



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

HERON CREST P.U.D.

CITY OF FERNDAL, WASHINGTON

SITUATE IN A PORTION OF THE NE 1/4 OF SECTION 24, TOWNSHIP 39 NORTH,
RANGE 1 EAST, W.M., CITY OF FERNDAL, WHATCOM COUNTY, WASHINGTON

ROADWAY & UTILITY IMPROVEMENT PLANS

SURVEY NOTES

- 1) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION.
- 2) EQUIPMENT USED: THEOMAT 00'01.5" EDM: ± 2 PPM, ± 3 MM
- 3) HORIZONTAL DATUM: LOCAL/ASSUMED BASIS OF BEARINGS: E. LINE, SE 1/4, PER R.O.S. A.F. NO. 1270419 BEARING: N00°25'58"W
- 4) VERTICAL DATUM: CITY OF FERNDAL (USC&GS) PER PLAT OF LAKERIDGE ESTATES AS-BUILT DRAWINGS BENCH MARK: PSE #2615 AS SHOWN ELEV.=324.19'
- 5) CONTOUR INTERVALS ARE TWO-FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION.
- 6) PACIFIC SURVEYING AND ENGINEERING INC., ASSUMES NO LIABILITY FOR ANY SUBSURFACE CONDITIONS OR FEATURES THAT MAY EXIST THAT ARE UNDETECTABLE AND/OR NOT VISIBLE.
- 7) FOR ADDITIONAL BOUNDARY INFORMATION, REFERENCE RECORD OF SURVEY PREPARED BY PACIFIC SURVEYING AND ENGINEERING, A.F. NO. 950104051

ROAD INTERSECTION EQUATIONS

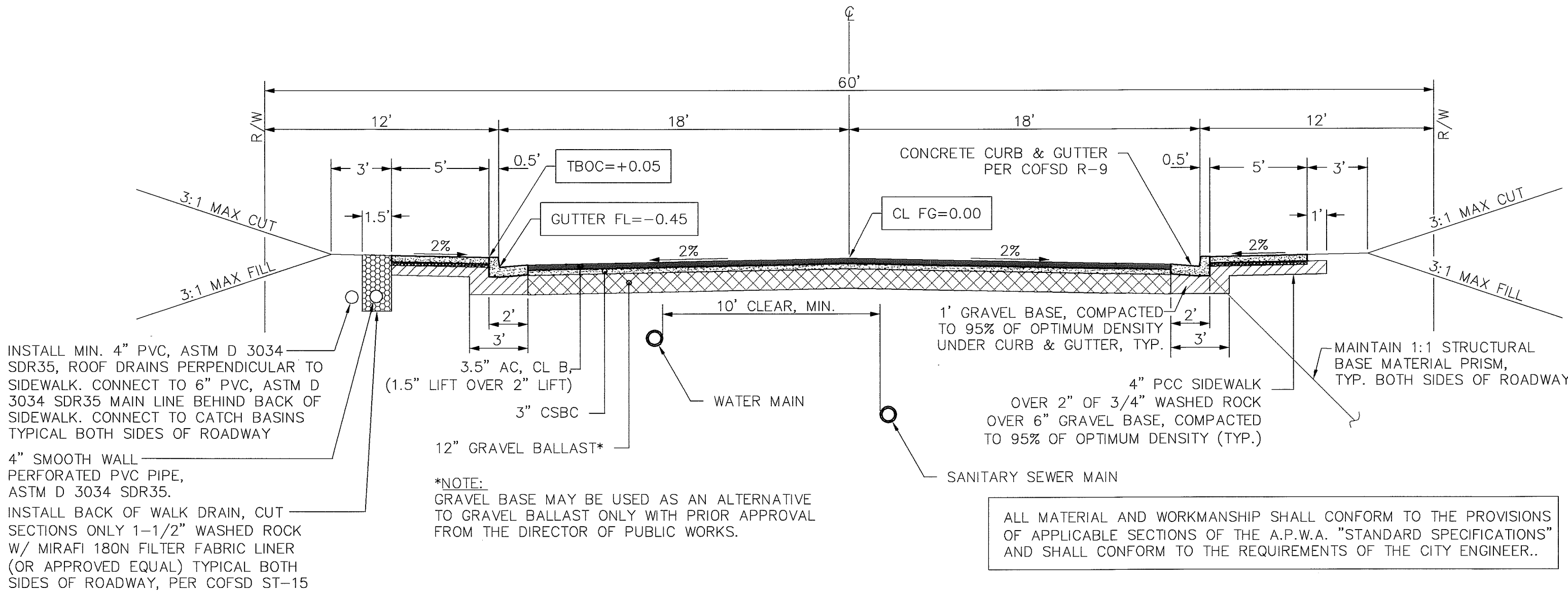
STA 10+99.05 PACIFIC HEIGHTS DRIVE = STA 30+00.00 TAYSIDE COURT
STA 14+31.67 PACIFIC HEIGHTS DRIVE = STA 50+00.00 MALLARD COURT

ABBREVIATIONS

AC	ASPHALT CONCRETE	PCC	POINT OF COMPOUND CURVATURE
B/C	BACK OF CURB	PRC	POINT OF REVERSE CURVATURE
BOR	BEGIN CURB RETURN	PT	POINT OF TANGENCY = END CURVE
BOW	BACK OF SIDEWALK	PM	POINT OF VERTICAL INTERSECTION
BVC	BEGIN VERTICAL CURVE	PVMT	PAVEMENT
C&G	CURB AND GUTTER	R	CURVE RADIUS
CL	CENTERLINE OR GLASS	R/W	RIGHT OF WAY
COFSD	CITY OF FERNDAL STANDARD DRAWING	RT	RIGHT
CPP	CORRUGATED POLYETHYLENE PIPE	SD	STORM DRAIN
D	CURVE DELTA	SCB	STORM DRAIN CATCH BASIN
ECR	END CURB RETURN	SSCO	SANITARY SEWER CLEAN-OUT
EG	EXISTING GRADE	SSMH	SANITARY SEWER MANHOLE
EP	EDGE OF PAVEMENT	SWK	SIDEWALK
EVC	END VERTICAL CURVE	STA	STATION
EXST	EXISTING	STD	STANDARD
F&G	FRAME AND GRATE	TBC	TOP BACK OF CURB
FG	FINISH GRADE	TFC	TOP FACE OF CURB
FH	FIRE HYDRANT	TC	TOP OF CURB
F/C	FACE OF CURB	T/P	TOP OF PIPE
FF	FINISH FLOOR	TYP.	TYPICAL
FL	FLOWLINE OR FLANGE	WL	WATER LINE
I.E.	INVERT ELEVATION		
INV	INVERT		
LT	CURVE LENGTH		
LT	LEFT		
MJ	MECHANICAL JOINT		
NTS	NOT TO SCALE		
PC	POINT OF CURVATURE = BEGIN CURVE		

STREET NAME ABBREVIATIONS:

PHD	PACIFIC HEIGHTS DRIVE
TC	TAYSIDE COURT
MC	MALLARD COURT



TYPICAL ROADWAY SECTION ~ RESIDENTIAL STREETS

NOT TO SCALE

PROPOSED FEATURE SYMBOL LEGEND

●	= PROPOSED SURVEY MONUMENT	★	= PROPOSED STREETLIGHT
⊙	= PROPOSED STORM DRAIN CATCH BASIN, TYPE 2	⬮	= PROPOSED STREET SIGN
⊠	= PROPOSED STORM DRAIN CATCH BASIN, TYPE 1	⬮	= PROPOSED TYPE 3 BARRICADE
⬮	= PROPOSED STORM DRAIN CLEANOUT	⬮	= PROPOSED SINGLE SANITARY SEWER SERVICE
⬮	= PROPOSED STORM DRAIN INLET/OUTLET	⬮	= PROPOSED DRIVEWAY
⬮	= PROPOSED SANITARY SEWER MANHOLE	⬮	= PROPOSED TEE, MJ x FL
⬮	= PROPOSED SANITARY SEWER CLEANOUT	⬮	= PROPOSED TEE, FL
⬮	= PROPOSED DOUBLE WATER SERVICE	⬮	= PROPOSED 22.5° BEND, MJ
⬮	= PROPOSED SINGLE WATER SERVICE	⬮	= PROPOSED 22.5° BEND, FL
⬮	= PROPOSED GATE VALVE	⬮	= PROPOSED 11.25° BEND, FL
⬮	= PROPOSED WATER BLOW-OFF ASSEMBLY	⬮	= PROPOSED FL x MJ ADAPTER
⬮	= PROPOSED REDUCER		
⬮	= PROPOSED FIRE HYDRANT		

PROPOSED LINE LEGEND

---	= PROPOSED ROADWAY CENTERLINE
---	= PROPOSED RIGHT OF WAY LINE
---	= PROPOSED EASEMENT LINE
---	= PROPOSED EDGE OF ASPHALT
---	= PROPOSED CURB & GUTTER
---	= PROPOSED BACK OF SIDEWALK
---	= PROPOSED STORM DRAIN LINE
---	= PROPOSED SANITARY SEWER LINE
---	= PROPOSED WATER LINE
---	= PROPOSED BACK OF WALK DRAIN
---	= PROPOSED EDGE OF GRAVEL
---	= PROPOSED CUT/FILL SLOPES

AS-BUILT CERTIFICATION
I hereby certify that the improvements in Heron Crest P.U.D. have been inspected by Pacific Survey and Engineering, Inc., and constructed in conformance with the plans approved by the Public Works Director for said development and the general specifications adopted by the City of Ferndale Department of Public Works.

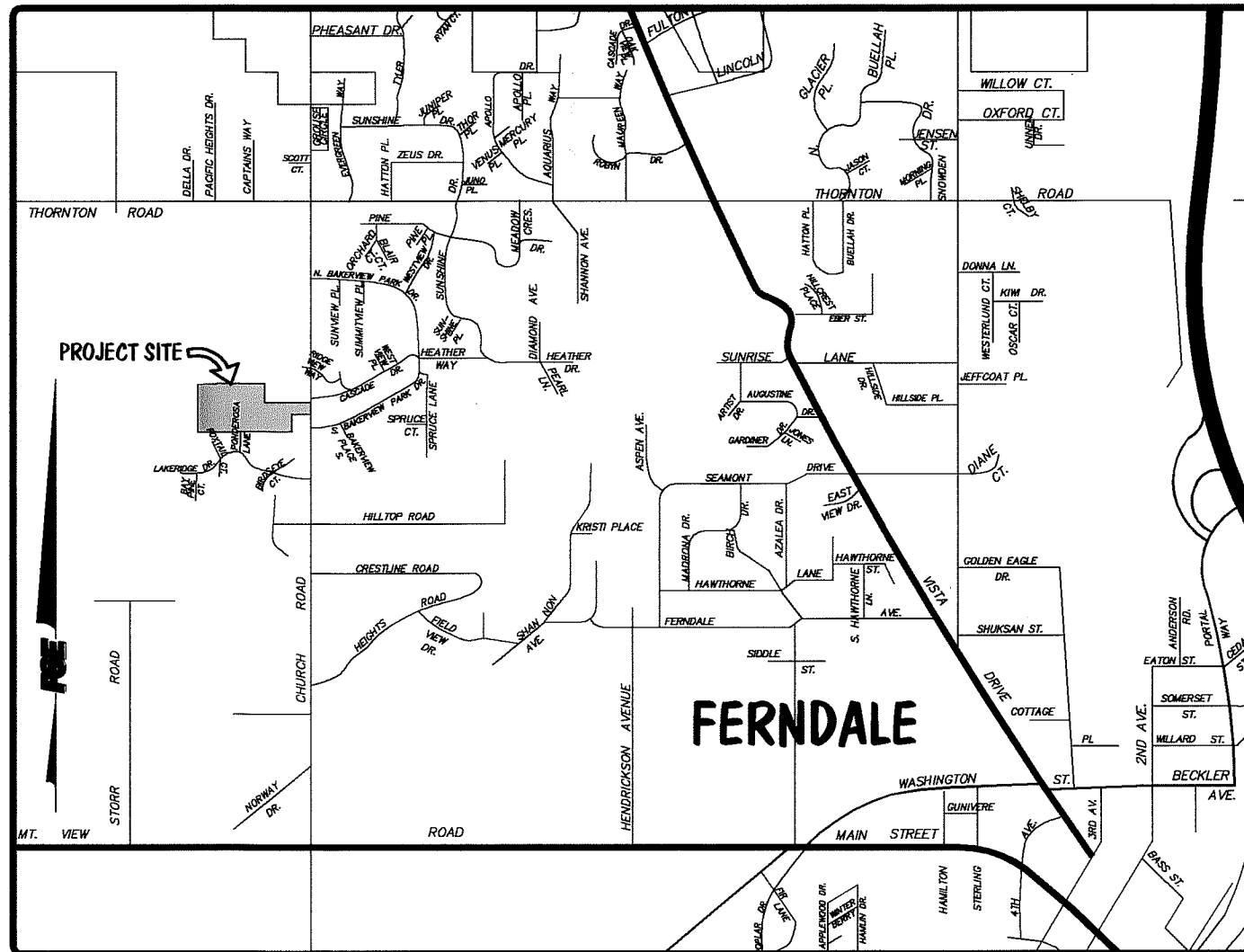
JEFFREY A. VANDER YACHT, P.E.

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

AS-BUILT
DRAWING

PUBLIC WORKS PROJECT LP 2006-01

VICINITY MAP NOT TO SCALE

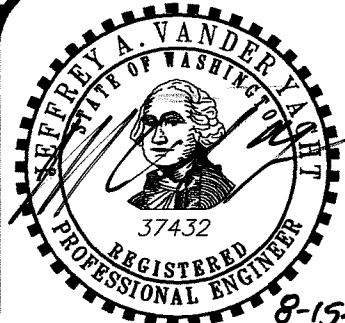


SHEET INDEX

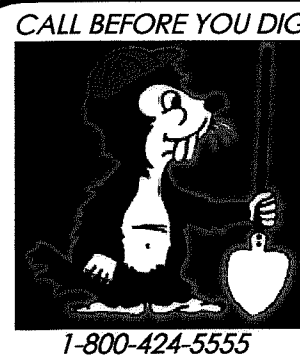
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APPROVED

APR 14 2009
By: [Signature]
CITY OF FERNDAL



FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: N.A.	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	AS-BUILT PLANS (PRELIM.) 07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: N.A.			& ROLLED CURB IN CUL-DE-SACS		6	AS-BUILT PLANS (PRELIM.) 02/20/08
ASBUILT:				XREF:								7	AS-BUILT PLANS (REV. 1) 05/30/08
				DWG: COVER NOTES, DETAILS_AB.dwg								8	AS-BUILT PLANS 08/14/08
SURVEY REFERENCE	VERTICAL DATUM	PLAN CHECK	REVISIONS	ISSUE									



KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
COVER SHEET

JOB #: 93084

SHEET 1 OF 26



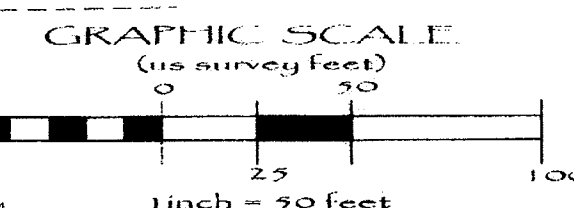
PACIFIC SURVEY & ENGINEERING INC
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685
WWW.PSESURVEY.COM EMAIL: PSE@PSESURVEY.COM

SURVEY NOTES

- 1) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION.
- 2) EQUIPMENT USED: THEOMAT 001015" EDM. ± 2 PPM, ± 3 MM
- 3) HORIZONTAL DATUM: LOCAL/ASSUMED BASIS OF BEARINGS, E. LINE, SE 1/4, PER R.O.S. A.F. NO. 1270419 BEARING: N00°25'58"W
- 4) VERTICAL DATUM: CITY OF FERNDALE (US&GS) PER PLAT OF LAKERIDGE ESTATES AS-BUILT DRAWINGS.
BENCH MARK: PSE #2615 AS SHOWN ELEV.=324.19'
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EXISTING FEATURE SYMBOL LEGEND

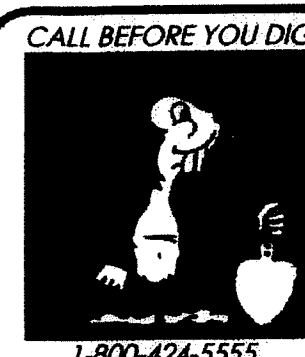
- = FOUND 4" CONC. MONUMENT & CAP, PLS#13730
- = FOUND REBAR & CAP
- = FOUND REBAR & CAP, PLS#24218
- = FOUND REBAR & CAP, PLS#24225
- = EXISTING AREA DRAIN
- = EXISTING SANITARY SEWER MANHOLE
- = EXISTING SANITARY SEWER CLEANOUT
- = EXISTING FIRE HYDRANT
- = EXISTING MAILBOX
- △ = EXISTING SATELLITE DISH
- = EXISTING POWER POLE
- = EXISTING POWER POLE W/DROP
- = EXISTING ELECTRICAL PEDESTAL/RISER
- = EXISTING TELEPHONE PEDESTAL/RISER
- = EXISTING BIRCH TREE
- = EXISTING COTTONWOOD TREE
- = EXISTING FIR TREE
- = EXISTING CEDAR TREE
- = EXISTING ALDER TREE
- = EXISTING MAPLE TREE
- = EXISTING HEMLOCK TREE
- = EXISTING SHRUB
- = DIAMETER OF EXISTING TREE
- = SPOT ELEVATION ON EXISTING GROUND
- = SPOT ELEVATION ON CENTERLINE OF ROAD
- = SPOT ELEVATION ON EDGE OF ASPHALT
- = SPOT ELEVATION ON EDGE OF CONCRETE
- = SPOT ELEVATION ON TOP OF CURB
- = WETLANDS AS DELINEATED IN AUG. 1993



EXISTING LINE LEGEND

- = EXISTING ROADWAY CENTERLINE
- = EXISTING EDGE OF ASPHALT
- = EXISTING EDGE OF CONCRETE
- = EXISTING CURB
- = EXISTING STORM CULVERT
- = EXISTING SANITARY SEWER LINE
- = EXISTING WATER LINE
- = EXISTING OVERHEAD ELECTRIC LINES
- = EXISTING FLOW LINE
- = EXISTING EDGE OF TREES & BRUSH
- = EXISTING EDGE OF LANDSCAPED AREA
- = EXISTING BARBED WIRE FENCE
- = EXISTING WOOD FENCE

APPROVED
JUN - 8 2006
BY: [Signature]
CITY OF FERNDALE

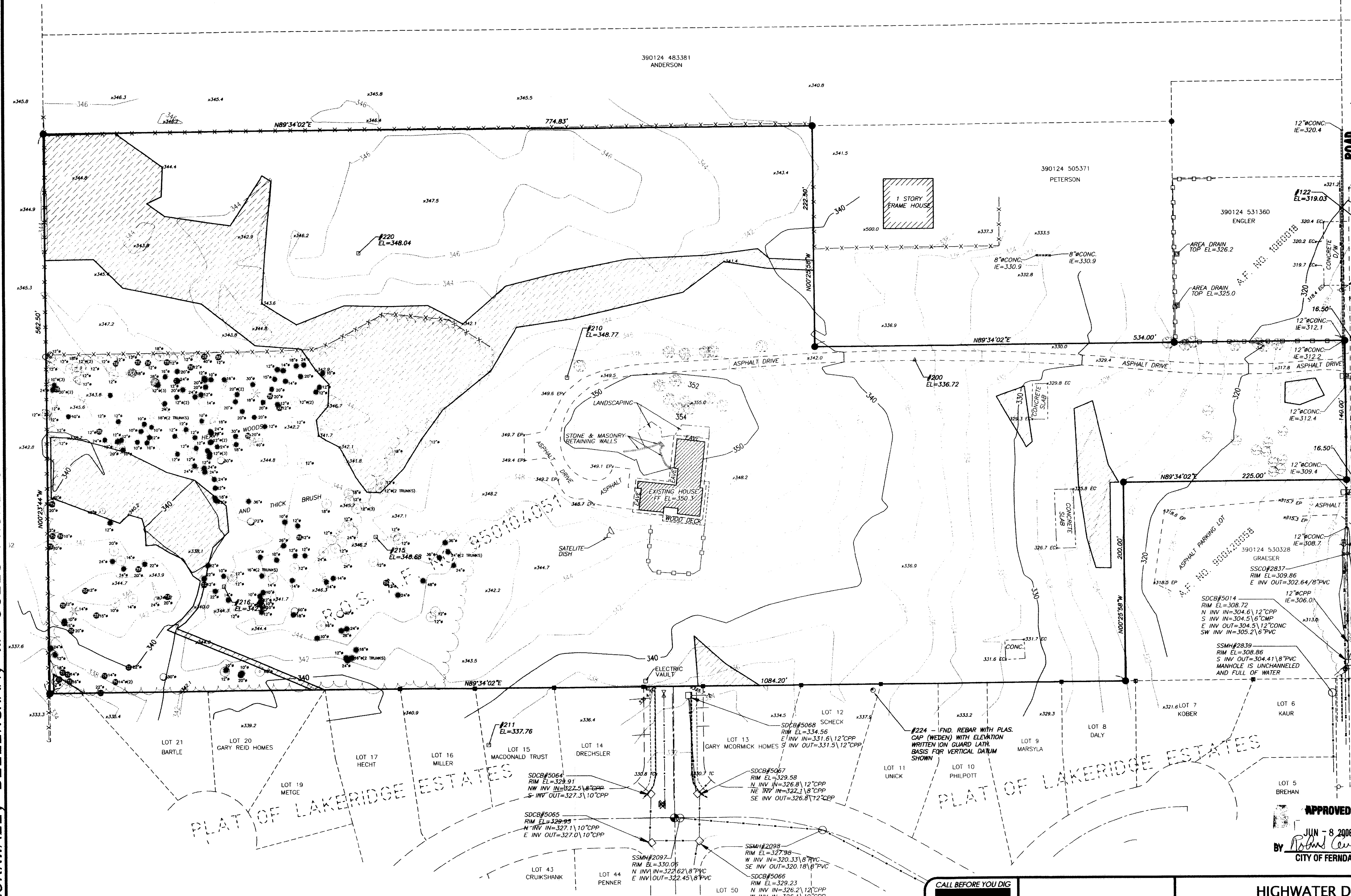
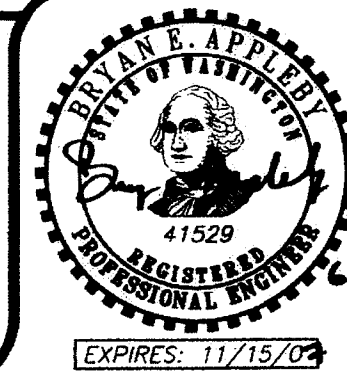


KINGMA BROS. DEVELOPMENT
33375 DOWNES ROAD
ABBOTTSFORD, BC V2S 4N3

HIGHWATER DOWNS P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
EXISTING CONDITIONS MAP

JOB #: 93084

SHEET 2 OF 26



FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 50'					1	ISSUED FOR REVIEW 01/10/06
STAKING:				DESIGN	BEA	JVY	VERT: N.A.					2	ISSUED FOR REVIEW 05/05/06
ASBUILT:				XREF:								3	ISSUED FOR REVIEW 06/01/06
SURVEY REFERENCE		VERTICAL DATUM		DWG: x-PSE_TOPO.dwg						REVISIONS			ISSUE



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CONSTRUCTION NOTES:

- 1) THE SITE SHALL BE CLEARED TO THE CLEARING LIMITS SHOWN ON THE TEMPORARY EROSION AND SEDIMENT CONTROL PLAN (SHEET 21) EXCEPT WHERE PRESERVATION OF NATURAL VEGETATION IS NOTED.
- 2) GRUBBING SHALL BE LIMITED TO AREAS REQUIRED FOR CONSTRUCTION OF ROADWAYS, DITCHES, PONDS, AND UTILITIES IN ADDITION TO THE GRUBBING OF LOTS 1 THROUGH 3 THAT IS REQUIRED FOR PREPARATION OF EMBANKMENT FILL.
- 3) STRUCTURES AND OBSTRUCTIONS WITHIN THE CLEARING LIMITS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- 4) NO CLEARING SHALL BE PERFORMED ON LOT 22 EXCEPT AS NECESSARY TO CONSTRUCT THE SLOPE TO MATCH GRADE BEHIND THE PROPOSED SIDEWALK.

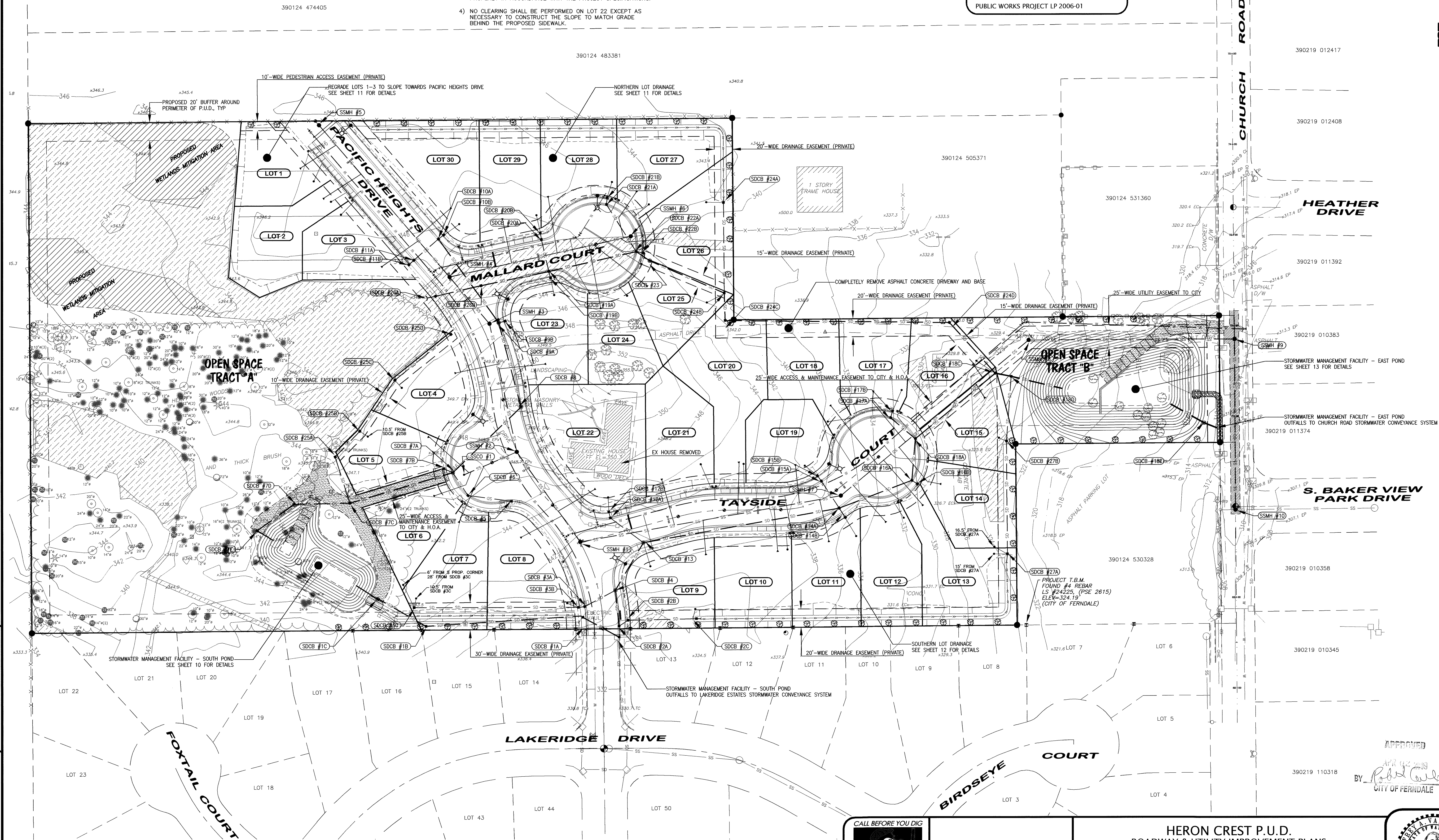
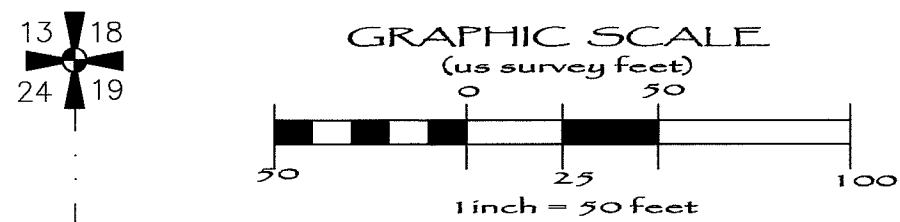
EASEMENT NOTES:

- 1) STORMWATER FACILITY ACCESS AND MAINTENANCE EASEMENTS WITHIN OPEN SPACE TRACTS 'A' AND 'B' WILL BE PROVIDED ON THE FINAL PLAT IN FAVOR OF THE CITY AND H.O.A.

AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
'(AB)' HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION.

AS-BUILT DRAWING

PUBLIC WORKS PROJECT LP 2006-01



APPROVED

BY *Robert Gable*
CITY OF FERNDALE

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 50'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JYY	VERT: N.A.					6	02/20/08
ASBUILT:				XREF:								7	05/20/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK		REVISIONS		ISSUE					

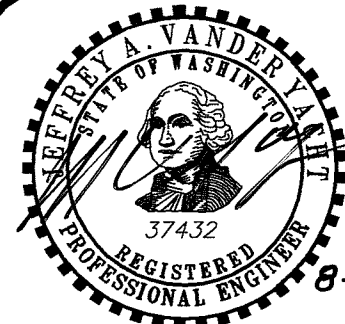


KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
PROJECT OVERVIEW
MAP

JOB #: 93084

SHEET 3 OF 26

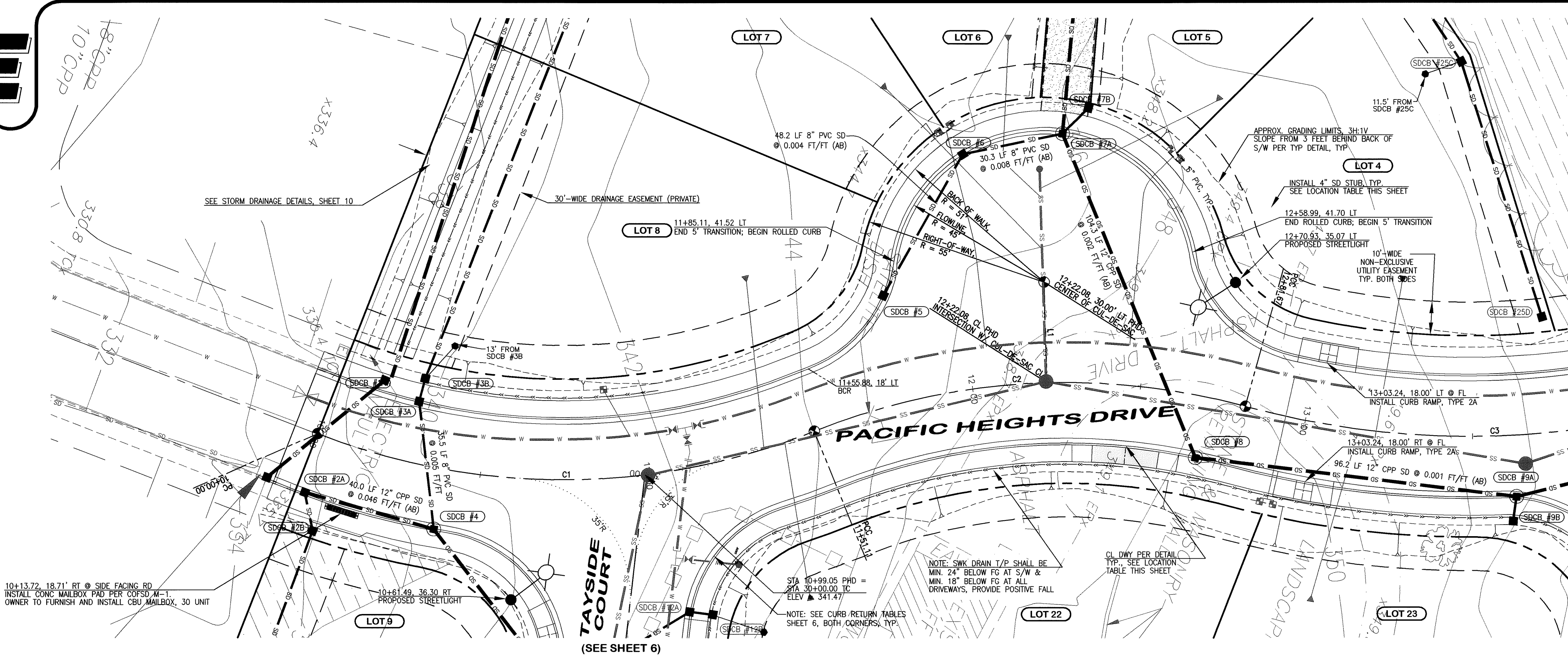


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PACIFIC HEIGHTS DR. CUL-DE-SAC CURB RETURN TABLE			
R=40.00'	L=61'33.30"	L=42.98'	
STATION	OFFSET	FL. ELEV.	STUB NO.
BCR	11+55.88 PHD	18.00 LT	344.36
1/5L	11+53.67 PHD	18.09 LT	344.62
2/5L	11+70.89 PHD	22.26 LT	344.78
3/5L	11+77.07 PHD	27.30 LT	344.89
4/5L	11+81.87 PHD	33.86 LT	344.98
ECR	11+85.11 PHD	41.52 LT	345.04
R=45.00'	L=160'48.00"	L=126.29'	
STATION	OFFSET	FL. ELEV.	
BCR	11+85.11 PHD	41.52 LT	345.04
1/12L	11+88.88 PHD	50.94 LT	345.12
2/12L	11+93.99 PHD	59.18 LT	345.18
3/12L	12+00.13 PHD	65.91 LT	345.24
4/12L	12+07.02 PHD	70.89 LT	345.29
5/12L	12+14.39 PHD	73.95 LT	345.35
6/12L	12+22.01 PHD	75.00 LT	345.42
7/12L	12+29.62 PHD	73.99 LT	345.50
8/12L	12+37.00 PHD	70.96 LT	345.62
9/12L	12+43.90 PHD	66.01 LT	345.76
10/12L	12+50.06 PHD	59.31 LT	345.91
11/12L	12+55.19 PHD	51.10 LT	346.06
ECR	12+58.99 PHD	41.70 LT	346.20
R=40.00'	L=65'41.47"	L=45.86'	
STATION	OFFSET	FL. ELEV.	
BCR	12+58.99 PHD	41.70 LT	346.20
1/5L	12+62.53 PHD	33.57 LT	346.32
2/5L	12+67.83 PHD	26.75 LT	346.39
3/5L	12+74.65 PHD	21.72 LT	346.40
4/5L	12+82.71 PHD	18.87 LT	346.32
ECR	12+92.54 PHD	18.00 LT	346.15

STORM STUB LOCATION TABLE			
LOT No.	STREET	STA & OFFSET	STUB I.E.
4	PAC HEIGHTS	13+26.0 107.31L (AB)	342.36 (AB)
5	PAC HEIGHTS	12+67.9 153.51L (AB)	341.53 (AB)
6	PAC HEIGHTS	11+77.0 183.21L (AB)	341.08 (AB)
7	PAC HEIGHTS	11+66.4 181.21L (AB)	340.99 (AB)
8	PAC HEIGHTS	10+35.0 36.7 LT (AB)	335.07 (AB)

DRIVEWAY CENTERLINE TABLE			
LOT No.	STREET	STA & OFFSET	WIDTH
5			
6			
7			
8			
22	PAC HEIGHTS	12+47.36 18.00 RT	20.00

LINE TABLE - ROADWAY CENTERLINE		
LINE	DELTA	BEARING
L1	30.00'	N66°35'46"E

CURVE TABLE - ROADWAY CENTERLINE			
LINE	DELTA	RADIUS	LENGTH
C1	43°17'21"	200.00'	151.11'
C2	37°24'16"	200.00'	130.57'
C3	34°22'36"	250.00'	150.00'

STORM DRAINAGE NOTES

- SDCB #1A**
10+14.39, 21.67' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=336.85 (AB)
12" I.E. (W)=332.25 (AB)
12" I.E. (E)=332.10 (AB)
- SDCB #1B**
10+02.29, 18.00' RT @ FL (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=335.72 (AB)
8" I.E. (NE)=333.55 (AB)
12" I.E. (N)=333.35 (AB)
- SDCB #2A**
10+08.82, 26.71' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=336.49 (AB)
8" I.E. (E)=333.99 (AB)
8" I.E. (SW)=333.95 (AB)
- SDCB #2B**
10+27.53, 25.04' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=337.28 (AB)
8" I.E. (W)=334.18 (AB)
8" I.E. (E)=332.98 (AB)
- SDCB #3A**
10+39.26, 18.00' RT @ FL (AB)
TYPE 2 W/ THRU CURB F&G
RIM=337.94 (AB)
12" I.E. (S)=331.50 (AB)
8" I.E. (W)=333.80 (AB)
12" I.E. (N)=333.68 (AB)
- SDCB #3B**
10+42.29, 18.00' RT @ FL (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=335.00 (AB)
8" I.E. (NE)=333.55 (AB)
12" I.E. (N)=333.35 (AB)
- SDCB #4**
10+39.26, 18.00' RT @ FL (AB)
TYPE 2 W/ THRU CURB F&G
RIM=337.94 (AB)
12" I.E. (S)=331.50 (AB)
8" I.E. (W)=333.80 (AB)
12" I.E. (N)=333.68 (AB)
- SDCB #5**
11+80.64, 31.84' LT @ FL (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=344.83 (AB)
8" I.E. (W)=340.53 (AB)
- SDCB #6**
12+05.01, 69.57' LT @ FL (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=345.61 (AB)
12" I.E. (E)=340.32 (AB)
8" I.E. (SW)=340.42 (AB)
- SDCB #7A**
12+22.08, 74.56' LT @ FL (AB)
TYPE 2 W/ ROLLED F&G
RIM=345.80 (AB)
RIM=345.39 (AB)
8" I.E. (NW)=342.44 (AB)
8" I.E. (SE)=340.19 (AB)
12" I.E. (NE)=338.59 (AB)
12" I.E. (W)=338.04 (AB)
- SDCB #7B**
12+32.48, 80.80' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=345.94 (AB)
8" I.E. (SW)=342.94 (AB)
- SDCB #8**
12+71.13, 18.00' RT @ FL (AB)
TYPE 2 W/ THRU CURB F&G
RIM=347.03 (AB)
RIM=346.29 (AB)
12" I.E. (N)=339.19 (AB)
12" I.E. (SW)=338.79 (AB)
- SDCB #9A**
13+62.85, 18.35' RT @ FL (AB)
TYPE 2 W/ THRU CURB F&G
RIM=344.25 (AB)
8" I.E. (E)=341.40 (AB)
12" I.E. (NW)=339.95 (AB)
12" I.E. (S)=339.30 (AB)
- SDCB #9B**
13+60.95, 25.24' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=345.33 (AB)
8" I.E. (W)=342.18 (AB)

APPROVED

BY: *Robert Gable*
CITY OF FERRISDALE

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

AS-BUILT DRAWING

PUBLIC WORKS PROJECT LP 2006-01

(CORRESPONDING WATER & SANITARY SEWER IMPROVEMENTS SEE SHEET 14)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 4'

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/08	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/20/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK		REVISIONS		ISSUE					



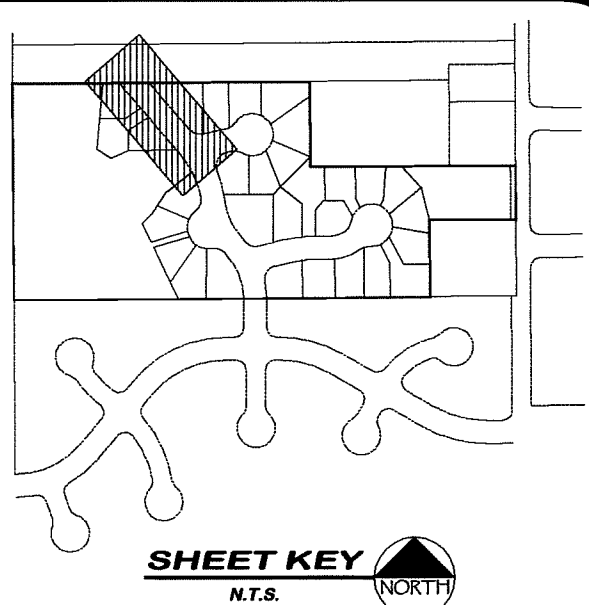
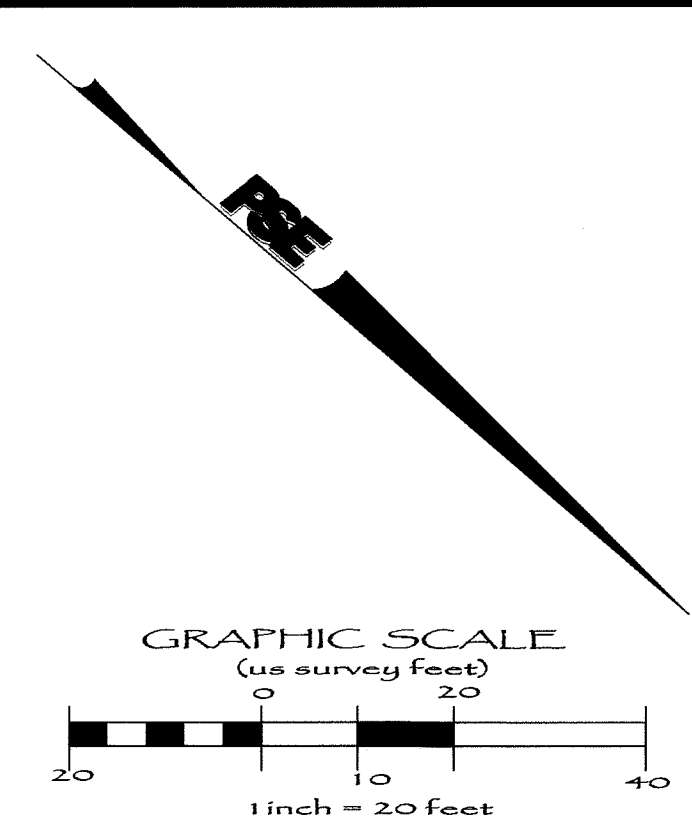
KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

JOB #: 93084

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
PACIFIC HEIGHTS DRIVE ~
STATIONS 9+15 to 13+65
ROADWAY & STORM DRAINAGE IMPROVEMENTS

SHEET 4 OF 26





SDCB #11B
14+70.56, 25.04' LT @ CTR SDC
TYPE 1 W/ LOCKING SOLID LID
RIM=343.90 (AB)
8" I.E. (NE)=340.80 (AB)



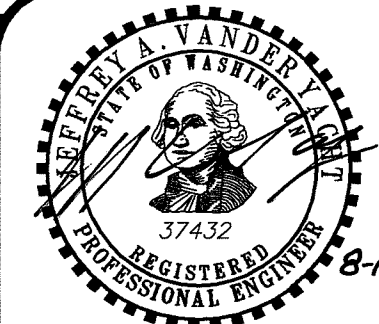
AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
(AB)" HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION

AS-BUILT DRAWING

PUBLIC WORKS PROJECT LP 2006-01

{CORRESPONDING WATER & SANITARY SEWER IMPROVEMENTS SEE SHEET 15}

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
**PACIFIC HEIGHTS DRIVE ~
STATIONS 13+65 to 17+05**
ROADWAY & STORM DRAINAGE IMPROVEMENTS



FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	AS-BUILT PLANS 07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	AS-BUILT PLANS (PRELIM.) 02/20/08
ASBUILT:				XREF:								7	AS-BUILT PLANS (REV. 1) 05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	AS-BUILT PLANS 08/14/08
SURVEY REFERENCE		VERTICAL DATUM				PLAN CHECK				REVISIONS			ISSUE



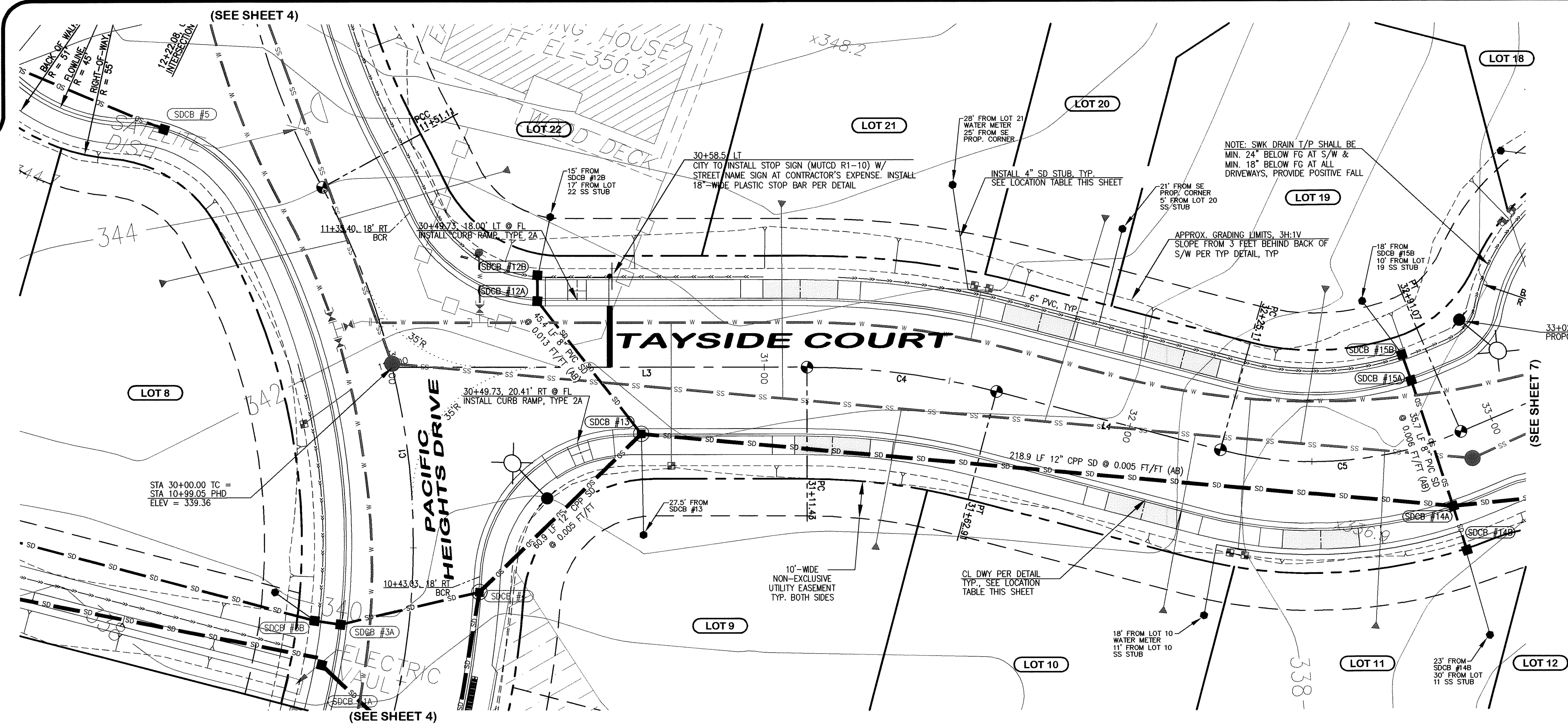
KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

