





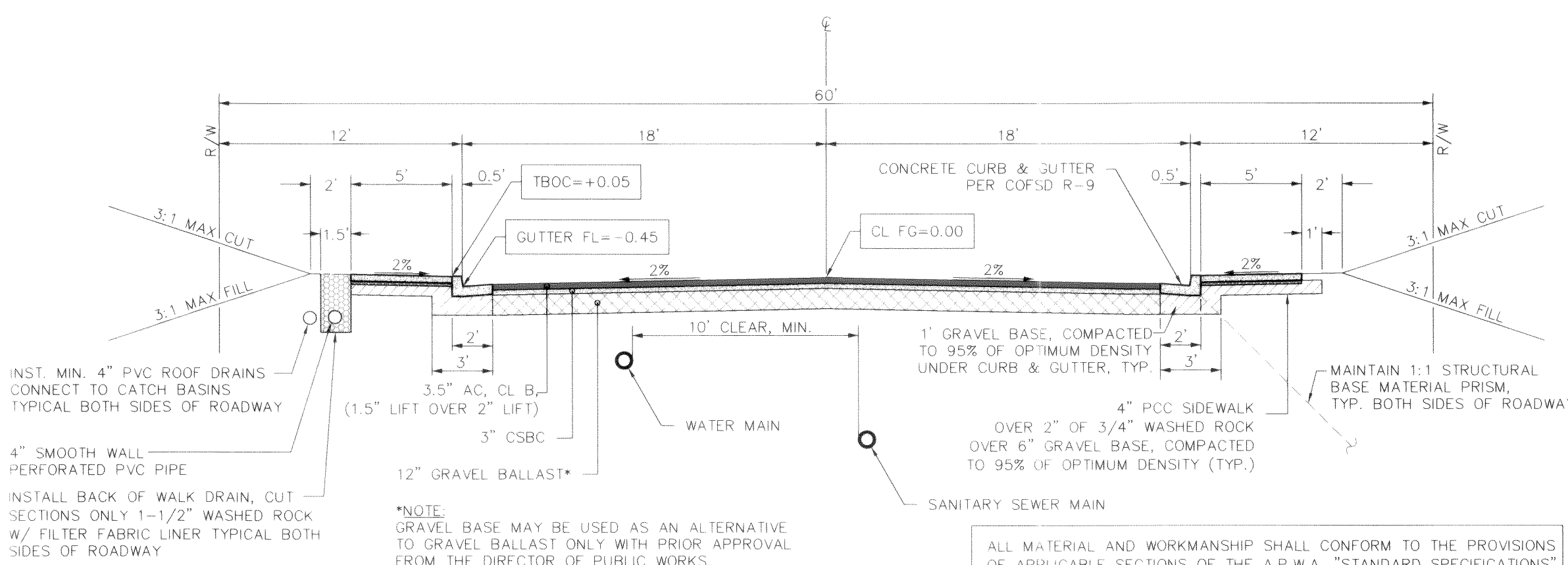
**SITUATE IN THE SOUTH HALF OF THE NORTH HALF OF SEC. 19, TWP. 39 N., RGE. 2 E., W.M.,  
CITY OF FERNDALE, WHATCOM COUNTY, WASHINGTON**

**SURVEY NOTES:**

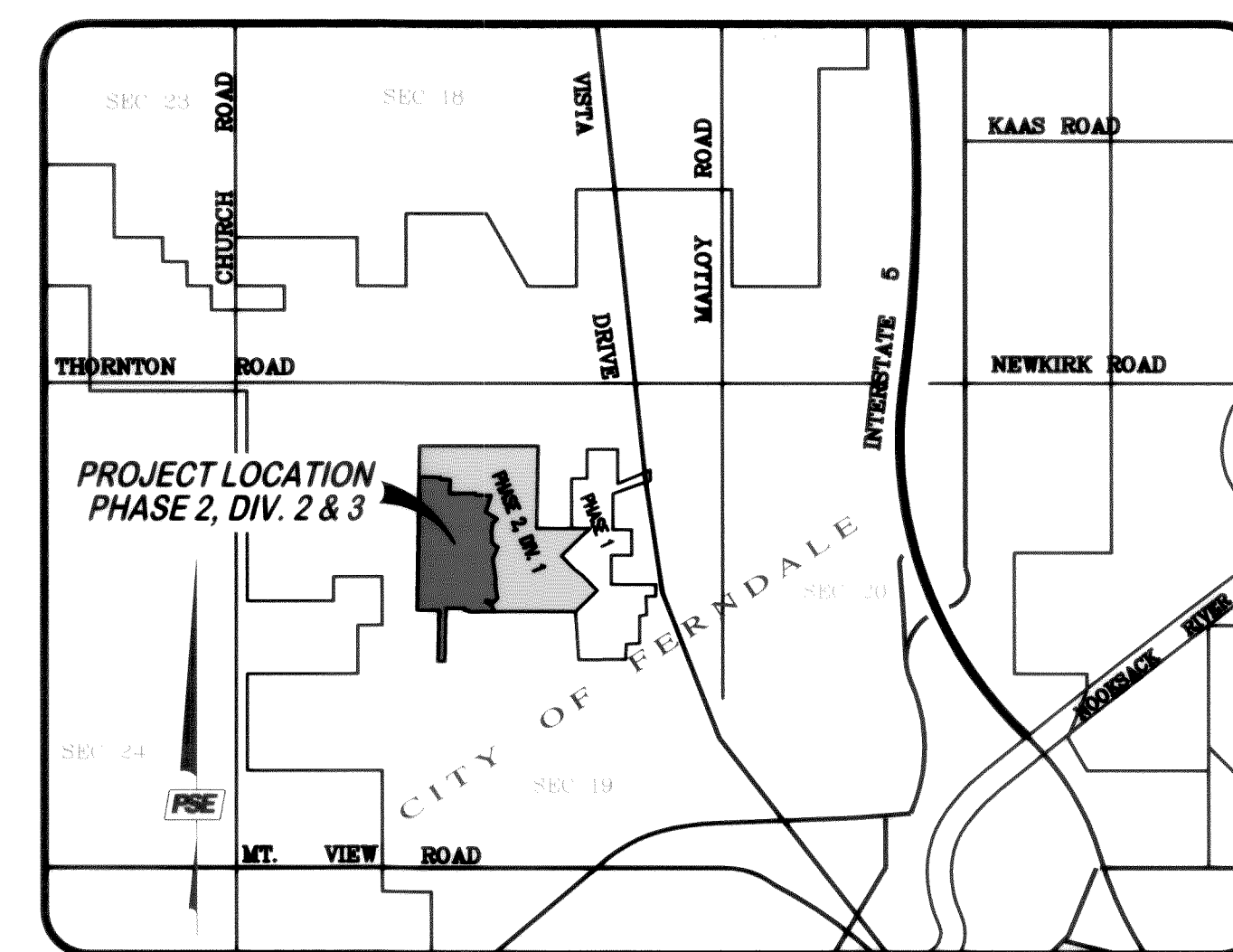
- 1) BOUNDARY & CONTROL BASIS OF BEARING PER THAT RECORD OF SURVEY RECORDED UNDER WHATCOM COUNTY AUDITOR'S FILE # 920093067 AND THAT PLAT OF "AMENDED GARDNER FENCE, PHASE 1" RECORDED UNDER WHATCOM COUNTY AUDITOR'S FILE # 1980802934.
- 2) EXISTING CONTOUR INTERVAL IS 2-FOOT & COMPUTER GENERATED FROM FIELD DATA COLLECTED ELECTRONICALLY FROM ROBOTIC TOTAL STATION EQUIPMENT.
- 3) VERTICAL DATUM: NAVD 1989.  
BENCH MARK= USGS 16-228, ELEV.=34.96'

### ROAD INTERSECTION EQUATIONS

STA 14+52.79 SHANNON AVE. = STA 5+04.26 ARTIST DRIVE  
STA 18+22.08 ARTIST DR. (NEW) = STA 8+22.08 ARTIST DR. (EX.)  
STA 18+31.25 SHANNON AVE. = STA 33+00 HEATHER WAY  
STA 16+05.94 SHANNON AVE. = STA 40+00 KENNETH COURT  
STA 13+02.75 SHANNON AVE. = STA 35+00 JOSEPH PLACE

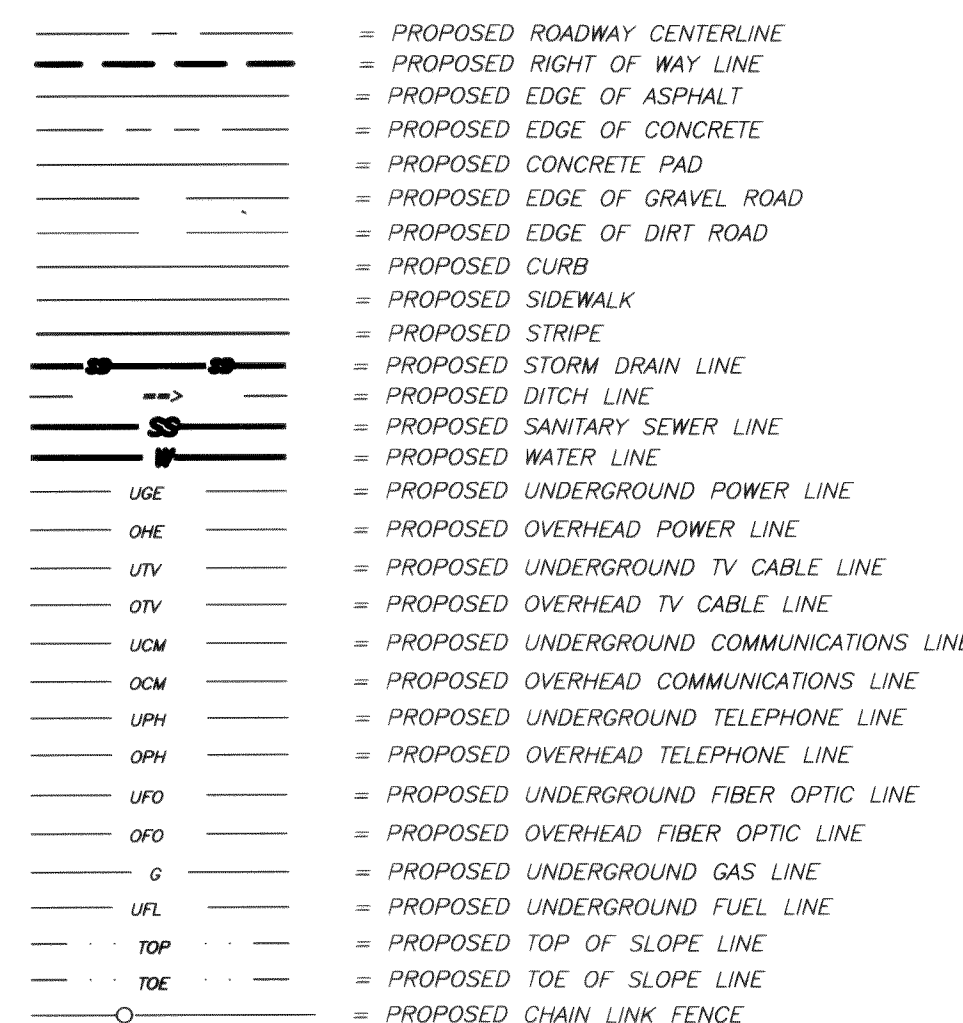


TYPICAL SECTION - ALL STREETS  
NOT TO SCALE

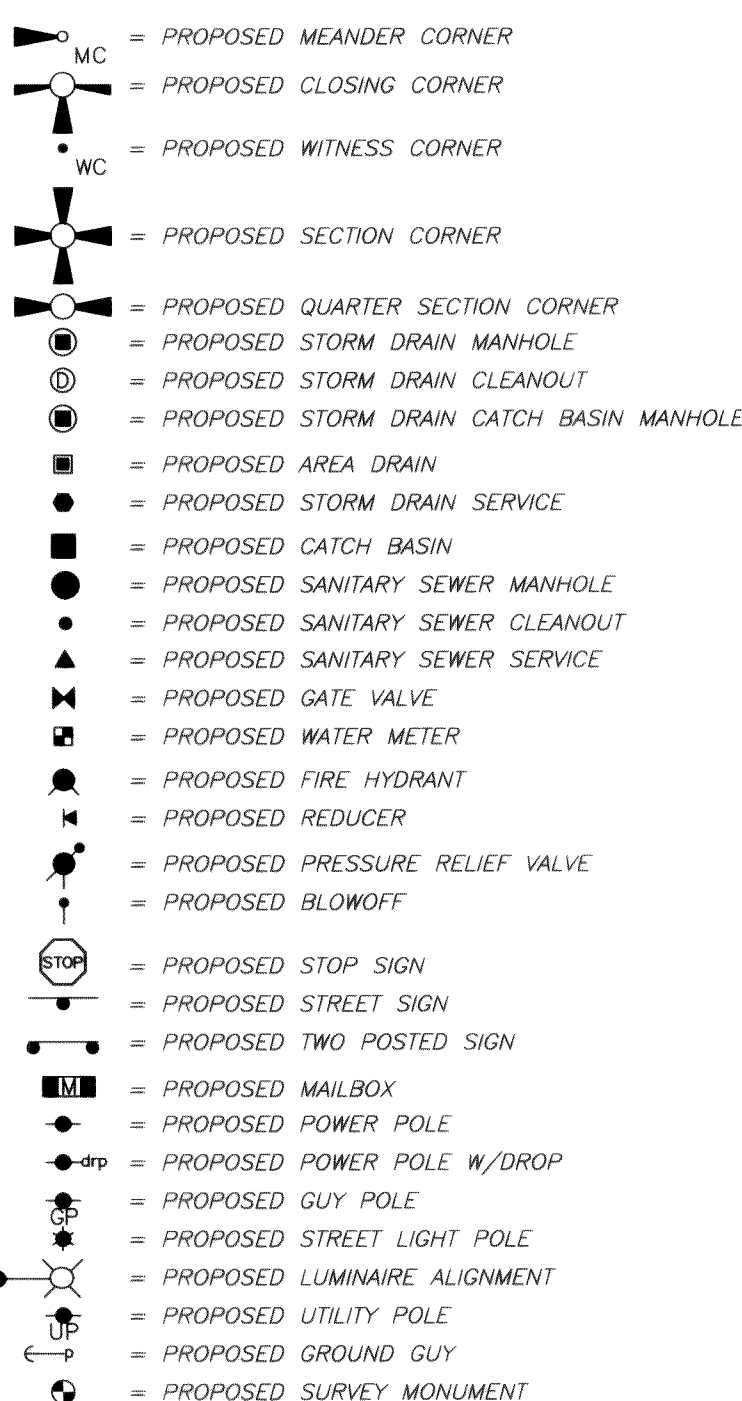


VICINITY MAP  
Not To Scale

**PROPOSED LINE LEGEND**



### PROPOSED SYMBOL LEGEND



## ABBREVIATIONS

B/C	BACK OF CURB
B/W	BOTTOM OF WALL
BCR	BEGIN CURB RETURN
BOW	BACK OF SIDEWALK
BVC	BEGIN VERTICAL CURVE
C&G	CURB AND GUTTER
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
COFSD	CITY OF FERNDALE STANDARD DRAWING
CPP	CORRUGATED POLYETHYLENE PIPE
CR	CURB DELTA
ECR	END CURB RETURN
EG	EXISTING GRADE
EP	EDGE OF PAVEMENT
EVC	END VERTICAL CURVE
EXST	EXISTING
F&G	FRAME AND GRATE
F.HYD.	FIRE HYDRANT
FC	FACE OF CURB
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOWLINE
FS	FINISH SURFACE
IE	INVERT ELEVATION
INV.	INVERT
L	CURB LENGTH
LT	LEFT
PC	POINT OF CURVATURE=BEGIN CURVE
PCC	POINT OF COMPOUND CURVATURE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY = END CURVE
PVI	POINT OF VERTICAL INTERSECTION
R	CURB RADIUS
R/W	RIGHT OF WAY
RT	RIGHT
SD	STORM DRAIN
SDOB	STORM DRAIN CATCH BASIN
SDMH	STORM DRAIN MANHOLE
SERV	SERVICE
SSCO	SANITARY SEWER CLEAN-OUT
SDMH	SANITARY SEWER MANHOLE
SWD	SIDEWALK DRAIN PER COFSD ST-15
SWK	SIDEWALK
T/W	TOP OF WALL
TBOC	TOP BACK OF CURB
T/C	TOP OF CURB
TF	TOP OF FOOTING
TP	TOP OF PIPE
TYP.	TYPICAL

## SHEET INDEX

- 1 COVER SHEET  
2 SHEET INDEX MAP  
3 EXISTING CONDITIONS MAP  
4 PROJECT OVERVIEW MAP

**ROADWAY & STORM DRAINAGE:**

- 5 SHANNON AVENUE ~ STATIONS 4+48 to 9+00  
6 SHANNON AVENUE ~ STATIONS 9+00 to 14+00  
7 SHANNON AVENUE ~ STATIONS 14+00 to 19+50  
8 HEATHER WAY  
9 KENNETH COURT  
10 JOSEPH PLACE

**WATER & SANITARY SEWER:**

- |    |                |            |                |
|----|----------------|------------|----------------|
| 11 | SHANNON AVENUE | ~ STATIONS | 4+48 to 9+00   |
| 12 | SHANNON AVENUE | ~ STATIONS | 9+00 to 14+00  |
| 13 | SHANNON AVENUE | ~ STATIONS | 14+00 to 19+50 |
| 14 | HEATHER WAY    |            |                |
| 15 | KENNETH COURT  |            |                |
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- 17 STORMWATER MANAGEMENT FACILITY "A" PLAN  
18 STORMWATER MANAGEMENT FACILITY "B" PLAN  
19 STORMWATER MANAGEMENT FACILITY & STORM DRAINAGE DETAILS  
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21 EROSION CONTROL NOTES & DETAILS  
22 ROADWAY DETAILS  
23 WATER & SANITARY SEWER DETAILS  
24 GENERAL CONSTRUCTION NOTES
- APPROVED

**APPROVED**

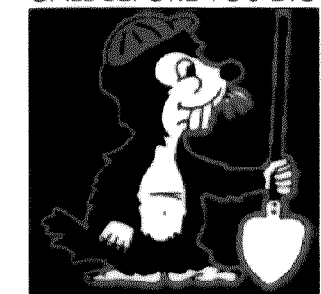
JUN 24 2005

BY KC  
CITY OF FERNDALE

AS BUILT NOTE: ONLY INFORMATION NOTED AS "[AB]" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: N/A					1	ISSUED FOR CITY 1st REVIEW June 4, 2004
STAKING:		HYDRANT AT NW CORNER		DESIGN:	BM/SW	JVY	VERT: N/A					2	ISSUED FOR CITY 2nd REVIEW July 6, 2004
ASBUILT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL July 21, 2004
		NAVD 1929. BENCH MARK=USGS L6=26B, ELEV.=34.96'		DWG:	Div2+3_CND_AsBuilt.dwg							4	AS BUILT June 16, 2004
SURVEY REFERENCE		VERTICAL DATUM								REVISIONS			ISSUE

CALL BEFORE YOU DIG



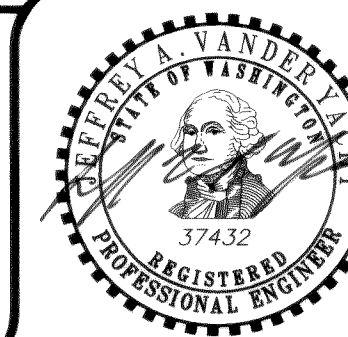
KRAMER CONSTRUCTION CO.  
1442 SUNSET AVENUE  
FERNDALE, WA 98248

**GARDINER TERRACE PLAT**  
PHASE 2, DIVISIONS 2 & 3. ROADWAY & UTILITY IMPROVEMENT PLANS

COVER SHEET

*AS BUILT*

SHEET 1 OF 24



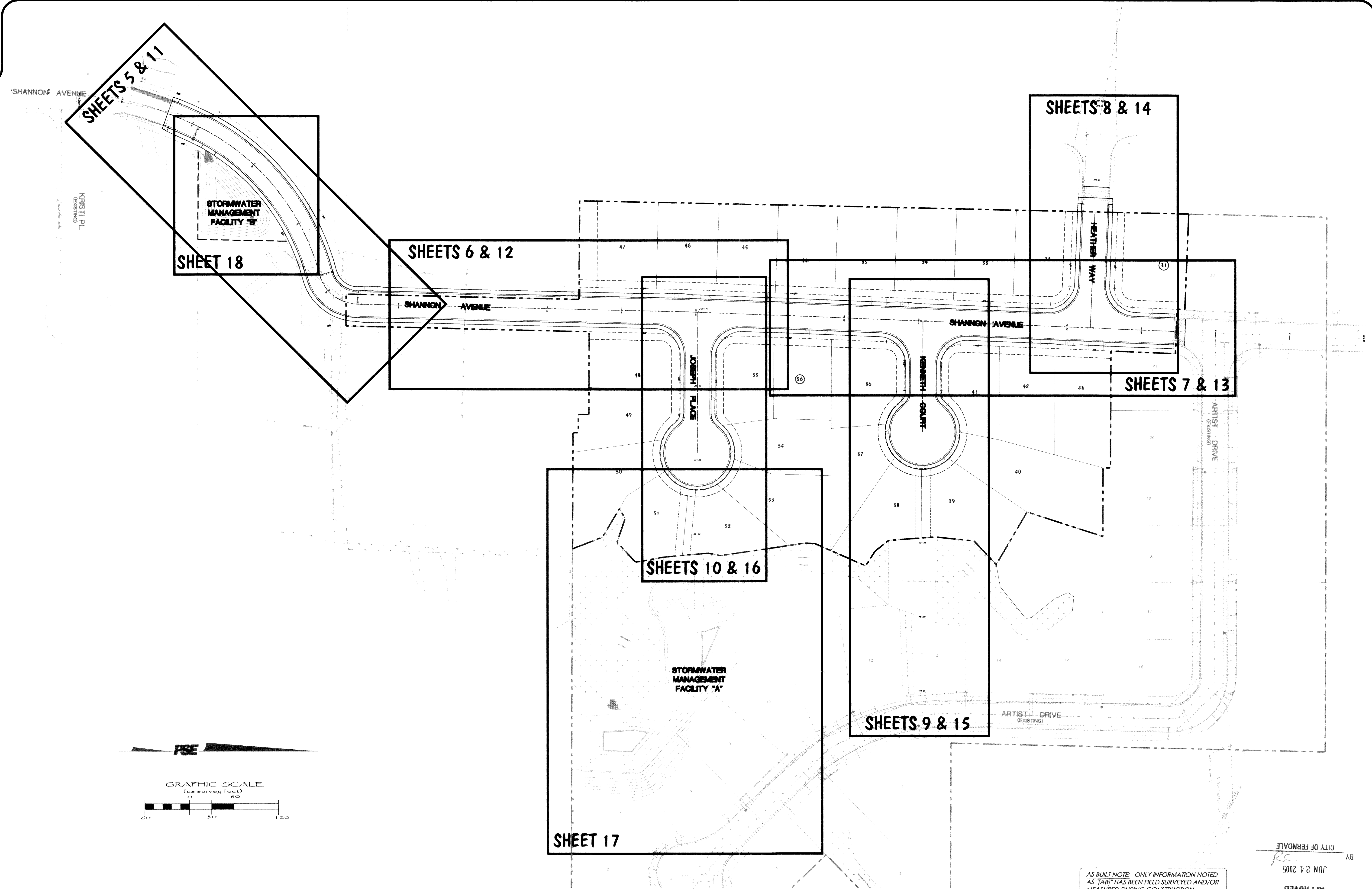
EXPIRES: 10/10/0

JOB #: 2003103





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www.psesurvey.com  
EMAIL: pse@psurvey.com



FIELD BOOKS	TBM NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:	DM/DW	JVY	HORIZ: 1" = 60'					1	ISSUED FOR CITY 1st REVIEW June 4, 2004
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SURVEY REFERENCE		VERTICAL DATUM								REVISIONS			ISSUE

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GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

SHEET INDEX MAP

AS BUILT

SHEET 2 OF 24

JOB #: 2003103

APPROVED  
JUN 24 2005  
BY  
CITY OF FERNDAL

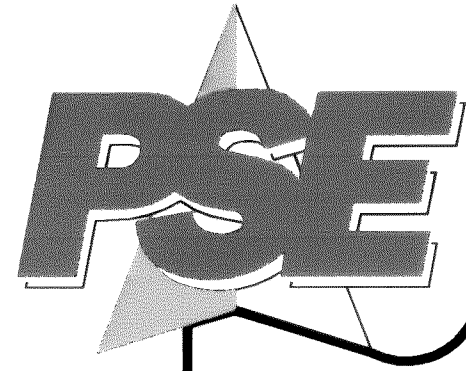
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EXPIRES: 10/10/08

16-05

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SHANNON AVENUE  
(EXISTING)

KRISTI PL.  
(EXISTING)

PROPOSED OFF-SITE  
IMPROVEMENTS

PROJECT  
BOUNDARY

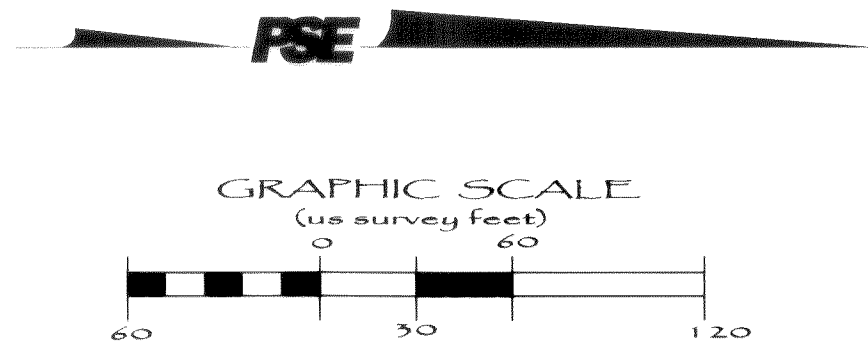
PHASE 2, DIVISION 3

PHASE 2, DIVISION 2

PHASE 2, DIVISION 1  
(COMPLETED)

ARTIST DRIVE  
(EXISTING)

ARTIST DRIVE  
(EXISTING)



EXISTING FEATURE SYMBOL LEGEND

- EXISTING MONUMENT
- EXISTING REBAR AND CAP PLS #11693
- EXISTING REBAR, NO CAP
- EXISTING REBAR AND CAP PLS #18074
- EXISTING HUB AND TACK
- EXISTING LEAD AND TACK
- EXISTING P.K. NAIL
- EXISTING SPIKE
- EXISTING FLASHER
- EXISTING CHISELED "X"
- EXISTING PANEL POINT
- EXISTING/SET TEMPORARY BENCHMARK/BENCHMARK
- EXISTING IRON PIPE NO. 10
- EXISTING TRAVERSE PT./WORK PT.
- DELTA SYMBOL
- EXISTING MEANDER CORNER
- EXISTING OWNERSHIP TIE
- EXISTING CLOSING CORNER
- CENTER OF SECTION
- EXISTING WITNESS CORNER
- EXISTING SECTION CORNER
- EXISTING QUARTER SECTION CORNER
- TAX LOT/ PARCEL NUMBER
- EXISTING STORM DRAIN MANHOLE
- EXISTING STORM DRAIN CLEANOUT
- EXISTING STORM DRAIN CATCH BASIN MANHOLE
- EXISTING C/L CATCH BASIN AT TOP BACK OF CURB
- EXISTING AREA DRAIN
- EXISTING DRY WELL
- EXISTING STORM DRAIN SERVICE
- EXISTING CATCH BASIN
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER CLEANOUT
- EXISTING SANITARY SEWER SERVICE
- EXISTING GATE VALVE
- EXISTING WATER METER
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING REDUCER
- EXISTING SPRINKLER
- EXISTING PRESSURE RELIEF VALVE
- EXISTING BLOWOFF
- EXISTING DOUBLE DETECTION VALVE
- EXISTING HOSE BIB
- EXISTING WATER MANHOLE
- EXISTING FIRE STANDPIPE
- EXISTING IRRIGATION BOX
- EXISTING BOLLARD
- EXISTING SINGLE HEAD PARKING METER
- EXISTING DOUBLE HEAD PARKING METER
- EXISTING STOP SIGN
- EXISTING STREET SIGN
- EXISTING TWO POSTED SIGN
- EXISTING MAILBOX
- EXISTING NEWSPAPER BOX
- EXISTING PIEZOMETER
- EXISTING TEST BORE
- EXISTING TEST PIT
- EXISTING TEST HOLE
- EXISTING SIGNAL BASE
- EXISTING POWER POLE
- EXISTING POWER POLE W/DROP
- EXISTING GUY POLE
- EXISTING STREET LIGHT POLE
- EXISTING LUMINAIRE ALIGNMENT
- EXISTING UTILITY POLE
- EXISTING GROUND GUY
- EXISTING DROP FROM POLE
- EXISTING ELECTRIC HANDHOLD
- EXISTING ELECTRICAL VAULT/MANHOLE
- EXISTING ELECTRICAL PEDESTAL/RISER
- EXISTING ELECTRIC METER/SWITCH
- EXISTING CABLE PEDESTAL/RISER
- EXISTING TELEPHONE PEDESTAL/RISER
- EXISTING TELEPHONE HANDHOLD
- EXISTING TELEPHONE VAULT/MANHOLE
- EXISTING COMMUNICATIONS PEDESTAL/RISER
- EXISTING UTILITY VAULT
- EXISTING GAS METER
- EXISTING NATURAL GAS VALVE
- EXISTING YARD LIGHT
- EXISTING PINE/SPRUCE TREE
- EXISTING FIR TREE
- EXISTING LANDSCAPE TREE/UNKNOWN SPECIES TREE
- EXISTING FRUIT TREE
- EXISTING CEDAR TREE
- EXISTING HEMLOCK TREE
- EXISTING BUSH
- EXISTING SHRUB
- EXISTING STUMP
- DIAMETER OF EXISTING TREE
- SPOT ELEVATION ON EXISTING GROUND

EXISTING LINE LEGEND

- EXISTING ROADWAY CENTERLINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EDGE OF ASPHALT
- EXISTING EDGE OF CONCRETE
- EXISTING CONCRETE PAD
- EXISTING EDGE OF GRAVEL ROAD
- EXISTING EDGE OF DIRT ROAD
- EXISTING CURB
- EXISTING SIDEWALK
- EXISTING STRIPE (1 YELLOW)
- EXISTING STRIPE (2 YELLOW)
- EXISTING BUTTON STRIPE
- EXISTING WHITE STRIPE
- EXISTING STORM CULVERT
- EXISTING STORM DRAIN LINE
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC LINES
- EXISTING UNDERGROUND POWER
- EXISTING UNDERGROUND TV CABLE LINE
- EXISTING OVERHEAD TV CABLE LINE
- EXISTING UNDERGROUND COMMUNICATIONS LINE
- EXISTING OVERHEAD COMMUNICATIONS LINE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING OVERHEAD TELEPHONE LINE
- EXISTING UNDERGROUND TRAFFIC SIGNAL LINE
- EXISTING UNDERGROUND FIBER OPTIC LINE
- EXISTING OVERHEAD FIBER OPTIC LINE
- EXISTING UNDERGROUND GAS LINE
- EXISTING UNDERGROUND FUEL LINE
- EXISTING TOP OF SLOPE LINE
- EXISTING TOE OF SLOPE LINE
- EXISTING FLOW LINE
- EXISTING EDGE OF TREES & BRUSH
- EXISTING EDGE OF LANDSCAPED AREA
- EXISTING CHAINLINK FENCE
- EXISTING BARBED WIRE FENCE
- EXISTING WOOD FENCE
- EXISTING ROCK FENCE
- EXISTING CONCRETE FENCE

APPROVED

JUN 24 2005

BY CITY OF FERDALE

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1442 SUNSET AVENUE  
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GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

