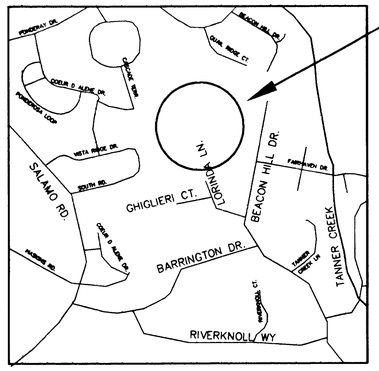
Engineering Design for LE CHEVALIER

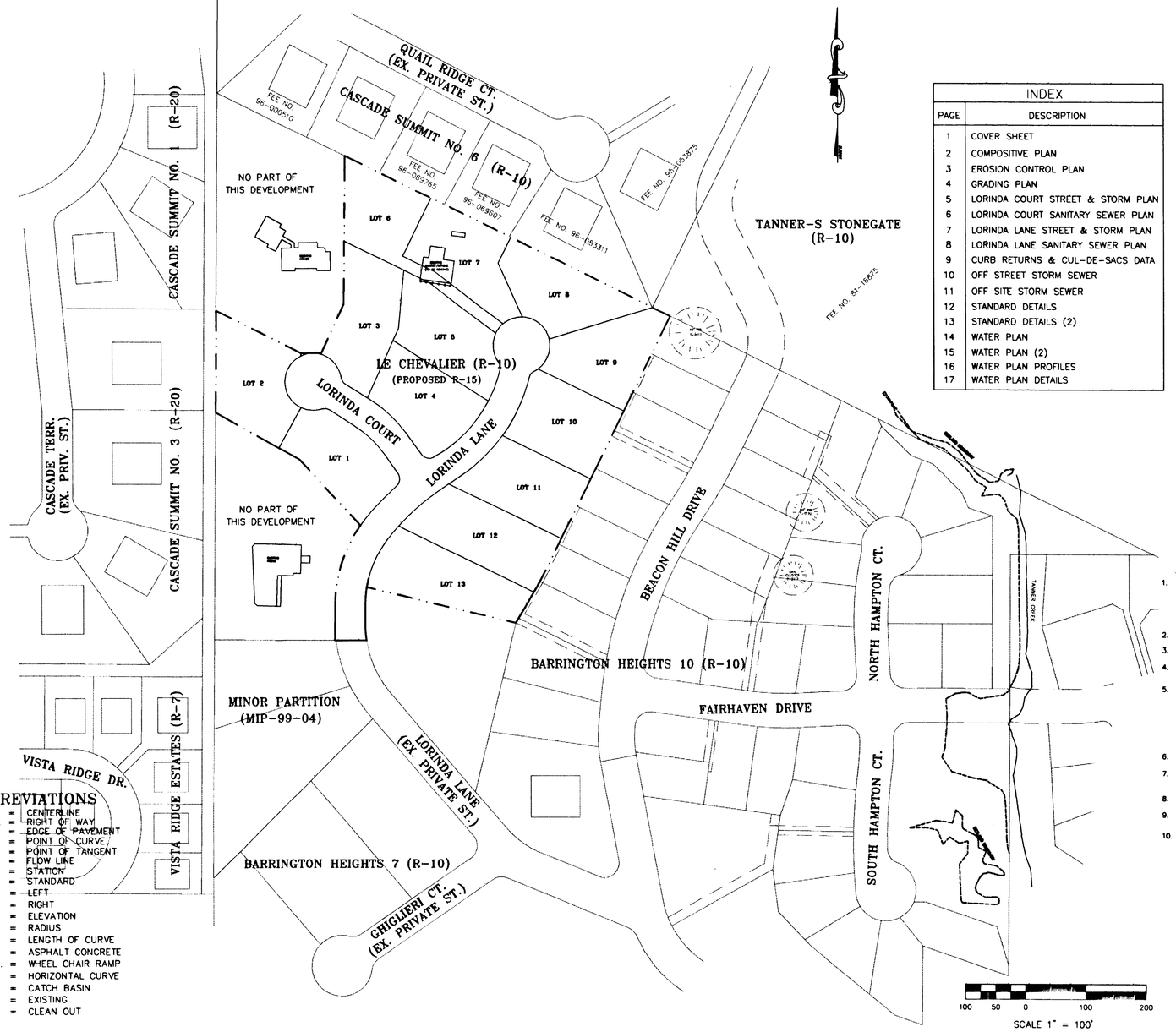


VICINITY MAP

SCALE: N.T.S.

5232 | 5233
5332 | 5333

±580'



DEVELOPER:

JEFF PARKER
NORTHWEST QUALITY HOMES
17225 SE McLOUGHLIN BLVD.
MILWAUKIE, OR 97267
(503) 654-0005

ENGINEER:

CSA CONSULTING ENGINEERS
321 S.W. 4TH, 4TH FLOOR
PORTLAND, OR 97204
(503) 228-3848

LEGEND

- PROPERTY LINES
- CENTERLINE
- EDGE OF PAVEMENT
- LOT LINES
- 1' CONTOURS
- 5' CONTOURS
- EXISTING CURB
- PROPOSED CURB
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING WATER LINE
- PROPOSED WATER LINE
- LOT 1 — LOT NUMBER
- EXISTING MANHOLE
- PROPOSED MANHOLE
- EXISTING POWER POLE
- PROPOSED CATCH BASIN
- EXISTING CATCH BASIN
- FIRE HYDRANT

ABBREVIATIONS

C.L.	=	CENTERLINE
R.O.W.	=	RIGHT OF WAY
E.O.P.	=	EDGE OF PAVEMENT
P.C.	=	POINT OF CURVE
P.T.	=	POINT OF TANGENT
F.L.	=	FLOW LINE
STA.	=	STATION
STD.	=	STANDARD
LT.	=	LEFT
RT.	=	RIGHT
EL.	=	ELEVATION
R.	=	RADIUS
L.	=	LENGTH OF CURVE
A.C.	=	ASPHALT CONCRETE
WCHR.	=	WHEEL CHAIR RAMP
H.C.	=	HORIZONTAL CURVE
C.B.	=	CATCH BASIN
EX.	=	EXISTING
C.O.	=	CLEAN OUT

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GENERAL NOTES:

1. PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR AND ALL SUBCONTRACTORS ARE TO HAVE ALL NECESSARY CURRENT LICENSES, PERMITS AND A COPY OF THE GENERAL CONTRACTOR'S LIABILITY INSURENCE THAT CAN BE PROVIDED TO THE CITY.
2. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE CITY OF WEST LINN AND CSA CONSULTING ENGINEERS WITH A SCHEDULE SHOWING SEQUENCE OF MAJOR CONSTRUCTION PHASES AND ESTIMATED DURATION.
3. THE CONTRACTOR AND/OR SUBCONTRACTOR SHALL HAVE A MINIMUM OF ONE COMPLETE SET OF APPROVED CONSTRUCTION PLANS ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
4. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS AND THE APPLICABLE REQUIREMENTS OF THE CITY OF WEST LINN.
5. THE CONTRACTOR SHALL KEEP CSA CONSULTING ENGINEERS AND CITY OF WEST LINN ADVISED OF PROGRESS AND GIVE 72 HOUR NOTIFICATION FOR INSPECTION, TESTING, AND TO OBSERVE ALL NECESSARY WORK PRIOR TO COVERING IT UP. CONTRACTOR WILL UNCOVER AT HIS/HER OWN EXPENSE ALL WORK THAT WAS BACKFILLED OR COVERED PRIOR TO OBSERVATION AND INSPECTION.
6. THE CONTRACTOR SHALL PERFORM ALL WORK AS SHOWN ON THESE DRAWINGS AND ALL INCIDENTAL WORK AS NECESSARY TO COMPLETE THE PROJECT IN AN ACCEPTABLE MANNER AS DETERMINED BY THE ENGINEER.
7. ALL MATERIAL USED IS SPECIFIED ON THE APPROVED PLANS OR SPECIFICATIONS. ANY ALTERNATIVES ARE TO BE APPROVED BY CSA CONSULTING ENGINEERS AND THE CITY OF WEST LINN.
8. ANY PROPOSED CHANGES ARE TO BE SUBMITTED TO THE ENGINEER AND APPROVED BY CSA CONSULTING ENGINEERS AND THE CITY OF WEST LINN PRIOR TO ANY WORK BEING DONE ON THE PROPOSED CHANGE. NO PAYMENT WILL BE MADE FOR UNAPPROVED CHANGES.
9. EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR IS TO VERIFY THE LOCATIONS AND ELEVATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. IN CASES WHERE THE ACTUAL LOCATION AND/OR ELEVATION VARIES FROM PLAN, CONTRACTOR SHALL NOTIFY THE ENGINEERS BEFORE PROCEEDING WITH CONSTRUCTION.
10. IF CONTRACTOR ENCOUNTERS ANY INCONSISTENCES OR PROBLEMS BETWEEN THESE PLANS & SPECIFICATIONS AND ACTUAL FIELD CONDITIONS. THE CONTRACTOR IS TO STOP WORK IMMEDIATELY AND SHALL NOTIFY CSA BEFORE PROCEEDING WITH CONSTRUCTION.
11. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL UTILITY SERVICES TO THE SITE.
12. THE CONTRACTOR IS RESPONSIBLE FOR MANAGING CONSTRUCTION ACTIVITIES TO INSURE ADJACENT PUBLIC STREETS AND PRIVATE PROPERTIES ARE KEPT CLEAN AND CLEAR OF DEBRIS, DUST, ALL NUISANCES AND DISTURBANCES OF CONSTRUCTION. THE CONTRACTOR SHALL LEAVE ALL AREAS OF THE PROJECT FREE OF DEBRIS AND UNUSED CONSTRUCTION MATERIALS.
13. TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH STATE, COUNTY AND LOCAL OFFICIALS.
14. THE CONTRACTOR IS TO NOTIFY ALL UTILITY COMPANIES FOR UNDERGROUND LOCATIONS PRIOR TO ANY WORK AND/OR EXCAVATION. "ONE CALL" UTILITY NOTIFICATION CENTER, (503) 246-6699.
15. EXCAVATORS MUST COMPLY WITH ALL PROVISIONS OF O.R.S. 757.541 TO 757.571 INCLUDING NOTIFICATION OF ALL OWNERS OF UNDERGROUND FACILITIES AT LEAST (48) BUSINESS DAY HOURS, BUT NOT MORE THAN (10) BUSINESS DAYS BEFORE COMMENCING AN EXCAVATION.
16. ELEVATIONS ARE BASED ON FOUND BENCHMARK, CITY OF WEST LINN, AT INTERSECTION OF FAIRHAVEN DRIVE AND FAIRHAVEN COURT, ELEV.= 386.99
17. AN EROSION/SEDIMENTATION CONTROL (ESC) PLAN IS REQUIRED ON THIS PROJECT. THE IMPLEMENTATION OF THE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE PERMITEE/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND THE VEGETATION/LANDSCAPING IS ESTABLISHED.
18. PRIOR TO BEGINNING WORK THE EROSION CONTROL PLAN APPROVED BY THE CITY OF WEST LINN MUST BE INSTALLED.
19. STREETS AND STORM SEWER SYSTEM WILL BE PRIVATE.
20. A PUBLIC EASEMENT FOR PUBLIC WATER AND PUBLIC SANITARY SEWER WILL EXIST OVER THE ENTIRE PRIVATE STREETS.

CONDITIONS OF APPROVAL:

1. THE APPLICANT SHALL PROVIDE A 20-FOOT WIDE CORRIDOR LINKING LORINDA LN. WITH THE PUBLIC TRAIL ON THE WESTERN EDGE OF THE PROJECT SITE. IN THE 20-FOOT DEDICATED CORRIDOR, THE APPLICANT SHALL PROVIDE AN 8-FOOT WIDE PAVED FOOTPATH. THERE SHALL BE A FOUR-FOOT HIGH FENCE PER CODE ALONG BOTH EDGES OF THE 20-FOOT WIDE CORRIDOR. THERE SHALL BE NO LOCKABLE GATES AT EITHER END OF THE TRAIL OR POINTS IN BETWEEN.
2. ALL LOTS SHALL EXCEED 20,000 SQUARE FEET.
3. SIDEWALKS SHALL BE 5 FEET WIDE WITH 3.5-FOOT WIDE PLANTER STRIP.
4. THE CUL-DE-SACS (CDS) SHALL ALL HAVE A 38-FOOT PAVED RADIUS SINCE ALL NEW DWELLINGS WILL BE SPRINKLERED BY CONDITION OF APPROVAL NO. 10 (BELOW).
5. THE WATER SYSTEM SHALL BE CONNECTED AND LOOPED WITHIN THE HORTON PRESSURE ZONE IN COMPLIANCE WITH THE CITY OF WEST LINN WATER SYSTEM MASTER PLAN AND MEET FIRE MARSHALL REQUIREMENTS TO PROVIDE A MINIMUM 1,500 GALLONS PER MINUTE (GPM) AT 20 PSI. SPECIFICALLY, THE WATER LINE FROM THE HORTON ZONE IN VISTA RIDGE ESTATES SHALL BE EXTENDED VIA EASEMENT TO LORINDA LANE. THE WATER LINE SHALL THEN EXTEND DOWN THE EASEMENT BETWEEN LOTS 9 AND 10 TO BEACON HILL DRIVE AND THEN THIS LINE SHALL BE EXTENDED NORTH THROUGH SLEEPY HALLOW SUBDIVISION TO CONNECT AT THE NORTHWEST CORNER WITH THE HORTON PRESSURE ZONE LINE IN CASCADE SUMMIT NO. 6.
6. PROVIDE TURNAROUND FACILITIES FOR LOT 7. (NOTE: ACTUAL LOT 6)
7. PROVIDE MINIMUM 35-FOOT FRONTAGE AND FIRE TURNAROUND FOR THE LOT WITH EXISTING HOUSE BETWEEN LOTS 2 AND 3.
8. ALL CUL-DE-SACS SHALL HAVE A MAXIMUM 5 PERCENT CROSS SLOPE.
9. PROVIDE FIRE HYDRANTS AT THE END OF BOTH CUL-DE-SACS NEAR LOTS 2 AND 8 AND AT THE INTERSECTION OF LORINDA LANE AND LORINDA COURT.
10. ALL NEW DWELLINGS IN THE SUBDIVISION SHALL BE EQUIPPED WITH AN APPROVED NATIONAL FIRE PROTECTION ASSOCIATION 130 FIRE SUPPRESSION SYSTEM.

AS-BUILT

THESE AS-BUILT PLANS WERE COMPILED FROM SURVEY DATA, DATA COLLECTED FROM OTHERS, AND PERIODIC OBSERVATION DURING CONSTRUCTION. IT IS SUGGESTED THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATIONS OF IMPROVEMENTS IN QUESTION. THESE PLANS ARE AN ACCURATE RECORD OF PUBLIC IMPROVEMENTS TO THE BEST OF MY INFORMATION, KNOWLEDGE AND BELIEF.

SIGNATURE

DATE

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 1 OF 17

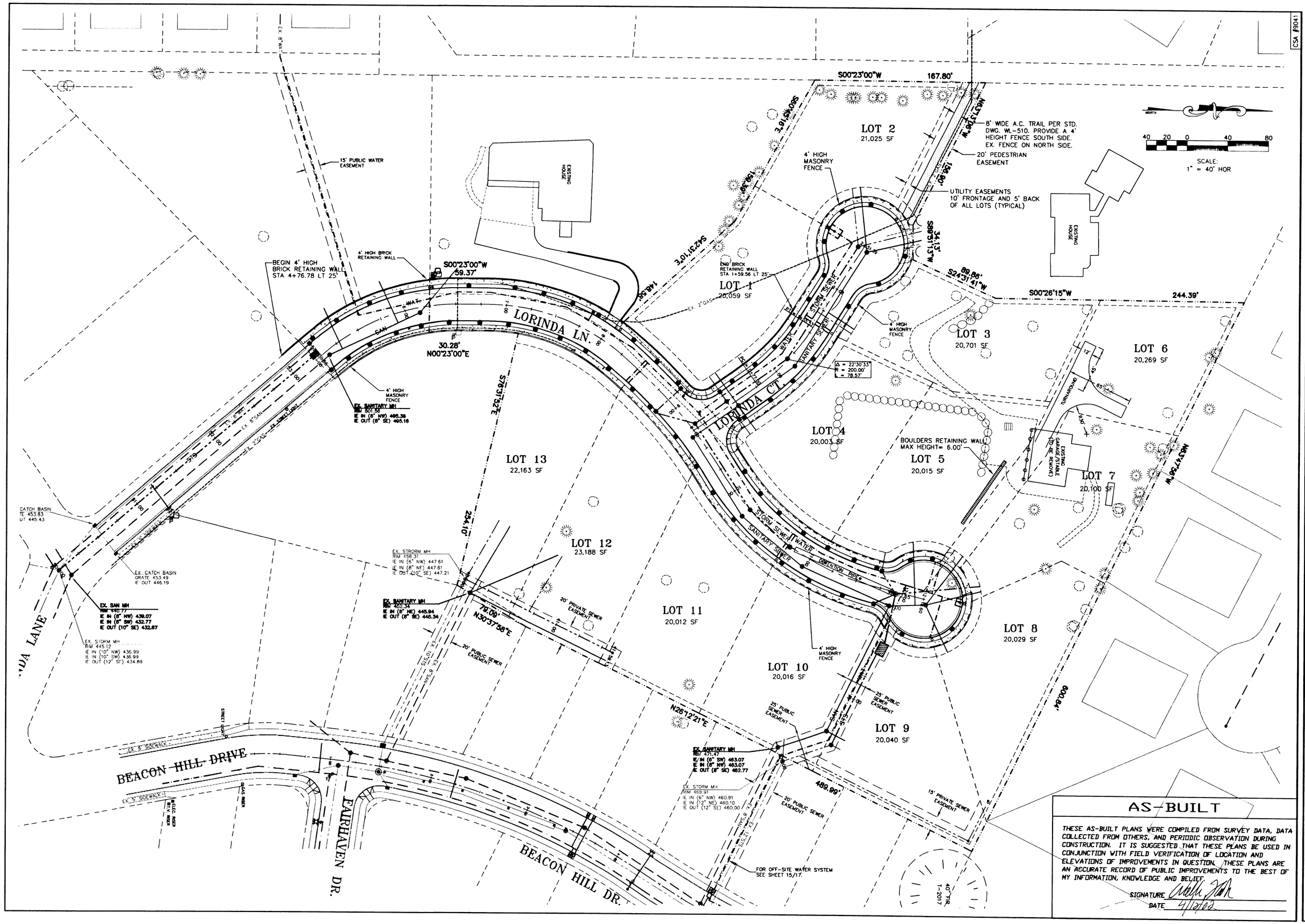
REGISTERED PROFESSIONAL ENGINEER — WALTER L. COOK — OREGON — DECEMBER 5, 1978 — EXPIRES: 12-31-2003

SCALE	VERT: N/A HORIZ: 1" = 100'
DATE: 8/8/2000	
FILE: SUB-99-07 ET AL	
ASSESSOR'S MAP	TAX LOTS
2S-1E-36	608 & 609

PROJECT NAME: LE CHEVALIER

COVER SHEET

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



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SIGNATURE _____

DATE 4/12/02

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 2 OF 17

REGISTERED PROFESSIONAL ENGINEER — OREGON — WALTER L. COOK — EXPIRES: 12-31-2003

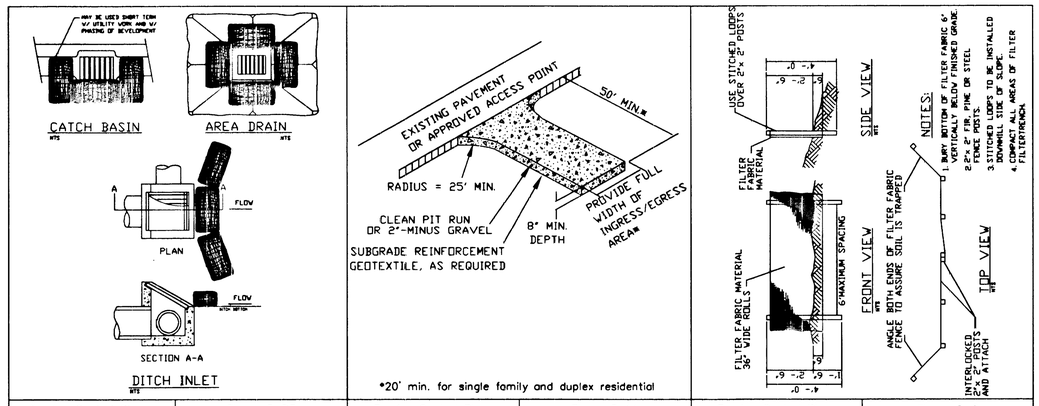
SCALE	VERT. N/A HORIZ. 1" = 40'
DATE: 8/8/2000	
FILE: SUB-99-07 ET AL	
ASSESSOR'S MAP	TAX LOTS
2S-1E-36	608 & 609

PROJECT NAME:

LE CHEVALIER

COMPOSITIVE PLAN

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



Erosion Control Plans Technical Guidance Handbook	Figure 3-D7 Biofilter Bags (Temporary)	Erosion Control Plans Technical Guidance Handbook	Figure 3-1A Gravel Construction Entrance	Erosion Control Plans Technical Guidance Handbook	Figure 3-2 Sediment Fence

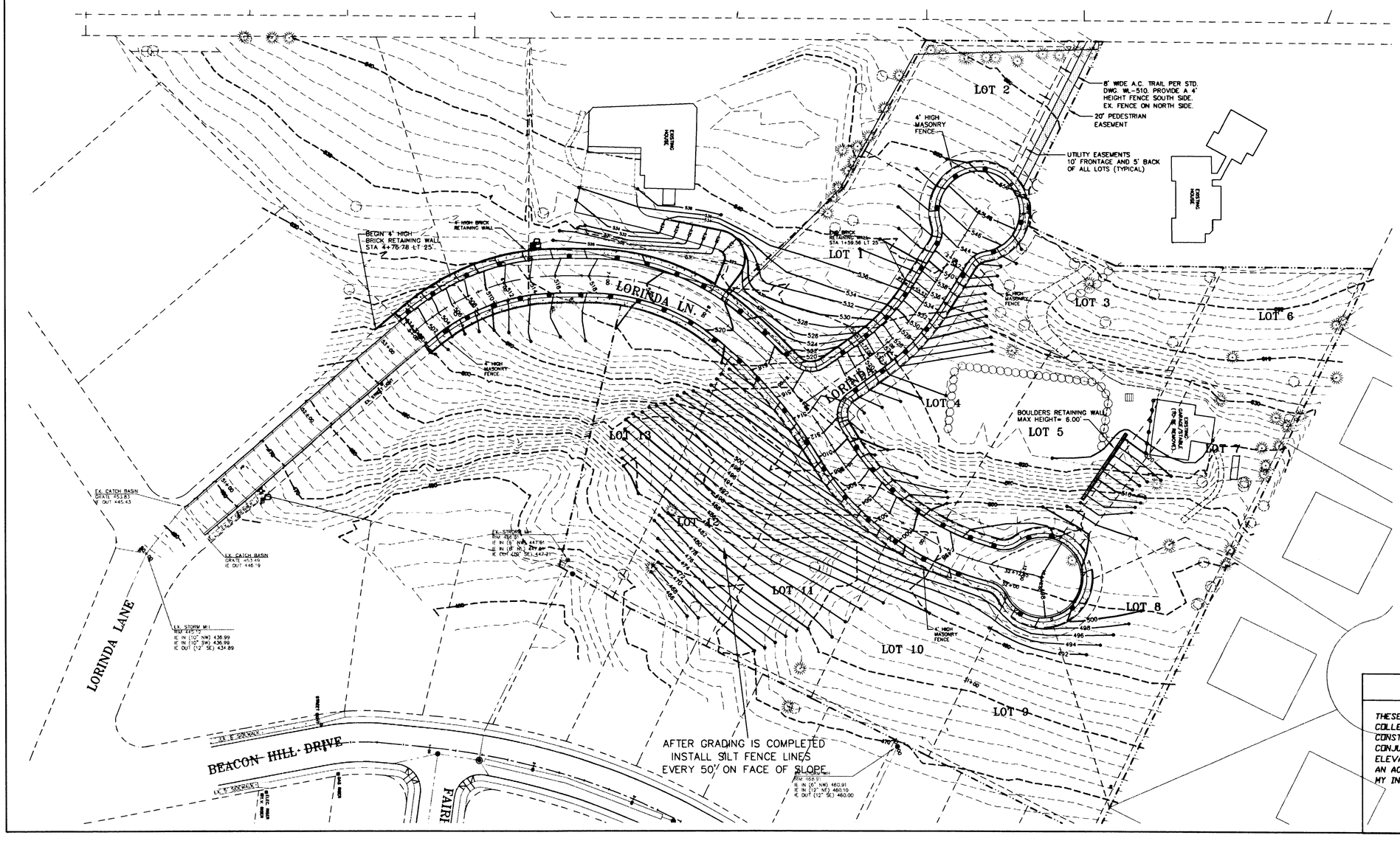
NOTES FOR EROSION CONTROL PLANS

1. Approval of this erosion/sedimentation control (ESC) plan 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.).
2. The implementation of these ESC plans and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the applicant/contractor until all construction is completed and approved and vegetation/landscaping is established.
3. 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 applicant/contractor for the duration of construction.
4. The ESC facilities shown on this plan must be constructed in conjunction with all clearing and grading activities, and in such a manner as to insure that sediment and sediment laden water do not enter the drainage system, roadways, or violate applicable water standards.
5. The ESC facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these ESC facilities shall be upgraded as needed for unexpected storm events and to insure that sediment and sediment laden water do not leave the site.
6. The ESC facilities shall be inspected daily by the applicant/contractor and maintained as necessary to insure their continued functioning.
7. The ESC facilities on inactive sites shall be inspected and maintained a minimum of once a month or within the 24 hours following a storm event.
8. At no time shall more than one foot of sediment be allowed to accumulate within a trapped 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 down stream system.
9. Stabilized construction entrances 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.
10. Use Bio Bag or equivalent inlet protection per the Erosion Control Guidance Handbook as deemed necessary by the City Inspector.

