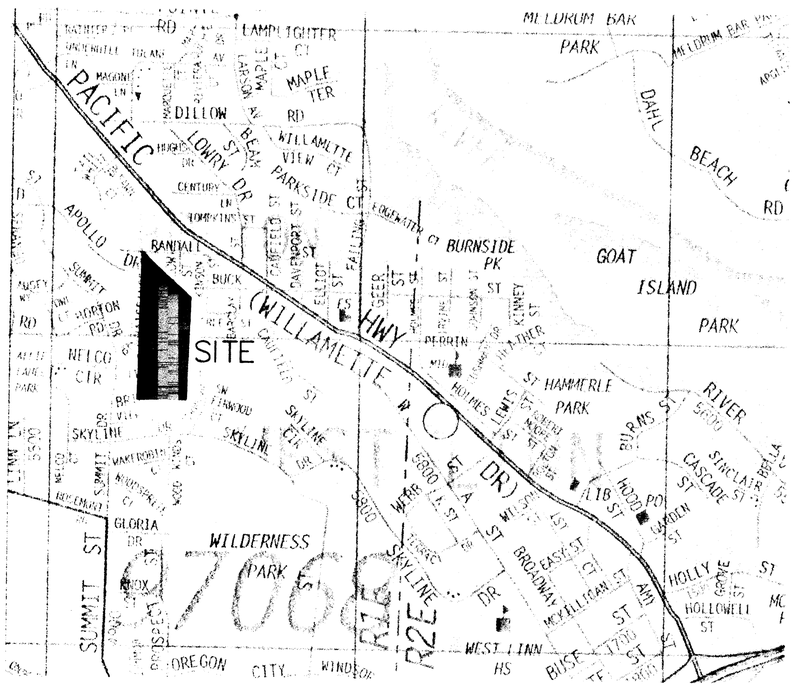
RENAISSANCE RIDGE 2

SEPTEMBER 2004

DEVELOPER:

RENAISSANCE HOMES

1672 SW WILLAMETTE FALLS DRIVE
WEST LINN, OR 97068
(503) 557-8000



VICINITY MAP
N.T.S.

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DECISION

Based upon staff findings and findings contained in the applicant's submittal in the City record, staff finds that there are sufficient grounds for the Planning Director and City Engineer to approve this application with addendums with the following conditions:

1. The trails through Tract A shall be gravel and six feet wide. They shall be designed to provide a clear cognitive route between the Renaissance Ridge II subdivision and Buck and Hammerle Streets. The trail layout shall minimize disturbance or compaction of tree roots. Use of old logging roads/trails is encouraged. The trail shall accommodate both pedestrian and bicycle traffic. Therefore, no stairs shall be incorporated in the design.
2. The trail from the west end of Barlow Street shall connect to the existing trail in Renaissance Ridge I and may include a small six-foot wide wooden bridge to access that existing trail.
3. Signs shall be mounted on 6" X 6" or 4" X 4" posts at each end of the trail system identifying it as a public trail corridor.
4. The applicant must provide a stamped report from a geotechnical engineer or equally qualified professional that demonstrates that the water storage and exfiltration of water from the detention facility will not: (a) weaken or adversely impact off-site properties, including lot 16's rock wall; (b) adversely impact the rock wall retaining the detention facility; or, (c) not adversely impact the downhill geomorphology.
5. The applicant shall install a fence (minimum three feet high) along the first 80.9 feet of the west edge of lot 16 as measured from Evergreen Drive ROW and the first 77 feet of the east edge of Tract B and lot 12 as measured from the Evergreen Drive ROW.
6. The applicant shall install markers every 40 feet at the rear of lots 16-20 that identify Tract A as a public open space.
7. Maintenance agreement shall be signed between the City and Developer for all private facilities and be recorded on the plat prior to acceptance of the subdivision.
8. There shall be absolutely no storm discharge from any part of the roof to the rear of all the lots with the exception of lots 17,18,19 and 20, where discharge after private facilities will be to the creek through spreader.
9. Engineering Department shall inspect and approve all private storm facilities prior to final inspection of the houses on lots 17, 18, 19. 20 and 1.

INDEX

MOST RECENT REVISION TO THIS SET OF PLANS: **AS BUILT**

General Notes:

1. The Design Engineer will be responsible for inspection of the proposed improvements with oversight from the City's Public Works and Engineering staff.
2. A work schedule will be required from the contractor so that the Engineer can have an inspector onsite at the appropriate times. If the work schedule is revised the contractor is to notify the Engineer of the changes. Additionally, the contractor is to give the Engineer at least 24 hours notice of any testing requiring the presence of the Engineer and/or City staff
3. The contractor is to receive the approval of the Engineer and the City of any proposed changes to the plans or standard requirements
4. A Building Department Plumbing Permit is required for utilities beyond the first cleanout or meter on private property
5. A Public Improvement Guarantee Agreement or a Public Works Permit, a pre-construction meeting with the City of West Linn, and installation of erosion control measures are required prior to beginning construction
6. Prior to site clearing, 6' tall chain-link fencing shall be placed at tree easement boundaries prior to site grading. The City Arborist shall inspect & approve all onsite tree protection measures prior to the start of site work. It is the contractors responsibility to contact the City Arborist and arrange for this approval to take place. No permits will be issued from Engineering, Planning, or Building Departments without tree protection approval from the City Arborist. All tree protection measures shall remain in place and fully functional for the entire time that site work and construction is taking place.
7. A City representative must be present at all testing and the City shall be furnished a copy of all test results
8. All fees for street trees shall be paid to the City of West Linn Parks and Recreation Department
9. No building permits will be given until the improvements have been accepted by the City as substantially complete.

Streets:

1. New street sections are to be cleared of all surface vegetation and other miscellaneous structures or materials. Grub improvement areas to remove all buried vegetative matter and debris to a depth of 8" below subgrade. Properly dispose of all waste material.
2. Street subgrade shall conform to Division 501 of the City of West Linn Standard Construction Specifications. Areas to receive fill are to be inspected by City of West Linn personnel prior to placement of the fill. The Contractor shall have fill areas tested for compaction by a certified testing lab in accordance with W.L.S.C.S. Division 501.03.08. Such testing will be at the contractor's expense
3. Aggregate base rock shall conform to the requirements of W.L.S.C.S. Division 205. Base course shall be 1½"-0 crushed rock and leveling course shall be 3/4"-0. City of West Linn requires a proof roll with a loaded 10 yard dump truck of the subgrade prior placement of the rock and again after placement of the base rock and prior to paving. All underground utilities including laterals, services and power or gas conduits will be in place before subgrade proof roll will take place.
4. Asphalt concrete shall conform to the requirements of W.L.S.C.S. Division 205. 2" base lift shall be Class 'B' A.C. and 1½" final lift shall be Class 'C' A.C. meeting the specifications of W.L.S.C.S. Division 505. The top lift of asphalt concrete shall not be placed prior to receiving permission from the City of West Linn Engineering Department
5. Construct curb and gutter using 3300 psi concrete meeting the specifications of W.L.S.C.S. Division 205 (after 28 days) with maximum 1½" aggregate size. Contraction joints at 15' maximum on centers. Three inch weepholes are to be installed on all lots uphill or even with the street. Generally weepholes shall be located at the center and lowest edge of curb for each lot. Handicap ramps shall be constructed at each curb return at intersections by contractor unless otherwise noted on the plans. Contractor shall stamp location of sewer and water crossings with an (S) or a (W). A proof roll of the curblines is required prior to pouring curbs.
6. All materials, installation, tests, and inspections to be in strict accordance with City of West Linn Public Works Standard Construction Specifications.
7. A street construction encroachment permit or similar permit may be required from the City of West Linn. Construction permit fees or other similar fees or bonding required of the contractor will be the contractor's responsibility to obtain.
8. The developer may desire an additional 6" of 1 1/2"-0" crushed rock wet weather section and Mirafi fabric (500x) for winter time construction.

Utilities:

1. If not noted on the plans utility information and crossing locations will have to be obtained from the utilities
2. Utility contacts are as follows: PGE – Service Coordinator, 736-5450; Comcast Cable – Jamie Stencil, 605-6000, U.S. West Communications – Lori Dorney 242-4596, Northwest Natural Gas – Scott Palmer 721-2447

Detention Pond Notes:

1. Pond to be landscaped per approved plan. Plan to prepared by a professional landscape architect and submitted to the City.
2. Pond will be tested for infiltration. The test shall consist of filling the pond to the 25 year water level and letting it sit for 24 hours. No visible damage shall be observed, including failures outside the pond and sloughing inside the pond.
3. Anti-Seepage collars shall be installed on pond inlet pipes and pond outlet pipes.
4. A five foot tall chainlink fence shall be installed around entire pond. Black powder coating is required on all hardware and accessories.

Water Supply

1. Water mains shall be ductile iron pipe conforming to AWWA C151 Class 52. Pipe is to have cement mortar lining and bituminous seal coat conforming to AWWA C104. Joints are to be push-on rubber gasketed joints unless noted otherwise on the plan. Pipe fittings are to be of the same material and class as pipe and of domestic origin
2. Water mains to have a minimum cover of 36"
3. Thrust blocks are to be provided at all changes in direction and branches. Thrust blocking concrete strength is to be 3000 psi. See details for thrust block sizing. Pour thrust blocks against undisturbed earth.
4. Gate valves shall be resilient seat, non rising stem with "O" ring packing, complying with AWWA Class "C" Specifications. The valves shall be designed to withstand a working pressure of 150 psi. Butterfly valves shall be rubber seat type and bubble-tight at 150 psi, and shall conform to AWWA C504. Valve boxes shall be "Vancouver" pattern.
5. Fire hydrants shall conform with AWWA Specification C-502. Pumper outlet is to face the direction of access. Acceptable models are Mueller Centurion A-423 or Clow Medallion F-2545. Hydrant color shall be yellow
6. Granular backfill (3/4"-0) is to be compacted to 95% maximum dry density per AASHTO T 180 test method and native material shall be compacted to 95% of in-place dry density of surrounding soil. Excavation, bedding and backfill shall be in accordance with Division 204 of the City of West Linn Standard Construction Specifications. Backfill under new streets shall be Class "B" and backfill in existing streets shall be Class "E".
7. Service laterals shall be Type K copper. Lateral sizes shall be 1". For double services two 1" water services shall be laid side by side. Corporation stops shall be Mueller H 15008 or Ford F1000 4Q. Angle meter stop shall be Mueller H 14258 or Ford 1"-KV43-444W-Q. Meter boxes shall be equal to Brooks #37 with a 37-S lid and cover. Meter boxes are to be installed 3/4" above finish grade and 2½" from the curb in planter strips or flush with sidewalk surface in a sidewalk.
8. All waterlines will be pressure tested and purification tested before connection to the city water system. Pressure test shall be conducted at 180 psi or 1.5 times the normal working pressure, whichever is higher and shall last for 1 hour with no loss. Testing shall meet the requirements of Division 403.14 of the West Linn Public Works Standard Construction Specifications.
9. Chlorination shall conform with Division 403.14 of the W.L.S.C.S.
10. Do not connect new pipe to existing pipe prior to testing. The City of West Linn requires acceptance of new waterline prior to connection to existing water system
11. A plumbing permit from the City of West Linn Building Department is required for service lateral installations beyond the water meter.
12. All materials, installation, tests, and chlorination to be in strict accordance with the City of West Linn Public Works Standard Construction Specifications, and the Oregon State Health Division Administrative Rules, Chapter 333

Sanitary Sewer:

1. Pipe shall be PVC sewer pipe conforming to ASTM D-3034 SDR 35. Minimum stiffness shall be 46 psi and joint type shall be elastomeric gasket conforming to ASTM D-3212.
2. Manhole base shall be poured in place concrete base with a minimum compressive strength of 3300 psi or precast. Manhole risers and tops shall be precast sections with minimum compressive strength of 4000 psi. Tops shall be eccentric cones except where insufficient headroom requires flat tops. Inverts shall be constructed so as to provide smooth flow-through characteristics and channels must be able to pass a 7" x 30" cylinder into pipes. PVC pipe shall be connected to manhole by means of a flexible connection and shall have a shear joint located 18" outside of manhole. Cement grout for connecting PVC sewer pipe to manhole will not be permitted.
3. All manholes located in easement areas require tamper proof lids and the lid shall be set 6 inches above proposed grade
4. Cleanout pipe, fittings, and joints shall be the same specifications as for pipe. Castings are as shown on detail and shall conform to ASTM A48 (Grade 30). Cleanout riser shall match downstream pipe diameter. Frame shall set on 18" x 24" concrete pad.
5. Granular backfill (3/4"-0) is to be compacted to 95% maximum dry density per AASHTO T-180 test method and native material shall be compacted to 95% of in-place dry density of surrounding soil. Excavation, bedding and backfill shall be in accordance with Division 204 of the City of West Linn Standard Construction Specifications. Backfill under new streets shall be Class "B" and backfill in existing streets shall be Class "E".
6. PVC service laterals shall be 4" pipe conforming to the same specifications as the sewer mains. Service laterals shall be installed to a point beyond the line of the sewer or utility easement as shown on the plan. The service lateral shall be plugged with a 4" rubber ring plug, and the location of the lateral's end marked with a 2" x 4" stake painted green
7. Sanitary sewer pipe and appurtenances shall be tested for leakage in accordance with W.L.S.C.S. Division 301.03.09 and manholes shall be vacuum tested in accordance with W.L.S.C.S. Division 302.03.07. All tests shall be witnessed by the Engineer and the City of West Linn. All tests shall be passed and new line shall be accepted prior to connection to existing system.
8. A plumbing permit from the City of West Linn Building Department is required for sanitary sewer laterals beyond the first cleanout.
9. All materials, installation, tests, and inspections to be made in strict accordance with City of West Linn Public Works Standard Construction Specifications.

Storm Drains:

1. Eight inch to 24-inch storm drain pipe is preferred to be seamless ribbed PVC pipe conforming to ASTM F 794. Where larger pipe is required or lack of cover prevents use of ribbed PVC pipe, pipe shall be Class 3 non-reinforced, concrete pipe conforming to ASTM C14, reinforced concrete pipe conforming to ASTM C-76, Class IV, or ductile iron pipe conforming to AWWA C151 Class 52. Rubber joints are required for all concrete pipe. Six inch and smaller storm drain pipe shall conform to ASTM D 3034 PVC pipe.
2. Gutter inlets shall be poured in-place concrete with a minimum compressive strength of 3300 psi. Frame shall be fabricated of structural steel, ASTM A-7, A-36, A 373.
3. Manhole base may be poured in place concrete with a minimum compressive strength of 3000 psi or precast. Manhole risers and tops shall be precast sections with a minimum compressive strength of 4000 psi. Tops shall be eccentric cones except where insufficient headroom requires flat tops. Interior dimensions noted on the plans are minimums. Some or all of the storm drain manholes required will be oversized manholes, contractor shall check with manhole manufacturer for actual size of manhole needed for type and size of pipe to be used. Inverts shall be constructed so as to provide smooth flow through characteristics. Pipe shall be connected to manhole by means of a flexible connection and shall have a shear joint located 18" outside of the manhole
4. All manholes located in easement areas require tamper proof lids and lid shall be set 6 inches above proposed grade.
5. Cleanout pipe, fittings, and joints shall be the same specifications as for pipe. Castings are shown on detail and shall conform to ASTM A48 (Grade 30). Cleanout riser shall match downstream pipe diameter
6. Granular backfill (3/4"-0) is to be compacted to 95% maximum dry density per AASHTO T-180 test method and native material shall be compacted to 95% of in-place dry density of surrounding soil.
7. Storm drain service laterals shall be 4" pipe conforming to the same specifications as the storm drain main lines. Service laterals shall be installed to a point beyond the line or utility easement as shown on the plan. The service lateral shall be plugged with a 4" rubber ring plug, and the location of the laterals end marked with a 2"x4" stake painted white.
8. Riprap where noted on the plans is to be Class 50 in accordance with Oregon State Highway Division specification 714.
9. Private catchbasin shall be trapped and sumped Gibson Steel pre-fabricated catchbasin or approved equal.
10. Storm drains shall be tested for deflection in accordance with Division 601.03.11 and video inspected in accordance with Division 601.03.12 of the West Linn Standard Construction Specifications. All tests shall be witnessed by the Engineer and a representative of the City
11. A plumbing permit from the City of West Linn Building Department is required for storm drains beyond the first cleanout.
12. All materials, installation, tests, and inspections to be in strict accordance with the City of West Linn Standard Construction Specifications.

Structural Fill Notes:

1. Besides the structural fill that will be required for construction of street improvements a structural fill is also to be built on lots where noted on the plans to the specifications noted below.
2. All miscellaneous materials and the organic layer under the fill area shall be stripped or removed. All stumps in the fill area must be removed in their entirety.
3. The contractor shall retain the services of a Geotechnical Engineer and testing lab to inspect and provide testing services and to certify that the structural fill meets the compaction requirements appropriate for home construction and the requirements of the City of West Linn Grading Permit for this project. The contractor must obtain the grading permit and attend a grading pre-construction meeting with the City of West Linn prior to beginning work on the project
4. Fill material should be placed in horizontal lifts approximately 8 inches thick (loose) and compacted to at least 95% of the maximum dry density, as determined per 501.03.04 Construction Standards, except as modified by the Geotechnical Engineer. Moisture content of the structural fill shall be controlled to within 2% of the optimum moisture content at the time of compaction, unless modified by the Geotechnical Engineer.
5. Inspections by the Geotechnical Engineer will be required after stripping of topsoil and prior to fill placement, after each lift completed and after all fill is completed.
6. At the completion of fill activities a final report to the City of West Linn by the Geotechnical Engineer is required

Seeding/Mulching:

1. All areas disturbed during construction to be graded to drain and compacted to a minimum of 90% of AASHTO T-99 immediately after installation of utilities or grading.
2. Recommended Seed Mixture: 80% PR 8820 Dwarf Perennial Ryegrass and 20% Creeping Red Fescue, by weight. Application Rate shall be 100 pounds minimum per acre.
3. Fertilizer shall be 12-16-8 with 50% of the nitrogen derived from UREA FORMALDEHYDE, and applied at a rate of 400 pounds per acre.
4. Seed and mulch at a rate of 2000 lbs/Ac with heavy bonding agent or netting and anchors. Mulch shall be a wood cellulose fiber or other material suitable for hydromulching.
5. Temporary or Permanent Hydroseeding or acceptable seeding and mulching must be provided whenever perennial cover cannot be established on sites which will be exposed for 60 days or more.

