

**CANTERWOOD DIVISION 12**  
**LOCATION AND ALIGNMENT**  
**Sanitary Sewer S.T.E.P Force Main**  
**GIG HARBOR, WA**

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DESIGNED BY: BCallagan  
DRAWN BY: JHannan

REVISIONS		
NO.	DATE	BY
AS-BUILT	8/5/04	DPW

JOB NO: P:\Canterwood Div12

COVER SHEET



OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

COVER SHEET

"AS-BUILT DRAWING"

**C-1**  
OF SHEETS

# CANTERWOOD DIVISION 12 SEWER IMPROVEMENTS

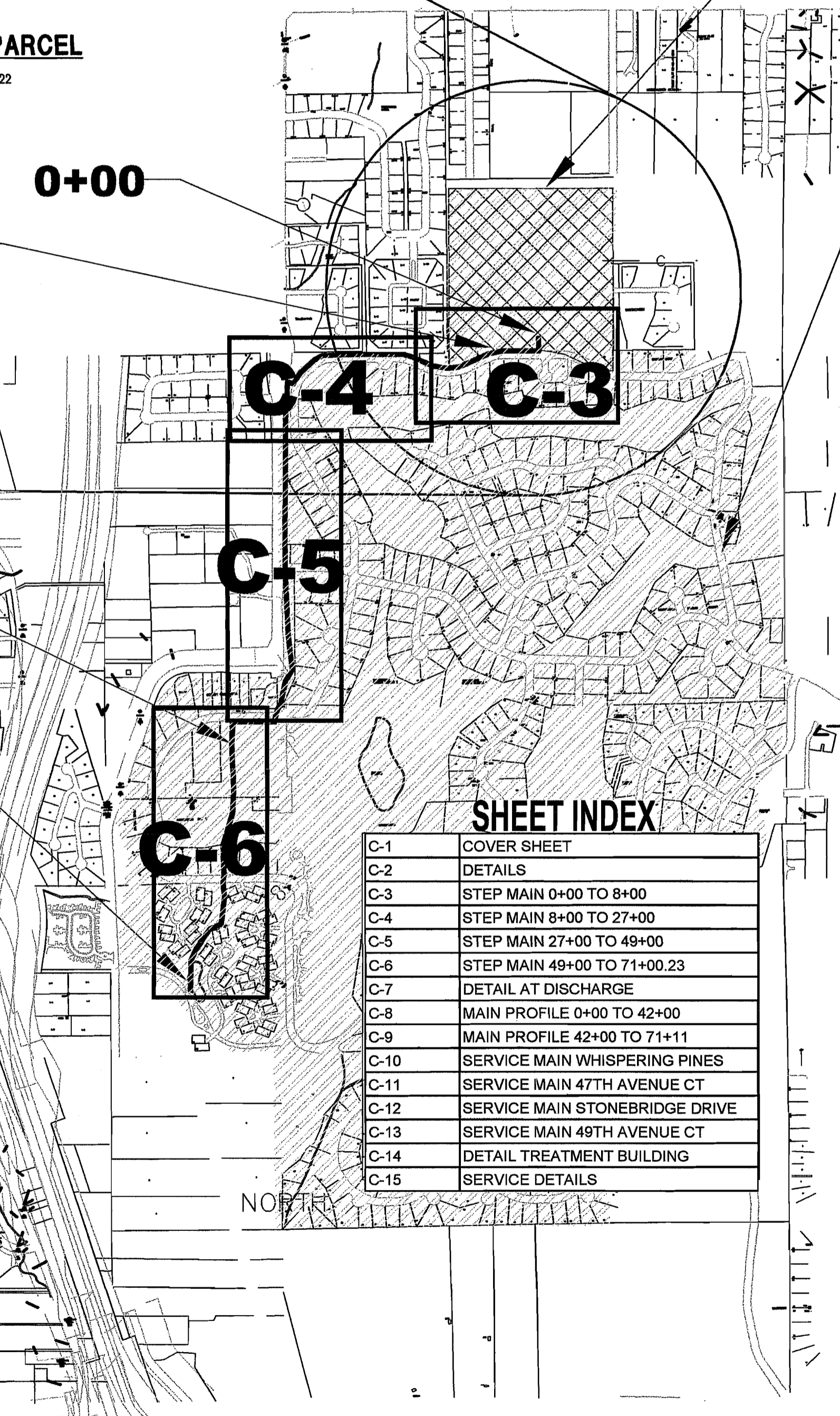
Township 22 N, Range 2 East, Section 19 (NW 1/4)

## LEGAL DESCRIPTION OF SERVED PARCEL

THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 19, TOWNSHIP 22 NORTH, RANGE 2 EAST, W.M.  
SITATE IN PIERCE COUNTY, WASHINGTON

**TREATMENT BUILDING**

**C-7 TERMINAL MANHOLE**

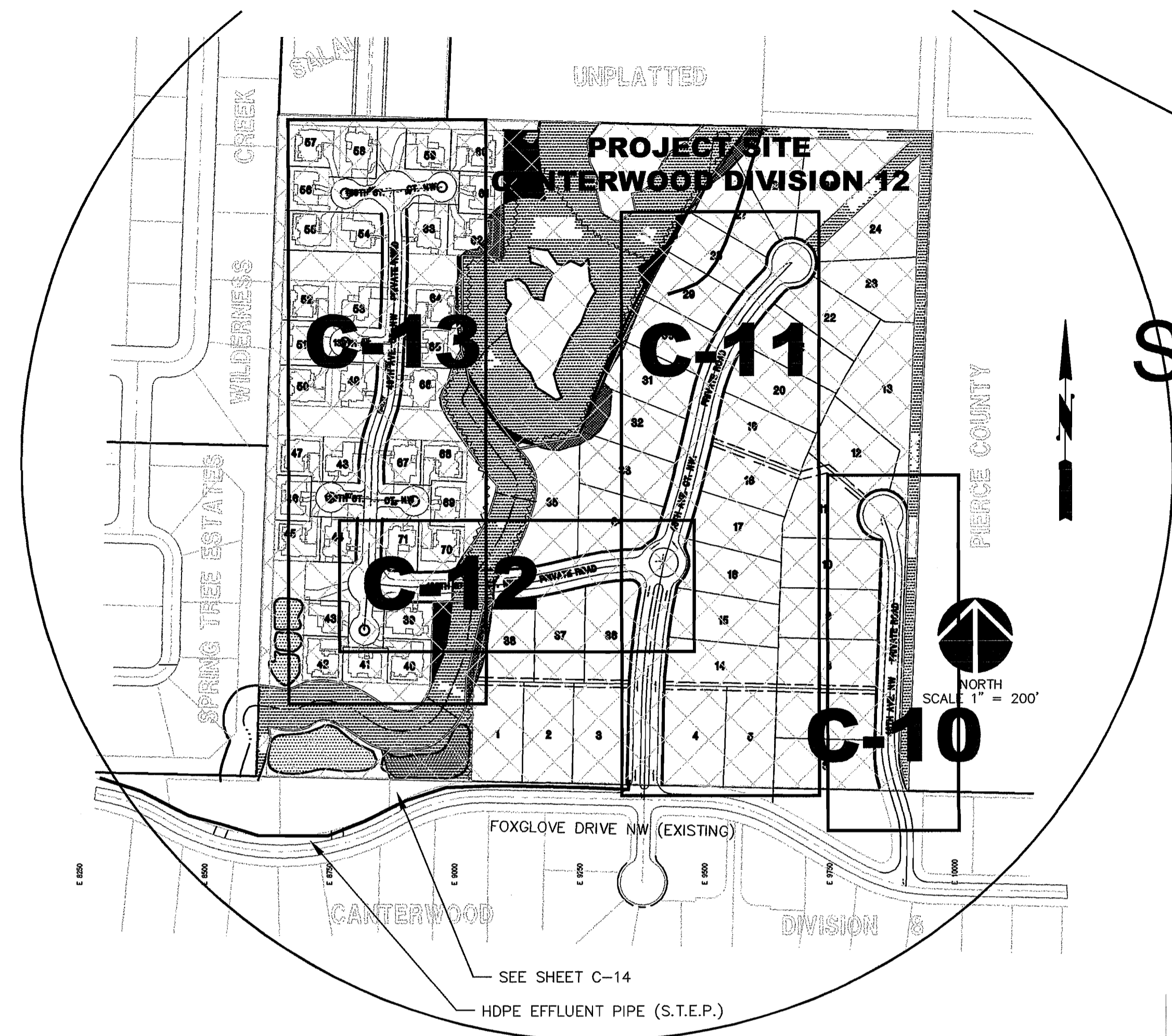


SHEET INDEX	
C-1	COVER SHEET
C-2	DETAILS
C-3	STEP MAIN 0+00 TO 8+00
C-4	STEP MAIN 8+00 TO 27+00
C-5	STEP MAIN 27+00 TO 49+00
C-6	STEP MAIN 49+00 TO 71+00.23
C-7	DETAIL AT DISCHARGE
C-8	MAIN PROFILE 0+00 TO 42+00
C-9	MAIN PROFILE 42+00 TO 71+11
C-10	SERVICE MAIN WHISPERING PINES
C-11	SERVICE MAIN 47TH AVENUE CT
C-12	SERVICE MAIN STONEBRIDGE DRIVE
C-13	SERVICE MAIN 49TH AVENUE CT
C-14	DETAIL TREATMENT BUILDING
C-15	SERVICE DETAILS

**VICINITY MAP**  
8" = 1 MILE

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER



## PROPOSED 3" HDPE S.T.E.P. FORCE MAIN

S.T.E.P. FORCE MAIN TO BE  
3" HDPE SDR 9 AND 2" HDPE SDR 9  
PE 3408 PIPE  
MEETING THE STANDARDS OF  
ASTM D3035 AND F714

Datum  
Pierce County BM L1, Per book 1, Page 15, of Benchmarks.  
Elevation Control for Canterwood

### GENERAL NOTES

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH CITY OF GIG HARBOR STANDARDS AND THE MOST CURRENT COPY OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL IN ACCORDANCE WITH M.U.T.C.D. PRIOR TO DISRUPTION OF ANY TRAFFIC. TRAFFIC CONTROL PLANS SHALL BE PREPARED AND SUBMITTED TO THE CITY FOR APPROVAL. NO WORK SHALL COMMENCE UNTIL ALL APPROVED TRAFFIC CONTROL IS IN PLACE.
- SEE CITY OF GIG HARBOR PUBLIC WORKS STANDARDS FOR TESTING AND SAMPLING FREQUENCIES.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS, EASEMENTS AND RELEASES REQUIRED FOR THIS PROJECT.
- THE CONTRACTOR SHALL MAINTAIN A SET OF THE CITY OF GIG HARBOR APPROVED CONSTRUCTION DRAWINGS ON SITE DURING CONSTRUCTION. THESE DRAWINGS SHALL BE USED BY THE CONTRACTOR FOR NECESSARY DOCUMENTATION OF AS BUILT CONDITIONS AND SHALL BE PROVIDED TO THE ENGINEER FOLLOWING PROJECT COMPLETION.
- THE EXISTING UTILITIES AND SERVICES HAVE BEEN SHOWN IN THEIR APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE ONE CALL NUMBER IS 1-800-424-5555. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES FROM DAMAGE AND REPAIR ANY DAMAGE CAUSED BY HIS/HER OPERATIONS.
- IT SHALL BE THE APPLICANT'S OR HIS CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES TO COORDINATE CONSTRUCTION. ALL UTILITY RELOCATIONS, REMOVAL AND/OR ABANDONMENTS SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY COMPANY AND PERFORMED IN ACCORDANCE WITH CITY STANDARDS. LOCAL UTILITY COMPANIES ARE SHOWN ON THE COVER SHEET OF THESE CONSTRUCTION DRAWINGS.
- THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER UPON DISCOVERY OF POOR SOILS, GROUNDWATER, UNANTICIPATED CONDITIONS, OR DISCREPANCIES IN THE EXISTING CONDITIONS AS NOTED ON THE PLANS.
- ANY REVISIONS TO THE APPROVED CONSTRUCTION PLANS SHALL BE REVIEWED AND APPROVED BY THE CITY OF GIG HARBOR PUBLIC WORKS DEPARTMENT PRIOR TO IMPLEMENTATION IN THE FIELD.
- PRIOR TO ACCEPTANCE OF THE PROJECT THE PRESSURE MAINLINE AND SERVICE LINES SHALL BE SUBJECT TO A HYDROSTATIC PRESSURE TEST OF 200 POUNDS FOR 15 MINUTES AND ANY LEAKS OR IMPERFECTIONS DEVELOPING UNDER SAID PRESSURE SHALL BE REMEDIATED BY THE CONTRACTOR. NO AIR WILL BE ALLOWED IN THE LINE. THE MAIN SHALL BE TESTED BETWEEN VALVES. INsofar AS POSSIBLE, NO HYDROSTATIC PRESSURE SHALL BE PLACED AGAINST THE OPPOSITE SIDE OF THE VALVE BEING TESTED. THE PRESSURE TEST SHALL BE MAINTAINED WHILE THE ENTIRE INSTALLATION IS INSPECTED.

### PROJECT DIRECTORY

**OWNER/APPLICANT:**  
RUSH CONSTRUCTION COMPANY  
5715 WOLLOCHET DR. NW  
GIG HARBOR, WA. 98335  
(253) 858-3636 T  
(253) 858-3188 F

**DEVELOPER & CONTRACTOR**  
RUSH CONSTRUCTION COMPANY  
5715 WOLLOCHET DR. NW  
GIG HARBOR, WA. 98335  
(253) 858-3636 T  
(253) 858-3188 F

**CIVIL ENGINEERING:**  
NORTH PACIFIC DESIGN  
BRIAN CALLAGAN, P.E.  
5715 WOLLOCHET DR. NW  
GIG HARBOR, WA. 98335  
(253) 858-8204 T  
(253) 858-3188 F

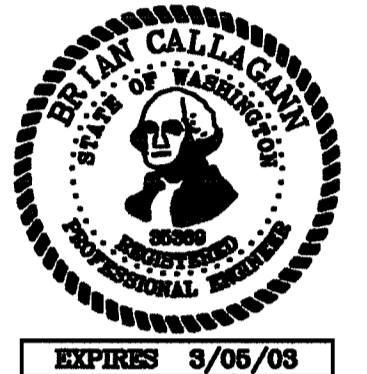
**SURVEYORS:**  
ASPEN LAND SURVEYING  
12904-A Purdy Drive NW  
GIG HARBOR, WASHINGTON 98332  
(253) 857-4265 T  
(253) 857-9265 F

**UTILITIES**

**WATER**  
CANTERWOOD WATER COMPANY  
PENINSULA LIGHT COMPANY  
13315 GOODNOUGH DR. NW  
GIG HARBOR, WA 98335  
(253) 857-5950

**POWER**  
PENINSULA LIGHT COMPANY  
13315 GOODNOUGH DR. NW  
GIG HARBOR, WA 98335  
(253) 857-5950

**Call "One Call" for Buried Cable Location Service at 1-800-424-5555 at least 2 days before digging.**



REVISIONS		
NO.	DATE	BY
REV	3/5/04	CITY
COMMENTS		
AS-BUILT 8/5/04 DPW		

**THRUST LOADS**

PIPE DIAMETER	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	DEAD END OR TEE
3"	2,000	1,100	575	300	1,425

**NOTES:**

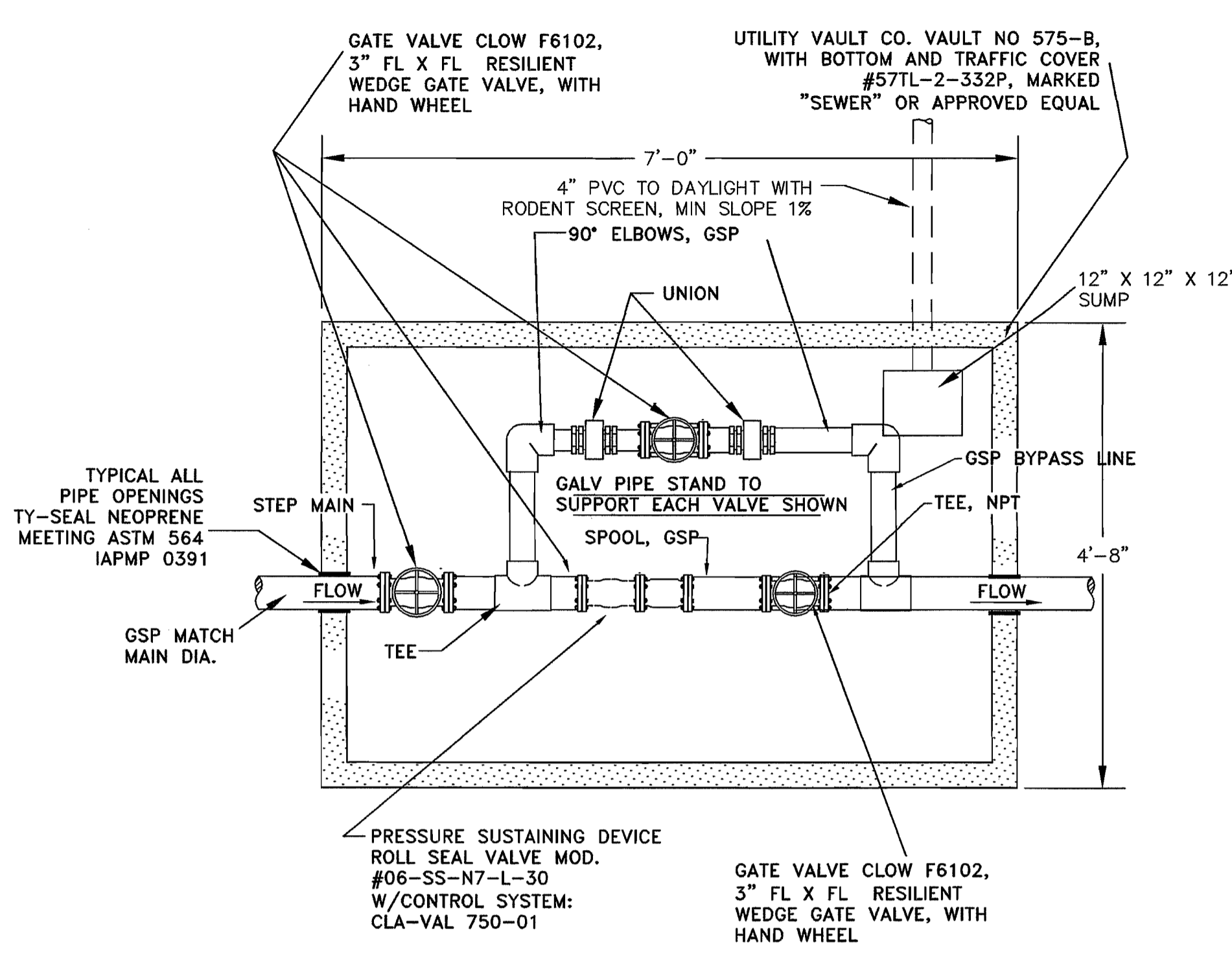
1. BLOCKING SHALL BE COMMERCIAL CONCRETE POURED IN PLACE AGAINST UNDISTURBED EARTH. FITTING SHALL BE ISOLATED FROM CONCRETE THRUST BLOCK WITH PLASTIC OR SIMILAR MATERIAL.
2. TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (S.F.):  
EXAMPLE: 12" - 90° BEND IN SAND AND GRAVEL  
32,000 LBS ÷ 3000 LB/S.F. = 10.7 S.F. OF AREA
3. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZE, PRESSURES AND SOIL CONDITIONS.
4. BLOCKING SHALL BE ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

**SAFE SOIL BEARING LOADS**

FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET

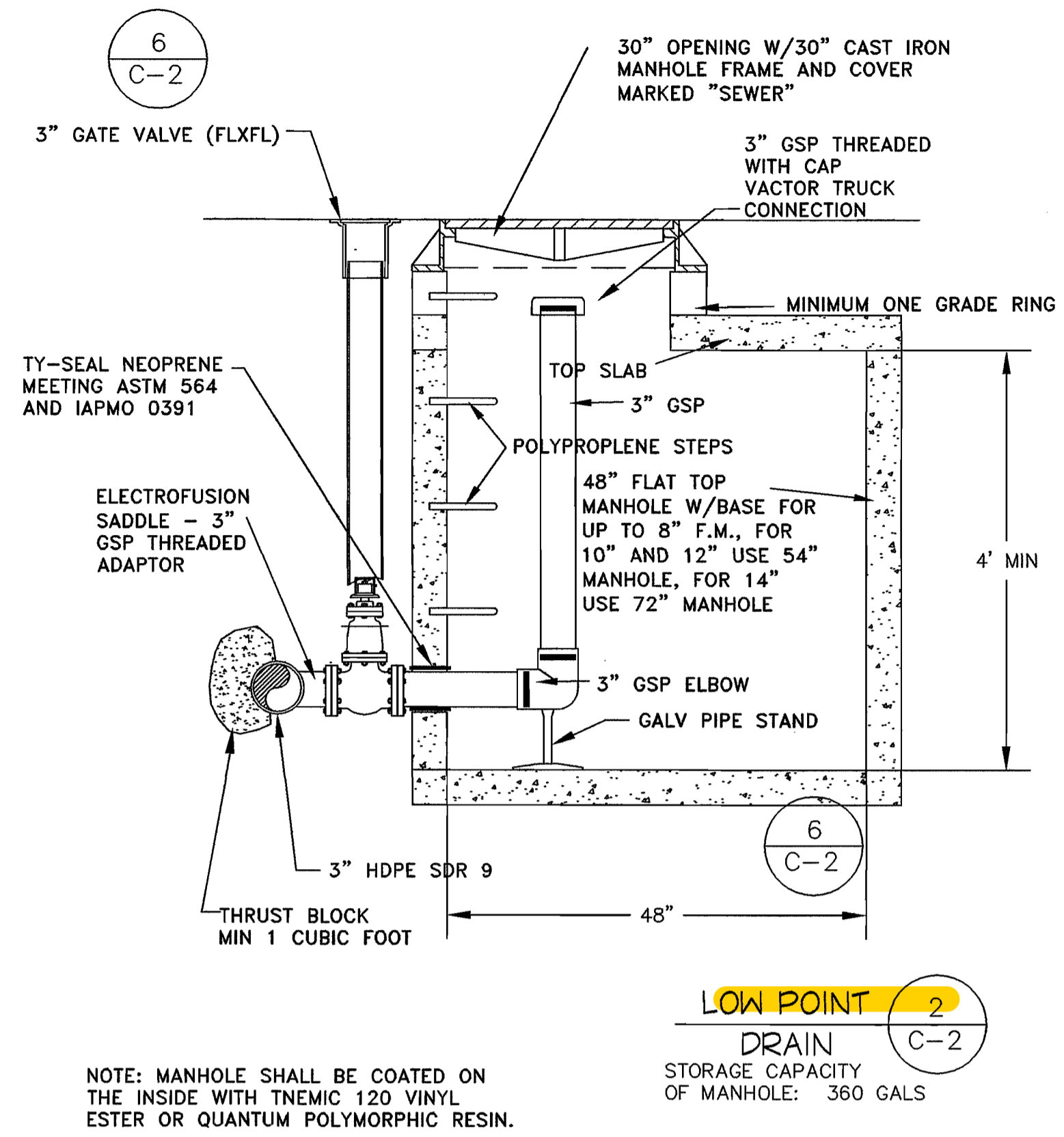
SOIL	POUNDS PER SQUARE FOOT
MUCK, PEAT	0
SOFT CLAY	1,000
SAND	2,000
SAND & GRAVEL	3,000
SAND & GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

THRUST LOADS 3  
C-2



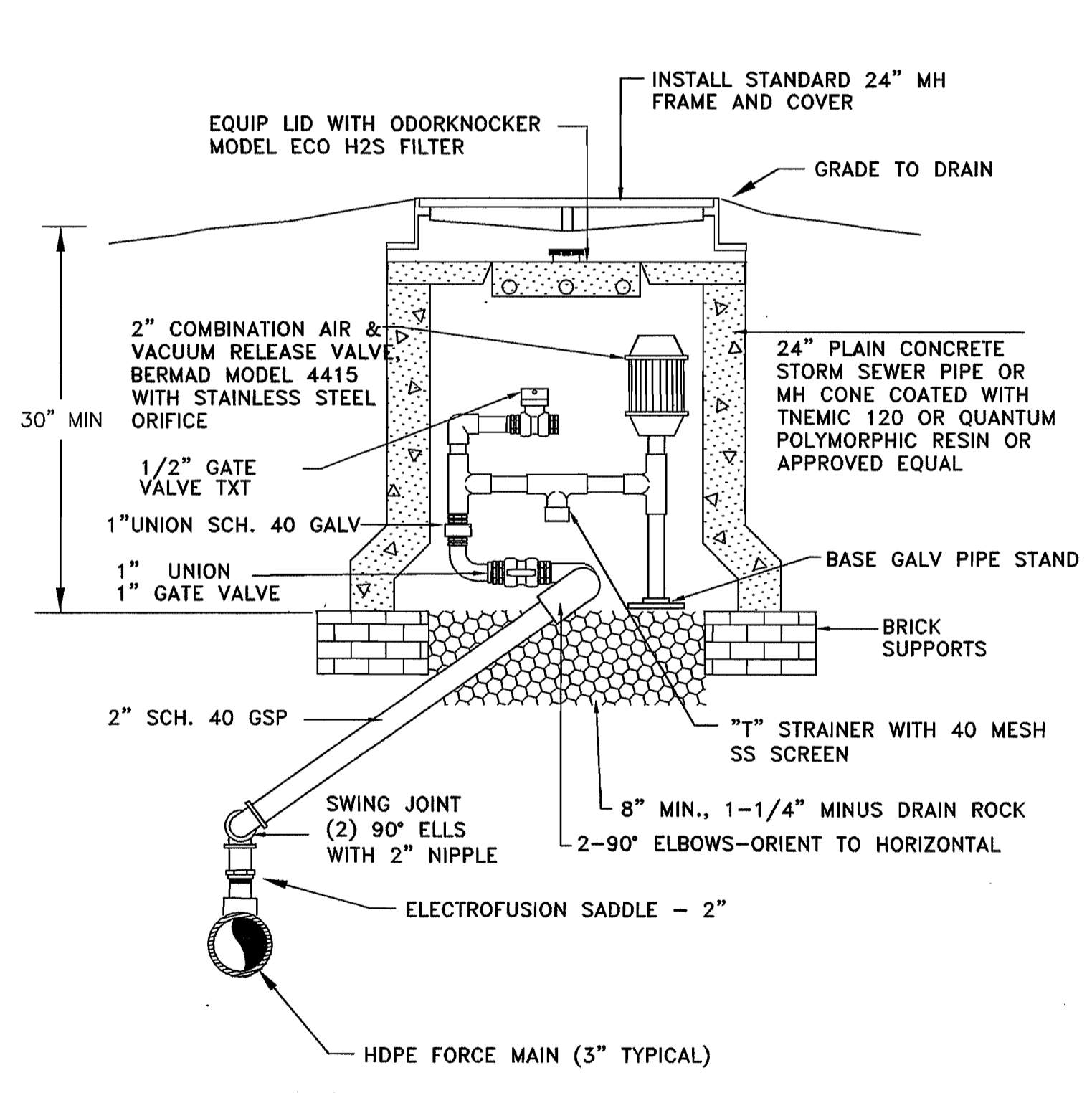
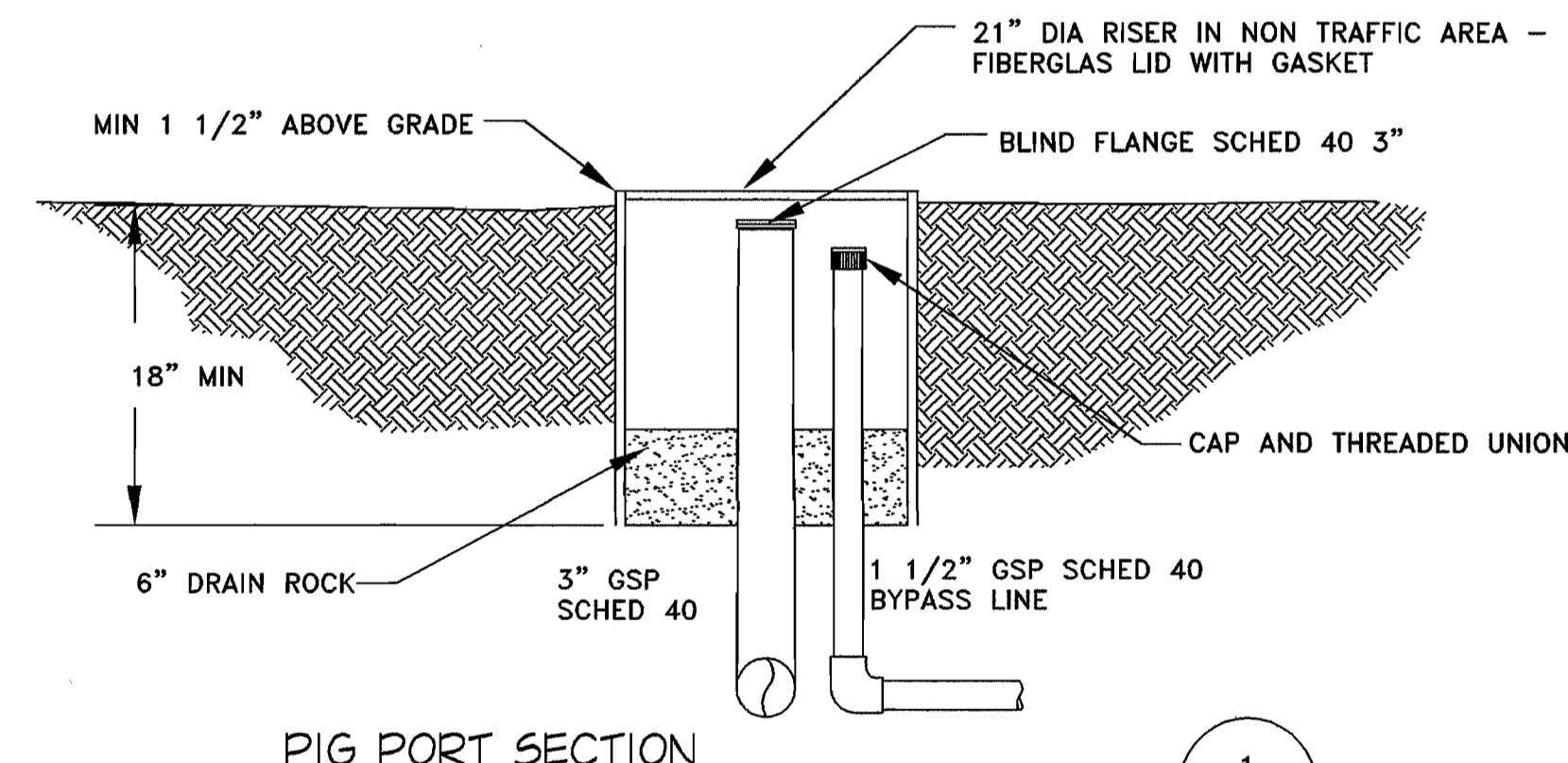
1  
C-2  
PRESSURE SUSTAINING DEVICE

