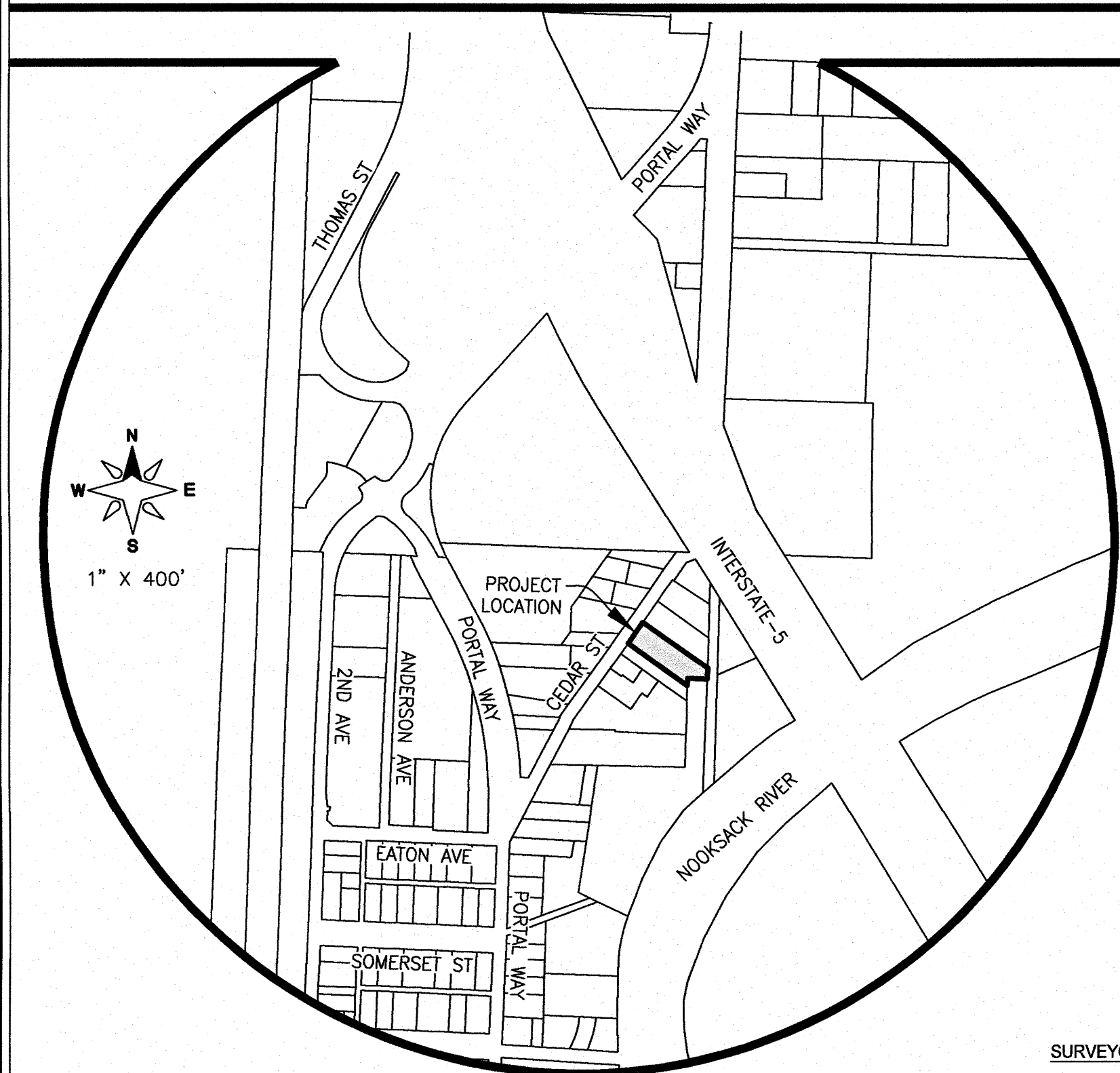


A PORTION OF THE NE 1/4 OF THE SW 1/4 OF SECTION 20, T.39N., R.2E., W.M.
CITY OF FERNDAL, WHATCOM COUNTY, WASHINGTON

CEDAR VILLAS CONSTRUCTION PLANS



PROJECT SUMMARY	
OWNER	ANDREY SAVCHUK 3348 BRESLIN LANE FERNDAL, WA 98248 (360) 510-9166
SITE ADDRESS	5874 CEDAR STREET
ASSESSOR'S PARCEL #	390220 270249 0000
CITY ZONING	RMH-RESIDENTIAL MULTIFAMILY HIGH
# OF PARKING	20 - 19' X 9' STALLS
PROJECT DESCRIPTION	-8 ATTACHED TOWNHOMES & 1 DETACHED SINGLE-FAMILY RESIDENCE -PROVIDE STORM, SEWER, WATER & DRY UTILITIES -PAVED ACCESS ROAD W/ CONCRETE SIDEWALK -PAVED PARKING AREA -STORMWATER CHAMBERS
BASE FLOOD ELEVATION	32.30'

ENGINEER
LDES, INC.
5160 INDUSTRIAL PL., SUITE 108
FERNDAL, WA 98248
CONTACT: RAMON LLANOS, P.E.
PHONE: (360) 383-0620

SURVEYOR
LDES, INC.
5160 INDUSTRIAL PL., SUITE 108
FERNDAL, WA 98248
CONTACT: RAYMOND PETERSON, PLS.
PHONE: (360) 383-0620

SURVEYOR'S NOTES:

- DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION ON DECEMBER OF 2019.
- EQUIPMENT USED: LEICA MS60: 00'01" ±1 MM, ±1.5 PPM & LEICA GS14 RTK/WSRN.
RELATIVE ACCURACY AND FIELD TRAVERSE CLOSURE EXCEEDS THE REQUIREMENTS OF WAC 332-130-085 AND WAC 332-130-090.
- HORIZONTAL DATUM: FERNDAL MONUMENT CONTROL NETWORK, NAD83/91
VERTICAL DATUM: NGVD29
- PURPOSE OF SURVEY: BOUNDARY AND TOPOGRAPHIC SURVEY.
- IN ACCORDANCE WITH THE REVISED CODE OF WASHINGTON: 58.09 AND WAC CHAPTER 332-130, THIS RECORD OF SURVEY DEPICTS OCCUPANCY INDICATORS, SUCH AS FENCES, THESE INDICATORS REPRESENT A POTENTIAL FOR CLAIMS OF UNWRITTEN TITLE. THIS SURVEY DOES NOT RESOLVE ANY OF THE LEGAL OWNERSHIP ISSUES THAT MAY ARISE FROM THESE UNWRITTEN TITLE CLAIMS.
- CONTOUR INTERVALS ARE 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION.
- ELEVATION ACCURACY OF SURVEYED POINTS AND DIGITAL TERRAIN MODELS EXCEEDS THE STANDARDS PUT FORTH BY THE US ARMY CORPS OF ENGINEERS FOR CONSTRUCTION LAYOUT: 0.10 FEET IN ELEVATION MULTIPLIED BY THE DISTANCE FROM BENCHMARK TRAVERSED IN MILES, SQUARE-ROOTED, AND FOR WELL-DEFINED POINTS IN THE DIGITAL TERRAIN MODEL, PLUS OR MINUS HALF THE CONTOUR INTERVAL (0.5 FEET).
- LIMITATIONS ON USE: THIS SURVEY IS ONLY INTENDED FOR BOUNDARY RESOLUTION AND CIVIL DESIGN AND CONSTRUCTION OF THE SUBJECT PROPERTY, AND SHOULD NOT BE USED FOR OTHER PURPOSES.
- UTILITY LOCATIONS SHOWN HEREON ARE BASED UPON FIELD LOCATION OF THE SURFACE EVIDENCE OF EXISTING STRUCTURES. UNDERGROUND UTILITY LOCATION SERVICES WERE NOT PROVIDED FOR THIS TOPOGRAPHIC SURVEY AND THE UNDERGROUND ROUTING OF REPORTED BURIED UTILITIES HAS NOT BEEN VERIFIED OR CONFIRMED WITH THE UTILITY PURVEYOR. ADDITIONAL UTILITY LOCATIONS AND UNDERGROUND UTILITY LOCATION PAINT MAPPING WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- BASE FLOOD ELEVATION (BFE): 32.30'

LEGAL DESCRIPTION

PARCEL 390220 270249 0000
(PER BARGAIN AND SALE DEED A.F.N. 2020-0203095)

LOTS 8 & 9, CARPENTER'S FIRST ADDITION TO THE CITY OF FERNDAL, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 6 OF PLATS, PAGE 2, RECORDS OF WHATCOM COUNTY, WASHINGTON.

SITUATE IN WHATCOM COUNTY, WASHINGTON.

CALL 2 BUSINESS DAYS BEFORE YOU DIG
UTILITIES UNDERGROUND LOCATION CENTER
1-800-424-5555

BURIED UTILITIES NOTE:

ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE LOCATIONS ONLY AND THERE IS NO GUARANTEE THAT ALL UTILITIES ON THIS SITE ARE SHOWN. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT THE WASHINGTON STATE UTILITY LOCATED CENTER AT LEAST 48 HOURS BEFORE CONSTRUCTION

SHEET INDEX

- COVER SHEET
- CITY OF FERNDAL GENERAL NOTES
- EXISTING CONDITIONS PLAN
- STORMWATER POLLUTION PREVENTION PLAN & TESC NOTES & DETAILS
- TEMPORARY EROSION CONTROL - PLAN & DETAILS
- COMPOSITE UTILITY PLAN
- ROAD & STORMWATER PLAN & PROFILE
- GRADING PLAN
- ROAD & STORM TYPICAL DETAILS
- ROAD & STORM TYPICAL DETAILS
- ROAD & STORM TYPICAL DETAILS
- WATER & SEWER PLAN & PROFILE
- WATER TYPICAL DETAILS
- SEWER TYPICAL DETAILS

EXISTING LEGEND

●	FOUND MONUMENT AS NOTED
⊙	FOUND BOAT SPIKE
○	FOUND IRON PIPE
●	SET REBAR WITH YELLOW CAP (LS 49287, MARCH 2020)
⊙	FOUND REBAR AND CAP AS NOTED
⊗	SET WOODEN LATH ON PROPERTY LINE
□	CALCULATED POINT
⊗	WATER METER
⊗	WATER SPIGOT
⊗	GAS METER
○	SEWER MANHOLE
○	UTILITY POLE
⊗	POWER METER
---	POWER (AERIAL)
---	GAS LINE
---	SEWER MAIN
---	WATER MAIN
---	TOP OF BANK/SLOPE
---	BOTTOM OF BANK/SLOPE
---	FENCE LINE - WOOD
---	EDGE OF GRAVEL
---	EXISTING GRAVEL
---	EXISTING CONCRETE

PROPOSED LEGEND

■	= PROPOSED STORM CATCHBASIN - TYPE 1	---	= PROPOSED STORM WATER LINE
■	= PROPOSED STORM CATCHBASIN - TYPE 2	---	= PROPOSED SEWER LINE
⊙	= PROPOSED STORM DRAIN ROOF STUB	---	= PROPOSED WATER LINE
●	= PROPOSED STORM SERVICE	40	= PROPOSED CONTOUR (INDEX)
●	= PROPOSED SEWER MANHOLE	41	= PROPOSED CONTOUR (NORMAL)
▲	= PROPOSED SANITARY SEWER SERVICE	OUT	= PROPOSED DAYLIGHT CUT LINE
⊗	= PROPOSED SANITARY SEWER CLEANOUT		= PROPOSED ASPHALT
⊗	= PROPOSED WATER METER		= PROPOSED CONCRETE
⊗	= PROPOSED FIRE HYDRANT		
⊗	= PROPOSED VALVE		
⊗	= PROPOSED THRUST BLOCK		
⊗	= PROPOSED MAILBOX		
⊗	= PROPOSED RIP RAP		
⊗	= PROPOSED LANDSCAPE BUSH & TREE		

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THE IMPROVEMENTS IN "CEDAR VILLAS" HAVE BEEN INSPECTED BY LDES AND TO THE BEST OF MY KNOWLEDGE, HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE CITY OF FERNDAL DEVELOPMENT STANDARDS, THE CITY OF FERNDAL MUNICIPAL CODE, SUBSEQUENT STANDARDS ADOPTED BY THE CITY OF FERNDAL, AND STANDARD ENGINEERING PRACTICE.

DATE: 12-19-23
RAMON LLANOS, P.E.

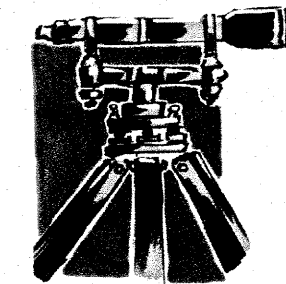
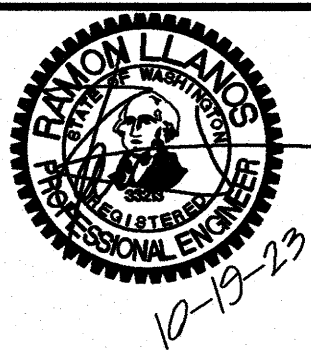
SURVEYOR'S CERTIFICATION

I CERTIFY THAT THE LOCATIONS, ELEVATIONS, DEPTHS, AND AS-BUILT COMMENTS REFLECTING MATERIALS ACTUALLY USED DURING CONSTRUCTION ACCURATELY REFLECT EXISTING FIELD CONDITIONS AS DETERMINED BY ME OR UNDER MY DIRECT SUPERVISION ON THIS

DATE: 12-19-23
RAYMOND D. PETERSON, PLS.

R:\Common\Land Projects\2020\2015-5874 Cedar Street\Map\2015-Civil_AB.dwg PLOT DATE: 10/19/2023 2:04 PM

NO.	REVISION	BY	DATE
1	SUBMITTAL 1	RL	02/08/21
2	SUBMITTAL 2	RL	04/13/21
3	SUBMITTAL 3	RL	04/29/21
4	SUBMITTAL 4 - OUTFALL REV.	RL	03/16/22
5	SUBMITTAL 5 - OUTFALL REV.	RL	03/31/22



LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDAL, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

JOB NO.:	2015
DWG. NAME:	2015-CIVIL_AB.dwg
DESIGNED BY:	RL
DRAWN BY:	RL
CHECKED BY:	RL

ANDREY SAVCHUK
3348 BRESLIN LANE
FERNDAL WA

APPROVED

DATE: 10/10/2023
BY: [Signature]
CITY OF FERNDAL
PUBLIC WORKS DEPARTMENT

COVER SHEET

CEDAR VILLAS

FERNDAL, WHATCOM COUNTY, WASHINGTON
SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N., R. 3E., W.M.

SHEET
01
OF
14

RECORD DRAWING

00744.001 10/20/23 RH

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GENERAL REQUIREMENTS:

- ALL WORK AND MATERIALS SHALL CONFORM TO THESE PLANS AND TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE "STATE OF WASHINGTON, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION" (WSDOT SPECS.), THE CITY OF FERNDALE DEVELOPMENT STANDARDS (CDFS) AND THE 2014 VERSION OF THE DEPARTMENT OF ECOLOGY STORM WATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (DCE MANUAL). IN CASE OF A CONFLICT BETWEEN PLANS, REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
- 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 REVIEWED ALL PLANS AND OTHER CONSTRUCTION DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES. THROUGHOUT THE PERIOD OF CONSTRUCTION, CONTRACTOR SHALL COMPLY WITH THE TERMS OF ALL PERMITS.
- THE CONTRACTOR MUST HAVE A FULL SET OF CITY CONTRACT DOCUMENTS ON THE SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
- CONSTRUCTION NOISE SHALL BE LIMITED TO BETWEEN 7 a.m. TO 8 p.m., MONDAY THROUGH SATURDAY. THE CONTRACTOR SHALL CONTACT THE UTILITIES UNDERGROUND LOCATION CENTER AT LEAST 72 HOURS PRIOR TO STARTING CONSTRUCTION. PHONE: 1-800-424-5555. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL OF THE VARIOUS UTILITY COMPANIES TO ARRANGE FOR FIELD LOCATIONS OF ALL EXISTING UTILITY FACILITIES. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR COSTS INCURRED BECAUSE OF DAMAGE DONE TO EXISTING FACILITIES BY THE CONTRACTOR'S WORK FORCE, INCLUDING COSTS FOR REPAIRS, WHICH WILL BE CONTRACTOR'S SOLE RESPONSIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EXISTING UTILITIES AND TO NOTIFY THE ENGINEER PROMPTLY OF ANY CONFLICT BETWEEN THE PROJECT PLANS AND THE LOCATION OF ANY EXISTING UTILITIES.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY CLEARING OR GRADING IN CONFORMANCE WITH THE EROSION & SEDIMENTATION CONTROL PLAN AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP SHALL BE ON-SITE AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.
- SITE CLEARING SHALL INCLUDE THE LOCATION AND REMOVAL OF ALL ABOVE GROUND AND BURIED DEBRIS AND WASTE THAT MAY BE PRESENT.
- THE CONTRACTOR SHALL OBTAIN REVOCABLE ENCROACHMENT PERMITS FROM THE CITY OF FERNDALE AND/OR WHATCOM COUNTY PRIOR TO COMMENCING WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH REPRESENTATIVES OF THE CITY OF FERNDALE PUBLIC WORKS DEPARTMENT AND THE PROJECT ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. THE CITY WILL SCHEDULE THE MEETING.
- ALL WORK AND MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE CITY OF FERNDALE PUBLIC WORKS DEPARTMENT. REPRESENTATIVES FROM THE CITY OF FERNDALE PUBLIC WORKS DEPARTMENT MUST INSPECT ALL WORK IDENTIFIED ON THE PLANS, BOTH PUBLIC AND PRIVATE. THE CONTRACTOR SHALL CALL AT LEAST 24 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS AS FOLLOWS:
 - PLACEMENT OF TEMPORARY EROSION CONTROL MEASURES.
 - CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES.
 - PLACEMENT OF WATER MAIN AND BACKFILLING OF WATER MAIN TRENCH WITHIN ROAD RIGHTS OF WAY OR IN WATERLINE EASEMENT TO BE DEDICATED TO THE CITY OF FERNDALE.
 - PLACING OR BACKFILLING OF UNDERGROUND UTILITIES, STORM SEWER AND SANITARY SEWER WITHIN ROAD RIGHTS-OF-WAY, IN EASEMENTS TO BE DEDICATED TO THE CITY OF FERNDALE, OR OTHER PUBLICLY SHARED FACILITIES.
 - GRADING OF PUBLIC OR PRIVATE ROADWAY AT:
 - COMPLETION OF EXCAVATION TO SUBGRADE.
 - COMPLETION OF BALLAST COURSE PLACEMENT
 - COMPLETION OF CRUSHED SURFACING COURSE PLACEMENT
 - POURING OF CURB AND GUTTER AND SIDEWALK IN PUBLIC ROADWAY.
 - ASPHALT PAVING IN PROGRESS IN PUBLIC ROADWAY.
 - OVERALL INSPECTION FOR FINISHED SHOULDERS, DITCHES, PERMANENT SEEDING AND MONUMENT PLACEMENT.
- END OF MAINTENANCE PERIOD
- 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 OF THE PUBLIC, AND TO PROTECT PRIVATE & PUBLIC PROPERTY IN CONNECTION WITH THE PERFORMANCE AND WORK 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. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO PERFORMING THE WORK. ALL SECTIONS OF THE WSDOT STANDARD SPECIFICATIONS 1-07.23- TRAFFIC CONTROL, SHALL APPLY.
- 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.
- 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.
- POTHOLES ALL EXISTING UTILITIES IS REQUIRED PRIOR TO CONSTRUCTION TO VERIFY DESIGN FEASIBILITY. THE CITY DOES NOT GUARANTEE AS-BUILT INFORMATION IN THE CITY DATABASE IS ACCURATE AND WILL NOT BE HELD RESPONSIBLE IF FIELD MODIFICATIONS ARE REQUIRED BECAUSE POTHOLES WAS NOT DONE PRIOR TO DESIGN. ALL STRUCTURES AND WATERMAIN CONVEYANCE WILL BE STAKED AND LOCATED BY A LICENSED LAND SURVEYOR PROVIDING OFFSET LOCATION AND ELEVATIONS PRIOR TO CONSTRUCTION AND INSPECTION. FAILURE TO DO SO WILL RESULT IN POTENTIAL RE-INSPECTION AND OR PROJECT DELAYS.