NOTES FOR SEDIMENT FENCES

1. The filter fabric shall be purchased in a continuous roll cut to 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, or overlap 2" x 2" posts and attached as shown on detail 3-2.
2. The filter fabric fence shall be installed to follow the contours where feasible. The fence posts shall be spaced a maximum of 6 feet apart and driven securely into the ground a minimum of 24 inches.
3. The filter fabric shall have a minimum vertical burial of 6 inches. All excavated material from filter fabric fence installation, shall be backfilled and compacted along the entire disturbed area.
4. Standard or heavy duty filter fabric fence shall have manufactured stitched loops for 2" x 2" post installation. Stitched loops shall be installed on the uphill side of the sloped area.
5. Filter fabric fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently protected and stabilized.
6. Filter fabric fences shall be inspected by applicant/contractor immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.

* Temporary grass cover measures must be fully established by November 1 or other cover measures will have to be implemented until adequate grass coverage is achieved. To establish an adequate grass stand for controlling erosion by November 1, it is recommended that seeding and mulching occur by September 1. (Any seeding planned after September 1, must have City approval and requires the use of pre-germinated grass seed.)



AS-BUILT

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SIGNATURE _____

DATE 4/10/02

CSA #9041

DATE	NO.	REVISION	BY

SHEET 3 OF 17

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 19, 1983 — WALTER L. COOK

EXPIRES: 12-31-2003

SCALE: VERT: N/A HORIZ: 1" = 50'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

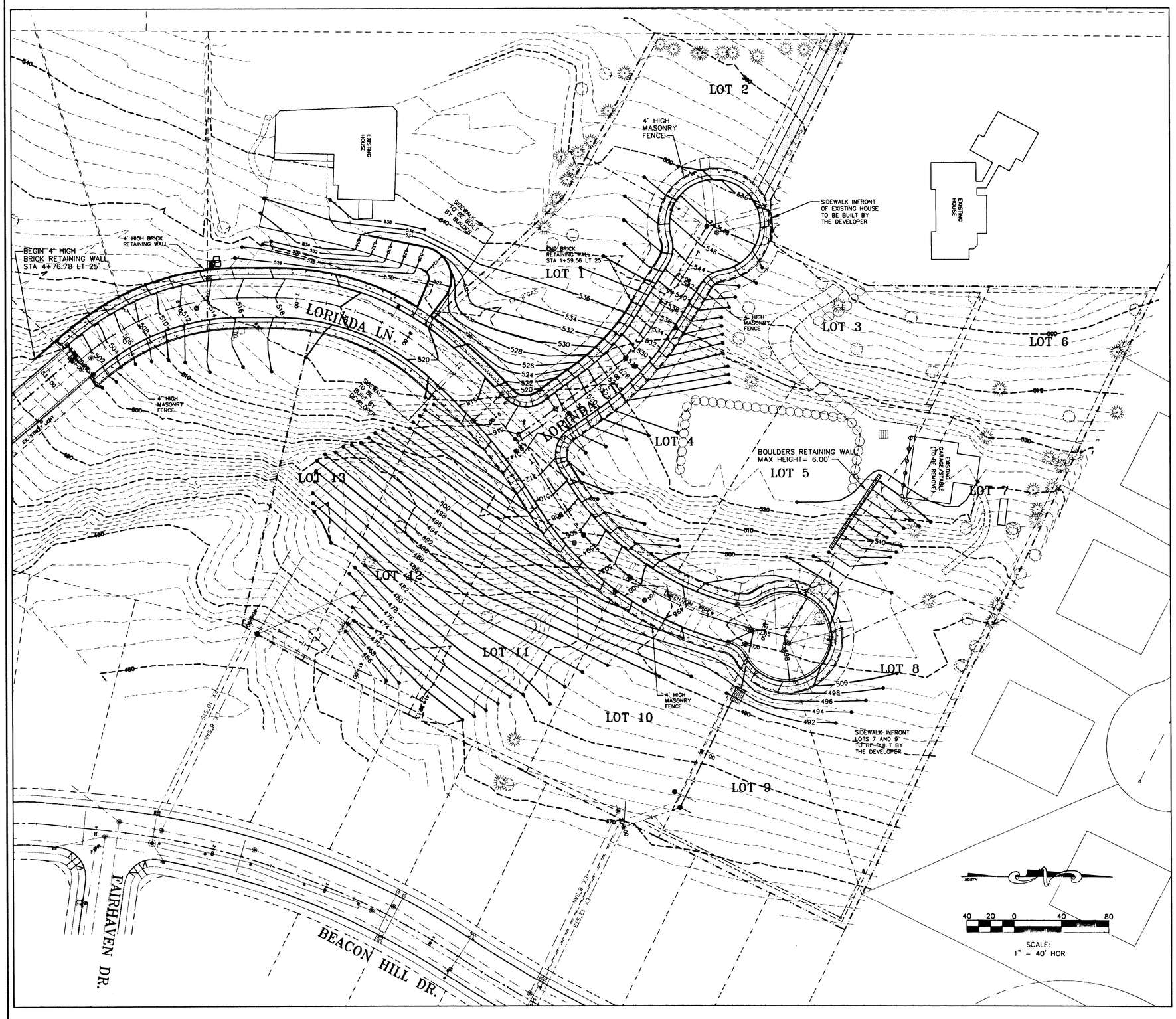
ASSESSOR'S MAP: 2S-1E-36
TAX LOTS: 608 & 609

PROJECT NAME:

LE CHEVALIER

EROSION CONTROL PLAN

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



GRADING NOTES:

1. ANY ALTERATION OR VARIANCE FROM THESE PLANS, EXCEPT MINOR FIELD ADJUSTMENTS TO MEET EXISTING CONDITIONS, SHALL FIRST BE APPROVED BY THE CITY INSPECTOR OR HIS DESIGNATED REPRESENTATIVE ANY CHANGES TO THESE PLANS SHALL BE DOCUMENTED ON CONSTRUCTION FIELD PLANS AND TRANSMITTED TO THE ENGINEER OF RECORD.
2. ALL THE FILL MATERIAL SHALL BE PLACED IN LAYERS NOT TO EXCEED EIGHT (8) INCHES LOOSE THICKNESS AND SHALL BE COMPACTED TO A DENSITY OF AT LEAST NINETY (90) PERCENT OF THE MODIFIED PROTOR MAXIMUM DRY DENSITY AND SHALL HAVE A MOISTURE CONTENT NOT GREATER THAN FOUR PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT GREATER THAN FOUR PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT.
3. FILL OVER CUT SLOPES SHOULD BE PROPERLY KEYED THROUGH TOP SOIL AND SOFT MATERIAL INTO FIRM MATERIAL.
4. THE CRUSHED ROCK BASE FOR PAVING SHALL BE COMPACTED TO NINETY-TWO (92) PERCENT OF MAXIMUM DENSITY USING ASTM D-1557 OR AASHTO T-180 AS A STANDARD. THE DENSITY OF ASPHALT CONCRETE SHALL BE AT LEAST NINETY-ONE (91) PERCENT OF RICE THEORETICAL MAXIMUM DENSITY AS DETERMINED IN CONFORMANCE WITH AASHTO T-209 AS MODIFIED BY OSHD.
5. GRANULAR BACKFIL UNDER FOOTINGS AND SLABS SHALL BE IN LIFTS NOT EXCEEDING A SIX (6) INCH LOOSE THICKNESS. EACH LIFT SHALL BE COMPACTED TO 100 PERCENT OF ITS MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698, METHOD C.
6. EXCESSIVELY SOFT OR WET AREA EXPOSED DURING STRIPPING OR OCCURRING THEREAFTER IN THE FILL SECTION SHALL BE REMOVED BEFORE THE NEXT LIFT IS PLACED AND COMPACTED.

VOLUMES:

FILL	15,208 CY
CUT	8,163 CY

MASONRY FENCE AND WALL NOTES:

1. ALL ALONG THE PRIVATE STREETS, LORINDA LANE AND LORINDA COURT, A 4' HIGH MASONRY FENCE OR A MASONRY RETAINING WALL BE CONSTRUCTED; EXCEPT FOR DRIVEWAY ACCESSES.
2. THE RETAINING WALL BEGINS AT LORINDA LANE STA 4+76.78 LT. 25' AND ENDS AT LORINDA COURT STA 1+59.56 LT. 25'. FOR MASONRY RETAINING WALL DETAIL SEE BELOW.
3. ALL OTHER WALLS SHOWN ON THIS PLAN ARE A 4' HIGH MASONRY FENCE.
   MASONRY FENCE DESIGNED BY OTHERS.
4. FOR BOULDER WALL DETAIL SEE SHEET 11/17.

AS-BUILT

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SIGNATURE _____

DATE _____

CSA Consulting Engineers
321 SW 4th, Fourth Floor
Portland, OR 97204

RETAINING WALL SECTIONS
(see foundation plan)
FILE: 100U801D

CSA Job #2392
Le Chevalier Subdivision

GENERAL NOTES AND SPECIFICATIONS

This drawing is not to scale.
This design is valid only for the structure and location(s) indicated.
This design is valid only if the soil values listed in the calculations are verified before placement of concrete.
Specified concrete strength: 3000 psi (design uses 2500 psi - special inspections not be required per UBC 1701.5.
Specified reinforcement strength: 60000 psi
Specified lap lengths (unless otherwise noted): #4 bars-20"; #5 bars-24"; #6 bars-28"
Provide standard hook (UBC 1907.1) with 3" clearance from bottom.
Provide 4" perforated drain as shown, embedded in drain rock, covered with filter fabric.
Backfill with 4"-0" crushed aggregate, lightly compacted in 12" lifts.
Base to rest 1 1/2"-0" crushed aggregate with no more than 7% fines passing the No. 200 seive, lightly tamped.
Min. base thickness to be 6 inches.
For stepped construction, the base width, depth, and longitudinal reinforcement must be continuous at the change in elevation of the base.

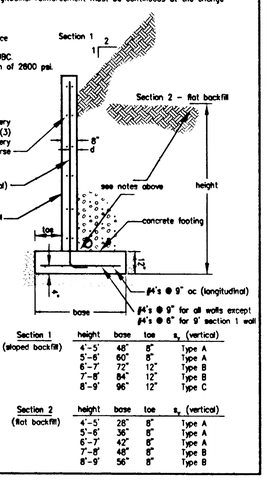
Masonry General Notes:
Structural Masonry walls shall be constructed in accordance with the provisions of Section 2104, 1997 UBC.
Material standards shall conform to Section 2102, 1997 UBC.
Masonry units shall have a minimum compressive strength of 2800 psi.
Use type S mortar for all structural elements.
Provide clean-outs in the bottom course at every vertical bar where grout height is 5' or greater.
Reinforcement shall be continuous around wall corners and through intersections.

Type "A" Reinforcement:
Vertical #4's @ 16" o.c.
d = 4"
No special inspections

Type "B" Reinforcement:
Vertical #4's @ 8" o.c.
(every other bar may be cut off 3' from top of wall)
d = 3.75"
Special inspections required

Type "C" Reinforcement:
Vertical #6's @ 8" o.c.
(every other bar may be cut off 3' from top of wall)
d = 3.75"
Special inspections required

Special Inspections:
When required, special inspections must be performed at the start of laying units, after the placement of reinforcing steel, grout space prior to each grouting opperation, and during all grouting operations.



Section 1 (sloped backfill)	height	base	toe	s_v (vertical)
	4'-5'	48"	8"	type A
	5'-6'	60"	8"	type A
	6'-7'	72"	12"	type B
	7'-8'	84"	12"	type B
	8'-9'	96"	12"	type C

Section 2 (flat backfill)	height	base	toe	s_v (vertical)
	4'-5'	28"	8"	type A
	5'-6'	36"	8"	type A
	6'-7'	42"	8"	type A
	7'-8'	48"	8"	type B
	8'-9'	56"	8"	type B

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 4 OF 17

REGISTERED PROFESSIONAL ENGINEER — OREGON — JAMES S. SCHMUCK — EXPIRES: 12-31-2003

SCALE VERT: N/A HORIZ: 1" = 40'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

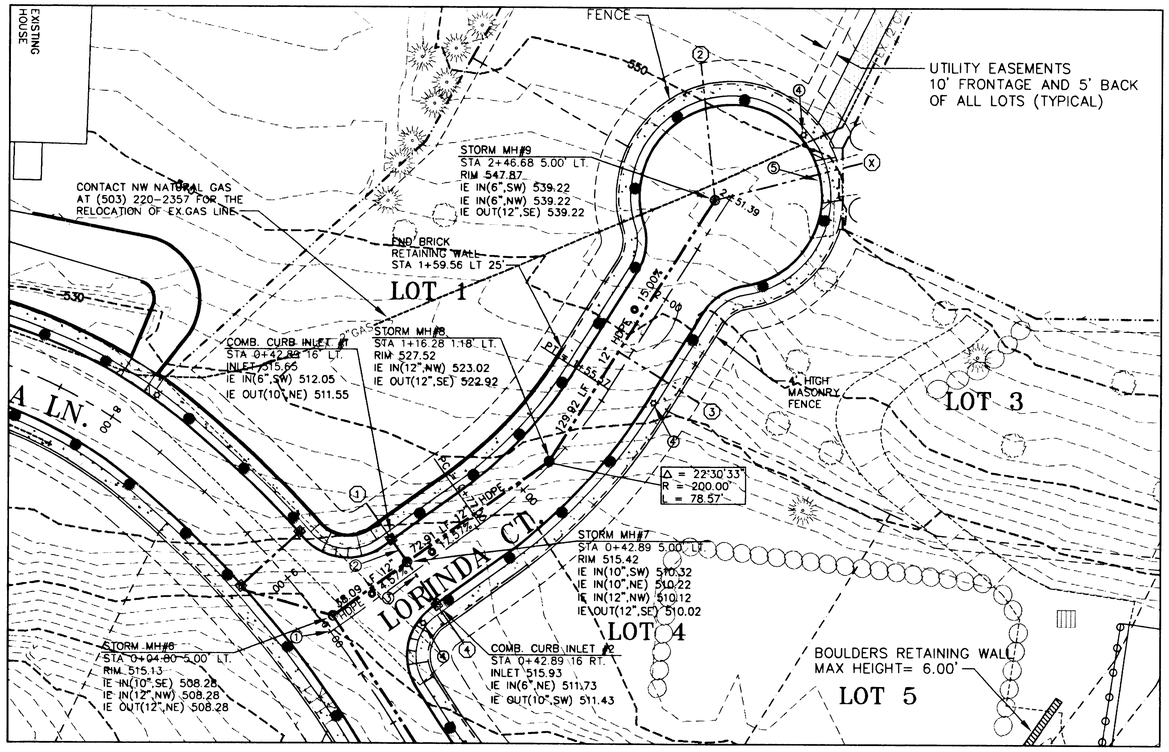
ASSESSOR'S MAP 25-1E-36
TAX LOTS 608 & 609

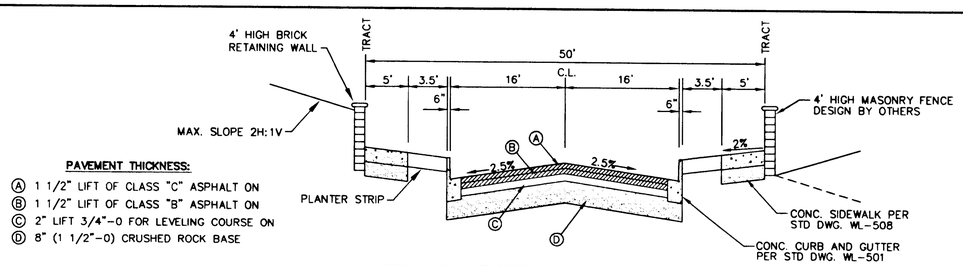
PROJECT NAME:

LE CHEVALIER

GRADING PLAN

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848





PAVEMENT THICKNESS:

- (A) 1 1/2" LIFT OF CLASS "C" ASPHALT ON
- (B) 1 1/2" LIFT OF CLASS "B" ASPHALT ON
- (C) 2" LIFT 3/4"-0 FOR LEVELING COURSE ON
- (D) 8" (1 1/2"-0) CRUSHED ROCK BASE

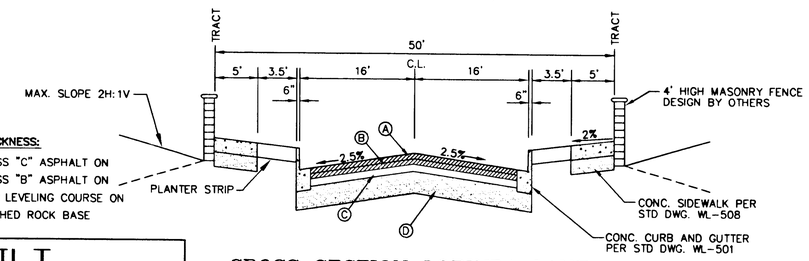
CROSS SECTION LORINDA LANE

FROM STA 4+76 TO STA 9+00

CROSS SECTION LORINDA COURT

FROM STA 0+00 TO STA 1+60

(PRIVATE STREETS)



PAVEMENT THICKNESS:

- (A) 1 1/2" LIFT OF CLASS "C" ASPHALT ON
- (B) 1 1/2" LIFT OF CLASS "B" ASPHALT ON
- (C) 2" LIFT 3/4"-0 FOR LEVELING COURSE ON
- (D) 8" (1 1/2"-0) CRUSHED ROCK BASE

CROSS SECTION LORINDA LANE
CROSS SECTION LORINDA COURT
(PRIVATE STREETS)

AS-BUILT

THESE AS-BUILT PLANS WERE COMPILED FROM SURVEY DATA, DATA COLLECTED FROM OTHERS, AND PERIODIC OBSERVATION DURING CONSTRUCTION. IT IS SUGGESTED THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATIONS OF IMPROVEMENTS IN QUESTION. THESE PLANS ARE AN ACCURATE RECORD OF PUBLIC IMPROVEMENTS TO THE BEST OF MY INFORMATION, KNOWLEDGE AND BELIEF.

SIGNATURE

DATE 2/12/10

STORM SEWER LATERALS (MIN 2% SLOPE)

ALL STATIONING IS BASED OF CENTERLINE

LOT	STATION	SIZE	TYPE	LENGTH	I.E. @ MAIN
1	0+42.89 16.00' LT	6"	PVC	16.50'	512.59 CB
2	2+46.68 5.00' LT	6"	PVC	57.30'	542.82
3	1+71 5.00' LT	6"	PVC	40.00'	531.26 MH
4	0+42.89 16.00' RT	6"	PVC	16.50'	512.09 CB
X	2+46.68 5.00' LT	6"	PVC	63.90'	542.82

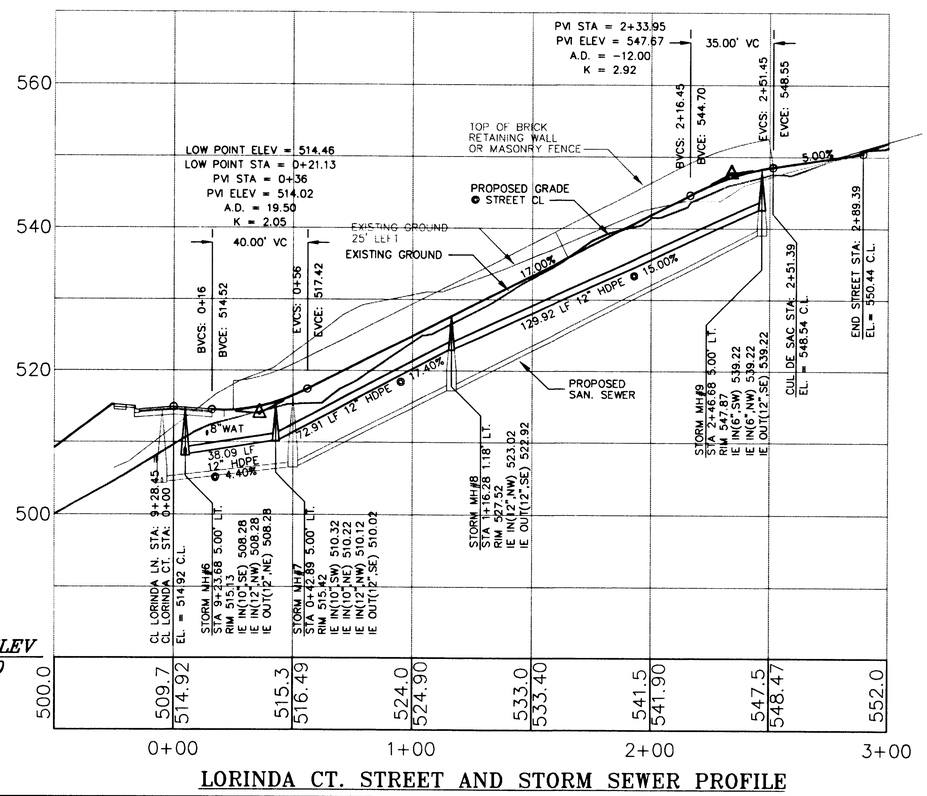
NOTES:

1. LORINDA LN. STA 9+28.45 = LORINDA CT. STA 0+00
2. 11.00 LF 10" HDPE @ 12.00%
3. 21.00 LF 10" HDPE @ 4.00%
4. STREET LIGHTS AT STA:
   0+34 19.30' RT.
   1+60.80 18.25' RT.
   2+89.50 12.00' RT.
5. 18' DRIVEWAY PER STD. DWG. WL-503
   CL DWY. AT STA 2+76.71 28.33 RT.

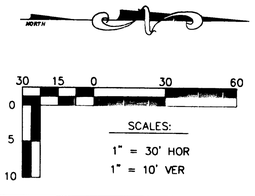
2 1/2" CALIPER PERSIAN PARROTA

MAXIMUM SPACING 30'
FINAL LOCATION TO BE DETERMINATE AFTER STREET LIGHT AND DRIVEWAY LOCATIONS.

*PER CURB RETURN & CUL-DE-SAC DATA SEE SHEET 9/17.