NOTE: ALL PIPE INSIDE AND WITHIN 5 FEET OF VAULT TO BE GALVANIZED STEEL SCHEDULE 40 - INSTALL HDPE TO GSP ADAPTERS AS REQUIRED



2  
C-2  
LOW POINT DRAIN

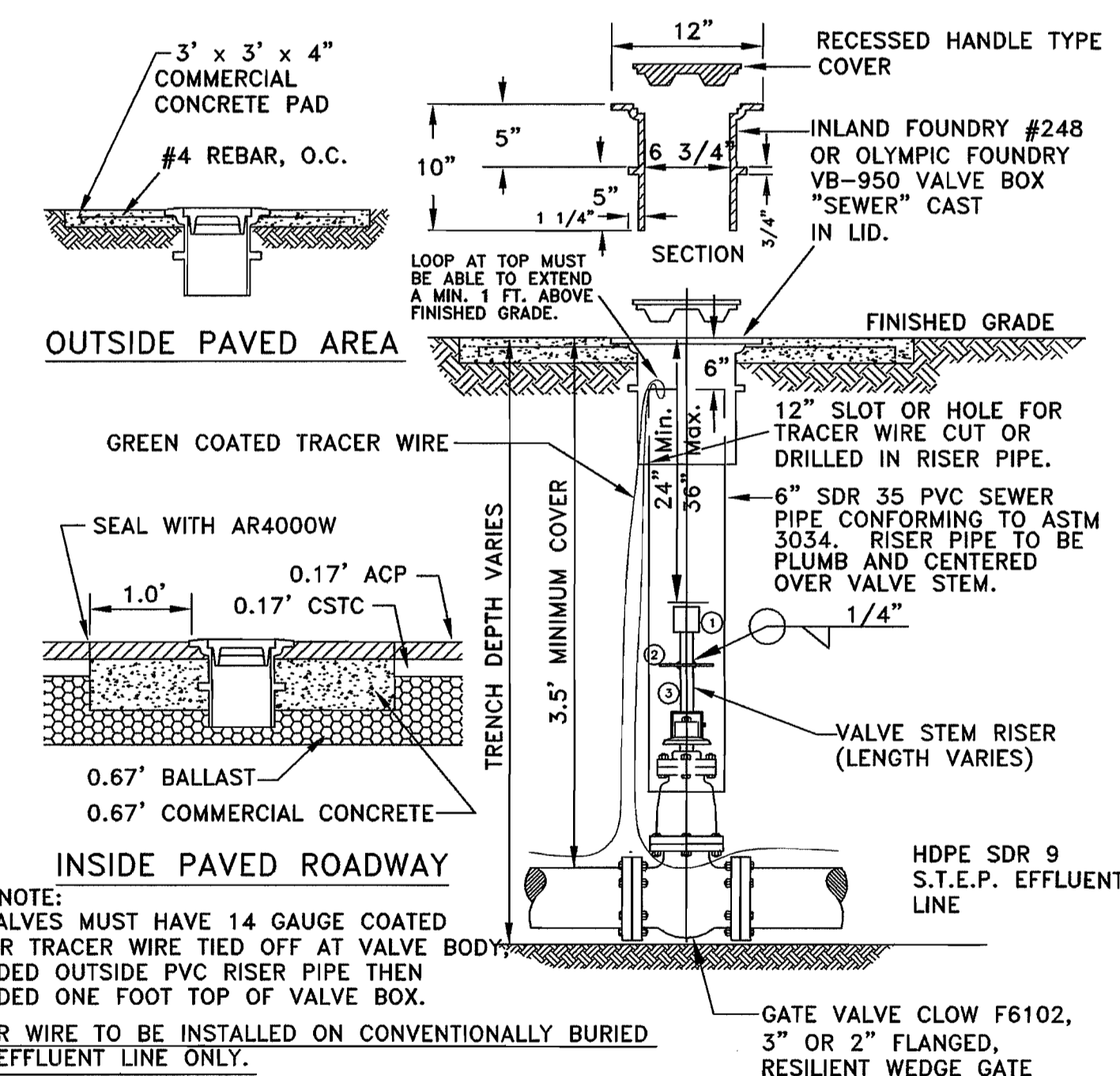
NOTE: ALL PIPE (EXCEPT MAIN LINE) INSIDE AND WITHIN 5 FEET OF VAULT TO BE GALVANIZED STEEL SCHEDULE 40



5  
C-2  
AIR VACUUM RELEASE ASSEMBLY

NOTE: ALL PIPE INSIDE AND WITHIN 5 FEET OF VAULT TO BE GALVANIZED STEEL SCHEDULE 40 - INSTALL HDPE TO GSP ADAPTERS

AS-BUILT



6  
C-2  
STANDARD VALVE BOX

NOTE: ALL VALVES MUST HAVE 14 GAUGE COATED COPPER TRACER WIRE TIED OFF AT VALVE BODY. EXTENDED OUTSIDE PVC RISER PIPE THEN EXTENDED ONE FOOT TOP OF VALVE BOX. TRACER WIRE TO BE INSTALLED ON CONVENTIONALLY BURIED STEP EFFLUENT LINE ONLY.

**VALVE STEM EXTENSION LEGEND**

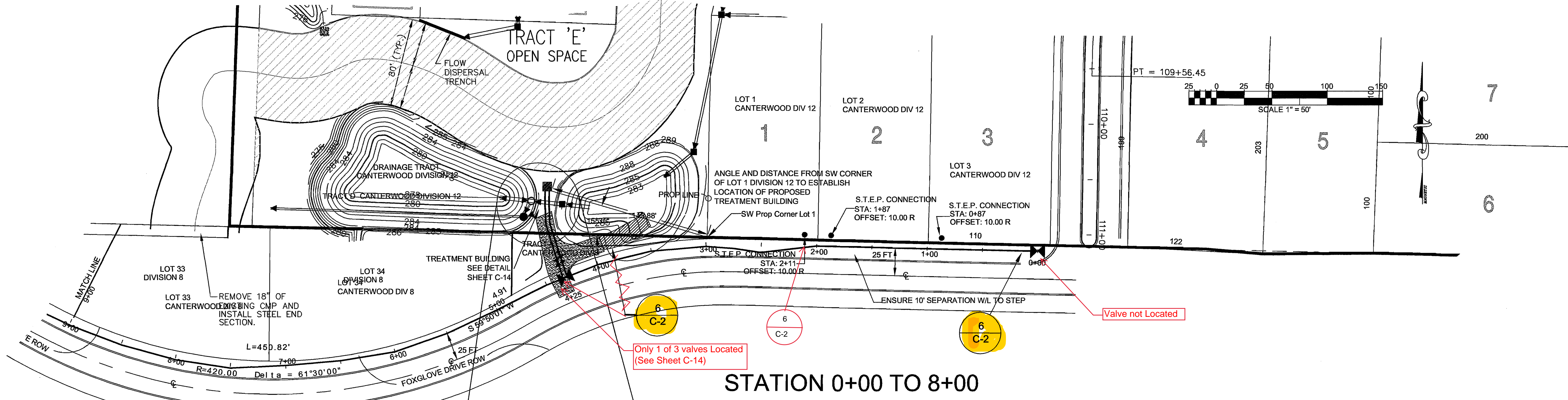
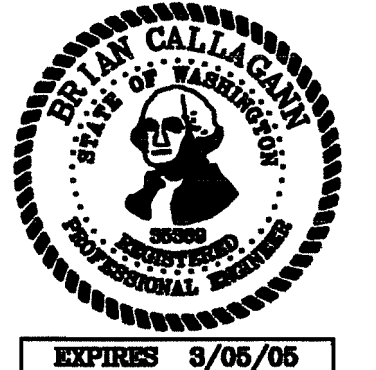
1. VALVE OPERATING NUT OR 1 7/8" X 1 7/8" X 2" HIGH GRADE STEEL WELDED TO GUIDE PLATE.
2. 3/16" THICK X 5 1/5" DIA STEEL GUIDE PLATE WELDED TO RISER SHAFT.
3. 2"x2"x 3/16" SQUARE STRUCTURAL STEEL TUBING TO FIT OPERATING NUT. LENGTH AS REQUIRED.

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER



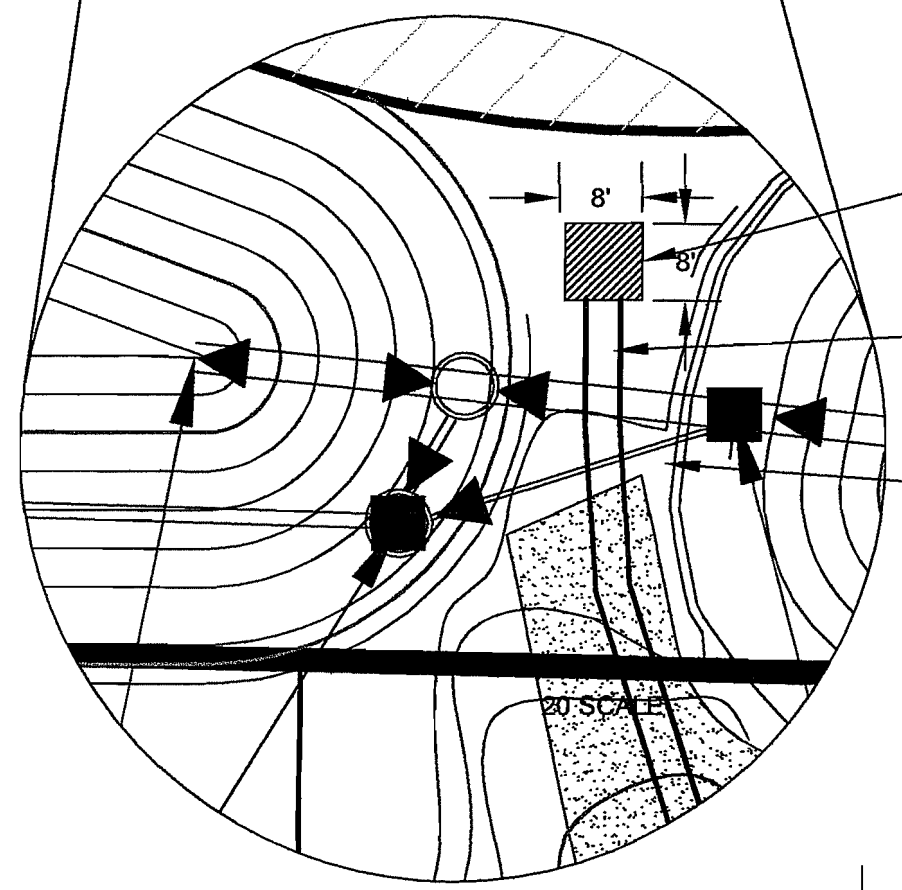
"AS-BUILT DRAWING"



**STATION 0+00 TO 8+00**

NOTE: WATER LINE MUST BE LOCATED PRIOR TO DIRECTIONAL BORING  
MAINTAIN 10' MIN SEPARATION FROM EXISTING WATER LINE

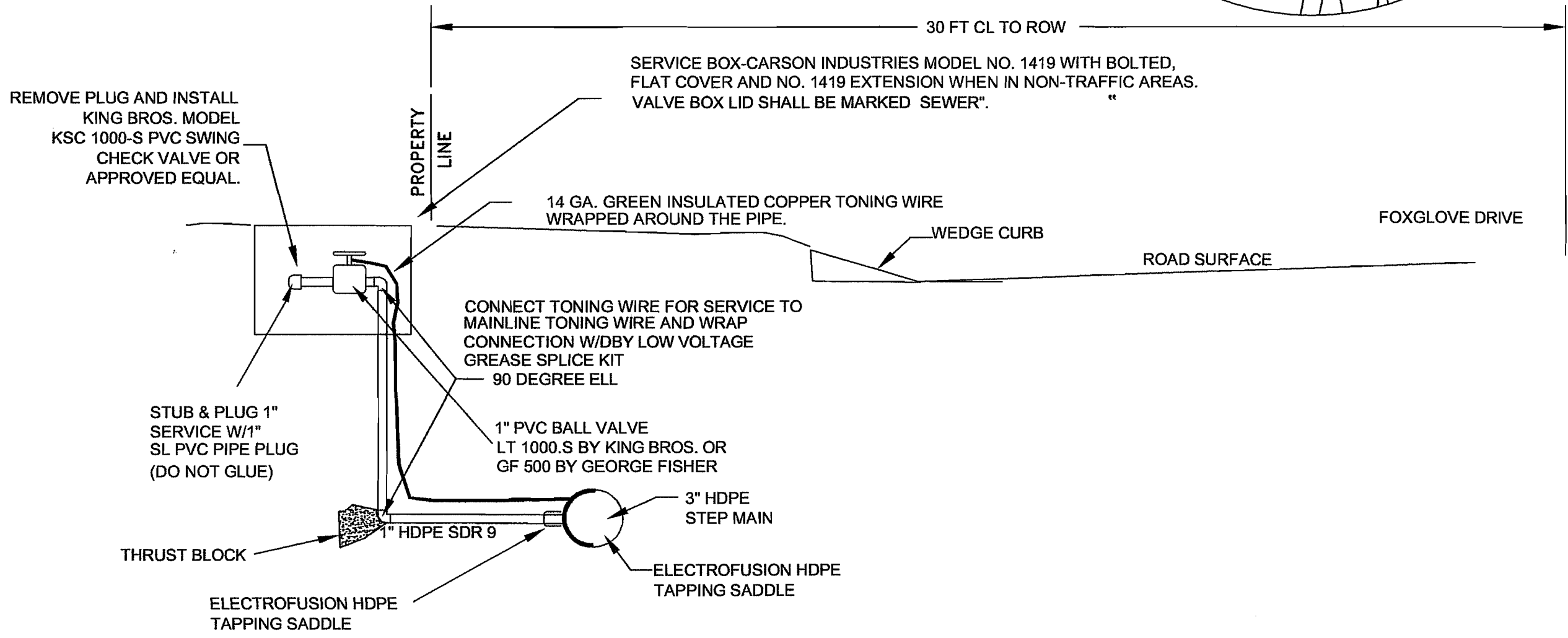
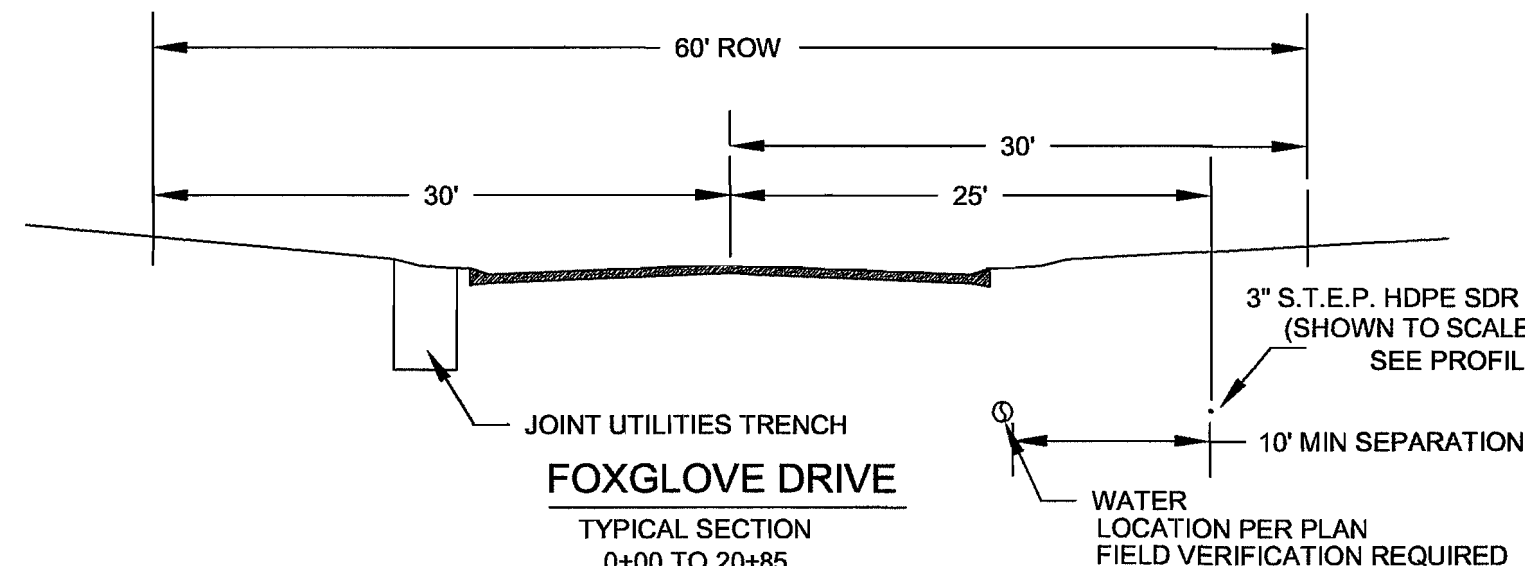
**S.T.E.P. FORCE MAIN TO BE  
3" HDPE SDR 9 AND 2" HDPE SDR 9  
PE 3408 PIPE  
MEETING THE STANDARDS OF  
ASTM D3035 AND F714**



TREATMENT BUILDING SEE SHEET C-14  
LOCATION SHOWN IN PLAN ABOVE  
OPEN TRENCH CONSTRUCTION THIS PARCEL.

INSTALL WITH MIN 18" VERTICAL  
SEPARATION BETWEEN SD AND S.T.E.P.

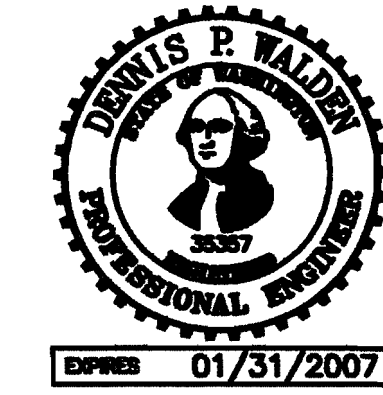
OPEN DITCH INSTALLATION OF 3" HDPE



**TYPICAL S.T.E.P. SYSTEM  
SERVICE CONNECTION**  
4717, 4805, 4805 FOXGLOVE DRIVE. (SEE PLAN FOR STATIONING)

- LEGEND**
- FM — FORCE MAIN (HDPE SDR 9 UNLESS OTHERWISE NOTED)
  - - - - ELECTRICAL AND DRY UTILITIES (SCHEMATIC - IN JOINT TRENCH)
  - - - - WATER LINE (AS BUILT)
  - - - - STORM DRAINAGE LINE (AS BUILT)
  - - - - EASEMENT BOUNDARIES (PER FINAL PLAT AND AS RECORDED)
  - SS S.T.E.P. SERVICE CONNECTION (1 C-3)
  - SLEEVE PVC 200 DIAMETER AS NOTED 10 FT (MIN.) EACH SIDE OF CROSSING WATER LINE
  - GATE VALVE ON S.T.E.P. LINE (6 C-2)
  - AIR/VACUUM RELEASE ASSEMBLY (5 C-2)
  - PIG PORT (1 C-4)
  - PRESSURE SUSTAINING VALVE (1 C-2)
  - LOW POINT DRAIN (2 C-2)
  - SETUP LOCATION, DIRECTIONAL BORING EQUIPMENT 10 FT X 25 FT RECOMMENDED. ALTERNATE LOCATIONS MAY BE PROPOSED BY CONTRACTOR AND WILL REQUIRE COORDINATION WITH...

AS-BUILT



**Call "One Call" for  
Buried Cable Location  
Service at  
1-800-424-5555 at least  
2 days before digging.**

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

1. FILL SERVICE BOX WITH FIBERGLASS INSULATION AT TIME OF ON-SITE CONNECTION TO THE STUB.

CALL 2 DAYS  
BEFORE YOU DIG  
1-800-424-5555  
(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

**Canterwood Division 12**  
**S.T.E.P. Improvement Plans**  
**Gig Harbor, WA**

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NORTH PACIFIC DESIGN  
DESIGNED BY: BCallagan  
DRAWN BY: JHannon

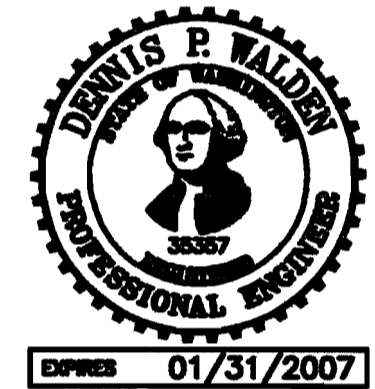
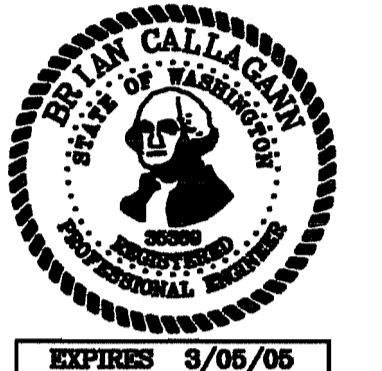
NO.	DATE	BY
AS-BUILT	8/5/04	DPW

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P: Canterwood Div12

ALIGNMENT

**C-3**  
OF SHEETS

"AS-BUILT DRAWING"



Canterwood Division 12  
 S.T.E.P. Improvement Plans  
 Gig Harbor, WA

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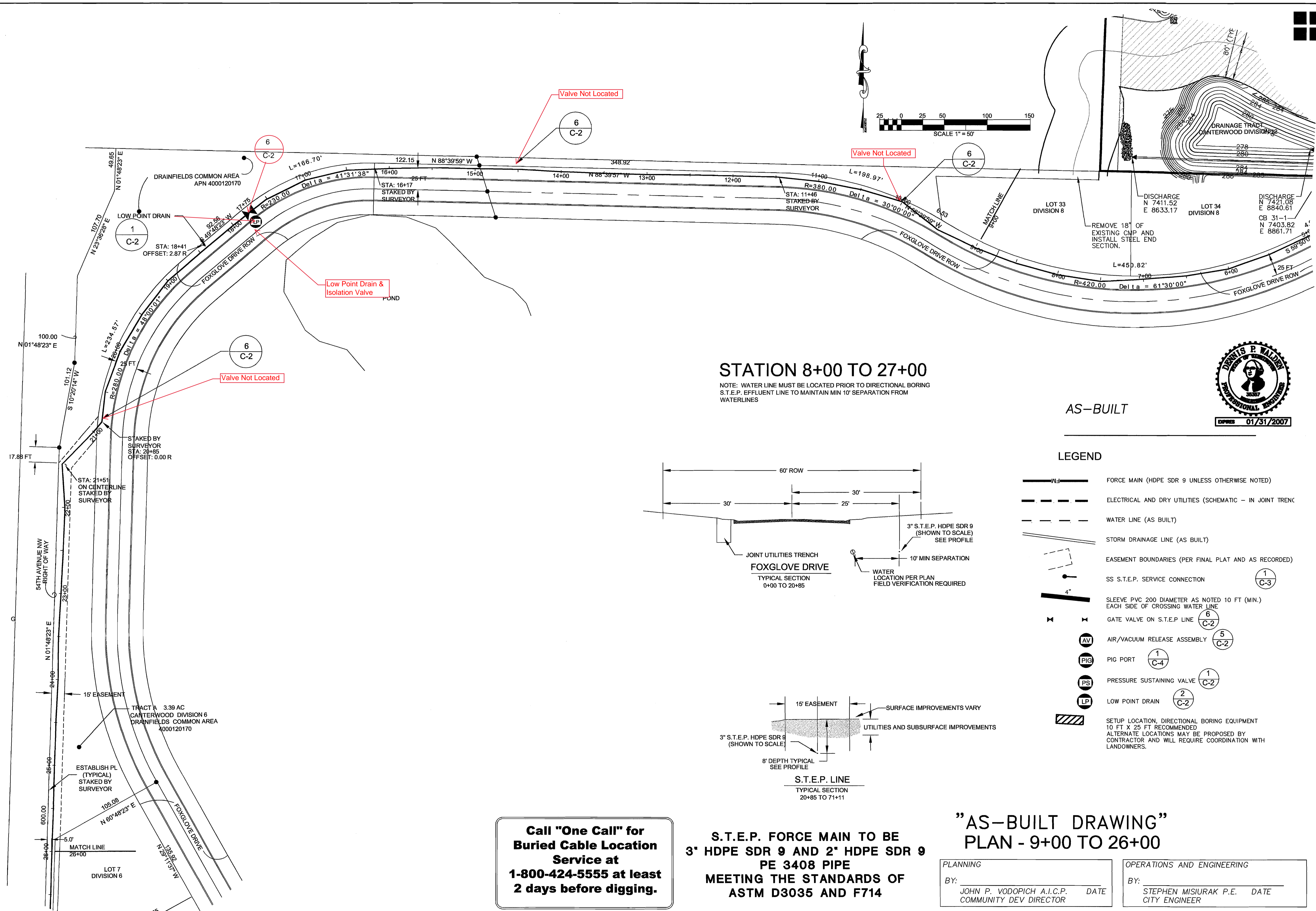
DESIGNED BY: BCallaghan  
DRAWN BY: JHannan