UNDERGROUND UTILITIES CONSTRUCTION:

- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE ENGINEER TO ASSURE ACCURATE AND TIMELY COLLECTION OF ALL REQUIRED AS-BUILT DATA. THIS DATA MUST ACCURATELY REFLECT THE LOCATIONS OF ALL UNDERGROUND UTILITIES, BOTTOM OF PIPE ELEVATIONS, INVERT ELEVATIONS, MANHOLE LOCATIONS, WATER SERVICE TAPS, BLOW-OFF LOCATIONS AND INVERTS OF SERVICE CONNECTIONS (BOTH AT PIPE AND AT PROPERTY LINE), VERTICAL AND HORIZONTAL BENDS, SERVICE BOXES AND METERS, VALVES AND HYDRANTS. CALL THE PROJECT ENGINEER AT LEAST 48-HOURS BEFORE BURYING UNDERGROUND PIPE TO ASSURE AND FACILITATE REQUIRED AS-BUILT SURVEY.
- THE CONSTRUCTION OF UNDERGROUND UTILITY LINES SHALL BE SUBJECT TO THE FOLLOWING CRITERIA:
 - NO MORE THAN 500 FEET OF TRENCH SHALL BE OPENED AT ONE TIME.
 - WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPRILL SIDE OF DITCHES.
 - TRENCH DEWATERING DEVICES SHALL DISCHARGE INTO SEDIMENT TRAPS OR SEDIMENT PONDS.
 - WHERE PRACTICAL, INSTALL GRAVITY PIPE UTILITIES PRIOR TO INSTALLATION OF OTHER UTILITIES.
- UTILITY CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF FERNDALE DEVELOPMENT STANDARDS.
- ALL UTILITY TRENCHES IN THE RIGHT OF WAY SHALL BE BACKFILLED IN CONFORMANCE WITH CITY STANDARDS.
- TESTING OF NEW WATER LINES, STORM SEWER SYSTEMS SHALL NOT BE PERFORMED UNTIL ALL OTHER ADJACENT UTILITIES HAVE BEEN INSTALLED.
- ALL UTILITY TRENCHES SHALL BE BACKFILLED AND COMPACTED TO 95% DENSITY IN LIFTS NOT TO EXCEED 24 INCHES WITH A "HOE PACK, OR 8 INCHES WITH HAND-OPERATED COMPACTION."
- OPEN CUTTING OF EXISTING ROADWAYS IS ONLY ALLOWED AS APPROVED AND NOTED ON THESE APPROVED PLANS. ANY OPEN CUT SHALL BE RESTORED IN ACCORDANCE WITH THE FERNDALE STANDARD TRENCH DETAIL(S). ALL UTILITY TRENCHES UNDERNEATH AN EXISTING ROADWAY SHALL BE BACKFILLED WITH 150 PSI CONTROLLED DENSITY FILL.
- NO PART OF THE DRAINAGE SYSTEM MAY BE COVERED, CONCEALED, OR PUT INTO USE UNTIL IT HAS BEEN INSPECTED, TESTED, AND ACCEPTED BY THE CITY INSPECTOR.
- A MINIMUM OF 5-FOOT SEPARATION IS REQUIRED BETWEEN THE MET UTILITIES (WATER, SEWER, STORM) SHOWN ON THE PLANS AND THE DRY UTILITIES (GAS, POWER, CABLE AND POWER) THAT MAY OR MAY NOT BE SHOWN ON THE PLANS.

STORM DRAINAGE:

- THE FOLLOWING STANDARD DETAILS SHALL BE USED FOR CONSTRUCTION OF STORM DRAIN IMPROVEMENTS:

CATCH BASINS TYPE 1, II, OR 2	WSDOT STD. DETAILS 8-5.22, 8-5.40 OR 8-10.20
"RESIDENTIAL SERVICE LINE"	CDFS ST-7 (CITY OF FERNDALE STD DETAIL)
CATCH BASINS	CDFS ST-16 (CITY OF FERNDALE STD DETAIL)
- STORM SEWER PIPE HAVING DIAMETERS GREATER THAN 8" SHALL BE CORRUGATED POLYETHYLENE PIPE (CPEP); ALL OTHER STORM SEWER PIPE SHALL BE PVC.
- ALL CATCH BASIN GRATES SHALL INCLUDE THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS".
- CONTROL DENSITY FILL SHALL BE USED IN AREAS WHERE LESS THAN 24" OF COVER IS MAINTAINED OVER THE PROPOSED STORM PIPES (PIPE IS IN ROAD BASE SECTION), AS SHOWN IN THE PLANS. DUCTILE IRON PIPE MAY BE USED FOR STORM PIPES WITH LESS THAN 24" OF COVER IF APPROVED BY THE CITY.
- COVER OVER PIPES SHALL BE MAINTAINED DURING CONSTRUCTION. DEPTH OF COVER REQUIRED SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS AND WILL VARY WITH THE VEHICLE LOADS TRAVELING OVER THE PIPE. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR DAMAGE TO PIPE DURING CONSTRUCTION ACTIVITIES. 24" MINIMUM COVER REQUIRED UNLESS OTHERWISE APPROVED BY THE PUBLIC WORKS DIRECTOR.
- AT THE END OF ALL SITE CONSTRUCTION, THE CONTRACTOR SHALL CLEAN ALL DEBRIS FROM CATCH BASINS AND STORMWATER CONVEYANCES. DEBRIS SHALL NOT BE ALLOWED TO ENTER STREAMS OR OFF-SITE STORMWATER SYSTEMS.
- POSITIVE LOT DRAINS PER STANDARD DETAIL ST-16.

WATER:

- THE FOLLOWING STANDARD DETAILS SHALL BE USED IN CONSTRUCTING WATER SUPPLY SYSTEM IMPROVEMENTS:

PIPE BEDDING	CDFS W-11
TRENCH BACKFILL	CDFS W-11
FIRE HYDRANT ASSEMBLY	CDFS W-1
THRUST BLOCKING	CDFS W-2, W-3 & W-4
WATER SERVICE	CDFS W-5
- 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.
- ALL WATER MAIN PIPE SHALL BE DUCTILE IRON, MINIMUM THICKNESS CLASS 50, PER AWWA STANDARDS H3-71 AND C151-71, WITH CEMENT LINING PER AWWA STANDARD C104-71.
- MATERIAL FOR FITTINGS SUCH AS CROSSES, TEES, BENDS, REDUCERS AND SLEEVES SHALL BE DUCTILE IRON. JOINTS SHALL BE M.J., FLANGED OR PUSH-ON JOINTS AND SHALL CONFORM TO AWWA SPECIFICATIONS C-110-71 AND C-104-71.
- CONCRETE BLOCKING SHALL BE AS SPECIFIED IN CITY OF FERNDALE STANDARD DETAILS W-2, W-3 AND W-4, OR AS DIRECTED BY THE PROJECT ENGINEER. BLOCKS SHALL BE INSTALLED AS SPECIFIED IN SECTION 7-09.3(21) OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE OR MUNICIPAL CONSTRUCTION. NO PRE-CAST BLOCKS ARE ALLOWED.
- CONNECTIONS TO EXISTING WATER MAINS - THE CONTRACTOR MUST NOTIFY THE CITY OF FERNDALE PUBLIC WORKS DIRECTOR OF A PROPOSED CONNECTION AT LEAST FOUR WORKING DAYS IN ADVANCE.
- ALL HYDROSTATIC TESTING AND DISINFECTION OF WATER MAINS SHALL CONFORM TO SECTION 7-09.3(23) AND SECTION 7-09.3(24) OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE OR MUNICIPAL CONSTRUCTION - CURRENT EDITION. HYDROSTATIC TEST PRESSURE FOR WATER MAIN ACCEPTANCE SHALL BE 225 PSI AND SHALL BE DONE ACCORDING TO CITY OF FERNDALE REQUIREMENTS. THE CITY OF FERNDALE LABORATORY SHALL CONDUCT ALL DISINFECTION TESTS AND BACTERIOLOGICAL TESTS. THE PIPE WILL NOT PASS TESTING UNLESS A ZERO BACTERIAL COUNT IS MEASURED ON TWO CONSECUTIVE TESTS, CONDUCTED 24 HOURS APART.
- BACKFILL SHALL BE GRAVEL BASE, CLASS B, IN ALL STREET RIGHTS-OF-WAY, COMPACTED TO MINIMUM 95% OPTIMUM DENSITY. IN UNIMPROVED AREAS, MINIMUM COMPACTION SHALL BE 90% OF OPTIMUM DENSITY.
- ALL PIPES SHALL HAVE A MINIMUM COVER OF 36" AND MAXIMUM OF 42".
- ALL VALVES SHALL BE GATE VALVES AND SHALL BE INSTALLED WITH SLIP TYPE CAST IRON VALVE BOXES. GATE VALVES SHALL BE USED FOR LINES 2 INCHES THROUGH 10 INCHES IN DIAMETER. SHORT-BODY VALVES SUITABLE FOR A NON-SHOCK SHUT-OFF PRESSURE OF 150 PSI AND SUITABLE FOR DIRECT BURIAL ARE SPECIFIED. GATE VALVES SHALL BE RESILIENT SEATED IRON-BODY, FULL-BRONZE MOUNTED VALVES CONFORMING TO AWWA C509 AND SUITABLE FOR SERVICE WITH THE TYPE AND CLASS OF PIPE USED. ALL VALVES SHALL HAVE NON-RISING STEMS AND SHALL OPEN COUNTERCLOCKWISE AND SHALL BE EQUIPPED WITH A 2 INCH SQUARE OPERATING NUT. VALVES WILL BE FLANGE OR M.J. JOINTS. VALVE MARKERS SHALL BE LOCATED OUTSIDE OF PAVEMENT SECTIONS.
- WATER SERVICE TAP INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE CDFS W-5.
- FIRE HYDRANTS AND FIRE MAINS MUST CONFORM TO CDFS-SD W-1 (WSDOT 8-19) AND THE FOLLOWING STANDARDS:
 - FIRE HYDRANTS SHALL HAVE TWO INDIVIDUALLY VALVED 2-1/2" PORTS AND ONE 5-1/4" MAIN VALVE OPENING. A 4-1/2" NST PUMPER NOZZLE AND A 5" STORZ PORT WITH CAP AND AIRCRAFT CABLE SHALL BE SUPPLIED. HYDRANTS SHALL BE M.H. 1255 HYDRANTS.
 - FIRE HYDRANTS SHALL HAVE THE STORZ PORT FACING THE REQUIRED ACCESS AND THE BASE FLANGE OF THE HYDRANT MUST NOT VARY MORE THAN 1 FOOT IN ELEVATION FROM THE GRADE LEVEL OF THE REQUIRED ACCESS. THE LOWEST STEM SHALL BE A MINIMUM OF 14" ABOVE THE GROUND.
 - IF THE PUBLIC WORKS DIRECTOR DETERMINES THAT FIRE HYDRANTS ARE VULNERABLE TO VEHICULAR DAMAGE, APPROPRIATE CRASH POSTS SHALL BE PROVIDED. NO OBSTRUCTIONS SHALL EXIST WITHIN A 3-FOOT WORKING AREA OF EACH REQUIRED ACCESS. CRASH POSTS SHALL BE 6" CEMENT-FILLED PIPE A MIN. OF 3' IN HEIGHT WITH A MIN. OF 2" OF PIPE BELOW GRADE. HYDRANT SHUTOFF VALVES SHALL BE LOCATED BETWEEN 5' AND 20' FROM THE HYDRANT.
 - UNDERGROUND SUPPLIES TO FIRE HYDRANTS MUST BE INSPECTED. SUCH INSPECTION SHALL INCLUDE VISUAL INSPECTION OF PIPING AND HYDROSTATIC PRESSURE TESTING TO A MIN. OF 225 PSI. A FLOW TEST WILL BE REQUIRED. PIPE INSTALLATION IS COMPLETE.
 - FIRE HYDRANTS MUST BE MAINTAINED IN AN OPERABLE CONDITION AT ALL TIMES AND MUST BE REPAIRED OR REPLACED WHEN DEFECTIVE. HYDRANTS SHALL BE FULLY OPERABLE BEFORE CONSTRUCTION COMMENCES ABOVE GROUND LEVEL.

SANITARY SEWER SYSTEMS:

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF FERNDALE STANDARD SPECIFICATIONS AND DETAILS, A.P.W.A. STANDARD SPECIFICATIONS, AND WSDOT STANDARD SPECIFICATIONS, MOST RECENT EDITIONS. SANITARY SEWER SYSTEM INSTALLATION, BOTH PUBLIC AND PRIVATE, IS SUBJECT TO CITY REVIEW AND APPROVAL.
- ALL WORK MUST BE INSPECTED TO THE SATISFACTION OF THE CITY OF FERNDALE. INSPECTION MUST BE GIVEN PRIOR TO STARTING WORK. TESTING OF THE SEWER SYSTEM AND ALL CONNECTIONS TO EXISTING MAINS SHALL BE PERFORMED IN THE PRESENCE AND UNDER THE SUPERVISION OF A CITY OF FERNDALE REPRESENTATIVE.
- SANITARY SEWER MAINS SHALL BE A MINIMUM 18 INCH DIAMETER (SDR) CONFORMING TO THE PROVISIONS OF ASTM D 3034 AND INSTALLED TO CITY REQUIREMENTS.
- SANITARY SEWER PIPE MATERIALS SHALL BE PEAP SDR-11. ALL TRENCHES SHALL BE BACKFILLED WITH CLASS B BANK RUN GRAVEL WITHIN CITY RIGHTS OF WAY AND TRAVELED WAYS OUTSIDE OF RIGHT OF WAY (ACCESS EASEMENTS) AND SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% OF OPTIMUM DENSITY. USE OF SUITABLE NATIVE BACKFILL OUTSIDE OF TRAVELED WAY SHALL BE SUBJECT TO APPROVAL BY THE CITY.
- ALL MAINS SHALL BE INSTALLED PER CITY OF FERNDALE STANDARD DETAILS AND SHALL BE PRE-CHANNELED. MANHOLE CONES SHALL BE USED FOR SUCH UNDERDRAINS AS ARE PARALLEL TO THE FLOW.
- SEWER SHALL HAVE A MINIMUM INVERT OF 4".
- CONNECTION SHALL BE 5 FT BEYOND UTILITY CORRIDOR OR 15 FEET BEYOND RIGHT-OF-WAY LINE.
- EXISTING CURB SHALL BE CAPPED WITH A WATER-TIGHT PLUG. EACH STUB SHALL BE MARKED FOR LOCATION WITH A 2" DIA. PAINTED CUP (MIN. SCHEDULE 40) WITH THE TOP 18" PAINTED GREEN AND STENCILED WITH THE WORD "SEWER" AND THE PIPE INVERT INDICATED. THE LOCATION MARKER SHALL BE CONNECTED TO THE SERVICE STUB BY A #12 COPPER WIRE.

ROAD:

- THE FOLLOWING STANDARD DETAILS SHALL BE USED FOR CONSTRUCTION OF THE STANDARD STREET SECTION:

TYPICAL STREET SECTION	PER THESE PLANS
PCC CURB AND GUTTER	CDFS R-9
PCC SIDEWALKS	CDFS R-12 (SEE CONSTRUCTION DOCUMENTS TYPICAL SECTION)
PCC CURB RAMPS	WSDOT STD. DETAIL F-40.
- ROADWAY EXCAVATION WITHIN THE ROADWAY PRISM SHALL BE CUT TO A UNIFORM GRADE. THE COMPLETED SUBGRADE SURFACE SHALL NOT VARY MORE THAN 0.10-FOOT FROM THE LOWER EDGE OF A 15-FOOT STRAIGHTEDGE PLACED ON THE SUBGRADE PARALLEL TO THE CENTERLINE UNLESS APPROVED BY THE ENGINEER.
- THE OWNER SHALL PROVIDE TO THE ENGINEER A REPORT FROM A QUALIFIED GEOTECHNICAL FIRM CERTIFYING THE COMPACTION OF THE GRAVEL BASE UNDER ALL PAVING AREAS.
- ASPHALT CONCRETE PAVEMENT SHALL BE CLASS "B" MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 5-04, EXCEPT AS MODIFIED HEREIN. CONNECTION TO EXISTING PAVEMENT SHALL BE TO A STRAIGHT NEATLY-TRIMMED LINE.
- CRUSHED ROCK SURFACING FOR PAVEMENT SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION, SECTION 9-03.9(3); BALLAST PER SECTION 9-03.9(1).
- CEMENT CONCRETE SHALL BE CLASS 3000 (WITH AIR ENTRAINMENT) IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION, SECTION 8-02.3(2)(B).
- CEMENT CONCRETE SIDEWALK SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS OR AS DESIGNATED BY THE ENGINEER IN ACCORDANCE WITH CITY STANDARDS, DRAWING NO. R-12.
- CEMENT CONCRETE DRIVEWAYS SHALL BE 6 INCHES THICK AND CONSTRUCTED WHERE SHOWN ON THE PLANS OR DESIGNATED BY THE ENGINEER IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, DRAWING NO. R-15. A 2- INCH LATER OF 3/4 INCH DRAIN ROCK SHALL BE USED FOR DRIVEWAY BEDDING.
- CEMENT CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED WHERE SHOWN ON THE PLANS OR AS DESIGNATED BY THE ENGINEER. IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS, SECTION 8-04 AND CITY OF FERNDALE STANDARDS, DRAWING R-8 AND R-9. CULDEP RAMPS SHALL BE CONSTRUCTED PER WSDOT STANDARD PLANS F-40. WHERE NEW CEMENT CONCRETE CURB AND GUTTER IS CONNECT TO EXISTING CURB AND GUTTER, ASSURE THAT NO ABRUPT OFFSETS IN LINE OR GRADE SHALL BE CONSTRUCTED WHICH WILL BE UNLIFTLY OR IMPEDE FLOW IN THE GUTTER LINE.
- PAVEMENT:
 - SOIL RESIDUAL GRADE SHALL BE PLACED WITHIN 24 HOURS OF PAVING.
 - BLACK COAT OF ASPHALT SHALL BE APPLIED BETWEEN ALL COURSES OF ASPHALT.
 - PAVEMENT TOPPAI SHALL BE SAW CUT BEFORE REMOVAL. AIR-ROAD SHALL BE APPLIED TO ALL EDGES OF EXISTING PAVEMENT WHERE NEWLY CONSTRUCTED PAVING MEETS EXISTING PAVING. THE APPLICANT SHALL PROVIDE A SAW CUT WITHIN 10 FEET OF THE PAVING. THE SAW CUT SHALL BE INSTALLED TO PROPOSED PAVING. CONTRACTOR SHALL COLD PLANE PER DIMENSIONS SHOWN ON THE PLANS, AND INSTALL A MINIMUM 2-FOOT WIDE PETROTAC PAVING FABRIC, OR EQUIVALENT, BETWEEN PAVING LIFTS.
- THRU-CURB BENS AND THROUGH-CURB INLETS CONFORMING TO THE WSDOT STANDARD SPECIFICATIONS, SECTION 7-05 SHALL BE CONSTRUCTED AT THE LOW POINT OF THE CURB FLOW LINES AND TO THE LOCATIONS, DIMENSIONS, AND DETAILS AS SHOWN ON THE PLANS OR DESIGNATED BY THE ENGINEER AND CITY STANDARDS, DRAWING NO. R-8.
- TRENCH LOCATIONS, BEDDING AND PIPE FOR STORMWATER PIPE LAYING SHALL BE IN ACCORDANCE WITH THE WSDOT STANDARD SPECIFICATIONS, SECTION 7-08.
- STORM SEWER PIPE CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION, SECTION 9-05.1(1). MATERIAL SHALL BE HANCOCK SURE-LOK 1477 PIPE OR CITY APPROVED EQUAL. LOTS' STORM DRAIN SERVICE LINE SHALL BE 6" PVC PER WSDOT STANDARD SPECIFICATION, SECTION 9-05.1(5).
- PERFORATED UNDERDRAIN PIPE SHALL MEET THE WSDOT STANDARD SPECIFICATION 7-01.3(2).