JOB #: 93084

SHEET 5 OF 26

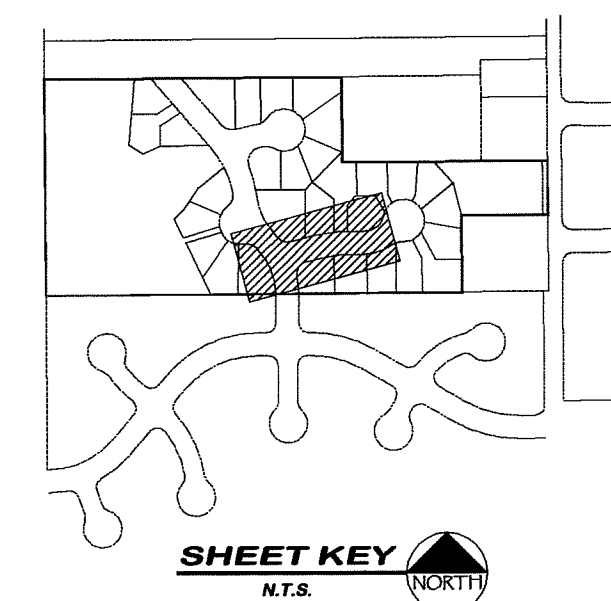
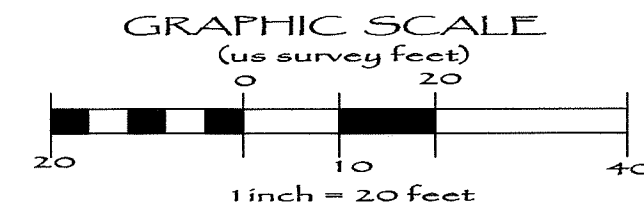


PACIFIC SURVEY & ENGINEERING INC
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WWW.PSESURVEY.COM EMAIL: PSE@PSESURVEY.COM



NE CORNER CURB RETURN TABLE			
R=40.00'	b=65'56.40"	L=61.15'	
STATION	OFFSET	FL ELEV.	
BCR 11+35.40	PHD 18.00 RT	343.21	
1/SL 11+27.08	PHD 19.25 RT	342.60	
2/SL 11+19.44	PHD 22.87 RT	341.85	
3/SL 30+23.46	TC 22.16 LT	341.04	
4/SL 30+32.11	TC 19.06 LT	340.48	
ECR 30+41.23	TC 18.00 LT	340.34	

SE CORNER CURB RETURN TABLE			
R=40.00'	b=87'35.36"	L=61.15'	
STATION	OFFSET	FL ELEV.	
BCR 10+43.03	PHD 18.00 RT	337.67	
1/SL 10+52.22	PHD 19.52 RT	338.25	
2/SL 10+40.48	PHD 23.93 RT	338.85	
3/SL 10+67.08	PHD 30.79 RT	339.43	
4/SL 30+43.90	TC 23.08 RT	339.96	
5/SL 30+53.33	TC 19.29 RT	340.44	
ECR 30+63.41	TC 18.00 RT	340.78	



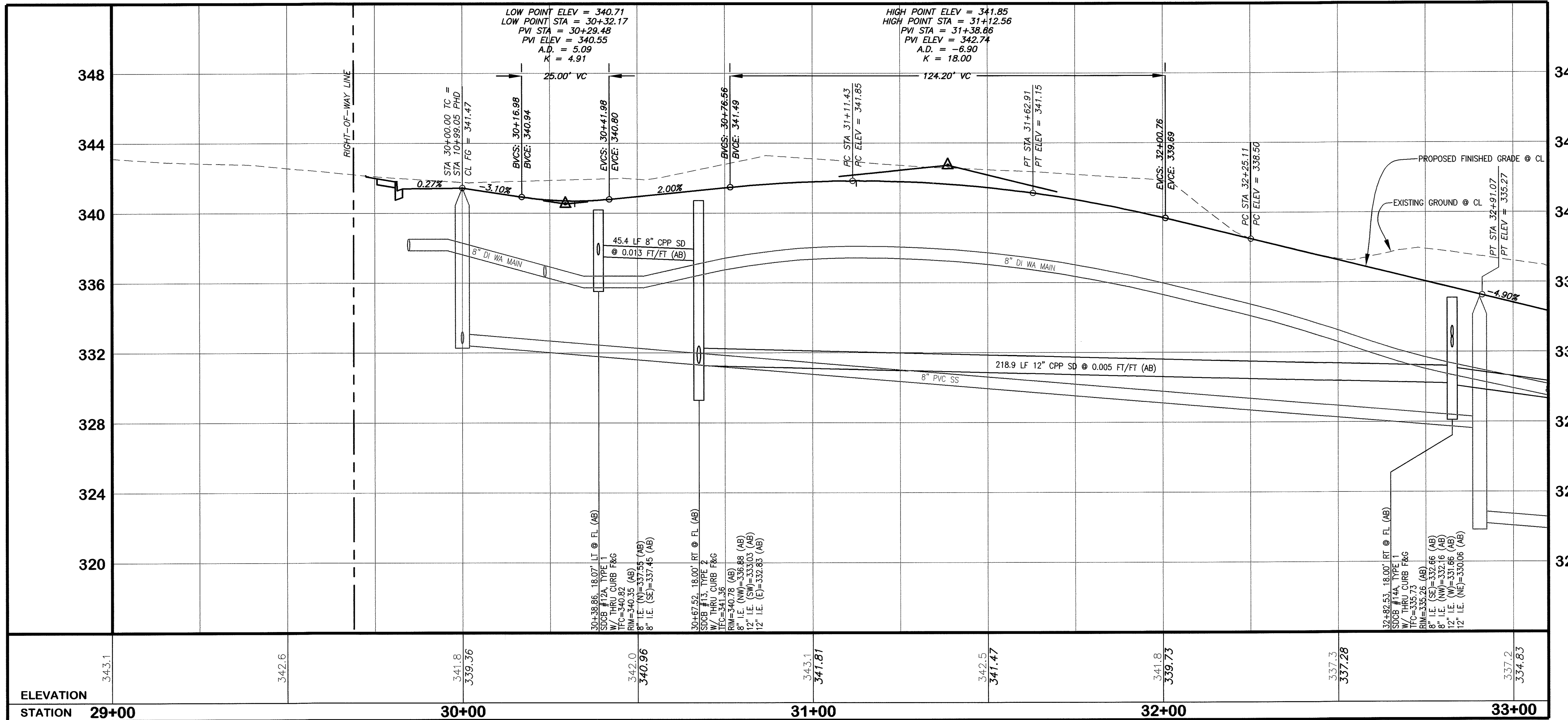
STORM STUB LOCATION TABLE			
LOT No.	STREET	STA & OFFSET @ FL	STUB L/E
9	TAYSIDE	30+67.5 45.2 RT (AB)	334.57 (AB)
10	TAYSIDE	32+30.0 44.5 RT (AB)	335.97 (AB)
11	TAYSIDE	32+81.8 54.1 RT (AB)	332.76 (AB)
19	TAYSIDE	32+72.7 41.8 LT (AB)	334.66 (AB)
20	TAYSIDE	31+84.8 50.9 LT (AB)	336.64 (AB)
21	TAYSIDE	31+42.6 52.1 LT (AB)	340.46 (AB)
22	TAYSIDE	30+42.5 40.5 LT (AB)	339.12 (AB)

DRIVEWAY CENTERLINE TABLE			
LOT No.	STREET	STA & OFFSET @ FL	WIDTH
9	TAYSIDE	31+18.04 18.00 RT	20.00
10	TAYSIDE	32+09.11 18.00 RT	20.00
11	TAYSIDE	32+52.10 18.00 RT	20.00
19	TAYSIDE	32+09.11 18.00 LT	20.00
20	TAYSIDE	31+69.47 18.00 LT	20.00
21	TAYSIDE	31+09.64 18.00 LT	20.00

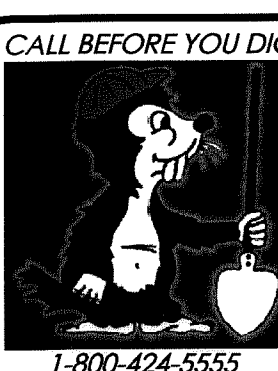
LINE TABLE - ROADWAY CENTERLINE			
LINE	DELTA	BEARING	DESCRIPTION
L3	111.43'	N74°49'09"E	TAYSIDE CT
L4	62.20'	N89°34'02"E	TAYSIDE CT

CURVE TABLE - ROADWAY CENTERLINE			
LINE	DELTA	RADIUS	LENGTH
C4	14°44'52"	200.00'	51.48'
C5	37°47'33"	100.00'	65.96'

STORM DRAINAGE NOTES			
SDCB #12A 30+38.86, 18.07' LT @ FL (AB) TYPE 1 W/ THRU CURB F&G TFC=340.82 RIM=340.35 (AB) 8" I.E. (N)=337.55 (AB) 8" I.E. (SE)=337.45 (AB)			
SDCB #12B 30+39.28, 25.10' LT @ CTR SDCB (AB) TYPE 1 W/ SOLID COVER RIM=341.06 (AB) 8" I.E. (S)=337.56 (AB)			
SDCB #13 30+67.52, 18.00' RT @ FL (AB) TYPE 2 W/ THRU CURB F&G TFC=341.36 RIM=340.78 (AB) 8" I.E. (NW)=336.88 (AB) 12" I.E. (SW)=333.03 (AB) 12" I.E. (E)=332.83 (AB)			
SDCB #14A 32+82.53, 18.00' RT @ FL (AB) TYPE 1 W/ THRU CURB F&G TFC=335.73 RIM=335.26 (AB) 8" I.E. (SE)=332.66 (AB) 8" I.E. (NW)=332.16 (AB) 12" I.E. (W)=331.66 (AB) 12" I.E. (NE)=330.06 (AB)			
SDCB #14B 32+82.53, 25.04' RT @ CTR SDCB (AB) TYPE 1 W/ SOLID COVER RIM=335.83 (AB) 8" I.E. (NW)=332.73 (AB)			
SDCB #15A 32+82.53, 18.00' LT @ FL (AB) TYPE 1 W/ THRU CURB F&G TFC=335.73 RIM=335.29 (AB) 8" I.E. (NW)=332.39 (AB) 8" I.E. (SE)=332.39 (AB)			
SDCB #15B 32+82.53, 25.04' LT @ CTR SDCB (AB) TYPE 1 W/ SOLID COVER RIM=335.69 (AB) 8" I.E. (SE)=332.43 (AB)			



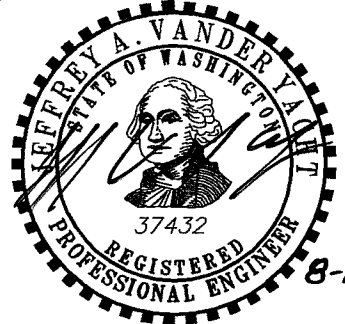
FIELD BOOKS		TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1					BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:					DESIGN	BEA	JVY	VERT: 1" = 4'					6	02/20/08
AS-BUILT:					XREF:								7	05/30/08
SURVEY REFERENCE					DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
VERTICAL DATUM					PLAN CHECK									
					REVISIONS									
					ISSUE									



KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

(CORRESPONDING WATER & SANITARY SEWER IMPROVEMENTS SEE SHEET 16)

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
TAYSIDE COURT ~
STATIONS 29+00 to 33+00
ROADWAY & STORM DRAINAGE IMPROVEMENTS
JOB #: 93084 SHEET 6 OF 26



AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
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OR MEASURED DURING CONSTRUCTION.

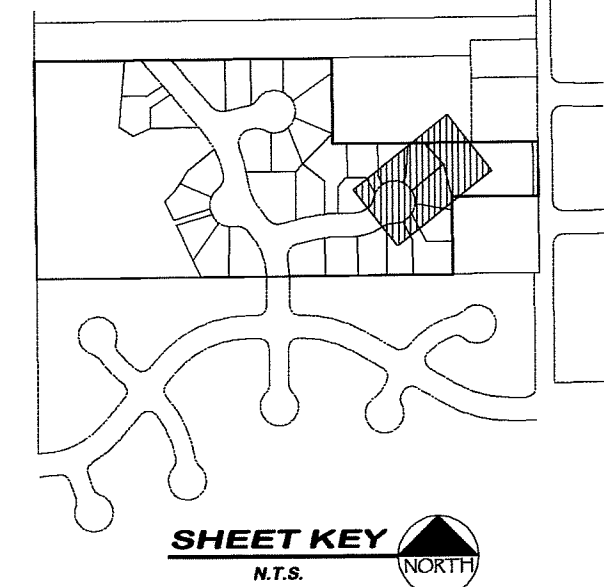
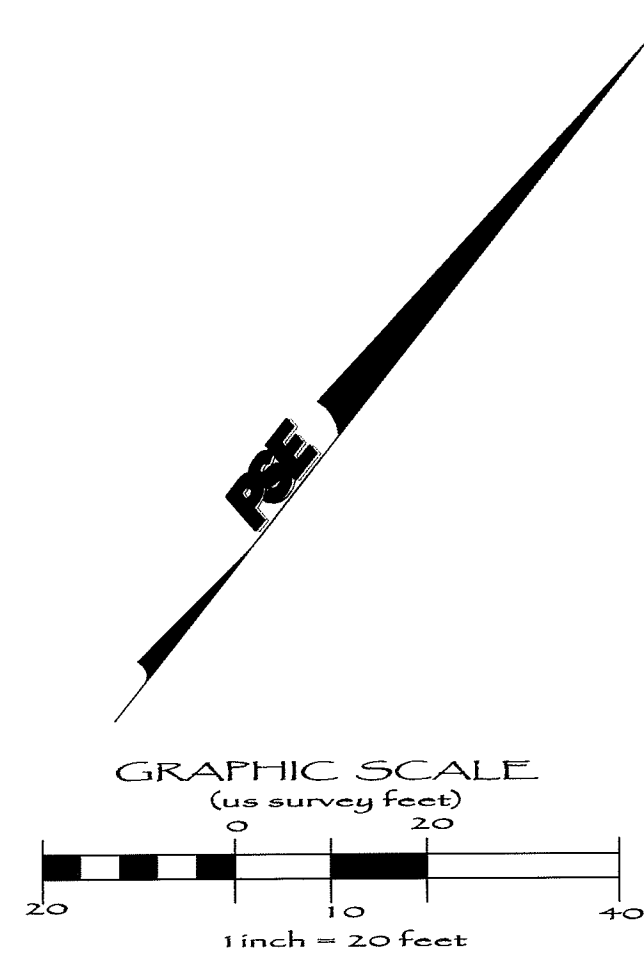
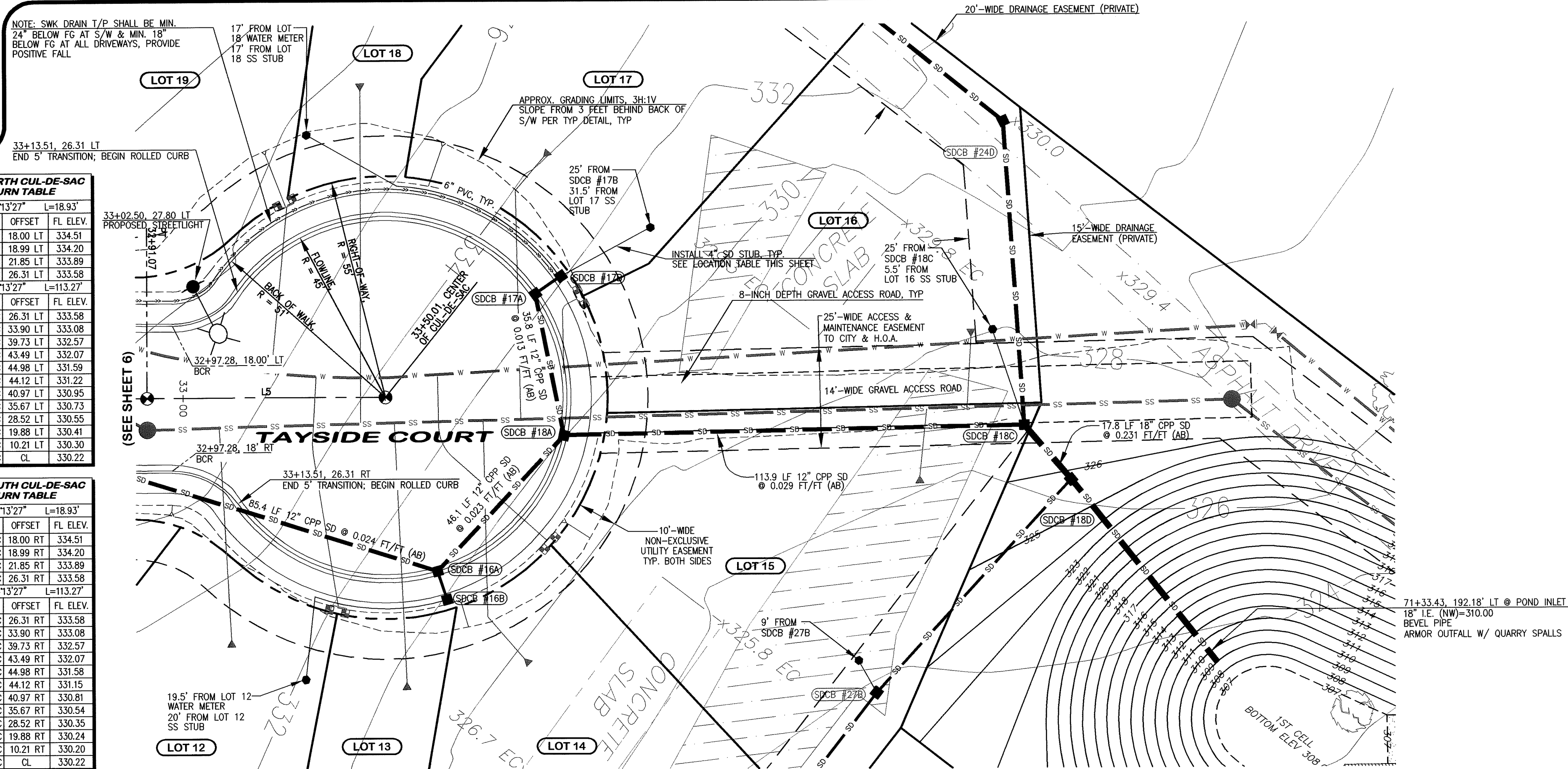
AS-BUILT DRAWING
PUBLIC WORKS PROJECT LP 2006-01

APPROVED
APR 12 2009
BY *Robert J. Lewis*
CITY OF FERNDALE



TAYSIDE CT. NORTH CUL-DE-SAC CURB RETURN TABLE			
R=20.00'	Δ=54°13'27"	L=18.93'	
STATION	OFFSET	FL ELEV.	
BCR	32+97.28 TC	18.00 LT	334.51
1/3L	33+03.48 TC	18.99 LT	334.20
2/3L	33+09.08 TC	21.85 LT	333.89
ECR	33+13.51 TC	26.31 LT	333.58
R=45.00' Δ=144°13'27" L=113.27'			
STATION	OFFSET	FL ELEV.	
BCR	33+13.51 TC	26.31 LT	333.58
1/1L	33+20.42 TC	33.90 LT	333.08
2/1L	33+28.89 TC	39.73 LT	332.57
3/1L	33+38.45 TC	43.49 LT	332.07
4/1L	33+48.62 TC	44.98 LT	331.59
5/1L	33+58.86 TC	44.12 LT	331.22
6/1L	33+68.63 TC	40.97 LT	330.95
7/1L	33+77.44 TC	35.67 LT	330.73
8/1L	33+84.82 TC	28.52 LT	330.55
9/1L	33+90.38 TC	19.88 LT	330.41
10/1L	33+93.84 TC	10.21 LT	330.30
MD	33+95.01 TC	CL	330.22

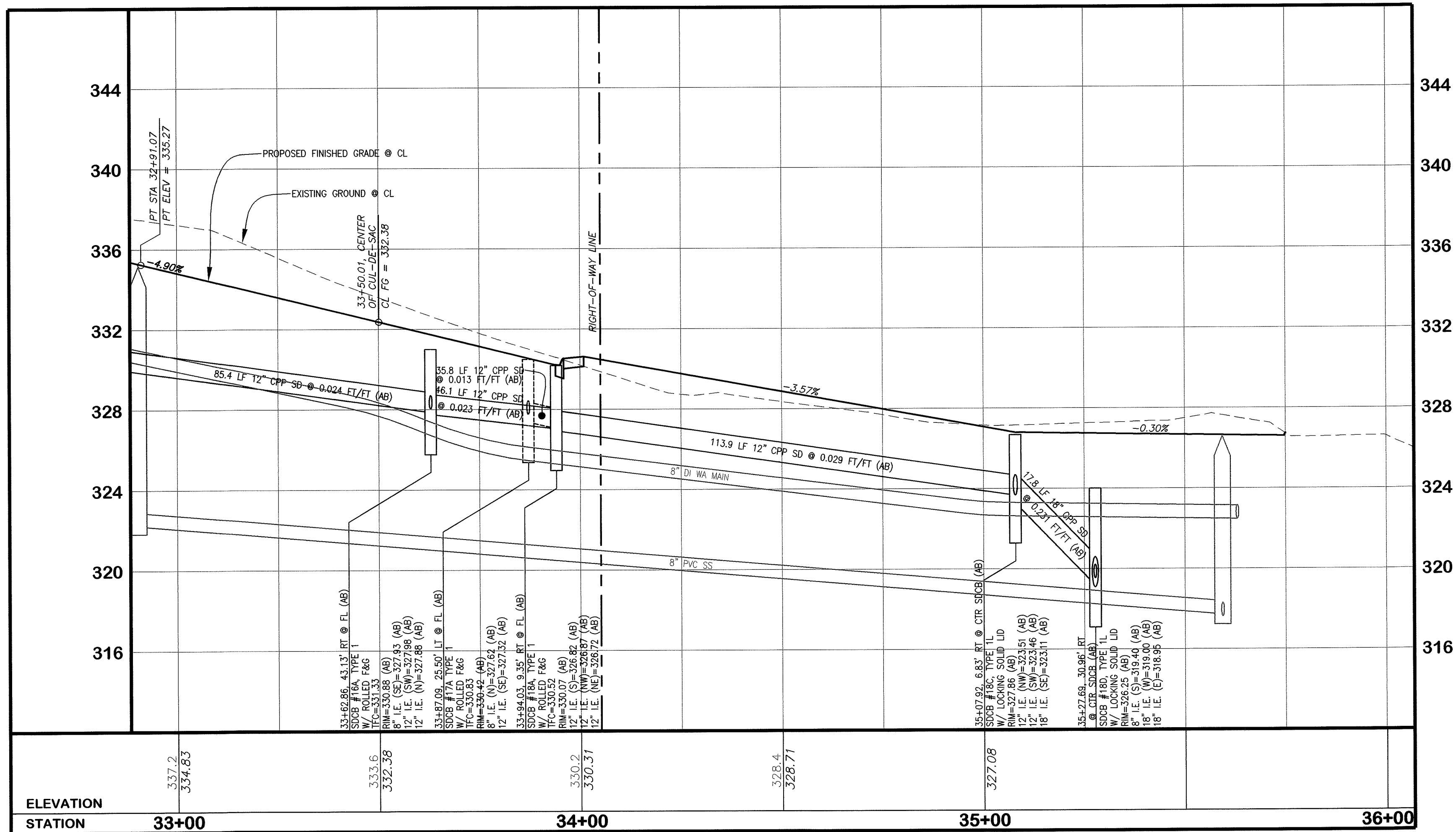
TAYSIDE CT. SOUTH CUL-DE-SAC CURB RETURN TABLE			
R=20.00'	Δ=54°13'27"	L=18.93'	
STATION	OFFSET	FL ELEV.	
BCR	32+97.28 TC	18.00 RT	334.51
1/3L	33+03.48 TC	18.99 RT	334.20
2/3L	33+09.08 TC	21.85 RT	333.89
ECR	33+13.51 TC	26.31 RT	333.58
R=45.00' Δ=144°13'27" L=113.27'			
STATION	OFFSET	FL ELEV.	
BCR	33+13.51 TC	26.31 RT	333.58
1/1L	33+20.42 TC	33.90 RT	333.08
2/1L	33+28.89 TC	39.73 RT	332.57
3/1L	33+38.45 TC	43.49 RT	332.07
4/1L	33+48.62 TC	44.98 RT	331.58
5/1L	33+58.86 TC	44.12 RT	331.15
6/1L	33+68.63 TC	40.97 RT	330.81
7/1L	33+77.44 TC	35.67 RT	330.54
8/1L	33+84.82 TC	28.52 RT	330.35
9/1L	33+90.38 TC	19.88 RT	330.24
10/1L	33+93.84 TC	10.21 RT	330.20
MD	33+95.01 TC	CL	330.22



STORM STUB LOCATION TABLE			
LOT No.	STREET	STA & OFFSET	STUB I.E.
12	TAYSIDE	33+30.1 70.1 RT (AB)	329.68 (AB)
13	TAYSIDE	33+83.3 162.9 RT (AB)	324.03 (AB)
14	TAYSIDE	33+88.6 157.0 RT (AB)	321.58 (AB)
15	TAYSIDE	34+65.5 65.6 RT (AB)	321.92 (AB)
16	TAYSIDE	35+00.2 16.4 LT (AB)	324.73 (AB)
17	TAYSIDE	34+15.7 42.1 LT (AB)	327.97 (AB)
18	TAYSIDE	33+30.6 65.1 LT (AB)	334.01 (AB)

DRIVEWAY CENTERLINE TABLE			
LOT No.	STREET	STA & OFFSET	WIDTH
12			
13			
14			
15			
16			
17			
18			

LINE TABLE - ROADWAY CENTERLINE			
LINE	DELTA	BEARING	DESCRIPTION
LS	58.94'	NS1°46'29"E	TAYSIDE CT



STORM DRAINAGE NOTES	
SDCB #16A	33+62.86, 43.13' RT @ FL (AB) TYPE 1 W/ ROLLED F&G TFC=331.33 RIM=330.88 (AB) 8" I.E. (SE)=327.93 (AB) 12" I.E. (SW)=327.98 (AB) 12" I.E. (N)=327.88 (AB)
SDCB #16B	33+65.00, 50.32' RT @ CTR SDCB (AB) TYPE 1 W/ LOCKING SOLID LID RIM=331.49 (AB) 8" I.E. (NW)=327.89 (AB)
SDCB #17A	33+87.09, 25.50' LT @ FL (AB) TYPE 1 W/ ROLLED F&G TFC=330.83 RIM=330.42 (AB) 8" I.E. (N)=327.62 (AB) 12" I.E. (SE)=327.32 (AB)
SDCB #17B	33+93.27, 29.75' LT @ CTR SDCB (AB) TYPE 1 W/ LOCKING SOLID LID RIM=330.96 (AB) 8" I.E. (S)=326.66 (AB)
SDCB #18A	33+94.03, 9.35' RT @ FL (AB) TYPE 1 W/ ROLLED F&G TFC=330.52 RIM=330.07 (AB) 12" I.E. (SW)=326.82 (AB) 12" I.E. (NW)=326.87 (AB) 12" I.E. (NE)=326.72 (AB)
SDCB #18C	35+07.92, 6.83' RT @ CTR SDCB (AB) TYPE 1L W/ LOCKING SOLID LID RIM=327.86 (AB) 12" I.E. (NW)=323.51 (AB) 12" I.E. (SW)=323.46 (AB) 18" I.E. (SE)=323.11 (AB)
SDCB #18D	35+19.70, 20.73' RT @ CTR SDCB (AB) TYPE 1L W/ LOCKING SOLID LID RIM=326.25 (AB) 8" I.E. (S)=319.40 (AB) 18" I.E. (W)=319.00 (AB) 18" I.E. (E)=318.95 (AB)

AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
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OR MEASURED DURING CONSTRUCTION.

AS-BUILT
DRAWING

PUBLIC WORKS PROJECT LP 2006-01

APPROVED

APR 12 2008
BY: [Signature]
CITY OF FERNDALE

(CORRESPONDING WATER & SANITARY SEWER IMPROVEMENTS SEE SHEET 17)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 4'

FIELD BOOKS		TBM. NO.	LOCATION	ELEV.	DATA	DRWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1					BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:					DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:					XREF:								7	05/30/08
					DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK		REVISIONS		ISSUE						

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33677 ARCADIAN WAY
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TAYSIDE COURT ~
STATIONS 33+00 to 36+00
ROADWAY & STORM DRAINAGE IMPROVEMENTS

JOB #: 93084

SHEET 7 OF 26



8-15-08

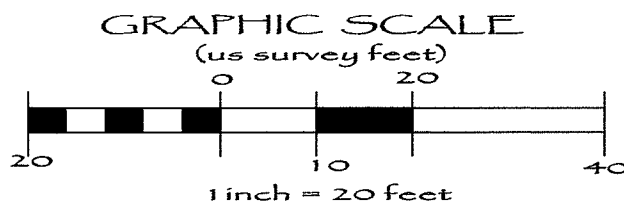
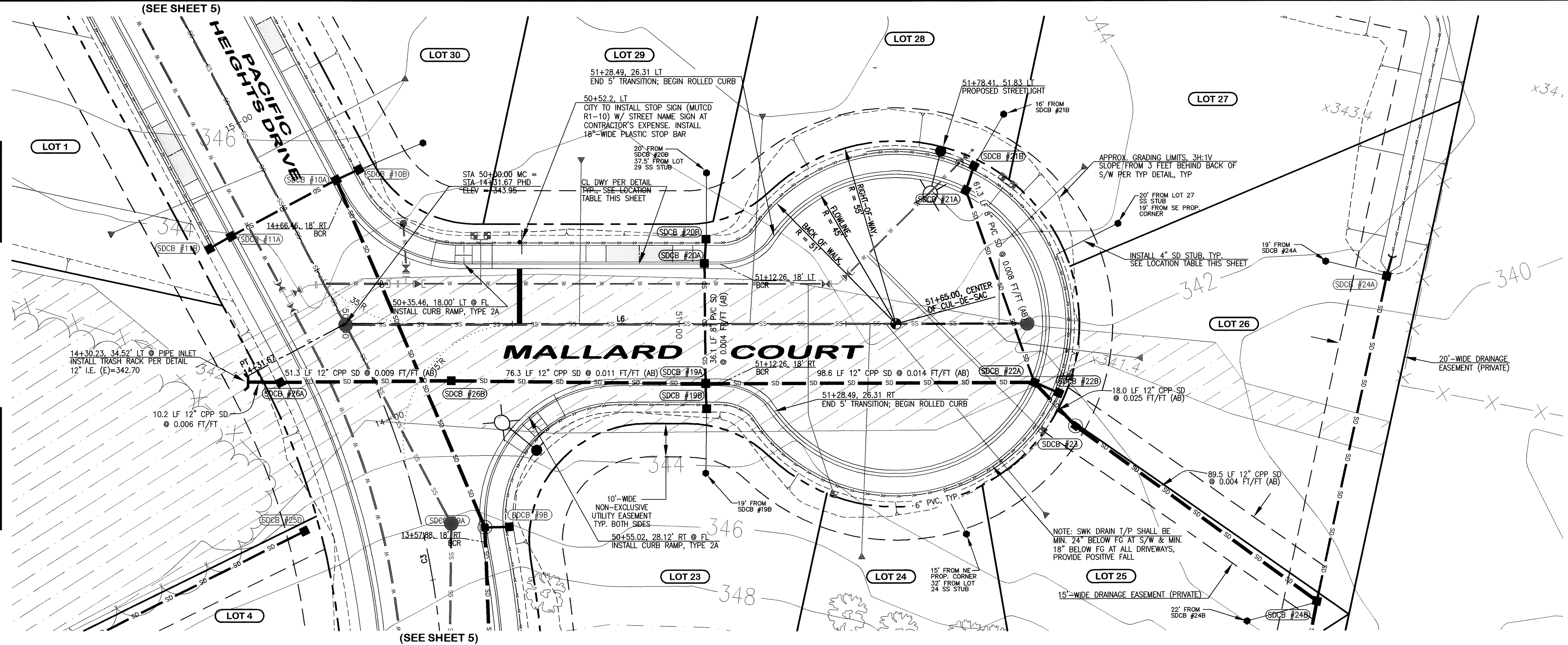


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EMAIL: pse@psurvey.com

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

NE CORNER CURB RETURN TABLE			
R=40.00'	Δ=61°54'06"	L=43.22'	
STATION	OFFSET	FL ELEV.	
BCR 14+66.46	PHD 18.00	RT 343.29	
1/2L 14+57.88	PHD 18.93	RT 343.36	
2/2L 14+49.70	PHD 21.68	RT 343.39	
3/2L 50+18.03	MC 21.68	LT 343.34	
4/2L 50+26.21	MC 18.93	LT 343.22	
ECR 50+34.78	MC 18.00	LT 343.10	

SE CORNER CURB RETURN TABLE			
R=40.00'	Δ=101°11'06"	L=70.64'	
STATION	OFFSET	FL ELEV.	
BCR 13+57.88	PHD 18.00	RT 344.81	
1/2L 13+47.14	PHD 19.45	RT 344.55	
2/2L 13+35.56	PHD 23.67	RT 344.22	
3/2L 13+24.42	PHD 30.27	RT 343.86	
4/2L 50+54.15	MC 28.92	RT 343.49	
5/2L 50+62.28	MC 22.98	RT 343.14	
6/2L 50+71.63	MC 19.27	RT 342.84	
ECR 50+81.61	MC 18.00	RT 342.63	



MALLARD CT. NORTH CUL-DE-SAC CURB RETURN TABLE			
R=20.00'	Δ=54°13'27"	L=18.93'	
STATION	OFFSET	FL ELEV.	
BCR 51+12.26	MC 18.00	RT 342.32	
1/2L 51+18.47	MC 18.99	LT 342.25	
2/2L 51+24.06	MC 21.85	RT 342.18	
ECR 51+28.49	MC 26.31	LT 342.10	
R=45.00'	Δ=144°13'27"	L=113.27'	
STATION	OFFSET	FL ELEV.	
BCR 51+28.49	MC 26.31	LT 342.10	
1/2L 51+35.41	MC 33.90	LT 341.96	
2/2L 51+43.87	MC 39.73	LT 341.80	
3/2L 51+53.44	MC 43.49	LT 341.62	
4/2L 51+63.60	MC 44.98	LT 341.41	
5/2L 51+73.84	MC 44.12	LT 341.25	
6/2L 51+83.62	MC 40.97	LT 341.19	
7/2L 51+92.43	MC 35.67	LT 341.23	
8/2L 51+99.81	MC 28.52	LT 341.34	
9/2L 52+05.37	MC 19.88	LT 341.48	
10/2L 52+08.83	MC 10.21	LT 341.63	
MD 52+10.00	MC	CL 341.69	

MALLARD CT. SOUTH CUL-DE-SAC CURB RETURN TABLE			
R=20.00'	Δ=54°13'27"	L=18.93'	
STATION	OFFSET	FL ELEV.	
BCR 51+12.26	MC 18.00	RT 342.32	
1/2L 51+18.47	MC 18.99	RT 342.25	
2/2L 51+24.06	MC 21.85	RT 342.18	
ECR 51+28.49	MC 26.31	RT 342.10	
R=45.00'	Δ=144°13'27"	L=113.27'	
STATION	OFFSET	FL ELEV.	
BCR 51+28.49	MC 26.31	RT 342.10	
1/2L 51+35.41	MC 33.90	RT 341.96	
2/2L 51+43.87	MC 39.73	RT 341.80	
3/2L 51+53.44	MC 43.49	RT 341.62	
4/2L 51+63.60	MC 44.98	RT 341.80	
5/2L 51+73.84	MC 44.12	RT 341.72	
6/2L 51+83.62	MC 40.97	RT 341.64	
7/2L 51+92.43	MC 35.67	RT 341.57	
8/2L 51+99.81	MC 28.52	RT 341.50	
9/2L 52+05.37	MC 19.88	RT 341.45	
10/2L 52+08.83	MC 10.21	RT 341.51	
MD 52+10.00	MC	CL 341.69	

STORM STUB LOCATION TABLE			
LOT NO.	STREET	STA & OFFSET	STUB I.E.
23	MALLARD	51+08.0 44.9 RT (AB)	340.85 (AB)
24	MALLARD	51+86.2 63.2 RT (AB)	340.13 (AB)
25	MALLARD	52+70.3 89.5 RT (AB)	337.77 (AB)
26	MALLARD	52+94.7 16.7 RT (AB)	338.89 (AB)
27	MALLARD	52+31.5 30.1 LT (AB)	340.60 (AB)
28	MALLARD	51+97.3 63.1 LT (AB)	341.21 (AB)
29	MALLARD	51+08.2 45.4 LT (AB)	340.99 (AB)

DRIVEWAY CENTERLINE TABLE			
LOT NO.	STREET	STA & OFFSET @ FL	WIDTH
23			
24			
25			
26			
27			
28			
29	MALLARD	50+88.06 18.00 LT	20.00

LINE TABLE - ROADWAY CENTERLINE		
LINE	DELTA	BEARING DESCRIPTION
L6	165.00'	N77°23'25"E MALLARD CT

APPROVED
APR 02 2009
BY [Signature]
CITY OF FERNDALE

STORM DRAINAGE NOTES

SDCB #19A
51+08.16, 18.00' RT @ FL (AB)
TYPE 1 W/ THRU CURB F&G
TFC=342.86
RIM=342.41 (AB)
8" I.E. (S)=339.21 (AB)
8" I.E. (N)=339.31 (AB)
12" I.E. (W)=338.36 (AB)
12" I.E. (E)=338.26 (AB)

SDCB #19B
51+08.16, 25.04' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=343.30 (AB)
8" I.E. (N)=340.15 (AB)

SDCB #20A
51+08.16, 18.00' LT @ FL (AB)
TYPE 1 W/ THRU CURB F&G
TFC=342.86
RIM=342.31 (AB)
8" I.E. (N)=339.66 (AB)
8" I.E. (S)=339.46 (AB)

SDCB #20B
51+08.16, 25.04' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=342.89 (AB)
8" I.E. (S)=339.74 (AB)

SDCB #21A
51+85.12, 40.25' LT @ FL (AB)
TYPE 1 W/ THRU CURB F&G
TFC=341.51
RIM=341.24 (AB)
8" I.E. (N)=338.29 (AB)
8" I.E. (S)=338.39 (AB)

SDCB #21B
51+85.12, 40.25' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=341.84 (AB)
8" I.E. (S)=338.64 (AB)

SDCB #22A
52+06.41, 17.61' RT @ FL (AB)
TYPE 1 W/ ROLLED F&G
TFC=341.77
RIM=341.27 (AB)
8" I.E. (NW)=337.87 (AB)
8" I.E. (E)=338.67 (AB)
12" I.E. (W)=337.37 (AB)
12" I.E. (SE)=336.87 (AB)

SDCB #22B
52+13.31, 20.54' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=341.77 (AB)
8" I.E. (W)=338.52 (AB)

SDCB #23
52+17.61, 32.09' RT @ CTR SDCB (AB)
TYPE 2 W/ LOCKING SOLID LID
RIM=343.42 (AB)
12" I.E. (NW)=336.42 (AB)
12" I.E. (E)=336.42 (AB)

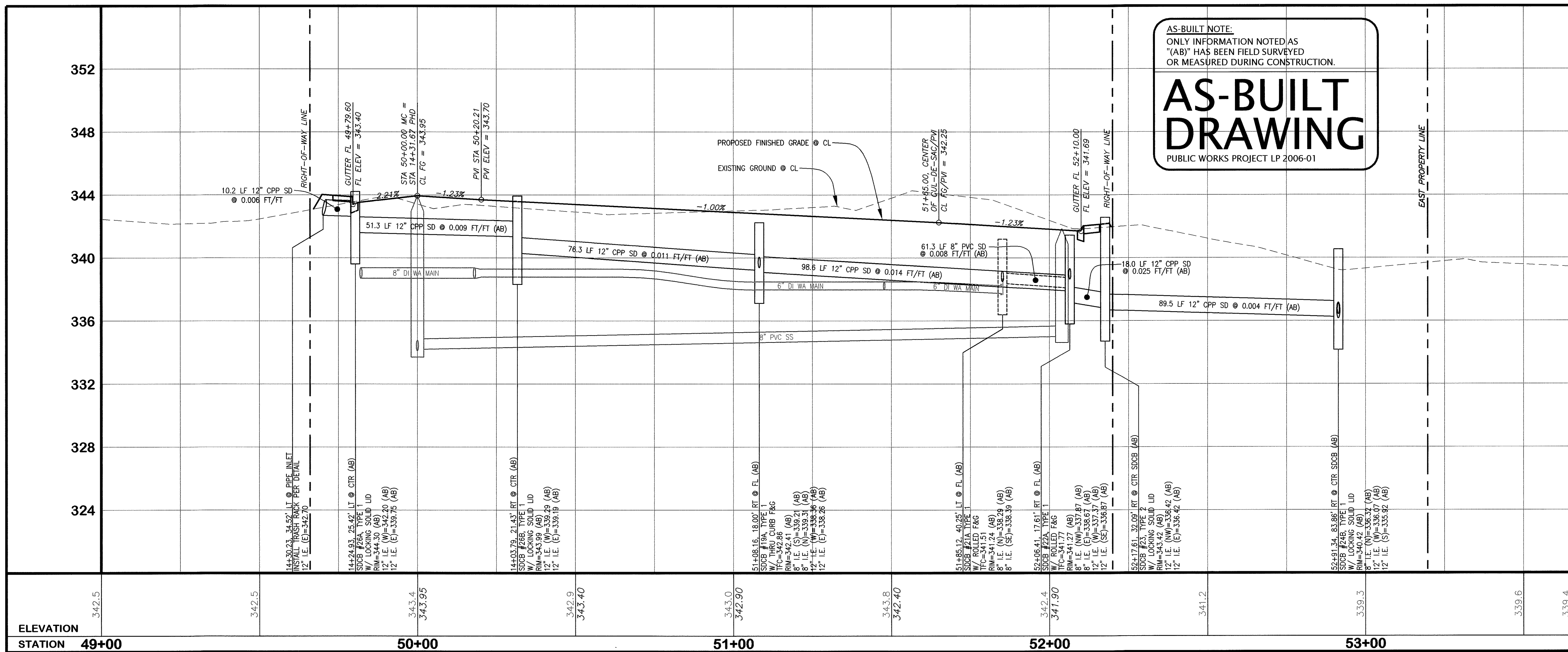
SDCB #24B
52+91.34, 83.86' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=340.42 (AB)
8" I.E. (N)=336.32 (AB)
12" I.E. (W)=336.07 (AB)
12" I.E. (S)=335.92 (AB)

SDCB #26A
14+24.93, 25.42' LT @ CTR (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=344.30 (AB)
12" I.E. (W)=342.20 (AB)
12" I.E. (S)=339.75 (AB)

SDCB #26B
14+03.78, 21.43' RT @ CTR (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=343.99 (AB)
12" I.E. (W)=339.29 (AB)
12" I.E. (S)=339.19 (AB)

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

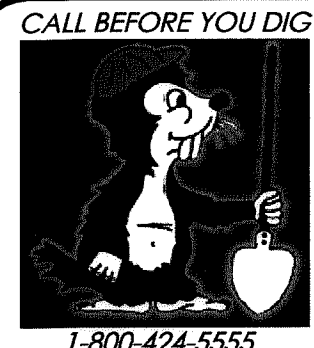
AS-BUILT
DRAWING
PUBLIC WORKS PROJECT LP 2006-01



HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 4'

(CORRESPONDING WATER & SANITARY SEWER IMPROVEMENTS SEE SHEET 18)

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/08	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK				REVISIONS		ISSUE			



KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
MALLARD COURT ~
STATIONS 49+00 to 53+65
ROADWAY & STORM DRAINAGE IMPROVEMENTS
JOB #: 93084 SHEET 8 OF 26





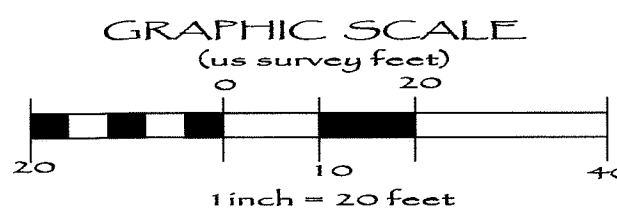
www.psesurvey.com
EMAIL: pse@psurvey.com

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

AS-BUILT NOTE:
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"AB" HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION.