EXISTING CONDITIONS MAP

AS BUILT

SHEET 3 OF 24

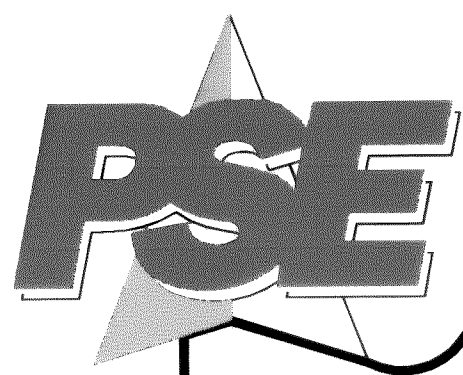


JOB #: 2003103

EXPIRES: 10/10/05

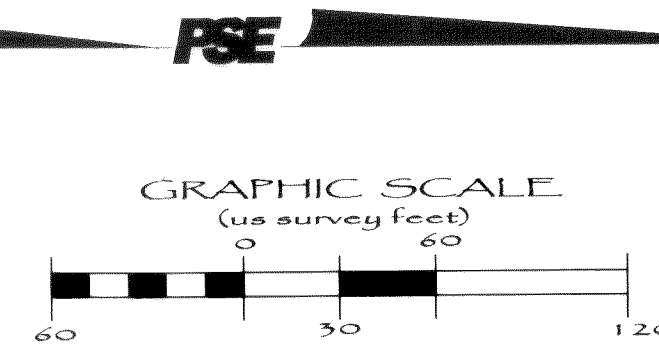
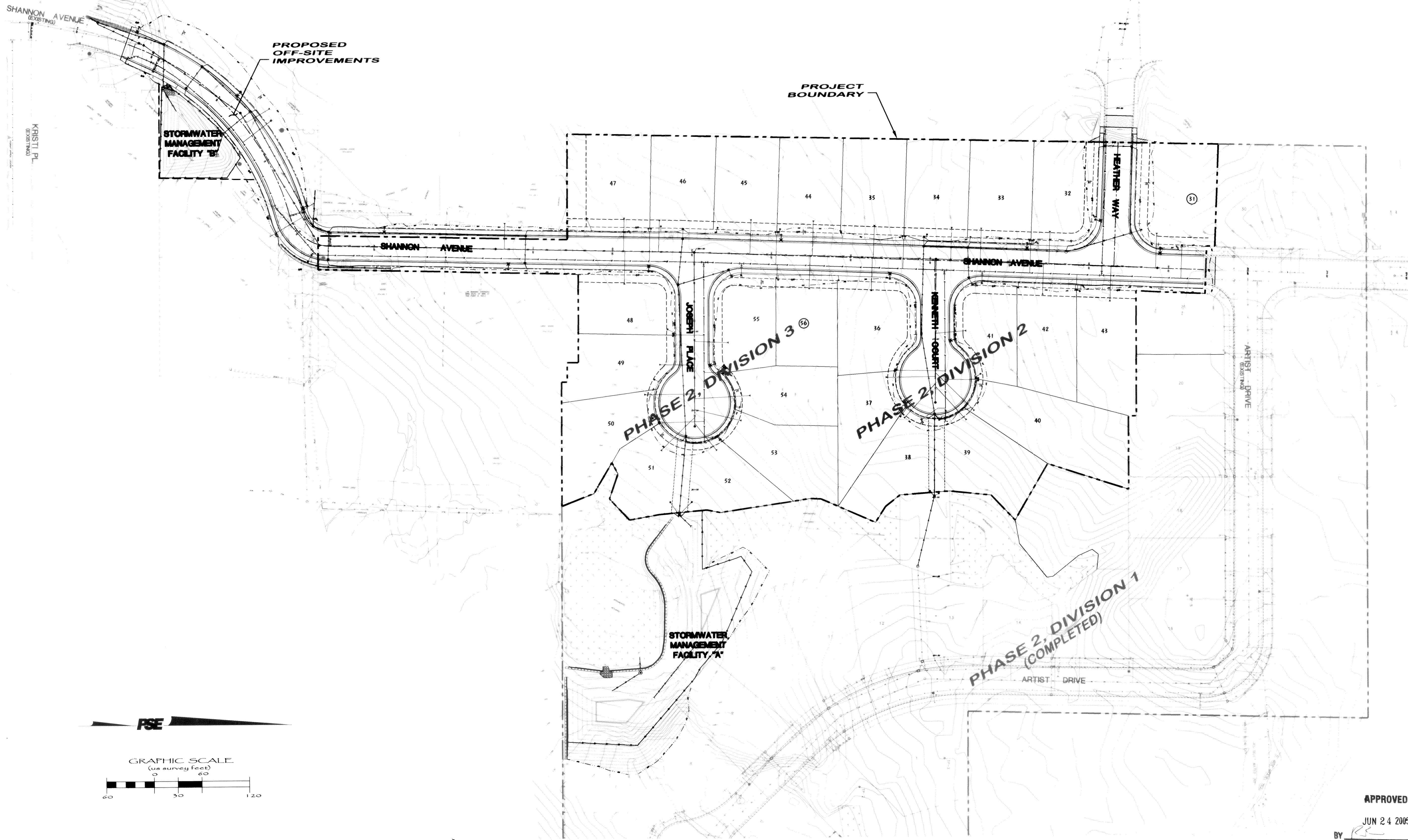
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		NAVD 1929, BENCH MARK=USGS L6=26B, ELEV=34.96'		DWG:	Div2+3_engbase_AsBuilt.dwg							4	AS BUILT
SURVEY REFERENCE		VERTICAL DATUM						REVISIONS					ISSUE





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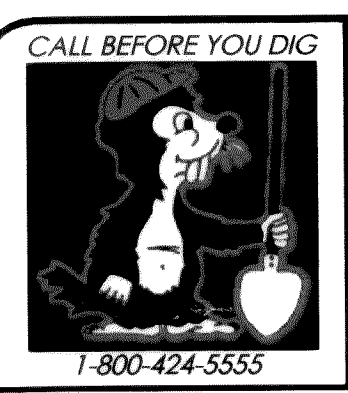
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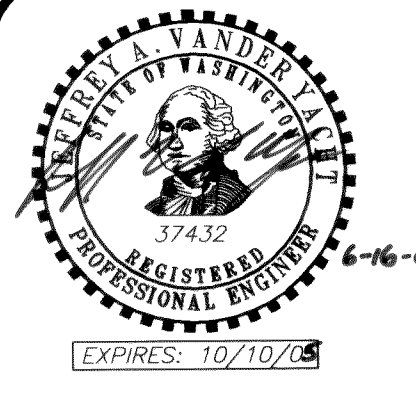
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BY [Signature]  
CITY OF FERNDALE

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	NAVD 1929	BENCH MARK=USGS L6=268, ELEV.=34.96'		DWG:	Div2+3_engbase_AsBuilt.dwg								4	AS BUILT June 16, 2005
SURVEY REFERENCE		VERTICAL DATUM		REVISIONS								ISSUE		



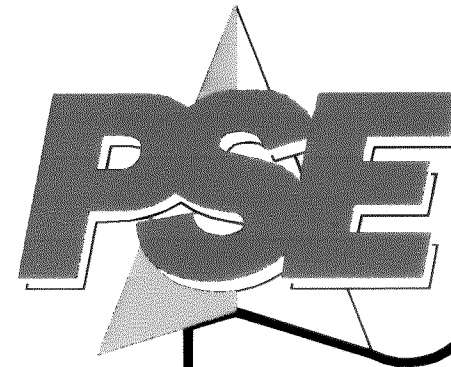
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GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS  
PROJECT OVERVIEW MAP  
AS BUILT SHEET 4 OF 24  
JOB #: 2003103



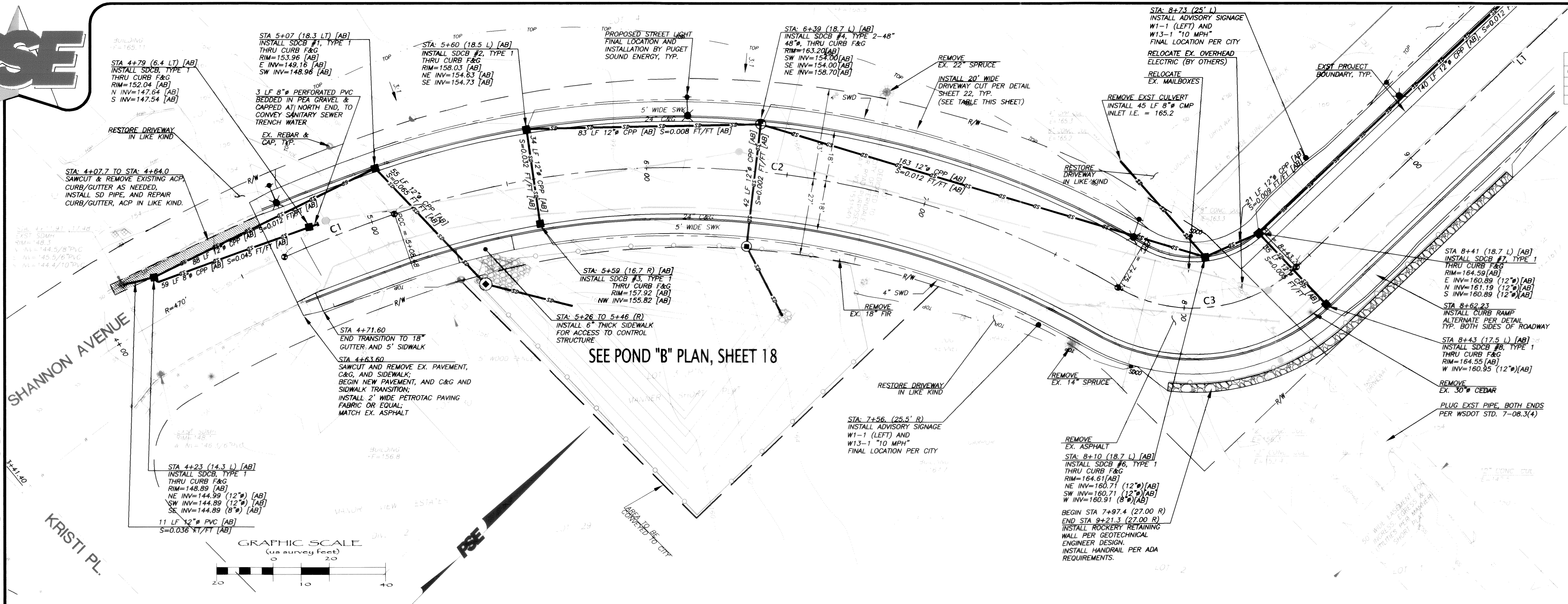
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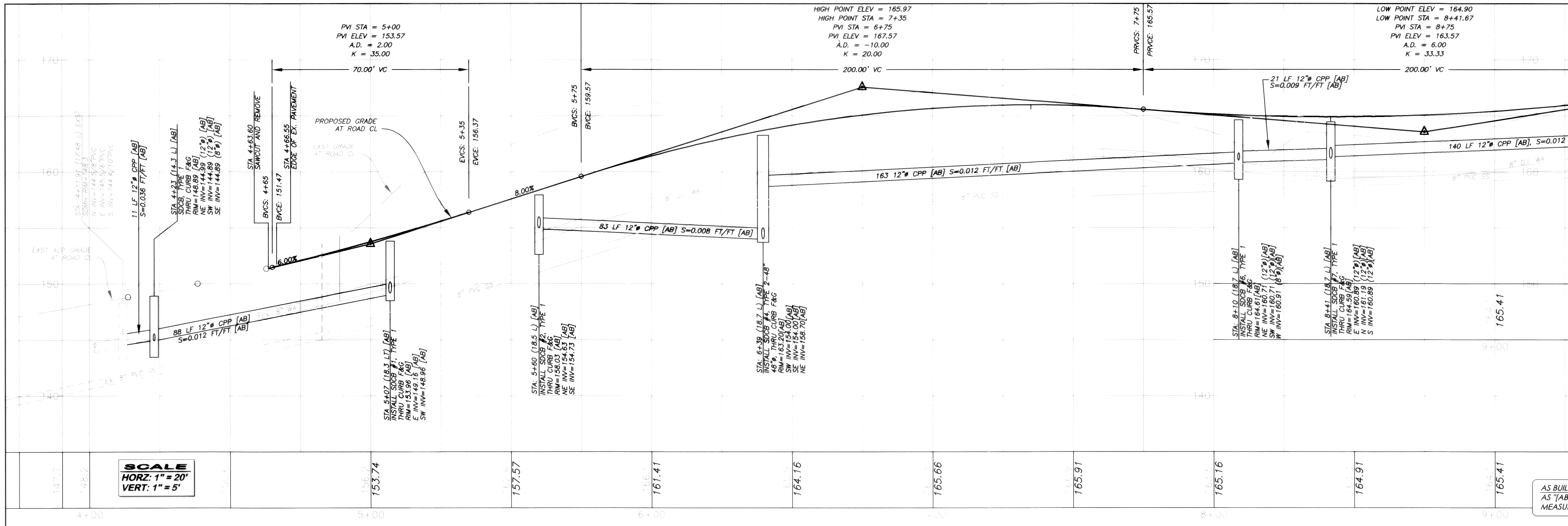


CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	DESCRIPTION
C1	50°42'	470.00	41.93	SHANNON AVE. @ CL
C2	49°18'49"	310.00	266.63	SHANNON AVE. @ CL
C3	74°10'45"	53.00	68.62	SHANNON AVE. @ CL

LINE DATA			
LINE	LENGTH	BEARING	DESCRIPTION
L1	444.00	N01°17'54"E	SHANNON AVE. @ CL

DRIVEWAY CENTERLINE TABLE			
LOT NO.	STATION & OFFSET	FACE OF CURB	
EXST LOT	7+65.67 18.00 L	SHANNON AVE.	
EXST LOT	7+36.53 18.00 R	SHANNON AVE.	
EXST LOT	6+90.67 18.00 L	SHANNON AVE.	

**RETENTION WALL NOTE:**  
CONTRACTOR SHALL CONTACT WESTERN GEOTECHNICAL CONSULTANTS, INC. AT (360)380-2507, PRIOR TO UNDERTAKING ANY RETAINING WALL CONSTRUCTION. SAID GEOTECHNICAL ENGINEER SHALL REVIEW CONSTRUCTION OF ALL RETAINING WALLS SPECIFIED ON THE PLANS.



**SCALE**  
HORIZ: 1" = 20'  
VERT: 1" = 5'

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE	
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SURVEY REFERENCE										REVISIONS		ISSUE		
VERTICAL DATUM														

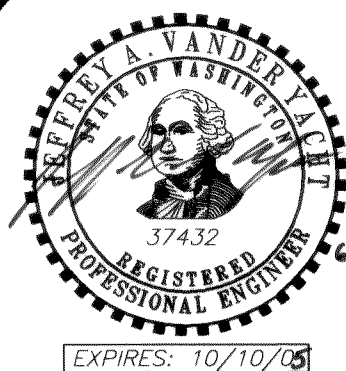
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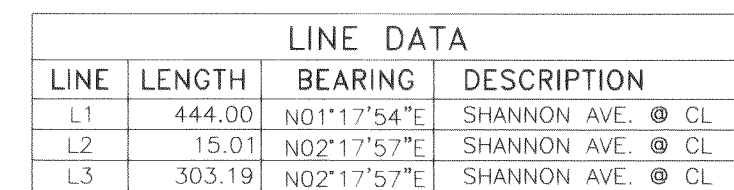
SHANNON AVENUE  
STATIONS 4+48 TO 9+00  
ROADWAY & STORM DRAINAGE IMPROVEMENTS  
**AS BUILT** SHEET 5 OF 24



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JUN 24 2005  
BY  
CITY OF FERNDALE

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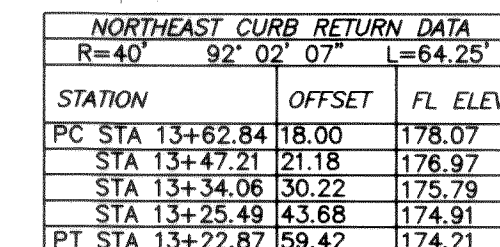




LOT NO.	STATION & OFFSET	FACE OF CURB
45	13+85.82	18.00 L SHANNON AVE.
46	13+05.82	18.00 L SHANNON AVE.
47	12+26.34	18.00 L SHANNON AVE.
EASEMENT	11+54.34	18.00 L SHANNON AVE.
EXST LOT	11+22.34	18.00 L SHANNON AVE.

LOT NO.	STATION & OFFSET	SERVICE TYPE
45	13+31 32 L [AB]	4"Ø OFF 6" PVC
46	12+60 32 L [AB]	4"Ø OFF 6" PVC
47	11+67 40 L [AB]	4"Ø SINGLE

STORM STUB NOTE:  
ALL STORM STUB INVERT ELEVATIONS SHALL BE  
CONSTRUCTED TO FACILITATE POSITIVE FLOW TO  
CATCH BASIN.



**APPROVED**

BY RC JUN 24 200  
CITY OF FERND

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MEASURED DURING CONSTRUCTION.

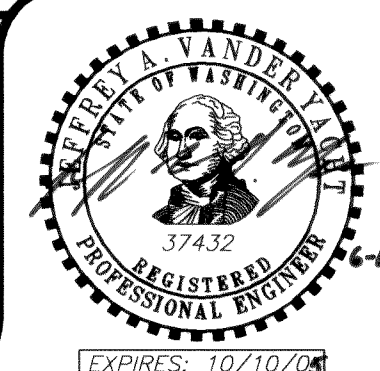
FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW June 4, 2000
STAKING:		HYDRANT AT NW CORNER		DESIGN:	BM/DW	JVY	VERT: 1" = 5'					2	ISSUED FOR CITY 2nd REVIEW July 6, 2000
ASBLT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL July 21, 2000
				DWG:	Div2+3_engbase_AsBuilt.dwg							4	AS BUILT June 16, 2000
SURVEY REFERENCE		VERTICAL DATUM								REVISIONS			ISSUE



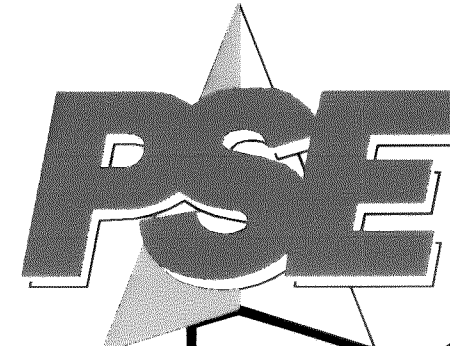
KRAMER CONSTRUCTION CO.  
1442 SUNSET AVENUE  
FERNDALE, WA 98248

**GARDINER TERRACE PLAT**  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

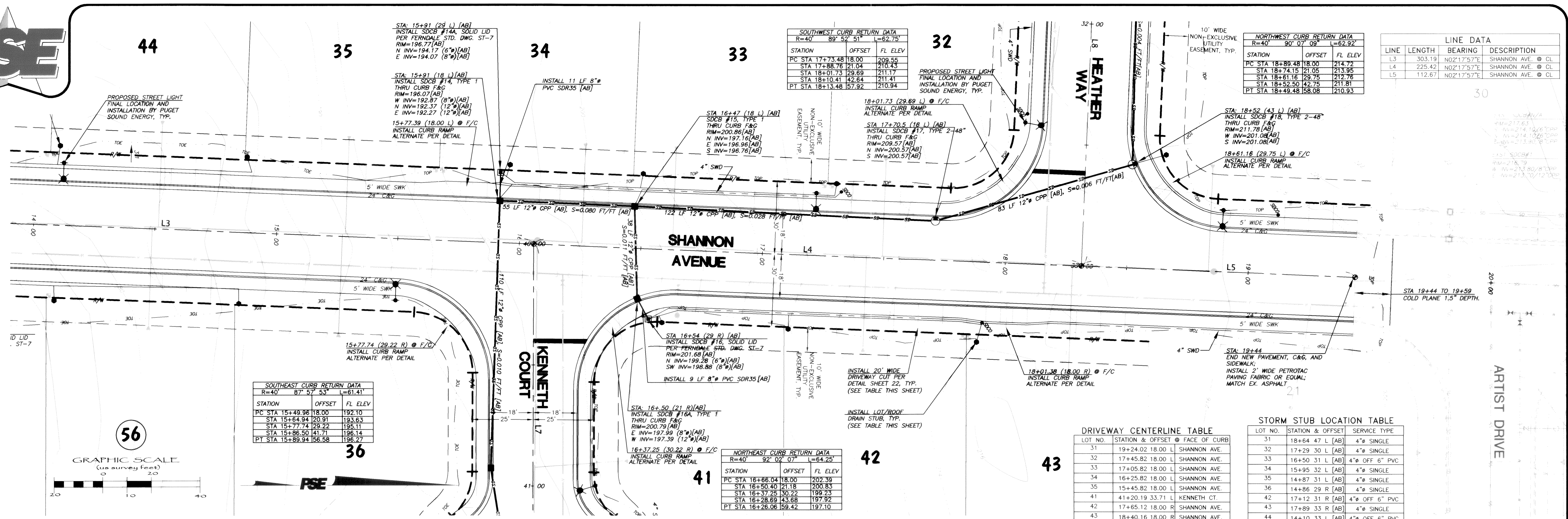
SHANNON AVENUE  
STATIONS 9+00 to 14+00  
ROADWAY & STORM DRAINAGE IMPROVEMENTS  
**AS BUILT**  
# 2003103 SHEET 6 OF 24







PACIFIC SURVEY & ENGINEERING INC  
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685  
www.psesurvey.com  
EMAIL: pse@psurvey.com





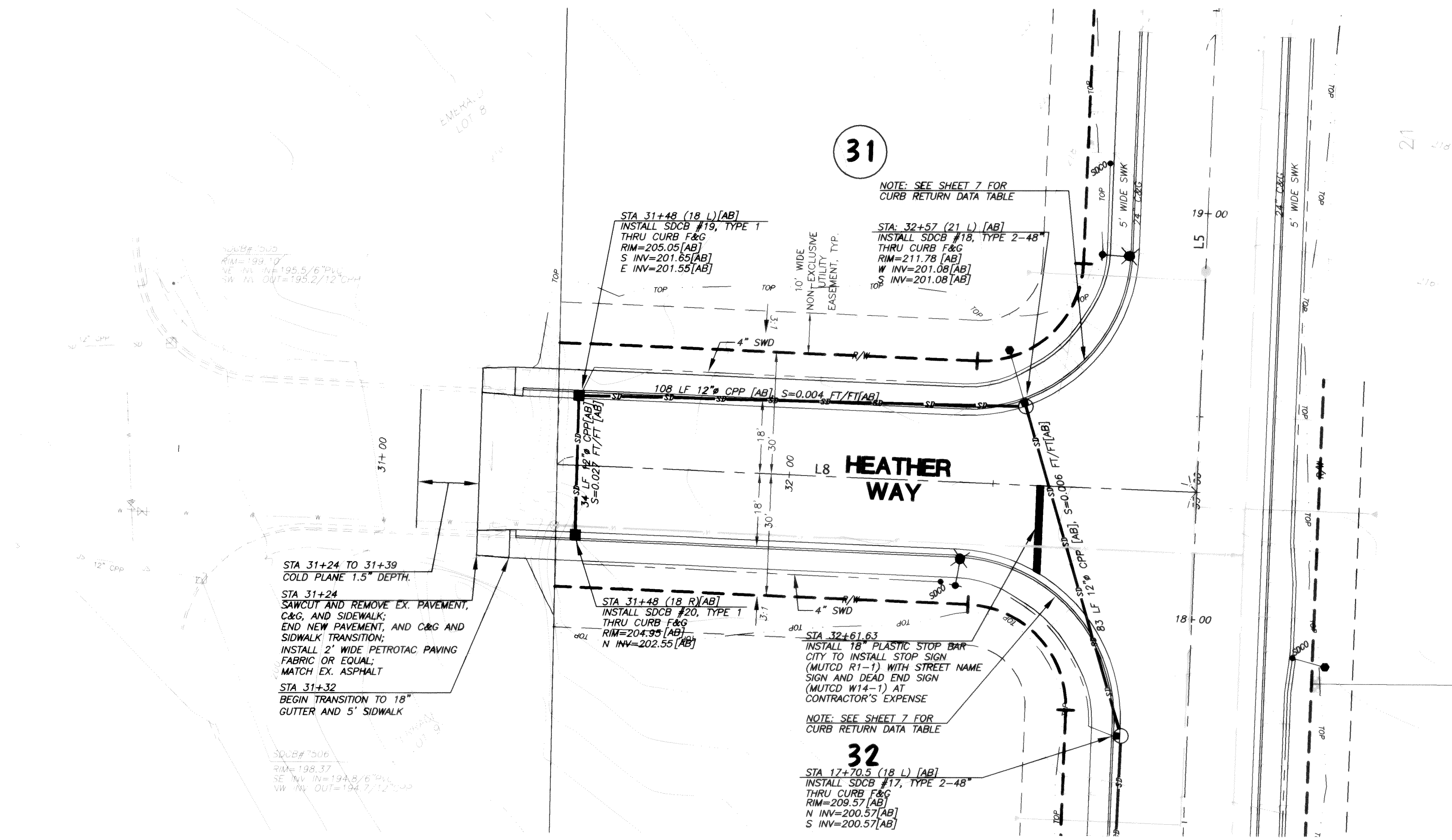


www.psesurvey.com  
EMAIL: pse@psurvey.com

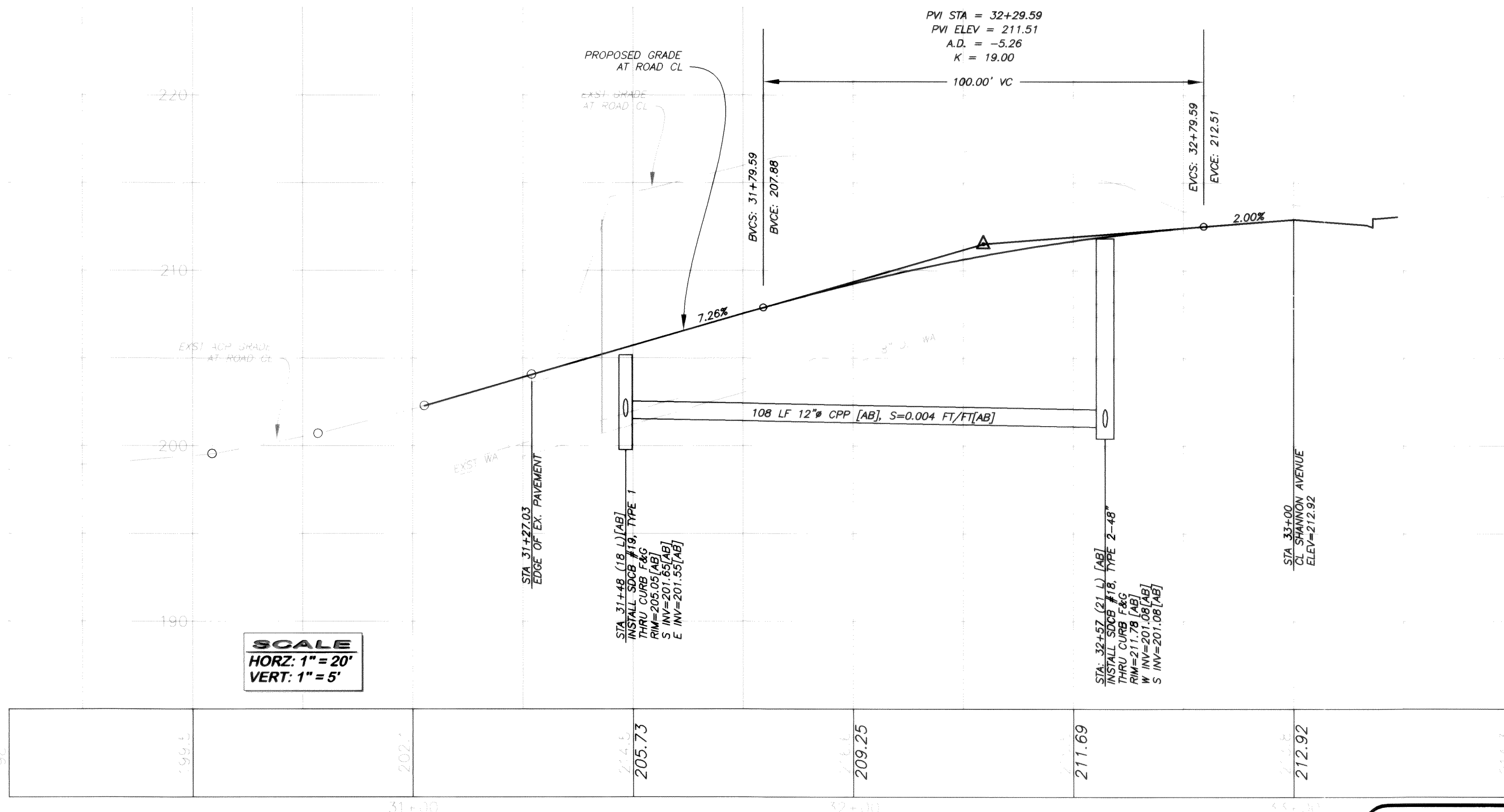
PACIFIC SURVEY & ENGINEERING INC

1812 CORNWALL, BELLINGHAM, WA 98225  
PHONE: 671.7387 FAX: 671.4685

PACIFIC SURVEY & ENGINEERING INC  
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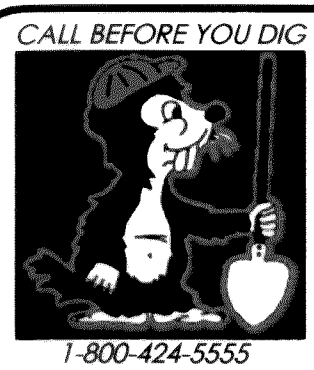


LINE DATA			
LINE	LENGTH	BEARING	DESCRIPTION
L8	156.99'	S87°34'54"E	HEATHER WAY @ CL



SCALE  
HORIZ: 1" = 20'  
VERT: 1" = 5'

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE	
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW	June 4, 2004
STAKING:		HYDRANT AT NW CORNER		DESIGN:	BM/BW	JVY	VERT: 1" = 5'					2	ISSUED FOR CITY 2nd REVIEW	July 6, 2004
ASBUILT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL	July 21, 2004
		NAVD 1929 BENCH MARK=USGS L6=26B, ELEV=34.96'		DWG:	Div2+3_engbase_AsBuilt.dwg							4	AS BUILT	June 16, 2005
SURVEY REFERENCE		VERTICAL DATUM						REVISIONS				ISSUE		



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1442 SUNSET AVENUE  
FERNDAL, WA 98248

GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS  
**HEATHER WAY**  
ROADWAY & STORM DRAINAGE IMPROVEMENTS  
**AS BUILT** SHEET 8 OF 24

