CITY OF FERNDALE
U.L.I.D. NO. 7

RECORD DRAWINGS FOR SANITARY SEWER IMPROVEMENTS
FERNDALE, WASHINGTON

SECTIONS 20, 17 & 8, T 39 N, R 2 E

CONSULTING ENGINEERS: WEDEN ENGINEERING, INC. 119 GRAND AVE., STE. D, BELLINGHAM, WA 98225 671-8200

OWNER: CITY OF FERNDALE

CONTACT PERSON: JOHN F. ELEY, DIRECTOR OF PUBLIC WORKS
STAN STREBEL, CITY MANAGER

DRAWING INDEX

GENERAL NOTES

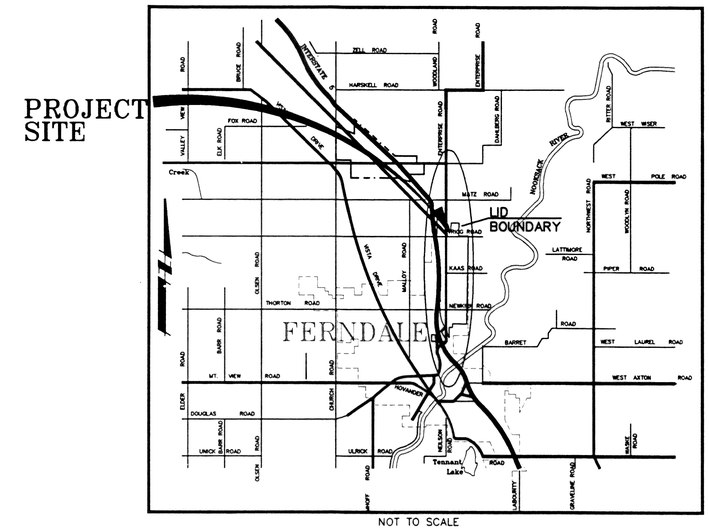
1. THE LOCATION AND SIZE OF EXISTING UTILITIES SHOWN IS APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THESE LOCATIONS PRIOR TO CONSTRUCTION.
2. ALL WORK SHALL CONFORM TO THE STANDARD PLANS AND SPECIFICATIONS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), 1991, AND CITY OF FERNDALE STANDARDS UNLESS INDICATED OTHERWISE BY THE CONTRACT DOCUMENTS. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
3. UNDERGROUND UTILITIES ARE KNOWN TO EXIST IN THE AREA OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE UTILITY OWNERS FOR LOCATIONS AND TO NOTIFY THE ENGINEER PROMPTLY OF ANY CONFLICT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ADJACENT UTILITIES WHICH INCLUDE, BUT ARE NOT LIMITED TO, WATER, SEWER, STORM SEWER, POWER, TELEPHONE, CABLE TV, NATURAL GAS, IRRIGATION, AND STREET LIGHTING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT.
6. ELEVATION REFERS TO U.S.C. & G.S. DATUM; SEE KNOWN BENCH MARK LOCATED EACH SHEET.
7. X,Y PARCEL NUMBERS ARE FROM THE WHATCOM COUNTY ASSESSORS OFFICE. OWNERSHIPS OF THESE PARCELS ARE ON RECORD WITH THE ABOVE REFERENCED OFFICE.
8. THE COORDINATES ON THIS PLAN ARE BASED ON AN ASSUMED COORDINATE BASE.
9. CONTRACTOR TO COORDINATE ALL UTILITY RESTORATION WITH UTILITY COMPANIES. UNDERGROUND TELECOMMUNICATION, TV, POWER, WATER AND GAS SHALL BE INCIDENTAL TO CONTRACT.

LEGEND

EXISTING	PLAN	PROPOSED
□	CATCH BASIN	■
	CULVERT	
	DETAIL NUMBER SHEET FOUND	3/3
W	WATER LINE	
	STRAW BALE DAM	
	GATE VALVE	
	HYDRANT	
	THRUST BLOCK	
	CURB CUT	
	EASEMENT	
	LIGHTING	
	LIGHTING TRENCH	2"L
G	GAS	
T / UT	TELEPHONE / UNDERGROUND TELEPHONE	
DR	STORM DRAIN	
E / UE	ELECTRICAL / UNDERGROUND ELECTRICAL	
	SANITARY SEWER	SS
	FORCE MAIN	FM
	DITCH	
	SILT FENCE	SF
50 50	ELEVATION CONTOUR	
	APPROXIMATE PROPERTY LINE	
	RIGHT OF WAY	
	EDGE OF PAVING	

PROFILE

	EXISTING GROUND
	MANHOLE / SANITARY SEWER
	FORCE MAIN
	CATCH BASIN / STORM PIPE
OR	EXISTING PIPING



WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.

EXPIRES 11-27-96

RECORD DRAWING

C:\DWG\92096\2096RD1A 11/09/94 13:25

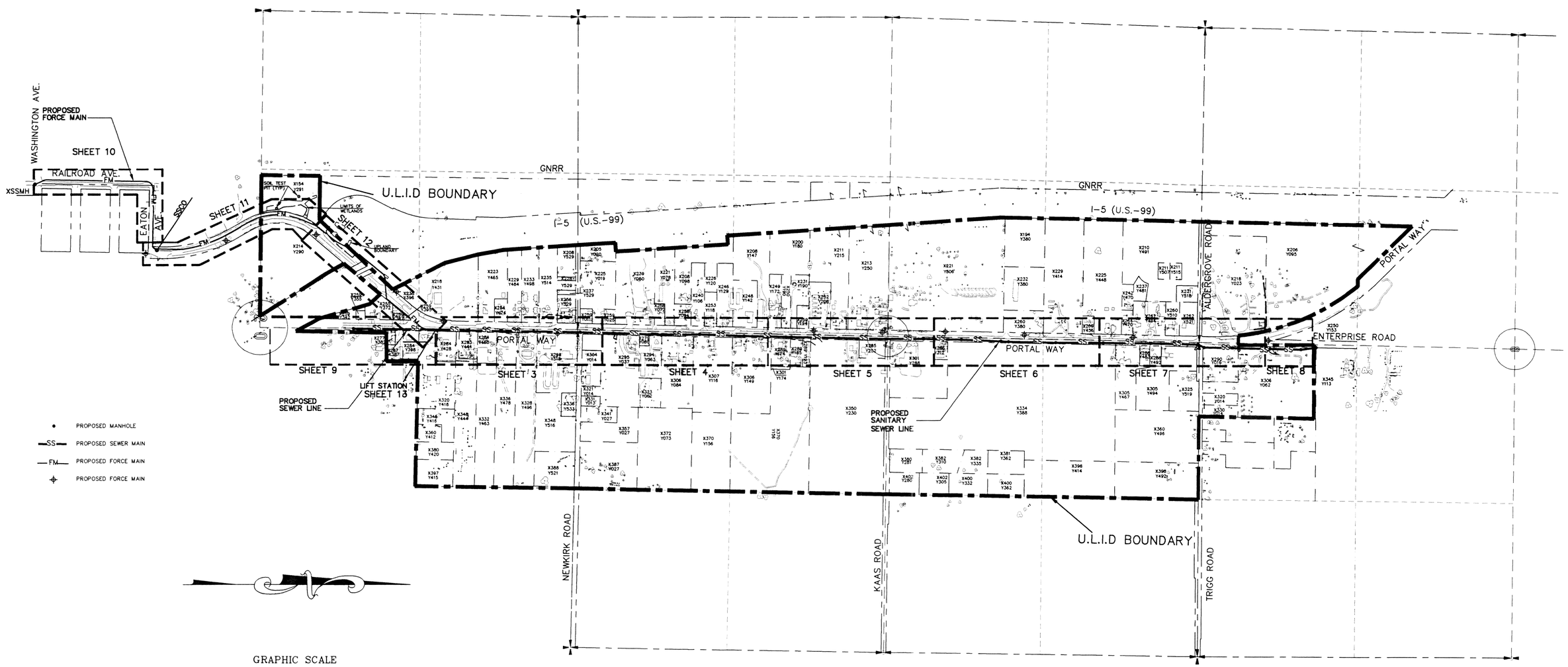
NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

DESIGNED BY
DRAWN BY
CHECKED BY

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
TITLE, VICINITY MAP, LEGEND, NOTES, AND SHEET INDEX

DATE 09/22/94
SCALE AS NOTED
REC. NO. 92096
SHEET 1 OF 16



NOTE: X,Y PARCEL NUMBERS BASED ON WHATCOM COUNTY ASSESSOR'S FILES.

EXPIRES 11-21-95

C:\DWG\2096RD2A 09/22/94 14:33

NO.	REVISIONS	BY	DATE

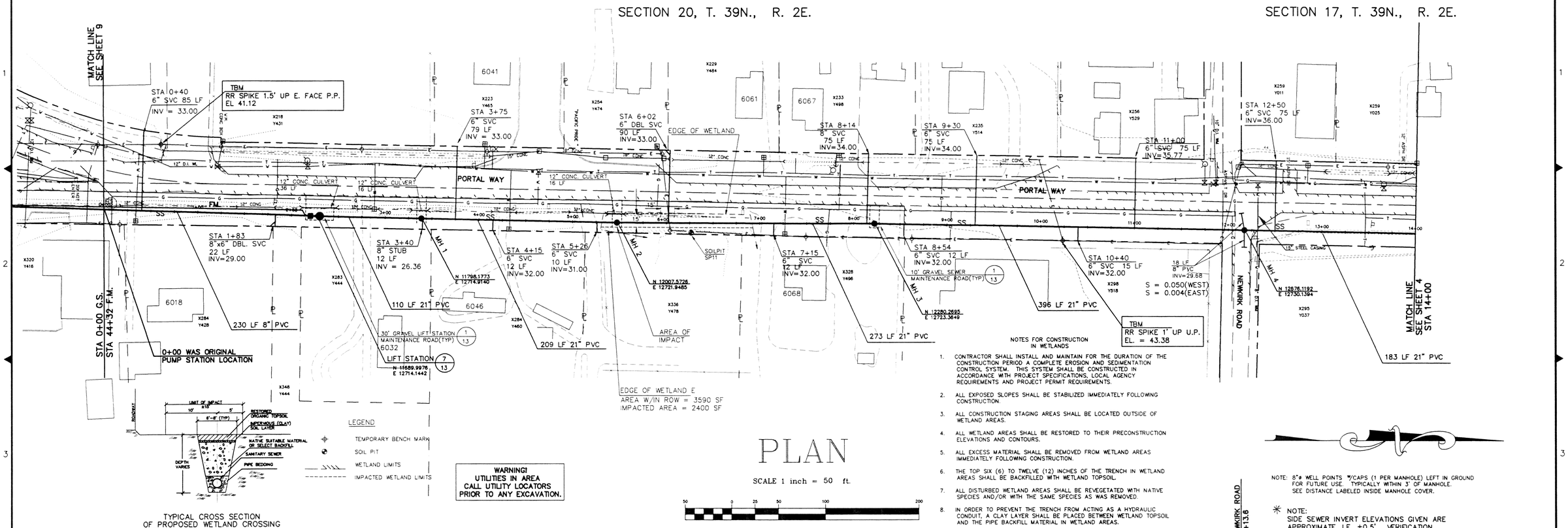
WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY
DRAWN BY
CHECKED BY

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
INDEX MAP

DATE 09/22/94
SCALE 1" = 400'
REC. NO. 92096
SHEET 2 OF 16



NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

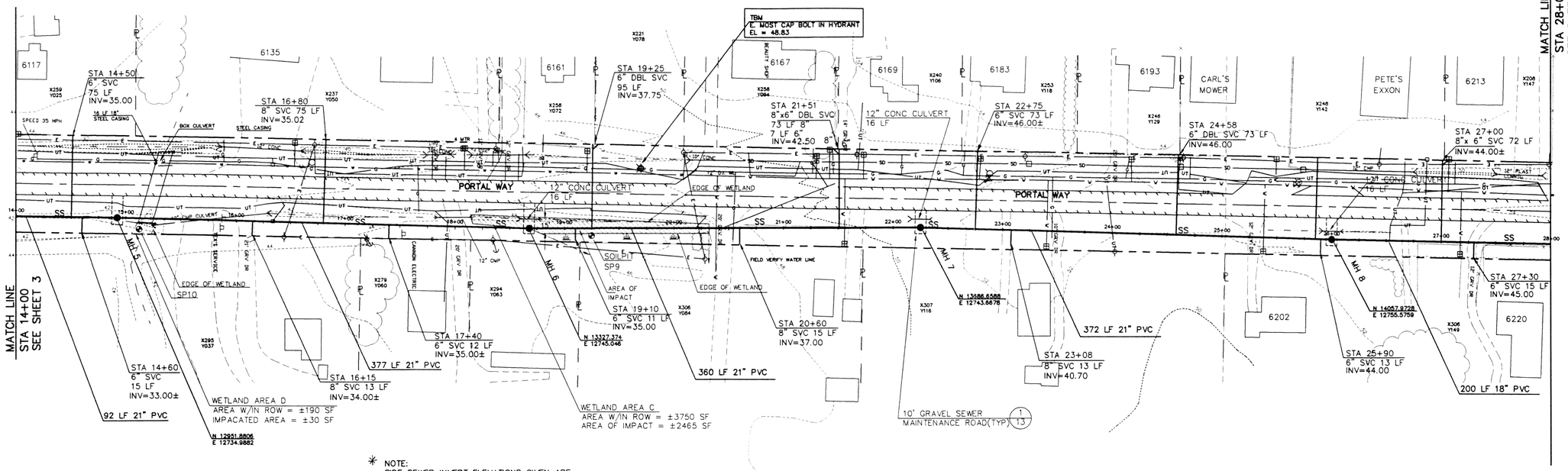
ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY
DRAWN BY
CHECKED BY JCW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE STA 0+00 TO STA 14+00
PLAN PROFILE FORCE MAIN

DATE 09/22/94
SCALE 1"=50'H 1"=5'V
REC. NO. 92096
SHEET 3 OF 16

SECTION 17, T. 39N., R. 2E.