AS-BUILT DRAWING

PUBLIC WORKS PROJECT LP 2006-01



STORM DRAINAGE NOTES

SDCB #7A

12+27.08, 74.56' LT @ FL (AB)
TYPE 2 W/ ROLLED F&G
TPO=345.80
RIM=345.39 (AB)
8" I.E. (NW)=342.44 (AB)
8" I.E. (SE)=340.19 (AB)
12" I.E. (NE)=338.59 (AB)
12" I.E. (W)=338.04 (AB)

SDCB #7B

12+32.49, 80.80' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=345.94 (AB)
6" I.E. (SW)=342.94 (AB)

SDCB #7C

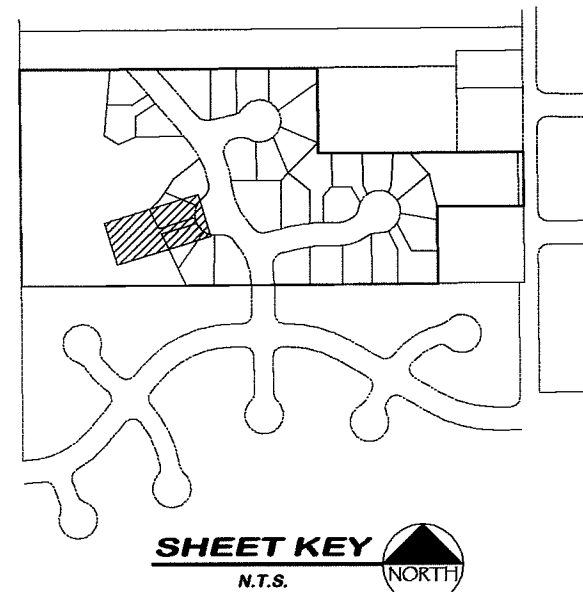
12+32.21, 192.26' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=342.36 (AB)
8" I.E. (NW)=339.46 (AB)
12" I.E. (E)=337.56 (AB)
12" I.E. (W)=337.46 (AB)

SDCB #7D

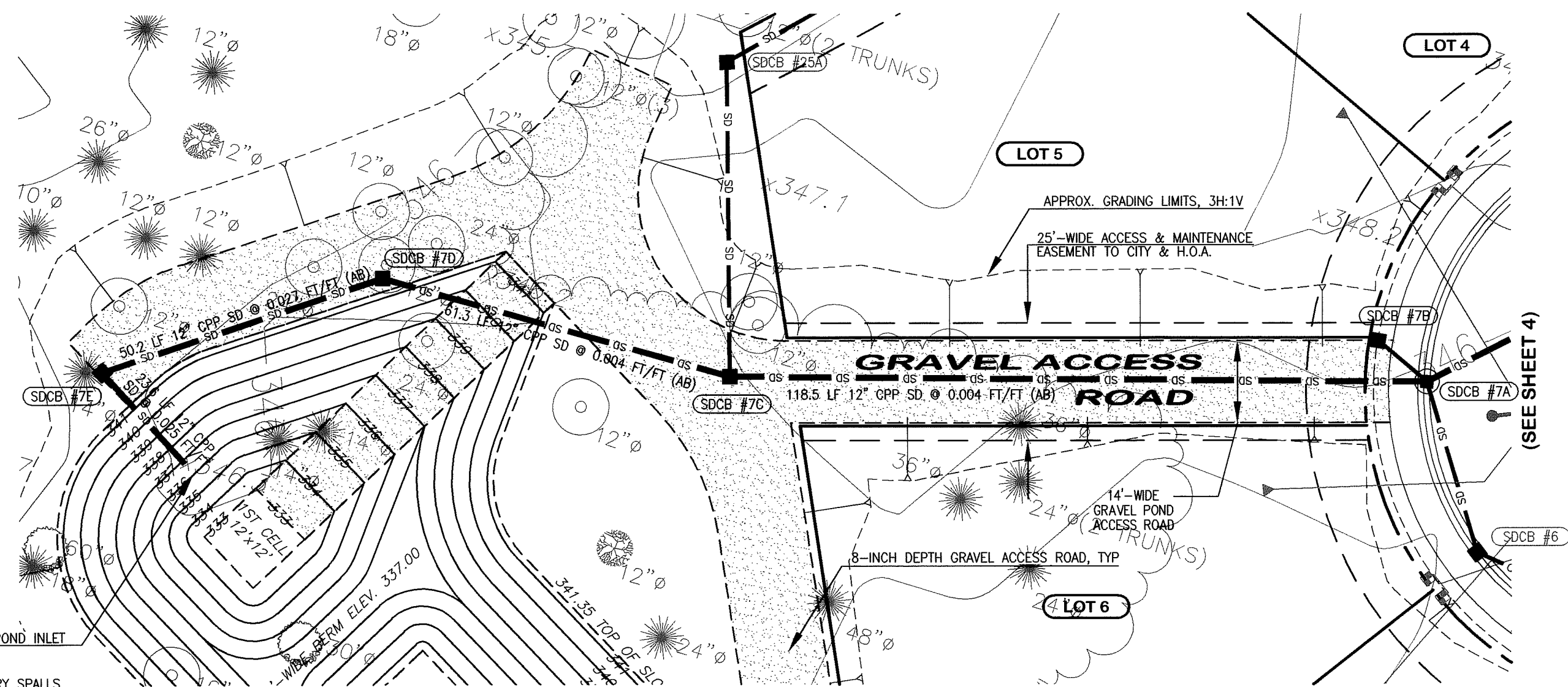
12+41.62, 249.29' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=342.11 (AB)
12" I.E. (E)=337.21 (AB)
12" I.E. (SW)=337.11 (AB)

SDCB #7E

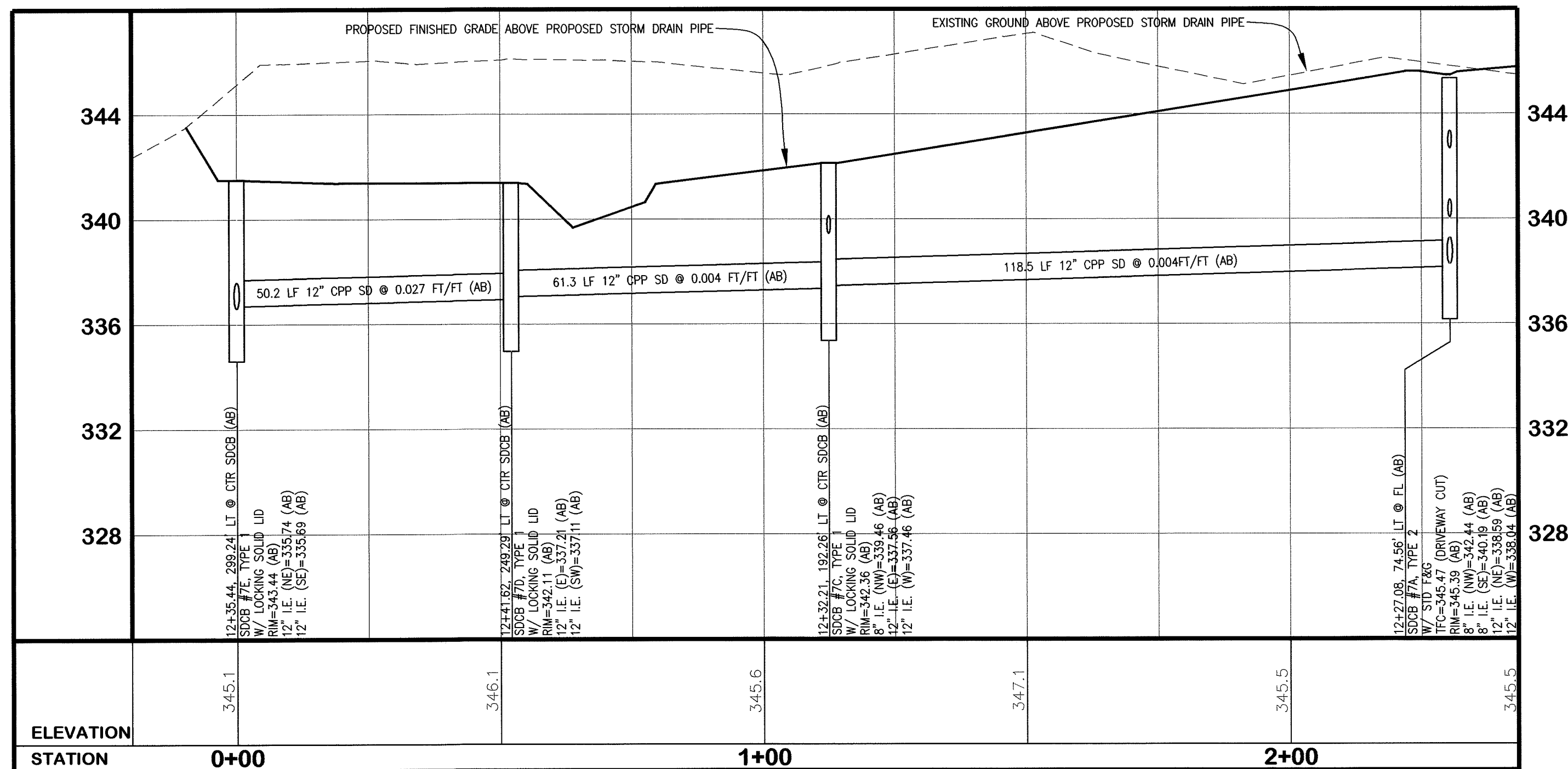
12+35.44, 299.24' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=343.44 (AB)
12" I.E. (NE)=335.74 (AB)
12" I.E. (SE)=335.69 (AB)



SHEET KEY
N.T.S. NORTH



12+28.08, 284.16' LT @ POND INLET
12" I.E. (NW)=336.00
BEVEL PIPE
ARMOR OUTFALL W/ QUARRY SPALLS



HORIZONTAL SCALE: 1" = 20'

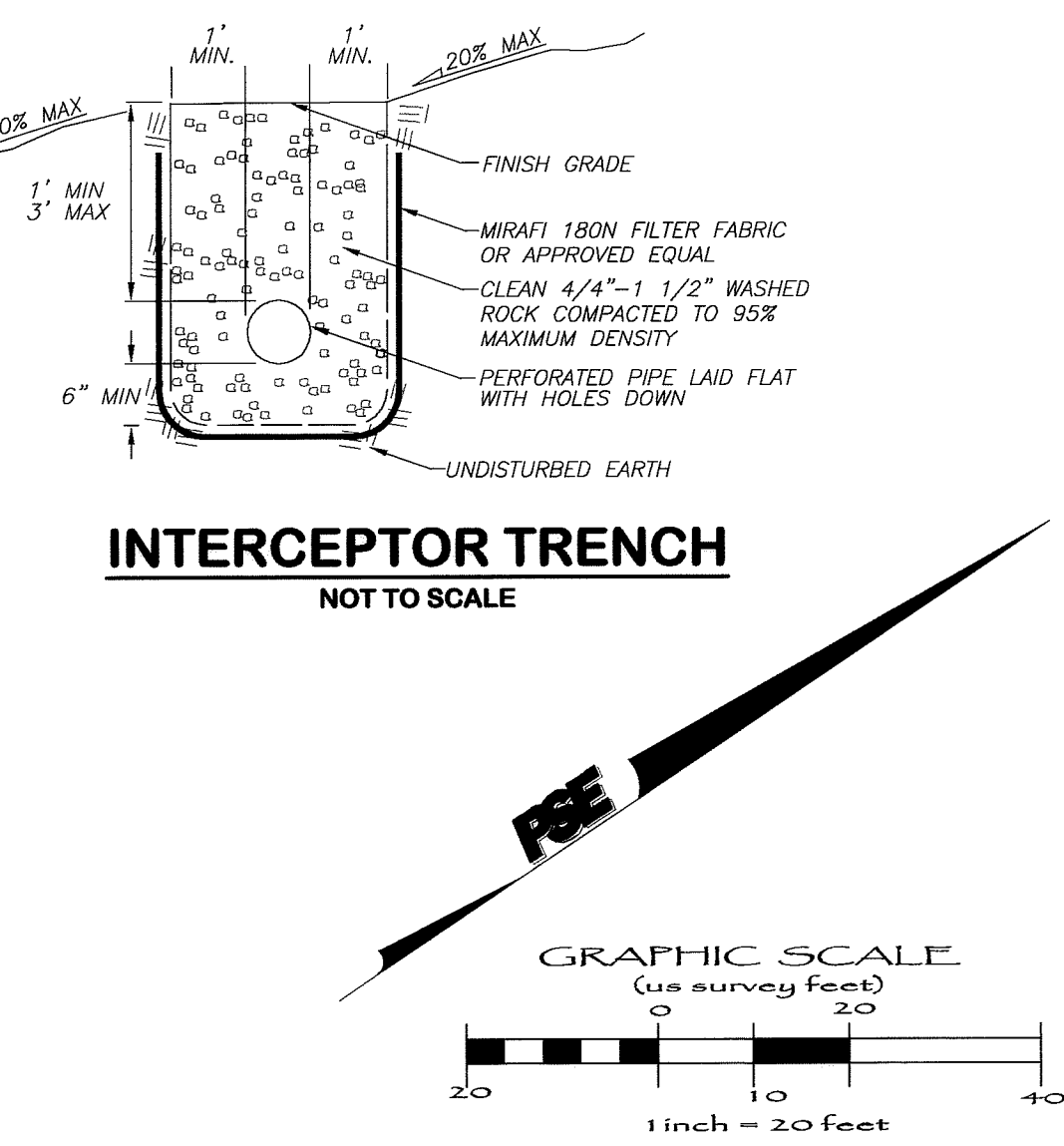
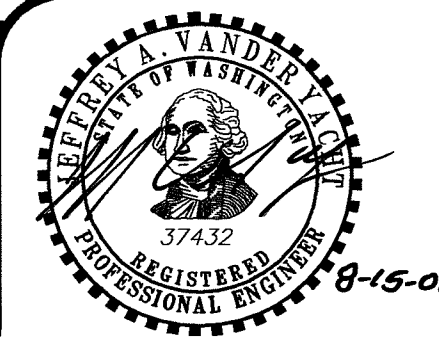
VERTICAL SCALE: 1" = 4'

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	NO.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	06/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'					6	02/20/08
AS-BUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK						REVISIONS			ISSUE



KINGMA BROS. DEVELOPMENT
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ABBOTTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
**SOUTH POND &
LOTS 4 & 5**
ROADWAY & STORM DRAINAGE IMPROVEMENTS
JOB # 93084
SHEET 9 OF 26



STORM DRAINAGE NOTES

SDCB #7C

12+32.21, 192.26' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=342.36 (AB)
8" I.E. (NW)=339.46 (AB)
12" I.E. (E)=337.56 (AB)
12" I.E. (W)=337.46 (AB)

SDCB #25A

12+60.59, 192.87' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=344.81 (AB)
6" I.E. (NE)=340.61 (AB)
8" I.E. (SE)=340.51 (AB)

SDCB #25B

12+71.96, 161.43' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=344.40 (AB)
6" I.E. (NE)=341.50 (AB)
6" I.E. (SW)=341.30 (AB)

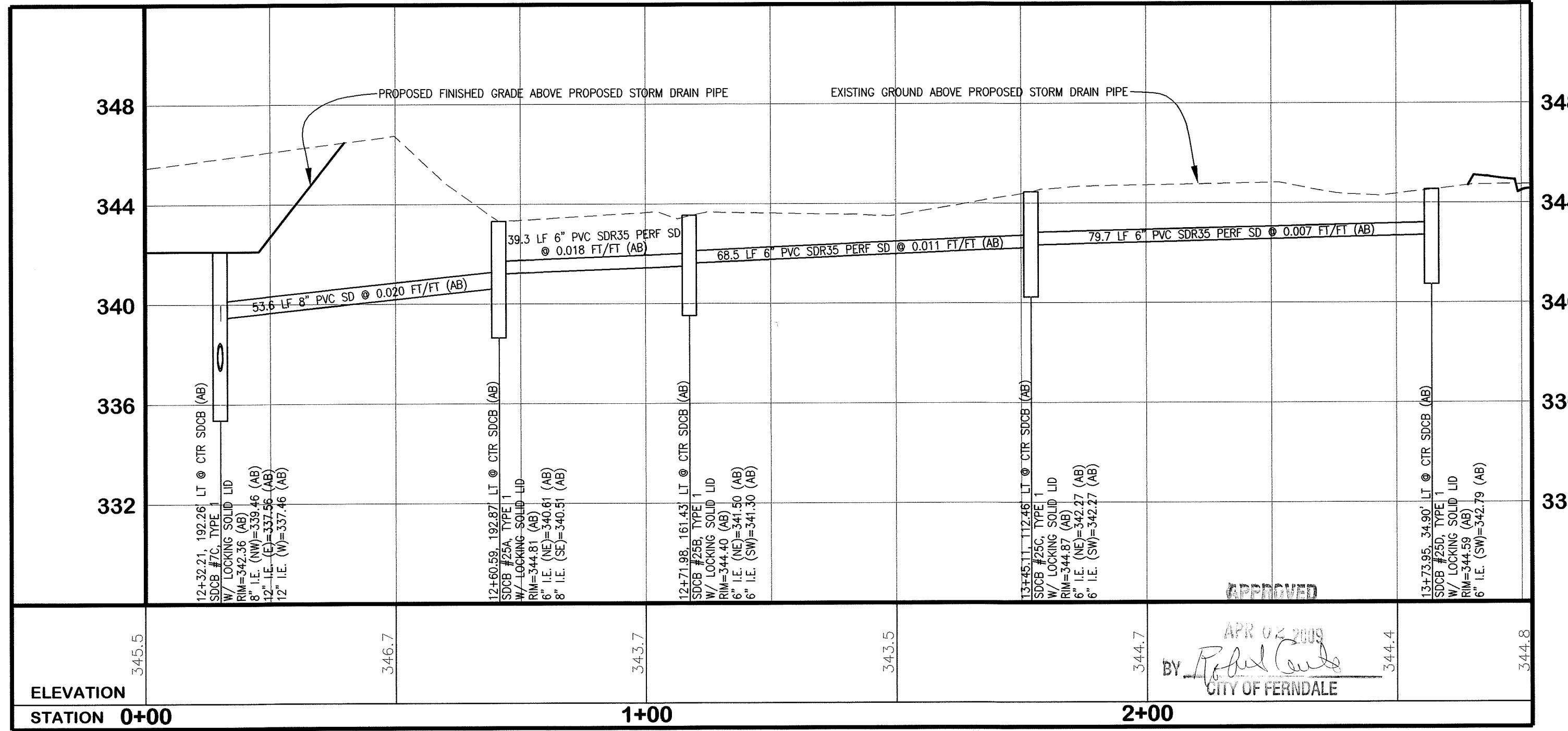
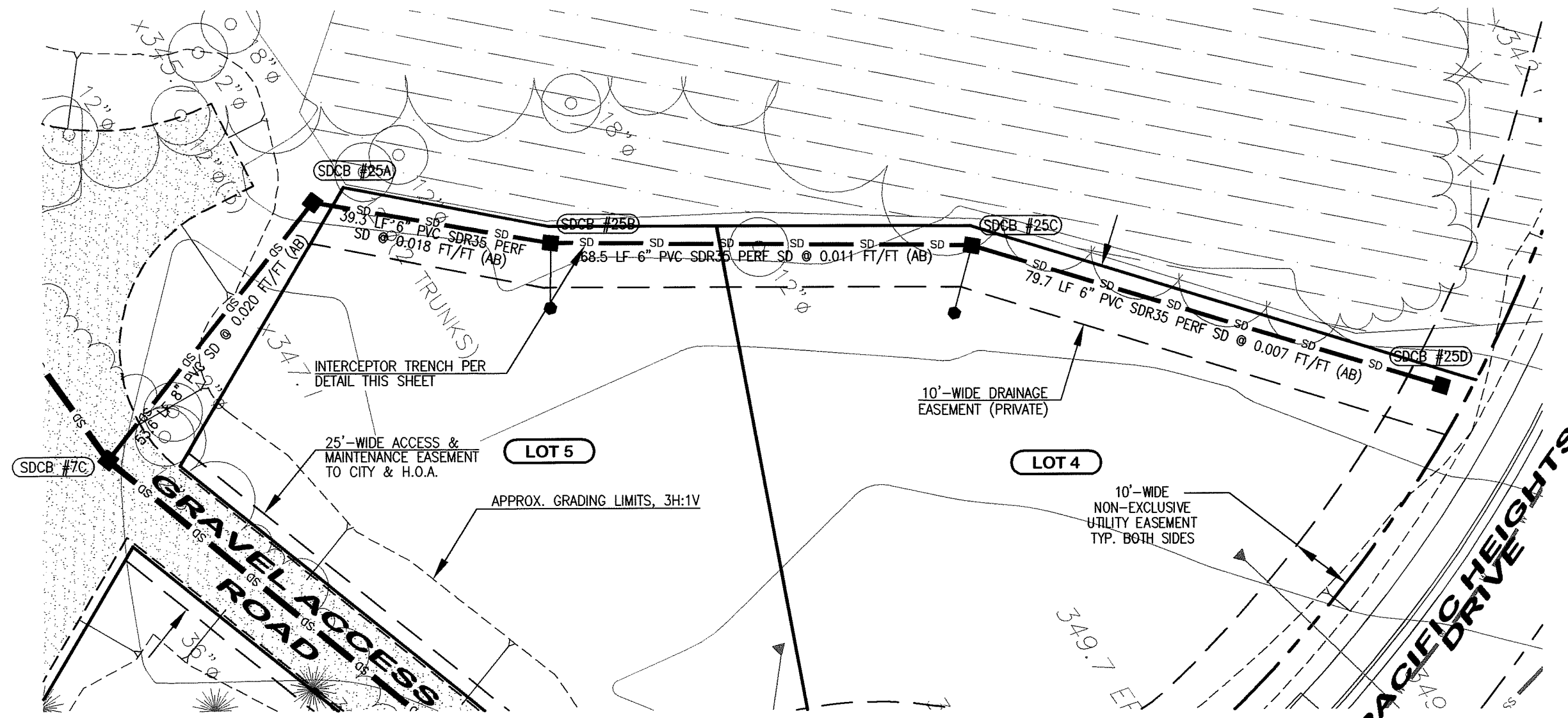
SDCB #25C

13+45.11, 112.46' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=344.87 (AB)
6" I.E. (NE)=342.27 (AB)
6" I.E. (SW)=342.27 (AB)

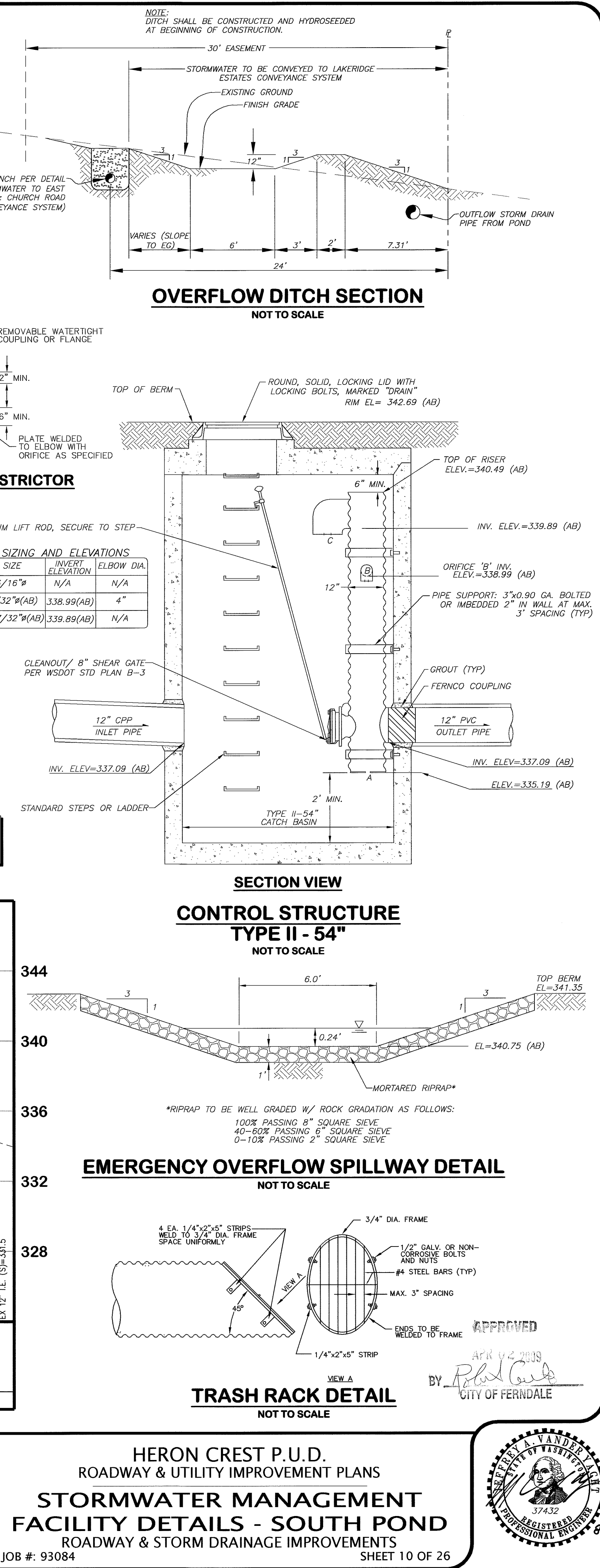
SDCB #25D

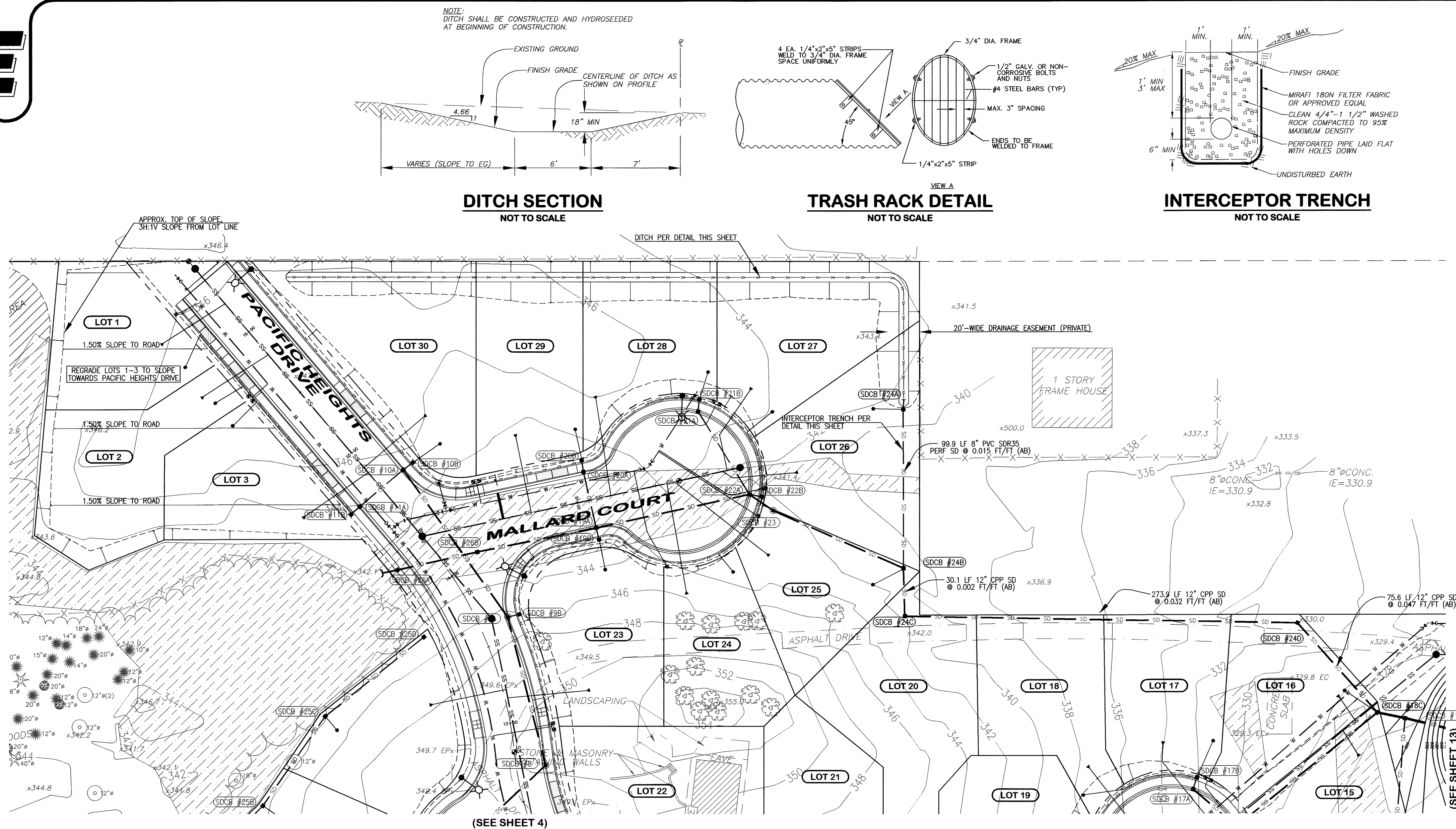
13+73.95, 34.90' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RIM=344.59 (AB)
6" I.E. (SW)=342.79 (AB)

LOT NO.	STREET	SR & OFFSET	STUB I.E.
4	PAC HEIGHTS	13+26.0	107.3LT (AB) 342.36 (AB)
5	PAC HEIGHTS	12+67.9	153.5LT (AB) 341.53 (AB)



APPROVED
BY: *Robert J. Gault*
CITY OF FERNDALE





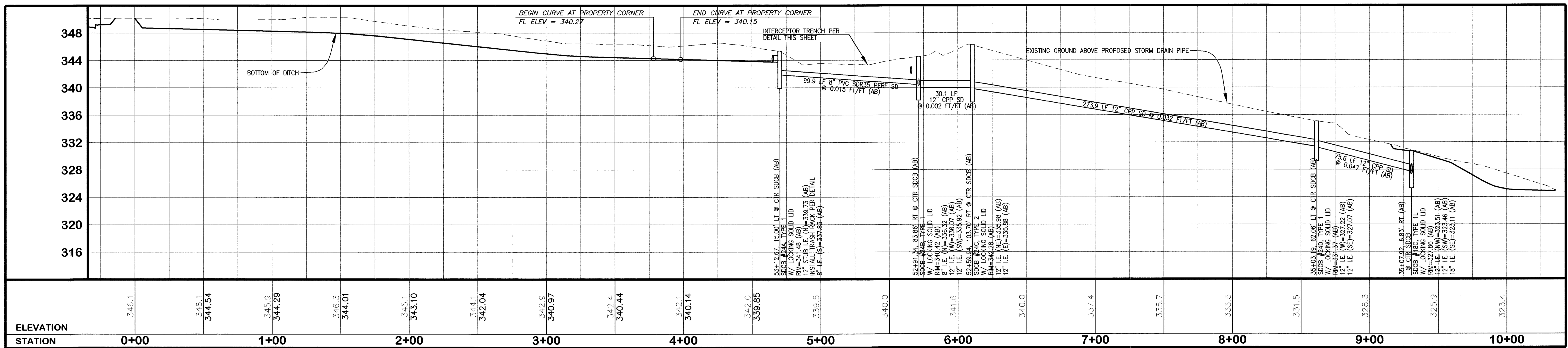
- STORM DRAINAGE NOTES**
- SDCB #18C**
35+07.92, 6.83' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RM=327.86 (AB)
12" I.E. (NW)=323.51 (AB)
12" I.E. (SW)=323.46 (AB)
18" I.E. (SE)=323.11 (AB)
- SDCB #24A**
53+12.67, 15.00' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RM=341.48 (AB)
12" STUB I.E. (N)=339.73 (AB)
INSTALL TRASH RACK PER DETAIL
8" I.E. (S)=337.83 (AB)
- SDCB #24B**
52+49.34, 83.86' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RM=340.42 (AB)
8" I.E. (N)=336.32 (AB)
12" I.E. (W)=336.07 (AB)
12" I.E. (S)=335.92 (AB)
- SDCB #24C**
52+59.94, 103.7' RT @ CTR SDCB (AB)
TYPE 2 W/ LOCKING SOLID LID
RM=342.28 (AB)
12" I.E. (NE)=335.88 (AB)
12" I.E. (E)=335.88 (AB)
- SDCB #24D**
35+03.19, 62.06' LT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RM=331.37 (AB)
12" I.E. (W)=327.22 (AB)
12" I.E. (SE)=327.07 (AB)

APPROVED
APR 12 2008
BY *Robert C. [Signature]*
CITY OF FERNDALE

AS-BUILT NOTE:
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"AB" HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION.

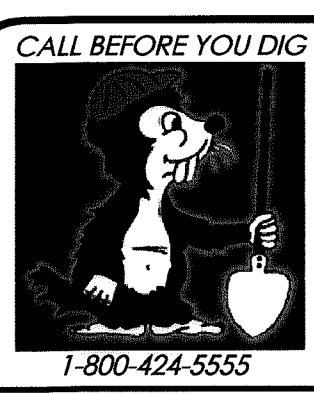
**AS-BUILT
DRAWING**

PUBLIC WORKS PROJECT LP 2006-01



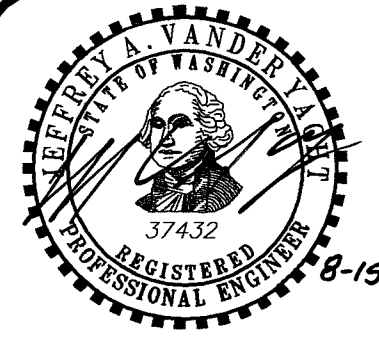
HORIZONTAL SCALE: 1" = 40' VERTICAL SCALE: 1" = 8'

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 40'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 8'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/20/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK				REVISIONS		ISSUE			



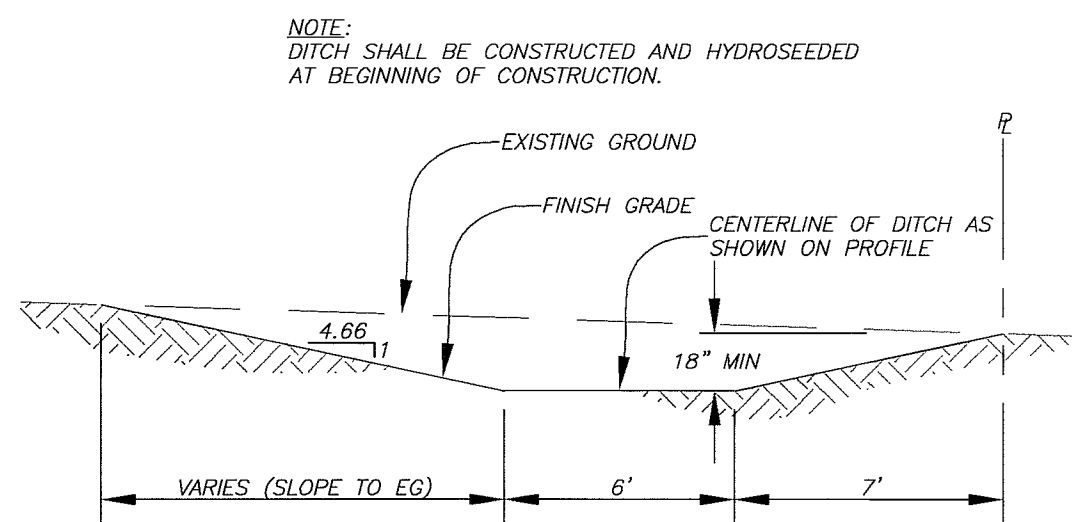
KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
**NORTHERN LOT
DRAINAGE**
ROADWAY & STORM DRAINAGE IMPROVEMENTS
JOB #: 93084 SHEET 11 OF 26

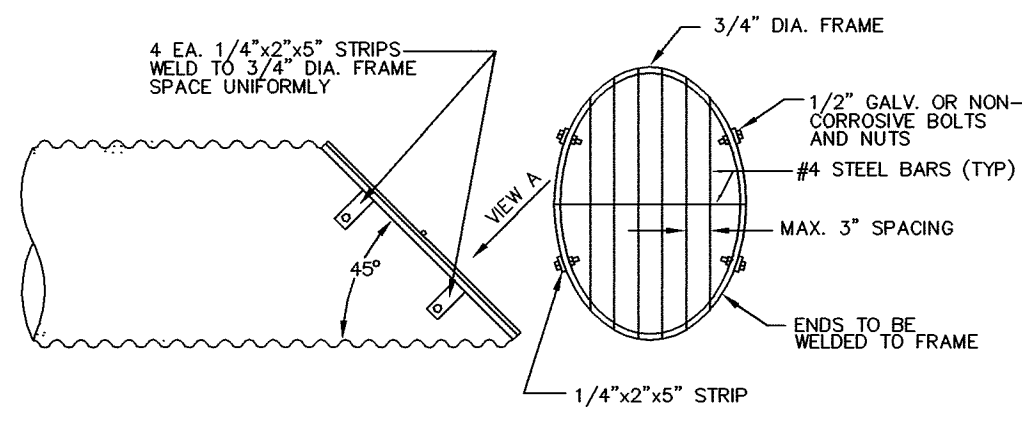




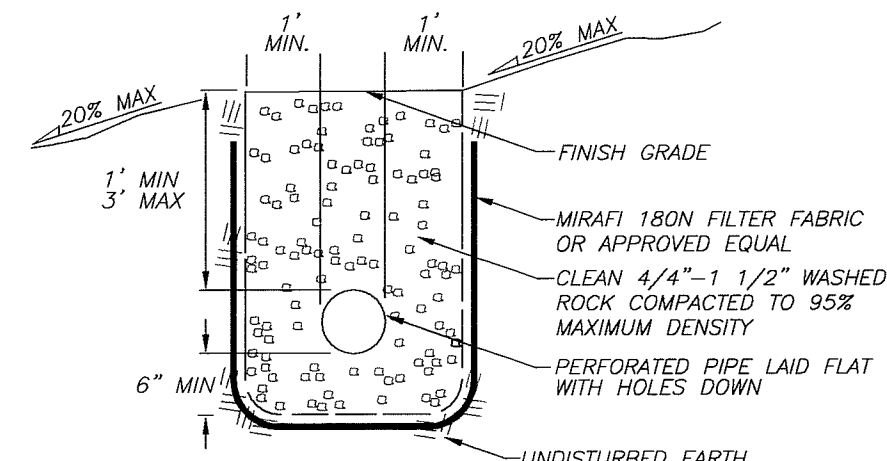
PACIFIC SURVEY & ENGINEERING INC
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685
www.psesurvey.com
EMAIL: pse@psurvey.com



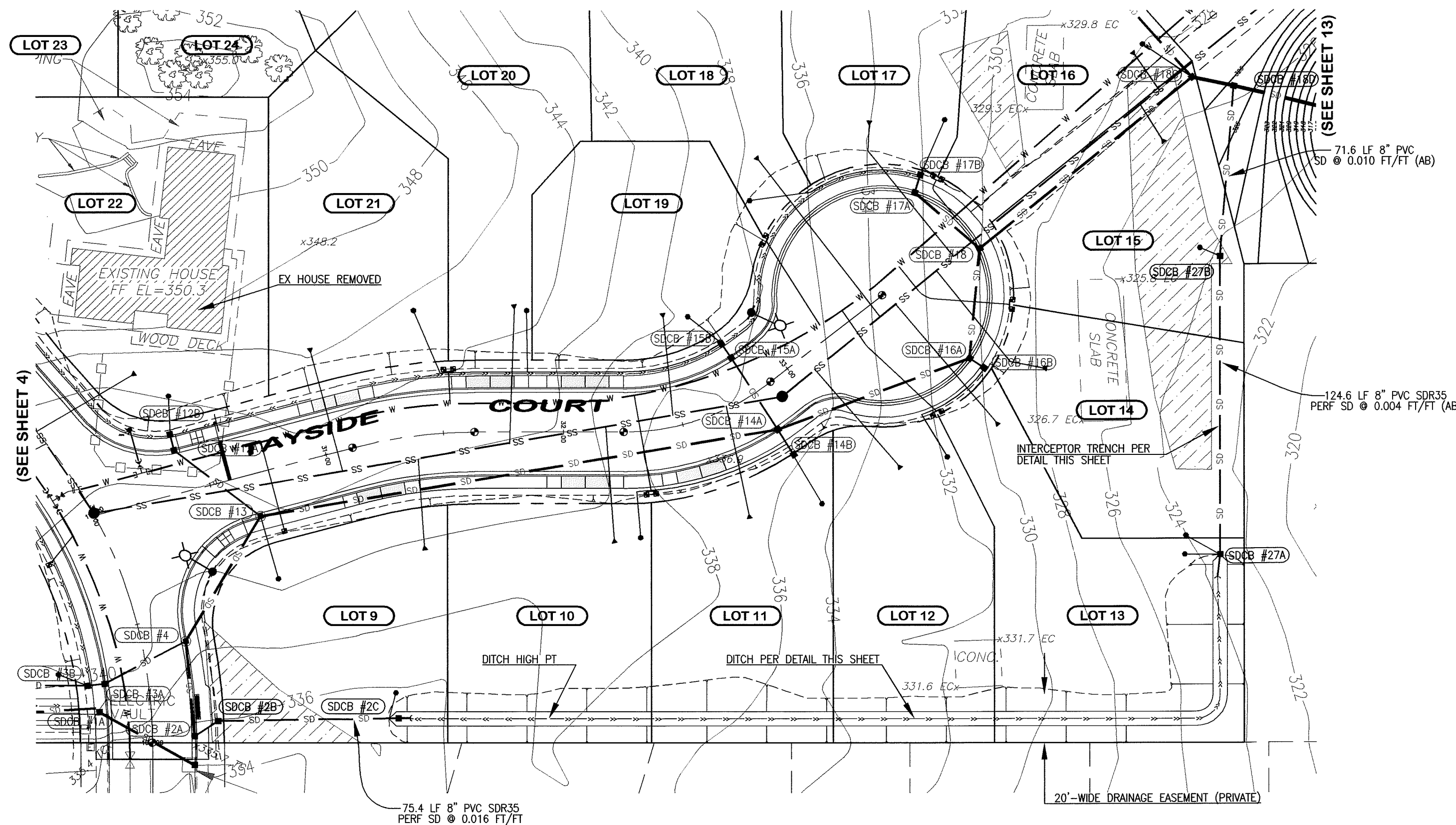
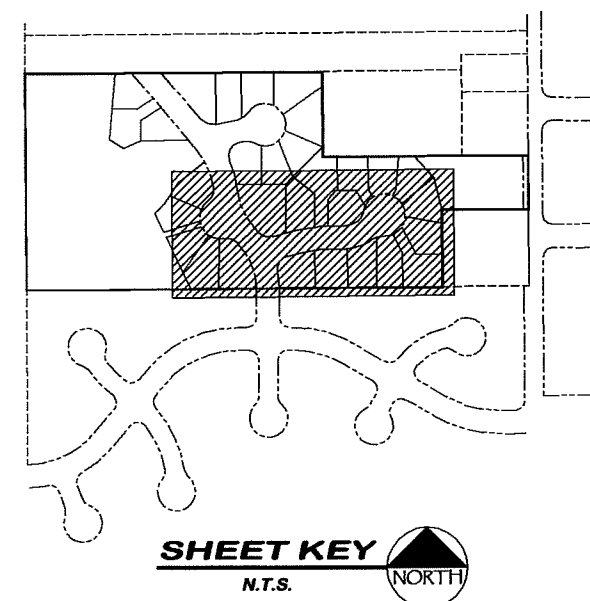
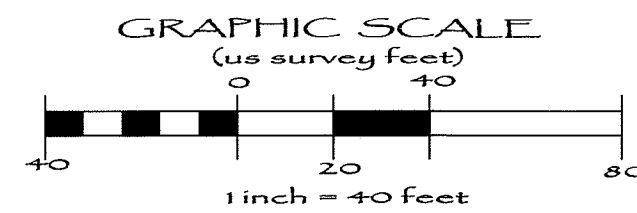
DITCH SECTION
NOT TO SCALE



TRASH RACK DETAIL
NOT TO SCALE



INTERCEPTOR TRENCH
NOT TO SCALE



STORM DRAINAGE NOTES

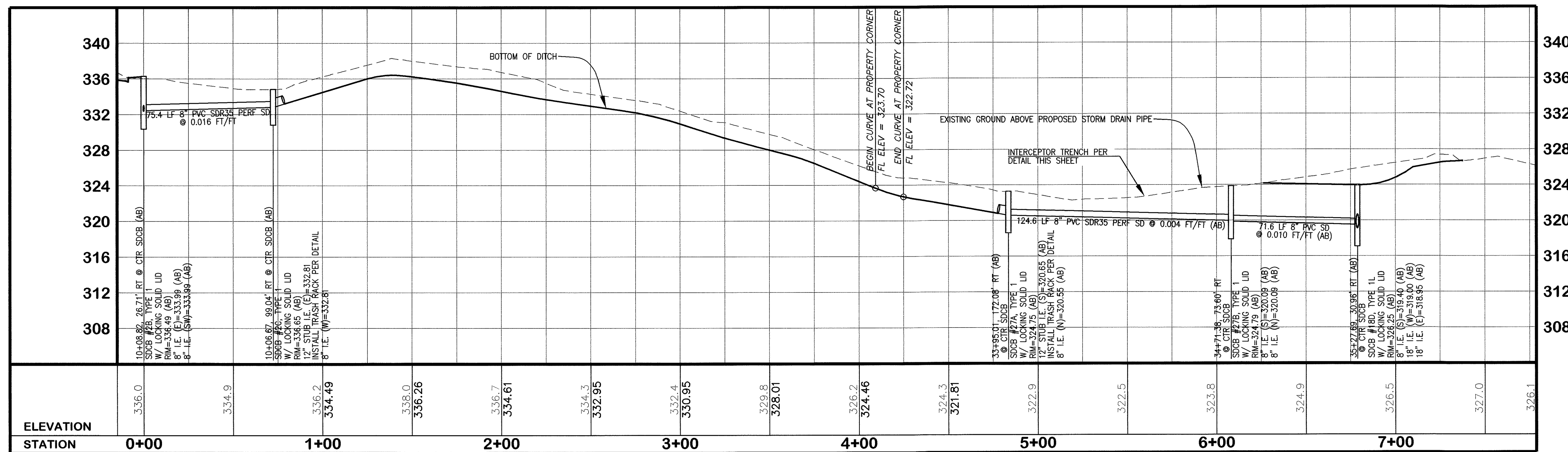
SDCB #2B
10+08.82, 26.71' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RM=336.49 (AB)
8" I.E. (E)=333.99 (AB)
8" I.E. (SW)=333.99 (AB)

