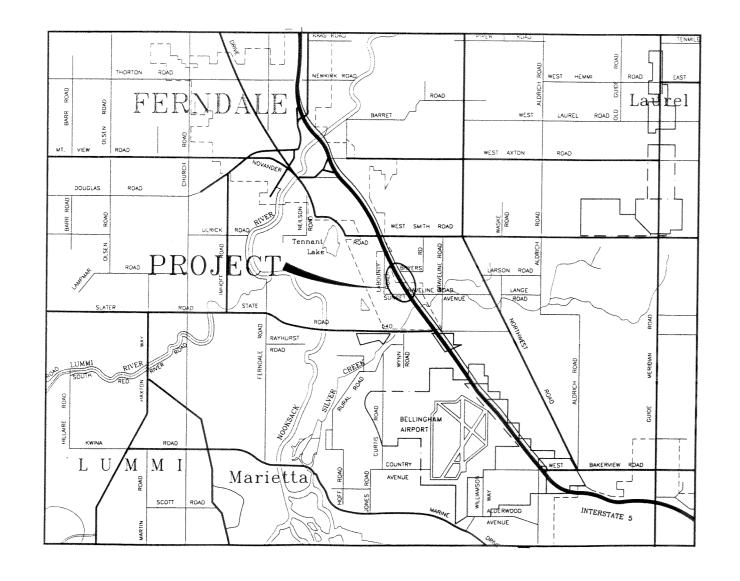
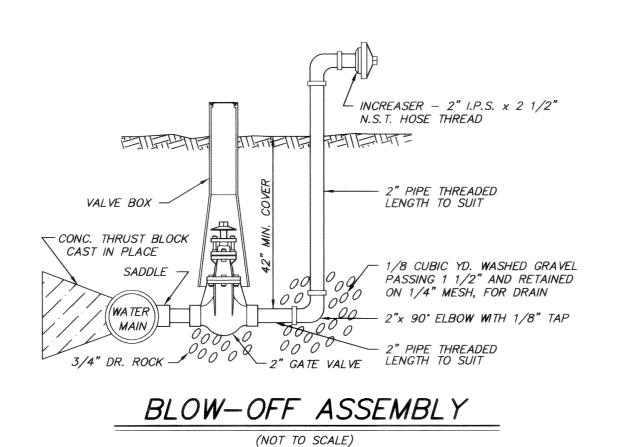
# TRILLIUM CORPORATION PACIFIC INDUSTRIAL PARK

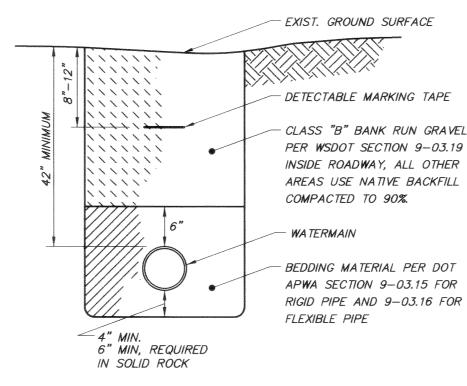
## PACIFIC HIGHWAY WATER MAIN EXTENTION

FROM BYERS ROAD TO SUNSET AVENUE



## VICINITY MAP





#### WATERMAIN TRENCH (NOT TO SCALE)

## FINISH GRADE MECH. JOINT VALVE BOX - 6" GATE VALVE WASHED GRAVEL - FLANGE JOINT 1/4" TIE RODS

. HYDRANT BARREL EXTENSIONS SHALL BE PROVIDED AND INSTALLED AS REQUIRED.

2. SHACKLE RODS SHALL BE THREADED EACH AS REQUIRED AND INSTALLED WITH ROMAC DUCTILE LUGS. FULL LENGTH THREADED RODS SHALL NOT BE USED. THE RODS SHALL BE PAINTED WITH BITUMINOUS PAINT AFTER

FIRE HYDRANT ASSEMBLY (NOT TO SCALE)

#### **SPECIFICATIONS**

ALL WORK AND MATERIALS SHALL CONFORM TO THE 1994 EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) AND THE WASHINGTON STATE CHAPTER OF AMERICAN PUBLIC WORKS ASSOCIATION (APWA), THE CITY OF FERNDALE?S ORDINANCE NO. 676 AND ACCORDING TO THE INSTRUCTIONS AND RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIALS INVOLVED. IN CASE OF A CONFLICT BETWEEN THE ABOVE STANDARD AND RECOMMENDATIONS, THE MORE STRINGENT ONE WILL APPLY.

