

1. All materials, workmanship and testing shall conform to A.P.W.A., 1981 Edition Specifications, unless otherwise noted within these plans.
2. The vertical datum is a U.S.G.S. Bench mark (brass disk) located at the southeast corner of the main street bridge. Elevation = 34.90.
3. A two year maintenance bond for 10% of the project cost for the City of Ferndale's portion, shall be submitted to the City of Ferndale prior to acceptance of the project.
4. The ditch located at the outlet of the storm pipe, shall be dug to the south property line and aligned with the existing culvert on the adjoining property.

**GRAVITY STORM SEWER SYSTEM**

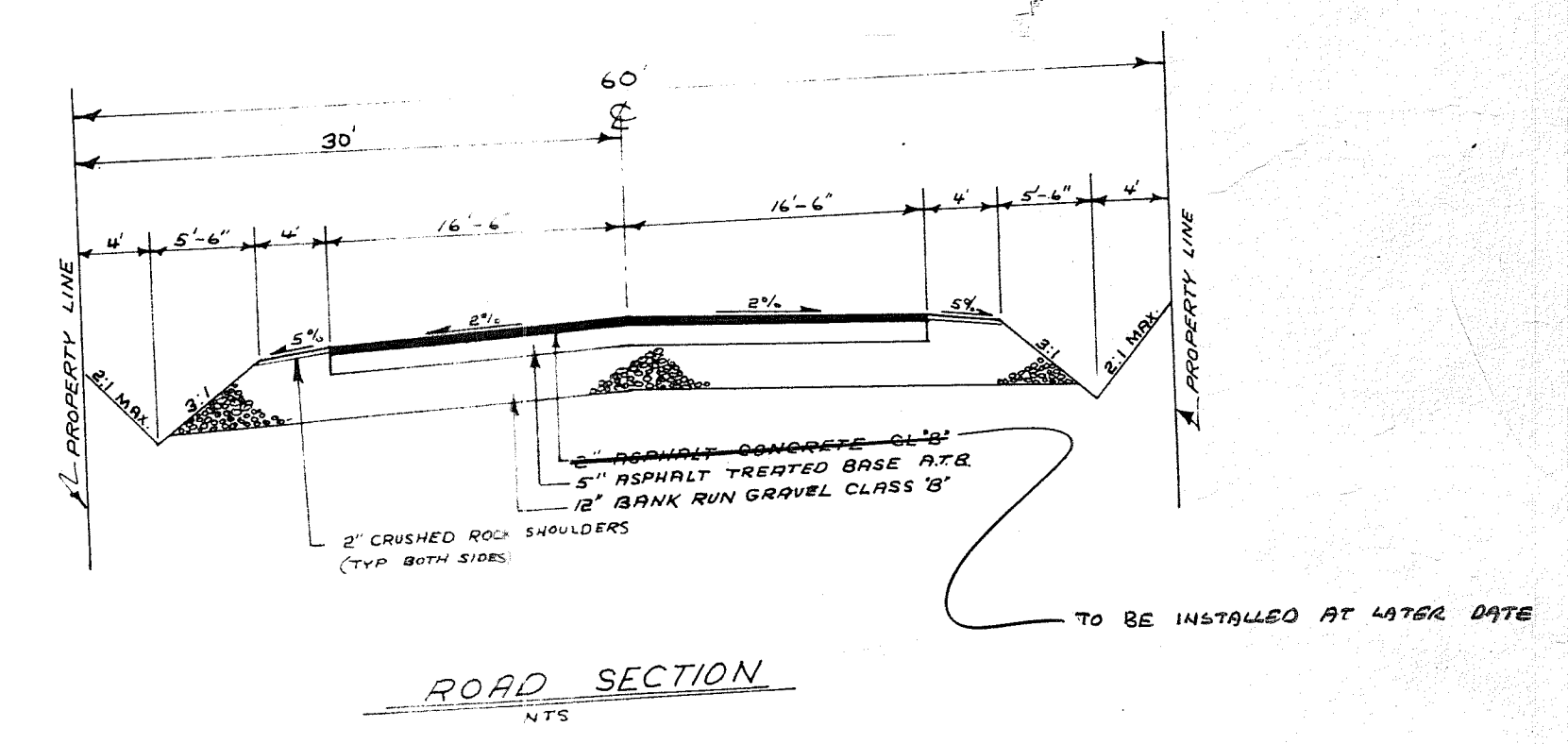
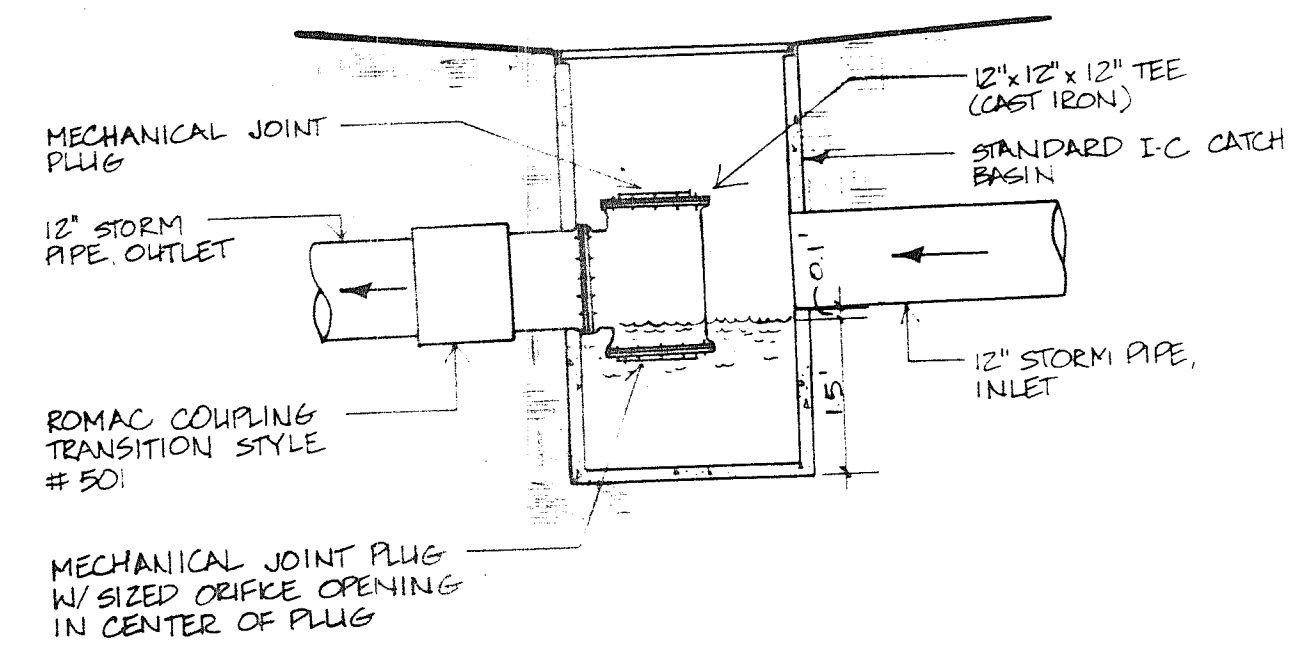
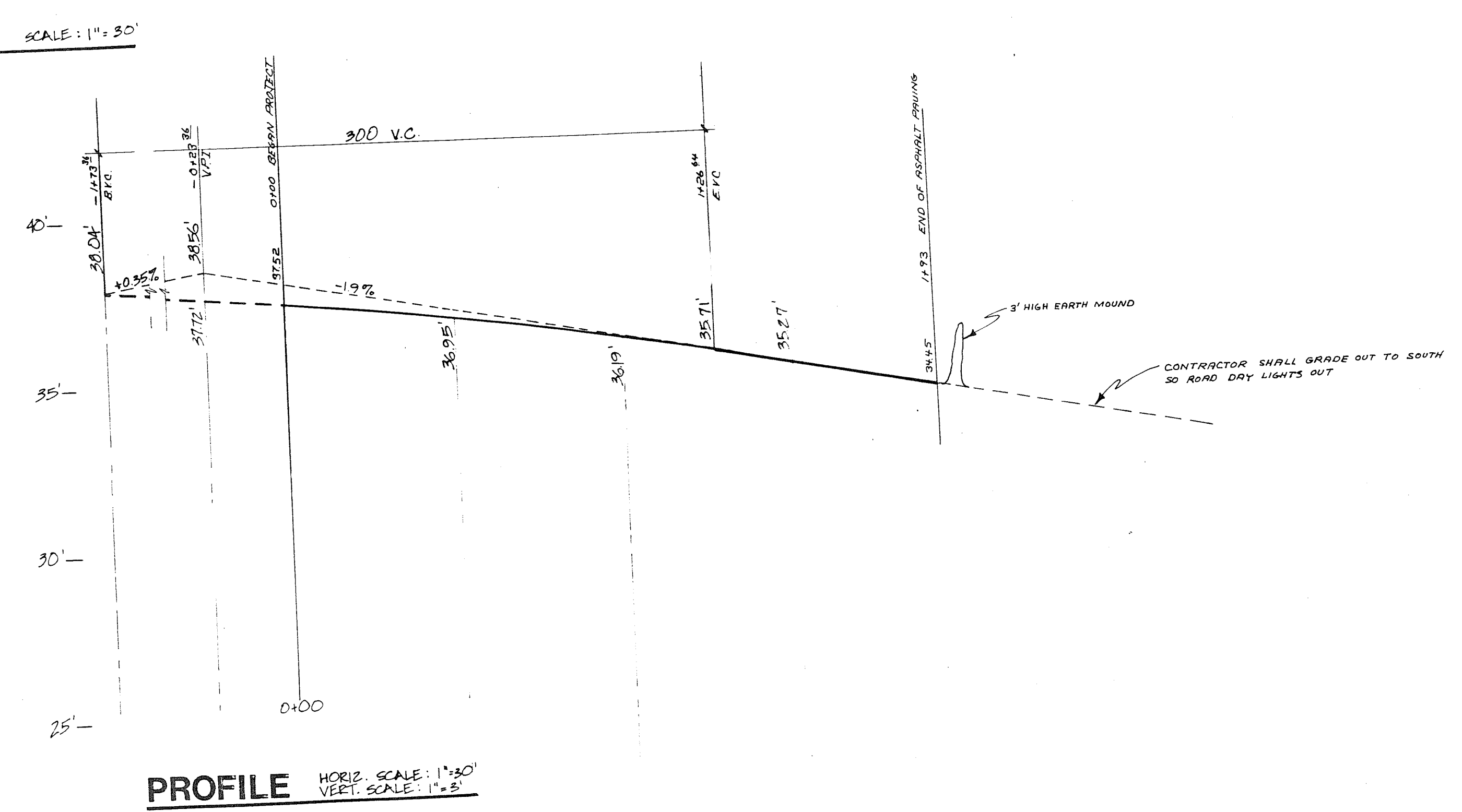
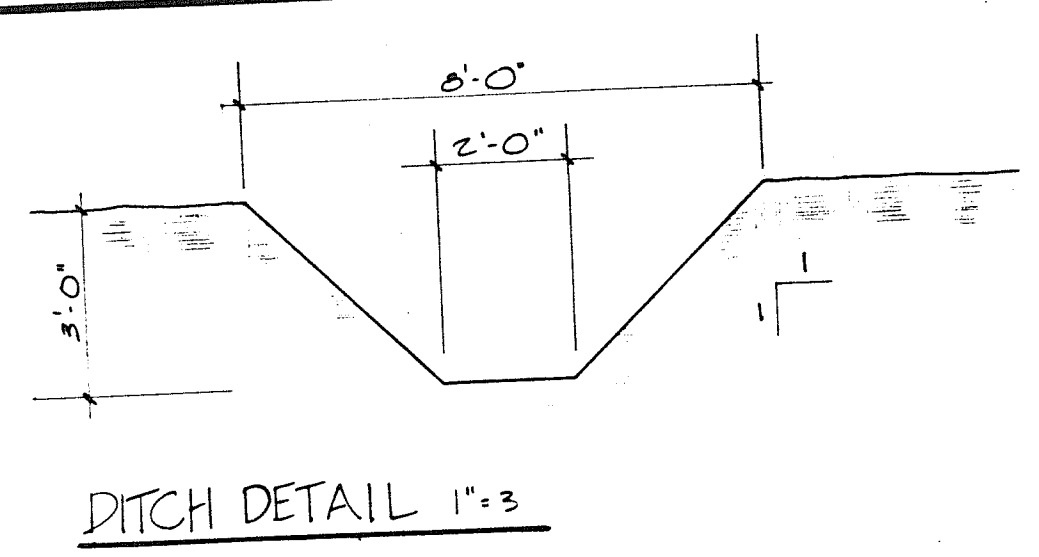
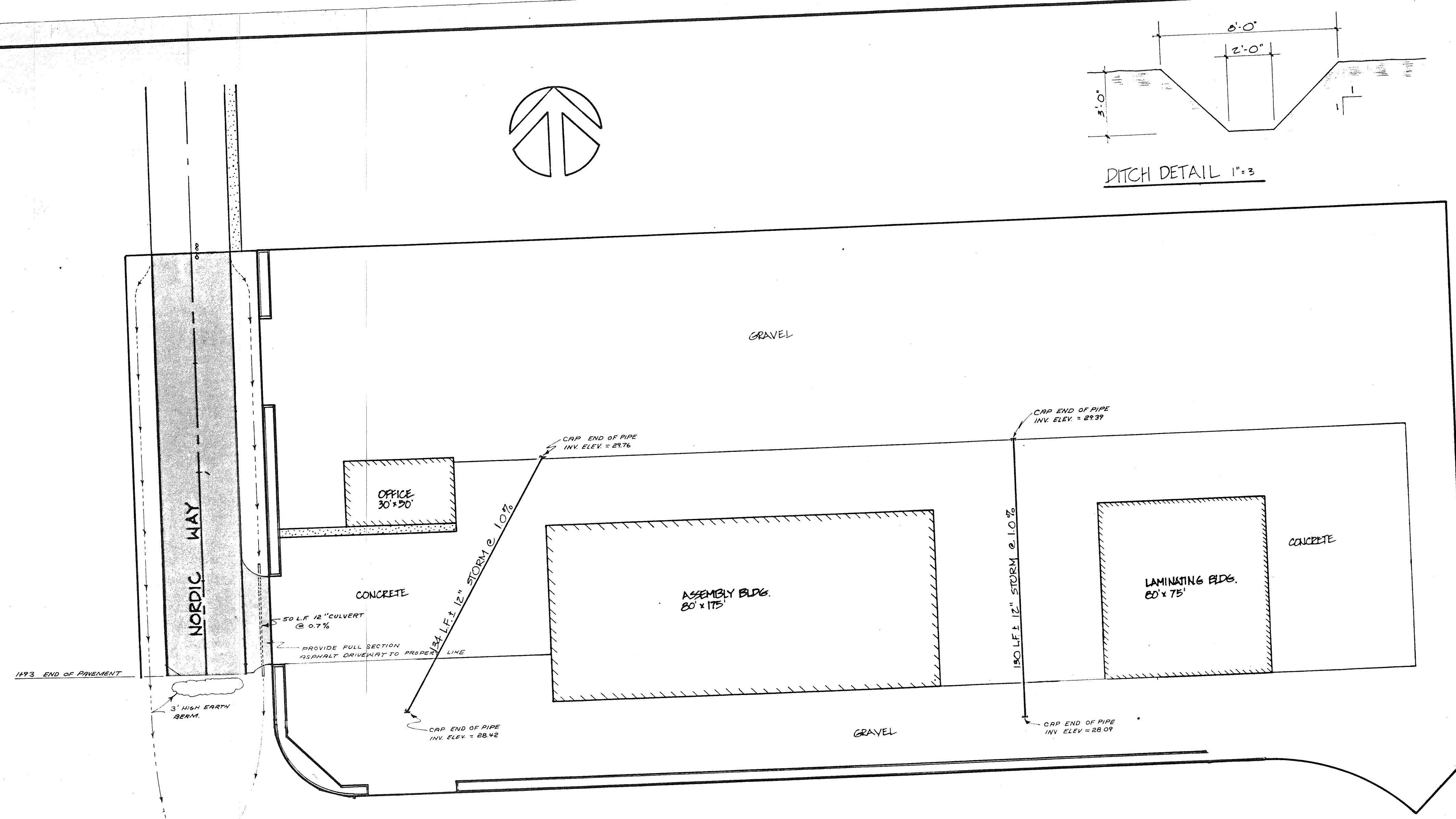
1. Sewers shall be constructed as shown on the plans and as specified herein.
2. Non-reinforced concrete sewer pipe with bell spigot ends shall conform to Section 60-3.01A of the Standard Specifications. All pipe shall be coupled with a "Standard O-Ring" type of rubber gasket.
3. PVC pipe shall meet the requirements of Section 60-3.01G with joints using restrained gasket and conforming to Section 60-3.02F.
4. Pipe installation at locations, lines and grades as shown on the plans, shall be in conformance with provisions of Sections 60, 61, and 62 of the Standard Specifications.
5. Bedding shall be Type 2 for flexible pipe except that pea gravel shall be used for PVC storm pipe, and shall conform to Section 61-5 of the Standard Specifications.
6. All backfill in trenches within the street right-of-way shall be Class "B" bankrun gravel and shall be compacted to 95% of its maximum dry density as defined in Section 13-3.10E5.
7. Trench backfill outside the street right-of-way shall meet the requirements of Section 61-6 of the Standard Specifications.
8. Catch basins shall conform to the material and installation requirements of Section 64 of the Standard Specifications, and the castings shall have the diagonal grate pattern (Bicycle Type) as noted on Standard Plan Numbers 48 and 49.

