




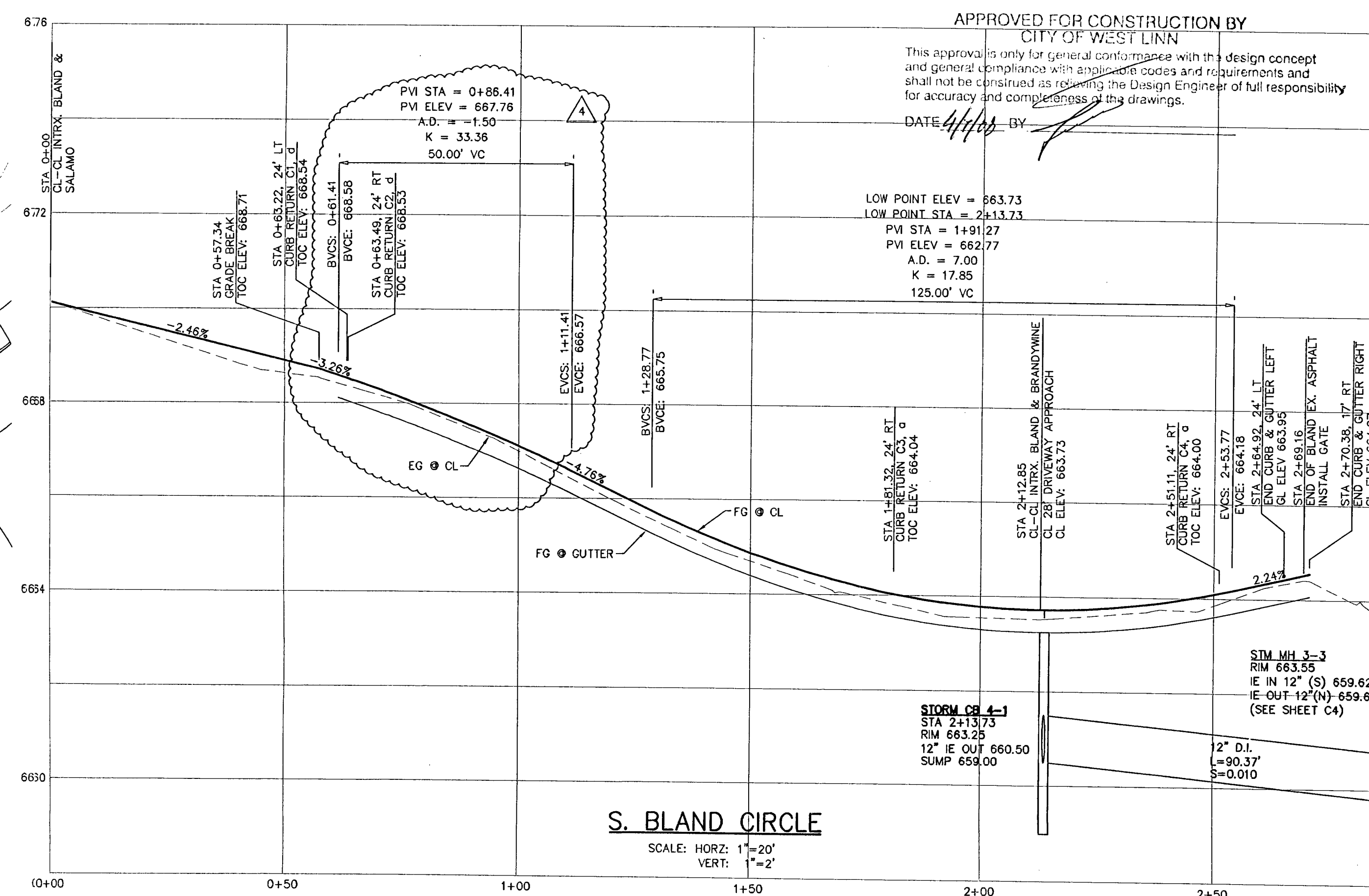
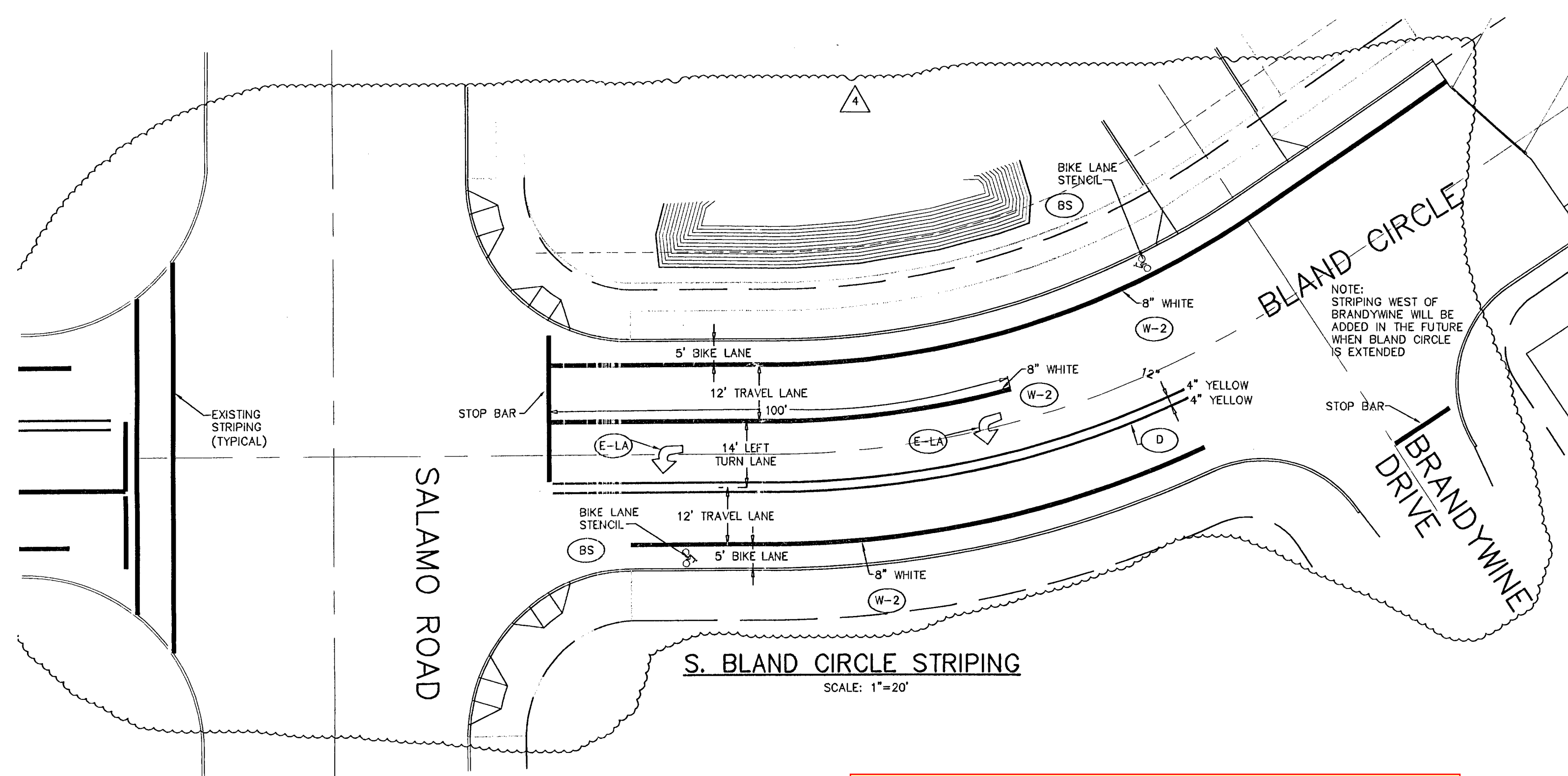
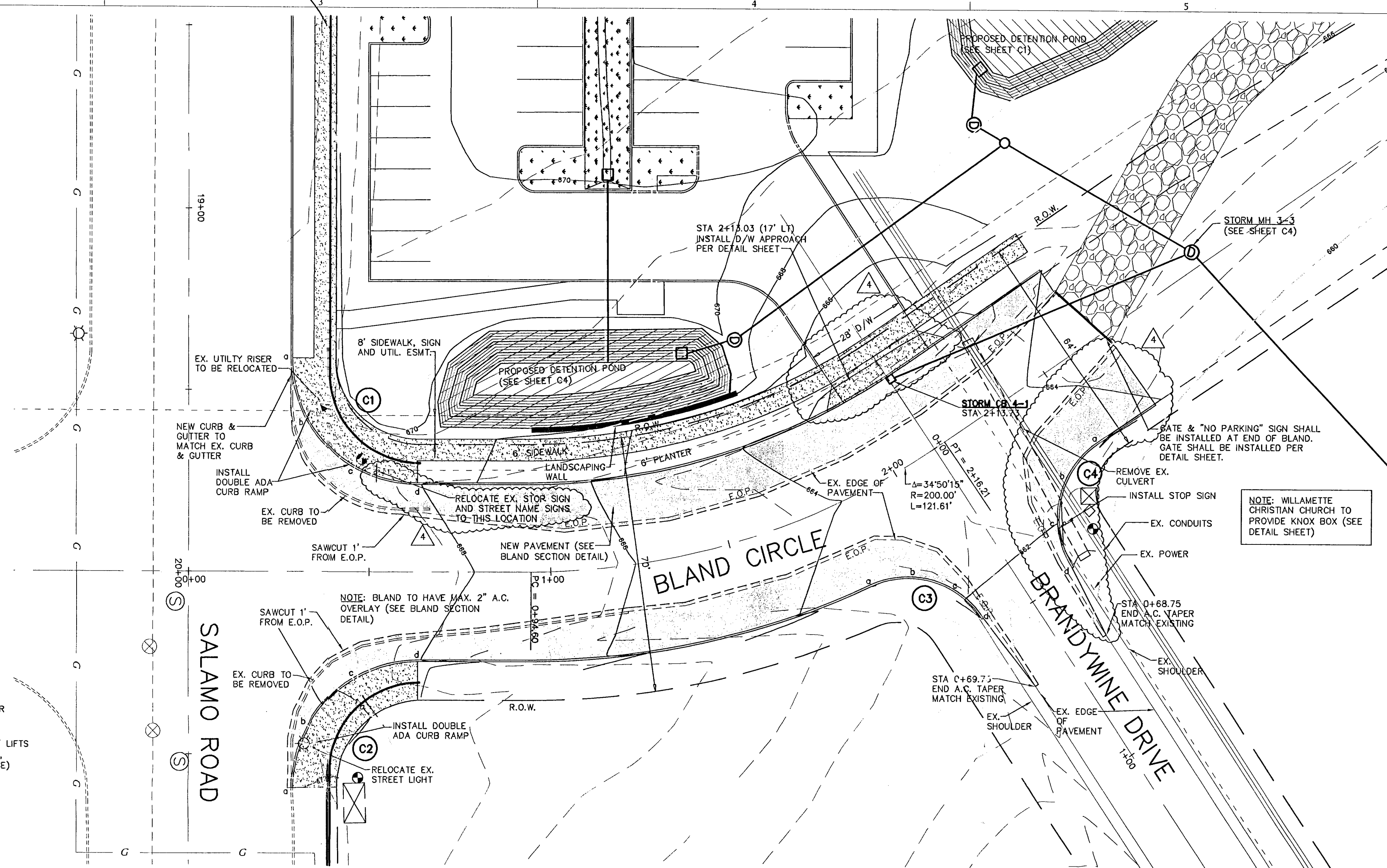
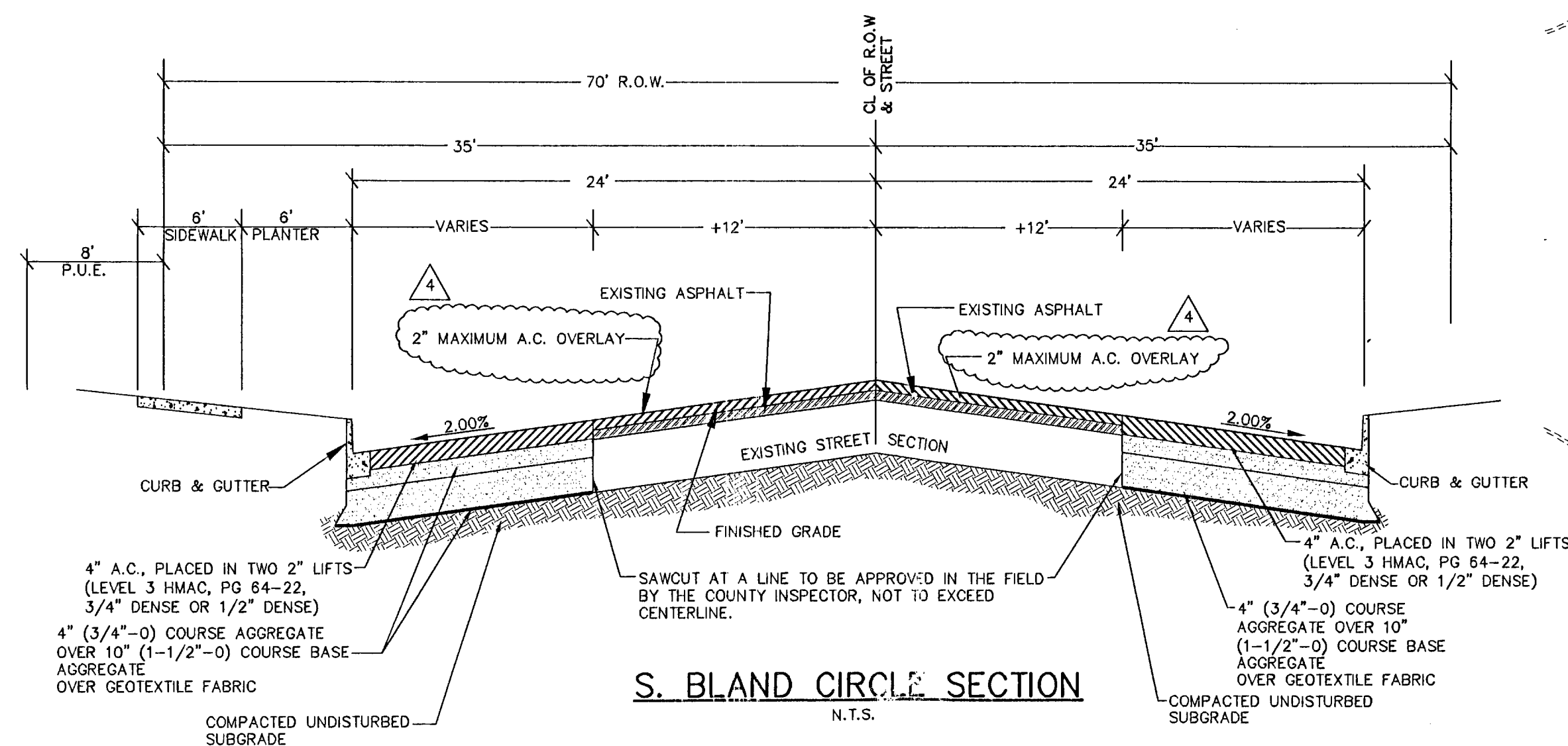


