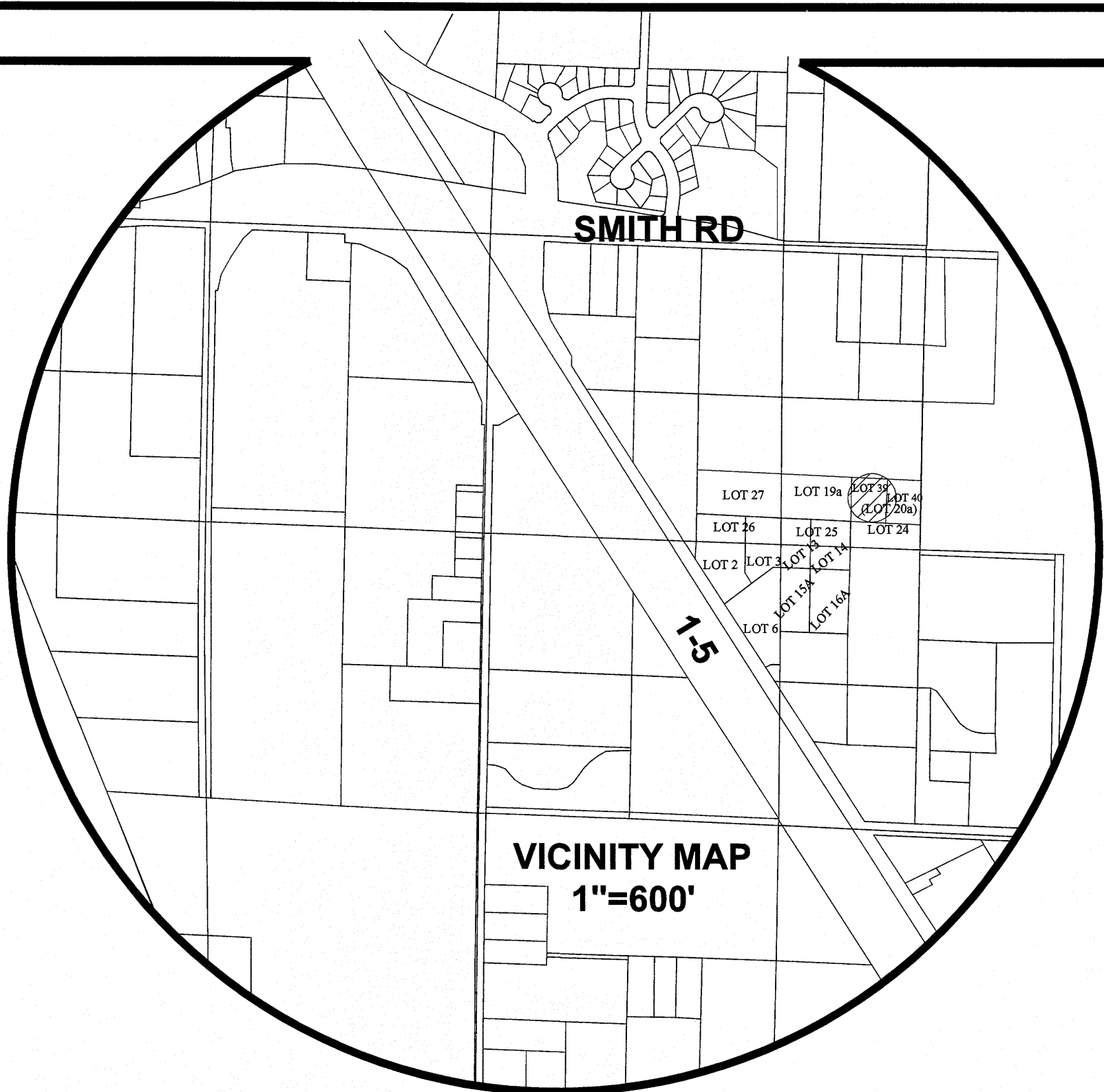


A PORTION OF THE NORTHEAST QUARTER OF SECTION 33, T39N, R2E, W.M.

# PACIFIC INDUSTRIAL PARK

## LOT 39

### RECORD DRAWINGS



#### INDEX TABLE

- COVER SHEET
- EXISTING CONDITIONS
- EROSION CONTROL TESC NOTES & DETAILS
- COMPOSITE UTILITY PLAN
- SITE GRADING PLAN & ROAD SECTION
- STORM DRAINAGE PLAN AND DETAILS
- WATER AND SANITARY SEWER PLAN & PROFILE
- SANITARY SEWER AND WATER DETAILS
- CITY OF FERNDAL GENERAL REQUIREMENT NOTES

#### LEGEND:

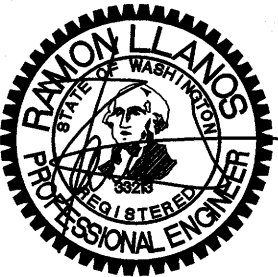
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- PROPOSED 45° BEND (MJ)
- PROPOSED 90° BEND (FL)
- PROPOSED PARKING AREA ASPHALT
- EXIST ASPHALT

#### ABBREVIATIONS:

- AS-BUILT
- BACK OF WALK
- BACK OF WALK CLEAN OUT
- BOTTOM OF WALL
- CITY OF FERNDAL
- CENTERLINE
- CONCRETE
- CORRUGATED PLASTIC DRAIN PIPE
- CRUSHED SURFACING TOP COURSE
- DUCTILE IRON
- DEPARTMENT OF ECOLOGY
- DETAIL
- EXISTING GROUND
- ELEVATION
- EXISTING
- FINISH FLOOR
- FINISH GROUND
- FORCE MAIN
- FOUND
- GATE VALVE
- FIRE HYDRANT
- INVERT ELEVATION
- LINEAR FEET
- LEFT
- MINIMUM
- ORDINARY HIGH WATER MARK
- PERFORATED PIPE
- PERMANENT
- PROPOSED
- POLYETHYLENE GLYCOL PIPE
- ROAD
- RIGHT
- ROOF AND YARD
- STORM DRAIN
- SANITARY SEWER
- SANITARY SEWER CLEAN OUT
- SQUARE FEET
- SANITARY SEWER MANHOLE
- STATION
- TOP OF ASPHALT
- TOP OF CONCRETE
- TEMPORARY
- TOP OF WALL
- WATER

**BURIED UTILITIES NOTE:**  
ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE LOCATIONS ONLY AND THERE IS NO GURANTEE 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 LOCATE CENTER AT LEAST 48 HOURS BEFORE CONSTRUCTION

**ENGINEER'S CERTIFICATION**  
I HEREBY CERTIFY THAT THE IMPROVEMENTS IN "PIP LOT 39" HAVE BEEN INSPECTED BY LDES AND TO THE BEST OF MY KNOWLEDGE, HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE CITY OF FERNDAL DEVELOPMENT STANDARDS, THE CITY OF FERNDAL MUNICIPAL CODE, SUBSEQUENT STANDARDS ADOPTED BY REFERENCE THEREIN, AND STANDARD ENGINEERING PRACTICE.



1/22/18  
RAMON LLANOS, P.E.

**SURVEYOR'S CERTIFICATION**  
I CERTIFY THAT THE LOCATIONS, ELEVATIONS, DEPTHS, AND AS-BUILT COMMENTS REFLECTING MATERIALS ACTUALLY USED DURING CONSTRUCTION ACCURATELY REFLECT EXISTING FIELD CONDITIONS AS DETERMINED BY ME OR UNDER MY DIRECT SUPERVISION ON THIS DATE: JAN 22, 2018

KYLE HAGGITH, P.L.S.



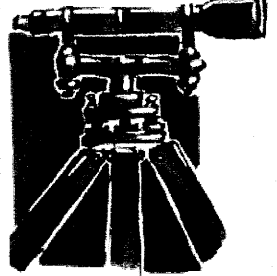
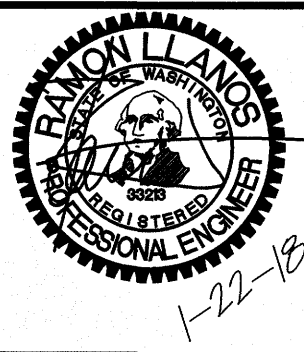
CALL 2 BUSINESS DAYS BEFORE YOU DIG  
1-800-424-5555  
UTILITIES UNDERGROUND LOCATION CENTER

**OWNER/APPLICANT**  
SYB HOLDINGS  
CONTACT: SAM BOULOS  
P.O. BOX 189  
FERNDAL, WA 98248  
(360) 312-8080

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

**SURVEYOR**  
LDES, INC.  
5160 INDUSTRIAL PL., SUITE 108  
FERNDAL, WA 98248  
CONTACT: KYLE HAGGITH, P.L.S.  
(360) 383-0620