LORINDA CT. STREET AND STORM SEWER PROFILE



STREET NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS OF THE CITY OF WEST LINN, OREGON, AND THE 1991 A.P.W.A STANDARD SPECIFCATIONS AND DETAILS WITH A.P.W.A. AMENDMENTS.
2. STATIONING IS BASED UPON CENTERLINE UNLESS OTHERWISE NOTED.
3. ADJUST ALL MANHOLE LIDS AND VALVES TO FINISHED GRADE.
4. SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. DWG. WL-508
5. ALL CURBS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. DWG. WL-501
6. CUT STRAIGHT MATCHLINES TO MEET EXISTING PAVEMENT WITH NEW PAVEMENT. SKIN PATCH WITH CLASS "C" ASPHALT AS DIRECTED BY CITY INSPECTOR. SAND SEAL ALL NEW PAVEMENT JOINTS.
7. TREE ROOT INSPECTION REQUIRED PRIOR TO ANY EXCAVATION ADJACENT TO TREES. A TREE INPECTION MUST BE MADE BEFORE CUTTING ANY ROOTS.
8. DRIVEWAYS AND SIDEWALKS IN FRONT OF PRIVATE LOTS WILL BE CONSTRUCTED UNDER SEPERATE BUILDING PERMIT (INCLUDES LOTS 1-13). SEE SHEET 6/17 FOR SIDEWALK TO BE CONSTRUCTED UNDER THIS PERMIT.
9. THE CONTRACTOR SHALL SUPPLY COMPACTION TESTS FOR SUBGRADE, BASE ROCK AND ASPHALT THROUGH AN INDEPENDENT TESTING LAB. COMPACTION WILL BE BASED ON AASHTO T-180. A PROOF ROLL IS REQUIRED ON ALL ROAD SUBGRADE AND BASEROCK PRIOR TO PAVING.
10. ALL CONCRETE SHOULD HAVE A COMPRESSIVE STRENGTH OF 3300 PSI AT 28 DAYS.

STORM SEWER NOTES:

1. ALL STORM MAINS, LATERALS AND DETENTION PIPE SHALL BE CONSTRUCTED OF SMOOTH WALL HDPE N-12 SDR 26 OR OTHER APPROVED AND EQUIVALENT MATERIAL (RATED FOR HS-20 LOADING). ALL PIPE IS TO BE BACKFILLED WITH APPROVED GRANULAR BACKFILL AND BEDDING. ALL JOINTS TO BE FUSHION WELDED.
2. CONTRACTOR TO VERIFY DEPTH OF ALL EXISTING STORM WATER LINES BEFORE CONTRUCTION.
3. THE CONTRACTOR SHALL NOT EXCAVATE OVER FOUR FEET IN DEPTH WITHOUT USING ADEQUATE SAFETY MEASURES. THE CONTRACTOR IS REFERRED TO TITLE 296 WAC, PART N FOR EXCAVATION, TRENCHING AND SHORING REQUIREMENTS.
4. ALL COMPACTION ABOVE PIPE ZONE TO BE 95% RELATIVE DENSITY OF AASHTO T-180; 95% FOR FULL DEPTH OF TRENCH.
5. ALL CURB INLETS TO BE CITY OF WEST LINN TYPE 2-1/2 A IN ACCORDANCE WITH STD. DWG. WL-600. UNLESS STATED OTHERWISE.
9. COMBINATION CURB INLET SHALL BE USED ON STREETS OVER 5% SLOPE AND CONSTRUCTED IN ACCORDANCE WITH STD. DWG. WL-601
6. ALL STORM WATER MANHOLES TO BE CONSTRUCTED PER STD. DWG. WL-207
7. FLOW CONTROL MANHOLE TO BE 60". FLOW CONTROL DEVICE SHALL BE CONSTRUCTED PER DETAIL ON SHEET 13/17.
8. ALL LATERALS TO LOTS TO BE IN ACCORDANCE WITH STD. DWG. 218
9. MARK ENDS OF ALL STUB OUTS AND LATERALS WITH CONTINUOUS PRESSURE TREATED 2" x 4" BURIED TO THEIR INVERT ELEVATION. TOP 12" PAINTED BLUE AND STENCILED WITH BLACK "ST", PIPE SIZE, TYPE AND DEPTH.
10. ALL STORM SEWERS SHALL BE BOTH TESTED WITH A MANDREL AND TV.
11. CONNECT 36" HDPE DETENTION PIPE TO MANHOLE WITH MANHOLE ADAPTER. THE 36" DIA. PIPE TO BE CONNECTED TO 60" DIA. DETENTION PIPE WITH 36" x 60" A REDUCER. THE REDUCER TO BE ALL 36" ACCESS RISERS TO BE CONSTRUCTED WITH 36" DIA. HDPE SMOOTH WALL. ALL ACCESS RISERS TO BE SPACED AT 40' O.C. MIN., AND CONNETED TO THE 60" DIA. DETENTION PIPE BY A 36" X 60" TEE. TEES AND REDUCERS TO BE MANUFACTURED BY PLEXCO.

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 5 OF 17

REGISTERED PROFESSIONAL ENGINEER
OREGON
WALTER L. COOK
EXPIRES: 12-31-2003

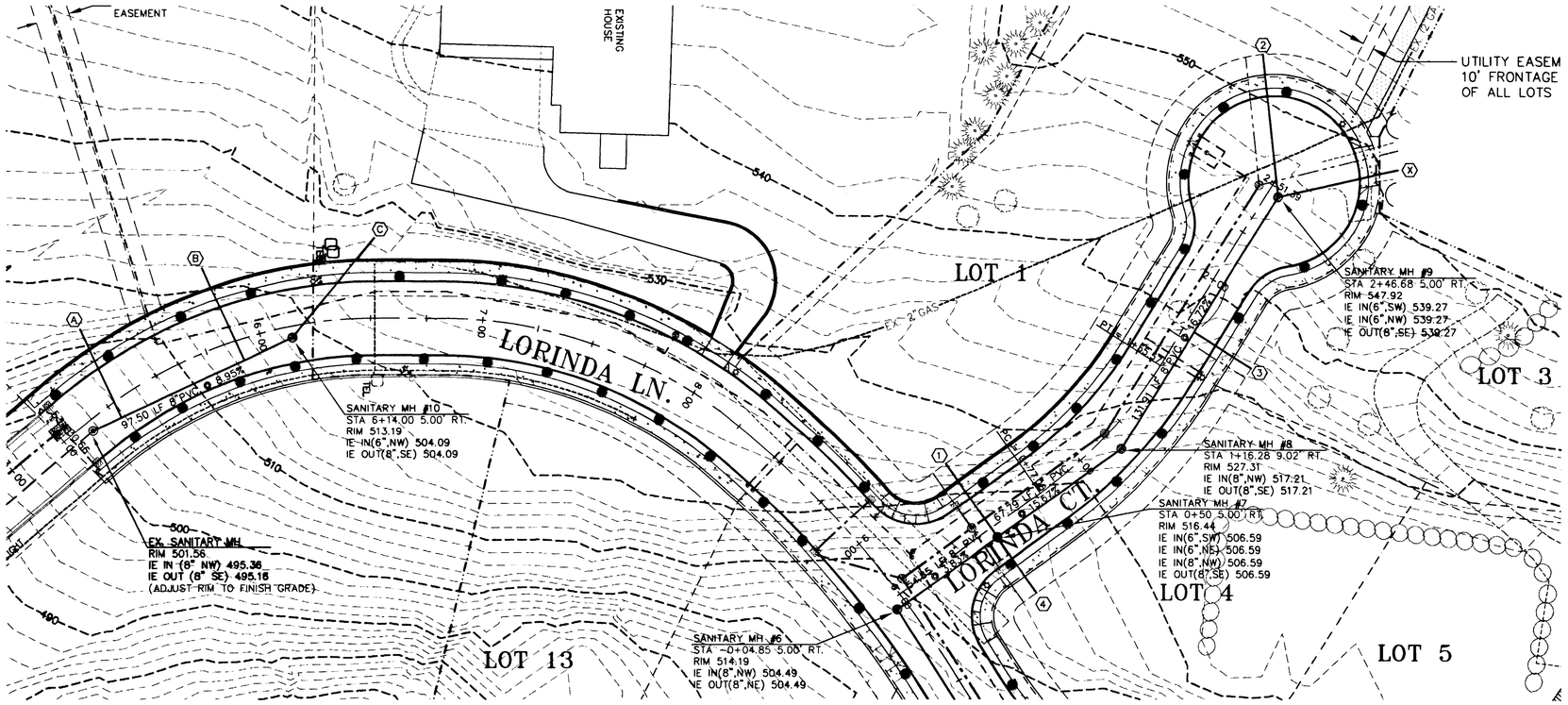
SCALE	
VERT: 1" = 10'	
HORIZ: 1" = 30'	
DATE: 8/8/2000	
FILE: SUB-99-07 ET AL	
ASSESSOR'S MAP	TAX LOTS
2S-1E-36	608 & 609

PROJECT NAME:

LE CHEVALIER

LORINDA COURT STREET & STORM SEWER PLAN

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



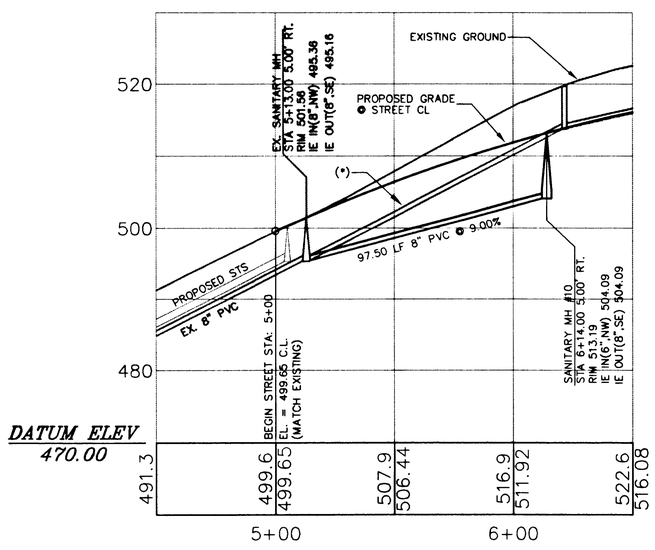
SANITARY SEWER LATERALS (MIN 2% SLOPE)

ALL STATIONING IS BASED OF CENTERLINE

LOT	STATION	SIZE	TYPE	LENGTH	I.E. @ MAIN
1	0+51 5.00' RT	6"	PVC	40.00'	506.70 MH
2	2+46.68 5.00' RT	6"	PVC	64.00'	539.24 MH
3	1+76 5.00' RT	6"	PVC	30.00'	527.45
4	0+56 5.00' RT	6"	PVC	30.00'	506.70 MH
X	2+46.68 5.00' RT	6"	PVC	54.60'	539.24 MH
A	5+27 7.63' RT	6"	PVC	43.20'	496.61
B	5+90 9.40' RT	6"	PVC	44.70'	502.02
C	6+14 5.00' RT	6"	PVC	57.00'	504.33 MH

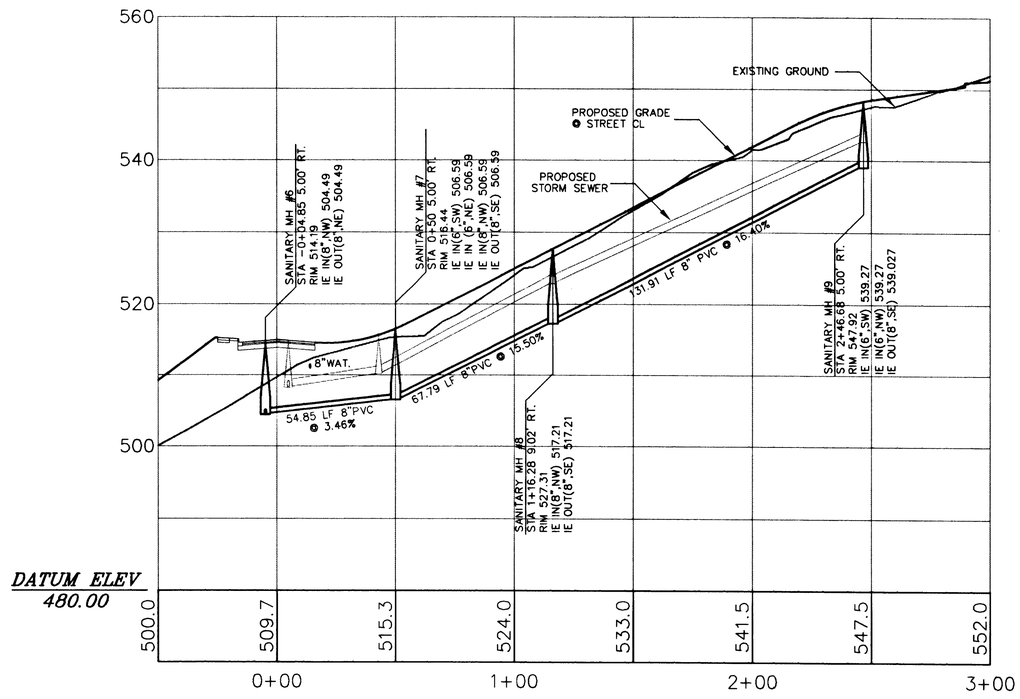
SANITARY NOTES:

1. ALL SANITARY SEWER LINE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRAVITY SEWER SPECIFICATIONS OF THE PROJECT PLANS AND CITY SPECIFICATIONS.
2. SEWER LINES SHALL BE TESTED WITH AIR AND A MANDREL. MANHOLES SHALL BE VACUUM TESTED FOR TIGHTNESS. ALSO ALL SEWER LINES MUST BE TV TESTED.
3. ALL SANITARY PIPE TO BE PVC ASTM D3034 SDR 35 AND 6" OF 3/4"-0 BEDDING.
4. UTILITY BACKFILL IN R.O.W. AREAS TO BE SELECTED GRANULAR (3/4"-0) COMPACTED TO 95% FOR THE FULL DEPTH OF THE TRENCH.
5. UTILITY BACKFILL OUTSIDE R.O.W. AREAS TO BE CLASS "A" NATIVE BACKFILL TO 90% RELATIVE DENSITY OF AASHTO T-180; 90% BELOW THREE FEET.
6. THE CONTRACTOR SHALL NOT EXCAVATE OVER FOUR FEET IN DEPTH WITHOUT USING ADEQUATE SAFETY MEASURES. THE CONTRACTOR IS REFERRED TO TITLE 296 WAC, PARTN FOR EXCAVATION, TRENCHING AND SHORING REQUIREMENTS.
7. ALL SANITARY LATERALS TO BE A TYPICAL CONNECTION FOR ONE LOT.
8. MARK ENDS OF ALL STUB OUTS AND LATERALS WITH CONTINUOUS PRESSURE TREATED 2" x 4" BURIED TO THEIR INVERT ELEVATION. TOP 12" PAINTED GREEN AND STENCILED WITH BLACK "SS", PIPE SIZE, TYPE AND DEPTH.
9. CONTRACTOR TO VERIFY DEPTH IN FIELD BEFORE CONSTRUCTION.
10. ALL SANITARY SEWER MANHOLES OUT SIDE THE ROW (OFF STREET) TO USE TAMPER PROOF LIDS AND RIM ELEVATIONS TO BE 6" ABOVE FINISH GRADE.

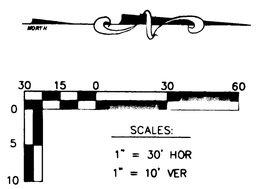


LORINDA LN. SANITARY SEWER PROFILE

(*) APPROXIMATE LOCATION OF EX. SANITARY SEWER LATERAL FOR EX. HOUSE (NO AS-BUILT AVAILABLE). REMOVE AND RECONNECT LATERAL TO NEW SAN MH#9.



LORINDA CT. SANITARY SEWER PROFILE



AS-BUILT

THESE AS-BUILT PLANS WERE COMPILED FROM SURVEY DATA, DATA COLLECTED FROM OTHERS, AND PERIODIC OBSERVATION DURING CONSTRUCTION. IT IS SUGGESTED THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATIONS OF IMPROVEMENTS IN QUESTION. THESE PLANS ARE AN ACCURATE RECORD OF PUBLIC IMPROVEMENTS TO THE BEST OF MY INFORMATION, KNOWLEDGE AND BELIEF.

SIGNATURE _____

DATE 4/13/04

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 6 OF 17

REGISTERED PROFESSIONAL ENGINEER 10001 OREGON WALTER L. COOK 12-31-2003

EXPIRES: 12-31-2003

SCALE VERT: 1"= 10' HORIZ: 1"= 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

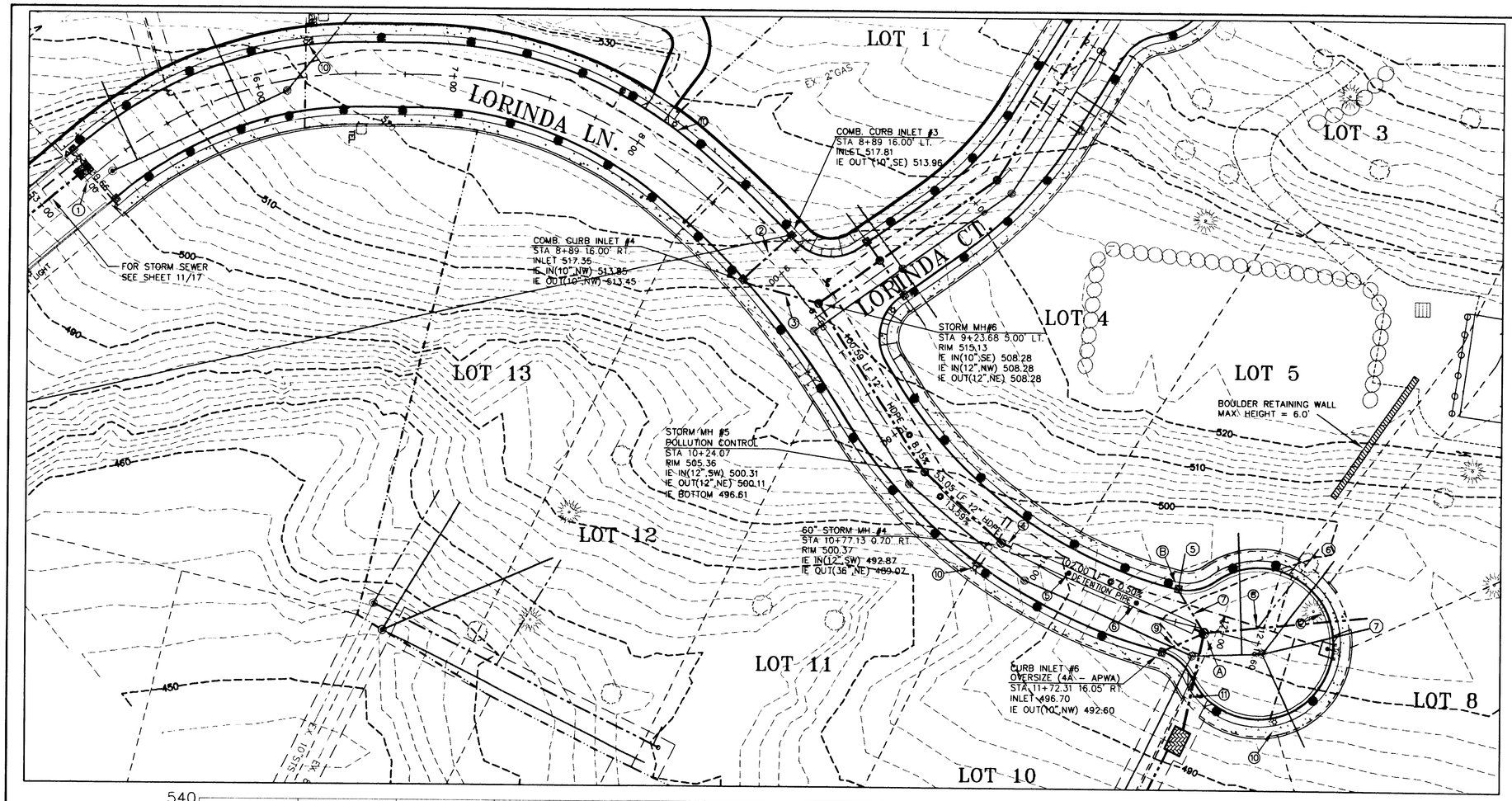
ASSESSOR'S MAP: 2S-1E-36
TAX LOTS: 608 & 609

PROJECT NAME:

LE CHEVALIER

LORINDA COURT SANITARY SEWER PLAN

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



STORM SEWER LATERALS (MIN 2% SLOPE)

ALL STATIONING IS BASED OF CENTERLINE

LATERAL	STATION	SIZE	TYPE	LENGTH	I.E. @ MAIN
5	11+72.31 16.00' RT	6"	PVC	57.48'	493.92 CB
6	12+15.32 5.00' LT	6"	PVC	51.30'	492.35
7	12+15.32 5.00' LT	6"	PVC	83.70'	491.80

1. BEGIN STREET AT PROPERTY LINE STA 5+00 SAWCUT STRAIGHT LINE 6" INSIDE EXISTING ASPHALT AND MATCH NEW ASPHALT TO IT.
2. 32.00 LF 10" HDPE @ 3.00%
3. 39.28 LF 10" HDPE @ 6.80%
4. 36" DIA. HDPE; USE MANHOLE ADAPTER (TYP. BOTH ENDS OF DETENTION PIPE.)
5. ACCESS #1 STA 11+61.00 5.18 LT. RIM 498.46
6. ACCESS #2 STA 12+05.26 3.50' LT. RIM 496.86
7. 25.50 LF 10" HDPE @ 7.53%
8. 6" Y AT STA
9. 23.10 LF 10" HDPE @ 6.15%
10. STREET LIGHTS AT STA: STA 6+26.60 18.25 LT. STA 8+10 18.25' LT. STA 10+74.20 18.25 RT. STA 12+36.30 36.20' RT.
11. 12' DRIVEWAY CL AT STA 11+95.23 29.97 RT.
12. 40' DRIVEWAY AT STA 12+43 29.15' LT.

*PER CURB RETURN & CUL-DE-SAC DATA SEE SHEET 10/15

PER STREET AND STORM SEWER NOTES SEE SHEET 5/15

(A) 60" STORM MH#3 (W/ CONTROL FLOW)
STA 11+90.50 2.00' RT.
RIM 497.19
IE IN(10",SW) 491.60
IE IN(10",SE) 491.60
IE IN(6",NW) 491.60
IE IN(36",SW) 488.00
IE OUT(15",NE) 487.75
IE BOTTOM 484.30

(B) CURB INLET #5 OVERSIZE (4A - APWA)
STA 11+72.31 16.05' RT.
INLET 496.84
IE IN(6",W) 493.94
IE OUT(10",NE) 493.64

* FOR DETENTION PIPE SEE DETAILS OF 60" STORM MH #3; WL-609 FOR ACCESS AND WL-608 FOR DESIGN CONCEPT, CONNECTIONS TO MH TO BE 36"D MAX.(SHEET 13/17).

