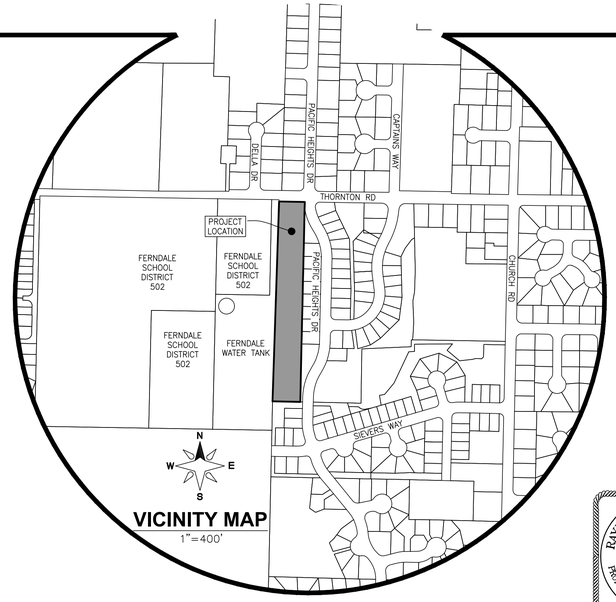
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, T39N., R1E., W.M.
CITY OF FERNDALE, WHATCOM COUNTY, WASHINGTON

THORNTON HEIGHTS
CONSTRUCTION PLANS



VICINITY MAP
1"=400'

CONTACT INFORMATION

CIVIL ENGINEER
LDES, INC.
5160 INDUSTRIAL PL., SUITE 108
FERNDALE, WA 98248
CONTACT: RAMON LLANOS, PE.
EMAIL: RAMON@LDESINC.COM
PHONE: (360) 383-0620

OWNER
MATTHEW LYNCH
6420 CHURCH RD
FERNDALE, WA 98248
EMAIL: RUBICONIDC@GMAIL.COM
PHONE: (360) 318-4825

SURVEYORS
LDES, INC.
5160 INDUSTRIAL PL., SUITE 108
FERNDALE, WA 98248
CONTACT: RAY PETERSON, PLS
EMAIL: RAY@LDESINC.COM
PHONE: (360) 383-0620

RAMON LLANOS — STATE OF WASHINGTON — 39211 — REGISTERED — PROFESSIONAL ENGINEER

RECORD DRAWINGS PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THE IMPROVEMENTS IN THORNTON HEIGHTS HAVE BEEN INSPECTED BY LDES INC. AND TO THE BEST OF MY KNOWLEDGE, HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE CITY OF FERNDALE DEVELOPMENT STANDARDS, THE CITY OF FERNDALE MUNICIPAL CODE, SUBSEQUENT STANDARDS ADOPTED BY REFERENCE THEREIN, AND STANDARD ENGINEERING PRACTICE

RAMON LLANOS, PE — 2-7-25 DATE

RAYMOND D. PETERSON — STATE OF WASHINGTON — 49287 — REGISTERED — PROFESSIONAL LAND SURVEYOR

RECORD DRAWINGS PROFESSIONAL CERTIFICATION

I HEREBY 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.

RAYMOND PETERSON, PLS — 2-7-25 DATE

SHEET INDEX

ABBREVIATIONS

AB	=	ASBUILT	FND	=	FOUND	SCH	= SCHEDULE
AC	=	ACRE	GND	=	GROUND	SD	= STORM DRAIN
AF#	=	AUDITORS FILE NUMBER	GUTT	=	GUTTER	SDCB	= STORM DRAIN CATCH BASIN
APPROX	=	APPROXIMATE	GV	=	GATE VALVE	SDCO	= STORM DRAIN CLEANOUT
ASPH	=	ASPHALT	HYD	=	FIRE HYDRANT	SDMH	= STORM DRAIN MANHOLE
BLDG	=	BUILDING	IE	=	INVERT ELEVATION	SERV	= SERVICE
BMP	=	BEST MANAGEMENT PRACTICE	INV	=	INVERT	SF	= SQUARE FEET
BNDRY	=	BOUNDARY	IRRIG	=	IRRIGATION	SQ.IN.	= SQUARE INCHES
BVCS	=	BEGINNING OF VERTICAL CURVE STATION	JBOX	=	JUNCTION BOX	SS	= SANITARY SEWER
BVCE	=	BEGINNING OF VERTICAL CURVE ELEVATION	lbs.	=	POUNDS	SSCO	= SANITARY SEWER CLEAN OUT
CB	=	CATCH BASIN	LF	=	LINEAR FEET	SSMH	= SANITARY SEWER MANHOLE
CL	=	CENTERLINE	LT	=	LEFT	ST	= STREET
CL	=	CLASS	MAX	=	MAXIMUM	STD/STND	= STANDARD
CMP	=	CORRUGATED METAL PIPE	MIN	=	MINIMUM	STA	= STATION
CO	=	CLEANOUT	MON	=	MONUMENT	STRC	= STRUCTURE
CONC	=	CONCRETE	N	=	NORTH	SWALK	= SIDEWALK
COR	=	CORNER	NIC	=	NOT IN CONTRACT	SWMF	= STORM WATER MANAGEMENT FILTER
CPDP	=	CORRUGATED POLYETHYLENE DRAIN PIPE	NO.	=	NUMBER	SWMM	= STORM WATER MANAGEMENT MANUAL
CPP	=	CORRUGATED POLYETHYLENE PIPE	O.C.	=	ON CENTER	SWPPP	= STORMWATER POLLUTION PREVENTION PLAN
CSTC	=	CRUSHED SURFACING TOP COURSE	O.D.	=	OUTSIDE DIAMETER	TA	= TOP OF ASPHALT
CSBC	=	CRUSHED SURFACING BASE COURSE	O/S	=	OFFSET	TB	= THRUST BLOCK
CTRL	=	CONTROL	PC	=	POINT OF CURVATURE	TBM	= TEMPORARY BENCH MARK
CULV	=	CULVERT	PERF	=	PERFORATED PIPE	TC	= TOP OF CONCRETE
DEG	=	DEGREE	PERM	=	PERMANENT	TEL/TELE	= TELEPHONE
DEMO	=	DEMOLITION	POB	=	POINT OF BEGINNING	TEMP	= TEMPORARY
DI	=	DUCTILE IRON	PP	=	POWER POLE	TESC	= TEMPORARY EROSION & SEDIMENT CONTROL
DOE	=	DEPARTMENT OF ECOLOGY	PRP/PROP	=	PROPOSED	TP	= TOP OF PAVEMENT
DTL	=	DETAIL	PSE	=	PUGET SOUND ENERGY	TS	= TOP OF SIDEWALK
DWGS	=	DRAWINGS	PT	=	POINT OF TANGENCY	TW	= TOP OF WALL
E	=	EASTING	PVC	=	POLYVINYL CHLORIDE PIPE	TYP	= TYPICAL
EA	=	EAST	PVI	=	POINT OF VERTICAL INTERSECTION	UG	= UNDERGROUND
EG	=	EXISTING GROUND	PWR	=	POWER	VC	= VERTICAL CURVE
EL/ELEV	=	ELEVATION	R	=	RADIUS	VEG/VEGE	= VEGETATION
EOP	=	EDGE OF PAVEMENT	RET	=	RETAINING	W	= WEST
ESMT	=	EASEMENT	RIM	=	RIM	WA	= WATER
EVCS	=	END OF VERTICAL CURVE STATION	ROW	=	RIGHT OF WAY	WM	= WATER MAIN
EVCE	=	END OF VERTICAL CURVE ELEVATION	RR	=	RAILROAD	WM	= WATER METER
EX/EXIST	=	EXISTING	RT	=	RIGHT	WSDOT	= WASHINGTON DEPARTMENT OF TRANSPORTATION
FF/FFE	=	FINISH FLOOR	RY	=	ROOF AND YARD	W/IN	= WITHIN
FG	=	FINISH GROUND	S	=	SLOPE	X-ING	= CROSSING
FH	=	FIRE HYDRANT	S	=	SOUTH	ø	= DIAMETER
FL	=	FLOW LINE	SAN	=	SANITARY		

PROJECT SUMMARY

OWNER	MATTHEW LYNCH 6240 CHURCH RD FERNDALE, WA 98248
SITE ADDRESS	2593 THORNTON ST
PARCEL NO.	390124 416472 0000
SITE AREA	173,205 SF (3.98 ACRES)
CITY ZONING	RS LOW-SINGLE FAMILY DWELLING
PROJECT DESCRIPTION	-10 LOT SUBDIVISION -PROVIDE STORM, SEWER, WATER & DRY UTILITIES -PAVED ACCESS ROAD W/ CONCRETE SIDEWALK -STORMWATER FACILITIES

PROPOSED LEGEND

SANITARY SEWER MANHOLE	SS — SS — SANITARY SEWER LINE
SANITARY SEWER CLEANOUT	FM — FM — SANITARY SEWER FORCE MA
SANITARY SEWER SERVICE	SD — SD — STORM DRAIN LINE
STORM DRAIN CATCH BASIN TYPE 2	SD — SD — STORM CULVERT
STORM DRAIN CATCH BASIN TYPE 1	PRF — PRF — PERFORATED STORM PIPE
STORM AREA DRAIN	RY — RY — ROOF & YARD DRAIN
STORM DRAIN SERVICE	W — W — WATER LINE
STORM DRAIN CLEANOUT	RW — RW — RECLAIMED WATER
STORM DRAIN ROOF DOWNSPOUT	IRG — IRG — IRRIGATION
FIRE HYDRANT	G — G — GAS LINE
WATER METER	UTL — COMMON UTILITIES
GATE VALVE	PWR — PWR — POWER
BLOW-OFF	C — C — CONDUIT
THRUST BLOCK	FO — FO — FIBER OPTIC
PRESSURE RELIEF VALVE	DITCH LINE
FIRE DEPARTMENT CONNECTION (FDC)	CUT — DAYLIGHT CUT LINE
POST INDICATOR VALVE (PIV)	FILL — DAYLIGHT FILL LINE
IRRIGATION BOX	FENCE
WELL	GUARDRAIL
GAS METER	RETAINING WALL
POWER TRANSFORMER	ROCKERY
POWER VAULT	ROAD STRIPING
POWER JUNCTION BOX	FACE OF CURB
GUY POLE	TOP BACK OF CURB
UTILITY POLE	BUILDING
UTILITY POLE ANCHOR	ROOF
STREET LIGHT	DECK
SIGN	LOT LINE
MAIL BOX	CENTERLINE
POST OR BOLLARD	RIGHT-OF-WAY
RIP RAP	EASEMENT
SHRUB	SETBACK
TREE - DECIDUOUS	ASPHALT
TREE - CONIFEROUS	CONCRETE
	GRAVEL
	LANDSCAPE

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

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

NO.	REVISION	BY	DATE
6			
5			
4			
3			
2			
1			
0			

RAMON LLANOS — STATE OF WASHINGTON — 39211 — REGISTERED — PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #: 2196
DATE: 3/19/2025
DESIGNED BY: RL
DRAWN BY: JRF
CHECKED BY: RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

RECORD DRAWINGS PROFESSIONAL CERTIFICATION

THIS DRAWING REPRESENTS THE WORK AS CONSTRUCTED AND ALL MODIFICATIONS MEET THE PERFORMANCE STANDARDS OF THE ORIGINAL DESIGN.

RAMON LLANOS, PE — DATE

APPROVED
03/20/2025
BY: CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

COVER SHEET

THORNTON HEIGHTS
AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 1 OF 18

R:\Common\Land Projects 2021\2196 - 2583 Thornton - Matt Lynch\DWG\2196 Civil As-builts.dwg PLOT DATE:3/19/2025 4:35 PM

00757.001 03/20/25 RH

RECORD DRAWINGS

GENERAL REQUIREMENTS:

1. 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 (COFDS) AND THE 2005 VERSION OF THE DEPARTMENT OF ECOLOGY STORM WATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (DOE MANUAL). IN CASE OF A CONFLICT BETWEEN PLANS, REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
2. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY 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.
3. THE CONTRACTOR MUST HAVE A FULL SET OF CITY CONTRACT DOCUMENTS ON THE SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
4. CONSTRUCTION NOISE SHALL BE LIMITED TO BETWEEN 7 a.m. TO 8 p.m., MONDAY THROUGH SATURDAY.
5. 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 APPROVED PLANS AND THE LOCATION OF ANY EXISTING UTILITIES.
6. 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.
7. 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 ONSITE AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.
8. SITE CLEARING SHALL INCLUDE THE LOCATION AND REMOVAL OF ALL ABOVE GROUND AND BURIED DEBRIS AND WASTE THAT MAY BE PRESENT.
9. 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.
10. 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.
11. 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 FOLLOW:
    - A. PLACEMENT OF TEMPORARY EROSION CONTROL MEASURES.
    - B. CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES.
    - C. 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.
    - D. 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.
    - E. GRADING OF PUBLIC OR PRIVATE ROADWAY AT:
        1. COMPLETION OF EXCAVATION TO SUBGRADE.
        2. COMPLETION OF BALLAST COURSE PLACEMENT
        3. COMPLETION OF CRUSHED SURFACING COURSE PLACEMENT
    - F. POURING OF CURB AND GUTTER AND SIDEWALK IN PUBLIC ROADWAY.
    - G. ASPHALT PAVING IN PROGRESS IN PUBLIC ROADWAY.
    - H. OVERALL INSPECTION FOR FINISHED SHOULDERS, DITCHES, PERMANENT SEEDING AND MONUMENT PLACEMENT.
    - I. END OF MAINTENANCE PERIOD
12. 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.
13. 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.
14. 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.
15. POTHOLING 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 POTHOLING WAS NOT DONE PRIOR TO DESIGN.
16. 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:

A. 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.

B. THE CONSTRUCTION OF UNDERGROUND UTILITY LINES SHALL BE SUBJECT TO THE FOLLOWING CRITERIA:
   - i. NO MORE THAN 500 FEET OF TRENCH SHALL BE OPENED AT ONE TIME.
   - ii. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF DITCHES.
   - iii. TRENCH DEWATERING DEVICES SHALL DISCHARGE INTO SEDIMENT TRAPS OR SEDIMENT PONDS.
   - iv. WHERE PRACTICAL, INSTALL GRAVITY PIPE UTILITIES PRIOR TO INSTALLATION OF OTHER UTILITIES.

C. UTILITY CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF FERNDALE DEVELOPMENT STANDARDS.

D. ALL UTILITY TRENCHES IN THE RIGHT OF WAY SHALL BE BACKFILLED IN CONFORMANCE WITH CITY STANDARDS.

E. TESTING OF NEW WATER LINES, STORM SEWER SYSTEMS SHALL NOT BE PERFORMED UNTIL ALL OTHER ADJACENT UTILITIES HAVE BEEN INSTALLED.

F. 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."

G. 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.

H. 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.

I. A MINIMUM OF 5-FOOT SEPARATION IS REQUIRED BETWEEN THE WET 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:

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

CATCH BASINS TYPE 1, 1L OR 2	WSDOT STD. DETAILS B-5.20, B-5.40 OR B-10.20
"RESIDENTIAL SERVICE LINE"	COFSD ST-7 (CITY OF FERNDALE STD DETAIL)
CATCH BASINS	COFSD ST-16 (CITY OF FERNDALE STD DETAIL)

2. STORM SEWER PIPE HAVING DIAMETERS GREATER THAN 8" SHALL BE CORRUGATED POLYETHYLENE PIPE (CPEP); ALL OTHER STORM SEWER PIPE SHALL BE PVC.
3. ALL CATCH BASIN GRATES SHALL INCLUDE THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS".
4. CONTROL DENSITY FILL SHALL BE USED IN AREAS WHERE LESS THAN 18" 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 18" OF COVER IF APPROVED BY THE CITY.
5. 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.
6. 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.
7. POSITIVE LOT DRAINS PER STANDARD DETAIL ST-16.
8. THE CONTRACTOR IS RESPONSIBLE FOR CONTRACTING WITH AND SCHEDULING A PROFESSIONAL GEOTECHNICAL FIRM TO OBSERVE SOILS / FILLS AND VERIFY COMPACTION WITHIN PUBLIC RIGHT-OF-WAY AS SPECIFIED BY CITY STANDARDS AND/OR WSDOT REQUIREMENTS. PRIVATE ON-SITE COMPACTION REQUIREMENTS AND METHODS WILL BE MONITORED BUT NOT REGULATED BY CITY INSPECTORS. THE ENGINEER OF RECORD AND CONTRACTOR MUST COMMUNICATE ON TESTING AND SCHEDULES FOR SAID TESTING REQUIRED FOR THE ENGINEER TO CERTIFY THE PROJECT.

WATER:

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

PIPE BEDDING	COFSD W-11
TRENCH BACKFILL	COFSD W-11
FIRE HYDRANT ASSEMBLY	COFSD W-1
THRUST BLOCKING	COFSD W-2, W-3 & W-4
WATER SERVICE	COFSD W-5

2. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF FERNDALE DEVELOPMENT STANDARDS, SECTIONS 702 AND 705 AND THE MOST RECENT VERSION OF WSDOT STANDARD SPECIFICATIONS.
3. ALL 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. ALL PIPES SHALL HAVE A MINIMUM COVER OF 36".
10. 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 130 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.
11. WATER SERVICE TAP INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE COFDS W-5.
12. FIRE HYDRANTS AND FIRE MAINS MUST CONFORM TO COFDS- SD W-1 (WSDOT B-19) AND THE FOLLOWING STANDARDS:
    - A. 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. 929S HYDRANTS.
    - B. 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.
    - C. 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.
    - D. 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 WHEN INSTALLATION IS COMPLETE.
    - E. 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 GRADE LEVEL.

SANITARY SEWER SYSTEMS:

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH 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.
2. ALL WORK MUST BE INSPECTED TO THE SATISFACTION OF THE CITY OF FERNDALE. 24 HOUR NOTICE 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.
3. SANITARY SEWER MAINS SHALL BE A MINIMUM 8 INCH DIAMETER PVC PIPE (SDR-35) CONFORMING TO THE PROVISIONS OF ASTM D 3034 AND INSTALLED TO CITY SPECIFICATIONS.
4. SANITARY SEWER PIPE BEDDING SHALL BE PEA GRAVEL PER COFSD SS-1. ALL TRENCHES SHALL BE BACKFILLED WITH CLASS B BANK RUN GRAVEL WITHIN CITY RIGHT OF WAY AND TRAVELED WAYS OUTSIDE OF RIGHT OF WAY (ACCESS EASEMENTS) AND SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% MODIFIED PROCTOR. USE OF SUITABLE NATIVE BACKFILL OUTSIDE OF TRAVELED WAY SHALL BE SUBJECT TO APPROVAL BY THE CITY.
5. ALL MANHOLES SHALL BE INSTALLED PER CITY OF FERNDALE STANDARD DETAILS AND SHALL BE PRE-CHANNELED. MANHOLE CONES ARE TO BE OFFSET SUCH THAT LADDER RUNGS ARE PARALLEL TO THE FLOW.
6. ALL SIDE SEWERS SHALL BE INSTALLED PER CITY OF FERNDALE STANDARD DETAILS SS-6, SS-8 OR SS-13, EXCEPT THAT SINGLE SIDE SEWERS SHALL HAVE A MINIMUM DIAMETER OF 4".
7. CONTRACTOR SHALL EXTEND SEWER STUBS 5 FT BEYOND UTILITY CORRIDOR OR 15 FEET BEYOND RIGHT-OF-WAY LINE.
8. EACH SIDE SEWER STUB SHALL BE CAPPED WITH A WATERTIGHT PLUG. EACH STUB SHALL BE MARKED FOR LOCATION WITH A 2" DIA. PVC PIPE (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:

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

TYPICAL STREET SECTION	PER THESE PLANS
PCC CURB AND GUTTER	COFSD R-9
PCC SIDEWALKS	COFSD R-12 (SEE CONSTRUCTION DOCUMENTS TYPICAL SECTION)
PCC CURB RAMPS	WSDOT STD. DETAIL F-40.

2. 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.
3. 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.
4. 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.
5. 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).
6. CEMENT CONCRETE SHALL BE CLASS 3000 (WITH AIR ENTRAINMENT) IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION, SECTION 6-02.3(2)B.
7. 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.
8. CEMENT CONCRETE DRIVEWAYS SHALL BE 6 INCHES THICK AND CONSTRUCTED WHERE SHOWN ON THE PLANS OR DESIGNATED BY THE ENGINEER IN ACCORDANCE WITH THE CITY STANDARDS, DRAWING NO. R-15. A 2- INCH LATER OF 3/4 INCH DRAIN ROCK SHALL BE USED FOR DRIVEWAY BEDDING.
9. CEMENT CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED WHERE SHOWN ON THE PLANS OR AS DESIGNED BY THE ENGINEER, IN ACCORDANCE WITH WSDOT STANDARDS SPECIFICATIONS, SECTION 8-04 AND CITY OF FERNDALE STANDARDS, DRAWING R-8 AND R-9. HANDICAP 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 UNSIGHTLY OR IMPEDE FLOW IN THE GUTTER LINE.
10. PAVEMENT:
    - A. SOIL RESIDUAL HERBICIDE SHALL BE PLACED WITHIN 24 HOURS OF PAVING.
    - B. A TACK COAT OF ASPHALT SHALL BE APPLIED BETWEEN ALL COURSES OF ASPHALT.
    - C. ALL PAVEMENT REPAIR SHALL BE SAW-CUT BEFORE REMOVAL. AR-4000W SHALL BE APPLIED TO ALL EDGES OF EXISTING PAVEMENT. WHERE NEWLY CONSTRUCTED PAVING MEETS EXISTING PAVING, THE APPLICANT SHALL PROVIDE A SMOOTH TRANSITION FROM EXISTING TO PROPOSED PAVING. CONTRACTOR SHALL COLD PLANE PER DIMENSIONS SPECIFIED ON THE PLANS, AND INSTALL A MINIMUM 2-FOOT WIDE PETROTAC PAVING FABRIC, OR EQUIVALENT, OVER JOINT BETWEEN PAVING LIFTS.
11. THRU-CURB BASINS AND THRU-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.
12. TRENCH EXCAVATIONS, BEDDING AND PIPE FOR STORMWATER PIPE LAYING SHALL BE IN ACCORDANCE WITH THE WSDOT STANDARD SPECIFICATIONS, SECTION 7-08.
13. STORM SEWER PIPE CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION, SECTION 7-04. MATERIAL SHALL BE HANCOR SURE-LOK F477 PIPE OR CITY APPROVED EQUAL. LOTS' STORM DRAIN SERVICE LINE SHALL BE 6" PVC PER WSDOT STANDARD SPECIFICATION, SECTION 9-05.1(5)
14. PERFORATED UNDERDRAIN PIPE SHALL MEET THE WSDOT STANDARD SPECIFICATION 7-01.3(2) .

