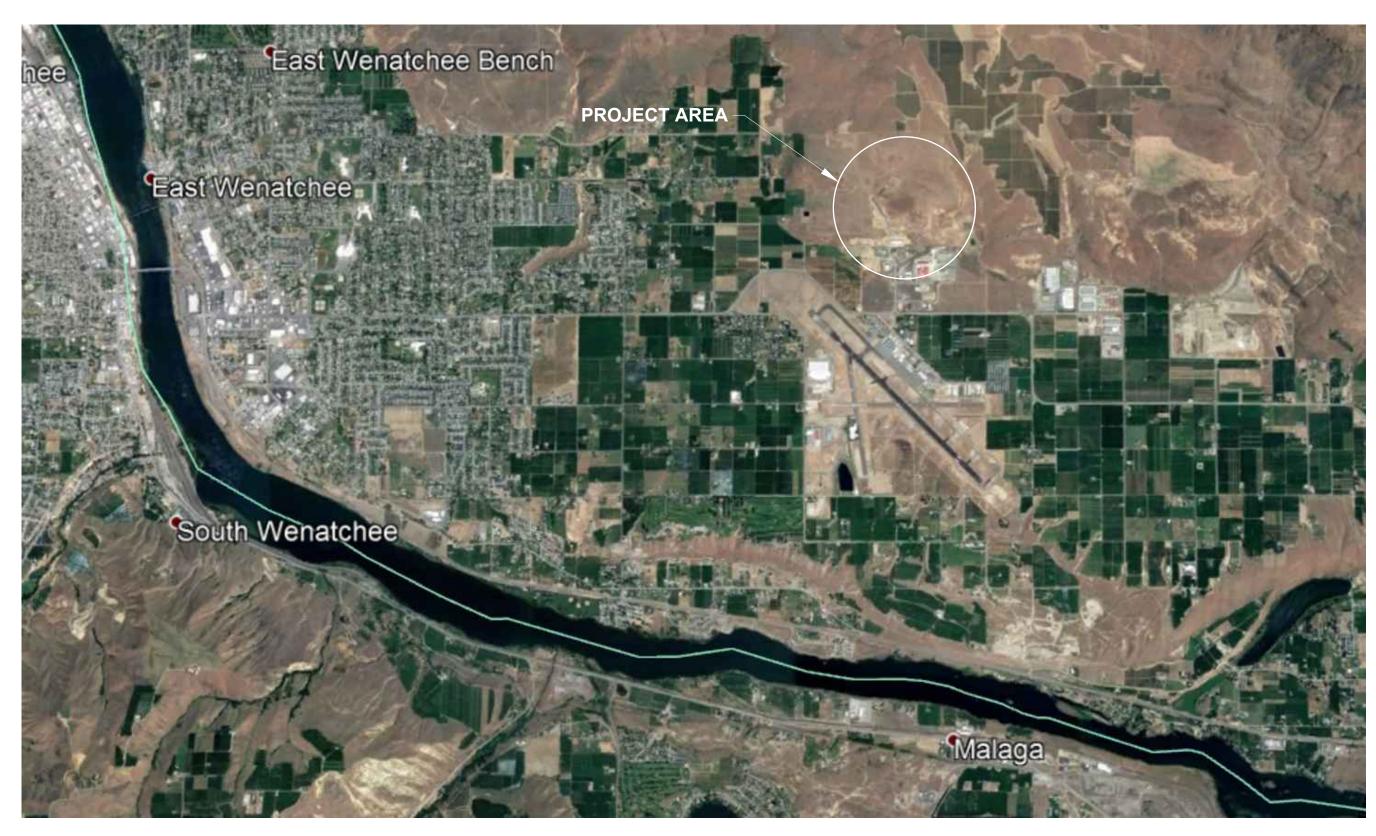
PRONOIA EFFECTS, LLC

501 URBAN INDUSTRIAL WAY DATA CENTER EAST WENATCHEE, WA NOVEMBER 2018







VICINITY MAP

UTILITIES AND JURISDICTION AGENCIES

DOUGLAS COUNTY TL&S

140 19TH STREET NW, SUITE A EAST WENATCHEE, WA 98802

PHONE: 509.884.7173

EAST WENATCHEE WATER DISTRICT

692 EASTMONT AVE EAST WENATCHEE, WA 98802

PHONE: 509.884.3569

POWER

DOUGLAS COUNTY PUD 1151 VALLEY MALL PKWY EAST WENATCHEE, WA 98802

PHONE: 800.503.7990

DOUGLAS COUNTY SEWER DISTRICT

692 EASTMONT AVE EAST WENATCHEE, WA 98802

PHONE: 509.884.2482

CONTACTS

OWNER/REPRESENTATIVE

PRONOIA EFFECTS, LLC

CHRIS UNGARO 1506 SENECA PLACE WENATCHEE, WA 98801 CONTACT: CHRIS UNGARO

PHONE: 702.525.1300

ENGINEER/SURVEYOR

PACE ENGINEERS, INC. 104 EAST 9TH STREET

WENATCHEE, WA 98801

FAX: 509.662.4324

CONTACT: LARRY CORDES, PRINCIPAL ENGINEER LARRYC@PACEENGRS.COM PHONE: 509.662.1762

SHEET INDEX

SHEET NUMBER	SHEET TITLE			
1	COVER SHEET			
2	LEGEND AND SYMBOLS			
3	CONSTRUCTION NOTES			
4	EROSION AND SEDIMENT CONTROL PLAN			
5	EROSION CONTROL NOTES AND DETAILS			
6	SITE GRADING AND UTILITIES			
7	CROSS SECTIONS AND PROFILES			
8	DETAILS			
9	DETAILS			



NTS

PREPARED BY:



104 East 9th Street Wenatchee, WA 98801 p. 509.662.1762

Civil | Structural | Planning | Survey www. paceengrs.com

before you

Call

1-800-424-5555 UNDERGROUND SERVICE (USA



DESIGNED AAR REVISION DATE BY APP



PRONOIA EFFECTS, LLC DOUGLAS COUNTY, WA

NOV 2018 SCALE

AS SHOWN

PRONOIA-501 UIW DATA CENTER **GRADING AND DRAINAGE**

COVER SHEET

JOB NUMBER 18487 DWG NAME:P18209 COVER SHEET 1 OF 9

CHRIS UNGARO

PRONOIA EFFECTS, LLC

GENERAL CONSTRUCTION NOTES

SITE GRADING AND UTILITIES

PACE ENGINEERS, INC. 104 EAST NINTH STREET WENATCHEE, WA 98801 509-662-1762

LOCAL AGENCY REQUIREMENTS:

ALL WORK MUST BE IN COMPLIANCE WITH LOCAL AGENCY ORDINANCES, CODES, AND STANDARDS. LOCAL AGENCIES WOULD INCLUDE BUT NOT BE LIMITED TO UTILITY DISTRICTS. UTILITY PURVEYORS. BUILDING DEPARTMENTS, PLANNING DEPARTMENTS, PUBLIC TRANSPORTATION DISTRICTS, CITIES, AND COUNTIES.

EXISTING UTILITIES:

SCOPE OF WORK:

OWNERSHIP AND CONTACTS:

EXISTING UTILITIES SHOWN ARE APPROXIMATE AND BASED ON INFORMATION PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE UTILITY LOCATE SERVICE 1-800-424-5555 AT LEAST 3 WORKING DAYS PRIOR TO CONSTRUCTION. ANY DAMAGE TO MARKED UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

PUBLIC AND WORKER SAFETY:

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SAFE WORK SITE IN COMPLIANCE WITH THE WASHINGTON STATE INDUSTRIAL SAFETY AND HEALTH ACT AND THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT. PEDESTRIAN WALKWAYS MUST BE CLOSED WITH BARRICADES AND SAFETY RIBBON PRIOR TO ANY WORK WITHIN WALKWAYS. TRAFFIC CONTROL IN ACCORDANCE WITH LOCAL AGENCY REQUIREMENTS MUST BE PROVIDED DURING ALL WORK WITHIN PUBLIC STREETS OR ROADS.

THE CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES TO AVOID DELAYS AND INCONVENIENCES.

PRECONSTRUCTION CONFERENCE:

THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE WITH THE OWNER AND ENGINEER PRIOR TO BEGINNING WORK. DATE AND LOCATION TO BE ESTABLISHED BY THE ENGINEER.

THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS AND FEES REQUIRED TO

MATERIALS TESTING AND INSPECTION:

UNLESS SPECIFIED BY THE OWNER THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTIONS INCLUDING BUT NOT LIMITED TO SOILS, AGGREGATE, AND ASPHALT COMPACTION TESTING, AGGREGATE ANALYSIS, CONCRETE AIR CONTENT, SLUMP, AND TEST CYLINDERS.