Erosion and Sediment Control Requirements:

1. The intent of the requirement is to prevent siltation from reaching storm drain systems and drainage ways. The erosion and sediment control (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 ensure that sediment laden water does not leave the site.
2. The following controls and practices are required:
   a) Each site shall have graveled or paved entrances, exits and parking areas, prior to beginning any other work, to reduce the tracking of sediment onto public or private roads.
   b) All unpaved roads located on-site shall be graveled. Other effective erosion and sediment control measures either on the road or down gradient may be used in place of graveling.
   c) When trucking saturated soils from the site, either water-tight trucks shall be used or loads shall be drained on-site until dripping has been reduced to minimize spillage on roads.
   d) Concrete trucks being washed out onsite shall be parked in a location that will prevent all wash water from entering the storm drain system without proper filtration. Concrete remnants and residue shall be properly disposed of.
3. Additional controls and practices shall be developed that are appropriate for the site. At a minimum the following shall be considered:
   a) Whenever practicable, clearing and grading shall be done in a phased manner to prevent exposed inactive areas from becoming a source of erosion.
   b) In developing vegetative erosion control practices, at a minimum the following shall be considered; temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips, and protection of trees with protective construction fences.
   c) The following shall be considered for the protection of exposed areas and the prevention of soil from being eroded by storm water; mulching with straw or other vegetation, use of erosion control blankets, and application of soil tackifiers.
   d) The following shall be considered for the diversion of flows from exposed soil, store flows to allow for sedimentation, filter flows, or otherwise reduce soil laden runoff; use of silt fences, earth dikes, brush barriers, drainage swales, check dams, subsurface drains, pipe slope drains, rock outlet protection, sediment traps, and temporary or permanent sedimentation basins. All temporary sediment control practices shall not be removed until permanent vegetation or other cover of exposed areas is established.
   e) The following shall be considered to prevent the stockpiles from becoming a source of erosion; diversion of uncontaminated flows around stockpiles, use of cover over stockpiles, and installation of silt fences around stockpiles.
4. The following maintenance activities shall be implemented:
   a) Significant amounts of sediment that leave the site shall be cleaned up within 24 hours and placed back on the site or properly disposed. Any in-stream clean up of sediment shall be performed according to Oregon Division of State Lands' required timeframe.
   b) Under no conditions shall sediment intentionally be washed into storm sewer or drainage way.
   c) For a filter fence, the trapped sediment shall be removed when it reaches one third of the above ground fence height.
   d) For catch basin protection, cleaning must occur when design capacity has been reduced by fifty percent.
   e) For a sediment basin, removal of trapped sediments shall occur when design capacity has been reduced by fifty percent.
   f) All erosion and sediment controls not in the direct path of work shall be installed before any land disturbance.
   g) If fertilizers are used to establish vegetation, the application rates shall follow manufacturer's guidelines and the application shall be done in such a way to minimize nutrient-laden runoff to receiving waters.
   h) If construction activities cease for thirty (30) days or more, the entire site must be stabilized, using vegetation of a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.
   i) Any use of toxic or other hazardous materials shall include proper storage, application, and disposal.
   j) The permittee shall manage abandoned hazardous wastes, used oils, contaminated soils or other toxic substances discovered during construction activities in a manner approved by the Department of Environmental Quality.

Erosion and Sediment Control Inspection Requirements:

1. All sites 1 acre and greater shall have a person with knowledge and experience in construction storm water controls and management practices conduct all inspections. The inspector shall keep a written record of each inspection.
2. Active Sites: Frequency of inspections shall be daily during storm water runoff or snowmelt runoff and at least once every seven (7) calendar days and within 24 hours after any storm event of greater than 0.5 inches of rain per 24-hour period.
3. Inactive Sites: During inactive periods of greater than seven (7) consecutive calendar days, inspections shall only be required once every two (2) weeks. Prior to discontinuing activities at the site, any exposed area shall be stabilized to prevent erosion. Stabilization may occur by applying appropriate cover (mulch, erosion control blanket, soil tackifier, etc.) or establishing adequate vegetative cover.

Sediment Fence:

1. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 8 inch overlap, and both ends securely fastened to the post.
2. The filter fabric fence shall be installed to follow the contours, where feasible. Then fence posts shall be spaced a maximum of six feet apart and driven securely into the ground a minimum of 18 inches.
3. A trench shall be excavated, roughly 6 inches wide by 6 inches deep, upslope and adjacent to the wood post to allow the filter fabric to be buried. Bury the bottom of the fabric 6" vertically below finished grade. All areas of filter fabric trench shall be compacted.
4. The filter fabric shall be installed with stitched loops over fence posts. The fence post shall be constructed of 2" x 2" fir, pine, or steel. The fence post must be a minimum of 48" long. The filter fabric shall not be stapled or attached to existing trees.
5. Sediment fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.
6. Sediment 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.

AS BUILT

REGISTERED PROFESSIONAL ENGINEER 27,977 OREGON Nov. 12, 2003 DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
AS-BUILT 5-13-2005	LD

RENAISSANCE RIDGE 2

RENAISSANCE DEVELOPMENT

Notes

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING 03-106notes.dwg

DATE SEPT. 2004
SCALE NOTED
DRAWN DJ
JOB SGL 03-106
SHEET 1 OF 16 SHEETS

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	8" CLA-VAL 800-01BCY Pressure Reducing Valve c/w DMIT & X101 Position Indicator - #150 Flgd
2	1	2" CLA-VAL 800-01BSY Pressure Reducing Valve c/w X101 Position Indicator DI Body, Bronze Trim, Threaded
3	2	8" MUELLER A2360-#941 W06 RW NRS Gate Valve c/w Handwheel - #125 Flgd
4	2	2" MUELLER A2360-#941 RW NRS Gate Valve c/w Handwheel - Threaded
5	1	6" VICTAULIC #07 Zerolfex Coupling
6	3	2" VICTAULIC #07 Zerolfex Coupling
7	2	4" 0-300Psi Pressure Gauge c/w Gauge Cock
8	1	#10080 Precast Concrete Vault c/w White Interior And Black Exterior
-	1	30" Manhole Cover And Frame
9	1	---
10	4	Adjustable Pipe Support
11	2	6" SMITH BLAIR Transition Couplings
12	1	Aluminum Ladder With Safety Post
13	1	1" APCO 1435.1 Combination Air Valve c/w Isolation Valve
14	1	3/4" Hose Bib Assembly

CCSTone INCORPORATED

TITLE: 6" X 2" PRV STATION

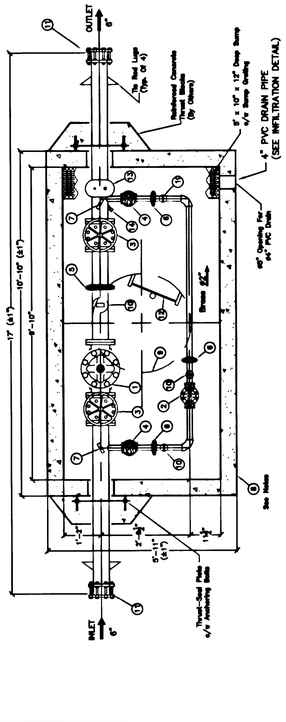
PROJECT: RENAISSANCE RIDGE 2

DATE: NOV.02, 04 | APP'D JY | DR'D PW | SHEET 1 OF 1

DRAWN: MA | CAD DRAWING No 048130-51

SCALE: 1/2" = 1' | REV A

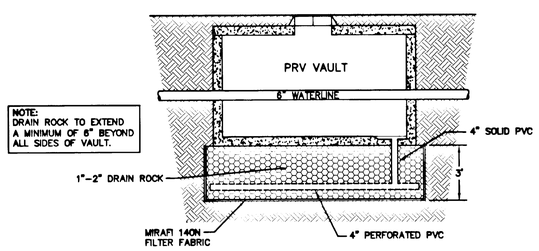
No.	REVISIONS	DATE	APP'D
C			
B			
A			



PLAN VIEW
FLOOR TO CENTERLINE OF MAIN PIPING = 24"

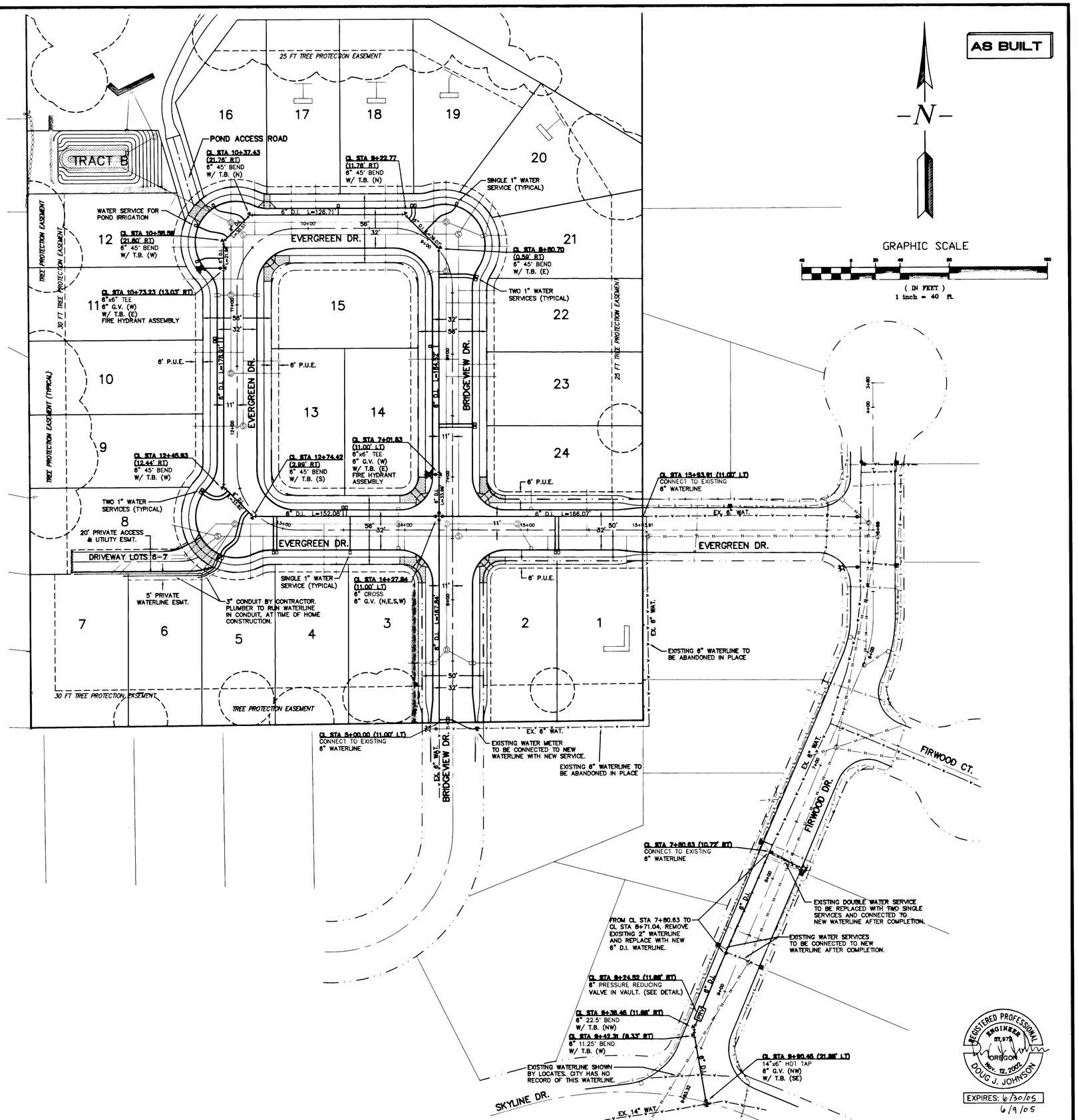
NOTES:
1. VAULT #10080 (H-20 LOADING) WITH 30" MANHOLE COVER 6'-10" L x 5' W x 6'-6" H
2. VAULT WEIGHT: TOP/WALL....13,000 Lbs BOTTOM.....15,000 Lbs : WEIGHTS ±10%

STANDARD FABRICATION & FINISHING SPECIFICATION
FABRICATED STEEL PIPE & FITTINGS TO BE SCHEDULE NO. 40 STEEL PIPE FOR SIZES TO 10", AND 3/8" WALL FOR 12" AND LARGER.
ALL 3" LARGER PIPE, INSIDE WETTED SURFACES TO BE SANDBLASTED, ENCAPSULATED WITH PROTECTO 401 AND PS-81 SPECIFICATION, FINISH COATING WILL BE BLUE ENAMEL.



NOTE:
DRAIN ROCK TO EXTEND A MINIMUM OF 6" BEYOND ALL SIDES OF VAULT.

PRV SUMP INFILTRATION DETAIL
N.T.S.



REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
AS-BUILT 5-25-2005	LD

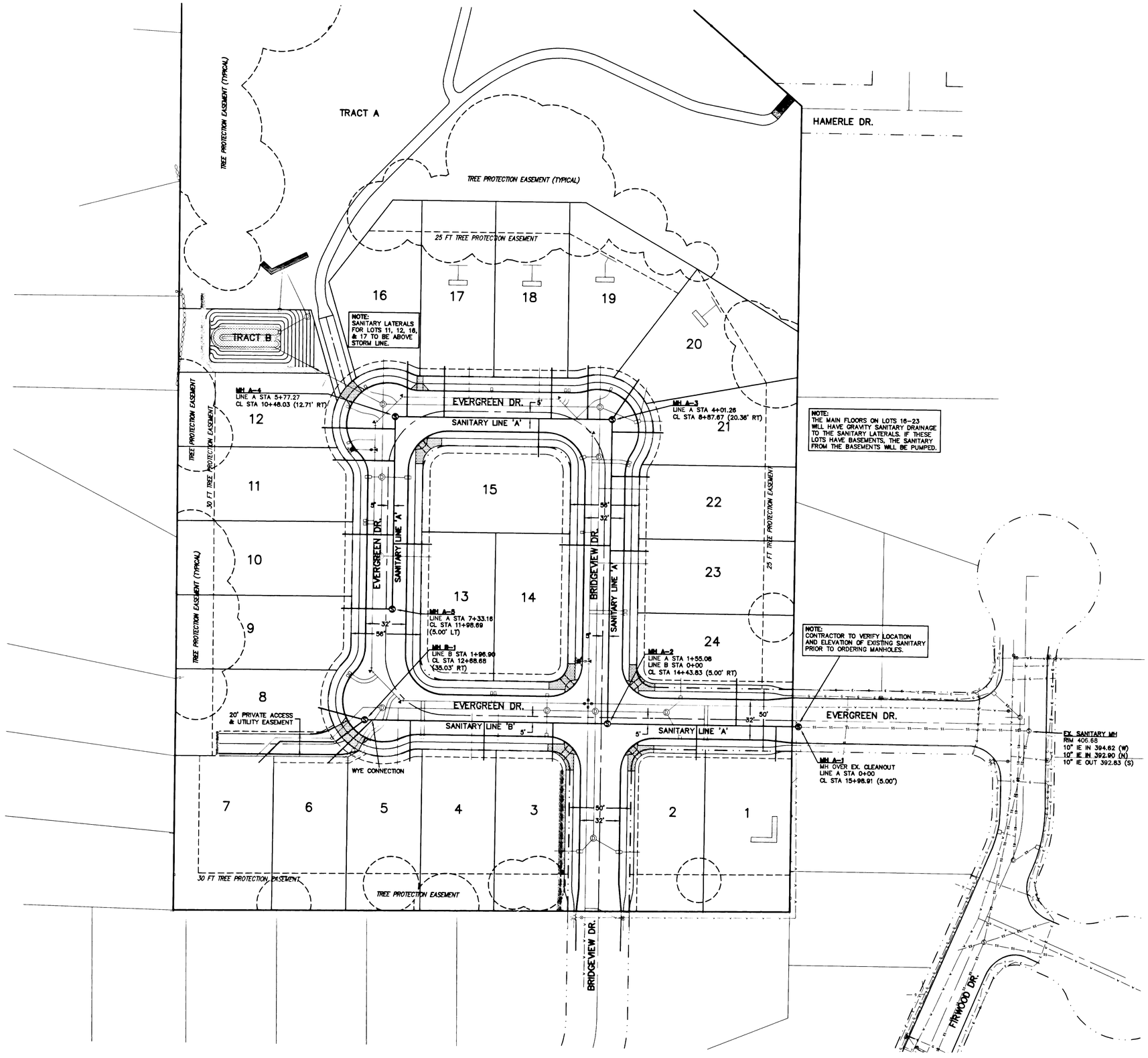
RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

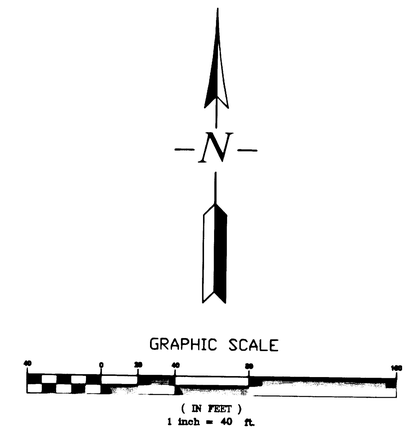
Waterline Plan

SGL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188
DRAWING: 03-106wat.dwg

DATE	SEPT. 2004
SCALE	1"=40'
DRAWN	DJ
JOB	SGL 03-106
SHEET	2 OF 16 SHEETS

AS BUILT





SANITARY SERVICE LATERAL TABLE

LOT #	LINE	STATION	PIPE TYPE	LENGTH	SLOPE	IE ● END
1	'A'	0+18.18	4" PVC	28.0'	0.093	426.0'
2	'A'	0+82.59	4" PVC	28.0'	0.227	434.0'
3	'B'	0+44.26	4" PVC	31.0'	0.120	446.5'
4	'B'	1+00.01	4" PVC	31.0'	0.179	452.0'
5	'B'	1+60.01	4" PVC	33.0'	0.200	457.0'
6	'B'	1+90.78	4" PVC	50.0'	0.152	460.0'
7	'B'	1+96.90	4" PVC	99.0'	0.127	465.5'
8	'B'	1+96.90	4" PVC	39.0'	0.118	457.5'
9	'A'	7+33.16	4" PVC	41.0'	0.098	454.5'
10	'A'	6+73.16	4" PVC	41.0'	0.043	448.0'
11	'A'	6+13.26	4" PVC	50.0'	0.079	446.0'
12	'A'	5+87.27	4" PVC	59.0'	0.047	443.0'
13	'A'	6+80.19	4" PVC	31.0'	0.020	447.4'
14	'A'	2+99.15	4" PVC	41.0'	0.208	439.5'
15	'A'	4+60.76	4" PVC	31.0'	0.044	436.0'
16	'A'	5+67.76	4" PVC	44.5'	0.020	440.1'
17	'A'	5+37.76	4" PVC	41.0'	0.020	438.8'
18	'A'	4+50.76	4" PVC	41.0'	0.020	435.1'
19	'A'	4+21.23	4" PVC	43.0'	0.020	433.9'
20	'A'	4+01.26	4" PVC	39.0'	0.020	433.3'
21	'A'	3+91.26	4" PVC	41.5'	0.020	432.9'
22	'A'	3+55.12	4" PVC	31.0'	0.020	432.3'
23	'A'	2+95.11	4" PVC	31.0'	0.099	434.0'
24	'A'	0+50.65	4" PVC	38.0'	0.162	431.0'

REGISTERED PROFESSIONAL ENGINEER 17,972 OREGON Nov. 12, 2002 DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
AS-BUILT 5-25-2005	LD