AS-BUILT

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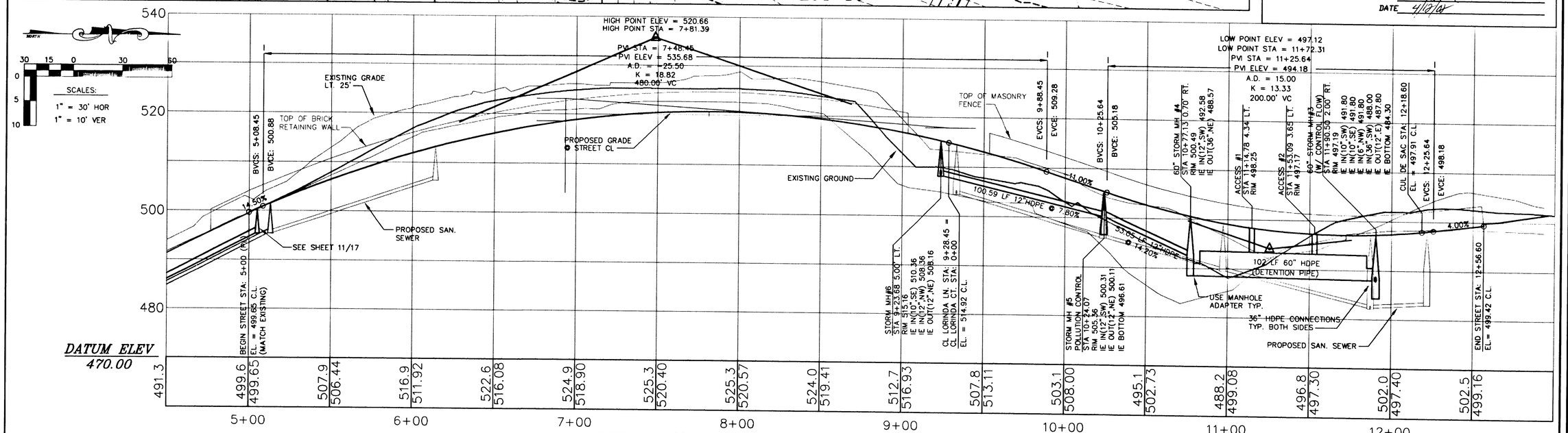
SIGNATURE

DATE 4/8/04



LORINDA LN. STREET AND STORM SEWER PROFILE

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 7 OF 17

REGISTERED PROFESSIONAL ENGINEER — OREGON — HAROLD L. COOK WALTER — EXPIRES: 12-31-2003

SCALE VERT: 1"= 10' HORIZ: 1"= 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

ASSESSOR'S MAP: 2S-1E-36
TAX LOTS: 608 & 609

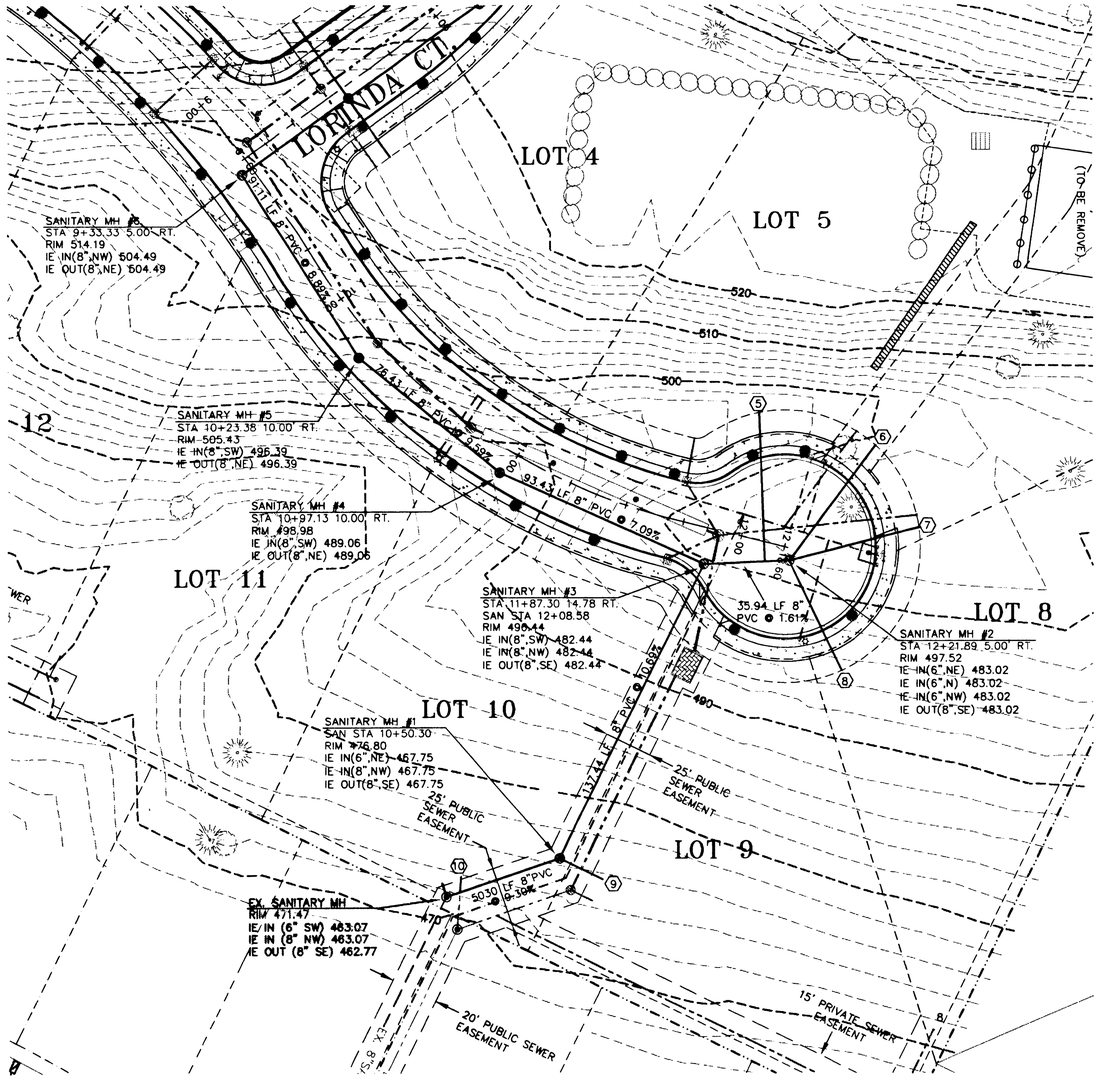
PROJECT NAME:

LE CHEVALIER

LORINDA LANE STREET AND STORM SEWER PLAN & PROFILE

GSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848

CSA #9041



SANITARY SEWER LATERALS (MIN 2% SLOPE)

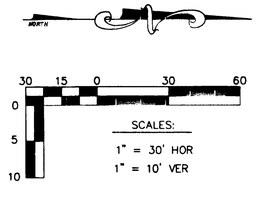
ALL STATIONING IS BASED OF CENTERLINE
I.E. OF LATERALS @ CURB LINE SHALL
BE 6' MIN. DEPTH UNLESS OTHERWISE NOTED.

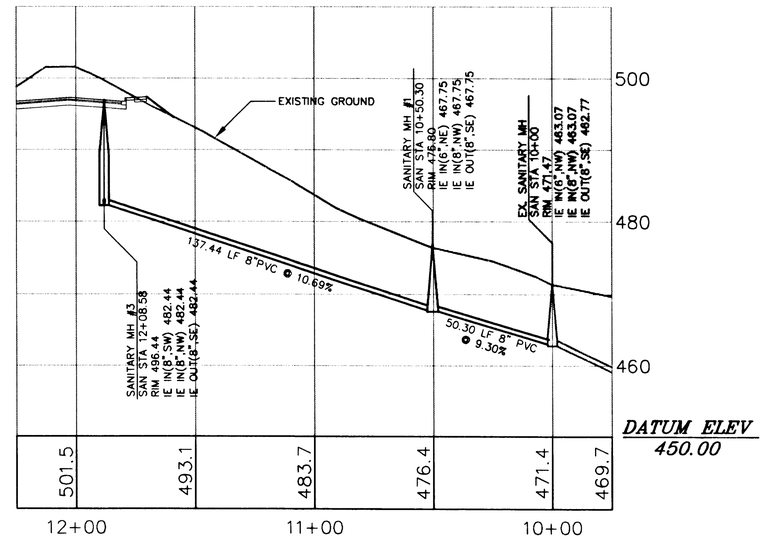
LOT	STATION	SIZE	TYPE	LENGTH	I.E. @ MAIN
5	12+13.28 7.64' RT	6"	PVC	62.00'	482.67
6	12+21.89 5.00' RT	6"	PVC	60.00'	482.96 MH
7	12+21.89 5.00 RT	6"	PVC	56.00'	482.96 MH
8	12+21.89 5.00' RT	6"	PVC	51.00'	482.96 MH

ALL STATIONING IS BASED OF SAN. MH #1

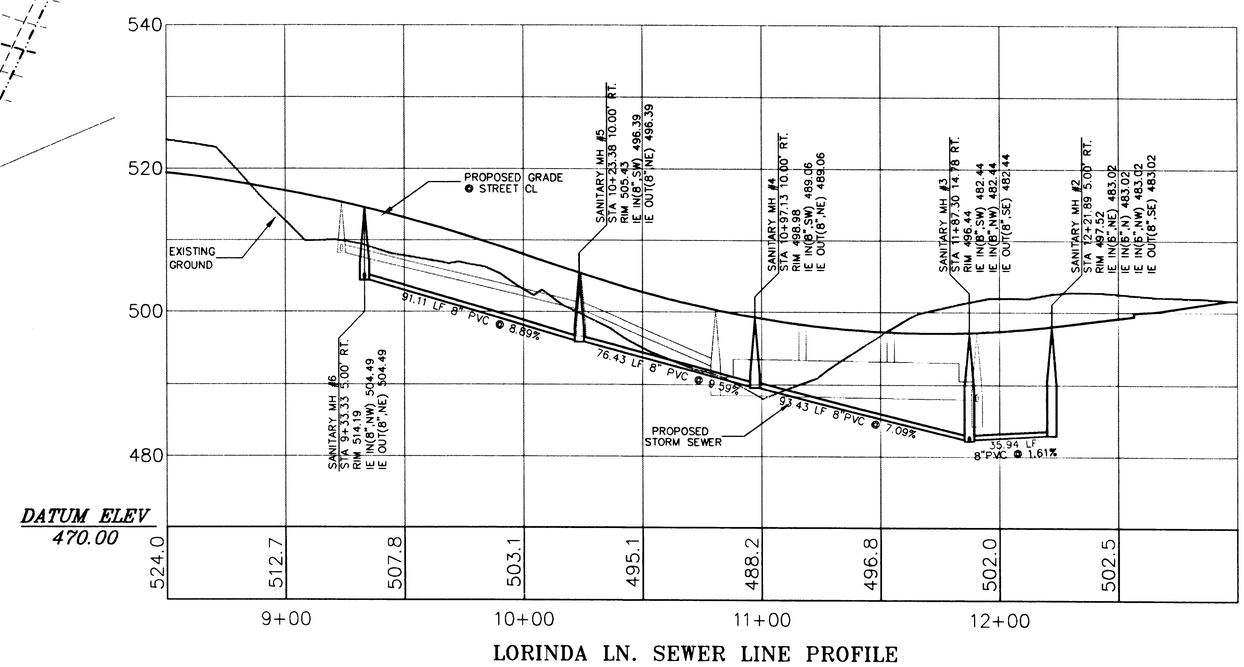
LOT	STATION	SIZE	TYPE	LENGTH	I.E. @ MAIN
9	0+50.30	6"	PVC	20.00'	467.77 MH
10	0+00	6"	PVC	10.00'	463.67

*PER SANITARY SEWER NOTES SEE SHEET 6/17





OFF STREET SANITARY SEWER PROFILE



LORINDA LN. SEWER LINE PROFILE

AS-BUILT

THESE AS-BUILT PLANS WERE COMPILED FROM SURVEY DATA, DATA COLLECTED FROM OTHERS, AND PERIODIC OBSERVATION DURING CONSTRUCTION. IT IS SUGGESTED THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATIONS OF IMPROVEMENTS IN QUESTION. THESE PLANS ARE AN ACCURATE RECORD OF PUBLIC IMPROVEMENTS TO THE BEST OF MY INFORMATION, KNOWLEDGE AND BELIEF.

SIGNATURE

DATE 4/12/02

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 8 OF 17

REGISTERED PROFESSIONAL ENGINEER — OREGON — JAMES S. SCHMIDT — 12-31-2003

EXPIRES: 12-31-2003

SCALE: VERT: 1" = 10' HORIZ: 1" = 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

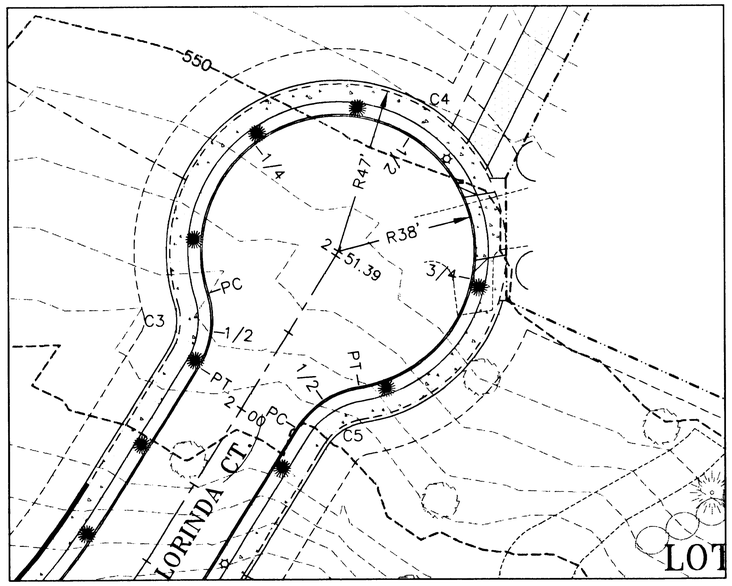
ASSESSOR'S MAP: 2S-1E-36
TAX LOTS: 608 & 609

PROJECT NAME:

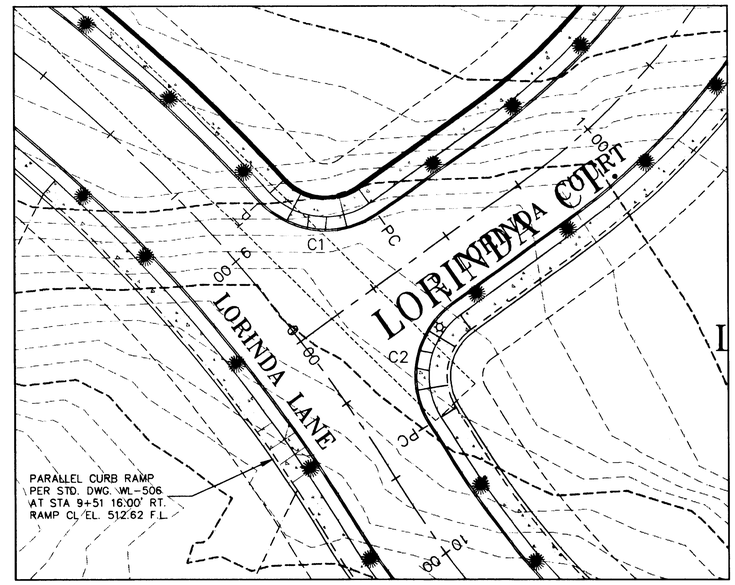
LE CHEVALIER

LORINDA LANE SANITARY SEWER PLAN & PROFILE

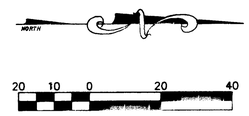
CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



LORINDA COURT CUL-DE-SAC



INTERSECTION LORINDA LN. & LORINDA CT.

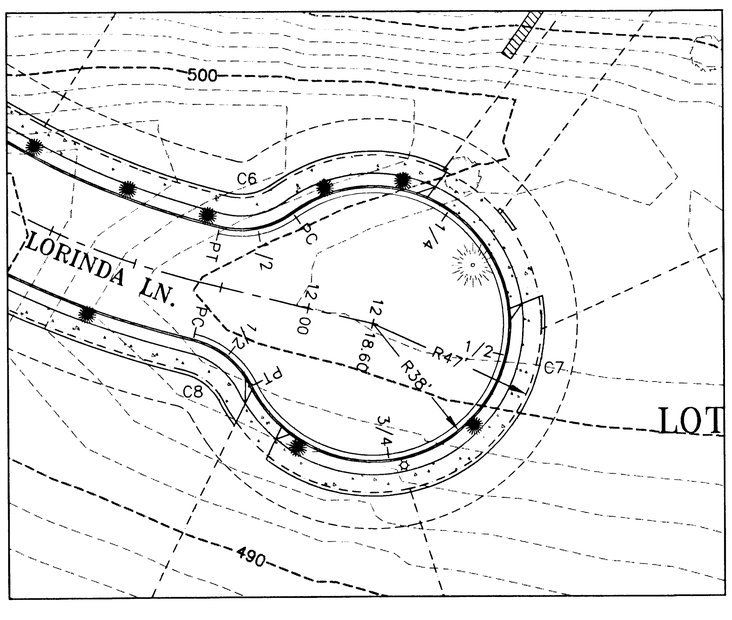


1" = 20' HOR

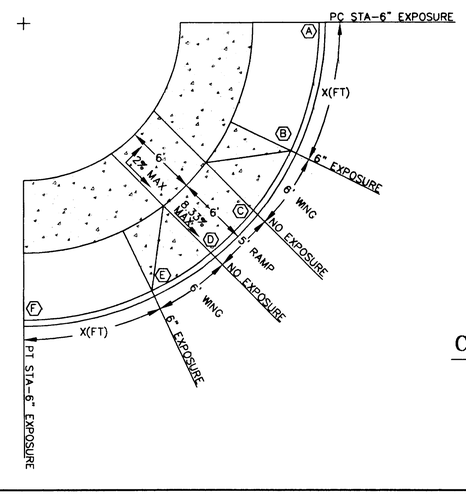
CURB RETURN DATA

	C1	C2	C3	C4	C5	C6	C7	C8
Δ	83°19'29"	87°05'25"	49°23'55"	278°47'49"	49°23'55"	49°38'30"	278°47'47"	49°13'24"
R	25.00'	25.00'	25.00'	38.00'	25.00'	25.00'	38.00'	25.00'
L	36.36'	38.00'	21.55'	184.91'	21.55'	21.66'	184.90'	21.48'
PC STA	0+37.96 LORINDA CT.	9+67.39 LORINDA LN.	2+22.53 LORINDA CT.	2+22.53 LORINDA CT.	2+03.55 LORINDA CT.	11+89.37 LORINDA LN.	11+89.37 LORINDA LN.	11+70.89 LORINDA LN.
PC OFF	16.00' LT	16.00' LT	24.73' LT	24.73' LT	16.00' RT	25.06' LT	25.06' LT	16.00' RT
PC EL.	514.75	511.07	545.05	545.05	542.10	496.94	496.94	496.22
PT STA	8+92.10 LORINDA LN.	0+40.65 LORINDA CT.	2+03.55 LORINDA CT.	2+22.53 LORINDA CT.	2+22.53 LORINDA CT.	11+70.59 LORINDA LN.	11+89.75 LORINDA LN.	11+89.75 LORINDA LN.
PT OFF	16.00' LT	16.00' RT	16.00' LT	24.73' RT	24.73' RT	16.00' LT	24.73' RT	24.73' RT
PT EL.	517.01	514.98	542.10	545.05	545.05	496.22	496.94	496.94
		1/4	N/A	547.74	N/A	N/A	497.89	N/A
		1/2	544.25	550.44	544.25	496.83	499.42	496.83
		3/4	N/A	547.74	N/A	N/A	497.89	N/A

NOTE: ALL ELEVATIONS ARE AT FLOW LINE.
ALL CURB DATA IS CLOCKWISE.



LORINDA LANE CUL-DE-SAC



	C1	C2
Ⓐ	514.75	511.07
Ⓑ	515.35	512.15
Ⓒ	515.72	512.77
Ⓓ	516.04	513.28
Ⓔ	516.41	513.90
Ⓕ	517.01	514.98
X(FT)	9.68	10.50

NOTES:
1. ALL ELEVATIONS ARE AT FLOW LINE.
2. ALL LETTERING IS FROM PC OF CURVE TO PT OF CURVE.

CURB RETURN DATA

SCALE: N.T.S.

AS-BUILT

THESE AS-BUILT PLANS WERE COMPILED FROM SURVEY DATA, DATA COLLECTED FROM OTHERS, AND PERIODIC OBSERVATION DURING CONSTRUCTION. IT IS SUGGESTED THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATIONS OF IMPROVEMENTS IN QUESTION. THESE PLANS ARE AN ACCURATE RECORD OF PUBLIC IMPROVEMENTS TO THE BEST OF MY INFORMATION, KNOWLEDGE AND BELIEF.

SIGNATURE

DATE 4/12/02

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC
SHEET 9 OF 17

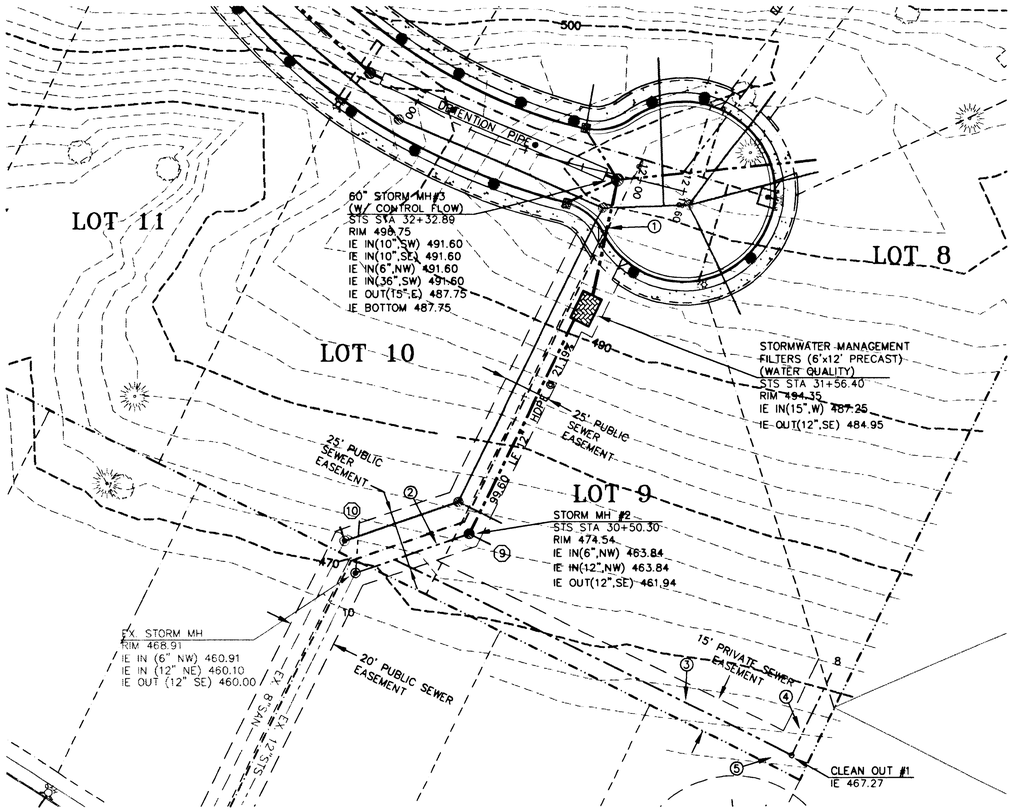
REGISTERED PROFESSIONAL ENGINEER 10001 OREGON DECEMBER 31, 1982 WALTER L. COOK
EXPIRES: 12-31-2003

SCALE VERT: 1"= 10' HORIZ: 1"= 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL
ASSESSOR'S MAP 25-1E-36
TAX LOTS 608 & 609

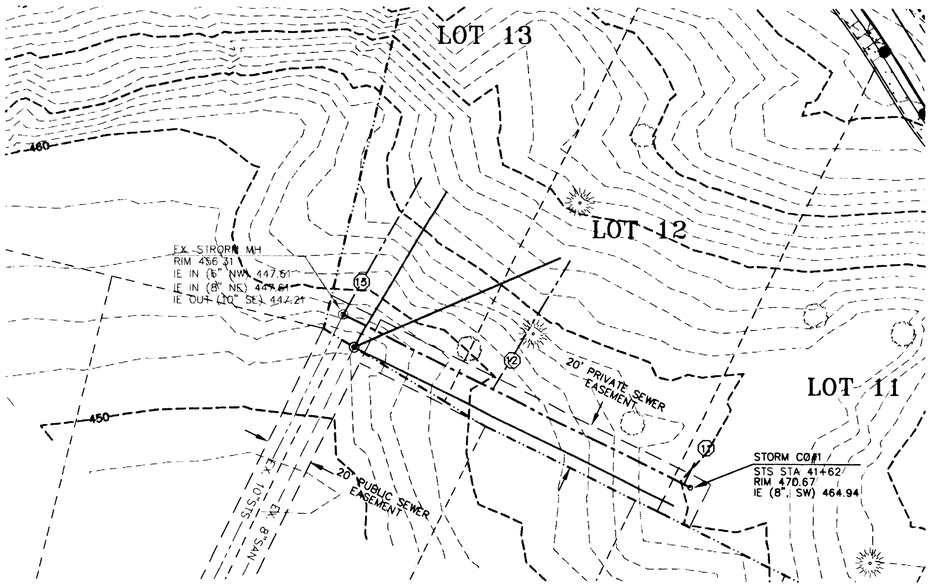
PROJECT NAME: LE CHEVALIER

CURB RETURN & CUL-DE-SAC DATA

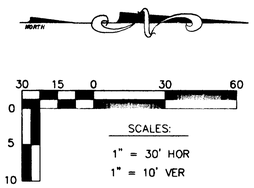
CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



OFF-STREET STORM SEWER #1

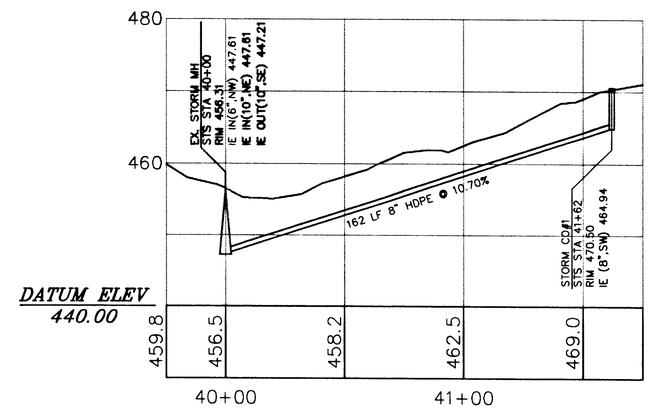


SANITARY & STORM LATERALS (LOTS 11 TO 13)

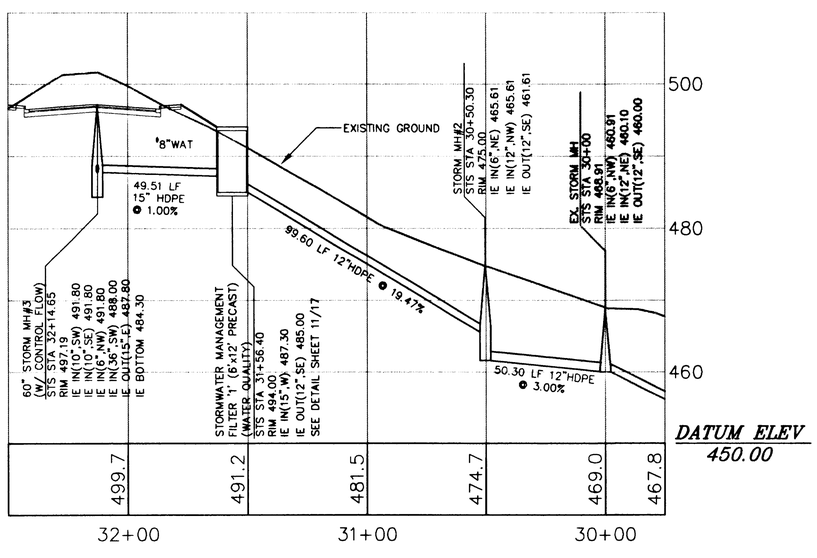


NOTES:

① 49.51 LF 15" HDPE @ 1.00%
② 50.30 LF 12" HDPE @ 2.05%
③ 185.49 LF 6" HDPE @ 1.00%
④ 37.90 LF 6" HDPE @ 1.00%
⑤ FILL AS NECESSARY. 3' MINIMUM COVER OVER PIPE.