EARTHWORK:

A. 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.

B. THE CONTRACTOR SHALL EXCAVATE AND GRADE TO THE ALIGNMENT, GRADE AND CROSS-SECTIONS SHOWN IN THE PLANS OR ESTABLISHED BY THE ENGINEER.

C. UNSUITABLE 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.

D. THE ENGINEER IS REQUIRED TO CERTIFY SUBGRADE, IN WRITING, PRIOR TO PAVING.

BASE COURSES AND SURFACING:

A. GRAVEL BASES AND BALLAST MATERIAL GRADATION SHALL MEET WSDOT STANDARD SPECIFICATIONS.

B. BALLAST, GRAVEL BASE AND CRUSHED SURFACING SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY.

C. THE GRADED AND COMPACTED SURFACE OF THE CRUSHED SURFACING TOP COURSE SHALL BE WITHIN ½ INCH OF FINISHED GRADE.

D. 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.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) ELEMENTS:

ELEMENT 1: PRESERVE VEGETATION / MARK CLEARING LIMITS

CLEARING LIMITS WILL BE VISIBLY MARKED IN THE FIELD AND ON THE CIVIL PLAN SET PRIOR TO ANY LAND DISTURBING ACTIVITIES. THESE AREAS WILL BE CLEARLY MARKED BOTH IN THE FIELD AND ON THE 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 FROM THORNTON STREET 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 SWEPT 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 C105: STABILIZED CONSTRUCTION ENTRANCE
- BMP C107: CONSTRUCTION ROAD/PARKING AREA STABILIZATION

ELEMENT 3: CONTROL FLOW RATES

STORMWATER BMP'S WILL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION AND WILL BE FUNCTIONAL PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS (E.G. IMPERVIOUS SURFACES). THIS PROJECT IS REQUIRED TO COMPLY WITH MINIMUM REQUIREMENT #7 (FLOW CONTROL). THE ON-SITE OPEN TOP COMBINED DETENTION/WETVAULT WILL BE CONSTRUCTED IMMEDIATELY AFTER CLEARING AND GRUBBING, AND PRIOR TO INITIAL SITE GRADING, TO PROVIDE FLOW CONTROL DURING CONSTRUCTION. SEDIMENT SHALL BE CONTROLLED PRIOR TO DISCHARGING INTO THE DETENTION POND TO THE MAXIMUM EXTENT FEASIBLE. THIS MAY INCLUDE USING SEDIMENT TRAP, TEMPORARY SEDIMENT POND, SEDIMENTATION BAG, OR BAKER TANKS. IN EMERGENCY CIRCUMSTANCES, SUCH AS A SIGNIFICANT RAIN EVENT, THE VAULT MAY BE USED AS SEDIMENT POND. ANY SEDIMENT THAT ACCUMULATES IN THE PROPOSED STORM POND SHALL BE REMOVED PRIOR TO PROJECT COMPLETION.

THE CONTRACTOR SHALL PROTECT PROPERTIES AND WATERWAYS DOWNSTREAM OF PROJECT SITE FROM EROSION AND THE ASSOCIATED DISCHARGE OF TURBID WATER DUE TO INCREASES IN THE VELOCITY AND PEAK VOLUMETRIC FLOW RATE OF STORMWATER RUNOFF. IF THE CONTRACTOR OR IF APPLICABLE, THE CERTIFIED EROSION SEDIMENTATION CONTROL LEAD (CESCL) FINDS THAT TEMPORARY WATER STORAGE IS REQUIRED BEYOND WHAT IS BEING PROPOSED, THEY SHALL CONTACT THE ENGINEER OF RECORD (EOR) TO IDENTIFY AND LOCATE A STORAGE SOLUTION.

ELEMENT 4: INSTALL SEDIMENT CONTROLS

THE CONTRACTOR SHALL MINIMIZE SEDIMENT DISCHARGE FROM THE SITE THROUGHOUT THE DURATION OF THE PROJECT. THIS INCLUDES PROPER MAINTENANCE OF THE CONSTRUCTION SITE, PARKING/STAGING AREA, AND ROAD WORK THROUGH BMP C107. ALL TESC BMPS SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND AS DIRECTED BY THE NPDES PERMIT FOR THE CESCL, IF APPLICABLE.

SEDIMENT SHALL BE CONTROLLED PRIOR TO DISCHARGING INTO THE OPEN TOP COMBINED DETENTION/WETVAULT. THIS MAY INCLUDE USING SEDIMENT TRAP, TEMPORARY SEDIMENT POND, SEDIMENTATION BAG, OR BAKER TANKS. IN EMERGENCY CIRCUMSTANCES, SUCH AS A SIGNIFICANT RAIN EVENT, THE VAULT MAY BE USED AS SEDIMENT POND. ANY SEDIMENT THAT ACCUMULATES IN THE PROPOSED VAULT SHALL BE REMOVED PRIOR TO PROJECT COMPLETION.

PROPOSED SILT FENCING WILL BE INSTALLED PRIOR TO LAND DISTURBANCES OR PROJECT GRADING. INLET PROTECTION IN EXISTING AND PROPOSED CATCH BASINS WITHIN THE VICINITY WILL BE UTILIZED TO HELP PREVENT SEDIMENT FROM ENTERING THE TRIBUTARY WATERS. IF THE CONTRACTOR WOULD LIKE TO USE ANOTHER SEDIMENT CONTROL BMP, THEY SHALL SUBMIT TO THE EOR AND CITY OF FERNDALE THE SEDIMENT CONTROL BMP FOR APPROVAL.

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 COURSE 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.

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 CONSTRUCTION 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 EROSIVE FORCES OF RAINFALL, RUNOFF, AND WIND. PLASTIC COVERING SHALL COVER ALL SOIL STOCKPILES. REFER TO ELEMENT #9 FOR FURTHER SOILS STABILIZATION REQUIREMENTS FOR SITE SOILS DUE TO SOIL CONTAMINATION.

BMPS THAT ARE EFFECTIVE IN STABILIZING SOILS AND PROTECTING THEM FROM EXPOSURE TO RAIN AND WIND OR OTHER CLIMATIC CONDITIONS WILL BE IMPLEMENTED THROUGHOUT THE PROJECT. EVALUATION AND MONITORING OF BMP EFFECTIVENESS WILL OCCUR DAILY BY THE CONTRACTOR AND OR AS DESCRIBED IN ELEMENT 12 BY THE CESCL. IN ADDITION, IN THE EVENT OF FORECASTED PRECIPITATION EVENTS, ADDITIONAL MEASURES TO STABILIZE SOILS WILL BE TAKEN.

BMPS THAT WILL BE CONSIDERED THROUGHOUT CONSTRUCTION INCLUDE BUT ARE NOT LIMITED TO TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, PLASTIC COVERING, EROSION CONTROL FABRICS AND MATTING, THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED, AND DUST CONTROL.WASHINGTON STATE DEPARTMENT OF ECOLOGY BMPS CONSIDERED FOR ELEMENT #5 INCLUDE:

- BMP 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

NO MAJOR SLOPES ARE TO BE DISTURBED OR CREATED AS PART OF THIS PROJECT.

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. REFER TO SHEET 5 FOR INLET PROTECTION LOCATIONS. APPLICABLE BMP'S:

- BMP C220 - STORM DRAIN INLET PROTECTION

ELEMENT 8: STABILIZE CHANNELS AND OUTLETS

WHILE NOT 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 BMPS 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. IF EMERGENCY REPAIRS NEED TO BE PERFORMED AND CLIMATIC CONDITIONS MAY RESULT IN A PRECIPITATION EVENT PRIOR TO THE REPAIR BEING COMPLETED, THE REPAIR AREA, WHICH INCLUDES THE VEHICLE, WILL BE COVERED WITH TARPS OR OTHER PLASTIC SHEETING.

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

- NOTIFY KEY PERSONNEL - DURING CONSTRUCTION, THE CESCL (IF APPLICABLE) AND CONTRACTOR WILL BE PROVIDING PROJECT OVERSIGHT AND WILL BE CONTACT THE ENGINEER OF RECORD IN THE EVENT OF A SPILL. THE ENGINEER OF RECORD 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.
- ALL SPILLS WILL BE REPORTED TO THE DEPARTMENT OF ECOLOGY, SPILL RESPONSE PROGRAM (425) 649-7000.

WASHINGTON STATE DEPARTMENT OF ECOLOGY BMPS CONSIDERED FOR ELEMENT #9 INCLUDE:

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

ELEMENT 10: CONTROL DEWATERING

SITE DE-WATERING MAY BE NEEDED DURING CONSTRUCTION AS THE GRADING WILL BE CLOSE TO THE FOUND GROUNDWATER. CLEAN, NON-TURBID DE-WATERING WATER, SUCH AS WELL-POINT GROUND WATER, CAN BE DISCHARGED DIRECTLY INTO THE OPEN TOP COMBINED DETENTION/WETVAULT. FOUNDATION, VAULT, AND TRENCH DE-WATERING WATER, WHICH HAS SIMILAR CHARACTERISTICS TO STORMWATER RUNOFF AT THE SITE, SHALL BE DISCHARGED INTO THE DETENTION POND ON-SITE. IF CHANNELS ARE USED, THEY MUST BE STABILIZED, AS SPECIFIED IN ELEMENT #8. HIGHLY TURBID OR OTHERWISE CONTAMINATED DEWATERING WATER, SUCH AS FROM CONSTRUCTION EQUIPMENT OPERATION, CLAMSHELL DIGGING, CONCRETE TREMIE POUR, OR WORK INSIDE A COFFERDAM, SHALL BE HANDLED SEPARATELY FROM STORMWATER.

OTHER DISPOSAL OPTIONS, DEPENDING ON SITE CONSTRAINTS, MAY INCLUDE: 1) TRANSPORT OFF-SITE IN A VEHICLE, SUCH AS A VACUUM FLUSH TRUCK, FOR LEGAL DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATERS, 2) ECOLOGY-APPROVED ON-SITE CHEMICAL TREATMENT OR OTHER SUITABLE TREATMENT TECHNOLOGIES, 3) SANITARY SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL, IF THERE IS NO OTHER OPTION, OR 4) USE OF A SEDIMENTATION BAG WITH OUTFALL TO A DITCH OR SWALE FOR SMALL VOLUMES OF LOCALIZED DEWATERING.

ELEMENT 11: MAINTAIN BMPS

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

TEMPORARY EROSION AND SEDIMENT CONTROLS IDENTIFIED ABOVE WILL BE INSPECTED DAILY DURING THE WET SEASON BY THE CONTRACTOR AND CESCL (IF APPLICABLE). 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 BMPS WILL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT WILL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED.

ELEMENT 12: MANAGE THE PROJECT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES):

THIS PROJECT WILL BE REQUIRED TO OBTAIN AN NPDES PERMIT AS THE PROJECT WILL DISTURB MORE THAN 1 ACRE OF LAND AND DISCHARGE TO WATERS OF THE UNITED STATES. ONCE AN NPDES PERMIT IS OBTAINED, IT WILL BE PROVIDED TO CITY OF FERNDALE PUBLIC WORKS. THE NPDES PERMIT IS REQUIRED TO BE OBTAINED BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES.

CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL):

A CESCL WILL BE NAMED FOR THIS PROJECT BEFORE CONSTRUCTION ACTIVITIES BEGIN. THE CESCL WILL INSPECT ALL AREAS DISTURBED BY THE CONSTRUCTION ACTIVITIES, ALL BMPS, AND ALL STORMWATER DISCHARGE POINTS AT LEAST ONCE EVERY CALENDAR WEEK AND WITHIN 24-HOURS OF ANY DISCHARGE FROM THE SITE. FOR PURPOSES OF THIS CESCL CONDITION, INDIVIDUAL DISCHARGE EVENTS THAT LAST MORE THAN ONE DAY DO NOT REQUIRE DAILY INSPECTIONS. THE CESCL MAY REDUCE THE INSPECTION FREQUENCY FOR TEMPORARY STABILIZED INACTIVE SITES TO ONCE EVERY CALENDAR MONTH.

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 BMPS 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. IF CONSTRUCTION OCCURS IN THE DRY SEASON (5/1 THROUGH 9/30) 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, BMPS THAT ARE EFFECTIVE IN STABILIZING SOILS AND PROTECTING THEM FROM EXPOSURE TO RAIN AND WIND OR OTHER CLIMATIC CONDITIONS WILL BE IMPLEMENTED THROUGHOUT THE PROJECT. INSPECTION AND EVALUATION OF THE EFFECTIVENESS OF THE BMPS WILL OCCUR DAILY 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:

THE STORMWATER MANAGEMENT REQUIREMENTS FOR ALL ASPECTS OF THE CONSTRUCTION PROJECT, INCLUDING UTILITIES, WERE CONSIDERED 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 BMPS WILL BE INSPECTED, MAINTAINED, AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. IF INSPECTION AND/OR MONITORING REVEALS THAT THE BMPS IDENTIFIED IN THIS CONSTRUCTION SWPPP ARE INADEQUATE, DUE TO THE ACTUAL DISCHARGE OF OR POTENTIAL TO DISCHARGE A SIGNIFICANT AMOUNT OF ANY POLLUTANT, THIS SWPPP SHALL BE MODIFIED, AS APPROPRIATE, IN A TIMELY MANNER, WITH NOTICE TO 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 BMPS

NO LID BMPS ARE PROPOSED AT THIS TIME. IF LID BMP'S ARE FOUND TO BE FEASIBLE, THEY WILL COMPLY WITH THE 2014 SWMM.

NO.	REVISION	BY	DATE
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RAMON LLANOS, STATE OF WASHINGTON, 33213, REGISTERED PROFESSIONAL ENGINEER, 3-19-25

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

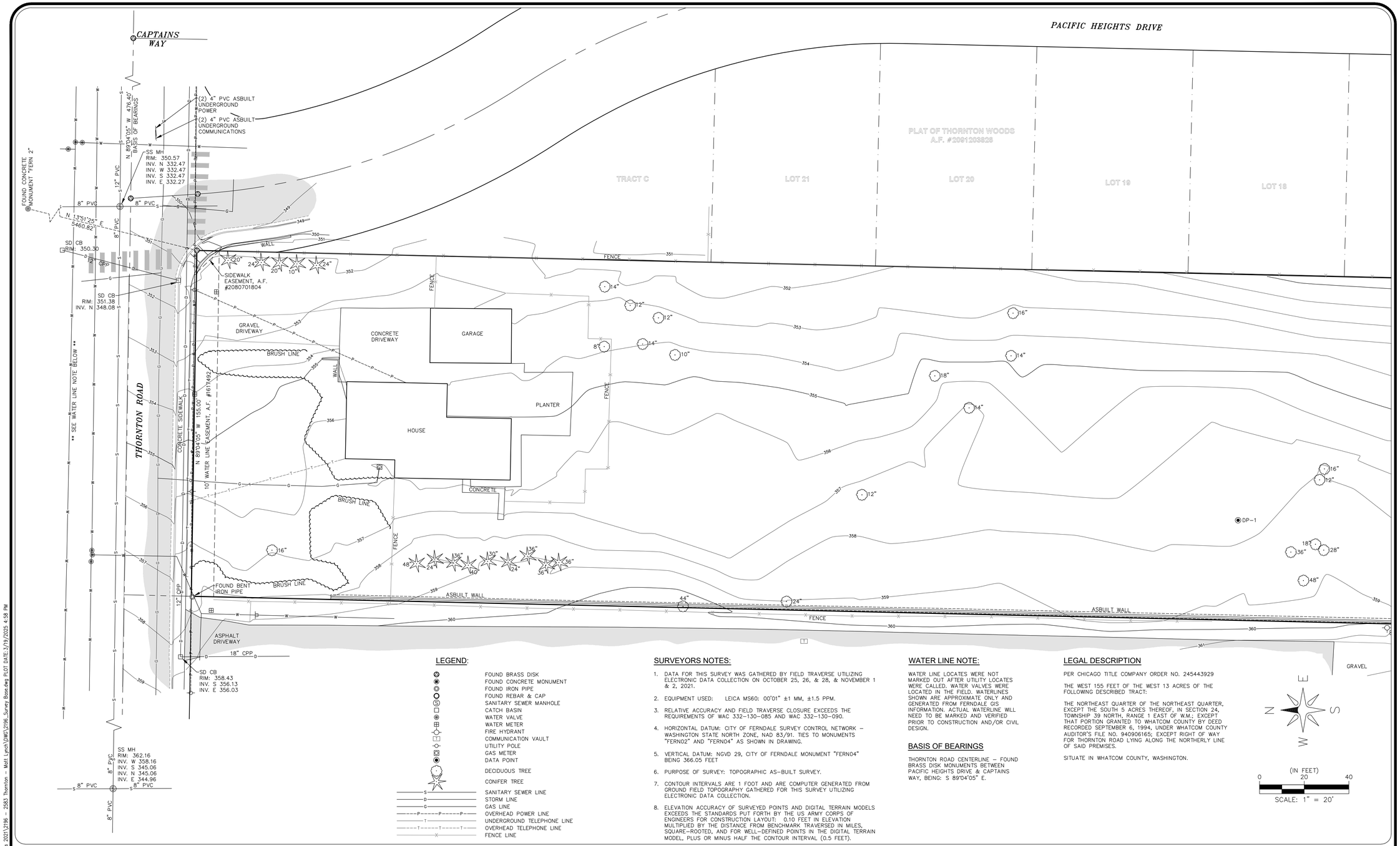
PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH
6249 CHURCH RD
FERNDALE, WA 98248

APPROVED 03/20/2025
BY: [signature] FOR KEVIN RENZ
CITY OF FERNDALE PUBLIC WORKS DEPARTMENT

CITY OF FERNDALE NOTES
STORMWATER POLLUTION PREVENTION PLAN

THORNTON HEIGHTS
AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.



LEGEND:

- FOUND BRASS DISK
- FOUND CONCRETE MONUMENT
- FOUND IRON PIPE
- FOUND REBAR & CAP
- SANITARY SEWER MANHOLE
- CATCH BASIN
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- COMMUNICATION VAULT
- UTILITY POLE
- GAS METER
- DATA POINT
- DECIDUOUS TREE
- CONIFER TREE
- SANITARY SEWER LINE
- STORM LINE
- GAS LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELEPHONE LINE
- OVERHEAD TELEPHONE LINE
- FENCE LINE

SURVEYORS NOTES:

1. DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION ON OCTOBER 25, 26, & 28, & NOVEMBER 1 & 2, 2021.
2. EQUIPMENT USED: LEICA MS60: 00'01" ±1 MM, ±1.5 PPM.
3. RELATIVE ACCURACY AND FIELD TRAVERSE CLOSURE EXCEEDS THE REQUIREMENTS OF WAC 332-130-085 AND WAC 332-130-090.
4. HORIZONTAL DATUM: CITY OF FERNDALE SURVEY CONTROL NETWORK – WASHINGTON STATE NORTH ZONE, NAD 83/91. TIES TO MONUMENTS "FERN02" AND "FERN04" AS SHOWN IN DRAWING.
5. VERTICAL DATUM: NGVD 29, CITY OF FERNDALE MONUMENT "FERN04" BEING 366.05 FEET
6. PURPOSE OF SURVEY: TOPOGRAPHIC AS-BUILT SURVEY.
7. CONTOUR INTERVALS ARE 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION.
8. 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).

WATER LINE NOTE:

WATER LINE LOCATES WERE NOT MARKED OUT AFTER UTILITY LOCATES WERE CALLED. WATER VALVES WERE LOCATED IN THE FIELD. WATERLINES SHOWN ARE APPROXIMATE ONLY AND GENERATED FROM FERNDALE GIS INFORMATION. ACTUAL WATERLINE WILL NEED TO BE MARKED AND VERIFIED PRIOR TO CONSTRUCTION AND/OR CIVIL DESIGN.

BASIS OF BEARINGS

THORNTON ROAD CENTERLINE – FOUND BRASS DISK MONUMENTS BETWEEN PACIFIC HEIGHTS DRIVE & CAPTAINS WAY, BEING: S 89°04'05" E.