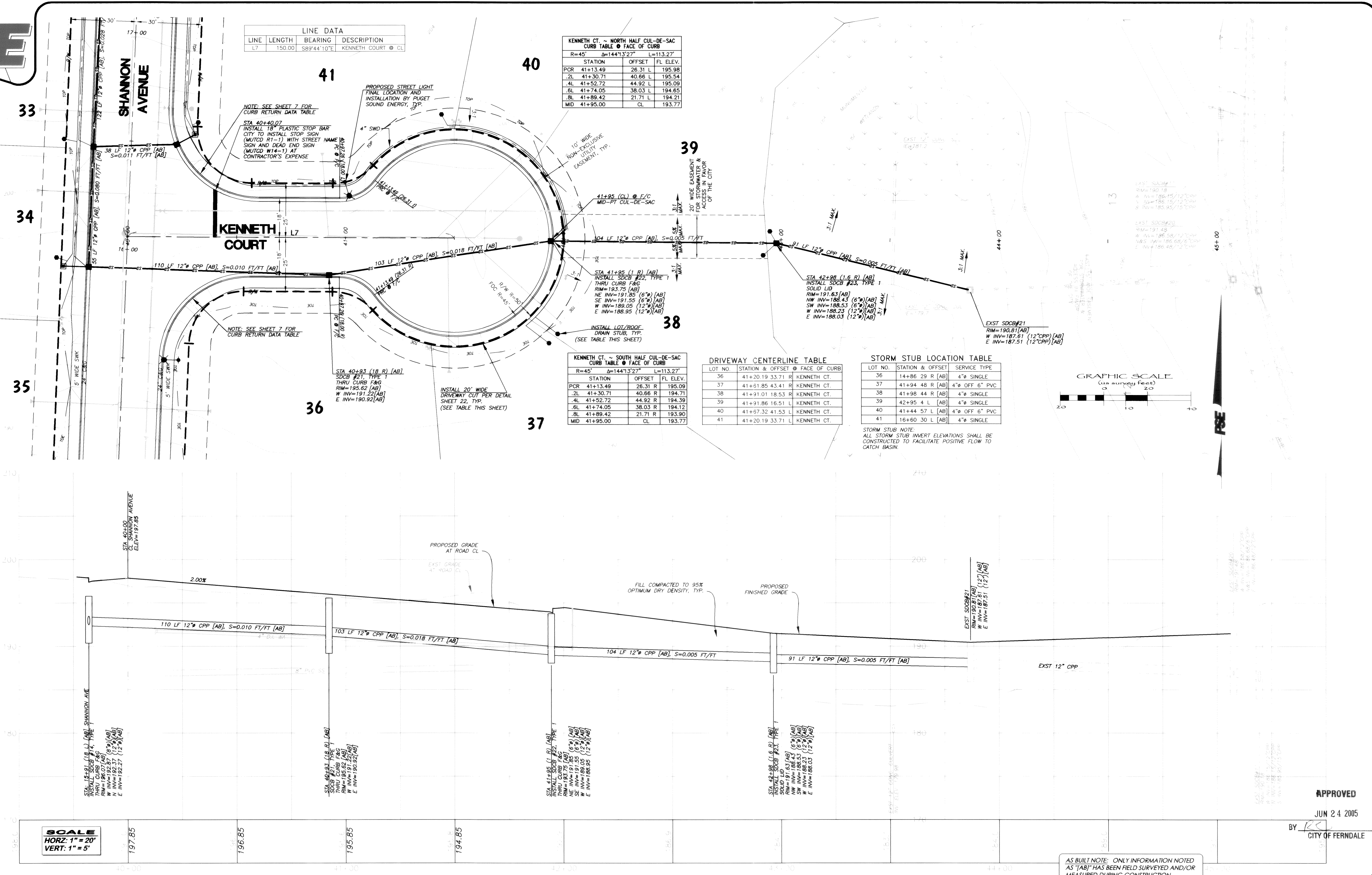
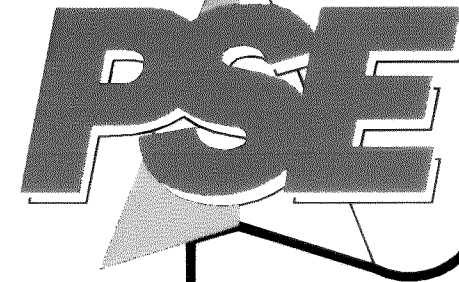


APPROVED  
JUN 24 2005  
BY [Signature]  
CITY OF FERNDAL

AS BUILT NOTE: ONLY INFORMATION NOTED AS "ASB" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

00311.009 2.21.06 R12





FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW June 4, 2004
STAKING:		HYDRANT AT NW CORNER		DESIGN:	BM/DW	JVY	VERT: 1" = 5'					2	ISSUED FOR CITY 2nd REVIEW July 6, 2004
ASBUILT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL July 21, 2004
		NAVD 1929. BENCH MARK=USGS L6=26B, ELEV=34.96'		DWG:	Div2+3_engbase_AsBuilt.dwg							4	AS BUILT June 16, 2005
SURVEY REFERENCE				VERTICAL DATUM				REVISIONS				ISSUE	

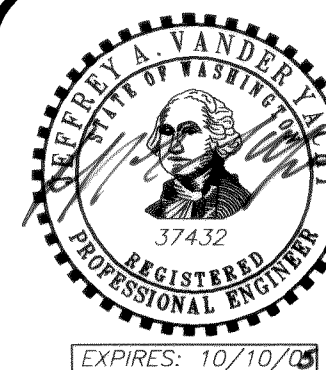


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FERNDAL, WA 98248

GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

KENNETH COURT  
ROADWAY & STORM DRAINAGE IMPROVEMENTS

AS BUILT SHEET 9 OF 24



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JUN 24 2005  
BY [Signature]  
CITY OF FERNDAL

AS BUILT NOTE: ONLY INFORMATION NOTED AS "ABT" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

JOB #: 2003103

EXPIRES: 10/10/09

16-06

00311.010 2.21.06 KR





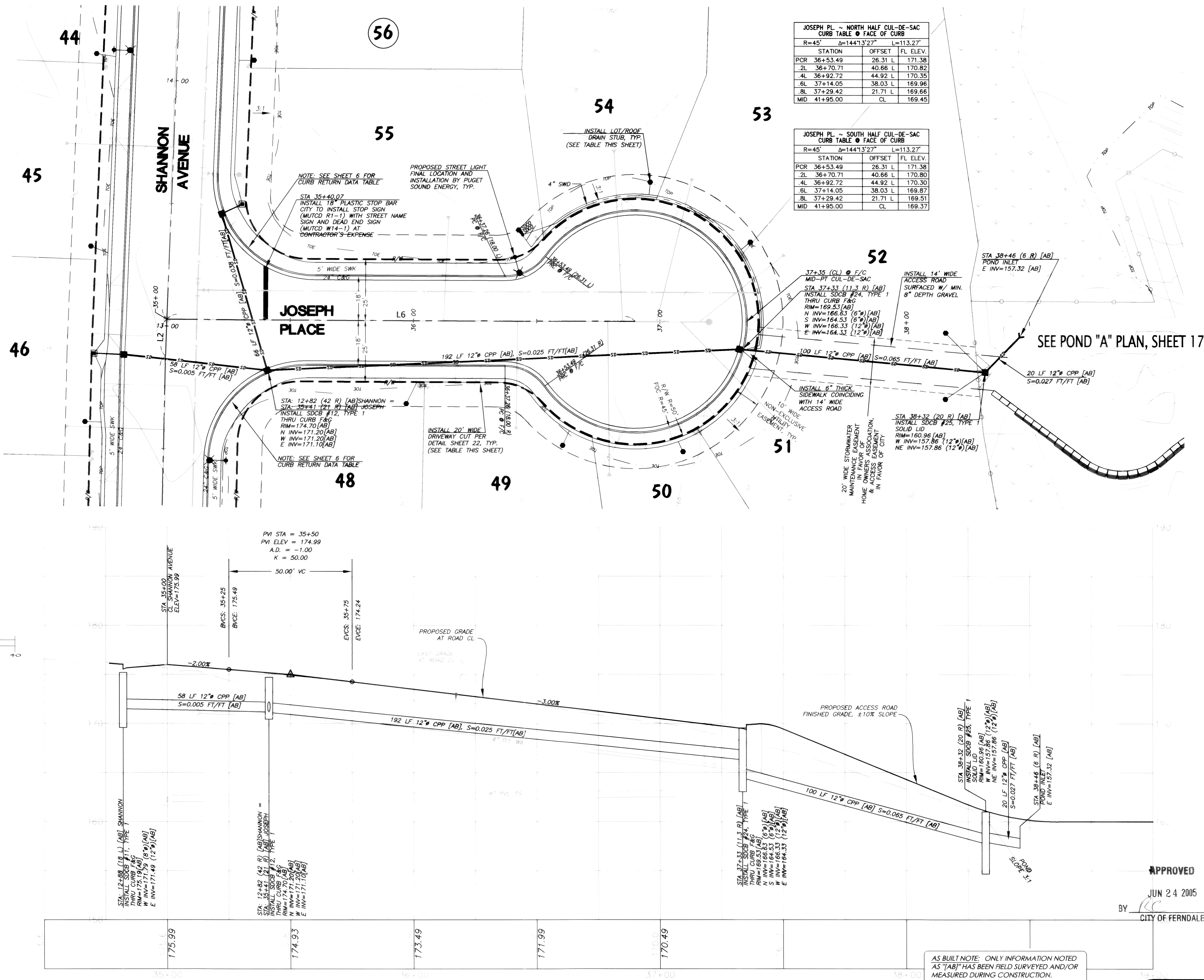
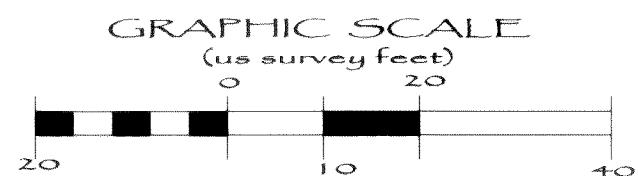
PACIFIC SURVEY & ENGINEERING INC  
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685  
www.psesurvey.com  
EMAIL: pse@psurvey.com

LINE DATA			
LINE	LENGTH	BEARING	DESCRIPTION
L6	190.00	S89°44'10"E	JOSEPH PLACE @ CL

DRIVEWAY CENTERLINE TABLE			
LOT NO.	STATION & OFFSET @ FACE OF CURB		
50	36+93.87 44.83 R	JOS	
51	37+26.02 26.97 R	JOS	
52	37+34.43 7.14 L	JOS	
53	37+14.89 37.49 L	JOS	
54	36+75.02 42.43 L	JOS	
55	36+27.26 18.00 L	JOS	

STORM STUB LOCATION TABLE			
LOT NO.	STATION & OFFSET	SERVICE	TYPE
48	35+97 34 R [AB]	4" SINGLE	
49	36+61 51 R [AB]	4" OFF 6" PVC	
50	37+10 53 R [AB]	4" OFF 6" PVC	
51	38+16 31 R [AB]	4" SINGLE	
52	38+16 4 R [AB]	4" SINGLE	
53	37+37 33 L [AB]	4" OFF 6" PVC	
54	36+96 57 L [AB]	4" OFF 6" PVC	
55	36+43 37 L [AB]	4" SINGLE	

STORM STUB NOTE:  
ALL STORM STUB INVERT ELEVATIONS SHALL BE  
CONSTRUCTED TO FACILITATE POSITIVE FLOW TO  
CATCH BASIN.



JOSEPH PL. ~ NORTH HALF CUL-DE-SAC CURB TABLE @ FACE OF CURB		
R=45'	Δ=144'13.27"	L=113.27'
STATION	OFFSET	FL. ELEV.
PCR 36+53.49	26.31 L	171.38
2L 36+70.71	40.66 L	170.82
4L 36+92.72	44.92 L	170.35
6L 37+14.05	38.03 L	169.96
8L 37+29.42	21.71 L	169.66
MID 41+95.00	CL	169.45

JOSEPH PL. ~ SOUTH HALF CUL-DE-SAC CURB TABLE @ FACE OF CURB		
R=45'	Δ=144'13.27"	L=113.27'
STATION	OFFSET	FL. ELEV.
PCR 36+53.49	26.31 L	171.38
2L 36+70.71	40.66 L	170.80
4L 36+92.72	44.92 L	170.30
6L 37+14.05	38.03 L	169.87
8L 37+29.42	21.71 L	169.51
MID 41+95.00	CL	169.37

APPROVED

JUN 24 2005

BY [Signature] CITY OF FERDALE

AS BUILT NOTE: ONLY INFORMATION NOTED  
AS "AB" HAS BEEN FIELD SURVEYED AND/OR  
MEASURED DURING CONSTRUCTION.

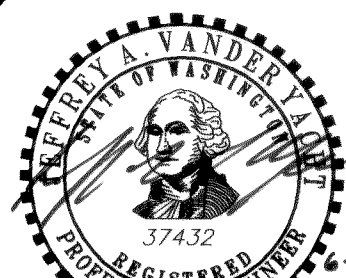
GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

JOSEPH PLACE  
ROADWAY & STORM DRAINAGE IMPROVEMENTS

AS BUILT

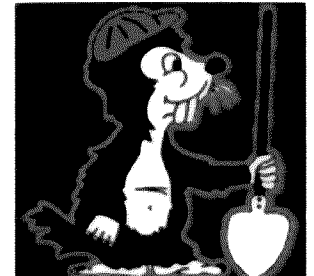
SHEET 10 OF 24

JOB #: 2003103



EXPIRES: 10/10/06

CALL BEFORE YOU DIG



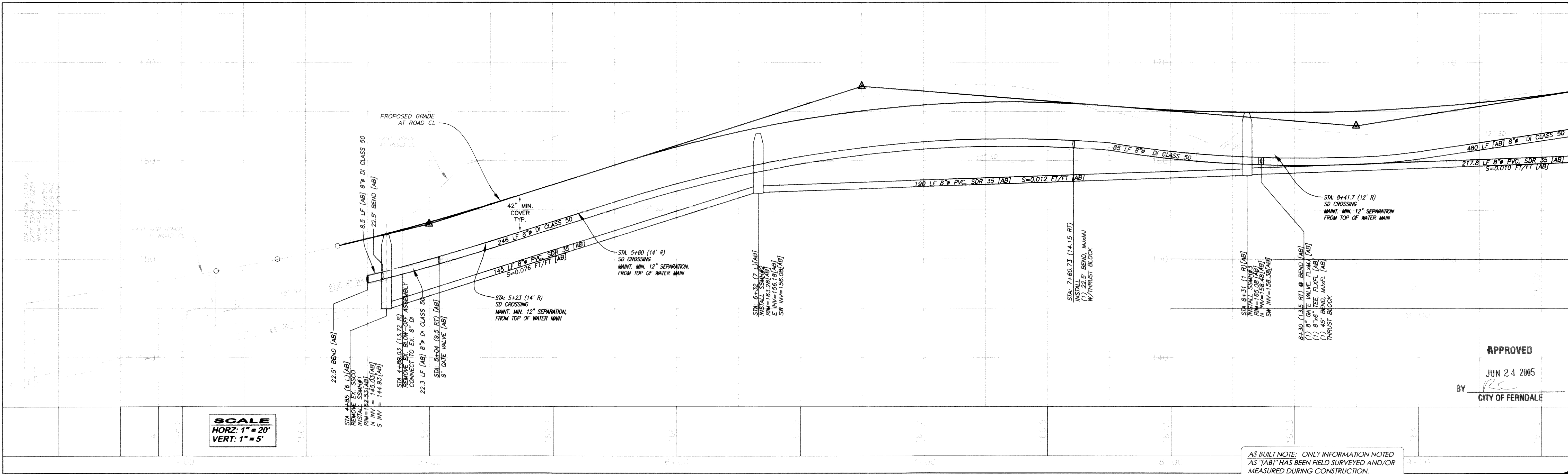
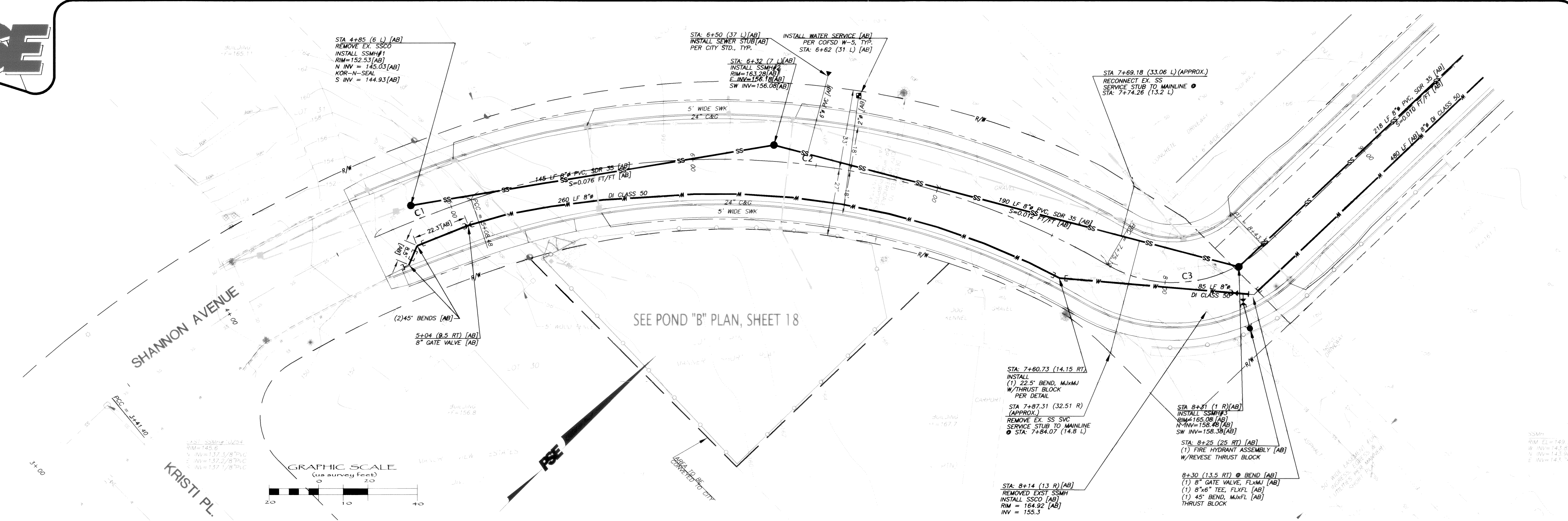
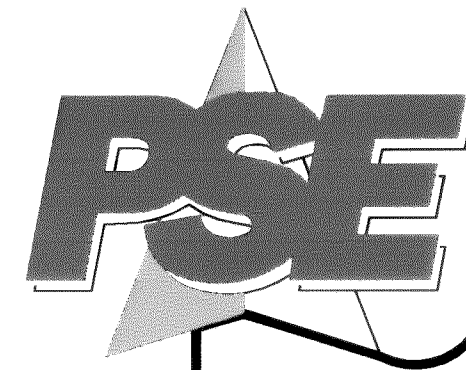
1-800-424-5555

KRAMER CONSTRUCTION CO.

1442 SUNSET AVENUE  
FERDALE, WA 98248

FIELD BOOKS		TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE	
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:				HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW	June 4, 2004
STAKING:		HYDRANT AT NW CORNER		DESIGN:	BM/BW	JVY		VERT: 1" = 5'					2	ISSUED FOR CITY 2nd REVIEW	July 6, 2004
ASBUILT:		OF SEAMOUNT & VISTA		XREF:									3	ISSUED FOR CITY APPROVAL	July 21, 2004
		NAVD 1929. BENCH MARK=USGS L6=26B, ELEV.=34.96'		DWG:	Div2+3_engbase_AsBuilt.dwg								4	AS BUILT	June 16, 2005
SURVEY REFERENCE				VERTICAL DATUM				REVISIONS				ISSUE			





FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE	
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW	June 4, 2004
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ASBUILT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL	July 21, 2004
	NAVD 1929, BENCH MARK=USGS L6=26B, ELEV=34.96'			DWG:	Div2+3_engbase_AsBuilt.dwg							4	AS BUILT	June 16, 2005
SURVEY REFERENCE		VERTICAL DATUM								REVISIONS			ISSUE	



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FERDALE, WA 98248

GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

SHANNON AVENUE  
STATIONS 4+48 TO 9+00  
WATER & SANITARY SEWER IMPROVEMENTS  
**AS BUILT** SHEET 11 OF 24

JOB #: 2003103

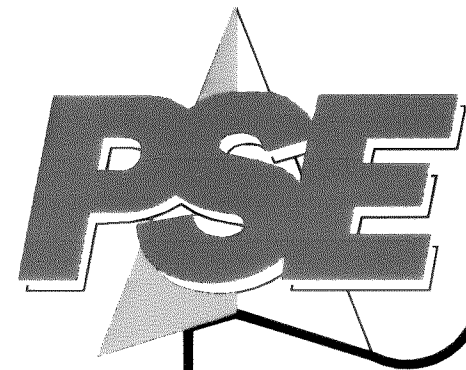
APPROVED  
JUN 24 2005  
BY [Signature]  
CITY OF FERDALE

AS BUILT NOTE: ONLY INFORMATION NOTED AS "AS BUILT" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

REGISTERED PROFESSIONAL ENGINEER  
37432  
EXPIRES: 10/10/05

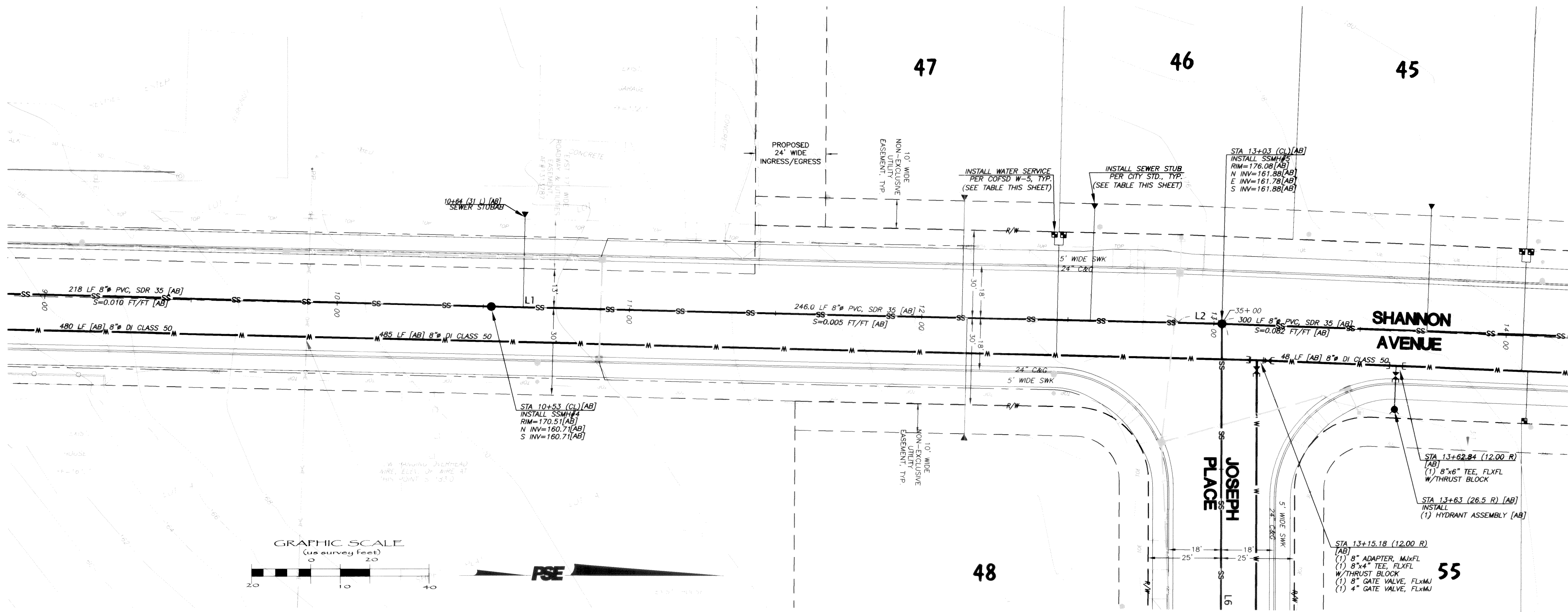
00311-012 2-21-06 KZ





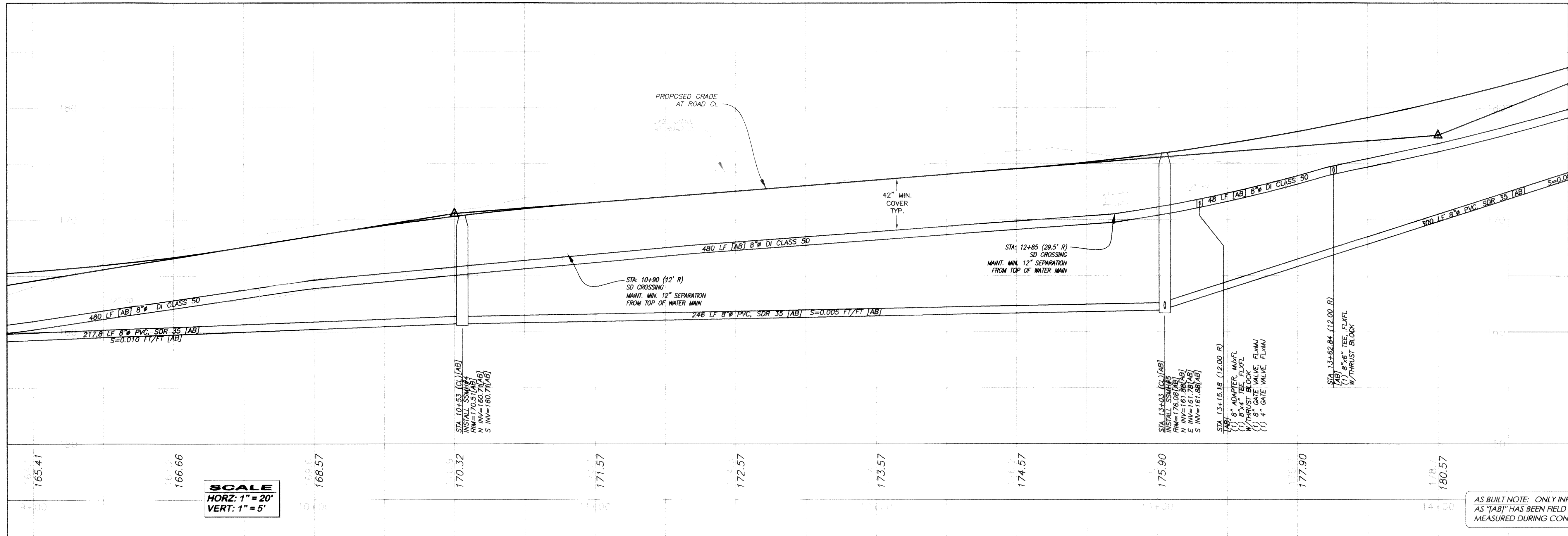
www.psesurvey.com  
EMAIL: pse@psurvey.com

PACIFIC SURVEY & ENGINEERING INC  
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685



SEWER STUB LOCATION TABLE		
LOT NO.	STATION & OFFSET	SERVICE TYPE
45	13+73 42 L [AB]	4" SINGLE
46	12+58 38 L [AB]	4" SINGLE
47	12+14 40 L [AB]	4" SINGLE
48	12+15 40 R [AB]	4" SINGLE

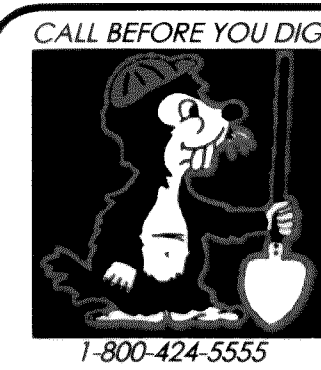
WATER SERVICE LOCATION TABLE		
LOT NO.	STATION & OFFSET	SERVICE TYPE
44	14+06 30 L [AB]	1" DOUBLE
45	14+05 29 L [AB]	1" DOUBLE
46	12+47 28 L [AB]	1" DOUBLE
47	12+45 28 L [AB]	1" DOUBLE



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JUN 24 2005  
BY RC  
CITY OF FERDALE

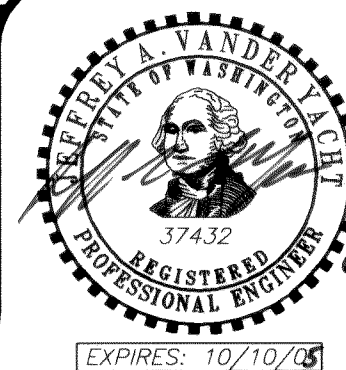
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FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW June 4, 2004
STAKING:		HYDRANT AT NW CORNER		DESIGN:	BM/BW	JVY	VERT: 1" = 5'					2	ISSUED FOR CITY 2nd REVIEW July 6, 2004
ASBUILT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL July 21, 2004
		NAVD 1929, BENCH MARK=USGS L6=26B, ELEV=34.96'		DWG: Div2+3_engbase_AsBuilt.dwg								4	AS BUILT June 16, 2005
SURVEY REFERENCE		VERTICAL DATUM		REVISIONS						ISSUE			



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FERDALE, WA 98248

GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS  
SHANNON AVENUE  
STATIONS 9+00 TO 14+00  
WATER & SANITARY SEWER IMPROVEMENTS  
AS BUILT SHEET 12 OF 24