**PAVING AND GRADING SPECIFICATIONS**

1. The subgrade preparation shall meet the requirements of Section 12, 13, and 15 of the General Specifications. Payment, however, will be by lump sum.
2. Bank run gravel base shall be Class "B" and shall be installed in conformance with Section 26 of the General Specifications. Payment will be by cubic yard calculated by compaction in place volume.
3. Asphalt treated base shall meet the material and installation requirements of Section 33 of the General Specifications. Payment will be by a square yard measurement, which shall be considered full compensation for furnishing all labor, equipment, and materials for fulfilling the requirements of the specifications.
4. Asphalt concrete pavement shall meet the requirements as outlined in Sections 27 and 32 of the A.P.W.A. Specifications. Payment shall be per square yard and shall be full compensation for furnishing, heating, hauling, spreading, rolling and all other work incidental to fulfilling the requirements.

**SPECIFICATIONS FOR SIDEWALKS AND CURB & GUTTER**

1. Cement concrete sidewalks shall meet material and installation requirements of the City of Ferndale and Section 42 of the Standard Specifications. If any differences arise between the two Specifications, the City of Ferndale's shall prevail. The width of the sidewalk shall be 5 feet.
2. Before the forms are set, the subgrade shall be graded to within one inch of established grade and the area between the sidewalk and the adjacent private property shall be shaped to line, grade and section shown on the construction plans.
3. Any low areas in the subgrade shall be backfilled and compacted with bank run gravel and/or 1 1/2" washed rock.
4. Cement concrete curb and gutter shall be type A-1 and shall meet material and installation requirements of the City of Ferndale and Section 40 of the Standard Specifications. If any differences arise between the two specifications, the City of Ferndale's shall prevail.