REFERENCES HEREINAFTER TO DIVISION AND SECTIONS SHALL REFER TO THE STANDARD SPECIFICATIONS MENTIONED ABOVE.

#### **DIVISION 2: EARTHWORK**

- CLEARING, GRUBBING AND ROADSIDE CLEANUP SHALL CONFORM TO SECTION 2-01 USING DISPOSAL METHOD NO. 2.
- ROADWAY EXCAVATION AND EMBANKMENT
  ROADWAY EXCAVATION AND EMBANKMENT SHALL CONFORM TO SECTION 2-03, USING COMPACTION METHOD B. COMPACTION LAYER FOR GRANULAR MATERIALS SHALL NOT EXCEED 12 INCHES IN DEPTH. LAYERS FOR NON-GRANULAR MATERIAL SHALL NOT EXCEED 4 INCHES IN DEPTH.
- 3. <u>SUBGRADE PREPARTION</u> SUBGRADE PREPARATIONS SHALL CONFORM TO SECTION 2-06.
- 4. <u>DITCH AND CHANNEL EXCAVATION</u>
  DITCH AND CHANNEL EXCAVATION SHALL CONFORM TO SECTION 2-10.
- 5. TRIMMING AND CLEANUP SHALL CONFORM TO SECTION 2-11.

#### DIVISION 3: (NOT USED)

DIVISION 4: BASES

1. <u>ASPHALT TREATED BASE</u> ASPHALT TREATED BASE SHALL CONFORM TO SECTION 4-06.

DIVISION 5: SURFACE TREATMENT AND PAVEMENT

ASPHALT CONCRETE PAVEMENT SHALL CONFORM TO SECTION 5-04. MATERIAL SHALL BE CLASS B.

#### **DIVISION 6: STRUCTURES**

CONCRETE STRUCTURES
CONCRETE WEIRS AND MISCELLANEOUS STRUCTURES SHALL CONFORM TO SECTION 6-02. CONCRETE SHALL BE CLASS 3000.

#### DIVISION 7: DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWER, WATER MAINS, AND CONDUITS

- STORM SEWERS
  STORM SEWERS SHALL CONFORM TO SECTION 7-04. PIPE SHALL BE PVC CONFORMING TO SECTION 9-05.12. EXFILTRATION OR PRESSURE TESTING MAY BE REQUIRED BY THE ENGINEER.
- MANHOLES, INLETS AND CATCH BASINS SHALL CONFORM TO SECTION 7-05.
- WATER SYSTEM
  ALL WATER PIPE MATERIALS AND INSTALLATION SHALL CONFORM TO THE APPLICABLE PORTIONS OF SECTION 7-09 TO 7-11, AWWA C600 AND C651. IN

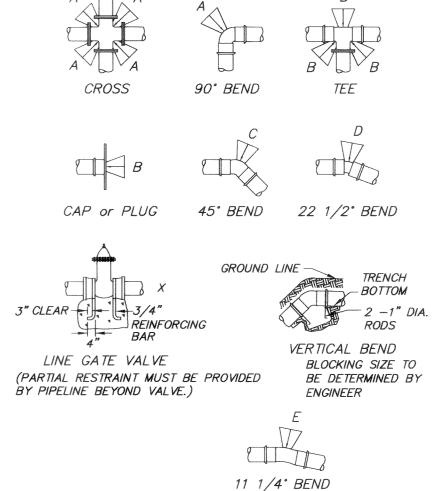
ADDITION, THE FOLLOWING PROVISIONS APPLY:

- A. PIPELINES SHALL BE DUCTILE IRON CLASS 50, AND SHALL MEET THE REQUIREMENTS OF SECTION 9-30.1(1), WITH CEMENT LINING ACCORDING TO AWWA STANDARD H3-71, C151-71, AND CEMENT LINING C104-71.
- B. ALL FITTINGS SHALL HAVE A MINIMUM PRESSURE RATING OF 350 PSI AND SHALL CONFORM TO SECTION 9-03.2.
- C. EXCAVATION SHALL BE IN ACCORDANCE WITH SECTION 7-10.3(7) AND SHALL INCLUDE ALL MATERIALS OF WHATEVER NATURE ENCOUNTERED, INCLUDING SOLID ROCK EXCAVATION

