE PERSONS. NFPA 24 4.2.1
- 2. THE AUTHORITY HAVING JURISDICTION (AHJ) SHALL ALWAYS BE CONSULTED BEFORE THE INSTALLATION OR REMODELING OF PRIVATE FIRE SERVICE MAINS. NFPA 24 4.2.2
- 3. PIPING MANUFACTURED IN ACCORDANCE WITH TABLE NFPA 24 10.1.1.1 SHALL BE PERMITTED TO BE USED.
- 4. PIPING SPECIFICALLY LISTED FOR USE IN PRIVATE FIRE SERVICE MAINS SHALL BE PERMITTED TO BE USED. NFPA 24 10.1.1.2
- THE DEPTH OF COVER FOR PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES TO PROTECT AGAINST FREEZING SHALL BE A MINIMUM OF 4 FEET (48 INCHES). NFPA 24 10.4.2.1 AND AHJ
- 6. PRIVATE FIRE SERVICE MAINS INSTALLED UNDER RAILROAD TRACKS SHALL BE BURIED AT A MINIMUM DEPTH OF 4 FEET (48 INCHES). NFPA 24 10.4.2.4
- ALL PIPING SHALL BE INSTALLED A MINIMUM OF 12 INCHES BELOW THE BOTTOM OF BUILDING FOUNDATION OR FOOTERS. NFPA 10.4.3.1.2
- 8. AFTER INSTALLATION, RODS, NUTS, BOLTS, WASHERS, CLAMPS, AND OTHER RESTRAINING DEVICES SHALL BE CLEANED AND THOROUGHLY COATED WITH A BITUMINOUS OR OTHER ACCEPTABLE CORROSION-RETARDING MATERIAL. NFPA 24 10.6.2.5
- 9. ALL PIPING AND ATTACHED APPURTENANCES SUBJECTED TO SYSTEM WORKING PRESSURE SHALL BE HYDROSTATICALLY TESTED AT GAUGE PRESSURE OF 200 PSI OR 50 PSI IN EXCESS OF THE SYSTEM WORKING PRESSURE, WHICHEVER IS GREATER, AND SHALL MAINTAIN THAT PRESSURE AT GAUGE PRESSURE OF + OR - 5 PSI FOR A MINIMUM OF 2 HOURS. NFPA 24 10.10.2.2.1
- 10. ACCEPTABLE TEST RESULTS SHALL BE DETERMINED BY INDICATION OF EITHER A PRESSURE LOSS LESS THAN GAUGE PRESSURE OF 5 PSI OR BY NO VISUAL LEAKAGE. NFPA 24 10.10.2.2.2
- 11. WHERE USING PIPING LISTED FOR PRIVATE FIRE SERVICE MAINS, THE MANUFACTURERS INSTALLATION INSTRUCTION FOR BACKFILL AS WELL AS AHJ REQUIREMENTS FOR BACKFILL SHALL BE FOLLOWED. NFPA
- 12. PER AHJ REQUIREMENTS THE FDC SHALL BE COLORED APPROPRIATELY FOR USE. RUSTOLEUM RED FOR STAND ALONE SPRINKLER SYSTEM RUSTOLEUM GREEN FOR STAND ALONE STANDPIPE SYSTEM RUSTOLEUM YELLOW FOR COMBINATION STANDPIPE SPRINKLER
- 13. PER AHJ REQUIREMENTS REMOTE FDC SHALL BE SIGNED OR ADDRESSED APPROPRIATELY TO SHOW WHAT BUILDING OR PORTION OF BUILDING IT IS CONNECTED TO.
- 14. PER AHJ REQUIREMENTS IF THE SPRINKLER SYSTEM RISER ROOM IS ACCESSIBLE THROUGH AN EXTERIOR DOOR, A PIV IS NOT NEEDED; HOWEVER, WE STILL REQUIRE AN ISOLATION VALVE AT THE PROPERTY LINE OR EDGE OF EASEMENT.
- 15. ALL ABOVE REQUIREMENTS SHALL BE INSPECTED AND APPROVED BY THE AHJ BEFORE PERMIT CAN BE FINALED.
- 16. INSTALLER MUST BE A LEVEL "U" CERTIFICATE HOLDER.

FIRE SERVICE SIZING NOTE

CONTRACTOR SHALL VERIFY FIRE SERVICE SUPPLY LINE SIZE WITH SPRINKLER CONTRACTOR PRIOR TO INSTALLATION.

CALL BEFORE YOU DIG 1-800-424-5555

SHEET NOTES:



REVISIONS:

PROFESSIONAL SEAL:



CONSULTANT LOGO:



FREELAND & ASSOCIATES

AMERCO. **REAL ESTATE COMPANY**

CONSTRUCTION DEPARTMENT 2727 NORTH CENTRAL AVENUE PHOENIX, ARIZONA 85004 PH: (602) 263-6502

SITE ADDRESS:

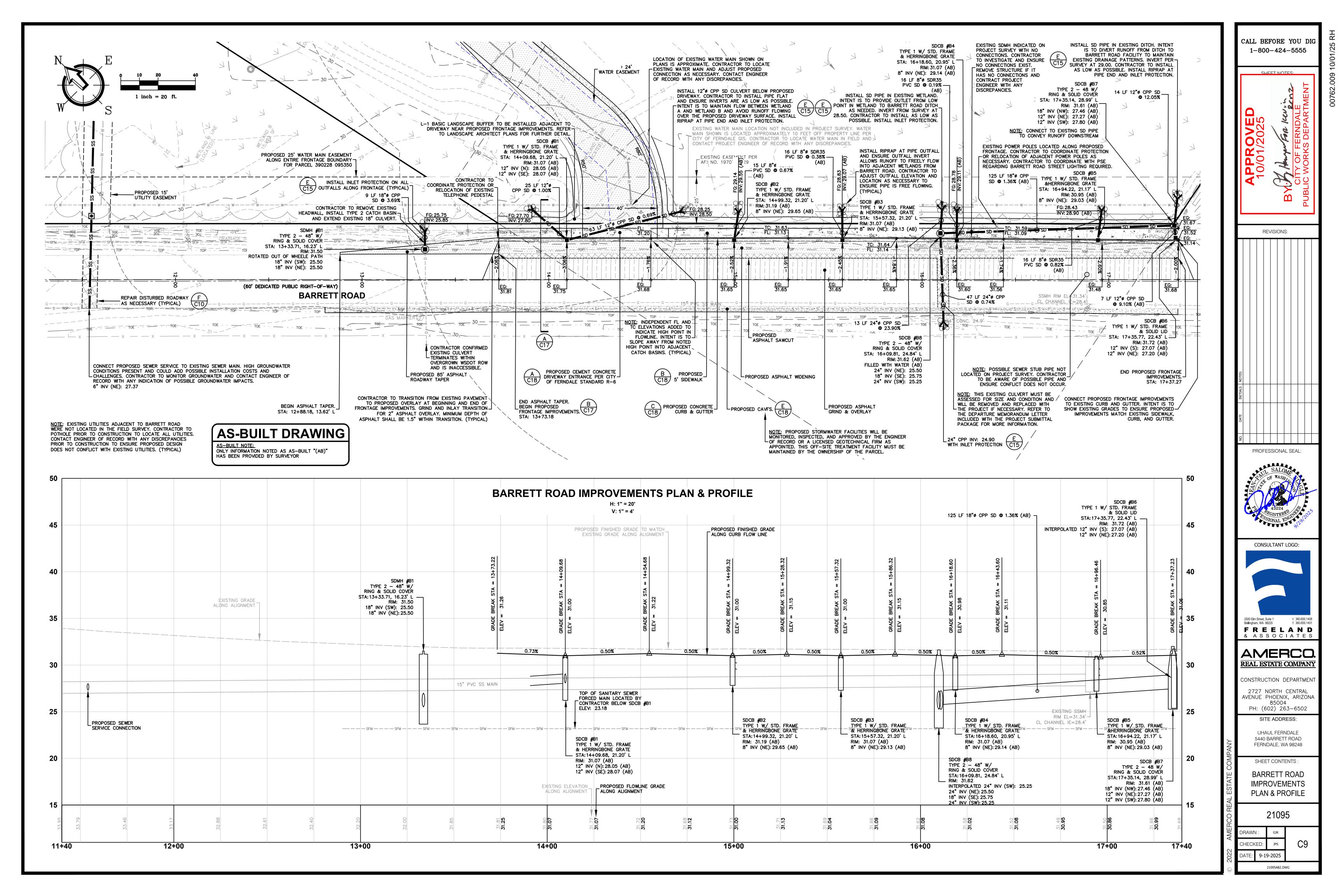
UHAUL FERNDALE 5440 BARRETT ROAD FERNDALE, WA 98248

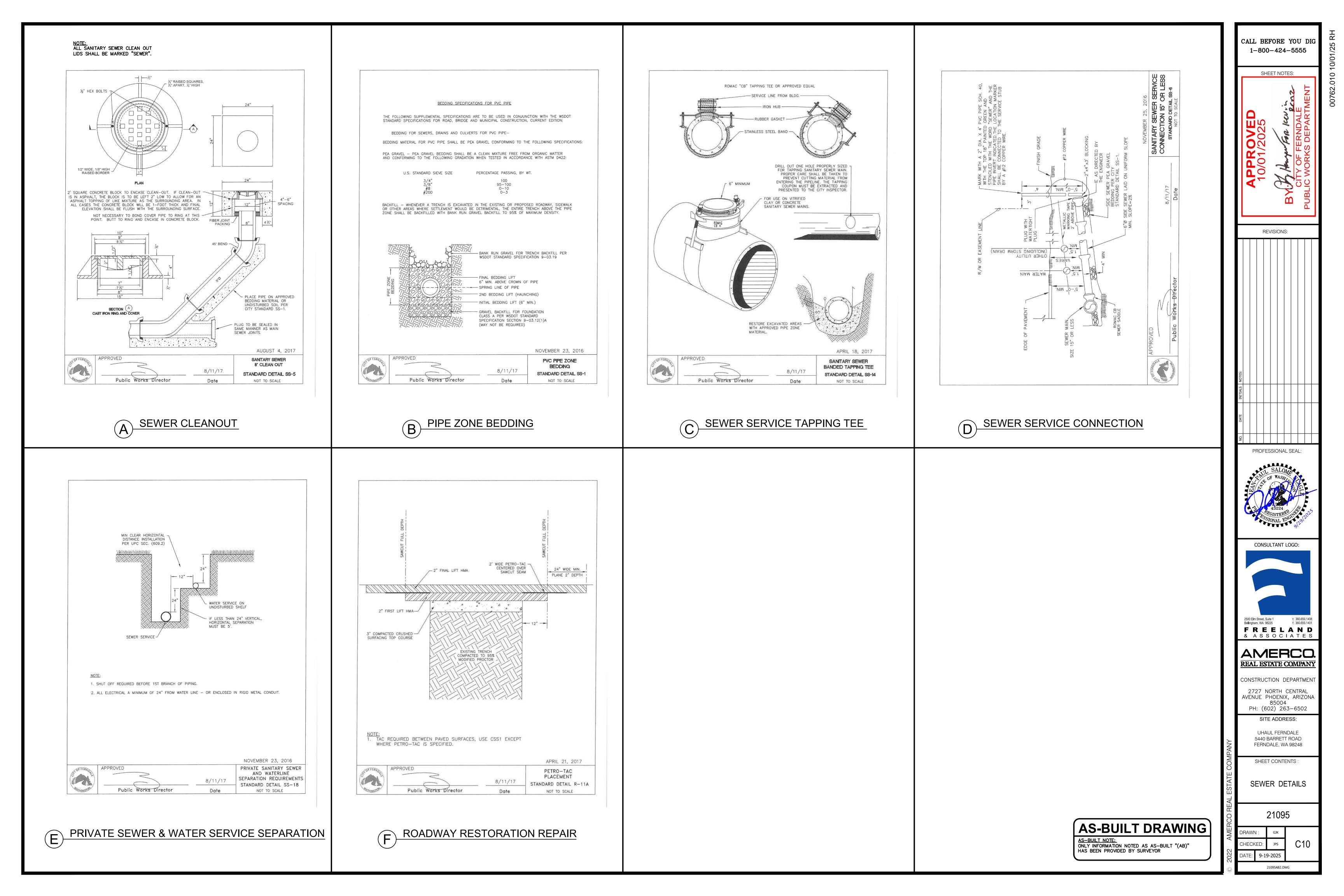
SHEET CONTENTS: WATER MAIN **EXTENSION PLAN** & PROFILE (STA: 55+50 TO 58+50)