SDCB #2C
10+06.67, 99.04' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RM=336.65 (AB)
12" STUB I.E. (E)=332.81
INSTALL TRASH RACK PER DETAIL
8" I.E. (W)=332.81

SDCB #18D
15+27.69, 30.96' RT @ CTR SDCB (AB)
TYPE 1L W/ LOCKING SOLID LID
RM=326.25 (AB)
8" I.E. (S)=319.40 (AB)
18" I.E. (W)=319.00 (AB)
18" I.E. (E)=318.95 (AB)

SDCB #27A
33+95.01, 172.08' RT @ CTR SDCB (AB)
TYPE 1 W/ LOCKING SOLID LID
RM=324.75 (AB)
12" STUB I.E. (S)=320.65 (AB)
INSTALL TRASH RACK PER DETAIL
8" I.E. (N)=320.55 (AB)

SDCB #27B
34+71.38, 73.60' RT @ CTR SDCB
SDCB #27B, TYPE 1
W/ LOCKING SOLID LID
RM=324.79 (AB)
8" I.E. (S)=320.09 (AB)
8" I.E. (N)=320.09 (AB)



HORIZONTAL SCALE: 1" = 40' VERTICAL SCALE: 1" = 8'

APPROVED

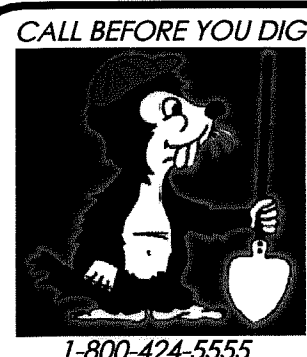
APR 14 2008
BY *Robert Cook*
CITY OF FERNDALE

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

**AS-BUILT
DRAWING**

PUBLIC WORKS PROJECT LP 2006-01

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 40'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JYV	VERT: 1" = 8'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE	VERTICAL DATUM	PLAN CHECK	REVISIONS	ISSUE									



KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTTSFORD, BC V2S 7T4

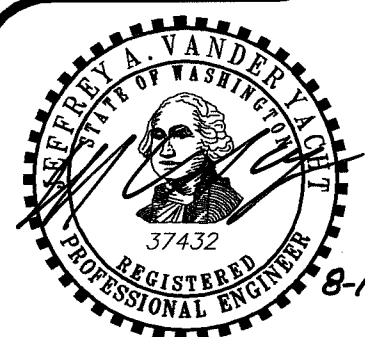
HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS

**SOUTHERN LOT
DRAINAGE**

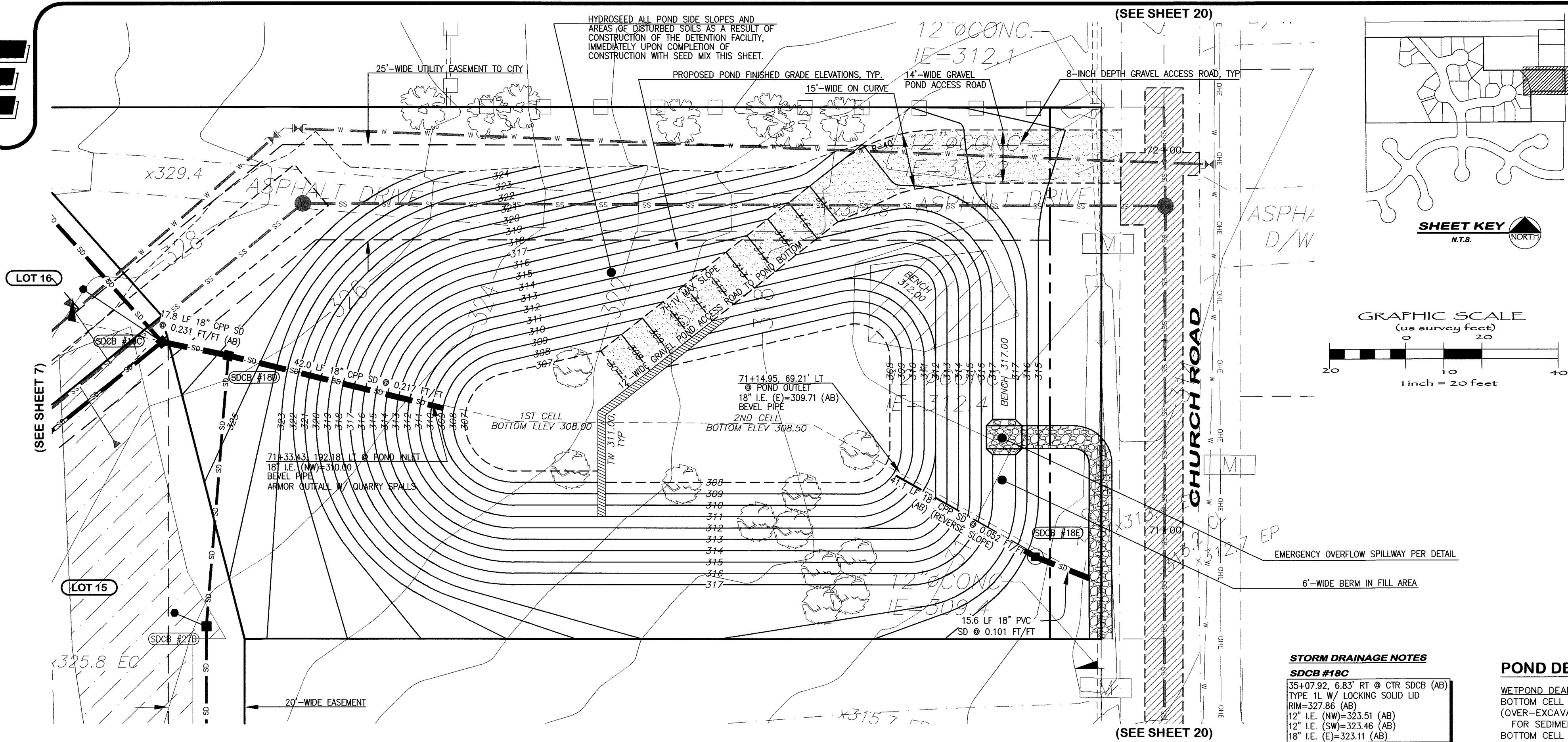
ROADWAY & STORM DRAINAGE IMPROVEMENTS

JOB #: 93084

SHEET 12 OF 26



00389.012 7-10-09 DA



STORM DETENTION POND SLOPES SEED MIX CONSTITUENTS

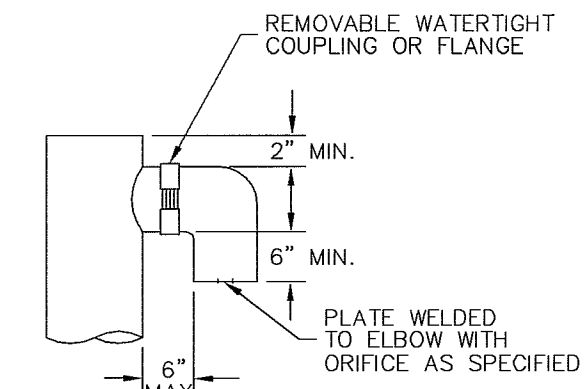
ALL POND SIDE SLOPES AND AREAS DISTURBED AS A RESULT OF CONSTRUCTION OF THE DETENTION POND FACILITY SHALL BE HYDROSEED WITH THE FOLLOWING "LOW GROW" SEED MIX AT A RATE OF 2.5# PER 1000 SF:

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

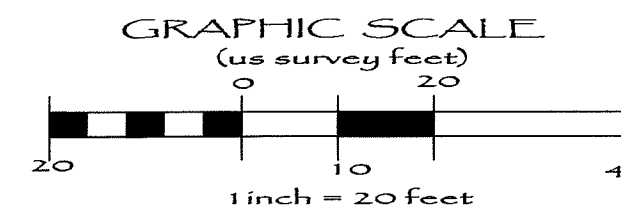
AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
"AB" HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION.

AS-BUILT DRAWING

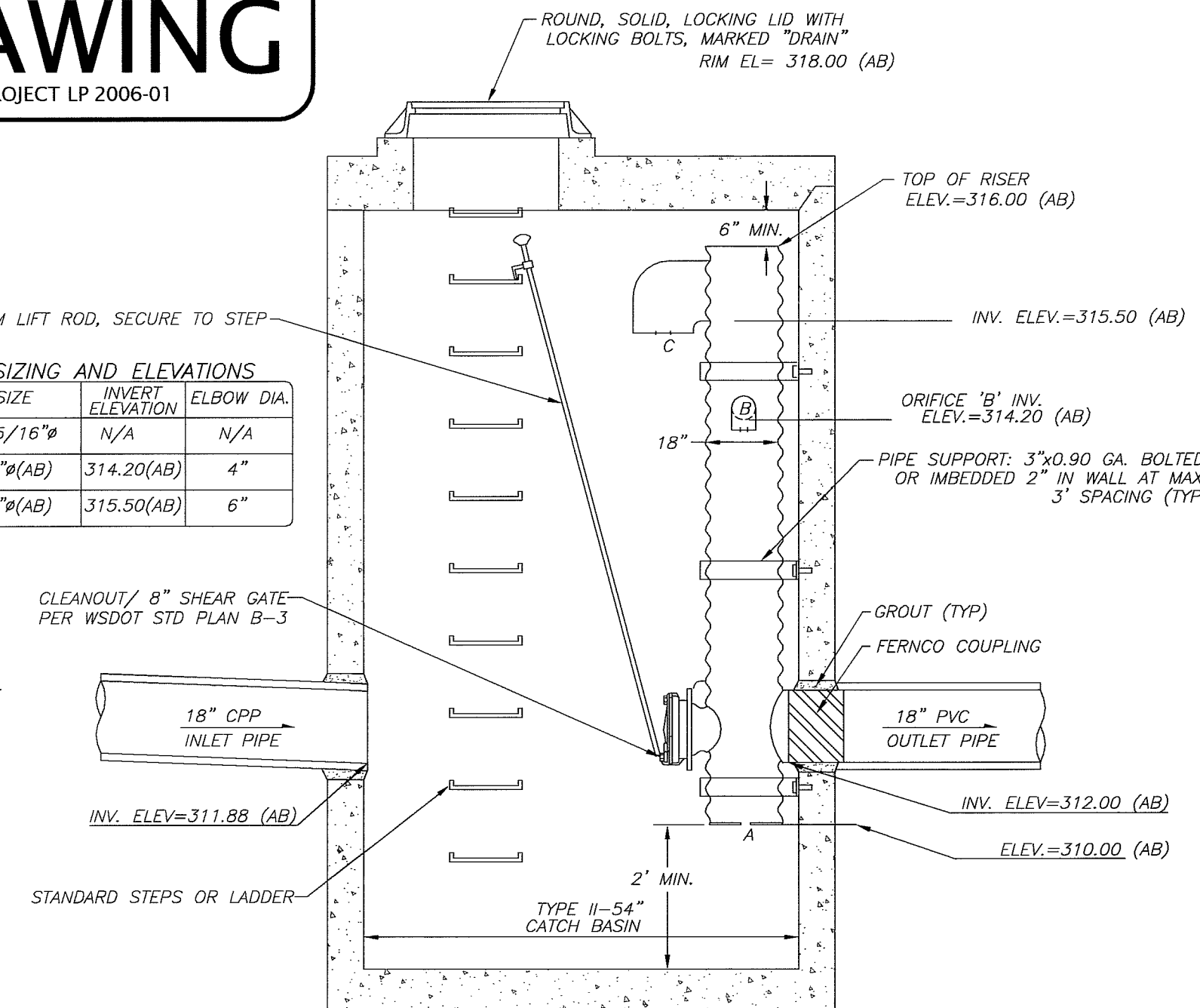
PUBLIC WORKS PROJECT LP 2006-01



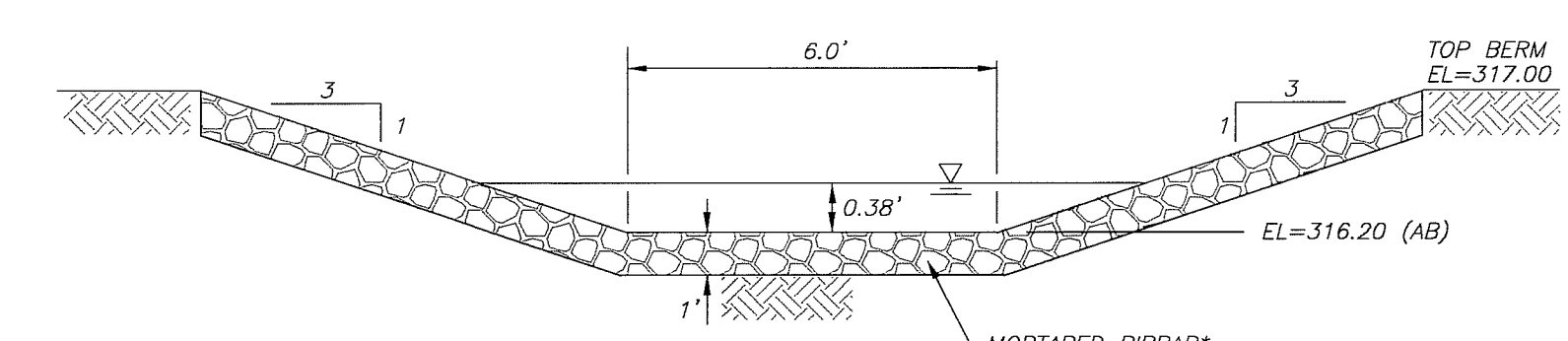
ELBOW RESTRICTOR



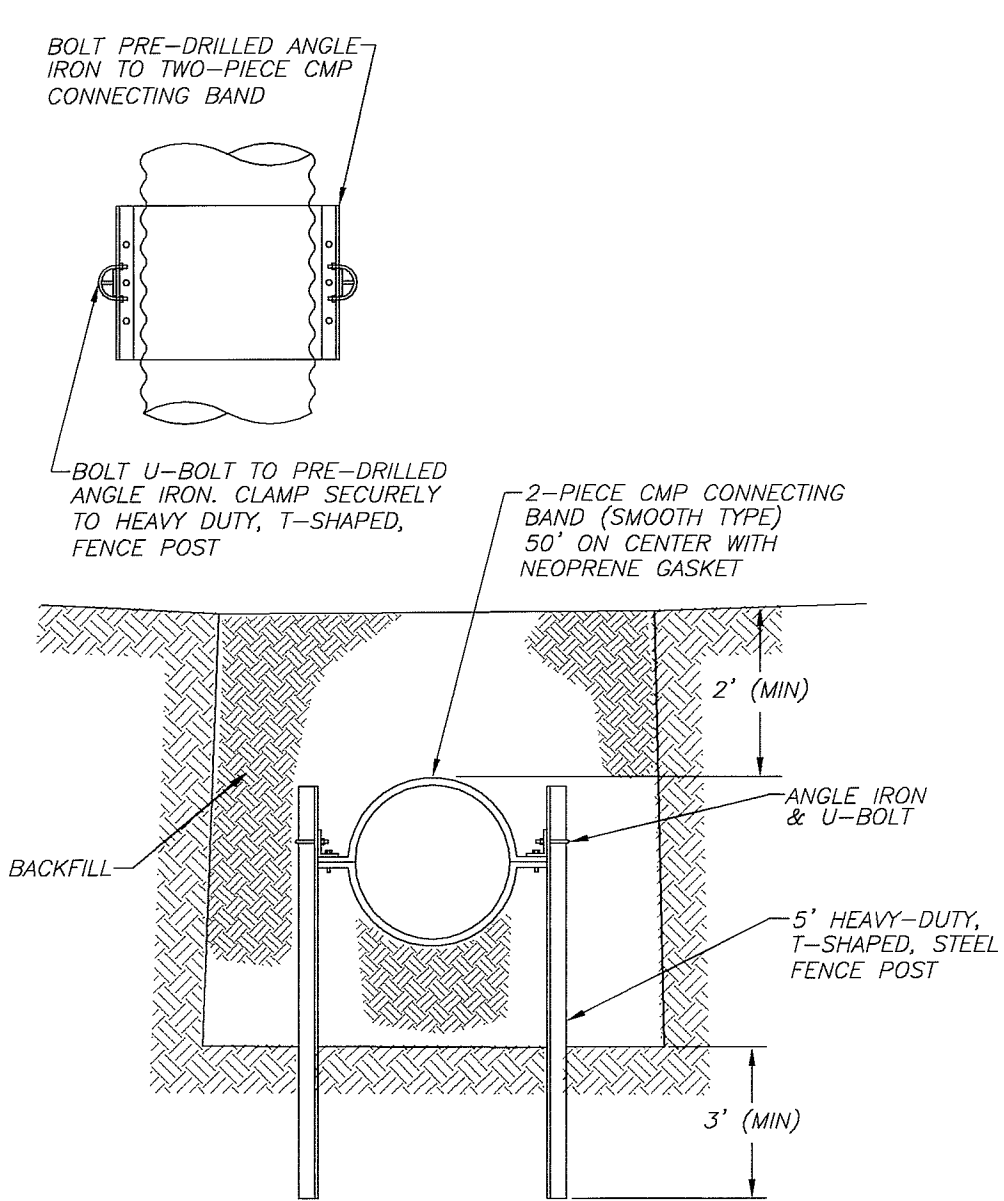
ORIFICE SIZING AND ELEVATIONS				
ORIFICE	SIZE	INVERT ELEVATION	ELBOW DIA.	
A	2'-5/16\"/>	N/A	N/A	
B	1\"/>	314.20(AB)	4\"/>	
C	4\"/>	315.50(AB)	6\"/>	



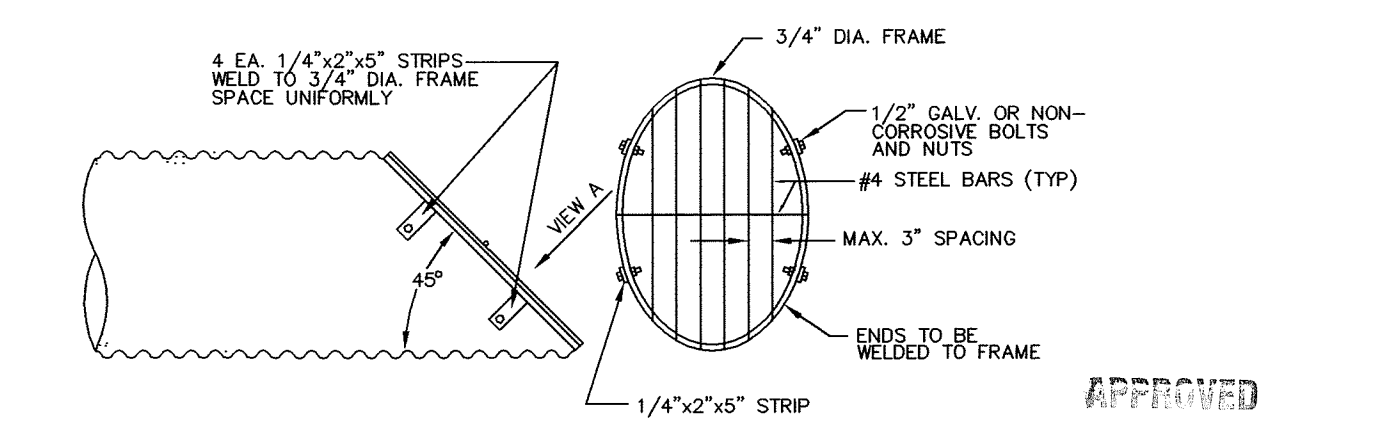
SECTION VIEW
CONTROL STRUCTURE
TYPE II - 54\"/>



EMERGENCY OVERFLOW SPILLWAY DETAIL
NOT TO SCALE

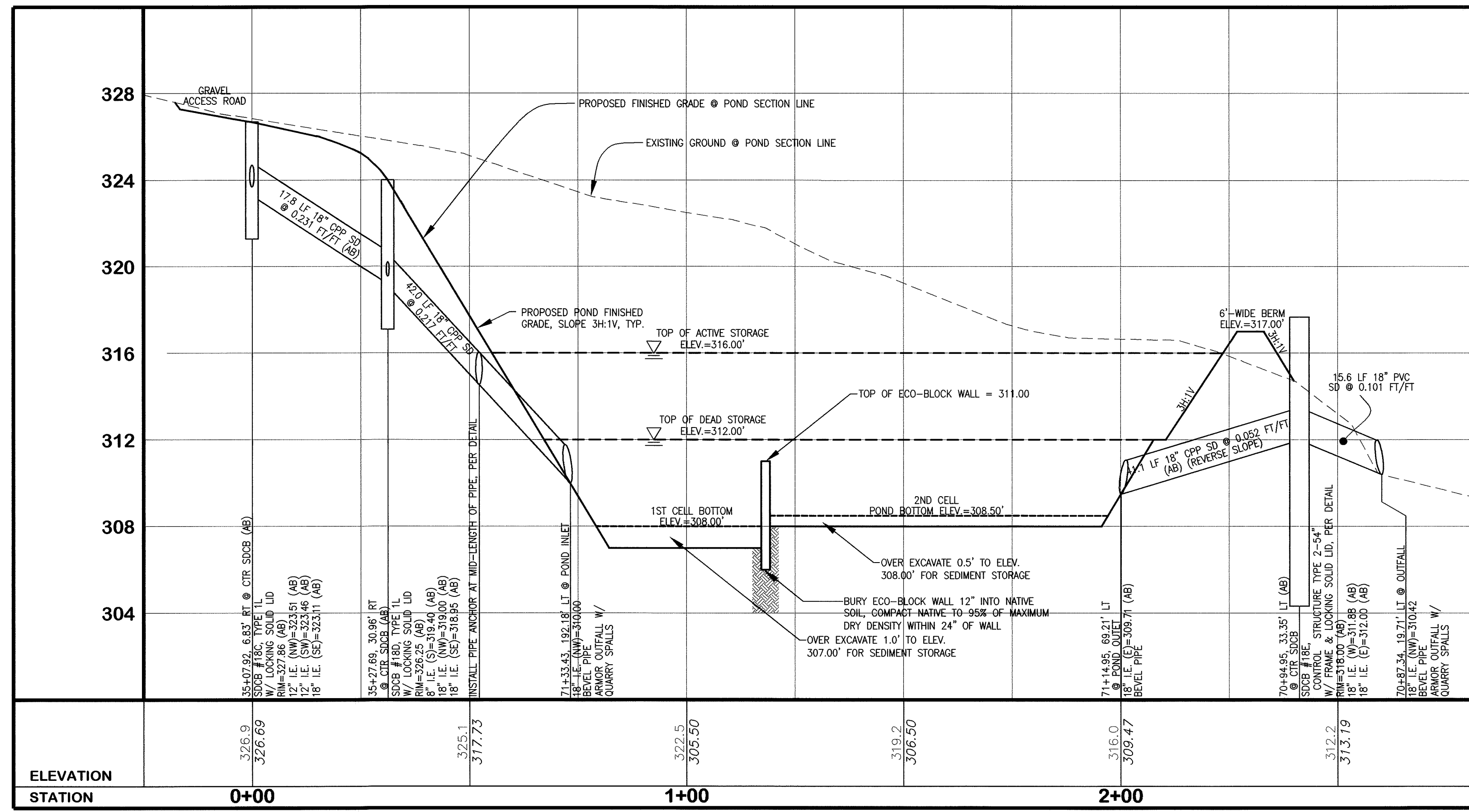


STORM PIPE ANCHOR DETAIL
NOT TO SCALE



TRASH RACK DETAIL
NOT TO SCALE

(CORRESPONDING SANITARY SEWER IMPROVEMENTS SEE SHEET 19)



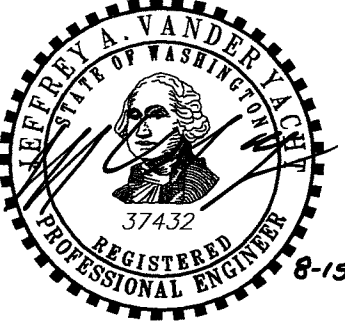
HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 4'

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	06/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
AS-BUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK		REVISIONS		ISSUE					



KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTTSFORD, BC V2S 7T4

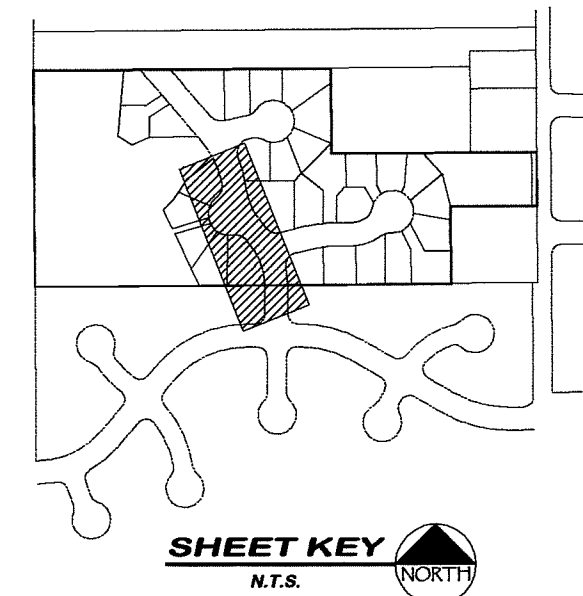
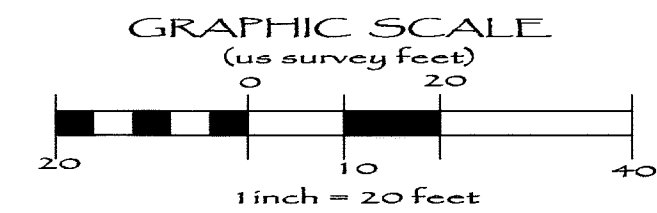
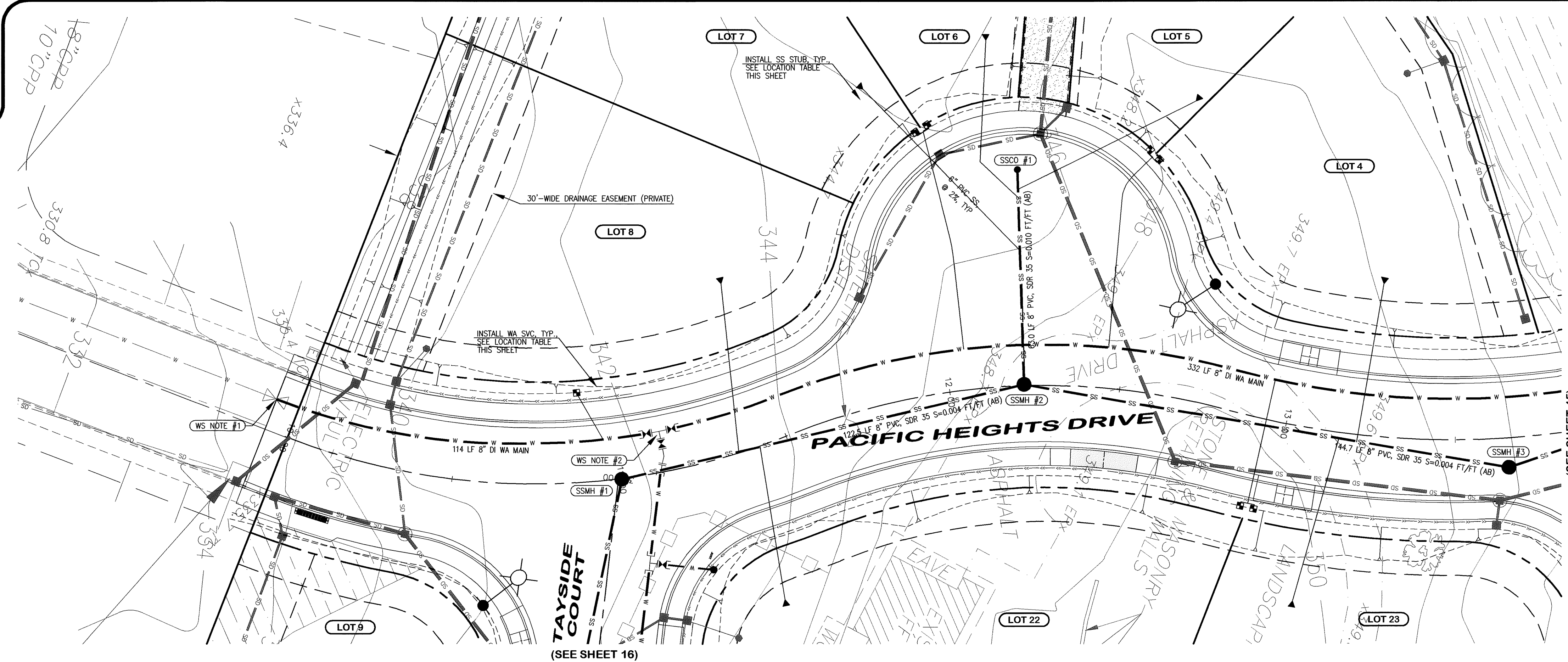
HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
STORMWATER MANAGEMENT
FACILITY DETAILS - EAST POND
ROADWAY & STORM DRAINAGE IMPROVEMENTS
JOB #: 93084 SHEET 13 OF 26





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.	STREET	STA & OFFSET @ MAIN	TYPE	STA & OFFSET @ STUB	
4	PAC HEIGHTS	13+21.2 2.2 RT	SINGLE	13+24.6 45.0 LT	
5	PAC HEIGHTS	12+22.1 58.0 LT	SINGLE	12+59.0 87.1 LT (AB)	
6	PAC HEIGHTS	12+22.1 55.0 LT	SINGLE	12+16.4 102.0 LT (AB)	
7	PAC HEIGHTS	12+22.1 39.5 LT	SINGLE	11+91.1 92.2 LT (AB)	
8	PAC HEIGHTS	11+35.3 0.4 LT	SINGLE	11+48.4 48.8 LT (AB)	
22	PAC HEIGHTS	11+41.7 0.2 RT	SINGLE	11+35.2 45.3 RT (AB)	
23	PAC HEIGHTS	13+15.8 2.0 RT	SINGLE	13+09.9 51.1 RT (AB)	

WATER SVC LOCATION TABLE			
LOT No.	STREET	STA & OFFSET	TYPE
4	PAC HEIGHTS	12+53.1 68.6 LT (AB)	1" DUAL
5	PAC HEIGHTS	12+50.8 71.1 LT (AB)	1" DUAL
6	PAC HEIGHTS	12+02.9 78.9 LT (AB)	1" DUAL
7	PAC HEIGHTS	12+00.3 77.1 LT (AB)	1" DUAL
8	PAC HEIGHTS	10+88.5 28.4 LT (AB)	3/4" SINGLE
22	PAC HEIGHTS	12+92.2 26.5 RT (AB)	1" DUAL
23	PAC HEIGHTS	12+95.8 26.5 RT (AB)	1" DUAL

SANITARY SEWER NOTES

SSMH #1
10+99.05, CL PHD =
30+00.00, CL TC (AB)
RM=341.57 (AB)
8" I.E. (NW)=332.27 (AB)
8" I.E. (E)=332.07 (AB)

SSMH #2
12+22.08, CL (AB)
RM=346.86 (AB)
8" I.E. (N)=333.06 (AB)
8" I.E. (SW)=333.96 (AB)
8" I.E. (SE)=333.96 (AB)

SSMH #3
13+65.58, 9.00 RT (AB)
RM=345.03 (AB)
8" I.E. (NW)=333.63 (AB)
8" I.E. (S)=333.58 (AB)

SSCO #1
12+22.08, 62.99 LT (AB)
RM=345.65 (AB)
8" I.E. (NE)=333.30 (AB)

WATER SYSTEM NOTES

WS NOTE #1
9+92.7, 9.3' LT PHD
REMOVE EXIST 2" BLOW-OFF ASSEMBLY.
BEGIN INSTALL 8" DI WA MAIN.
MAKE CONNECTION TO EXIST 8" DIP WA MAIN.
SEPARATION REQUIRED UNTIL BACTERIA &
PRESSURE TESTS PASS & THE CONNECTION
CAN BE MADE.

WS NOTE #2
11+15.5, 12.0' LT PHD =
29+84.7, 10.2' LT TC (AB)
INSTALL:
(1) 8"x8" TEE, FL
THRUST BLOCK
(2) 8" GATE VALVE, FLxMJ [NW & SE]
(1) 8" GATE VALVE, FL [NE]
(1) 22" BEND, FL & FLxMJ ADAPTER [NE]

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

**AS-BUILT
DRAWING**

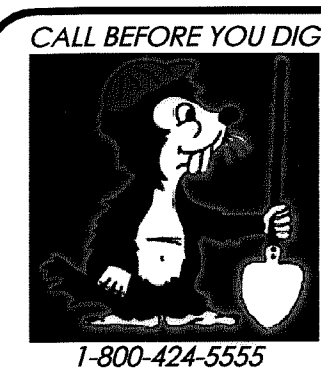
PUBLIC WORKS PROJECT LP 2006-01

APR 12 2009
CITY OF FERDALE

(CORRESPONDING ROADWAY & STORM DRAINAGE IMPROVEMENTS SEE SHEET 4)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 4'

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	7	08/07/08	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/20/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK				REVISIONS		ISSUE			

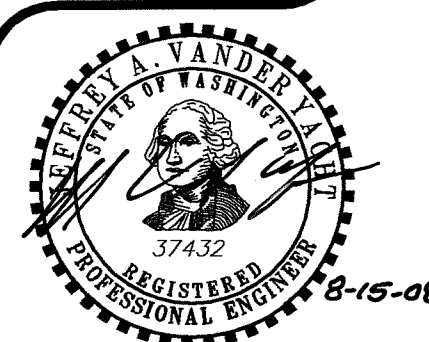


KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
PACIFIC HEIGHTS DRIVE ~
STATIONS 9+15 to 13+65
WATER & SANITARY SEWER IMPROVEMENTS

JOB #: 93084

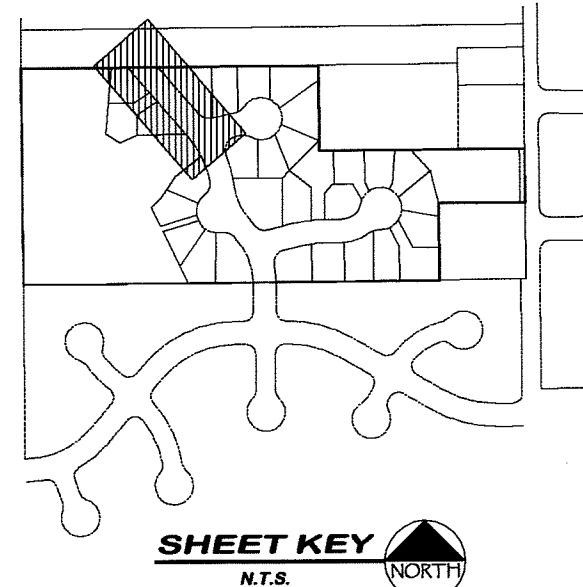
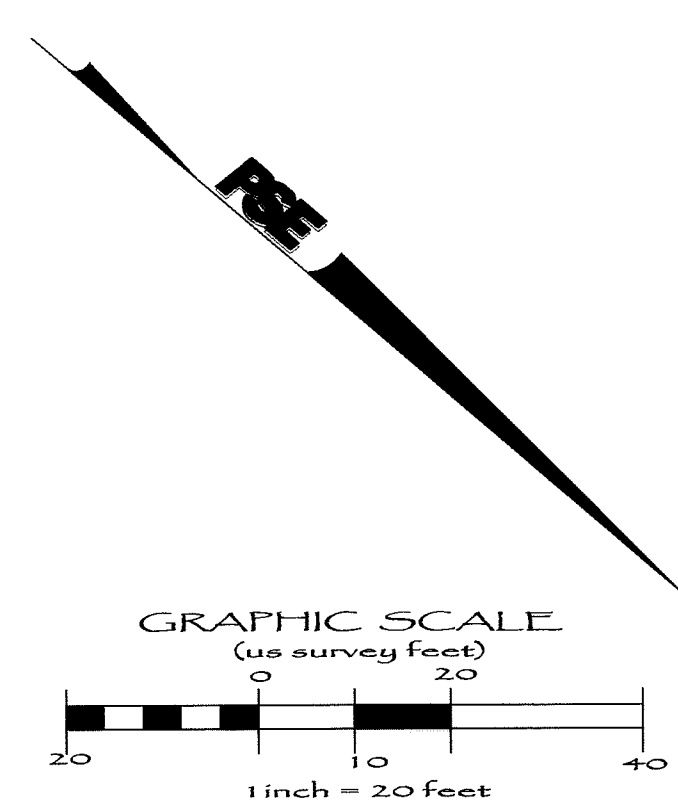
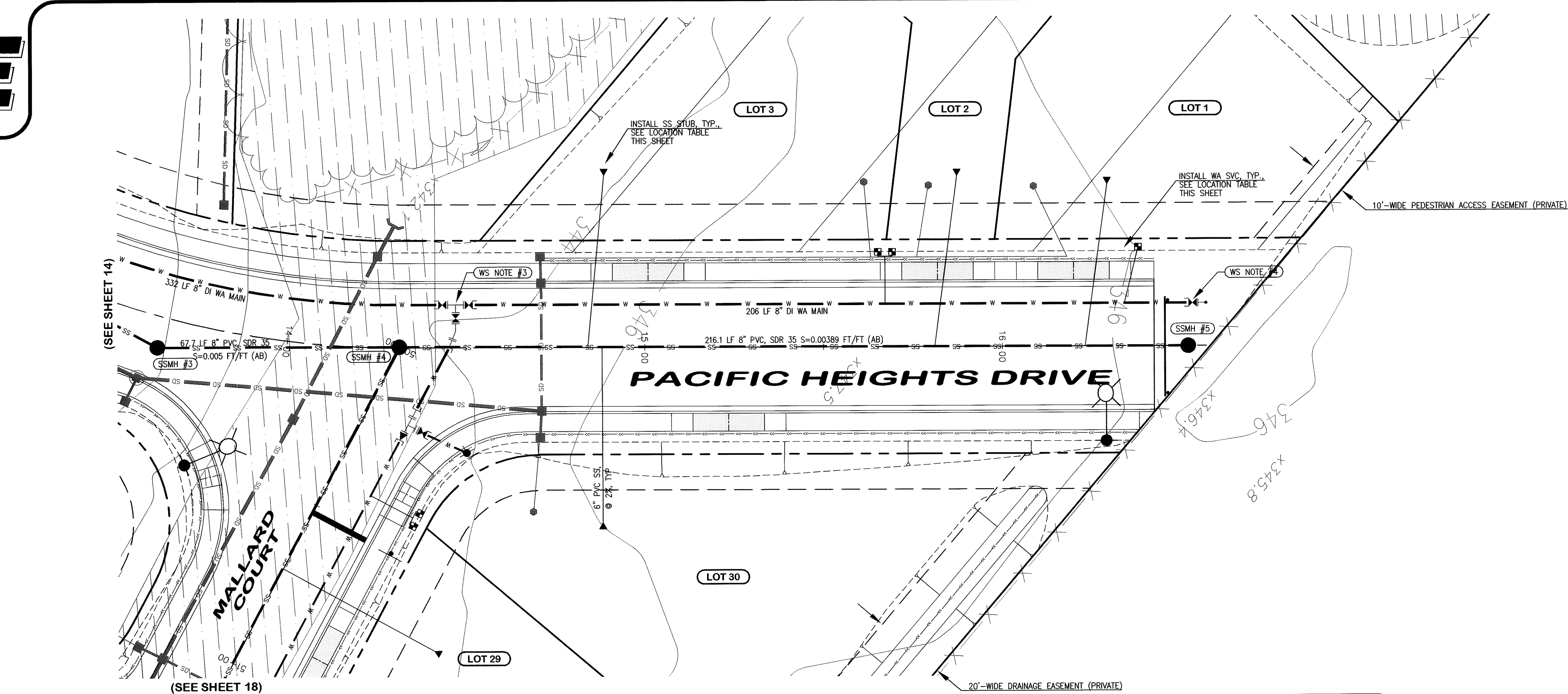
SHEET 14 OF 26





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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.	STREET	STA & OFFSET @ MAIN	TYPE	STA & OFFSET @ STUB	
1	PAC HEIGHTS	16+23.1 0.0 CL	SINGLE	16+29.3 45.3 LT (AB)	
2	PAC HEIGHTS	15+81.1 0.0 CL	SINGLE	15+87.4 47.8 LT (AB)	
3	PAC HEIGHTS	14+84.0 0.0 CL	SINGLE	14+88.6 48.2 LT (AB)	
30	PAC HEIGHTS	14+88.0 0.0 CL	SINGLE	14+88.1 48.1 RT (AB)	

WATER SVC LOCATION TABLE			
LOT NO.	STREET	STA & OFFSET	TYPE
1	PAC HEIGHTS	16+38.0 27.7 LT (AB)	3/4" SINGLE
2	PAC HEIGHTS	15+89.2 26.5 LT (AB)	>1" DUAL
3	PAC HEIGHTS	15+85.2 26.5 LT (AB)	

SANITARY SEWER NOTES

SSMH #3
13+65.58, 9.00 RT (AB)
RM=345.03 (AB)
8" I.E. (NW)=333.53 (AB)
8" I.E. (S)=333.58 (AB)

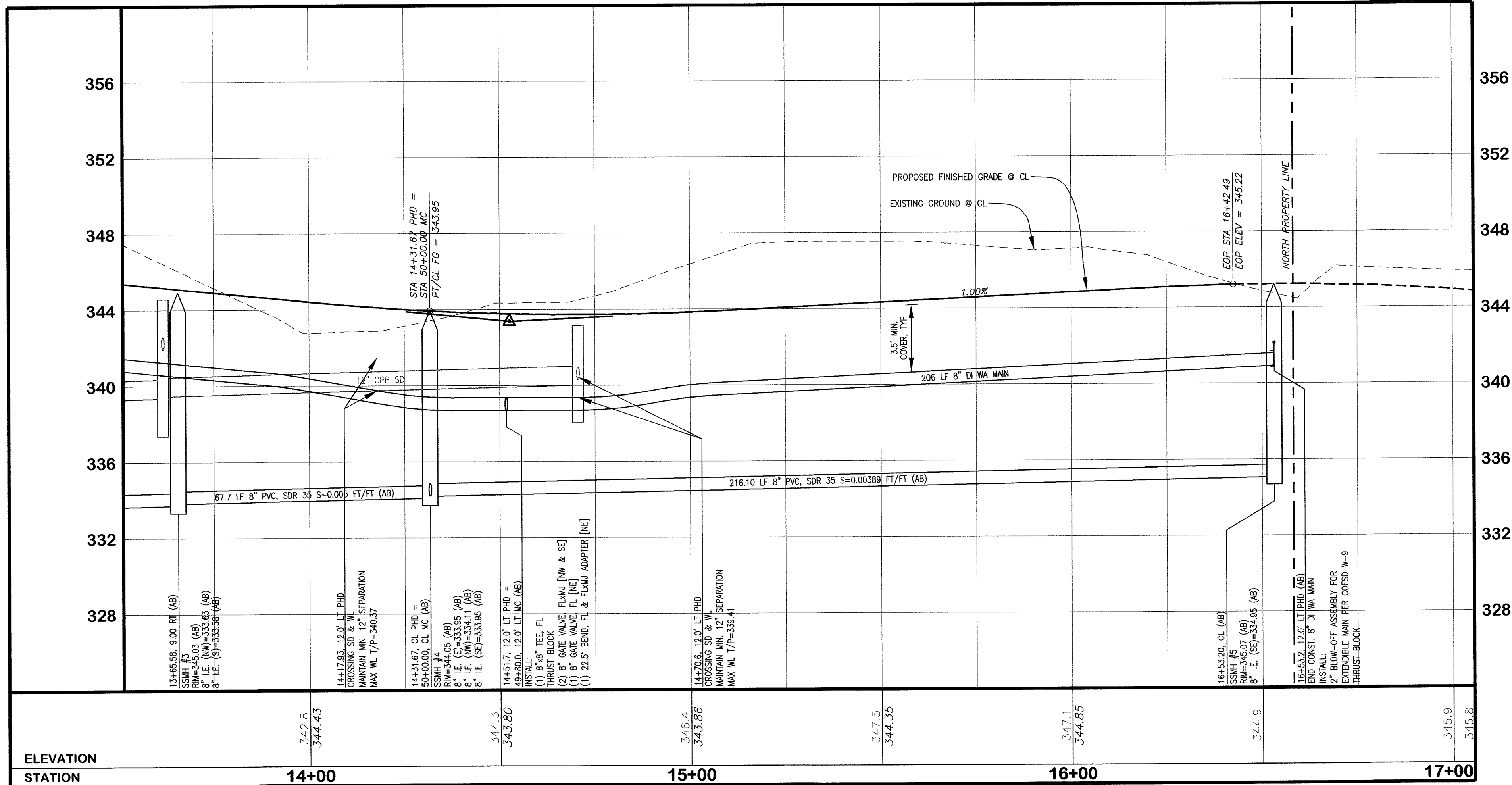
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14+31.67, CL PHD =
50+00.00, CL MC (AB)
RM=344.05 (AB)
8" I.E. (C)=333.95 (AB)
8" I.E. (NW)=334.11 (AB)
8" I.E. (SE)=333.95 (AB)

SSMH #5
16+53.20, CL (AB)
RM=345.07 (AB)
8" I.E. (SE)=334.95 (AB)

WATER SYSTEM NOTES

WS NOTE #3
14+51.7, 12.0' LT PHD =
49+80.0, 12.0' LT MC (AB)
INSTALL:
(1) 8"x8" TEE, FL
THRUST BLOCK
(2) 8" GATE VALVE, FLXWJ [NW & SE]
(1) 8" GATE VALVE, FL [NE]
(1) 22.5' BEND, FL & FLXWJ ADAPTER [NE]

WS NOTE #4
16+53.2, 12.0' LT PHD (AB)
END CONST. 8" DI WA MAIN
INSTALL:
2" BLOW-OFF ASSEMBLY (AB) FOR
EXTENDIBLE MAIN PER CDFSD W-9
THRUST BLOCK