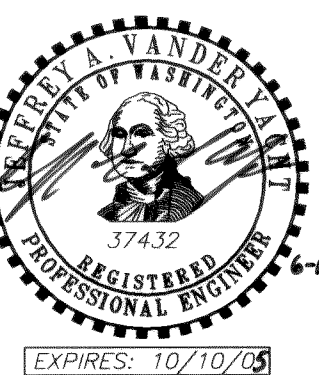


00311.013 2-21-04 KR



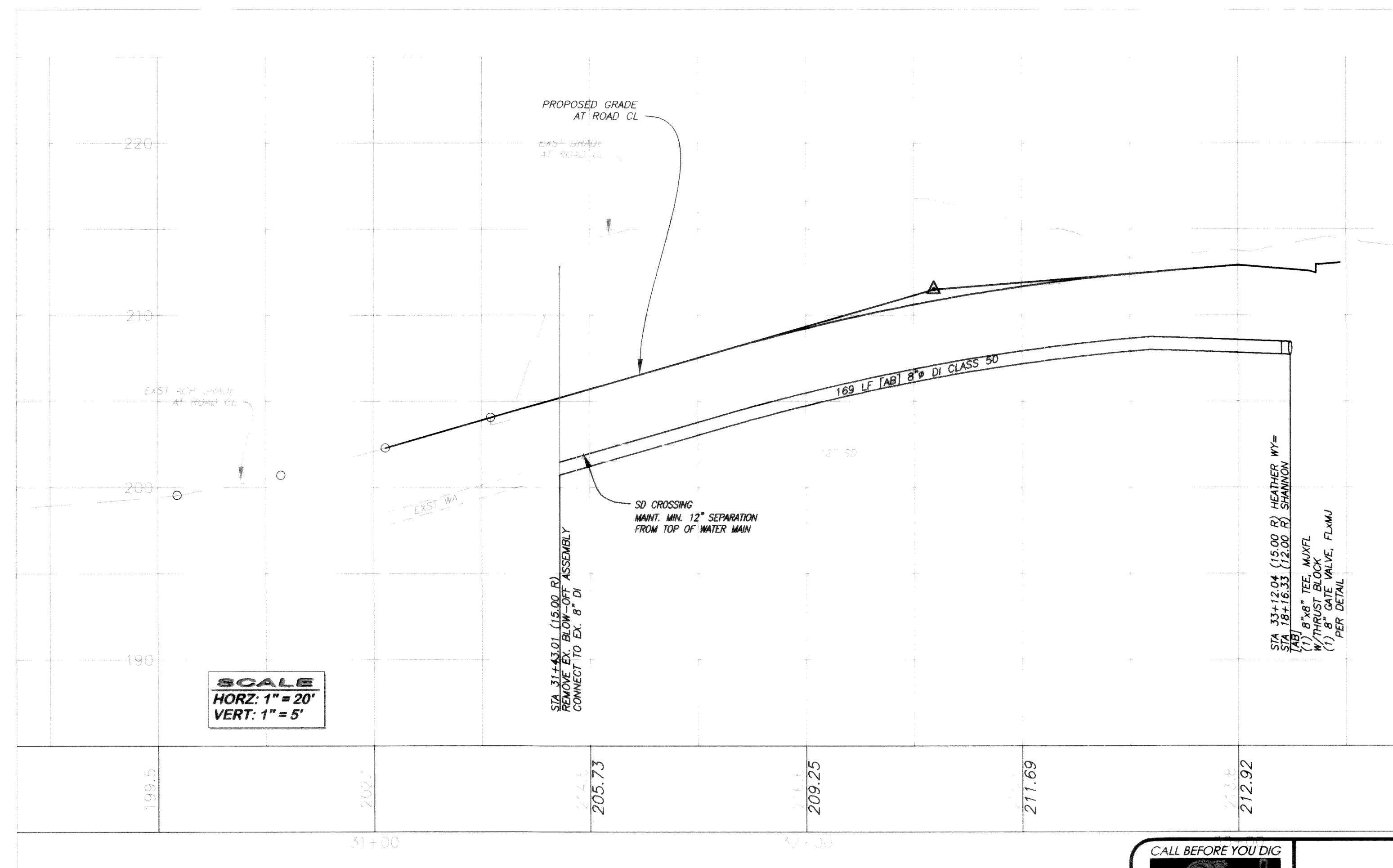
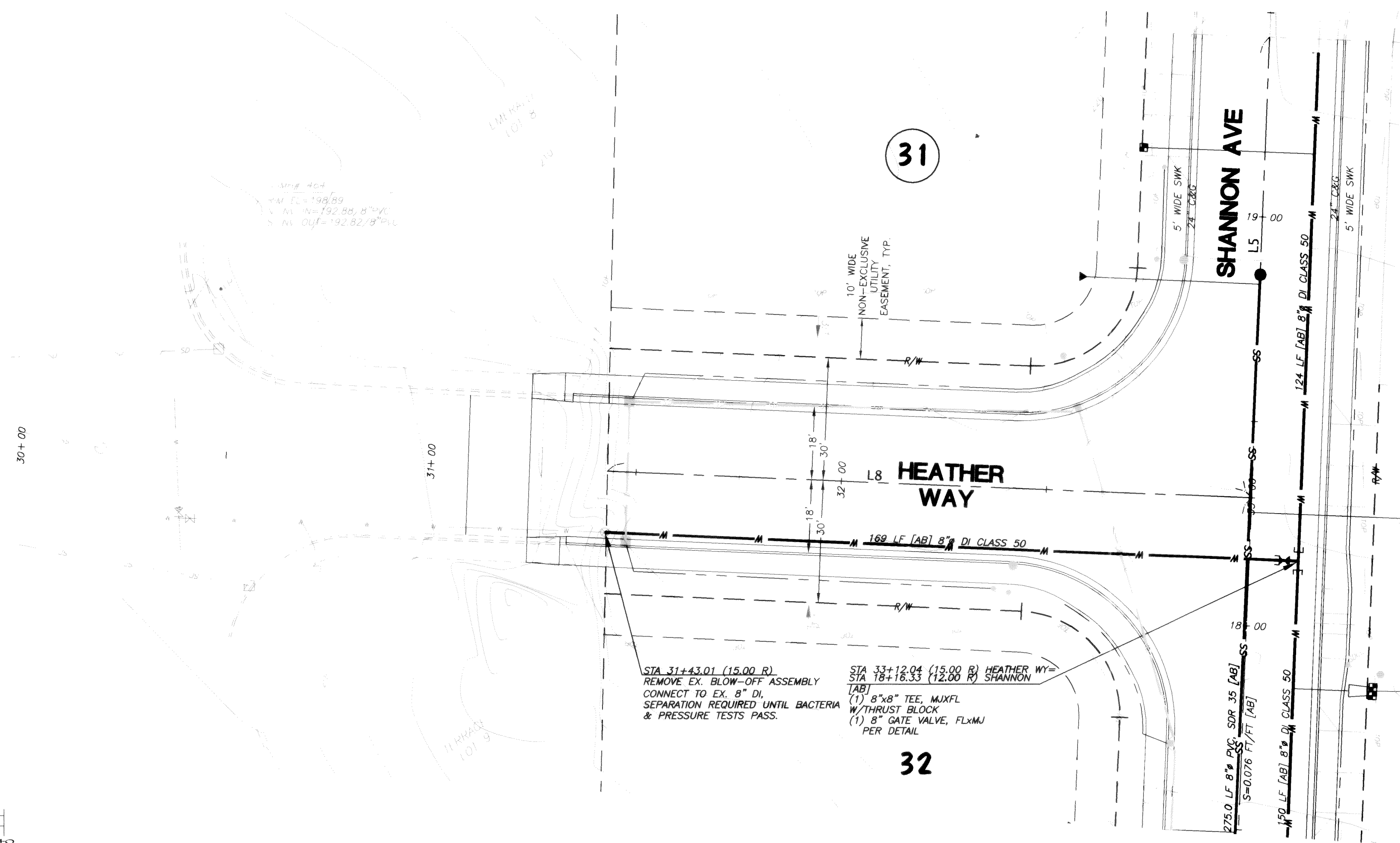
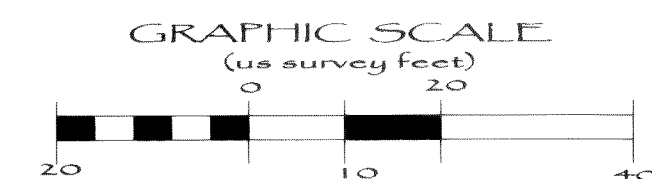


SHEET 13 OF 24



EXPIRES: 10/10/05





FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW June 4, 2004
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	NAVD 1929. BENCH MARK=USGS L6=26B, ELEV=34.96'			DWG:	Div2+3_engbase_AsBuilt.dwg							4	AS BUILT June 16, 2004
SURVEY REFERENCE		VERTICAL DATUM								REVISIONS			ISSUE

1-800-424-5555

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FERNDALE, WA 98248

**GARDINER TERRACE PLAT**  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

# HEATHER WAY

## WATER & SANITARY SEWER IMPROVEMENTS

*AS BUILT*

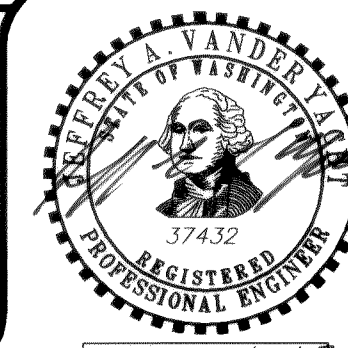
SHEET 14 OF 24

**APPROVED**

JUN 24 2005

BY RC  
CITY OF FERNDALE

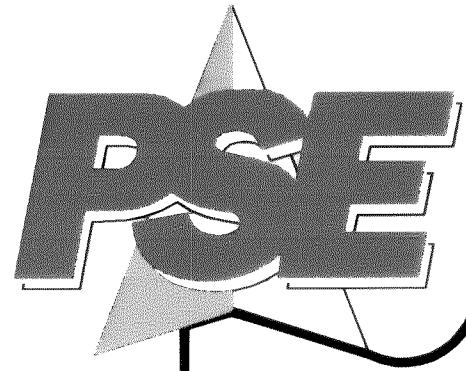
AS BUILT NOTE: ONLY INFORMATION NOTED AS "[AB]" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.



EXPIRES: 10/10/0

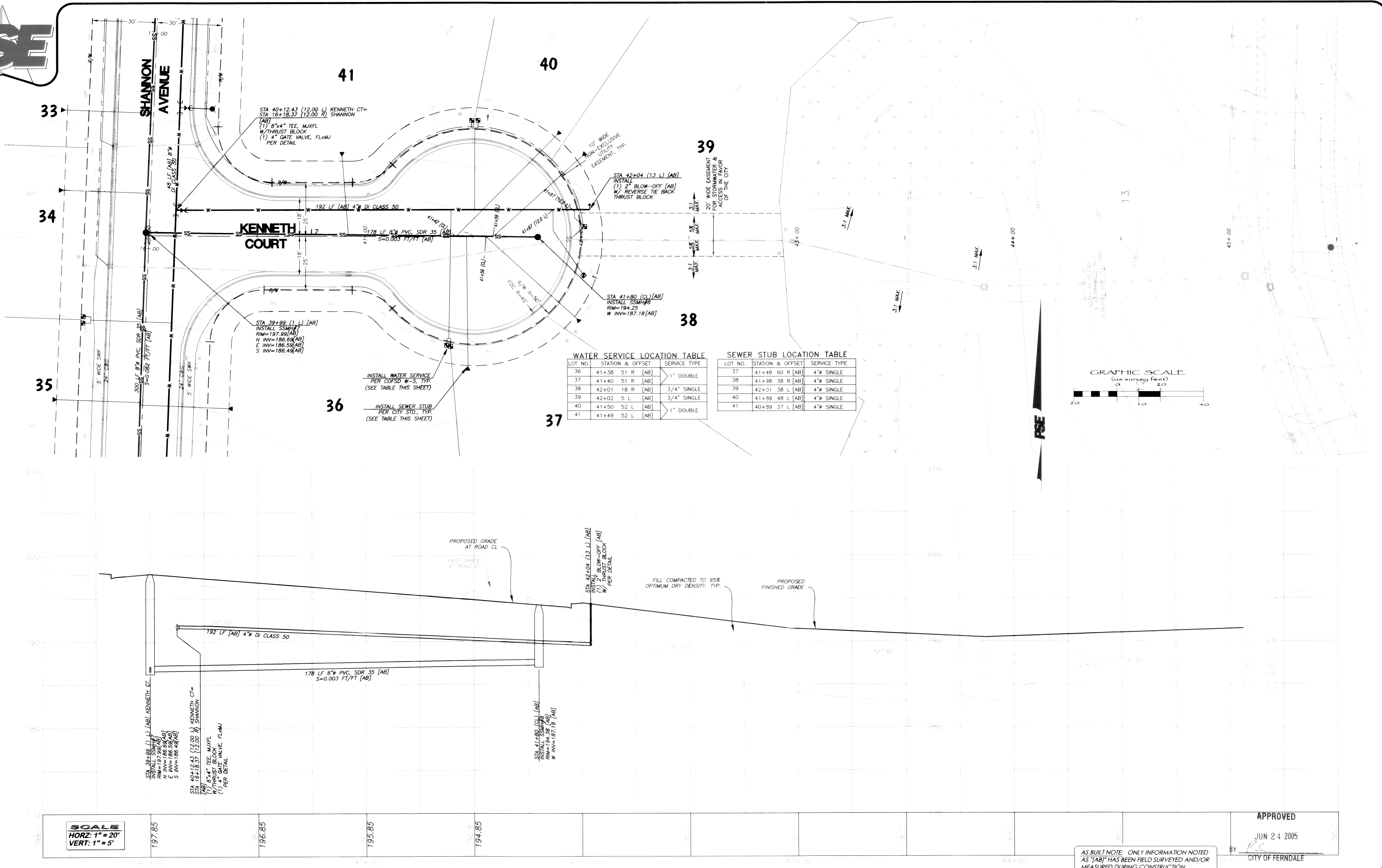
00011.015 2.21.00 KR





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JUN 24 2005  
BY RC  
CITY OF FERDALE

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW June 4, 2004
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ASBUILT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL July 21, 2004
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SURVEY REFERENCE		VERTICAL DATUM		REVISIONS								ISSUE	



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GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

KENNETH COURT  
WATER & SANITARY SEWER IMPROVEMENTS

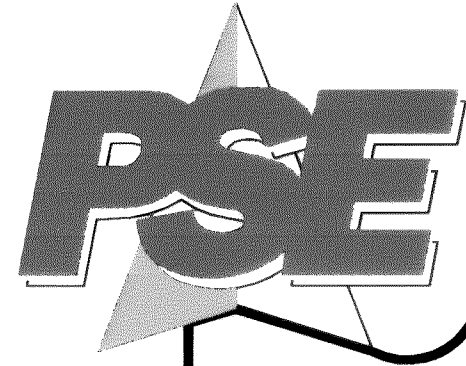
AS BUILT SHEET 15 OF 24

JOB #: 2003103

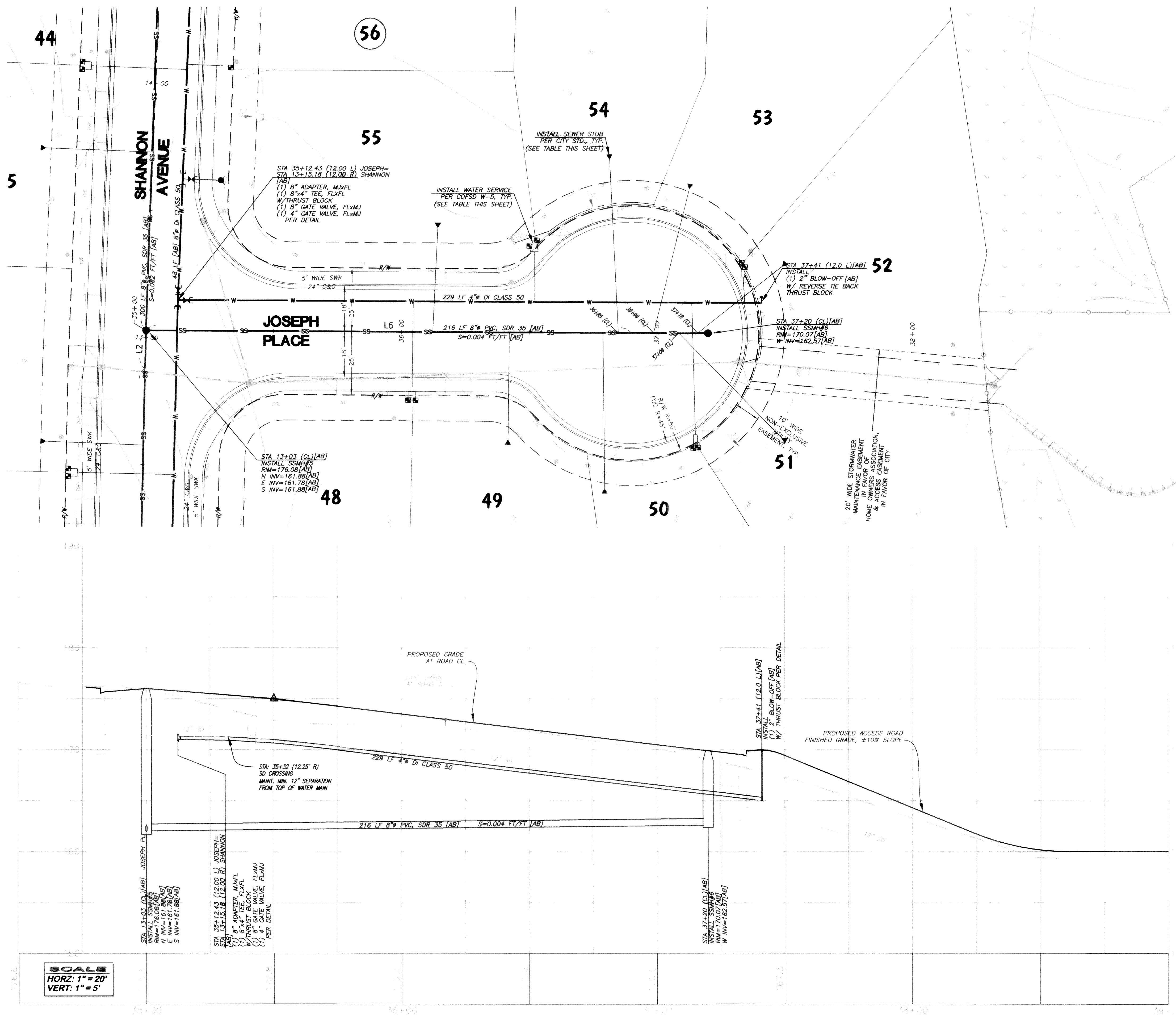
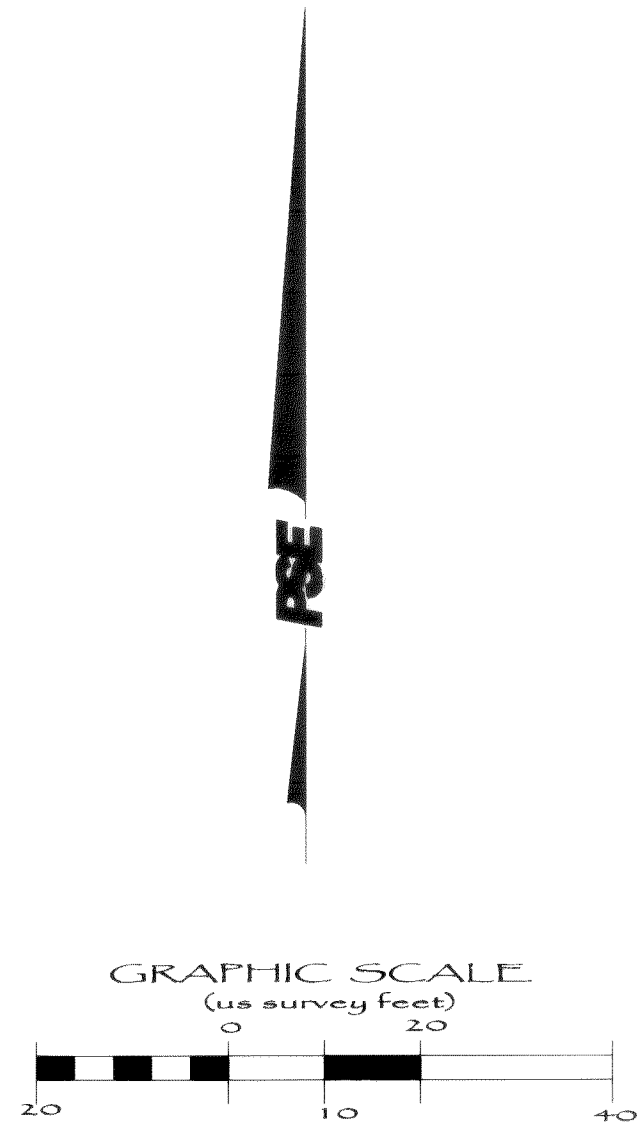


00311-016 2-21-06 RL





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www.psesurvey.com  
EMAIL: pse@psurvey.com



SEWER STUB LOCATION TABLE		
LOT NO.	STATION & OFFSET	SERVICE TYPE
49	36+42 42 R [AB]	4" SINGLE
50	36+80 61 R [AB]	4" SINGLE
51	37+49 41 R [AB]	4" SINGLE
52	37+49 27 L [AB]	4" SINGLE
53	37+13 57 L [AB]	4" SINGLE
54	36+81 68 L [AB]	4" SINGLE
55	36+11 41 L [AB]	4" SINGLE

WATER SERVICE LOCATION TABLE		
LOT NO.	STATION & OFFSET	SERVICE TYPE
48	36+03 27 R [AB]	1" DOUBLE
49	36+06 27 R [AB]	1" DOUBLE
50	37+14 45 R [AB]	1" DOUBLE
51	37+16 45 R [AB]	1" DOUBLE
52	37+35 26 L [AB]	1" DOUBLE
53	37+33 28 L [AB]	1" DOUBLE
54	36+53 36 L [AB]	1" DOUBLE
55	36+50 34 L [AB]	1" DOUBLE

SCALE  
HORZ: 1" = 20'  
VERT: 1" = 5'

APPROVED

JUN 24 2005

BY

AS BUILT NOTE: ONLY INFORMATION SHOWN ON THIS SHEET IS AS "AS BUILT" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

FIELD BOOKS		TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE	
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:				HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW	June 4, 2004
STAKING:		HYDRANT AT NW CORNER		DESIGN:	BM/DW	JVY		VERT: 1" = 5'					2	ISSUED FOR CITY 2nd REVIEW	July 6, 2004
ASBUILT:		OF SEAMOUNT & VISTA		XREF:									3	ISSUED FOR CITY APPROVAL	July 21, 2004
	NAVD 1929, BENCH MARK=USGS L6=26B, ELEV=34.96'			DWG:	Div2+3_engbase_AsBuilt.dwg								4	AS BUILT	June 16, 2005
SURVEY REFERENCE		VERTICAL DATUM				REVISIONS								ISSUE	

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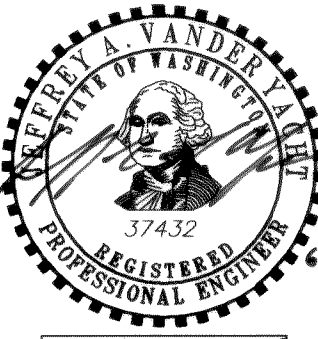
GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

JOSEPH PLACE  
WATER & SANITARY SEWER IMPROVEMENTS

AS BUILT

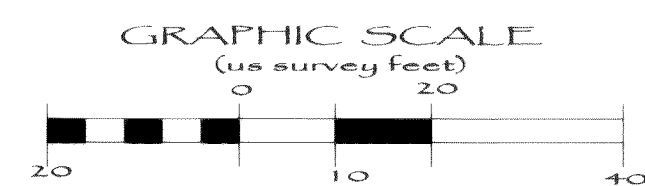
JOB #: 2003103

SHEET 16 OF 24

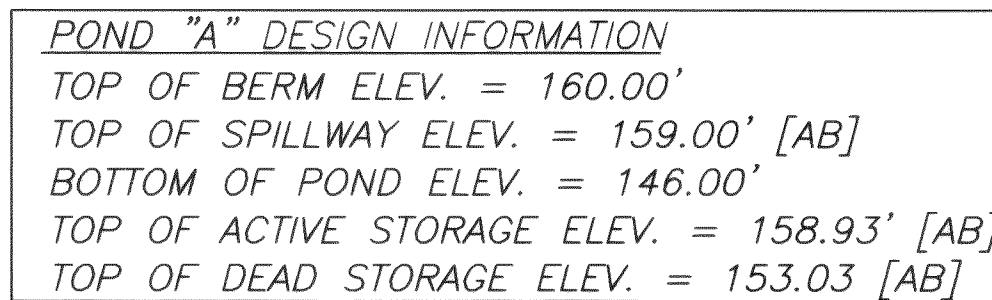


EXPIRES: 10/10/08





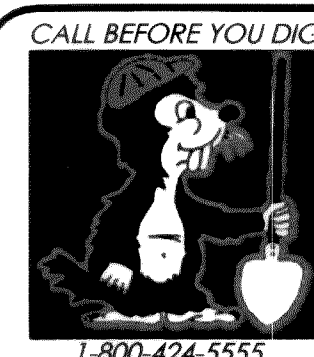
2) ULTRA BLOCKS SHALL BE STAGGERED ALONG LENGTH OF WALL (I.E. PLACED WITH ONE-HALF BLOCK LENGTH OFFSET) WHERE APPLICABLE.



JEFFREY A. VANDER YACHT  
STATE OF WASHINGTON  
37432  
REGISTERED  
PROFESSIONAL ENGINEER

**AS BUILT** SHEET 17 OF 24

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: 1" = 20'					1	ISSUED FOR CITY 1st REVIEW June 4, 2006
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SURVEY REFERENCE		VERTICAL DATUM								REVISIONS			ISSUE



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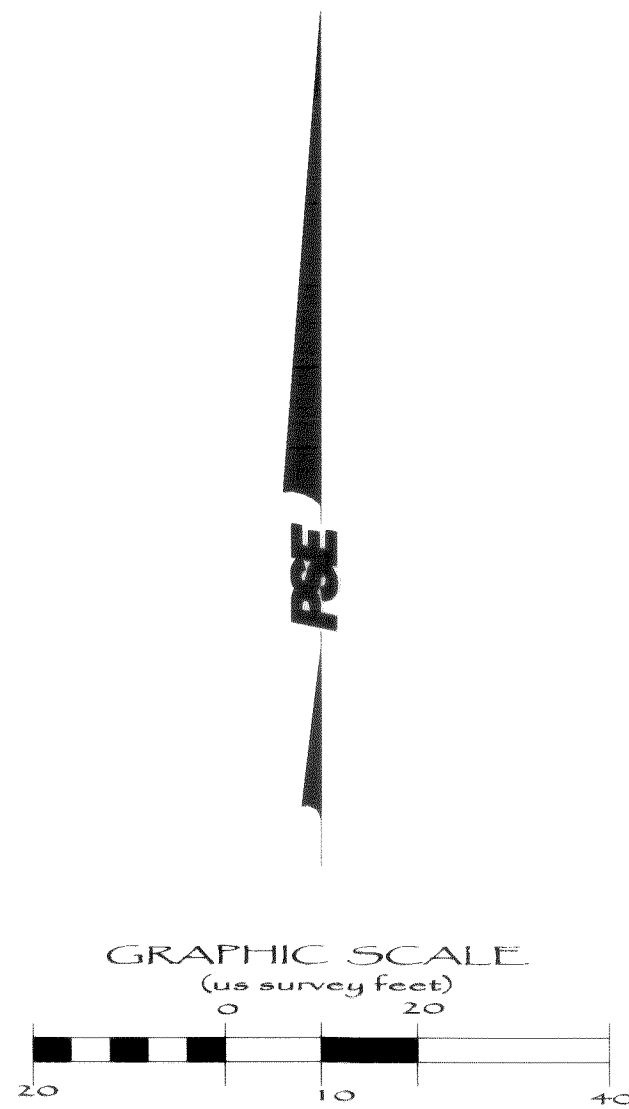
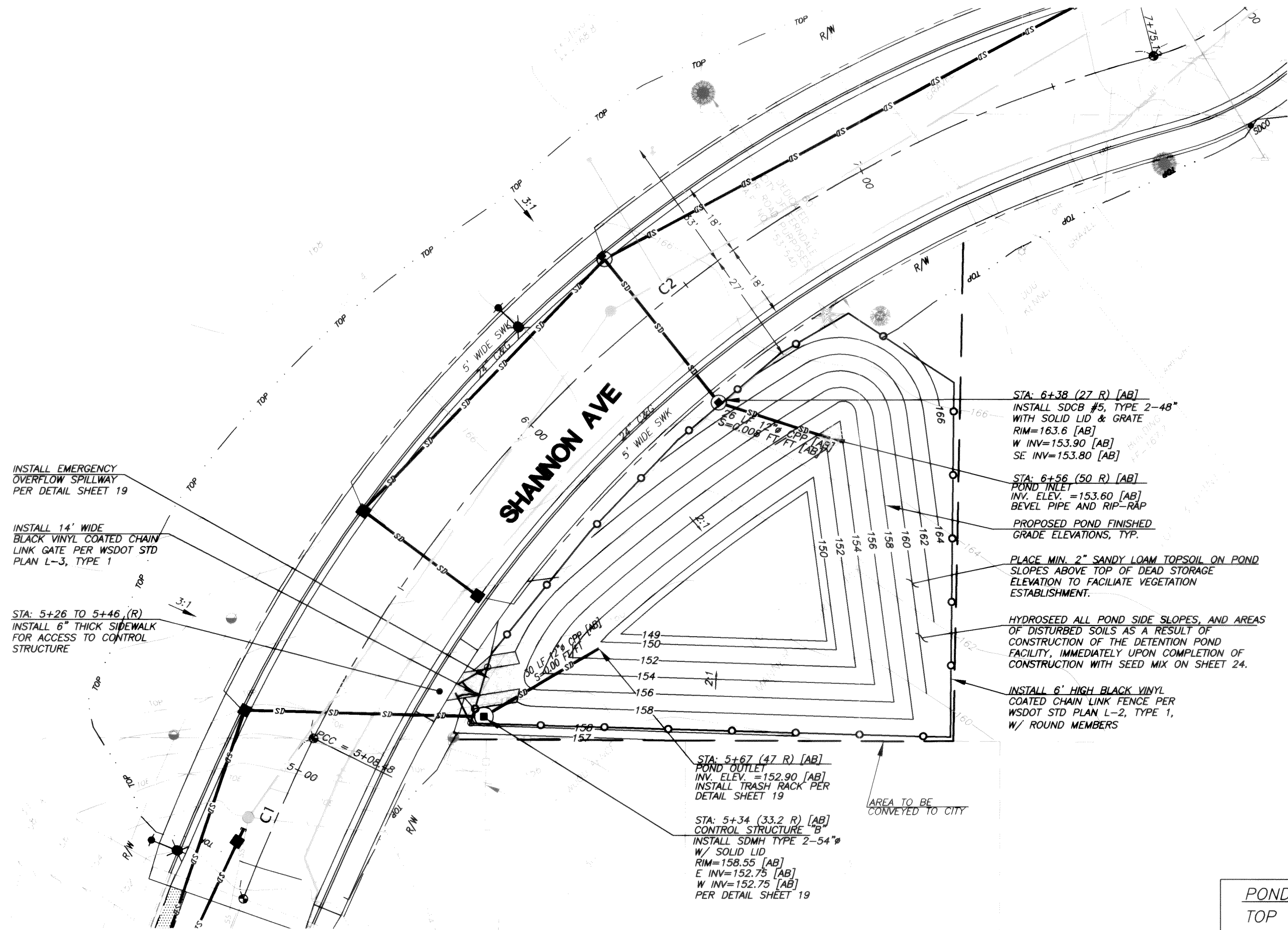
JOB #: 2003103





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1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685



POND "B" DESIGN INFORMATION  
TOP OF BERM ELEV. = 158.00'  
TOP OF SPILLWAY ELEV. = ±157.08' [AB]  
BOTTOM OF POND ELEV. = 149.00'  
TOP OF ACTIVE STORAGE ELEV. = 156.83' [AB]  
TOP OF DEAD STORAGE ELEV. = 152.75' [AB]

AS BUILT NOTE: ONLY INFORMATION NOTED AS "AB" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

APPROVED  
JUN 24 2005  
BY [Signature]  
CITY OF FERNDALE

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
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SURVEY REFERENCE				VERTICAL DATUM				REVISIONS				ISSUE	



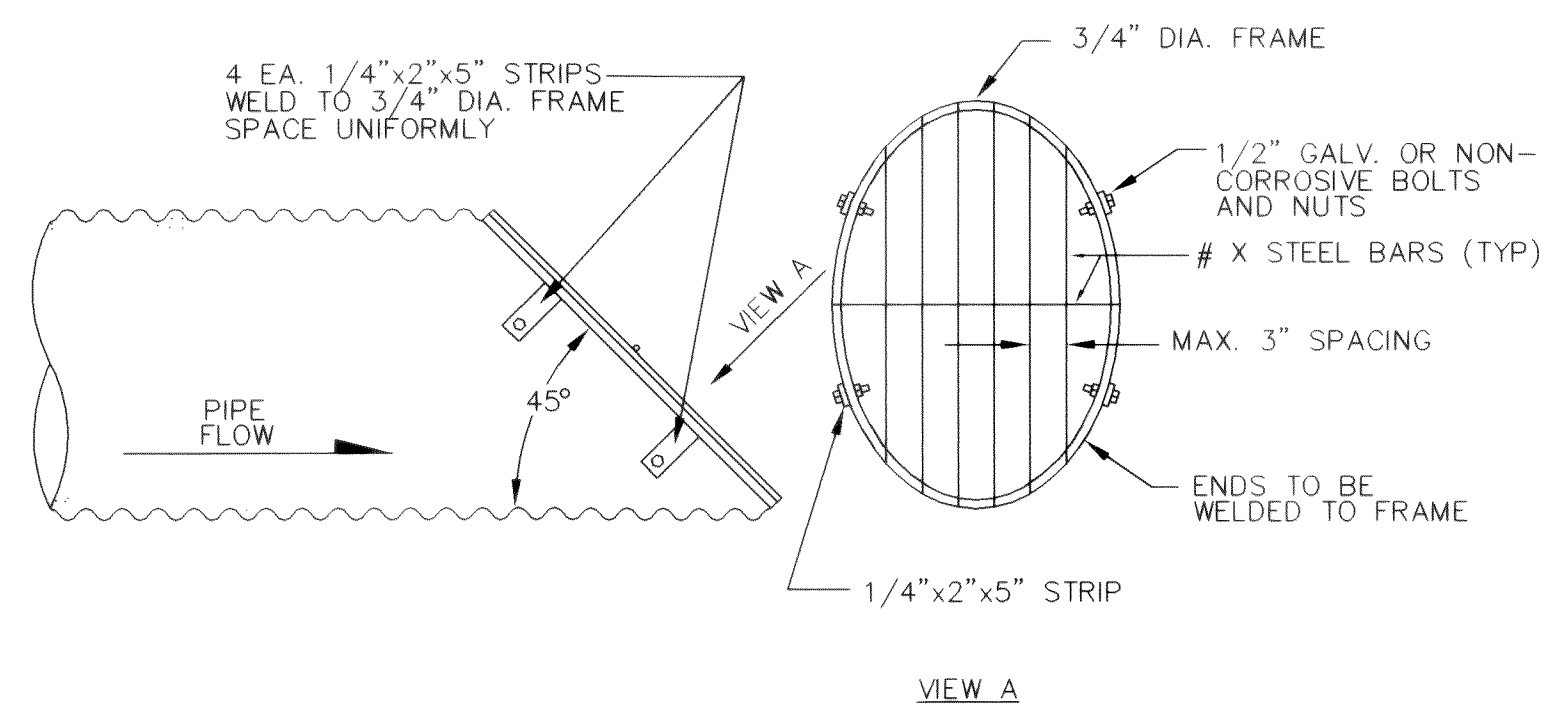
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GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS  
STORMWATER MANAGEMENT FACILITY "B" PLAN  
(POND SERVING OFF-SITE SHANNON AVE.)  
AS BUILT  
JOB #: 2003103 SHEET 18 OF 24