SURVEYING AND STAKING:

UNLESS SPECIFIED BY THE OWNER THE CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING AND SURVEYING.

THE CONTRACTOR SHALL PROVIDE DUST CONTROL BY WATERING OR DUST PALLIATIVE AND BEAR THE COST FOR PROVIDING WATER TO THE SITE.

RECORD DRAWINGS: THE CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING ACTUAL INSTALLATIONS OF UTILITIES ON A SEPARATE SET OF PLANS TO BE DELIVERED TO THE OWNER UPON COMPLETION OF THE WORK.

TRAFFIC CONTROL

CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER AND ALL AFFFECTED AGENCIES.

EARTHWORK

EARTHWORK SHALL BE IN ACCORDANCE WITH THE FINDINGS AND RECOMMENDATIONS OF THE SITE GEOTECHNICAL REPORT.

STRUCTURAL FILL - EARTH FILL UNDER FOOTINGS, PAVEMENTS, AND SIDEWALKS IS DEFINED AS STRUCTURAL FILL AND SHALL BE SELECT NATIVE SOIL FREE OF ORGANICS AND DEBRIS. IF NATIVE SOILS HAVE BEEN IDENTIFIED AS UNSUITABLE, IMPORTED FILL SHALL BE PROVIDED. IMPORTED STRUCTURAL FILL SHALL BE A WELL GRADED SAND AND GRAVEL MEETING THE FOLLOWING REQUIREMENTS:

100% PASSING 4" SQUARE U.S. NO.40 50% MAX. PASSING U.S. NO. 200 5% MAX. PASSING SAND EQUIVALENT

EXECUTION

FILL AREAS - FILL UNDER ROADWAYS, PARKING AREAS AND SIDEWALKS SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES AND SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY (PER THE MODIFIED PROCTOR).

SANITARY SEWERAGE

GENERAL

ALL WORK SHALL BE IN CONFORMANCE WITH THE STANDARDS OF THE SEWER UTILITY. THE CONTRACTOR SHALL PROVIDE FOR ANY INSPECTIONS OR SPECIAL PROCEDURES REQUIRED BY THE UTILITY.

MATERIALS

GRAVITY SEWER PIPE - SANITARY SEWER PIPE SHALL BE SOLID WALL PVC MEETING ASTM D-3034, WITH AN SDR OF 35. PIPE JOINTS AND FITTINGS SHALL CONFORM TO ASTM D-3212 AND ASTM F-477 RESPECTIVELY.

PRESSURE SEWER PIPE - PRESSURE SEWER PIPE SHALL BE 3" HDPE IPS DR11

EXECUTION

TRENCHING - SEWER TRENCHES SHALL BE EXCAVATED IN ACCORDANCE WITH THE TRENCH SECTION SHOWN ON THE PLANS.

PIPE INSTALLATION - PIPE SHALL BE LAID IN CONFORMITY WITH THE HORIZONTAL AND VERTICAL ALIGNMENTS SHOWN IN THE PLANS. DEFLECTIONS AT PIPE JOINTS SHALL BE WITHIN MANUFACTURER'S RECOMMENDED LIMITS. PIPE MUST REMAIN EXPOSED UNTIL ENGINEER OR OWNER'S REPRESENTATIVE HAS INSPECTED AND APPROVED THE INSTALLATION.

BEDDING- PIPE ZONE BEDDING MATERIAL SHALL PROVIDE UNIFORM SUPPORT ALONG THE ENTIRE PIPE BARREL WITHOUT LOAD CONCENTRATION AT JOINT COLLARS OR BELLS. BEDDING SHALL BE PLACED, SPREAD, AND COMPACTED BEFORE THE PIPE IS INSTALLED SO THAT THE PIPE IS UNIFORMLY SUPPORTED ALONG THE BARREL. LIFTS NOT EXCEEDING SIX INCHES SHALL BE PLACED AND COMPACTED ALONG THE SIDES OF THE PIPE TO THE HEIGHT SHOWN ON THE TRENCH SECTION DETAIL. PIPE ZONE BEDDING SHALL CONSIST OF CRUSHED, PROCESSED, OR NATURALLY OCCURRING GRANULAR MATERIAL FREE OF ORGANICS AND MEETING THE FOLLOWING SPECIFICATION -

SIEVE SIZE PERCENT PASSING (BY WEIGHT)

1" SQUARE 1/4" SQUARE 25-80 5.0 MAX U.S. NO. 200 SAND EQUIVALENT 27 MIN.

BACKFILL - BACKFILLING THE TRENCH SHALL NOT PROCEED UNTIL THE ENGINEER OR DESIGNATED REPRESENTATIVE HAS INSPECTED THE PIPE INSTALLATION. BACKFILL COMPACTION ABOVE THE BEDDING ZONE SHALL NOT SHIFT OR DAMAGE THE PIPE. LIFT THICKNESS SHALL NOT EXCEED SIX INCHES. BACKFILL MATERIAL SHALL BE FREE OF WOOD WASTE, ORGANICS, DEBRIS, AND ROCKS EXCEEDING SIX INCHES. COMPACTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE TRENCH SECTION DETAIL.

TESTING - SANITARY SEWER PVC PIPE SHALL BE PRESSURE TESTED BY THE CONTRACTOR IN ACCORDANCE WITH ONE OF THE FOLLOWING PROCEDURES:

TEST PROCEDURE A - WATER EXFILTRATION TEST

1) PRIOR TO MAKING EXFILTRATION LEAKAGE TESTS, THE CONTRACTOR MAY FILL THE PIPE WITH CLEAR WATER TO PERMIT NORMAL PIPE WALL ABSORPTION PROVIDED THAT THE CONTRACTOR SHALL COMPLETE THE LEAKAGE TEST WITHIN 24 HOURS AFTER FILLING.

2) LEAKAGE SHALL BE NO MORE THAN 0.28 GAL/HR PER INCH DIAMETER PER 100 FEET OF SEWER WITH A HYDROSTATIC HEAD OF 6 FEET ABOVE THE CROWN AT THE UPPER END OF THE TEST SECTION OR ABOVE THE NATURAL GROUNDWATER TABLE WHICHEVER IS HIGHER. THE LENGTH OF PIPE SHALL BE LIMITED SO THAT THE PRESSURE HEAD DOES NOT EXCEED 16 FEET ABOVE THE INVERT AND IN NO CASE GREATER THAN 700 FEET.

3) WHERE THE TEST HEAD IS OTHER THAN 6 FEET, THE MAXIMUM LEAKAGE SHALL NOT EXCEED 0.28 GAL/HR PER INCH DIAMETER PER 100 FEET OF PIPE LENGTH TIME THE SQUARE ROOT OF THE TEST HEAD.

EXFILTRATION LEAKAGE CAN BE DETERMINED FROM THE FOLLOWING EQUATION

MAXIMUM LEAKAGE, GAL/HR = $0.28 \times (H/6) 1/2 \times D \times L/100$

WHERE D = DIAMETER, INCHES L = LENGTH OF PIPE

H = TEST HEAD, FT.

TEST PROCEDURE B - WATER INFILTRATION TEST WHEN GROUNDWATER PRESENT

1) WHERE THE NATURAL GROUNDWATER HEAD IS 2 FEET OR LESS ABOVE THE PIPE CROWN AT THE UPPER END OF THE TEST SECTION, THE INFILTRATION TEST LEAKAGE SHALL NOT EXCEED 0.16 GAL/HR PER INCH DIAMETER PER 100 FEET OF PIPE LENGTH. THE LENGTH OF PIPE TEST SHALL NOT EXCEED 700 FEET OR THE DISTANCE BETWEEN MANHOLES WHEN GREATER THAN 700 FEET.

2) WHERE THE NATURAL GROUNDWATER HEAD IS GREATER THAN 2 FEET, THE INFILTRATION TEST LEAKAGE SHALL NOT EXCEED 0.16 GAL/HR PER INCH DIAMETER PER 100 FEET OF PIPE LENGTH TIMES THE SQUARE ROOT OF THE NATURAL GROUNDWATER HEAD.

INFILTRATION LEAKAGE CAN BE DETERMINED FROM THE FOLLOWING EQUATION -

MAXIMUM LEAKAGE, GAL/HR = $0.16 \times (H/2) 1/2 \times DX \times L/100$

WHERE D = DIAMETER, INCHES

L = LENGTH OF PIPEH = NATURAL GROUNDWATER HEAD, FT.

TEST PROCEDURE C - LOW PRESSURE AIR TEST

1) THE CONTRACTOR SHALL FURNISH ALL TEST EQUIPMENT AND PROVIDE FOR ENGINEER INSPECTION PRIOR TO THE TEST. THE ENGINEER AT ANY TIME MAY REQUEST A CALIBRATION TEST OF GAUGES OR OTHER INSTRUMENTATION TO BE USED IN THE TEST.