NO.	REVISION	BY	DATE
1	ASBUILT SUBMITTAL	RL	01/22/18



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

JOB NO.:	9019
DWG. NAME:	9019-LOT 39-ASBUILT.dwg
DESIGNED BY:	RL
DRAWN BY:	YC
CHECKED BY:	RL

APPROVED

JAN 23 2018

BY  
CITY OF FERNDAL  
PUBLIC WORKS DEPARTMENT

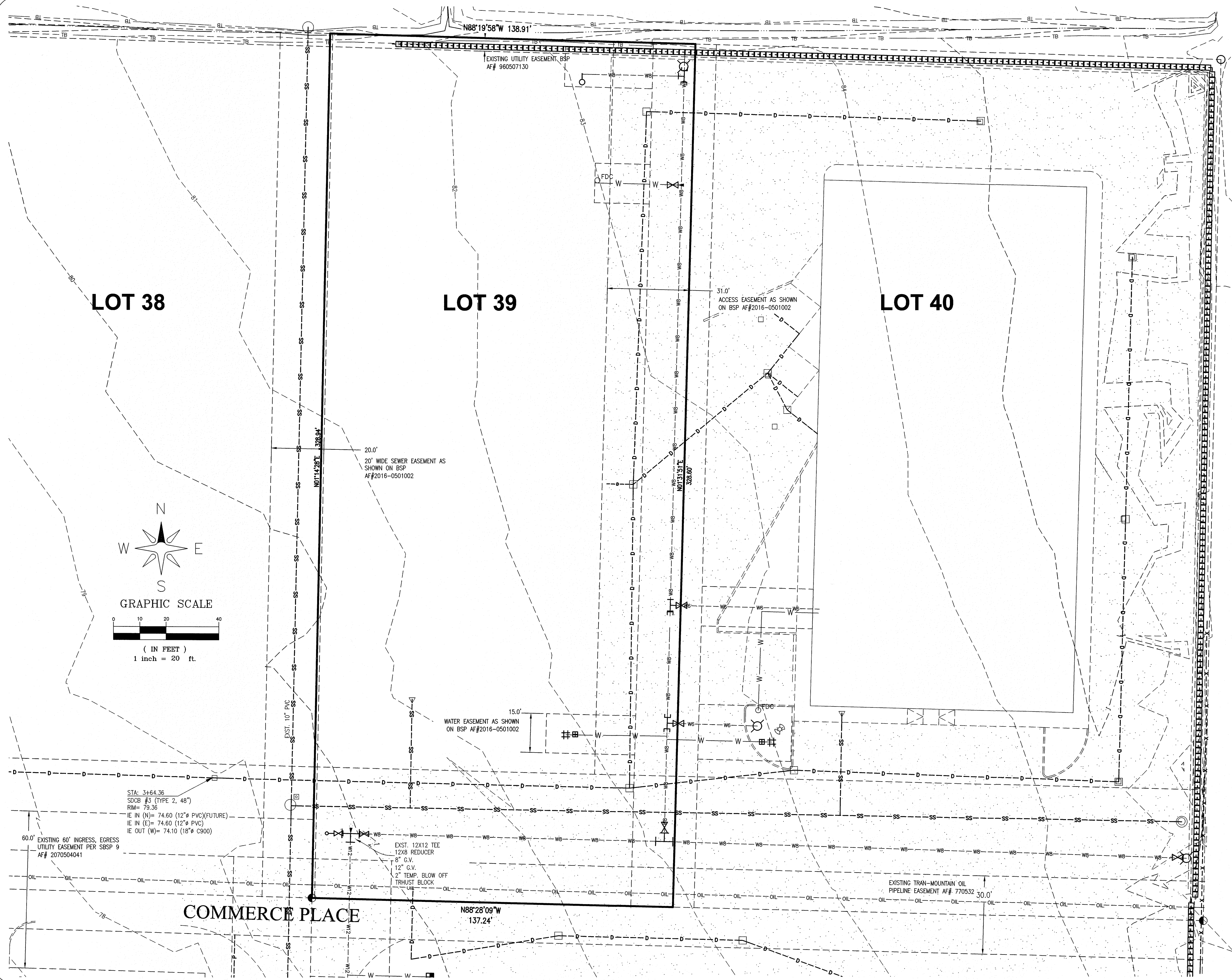
**PIP LOT 39**  
**COVER SHEET**

SHEET  
**1**  
OF  
**9**

RECORD DRAWING

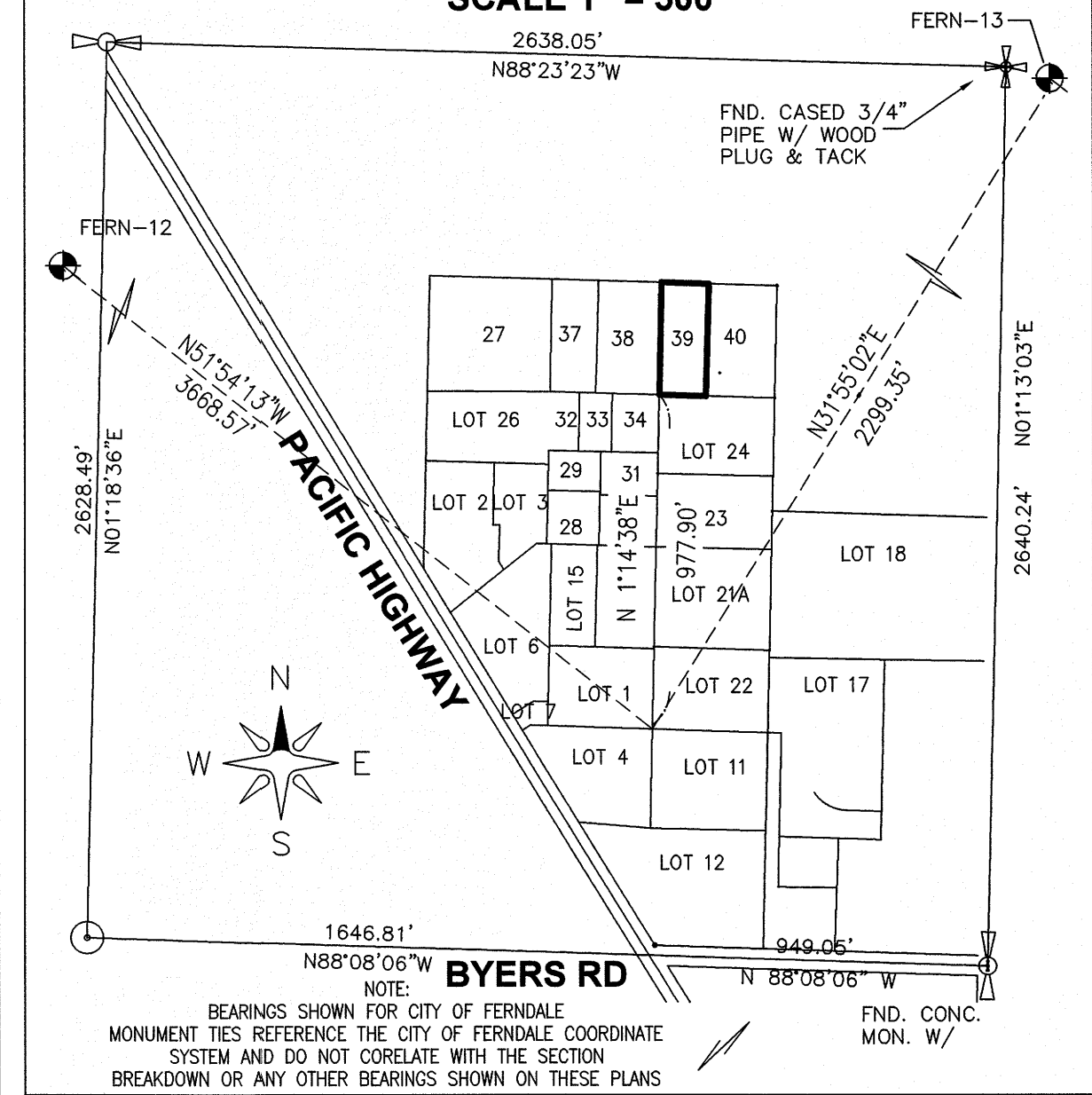


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EXISTING CONDITIONS JOB NO. 9019

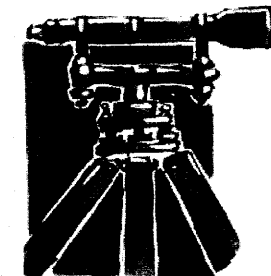
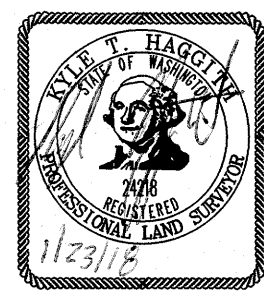
**SECTION BREAKDOWN**  
SECTION 33, TOWNSHIP 39 NORTH, RANGE 2 EAST., W.M.  
SCALE 1" = 500'



**LEGAL DESCRIPTION:**  
LOT 39 AS DELINEATED ON PACIFIC INDUSTRIAL PARK SPECIFIC BINDING SITE PLAN No. 12, ACCORDING TO THE PLAT THEREOF, UNDER AUDITOR'S FILE No. 2016-0501002, RECORDS OF WHATCOM COUNTY, WASHINGTON.

- SURVEY NOTES:**
- 1) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION.
  - 2) EQUIPMENT USED: NIKON DT500: 00'01.5" ± 2 PPM, ± 2 MM
  - 3) BASIS OF BEARINGS: PER SPECIFIC BINDING SITE PLAN No. 8 AF #: 2040505272
  - 4) SURVEY WAS DONE ON OR ABOUT FEBRUARY 2012
  - 5) HORIZONTAL DATUM:  
BASED ON CITY OF FERNDAL CONTROL POINT NUMBERS FERN-12 AND FERN-13, THE STATE PLANE COORDINATE AT THE SOUTHWEST CORNER OF LOT 22 PER SPECIFIC BINDING SITE PLAN No. 9 AF #2070504041 IS:  
NORTHING = 671496.57  
EASTING = 1225433.46  
THE CITY OF FERNDAL DATUM BEARING ALONG THE WEST LINE OF SAID LOT 23 IS N 01-14-38 E  
PLAT BEARINGS SAID LINE: N 01-14-28 E  
VERTICAL DATUM:  
PROJECT DATUM DERIVED FROM DAVID EVANS AND ASSOCIATES ORIGINAL BASE MAP AT THE SOUTHWEST CORNER OF SAID LOT 22.  
REFERENCE BENCHMARK IS A SURFACE 2" BRASS DISK  
PROJECT DATUM ELEVATION = 66.15'  
CITY OF FERNDAL DATUM (NGVD29) ELEVATION = 59.60'
  - 6) CONTOUR INTERVALS ARE 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION.
  - 7) THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF A CURRENT TITLE REPORT AND LAND DEVELOPMENT ENGINEERING AND SURVEYING IS NOT RESPONSIBLE FOR ANY EASEMENTS, COVENANTS, AND RESTRICTIONS NOT SHOWN HEREON.

ASBUILT SUBMITTAL	RL	01/22/18
NO.	REVISION	BY DATE



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

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DRAWN BY:	EC
CHECKED BY:	RL

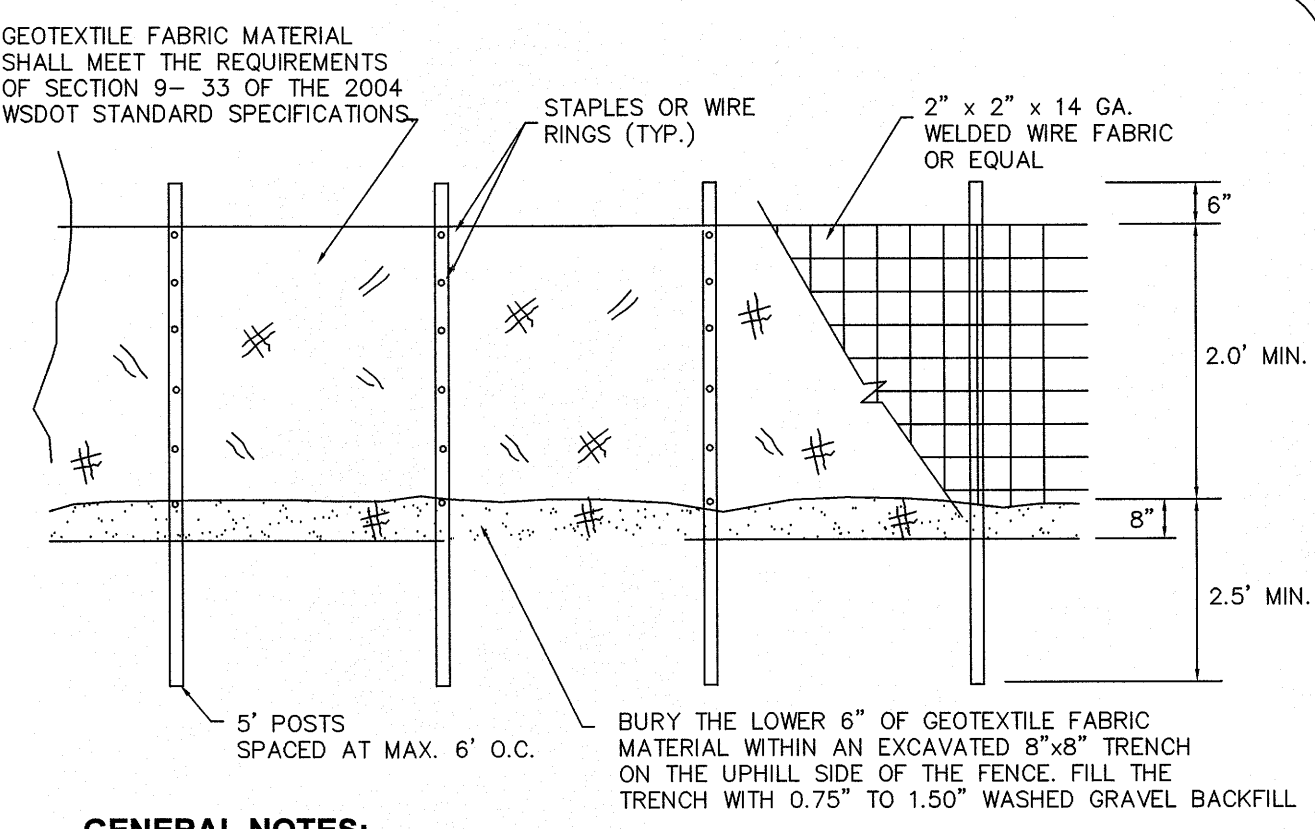
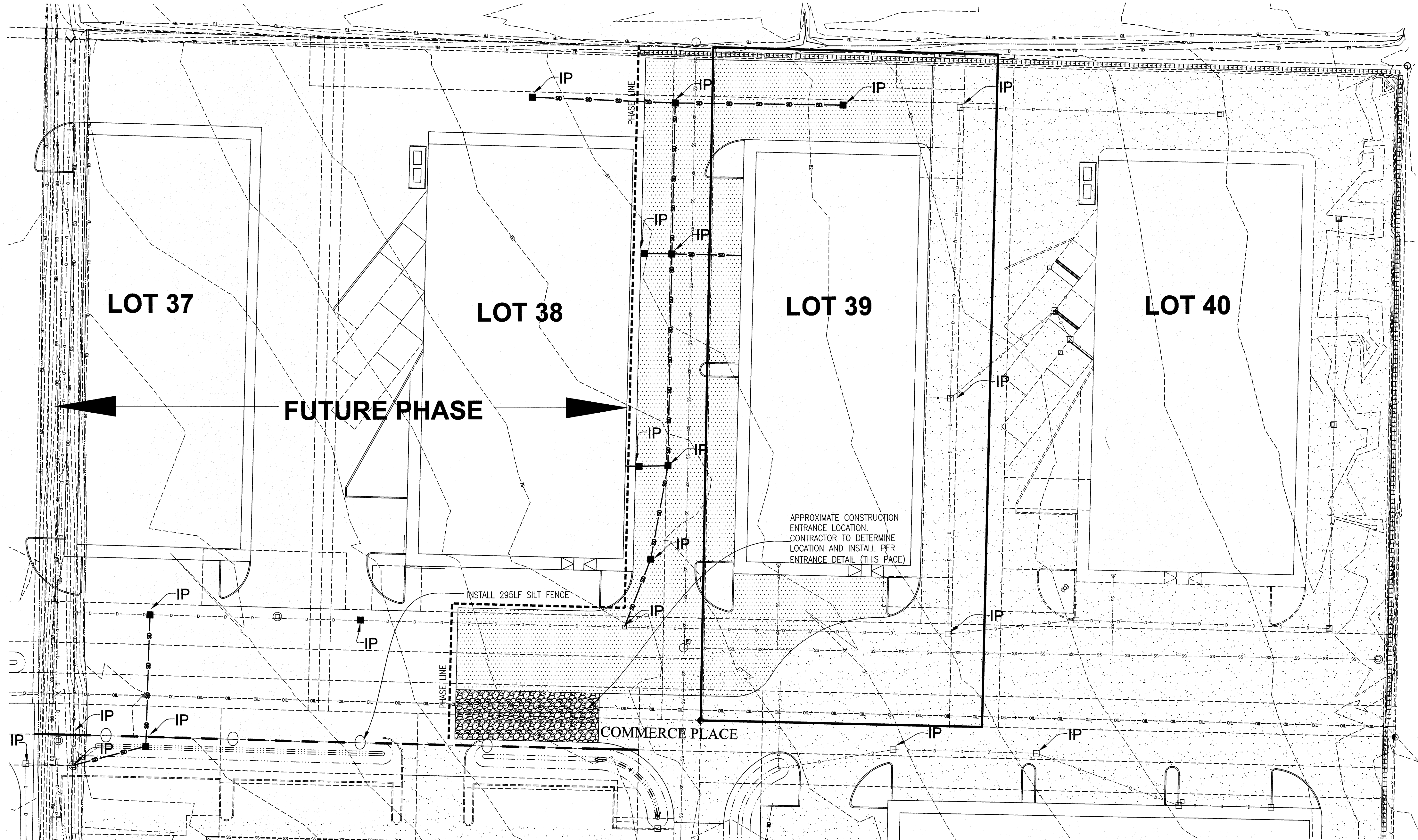
**PIP LOT 39**  
**EXISTING CONDITIONS**

