PUBLIC WORKS STANDARDS

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SECTION 1 INTRODUCTION

1.01 Application

These Standards shall apply to all improvements within the public right-of-way and/or public easements, to all improvements required within the proposed public right-of-way of new subdivisions, for all improvements intended for ownership, operation and maintenance by the City and for all other improvements (on or offsite) for which the City Code requires approval from the City Manager, Public Works Director, City Engineer, Director of Community Development and/or the City Council. These Standards are intended as guidelines for designers and developers in preparing their plans and for the City in reviewing plans. Where minimum values are stated, greater values should be used whenever practical; where maximum values are stated, lesser values should be used where practical. The developer/proponent is however cautioned that higher standards and/or additional studies and/or environmental mitigation measures may, and will, in all likelihood, be imposed by the City when developing on, in, near, adjacent, or tributary to sensitive areas to include, but not be limited to, steep slopes, creeks, ponds, lakes, certain wildlife habitat, unstable soils, etc.

Alternate design standards will be accepted when it can be shown, to the satisfaction of the City, that such alternate standards will provide a design equal to or superior to that specified. In evaluating the alternate design, the City shall consider appearance, traffic operations, durability, ease of maintenance, public safety and other appropriate factors.

Any improvements not specifically covered herein by these Standards must meet or exceed the current Standard Specification for Road, Bridge & Municipal Construction, State of Washington, revised as to form to make reference to Local Governments. Said specifications shall be referred to hereafter as the "Standard Specifications".

Where improvements are not covered by these Standards nor by the Standard Specifications nor by the standard details, the City will be the sole judge in establishing appropriate standards. Where these Standards conflict with any existing City ordinances or discrepancies exist within the body of this text, the higher standards shall be utilized as determined by the Department of Community Development.

Plans for major improvements in the public right-of-way or within public easements, or improvements to be "deeded" or "gifted" to the City, shall bear an approval signature from the City.

The designer shall submit calculations or other appropriate materials supporting the design of utilities, pavements and storm drainage facilities. The designer shall submit calculations for structures and other designs when requested by the City Engineer and/or Building Official.

1.02 Definitions

Definitions: As used herein:

(a) "City" means the City of Newcastle, Washington, King County, a municipal corporation, existing under and by virtue of the laws of the State of Washington. Actions designated as taken by the City are the acts of the Council acting through the City Manager.

(b) “City Manager” means the City’s duly appointed City Manager or his/her authorized representative.

(c) "Contract Documents": The contract documents shall consist of the following and in case of conflicting provisions, the first mention shall have precedence. These documents shall form the contract:

(1) Developers Agreement
(2) City of Newcastle Public Works Standards
(3) Other Applicable City Municipal Codes
(4) City Right-of-Way Use Permit
(5) Plans
(6) Standard Details (WSDOT Specifications)
(7) Specifications - Conditions and Standards of the Contract (As Approved by City)
(8) City Approved Addenda
(9) City Approved Change Orders

(d) "Contractor" means the Developer's contractor or subcontractor.

(e) "Developer" means the party having an agreement with the City to cause the installation of certain improvements (public and private), to become a part of the City's utility and/or roadway system upon completion and acceptance. The term shall also include the Developer's contractor employed to do the work or the contractor's employees.

(f) "Development" means the construction, reconstruction, conversion, structural alteration, relocation, enlargement, or change in use of any structure or property, or any project which will increase vehicle trips per day during peak hour traffic, or any project which negatively impacts the service level, safety, or operational efficiency of serving roads and storm drainage systems. Individual single family residences are excluded from this definition.

(g) “Developers Agreement” means any written agreement such as SEPA mitigation conditions, conditions of approval for subdivisions, conditions associated with any permit, approved plans, and any other written agreement between the City and a Developer.

(h) "Director" means the City's duly appointed Director of Community Development, or his/her authorized representative.

(i) "Engineer" means the City's Engineer, whether a staff engineer or consultant.

(j) "Maintenance Surety " means a surety furnished by the Developer and written by a corporate body qualified to write surety in the State of Washington, guaranteeing that the Developer will repair any defects found in the work within the time period as further identified herein.

(k) "Operations and Maintenance Supervisor" means the City's utilities superintendent, or operations and maintenance supervisor, or public works director.

(l) "Performance Surety" means a surety furnished by the Developer and written by a corporate body qualified to write surety in the State of Washington, guaranteeing that the work will be completed in accordance with the plans and specifications.

(m) “Permitee” means any party applying for a permit.

(n) "Plans" mean drawings, including reproductions thereof, of the work to be done as an extension to the City's public roads and utilities, prepared by an engineer licensed in the State of Washington.

(o) “Reviewing Agency” means the Department of Community Development.

(p) "Specifications" means the directions, provisions, and requirements designated by an engineer licensed in the State of Washington for the performance of the work and for the quantity and quality of materials, as contained or referenced herein.

(q) “Standard Details” means the current Standard Plans for Road and Bridge Construction, State of Washington.

(r) "Work" means the labor or materials or both, superintendence, equipment, transportation, and other facilities necessary to complete the Contract.

1.03 Developer to be Informed

The Developer is expected to be fully informed regarding the nature, quality, and the extent of the work to be done, and, if in doubt, to secure specific instructions from the City.

1.04 Authority of the City Manager

The City Manager or his authorized representative shall have the authority to stop work whenever, in his opinion, the same shall be necessary to insure compliance with the plans and specifications and shall have authority to reject work and materials which do not so conform and to decide questions which may arise in the execution of the work and have the authority to determine the amount, quality, acceptability and fitness of the several kinds of work, material and equipment and to decide all questions relative to the classification of materials and the fulfillment of the Contract, and to reject or condemn all work or material which does not conform to the terms of the Contract. The City Manager's decision in all matters is the decision of the City, and can only be changed by the City. Moreover, the City has not so delegated, and

the City Manager or his authorized representative(s) does (do) not purport to be a safety expert, is not so engaged in that capacity under the Contract, and has neither the authority nor the responsibility to enforce construction safety laws, rules, regulations or procedures, or to order the stoppage of work for claimed violations thereof. The furnishing by the City of resident project representation and/or inspection shall not be construed by the Contractor or Development that the City is responsible for the identification or enforcement of such laws, rules or regulations.

1.05 Payment for City Services

The Developer shall be responsible for promptly reimbursing the City for all costs and expenses incurred by the City in the pursuit of project submittal, review, approval, and construction. These costs include, but are not limited to, the utilization of staff and "other" outside consultants as may be necessitated to adequately review and inspect construction of the project(s). All legal, administrative, and engineering fees for project review, meetings, approvals, site visits, construction inspection, etc., shall be subject to prompt reimbursement. The Developer is cautioned that project approval (City acceptance) and occupancy permits will be denied until all bills are paid in full. The City may, at its sole discretion require that funds be placed in an account at the City by which the City may draw from to reimburse said costs.

SECTION 2 PERMITS

2.01 Permit Required

No person, firm or corporation shall commence work on the construction, alteration or repair of any facility located either in the public right-of-way or a public easement without any necessary permit(s) first having been obtained from the City.

2.02 Permit Application

Any party requesting such permit shall file written application therefore with the City at least ten (10) working days before construction is proposed to start. Such application shall be made on a standard City form provided for that purpose, and shall include:

(a) The name and address of the applicant (name and address of property owner if different than applicant);

(b) The name and address of the owner of the property abutting the street where the work is proposed;

(c) The street location of the proposed work, giving the street address or legal description of the property involved;

(d) A detailed plan showing the dimensions of the abutting properties and the dimensions and location of all existing and/or proposed facilities and other pertinent features to understand the proposed work;

(e) The plan shall also show the location of buildings, loading platforms or roof overhangs (if significant), facilities being served or to be served by the new construction.

The City may require, at their discretion, the filing of any other information when in their opinion such information is necessary to properly enforce the provisions of these Standards or other applicable codes.

2.03 Permit Issued

No permit shall be issued until the proposed work has been approved by the appropriate official. Adjudication of disagreements regarding approvals shall be made by the City Manager and his decision shall be final.

No plan shall be approved nor a permit issued where it appears that the proposed work, or any part thereof, conflicts with the provisions of these Standards or any other applicable codes of the City of Newcastle, nor shall issuance of a permit be construed as a waiver of the Zoning code or other code requirements concerning the plan.

A fee of an amount as designated by the City's fee schedule shall accompany all applications for permits.

SECTION 3 PUBLIC WORKS CONSIDERATIONS

3.01 Financial Guarantee

Financial guarantees of the work covered under these standards shall be financially guaranteed in accordance with the applicable City codes and specifically Title 12 NMC.

3.02 Hold Harmless Clause

The Developer shall indemnify and hold harmless the City and City Engineer, and their agents and employees, from and against all damages, losses, and expenses as specified in Title 12 NMC.

3.03 Developer's Public Liability & Property Damage Insurance

The Developer shall maintain all required public liability and property damage insurance as specified in Title 12 NMC.

3.04 Compensation & Employer's Liability Insurance

The Developer shall maintain all required employer insurance and employee compensation as specified in Title 12 NMC.

3.05 Non-interference

The permittee shall be responsible for minimum interference with:

- Traffic Routing
- Fire Facility Clearance
- Adjoining Property
- Utility Facilities
- Natural Surface Drainage

Prior to construction, these items are to be discussed with the City Public Works Department, and/or City Fire and Police Departments and/or the City Building Official, and special provisions may be included in any applicable City Permit(s).

3.06 Work Standards

All work performed pursuant to a permit issued shall be done in accordance with standards published in the current Standard Specifications for Road, Bridge & Municipal Construction, State of Washington, revised as to form to make reference to Local Governments. The City Engineer may require roadway designs in accordance with the WSDOT Design Manual - Modified Design Level in order to achieve reduced pavement widths.

The following shall be applicable when pertinent, when specifically cited in the standards or when required by state or federal funding authority:

(a) Local Agency Guidelines, WSDOT, as amended.
(b) Guidelines for Urban Arterial Program, WSDOT, as amended,

(c) Design criteria of federal agencies including the Federal Housing Administration, Department of Housing and Urban Development, the Federal Highway Administration and Department of Transportation.
(d) A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials (AASHTO), 1984, or current edition when adopted by WSDOT.
(e) Standard Specifications for Highway Bridges, adopted by AASHTO, current edition.
(f) U.S. Department of Transportation Manual on Uniform Traffic Control Devices, "MUTCD", as amended and approved by Washington State Department of Transportation, current edition.
(g) Guide for the Development of Bicycle Facilities, adopted by AASHTO, current edition.
(h) Associated Rockery Contractors (ARC), Standard Rock Wall Construction Guidelines.
(i) American Society for Testing and Materials (ASTM).
(j) Illuminating Engineering Society of America (IES) National Standard Practices for Roadway Lighting, RP-8, Current Edition.
(k) WSDOT/APWA Standard Specifications for Road, Bridge, and Municipal Construction, current edition as amended. These will be referred to as the "WSDOT/APWA Standard Specifications".
(l) The WSDOT/APWA Standard Plans for Road and Bridge Construction, to be referred to as the "WSDOT/APWA standard plans," current edition as amended.
(m) WSDOT Design Manual, current edition as amended.
(n) City and County Design Standards for the Construction of Urban and Rural Arterial and Collector Roads, adopted per RCW 35.78.030 and RCW 43.32.020, May 24, 1989, current edition as amended.
(o) Institute of Transportation Engineers, Traffic Engineering Handbook, current edition.

3.07 Inspection

A. General

The City shall exercise full right of inspection of all excavating, construction, and other invasions of City right-of-way or public easements. The City Engineer or designated official shall be notified on the working day prior to commencing any work in the City's right-of-way or public easements. The City Engineer and/or his authorized representative is authorized to and may issue immediate Stop Work Orders in the event of noncompliance with this chapter and/or any of the terms and provisions of the permit or permits issued here under.

Timely notification by the developer as noted herein is essential for the City to verify thorough inspection that the work meets the standard. Failure to notify in time may oblige the City to arrange appropriate sampling and testing after-the-fact, with certification, by a professional engineer. Costs of such testing and certification shall be borne by the developer. At the time that such action is directed by the City Engineer, the Engineer may prohibit or limit further work on the development until all directed tests have been completed and corrections made to the satisfaction of the Engineer. If necessary the City may take further action as set forth in the Newcastle Municipal Code (NMC).

B. Requirements for subdivision, binding site plan, commercial and right-of-way land use inspection.

On all road and drainage facility construction, proposed or in progress, which relates to subdivision, binding site plan, commercial and right-of-way development, control and inspection will be done by the City Engineer. Unless otherwise instructed by the engineer, construction events which require monitoring or inspection are identified as follows:

(1) Preconstruction Conference. Three working days' prior notice. Conference must precede the beginning of construction and include contractor, designing engineer, utilities, and other parties affected. Plan approvals and permits must be in hand prior to the conference.
(2) Clearing and Temporary Erosion/Sedimentation Control. One working day's notice prior to initial site work involving drainage and installation of temporary water retention/detention and siltation control. Such work to be in accordance with the Surface Water Design Manual and the approved plans.
(3) Utility and Storm Drainage Installation. One working day's notice prior to trenching and placing of storm sewers and underground utilities such as sanitary, water, gas, power, telephone, and TV lines.
(4) Utility and Storm Drainage Backfill and Compaction. One working day's notice before backfill and compaction of storm sewers and underground utilities.
(5) Subgrade Completion. One working day's notice at stage that underground utilities and roadway grading are complete, to include placement of gravel base if required. Inspection to include compaction tests and certifications described in the WSDOT standard specifications.
(6) Curb and Sidewalk Forming. One working day's notice to verify proper forming and preparation prior to pouring concrete.
(7) Curb and Sidewalk Placement. One working day's notice to check placement of concrete.
(8) Crushed Surfacing Placement. One working day's notice to check placement and compaction of crushed surfacing base course and top course.
(9) Paving. Three working days' notice in advance of paving with asphalt or portland cement concrete.
(10) Structural. Three working days' notice prior to each critical stage such as placing foundation piling or footings, placement and assembly of major components, and completion of structure and approaches. Tests and certification requirements will be as directed by the engineer.

C. Final Construction Inspection

Fifteen working days notice prior to overall check of road or drainage project site, to include completion of paving and associated appurtenances and improvements, cleaning of drainage system, and all necessary clean-up and site restoration.

D. Final Maintenance Inspection

Thirty days notice prior to the end of the maintenance period. Prior to release of the maintenance guarantee, there shall be successful completion of the maintenance period as described in Section 3.01, repair of any failed facilities and the payment of any outstanding fees.

3.08 Record Drawings

Permittees who install systems within, on, or below the City's public rights-of-way or public easements shall furnish the City with accurate drawings, plans and profiles, showing the location and curvature of all underground structures installed, including existing facilities where encountered and abandoned installations. Horizontal locations of utilities are to be referenced to street centerlines, as marked by survey monuments, and shall be accurate to a tolerance of plus or minus one half (1/2) foot. The depth of such structure may be referenced to the elevation of the finished street above said utility, with depths to the nearest one-tenth foot being shown at a minimum fifty-foot interval along the location of said utility.

Such record drawings shall be submitted to the City within thirty (30) calendar days after completion of the work. Record drawings shall be stamped, signed and dated by an engineer currently licensed in the State of Washington.

In the event that the permittee does not have qualified personnel to furnish the record drawings required by this section, he shall advise the City Engineer in order that necessary field measurement may be taken during construction for the preparation of record drawings. All costs of such field inspection and measurement, to include the preparation of the record drawings, shall be at the sole expense of the permittee.

Drawing Standards:

Minimum scale - 1" = 50' horizontal; 1" = 5' vertical
Detail scale - Larger as necessary

Record drawings shall be submitted on permanent, stable reproducible mylar with a signature and data which verifies the "as-built" condition of the project. All data as shown on the drawings shall be "fixed line" or ink. Sticky back (glue) reproductions or "sepia" mylars shall not be considered acceptable. Electronic files shall be also provided to the City.

SECTION 4 STREET, PEDESTRIAN PATHS, AND BIKEWAYS

4.01 General Considerations

The overall goal of this chapter is to encourage the uniform development of an integrated, fully accessible public transportation system that will facilitate present and future travel demand with minimal environmental impact to the community as a whole.

Development of properties on or tributary to substandard or unsafe (safety issues) roadways may, depending on the size and type of development, be cause for "off-site" improvements to the substandard or unsafe corridors, to include road drainage facilities. The City Engineer shall determine when and if such conditions exist. At a minimum "half street improvements" will be required as a condition of development in and along the entire property as it abuts City rights-of-way. The City shall determine what qualifies as "development".

This chapter provides *minimum* street design standards as well as minimum design standards for "stand alone" pedestrian and/or bike trails/paths. Higher design and construction standards may be warranted due to localized design and construction parameters.

4.02 Streets

A. General

All plans submitted for channelization, traffic control and road construction or reconstruction shall be prepared by a professional engineer licensed in the State of Washington. All street design must provide for the maximum traffic loading and capacity conditions anticipated. The width and grade of the pavement must conform to specific standards set forth herein for safety and uniformity.

B. Design Standards

The design of streets and roads shall depend upon their type and usage. The design elements of streets shall conform to City standards as set forth herein and current design practice as set forth in Section 3.06.

The layout of streets shall provide for the continuation of existing arterial and neighborhood collector streets in adjoining subdivisions or of their proper projection when adjoining property is not yet subdivided. Local access streets, which serve primarily to provide access to abutting property, shall be designed to discourage through traffic. See Table 1.1 for the Minimum Street Design Standards.

(1) Street profile grade should conform closely to the natural contour of the land. In some cases, a different grade may be required by the City Engineer. Unless otherwise approved by the City, the minimum profile grade shall be 0.7 percent. Local conditions may, in the opinion of the City's Engineer, require a lesser profile grade in which case (if specifically approved by the City Engineer), the minimum

allowable profile grade shall be 0.5 percent. The maximum allowable grade shall be as further specified herein.

(2) Maximum grade as shown in Table 1.1 may be exceeded for short distances of 300 feet or less, upon showing that no practical alternative exists. Exceptions which exceed 15 percent will require verification by the fire marshal that additional fire protection requirements will be met. Grades exceeding 12 percent shall be paved with asphalt concrete (AC) or Portland cement concrete (PCC). Any grade over 15 percent must be PCC. Grade transitions shall be constructed as smooth vertical curves.

(3) The pavement and right-of-way width depend upon the street classification. Table 1.1 shows the minimum widths allowed. Street widths shall be measured from face of vertical curb to face of vertical curb on streets with cement concrete curb and gutter, and from centerline of gutter to centerline of gutter of streets without concrete vertical curb and gutter.

(4) The developer is required to retain a licensed soils engineer to make soils tests and to provide engineering recommendations for design of the sub-base and roadway sections based on “in place” soils, depth of “free draining” structural materials, projected pavement loadings, roadway classification, average daily traffic volume, etc.

(5) In special circumstances, as may be specifically approved/required by the City Engineer, due to local conditions and/or geometric restrictions, paving widths or improvement standards may be required which are different than those specifically listed herein.

(6) The City intends to promote connectivity of roadways within plats and throughout the City. To facilitate future development within the City, streets and rights-of-way shall be planned to give access to or permit the future subdivision of adjoining land. Streets shall be extended to the plat boundary to accommodate extensions into future subdivisions or adjoining land and the resulting dead end street shall be barricaded pursuant to WSDOT standards, signed as described in Section 4.11, and provided with a temporary cul-de-sac. The cul-de-sac shall be paved. The inclusion of concrete curbs, gutters and sidewalks in the cul-de-sac shall be required even if it would be eliminated by future street extensions. In designing streets, existing development, proposed development and possible future development shall all be considered in the recommendation of right-of-way widths, street widths, paving sections, sidewalks and other applicable standards.

(7) Street jogs with centerline offsets less than one hundred twenty-five feet are prohibited.

(8) Intersecting streets shall be laid out so that blocks between street lines are not more than one thousand three hundred twenty feet in length, except where in the opinion of the City Engineer, extraordinary conditions justify a departure from the maximum.

(9) Streets shall conform to all requirements of the latest edition of the Uniform Fire Code adopted by the City, and all requirements of the Fire Marshal.

(10) In addition to the above requirements, street design shall incorporate the following minimum requirements:

(a) All new utility systems such as power, gas, cable TV and telephone shall be buried, except where topography or site conditions prohibit reasonable installation. Design and installation of the system shall be done by the franchised utility company. Design shall be submitted to the City Engineer for review and approval prior to installation;

(b) Roads are to be saw cut before permanent patch is made or new AC pavement is installed abutting the existing road;

(c) The street system (in residential subdivisions and short subdivisions) shall be laid out with a minimum number of intersections with arterial streets. Arterial streets shall not intersect with other arterial streets at intervals closer than one thousand three hundred twenty feet and no streets shall intersect at intervals closer than one hundred twenty-five feet, unless, in the judgment of the City Engineer, an exception to this rule would be in the public interest and welfare;

(d) Streets shall be laid out so as to intersect as nearly as possible at right angles, and in any event, no street shall intersect with any other street at an angle of less than sixty degrees.

(e) All public streets, sidewalks and alleys shall conform as a minimum to one of the herein referenced construction standards and shall be adjusted as necessary to match existing facilities, service the proposed development, and meet the needs of anticipated future development.

(f) All topsoil, organic, and structurally unsuitable soils shall be removed from beneath the proposed street section as located between the outside edge of sidewalks.

C. Submittal of Plans

(1) All street construction plans shall be submitted to the City and shall include the following required minimum information, and as further required in the City's plan submittal standards:

- Plan and profile;
- Street name;
- Centerline bearings;
- Centerline/baseline stationing;
- Centerline elevations every fifty feet;
- Gutterline elevations every fifty feet if not standard crown;
- Gutterline elevations around curb radii, 5 points;
- Slope shall be in percent;
- Transverse slope: Two percent standard crown (to be used unless otherwise approved/required by City;
- Longitudinal slope - see Table 1.1;

- Horizontal and vertical curves shall be required when a change of centerline grade occurs greater than one percent:
  - (a) Fifty feet minimum length;
  - (b) Elevations required at twenty five feet stations and at the P.C., P.I., P.T. and low point or high point;
- Longitudinal gutterline slope;
- Pavement cross sections per City standard detail;
- Accurate locations of monuments at all centerline intersections, cul-de-sacs, P.C.'s, P.T.'s, and P.R.C's;
- Length and width of sidewalks and driveways;
- The location of all existing fire hydrants within 300 feet of the project shall be indicated;
- Curb and gutter;
- Wheelchair ramps;
- Illumination. (Illumination not required to be shown on same street as on plan/profile, but approval at location of miscellaneous utilities (i.e., gas, power, cable) as required. Plan shall be submitted to City Engineer for approval prior to installation.
  - (a) Luminaries - location, material, height and wattage.
  - (b) Service cabinet - location and material.
  - (c) Conduits and wire - location, material size and depth.
  - (d) Junction boxes - location and material;
- Channelization and Signing:
  - (a) Lane markers - location and type.
  - (b) Pavement markings - location and type.
  - (c) Signs - location and type.

(2) The Standard Plan Notes, as shown and further referenced in Section 5, shall be included or referenced on any plans submitted to the City for construction approval dealing with street design.

4.03 Road Classifications

A. General

City roads are classified functionally as indicated in the Comprehensive Plan and Table 1.1. Function is the controlling element for classification and shall govern right-of-way, road width and road geometries. Other given elements such as access, arterial spacing and average daily traffic count (ADT) are typical.

B. Road Type

Roads can be characterized as "curb" or "shoulder" type. A "curb" type road typically requires curb and gutter with inlets and underground pipe drainage. A "shoulder" type road typically requires a shoulder and open ditch drainage.

(1) Land developments shall provide "curb" type road improvements. Exceptions to this may be approved by the Director on residential local access streets which are located in long-term, low density neighborhoods where a pattern of "shoulder" type roads is firmly established.

(2) When "shoulder" type improvements are allowed, shoulders shall be 5' wide, paved for principal and minor arterials and five (5') feet wide, paved or compacted gravel for neighborhood collector and local access streets, as directed by the Director.

Table 1.1
STREET DESIGN STANDARDS

CLASSIFICATION		PRINCIPAL ARTERIALS	MINOR ARTERIALS	NEIGHBORHOOD COLLECTORS	LOCAL ACCESS
Function		Inter-community streets connecting largest community centers and facilities.	Inter-community streets connecting community centers and facilities.	Intra-community streets connecting residential neighborhoods with community centers and facilities.	Streets providing circulation within neighborhoods typically connecting to neighborhood collectors; and also permanent cul-de-sacs.
Access		Controlled with very restricted access to abutting properties.[2]	Partially controlled with infrequent access to abutting properties.[2]	As needed with minimal restrictions.	As needed with minimal restrictions.
ADT		Over 2000	Over 2000	1000-2000	1000 max.
CRITERIA					
A. Typical road type		Vertical curb and gutter	Vertical curb and gutter	Vertical curb and gutter	Vertical curb and gutter
B. Design Speed [3] MPH		45	40	35	30
C. Maximum Superelevation (ft/ft)		0.06	0.06	-	-
D. Horizontal Curvature		See Table 1.2	See Table 1.2	See Table 1.2	275
E. Maximum Grade (%)		9	10	12[5]	15[5]
F. Standard Stopping Sight Distance (ft) [6]		See Table 1.2	See Table 1.2	250	200
G. Standard Entering Sight Distance (ft) [7]		See Table 1.2	See Table 1.2	490	430
H. Minimum Pavement Width (ft) [8]	2 lanes	32	32	36	28
	3 lanes	44	44	48	-
	4-5 lanes	varies	-	-	-
I. Minimum Right-of-Way Width (ft)		100	84	60	48
J. Bike Lane Width (ft) [9]		5	5	-	-
K. Parking Lane Width (ft) [9]		-	-	6-8	6-8
L. Planting Buffer Strip Width (ft)		5-9 min.	5-9 min.	5 min.	4 min.
M. Sidewalk Width (ft)		5-8	5-8	5	5

NOTES TO TABLE 1.1:

1. Within the above parameters, geometric design requirements shall be determined for specific arterial roads consistent with AASHTO.
2. Direct access allowed only if no other access potential exists. (See Section 4.23)
3. Design speed is a basis for determining geometric elements and does not imply posted or legally permissible speed. Curves shall be designed within parameters of B, C, and D in Table 1.1.
4. superelevation may be used, upon approval of the Engineer.
5. Maximum grade may be exceeded for short distances of 300 feet of less, upon showing that no practical alternative exists. All roads with grades exceeding 15 percent shall be paved with Portland cement concrete.
6. Standard stopping sight distance (SSD) shall apply unless otherwise approved by the Engineer.
7. Standard entering sight distance (ESD) shall apply at intersections and driveways unless otherwise approved by the Engineer.
8. Based on special needs of a specific project or location, the City may require additional width to accommodate on-street parking or increased truck traffic.
9. Bike lanes shall be marked in accordance with City requirements. Parking lanes shall not be marked as such unless required by the City.

Table 1.2
STREET DESIGN VALUES

Design Speed (mph)	25	30	35	40	45	50
Horizontal Curvature, Radius, (Feet)	180	300	460	note 1	note 1	note 1
Stopping Sight Distance (Feet)	150	200	250	325	400	475
Entering Sight Distance (Feet)	365	430	490	555	620	685

Notes:
1. Horizontal curvature to be designed by Engineer.

4.04 Street Frontage Improvements

A. All industrial, commercial, and residential development, as well as, long and short plats shall install street frontage improvements at the time of construction. Such improvements shall include concrete curb and gutter, concrete sidewalk, street storm drainage, street lighting system, utility relocation, landscaping and irrigation, undergrounding aerial utilities and street pavement widening all per these Standards. Plans shall be prepared and signed by a licensed engineer currently registered in the State of Washington.

B. All frontage improvements shall be made across the full frontage of the property.

C. Exceptions:

(1) When the proponent requests that the Director evaluate if the required frontage improvements cannot be reasonably performed due to unique conditions, the Director will consider a request from the proponent that an "equal" and voluntary monetary amount be deposited with the City and retained by the City for such use per applicable RCW's. The equivalent cost shall be approved by the City and include design, administration, and construction costs.

(2) When improvements cannot be reasonably accomplished in a timely manner a recorded agreement (performance surety or equal) on forms provided by the City shall be completed which provide for these improvements to be installed at a later date by the proponent.

(3) Urban residential short plats creating only one additional lot to a tax lot with an existing dwelling unit are exempt from providing "curb and gutter" type street improvements, but are subject to "shoulder" type improvements provided these are consistent with the surrounding roads.

D. Right-of-way shall be conveyed to the City on a recorded plat or by a right-of-way dedication deed. All costs of same to be borne by the property owner/developer.

4.05 Private Streets

A. General

While community street requirements are usually best served by public streets, owned and maintained by the City, private streets may be appropriate for some local access streets.

B. Approval

Private streets may be approved by the Director only when they are:

(1) Permanently established by right-of-way, tract or easement providing legal access to each affected lot, dwelling unit, or business and sufficient to accommodate required improvements, to include

provision for future use by adjacent property owners when applicable; and

(2) Built to City of Newcastle standards, as set forth herein, or secured under the provisions of the subdivision regulations; and

(3) Accessible at all times for emergency and public service vehicle use; and

(4) Not obstructing, or part of, the present or future public neighborhood circulation plan developed in processes such as the City of Newcastle comprehensive plan, or capital improvement program; and

(5) Not going to result in land locking of present or future parcels; and

(6) Not needed as public roads to meet the minimum road spacing requirements of these standards; and

(7) Designed to serve a maximum potential of 13 single-family dwelling units when the entire length of the private road system to the nearest public road is considered. The maximum potential is the number of dwelling units that can possibly be served by the road when physical barriers, zoning or other legal constraints are considered; and

(8) Maintained by a capable and legally responsible owner or homeowners' association or other legal entity made up of all benefited property owners, under the provisions of the applicable codes; and

(9) Clearly described on the face of the plat, short plat, or other development authorization and clearly signed at street location as a private street, for the maintenance of which the City of Newcastle is not responsible.

C. Acceptance of Private Streets

The City of Newcastle will not accept private streets for maintenance as public streets until such streets are brought into conformance with current City standards. This requirement will include the hard surface paving of any streets originally surfaced with gravel.

The City of Newcastle will not accept private streets within short plats when the roads providing access to the plat are private and already have the potential to serve more than the number of lots specified in subsection 4.05 B.(7). Short plats proposed on properties to which the access is over private streets that do not meet the standards in this section shall be denied.

4.06 Cul-de-sacs and eyebrows.

A. Whenever a cul-de-sac street serves more than six lots or extends more than 150 feet from centerline of accessing street to farthest extent of surfaced traveled way a widened "bulb" shall be constructed as shown in the drawings.

B. Any permanent cul-de-sac shall not serve more than 13 potential single family dwelling units and shall not be longer than 600 feet measured from centerline

of intersecting street to the center of the bulb section. Proposed exceptions to this rule will be considered by the Engineer based on pertinent traffic planning factors such as topography, sensitive areas and existing development. The cul-de-sac length may extend to 1,000 feet if 13 or fewer potential single family dwelling units are to be served and there is provision for emergency turnaround near mid-length.

C. The Engineer or Director may require an off-street walk or an emergency vehicle access to connect a cul-de-sac at its terminus with other streets, parks, schools, bus stops, or other pedestrian traffic generators, if the need exists.

D. If a street temporarily terminated at a property boundary serves more than six lots or is longer than 150 feet, a temporary bulb shall be constructed near the plat boundary. The paved bulb shall be 70 feet in diameter. Removal of the temporary cul-de-sac and extension of the sidewalk shall be the responsibility of the developer who extends the road.

E. The maximum cross slope in a bulb shall not exceed six percent.

F. Use of a "hammer head" turnaround shall not be used in place of a bulb and shall only be used as an emergency turnaround where required by the Fire Marshal.

4.07 Intersections

A. Traffic control will be as specified in the Manual on Uniform Traffic Control Devices (MUTCD) or as may be specifically modified by the City Public Works Director as a result of appropriate traffic engineering studies.

B. Street intersections shall be laid out so as to intersect as nearly as possible at right angles. Sharp angled intersections shall be avoided. For reasons of traffic safety, a "T" intersection (three-legged) is preferable to the cross-road (four-legged) intersection for local access streets. For safe design, the following types of intersection features should be avoided:

(1) Intersections with more than four intersecting streets;

(2) "Y" type intersections where streets meet at acute angles;

C. On sloping approaches at an intersection, landings shall be provided with grade not to exceed one foot difference in elevation for a distance of 30 feet approaching any arterial or neighborhood collector or 20 feet approaching an local access street, measured from nearest right-of-way line (extended) of intersecting street.

D. Spacing between adjacent intersecting streets, whether crossing or T-connecting, shall be as follows:

When Highest Classification involved is:	Minimum centerline offset shall be:
Principal arterial	1000 feet
Minor arterial	500 feet
Neighborhood Collector	300 feet
Local Access	100 feet

E. Curb radii at intersections shall be 35 feet for any street connecting to a Principal Arterial and 25 feet at all other intersections. Minimum right-of-way radius shall be 25 feet.

4.08 Half Streets

A half street may be permitted as an interim facility when:

(a) Such street shall not serve as primary access to more than 20 dwelling units or tax lots; and
(b) Such alignment is consistent with or will establish a reasonable circulation pattern; and
(c) There is reasonable assurance of obtaining the prescribed additional right-of-way from the adjoining property with topography suitable for completion of a full-section road.

4.09 One-way streets.

Local access streets, including loops, may be designated one-way upon a finding by the Engineer that topography or other site features make two-way traffic impractical.

4.10 Bus zones and turn-outs.

During the design of arterials and neighborhood collectors, the designer shall contact the service provider, and the local school district to determine bus zone (stop) locations and other bus operation needs. The road project shall provide wheelchair accessible landing pads at designated bus zones as per Americans with Disabilities Act (ADA) and where required shall include turn-outs and shelter pads. Pedestrian and wheelchair access improvements within the right-of-way to and from the bus loading zone or turn-out from nearby businesses or residences shall also be provided as part of the road improvement. Surfacing requirements may also be affected, particularly on shoulders. Metro's publication, "Metro Transportation Facility Design Guidelines," is applicable.

4.11 Access and circulation requirements.

A. A future street plan shall:

(1) Be filed by the applicant in conjunction with an application for a subdivision or development. The plan shall show the pattern of existing and proposed land division and shall include other parcels within one-quarter mile surrounding and adjacent to the proposed land division. At the applicant's request, the City shall prepare a future

streets proposal. A street proposal may be modified when subsequent subdivision proposals are submitted.

(2) Identify existing or proposed bus routes, pullouts or other transit facilities, bicycle routes and pedestrian facilities on or within 500 feet of the site.

B. All local access and neighborhood collector streets which abut a development site shall be extended within the site to provide through circulation when not precluded by environmental or topographical constraints, existing development patterns or strict adherence to other portions of the City standards. A street connection or extension is considered precluded when it is not possible to redesign or reconfigure the street pattern to provide required extensions. In the case of environmental or topographical constraints, the mere presence of a constraint is not sufficient to show that a street connection is not possible. The applicant must show why the constraint precludes some reasonable street connection.

C. The location, width and grade of all streets shall conform to the approved street plan and shall be considered in their relation to existing and planned streets, to topographic conditions, to public convenience and safety, and in their appropriate relation to the proposed use of the land to be served by such streets. Such a plan shall be based on the type of land use to be serviced, the volume of traffic, the capacity of adjoining streets and the need for public convenience and safety.

D. Where the location of a street is not shown in an approved street plan, the arrangement of streets in a development shall either:

(1) Provide for the continuation or appropriate projection of existing streets in the surrounding areas, or;

(2) Conform to a plan adopted by the City Council if it is impractical to conform to existing street patterns because of topographical or other existing conditions of the land.

E. All development shall provide an internal network of connecting streets that minimize travel distances within the development.

F. Minimum separation of 125 feet between local access and neighborhood collector street intersections is required.

G. Where necessary to give access or permit a satisfactory future division of adjoining land, streets shall be extended to the boundary lines of the tract to be developed, and

(1) These extended streets or street stubs to adjoining properties are not considered to be permanent cul-de-sacs since they are intended to continue as through streets at such time as the adjoining property is developed. A temporary cul-de-sac shall be constructed in accordance with Section 4.06.

(2) A barricade shall be constructed at the end of the street by the developer which shall not be removed until authorized by the City

Engineer, the cost of which is to be included in the street construction cost. The sign shall read:

THIS STREET TO BE EXTENDED WITH FUTURE DEVELOPMENT BEYOND THIS POINT.

4.12 Second access requirements.

In order to provide a second access to a residential subdivision, short subdivision, binding site plan or planned unit development, no residential street shall serve as an access street to any development of more than 50 lots or dwelling units unless the access street is connected in at least two locations with other streets that have a vehicle carrying capacity (ADT in Table 1.1) the same as or greater than the access street. A residential development access road may be separated by a median, but the median separation may not constitute or substitute for a second access.