2) PIPE SEGMENTS SHALL BE PLUGGED AT MANHOLES. GAUGES, AIR PIPING MANIFOLD, AND VALVES SHALL BE LOCATED AT THE TOP OF THE GROUND. NO ONE SHALL BE ALLOWED TO ENTER A MANHOLE OR TRENCH WHERE A PLUGGED PIPE IS UNDER PRESSURE. TESTING EQUIPMENT SHALL BE EQUIPPED WITH RELIEF DEVICES SET TO RELEASE AT 2 PSI ABOVE THE TEST PRESSURE.

3) AIR SHALL BE SLOWLY SUPPLIED TO THE PLUGGED PIPE SECTION UNTIL THE INTERNAL AIR PRESSURE REACHES 4 PSIG. THE AIR SUPPLY SHALL THEN BE SHUT OFF AND THE INTERNAL AIR PRESSURE ALLOWED

4) WHEN THE INTERNAL PRESSURE DROPS TO 3.5 PSIG THE TEST SHALL BEGIN. THE TEST SHALL CONSIST OF MEASURING THE TIME IN SECONDS FOR THE INTERNAL PRESSURE TO DROP FROM 3.5 TO 2.5 PSIG. THE PIPE SHALL BE CONSIDERED ACCEPTABLE IF THE TIME IN SECONDS FOR THE PRESSURE DROP IS EQUAL TO OR GREATER THAN THE REQUIRED TIME AS CALCULATED BELOW:

 $K = 0.0111D^{2}L$ C = 0.0003918DL

IF CT < 1. THEN REQUIRED TIME = 4KT SECONDS IF 1 < CT < 1.75, THEN REQUIRED TIME = 4KT/CT SECONDS IF CT => 1.75, THEN REQUIRED TIME = 4KT/1.75 SECONDS

WHERE D = PIPE DIAMETER, INCHES

L = PIPE LENGTH, FEET K = VALUE FOR EACH LENGTH OF PIPE OF A SPECIFIC DIAMETER

C = VALUE FOR EACH LENGTH OF PIPE OF A SPECIFIC DIAMETER

KT = SUM OF ALL K VALUES CT = SUM OF ALL C VALUES

PIPE OVER 30 INCHES IN DIAMETER SHALL BE TESTED ONE JOINT AT A TIME IN ACCORDANCE WITH ASTM C

TEST PROCEDURE D - PRESSURE SEWERS

ALL PRESSURE SEWER PIPING SHALL BE TESTED IN SECTIONS OF CONVENIENT LENGTH UNDER A HYDROSTATIC PRESSURE TEST TO 50 PSI. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT REQUIRED TO PERFORM THE

THE TEST SHALL INCLUDE THE SERVICE LINES FROM THE MAIN TO THE TERMINATING VALVE.

THE PIPE TRENCH SHALL BE BACKFILLED SUFFICIENTLY TO PREVENT MOVEMENT OF THE PIPE UNDER PRESSURE. ALL THRUST BLOCKS SHALL BE IN PLACE AND CURED AT THE TIME OF TESTING. TEMPORARY BLOCKING SHALL BE INSTALLED WHERE REQUIRED.

THE PRESSURE SEWER SHALL BE FILLED WITH WATER AND ALLOWED TO STAND UNDER PRESSURE FOR SUFFICIENT TIME TO ALLOW THE ESCAPE OF AIR AND ALLOW WATER ABSORPTION IN THE PIPE LINING. DURING FILLING THE WATER SOURCE SHALL BE PROTECTED FROM CONTAMINATION BY A WASHINGTON STATE DEPARTMENT OF HEALTH BACKFLOW PREVENTION DEVICE.

THE TEST SHALL BE ACCOMPLISHED BY PRESSURIZING THE PIPE TO THE REQUIRED PRESSURE, STOPPING THE PUMP FOR 15 MINUTES, AND THEN REPRESSURIZING THE PIPE. THE TEST SECTION SHALL BE OBSERVED FOR VISIBLE LEAKAGE. THE QUANTITY OF WATER REQUIRED TO RESTORE THE PRESSURE SHALL BE ACCURATELY DETERMINED BY PUMPING THROUGH A POSITIVE DISPLACEMENT WATER METER. THE ALLOWABLE LEAKAGE SHALL BE DETERMINED USING THE FORMULA PROVIDED IN THESE NOTES FOR PRESSURE TESTING WATER

TEST ALLOWANCES- FOR TEST PROCEDURE A OR B ALL LATERAL OR SIDE SEWER BRANCHES INCLUDED IN THE TEST SECTION SHALL BE TAKEN INTO ACCOUNT IN COMPUTING ALLOWABLE LEAKAGE. AN ALLOWANCE OF 0.2 GAL/HR PER FOOT OF HEAD ABOVE THE INVERT SHALL BE MADE FOR EACH MANHOLE INCLUDED IN A TEST SECTION.

UPON FINAL ACCEPTANCE ALL SEWERS, SIDE SEWERS, AND FITTINGS SHALL BE OPEN, CLEAN, AND FREE DRAINING

WATER DISTRIBUTION

<u>GENERAL</u>

ALL WORK SHALL BE IN CONFORMANCE WITH THE STANDARDS OF THE WATER UTILITY. THE CONTRACTOR SHALL PROVIDE FOR ANY INSPECTIONS OR SPECIAL PROCEDURES REQUIRED BY THE UTILITY.

DUCTILE IRON PIPE (DI) - DI PIPE SHALL MEET THE REQUIREMENTS OF AWWA C-151 WITH CEMENT MORTAR LINING MEETING THE REQUIREMENTS OF AWWA C-104. DI PIPE TO BE JOINED USING BOLTED FLANGED JOINTS SHALL BE STANDARD THICKNESS CLASS 53. ALL OTHER DI PIPE SHALL BE STANDARD THICKNESS CLASS 50 OR THE THICKNESS CLASS SHOWN ON THE PLANS.

JOINTS - NONRESTRAINED DI PIPE JOINTS SHALL BE RUBBER GASKET, PUSH-ON TYPE, OR MECHANICAL TYPE MEETING THE REQUIREMENTS OF AWWA C-111. RESTRAINED JOINTS SHALL UTILIZE FIELD-LOK BRAND GASKETS OR APPROVED EQUAL.

POLYVINYL CHLORIDE PIPE (PVC) - PVC PIPE FOR DISTRIBUTION PIPE LINES SHALL MEET THE REQUIREMENTS OF AWWA C-900. PVC PIPE JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D-3139 USING A RESTRAINED RUBBER GASKET CONFORMING TO ASTM F-477. SOLVENT WELDED PIPE JOINTS ARE NOT PERMITTED.

APPURTENANCES - VALVES, HYDRANTS, SERVICE CONNECTION FITTINGS AND OTHER APPURTENANCES SHALL BE AS SHOWN ON THE PLANS OR AS SPECIFIED BY THE WATER PURVEYOR.

FITTINGS - FITTINGS FOR DI AND PVC PIPE SHALL MEET THE REQUIREMENTS OF AWWA C-110 OR AWWA C-153. JOINTS SHALL MEET THE REQUIREMENTS OF AWWA C-111.

TRENCHING - WATER MAIN TRENCHES SHALL BE IN ACCORDANCE WITH THE TRENCH SECTION SHOWN ON THE PLANS. ALL TRENCHES SHALL BE EXCAVATED TO TRUE AND SMOOTH BOTTOM GRADES IN ACCORDANCE WITH THE GRADES AND ALIGNMENTS SHOWN ON THE PLANS. WHEN EXCAVATING THE BOTTOM OF THE TRENCH EXPOSES SOFT SOILS OR OTHER UNSUITABLE FOUNDATION MATERIAL, SUCH MATERIAL SHALL BE REMOVED TO THE DEPTH DIRECTED BY THE ENGINEER AND BACKFILLED WITH PIT RUN GRAVEL OR OTHER MATERIAL APPROVED BY THE ENGINEER.

BEDDING - BEDDING MATERIAL FOR PVC PIPE SHALL BE SELECT GRANULAR MATERIAL FREE FROM WOOD WASTE, ORGANIC MATERIALS AND SHALL HAVE A MAXIMUM DIMENSION OF 1 1/2 INCHES. DEPTHS OF BEDDING SHALL BE AS SHOWN IN THE TRENCH SECTION DETAIL. BEDDING MATERIAL FOR DI PIPE SHALL BE SELECT NATIVE MATERIAL WITH A MAXIMUM DIMENSION OF 2 INCHES.