CURVE	DATA	a	b	c	d
	$\Delta=90^{\circ}09'22"$ $R=35.00'$ $L=55.07'$	TOC 668.80 PC SALAMO ROAD STA 19+41.05	TOC 669.16	TOC 669.07	TOC 668.54 PT BLAND CIRCLE STA 0+63.22
	$\Delta=90^{\circ}01'14"$ $R=35.00'$ $L=55.15'$	TOC 671.94 PC SALAMO ROAD STA 20+59.31	TOC 671.12	TOC 669.45	TOC 668.53 PT BLAND CIRCLE STA 0+40
	$\Delta=80^{\circ}41'56"$ $R=25.00'$ $L=35.21'$	TOC 664.04 PC BLAND CIRCLE STA 1+81.32	TOC 663.61	TOC 662.83	TOC 661.95 PT BRANDYWINE STA 0+46.22
	$\Delta=88^{\circ}58'34"$ $R=25.00'$ $L=38.82'$	<div style="border: 1px solid black; border-radius: 50%; padding: 10px; display: inline-block;">           TOC 664.00 PC BLAND CIRCLE STA 2+51.11   </div>	TOC 663.51	TOC 663.02	TOC 662.10 PT BRANDYWINE STA 0+41.31



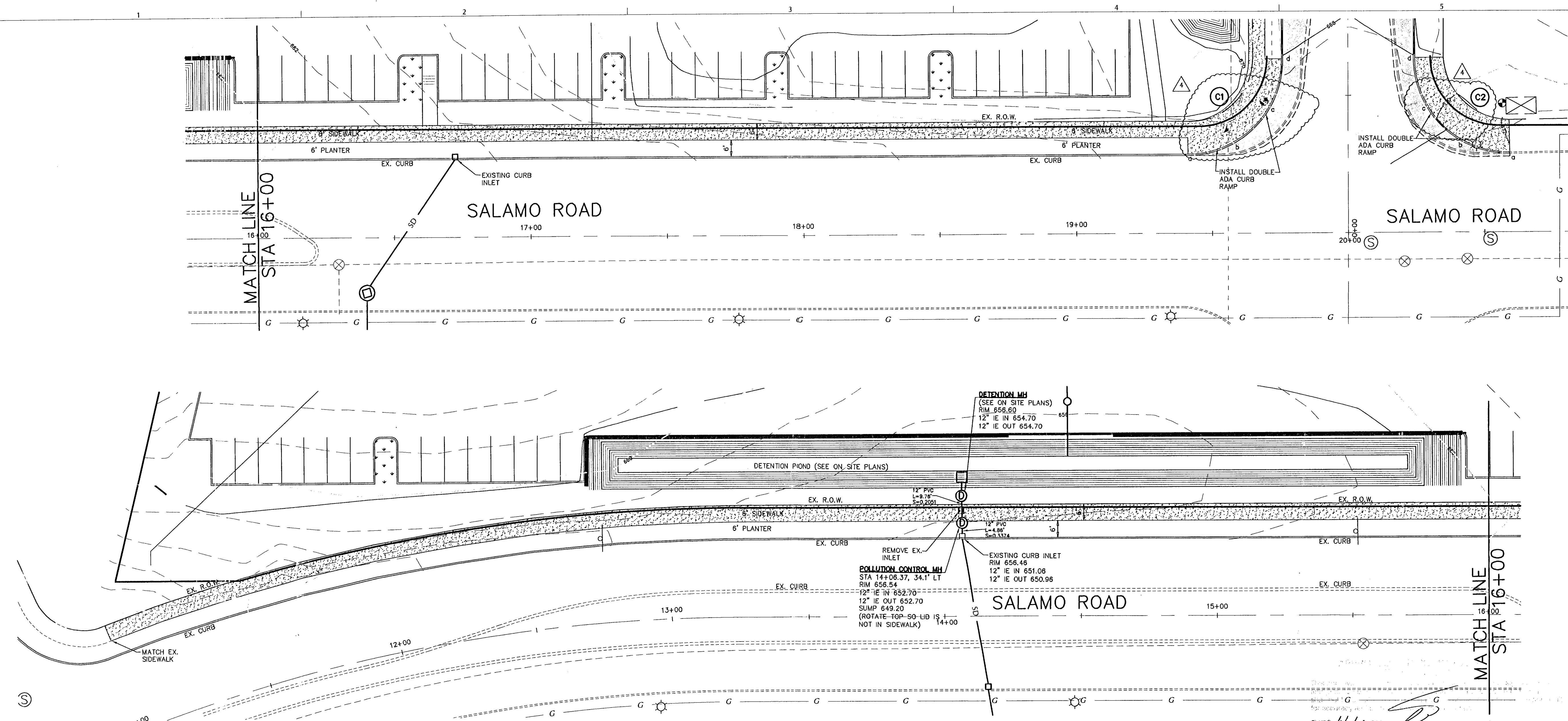
APPROVED PLANS 4/7/2008  
NOT AS-BUILT DRAWINGS



# SALAMO ROAD PLAN

[illegible]

SHEET  
C12  
OF 14 SHEETS



**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 ASTM A151 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 3300 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 with proper 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 12 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% minimum density per ASTM D1557-180 (Proctor) 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 pointed 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 summed Gibson Steel pre-fabricated catchbasin or approved equal.