RENAISSANCE RIDGE 2

RENAISSANCE DEVELOPMENT

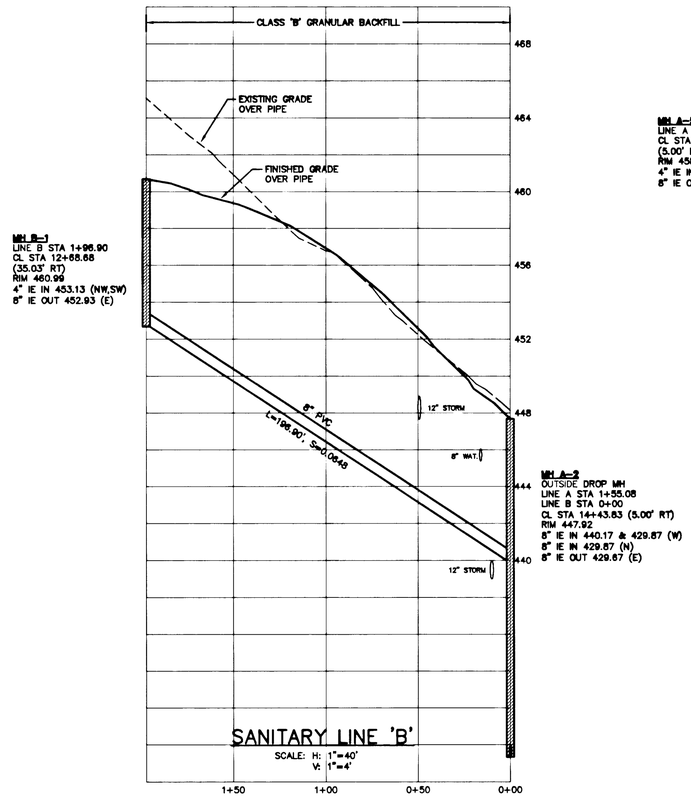
Sanitary Sewer Plan

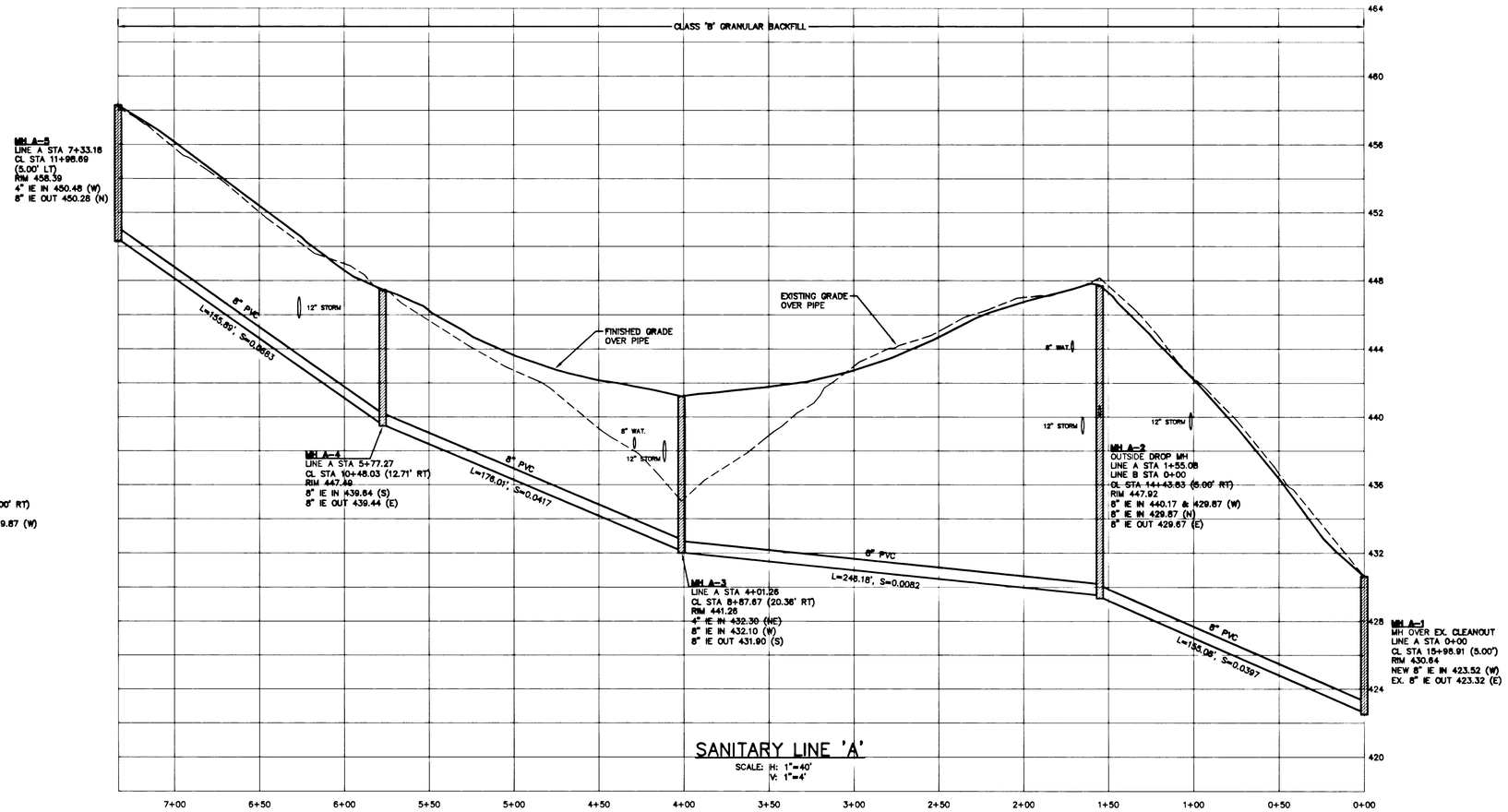
SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING: 03-106sanitary.dwg

DATE	SEPT. 2004
SCALE	1"=40'
DRAWN	DJ
JOB	SGL 03-106
SHEET	3
OF	16 SHEETS

AS BUILT





REGISTERED PROFESSIONAL ENGINEER 57,973 OREGON Nov. 12, 2002 DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
AS-BUILT 8-26-2005	LD

RENAISSANCE RIDGE 2

RENAISSANCE DEVELOPMENT

Sanitary Sewer Profiles

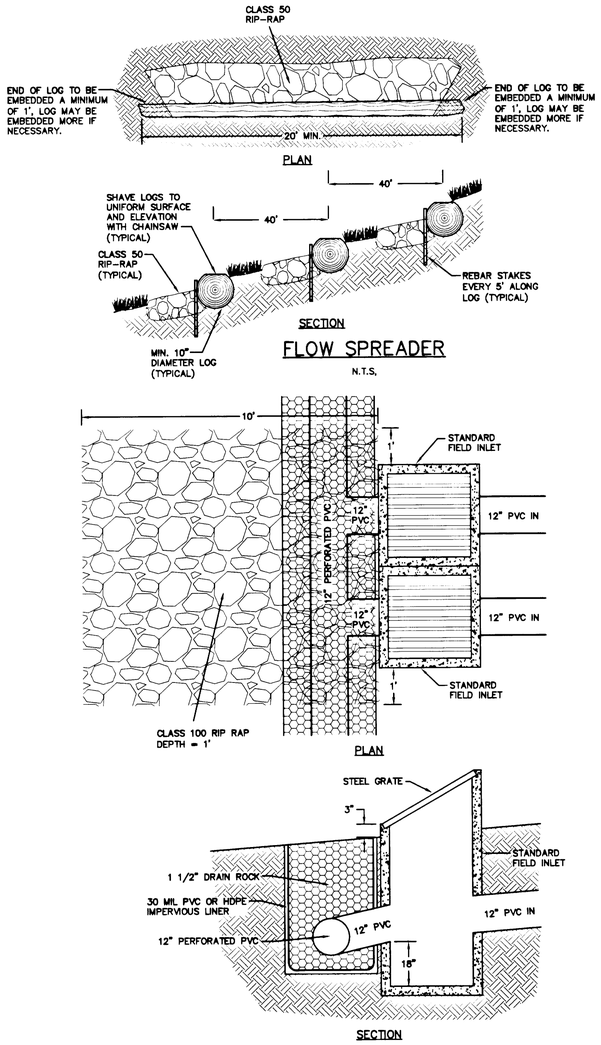
SUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

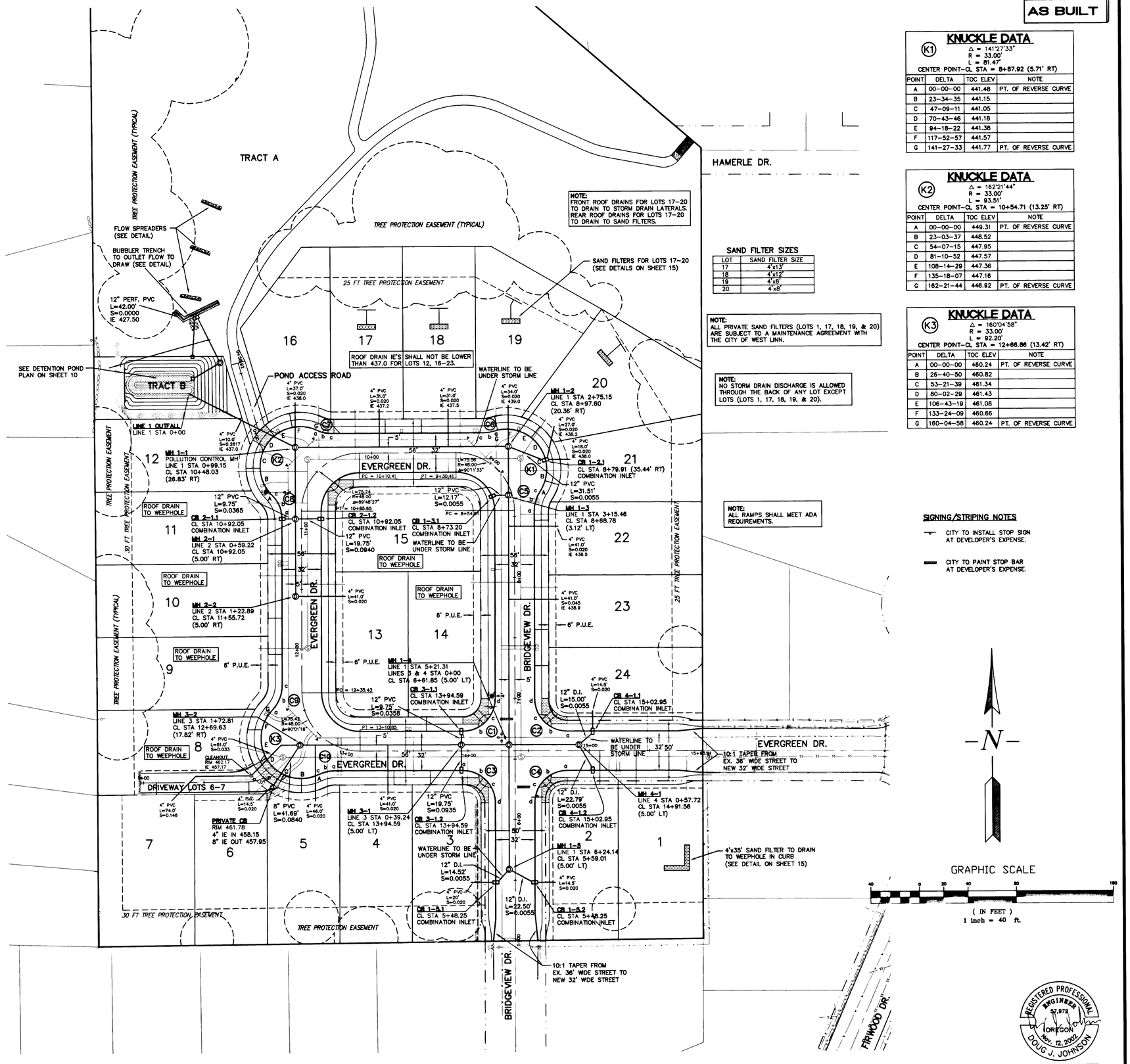
DRAWING 03-106sanitary.dwg

DATE	SEPT. 2004
SCALE	1"=40'
DRAWN	DJ
JOB	SGL 03-106
SHEET	4
OF	16 SHEETS

CURB RETURN DATA

CURVE	DATA	a	b	c	d
C1	Δ = 89°58'44" R = 27.00' L = 42.40'	TOC 452.55 PC EVERGREEN DRIVE STA. 13+95.85 (16' LT)	TOC 450.13	TOC 448.68	TOC 446.97 PT BRIDGEVIEW DRIVE STA. 8+99.83 (16' LT)
C2	Δ = 90°01'16" R = 27.00' L = 42.42'	TOC 444.12 PC EVERGREEN DRIVE STA. 14+81.85 (16' LT)	TOC 445.56	TOC 446.91	TOC 446.97 PT BRIDGEVIEW DRIVE STA. 8+99.86 (16' RT)
C3	Δ = 90°01'16" R = 27.00' L = 42.42'	TOC 452.55 PC EVERGREEN DRIVE STA. 13+95.82 (16' RT)	TOC 450.14	TOC 448.56	TOC 446.79 PT BRIDGEVIEW DRIVE STA. 8+13.83 (16' LT)
C4	Δ = 89°58'44" R = 27.00' L = 42.40'	TOC 444.12 PC EVERGREEN DRIVE STA. 14+81.82 (16' RT)	TOC 445.56	TOC 446.84	TOC 446.79 PT BRIDGEVIEW DRIVE STA. 8+13.86 (16' RT)
C5	Δ = 33°29'40" R = 30.00' L = 17.54'	TOC 441.85 PC BRIDGEVIEW DRIVE STA. 8+54.23 (16' RT)	TOC 441.70	TOC 441.48 PRC BRIDGEVIEW DRIVE STA. 8+65.75 (22.80' RT)	
C6	Δ = 17°46'20" R = 30.00' L = 9.31'	TOC 441.77 PRC EVERGREEN DRIVE STA. 9+08.87 (24.62' RT)	TOC 441.86	TOC 441.95 PT EVERGREEN DRIVE STA. 9+14.29 (19.79' RT)	
C7	Δ = 26°13'05" R = 25.00' L = 11.44'	TOC 446.92 PRC EVERGREEN DRIVE STA. 10+33.22 (26.87' RT)	TOC 446.78	TOC 446.59 PT EVERGREEN DRIVE STA. 10+27.11 (20.08' RT)	
C8	Δ = 46°20'12" R = 25.00' L = 20.22'	TOC 450.72 PC EVERGREEN DRIVE STA. 10+90.81 (16' RT)	TOC 449.95	TOC 449.31 PRC EVERGREEN DRIVE STA. 10+77.09 (24.90' RT)	
C9	Δ = 44°02'47" R = 30.00' L = 23.06'	TOC 460.24 PRC EVERGREEN DRIVE STA. 12+44.89 (25.87' RT)	TOC 459.92	TOC 459.61 PT EVERGREEN DRIVE STA. 12+29.04 (16' RT)	
C10	Δ = 26°00'55" R = 30.00' L = 13.62'	TOC 459.73 PC EVERGREEN DRIVE STA. 12+95.56 (19.39' RT)	TOC 459.99	TOC 460.24 PRC EVERGREEN DRIVE STA. 12+88.17 (27.29' RT)	





NOTE: FRONT ROOF DRAINS FOR LOTS 17-20 TO DRAIN TO STORM DRAIN LATERALS. REAR ROOF DRAINS FOR LOTS 17-20 TO DRAIN TO SAND FILTERS.

SAND FILTER SIZES

LOT	SAND FILTER SIZE
17	4'x13'
18	4'x12'
19	4'x8'
20	4'x8'

NOTE: ALL PRIVATE SAND FILTERS (LOTS 1, 17, 18, 19, & 20) ARE SUBJECT TO A MAINTENANCE AGREEMENT WITH THE CITY OF WEST LINN.

NOTE: NO STORM DRAIN DISCHARGE IS ALLOWED THROUGH THE BACK OF ANY LOT EXCEPT LOTS (LOTS 1, 17, 18, 19, & 20).

NOTE: ALL RAMPS SHALL MEET ADA REQUIREMENTS.

SIGNING/STRIPING NOTES

- CITY TO INSTALL STOP SIGN AT DEVELOPER'S EXPENSE.
- CITY TO PAINT STOP BAR AT DEVELOPER'S EXPENSE.

AS BUILT

KNUCKLE DATA (K1)

Δ = 141°27'33"
R = 33.00'
L = 81.47'
CENTER POINT-CL STA = 8+87.92 (5.71' RT)

POINT	DELTA	TOC ELEV	NOTE
A	00-00-00	441.48	PT. OF REVERSE CURVE
B	23-34-35	441.15	
C	47-09-11	441.05	
D	70-43-46	441.18	
E	94-18-22	441.38	
F	117-52-57	441.57	
G	141-27-33	441.77	PT. OF REVERSE CURVE

KNUCKLE DATA (K2)

Δ = 162°21'44"
R = 33.00'
L = 93.51'
CENTER POINT-CL STA = 10+54.71 (13.25' RT)

POINT	DELTA	TOC ELEV	NOTE
A	00-00-00	449.31	PT. OF REVERSE CURVE
B	23-03-37	448.52	
C	54-07-15	447.95	
D	81-10-52	447.57	
E	108-14-29	447.36	
F	135-18-07	447.16	
G	162-21-44	446.92	PT. OF REVERSE CURVE

KNUCKLE DATA (K3)

Δ = 160°04'58"
R = 33.00'
L = 92.20'
CENTER POINT-CL STA = 12+66.86 (13.42' RT)

POINT	DELTA	TOC ELEV	NOTE
A	00-00-00	460.24	PT. OF REVERSE CURVE
B	26-40-50	460.82	
C	53-21-39	461.34	
D	80-02-29	461.43	
E	106-43-19	461.08	
F	133-24-09	460.66	
G	160-04-58	460.24	PT. OF REVERSE CURVE

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
REVISED FLOW SPREADER DETAIL 11/8/04	DJ
AS-BUILT 5-13-2005	LD

RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

Street & Storm Drain Plan

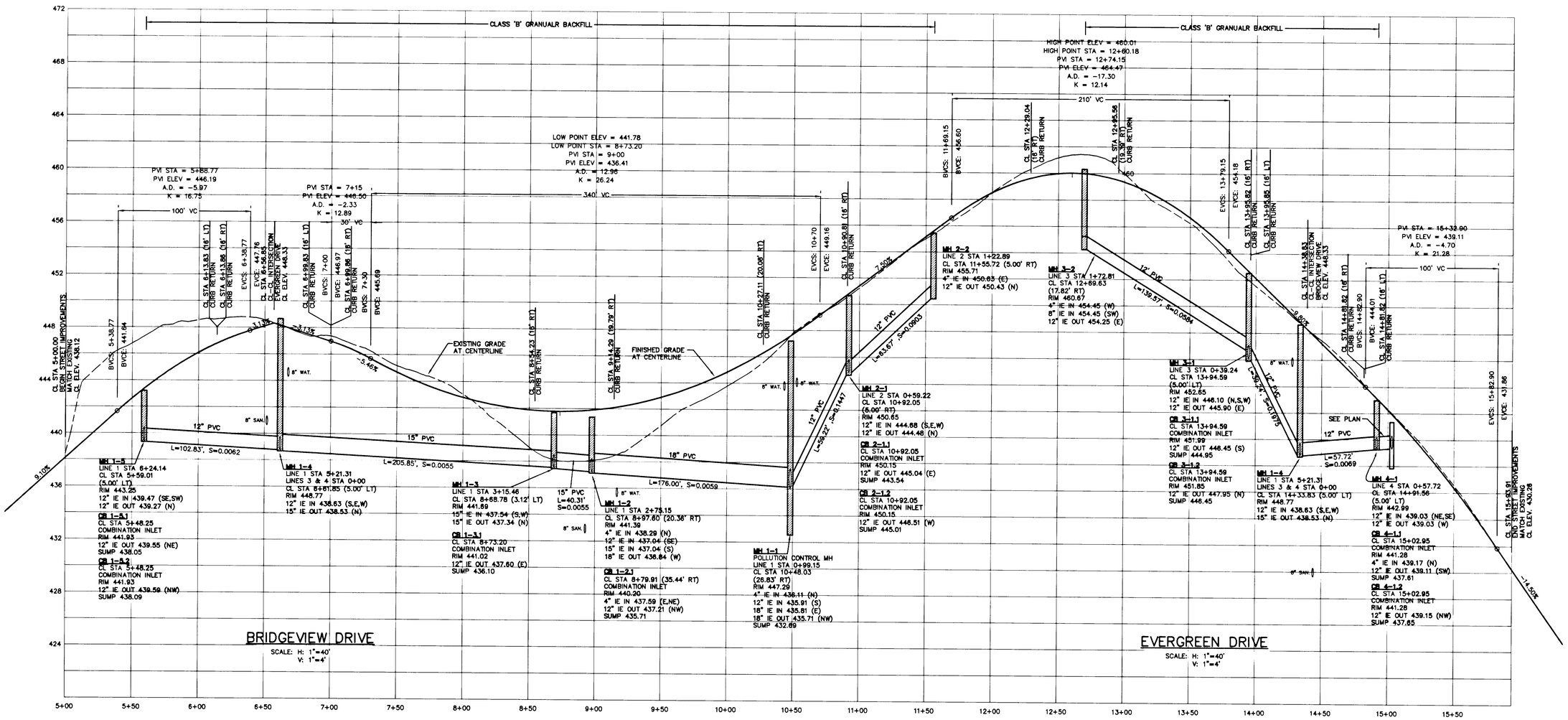
SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

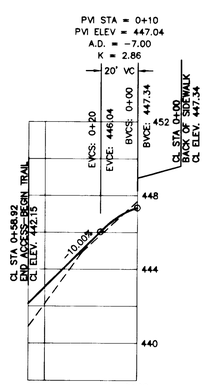
(DRAWING: D3-1(FRAC.DWG))