BACKFILLING - BACKFILL UP TO 12 INCHES OVER THE TOP OF THE PIPE SHALL BE EVENLY AND CAREFULLY PLACED. MATERIALS CAPABLE OF DAMAGING THE PIPE OR ITS COATING SHALL BE REMOVED FROM THE BACKFILL MATERIAL. COMPACTION SHALL BE AS SPECIFIED IN THE TRENCH SECTION DETAIL.

EXISTING PIPE OR CONDUITS WHEN ENCOUNTERED IN THE TRENCH. DISINFECTION - CHLORINE SHALL BE APPLIED TO THE PIPE IN DRY CALCIUM HYPOCHLORITE FORM AT A RATE

OTHER UTILITIES - A MINIMUM 3 INCH SAND CUSHION SHALL BE PLACED BETWEEN THE WATER MAIN AND

WHICH WILL YIELD A DOSAGE NOT LESS THAN 50 MG/L AVAILABLE CHLORINE. THE NUMBER OF GRAMS OF 65% TEST CALCIUM HYPOCHLORITE REQUIRED FOR A 20 FOOT LENGTH OF PIPE IS AS FOLLOWS:

CALCIUM HYPOCHLORITE, GRAMS = $0.008431 \times D^2$

WHERE D = PIPE DIAMETER IN INCHES

AFTER FILLING, CHLORINATED WATER SHALL BE RETAINED IN THE PIPE AT LEAST 24 HOURS BEFORE PRESSURE TESTING AND FLUSHING.

PRESSURE TESTING – ALL WATER MAINS AND APPURTENANCES SHALL BE TESTED IN SECTIONS OF CONVENIENT LENGTH UNDER A HYDROSTATIC PRESSURE EQUAL TO 150 PSI GREATER THAN OPERATING PRESSURE BUT NOT LESS THAN 200 PSI. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT REQUIRED TO PERFORM THE

THE PIPELINE SHALL BE BACKFILLED SUFFICIENTLY TO PREVENT MOVEMENT OF THE PIPE UNDER PRESSURE. ALL THRUST BLOCKS SHALL BE IN PLACE AND CURED. TEMPORARY BLOCKING SHALL BE INSTALLED WHERE

THE MAINS SHALL BE FILLED WITH WATER AND ALLOWED TO STAND UNDER PRESSURE FOR SUFFICIENT TIME TO ALLOW THE ESCAPE OF AIR AND WATER ABSORPTION IN THE PIPE LINING. DURING FILLING THE WATER SOURCE SHALL BE PROTECTED FROM CONTAMINATION BY A WASHINGTON STATE DEPARTMENT OF HEALTH APPROVED BACKFLOW PREVENTION DEVICE.

THE TEST SHALL BE ACCOMPLISHED BY PUMPING THE MAIN UP TO THE REQUIRED PRESSURE, STOPPING THE PUMP FOR 15 MINUTES AND THEN PUMPING TO THE TEST PRESSURE AGAIN. THE TEST SECTION SHALL BE OBSERVED FOR VISIBLE LEAKAGE. THE QUANTITY OF WATER REQUIRED TO RESTORE THE PRESSURE SHALL BE ACCURATELY DETERMINED BY PUMPING THROUGH A POSITIVE DISPLACEMENT WATER METER. THE QUANTITY OF WATER LOST FROM THE TEST SECTION SHALL NOT EXCEED THE NUMBER OF GALLONS PER HOUR AS DFTERMINED BY THE FORMULA:

 $L = (N \times D \times P) / 7400$

WHERE L = ALLOWABLE LEAKAGE, GAL/HRN = NUMBER OF JOINTS IN THE TEST SECTION

D = NOMINAL DIAMETER OF THE PIPE IN INCHES

P = AVERAGE TEST PRESSURE, PSI

ALL TESTS SHALL BE MADE WITH THE HYDRANT AUXILIARY GATE VALVES OPEN AND PRESSURE AGAINST THE HYDRANT VALVE. AFTER THE TEST HAS BEEN COMPLETED EACH GATE VALVE SHALL BE TESTED BY CLOSING EACH IN TURN AND RELIEVING THE PRESSURE BEYOND. IF THERE IS NO IMMEDIATE LOSS OF PRESSURE THE VALVE TESTED IS ACCEPTED.

FLUSHING - FOLLOWING CHLORINATION, ALL WATER SHALL BE FLUSHED FROM THE TEST SECTION UNTIL THE REPLACEMENT WATER SHOWS THE ABSENCE OF CHLORINE OR CONCENTRATION EQUAL TO THE SOURCE CHLORINE CONCENTRATION. FLUSH WATER SHALL BE DECHLORINATED PRIOR TO DISCHARGING TO SURFACE WATERS, SANITARY SEWERS, OR STORM SEWERS. DISCHARGE TO INFILTRATION OR EVAPORATION BASINS ACCEPTABLE WITH ENGINEER APPROVAL

BACTERIOLOGICAL TESTING - BEFORE PLACING THE MAIN IN SERVICE. A SATISFACTORY REPORT SHALL BE OBTAINED FROM A CERTIFIED LABORATORY ON SAMPLES COLLECTED FROM REPRESENTATIVE POINTS IN THE TEST SECTION. SAMPLES WILL BE COLLECTED AND BACTERIOLOGICAL TESTS OBTAINED BY THE ENGINEER.

STORM DRAINAGE

ALL WORK SHALL BE IN CONFORMANCE WITH THE STANDARDS OF THE STORM SEWER UTILITY. THE CONTRACTOR SHALL PROVIDE FOR ANY INSPECTIONS OR SPECIAL PROCEDURES REQUIRED BY THE UTILITY.

STORM SEWER PIPE SHALL BE AS SHOWN ON THE PLANS AND SPECIFIED AS FOLLOWS-

PVC - SOLID WALL STORM SEWER PIPE SHALL MEET ASTM D-3034, WITH AN SDR OF 35. PIPE JOINTS AND FITTINGS SHALL CONFORM TO ASTM D-3212 AND ASTM F-477 RESPECTIVELY.

CORRUGATED POLYETHYLENE (CPE) - CPE PIPE SHALL MEET AASHTO M-294 TYPE S. ALL JOINTS SHALL BE BELL/BELL OR BELL AND SPIGOT COUPLING AND SHALL CONFORM TO ASTM D-3212 USING ELASTOMERIC GASKETS CONFORMING TO ASTM F-477. ALL GASKETS SHALL BE FACTORY INSTALLED ON THE PIPE IN ACCORDANCE WITH THE PRODUCERS RECOMMENDATIONS WHERE SPECIFIED PERFORATED CPE SHALL MEET THE REQUIREMENTS OF AASHTO M294 ALUMINUM CULVERT PIPE - ALUMINUM CULVERT PIPE SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF

AASHTO M-196M. PROTECTIVE TREATMENTS AND END SECTIONS SHALL BE AS SHOWN ON THE PLANS.

STORM SEWER TRENCHING, PIPE BEDDING, INSTALLATION AND BACKFILL SHALL BE AS SPECIFIED IN SECTION 02530 SANITARY SEWERAGE.

PRESSURE TESTING FOR STORM SEWERS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROCEDURES SPECIFIED FOR SANITARY SEWERAGE WITH THE FOLLOWING MODIFICATIONS:

TEST PROCEDURE A - EXFILTRATION LEAKAGE SHALL BE NO MORE THAN 1 GAL/HR PER INCH OF DIAMETER

PER 100 FEET OF PIPE.

TEST PROCEDURE B - INFILTRATION LEAKAGE SHALL BE NO MORE THAN 0.8 GAL/HR PER INCH OF DIAMETER PER 100 FEET OF PIPE.

TEST PROCEDURE C - LOW PRESSURE AIR TEST - MINIMUM TIME IS REDUCED BY A FACTOR OF 4.

BASES, BALLASTS AND PAVEMENTS

<u>MATERIALS</u>

CRUSHED SURFACING - CRUSHED SURFACING FOR PAVING AND SIDEWALK SUBBASE SHALL MEET THE FOLLOWING SPECIFICATIONS -

PERCENT PASSING (BY WEIGHT)

SIEVE SIZE BASE COURSE TOP COURSE 1 1/4" SQUARE 100 3/4" SQUARE 5/8" SQUARE 50-80 1/4" SQUARE 30-50 55-75 U.S. NO. 40 3-18 U.S. NO. 200 7.5 MAX 10.0 MAX % FRACTURE 75 MIN. 75 MIN. SAND EQUIVALENT 32 MIN. 32 MIN.

ASPHALT CONCRETE PAVEMENT SHALL MEET THE REQUIREMENTS OF SECTION 5-04 OF THE CURRENT EDITION OF THE APWA/WSDOT STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION.

