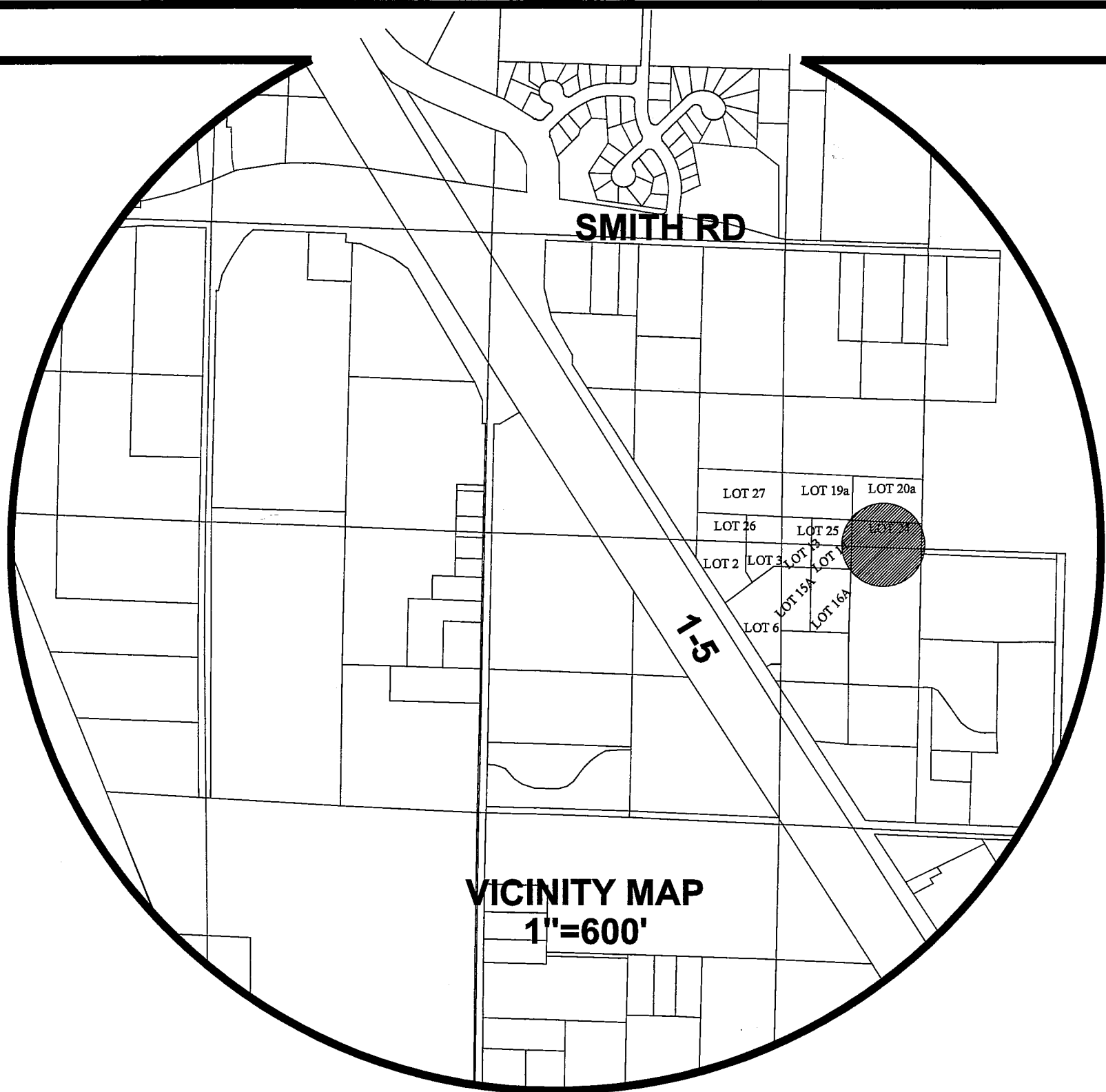


A PORTION OF THE NORTHEAST QUARTER OF SECTION 33, T39N, R2E, W.M.

# PACIFIC INDUSTRIAL PARK WATER LINE FOR LOTS 31, 33, 34 RECORD DRAWINGS



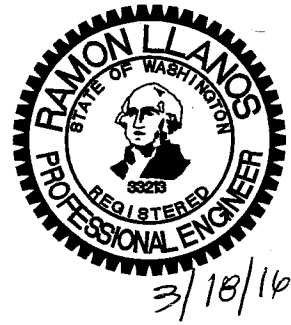
## INDEX TABLE

- COVER SHEET
- EXISTING CONDITIONS
- EROSION CONTROL TESC NOTES & DETAILS
- WATER DISTRIBUTION PLAN AND DETAILS
- CITY OF FERNDAL GENERAL REQUIREMENT NOTES

OWNER/APPLICANT  
SAM BOULOS  
P.O. BOX 189  
FERNDAL, WA 98248

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, PLS.  
(360) 383-0620

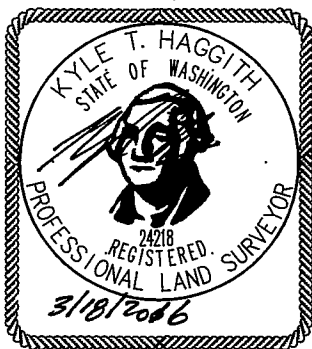


ENGINEER'S CERTIFICATION  
I HEREBY CERTIFY THAT THE IMPROVEMENTS IN "WATER LINE FOR LOTS 31, 33, 34" HAVE BEEN INSPECTED BY LDES AND TO THE BEST OF MY KNOWLEDGE, HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE CITY OF FERNDAL DEVELOPMENT STANDARDS, THE CITY OF FERNDAL MUNICIPAL CODE, SUBSEQUENT STANDARDS ADOPTED BY REFERENCE THEREIN, AND STANDARD ENGINEERING PRACTICE.

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: 3/18/16

KYLE HAGGITH, PLS.



## ABBREVIATIONS:

AB = AS-BUILT  
BOW = BACK OF WALK  
BOW CO = BACK OF WALK CLEAN OUT  
BW = BOTTOM OF WALL  
COF = CITY OF FERNDAL  
C = CENTERLINE  
CONC = CONCRETE  
CPDP = CORRUGATED PLASTIC DRAIN PIPE  
CSTC = CRUSHED SURFACING TOP COURSE  
DI = DUCTILE IRON  
DOE = DEPARTMENT OF ECOLOGY  
DTL = DETAIL  
EG = EXISTING GROUND  
EL = ELEVATION  
EXST = EXISTING  
FF = FINISH FLOOR  
FG = FINISH GROUND  
FM = FORCE MAIN  
FND = FOUND  
G.V. = GATE VALVE  
HYD = FIRE HYDRANT  
IE = INVERT ELEVATION  
LF = LINEAR FEET  
LT = LEFT  
MIN. = MINIMUM  
OHWM = ORDINARY HIGH WATER MARK  
PERF = PERFORATED PIPE  
PERM. = PERMANENT  
PROP. = PROPOSED  
PVC = POLYVINYL CHLORIDE PIPE  
RD = ROAD  
RT = RIGHT  
RY = ROOF AND YARD  
SD = STORM DRAIN  
SS = SANITARY SEWER  
SSCO = SANITARY SEWER CLEAN OUT  
SF = SQUARE FEET  
SSMH = SANITARY SEWER MANHOLE  
STA. = STATION  
TA = TOP OF ASPHALT  
TC = TOP OF CONCRETE  
TEMP. = TEMPORARY  
TW = TOP OF WALL  
WA = WATER

## LEGEND:

- PROPERTY CORNER
- EXIST SD CATCH BASIN (TYPE 1)
- EXIST SD CATCH BASIN (TYPE 2)
- EXIST SANITARY SEWER MANHOLE
- EXIST SANITARY SEWER CLEANOUT
- EXIST SANITARY SEWER SERVICE
- EXISTING WATER METER BOX
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXIST COUPLING ADAPTER
- EXIST POWER/AND OR UTILITY POLE
- EXIST GUY WIRE
- EXIST POWER METER/STRUCTURE
- EXIST POWER VAULT
- EXIST POWER JBOX/HANDHOLD
- EXIST LIGHT POLE
- EXIST UTILITY POLE
- EXIST TV BOX
- EXIST TELEPHONE PEDESTAL
- EXIST TELEPHONE MANHOLE
- EXIST SIGN
- EXIST UNDERGROUND POWER
- EXIST WATER LINE
- EXIST SANITARY SEWER LINE
- EXIST STORM DRAIN LINE
- EXIST BLOCK WALL
- EXIST CONTOUR (INDEX)
- EXIST CONTOUR (NORMAL)
- WATER LINE
- WATER VALVE
- TEE CONNECTION
- THRUST BLOCK
- WATER METER
- FIRE HYDRANT
- 11.25' BEND (M.J.)
- 45' BEND (M.J.)
- 90' BEND (FL)
- EXIST ASPHALT