REGISTERED PROFESSIONAL ENGINEER 57078 OREGON Nov. 12, 2002 DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

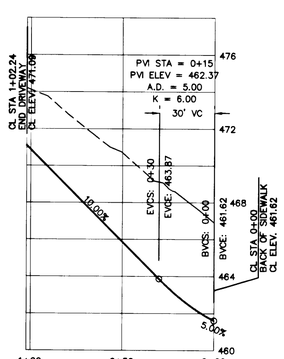
DATE	SEPT. 2004
SCALE	1"=40'
DRAWN	DJ
JOB	SGL 03-106
SHEET	5
OF	16 SHEETS





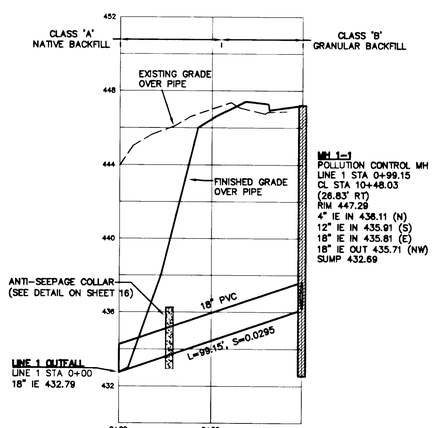
POND ACCESS ROAD

SCALE: H: 1"=40'
V: 1"=4'



DRIVEWAY LOTS 6-7

SCALE: H: 1"=40'
V: 1"=4'



STORM LINE '1'

SCALE: H: 1"=40'
V: 1"=4'

AS BUILT

REGISTERED PROFESSIONAL ENGINEER
57,973
OREGON
Nov. 12, 2002
DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REQUNES 11/3/04	DJ
AS-BUILT 5-25-2005	LD

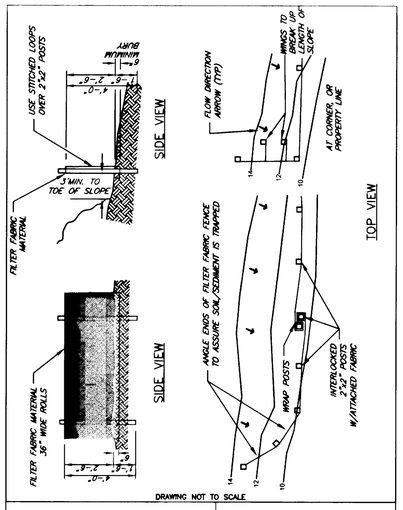
RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

Street & Storm Drain Profiles

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

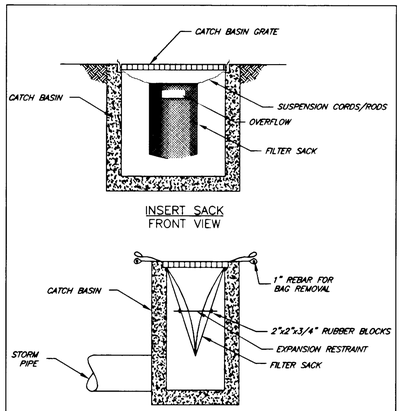
DRAWING: 01X-106st.dwg

DATE	SEPT. 2004
SCALE	NOTED
DRAWN	DJ
JOB	SGL 03-106
SHEET	6
OF	16 SHEETS



EROSION CONTROL MANUAL	TEMPORARY SEDIMENT FENCE Detail Drawing 4.2A

FILE DRAFT:INSPECTORS GRAPHICS DRAWING PLOT 34

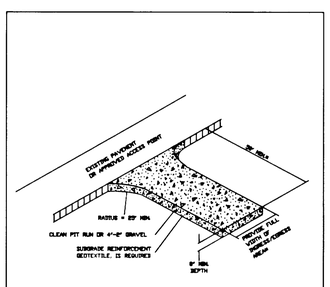


NOTE:
RECESSED CURB INLET MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS.
SIZE OF FILTER FABRIC INLET SACK TO BE DETERMINED BY MANUFACTURER.

DRAWING NOT TO SCALE

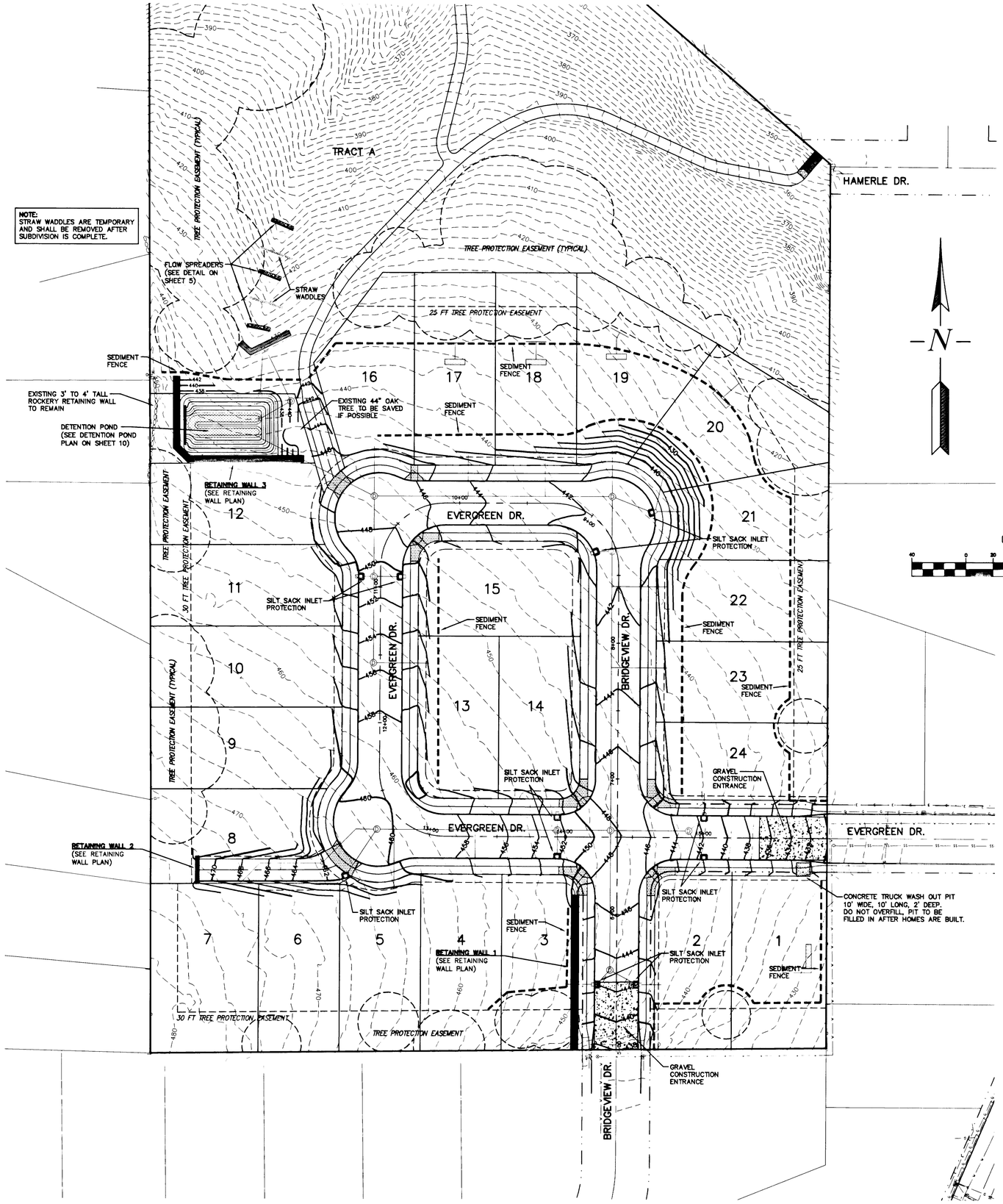
TECHNICAL GUIDANCE HANDBOOK	FILTER FABRIC INLET PROTECTION Detail Drawing 4.2H

FILE DRAFT:INSPECTORS GRAPHICS DRAWING PLOT 34



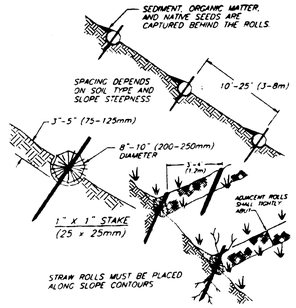
TECHNICAL GUIDANCE HANDBOOK	Gravel Construction Entrance Detail Drawing 3-1A

FILE DRAFT:INSPECTORS GRAPHICS DRAWING DRW-06 PLOT 34



NOTE:
STRAW WADDLES ARE TEMPORARY AND SHALL BE REMOVED AFTER SUBDIVISION IS COMPLETE.

AS BUILT



STRAW WADDLE DETAIL
N.T.S.

ESTIMATED EARTHWORK QUANTITIES (STRIPPINGS TO SUBGRADE)	
CUT	2,000 cu. yds.
FILL	5,000 cu. yds.
POND EXCAVATION	650 cu. yds.
TRENCH LINES	2,900 cu. yds.
TOTAL STRIPPINGS (18" DEPTH)	12,000 cu. yds.
STRIPPINGS TO BE HAULED OFF	9,000 cu. yds.
STRIPPINGS SPREAD ON LOTS	3,000 cu. yds.

REGISTERED PROFESSIONAL ENGINEER
57,973
OREGON
Nov. 12, 2002
DOUG J. JOHNSON
EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
AS-BUILT 5-25-2005	LD

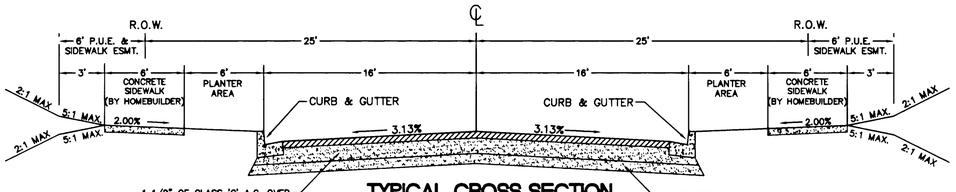
RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

Grading & Erosion Control Plan

SISUL ENGINEERING
3775 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING: U:\-Grading.dwg

DATE	SEPT. 2004
SCALE	1"=40'
DRAWN	DJ
JOB	SGL 03-106
SHEET	7 OF 16 SHEETS

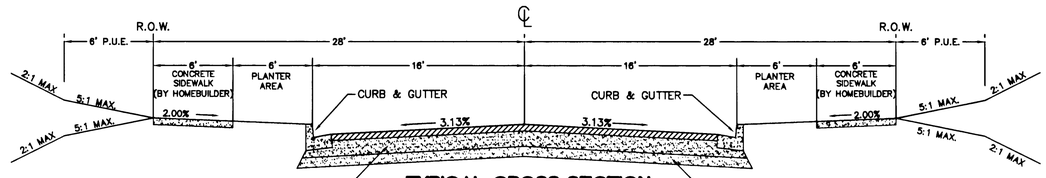


1 1/2" OF CLASS 'C' A.C. OVER
2" OF CLASS 'B' A.C. OVER
2" OF 3/4"-0" CRUSHED ROCK OVER
8" OF 1 1/2"-0" CRUSHED ROCK

TYPICAL CROSS SECTION

(BRIDGEVIEW DR. STA 5+00 TO STA 6+56)
(EVERGREEN DR. STA 14+38 TO STA 15+93)
NTS

DEVELOPER MAY CHOOSE TO INSTALL WET WEATHER SECTION.
6" OF 1 1/2"-0" CRUSHED ROCK OVER MIRAFI 500X GEOTEXTILE FABRIC.

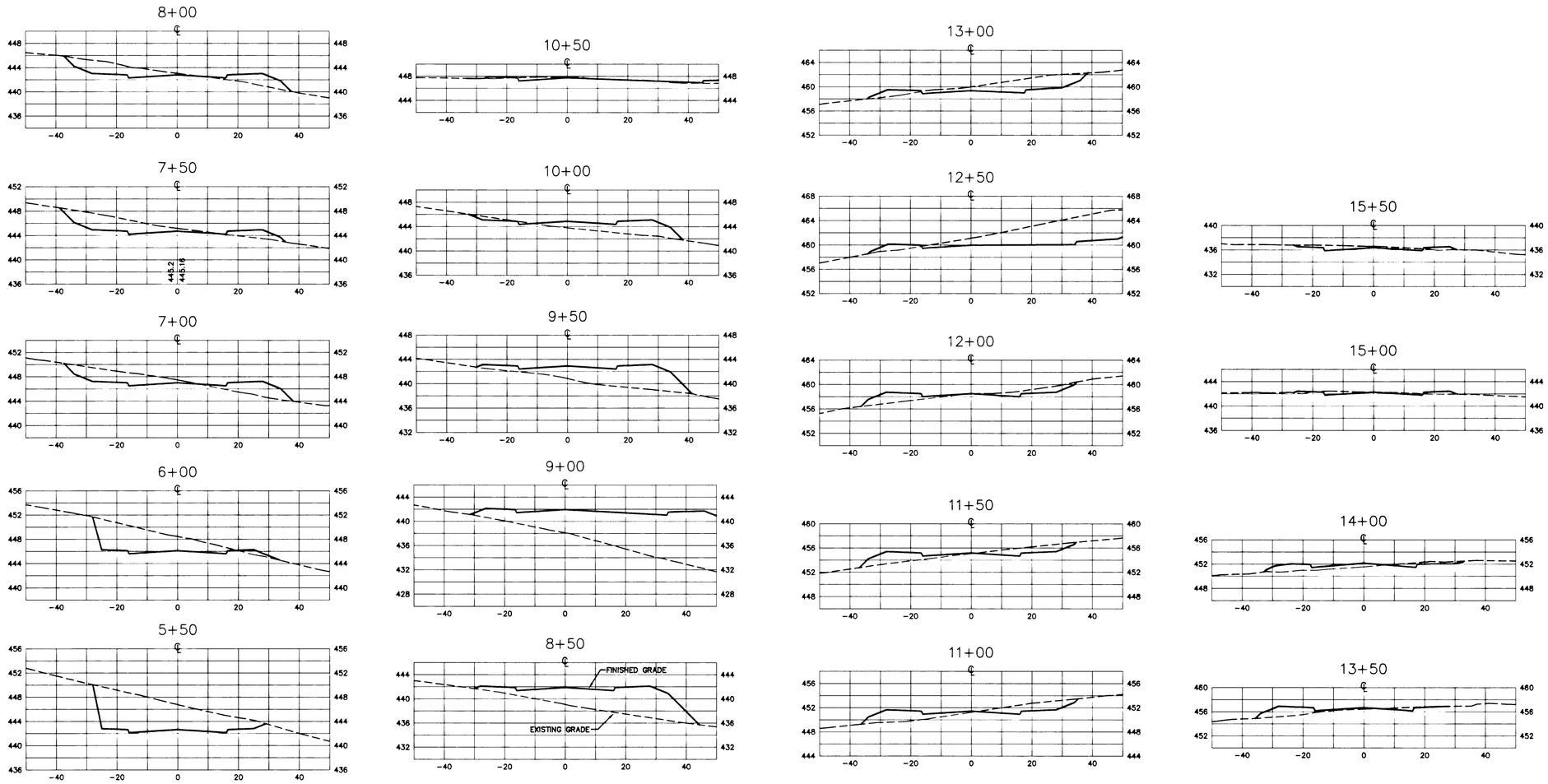


1 1/2" OF CLASS 'C' A.C. OVER
2" OF CLASS 'B' A.C. OVER
2" OF 3/4"-0" CRUSHED ROCK OVER
8" OF 1 1/2"-0" CRUSHED ROCK

TYPICAL CROSS SECTION

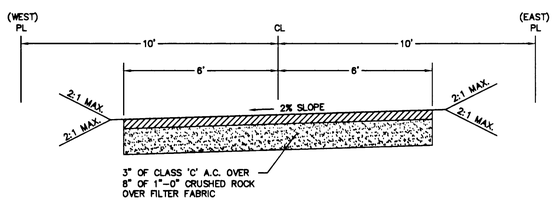
(BRIDGEVIEW DR. & EVERGREEN DR.)
NTS

DEVELOPER MAY CHOOSE TO INSTALL WET WEATHER SECTION.
6" OF 1 1/2"-0" CRUSHED ROCK OVER MIRAFI 500X GEOTEXTILE FABRIC.



BRIDGEVIEW DRIVE & EVERGREEN DRIVE

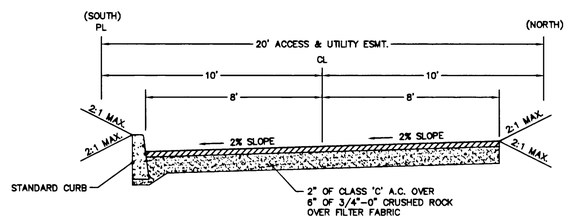
SCALE: H: 1"=20'
V: 1"=10'



3" OF CLASS 'C' A.C. OVER
8" OF 1"-0" CRUSHED ROCK
OVER FILTER FABRIC

TYPICAL CROSS SECTION

(POND ACCESS ROAD)
NTS



2" OF CLASS 'C' A.C. OVER
6" OF 3/4"-0" CRUSHED ROCK
OVER FILTER FABRIC

TYPICAL CROSS SECTION

(DRIVEWAY LOTS 6-7)
NTS

AS BUILT

REGISTERED PROFESSIONAL ENGINEER 59,972 OREGON Nov. 12, 2003 DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
AS-BUILT 5-25-2005	LD

RENAISSANCE RIDGE 2

RENAISSANCE DEVELOPMENT

Cross Sections

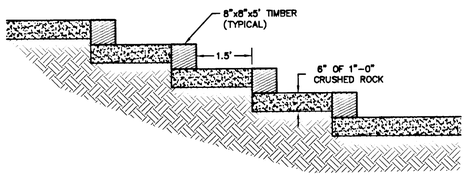
SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING: 03-106cross.dwg

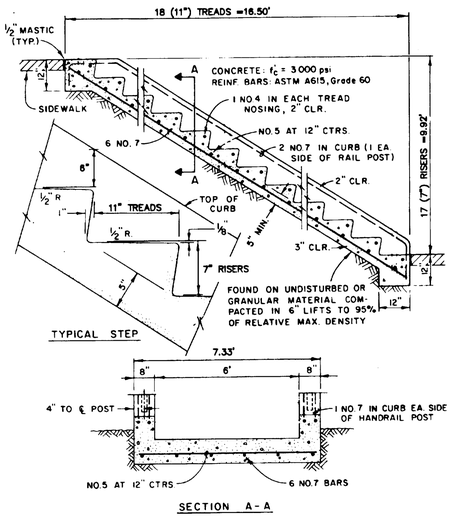
DATE SEPT. 2004
SCALE 1"=40'
DRAWN DJ
JOB SGL 03-106
SHEET 8 OF 16 SHEETS

AS BUILT

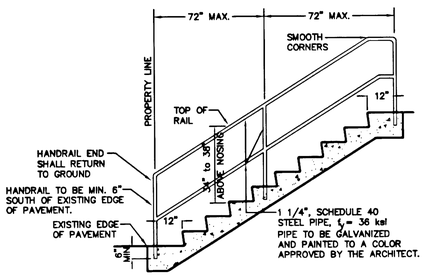
NOTE:
ACTUAL LOCATION OF TIMBER STAIRS TO BE DETERMINED IN THE FIELD BY THE PARKS DEPARTMENT.