**NORTHWEST CONSULTANTS**  
CIVIL & STRUCTURAL ENGINEERING  
1401 ASTOR BELLINGHAM, WA. (206) 676-9058

**CITY OF FERNDAL & NORDIC YACHT**

SCALE: AS SHOWN  
DATE: 7-16-05  
DRAWN BY: BSW  
CHECKED BY: EF  
JOB NO: 05-1216

REVISIONS  
MARK DESCRIPTION DATE BY  
Substituting 12 inch Storm Pipe for 18 inch Storm Pipe 05-12-06

**NORTHWEST INDUSTRIAL PARK**

**ROAD AND STORM DRAINAGE PLAN PROFILE AND SPECIFICATIONS**

**3**  
JOB NO. 05-1216





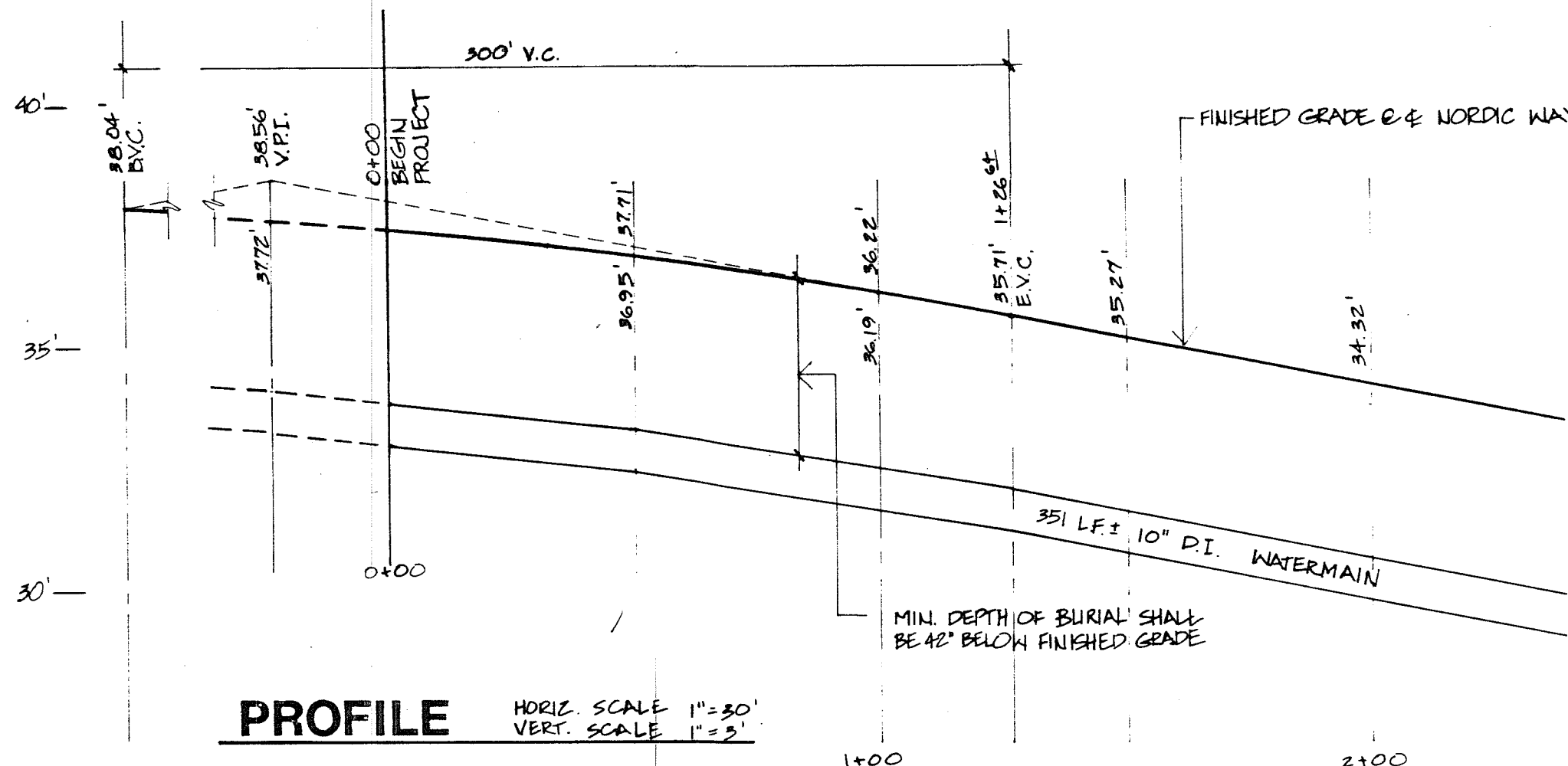
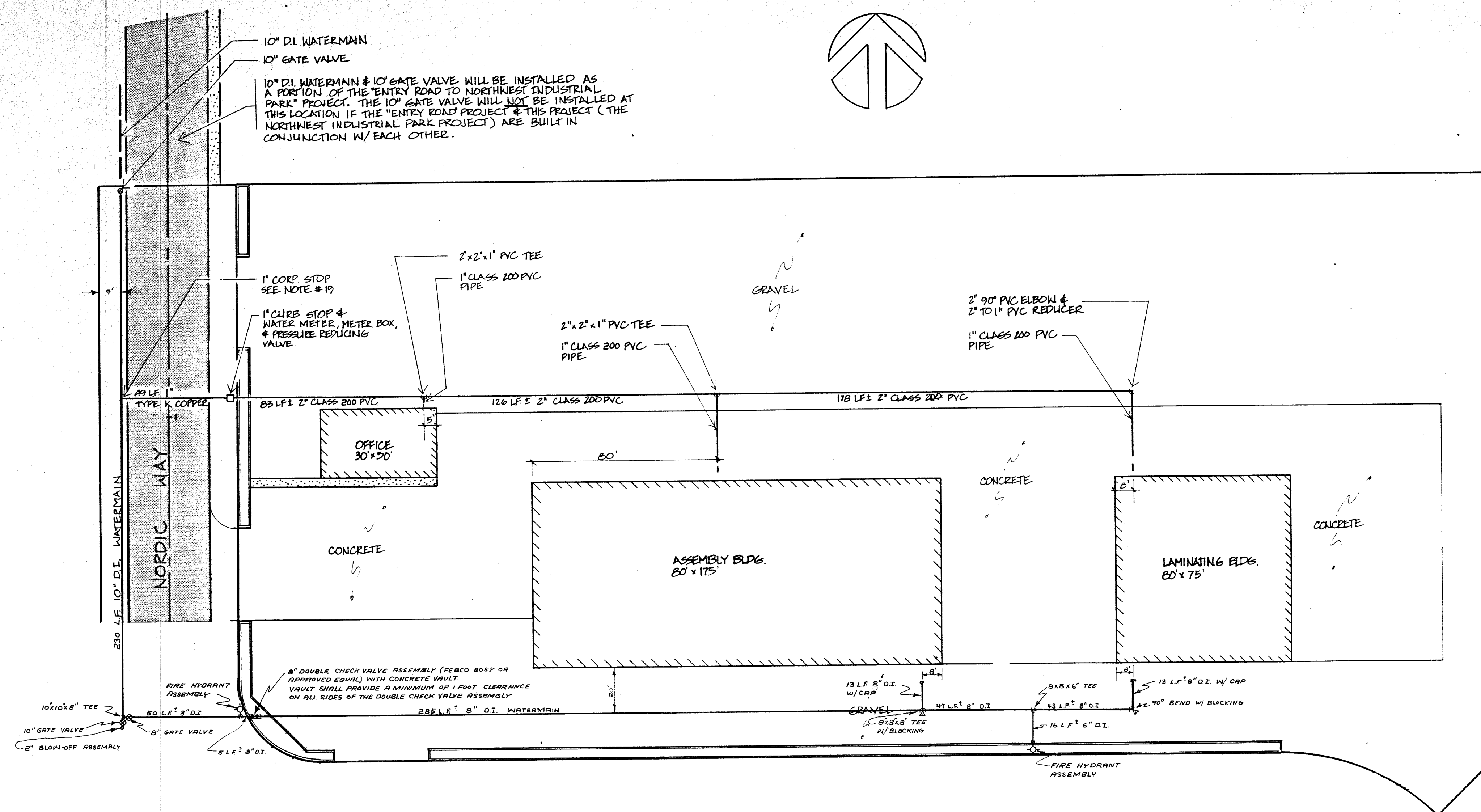