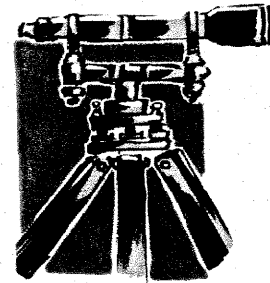
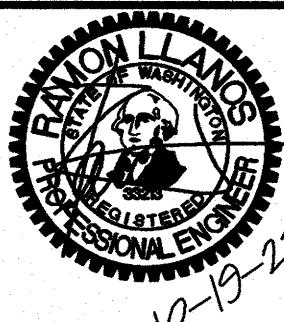
EARTHWORK:

- THE CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING UN-COMPACTED OR POORLY COMPACTED FILL SOILS WITHIN THE ROAD PRISM AT THE DIRECTION OF THE ENGINEER.
- THE CONTRACTOR SHALL EXCAVATE AND GRADE TO THE ALIGNMENT, GRADE AND CROSS-SECTIONS SHOWN IN THE PLANS OR ESTABLISHED BY THE ENGINEER.
- UNSATURABLE MATERIAL FOUND AND NOT FIT FOR USE AS A SUB-GRADE SHALL BE EXCAVATED TO THE BOUNDARIES SET BY THE ENGINEER AND REPLACED WITH A SUITABLE BACKFILL MATERIAL.
- THE ENGINEER IS REQUIRED TO CERTIFY SUBGRADE, IN WRITING, PRIOR TO PAVING.

BASE COURSES AND SURFACING:

- GRAVEL BASES AND BALLAST MATERIAL GRADATION SHALL MEET WSDOT STANDARD SPECIFICATIONS.
- BALLAST, GRAVEL BASE AND CRUSHED SURFACING SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY.
- THE GRADED AND COMPACTED SURFACE OF THE CRUSHED SURFACING TOP COURSE SHALL BE WITHIN 1/8 INCH OF FINISHED GRADE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL AND COMPACTION TESTING. PRIOR TO IMPORTING OF MATERIAL FOR BASE AND CRUSHED SURFACING TOP COURSE THE CONTRACTOR SHALL PROVIDE EVIDENCE OF SATISFACTORY PASSING GRADING AND DEGRADATION TEST RESULTS TO THE ENGINEER.

△	SUBMITTAL 1	RL	02/08/21
△	SUBMITTAL 2	RL	04/13/21
△	SUBMITTAL 3	RL	04/28/21
△	SUBMITTAL 4 - OUTFALL REV.	RL	03/16/22
△	SUBMITTAL 5 - OUTFALL REV.	RL	03/31/22
△			
NO.	REVISION	BY	DATE



LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDAL, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

JOB NO.:	2015
DWG. NAME:	2015-CIVIL_AB.dwg
DESIGNED BY:	RL
DRAWN BY:	RL
CHECKED BY:	RL

ANDREY SAVCHUK
3348 BRESLIN LANE
FERNDAL, WA

APPROVED

OCT 9 2023
Kevin Savchuk
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

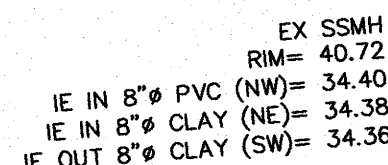
CITY OF FERNDAL GENERAL NOTES

CEDAR VILLAS
FERNDAL, WHATCOM COUNTY, WASHINGTON
SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N, R. 3E, W.M.

SHEET
02
OF
14

RECORD DRAWING

00744.002 10/20/23 RH



A horizontal number line with tick marks at 0, 10, 20, and 40. The segment between 10 and 20 is shaded black.

(IN FEET)
inch = 20 ft

C.O.F. MON 5
BRASS DISK
SURFACE
MONUMENT

SSMH, RIM=40.79
IE IN (NE)= 32.89 (8" CLAY)
IE OUT (SW)= 32.99 (8" CLAY)

LDES, INC.
0 INDUSTRIAL PL. #108
ERNDAL, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

ANDREY SAVCHUK
3348 BRESLIN LANE
FERNDALE WA

APPROVED

OCT 20 2023
BY John K. Kavin
CITY OF FURDALE
PUBLIC WORKS DEPARTMENT Ren 2

EXISTING CONDITIONS

5874 CEDAR STREET TOWNHOMES
FERNDALE, WHATCOM COUNTY, WASHINGTON
SITE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N., R. 3E., W.M.

SHEET

03

01

14

CONTROL NOTES:

CITY OF FERRISDALE SURVEY CONTROL NETWORK

HORIZONTAL DATUM: CITY OF FERNDAL
VERTICAL CONTROL: CITY OF FERNDAL, FERN-05

FERN-05:
FOUND A BRASS DISK SURFACE MONUMENT IN DRIVEWAY TO VISTA MIDDLE SCHOOL
NORTHING: 683,701.32'
EASTING: 1,214,911.44'
ELEVATION: 220.76'

FERN-09:
FOUND A BRASS DISK SURFACE MONUMENT IN DRIVEWAY ON NORTH SIDE OF AXTON ROAD
NORTHING: 678,723.53'
EASTING: 1,226,610.13'

BASIS OF BEARING: GRID BEARING BETWEEN MONUMENTS LISTED ABOVE, NORTH 66°57'01" WEST

LEGAL DESCRIPTION

PARCEL 390220 270249 0000
(PER BARGAIN AND SALE DEED A.F.N. 2020-0203095)

LOTS 8 & 9, CARPENTER'S FIRST ADDITION TO THE CITY OF FERNDALE,
ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 6 OF PLATS, PAGE 2,
RECORDS OF WHATCOM COUNTY, WASHINGTON.

SITUATE IN WHATCOM COUNTY, WASHINGTON

EXISTING LEGEND

- | | |
|------------|--|
| ● | FOUND MONUMENT AS NOTED |
| ⊙ | FOUND BOAT SPIKE |
| ○ | FOUND IRON PIPE |
| ● | SET REBAR WITH YELLOW CAP (LS 49287, MARCH 2020) |
| ⊙ | FOUND REBAR AND CAP AS NOTED |
| ⊠ | SET WOODEN LATH ON PROPERTY LINE |
| □ | CALCULATED POINT |
| ⊠ | WATER METER |
| ⊕ | WATER SPIGOT |
| ⊠ | GAS METER |
| ○ | SEWER MANHOLE |
| —○— | UTILITY POLE |
| ⊠ | POWER METER |
| ——— OH ——— | POWER (AERIAL) |
| ——— G ——— | GAS LINE |
| ——— | SEWER MAIN |
| ——— W ——— | WATER MAIN |
| ——— TB ——— | TOP OF BANK/SLOPE |
| ——— BB ——— | BOTTOM OF BANK/SLOPE |
| ——— x ——— | FENCE LINE — WOOD |
| ——— | EDGE OF GRAVEL |

EXISTING GRAVEL

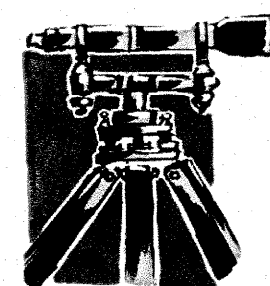
EXISTING CONCRETE

SURVEYOR'S NOTES:

- 1) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION ON DECEMBER OF 2019.
- 2) EQUIPMENT USED: LEICA M580: 00°01' ±1 MM, ±1.5 PPM & LEICA GS14 RTK/WSRN.
RELATIVE ACCURACY AND FIELD TRAVERSE CLOSURE EXCEEDS THE REQUIREMENTS OF WAC 332-130-085 AND WAC 332-130-090.
- 3) HORIZONTAL DATUM: FERNDALE MONUMENT CONTROL NETWORK, NAD83/91
VERTICAL DATUM: NGVD29
- 4) PURPOSE OF SURVEY: BOUNDARY AND TOPOGRAPHIC SURVEY.
- 5) IN ACCORDANCE WITH THE REVISED CODE OF WASHINGTON: 58.09 AND WAC CHAPTER 332-130, THIS RECORD OF SURVEY DEPICTS OCCUPATIONAL INDICATORS, SUCH AS FENCES, THESE INDICATORS REPRESENT A POTENTIAL FOR CLAIM. UNDER THIS TITLE, THIS SURVEY DOES NOT RESOLVE ANY OF THE LEGAL OWNERSHIP ISSUES THAT MAY ARISE FROM THESE UNWRITTEN TITLE CLAIMS.
- 6) CONTOUR INTERVALS ARE 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION.
- 7) ELEVATION ACCURACY OF SURVEYED POINTS AND DIGITAL TERRAIN MODELS EXCEEDS THE STANDARDS PUT FORTH BY THE US ARMY CORPS OF ENGINEERS FOR CONSTRUCTION LAYOUT: 0.10 FEET IN ELEVATION WHEN MULTIPLIED BY THE DISTANCE FROM BENCHMARK TRAVELLED IN MILES, SQUARE-ROOTED, AND FOR WELL-DEFINED POINTS IN THE DIGITAL TERRAIN MODEL, PLUS OR MINUS HALF THE CONTOUR INTERVAL (0.05 FEET).
- 8) LIMITATIONS ON USE: THIS SURVEY IS ONLY INTENDED FOR BOUNDARY RESOLUTION AND CIVIL DESIGN AND CONSTRUCTION OF THE SUBJECT PROPERTY, AND SHOULD NOT BE USED FOR OTHER PURPOSES.
- 9) UTILITY LOCATIONS SHOWN HEREON ARE BASED UPON FIELD LOCATION OF THE SURFACE EVIDENCE OF EXISTING STRUCTURES. UNDERGROUND UTILITY LOCATION SERVICES WERE NOT PROVIDED FOR THIS TOPOGRAPHIC SURVEY AND THE UNDERGROUND ROUTING OF REPORTED BURIED UTILITIES HAS NOT BEEN DETERMINED OR CORRELATED WITH THE UTILITY NETWORK. ADDITIONAL UTILITY LOCATIONS AND UNDERGROUND UTILITY LOCATION PAINT MARKING WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- 10) BASE FLOOD ELEVATION (BFE): 32.30'

10) BASE FLOOD ELEVATION (BFE): 32.30'

①	SUBMITTAL 1	RDP	02/08/20
②	SUBMITTAL 2	RDP	04/13/20
③	SUBMITTAL 2	RDP	04/29/20
④			
⑤			
NO.	REVISION	BY	DATE



JOB NO.:	2015
DWG. NAME:	2015_EX COND.dwg
DESIGNED BY:	—
DRAWN BY:	RDP
CHECKED BY:	RDP

JOB NO.:

DWG NAME:

2015_EX COND.dwg

DESIGNED BY:

DRAWN BY:

RDP

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) ELEMENTS:

ELEMENT 1: MARK CLEARING LIMITS

CLEARING LIMITS AREA WILL BE CLEARLY MARKED PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES, WHICH INCLUDES CLEARING AND GRADING. THESE AREAS WILL BE CLEARLY MARKED BOTH IN THE FIELD AND ON-SITE PLANS, TO PREVENT DAMAGE AND OFFSITE IMPACTS.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMP'S CONSIDERED FOR ELEMENT #1 INCLUDE:
BMP C103: HIGH VISIBILITY PLASTIC OR METAL FENCE
BMP C104: STAKE AND WIRE FENCE

ELEMENT 2: ESTABLISH CONSTRUCTION ACCESS

ONE CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED USING QUARRY SPALLS TO MINIMIZE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS. ROADS WILL BE CLEANED THROUGH THE DAY AND AT THE END OF EACH DAY. SEDIMENT TRANSPORTED TO ROADS FROM THE SITE WILL BE SWEEPED AND DISPOSED OF AT A CONTROLLED SEDIMENT DISPOSAL AREA ON SITE. IF STREET WASHING IS NEEDED, IT WILL ONLY OCCUR AFTER SEDIMENT HAS BEEN REMOVED AS DESCRIBED. THE RESULTING WASH WASTEWATER WOULD THEN BE DISPOSED OF AT AN APPROVED SITE.

ALL CONSTRUCTION ACCESS POINTS WILL BE RESTORED TO PRE-CONSTRUCTION CONDITION.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMP'S CONSIDERED FOR ELEMENT #2 INCLUDE:
BMP C106: STABILIZED CONSTRUCTION ENTRANCE
BMP C107: CONSTRUCTION ROAD/PARKING AREA STABILIZATION

ELEMENT 3: CONTROL FLOW RATES

STORMWATER BMP'S OUTLINED IN THE TESC PLAN AND SWPPP WILL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION AND WILL BE FUNCTIONAL PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS (E.G. IMPERVIOUS SURFACES). IT IS EXPECTED THAT RAIN AND SNOWMELT WILL INFILTRATE COMPLETELY INTO THE EXISTING SOILS DURING CONSTRUCTION. IF FLOW RATES NEED TO BE CONTROLLED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO AMEND THE SWPPP AND IDENTIFY APPROPRIATE BMP'S TO CONTROL FLOW RATES.

ELEMENT 4: INSTALL SEDIMENT CONTROLS

SILT FENCING (BMP C233) SHALL BE INSTALLED ALONG THE DOWNSTREAM EDGES OF THE PROJECT AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS. SEDIMENTATION SHOULD NOT BE ALLOWED TO ENTER THE INFILTRATION FACILITIES DURING CONSTRUCTION. CONSTRUCTION OF THE STORMTECH CHAMBERS SHOULD OCCUR NEAR THE END OF CONSTRUCTION TO MAINTAIN THE INFILTRATION CAPACITY OF THE NATIVE SOILS. IF IT IS FOUND THAT MORE CONTROL MEASURES ARE NEEDED, AND WATER NEEDS TO BE IMPOUNDED, TEMPORARY ON-SITE INTERCEPTOR DRAINAGE SWALES SHALL BE CONSTRUCTED AND STABILIZED.

OTHER SEDIMENT CONTROL MEASURES THAT MAY BE IMPLEMENTED ON SITE INCLUDE:

- CONSTRUCTION OF GRAVEL FILTER BERMS (BMP C232) TO RETAIN SEDIMENT FROM RIGHTS-OF-WAYS OR CONSTRUCTION TRAFFIC AREAS, IF APPLICABLE
- SILT FENCES WILL BE USED TO CONTROL TRANSPORT OF COARSE SEDIMENT FROM THE SITE. INSTALLATION OF SILT FENCES WILL BE DONE AS OUTLINED IN BMP C233 AND WILL BE USED IN COMBINATION WITH OTHER EROSION CONTROL METHODS IF NEEDED.
- VEGETATED STRIPS WILL BE USED WHERE APPROPRIATE. IF VEGETATED STRIPS ARE USED AS AN EROSION CONTROL MEASURE, THEY WILL BE IMPLEMENTED AS OUTLINED IN BMP C234.
- STRAW WATTLES MAY ALSO BE CONSIDERED AS PART OF THE EROSION CONTROL MEASURES FOR THIS SITE. IF STRAW WATTLES ARE INSTALLED, THEY WILL BE DONE AS OUTLINED IN BMP C235.

A COMBINATION OF THESE BMP'S MAY NEED TO BE IN PLACE TO EFFECTIVELY MANAGE THE SITE FOR EROSION CONTROL. EVALUATION OF BMP EFFECTIVENESS AND MAINTENANCE OF THE INSTALLED BMP'S WILL CONTINUE THROUGHOUT CONSTRUCTION. MODIFICATIONS TO THE COMBINATIONS OF BMP'S MAY OCCUR AS A RESULT OF ONGOING SITE EVALUATION.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMP'S CONSIDERED FOR ELEMENT #4 INCLUDE:
BMP C230: STRAW BALE BARRIER
BMP C232: GRAVEL FILTER BERM
BMP C233: SILT FENCE
BMP C235: STRAW WATTLES

ELEMENT 5: STABILIZE SOILS

IF CONSTRUCTION OCCURS IN THE WET SEASON (10/1 THROUGH 4/30) SOILS WILL NOT REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. IF IT OCCURS IN THE DRY SEASON (5/1 THROUGH 9/30) SOILS WILL NOT REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS. WHEN ACTIVE GRADING IS IN PROGRESS, THE DEADLINE FOR SOIL STABILIZATION MAY BE EXTENDED UPON DETERMINING THAT THE LIKELIHOOD OF EROSION IMPACTS IS LOW BASED ON THE TYPE AND AMOUNT OF SOIL EXPOSED, SITE TOPOGRAPHY, TO 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. IMMEDIATELY FOLLOWING GRADING ACTIVITIES, THE SITE SOILS SHALL BE STABILIZED BY SEEDING AND STRAW MULCHING TO PROTECT SOIL FROM EROSION FORCES OF RAINFALL, RUNOFF, AND WIND. PLASTIC COVERING SHALL COVER ALL SOIL STOCKPILES.

BMP'S 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. EVALUATION AND MONITORING OF BMP EFFECTIVENESS WILL OCCUR ON A DAILY BASIS BY THE CONTRACTOR AND AS DESCRIBED IN SECTION 6.2.12 BY THE CESCL. IN ADDITION, IN THE EVENT OF FORECASTED PRECIPITATION EVENTS, ADDITIONAL MEASURES TO STABILIZE SOILS WILL BE TAKEN.

BMP'S THAT WILL BE CONSIDERED THROUGHOUT CONSTRUCTION INCLUDE BUT ARE NOT LIMITED TO TEMPORARY AND PERMANENT SEEDING, SODDING, 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 BMP'S CONSIDERED FOR ELEMENT #5 INCLUDE:

BMP C120: TEMPORARY AND PERMANENT SEEDING
BMP C121: MULCHING
BMP C122: NETS AND BLANKETS
BMP C123: PLASTIC COVERING
BMP C124: SODDING
BMP C125: TOP SOILING
BMP C130: SURFACE ROUGHENING
BMP C131: GRADIENT TERRACES
BMP C140: DUST CONTROL

ELEMENT 6: PROTECT SLOPES

ANY DISTURBANCE TO THE STEEP SLOPE LOCATED ALONG THE SOUTH AND SOUTHEAST AREA OF THE PROJECT SITE SHALL BE ROUGHENED BY TRACKING PER BMP C130. IF ANY OTHER MAJOR SLOPE IS DISTURBED DURING CONSTRUCTION, IT SHALL BE MULCHED OR HYDRO-SEEDED IMMEDIATELY (WITHIN 24 HOURS) FOLLOWING THE DISTURBANCE.

ELEMENT 7: PROTECT DRAIN INLETS

NEW DRAIN INLETS WILL BE CONSTRUCTED AS PART OF THIS PROJECT. NEW DRAIN INLETS WILL RECEIVE BMP 220. EXISTING DRAIN INLETS IMMEDIATELY DOWNGRADE OF THE PROJECT SITE WILL ALSO RECEIVE BMP 220. PLEASE REFER THE TESC PLAN IN APPENDIX II FOR INLET PROTECTION LOCATIONS.

APPLICABLE BMP'S:

BMP C220 - STORM DRAIN INLET PROTECTION

ELEMENT 8: STABILIZE CHANNELS AND OUTLETS

WHILE NOTE ENVISIONED FOR THE PROJECT, IF TEMPORARY ON-SITE CONVEYANCE CHANNELS ARE NECESSARY, THEY WILL BE DESIGNED, CONSTRUCTED, AND STABILIZED TO PREVENT EROSION FROM THE EXPECTED FLOW RATE FROM A TYPE1A, 10 YEAR, 24-HOUR FREQUENCY STORM EVENT. BMP C202: CHANNEL LINING WILL BE USED TO DETERMINE THE MOST EFFECTIVE CHANNEL DESIGN FOR THE SITE (I.E. BLANKETS VERSUS RIPRAP). THE DESIGN, CONSTRUCTION AND STABILIZATION OF THE CONVEYANCE CHANNELS WILL BE CONSISTENT WITH THE METHODS OUTLINED IN BMP C202.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMP'S CONSIDERED FOR ELEMENT #8 INCLUDE:

BMP C202: CHANNEL LINING
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 DUMPSTERS AND STOCKPILES. ROUTINE INSPECTIONS OF THE WASTE MATERIAL STORAGE AREAS WILL BE CONDUCTED TO MAKE SURE THAT LEAKS OR SPILLS DO NOT OCCUR. ANY LEAKAGE OR SPILLS WILL BE CLEANED UP IMMEDIATELY. A SPILL RESPONSE KIT THAT INCLUDES ABSORBENT MATERIAL WILL BE AVAILABLE ON SITE. USED ABSORBENT MATERIAL WILL BE DISPOSED OF PROPERLY.

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 TARP'S OR OTHER PLASTIC SHEETING.