SHEET  
**2**  
OF  
9

RECORD DRAWING

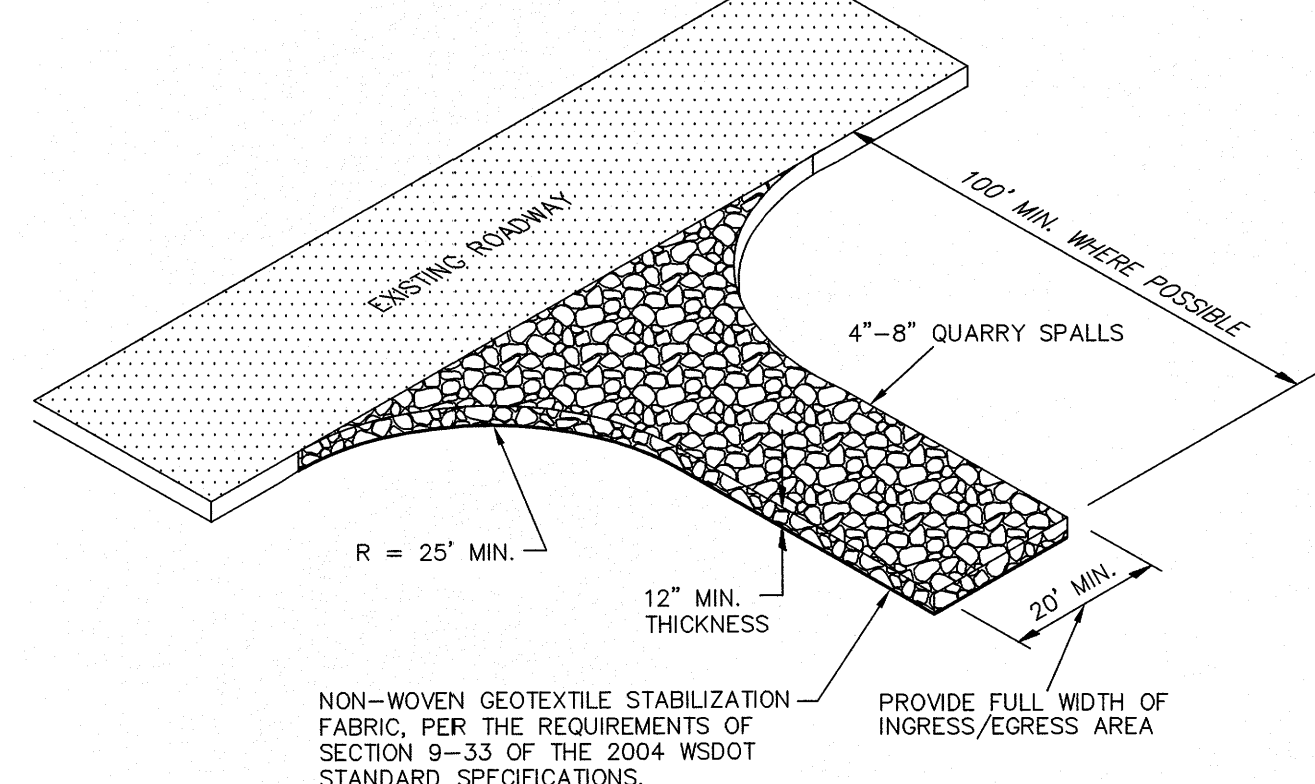


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- GENERAL NOTES:**
1. ANY DAMAGE TO FENCING SHALL BE REPAIRED IMMEDIATELY.
  2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEN THE WATER MUST BE INTERCEPTED AND CONVEYED TO A FULLY-FUNCTIONING SEDIMENT TRAP, POND, OR CONVEYANCE SYSTEM.
  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 AFTER CLEARING AND GRUBBING IS COMPLETE. THE FENCE SHALL ONLY BE REMOVED WHEN CONSTRUCTION OF UTILITIES DEMANDS IT ABSOLUTELY NECESSARY. IMMEDIATELY AFTER UTILITIES ARE IN-PLACE, THE SILT FENCING SHALL BE RECONSTRUCTED.

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



- GENERAL NOTES:**
1. IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO SURROUNDING FACILITIES, THEN ALTERNATIVE MEASURES TO KEEP THE FACILITIES FREE OF SEDIMENT SHALL 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.

**2 QUARRY SPALL CONSTRUCTION ENTRANCE DETAIL not to scale**

**EROSION AND SEDIMENT CONTROL GENERAL NOTES:**

1. EROSION CONTROL METHODS AND MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 8-01 OF THE 2014 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. FLUSHING OPERATION SHALL BE PERFORMED USING A VACTOR TRUCK.

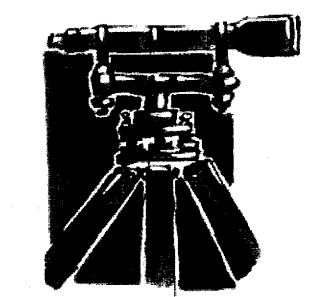
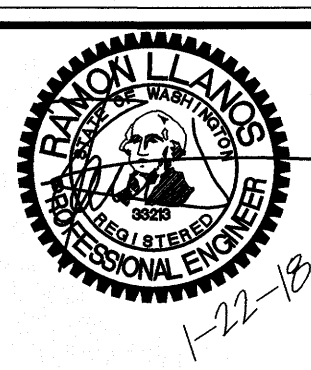
**CITY OF FERNDAL TESC NOTES:**

1. STABILIZATION & SEDIMENT TRAPPING. ALL EXPOSED SOILS SHALL BE STABILIZED BY SUITABLE APPLICATION OF BMP'S. FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL REMAIN UNEXPOSED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN EXPOSED FOR MORE THAN 7 DAYS. PRIOR TO LEAVING THE SITE, STORMWATER RUNOFF SHALL PASS THROUGH A SEDIMENT POND, TRAP OR OTHER APPROPRIATE BMP. DELINEATE CLEARING & EASEMENT LIMITS. IN THE FIELD, STAKE AND FLAG CLEARING LIMITS AND/OR ANY EASEMENTS, SETBACKS, SENSITIVE/CRITICAL AREAS AND THEIR BUFFERS, TREES AND DRAINAGE COURSES.
2. PROTECTION OF ADJACENT PROPERTIES. PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION.
3. 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.
4. CUT & FILL SLOPES. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. IN ADDITION, SLOPES SHALL BE STABILIZED IN ACCORDANCE WITH NO. 1 ABOVE.
5. CONTROLLING OFF-SITE EROSION. PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITES SHALL BE PROTECTED FROM EROSION DUE TO INCREASES IN THE VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FROM THE PROJECT SITE.
6. STABILIZATION OF TEMPORARY CONVEYANCE CHANNELS & OUTLETS. ALL TEMPORARY ON-SITE CONVEYANCE CHANNELS SHALL BE DESIGNED, CONSTRUCTED AND STABILIZED TO PREVENT EROSION FROM THE EXPECTED VELOCITY OF FLOW FROM A 2-YEAR, 24-HOUR FREQUENCY STORM FOR THE DEVELOPED CONDITION. STABILIZATION ADEQUATE TO PREVENT EROSION OF OUTLETS, ADJACENT STREAM BANKS, SLOPES AND DOWNSTREAM REACHES SHALL BE PROVIDED AT THE OUTLETS OF ALL CONVEYANCE SYSTEMS.
7. STORM DRAIN INLET PROTECTION. ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
8. UNDERGROUND UTILITY CONSTRUCTION. THE CONSTRUCTION OF UNDERGROUND UTILITY LINES SHALL BE SUBJECT TO THE FOLLOWING CRITERIA: WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPENED AT ONE TIME; WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES; AND TRENCH DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
9. CONSTRUCTION ACCESS ROUTES. WHEREVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED ROADS, PROVISIONS MUST BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT (MUD) ONTO THE PAVED ROAD. IF SEDIMENT IS TRANSPORTED ONTO A ROAD SURFACE, THE ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
10. REMOVAL OF TEMPORARY BMP'S. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMP'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
11. DEWATERING CONSTRUCTION SITES. DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
12. CONTROL OF POLLUTANTS OTHER THAN SEDIMENT ON CONSTRUCTION SITES. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER.
13. MAINTENANCE. ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
14. FINANCIAL LIABILITY. PERFORMANCE BONDING, OR OTHER APPROPRIATE FINANCIAL INSTRUMENTS, SHALL BE REQUIRED FOR ALL PROJECTS TO ENSURE COMPLIANCE WITH THE APPROVED TESC PLAN.

IP = INLET PROTECTION

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

ASBUILT SUBMITTAL	RL	01/22/18
NO.	REVISION	BY DATE



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

JOB NO.:	9019
DWG. NAME:	9019-Lot 39-ASBUILT.dwg
DESIGNED BY:	RL
DRAWN BY:	YC
CHECKED BY:	RL

**APPROVED**  
JAN 23 2018  
BY **RAYMOND L. LODES**  
CITY OF FERNDAL  
PUBLIC WORKS DEPARTMENT

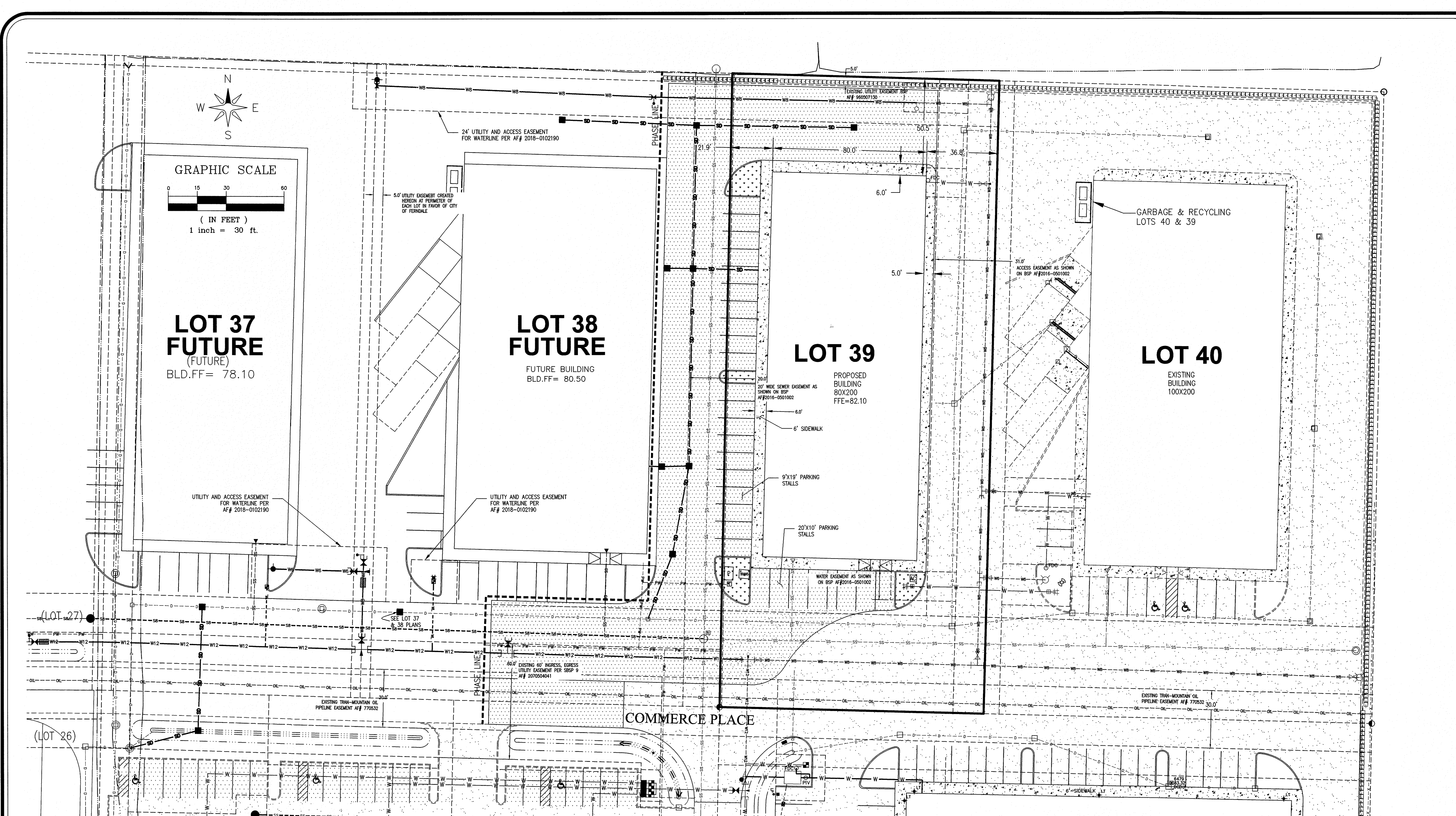
**PIP LOT 39**  
**EROSION CONTROL**  
**TESC NOTES & DETAILS**

SHEET  
**3**  
OF  
**9**

**RECORD DRAWING**



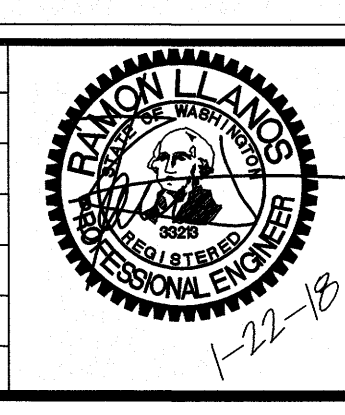
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**LEGEND:**

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- = EXIST SD CATCH BASIN (TYPE 2)
- = PROPOSED STORM DRAIN CATCH BASIN
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DRAWN BY:	YC
CHECKED BY:	RL

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JAN 23 2018  
BY [Signature]  
CITY OF FERNDAL  
PUBLIC WORKS DEPARTMENT