# GENERAL CONDITIONS

1. All materials, workmanship and testing shall conform to A.P.W.A. 1981 Edition Specifications unless otherwise noted within these plans.
2. The contractor must assume the risk of meeting quicksand, hardpan, boulders, clay, rubbish, existing utility lines, water table and other unforeseen obstacles.
3. The vertical datum is a U.S.G.S. Bench mark (brass disk) located at the south-east corner of the main street bridge. Elevation = 34.90.
4. A two year maintenance bond for 10% of the project cost for the City of Ferndale, shall be submitted to the City of Ferndale prior to acceptance of the project.
5. The contractor shall obtain and keep in force during the term of the contract, public liability and property damage insurance as outlined in Section 7-1.18 of the A.P.W.A. Specifications.
6. The contractor shall comply with the Public Convenience and Safety Requirements as detailed in Section 7-1.23 of the A.P.W.A. Specifications.

## WATER DISTRIBUTION SYSTEM

1. Water mains, service lines, valves and fittings shall be constructed as shown on the plans, as required by the State Department of Public Health, the City of Ferndale, and as specified hereon.
2. Water pipe and fittings shall be Ductile iron pipe Class 50 with cement lining and shall comply with Section 72-3 of the Standard Specifications.
3. All PVC pipe and fittings shall be Class 200 and shall conform to ASTM D2241 or 1785 Specifications current issue.
4. Buried gate valves shall meet the material and installation requirements as outlined in Section 75 of the Standard Specifications. They shall have a non-rising stem and shall open counterclockwise.
5. All gate valves adjacent to a tee or cross shall be flange connected.
6. Valve boxes shall be cast iron, 2-piece slip type extension, equal to Atlas Foundry Company or Olympic Foundry Company and shall conform to Section 75 of the Standard Specifications.
7. Fire hydrants shall meet the material and installation requirements as outlined in Section 77 of the Standard Specifications. Hydrant shall be of traffic type with designated replaceable break points.
8. The hydrant shall be installed so that the direction of the pumper connection faces the roadway.
9. The fire hydrants shall be an Iowa F5110 or approved equal.
10. All backfill in trenches shall be bank run gravel Class "B" and it shall meet the material requirements of Section 73-2.04 and 73-2.02A of the Standard Specifications or as approved by the Public Works Department and shall be compacted to 95% of its maximum dry density as defined by ASTM D-1557-64T.
11. The 6", 8" and 10" pipe shall be laid to the alignment and grades furnished by the engineer. Deflections from a straight line or grade as required by vertical curves, horizontal curves or offsets shall not exceed the maximum deflections recommended by the pipe manufacturer. Where the alignment or grade requires deflections in excess of recommended limits with standard pipe lengths, a sufficient number or shorter lengths shall be used.
12. Trench depth where 6", 8" and 10" pipe is used shall be as required to provide a minimum of 42" cover from finished grade. All other water line shall be a minimum of 36" cover from finished grade.
13. No pipe shall be covered until it has been inspected and permission to backfill has been obtained. Backfilling and surface restoration shall follow closely the installation and the testing of the pipe.
14. Concrete blocking shall meet the requirements of Section 74-2.13 of the Standard Specifications.
15. Concrete blocking shall be placed at all abrupt bends, both horizontal and vertical, and at tees and dead ends. No blocking shall be required at hydrant tees if hydrant is secured to water main by flanged pipe, restraining joints or by rods and shackles.
16. Prior to acceptance of the work, all sections of pipe shall be subjected to a hydrostatic test as per Section 74-2.11 of the Standard Specifications.
17. Sterilization of the water mains shall be accomplished by the contractor in accordance with the requirements of the State Health Department, the City of Ferndale and in a manner satisfactory to the engineer and as outlined in Section 74-2.12 of the Standard Specifications.
18. Butterfly valves are acceptable and shall meet all the requirements of Section 75-2.05 of the Standard Specifications.
19. The water services including the corporation stop shall meet all the material and workmanship requirements of the City of Ferndale.