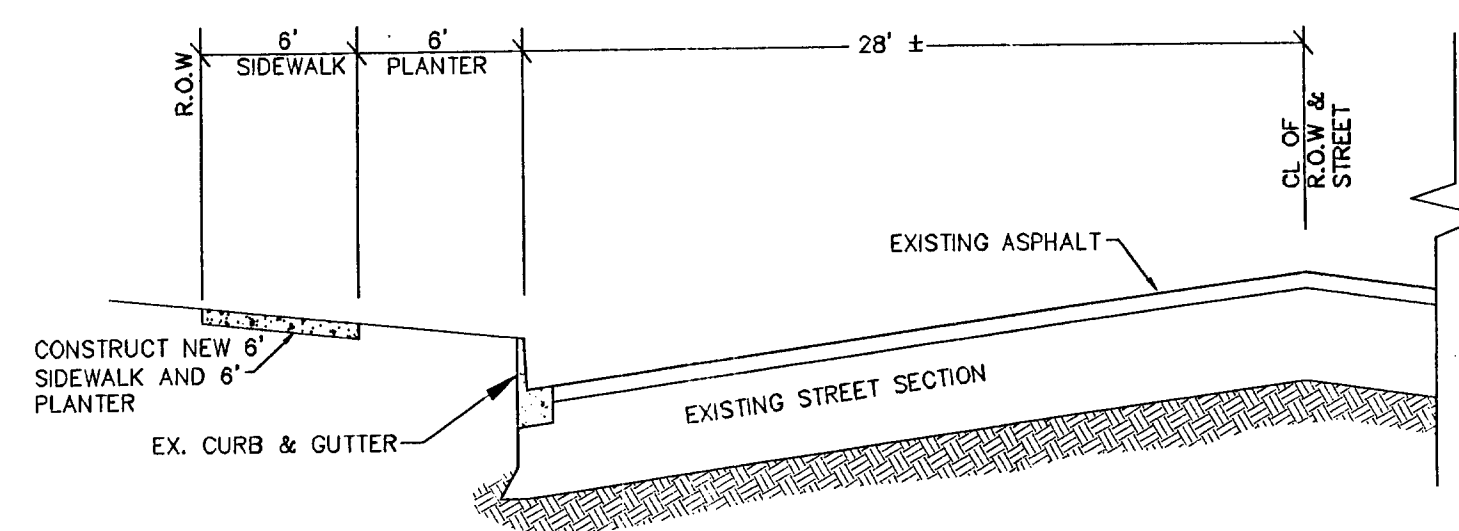
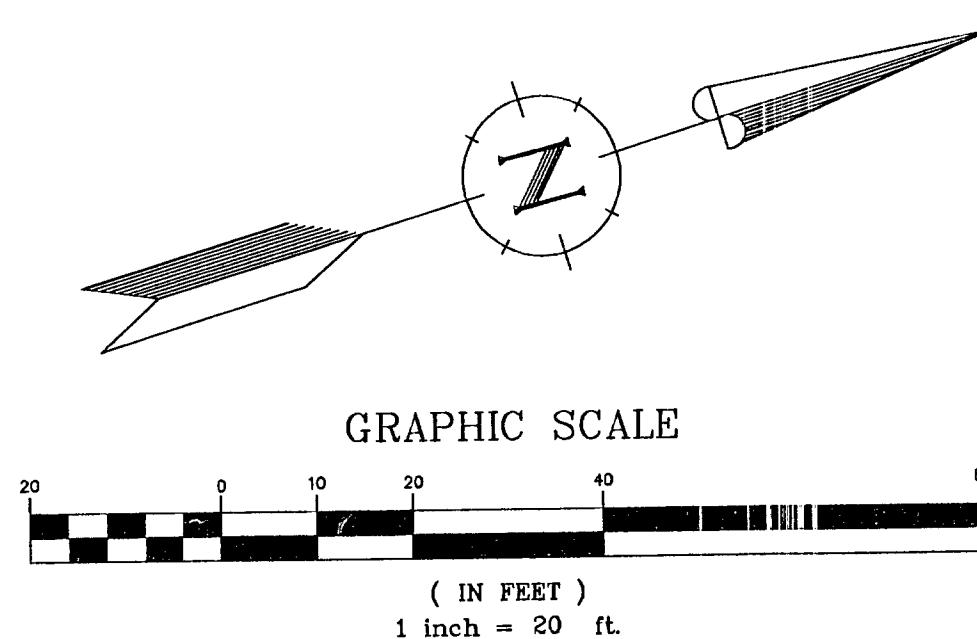
WEST LINN NOTES:

General Notes:

1. All references to City design standards refer to the current standards.
2. The Design Engineer will be responsible for inspection of the proposed improvements with oversight from the City's Public Works and Engineering staff.
3. 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
4. The contractor is to receive the approval of the Engineer and the City of any proposed changes to the plans or standard requirements
5. A Building Department Plumbing Permit is required for utilities beyond the first cleanout or meter on private property.
6. 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
7. 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.
8. A City representative and a representative of the engineer must be present at all testing and the City shall be furnished a copy of all test results. If engineer or City do not witness testing, contractor will be required to re-test.
9. All fees for street trees shall be paid to the City of West Linn Parks and Recreation Department
10. No building permits will be given until the improvements have been accepted by the City as substantially complete.
11. Contractor shall verify depth and location of existing utilities and points of connection prior to ordering manholes. If discrepancies are found, contractor shall notify the Engineer.
12. 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
13. A plumbing permit from the City of West Linn Building Department is required for storm drains beyond the first cleanout.
14. All materials, installation, tests, and inspections to be in strict accordance with the City of West Linn Standard Construction Specifications.

**Streets:**

1. New street sections are to be cleared of all surface vegetation and other miscellaneous structures or materials. Grub and 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 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 2" 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. Horizontal ramps will 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 curbline 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. Contractor to pay permit fees or other similar fees or bonding required of the contractor will be the contractor's responsibility to obtain
8. Monument boxes will be required at all street centerline intersections, points of curvature and points of tangency. Boxes shall conform to Clackamas County Surveyor requirements.



SALAMO ROAD SECTION  
N.T.S.

APPROVED PLANS 4/7/2008  
NOT AS-BUILT DRAWINGS



## CLACKAMAS COUNTY NOTES:

### Storm Drains:

- Twelve inch and larger storm drain pipe shall be Class 3 non-reinforced concrete pipe conforming to ASTM C14, seamless PVC pipe conforming to ASTM F794, or HDPE pipe conforming to AASHTO M-294s (with watertight gaskets) unless otherwise specifically noted on the plan or profile. Where required, reinforced concrete pipe shall conform to ASTM C-78, Class IV unless otherwise noted on the plan. Six or eight inch storm drain pipe shall conform to ASTM D-3034 PVC pipe. Watertight gaskets are required on all pipe types. All storm pipe line shall be watertight.
- All storm drain pipe shall have rubber gaskets. All storm drain pipe and related connections to catch basins, manholes and other related structures shall be water tight as per Clackamas County Water Environmental Services.
- Orifice risers and structures in detention facilities shall be constructed so that the overflow riser and orifice structure is removable for cleaning and maintenance. However, where the riser structure connects to downstream piping a water-tight fitting must be made by gasket or other means to ensure water does not by-pass the overflow riser and orifice structure. For pipe or structure types where a removable riser structure is not possible or practical, approval for an alternate method must be approved by the Clackamas County Water Environmental Services.
- Catch basins shall be poured in place concrete with a minimum compressive strength of 3000 psi. Frame and grate shall be fabricated of structural steel, ASTM A-7, A-36, A-273. All catchbasins shall be GB-2 or larger. Sumps are required.
- Manhole base may be poured in place or precast concrete. 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. Some or all of the storm drain manholes required will be oversized manholes. Check with manhole manufacturer for actual sized needed for type of pipe to be used.
- Grout backfill is to be compacted to 95% maximum dry density per AASHTO T-99 test method and native material shall be compacted to 85% of in place dry density of surrounding soil.
- If during the course of installing the underground utilities drain tiles are intercepted, the tiles shall be piped directly into the storm drain system.
- Riprap where not specified on the plans is to be class 50 in accordance with Oregon State Highway Division specification 714.
- All storm drain lines shall be 1/4" prior to acceptance by Clackamas County Water Environmental Services, Storm Water Management Division. A copy of video report and TV VCR tape shall be submitted to the Clackamas County Water Environmental Services for review and approval.
- Contractor shall perform deflection test on all PVC and HDPE storm drain pipe per Water Environmental Services. Submit copy of test results to Clackamas County Water Environmental Services for review and approval.
- All materials, installation, tests and inspections to be made in strict accordance with Clackamas County Department of Transportation and Development Services, Standards and Codes.