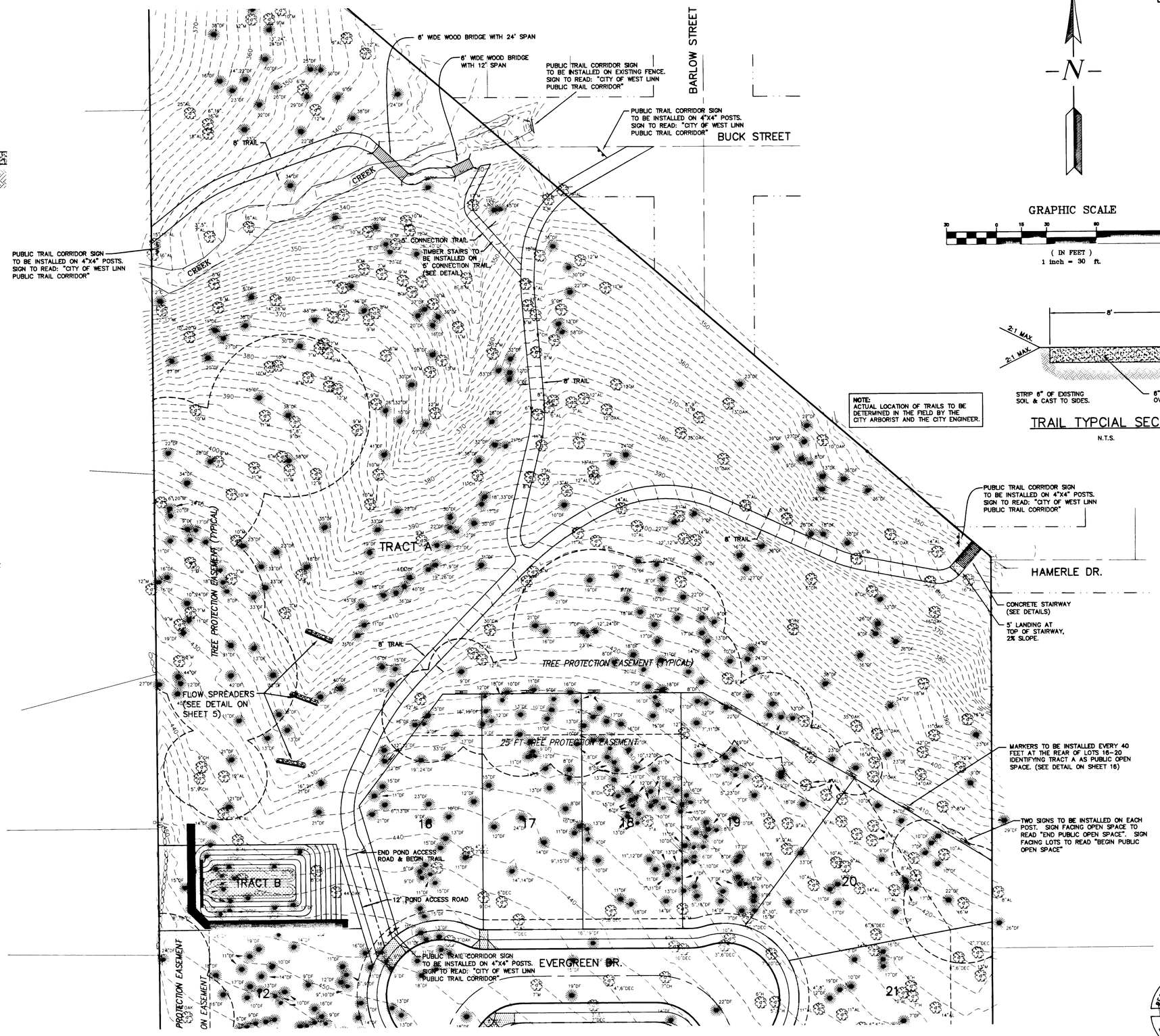
TIMBER STAIRS DETAIL
N.T.S.



REINFORCED CONCRETE STAIRWAY
N.T.S.



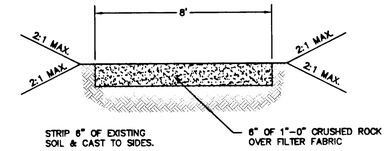
STAIR HANDRAIL-BOTH SIDES OF EACH STAIR
SCALE: NONE



N

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NOTE:
ACTUAL LOCATION OF TRAILS TO BE DETERMINED IN THE FIELD BY THE CITY ARBORIST AND THE CITY ENGINEER.



TRAIL TYPCIAL SECTION
N.T.S.

REGISTERED PROFESSIONAL ENGINEER
57,977
OREGON
Nov. 12, 2003
DOUG J. JOHNSON
EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
ADDED 5' CONNECTION TRAIL 11/8/04	DJ
AS-BUILT 5-25-2005	LD

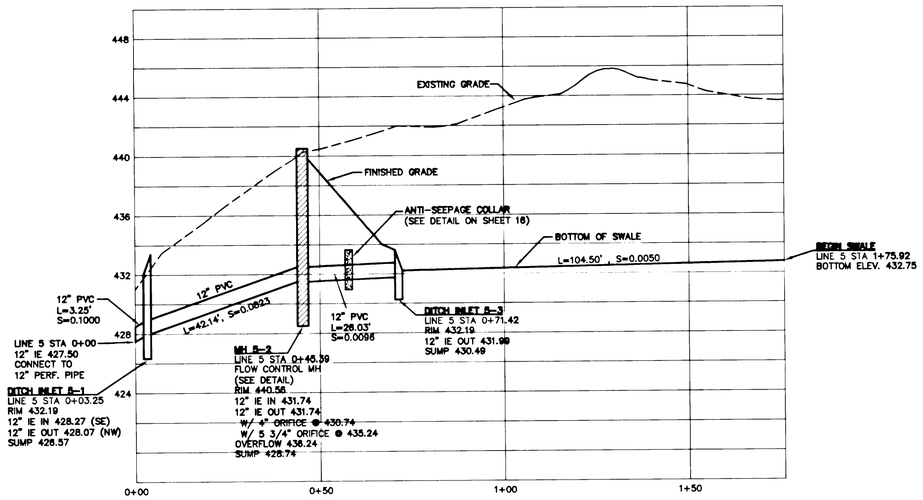
RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

Trail Plan

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

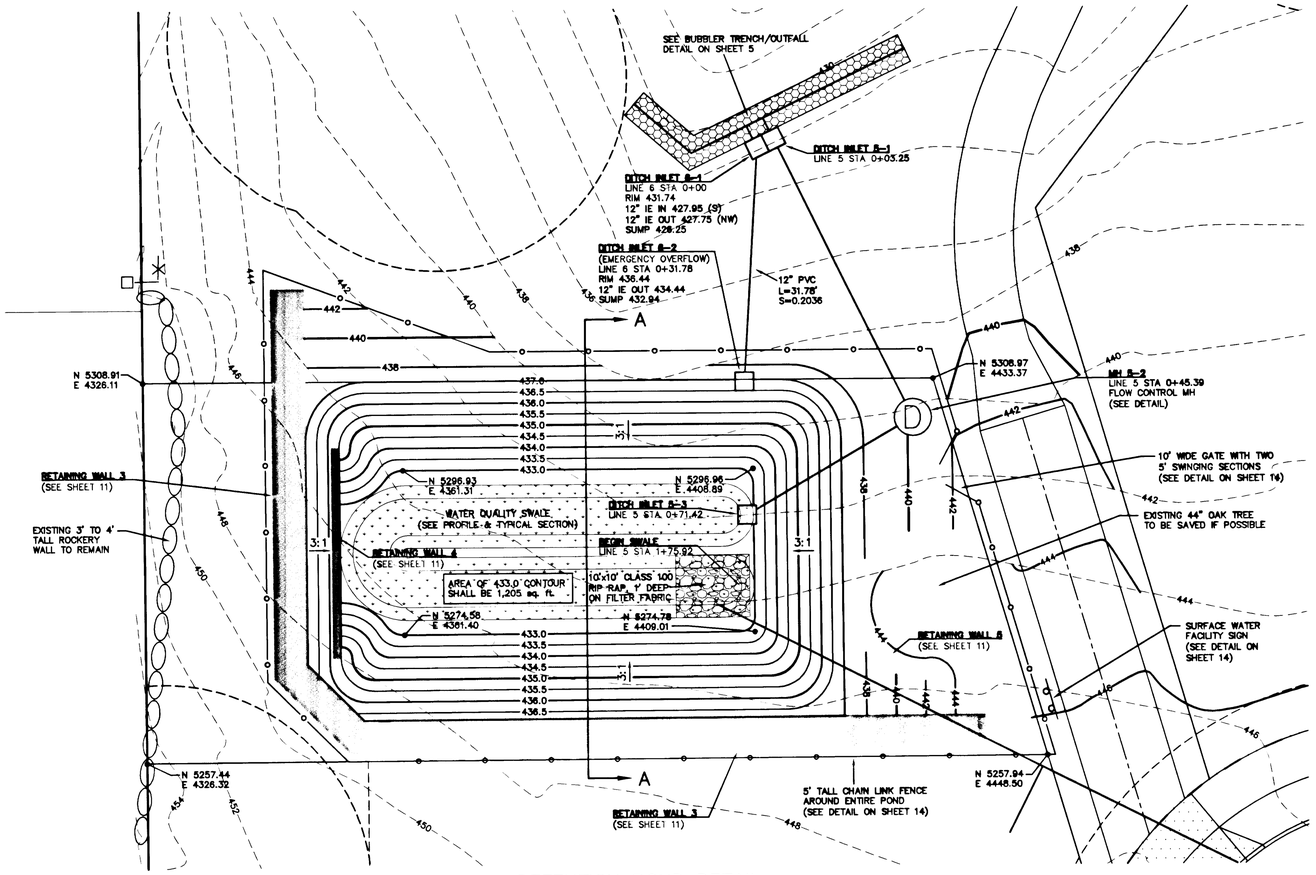
DRAWING: 03-106trail.dwg

DATE	SEPT. 2004
SCALE	1"=30'
DRAWN	DJ
JOB	SGL 03-106
SHEET	9
OF	16 SHEETS



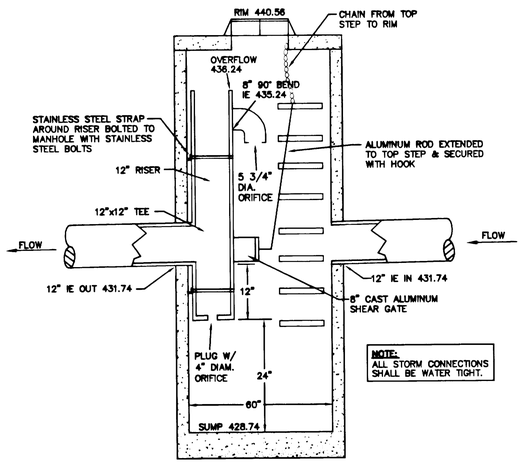
STORM LINE '5'

SCALE: H: 1"=20'
V: 1"=5'



DETENTION POND DETAIL

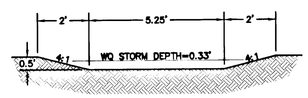
SCALE: 1"=10'



MH 5-2 DETAIL

(NTS)

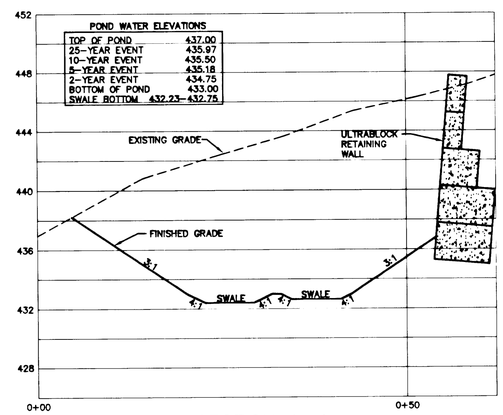
NOTE:
GRASSY SWALE TO BE INSTALLED
PER NOTES & DETAIL ON SHEET 15.



TYPICAL SECTION
WATER QUALITY SWALE

N.T.S.

POND WATER ELEVATIONS	
TOP OF POND	437.00
25-YEAR EVENT	435.97
10-YEAR EVENT	435.50
5-YEAR EVENT	435.18
2-YEAR EVENT	434.75
BOTTOM OF POND	433.00
SWALE BOTTOM	432.23-432.75



SECTION A-A

SCALE: H: 1"=10'
V: 1"=5'

AS BUILT

REGISTERED PROFESSIONAL ENGINEER
57,972
OREGON
Nov. 12, 2002
DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
AS-BUILT 5-25-2005	LD

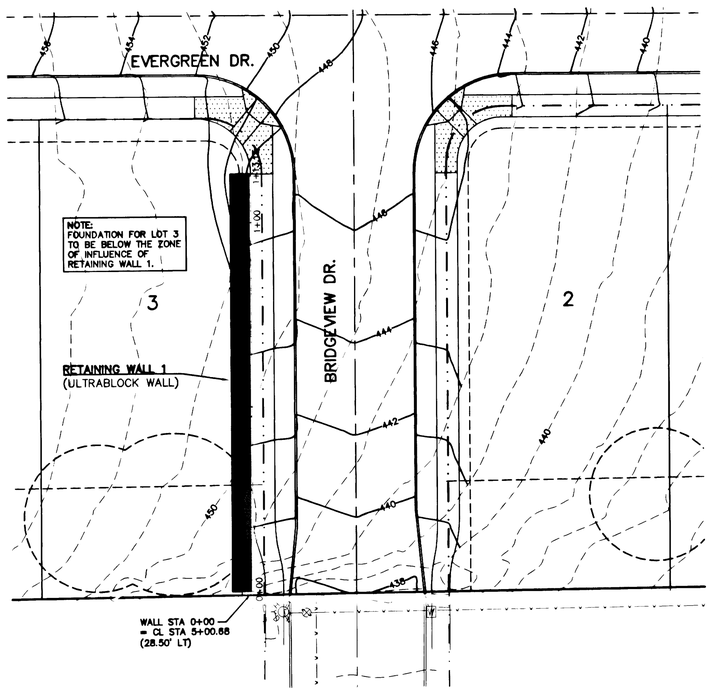
RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

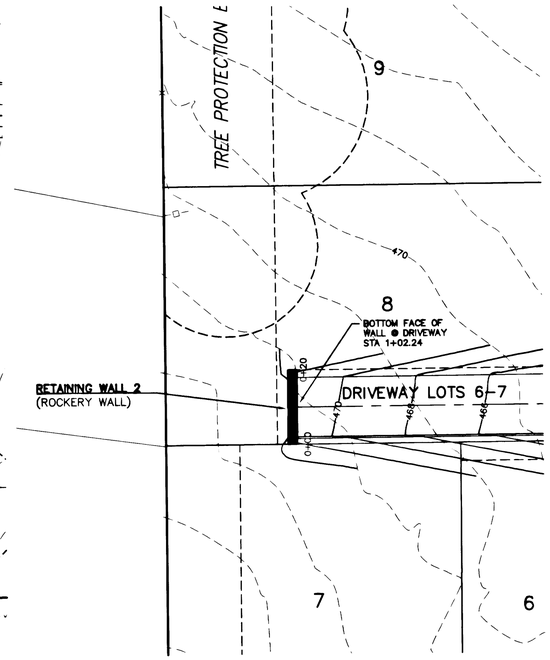
Detention Pond Plan

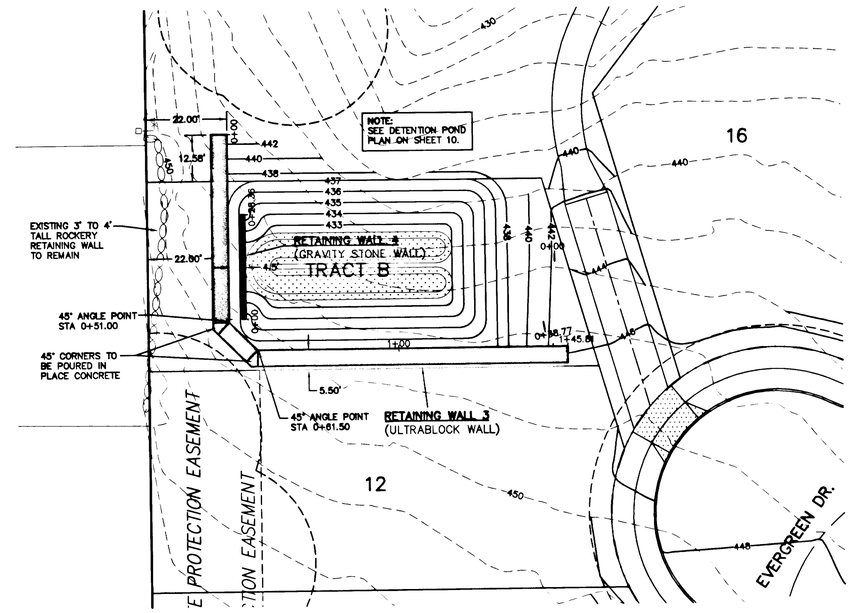
SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

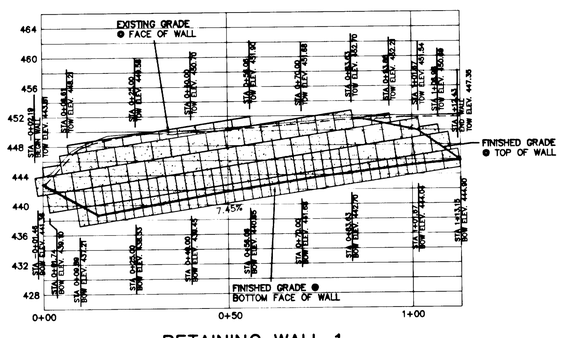
DRAWING: 03-106pond.dwg

DATE	SEPT. 2004
SCALE	1"=10'
DRAWN	DJ
JOB	SGL 03-106
SHEET	10
OF	16 SHEETS

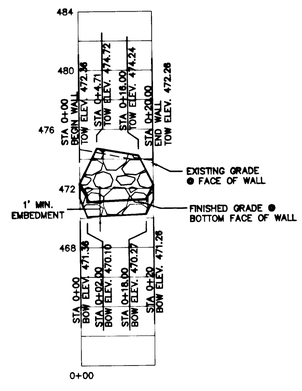




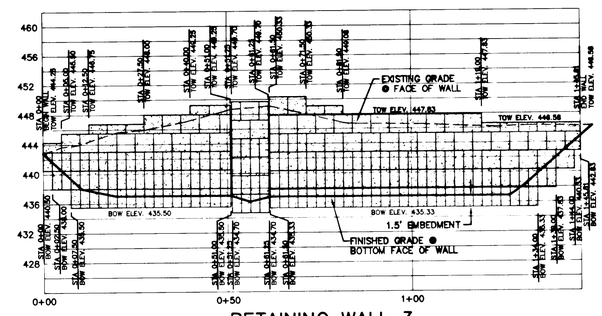




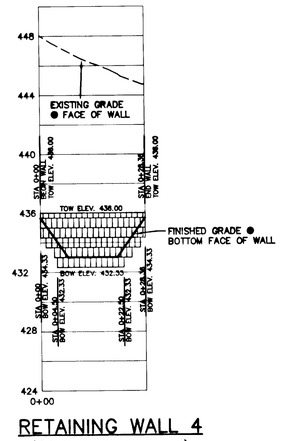
RETAINING WALL 1
(ULTRABLOCK WALL)
SCALE: H: 1"=20'
V: 1"=10'



RETAINING WALL 2
(ROCKERY WALL)
SCALE: H: 1"=20'
V: 1"=5'



RETAINING WALL 3
(ULTRABLOCK WALL)
SCALE: H: 1"=20'
V: 1"=5'



RETAINING WALL 4
(GRAVITY STONE WALL)
SCALE: H: 1"=20'
V: 1"=5'

AS BUILT

REGISTERED PROFESSIONAL ENGINEER
57,078
OREGON
Nov. 12, 2005
DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
AS-BUILT 5-13-2005	LD

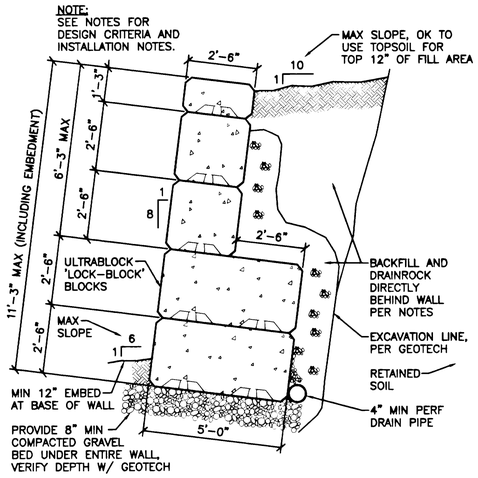
RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