DISCHARGES, SPILLS, OR LEAKS WILL BE CLEANED IMMEDIATELY. THE NOTIFICATION PROCEDURE OUTLINED IN THE PERMANENT SITE SWPPP IS AS FOLLOWS:

- NOTIFY KEY PERSONNEL - DURING CONSTRUCTION, THE PROJECT ENGINEER WILL BE PROVIDING PROJECT OVERSIGHT AND WILL BE CONTACTED IN THE EVENT OF A SPILL. THE PROJECT ENGINEER WILL CONTACT THE SITE OWNER AND THE DEPARTMENT OF ECOLOGY. ANY SPILLS WITH POTENTIAL TO DISCHARGE TO STORM DRAINS, SANITARY SEWER SYSTEM, OR SURFACE WATERS WILL BE REPORTED TO CITY OF FERNDALE PUBLIC WORKS.
- ALL SPILLS WILL BE REPORTED TO THE DEPARTMENT OF ECOLOGY, SPILL RESPONSE PROGRAM (425) 649-7000.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMP'S CONSIDERED FOR ELEMENT #9 INCLUDE:

BMP C151: CONCRETE HANDLING
BMP C152: SAW CUTTING AND SURFACING POLLUTION PREVENTION
BMP C153: MATERIAL DELIVERY, STORAGE AND CONTAINMENT
BMP C154: CONCRETE WASHOUT AREA

ELEMENT 10: CONTROL DE-WATERING

SITE DE-WATERING IS NOT ANTICIPATED FOR THIS PROJECT. IF DE-WATERING IS FOUND TO BE NEEDED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO IDENTIFY AN APPROPRIATE DE-WATERING DISCHARGE AND HAVE IT APPROVED BY CITY OF FERNDALE. IF DE-WATERING IS NEEDED NEAR THE END OF CONSTRUCTION, AND THE INFILTRATION CHAMBERS HAVE BEEN CONSTRUCTED, CLEAN SEDIMENT FREE WATER MAY BE DISCHARGED INTO A GASOLINE (G) WASH BASIN CONNECTS TO THE CHAMBERS WITH THE APPROVAL OF THE ENGINEER OF RECORD AND THE CITY. IF THE WATER IS HIGHLY TURBID OR CONTAMINATED, IT SHALL BE COLLECTED AND DISCHARGED AT AN APPROVED LOCATION.

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

- TRANSPORT OFF SITE IN VEHICLE, SUCH AS A VACUUM TRUCK, FOR LEAK DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATERS.
- SANITARY SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL.
- USE OF A SEDIMENTATION BAG WITH OUTLET TO A CATCH BASIN WHICH DISCHARGES TO ONE OF THE ON-SITE STORMTECH CHAMBERS FOR SMALL VOLUMES LOCATED DE-WATERING, WITH ENGINEER OF RECORD AND CITY APPROVAL.

ELEMENT 11: MAINTAIN BMP'S

ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMP'S WILL BE INSPECTED, MAINTAINED, AND REPAIRED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIRED BMP IDENTIFIED IN ELEMENTS #1 THROUGH #13.

TEMPORARY EROSION AND SEDIMENT CONTROLS IDENTIFIED ABOVE WILL BE INSPECTED DAILY DURING THE WET SEASON BY THE CONTRACTOR. NEEDED REPAIRS AND MAINTENANCE WILL OCCUR AS SOON AS PRACTICABLE OR, IN THE EVENT OF A FORECAST OF INCLEMENT WEATHER, REPAIRS AND MAINTENANCE WILL OCCUR PRIOR TO THE ANTICIPATED WEATHER EVENT.

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

ELEMENT 12: MANAGE THE PROJECT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
THIS PROJECT WILL NOT DISTURB MORE THAN 1 ACRE OF LAND, THEREFORE, WILL NOT REQUIRE AN NPDES PERMIT.

CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL):

IT IS RECOMMENDED, ALTHOUGH NOT REQUIRED, THAT THE PROJECT OWNER OR CONTRACTOR RETAIN A CESCL TO INSPECT ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, ALL BMP'S, AND ANY STORMWATER DISCHARGE POINT (IF APPLICABLE) AT LEAST ONCE EVERY CALENDAR WEEK.

PHASING OF CONSTRUCTION:

TO THE EXTENT PRACTICABLE, SITE DISTURBANCE AND CONSTRUCTION WILL BE PHASED WHERE FEASIBLE. REVEGETATION OF EXPOSED AREAS AND MAINTENANCE OF THAT VEGETATION WILL OCCUR AS PART OF THE CLEARING ACTIVITIES.

CLEARING AND GRADING ACTIVITIES WILL OCCUR AFTER THE APPLICABLE PERMITS HAVE BEEN OBTAINED. WHEN ESTABLISHING CLEARING AND GRADING AREAS, CONSIDERATION WILL BE GIVEN TO MINIMIZING REMOVAL OF EXISTING TREES AND MINIMIZING DISTURBANCE AND COMPACTION OF NATIVE SOILS EXCEPT AS NEEDED FOR BUILDING PURPOSES. ELEMENT #1 OUTLINES BMP'S THAT WILL EFFECTIVELY MINIMIZE REMOVAL AND DAMAGE TO NATIVE VEGETATION AND PROTECT THESE AREAS BY BEING CLEARLY DELINEATED AND MARKED.

SEASONAL WORK LIMITATIONS:

FROM OCTOBER 1 THROUGH APRIL 30, SOILS WILL NOT REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. FROM MAY 1 THROUGH SEPTEMBER 30, SOILS WILL NOT REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS. IN ADDITION, WEATHER CONDITIONS WILL CONTINUALLY BE MONITORED INCLUDING BEFORE HOLIDAYS AND WEEKENDS FOR PURPOSES OF PREPARING THE SITE FOR PREDICTED WEATHER CONDITIONS. AS DISCUSSED IN ELEMENT #5, BMP'S 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 BMP'S WILL OCCUR ON A DAILY BASIS BY THE CONTRACTOR. IN ADDITION, IN THE EVENT OF FORECASTED PRECIPITATION EVENTS, ADDITIONAL MEASURES TO STABILIZE SOILS WILL BE TAKEN.

COORDINATION WITH UTILITIES AND OTHER CONTRACTORS:

CONSTRUCTION WATER MANAGEMENT REQUIREMENTS FOR ALL ASPECTS OF THE CONSTRUCTION PROJECT, INCLUDING UTILITIES, WERE COVERED IN PREPARING THE CONSTRUCTION SWPPP. IT IS UP TO THE CONTRACTOR TO COORDINATE WITH SUB-CONTRACTORS AND/OR UTILITY COMPANIES.

INSPECTION AND MONITORING:

AS PREVIOUSLY MENTIONED, ALL BMP'S WILL BE INSPECTED, MAINTAINED, AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

IF INSPECTION AND/OR MONITORING REVEALS THAT THE BMP'S 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, WITH NOTICE TO THE ENGINEER OF RECORD AND CITY OF FERNDALE.

MAINTENANCE OF THE CONSTRUCTION SWPPP:

THE CONSTRUCTION SWPPP WILL BE RETAINED ON-SITE AND WILL BE UPDATED ON A REGULAR BASIS BY EITHER THE OWNER OR A DESIGNATED REPRESENTATIVE. A LOG WILL BE ATTACHED TO THE CONSTRUCTION SWPPP TO FACILITATE REGULAR UPDATES. 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 BMP'S

STORMTECH CHAMBERS:

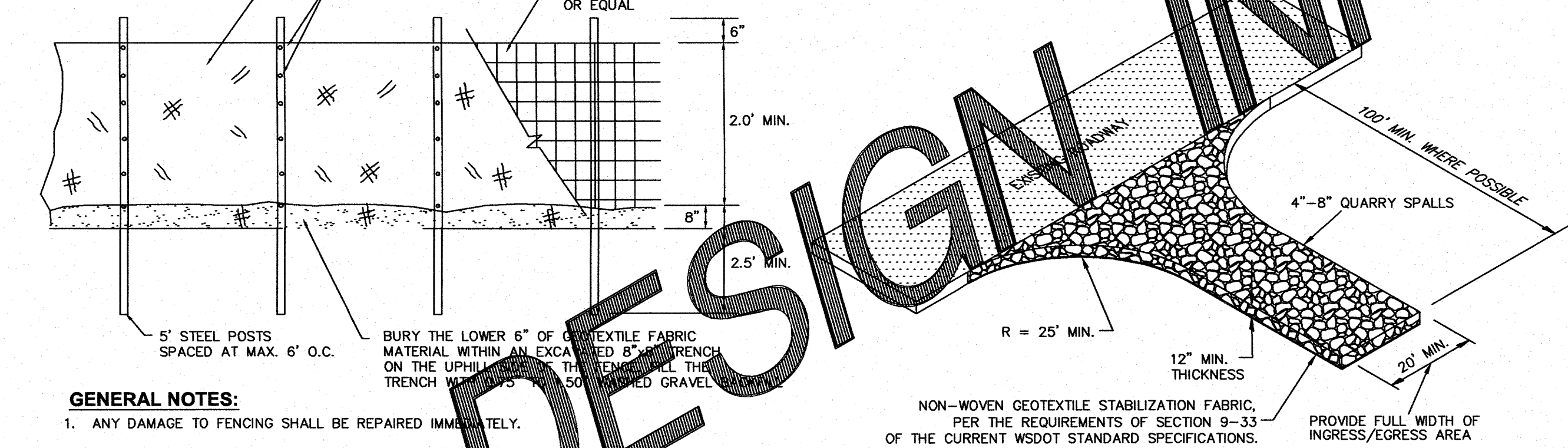
PROTECT THE INFILTRATION BED FROM SEDIMENTATION THROUGH THE FOLLOWING:

PREVENT COMPACTION UNDERNEATH THE STORMTECH CHAMBERS BY CONSTRUCTING IT NEAR THE END OF CONSTRUCTION AND SITE GRADING. THE PERIMETER OF THE STORMTECH CHAMBERS SHALL BE FLAGGED IN THE FIELD BY THE SURVEYORS AND SIGNAGE SHALL BE PROVIDED INFORMING CONSTRUCTION CREWS TO LIMIT TRAFFIC WITHIN THE FLAGGED PERIMETER TO PREVENT COMPACTION.

KEEP ALL HEAVY EQUIPMENT OFF EXISTING SOILS UNDER INFILTRATION BED THAT HAVE BEEN EXCAVATED TO FINAL GRADE TO RETAIN THE INFILTRATION RATE OF THE SOILS.

TESC NOTES & DETAILS:

GEOTEXTILE FABRIC MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 9-33 OF THE CURRENT WSDOT STANDARD SPECIFICATIONS.



GENERAL NOTES:

1. ANY DAMAGE TO FENCING SHALL BE REPAIRED IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEN THE FENCE MUST BE REPAIRED AND CONVEYED TO A FULLY-FUNCTIONING SEDIMENT TRAP, POND, OR CONVEYANCE SYSTEM.
3. IT IS IMPORTANT TO PERIODICALLY CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF CLOGGING. IF CLOGGING OCCURS, THE FENCE SHALL BE USED AS A BARRIER TO FLOW AND WILL CAUSE CHANNELIZATION PARALLEL TO THE FENCE. TO REMEDY THIS, THE CONTRACTOR SHALL REPLACE THE FENCE AND/OR REMOVE THE TRAPPED SEDIMENT.
4. SILT FENCING SHALL BE CONSTRUCTED DIRECTLY AFTER CLEARING AND GRUBBING IS COMPLETE. THE FENCE SHALL ONLY BE REMOVED WHEN CONSTRUCTION OF UTILITIES DEMANDS IT ABSOLUTELY NECESSARY. IMMEDIATELY AFTER UTILITIES ARE IN-PLACE, THE SILT FENCING SHALL BE RECONSTRUCTED.

1 SILT FENCE DETAIL (BASED ON FERNDALE ST-10) not to scale

GENERAL NOTES:

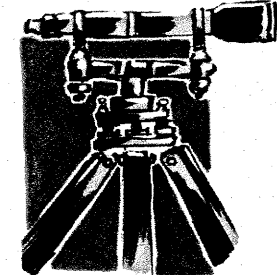
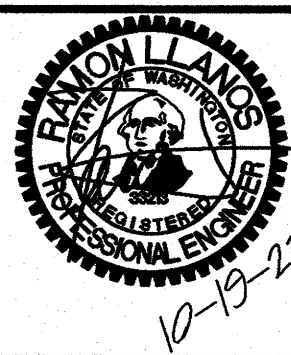
1. IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO SURROUNDING FACILITIES, THEN ALTERNATIVE MEASURES TO KEEP THE FACILITIES FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING OR UPGRADING THE DIMENSIONS OF THE ENTRANCE.
2. ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL 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, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH PAVEMENT, A SMALL SUMP OR POND SHALL BE CONSTRUCTED AND THE SEDIMENT SHALL BE CONVEYED INTO THE SUMP OR POND.

2 QUARRY SPALL CONSTRUCTION ENTRANCE DETAIL not to scale

CITY OF FERNDALE TESC NOTES:

1. STABILIZATION & SEDIMENT TRAPPING. ALL EXPOSED SOILS SHALL BE STABILIZED BY SUITABLE APPLICATION OF BMP'S. FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL REMAIN UNEXPOSED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN EXPOSED FOR MORE THAN 7 DAYS. PRIOR TO LEAVING THE SITE, STORMWATER RUNOFF SHALL PASS THROUGH A SEDIMENT POND, TRAP OR OTHER APPROPRIATE BMP, DELINEATE CLEARING & EASEMENT LIMITS. IN THE FIELD, STAKE AND FLAG CLEARING LIMITS AND/OR ANY EASEMENTS, SETBACKS, SENSITIVE/CRITICAL AREAS AND THEIR BUFFERS, TREES AND DRAINAGE COURSES.
2. PROTECTION OF ADJACENT PROPERTIES. PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION.
3. TRAPPING & STABILIZATION OF SEDIMENT TRAPPING MEASURES. SEDIMENT PONDS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS, AND OTHER BMP'S INTENDED TO TRAP SEDIMENT ON-SITE SHALL BE CONSTRUCTED AS A FIRST STEP IN GRADING. THESE BMP'S SHALL BE FUNCTIONAL BEFORE LAND DISTURBING ACTIVITIES TAKE PLACE. EARTH STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS SHALL BE SEEDED AND MULCHED ACCORDING TO THE TIMING INDICATED IN NO. 1 ABOVE.
4. CUT & FILL SLOPES. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. IN ADDITION, SLOPES SHALL BE STABILIZED IN ACCORDANCE WITH NO. 1 ABOVE.
5. CONTROLLING OFF-SITE EROSION. PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITES SHALL BE PROTECTED FROM EROSION DUE TO INCREASES IN THE VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FROM THE PROJECT SITE.
6. STABILIZATION OF TEMPORARY CONVEYANCE CHANNELS & OUTLETS. ALL TEMPORARY ON-SITE CONVEYANCE CHANNELS SHALL BE DESIGNED, CONSTRUCTED AND STABILIZED TO PREVENT EROSION FROM THE EXPECTED VELOCITY OF FLOW FROM A 2-YEAR, 24-HOUR FREQUENCY STORM FOR THE DEVELOPED CONDITION. STABILIZATION ADEQUATE TO PREVENT EROSION OF OUTLETS, ADJACENT STREAMBANKS, SLOPES AND DOWNSTREAM REACHES SHALL BE PROVIDED AT THE OUTLETS OF ALL CONVEYANCE SYSTEMS.
7. STORM DRAIN INLET PROTECTION. ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
8. UNDERGROUND UTILITY CONSTRUCTION. THE CONSTRUCTION OF UNDERGROUND UTILITY LINES SHALL BE SUBJECT TO THE FOLLOWING CRITERIA: WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPENED AT ONE TIME; WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES; AND TRENCH DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
9. CONSTRUCTION ACCESS ROUTES. WHEREVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED ROADS, PROVISIONS MUST BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT (MUD) ONTO THE PAVED ROAD. IF SEDIMENT IS TRANSPORTED ONTO A ROAD SURFACE, THE ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
10. REMOVAL OF TEMPORARY BMP'S. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMP'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
11. DEWATERING CONSTRUCTION SITES. DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
12. CONTROL OF POLLUTANTS OTHER THAN SEDIMENT ON CONSTRUCTION SITES. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER.
13. MAINTENANCE. ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
14. FINANCIAL LIABILITY. PERFORMANCE BONDING, OR OTHER APPROPRIATE FINANCIAL INSTRUMENTS, SHALL BE REQUIRED FOR ALL PROJECTS TO ENSURE COMPLIANCE WITH THE APPROVED TESC PLAN.
15. ALL SITE GRADING SHALL BE COMPLETED IN ACCORDANCE WITH APPENDIX J OF THE 2012, INTERNATIONAL BUILDING CODE.
16. SITE GRADING SHALL BE MONITORED BY GEOTECH SERVICES TO ENSURE THE FILLS WERE PERFORMED AND RECORDED PER APPENDIX J NOTED IN THE ABOVE COMMENT.
17. WORK PERFORMED OUTSIDE CITY RIGHT-OF-WAY ON PRIVATE PROPERTY REQUIRES PROJECT CERTIFICATION BY THE ENGINEER OF RECORD. THE ENGINEER OR RECORD SHALL DETERMINE AN INSPECTION SCHEDULE TO BE CARRIED OUT BY HIMSELF OR HERSELF AND/OR QUALIFIED DESIGNEE INCLUDING GEOTECHNICAL INSPECTIONS AND DOCUMENTATION SUPPORT.
18. AS THE ENGINEER OF RECORD, I HEREBY CERTIFY THAT THE IMPROVEMENTS COMPLETED AT 5024 CEDAR STREET HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE PLANS APPROVED BY THE PUBLIC WORKS DIRECTOR AND IN ACCORDANCE WITH THE SPECIFICATIONS ADOPTED BY THE CITY OF FERNDALE.
19. A STORMWATER MAINTENANCE PLAN MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL AT PROJECT COMPLETION INCLUDING AN 11X17 AS-BUILT DRAWING OF THE STORMWATER FACILITIES IN CONFORMANCE WITH THE ATTACHED STORMWATER MAINTENANCE MANUAL CHECKLIST FOR THE CONVEYANCE SYSTEM LOCATED OUTSIDE CITY R/W THAT MUST BE PRIVATELY MAINTAINED.

1	SUBMITTAL 1	RL	02/08/21
2	SUBMITTAL 2	RL	04/13/21
3	SUBMITTAL 3	RL	04/29/21
4	SUBMITTAL 4 - OUTFALL REV.	RL	03/16/22
5	SUBMITTAL 5 - OUTFALL REV.	RL	03/31/22
NO.	REVISION	BY	DATE



LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

JOB NO.:	2015
DWG. NAME:	2015-CIVIL_AB.dwg
DESIGNED BY:	RL
DRAWN BY:	RL
CHECKED BY:	RL

ANDREY SAVCHUK
3348 BRESLIN LANE
FERNDALE WA

APPROVED

By *Andrey Savchuk*
City of Ferndale
Public Works Department

STORMWATER POLLUTION PREVENTION PLAN & TESC NOTES AND DETAILS

CEDAR VILLAS

FERNDALE, WHATCOM COUNTY, WASHINGTON
SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N, R. 3E, W.M.