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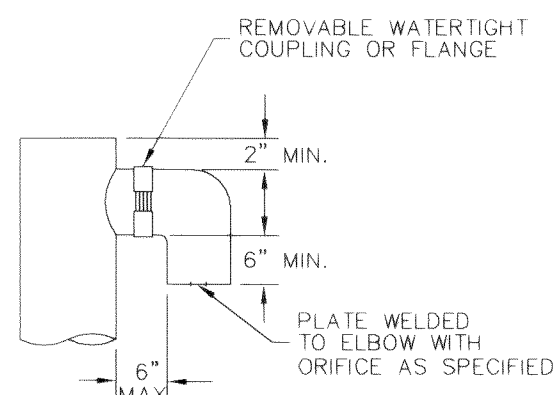


TRASH RACK FOR SD OUTLET DETAIL

## STORM DETENTION POND SLOPES SEED MIX CONSTITUENTS

ALL POND SIDE SLOPES AND AREAS DISTURBED AS A RESULT OF CONSTRUCTION OF THE DETENTION POND FACILITY SHALL BE HYDOSEEDED WITH THE FOLLOWING "LOW GROW" SEED MIX AT A RATE OF 2.5# PER 1000 SF:

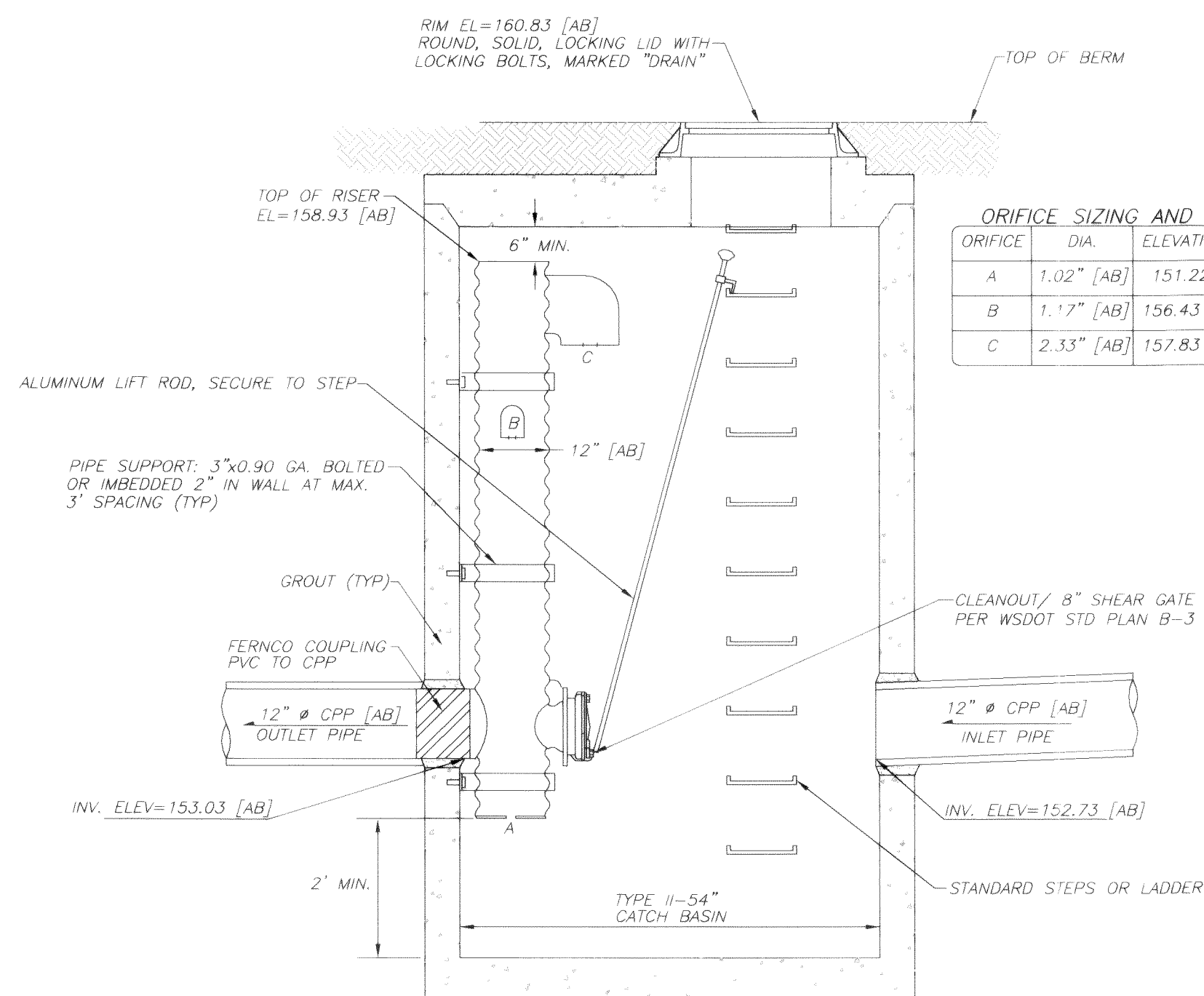
<u>SEED NAME</u>	<u>% OF MIX</u>
DWARF TALL FESCUE	40%
DWARF PERENNIAL RYE "BARCLAY"	30%
RED FESCUE	25%
COLONIAL BENTGRASS	5%



### ELBOW RESTRICTOR

NOTES:

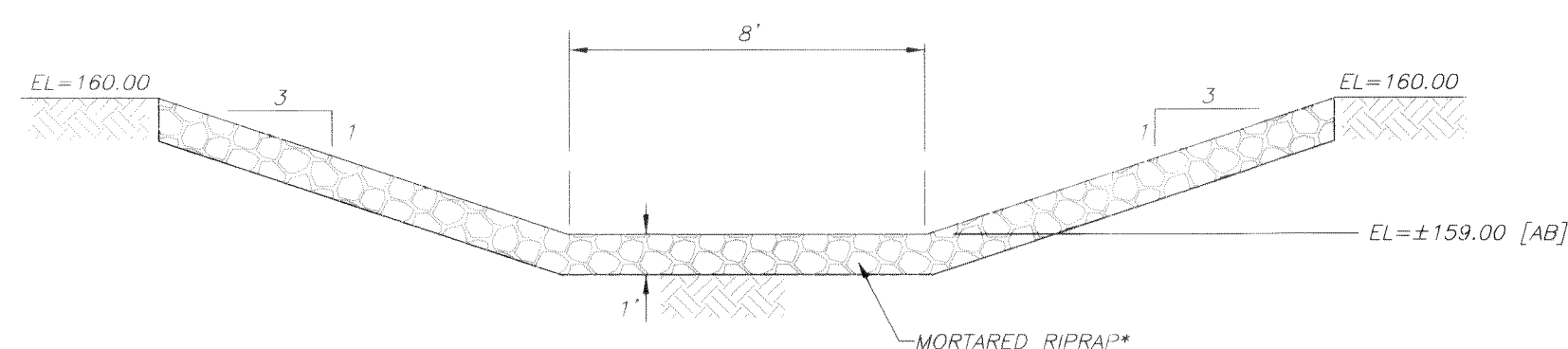
1. ALL ORIFICES TO BE FABRICATED BY SHOP DRILLING HOLES OF APPROPRIATE DIAMETER IN METAL PLATE, AND WELDING IT INTO PLACE AT THE BOTTOM OF THE MAIN RISER AND THE THREE ELBOWS.
2. PIPE SUPPORT BRACKETS AND THE RESTRICTOR/SEPARATOR SHALL BE OF THE SAME MATERIAL, AND BE ANCHORED AT 3' MAXIMUM SPACING.
3. ALL METAL PARTS SHALL BE CORROSION RESISTANT. ALL GALVANIZED STEEL PARTS SHALL BE ASPHALT TREATMENT 1 COATED.
4. THE RESTRICTOR/SEPARATOR STANDPIPE SHALL BE FABRICATED FROM 0.060" ALUMINUM, 0.064" ALUMINIZED STEEL, OR 0.064" GALVANIZED STEEL, IN ACCORDANCE WITH ASHSTO M36, M196, M197 AND M274. GALVANIZED STEEL SHALL BE ASPHALT TREATMENT 1 COATED.
5. IF A METAL OUTLET PIPE CONNECTS TO A CEMENT CONCRETE PIPE, THE OUTLET PIPE SHALL HAVE A SMOOTH OUTSIDE DIAMETER EQUAL TO THE INSIDE DIAMETER OF THE CONCRETE PIPE LESS 1/4".
6. THE FRAME AND LADDER (OR STEPS) SHALL OFFSET SO THAT:
  - A: THE CLEANOUT GATE IS VISIBLE FROM THE TOP.
  - B: THE CLIMB DOWN CLEAR SPACE OF 2 FEET IS BETWEEN THE RISER AND CLEANOUT GATE.
  - C: THE FRAME IS CLEAR OF THE CURB. (IF APPLICABLE)



**SECTION VIEW**

**CONTROL STRUCTURE "A"**  
**TYPE II-54"**

NOT TO SCALE



\*RIPRAP TO BE WELL GRADED W/ ROCK GRADATION AS FOLLOWS:

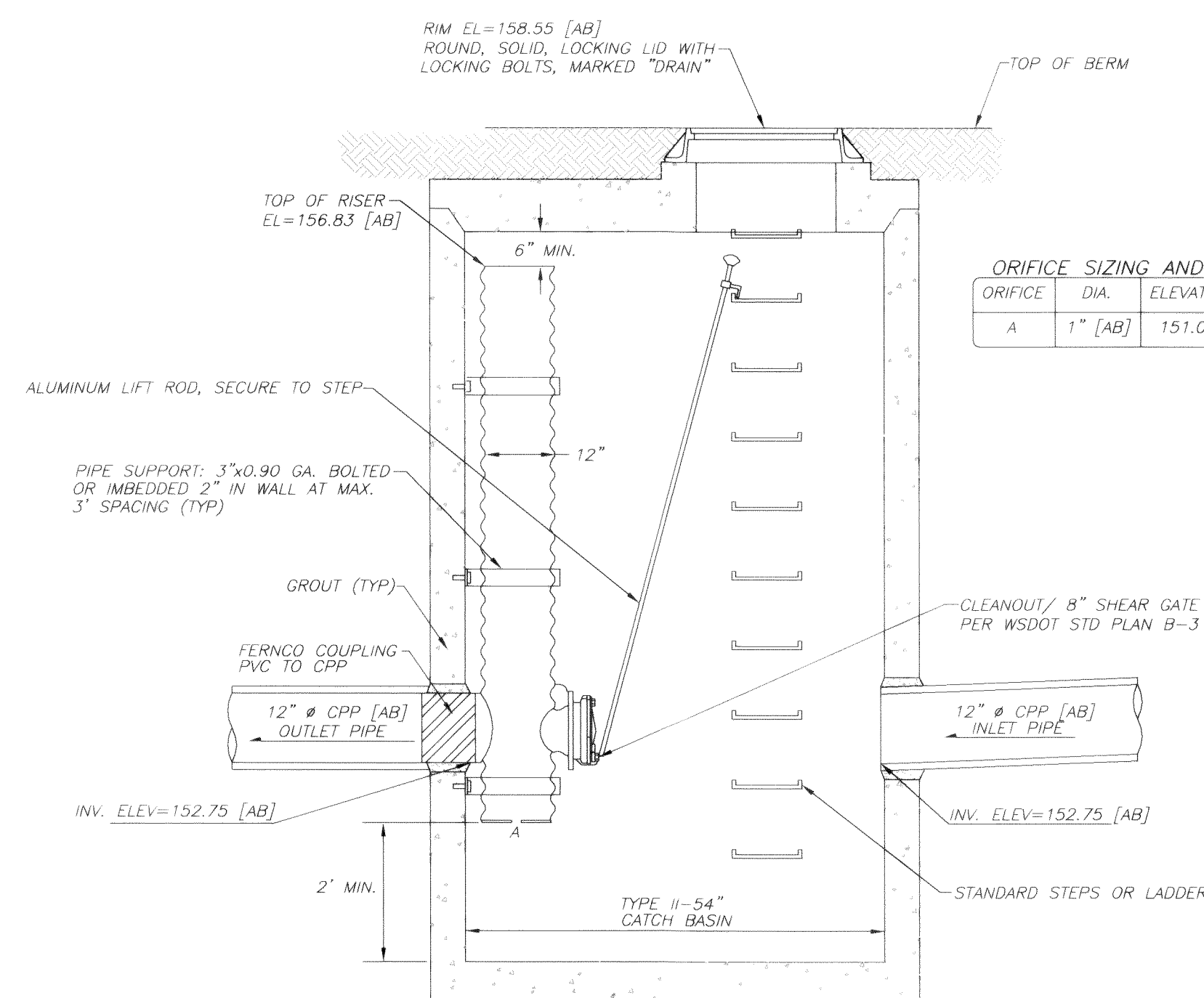
**EMERGENCY OVERFLOW SPILLWAY DETAIL**

NOT TO SCALE

# WATER MANAGEMENT FACILITY "A"

## (POND SERVING DIVISION 3)

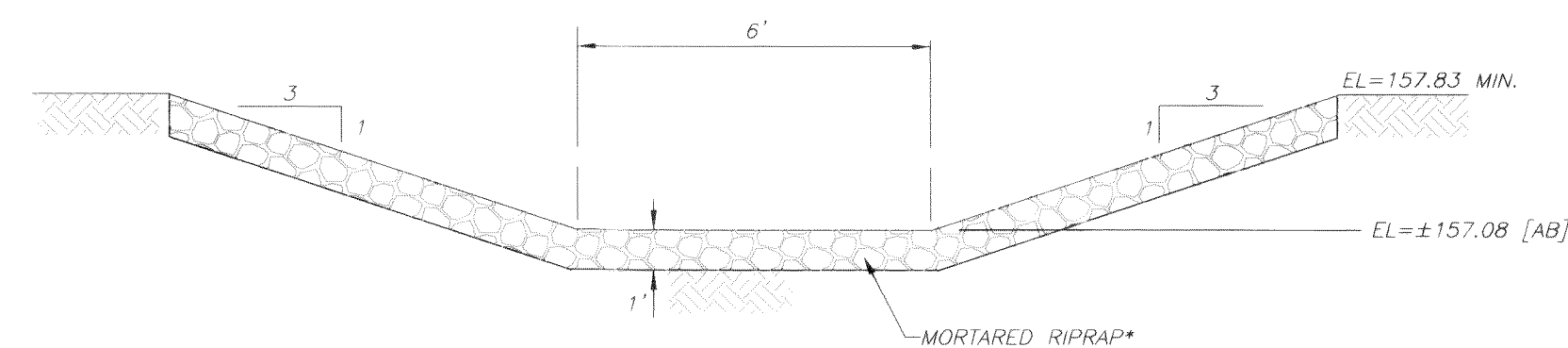
- NOTES:**
1. ALL ORIFICES TO BE FABRICATED BY SHOP DRILLING HOLES OF APPROPRIATE DIAMETER IN METAL PLATE, AND WELDING IT INTO PLACE AT THE BOTTOM OF THE MAIN RISER AND THE THREE ELBOWS.
  2. PIPE SUPPORT BRACKETS AND THE RESTRICTOR/SEPARATOR SHALL BE OF THE SAME MATERIAL, AND BE ANCHORED AT 3" MAXIMUM SPACING.
  3. ALL METAL PARTS SHALL BE CORROSION RESISTANT. ALL GALVANIZED STEEL PARTS SHALL BE ASPHALT TREATMENT 1 COATED.
  4. THE RESTRICTOR/SEPARATOR STANDPIPE SHALL BE FABRICATED FROM 0.060" ALUMINUM, 0.064" ALUMINIZED STEEL, OR 0.064" GALVANIZED STEEL, IN ACCORDANCE WITH ASHTO M36, M196, M197 AND M274. GALVANIZED STEEL SHALL BE ASPHALT TREATMENT 1 COATED.
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    - C: THE FRAME IS CLEAR OF THE CURB. (IF APPLICABLE)



**SECTION VIEW**

**CONTROL STRUCTURE "B"**  
**TYPE II-54"**

NOT TO SCALE



\*RIPRAP TO BE WELL GRADED W/ ROCK GRADATION AS FOLLOWS:

**EMERGENCY OVERFLOW SPILLWAY DETAIL**

NOT TO SCALE

# WATER MANAGEMENT FACILITY "B"

(POND SERVING OFF-SITE SHANNON AVE.)

APPROVED

JUN 24 2005

BY KC  
CITY OF FERNDALE

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MEASURED DURING CONSTRUCTION.

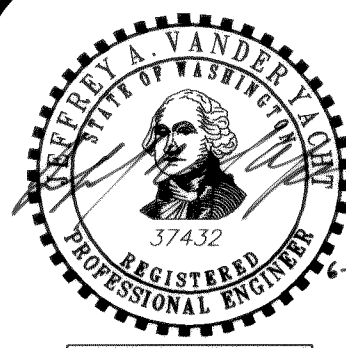
**GARDINER TERRACE PLAT**  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

## STORMWATER MANAGEMENT FACILITY & STORM DRAINAGE DETAILS

*AS BUILT*

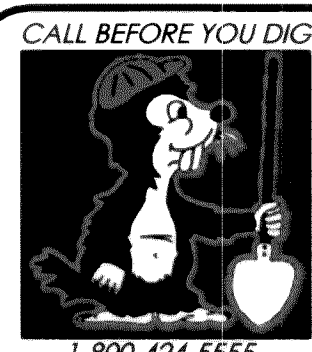
SHEET 19 OF 24

IOB #: 2003103



EXPIRES: 10/10/

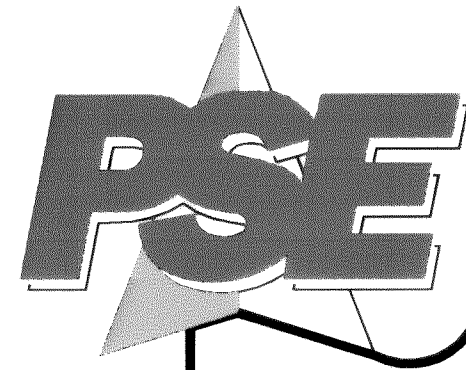
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SHANNON AVENUE

SHANNON AVENUE

STORMWATER  
MANAGEMENT  
FACILITY "B"

SHANNON AVENUE

SHANNON AVENUE

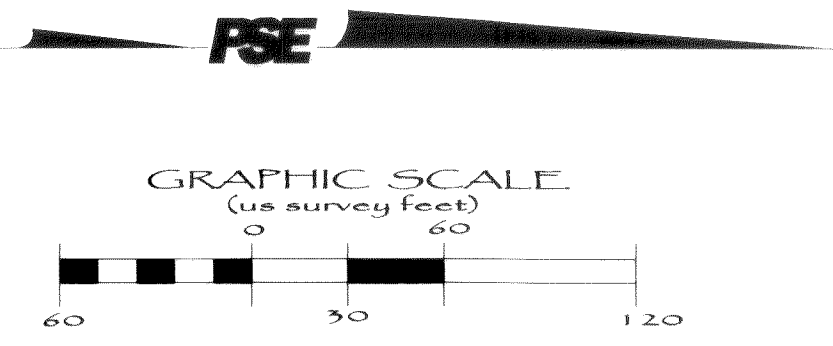
JOSEPH  
PLACE

KENNETH  
COURT

JOSEPH DRIVE

### EROSION CONTROL LEGEND

- CE WSDOE BMP C105  
STABILIZED CONSTRUCTION ENTRANCE  
(SEE DETAIL)
- MU WSDOE BMP C121  
MULCHING
- PS WSDOE BMP C120  
TEMPORARY AND PERMANENT SEEDING
- DC WSDOE BMP C140  
DUST CONTROL
- CD WSDOE BMP C207  
CHECK DAMS
- P WSDOE BMP C220  
INLET PROTECTION
- SB WSDOE BMP C241  
TEMPORARY SEDIMENT POND
- WSDOE BMP C233  
SILT FENCE (SEE DETAIL)
- PROPOSED DRAINAGE FLOW DIRECTION ARROWS  
(SHEET FLOW OR SHALLOW CHANNEL FLOW)



PHASE 2, DIVISION 3

PHASE 2, DIVISION 2

PHASE 2, DIVISION 1  
(COMPLETED)

STORMWATER  
MANAGEMENT  
FACILITY "A"

APPROVED

JUN 24 2005

BY [Signature] CITY OF FERDALE

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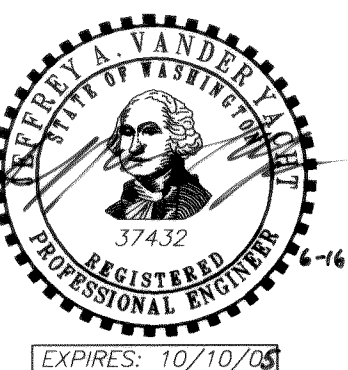
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GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

TEMPORARY EROSION &  
SEDIMENTATION CONTROL PLAN  
AS BUILT

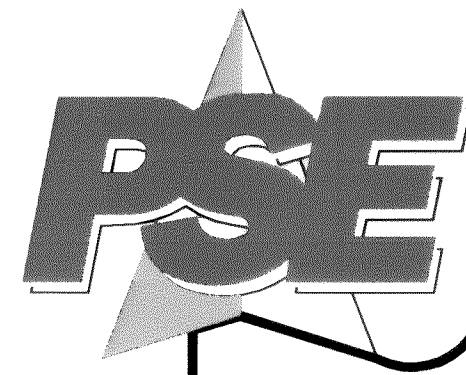
JOB #: 2003103

SHEET 20 OF 24



FIELD BOOKS	TBM NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	NO.	DATE
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## EROSION AND SEDIMENTATION CONTROL PLAN NARRATIVE

### PROJECT DESCRIPTION

THE PROPOSED PROJECT IS A RESIDENTIAL SUBDIVISION CONSISTING OF 56 LOTS WITH REQUIRED ROADWAYS AND UTILITY IMPROVEMENTS. THE MAJORITY OF THE SITE WILL BE CLEARED EXCEPT FOR EXISTING WETLANDS, BUFFERS, AND DEDICATED OPEN SPACE AREAS AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN (ESC). EARTHWORK WILL BE REQUIRED FOR ROADWAY CONSTRUCTION AND INDIVIDUAL RESIDENTIAL SITE PREPARATIONS.

### EXISTING SITE CONDITIONS

THE PROJECT SITE IS APPROXIMATELY 20 ACRES WITH SLOPES RANGING FROM APPROXIMATELY 6% TO 35%. THE SITE IS CURRENTLY BRUSHY AND WOODED. WETLANDS EXIST AT THE SITE. THE DRAINAGE GENERALLY FLOWS ACROSS THE SITE FROM THE NORTH TO THE SOUTH. DOWNSTREAM PIPE CONVEYANCE SYSTEMS EXIST AND OUTFALL TO UNNAMED DITCHES. STORMWATER EVENTUALLY DISCHARGES FROM EXISTING CONVEYANCE SYSTEMS TO SCHELL CREEK AND FROM SCHELL CREEK TO THE LUMMI RIVER.

### ADJACENT AREAS

AREAS ADJACENT TO THE PROJECT SITE INCLUDE EXISTING FERNDAL SCHOOLS, RESIDENTIAL PROPERTIES, AND VACANT PARCELS. ROADWAY AND UTILITY CONNECTIONS WILL BE MADE TO SHANNON AVENUE, HEATHER WAY, AND ARTIST DRIVE. STORMWATER DRAINAGE LEAVING THE SITE WILL BE CONTROLLED BY SILT FENCES, INTERCEPTOR SWALES AND DIKES, NATURAL BUFFER ZONES, AND TEMPORARY SEEDING AND MULCHING. ALL TEMPORARY SEDIMENTATION AND EROSION CONTROL MEASURES ARE IN ACCORDANCE WITH THE WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN, 1992 EDITION.

### SOILS

THE NATIVE SOILS ON THE PROJECT SITE HAVE BEEN CLASSIFIED AS "WHATCOM", HYDROLOGIC GROUP C PER THE SOIL CONSERVATION SERVICE SOIL SURVEY OF WHATCOM COUNTY AREA, WASHINGTON, 1992.

### CRITICAL AREA

THE ENTIRE SITE CONSISTS OF CRITICAL EROSION SLOPES AS DEFINED BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN.

### EROSION AND SEDIMENTATION CONTROL BMP'S

THE PROJECT MAY BE CONSTRUCTED IN TWO PHASES AS DESIGNATED ON THE ESC PLAN. UPON COMPLETION OF CLEARING AND GRUBBING WITHIN THE CLEARING LIMITS ON THE PLAN, ALL SILT FENCES, INTERCEPTOR DIKES AND SWALES, CONSTRUCTION ENTRANCES, AND THE TEMPORARY SEDIMENTATION POND WILL BE CONSTRUCTED. TEMPORARY SEEDING AND MULCHING WILL BE COMPLETED AFTER GRADING OF AREAS OUTSIDE OF PROPOSED RIGHT-OF-WAYS. ALL BMP'S SHOWN ON THE ESC PLAN ARE IN ACCORDANCE WITH THE WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN.

### PERMANENT STABILIZATION

THE SILT FENCES, INTERCEPTOR DIKES AND SWALES, TEMPORARY SEEDING, AND MULCHING WILL REMAIN UNTIL BUILDING LOTS ARE DEVELOPED.

### STORMWATER MANAGEMENT CONSIDERATIONS

THE DEVELOPMENT OF THE SITE WILL RESULT IN INCREASED RUNOFF RATES FROM THE SITE. THESE INCREASED RUNOFF RATES WILL BE LIMITED TO THE PREDEVELOPMENT RATES BY A STORM DRAINAGE CONTROL STRUCTURE AND DETENTION POND.

### MAINTENANCE

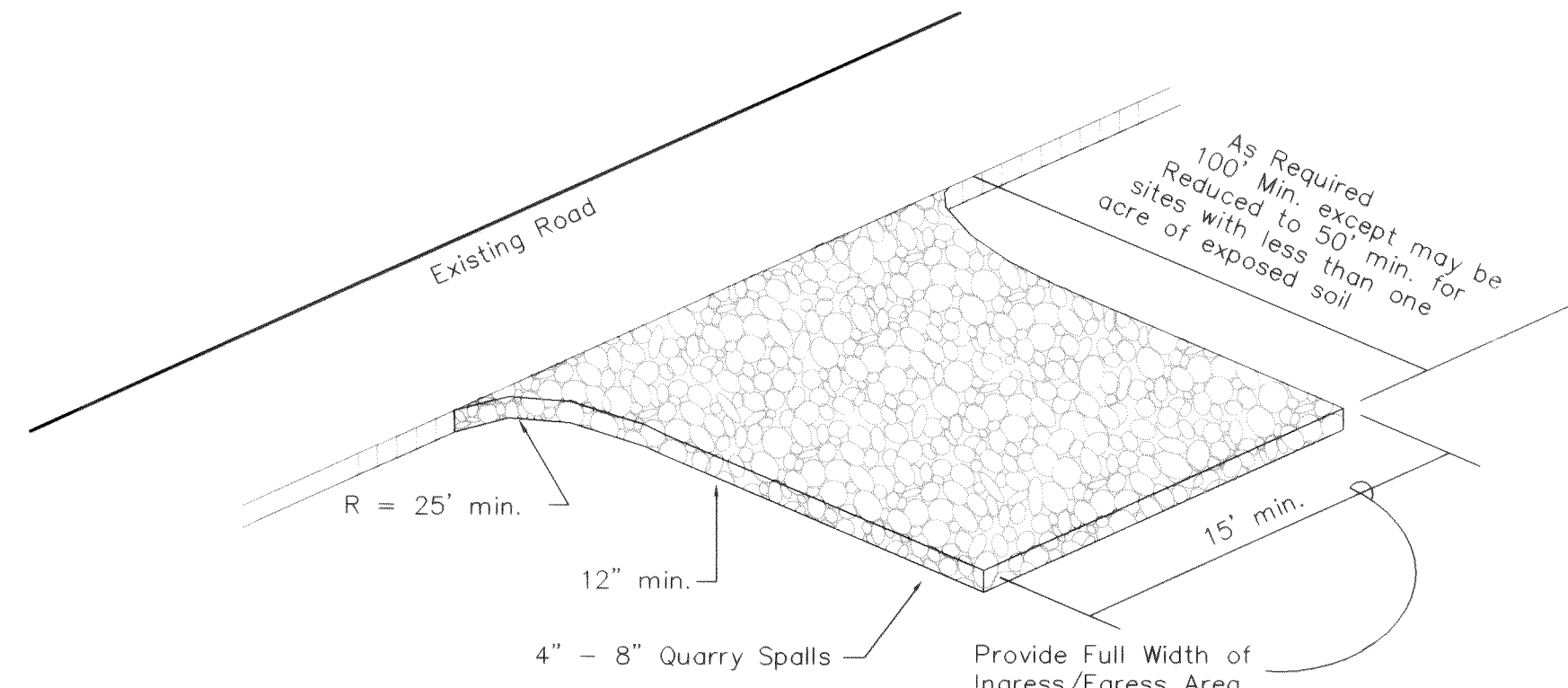
THE EROSION CONTROL MEASURES WILL BE MAINTAINED AS NECESSARY PER THE DIRECTION OF THE CITY OF FERNDAL.

### CALCULATIONS

FINAL DRAINAGE CALCULATIONS, CONVEYANCE CALCULATIONS, DETENTION POND DESIGN, AND STORMWATER QUALITY DESIGN ARE INCLUDED IN THE PROJECT STORMWATER DRAINAGE REPORT.

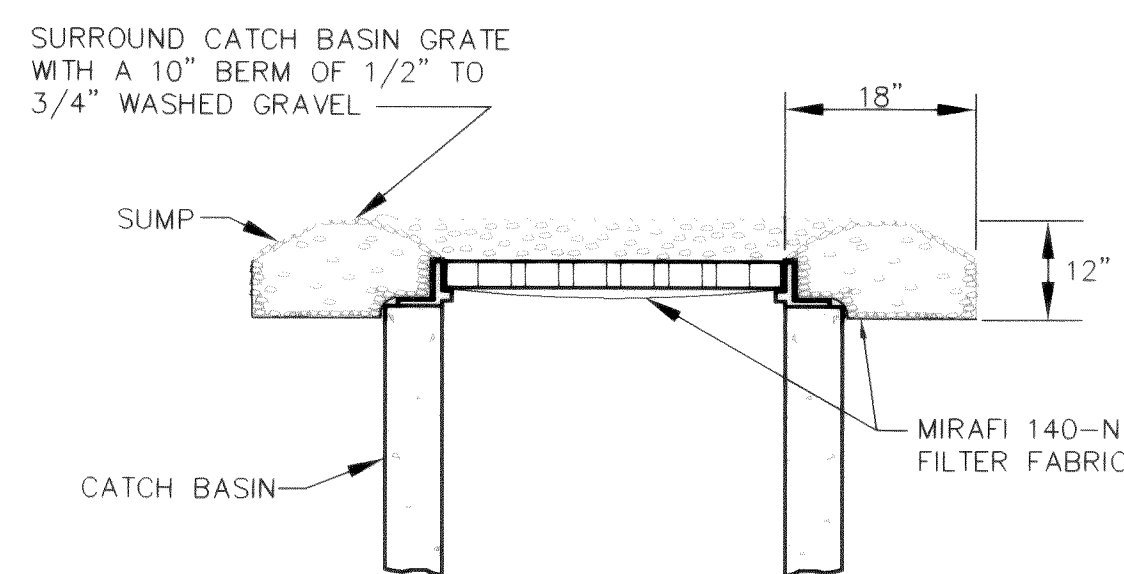
### NON-ESC BMP'S REQUIRED

THE CONTRACTOR SHALL BE REQUIRED TO PERFORM "GOOD HOUSEKEEPING" TO ENSURE THAT CONSTRUCTION DEBRIS IS CONTAINED WITHIN THE SITE AND PROPERLY DISPOSED OF. THE CONTRACTOR SHALL DEMONSTRATE THE ABILITY TO ADEQUATELY CONTAIN AND DISPOSE OF GASOLINE, DIESEL, HYDRAULIC FLUID, ETC. IN THE EVENT OF A SPILL.