OFF STREET STORM SEWER PROFILE #2



OFF STREET STORM SEWER PROFILE #1

STORM SEWER LATERALS (MIN 1% SLOPE)

ALL STATIONING IS BASED OF EX. STORM MH STA 30+00 (EAST LOT 10)

LOT	STATION	SIZE	TYPE	LENGTH	I.E. @ MAIN
8	30+17.36	6"	PVC	SEE ③&④	460.62
9	30+50.30	6"	PVC	10.00'	465.61 MH
10	30+00	6"	PVC	20.00'	460.91 MH

BASED OF EX. STORM MH (SE CORNER LOT 13)

LOT	STATION	SIZE	TYPE	LENGTH	I.E. @ MAIN
11	STA 41+59.13	6"	PVC	10.00'	464.64
12	STA 40+70	6"	PVC	10.00'	455.10
13	STA 40+00	6"	PVC	10.00'	447.61 MH

*PER STORM SEWER NOTES SEE SHEET 5/17

SANITARY SEWER LATERALS (MIN 2% SLOPE)

BASED OF EX. SANITARY MH (SE CORNER LOT 13)

LOT	STATION	SIZE	TYPE	LENGTH	I.E. @ MAIN
11	EX. SANITARY MH	6"	PVC	149.00'	447.94
12	EX. SANITARY MH	6"	PVC	54.00'	445.94
13	EX. SANITARY MH	6"	PVC	20.00'	445.94

*PER SANITARY SEWER NOTES SEE SHEET 6/17

AS-BUILT

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SIGNATURE

DATE 4/12/02

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 10 OF 17

REGISTERED PROFESSIONAL ENGINEER OREGON HAL TEAL COOK

EXPIRES: 12-31-2003

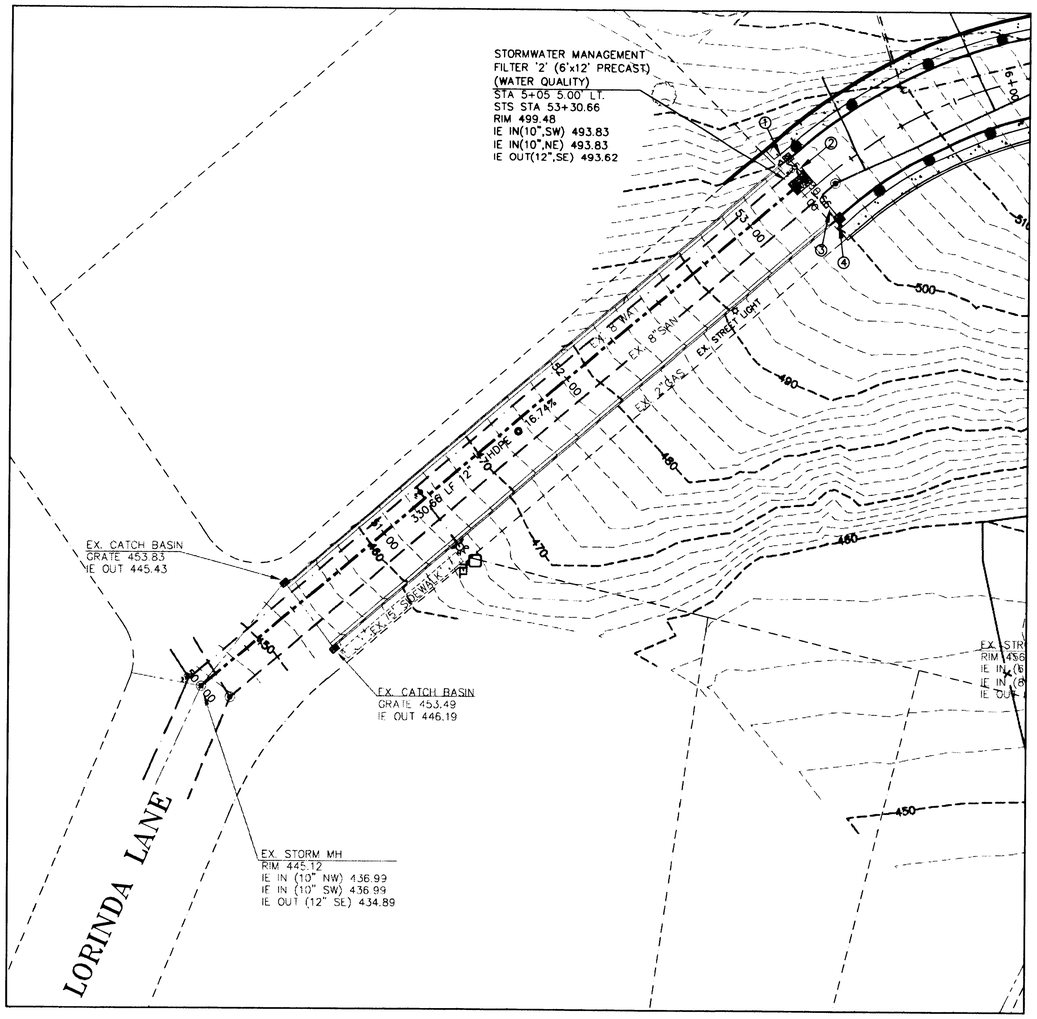
SCALE VERT: 1"= 10' HORIZ: 1"= 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL
ASSESSOR'S MAP 2S-1E-36
TAX LOTS 608 & 609

PROJECT NAME:

LE CHEVALIER

OFF STREET STORM SEWER

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



OFF SITE STORM SEWER

NOTES:

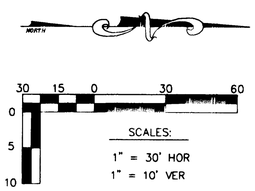
① COMB. CURB INLET #7
STA 5+05 16.00' LT.
GRATE 499.96
IE OUT (10",NE) 496.46

② 11.00' LF 10" HDPE @ 9.32%

③ COMB. CURB INLET #8
STA 5+05 16.00' RT.
GRATE 499.96
IE OUT (10", SW) 496.46

④ 21.00' LF 10" HDPE @ 4.88%

*PER STORM SEWER NOTES SEE SHEET 5/17



AS-BUILT

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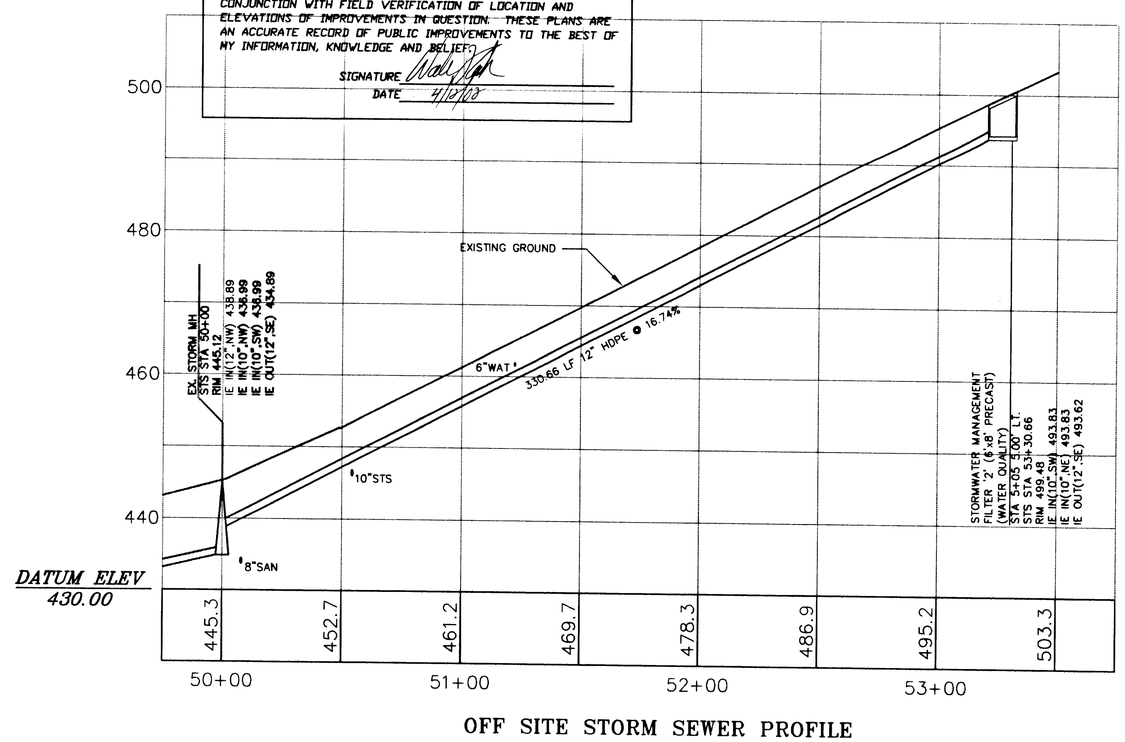
SIGNATURE

DATE 4/12/03



OFF SITE STORM SEWER PROFILE

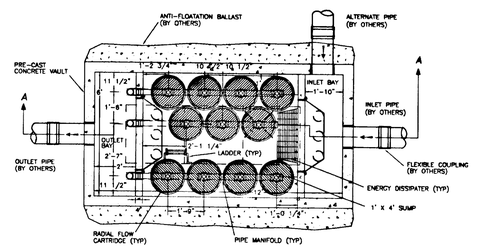
PRECAST STORMFILTER™ 1 DATA			
DESIGN WATER QUALITY FLOW (cfs)			0.33 cfs
PEAK FLOW (cfs)			2.865
RETURN PERIOD OF PEAK FLOW (yrs)			25 yrs
RADIAL FLOW CARTRIDGES REQUIRED			9
PRECAST STORMFILTER SIZE			6' x 12'
(In-Out)=2.3' Min.	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	487.30	HDPE	15"
INLET PIPE #2	N/A	N/A	N/A
INLET PIPE #3	N/A	N/A	N/A
OUTLET PIPE	485.00	HDPE	12"
RIM ELEVATION(S): 1 = 494.00, 2 = N/A, 3 = N/A, 4 = N/A (FLOW)			
ADJUSTABLE LID			YES/NO
DOOR OPENING DIRECTION: (FACING DOWNSTREAM – SEE FIGURE ABOVE EXAMPLE: '2 TO 1' OR '1 TO 2.' USE 'N/A' FOR METAL GRATE).			1 TO 2
H-20 TRAFFIC RATED LID			YES
LADDER			YES
ANTI-FLOATATION BALLAST (USE N/A IF NOT REQUIRED)	WIDTH		HEIGHT
	N/A		N/A
MEDIA TYPE			PERLITE

PRECAST STORMFILTER™ 2 DATA			
DESIGN WATER QUALITY FLOW (cfs)			0.236 cfs
PEAK FLOW (cfs)			0.372 cfs
RETURN PERIOD OF PEAK FLOW (yrs)			25 yr
RADIAL FLOW CARTRIDGES REQUIRED			2
PRECAST STORMFILTER SIZE			6' x 8'
(In-Out)=2.3' Min.	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	495.44	HDPE	10"
INLET PIPE #2	495.44	HDPE	10"
INLET PIPE #3	N/A	N/A	N/A
OUTLET PIPE	493.75	HDPE	12"
RIM ELEVATION(S): 1 = 500.24, 2 = N/A, 3 = N/A, 4 = N/A (FLOW)			
ADJUSTABLE LID			YES/NO
DOOR OPENING DIRECTION: (FACING DOWNSTREAM – SEE FIGURE ABOVE EXAMPLE: '2 TO 1' OR '1 TO 2.' USE 'N/A' FOR METAL GRATE).			MANHOLE LIDS
H-20 TRAFFIC RATED LID			YES
LADDER			YES
ANTI-FLOATATION BALLAST (USE N/A IF NOT REQUIRED)	WIDTH		HEIGHT
	N/A		N/A
MEDIA TYPE			PERLITE

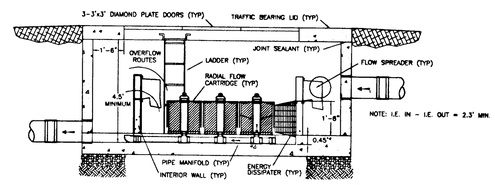
GENERAL NOTES:

1.) STORMFILTER BY STORMWATER MANAGEMENT, PORTLAND, OREGON (503-240-3383).
2.) ALL STORMFILTERS REQUIRE REGULAR MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR DETAILS.
3.) PRECAST CONCRETE VAULT CONSTRUCTED IN ACCORDANCE WITH ASTM C858.
4.) EXTERNAL PIPING AND COUPLINGS PROVIDED BY OTHERS.
5.) FLEXIBLE COUPLINGS TO BE SET 18" OUTSIDE FACE OF WALL. FERNCO OR ENGINEER APPROVED.
6.) SEE PRECAST STORMFILTER DATA SHEET FOR VAULT DIMENSIONS, ELEVATIONS AND NUMBER OF CARTRIDGES.
7.) ANTI-FLOATATION BALLAST TO BE SET ALONG ENTIRE LENGTH OF BOTH SIDES OF FILTER AS SHOWN. SEE PRECAST FILTER DATA BLOCK FOR BALLAST WIDTH AND HEIGHT DIMENSIONS.

The STORMWATER MANAGEMENT StormFilter U.S. PATENT No. 5,498,326, No. 5,806,576, AND OTHER U.S. AND FOREIGN PATENTS PENDING



6'x12' PRECAST STORMFILTER™ – PLAN VIEW (1/1)
SCALE: N.T.S



6'x12' PRECAST STORMFILTER™ – SECTION A-A (A-A/1)
SCALE: N.T.S

6'x12' PRECAST STORMFILTER™ PLAN AND SECTION VIEW STANDARD DETAIL

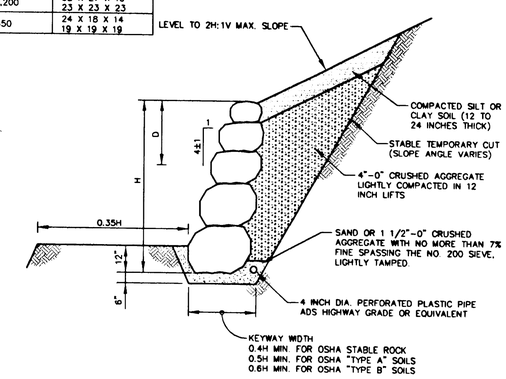
STORMWATER MANAGEMENT

ROCK SIZE SCHEDULE

D (FT)	MIN. WT. (LBS.)	TYPICAL SIZE (IN.)
9	3,200	40 X 34 X 24 32 X 32 X 32
7	2,400	38 X 32 X 32 29 X 29 X 29
5	1,900	34 X 28 X 20 27 X 27 X 27
3	1,200	32 X 27 X 16 23 X 23 X 23
1	650	24 X 18 X 14 19 X 19 X 19

ROCKERY WALL DESIGN

MAXIMUM WALL HEIGHT (H) = 9 FEET
DRAWING NOT TO SCALE



CONSTRUCTION NOTES

1. FOR WALLS SUPPORTING ENGINEERED FILL, THE FILL SHOULD BE OVERBUILT AS A TEMPORARY 1H:1V SLOPE STARTING AT A MINIMUM DISTANCE OF H/3 FROM THE BASE OF THE WALL. THE SLOPE SHOULD THEN BE TRIMMED BACK SUCH THAT THE WALL IS CONSTRUCTED AGAINST A STABLE EXCAVATED FACE OF COMPACTED FILL.
2. KEYWAY SUBGRADE AND EMBEDMENT SHOULD BE VERIFIED BY ADAPT ENGINEERING, INC..
3. ROCKS SHOULD HAVE A CUBICAL, TABULAR, OR SEMI-RECTANGULAR SHAPE THAT ROUGHLY MATCHES THE SPACE CREATED BY THE PREVIOUS ROCK COURSE. ROCKS SHOULD BE LAID FLAT WITH THE LONG DIMENSION ORIENTED PERPENDICULAR TO THE WALL AND EXTENDING TOWARDS THE EXCAVATION FACE. ROCKS SHOULD BE STAGGERED SUCH THAT EACH ROCK BEARS ON AT LEAST TWO ROCKS BELOW AND VERTICAL JOINTS ARE DISCONTINUOUS. ROCK PLACEMENT AND WALL INTEGRITY SHOULD BE CHECKED (BY BUILDER) BY LIGHTLY HAMMERING ON THE TOP OF EACH ROCK WITH EXCAVATOR BUCKET.
4. MINIMUM ROCK SIZED SHOULD BE DETERMINED USING THE ROCK SIZE SCHEDULE ABOVE, WHERE D IS THE DISTANCE FROM THE BASE OF THE ROCK TO THE TOP OF THE WALL. ROCKS SHOULD BE NO SMALLER THAN 650 LBS.
5. VOIDS GREATER THAN 6 INCHES WIDE WHERE THERE IS NO CONTACT BETWEEN ADJACENT ROCKS SHOULD BE CHINKED WITH A SMALL ROCK.
4. BACKFILL BEHIND THE ROCKS SHOULD CONSIST OF AN AVERAGE 12-INCH-WIDE SHEET OF 4"-0 CRUSHED AGGREGATE WITH NO MORE THAN 7% FINES PASSING THE U.S. STANDARD NO. 200 SIEVE. BACKFILL SHOULD BE PLACED IN 12 INCH LIFTS AND LIGHTLY COMPACTED TO AN UNYIELDING STATE AS EACH COURSE OF ROCKS IS PLACED.

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 11 OF 17

REGISTERED PROFESSIONAL ENGINEER
OREGON
WALTER L. COOK
EXPIRES: 12-31-2003

SCALE: VERT: 1" = 10' HORIZ: 1" = 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

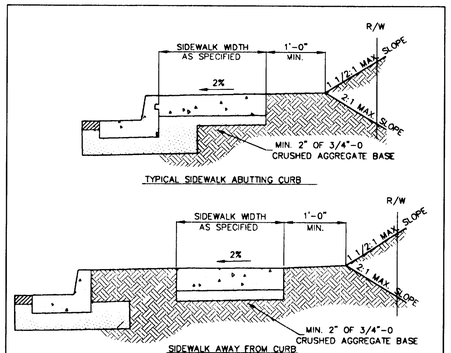
ASSESSOR'S MAP: 2S-1E-36
TAX LOTS: 608 & 609

PROJECT NAME:

LE CHEVALIER

OFF SITE STORM SEWER

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



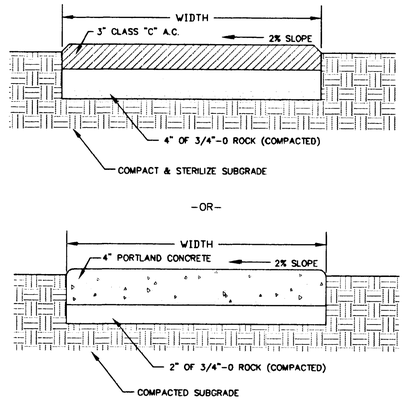
NOTES

1. CONCRETE SHALL BE 3300 PSI AT 28 DAYS, 6 SACK MIX, SLUMP RANGE OF 1 1/2" TO 3".
2. PANEL LENGTHS SHALL BE EQUAL TO THE SIDEWALK WIDTH, BUT MAY BE ADJUSTED WITH THE CITY ENGINEER'S APPROVAL.
3. CONTRACTION JOINTS (1/3RD OF THE THICKNESS OF CONCRETE) SHALL BE PLACED EVERY THIRD PANEL, WITH A MAX. SPACING OF 18 FEET. JOINTS SHALL ALSO BE PLACED AT THE SIDES OF DRIVEWAY APPROACHES, UTILITY VAULTS, AND WHEELCHAIR RAMPS.
4. A CURING COMPOUND SHALL BE USED. WHITE REFLECTIVE SHEETING SHALL BE USED IN CASE OF RAIN.
5. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT THE SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MIN. 1/2" RADIUS.
6. THE SIDEWALK SHALL HAVE A MIN. THICKNESS OF 8" IF MOUNTABLE CURB IS USED OR IF THE SIDEWALK IS INTENDED AS A PORTION OF THE DRIVEWAY. OTHERWISE, THE SIDEWALK SHALL HAVE A MIN. THICKNESS OF 4".
7. DRAIN BLOCKOUTS IN THE CURB SHALL BE EXTENDED TO THE BACK OF THE SIDEWALK WITH A 3" DIA. PLASTIC PIPE AT A 2% SLOPE. A CONTRACTION JOINT SHALL BE PLACED OVER THE PIPE.