* NOTE:
SIDE SEWER INVERT ELEVATIONS GIVEN ARE APPROXIMATE, I.E. ±0.5'. VERIFICATION IS RESPONSIBLITY OF OTHERS.

NOTE: 8"ø WELL POINTS /CAPS (1 PER MANHOLE) LEFT IN GROUND FOR FUTURE USE. TYPICALLY WITHIN 3' OF MANHOLE.

WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.

PLAN

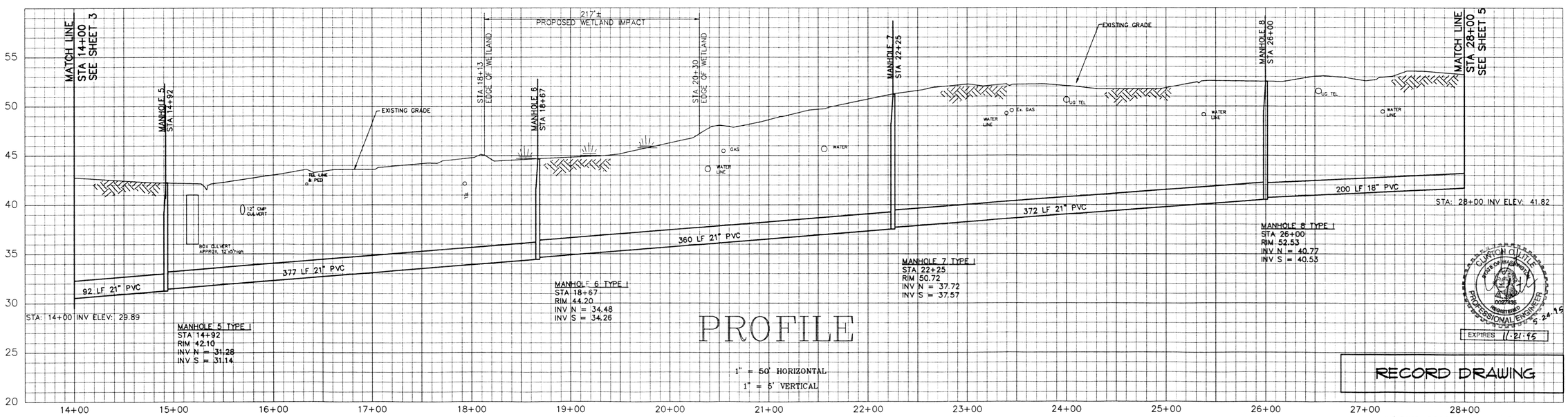
SCALE 1 inch = 50 ft.

50 0 25 50 100 200

WETLAND AREAS

	W/I RIGHT OF WAY	IMPACTED AREA	SHEET NO.
A	0	0	8
B	3675 SF	1510 SF	5
C	3750 SF	2465 SF	4
D	190 SF	30 SF	4
E	3590 SF	2400 SF	3
F	N/A	4415 SF	12
G	1355 SF	N/A	11
TOTAL	12560 SF	10820 SF	
SWALE	1816 SF	1263 SF	12

NOTE:
WETLAND DELINEATION PROVIDED BY
JOHN WONG, ENVIRONMENTAL CONSULTANT



PROFILE

1" = 50' HORIZONTAL
1" = 5' VERTICAL

CLINTON D. LITTLE
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
REGISTERED
EXPIRES 11-21-95

RECORD DRAWING

C:\DWG\2096RD4A 11/15/94 11:53

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

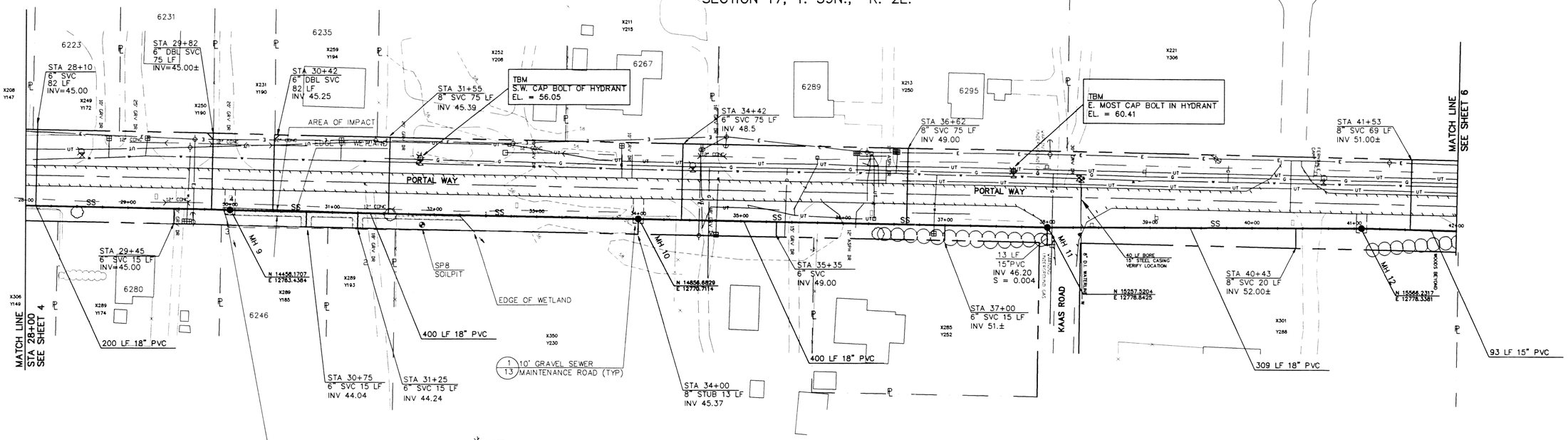
DESIGNED BY
DRAWN BY
CHECKED BY JLW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE STA 14+00 TO STA 28+00

DATE 09/22/94
SCALE 1"=50'H 1"=5'V
REC. NO. 92096
SHEET 4 OF 16

0010S.004-7.00 KR

SECTION 17, T. 39N., R. 2E.



NOTE: 8"ø WELL POINTS /CAPS (1 PER MANHOLE) LEFT IN GROUND FOR FUTURE USE. TYPICALLY WITHIN 3' OF MANHOLE.

* NOTE:
SIDE SEWER INVERT ELEVATIONS GIVEN ARE APPROXIMATE, I.E. ±0.5'. VERIFICATION IS RESPONSIBLITY OF OTHERS.

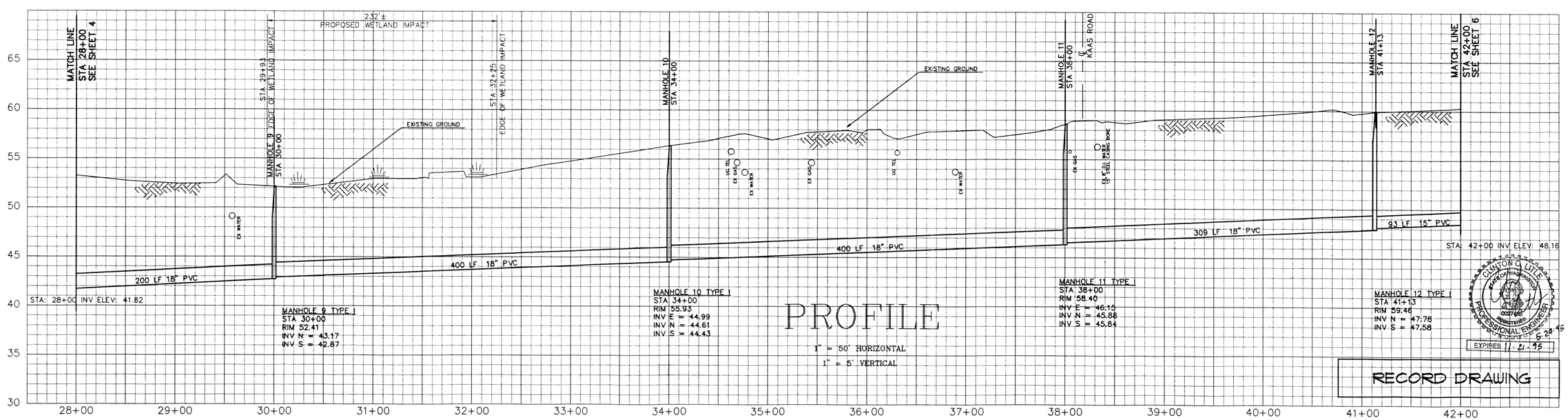
PLAN

SCALE 1 inch = 50 ft.

50 0 25 50 100 200

WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.

CONTRACTOR TO COORDINATE ALL UTILITY RESTORATION WITH UTILITY COMPANIES. UNDERGROUND TELECOMMUNICATIONS, TV, POWER AND GAS UTILITY RESTORATION SHALL BE INCIDENTAL TO CONTRACT (TYPICAL)



C:\DWG\2096RD5A 11/15/94 13:24

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

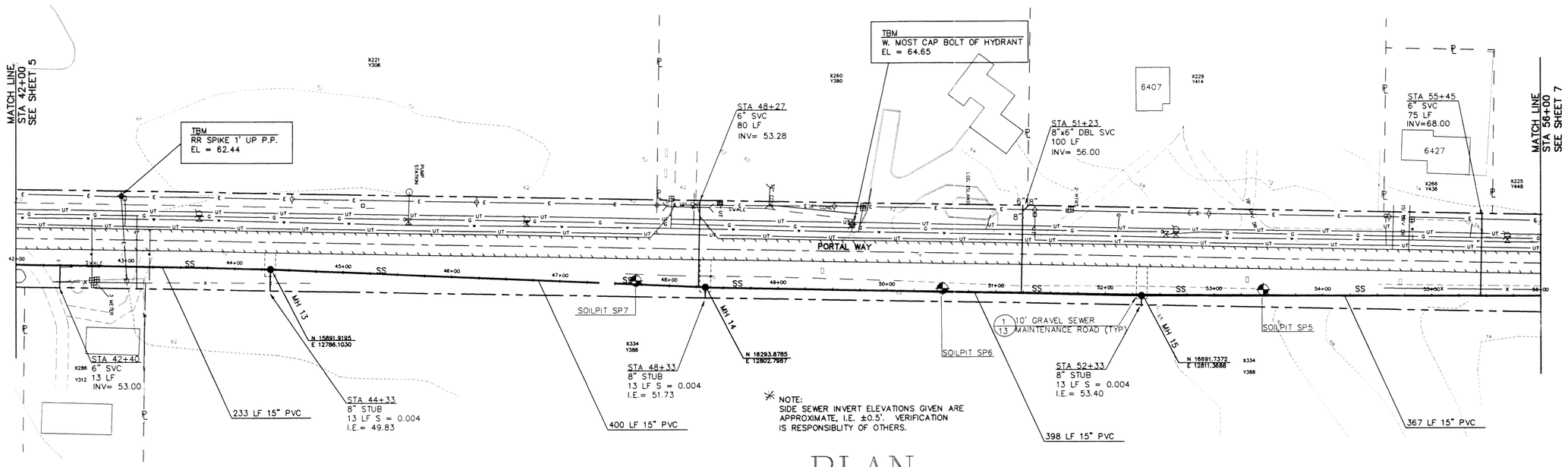
DESIGNED BY
DRAWN BY
CHECKED BY JLW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE STA 28+00 TO STA 42+00

DATE 09/22/94
SCALE 1"=50'H 1"=5'V
REC. NO. 92096
SHEET 5 OF 16

KR 90105.005 2-7-04

SECTION 17, T. 39N., R. 2E.



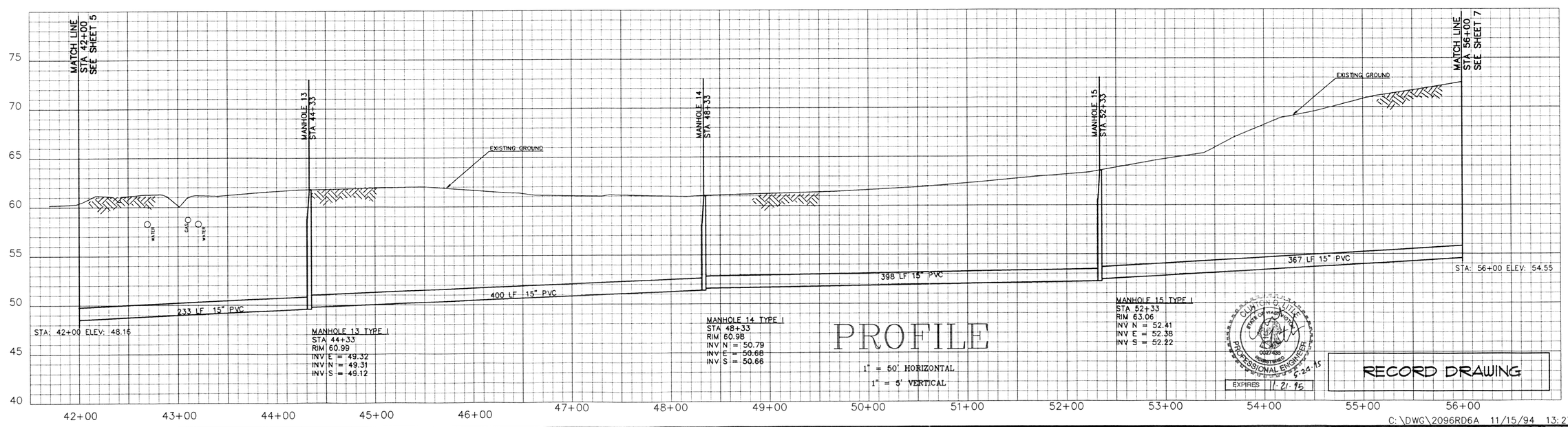
NOTE:
SIDE SEWER INVERT ELEVATIONS GIVEN ARE APPROXIMATE, I.E. ±0.5'. VERIFICATION IS RESPONSIBLITY OF OTHERS.