- D. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND PAY ALL APPLICABLE FEES TO THE CITY OF FERNDALE PRIOR TO CONNECTING TO THE EXISTING WATER SYSTEM.
- PAVEMENT SHALL BE CUT AHEAD OF THE EXCAVATING MACHINE TO PREVENT EXCESSIVE TEARING UP OF THE SURFACING AND TO ELIMINATE RAGGED EDGES. THE ROADWAY OR DRIVEWAY SURFACES SHALL BE REMOVED ONLY IN LOCATIONS AS INDICATED BY THE PLANS AND SPECIFICATIONS OR BY THE APPROVALS OF THE ENGINEER.
- F. ALL WATER LINE AND APPURTENANCES SHALL BE PRESSURE TESTED AT 200 PSI IN ACCORDANCE WITH SECTION 7-11.3(11) AND CITY OF FERNDALE REQUIREMENTS. ALL PURIFICATION ACCEPTANCE TESTING SHALL BE
- G. ALL BACKFILL SHALL BE BACKRUN GRAVEL BACKFILL AND SHALL MEET THE REQUIREMENTS OF SECTION 9-30.7(3).
- H. ALL WORK MUST BE INSPECTED AND APPROVED BY A REPRESENTATIVE OF THE CITY OF FERNDALE ENGINEERING DIVISION, AND TWENTY-FOUR (24) HOURS NOTICE MUST BE GIVEN PRIOR TO STARTING WORK OR TO SCHÉDULE
- VALVES FOR WATER MAINS
  VALVES FOR WATER MAINS SHALL CONFORM TO SECTION 7-12. GATE VALVES SHALL HAVE SCREW TYPE CAST IRON VALVE BOXES. VALVES SHALL BE RESILIENT SEAT GATE VALVES MEETING C509-87, AND/OR C504-877, C550-81 AND ALL CITY OF CERNDALE REQUIREMENTS AND SUITABLE FOR INSTALLATION WITH THE TYPE AND CLASS OF PIPE USED. ALL VALVES SHALL HAVE NONRISING STEMS AND SHALL OPEN COUNTER CLOCKWISE AND SHALL BE EQUIPPED WITH A 2? SQUARE OPERATING NUT. VALVES WILL BE FLANGE
- HYDRANTS
  FIRE HYDRANTS SHALL CONFORM TO AWWA C502 AND CITY OF FERNDALE STANDARDS. INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 7-14. A BLUE REFLECTOR WILL BE PLACED IN THE STREET ACROSS FROM EACH HYDRANT INSTALLED.
- <u>SERVICE CONNECTIONS</u>
  SERVICE CONNECTIONS SHALL CONFORM TO SECTION 7-15.
- SANITARY SEWERS SHALL CONFORM TO SECTION 7-17. PIPE MATERIAL SHALL BE PVC CONFORMING TO SECTION 9-05.12.
- 8. <u>SIDE SEWERS</u>
  SANITARY SIDE SEWERS SHALL CONFORM TO SECTION 7-18. PIPE MATERIAL SHALL BE PVC CONFORMING TO SECTION 9-05.12.

#### DIVISION 8: MISCELLANEOUS CONSTRUCTION

- EROSION CONTROL
  TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES (TESCF) SHALL CONFORM TO SECTION 8-01 AND CITY OF FERNDALE STANDARDS. THESE FACILITIES SHALL BE MAINTAINED DURING THE CONSTRUCTION AND REMOVED ONLY AFTER ALL EXPOSED SURFACES SUBJECT TO EROSION HAVE BEEN STABILIZED BY LANDSCAPING ELEMENTS OR HYDROSEEDING.
- CURBS AND GUTTERS
  CURBS AND GUTTERS SHALL CONFORM TO SECTION 8-04
- CEMENT CONCRETE SIDEWALKS
  CEMENT CONCRETE SIDEWALKS SHALL CONFORM TO SECTION 8-14. PROVIDE CURB RAMPS WHERE SHOWN.
- RIPRAP SHALL CONFORM TO SECTION 8-15.
- PERMANENT SIGNING SHALL CONFORM TO SECTION 8-21.
- 6. <u>PAVEMENT MARKINGS</u>
  PAVEMENTS MARKINGS SHALL CONFORM TO SECTION 8-22.