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

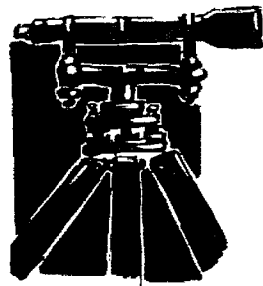
PACIFIC INDUSTRIAL PARK LOT 31, 33, 34

FOR: SAM BOULOS  
PO BOX 189 FERNDAL WA 98248

APPROVED

MAY 06 2016

BY: [Signature]  
CITY OF FERNDAL



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

FIRE LINE FOR LOTS 31, 33, 34  
COVER SHEET  
RECORD DRAWINGS

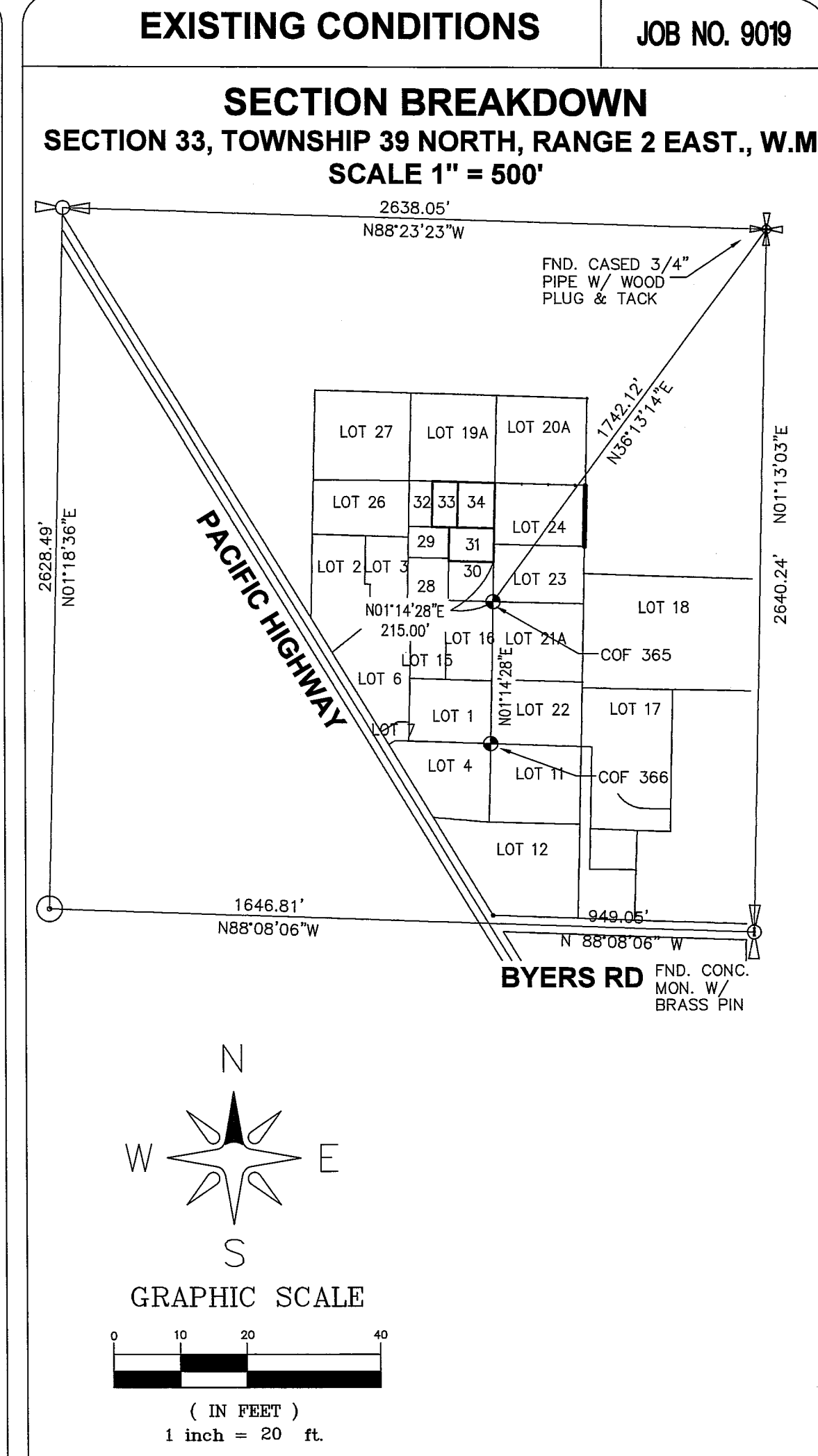
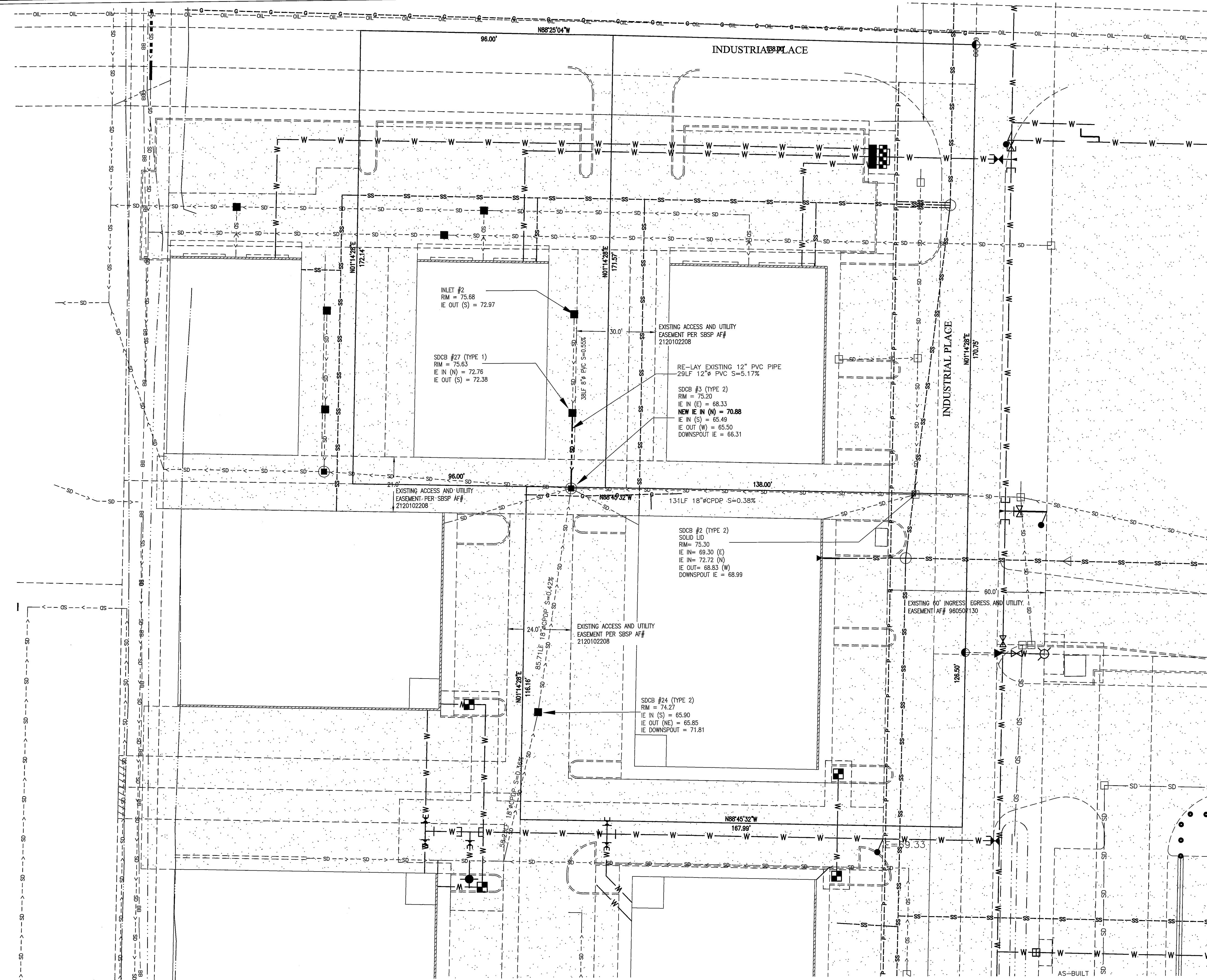
## REVISIONS - COMMENTS

SR	03/18/16	SUBMITTAL #1

SHEET

01

OF 5



**LEGAL DESCRIPTION:**  
 LOTS 31-34 AS DELINEATED ON PACIFIC INDUSTRIAL PARK SPECIFIC BINDING SITE PLAN No. 11, ACCORDING TO THE PLAT THEREOF, UNDER AUDITOR'S FILE No. 2120102208, RECORDS OF WHATCOM COUNTY, WASHINGTON.