LEGAL DESCRIPTION

PER CHICAGO TITLE COMPANY ORDER NO. 245443929

THE WEST 155 FEET OF THE WEST 13 ACRES OF THE FOLLOWING DESCRIBED TRACT:

THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER, EXCEPT THE SOUTH 5 ACRES THEREOF, IN SECTION 24, TOWNSHIP 39 NORTH, RANGE 1 EAST OF W.M.; EXCEPT THAT PORTION GRANTED TO WHATCOM COUNTY BY DEED RECORDED SEPTEMBER 6, 1994, UNDER WHATCOM COUNTY AUDITOR'S FILE NO. 940906165; EXCEPT RIGHT OF WAY FOR THORNTON ROAD LYING ALONG THE NORTHERLY LINE OF SAID PREMISES.

SITUATE IN WHATCOM COUNTY, WASHINGTON.

(IN FEET)
0 20 40
SCALE: 1" = 20'

NO.	REVISION	BY	DATE
0			
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RAYMOND D. PETTER — STATE OF WASHINGTON — 49287 — REGISTERED PROFESSIONAL LAND SURVEYOR — 11/27/21

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

PROJECT #:	2196
DATE:	1/23/2025
DESIGNED BY:	–
DRAWN BY:	SLG
CHECKED BY:	RDP

RUBICON IDC, LLC

P.O. BOX 1065
FERNDALE, WA 98248

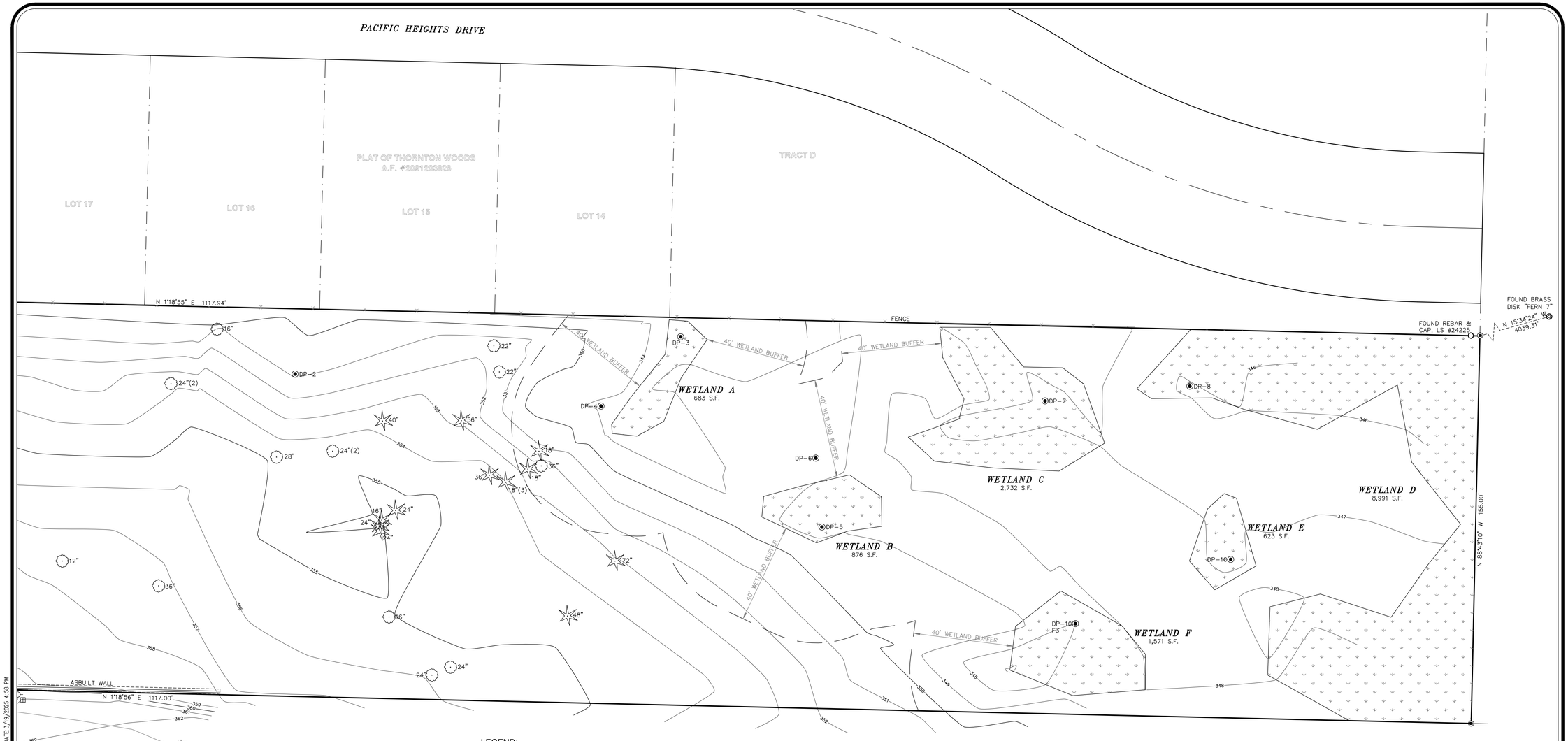
APPROVED
03/20/2025
BY _____
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

EXISTING CONDITIONS

2583 THORNTON ROAD

A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP 39 N., RANGE 1 E., W.M. WHATCOM COUNTY, WASHINGTON

SHEET **03** OF **17**



LEGEND:

- FOUND BRASS DISK
- FOUND CONCRETE MONUMENT
- FOUND IRON PIPE
- FOUND REBAR & CAP
- SANITARY SEWER MANHOLE
- CATCH BASIN
- WATER VALVE
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- FIRE HYDRANT
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- UTILITY POLE
- GAS METER
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LEGAL DESCRIPTION

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SITUATE IN WHATCOM COUNTY, WASHINGTON.

E N S W

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SCALE: 1" = 20'

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RAYMOND D. PETERSEN — 49287 — REGISTERED PROFESSIONAL LAND SURVEYOR

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
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RUBICON IDC, LLC

P.O. BOX 1065
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

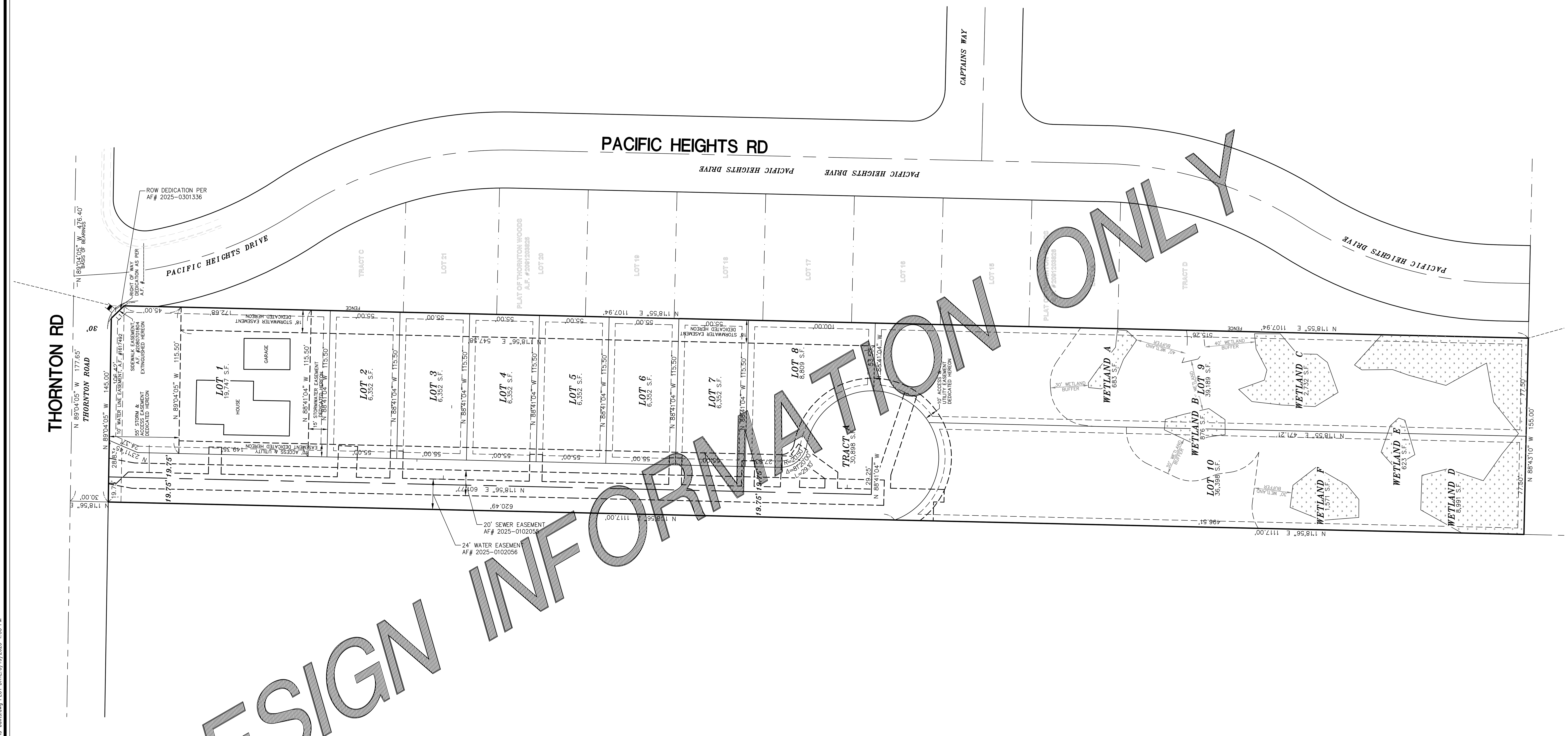
EXISTING CONDITIONS

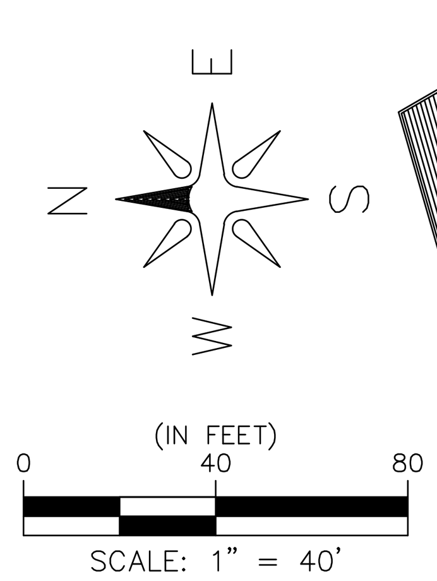
2583 THORNTON ROAD

A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP 39 N., RANGE 1 E., W.M. WHATCOM COUNTY, WASHINGTON

SHEET **04** OF **17**

R:\Common\Land Projects 2021\2196 - 2583 Thornton - Matt Lynch\DWG\2196_Survey Base.dwg PLOT DATE:3/19/2025 4:58 PM





PROJECT SUMMARY

OWNER	MATTHEW LYNCH 6240 CHURCH RD FERNDALE, WA 98248
SITE ADDRESS	2593 THORNTON ST
PARCEL NO.	390124 416472 0000
SITE AREA	173,205 SF (3.98 ACRES)
CITY ZONING	RS LOW-SINGLE FAMILY DWELLING
PROJECT DESCRIPTION	-10 LOT SUBDIVISION -PROVIDE STORM, SEWER, WATER & DRY UTILITIES -PAVED ACCESS ROAD W/ CONCRETE SIDEWALK -STORMWATER FACILITIES

PLAT INFORMATION

	ACRES & SQUARE FOOTAGE	PERCENTAGE
OVERALL PARCEL AREA	3.98 ACRES (173,205 SF)	100.00%
PUBLIC ROADS ESMT	0.71 ACRES (30,795 SF)	17.78%
TOTAL LOT AREA (*)	2.01 ACRES (87,726 SF)	50.65%
STORMWATER ESMT	0.15 ACRES (6,353 SF)	3.67%
WETLAND & BUFFER	1.11 ACRES (48,330 SF)	27.90%
OPEN SPACE	NONE	NA
RESERVE TRACT	NONE	NA
OTHER:	NONE	NA

(*) EXCLUDES EASEMENTS NEEDED FOR POWER, GAS, PHONE CABLE, INTERNET AND STORMWATER CONVEYANCE FOR LOTS GOING TO THE STORMWATER VAULT.

RECORD DRAWINGS

NO.	REVISION	BY	DATE
0			
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RAMON LLANOS · STATE OF WASHINGTON · 33213 · REGISTERED PROFESSIONAL ENGINEER · 3-19-25

LDES, INC.
5160 INDUSTRIAL PL. #108
FERNDALE, WA 98248
PHONE 360-383-0620
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PROJECT #: 2196
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DESIGNED BY: RL
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CHECKED BY: RL

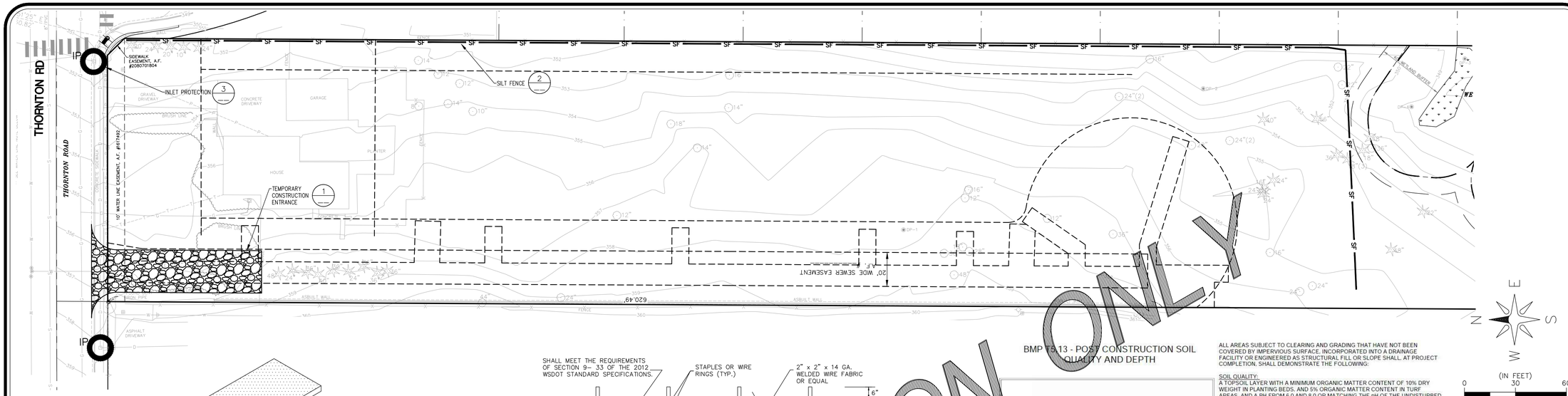
MATTHEW LYNCH
6249 CHURCH RD
FERNDALE, WA 98248

APPROVED 03/20/2025
BY: [signature] FOR KEVIN RENZ
CITY OF FERNDALE PUBLIC WORKS DEPARTMENT

PRELIMINARY LONG PLAT

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.



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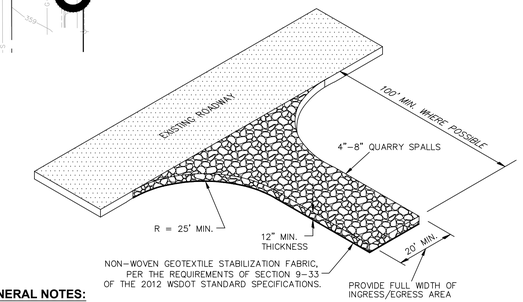
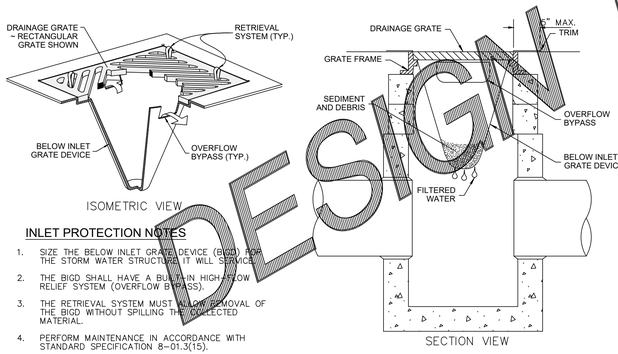
SCALE: 1" = 30'



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 TO USED. THIS MAY INCLUDE STREET SWEEPING OR UPSIZING 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.

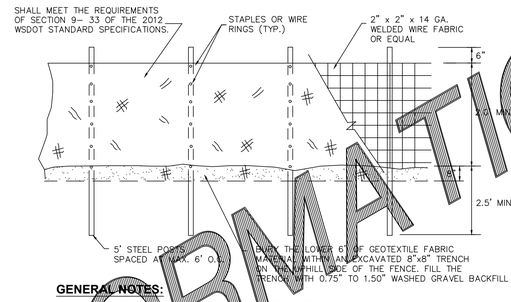
① QUARRY SPALL CONSTRUCTION ENTRANCE DETAIL
not to scale



INLET PROTECTION NOTES

1. SIZE THE BELOW INLET GRATE DEVICE (BIGD) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
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 COLLECTED MATERIAL.
4. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION 8–01.3(15).

③ STORM DRAIN INLET PROTECTION - BMP C220
NOT TO SCALE



GENERAL NOTES:

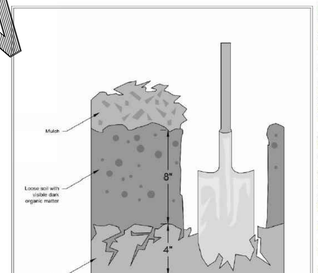
1. ANY DAMAGE TO FENCING SHALL BE REPAIRED IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEN THE WATER MUST BE INTERCEPTED AND CONVEYED TO A WELL–FUNCTIONING SEDIMENT TRAP, POND, OR CONVEYANCE SYSTEM.
3. IT IS IMPORTANT TO PERIODICALLY CHECK THE UPHILL SIDE OF FENCING FOR SIGNS OF CLOGGING. IF CLOGGING OCCURS, THE FENCE WILL ACT 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 BEFORE CLEARING AND GRUBBING IS COMPLETE.

② SILT FENCE DETAIL (BASED ON FERNDALE ST-10)
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.
2. DELINEATE CLEARING & EASEMENT LIMITS. IN THE FIELD, STAKE AND FLAG CLEARING LIMITS AND/OR ANY EASEMENTS, SETBACKS, SENSITIVE/CRITICAL AREAS AND THIER BUFFERS, TREES AND DRAINAGE COURSES.
3. PROTECTION OF ADJACENT PROPERTIES. PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION.
4. TIMING & 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. DEWATERING CONSTRUCTION SITES. DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
13. 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.
14. 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.
15. FINANCIAL LIABILITY. PERFORMANCE BONDING, OR OTHER APPROPRIATE FINANCIAL INSTRUMENTS, SHALL BE REQUIRED FOR ALL PROJECTS TO ENSURE COMPLIANCE WITH THE APPROVED TESC PLAN.
16. ALL SITE GRADING SHALL BE COMPLETED IN ACCORDANCE WITH APPENDIX J OF THE 2012, INTERNATIONAL BUILDING CODE.
17. SITE GRADING SHALL BE MONITORED BY GEOTEST SERVICES TO ENSURE THE FILLS WERE PERFORMED AND RECORDED PER APPENDIX J NOTED IN THE ABOVE COMMENT.
18. 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.
19. FOR PROJECT ACCEPTANCE THE ENGINEER OF RECORD IS REQUIRED TO SUBMIT A FINAL AS–BUILT GRADING PLAN FOR CITY REVIEW AND APPROVAL THAT INCLUDES THE FOLLOWING STATEMENT:
    AS THE ENGINEER OF RECORD, I HEREBY CERTIFY THAT THE IMPROVEMENTS COMPLETED AT 5445 PORTAL WAY FOR FLAX 4–LIFE AND 6407 PORTAL WAY FOR ALPINE INVESTMENTS 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.
20. 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.

BMP T5.13 - POST CONSTRUCTION SOIL QUALITY AND DEPTH



Reprinted from Guidelines and Resources For Implementing Soil Quality and Depth BMP T5.13 in WDOE Stormwater Management Manual for Western Washington, 2012, Washington Organic Recycling Council

NOT TO SCALE

Figure V-5.3.3
Planting Bed Cross-Section
Revised January 2016

DEPARTMENT OF ECOLOGY State of Washington

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

SOIL QUALITY:
A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 10% DRY WEIGHT IN PLANTING BEDS, AND 5% ORGANIC MATTER CONTENT IN TURF AREAS, AND A PH FROM 6.0 AND 8.0 OR MATCHING THE pH OF THE UNDISTURBED SOIL. USE COMPOST AND OTHER MATERIALS THAT MEET THE COMPOST GUIDELINES.

SOIL DEPTH:
THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF EIGHT INCHES EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA. SUBSOILS BELOW THE TOPSOIL LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES WITH SOME INCORPORATION OF THE UPPER MATERIAL TO AVOID STRATIFIED LAYERS WHERE FEASIBLE. PLANTING BEDS SHOULD HAVE 2 INCHES OF ORGANIC MATERIAL AS WELL.

COMPOST GUIDELINES:
MUST MEET THE DEFINITION OF "COMPOSTED MATERIAL" IN WAC 173-350-100 AND COMPLIES WITH TESTING PARAMETERS AND OTHER STANDARDS IN WAC 173-350-220: MUST BE PRODUCED AT A PERMITTED COMPOSTING FACILITY. ORGANIC MATTER CONTENT SHALL BE 40% TO 65%. CARBON TO NITROGEN RATIO OF MUST BE LESS THAN THAN 25:1. THE C:N RATIO MAY BE UP TO 35:1 FOR PLANTINGS COMPOSED ENTIRELY OF PUGET SOUND LOWLAND NATIVE SPECIES AND UP TO 40:1 FOR COARSE COMPOST TO BE USED AS A SURFACE MULCH (NOT IN A SOIL MIX).