Concrete Sidewalk Cross Section

West Linn

DATE:	JAN 2000
DRAWING NO.	WL-508
FILE NO.	00-508



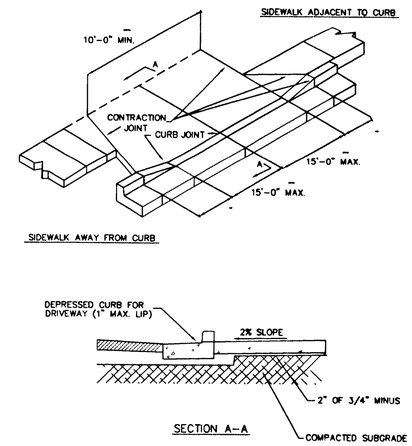
NOTES

1. CONCRETE SHALL BE 3300 PSI AT 28 DAYS, SIX SAC MIX, SLUMP RANGE OF 1 1/2"-3"
2. SIDEWALK PANELS SHALL BE SQUARE, 3/4" DEEP SCRIBES AT JOINTS, EDGED ON 4 SIDES AND HAVE A LIGHT BROOM FINISH.
3. PEDESTRIAN PATH OR BIKEWAY SHALL HAVE A MINIMUM WIDTH OF 5 FEET.

Pedestrian Path or Bikeway

West Linn

DATE:	JAN 2000
DRAWING NO.	WL-510
FILE NO.	00-510



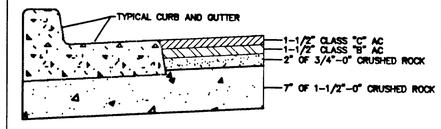
NOTES

1. CONCRETE SHALL HAVE A MINIMUM BREAKING STRENGTH OF 3300 PSI AFTER 28 DAYS, 6 SACK MIX.
2. CURB SHALL BE TROWELED JOINT WITH A MIN. 1/2" RADIUS ALONG BACK OF CURB.
3. DRIVEWAY SHALL BE A MINIMUM 6" THICK.

Residential Driveway

West Linn

DATE:	JAN 2000
DRAWING NO.	WL-503
FILE NO.	00-503



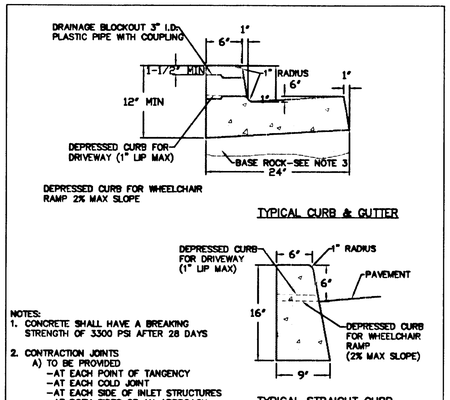
NOTES:

1. THE ENGINEER SHALL PROVIDE A STREET STRUCTURAL DESIGN SECTION FOR ALL ROADWAYS CLASSIFIED COLLECTOR OR HIGHER.
2. UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER, STREETS SHALL BE PAVED TO FINAL GRADE USING 2 OR MORE LIFTS. FINAL LIFT SHALL BE PLACED AT A TIME AS DIRECTED OR APPROVED BY THE CITY ENGINEER.

Alley, Local and Neighborhood Route Street Sections

West Linn

DATE:	JAN 2000
DRAWING NO.	WL-502
FILE NO.	00-502



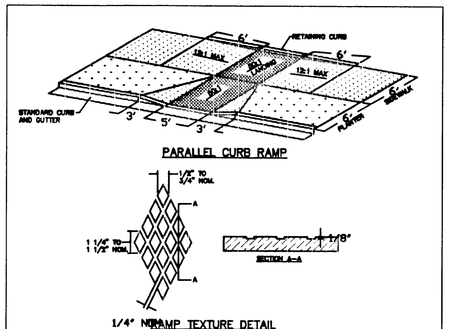
NOTES:

1. CONCRETE SHALL HAVE A BREAKING STRENGTH OF 3300 PSI AFTER 28 DAYS
2. CONTRACTION JOINTS
   A) TO BE PROVIDED
      -AT EACH POINT OF TANGENCY
      -AT EACH COLD JOINT
      -AT EACH SIDE OF INLET STRUCTURES
      -AT BOTH SIDES OF AN APPROACH
   B) SPACING TO BE NOT MORE THAN 15 FEET
   C) THE DEPTH OF THE JOINT SHALL BE AT LEAST 1/3 OF THE THICKNESS OF CONCRETE
   D) EXPANSION JOINTS SHALL NOT BE USED
3. BASE ROCK - 1-1/2"-0", 95% COMPACTION ROCK SHALL BE TO SUBGRADE OF THE STREET SECTION OR 4" IN DEPTH, WHICHEVER IS GREATER
4. DRAINAGE BLOCK - 3" DIA. PLASTIC PIPE
   A) DRAINAGE ACCESS THROUGH EXISTING CURBS SHALL BE DONE BY:
      -CORE DRILLING
      -VERTICAL SAWCUT OF CURB 18" EACH SIDE OF DRAIN AND RE-POURED TO FULL DEPTH OF CURB
5. STAMP TOP OF CURB WITH "W" AT WATER SERVICE CROSSING AND "S" AT SANITARY LATERAL CROSSING

Typical Curbs

West Linn

DATE:	JAN 2000
DRAWING NO.	WL-501
FILE NO.	00-501



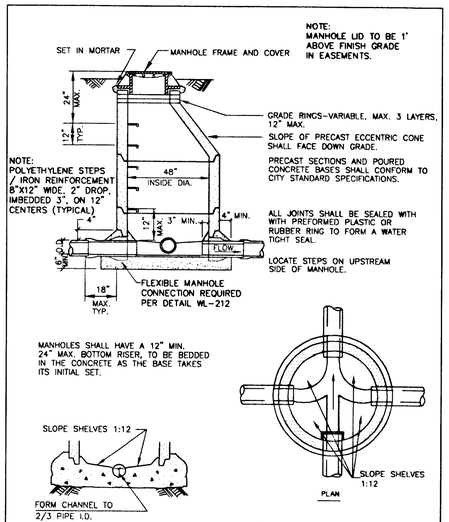
NOTES:

1. THE AMERICANS WITH DISABILITIES ACT" (ADA) REQUIRES THAT ACCESS RAMPS TO SIDEWALKS CONFORM TO ALL FEDERAL GUIDELINES. EXCEPTIONS TO THE REQUIREMENTS IN THIS DRAWING MUST BE APPROVED BY THE CITY ENGINEER AND MUST COMPLY WITH ADA.
2. NO ABOVE GROUND UTILITIES ARE PERMITTED WITHIN RAMP AREA.
3. LANDINGS SHALL BE PLACED AT THE TOP OF EACH RAMP. LANDING SLOPES SHALL NOT EXCEED 50:1 IN ANY DIRECTION. THE SLOPE OF THE SURFACING AT THE BOTTOM OF THE RAMP SHALL NOT EXCEED 20:1 FOR A DISTANCE OF 2' (SEE TYPICAL SECTION ABOVE).
4. MINIMUM LANDING DIMENSIONS SHALL BE 4' X 4'.
5. RAMP SURFACE SHALL BE TEXTURED WITH RAISED DIAMOND TEXTURE. TEXTURING SHALL BE DONE WITH AN EXPANDED METAL GRATE STAMPED INTO THE CONCRETE.
6. CONCRETE STRENGTH SHALL BE 3300 PSI.

Parallel Curb Ramp

West Linn

DATE:	JAN 2000
DRAWING NO.	WL-506
FILE NO.	00-506

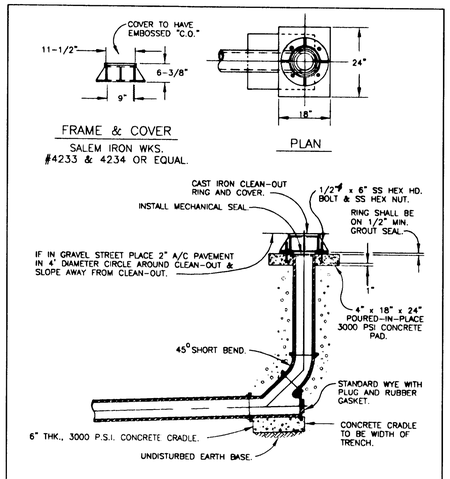


NOTE:
CHANNELS MUST BE ABLE TO PASS A 7"X30" CYLINDER INTO PIPES. SHELF SHALL NOT BE BELOW THE TOP OF THE PIPE.

Standard Manhole for Less than 36" Pipe

West Linn

DATE:	JAN 2000
DRAWING NO.	WL-207
FILE NO.	00-207



Standard Clean Out

West Linn

DATE:	JAN 2000
DRAWING NO.	WL-206
FILE NO.	00-206

AS-BUILT

THESE AS-BUILT PLANS WERE COMPILED FROM SURVEY DATA, DATA COLLECTED FROM OTHERS, AND PERIODIC OBSERVATION DURING CONSTRUCTION. IT IS SUGGESTED THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATIONS OF IMPROVEMENTS IN QUESTION. THESE PLANS ARE AN ACCURATE RECORD OF PUBLIC IMPROVEMENTS TO THE BEST OF MY INFORMATION, KNOWLEDGE AND BELIEF.

SIGNATURE

DATE 4/8/10

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 12 OF 18

REGISTERED PROFESSIONAL ENGINEER
OREGON
DECEMBER 15, 1992
WALTER L. COOK

EXPIRES: 12-31-2003

SCALE VERT: 1"= 10' HORIZ: 1"= 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

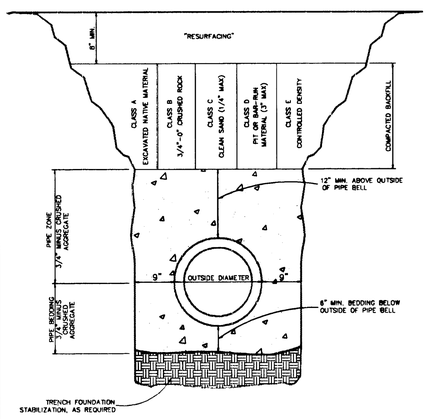
ASSESSOR'S MAP 2S-1E-36
TAX LOTS 608 & 609

PROJECT NAME:

LE CHEVALIER

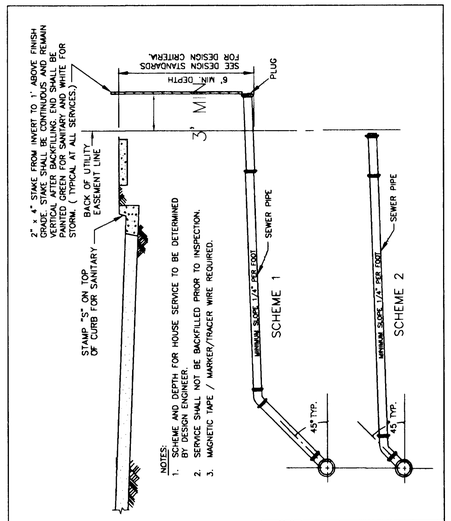
OFF SITE STORM SEWER

GSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



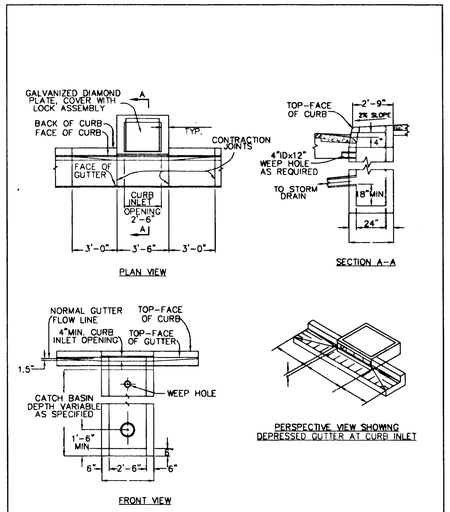
Trench Backfill, Bedding and Pipe Zone

West Linn	DATE: JAN 2000
	DRAWING NO. WL-200
	FILE NO. 00-200



Service Branch

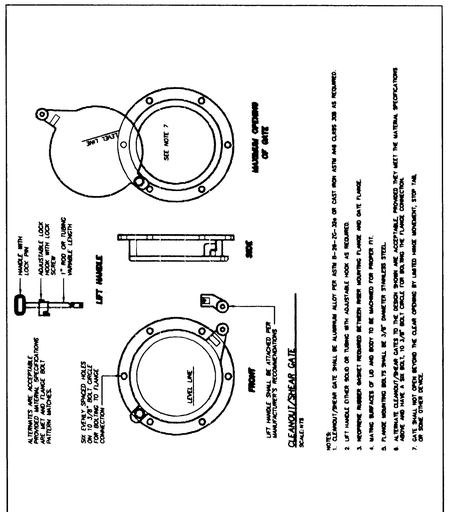
West Linn	DATE: JAN 2000
	DRAWING NO. WL-218
	FILE NO. 00-218



NOTES:
1. ALL FABRICATED METAL PARTS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
2. CONCRETE SHALL BE CLASS 3000.
3. CURB INLET BASE MAY BE PRECAST OR CAST-IN-PLACE.
4. FOR SLOPES OF 5% OR GREATER, USE DWG. WL-601.

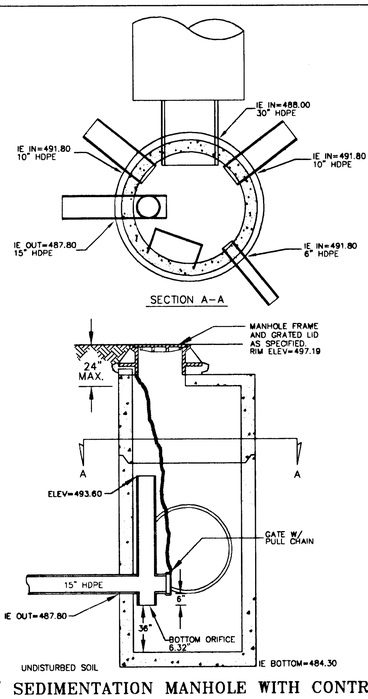
Gutter Inlet 2 1/2 A

West Linn	DATE: JAN 2000
	DRAWING NO. WL-600
	FILE NO. 00-600

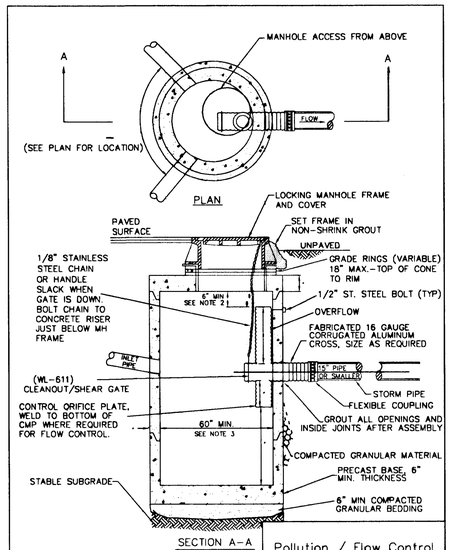


Cleanout / Shear Gate

West Linn	DATE: JAN 2000
	DRAWING NO. WL-611
	FILE NO. 00-611



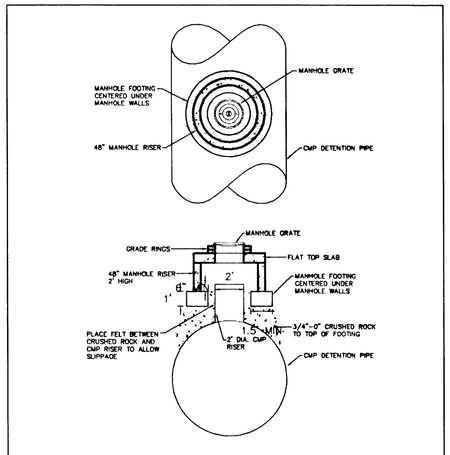
60" SEDIMENTATION MANHOLE WITH CONTROL FLOW STORM SEWER MANHOLE #3



NOTES:
1. ALL PRECAST SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
2. DISTANCE FROM TOP OF OVERFLOW TO MH RIM SHALL BE BASED ON OVERFLOW CAPACITY CALC'S BY DESIGN ENGINEER. ASSUME ORIFICE CONTROL.
3. 72" MINIMUM DIA. MANHOLE REQUIRED FOR OUTLET OR INLET > 21".
4. NO STEPS REQUIRED

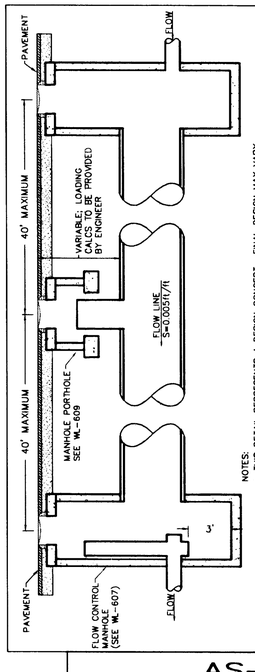
Pollution / Flow Control Manhole

West Linn	DATE: JAN 2000
	DRAWING NO. WL-607
	FILE NO. 00-607



Manhole Porthole

West Linn	DATE: JAN 2000
	DRAWING NO. WL-609
	FILE NO. 00-609



NOTES:
1. THIS DETAIL REPRESENTS A DESIGN CONCEPT. FINAL DESIGN MAY VARY DEPENDING ON SITE CONDITIONS AND SHALL BE APPROVED BY THE CITY.
2. MATERIALS FOR DETENTION PIPE AND MANHOLES SHALL HAVE A DESIGN LIFE OF 75 YEARS AND SHALL BE APPROVED BY THE CITY.
3. SUMP REQUIRED AT EACH END OF DETENTION PIPE.
4. MANHOLES MUST BE CONCRETE UNLESS OTHERWISE APPROVED BY THE CITY.
5. MANHOLE MATERIAL MAY BE SAME AS DETENTION PIPE MATERIAL. ALL FACILITIES WITHIN THE ROAD RIGHT OF WAY MUST BE DESIGNED FOR H20 LOADING.
6. DETENTION SYSTEM SHALL BE WATER TIGHT UNLESS DESIGNED AS AN INFILTRATION SYSTEM WHICH HAS BEEN APPROVED BY THE CITY.
7. MANHOLES TO BE OVERSIZED TO NECESSARY DIAMETER TO ACCOMMODATE DETENTION PIPE.
8. ALL ACCESSWAYS MUST BE 36" DIAMETER.

Underground Detention Manholes

West Linn	DATE: JAN 2000
	DRAWING NO. WL-608
	FILE NO. 00-608

AS-BUILT

THESE AS-BUILT PLANS WERE COMPILED FROM SURVEY DATA, DATA COLLECTED FROM OTHERS, AND PERIODIC OBSERVATION DURING CONSTRUCTION. IT IS SUGGESTED THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATIONS OF IMPROVEMENTS IN QUESTION. THESE PLANS ARE AN ACCURATE RECORD OF PUBLIC IMPROVEMENTS TO THE BEST OF MY INFORMATION, KNOWLEDGE AND BELIEF.

SIGNATURE

DATE 4/10/10

CSA #9041

DATE	NO.	REVISION	BY

REGISTERED PROFESSIONAL ENGINEER — OREGON — WALTER L. COOK — EXPIRES: 12-31-2003

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 13 OF 18

SCALE: VERT: 1" = 10' HORIZ: 1" = 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

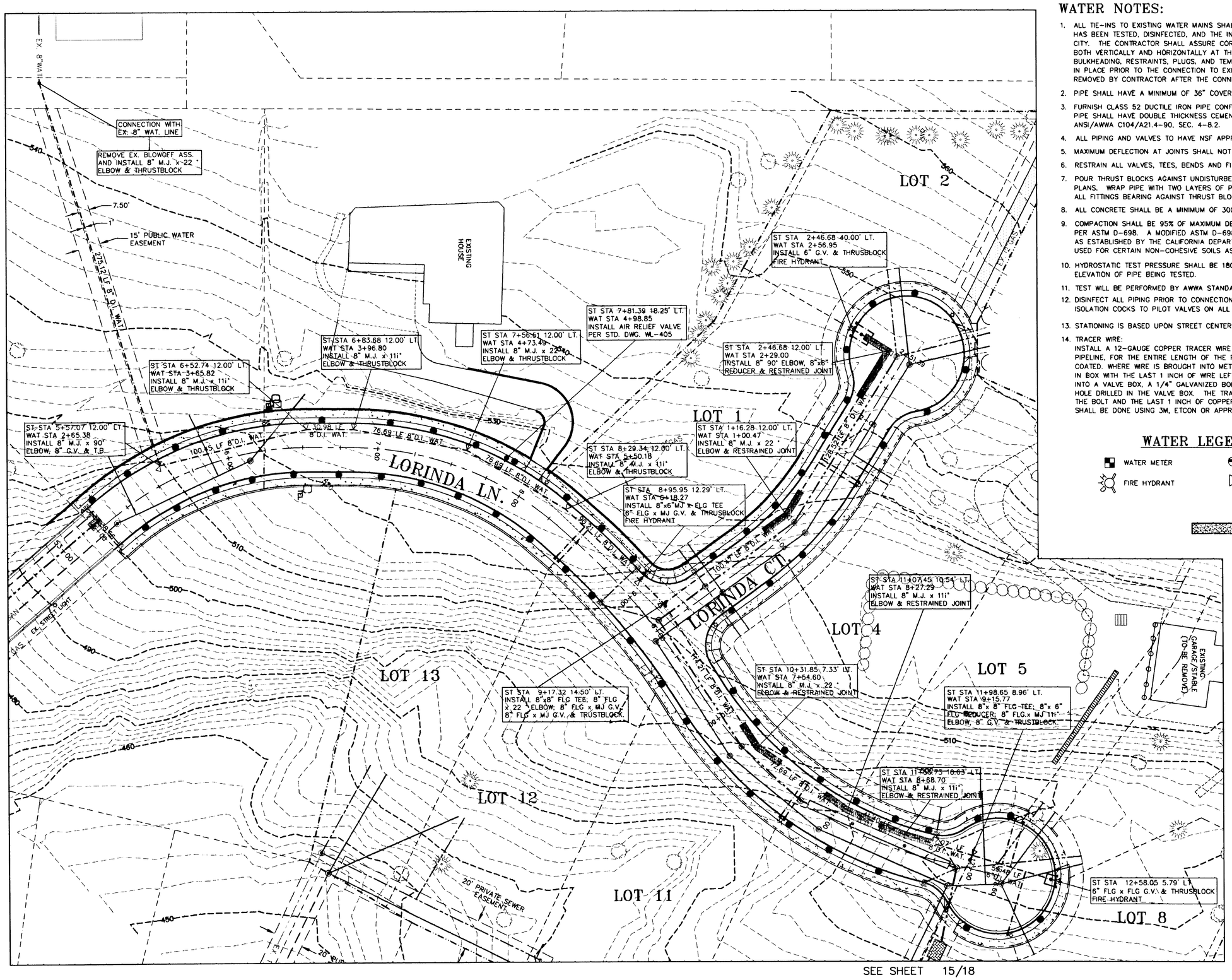
ASSESSOR'S MAP	TAX LOTS
2S-1E-36	608 & 609

PROJECT NAME:

LE CHEVALIER

OFF SITE STORM SEWER (2)

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



WATER NOTES:

1. ALL TIE-INS TO EXISTING WATER MAINS SHALL BE MADE AFTER THE PIPE HAS BEEN TESTED, DISINFECTED, AND THE INSTALLATION ACCEPTED BY THE CITY. THE CONTRACTOR SHALL ASSURE CORRECT ALIGNMENT OF PIPE, BOTH VERTICALLY AND HORIZONTALLY AT THE POINTS OF CONNECTION. ALL BULKHEADING, RESTRAINTS, PLUGS, AND TEMPORARY TEST PIPING SHALL REMAIN IN PLACE PRIOR TO THE CONNECTION TO EXISTING MAIN, AND SHALL THEN BE REMOVED BY CONTRACTOR AFTER THE CONNECTION.
2. PIPE SHALL HAVE A MINIMUM OF 36" COVER FROM FINISH GRADE.
3. FURNISH CLASS 52 DUCTILE IRON PIPE CONFORMING TO ANSI/AWWA C151/A21.51. PIPE SHALL HAVE DOUBLE THICKNESS CEMENT MORTAR LINING CONFORMING TO ANSI/AWWA C104/A21.4-90, SEC. 4-8.2.
4. ALL PIPING AND VALVES TO HAVE NSF APPROVAL, DOMESTIC FITTINGS ONLY.
5. MAXIMUM DEFLECTION AT JOINTS SHALL NOT EXCEED AWWA STANDARD.
6. RESTRAIN ALL VALVES, TEES, BENDS AND FITTINGS.
7. POUR THRUST BLOCKS AGAINST UNDISTURBED SOIL IN LOCATIONS SHOWN ON THE PLANS. WRAP PIPE WITH TWO LAYERS OF PLASTIC, 4 MIL THICKNESS EACH, AT ALL FITTINGS BEARING AGAINST THRUST BLOCKS.
8. ALL CONCRETE SHALL BE A MINIMUM OF 3000 PSI STRENGTH.
9. COMPACTION SHALL BE 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT PER ASTM D-698. A MODIFIED ASTM D-698 UTILIZING A ROCK CORRECTION FACTOR AS ESTABLISHED BY THE CALIFORNIA DEPARTMENT OF TRANSPORTATION SHALL BE USED FOR CERTAIN NON-COHESIVE SOILS AS DETERMINED BY THE ENGINEER.
10. HYDROSTATIC TEST PRESSURE SHALL BE 180 P.S.I. AT THE POINT OF THE HIGHEST ELEVATION OF PIPE BEING TESTED.
11. TEST WILL BE PERFORMED BY AWWA STANDARDS.
12. DISINFECT ALL PIPING PRIOR TO CONNECTION TO EXISTING MAINS. CLOSE ISOLATION COCKS TO PILOT VALVES ON ALL REGULATORS BEFORE CHLORINATION.
13. STATIONING IS BASED UPON STREET CENTERLINE UNLESS OTHERWISE SPECIFIED.
14. TRACER WIRE:
    INSTALL A 12-GAUGE COPPER TRACER WIRE ON TOP OF OR ALONGSIDE THE WATER PIPELINE, FOR THE ENTIRE LENGTH OF THE PROJECT. WIRE SHALL BE INSULATION COATED. WHERE WIRE IS BROUGHT INTO METER BOX, 1 FT. OF WIRE SHALL BE LEFT IN BOX WITH THE LAST 1 INCH OF WIRE LEFT UNCOATED WHERE WIRE IS BROUGHT INTO A VALVE BOX, A 1/4" GALVANIZED BOLT AND NUT SHALL BE INSTALLED IN A 3/8" HOLE DRILLED IN THE VALVE BOX. THE TRACER WIRE SHALL BE LOOPED TWICE AROUND THE BOLT AND THE LAST 1 INCH OF COPPER SHALL BE LEFT UNCOATED. SPLICING OF WIRE SHALL BE DONE USING 3M, ETCON OR APPROVED EQUAL SPLICE KIT.