PLACING PAVEMENT SUBBASE - EACH LAYER OF CRUSHED SURFACING SHALL BE SPREAD BY EQUIPMENT APPROVED BY THE ENGINEER. EQUIPMENT THAT CAUSES SEGREGATION OF THE SURFACING MATERIAL WILL NOT BE ALLOWED. SPREADING ON SMALL INACCESSIBLE AREAS MAY BE ACCOMPLISHED BY OTHER MEANS AS APPROVED BY THE ENGINEER.

IMMEDIATELY FOLLOWING SPREADING AND SHAPING, EACH LAYER OF SURFACING SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY (PER THE MODIFIED PROCTOR METHOD) BEFORE THE PLACING THE NEXT LAYER. VIBRATORY COMPACTORS AND ROLLERS SHALL OBTAIN THE SPECIFIED DENSITY FOR EACH LAYER. WATER SHALL BE APPLIED AS NECESSARY TO MAINTAIN OPTIMUM MOISTURE CONTENT.

PLACING AND COMPACTING ASPHALT PAVEMENT - ASPHALT PAVEMENT SHALL BE PLACED USING SELF CONTAINED, POWER PROPELLED PAVERS WITH AN ACTIVATED SCREED OR STRIKE-OFF ASSEMBLY. THE PAVER SHALL BE OPERATED AT A UNIFORM FORWARD SPEED CONSISTENT WITH THE MIX DELIVERY RATE AND FOLLOW-UP ROLLER CAPACITY. COMPACTION SHALL PROCEED IMMEDIATELY AFTER THE ASPHALT MIXTURE HAS BEEN SPREAD, STRUCK OFF, AND SURFACE IRREGULARITIES ADJUSTED. ASPHALT PAVEMENT SHALL BE COMPACTED WITH STEEL WHEEL, VIBRATORY, OR PNEUMATIC TIRE TYPE ROLLERS. THE NUMBER AND WEIGHT OF ROLLERS SHALL BE SUFFICIENT TO ACHIEVE A MINIMUM 91 PERCENT OF THE RICE DENSITY.

VIBRATORY ROLLERS SHALL NOT BE OPERATED IN THE VIBRATORY MODE WHEN THE INTERNAL TEMPERATURE OF THE MIX IS LESS THAN 175 DEGREES FAHRENHEIT UNLESS APPROVED BY THE ENGINEER.

ASPHALT CONCRETE SHALL NOT BE PLACED ON ANY WET SURFACE OR WHEN THE SURFACE TEMPERATURE IS LESS THAN 45 DEGREES FAHRENHEIT.

SAMPLING AND TESTING - ASPHALT MIX WILL BE SAMPLED DAILY TO CONFIRM COMPLIANCE WITH THE MIX SPECIFICATIONS. THE ENGINEER OR ENGINEER'S REPRESENTATIVE WILL SAMPLE THE MIX AT RANDOM AND SUBMIT THE SAMPLE TO AN APPROVED MATERIALS LABORATORY. COMPACTION TESTING WILL BE PERFORMED AT LOCATIONS AND FREQUENCIES DETERMINED BY THE ENGINEER'S REPRESENTATIVE. NO LESS THAN ONE COMPACTION TEST PER 2500 SQUARE FEET OF SURFACE WILL BE PERFORMED.

CAST IN PLACE CONCRETE

THESE SPECIFICATIONS ARE LIMITED TO SIDEWALKS, CURBS, GUTTERS, AND OTHER SITE CONCRETE WORK.

CEMENT CONCRETE - CEMENT CONCRETE FOR CURBS, GUTTERS, APRONS AND UTILITY PADS SHALL MEET THE FOLLOWING SPECIFICATIONS

STRENGTH - 3000 PSI AT 28 DAYS AIR CONTENT - 4.5% MIN. - 7.5% MAX. SLUMP - 7 INCHES MAX.

THE CONTRACTOR SHALL SUBMIT A MIX DESIGN FOR ENGINEER APPROVAL PRIOR TO PLACING ANY CONCRETE. THE MIX DESIGN SHALL INDICATE THE MAXIMUM WATER-CEMENT RATIO.

PLACING AND FINISHING - CONCRETE SHALL BE PLACED IN FORMS AND STRUCK OFF WITH A HEAVY IRON STRAIGHT EDGE AND TROWELED SMOOTH. AFTER TROWELING AND BEFORE JOINTING OR EDGING, THE SURFACE OF SIDEWALKS SHALL BE BRUSHED IN A TRANSVERSE DIRECTION WITH A SOFT BRUSH. ON GRADES EXCEEDING 4 PERCENT THE SURFACE SHALL BE FINISHED WITH A STIPPLE BRUSH OR AS THE ENGINEER MAY DIRECT. EXPANSION JOINTS SHALL BE CONSTRUCTED AT THE LOCATIONS AND OF THE SIZES AS INDICATED IN THE STANDARD PLANS.

CURING - CONCRETE SIDEWALKS, CURBS, AND GUTTERS SHALL BE CURED FOR AT LEAST 72 HOURS. CURING SHALL BE BY MEANS OF MOIST BURLAP OR QUILTED BLANKETS OR OTHER APPROVED METHODS. BLANKETS AND HEATING SHALL BE PROVIDED IF FREEZING MAY OCCUR. DURING THE CURING PERIOD. ALL TRAFFIC. BOTH PEDESTRIAN AND VEHICULAR SHALL BE EXCLUDED.

TESTING - EACH LOAD OF CONCRETE DELIVERED SHALL BE TESTED FOR AIR CONTENT AND SLUMP. THREE (3) TEST CYLINDERS SHALL BE MADE PER 50 CUBIC YARDS OF CONCRETE PLACED. TEST CYLINDERS MAY BE WAIVED FOR CONCRETE QUANTITIES UNDER FIVE (5) CUBIC YARDS WITH ENGINEER APPROVAL.

SHORING - THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO SHORE TRENCHES TO PROTECT THE WORK, EXISTING PROPERTY, UTILITIES, PAVEMENT, ETC. AND TO PROVIDE SAFE WORKING CONDITIONS IN THE TRENCH. DAMAGES RESULTING FROM IMPROPER SHORING OR FAILURE TO SHORE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

INADVERTENT DISCOVERY OF CULTURAL RESOURCES AND SKELETAL REMAINS

IF CULTURAL RESOURCES OR HUMAN SKELETAL REMAINS ARE DISCOVERED DURING CONSTRUCTION THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE OWNER AND THE FOLLOWING: CONFEDERATED TRIBES OF THE COLVILLE RESERVATION - RODERICK KEVIN DONALD, 509-634-2691 WA. DEPT. OF ARCHAEOLOGY & HISTORIC PRESERVATION - DR. ALLYSON BROOKS, 360-586-3066 DOUGLAS COUNTY TRANSPORTATION & LAND SERVICES - 509-884-7173



ESIGNED AAR DRAWN CAP REVISION DATE BY APP



PRONOIA EFFECTS, LLC DOUGLAS COUNTY, WA

NOV 2018 **SCALE**

AS SHOWN

PRONOIA-501 UIW DATA CENTER **GRADING AND DRAINAGE**

JOB NUMBER 18487 DWG NAME: P18209 LEGE

CONSTRUCTION NOTES

OF 9

CHANNELIZATION SYMBOLS

SYMBOL DESCRIPTION

EXIST. PROP.

EXIST. PROP.

⊥ ⊥ SIGN

WATER SYMBOLS

SYMBOL DESCRIPTION

① DO WATER METER

Q MATER HOSE BIB

୬୯ BUTTERFLY VALVE

WATER VALVE

⋈ 3−NOZZLE FIRE HYDRANT

→ 2-NOZZLE FIRE HYDRANT

BUTTERFLY M.J. VALVE

GATE FL M.J. VALVE

CHECK VALVE

工 TAPPING TEE FL M.J.

GATE/GENERAL VALVE

I**▶**C PLUG VALVE

士 九 TAPPING TEE FL M.J.

j<u>∓r</u> TEE FL

⊢ ⊢ TEE M.J.

✓ ✓ 11 BEND

✓ 22 BEND

☐ ☐ 45 BEND

→ 11 M.J. BEND

√ 22 M.J. BEND

H COUPLING

 \bowtie

∃+-C BENT VERT FL

رد 45 M.J. BEND

HE 90 M.J. BEND

ADAPTER FLxM.J.

REDUCER FL

► REDUCER PE

→ REDUCER FLxM.J.

→ REDUCER M.J.xFL

] PUSH-ON/HUB

W WATER TAP

| CAP/PLUG

[[THREAD

REDUCER M.J.

REDUCER M.J.xPE

FLANGE/BLIND FL

MECHANICAL JOINT

BENT VERT FLxM.J.