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AS-BUILT	8/5/04	DPW

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**C-4**  
OF SHEETS



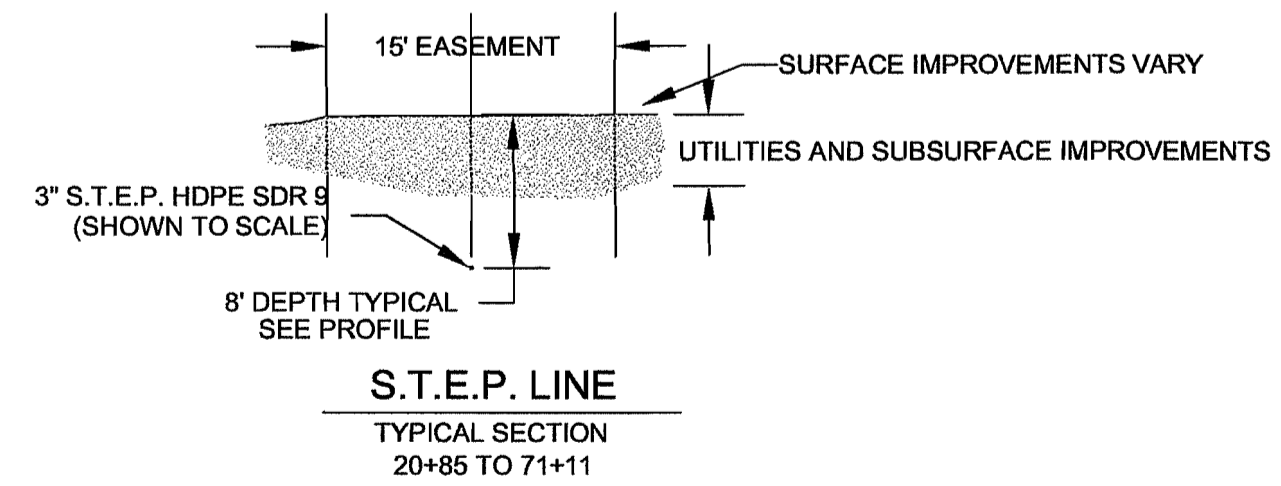
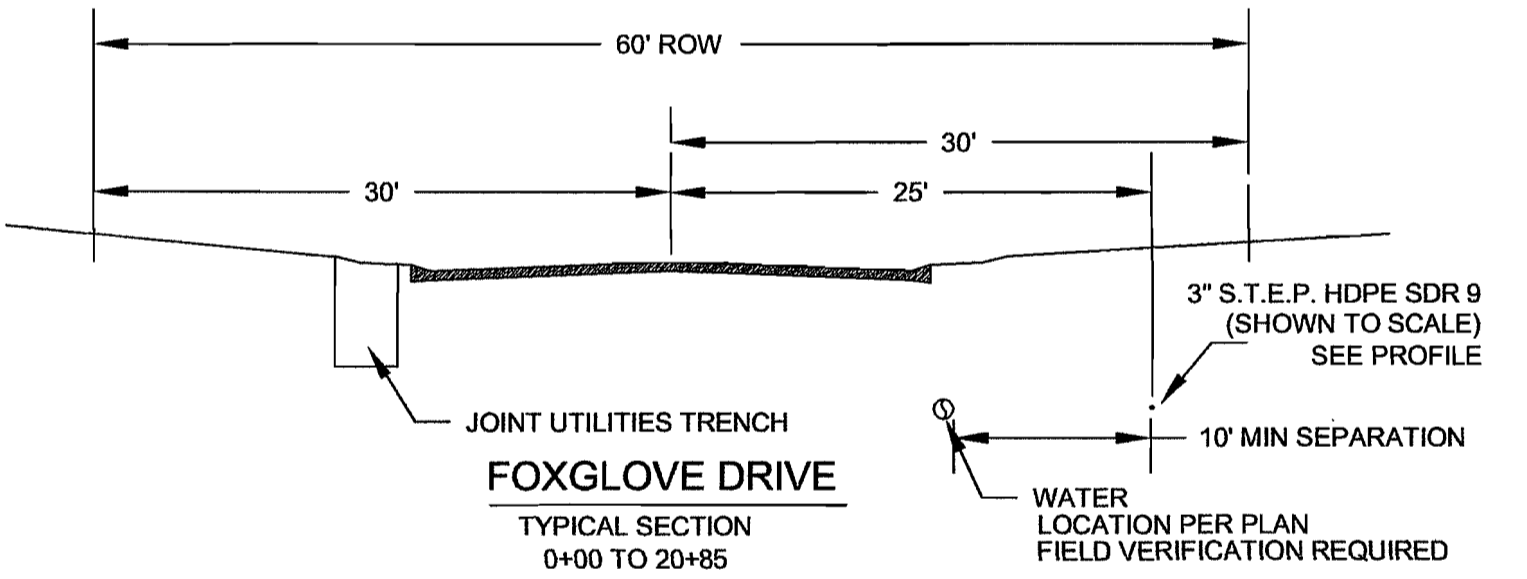
**STATION 8+00 TO 27+00**

NOTE: WATER LINE MUST BE LOCATED PRIOR TO DIRECTIONAL BORING  
S.T.E.P. EFFLUENT LINE TO MAINTAIN MIN 10' SEPARATION FROM  
WATERLINES

AS-BUILT

**LEGEND**

- FORCE MAIN (HDPE SDR 9 UNLESS OTHERWISE NOTED)
- ELECTRICAL AND DRY UTILITIES (SCHEMATIC - IN JOINT TRENCH)
- WATER LINE (AS BUILT)
- STORM DRAINAGE LINE (AS BUILT)
- EASEMENT BOUNDARIES (PER FINAL PLAT AND AS RECORDED)
- SS S.T.E.P. SERVICE CONNECTION (1 C-3)
- SLEEVE PVC 200 DIAMETER AS NOTED 10 FT (MIN.) EACH SIDE OF CROSSING WATER LINE
- GATE VALVE ON S.T.E.P. LINE (6 C-2)
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- LOW POINT DRAIN (2 C-2)
- SETUP LOCATION, DIRECTIONAL BORING EQUIPMENT 10 FT X 25 FT RECOMMENDED ALTERNATE LOCATIONS MAY BE PROPOSED BY CONTRACTOR AND WILL REQUIRE COORDINATION WITH LANDOWNERS.



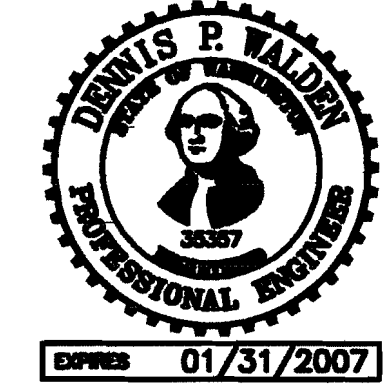
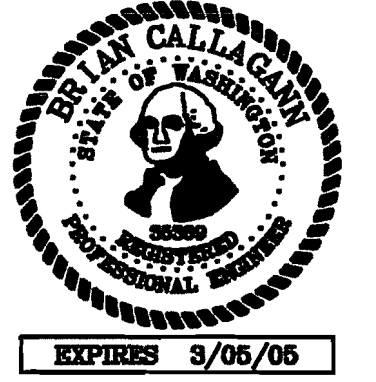
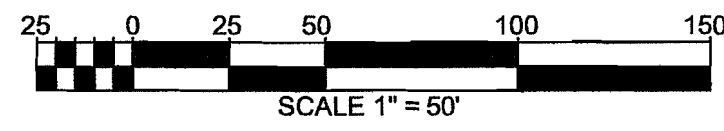
**Call "One Call" for Buried Cable Location Service at 1-800-424-5555 at least 2 days before digging.**

**S.T.E.P. FORCE MAIN TO BE 3" HDPE SDR 9 AND 2" HDPE SDR 9 PE 3408 PIPE MEETING THE STANDARDS OF ASTM D3035 AND F714**

**"AS-BUILT DRAWING" PLAN - 9+00 TO 26+00**

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

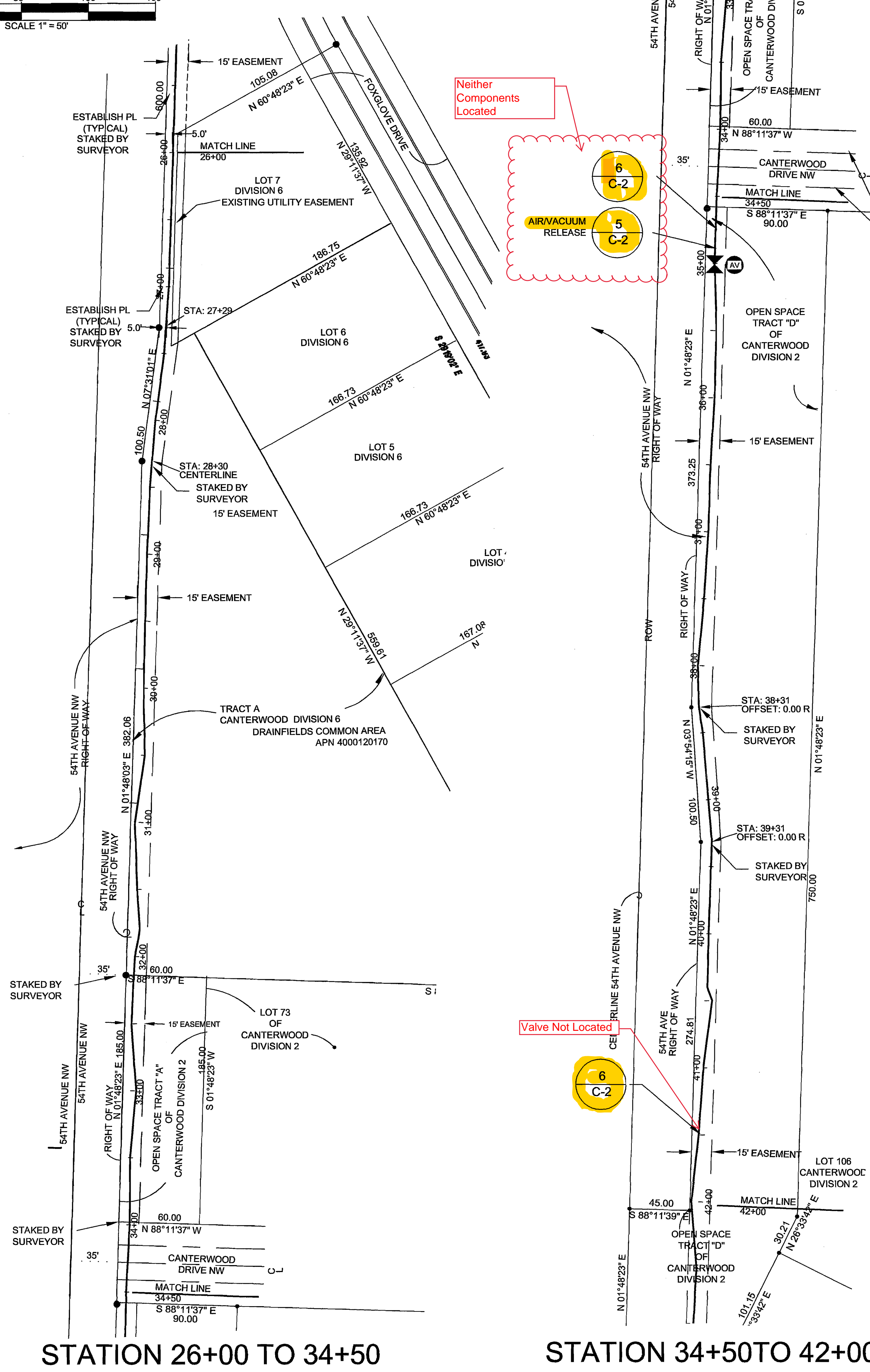


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NO.	DATE	BY
AS-BUILT	8/6/04	DPW

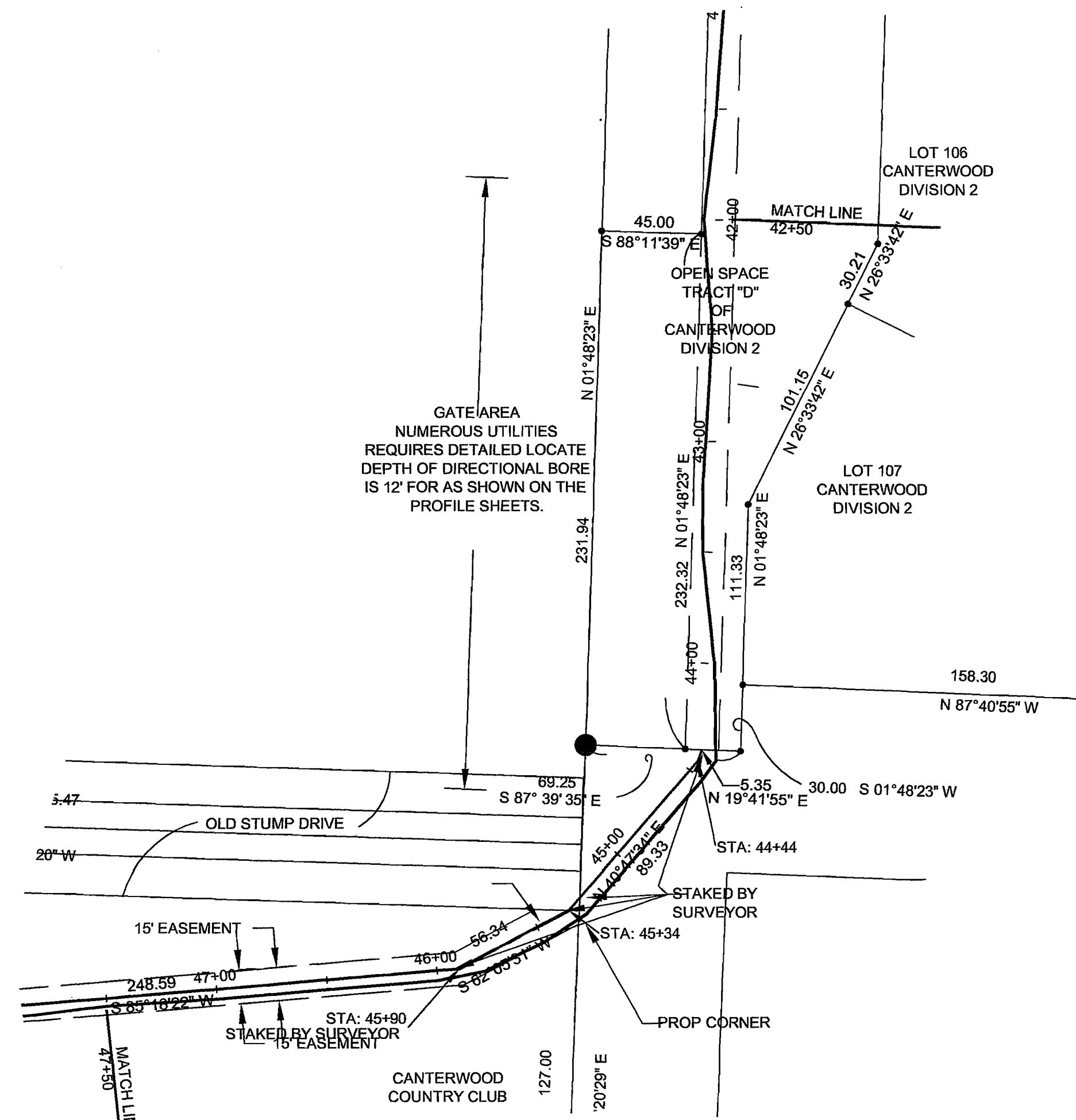
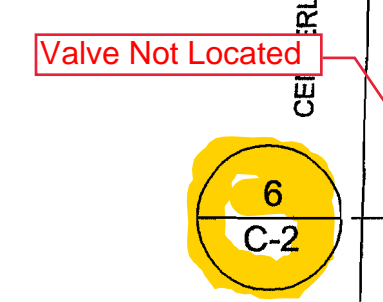
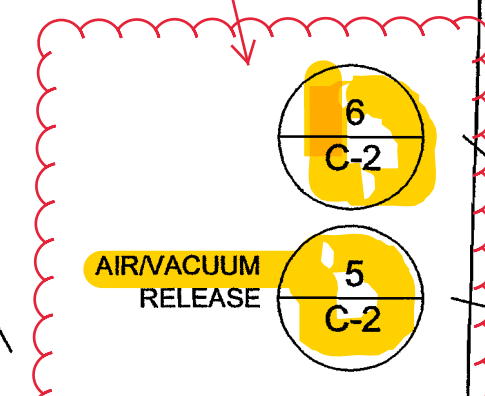
JOB NO:  
P:\Canterwood Div12

ALIGNMENT

**C-5**  
OF SHEETS



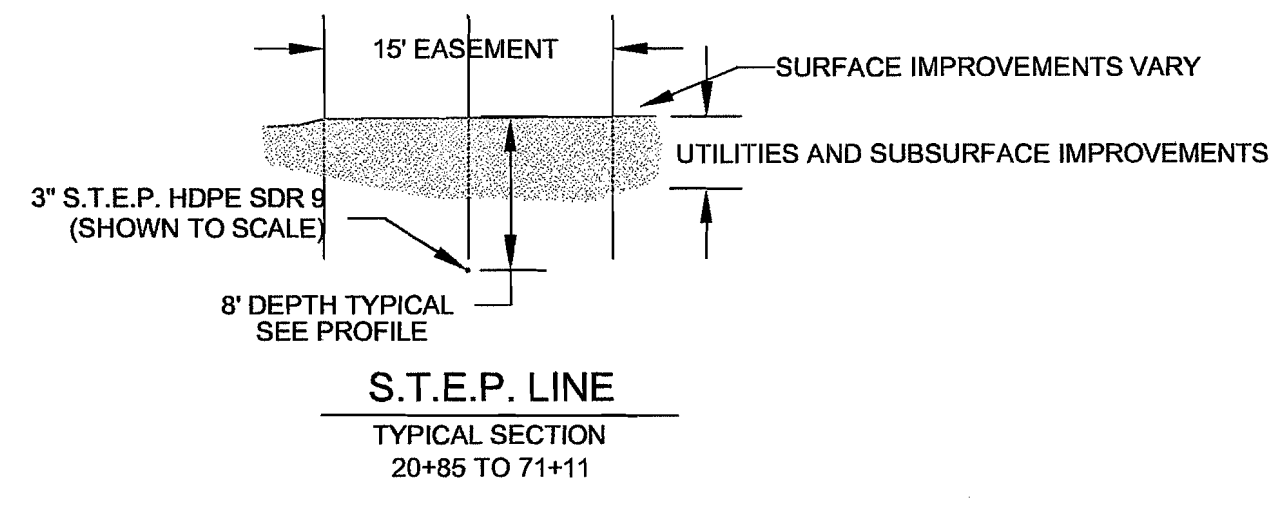
Neither  
Components  
Located



**STATION 42+00 47+50 AS-BUILT**  
NOTE: WATER LINE MUST BE LOCATED PRIOR TO DIRECTIONAL BORING

**LEGEND**

- FORCE MAIN (HDPE SDR 9 UNLESS OTHERWISE NOTED)
- ELECTRICAL AND DRY UTILITIES (SCHEMATIC - IN JOINT TRENCH)
- WATER LINE (AS BUILT)
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**S.T.E.P. FORCE MAIN TO BE 3" HDPE SDR 9 AND 2" HDPE SDR 9 PE 3408 PIPE MEETING THE STANDARDS OF ASTM D3035 AND F714**

**Call "One Call" for Buried Cable Location Service at 1-800-424-5555 at least 2 days before digging.**

**"AS-BUILT DRAWING" PLAN - 26+00 TO 47+50**

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

STATION 26+00 TO 34+50

STATION 34+50 TO 42+00



EXPIRES 3/05/06



EXPIRES 3/05/06

**Canterwood Division 12**  
S.T.E.P. Improvement Plans  
Gig Harbor, WA

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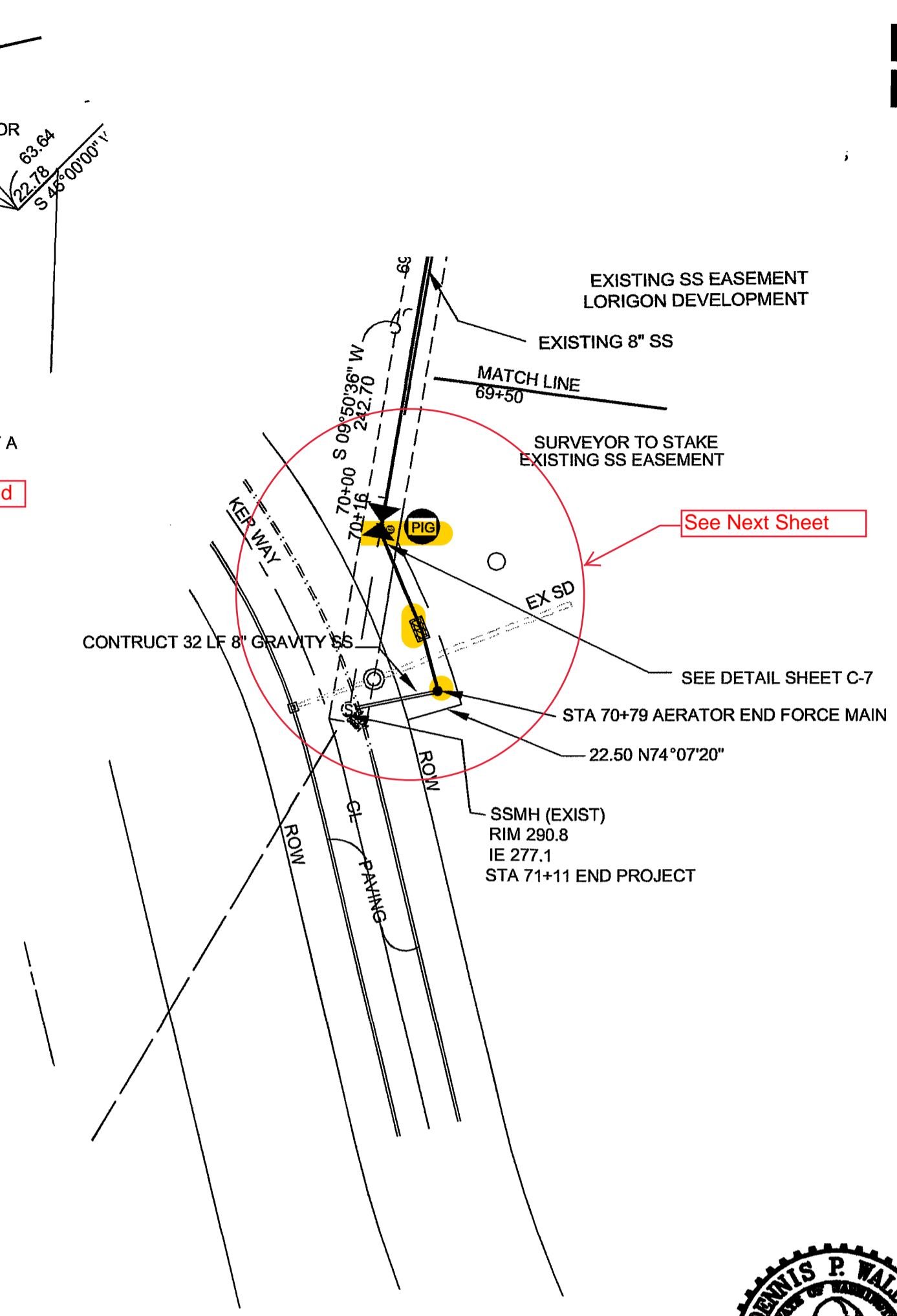
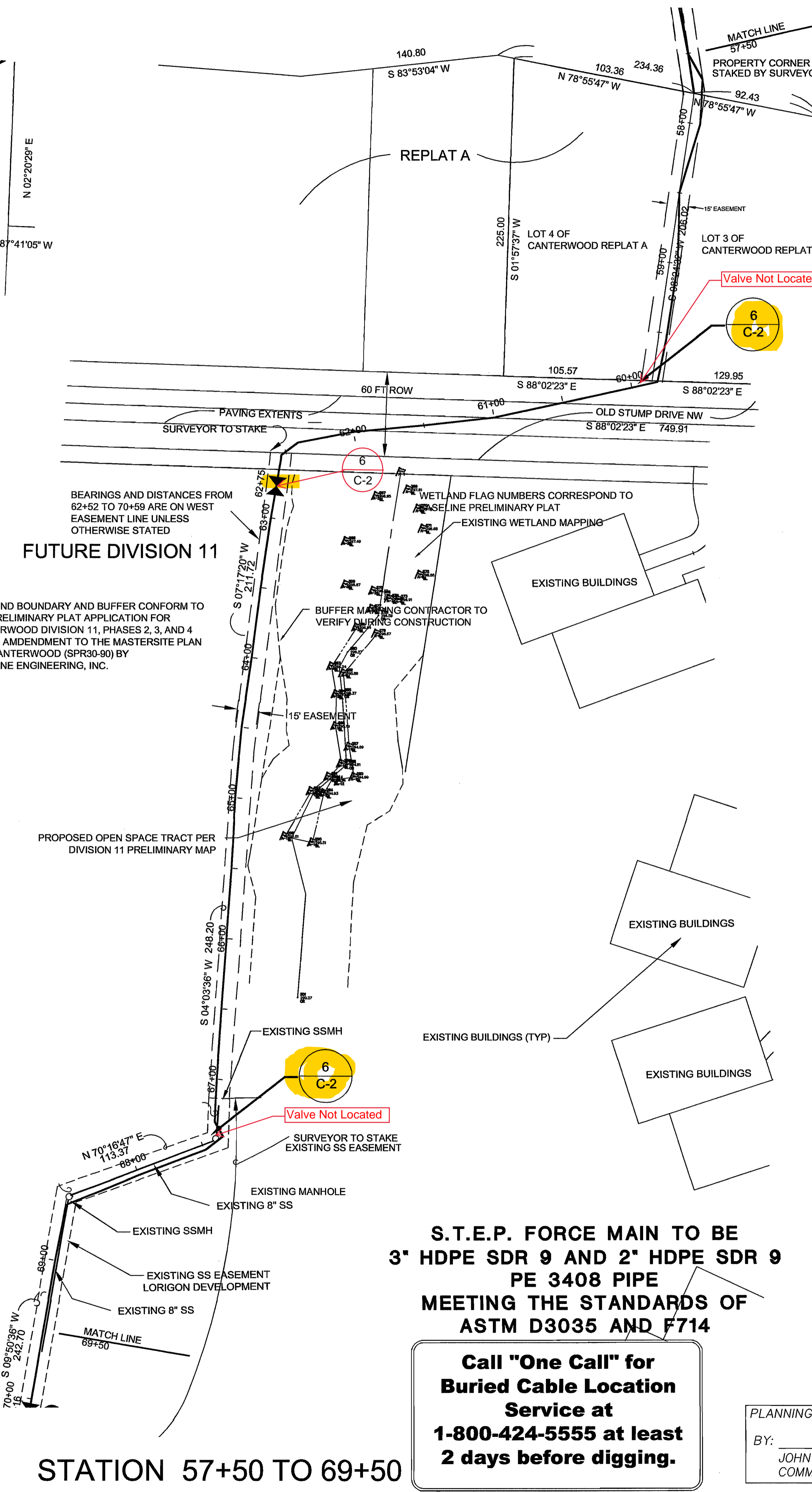
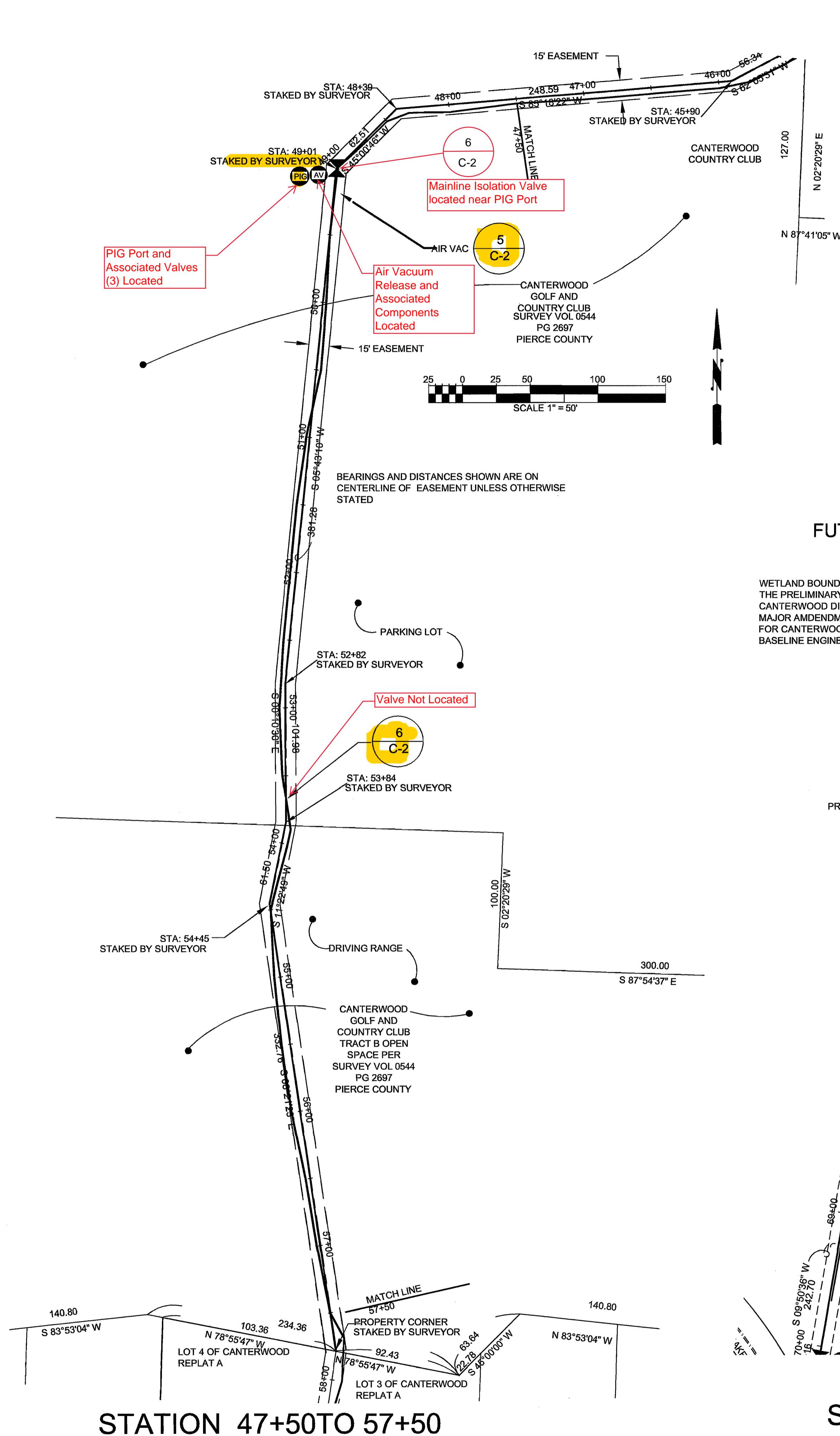
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DRAWN BY: JHannan