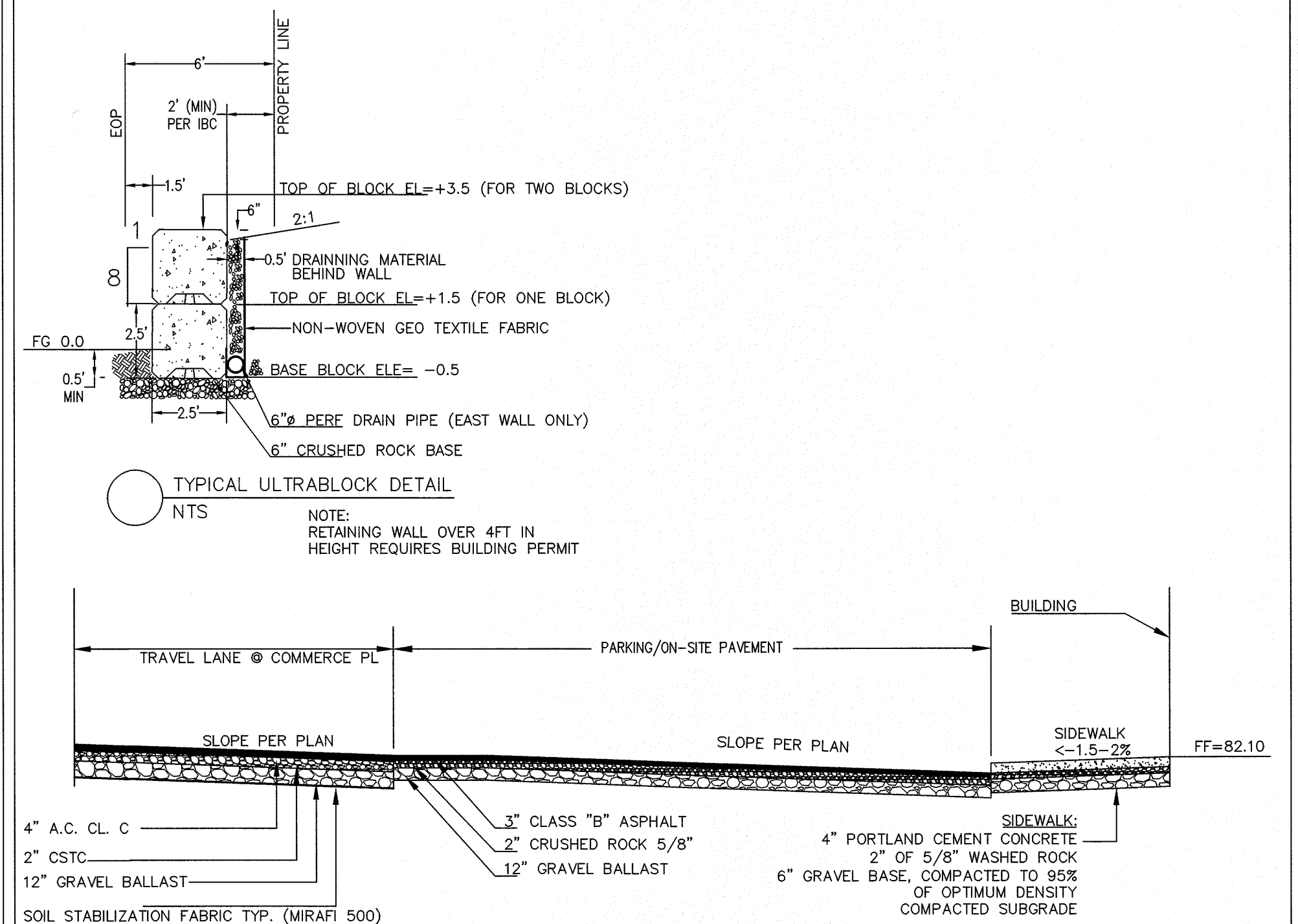
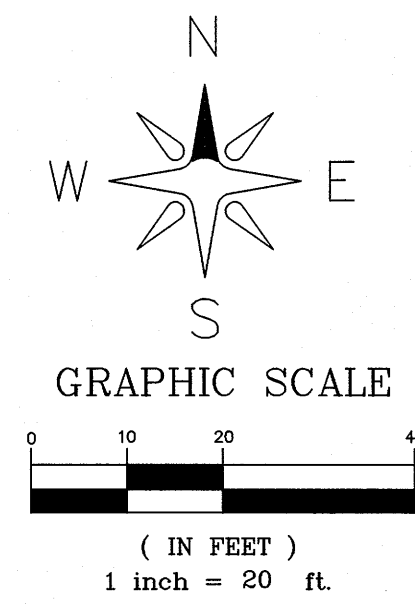
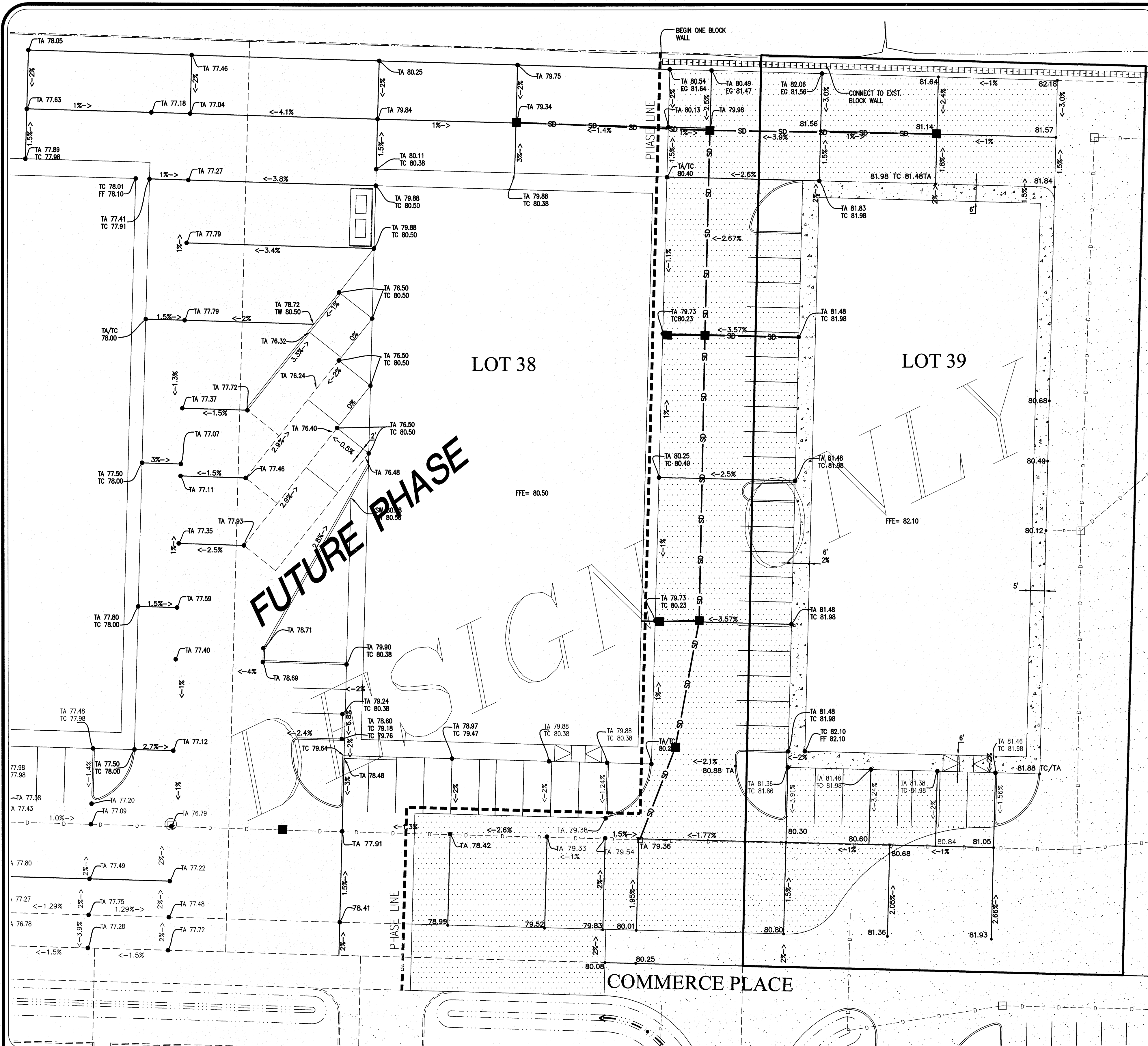
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**COMPOSITE UTILITY PLAN**

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**4**  
OF  
9

RECORD DRAWING

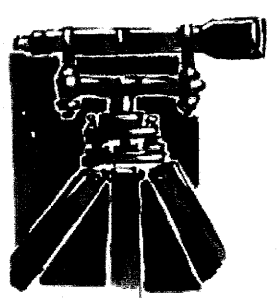
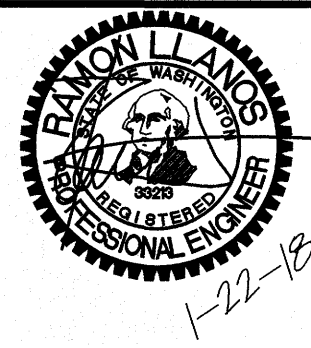


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ON SITE PAVEMENT SECTION  
NTS

ASBUILT SUBMITTAL	RL	01/22/18
NO.	REVISION	BY DATE



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

JOB NO.:	9019
DWG. NAME:	9019-Lot 39-ASBUILT.dwg
DESIGNED BY:	RL
DRAWN BY:	YC
CHECKED BY:	RL

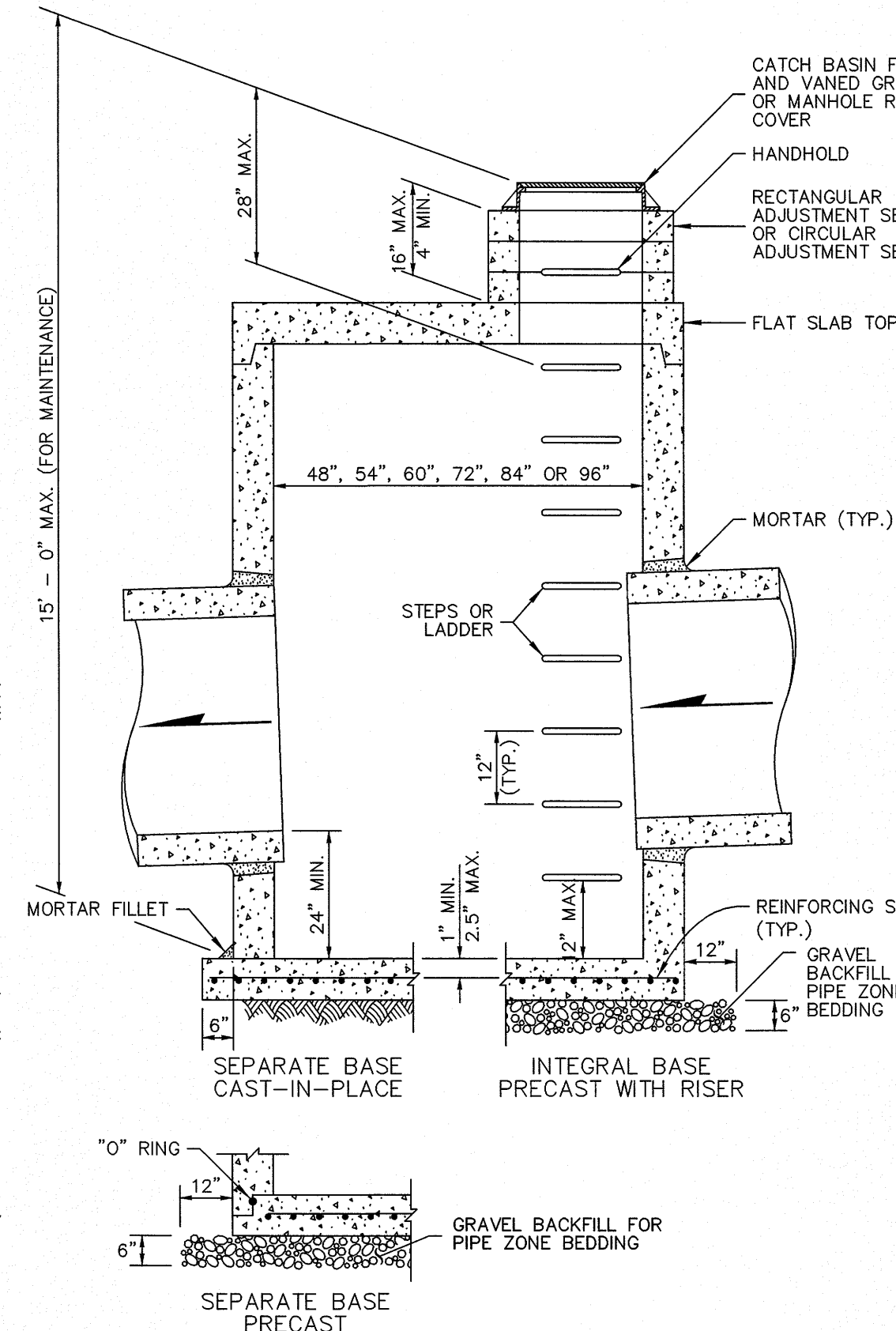
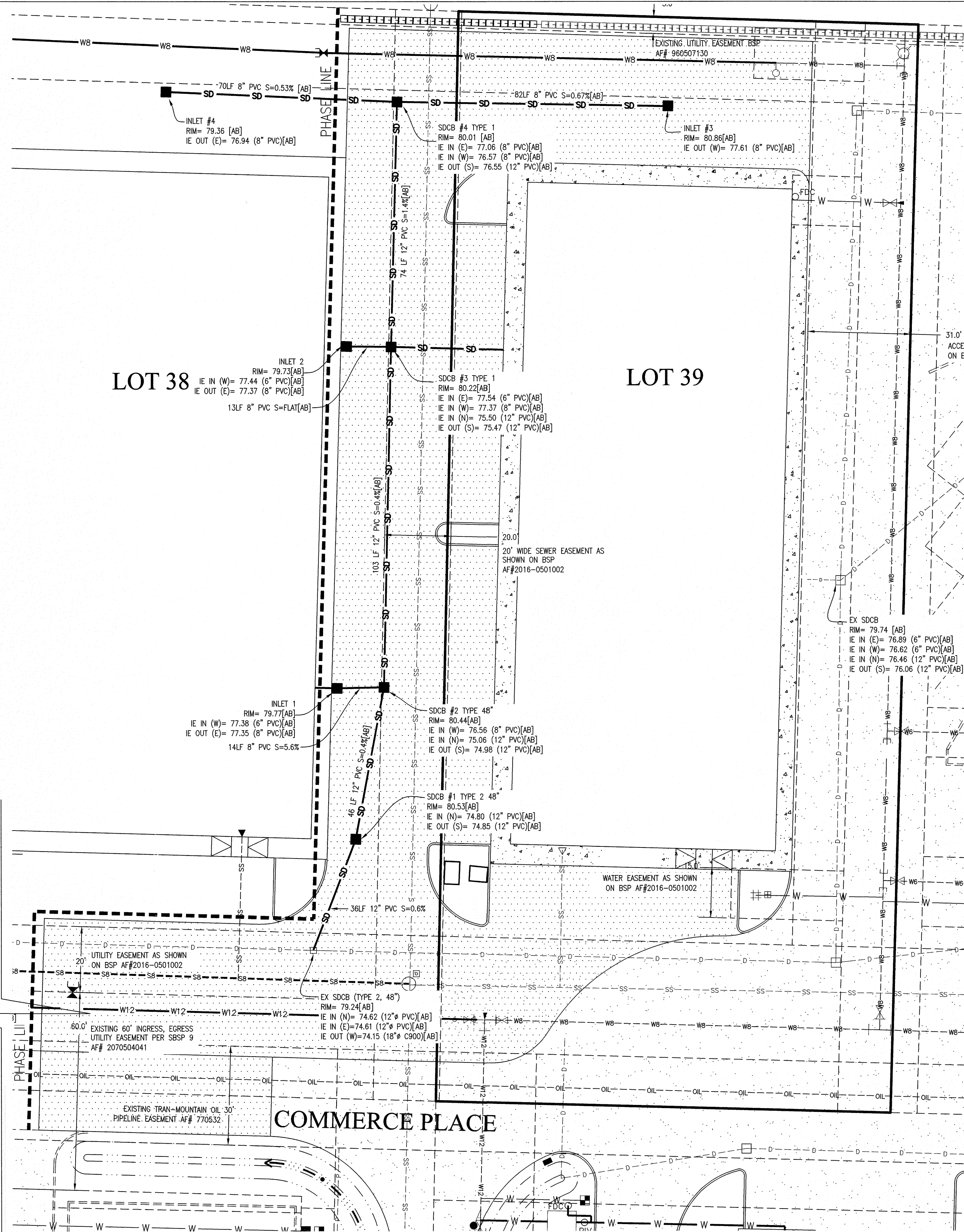
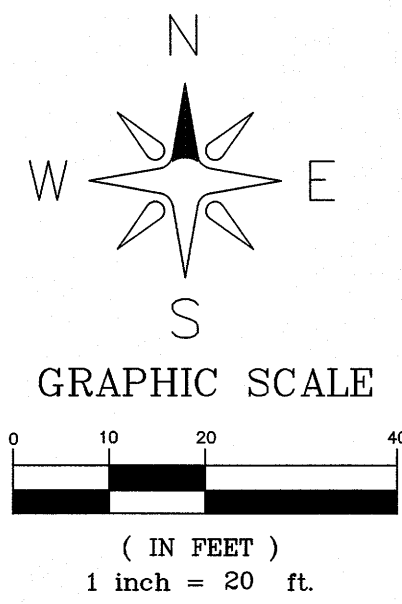
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JAN 23 2018  
BY  
CITY OF FERNDAL  
PUBLIC WORKS DEPARTMENT

**PIP LOT 39**  
**SITE GRADING PLAN & ROAD SECTION**

SHEET  
**5**  
OF  
**9**

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## NOTES

1. NO STEPS ARE REQUIRED WHEN HEIGHT IS 4' OR LESS.
2. THE BOTTOM OF THE PRECAST CATCH BASIN MAY BE SLOPED TO FACILITATE CLEANING.
3. THE RECTANGULAR FRAME AND GRATE MAY BE INSTALLED WITH THE FLANGE UP OR DOWN. THE FRAME MAY BE CAST INTO THE ADJUSTMENT SECTION.
4. 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 STANDARD SPECIFICATION 9-04.3.