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

**AS-BUILT
DRAWING**

PUBLIC WORKS PROJECT LP 2006-01

APR 02 2009

BY *Robert Cowie*
CITY OF FERNDALE

(CORRESPONDING ROADWAY & STORM DRAINAGE IMPROVEMENTS SEE SHEET 5)

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
AS-BUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/11/08
SURVEY REFERENCE				PLAN CHECK				REVISIONS				ISSUE	
VERTICAL DATUM													

CALL BEFORE YOU DIG



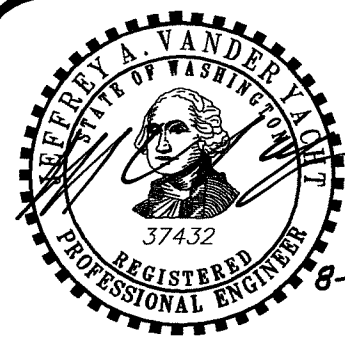
1-800-424-5555

KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTTSFORD, BC V2S 7T4

JOB #: 93084

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
PACIFIC HEIGHTS DRIVE ~
STATIONS 13+65 to 17+05
WATER & SANITARY SEWER IMPROVEMENTS

SHEET 15 OF 26



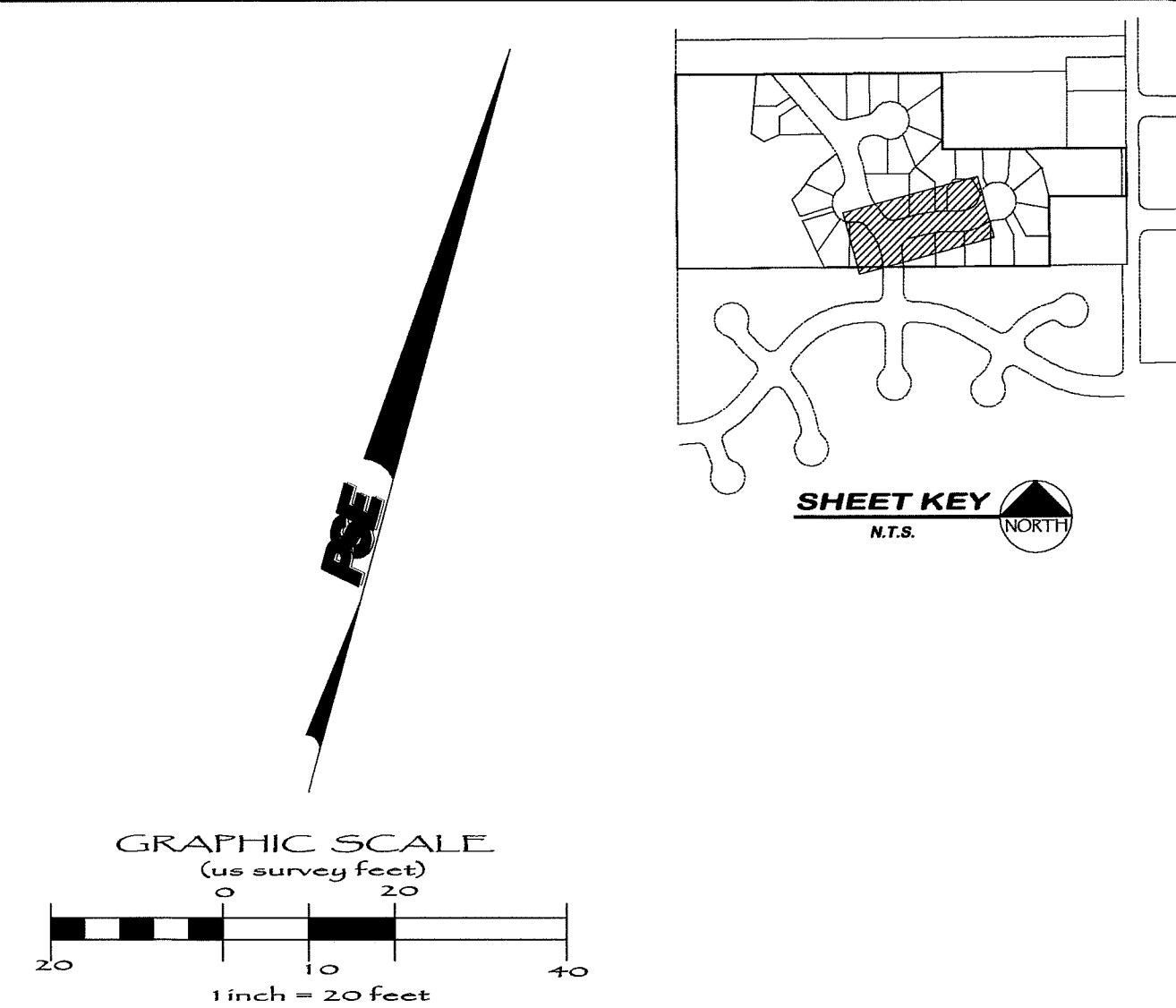
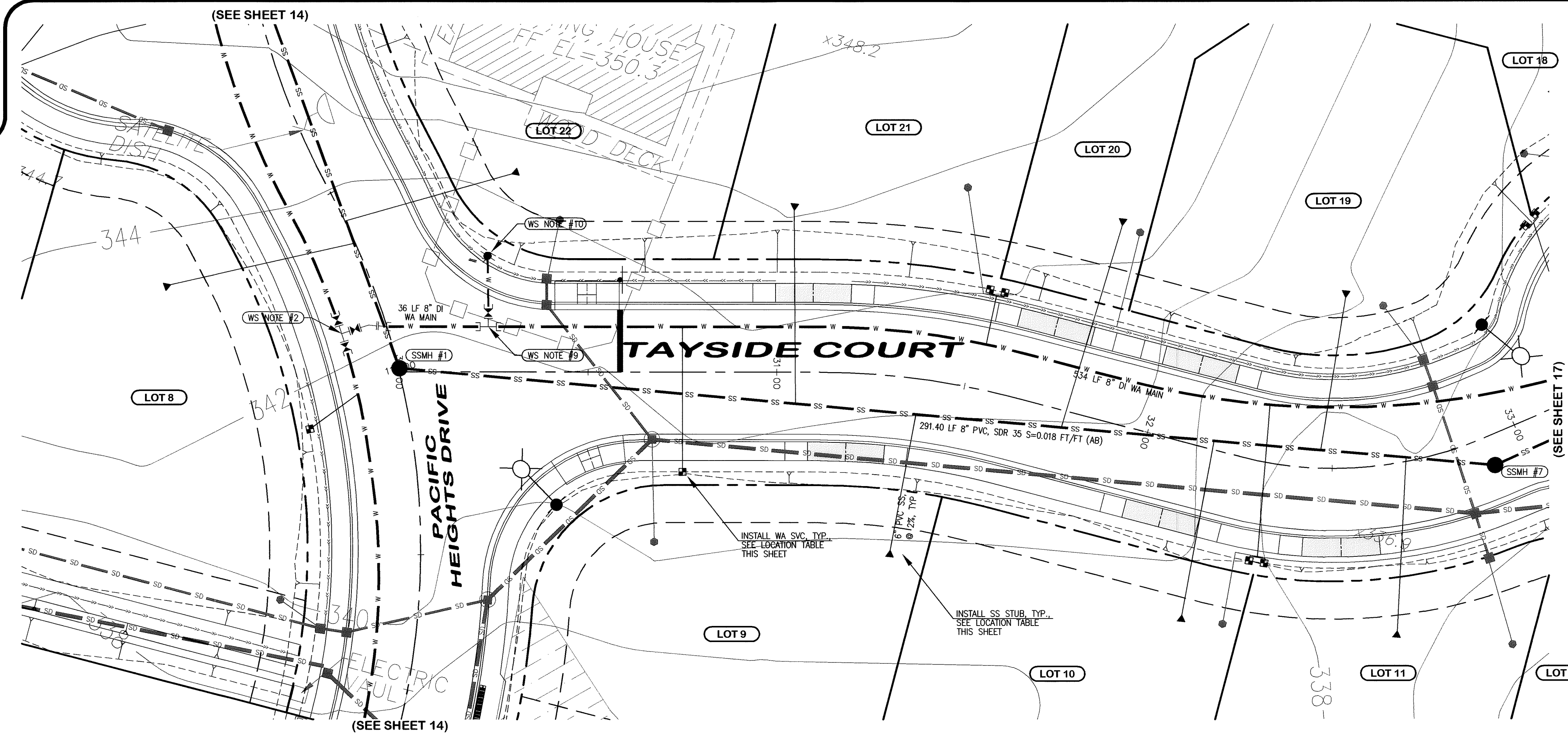
8-15-08

00389.015 7-10-09 DD



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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.	STREET	S/A & OFFSET @ MAN	TYPE	S/A & OFFSET @ STUB
9	TAYSIDE	31+38.1 10.0 RT	SINGLE	31+35.6 46.1 RT (AB)
10	TAYSIDE	32+17.6 2.1 LT	SINGLE	32+21.1 44.6 RT (AB)
11	TAYSIDE	32+69.9 1.1 LT	SINGLE	32+62.2 44.1 RT (AB)
19	TAYSIDE	32+46.8 4.7 LT	SINGLE	32+55.7 45.4 LT (AB)
20	TAYSIDE	31+77.5 4.9 RT	SINGLE	31+79.5 51.5 LT (AB)
21	TAYSIDE	31+22.1 10.2 RT	SINGLE	31+04.6 43.0 LT (AB)

WATER SVC LOCATION TABLE			
LOT No.	STREET	S/A & OFFSET	TYPE
9	TAYSIDE	30+75.0 26.5 RT(AB)	3/4" SINGLE
10	TAYSIDE	32+32.7 26.5 RT(AB)	1" DUAL
11	TAYSIDE	32+35.8 26.5 RT(AB)	
18	TAYSIDE	33+27.0 49.4 LT(AB)	1" DUAL
19	TAYSIDE	33+23.4 47.6 LT(AB)	
20	TAYSIDE	31+55.0 26.5 LT(AB)	1" DUAL
21	TAYSIDE	31+51.5 26.5 LT(AB)	

SANITARY SEWER NOTES

SSMH #1
10+98.05, CL PHD = 30+00.00, CL TC (AB)
RIM=341.57 (AB)
8" I.E. (NW)=332.27 (AB)
8" I.E. (E)=332.07 (AB)

SSMH #7
32+73.68, 3.28 RT (AB)
RIM=335.26 (AB)
8" I.E. (W)=326.96 (AB)
8" I.E. (NE)=321.86 (AB)
60" INSIDE DROP STRUCTURE
PER COPS SD SS-10

WATER SYSTEM NOTES

WS NOTE #2
11+15.5, 12.0' LT PHD = 28+84.7, 10.2' LT TC (AB)
INSTALL:
(1) 8"x8" TEE, FL
THRUST BLOCK
(2) 8" GATE VALVE, FL&M [NW & SE]
(1) 8" GATE VALVE, FL [NE]
(3) 22" BEND, FL & FL&M ADAPTER [NE]

WS NOTE #9
30+23.6, 12.0' LT TC (AB)
INSTALL:
(1) 8"x6" TEE, M&FL
PER COPS SD W-1
THRUST BLOCK

WS NOTE #10
30+23.4, 30.9' LT (AB)
INSTALL:
(1) HYDRANT ASSEMBLY
PER COPS SD W-1
FS 344.01 AT FH

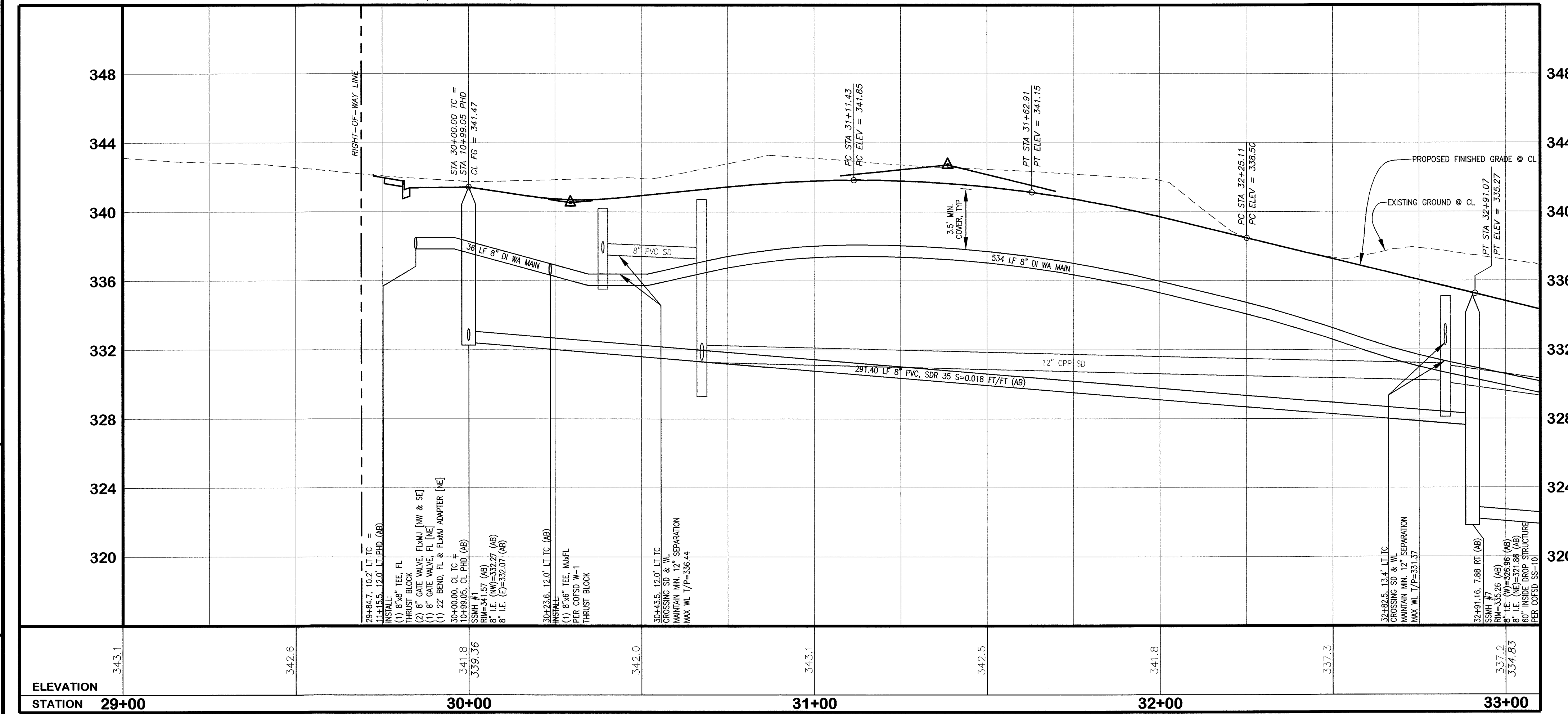
AS-BUILT NOTE:
ONLY INFORMATION NOTED AS "AB" HAS BEEN FIELD SURVEYED OR MEASURED DURING CONSTRUCTION.

AS-BUILT DRAWING

PUBLIC WORKS PROJECT LP 2006-01

APR 02 2009
CITY OF FERDALE

(CORRESPONDING ROADWAY & STORM DRAINAGE IMPROVEMENTS SEE SHEET 6)



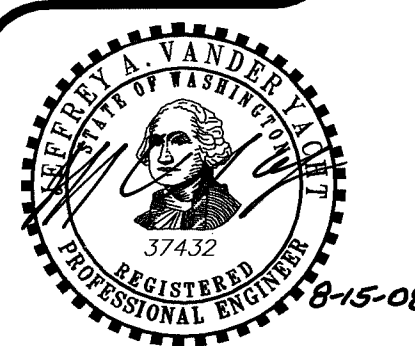
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FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK				REVISIONS		ISSUE			



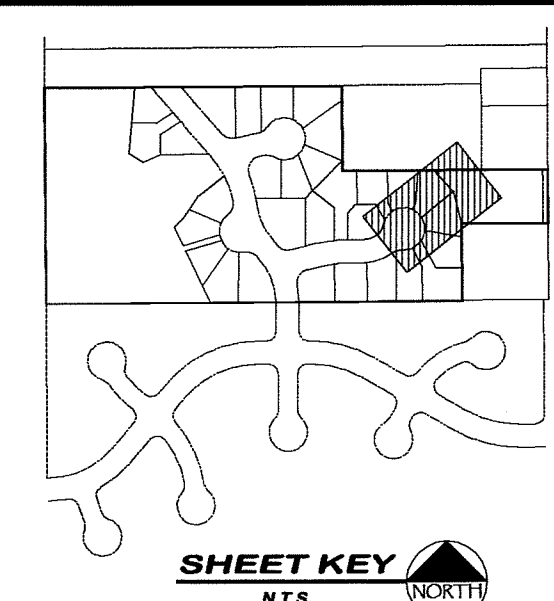
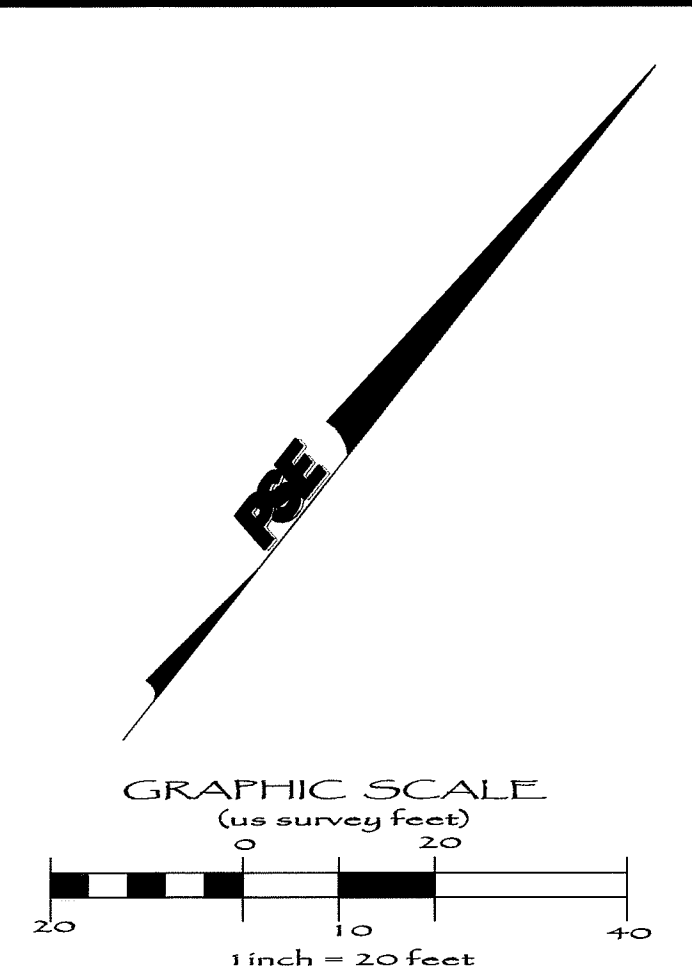
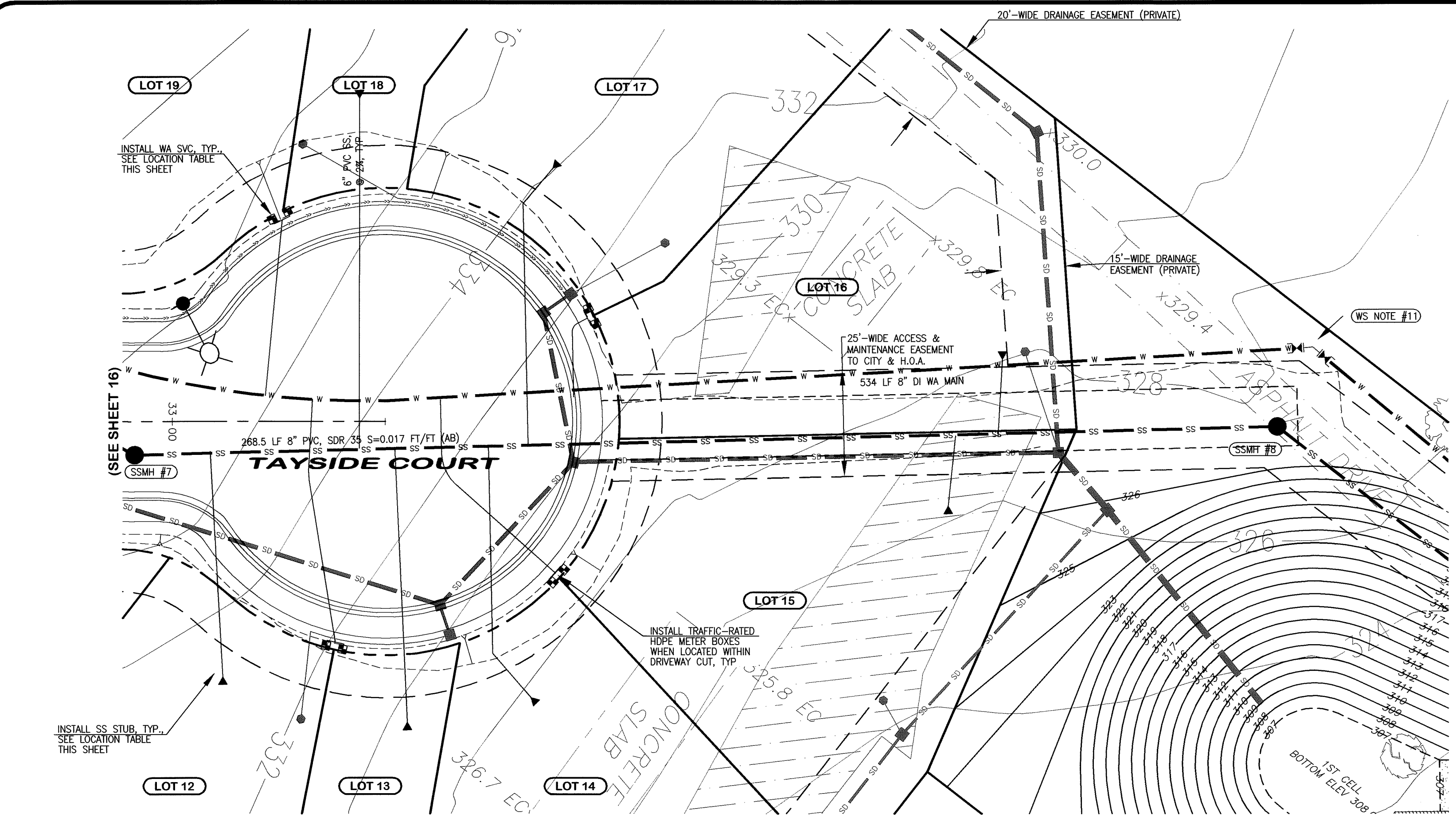
KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
TAYSIDE COURT ~
STATIONS 29+00 to 33+00
WATER & SANITARY SEWER IMPROVEMENTS
JOB #: 93084 SHEET 16 OF 26



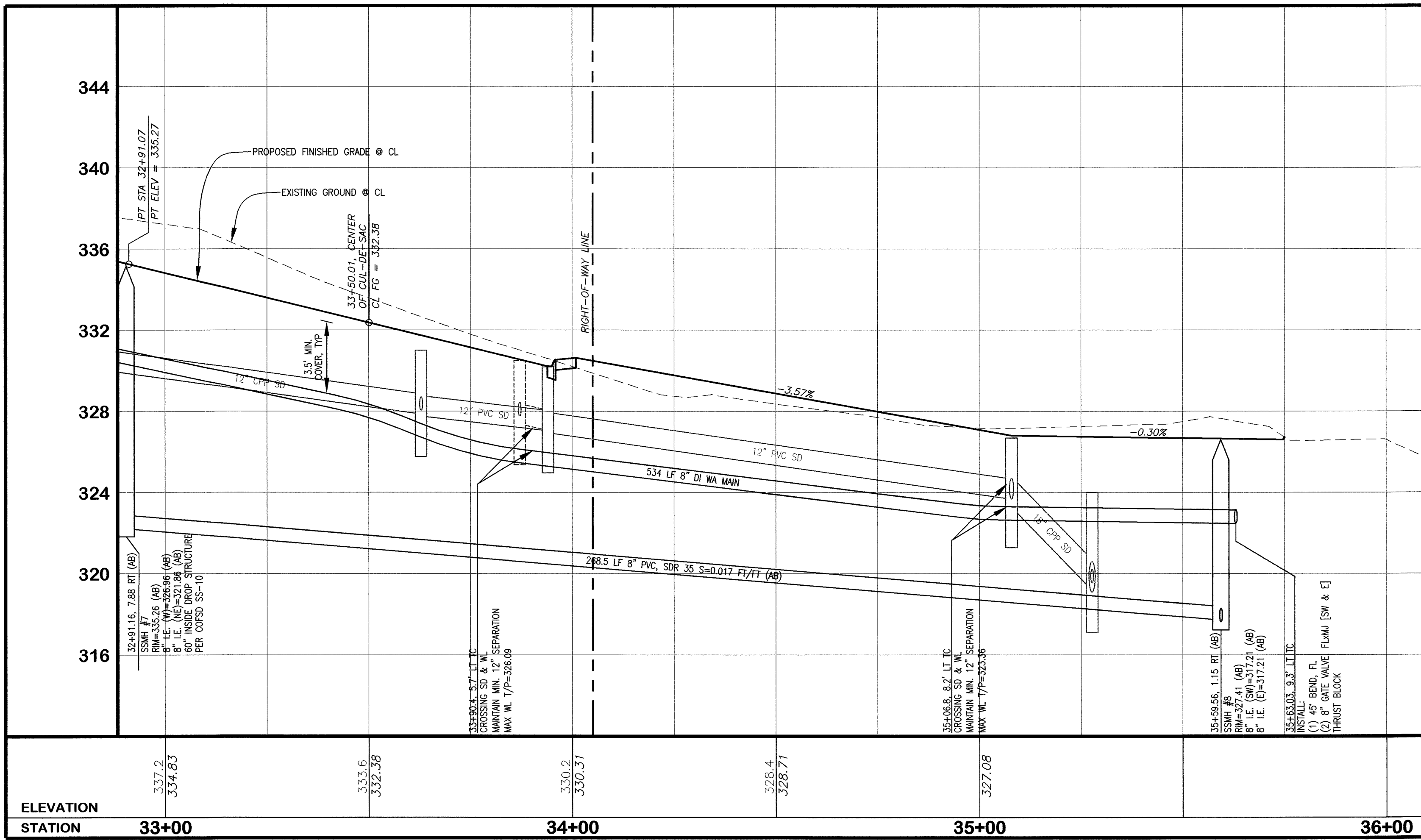


PACIFIC SURVEY & ENGINEERING INC
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685
www.psesurvey.com
EMAIL: pse@psurvey.com



SEWER STUB LOCATION TABLE					
LOT No.	STREET	S/A & OFFSET @ MIN	TYPE	S/A & OFFSET @ STUB	
12	TAYSIDE	33+08.8	7.0 RT	SINGLE	33+11.8 60.1 RT (AB)
13	TAYSIDE	33+52.2	6.1 RT	SINGLE	33+55.1 70.8 RT (AB)
14	TAYSIDE	33+74.2	5.6 RT	SINGLE	33+84.2 65.0 RT (AB)
15	TAYSIDE	34+83.9	3.3 RT	SINGLE	34+84.2 17.3 RT (AB)
16	TAYSIDE	34+93.9	3.1 RT	SINGLE	34+93.6 12.9 LT (AB)
17	TAYSIDE	33+83.5	5.4 RT	SINGLE	33+89.3 59.6 LT (AB)
18	TAYSIDE	33+43.8	6.3 RT	SINGLE	33+43.9 76.1 LT (AB)

WATER SVC LOCATION TABLE			
LOT No.	STREET	S/A & OFFSET	TYPE
12	TAYSIDE	33+36.0 52.7 RT (AB)	> 1" DUAL
13	TAYSIDE	33+39.9 53.8 RT (AB)	
14	TAYSIDE	33+89.3 37.8 RT (AB)	> 1" DUAL
15	TAYSIDE	33+92.0 34.9 RT (AB)	
16	TAYSIDE	33+99.4 23.1 LT (AB)	> 1" DUAL
17	TAYSIDE	33+97.6 26.6 LT (AB)	
18	TAYSIDE	33+27.0 49.4 LT (AB)	> 1" DUAL
19	TAYSIDE	33+23.4 47.6 LT (AB)	



SANITARY SEWER NOTES
SSMH #7
32+49.16, 7.88 RT (AB)
RIM=335.26 (AB)
8" I.E. (W)=326.96 (AB)
8" I.E. (NE)=321.86 (AB)
60" INSIDE DROP STRUCTURE
PER CORSD. SS=10'
SSMH #8
35+59.56, 1.15 RT (AB)
RIM=327.41 (AB)
8" I.E. (SW)=317.21 (AB)
8" I.E. (E)=317.21 (AB)
WATER SYSTEM NOTES
WS NOTE #11
35+67.88, 17.58' LT TC (AB)
INSTALL:
(1) 45° BEND, FL
(2) 8" GATE VALVE, FLX MJ [SW & E]
THRUST BLOCK

APPROVED
APR 02 2009
BY: [Signature]
CITY OF FERDALE

AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
"AB" HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION.
**AS-BUILT
DRAWING**
PUBLIC WORKS PROJECT LP 2006-01

{CORRESPONDING ROADWAY & STORM DRAINAGE IMPROVEMENTS SEE SHEET 7}

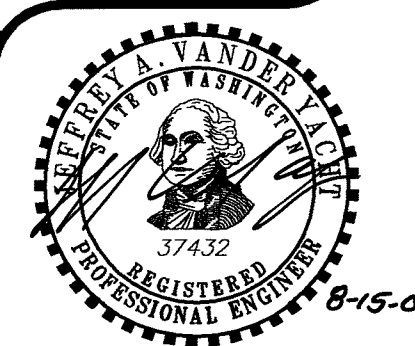
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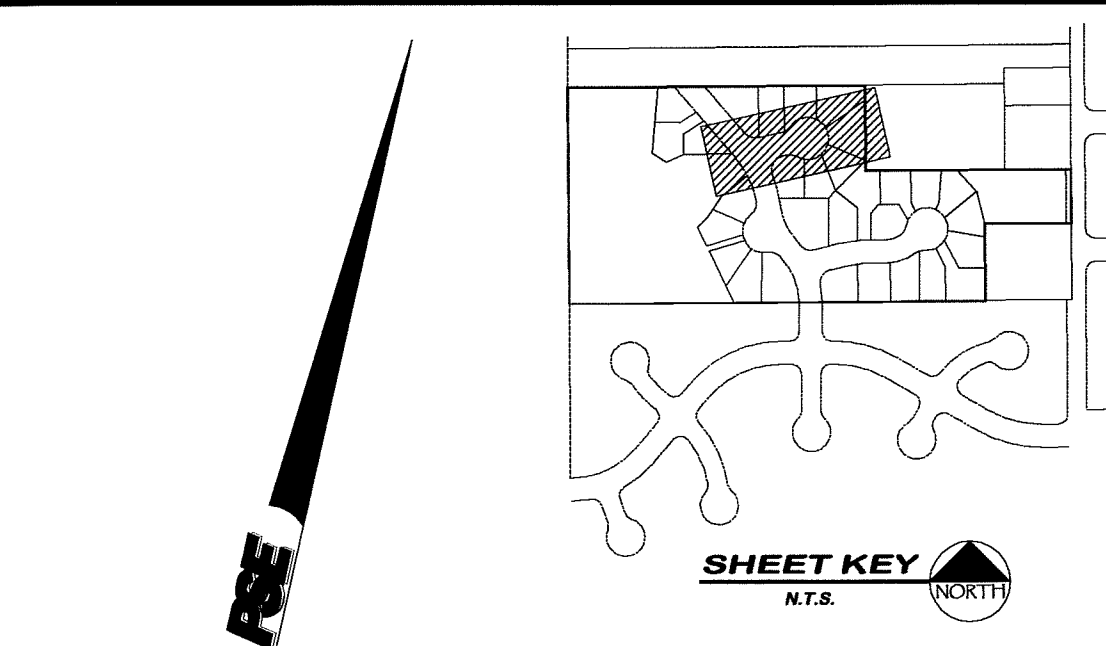
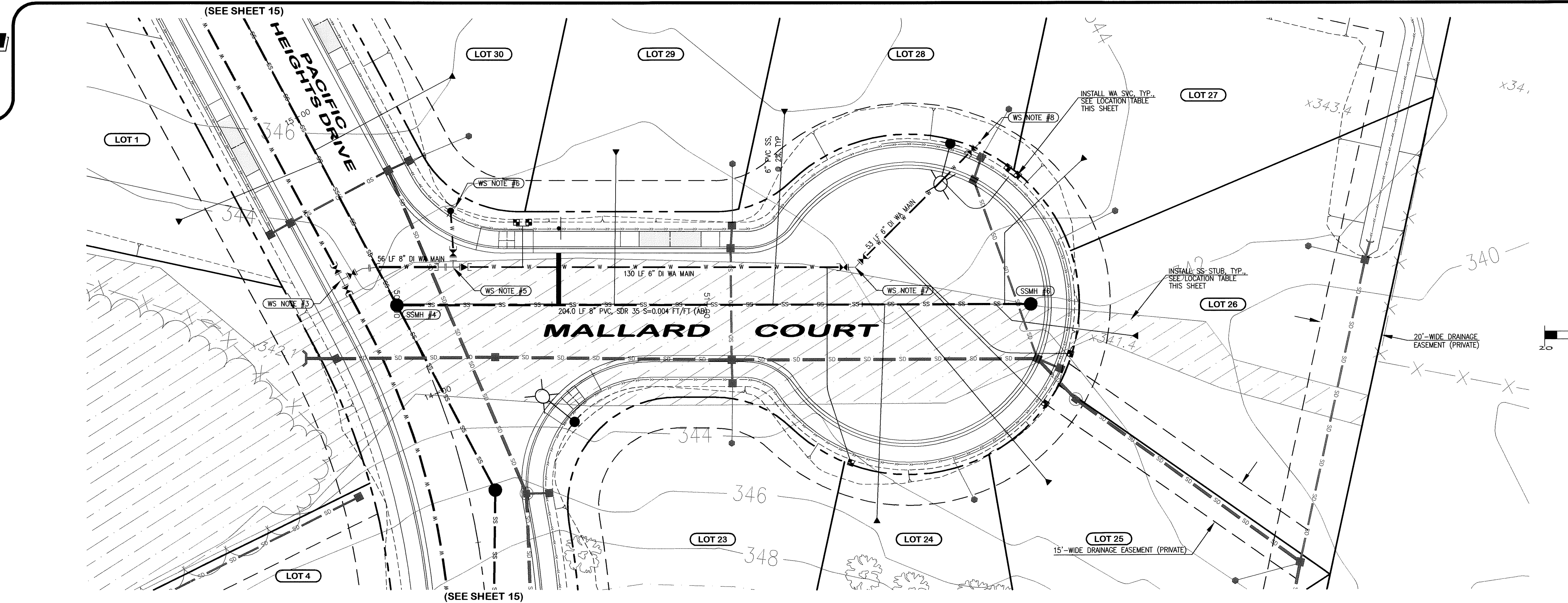
FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE				PLAN CHECK				REVISIONS				ISSUE	



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ABBOTTSFORD, BC V2S 7T4

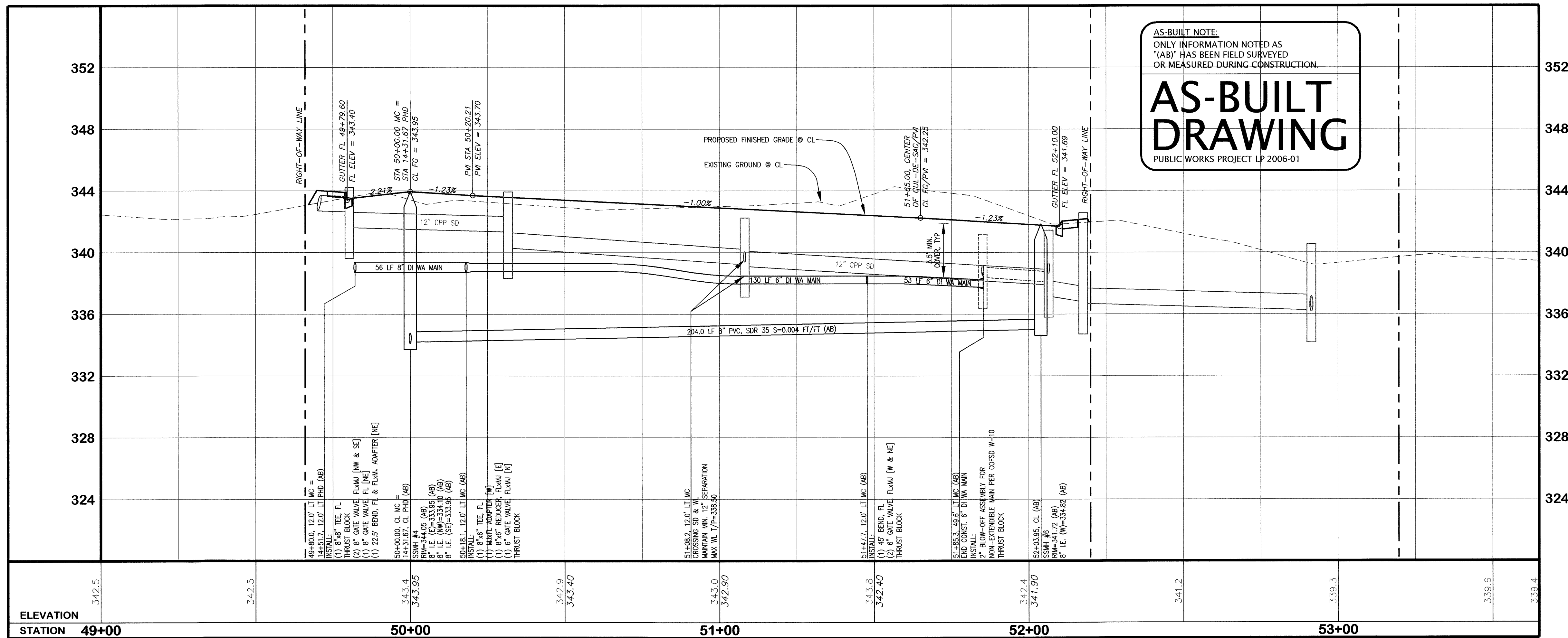
HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
TAYSIDE COURT ~
STATIONS 33+00 to 36+00
WATER & SANITARY SEWER IMPROVEMENTS
JOB #: 93084 SHEET 17 OF 26





SEWER STUB LOCATION TABLE				
LOT NO.	STREET	STA & OFFSET @ MAIN	TYPE	STA & OFFSET @ STUB
24	MALLARD	51+57.3 0.0 CL	SINGLE	51+54.8 68.9 RT (AB)
25	MALLARD	51+61.9 0.0 CL	SINGLE	52+08.1 56.6 RT (AB)
26	MALLARD	51+93.0 0.0 CL	SINGLE	52+37.1 10.3 RT (AB)
27	MALLARD	51+96.0 0.0 CL	SINGLE	52+20.5 46.2 LT (AB)
28	MALLARD	51+21.2 0.0 CL	SINGLE	51+24.9 61.3 LT (AB)
29	MALLARD	50+70.1 0.0 CL	SINGLE	50+70.6 48.2 LT (AB)

WATER SVC LOCATION TABLE			
LOT NO.	STREET	STA & OFFSET	TYPE
24	MALLARD	51+46.3 51.2 RT (AB)	3/4" SINGLE
25	MALLARD	52+09.0 32.2 RT (AB)	3/4" SINGLE
26	MALLARD	52+17.1 16.0 RT (AB)	3/4" SINGLE
27	MALLARD	52+00.1 41.7 LT (AB)	>1" DUAL
28	MALLARD	51+37.0 44.2 LT (AB)	>1" DUAL
29	MALLARD	50+42.5 28.5 LT (AB)	>1" DUAL
30	MALLARD	50+38.5 28.5 LT (AB)	>1" DUAL



AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
'(AB)' HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION.