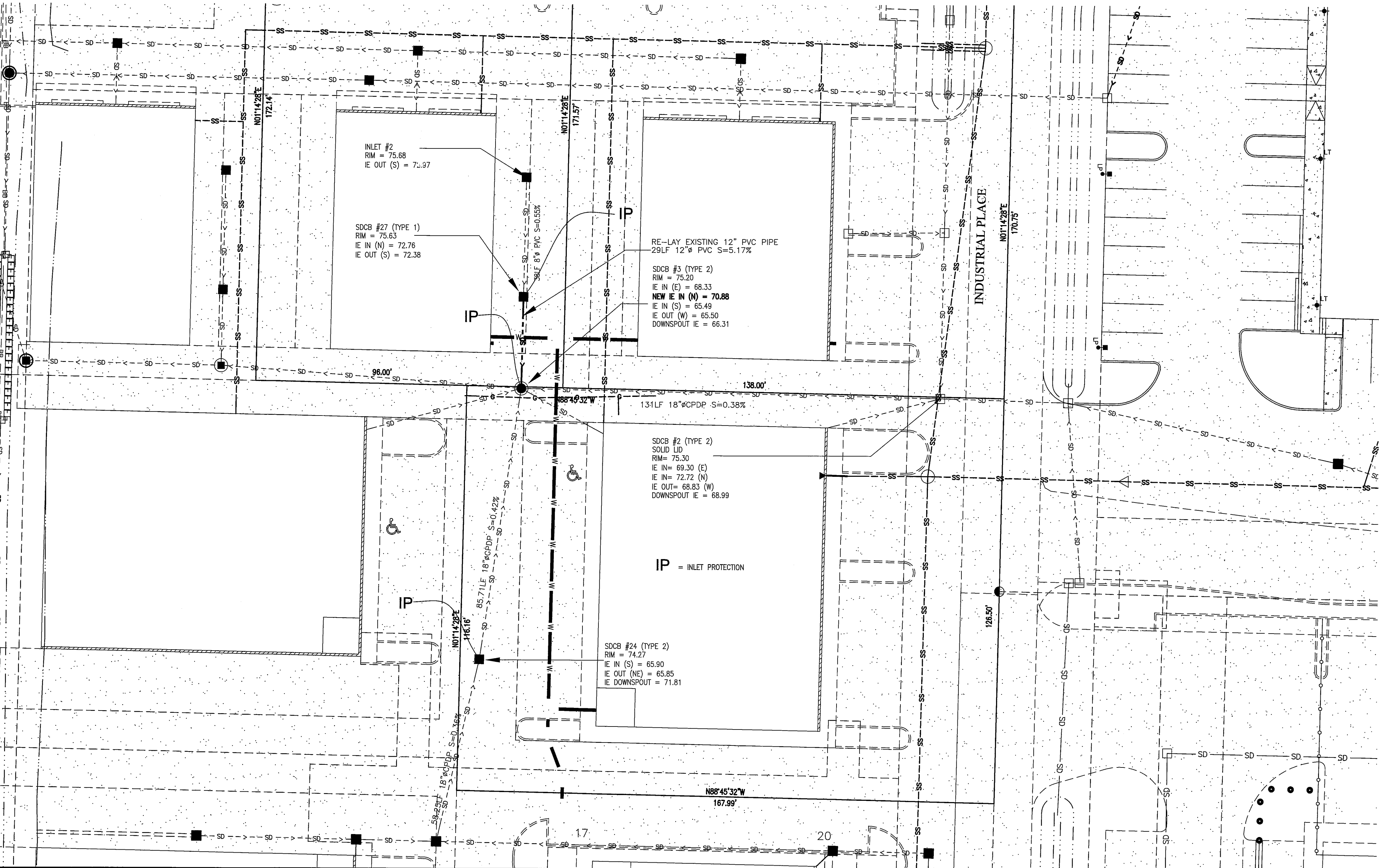
**SURVEY NOTES:**

- 1) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION.
- 2) EQUIPMENT USED: NIKON DTS00: 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 APRIL 2014
- 5) HORIZONTAL DATUM: ASSUMED  
 CONVERSION TO STATE PLANE: BASED ON CITY OF FERNDAL CONTROL POINT NUMBERS 13 AND 14, THE STATE PLANE COORDINATE AT THE SOUTHWEST CORNER OF LOT 23 PER SPECIFIC BINDING SITE PLAN NO. 9 AF #2070504041 IS:  
 NORTHING = 671496.57 EASTING = 1225433.46  
 LDES NORTHING: 11234.19 EASTING: 9026.69  
 THE BEARING ALONG THE WEST LINE OF LOT 23 HEREON IS N 01-14-38 E SHOWN HEREON ARE PLAT BEARINGS FOR THE SAID LINE: N 01-14-28 E
- 6) 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.

**VERTICAL DATUM:**  
 BENCHMARK DERIVED FROM DAVID EVANS AND ASSOCIATES ORIGINAL BASE MAP  
 CITY OF FERNDAL ELEV = 66.15 (LDES #2002)  
 COF 365 ELEV: 65.76 (NGVD29) = LDES ELEV: 72.32 (DEA BASEMAP)

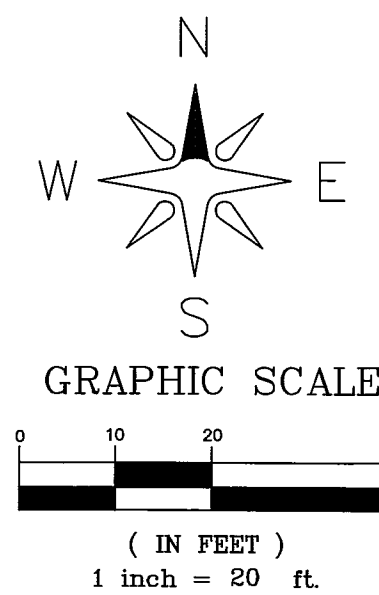
REVISIONS -		COMMENTS
SR	03/18/16	SUBMITTAL 1