PLAN

SCALE 1 inch = 50 ft.

NOTE: 8"ø WELL POINTS /CAPS (1 PER MANHOLE) LEFT IN GROUND FOR FUTURE USE. TYPICALLY WITHIN 3' OF MANHOLE.

WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.



PROFILE

1" = 50' HORIZONTAL
1" = 5' VERTICAL

CLINTON D. WEDEN
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
EXPIRES 11-21-95

RECORD DRAWING

C:\DWG\2096RD6A 11/15/94 13:27

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

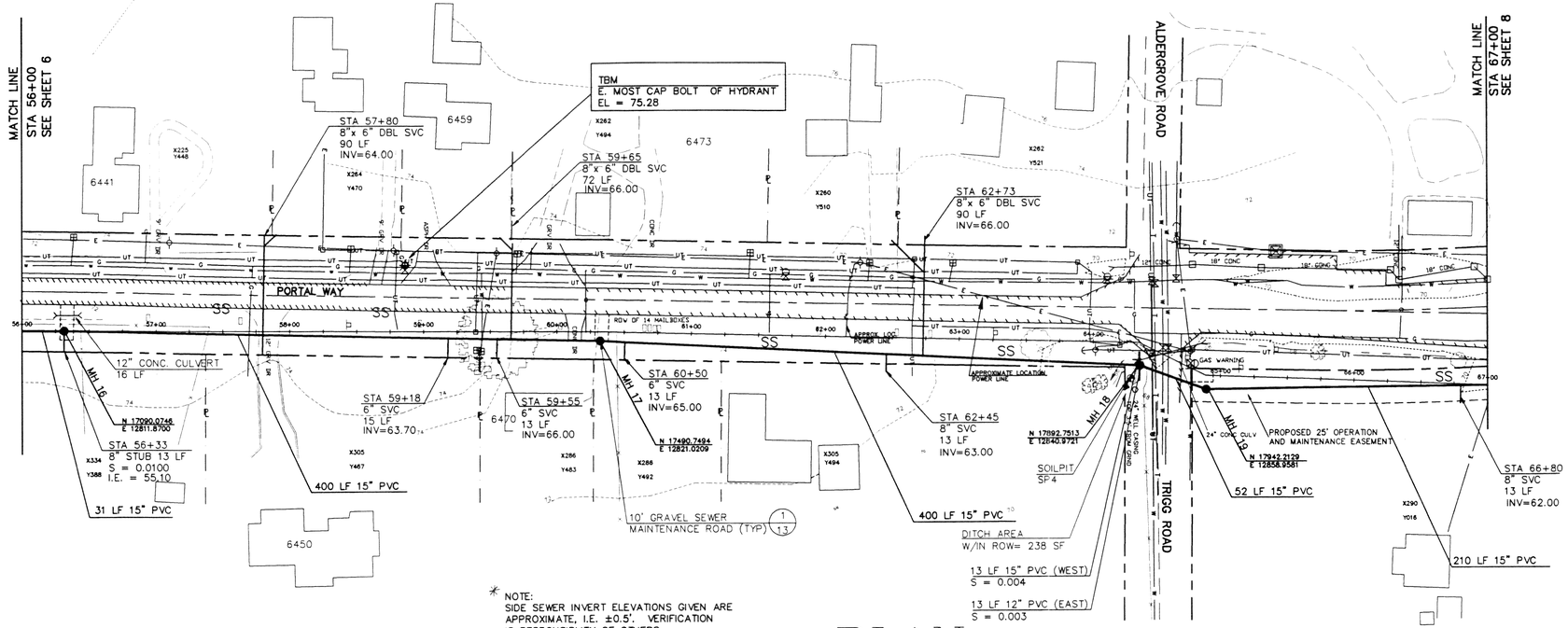
DESIGNED BY
DRAWN BY
CHECKED BY JLW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE STA 42+00 TO STA 56+00

DATE 09/22/94
SCALE 1"=50'H 1"=5'V
REC. NO. 92096
SHEET 6 OF 16

00105.006 2-7-06 KR

SECTION 8, T. 39N., R. 2E.

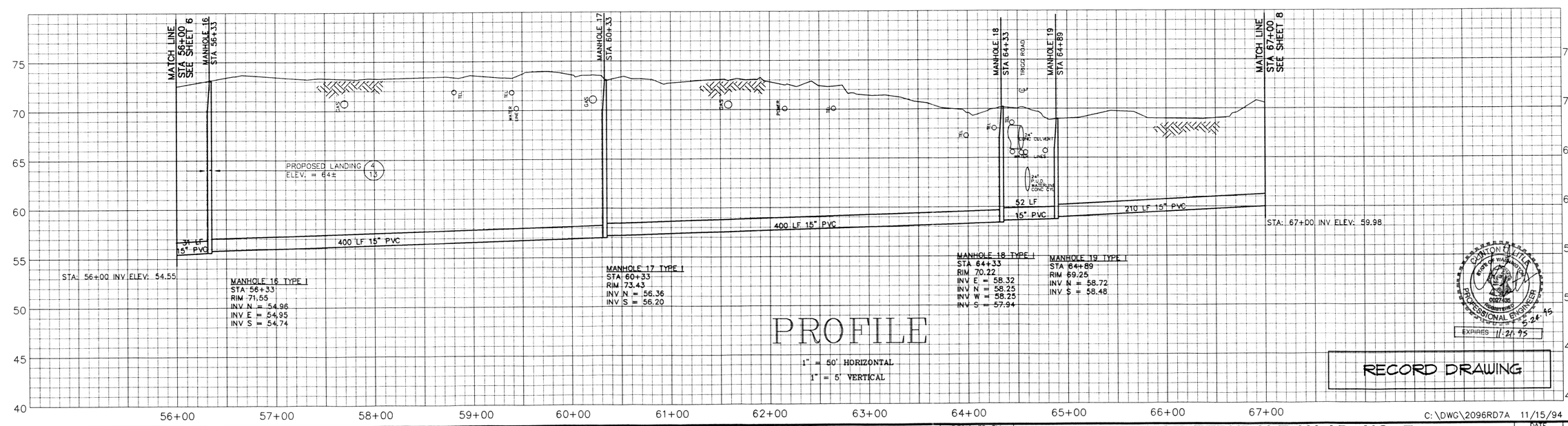


* NOTE:
SIDE SEWER INVERT ELEVATIONS GIVEN ARE APPROXIMATE, I.E. ±0.5'. VERIFICATION IS RESPONSIBILITY OF OTHERS.

PLAN

SCALE 1 inch = 50 ft.

WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.



PROFILE

1" = 50' HORIZONTAL
1" = 5' VERTICAL

RECORD DRAWING

C:\DWG\2096RD7A 11/15/94 13:31

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

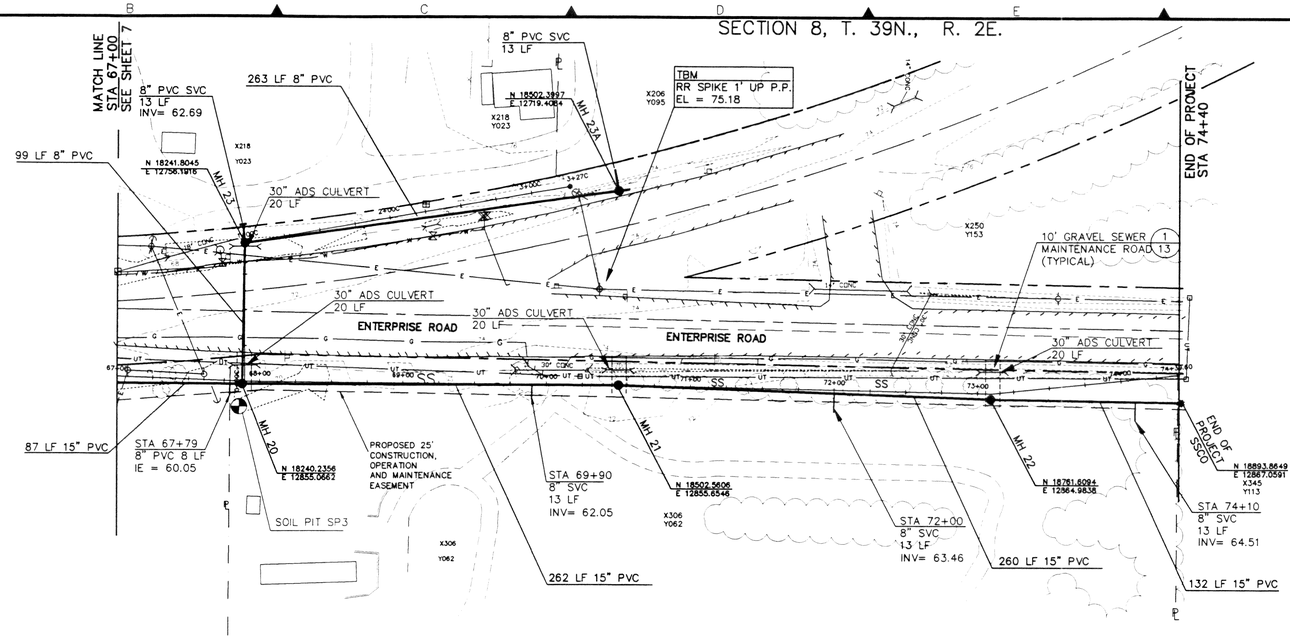
ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY
DRAWN BY
CHECKED BY JLW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE STA 56+00 TO STA 67+00

DATE 09/22/94
SCALE 1"=50'H 1"=5'V
REC. NO. 92096
SHEET 7 OF 16

00105.007 2-7-96 KR

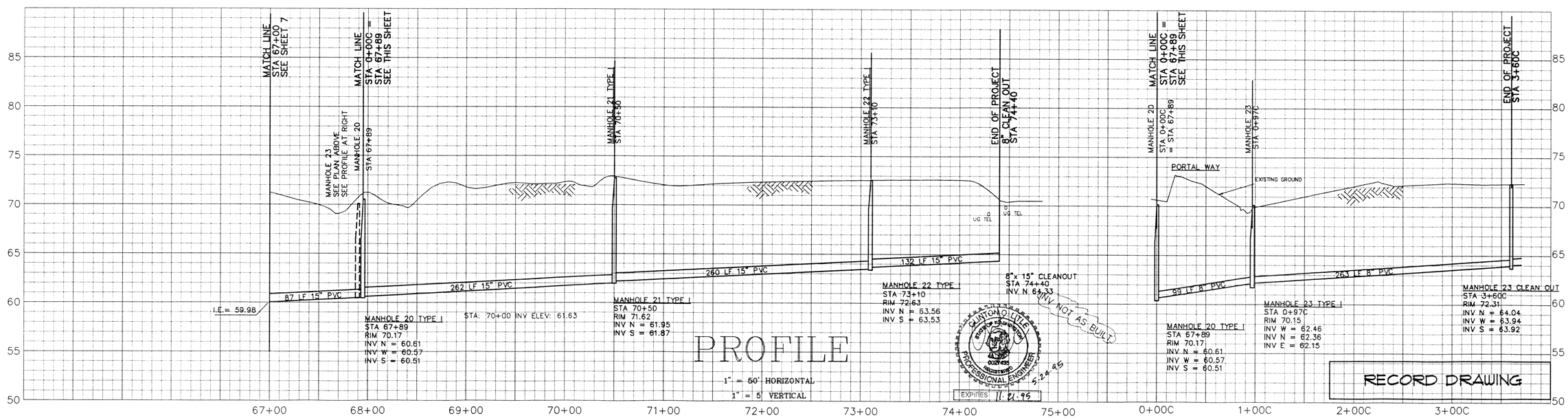


PLAN

SCALE 1 inch = 50 ft.

NOTE:
SIDE SEWER INVERT ELEVATIONS GIVEN ARE APPROXIMATE, I.E. ±0.5'. VERIFICATION IS RESPONSIBLITY OF OTHERS.

WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.