REVISIONS		
NO.	DATE	BY
1	AS-BUILT 8/5/04 DPW	

JOB NO:  
P: Canterwood Div12

ALIGNMENT

**C-6**  
OF SHEETS



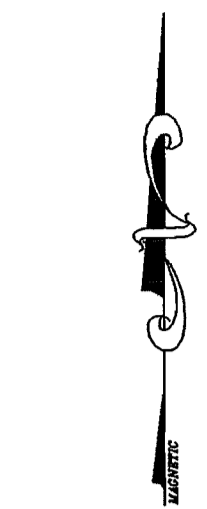
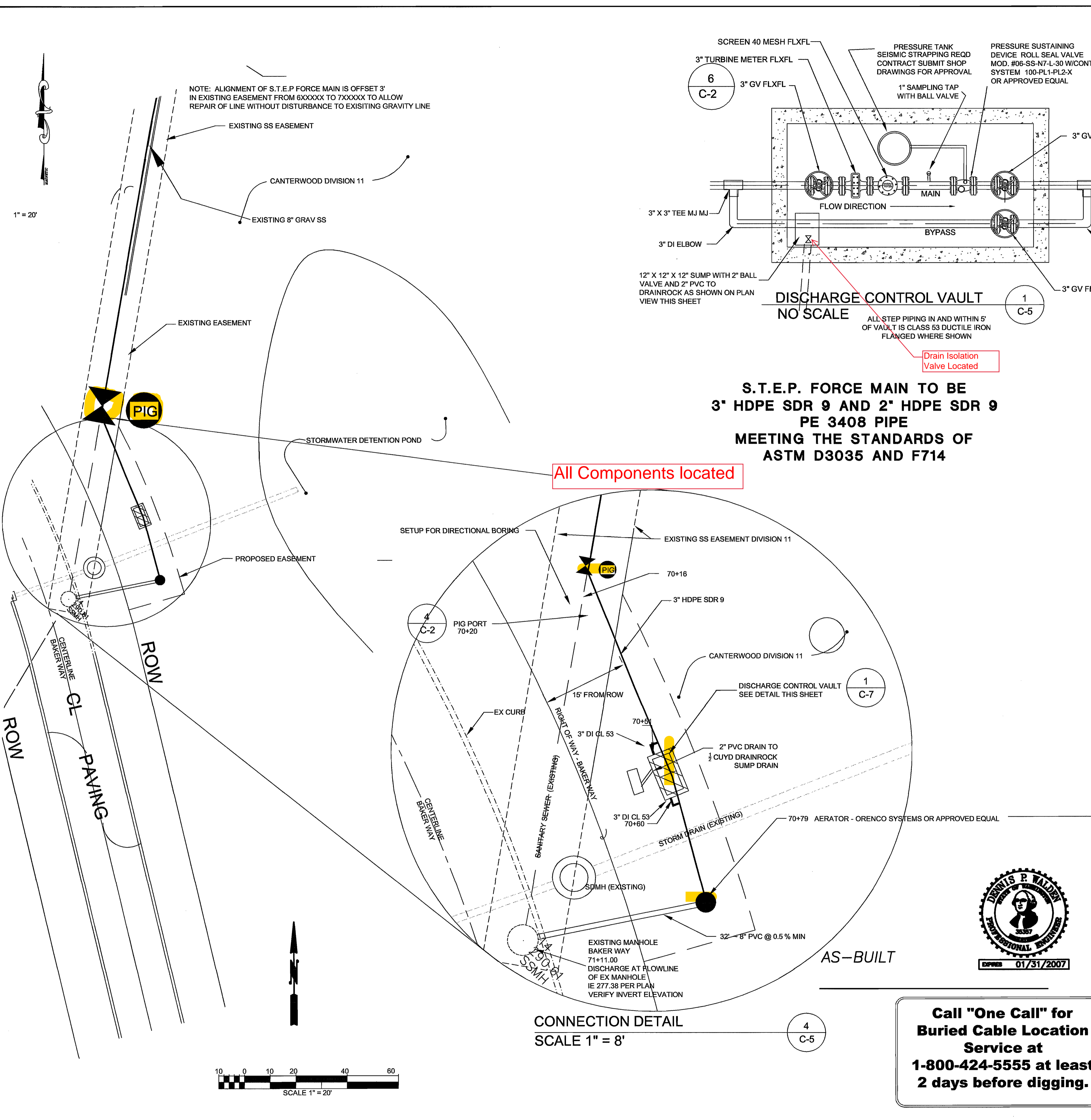
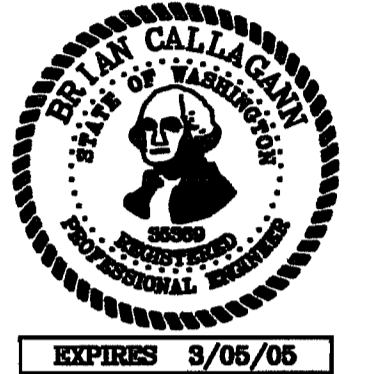
**AS-BUILT LEGEND**

	FORCE MAIN (HDPE SDR 9 UNLESS OTHERWISE NOTED)
	ELECTRICAL AND DRY UTILITIES (SCHEMATIC - IN JOINT TRENCH)
	WATER LINE (AS BUILT)
	STORM DRAINAGE LINE (AS BUILT)
	EASEMENT BOUNDARIES (PER FINAL PLAT AND AS RECORDED)
	SS S.T.E.P. SERVICE CONNECTION (1 C-3)
	SLEEVE PVC 200 DIAMETER AS NOTED 10 FT (MIN.) EACH SIDE OF CROSSING WATER LINE
	GATE VALVE ON S.T.E.P. LINE (6 C-2)
	AIR/VACUUM RELEASE ASSEMBLY (5 C-2)
	PIG PORT (1 C-4)
	PRESSURE SUSTAINING VALVE (1 C-2)
	LOW POINT DRAIN (2 C-2)
	SETUP LOCATION, DIRECTIONAL BORING EQUIPMENT 10 FT X 25 FT RECOMMENDED ALTERNATE LOCATIONS MAY BE PROPOSED BY CONTRACTOR AND WILL REQUIRE COORDINATION WITH LANDOWNERS.

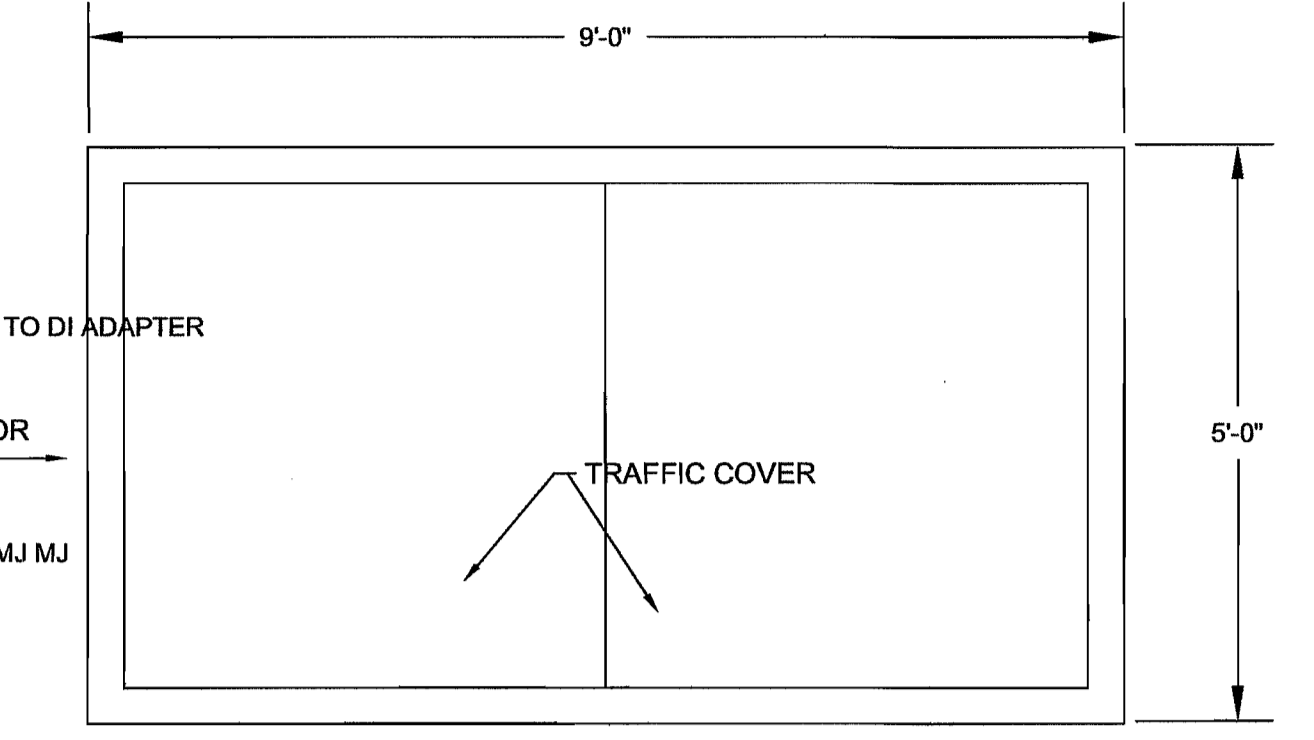
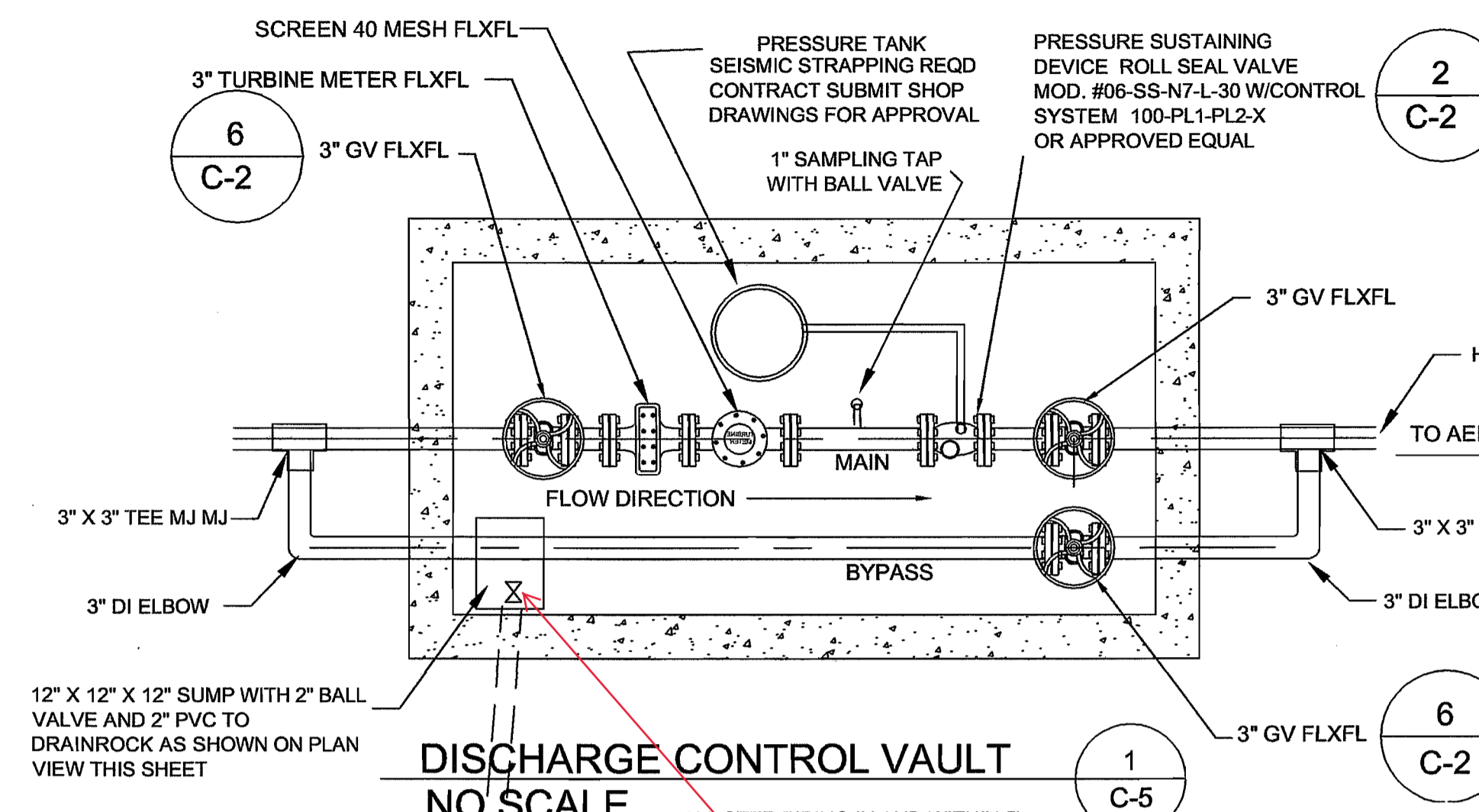
**S.T.E.P. FORCE MAIN TO BE 3" HDPE SDR 9 AND 2" HDPE SDR 9 PE 3408 PIPE MEETING THE STANDARDS OF ASTM D3035 AND F714**

**Call "One Call" for Buried Cable Location Service at 1-800-424-5555 at least 2 days before digging.**

PLANNING BY: JOHN P. VODOPICH A.I.C.P. COMMUNITY DEV DIRECTOR	OPERATIONS AND ENGINEERING BY: STEPHEN MISURAK P.E. CITY ENGINEER
DATE	DATE

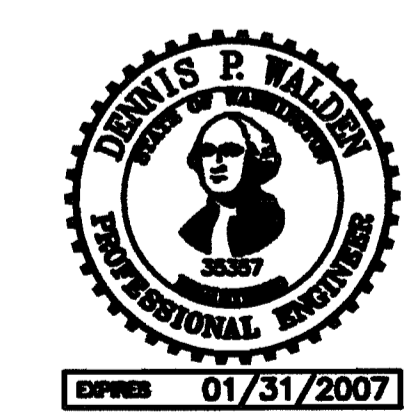
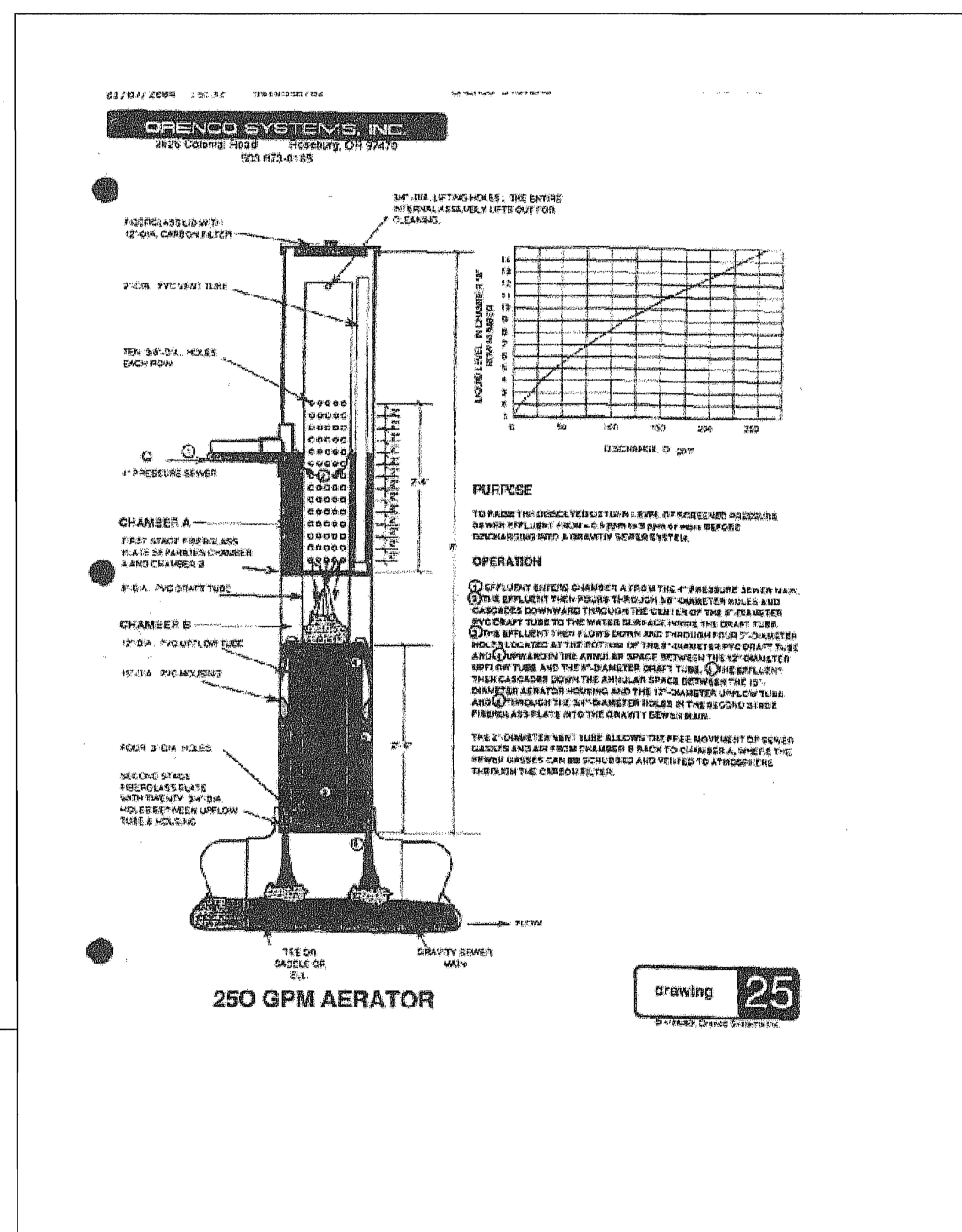


NOTE: ALIGNMENT OF S.T.E.P. FORCE MAIN IS OFFSET 3' IN EXISTING EASEMENT FROM 6XXXXX TO 7XXXXX TO ALLOW REPAIR OF LINE WITHOUT DISTURBANCE TO EXISTING GRAVITY LINE



**S.T.E.P. FORCE MAIN TO BE  
3" HDPE SDR 9 AND 2" HDPE SDR 9  
PE 3408 PIPE  
MEETING THE STANDARDS OF  
ASTM D3035 AND F714**

**All Components located**



**AERATOR  
NO SCALE** (3) C-5

NOTE: SUBSTITUTE 3" GSP FOR 4" INLET 6 ROWS OF HOLES IN DRAFT TUBE INSTALL ON 8" ELL

**"AS-BUILT DRAWING"  
DETAIL CONNECTION TO GRAVITY**

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

**Call "One Call" for  
Buried Cable Location  
Service at  
1-800-424-5555 at least  
2 days before digging.**

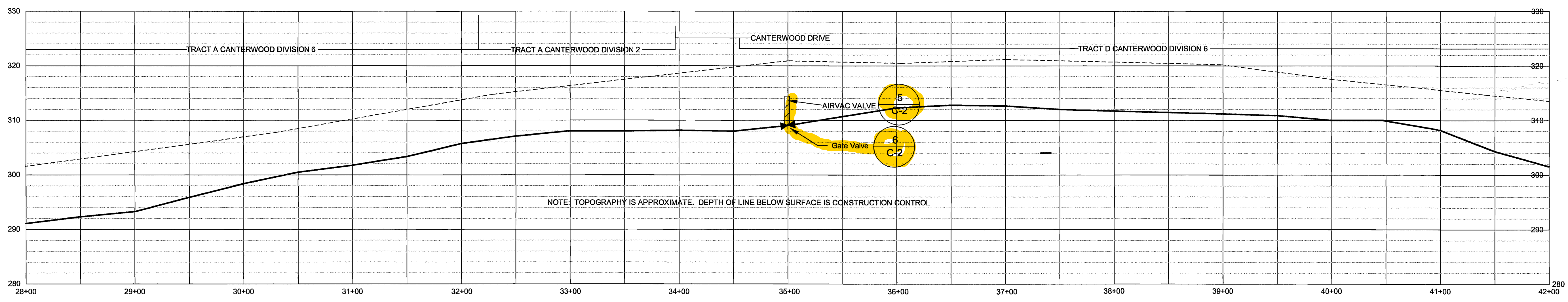
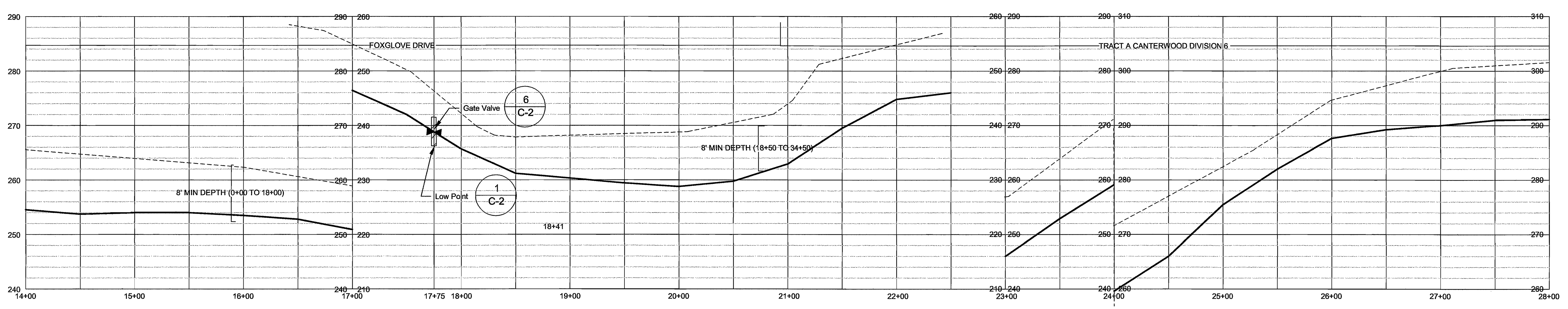
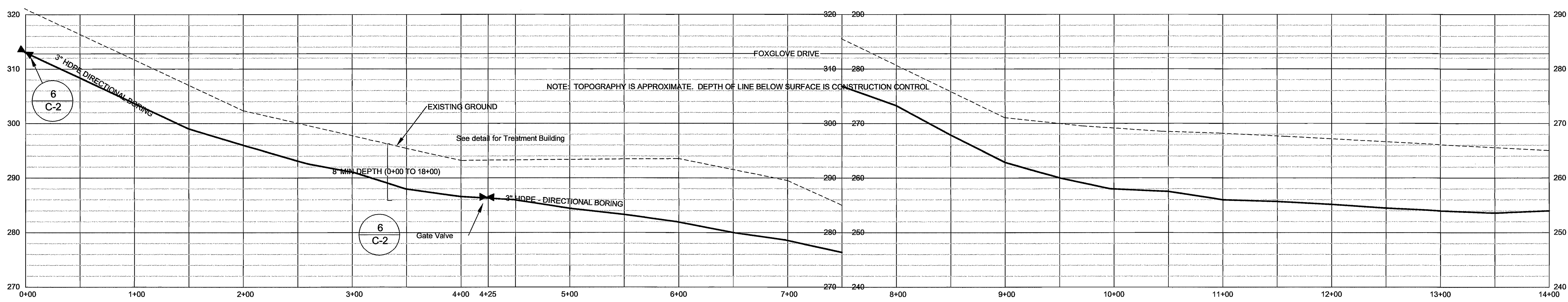
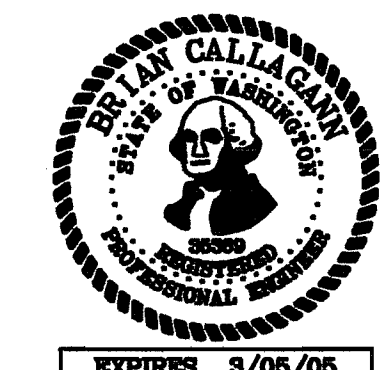
Canterwood Division 12  
S.T.E.P. Improvement Plans  
Gig Harbor, WA

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NORTH PACIFIC DESIGN  
DESIGNED BY: BColloqan  
DRAWN BY: JHannan

NO.	DATE	BY
AS-BUILT	8/5/04	DPW

ALIGNMENT

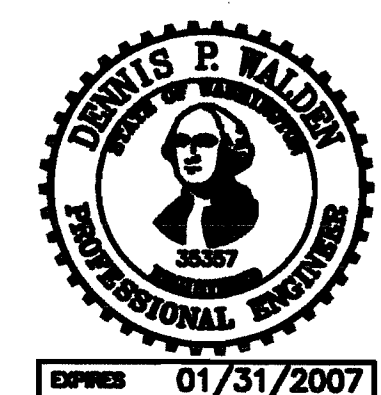
**C-7.**  
OF SHEETS



ALL STEP PIPE SHOWN ON THIS SHEET IS TO BE INSTALLED BY DIRECTIONAL BORING

**S.T.E.P. FORCE MAIN TO BE  
3' HDPE SDR 9 AND 2' HDPE SDR 9  
PE 3408 PIPE  
MEETING THE STANDARDS OF  
ASTM D3035 AND F714**

AS-BUILT



**Call "One Call" for  
Buried Cable Location  
Service at  
1-800-424-5555 at least  
2 days before digging.**

**"AS-BUILT DRAWING"  
PROFILE 0+00 TO 42+00**

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

Canterwood Division 12  
S.T.E.P. Improvement Plans  
Gig Harbor, WA

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DESIGNED BY: BCallagan  
DRAWN BY: JHannon