**CITY OF FERNDAL TESC NOTES:**

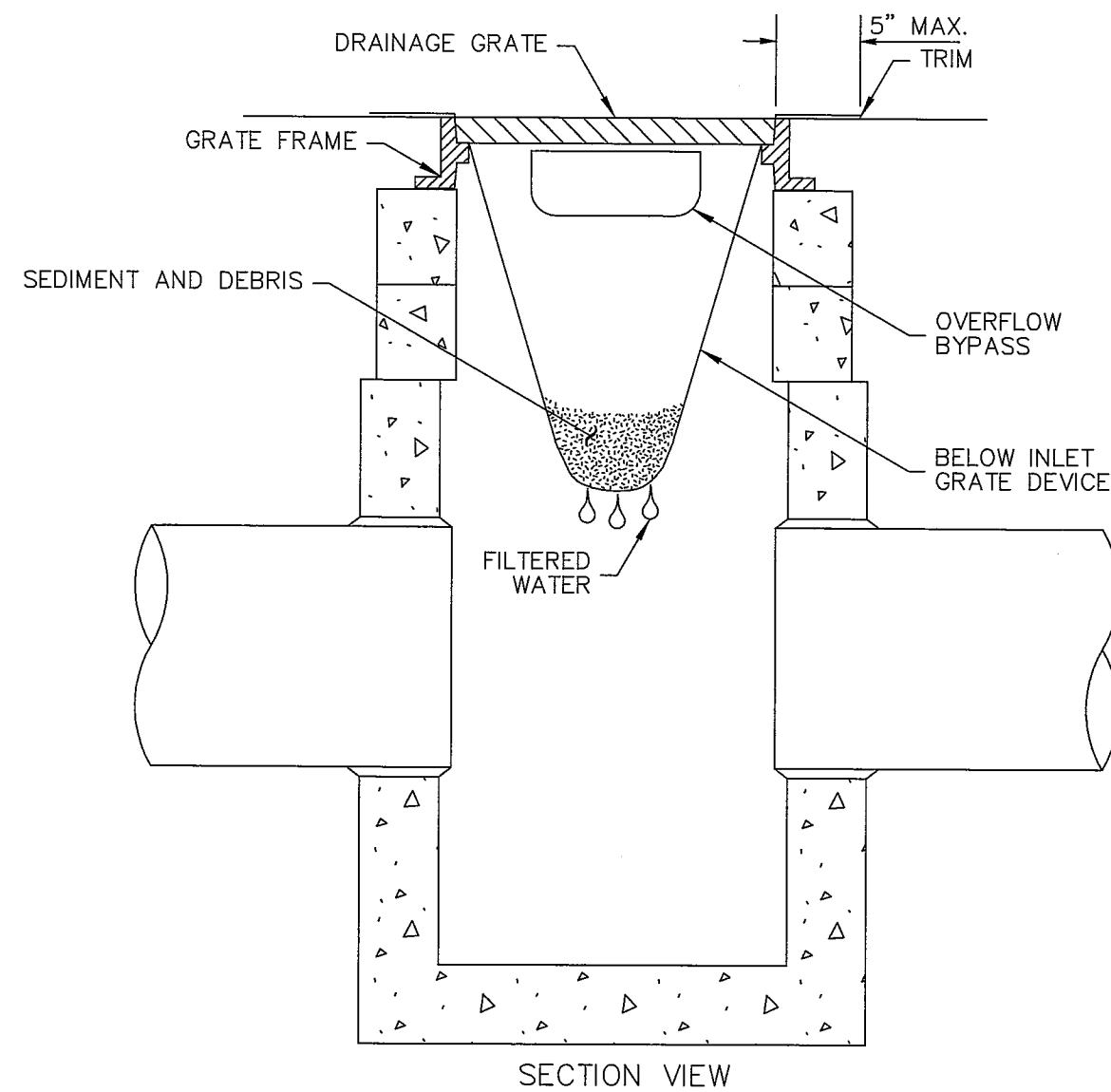
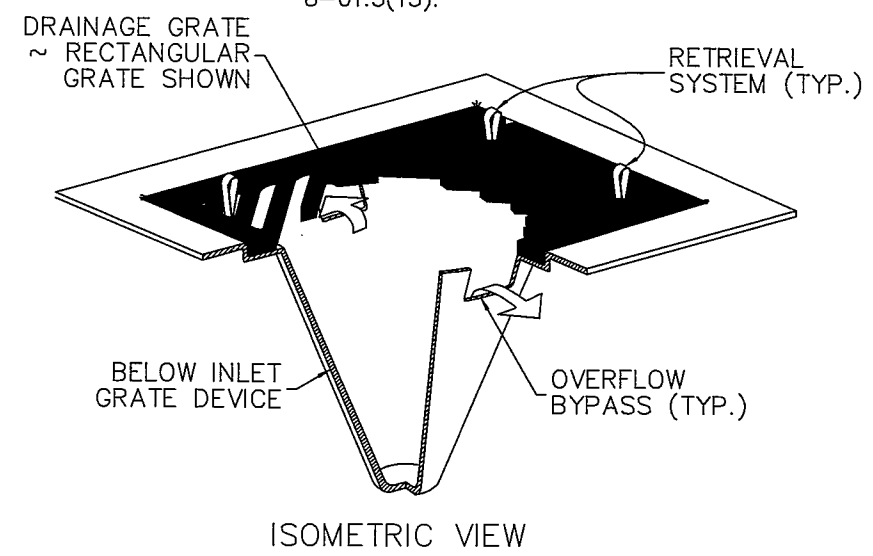
- STABILIZATION & SEDIMENT TRAPPING. ALL EXPOSED SOILS SHALL BE STABILIZED BY SUITABLE APPLICATION OF BMP'S. FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL REMAIN UNEXPOSED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN UNEXPOSED FOR MORE THAN 7 DAYS. PRIOR TO LEAVING THE SITE, STORMWATER 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.
- PROTECTION OF ADJACENT PROPERTIES. PROPERTIES ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- DEWATERING CONSTRUCTION SITES. DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND.
- 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.
- 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.
- FINANCIAL LIABILITY. PERFORMANCE BONDING, OR OTHER APPROPRIATE FINANCIAL INSTRUMENTS, SHALL BE REQUIRED FOR ALL PROJECTS TO ENSURE COMPLIANCE WITH THE APPROVED TESC PLAN.



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

**INLET PROTECTION NOTES**

- SIZE THE BELOW INLET GRATE DEVICE (BIGD) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
- THE BIGD SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
- THE RETRIEVAL SYSTEM MUST ALLOW REMOVAL OF THE BIGD WITHOUT SPILLING THE COLLECTED MATERIAL.
- PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION 8-01.3(15).



**1 STORM DRAIN INLET PROTECTION**  
NOT TO SCALE

**EROSION AND SEDIMENT CONTROL GENERAL NOTES:**

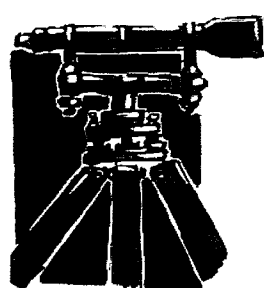
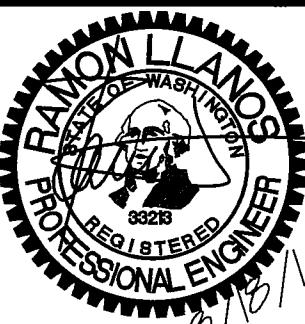
- EROSION CONTROL METHODS AND MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 8-01 OF THE 2012 WSDOT/APWA STANDARD SPECIFICATIONS, THE REQUIREMENTS SET FORTH IN VOLUME II OF THE "STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON" BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY, CURRENT EDITION, THE CITY OF FERNDAL 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.
- 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.
- THE EXISTING AND PROPOSED STORM SYSTEMS SHALL BE CLEANED AND MAINTAINED THROUGHOUT CONSTRUCTION AND UNTIL ALL ON-SITE SOILS HAVE BEEN STABILIZED.
- 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.