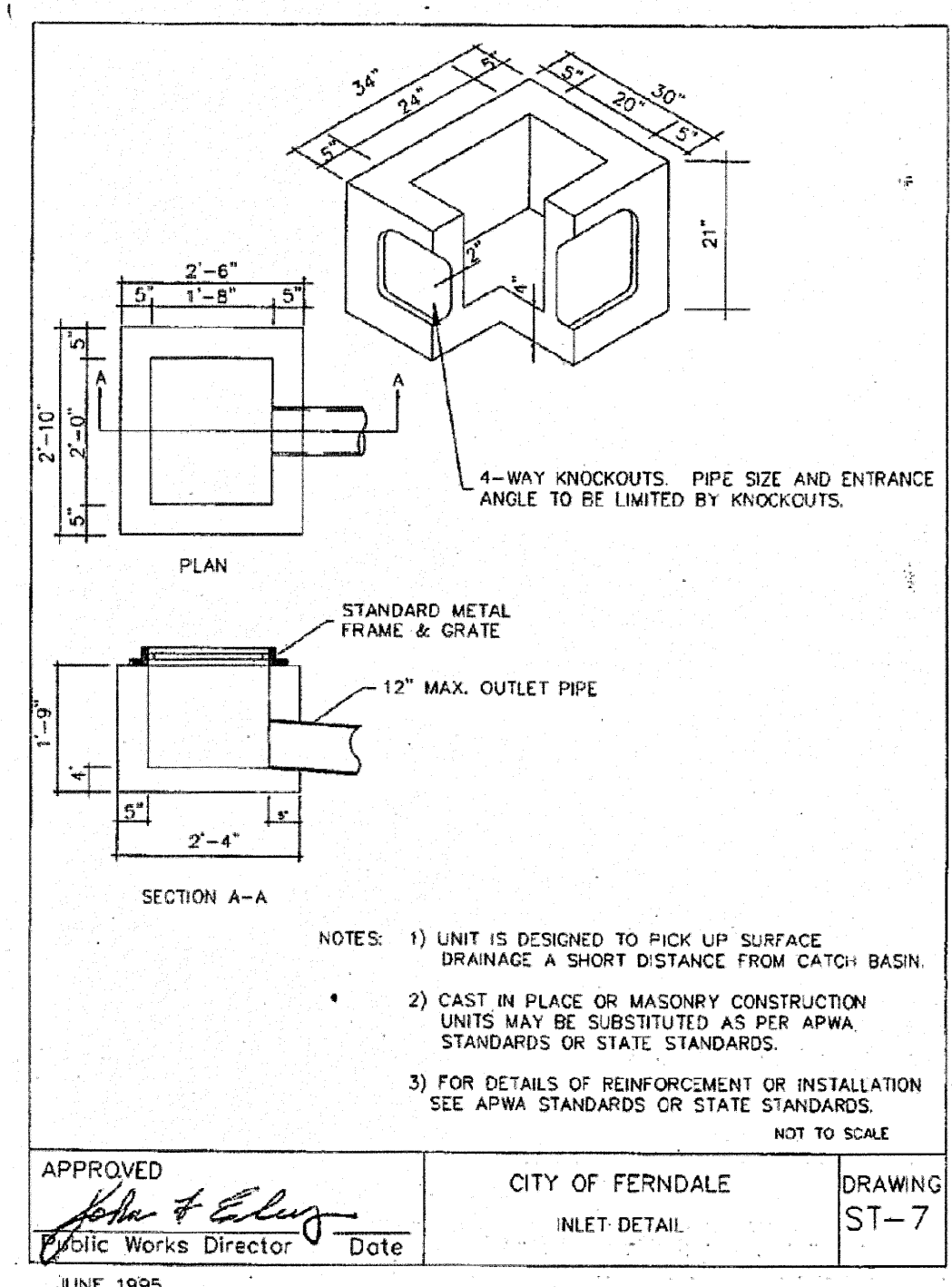
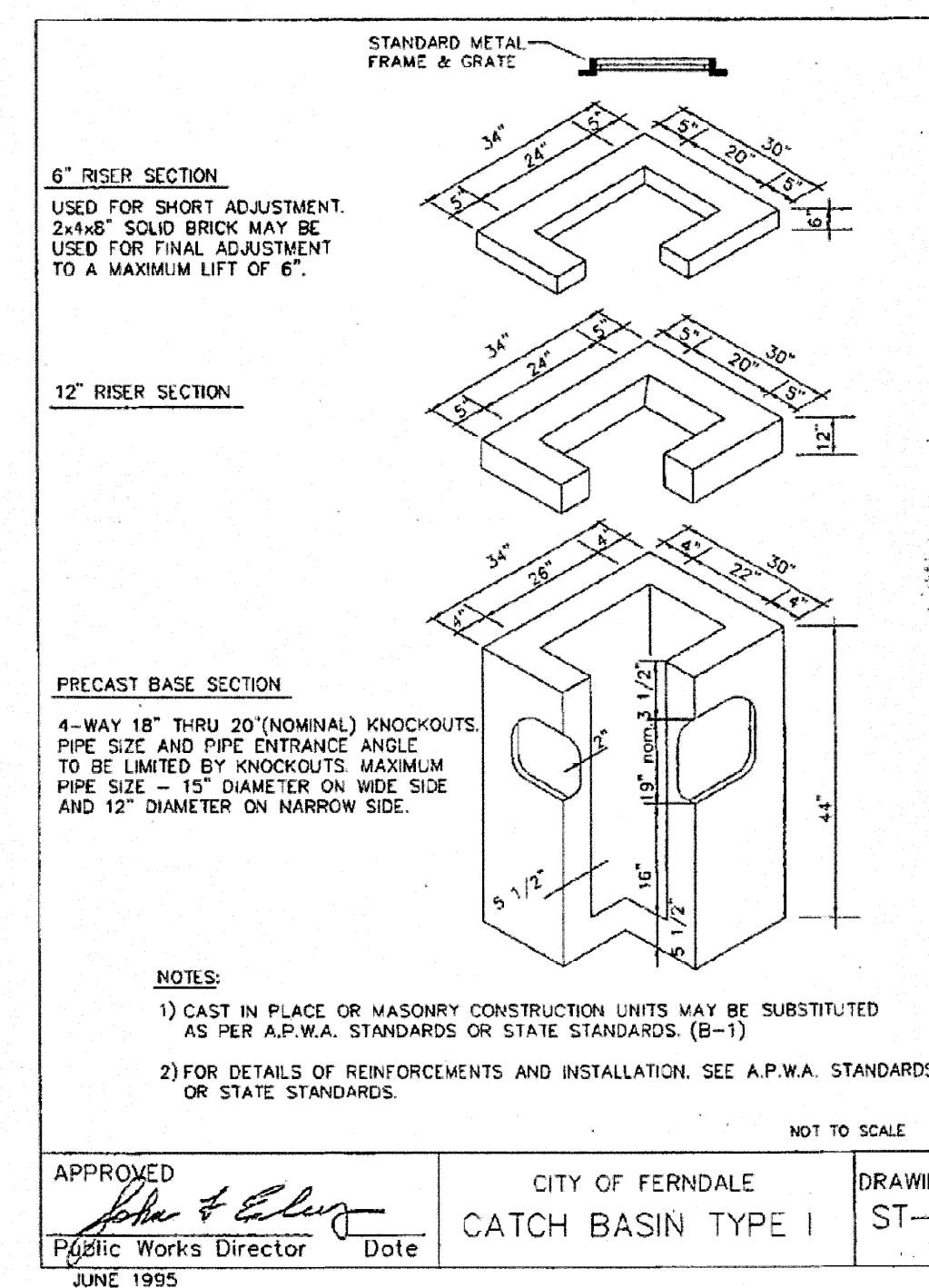
CATCH BASIN DIMENSIONS					
CATCH BASIN DIAMETER	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL in 2'ft. IN EACH DIRECTION
48"	4"	6"	36"	8"	0.23
54"	4.5"	8"	42"	8"	0.19
60"	5"	8"	48"	8"	0.25
72"	6"	8"	60"	12"	0.35
84"	8"	12"	72"	12"	0.39
96"	8"	12"	84"	12"	0.39

## PIPE ALLOWANCES

CATCH BASIN DIAMETER	PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER	ALL METAL CPSPS	SOLID WALL PVC	PROFILE WALL PVC
48"	24"	30"	24"	27"
54"	30"	36"	30"	36"
60"	36"	42"	36"	42"
72"	42"	54"	42"	54"
84"	54"	60"	54"	60"
96"	60"	72"	60"	72"

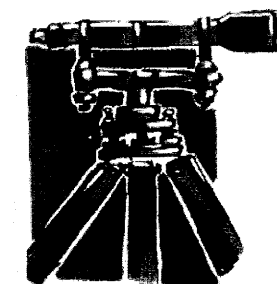
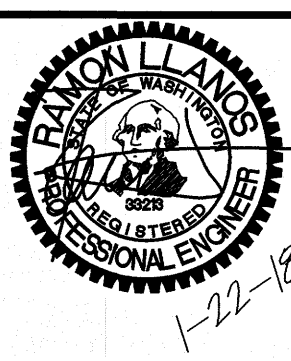
- ① Corrugated Polyethylene Storm Sewer Pipe (Std. Spec. 9-05.20)  
 ② (Std. Spec. 9-05.12(1))  
 ③ (Std. Spec. 9-05.12(2))