The second access requirement may be satisfied through use of connecting a new street to an existing street in an adjacent neighborhood if:

(a) No other practical alternative exists; or

(b) Existing street was previously stubbed indicating intent for future access; or

(c) An easement has been recorded specifically for said purpose.

These provisions are not intended to preclude the state statute on land locking. This section does not preclude a commercial project from gaining access through a residential development. Traffic impacts for such projects will be analyzed during the SEPA process.

4.13 Access requirements.

A. In order to provide for increased traffic movement on arterial and neighborhood collector streets and to eliminate turning movement conflicts, the director may restrict the location of driveways on streets and require the location of driveways be placed on adjacent streets upon the finding that the proposed access would:

(1) Cause or increase existing hazardous traffic conditions; or

(2) Provide inadequate access for emergency vehicles; or

(3) Cause hazardous conditions to exist which would constitute a clear and present danger to the public health, safety, and general welfare.

B. In order to eliminate the need to use public streets for movements between commercial or industrial properties, parking areas shall be designed to connect with parking areas on adjacent properties unless not feasible. The City Engineer shall require access easements between properties where necessary to provide for parking area connections.

C. In order to facilitate pedestrian and bicycle traffic, access and parking area plans shall provide efficient sidewalk and/or pathway connection between neighboring developments or land uses.

D. Proposed street or street extensions shall be located to provide direct access to existing or planned transit stops or other neighborhood activity centers, such as schools, shopping areas, and parks.

4.14 Street Names

The developer must check with the City regarding the naming of streets. This should be done at the time the preliminary plat is submitted and again upon approval of the final plat. The Director will insure that the name assigned to a new street is consistent with policies of the City.

An address number will be assigned to all new buildings at the time the building permit is issued. It is then the owner's responsibility to see that the house numbers are placed clearly and visibly at the main entrance to the property or at the principal place of ingress.

4.15 Signing

The developer is responsible for providing all traffic control signs. Traffic control signing shall comply with the provisions as established by the U.S. Department of Transportation Manual on Uniform Traffic Control devices (MUTCD).

Street designation signs, including poles and hardware, will be installed by the developer. Street designation signs shall display street names or grid numbers as applicable.

4.16 Slope, wall and drainage easements and right-of-way reduction.

A. Easements. Either the functional classification or particular design features of a road may necessitate slope, sight distance, wall or drainage easements beyond the right-of-way line. Such easements may be required by the Engineer or Director in conjunction with dedication or acquisition of right-of-way.

4.17 Pavement markings, markers, and pavement tapers.

Pavement markings, markers or striping shall be used to delineate channelization, lane endings, crosswalks and longitudinal lines to control or guide traffic per MUTCD. Channelization plans or crosswalk locations shall be approved by the traffic engineer.

4.18 Sight Obstruction

The following sight clearance requirements take into account the proportional relationship between speed and stopping distance.

The sight distance area is a clear-view triangle formed on all intersections by extending two lines of specified length (A) and (B) as shown below from the center of the intersecting streets along the centerlines of both streets and connecting those endpoints to form the hypotenuse of the triangle. See detail at the end of these

Standards. The area within the triangle shall be subject to restrictions to maintain a clear view on the intersection approaches.

Sight Distance Triangle:

Stop or Yield Controlled Intersection:

	Sight Distance (Ft.)	
	(A)	(B)
Speed Limit	Major Street	Minor Street
20 mph	200	*
25 mph	250	*
30 mph	300	*
35 mph	350	*
40 mph	400	*

* Sight distance measured from a point on the minor road 15 feet from the edge (extended) of the major road pavement and measured from a height of eye at 3.50 feet on the minor road to height of object at 4.25 feet on the major road.

Uncontrolled Intersection:

	Sight Distance (Ft.)	
	(A)	(B)
Speed Limit	Major Street	Minor Street
20 mph	90	90
25 mph	110	110
30 mph	130	130
35 mph	155	155
40 mph	180	180

The vertical clearance area within the sight distance triangle shall be free from obstructions to a motor vehicle operator's view between a height of 3 feet and 10 feet above the existing surface of the street.

Exclusions. Sight obstructions that may be excluded from these requirements include: utility poles, regulatory signs, trees trimmed from the base to a height of 10 feet above the street, places where the contour of the ground is such that there can be no cross visibility at the intersection, saplings or plant species of open growth habits and not in the form of a hedge which are so planted and trimmed as to leave at all seasons a clear and unobstructed cross view, buildings constructed in conformance with the provisions of appropriate zoning regulations and preexisting buildings.

4.19 Illumination

A. Continuous illumination will be required for channelization accommodating additional lanes including the tapers. Illumination will also be required as identifiers where roads intersect arterials or for frequently used pedestrian areas on arterials.

B. Widening of arterials with existing continuous illumination will require maintaining the continuous illumination. Widening to the ultimate roadway width will require illumination designed to current construction practices.

C. Illumination intensity and uniformity shall conform with current IES standards for urban streets. Luminaire fixtures shall be consistent with fixtures maintained by the local electrical utility.

D. All illumination shall be designed and constructed using materials as specified by the local electrical utility. Illumination shall be provided on all streets.

E. The standard luminaire shall be with a Type III medium cutoff distribution and a flat glass refractor. The standard luminaire shall be as specified by the local electrical utility. As an alternative, illumination may be provided from existing utility poles, with permission from the City Engineer. The City Engineer may require that analysis of light and glare be provided to show that any extra illumination beyond these standards will not have a significant adverse impact on existing land uses in the area.

4.20 Signals

Signalization will be required if warranted as determined by an existing study and/or transportation study performed by the Developer at the request of the City. The developer shall pay the entire cost of signalization if signalization is warranted, or wait until the City has procured sufficient monies to cause signalization improvements at the intersection(s). All components of the signals shall become property of the City.

4.21 Parking Lots

Storm water detention shall be provided and shall follow the criteria as set forth in Chapter 5 of these standards.

Six (6) sets of plans and specifications shall be required to be submitted for review and approval by the City with respect to storm drainage discharge and on site retention or detention, matching street and/or sidewalk grades, access locations, parking layout, and to check for future street improvement conformity and City zoning regulations.

Parking lot surfacing materials shall satisfy the requirement for a permanent all-weather surface. Asphalt concrete pavement and cement concrete pavement satisfy this requirement and are approved materials. Gravel surfaces are not acceptable or approved surface material types. Combination grass/paving systems are approved surface material types, however, their use requires submittal of an overall parking lot paving plan showing the limits of the grass/paving systems and a description of how the systems will be irrigated and maintained. If the City Engineer determines the grass/paving system is not appropriate for the specific application, alternate approved surfacing materials shall be utilized.

4.22 Survey Staking

All surveying and staking shall be performed by an engineering or surveying firm employed by the Developer and capable of performing such work. The engineer or surveyor performing and directing such work shall be currently licensed by the State

of Washington to perform said task.

A pre-construction meeting shall be held with the City prior to commencing staking. All construction staking shall be inspected by the City prior to construction.

The minimum staking of streets shall be as follows:

(a) Stake centerline alignment every 25 feet (50 feet in tangent sections) with cuts and/or fills to subgrade.

(b) Stake top of ballast and top of crushed surfacing at centerline and edge of pavement every 25 feet.

(c) Stake top back of curb at a consistent offset for vertical and horizontal alignment.

4.23 Driveways

A. General

(1) Driveway details are located at the end of these Standards.

(2) All abandoned driveway areas on the same frontage shall be removed and the curbing and sidewalk or shoulder and ditch section shall be properly restored, at the Property Owner's expense.

(3) Maintenance of driveway approaches and culverts shall be the responsibility of the owners whose property they serve.

(4) A right-of-way use permit shall be required. No person shall begin work on the construction, alteration, or removal of any driveway or the paving of any parking strip on and/or adjacent to any street, alley or other public place in the City without first obtaining a permit from the City. Exceptions to permit acquisition requirements may be granted at the discretion of the Public Works Director.

(5) Existing driveways may be reconstructed or repaired as they exist provided such reconstruction is compatible with the adjacent road. A right-of-way use permit shall not be required for driveway reconstruction or repair.

(6) Notwithstanding any other provisions, driveways will not be allowed where they are prohibited by separate City Council action or where they are determined by the Engineer or Director to create a hazard or impede the operation of traffic on the roadway.

B. Location and Width of New Driveways.

(1) A residential driveway shall typically serve only one parcel. A driveway serving more than one parcel shall be classed as a commercial driveway or a joint use driveway tract, except as provided in subsections (2)(a) and (2)(b) of this section.

(2) No portion of driveway width shall be allowed within five feet of side property lines in residential areas or nine feet in commercial areas except as follows:

(a) A joint use driveway tract may be used to serve a maximum of two parcels:

(i.) Minimum tract width shall be 32 feet with an 24-foot paved surface, cross slope in one direction and curb or thickened edge on one side. Minimum tract length shall be 20 feet from right-of-way line. The remaining eight feet of width (four feet on each side) of the tract area shall be used for landscaping purposes.

(ii.) Driving surface shall be paved, with a paved apron from the edge of pavement of intersecting street to right-of-way line.

(iii.) The Director may allow use of an easement if the only access to a serving roadway is through an adjacent parcel not owned by the applicant.

(b) Existing driveways may utilize full width of narrow "pipe-stem" parcels or easements if approved by Director.

(3) Grade transitions, excluding the tie to the roadway, shall be constructed as smooth vertical curves. The maximum change in driveway grade, shall be eight percent within any 10 feet of distance on a crest and 12 percent within any 10 feet of distance in a sag vertical curve. Driveway shall be graded to match into possible future widened road section without encroachment into graded shoulder or sidewalk. The design engineer for proposed developments shall consider the access driveway profile when designing the serving road to ensure that required grade transitions can be complied with considering building setback and lot terrain conditions. A drawing showing the grade transitions shall be required to be submitted to the City at the time of building permit approval.

(4) Driveways in rolled curb sections may be constructed abutting and flush with sidewalk or back of curb without gapping or lowering height of curb.

(5) No driveway aprons shall extend into the street further than the face of the curb.

(6) Every driveway must provide access to a garage, carport, parking area or other structure on private or public property requiring the entrance of vehicles. No public curb shall be cut unless a driveway is installed.

(7) No driveway shall be located as to create a hazard to pedestrians, bicyclists or motorists or to invite or compel illegal or unsafe traffic movements.

(8) No driveway shall be constructed in such a manner as to be a hazard to any existing street lighting standard, utility pole, traffic regulating

device or fire hydrant. At a minimum all portions of the driveway shall be located five (5') feet from these and similar appurtenances. The cost of relocating any such street structure when necessary to do so shall be paid by the abutting property owner. The relocation of any street structure shall be allowed with the specific written approval of the Owner of the structure involved.

(9) No driveway access shall be allowed onto an arterial street within 150 feet of the nearest right-of-way line of an intersecting street. No driveway shall be located within 20 feet of a crosswalk.

C. Dimensions, Slope, Details

(1) Except as otherwise provided, the width of any residential driveway shall not exceed twenty (20') feet (exclusive of the taper). The maximum width for any commercial driveway shall be thirty-five (35') feet. The City Engineer may authorize additional residential driveway widths for three-car garages, but no residential driveway shall be wider than 30 feet.

(2) The width of any driveway shall not be less than ten (10') feet, exclusive of the taper.

(3) The length of any driveway shall not exceed one hundred fifty feet, without approval of the City Engineer.

(4) Driveway slopes or grades shall not exceed eight percent unless otherwise authorized/approved by the City Engineer in writing. The City Engineer will consider authorizing driveway slopes exceeding eight percent, up to a maximum of twenty percent, if it is determined that:

(a) The driveway location is the only economically and environmentally reasonable alternative.

(b) The driveway will not present a traffic, pedestrian, bicycle or safety hazard.

(c) The Fire Marshal concurs in allowing the increased driveway slope.

(d) The public health, safety and general welfare will not be adversely affected.

(e) Driveways giving direct access onto arterials may be denied if alternate access is available.

(f) A road approach or wider driveway width may be approved by the City Engineer where a substantial percentage of oversized vehicle traffic exists, where divisional islands are required/desired, or where multiple exit or entrance lanes are needed.

(g) Parking lot circulation and signing needs shall be met on site. The public right-of-way shall not be utilized as part of a parking lot flow.

hi) Road approaches and/or ingress and egress tapers may be required in industrial and commercially zoned areas as directed by the City Engineer.

(i) For driveways crossing an open ditch section, culverts shall be adequately sized to carry anticipated stormwater flows and in no case be less than 12 inches in diameter. The property owner making the installation shall be responsible for determining proper pipe size. The Director may require the owner to verify the adequacy of pipe size. Concrete pipe shall have a minimum cover of 6 inches to finish grade. All other pipes shall have a minimum cover of 12 inches.

(5) The angle between any driveway and the street shall be not less than 45°.

(6) Generally, the two edges of each driveway shall be parallel.

(7) All driveways shall be constructed over a 4-inch crushed surfacing (5/8" minus) top course. Wire mesh shall be included within all portions of driveways constructed of Portland cement concrete. Driveways shall be subject to the same testing and inspection requirements as curb, gutter, and sidewalk construction. Portland cement concrete driveways shall be 6 inches thick, including the portion from the gutter to the back edge of sidewalk.

(8) Driveway approach to City streets shall be paved, unless otherwise approved by the City Engineer.

D. Commercial Driveways

For commercial or industrial driveways with heavy traffic volumes or significant numbers of trucks, the Director may require construction of the access as a road intersection. This requirement will be based on traffic engineering analysis submitted by the applicant that considers, among other factors, intersection spacing, sight distance and traffic volumes. No commercial or industrial type driveway shall be constructed, if reasonably possible, where backing onto the sidewalk or street is required.

4.24 Sidewalks, Curbs and Gutters

A. General

All properties within commercial zones of the City, properties abutting arterial streets, neighborhood collectors or local access streets shall, in conjunction with new construction on such properties or alterations, reconstruction, or improvements, where the total cost of construction, reconstruction or remodeling in the opinion of the City warrants frontage improvements, shall be required to provide sidewalks, curbs and gutters along abutting streets, in accordance with the details provided herein. Single-family residences, not

associated with short plats or long plats, shall be exempt from this requirement.

B. Design Standards

Plans for the construction of sidewalks, curbs and gutters are to be submitted as part of the street plans when applicable.

The City has set forth minimum standards as shown in the details which must be met in the design and construction of sidewalks, curbs and gutters. Because these are minimum standards, they may be modified by the City should the City Engineer feel circumstances require variances to minimum design standards.

C. Sidewalks

(1) Arterial and Neighborhood Collector Streets. Sidewalks, curbs and gutters shall be required on both sides of all major and minor arterial streets and collector streets interior to the development. Sidewalks, curbs and gutters shall also be required on the development side of streets abutting the exterior of said development. Sidewalks shall be separated from the curb by a minimum of five (5) feet, as a landscape buffer unless otherwise approved by the Director. This landscape buffer shall be landscaped as approved by the Director and maintained by the abutting property owner(s).

The sidewalks shall vary from five (5) feet (minimum) to twelve (12) feet (maximum) in width, at the discretion of the Director, in commercial corridors, or match existing widths if greater than twelve (12) feet wide.

(2) Local access Streets. Sidewalks shall be required on both sides of local access streets interior to the development and on the development side of access streets abutting the exterior of said development.. Sidewalks shall be separated from the curb by a minimum of four (4) feet, as a landscape buffer unless otherwise approved by the Director. This landscape buffer shall be landscaped as approved by the Director and maintained by the abutting property owner(s).

The sidewalks on local access Streets shall be five (5) feet wide.

(3) The design and construction of all sidewalks, curbs, gutters and walkways shall meet the following minimum standards:

The width of sidewalks shall be as further shown herein. The design of all sidewalks shall provide for a gradual taper rather than an abrupt transition between sidewalks of different widths or alignments.

(4) Form and subgrade inspection by the City, are required before sidewalk is poured. Monolithic pour of curb, gutter and sidewalk will not be allowed.

(5) Sidewalks shall be constructed of Portland Cement Concrete, 4 inches thick (6-inch thick at driveway sections or along access points for

public facilities). When the sidewalk, curb and gutter are contiguous, the width of the sidewalk shall be measured from back of curb to back of sidewalk.

(6) Sidewalks will be constructed on a compacted gravel base, (Class B), or 5/8-inch minus crushed rock of suitable thickness to provide a firm and unyielding base. Sidewalks will be constructed of Portland Cement Concrete as described in Section 8-14 of the Standard Specifications and be designed and constructed in compliance with those details as shown herein. Typically, in commercially zoned areas the sidewalks shall abut the curb. The Director shall be at liberty to vary sidewalk dimensional characteristics and location to meet localized or existing conditions.

The sidewalk thickness shall be as follows:

SIDEWALK LOCATION	SIDEWALK THICKNESS
Typical sidewalk	4" thick
Driveway sections and access points to public facilities	6" thick

The sidewalks will be divided into five foot lengths by contraction joints and expansion joints will be at intervals of no more than 15 feet. Joints shall be filled with an asphalt mastic material.

(7) For driveway requirements, see Section 4.23.

D. Curb and Gutter

Cement concrete curb and gutter shall be used for all street edges unless otherwise approved by the City Engineer. All curbs and gutters shall be constructed of Class "B" Cement Concrete in accordance with Section 6-02 of the Standard Specifications. Curbs shall be of the vertical face type. No rolled curb and gutter profile will be allowed without specific approval of the City Engineer. When rolled curbs are approved, all sidewalks abutting the rolled curb shall be a minimum 6 inches thick.

Extruded curb and gutter per WSDOT Standard Specifications is allowed only with the specific approval of the City Engineer.

Form and subgrade inspection by the City are required before curb and gutter are poured.

Forms, wood or steel, shall be staked securely in place, true to line and grade.

Sufficient support shall be given to the form to prevent movement in any direction, resulting from the weight of the concrete or the concrete placement. Forms shall not be set until the subgrade has been compacted within one inch of the established grade. Forms shall be clean and well oiled prior to setting in place. When set, the top of the form shall not depart from grade more than one-eighth (1/8) inch when checked with a ten-foot straightedge. The

alignment shall not vary more than one-fourth (1/4) inch in ten (10) feet. Immediately prior to placing the concrete, forms shall be carefully inspected for proper grading, alignment and rigid construction. Adjustments and repairs as needed shall be completed before placing concrete.

The subgrade shall be properly compacted and brought to specified grade before placing concrete. The subgrade shall be thoroughly dampened immediately prior to the placement of the concrete. Concrete shall be spaded and tamped thoroughly into the forms to provide a dense, compacted concrete free of rock pockets. The exposed surfaces shall be floated, finished and brushed longitudinally with a fiber hair brush approved by the City's inspector and/or Engineer.

The face form of the curb shall be stripped at such time in the early curing as will enable inspection and correction of all irregularities that appear thereon.

Forms shall not be removed until the concrete has set sufficiently to retain its true shape. The face of the curb shall be trawled with a tool cut to the exact section of the curb and at the same time maintain the shape, grade and alignment of the curb. The exposed surface of the curb shall be brushed with a fiber hair brush.

White pigmented or transparent curing compounds shall be applied to all exposed surfaces immediately after finishing. Transparent curing compounds shall contain a color dye of sufficient strength to render the film distinctly visible on the concrete for a minimum period of four (4) hours after application.

When the curb section is to be placed separately, the surface of the gutter directly underneath the curb section shall be covered with a protective cover to protect that area from the curing agent when the gutter is sprayed. This cover must remain in place until the curb is placed. Care shall be taken in the placing of this cover to prevent the steel dowels from puncturing the cover.

If, at any time during the curing period any of the forms are removed, a coat of curing compound shall be applied immediately to the exposed surface. The curing compound shall be applied in sufficient quantity to obscure the natural color of the concrete. Additional coats shall be applied if the City Inspector determines that the coverage is not adequate. The concrete shall be cured for the minimum period of 72 hours time set forth in Section 8-04 of the Standard Specifications.

Joints shall be constructed in the manner and at the locations shown in the drawings. They shall be cleaned and edged as shown on the drawings. All expansion and contraction joints shall extend entirely through the curb section above the pavement surface. Joint filler in the curb shall be normal to the pavement and in full but contact with pavement joint filler.

E. Wheelchair Ramps

All sidewalks must be constructed to provide for wheelchair ramps in accordance with the current standards of applicable state law. Details provided herein are minimum and subject to change. It is the Developer's responsibility to verify current ADA requirements and install same per current

standards even if City has approved of construction drawings with non-compliant ADA requirements.

Wheelchair Ramps shall be constructed of Portland Cement Concrete. Form and subgrade inspection by the City are required before wheelchair ramp is poured.

F. Survey Staking

The minimum staking of curb, gutter and sidewalk shall be as follows:

Stake top back of curb at a consistent offset for vertical and horizontal alignment every 25 feet (50 feet in tangent sections).

G. Testing

Testing shall be required at the developer's or contractor's expense on all materials and construction as specified in the WSDOT Standard Specifications.

At a minimum, one slump test and 2 test cylinders shall be taken once per day. All other testing frequencies shall be as specified in the Testing and Sampling Table in Section 4.34.

In addition, the City shall be notified before each phase of sidewalk, curb and gutter construction commences.

4.25 Separated walkways, bikeways, and trails.

Separated pedestrian, bicycle and equestrian facilities shall be provided where designated in the Comprehensive Plan or where required by the Engineer or Director because of anticipated significant public usage. Separated facilities are typically located on an easement, tract, or within the right-of-way when separated from the roadway by a drainage ditch or barrier. Where separated walkways, bikeways, or equestrian facilities intersect with motorized traffic, sight distance, marking and signalization (if warranted) shall be as provided in MUTCD. Facilities shall be designed as follows:

A. Primary Trail. Primary trails are intended for pedestrian and bicycle use, are accessible, and located conveniently so as to connect several community facilities. Primary trails shall be paved with a minimum paved surface width of 12 feet and graded shoulders of at least two feet. Primary trails shall include provisions for signage, access, lighting, drainage, visibility, landscaping, and other necessary appurtenances as required by the City. Tract width shall be a minimum of 30 feet in width.

B. Secondary Trail. Secondary trails are intended for pedestrians and bicycles, are located so as to connect community facilities or neighborhoods or to provide access to primary trails. Secondary trails shall have a minimum width of 6 feet with 2 feet of clearance on both sides and shall be paved or soft surface, and may not be accessible along the entire length. Tract width shall be a minimum of 15 feet in width.

C. Footpaths. Footpaths are typically soft surface facilities designed for pedestrians. Such pathways shall have a minimum width of 4 feet with at least 2 feet of clearance on both sides and shall be soft surface or paved, where required by the City Engineer or Director. Tract width shall be a minimum of 12 feet in width.

D. Unimproved Path. Unimproved paths are pedestrian facilities of various width dictated by use. Unimproved paths consist of native soil material.

E. All separated walkways, bikeways, and trails not located within a public park, or right-of-way shall be located in a tract dedicated to the City and identified by survey along the centerline of the tract. Survey shall be recorded at the County Assessor's Office or described and dedicated upon final plat recording.

F. Soft surface construction shall include two and one-half inches of crushed surfacing top course or wood chips over cleared and compacted native material as approved by the Engineer. Paved surface construction shall include two inches of asphalt concrete over one and one half inches of crushed surfacing top course over two and one half inches of crushed surfacing base course; or as identified in Section 4.37 for facilities located within the roadway. Provisions for drainage shall be included for all separated facilities.

G. Where located alongside individual parcels, fencing adjacent to the trail shall be open so as to allow clear visibility into the trail corridor. Fencing on adajcent properties may be required to be located a specific distance from the tract, in order to accomplish the intent of this requirement.

4.26 School access.

School access required as part of development approval shall be provided by an asphalt walkway or concrete sidewalk unless another alternative is available and approved by the Engineer through a road variance request.

4.27 Bikeways.

A. Bikeways are generally shared with other transportation modes, although they may be provided exclusively for bicycle use. Bikeways are categorized below per the WSDOT Design Manual based on degree of separation from motor vehicles and other transportation modes. This classification does not denote preference of one type over another. The planning and design of bikeways in any category shall be in accordance with Section 1020 of the WSDOT Design Manual as modified herein, and the AASHTO Guide for the Development of Bicycle Facilities, current edition. Bikeways are categorized as follows:

(1) Bike Path (Class I Bikeway). A separated paved path for the principal use of bicycles. Bike paths shall be 10 feet wide except in high usage areas or areas serving maintenance vehicles, where they shall be 12 feet wide. Graded shoulders of two feet shall be provided adjacent to the pavement.

(2) Bike Lane (Class II Bikeway). A portion of the road that is designated by pavement striping for exclusive bicycle use. Bicycle lanes may be signed as part of a directional route system. Bicycle lanes shall be five

feet wide, measured from the face of curb on a curbed road and five feet wide, measured from the edge of the traveled way (painted lane stripe) on a shouldered road. Bike lanes shall be provided on all arterials and where designated in the Parks, Trails, and Open Space Comprehensive Plan.

(3) Bike Routes (Class III Bikeway). A road that provides a widened paved outer lane to accommodate bicycles in the same lane as motor vehicles. These widened lanes may also be used for parking where allowed. Lane width shall be increased at least three feet. In areas of high turnover for onstreet parking, a Bike Lane may be required. Typically, Bike Routes shall be designated by signs and shall connect to higher use bicycle facilities. Bike Routes shall be provided, but not necessarily designated by signs, on all neighborhood collectors and local access streets.

(4) Shared Roadway With No Designation (Class IV Bikeway). All roads not categorized above where bicycles share the roadway with motor vehicles.

B. Striping and signing shall be implemented as follows:

(1) Pavement markings shall be used on bike lanes and paths according to WSDOT Design Manual and MUTCD.

(2) The design of all signalized intersections shall consider bicycle usage and the need for bicyclists to actuate the signal.

4.28 Equestrian facilities.

Equestrian facilities shall be provided where designated by the City of Newcastle Parks, Trails, and Open Space Comprehensive Plan or as required by the Engineer or Director and shall not be shared with bicycles. Facilities shall be provided as follows:

A. Shoulders adjacent to the traveled way intended for equestrian use shall be surfaced full-width, minimum eight feet. Surface shall be one and one-half inches of crushed surfacing top course over two and one-half inches of crushed surfacing base course.

B. A separated equestrian trail shall be constructed with an 18 percent maximum grade, 10-foot vertical clearance, 6 foot wide pathway and two feet of clearance to obstructions on both sides. The trail shall be constructed of native soil or, where drainage or erosion problems are present, a minimum of two and one-half inches of crushed surfacing top course on graded and compacted native soil. Native soil which is not free draining shall be removed and replaced with free draining soil as necessary to provide a maintainable and well-drained subgrade. Additional crushed surfacing, cinders or other stabilizing materials shall be required if heavy usage is anticipated or if there is any evidence of instability in the subgrade; including free water, swamp conditions, fine-grained or organic soils, slides or uneven trails.

C. All equestrian trails not located within a public park, or right-of-way shall be located in a tract and identified by survey along the centerline of the tract. Survey shall be recorded at the County Assessor's Office or described and

dedicated upon final plat recording. Tracts shall be a minimum of 15 feet in width.

4.29 Side slopes

Side slopes shall generally be constructed no steeper than 2.5:1 on both fill slopes and cut slopes. Steeper slopes may be approved by the Engineer upon showing that the steeper slopes, based on soils analyses, will be stable. Side slopes on projects funded by federal grants shall be constructed in conformance with local agency guidelines.

Side slopes shall be stabilized by grass sod or seeding or by other planting or surfacing materials acceptable to the Engineer.

4.30 Roadside Features

Miscellaneous features included herein shall be developed and constructed to encourage the uniform development and use of roadside features wherever possible. The design and placement of roadside features included herein shall adhere to the specific requirements as listed for each feature.

A preconstruction meeting shall be held with the City prior to commencing staking. All staking shall be inspected by the City prior to construction, and subject to the City's approval.

A. Testing

Testing shall be required at the developer's or contractor's expense on all materials and construction as specified in the WSDOT Standard Specifications and with a frequency as specified in the WSDOT Construction Manual.

B. Survey Monuments

(1) All existing (or new) survey control monuments and/or markers which are disturbed, lost, or destroyed during surveying or building shall be replaced with the proper monument as outlined below by a land surveyor currently registered (licensed) in the State of Washington at the expense of the responsible contractor, builder or developer.

(2) Street type: Principal Arterial or Minor Arterial; Neighborhood Collector Street;

A pre-cast concrete monument with cast iron monument case and cover installed per City of Newcastle Standards is required.

If the monument case and cover are placed in cement concrete pavement, the pre-cast base will not be necessary.

(3) Street type: Local Access;

A cast-in-place concrete surface monument with sufficient ferrous metal embedded to allow for detection by a magnetic detection device per City of Newcastle standards is required.

(4) Monument Locations

Appropriate monuments shall be placed:

(a) At all street intersections;

(b) At the PC and PT's of all horizontal curves;

(c) At PI of all horizontal curves of streets where the PI lies within the limits of the traveled roadway;

(d) At all corners, control points and angle points around the perimeter of subdivisions as determined by the City;

(e) At all section corners, quarter corners, and sixteenth corners that fall within the right-of-way.

C. Mailboxes

(1) During construction, existing mailboxes shall be accessible for the delivery of mail or, if necessary, moved to a temporary location. Temporary relocation shall be coordinated with the local U.S. Postal Service. The mailboxes shall be reinstalled at the original location or to a new location as may be required by the local Postmaster, as further outlined below and approved by the U.S. Postal Service.

(2) Location

(a) Bottom or base of box shall be 36" to 42" above the road surface.

(b) Front of mailbox 18 inches behind vertical curb face or outside edge of shoulder.

(c) New developments. Clustered mailboxes will, in all likelihood, be required. Contact the U.S. Postal Service for details. Sidewalks shall be constructed to facilitate same.

(d) Buck-outs in sidewalks and sidewalk re-alignment may be required per the City Engineer.

(3) Mailboxes shall be set on posts strong enough to give firm support but not to exceed 4 x 4 inch wood or one 1-1/2 inch diameter pipe, or material and design with comparable breakaway characteristics. Deviations may be allowed only with the written approval of the City.

D. Guard Rails

For purposes of design and location, all guard rails along roadways shall conform to the criteria of the "Washington State Department of Transportation Design Manual", current edition.

E. Rock Walls

(1) Rock walls may be used for erosion protection of cut or fill embankments up to a maximum height of 8 feet in stable soil conditions which will result in no significant foundation settlement or outward thrust upon the walls. For heights over 8 feet, or walls of any height supporting an outward thrust (surcharge), or when soil is unstable, a structural wall of acceptable design stamped by an engineer currently licensed in the State of Washington shall be used. A building permit shall be required for any wall over 4 feet in height or any wall supporting a surcharge, regardless of height. Design and construction shall be per the Association of Rockery Contractors (ARC) Specifications, applicable engineering recommendations, and these standards.

All walls shall be subject to inspection by the City and rock walls requiring design by an engineer, or walls over 4 feet in height shall be subject to inspection by the owner's engineer. The owner's engineer shall continuously inspect the installation of the wall as it progresses and shall submit inspection reports, including compaction test results and photographs taken during the construction, documenting the techniques used and the degree of conformance to the engineer's design.

The City shall inspect the wall on at least two occasions. The first inspection shall occur after placement of the first course of rocks and the inspector shall witness burial of the drain pipe. The second inspection shall occur after placement of the top course of rock, but prior to completing the placement of the backfill material for this top course of rock.

(2) The rock material shall be as nearly rectangular as possible. No stone shall be used which does not extend through the wall. The rock material shall be hard, sound, durable and free from weathered portions, seams, cracks and other defects. The rock density shall be a minimum of 160 pounds per cubic foot.

(3) The rock wall shall be started by excavating a trench having a depth below subgrade of one half the base course or one foot (whichever is greater).

(4) Rock selection and placement shall be such that there will be minimum voids and, in the exposed face, no open voids over 6 inches across in any direction. The final course shall have a continuous appearance and shall be placed to minimize erosion of the backfill material. The larger rocks shall be placed at the base of the rockery so that the wall will be stable and have a stable appearance. The rocks shall be placed in a manner such that the longitudinal axis of the rock shall be at right angles or perpendicular to the rockery face. The rocks shall have all inclining faces sloping to the back of the rockery. Each course of rocks shall be seated as tightly and evenly as possible on the course beneath. After setting each course of rock, all voids between the rocks shall be chinked on the back with quarry rock (2-4 inch) to eliminate any void sufficient to pass a 2 inch square probe.

(5) The wall backfill shall consist of quarry rock with a maximum size of 4 inches and a minimum size of 2 inches or as specified by a licensed engineer. This material shall be placed to a 12-inch minimum thickness between the entire wall and the cut or fill material. The backfill material shall be placed in lifts to an elevation approximately 6 inches below the top of each course of rocks as they are placed, until the uppermost course is placed. Any backfill material on the bearing surface of one rock course shall be removed before setting the next course.

(6) Perforated rigid drainage pipe shall be installed as required by the City. Minimum pipe diameter shall be 4 inches. Drainage pipe shall be placed below the bottom course of rocks and shall be bedded and buried with free-draining material, as shown on the drawings, up to a depth of 18 inches. The top of the wall, including the backfill shall be configured so as to prevent surface drainage from flowing over the wall.

F. Street Trees and Landscaping Items

(1) Street trees and landscaping shall be incorporated into the design of road improvements for all classifications of roads. Such landscaping in the right-of-way shall be coordinated with off-street landscaping required on developer's property under the provisions of Chapter 18.16 NMC, Development Standards – Tree Retention and Landscaping.

(2) Planting buffer strips are required along all streets.. The design of planting strips must be approved by the Engineer and must include a landscaping plan in which plant maintenance, utilities and traffic safety requirements are discussed. Said landscaping plan must be approved by the Director.

(3) Existing trees and landscaping shall be preserved where desirable and placement of new trees shall be compatible with other features of the environment. In particular, maximum heights and spacing shall not conflict unduly with overhead utilities, or root development with underground utilities.

(4) New trees shall not include poplar, cottonwood, soft maples, gum, any fruit bearing trees or any other tree or shrub whose roots are likely to obstruct sanitary or storm sewers.

(5) Street tree plans on bus routes shall be reviewed by local service provider.

G. Roadside obstacles

Non-yielding or non-breakaway structures, including rockeries and retaining walls, which may be potential hazards to the traveling public shall be placed with due regard to safety. On roads with a shoulder or mountable curb, hazardous objects shall be placed as close to the right-of-way line as practicable and a minimum of 10 feet from the edge of the traveled way or auxiliary lane. On urban roads with a vertical curb section, hazardous objects

shall be placed as far from the edge of the traveled way or auxiliary lane as practical. Such an object shall not be placed in a sidewalk or with the object edge nearest the roadway less than eight and one-half feet from the face of the curb in business areas or five and one-half feet from face of curb in residential areas. Placement of any utility structures shall be in accordance with requirements of Section 4.31, to include constraints on placement of poles on the outside of curves.

H. Roadway Barricades

Temporary and permanent barricades shall conform to the standards described in Section 6C-8 of MUTCD.

4.31 Utilities

Utilities shall be furnished and installed within the right-of-way beneath new roads, or in existing roadways and rights-of-way so as to provide minimal interference with existing utilities and shall be located as generally shown in Drawings listed herein. Where existing utilities are in place, new utilities shall conform to these Standards as nearly as practical and yet be compatible with the existing installations. Exceptions may be approved by the City when necessary to meet special or localized requirements. Utilities shall be sized and designed to serve adjacent and tributary areas. Typically, utilities shall be required to be extended to "far" property lines. Easements shall be procured and provided by the developer to facilitate same. Utilities shall not be "land locked".

A. Water Lines

Water lines shall be located as required by the Coal Creek Utility District and approved by the City Engineer or as follows:

(1) Shoulder-and-Ditch Section (on existing "standard" street sections):
If practical: Outside of ditch line.
Otherwise: In shoulder 3 feet minimum from edge of travel lane.

(2) Curb and Gutter Section: 5 feet from centerline. Mains and service connections to all lots should be completed prior to placing of surface materials. A location outside of existing roadway improvements will be considered by the City Engineer based on local conditions. This location, however, must be approved by the City Engineer.

(3) Designated side of centerline: North and East.

(4) Depth: 36" minimum pipe cover.

B. Sanitary Sewers

Sanitary sewers shall be located as required by the Coal Creek Utility District and approved by the City Engineer or 5 feet south and west of centerline; depth 36 inches minimum from finished grade.

Sanitary and water lines shall be horizontally and vertically separated per Washington State Department of Ecology minimum requirements unless otherwise approved by the City Engineer.

Gravity systems, whether sanitary or storm drainage, shall have precedence over other systems in planning and installation.