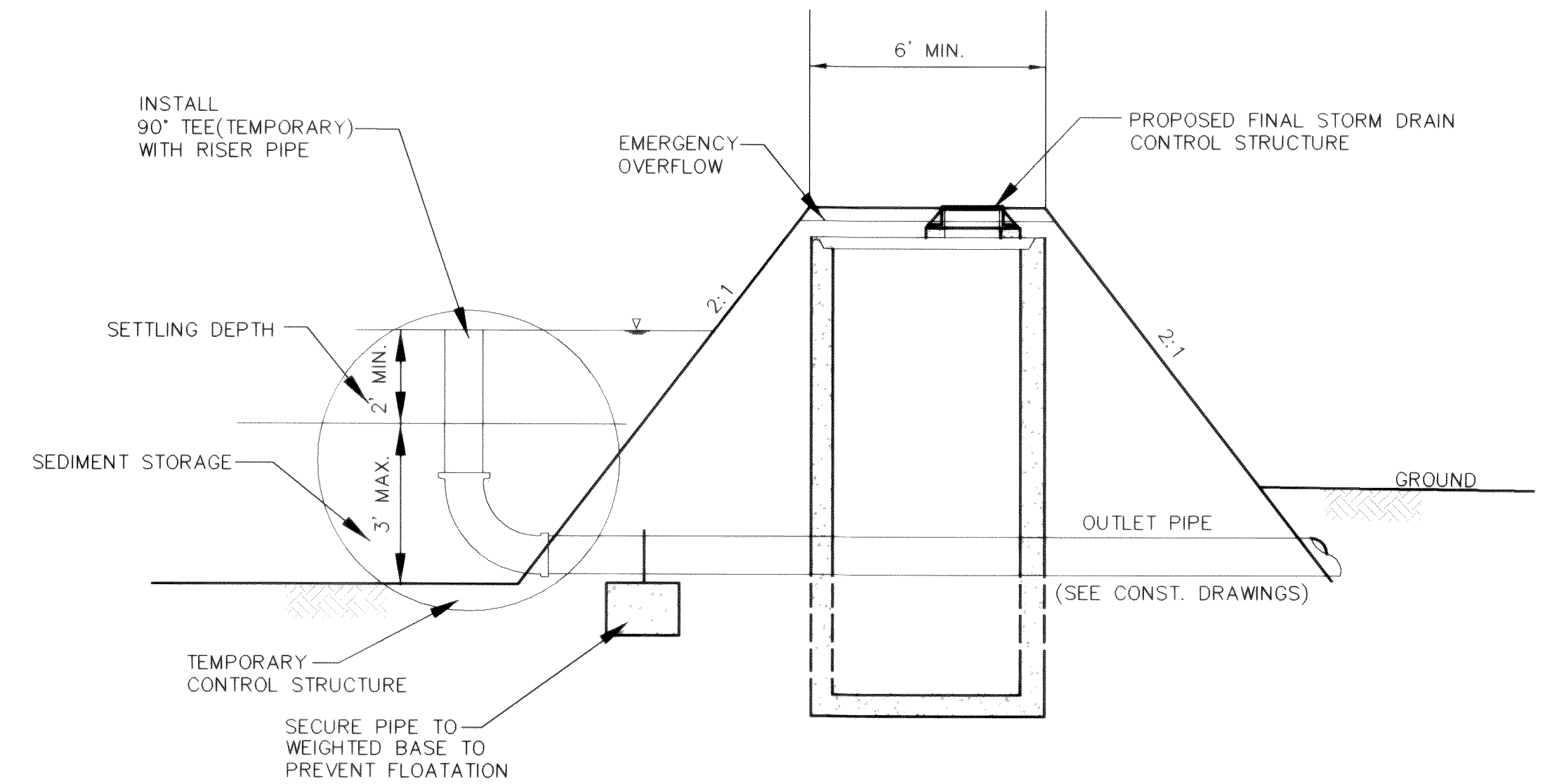
## CONSTRUCTION ROAD STABILIZATION

NOT TO SCALE



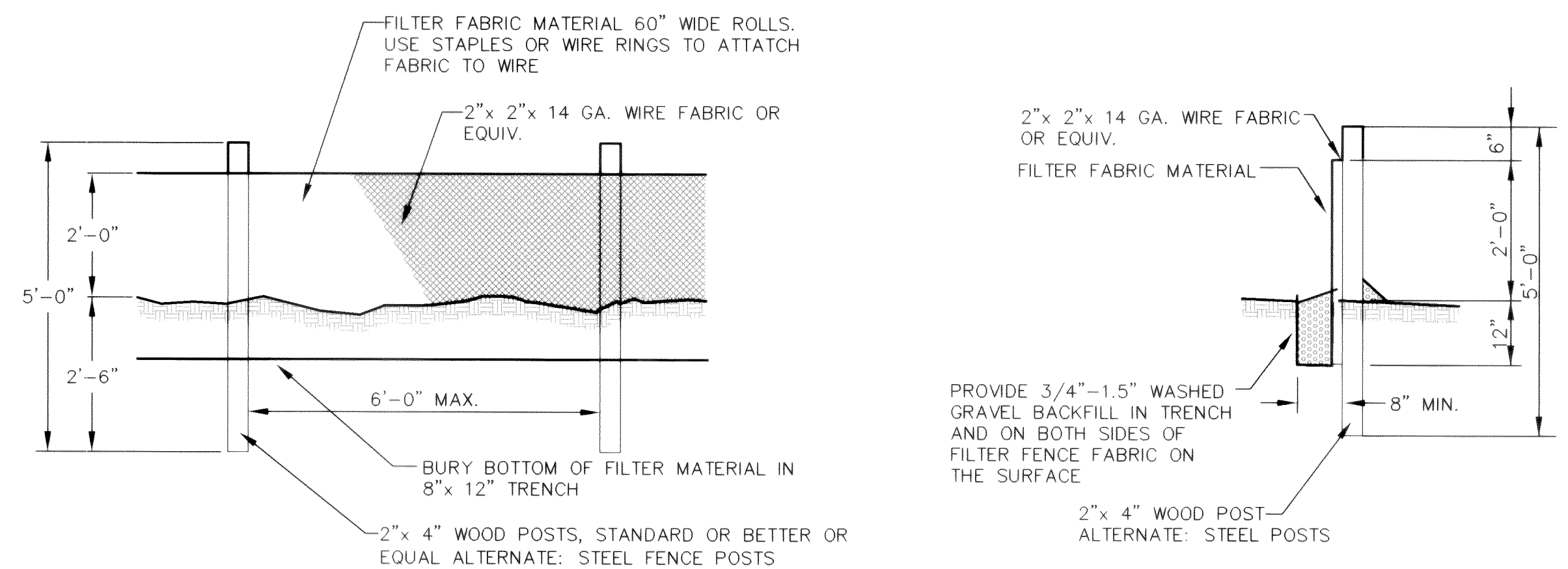
## INTERIM CATCH BASIN GRATE PROTECTION

NOT TO SCALE



## TEMPORARY CONTROL STRUCTURE DETAIL

NOT TO SCALE



## SILT FENCE DETAILS

NOT TO SCALE

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APPROVED

JUN 24 2005  
BY RC  
CITY OF FERNDAL

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SURVEY REFERENCE		VERTICAL DATUM								REVISIONS			ISSUE

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GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

EROSION CONTROL NOTES & DETAILS

AS BUILT

JOB #: 2003103

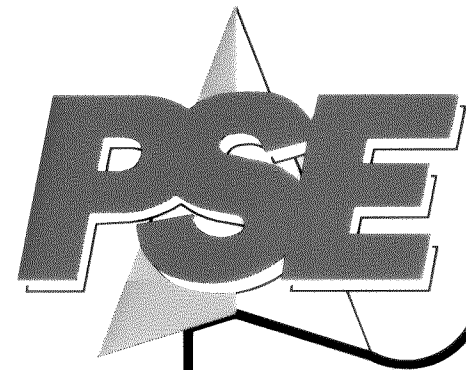
SHEET 21 OF 24



EXPIRES: 10/10/05

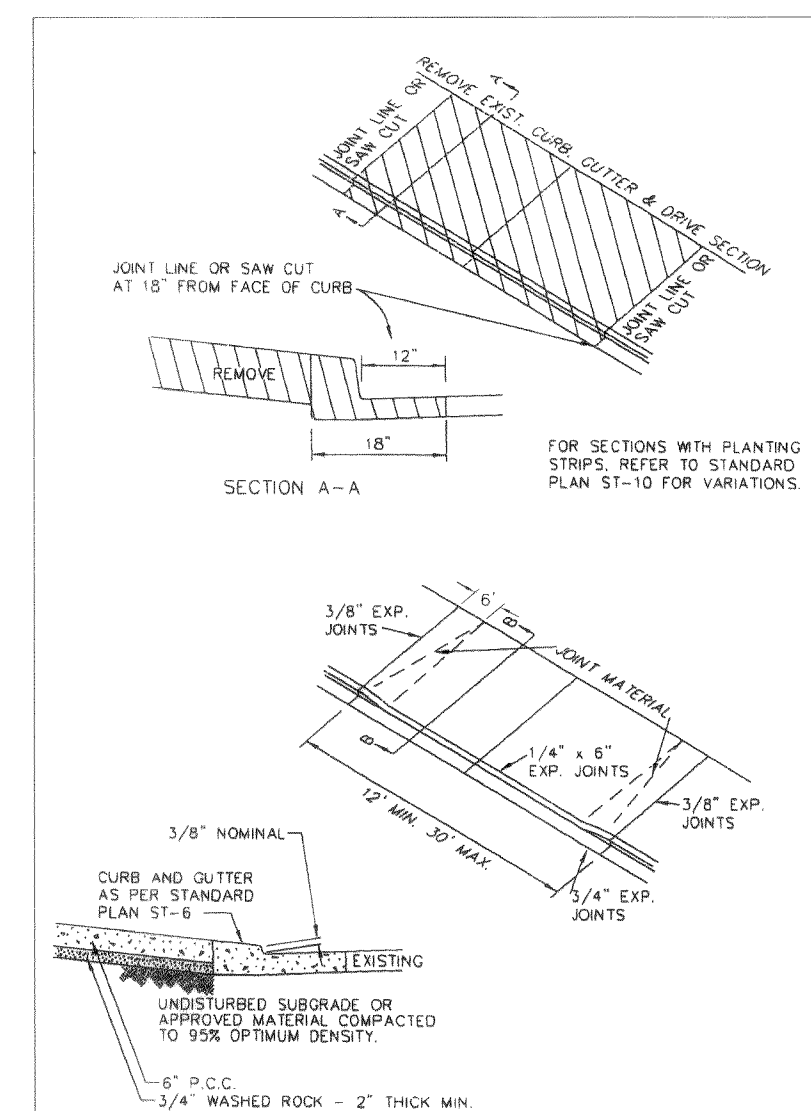
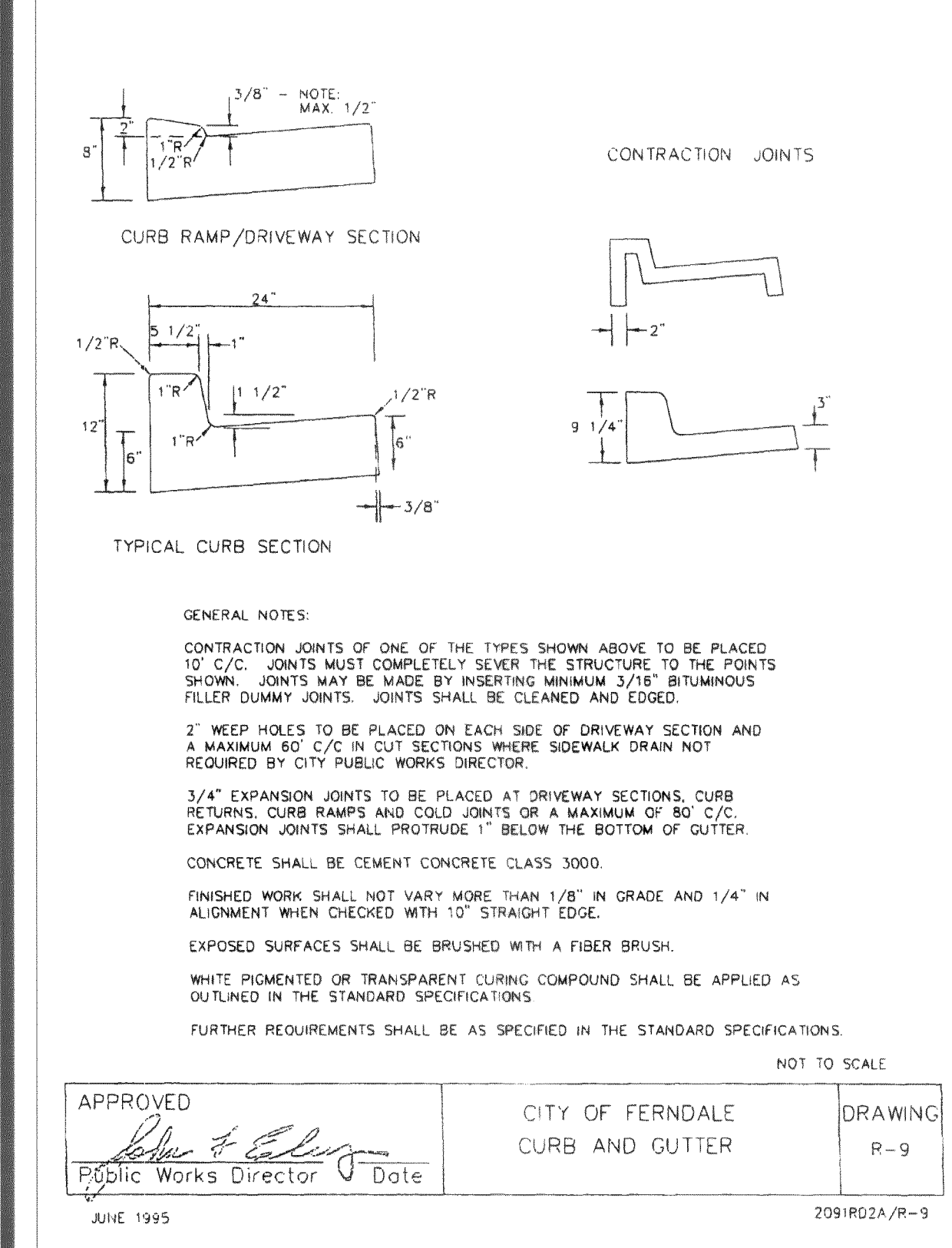
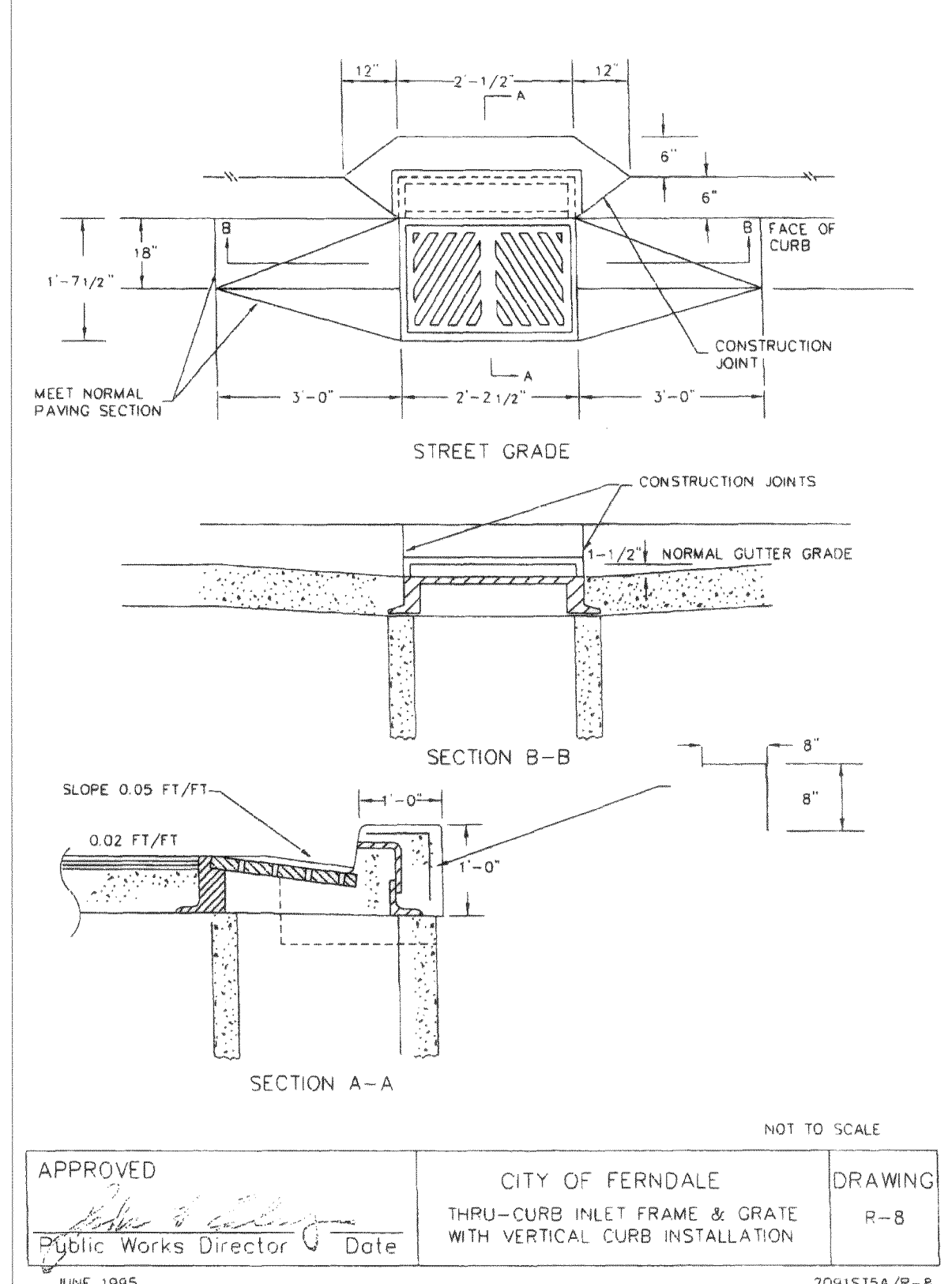
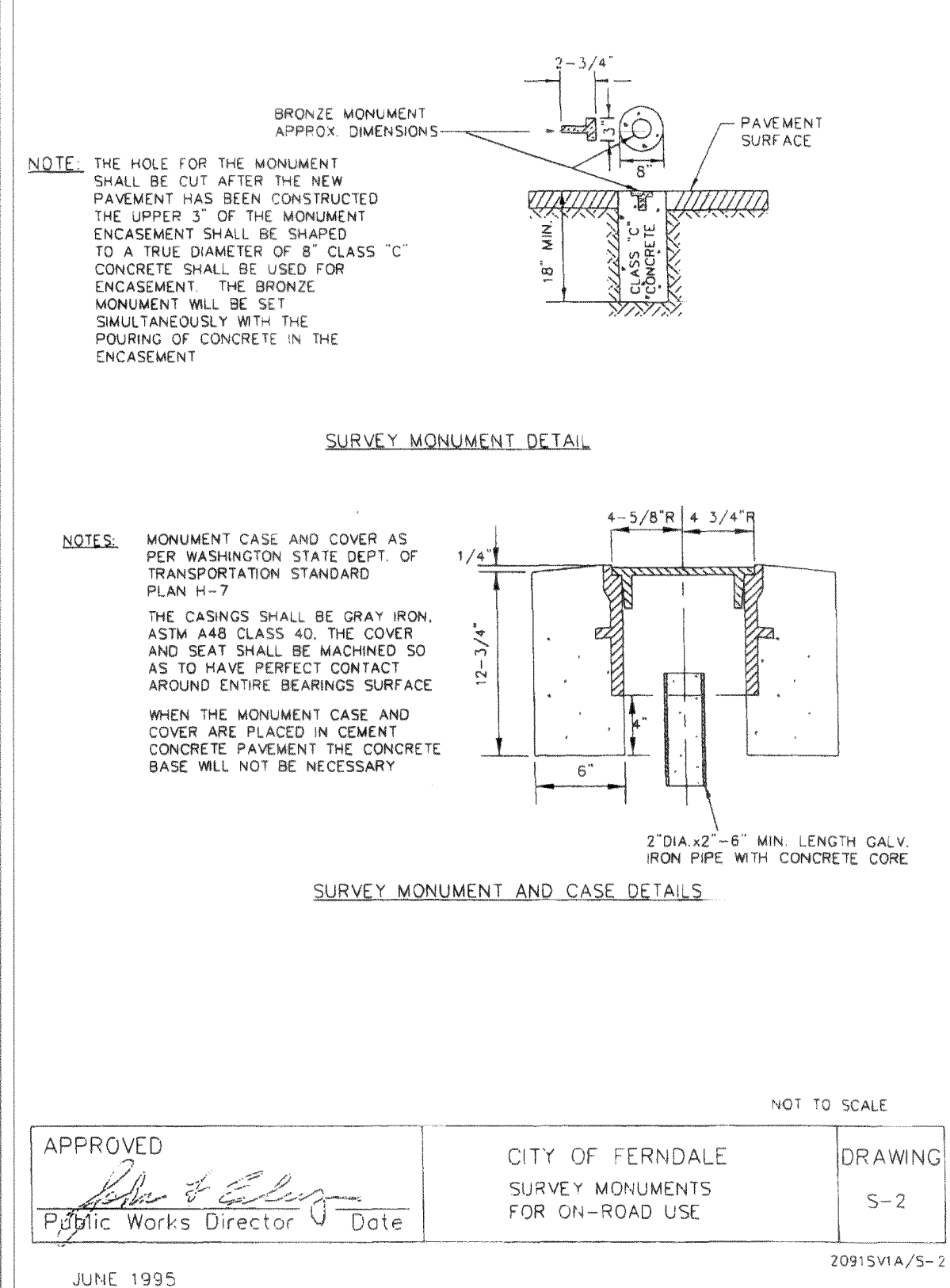
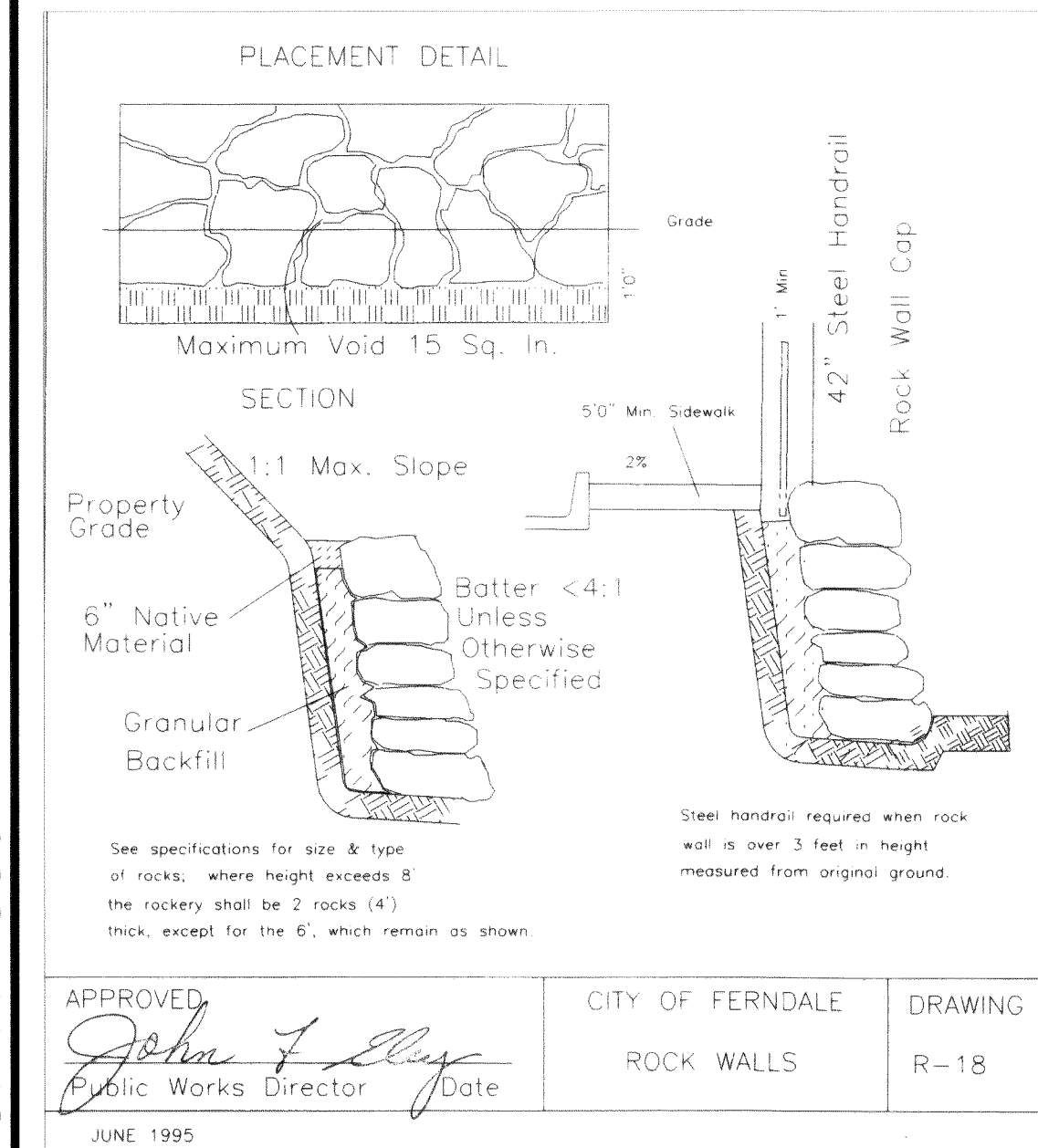
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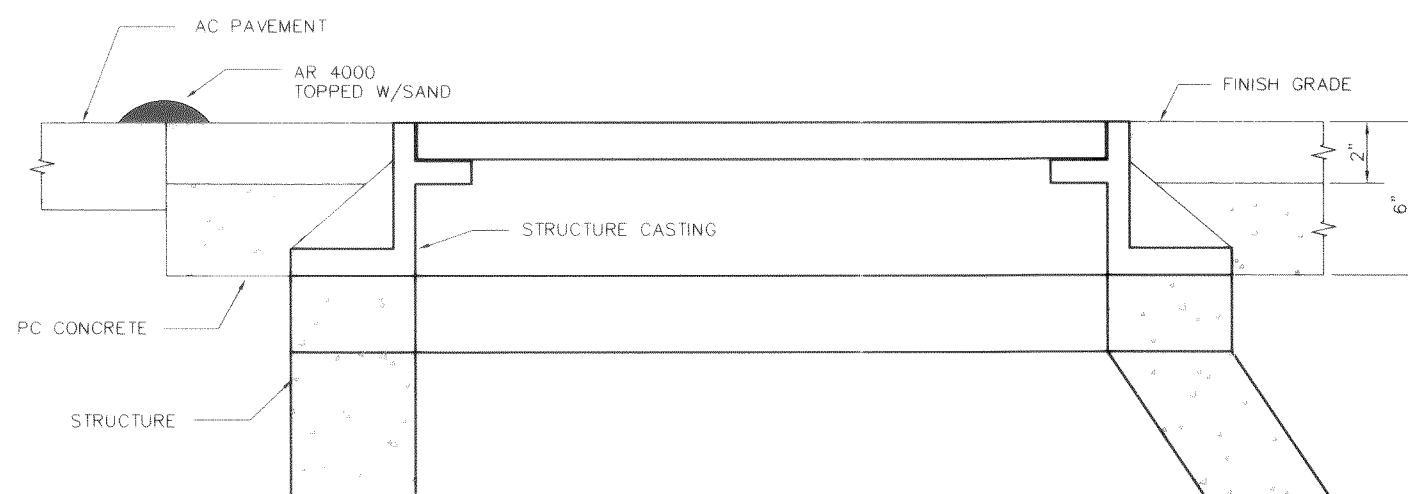
PACIFIC SURVEY & ENGINEERING INC  
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685



CONCRETE DRIVEWAY APPROACH DETAIL

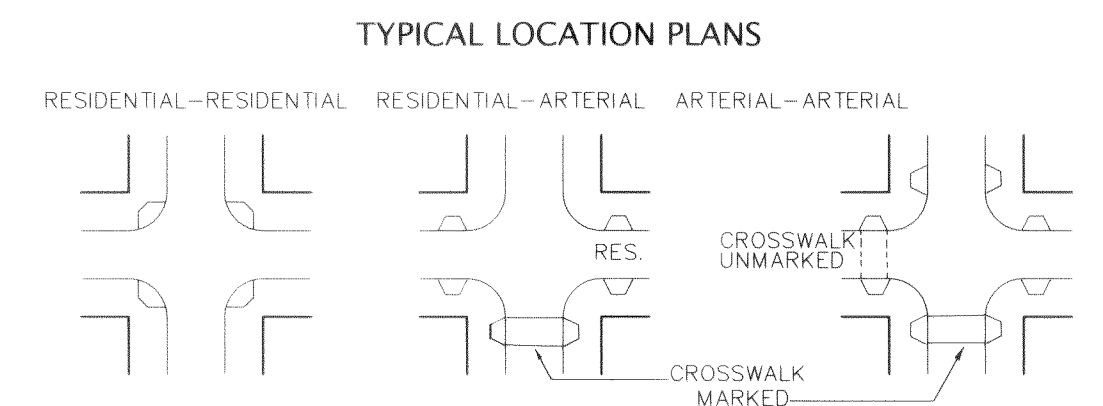
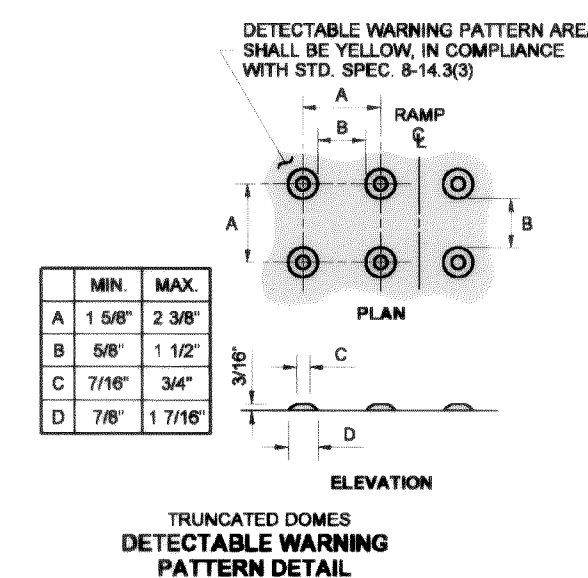
NOT TO SCALE

- NOTES:
- ALL FRAMES, COVERS AND VALVE BOXES SHALL BE RAISED TO FINISHED GRADE AFTER THE FINAL LIFT OF PAVING HAS BEEN COMPLETED. THE FOLLOWING PROCEDURE SHALL BE USED:
1. CUT THE ASPHALT IN AN EVEN CIRCLE AROUND THE STRUCTURE CASTING TO BE ADJUSTED.
  2. REMOVE THE FILL MATERIAL WITHIN THE CUT PAVEMENT AREA TO 6 INCHES MIN. BELOW FINISH GRADE.
  3. PLACE THE CASTING AT FINISH GRADE.
  4. PLACE PORTLAND CEMENT CONCRETE TO WITHIN THE TOP 2 INCHES OF FINISH GRADE.
  5. APPLY TACK TO THE STRUCTURE CASTING, CUT PAVEMENT, AND PC CONCRETE.
  6. PLACE AND COMPACT 2 INCHES OF ASPHALT CONCRETE CLASS B TO FINISH GRADE.
  7. SEAL PAVEMENT JOINTS WITH HOT AR4000 AND TOP WITH SAND.