WATER LEGEND:

- WATER METER
- WATER VALVE
- FIRE HYDRANT
- THRUSTBLOCK (WHERE THRUSTBLOCK DO NOT WORK USE INSTEAD RESTRAINED JOINTS PER SCHEDULE SHEET 17/17.)
- RESTRAINED JOINT

AS-BUILT

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SIGNATURE _____

DATE _____

SEE SHEET 16/18 FOR PROFILES

NORTH

30 15 0 30 60

SCALE: 1" = 30' HOR

CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 14 OF 17

REGISTERED PROFESSIONAL ENGINEER (1001) WATER L. COOK OREGON DECEMBER 12, 1978

EXPIRES: 12-31-2003

SCALE: VERT: N/A HORIZ: 1" = 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

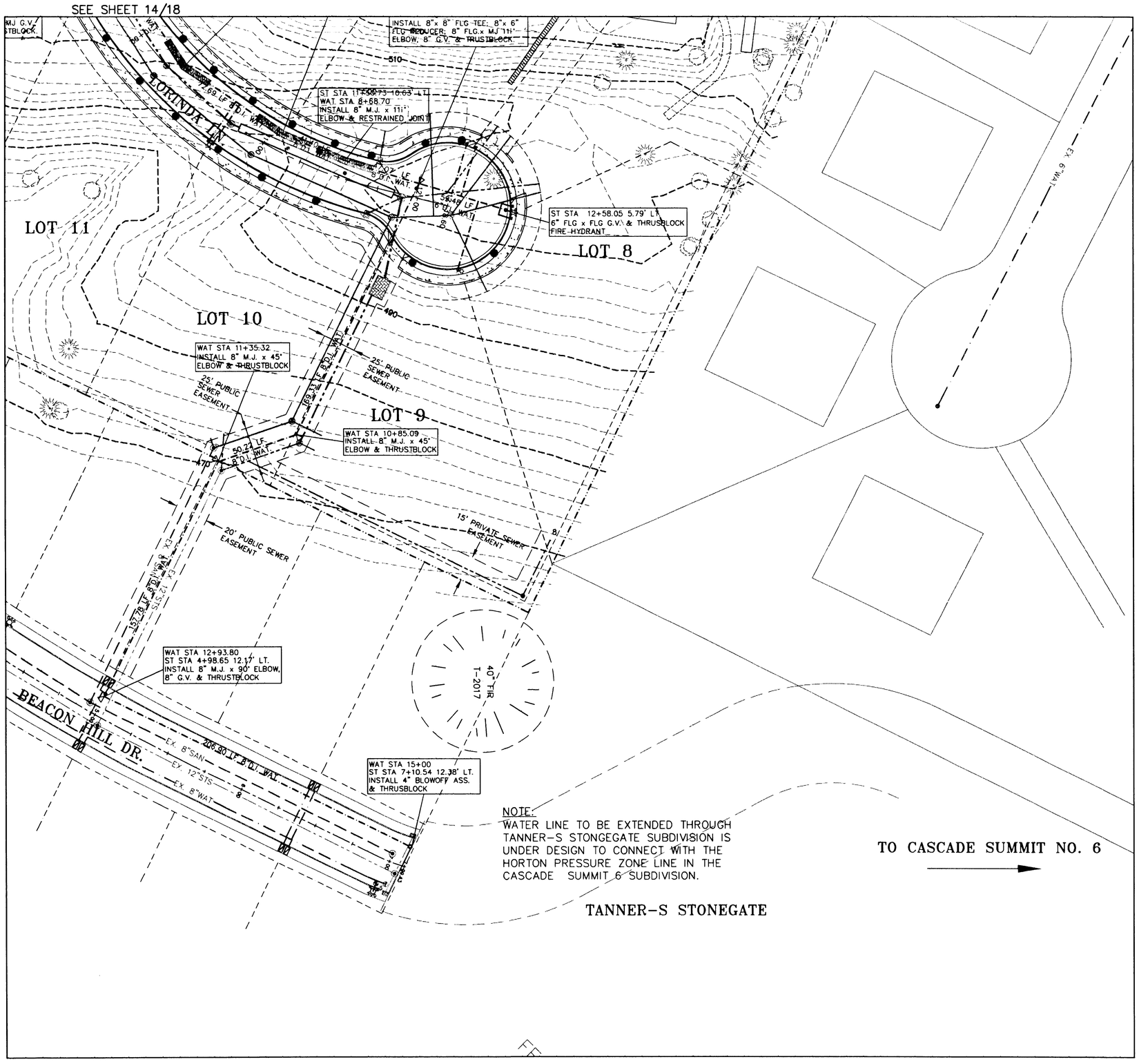
ASSESSOR'S MAP: 2S-1E-36
TAX LOTS: 608 & 609

PROJECT NAME:

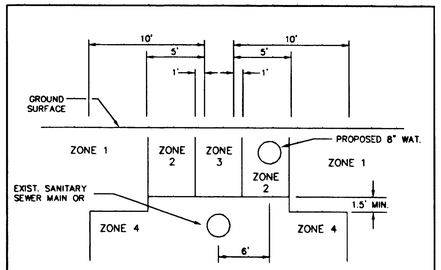
LE CHEVALIER

WATER PLAN

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



NOTE:
WATER LINE TO BE EXTENDED THROUGH TANNER-S STONEGATE SUBDIVISION IS UNDER DESIGN TO CONNECT WITH THE HORTON PRESSURE ZONE LINE IN THE CASCADE SUMMIT 6 SUBDIVISION.

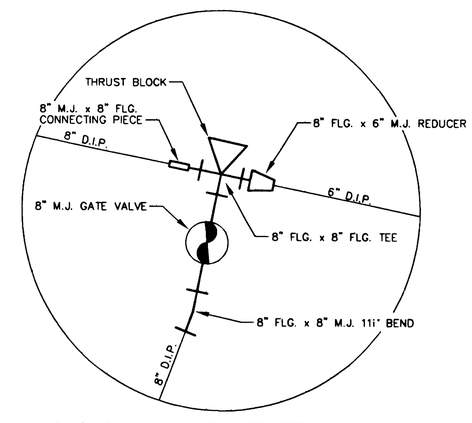


ZONE 1: ONLY CROSSING RESTRICTIONS APPLY
ZONE 2: CASE-BY-CASE DETERMINATION
ZONE 3: PARALLEL WATERLINE PROHIBITED
ZONE 4: PARALLEL WATERLINE PROHIBITED

NOTES:

1. WHERE THE PROPOSED WATERLINE WILL BE INSTALLED PARALLEL TO AN EXISTING GRAVITY SANITARY SEWER MAIN OR LATERAL LINE, THE SEPARATION BETWEEN THE TWO SHALL BE AS INDICATED ABOVE.
2. CROSSINGS:
   a.) WHEREVER POSSIBLE, THE BOTTOM OF THE WATERLINE SHALL BE 1.5 FEET ABOVE THE TOP OF THE SEWER LINE, AND ONE FULL LENGTH OF WATERLINE SHALL BE CENTERED AT THE CROSSING.
   b.) WHERE IT IS NOT POSSIBLE FOR THE WATER LINE TO BE 1.5 FEET ABOVE THE SEWER LINE, OR THE WATERLINE PASSES UNDER THE SEWER LINE, THE EXISTING SEWER LINE SHALL BE EXPOSED FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING, AND SHALL BE REPLACED WITH C-900 PVC, DR-18, DR-25 OR CLASS 50 DUCTILE IRON PIPE AS APPROVED BY THE ENGINEER, AND A LENGTH OF WATER PIPE SHALL BE CENTERED AT THE CROSSING, OR AS APPROVED BY THE ENGINEER.

*FOR WATER NOTES SEE SHEET 14/17.



WATER FITTING AT STA 12+02
N.T.S.

NORTH

30 15 0 30 60

SCALE:
1" = 30' HOR

AS-BUILT

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SIGNATURE
DATE 4/10/02

CSA #9041

DATE	NO.	REVISION	BY

SHEET 15 OF 18

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

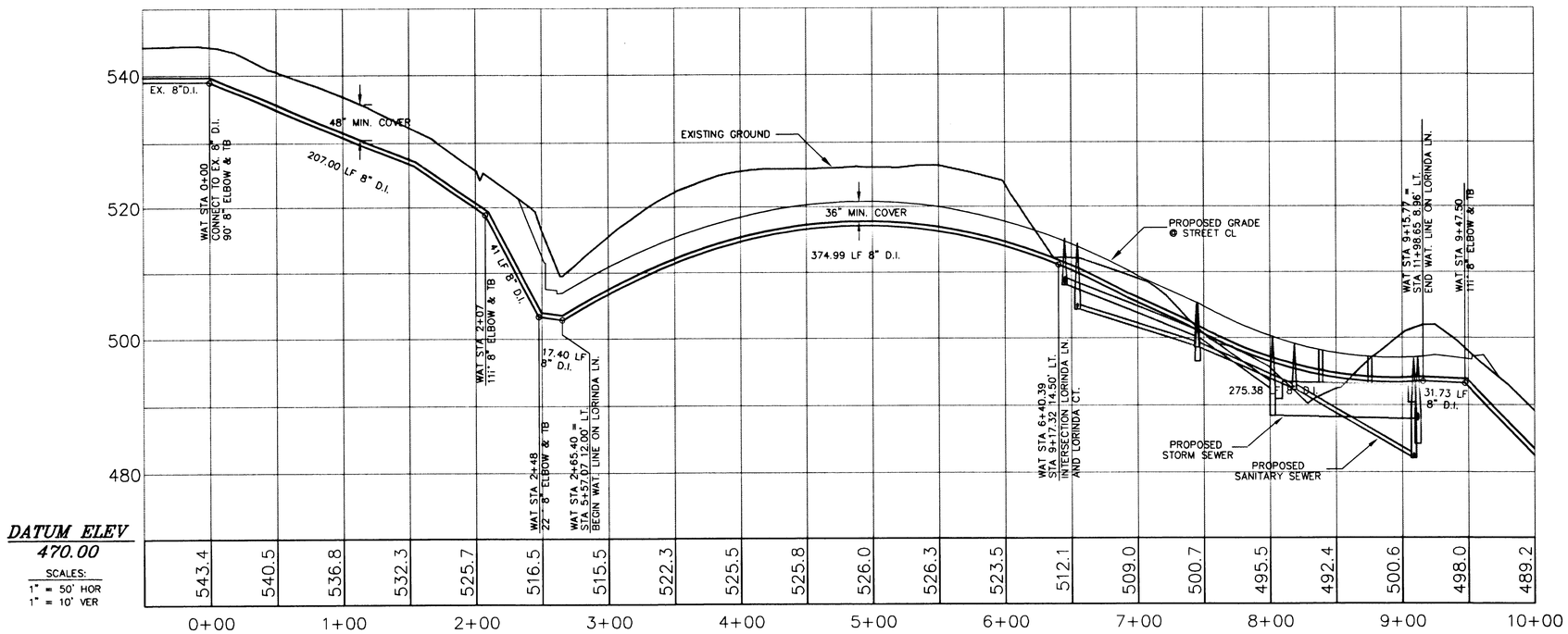
REGISTERED PROFESSIONAL ENGINEER OREGON WALTER L. COOK
EXPIRES: 12-31-2003

SCALE VERT: N/A HORIZ: 1" = 30'
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

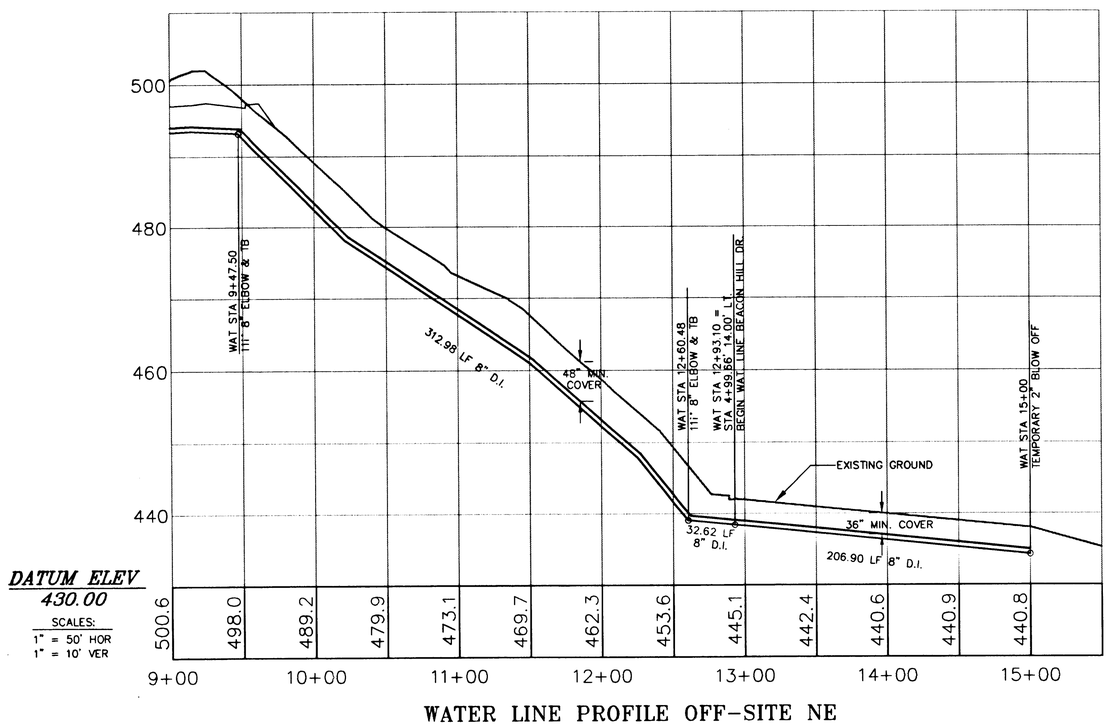
ASSESSOR'S MAP 25-1E-36
TAX LOTS 608 & 609

PROJECT NAME:
LE CHEVALIER
WATER PLAN (2)

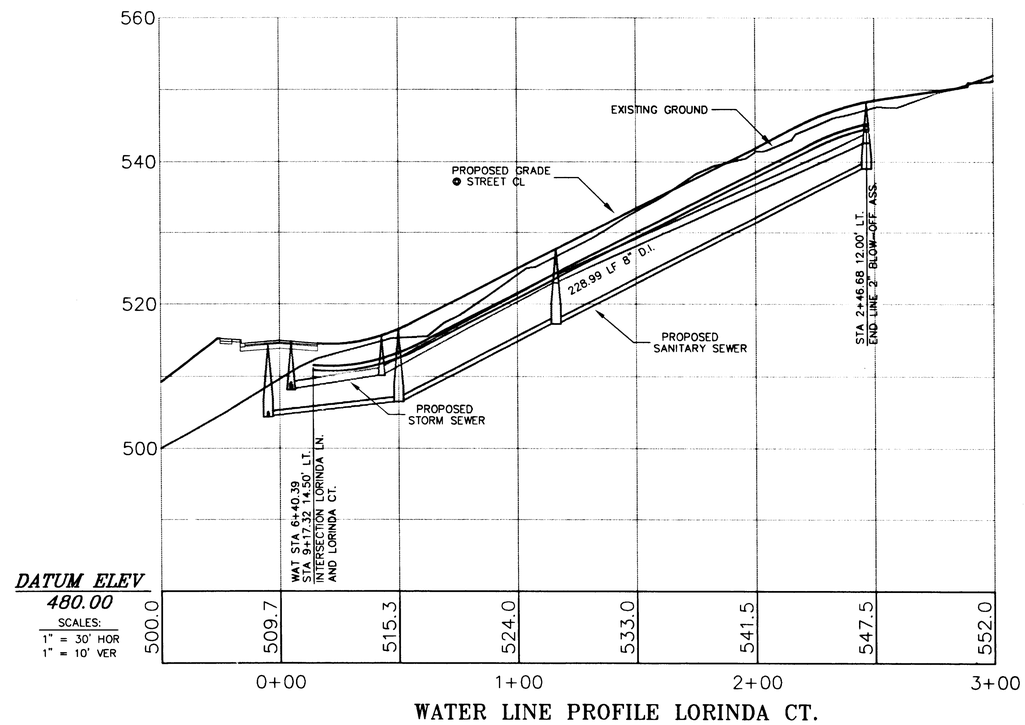
CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848



WATER LINE PROFILE OFF-SITE SW AND LORINDA LN.



WATER LINE PROFILE OFF-SITE NE



WATER LINE PROFILE LORINDA CT.

AS-BUILT

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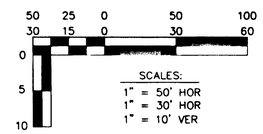
SIGNATURE Walt Koch

DATE 4/13/02



CSA #9041

DATE	NO.	REVISION	BY

DESIGNED: AC
DRAWN: AC
CHECKED: JSS
APPROVED: HLC

SHEET 16 OF 17

REGISTERED PROFESSIONAL ENGINEER
OREGON
WALTER L. COOK
EXPIRES: 12-31-2003

SCALE VERT: 1" = 10'
HORIZ: VARIES
DATE: 8/8/2000
FILE: SUB-99-07 ET AL

ASSESSOR'S MAP 25-1E-36
TAX LOTS 608 & 609

PROJECT NAME:

LE CHEVALIER

WATER LINE PROFILES

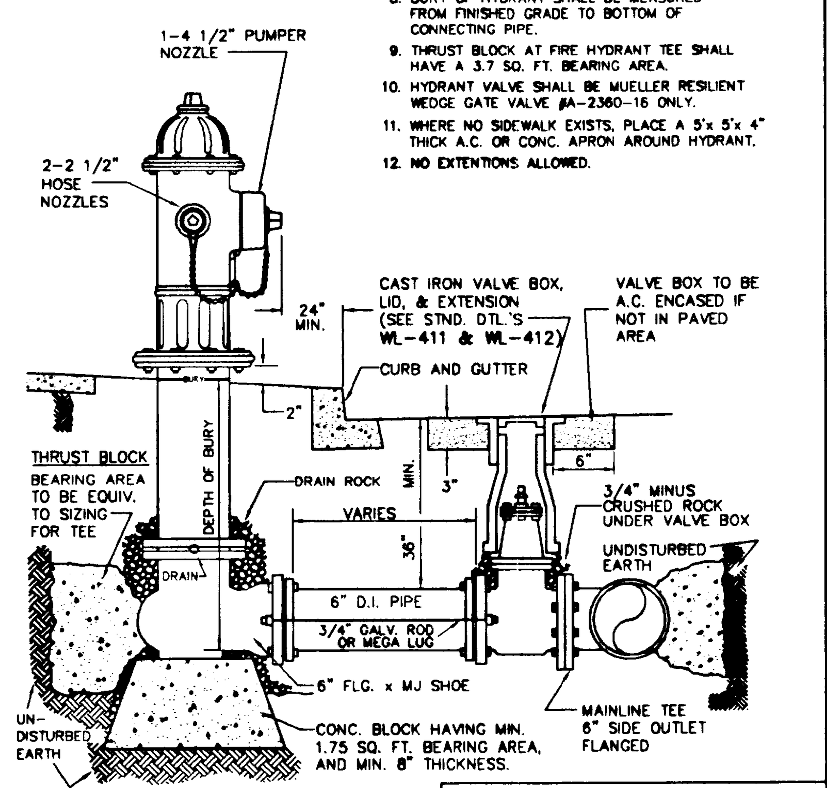
CSA
Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848

LE CHEVALIER — WATER DETAILS

Standard Fire Hydrant Assembly (WL-401)

NOTES:

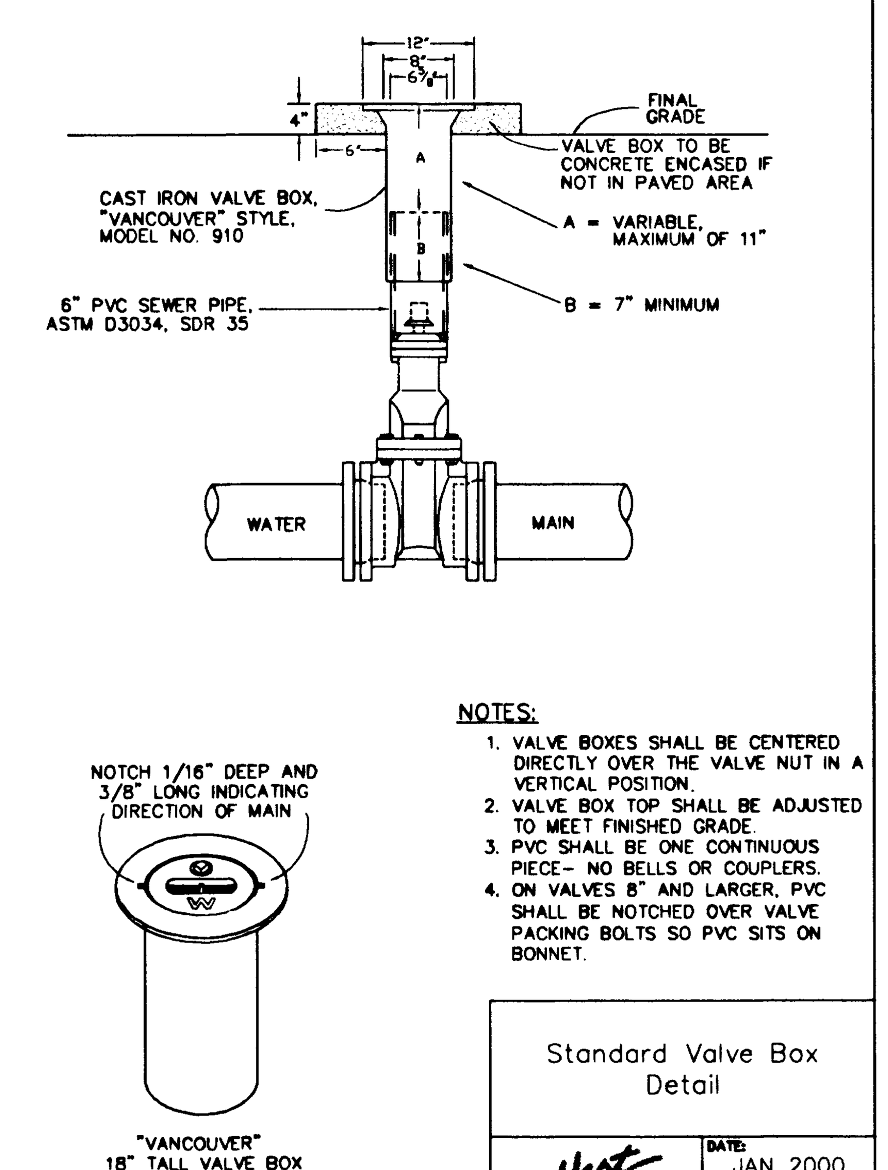
1. HYDRANTS TO BE MUELLER CENTURION MDL A-423 ONLY WITH 1 1/2" OPER. NUTS OR CLOW MEDDALION F-2545.
2. HYDRANT COLOR TO BE MILLER EQUIP. ENAMEL O E 40 (SAFETY YELLOW).
3. JOINTS TO BE RESTRAINED BY 3/4" DIA. GALVANIZED STEEL RODS AND THRUST BLOCKS OR MEGA LUGS AND THRUST BLOCKS.
4. ALL FITTINGS IN CONTACT W/CONCRETE SHALL BE WRAPPED IN PLASTIC. HYDRANT DRAIN HOLES TO REMAIN OPEN TO DRAIN ROCK AND OPERATIONAL.
5. MIN. 4 CU. FT. OF 1 1/2"-3/4" CLEAN DRAIN ROCK SHALL BE PLACED AROUND SHOE UP TO A MIN. OF 6" ABOVE DRAIN OUTLETS.
6. WHERE PLANTER STRIP EXISTS, HYDRANT SHALL BE PLACED SO FRONT PORT IS A MINIMUM OF 24" BEHIND FACE OF CURB.
7. WHERE INTEGRAL S/W & CURB EXISTS, HYD. SHALL BE PLACED AT BACK OF SIDEWALK, OR AS DIRECTED BY ENGINEER.
8. BURY OF HYDRANT SHALL BE MEASURED FROM FINISHED GRADE TO BOTTOM OF CONNECTING PIPE.
9. THRUST BLOCK AT FIRE HYDRANT TEE SHALL HAVE A 3.7 SQ. FT. BEARING AREA.
10. HYDRANT VALVE SHALL BE MUELLER RESILIENT WEDGE GATE VALVE #A-2360-16 ONLY.
11. WHERE NO SIDEWALK EXISTS, PLACE A 5'x 5'x 4" THICK A.C. OR CONC. APRON AROUND HYDRANT.
12. NO EXTENTIONS ALLOWED.