PACIFIC INDUSTRIAL PARK LOT 31, 33, 34

APPROVED

MAY 06 2016

BY  
CITY OF FERNDAL



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

FIRE LINE FOR LOTS 31, 33, 34

EROSION CONTROL  
TESC NOTES & DETAILS  
DESIGN INFORMATION

**REVISIONS -**

**COMMENTS**

SR	DATE	DESCRIPTION
03/18/16		SUBMITTAL 1

SHEET

3

OF

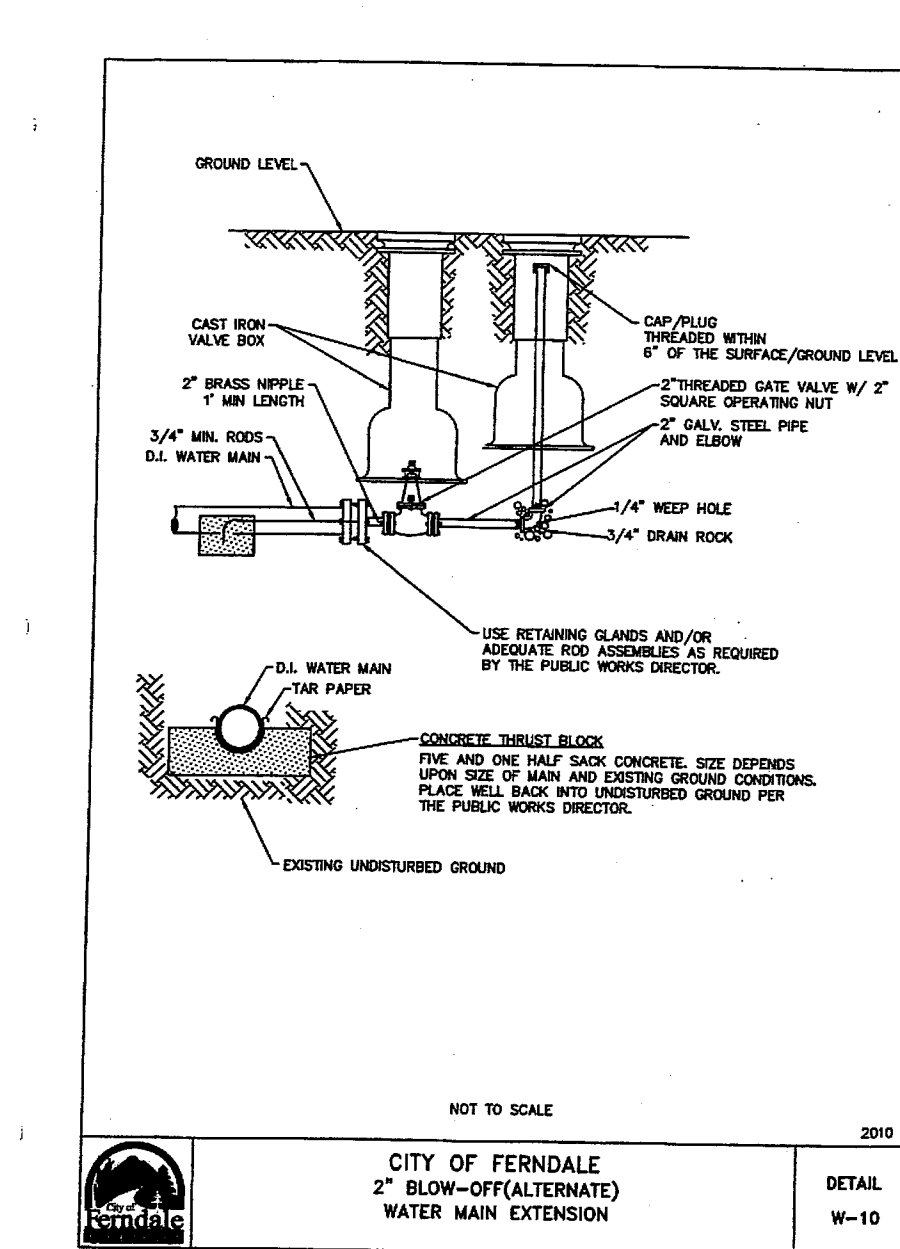
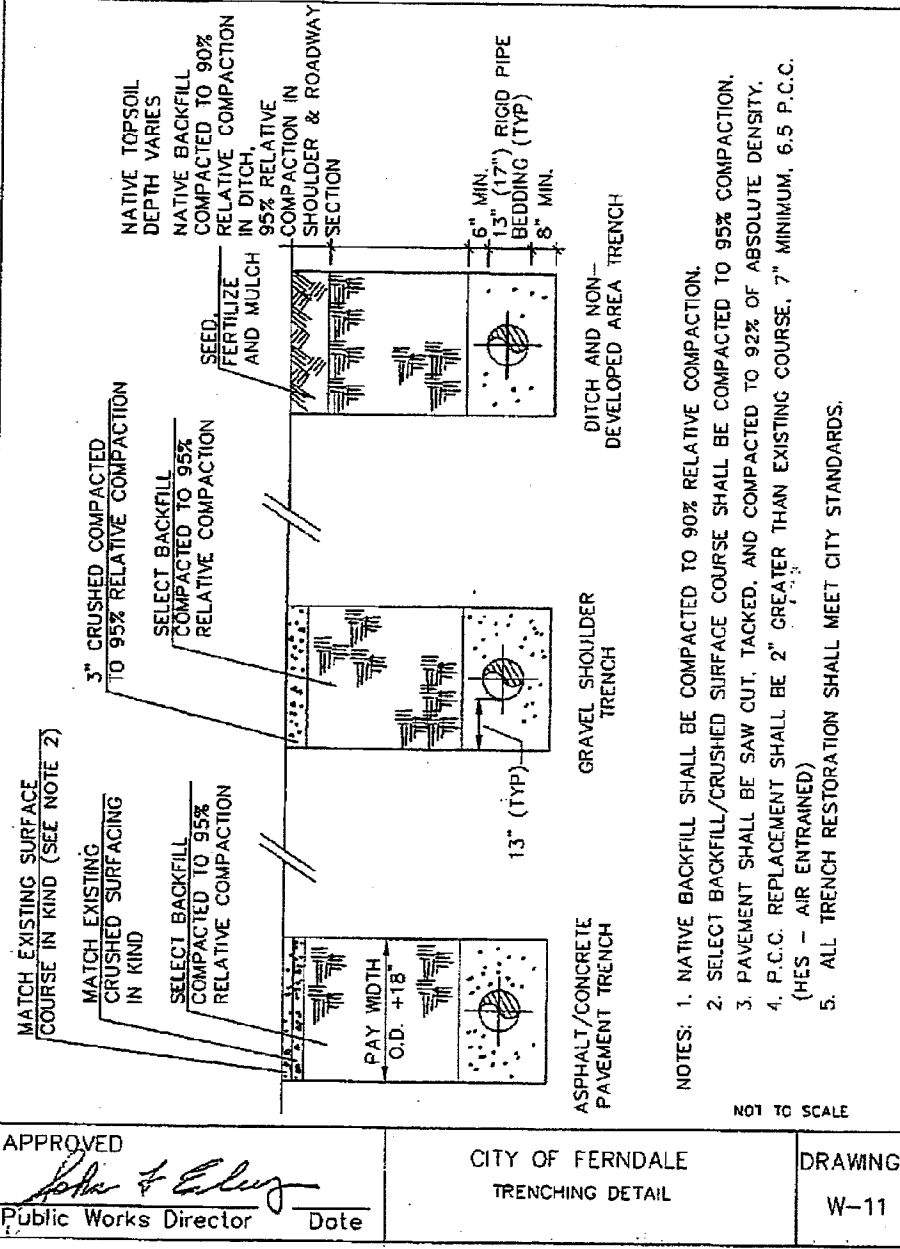
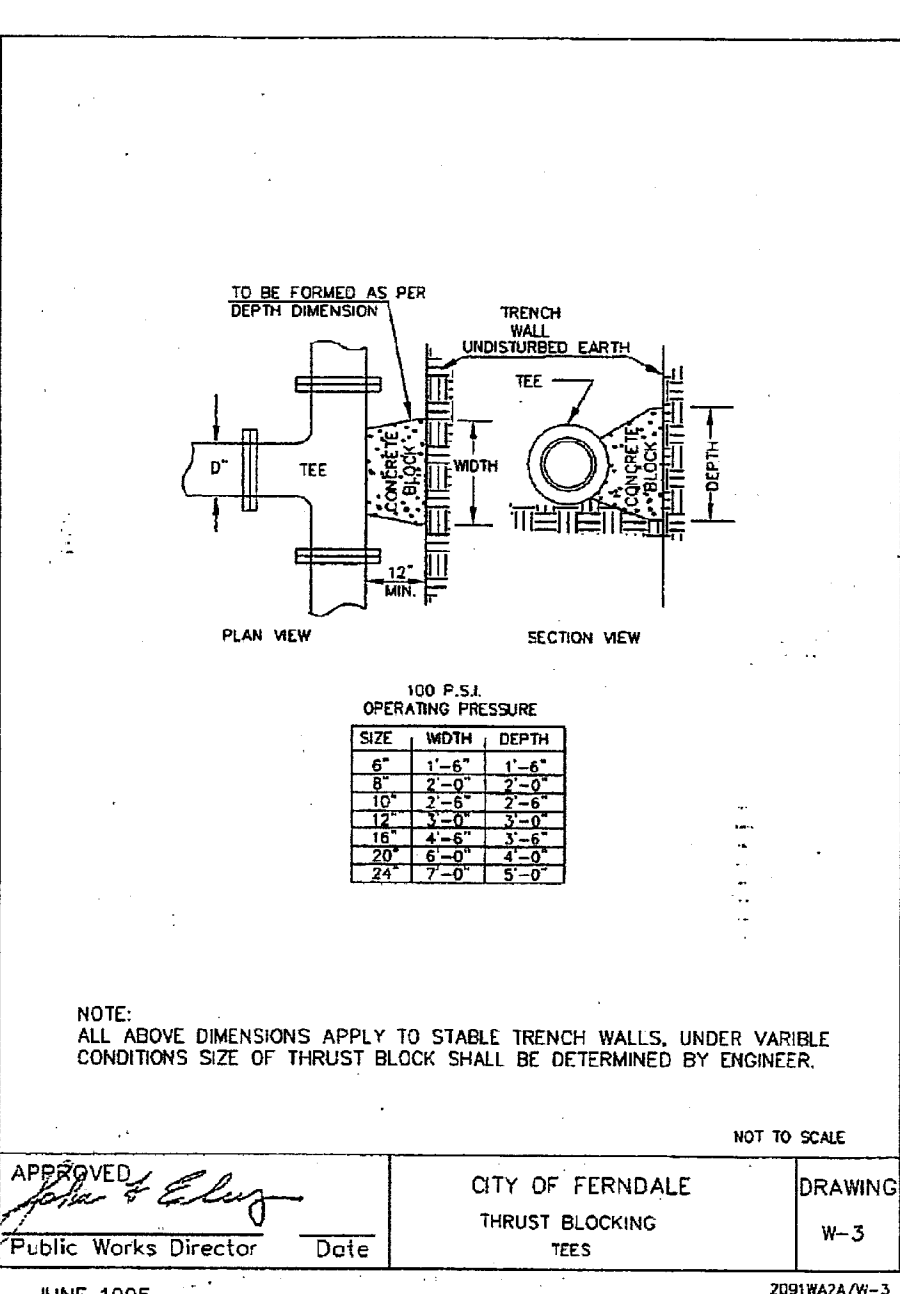
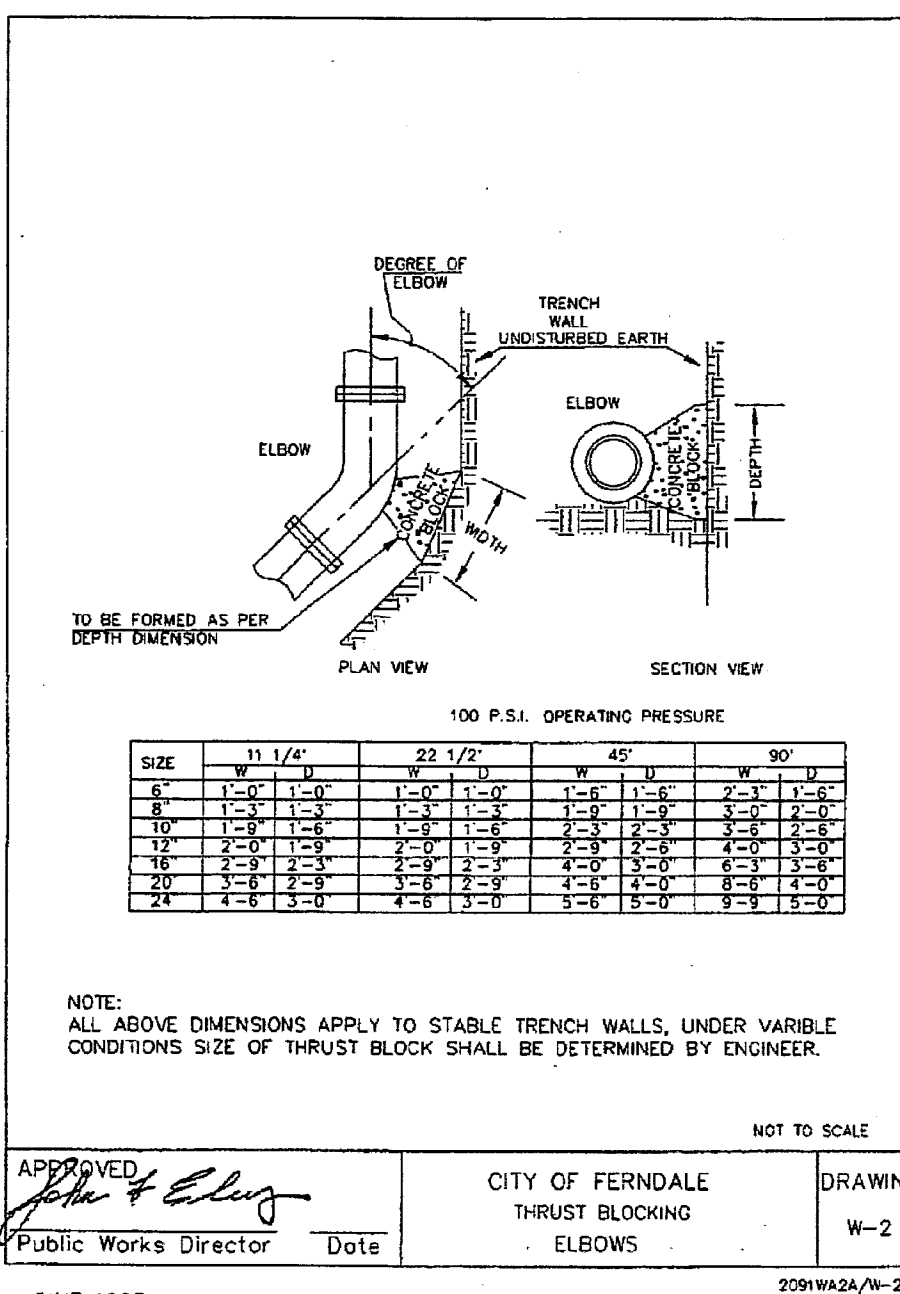
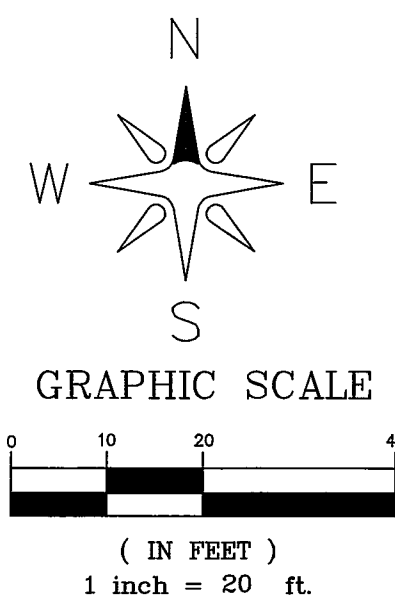
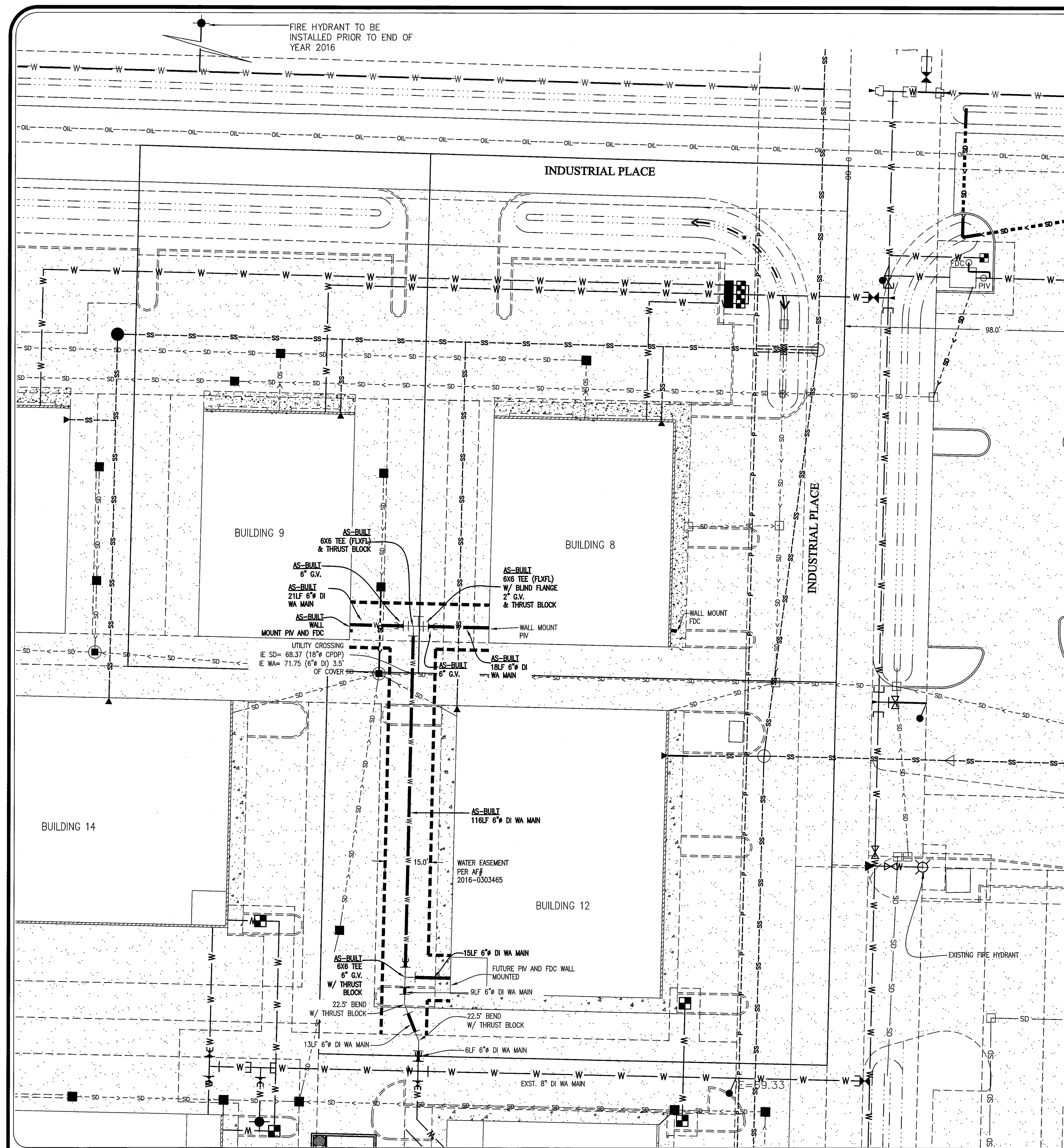
5