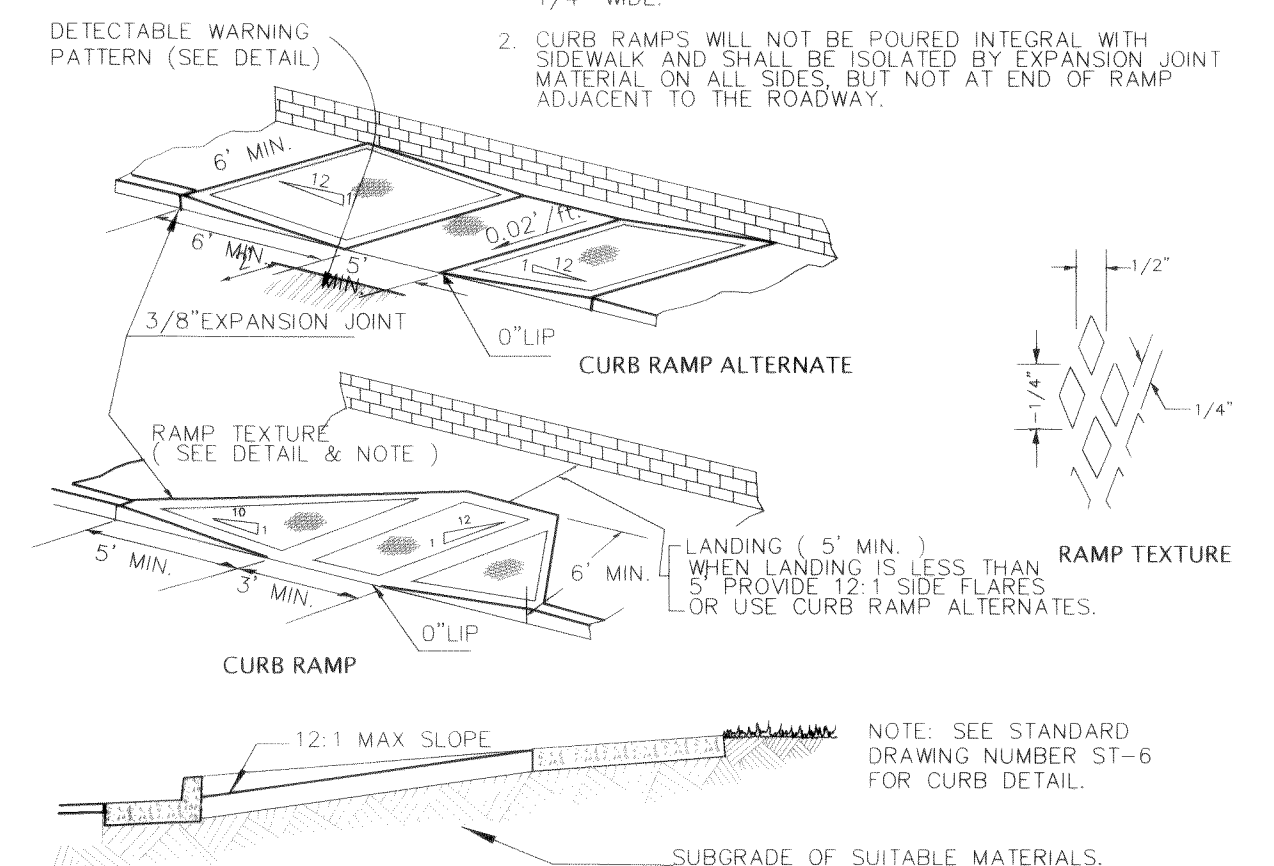


ADJUSTING CASTINGS TO FINISHED GRADE

NTS



- NOTES:
1. RAMP TEXTURING IS TO BE DONE WITH AN EXPANDED METAL GRATE PLACED AND REMOVED FROM WET CONCRETE TO LEAVE A DIAMOND PATTERN AS SHOWN. THE LONG AXIS OF THE DIAMOND PATTERN SHALL BE PERPENDICULAR TO THE CURB. GROOVES SHALL BE 1/8" DEEP AND 1/4" WIDE.
  2. CURB RAMPS WILL NOT BE POURED INTEGRAL WITH SIDEWALK AND SHALL BE ISOLATED BY EXPANSION JOINT MATERIAL ON ALL SIDES, BUT NOT AT END OF RAMP ADJACENT TO THE ROADWAY.



CURB RAMPS

NTS

AS BUILT NOTE: ONLY INFORMATION NOTED AS "TAB" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

APPROVED

JUN 24 2005

BY: *John F. Elger*

CITY OF FERDALE

GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

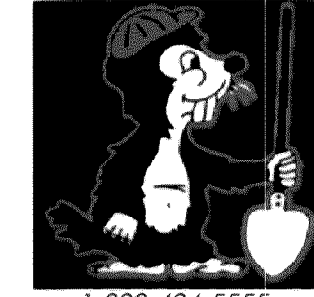
ROADWAY DETAILS

AS BUILT SHEET 22 OF 24



EXPIRES: 10/10/06

CALL BEFORE YOU DIG



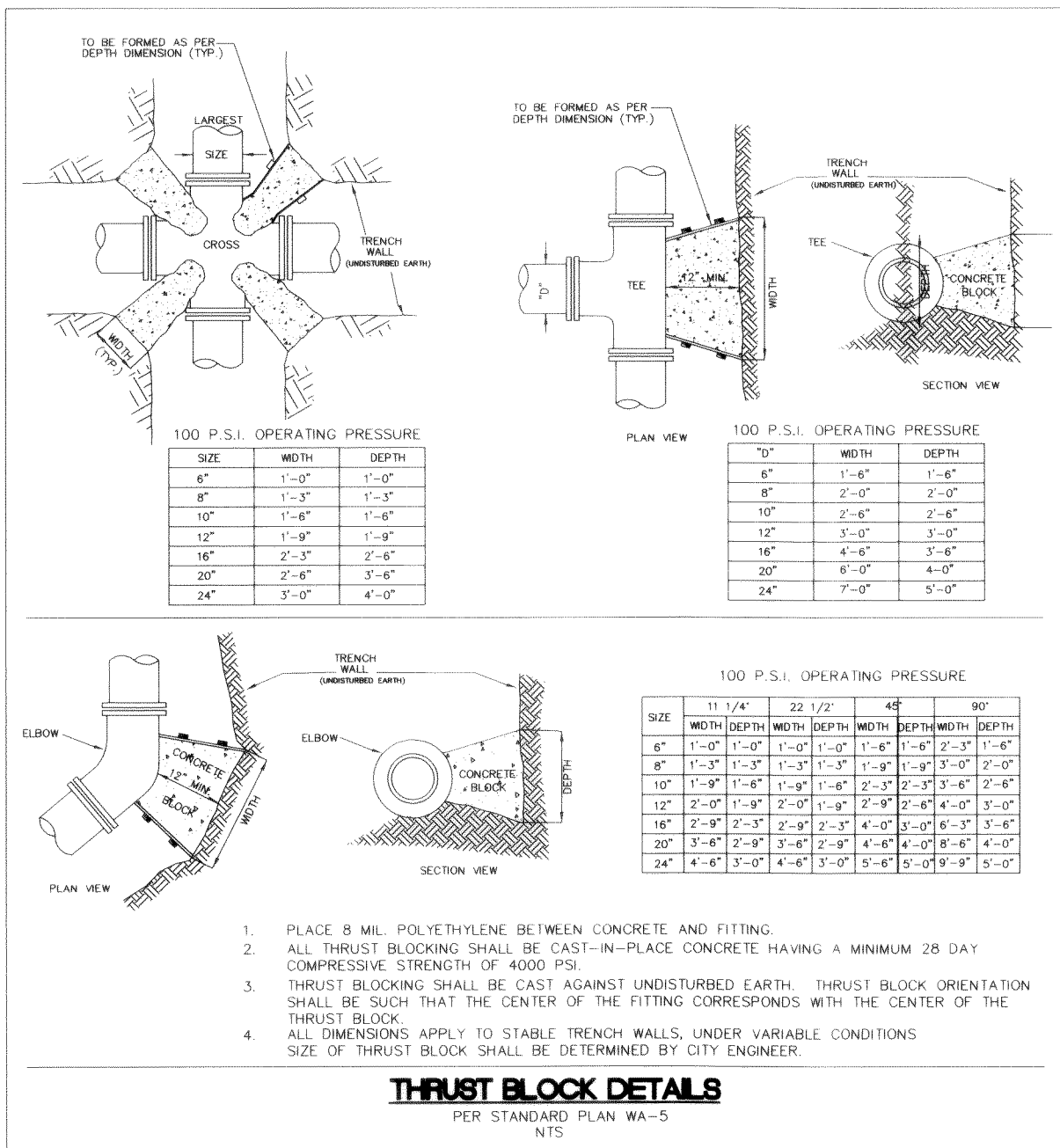
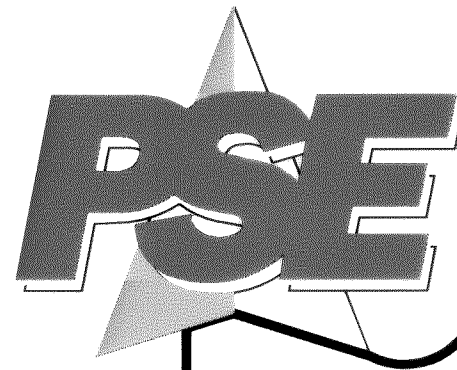
1-800-424-5555

KRAMER CONSTRUCTION CO.

1442 SUNSET AVENUE  
FERDALE, WA 98248

JOB #: 2003103



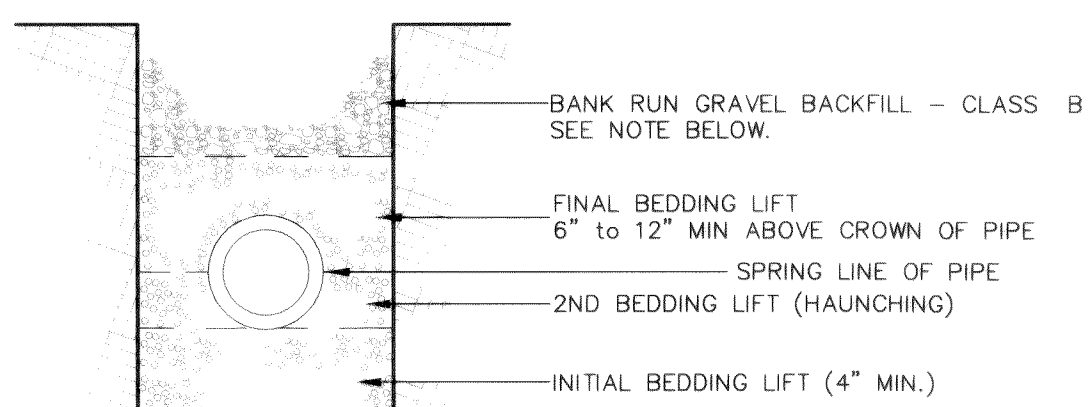


### BEDDING SPECIFICATIONS FOR D.I.P. WATERLINE

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

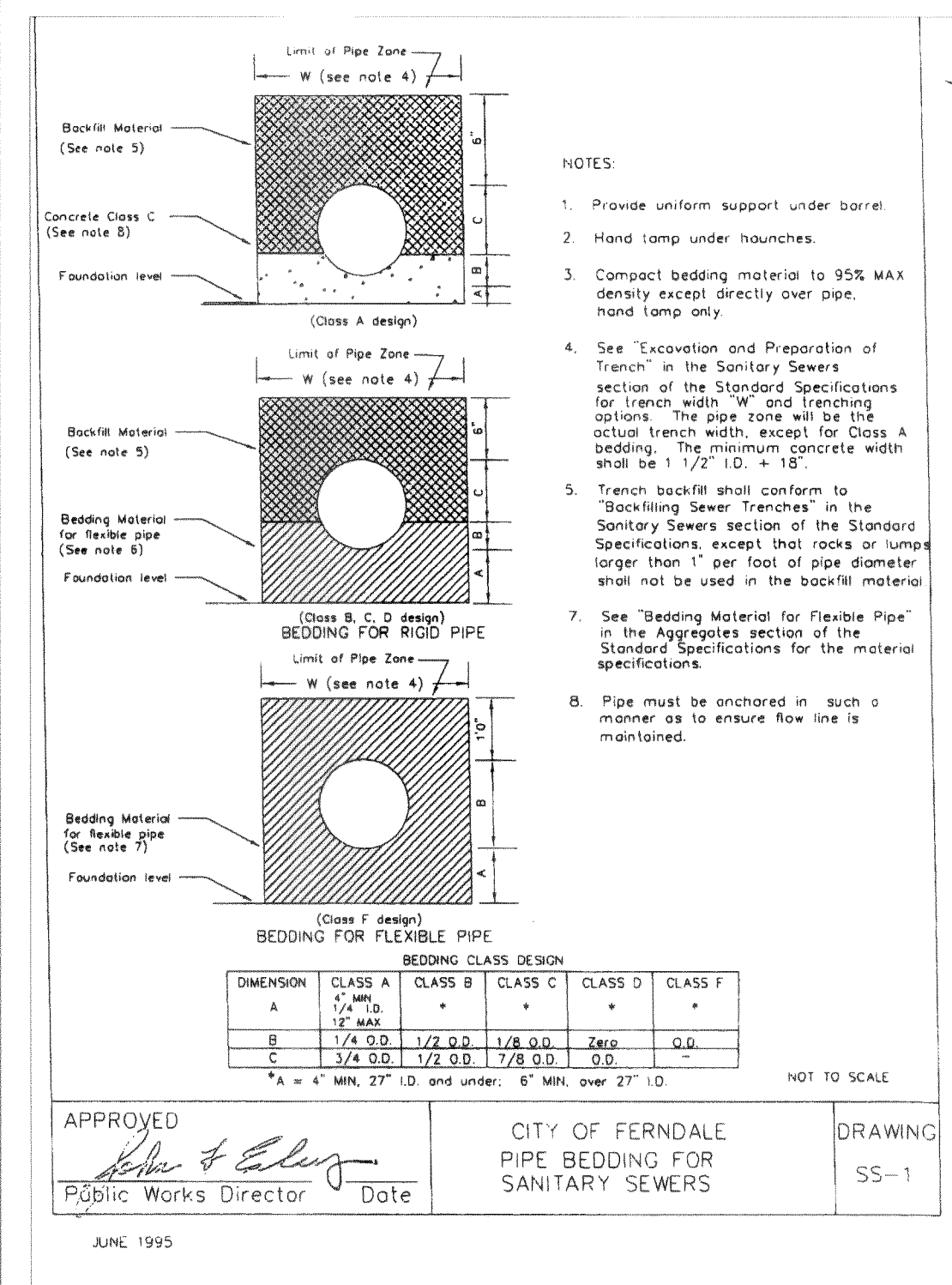
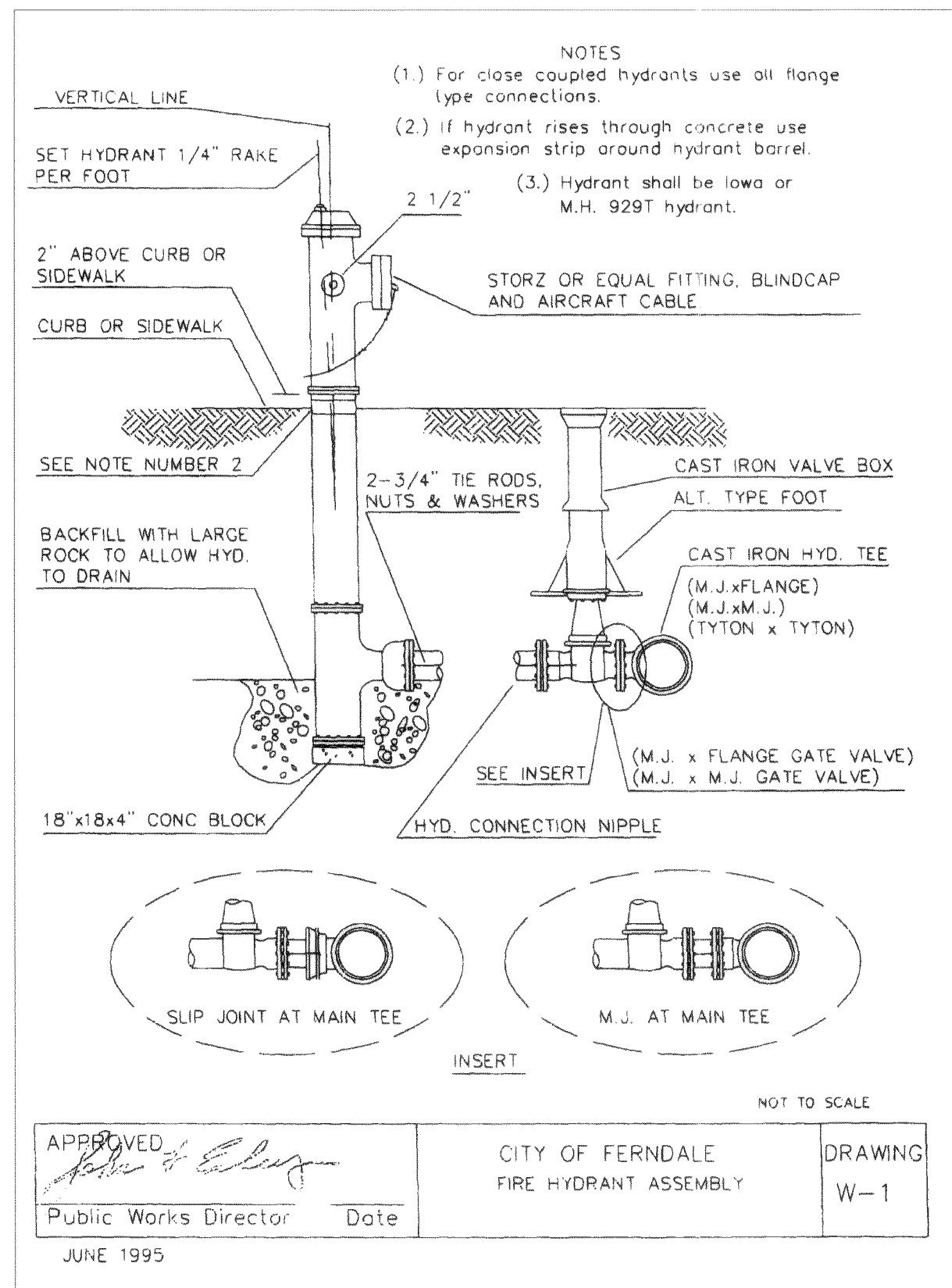
#### BEDDING FOR DUCTILE IRON PIPE WATERLINE--

BEDDING MATERIAL FOR THE DUCTILE IRON PIPE SHALL BE SELECT GRANULAR MATERIAL FREE FROM WOOD WASTE, ORGANIC MATERIAL, OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIALS AND SHALL HAVE A MAXIMUM DIMENSION OF 1-1/2 INCHES OR APPROVED PIPE BEDDING PER WSDOT SPECIFICATION SECTION 7-10.3(9). MATERIAL SHALL BE PLACED TO A MINIMUM DIPETH OF 4 INCHES UNDER THE PIPE AND 6 INCHES OVER THE TOP OF THE PIPE. THE BEDDING MATERIAL SHALL BE RAMMED AND TAMPED AROUND THE PIPE TO 95 PERCENT OF MAXIMUM DENSITY BY APPROVED HAND-HELD TOOLS, SO AS TO PROVIDE FIRM AND UNIFORM SUPPORT FOR THE FULL LENGTH OF THE PIPE, VALVES, AND FITTINGS. CARE SHALL BE TAKEN TO PREVENT ANY DAMAGE TO THE PIPE OR ITS PROTECTIVE COATING. PEA GRAVEL AND BUCKSHOT ARE NOT ACCEPTABLE BEDDING MATERIAL.

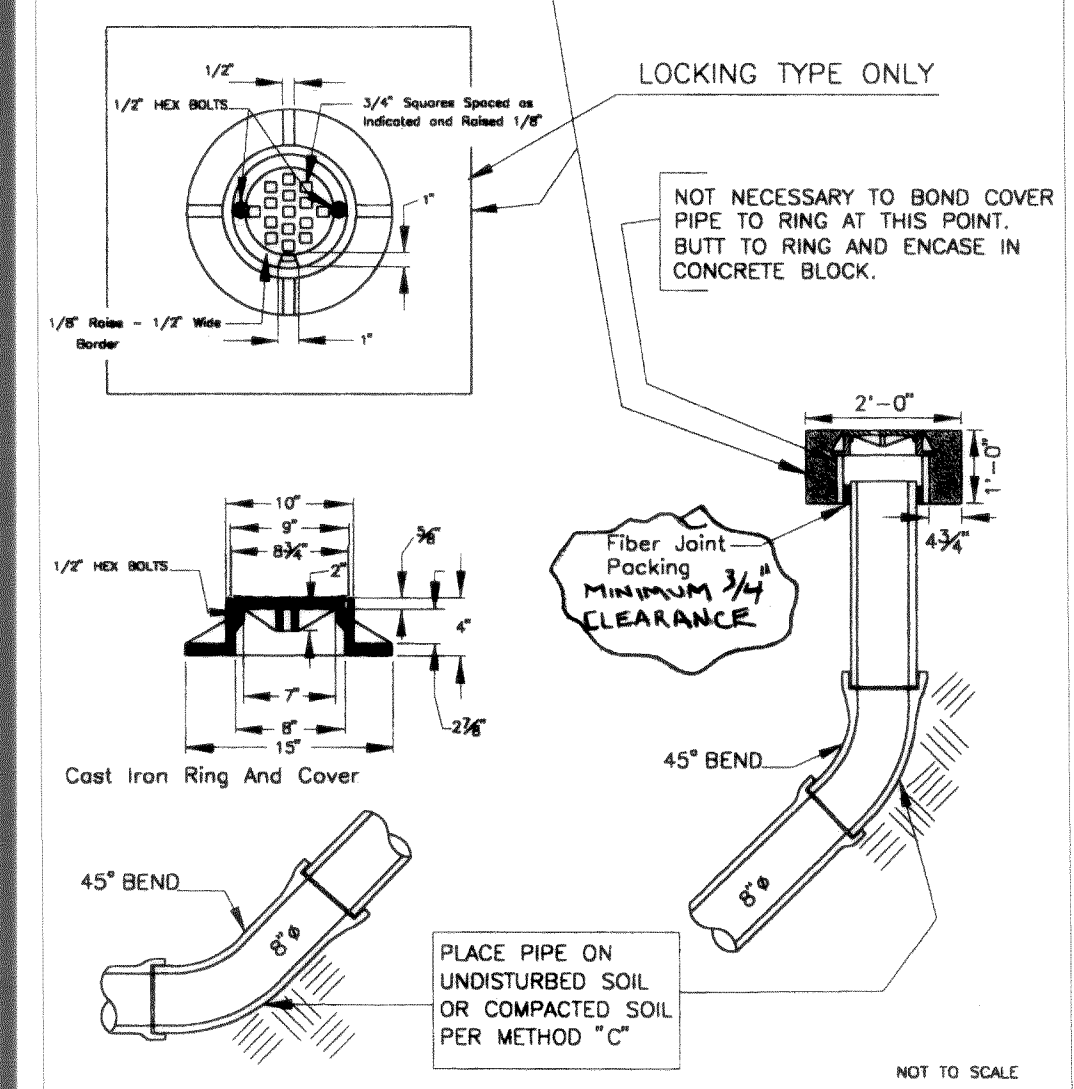


BACKFILL - WHEREVER A TRENCH IS EXCAVATED IN THE EXISTING OR PROPOSED ROADWAY, SIDEWALK OR OTHER AREAS WHERE SETTLEMENT WOULD BE DETRIMENTAL, THE ENTIRE TRENCH SHALL BE BACKFILLED WITH IMPORTED GRAVEL AND COMPACTED TO 95% OF MAXIMUM DENSITY.

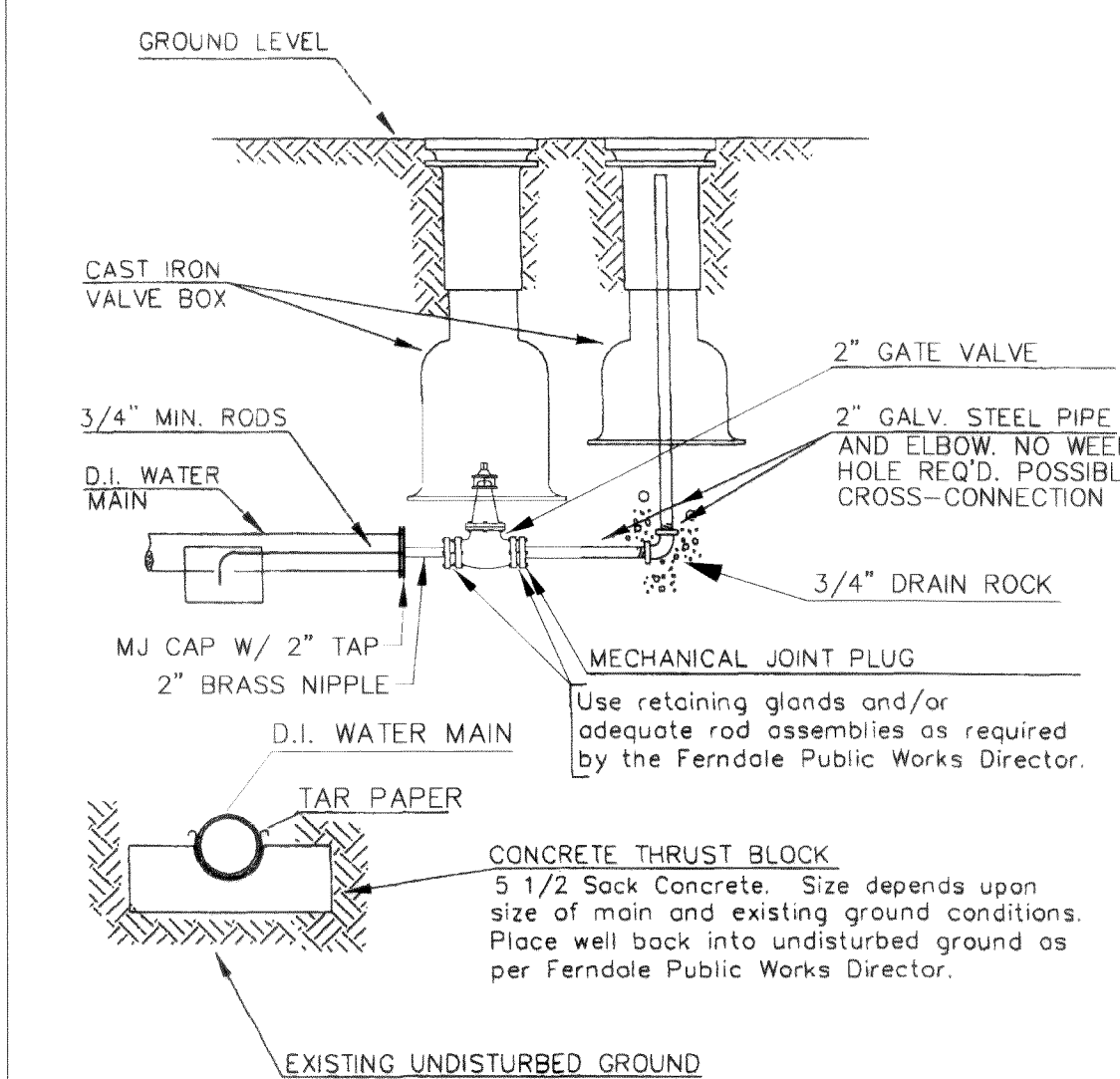
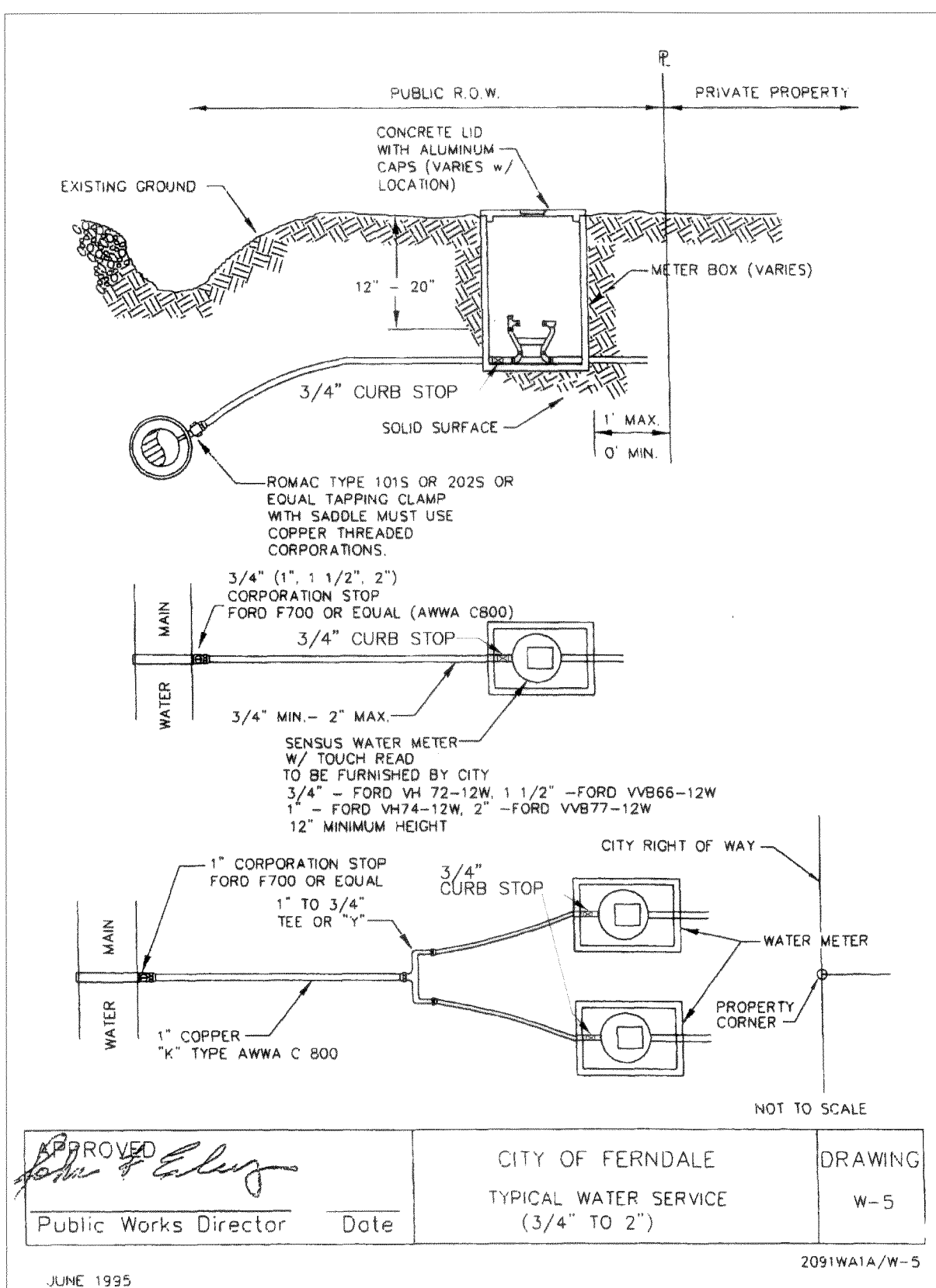
#### DIP WATERLINE BEDDING DETAIL



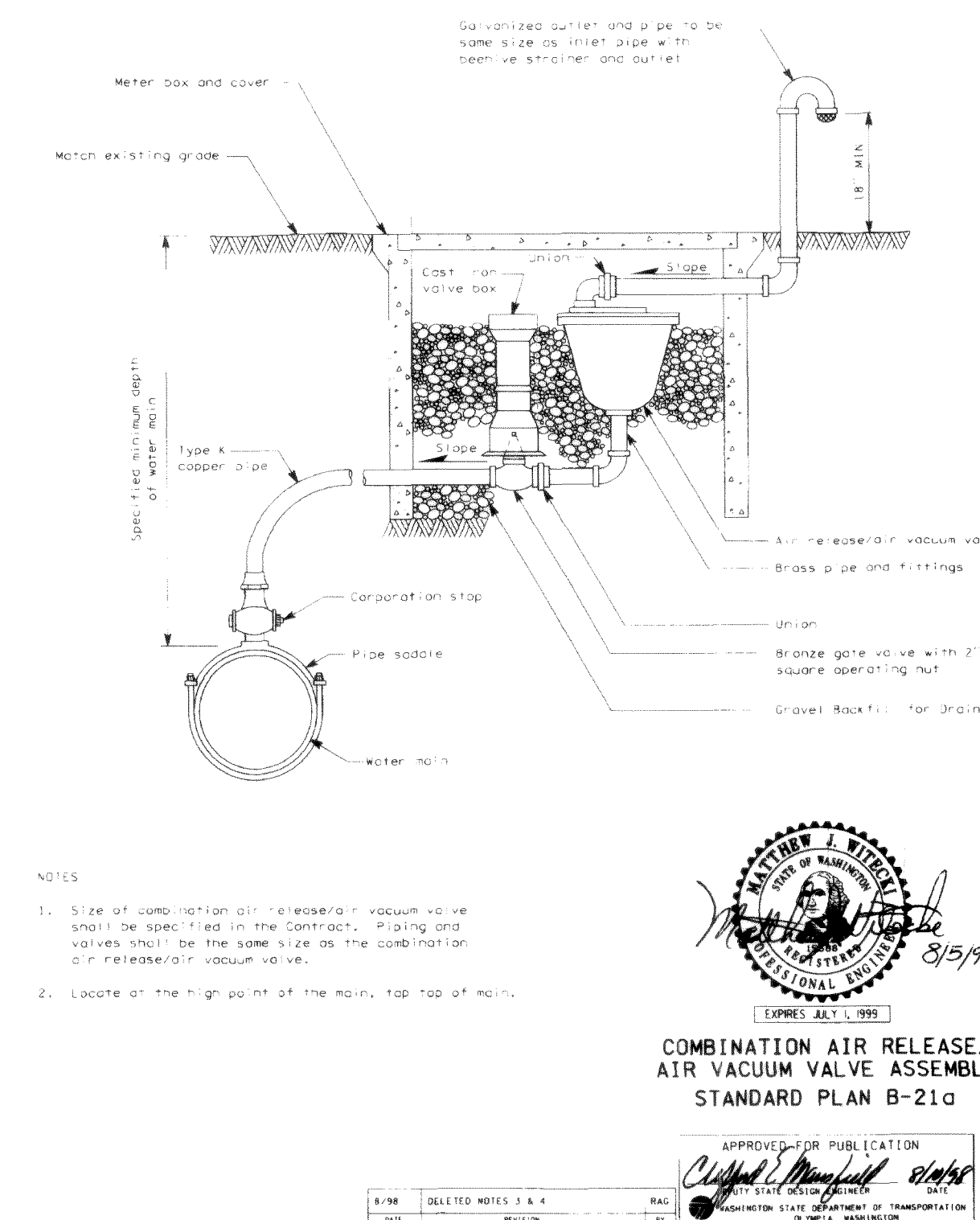
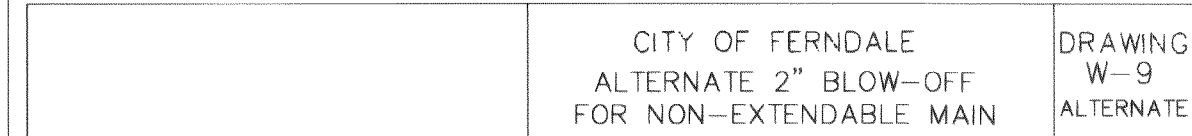
2" SQUARE CONCRETE BLOCK TO ENCASE CLEAN-OUT. IF CLEAN-OUT IS IN ASPHALT, THE BLOCK IS TO BE LEFT APPROX. 1 1/2" LOW TO ALLOW FOR AN ASPHALT TOPPING OF LIKE MIXTURE AS THE SURROUNDING AREA. IN ALL CASES THE CONCRETE BLOCK WILL BE 1" THICK.