IMPLEMENTATION OPTIONS:

1) LEAVE AS MUCH NATIVE VEGETATION AND SOIL AS POSSIBLE AND PROTECT FROM COMPACTION DURING CONSTRUCTION.

2) AMEND EXISTING SITE TOPSOIL OR SUBSOIL EITHER AT DEFAULT RATES OR AT A CUSTOM CALCULATED RATES BASED ON TESTS OF THE SOIL AND AMENDMENT.

3) IN AREAS REQUIRING CLEARING AND GRADING REMOVE AND STOCKPILE THE DUFF LAYER AND TOPSOIL ON SITE IN A DESIGNATED, CONTROLLED AREA. NOT ADJECT TO PUBLIC RESOURCES AND CRITICAL AREAS. REPLACE IT PRIOR TO PLANTING AND AMEND IF NEEDED TO MEET THE ORGANIC MATTER OR DEPTH REQUIREMENTS.

4) IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET THE REQUIREMENTS.

MORE THAN ONE METHOD MAY BE USED ON DIFFERENT PORTIONS OF THE SAME SITE.

EROSION AND SEDIMENT

1. EROSION CONTROL METHODS AND MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 8–01 OF THE 2012 WSDOT/APWA STANDARD SPECIFICATIONS, THE REQUIREMENTS SET FORTH IN VOLUME II OF THE "STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY, CURRENT EDITION, THE CITY OF FERNDALE DEVELOPMENT STANDARDS, THE PROJECT SWPPP AND THIS PLAN, WITH THE MOST EFFECTIVE REQUIREMENTS TAKING PRECEDENCE. THE CONTRACTOR SHALL FOLLOW RECOMMENDATIONS MADE BY SUPPLIERS AND MANUFACTURERS FOR ALL MATERIALS AND EQUIPMENT USED.
2. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PREVENT SILTY STORMWATER FROM EXITING THE SITE. IF SILT LADEN STORMWATER EXITS THE SITE, THE ENGINEER SHALL STOP WORK ON THE JOB. IT IS THE CONTRACTOR'S RESPONSIBILITY TO WORK WITH THE PROJECT ENGINEER OR LOCAL JURISDICTION TO COORDINATE FURTHER EROSION CONTROL MEASURES, NOT SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN, THAT MAY BE NECESSARY TO CONTROL SITE RUNOFF.
3. THE EXISTING AND PROPOSED STORM SYSTEMS SHALL BE CLEANED AND MAINTAINED THROUGHOUT CONSTRUCTION AND UNTIL ALL ON–SITE SOILS HAVE BEEN STABILIZED.
4. AT THE END OF ALL SITE CONSTRUCTION, THE CONTRACTOR SHALL FLUSH OUT ALL DEBRIS FROM THE STORM SYSTEM INSTALLED ON–SITE. MATERIAL FLUSHED FROM THE STORM SYSTEM SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED DISPOSAL SITE.

TESC NOTES:

1. SEE SHEET 2 STORMWATER POLLUTION PREVENTION PLAN (SWPPP) ELEMENTS.
2. ALL EROSION CONTROL MEASURES INCLUDING CONSTRUCTION ENTRANCE MUST BE INSTALLED PER PLAN AND INSPECTED BY CITY OF FERNDALE STORMWATER TECHNICIAN PAUL KNIPPEL (360)383–8189 PRIOR TO CONSTRUCTION. ALLOW A MINIMUM 24 HOURS NOTICE FOR INSPECTION.

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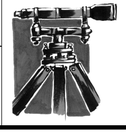
RAMON J. LANDA — 20170 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25



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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH
6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

TEMPORARY EROSION & SEDIMENTATION CONTROL PLAN

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP 39 N., RANGE 1 E., W.M.

SHEET 6 OF 18

RECORD DRAWINGS

00757.006 03/20/25 RH

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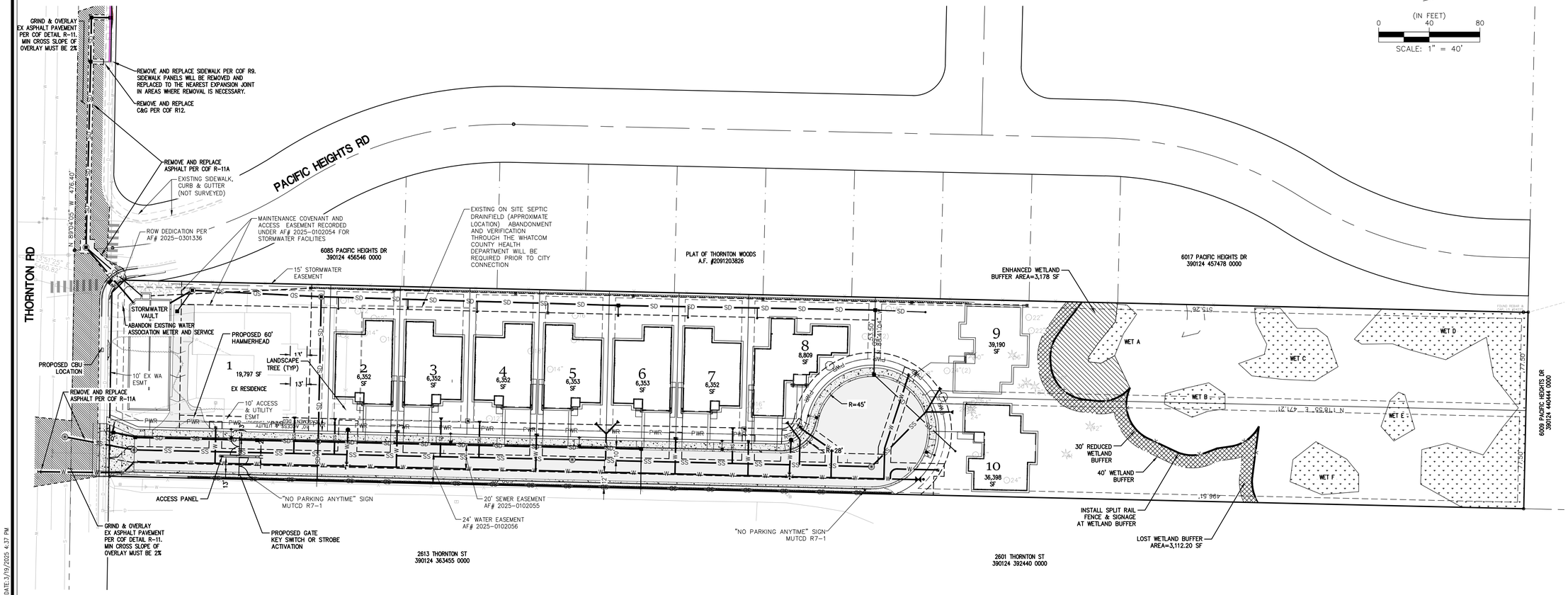

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RAMON LLANOS — EXPIRES: 9-19-25 — REGISTERED PROFESSIONAL ENGINEER

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

COMPOSITE UTILITY PLAN

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 7 OF 18

R:\Common\Land Projects 2021\2196 - 2583 Thornton - Matt Lynch\DWG\2196_Civil_As-builts.dwg PLOT DATE:3/19/2025 4:37 PM

RETAINING WALL NOTES
1. CONSTRUCTION OF THE CONCRETE RETAINING WALL REQUIRES A COF BUILDING PERMIT.
2. THE STRUCTURAL DESIGN AND CALCULATIONS FOR THE CONRETE RETAINING WALL MUST BE APPROVED BY THE COF BUILDING DEPARTMENT AND THE LAND DISTURBANCE PERMIT ISSUED BY PUBLIC WORKS FOR THE VAULT CONSTRUCTION TO BEGIN.
3. INTERNATIONAL BUILDING CODE APPENDIX J REQUIREMENTS APPLY.

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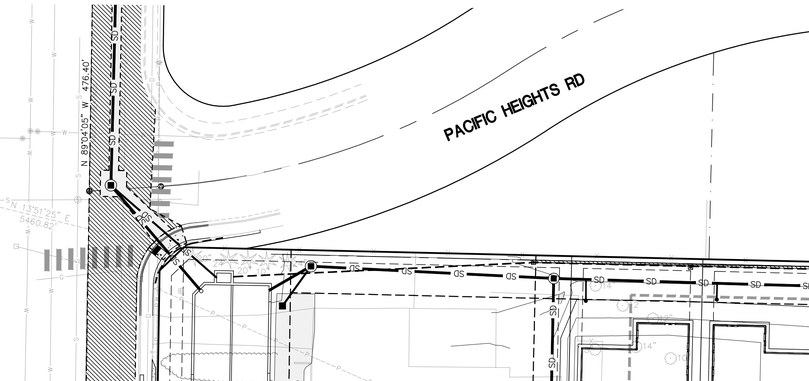
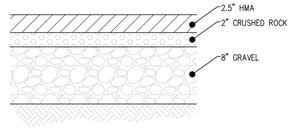
(IN FEET)
0 30 60
SCALE: 1" = 30'

NOTE:
ALL LOT AND ROADWAY FILLS IN EXCESS OF 18" WILL BE DONE SD IN A STRUCTURAL MANNER AS DIRECTED BY THE ENGINEER OF RECORD OR LICENSED GEO-TECHNICAL ENGINEER. DOCUMENTS WILL BE PROVIDED TO THE CITY SPECIFYING WHERE THE FILLS ARE LOCATED, HOW DEEP, WHAT TYPE OF MATERIAL USED, METHOD OF PLACEMENT AND COMPACTION FROM THE GEO-TECHNICAL PROFESSIONAL FOR CITY RECORD PRIOR TO FINAL PROJECT ACCEPTANCE AND OR FINAL PLAT.

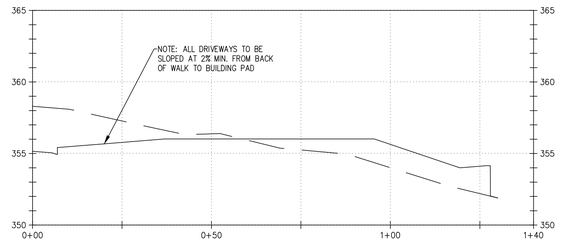


TYPICAL ROAD SECTION
N.T.S.

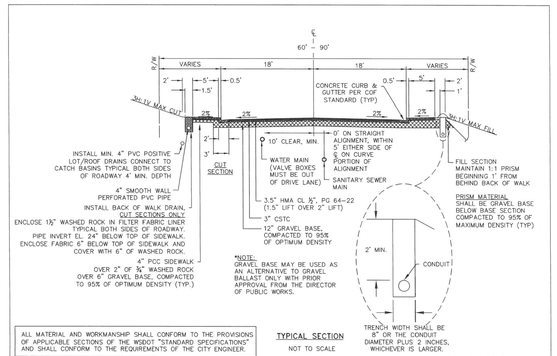


LOT 1 DRIVEWAY SECTION
NTS

NOTE:
ALL PROPOSED CAST IN PLACE WALLS ON THE SITE HAVE BEEN REVIEWED BY THE BUILDING DEPARTMENT AND WILL REQUIRE A SEPARATE BUILDING PERMIT PRIOR TO CONSTRUCTION.



LOT 5 SECTION (TYPICAL LOT GRADING)
N.T.S.



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RAMON LLANOS 35219 REGISTERED PROFESSIONAL ENGINEER 3-19-25

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

PROJECT #: 2196
DATE: 3/19/2025
DESIGNED BY: RL
DRAWN BY: JRF
CHECKED BY: RL

MATTHEW LYNCH
6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: Kevin Renz
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

GRADING PLAN

THORNTON HEIGHTS
AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 8 OF 18

RECORD DRAWINGS

00757.008 03/20/25 RH

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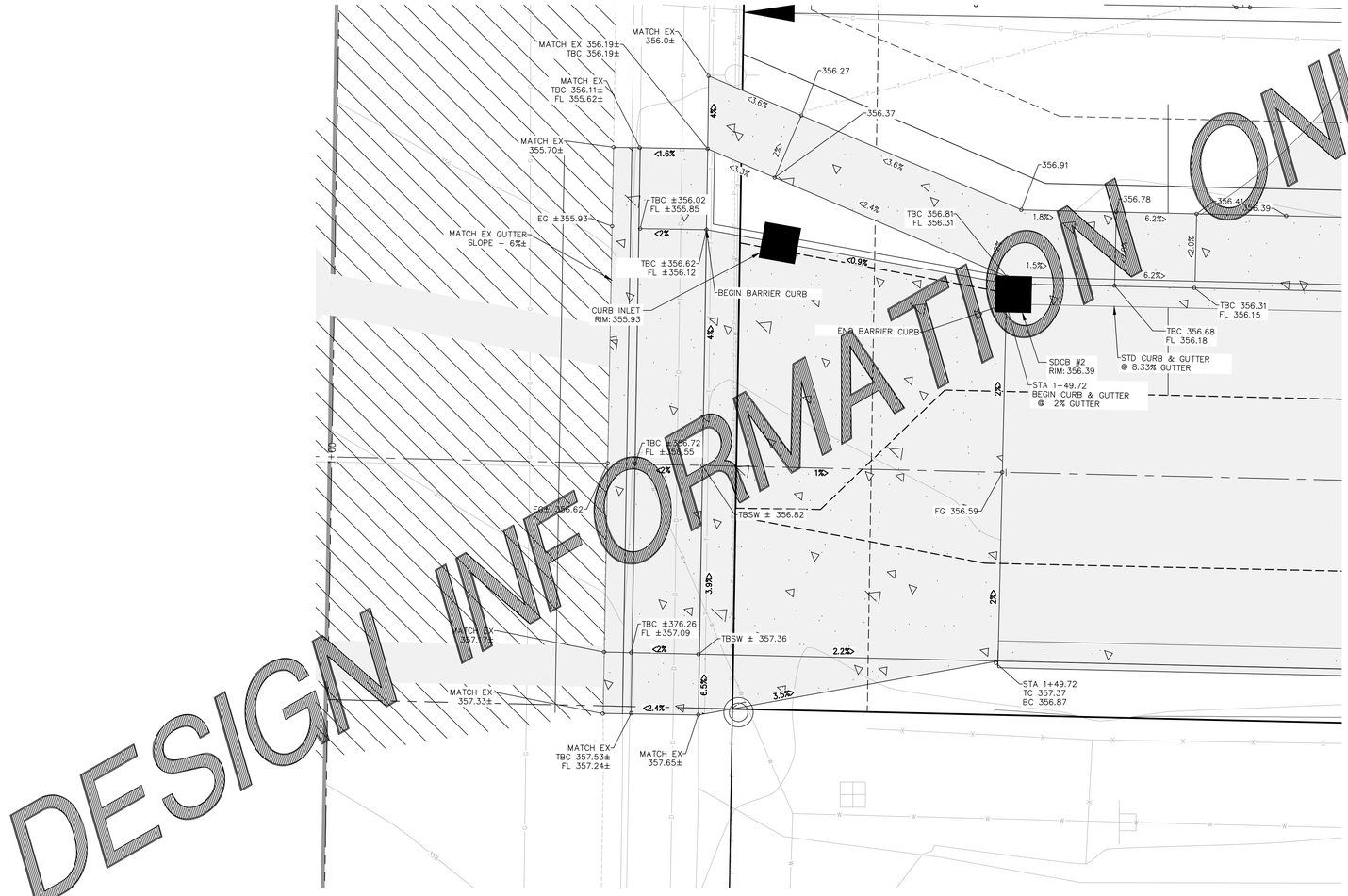
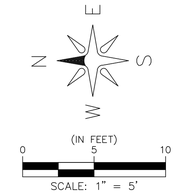


GRADING DETAIL
SCALE: 1" = 5'



GRADING NOTE:

GRADES FROM THRONTON ROAD NEW BACK OF SIDEWALK AND STA 1+49.72 ARE APPROXIMATE
CONTRACTOR TO INSTALL THRONTON SIDEWALK, CURB INLET RIM TO BE ADJUSTED TO ACTUAL GRADES

RECORD DRAWINGS

00757.009 03/20/25 RH

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RAMON J. LLAMOS — 33213 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW
LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: [signature] for kcw in Rez
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

ENTRANCE GRADING DETAIL

THORNTON HEIGHTS

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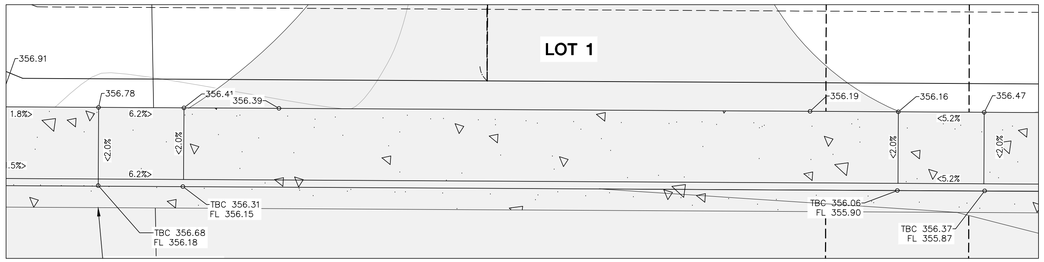
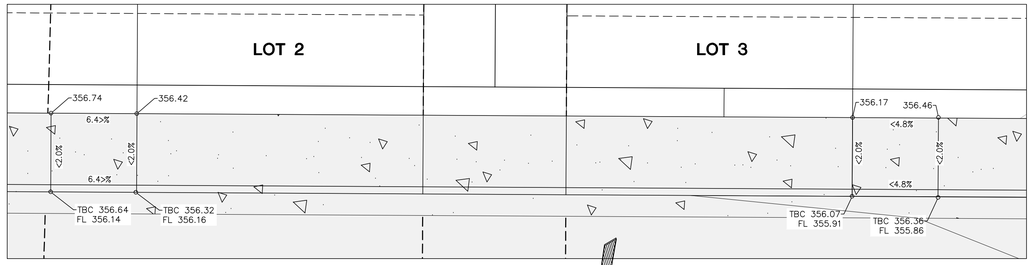
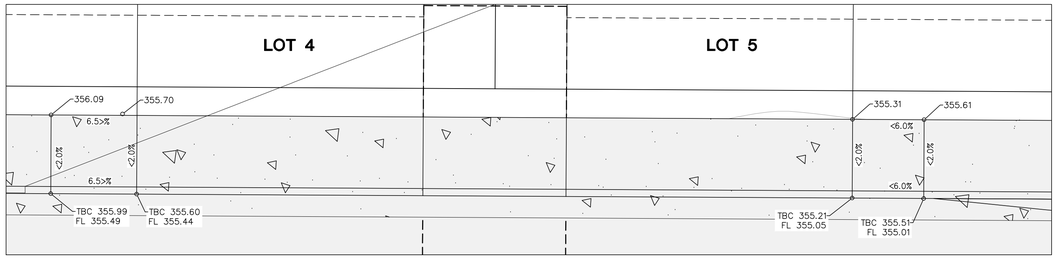
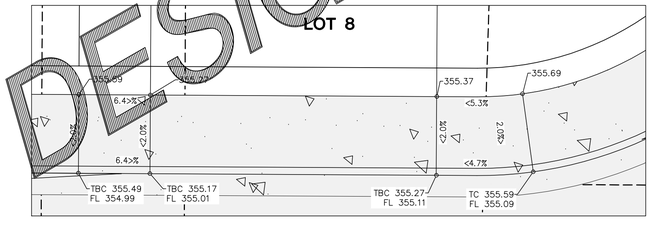
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 8A
OF 18

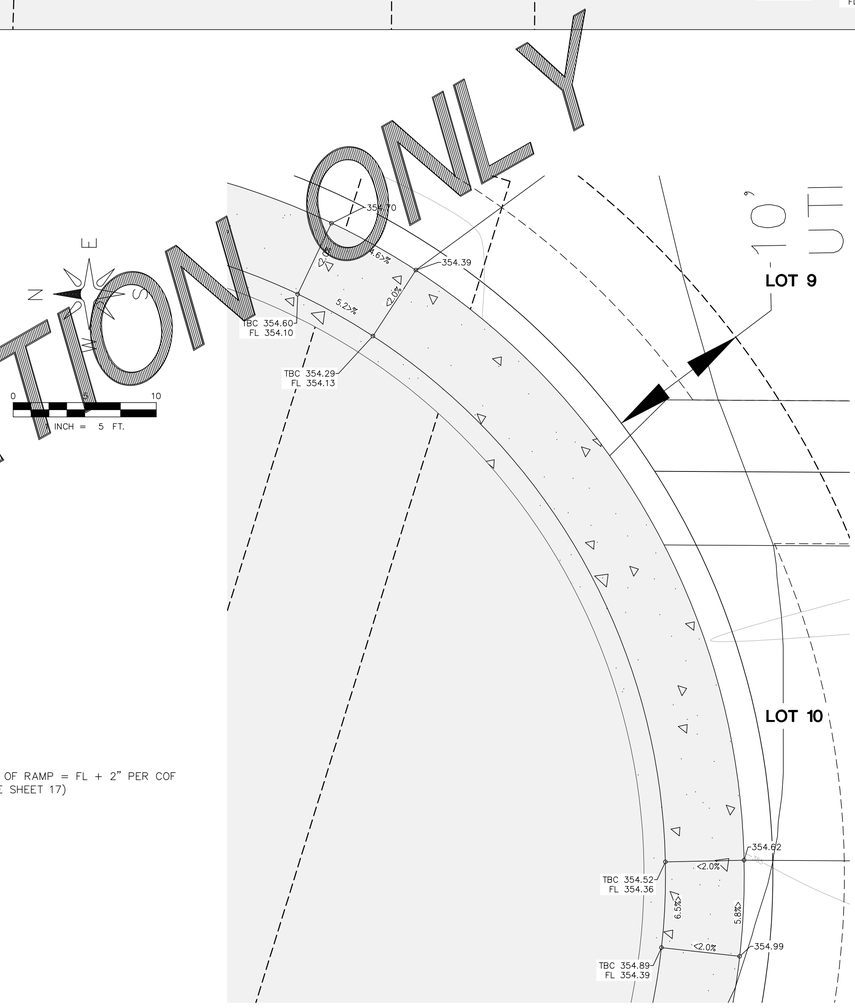








NOTE:
TBOC AT BOTTOM OF RAMP = FL + 2" PER COF DETAIL R-9 (SEE SHEET 17)