**NORTHWEST CONSULTANTS**  
CIVIL & STRUCTURAL ENGINEERING  
1401 ASTOR BELLINGHAM, WA. (206) 676-9058

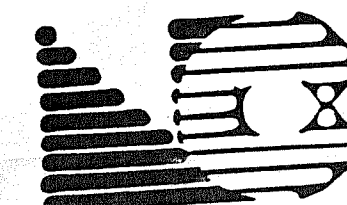
**CITY OF FERNDAL  
&  
NORDIC YACHT**

SCALE: AS SHOWN  
DATE: 7-16-05  
DRAWN BY: PSW  
CHECKED BY: EF  
JOB NO.: 05-1216

REVISIONS  
MARK DESCRIPTION DATE BY  
MAJOR REVISION 08 OCT 05 Z

**NORTHWEST INDUSTRIAL  
PARK**

**WATER DISTRIBUTION SYSTEM PLAN,  
PROFILE, AND SPECIFICATIONS**

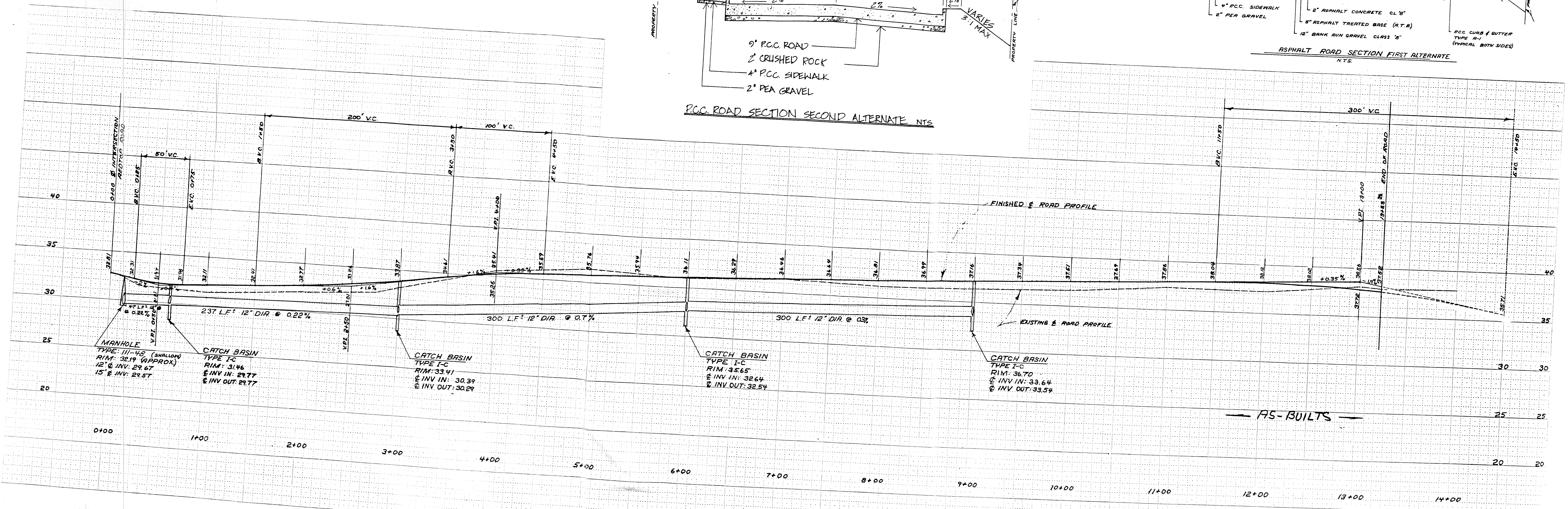
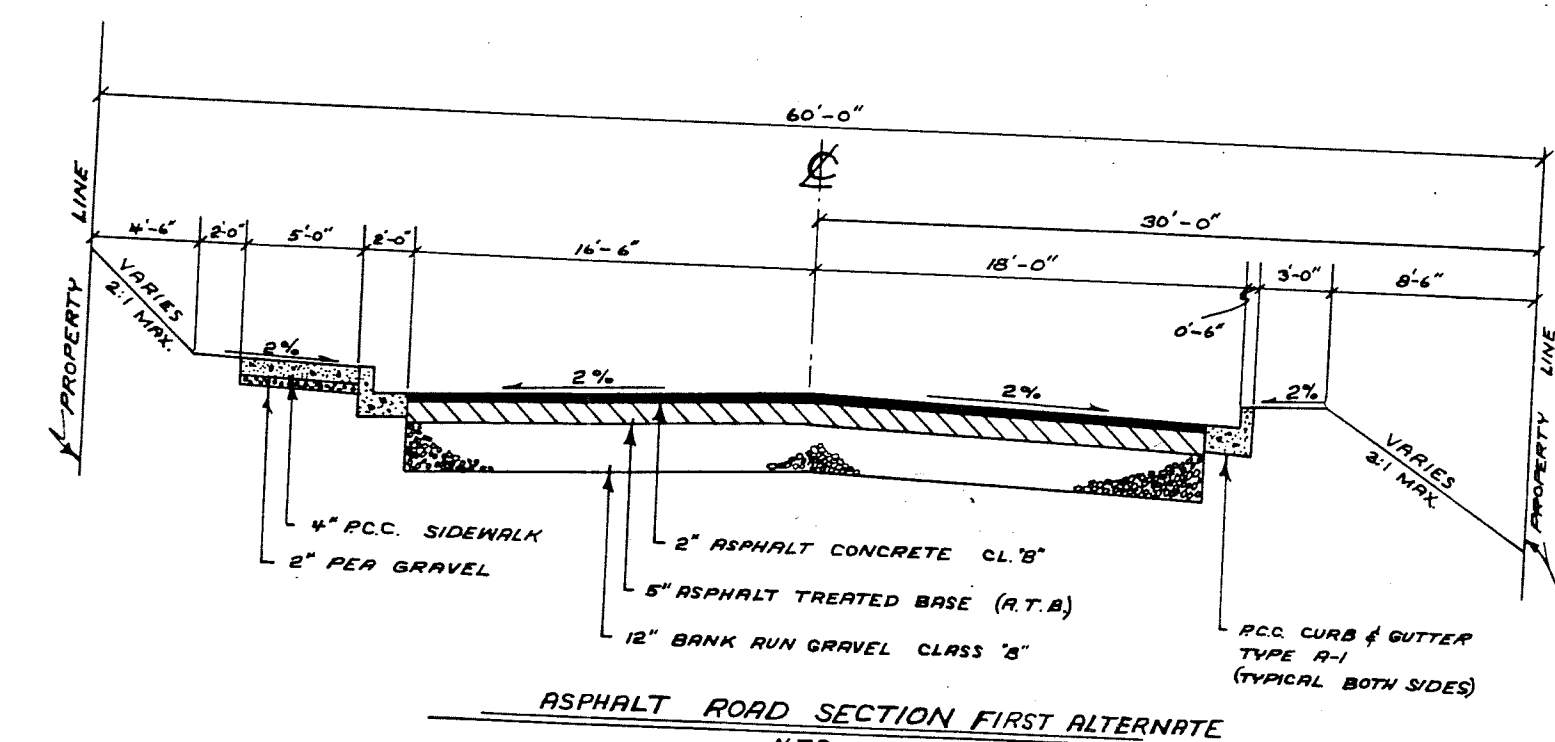
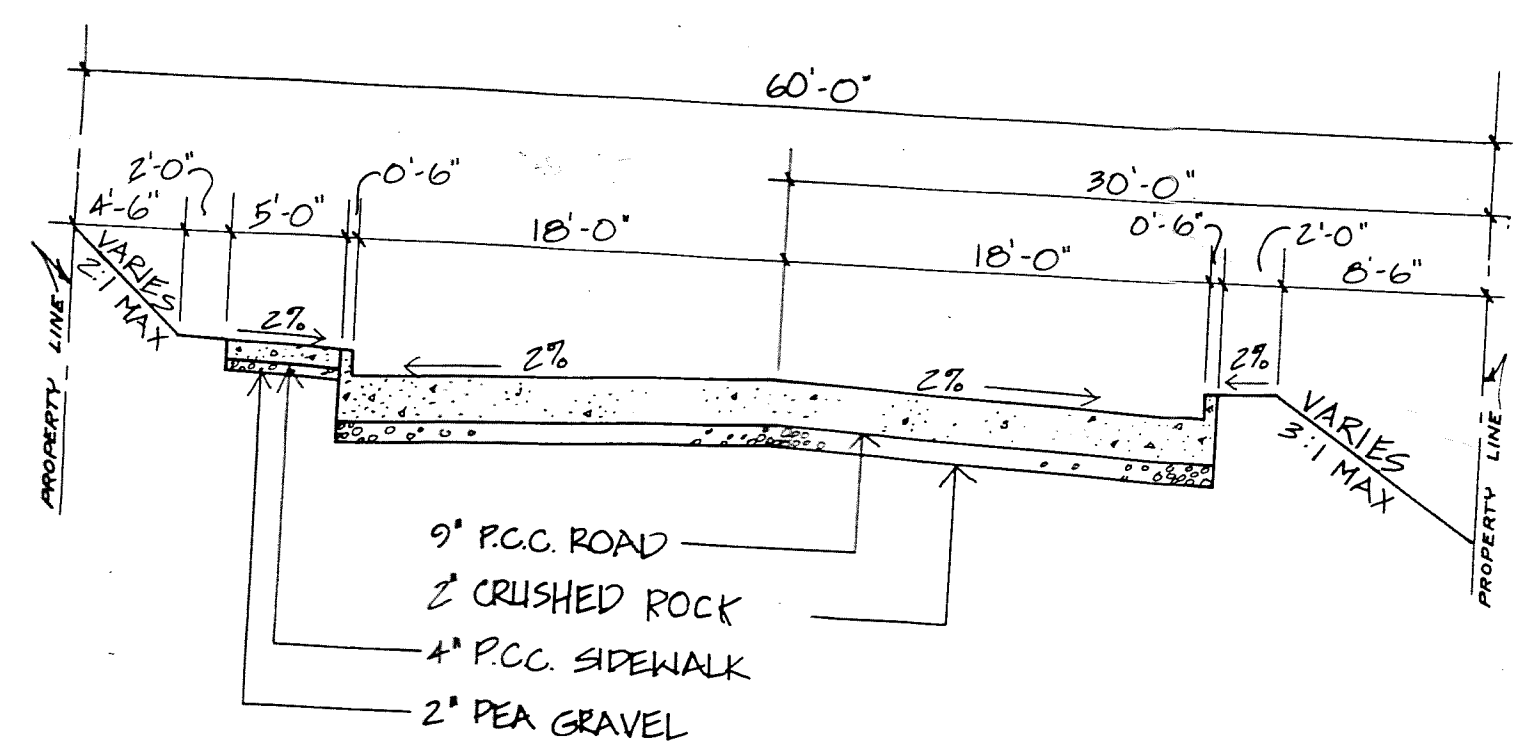
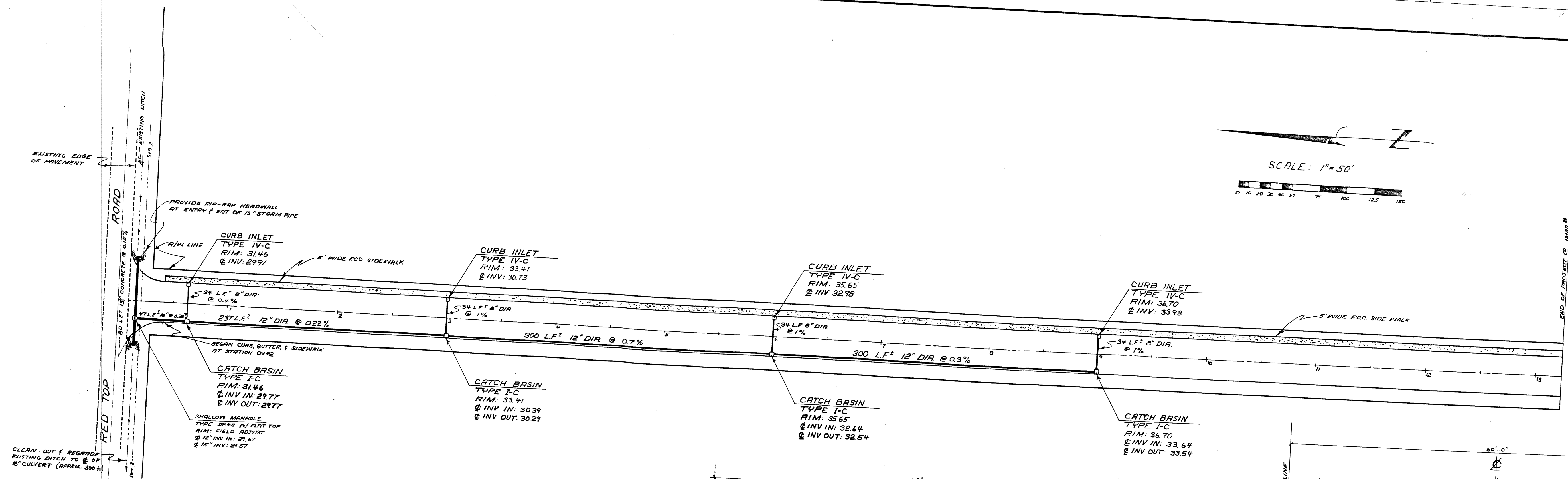