Retaining Wall Plan

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING: 03-106wall5.dwg

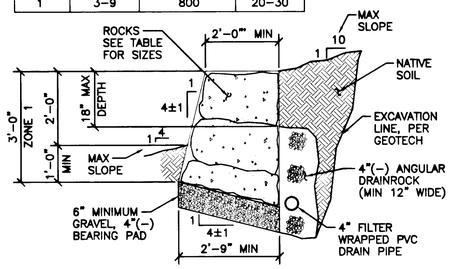
DATE	SEPT. 2004
SCALE	1"=20'
DRAWN	DJ
JOB	SGL 03-106
SHEET	11
OF	16 SHEETS



WALL 1 - 11 FT HIGH ULTRABLOCK LOT WALL W/ 10:1 SLOPE ABOVE

1/12 — 3/8" = 1'-0"

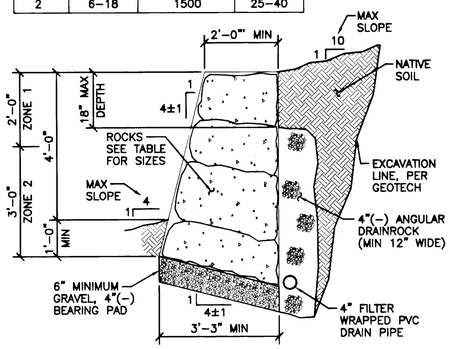
ROCK SIZES PER ZONE AREA			
ZONE	VOLUME (CU. FT.)	WEIGHT (Lbs.) MIN	SIZE (IN.)
1	3–9	800	20–30



WALL 2 - 3 FT HIGH ROCKERY WALL W/ 10:1 SLOPE ABOVE

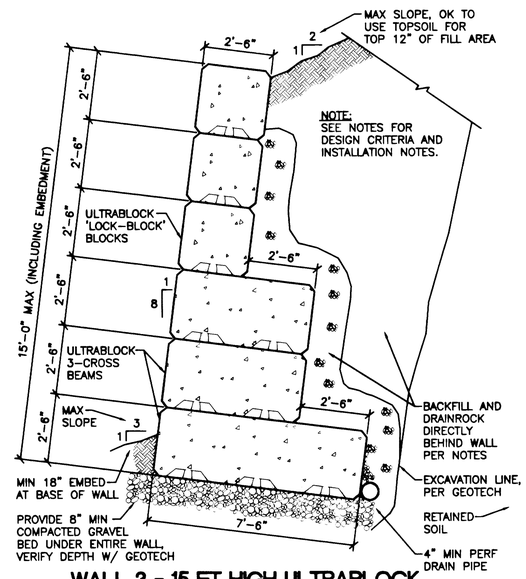
2A/12 — 1/2" = 1'-0"

ROCK SIZES PER ZONE AREA			
ZONE	VOLUME (CU. FT.)	WEIGHT (Lbs.) MIN	SIZE (IN.)
1	3–9	800	20–30
2	6–18	1500	25–40



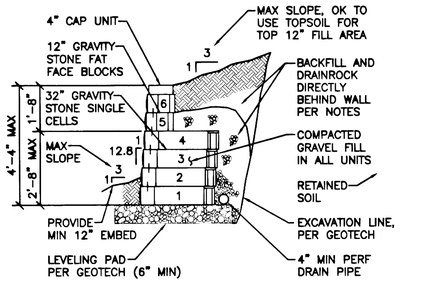
WALL 2 - 5 FT HIGH ROCKERY WALL W/ 10:1 SLOPE ABOVE

2B/12 — 1/2" = 1'-0"



WALL 3 - 15 FT HIGH ULTRABLOCK POND WALL W/ 2:1 SLOPE ABOVE

3/12 — 3/8" = 1'-0"



WALL 4 - 4 FT HIGH GRAVITY STONE POND WALL W/ 3:1 SLOPE ABOVE

4/12 — 3/8" = 1'-0"

DESIGN CRITERIA AND RETAINING WALL INSTALLATION NOTES:

1. ULTRABLOCK AND GRAVITY STONE WALLS ARE TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS. ROCKERY WALLS ARE TO BE INSTALLED PER THE ASSOCIATION OF ROCKERY CONTRACTORS (ARC) STANDARD ROCKERY CONSTRUCTION GUIDELINES.

2. DESIGN IS BASED ON THE FOLLOWING:
(PER CONVERSATION WITH JIM IMBRIE OF GEOPACIFIC ENGINEERING, INC., ON NOVEMBER 4, 2004)

MAXIMUM SOIL BEARING PRESSURE:	3,500 PSF
EQUIVALENT FLUID PRESSURE, EFP:	35 PSF (10:1 SLOPE)
(USE ACTIVE EARTH COEFFICIENT, ka=EFP/UNIT WT)	45 PSF (2:1 SLOPE)
(ka=0.269=35/135 AND ka=0.346=45/135)	
UNIT WEIGHT OF ROCKERY WALLS:	135 PCF
UNIT WEIGHT OF IMPORT AND ON-SITE FILL:	130 PCF
INTERNAL ANGLE FRICTION FOR BOTH FILLS:	30 DEGREES
BASE COEFFICIENT OF FRICTION:	0.5
BUILDING SURCHARGE:	0 PSF
(BUILDING FOUNDATION FALLS BELOW 1 TO 1 ZONE OF INFLUENCE, MEASURED FROM THE FRONT BASE OF THE RETAINING WALLS)	

3. DESIGN IS BASED ON COULOMB EARTH PRESSURE THEORY.

4. MAXIMUM HEIGHT OF WALL, PER DETAILS.

5. WALL 4 WAS DESIGNED WITH UNIT WEIGHT OF BLOCKS REDUCED BY WEIGHT OF WATER (62.4 PCF) SINCE HIGH WATER LEVEL IS EQUAL TO TOP OF WALL.

6. MINIMUM EMBEDMENT AT BASE OF WALL PER DETAILS.

7. MINIMUM FACTOR OF SAFETY:

FACTOR OF SAFETY AGAINST SLIDING:	1.5
FACTOR OF SAFETY AGAINST OVERTURN:	2.0

8. DRAINROCK MATERIAL SHALL BE CLEAN ANGULAR COMPACTED GRAVEL 4"(–) THAT MEETS THE PROPERTIES OUTLINED UNDER NOTE 2 ABOVE AND SHALL HAVE LESS THAN 5% PASSING THE NUMBER 200 SIEVE. BACKFILL BEHIND DRAINROCK MAY BE ON-SITE MATERIAL, IF IT IS APPROVED BY GEOTECH OF RECORD. DRAINROCK AND BACKFILL SHALL BE COMPACTED TO MINIMUM 95% OF ASTM D-698.

9. MAXIMUM SLOPE AT TOP OF WALL PER DETAILS.

10. ALL BUILDING FOUNDATIONS SHALL FALL BELOW 1 TO 1 ZONE OF INFLUENCE, MEASURED FROM FRONT BASE OF WALL. OVER EXCAVATION MAY BE REQUIRED FOR BUILDING FOUNDATIONS IN ORDER TO FALL BELOW ZONE OF INFLUENCE. WALLS 3 AND 4 SHALL BE SEPARATED HORIZONTALLY SUCH THAT THE 1:1 ZONE OF INFLUENCE IS MET.

11. THE ROCKERY CONSTRUCTION SHOULD BE OBSERVED BY A REPRESENTATIVE FROM GEOPACIFIC ENGINEERING ON A PERIODIC BASIS. THE PURPOSE OF THE OBSERVATIONS WILL BE TO VERIFY THAT THE ROCKERY WALLS ARE CONSTRUCTED IN ACCORDANCE WITH THE ARC GUIDELINES.

AS BUILT

REGISTERED PROFESSIONAL ENGINEER 16,716 OREGON JULY 20, 1993 TIMOTHY J. THEIS

EXPIRES: 06/30/06

THEIS ENGINEERING, LLC
Timothy J. Theis, P.E.
1500 Sunset Drive
West Linn, Oregon 97068
Phone: (503) 638-4140
Fax: (503) 638-1140
Project No.: 060

NO.	DATE	REVISION

REVISIONS	BY
REVISED PER CITY REQUIRES 11/3/04	DJ
AS-BUILT 5-13-2005	LD

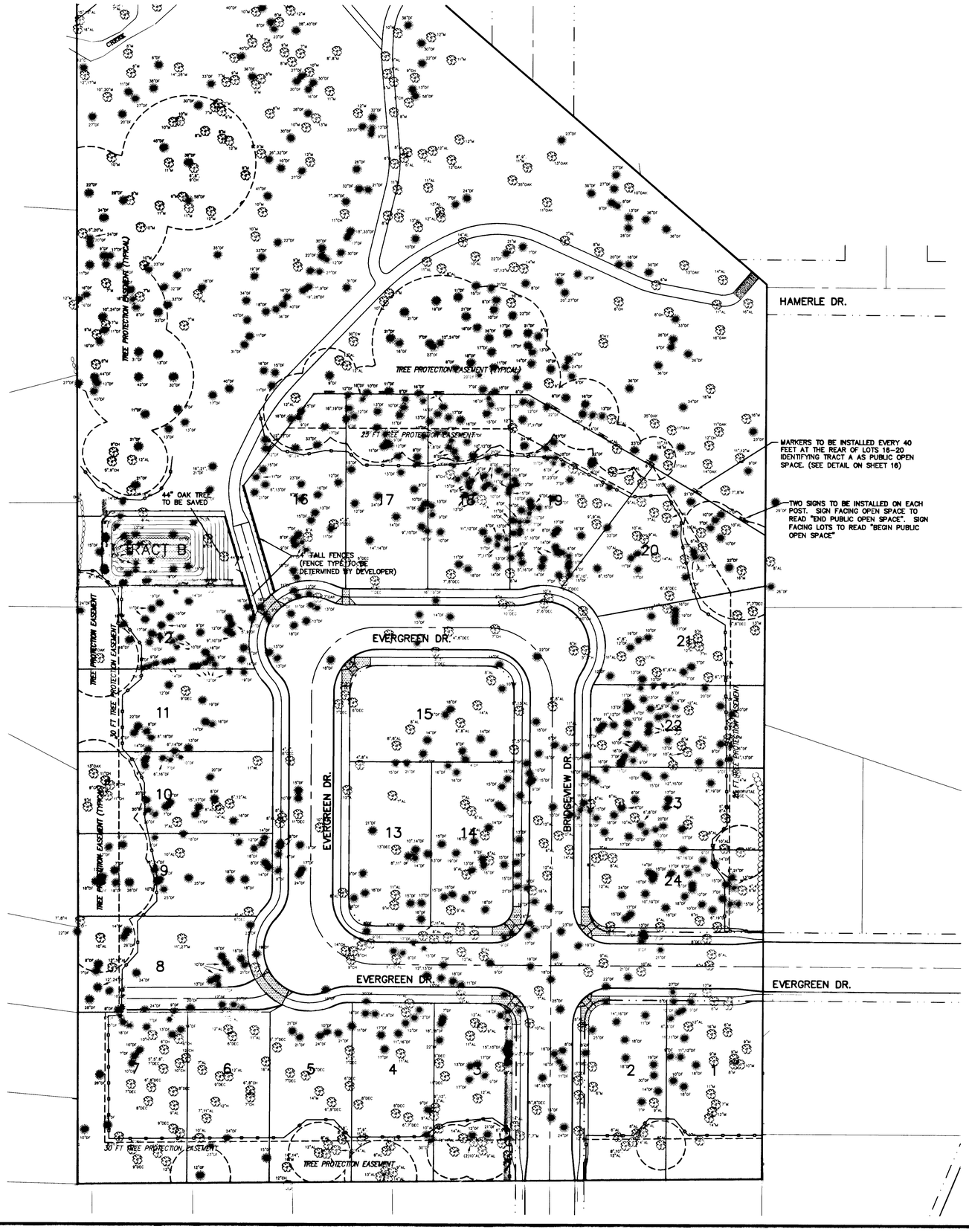
RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

Retaining Wall Details

SGL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING: 03-106-details.dwg

DATE	SEPT. 2004
SCALE	NOTED
DRAWN	DJ
JOB	SGL 03-106
SHEET	12
OF	16 SHEETS



AS BUILT

N

GRAPHIC SCALE

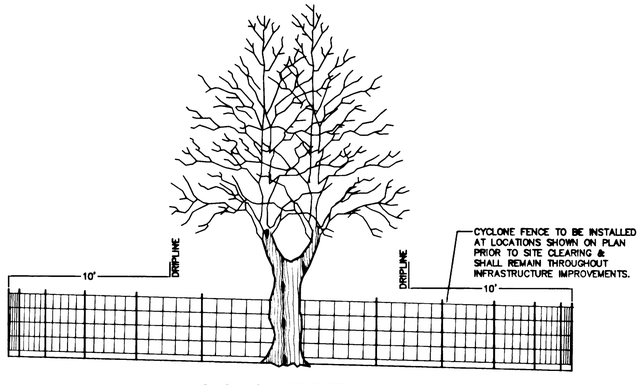
(IN FEET)
1 inch = 40 ft.

TREE LEGEND

- EXISTING TREE WITH SIZE AND TYPE
- ALL TREES IN SHADED AREAS TO REMAIN
- TREE PROTECTION EASEMENT
- CYCLONE FENCE

TREE NOTES:

1. Tree easements shall be recorded on the plat as shown in the applicant's submittal.
2. Six-foot tall chain link fencing shall be placed at tree easement boundaries prior to grading the site.
3. The City Arborist shall inspect and approve all on-site tree protection measures prior to the start of work. It is the applicants responsibility to contact the City Arborist and arrange for this approval to take place. No permits from Engineering, Planning, or Building Departments shall be issued without approval from the City Arborist regarding tree protection measures.
4. All tree protection measures shall remain in place and fully functional for the entire time that work and construction is taking place.



SNOW FENCE DETAIL
N.T.S.

REGISTERED PROFESSIONAL ENGINEER
57,972
OREGON
Nov. 12, 2001
DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
REVISED PER CITY REDLINES 11/3/04	DJ
AS-BUILT 5-13-2005	LD

RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

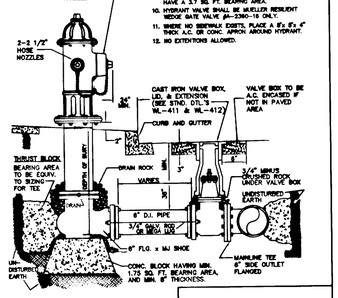
Tree Protection Plan

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188
DRAWING: 03-106tree.DWG

DATE	SEPT. 2004
SCALE	1"=40'
DRAWN	DJ
JOB	SGL 03-106
SHEET	13
OF	16 SHEETS

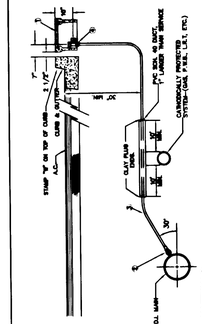
NOTES:

1. HYDRANTS TO BE MUELLER CENTURION MOD. A-423 ONLY WITH 1 1/2" OPER. NUTS OR OLDM MEDDALOY F-2848.
2. HYDRANT COLOR TO BE MILLER EQUIP. ENAMEL O.F. #0 (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 BHOE UP TO A MIN. OF 6" ABOVE DRAIN OUTLETS.
6. WHERE PLANTER STRIP EXISTS, HYDRANT SHALL BE PLACED 30 FROM FRONT PORT IS A MINIMUM OF 24" BEHIND FACE OF CURB.
7. WHERE INTERCAL 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-2360-18 ONLY.
11. WHERE NO SIDEWALK EXISTS, PLACE A 8'x 8'x 4" THICK A.C. OR CONC. APRON AROUND HYDRANT.
12. NO EXTENTIONS ALLOWED.



Standard Fire Hydrant Assembly

West Linn — DATE: JAN 2000 — DRAWING NO. WL-401 — FILE NO. 00-401



MATERIALS:

1. WHOCKER METER BOX, BODY NO. 72, LID AND COVER NO. 37-S.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED ROCK AND COMPACTED TO 95% MAXIMUM DENSITY. IF CATHODIC PROTECTION SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED AS SHOWN ABOVE WITH CLAY PLUG.
3. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
4. ALL PIPE SHALL HAVE A MINIMUM OF 36" COVER. SERVICE TO BE PLACED IN THE SIDE LOT LINE.
5. TAPS INTO MAIN TO BE AT 18" CENTERLINE MIN.
6. ANGLE METER STOPS TO BE 18" FROM PROPERTY LINE AND NOT IN DRIVEWAY APPROACH.
7.

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 ROCK AND COMPACTED TO 95% MAXIMUM DENSITY. IF CATHODIC PROTECTION SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED AS SHOWN ABOVE WITH CLAY PLUG.
3. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
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5. TAPS INTO MAIN TO BE AT 18" CENTERLINE MIN.
6. ANGLE METER STOPS TO BE 18" FROM PROPERTY LINE AND NOT IN DRIVEWAY APPROACH.
7.

Standard 1" Water Service

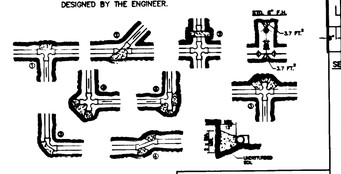
West Linn — DATE: JAN 2000 — DRAWING NO. WL-402 — FILE NO. 00-402

FITTING SIZE (inches)	TEE, WYE, & ① HYDRANTS	STRADDLE BLOCK ②	90° BEND ③ PLUGGED CROSS TEE PLUGGED-RUNS	45° BEND ④	22 1/2° BEND ⑤	11 1/2° BEND ⑥
2	*	*	*	*	*	*
4	1.7	2.1	2.4	1.3	*	*
6	3.7	4.5	5.3	2.9	*	*
8	6.6	8.0	9.4	5.2	2.7	1.3
10	10.3	13.5	14.5	8	4.1	2
12	15.1	19.6	21.0	11.6	5.9	2.8
14	*	*	*	*	*	*
16	26.8	34.8	37.9	20.5	10.4	5.2
18	33.9	44	47.9	25.9	13.8	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.

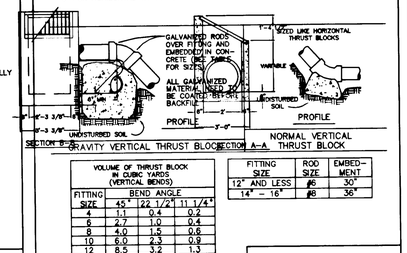


Horizontal Thrust Blocking

West Linn — DATE: JAN 2000 — DRAWING NO. WL-406 — FILE NO. 00-406

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-408.