SHEET

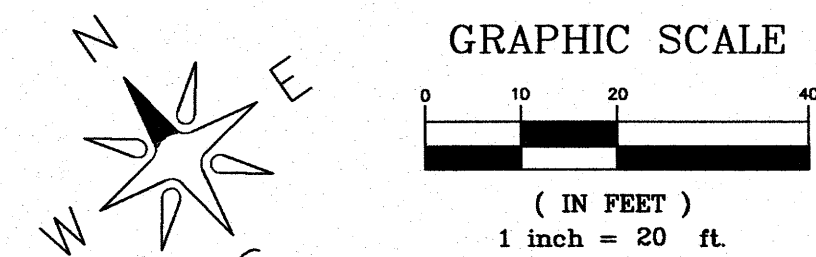
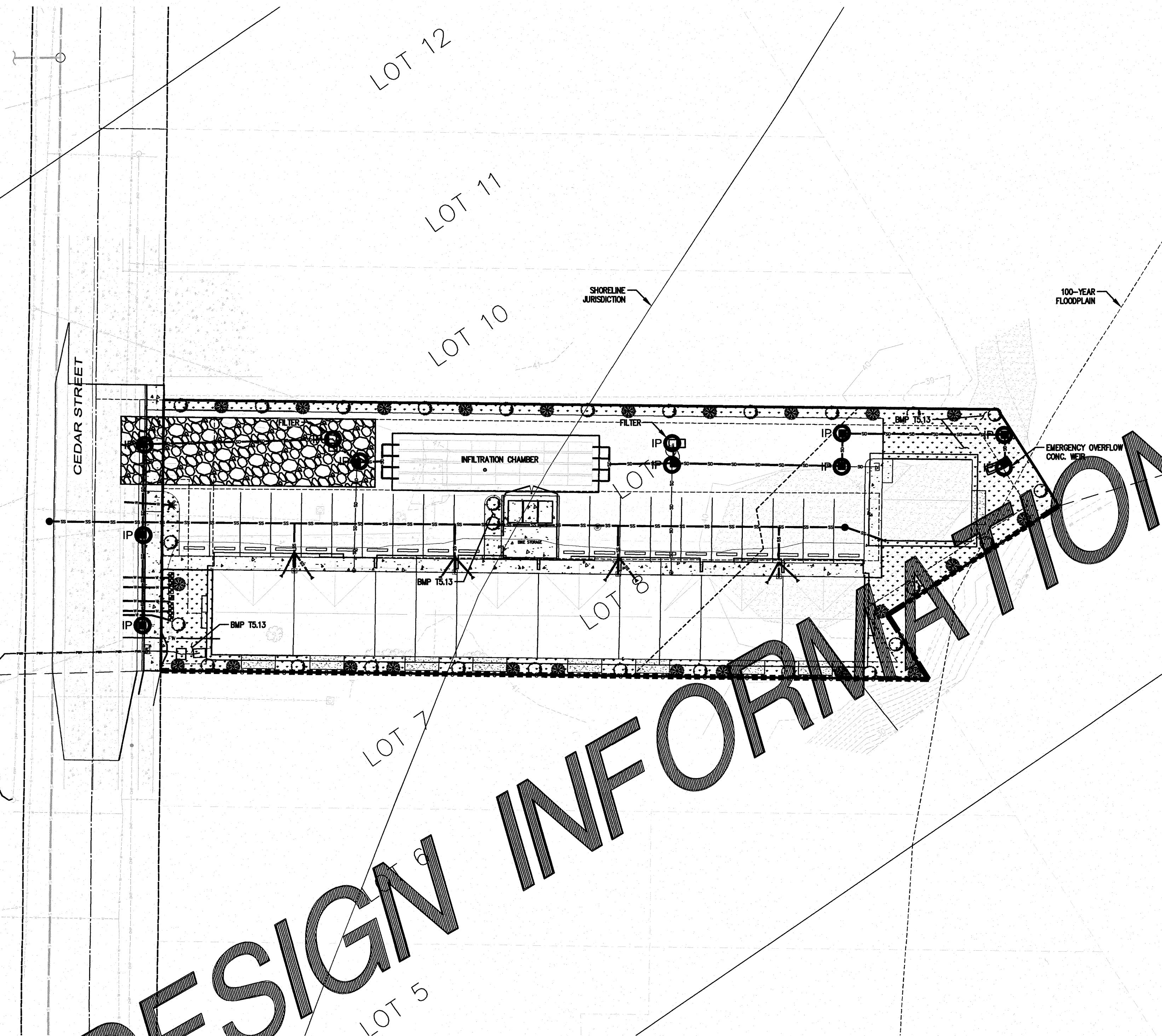
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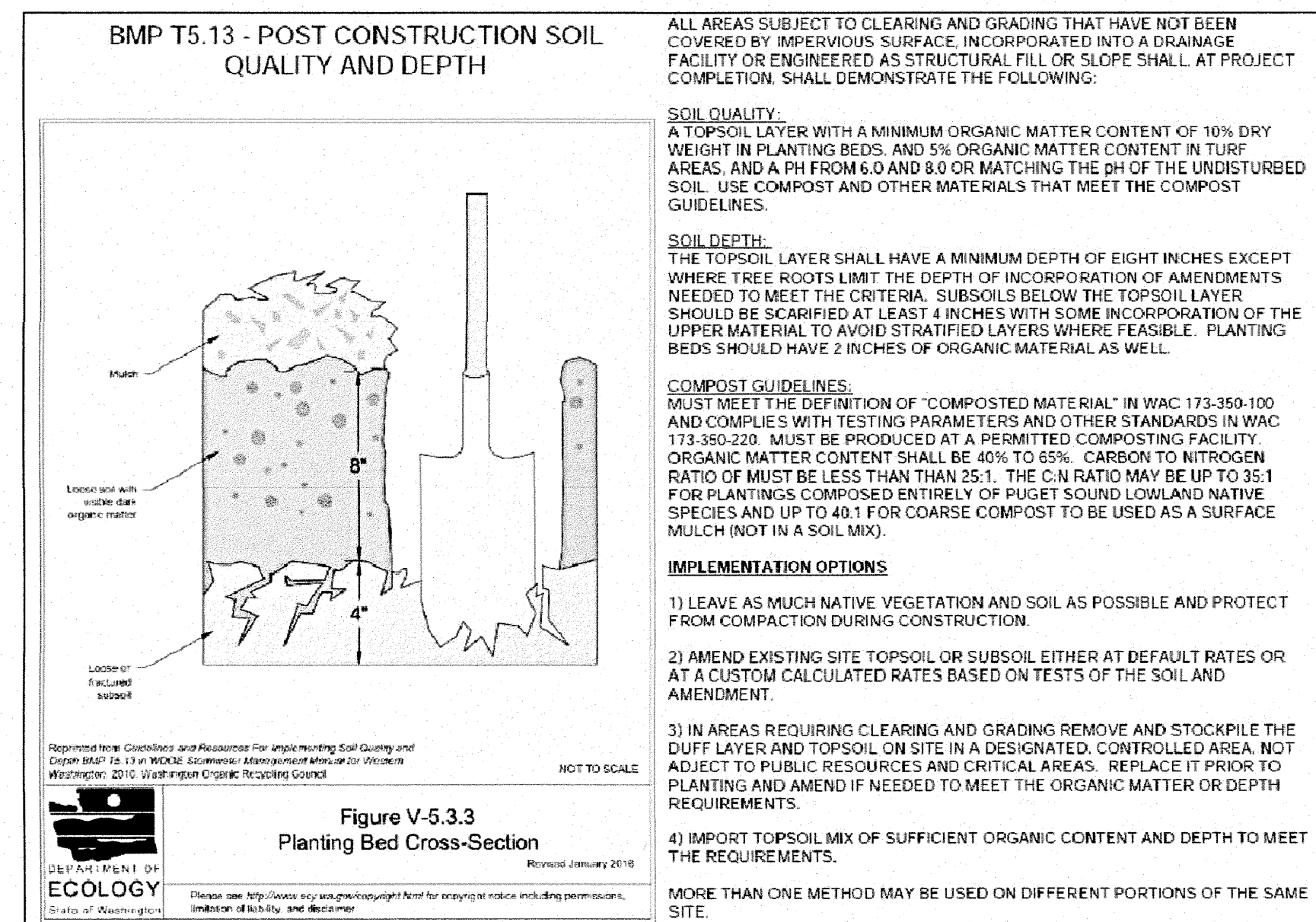
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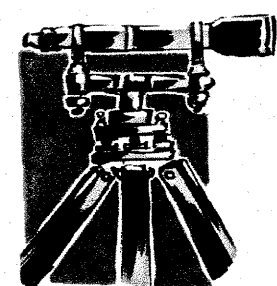
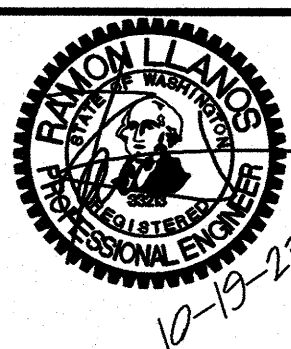
TESC LEGEND:

IP	= INLET PROTECTION PROTECT NEW STRUCTURES AS THEY ARE INSTALLED
	= CONSTRUCTION ENTRANCE (DETAIL 2, SEE SHEET 04)
	= SEDIMENT FENCE (DETAIL 1, SEE SHEET 04)

- TESC NOTES:**
- SEE SHEET 04 FOR TESC NOTES AND DETAILS, AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) ELEMENTS.
 - ALL EROSION CONTROL MEASURES INCLUDING CONSTRUCTION ENTRANCE MUST BE INSTALLED PER PLAN AND INSPECTED BY CITY OF FERNDAL STORMWATER TECHNICIAN PAUL KNIPPEL (360)383-8189 PRIOR TO CONSTRUCTION. ALLOW A MINIMUM 24 HOURS NOTICE FOR INSPECTION.



NO.	REVISION	BY	DATE
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ANDREY SAVCHUK
3348 BRESLIN LANE
FERNDAL WA

APPROVED

OCT 20 2023
BY *Kevin*
CITY OF FERNDAL
PUBLIC WORKS DEPARTMENT

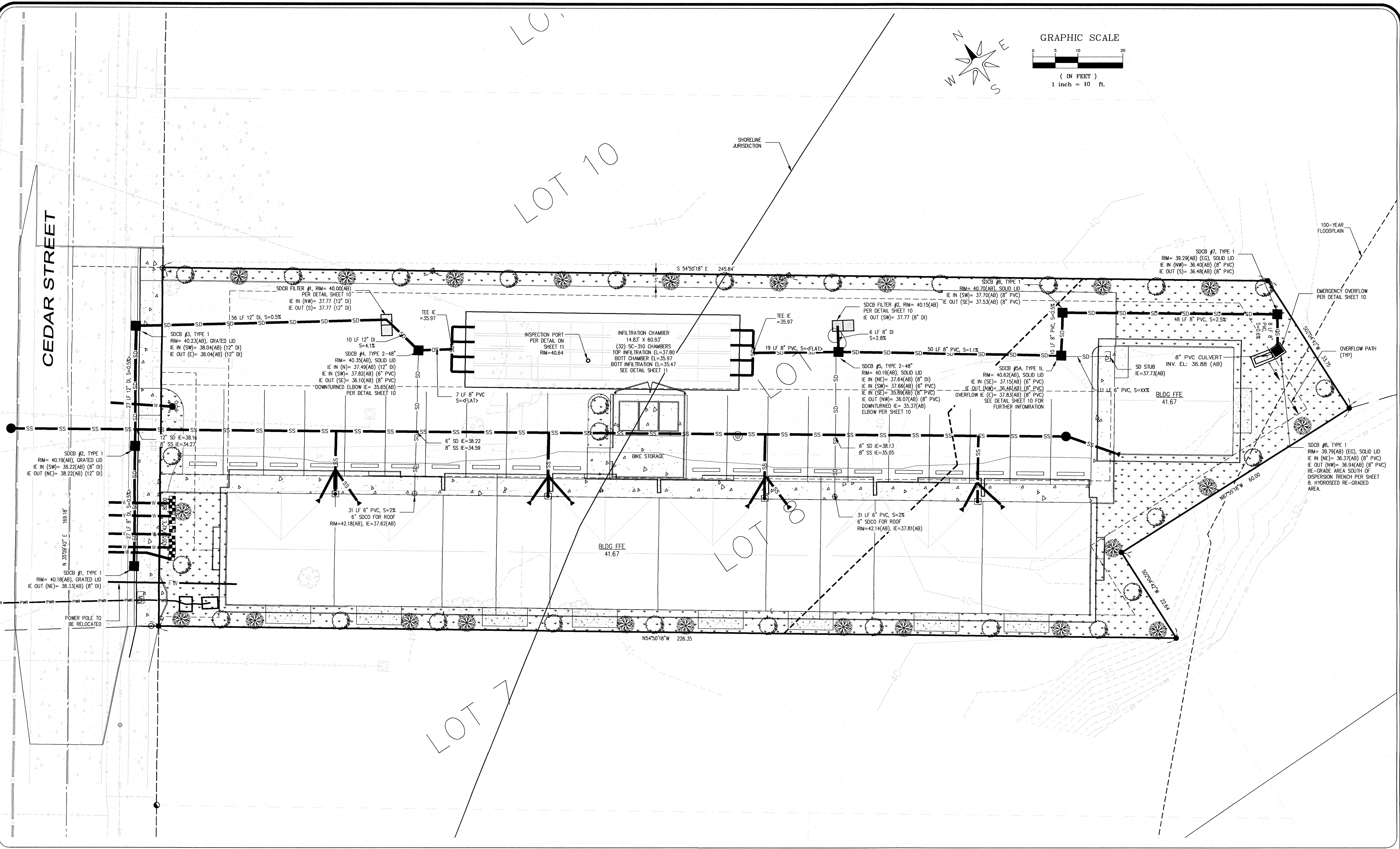
**TEMPORARY EROSION & SEDIMENTATION
CONTROL - PLANS & DETAILS**

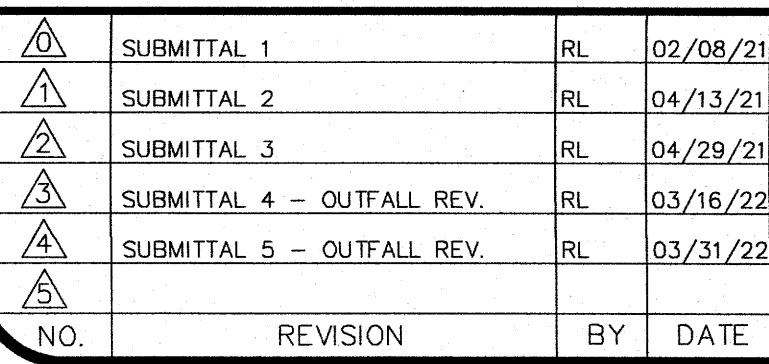
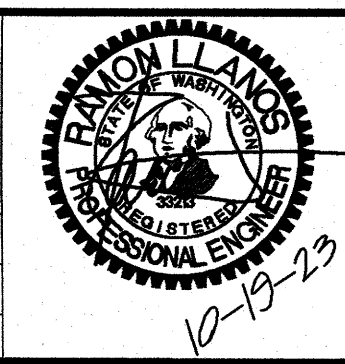
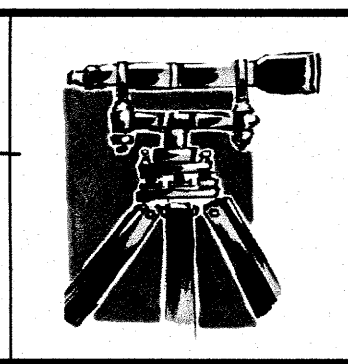
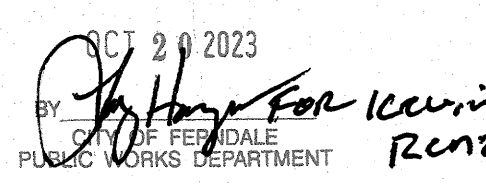
CEDAR VILLAS
FERNDAL, WHATCOM COUNTY, WASHINGTON
SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N, R. 3E, W.M.

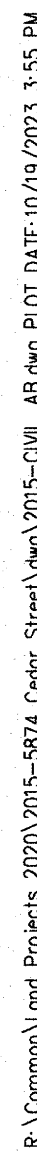
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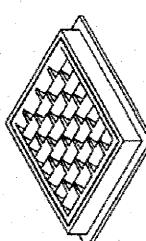
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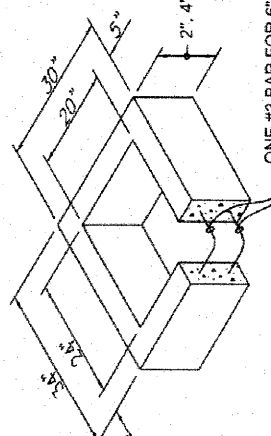
						<p>LDES, INC. 5160 INDUSTRIAL PL. #108 FERNDAL, WA 98248 PHONE 360-383-0620 FAX 360-383-0639</p>		<p>JOB NO.: 2015 DWG. NAME: 2015-CIVIL-AB.dwg DESIGNED BY: RL DRAWN BY: RL CHECKED BY: RL</p>		<p>ANDREY SAVCHUK 3348 BRESLIN LANE FERNDAL, WA</p>		<p>APPROVED BY:  R. L. SAVCHUK PUBLIC WORKS DEPARTMENT</p>		<p>ROAD & STORMWATER PLAN & PROFILE CEDAR VILLAS FERNDAL, WHATCOM COUNTY, WASHINGTON SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N., R. 3E., W.M.</p>		<p>SHEET 07 OF 14</p>	
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<table><tr><td>△</td><td>SUBMITTAL 1</td><td>RL</td><td>02/08/21</td></tr><tr><td>△</td><td>SUBMITTAL 2</td><td>RL</td><td>04/13/21</td></tr><tr><td>△</td><td>SUBMITTAL 3</td><td>RL</td><td>04/29/21</td></tr><tr><td>△</td><td>SUBMITTAL 4 - OUTFALL REV.</td><td>RL</td><td>03/16/22</td></tr><tr><td>△</td><td>SUBMITTAL 5 - OUTFALL REV.</td><td>RL</td><td>03/31/22</td></tr><tr><td>NO.</td><td>REVISION</td><td>BY</td><td>DATE</td></tr></table>				△	SUBMITTAL 1	RL	02/08/21	△	SUBMITTAL 2	RL	04/13/21	△	SUBMITTAL 3	RL	04/29/21	△	SUBMITTAL 4 - OUTFALL REV.	RL	03/16/22	△	SUBMITTAL 5 - OUTFALL REV.	RL	03/31/22	NO.	REVISION	BY	DATE	<div><p>LDES, INC. 5160 INDUSTRIAL PL. #108 FERNDAL, WA 98248 PHONE 360-383-0620 FAX 360-383-0639</p></div>		<div><p>JOB NO.: 2015</p><p>DWG. NAME: 2015-CIVIL_AB.dwg</p><p>DESIGNED BY: RL</p><p>DRAWN BY: RL</p><p>CHECKED BY: RL</p><p>ANDREY SAVCHUK 3348 BRESLIN LANE FERNDAL WA</p></div>		<div><p>APPROVED</p><p>OCT 20 2023</p><p>BY:  CITY OF FERNDAL PUBLIC WORKS DEPARTMENT</p></div>		<div><p>GRADING PLAN</p><p>CEDAR VILLAS FERNDAL, WHATCOM COUNTY, WASHINGTON SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N., R. 3E., WM.</p></div>		<div><p>SHEET</p><p>08</p><p>OF</p><p>14</p></div>	
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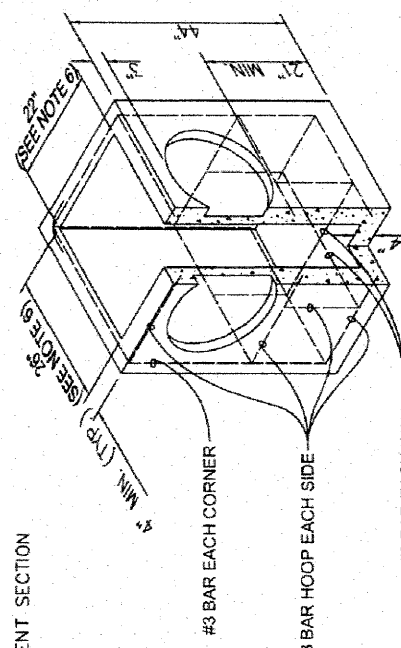


FRAME AND VANED GRATE



RECTANGULAR ADJUSTMENT SECTION

ONE #5 BAR FOR EACH VERTICAL INCREMENT (SPACED EQUALLY)



PRECAST BASE SECTION

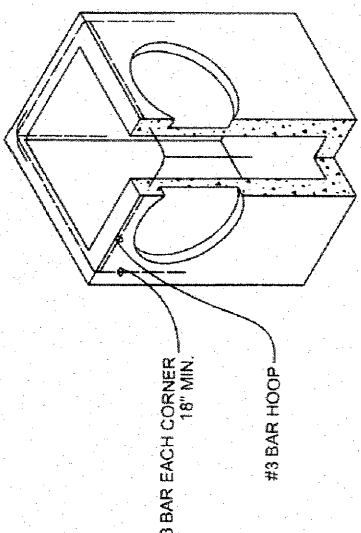
#25 BAR EACH CORNER
#25 BAR HOOP EACH SIDE

PIPE ALLOWANCES

PIPE MATERIAL	MAXIMUM DIAMETER
PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CIPROCON	12"
(WESDOT STD. SPEC. 9.05.209)	15"
FRP (WESDOT STD. SPEC. 9.05.191)	15"
FRP (FIBRE WALLING, 9.05.409)	15"
3-CORRUGATED POLYETHYLENE	15"
STORM SEWER PIPE	15"

NOTES:

1. Acceptable alternatives to the steel shown in the PRECAST BASE SECTION, when placed according to the WESDOT Standards, may be used for the CAST BASE SECTION. Material shall not be placed in the footings.
2. The frame and grate may be installed with the flange down, or, integrally with the PRECAST BASE SECTION may have a rounded top, and the walls may be sloped at a rate of 1/24 or steeper.
3. The opening shall be measured at the top of the Precast Base Section.
4. All group holes shall be grouted full after the basin has been poured.
5. The maximum width from the inner edge to the lowest pipe invert shall be 5'.
6. The frame and grate may be installed with the flange down, or, integrally with the PRECAST BASE SECTION may have a rounded top, and the walls may be sloped at a rate of 1/24 or steeper.
7. The opening shall be measured at the top of the Precast Base Section.
8. All group holes shall be grouted full after the basin has been poured.