C. Other Utilities

Other utilities (gas, power, telephone, and cable TV) shall be located as follows:

Utilities shall be placed underground, either side of road, at plan location and depth compatible with other utilities and storm drains, unless determined to not be practical by the City Engineer. Minimum cover over such utilities shall be 36" .

Otherwise: On existing poles (as applicable) set back of ditchline or sidewalk, at locations compatible with driveways, intersections, and other essential road features. To extent practical, utilities should share facilities so that a minimum of poles are needed, and preferably on only one side of road.

Notwithstanding other provisions, underground systems shall be located at least 5 feet away from road centerline and where they will not otherwise disturb existing survey monumentation.

D. Utility Crossings in Existing Streets

For smaller diameter pipes and wires the crossing shall be made without surface cut of the traveled portion where the street is of oil mat or better. The crossing shall be made by pushing or boring a pipe under the road. Where rock is known or expected in the area of the crossing, the attempt need not be first, open cutting will be permitted, but prior approval of the City is required.

4.32 Trench Backfill and Restoration

Trench restoration shall be either by a patch or patch plus overlay as required by the City, and as shown in the Drawings.

A. All trench and pavement cuts shall be made by sawcuts. The cuts shall be a minimum of 1 foot outside the trench width.

B. All trenching shall be backfilled with gravel base, Class B, or crushed surfacing materials conforming to Section 4 of the WSDOT Standard Specifications. The trench shall be compacted to 95 percent maximum density, as described in Section 2-03 of the WSDOT Standard Specifications. The City will be the sole judge of approving materials to be utilized for backfill. Typically, crushed rock (5/8-inch minus) or control density fill (CDF) shall be placed and compacted in the trench sections for all right angle (±) street crossings.

If the existing material is determined by the City to be suitable for backfill, the contractor may use the native material except that the top 12 inches of the trench section shall be 5/8-inch minus crushed rock or other structurally suitable material as approved by the City Inspector or Engineer. Exceptions may be granted by the City based on site evaluation of excavated materials. All trench backfill materials shall be compacted to 95% density.

Backfill compaction shall be performed in 6 inch lifts, unless otherwise approved by the City.

Replacement of the asphalt concrete or Portland concrete cement shall match existing asphalt concrete or Portland concrete cement depth, except asphalt shall be a minimum compacted thickness of 2 inches and concrete cement shall be a minimum thickness of 6 inches.

C. Tack shall be applied to the existing pavement and edge of cut and shall be emulsified asphalt grade CSS-1 as specified in Section 9-02.1(6) of the WSDOT Standard Specifications. Tack coat shall be applied as specified in Section 5-04 of the WSDOT Standard Specifications.

D. Asphalt concrete Class B shall be placed on the prepared surface by an approved paving machine and shall be in accordance with the applicable requirements of Section 5-04 of the WSDOT Standard Specifications, except that longitudinal joints between successive layers of asphalt concrete shall be displaced laterally a minimum of 12 inches unless otherwise approved by the City. Fine and coarse aggregate for asphalt concrete shall be in accordance with Section 9-03.8 of the WSDOT Standard Specifications. Asphalt concrete over 2 inches thick shall be placed and compacted in equal lifts not to exceed 2 inches each.

All street surfaces, walks or driveways within the street trenching areas affected by the trenching shall be feathered and shimmed to an extent that provides a smooth-riding connection and expeditious drainage flow for the newly paved surface. Shimming and feathering as required by the City Inspector shall be accomplished by raking out the oversized aggregates from the Class B mix as appropriate.

Surface smoothness shall be per Section 5-04.3(13) of the WSDOT Standard Specifications. The paving shall be corrected by removal and repaving of the trench only.

E. All joints and cracks shall be sealed.

F. When trenching within the roadway shoulder(s), the shoulder shall be restored to its original or better condition.

G. The final patch shall be completed as soon as possible and shall be completed within 30 days after first opening the trench. This time frame may be adjusted if delays are caused by inclement paving weather, or other adverse conditions that may exist. However, delaying of final repair is allowable only subject to the City Engineer's approval. The City Engineer may deem it necessary to complete the work within the 30 days time frame and not allow any time extension. If this occurs, the Contractor shall perform the necessary work as required by the City.

4.33 Temporary Street Patching

Temporary restoration of trenches shall be accomplished by using 2" Class B Asphalt Concrete Pavement when available or 4" medium-curing (MC-250) liquid asphalt (cold mix), 3" Asphalt Treated Base (ATB), or steel plates suitable for H-20 traffic

loading conditions. Steel plates shall be provided with a cold mix "lip" to accommodate a smooth transition from pavement to steel plate.

ATB used for temporary restoration may be dumped directly into the trench, bladed and rolled. After rolling, the trench must be filled flush with asphalt concrete pavement to provide a smooth riding surface.

All temporary patches shall be maintained by the contractor until such time as the permanent pavement patch is in place. All temporary patch materials shall be loaded and hauled to waste by the Contractor, in compliance with applicable government regulations.

If the contractor is unable to maintain a patch for whatever reason, the City will patch it at actual cost plus overhead and materials. The property owner/developer/permittee shall be invoiced for any City expenses incurred to comply with this Contractor requirement.

4.34 Material and Construction Testing

Testing shall be required at the developer's or contractor's expense. The testing shall be ordered by the developer or contractor and the chosen testing lab shall be preapproved by the City. Testing shall be done on all materials and construction as specified in the WSDOT Standard Specifications and with frequency as specified herein.

In addition, the City shall be notified before each phase that street construction commences (i.e., staking, grading, subgrade, ballast, base, top course, and surfacing).

CITY OF NEWCASTLE
TESTING AND SAMPLING FREQUENCY GUIDE

ITEM	TYPE OF TESTS	MIN. NO.	FREQUENCY
GRAVEL BORROW	GRADING & SE	1 EACH	1-4000 TON
SAND DRAINAGE BLANKET	GRADING	1 EACH	1-4000 TON
CSTC	GRADING, SE & FRACTURE	1 EACH	1-2000 TON
CSBC	GRADING, SE & FRACTURE	1 EACH	1-2000 TON
BALLAST	GRADING, SE & DUST RATIO	1 EACH	1-2000 TON
BACKFILL/SAND DRAINS	GRADING	1 EACH	1-2000 TON
GRAVEL BACKFILL FOR:			
FOUNDATIONS	GRADING, SE & DUST RATIO	1 EACH	1-1000 TON
WALLS	GRADING, SE & DUST RATIO	1 EACH	1-1000 TON
PIPE BEDDING	GRADING, SE & DUST RATIO	1 EACH	1-1000 TON
DRAINS	GRADING	1 EACH	1-100 TON
PCC STRUCTURES: (Sidewalk, Curb and Gutter, Foundations)			
COARSE AGGREGATE	GRADING	1 EACH	1-1000 TON
FINE AGGREGATE	GRADING	1 EACH	1-500 TON
CONSISTENCY	SLUMP	1 EACH	1-100 CY
AIR CONTENT	AIR	1 EACH	1-100 CY
CYLINDERS (28 DAY)	COMPRESSIVE STRENGTH	2 EACH	1-100 CY
CEMENT:	CHEMICAL & PHYSICAL CERT.	1	1-JOB
ASPHALT CEMENT CONCRETE:			
BLEND SAND	SE	1 EACH	1-1000 TON
MINERAL FILLER	S.G. & PI, CERTIFICATION	1	1-JOB
COMPLETED MIX	FRACTURE, SE, GRADING, ASPHALT CONTENT	1 EACH	1-1000 TON
	COMPACTION	2 EACH	5-400 TON
ASPHALT TREATED BASE:			
COMPLETED MIX	SE, GRADING, ASPHALT CONTENT	1 EACH	1-1000 TON
	COMPACTION	1 EACH	5-Control Lot*
ASPHALT MATERIALS	CERTIFICATION	1	1-JOB
RUBBERIZED ASPHALT:	CERTIFICATION	1	1-JOB
COMPACTION TESTING:			
EMBANKMENT	COMPACTION	1 EACH	1-500 LF
CUT SECTION	COMPACTION	1 EACH	1-500 LF
CSTC	COMPACTION	1 EACH	1-500 LF
CSBC	COMPACTION	1 EACH	1-500 LF
BALLAST	COMPACTION	1 EACH	1-500 LF
TRENCH BACKFILL	COMPACTION	1 EACH	1-500 LF

SE = Sand Equivalency

* A control lot shall be a normal day's production. For minor quantities 200 tons or less per day, a minimum of two (2) gauge readings shall be taken.

4.35 Subgrade Preparation

The subgrade area of the street right-of-way shall be cleared of brush, weeds, vegetation, grass and debris, per Section 2-01 of the aforementioned WSDOT Standard Specifications. All cleared and grubbed material shall be satisfactorily removed and disposed of properly. All depressions, or ruts, which contain water will be drained. At a minimum, the subgrade of the road shall consist of free-draining materials to a depth of 12 inches below finish grade.

The subgrade shall then be bladed and dragged to remove inequalities and secure a uniform surface. The existing subgrade will be compacted to a minimum density as defined in the WSDOT Standard Specifications and as witnessed by the City Inspector. Compaction tests may be required to be conducted at the discretion of the City to verify same.

4.36 Crushed Surfacing (Base and Top Course)

Surfacing shall consist of the construction of two or more courses of crushed stone upon an existing roadway surface, or upon a subgrade properly prepared as outlined above. Crushed surfacing material shall be uniform in quality and substantially free from wood, roots, bark and other extraneous material. It will compact into a dense and unyielding mass which will be true to line, grade and cross-section. It shall meet the following test requirements:

Los Angeles Wear, 500 Rev. (ASTM Designation C 131) 35% Max.
Grading Requirement (% by weight)

Percent Passing	Base Course	Top Course
1-1/4" square sieve	100	0
5/8" square sieve	50 to 80	100
1/4" square sieve	30 to 50	50 to 65
U.S. No. 40 sieve	3 to 18	8 to 23
U.S. No. 200 sieve (wet sieving)	7.5 Max.	10 Max.
Sand equivalent	40 Min.	40 Min.

Base courses and top courses shall be placed in accordance with the approved cross-section. Compaction shall be a minimum of 95% of standard density as determined by the compaction control test for granular materials. Base course rock may be composed of larger fractured rock or recycled concrete if recommended by the developer's engineer and approved by the City Engineer.

4.37 Surfacing Requirements

All streets in the City of Newcastle will be paved with either Asphalt Concrete or Portland Cement Concrete, in strict compliance with these standards. All pavement sections shall be designed by an engineer licensed in the State of Washington. The pavement design shall meet the requirements in the latest publication of the AASHTO Guide for Design of Pavement Structures. Any pavement shall be designed using currently accepted methodology that considers the load bearing capacity of the soils and the traffic carrying capacity requirements of the roadway. Plans shall be accompanied by a pavement thickness design based on soil strength parameters

reflecting actual field tests and traffic loading analyses. The analysis shall include the traffic volume and axle loading, the type and thickness of roadway materials and the recommended method of placement.

When an existing asphalt paved street is to be widened, the edge of pavement shall be sawcut to provide a clean, vertical edge for joining to the new asphalt. After placement of the new asphalt section, the joint shall be sealed and the street overlaid, one and one half inches, plus a prelevel course, full width throughout the widened area. The requirement for overlay may be waived by the City Engineer based on the condition of existing pavement, roadway drainage, and the extent of required changes to channelization. As required by the City Engineer, grinding and prelevel shall be required in order to restore the street surface to conditions equal to or better than prior to the widening work.

One soil sample per each 500 LF of centerline with 3 minimum per project representative of the roadway subgrade shall be taken by the Developer and delivered to a City approved soils lab in order to determine a statistical representation of the existing soil conditions.

Soil tests shall be performed by an engineering firm specializing in soils analysis and currently licensed in the State of Washington.

The soils report, signed and stamped by a soils engineer licensed by the State of Washington, shall be based on actual soils tests and submitted with the plans. All depths indicated are a minimum compacted depth.

Construction of streets paved with Asphalt Concrete shall conform to Section 5-04 of the Standard Specifications. Pavement material will be Class "B" asphalt concrete and be constructed at least two (2) inches thick (minimum compacted thickness) over the prepared crushed surface, top course, or asphalt treated base. Mechanical spreading and finishing will be as described in Section 5-04.3(9) of the Standard Specifications. Compaction will be performed by the equipment and methods presented in Section 5-04.3(10) of the Standard Specifications, and Surface Smoothness shall satisfy the requirement of Section 5-04.3(13) of the Standard Specifications.

Cement concrete streets will be constructed as specified in Section 5-05 of the Standard Specifications.

Permanent pavement patching will be performed as described in the pavement repair detail listed herein, and in compliance with Section 5-04 of the Standard Specifications. All fill material will be placed in lifts no thicker than six inches and mechanically compacted to 95 percent of standard density, as described in Section 2-03 of the Standard Specifications and to the satisfaction of the City Inspector.

The City has established minimum surfacing requirements. These minimum standards are to be used in lieu of a pavement design by a licensed engineer on neighborhood collector or local access streets only and only upon approval by the City Engineer:

	Class B Asphalt Concrete	Asphalt Treated Base or Crushed Surfacing Top Course	Crushed Surfacing Base Course
Neighborhood Collector	2”	4”	6”
Local Access	2”	4”	6”

SECTION 5 STORM DRAINAGE STANDARDS

5.01 General

The standards established by this chapter are intended to represent the **minimum** standards for the design and construction of storm drainage facilities. Greater or lesser requirements may be mandated by the City due to localized conditions. Storm drainage revisions, additions, modification, or changes shall be made in compliance with City standards, ordinances, and Best Management Practices as identified in the King County Surface Water Design Manual. Adequate provisions shall be made for storm drainage, storm sewers, and associated appurtenances sufficient to transmit maximum seasonal flows and one hundred year flood waters characterized by the area. All storm drains and facilities shall be designed by a professional engineer licensed in the State of Washington.

If warranted based on the condition and capacity of the existing storm drainage infrastructure (or lack thereof) and, impacts caused by the proposed development, off-site improvements may be required, at the City Engineer's discretion, to mitigate impacts caused by the proposed development.

5.02 Design Standards

On-site detention systems shall be provided to ensure that stormwater flow rates following development do not exceed the pre-development flow rates. The design of storm drainage and detention systems shall depend on their type and local site conditions. The design elements of storm drainage systems shall conform to City Standards as set forth herein. The following design considerations shall apply:

A. The use of commercial parking lots for detention of stormwater will be reviewed by the City Engineer and approved or denied based on the design, location and general parameters of the project. The detention area shall be situated away from areas of pedestrian movement unless means for rapid closing of the areas is incorporated in the design. The maximum depth of water in parking lot storage shall be limited to 6 inches. Curbs cannot be used for storage.

B. Maximum catch basin spacing shall be 200 feet on road grades up to 3%, 300 feet when the road grade is 3% or greater and 500 feet maximum on main storm drains between access structures, whether catch basins or manholes. No surface water (unless otherwise approved in writing by the City Engineer) shall cross any roadway. In addition, catch basins shall be placed whenever the length of surface drainage exceeds 300 feet on road grade, extending either direction from crest or sag on vertical curves. Vaned grates shall be employed on street grades exceeding 6% slope.

C. Plans for storm drainage shall indicate where the stormwater will be discharged. If the proposed development will increase the amount of storm runoff, it must be shown that the pipes and channels downstream from the discharge point (a minimum of 1/4 mile) can carry the increased runoff without damage to the adjoining properties or surcharging of the system. Wherever possible, provisions should be made for detention and/or retention of stormwater in order to decrease the amount of storm runoff and, more

importantly, to decrease the peak runoff volume.

D. Where storm drains run outside an existing public right-of-way, permanent easements will be required for public or private maintenance as may be required and warranted. Such easement shall be a minimum of 15 feet in width unless otherwise approved or required by the City. Where the City is to maintain the storm drain, a permanent easement will be required having a minimum width of 15 feet. A construction (temporary) easement of suitable width shall also be provided.

E. Storm Drain Detention Systems shall be, at a minimum, designed and constructed in strict compliance with the currently adopted King County Surface Water Design Manual. Local prevailing conditions may warrant higher standards as determined by the City Engineer. The Developer and/or Homeowners Association shall enter into a formal, legally binding agreement, as approved by the City Attorney, regarding the landowner's duties and obligations regarding their ownership, operation and maintenance of any private systems.

F. The Standard Plan Notes , as shown and further referenced herein shall be included or referenced on any plans submitted to the City for construction approval dealing with storm system design.

STANDARD PLAN NOTES

Standard plan notes must be included on all plans. At the applicant's discretion, notes which in no way apply to the project may be omitted; however, the remaining notes must not be renumbered.

GENERAL NOTES

1. All construction shall be in accordance with the Newcastle Municipal Code (NMC), Newcastle Public Works Standards, and the City of Newcastle's conditions of approval. It shall be the sole responsibility of the applicant and the professional civil engineer to correct any error, omission, or variation from the above requirements found in these plans. All corrections shall be at no additional cost or liability to the City.

2. The design elements within these plans have been reviewed according to the Newcastle Department of Public Works Engineering Review checklist. Some elements may have been overlooked or missed by the plan reviewer. Any variance from adopted standards is not allowed unless specifically approved by the City prior to construction.

3. Approval of this road, grading, and drainage plan does not constitute an approval of any other construction (e.g., domestic water conveyance, sewer conveyance, gas, electrical, etc.).

4. Before any construction or development activity, a preconstruction meeting must be held between the Public Works Department, Community Development Department, the applicant, and the applicant's Construction Representative.

5. A copy of these approved plans must be on the job site whenever construction is in progress.

6. Construction noise shall be limited in accordance with NMC; normally this is 7 a.m. to 7 p.m. on weekdays and 9 a.m. to 6 p.m. on weekends and legal holidays.

7. It shall be the applicant's/contractor's responsibility to obtain all construction easements necessary before initiating offsite work within the road right-of-way.

8. Franchised utilities or other installations that are not shown on these approved plans shall not be constructed unless a permit has been issued by the City of Newcastle or its designated representative agency.

9. Datum shall be NAVD 1988 unless otherwise approved by the City.

10. Groundwater system construction shall be within a right-of-way or appropriate drainage easement, but not underneath the roadway section, unless specifically approved by the City. All groundwater systems must be constructed in accordance with Section B1 3.02 of the APWA Standard Specifications.

11. All utility trenches shall be backfilled and compacted to 95 percent maximum density, modified proctor.

12. All roadway subgrade shall be backfilled and compacted to 95 percent maximum density (WSDOT 2-06.3).

13. Open cutting of existing roadways is not allowed unless specifically approved by the City and noted on these approved plans. Any open cut shall be restored in accordance with the Newcastle Public Works Standards.

14. The contractor shall be responsible for providing adequate safeguards, safety devices, protective equipment, flaggers, and any other needed actions to protect the life, health, and safety of the public, and to protect property in connection with the performance of work covered by the contractor. Any work within the traveled right-of-way that may interrupt normal traffic flow shall require at least one flagger for each lane of traffic affected. Section 1-07.23, "Traffic Control," of the Standard Specifications shall apply in its entirety.

15. Call underground utility locate line 1-800-424-5555 a minimum of 48 hours prior to any excavation.

DRAINAGE NOTES

1. All fees, bonding, and proof of liability insurance shall be submitted to the City prior to the preconstruction meeting.

2. All storm mains and retention/detention areas shall be staked for grade and alignment by an engineering or surveying firm capable of performing such

work, and currently licensed in the State of Washington to do so.

3. Storm drain pipelines shall be installed to the far property line(s) to serve adjacent tributary areas a may be warranted. They shall be appropriately sized to accommodate flows as further identified herein. Pipes shall be designed to facilitate a minimum 2 feet/second flow unless otherwise approved by the City Engineer.

4. All pipe and appurtenances shall be laid on a properly prepared foundation in accordance with WSDOT 7-02.3(1). This shall include leveling and compacting the trench bottom, the top of the foundation material, and any required pipe bedding to a uniform grade so that the entire pipe is supported by a uniformly dense unyielding base.

5. Steel pipe shall be galvanized and have asphalt treatment #1 or better inside and outside.

6. All drainage structures, such as catch basins and manholes, not located within a traveled roadway or sidewalk shall have solid locking lids. All drainage structures associated with a permanent retention/detention facility shall have solid locking lids.

7. All catch basin grates shall conform to City of Newcastle drawings, and shall include the stamping "OUTFALL TO STREAM, DUMP NO POLLUTANTS" and "PROPERTY OF CITY OF NEWCASTLE".

8. All driveway culverts located within the right-of-way shall be of sufficient length to provide a minimum 3:1 slope from the edge of the driveway to the bottom of the ditch. Culverts shall have beveled end sections to match the side slope (see City of Newcastle drawings).

9. Rock for erosion protection for roadway ditches, where required, must be of sound quarry rock, placed to a depth of one foot, and must meet the following specifications: 4"-8" rock/40-70% passing; 2"-4" rock/30-40% passing; and 2" minus rock/10-20% passing. Installation shall be in accordance with City of Newcastle drawings.

10. Drainage outlets (stub-outs) shall be provided for each individual lot or building, except for those lots approved for infiltration by the City. Stub-outs shall conform to the following:
    a) Each outlet shall be suitably located at the lowest elevation on the lot, so as to service all future roof downspouts and footing drains, driveways, yard drains, and any other surface or subsurface drain necessary to render the lots suitable for their intended use. Each outlet shall have free-flowing, positive drainage to an approved stormwater conveyance system or an approved outfall location.
    ~~a)~~b) Outlets on each lot shall be marked with a five foot high, 2"x4" stake marked "storm" or "drain". The stub-out shall extend above surface level, be visible, and be secured to the stake.
    ~~a)~~c) Pipe material shall be a minimum of 4 inches in diameter, perforated, smooth interior, rigid drain pipe. A metallic tracer wire shall be attached the entire length of the pipe.
    ~~a)~~d) Individual lots stub-outs may connect directly to the roadway storm drainage system, PROVIDED, that said connection is made through

use of a manufactured tee specifically for this purpose. If stub-outs must pass across individual lots, they shall be located in drainage easements.

~~a)~~e) The applicant/contractor is responsible for coordinating the locations of all stub-out conveyance lines with respect to utilities (e.g., power, gas, phone, cable).

~~a)~~f) All individual stub-outs shall be privately owned and maintained by the lot homeowner.

STRUCTURAL NOTES

1. These plans are approved for standard road and drainage improvements only. Plans for structures such as bridges, vaults, rockeries and retaining walls require a separate review and approval by the Building Department prior to construction.

2. Rockeries are considered to be a method of bank stabilization and erosion control. Rockeries shall not be constructed to serve as retaining walls. All rockeries in the City shall be constructed in accordance to the City of Newcastle drawings.

EROSION AND SEDIMENT CONTROL NOTES

The standard ESC plan notes must be included on all ESC plans. At the applicant's discretion, notes that in no way apply to the project may be omitted; however, the remaining notes must not be renumbered.

1. Approval of this erosion and sedimentation control (ESC) plan does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

2. The implementation of these ESC plans and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the applicant/ESC supervisor until all construction is approved.

3. The boundaries of the clearing limits show on this plan shall be clearly flagged by a continuous length of orange protection fencing prior to construction. During construction, no disturbance beyond the clearing limits shall be permitted. The clearing limits shall be maintained by the applicant/ESC supervisor until all construction is approved.

4. The ESC facilities shown on this plan must be constructed prior to or in conjunction with all clearing and grading so as to ensure that the transport of sediment to surface waters, drainage systems, and adjacent properties is prevented.

5. The ESC facilities shown on this plan are the minimum requirements for anticipated site conditions. During the course of construction, these ESC facilities shall be upgraded as needed for unexpected storm events and modified to account for changing site conditions.

6. The ESC facilities shall be inspected daily by the applicant/ESC supervisor and maintained to ensure continued proper functioning. Written records shall be kept of weekly reviews of the ESC facilities during the wet season (October 1 to April 30) and of monthly reviews during the dry season (May 1 to September 30).

7. Any areas of exposed soils, including roadway embankments, that will not be disturbed for two days during the wet season or seven days during the dry season shall be immediately stabilized with the approved ESC methods (e.g., seeding, mulching, plastic covering, etc.).

8. Any area needing ESC measures that do not require immediate attention shall be addressed within fifteen (15) days.

9. The ESC facilities on inactive sites shall be inspected and maintained a minimum of once a month or within 48 hours following a storm event.

10. At no time shall more than one (1) foot of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system.

11. Stabilized construction entrances and roads shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures, such as wash pads, may be required to ensure that all paved areas are kept clean for the duration of the project.

12. Any permanent flow control facility used as a temporary settling basin shall be modified with the necessary erosion control measures and shall provide adequate storage capacity. If the facility is to function ultimately as an infiltration system, the temporary facility must be graded so that the bottom and sides are at least three feet above final grade of the permanent facility.

13. Where straw mulch for temporary erosion control is required, it shall be applied at a minimum thickness of 2 to 3 inches.

14. Prior to September 15, all disturbed areas shall be reviewed to identify which ones can be seeded in preparation for the winter rains. Disturbed areas shall be seeded prior to October 1. A sketch map of those areas to be seeded and those areas to remain uncovered shall be submitted to the City inspector. The City inspector can require seeding of additional areas in order to protect surface waters, adjacent properties, or drainage facilities.

CONSTRUCTION SEQUENCE

A recommended construction sequence is provided below:

1. Clearing limits, trees to be retained, and sensitive areas flagged, fenced, and inspected by the City.
~~1.~~2. Hold a pre-construction meeting.
~~1.~~3. Post a sign with the name and phone number of the project supervisor.
~~1.~~4. Install catch basin protection.
~~1.~~5. Grade and install construction entrance(s).

~~1.~~6. Install perimeter protection.
~~1.~~7. Construct sediment ponds and traps.
~~1.~~8. Grade and stabilize construction roads and staging areas.
~~1.~~9. Construct surface water controls (interceptor ditches, pipe slope drains, etc.) simultaneously with clearing and grading for project development.
~~1.~~10. Maintain erosion control measures in accordance with City standards and manufacturer's recommendations.
~~1.~~11. Relocate surface water controls or erosion control measures, or install new measures so that as site conditions change, the erosion and sediment control is always in accordance with the Erosion and Sediment Control Standards per the King County Surface Water Design Manual.
~~1.~~12. Cover all areas that will be unworked for more than seven days during the dry season or two days during the wet season with straw, wood fiber mulch, compost, plastic sheeting, or equivalent.
~~1.~~13. Stabilize all areas within seven days of reaching final grade.
~~1.~~14. Seed or sod any areas to remain unworked for more than 30 days.
~~1.~~15. Upon completion of the project, stabilize all disturbed areas and remove BMPs if appropriate.

5.03 Conveyance

Pipe: Storm drain pipe within a public right-of-way or easement shall be sized to carry the maximum anticipated runoff (100-year design storm) from the possible contributing tributary area.

The minimum pipe size shall be 12 inches diameter. Runoff shall be computed and, if the flow requires it, a larger pipe shall be used. Nothing shall preclude the City from requiring the installation of a larger sized main if the City determines a larger size is needed to serve adjacent areas or for future service.

Storm drain gradients shall be such as to assure minimum flow velocity of two feet per second when flowing full.

All pipe for storm mains shall be "pre-approved" by the City's Engineer based on localized conditions and comply with the Standard Specifications 7-04.

5.04 Connections

Connections of storm drain pipe leading from an existing street inlet location may be made into an existing main storm drain only with a new structure, subject to case-by-case review and approval of the City Engineer or Public Works Field Inspector/Superintendent and subject to the following additional requirements:

(a) The inlet structure shall be a catch basin and not a simple inlet lacking a catch or drop section.

(b) Length of inlet connection shall be as approved by the City Engineer.

5.05 Survey Staking

All surveying and staking shall be performed by an engineering or surveying firm employed by the Developer and capable of performing such work. The engineer or surveyor directing and/or performing such work shall be currently licensed by the State of Washington to perform said tasks.

A preconstruction meeting shall be held with the City prior to commencing staking. All construction staking shall be inspected by the City prior to construction.

The minimum staking of storm sewer systems shall be as follows:

(a) Stake centerline alignment every 25 feet with cuts and/or fills to bottom of trench.

(b) Stake location of all catch basins/manholes and other fixtures for grade and alignment.

(c) Stake location, size and depth of retention/detention facility.

(d) Stake finished grade of catch basin/manhole rim elevation and invert elevations of all pipes in catch basins, manholes, and those that daylight.

5.06 Trench Excavation

A. Clearing and grubbing where required shall be performed within the easement or public right-of-way as permitted by the City and/or governing agencies. Debris resulting from the clearing and grubbing shall be disposed of by the owner or contractor in accordance with the terms of all applicable permits.

B. Trenches shall be excavated to the line and depth designated by the City to provide a minimum of 24 inches of cover over the pipe. Except for unusual circumstances where approved by the City, the trench sides shall be excavated vertically and the trench width shall be excavated only to such widths as are necessary for adequate working space as allowed by the governing agency and in compliance with all safety requirements of the prevailing agencies. See Detail. The trench shall be kept free from water until joining is complete. Surface water shall be diverted so as not to enter the trench. The Contractor shall maintain sufficient pumping equipment on the job to insure that these provisions are carried out.

C. The contractor shall perform all excavation of every description and whatever substance encountered and boulders, rocks, roots and other obstructions shall be entirely removed or cut out to the width of the trench and to a depth 6 inches below storm line grade. Where materials are removed from below the pipeline grade, the trench shall be backfilled to grade with material satisfactory to the City and thoroughly compacted.

D. Trenching and shoring operations shall not proceed more than 100 feet in advance of pipe laying without specific written approval of the City, and shall be in conformance with Washington Industrial Safety and Health

Administration (WISHA) and Office of Safety and Health Administration (OSHA) Safety Standard.

E. The bedding course shall be finished to grade with hand tools in such a manner that the pipe will have bearing along the entire length of the barrel. The bell holes shall be excavated with hand tools to sufficient size to facilitate the construction of pipe joints.

5.07 Bedding

Gravel backfill for pipe bedding shall be installed in conformance with Section 2-09 of the Standard Specifications (WSDOT). See Detail.

Bedding for Rigid Pipe (Concrete or Ductile Iron Pipe):

Gravel backfill for rigid pipe bedding shall consist of crushed, processed, or naturally occurring granular material. It shall be essentially free from various types of wood waste or other extraneous or objectionable materials. It shall have such characteristics of size and shape that it will compact readily and shall meet the following specifications for grading and quality:

Sieve Size	Percent Passing*
3/4" Square	100
3/8" Square	95-100
U.S. No. 8	0-10
U.S. No. 200	0-3
Sand Equivalent	35 MIN.

*All percentages are by weight.

Bedding for Flexible Pipe (P.V.C. pipe):

Gravel backfill for flexible pipe (P.V.C. pipe) bedding shall consist of crushed, processed, or naturally occurring granular material. It shall be essentially free from various types of wood waste or other extraneous or objectionable materials. It shall have such characteristics of size and shape that it will compact readily and shall meet the following specifications for grading and quality:

Sieve Size	Percent Passing*
3/4" Square	100
3/8" Square	95-100
U.S. No. 8	0-10
U.S. No. 200	0-3
Sand Equivalent	35 MIN.

*All percentages are by weight.

Native Material shall not be used for bedding, unless approved by the Engineer.

Bedding for Flexible Pipe (H.D.P.E. pipe):

Bedding material for flexible pipe shall be a clean gravel mixture free from organic matter and conforming to the following gradation:

Sieve Size	Percent Passing*
3/4" Square	100
3/8" Square	70-100
U.S. No. 4	55-100
U.S. No. 10	35-95
U.S. No. 20	20-80
U.S. No. 40	10-55
U.S. No. 100	0-10
U.S. No. 200	0-3

*All percentages are by weight.

5.08 Backfilling

Backfilling and surface restoration shall closely follow installation of pipe so that not more than 100 feet is left exposed during construction hours without approval of the City. Selected material shall be placed and compacted around and under the storm drain by hand tools. Special precautions should be provided to protect the pipe to a point 12 inches above the crown of the pipe. The remaining backfill shall be compacted to 95 percent of the maximum density in traveled areas, 90 percent outside driveway, roadways, road prism, shoulders, parking or other traveled areas. Where governmental agencies other than the City have jurisdiction over roadways, the backfill and compaction shall be done to the satisfaction of the agency having jurisdiction. Typically, trench sections crossing existing roadways, in roadway "prisms" or beneath traffic bearing areas shall be backfilled and compacted with 5/8-inch minus crushed rock. Due to localized conditions, the City may allow/permit the backfill of the trench section with suitable excavated material, as determined by the City, or if this material is not available from trenching operations, the City may order the placing and compaction of gravel base conforming with Section 9-03.10 of the Standard Specifications (WSDOT) for backfilling the trench. All excess material shall be loaded and hauled to waste.

5.09 Street Patching and Restoration

See Chapter 4 for requirements regarding street patching and trench restoration.

5.10 Erosion Control

The detrimental effects of erosion and sedimentation shall be minimized by conforming with the following general principles:

- Soil shall be exposed for the shortest possible time.
- Reducing the velocity and controlling the flow of runoff.
- Detaining runoff on the site to trap sediment.
- Releasing runoff safely to downstream areas.

In applying these principles, the Developer and/or Contractor shall provide for erosion control by conducting work in workable units; minimizing the disturbance to cover crop materials; providing mulch and/or temporary cover crops, sedimentation

basins, and/or diversions in critical areas during construction; controlling and conveying runoff; and establishing permanent vegetation and installing erosion control structures as soon as possible.

A. Trench Mulching

Where there is danger of backfill material being washed away due to steepness of the slope along the direction of the trench, backfill material shall be compacted and held in place by covering the disturbed area with straw and held with a covering of jute matting or wire mesh anchored in place.

B. Cover-Crop Seeding

A cover crop shall be sown in all areas excavated or disturbed during construction that were not paved, landscaped and/or seeded prior to construction. Areas landscaped and/or seeded prior to construction shall be restored to their original or superior condition.
Cover-crop seeding shall follow backfilling operations.

The Developer and/or Contractor shall be responsible for protecting all areas from erosion until the cover crop affords such protection. The cover crop shall be re-seeded if required and additional measures taken to provide protection from erosion until the cover crop is capable of providing protection.

During winter months, the Contractor may postpone seeding, if conditions are such that the seed will not germinate and grow. The Developer and/or Contractor will not, however, be relieved of the responsibility of protecting all areas until the cover crop has been sown and affords protection from erosion.

The cover crop shall be sown at a rate of 10 to 15 pounds of seed per acre using a hand or power operated mechanical seeder capable of providing a uniform distribution of seed.

5.11 Adjustment Of New And Existing Utility Structures To Grade

This work consists of constructing and/or adjusting all new and existing utility structures encountered on the project to finished grade.

A. Asphalt Concrete Paving Projects

On asphalt concrete paving projects, the manholes shall not be adjusted until the pavement is completed, at which time the center of each manhole lid shall be relocated from references previously established by the Developer and/or Contractor. The pavement shall be cut as further described and base material removed to permit removal of the cover. The manhole shall then be brought to proper grade.

As soon as the street is paved past each manhole, the asphalt concrete mat shall be scored around the location of the manhole, catch basin, meter boxes or valve box. After rolling has been completed and the mat has cooled, it shall be cut along the scored lines. The manholes, catch basins, meter boxes and valve boxes shall then be raised to finished pavement grade and the annular spaces filled with cement concrete to within 1-1/2 inches of the finished grade. The remaining 1-1/2 inches shall be filled with asphalt

concrete Class B to give a smooth finished appearance.

After pavement is in place, all joints shall be sealed with hot asphalt cement (AR 4000W). A sand blanket shall be applied to the surface of the AR 4000W hot asphalt cement binder to help alleviate "tracking".

Asphalt concrete patching shall not be carried out during wet ground conditions or when the ambient air temperature is below 50^{O}F. Asphalt concrete mix shall be at required temperature when placed. Before making the asphalt concrete repair, the edges of the existing asphalt concrete pavement and the outer edge of the casting shall be tack coated with hot asphalt cement. The remaining 2" shall then be filled with Class B asphalt concrete and compacted with hand tampers and a patching roller.

The completed patch shall match the existing paved surface for texture, density and uniformity of grade. The joint between the patch and the existing pavement shall then be carefully painted with hot asphalt cement or asphalt emulsion and shall be immediately covered with dry paving sand before asphalt cement solidifies. All debris such as asphalt pavement, cement bags, etc., shall be removed and disposed of by the Developer and/or his Contractor.

5.12 Finishing And Cleanup

Slopes, sidewalk areas, planting areas and roadway shall be smoothed and finished to the required cross section and grade by means of a grading machine insofar as it is possible to do so without damaging existing improvements, trees and shrubs. Machine dressing shall be supplemented by hand work to meet requirements outlined herein, to the satisfaction of the City Inspector and/or the City Engineer.