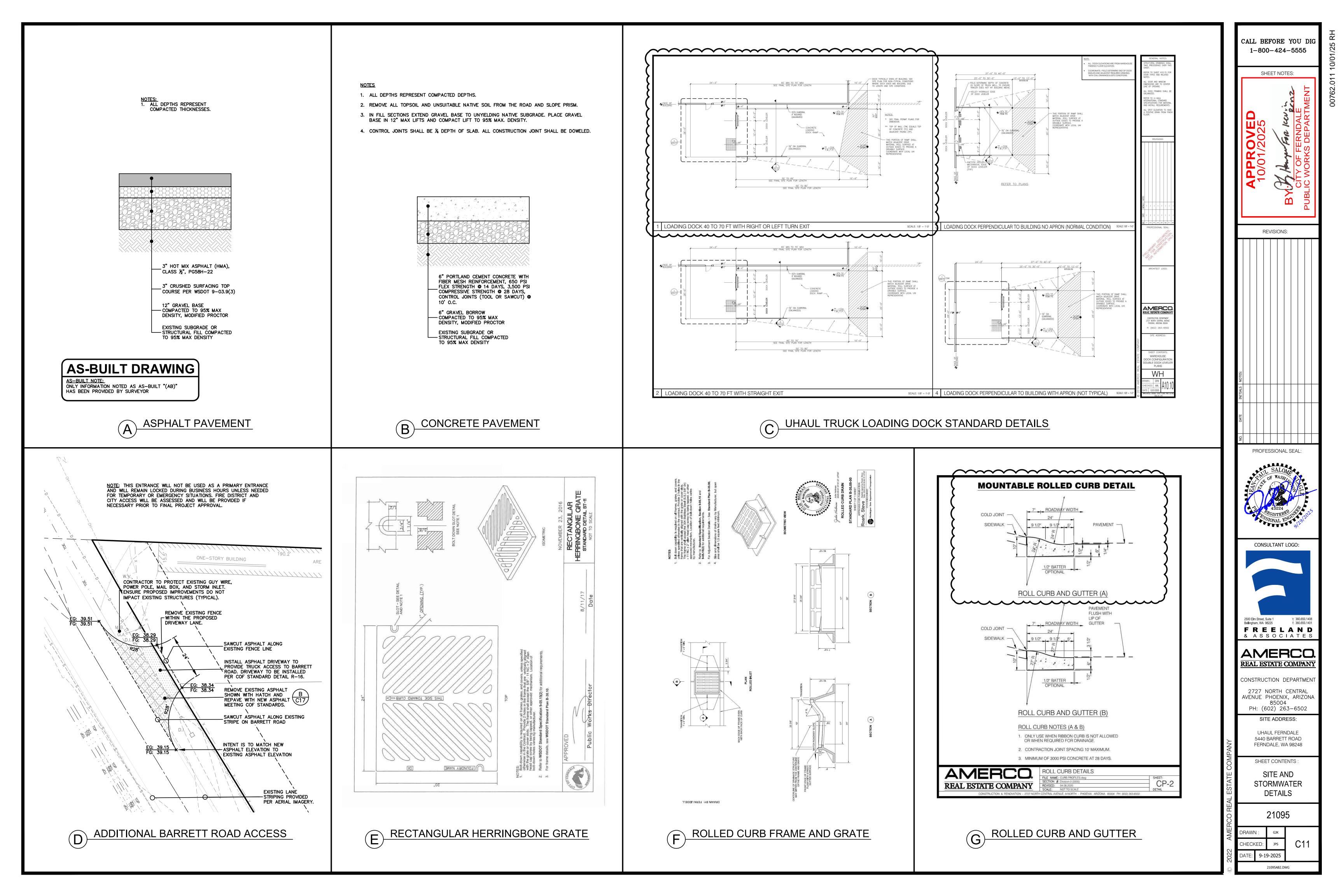
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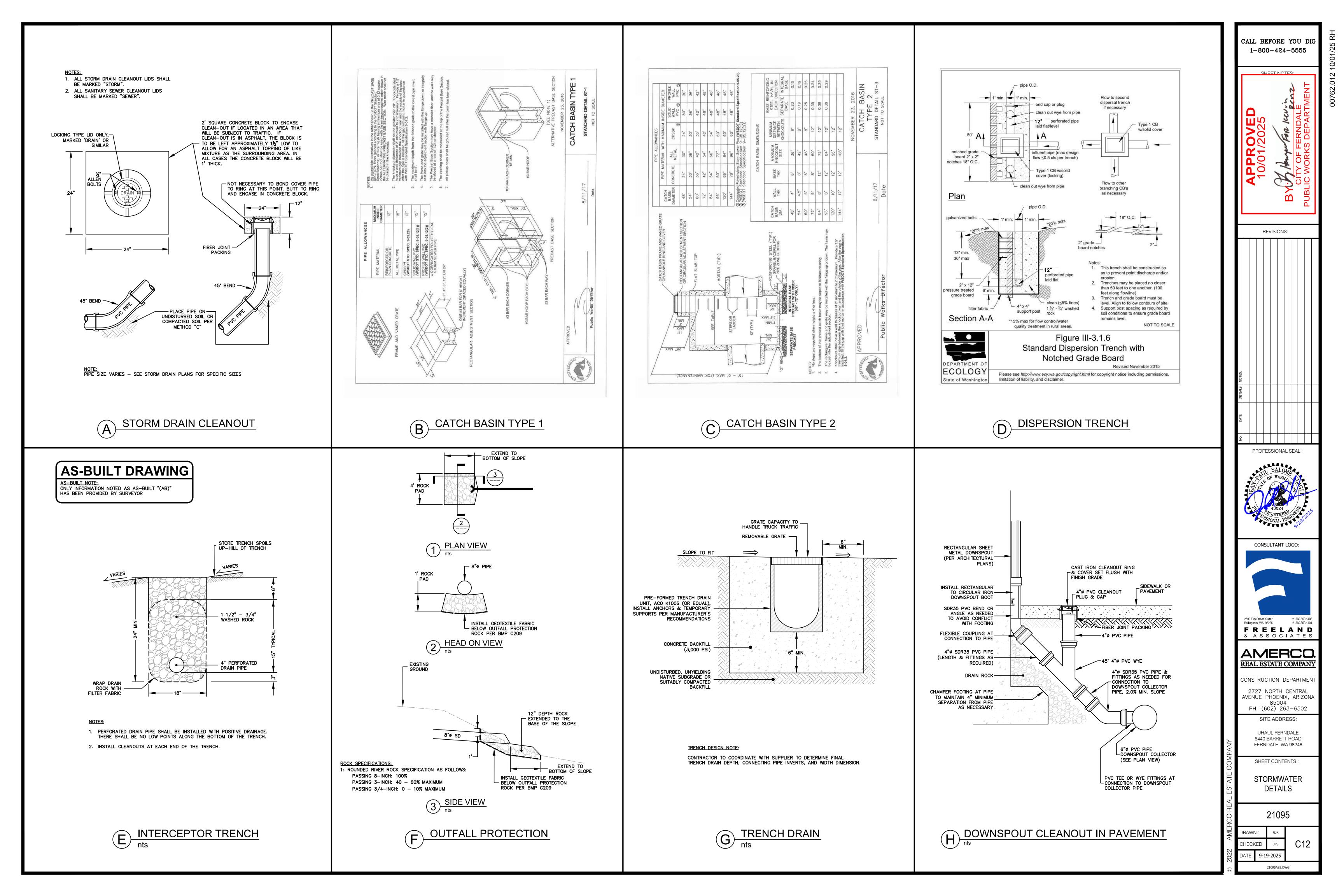
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AS-BUILT DRAWING AS-BUILT NOTE: ONLY INFORMATION NOTED AS AS-BUILT "(AB)" HAS BEEN PROVIDED BY SURVEYOR









• THE FINAL SOIL MIXTURE SHOULD BE TESTED PRIOR TO INSTALLATION FOR FERTILITY, MICRONUTRIENT

COMPOST MUST NOT CONTAIN BIOSOLIDS, MANURE, ANY STREET OR HIGHWAY SWEEPINGS, OR ANY CATCH

SULFUR TO LOWER THE PH. THE LIME OR IRON SULFATE MUST BE MIXED UNIFORMLY INTO THE SOIL PRIOR

WHEN PLACING TOPSOIL, IT IS IMPORTANT THAT THE FIRST LIFT OF TOPSOIL IS MIXED INTO THE TOP OF THE

EXISTING SOIL. THIS ALLOWS THE ROOTS TO PENETRATE THE UNDERLYING SOIL EASIER AND HELPS PREVENT

• THE PH FOR THE SOIL MIX SHOULD BE BETWEEN 5.5 AND 7.0 (STENN, 2003). IF THE PH FALLS OUTSIDE THE ACCEPTABLE RANGE, IT MAY BE MODIFIED WITH LIME TO INCREASE THE PH OR IRON SULFATE PLUS

THE SOIL MIX SHOULD BE UNIFORM AND FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR MATERIAL

THE TEXTURE FOR THE SOIL COMPONENT OF THE SOIL MIX SHOULD BE LOAMY SAND (USDA SOIL TEXTURAL

ANALYSIS, AND ORGANIC MATERIAL CONTENT.

LARGER THAN 2 INCHES.

SOIL COMPONENT

• CLAY CONTENT FOR THE FINAL SOIL MIX SHOULD BE LESS THAN 5%.

TO USE IN LID AREAS (LOW-IMPACT DEVELOPMENT CENTER, 2004).

THE FORMATION OF A SLIP PLANE BETWEEN THE TWO SOIL LAYERS.

FOLLOW THE SPECIFICATIONS FOR COMPOST IN BMP T7.30: BIORETENTION.

COMPOST-AMENDED VEGETATED FILTER STRIP (CAVFS) DESIGN CRITERIA

- PRESUMPTIVE APPROACH: PLACE AND ROTOTILL 1.75 INCHES OF COMPOSTED MATERIAL INTO 6.25 INCHES OF SOIL (A TOTAL AMENDED DEPTH OF ABOUT 9.5 INCHES) FOR A SETTLED DEPTH OF 8 INCHES. WATER OR ROLL TO COMPACT SOIL TO 85% MAXIMIM. PLANT GRASS.
- CUSTOM APPROACH: PLACE AND ROTOTILL THE CALCULATED AMOUNT OF COMPOSTED MATERIAL INTO A DEPTH OF SOIL NEEDED TO ACHIEVE 8 INCHES OF SETTLED SOIL AT 5% ORGANIC CONTENT. WATER OR ROLL TO COMPACT SOIL TO 85% MAXIMUM. PLANT GRASS.
- THE AMOUNT OF COMPOST OR OTHER SOIL AMENDMENTS USED VARIES BY SOIL TYPE AND ORGANIC MATTER CONTENT. IF THERE IS A GOOD POSSIBILITY THAT SITE CONDITIONS MAY ALREADY CONTAIN A RELATIVELY HIGH ORGANIC CONTENT, THEN IT MAY BE POSSIBLE TO MODIFY THE PRE-APPROVED RATE DESCRIBED ABOVE AND STILL BE ABLE TO ACHIEVE THE 5% ORGANIC CONTENT TARGET.
- THE FINAL SOIL MIX (INCLUDING COMPOST AND SOIL) SHOULD HAVE AN INITIAL SATURATED HYDRAULIC CONDUCTIVITY LESS THAN 12 INCHES PER HOUR, AND A MINIMUM LONG-TERM HYDRAULIC CONDUCTIVITY OF 1.0 INCH/HOUR PER ASTM DESIGNATION D 2434 (STANDARD TEST METHOD FOR PERMEABILITY OF GRANULAR SOILS) AT 85% COMPACTION PER ASTM DESIGNATION D 1557 (STANDARD TEST METHOD FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING MODIFIED EFFORT).
- INFILTRATION RATE AND HYDRAULIC CONDUCTIVITY ARE ASSUMED TO BE APPROXIMATELY THE SAME IN A UNIFORM MIX SOIL. THE LONG TERM SATURATED HYDRAULIC CONDUCTIVITY OF THE SOIL MIX IS DETERMINED BY APPLYING THE APPROPRIATE INFILTRATION CORRECTION FACTORS AS EXPLAINED IN DETERMINING THE BIORETENTION SOIL MIX DESIGN INFILTRATION RATE WITHIN BMP T7.30: BIORETENTION.
- THE FINAL SOIL MIX SHOULD HAVE A MINIMUM ORGANIC CONTENT OF 5% BY DRY WEIGHT PER ASTM DESIGNATION D 2974 (STANDARD TEST METHOD FOR MOISTURE, ASH AND ORGANIC MATTER OF PEAT AND OTHER ORGANIC SOILS.
- ACHIEVING THE ABOVE RECOMMENDATIONS WILL DEPEND ON THE SPECIFIC SOIL AND COMPOST CHARACTERISTICS. IN GENERAL, THE RECOMMENDATION CAN BE ACHIEVED WITH 60% TO 65% LOAMY SAND MIXED WITH 25% TO 30% COMPOST OR 30% SANDY LOAM, 30% COARSE SAND, AND 30% COMPOST.

BIORETENTION SOIL MIX (BSM) SOIL SPECIFICATIONS

MINERAL AGGREGATE

PERCENT FINES: A RANGE OF 2 TO 4 PERCENT PASSING THE #200 SIEVE IS IDEAL AND FINES SHOULD NOT BE ABOVE 5 PERCENT FOR A PROPER FUNCTIONING SPECIFICATION ACCORDING TO ASTM D422.

AGGREGATE GRADATION

THE AGGREGATE PORTION OF THE BSM SHOULD BE WELL-GRADED. ACCORDING TO ASTM D 2487-98 (CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED SOIL CLASSIFICATION SYSTEM)), WELL-GRADED SAND SHOULD HAVE THE FOLLOWING GRADATION COEFFICIENTS:

• COEFFICIENT OF UNIFORMITY (CU = D60/D10) EQUAL TO OR GREATER THAN 4, AND • COEFFICIENT OF CURVE (CC = (D30)2/D60 X D10) GREATER THAN OR EQUAL TO 1 AND LESS THAN OR EQUAL TO 3.