ALTERNATE PRECAST BASE SECTION

(SEE NOTE 1)

#25 BAR EACH CORNER
#25 BAR HOOP

CATCH BASIN TYPE 1

STANDARD DETAIL #1-1

NOT TO SCALE

APPROVED

Public Works Director

DATE

8/11/17

APPROVED

Public Works Director

DATE

8/11/17

CATCH BASIN DIMENSIONS									
CATCH BASIN DIA.	WALL THK	BASE THK	MAXIMUM MAXIMUM SIZE	MINIMUM DISTANCE BETWEEN HANDRAILS	BASE INTEGRAL	MINIMUM BASE	MAXIMUM BASE	MINIMUM BASE	MINIMUM BASE
48"	4"	6"	36"	8"	0.23	0.15	0.15	0.15	0.15
54"	4.5"	6"	42"	8"	0.23	0.15	0.15	0.15	0.15
60"	5"	8"	48"	8"	0.25	0.25	0.25	0.25	0.25
72"	6"	8"	60"	12"	0.35	0.24	0.24	0.24	0.24
84"	8"	12"	72"	12"	0.38	0.29	0.29	0.29	0.29
96"	8"	12"	84"	12"	0.38	0.29	0.29	0.29	0.29
120"	10"	12"	96"	12"	0.38	0.29	0.29	0.29	0.29
144"	12"	12"	108"	12"	0.38	0.29	0.29	0.29	0.29

NOTE: 1. No steps are required when height is 4' or less.
 2. The bottom of the precast catch basin may be skewed to facilitate clearing.
 3. The rectangular frame and grate may be installed with the flange up or down. The flange may be installed with the flange up or down.
 4. Woodwork shall have a void thickness of 2" minimum to 25" maximum. Provide a 1.5" minimum depth between the woodwork wall and the adjacent precast concrete wall.
 5. The precast concrete wall shall be installed in accordance with the precast concrete wall specifications.

APPROVED _____
 Public Works Director
 8/11/17
 DATE
 NOVEMBER 23, 2016
 CATCH BASIN TYPE 2
 STANDARD DETAIL ST-3
 NOT TO SCALE

[illegible]

BID ITEM (INCLUDED SIDEWALK RAMPS)

VARIES 14' MIN. 6'-0"

3/8" EXPANSION JOINT (TYP.)

CEMENT CONC. PEDESTAL (TYP.)

CEMENT CONC. SIDEWALK

RAMP WITH 12:1 V SLOPE (TYP.)

SEE NOTE 1

CEMENT CONCRETE CURB & GUTTER

PLAN VIEW

15' MAX (SEE NOTE 5) 15' MAX (SEE NOTE 5)

45' MIN. (TYP.)

CEMENT CONC. PEDESTRIAN CURB (TYP.)

GRADE BREAK

6'-1"

CEMENT CONCRETE SIDEWALK

3/8" EXPANSION JOINT (TYP.)

SECTION

1/2" R (TYP.)

DRIVEWAY (BY OTHERS)

EXPANSION JOINT (TYP.)

CEMENT CONCRETE SIDEWALK

5'-0"

DEPRESSED CURB & GUTTER

CEMENT CONCRETE CURB & GUTTER

LEGEND

SLOPE IN EITHER DIRECTION

* 1.5% OR FLATTER RECOMMENDED FOR DESIGN/FORMWORK (2% MAX.)

** 7.5% OR FLATTER RECOMMENDED FOR DESIGN/FORMWORK (8.3% MAX.) (SEE NOTE 5)

NOTES:

1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILL ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTER-LINE AS REQUIRED AT 15' MAXIMUM SPACING WHEN DRIVEWAY WIDTH EXCEEDS 30'.
2. AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF DRIVEWAY ENTRANCES.
3. CEMENT CONCRETE SHALL BE CLASS A 4000 PSI.
4. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE LINE BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.
5. THE PEDESTRIAN RAMP LENGTH IS NOT REQUIRED TO EXCEED 15 FEET. WHEN APPLYING THE 15-FOOT MAX. LENGTH (MEASURED FROM BACK OF SIDEWALK) THE RUNNING SLOPE OF THE PEDESTRIAN RAMP IS ALLOWED TO EXCEED 8.3% USE A SINGLE CONSTANT SLOPE FROM BOTTOM OF RAMP TO TOP OF RAMP TO MATCH INTO THE SIDEWALK OVER A HORIZONTAL DISTANCE OF 15 FEET.

REFERENCE: WSDOT STD PLAN F-8010-04

NOVEMBER 25, 2016

CEMENT CONCRETE DRIVEWAY ENTRANCE STANDARD DETAIL R-8

APPROVED

Public Works Director

8/11/17

City of Portland

3/8"-NOTE:
MAX. 1/2"

AT CURB RAMP,
MATCH ROADWAY SLOPE,
COUNTER SLOPE 5% MAX

1" R

2"

2 1/2"

1/2" R

8"

FLUSH WITH GUTTER
PAN AT CURB RAMP
ENTRANCE

CURB RAMP/DRIVEWAY SECTION

1/2" R

24"

5-1/2"

1"

1-1/2"

1/2" R

12"

6"

1" R

5"

3/8"

TYPICAL SECTION

2"

9-1/4"

3"

CONTRACT JOINTS

GENERAL NOTES

1. CONTRACTION JOINTS OF ONE OF THE TYPES SHOWN ABOVE TO BE PLACED 10'C/C JOINTS MUST COMPLETELY SEVER THE STRUCTURE TO THE POINTS SHOWN. JOINTS MAY BE MADE BY INSERTING MINIMUM 3/16" BITUMINOUS FILLER DUMMY JOINTS. JOINTS SHALL BE CLEANED AND FILLER.
2. 2" WEEP HOLES TO BE PLACED ON EACH SIDE OF DRIVEWAY SECTIONS & A MAXIMUM 60' C/C IN CUT SECTIONS WHERE SIDEWALK DRAIN NOT REQUIRED BY PUBLIC WORKS DIRECTOR.
3. 3/8" EXPANSION JOINTS TO BE PLACED AT DRIVEWAY SECTIONS, CURB RETURNS, CURB RAMPS, & COLD JOINTS OR A MAXIMUM OF 80' C/C. EXPANSION JOINTS SHALL PROTRUDE 1" BELOW THE BOTTOM OF GUTTER.
4. CONCRETE SHALL BE CEMENT CONCRETE "CLASS 3000".
5. FINISHED WORK SHALL NOT VARY MORE THAN 1/8" IN GRADE AND 1/4" IN ALIGNMENT WHEN CHECKED WITH A 10' STRAIGHT EDGE.
6. EXPOSED SURFACES SHALL BE BRUSHED WITH A FIBER HAIR BRUSH.
7. WHITE PIGMENTED OR TRANSPARENT CUT COMPOUND SHALL BE USED AS OUTLINE IN THE STANDARD SPECIFICATIONS.
8. FURTHER REQUIREMENTS SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

NOVEMBER 25, 2016

**CURB AND GUTTER
INSTALLATION**

STANDARD DETAIL R-9
NOT TO SCALE

APPROVED _____

Public Works Director

8/11/17

Date _____

CITY OF TARRANT
REGISTRATION

EXISTING A.T.B. OR P.C.C.

2" MIN. HMA CL $\frac{1}{2}$ " PG 64-22, OVERLAY

7" MIN. HMA CL $\frac{1}{2}$ " PG 64-22

3/4" CRUSHED ROCK (2" MIN.)

THICKNESS TO BE EQUAL TO OR GREATER THAN EXISTING. FINAL 4" OF HMA SHALL BE PLACED IN TWO (2) 2" LIFTS.

EXISTING PAVEMENT

8" MIN. GRAVEL BASE

9"

SUITABLE COMPACTED BACKFILL (95% MODIFIED PROCTOR)

EXISTING A.C. OVERLAY ATB OVERLAY

EXISTING OIL MAT OR ASPHALT CONCRETE PAVEMENT

NOTES

1. THE PUBLIC WORKS DIRECTOR SHALL DETERMINE IF A PAVEMENT OVERLAY IS REQUIRED. ROAD SHOULDER AREAS SHALL BE COMPACTED TO 95% MODIFIED PROCTOR.

NOVEMBER 23, 2015

APPROVED

8/11/17

City of Eugene

Public Works Director

Engineering

STANDARD

EXISTING ROADWAY RESTORATION REPAIR

STANDARD DETAIL R-11

**3" DEEP "V" GROVE
AT 1/4 POINTS FOR 15"
RADIUS AND AT 1/8
POINTS FOR 20" RADIUS.**

**3/8" x 4-1/2" THRU
JOINTS AT CURB RETURNS**

5' TYP.

**3/8" x 2" MIN. DUMMY
JOINTS 20' C/C**

**3/4" DEEP "V" GROOVES
THRU JOINTS AT DRIVEWAYS**

**3/8" x 4-1/2" THRU
JOINTS AT DRIVEWAYS**

5' MIN.

SEE NOTE 3

**ASPHALT RAMP AT END OF
SIDEWALK TO MATCH EXISTING
PROVIDE 4'x4' LANDING**

**3/8" x 4-1/2" THRU
JOINTS**

2% MAX.

4" CEMENT CONCRETE

**2" of 3/4"
WASH ROCK**

**UNDISTURBED SUBGRADE OR
APPROVED MATERIAL COMPACTED
TO 95% OPTIMUM DENSITY.**

5' MIN.

**20' MIN TO
80' MAX**

3/8" x 4-1/2" THRU JOINTS

2' MIN.

5' TYP.

5' MIN.

PROPERTY LINE

NOTES:

1. SIDEWALKS IN COMMERCIAL ZONES SHALL BE 8' WIDE
2. WHEEL CHAIR RAMPS ARE TO BE LOCATED AT ALL RETURNS ACCORDING TO WSDOT AND IS LISTED ON DETAIL R-14
3. RAMP LENGTH IS NOT REQUIRED TO EXCEED 15 FEET. WHEN APPLYING THE 15-FOOT MAX. LENGTH, THE RUNNING SLOPE OF THE CURB RAMP IS ALLOWED TO EXCEED 2%. USE A SINGLE CONSTANT SLOPE FROM BOTTOM OF RAMP TO TOP OF RAMP TO MATCH INTO THE SIDEWALK OVER A HORIZONTAL DISTANCE OF 15 FEET. WHEN A RAMP IS CONSTRUCTED ON A RADIUS, THE 15-FOOT MAX. LENGTH IS MEASURED ON THE INSIDE RADIUS ALONG THE BACK OF THE RAMP.

APRIL 21, 2017

**TYPICAL SIDEWALK PLAN
WITH CROSS SECTION**

STANDARD DETAIL R-12

8/11/17

---STREET---

MAILBOXES

5' MIN

3' MIN SIDEWALK

BACK OF CURB

MAILBOX LOCATION VARIES

CLUSTER BOX UNITS

FRONT

FRONT

SIDEWALK FINISH

6"

VARIES

FACE OF CURB

ADDRESS

NOTES:

1. CLUSTER BOX UNITS MUST BE TYPE "APPROVED BY THE POSTMASTER GENERAL" WITH A UNIFORM BOX STYLE AND METHOD OF ADDRESS IDENTIFICATION PER EACH STANDARD
2. LOCATION IS SUBJECT TO APPROVAL BY THE CITY AND POSTMASTER FOR PROTECTION OF VIEWS AND ACCESS.

APRIL 21, 2017

APPROVED






8/11/17

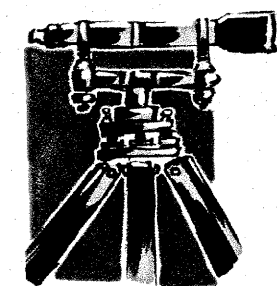
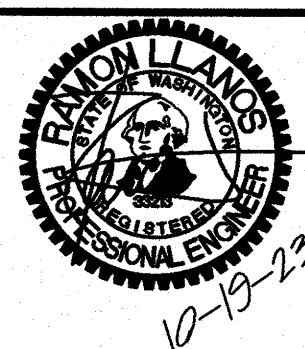
Public Works Director

MAILBOX STANDARD

STANDARD DETAIL M-2

NOT TO SCALE

	SUBMITTAL 1	RL	02/08/21
	SUBMITTAL 2	RL	04/13/21
	SUBMITTAL 3	RL	04/29/21
	SUBMITTAL 4 – OUTFALL REV.	RL	03/16/22
	SUBMITTAL 5 – OUTFALL REV.	RL	03/31/22
NO.	REVISION	BY	DATE



LDES, INC.
5160 INDUSTRIAL PL. #1
FERNDALE, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

JOB NO.:	2015
DWG. NAME:	2015-CIVIL_AB.dwg
DESIGNED BY:	RL
DRAWN BY:	RL
CHECKED BY:	RL

ANDREY SAVCHUK
3348 BRESLIN LANE
FERNDALE WA

APPROVED

BY [Signature]
CITY OF FERRDALE
PUBLIC WORKS DEPARTMENT

ROAD & STORM TYPICAL DETAILS

CEDAR VILLAS
FERNDAL, WHATCOM COUNTY, WASHINGTON
SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N., R. 3E., W.M.

SHEET

09

OF

14

R:\Common\Land Projects\2020\2015-5874-Ord. Street\Map\2015-DWL AB.dwg PLOT DATE: 10/19/2023 2:05 PM



STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-310 OR SC-740.
- CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE (PP) WITH 10% FIBER REINFORCEMENT.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPED FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE ASPHALT PAVEMENT DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL MEET ASTM F2622 (POLYETHYLENE) OR ASTM F2418-16 (POLYPROPYLENE) "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2797 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.50 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2797 AND BY AASHTO FOR THE THERMOPLASTIC PIPE.
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE ASPHALT PAVEMENT DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET, THE 50-YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2622 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
 - STRUCTURAL CROSS SECTION DETAIL, ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

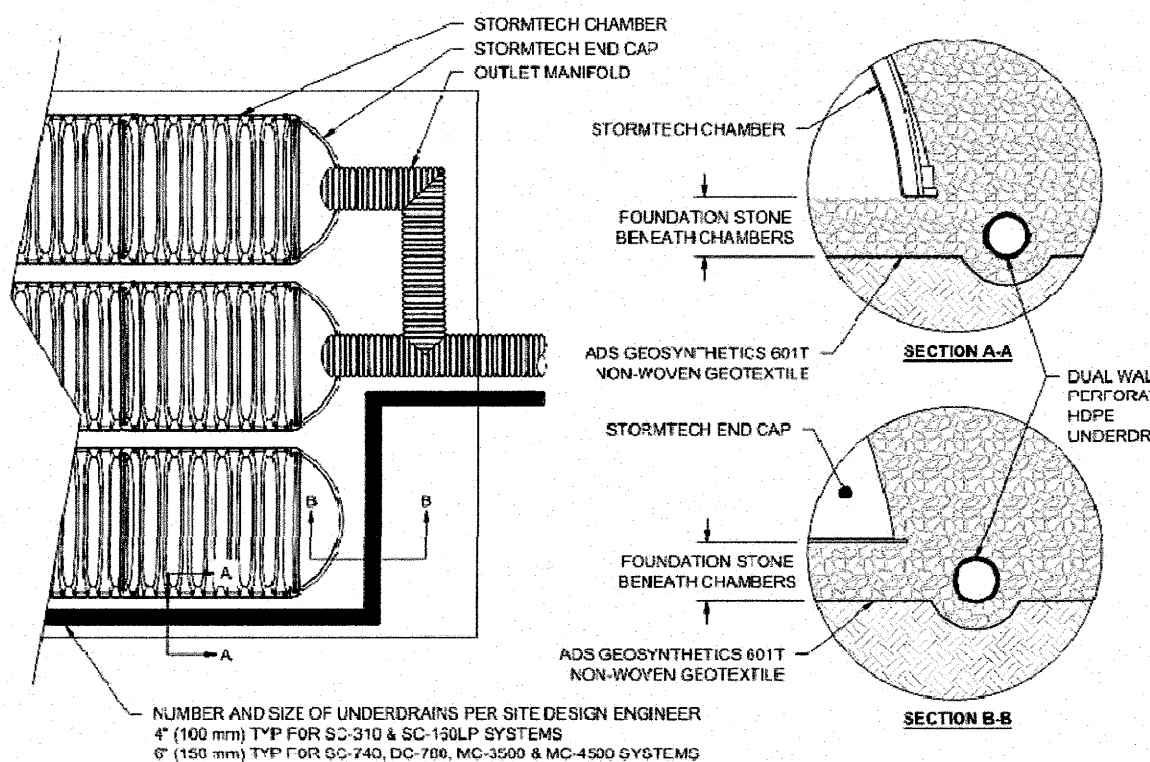
IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740 DEC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONE SPILLER LUGS (LUGS) ON THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELLED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEALED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4" (20 mm) DIA.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

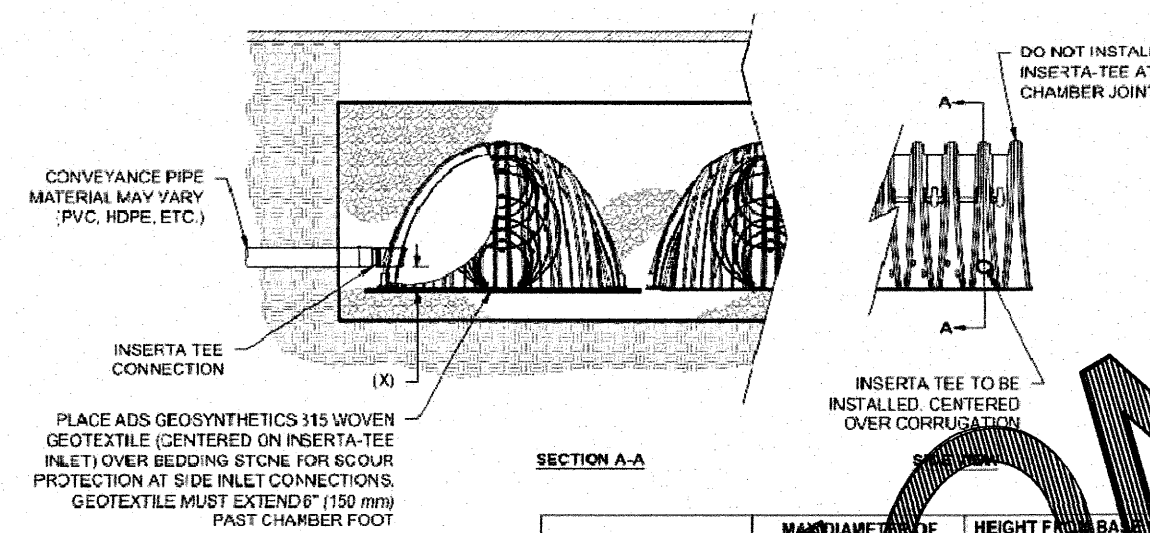
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740 DEC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE STORMTECH SC-310/SC-740 DEC-780 CONSTRUCTION GUIDE.
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740 DEC-780 CONSTRUCTION GUIDE".
- FULL 36" (914 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DRIVING. USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