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RAMON L. LANOS — 35019 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: [signature]
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

ADA RAMP GRADING

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 9 OF 18

RECORD DRAWINGS

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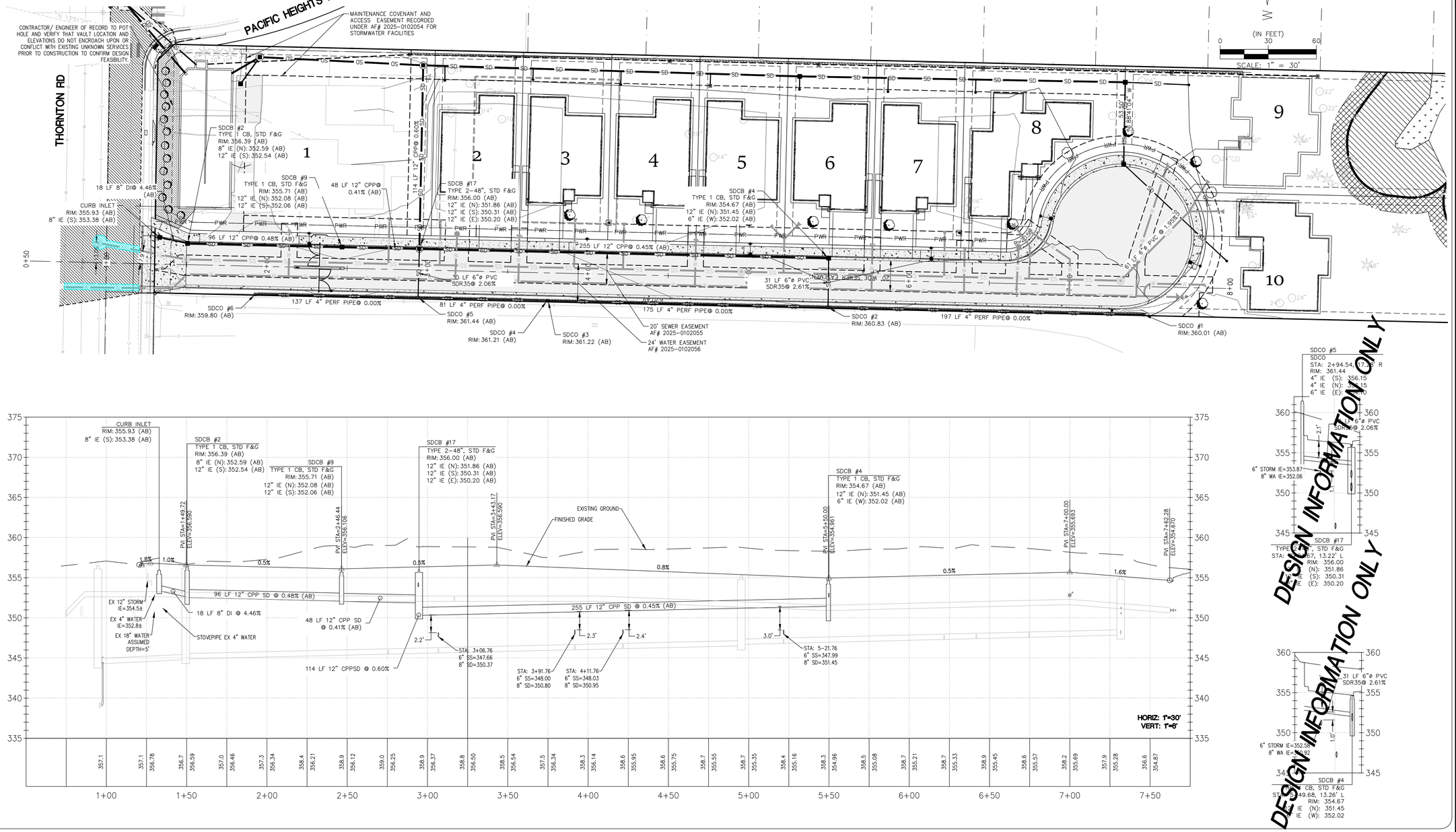
NOTE:
PEDESTRIAN SAFETY MEASURES SHALL BE PROVIDED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION. SAFETY PLANS FOR THE PROJECT SHALL BE DISCUSSED AT PRE-CON.



DESIGN INFORMATION ONLY

DESIGN INFORMATION ONLY

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RAMON L. LANOS
EXPIRATION DATE: 10/10/2025
33273
REGISTERED PROFESSIONAL ENGINEER
3-19-25

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

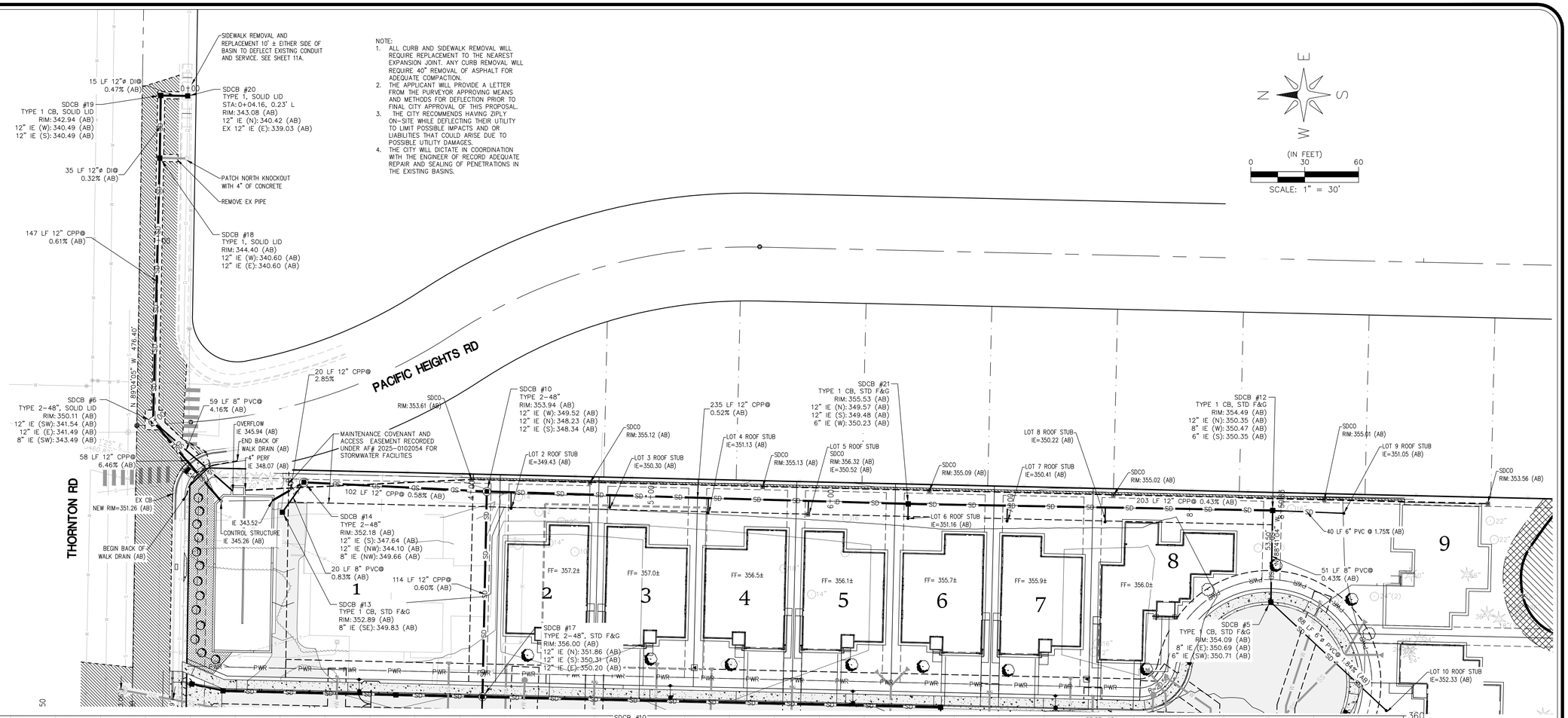
APPROVED
03/20/2025
BY: _____
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

STORMWATER PLAN & PROFILE

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET **10** OF **18**



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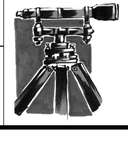
RAMON L. LLANOS — REGISTERED PROFESSIONAL ENGINEER — 3-19-25



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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

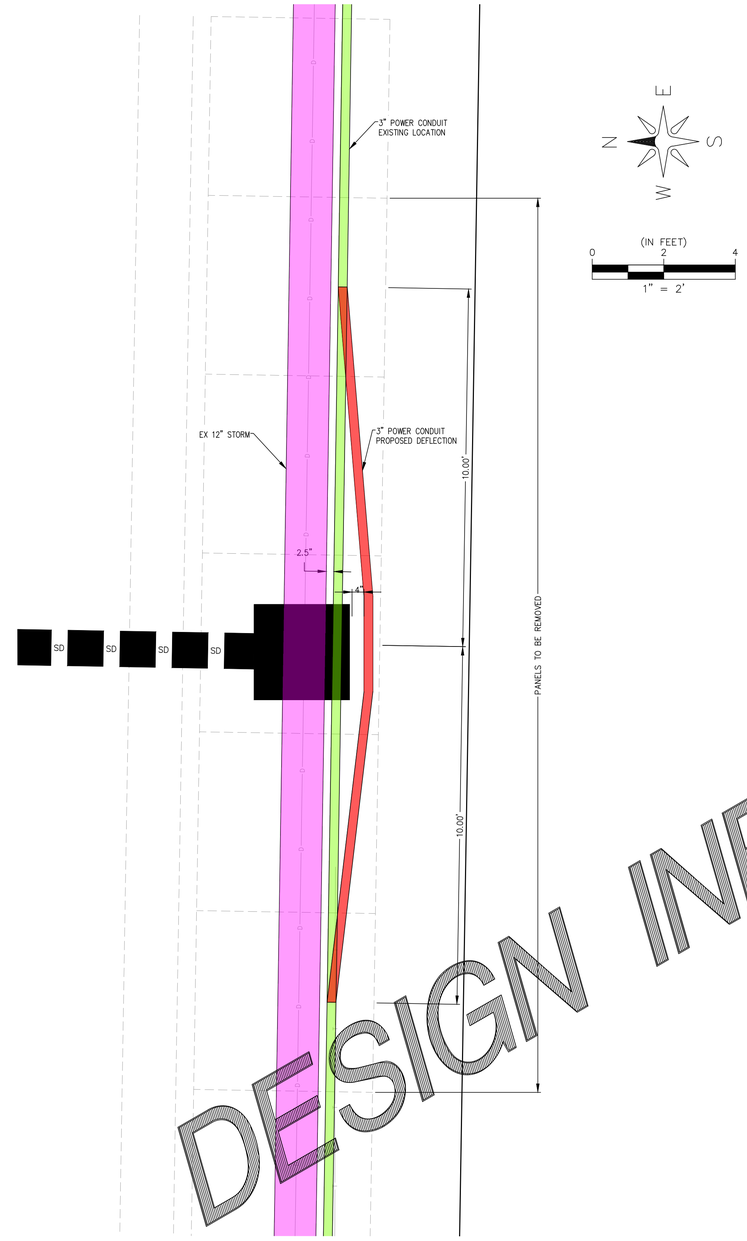
APPROVED
03/20/2025
BY
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

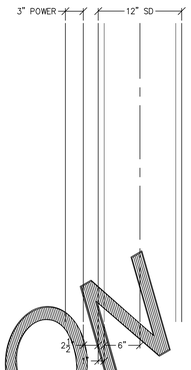
STORMWATER PLAN & PROFILE II

THORNTON HEIGHTS

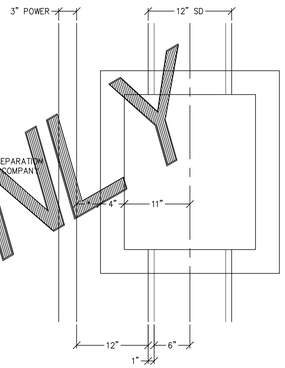
AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 11
OF 18

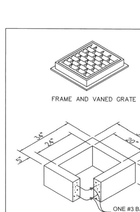




EXISTING CONDITIONS
@ PROPOSED CB#20 LOCATION



PROPOSED POWER RELOCATION
@ PROPOSED CB#20 LOCATION

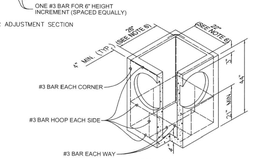


PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP* (WSDOT STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (WSDOT STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (WSDOT STD. SPEC. 9-05.12(2))	15"

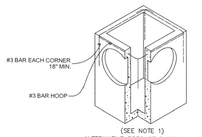
* CORRUGATED POLYETHYLENE STORM DRM SEWER PIPE

NOTES:
1. As acceptable alternatives to the rebar shown in the PRECAST BASE SECTION, fibers (placed according to the WSDOT Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used. The minimum required rebar shown in the ALTERNATIVE PRECAST BASE SECTION. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 20". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with WSDOT Standard Specification 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
4. The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the Precast Base Section.
7. All pickup holes shall be grouted full after the basin has been placed.

RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION



(SEE NOTE 1)
ALTERNATIVE PRECAST BASE SECTION

NOVEMBER 23, 2016

APPROVED

Public Works Director

8/11/17
Date

CATCH BASIN TYPE 1

STANDARD DETAIL ST-1

NOT TO SCALE

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RAMON L. LLANOS — 33213 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 3-19-25

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

PROJECT #: 2196
DATE: 3/19/2025
DESIGNED BY: RL
DRAWN BY: JRF
CHECKED BY: RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

UTILITY DEFLECTION AT SDCB #20

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET ***11A***
OF ***18***

R:\Common\Land Projects 2021\2196 - 2583 Thornton - Matt Lynch\DWG\2196_Civil_As-builts.dwg PLOT DATE:3/19/2025 4:41 PM

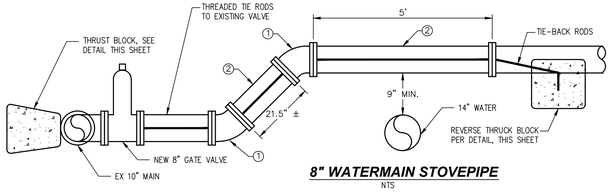
00757.013 03/20/25 RH

RECORD DRAWINGS

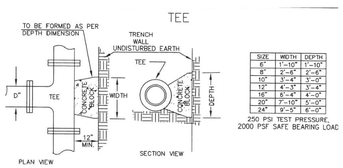
KEY NOTES:

① INSTALL 8"ø 45° BEND MJXMJ W/ MEGALUG KIT

② INSTALL 8"ø CL 50 D.I. PIPE, FIELD FIT LENGTH, OR AS SHOWN. RESTRAIN WITH THREADED TIE RODS THROUGH THE STOVE PIPE ASSEMBLY



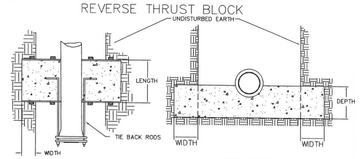
8" WATERMAIN STOVEPIPE
NTS



SIZE	WIDTH	DEPTH
6"	1'-10"	1'-10"
8"	2'-6"	2'-6"
10"	3'-3"	3'-0"
12"	4'-3"	3'-6"
16"	5'-6"	4'-0"
20"	7'-10"	5'-0"
24"	9'-5"	6'-0"

250 PSI TEST PRESSURE, 2000 PSF SAFE BEARING LOAD

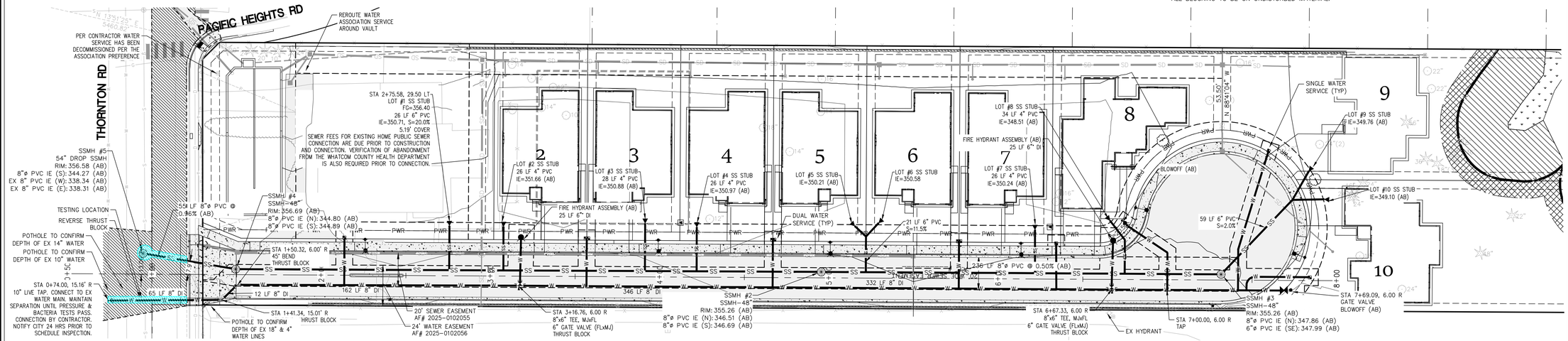
NOTE:
THE ENGINEER OF RECORD AND OR OWNERSHIP MUST GAIN APPROVAL AND PROVIDE EVIDENCE OF SAID APPROVAL FOR ANY PROPOSED WORK ON THE WATER ASSOCIATION LINE AS THE CITY DOES NOT HAVE THE JURISDICTION TO APPROVE WITHOUT THEIR CONSENT.

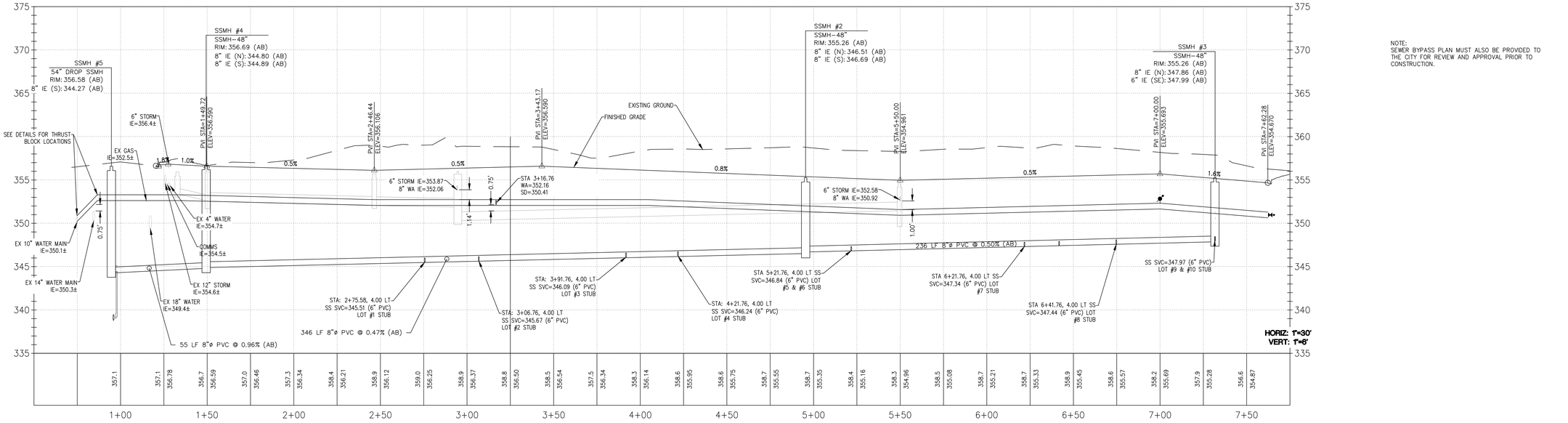


"D"	WIDTH	DEPTH	LENGTH	*VOL.	#OF RODS	ROD ø
6"	1'-6"	1'-6"	12"	7.5	2	¾"
8"	2'-0"	2'-0"	18"	20.0	2	¾"
10"	2'-6"	2'-6"	24"	37.5	2	¾"

* VOL = Approx. Volume of Blocking Material Required in cu. ft.
RODS: A36 STEEL MINUMUM
ALL BLOCKING TO BE ON UNDISTURBED MATERIAL.