All excavated material at the outer lateral limits of the project shall be removed entirely. Trash of all kinds resulting from clearing and grubbing or grading operations shall be removed and not placed in areas adjacent to the project. Where machine operations have broken down brush and trees beyond the lateral limits of the project, the Developer and/or Contractor shall remove and dispose of same and restore said disturbed areas at his own expense.

Drainage facilities such as inlets, catch basins, culverts, and open ditches shall be cleaned of all debris which is the result of the Developer and/or Contractor's operations.

All pavements and oil mat surfaces, whether new or old, shall be thoroughly cleaned. Existing improvements such as Portland cement concrete curbs, curb and gutters, walls, sidewalks, and other facilities which have been sprayed by the asphalt cement shall be cleaned to the satisfaction of the City Inspector and/or City Engineer.

SECTION 6 SANITARY SEWER STANDARDS

6.01 General

All standards regarding construction of sanitary sewers shall be per Coal Creek Utility District (CCUD) Standards. The Coal Creek Utility District can be contacted at (425) 235-9200.

6.02 Street Patching and Restoration

See Section 4 and Standard Details for requirements regarding street patching and trench restoration.

6.03 Erosion Control

The detrimental effects of erosion and sedimentation shall be minimized by conforming with the following general principles:

- Soil shall be exposed for the shortest possible time.
- Reducing the velocity and controlling the flow of runoff.
- Detaining runoff on the site to trap sediment.
- Releasing runoff safely to downstream areas.

In applying these principles, the Developer and/or Contractor shall provide for erosion control by conducting work in workable units; minimizing the disturbance to cover crop materials; providing mulch and/or temporary cover crops, sedimentation basins, and/or diversions in critical areas during construction; controlling and conveying runoff; and establishing permanent vegetation and installing erosion control structures as soon as possible.

A. Trench Mulching

Where there is danger of backfill material being washed away due to steepness of the slope along the direction of the trench, backfill material shall be compacted and held in place by covering the disturbed area with straw and held with a covering of jute matting or wire mesh anchored in place.

B. Cover-Crop Seeding

A cover crop shall be sown in all areas excavated or disturbed during construction that were not paved, landscaped and/or seeded prior to construction. Areas landscaped and/or seeded prior to construction shall be restored to their original or superior condition.

Cover-crop seeding shall follow backfilling operations.

The Developer and/or Contractor shall be responsible for protecting all areas from erosion until the cover crop affords such protection. The cover crop shall be re-seeded if required and additional measures taken to provide protection from erosion until the cover crop is capable of providing protection.

During winter months, the Contractor may postpone seeding, if conditions are

such that the seed will not germinate and grow. The Developer and/or Contractor will not, however, be relieved of the responsibility of protecting all areas until the cover crop has been sown and affords protection from erosion.

The cover crop shall be sown at a rate of 10 to 15 pounds of seed per acre using a hand or power operated mechanical seeder capable of providing a uniform distribution of seed.

6.04 Adjustment Of New And Existing Utility Structures To Grade

This work consists of constructing and/or adjusting all new and existing utility structures encountered on the project to finished grade.

A. Asphalt Concrete Paving Projects

On asphalt concrete paving projects, the manholes shall not be adjusted until the pavement is completed, at which time the center of each manhole lid shall be relocated from references previously established by the Developer and/or Contractor. The pavement shall be cut as further described and base material removed to permit removal of the cover. The manhole shall then be brought to proper grade.

As soon as the street is paved past each manhole, the asphalt concrete mat shall be scored around the location of the manhole, catch basin, meter boxes or valve box. After rolling has been completed and the mat has cooled, it shall be cut along the scored lines. The manholes, catch basins, meter boxes and valve boxes shall then be raised to finished pavement grade and the annular spaces filled with cement concrete to within 1-1/2 inches of the finished grade. The remaining 1-1/2 inches shall be filled with asphalt concrete Class B to give a smooth finished appearance.

After pavement is in place, all joints shall be sealed with hot asphalt cement (AR 4000W). A sand blanket shall be applied to the surface of the AR 4000W hot asphalt cement binder to help alleviate “tracking”.

Asphalt concrete patching shall not be carried out during wet ground conditions or when the ambient air temperature is below 50^{o}F. Asphalt concrete mix shall be at required temperature when placed. Before making the asphalt concrete repair, the edges of the existing asphalt concrete pavement and the outer edge of the casting shall be tack coated with hot asphalt cement. The remaining 2” shall then be filled with Class B asphalt concrete and compacted with hand tampers and a patching roller.

The completed patch shall match the existing paved surface for texture, density and uniformity of grade. The joint between the patch and the existing pavement shall then be carefully painted with hot asphalt cement or asphalt emulsion and shall be immediately covered with dry paving sand before asphalt cement solidifies. All debris such as asphalt pavement, cement bags, etc., shall be removed and disposed of by the Developer and/or his Contractor.

6.05 Finishing And Cleanup

After all other work on this project is completed and before final acceptance, the entire roadway, including the roadbed, planting, sidewalk areas, shoulders, driveways, alley and side street approaches, slopes, ditches, utility trenches, and construction areas shall be neatly finished to the lines, grades and cross sections of a new roadway consistent with the original section, and as hereinafter specified.

Slopes, sidewalk areas, planting areas and roadway shall be smoothed and finished to the required cross section and grade by means of a grading machine insofar as it is possible to do so without damaging existing improvements, trees and shrubs. Machine dressing shall be supplemented by hand work to meet requirements outlined herein, to the satisfaction of the City Inspector and/or the City Engineer.

Upon completion of the cleaning and dressing, the project shall appear uniform in all respects. All graded areas shall be true to line and grade. Where the existing surface is below sidewalk and curb, the area shall be filled and dressed out to the walk. Wherever fill material is required in the planting area, the finished grade shall be elevated to allow for final settlement, but nevertheless, the raised surface shall present a uniform appearance.

All rocks in excess of one (1) inch diameter shall be removed from the entire construction area and shall be disposed of the same as required for other waste material. In no instance shall the rock be thrown onto private property. Overhang on slopes shall be removed and slopes dressed neatly so as to present a uniform, natural, well-sloped surface.

All excavated material at the outer lateral limits of the project shall be removed entirely. Trash of all kinds resulting from clearing and grubbing or grading operations shall be removed and not placed in areas adjacent to the project. Where machine operations have broken down brush and trees beyond the lateral limits of the project, the Developer and/or Contractor shall remove and dispose of same and restore said disturbed areas at his own expense.

Drainage facilities such as inlets, catch basins, culverts, and open ditches shall be cleaned of all debris which is the result of the Developer and/or Contractor's operations.

All pavements and oil mat surfaces, whether new or old, shall be thoroughly cleaned. Existing improvements such as Portland cement concrete curbs, curb and gutters, walls, sidewalks, and other facilities which have been sprayed by the asphalt cement shall be cleaned to the satisfaction of the City Inspector and/or City Engineer.

SECTION 7 WATER SYSTEM STANDARDS

7.01 General

All standards regarding requirements for water systems shall be per Coal Creek Utility District (CCUD) Standards. Coal Creek Utility District can be contacted at (425) 235-9200.

7.02 Street Patching and Restoration

See Chapter 4 and Standard Details for requirements regarding street patching and trench restoration.

7.03 Erosion Control

The detrimental effects of erosion and sedimentation shall be minimized by conforming with the following general principles:

- Soil shall be exposed for the shortest possible time.
- Reducing the velocity and controlling the flow of runoff.
- Detaining runoff on the site to trap sediment.
- Releasing runoff safely to downstream areas.

In applying these principles, the Developer and/or Contractor shall provide for erosion control by conducting work in workable units; minimizing the disturbance to cover crop materials; providing mulch and/or temporary cover crops, sedimentation basins, and/or diversions in critical areas during construction; controlling and conveying runoff; and establishing permanent vegetation and installing erosion control structures as soon as possible.

A. Trench Mulching

Where there is danger of backfill material being washed away due to steepness of the slope along the direction of the trench, backfill material shall be compacted and held in place by covering the disturbed area with straw and held with a covering of jute matting or wire mesh anchored in place.

B. Cover-Crop Seeding

A cover crop shall be sown in all areas excavated or disturbed during construction that were not paved, landscaped and/or seeded prior to construction. Areas landscaped and/or seeded prior to construction shall be restored to their original or superior condition.

Cover-crop seeding shall follow backfilling operations.

The Developer and/or Contractor shall be responsible for protecting all areas from erosion until the cover crop affords such protection. The cover crop shall be re-seeded if required and additional measures taken to provide protection from erosion until the cover crop is capable of providing protection.

During winter months, the Contractor may postpone seeding, if conditions are

such that the seed will not germinate and grow. The Developer and/or Contractor will not, however, be relieved of the responsibility of protecting all areas until the cover crop has been sown and affords protection from erosion.

The cover crop shall be sown at a rate of 10 to 15 pounds of seed per acre using a hand or power operated mechanical seeder capable of providing a uniform distribution of seed.

7.04 Adjustment Of New And Existing Utility Structures To Grade

This work consists of constructing and/or adjusting all new and existing utility structures encountered on the project to finished grade.

A. Asphalt Concrete Paving Projects

On asphalt concrete paving projects, the manholes shall not be adjusted until the pavement is completed, at which time the center of each manhole lid shall be relocated from references previously established by the Developer and/or Contractor. The pavement shall be cut as further described and base material removed to permit removal of the cover. The manhole shall then be brought to proper grade.

As soon as the street is paved past each manhole, the asphalt concrete mat shall be scored around the location of the manhole, catch basin, meter boxes or valve box. After rolling has been completed and the mat has cooled, it shall be cut along the scored lines. The manholes, catch basins, meter boxes and valve boxes shall then be raised to finished pavement grade and the annular spaces filled with cement concrete to within 1-1/2 inches of the finished grade. The remaining 1-1/2 inches shall be filled with asphalt concrete Class B to give a smooth finished appearance.

After pavement is in place, all joints shall be sealed with hot asphalt cement (AR 4000W). A sand blanket shall be applied to the surface of the AR 4000W hot asphalt cement binder to help alleviate “tracking”.

Asphalt concrete patching shall not be carried out during wet ground conditions or when the ambient air temperature is below 50°F. Asphalt concrete mix shall be at required temperature when placed. Before making the asphalt concrete repair, the edges of the existing asphalt concrete pavement and the outer edge of the casting shall be tack coated with hot asphalt cement. The remaining 2” shall then be filled with Class B asphalt concrete and compacted with hand tampers and a patching roller.

The completed patch shall match the existing paved surface for texture, density and uniformity of grade. The joint between the patch and the existing pavement shall then be carefully painted with hot asphalt cement or asphalt emulsion and shall be immediately covered with dry paving sand before asphalt cement solidifies. All debris such as asphalt pavement, cement bags, etc., shall be removed and disposed of by the Developer and/or his Contractor.

7.05 Finishing and Cleanup

After all other work on this project is completed and before final acceptance, the entire roadway, including the roadbed, planting, sidewalk areas, shoulders, driveways, alley and side street approaches, slopes, ditches, utility trenches, and construction areas shall be neatly finished to the lines, grades and cross sections of a new roadway consistent with the original section, and as hereinafter specified.

On water system construction where all or portions of the construction is in undeveloped areas, the entire area which has been disturbed by the construction shall be shaped so that upon completion the area will present a uniform appearance, blending into the contour of the adjacent properties. All other requirements outlined previously shall be met.

Slopes, sidewalk areas, planting areas and roadway shall be smoothed and finished to the required cross section and grade by means of a grading machine insofar as it is possible to do so without damaging existing improvements, trees and shrubs. Machine dressing shall be supplemented by hand work to meet requirements outlined herein, to the satisfaction of the City Inspector and/or the City Engineer.

Upon completion of the cleaning and dressing, the project shall appear uniform in all respects. All graded areas shall be true to line and grade. Where the existing surface is below sidewalk and curb, the area shall be filled and dressed out to the walk. Wherever fill material is required in the planting area, the finished grade shall be elevated to allow for final settlement, but nevertheless, the raised surface shall present a uniform appearance.

All rocks in excess of one (1) inch diameter shall be removed from the entire construction area and shall be disposed of the same as required for other waste material. In no instance shall the rock be thrown onto private property. Overhang on slopes shall be removed and slopes dressed neatly so as to present a uniform, natural, well-sloped surface.

All excavated material at the outer lateral limits of the project shall be removed entirely. Trash of all kinds resulting from clearing and grubbing or grading operations shall be removed and not placed in areas adjacent to the project. Where machine operations have broken down brush and trees beyond the lateral limits of the project, the Developer and/or Contractor shall remove and dispose of same and restore said disturbed areas at his own expense.

Drainage facilities such as inlets, catch basins, culverts, and open ditches shall be cleaned of all debris which is the result of the Developer and/or Contractor's operations.

All pavements and oil mat surfaces, whether new or old, shall be thoroughly cleaned. Existing improvements such as Portland cement concrete curbs, curb and gutters, walls, sidewalks, and other facilities which have been sprayed by the asphalt cement shall be cleaned to the satisfaction of the City Street Superintendent and/or City Engineer.

Castings for monuments, water valves, vaults and other similar installations which have been covered with the asphalt material shall be cleaned to the satisfaction of the City and/or the Engineer.

SECTION 8 MISCELLANEOUS UTILITY SERVICES AND ADDITIONAL DEVELOPMENT REQUIREMENTS

8.01 General

The standards established by this chapter are intended to represent the **minimum** standards for the design and construction of additional facilities. Greater or lesser requirements may be mandated by the City due to localized conditions. The following design and construction considerations shall apply.

8.02 Traffic Control

The developer/contractor shall be responsible for interim traffic control during construction on or along traveled city roads. Traffic control shall follow the guidelines of Section 1-07.23 of the WSDOT/APWA Standard Specifications. All barricades, signs and flagging shall conform to the requirements of the MUTCD Manual. Signs must be legible and visible and should be removed at the end of each work day if not applicable after construction hours.

Haul Routes. If the construction of a proposed development is determined by the Director to require special routing of large trucks or heavy construction equipment to prevent impacts to surrounding roads, residences or businesses, the developer/contractor shall be required to develop and use an approved haul route. When required, the haul route plan must be prepared and submitted to the Director and approved prior to beginning or continuing construction. The haul route plan shall address routing, hours of operation, signage and flagging, and daily maintenance. If the developer/contractor's traffic fails to use the designated haul route, the Director may prohibit or limit further work on the development until such time as the requirements of the haul route are complied.

Haul Road Agreement. When identified as a need by the SEPA review process or by the engineer, a haul road agreement shall be obtained by the franchised utility, developer or property owner establishing restoration procedures to be performed upon completion of the haul operation.

8.03 Utility Services

All utility lines, including electric, telephone, fire alarm and television cables shall be placed underground prior to paving. Easement for maintenance of all utilities, both on and off-site, shall be provided as applicable to the satisfaction of the City Engineer.

Utilities to be located within existing and proposed city road right-of-way shall be constructed in accordance with current franchise and/or permit procedure and in compliance with these standards. In their use of the right-of-way, utilities will be given consideration in concert with the traffic carrying requirements of the road which are, namely, to provide safe, efficient and convenient passage for motor vehicles, pedestrians, and other transportation uses. Aesthetics shall be a consideration. Undergrounding of electric utilities shall be required in all types of development. Also, utilities are subject to city policies relating to drainage, erosion/sedimentation control and sensitive areas as set forth in Chapter 13.10 NMC, Surface Water Management, and NMC Title 18, Zoning.

Notwithstanding other provisions, underground systems shall be located at least five feet away from road centerline and where they will not otherwise disturb existing survey monumentation.

SECTION 9

STANDARD DRAWINGS

SECTION 9 STANDARD DRAWINGS

Through Curb Inlet Frame	SW-9
Ditch Construction	SW-10
Energy Dissipation Pad/Rock-Lined Ditch	SW-11
Casing Installation	SW-12
Soil/Cement Pipe Anchor	SW-13
Pipe Bedding	SW-14
Trash Rack/Debris Barrier	SW-15
Debris Cage	SW-16
Beveled End Pipe Section	SW-17
Flow Restrictor Tee Type	SW-18
24" Bolt-Locking Manhole Ring and Cover	SW-19
Storm Drain Pipe Trench Section (Rigid Pipe)	SW-20
Storm Drain Pipe Trench Section (Flexible Pipe)	SW-21

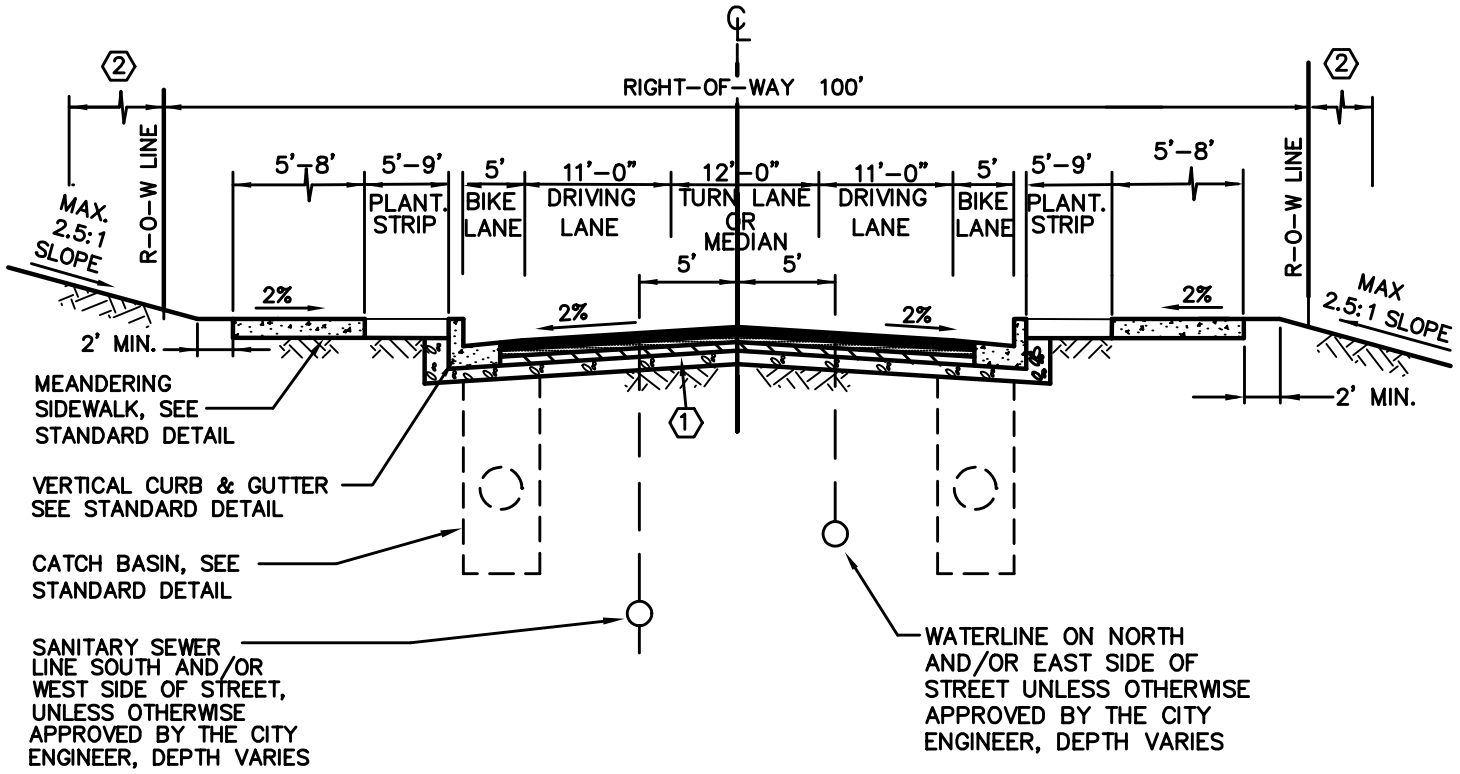
SANITARY SEWER DETAILS - See Coal Creek Utility District

WATER SYSTEM DETAILS - See Coal Creek Utility District

MISCELLANEOUS DETAILS

Removable Bollard Detail	MD-1
Filter Fabric Catch Basin Insert for Sediment Collection	MD-2
Alternative Fire Apparatus Access Turnaround	MD-3
Street Tree Planting and Staking Detail	MD-4

ROADWAY DETAILS



NOTE

(1) PAVEMENT DESIGN BY CURRENT WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER. SEE MIN. REQUIREMENTS, SEC. 4.37.

(2) 10' UTILITY EASEMENT REQUIRED (BOTH SIDES)

CITY OF NEWCASTLE

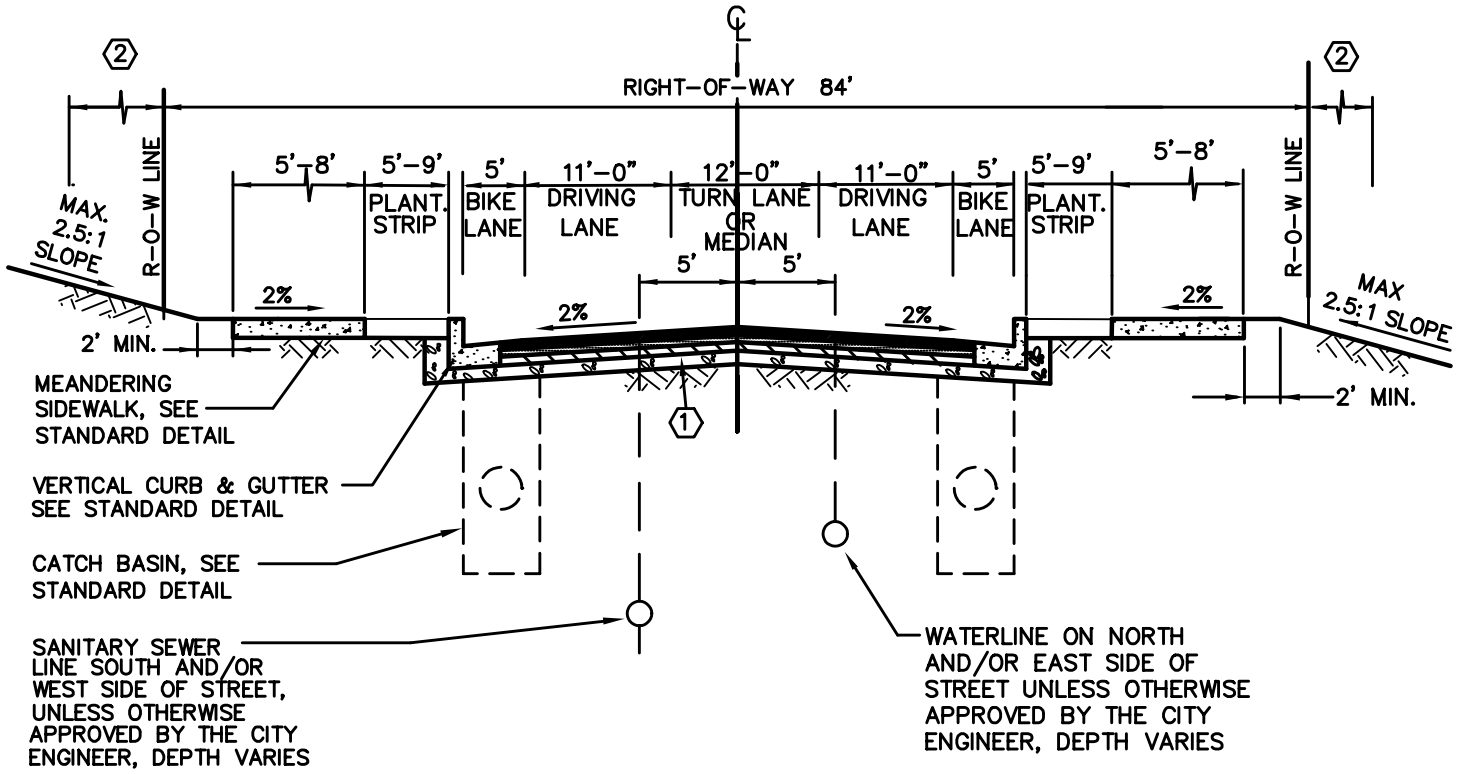
PRINCIPAL ARTERIAL STREET SECTION

APPROVED:

ROGER KUYKENDALL, P.E. — BY CITY

8/1/2000 — DATE

DWG. NO. ST–1



NOTE

(1) PAVEMENT DESIGN BY CURRENT WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER. SEE MIN. REQUIREMENTS, SEC. 4.37.

(2) 10' UTILITY EASEMENT REQUIRED (BOTH SIDES)

CITY OF NEWCASTLE

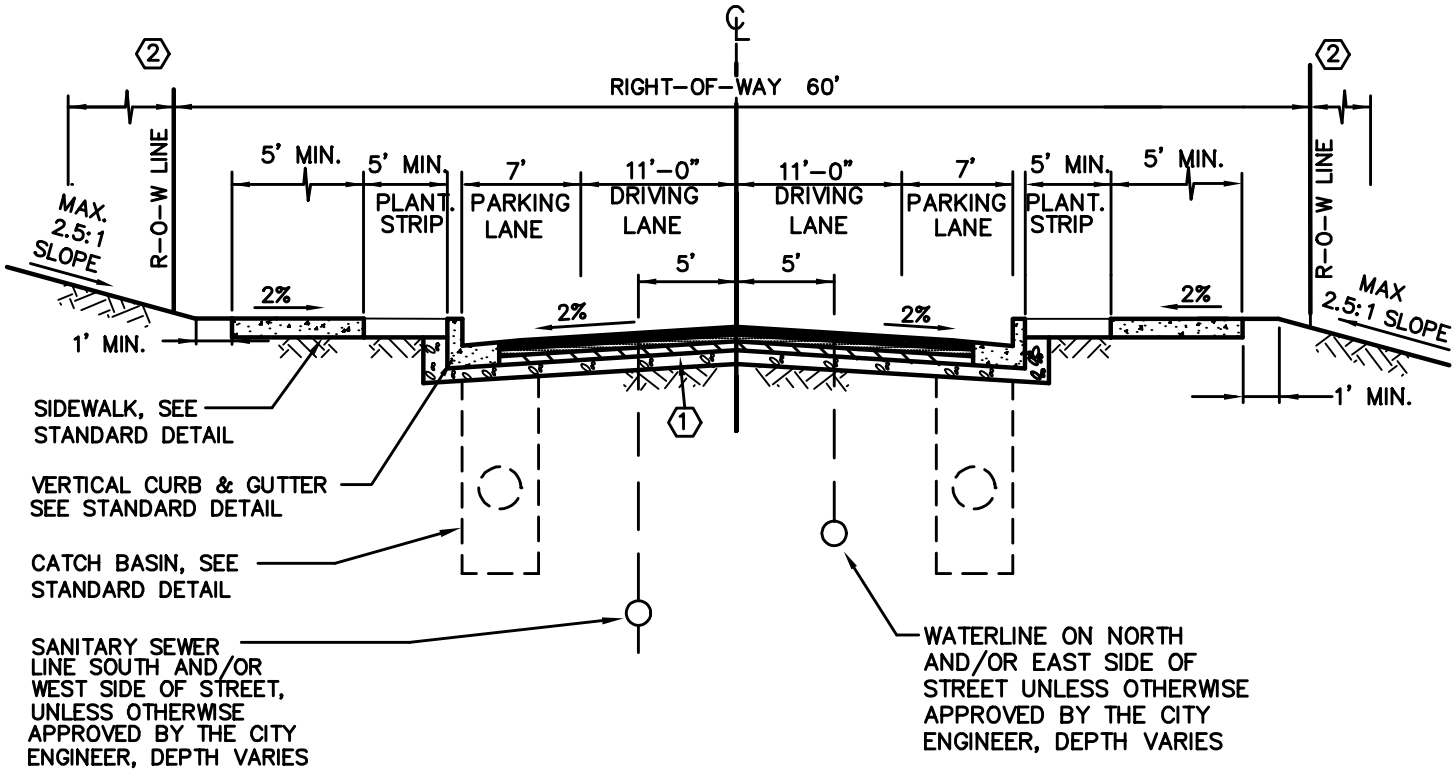
MINOR ARTERIAL STREET SECTION

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST-2



NOTE

(1) PAVEMENT DESIGN BY CURRENT WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER. SEE MIN. REQUIREMENTS, SEC. 4.37.

(2) 5' UTILITY EASEMENT REQUIRED (BOTH SIDES)

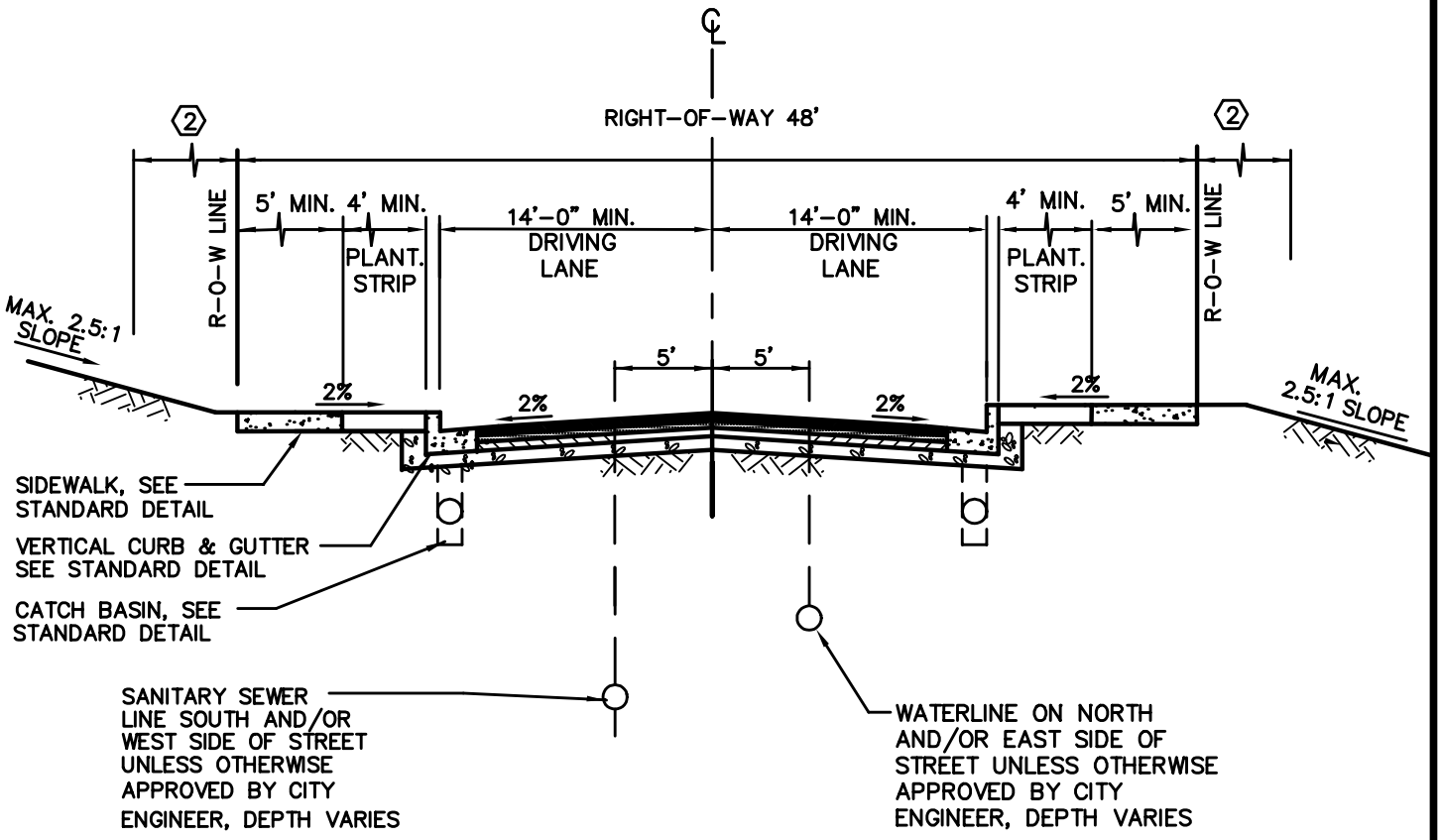
CITY OF NEWCASTLE
NEIGHBORHOOD COLLECTOR STREET SECTION

APPROVED:

ROGER KUYKENDALL, P.E. — BY CITY

8/1/2000 — DATE

DWG. NO. ST–3



NOTE

(1) PAVEMENT DESIGN BY CURRENT WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER. SEE MIN. REQUIREMENTS, SEC. 4.37.

(2) 5' UTILITY EASEMENT REQUIRED (BOTH SIDES)

CITY OF NEWCASTLE

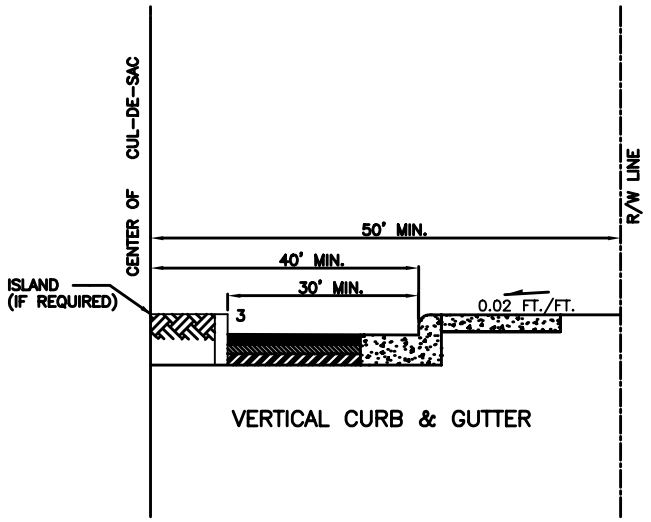
LOCAL ACCESS STREET SECTION

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

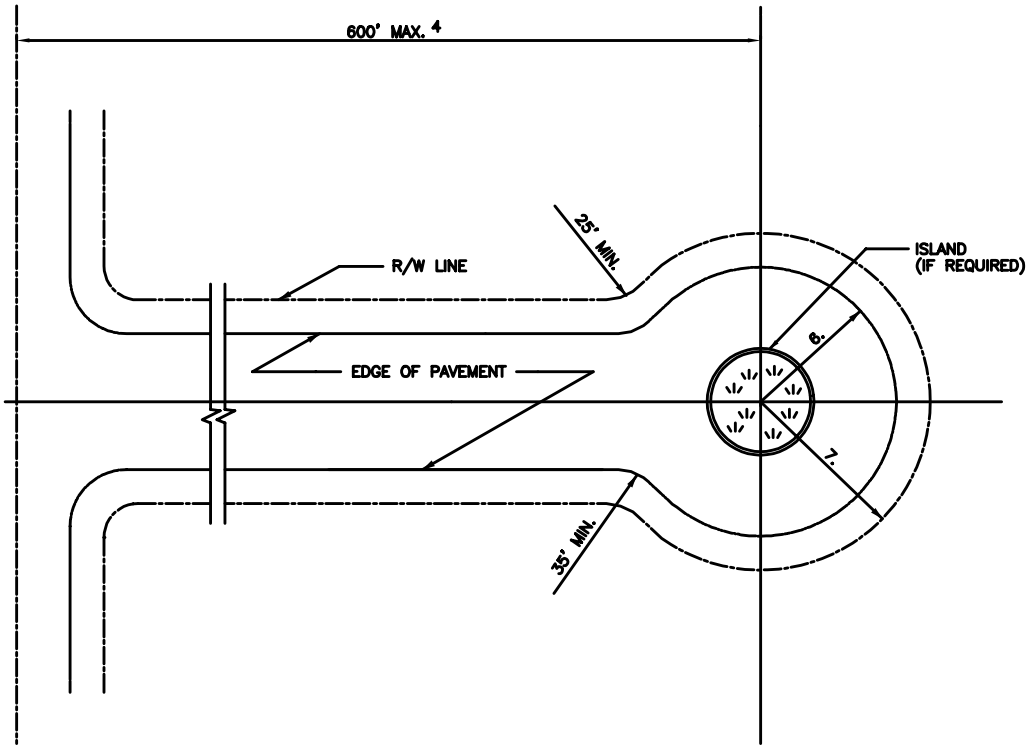
DWG. NO. ST–4



VERTICAL CURB & GUTTER

NOTES:

1. SEE SEC. 4.06.
2. ISLAND AT CENTER OF BULB SHALL HAVE VERTICAL CURB.
3. ISLAND IS MANDATORY WHEN RADIUS OF PAVED AREA EXCEEDS 40'.
4. SEE SEC 4.06 FOR CUL-DE-SAC LENGTH EXCEPTION.
5. SEE SECS. 4.16 AND TABLE 1.1 FOR RIGHT-OF-WAY REDUCTION REQUIREMENTS
6. R= 42'
7. R= 50'
8. ISLAND TO BE LANDSCAPED AND MAINTAINED BY ADJACENT PROPERTY OWNERS.