TABLE BELOW PROVIDES A GRADATION GUIDELINE FOR THE AGGREGATE COMPONENT OF A BIORETENTION SOIL MIX SPECIFICATION IN WESTERN WASHINGTON (HINMAN, ROBERTSON, 2007). THE SAND GRADATION BELOW IS OFTEN SUPPLIED AS A WELLGRADED UTILITY OR SCREENED. WITH COMPOST THIS BLEND PROVIDES ENOUGH FINES FOR ADEQUATE WATER RETENTION, HYDRAULIC CONDUCTIVITY WITHIN RECOMMENDED RANGE (SEE BELOW), POLLUTANT REMOVAL CAPABILITY, AND PLANT GROWTH CHARACTERISTICS FOR MEETING DESIGN GUIDELINES AND OBJECTIVES.

MINERAL AGGREGATE GRADATION U.S. SIEVE NUMBER PERCENT PASSING

WHERE EXISTING SOILS MEET THE ABOVE AGGREGATE GRADATION, THOSE SOILS MAY BE AMENDED RATHER THAN IMPORTING MINERAL AGGREGATE.

- COMPOST TO AGGREGATE RATIO, ORGANIC MATTER CONTENT, CATION EXCHANGE CAPACITY
- COMPOST TO AGGREGATE RATIO: 60-65 PERCENT MINERAL AGGREGATE, 35 40 PERCENT COMPOST. • ORGANIC MATTER CONTENT: 5 - 8 PERCENT BY WEIGHT.
- CATION EXCHANGE CAPACITY (CEC) MUST BE > 5 MILLIEQUIVALENTS/100 G DRY SOIL NOTE: SOIL MIXES MEETING THE ABOVE SPECIFICATIONS DO NOT HAVE TO BE TESTED FOR CEC. THEY WILL READILY MEET THE MINIMUM CEC.

TO ENSURE THAT THE BSM WILL SUPPORT HEALTHY PLANT GROWTH AND ROOT DEVELOPMENT, CONTRIBUTE TO BIOFILTRATION OF POLLUTANTS, AND NOT RESTRICT INFILTRATION WHEN USED IN THE PROPORTIONS CITED HEREIN, THE FOLLOWING COMPOST STANDARDS ARE REQUIRED.

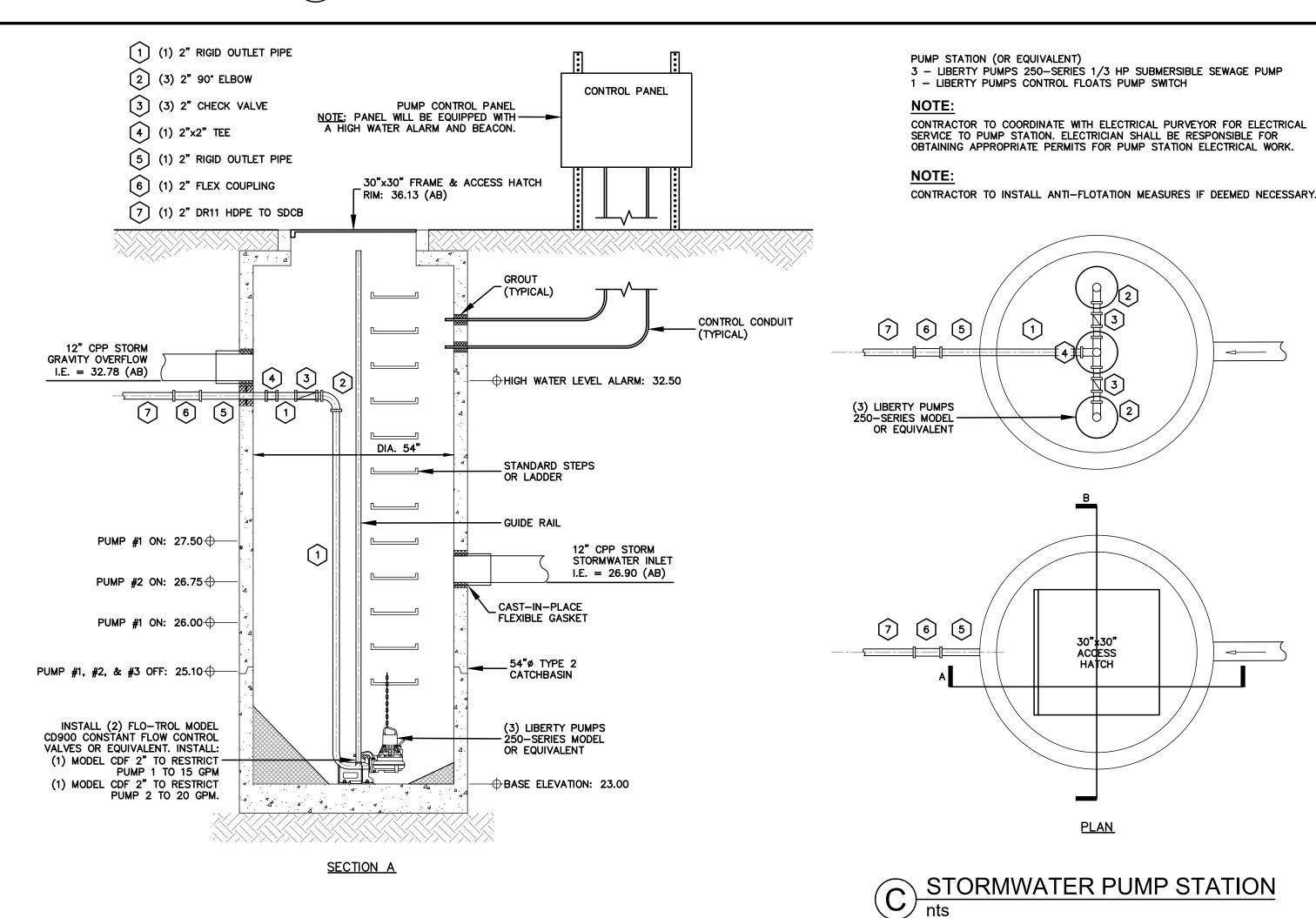
- MEETS THE DEFINITION OF "COMPOSTED MATERIALS" IN WAC 173-350-220 (INCLUDING CONTAMINANT LEVELS AND OTHER STANDARDS), AVAILABLE ONLINE AT HTTP: //WWW.ECY.WA.GOV/PROGRAMS/SWFA/ORGANICS/SOIL.HTML • PRODUCED AT A COMPOSTING FACILITY PERMITTED BY THE WA DEPARTMENT OF ECOLOGY. A CURRENT LIST OF PERMITTED FACILITIES IS AVAILABLE AT
- HTTP: //WWW.ECY.WA.GOV/PROGRAMS/SWFA/COMPOST/ • THE COMPOST PRODUCT MUST ORIGINATE A MINIMUM OF 65 PERCENT BY VOLUME FROM RECYCLED PLANT WASTE AS DEFINED IN WAC 173-350-100 AS "TYPE I
- FEEDSTOCKS." A MAXIMUM OF 35 PERCENT BY VOLUME OF OTHER APPROVED ORGANIC WASTE AS DEFINED IN WAC 173-350-100 AS "TYPE III", INCLUDING POSTCONSUMER FOOD WASTE, BUT NOT INCLUDING BIOSOLIDS, MAY BE SUBSTITUTED FOR RECYCLED PLANT WASTE.
- STABLE (LOW OXYGEN USE AND CO2 GENERATION) AND MATURE (CAPABLE OF SUPPORTING PLANT GROWTH) BY TESTS SHOWN BELOW. THIS IS CRITICAL TO PLANT SUCCESS IN A BIORETENTION SOIL MIXES.
- MOISTURE CONTENT RANGE: NO VISIBLE FREE WATER OR DUST PRODUCED WHEN HANDLING THE MATERIAL. • TESTED IN ACCORDANCE WITH THE U.S. COMPOSTING COUNCIL "TESTING METHODS FOR THE EXAMINATION OF COMPOST AND COMPOSTING" (TMECC), AS ESTABLISHED IN THE COMPOSTING COUNCIL'S "SEAL OF TESTING ASSURANCE" (STA) PROGRAM. MOST WASHINGTON COMPOST FACILITIES NOW USE THESE TESTS.
 - SCREENED TO THE SIZE GRADATIONS FOR FINE COMPOST UNDER TMECC TEST METHOD 02.02-B, SAMPLE SIEVING FOR AGGREGATE SIZE CLASSIFICATION. • PH BETWEEN 6.0 AND 8.5 (TMECC 04.11-A). "PHYSICAL CONTAMINANTS" (AS DEFINED IN THE WAC 173-350-100) CONTENT LESS THAN 1% BY WEIGHT (TMECC
- 04.10-A) TOTAL, NOT TO EXCEED 0.25 PERCENT FILM PLASTIC BY DRY WEIGHT. • MINIMUM ORGANIC MATTER CONTENT OF 40% (TMECC 05.07-A)
- SOLUBLE SALT CONTENT LESS THAN 4.0 MMHOS/CM (TMECC 04.10-A)
- MATURITY GREATER THAN 80% (TMECC 05.05—A "GERMINATION AND VIGOR")
- STABILITY OF 7 OR BELOW (TMECC 05.08-B "CARBON DIOXIDE EVOLUTION RATE") • CARBON TO NITROGEN RATIO (TMECC 04.01 "TOTAL CARBON" AND 04.02D "TOTAL KJELDAHL NITROGEN") OF
- LESS THAN 25:1. THE C:N RATIO MAY BE UP TO 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PUGET SOUND LOWLAND NATIVE SPECIES AND UP TO 40:1 FOR COARSE COMPOST TO BE USED
 - AS A SURFACE MULCH (NOT IN A SOIL MIX).

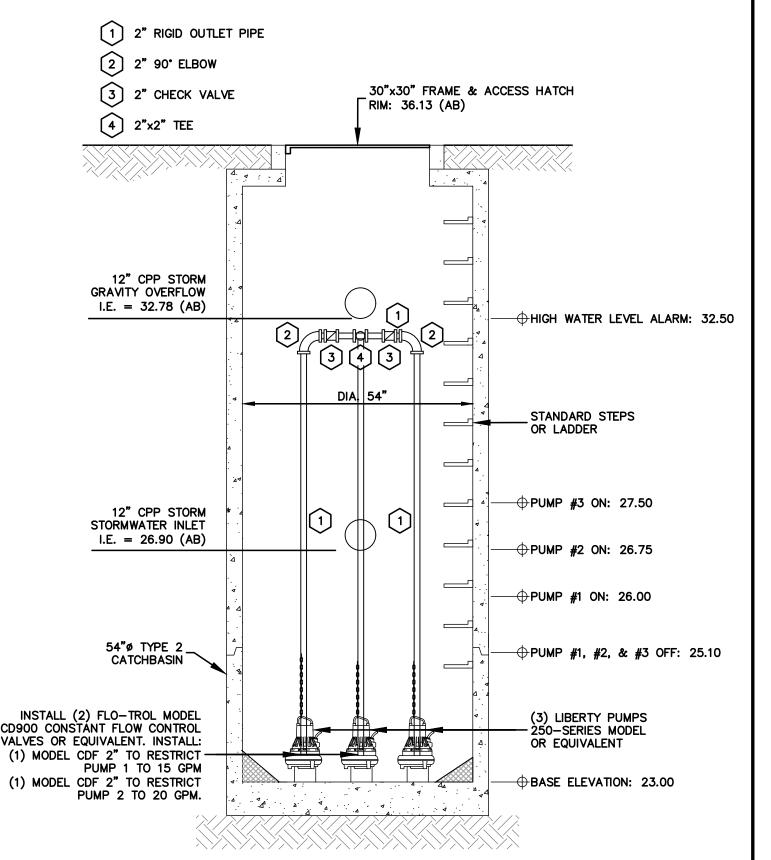
AS-BUILT DRAWING

ONLY INFORMATION NOTED AS AS-BUILT "(AB)" HAS BEEN PROVIDED BY SURVEYOR

COMPOST-AMENDED VEGETATED FILTER STRIP (CAVFS)