PROFILE

1" = 50' HORIZONTAL
1" = 5' VERTICAL

CLINTON O. LITLE
STATE OF WASHINGTON
22274
REGISTERED PROFESSIONAL ENGINEER
5-24-95
EXPIRES 11-21-95

RECORD DRAWING

C:\DWG\2096RD8A 11/15/94 13:32

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

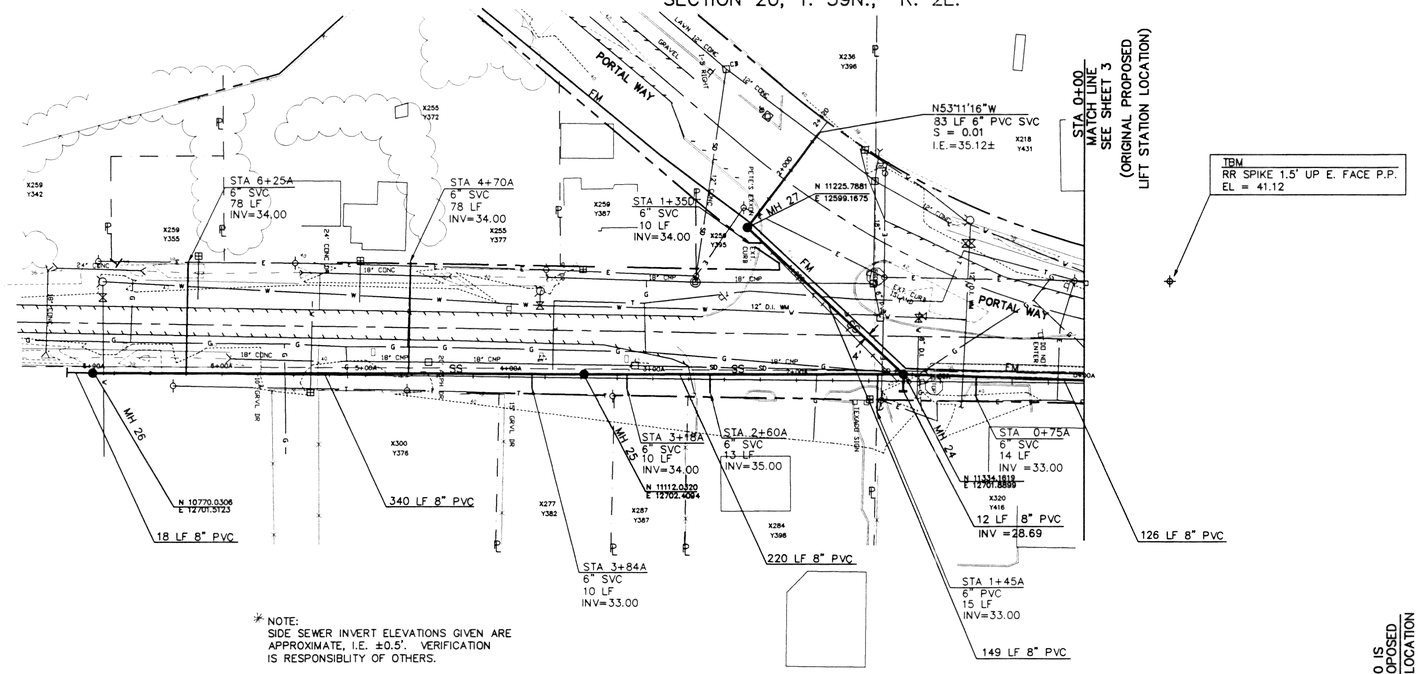
DESIGNED BY
DRAWN BY
CHECKED BY JLW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE STA 67+00 TO STA 74+40, STA 0+00C TO STA 3+27C

DATE 09/22/94
SCALE 1"=50'H 1"=5'V
REC. NO. 92096
SHEET 8 OF 16

00105.008 2-7-06 KR

SECTION 20, T. 39N., R. 2E.



* NOTE:
SIDE SEWER INVERT ELEVATIONS GIVEN ARE APPROXIMATE, I.E. ±0.5'. VERIFICATION IS RESPONSIBLITY OF OTHERS.

PLAN

SCALE 1 inch = 50 ft.

STA 0+00 IS
ORIGINAL PROPOSED
LIFT STATION LOCATION

WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.

PROFILE

1" = 5' VERTICAL
1" = 50' HORIZONTAL

COLVIN DILLING
STATE OF WASHINGTON
00027435
REGISTERED
PROFESSIONAL ENGINEER
5-24-95
EXPIRES 11-21-95

RECORD DRAWING

C:\DWG\2096RD9A 11/15/94 13:33

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

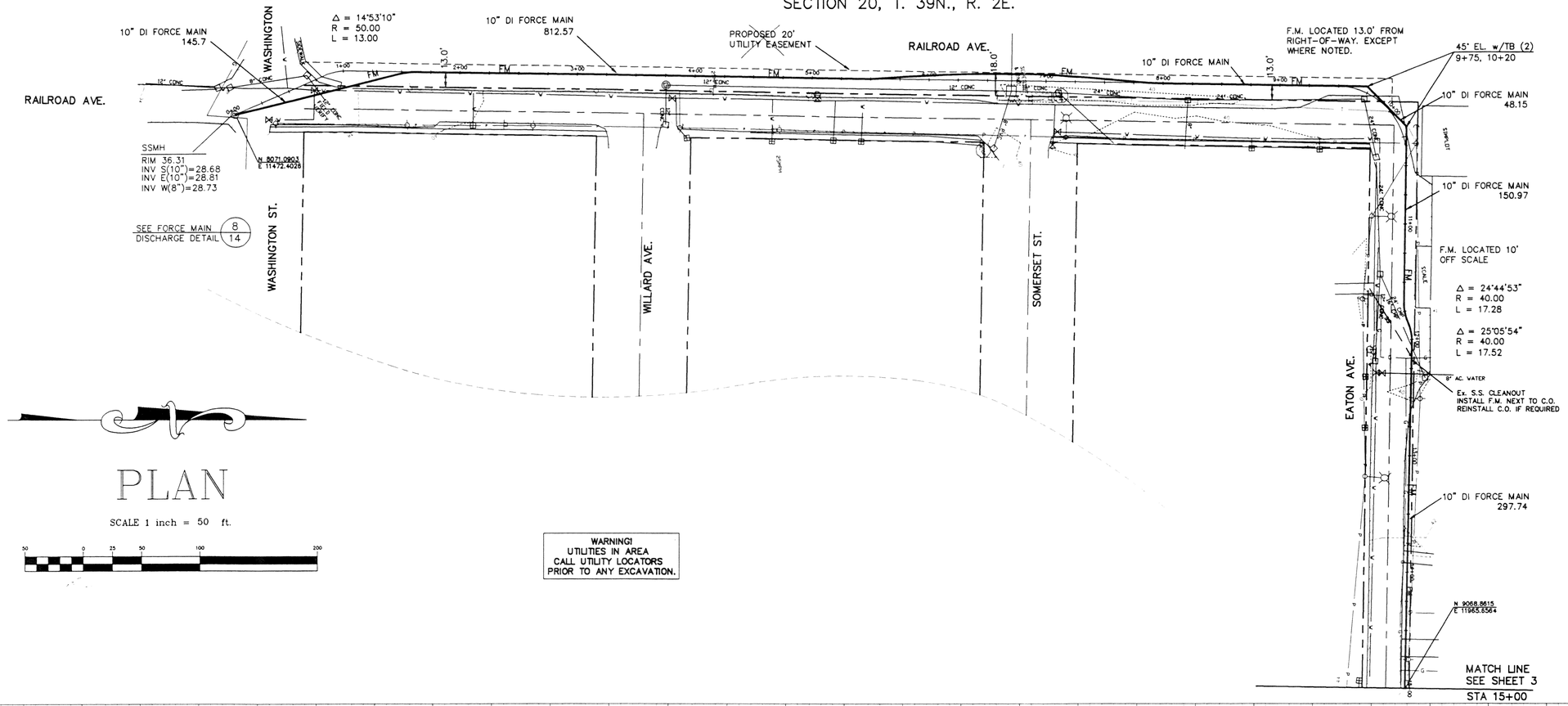
ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY
DRAWN BY
CHECKED BY JLW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE STA 0+00A TO STA 6+90A, STA 0+00D TO STA 2+42D

DATE	SHEET
09/22/94	9
SCALE 1"=50'H 1"=5'V	OF
REC. NO. 92096	16

SECTION 20, T. 39N., R. 2E.



PLAN

SCALE 1 inch = 50 ft.

WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.

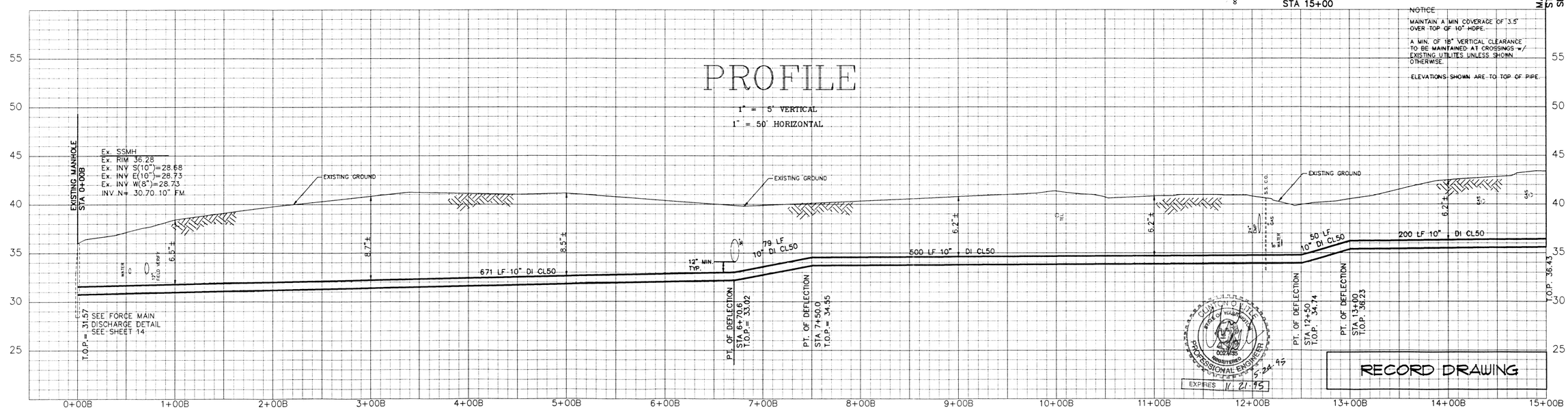
MATCH LINE STA 15+00B SEE SHEET 3

NOTICE

MAINTAIN A MIN COVERAGE OF 3.5' OVER TOP OF 10" HDPE.

A MIN. OF 18" VERTICAL CLEARANCE TO BE MAINTAINED AT CROSSINGS w/ EXISTING UTILITES UNLESS SHOWN OTHERWISE.

ELEVATIONS SHOWN ARE TO TOP OF PIPE.



RECORD DRAWING

CHRISTOPHER J. WARNOCK
STATE OF WASHINGTON
22202
REGISTERED PROFESSIONAL ENGINEER
5-24-95
EXPIRES 11-21-95

C:\DWG\92096\2096RD10 11/09/94 10:02

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

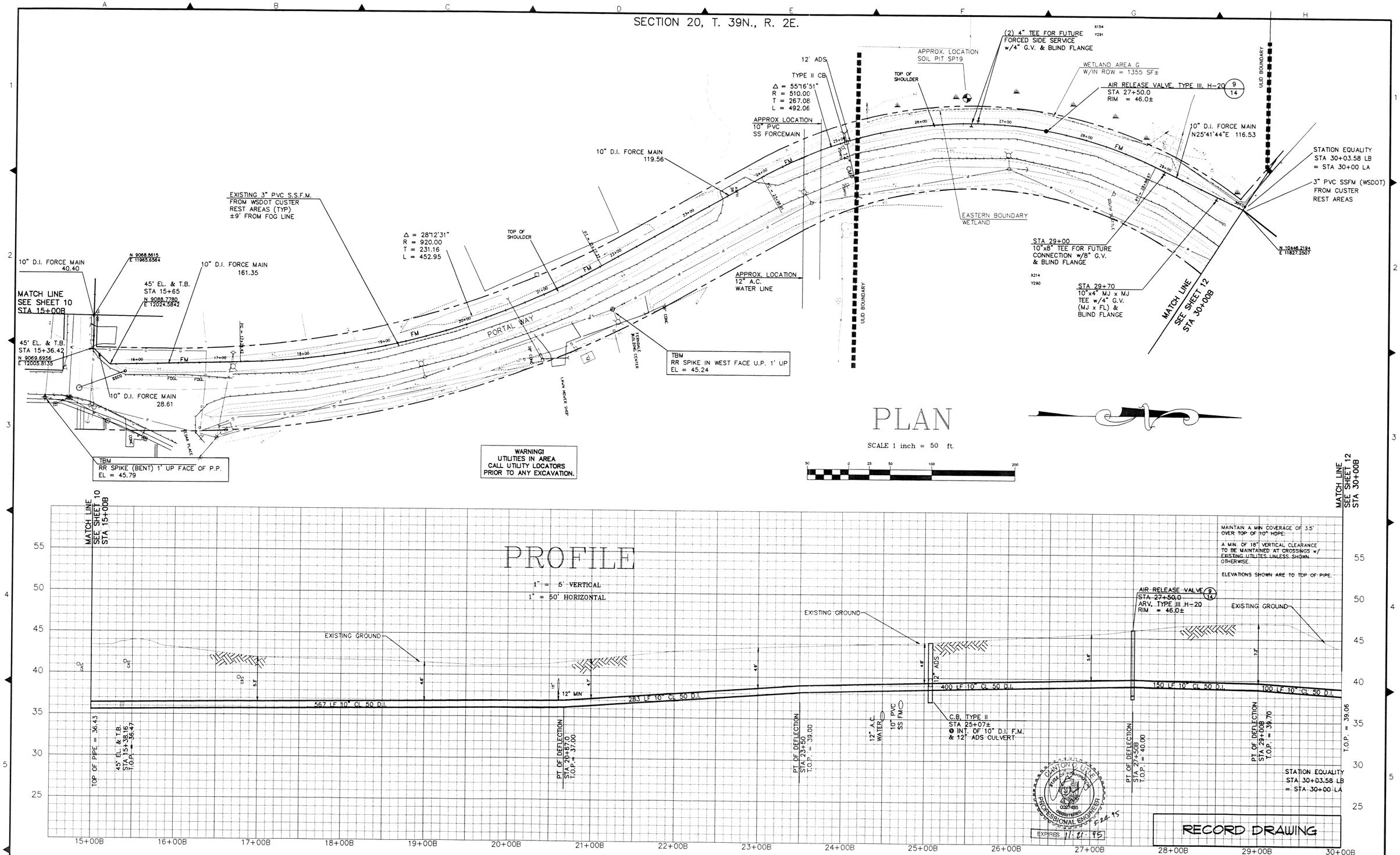
DESIGNED BY
DRAWN BY
CHECKED BY JCW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE FORCE MAIN STA 0+00B TO STA 15+00B

DATE 09/22/94
SCALE 1" = 50' H 1" = 5' V.
REC. NO. 92096 2096PP10
SHEET 10 OF 16

00105.010 2.7.06

SECTION 20, T. 39N., R. 2E.