CITY OF NEWCASTLE

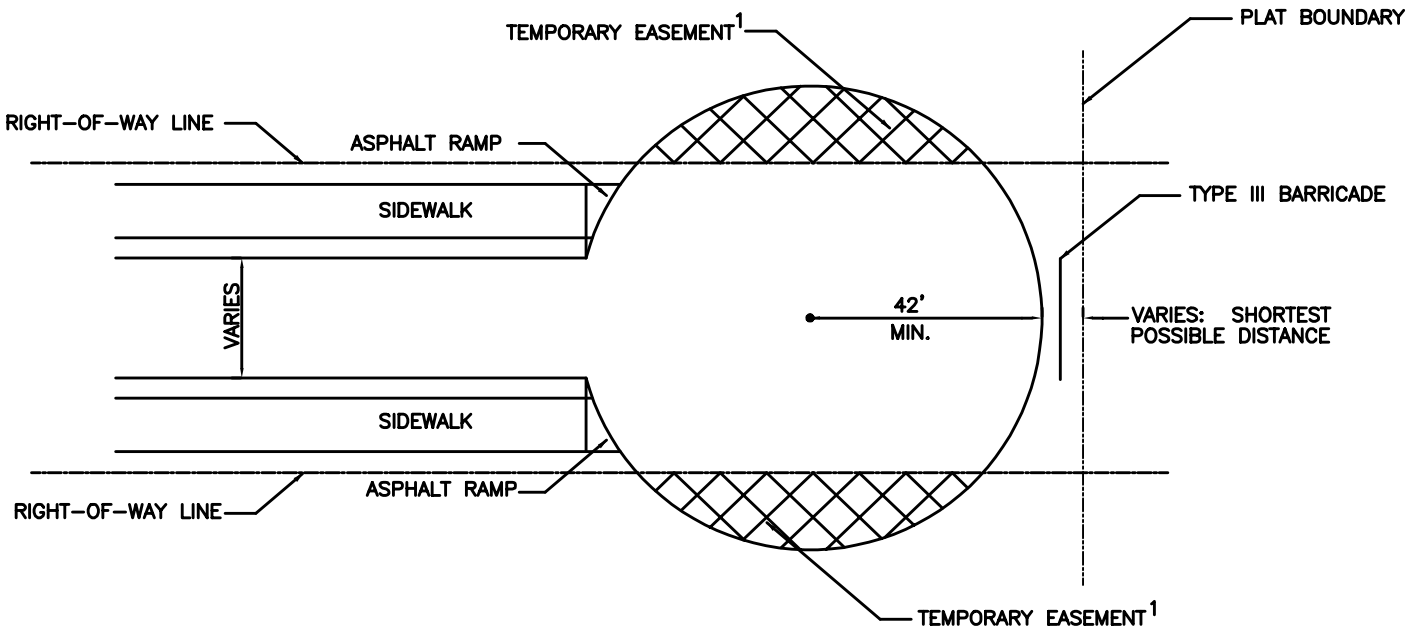
CUL-DE-SAC DETAIL

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST-5



NOTES:

1. SEE SEC. 4.06.
2. BARRICADE REQUIRED AT END OF BULB. SEE SEC. 4.11.

CITY OF NEWCASTLE

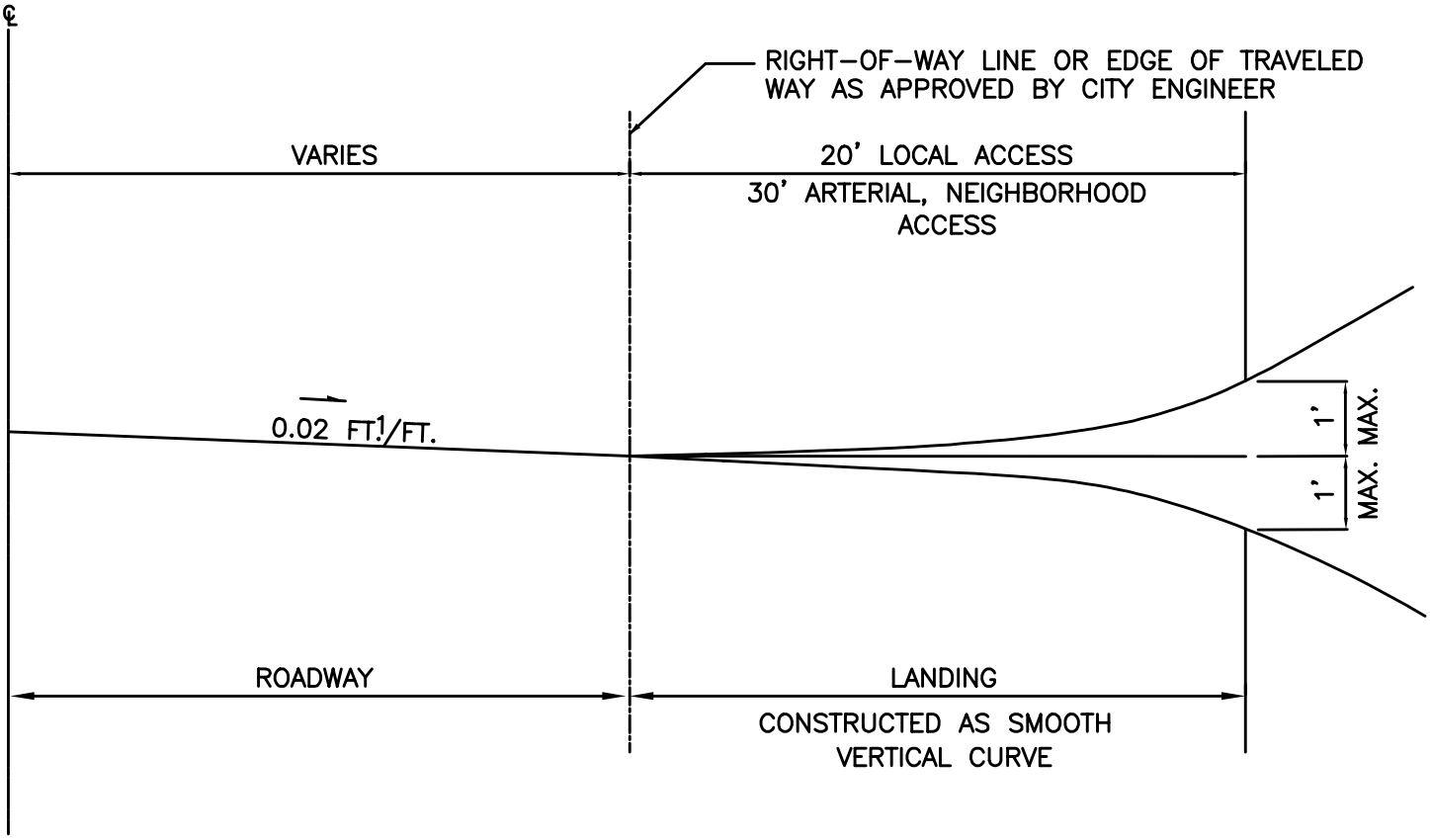
TEMPORARY CUL-DE-SAC DETAIL

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST-6



SECTION

NOTES:

1. SEE SEC. 4.07 FOR INTERSECTION REQUIREMENTS.

CITY OF NEWCASTLE

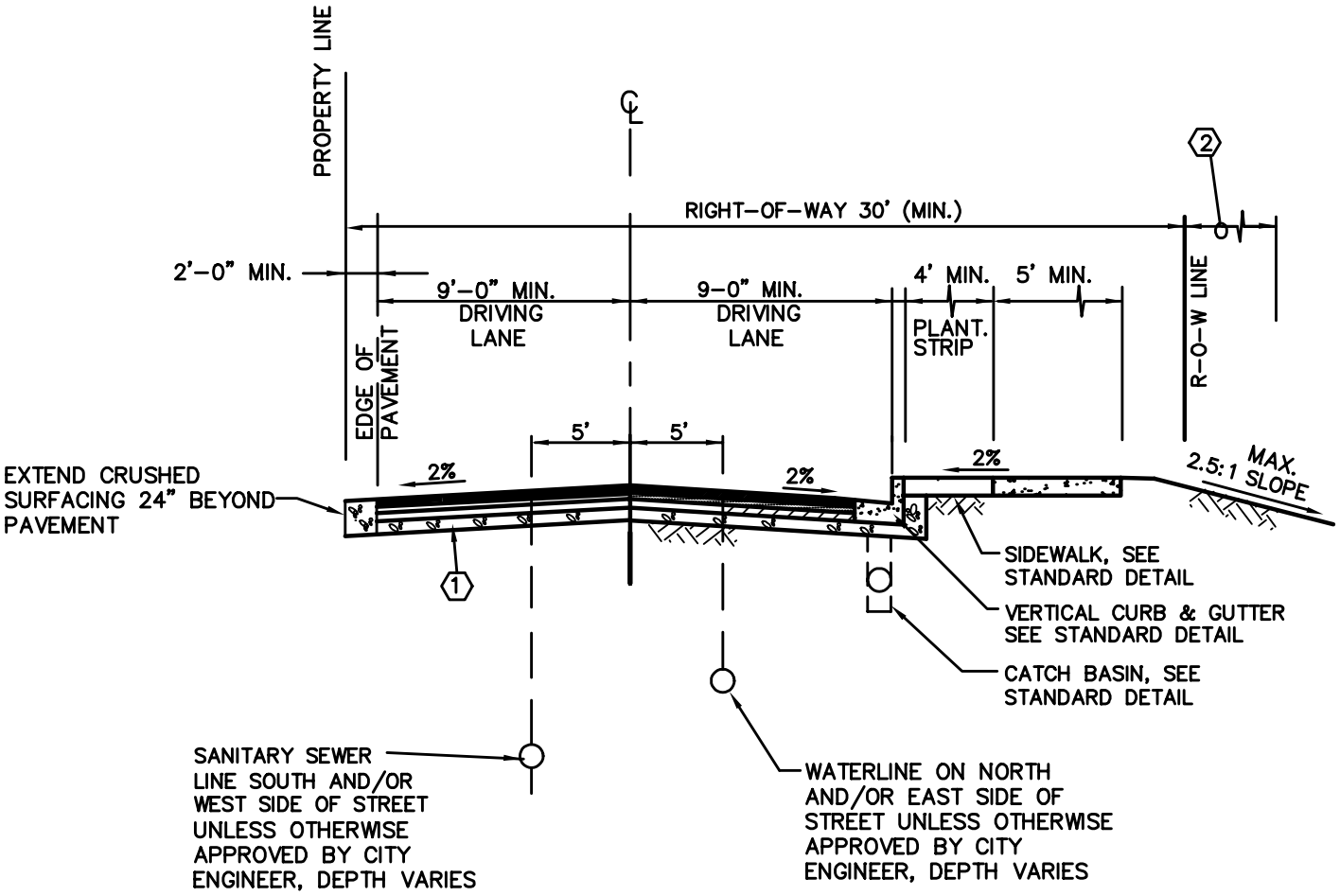
INTERSECTION LANDING

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST–7



NOTE

1. PAVEMENT DESIGN BY CURRENT WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER. SEE MIN. REQUIREMENTS, SEC. 4.37.

2. 5' UTILITY EASEMENT REQUIRED (BOTH SIDES)

CITY OF NEWCASTLE

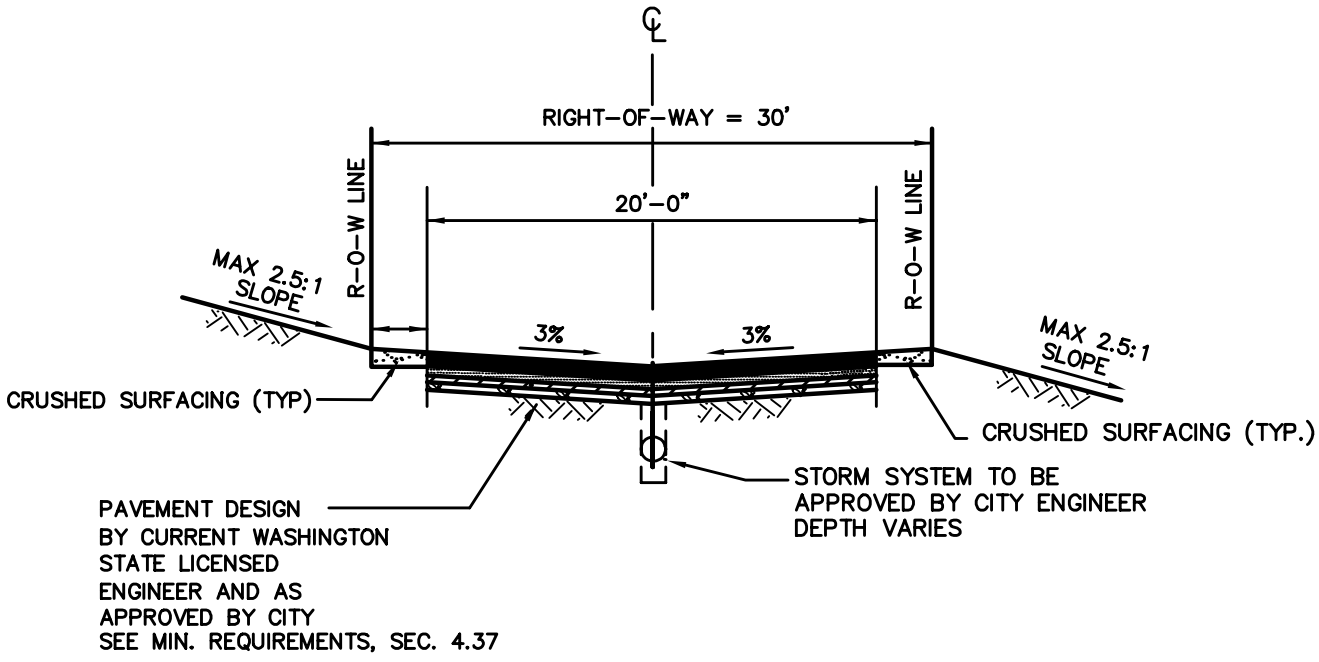
HALF–STREET SECTION

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST–8



CITY OF NEWCASTLE

ALLEY SECTION

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

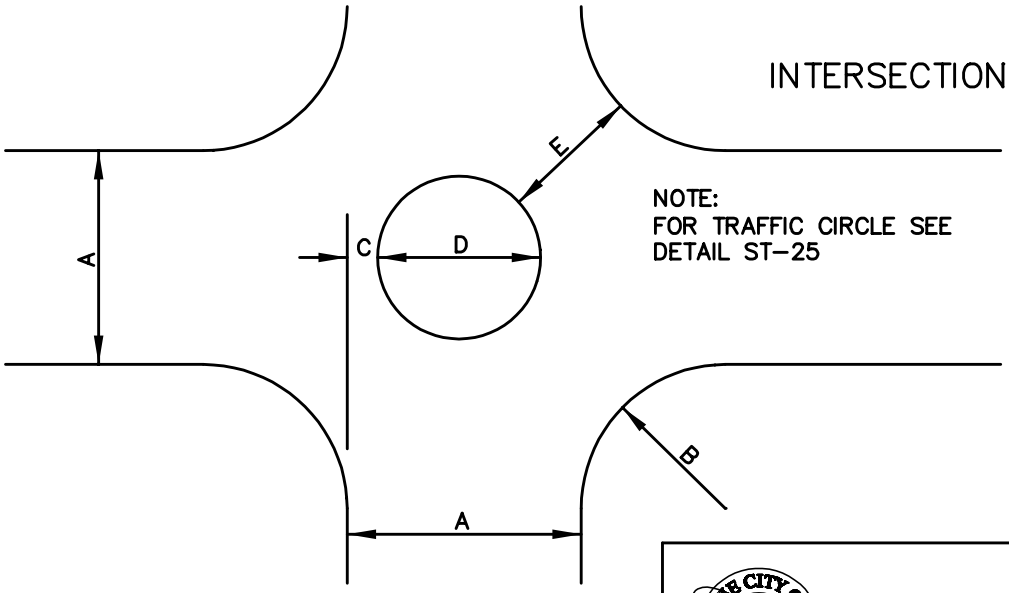
DWG. NO. ST–9

A STREET WIDTH	B CURB RETURN RADIUS	C OFF–SET DISTANCE	D CIRCLE DIAMETER	E OPENING WIDTH
20'	<15'	RECONSTRUCT CURBS		
	15'	5.5'	9'	16'+
	18'	5.0'	10'	17'+
	20'	4.5'	11'	18'–
	25'	4.0'	12'	19'+
24'	<12'	RECONSTRUCT CURBS		
	12'	5.5'	13'	16'
	15'	5.0'	14'	17'–
	20'	4.5'	15'	18'+
	25'	3.5'	17'	20'–
25'	<12'	RECONSTRUCT CURBS		
	12'	5.5'	14'	16'+
	15'	5.0'	15'	17'–
	18'	4.5'	16'	18'–
	20'	4.5'	16'	18'+
	25'	3.5'	18'	20'–
30'	10'	5.5'	19'	16'+
	12'	5.0'	20'	17'–
	15'	5.0'	20'	17'+
	18'	4.5'	21'	18'+
	20'	4.0'	22'	19'+
	25'	3.0'	24'	20'
32'	10'	5.5'	21'	16'+
	12'	5.0'	22'	17'–
	15'	4.5'	23'	18'–
	18'	4.0'	24'	19'–
	20'	4.0'	24'	19'+
	25'	2.5'	27'	20'
36'	10'	5.0'	26'	17'–
	12'	5.0'	26'	17'+
	15'	4.5'	27'	18'+
	18'	4.0'	28'	19'+
	20'	3.5'	29'	20'–
	25'	1.5'	33'	20'
40'	10'	5.0'	30'	17'+
	12'	4.5'	31'	18'+
	15'	4.0'	32'	19'–
	18'	3.5'	33'	20'–
	20'	3.0'	34'	20'
	25'	1.0'	38'	20'

OPTIMUM CRITERIA

OFF–SET DISTANCE	OPENING WIDTH
5.5' MAX.	16' MIN.
5.0'	17' ±
4.5'	18' ±
4.0'	19' ±
3.5' OR LESS	20'

INTERSECTION DIAGRAM



NOTE:
FOR TRAFFIC CIRCLE SEE DETAIL ST–25

CITY OF NEWCASTLE

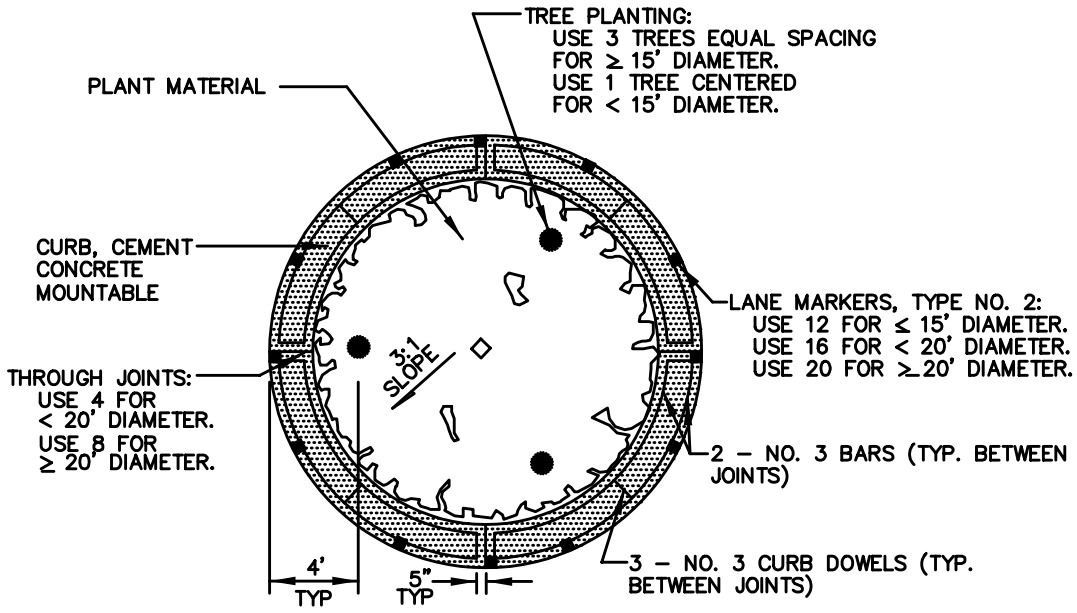
TRAFFIC CIRCLE

APPROVED:

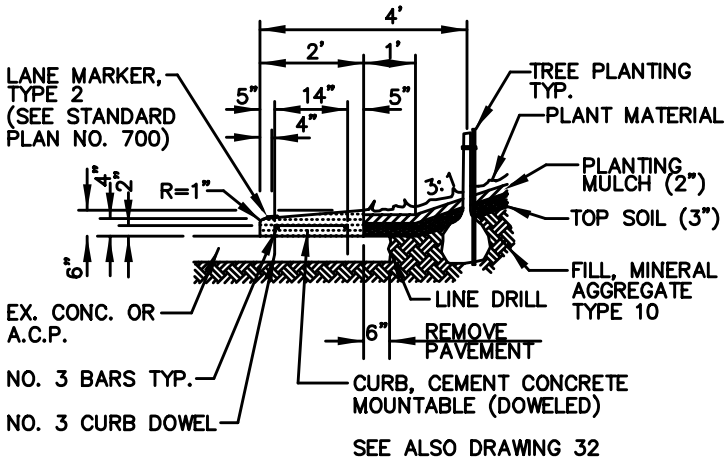
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

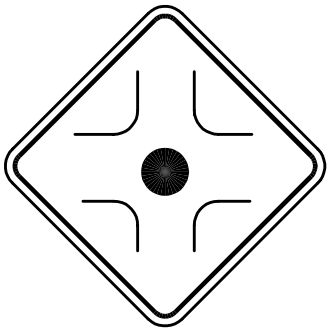
DWG. NO. ST–10



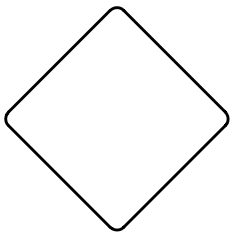
TYPICAL TRAFFIC CIRCLE



TYPICAL SECTION A



30" x 30" BLACK ON YELLOW
PLACED 75' TO 100' BACK
FROM TRAFFIC CIRCLE ON EACH
APPROACH.



18" x 18" YELLOW HIGH INTENSITY
TYPE 1 OBJECT MARKER PLACED
IN CENTER OF TRAFFIC CIRCLE
FOR EACH APPROACH.

REV. DATE _____

CITY OF NEWCASTLE

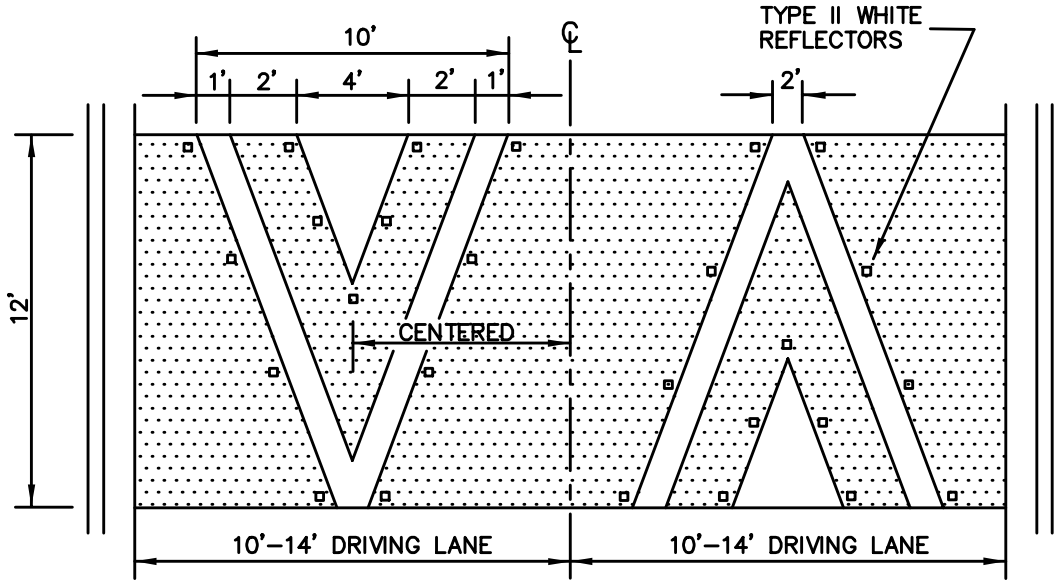
TRAFFIC CIRCLE DETAILS

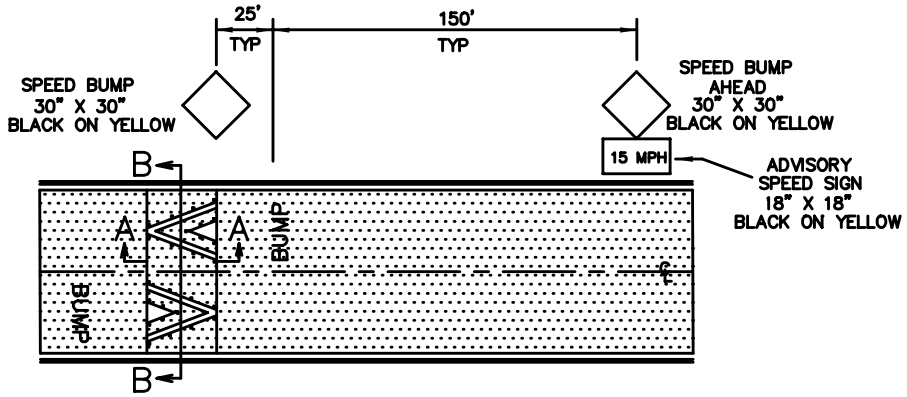
APPROVED:

ROGER KUYKENDALL, P.E. 8/1/2000

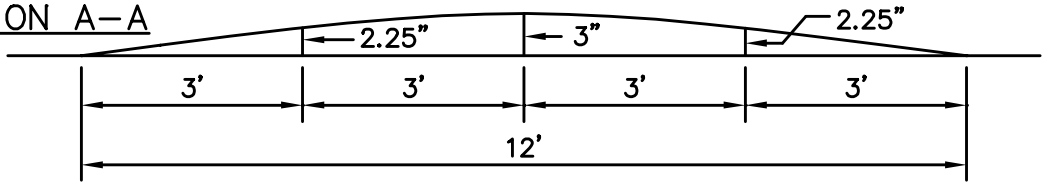
BY CITY DATE

DWG. NO.
ST–11

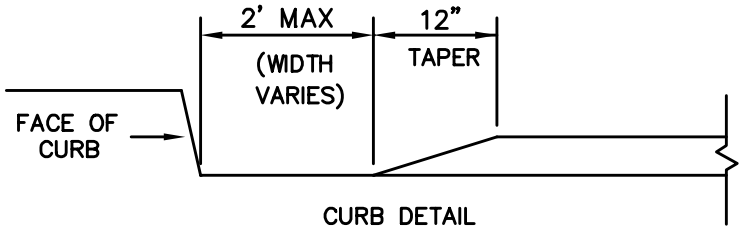




SECTION A–A



SECTION B–B



CURB DETAIL

NOTES

1. SIGN AND LEGEND LOCATION SHALL BE VERIFIED BY THE ENGINEER PRIOR TO INSTALLATION.
2. LEGEND AND V MARKINGS TO BE THERMOPLASTIC.

REV. DATE _____

CITY OF NEWCASTLE

SPEED HUMP: DESIGN, PAVEMENT MARKING, AND SIGNING

APPROVED:

ROGER KUYKENDALL, P.E. — BY CITY

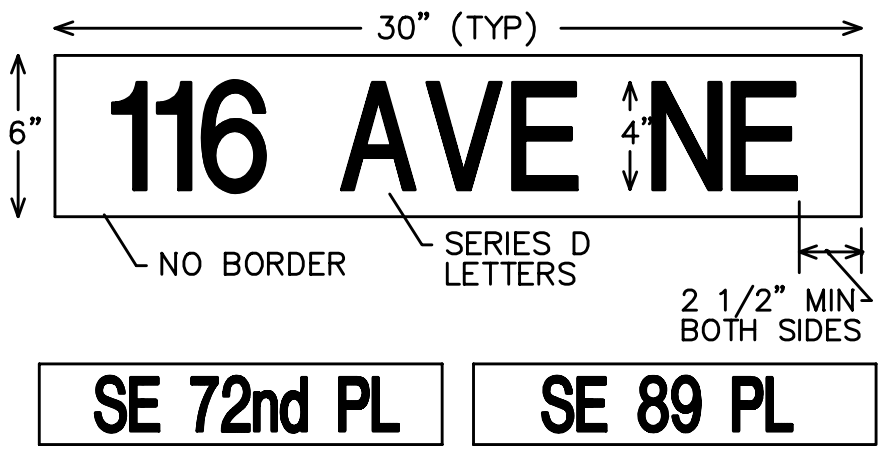
8/1/2000 — DATE

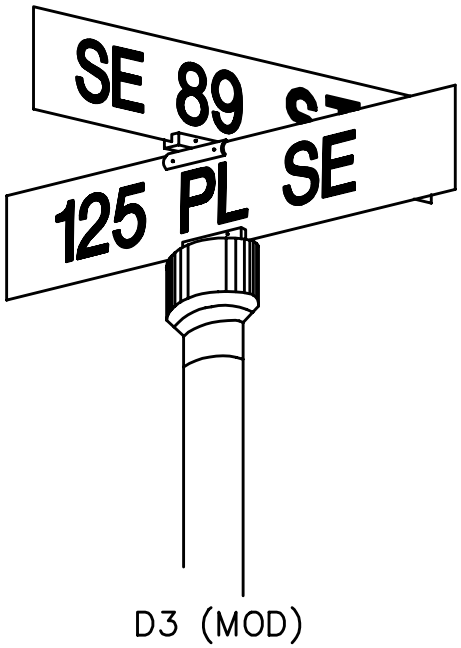
DWG. NO. ST–12

ROADWAY DETAILS

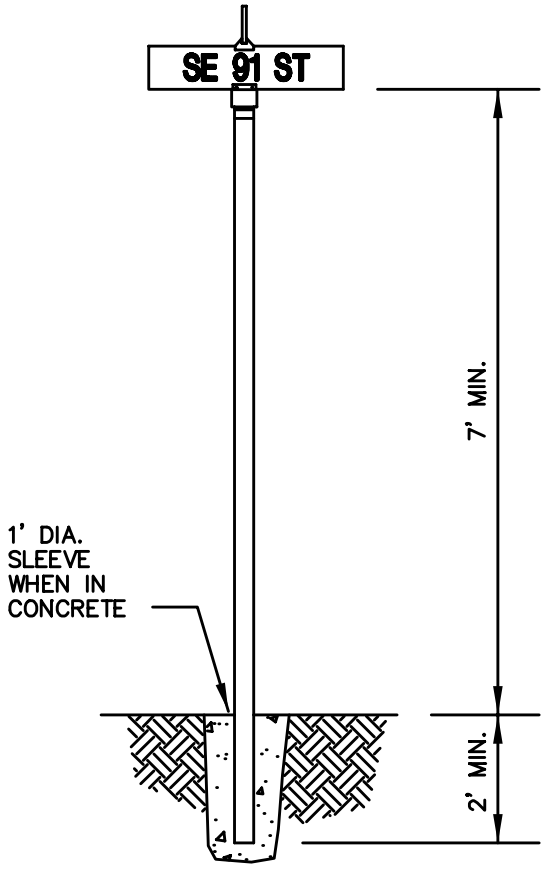
ABBREVIATIONS:

STREET=	ST
AVENUE=	AVE
PLACE=	PL
WAY=	WAY
BOULEVARD=	BLVD
PARKWAY=	PKWY
LANE=	LN
COURT=	CT
DRIVE=	DR
ROAD=	RD
KEY=	KEY
CONNECTOR=	CONN
CIRCLE=	CIR





D3 (MOD)



TYPICAL INSTALLATION

NOTES

1. SIGN:
   6" X 30"(TYP) EXTRUDED ALUMINUM, TREATED, 0.080 GAUGE
2. BACKGROUND:
   GREEN, 3M DIAMOND GRADE VISUAL IMPACT PERFORMANCE (VIP) SHEETING, NO BORDER
3. LETTERS:
   WHITE, 4" UC SERIES D, DIAMOND GRADE VIP CUT-OUT LETTERS OR 3M SCOTCHLITE EC FILM SERIES 1170
4. POST:
   10' X 2 3/8" OD GALV. STEEL POST
5. HARDWARE:
   #808 EXTRUDED BRACKET, DIE CAST ALUMINUM, OR EQUAL

REV. DATE _____

CITY OF NEWCASTLE

STREET NAME SIGN – TYPE 1:
RESIDENTIAL STREET

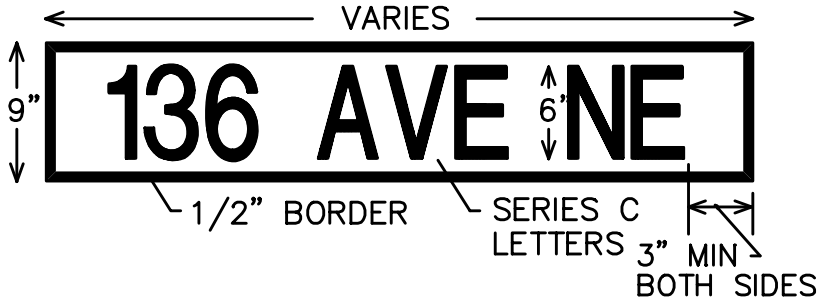
APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000
BY CITY — DATE

DWG. NO.
ST-13

ABBREVIATIONS:

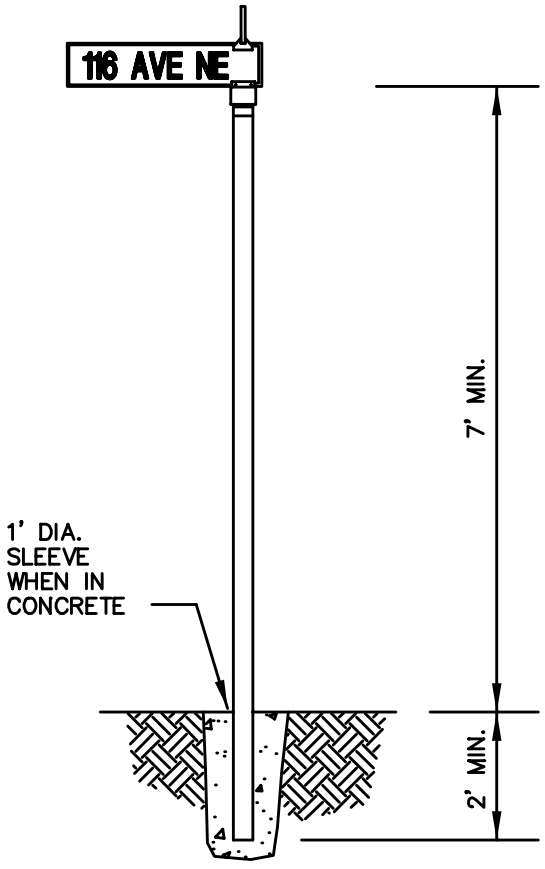
STREET=	ST
AVENUE=	AVE
PLACE=	PL
WAY=	WAY
BOULEVARD=	BLVD
PARKWAY=	PKWY
LANE=	LN
COURT=	CT
DRIVE=	DR
ROAD=	RD
KEY=	KEY
CONNECTOR=	CONN
CIRCLE=	CIR



SE 85 ST

144 PL SE

D3 (MOD)



TYPICAL INSTALLATION

NOTES

1. SIGN:
   9" X VARIES EXTRUDED ALUMINUM, TREATED, 0.080 GAUGE
2. BACKGROUND AND LETTERS:
   WHITE LETTERS ON GREEN BACKGROUND USE 3M SCOTCHLITE EC FILM SERIES 1170 OVER 3M DIAMOND GRADE VISUAL IMPACT PERFORMANCE (VIP) SHEETING, 1/2" BORDER, NO MARGIN
3. POST:
   10' X 2 3/8" OD GALV. STEEL POST
4. HARDWARE:
   #809 EXTRUDED BRACKET, DIE CAST ALUMINUM, OR EQUAL