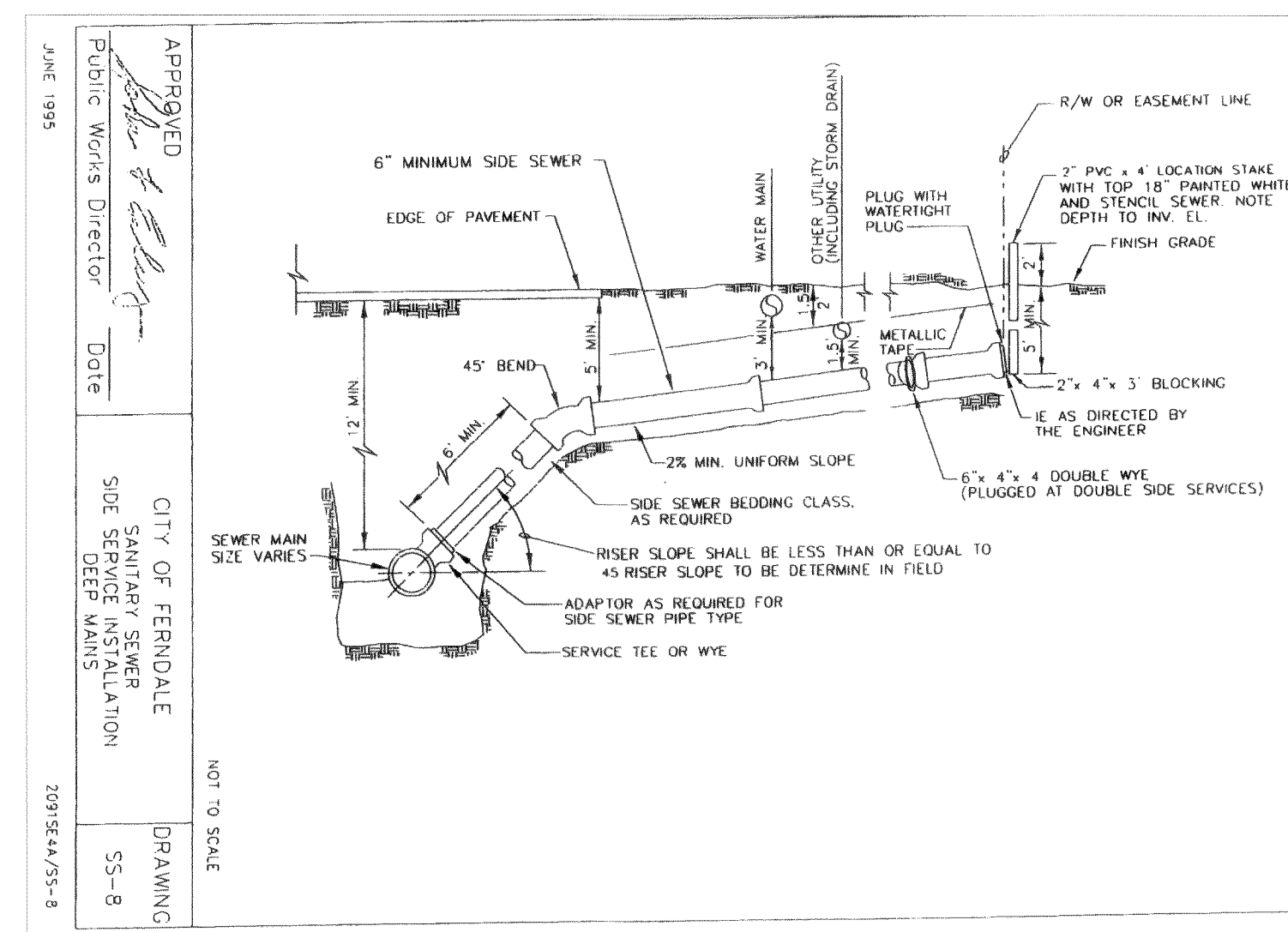
#### SANITARY SEWER CLEANOUT DETAIL



Alternate 2" blow-off, non-extendable, to be used where mains will not be extended. For mains with future extension, refer to 2" blow-off, Standard Drawing No. W-9



COMBINATION AIR RELEASE/AIR VACUUM VALVE ASSEMBLY  
STANDARD PLAN B-21a



APPROVED

JUN 2 - 2005

BY CITY OF FERNDALE

AS BUILT NOTE: ONLY INFORMATION NOTED AS "AS BUILT" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

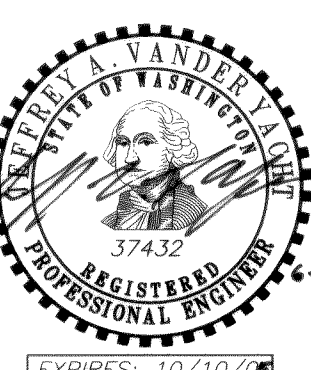
GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

WATER & SANITARY SEWER DETAILS

AS BUILT

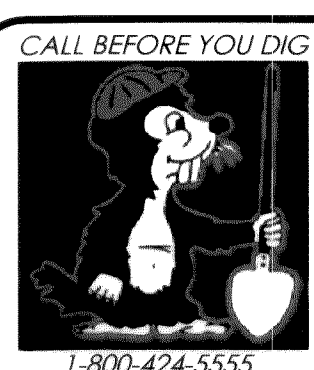
JOB #: 2003103

SHEET 23 OF 24



KRAMER CONSTRUCTION CO.

1442 SUNSET AVENUE  
FERNDALE, WA 98248



1-800-424-5555

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	NO.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:	BM/BW	JVY	HORIZ: N/A					1	ISSUED FOR CITY 1st REVIEW June 4, 2004
STAKING:		HYDRANT AT NW CORNER		DESIGN:			VERT: N/A					2	ISSUED FOR CITY 2nd REVIEW July 6, 2004
ASBUILT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL July 21, 2004
		NAVD 1928, BENCH MARK-USGS L6=268, ELEV.=34.96'		DWG:	Div2+3_CND_AsBuilt.dwg							4	AS BUILT June 16, 2005
REVISIONS											ISSUE		





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EMAIL: pse@psurvey.com

PACIFIC SURVEY & ENGINEERING INC  
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE:671.7387 FAX:671.4685

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: 16 SERIES	VISTA	TOP CENTER BOLT OF FIRE	123.96	BASE:			HORIZ: N/A					1	ISSUED FOR CITY 1st REVIEW June 4, 2004
STAKING:		HYDRANT AT NW CORNER		DESIGN:	BM/BW	JVY	VERT: N/A					2	ISSUED FOR CITY 2nd REVIEW July 6, 2004
ASBUILT:		OF SEAMOUNT & VISTA		XREF:								3	ISSUED FOR CITY APPROVAL July 21, 2004
		NAVD 1929. BENCH MARK=USGS 16=26B, ELEV.=34.96'		DWG:	Div2+3_CND_AsBuilt.dwg							4	AS BUILT June 16, 2005
SURVEY REFERENCE	VERTICAL DATUM	REVISIONS											
		ISSUE											

#### GENERAL REQUIREMENTS

- ALL WORK AND MATERIALS SHALL CONFORM TO THESE PLANS AND TO THE REQUIREMENTS OF THE MOST CURRENT EDITION OF THE STATE OF WASHINGTON, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. WORK AND MATERIALS SHALL ALSO CONFORM TO THE CITY OF FERDALE DEVELOPMENT STANDARDS. 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.
- THE CONTRACTOR SHALL OBTAIN REVOCABLE ENCROACHMENT PERMITS FROM THE CITY OF FERDALE AND WHATCOM COUNTY PRIOR TO COMMENCING WORK WITHIN PUBLIC RIGHTS-OF-WAY.
- THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH REPRESENTATIVES OF THE CITY OF FERDALE PUBLIC WORKS DEPARTMENT AND THE PROJECT ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- ALL WORK AND MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE CITY OF FERDALE. REPRESENTATIVES FROM THE CITY OF FERDALE PUBLIC WORKS DEPARTMENT MUST INSPECT ALL WORK. THE CONTRACTOR SHALL CALL AT LEAST 24 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS AS FOLLOWS:
  - PLACEMENT OF TEMPORARY EROSION CONTROL MEASURES.
  - PLACEMENT OF WATER MAIN AND BACKFILLING OF WATER MAIN TRENCH WITHIN ROAD RIGHTS-OF-WAY OR IN WATERLINE EASEMENTS TO BE DEDICATED TO THE CITY OF FERDALE.
  - PLACEMENT AND BACKFILLING OF UNDERGROUND UTILITIES, STORM SEWER AND SANITARY SEWER WITHIN ROAD RIGHTS-OF-WAY OR IN EASEMENTS TO BE DEDICATED TO THE CITY OF FERDALE.
  - GRADING OF PUBLIC 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.
- SITE CLEARING SHALL INCLUDE THE LOCATION AND REMOVAL OF ALL ABOVE GROUND AND BURIED DEBRIS AND WASTE THAT MAY BE PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING SUB-SURFACE CONDITIONS AND SOILS TYPES.
- 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. ALL SECTIONS OF THE WSDOT STANDARD SPECIFICATIONS 1-07.23-TRAFFIC CONTROL, SHALL APPLY.
- A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
- THE CONTRACTOR SHALL INFORM THE ENGINEER AND OBTAIN APPROVAL FROM THE CITY OF FERDALE PUBLIC WORKS DIRECTOR OF ANY PROPOSED DEVIATIONS 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 FERDALE PUBLIC WORKS DEPARTMENT.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE BASED UPON A COMBINATION OF FIELD RECONNAISSANCE, FIELD SURVEY AND UTILITY COMPANY RECORDS AND ARE SHOWN ON THESE PLANS IN AN APPROXIMATE WAY ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL OF THE VARIOUS UTILITY COMPANIES TO ARRANGE FOR FIELD LOCATIONS OF ALL EXISTING UTILITY FACILITIES PRIOR TO STARTING CONSTRUCTION. 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 CONTACT UTILITY LOCATION SERVICE AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION. PHONE: 1-800-424-5555.
- 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.
- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF ANY DISCREPANCIES EXIST BETWEEN ACTUAL FIELD CONDITIONS AND THE ASSUMED CONDITIONS SHOWN ON THE APPROVED PLANS PRIOR TO PROCEEDING WITH CONSTRUCTION, SO THAT NECESSARY PLAN OR DESIGN CHANGES CAN BE MADE. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR EXTRA WORK, INCLUDING REMOVAL AND RECONSTRUCTION OF NEWLY BUILT IMPROVEMENTS MADE NECESSARY BY ERRORS OF DIMENSION OR GRADE ON THE APPROVED PLANS, UNLESS SUCH NOTIFICATION WAS GIVEN.
- THROUGHOUT THE PERIOD OF CONSTRUCTION, CONTRACTOR SHALL COMPLY WITH THE TERMS OF ALL PERMITS.
- 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.
- ALL MATERIALS TESTING REQUIREMENTS FOR THE IMPROVEMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PERFORMED IN ACCORDANCE WITH THE INSTRUCTIONS OF THE CITY OF FERDALE PUBLIC WORKS DIRECTOR. CONTRACTOR SHOULD DETERMINE THESE REQUIREMENTS PRIOR TO THE START OF CONSTRUCTION.
- ALL PORTLAND CEMENT CONCRETE SHALL BE APWA CLASS 3000, PER APWA STANDARD SPECIFICATIONS, SECTION 6-02.3(2)B.
- 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, 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 AT LEAST 48-HOURS BEFORE BURYING UNDERGROUND PIPE TO ASSURE AND FACILITATE REQUIRED AS-BUILT SURVEY. THE ENGINEER WILL PROVIDE CERTIFIED AS-BUILT MYLARS TO PUBLIC WORKS UPON PROVISIONAL ACCEPTANCE OF ROAD AND UTILITY IMPROVEMENTS.
  - 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 DEWATERING DEVICES SHALL DISCHARGE INTO SEDIMENT TRAPS OR SEDIMENT PONDS.
    - WHERE PRACTICAL, INSTALL GRAVITY PIPE UTILITIES PRIOR TO INSTALLATION OF OTHER UTILITIES.
  - UTILITY CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF FERDALE DEVELOPMENT STANDARDS.
  - TESTING OF NEW WATER LINES, SANITARY SEWER LINES, AND STORM SEWER SYSTEMS SHALL NOT BE PERFORMED UNTIL ALL OTHER ADJACENT UTILITIES HAVE BEEN INSTALLED.

#### ROAD

- THE FOLLOWING STANDARD DETAILS SHALL BE USED FOR CONSTRUCTION OF THE STANDARD STREET SECTION:

TYPICAL STREET SECTION PCC CURB AND GUTTER PCC SIDEWALKS PCC CURB RAMPS, ADA APPROACHES SIDEWALK DRAINS MONUMENTS	TYPICAL SECTION ON SHEET 1 OF THESE PLANS CITY OF FERDALE STANDARD DETAIL (COFSD) R-9 COFSD R-12 & TYP. SECTION ON SHEET 1 WSDOT STD. DETAIL F-3 COFSD ST-15 COFSD S-2
--	---
- ALTERNATE PAVEMENT SECTIONS, WHEN DESIGNED BY A LICENSED GEOTECHNICAL ENGINEER, MAY BE SUBMITTED TO THE CITY OF FERDALE PUBLIC WORKS DIRECTOR FOR CONSIDERATION AND, IF APPROVED, USED IN PLACE OF THE PAVEMENT SECTION SHOWN ON THESE PLANS.
- EARTHWORK**
  - THE CONTRACTOR SHALL CLEAR, GRUB AND CLEAN UP THOSE AREAS SHOWN ON THE PLANS.
  - THE CONTRACTOR SHALL RAZE, REMOVE AND DISPOSE OF ALL BUILDING AND FOUNDATIONS, STRUCTURES, FENCES AND OTHER OBSTRUCTIONS THAT LIE WHOLLY OR PARTIALLY WITHIN THE PROJECT LIMITS.
  - THE CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING UNCOMPACTED 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.
  - MAXIMUM DENSITY AND OPTIMUM MOISTURE FOR GRANULAR MATERIALS WILL BE DETERMINED USING ASTM D-1557 TEST METHOD.
  - UNSUITABLE MATERIAL 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**
  - GRAVEL BASES AND BALLAST SHALL NOT HAVE THE PERCENT PASSING THE U.S. NO. 200 SIEVE EXCEED 5%.
  - BALLAST, GRAVEL BASE AND CRUSHED SURFACING SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY.
  - OWNER SHALL BE RESPONSIBLE FOR ALL COMPACTION TESTING. ALL TESTING SHALL BE THROUGH ENG. REV. ACCOUNT AND PAID FOR BY OWNER.
- PAVEMENTS**
  - SOIL RESIDUAL HERBICIDE SHALL BE PLACED WITHIN 24 HOURS OF PAVING.
  - A TACK COAT OF ASPHALT SHALL BE APPLIED BETWEEN ALL COURSES OF ASPHALT.
  - ALL PAVEMENT REPAIR SHALL BE SAW-CUT BEFORE REMOVAL. AR-4000W SHALL BE APPLIED TO ALL EDGES OF EXISTING PAVEMENT.
  - WHERE NEWLY CONSTRUCTED PAVING MEETS EXISTING PAVING, THE APPLICANT SHALL OVERLAY AND FEATHER NEW PAVEMENT TO PROVIDE A SMOOTH TRANSITION TO PROPOSED PAVING. APPLICATION OF A THIN PAINT COAT OF EMULSIFIED ASPHALT SHALL BE APPLIED TO INSURE PROPER BONDING.
  - ALL PAVEMENT MARKINGS SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD.
- STREET LIGHTING**
  - CONTRACTOR SHALL PROVIDE STREET ILLUMINATION IN ACCORDANCE WITH THE PROVISIONS OF SECTION 707 OF THE CITY OF FERDALE DEVELOPMENT STANDARDS. 100-WATT HIGH PRESSURE SODIUM LAMPS SHALL BE INSTALLED ON STANDARD CONCRETE OCTAGONAL OR ROUND POLES NO LESS THAN 25 FEET HIGH AND SPACED NO MORE THAN 250' APART, MEASURED ALONG THE PAVEMENT CENTERLINE. POLE LOCATIONS ARE SHOWN ON THESE PLANS.
  - FINAL LOCATIONS OF STREET LIGHTS IS TO BE COORDINATED WITH PUGET SOUND ENERGY.
  - CONTRACTOR IS TO COMPLY WITH THE SPECIFICATIONS SHOWN ON WSDOT STANDARD DETAIL J-11A, STANDARD JUNCTION BOX, UNLESS OTHERWISE DIRECTED BY THE CITY OF FERDALE PUBLIC WORKS DIRECTOR.
  - CONTRACTOR MUST INFORM THE CITY OF FERDALE PUBLIC WORKS DIRECTOR OF A PROPOSED CONNECTION AT LEAST FOUR (4) WORKING DAYS IN ADVANCE.
- MAILBOXES**

MAILBOXES SHALL BE TYPE I, II, AND/OR III - CBU (CENTRAL BOX UNIT), USPS APPROVED.  
FINAL LOCATION AS DETERMINED BY USPS.

#### STORM DRAINAGE

- THE FOLLOWING STANDARD DETAILS SHALL BE USED FOR CONSTRUCTION OF STORM DRAIN IMPROVEMENTS:

"MAIN LINE" CATCH BASINS "RESIDENTIAL SERVICE LINE" CATCH BASINS THRU-CURB INLET FRAME AND GRATE SIDEWALK DRAINS	TYPE 1, 1L OR 2, WSDOT STD. DETAILS B-1, B-1A OR B-1E CITY OF FERDALE STANDARD DETAIL (COFSD) ST-7 CITY OF FERDALE STANDARD DETAIL (COFSD) ST-8 COFSD ST-15
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- ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS SECTION 7-08.3(1). THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL AND ANY REQUIRED PIPE BEDDING TO A UNIFORM GRADE SO THAT THE ENTIRE PIPE IS SUPPORTED BY A UNIFORMLY DENSE UNYIELDING BASE. DRAINAGE MATERIALS SHALL CONFORM TO WSDOT STANDARD SPECIFICATIONS SECTION 9-05.
- STORM SEWER PIPE HAVING DIAMETERS GREATER THAN 8" SHALL BE CORRUGATED POLYETHYLENE PIPE (CPEP) AND SHALL CONFORM TO WSDOT STANDARD SPECIFICATIONS, SECTION 9-05.20. STORM SEWER PIPE HAVING DIAMETERS 8" AND SMALLER SHALL BE POLYVINYL CHLORIDE (PVC) PIPE AND SHALL CONFORM TO WSDOT STANDARD SPECIFICATIONS, SECTION 9-05.12.
- ALL CATCH BASIN GRATES SHALL INCLUDE THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS".
- UNLESS OTHERWISE SPECIFIED, CAST IRON PRODUCTS SHALL CONFORM TO ASTM DESIGNATION "A 48 CLASS 30" AND DUCTILE IRON PRODUCTS TO ASTM DESIGNATION "A 536 GRADE 60-55-06".
- ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, NOT LOCATED WITHIN A TRAVELED ROADWAY OR SIDEWALK, SHALL HAVE SOLID LOCKING LIDS. ALL DRAINAGE STRUCTURES ASSOCIATED WITH A PERMANENT RETENTION/DETENTION FACILITY SHALL HAVE SOLID LOCKING LIDS.
- ALL DRAINAGE SERVICE STUBS SHALL BE MARKED FOR LOCATION WITH A PRESSURE TREATED 2" x 4" TIMBER, PAINTED WHITE OR A WHITE 2" DIA. PVC PIPE. BOTH TYPES OF LOCATION MARKER SHALL BE CONNECTED TO THE SERVICE STUB BY A #12 COPPER WIRE.
- MULTIPLE RESIDENTIAL STORM DRAIN SERVICES SHALL BE 6" PVC PIPE, DRAINING TO A COFSD ST-7 INLET. 8" PVC PIPE SHALL BE USED TO CONNECT EACH ST-7 INLET TO A NEARBY TYPE 1 OR TYPE 1L CATCH BASIN.
- ALL STORM STUB INVERT ELEVATIONS SHALL BE CONSTRUCTED TO FACILITATE POSITIVE FLOW TO CATCH BASIN.

#### SANITARY SEWER

- THE FOLLOWING STANDARD DETAILS SHALL BE USED IN CONSTRUCTING SANITARY SEWER IMPROVEMENTS:

PIPE BEDDING TRENCH BACKFILL SS MANHOLE, TYPE 1-48" SSMH RING & COVER, TYPE 2 SS CLEANOUTS SIDE SEWERS	CITY OF FERDALE STANDARD DETAIL (COFSD) SS-1 COFSD SS-15 & SS-1 & WSDOT STD. SPEC. SEC. 9-03.12 COFSD SS-2 COFSD SS-9 (BOLT DOWN/WATERTIGHT) COFSD SS-5 COFSD SS-6, SS-8 & SS-13
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- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH A.P.W.A. STANDARD SPECIFICATIONS, 1996 EDITION, AND SHALL BE SUBJECT TO APPROVAL BY THE CITY OF FERDALE.
- ALL WORK MUST BE INSPECTED TO THE SATISFACTION OF THE CITY OF FERDALE. 24 HOUR NOTICE MUST BE GIVEN PRIOR TO STARTING WORK. TESTING OF THE SEWER SYSTEM AND ALL CONNECTIONS TO EXISTING MAINS SHALL BE DONE IN THE PRESENCE AND UNDER THE SUPERVISION OF A CITY OF FERDALE REPRESENTATIVE.
- SANITARY SEWER MAINS SHALL BE A MINIMUM 8 INCH DIAMETER PVC PIPE (SDR-35) CONFORMING TO THE PROVISIONS OF ASTM D 3034 AND INSTALLED TO CITY SPECIFICATIONS.
- SANITARY SEWER PIPE BEDDING SHALL BE PEA GRAVEL PER COFSD SS-1. ALL TRENCHES SHALL BE BACKFILLED WITH CLASS B BANK RUN GRAVEL OR SUITABLE NATURAL MATERIAL AS DIRECTED BY THE ENGINEER, AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
- ALL MANHOLES SHALL BE INSTALLED PER CITY OF FERDALE SS-2, SS-3 OR SS-4, AND SHALL BE BE PRE-CHANNELED. MANHOLE CONES ARE TO BE OFFSET SUCH THAT LADDER RUNGS ARE PARALLEL TO THE FLOW.
- ALL SIDE SEWERS SHALL BE INSTALLED PER CITY OF FERDALE STANDARD DETAILS SS-6, SS-8 OR SS-13, EXCEPT THAT SINGLE SIDE SEWERS SHALL HAVE A MINIMUM DIAMETER OF 4".
- CONTRACTOR SHALL EXTEND SEWER STUBS BEYOND THE STREET RIGHT-OF-WAY LINE.
- EACH SIDE SEWER STUB SHALL BE CAPPED WITH A WATERTIGHT PLUG. EACH STUB SHALL BE MARKED FOR LOCATION PER COFSD SS-14, WITH A 2" DIA. PVC PIPE WITH THE TOP 18" PAINTED WHITE AND STENOILED WITH THE WORD "SEWER". THE LOCATION MARKER SHALL BE CONNECTED TO THE SERVICE STUB BY A #12 COPPER WIRE.

#### WATER

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

PIPE BEDDING TRENCH BACKFILL AIR/VACUUM RELEASE VALVE BLOW-OFF ASSEMBLY FIRE HYDRANT ASSEMBLY THRUST BLOCKING WATER SERVICE	SEE DETAIL, SHEET 27 COFSD W-11 & WSDOT STD. SPEC. SEC. 9-03.12 WSDOT STD. DETAIL B21-o COFSD W-9 & W-10 COFSD W-1 COFSD W-2, W-3 & W-4 COFSD W-5
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- ALL WATERMAIN PIPE SHALL BE DUCTILE IRON, MINIMUM CLASS 50, PER AWWA STANDARDS H3-71 AND C151-71, WITH CEMENT LINING PER AWWA STANDARD C104-71. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF FERDALE DEVELOPMENT STANDARDS, SECTIONS 702 AND 705.
- 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 FERDALE STANDARD DETAILS W-2, W-3 AND W-4, OR AS DIRECTED BY THE PROJECT ENGINEER. BLOCKS SHALL BE INSTALLED AS SPECIFIED IN SECTION 7-11.3(13) 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 - PER WSDOT STD SPEC. 7-09.3(19), THE CONTRACTOR MUST NOTIFY THE CITY OF FERDALE PUBLIC WORKS DIRECTOR OF A PROPOSED CONNECTION AT LEAST FOUR WORKING DAYS IN ADVANCE. ALL CONNECTIONS SHALL BE DONE BY THE CONTRACTOR. CONNECTION TO EXISTING CITY WATER SYSTEM SHALL BE PAID IN ADVANCE BY A DEPOSIT.
- ALL HYDROSTATIC TESTING AND DISINFECTION OF WATER MAINS SHALL CONFORM TO SECTIONS 7-09.3(23) AND 7-09.3(24) AND OF THE WSDOT STD SPECIFICATIONS FOR ROAD, BRIDGE OR MUNICIPAL CONSTRUCTION - CURRENT EDITION. HYDROSTATIC TEST PRESSURE - FOR WATER MAIN ACCEPTANCE - SHALL BE 225 PSI AND SHALL BE DONE ACCORDING TO CITY OF FERDALE REQUIREMENTS. ALL DISINFECTION AND BACTERIOLOGICAL TESTS SHALL BE CONDUCTED BY THE CITY OF FERDALE LABORATORY. 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 PIPE SHALL HAVE A MINIMUM COVER OF 42".
- 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 8 INCHES IN DIAMETER. SHORT-BODY VALVES SUITABLE FOR A NONSHOCK 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 NONRISING 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 CITY OF FERDALE DEVELOPMENT STANDARDS. ALL WATER SERVICES SHALL BE MARKED FOR LOCATION WITH A METER BOX PER COFSD W-5.
- FIRE HYDRANTS AND FIRE MAINS MUST CONFORM TO COF STANDARD DETAIL 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 CABLE SHALL BE SUPPLIED. HYDRANTS SHALL EITHER BE IOWA OR M.H. 929T 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. HYDRANTS PAINTED FACTORY YELLOW MAY NOT REQUIRE ADDITION PAINTING.
  - 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 225 PSI OR 50 PSI IN EXCESS OF STREET MAIN PRESSURE, WHICHEVER IS GREATER. 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.

APPROVED

JUN 21 2005

BY  CITY OF FERDALE

AS BUILT NOTE: ONLY INFORMATION NOTED AS "AB" HAS BEEN FIELD SURVEYED AND/OR MEASURED DURING CONSTRUCTION.

CALL BEFORE YOU DIG



KRAMER CONSTRUCTION CO.

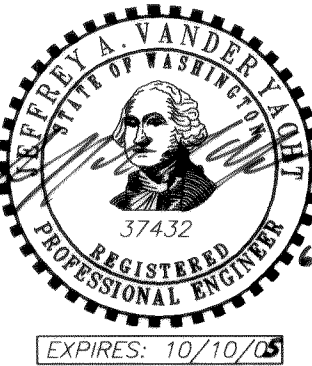
1442 SUNSET AVENUE  
FERDALE, WA 98248

GARDINER TERRACE PLAT  
PHASE 2, DIVISIONS 2 & 3, ROADWAY & UTILITY IMPROVEMENT PLANS

GENERAL CONSTRUCTION NOTES

AS BUILT SHEET 24 OF 24

JOB #: 2003103



EXPIRES: 10/10/06

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