→ 90 BEND

►C GATE M.J. VALVE

BUTTERFLY FL M.J. VALVE

SANITARY/STORM SEWER SYMBOLS

□ GENERIC STORM DRAIN MANHOLE

GAS/POWER/TELEPHONE SYMBOLS

A PAD MOUNTED TRANSFORMER

☐ ■ GENERIC STORM DRAIN CATCH BASIN

SYMBOL DESCRIPTION

SYMBOL DESCRIPTION

(C) (D) GAS VALVE

□ ■ GAS RISER

G GAS MANHOLE

P POWER VAULT

■ POWER BOX

-⊙- **→** UTILITY POLE

TRANSMISSION TOWER

 \leftarrow \leftarrow UTILITY POLE ANCHOR

P POWER MANHOLE

□ ■ TELEPHONE RISER

TELEPHONE VAULT

O TELEPHONE POLE

TV TV BOX

TV VAULT

© COMM MANHOLE

C COMM VAULT

TOPO SYMBOLS

SYMBOL

 \Box

TELEPHONE MANHOLE

DESCRIPTION

HYDRANT

WATER VALVE

WATER METER

GUY ANCHOR

POWER METER

GAS VALVE GAS METER

STREET LIGHT

SPOT ELEVATION

CONIFEROUS TREE
DECIDUOUS TREE

FOUND CASED MONUMENT

SET MAGNETIC NAIL W/ WASHER

LUMINAIRE

MAILBOX

ROCKERY

MANHOLES (SS/SD)

POWER/UTILITY POLE

POWER TRANSFORMER

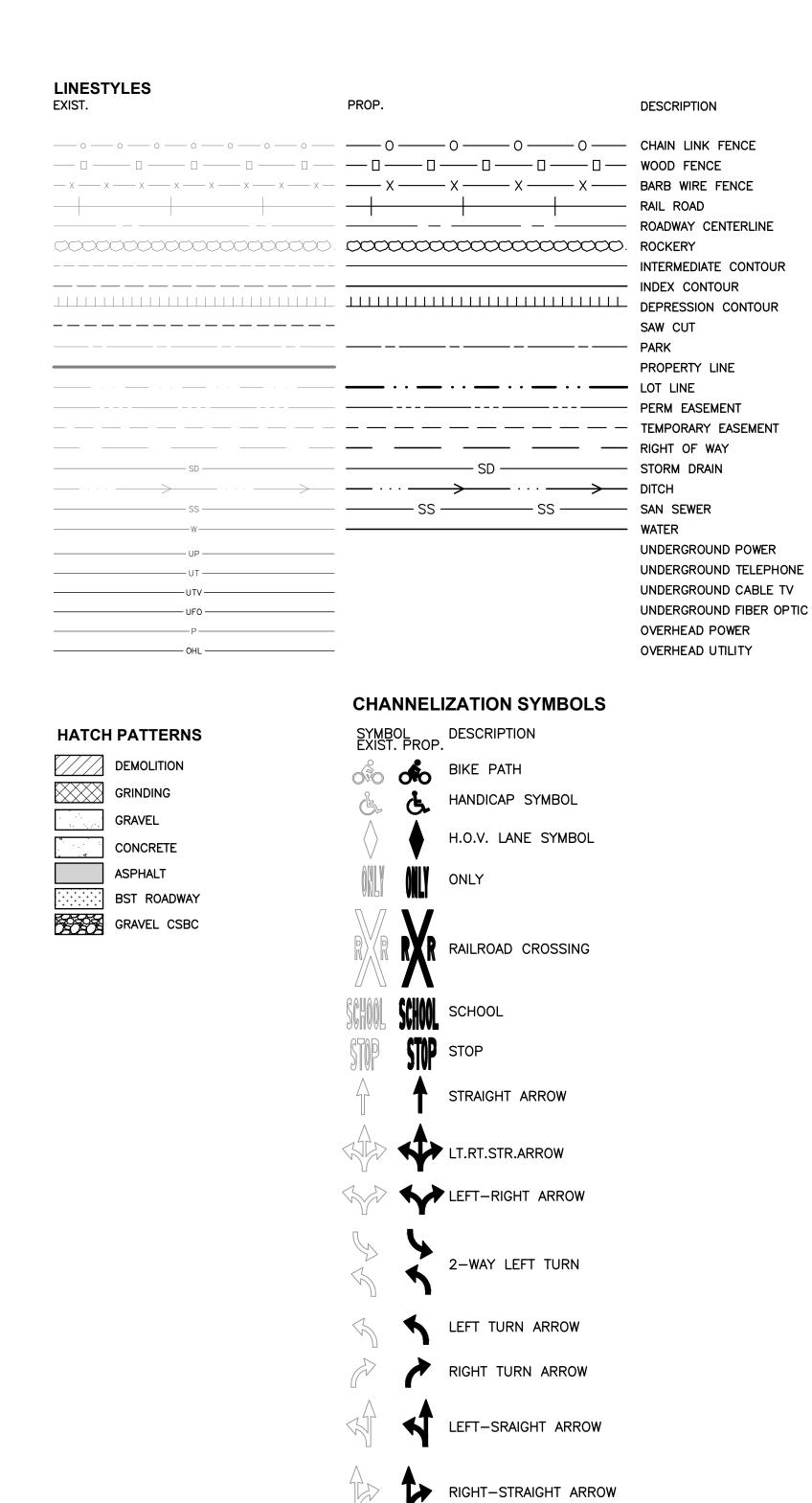
TELEPHONE/TV RISER

POWER/TELEPHONE VAULT

EXIST. PROP.

EXIST. PROP.

DESIGNED AAR
DESIGNED CAP
CHECKED LMC
SYM
REVISION
DATE BY APP



ABBREVIATIONS

AL	=	ALUMINUM AMERICAN NATIONAL STANDARDS INSTITUTE ANCHOR BOLT ARCHITECT(URAL) ASSEMBLY BEST MANAGEMENT PRACTICE BEARING	IF	=	INSIDE FACE
ANSI	=	AMERICAN NATIONAL	ΪΝV	=	INVERT, INVERSE
40		STANDARDS INSTITUTE	Ί <u>Τ</u>	=	JOINT FILLED
AB ARCH	=	ANCHUR BULI	JF .IST	=	JOINT FILLER JOIST
ASSY	=	ASSEMBLY	LF	=	LINEAR FEET
BMP	=	BEST MANAGEMENT PRACTICE	KCRS	=	KING COUNTY ROAD STANDARDS
BRG	=	BEARING	MH	=	
BST BOT		BITUMINOUS SURFACE TREATMENT	MFR MAX		MANUFACTURER MAXIMUM
BLDG	=	BOTTOM BUILDING CATCH BASIN CEMENT CENTER CENTER TO CENTER CENTERLINE CAST IN PLACE	MECH	=	MECHANICAL
CB	=	CATCH BASIN	MJ	=	MECHANICAL JOINT
CEM	=	CEMENT	MTL	=	METAL
CTR C/C	=	CENTER TO CENTER	MIN	=	MINIMUM, MINUIL MISCELLANEOUS
čĹ	=	CENTER TO CENTER CENTER INF	N	=	NORTH. NEW
011	=	CENTERLINE CAST IN PLACE CLEANOUT CLEAR, CLEARANCE CONCRETE	NAD N/A NGVD NIC NTS O/C	=	1101111 7 IIII E11107 III
CO	=	CLEANOUT	N/A	=	NOT APPLICABLE
CLR CONC	=	CLEAR, CLEARANCE CONCRETE	NIC	=	NATIONAL GEODETIC VERTICAL DATUM NOT IN CONTRACT
CMU	=	CONCRETE MASONRY UNIT	NTS	=	NOT TO SCALE
CND	=	CONDUIT	NTS O/C OD	=	ON CENTER
CJ	=	CONSTRUCTION JOINT	OD OF	=	OUTSIDE DIAMETER
CONT CPEP	=	CONTINUE(D) CORRUGATED POLYETHYLENE PIPE	PVT	=	OUTSIDE FACE PAVEMENT
CU	=	CUBIC	DEDE	_	DEDECDATED
CMP		CORRUGATED METAL PIPE	PCP	=	PLAIN CONCRETE PIPE
CSBC	=		PVC	=	POLYVINYL CHLORIDE
CSTC	=	CRUSHED SURFACING TOP COURSE	I R	=	PORTLAND CEMENT/POINT OF CURVE POUND (LRS)
CUFT	=	CUBIC FEET (FOOT) DIAMETER	LBS	=	PLAIN CONCRETE PIPE POLYVINYL CHLORIDE PORTLAND CEMENT/POINT OF CURVE POUND (LBS) POUNDS POUNDS POUNDS PER CUBIC FOOT
DIA DI		DUCTILE IRON	PCF	=	POUNDS PER CUBIC FOOT
DBL		DOUBLE	PSF	=	POUNDS PER SQUARE FOOT
DWG	=	CUBIC FEET (FOOT) DIAMETER DUCTILE IRON DOUBLE DRAWING EAST	PSI PT PP PVI	=	POUNDS PER SQUARE INCH POINT OF TANGENT
E	=	EAST	ΡΡ	=	POWER POLE, POWER PANEL
FF	=	END OF CURB RETURN EACH FACE	PVI	=	POINT OF VERTICAL INFLECTION
EW	=	EACH WAY	PROP		PROPOSED
EA	=	EACH ELECTRIC ELECTRICAL VAULT ELEVATION (ELEV.) EQUAL EROSION AND SEDIMENT CONTROL	R	=	RADIUS
ELEC	=	ELECTRICAL MALILE	RWL	=	RAINWATER LEADER
FL	=	FLEVATION (FLEV.)	R/C	=	REINFORCED CONCRETE
ĒQ	=	EQUAL	RCP	=	REINFORCED CONCRETE PIPE
ESC	=	EROSION AND SEDIMENT CONTROL	REBAR	=	REINFORCING BAR
EXIST EJ	=	EXISTING EXPANSION JOINT	RD RO	=	ROUF DRAIN
EXP		EXPOSED, EXPANSION	S	=	
EXT	=	EXTERIOR	SS	=	STAINLESS STEEL, SANITARY SEWER
<u>F/</u> F	=	FACE TO FACE	SHT	=	SHEET
FT FIN	=	FEET, FOOT FINISHED	SL SPC	=	SLOPE SPACE
FD	_	FLOOR DRAIN	SQ	=	
FHY	=	FIRE HYDRANT	STD	=	STANDARD
FTG		FOUNDATION	STA		STATION
FDN GAL		FOUNDATION GALLON(S)	STL SD	=	STEEL STORM DRAIN
GALV	=	GALVANIZED	STRUCT	_	STRUCTURE
GI	=	GRATE INLET	SWDM		STORM WATER DESIGN MANUAL
GND GRT	=	0.100112	SWR	=	
HMA	=	<u>-</u>	TCE T/A	=	
HT	=		t∕c	=	
HP	=	HIGH POINT	T/G	=	TOP OF GRAVEL
IN	=		T/W	=	TOP OF WALL
INCL ID	=	INCLUDE(S) (ED) (ING) INSIDE DIAMETER	TÝP U.N.O.	=	TYPICAL UNLESS NOTED OTHERWISE
ΪĔ	=		0.N.O. W	=	
			WWF	=	WELDED WIRE FABRIC
			W/O	=	WITHOUT
			W/O		WITHOUT