REV. DATE _____

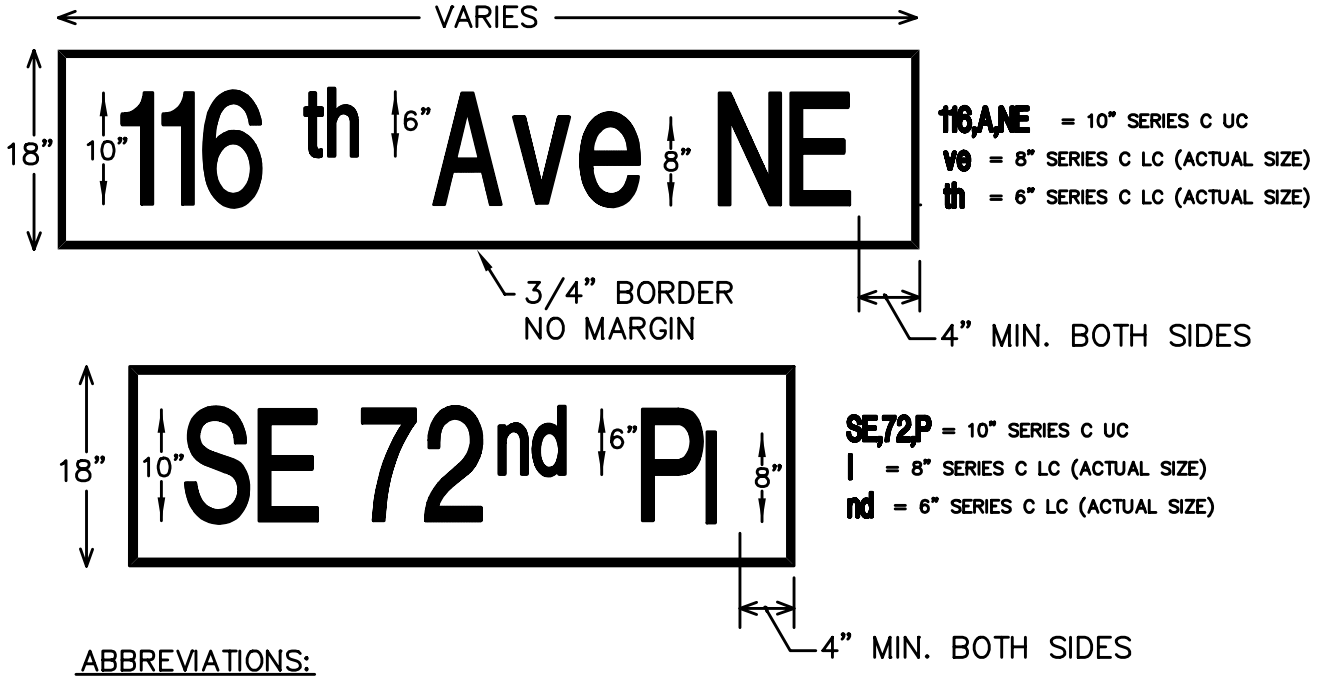
CITY OF NEWCASTLE

STREET NAME SIGN – TYPE 2:
ARTERIAL STREET

APPROVED:

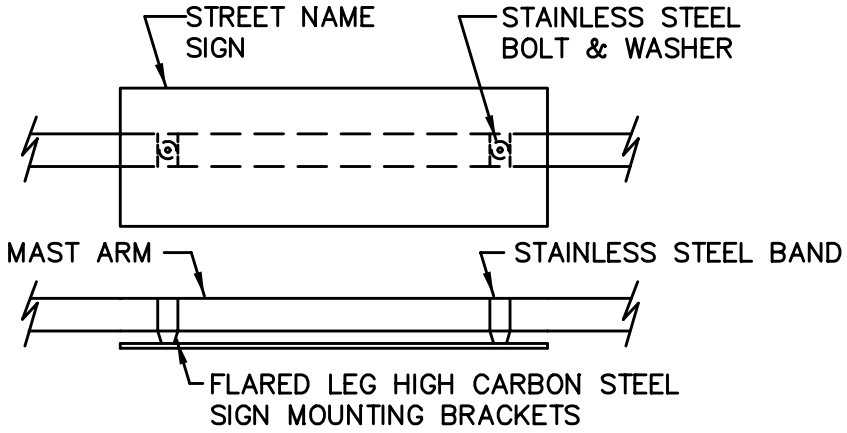
ROGER KUYKENDALL, P.E. — 8/1/2000
BY CITY — DATE

DWG. NO.
ST–14



ABBREVIATIONS:

STREET=	St
AVENUE=	Ave
PLACE=	Pl
WAY=	Way
BOULEVARD=	Blvd
PARKWAY=	Pkwy
LANE=	Ln
COURT=	Ct
DRIVE=	Dr
ROAD=	Rd
KEY=	Key
CONNECTOR=	Conn
CIRCLE=	Cir



NOTES

1. SIGN:
   18" X VARIES EXTRUDED ALUMINUM, TREATED, 0.080 GAUGE
2. BACKGROUND:
   GREEN, 3M DIAMOND GRADE VISUAL IMPACT PERFORMANCE (VIP) SHEETING, 3/4" WHITE BORDER, NO MARGIN
3. COPY:
   WHITE DIAMOND GRADE VIP CUT-OUT LETTERS OR 3M SCOTCHLITE EC FILM SERIES 1170

   NUMBERS:
   10" SERIES C UC

   QUADRANT (NE or SE):
   10" SERIES C UC

   DESIGNATION (Ave,St,etc):
   FIRST LETTER 10" SERIES C UC, REMAINING LETTERS 8" SERIES C LC (ACTUAL SIZE ON SIGN)

   SUFFIX (th,st,etc):
   6" SERIES C LC (ACTUAL SIZE ON SIGN)

REV. DATE

CITY OF NEWCASTLE

STREET NAME SIGN – TYPE 3: MAST ARM

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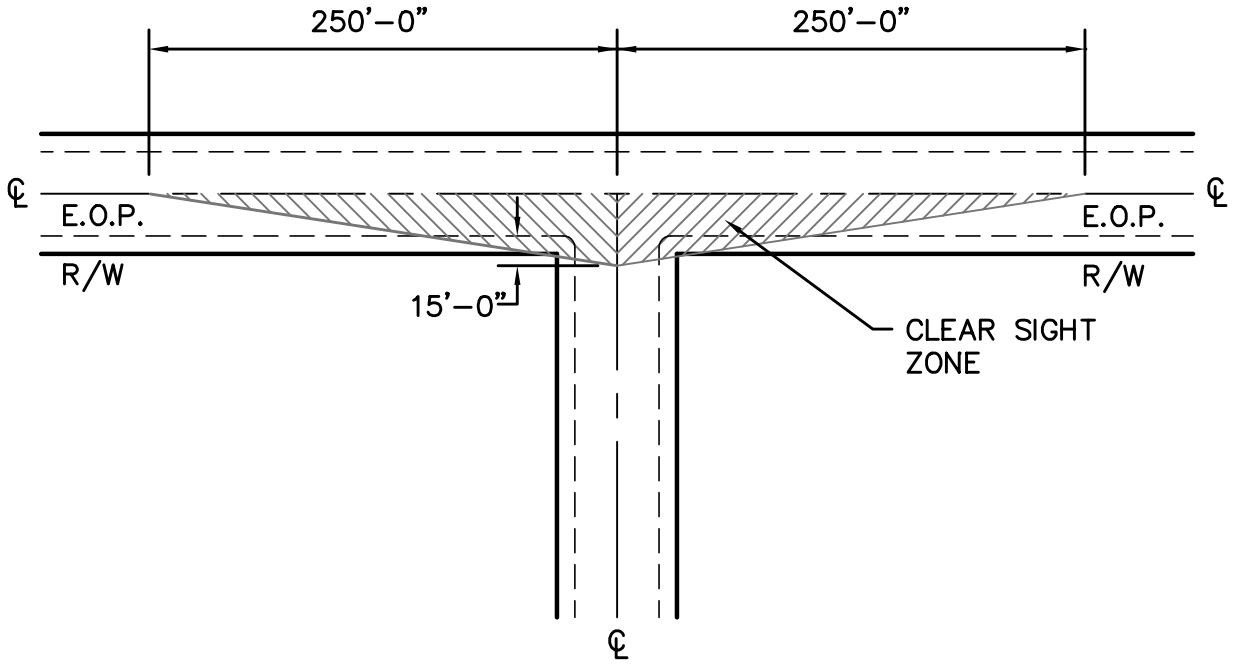
ROGER KUYKENDALL, P.E. — BY CITY

8/1/2000 — DATE

DWG. NO. ST-15

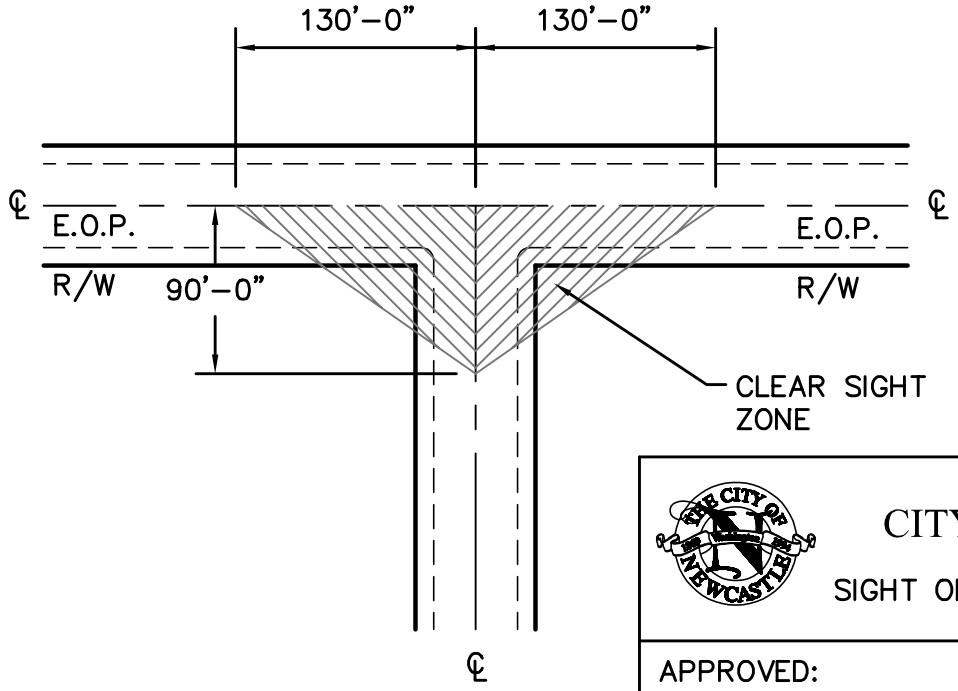
STOP OR YIELD CONTROLLED INTERSECTIONS

EXAMPLE: MAJOR STREET SPEED LIMIT = 25 M.P.H.



UNCONTROLLED INTERSECTIONS

EXAMPLE: MAJOR STREET SPEED LIMIT = 30 M.P.H.
MINOR STREET SPEED LIMIT = 20 M.P.H.



CITY OF NEWCASTLE

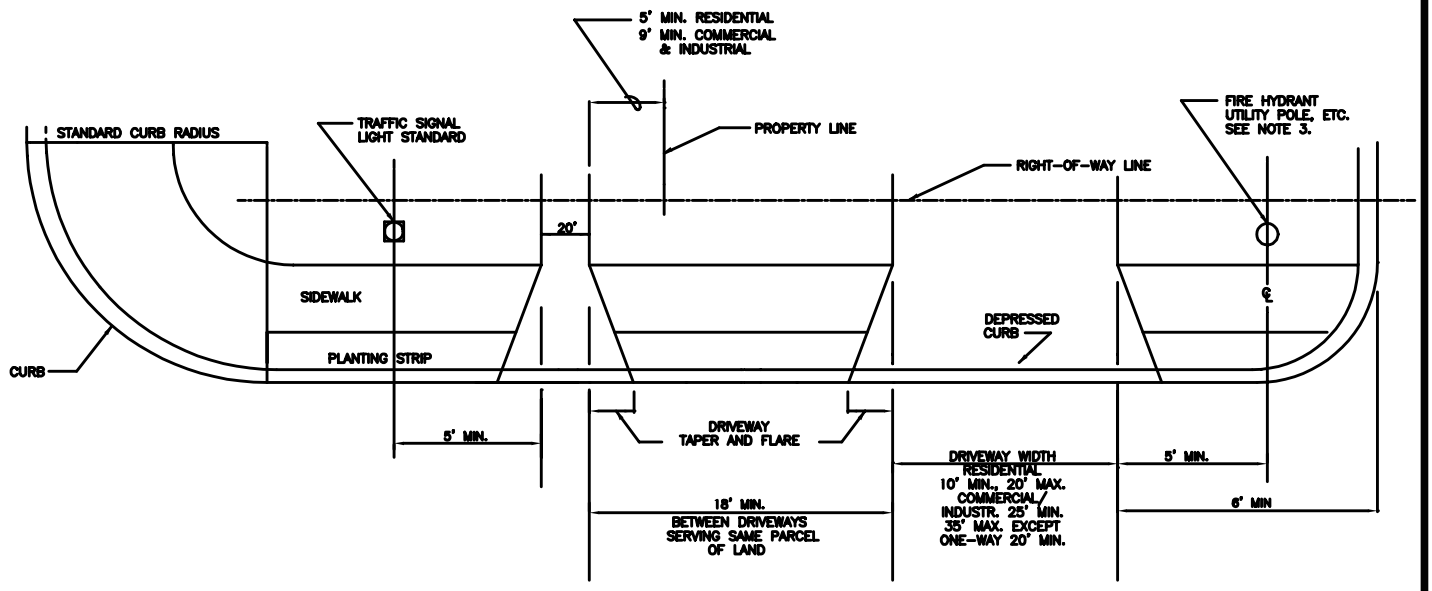
SIGHT OBSTRUCTION DETAIL

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO.
ST–16



NOTES:

1. NO PORTION OF ANY DRIVEWAY SHALL ENCROACH IN CURB RETURN.
2. COMMERCIAL/INDUSTRIAL DRIVEWAYS MUST BE APPROVED BY THE ENGINEER, CONSIDERING BOTH TRAFFIC SAFETY AND THE ACTIVITY BEING SERVED. ALL COMMERCIAL/INDUSTRIAL DRIVEWAYS SHALL HAVE AN EXPANSION JOINT LOCATED MID-WIDTH.
3. DRIVEWAYS SHALL BE LOCATED AS FAR FROM THE INTERSECTION AS POSSIBLE.

CITY OF NEWCASTLE

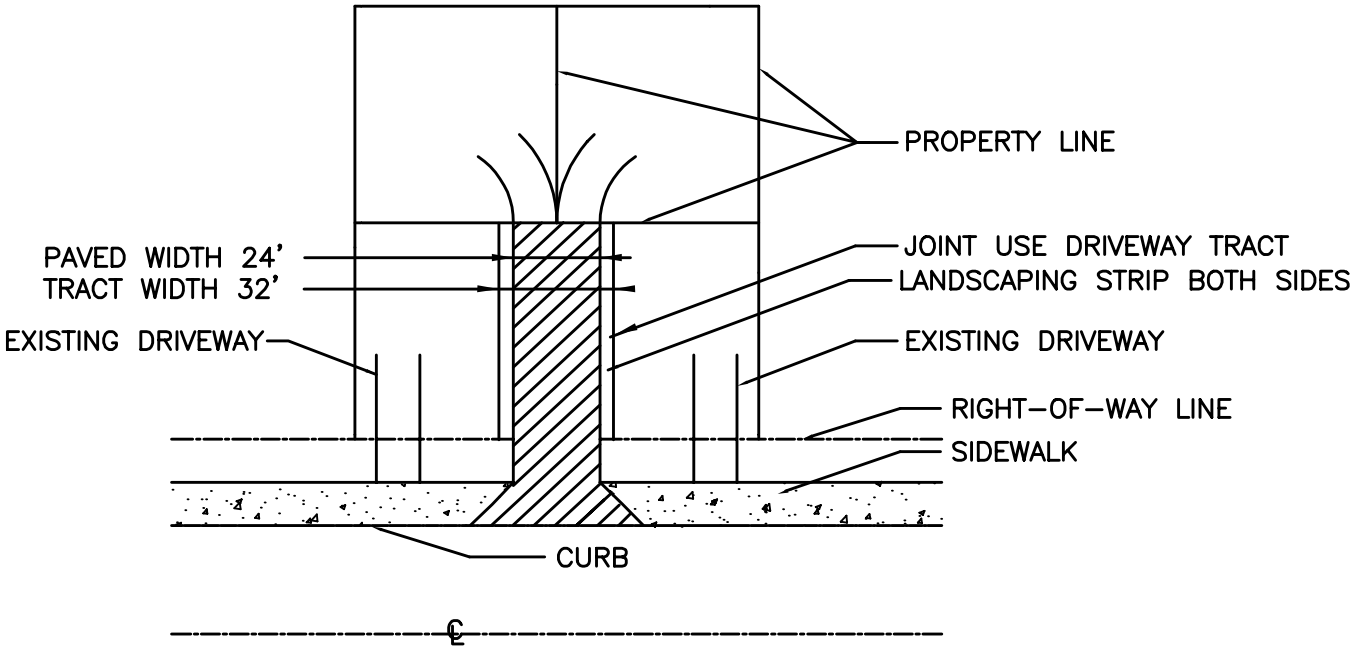
LOCATION & WIDTH OF NEW DRIVEWAYS

APPROVED:

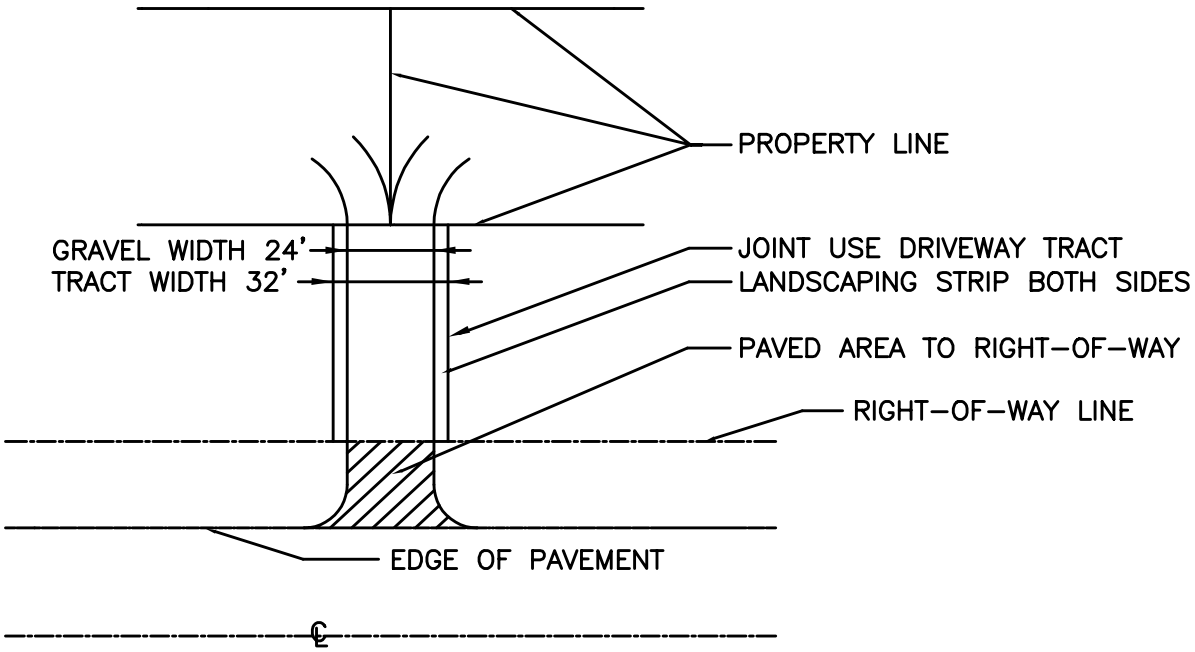
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST-17



CURB & GUTTER



SHOULDER/DITCH

NOTE:

1. SEE SEC. 4.23 FOR TRACT WIDTH AND PAVING REQUIREMENTS.

CITY OF NEWCASTLE

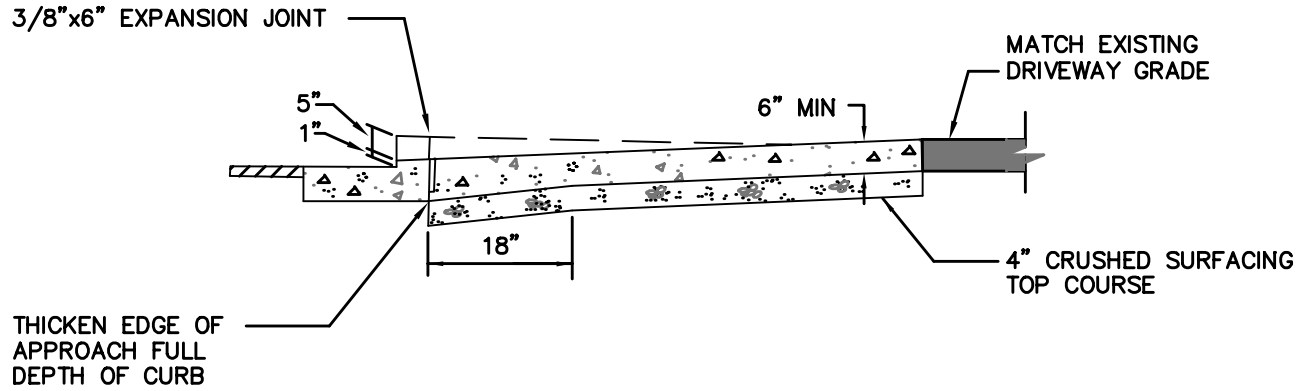
JOINT USE DRIVEWAYS

APPROVED:

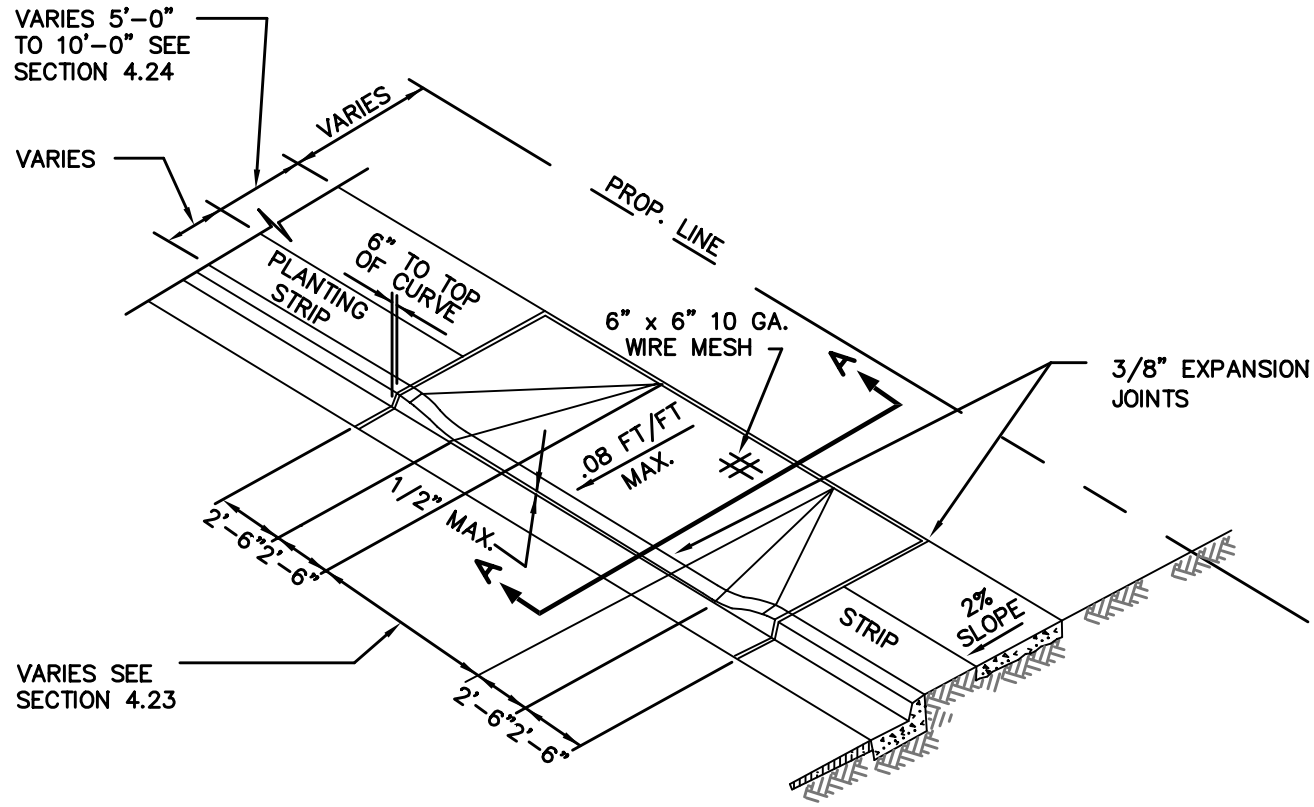
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST-18



SECTION A–A



CITY OF NEWCASTLE

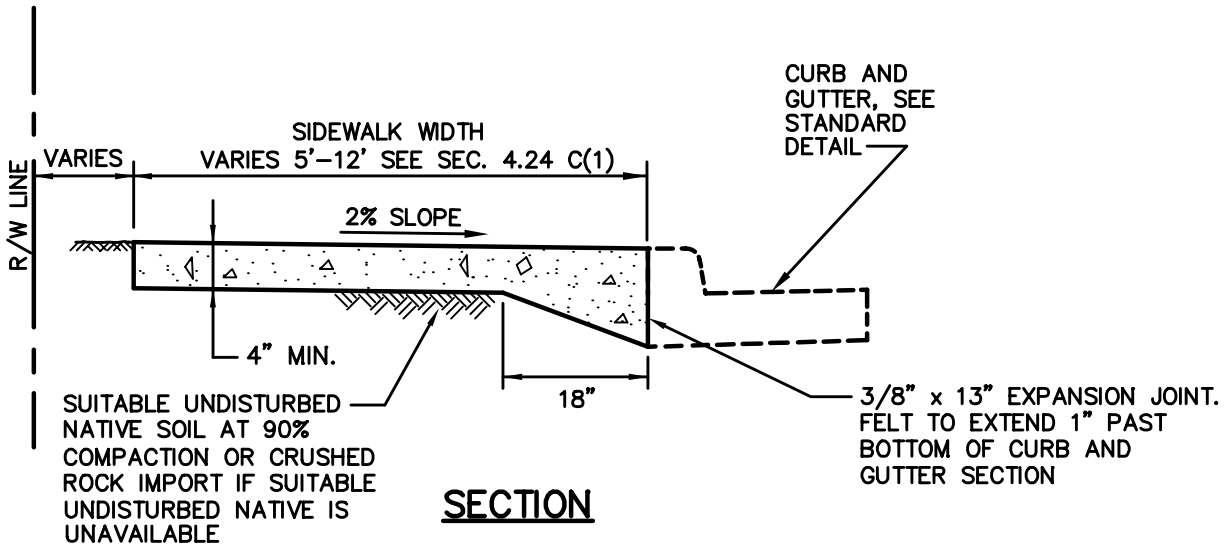
CEMENT CONCRETE DRIVEWAY

APPROVED:

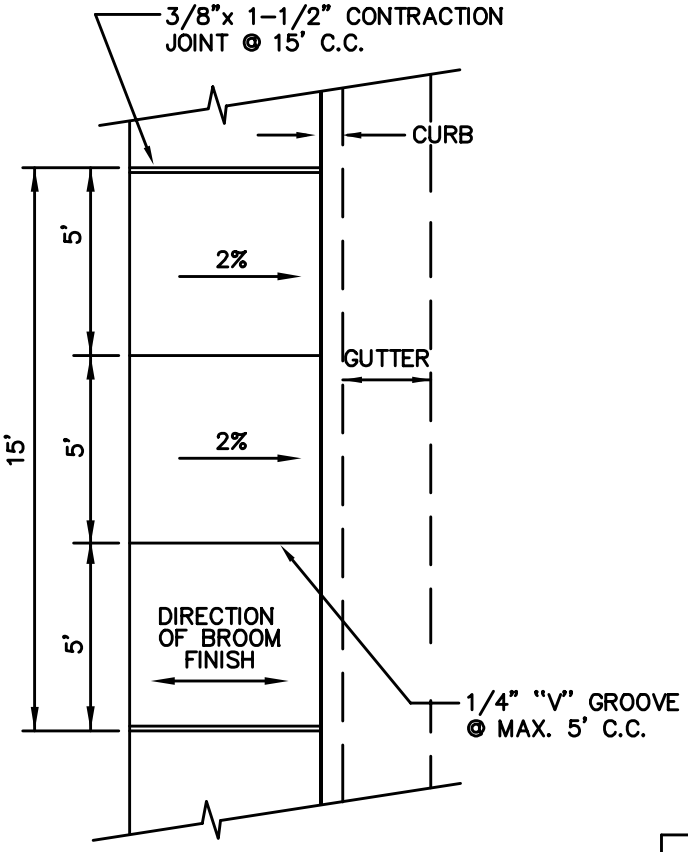
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST–19



SECTION



PLAN

MINIMUM SIDEWALK WIDTHS

5' MINIMUM, 10' MAXIMUM
SEE DESIGN STANDARDS

NOTES:

1. THRU JOINTS AND CONTRACTION JOINTS SHALL BE AS SHOWN ABOVE. THRU JOINTS SHALL ALSO BE PLACED IN THE SIDEWALK SECTION AT DRIVE–WAY AND ALLEY RETURNS. ALL JOINTS SHALL BE CLEAN AND EDGED WITH AN EDGE HAVING 1/4" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
2. ALL UTILITY POLES, METER BOXES, ETC. IN IN SIDEWALK AREAS SHALL HAVE 3/8" JOINT MATERIAL (FULL DEPTH) PLACED AROUND THEM BEFORE PLACING CONCRETE.
3. PREMOLDED JOINT FILLER SHALL BE 3/8"x 2" ASPHALT SATURATED FELT OR PAPER.
4. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THESE SPECIFICATIONS.
5. CONCRETE SHALL BE CLASS 3000 PSI
6. FOR SIDEWALKS GREATER THAN 8' IN WIDTH, ADDITIONAL EXPANSION AND CONTRACTION JOINTS WILL BE REQUIRED.

SIDEWALK WITHOUT PLANTING STRIP

CITY OF NEWCASTLE

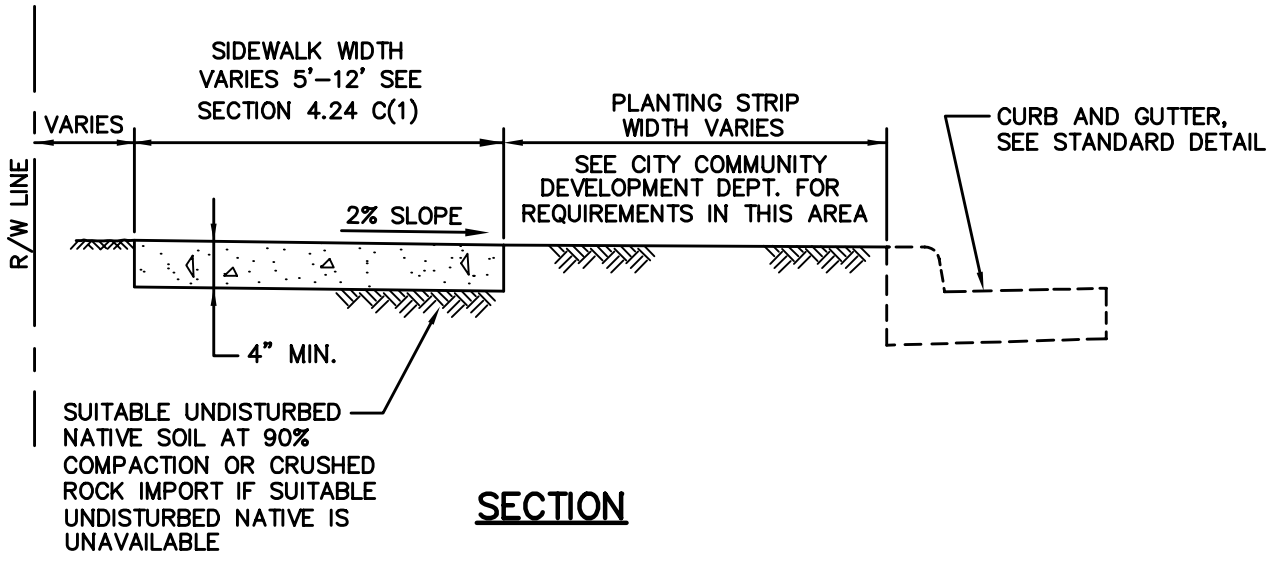
SIDEWALK WITHOUT PLANTING STRIP

APPROVED:

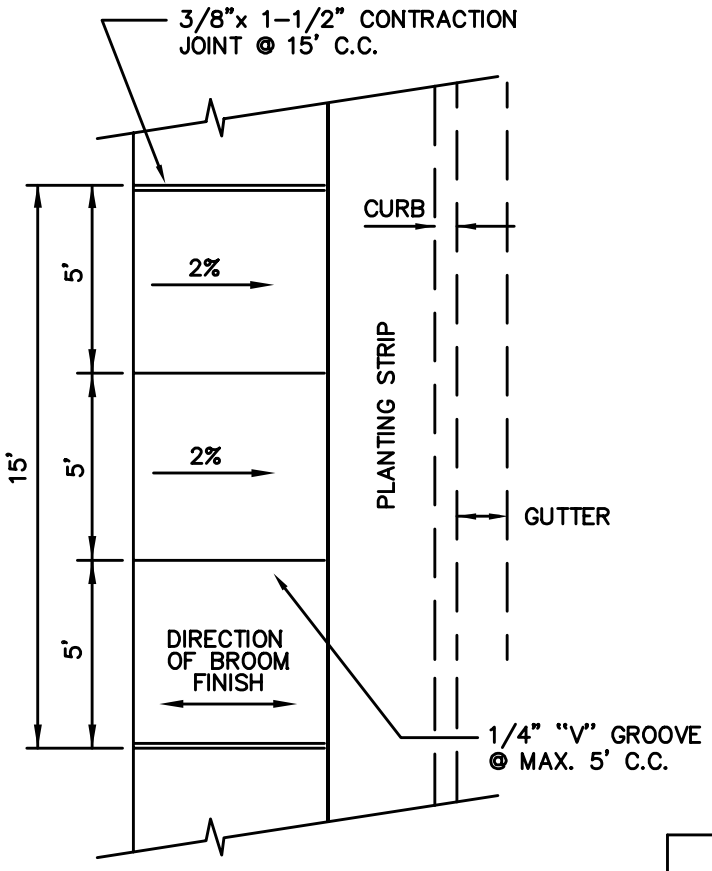
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST–20



SECTION



PLAN

SIDEWALK WITH PLANTING STRIP

MINIMUM SIDEWALK WIDTHS

5' MINIMUM, 10' MAXIMUM
SEE DESIGN STANDARDS

NOTES:

1. JOINTS THRU AND DUMMY JOINTS SHALL BE AS SHOWN ABOVE. THRU JOINTS SHALL ALSO BE PLACED IN THE SIDEWALK SECTION AT DRIVE–WAY AND ALLEY RETURNS. ALL JOINTS SHALL BE CLEAN AND EDGED WITH AN EDGE HAVING 1/4" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
2. ALL UTILITY POLES, METER BOXES, ETC. IN IN SIDEWALK AREAS SHALL HAVE 3/16" JOINT MATERIAL (FULL DEPTH) PLACED AROUND THEM BEFORE PLACING CONCRETE.
3. PREMOLDED JOINT FILLER SHALL BE 3/16" x 2" ASPHALT SATURATED FELT OR PAPER.
4. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THESE SPECIFICATIONS.
5. CONCRETE SHALL BE CLASS 3000 PSI
6. FOR SIDEWALKS GREATER THAN 8' IN WIDTH, ADDITIONAL EXPANSION AND CONTRACTION JOINTS WILL BE REQUIRED.