CATCH BASIN TYPE 2



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

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DRAWN BY:	YC
CHECKED BY:	RL

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JAN 23 2018

BY DATE  
 CITY OF FERNDAL  
 PUBLIC WORKS DEPARTMENT

CITY OF FERNDAL  
 CATCH BASIN TYPE I  
 DRAWING ST-1

APPROVED DATE  
 CITY OF FERNDAL  
 INLET DETAIL  
 DRAWING ST-7

**PIP LOT 39**  
**STORM DRAINAGE PLAN & DETAILS**

SHEET

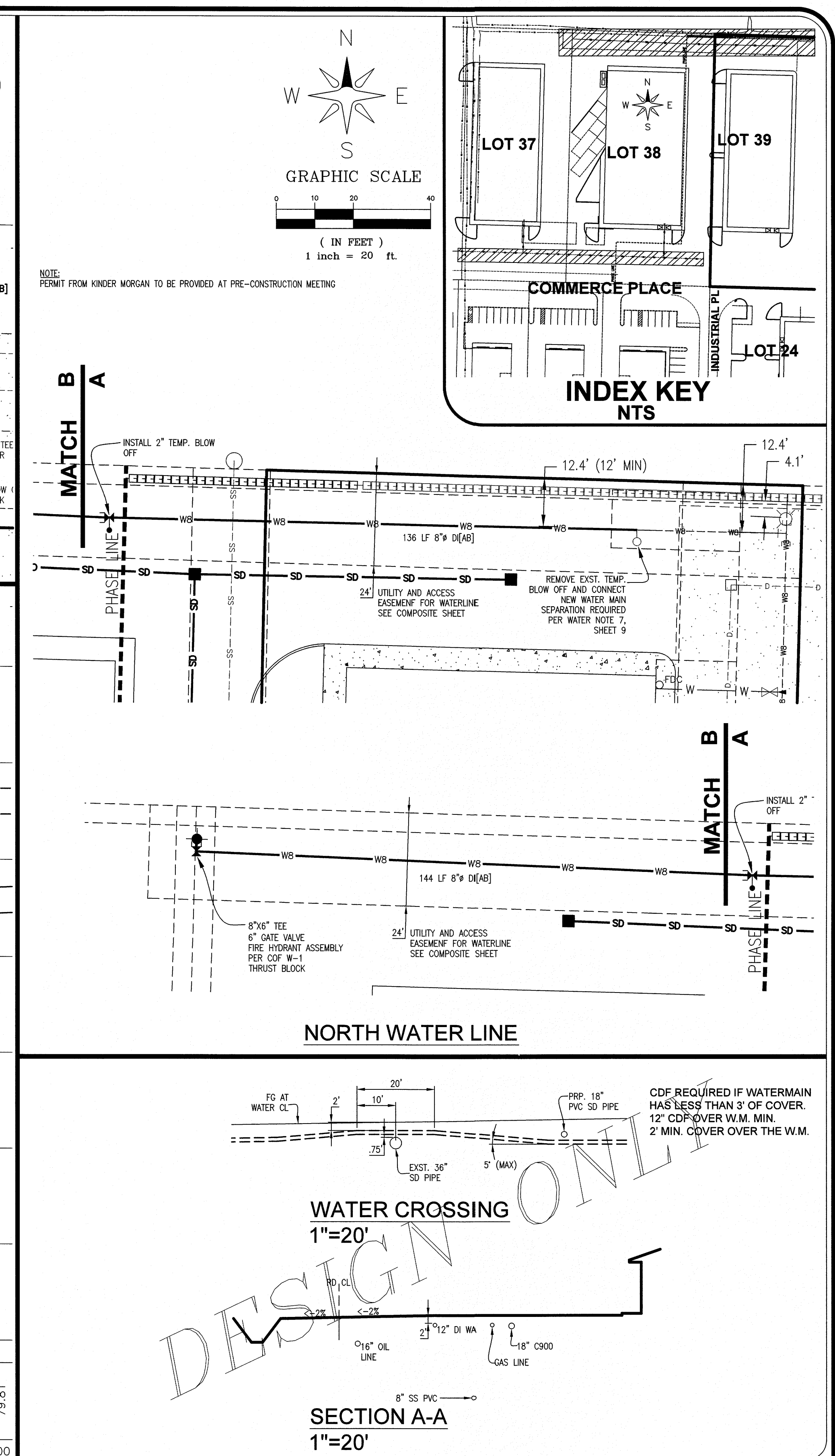
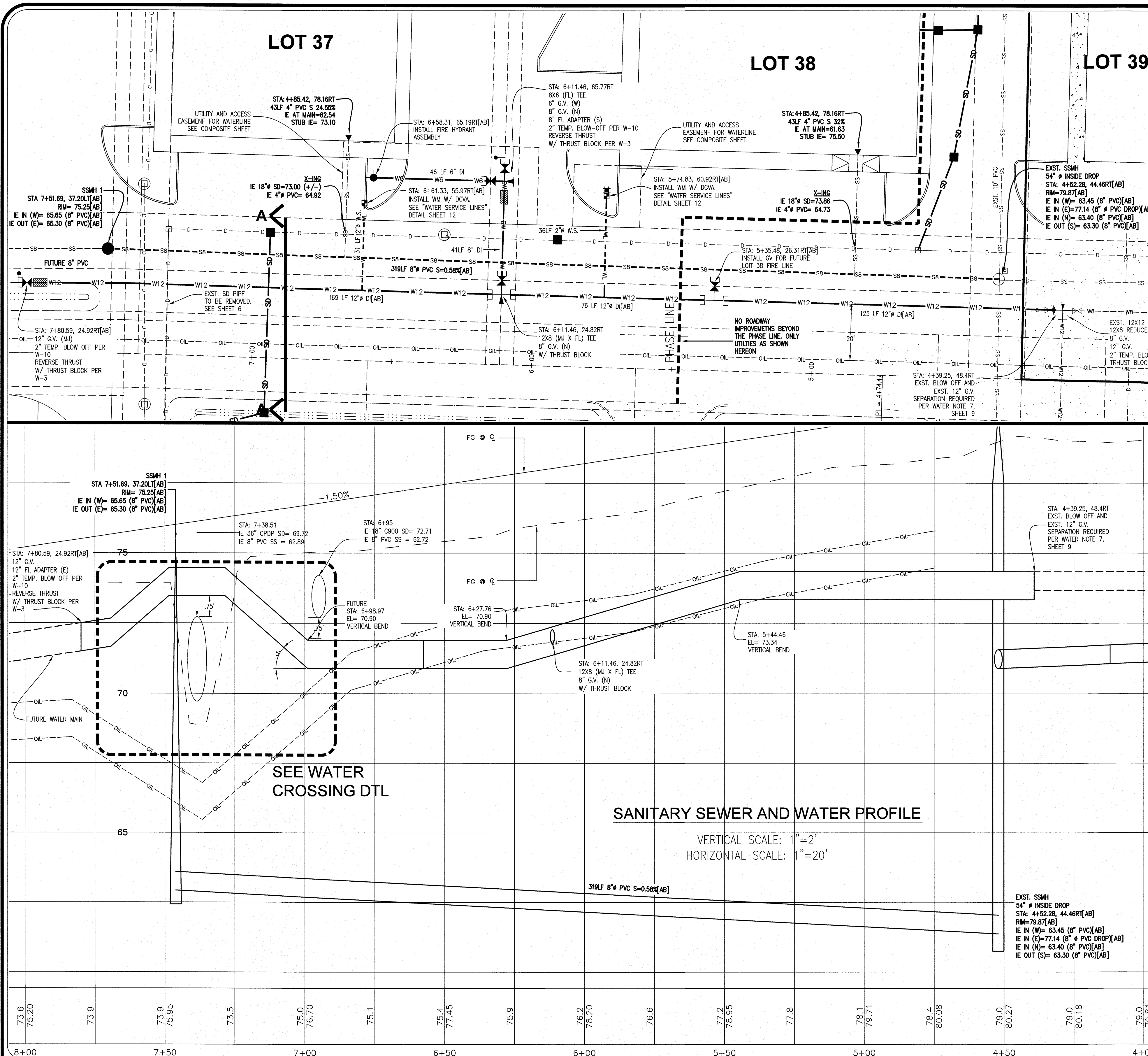
6

OF 9

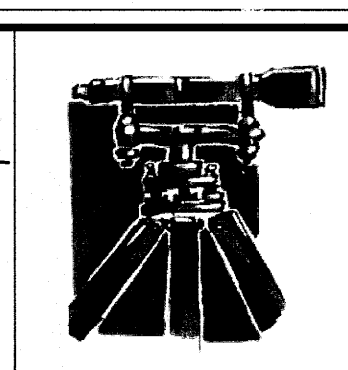
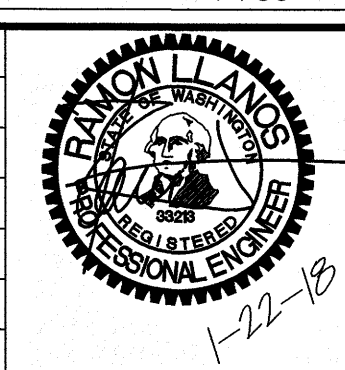
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NO.	REVISION	BY	DATE
1	ASBUILT SUBMITTAL	RL	01/22/18
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DRAWN BY:	YC
CHECKED BY:	RL

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JAN 23 2018  
BY: [Signature]  
CITY OF FERNDAL  
PUBLIC WORKS DEPARTMENT

**PIP LOT 39**  
**WATER AND SANITARY SEWER PLAN & PROFILE**

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**9**

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## BEDDING SPECIFICATIONS FOR PVC PIPE

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

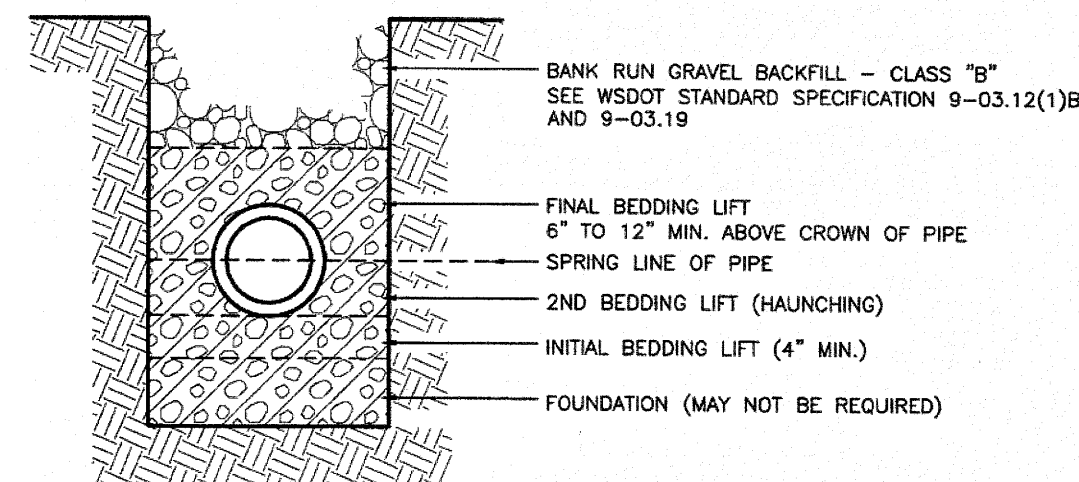
BEDDING FOR SEWERS, DRAINS AND CULVERTS FOR PVC PIPE-

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

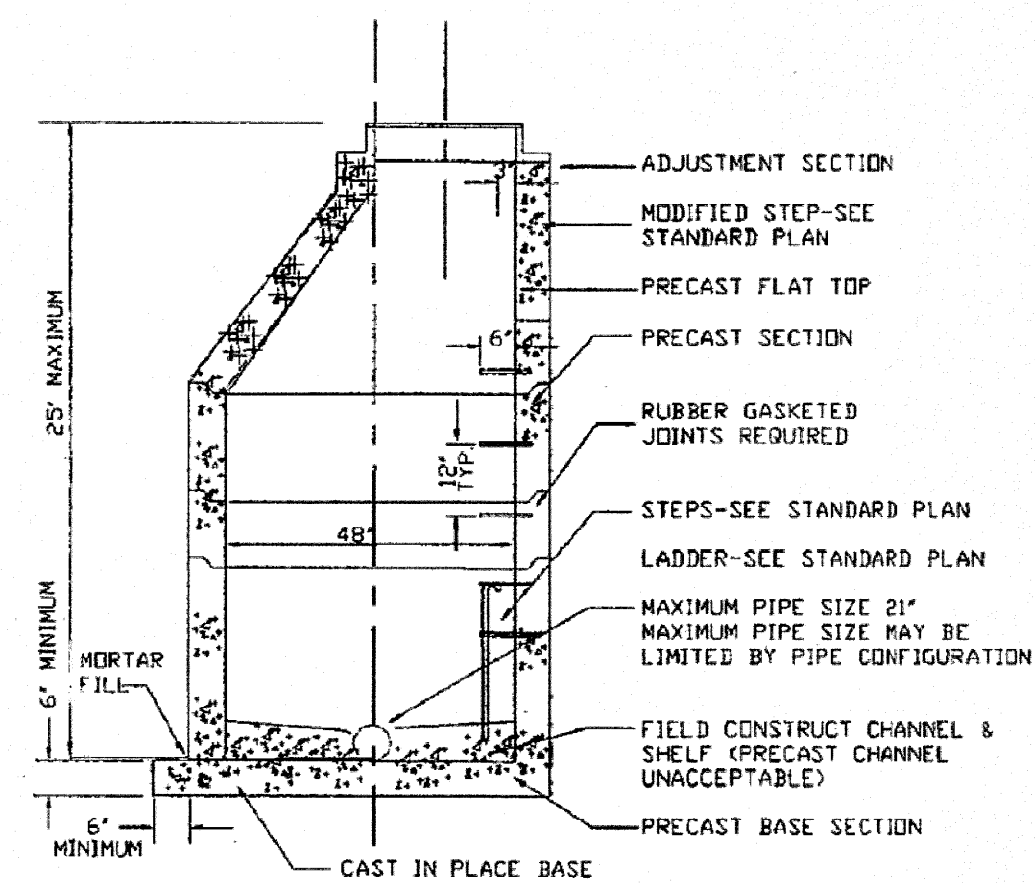
PEA GRAVEL - PEA GRAVEL BEDDING SHALL BE A CLEAN MIXTURE FREE FROM ORGANIC MATTER AND CONFORMING TO THE FOLLOWING GRADATION WHEN TESTED IN ACCORDANCE WITH ASTM D422:

U.S. STANDARD SIEVE SIZE	PERCENTAGE PASSING, BY WT.
3/4"	100
3/8"	95-100
#20	0-10
	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 SHALL BE BACKFILLED WITH IMPORTED GRAVEL AND COMPACTED TO 95% OF MAXIMUM DENSITY.

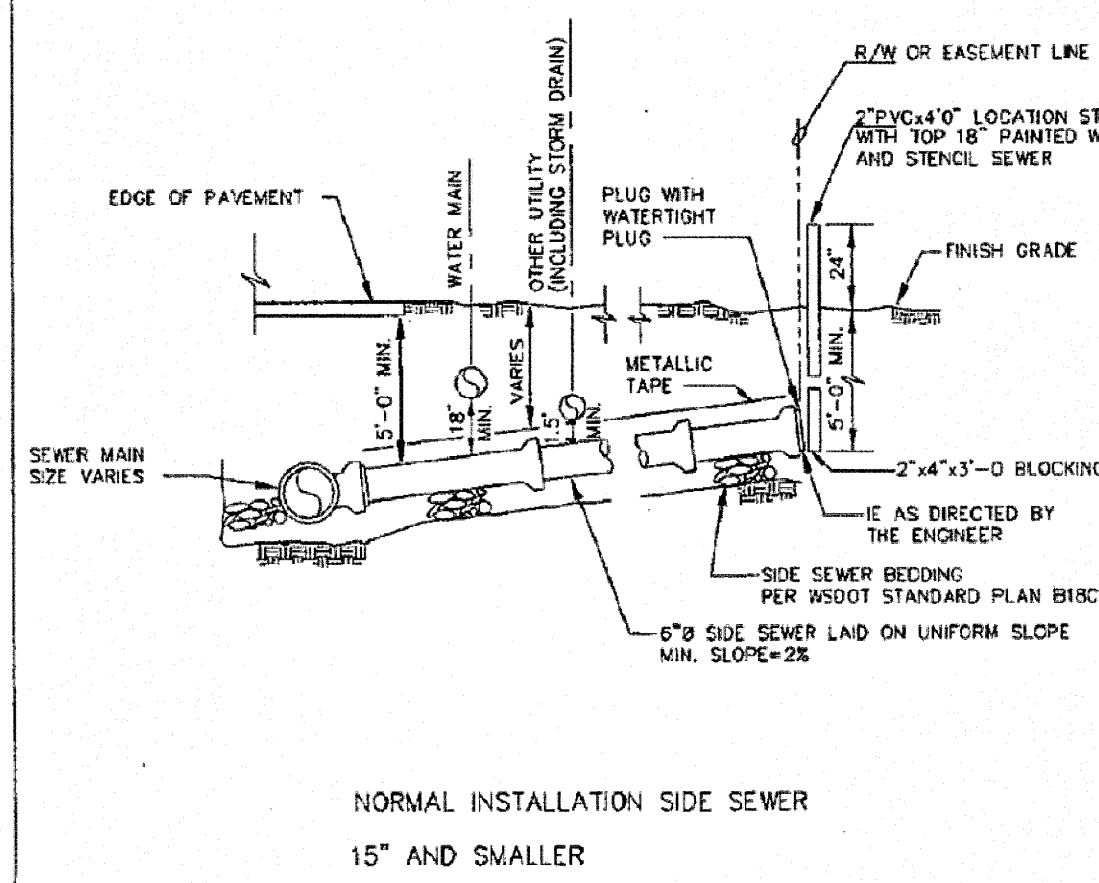


APPROVED	Public Works Director	Date	April 18, 2012
PVC PIPE BEDDING			STANDARD DETAIL 88-1
NOT TO SCALE			