### Streets:

- 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.
- Immediately following the grading operations proof roll subgrade areas to achieve 95% of maximum density for a 6" depth per AASHTO T-99 test method. Embankments or fills are to be constructed in 6" maximum lifts with each lift being compacted to 95% maximum dry density prior to proceeding with the next lift. Areas to receive fill are to be inspected by County of Clackamas prior to placement of the fill. Contractor shall provide completion test reports on fills.
- Aggregate base rock shall be 1"-2" crushed rock as per Oregon State Highway Division specifications. Aggregate base is to be compacted in 6" maximum lifts to 95% of maximum dry density per AASHTO T-99 test method. County of Clackamas requires a proof roll with a loaded 10 yard dump truck of the subgrade prior to placement of the rock and again after placement of the base rock and prior to paving.
- Both lifts of asphalt concrete shall be as per 0007/APWA specifications. The second A.C. shall be placed prior to project completion.
- Construct the curb and gutter using Class 'A' 3300 psi concrete with maximum 1-1/2" aggregate size. Expansion joints shall be installed at 45' maximum on centers, contraction joints at 15' maximum on centers.
- Inspection of subgrade, base rock, and A.C. will be made by the developer's geotechnical engineer.
- Monument box locations have been noted on the plans. The contractor shall install the monument boxes in street areas where marked by the surveyor after the first lift of asphalt is placed.
- All materials, installation, tests, and inspections are to be in strict accordance with the City of Happy Valley Standards and Codes.
- A street construction encroachment permit must be acquired from City of Happy Valley. Construction permit fees or other similar fees or bonding required of the contractor will be the contractor's responsibility to obtain.

### General Notes:

- All work and materials shall conform to these plans and the applicable provisions of the City of Happy Valley, 0007/APWA Standards.
- In order to protect underground facilities, excavators performing the work set forth on these plans must comply with the provisions of ORS 757.541 to 757.571 (requires contractor to notify utilities at least 48 hours, but no more than 10 business days prior to any excavation).
- The location of existing utilities shown on the plans is approximate and shown for information purposes only. The contractor shall have all utilities located prior to commencing construction. Notify Engineer of any discrepancies prior to construction. Additional underground utilities may exist.
- Vertical Datum: Basis of elevation: Clackamas County USBT 2002-093 SE Corner of Section 34 T.1S., R.2E. - A bronze disk in monument well EL 396.8 (NGVD 1988)
- Topographic Survey by: Griffin Land Surveying.
- Trenches within the right-of-way shall be backfilled with approved granular material conforming to APWA Class B Specifications. Compaction tests are required. Contractor to send copies of compaction tests to the City.
- Trenches outside of right-of-way may be backfilled in accordance with native material and compaction specifications for APWA Class A Backfill.
- Vegetation and topsoil are to be stripped to mineral earth (and inspected by the Geotechnical Engineer) prior to placement of fill or base materials.
- In addition to any required compaction testing, the City of Happy Valley requires a proof roll with a fully loaded 10-yard dump truck to check subgrade compaction prior to placement of rock subbase and again at the completion of the placement of the base rock prior to paving the first lift of asphalt.
- Asphaltic concrete mix is to be batched from a mix formula approved by OSHD for material used. Paving contractor shall provide a certificate of compliance from asphalt pavement plant.
- Subsequent settlement or cracking of finished surface within the warranty period shall be considered to be a failure of the subgrade and repaired at no cost to the City of Happy Valley.
- The contractor shall control traffic through the project site in conformance with the latest edition of "Manual on Uniform Traffic Control Devices," "Oregon Supplements". The contractor shall at all times maintain local access for homeowners along the project site.
- The contractor and/or sub-contractor shall have a minimum of one (1) set of approved construction plans on the job site at all times during the construction phases.
- Contractor shall remove and dispose of trees, stumps, brush, roots, topsoil and other material encountered during the construction of the roadway and where indicated on the plans. Material shall be disposed of in accordance with local, regional and state regulations at facilities authorized to accept such material.
- Contractor shall coordinate and schedule all earthwork, trench backfill and road construction compaction tests and geotechnical reviews with the soils testing lab as required for acceptance of project work by the City of Happy Valley.
- Contractor shall carefully maintain benchmarks, property corners, monuments, and other reference points if they are disturbed or destroyed by construction activities, the Contractor shall notify the Engineer and pay for their replacement by employing a professional land surveyor to reset property corners & other such monuments.
- Excess Excavated Material shall be hauled and disposed of at sites provided by the Owner and approved pursuant to a City of Happy Valley grading permit. Fill sites shall be leveled and graded to drain. The Contractor shall correct any fill related conditions.
- Prior to beginning work, the Contractor shall present a list at the Preconstruction meeting of Subcontractors, a project schedule, a traffic control plan and a list of at least 3 people responsible for maintaining traffic control during non-work periods.
- Final Cleanup - Prior to final acceptance and payment, the Contractor shall clean the work site and adjacent areas of any debris, discarded asphaltic concrete material or other items deposited by the Contractor's personnel during the performance of this contract.
- Contact the City of Happy Valley for inspection and approval of the on-site ESC measures prior to beginning work.

### NOTES

- SPECIFICATIONS FOR CONCRETE AND MISC. MATERIALS USED IN CONSTRUCTION SHALL CONFORM TO CURRENT APWA STANDARD SPECIFICATIONS.
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3300 PSI IN 28 DAYS, 2" TO 4" SLUMP.
- NOT TO EXCEED.
- CONTRACTION JOINTS TO BE CONSTRUCTED AT INTERVALS.
- 4" PLASTIC PIPE SHALL HAVE A BELL OR A 3" EXTENSION, FOR FUTURE.
- CONTRACTION JOINTS, MAX 45' SPACING AND AT BEGINNING AND END OF CURVES OR AS DIRECTED.
- CONTRACTION JOINTS, MAX 15' SPACING AND AT LOCATIONS AS DIRECTED.