REVISIONS		
NO.	DATE	BY
AS-BUILT	8/5/04	DPW

JOB NO:  
P: Canterwood Div12

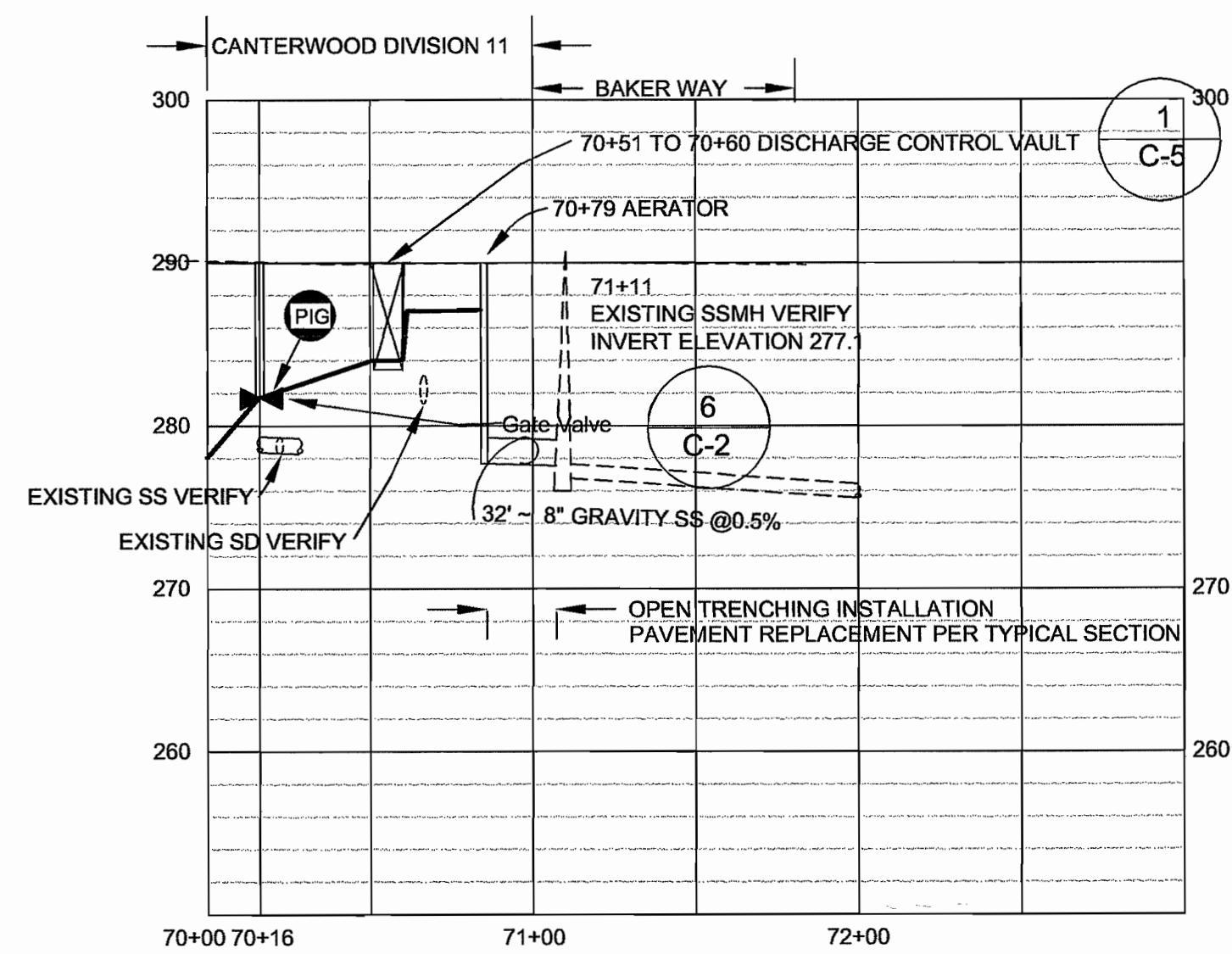
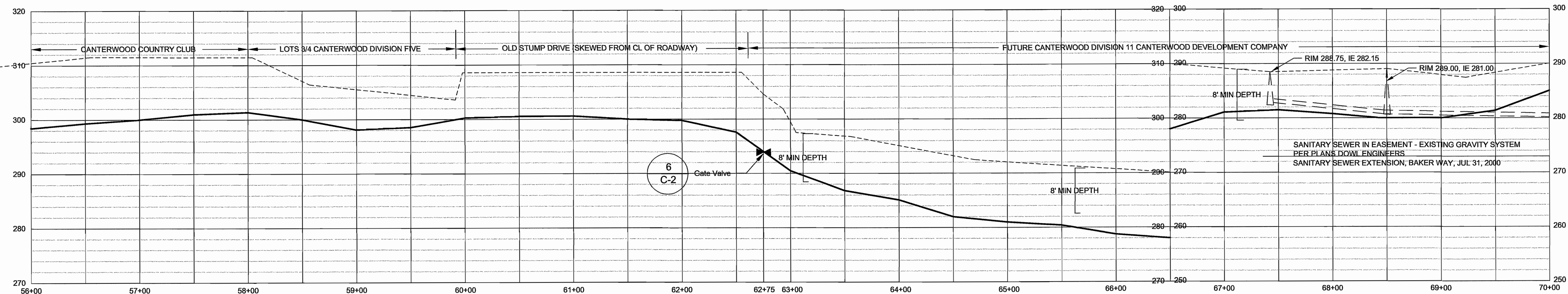
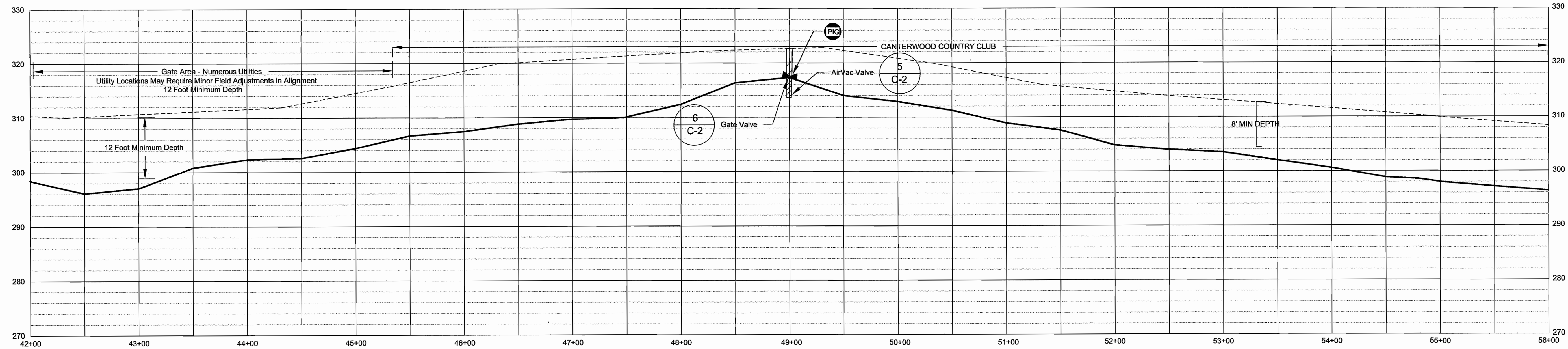
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**C-8**  
OF SHEETS





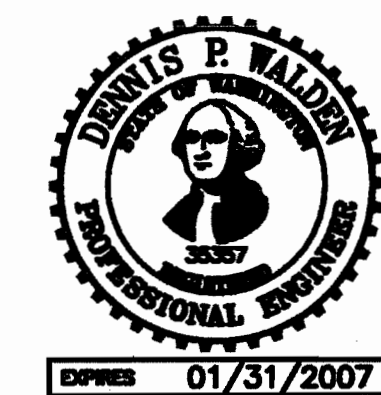
EXPIRES 3/06/06



ALL STEP PIPE SHOWN ON THIS SHEET IS TO BE INSTALLED BY DIRECTIONAL BORING EXCEPT AS NOTED

**S.T.E.P. FORCE MAIN TO BE  
3" HDPE SDR 9 AND 2" HDPE SDR 9  
PE 3408 PIPE  
MEETING THE STANDARDS OF  
ASTM D3035 AND F714**

AS-BUILT



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NO.	DATE	BY
1	8/5/04	DPW

JOB NO:  
P:\Canterwood Div12

ALIGNMENT

**C-9.**  
OF SHEETS

**Call "One Call" for  
Buried Cable Location  
Service at  
1-800-424-5555 at least  
2 days before digging.**

**"AS-BUILT DRAWING"  
PROFILE 42+00 TO 71+11**

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

**Canterwood Division 12**  
**S.T.E.P. Improvement Plans**  
**Gig Harbor, WA**

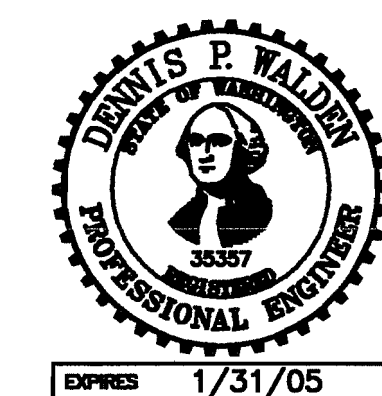
Township 22 N, Range 2 East, Section 19 (NW 1/4)



Architecture  
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Planning

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Drive NW  
Suite 2A  
Gig Harbor  
WA 98335



EXPIRES 1/31/05



EXPIRES 3/05/06



(253) 858-3636

**CANTERWOOD DIVISION 12**  
**S.T.E.P. IMPROVEMENT PLANS**  
**GIG HARBOR, WA**

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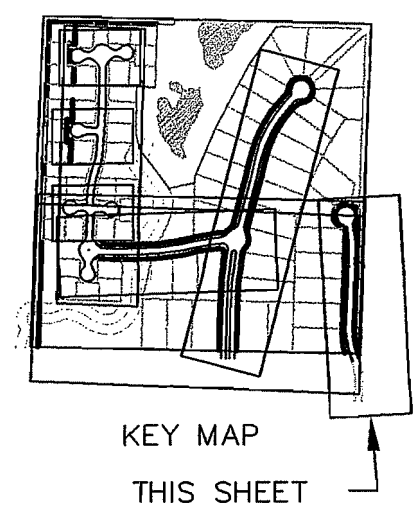
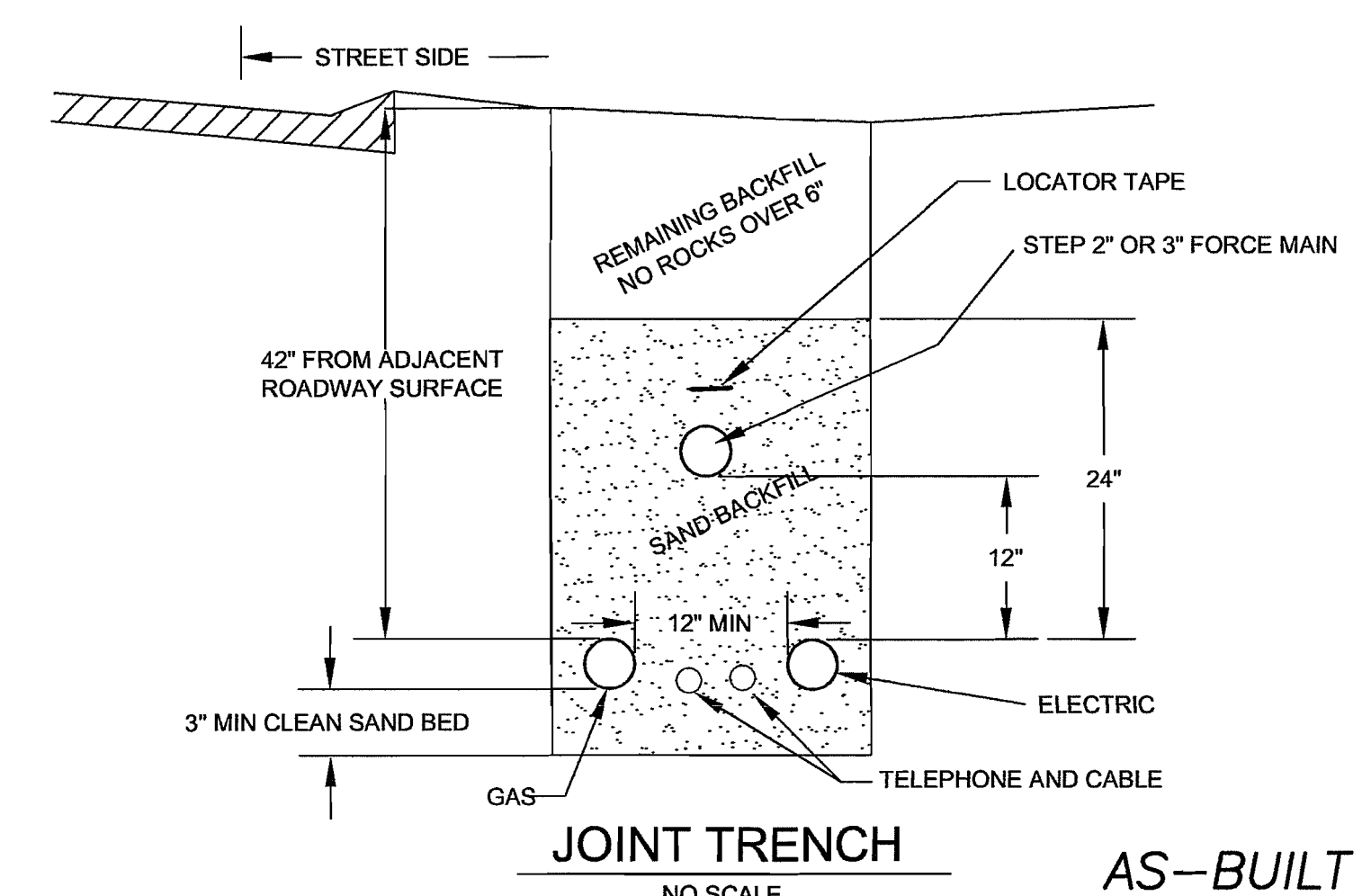
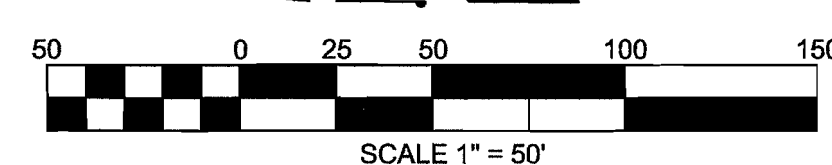
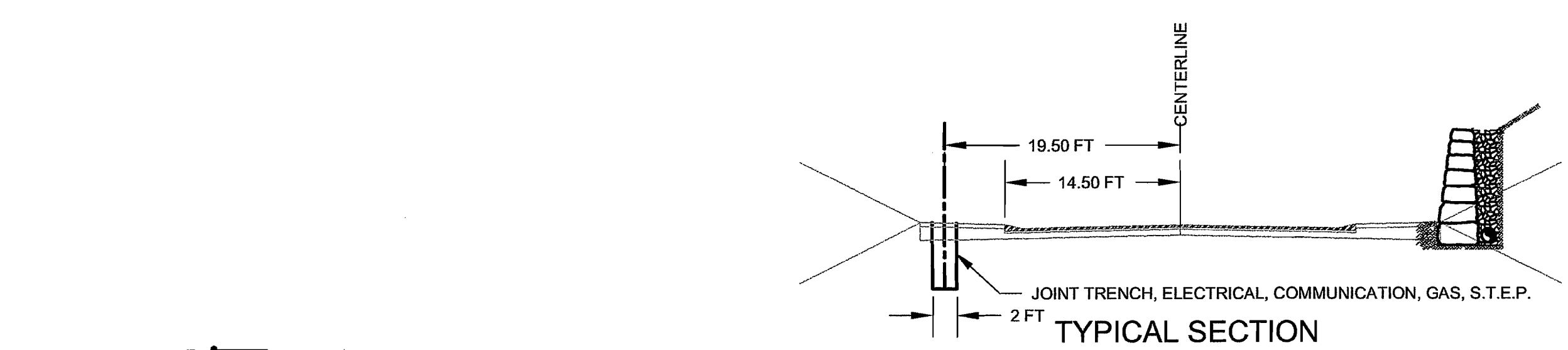
DESIGNED BY: BCallagan  
DRAWN BY: JHannan

REVISIONS		
NO.	DATE	BY
1	3/27/03	BKC
ADDED DET FOR GIG HARBOR STDS		
AS-BUILT 8/5/04 DPW		

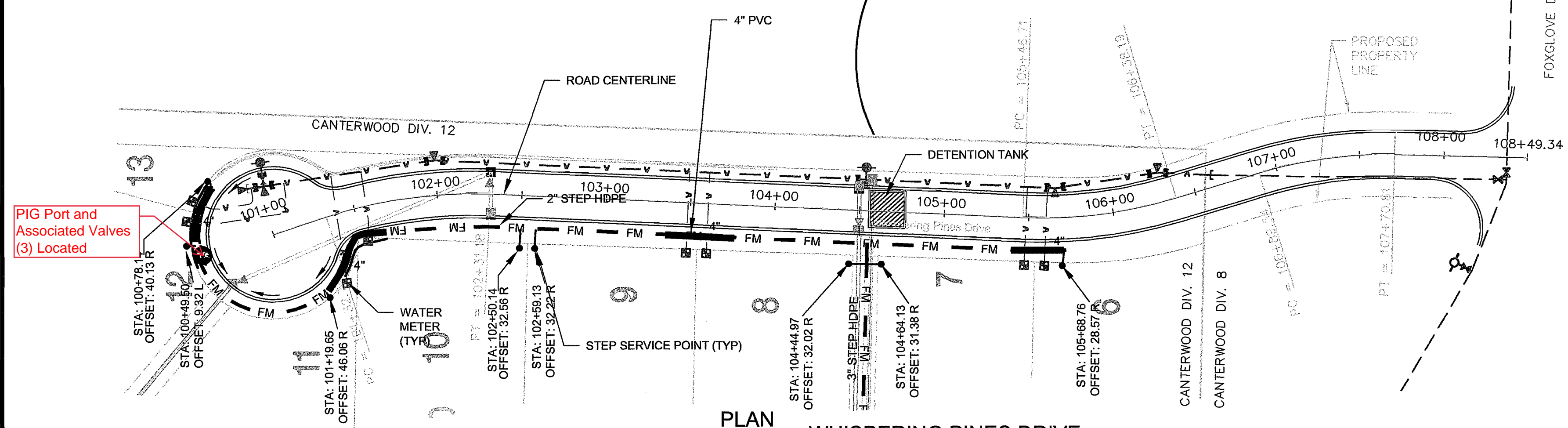
JOB NO:  
P:\Canterwood Div12

ROAD PLAN &  
PROFILE

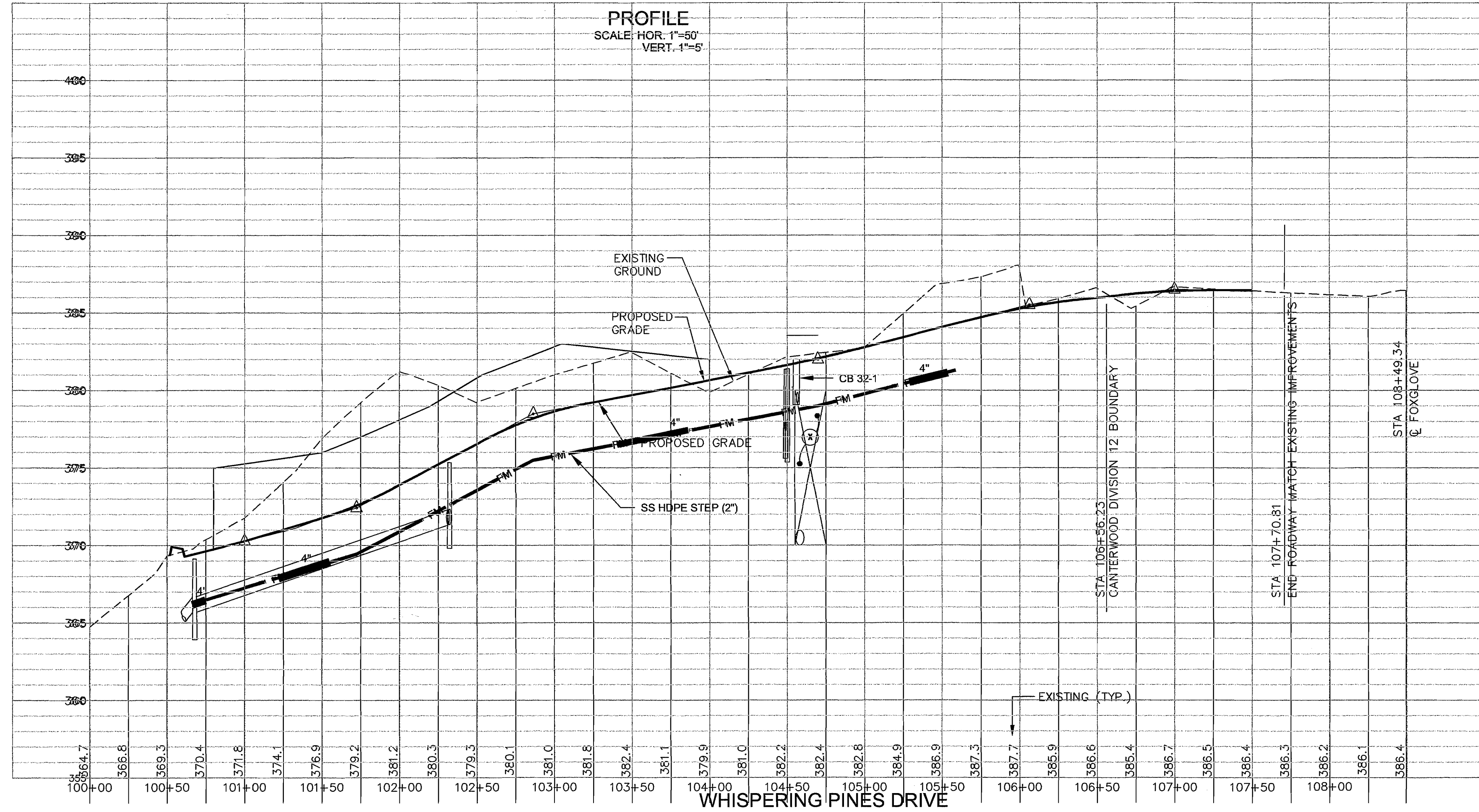
**C-10**  
OF SHEETS



**PROJECT BOUNDARY**



**PLAN**  
SCALE: 1"=50' **WHISPERING PINES DRIVE**



**PROFILE**  
SCALE: HOR. 1"=50'  
VERT. 1"=5'

**LEGEND**

- FM FORCE MAIN (HDPE SDR 9 UNLESS OTHERWISE NOTED)
- E-E-E ELECTRICAL AND DRY UTILITIES (SCHEMATIC - IN JOINT TRENCH)
- W-W WATER LINE (AS BUILT)
- STORM DRAINAGE LINE (AS BUILT)
- EASEMENT BOUNDARIES (PER FINAL PLAT AND AS RECORDED)
- SS S.T.E.P. SERVICE CONNECTION (1 C-3)
- SLEEVE PVC 200 DIAMETER AS NOTED 10 FT (MIN.) EACH SIDE OF CROSSING WATER LINE (6 C-2)
- GATE VALVE ON S.T.E.P. LINE (5 C-2)
- AIR/VACUUM RELEASE ASSEMBLY (2 C-2)
- PIG PORT (1 C-4)
- PRESSURE SUSTAINING DEVICE (1 C-2)
- LOW POINT DRAIN (2 C-2)

- REDUCER
- THRUST BLOCK
- WATER METER
- HYDRANT
- FLANGE/BLIND FL
- MECHANICAL
- AIR RELIEF
- BLOW-OFF
- CHECK
- WATER SYSTEM FITTINGS
- STORM DRAIN CATCH BASIN
- STORM DRAIN CULVERT
- STORM DRAIN MANHOLE
- STORM DRAINAGE

**S.T.E.P. FORCE MAIN TO BE**  
**3" HDPE SDR 9 AND 2" HDPE SDR 9**  
**PE 3408 PIPE**  
**MEETING THE STANDARDS OF**  
**ASTM D3035 AND F714**

**"AS-BUILT DRAWING"**

S.T.E.P. SEWAGE LINES SHOWN ON THIS SHEET TO BE INSTALLED WITH CONVENTIONAL TRENCHING

PLANNING		OPERATIONS AND ENGINEERING	
BY:	DATE	BY:	DATE
JOHN P. VODOPICH A.I.C.P. COMMUNITY DEV DIRECTOR		STEPHEN MISIURAK P.E. CITY ENGINEER	

BENCH MARK:  
B.M. "GRASSIE" IN N.W. COR. OF EAST PARKING LOT AT  
PURDY FIRE STATION NO. 56. ELEV = 300.49' (NGVD 29)

**WHISPERING PINES DRIVE**

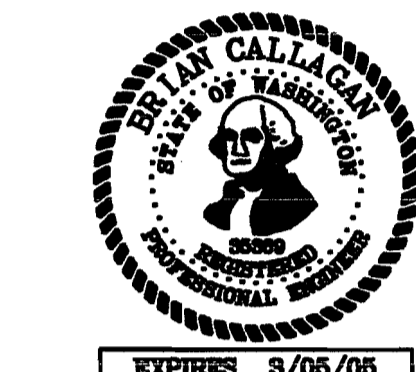
Township 22 N, Range 2 East, Section 19 (NW 1/4)



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Planning

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Wollochet  
Drive NW  
Suite 2A  
Gig Harbor  
WA 98335