(IN FEET)
0 30 60
SCALE: 1" = 30'





NOTE:
SEWER BYPASS PLAN MUST ALSO BE PROVIDED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

NO.	REVISION	BY	DATE
0			
1			
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3			
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5			

RAMON J. LLANOS — 33213 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: for Kevin Renz
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

WATER & SEWER PLAN & PROFILE

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET **12** OF **18**

RECORD DRAWINGS

00757.014 03/20/25 RH

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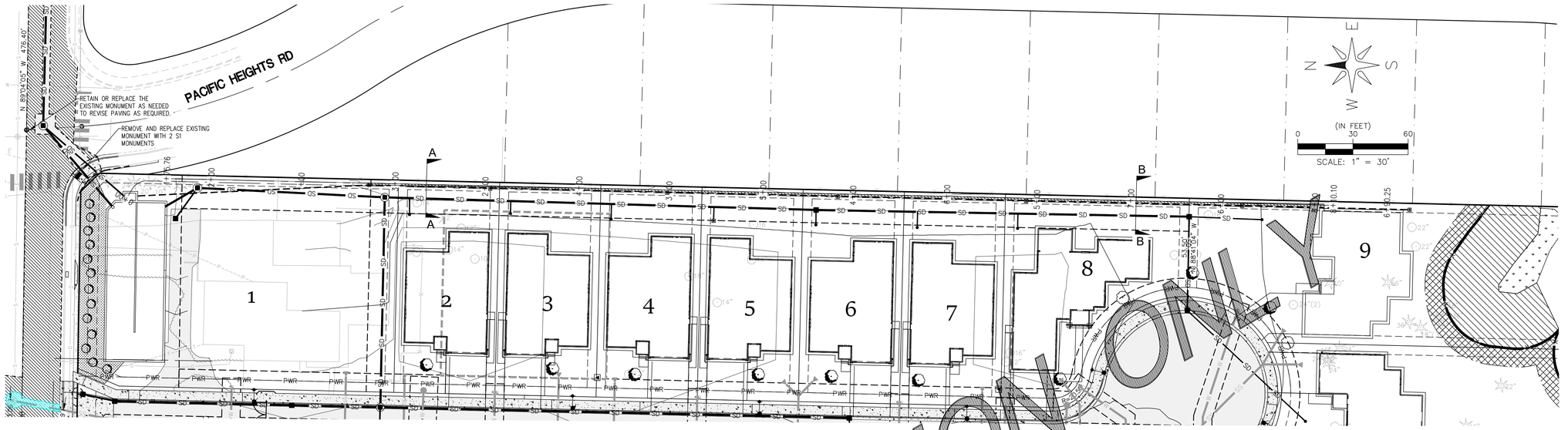
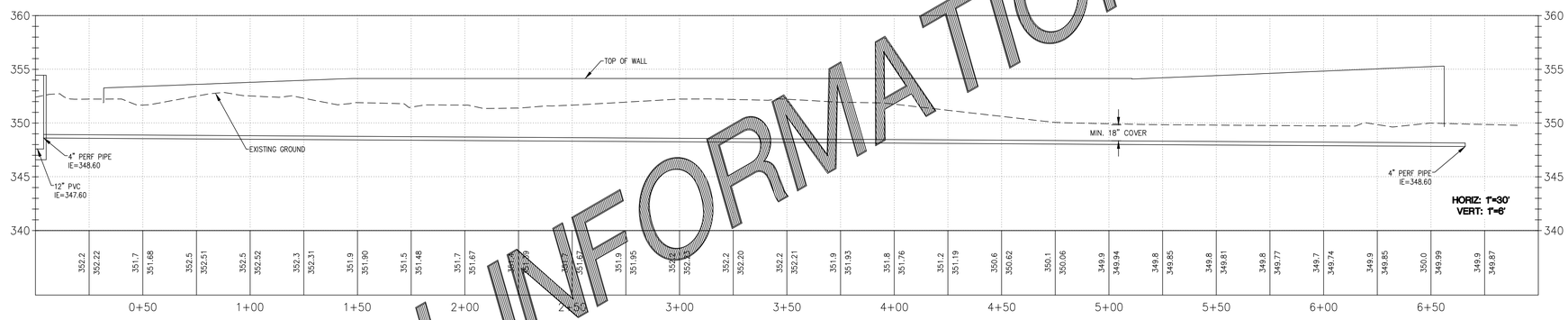
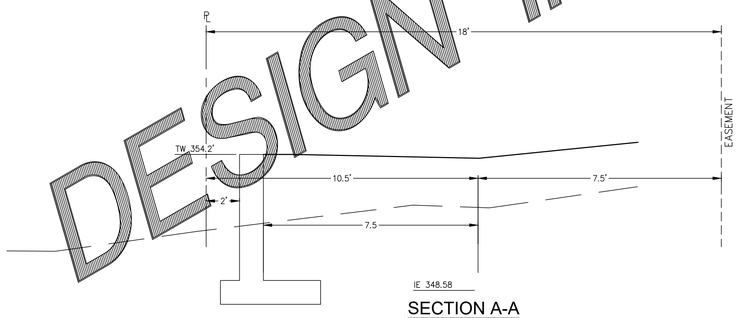
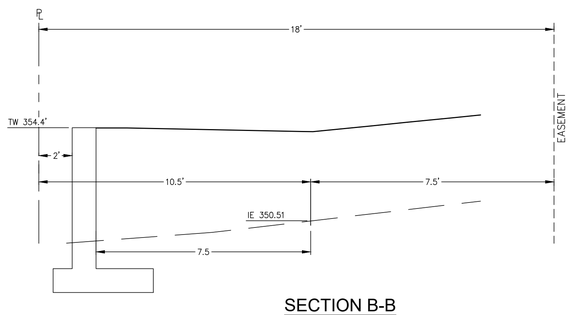






SECTION A-A
NTS



SECTION B-B
NTS

NOTE:
1. ALL LOT AND ROADWAY FILLS IN EXCESS OF 18" WILL BE DONE SO IN A STRUCTURAL MANNER AS DIRECTED BY THE ENGINEER OF RECORD OR LICENSED GEO-TECHNICAL ENGINEER. DOCUMENTS WILL BE PROVIDED TO THE CITY SPECIFYING WHERE THE FILLS ARE LOCATED, HOW DEEP, WHAT TYPE OF MATERIAL USED, METHOD OF PLACEMENT AND COMPACTION FROM THE GEO-TECHNICAL PROFESSIONAL FOR CITY RECORD PRIOR TO FINAL PROJECT ACCEPTANCE AND OR FINAL PLAT.
2. ALL PROPOSED RETAINING WALLS EXCEEDING 4' IN HEIGHT WILL REQUIRE AN ADDITIONAL PERMIT THROUGH THE BUILDING DEPARTMENT.
3. ALL PROPOSED CAST IN PLACE WALLS ON THE SITE HAVE BEEN REVIEWS BY THE BUILDING DEPARTMENT AND WILL REQUIRE A SEPARATE BUILDING PERMIT PRIOR TO CONSTRUCTION.

NO.	REVISION	BY	DATE
0			
1			
2			
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5			

RAMON LLANOS — 23219 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: _____
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

RETAINING WALL FOOTING DRAIN PLAN & PROFILE

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 13 OF 18

RECORD DRAWINGS

00757.015 03/20/25 RH

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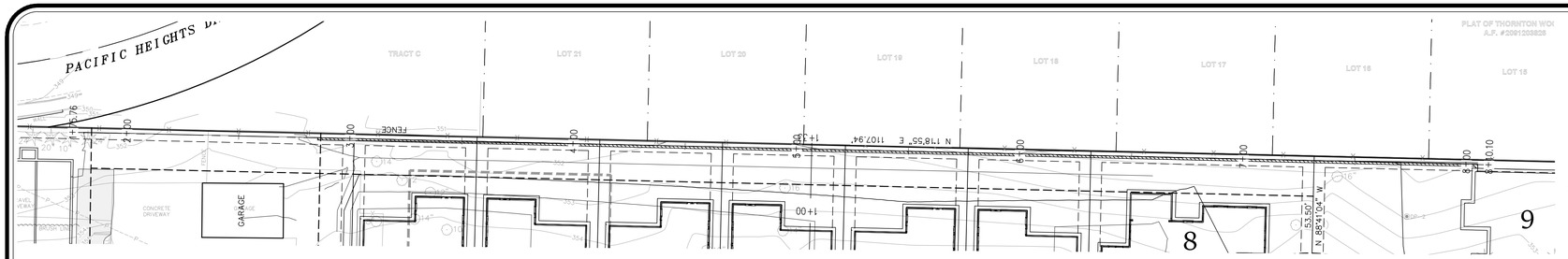
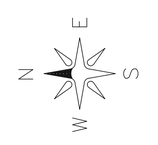
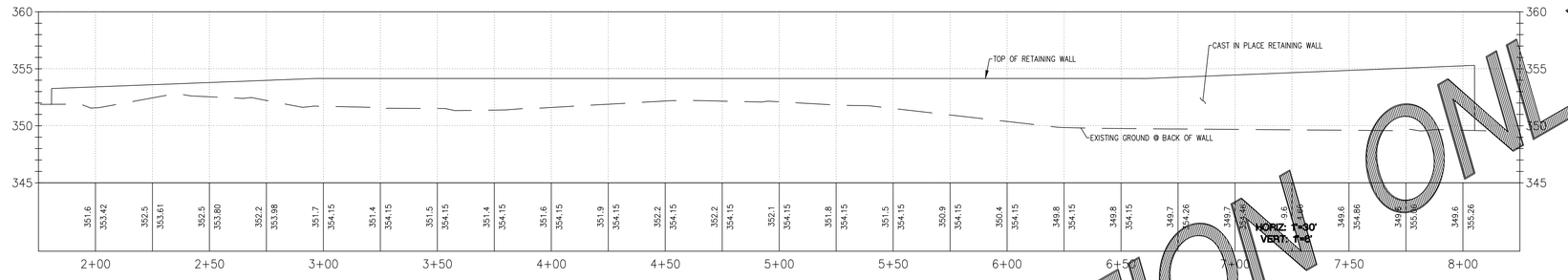
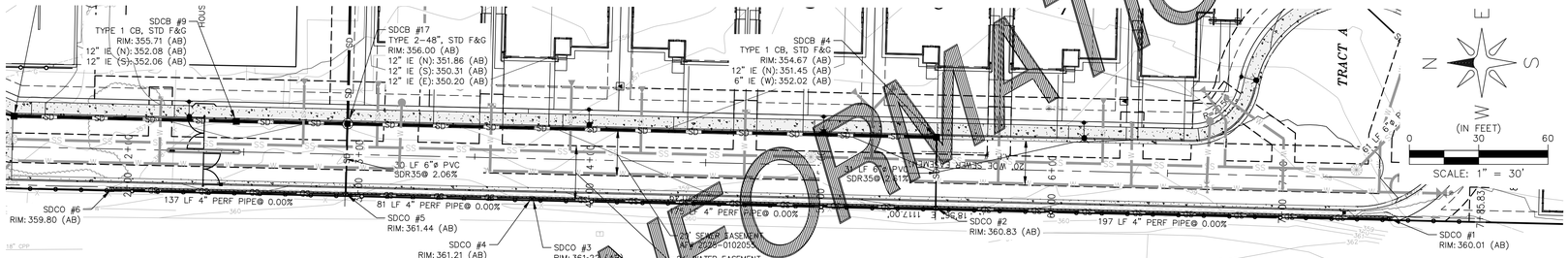
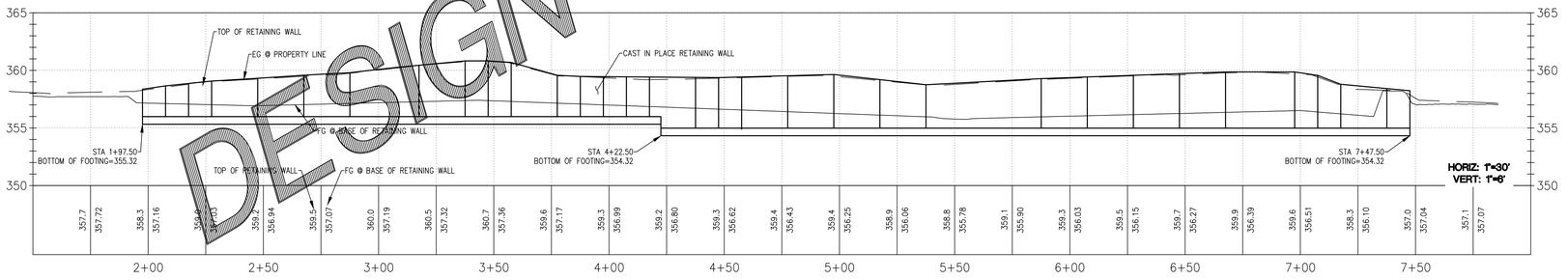




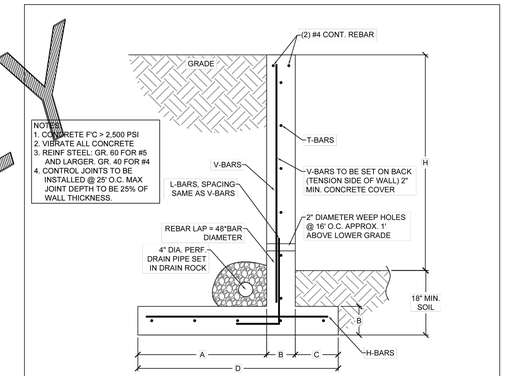


EAST WALL PROFILE





WEST WALL PROFILE

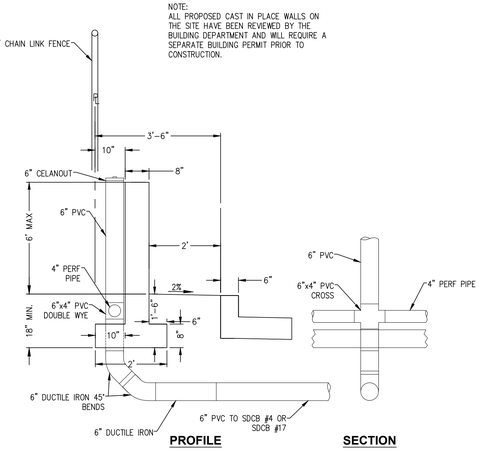


NOTES:
1. CONCRETE FC > 2,500 PSI
2. VIBRATE ALL CONCRETE
3. REINF STEEL: GR. 60 FOR #5 AND LARGER. GR. 40 FOR #4
4. CONTROL JOINTS TO BE INSTALLED @ 25' O.C. MAX JOINT DEPTH TO BE 25% OF WALL THICKNESS.

H	V-BARS	H-BARS	T-BARS	A	B	C	D
0' - 4'	#4 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	8"	8"	4"	20"
4' - 6'	#4 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	10"	8"	6"	24"
6' - 8'	#5 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	16"	8"	8"	32"
8' - 10'	#5 @ 10" O.C.	#4 @ 10" O.C.	#4 @ 10" O.C.	24"	10"	8"	42"

E TYPICAL RETAINING WALL
SCALE: 3/4" = 1'-0"

NOTE:
ALL PROPOSED CAST IN PLACE WALLS ON THE SITE HAVE BEEN REVIEWED BY THE BUILDING DEPARTMENT AND WILL REQUIRE A SEPARATE BUILDING PERMIT PRIOR TO CONSTRUCTION.



FOOTINGS FOR ALL WALLS TO USE DIMENSIONS FOR 4'-6' WALLS (SEE DETAIL 'E' IN STRUCTURAL PLANS) REGARDLESS OF HEIGHT

WEST WALL TYPICAL SECTION
N.T.S.

DESIGN INFORMATION ONLY

NO.	REVISION	BY	DATE
6			
1			
2			
3			
4			
5			

RAMON L. LLANOS — STATE OF WASHINGTON — 35219 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH
6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY:
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

EAST & WEST RETAINING WALL PLAN & PROFILES

THORNTON HEIGHTS
AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 14 OF 18

RECORD DRAWINGS

00757.016 03/20/25 RH

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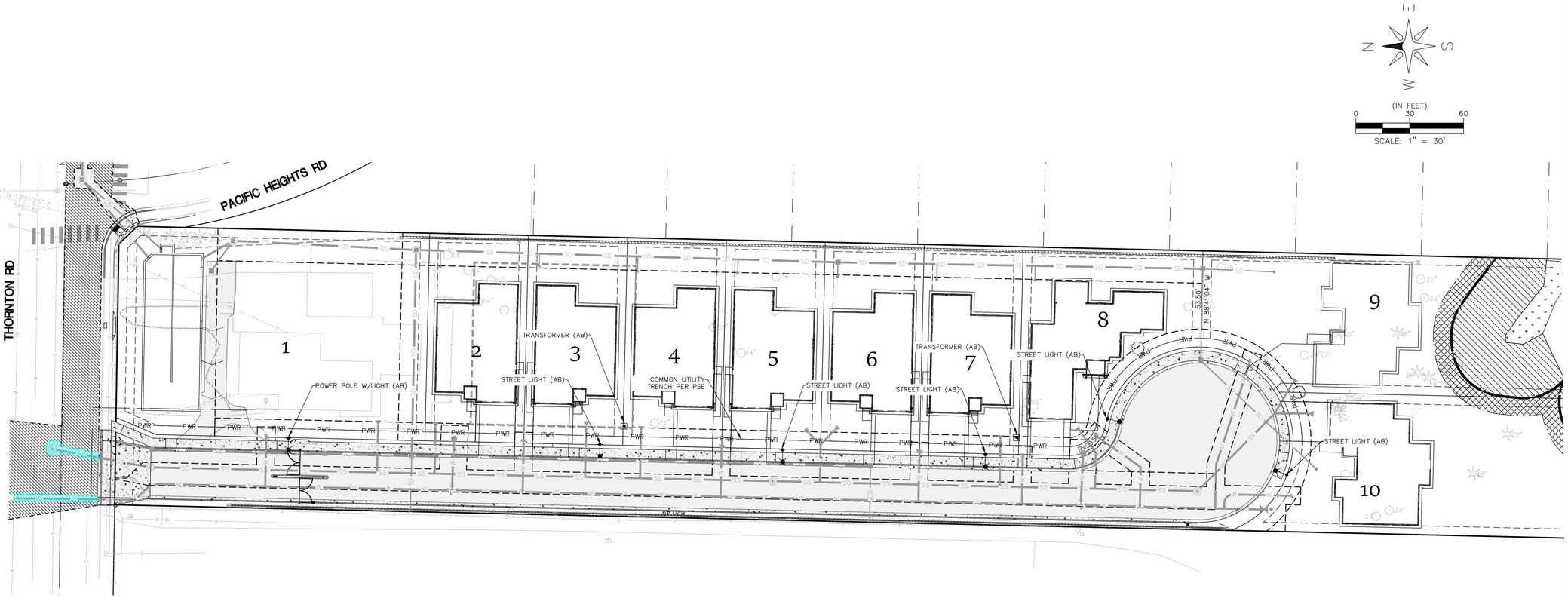

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NO.	REVISION	BY	DATE
6			
5			
4			
3			
2			
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RAMON LLANOS — EXPIRES: 09/30/2026 — STATE OF WASHINGTON — 33273 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: _____
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

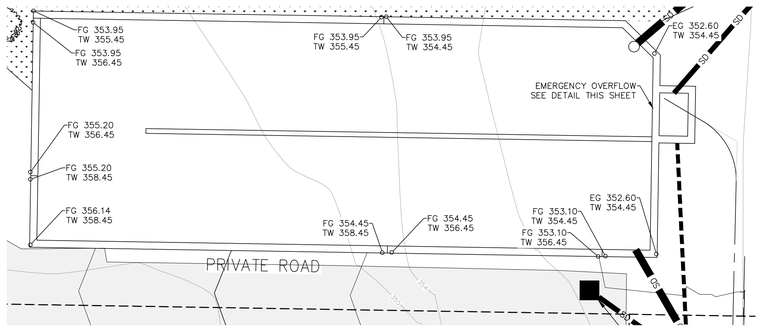
LIGHTING & ELECTRICAL PLAN

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 15 OF 18

RECORD DRAWINGS

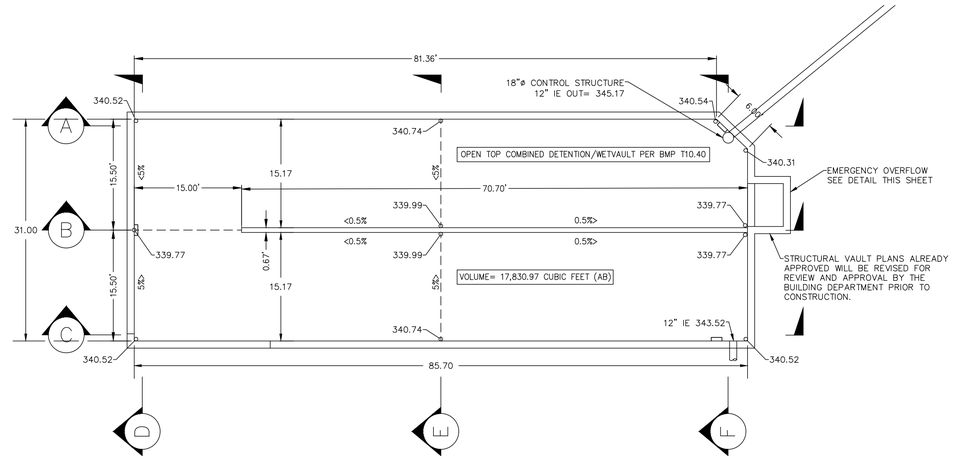


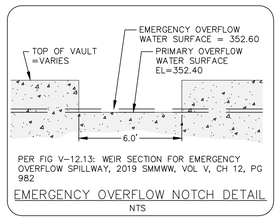
ON-SITE STORMWATER VAULT PLAN
1"=10'

OPEN TOP DETENTION/WETVAULT INFORMATION:
VAULT BOTTOM AREA = 2,586 SF
DETENTION DEPTH = 7-FT
RETENTION DEPTH = 3.6-FT
DETENTION VOLUME = ~~18,102 CF~~ 17,830.97 CF (AB) PER MEMO DATED FEBRUARY 21, 2025
RETENTION VOLUME = 9,310 CF
DETENTION VOLUME REQUIRED= 17,993 CF PER WWHM2012
RETENTION VOLUME REQUIRED= 0.2177 AC-FT (9,292 CF) PER WWHM2012
PRIMARY OVERFLOW WATER SURFACE= 352.40 ELEV.
EMERGENCY OVERFLOW WATER SURFACE= 352.60 ELEV.