Call before you Dig.

1-800-424-5555 UNDERGROUND SERVICE (USA)



	104 East 9th Street Wenatchee, WA 98801
PACE)	p. 509.662.1762 Civil Structural Planning Surve
An Engineering Services Company	www. paceengrs.com

DBL POST SIGN DELINEATOR

SCALE

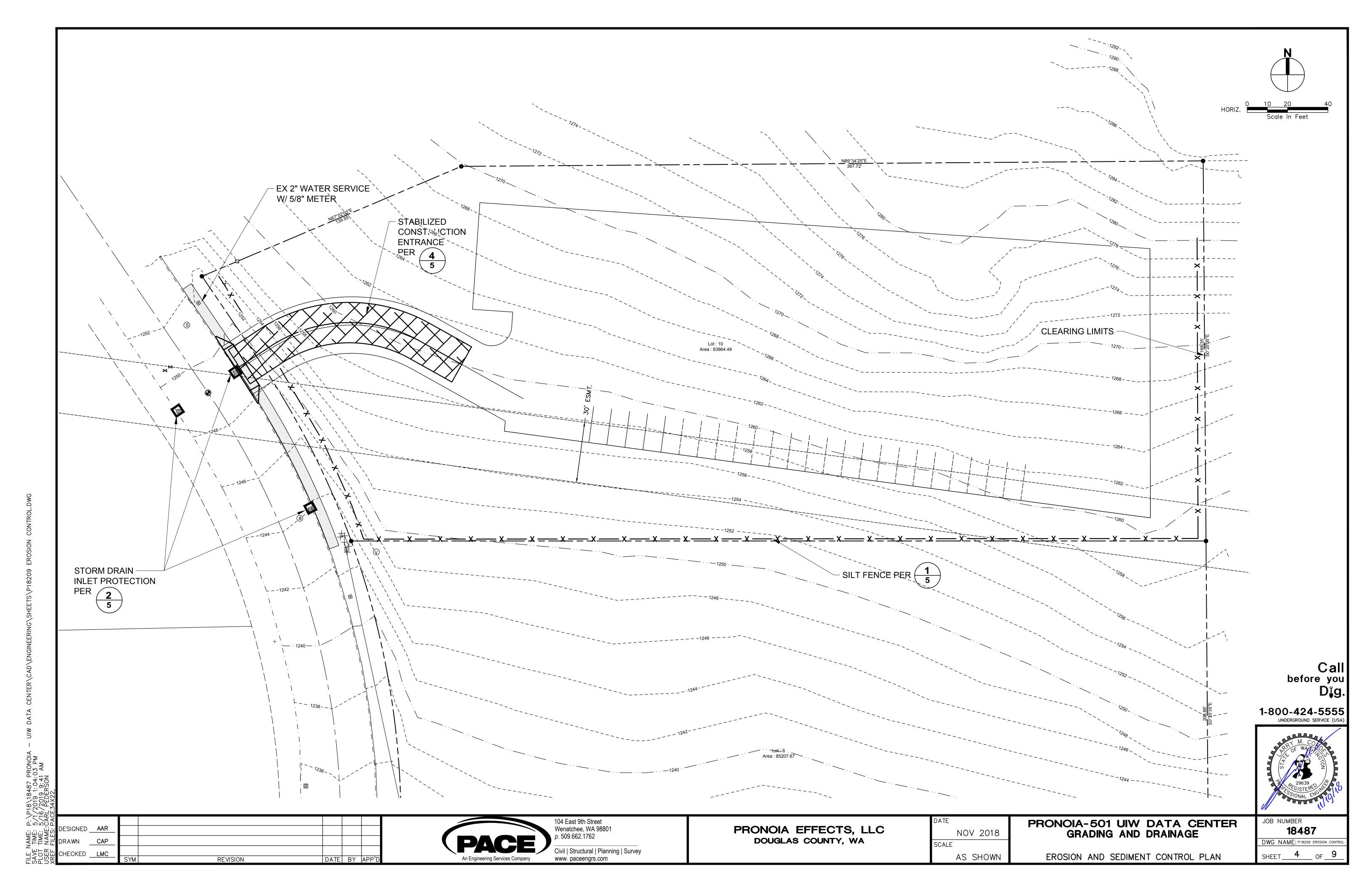
AS SHOWN

CONSTRUCTION NOTES

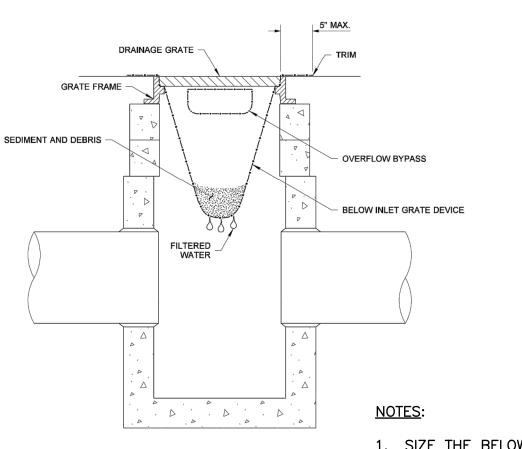
JOB NUMBER
18487

DWG NAME:P18209 LEGEND

SHEET 3 OF 9



- 2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
- 3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY A CONTINUOUS LENGTH OF ORANGE PROTECTION FENCING PRIOR TO CONSTRUCTION. DURING CONSTRUCTION, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
- THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS PREVENTED.
- THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE COURSE OF CONSTRUCTION, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS, AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS.
- THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES DURING THE WET SEASON (OCTOBER 1 TO APRIL 30) AND OF MONTHLY REVIEWS DURING THE DRY SEASON (MAY 1 TO SEPTEMBER 30).
- 7. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR FIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
- 8. ANY AREA NEEDING ESC MEASURES, THAT DO NOT REQUIRE IMMEDIATE ATTENTION, SHALL BE ADDRESSED WITHIN FIFTEEN (15) DAYS.
- 9. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT.
- 10. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
- 11. STABILIZED CONSTRUCTION ENTRANCES AND ROADS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES SUCH AS WASH PADS MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- 12. ANY PERMANENT FLOW CONTROL FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE FINAL GRADE OF THE PERMANENT FACILITY.
- 13. WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF 2 TO 3 INCHES.
- 14. PRIOR TO SEPTEMBER 15, ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH LOCATIONS WILL REQUIRE IMMEDIATE SEEDING. DISTURBED AREAS SHALL BE SEEDED PRIOR TO OCTOBER 1. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE ENGINEER. THE CITY INSPECTOR CAN REQUIRE SEEDING OF ADDITIONAL AREAS IN ORDER TO PROTECT SURFACE WATERS, ADJACENT PROPERTIES, OR DRAINAGE FACILITIES.