CITY OF NEWCASTLE

SIDEWALK WITH PLANTING STRIP

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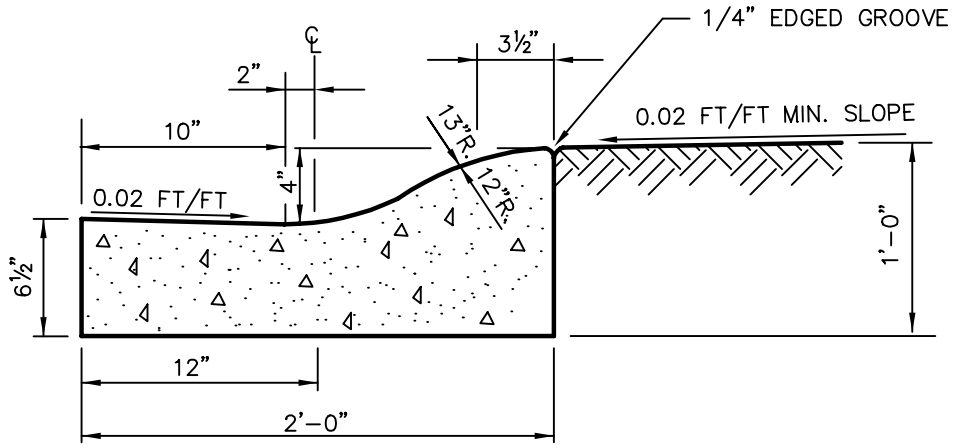
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

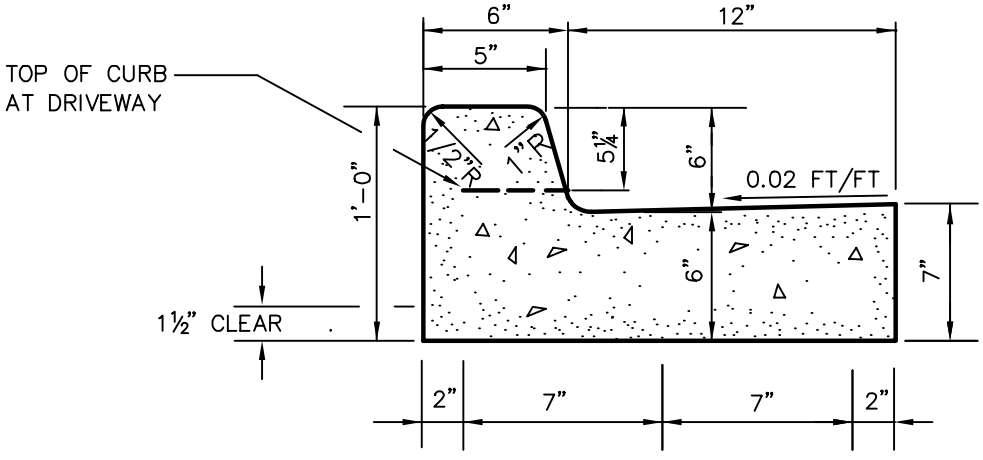
DWG. NO. ST–21



ROLLED CONCRETE CURB AND GUTTER

NOTES:

1. THE CURBS, GUTTERS AND SIDEWALKS SHALL HAVE CONTRACTION JOINTS (3/8" x 1½") AT INTERVALS OF NOT GREATER THAN 15'–0"
2. CEMENT CONCRETE SHALL BE CLASS B
3. ROLLED CURBS AND GUTTERS SHALL ONLY BE ALLOWED AS A REPLACEMENT TO EXISTING ROLLED CURBS AND GUTTERS.



VERTICAL CONCRETE CURB AND GUTTER

CITY OF NEWCASTLE

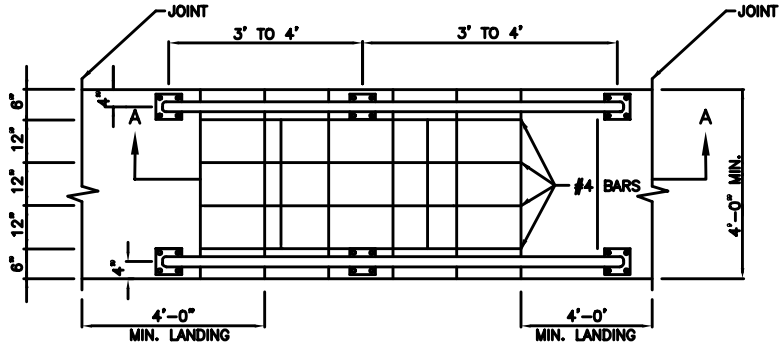
CONCRETE CURB AND GUTTER

APPROVED:

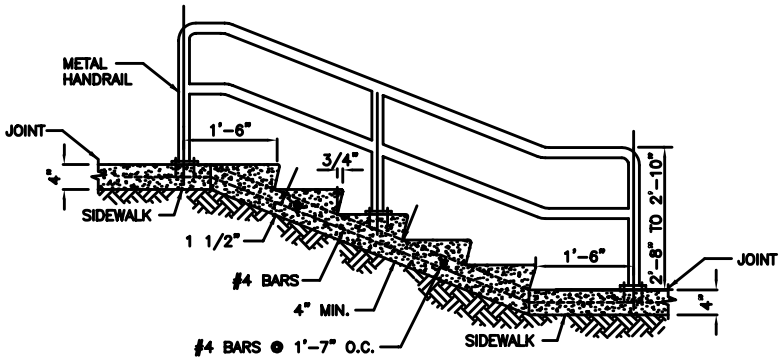
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST–22



CONCRETE STEPS
PLAN



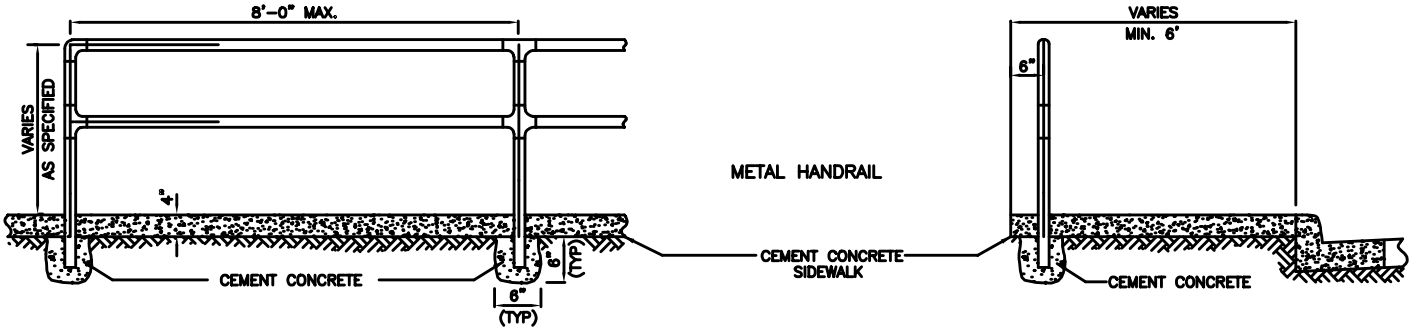
CONCRETE STEPS
SECTION A-A

NOTES FOR CONCRETE STEPS:

1. CONCRETE: CEMENT CONCRETE CLASS 3000.
2. ALL STEPS: SAME DIMENSIONS, WITHIN 3/8" MAX. DIFFERENCE.
3. RISERS: 7 1/2" MAX., 5" MIN.
4. TREADS: 12" MAX., 11" MIN., WITH TRANSVERSE 0.01 FT./FT. SLOPE.
5. METAL HANDRAIL REQUIRED FOR 4 STEPS OR MORE. SEE NOTES BELOW.
6. REINFORCING BARS SHALL MEET THE REQUIREMENTS OF ASTM A-615, GRADE 60 AND ARE REQUIRED FOR 4 STEPS OR MORE.
7. MAX. VERTICAL DISTANCE BETWEEN LANDINGS IS 12'.

NOTES FOR HANDRAILS:

1. GALVANIZED STEEL OR ALUMINUM.
2. 1 1/4" TO 2" O.D. ROUND OR OVAL PIPE.
3. WELDED, WITH SMOOTH SURFACE AND JOINTS.
4. POSTS SET IN MIN. 6" CONCRETE CLASS 3000.



CITY OF NEWCASTLE

CONCRETE STEPS WITH HANDRAIL

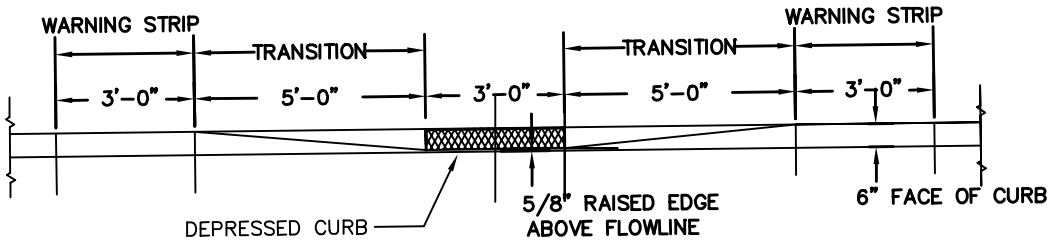
APPROVED:

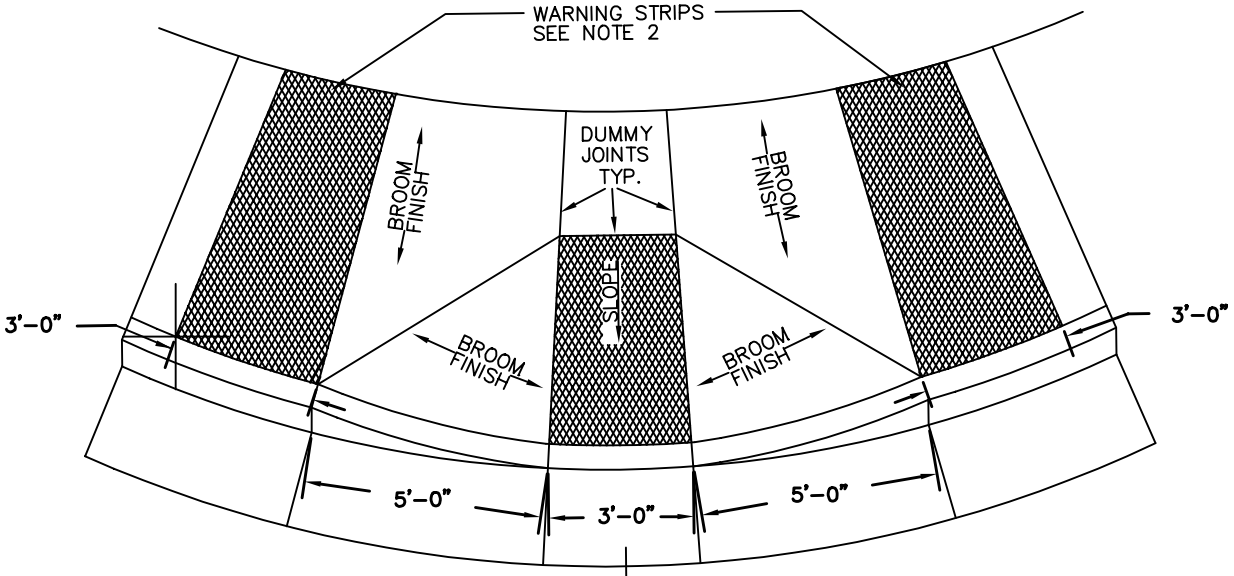
ROGER KUYKENDALL, P.E. — 8/1/2000

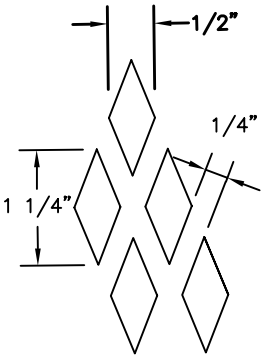
BY CITY — DATE

DWG. NO. ST-23

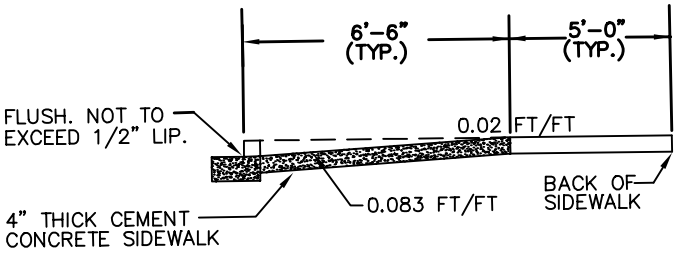
ROADWAY DETAILS







RAMP TEXTURE DETAIL



SECTION A

NOTES:
1. RAMP AND APPROACHES SHALL BE CLEAR OF OBSTACLES INCLUDING HYDRANTS, POLES, AND DRAINAGE STRUCTURES.
2. RAMP TEXTURING IS TO BE DONE WITH AN EXPANDED METAL GRATE PLACED AND REMOVED FROM WET CONCRETE TO LEAVE A DIAMOND PATTERN. THE LONG AXIS OF THE DIAMOND PATTERN SHALL BE PERPENDICULAR TO THE CURB. GROOVES SHALL BE 1/4" DEEP AND 1/4" WIDE.

CITY OF NEWCASTLE

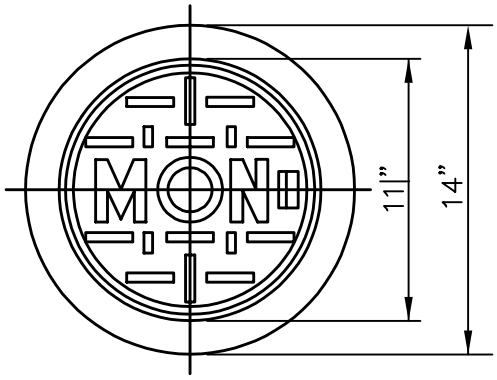
CURB RAMP & TEXTURE DETAIL

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

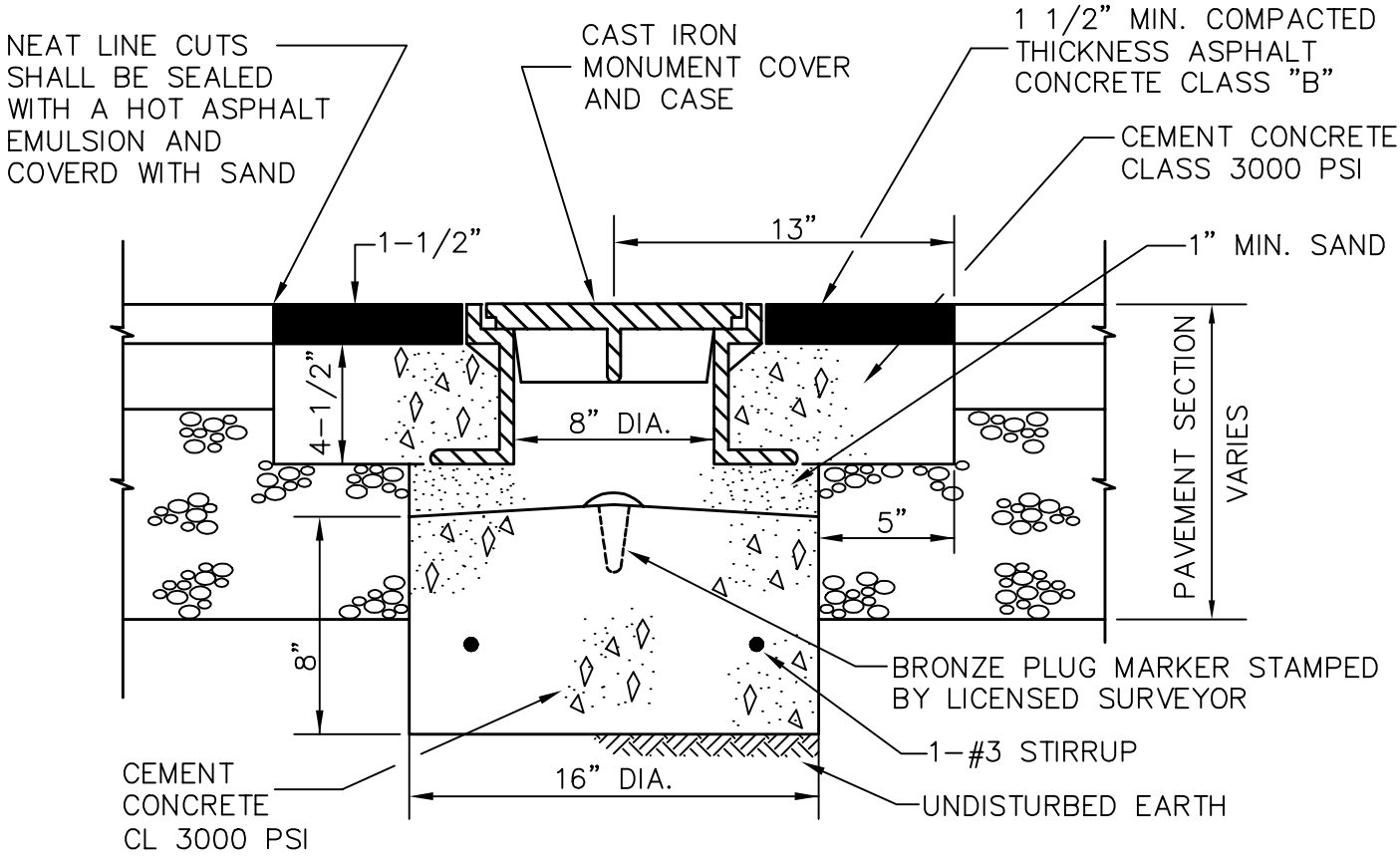
DWG. NO. ST-24



NOTES:

1. MACHINE BEARING FACES OF COVER AND CASE TO INSURE POSITIVE FIT.
2. MATERIAL SHALL CONFORM TO THE CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION", PREPARED BY THE WASHINGTON STATE DEPT. OF TRANSPORT-ATION AND AMERICAN PUBLIC WORKS ASSOCIATION, WASHINGTON STATE CHAPTER.

MONUMENT COVER



POURED MONUMENT IN PLACE

CITY OF NEWCASTLE

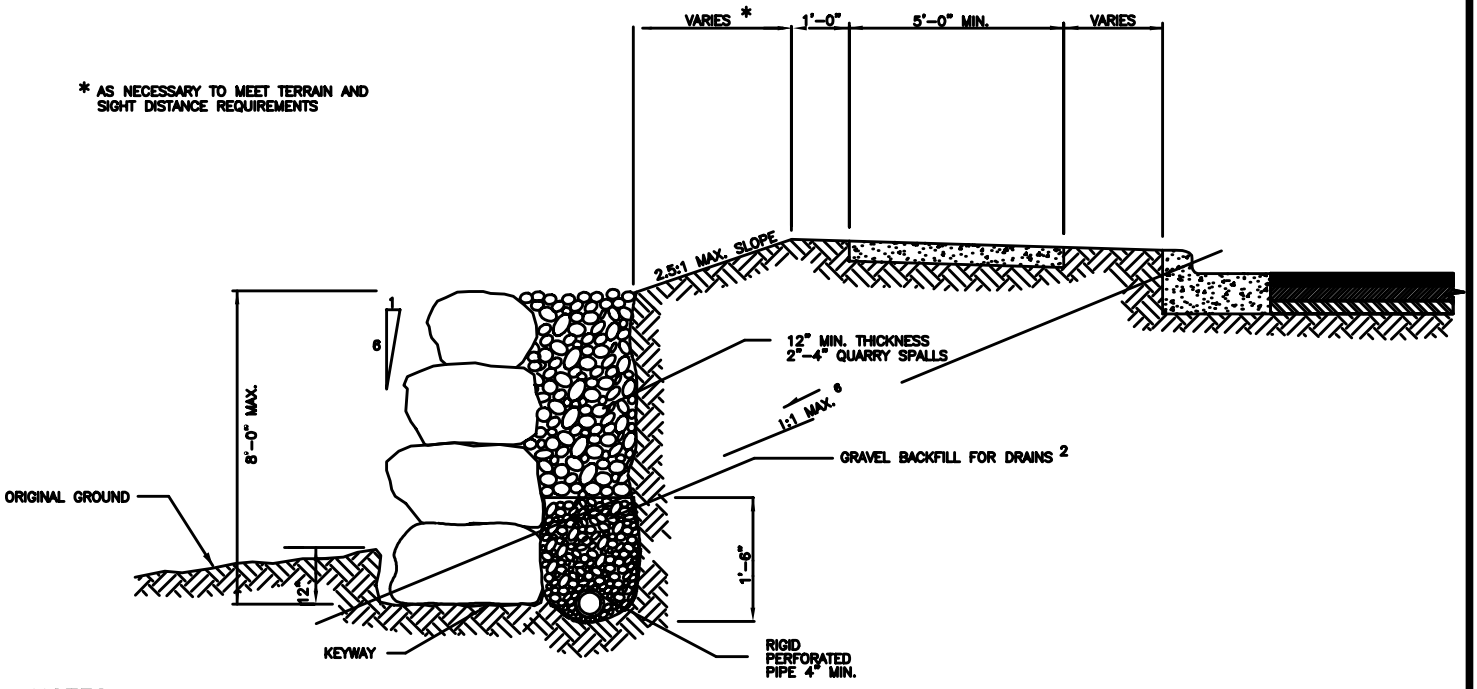
POURED MONUMENT IN PLACE

APPROVED:

ROGER KUYKENDALL, P.E. — BY CITY

8/1/2000 — DATE

DWG. NO. ST-25



NOTES:

1. SEE SECTION 4.30.
2. WSDOT / APWA 9-03.12[4]
3. FENCE OR HANDRAIL MAY BE REQUIRED WHEN ROCKERY HEIGHT EXCEEDS 30 INCHES. INCHES AND IS LOCATED IN A PUBLIC AREA.
4. THE WALL FOUNDATION IS TO BE CLEARED OF ORGANIC MATTER AND DEBRIS AND THE UNDERLYING MINERAL SOIL COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY. THE EMBANKMENT MATERIAL IS TO BE GRAVEL BORROW MEETING THE REQUIREMENTS OF 9-03.14 OF THE WSDOT STANDARDS. THE BACKFILL IS TO BE PLACED IN THIN LIFTS, NOT EXCEEDING SIX INCHES IN THICKNESS AND COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY.
5. (NOT USED)
6. ZONE OF INFLUENCE. FLATTER SLOPE MAY BE REQUIRED IN LESS STABLE SOILS. ALL DRIVEWAYS, PARKING AREAS, AND ROADS SHALL LIE BELOW THE ZONE OF INFLUENCE.
7. (NOT USED)
8. ROCK WALLS SHALL BE PLACED NO CLOSER THAN 5 FEET FROM THE EDGE OF ANY PEDESTRIAN WALKWAY, PUBLIC EASEMENT OR RIGHT OF WAY.
9. MAXIMUM HEIGHT, AS MEASURED FROM THE KEYWAY, IS EIGHT (8) FEET. ALL WALLS FOUR FEET OR HIGHER SHALL REQUIRE A BUILDING PERMIT. ALL WALLS TO BE CONSTRUCTED IN A FILL SECTION OR THOSE WALLS SUPPORTING A SURCHARGE (DRIVEWAY, ROAD, BUILDING, OR PARKING AREA) SHALL REQUIRE DESIGN BY A LICENSED ENGINEER.
10. THE TOP OF ALL ROCK WALLS SHALL BE CONFIGURED TO PREVENT SURFACE DRAINAGE OVER THE TOP OF THE WALL.

CITY OF NEWCASTLE

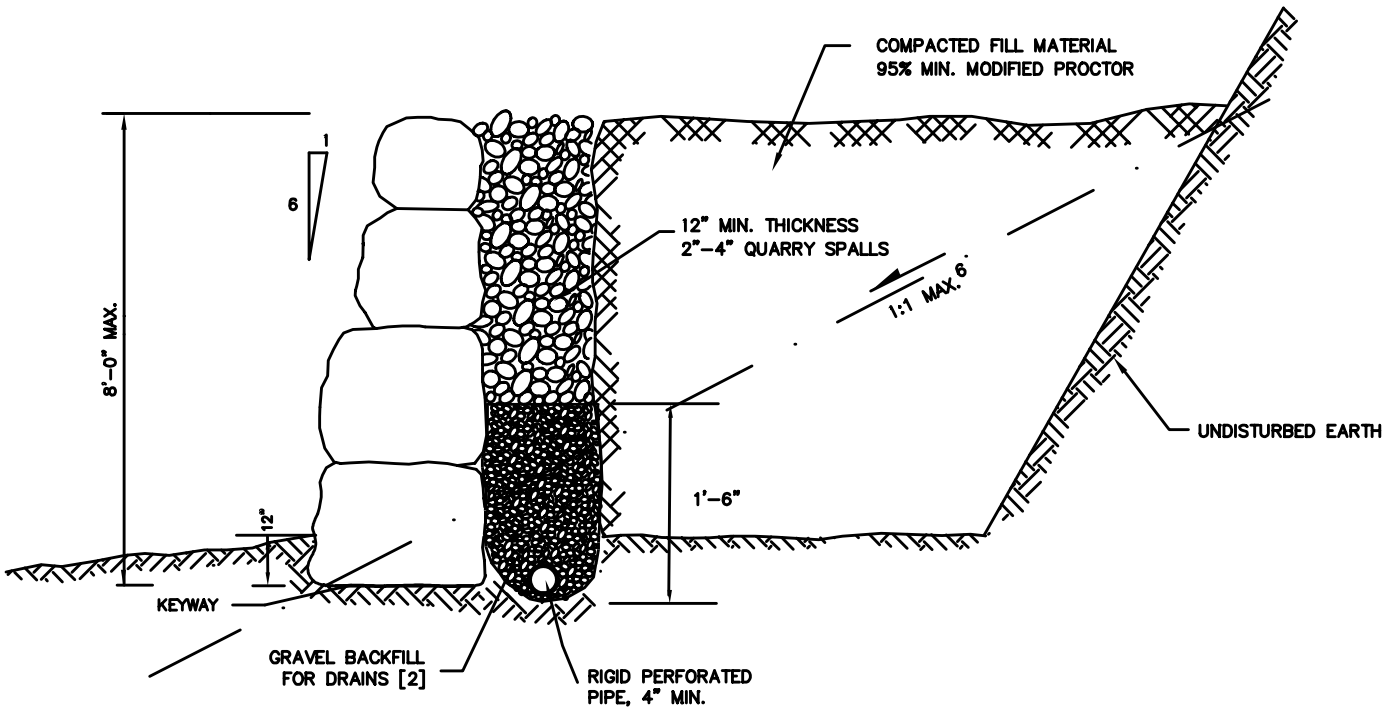
ROCK WALL - CUT SECTION

APPROVED:

ROGER KUYKENDALL, P.E. 8/1/2000

BY CITY DATE

DWG. NO. ST-26



NOTES:

1. SEE SECTION 4.30.
2. WSDOT / APWA 9–03.12[4]
3. FENCE OR HANDRAIL MAY BE REQUIRED WHEN ROCKERY HEIGHT EXCEEDS 30 INCHES. INCHES AND IS LOCATED IN A PUBLIC AREA.
4. THE WALL FOUNDATION IS TO BE CLEARED OF ORGANIC MATTER AND DEBRIS AND THE UNDERLYING MINERAL SOIL COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY. THE EMBANKMENT MATERIAL IS TO BE GRAVEL BORROW MEETING THE REQUIREMENTS OF 9–03.14 OF THE WSDOT STANDARDS. THE BACKFILL IS TO BE PLACED IN THIN LIFTS, NOT EXCEEDING SIX INCHES IN THICKNESS AND COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY.
5. (NOT USED)
6. ZONE OF INFLUENCE. FLATTER SLOPE MAY BE REQUIRED IN LESS STABLE SOILS. ALL DRIVEWAYS, PARKING AREAS, AND ROADS SHALL LIE BELOW THE ZONE OF INFLUENCE.
7. EMBANKMENTS BEHIND ROCKERIES EXCEEDING 4' IN HEIGHT SHALL BE REINFORCED WITH GEOSYNTHETIC FABRIC OR GEOGRID.
8. ROCK WALLS SHALL BE PLACED NO CLOSER THAN 5 FEET FROM THE EDGE OF ANY PEDESTRIAN WALKWAY, PUBLIC EASEMENT OR RIGHT OF WAY.
9. MAXIMUM HEIGHT, AS MEASURED FROM THE KEYWAY, IS EIGHT (8) FEET. ALL WALLS FOUR FEET OR HIGHER SHALL REQUIRE A BUILDING PERMIT. ALL WALLS TO BE CONSTRUCTED IN A FILL SECTION OR THOSE WALLS SUPPORTING A SURCHARGE (DRIVEWAY, ROAD, BUILDING, OR PARKING AREA) SHALL REQUIRE DESIGN BY A LICENSED ENGINEER.
10. THE TOP OF ALL ROCK WALLS SHALL BE CONFIGURED TO PREVENT SURFACE DRAINAGE OVER THE TOP OF THE WALL.
11. OVERBURDEN SHALL EXTEND BEYOND THE CUT FACE AT LEAST THE HEIGHT OF THE WALL.

CITY OF NEWCASTLE

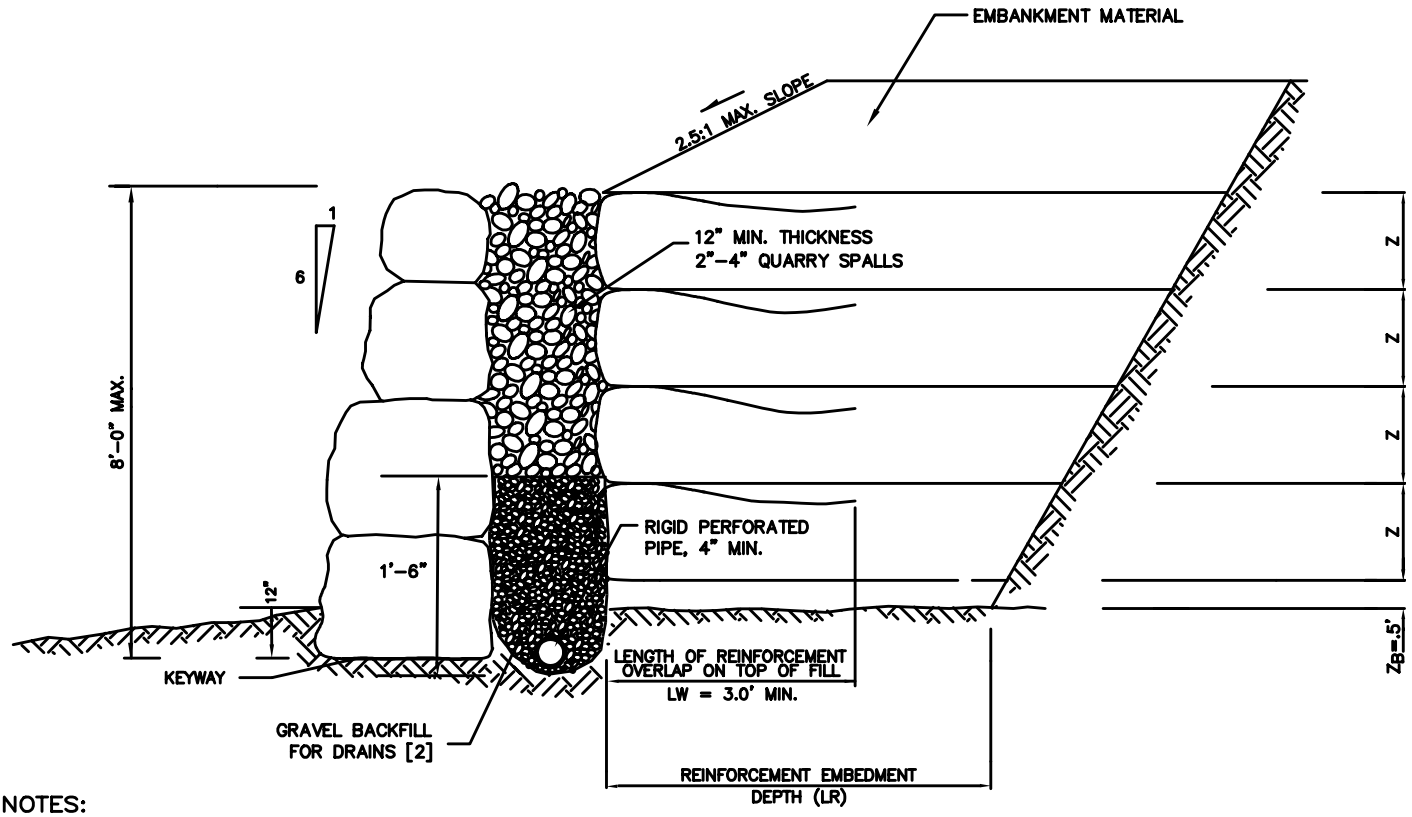
ROCK WALL – FILL SECTION

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST–27



NOTES:

1. SEE SECTION 4.30.
2. WSDOT / APWA 9–03.12[4]
3. FENCE OR HANDRAIL MAY BE REQUIRED WHEN ROCKERY HEIGHT EXCEEDS 30 INCHES. INCHES AND IS LOCATED IN A PUBLIC AREA.
4. THE WALL FOUNDATION IS TO BE CLEARED OF ORGANIC MATTER AND DEBRIS AND THE UNDERLYING MINERAL SOIL COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY. THE EMBANKMENT MATERIAL IS TO BE GRAVEL BORROW MEETING THE REQUIREMENTS OF 9–03.14 OF THE WSDOT STANDARDS. THE BACKFILL IS TO BE PLACED IN THIN LIFTS, NOT EXCEEDING SIX INCHES IN THICKNESS AND COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY.
5. GEOSYNTHETIC FABRIC OR GEOGRID REQUIREMENTS INCLUDING TYPE, VERTICAL SPACING (Z), AND EMBEDMENT (LR), WILL BE DETERMINED ON A ROCKERY BY ROCKERY BASIS BY A PROFESSIONAL ENGINEER.
6. (NOT USED)
7. EMBANKMENTS BEHIND ROCKERIES EXCEEDING 4' IN HEIGHT SHALL BE REINFORCED WITH GEOSYNTHETIC FABRIC OR GEOGRID.
8. ROCK WALLS SHALL BE PLACED NO CLOSER THAN 5 FEET FROM THE EDGE OF ANY PEDESTRIAN WALKWAY, PUBLIC EASEMENT OR RIGHT OF WAY.
9. MAXIMUM HEIGHT, AS MEASURED FROM THE KEYWAY, IS EIGHT (8) FEET. ALL WALLS FOUR FEET OR HIGHER SHALL REQUIRE A BUILDING PERMIT. ALL WALLS TO BE CON–STRUCTED IN A FILL SECTION OR THOSE WALLS SUPPORTING A SURCHARGE (DRIVEWAY, ROAD, BUILDING, OR PARKING AREA) SHALL REQUIRE DESIGN BY A LICENSED ENGINEER.
10. THE TOP OF ALL ROCK WALLS SHALL BE CONFIGURED TO PREVENT SURFACE DRAINAGE OVER THE TOP OF THE WALL.

CITY OF NEWCASTLE

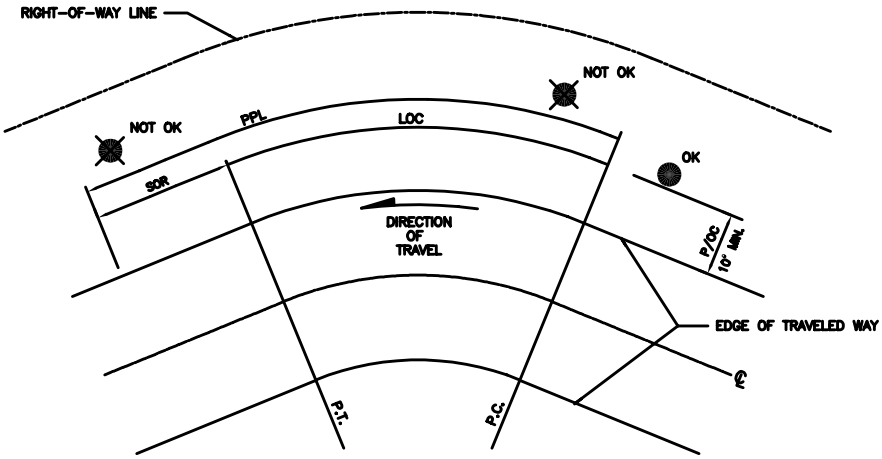
ROCK WALL – SECTION REINFORCEMENT

APPROVED:

ROGER KUYKENDALL, P.E. 8/1/2000

BY CITY DATE

DWG. NO. ST–28



OUTSIDE OF CURVE
POSTED 40 MPH & OVER

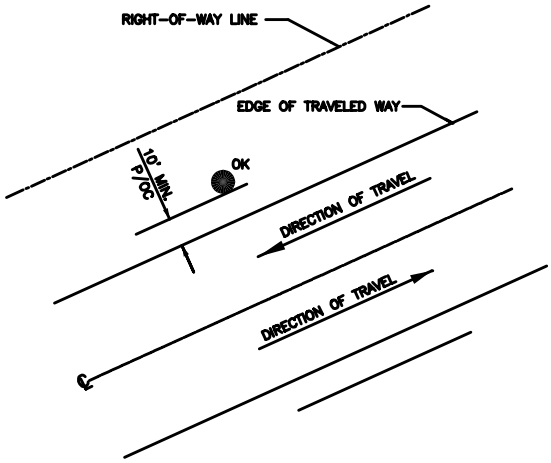
LOC: LENGTH OF CURVE (FEET) AT EDGE OF TRAVELED WAY FROM P.C. TO P.T.

SOR: SAFETY OVERRUN (FEET) BEYOND P.T.

PPL: PROHIBITED POLE LOCATION (FEET) (LOC + SOR) WHERE POLES OR OBSTACLES MUST BE REMOVED OR BARRICADED.