Standard Fire Hydrant Assembly

DATE: JAN 2000 | DRAWING NO. WL-401 | FILE NO. 00-401

Standard Valve Box Detail (WL-411)



NOTES:

1. VALVE BOXES SHALL BE CENTERED DIRECTLY OVER THE VALVE NUT IN A VERTICAL POSITION.
2. VALVE BOX TOP SHALL BE ADJUSTED TO MEET FINISHED GRADE.
3. PVC SHALL BE ONE CONTINUOUS PIECE– NO BELLS OR COUPLERS.
4. ON VALVES 8" AND LARGER, PVC SHALL BE NOTCHED OVER VALVE PACKING BOLTS SO PVC SITS ON BONNET.

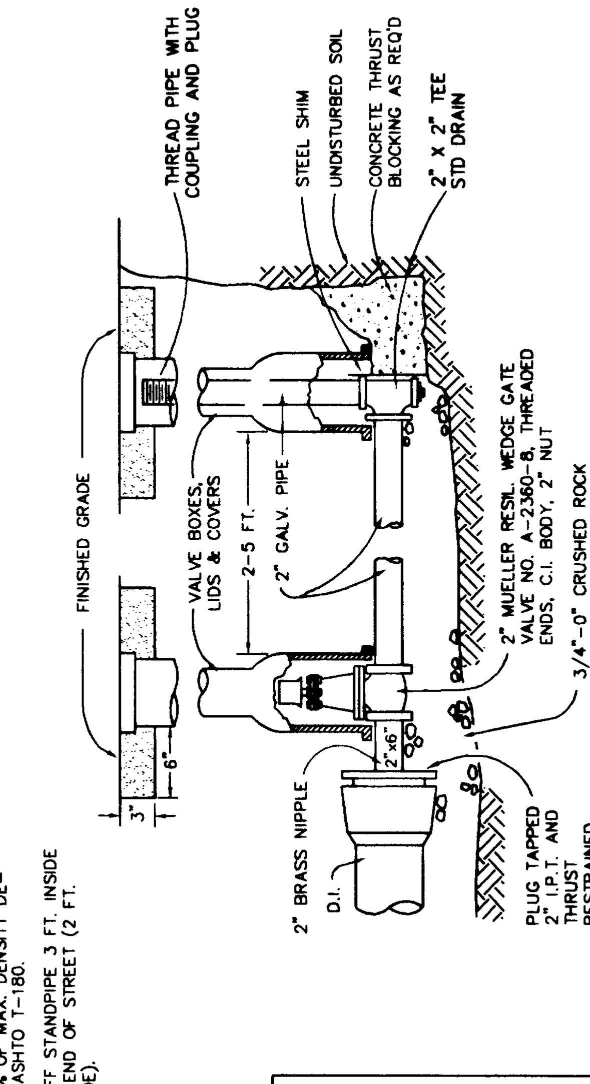
Standard Valve Box Detail

DATE: JAN 2000 | DRAWING NO. WL-411 | FILE NO. 00-411

Standard 2" Blow-off Assembly (WL-404A)

NOTES:

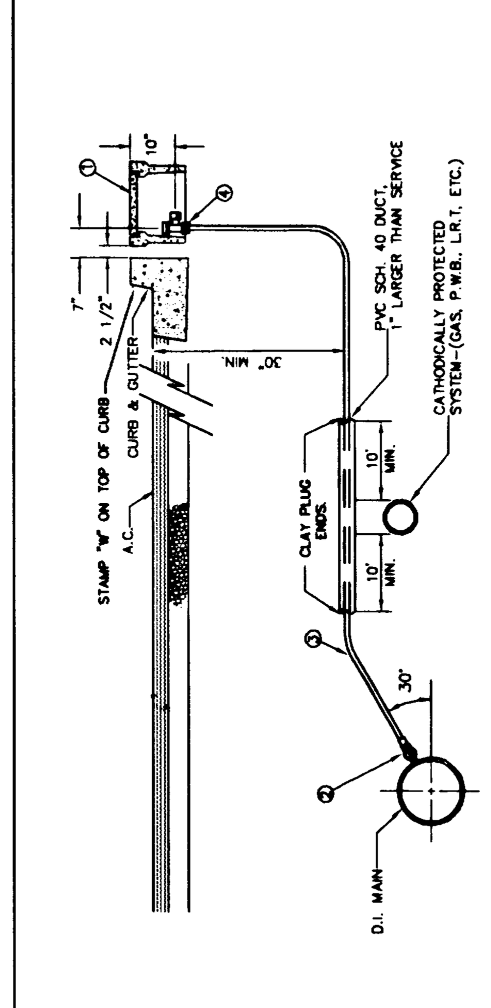
1. VALVE BOX SHALL BE PER STANDARD DETAIL WL-411.
2. VALVE BOX TO BE ASPHALT ENCASED AS SHOWN, IF NOT IN PAVED AREA.
3. BLOW-OFF UNIT SHALL BE BACKFILLED WITH 3/4"-0" CRUSHED ROCK AND COMPACTED TO 95% OF MAX. DENSITY DETERMINED BY AASHTO T-180.
4. PLACE BLOW-OFF STANDPIPE 3 FT. INSIDE R.O.W. LINE AT END OF STREET (2 FT. FROM BARRICADE).



Standard 2" Blow-off Assembly

DATE: JAN 2000 | DRAWING NO. WL-404A | FILE NO. 00-404A

Standard 1" Water Service (WL-402)



MATERIALS:

1. BROOKS METER BOX, BODY NO. 37, LID AND COVER NO. 37-S.
2. MUELLER CORP. STOP NO. H-15008 OR FORD F1000-4Q SET CORP. STOP WITH OPERATING NUT AT 3 OR 9 O'CLOCK.
3. 1" SOFT TEMPER, TYPE 'K' COPPER TUBING COMPLYING WITH ASTM B-88.
4. MUELLER ANGLE METER STOP NO. H-14258 (FORD NO. KV43-444W-Q).

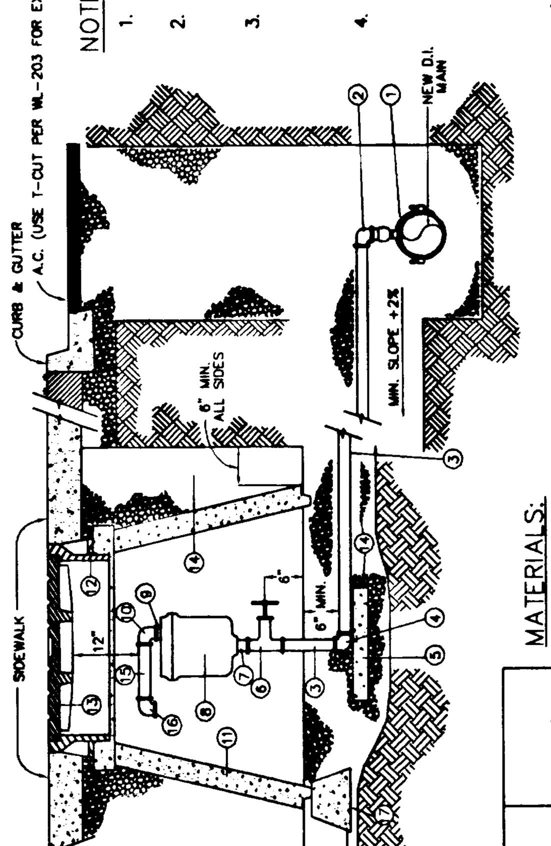
NOTES:

1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY ENGINEER.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED AGG. AND COMPACTED TO 95% MAX DENSITY AS DETERMINED BY AASHTO T-180.
3. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED AS SHOWN ABOVE WITH CLAY PLUG.
4. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
5. FOR VACANT RESIDENTIAL LOTS, LOCATE SINGLE SERVICE 18" INSIDE SIDE LOT LINE.
6. TAPS INTO MAIN TO BE AT 18" CENTERLINE MIN.
7. ANGLE METER STOPS TO BE 18" FROM PROPERTY LINE AND NOT IN DRIVEWAY APPROACH.

Standard 1" Water Service

DATE: JAN 2000 | DRAWING NO. WL-402 | FILE NO. 00-402

Standard Air Release Valve Unit (WL-405)



NOTES:

1. INSTALLATION LOCATED AT HIGH POINT OF MAIN
2. 48" MANHOLE BARREL SECTIONS SHALL BE USED TO INCREASE DEPTH IF NECESSARY.
3. ALL PIPE AND STRUCTURE ZONES SHALL BE COMPACTED TO 95% OF MAX. DENSITY AS DETERMINED BY AASHTO T-180 OR AS SPECIFIED IN THE CONTRACT DOCUMENTS.
4. STD. DETAIL IS NOT FOR SHALLOWER THAN TYPICAL INSTALLATIONS. CONTACT CITY WATER DEPT. FOR OPTIONS.

MATERIALS:

1. ROCKWELL NO. 317 SERVICE SADDLE WITH STAINLESS STRAPS
2. MUELLER NO. H15045 2" CORPORATION STOP WITH 1/4 BEND ADAPT (I.P.T. MUELLER 110 CTS)
3. 2" X VARIABLE LENGTH BRASS I.P.T. NIPPLE
4. 2" BRASS 90 DEGREE ELL (MUELLER 110 CTS)
5. 12" X 12" X 4" CONCRETE BLOCK
6. NIBCO NO. 113 2" BRASS GATE VALVE
7. 2" X 3" BRASS I.P.T. NIPPLE
8. 2" AIR RELEASE VALVE (VAL-MATIC #38 OR APCO #205 FOR TYPICAL INSTALLATIONS, IN SOME INSTANCES THE CITY MAY REQUIRE COMBINATION AIR RELEASE & VACUUM UNIT.) INSTALL WALL BRACKETS TO SUPPORT VALVE AS NECESSARY.
9. 1/2" X 1 1/2" OR 2" X 1 1/2" BRASS I.P.T. NIPPLE
10. 1/2" OR 2" BRASS 90 DEGREE ELL (F.M. I.P.T. X F.M. I.P.T.)
11. STD. 48" CONCRETE MANHOLE CONE
12. FRAME PER STD. DWG. WL-214.
13. TAMPERPROOF MANHOLE COVER PER STD. DWG. WL-214.
14. 3/4" MINUS CRUSHED AGG.
15. 1/2" X 6" OR 2" X 6" BRASS NIPPLE, I.P.T.
16. 1/2" OR 2" BRASS 90 DEGREE ELL WITH SCREEN ON OUTLET
17. 3 EA. 12" CONCRETE PIER BLOCKS

Standard Air Release Valve Unit

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Horizontal Thrust Blocking (WL-406)

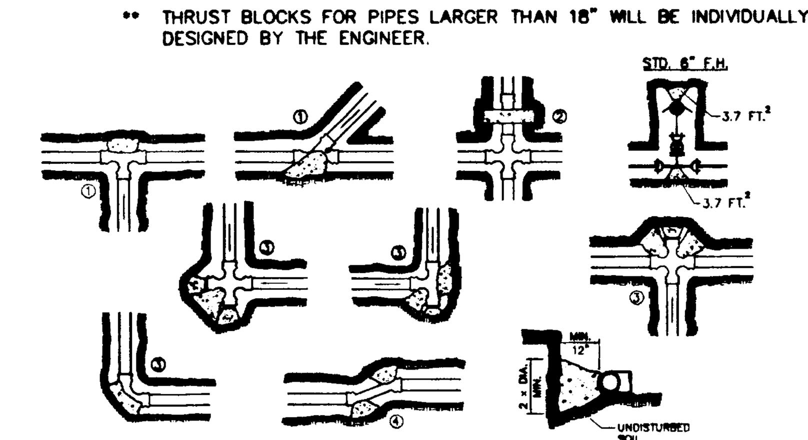
FITTING SIZE (Inches)	TEE, WYE, & HYDRANTS ①	STRADDLE BLOCK ②	90° BEND PLUGGED CROSS TEE PLUGGED-RUNS ③	45° BEND ④	22 1/2° BEND ④	11 1/2° BEND ④
2	*	*	*	*	*	*
4	1.7	2.1	2.4	1.3	*	*
6	3.7	4.9	5.3	2.9	1.5	*
8	6.7	8.7	9.5	5.1	2.7	1.3
10	10.5	13.6	14.8	8	4.1	2
12	15.1	19.6	21.3	11.6	5.9	2.9
14						
16	26.8	34.8	37.9	20.5	10.4	5.2
18	33.9	44	47.9	25.9	12.8	6.7
LARGER	**	**	**	**	**	**

BEARING AREA OF THRUST BLOCKS (sq. ft.)

1. ALL VALUES ARE BASED ON THE FOLLOWING ASSUMPTIONS: AVG. PRESSURE = 100 PSI X 2 (safety factor); 1500 PSF SOIL BEARING CAPACITY; NORMAL DISTRIBUTION DESIGN VELOCITY NOT TO EXCEED 5 F/S.
2. ALL FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.
3. BEARING SURFACE OF THRUST BLOCKING SHALL BE AGAINST UNDISTURBED SOIL
4. ALL CONCRETE MIX SHALL HAVE A MIN. 28 DAY STRENGTH OF 3000 PSI.
5. ALL PIPE ZONES SHALL BE GRAVEL FILLED AND COMPACTED.
6. THRUST BLOCKS FOR PLUGGED CROSS AND PLUGGED TEE SHALL HAVE #4 REBAR LIFTING LOOPS INSTALLED AS SHOWN.
7. VERTICAL THRUST DETAILS-SEE DWG. WL-407.
8. STRADDLE BLOCK DETAILS-SEE DWG. WL-408.

* BLOCK TO UNDISTURBED TRENCH WALLS

** THRUST BLOCKS FOR PIPES LARGER THAN 18" WILL BE INDIVIDUALLY DESIGNED BY THE ENGINEER.



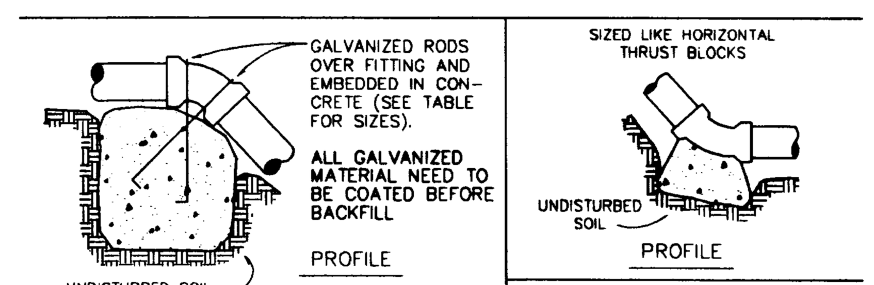
Horizontal Thrust Blocking

DATE: JAN 2000 | DRAWING NO. WL-406 | FILE NO. 00-406

Vertical Thust Blocking (WL-407)

NOTES:

1. GRAVITY VERTICAL THRUST BLOCKS SHALL BE DESIGNED BY THE ENGINEER.
2. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES. FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.
3. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
4. CONCRETE MIX SHALL HAVE A MIN. 28 DAY STRENGTH OF 3300 P.S.I.
5. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 P.S.I.G. AND THE WEIGHT OF CONCRETE = 4050 LBS./CU.YD.
6. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE PLANS FOR VOLUMES SHOWN INSIDE HEAVY LINE IN TABLE.
7. PAYMENT SHALL BE THE SAME AS FOR HORIZONTAL THRUST BLOCKS.
8. ALL REBAR SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-123 (MIN. 3.4 MIL). REBAR SHALL BE BENT BEFORE GALVANIZATION, AND LAST 4" OF BAR SHALL BE BENT 90 DEGREES WITH A 1/2" RADIUS BEND. REBAR SHALL BE TIGHTLY FIT TO RESTRAINED FITTING.
9. FOR HORIZONTAL THRUST BLOCK DETAILS SEE DWG NO. WL-406.



VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)			
FITTING SIZE	BEND ANGLE 45°	22 1/2°	11 1/4°
4	1.1	0.4	0.2
6	2.7	1.0	0.4
8	4.0	1.5	0.6
10	6.0	2.3	0.9
12	8.5	3.2	1.3
14	11.5	4.3	1.8
16	14.8	5.6	2.3

FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14" – 16"	#8	36"

Vertical Thust Blocking

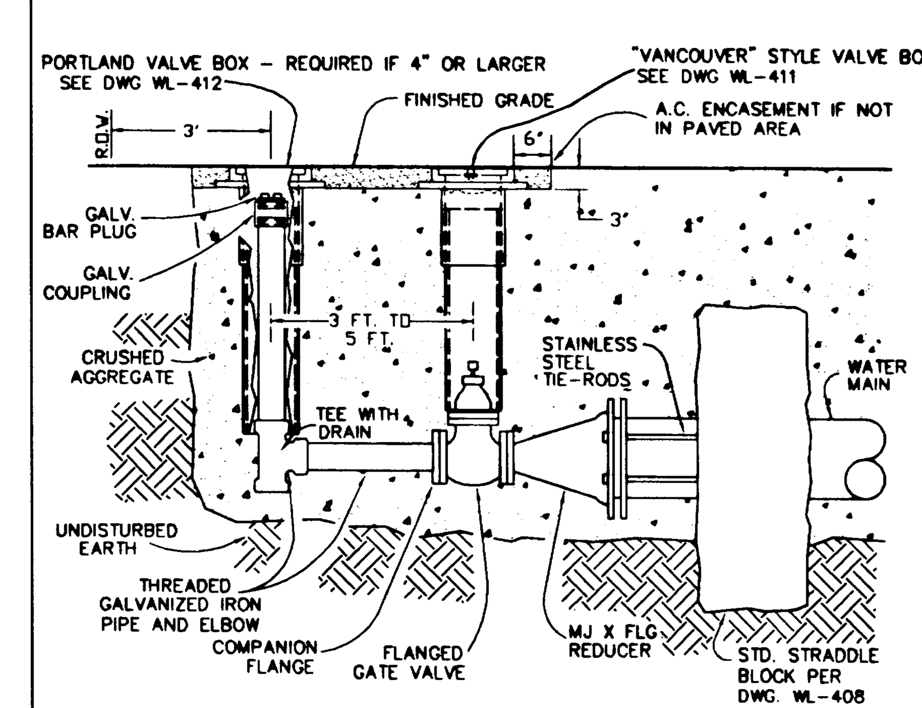
DATE: JAN 2000 | DRAWING NO. WL-407 | FILE NO. 00-407

Permanent or Temporary 4" & 6" Blow-off (WL-404B)

BLOW-OFF SIZES REQUIRED	
MAIN SIZE	BLOW-OFF SIZE
4" TO 6"	2"
8" TO 12"	4"
14" TO 18"	6"
20" & UP	PER ENGR.

NOTES:

1. BACKFILL WITH SELECT CRUSHED AGGREGATE A MINIMUM OF 6" ON ALL SIDES.
2. ON TEMPORARY BLOW-OFFS ONLY, AN MJ CAP TAPPED 4" OR 6" MAY BE SUBSTITUTED FOR REDUCER.
3. TEMPORARY BLOW-OFF IS ONE REMOVED AT THE END OF PROJECT CONSTRUCTION. A PERMANENT BLOW-OFF REMAINS ON THE PROJECT AFTER ACCEPTANCE.
4. PLACE BLOW-OFF STANDPIPE 3 FT. INSIDE R.O.W. LINE AT END OF STREET (2FT. FROM BARRICADE).



Permanent or Temporary 4" & 6" Blow-off

DATE: JAN 2000 | DRAWING NO. WL-404B | FILE NO. 00-404B

AS-BUILT

THESE AS-BUILT PLANS WERE COMPILED FROM SURVEY DATA, DATA COLLECTED FROM OTHERS, AND PERIODIC OBSERVATION DURING CONSTRUCTION. IT IS SUGGESTED THAT THESE PLANS BE USED IN CONJUNCTION WITH FIELD VERIFICATION OF LOCATION AND ELEVATIONS OF IMPROVEMENTS IN QUESTION. THESE PLANS ARE AN ACCURATE RECORD OF PUBLIC IMPROVEMENTS TO THE BEST OF MY INFORMATION, KNOWLEDGE AND BELIEF.

SIGNATURE ____

DATE 4/12/01

CSA #9041

CSA Consulting Engineers
321 SW 4th AVE.
4th Floor
PORTLAND, OREGON 97204
(503) 228-3848

PROJECT NAME: LE CHEVALIER

WATER DETAILS

SCALE	VERT: 1"= 10'; HORIZ: 1"= 30'
DATE:	8/8/2000
FILE:	SUB-99-07 ET AL
ASSESSOR'S MAP	2S-1E-36
TAX LOTS	608 & 609

REGISTERED PROFESSIONAL ENGINEER — OREGON — WALTER L. COOK — EXPIRES: 12-31-2003

DATE	NO.	REVISION	BY

DESIGNED: AC | DRAWN: AC | CHECKED: JSS | APPROVED: HLC

SHEET 17 OF 17