CANTERWOOD DIVISION 12  
PLAT IMPROVEMENT PLANS  
GIG HARBOR, WA

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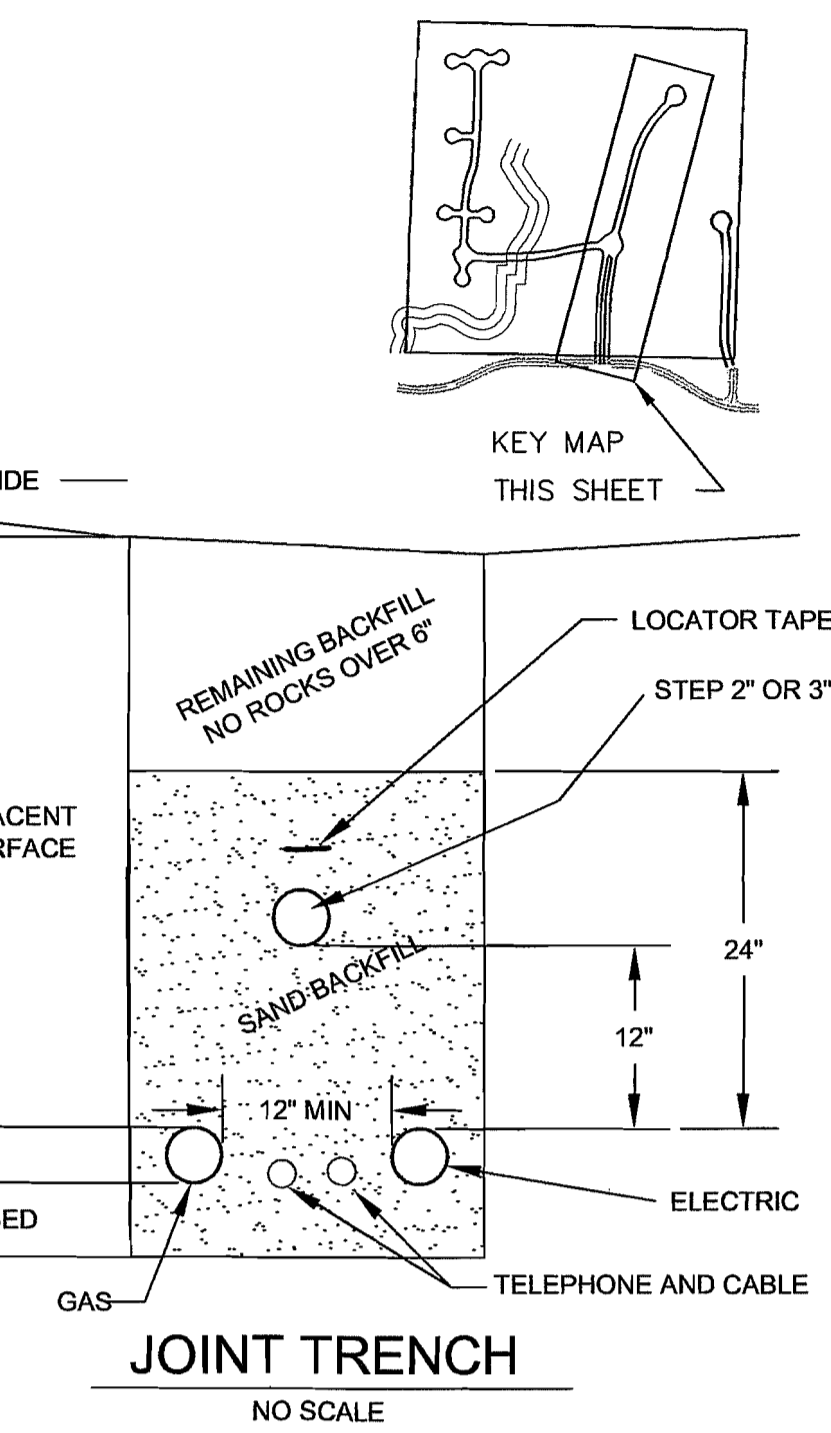
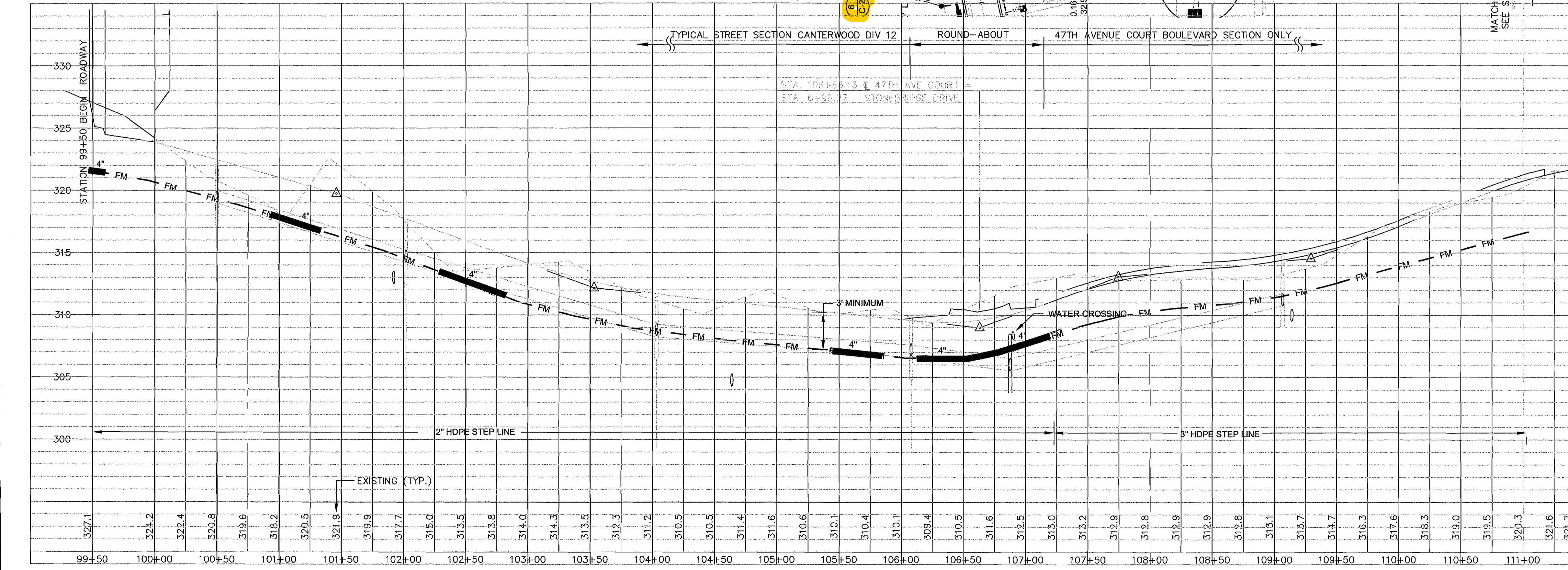
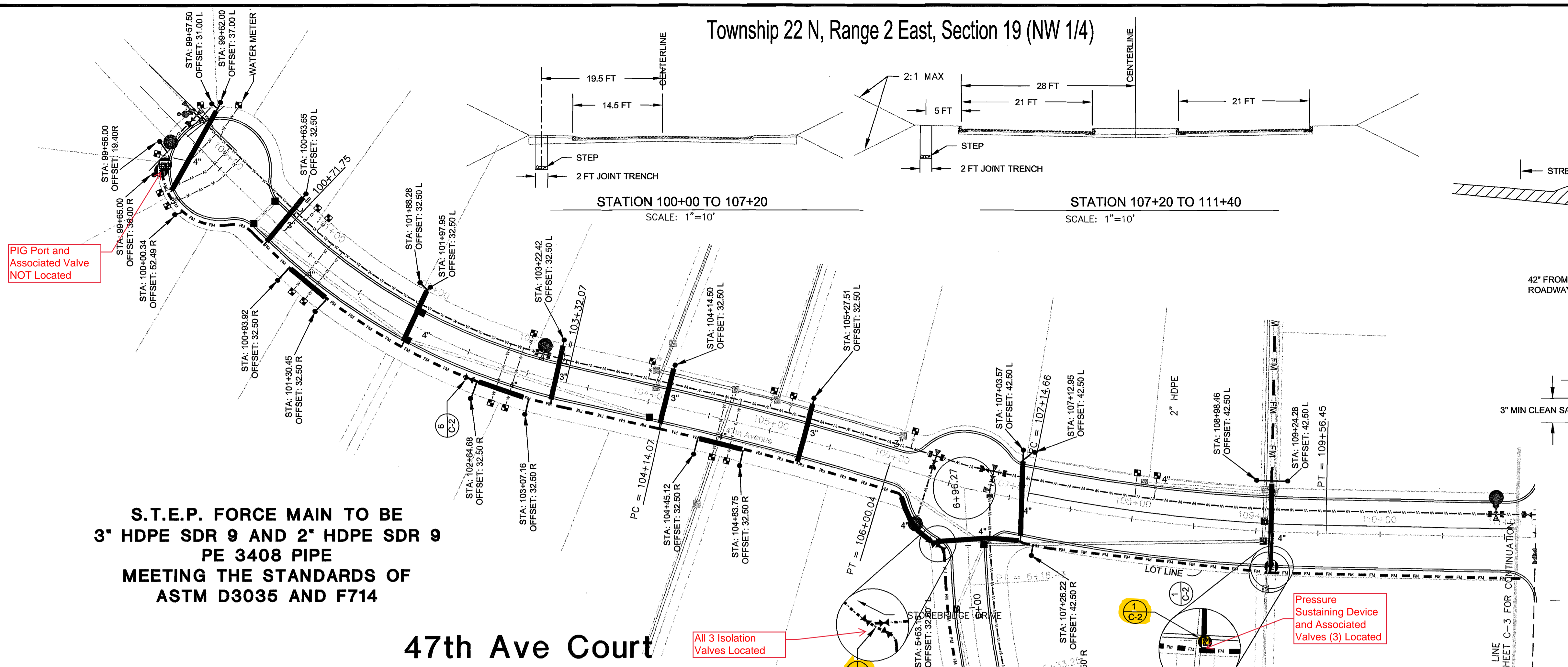
DESIGNED BY: BCallagan  
DRAWN BY: JHannon

REVISIONS		
NO.	DATE	BY
AS-BUILT	8/5/04	DPW

JOB NO:  
P:\Canterwood Div12

ROAD PLAN &  
PROFILE

C-11  
OF SHEETS



- LEGEND**
- FM — FORCE MAIN (HDPE SDR 9 UNLESS OTHERWISE NOTED)
  - E — E — E — ELECTRICAL AND DRY UTILITIES (SCHEMATIC - IN JOINT TRENCH)
  - W — WATER LINE (AS BUILT)
  - — — STORM DRAINAGE LINE (AS BUILT)
  - — — EASEMENT BOUNDARIES (PER FINAL PLAT AND AS RECORDED)
  - SS S.T.E.P. SERVICE CONNECTION (1 C-3)
  - — — SLEEVE PVC 200 DIAMETER AS NOTED 10 FT (MIN.) EACH SIDE OF CROSSING WATER LINE
  - — — GATE VALVE ON S.T.E.P. LINE (C-2)
  - — — AIR/VACUUM RELEASE ASSEMBLY (5 C-2)
  - — — PIG PORT (1 C-4)
  - — — PRESSURE SUSTAINING DEVICE
  - — — LOW POINT DRAIN (2 C-2, 1 C-2)
  - ▽ — REDUCER
  - — THRUST BLOCK
  - — WATER METER
  - ⊕ — HYDRANT
  - ⊖ — FLANGE/BLIND FL
  - ⊙ — MECHANICAL
  - ⊙ — AIR RELIEF
  - ⊙ — BLOW-OFF
  - ⊙ — CHECK
  - — STORM DRAIN CATCH BASIN
  - ⊙ — STORM DRAIN CULVERT
  - ⊙ — STORM DRAIN MANHOLE

AS-BUILT

S.T.E.P. SEWAGE LINES SHOWN ON THIS SHEET TO BE INSTALLED WITH CONVENTIONAL TRENCHING BENCH MARK:

B.M. "BRASSE" IN N.W. COR. OF EAST PARKING LOT AT PURDY FIRE STATION NO. 56. ELEV = 300.49' (NGVD 29)



SCALE 1" = 50'

"AS-BUILT DRAWING"  
47TH AVENUE COURT - PLAN AND PROFILE

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. COMMUNITY DEV DIRECTOR DATE

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. CITY ENGINEER DATE

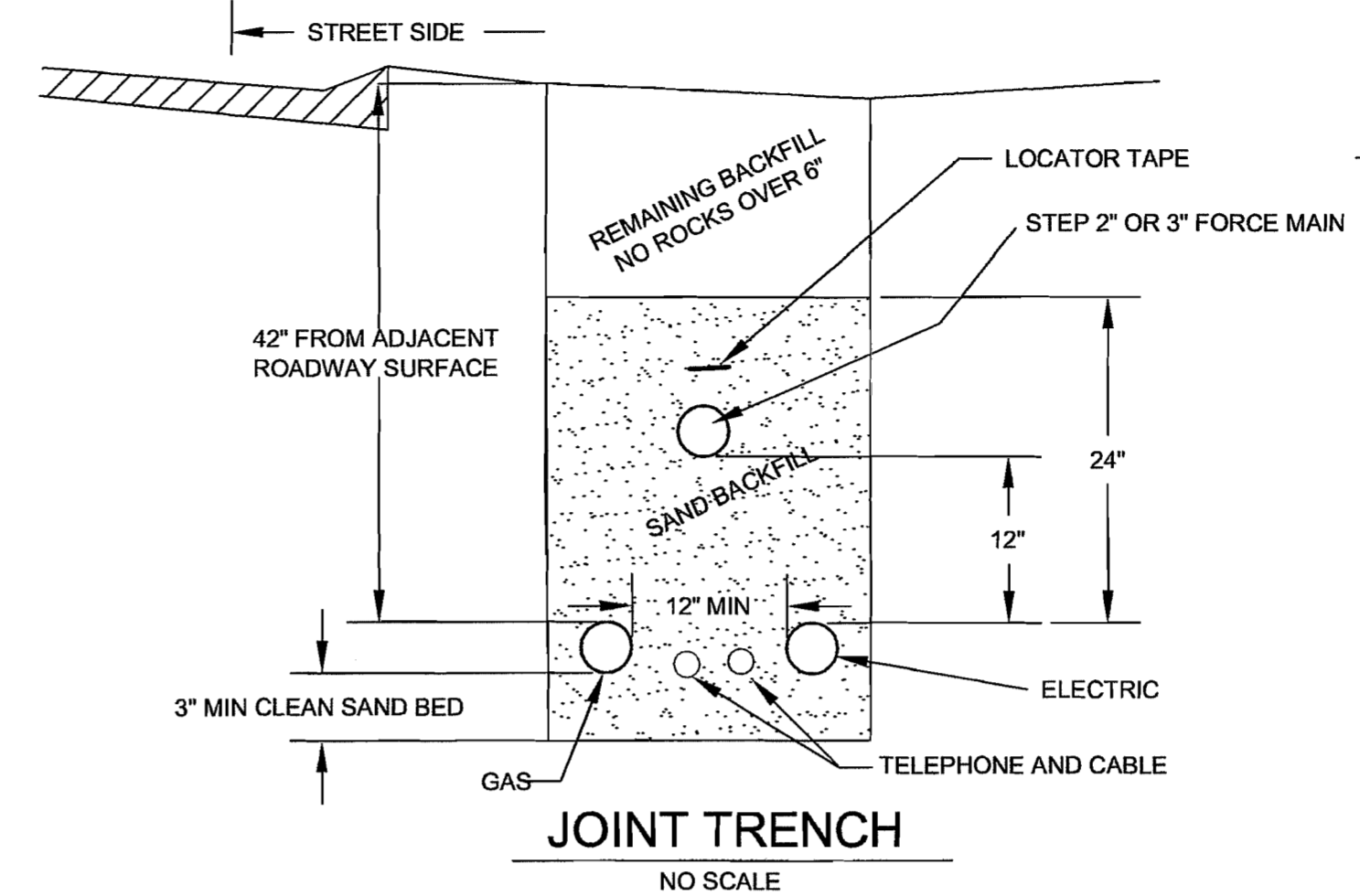
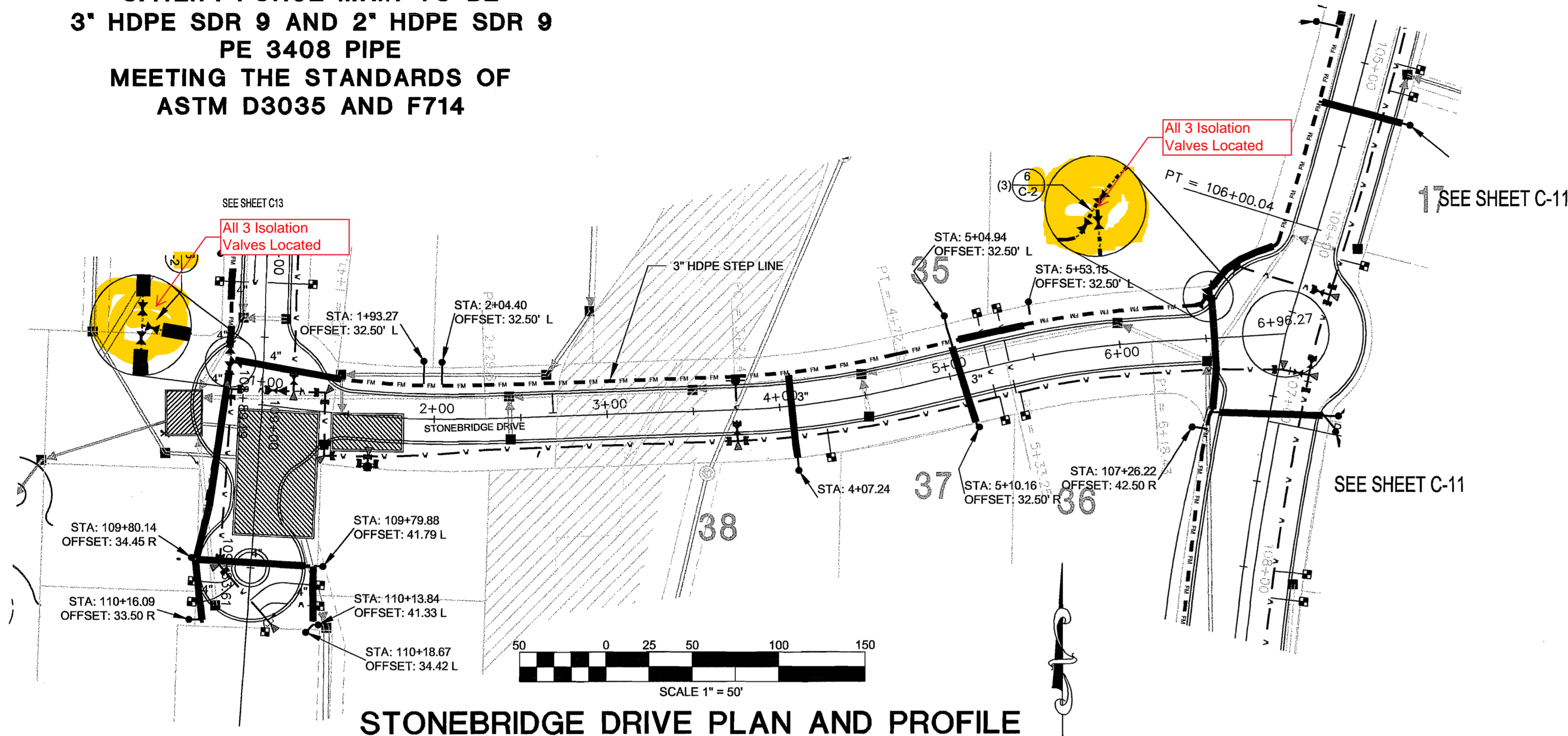
PIG Port and Associated Valve NOT Located

All 3 Isolation Valves Located

Pressure Sustaining Device and Associated Valves (3) Located

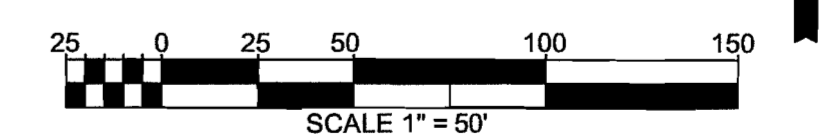
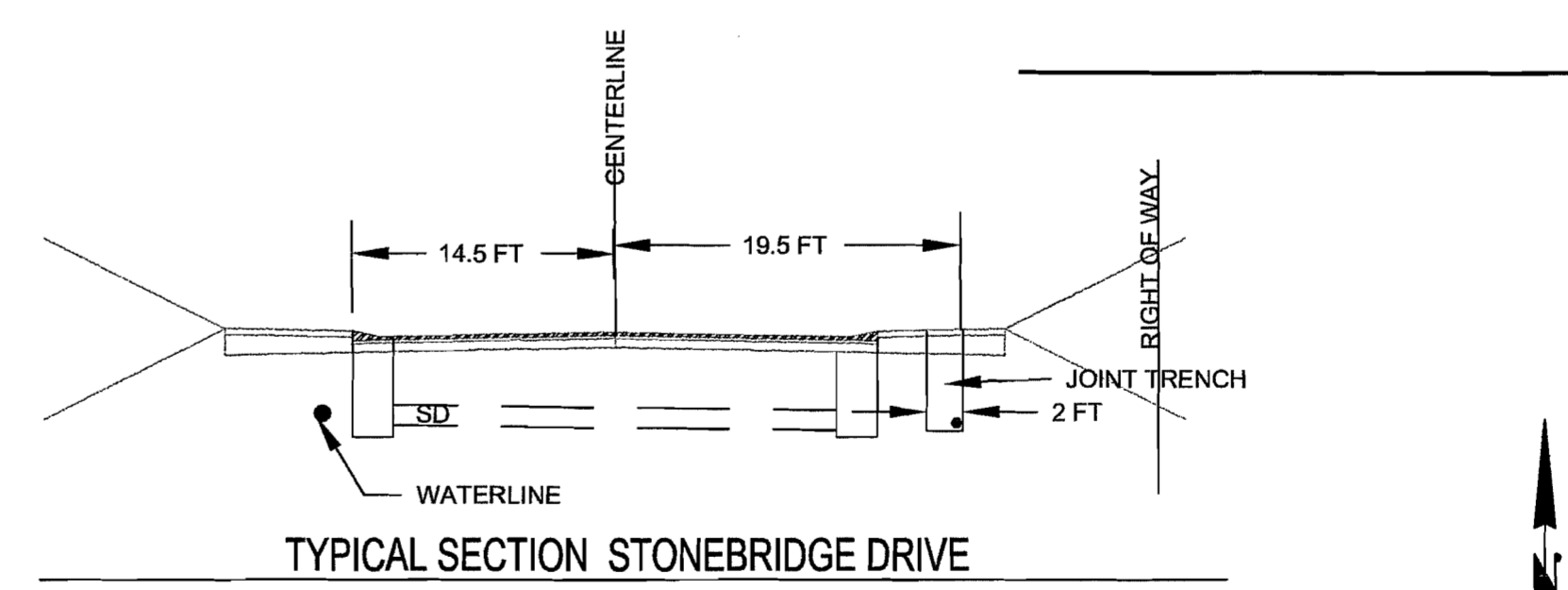
S.T.E.P. FORCE MAIN TO BE  
3" HDPE SDR 9 AND 2" HDPE SDR 9  
PE 3408 PIPE  
MEETING THE STANDARDS OF  
ASTM D3035 AND F714

**S.T.E.P. FORCE MAIN TO BE  
3" HDPE SDR 9 AND 2" HDPE SDR 9  
PE 3408 PIPE  
MEETING THE STANDARDS OF  
ASTM D3035 AND F714**



- LEGEND**
- FM — FORCE MAIN (HDPE SDR 9 UNLESS OTHERWISE NOTED)
  - E — E — E — ELECTRICAL AND DRY UTILITIES (SCHEMATIC — IN JOINT TRENCH)
  - W — W — WATER LINE (AS BUILT)
  - — — STORM DRAINAGE LINE (AS BUILT)
  - — — EASEMENT BOUNDARIES (PER FINAL PLAT AND AS RECORDED)
  - SS S.T.E.P. SERVICE CONNECTION (1/C-3)
  - — — SLEEVE PVC 200 DIAMETER AS NOTED 10 FT (MIN.) EACH SIDE OF CROSSING WATER LINE
  - X — GATE VALVE ON S.T.E.P. LINE (2/C-2)
  - AV — AIR/VACUUM RELEASE ASSEMBLY (5/C-2)
  - PP — PIG PORT (1/C-4)
  - PS — PRESSURE SUSTAINING DEVICE (1/C-2)
  - LD — LOW POINT DRAIN (2/C-2)

AS-BUILT



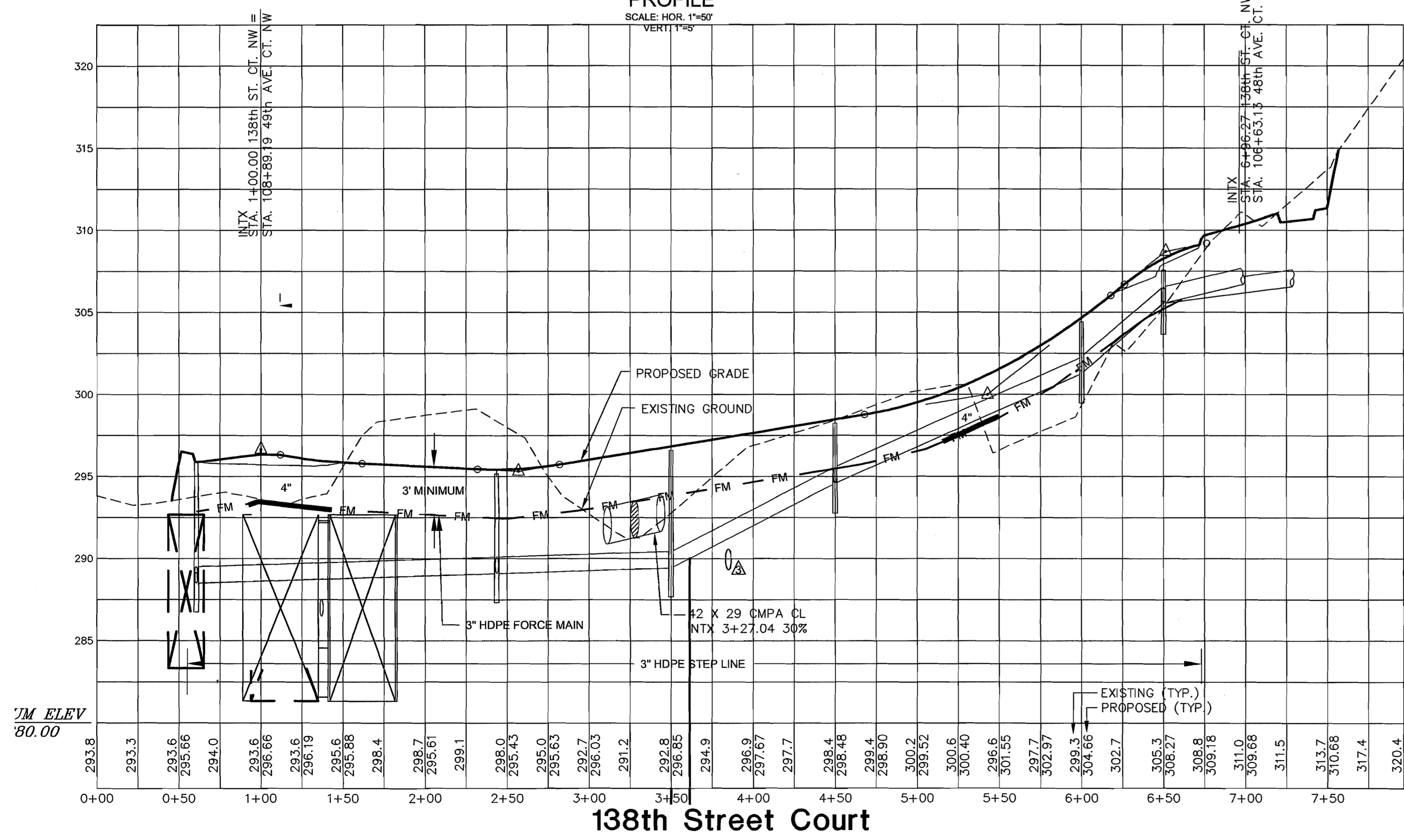
S.T.E.P. SEWAGE LINES SHOWN ON THIS SHEET TO BE INSTALLED WITH CONVENTIONAL TRENCHING

**"AS-BUILT DRAWING"  
STONEBRIDGE DRIVE PLAN AND PROFILE**

BENCH MARK:  
B.M. "BRASSIE" IN N.W. COR. OF EAST PARKING LOT AT  
PURDY FIRE STATION NO. 56. ELEV = 300.49' (NGVD 29)

**PLANNING**  
BY: JOHN P. VODOPICH A.I.C.P. COMMUNITY DEV DIRECTOR  
DATE

**OPERATIONS AND ENGINEERING**  
BY: STEPHEN MISURAK P.E. CITY ENGINEER  
DATE



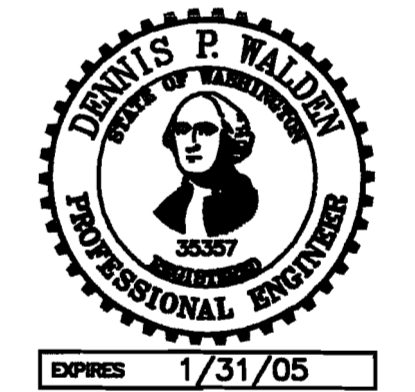
Architecture  
Engineering  
Planning

(253) 858-8204

5715  
Wollochet  
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WA 98335



**CANTERWOOD DIVISION 12  
S.T.E.O IMPROVEMENT PLANS  
GIG HARBOR, WA**



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DRAWN BY:

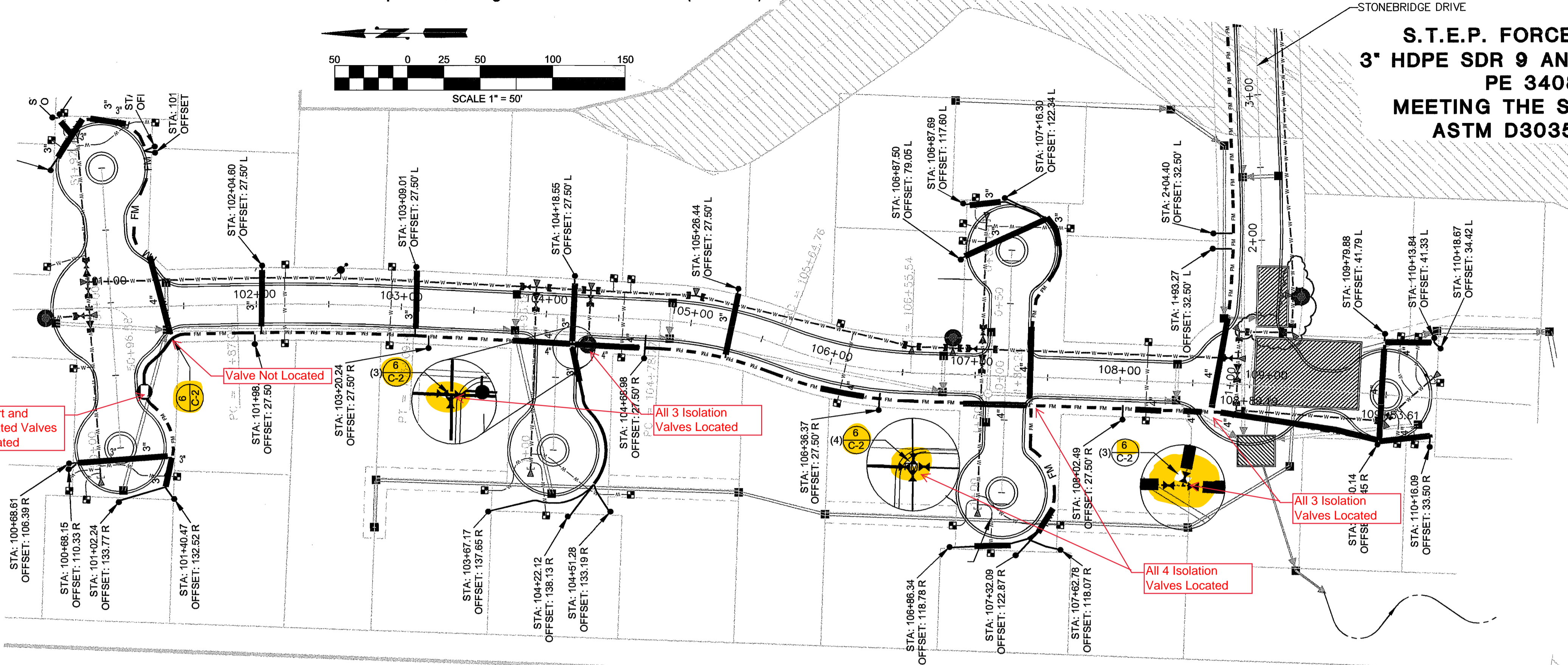
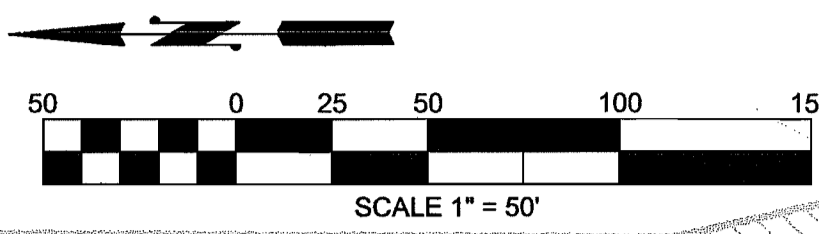
REVISIONS		
NO.	DATE	BY