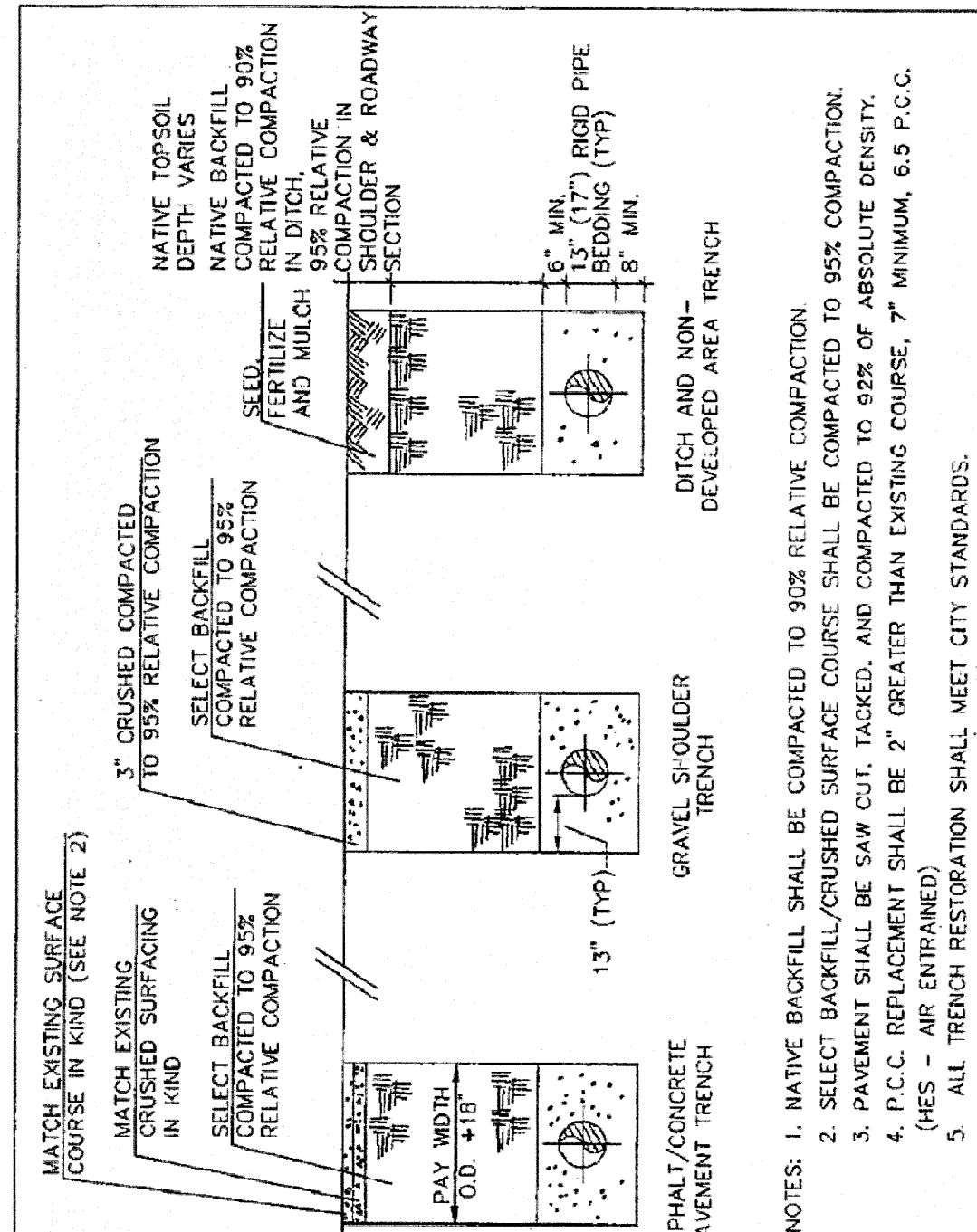


TYPE 1 - 48" MANHOLE  
NTS

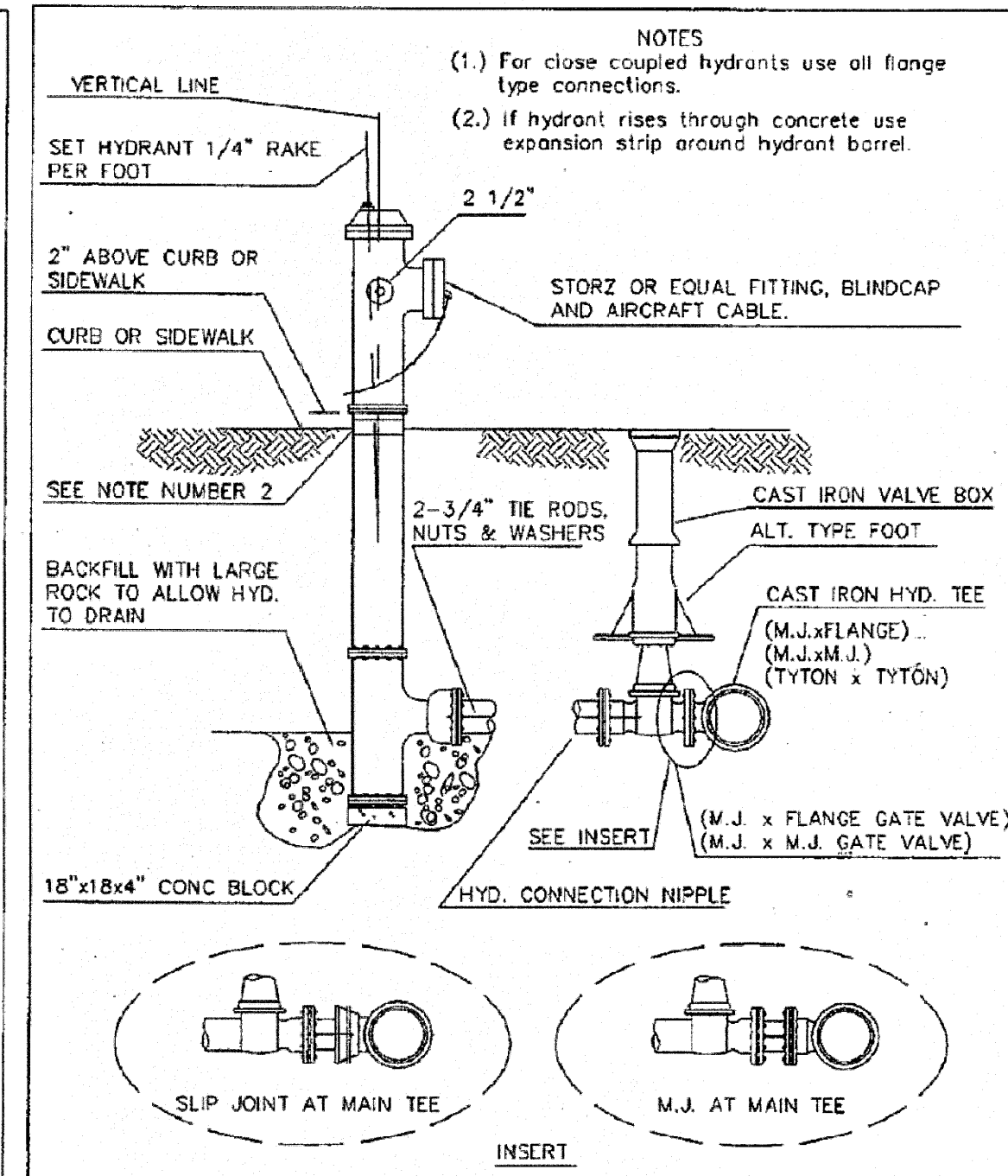
APPROVED	CITY OF FERDALE	DRAWING
Public Works Director	TYPE 1 48" MANHOLE	SS-2
JANUARY 1993		



APPROVED	CITY OF FERDALE	DRAWING
Public Works Director	NORMAL INSTALLATION	SS-6
JUNE 1995	15" AND SMALLER SEWER MAINS	

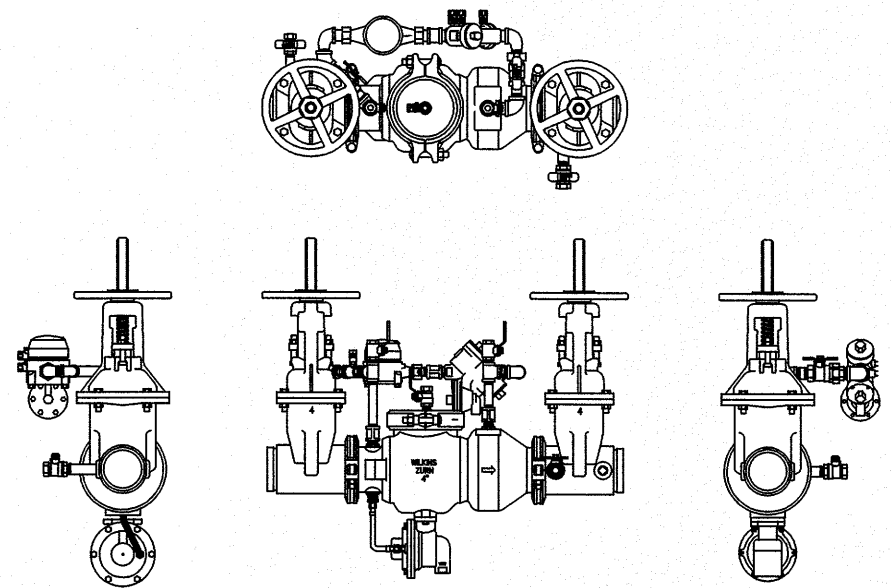


APPROVED	CITY OF FERDALE	DRAWING
Public Works Director	TRENCHING DETAIL	SS-15
JUNE 1995		



APPROVED	CITY OF FERDALE	DRAWING
Public Works Director	FIRE HYDRANT ASSEMBLY	W-1
JUNE 1995		

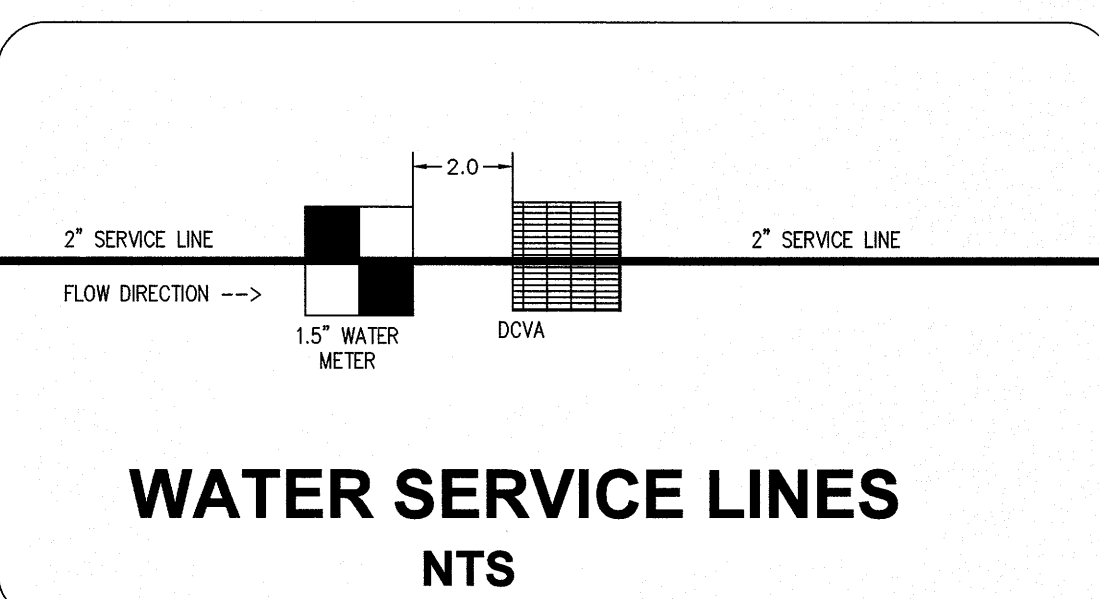
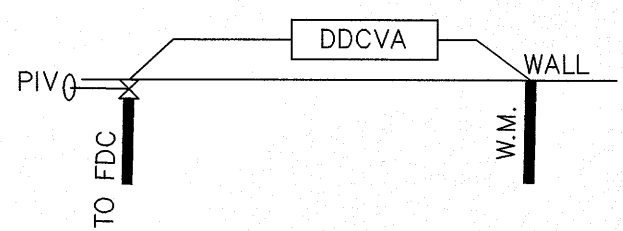
INSTALL DDCVA (DOUBLE DETECTOR CHECK VALVE ASSEMBLY) ON THE INSIDE OF BUILDING (BY OTHERS).



DDCVA DETAIL (NTS)  
TYPICAL

DDCVA NOTE: PROVIDE DRAIN AREA TO PURGE WATER EVERY 6 MONTHS OR YEARLY.

DDCVA PIPING: USE RESTRAINT SYSTEM ON FITTINGS (BENDS, CONNECTIONS, VALVES).