C:\DWG\92096\2096RD11 11/09/94 11:33

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY
DRAWN BY
CHECKED BY JLW

CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE FORCE MAIN STA 15+00 TO STA 30+00

DATE 09/22/94
SCALE 1" = 50' H 1" = 5' V.
REC. NO. 92096 2096PP11
SHEET 11 OF 16

SECTION 20, T. 39N., R. 2E.

PLAN

SCALE 1 inch = 50 ft.

START HDPE
STA 30+06

3" FORCE MAIN
(W.S.D.O.T.)

N 10446.2399
E 11827.2185

10"x 4" TEE
FUTURE TIE

TBM
ELEV AT CONC BASE LIGHT STD
EL = 46.00

MATCH LINE
SEE SHEET 11
STA 30+00B

START
20" CASING 13
STA 30+11.0

10" D.I. FORCE MAIN
110.0

100 LF 20"
.375 STEEL CASING

KNOLL

SOILPIT
SP-15

10" D.I. FORCE MAIN
329.52

START 20" CASING
STA 34+50

START HDPE
STA 34+45

SOILPIT
SP-14

5 13 264 LF 20"
.375 STEEL CASING

10" HDPE FORCE MAIN
274.0

INTERSTATE 5

END
20" CASING
STA 37+14.0

BORE PIT
(TYP)

10" D.I. FORCE MAIN
69.0

START HDPE
END D.I.
FL x MJ
ADAPTER

100 LF 20"
.375 STEEL CASING 5 13

SOILPIT
SP-13

END HDPE
START D.I.
STA 37+19.0

45° EL w/MEGALUGS
MJ & TB
STA 37+22.0
MOLDED FLANGE w/
D.I. BACKUP RING,
1' FL x P.E. SPOOL

TBM
ELEV TOP OF S. MOST BOLT ON BOLLARD
EL = 43.66

PROPOSED GRAVITY SEWER
SEE SHEET 9

TBM
RR SPIKE IN P.P.
EL = 41.12

LIFT STATION
SEE SHEET 13
N 11689.9976
E 12714.1442

10" D.I. FORCE MAIN
4.75

45° EL & TB
STA 46+56.7

10" D.I. FORCE MAIN
352.10

PROPOSED
GRAVITY SEWER
SEE SHEET 3

BEGINNING OF
OVERPASS ABUTMENT

EDGE OF BRIDGE

WING WALL

GIRDER

PORTAL WAY

START
20" CASING
STA 37+94.2

10" D.I. FORCE MAIN
258.74

10" D.I. FORCE MAIN
144.56

MH 27

MH 24

MH 25

45° EL & TB
STA 43+04.6

SOILPIT
SP-12
45° EL & TB
STA 39+01.30

END HDPE
STA 38+97.3

END 20" CASING
STA 38+94.2

SWALE AREA
WETLAND AREA = 1816 SF
IMPACTED AREA = 1390 SF

10" HDPE FORCE MAIN
108.0

WETLAND AREA F
IMPACTED AREA
= 4415 SF

WETLAND AREA F

END HDPE
START D.I.
STA 31+16

END
20" CASING
STA 31+11.0

ULID BOUNDARY

PROPOSED GRAVITY SEWER
SEE SHEET 9

MATCH LINE
SEE SHEETS 3 & 9
STA 44+32B

WARNING!
UTILITIES IN AREA
CALL UTILITY LOCATORS
PRIOR TO ANY EXCAVATION.

20" CASING
FL x MJ
ADAPTER
SPOOL
45° EL

311'±
PROPOSED WETLAND IMPACT

PROFILE

1" = 5' VERTICAL
1" = 50' HORIZONTAL

MATCH LINE
SEE SHEET 11
STA 30+00B

STA 31+25
EDGE OF WETLAND IMPACT

STA 34+36
EDGE OF WETLAND IMPACT

STA 38+94
EDGE OF SWALE IMPACT

71'±
PROPOSED
SWALE IMPACT

MAINTAIN A MIN COVERAGE OF 3.5' OVER TOP OF 10" HDPE.

A MIN. OF 18" VERTICAL CLEARANCE TO BE MAINTAINED AT CROSSINGS W/ EXISTING UTILITES UNLESS SHOWN OTHERWISE.

ELEVATIONS SHOWN ARE TOP OF PIPE.

ORIGINAL LIFT STATION
LOCATION
STA 44+32± T.O.P. 33.82
SEE SHEET 13

EXISTING GROUND

ROADWAY

FIELD VERIFY

TOP OF PIPE = 39.06

110 LF 10" SDR 21 HDPE

100 LF 20" CASING

329.52 LF 10" D.I.

274 LF 10" SDR 21 HDPE FM

265 LF 20" CASING

69 LF 10" D.I. FM

108 LF 10" SDR 21 HDPE FM

100 LF 20" CASING

208.7 LF 10" D.I. FM

52 LF 10" D.I. FM

494.7 LF 10" D.I. FM

20" CASING
STA 30+11.0
T.O.P.= 38.73

20" CASING
STA 31+11.0
T.O.P.= 38.77

20" CASING
STA 34+50.0
TOP OF 10" D.I.= 37.62
TOP OF 20" CASING = 38.47
I.E. = 38.80

APPROXIMATE
DEFLECTION POINT
IN CASING

45° EL
STA 37+22.0

20" CASING
STA 37+15.0
T.O.P.= 36.60

20" CASING
STA 37+94.2
T.O.P.= 36.15

20" CASING
STA 38+94.2
T.O.P.= 34.5

45° EL
STA 39+01.3
T.O.P.=34.5

PT. OF DEFLECTION
STA 41+10
T.O.P. = 34.5

PT. OF DEFLECTION
STA 41+62
T.O.P. = 33.52

45° EL
STA 43+04.7

45° EL
STA 46+36
T.O.P.=34.07

CLINTON O. LITTLE
STATE OF WASHINGTON
00271433
REGISTERED
PROFESSIONAL ENGINEER
5-24-95
EXPIRES 11-21-95

RECORD DRAWING

30+00B 31+00B 32+00B 33+00B 34+00B 35+00B 36+00B 37+00B 38+00B 39+00B 40+00B 41+00B 42+00B 43+00B 44+00B

C:\DWG\92096\2096RD12 11/09/94 13:20

NO.	REVISIONS	BY	DATE

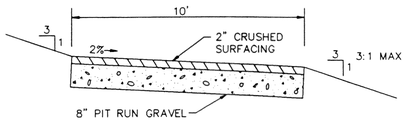
WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY
DRAWN BY
CHECKED BY JLW

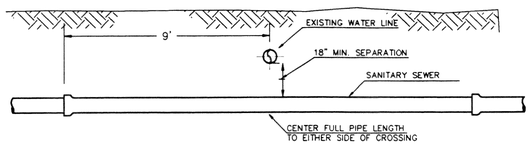
CITY OF FERNDALE U.L.I.D. NO. 7
PORTAL WAY
SANITARY SEWER EXTENSION
PLAN PROFILE FORCE MAIN STA 30+00 TO STA 44+42

DATE 09/22/94
SCALE 1" = 50' H 1" = 5' V.
REC. NO. 92096 2096PP12
SHEET 12 OF 16



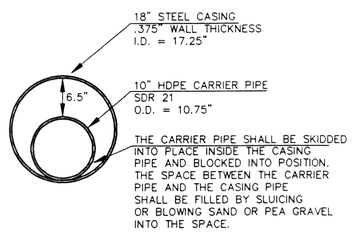
1 / – MAINTENANCE ROAD CROSS SECTION

NTS



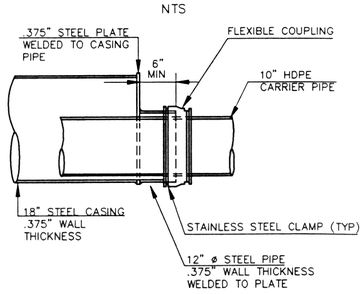
2 / – WATER LINE CROSSING DETAIL

NTS



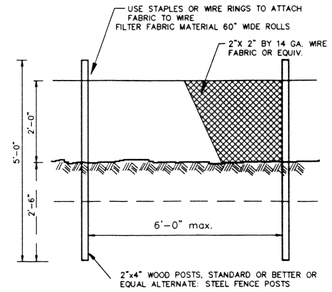
TYPICAL CROSS SECTION OF PROPOSED CASING AND CARRIER PIPE

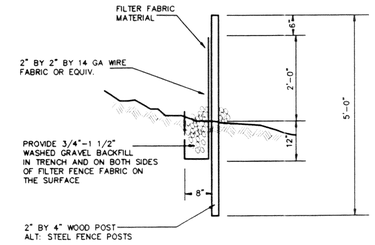
NTS



5 / 12 CASING SEAL DETAIL

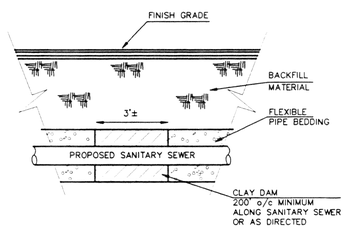
NTS





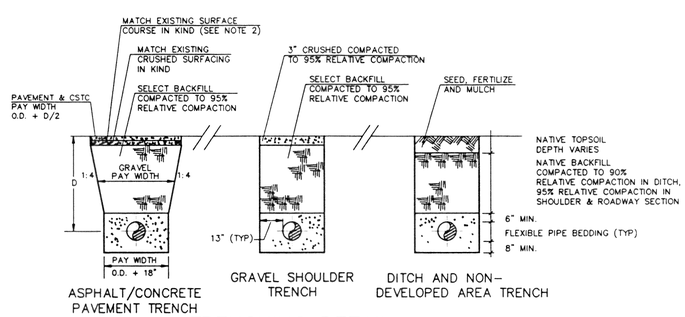
3 / – SILT FENCE

NTS



6 / – CLAY DAM DETAIL

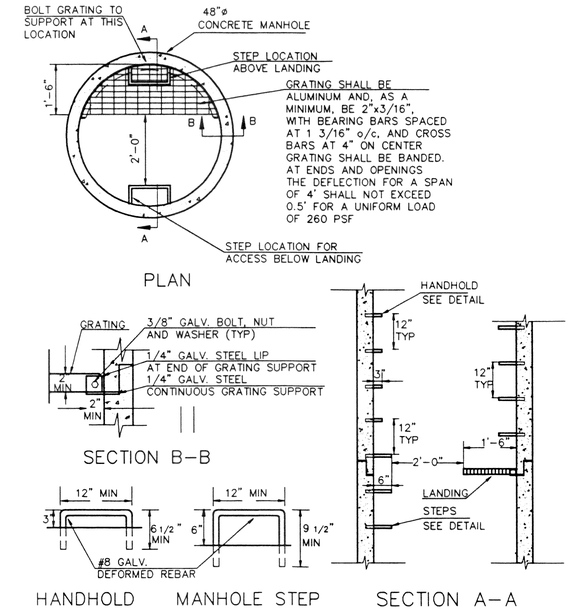
NTS



TRENCHING DETAIL

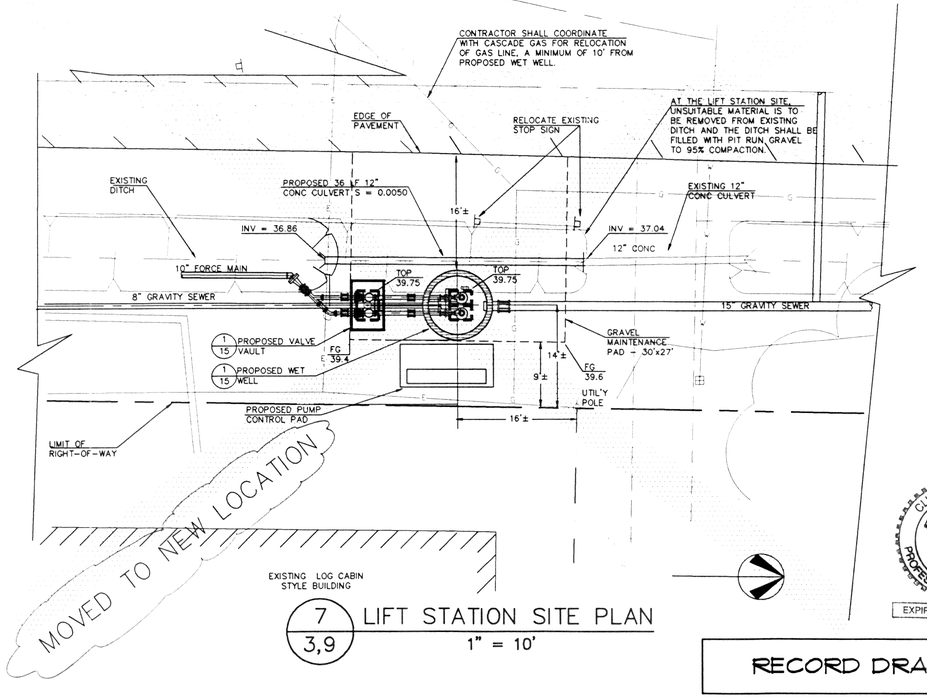
N.T.S.

NOTES:
1. NATIVE BACKFILL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION.
2. SELECT BACKFILL/CRUSHED SURFACE COURSE SHALL BE COMPACTED TO 95% COMPACTION.
3. PAVEMENT SHALL BE SAW CUT, TACKED, AND COMPACTED TO 92% OF ABSOLUTE DENSITY.
4. P.C.C. REPLACEMENT SHALL BE 2" GREATER THAN EXISTING COURSE, 7" MINIMUM, 6.5 P.C.C. (HES - AIR ENTRAINED)
5. ALL TRENCH RESTORATION SHALL MEET EITHER CITY OF FERNDALE OR WHATCOM COUNTY STANDARDS.