JOB NO:  
P:\Canterwood Div12

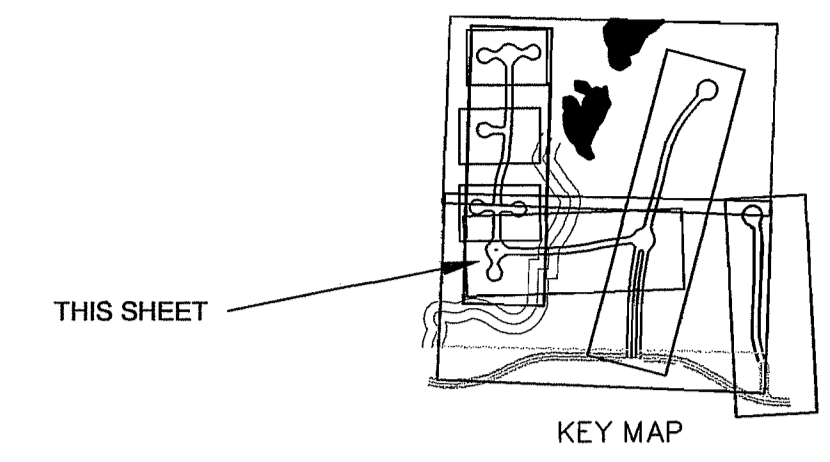
ROAD PLAN &  
PROFILE

**C-12**  
OF SHEETS

Township 22 N, Range 2 East, Section 19 (NW 1/4)



STONEBRIDGE DRIVE  
**S.T.E.P. FORCE MAIN TO BE  
 3" HDPE SDR 9 AND 2" HDPE SDR 9  
 PE 3408 PIPE  
 MEETING THE STANDARDS OF  
 ASTM D3035 AND F714**



**NORTH PACIFIC DESIGN**  
 INCORPORATED

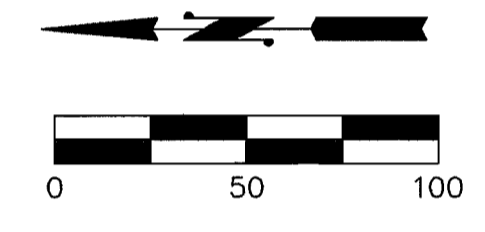
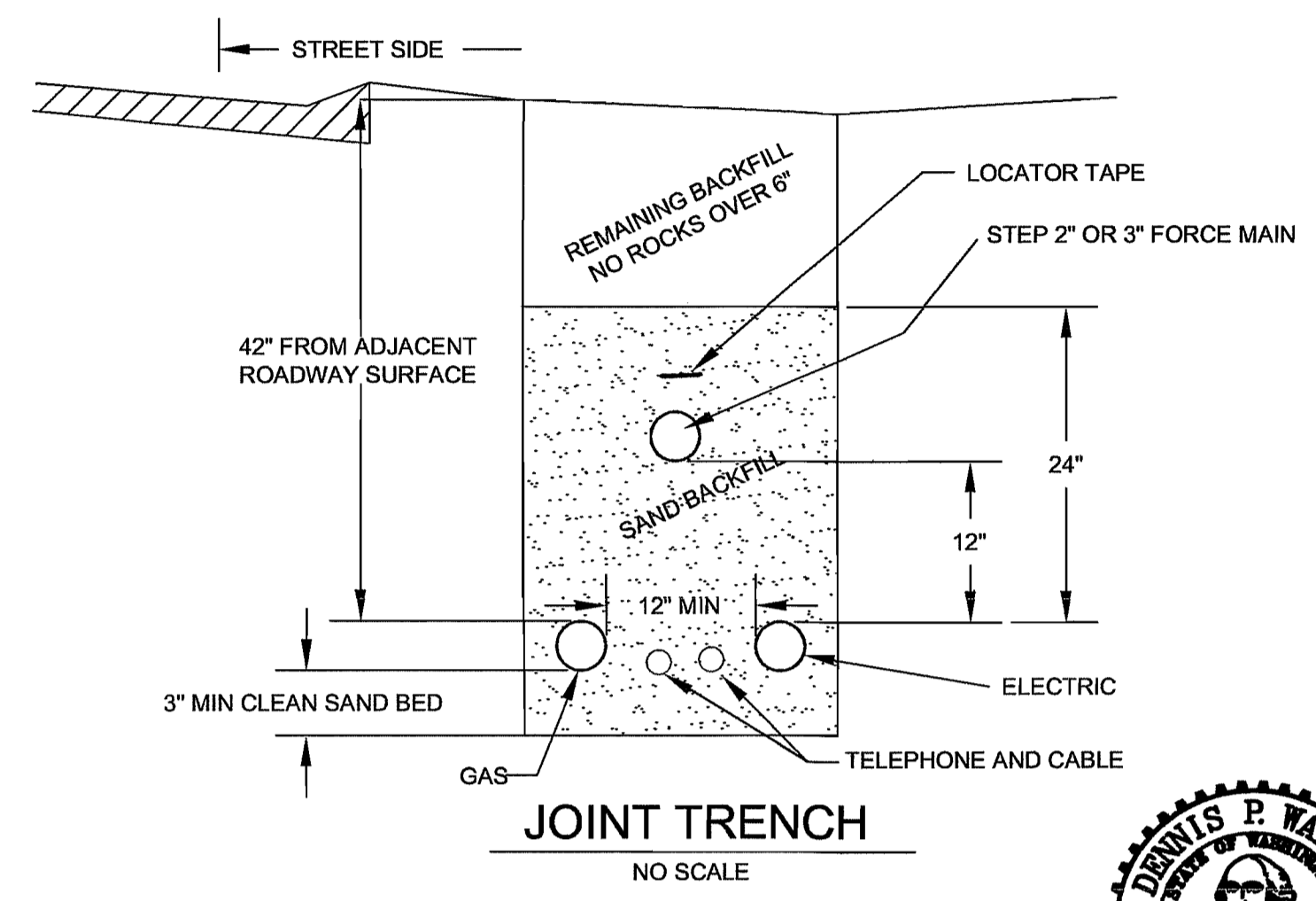
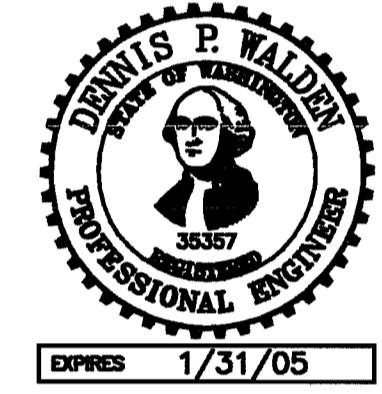
Architecture  
 Engineering  
 Planning

(253) 858-8204

5715  
 Wollochet  
 Drive NW  
 Suite 2A  
 Gig Harbor  
 WA 98335



**RUSH CONSTRUCTION COMPANY, INC.**  
 (253) 858-3636

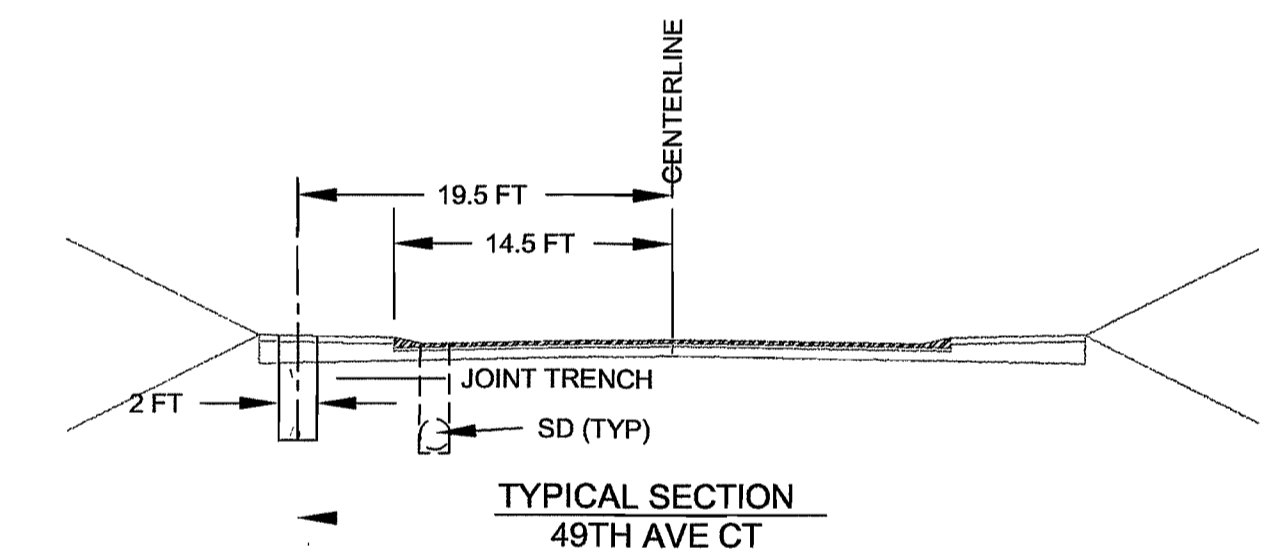
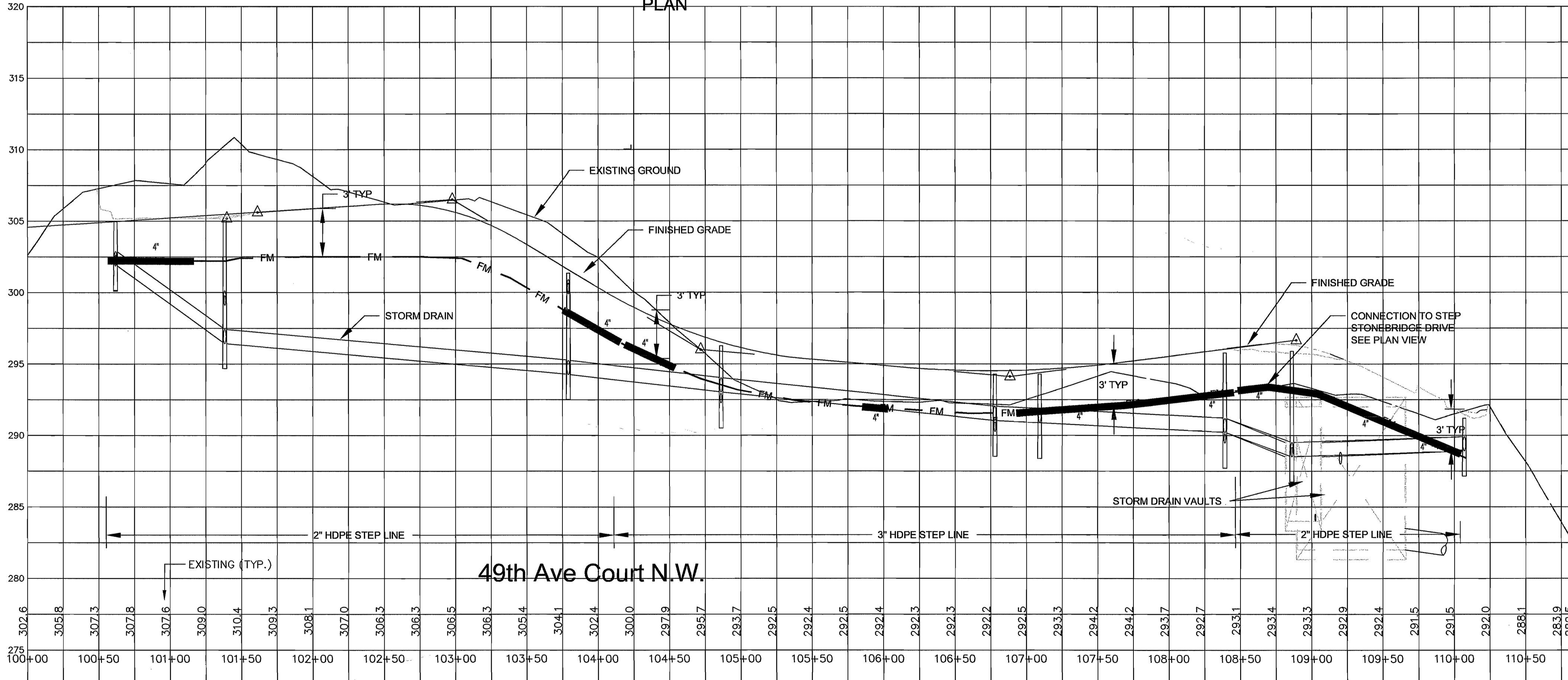


AS-BUILT

49th Ave Court N.W.

PROFILE  
 SCALE: HOR. 1"=50'  
 VERT. 1"=5'

PROJECT BOUNDARY



LEGEND

- 3" AND 2" HDPE IN COMMON TRENCH FORCE MAIN (HDPE SDR 9 UNLESS OTHERWISE NOTED)
- E-E-E-E ELECTRICAL AND DRY UTILITIES (SCHEMATIC - IN JOINT TRENCH)
- W-W-W-W WATER LINE (AS BUILT)
- STORM DRAIN LINE (AS BUILT)
- EASEMENT BOUNDARIES (PER FINAL PLAT AND AS RECORDED)
- SS S.T.E.P. SERVICE CONNECTION (1 C-3)
- SLEEVE PVC 200 DIAMETER AS NOTED 10 FT (MIN.) EACH SIDE OF CROSSING WATER LINE
- GATE VALVE ON S.T.E.P. LINE (6 C-2)
- AIR/VACUUM RELEASE ASSEMBLY (5 C-2)
- PIG PORT (1 C-4)
- PRESSURE SUSTAINING DEVICE (1 C-2)
- LOW POINT DRAIN (2 C-2)

BENCH MARK:  
 B.M. "BRASSIE" IN N.W. COR. OF EAST PARKING LOT AT  
 PURDY FIRE STATION NO. 56. ELEV = 300.49' (NGVD 29)  
 FORCE MAIN ON THIS SHEET TO BE INSTALLED WITH CONVENTIONAL TRENCHING METHODS

**"AS-BUILT DRAWING"**  
**49TH AVENUE COURT PLAN AND PROFILE**

PLANNING

BY: JOHN P. VODOPICH A.I.C.P. DATE  
 COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING

BY: STEPHEN MISURAK P.E. DATE  
 CITY ENGINEER

**CANTERWOOD DIVISION 12  
 PLAT IMPROVEMENT PLANS  
 GIG HARBOR, WA**

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 NORTH PACIFIC DESIGN

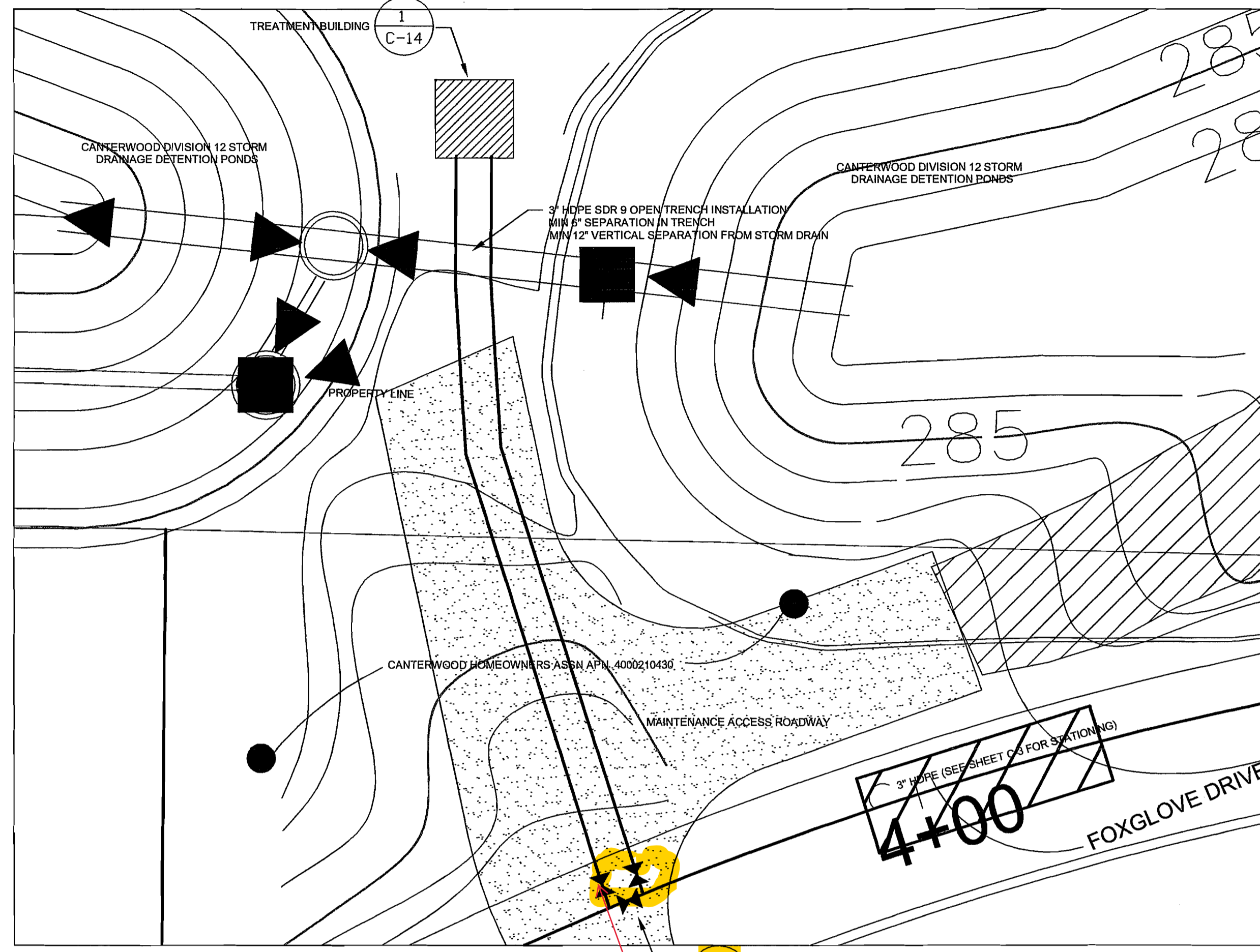
DESIGNED BY: BCollagan  
 DRAWN BY: JHannan

REVISIONS		
NO.	DATE	BY
AS-BUILT	8/5/04	DPW

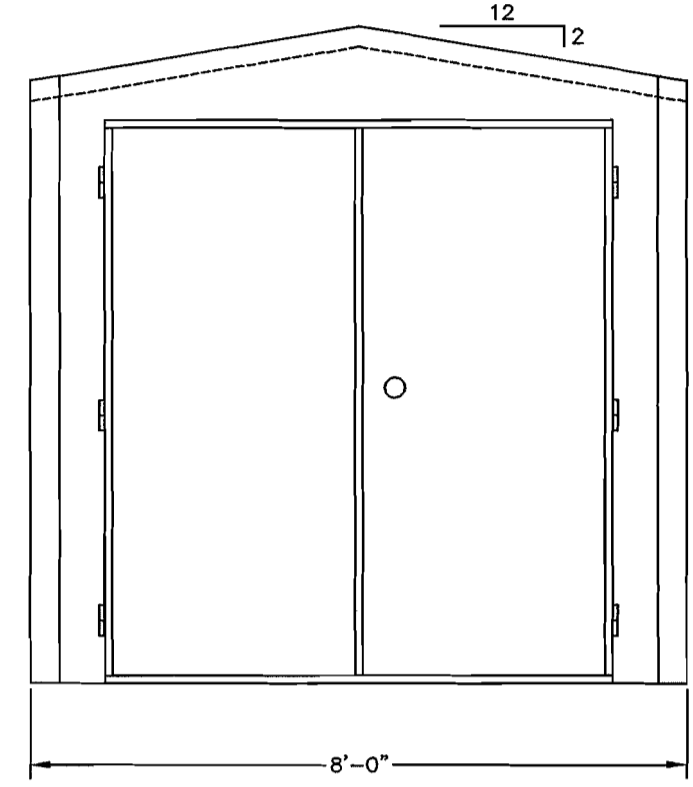
JOB NO:  
 P:\Canterwood Div12

**C-13**  
 OF SHEETS

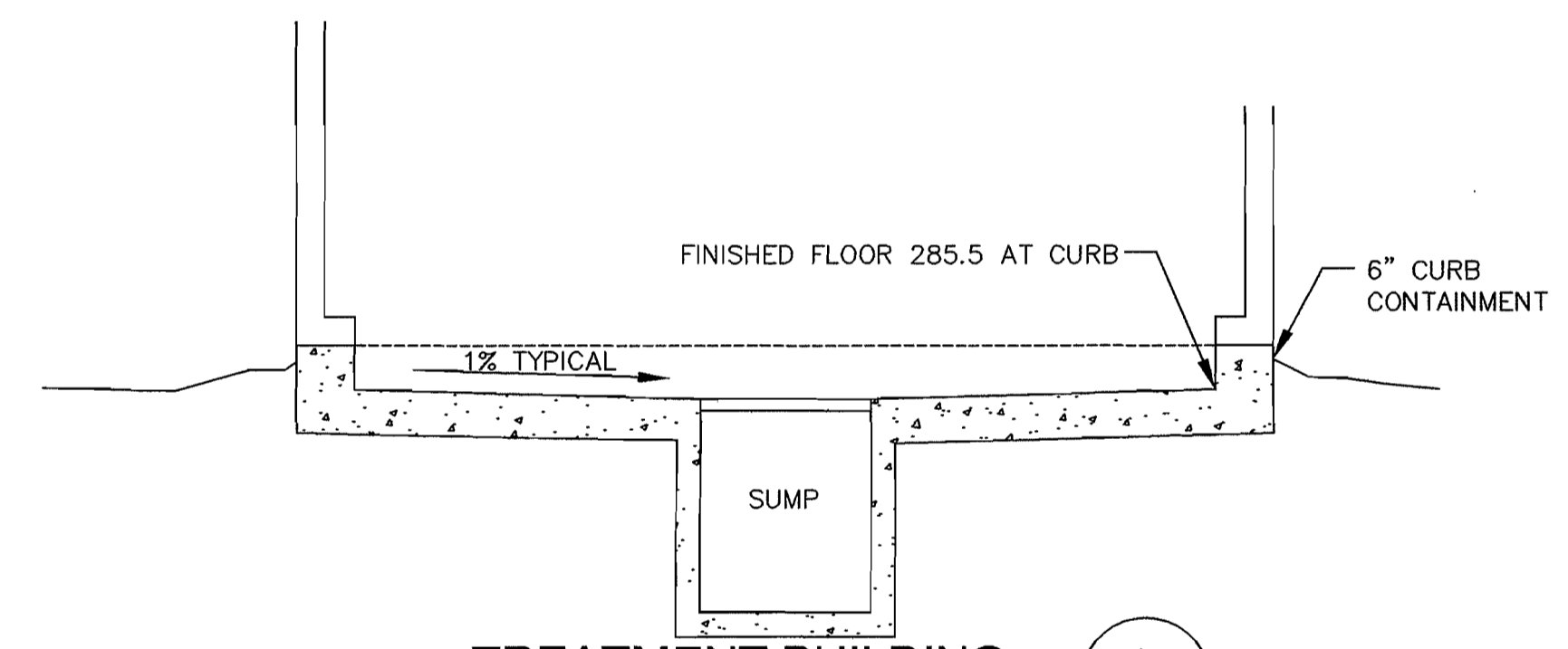
SEE SHEET C-3 FOR STAKING LOCATION OF TREATMENT BUILDING



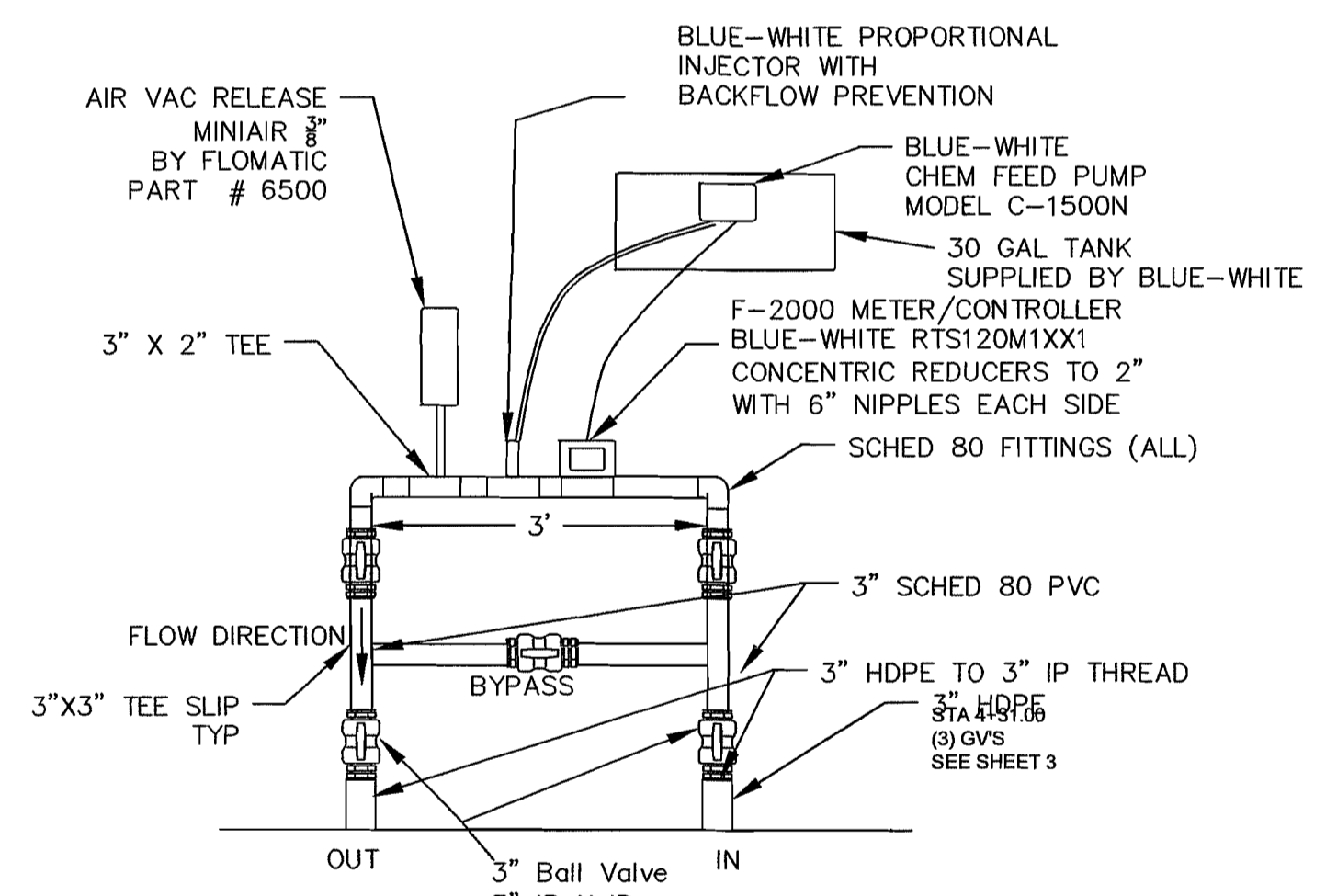
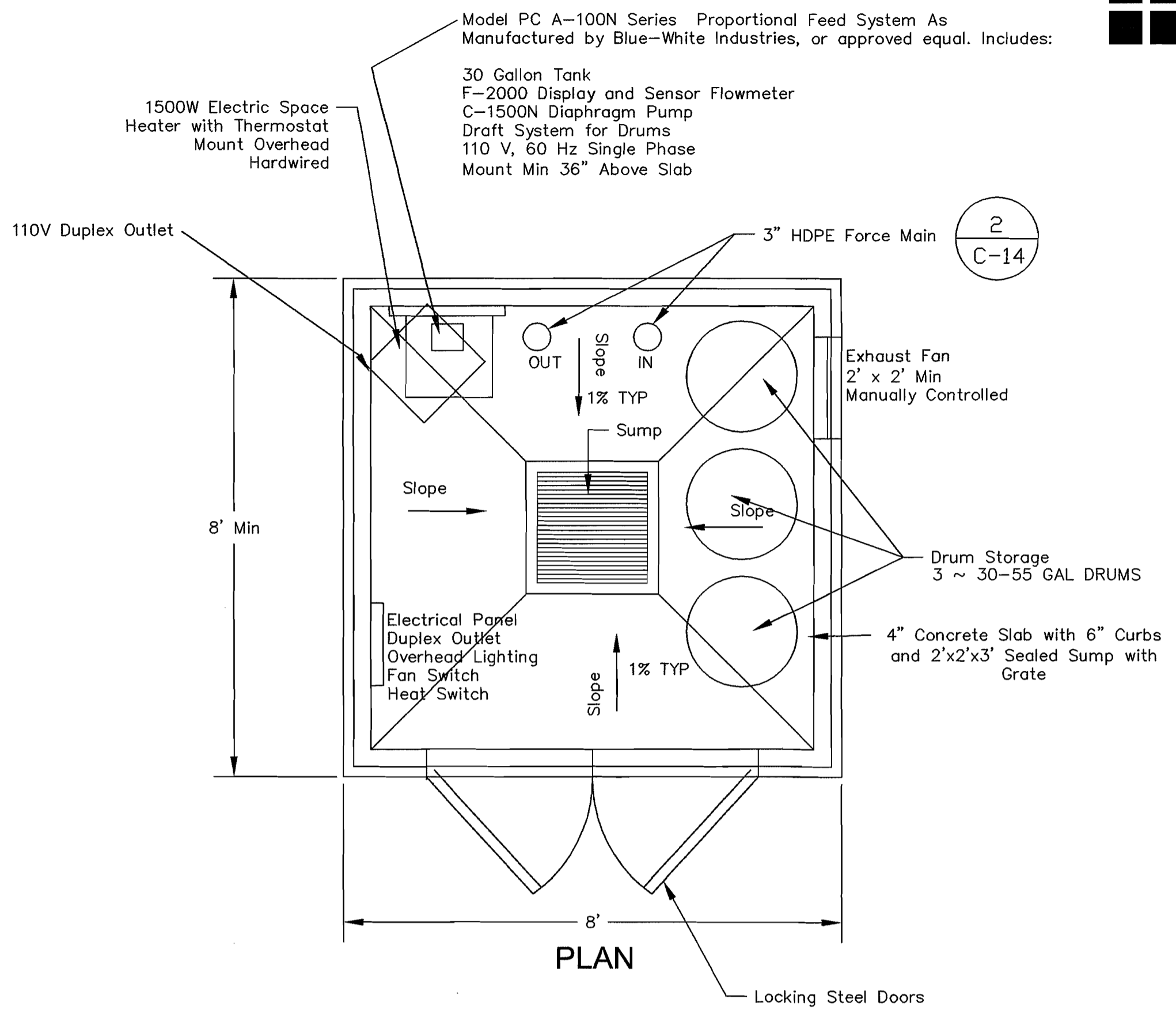
Only 1 of 3 Valves Located (appears to be Downstream valve)