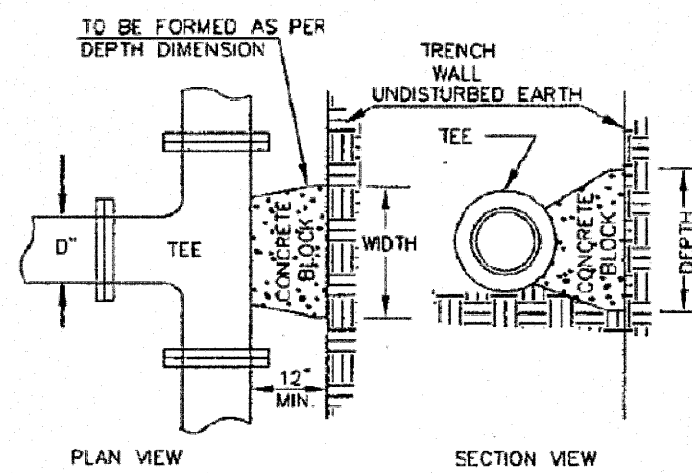


WATER SERVICE LINES  
NTS

NOTE:

OWNER/DEVELOPER SHALL INSTALL R.P.B.A. IN CASE WATER USE OF BUILDINGS FALL UNDER THE FOLLOWING CATEGORIES:

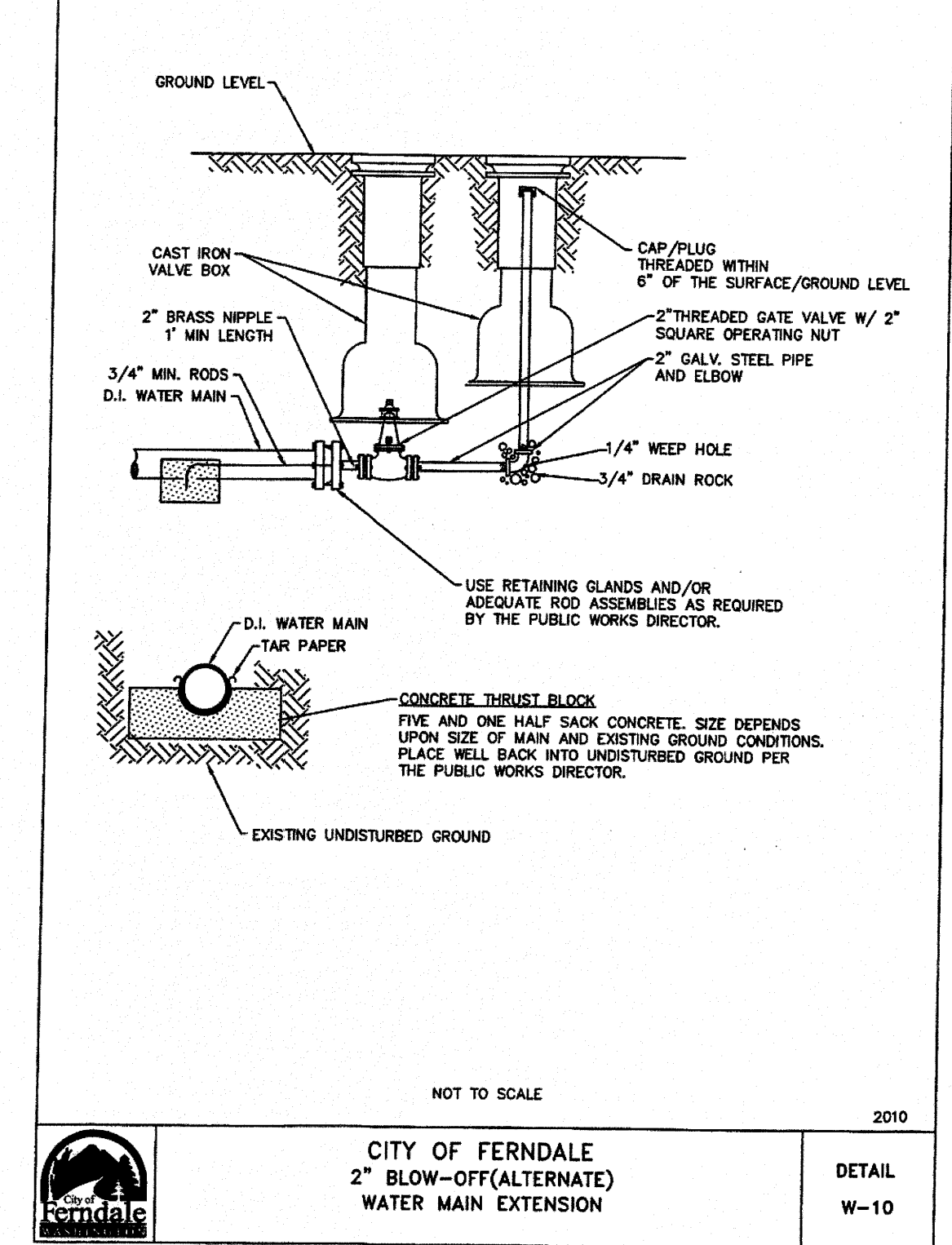
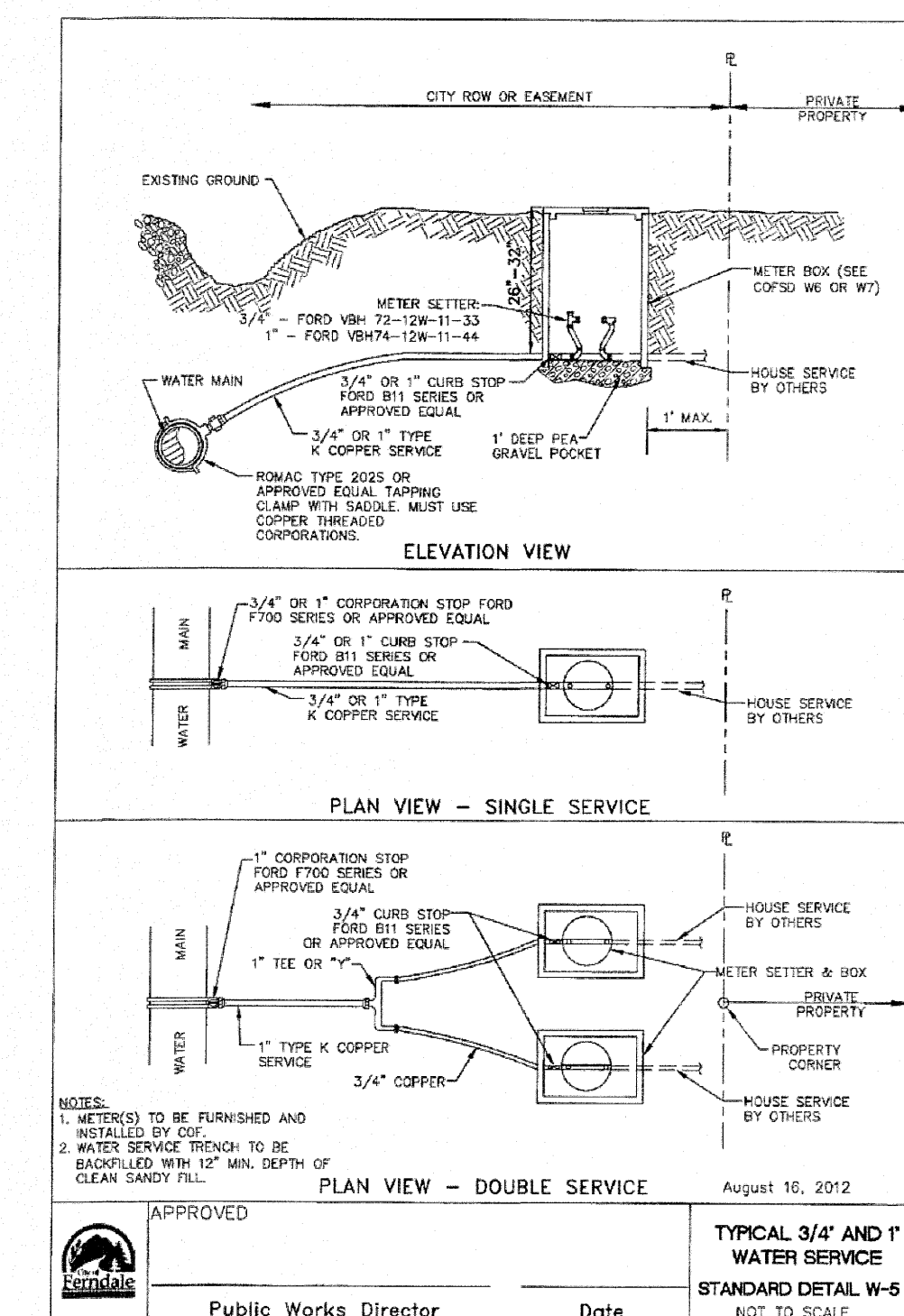
- AGRICULTURAL (FARMS AND DAIRIES)
- BEVERAGE BOTTLING PLANTS
- CAR WASHES
- CHEMICAL PLANTS
- COMMERCIAL LAUNDRIES AND DRY CLEANERS
- PREMISES WHERE BOTH RECLAIMED WATER AND POTABLE WATER ARE PROVIDED
- FILM PROCESSING FACILITIES
- FOOD PROCESSING PLANTS
- HOSPITALS, MEDICAL CENTERS, NURSING HOMES, VETERINARY, MEDICAL AND DENTAL CLINICS, AND BLOOD PLASMA CENTERS
- PREMISES WITH SEPARATE IRRIGATION SYSTEMS USING THE PURVEYOR'S WATER SUPPLY AND WITH CHEMICAL ADDITION+
- LABORATORIES
- METAL PLATING INDUSTRIES
- MORTUARIES
- PETROLEUM PROCESSING OR STORAGE PLANTS
- PIERS AND DOCKS
- RADIOACTIVE MATERIAL PROCESSING PLANTS OR NUCLEAR REACTORS
- SURVEY ACCESS DENIED OR RESTRICTED
- WASTEWATER LIFT STATIONS AND PUMPING STATIONS
- WASTEWATER TREATMENT PLANTS



100 P.S.I. OPERATING PRESSURE		
SIZE	WIDTH	DEPTH
6"	1'-6"	1'-6"
8"	2'-0"	2'-0"
10"	2'-6"	2'-6"
12"	3'-0"	3'-0"
16"	4'-6"	3'-6"
20"	6'-0"	4'-0"
24"	7'-0"	5'-0"

NOTE: ALL ABOVE DIMENSIONS APPLY TO STABLE TRENCH WALLS, UNDER VARIABLE CONDITIONS SIZE OF THRUST BLOCK SHALL BE DETERMINED BY ENGINEER.

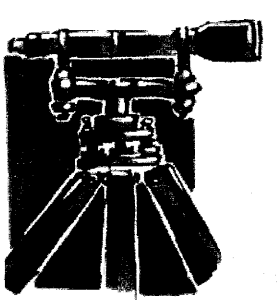
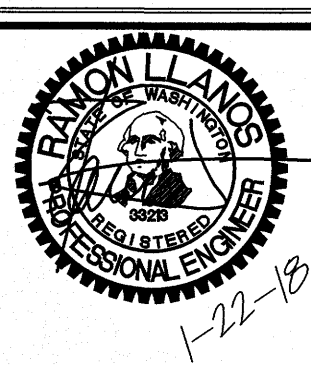
APPROVED	CITY OF FERDALE	DRAWING
Public Works Director	THRUST BLOCKING TEES	W-3
JUNE 1995		



APPROVED	CITY OF FERDALE	DRAWING
Public Works Director	2" BLOW-OFF (ALTERNATE) WATER MAIN EXTENSION	DETAIL W-10
AUGUST 10, 2010		

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ASBUILT SUBMITTAL	RL	01/22/18
NO.	REVISION	BY DATE



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5160 INDUSTRIAL PL. #108  
FERDALE, WA 98248  
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DESIGNED BY:	RL
DRAWN BY:	YC
CHECKED BY:	RL

APPROVED

JAN 23 2018

BY: [Signature]  
PUBLIC WORKS DEPARTMENT

**PIP LOT 39**  
**SANITARY SEWER &**  
**WATER DETAILS**

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OF  
**9**

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OF 9

BY 3  
CITY OF FERRISDALE  
PUBLIC WORKS DEPARTMENT

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1. 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.
2. 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.
3. 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.
4. 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 3.03(21) OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE OR MUNICIPAL CONSTRUCTION. NO PRE-CAST BLOCKS ARE ALLOWED.
5. 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.
6. 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 ALL MAINS SHALL BE 250 PSI. ACCEPTANCE TESTING SHALL BE DONE ACCORDING TO THE 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.
7. 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.
8. ALL PIPES SHALL HAVE A MINIMUM COVER OF 36".
9. ALL VALVES SHALL BE EITHER GATE OR BUTTERFLY TYPE VALVES AND SHALL BE INSTALLED WITH SLOPE TYPE CAST IRON VALVE BOXES. GATE VALVES SHALL BE USED FOR LINES 2 INCHES THROUGH 10 INCHES. BUTTERFLY VALVES SHALL BE USED FOR LINES 12 INCHES THROUGH 36 INCHES. VALVES SHALL BE INSTALLED ON 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 BOURNED MOUNTED VALVES CONFORMING TO AWWA C509 AND SUITABLE FOR SERVICE WITH THE TYPE AND CLASS OF PIPE USED. ALL VALVES SHALL HAVE NON-RIISING 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.
10. WATER SERVICE TAP INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE CDFD'S W-5.
11. FIRE HYDRANTS AND FIRE MAINS MUST CONFORM TO CDFD'S - SD W-1 (WSDOT B-19) AND THE FOLLOWING STANDARDS:
  - A. FIRE HYDRANTS SHALL HAVE TWO INDIVIDUALLY VALVED 1-1/2" 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. 9287 HYDRANTS.
  - B. FIRE HYDRANTS SHALL HAVE THE 5/8" PORT FACING TO 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 PROTS SHALL BE PROVIDED. NO OBSTRUCTIONS SHALL EXIST WITHIN THE FOOT WORKING AREA OF THE HYDRANT. ACCESS TO THE HYDRANTS SHALL BE 4" 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 8' 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 250 PSI. A FLOW TEST WILL BE REQUIRED WHEN INSTALLATION IS COMPLETE.
  - E. 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.

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 THE PROPERTY OF THE CITY OF FERNDALE.
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 INSPECTOR.
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 COPS SS-1. ALL TRENCHES SHALL BE BACKFILLED WITH CLASS B BANK RUN GRAVEL WITHIN 18 INCHES OF WALL. TRAVELED WAYS OUTSIDE OF RIGHT OF WAY (ACCESS EASEMENTS) AND SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% MODIFIED PROCTOR. USE OF SUSTAINABLE 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 WATERIGHT PLUG. EACH STUB SHALL BE MARKED FOR LOCATION WITH A 2" DIA. PVC PIPE (MIN. SCHEDULE 40) WITH END CAPS. THE PLUG, END CAP AND STUB SHALL BE MARKED WITH THE WORD "SEWER" AND THE PIPE INVERT INDICATED. THE LOCATION MARKER SHALL BE CONNECTED TO THE SERVICE STUB BY A #12 COPPER WIRE.