4 / 7 MANHOLE LANDING

NTS



7 / 3,9 LIFT STATION SITE PLAN

1" = 10'

CLINTON O. LILLE — STATE OF WASHINGTON — 20007 — REGISTERED PROFESSIONAL ENGINEER — 5-24-95

EXPIRES 11-21-95

RECORD DRAWING

C:\DWG\2096RD13 10/07/94 14:52

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE

IF NOT ONE INCH SCALE ACCORDINGLY

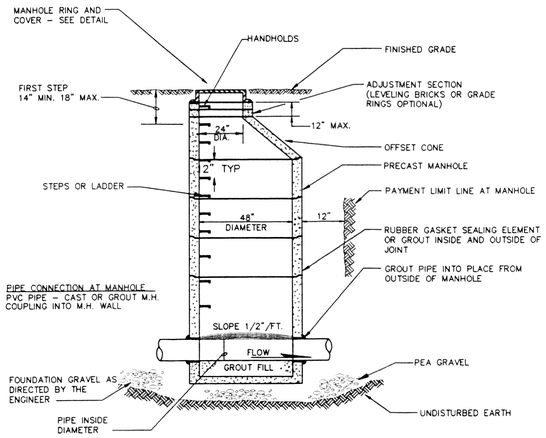
DESIGNED BY
DRAWN BY
CHECKED BY

CITY OF FERNDALE U.L.I.D. NO. 7
SANITARY SEWER EXTENSION

DETAILS AND LIFT STATION SITE PLAN

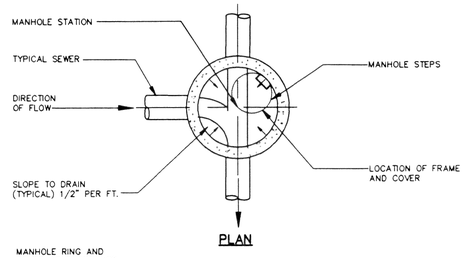
DATE 09/22/94
SCALE AS SHOWN
REC. NO. 92096
SHEET 13 OF 16

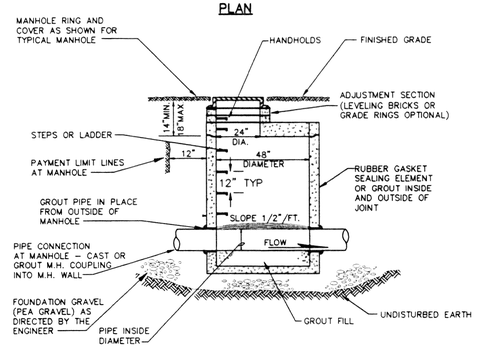
00105.012 X 2096 KR



1 — PRECAST MANHOLE – TYPE I

NTS

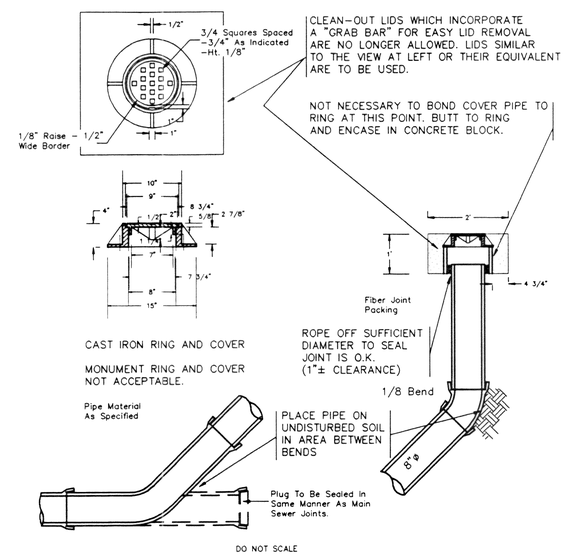




2 — PRECAST MANHOLE – TYPE III

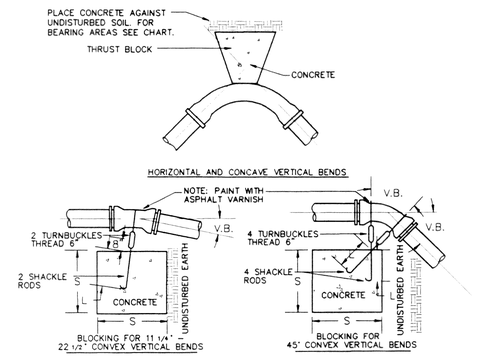
NOT TO SCALE

2" SQUARE CONCRETE BLOCK TO ENCASE CLEAN-OUT. IN AREAS WHERE CLEAN-OUT OCCURS IN ASPHALT, THIS BLOCK IS TO BE LEFT APPROX. 1 1/2" LOW TO ALLOW FOR AN ASPHALT TOPPING OF LIKE MIXTURE AS THE SURROUNDING AREA. IF CLEAN-OUT OCCURS IN CONCRETE OR IN SOME TYPE OF SOIL, THE BLOCK IS TO BE MADE THE FULL 1' DEPTH AND FLUSH WITH THE SURROUNDING SURFACE.



6 — SANITARY SEWER CLEANOUT

NOT TO SCALE



NOTE: PLACE THRUST BLOCKS ON ALL CHANGES IN DIRECTION OF FORCE MAINS, INCLUDING GRINDER PUMPS STATION DISCHARGE PIPES.

7 — THRUST BLOCK DETAILS – FORCE MAIN

NTS

HORIZONTAL AND CONCAVE VERTICAL THRUST BLOCKS

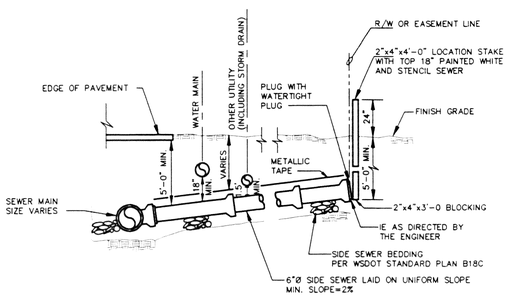
THRUST BLOCK BEARING AREA

FITTING OR BRANCH SIZE	90°	45°	22 1/2°	11 1/4°
10"	9.0	5.1	2.7	2.7

CONVEX VERTICAL THRUST BLOCKS

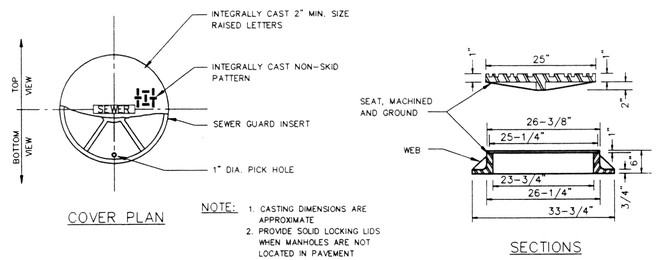
PIPE SIZE INCHES	VERTICAL BEND DEGREES – V.B. –	VOLUME OF BLOCKING CU. FT.	SIDE OF CUBE FEET – S –	SHACKLE ROD DIAMETER – V.B. –	DEPTH OF ROD IN CONC. FEET – L –
10"	11 1/4	32	3.2	5/8	2.0
	22 1/2	88	4.5	7/8	3.0
	45	232	6.1	7/8	3.0

BASED ON TEST PRESSURE OF 50 PSI AND SOIL BEARING PRESSURE OF 1000 PSF



3 — SIDE SERVICES SHALLOW INSTALLATION 15" AND SMALLER MAINS

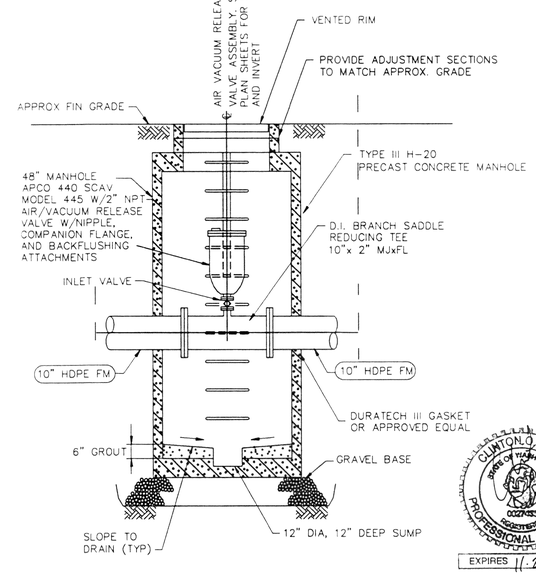
NTS

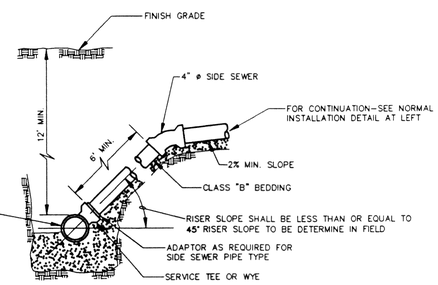


NOTE:
1. CASTING DIMENSIONS ARE APPROXIMATE
2. PROVIDE SOLID LOCKING LIDS WHEN MANHOLES ARE NOT LOCATED IN PAVEMENT

4 — MANHOLE FRAME AND COVER

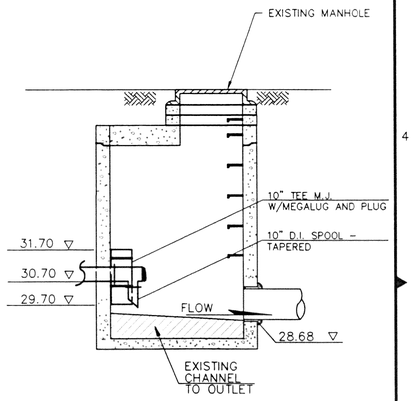
NTS





5 — SIDE SERVICES DEEP INSTALLATION

NTS



8/10 — FORCE MAIN DISCHARGE

NTS

9/11 — AIR RELEASE VALVE ASSEMBLY

NTS

CLINTON O. LINE
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
REGISTERED
EXPIRES 11.21.95
5.24.95