JOB # 1509

FOR:

SAM BOULOS  
PO BOX 189 FERNDAL WA 98248

00596.004 5/10/16 SH



- NOTES
- AT THE APPLICANT'S REQUEST THE CITY ALLOWED THE DOUBLE DETECTOR CHECK VALVE ASSEMBLIES (DDCVA) REQUIRED ON FIRE LINES TO BE INSTALLED INSIDE THE BUILDINGS 8, 9 AND 12 WITH THE FOLLOWING CONDITIONS:
1. COST ASSOCIATED WITH REPAIRS TO FIRE LINES SHOWN SHALL BE BORNE BY THE PROPERTY OWNER.
  2. A CITY OF FERNDAL ENCROACHMENT PERMIT IS REQUIRED TO PERFORM ANY WORK OR REPAIRS TO THE FIRE LINES.
  3. ANY WORK OR REPAIR TO FIRE LINE MUST BE PERFORMED BY A LICENSED CONTRACTOR AND INSPECTED BY THE CITY.
  4. THE APPLICANT MUST ENTER INTO AN AGREEMENT WITH THE CITY THAT WILL HOLD THE CITY HARMLESS OF ANY AND ALL DAMAGES ASSOCIATED WITH FIRE LINE FAILURE, MAINTENANCE AND/OR REPAIR.
  5. A 15 FEET WIDE PUBLIC EASEMENT CENTERED OVER THE PROPOSED WATERMAINS/FIRE LINES MUST BE RECORDED AND THE AUDITOR'S FILE NUMBER SHOWN ON AS-BUILT DRAWINGS FOR PROJECT ACCEPTANCE BY THE CITY OF FERNDAL.