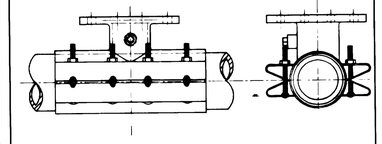


VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)			
FITTING SIZE	BEND ANGLE 45°	22 1/2°	11 1/4°
4	1.1	0.4	0.2
6	2.7	1.0	0.4
8	4.0	1.5	0.6
10	6.0	2.3	0.9
12	8.5	3.2	1.3
14	11.5	4.3	1.8
16	14.8	5.6	2.3

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

Vertical Thust Blocking

West Linn — DATE: JAN 2000 — DRAWING NO. WL-407 — FILE NO. 00-407

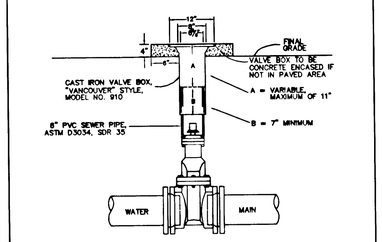


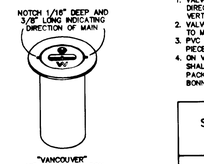
NOTES:

1. WATER MAIN SHALL BE CLEANED BEFORE ATTACHING ATTACHING.
2. SLEEVE AND VALVE SHALL BE PRESSURE TESTED BEFORE MAKING TAP.
3. PRESSURE TEST AND TAP SHALL BE MADE IN THE PRESENCE OF AN AUTHORIZED CITY REPRESENTATIVE.
4. PROPER TAPPING MACHINE SHALL BE USED TO MAKE TAP.
5. THRUST BLOCKING REQUIREMENTS SHALL BE DETERMINED BY THE ENGINEER OR PER DWG. WL-406.
6. TAP SHALL BE MADE NO CLOSER THAN 18 INCHES FROM THE NEAREST JOINT.
7. SLEEVE AND VALVE SHALL BE WRAPPED WITH 8 MIL PLASTIC.
8. SLEEVES TO BE USED ARE JCM OR MUELLER STAINLESS STEEL TAPPING SLEEVES. ALL NUTS AND BOLTS SHALL BE STAINLESS STEEL.
9. SLEEVE SHALL BE AS LEVEL AS POSSIBLE.
10. ALL BOLTS SHALL HAVE NEVER SIEZE ON THREADS.

Standard Wet Tap

West Linn — DATE: JAN 2000 — DRAWING NO. WL-410 — FILE NO. 00-410



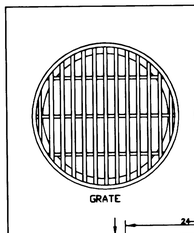


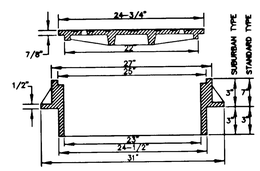
NOTES:

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

West Linn — DATE: JAN 2000 — DRAWING NO. WL-411 — FILE NO. 00-411





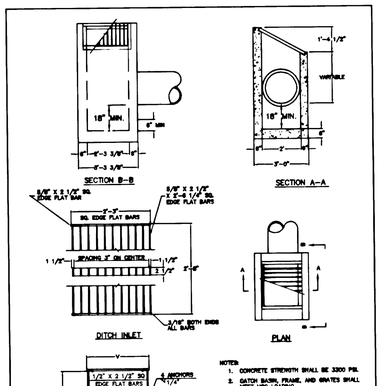
NOTES:

1. USE SUBURBAN TYPE ONLY IN HIGH-TRAFFIC AREAS, AND ONLY WITH APPROVAL BY THE CITY.
2. COVER AND FRAME SHALL BE GRAY CAST IRON ASTM A-48 CLASS 30.
3. COVER AND FRAME TO BE MACHINED TO A TRUE BEARING ALL AROUND.
4. NOTCH LID FOR LIFTING HOOK.
5. OPEN GRATES REQUIRE APPROVAL BY CITY, AND MUST BE BICYCLE SAFE IF USED IN TRAFFIC AREAS.

SUBURBAN AND STANDARD MANHOLE FRAME AND COVER

Manhole Covers

West Linn — DATE: JAN 2000 — DRAWING NO. WL-605 — FILE NO. 00-605



NOTES:

1. CONCRETE STRENGTH SHALL BE 3200 PSI.
2. CATCH BASIN, FRAME, AND GRATES SHALL MEET H20 LOADING.
3. INSIDE FRAME DIMENSIONS: 2'-3 3/8", 2'-8 1/2".

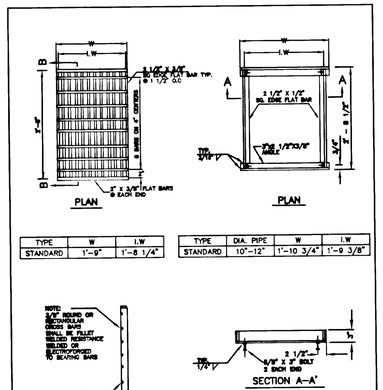
NOTE:

3/8" CROSS BARS SHALL BE FLUSH WITH THE GRATE SURFACE AND MAY BE FILLET WELDED, RESISTANCE WELDED OR ELECTROFORGED TO BEARING BARS.

INLET TYPE	V	Y	Y1	NO. OF BARS	TYPE
D	2'-4 3/4"	2'-3 3/8"	2'-2"	9	1

Standard Ditch Inlet

West Linn — DATE: JAN 2000 — DRAWING NO. WL-603 — FILE NO. 00-603

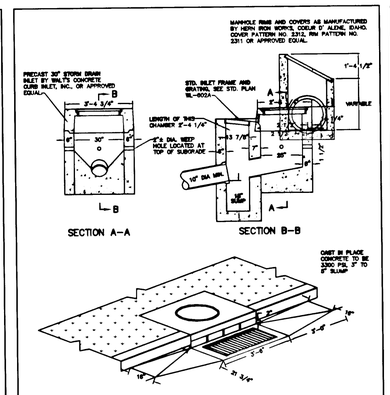


TYPE	W	I.W
STANDARD	1'-9"	1'-8 1/4"

TYPE	DIA. PIPE	W	I.W
STANDARD	10"-12"	1'-10 3/4"	1'-9 3/8"

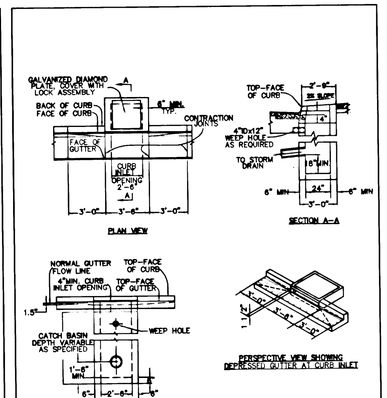
Frame & Grate for Gutter & Curb Inlets

West Linn — DATE: JAN 2000 — DRAWING NO. WL-602A — FILE NO. 00-602A



Combination Curb Inlet

West Linn — DATE: JAN 2000 — DRAWING NO. WL-601 — FILE NO. 00-601

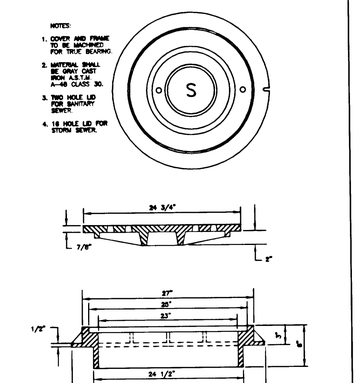


NOTES:

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.

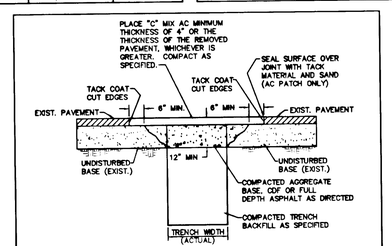
Gutter Inlet 2 1/2 A

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



Suburban Manhole Frame and Cover 3" Depth

West Linn — DATE: JAN 2000 — DRAWING NO. WL-300 — FILE NO. 00-300

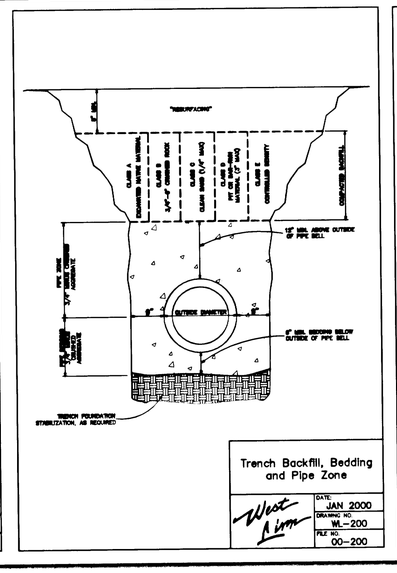


NOTES:

1. ALL EXISTING AC OR PCC PAVEMENT SHALL BE SAWCUT TO NEAT, STRAIGHT LINES PRIOR TO REPAVING.
2. CONCRETE PAVEMENT SHALL BE REPLACED WITH CONCRETE TO A MINIMUM THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER.
3. IF EXISTING BASE MATERIAL IS CTB OR ATB, THEN REPLACEMENT BASE MATERIAL SHALL MATCH EXISTING.
4. ALL UTILITIES SHALL HAVE A MINIMUM COVER OF 36".
5. ALL TRENCH BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO T-180 OR AS SPECIFIED IN THE CONTRACT DOCUMENTS.
6. ALL TRENCH BACKFILL AND PATCHING SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF WEST LINN.
7. BACKFILL SHALL BE PLACED AND COMPACTED IN A MAXIMUM OF 8" LIFTS.

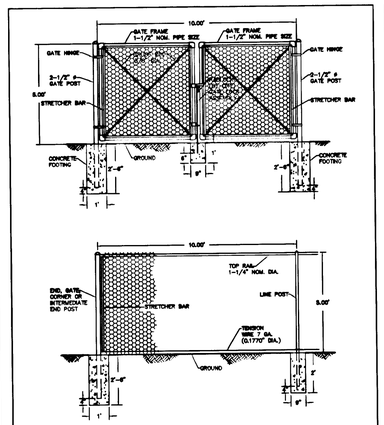
Street T-Cut

West Linn — DATE: JAN 2000 — DRAWING NO. WL-203 — FILE NO. 00-203



Trench Backfill, Bedding and Pipe Zone

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

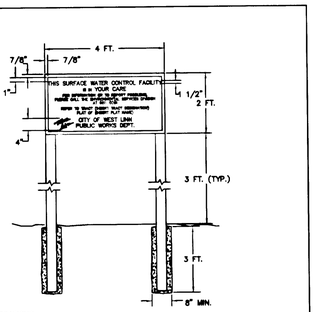


NOTES:

1. BLACK POWDER COATING ON ALL HARDWARE AND ACCESSORIES IS REQUIRED.
2. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT STATE OF OREGON STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

Surface Water Facility Fence

West Linn — DATE: JAN 2000 — DRAWING NO. WL-616 — FILE NO. 00-616

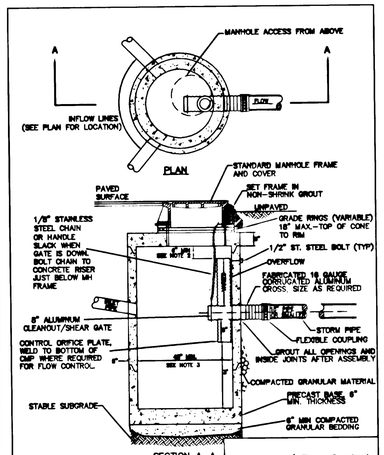


SPECIFICATIONS:

SIZE: 48" BY 24"
MATERIAL: GRADE "B" OR BETTER EXTERIOR PLYWOOD
PAINT: FACE - 3 COATS OUTDOOR ENAMEL (SPRAYED). BACK - 1 COAT OUTDOOR ENAMEL (SPRAYED).
LETTERING: SILK SCREEN ENAMEL WHERE POSSIBLE, OR HAND PAINTED ENAMELS.
COLORS: BLACK AND WHITE. WHITE BACKGROUND, LETTERING AND BORDER IN BLACK
TYPE FACE: HELVETICA. 1 1/2" TALL WITH 7/8" SPACING BETWEEN LETTERS AND OUTER BORDER. OUTER BORDER 1/2" WIDTH
INSTALLATION: SECURED TO CHAIN LINK FENCE IF AVAILABLE, OTHERWISE INSTALL ON TWO 8 FT. LONG 4" X 4" POSTS, PRESSURE TREATED, INSTALLED IN 3 FT. DEEP CONCRETE FILLED POST HOLES (8" MIN. DIA.)

Surface Water Facility Sign

West Linn — DATE: JAN 2000 — DRAWING NO. WL-615 — FILE NO. 00-615



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. ARBITRARY ORIFICE CONTROL.
3. 60" MINIMUM DIA. MANHOLE REQUIRED FOR OUTLET PIPE LARGER THAN 18" OR INLET > 21".
4. NO STEPS REQUIRED

Pollution / Flow Control Manhole

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

AS BUILT

REGISTERED PROFESSIONAL ENGINEER — 57,978 — OREGON — Nov. 12, 2002 — DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
AS-BUILT 5-13-2005	LD

RENAISSANCE RIDGE 2

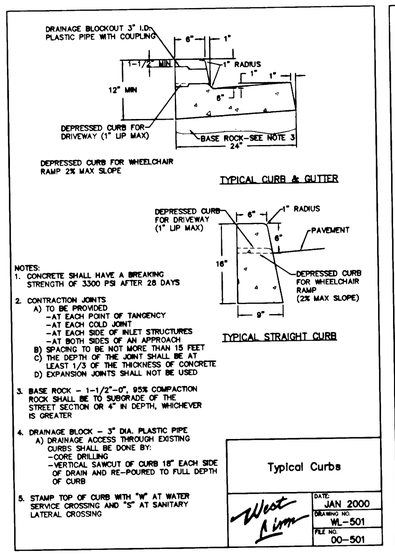
RENAISSANCE DEVELOPMENT

Details

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING: 03-106details.dwg

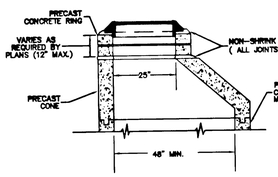
DATE	SEPT. 2004
SCALE	NOTED
DRAWN	DJ
JOB	SGL 03-106
SHEET	14 OF 16 SHEETS



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

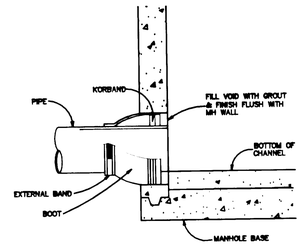
West Linn | DATE: JAN 2000 | DRAWING NO. WL-501 | FILE NO. 00-501



PRECAST RING EXTENSION FOR TYPICAL MANHOLE

Precast Ring Extension

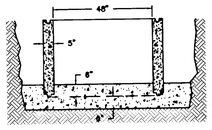
West Linn | DATE: JAN 2000 | DRAWING NO. WL-213 | FILE NO. 00-213



FLEXIBLE MANHOLE CONNECTION (KOR-N-SEAL OR EQUAL)

Flexible Manhole Connection

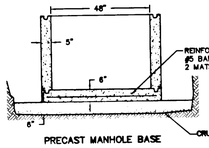
West Linn | DATE: JAN 2000 | DRAWING NO. WL-212 | FILE NO. 00-212



NOTE:
PIPE CONNECTIONS MUST HAVE FLEXIBLE CONNECTIONS

NOTE:
CONCRETE TO EXTEND 12" OUTSIDE OF MANHOLE WALL AND 6" ABOVE THE BOTTOM OF THE BASE SECTION

POURED IN PLACE MANHOLE BASE



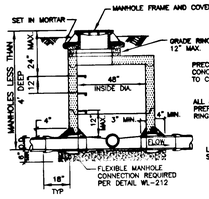
PRECAST MANHOLE BASE

NOTE:
USE 3300 PSI CONCRETE FOR EITHER MANHOLE BASE.

Manhole Base

West Linn | DATE: JAN 2000 | DRAWING NO. WL-211 | FILE NO. 00-211

NOTE:
MANHOLE LID TO BE 8" ABOVE FINISH GRADE IN EASEMENTS.

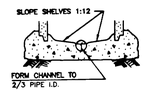


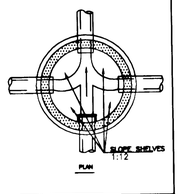
PRECAST SECTIONS AND POURED CONCRETE BASES SHALL CONFORM TO CITY STANDARD SPECIFICATIONS.

ALL JOINTS SHALL BE SEALED WITH PREFORMED PLASTIC OR RUBBER RING TO FORM A WATER TIGHT SEAL

LOCATED STEPS ON UPSTREAM SIDE OF MANHOLE

ALL MANHOLES SHALL HAVE A 12" MIN. 24" MAX. BOTTOM RISER, TO BE BEDDED AS THE CONCRETE IN THE BASE TAKES ITS INITIAL SET.



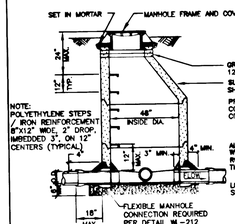


NOTE:
CHANNELS MUST BE ABLE TO PASS A 7"X30" CYLINDER INTO PIPES. SHELF SHALL NOT BE BELOW SPRING LINE OF THE PIPE.

Shallow Manhole for Less than 36" Pipe

West Linn | DATE: JAN 2000 | DRAWING NO. WL-208 | FILE NO. 00-208

NOTE:
MANHOLE LID TO BE 6" ABOVE FINISH GRADE IN EASEMENTS.



NOTE:
POLYETHYLENE STEPS / IRON REINFORCEMENT 8"X12" WIDE, 3" DROP, IMBEDDED 3" ON 12" CENTERS (TYPICAL)

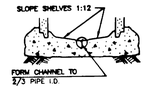
SLOPE OF PRECAST ECCENTRIC CONE SHALL FACE DOWN GRADE.

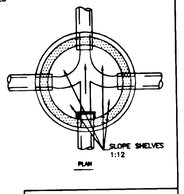
PRECAST SECTIONS AND POURED CONCRETE BASES SHALL CONFORM TO CITY STANDARD SPECIFICATIONS.

ALL JOINTS SHALL BE SEALED WITH WITH PREFORMED PLASTIC OR RUBBER RING TO FORM A WATER TIGHT SEAL.

LOCATE STEPS ON UPSTREAM SIDE OF MANHOLE.

MANHOLES SHALL HAVE A 12" MIN. 24" MAX. BOTTOM RISER, TO BE BEDDED IN THE CONCRETE AS THE BASE TAKES ITS INITIAL SET.





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

Standard Manhole for Less than 36" Pipe

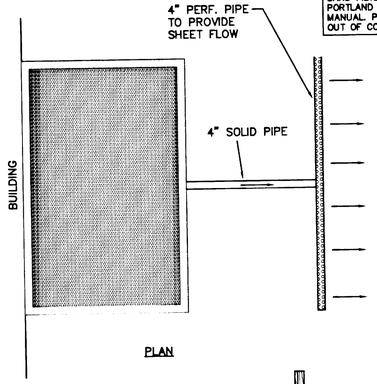
West Linn | DATE: JAN 2000 | DRAWING NO. WL-207 | FILE NO. 00-207

SAND FILTER SIZES

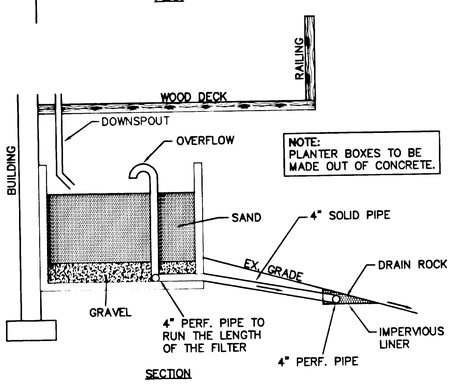
LOT	SAND FILTER SIZE
17	4'x13'
18	4'x12'
19	4'x8'
20	4'x8'

NOTE:
ALL PLANTER BOXES ARE SUBJECT TO ENGINEERING INSPECTIONS AND APPROVAL OWNER WILL ENTER INTO A MAINTENANCE AGREEMENT WITH THE CITY FOR ALL PRIVATE STORM DRAIN TREATMENT FACILITIES.

NOTE:
SAND FILTER TO COMPLY WITH CITY OF PORTLAND STORMWATER MANAGEMENT MANUAL. PLANTER BOX TO BE MADE OUT OF CONCRETE.



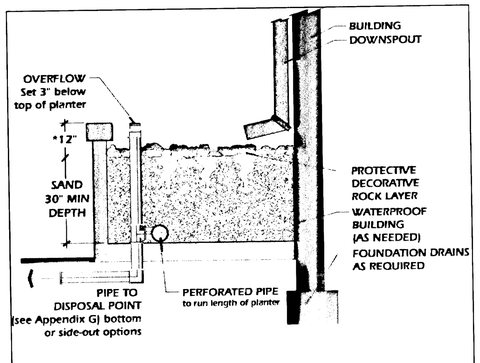
PLAN



NOTE:
PLANTER BOXES TO BE MADE OUT OF CONCRETE.