CLACKAMAS COUNTY  
DEPARTMENT OF  
TRANSPORTATION  
AND  
DEVELOPMENT

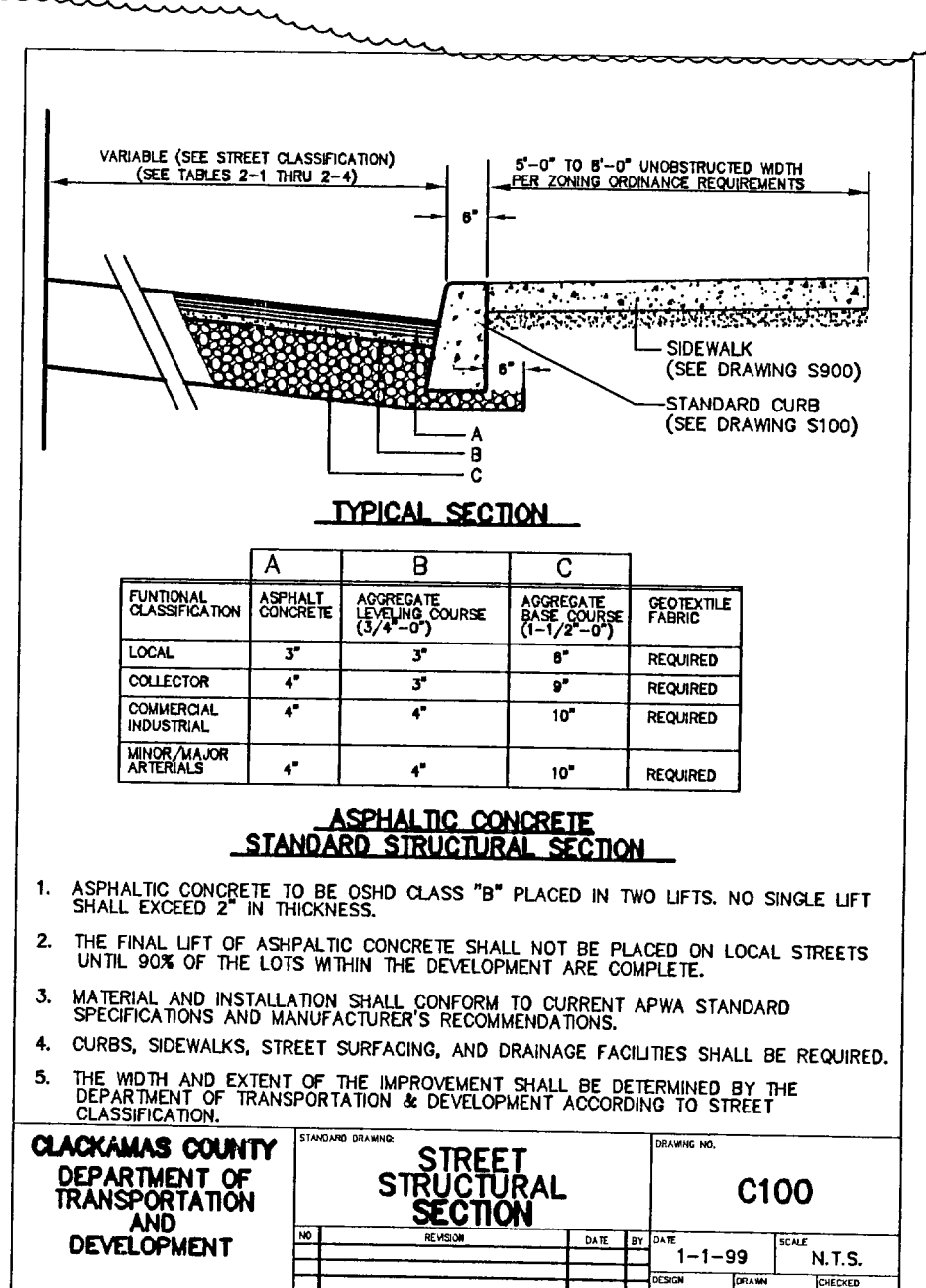
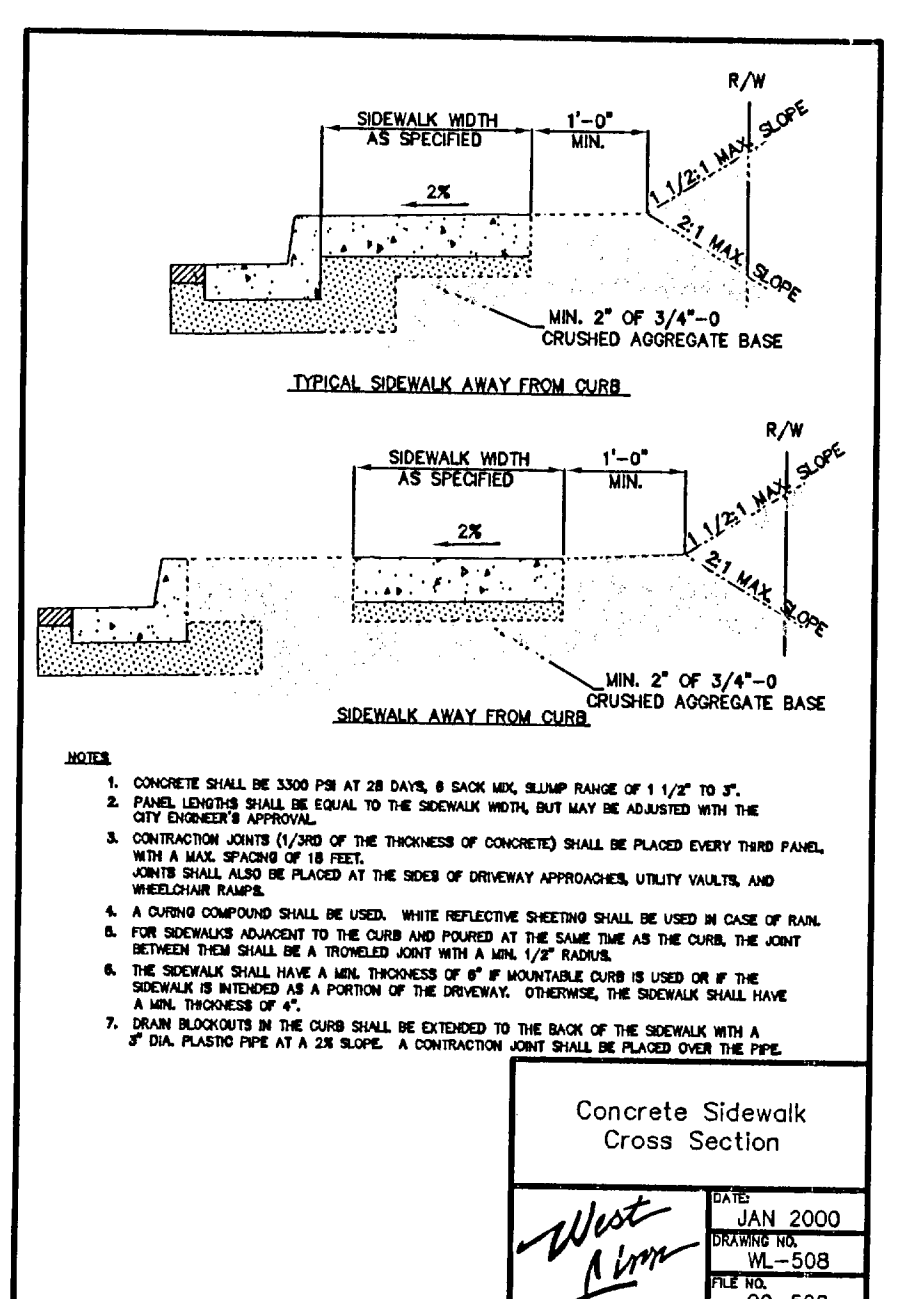
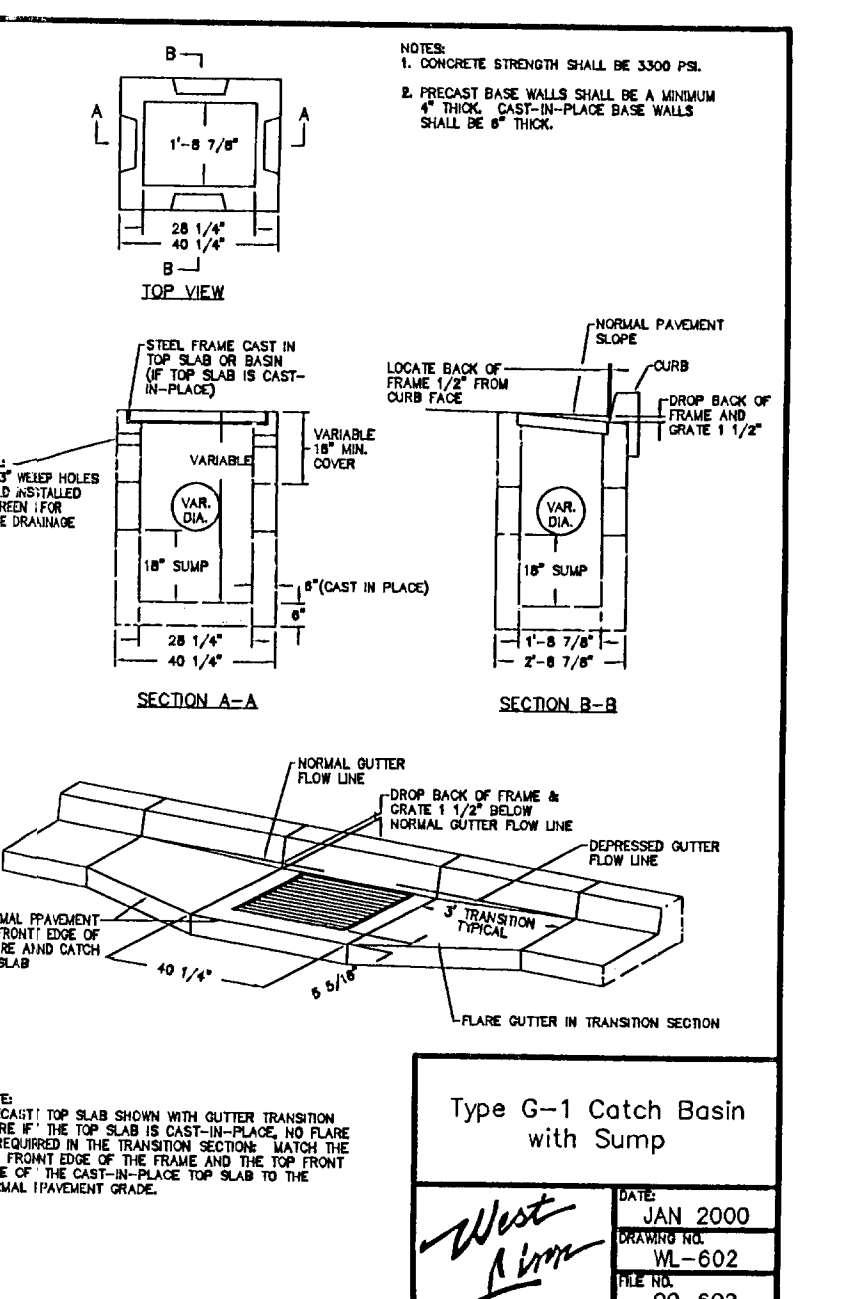