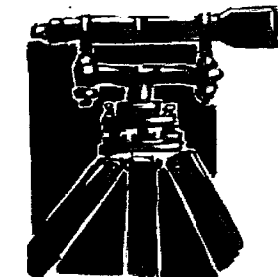
CALL 2 BUSINESS DAYS BEFORE YOU DIG  
1-800-424-5555  
UTILITIES UNDERGROUND LOCATION CENTER

PACIFIC INDUSTRIAL PARK LOT 31, 33, 34

JOB # 1509

FOR: **SAM BOULOS**  
PO BOX 189 FERNDAL WA 98248

APPROVED  
MAY 06 2016  
BY: [Signature]  
CITY OF FERNDAL



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

**FIRE LINE FOR LOTS 31, 33, 34  
WATER DISTRIBUTION  
AND DETAILS  
RECORD DRAWINGS**

REVISIONS -		COMMENTS
SR	03/18/16	SUBMITTAL 1

SHEET  
**4**  
OF  
5



As 9/10/15 500 81500

- GENERAL REQUIREMENTS:
- ALL WORK AND MATERIALS SHALL CONFORM TO THESE PLANS AND TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE "STATE OF WASHINGTON, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION" (WSDOT SPECS), THE CITY OF FERNDALE DEVELOPMENT STANDARDS (CDFS) AND THE 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.
  - PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER CONSTRUCTION DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES. THROUGHOUT THE PERIOD OF CONSTRUCTION, CONTRACTOR SHALL COMPLY WITH THE TERMS OF ALL PERMITS.
  - THE CONTRACTOR MUST HAVE A FULL SET OF CITY CONTRACT DOCUMENTS ON THE SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
  - CONSTRUCTION NOISE SHALL BE LIMITED TO BETWEEN 7 a.m. TO 8 p.m., MONDAY THROUGH SATURDAY.
  - THE CONTRACTOR SHALL CONTACT THE UTILITIES UNDERGROUND LOCATION CENTER AT LEAST 72 HOURS PRIOR TO STARTING CONSTRUCTION. PHONE: 1-800-424-5555. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL OF THE VARIOUS UTILITY COMPANIES TO ARRANGE FOR FIELD LOCATIONS OF ALL EXISTING UTILITY FACILITIES. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR COSTS INCURRED BECAUSE OF DAMAGE DONE TO EXISTING FACILITIES BY THE CONTRACTOR'S WORK FORCE, INCLUDING COSTS FOR REPAIRS, WHICH WILL BE CONTRACTOR'S SOLE RESPONSIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EXISTING UTILITIES AND TO NOTIFY THE ENGINEER PROMPTLY OF ANY CONFLICT BETWEEN THE APPROVED PLANS AND THE LOCATION OF ANY EXISTING UTILITIES.
  - THE CONTRACTOR SHALL PROTECT ALL PRIVATE AND PUBLIC UTILITIES FROM DAMAGE RESULTING FROM THE WORK. CONTRACTOR SHALL RESTORE ALL PRIVATE AND PUBLIC PROPERTY DISRUPTED BY THE PROJECT IMMEDIATELY AFTER CONSTRUCTION.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY CLEARING OR GRADING IN CONFORMANCE WITH THE EROSION & SEDIMENTATION CONTROL PLAN AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP SHALL BE ON-SITE AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.
  - SITE CLEARING SHALL INCLUDE THE LOCATION AND REMOVAL OF ALL ABOVE GROUND AND BURIED DEBRIS AND WASTE THAT MAY BE PRESENT.
  - THE CONTRACTOR SHALL OBTAIN REVOCABLE ENCROACHMENT PERMITS FROM THE CITY OF FERNDALE AND/OR WHATCOM COUNTY PRIOR TO COMMENCING WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
  - THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH REPRESENTATIVES OF THE CITY OF FERNDALE PUBLIC WORKS DEPARTMENT AND THE PROJECT ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. THE CITY WILL SCHEDULE THE MEETING.
  - ALL WORK AND MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE CITY OF FERNDALE PUBLIC WORKS DEPARTMENT. REPRESENTATIVES FROM THE CITY OF FERNDALE PUBLIC WORKS DEPARTMENT MUST INSPECT ALL WORK IDENTIFIED ON THE PLANS, BOTH PUBLIC AND PRIVATE. THE CONTRACTOR SHALL CALL AT LEAST 24 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS AS FOLLOW:
    - PLACEMENT OF TEMPORARY EROSION CONTROL MEASURES.
    - CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES.
    - PLACEMENT OF WATER MAIN AND BACKFILLING OF WATER MAIN TRENCH WITHIN ROAD RIGHTS OF WAY OR IN WATERLINE EASEMENT TO BE DEDICATED TO THE CITY OF FERNDALE.
    - PLACING OR BACKFILLING OF UNDERGROUND UTILITIES, STORM SEWER AND SANITARY SEWER WITHIN ROAD RIGHTS-OF-WAY, IN EASEMENTS TO BE DEDICATED TO THE CITY OF FERNDALE, OR OTHER PUBLICLY SHARED FACILITIES.
    - GRADING OF PUBLIC OR PRIVATE ROADWAY AT:
      - COMPLETION OF EXCAVATION TO SUBGRADE.
      - COMPLETION OF BALLAST COURSE PLACEMENT
      - COMPLETION OF CRUSHED SURFACING COURSE PLACEMENT
    - POURING OF CURB AND GUTTER AND SIDEWALK IN PUBLIC ROADWAY.
    - ASPHALT PAVING IN PROGRESS IN PUBLIC ROADWAY.
    - OVERALL INSPECTION FOR FINISHED SHOULDERS, DITCHES, PERMANENT SEEDING AND MONUMENT PLACEMENT.
    - END OF MAINTENANCE PERIOD
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO PERFORMING THE WORK. ALL SECTIONS OF THE WSDOT STANDARD SPECIFICATIONS 1-07.23- TRAFFIC CONTROL SHALL APPLY.
  - THE CONTRACTOR SHALL INFORM THE ENGINEER AND OBTAIN APPROVAL FROM THE CITY OF FERNDALE PUBLIC WORKS DIRECTOR OF ANY PROPOSED DEVIATION FROM THE APPROVED PLANS PRIOR TO CONSTRUCTION OF THE REVISED IMPROVEMENTS. THE CONTRACTOR SHALL KEEP RECORDS OF ALL DEVIATIONS AND SHALL FORWARD THEM TO THE ENGINEER AND TO THE CITY OF FERNDALE PUBLIC WORKS DEPARTMENT.
  - AS-BUILT DATA SHALL BE PROVIDED TO THE CITY OF FERNDALE UPON COMPLETION OF CONSTRUCTION AND PROVIDED IN CITY OF FERNDALE DATUM - VERTICAL (NAVD-88) AND HORIZONTAL (NAD 27). CONTACT THE CITY FOR MORE INFORMATION ON SUBMITTAL REQUIREMENTS.