SECTION

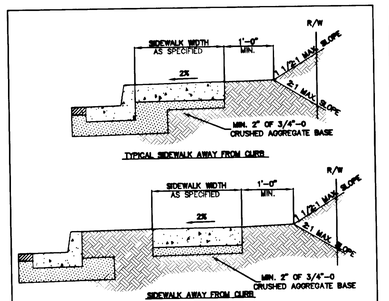
SAND FILTER DETAIL
N.T.S.



*Water reservoir depth may be reduced if planter surface area is increased.

Sand Filter Planter

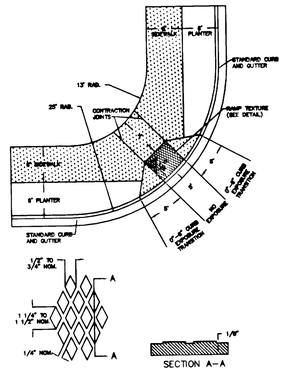
7/26/02



NOTES
1. CONCRETE SHALL BE 3000 PSI AT 28 DAYS, 6 SACK MIX, SLUMP RANGE OF 1 1/2" TO 3".
2. PANEL LENGTH 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 15 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 LIEU 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 6" 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

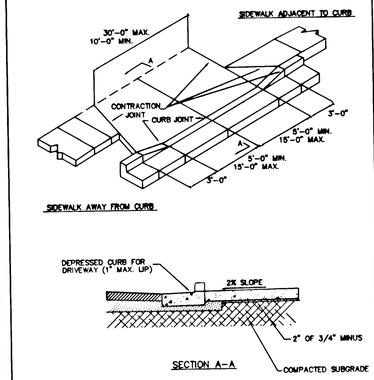


RAMP TEXTURE DETAIL

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.
2. NO ABOVE GROUND UTILITIES ARE PERMITTED WITHIN RAMP AREA.
3. RAMP SURFACE SHALL BE TEXTURED WITH RAISED DIAMOND TEXTURE. TEXTURING SHALL BE DONE WITH AN EXPANDED METAL GRATE STAMPED INTO THE CONCRETE.
4. CONCRETE STRENGTH SHALL BE 3300 PSI.
5. PLACE CONTRACTION JOINTS AS SHOWN ABOVE.
6. WHEN EITHER OPPOSING CURB RAMP HAS AN EXISTING TWIN RAMP, USE DETAIL WL-507B.

Single Curb Ramp (For Use At Intersection of (2) Local Streets Only)

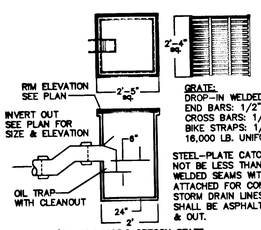
West Linn | DATE: JAN 2000 | DRAWING NO. WL-507A | FILE NO. 00-507A



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



GRATE:
DROP-IN WELDED STEEL
END BARS: 1/2" X 2"
CROSS BARS: 1/2" X 2" @ 2" O.C.
BIKE STRAPS: 1/8" X 1"
16,000 LB. UNIFORM LOAD CAPACITY

STEEL-PLATE CATCHBASINS SHALL NOT BE LESS THAN 10 GAUGE WITH WELDED SEAMS WITH SLEEVES ATTACHED FOR CONNECTING THE STORM DRAIN LINES. CATCHBASINS SHALL BE ASPHALT COATED INSIDE & OUT.

(SECTION 1108.0 OREGON STATE PLUMBING SPECIALTY CODE)

CATCHBASIN DETAIL IN PAVED AREAS
N.T.S.

5.3.4 Grassy Swale Landscaping Requirements

Plantings shall be designed at the following quantities per 200 square feet of facility area. Facility area is equivalent to the area of the swale calculated from Form SIM. (Note: Facilities smaller than 200 square feet shall have a minimum of one tree per facility.):

1 Evergreen or Deciduous tree:
Evergreen trees: Minimum height: 6 feet.
Deciduous trees: Minimum caliper: 1 ½ inches at 6 inches above base..

Grass: Seed or sod is required to completely cover the grassy swale bottom and side slopes.
(Shrubs are optional)

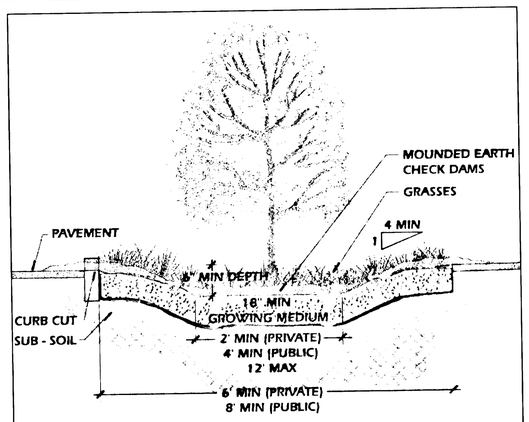
5.4.4 Grassy Swale Recommended Seed Mixes

The grass mixes recommended below have been reviewed for desirable characteristics of swale grasses. For BES-maintained facilities, native grass mixes will be required.

NATIVE SEED MIX
Pacific Northwest Natives, Willamette Valley Region Bioswale Native Mixture, percentages by weight

Meadow Barley	20.0%
Blue Wildrye	20.0%
Sitka or California Brome	20.0%
American Sloughgrass	20.0%
Water Foxtail	10.0%
Spike Bentgrass	5.0%
Tufted Hairgrass	5.0%

Seed this mixture at 10-30 lbs per acre on well-prepared soil. Drill seed if possible to improve seed soil contact. Roll soil to firm up seedbed pre and post planting. If you hydroseed or broadcast seed, increase seeding rate about 30%. Harrow seed into soil with rake, chain or rug mat system or cover exposed seed with native straw or mulch (free of weed seed) to improve germination. This mixture will provide excellent seedling establishment on moderately eroded sites. Meadow barley, blue wildrye, American sloughgrass and sitka brome are short-lived large seeded species.



Grassy Swale

7/26/02

AS BUILT

REGISTERED PROFESSIONAL ENGINEER
OREGON
Nov. 12, 2002
DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

REVISIONS	BY
AS-BUILT 5-13-2005	LD

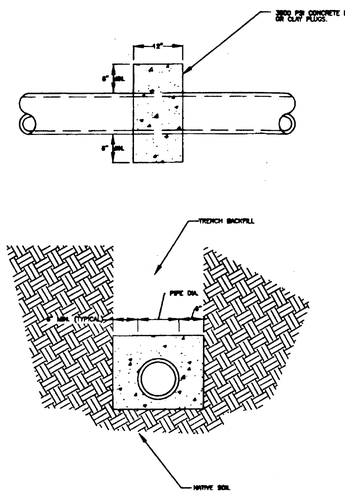
RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

Details

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING: 03-106details.dwg

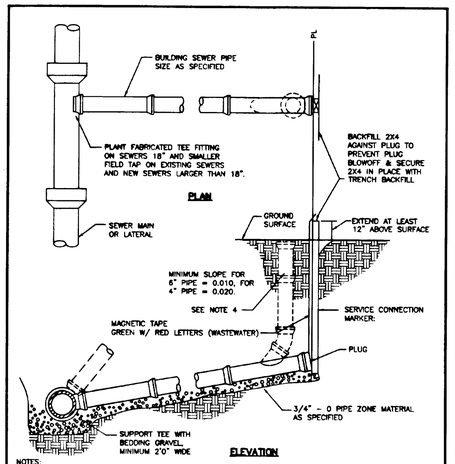
DATE	SEPT. 2004
SCALE	NOTED
DRAWN	DJ
JOB	SGL 03-106
SHEET	15 OF 16 SHEETS



NTS

DRAWN BY RRG

EXHIBIT 3-8
POND INLET / OUTLET
ANTI-SEEPAGE COLLAR



NOTES:

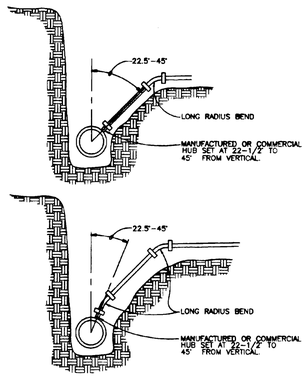
1. PIPE AND FITTINGS SHALL BE COMPATIBLE. ONLY MANUFACTURED FITTINGS SHALL BE USED.
2. MINIMUM DEPTH AT RIGHT OF WAY OR EASEMENT LINE SHALL BE 4 FEET.
3. MARKER POSTS AND BLOCKING SHALL BE TREATED WOOD. POST SHALL BE 2" x 4" FIR. POST TO EXTEND 12" MINIMUM ABOVE FINISH GRADE AND EXPOSED AREA SHALL BE PAINTED WHITE.
4. WHEN REQUIRED, A CLEANOUT SHALL BE INSTALLED.
5. LAY BUILDING SEWER AT MAX. 45° FROM HORIZONTAL TO ACHIEVE REQUIRED DEPTH AT PROPERTY LINE WHEN MINIMUM SLOPE RESULTS IN EXCESSIVE DEPTH.

APWA OREGON CHAPTER

SHALLOW TRENCH SERVICE CONNECTION, BLOCKING, AND MARKERS

DATE: AUG 1996 | DRAWING NO. 308

FILENAME: APWA0023.DWG



NOTES:

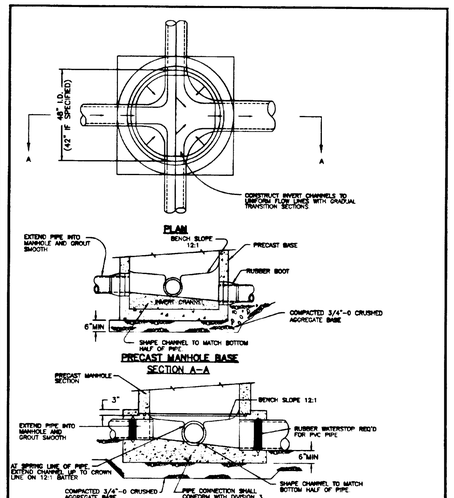
1. PIPE AND FITTINGS SHALL BE COMPATIBLE. ONLY MANUFACTURED FITTINGS SHALL BE USED.
2. MINIMUM DEPTH AT RIGHT OF WAY OR EASEMENT LINE SHALL BE 4 FEET.
3. PLUGGING, BLOCKING, AND MARKING OF UNCONNECTED SERVICES SHALL CONFORM TO SHALLOW TRENCH SERVICE CONNECTION DRAWING.
4. VERTICAL TRENCH WALLS ARE REQUIRED. IF IT IS NOT POSSIBLE TO MAINTAIN VERTICAL TRENCH WALLS, USE ALTERNATE CONNECTION METHOD TO MAINTAIN 6" MAXIMUM DISTANCE BETWEEN RISER PIPE AND TRENCH WALLS. REPLACE ALL EXCAVATED OR DISTURBED MATERIAL WITH FULL DEPTH GRANULAR BACKFILL COMPACTED TO 95% RELATIVE DENSITY.
5. WHERE DEEP CONNECTION IS AT AN ANGLE LESS THAN 45° FROM VERTICAL, DUCTILE IRON PIPE AND FITTINGS SHOULD BE USED.

APWA OREGON CHAPTER

TYPICAL DEEP TRENCH SERVICE CONNECTION

DATE: MAY 1992 | DRAWING NO. 309

FILENAME: APWA0024.DWG



CAST -IN-PLACE MANHOLE BASE
SECTION A-A

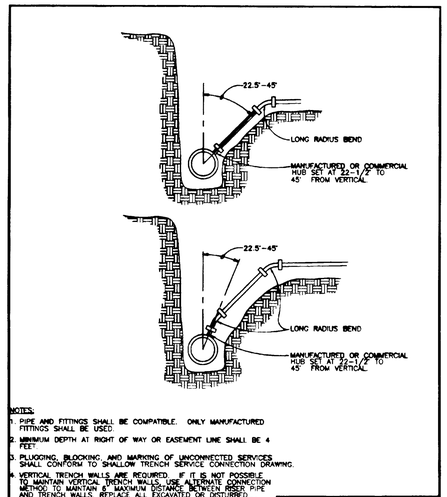
NOTES:

1. CONCRETE SHALL BE CLASS 3000.
2. CHANNELS SHALL BE CONSTRUCTED TO PROVIDE SMOOTH SLOPES AND RADII TO OUTLET PIPE.
3. BASES MAY BE PRECAST OR POURED IN PLACE.
4. THIS MANHOLE BASE SECTION SHALL BE USED FOR PIPE SIZES UP TO 24".
5. USE RUBBER BOOTS IF PIPE IS FLEXIBLE. BOOTS MAY BE KOR-N-SEAL OR EQUIVALENT.

APWA OREGON CHAPTER

MANHOLE BASE SECTION

DATE: AUG 1996 | DRAWING NO. 316



NOTES:

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5. WHERE DEEP CONNECTION IS AT AN ANGLE LESS THAN 45° FROM VERTICAL, DUCTILE IRON PIPE AND FITTINGS SHOULD BE USED.

APWA OREGON CHAPTER

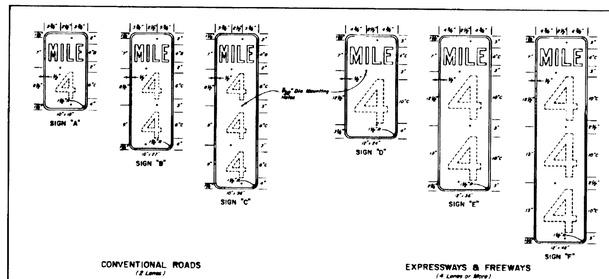
TYPICAL DEEP TRENCH SERVICE CONNECTION

DATE: MAY 1992 | DRAWING NO. 309

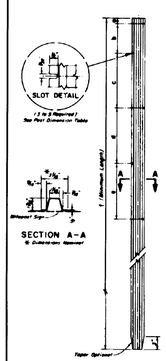
FILENAME: APWA0024.DWG

REVISIONS	BY
AS-BUILT 5-13-2005	LD

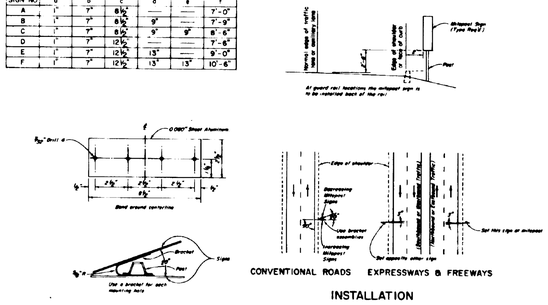
NOTE:
OPEN SPACE MARKERS TO BE PER SIGN "A" DETAIL. TWO SIGNS TO BE INSTALLED ON EACH POST. SIGN FACING OPEN SPACE TO READ "END PUBLIC OPEN SPACE". SIGN FACING LOTS TO READ "BEGIN PUBLIC OPEN SPACE"



MILEPOST SIGN DETAILS



POST DIMENSION TABLE						
SIGN NO	a	b	c	d	e	f
A	1"	7"	8½"	—	—	7'-0"
B	1"	7"	8½"	9"	—	7'-9"
C	1"	7"	8½"	9"	9"	8'-6"
D	1"	7"	12½"	—	—	7'-6"
E	1"	7"	12½"	13"	—	9'-0"
F	1"	7"	12½"	13"	13"	10'-6"



GENERAL NOTES

1. SIGNS
   (a) Signs shall be fabricated from sheet aluminum with a nominal thickness of 0.063 inches and shall conform to subsections 645.33(a) and 761.11 of the current Oregon State Highway Division Standard Specifications for Highway Construction.
   (b) Signs shall have silver-white reflectorized legend and border on a green reflectorized background, and shall conform to subsections 646.25, 745.26(c)3 and 761.13.
   (c) The Federal Highway Administration's standard rounded capital letter alphabet shall be used.
   (d) The corners of the signs shall be rounded to match the border.
2. POSTS AND BRACKET ASSEMBLIES
   (a) The nominal weight of the post shall be two pounds per lineal foot and shall conform to subsection 711.01.
   (b) Bracket assemblies shall be fabricated from 0.080 inch sheet aluminum and shall conform to subsection 761.11.
3. INSTALLATION
   (a) Mileposts should normally be installed at the location detailed on this sheet. However, where delineators are installed along the roadway, the mileposts should be in line with the delineators and the bottoms of the delineators and mileposts should be at the same height above the edge of travelled way.
   (b) If roadway conditions prevent locating the milepost sign at the milepoint, it may be moved up to 50 feet in either direction. If it cannot be located within this variation, it should be omitted.
   (c) Signs shall be mounted to posts with 3/16" diameter aluminum blind rivets that conform to subsection 761.27.
   (d) If the milepost sign is located within 25 feet of a delineator, the delineator should be moved or deleted.
   (e) Installation of the post and sign panel shall conform to subsection 673.32.
   (f) Offset mileposts four feet in areas of heavy snow removal operations.

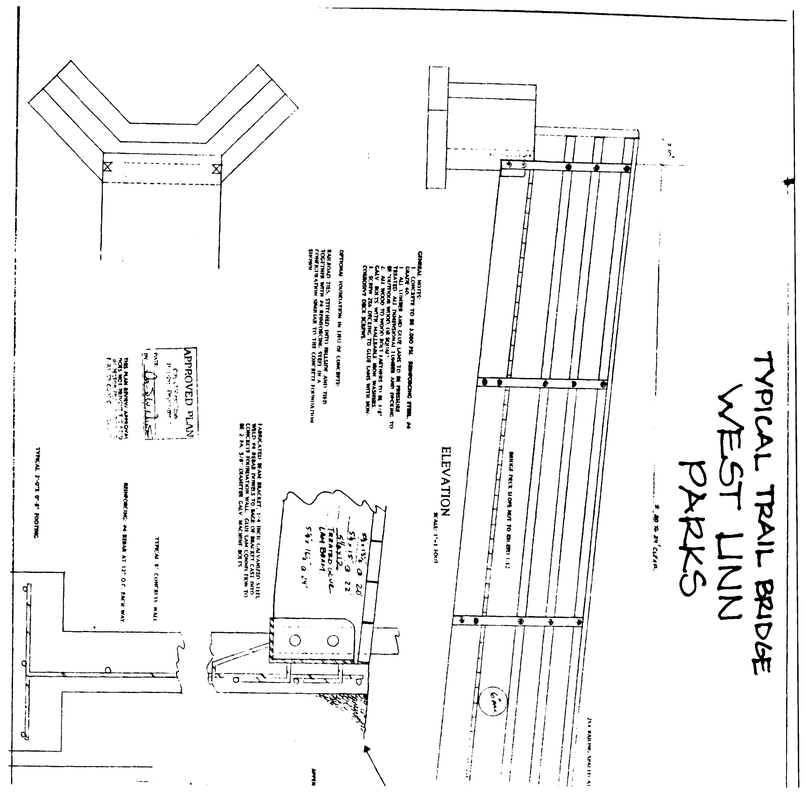
DATE	INITIAL	DATE	REVISION
8-1-96			Original Drawing
8-1-96			Sign Material is Alum. (1.1)

OREGON STATE HIGHWAY DIVISION
TRAFFIC ENGINEERING SECTION

STANDARD SIGNING DETAILS MILEPOSTS

DATE: November, 1971

S-17



AS BUILT

REGISTERED PROFESSIONAL ENGINEER
97,975
OREGON
Nov. 12, 2002
DOUG J. JOHNSON

EXPIRES: 6/30/05
6/9/05

RENAISSANCE RIDGE 2
RENAISSANCE DEVELOPMENT

Details

SISUL ENGINEERING
375 PORTLAND AVENUE
GLADSTONE, OREGON 97027
(503) 657-0188

DRAWING: 03-106details.dwg

DATE	OCT. 2004
SCALE	NOTED
DRAWN	DJ
JOB	SGL 03-106
SHEET	16
OF	16 SHEETS