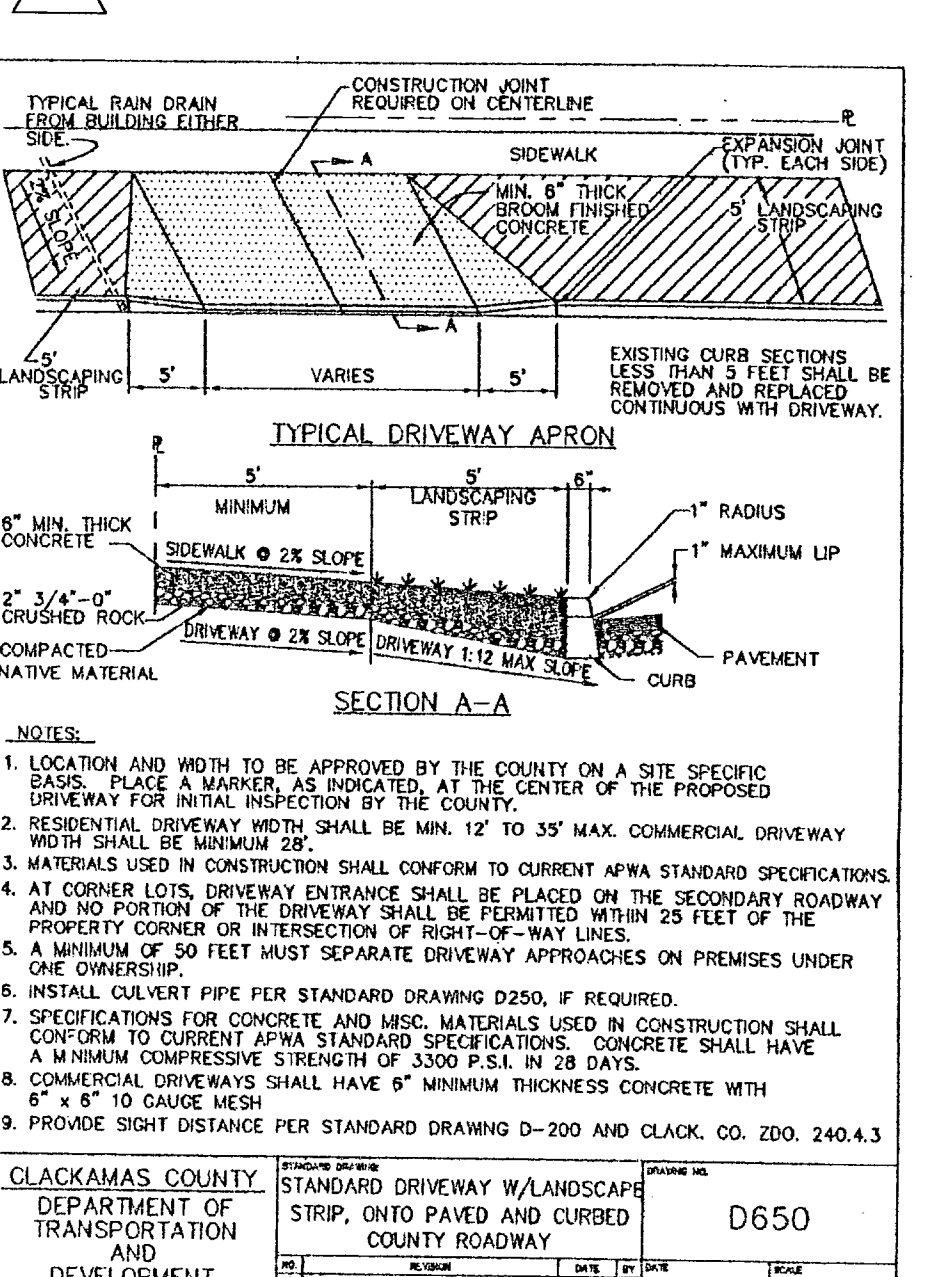
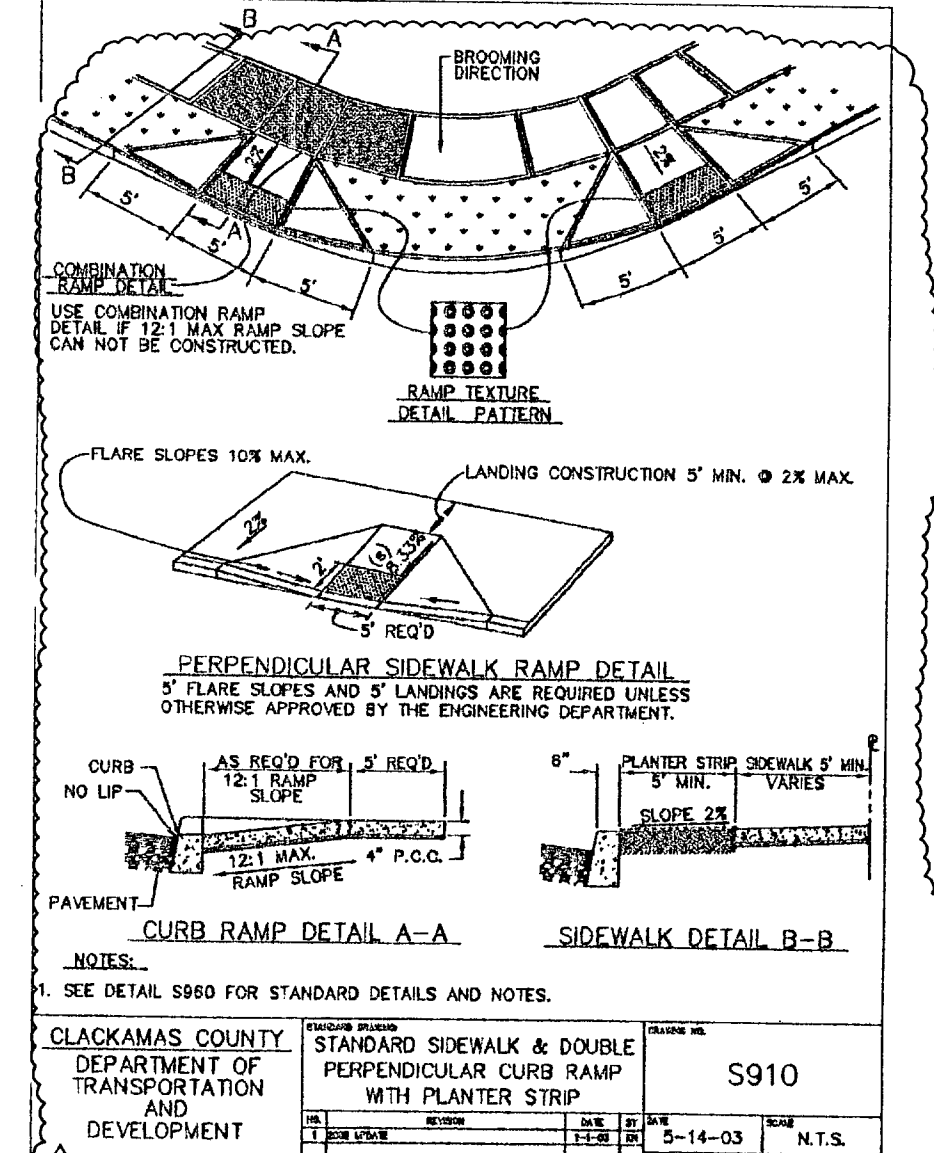
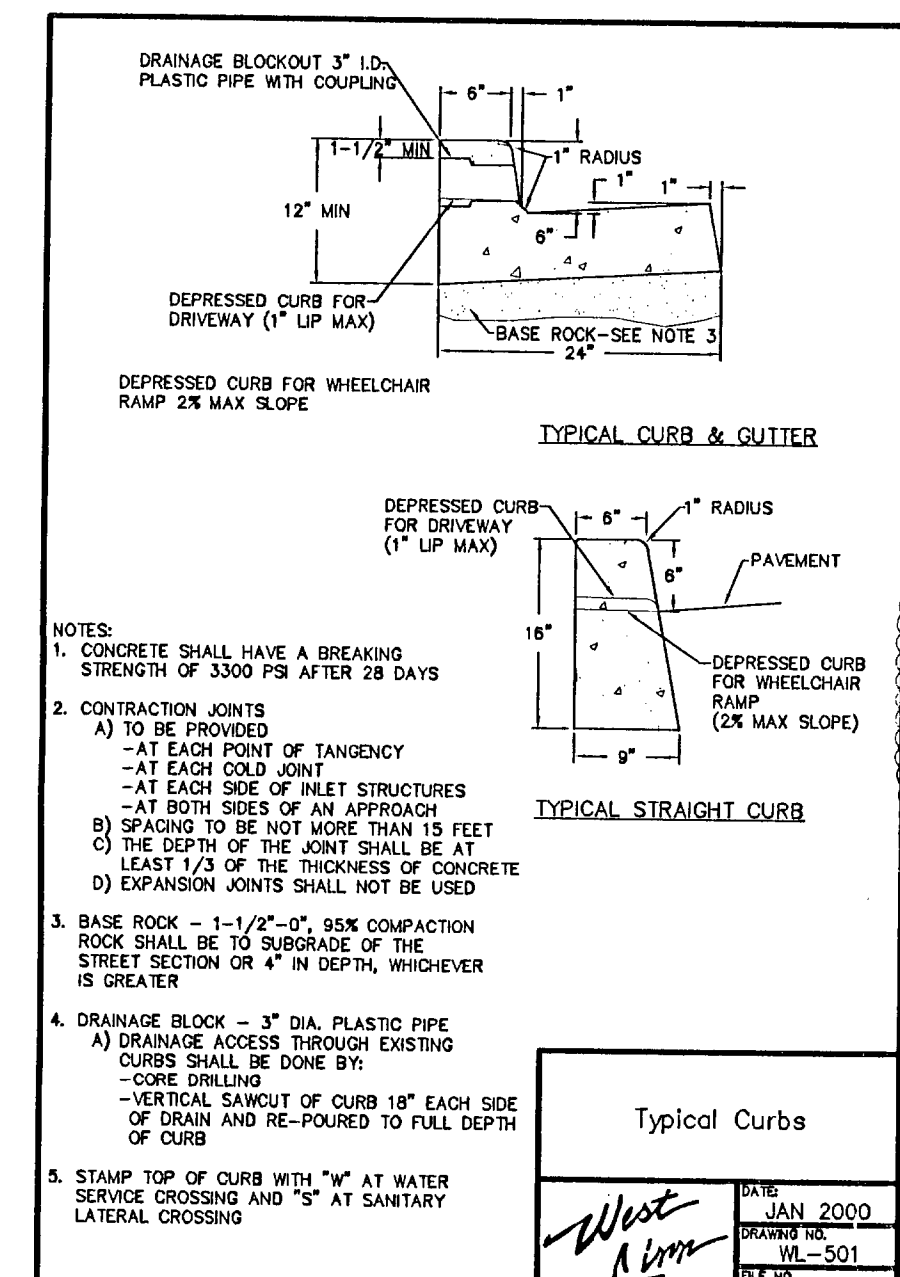
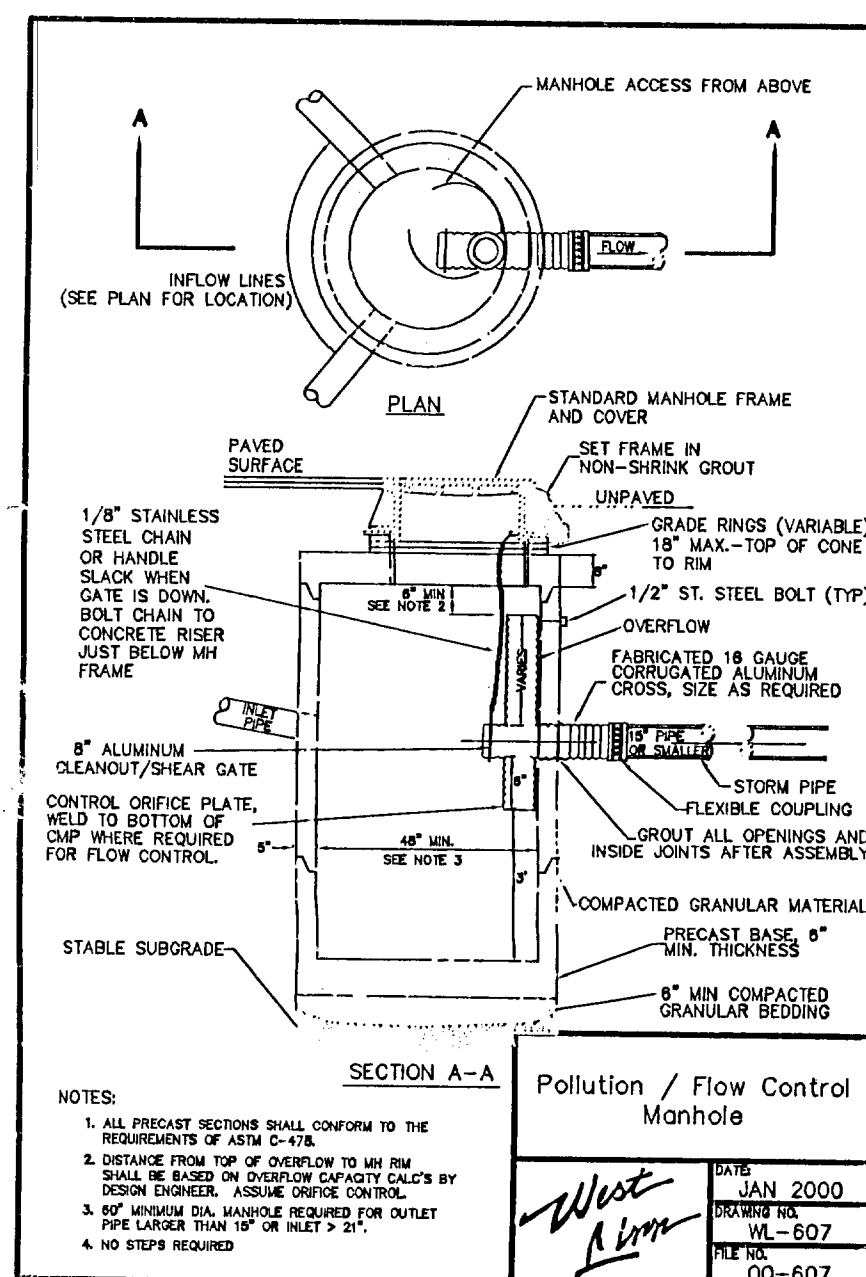