OPEN TOP COMBINED DETENTION/WETVAULT (BMP T10.40) NOTES:
1. A COF BUILDING PERMIT IS REQUIRED FOR CONSTRUCTING THE VAULT.
2. VAULTS CONSTRUCTED CLOSER THAN 20' FROM PROPERTY LINE AND OR CITY OF FERNDALE ROW MUST BE DESIGNED APPROPRIATELY BY A STRUCTURAL ENGINEER IN ACCORDANCE WITH SWMM GUIDELINES AND THE THE CONDITIONS IN WHICH IT WILL BE PLACED. THE PROJECT CIVIL ENGINEER OF RECORD WILL BE REQUIRED TO CERTIFY THAT CONSTRUCTION AND PLACEMENT WAS DONE IN ACCORDANCE WITH SAID GUIDELINES PRIOR TO PROJECT ACCEPTANCE BY PUBLIC WORKS.
3. INSTALL HANGING REMOVABLE CONFINED SPACE SIGN UNDER EACH ACCESS LID, PER OSHA REQUIREMENTS.
4. VAULT MUST BE CONSTRUCTED WITHOUT TEMPORARY IMPACTS TO ADJACENT PROPERTIES.

OPEN TOP COMBINED DETENTION/WETVAULT STRUCTURAL NOTES:
1. THE CONCRETE DETENTION VAULT MUST BE DESIGNED BY A STRUCTURAL ENGINEER OR CIVIL ENGINEER WITH STRUCTURAL EXPERTISE IN CONFORMANCE WITH THE VOLUME III PAGE 3-42 & 3-43 OF THE 2014 STORMWATER MANAGEMENT VOLUME.
2. MINIMUM 3000 PSI STRUCTURAL REINFORCED CONCRETE MUST BE USED PER THE 2019 SWMM, VOL. V, PAGE 998
3. STRUCTURAL CALCULATIONS SHALL ADDRESS VAULT BUOYANCY, SPECIFICALLY BUOYANCY WHEN THE VAULT IS EMPTY. FOR BUOYANCY CALCULATIONS ASSUME THAT THE HIGH GROUNDWATER ELEVATION IS AT GRADE.
4. WATER STOPS MUST BE PROVIDED AT ALL CAST IN PLACE CONSTRUCTION JOINS PER THE 2014 SWMM, VOL. V, FIGURE 3.2.8.
5. THE ENGINEER OF RECORD MUST CERTIFY THAT THE STORMWATER VAULT IS CONSTRUCTED IN CONFORMANCE WITH THE 2014 STORMWATER MANAGEMENT MANUAL, THE APPROVED STRUCTURAL DESIGN AND THE APPROVED CIVIL PLANS.
6. THE STRUCTURAL PLANS SHAL INCLUDE SHEET 12 OF THE APPROVED CIVIL PLANS.
7. VAULT MUST BE PLACED ON STABLE WELL-CONSOLIDATED NATIVE MATERIAL WITH SUITABLE BEDDING PER VOL. III, PAGE 3-38 OF THE SWMM.
8. ALL CONSTRUCTION JOINTS MUST BE PROVIDED WITH WATER STOPS PER VOLUME III, PAGE 3-37 & 3-41 OF THE SWMM.
9. VAULT SHALL HAVE SUFFICIENT ACCESS FOR MAINTENANCE TO ALL ACCESS PANELS CONTROL STRUCTURE IN CONFORMANCE WITH VOLUME III, PAGE 3-48 OF THE SWMM.
10. THE STRUCTURAL DESIGN AND CALCULATIONS FOR THE DETENTION VAULT MUST BE APPROVED BY THE COF BUILDING DEPARTMENT AND THE LAND DISTURBANCE PERMIT ISSUED BY PUBLIC WORKS FOR THE VAULT CONSTRUCTION TO BEGIN.



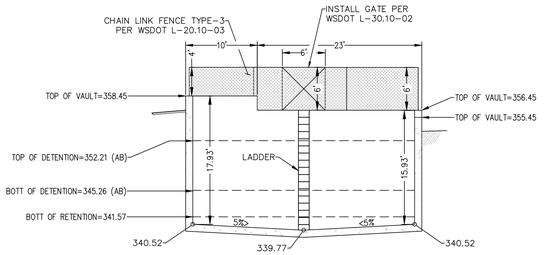


PER FIG V-12.13: WEIR SECTION FOR EMERGENCY OVERFLOW SPILLWAY, 2019 SMMWW, VOL V, CH 12, PG 982

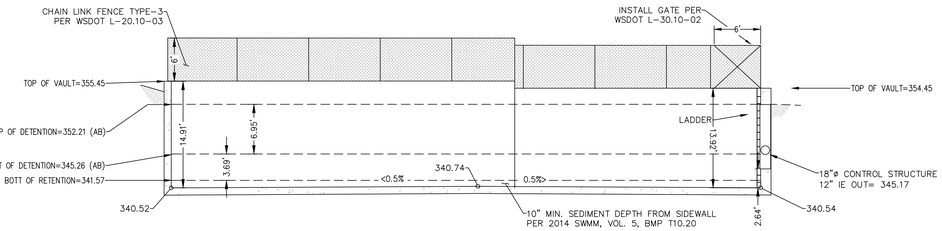
EMERGENCY OVERFLOW NOTCH DETAIL
NTS

IMPERVIOUS SURFACE ALLOCATION	
LOT	IMPERVIOUS (SF)
1	2,940
2	3,585
3	3,585
4	3,585
5	3,585
6	3,585
7	3,152
8	4,570
9	4,680
10	5,493
TRACT A	27,150
LOT TOTAL	38,760
PLAT TOTAL	65,910

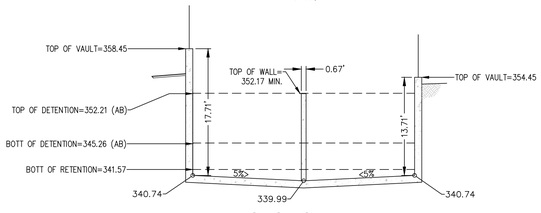
*BASED ON CALCULATIONS PER MEMO DATED FEBRUARY 21, 2025



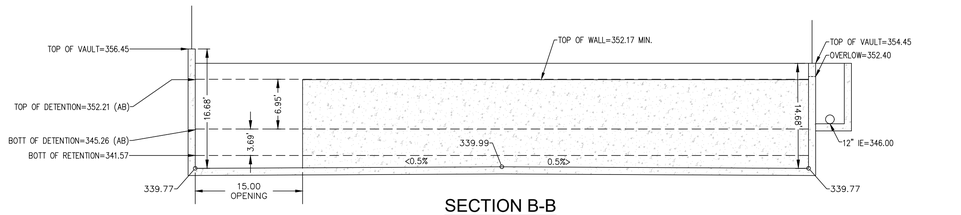
SECTION D-D
1"=10'



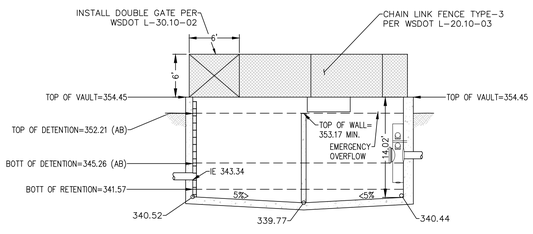
SECTION A-A
1"=10'



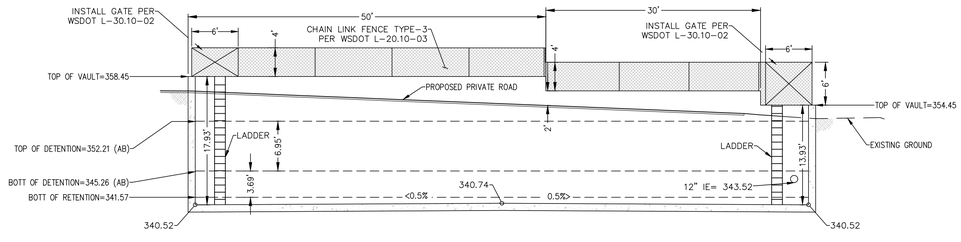
SECTION E-E
1"=10'



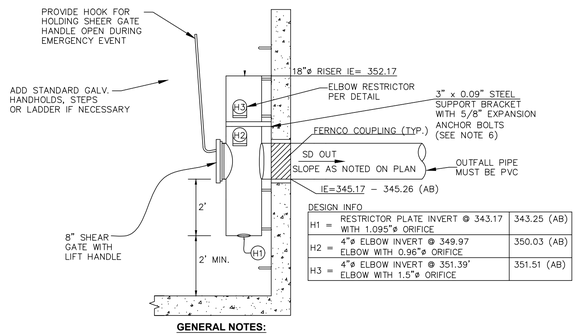
SECTION B-B
1"=10'



SECTION F-F
1"=10'

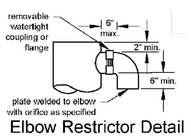


SECTION C-C
1"=10'



DESIGN INFO

H1 =	RESTRICTOR PLATE INVERT @ 343.17 WITH 1.095"ø ORIFICE	343.25 (AB)
H2 =	4"ø ELBOW INVERT @ 349.97 ELBOW WITH 0.96"ø ORIFICE	350.03 (AB)
H3 =	4"ø ELBOW INVERT @ 351.39' ELBOW WITH 1.5"ø ORIFICE	351.51 (AB)



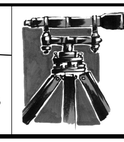
Elbow Restrictor Detail

GENERAL NOTES:
1. ELBOW DIAMETERS SHALL BE LARGER THAN ORIFICE DIAMETERS, TYPICAL.
2. ALL PARTS SHALL BE STAINLESS STEEL, ALUMINUM, OR ALUMINIZED STEEL.
3. OFFSET FRAME AND LADDER OR STEPS SO CLEANOUT GATE IS VISIBLE FROM TOP AND SO CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE.
4. LOCATE ELBOW RESTRICTOR(S) AS NECESSARY TO PROVIDE MINIMUM CLEARANCE AS SHOWN.
5. THE PIPE SUPPORTS AND THE RESTRICTOR/SEPARATOR SHALL BE CONSTRUCTED OF THE SAME MATERIAL AND BE ANCHORED AT A MAXIMUM SPACING OF 36 INCHES. ATTACHED THE PIPE SUPPORTS TO THE MANHOLE WITH 5/8 INCH STAINLESS STEEL EXPANSION BOLTS OR EMBED THE SUPPORTS INTO THE VAULT WALL 2 INCHES.

CONTROL STRUCTURE - VAULT
NTS

NO.	REVISION	BY	DATE
0			
1			
2			
3			
4			
5			

RAMON LLANOS — 33013 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 3-19-25



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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: [signature]
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

OPEN TOP VAULT DETAILS

THORNTON HEIGHTS
AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 16 OF 18

R:\Common\Land Projects 2021\2196 - 2583 Thornton - Matt Lynch\DWG\2196_Civil_As-builts.dwg PLOT DATE:3/19/2025 4:45 PM

00757.018 03/20/25 RH

RECORD DRAWINGS

NOTES:
1. Alternate construction allowances to the detail shown (CPI PRECAST BASE SECTION) may be allowed by the Engineer. Alternate construction may include: pre-cast base (see detail #2), cast-in-place (CIP) concrete base, or brick and mortar. Pipe stubs shall be provided as shown. Pipe openings shall not be placed in the knockouts.
2. The base section shall be set on a level bed of 3/4" minimum, 0" maximum, crushed surfacing material (Detail "B"). Have a seal thickness of 2" minimum to 12" maximum. Provide a 6" minimum, 12" maximum, compacted depth of crushed surfacing base course. After the pipe is installed, fill the pipe with joint mortar in accordance with the applicable requirements of Section 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 10'.
4. The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
5. The adjustment section shall be placed on a mortar bed, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the Precast Base Section.
7. All pickup holes shall be grouted full after the catch has been placed.

PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM NOMINAL PIPE DIAMETER
CONCRETE PLAIN OR REINFORCED	12"
ALL METAL PIPE	15"
DUCTILE IRON PIPE (DIPS) (WSDOT STD. SPEC. 9-05.13)	12"
SOLID WALL PVC (WSDOT STD. SPEC. 9-05.12(1))	15"
RIBBED PVC (WSDOT STD. SPEC. 9-05.12(2))	15"

* STORM SEWER PIPE

FRAME AND VANED GRATE

RECTANGULAR ADJUSTMENT SECTION

#3 BAR EACH CORNER 18" MIN.
#3 BAR HOOP
SET LEVEL
ALTERNATIVE PRECAST BASE SECTION

#3 BAR EACH CORNER
#3 BAR HOOP EACH SIDE
#3 BAR EACH WAY
PRECAST BASE SECTION

CATCH BASIN TYPE 1

STANDARD DETAIL ST-1

NOT TO SCALE

NOVEMBER 23, 2016

APPROVED
Public Works Director
8/11/17
Date

PROPOSED ASPHALT ROADWAY
SAWCUT EXISTING ASPHALT ROADWAY
4" OR MATCH EXISTING ASPHALT THICKNESS IF THICKER THAN 4"
FINAL 2" OF HMA WEARING COURSE PLACED OVER 2" PLANED AREA AND PROPOSED ROADWAY IN 1 LIFT
15" PLANED @ 2" DEPTH
2" WIDE PETROTAC OR EQUAL
EXISTING ASPHALT ROADWAY
12" MIN.

NOVEMBER 25, 2016

PLANING OF EXISTING AND/OR TYPICAL OVERLAY AND PAVEMENT SECTIONS

STANDARD DETAIL R-3

NOT TO SCALE

APPROVED
Public Works Director
8/11/17
Date

BID ITEM (INCLUDES SIDEWALK RAMPS)
VARIES: 14' MIN.
6'-0"
3/8" EXPANSION JOINT (TYP.)
CEMENT CONC. PEDESTRIAN (TYP.)
CEMENT CONC. SIDEWALK
5'-0"
RAMP WITH 12H:1V SLOPE (TYP.)
SEE NOTE 1
CEMENT CONCRETE CURB & GUTTER
PLAN VIEW

LEGEND
SLOPE IN OTHER 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)

15' MAX (SEE NOTE 5) (TYP.)
VARIES: 14' MIN. 45' MAX
CEMENT CONC. PEDESTRIAN CURB (TYP.)
GRADE BREAK
4"
5"
6"
CEMENT CONCRETE SIDEWALK
SECTION (A)
3/8" EXPANSION JOINT (TYP.)
1/2" R (TYP.)
FLUSH
DEPRESSED CURB & GUTTER
DRIVEWAY (BY OTHERS)
SECTION (B)
CEMENT CONCRETE PEDESTRIAN) CURB (TYP.)
DEPRESSED CURB & GUTTER

NOTES:
1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTER-LINE AS REQUIRED AT 15' MAXIMUM SPACING WHEN DRIVEWAY WIDTH EXCEED 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-80.10-04

CEMENT CONCRETE SIDEWALK
CEMENT CONCRETE PEDESTRIAN) CURB (TYP.)
DEPRESSED CURB & GUTTER
CEMENT CONCRETE CURB & GUTTER

NOVEMBER 25, 2016

CEMENT CONCRETE DRIVEWAY ENTRANCE

STANDARD DETAIL R-6

NOT TO SCALE

APPROVED
Public Works Director
8/11/17
Date

3/8"—NOTE: MAX. 1/2"
AT CURB RAMP, MATCH ROADWAY SLOPE, COUNTER SLOPE 5% MAX
1"R
2"
2%
8"
1/2" R
FLUSH WITH GUTTER PAN AT CURB RAMP ENTRANCE

CURB RAMP/DRIVEWAY SECTION

24"
5-1/2"
1"
1/2" R
1"R
1-1/2"
12"
6"
1/2" R
6"
3"

TYPICAL SECTION

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 EDGED.
2. 2" WEEP HOLES TO BE PLACED ON EACH SIDE OF DRIVEWAY SECTION & 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 CURING COMPOUND SHALL BE APPLIED AS OUTLINED IN THE STANDARD SPECIFICATIONS.
8. FURTHER REQUIREMENTS SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

NOVEMBER 25, 2016

APPROVED
Public Works Director
8/11/17
Date

CURB AND GUTTER INSTALLATION

STANDARD DETAIL R-9

NOT TO SCALE

EX 8" WATER
1.5" BEDDING MATERIAL
6" CDF
1.5" BEDDING MATERIAL
12" STORM

SHALLOW CROSSING

N.T.S.

3/8" X 4-1/2" THRU JOINTS
3/4" DEEP "V" GROVE AT 1/4 POINTS FOR 15' RADIUS AND AT 1/6 POINTS FOR 20' RADIUS.
3/8" X 4-1/2" THRU JOINTS AT CURB RETURNS
3/8" X 2" MIN. DUMMY JOINTS 20' C/C
3/4" DEEP "V" GROOVES
3/8" X 4-1/2" THRU JOINTS AT DRIVEWAYS
ASPHALT RAMP AT END OF SIDEWALK TO MATCH EXISTING
PROVIDE 4'x4' LANDING
SEE NOTE 3
20' MIN TO 80' MAX
2' MIN.
PROPERTY LINE
5' TYP.
5' MIN.

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 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. 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.

CURB & GUTTER
SEE NOTE 3
3/8" x 4 1/2" THRU JOINTS
2% MAX.
4" CEMENT CONCRETE SIDEWALK
ASPHALT RAMP
INSTALL BACK OF WALK DRAIN, CUT SECTIONS ONLY (TYPICAL BOTH SIDES OF ROADWAY) PIPE INVERT EL. 24" BELOW TOP OF SIDEWALK. ENCLOSE FABRIC 6" BELOW TOP OF SIDEWALK AND COVER WITH 6" OF WASHED ROCK.
UNDISTURBED SUBGRADE OR APPROVED MATERIAL COMPACTED TO 95% OPTIMUM DENSITY.

APRIL 21, 2017

APPROVED
Public Works Director
8/11/17
Date

TYPICAL SIDEWALK PLAN WITH CROSS SECTION

STANDARD DETAIL R-12

NOT TO SCALE

DRILLED TAP 3/8" x 1"NC INTERNAL THREADS 1/2" MIN. DEPTH
STAINLESS STEEL SOCKET HEAD CAP SCREW
GASKET
CIRCULAR FRAME AND COVER
ROADWAY DUTY
SEE NOTE 1
SEE DETAIL "A"
COVER PLAN
SECTION (B)
BOLT-DOWN WATERTIGHT COVER SECTION (SEE NOTE 5)
STAINLESS STEEL BOLT TYPE 1
SEE DETAIL "A"
SEE DETAIL "A"
SEE DETAIL "A"
SKID GROOVE PATTERN DETAIL
BLIND PICK NOTCH
BOTTOM PLAN
SECTION (A)
SEE DETAIL "B"
RING PLAN
RING SECTION
WASHER (SEE NOTES)
INTERNAL GROOVE WITH NEOPRENE GASKET
BOLT-DOWN WATERTIGHT DETAIL "B"
SPECIFY LETTERING
ISOMETRIC VIEW

NOTES:
1. The gasket and groove may be in the seat (frame) or in the underside of the cover (lid) as shown in Section "A". The gasket location may be optional and may be cast or machined.
2. For bolt-down manhole ring and covers that are not designated "Watertight", a gasket shall be required. The gasket shall be neoprene (Detail "B").
3. Instead of three equally spaced holes, a single 3" dia. hole is acceptable. Hole location and number of holes may vary by agency.
4. For clarity, the vertical scale of the Cover Section has been exaggerated, it is 1.5 times the horizontal scale (1H:1.5V).
5. Proprietary manhole covers without bottom are acceptable.
6. Proprietary manhole covers without bottom are acceptable.

8/11/17
Date

CIRCULAR FRAME AND COVER ROADWAY DUTY

STANDARD DETAIL SS-10

NOT TO SCALE

APPROVED
Public Works Director

SAWCUT FULL DEPTH
2" WIDE PETRO-TAC CENTERED OVER SAWCUT SEAM
24" WIDE MIN. PLANE 2" DEPTH
2" FINAL LIFT HMA
2" FIRST LIFT HMA
3" COMPACTED CRUSHED SURFACING TOP COURSE
12"
EXISTING TRENCH COMPACTED TO 95% MODIFIED PROCTOR

NOTE:
1. TAC REQUIRED BETWEEN PAVED SURFACES, USE CSS1 EXCEPT WHERE PETRO-TAC IS SPECIFIED.