- UNDERGROUND UTILITIES CONSTRUCTION
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE ENGINEER TO ASSURE ACCURATE AND TIMELY COLLECTION OF ALL REQUIRED AS-BUILT DATA. THIS DATA MUST ACCURATELY REFLECT THE LOCATIONS OF ALL UNDERGROUND UTILITIES, BOTTOM OF PIPE ELEVATIONS, INVERT ELEVATIONS, MANHOLE LOCATIONS, WATER SERVICE TAPS, BLOW-OFF LOCATIONS AND INVERTS OF SERVICE CONNECTIONS (BOTH AT PIPE AND AT PROPERTY LINE). VERTICAL AND HORIZONTAL BENDS, SERVICE BOXES AND METERS, VALVES AND HYDRANTS. CALL THE PROJECT ENGINEER AT LEAST 48-HOURS BEFORE BURYING UNDERGROUND PIPE TO ASSURE AND FACILITATE REQUIRED AS-BUILT SURVEY.
  - THE CONSTRUCTION OF UNDERGROUND UTILITY LINES SHALL BE SUBJECT TO THE FOLLOWING CRITERIA:
    - NO MORE THAN 500 FEET OF TRENCH SHALL BE OPENED AT ONE TIME.
    - WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF DITCHES.
    - TRENCH DRAINAGE DEVICES SHALL DISCHARGE INTO SEDIMENT TRAPS OR SEDIMENT PONDS.
    - WHERE PRACTICAL, INSTALL PRIORITY PIPE UTILITIES PRIOR TO INSTALLATION OF OTHER UTILITIES.
  - UTILITY CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF FERNDALE DEVELOPMENT STANDARDS.
  - ALL UTILITY TRENCHES IN THE RIGHT OF WAY SHALL BE BACKFILLED WITH 7-INCH MINUS OR 5/8-INCH MINUS WELL GRADED CRUSHED ROCK.
  - TESTING OF NEW WATER LINES, STORM SEWER SYSTEMS SHALL NOT BE PERFORMED UNTIL ALL OTHER ADJACENT UTILITIES HAVE BEEN INSTALLED.
  - ALL UTILITY TRENCHES SHALL BE BACKFILLED AND COMPACTED TO 95% DENSITY IN LIFTS NOT TO EXCEED 24 INCHES WITH A "TWO PACK" OR 8 INCHES WITH HAND-OPERATED COMPACTION."
  - OPEN CUTTING OF EXISTING ROADWAYS IS ONLY ALLOWED AS APPROVED AND NOTED ON THESE APPROVED PLANS. ANY OPEN CUT SHALL BE RESTORED IN ACCORDANCE WITH THE FERNDALE STANDARD TRENCH DETAIL(S). ALL UTILITY TRENCHES UNDERNEATH AN EXISTING ROADWAY SHALL BE BACKFILLED WITH 150 PSI CONTROLLED DENSITY FILL.
  - NO PART OF THE DRAINAGE SYSTEM MAY BE COVERED, CONCEALED, OR PUT INTO USE UNTIL IT HAS BEEN INSPECTED, TESTED, AND ACCEPTED BY THE CITY INSPECTOR.

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

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

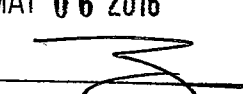
- WATER
- THE FOLLOWING STANDARD DETAILS SHALL BE USED IN CONSTRUCTING WATER SUPPLY SYSTEM IMPROVEMENTS:

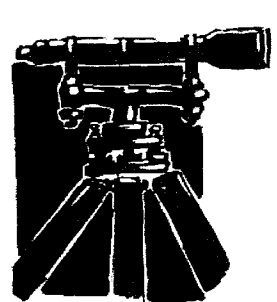
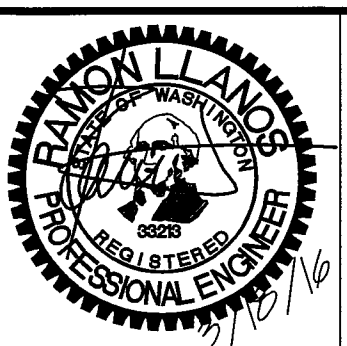
PIPE BEDDING	CDFS W-11
TRENCH BACKFILL	CDFS W-11
FIRE HYDRANT ASSEMBLY	CDFS W-1
THRUST BLOCKING	CDFS W-2, W-3 & W-4
WATER SERVICE	CDFS W-5
  - ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF FERNDALE DEVELOPMENT STANDARDS, SECTIONS 702 AND 705 AND THE MOST RECENT VERSION OF WSDOT STANDARD SPECIFICATIONS.
  - ALL WATER MAIN PIPE SHALL BE DUCTILE IRON, MINIMUM THICKNESS CLASS 50, PER AWWA STANDARDS H3-71 AND C151-71, WITH CEMENT LINING PER AWWA STANDARD C104-71.
  - MATERIAL FOR FITTINGS SUCH AS CROSSES, TEES, BENDS, REDUCERS AND SLEEVES SHALL BE DUCTILE IRON, JOINTS SHALL BE M.J., FLANGED OR PUSH-ON JOINTS AND SHALL CONFORM TO AWWA SPECIFICATIONS C-110-71 AND C-104-71.
  - CONCRETE BLOCKING SHALL BE AS SPECIFIED IN CITY OF FERNDALE STANDARD DETAILS W-2, W-3 AND W-4, OR AS DIRECTED BY THE PROJECT ENGINEER. BLOCKS SHALL BE INSTALLED AS SPECIFIED IN SECTION 7-09.3(21) OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE OR MUNICIPAL CONSTRUCTION. NO PRE-CAST BLOCKS ARE ALLOWED.
  - CONNECTIONS TO EXISTING WATER MAINS - THE CONTRACTOR MUST NOTIFY THE CITY OF FERNDALE PUBLIC WORKS DIRECTOR OF A PROPOSED CONNECTION AT LEAST FOUR WORKING DAYS IN ADVANCE.
  - ALL HYDROSTATIC TESTING AND DISINFECTION OF WATER MAINS SHALL CONFORM TO SECTION 7-09.3(23) AND SECTION 7-09.3(24) OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE OR MUNICIPAL CONSTRUCTION - CURRENT EDITION. HYDROSTATIC TEST PRESSURE FOR WATER MAIN ACCEPTANCE SHALL BE 250 PSI AND SHALL BE DONE ACCORDING TO CITY OF FERNDALE REQUIREMENTS. THE CITY OF FERNDALE LABORATORY SHALL CONDUCT ALL DISINFECTION TESTS AND BACTERIOLOGICAL TESTS. THE PIPE WILL NOT PASS TESTING UNLESS A ZERO BACTERIAL COUNT IS MEASURED ON TWO CONSECUTIVE TESTS, CONDUCTED 24 HOURS APART.
  - BACKFILL SHALL BE GRAVEL BASE, CLASS B, IN ALL STREET RIGHTS-OF-WAY, COMPACTED TO MINIMUM 95% OPTIMUM DENSITY. IN UNIMPROVED AREAS, MINIMUM COMPACTION SHALL BE 90% OF OPTIMUM DENSITY.
  - ALL PIPES SHALL HAVE A MINIMUM COVER OF 36".
  - ALL VALVES SHALL BE EITHER GATE OR BUTTERFLY TYPE 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.
  - WATER SERVICE TAP INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE CDFS W-5.
  - FIRE HYDRANTS AND FIRE MAINS MUST CONFORM TO CDFS- SD W-1 (WSDOT B-19) AND THE FOLLOWING STANDARDS:
    - FIRE HYDRANTS SHALL HAVE TWO INDIVIDUALLY VALVED 2-1/2" PORTS AND ONE 5-1/4" MAIN VALVE OPENING. A 4-1/2" NST PUMPER NOZZLE AND A 5" STORZ PORT WITH CAP AND AIRCRAFT CABLE SHALL BE SUPPLIED. HYDRANTS SHALL BE EITHER IOWA OR M.J. 90PT HYDRANTS.
    - FIRE HYDRANTS SHALL HAVE THE STORZ PORT FACING THE REQUIRED ACCESS AND THE BASE FLANGE OF THE HYDRANT MUST NOT VARY MORE THAN 1 FOOT IN ELEVATION FROM THE GRADE LEVEL OF THE REQUIRED ACCESS. THE LOWEST STEM SHALL BE A MINIMUM OF 14" ABOVE THE GROUND.
    - IF THE PUBLIC WORKS DIRECTOR DETERMINES THAT FIRE HYDRANTS ARE VULNERABLE TO VEHICULAR DAMAGE, APPROPRIATE CRASH POSTS SHALL BE PROVIDED. NO OBSTRUCTIONS SHALL EXIST WITHIN A 3-FOOT WORKING AREA OF EACH REQUIRED ACCESS. CRASH POSTS SHALL BE 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 5' AND 20' FROM THE HYDRANT.
    - UNDERGROUND SUPPLIES TO FIRE HYDRANTS MUST BE INSPECTED. SUCH INSPECTION SHALL INCLUDE VISUAL INSPECTION OF PIPING AND HYDROSTATIC PRESSURE TESTING TO A MIN. OF 250 PSI. A FLOW TEST WILL BE REQUIRED WHEN INSTALLATION IS COMPLETE.
    - FIRE HYDRANTS MUST BE MAINTAINED IN AN OPERABLE CONDITION AT ALL TIMES AND MUST BE REPAIRED OR REPLACED WHEN DEFECTIVE. HYDRANTS SHALL BE FULLY OPERABLE BEFORE CONSTRUCTION COMMENCES ABOVE GRADE LEVEL.

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

PACIFIC INDUSTRIAL PARK LOT 24

JOB # 1509 FOR: **SAM BOULOS**  
**PO BOX 189 FERNDAL WA 98248**

APPROVED  
MAY 06 2016  
BY   
CITY OF FERNDALE



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

**FIRE LINE FOR LOTS 31, 33, 34**  
**CITY OF FERNDAL**  
**GENERAL REQUIREMENT NOTES**  
**DESIGN INFORMATION**

REVISIONS -		COMMENTS
SR	03/18/16	SUBMITTAL 1

SHEET  
**5**  
OF  
5