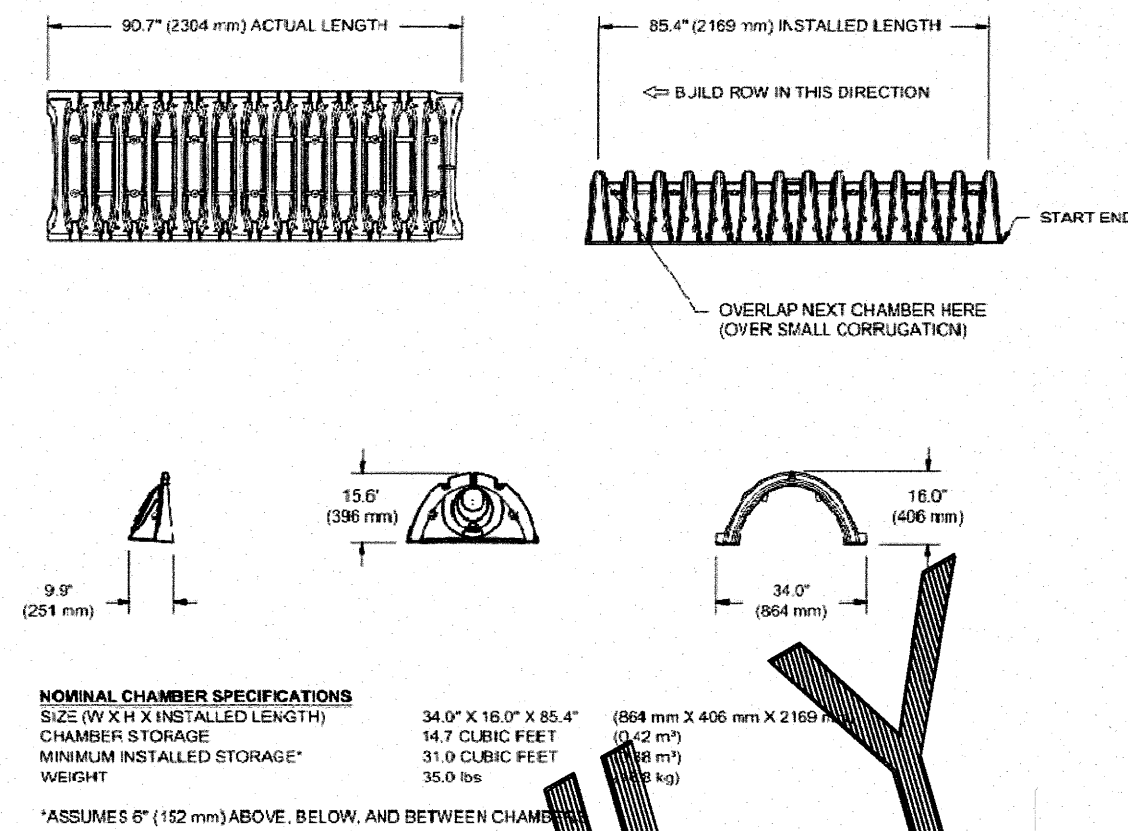
CONTACT STORMTECH AT 1-888-862-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



5 UNDERDRAIN DETAIL



6 INSERT TEE SIDE INLET DETAIL

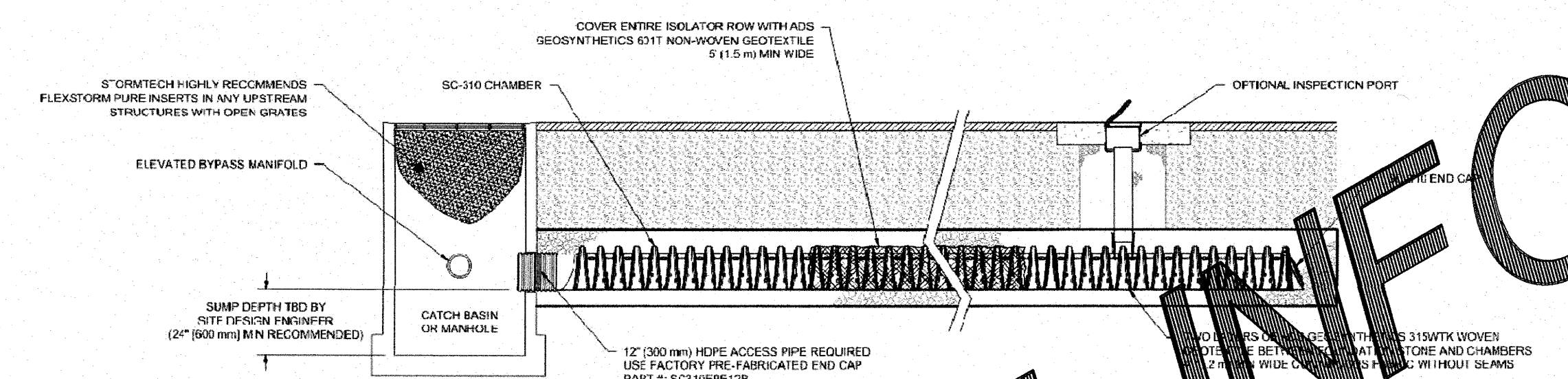


CHAMBER	MANUFACTURER	HEIGHT	WEIGHT	WEIGHT
SC-310	ADS	4' (1219 mm)	147 lb (67 kg)	147 lb (67 kg)
SC-740	ADS	8' (2438 mm)	294 lb (133 kg)	294 lb (133 kg)

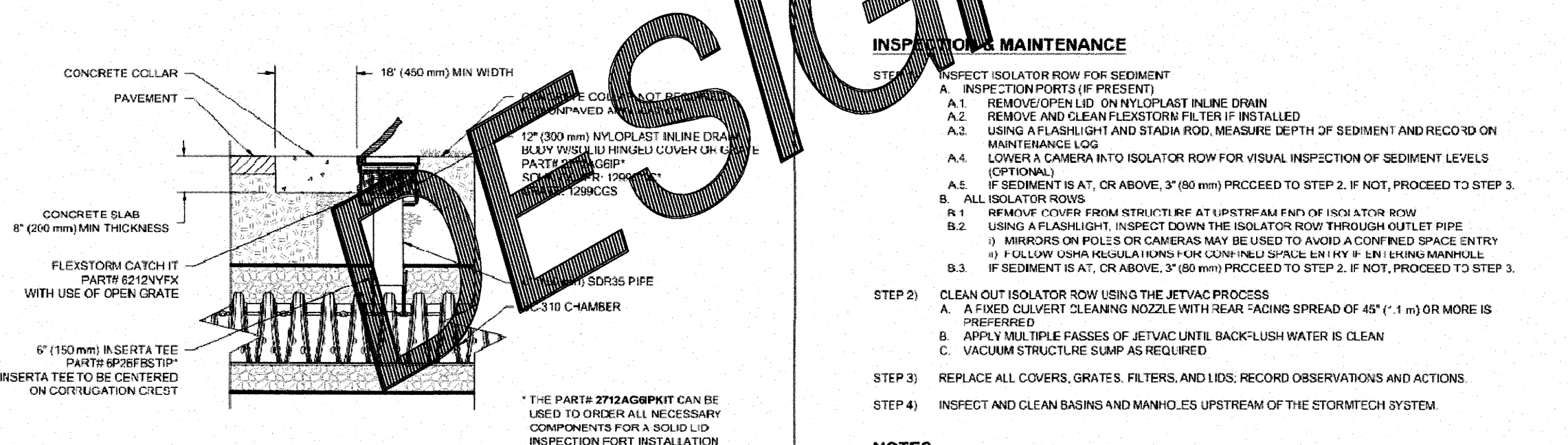
NOTE: ALL DIMENSIONS ARE NOMINAL.

2 SC-310 TECHNICAL SPECIFICATIONS

CHAMBER	MANUFACTURER	HEIGHT	WEIGHT	WEIGHT
SC-310	ADS	4' (1219 mm)	147 lb (67 kg)	147 lb (67 kg)
SC-740	ADS	8' (2438 mm)	294 lb (133 kg)	294 lb (133 kg)



3 SC-310 ISOLATOR ROW DETAIL



4 SC-310 6" (150 mm) INSPECTION PORT DETAIL

NO.	REVISION	BY	DATE
1	SUBMITTAL 1	RL	02/08/21
2	SUBMITTAL 2	RL	04/13/21
3	SUBMITTAL 3	RL	04/28/21
4	SUBMITTAL 4 - OUTFALL REV.	RL	03/16/22
5	SUBMITTAL 5 - OUTFALL REV.	RL	03/31/22

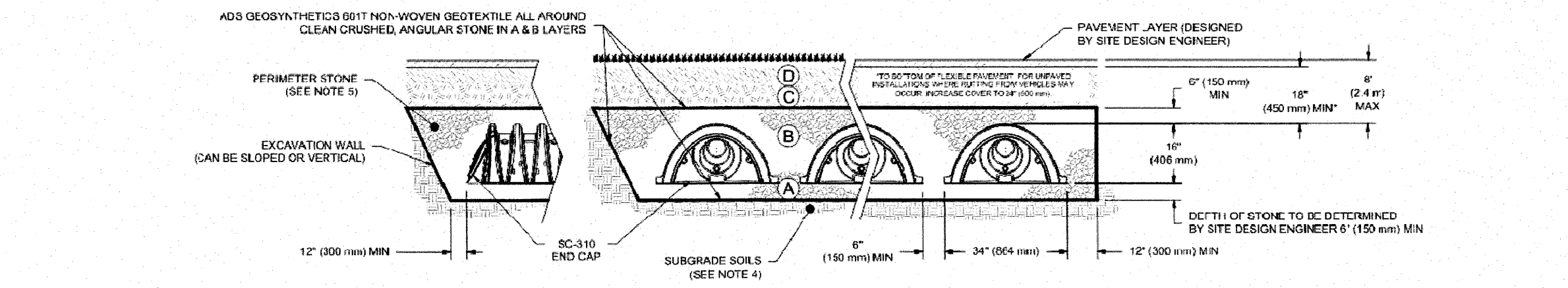
- ### INSPECTION MAINTENANCE
- STEP 1: INSPECT ISOLATOR ROW FOR SEDIMENT
- INSPECT ISOLATOR ROW FOR SEDIMENT
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR ROWS
 - REMOVE COVER FROM STRIKIT BE AT UPSTREAM END OF ISOLATOR ROW
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - MIRRORS OR POLLS OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF NEEDED USING MANHOLE EQUIPMENT FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR CONSTRUCTION REQUIREMENTS.
- STEP 2: CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR SPREAD OF 45° (1:1) OR MORE IS PREFERRED.
 - REPLACE MULTIPLE PASSES OF JETVAC UNTIL BACKLASH WATER IS CLEAN
 - VACUUM STRUCTURE SLURRY AS REQUIRED
- STEP 3: REPLACE ALL COVERS, GRATES, FILTERS, AND LOGS, RECORD OBSERVATIONS AND ACTIONS
- STEP 4: INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM

- ### NOTES
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION, ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
 - CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER D STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF THE 'E' LAYER. NOTE THAT PAVEMENT SUBGRADE ABOVE GRADE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDEDMENT STONE (1" LAYER) TO 18" (457 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBGRADE MAY BE A PART OF THE 'C' LAYER.	GRANULAR, WELL-GRADED SOIL/AGGREGATE MIXTURES, <5% FINER OR PROPOSED AGGREGATE FINER OR PROPOSED AGGREGATE	AASHTO M 101 A-1, A-2, A-3 OR AASHTO M 31 3, 307, 4, 407, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACT AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL-GRADED MATERIAL AND 98% RELATIVE DENSITY FOR PROCESSSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (5,443 kg). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (8,896 kg).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (1" LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M 31 3, 307, 4, 407, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M 31 3, 307, 4, 407, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR 3/4" STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M 31) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'C' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERAGE S WITH A VIBRATORY COMPACTOR. WHERE RULING SURFACES MAY BE COMPACTIONED BY CONSTRUCTION FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY HANDING OR DRAVING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR CONSTRUCTION REQUIREMENTS.



- ### NOTES:
- SC-310 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2622 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2797 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION ON, EMBEDMENT, AND FILL MATERIALS.
 - THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION SOIL WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
 - PERMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBGRADE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE OFFICE DESIGN ENGINEER'S DISCRETION.

1 SC-310 CROSS SECTION DETAIL

NO.	REVISION	BY	DATE
1	SUBMITTAL 1	RL	02/08/21
2	SUBMITTAL 2	RL	04/13/21
3	SUBMITTAL 3	RL	04/28/21
4	SUBMITTAL 4 - OUTFALL REV.	RL	03/16/22
5	SUBMITTAL 5 - OUTFALL REV.	RL	03/31/22

DRAWN: JLM
REVIEWED: JLM
REV: NOT TO SCALE

DATE: 08/28/18
PROJECT NO.:
SC-310
STANDARD DETAILS

4640 TRUENAN BLVD
HILLIARD, OH 43026

ADS
ADVANCED DRAINAGE SYSTEMS, INC.

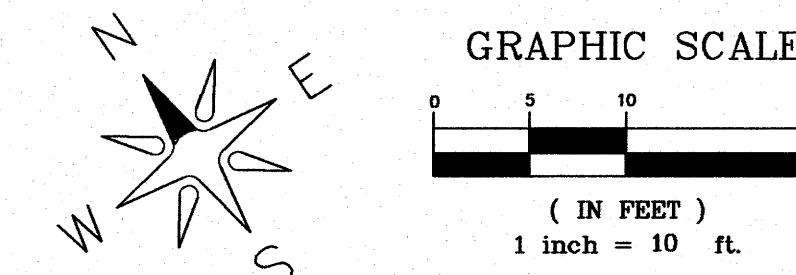
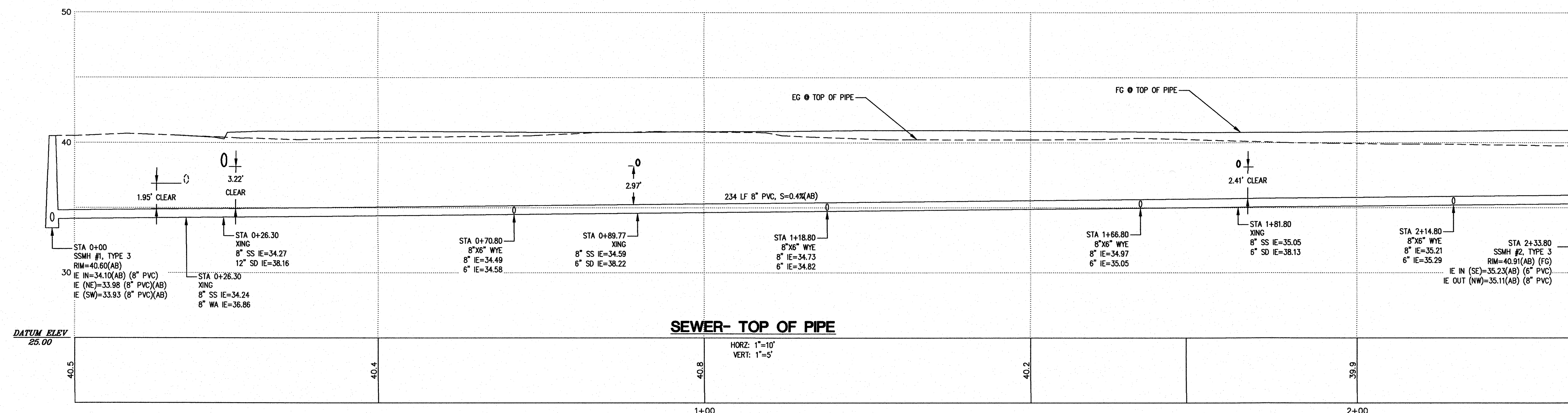
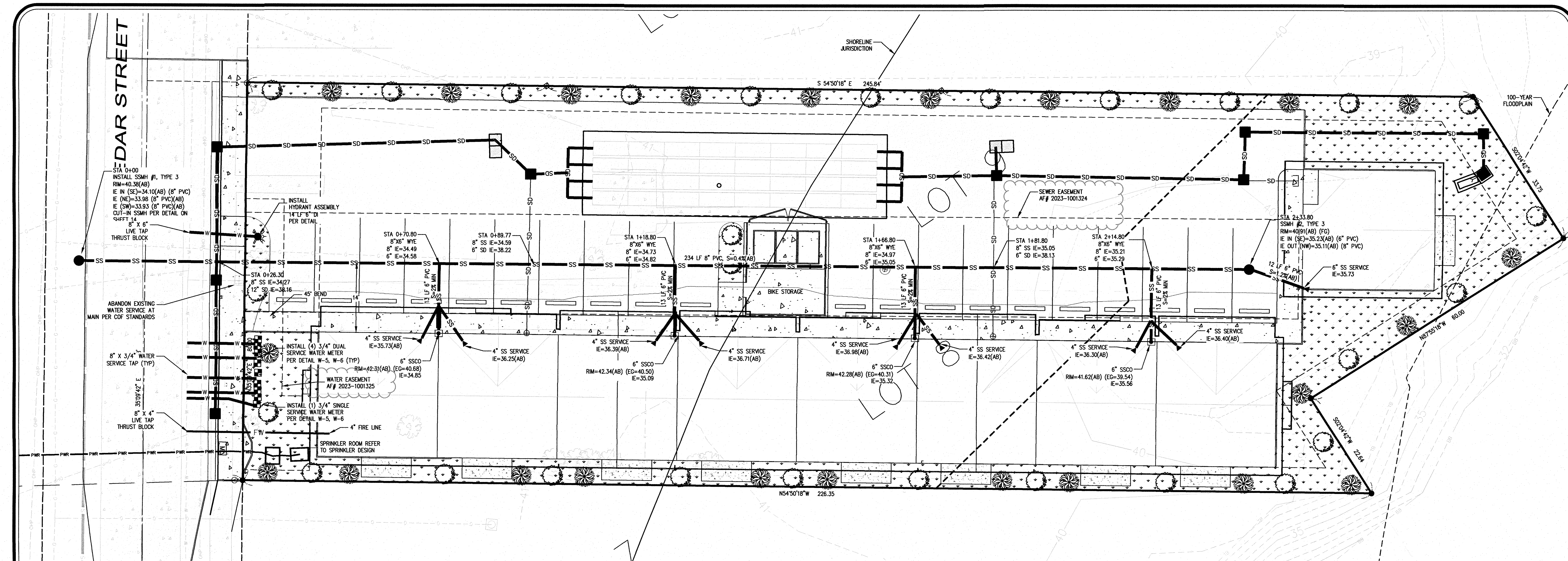
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1 OF 1

ADVANCED DRAINAGE SYSTEMS, INC. (ADS) HAS PREPARED THIS DETAIL BASED ON REFERENCED STANDARDS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT. NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE FOR INFORMATION ONLY. IT IS THE SITE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEET OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

RECORD DRAWING

00744.011 10/20/23 RH

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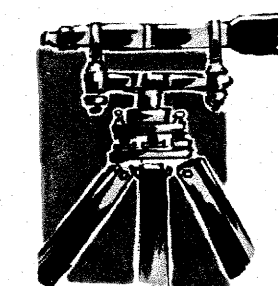
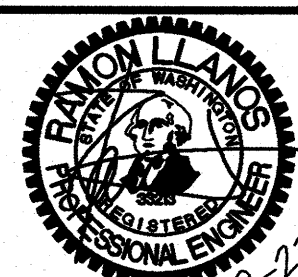


SEWER NOTE:
1. LOCATE AND ABANDON THE EXISTING HOUSE SEWER SERVICE AT THE MAIN.

FIRE SUPPRESSION INSTALLATION NOTES:
1. A MINIMUM OF 12" VERTICAL SEPARATION WILL BE REQUIRED AT ALL ELECTRICAL CROSSINGS.
2. FIRE LINE SHALL BE EXTENDED TO THE RISER FLANGE IN THE BUILDING PRIOR TO TESTING.
3. PUBLIC WORKS AND THE BUILDING DEPARTMENT SHALL INSPECT FIRE LINE.
4. FIRE LINE MUST BE INSTALLED OR DIRECTED BY A LICENSED FIRE LINE INSTALLER VERIFIED TO THE BUILDING DEPARTMENT.