APRIL 21, 2017

APPROVED
Public Works Director
8/11/17
Date

PETRO-TAC PLACEMENT

STANDARD DETAIL R-11A

NOT TO SCALE

℄
60' — 90°
R/W
VARIES
18'
18'
VARIES
2'
5'
1.5'
0.5'
3% TV MAX CUT
2%
2'
3'
CUT SECTION
CONCRETE CURB & GUTTER PER COF STANDARD (TYP)
0.5'
5'
2'
1'
3% TV MAX FILL
INSTALL MIN. 4" PVC POSITIVE LOT/ROOF DRAINS CONNECT TO CATCH BASINS TYPICAL BOTH SIDES OF ROADWAY 4' MIN. DEPTH
4" SMOOTH WALL PERFORATED PVC PIPE
INSTALL BACK OF WALK DRAIN, CUT SECTIONS ONLY
ENCLOSE 1½" WASHED ROCK IN FILTER FABRIC LINER TYPICAL BOTH SIDES OF ROADWAY. PIPE INVERT EL. 24" BELOW TOP OF SIDEWALK. ENCLOSE FABRIC 6" BELOW TOP OF SIDEWALK AND COVER WITH 6" OF WASHED ROCK.
4" PCC SIDEWALK
OVER 2" OF ¾" WASHED ROCK OVER 6" GRAVEL BASE, COMPACTED TO 95% OF OPTIMUM DENSITY (TYP.)
10' CLEAR, MIN.
WATER MAIN (VALVE BOXES MUST BE OUT OF DRIVE LANE)
0' ON STRAIGHT ALIGNMENT, WITHIN 5' EITHER SIDE OF ℄ ON CURVE PORTION OF ALIGNMENT
SANITARY SEWER MAIN
3.5" HMA CL ½", PG 64-22 (1.5" LIFT OVER 2" LIFT)
3" CSTC
12" GRAVEL BASE, COMPACTED TO 95% OF OPTIMUM DENSITY
*NOTE: GRAVEL BASE MAY BE USED AS AN ALTERNATIVE TO GRAVEL BALLAST ONLY WITH PRIOR APPROVAL FROM THE DIRECTOR OF PUBLIC WORKS.
FILL SECTION MAINTAIN 1:1 PRISM BEGINNING 1' FROM BEHIND BACK OF WALK
PRISM MATERIAL SHALL BE GRAVEL BASE BELOW BASE SECTION, COMPACTED TO 95% OF MAXIMUM DENSITY (TYP)
2' MIN.
CONDUIT
TRENCH WIDTH SHALL BE 8" OR THE CONDUIT DIAMETER PLUS 2 INCHES, WHICHEVER IS LARGER.

ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE PROVISIONS OF APPLICABLE SECTIONS OF THE WSDOT "STANDARD SPECIFICATIONS" AND SHALL CONFORM TO THE REQUIREMENTS OF THE CITY ENGINEER.

TYPICAL SECTION
NOT TO SCALE

APRIL 21, 2017

APPROVED
Public Works Director
8/11/17
Date

ASPHALT CONCRETE SECTION LOCAL STREET

STANDARD DETAIL R-4

NOT TO SCALE

℄
10.0'
39.5' ROW
14.0' DRIVE LANE
14.0' DRIVE LANE
5.0'
2.0'
EASEMENT
0.5'
ROAD ℄
0.5'
3.5'
SEE SHEET 14
2%
2%
8" SEWER
8" WATER
12" SD
10.0'
10.0'

TYPICAL ROAD SECTION

N.T.S.

NO.	REVISION	BY	DATE
0			
1			
2			
3			
4			
5			

RAMON L. LLANOS — EXPIRES: 09/29/2025 — 33213 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #:	2196
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CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

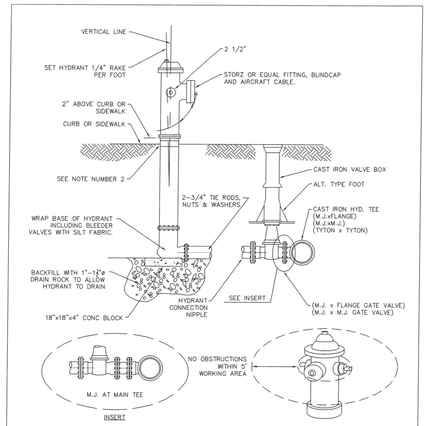
APPROVED
03/20/2025
BY:
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

ROAD & STORM DETAILS

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET **17** OF **18**

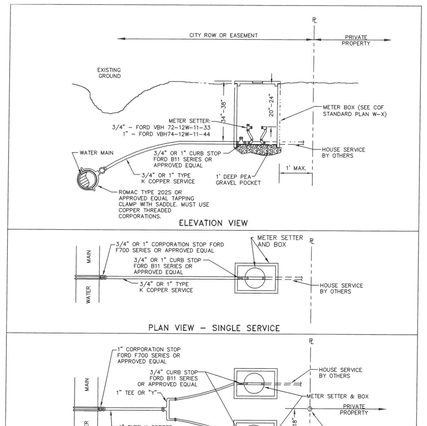


NOTES:
1. FOR CLOSE COUPLED HYDRANTS USE ALL FLANGE TYPE CONNECTIONS.
2. IF HYDRANT RISES THROUGH CONCRETE USE EXPANSION STRIP AROUND HYDRANT BARREL.
3. ALL HYDRANT ASSEMBLIES WILL BE M&H MODEL 129S

AUGUST 2, 2017

APPROVED — Public Works Director — 8/11/17 Date

FIRE HYDRANT ASSEMBLY
STANDARD DETAIL W-1
NOT TO SCALE

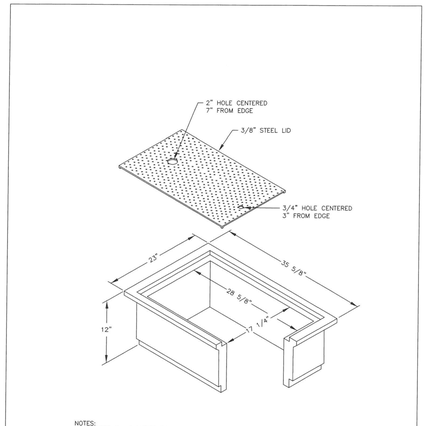


NOTES:
1. METER(S) TO BE FURNISHED AND INSTALLED BY COF.
2. WATER SERVICE TRENCH TO BE BACKFILLED WITH 12" MIN. DEPTH OF CLEAN SANDY FILL.

NOVEMBER 23, 2016

APPROVED — Public Works Director — 8/11/17 Date

TYPICAL ¾" AND 1" WATER SERVICE
STANDARD DETAIL W-5
NOT TO SCALE

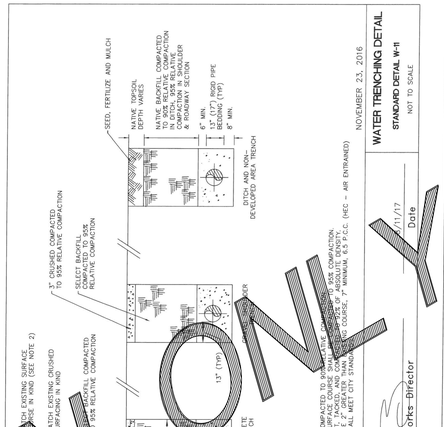


NOTES:
1. FOGTITE No. 2 METER BOX OR APPROVED EQUAL.
2. FOR USE WITH WATER SERVICE IN PLANTER/LANDSCAPE AREA OR OUTSIDE OF SIDEWALK.

NOVEMBER 23, 2016

APPROVED — Public Works Director — 8/11/17 Date

¾" AND 1" CONCRETE METER BOX
STANDARD DETAIL W-6
NOT TO SCALE

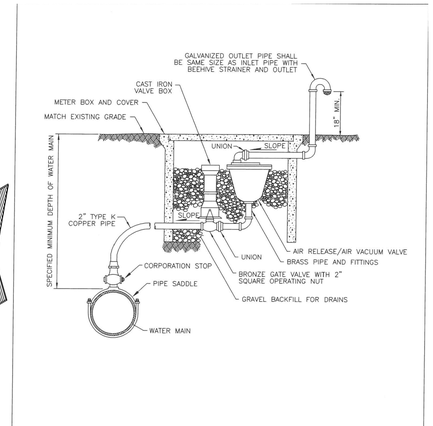


NOTES:
1. NATIVE BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.
2. SELECT BACKFILL/CRUSHED SURFACE COURSE SHALL BE COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION.
3. ASPHALT/CONCRETE PAVEMENT TRENCH SHALL BE BACKFILLED WITH 1" - 0" CRUSHED SURFACING TOP COURSE, 2" MINIMUM ASPHALT CONCRETE PAVEMENT OVER 4" MINIMUM CRUSHED SURFACING BASE COURSE.
4. P.C.C. REPLACEMENT SHALL BE 2" GREATER THAN EXISTING, 6" MINIMUM.
5. ALL TRENCH RESTORATION SHALL MEET CITY STANDARDS.

NOVEMBER 23, 2016

APPROVED — Public Works Director — 8/11/17 Date

WATER TRENCHING DETAIL
STANDARD DETAIL W-11
NOT TO SCALE

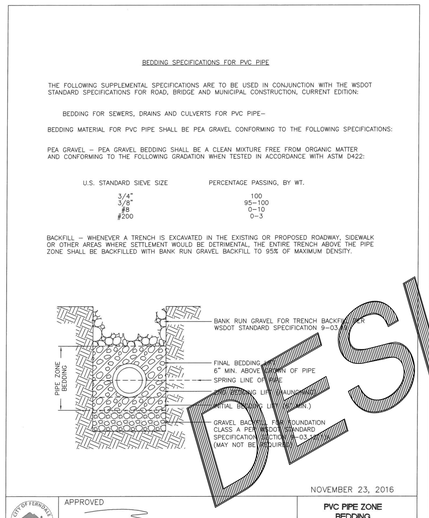


NOTES:
1. THE SIZE OF THE COMBINATION AIR RELEASE/AIR VACUUM VALVE SHALL BE SPECIFIED IN THE CONTRACT. THE PIPING AND VALVES SHALL BE THE SAME SIZE AS THE COMBINATION AIR RELEASE/AIR VACUUM VALVE.
2. LOCATE AT THE HIGH POINT OF THE MAIN, TAP TOP OF MAIN.

NOVEMBER 23, 2016

APPROVED — Public Works Director — 8/11/17 Date

COMBINATION AIR RELEASE AIR VACUUM VALVE ASSEMBLY
STANDARD DETAIL W-13
NOT TO SCALE



BEDDING SPECIFICATIONS FOR PVC PIPE

THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS ARE TO BE USED IN CONJUNCTION WITH THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, CURRENT EDITION:

BEDDING FOR SEWERS, DRAINS AND CULVERTS FOR PVC PIPE–

BEDDING MATERIAL FOR PVC PIPE SHALL BE PEA GRAVEL CONFORMING TO THE FOLLOWING SPECIFICATIONS:

PEA GRAVEL – PEA GRAVEL BEDDING SHALL BE A CLEAN MIXTURE FREE FROM ORGANIC MATTER AND CONFORMING TO THE FOLLOWING GRADATION WHEN TESTED IN ACCORDANCE WITH ASTM D422:

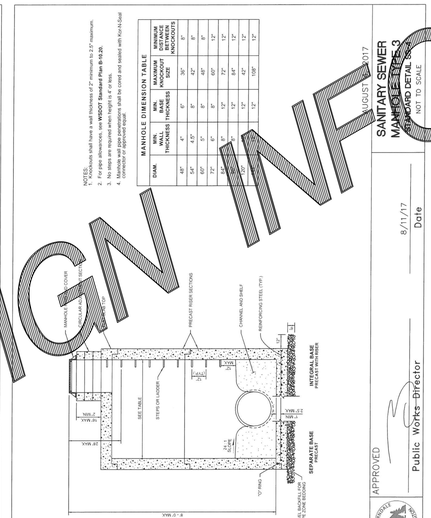
U.S. STANDARD SIEVE SIZE	PERCENTAGE PASSING, BY WT.
3/4"	100
3/8"	95–100
#8	0–10
#200	0–3

BACKFILL – WHENEVER A TRENCH IS EXCAVATED IN THE EXISTING OR PROPOSED ROADWAY, SIDEWALK OR OTHER AREAS WHERE SETTLEMENT WOULD BE DETRIMENTAL, THE ENTIRE TRENCH ABOVE THE PIPE ZONE SHALL BE BACKFILLED WITH BANK RUN GRAVEL. BACKFILL TO 95% OF MAXIMUM DENSITY.

NOVEMBER 23, 2016

APPROVED — Public Works Director — 8/11/17 Date

PVC PIPE ZONE BEDDING
STANDARD DETAIL SS-1
NOT TO SCALE



MANHOLE DIMENSION TABLE

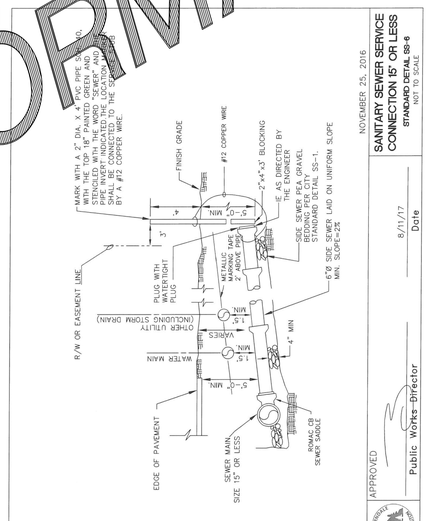
DIAM	MIN. WALL THICKNESS	MAXIMUM DEPTH SIZE	MINIMUM DIAMETER BETWEEN STEPS/RINGS
48"	4"	30"	8"
54"	4.5"	42"	8"
60"	5"	48"	12"
72"	6"	60"	12"
84"	7"	72"	12"
96"	8"	84"	12"
108"	9"	96"	12"
120"	10"	108"	12"

NOTES:
1. Manhole shall have a wall thickness of 5" minimum to 21" maximum.
2. For pipe dimensions, see WSDOT Standard Plan B-6.20.
3. No steps are required when height is 4' or less.
4. Manhole base and riser section shall be cured and tested with the H-Gasket connection or approved equal.

AUGUST 1, 2017

APPROVED — Public Works Director — 8/11/17 Date

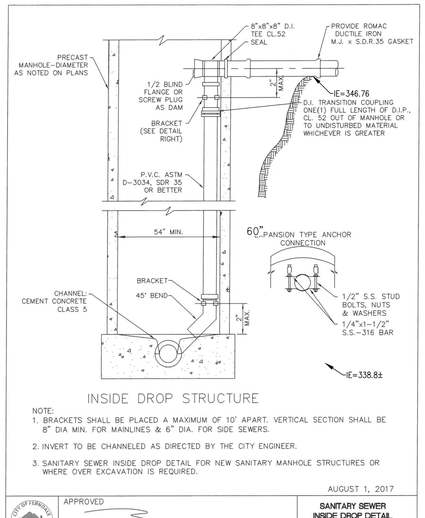
SANITARY SEWER MANHOLE TYPE 3
STANDARD DETAIL SS-3
NOT TO SCALE



NOVEMBER 25, 2016

APPROVED — Public Works Director — 8/11/17 Date

SANITARY SEWER SERVICE CONNECTION 15" OR LESS
STANDARD DETAIL SS-9
NOT TO SCALE



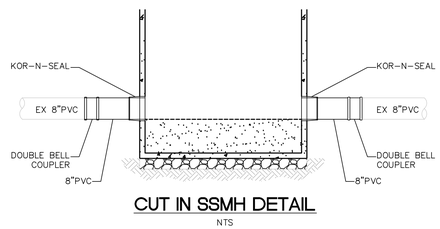
INSIDE DROP STRUCTURE

NOTE:
1. BRACKETS SHALL BE PLACED A MAXIMUM OF 10' APART. VERTICAL SECTION SHALL BE 8" DIA MIN. FOR MAINLINES & 6" DIA. FOR SIDE SEWERS.
2. INVERT TO BE CHANNELED AS DIRECTED BY THE CITY ENGINEER.
3. SANITARY SEWER INSIDE DROP DETAIL FOR NEW SANITARY MANHOLE STRUCTURES OR WHERE OVER EXCAVATION IS REQUIRED.

AUGUST 1, 2017

APPROVED — Public Works Director — 8/11/17 Date

SANITARY SEWER INSIDE DROP DETAIL
STANDARD DETAIL SS-11
NOT TO SCALE



CUT IN SSMH DETAIL
NTS

NO.	REVISION	BY	DATE
0			
1			
2			
3			
4			
5			

RAMON LLANOS — STATE OF WASHINGTON — 33013 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #: 2196
DATE: 3/19/2025
DESIGNED BY: RL
DRAWN BY: JRF
CHECKED BY: RL

MATTHEW LYNCH
6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY: Hannah Kerr for Kevin Renz
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

WATER & SEWER DETAILS

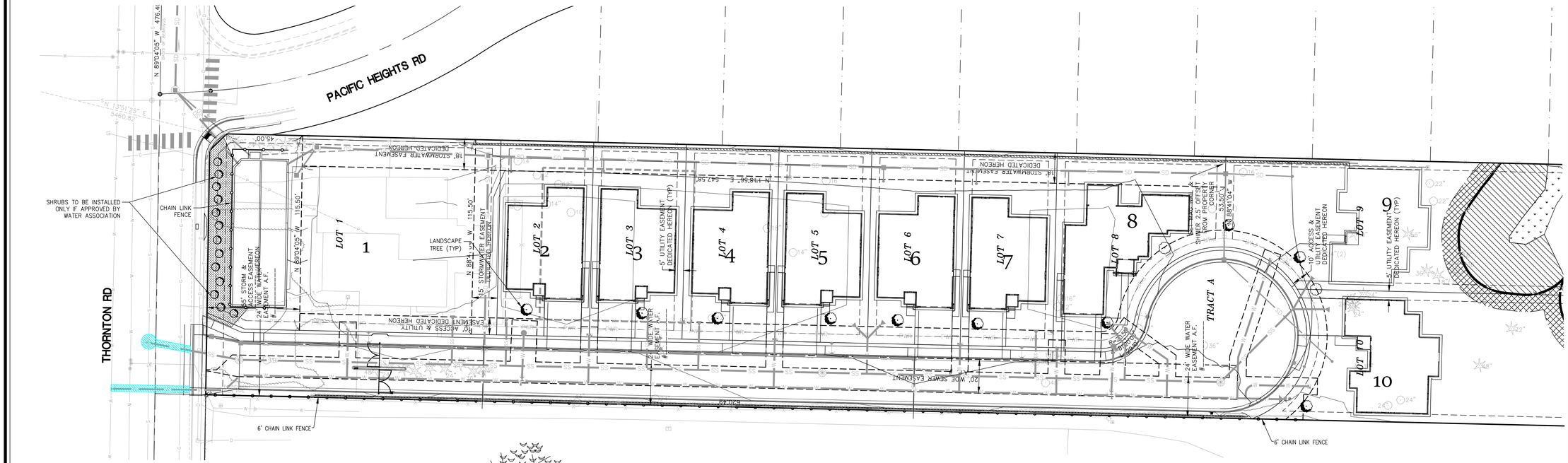
THORNTON HEIGHTS
AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 18 OF 18

RECORD DRAWINGS

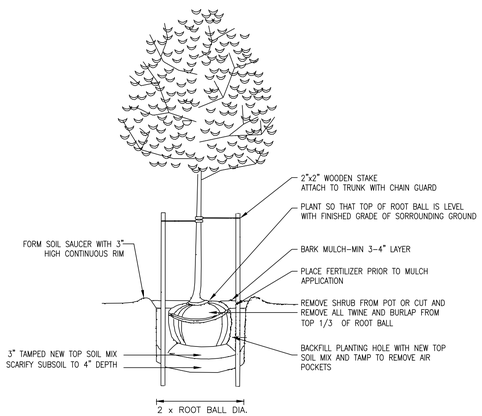
00757.020 03/20/25 RH

R:\Common\Land Projects 2021\2196 - 2583 Thornton - Matt Lynch\DWG\2196_Civil_As-builts.dwg PLOT DATE:3/19/2025 4:45 PM

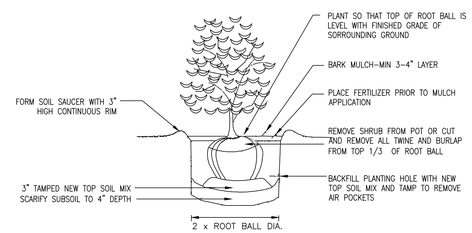


LANDSCAPE LEGEND:

- 2 1/2" CORAL BARK MAPLE
- 18"–24" OTTO LUYKEN
- GROUND COVER/ BARK MULCH



1 TREE PLANTING DETAIL
SCALE: NTS



2 SHRUB PLANTING DETAIL
SCALE: NTS

NO.	REVISION	BY	DATE
0			
1			
2			
3			
4			
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RAMON L. LLANOS — 33212 — REGISTERED PROFESSIONAL ENGINEER — 3-19-25

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

PROJECT #:	2196
DATE:	3/19/2025
DESIGNED BY:	RL
DRAWN BY:	JRF
CHECKED BY:	RL

MATTHEW LYNCH

6249 CHURCH RD
FERNDALE, WA 98248

APPROVED
03/20/2025
BY
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

LANDSCAPE PLAN

THORNTON HEIGHTS

AF 390124-416472-0000 - 2593 THORNTON ST, FERNDALE, WASHINGTON
A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP39 N., RANGE 1 E., W.M.

SHEET 1 OF 1

RECORD DRAWINGS

00757.021 03/20/25 RH

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