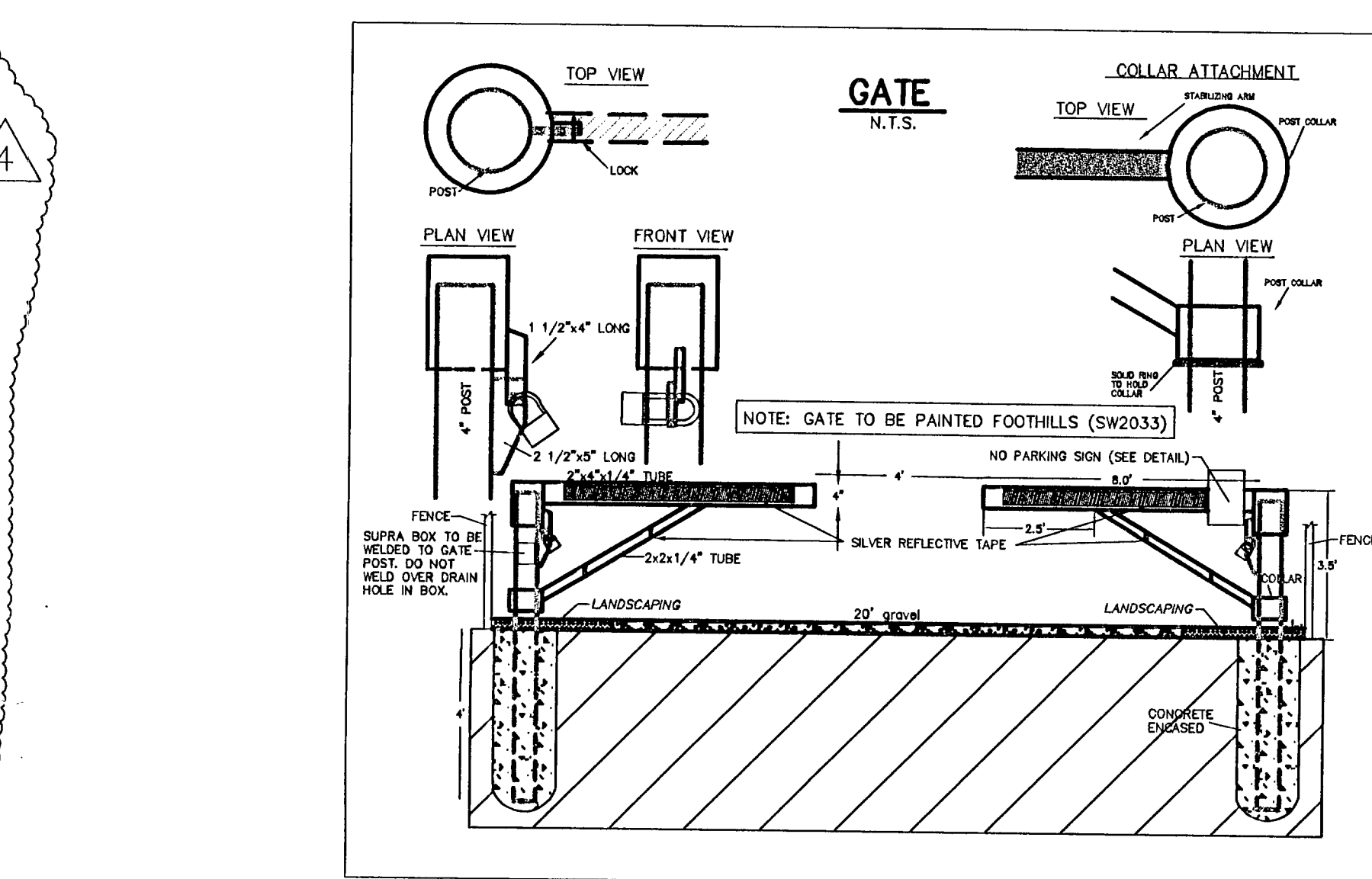
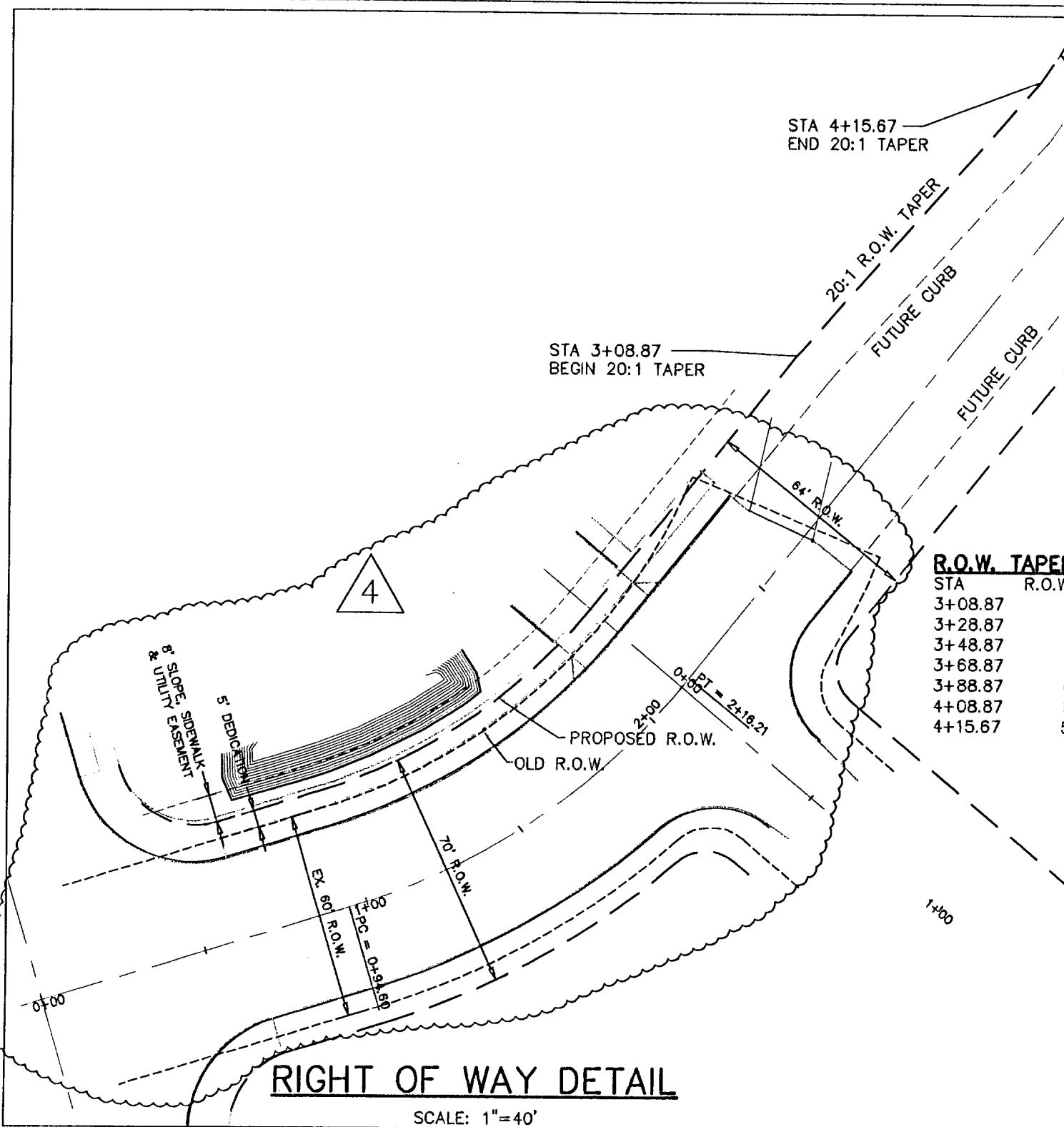
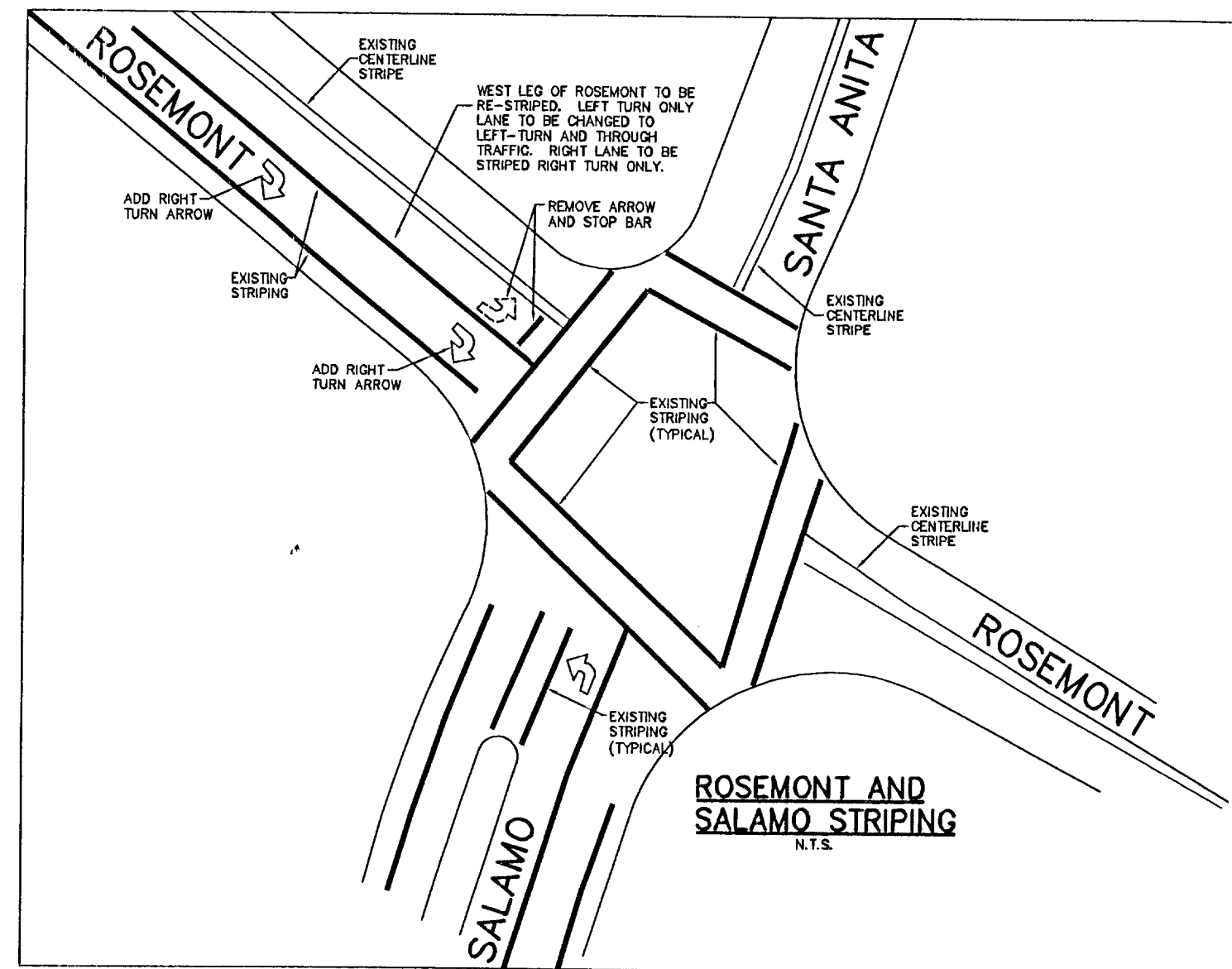
STANDARD CURB  
AND GUTTER  
S150  
1-1-99  
N.T.S.