**AS-BUILT
DRAWING**

PUBLIC WORKS PROJECT LP 2006-01

SANITARY SEWER NOTES

SSMH #4
14+31.67, CL PHD =
50+00.00, CL MC (AB)
RIM=344.05 (AB)
8" I.E. (E)=333.95 (AB)
8" I.E. (NW)=334.10 (AB)
8" I.E. (SE)=333.95 (AB)

SSMH #6
52+03.95, CL (AB)
RIM=341.72 (AB)
8" I.E. (W)=334.82 (AB)

WATER SYSTEM NOTES

WS NOTE #3
14+51.7, 12.0' LT PHD =
49+80.0, 12.0' LT MC (AB)
INSTALL:
(1) 8"x8" TEE, FL
THRUST BLOCK
(2) 8" GATE VALVE, FL [NW & SE]
(1) 8" GATE VALVE, FL [NE]
(1) 22.5' BEND, FL & FLXJ [N]

WS NOTE #5
50+18.1, 12.0' LT MC (AB)
INSTALL:
(1) 8"x8" TEE, FL
(1) M&FL ADAPTER [W]
(1) 8"x6" REDUCER, FLXJ [E]
(1) 6" GATE VALVE, FLXJ [N]
THRUST BLOCK

WS NOTE #6
50+18.1, 30.2' LT MC (AB)
INSTALL:
(1) HYDRANT ASSEMBLY
PER COFSD W-1
FIG. 344.01 AT FH

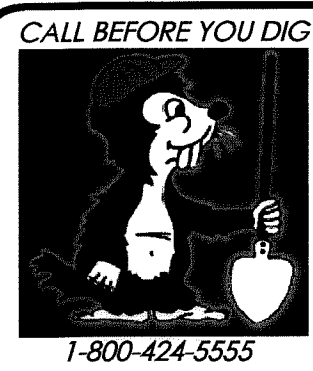
WS NOTE #7
51+47.7, 12.0' LT MC (AB)
INSTALL:
(1) 45' BEND, FL
(2) 6" GATE VALVE, FLXJ [W & NE]
THRUST BLOCK

WS NOTE #8
51+85.3, 49.6' LT MC (AB)
END CONST. 6" DI WA MAIN
INSTALL:
2" BLOW-OFF ASSEMBLY (AB) FOR
NON-EXTENSIBLE MAIN PER COFSD W-10
THRUST BLOCK

APPROVED

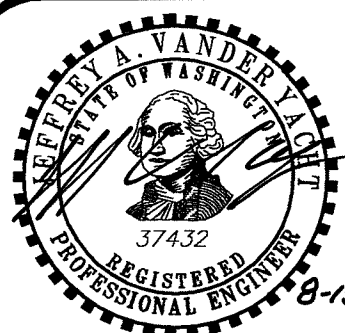
APR 12 2009
BY: [Signature]
CITY OF FERNDALE

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	06/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
AS-BUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE				VERTICAL DATUM				PLAN CHECK				REVISIONS	
												ISSUE	



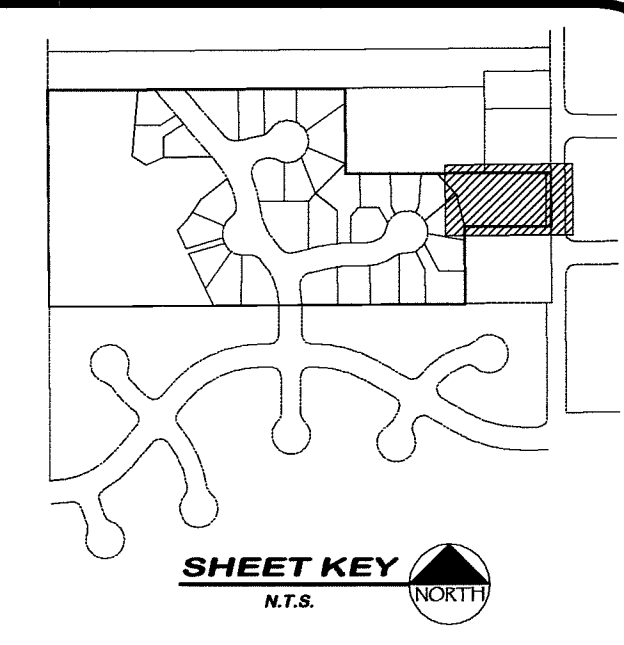
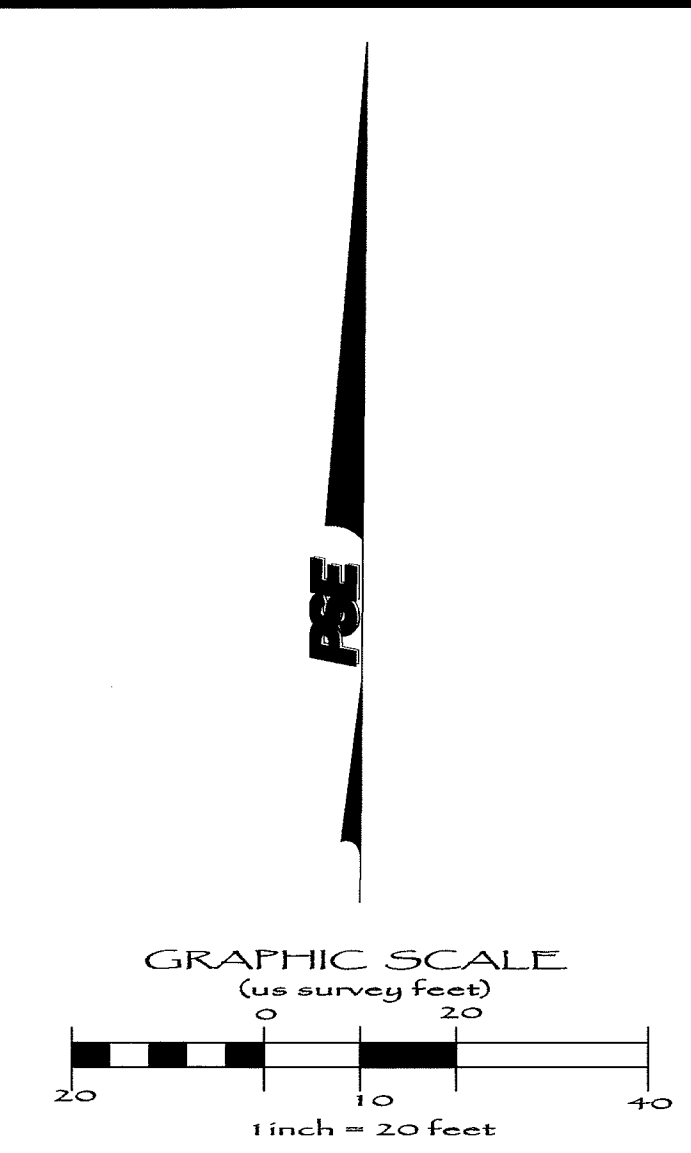
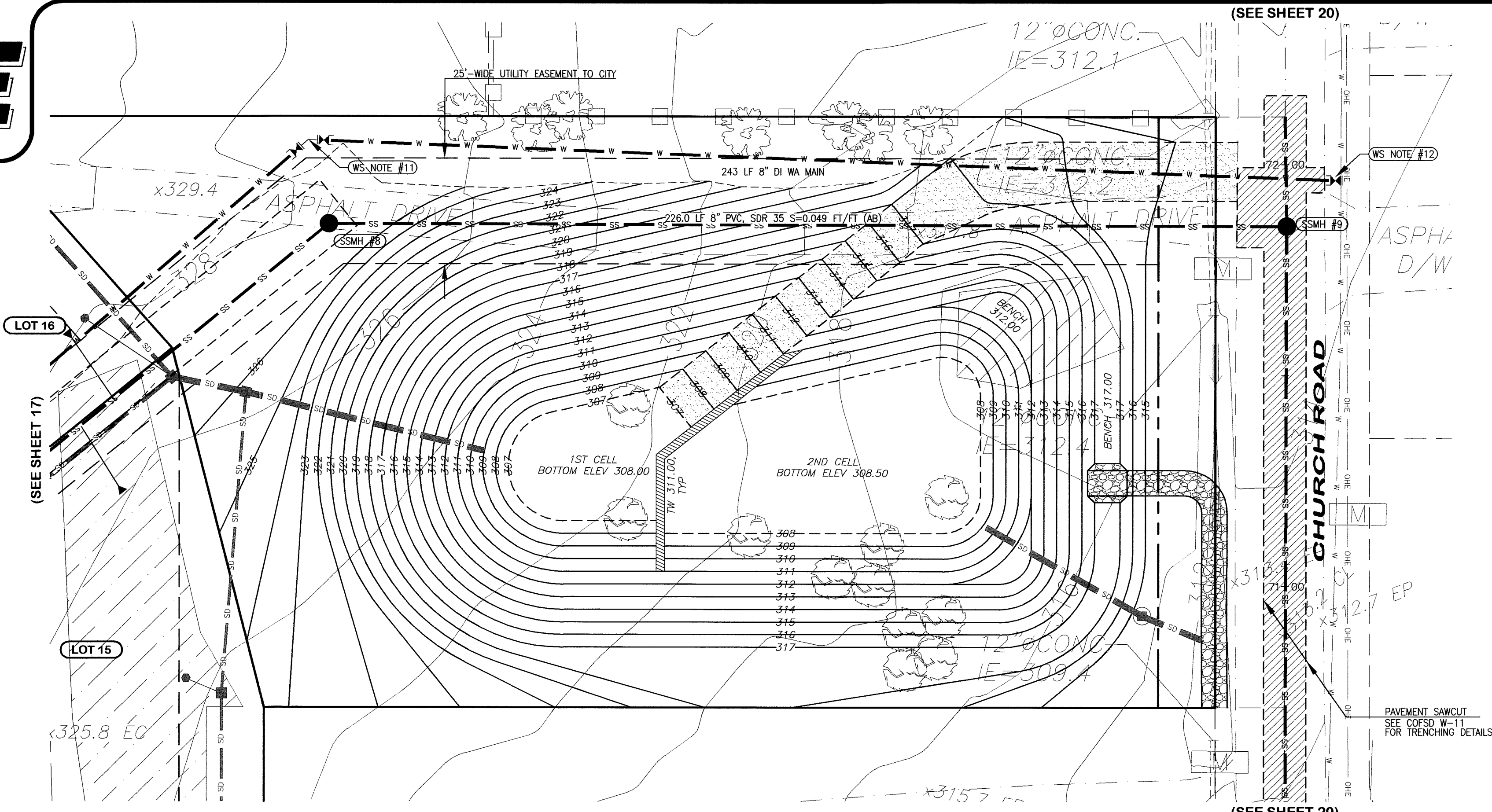
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33677 ARCADIAN WAY
ABBOTTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
MALLARD COURT ~
STATIONS 49+00 to 53+65
WATER & SANITARY SEWER IMPROVEMENTS

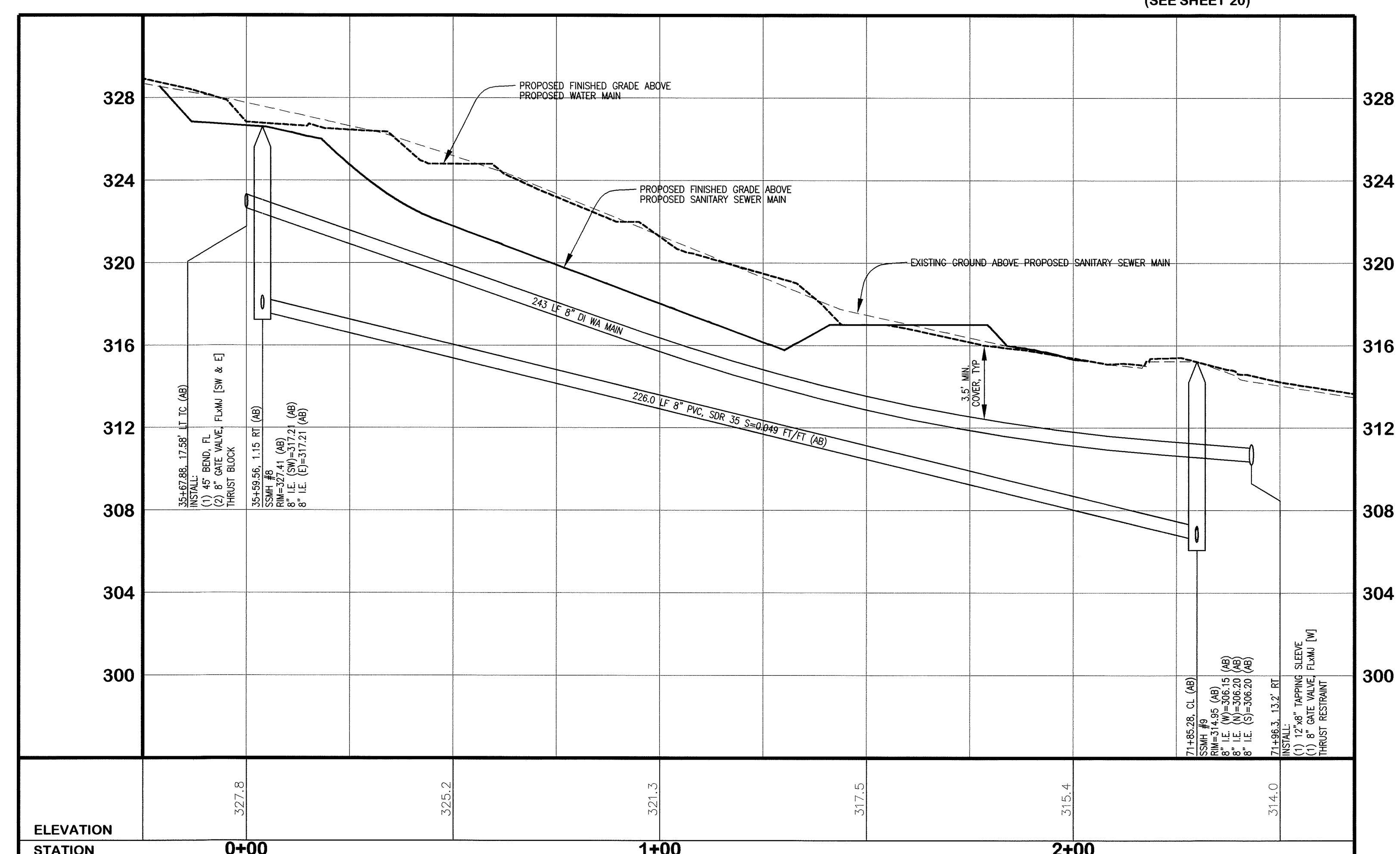




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www.psesurvey.com
EMAIL: pse@psurvey.com



- SANITARY SEWER NOTES**
- SSMH #8**
35+59.56, 1.15 LT (AB)
RM=327.41 (AB)
8" I.E. (SW)=317.21 (AB)
8" I.E. (E)=317.21 (AB)
- SSMH #9**
71+85.28, CL (AB)
RM=314.95 (AB)
8" I.E. (W)=308.15 (AB)
8" I.E. (N)=308.20 (AB)
8" I.E. (S)=308.20 (AB)
- WATER SYSTEM NOTES**
- WS NOTE #11**
35+57.88, 17.58' LT TC (AB)
INSTALL:
(1) 45' BEND, FL
(2) 8" GATE VALVE, FLXJ [SW & E]
THRUST BLOCK
- WS NOTE #12**
71+96.3, 13.2' RT (AB)
INSTALL:
(1) 12"x8" TAPPING SLEEVE
(1) 8" GATE VALVE, FLXJ [W]
THRUST RESTRAINT



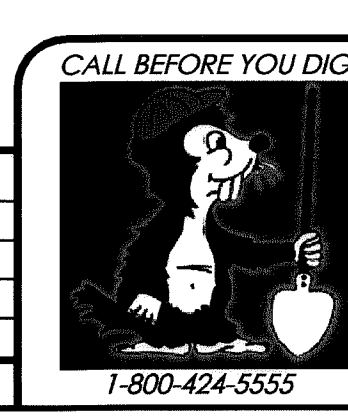
APPROVED
APR 04 2009
BY: [Signature]
CITY OF FERNDALE

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

**AS-BUILT
DRAWING**

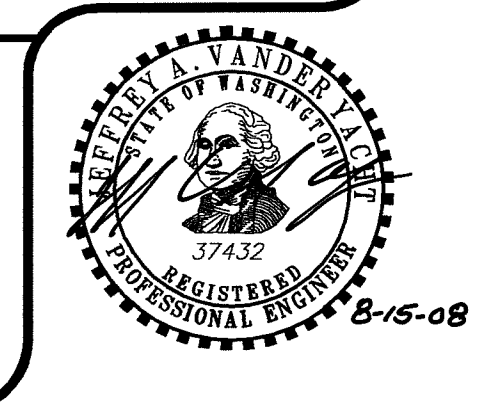
PUBLIC WORKS PROJECT LP 2006-01

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/30/08
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SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK						REVISIONS			ISSUE



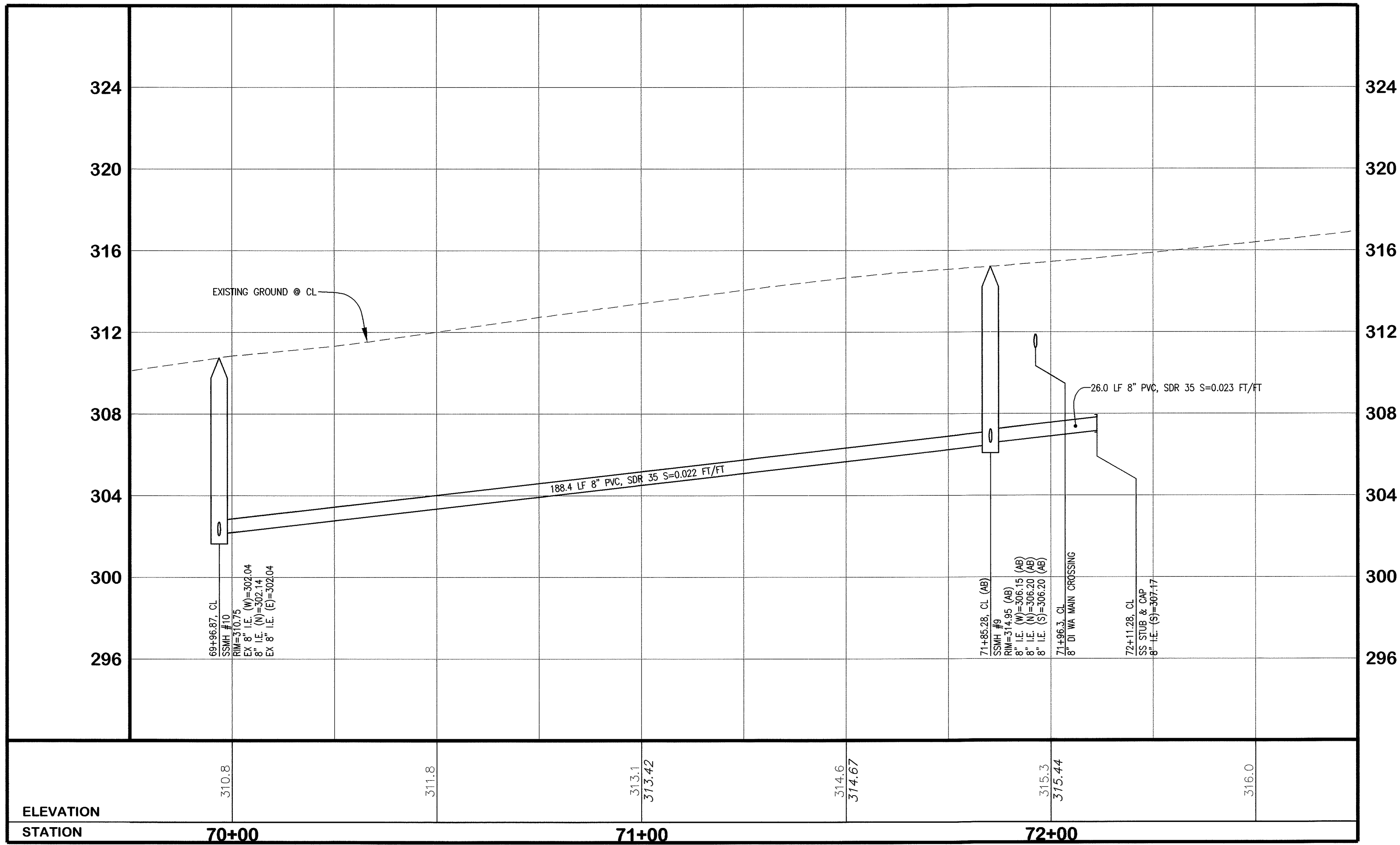
KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
**CONNECTION TO
CHURCH ROAD**
WATER & SANITARY SEWER IMPROVEMENTS
JOB #: 93084
SHEET 19 OF 26





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EMAIL: pse@psurvey.com



HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 4'

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DESIGNED BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 20'	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: 1" = 4'			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK				REVISIONS		ISSUE			

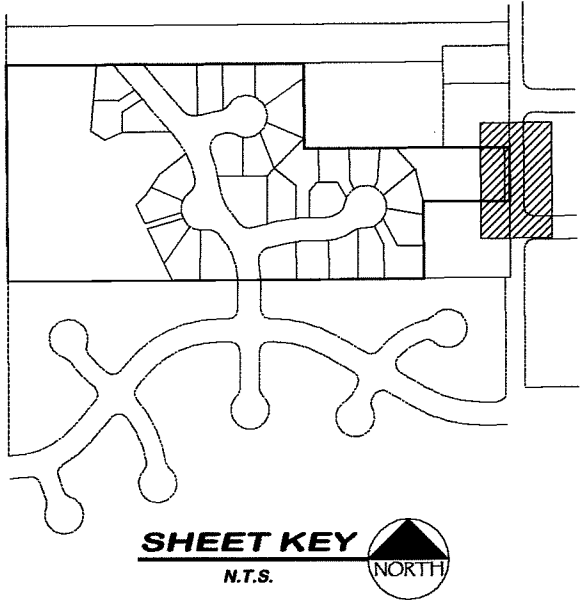
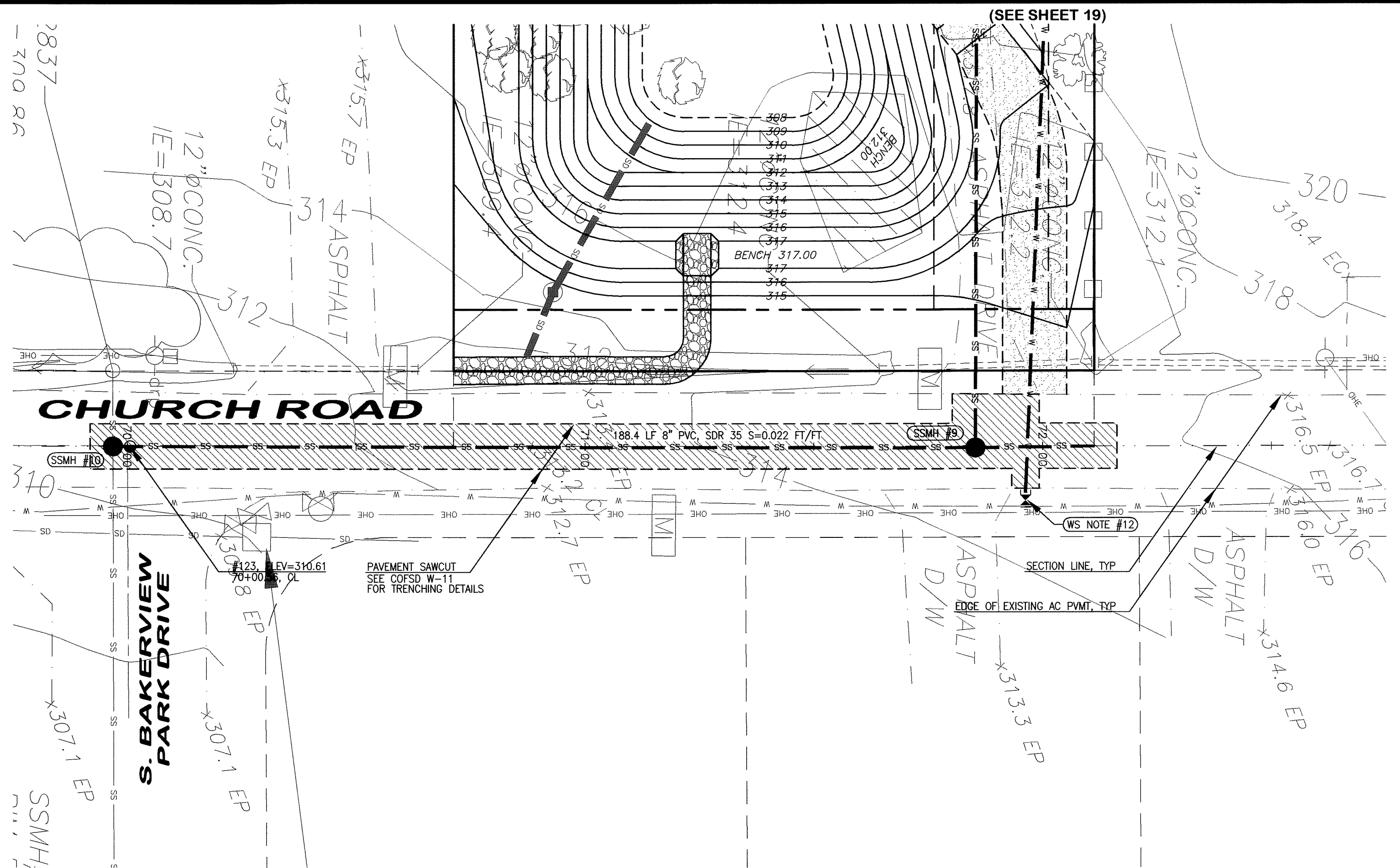


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HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
CHURCH ROAD ~
STATIONS 69+75 to 72+75
WATER & SANITARY SEWER IMPROVEMENTS
JOB #: 93084 SHEET 20 OF 26



APPROVED
BY: [Signature]
CITY OF FERDALE
AS-BUILT NOTE:
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OR MEASURED DURING CONSTRUCTION.
AS-BUILT DRAWING
PUBLIC WORKS PROJECT LP 2006-01



SANITARY SEWER NOTES
SSMH #9
71+85.28, CL (AB)
RIM=314.95 (AB)
8" I.E. (W)=306.15 (AB)
8" I.E. (N)=306.20 (AB)
8" I.E. (S)=306.20 (AB)
SSMH #10
69+96.87, CL
RIM=310.75
EX 8" I.E. (W)=302.04
8" I.E. (N)=302.14
EX 8" I.E. (E)=302.04
WATER SYSTEM NOTES
WS NOTE #12
71+96.3, 13.2' RT (AB)
INSTALL:
(1) 12"x8" TAPPING SLEEVE
(1) 8" GATE VALVE, FLX MJ [W]
THRUST RESTRAINT



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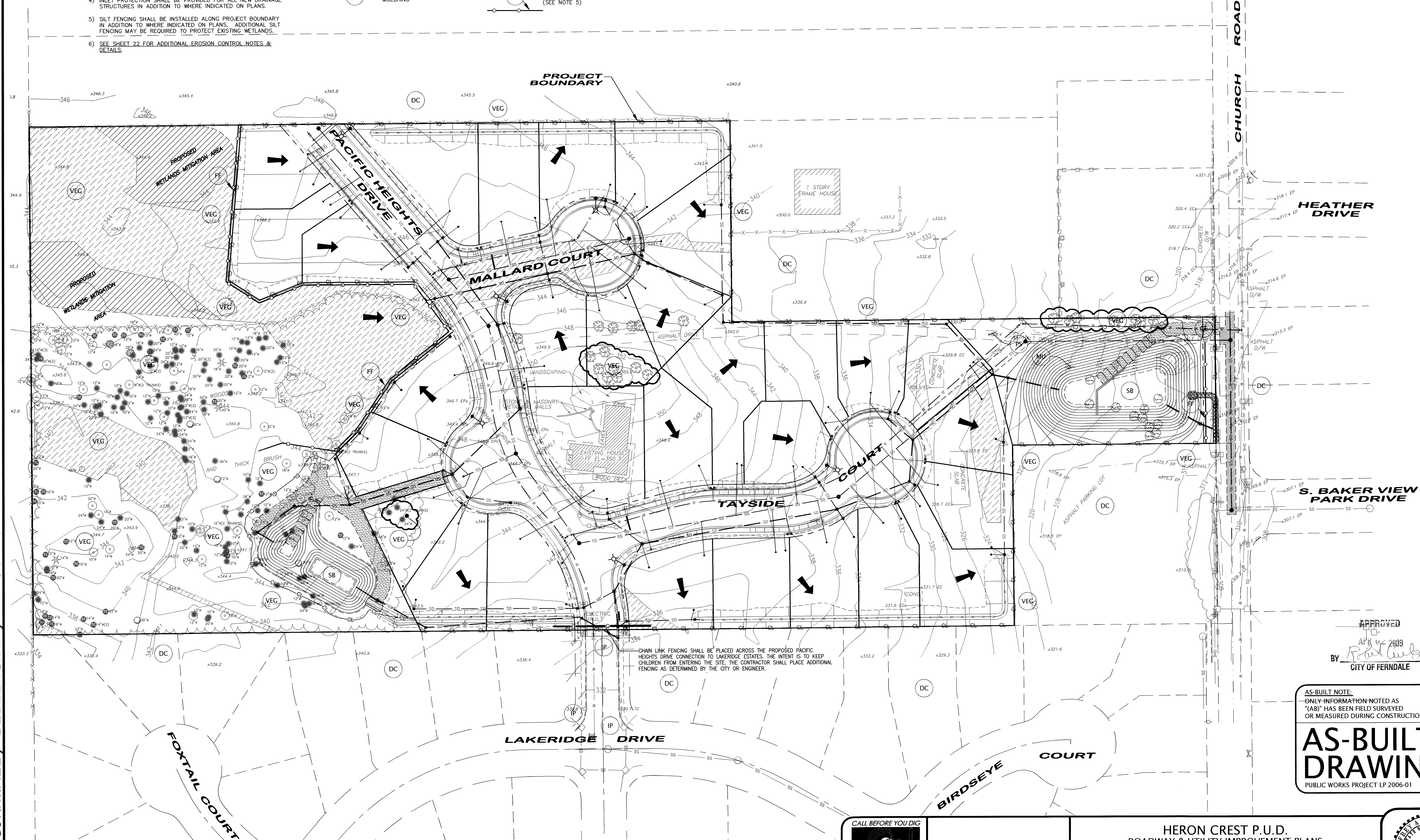
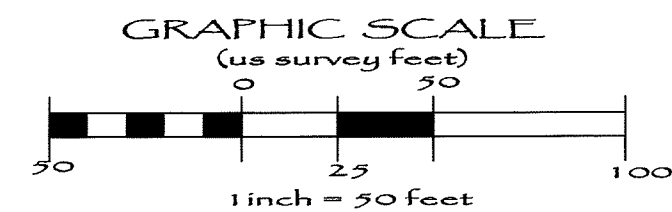
EROSION CONTROL NOTES:

- 1) COVER ALL DIRT/GRAVEL PILES WITH PLASTIC SHEETING DURING CONSTRUCTION WHEN NOT IN USE.
- 2) NATIVE SOILS AREA CLASSIFIED AS "WHATCOM - LABOUNTY SILT LOAMS" HYDROLOGIC GROUP C AND "WHATCOM SILT LOAMS" HYDROLOGIC GROUP C PER "SOIL SURVEY OF WHATCOM COUNTY," SCS 1992.
- 3) CONSTRUCTION SCHEDULE- PENDING APPROVAL OF PLANS FROM CITY OF FERNDALE, BEGINNING SPRING 2006.
- 4) INLET PROTECTION SHALL BE PROVIDED FOR ALL NEW DRAINAGE STRUCTURES IN ADDITION TO WHERE INDICATED ON PLANS.
- 5) SILT FENCING SHALL BE INSTALLED ALONG PROJECT BOUNDARY IN ADDITION TO WHERE INDICATED ON PLANS. ADDITIONAL SILT FENCING MAY BE REQUIRED TO PROTECT EXISTING WETLANDS.
- 6) SEE SHEET 22 FOR ADDITIONAL EROSION CONTROL NOTES & DETAILS.

EROSION CONTROL LEGEND

- | | | | |
|-----|--|----|--|
| VEG | WSDOE BMP C101
PRESERVING NATURAL VEGETATION | DC | WSDOE BMP C140
DUST CONTROL |
| CE | WSDOE BMP C105
STABILIZED CONSTRUCTION ENTRANCE | IP | WSDOE BMP C220
STORM DRAIN INLET PROTECTION
(SEE NOTE 4) |
| PS | WSDOE BMP C120
TEMPORARY AND PERMANENT SEEDING | SB | WSDOE BMP C241
TEMPORARY SEDIMENT POND |
| MU | WSDOE BMP C121
MULCHING | FF | WSDOE BMP C233
SILT FENCE
(SEE NOTE 5) |

CL—CL— INDICATES CLEARING LIMITS
← DRAINAGE FLOW DIRECTION ARROWS
(SHEET FLOW OR SHALLOW CHANNEL FLOW)



APPROVED
BY *[Signature]*
CITY OF FERNDALE

AS-BUILT NOTE:
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"AB" HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION.

AS-BUILT
DRAWING

PUBLIC WORKS PROJECT LP 2006-01

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: 1" = 50'	1	06/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: N.A.			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
ASBUILT:				XREF:								7	05/30/08
				DWG: P:\PSE Project\93084\DWGS\ENG_BASE_AB.dwg								8	08/14/08
SURVEY REFERENCE	VERTICAL DATUM	PLAN CHECK	REVISIONS	ISSUE									

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ABBOTTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
TEMPORARY EROSION &
SEDIMENT CONTROL PLAN

JOB #: 93084

SHEET 21 OF 26



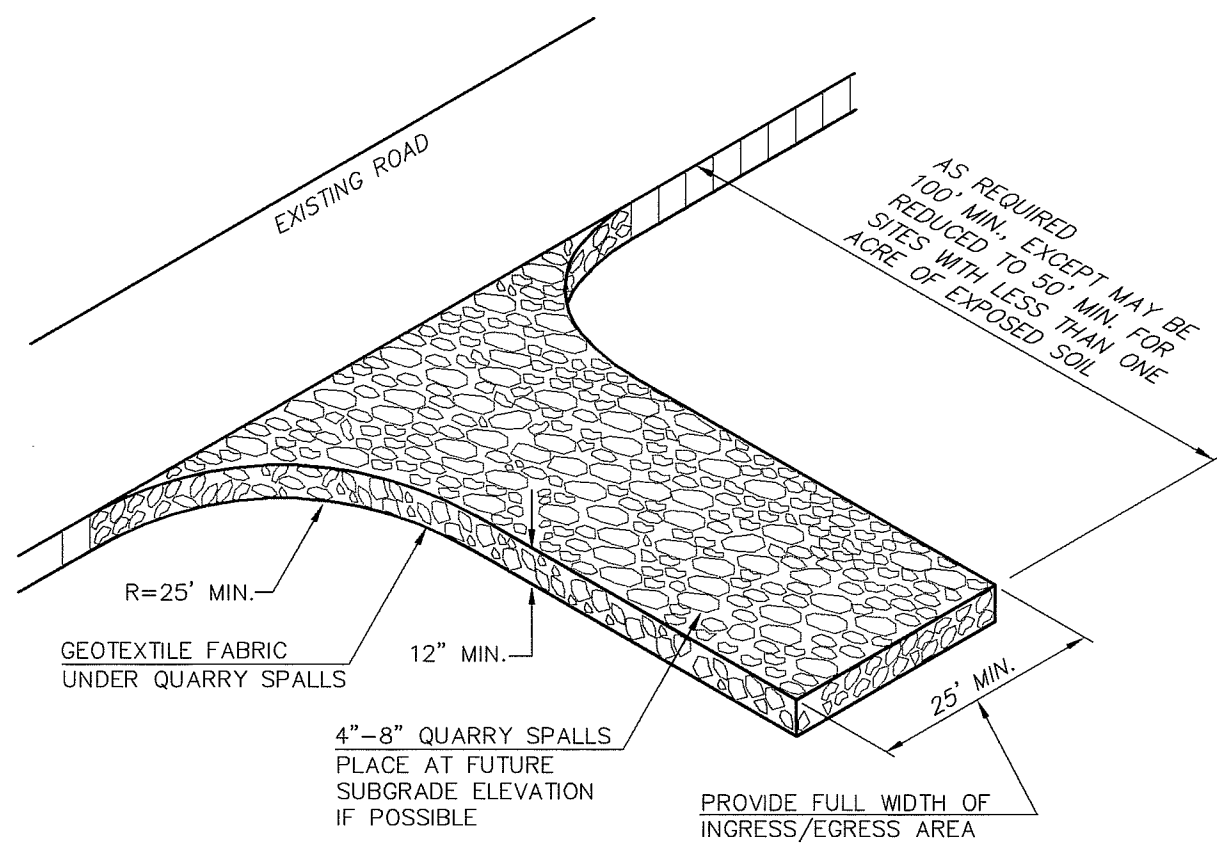
8-15-08



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EROSION & SEDIMENT CONTROL DETAILS

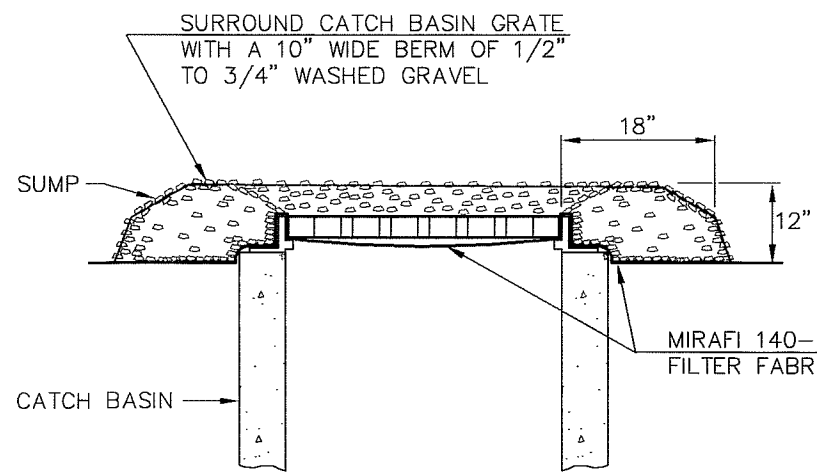


ROCK STABILIZATION CONSTRUCTION ROAD ENTRANCE

MAINTENANCE:

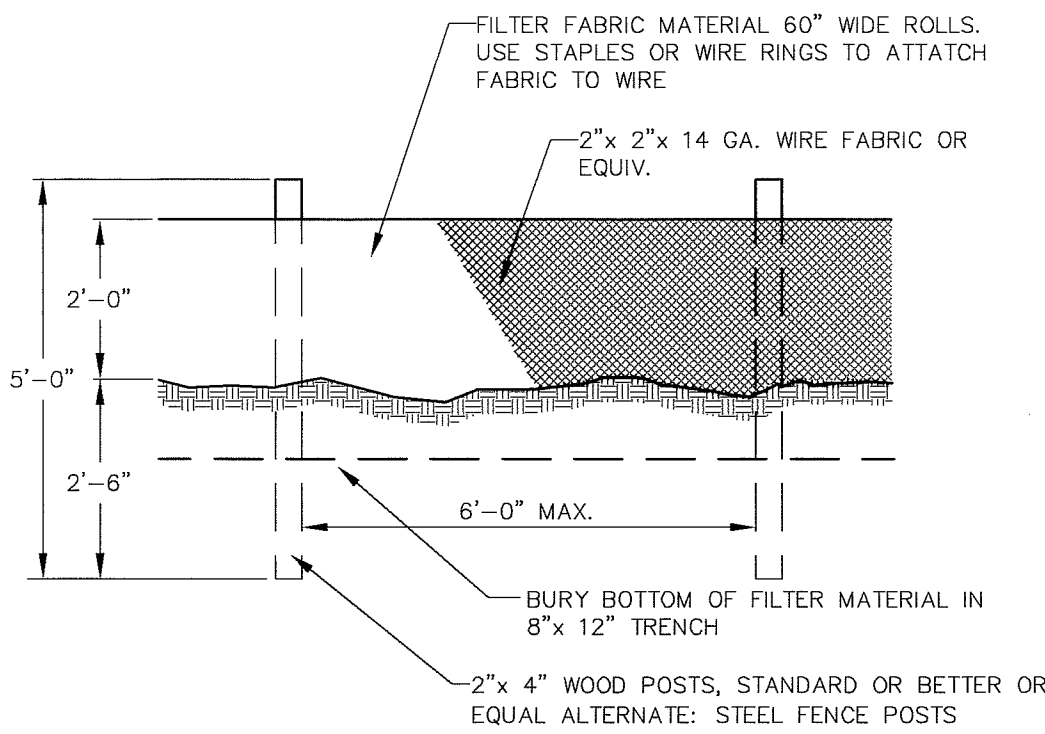
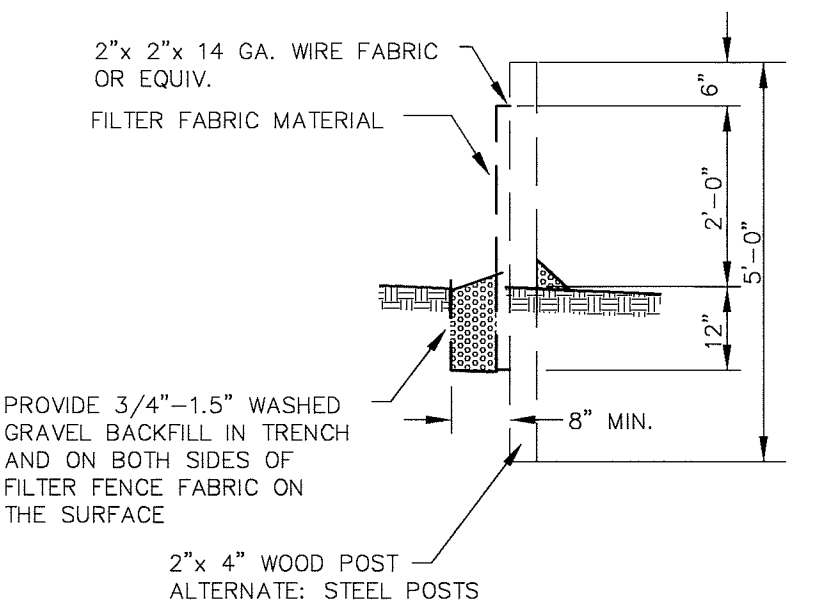
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 4 TO 8-INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

MULCH SPECIFICATIONS			
Mulch Material	Quality Standards	Application Rates	Remarks
Straw	Air-dried; free from undesirable seed and coarse material	2"-3" thick; 2-3 bales per 1000 sq. ft. or 2-3 tons per acre	Cost-effective protection when applied with adequate thickness. Hand-application generally requires greater thickness than blown straw. Straw should be crimped to avoid wind blow. The thickness of straw may be reduced by half when used in conjunction with seeding.
Wood Fiber Cellulose	No growth inhibiting factors	Approx. 25-30 lbs. per 1000 sq. ft. or 1000-1500 lbs per acre	Shall be applied with hydromulcher. Shall not be used without seed and tackifier unless the application rate is at least doubled. Some wood fiber with very long fibers can be effective at lower application rates and without seed or tackifier.
Compost	No visible water or dust during handling. Must be purchased from supplier with Solid Waste Handling Permit.	2" thick min.; approx. 100 tons per acre (approx. 800 lbs per yard)	More effective control can be obtained by increasing thickness to 3". Excellent mulch for protecting final grades until landscaping because it can be directly seeded or tilled into soil as an amendment. Sources for compost are available from the King County Commission for Marketing Recyclable Materials at 296-4439.
Chipped Site Vegetation	Average size shall be several inches.	2" minimum thickness	This is a cost-effective way to dispose of debris from clearing and grubbing and eliminates the problems associated with burning. It should generally not be used on slopes above approx. 10% because of its tendency to be transported by runoff. It is not recommended within 200 feet of surface waters. If seeding is expected shortly after mulch, the decomposition of the chipped vegetation may tie up nutrients important to grass establishment.



INTERIM CATCH BASIN GRATE PROTECTION

NOT TO SCALE



SILT FILTER FENCE DETAIL

NOT TO SCALE

TEMPORARY EROSION/SEDIMENTATION CONTROL

- A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
- APPROVAL OF THESE TEMPORARY EROSION/SEDIMENTATION CONTROL (TESC) PLANS DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
- THE IMPLEMENTATION OF THESE TESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE TESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
- THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
- THE TESC FACILITIES SHOWN ON THE PLANS MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS.
- THE TESC FACILITIES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC FACILITIES SHALL BE UPGRADED (E.G., ADDITIONAL SUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.) AS NEEDED FOR UNEXPECTED STORM EVENTS.
- THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
- ANY AREA STRIPPED OF VEGETATION, INCLUDING ROADWAY EMBANKMENTS, WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD OF 7 DAYS, SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED TESC METHODS (E.G., SEEDING, MULCHING, NETTING, EROSION BLANKETS, ETC.).
- ANY AREA NEEDING TESC MEASURES, NOT REQUIRING IMMEDIATE ATTENTION, SHALL BE ADDRESSED WITHIN FIFTEEN (15) DAYS.
- THE TESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.
- AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
- STABILIZED CONSTRUCTION ENTRANCES AND WASH PADS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- DURING THE TIME PERIOD OF OCTOBER 1 THROUGH APRIL 30, ALL PROJECT DISTURBED AREAS GREATER THAN 5,000 SQUARE FEET, THAT ARE TO BE LEFT UNWORKED FOR MORE THAN 12 HOURS, SHALL BE COVERED BY ONE OF THE FOLLOWING COVER MEASURES: MULCH, SODDING OR PLASTIC COVERING.
- ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE PERMANENT FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION OR DISPERSION SYSTEM, THE FACILITY SHALL NOT BE USED AS A TEMPORARY SETTLING BASIN. NO UNDERGROUND DETENTION TANK, DETENTION VAULT, OR SYSTEM WHICH BACKS UNDER OR INTO A POND SHALL BE USED AS A TEMPORARY SETTLING BASIN.
- WHERE SEEDING FOR TEMPORARY EROSION CONTROL IS REQUIRED, FAST GERMINATING GRASSES SHALL BE APPLIED AT AN APPROPRIATE RATE (E.G. ANNUAL OR PERENNIAL RYE APPLIED AT APPROXIMATELY 80 POUNDS PER ACRE).
- WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF TWO INCHES.
- ALL EROSION/SEDIMENTATION CONTROL PONDS WITH A DEAD STORAGE DEPTH EXCEEDING 6 INCHES MUST HAVE SLOPES NOT STEEPER THAN 3H:1V.
- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
- EROSION/SEDIMENTATION CONTROL FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS IN THESE PLANS. LOCATIONS MAY BE MOVED TO SUIT FIELD CONDITIONS, SUBJECT TO APPROVAL BY THE ENGINEER AND THE CITY INSPECTOR.

NPDES NOTES

- THE CONTRACTOR SHALL KEEP A RECORD OF THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR. WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES ARE IMPLEMENTED.
- ALL EROSION CONTROL FACILITIES SHALL BE INSPECTED, MAINTAINED AND REPAIRED BY THE CONTRACTOR AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL ON SITE EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT OF GREATER THAN 0.5 INCHES PER 24 HOUR PERIOD. AN INSPECTION REPORT FILE SHALL BE MAINTAINED BY THE CONTRACTOR.

FILTER FENCE NOTES

- THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-INCH OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST.
- THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS (WHERE FEASIBLE). THE FENCE POSTS SHALL BE SPACED AT A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 30 INCHES).
- A TRENCH SHALL BE EXCAVATED, ROUGHLY 8 INCHES WIDE AND 12 INCHES DEEP, UPSLOPE AND ADJACENT TO THE WOOD POST TO ALLOW THE FILTER FABRIC TO BE BURIED.
- WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES. AT LEAST 1 INCH LONG, THE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE AND 20 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
- WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF STANDARD NOTE 5 APPLYING.
- THE TRENCH SHALL BE BACKFILLED WITH 3/4-INCH MINIMUM DIAMETER WASHED GRAVEL.
- FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
- FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

SEEDING NOTES

- SEEDBED PREPARATION MAY INCLUDE THE FOLLOWING:
 - IF INFERTILE OR COARSE TEXTURED SUBSOIL WILL BE EXPOSED DURING GRADING, STOCKPILE TOPSOIL AND RE-SPREAD IT OVER THE FINISHED SLOPE AND ROLL IT TO PROVIDE A FIRM BASE.
 - IF CONSTRUCTION FILLS HAVE LEFT SOIL EXPOSED WITH A LOOSE, ROUGH OR IRREGULAR SURFACE, TRACK WALK UP SLOPE.
 - IF CUTS OR CONSTRUCTION EQUIPMENT HAVE LEFT A TIGHTLY COMPACTED SURFACE, BREAK WITH CHISEL PLOW OR OTHER SUITABLE EQUIPMENT.
 - PERFORM ALL CULTURAL OPERATIONS ACROSS OR AT RIGHT ANGLES TO THE SLOPES (CONTOURED). THE SEEDBED SHOULD BE FIRM WITH A FAIRLY FINE SURFACE AFTER ROUGHENING.
- FERTILIZATION - AS PER SUPPLIER'S RECOMMENDATIONS. DEVELOPMENTS ADJACENT TO WATER BODIES MUST USE NON-PHOSPHOROUS FERTILIZER.
- HYDROSEEDING APPLICATIONS WITH APPROVED SEED-MULCH-FERTILIZER MIXTURES MAY ALSO BE USED.
- SEEDING - APPLY APPROPRIATE MIXTURE TO THE PREPARED SEEDBED AT A RATE OF 120 LBS/ACRE. COVER THE SEED WITH TOPSOIL OR MULCH NO DEEPER THAN ONE-HALF INCH.

TEMPORARY EROSION CONTROL SEED MIX	PROPORTIONS BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION
CHEWINGS OR RED FESCUE	40%	98	90
ANNUAL OR PERENNIAL RYE	40%	98	90
REDTOP OR COLONIAL BENTGRASS	10%	92	85
WHITE DUTCH CLOVER	10%	98	90

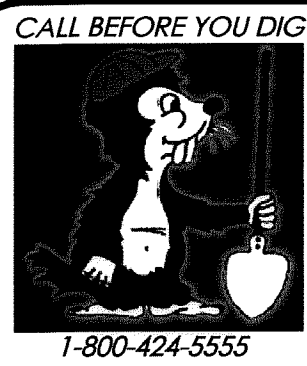
AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
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OR MEASURED DURING CONSTRUCTION.