SIZE THE BELOW INLET GRATE DEVICE (BIGD) FOR STORM WATER STRUCTURE IT WILL SERVICE

DRAINAGE GRATE ~ RECTANGULAR GRATE SHOWN

BELOW INLET GRATE DEVICE -

2. THE BIGD SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS).

3. THE RETRIEVAL SYSTEM MUST ALLOW REMOVAL OF THE BIGD WITHOUT SPILLING THE COLLECTING MATERIAL 4. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD

INLET/CB PROTECTION (WSDOT I-40.20-00) SCALE: NTS

SPECIFICATIONS 8-01.3(15).

DATE BY APP

DESIGN AND INSTALLATION SPECIFICATIONS

THE GEOTEXTILE USED MUST MEET THE STANDARDS LISTED BELOW. A COPY OF THE MANUFACTURER'S FABRIC SPECIFICATIONS MUST BE AVAILABLE ON SITE.

AOS (ASTM D-4751)

30-100 SIEVE SIZE (0.60-0.15 mm) FOR SLIT FILM 50-100 SIEVE SIZE (0.30-0.15 mm) FOR OTHER FABRICS

WATER PERMITTIVITY (ASTM D-4491)

GRAB TENSILE STRENGTH (ASTM D-4632) 180 LBS MIN. FOR EXTRA STRENGTH FABRIC

0.02 SEC MIN.

70% MIN.

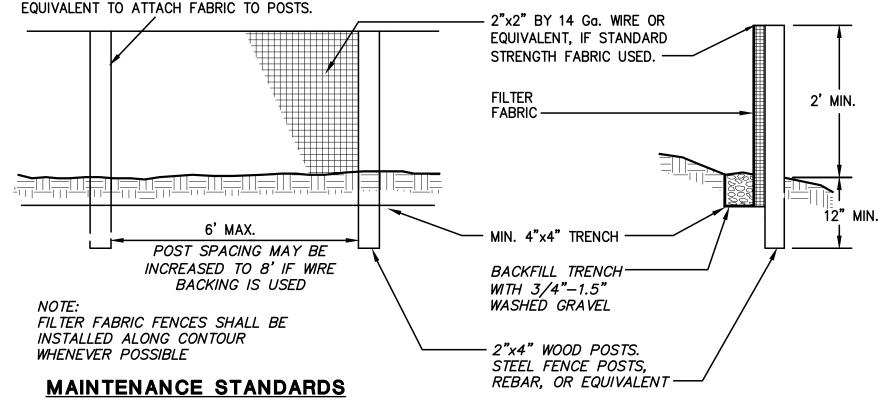
100 LBS MIN. FOR STANDARD STRENGTH FABRIC

GRAB TENSILE ELONGATION (ASTM D-4632) 30% MAX.

ULTRAVIOLET RESISTANCE (ASTM D-4355)

- STANDARD STRENGTH FABRIC REQUIRES WIRE BACKING TO INCREASE THE STRENGTH OF THE FENCE. WIRE BACKING OR CLOSER POST SPACING MAY BE REQUIRED FOR EXTRA STRENGTH FABRIC IF FIELD PERFORMANCE WARRANTS A STRONGER FENCE.
- WHERE THE FENCE IS INSTALLED, THE SLOPE SHALL BE NO STEEPER THAN 2H:1V.

JOINTS IN FILTER FABRIC SHALL BE SPLICED AT POSTS. USE STAPLES, WIRE RINGS, OR



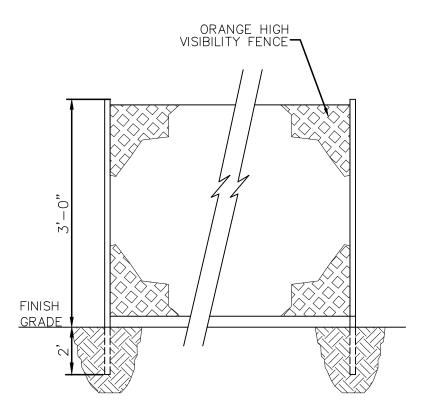
- ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.
- IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT TRAP OR POND.
- IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE AND/OR REMOVE THE TRAPPED SEDIMENT.
- SEDIMENT MUST BE REMOVED WHEN IT IS 6" HIGH.

RETRIEVAL SYSTEM (TYP.)

OVERFLOW BYPASS (TYP.)

IF THE FILTER FABRIC HAS DETERIORATED DUE TO THE ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

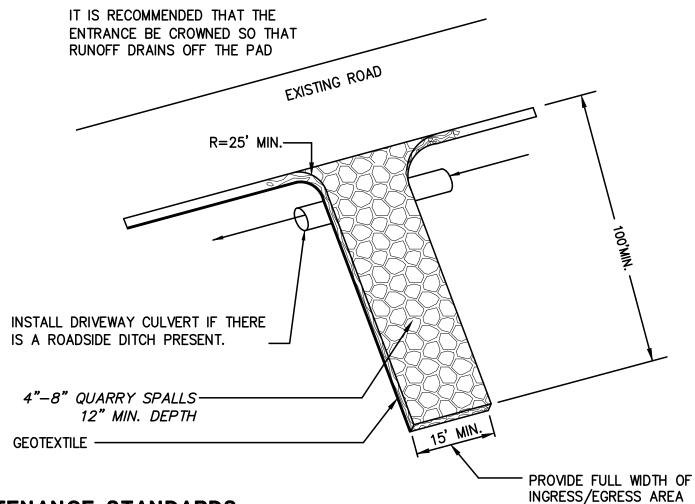
> FILTER FABRIC FENCE DETAIL SCALE: NTS



CONSTRUCTION LIMIT FENCE

FILTER FABRIC FENCE NOTES:

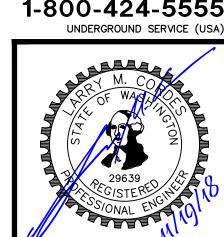
- 1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST. WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST.
- 2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS (WHERE FEASIBLE). THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES).
- 3. A TRENCH SHALL BE EXCAVATED, ROUGHLY 4 INCHES WIDE AND 4 INCHES DEEP, UPSLOPE AND ADJACENT TO THE POST TO ALLOW THE FILTER FABRIC TO BE BURIED.
- 4. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- 5. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
- 6. WHEN EXTRA-STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF STANDARD NOTE 5. APPLYING.
- 7. THE TRENCH SHALL BE BACKFILLED WITH 3/4-INCH MINIMUM DIAMETER WASHED GRAVEL.
- 8. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
- 9. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



MAINTENANCE STANDARDS

- QUARRY SPALLS SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.
- IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH. IF WASHING IS USED, IT SHALL BE DONE ON THE AREA COVERED WITH CRUSHED ROCK, AND WASH WATER SHALL DRAIN TO A SEDIMENT TRAP OR POND.
- ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED IMMEDIATELY BY SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON-SITE. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH THE STREETS. THE CONSTRUCTION OF A SMALL SUMP SHALL BE CONSIDERED. THE SEDIMENT WOULD THEN BE WASHED INTO THE SUMP.
- ANY ROCK SPALLS THAT ARE LOOSENED FROM THE PAD AND END UP ON THE ROADWAY SHALL BE REMOVED IMMEDIATELY.
- IF VEHICLES ARE ENTERING OR EXITING THE SITE AT POINTS OTHER THAN THE CONSTRUCTION ENTRANCE(S), FENCING SHALL BE INSTALLED TO CONTROL

STABILIZED CONSTRUCTION ENTRANCE / 4



Cal

before you

ESIGNED AAR CAP

REVISION

SECTION VIEW

104 East 9th Street Civil | Structural | Planning | Survey An Engineering Services Company www. paceengrs.com

ISOMETRIC VIEW

PRONOIA EFFECTS, LLC DOUGLAS COUNTY, WA

NOV 2018 **SCALE**

PRONOIA-501 UIW DATA CENTER GRADING AND DRAINAGE

JOB NUMBER 18487 DWG NAME: P18209 DEMO & TESC SHEET___5 of 9

HECKED <u>LMC</u>

Wenatchee, WA 98801 5. 509.662.1762

AS SHOWN

EROSION CONTROL NOTES & DETAILS