SHEET  
3  
3

NOTED NO. 05-1216



SCALE: 1"=50'



**NORTHWEST CONSULTANTS**  
CIVIL & STRUCTURAL ENGINEERING  
1101 ASTOR, BELLINGHAM, WA.  
12061676-9058

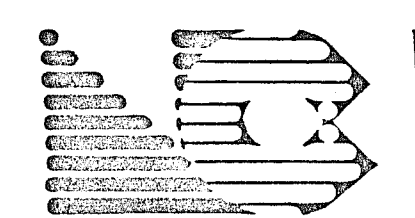
CITY OF FERNDALE

SCALE: 1"=50'  
DATE: 24 JUNE 88  
DRAWN BY: E.F.  
CHECKED BY:  
JOB NO.: 83-1326

REVISIONS  
MARK DESCRIPTION DATE BY  
P. S. 8-88 BORIS 85 78

RY ROAD  
EN  
TO  
NORTHWEST INDUSTRIAL PARK

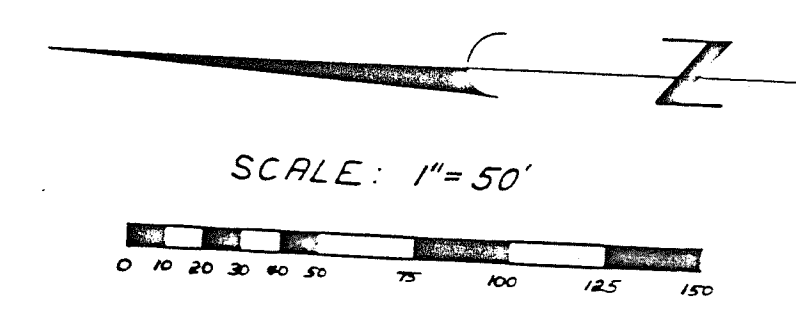
**ROAD & STORM DRAINAGE  
PLAN AND PROFILE**



SHEET  
1  
4



RED TOP (LOCATION OF SANITARY SEWER ROAD)



EXISTING MANHOLE  
6" E INV IN: 19.85  
EXISTING E INV: 18.98

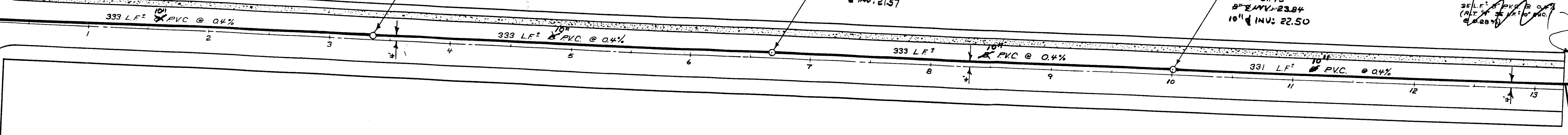
MANHOLE #1  
TYPE I-48  
RIM: 34.31  
8" E INV: 21.48  
10" E INV: 20.64

MANHOLE #2  
TYPE I-48  
RIM: 36.27  
8" E INV: 22.51  
10" E INV: 21.57

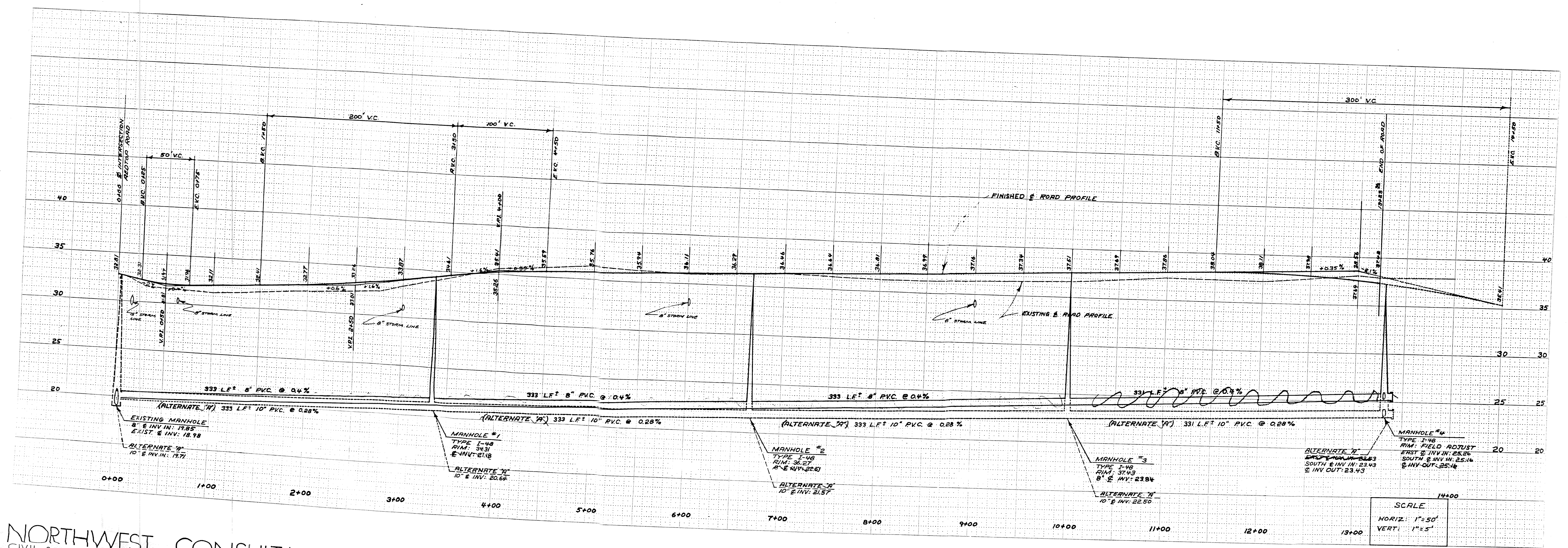
MANHOLE #3  
TYPE I-48  
RIM: 37.43  
8" E INV: 23.84  
10" E INV: 22.50

MANHOLE #4  
TYPE I-48  
RIM: FIELD ADJUST  
EAST E INV IN: 25.26  
SOUTH E INV IN: 25.16  
E INV OUT: 25.16  
SOUTH E INV IN: 23.43  
10" E INV OUT: 23.43

25' L.F. 10" PVC @ 0.4%  
(ALT. 10" E INV: 22.50)



- AS-BUILTS -



**NORTHWEST CONSULTANTS**  
CIVIL & STRUCTURAL ENGINEERING  
1401 ASTOR, BELLINGHAM, WA.  
12061676-9058

**CITY OF FERNDALE**

SCALE: 1"=50'  
DATE: 10.20.1985  
DRAWN BY: E.F.  
CHECKED BY:  
JOB NO.: 85-1326

REVISIONS		
MARK	DESCRIPTION	DATE BY

ENTRY ROAD  
TO  
NORTHWEST INDUSTRIAL PARK

**SANITARY SEWER  
PLAN AND PROFILE**

SCALE  
HORIZ: 1"=50'  
VERT: 1"=5'

SHEET  
2  
4