**AS-BUILT
DRAWING**
PUBLIC WORKS PROJECT LP 2006-01

APPROVED

APR 02 2009
BY: [Signature]
CITY OF FERDALE

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: N.A.	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES	BEA	5	AS-BUILT PLANS (PRELIM.) 07/03/07
STAKING:				DESIGN	BEA	JYY	VERT: N.A.			& ROLLED CURB IN CUL-DE-SACS		6	AS-BUILT PLANS (PRELIM.) 02/20/08
ASBUILT:				XREF:								7	AS-BUILT PLANS (REV. 1) 05/30/08
				DWG: COVER_NOTES_DETAILS_AB.dwg								8	AS-BUILT PLANS 08/14/08
SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK		REVISIONS		ISSUE					

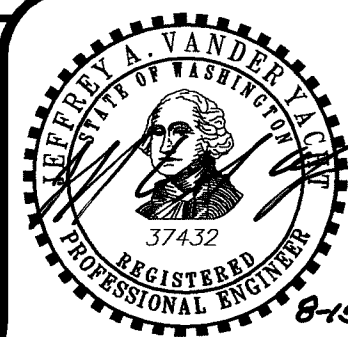


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ABBOTTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
**EROSION & SEDIMENT
CONTROL DETAILS**

JOB #: 93084

SHEET 22 OF 26



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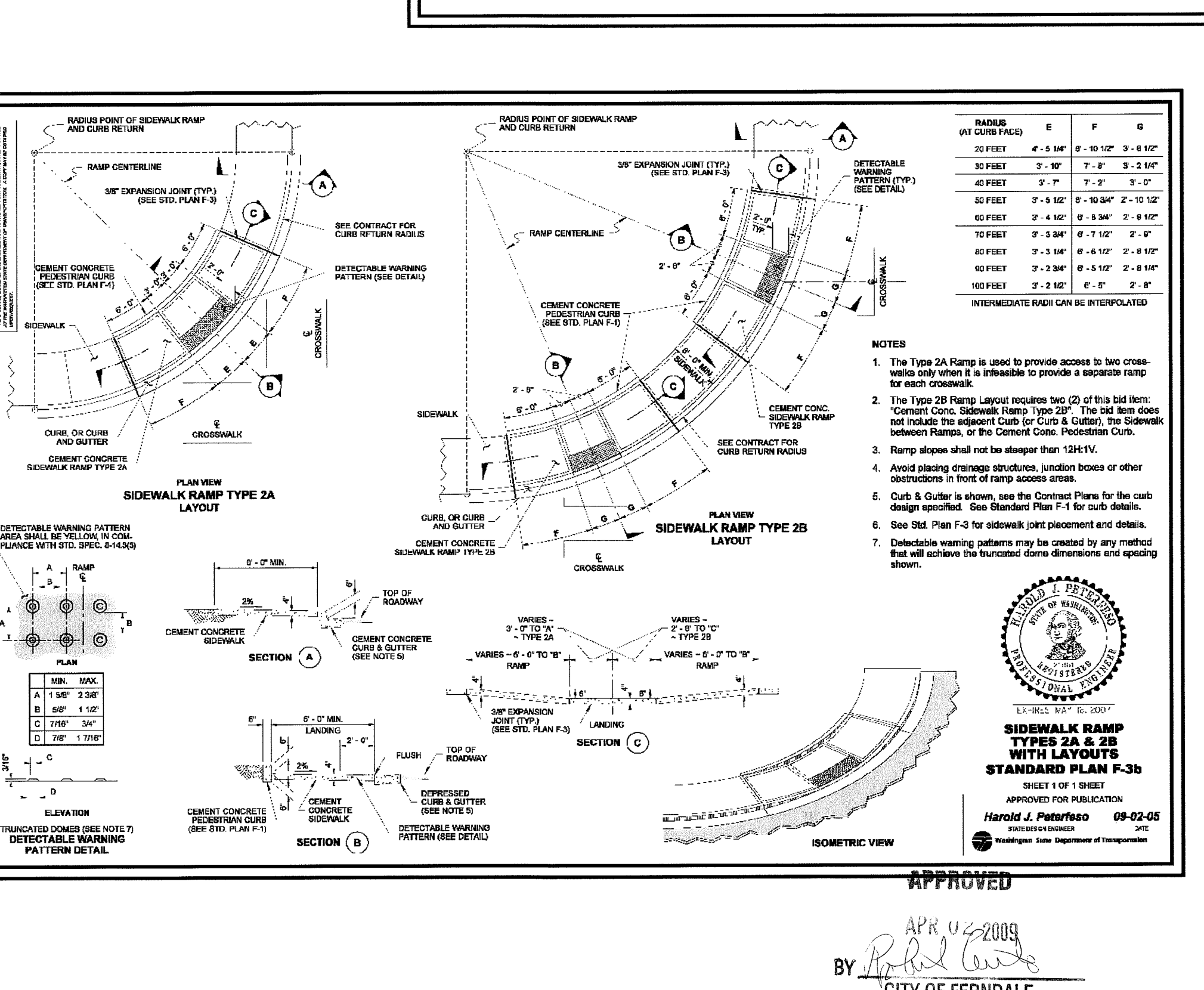
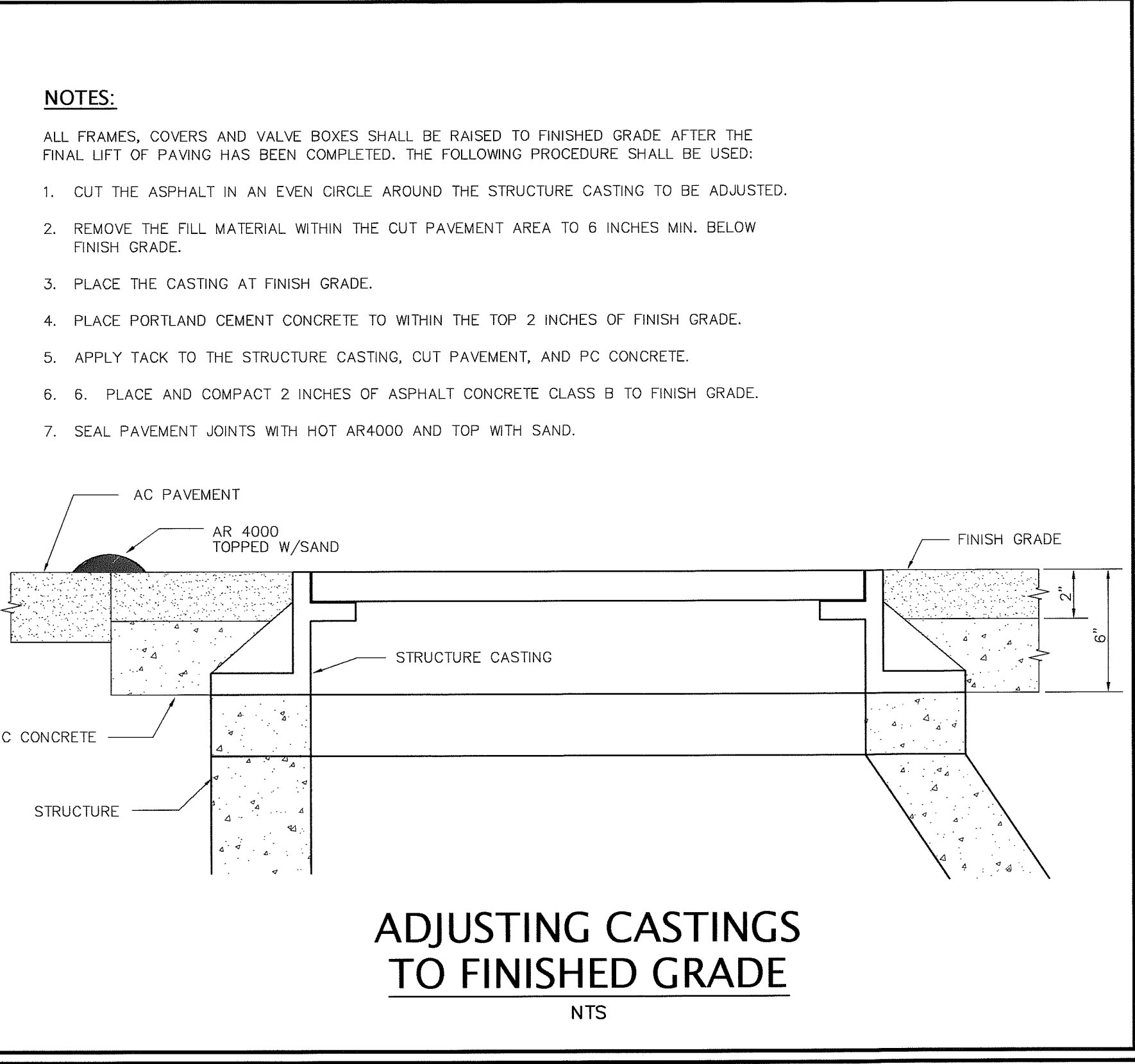
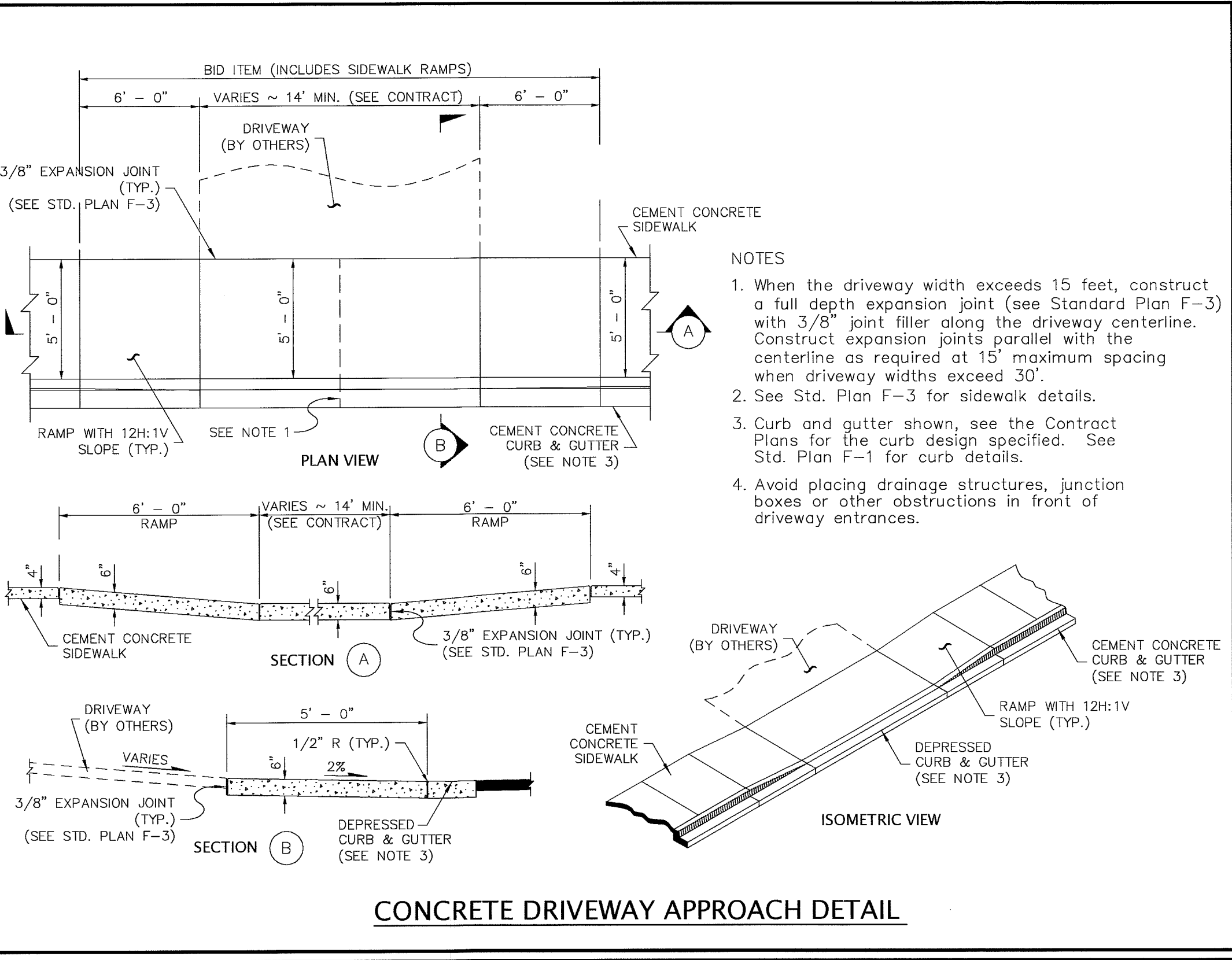
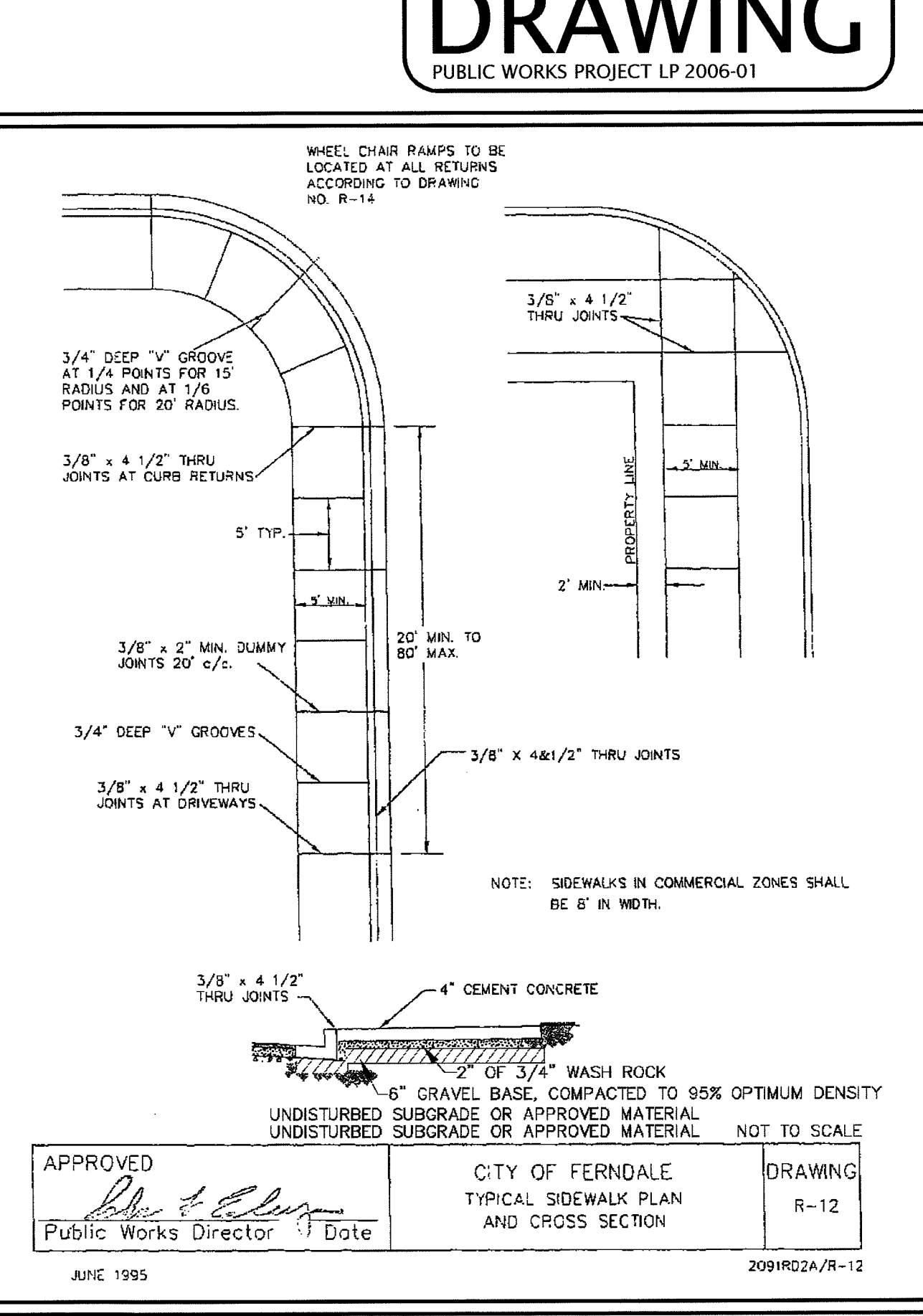
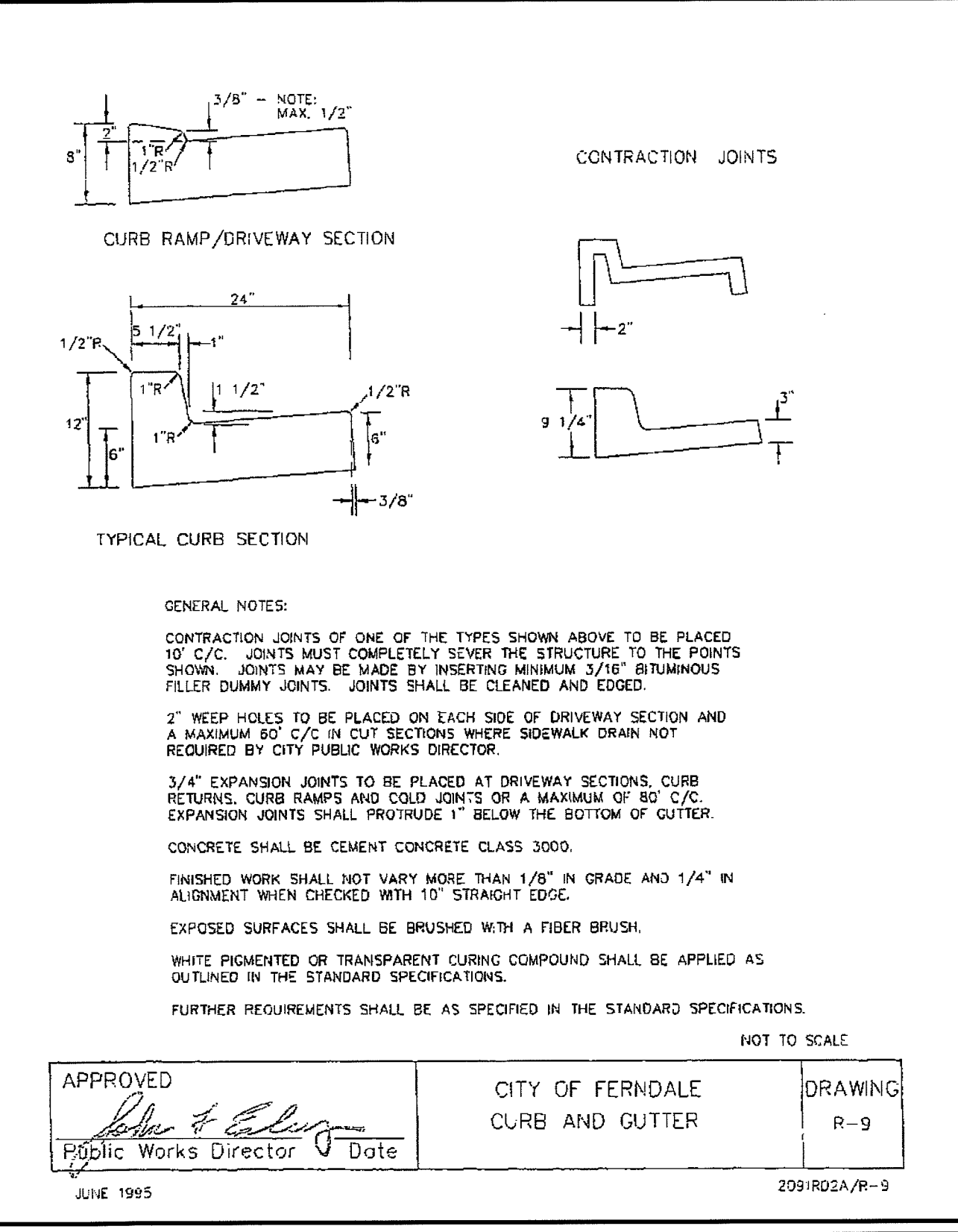
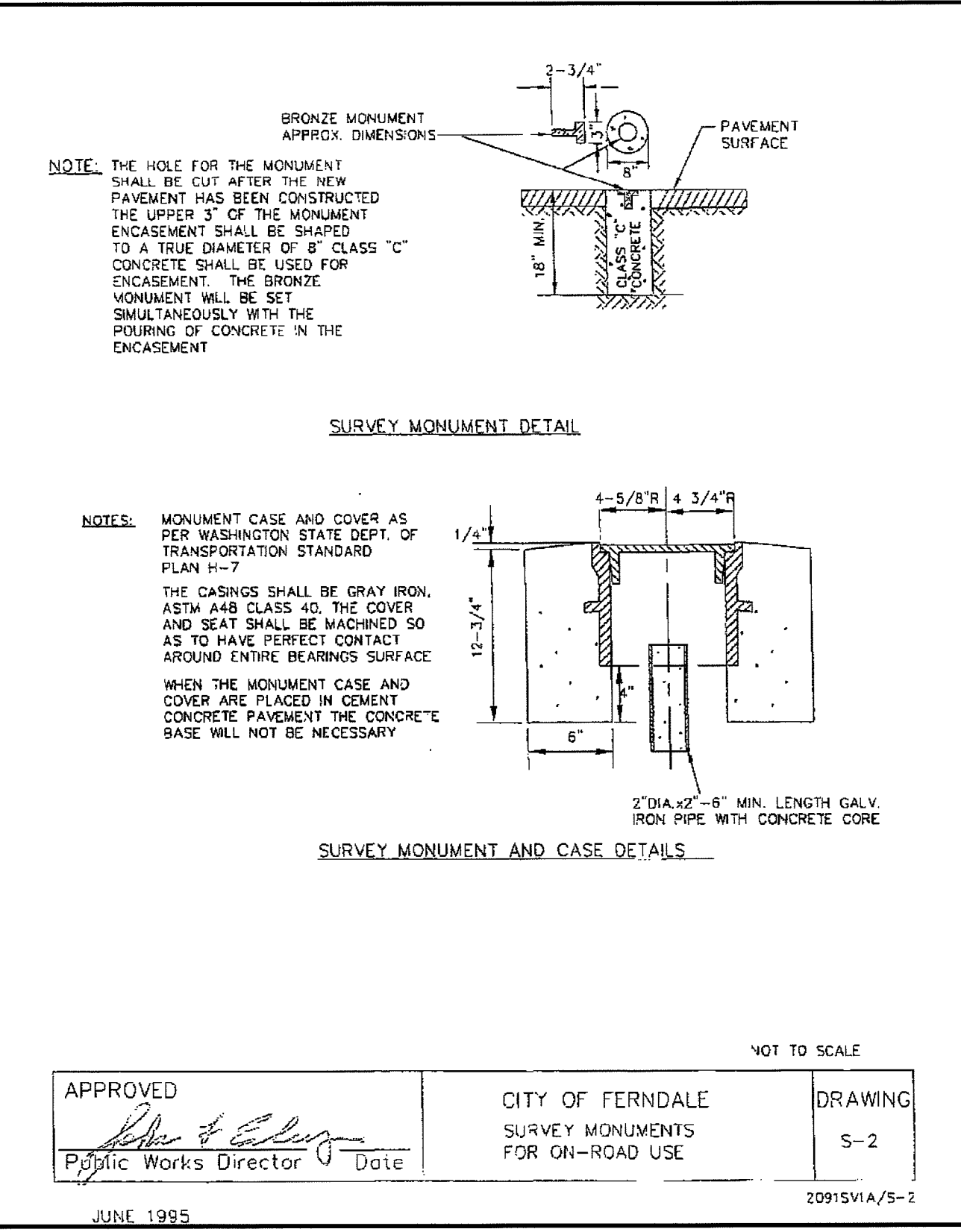
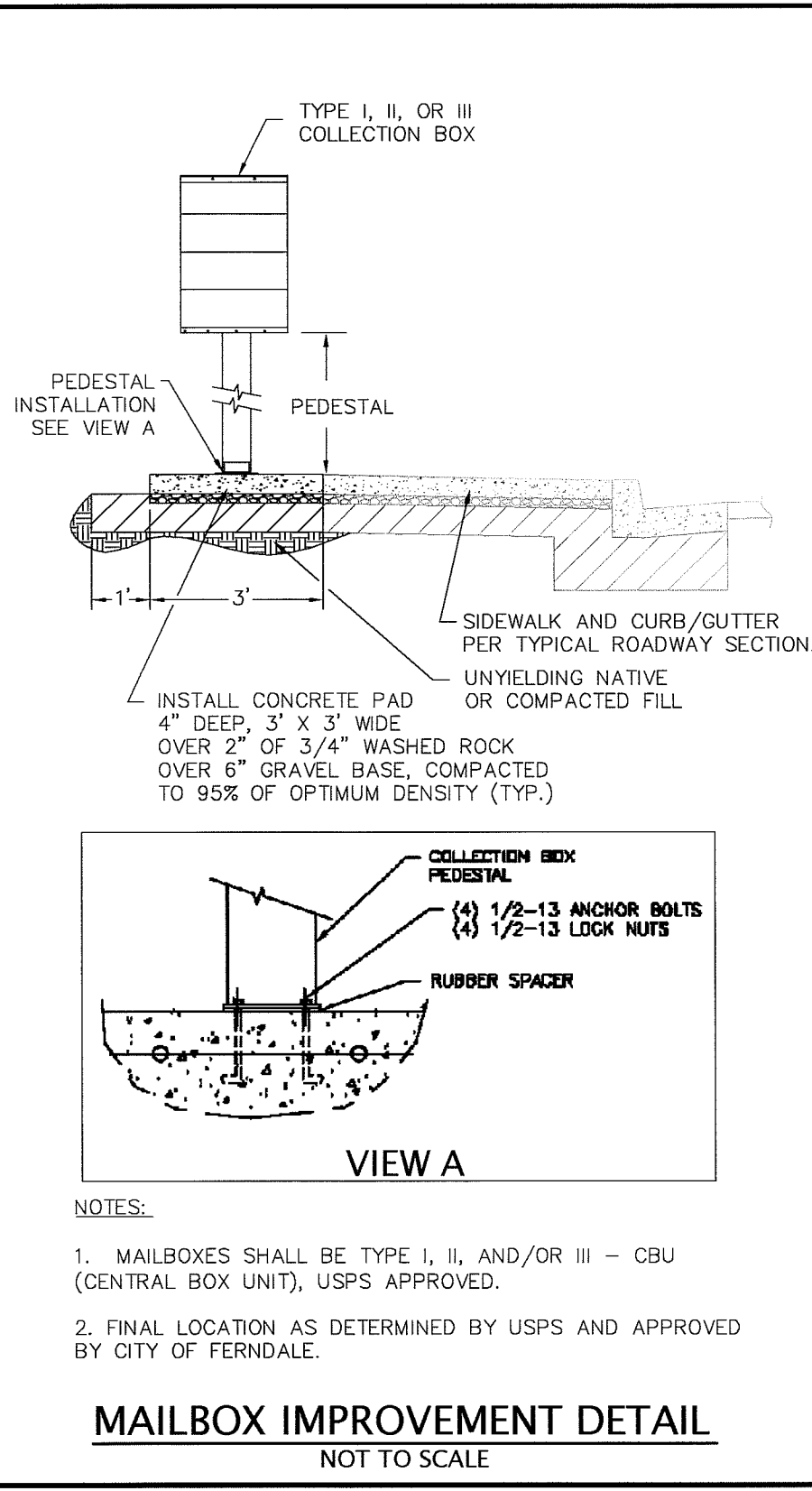
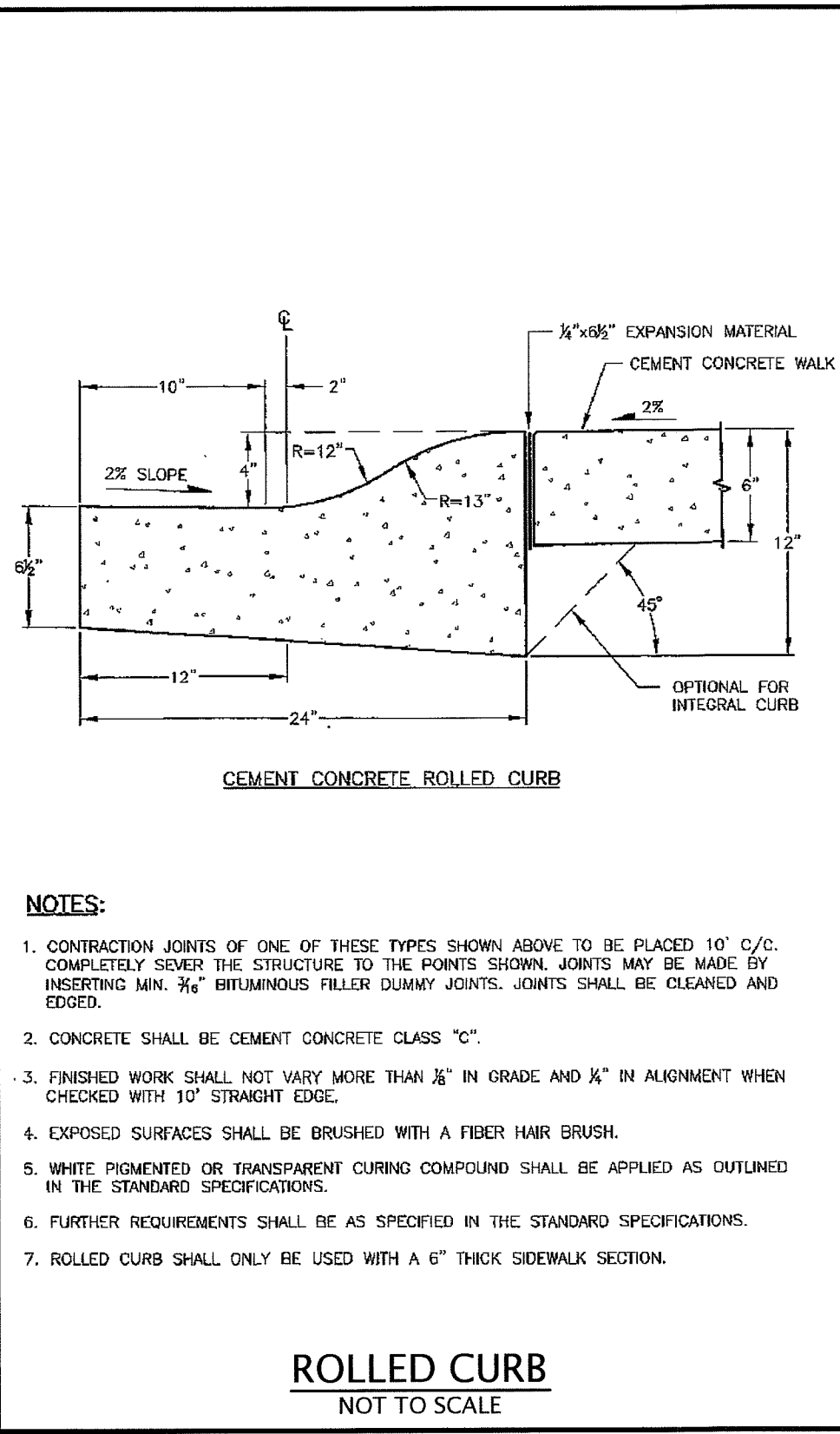


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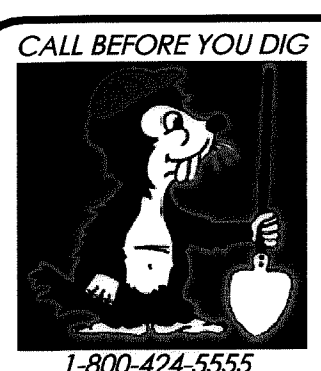
PACIFIC SURVEY & ENGINEERING INC
1812 CORNWALL, BELLINGHAM, WA 98225 PHONE: 671.7387 FAX: 671.4685

ROADWAY & SURFACE IMPROVEMENT DETAILS

AS-BUILT NOTE:
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**AS-BUILT
DRAWING**
PUBLIC WORKS PROJECT LP 2006-01

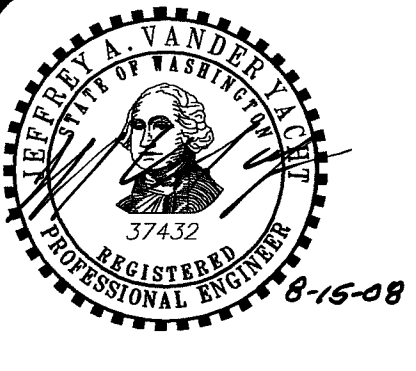


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STAKING:				DESIGN	BEA	JVY	VERT: N.A.			& ROLLED CURB IN CUL-DE-SACS		6	02/20/08
AS-BUILT:				XREF:								7	05/20/08
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SURVEY REFERENCE		VERTICAL DATUM		PLAN CHECK				REVISIONS		ISSUE			