RECORD DRAWING

C:\DWG\2096RD14 10/07/94 15:17

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

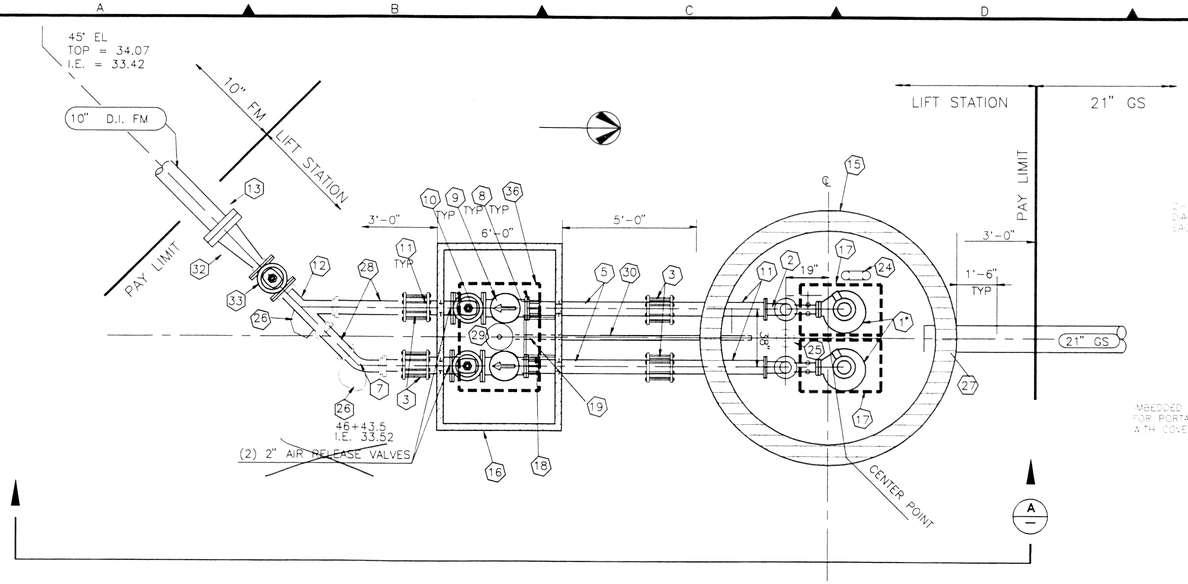
DESIGNED BY
DRAWN BY
CHECKED BY JLW

CITY OF FERNDALE U.L.I.D. NO. 7
SANITARY SEWER EXTENSION

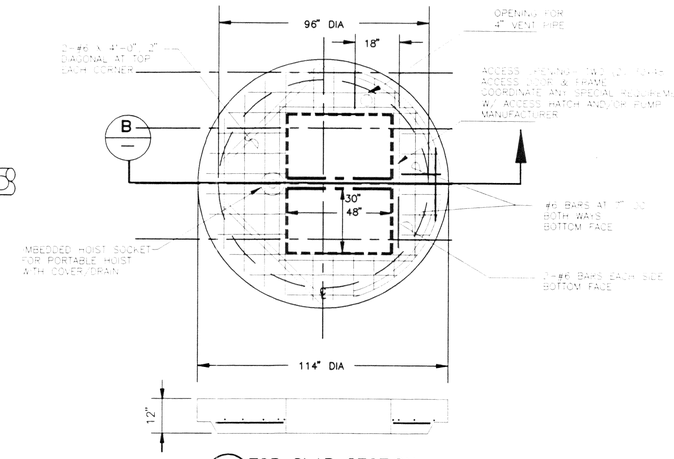
DETAILS

DATE 09/22/94
SCALE AS SHOWN
REC. NO. 92096
SHEET 14 OF 16

RR 90.7.2 PIC 5010 00

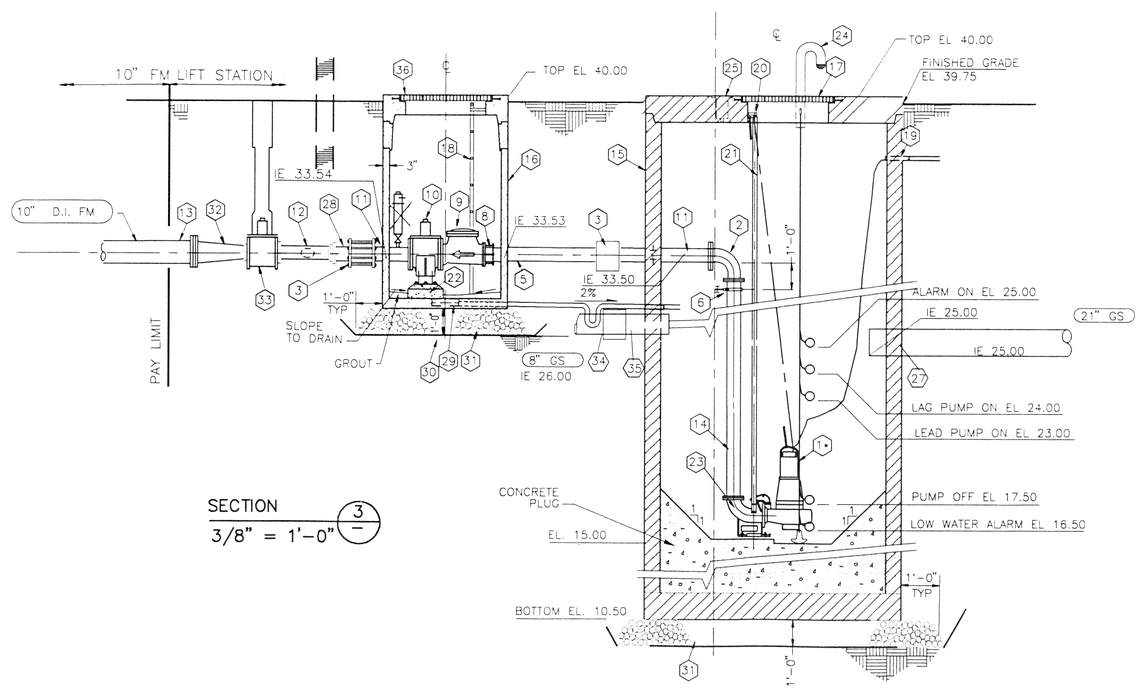


1 LIFT STATION PLAN
3/8" = 1'-0"



2 TOP SLAB SECTION

LIFT STATION TOP SLAB
3/8" = 1'-0"



SECTION 3
3/8" = 1'-0"

LIST OF MATERIALS

1*	SUBMERSIBLE PUMP W/ACCESSORIES, SEE SPECS
2	6" MEGA-LUG DI 90° ELBOW
3	6" D.I. COUPLING
5	6" DI PE WALL PIPE, SEE DETAIL 1/13
6	I-BEAM w/ U-BOLTS
7	6" DI 45° ELBOW, MJXMJ
8	6" FLANGED COUPLING ADAPTOR
9	6" CHECK VALVE
10	6" PLUG VALVE
11	6" FLxPE DI WALL PIPE, SEE DETAIL 1/13
12	6"x6"x6"DI MJXMJXPE WYE
13	10" HDPE MOLDED FLANGED ADAPTOR W/DI BACKUP RING
14	6" DI SPOOL, FL
15	96" DIA PRECAST CONCRETE MANHOLE,SEE TOP SLAB DETAIL
16	PRECAST CONCRETE VAULT 6'x5'x8' INSIDE DIMENSIONS
17	ACCESS HATCH 30" X 48" CLEAR OPENING
18	ACCESS LADDER, SEE DETAIL 3/13
19	ELECTRICAL CONDUIT
20	UPPER GUIDE BRACKET
21	GUIDE BARS (2 PER PUMP) 2" DIA SS PIPE, SCH 40 W/ INTERMEDIATE SUPPORTS.
22	PIPE SUPPORT, SEE DETAIL 5/13
23	6" DI DISCHARGE ELBOW
24	4" S.S. VENT PIPE W/WIRE MESH
25	IMBEDDED HOIST SOCKET
26	THRUST BLOCK, SEE DETAIL 4/13
27	14" PVC SPOOL
28	6" DI SPOOL, PE
29	SUMP AND GRATE
30	2" PVC AND P-TRAP
31	GRAVEL BASE, SEE SPECS
32	6X10 DI REDUCER MJXPE
33	6" ECCENTRIC PLUG VALVE FOR THROTTLING FLOW
34	8" PVC SPOOL
35	8" DI PE WALL PIPE, SEE DETAIL 1/13
36	ACCESS HATCH 36" X 48" CLEAR OPENING

DESIGN CRITERIA

NUMBER OF PUMPS:	2
PUMP	ITT FLYGT
MODEL	3127 3ø
IMPELLER	433
PUMP HORSEPOWER:	7.5 HP
DESIGN FLOW RATE:	525 gpm @ 26.8 ft TDH

* PUMP PLACEMENT/LOCATION TO BE AS PER MANUFACTURER DESIGN OF FLYGT PUMP, MODEL 3170. AT PRESENT TIME FLYGT PUMPS, MODEL 3127-433, TO BE PLACE IN WETWELL @ LOCATION AS STATED ABOVE.

CLINTON O. LYLE — STATE OF WASHINGTON — 20027456 — REGISTERED PROFESSIONAL ENGINEER — 5-24-95
EXPIRES 11-21-95

RECORD DRAWING

C:\DWG\2096RD15 11/14/94 15:32

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

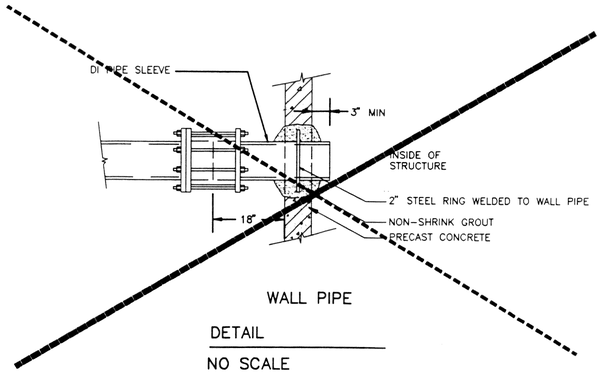
ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY:
DRAWN BY:
CHECKED BY: JLW

CITY OF FERNDALE L.I.D. NO. 7
SANITARY SEWER EXTENSION
LIFT STATION DETAILS

DATE 09/22/94
SCALE 3/8"=1'-0"
REC. NO. 92096
SHEET 15 OF 16

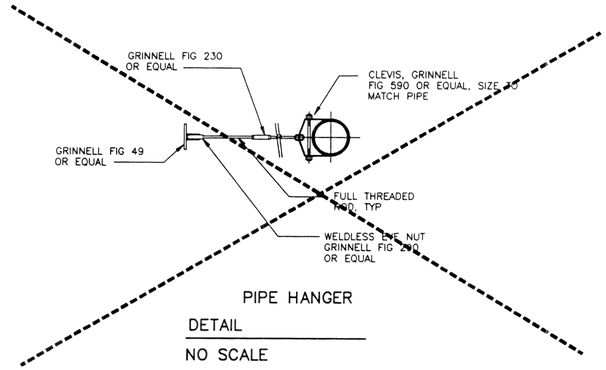
00105.015 2-7-06 KR



WALL PIPE

DETAIL

NO SCALE



PIPE HANGER

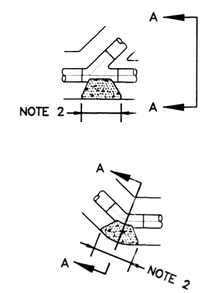
DETAIL

NO SCALE

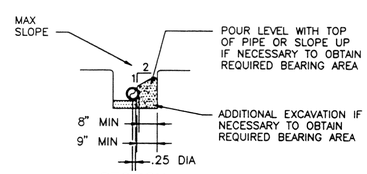
"I" BEAM INSTALLED

THRUST BLOCKING NOTES

1. BEARING AREAS ARE BASED ON MAXIMUM SOIL BEARING STRESS OF 1000 PSF.
2. LENGTH/HEIGHT AS REQUIRED TO OBTAIN BEARING AGAINST UNDISTURBED EARTH.
3. CONCRETE SHALL BE CLASS B.
4. REINFORCE THRUST BLOCKS WITH #3 BARS @ 12" O.C. EACH WAY, EACH FACE.
5. UNLESS OTHERWISE SPECIFIED, THRUST BLOCKS ARE NOT REQUIRED FOR PIPELINES WHICH USE ONLY FULLY RESTRAINED JOINTS, I.E. WELDED, VICTAULIC OR FLANGED, MECHANICAL JOINTS WITH SUPPLEMENTAL THRUST CONTROL ROD RESTRAINT, OR SPECIAL RESTRAINT JOINTS SHALL BE USED SUBJECT TO THE ENGINEER'S PRIOR WRITTEN REVIEW.



TYPICAL PIPE THRUST BLOCKING



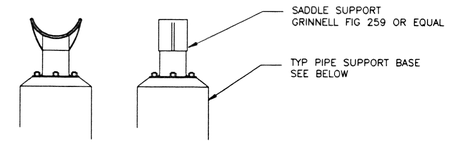
SECTION

PIPE DIA IN	TEST PRESSURE PSIG	BEARING AREA (Square Feet)			
		TEE	90°	45°	22 1/2°
UP TO 4	0 – 150	3	4	2	1
6	0 – 150	6	8	4	2
8	0 – 150	10	15	8	4
10	0 – 150	16	23	12	6

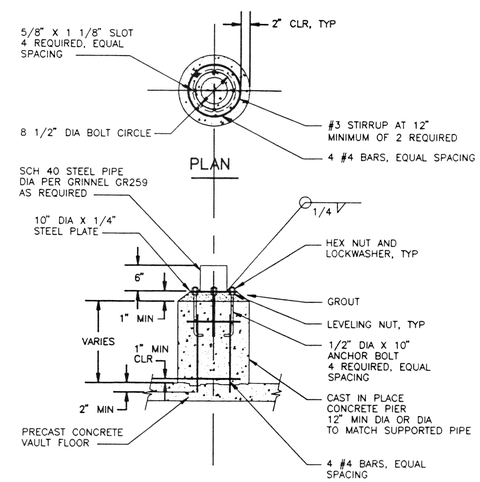
THRUST BLOCKS

DETAIL

NO SCALE



PIPE SUPPORT

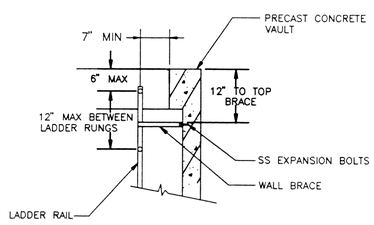


SECTION

PIPE SUPPORT BASE

DETAIL

NO SCALE



1. LADDER SHALL BE 16" WIDE, MEASURED AT INSIDE OF RAILS, UNLESS OTHERWISE DIRECTED BY ENGINEER
2. LADDER SHALL BE FABRICATED ENTIRELY OF STEEL AND HOT-DIPPED GALVANIZED AFTER FABRICATION
3. LADDER SHALL BE SECURELY FASTENED TO FLOOR
4. THE MAXIMUM DISTANCE BETWEEN THE BOTTOM RUNG AND FINISH FLOOR SHALL BE 15"

VAULT ACCESS LADDER

DETAIL

NO SCALE

CLINTON C. LITLE
STATE OF WASHINGTON
00274
REGISTERED PROFESSIONAL ENGINEER
5-24-95
EXPIRES 11-21-95

RECORD DRAWING

C:\DWG\2096RD16 11/14/94 15:31

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

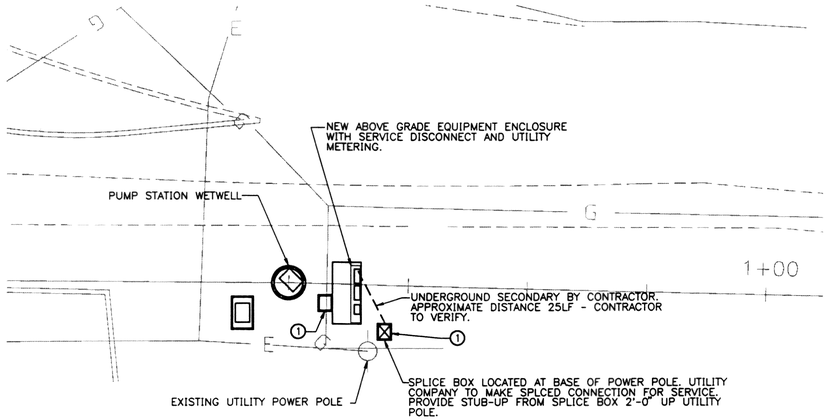
ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY:
DRAWN BY:
CHECKED BY:

CITY OF FERNDALE U.L.I.D. NO. 7
SANITARY SEWER EXTENSION
LIFT STATION DETAILS

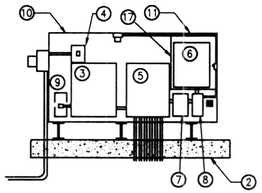
DATE 09/22/94
SCALE AS NOTED
REC. NO. 92096
SHEET 16 OF 16

00105.016 2-7-06 KR



SITE PLAN - LIFT STATION

SCALE: 1/16" = 1'-0"

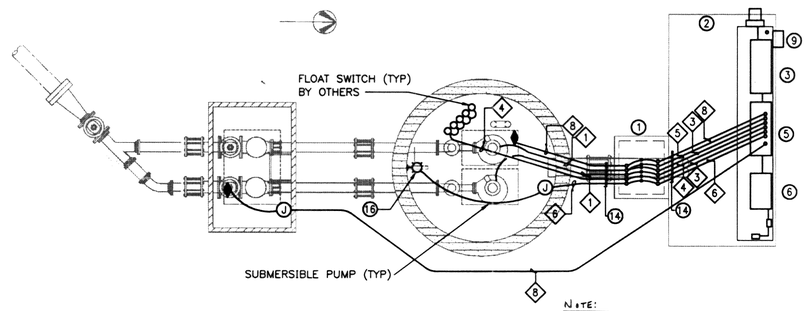


PANEL ELEVATION (1)