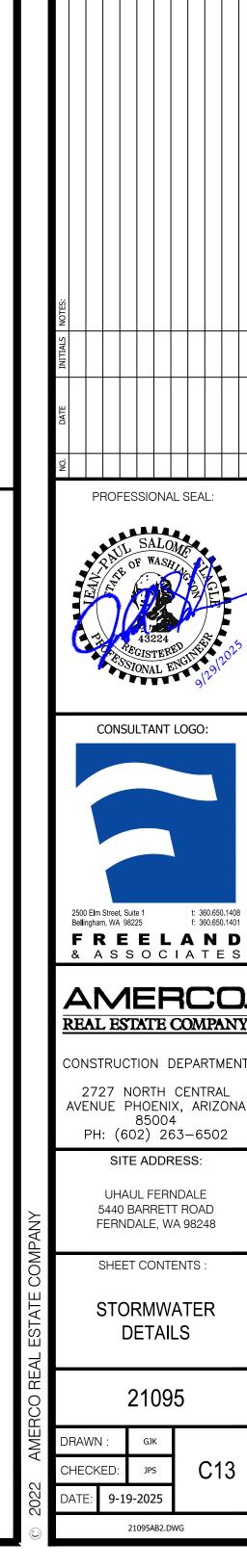
BIORETENTION SOIL MIX SPECIFICATION





SECTION B





CALL BEFORE YOU DIG 1-800-424-5555

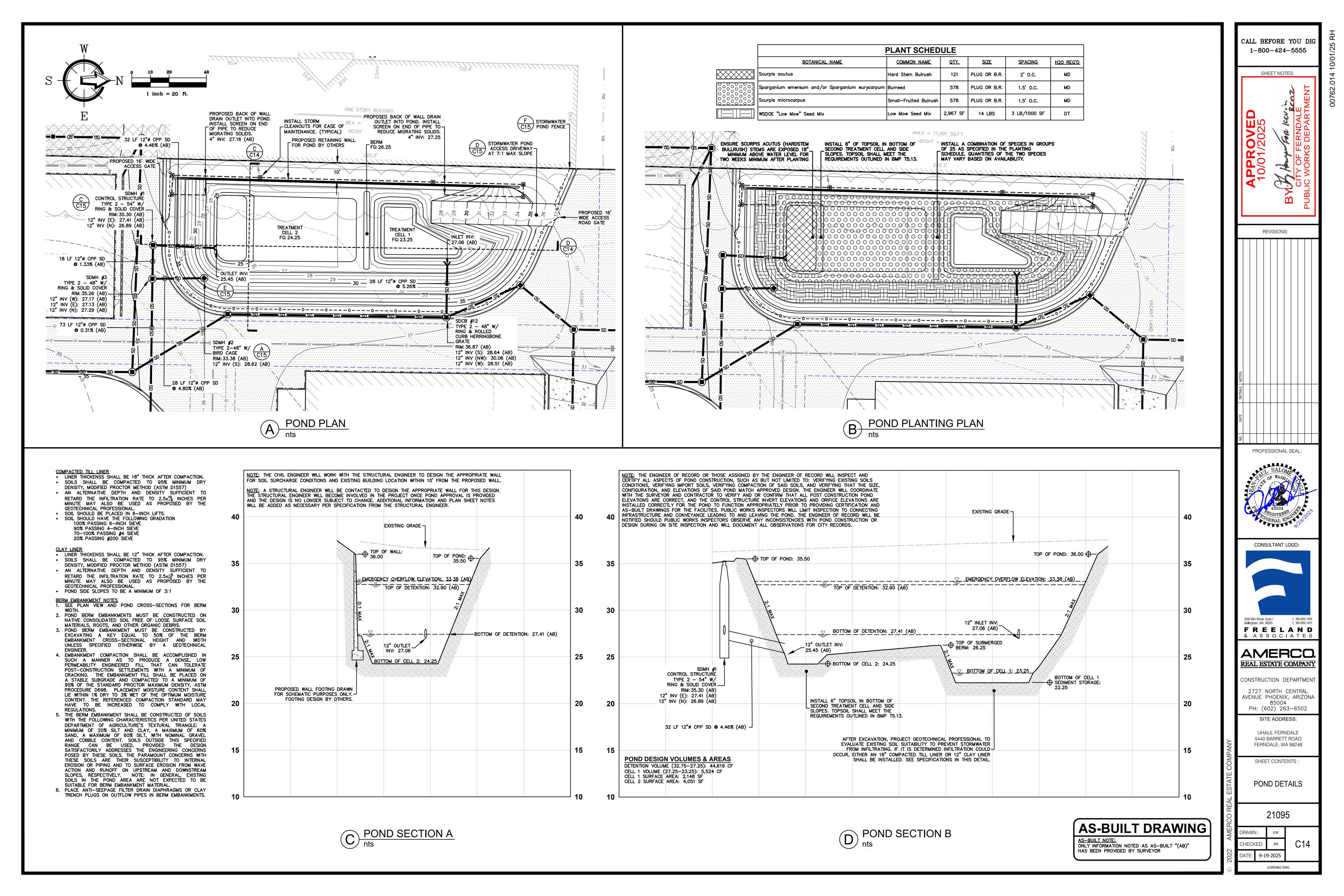
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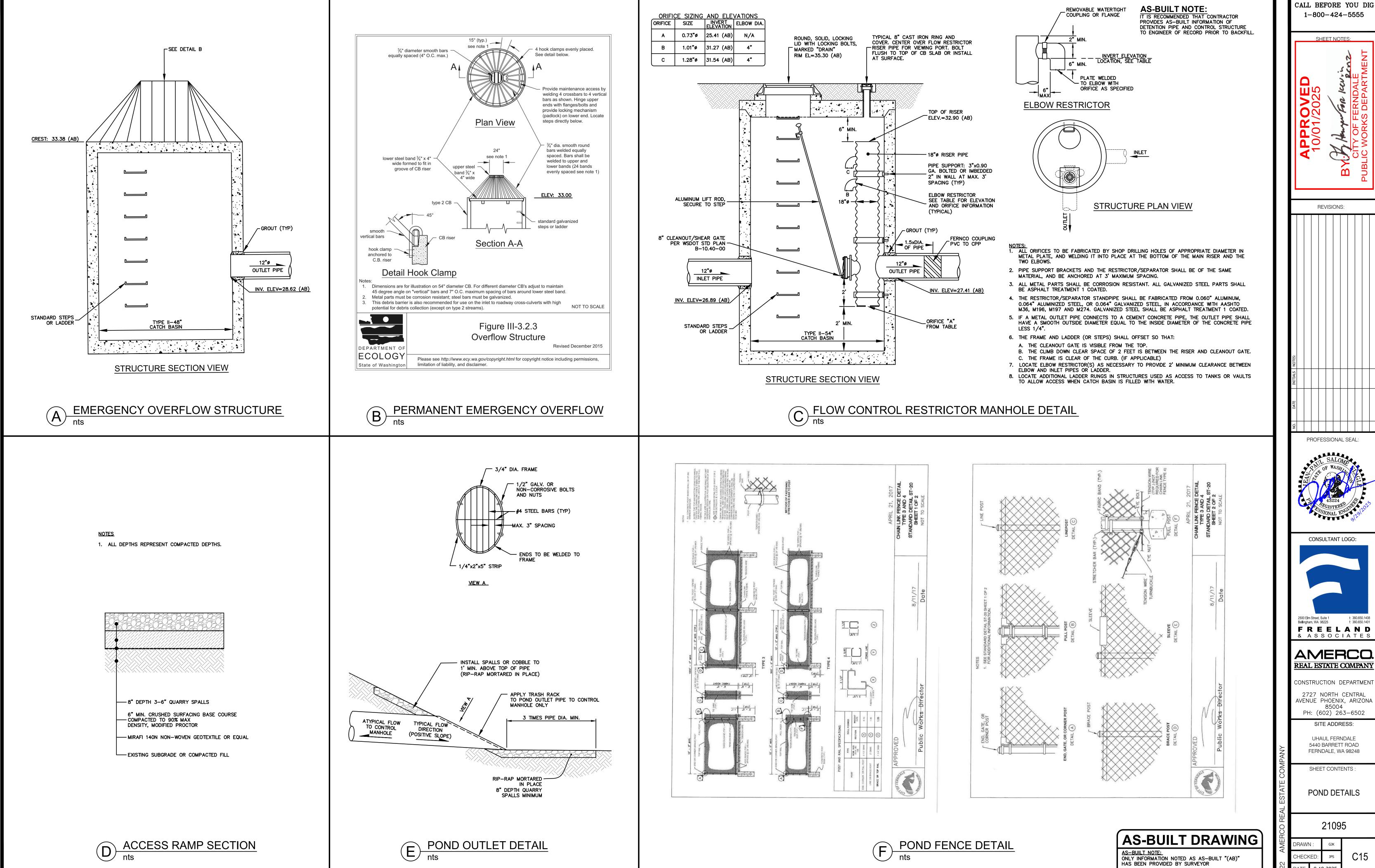
REVISIONS:

FREELAND

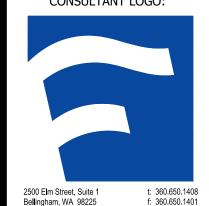
AMERCO. REAL ESTATE COMPANY

2727 NORTH CENTRAL AVENUE PHOENIX, ARIZONA PH: (602) 263-6502

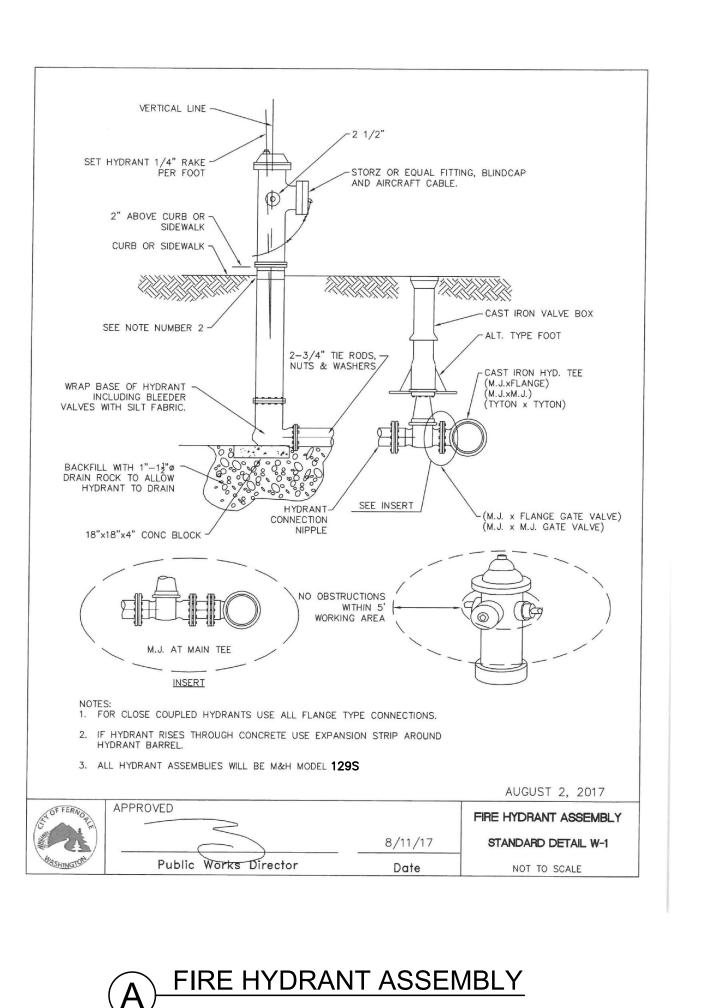


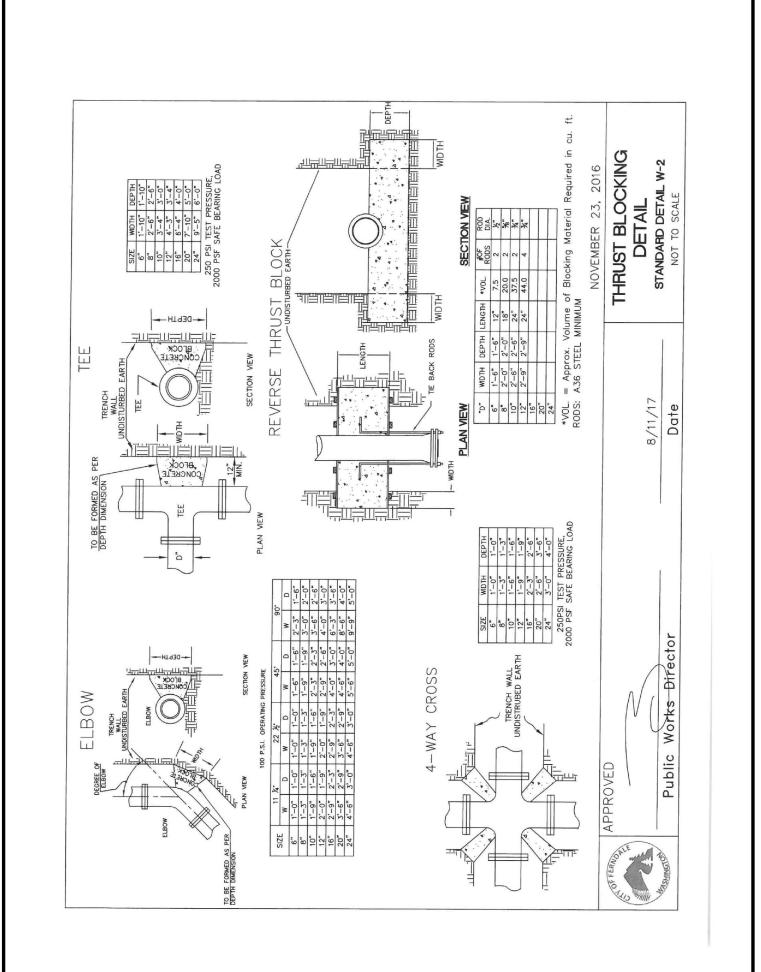


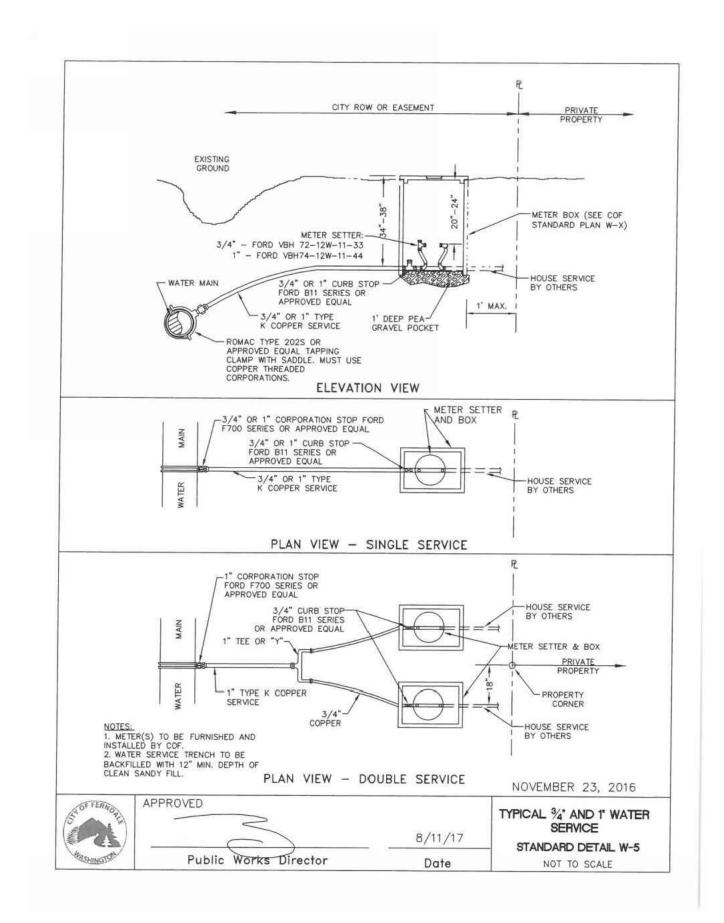


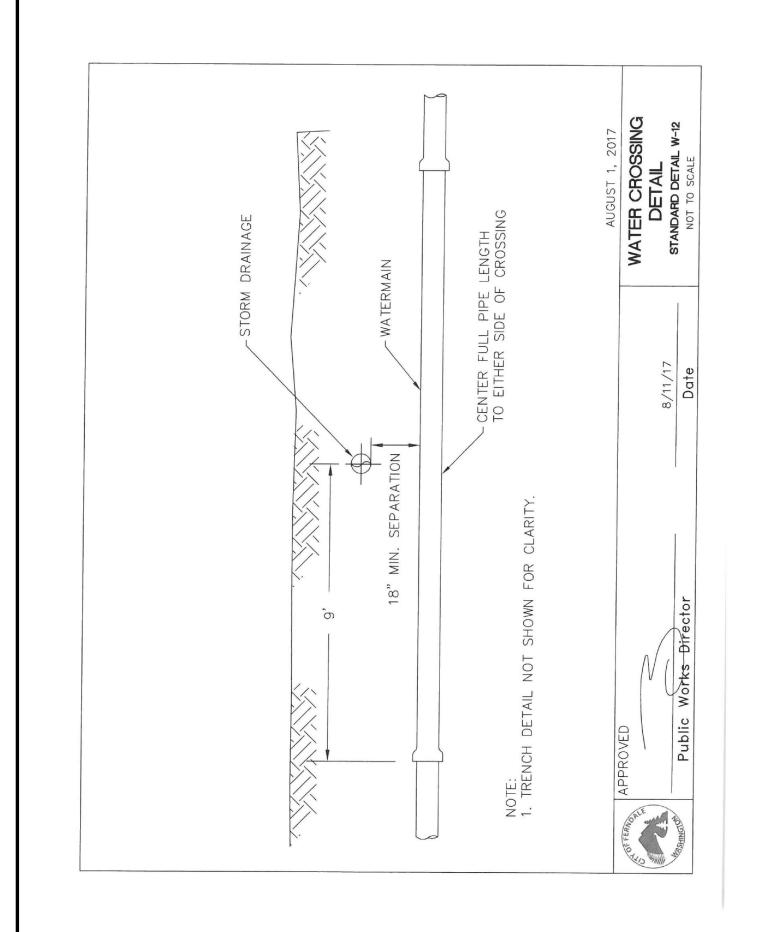


9-19-2025









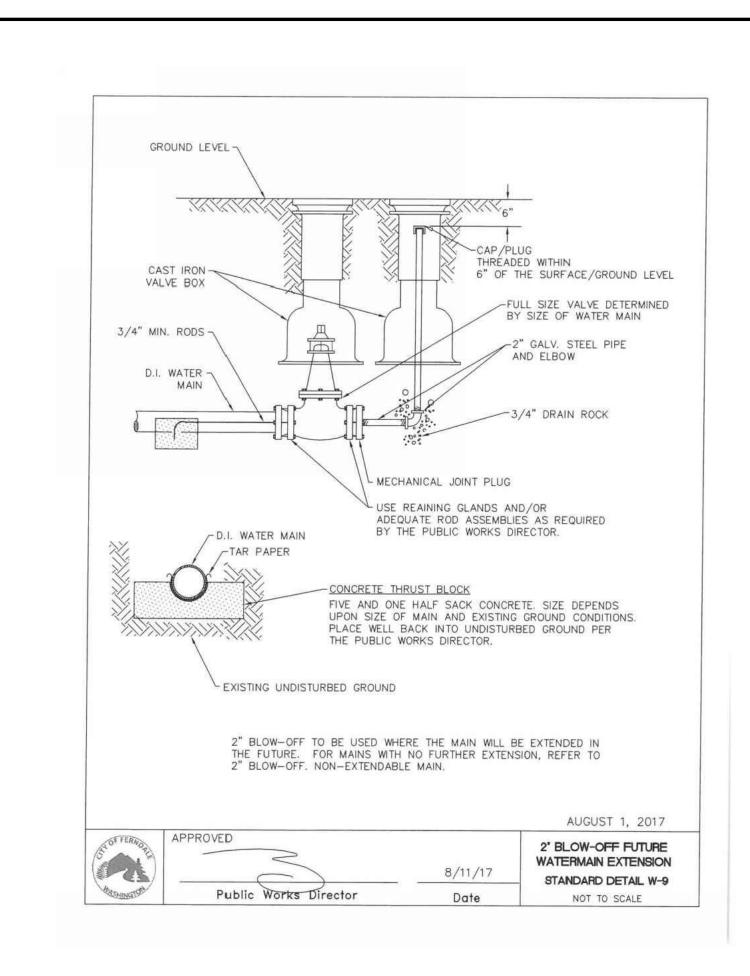




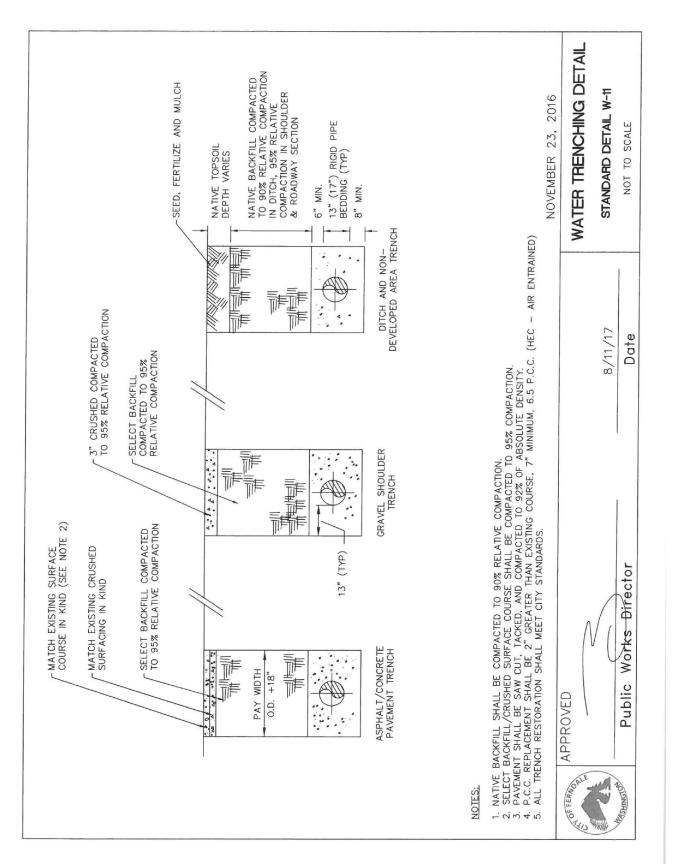


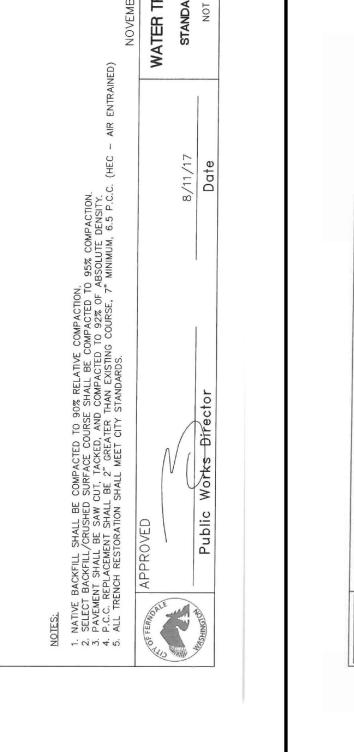
C 1" WATER SERVICE

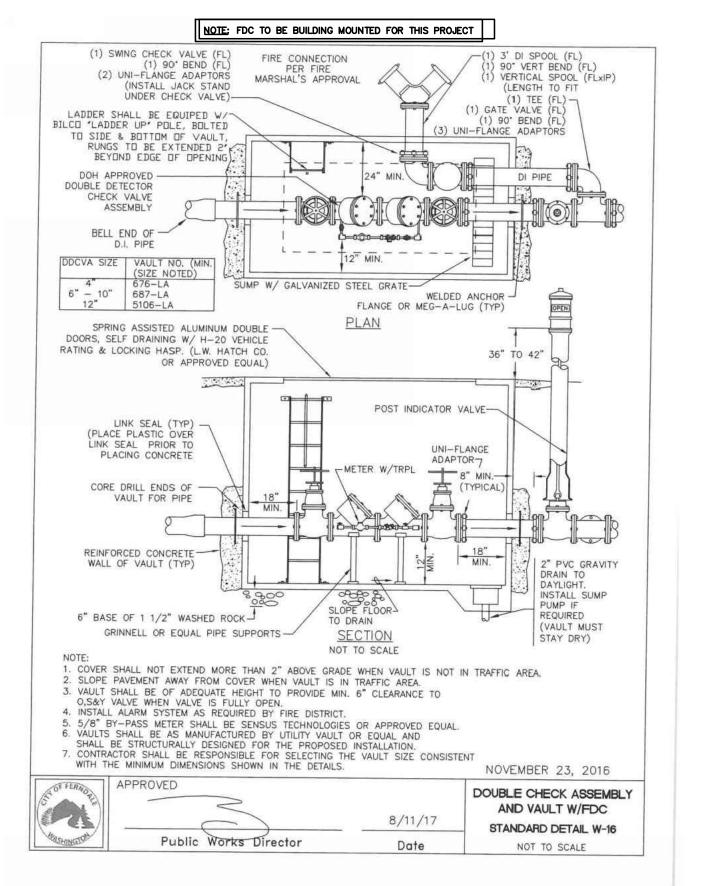




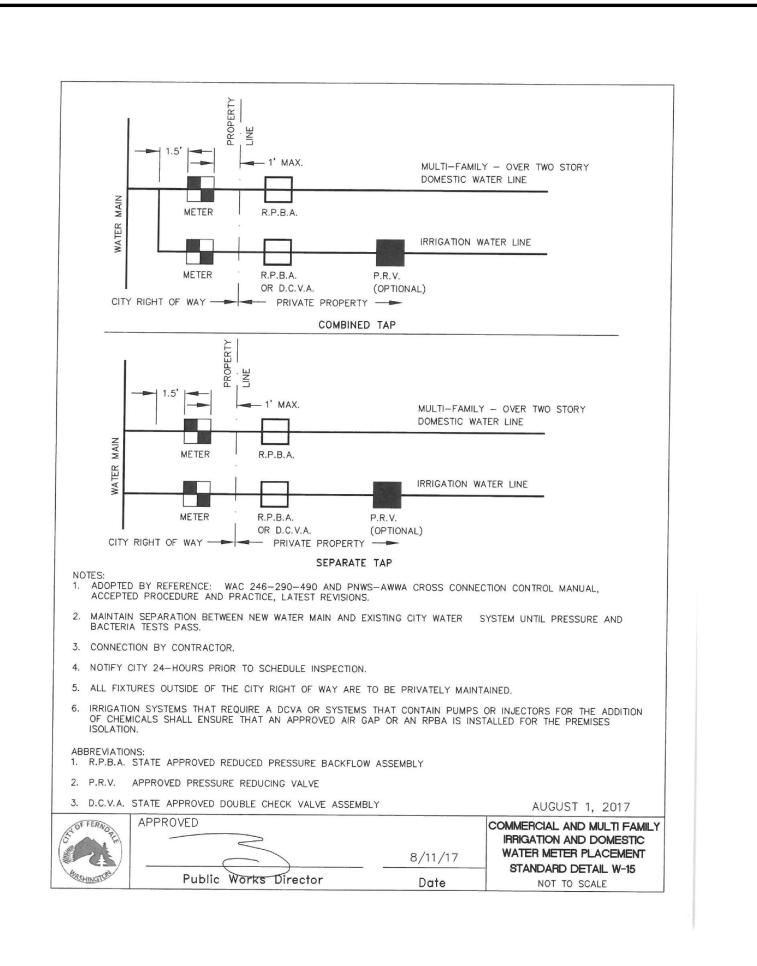
BLOW OFF ASSEMBLY















CALL BEFORE YOU DIG 1-800-424-5555 SHEET NOTES: **REVISIONS:** PROFESSIONAL SEAL: CONSULTANT LOGO: 2500 Elm Street, Suite 1 Bellingham, WA 98225 FREELAND & ASSOCIATES AMERCO. REAL ESTATE COMPANY CONSTRUCTION DEPARTMENT 2727 NORTH CENTRAL AVENUE PHOENIX, ARIZONA 85004 PH: (602) 263-6502 SITE ADDRESS: UHAUL FERNDALE 5440 BARRETT ROAD FERNDALE, WA 98248 SHEET CONTENTS:

WATER DETAILS

9-19-2025

- 2. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWS ALL PLANS AND OTHER CONSTRUCTION DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES. THROUGHOUT THE PERIOD OF CONSTRUCTION, CONTRACTOR SHALL COMPLY WITH THE THE TERMS OF ALL PERMITS.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING SUB-SURFACE CONDITIONS AND SOILS TYPES.
- 4. THE SURVEYOR SHALL LAY OUT AND SET ANY CONSTRUCTION STAKES AND MARKS NEEDED TO ESTABLISH THE LINES, GRADES, SLOPES OR CROSS-SECTIONS AS SHOWN ON THE PLANS OR AS STAKED BY THE ENGINEER. ALL STRUCTURES AND GRADES WILL BE CLEARLY STAKED AND MARKED PRIOR TO CITY INSPECTION.
- 5. THE CONTRACTOR SHALL PROTECT ALL PRIVATE AND PUBLIC UTILITIES FROM DAMAGE RESULTING FROM THE WORK. CONTRACTOR SHALL RESTORE ALL PRIVATE AND PUBLIC PROPERTY DISRUPTED BY THE PROJECT IMMEDIATELY AFTER CONSTRUCTION.
- 6. WHEN THE CONTRACTOR CONSIDERS THE WORK PHYSICALLY COMPLETE AND READY FOR FINAL INSPECTION, THE CONTRACTOR SHALL REQUEST THAT CITY INSPECTOR SCHEDULE A FINAL INSPECTION. THE INSPECTOR WILL MAKE A FINAL INSPECTION AND NOTIFY THE CONTRACTOR IN WRITING OF ALL PARTICULARS IN WHICH THE FINAL INSPECTION REVEALS THE WORK INCOMPLETE OR UNACCEPTABLE. THE CONTRACTOR SHALL IMMEDIATELY TAKE SUCH CORRECTIVE MEASURES AS ARE NECESSARY TO REMEDY THE LISTED DEFICIENCIES.
- 7. BEFORE ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY A PRE-CONSTRUCTION MEETING MUST BE HELD BETWEEN THE CONTRACTOR, OWNER, CITY ENGINEER AND PROJECT ENGINEER. (MINIMUM 3 DAYS PRIOR TO STARTING WORK)
- 8. A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH AND SAFETY PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. ALL SECTIONS OF THE WSDOT STANDARD SPECIFICATIONS 1-07.23-PUBLIC CONVENIENCE AND SAFETY. SHALL APPLY.
- 10. PROOF OF LIABILITY INSURANCE SHALL BE SUBMITTED TO THE CITY PRIOR TO THE PRE-CONSTRUCTION MEETING.

ASPHALT WIDENING

(~8' TO ~8.5')

— WIDTH VARIES — →

MATCH EXISTING

ASPHALT PAVEMENT PER COF:

- 3" COMPACTED CRUSHED

SURFACING TOP COURSE

EXISTING SUBGRADE OR

STRUCTURAL FILL COMPACTED

- 10" GRAVEL BASE

TO 95% MAX DENSITY

NOTES:

- 2" HMA, CL ½", OVERLAY / F

- 2" HMA, CL ½", OVERLAY

1. ALL DEPTHS REPRESENT COMPACTED THICKNESSES.

LONGEVITY OF PAVEMENT AND CURBS.

5' PUBLIC -

CONCRETE

CURB &

GUTTER

2.5'

SIDEWALK

- THROUGH SATURDAY.
- 12. ALL HARD SURFACED PAVEMENTS MUST BE REPAIRED AT THE CLOSE OF 3. THE CONTRACTOR OR PROPONENT SHALL BE RESPONSIBLE FOR ALL EACH WORK DAY. THE REPAIRS CAN BE TEMPORARY WITH ASPHALT COLD MIX OR PERMANENT WITH HOT MIX ASPHALT OR CONCRETE. ALL REPAIRS SHALL BE ACCORDING TO CITY OF FERNDALE DRAWING R-11.
- 13. ALL WORK MUST BE INSPECTED BY A REPRESENTATIVE OF THE CITY OF FERNDALE ENGINEERING DIVISION, AND 24 HOURS NOTICE MUST BE GIVEN PRIOR TO STARTING WORK OR TO SCHEDULE INSPECTIONS IN ACCORDANCE WITH SECTION 302 OF THE DEVELOPMENT STANDARDS.
- 14. THE CONTRACTOR SHALL INFORM THE ENGINEER AND OBTAIN APPROVAL FROM THE CITY OF FERNDALE PUBLIC WORKS DIRECTOR OF ANY PROPOSED DEVIATION FROM THE APPROVED PLANS PRIOR TO CONSTRUCTION OF THE REVISED IMPROVEMENTS. THE CONTRACTOR SHALL KEEP RECORDS OF ALL DEVIATIONS AND SHALL FORWARD THEM TO THE ENGINEER AND TO THE CITY OF FERNDALE PUBLIC WORKS DEPARTMENT
- 15. AS-BUILT DATA SHALL BE PROVIDED TO THE CITY OF FERNDALE UPON COMPLETION OF CONSTRUCTION AND PROVIDED IN CITY OF FERNDALE DATUM-VERTICAL (NGVD 29) AND HORIZONTAL (NAD 83/91). CONTACT THE CITY FOR MORE INFORMATION ON SUBMITTAL REQUIREMENTS. ALL EXISTING AND NEW SITE IMPROVEMENTS MUST BE ACCURATELY DOCUMENTED PRIOR TO FINAL PROJECT ACCEPTANCE.
- 16. METHOD OF SURVEY, SURVEY DATA, AND SURVEY EQUIPMENT UTILIZED TO CREATE THE BASE MAP/EXISTING CONDITIONS ARE NOTED ON SHEET C2 OF THIS PLAN SET.
- 17. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE BASED ON FIELD SURVEYS AND LOCAL UTILITY COMPANY RECORDS. 17 SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO STARTING CONSTRUCTION. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE. CALL 1-800-424-5555 FOR UTILITY LOCATE 48 HOURS PRIOR TO WORK, CONTRACT TO HOLD. THE CONTRACTOR SHALL NOTIFY THE ENGINEER PROMPTLY OF ANY CONFLICT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL ADJACENT UTILITIES WHICH INCLUDE BUT ARE NOT LIMITED TO: WATER, SEWER, STORM SEWER, POWER, TELEPHONE, CABLE TV, IRRIGATION, AND STREET LIGHTING. CONTRACTOR SHALL RESTORE ALL PRIVATE AND PUBLIC PROPERTY DISTURBED BY THE PROJECT UPON COMPLETION OF THE PROJECT
- 18. A REVOCABLE ENCROACHMENT PERMIT SHALL BE OBTAINED PRIOR TO COMMENCING WORK IN THE PUBLIC RIGHT-OF-WAY.
- OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE 19. POT HOLING ALL EXISTING UTILITIES IS REQUIRED PRIOR TO CONSTRUCTION TO VERIFY DESIGN FEASIBILITY. THE CITY DOES NOT GUARANTEE AS BUILT INFORMATION IN THE CITY DATA BASE IS ACCURATE AND WILL NOT BE HELD RESPONSIBLE IF FIELD MODIFICATIONS AND/OR ADDITIONAL COSTS ARE REQUIRED BECAUSE POTHOLING WAS NOT DONE PRIOR TO DESIGN

ASPHALT OVERLAY PER COF:

- 2" HMA, CL ½", OVERLAY

2' WIDE PETRO-TAC CENTERED

-OVER SAWCUT SEAM PER COF

2. ALL MATERIALS SHALL BE PER WSDOT STANDARD SPECIFICATIONS (CURRENT EDITION), UNLESS NOTED.

4. COORDINATE WITH GEOTECHNICAL PROFESSIONAL TO ENSURE SUFFICIENT SUBGRADE COMPACTION FOR

3. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE PREVISIONS OF APWA "STANDARD SPECIFICATIONS" AND SHALL CONFORM TO THE REQUIREMENTS OF THE CITY ENGINEER.

EXISTING ROADWAY SURFACE

11.5' ASPHALT

OVERLAY

MATCH EXISTING

GRAVEL BASE AND GRAVEL BALLAST USED FOR TRENCH BACKFILL AND ROAD CONSTRUCTION MUST MEET CURRENT WSDOT REGULATIONS AND

EXISTING

EXISTING ROADWAY

1' MINIMUM GRAVEL OR

FOR LEVEL SPREADER

CRUSHED SURFACING -

SURFACE

2' COMPOST-AMENDED

SPREADER

VEGETATED FILTER STRIP (C18)

EXISTING

GROUND

COMPOST-AMENDED

SOIL/COMPOST MIX

- VEGETATED FILTER STRIP

- 11. NO WORK SHALL OCCUR BETWEEN 7:00 PM & 7:00 AM MONDAY 2. BALLAST, GRAVEL BASE AND CRUSHED SURFACING SHALL BE COMPACTED 4. THE UNSUITABLE MATERIAL NOT FIT FOR A SUB-GRADE SHALL BE TO AT LEAST 95% OF ITS MAXIMUM DRY DENSITY.
 - COMPACTION TESTING. PRIOR TO IMPORTING OF MATERIAL FOR BASE AND CSTC THE CONTRACTOR SHALL PROVIDE EVIDENCE OF SATISFACTORY PASSING GRADING AND DEGRADATION TEST RESULTS TO THE ENGINEER AND

PAVEMENTS

- . WHERE SHOWN ON THE PLANS, PAVEMENT MARKINGS SHALL BE OBLITERATED UNTIL BLEMISHES CAUSED BY THE PAVEMENT MARKING REMOVAL CONFORM TO THE COLORATION OF THE ADJACENT PAVEMENT.
- 2. SOIL RESIDUAL HERBICIDE SHALL BE PLACED WITHIN 24 HOURS OF PAVING.
- 3. A TACK COAT OF ASPHALT SHALL BE APPLIED BETWEEN ALL COURSES OF ASPHALT.
- 4. ALL PAVEMENT REPAIR SHALL BE SAW-CUT BEFORE REMOVAL. SHALL BE APPLIED TO ALL EDGES OF EXISTING PAVEMENT.
- 5. ASPHALT CONCRETE PAVEMENT SHALL NOT BE PLACED NOR COMPACTED DURING HOURS OF DARKNESS.
- 6. SUBGRADE SHALL BE CERTIFIED IN WRITING BY THE ENGINEER PRIOR TO

WATER MAINS

- 1. TEST PRESSURE FOR WATERMAIN ACCEPTANCE SHALL BE 225 p.s.i. AT THE HIGHEST POINT ON THE WATER LINE AND SHALL BE DONE ACCORDING TO CITY OF FERNDALE REQUIREMENTS. ALL PURIFICATION ACCEPTANCE TESTING SHALL BE ACCORDING TO CITY OF FERNDALE REQUIREMENTS. THE PIPE WILL NOT PASS UNLESS A ZERO BACTERIA COUNT IS OBTAINED FOR TWO CONSECUTIVE TESTS 24 HOURS APART.
- 2. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF FERNDALE DEVELOPMENT STANDARDS, SECTIONS 702 AND 705 AND THE MOST RECENT VERSION OF WSDOT STANDARD SPECIFICATIONS.
- 3. ALL BACKFILL SHALL BE IMPORTED GRAVEL AND SHALL CONFORM TO SECTION 2-09 OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.
- 3.5 FEET UNLESS OTHERWISE APPROVED.

EARTHWORK

- ON THE PLANS.
- 2. THE CONTRACTOR SHALL EXCAVATE AND GRADE TO THE ALIGNMENT, GRADE 5. ALL EXISTING AND NEW FACILITIES CONNECTING TO THE PUBLIC WATER AND CROSS-SECTIONS SHOWN IN THE PLANS OR ESTABLISHED BY THE ENGINEER. IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL ENGINEERING
- 3. MAXIMUM DENSITY AND OPTIMUM MOISTURE FOR GRANULAR MATERIALS WILL BE DETERMINED USING ASTM D-1557 TEST METHOD.