FRONT  
Prefabricated Structure 8' x 8'  
With 6" Steel Doors  
MekCo or Approved Equal



TREATMENT BUILDING SECTION - NO SCALE



PIPING DIAGRAM

**MEKCO MANUFACTURING INCORPORATED**  
FIBERGLASS REINFORCED PLASTIC BUILDINGS

**PART 1 - GENERAL**

- 1.01 SUMMARY
  - A. Section Includes:
    1. Freestanding, shop fabricated and assembled fiberglass reinforced plastic (FRP) insulated composite buildings.
    2. Include fasteners, anchors, doors and frames, vents, windows, gasketing, lighting, and HVAC.
- 1.02 SYSTEM DESCRIPTION
  - A. Design Requirements:
    1. Buildings shall conform to dimensions shown on Drawings or Buildings shall have outside dimensions of 8'6" ft long by 8' 0" ft wide with a minimum eave height of 7'-4" (WITH 6" CURB ALLOWS 7'-10" MIN INTERIOR HEIGHT).
    2. Buildings shall be completely waterproof, air and watertight, corrosion and chemical resistant, lightweight, and environmentally aesthetic.
    3. Design to sustain superimposed loads for load combinations in accordance with ASCE 7-98.
      - a. Design loads:
        - (1) Dead load of building, live (snow) load, 35 psf, wind load, 25 psf, mechanical equipment.
        - b. During installation of the composite FRP structure a concentrated load not exceeding 250 pounds may be placed on any portion of the roof. The concentrated load shall not be applied to the roof if other loads are present.
    4. Stresses produced by specified load conditions shall be determined consistent with recognized methods of analysis.
    5. Average R-value of assembled building shall be minimum of R-7.

**1.03 SUBMITTALS**

- A. Product Data:
  1. Resin and glass manufacturers material specifications.
- B. Shop Drawings:
  1. Include plans and elevations, fabrication details indicating laminate thickness and section depths and widths, location of openings and equipment supports, size and location of anchor bolts, and gasketing details.

**1.04 QUALITY ASSURANCE**

- A. Buildings provided shall be end product of one manufacturer to achieve standardization for appearance. Manufacturer Qualifications: Building shall be manufactured and erected by firm with minimum of 5 yrs experience in structures of size and character specified.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Store and protect on manufacturer's site, project site and during shipment and installation to prevent warping and fracturing.

**PART 2 - PRODUCTS**

- 2.01 MANUFACTURER
  - A. MEKCO Manufacturing, Inc., 1063 W Washington Ave., P. O. Box 126, Cleveland, WI 53015, 920-693-8163 phone, 920-693-8444 fax
- 2.02 LAMINATE MATERIALS
  - A. Resins, Gel Coat, Glass Reinforcing, Insulation.
  - 1. As provided by MEKCO Manufacturing Inc.
- 2.03 MISCELLANEOUS MATERIALS
  - A. Concrete Anchors, Doors, Gasketing, to be provided by MEKCO Manufacturing, Inc. per description above
  - B. Permanently fused building assembly yielding a watertight one-piece structure.

**2.05 ASSEMBLY**

- A. Shop assemble complete building. Flanges between adjacent panels shall be factory bonded together with structural adhesive. Seal exterior edges of adjacent panels with color matched silicon sealant. Fit and bond appurtenances, formed separately, into openings cut in finished panel or integrally mold to panel. Bond attachments with glass fibers and resin from interior of panel. Resin seal cut or drilled edges.

**PART 3 - EXECUTION**

- 3.01 EXAMINATION
  - A. Examine surface to receive building for acceptable installation conditions. Do not start installation unless acceptable conditions are provided.
- 3.02 INSTALLATION
  - A. Install in accordance with manufacturer's instructions and approved submittals. Field erect panels. Flanges between adjacent panels shall be bolted and gasketed. Use washers to avoid localized stresses. Seal exterior edges of adjacent panels with color matched silicon sealant.
  - B. Install continuous neoprene gasket between perimeter anchoring flange and where panels rest on supporting structure. Resin seal cut or drilled edges. Repair damaged panels. Minimum spacing and edge distances of concrete anchors shall conform to requirements of local building codes

BENCH MARK:  
B.M. "BRASSIE" IN N.W. COR. OF EAST PARKING LOT AT  
PURDY FIRE STATION NO. 56. ELEV = 300.49' (NGVD 29)

PLANNING  
BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

OPERATIONS AND ENGINEERING  
BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

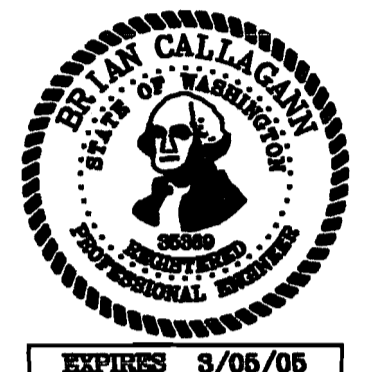
**"AS-BUILT DRAWING"**  
**TREATMENT FACILITIES DETAILS**



Architecture  
Engineering  
Planning

(253) 858-8204

5715  
Wollochet  
Drive NW  
Suite 2A  
Gig Harbor  
WA 98335



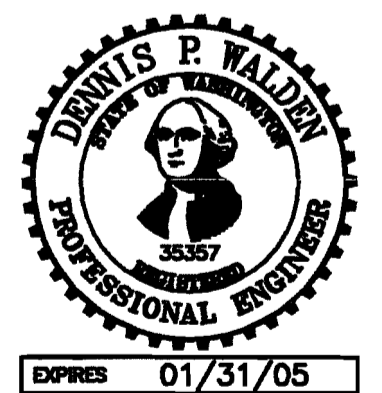
**RUSH CONSTRUCTION COMPANY, INC.**  
(253) 858-3636

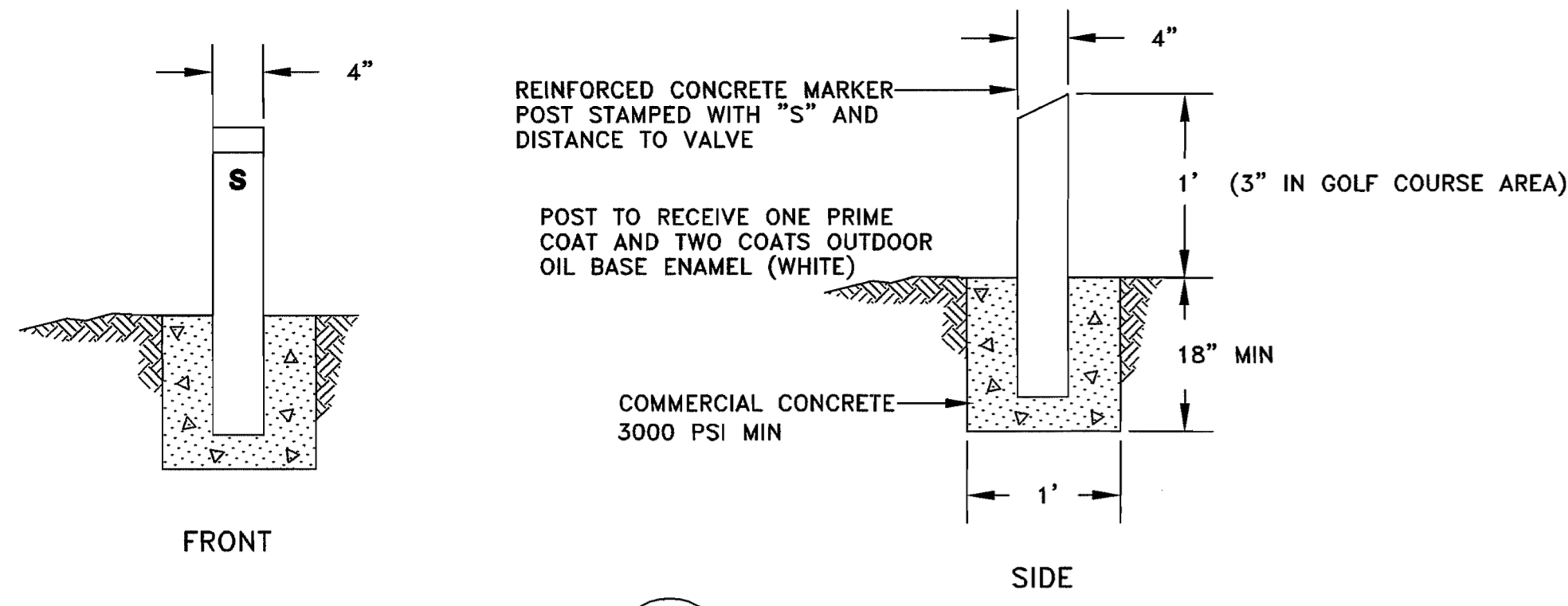
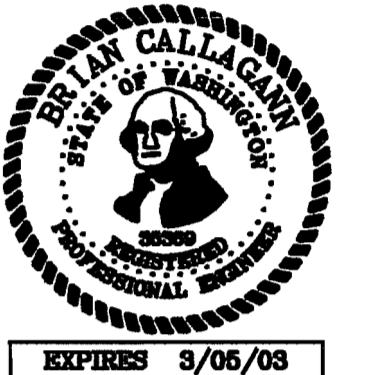
**CANTERWOOD DIVISION 12**  
**S.T.E.P. IMPROVEMENT PLANS**  
**GIG HARBOR, WA**

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NORTH PACIFIC DESIGN  
DESIGNED BY: BCallaghan  
DRAWN BY: JHannan

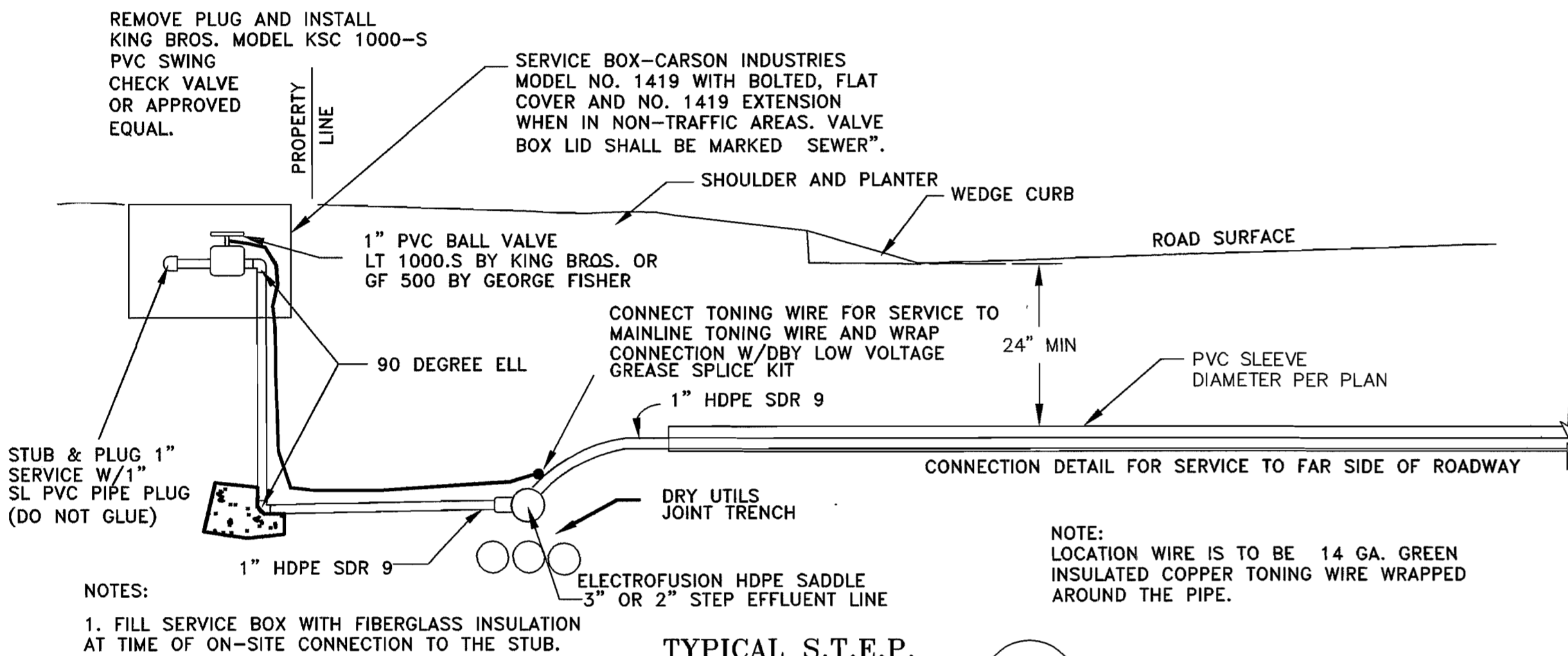
REVISIONS		
NO.	DATE	BY
AS-BUILT	8/5/04	DPW

JOB NO:  
P:\Canterwood Div12

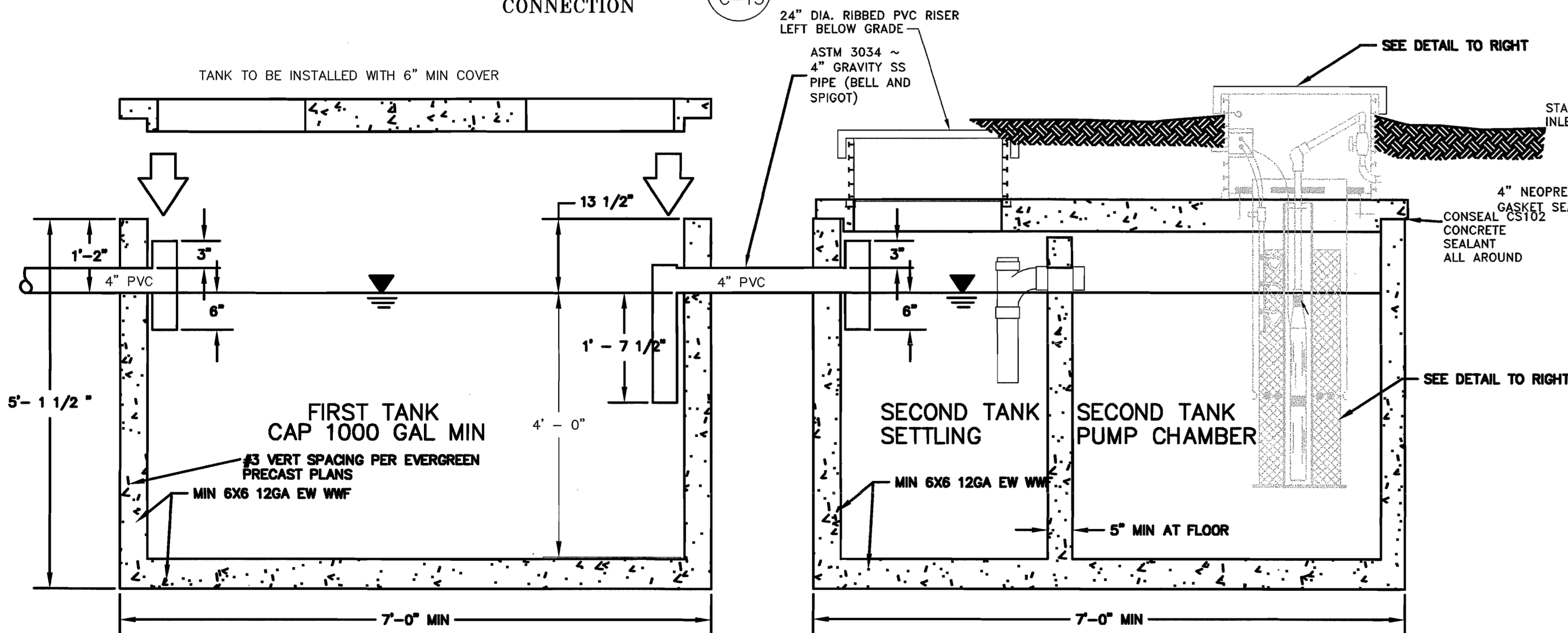




**VALVE MARKER POST** (1)  
C-15



**TYPICAL S.T.E.P. SYSTEM SERVICE CONNECTION** (3)  
C-15



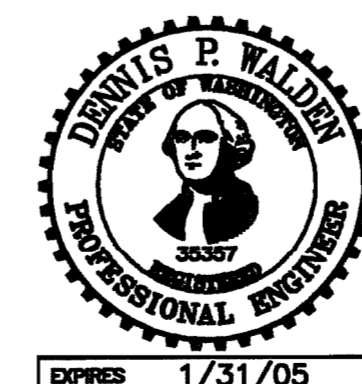
**1000 GALLON S.T.E.P. SEPTIC TANK** (4)  
C-15

TANK TO BE MANUFACTURED BY EVERGREEN PRECAST, INC. OR EQUAL

**1000 GALLON S.T.E.P. PUMP TANK** (4)  
C-15

1. TANK SHALL BE BEDDED ON 6" SAND OR PEA GRAVEL.  
2. BACKFILL AGAINST SIDE SHALL BE COMPACTED IN 2" LIFTS TO THE SAME OR GREATER COMPACTION THAN SURROUNDING AREA.

AS-BUILT



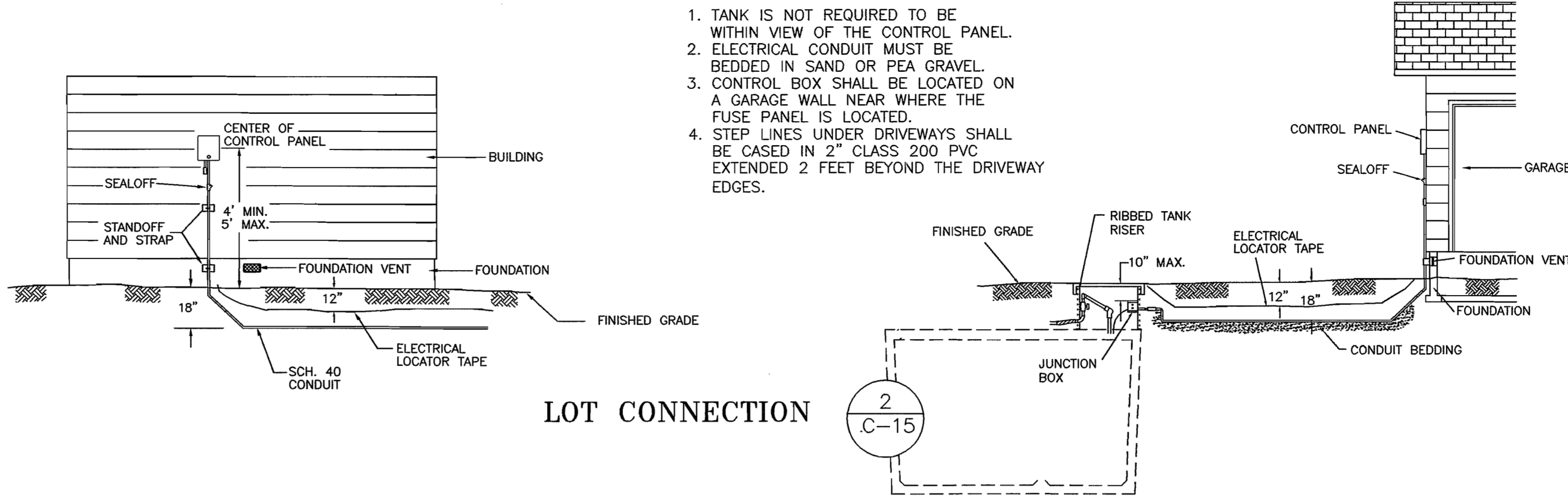
PLANNING

BY: JOHN P. VODOPICH A.I.C.P. DATE  
COMMUNITY DEV DIRECTOR

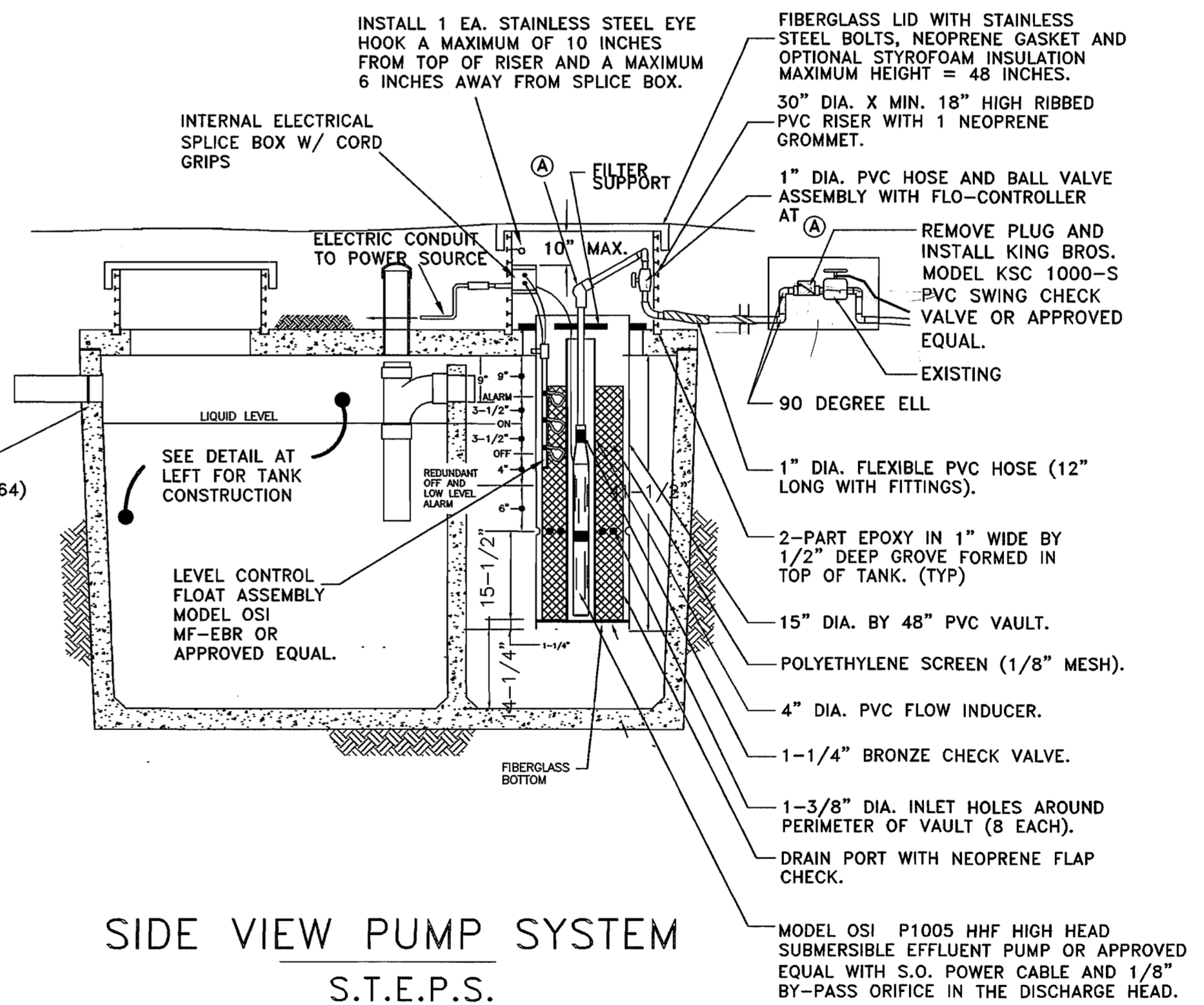
OPERATIONS AND ENGINEERING

BY: STEPHEN MISURAK P.E. DATE  
CITY ENGINEER

1. TANK IS NOT REQUIRED TO BE WITHIN VIEW OF THE CONTROL PANEL.
2. ELECTRICAL CONDUIT MUST BE BEDDED IN SAND OR PEA GRAVEL.
3. CONTROL BOX SHALL BE LOCATED ON A GARAGE WALL NEAR WHERE THE FUSE PANEL IS LOCATED.
4. STEP LINES UNDER DRIVEWAYS SHALL BE CASED IN 2" CLASS 200 PVC EXTENDED 2 FEET BEYOND THE DRIVEWAY EDGES.



**LOT CONNECTION** (2)  
C-15



**SIDE VIEW PUMP SYSTEM S.T.E.P.S.**

BIOTUBE EFFLUENT PUMPING SYSTEM AS SUPPLIED BY ORENCO SYSTEMS, INC.

**"AS-BUILT DRAWING"**