RECORD DRAWING

△	SUBMITTAL 1	RL	02/08/21
△	SUBMITTAL 2	RL	04/13/21
△	SUBMITTAL 3	RL	04/29/21
△	SUBMITTAL 4 - OUTFALL REV.	RL	03/16/22
△	SUBMITTAL 5 - OUTFALL REV.	RL	03/31/22
NO.	REVISION	BY	DATE



LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDAL, WA 98248
PHONE 360-383-0620
FAX 360-383-0639

JOB NO.:	2015
DWG. NAME:	2015-CIVIL_AB.dwg
DESIGNED BY:	RL
DRAWN BY:	RL
CHECKED BY:	RL

ANDREY SAVCHUK
3348 BRESLIN LANE
FERNDAL, WA

APPROVED

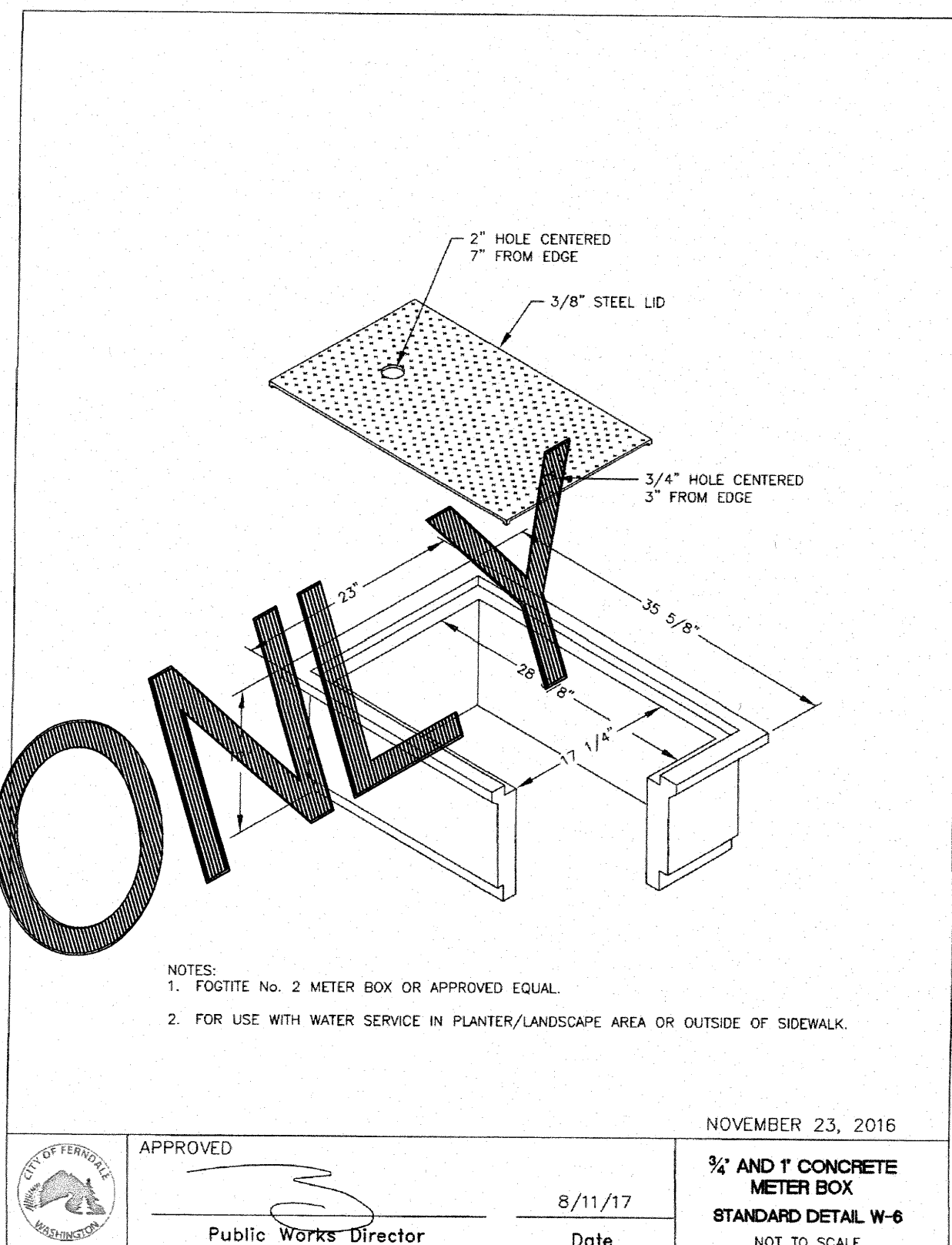
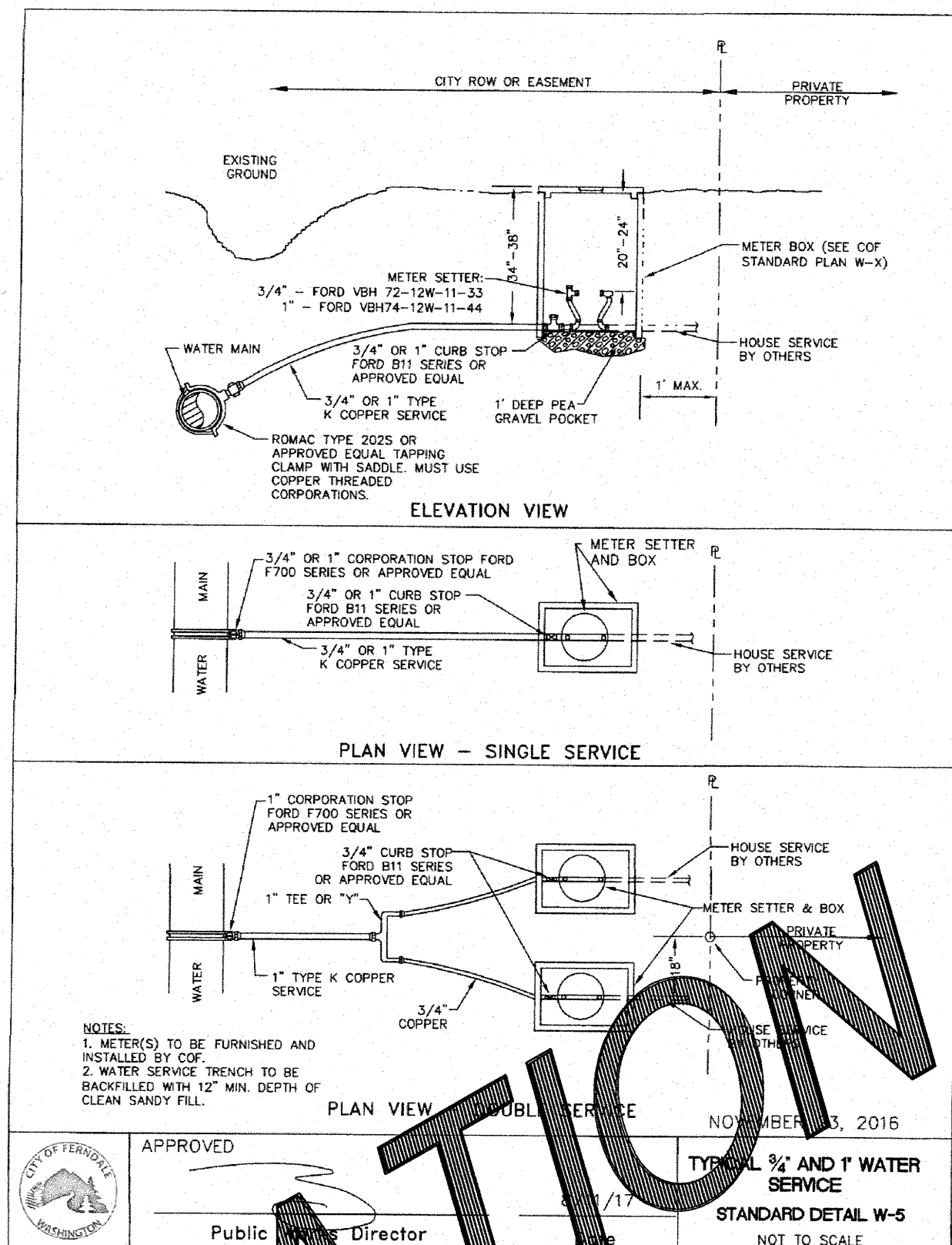
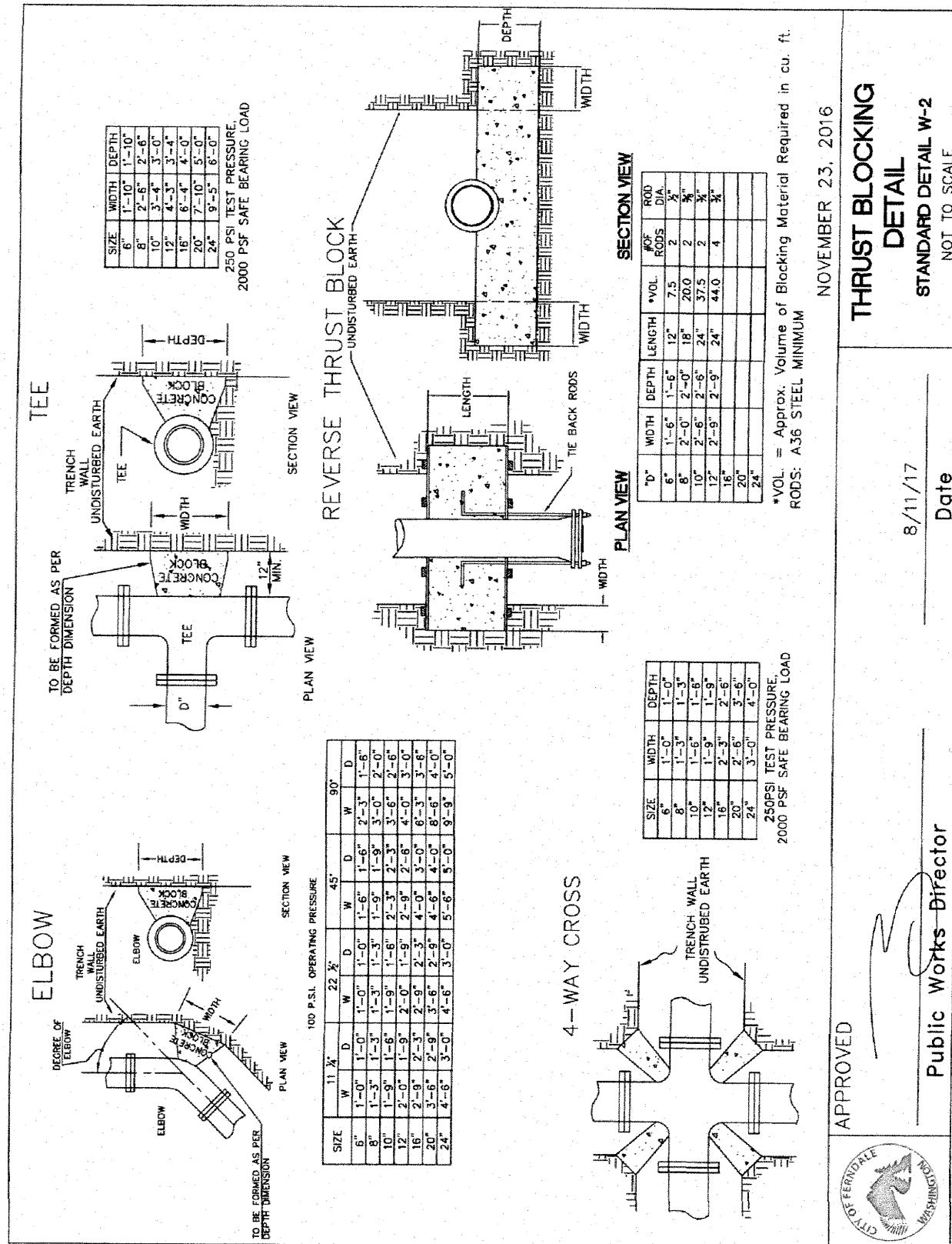
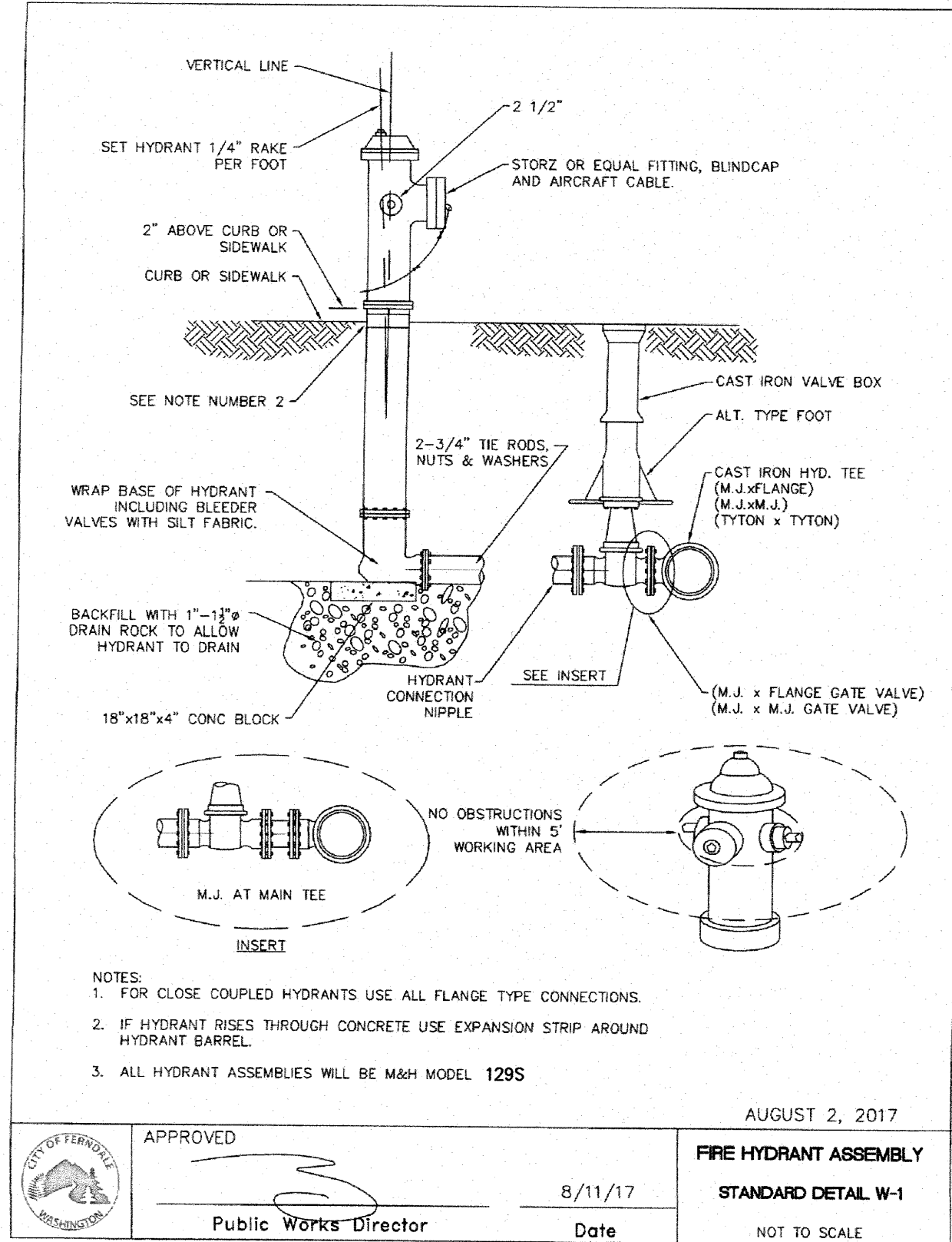
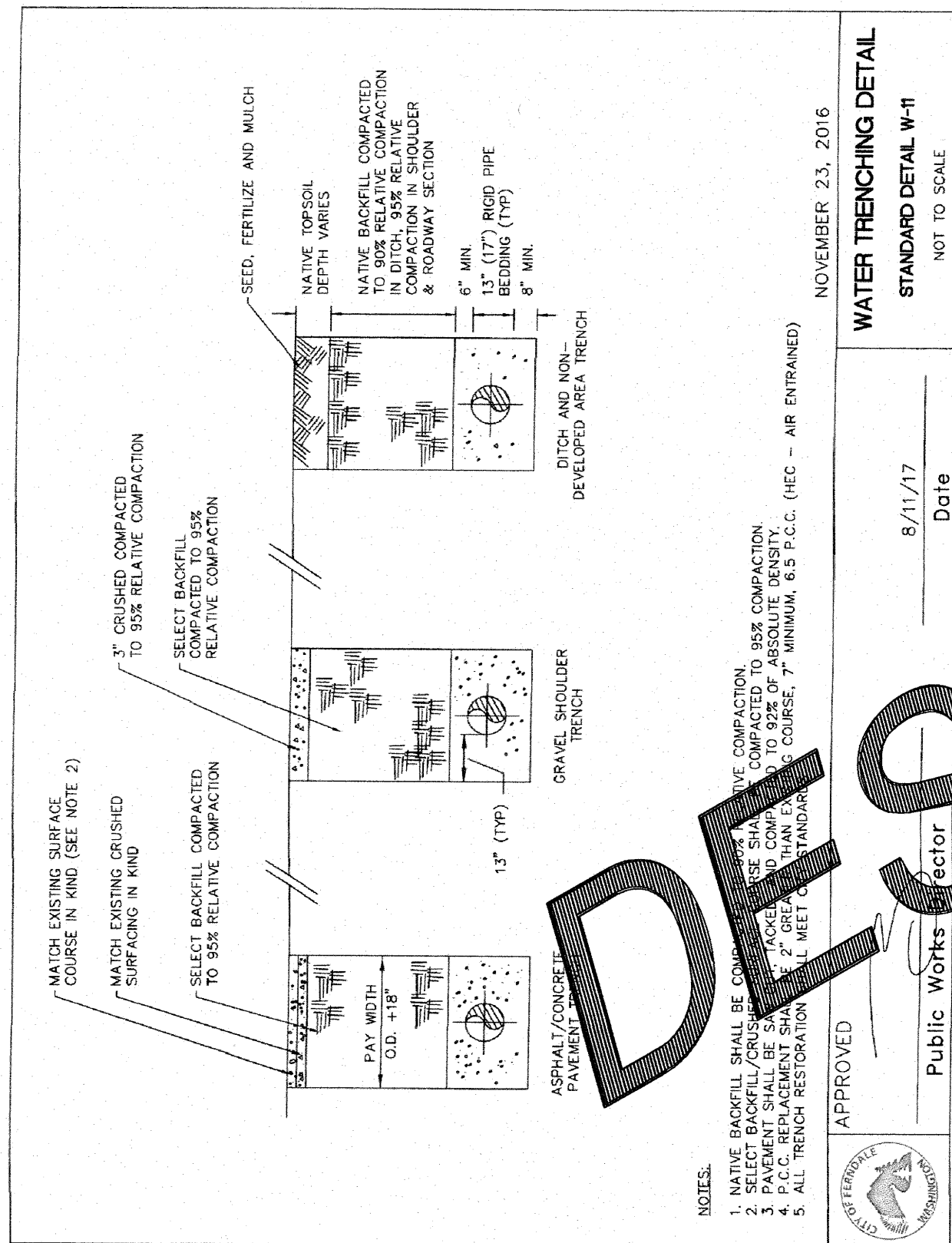
OCT 20 2023
BY *[Signature]*
PUBLIC WORKS DEPARTMENT

**WATER & SEWER
PLAN & PROFILE**

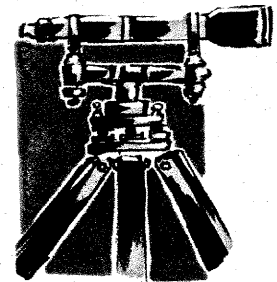
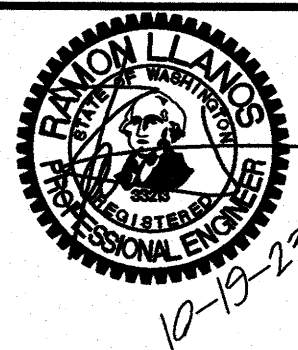
CEDAR VILLAS

FERNDAL, WHATCOM COUNTY, WASHINGTON
SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N, R. 3E, W.M.

SHEET
12
OF
14



△	SUBMITTAL 1	RL	02/08/21
△	SUBMITTAL 2	RL	04/13/21
△	SUBMITTAL 3	RL	04/29/21
△	SUBMITTAL 4 - OUTFALL REV.	RL	03/16/22
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LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDAL, WA 98248
PHONE 360-383-0620
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DESIGNED BY:	RL
DRAWN BY:	RL
CHECKED BY:	RL

ANDREY SAVCHUK
3348 BRESLIN LANE
FERNDAL, WA

APPROVED

APPROVED: *[Signature]*
BY: *[Signature]*
PUBLIC WORKS DEPARTMENT

WATER
TYPICAL DETAILS

CEDAR VILLAS

FERNDAL, WHATCOM COUNTY, WASHINGTON
SITUATE IN A PORTION OF THE NE 1/4, SW 1/4 OF SECTION 20, T. 39 N., R. 3E, W.M.

SHEET
13
OF
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RECORD DRAWING

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