NOT TO SCALE

KEYNOTES:

1. PROVIDE 36"Wx42"Lx32"H CONCRETE JUNCTION BOX, UTILITY VAULT CO #3642-LA WITH LOCKING STEEL COVER, #3642--2436P, OR APPROVED EQUAL. AREA WITHIN JUNCTION BOX SHALL BE CLASSIFIED AS CLASS 1 DIVISION 1.
2. PROVIDE 6'-0"x11'-0"x1'-0" CONCRETE PAD.
3. PROVIDE 60A-3P MANUAL TRANSFER SWITCH.
4. PROVIDE 40A-3P ENCLOSED CIRCUIT BREAKER, NEMA 3R.
5. PROVIDE POWER AND CONTROL PANEL, NEMA 3R.
6. PROVIDE TELEMETRY RTU CABINET, REFERENCE THE SPECIFICATIONS.
7. PROVIDE 3KVA, 1ø, 480-120/240V, TRANSFORMER, SQUARE D #3S40F OR EQUAL.
8. PROVIDE LOAD CENTER, 120/240V, 1ø, SQUARE D #NQOD12M100RB OR EQUAL.
9. PROVIDE GENERATOR RECEPTACLE MOUNTED ON BACK OF EQUIPMENT ENCLOSURE. CROUSE-HINDS #AREA204227 WITH 2½" HUB SIZE, BACK BOX, ANGLE ADAPTER, RECEPTACLE HOUSING, SPRING DOOR COVER, AND TYPE AP MATING PLUG.
10. PROVIDE 9'4"Wx5'Hx2'D POWER AND CONTROL EQUIPMENT ENCLOSURE IN ACCORDANCE WITH CITY OF FERNDALE STANDARD DETAIL. MOUNT ENCLOSURE ON I-BEAM SUPPORTS TO GIVE A MINIMUM 12" CLEARANCE ABOVE CONCRETE SLAB.
11. PROVIDE LIGHT FIXTURE, CROUSE-HINDS #VXHF25GP.
12. PROVIDE LIGHT SWITCH.
13. PROVIDE GFI RECEPTACLE, QUADRAPLEX.
14. PROVIDE CLASS 1 DIVISION 1 CONDUIT SEALS, APPLETON #ESU SERIES.
15. 3/4"x8'-0" COPPER CLAD GROUND ROD.
16. LIGHT FIXTURE, CROUSE-HINDS #EVBX210-T3C.
17. PROVIDE 16 GA STEEL BARRIER, ENCLOSURE DEPTH, TO SEPERATE THE RTU FROM OTHER DEVICES.



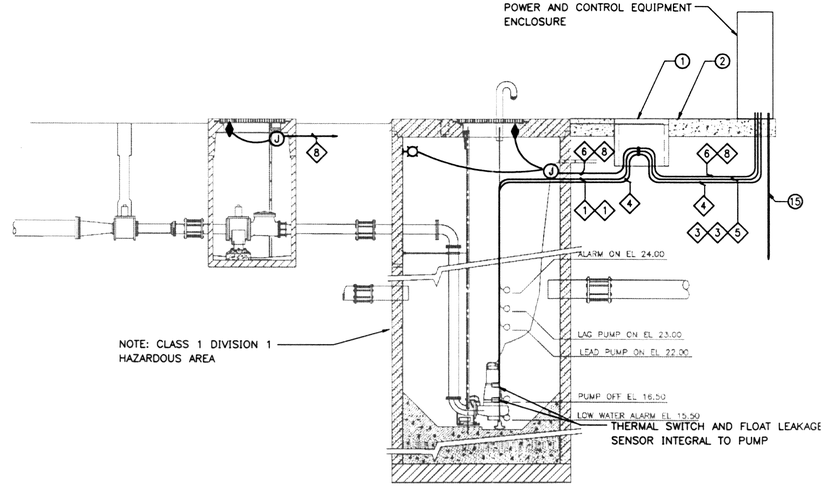
NOTE:
EQUIPMENT ENCLOSURE AND JUNCTION BOX LOCATED TO EAST OF WET WELL. SEE SHEET NO. 13.

LIFT STATION PLAN (2)

1/4" = 1'-0"

SYMBOL LEGEND

- LIGHT
- DUPLEX RECEPTACLE
- GFI RECEPTACLE, DOUBLE DUPLEX
- EXPOSED CONDUIT: UNLESS OTHERWISE INDICATED, SYMBOL DENOTES ½"C-2#12+1#12 GROUND
- CONCEALED CONDUIT: UNLESS OTHERWISE INDICATED, SYMBOL DENOTES ½"C-2#12+1#12 GROUND
- ½"C-3#12+1#12 GROUND
- DOOR POSITION INDICATION SWITCH (DPIS)
- RELAY CONTACT, NORMALLY OPEN
- RELAY CONTACT, NORMALLY CLOSED
- CIRCUIT BREAKER
- TRANSFORMER
- SINGLE POLE SWITCH
- MOTOR OUTLET
- MANUAL MOTOR STARTER
- DISCONNECT SWITCH
- JUNCTION BOX
- METER
- RELAY — RELAY COIL
- "DISTANT" CONNECTION TO FIELD DEVICE OR OTHER SYSTEM
- KEY NOTE
- CONDUIT AND WIRE IDENTIFIER



LIFT STATION SECTION (3)

1/4" = 1'-0"

ROBERT H. WELTY — STATE OF WASHINGTON — 15150 — REGISTERED PROFESSIONAL ENGINEER
4-6-94
EXPIRES 09/01/95

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D,
BELLINGHAM, WA. 98225 671-8200

MW Consulting Engineers
Great Northwest Building, Suite 200
North 222 Wall Street, Spokane, WA 99201-0877
Telephone: 509.838.9020 FAX: 509.838.1123

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

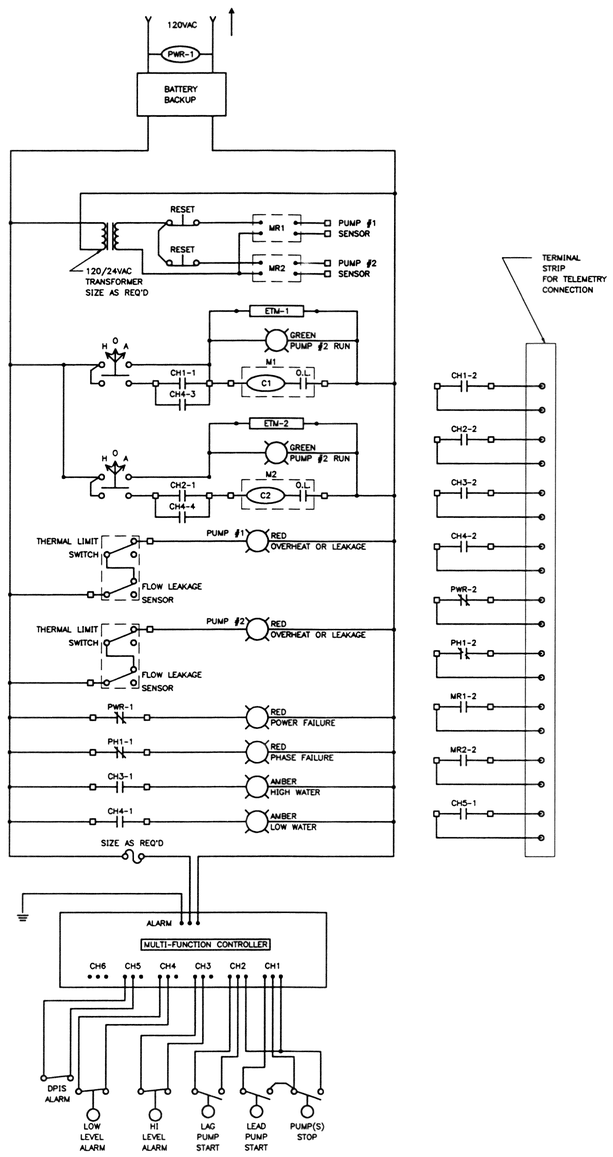
DESIGNED BY: RCP
DRAWN BY: RCP
CHECKED BY: RCP

CITY OF FERNDALE U.L.I.D. NO. 7
SANITARY SEWER EXTENSION
LIFT STATION

DATE 4/06/94
SCALE AS NOTED
REC. NO.
SHEET 17 OF 18

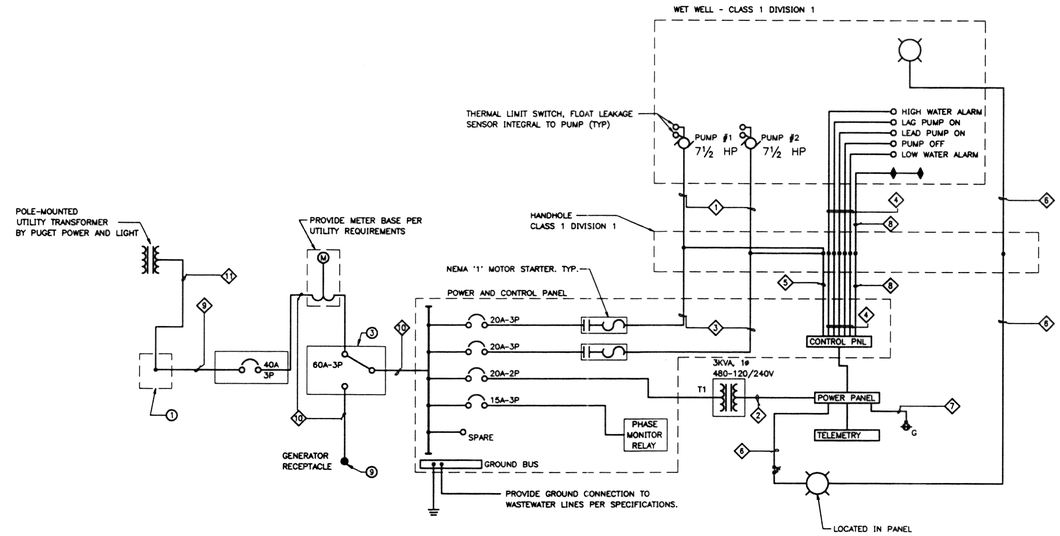
04-05-1994 9:34:32E11 UPDATE-6 REV-0 CLM DREPS: 2-SUMP.X-E11.2-S

2015.017 R 7.06 KR

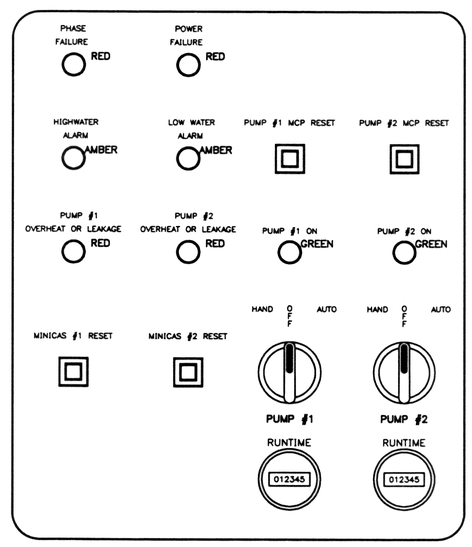


CONTROL LOGIC DIAGRAM (2)

NOT TO SCALE



ONE-LINE DIAGRAM



PUMP CONTROL PANEL (1)

NOT TO SCALE

RACEWAY AND WIRE SCHEDULE

1. 1"C, WIRE BY PUMP MANUFACTURER
2. ½"C - 3#12
3. 1"C - 3#10+1#10 GND
4. 2"C, WIRE BY FLOAT MANUFACTURER
5. ½"C - 4#14
6. ½"C - 2#12
7. ½"C - 3#12+1#12 GND
8. ½"C - 2#14
9. 1"C - 3#8
10. 1"C - 3#8+1#8 GND
11. 2"C - WIRE BY PUGET POWER AND LIGHT

NOTE:
SEE OPERATION AND MAINTENANCE MANUALS FOR APPROVED SHOP DRAWING.

LOAD CALCULATION

	LTG	RECEPT	MOTORS	MISC	LINE TOTAL
PUMP #1			9141		9141
PUMP #2			9141		9141
POWER PANEL	600	180		1000	1780
CONNECTED LOAD					
DEMAND FACTOR	1.25	1.0	1.25	1.0	
DEMAND LOAD	750	180	20567	1000	22477
DEMAND AMPS AT 480V					27.1

ROBERT H. WELT STATE OF WASHINGTON 15150 REGISTERED PROFESSIONAL ENGINEER
4-6-94
EXPIRES 08/01/95

NO.	REVISIONS	BY	DATE

WEDEN ENGINEERING, INC.
119 GRAND AVENUE, SUITE D
BELLINGHAM, WA. 98225 671-8200

MW Consulting Engineers
Great Northwest Building, Suite 200
North 222 Wall Street, Spokane, WA 99201-0677
Telephone: 509.838.9020 FAX: 509.838.1123

ONE INCH AT FULL SCALE
IF NOT ONE INCH SCALE ACCORDINGLY

DESIGNED BY: RCP
DRAWN BY: RCP
CHECKED BY: RCP

CITY OF FERNDALE U.L.I.D. NO. 7
SANITARY SEWER EXTENSION
LIFT STATION

DATE 4/06/94
SCALE NO SCALE
REC. NO.
SHEET 18 OF 18

00105.018 2.7.06 KR

04-05-1994 93432E31 UPDATE-1 REV-0 CLM