EXCAVATED TO THE BOUNDARIES SET BY THE ENGINEER AND REPLACED WITH A SUITABLE BACKFILL MATERIAL

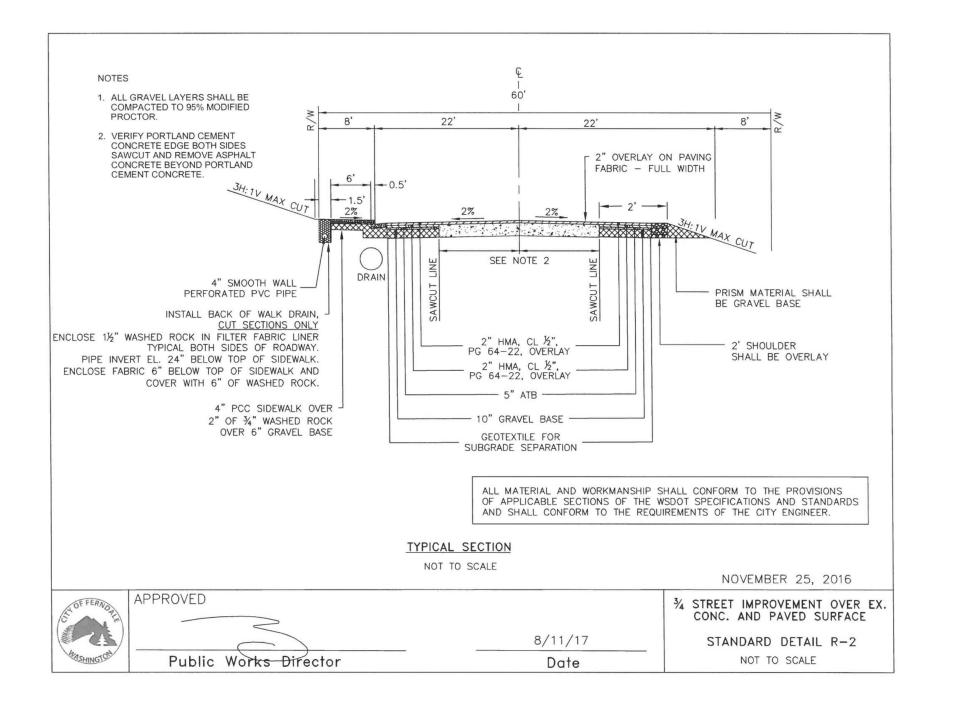
STORM DRAINAGE

- 1. ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT 7-08. THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL AND ANY REQUIRED PIPE BEDDING, TO A UNIFORM GRADE SO THAT THE ENTIRE PIPE IS SUPPORTED BY A UNIFORMLY DENSE UNYIELDING BASE.
- 2. ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, NOT LOCATED WITHIN A TRAVELED ROADWAY OR SIDEWALK, SHALL HAVE SOLID LOCKING LIDS. ALL DRAINAGE STRUCTURES ASSOCIATED WITH A PERMANENT RETENTION/DETENTION FACILITY SHALL HAVE SOLID LOCKING
- 3. ALL CATCH BASIN GRATES SHALL INCLUDE THE STAMPING "OUTFALL TO STREAM. DUMP NO POLLUTANTS".
- 4. ALL DRIVEWAY CULVERTS LOCATED WITHIN THE RIGHT-OF-WAY SHALL BE OF SUFFICIENT LENGTH TO PROVIDE A MINIMUM 3:1 SLOPE FROM THE EDGE OF THE DRIVEWAY TO THE BOTTOM OF THE DITCH. CULVERTS SHALL HAVE BEVELED END SECTIONS PER WSDOT
- 5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUT CONVEYANCE LINES WITH RESPECT TO THE UTILITIES (E.G. POWER, GAS, TELEPHONE, TELEVISION).

CITY OF FERNDALE NOTES

- 1. APPLICANT/OWNER WILL PROVIDE ANYTIME ACCESS TO BOTH THE CITY AND FIRE DISTRICT AS NEEDED. KEY OR CODE ACCESS TO THE SATISFACTION OF BOTH CITY AND FIRE DISTRICT TO PROVIDE SAID ACCESS WILL BE REQUIRED PRIOR TO CITY FINAL ACCEPTANCE OF THE PROJECT.
- 2. ALL PROPOSED LOCKABLE GATE LOCATIONS CONCEALING CITY INFRASTRUCTURE, FIRE DEPARTMENT CONNECTION, AND BUILDING ACCESS MUST PROVIDE 24 HR ACCESS VIA CODE OR ELECTRONIC OPENING DEVICES AS REQUIRED BY THE CITY OF FERNDALE AND FIRE DISTRICT #7.
- 4. ALL PIPES SHALL HAVE A MINIMUM COVER OF 3.0 FEET AND A MAXIMUM OF 3. ALL STRUCTURES, STORM FACILITIES, AND UTILITY CONNECTION POINTS WILL BE LOCATED AND MARKED APPROPRIATELY BY A LICENSED SURVEYOR PRIOR TO START OF CONSTRUCTION AND OR CITY INSPECTION.
- . THE CONTRACTOR SHALL CLEAR, GRUB AND CLEAN UP THOSE AREAS SHOWN 4. ALL EXISTING SEWER AND WATER SERVICES NOT UTILIZED WILL BE ABANDONED APPROPRIATELY AT THE MAIN.
 - SOURCE MUST BE DCVA PROTECTED. VERIFICATION OF DEVICES, LOCATIONS OF DEVICES AND NEW UPGRADES NEEDED TO COMPLY WILL BE REQUIRED PRIOR TO PROJECT ACCEPTANCE BY THE CITY.

RUNOFF SHALL SHEET - FLOW AND DISPERSE INTO ADJACENT DITCH



3/4 STREET IMPROVEMENT DETAIL

INSPECTION NOTE

MATERIAL USAGE, SOIL OBSERVATIONS, AND NECESSARY COMPACTION REQUIRED TO MEET CITY STANDARDS AND SPECIFICATIONS WITHIN CITY RIGHT OF WAY MUST BE DONE BY A LICENSED GEOTECHNICAL ENGINEER. VERIFICATION OF SAMPLES AND TESTING WILL B REQUIRED PRIOR TO FINAL CITY PROJECT ACCEPTANCE.

AS-BUILT DRAWING

HAS BEEN PROVIDED BY SURVEYOR

AS-BUILT NOTE: ONLY INFORMATION NOTED AS AS-BUILT "(AB)" CALL BEFORE YOU DIG 1-800-424-5555



REVISIONS:

PROFESSIONAL SEAL:



CONSULTANT LOGO:



FREELAND & ASSOCIATES **AMERCO**

REAL ESTATE COMPANY CONSTRUCTION DEPARTMENT 2727 NORTH CENTRAL AVENUE PHOENIX, ARIZONA

85004

PH: (602) 263-6502

SITE ADDRESS: **UHAUL FERNDALE**

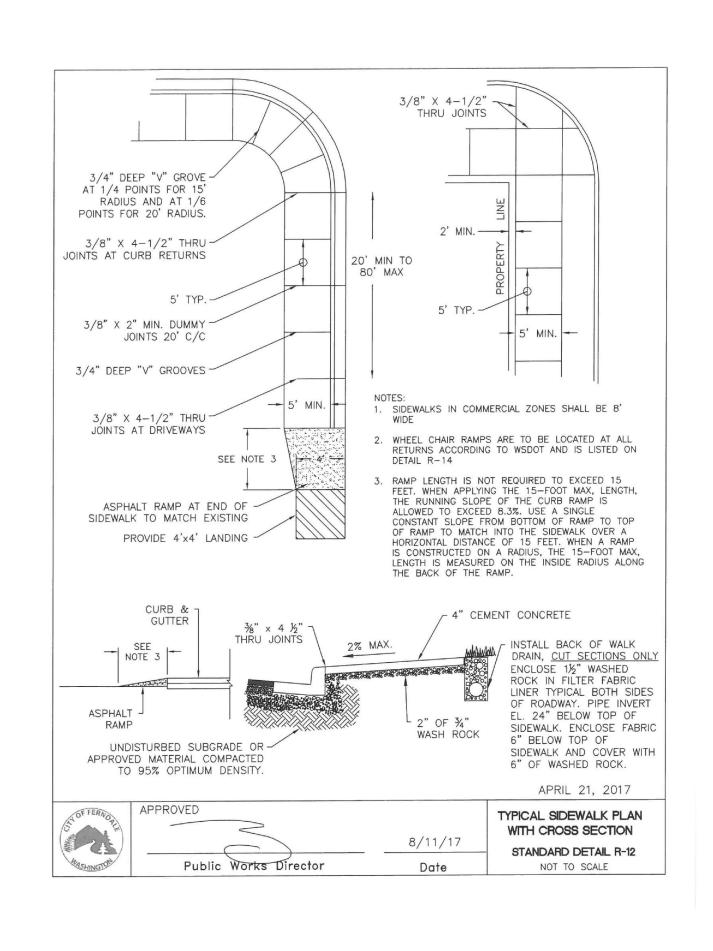
5440 BARRETT ROAD FERNDALE, WA 98248

SHEET CONTENTS FERNDALE **GENERAL NOTES &** BARRETT ROAD CROSS SECTIONS

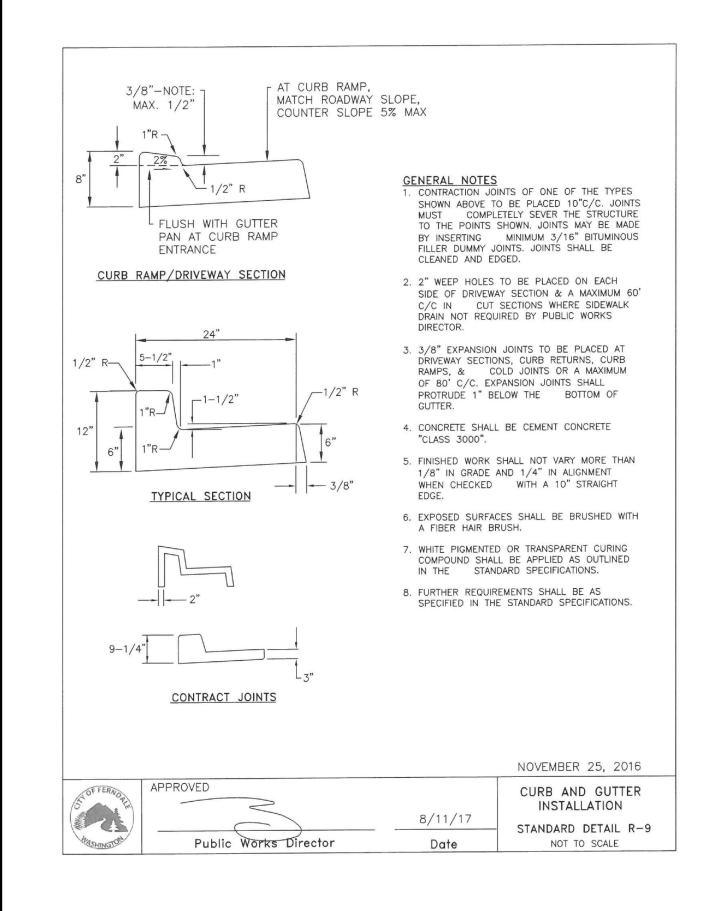
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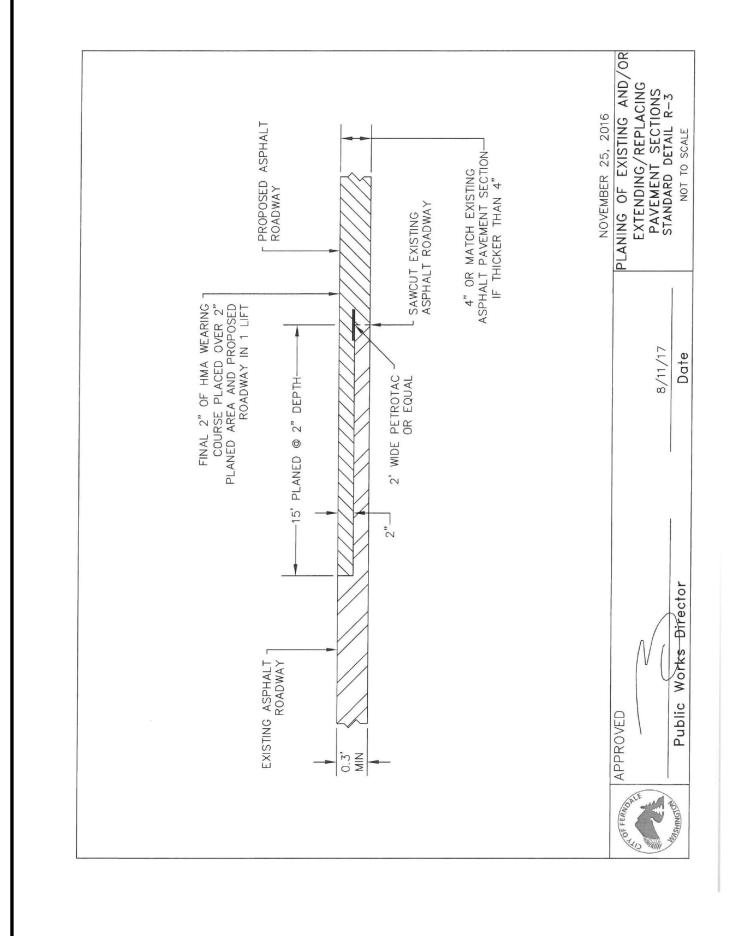
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BARRETT ROAD CROSS SECTION



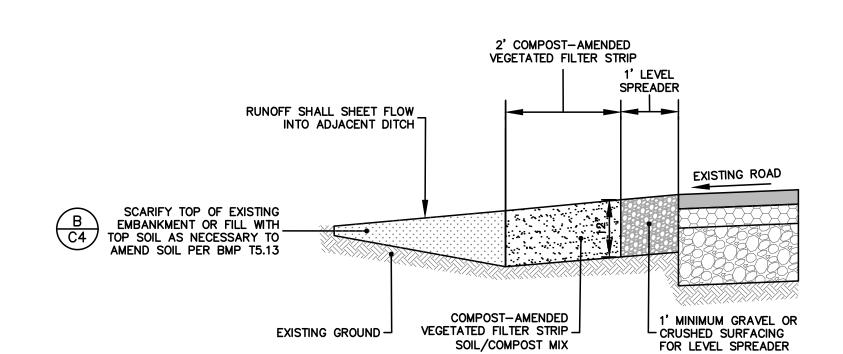
CONCRETE SIDEWALK





CONCRETE CURB & GUTTEF

EXISTING PAVEMENT PLANING



COMPOST-AMENDED VEGETATED FILTER STRIP (CAVFS) DESIGN CRITERIA

SOIL/COMPOST MIX

 PRESUMPTIVE APPROACH: PLACE AND ROTOTILL 1.75 INCHES OF COMPOSTED MATERIAL INTO 6.25 INCHES OF SOIL (A TOTAL AMENDED DEPTH OF ABOUT 9.5 INCHES) FOR A SETTLED DEPTH OF 8 INCHES. WATER OR ROLL TO COMPACT SOIL TO 85% MAXIMIM. PLANT GRASS.