THRUST BLOCK TABLE						
MIN. BEARING AREA AGAINST UNDISTURBED  SQUARE FEET						
PIPE SIZE	Α	В	С	D	Ε	X
4"	2	2	2	2	2	NONE
6"	4	3	2	2	2	NONE
8"	7	5	4	2	2	3
10"	11	8	6	3	2	4
12"	16	12	9	5	3	6
20"	45	34	25	13	8	17

- 1. SQUARE FEET OF CONCRETE THRUST BLOCK AREA IS BASED ON 200 P.S.I. INTERNAL PRESSURE, A SOIL SAFE BEARING OF 3000 POUNDS PER SQUARE FOOT AND A FACTOR OF SAFETY OF 1.5.
- 2. BEARING AREA MUST BE ADJUSTED FOR INTERNAL PRESSURES AND LOWER SOIL BEARING VALUES.
- 3. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING
- 4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT.
- 5. THE CONTRACTOR SHALL INSTALL BLOCK WHICH IS ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY STAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

### THRUST BLOCK SCHEDULE

(NOT TO SCALE)

AS-BUILT

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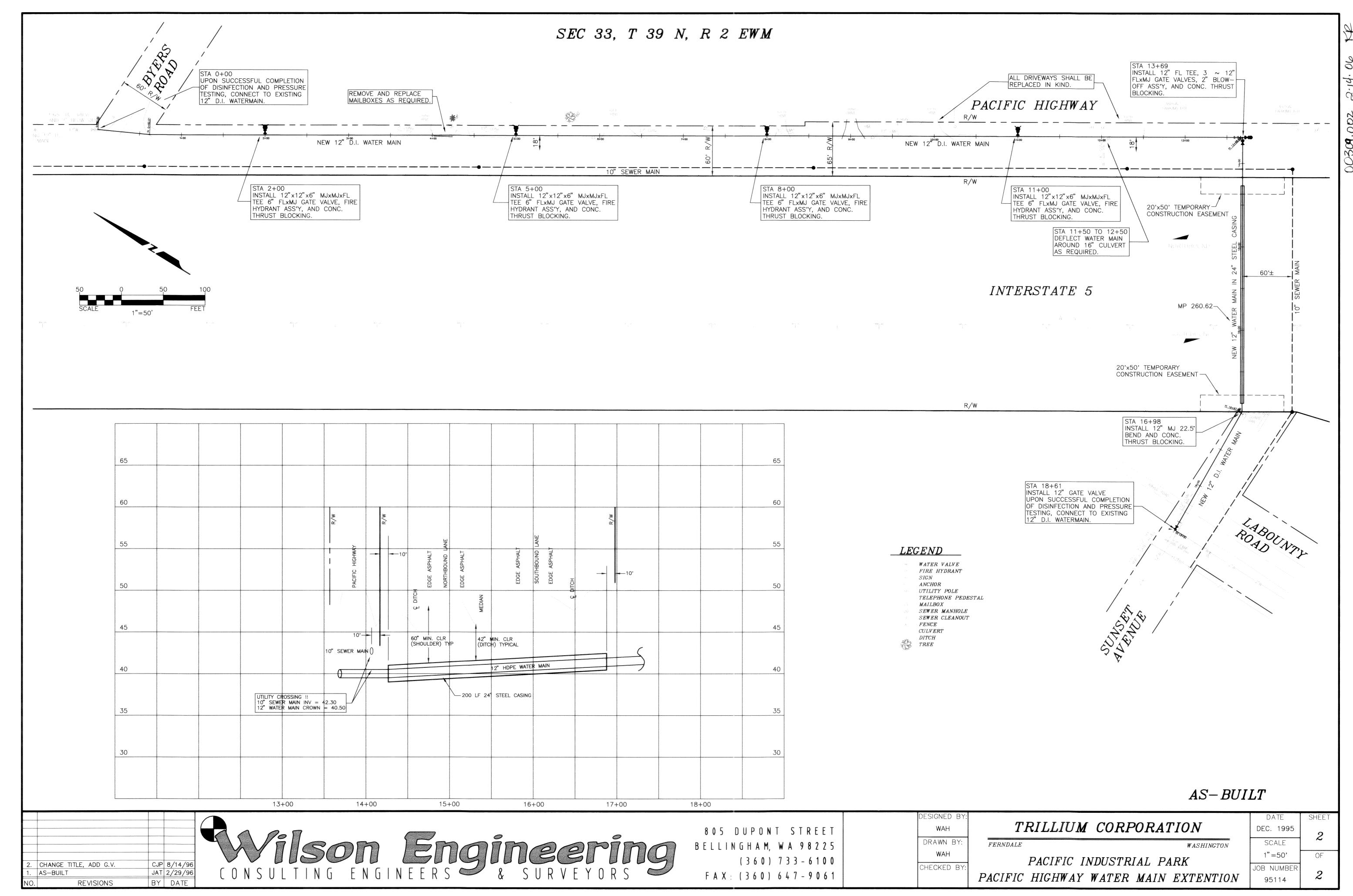
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TRILLIUM	CORPORATION
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PACIFIC	HIGHWAY	WATER	MAIN	EXTENSION	

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