### NOTES

- SPECIFICATIONS FOR CONCRETE AND MISC. MATERIALS USED IN CONSTRUCTION SHALL CONFORM TO CURRENT APWA STANDARD SPECIFICATIONS.
- A MAXIMUM DEVIATION FROM PLAN DIMENSIONS OF ONE INCH, AT THE INLET FLOOR, SHALL BE ALLOWED FOR LAPING OF FORMS USED IN CONSTRUCTION OF CONCRETE BUILT.
- REFER TO CURRENT APWA OREGON STATE CHAPTER DRAWING 305 AND CLACKAMAS COUNTY DEPARTMENT OF UTILITIES DETAIL NO. SWM-0001 FOR MORE INFORMATION.
- THE OUTSIDE DIAMETER OF THE PIPE MATERIAL SHALL NOT EXCEED 4".

CLACKAMAS COUNTY  
DEPARTMENT OF  
TRANSPORTATION  
AND  
DEVELOPMENT

STANDARD CATCH BASIN  
S350  
1-1-99  
N.T.S.



APPROVED PLANS  
NOT AS-BUILT DRAWINGS  
4/7/2008

APPROVED FOR CONSTRUCTION BY  
CITY OF WEST LINN  
DATE 4/16/08 BY [Signature]

GROUP

780 SW Taylor Street, Suite 400, Portland, Oregon 97205  
1.503.236.6000 / 1.503.236.7500 / www.westlinneng.com

REGISTERED PROFESSIONAL ENGINEER  
12,800  
West Linn, Oregon  
1985 - 1995  
4-17-08

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**WEST LINN ENGINEERING**  
376 PORTLAND AVENUE  
CLACKAMAS, OREGON 97027  
(503) 667-0186  
603-930-6155 (FAX)

PERMIT REVIEW SET

Willamette Christian Church

3153 S. BRANDYWINE DRIVE  
WEST LINN, OREGON

DETAILS

REV	DATE	FILE
1	4/15/08	

PM: [Signature]  
PA: [Signature]  
DRAWN BY: MM  
JOB NO: SCL 06-139A  
DATE: 03.07.2008

SHEET

**C14**  
OF 14 SHEETS

STANDARD SIDEWALK & DOUBLE PERPENDICULAR CURB RAMP WITH PLANTER STRIP  
S910  
1-14-03  
N.T.S.

STANDARD DRIVEWAY APRON STRIP, ON PAVED AND CURBED COUNTRY ROADWAY  
D650  
2-1-99  
N.T.S.

STREET STRUCTURAL SECTION  
C100  
1-1-99  
N.T.S.

ASPHALTIC CONCRETE STANDARD STRUCTURAL SECTION

FUNCTIONAL CLASSIFICATION	A	B	C	PERMISSIBLE FLOORING
LOCAL	3"	3"	3"	REQUIRED
COLLECTOR	4"	4"	4"	REQUIRED
COMMERCIAL/INDUSTRIAL	4"	4"	4"	REQUIRED
MAJOR ARTERIAL	4"	4"	10"	REQUIRED

1. ASPHALTIC CONCRETE IS TO BE CLASS "B" PLACED IN TWO LIFTS, NO SINGLE LIFT SHALL EXCEED 2" IN THICKNESS.

2. THE FINAL LIFT OF ASPHALTIC CONCRETE SHALL NOT BE PLACED ON LOCAL STREETS UNLESS THE SOILS WITHIN THE DEVELOPMENT ARE COMPLETE.

3. MATERIAL AND INSTALLATION SHALL CONFORM TO CURRENT APWA STANDARD SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.

4. CURBS, SIDEWALKS, STREET SURFACING, AND DRAINAGE FACILITIES SHALL BE REQUIRED.

5. THE WIDTH AND EXTENT OF THE IMPROVEMENT SHALL BE DETERMINED BY THE CLACKAMAS COUNTY DEPARTMENT OF TRANSPORTATION & DEVELOPMENT ACCORDING TO STREET CLASSIFICATION.