CONCRETE DRIVEWAY ENTRANCE

- CUSTOM APPROACH: PLACE AND ROTOTILL THE CALCULATED AMOUNT OF COMPOSTED MATERIAL INTO A DEPTH OF SOIL NEEDED TO ACHIEVE 8 INCHES OF SETTLED SOIL AT 5% ORGANIC CONTENT. WATER OR ROLL TO COMPACT SOIL TO 85% MAXIMUM. PLANT GRASS.
- THE AMOUNT OF COMPOST OR OTHER SOIL AMENDMENTS USED VARIES BY SOIL TYPE AND ORGANIC MATTER CONTENT. IF THERE IS A GOOD POSSIBILITY THAT SITE CONDITIONS MAY ALREADY CONTAIN A RELATIVELY HIGH ORGANIC CONTENT, THEN IT MAY BE POSSIBLE TO MODIFY THE PRE—APPROVED RATE DESCRIBED ABOVE AND STILL BE ABLE TO ACHIEVE THE 5% ORGANIC CONTENT TARGET.
- THE FINAL SOIL MIX (INCLUDING COMPOST AND SOIL) SHOULD HAVE AN INITIAL SATURATED HYDRAULIC CONDUCTIVITY LESS THAN 12 INCHES PER HOUR, AND A MINIMUM LONG-TERM HYDRAULIC CONDUCTIVITY OF 1.0 INCH/HOUR PER ASTM DESIGNATION D 2434 (STANDARD TEST METHOD FOR PERMEABILITY OF GRANULAR SOILS) AT 85% COMPACTION PER ASTM DESIGNATION D 1557 (STANDARD TEST METHOD FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING MODIFIED EFFORT).
- INFILTRATION RATE AND HYDRAULIC CONDUCTIVITY ARE ASSUMED TO BE APPROXIMATELY THE SAME IN A UNIFORM MIX SOIL. THE LONG TERM SATURATED HYDRAULIC CONDUCTIVITY OF THE SOIL MIX IS DETERMINED BY APPLYING THE APPROPRIATE INFILTRATION CORRECTION FACTORS AS EXPLAINED IN DETERMINING THE BIORETENTION SOIL MIX DESIGN INFILTRATION RATE WITHIN BMP T7.30: BIORETENTION.
- THE FINAL SOIL MIX SHOULD HAVE A MINIMUM ORGANIC CONTENT OF 5% BY DRY WEIGHT PER ASTM DESIGNATION D 2974 (STANDARD TEST METHOD FOR MOISTURE, ASH AND ORGANIC MATTER OF PEAT AND
- ACHIEVING THE ABOVE RECOMMENDATIONS WILL DEPEND ON THE SPECIFIC SOIL AND COMPOST CHARACTERISTICS. IN GENERAL, THE RECOMMENDATION CAN BE ACHIEVED WITH 60% TO 65% LOAMY SAND MIXED WITH 25% TO 30% COMPOST OR 30% SANDY LOAM, 30% COARSE SAND, AND 30% COMPOST.

- THE FINAL SOIL MIXTURE SHOULD BE TESTED PRIOR TO INSTALLATION FOR FERTILITY, MICRONUTRIENT ANALYSIS, AND ORGANIC MATERIAL CONTENT.
- CLAY CONTENT FOR THE FINAL SOIL MIX SHOULD BE LESS THAN 5%.
- COMPOST MUST NOT CONTAIN BIOSOLIDS, MANURE, ANY STREET OR HIGHWAY SWEEPINGS, OR ANY CATCH
- THE PH FOR THE SOIL MIX SHOULD BE BETWEEN 5.5 AND 7.0 (STENN, 2003). IF THE PH FALLS OUTSIDE THE ACCEPTABLE RANGE, IT MAY BE MODIFIED WITH LIME TO INCREASE THE PH OR IRON SULFATE PLUS SULFUR TO LOWER THE PH. THE LIME OR IRON SULFATE MUST BE MIXED UNIFORMLY INTO THE SOIL PRIOR TO USE IN LID AREAS (LOW-IMPACT DEVELOPMENT CENTER, 2004).
- THE SOIL MIX SHOULD BE UNIFORM AND FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR MATERIAL LARGER THAN 2 INCHES.
- WHEN PLACING TOPSOIL, IT IS IMPORTANT THAT THE FIRST LIFT OF TOPSOIL IS MIXED INTO THE TOP OF THE EXISTING SOIL. THIS ALLOWS THE ROOTS TO PENETRATE THE UNDERLYING SOIL EASIER AND HELPS PREVENT THE FORMATION OF A SLIP PLANE BETWEEN THE TWO SOIL LAYERS.

SOIL COMPONENT

THE TEXTURE FOR THE SOIL COMPONENT OF THE SOIL MIX SHOULD BE LOAMY SAND (USDA SOIL TEXTURAL CLASSIFICATION).

FOLLOW THE SPECIFICATIONS FOR COMPOST IN BMP T7.30: BIORETENTION.



(E) COMPOST-AMENDED VEGETATED FILTER STRIP (CAVFS)

BIORETENTION SOIL MIX (BSM) SOIL SPECIFICATIONS

MINERAL AGGREGATE

PERCENT FINES: A RANGE OF 2 TO 4 PERCENT PASSING THE #200 SIEVE IS IDEAL AND FINES SHOULD NOT BE ABOVE 5 PERCENT FOR A PROPER FUNCTIONING SPECIFICATION ACCORDING TO ASTM D422.

AGGREGATE GRADATION

THE AGGREGATE PORTION OF THE BSM SHOULD BE WELL-GRADED. ACCORDING TO ASTM D 2487-98 (CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED

SOIL CLASSIFICATION SYSTEM)), WELL-GRADED SAND SHOULD HAVE THE FOLLOWING GRADATION COEFFICIENTS:

• COEFFICIENT OF UNIFORMITY (CU = D60/D10) EQUAL TO OR GREATER THAN 4, AND • COEFFICIENT OF CURVE (CC = (D30)2/D60 X D10) GREATER THAN OR EQUAL TO 1 AND LESS THAN OR EQUAL TO 3.

TABLE BELOW PROVIDES A GRADATION GUIDELINE FOR THE AGGREGATE COMPONENT OF A BIORETENTION SOIL MIX SPECIFICATION IN WESTERN WASHINGTON (HINMAN, ROBERTSON, 2007). THE SAND GRADATION BELOW IS OFTEN SUPPLIED AS A WELLGRADED UTILITY OR SCREENED. WITH COMPOST THIS BLEND PROVIDES ENOUGH FINES FOR ADEQUATE WATER RETENTION, HYDRAULIC CONDUCTIVITY WITHIN RECOMMENDED RANGE (SEE BELOW), POLLUTANT REMOVAL CAPABILITY, AND PLANT GROWTH CHARACTERISTICS FOR MEETING DESIGN GUIDELINES AND OBJECTIVES.

MINERAL AGGREGATE GRADATION			
U.S. SIEVE NUMBER	PERCENT PASSING		
3/8	100		
4	95–100		
10	75–90		
40	25-40		
100	4–10		
200	2_5		

WHERE EXISTING SOILS MEET THE ABOVE AGGREGATE GRADATION, THOSE SOILS MAY BE AMENDED RATHER THAN IMPORTING MINERAL AGGREGATE.

- COMPOST TO AGGREGATE RATIO, ORGANIC MATTER CONTENT, CATION EXCHANGE CAPACITY
- COMPOST TO AGGREGATE RATIO: 60-65 PERCENT MINERAL AGGREGATE, 35 40 PERCENT COMPOST. • ORGANIC MATTER CONTENT: 5 - 8 PERCENT BY WEIGHT.
- CATION EXCHANGE CAPACITY (CEC) MUST BE > 5 MILLIEQUIVALENTS/100 G DRY SOIL NOTE: SOIL MIXES MEETING THE ABOVE SPECIFICATIONS DO NOT HAVE TO BE TESTED FOR CEC. THEY WILL READILY MEET THE MINIMUM CEC.

- TO ENSURE THAT THE BSM WILL SUPPORT HEALTHY PLANT GROWTH AND ROOT DEVELOPMENT, CONTRIBUTE TO BIOFILTRATION OF POLLUTANTS, AND NOT RESTRICT INFILTRATION WHEN USED IN THE PROPORTIONS CITED HEREIN, THE FOLLOWING COMPOST STANDARDS ARE REQUIRED.
- MEETS THE DEFINITION OF "COMPOSTED MATERIALS" IN WAC 173-350-220 (INCLUDING CONTAMINANT LEVELS AND OTHER STANDARDS), AVAILABLE ONLINE AT HTTP: //WWW.ECY.WA.GOV/PROGRAMS/SWFA/ORGANICS/SOIL.HTML
- PRODUCED AT A COMPOSTING FACILITY PERMITTED BY THE WA DEPARTMENT OF ECOLOGY. A CURRENT LIST OF PERMITTED FACILITIES IS AVAILABLE AT HTTP: //WWW.ECY.WA.GOV/PROGRAMS/SWFA/COMPOST/
- THE COMPOST PRODUCT MUST ORIGINATE A MINIMUM OF 65 PERCENT BY VOLUME FROM RECYCLED PLANT WASTE AS DEFINED IN WAC 173-350-100 AS "TYPE I FEEDSTOCKS." A MAXIMUM OF 35 PERCENT BY VOLUME OF OTHER APPROVED ORGANIC WASTE AS DEFINED IN WAC 173-350-100 AS "TYPE III", INCLUDING POSTCONSUMER FOOD WASTE, BUT NOT INCLUDING BIOSOLIDS, MAY BE SUBSTITUTED FOR RECYCLED PLANT WASTE.
- STABLE (LOW OXYGEN USE AND CO2 GENERATION) AND MATURE (CAPABLE OF SUPPORTING PLANT GROWTH) BY TESTS SHOWN BELOW. THIS IS CRITICAL TO PLANT SUCCESS IN A BIORETENTION SOIL MIXES.
- MOISTURE CONTENT RANGE: NO VISIBLE FREE WATER OR DUST PRODUCED WHEN HANDLING THE MATERIAL.
- TESTED IN ACCORDANCE WITH THE U.S. COMPOSTING COUNCIL "TESTING METHODS FOR THE EXAMINATION OF COMPOST AND COMPOSTING" (TMECC), AS ESTABLISHED IN THE COMPOSTING COUNCIL'S "SEAL OF TESTING ASSURANCE" (STA) PROGRAM. MOST WASHINGTON COMPOST FACILITIES NOW USE THESE TESTS.
- SCREENED TO THE SIZE GRADATIONS FOR FINE COMPOST UNDER TMECC TEST METHOD 02.02-B, SAMPLE SIEVING FOR AGGREGATE SIZE CLASSIFICATION.
- PH BETWEEN 6.0 AND 8.5 (TMECC 04.11-A). "PHYSICAL CONTAMINANTS" (AS DEFINED IN THE WAC 173-350-100) CONTENT LESS THAN 1% BY WEIGHT (TMECC 04.10-A) TOTAL, NOT TO EXCEED 0.25 PERCENT FILM PLASTIC BY DRY WEIGHT.
- MINIMUM ORGANIC MATTER CONTENT OF 40% (TMECC 05.07-A)
- SOLUBLE SALT CONTENT LESS THAN 4.0 MMHOS/CM (TMECC 04.10-A)
- MATURITY GREATER THAN 80% (TMECC 05.05—A "GERMINATION AND VIGOR") • STABILITY OF 7 OR BELOW (TMECC 05.08-B "CARBON DIOXIDE EVOLUTION RATE")
- CARBON TO NITROGEN RATIO (TMECC 04.01 "TOTAL CARBON" AND 04.02D "TOTAL KJELDAHL NITROGEN") OF
- LESS THAN 25:1. THE C:N RATIO MAY BE UP TO 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PUGET SOUND
- LOWLAND NATIVE SPECIES AND UP TO 40:1 FOR COARSE COMPOST TO BE USED AS A SURFACE MULCH (NOT IN A SOIL MIX).

BIORETENTION SOIL MIX SPECIFICATION

AS-BUILT DRAWING AS-BUILT NOTE:

ONLY INFORMATION NOTED AS AS-BUILT "(AB)"

HAS BEEN PROVIDED BY SURVEYOR

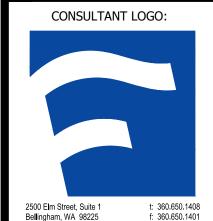
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SITE ADDRESS:

UHAUL FERNDALE 5440 BARRETT ROAD FERNDALE, WA 98248

SHEET CONTENTS:

FRONTAGE **IMPROVEMENT** DETAILS

RAWN: 9-19-2025