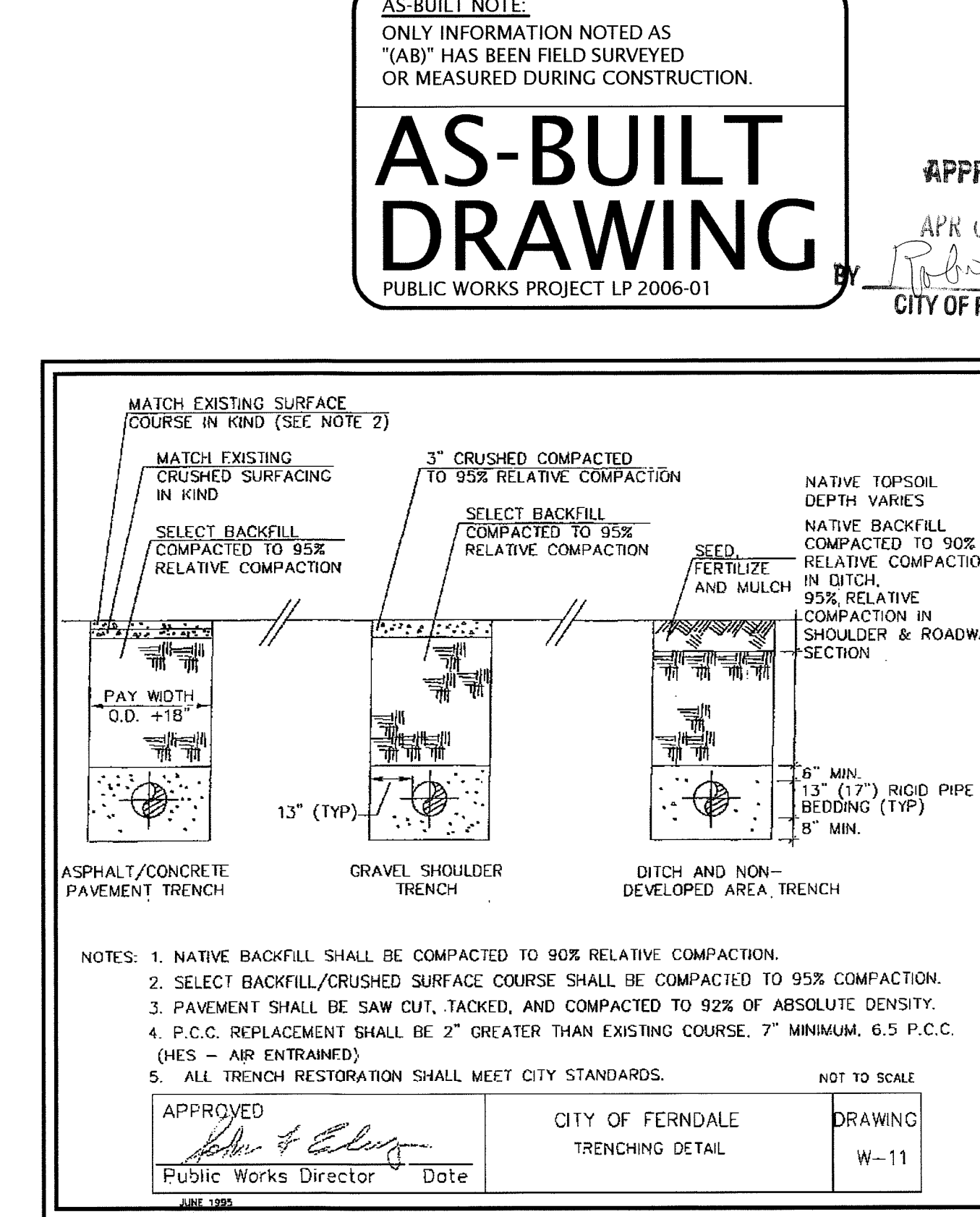
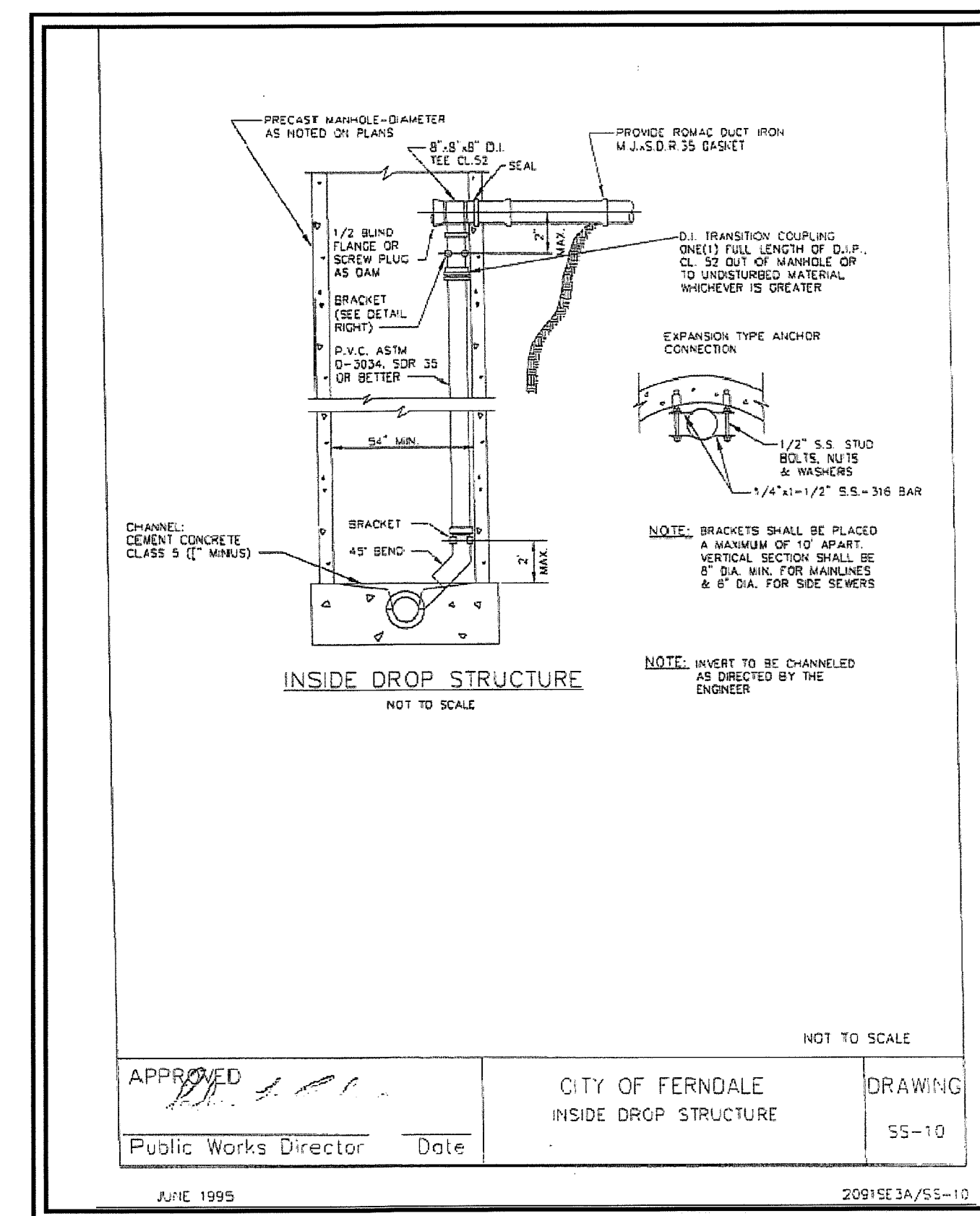
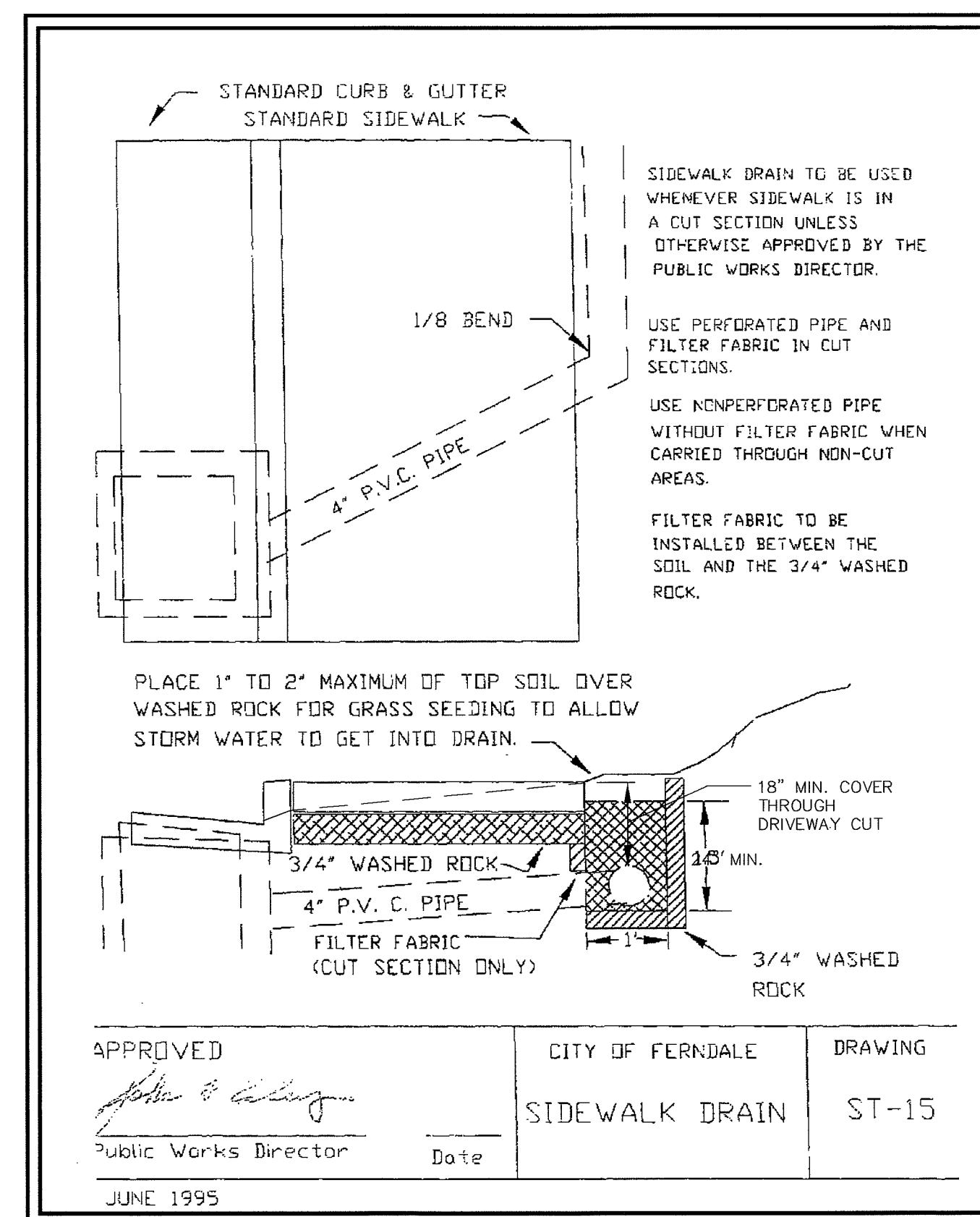
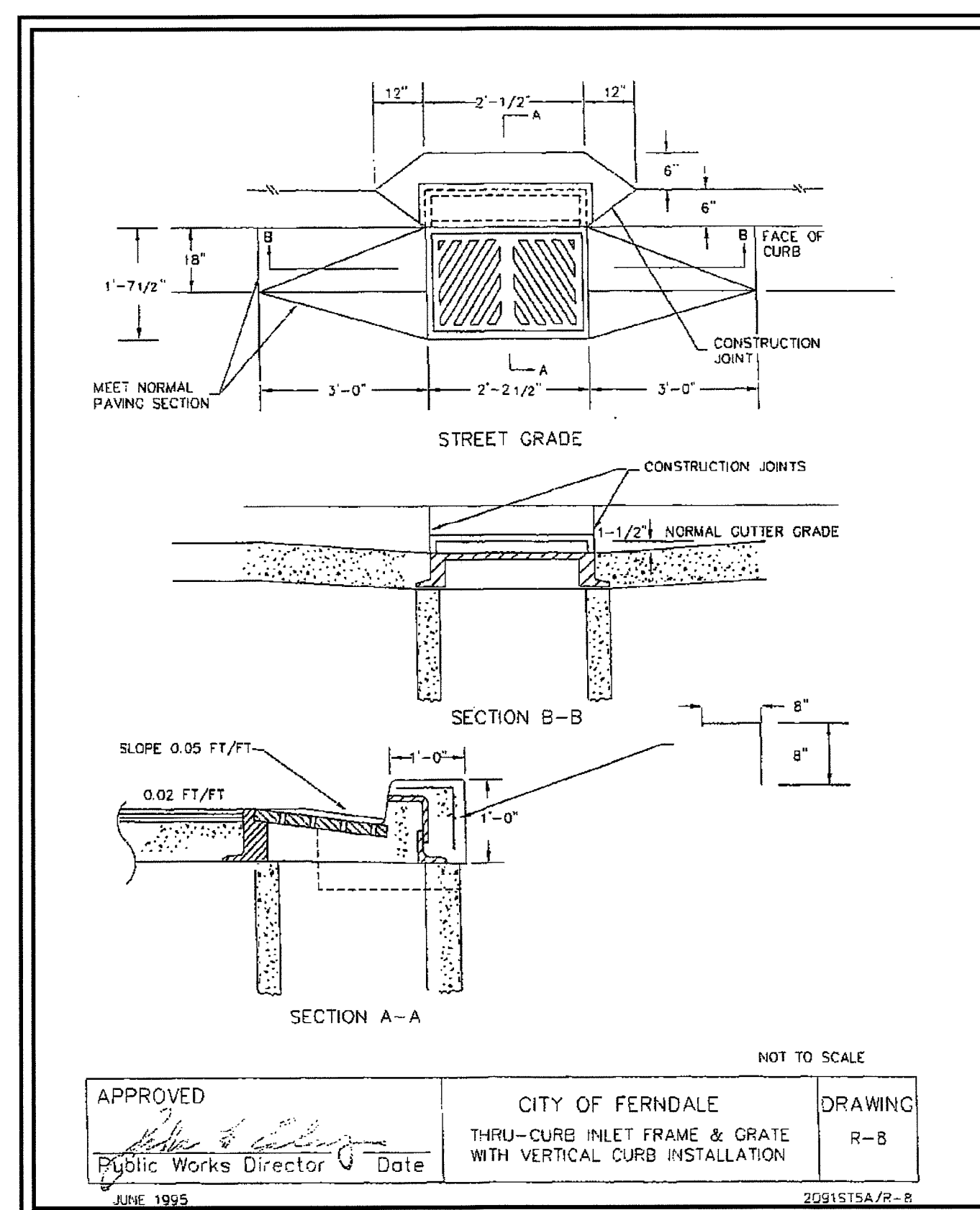
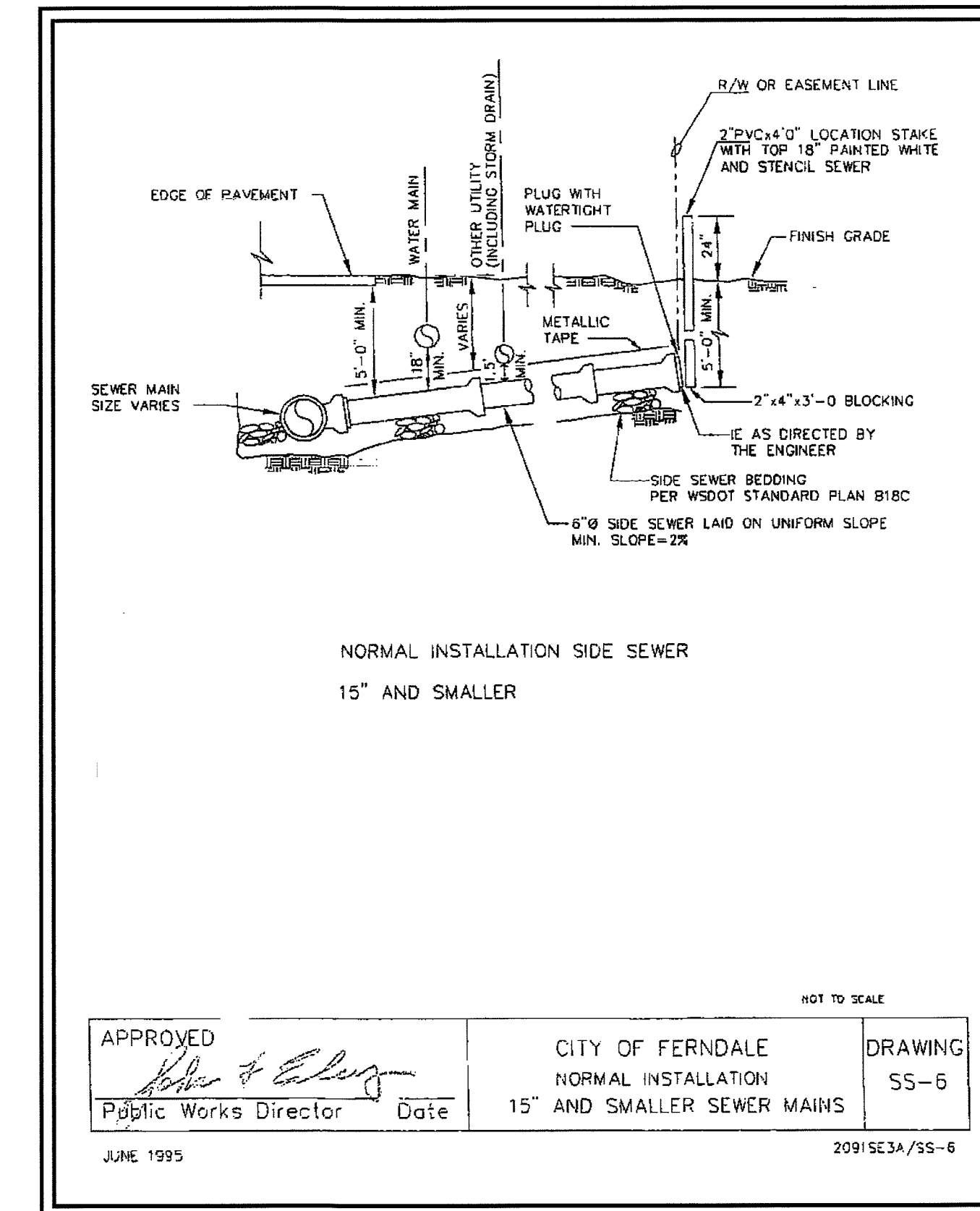
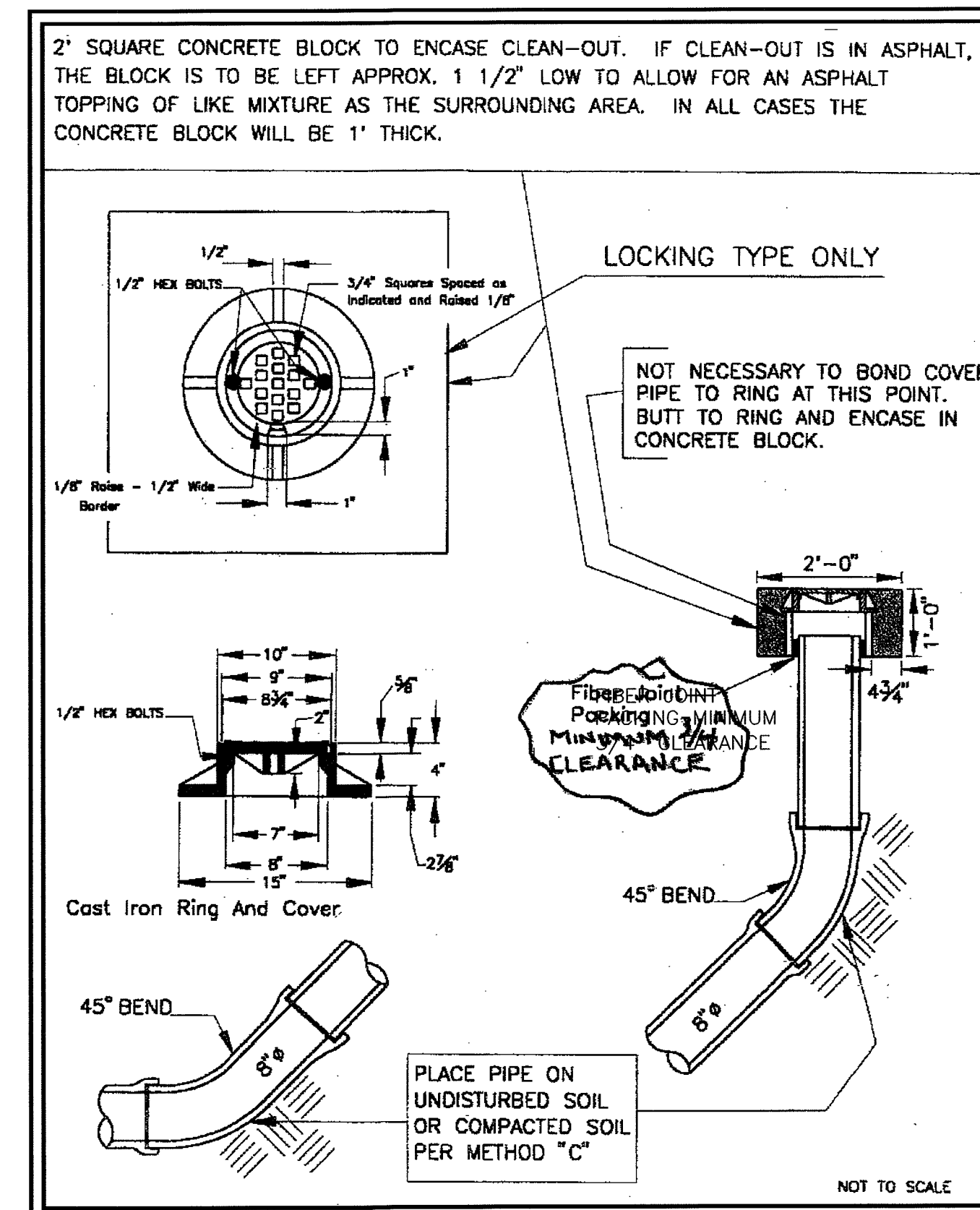
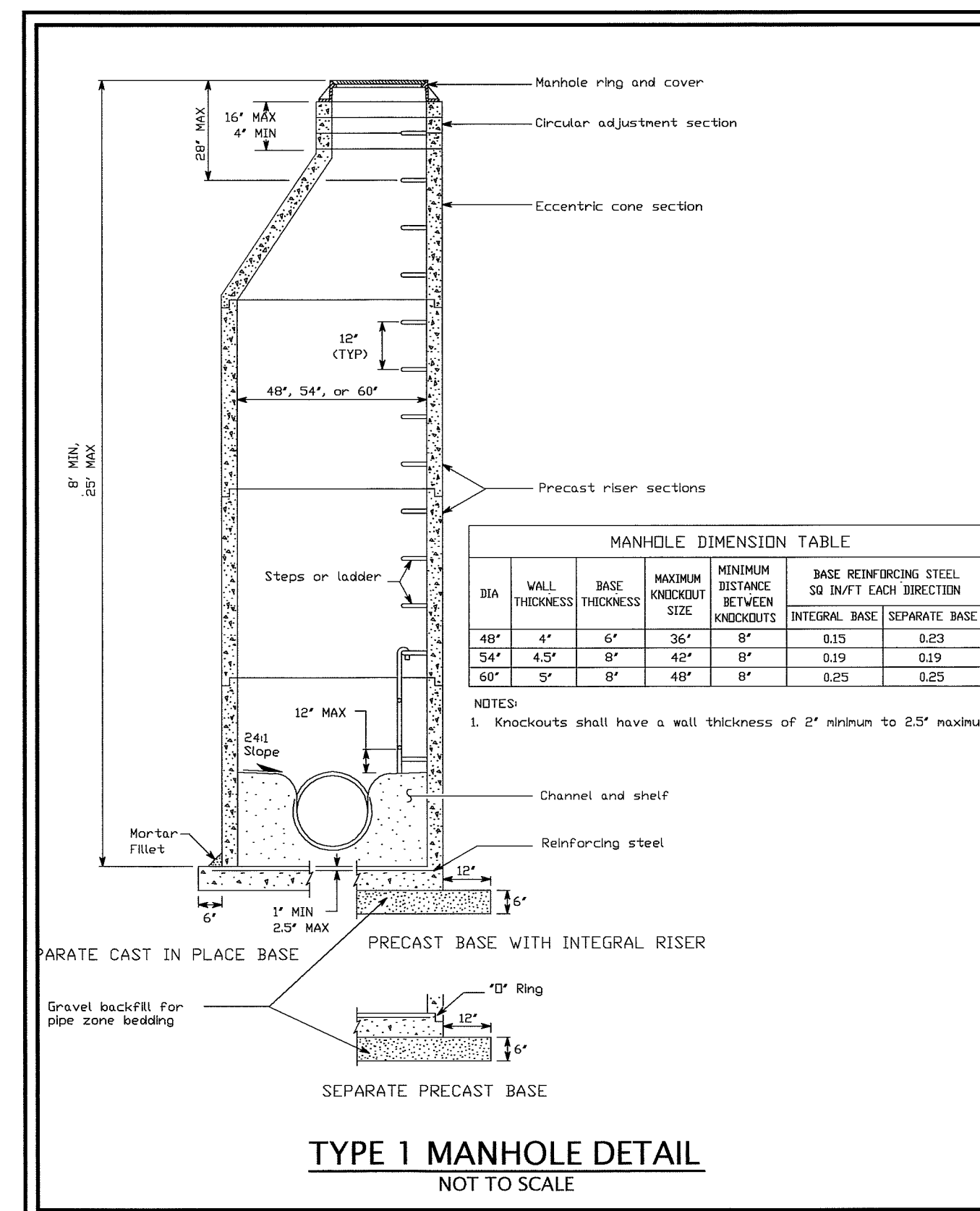
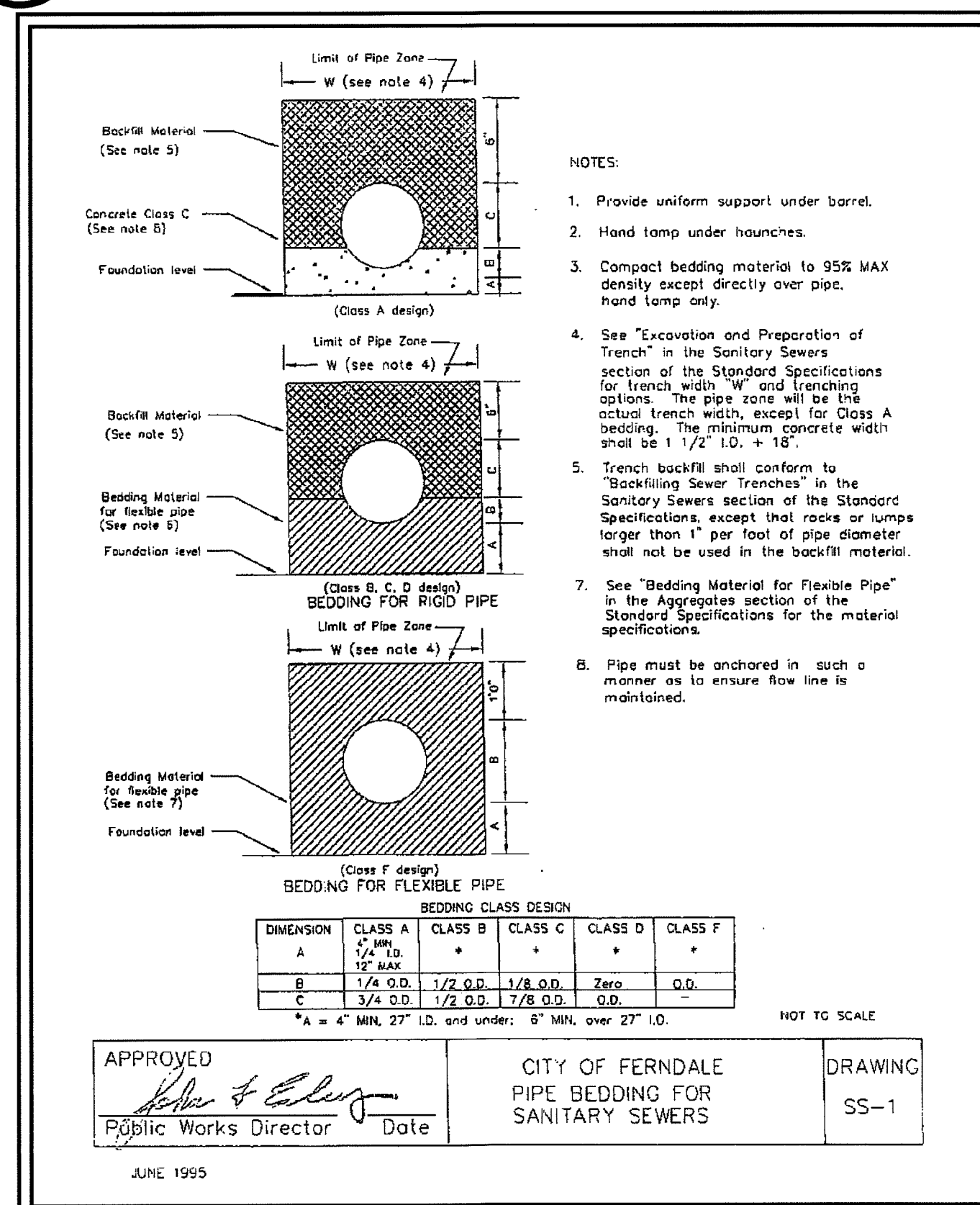


KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
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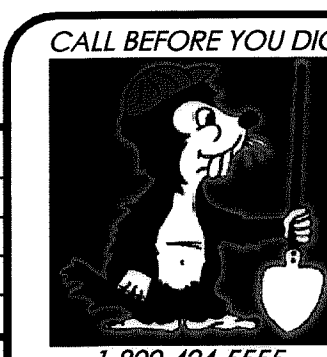
HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
**ROADWAY & SURFACE
IMPROVEMENT DETAILS**
JOB #: 93084
SHEET 23 OF 26



SANITARY SEWER & STORM DRAINAGE DETAILS



FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
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STAKING:				DESIGN	BEA	JVY	VERT: N.A.			& ROLLED CURB IN CUL-DE-SACS		6	AS-BUILT PLANS (PRELIM.) 02/20/06
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KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS

**SANITARY SEWER & STORM
DRAINAGE DETAILS**

JOB #: 93084

SHEET 24 OF 26



8-15-08

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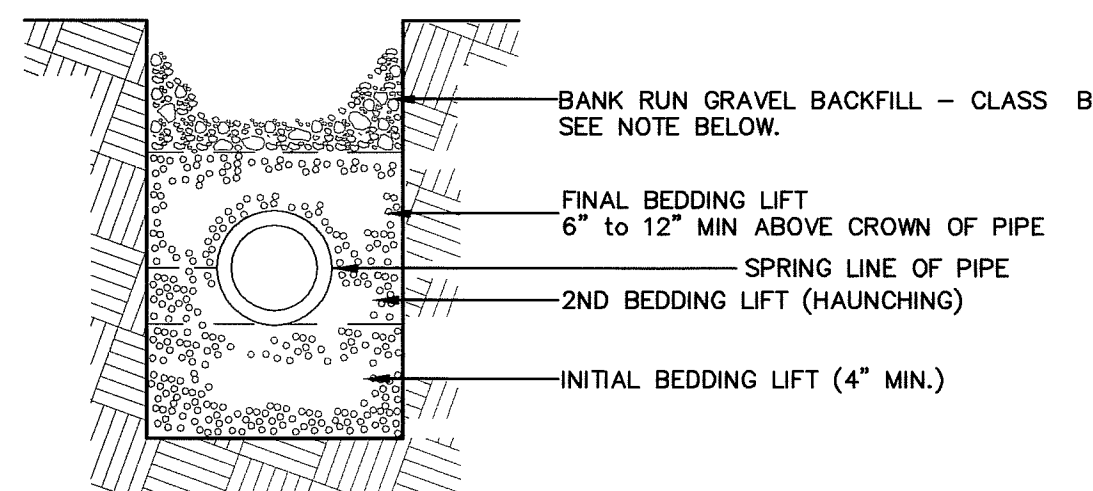
WATER SYSTEM DETAILS

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:

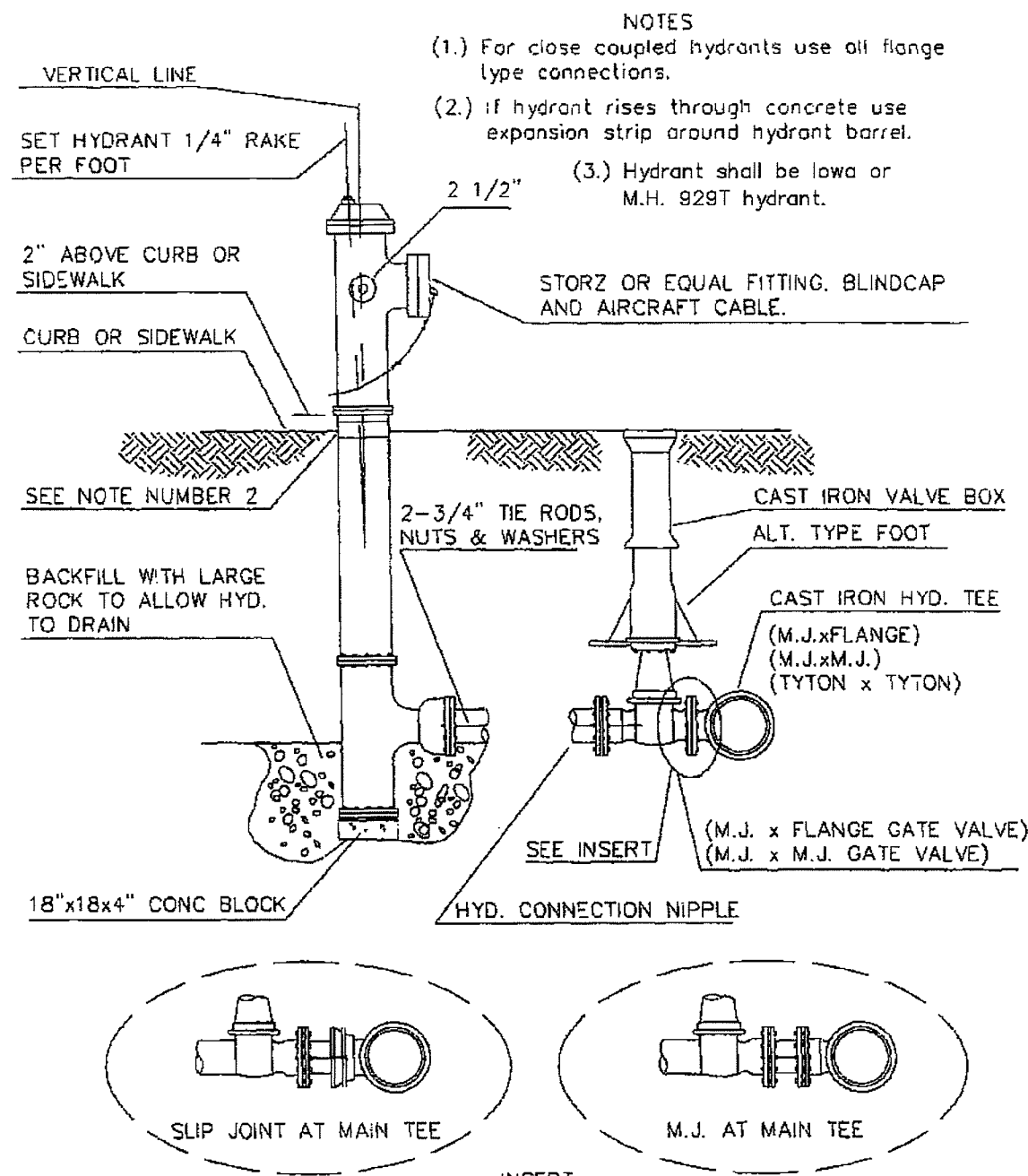
BEDDING FOR DUCTILE IRON PIPE WATERLINE--

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 DEPTH 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.

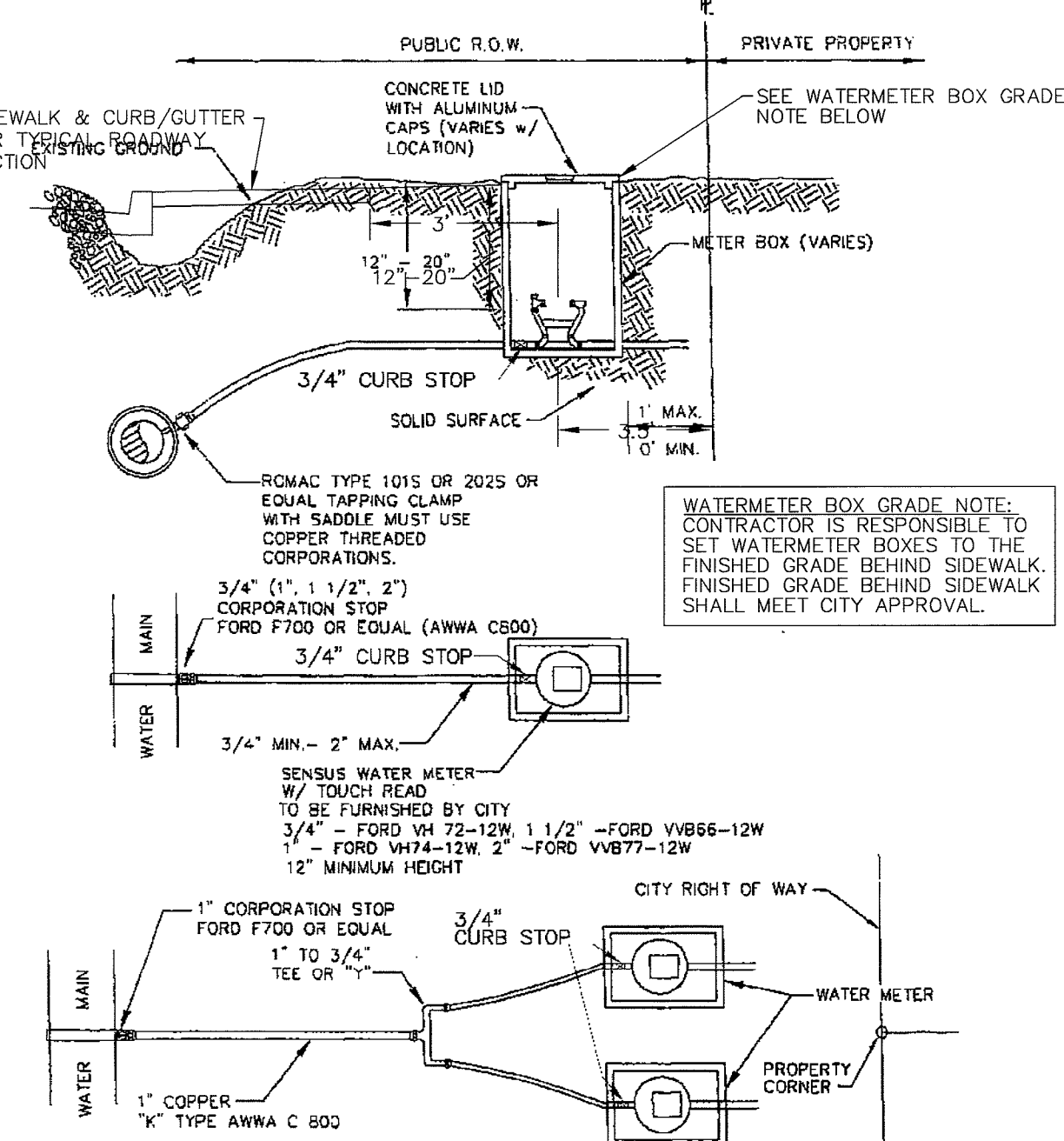


BACKFILL - WHEREVER A TRENCH IS EXCAVATED IN THE EXISTING OR PROPOSED ROADWAY, SIDEWALK OR OTHER AREAS WHERE SETTLEMENT WOULD BE DETRIMENTAL, THE ENTIRE TRENCH SHALL BE BACKFILLED WITH IMPORTED GRAVEL AND COMPACTED TO 95% OF MAXIMUM DENSITY.

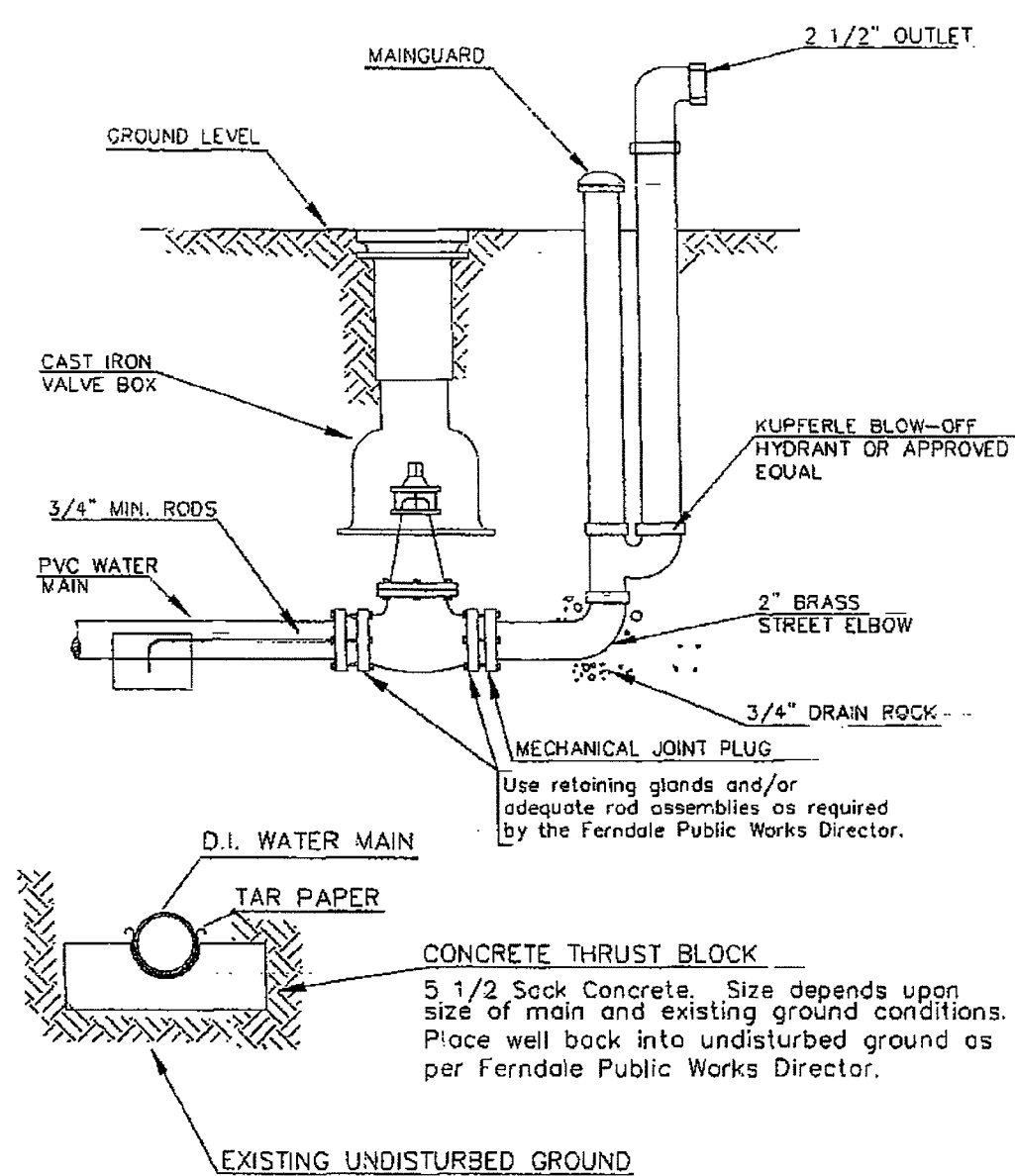
DIP WATERLINE BEDDING DETAIL



APPROVED: [Signature] CITY OF FERDALE FIRE HYDRANT ASSEMBLY DRAWING W-1
Public Works Director Date
JUNE 1995

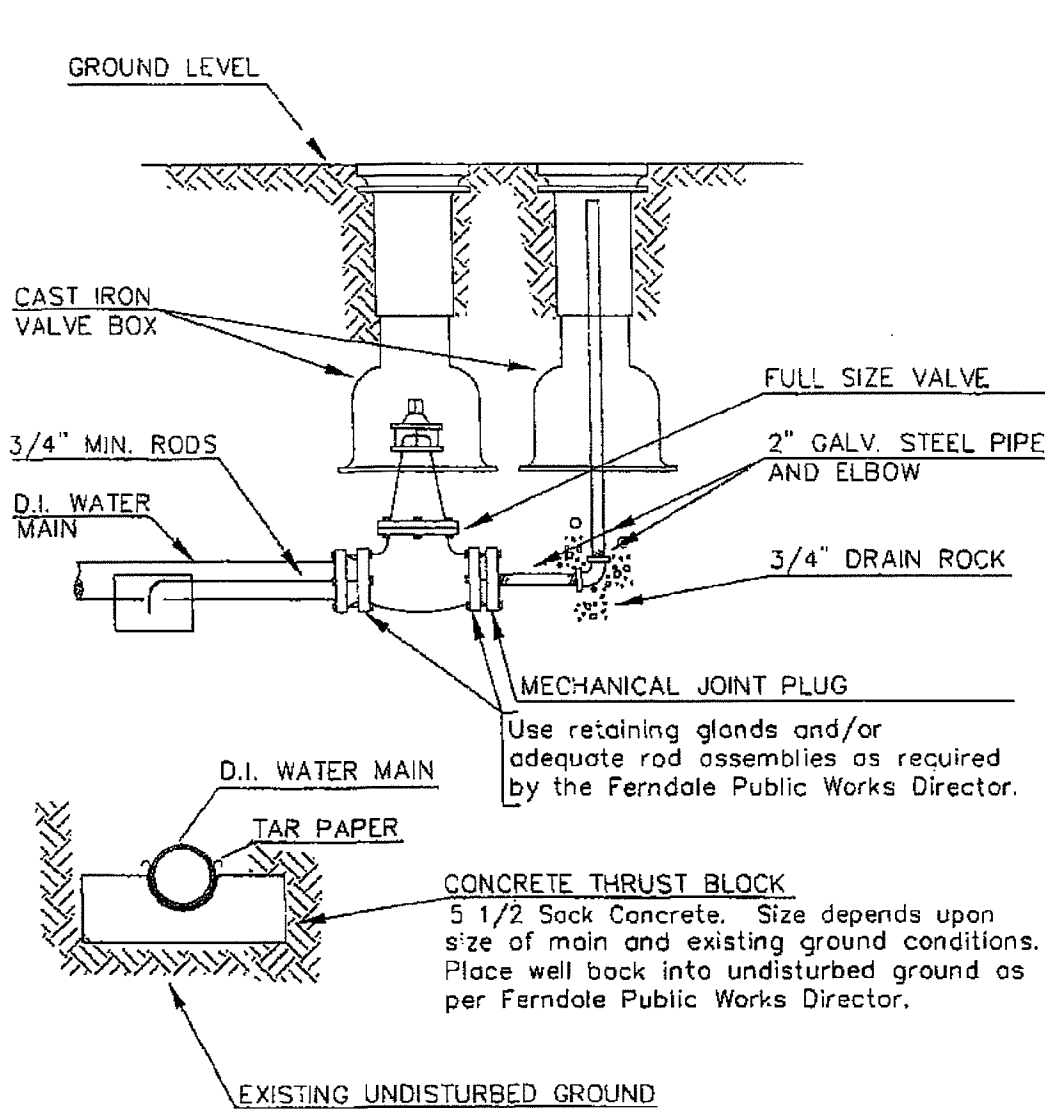


APPROVED: [Signature] CITY OF FERDALE TYPICAL WATER SERVICE (3/4" TO 2") DRAWING W-5
Public Works Director Date
JUNE 1995



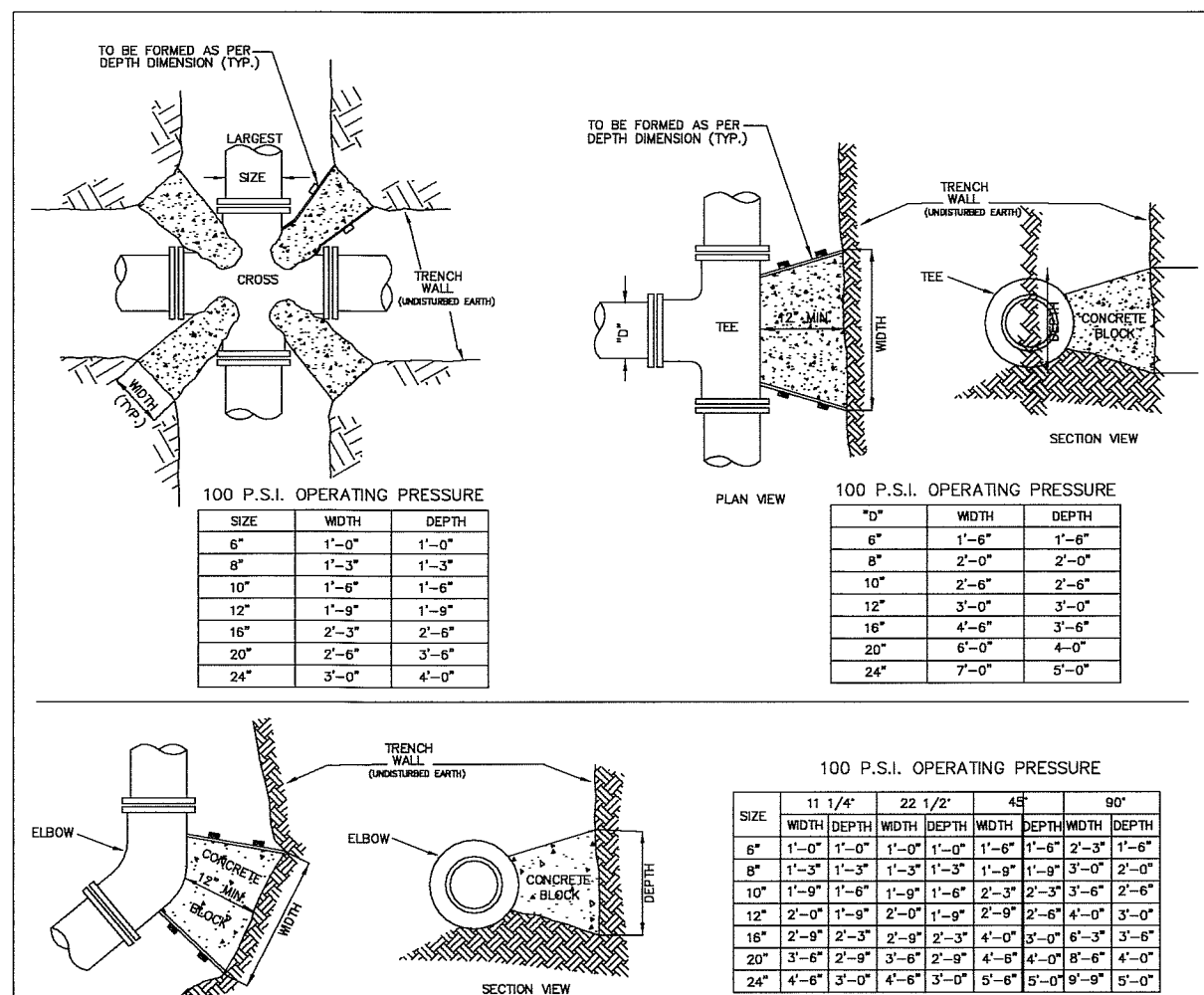
2" blow-off, non-extendable main to be used where mains will not be extended. For mains with future extension, refer to 2" blow-off.

APPROVED: [Signature] CITY OF FERDALE 2" BLOW-OFF NON-EXTENDABLE MAIN DRAWING W-10
Public Works Director Date
JUNE 1995



2" blow-off to be used where the main will be extended in the future. For mains with no further extension, refer to 2" blow-off, non-extendable main.

APPROVED: [Signature] CITY OF FERDALE 2" BLOW-OFF WATER MAIN EXTENSION DRAWING W-9
Public Works Director Date
JUNE 1995



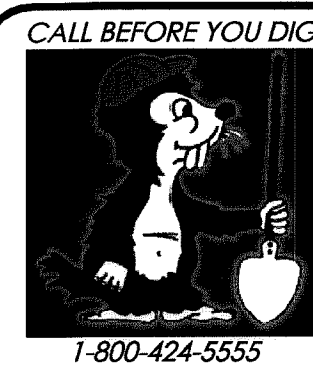
THRUST BLOCK DETAILS

NTS

BY [Signature] CITY OF FERDALE

AS-BUILT NOTE:
ONLY INFORMATION NOTED AS "AB" HAS BEEN FIELD SURVEYED OR MEASURED DURING CONSTRUCTION.
AS-BUILT DRAWING
PUBLIC WORKS PROJECT LP 2006-01

FIELD BOOKS	TBM. NO.	LOCATION	ELEV.	DATA	DRAWN BY	CHECKED BY	SCALE	REV	DATE	DESCRIPTION	BY	No.	DATE
DESIGN: SEE SURVEY NOTES, SHEET 1				BASE	BEA	BEA	HORIZ: N.A.	1	08/07/06	ROAD PROFILES REVISED INC. ASSOC. UTILITIES & ROLLED CURB IN CUL-DE-SACS	BEA	5	AS-BUILT PLANS (PRELIM.) 07/03/07
STAKING:				DESIGN	BEA	JVY	VERT: N.A.					6	AS-BUILT PLANS (PRELIM.) 02/20/08
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SURVEY REFERENCE	VERTICAL DATUM	PLAN CHECK	REVISIONS	ISSUE									

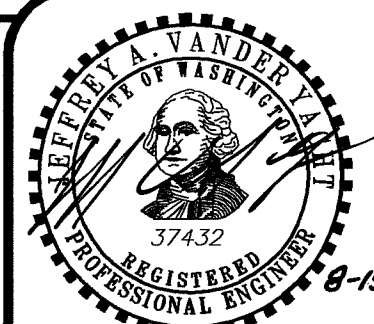


KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
WATER SYSTEM DETAILS

JOB #: 93084

SHEET 25 OF 26



8-15-08



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1812 CORNWALL, BELLINGHAM, WA 98225 PHONE:671.7387 FAX:671.4685
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GENERAL CONSTRUCTION NOTES

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, A:
 - 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
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- 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.
- PROJECT SURVEYOR OR THEIR DESIGNEE SHALL SURVEY THE ELEVATION OF THE COMPLETED SUBGRADE ALONG THE ROADWAY CENTERLINE AT 25-FOOT INTERVALS. THE PROJECT SURVEYOR SHALL SUBMIT THE SURVEY DATA TO THE CITY OF FERDALE AND THE ENGINEER FOR REVIEW. ALL SUBGRADE ELEVATIONS SHALL BE AT OR BELOW THE DESIGN SUBGRADE ELEVATION. NO TOLERANCE IS PROVIDED FOR SUBGRADE ABOVE THE DESIGN SUBGRADE ELEVATION. OTHER METHODS OF SUBGRADE CERTIFICATION MAY BE USED IF MUTUALLY AGREED UPON BY THE CITY, CONTRACTOR, AND ENGINEER.
- ROADWAY EXCAVATION WITHIN THE ROADWAY PRISM SHALL BE CUT TO A UNIFORM GRADE. THE COMPLETED SUBGRADE SURFACE SHALL NOT VARY MORE THAN 0.10-FOOT FROM THE LOW EDGE OF A 15-FOOT STRAIGHTEDGE PLACED ON THE SUBGRADE PARALLEL TO THE CENTERLINE UNLESS APPROVED BY THE ENGINEER.
- 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 PROVIDE A SMOOTH TRANSITION FROM EXISTING TO PROPOSED PAVING. CONTRACTOR SHALL COLD PLANE PER DIMENSIONS SPECIFIED ON THE PLANS, AND INSTALL A MINIMUM 2-FOOT WIDE PETROCRAC PAVING FABRIC, OR EQUIVALENT, OVER JOINT BETWEEN PAVING LIFTS.
 - 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
 - MAILBOX STRUCTURES SHALL BE IN ACCORDANCE WITH DETAIL SHEET 15, FINAL LOCATION AS DETERMINED BY USPS AND APPROVED BY CITY OF FERDALE.
 - MAILBOXES SHALL BE TYPE I, II, AND/OR III - CBU (CENTRAL BOX UNIT), USPS APPROVED.

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.
- BACK OF WALK DRAIN SHALL BE 4" SMOOTH WALL PERFORATED PVC PIPE, ASTM D 3034 SDR35, INSTALLED IN CUT SECTIONS PER COFSD ST-15.
- 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 80-55-06".
- 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.
- EACH DRAINAGE SERVICE STUB SHALL BE CAPPED WITH A WATERTIGHT PLUG. EACH STUB SHALL BE MARKED FOR LOCATION WITH A 2" DIA. WHITE PVC PIPE (MIN. SCHEDULE 40) WITH THE TOP 18" STENOILED WITH THE WORD "STORM" AND THE PIPE INVERT INDICATED. THE LOCATION MARKER SHALL BE CONNECTED TO THE SERVICE STUB BY A #12 COPPER WIRE.
- LOT/ROOF DRAIN SERVICES SHALL BE MIN. 4" PVC PIPE, ASTM D 3034 SDR35. 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, TYPE 1L, OR TYPE 2 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" SSM 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-5 (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 5 FEET BEYOND UTILITY CORRIDOR OR 15 FEET BEYOND RIGHT-OF-WAY LINE.
- EACH SIDE SEWER STUB SHALL BE CAPPED WITH A WATERTIGHT PLUG. EACH STUB SHALL BE MARKED FOR LOCATION WITH A 2" DIA. PVC PIPE (MIN. SCHEDULE 40) WITH THE TOP 18" PAINTED GREEN AND STENOILED WITH THE WORD "SEWER" AND THE PIPE INVERT INDICATED. 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 BLOW-OFF ASSEMBLY FIRE HYDRANT ASSEMBLY THRUST BLOCKING WATER SERVICE	SEE DETAIL, SHEET 16 COFSD W-11 & WSDOT STD. SPEC. SEC. 9-03.12 COFSD W-9 & W-10 COFSD W-1 COFSD W-2, W-3 & W-4 COFSD W-6, & DETAIL SHEET 16
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- ALL WATER MAIN 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 - 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 SECTION 7-09.3 OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE OR MUNICIPAL CONSTRUCTION - CURRENT EDITION. HYDROSTATIC TEST PRESSURE FOR WATER MAIN ACCEPTANCE SHALL BE 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 NON-SHOCK SHUT-OFF PRESSURE OF 130 PSI AND SUITABLE FOR DIRECT BURIAL ARE SPECIFIED. GATE VALVES SHALL BE RESILIENT SEATED IRON-BODY, FULL-BRONZE MOUNTED VALVES CONFORMING TO AWWA C509 AND SUITABLE FOR SERVICE WITH THE TYPE AND CLASS OF PIPE USED.

ALL VALVES SHALL HAVE NON-RIISING 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 SERVICE STUB ENDS SHALL BE MARKED FOR LOCATION WITH A 4" LONG 2" X 4" TIMBER, PAINTED BLUE.
- CONTRACTOR IS RESPONSIBLE TO SET WATERMETER BOXES TO THE FINISHED GRADE BEHIND SIDEWALK. FINISHED GRADE BEHIND SIDEWALK SHALL MEET CITY APPROVAL.
- 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.
 - 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 200 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.

AS-BUILT NOTE:
ONLY INFORMATION NOTED AS
" (AB)" HAS BEEN FIELD SURVEYED
OR MEASURED DURING CONSTRUCTION.

AS-BUILT
DRAWING
PUBLIC WORKS PROJECT LP 2006-01

APPROVED

APK 02.2009
BY *[Signature]*
CITY OF FERDALE

CALL BEFORE YOU DIG

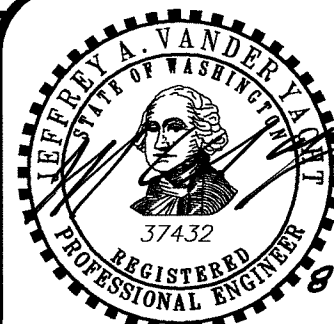


KINGMA BROS. DEVELOPMENT
33677 ARCADIAN WAY
ABBOTTSFORD, BC V2S 7T4

HERON CREST P.U.D.
ROADWAY & UTILITY IMPROVEMENT PLANS
GENERAL CONSTRUCTION
NOTES

JOB #: 93084

SHEET 26 OF 26



8-15-08