PPL (FEET) ON OUTSIDE OF CURVES WITH POSTED SPEED LIMIT OF 40 MPH & OVER.	
40 MPH	LOC + 220 (SOR)
45	LOC + 255
50	LOC + 290
55	LOC + 325

APPLIES TO ROADWAY WITH SHOULDER OR MOUNTABLE CURB ON OUTSIDE OF CURVE, WITH:
-RADIUS LESS THAN 3500', AND
-POSTED SPEED GREATER THAN OR EQUAL TO 40 M.P.H.



GENERAL CASE

P/OC: POLE/OBSTACLE CLEARANCE TO NEAREST FACE OF POLE/OBSTACLE.

APPLIES: TO ROADWAY WITH SHOULDER OR MOUNTABLE CURB ON:
1. TANGENT, OR
2. INSIDE OF CURVE, OR
3. OUTSIDE OF CURVE, EITHER WITH
   -POSTED SPEED LESS THAN 40 MPH OR
   -RADIUS GREATER THAN 3500' ON ROADWAY MEETING ALL CURRENT DESIGN STANDARDS.

NOTES:
1. THE STANDARDS SHALL APPLY TO EVERY NEW PLACEMENT AND EVERY PLANNED, NON-EMERGENCY REPLACEMENT OF EXISTING POLES AND OTHER UTILITY STRUCTURES WITHIN KING COUNTY RIGHT-OF-WAY.
2. NO POLES MAY BE REPLACED ON THE OUTSIDE OF A CURVE WITH A POSTED SPEED LIMIT OF 40 MPH OR OVER UNLESS APPROVED THROUGH A VARIANCE REQUEST.

CITY OF NEWCASTLE

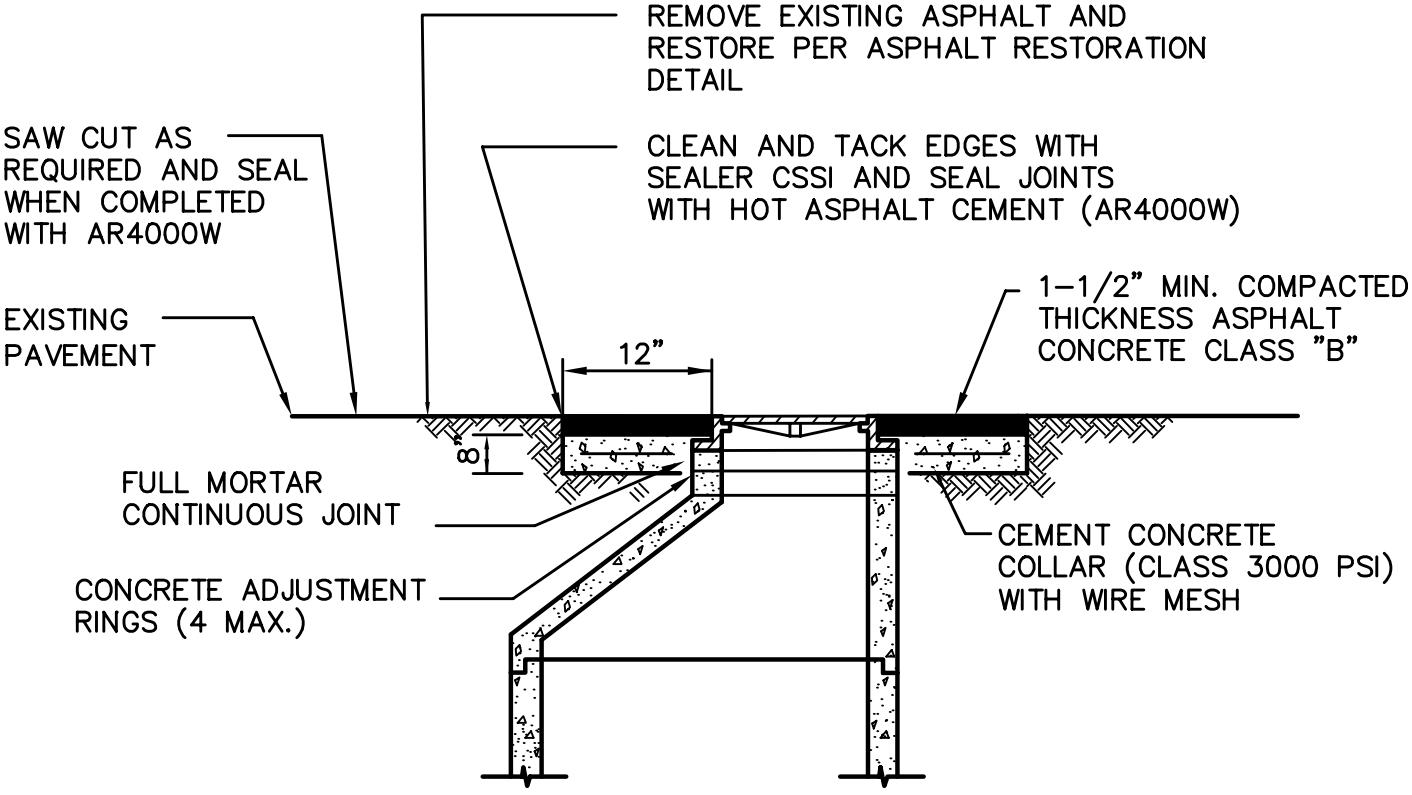
CLEARANCE OF ROAD OBSTACLES ON SHOULDER TYPE ROADS

APPROVED:

ROGER KUYKENDALL, P.E. 8/1/2000

BY CITY DATE

DWG. NO. ST-29



CITY OF NEWCASTLE

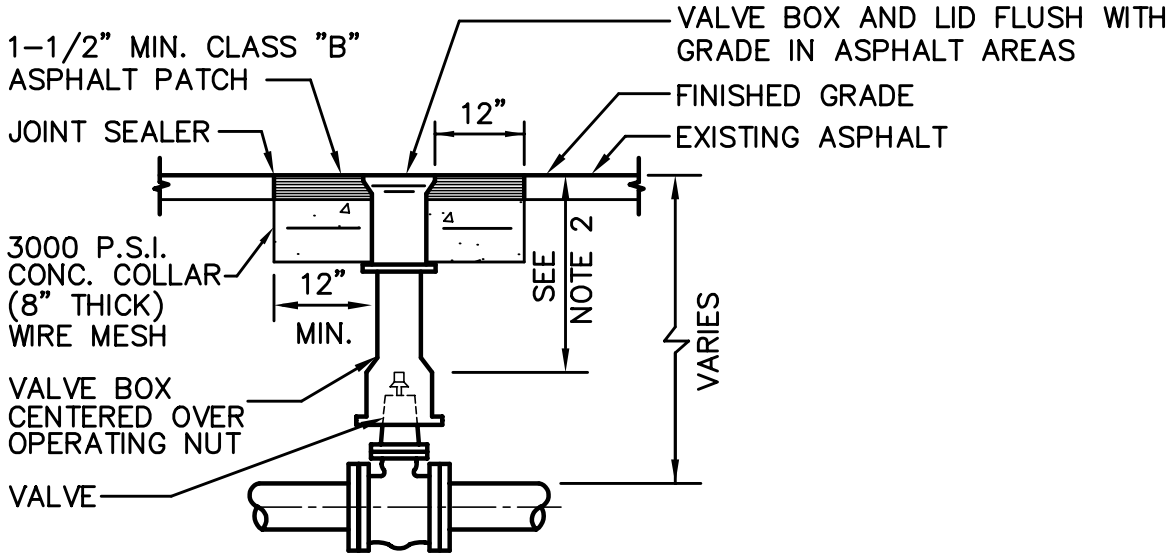
MANHOLE, OR CATCH BASIN (TYPE II)
GRADE ADJUSTMENT DETAIL

APPROVED:

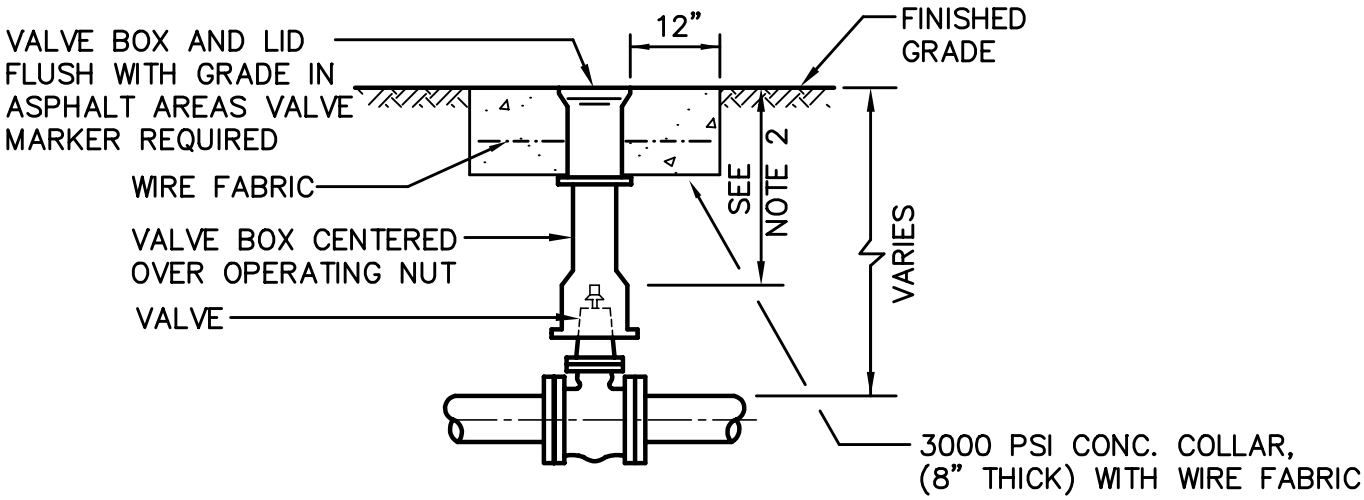
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO.
ST–30



VALVE BOX IN ASPHALT AREA



VALVE BOX IN UNIMPROVED AREA

NOTES:

1. EACH VALVE SHALL BE PROVIDED WITH AND ADJUSTABLE CAST IRON VALVE BOX OF 5 INCHES (5") INSIDE DIAMETER. VALVE BOXES SHALL HAVE A TOP SECTION WITH AN EIGHTEEN INCH (18") MIN. LENGTH. THE VALVE BOX SHALL BE RICH No. 940 OR APPROVED EQUAL. VALVE BOX EARS SHALL BE PLACED IN LINE WITH PIPE IT SERVES.

2. 15" MINIMUM, 36" MAXIMUM FOR OPERATOR NUT. EXTENSION MAY BE REQUIRED.

CITY OF NEWCASTLE

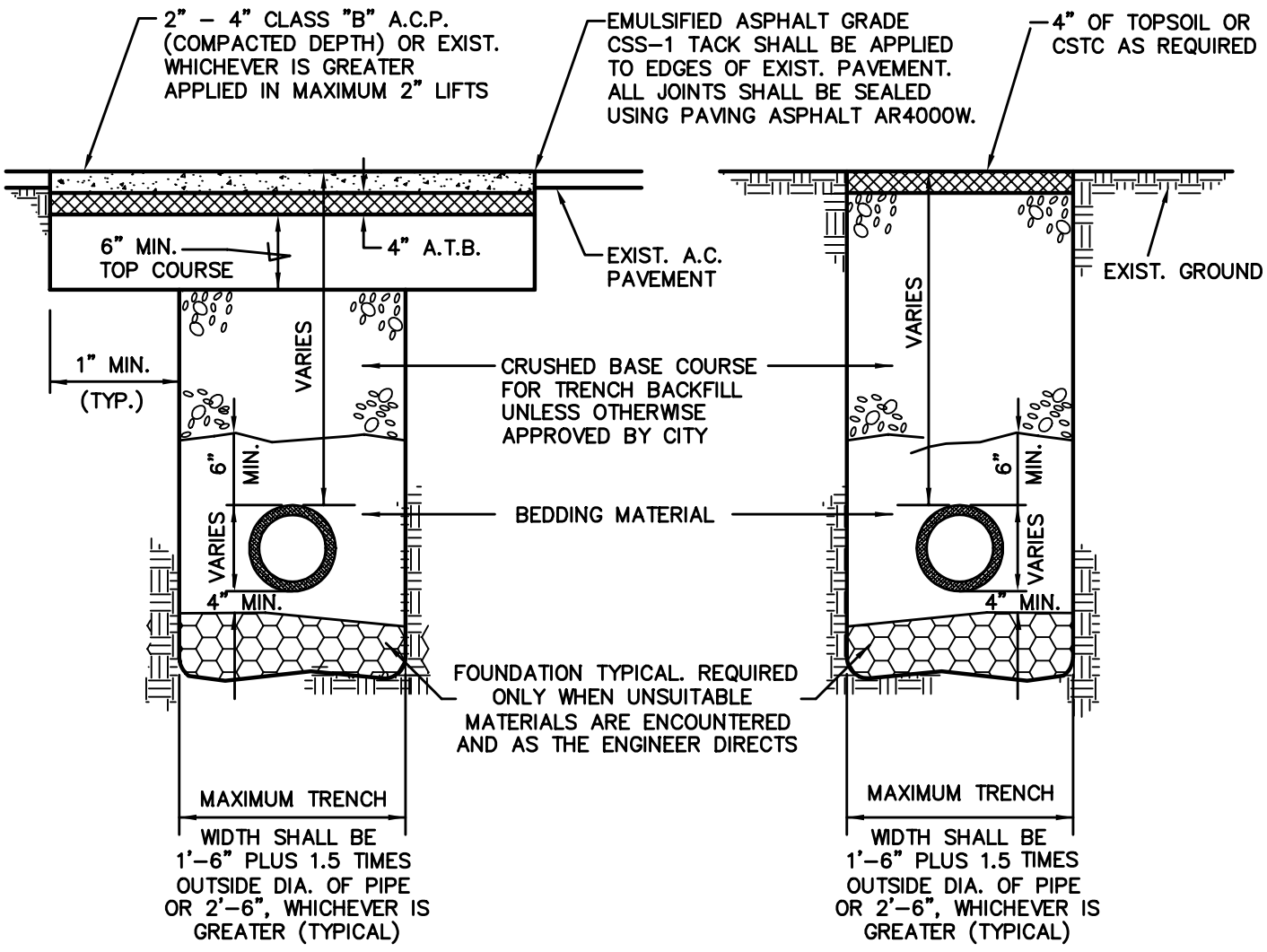
VALVE BOX ADJUSTMENT DETAIL

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST–31



NOTES:

1. ALL MATERIALS EXCEPT A.C.P. AND BEDDING MATERIAL SHALL BE COMPACTED IN 6–INCH MAXIMUM LIFTS TO 95% DENSITY.
2. BEDDING SHALL CONFORM TO CITY STANDARDS OF STANDARD SPECIFICATIONS.
3. COMPACTION: BEDDING SHALL BE COMPACTED TO 95% MAX. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 85% IN UNPAVED AREA, AND 95% IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.
4. ALL MATERIALS, WORKMANSHIP, AND INSTALL–ATION SHALL BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AS AMENDED BY CITY STANDARDS.
5. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR

CITY OF NEWCASTLE

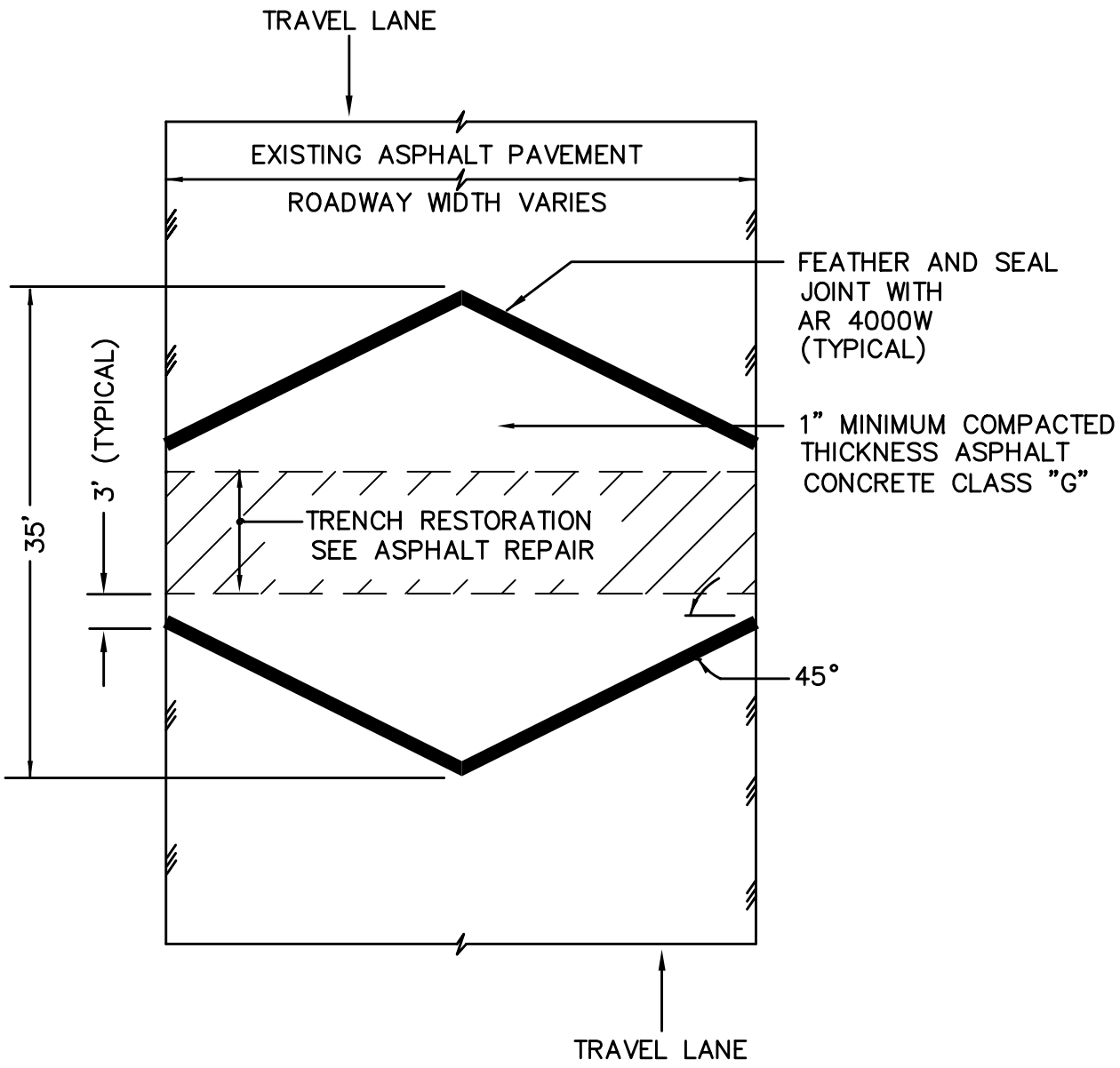
TRENCH – PAVEMENT RESTORATION

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. ST–32



DIAMOND PATCH TO BE CONSTRUCTED WHEN REQUIRED BY CITY ENGINEER.

CITY OF NEWCASTLE

ASPHALT DIAMOND PATCH

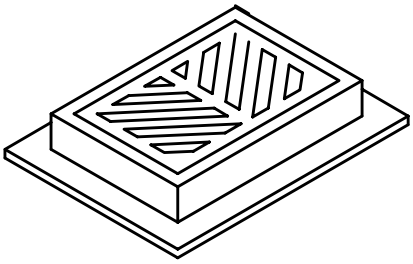
APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

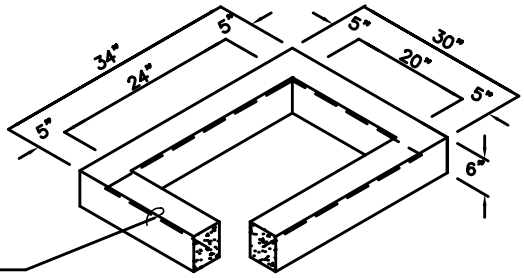
BY CITY — DATE

DWG. NO. ST-33

STORM SEWER DETAILS

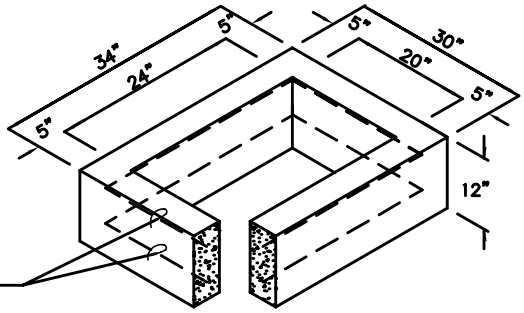


FRAME AND GRATE
SEE SEC. 7.05 AND
APPLICABLE DWGS.



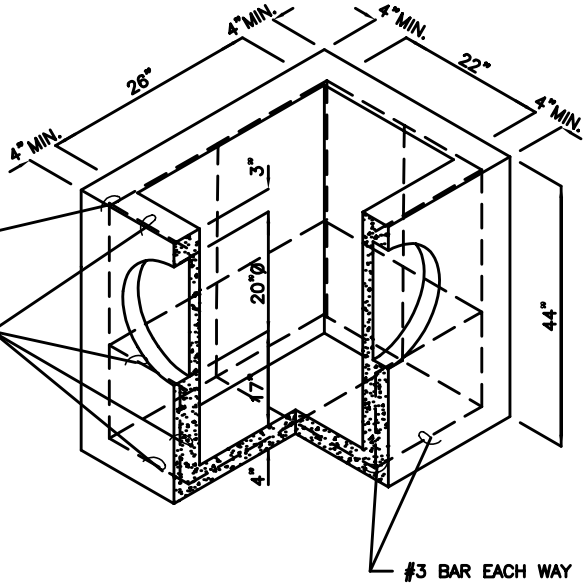
6" RISER SECTION

1 #3 BAR HOOP



12" RISER SECTION

2 #3 BAR HOOPS



PRECAST BASE SECTION
(MEASUREMENT AT THE TOP
OF THE BASE)

#3 BAR EACH CORNER

#3 BAR EACH SIDE

#3 BAR EACH WAY

NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.
6. ROUND KNOCKOUTS MAY BE ON ALL 4 SIDES, WITH MAX. DIAM. OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.
7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
8. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2"/FT.
9. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
10. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.
11. FOR CATCH BASINS IN PARKING LOTS REFER TO WSDOT/APWA STANDARD DWG. B1-b.
12. EDGE OF RISER OR BRICK SHALL NOT BE MORE THAN 2" FROM VERTICAL EDGE OF CATCH BASIN WALL.

CITY OF NEWCASTLE

CATCH BASIN - TYPE 1

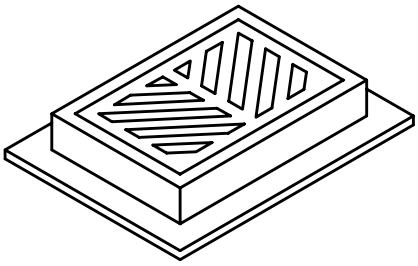
APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

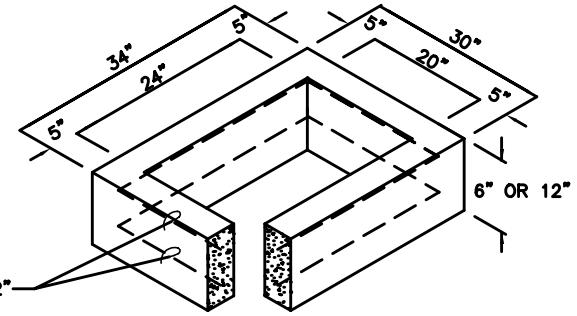
DWG. NO.
SW-1

FRAME AND GRATE



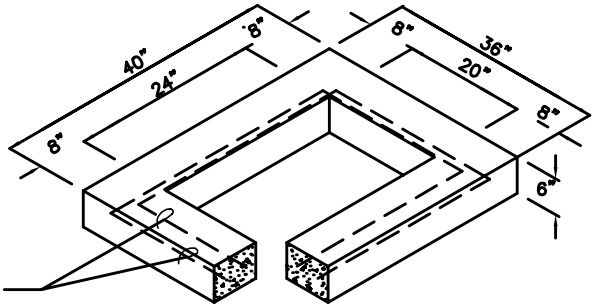
RISER SECTION

1 #3 BAR HOOP FOR 6"
2 #3 BAR HOOP FOR 12"



6" REDUCING SECTION

2 #3 BAR HOOP

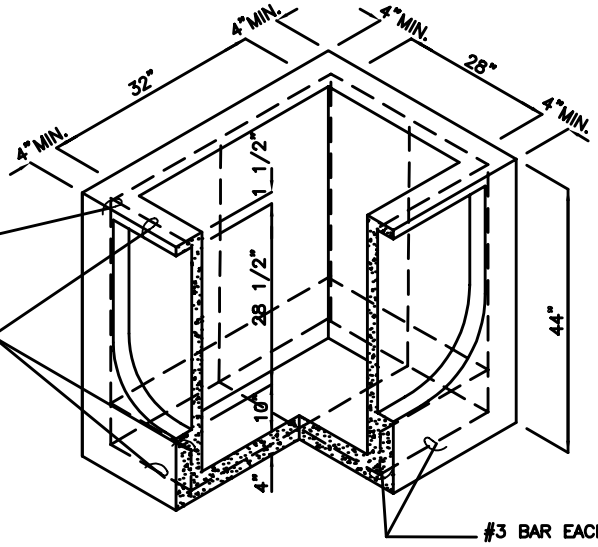


PRECAST BASE SECTION
(MEASUREMENT AT THE TOP OF THE BASE)

#3 BAR EACH CORNER

#3 BAR EACH SIDE

#3 BAR EACH WAY



NOTES:

CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.

AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.

ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.

PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.

KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.

KNOCKOUTS MAY BE ON ALL 4 SIDES WITH MAX. DIAM. OF 28". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.

THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2"/FT.

CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.

FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.

MAX. DEPTH FROM FINISHED GRADE TO PIPE INVERT SHALL BE 5'-0".

EDGE OF REDUCING SECTION OR BRICK SHALL NOT BE MORE THAN 2" FROM VERTICAL EDGE OF CATCH BASIN WALL.

CITY OF NEWCASTLE

CATCH BASIN - TYPE 1L

APPROVED:

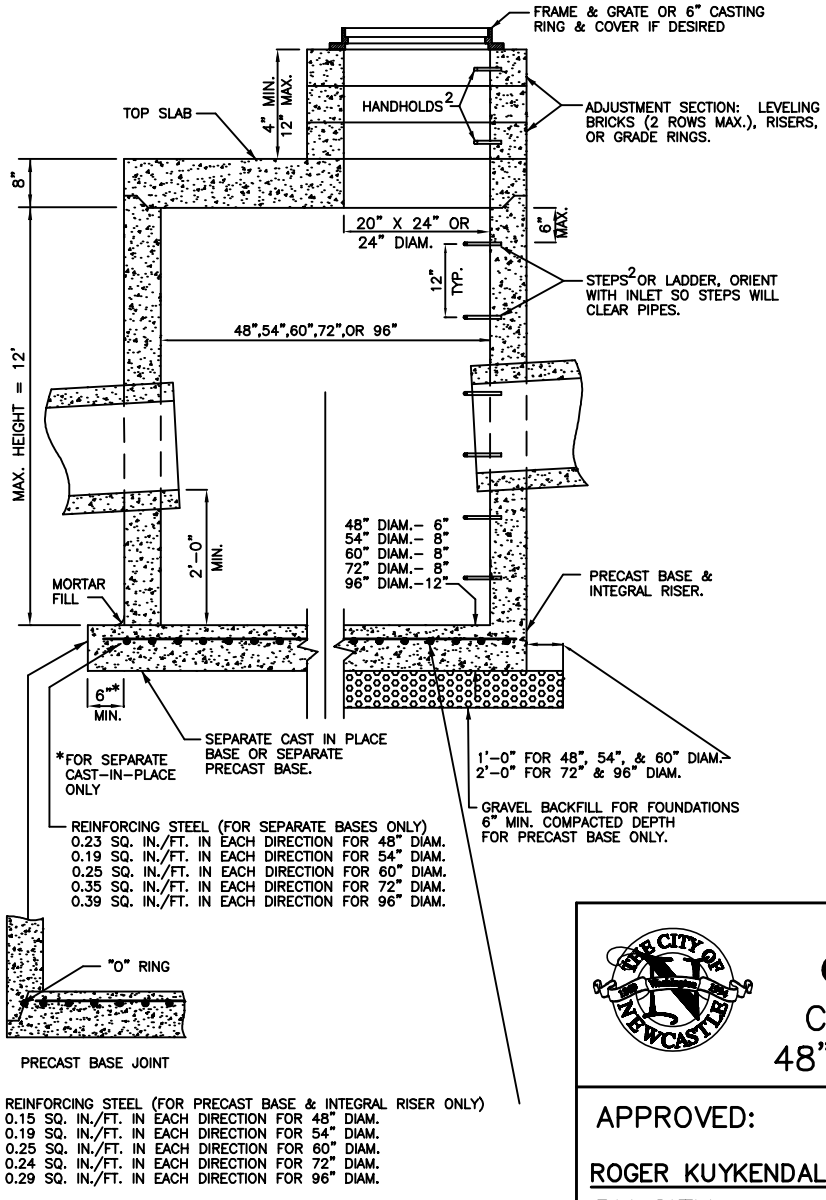
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW-2

NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M199) AND ASTM C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN CATCH BASIN SHALL HAVE 6" MIN. CLEARANCE. CATCH BASIN DETAILS. HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HANDHOLD BETWEEN THE LAST STEP AND TOP OT THE FINISHED GRADE.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS. MAX. HOLE SIZE SHALL BE 36" FOR 48" CATCH BASIN, 42" FOR 54" C.B., 48" FOR 60" C.B., 60" FOR 72" C.B., 84" FOR 96" C.B. MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54", AND 60" C.B.; 12" FOR 72" AND 96" C.B.
6. CATCH BASIN FRAMES AND GRATES OR COVERS SHALL BE IN ACCORDANCE WITH SEC. 7.05 OF THE STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
7. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
8. MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT.
9. FOR DETAILS SHOWING LADDER, STEPS, HANDRAILS AND TOP SLABS, SEE OTHER STANDARD DETAILS.
10. SEE THE STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.



CITY OF NEWCASTLE

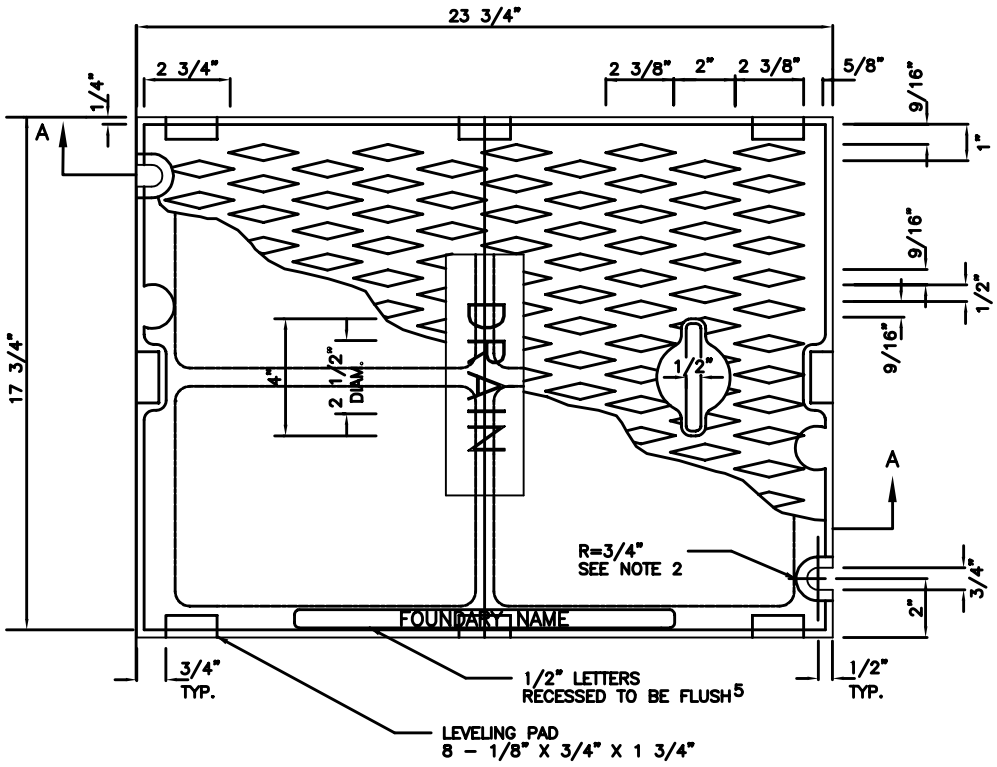
CATCH BASIN TYPE 2
48", 54", 60", 72", & 96"

APPROVED:

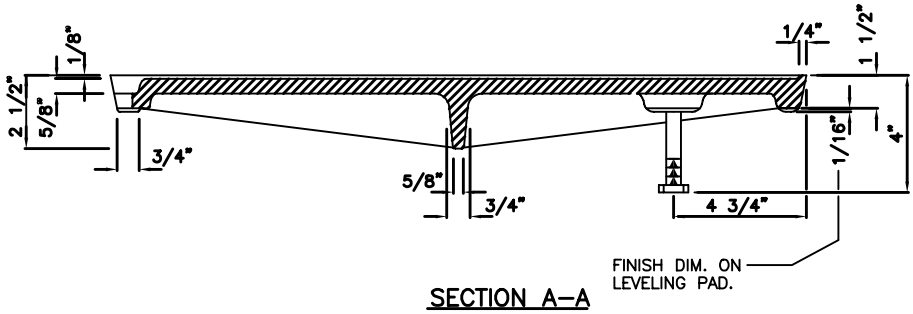
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW-3



PLAN COVER



SECTION A–A

NOTES:

1. USE WITH FRAME DRILLED AND TAPPED FOR LOCKING BOLTS.
2. USE WITH TWO LOCKING BOLTS 5/8"–11 NC STAINLESS STEEL TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG.
3. COVER MATERIAL IS CAST IRON PER ASTM A48 CLASS 30.
4. SHALL CONFORM TO SEC. 7.05 OF THE STANDARD SPECIFICATIONS.
5. COVER SHALL HAVE THE WORD "DRAIN" IN 2–INCH RAISED LETTERS.

CITY OF NEWCASTLE

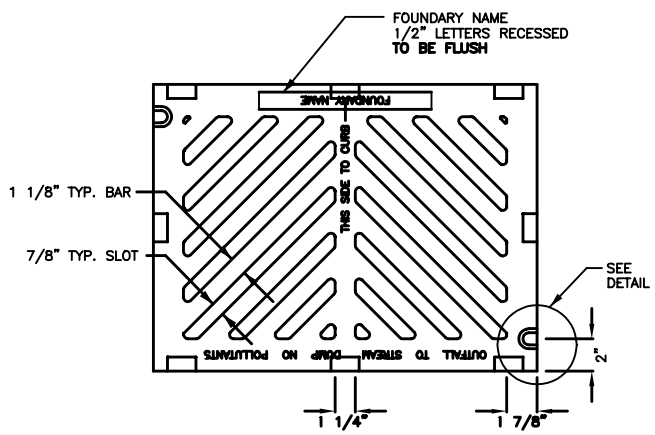
SOLID STORM DRAIN COVER

APPROVED:

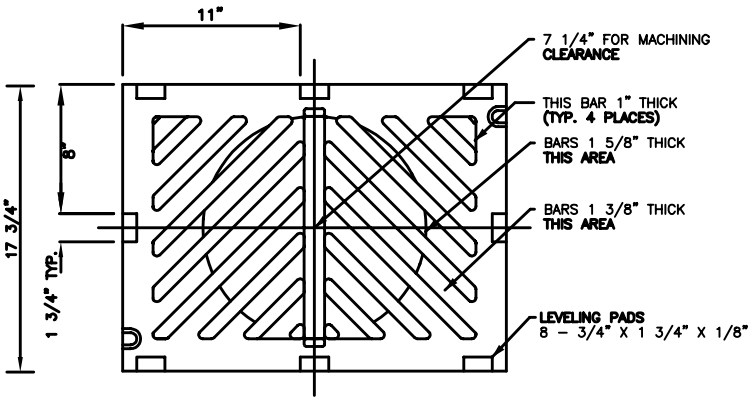
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

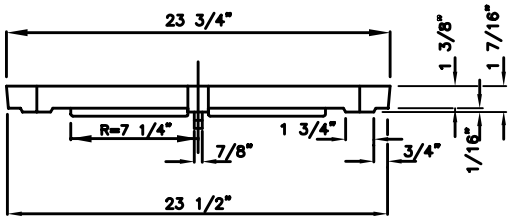
DWG. NO. SW–4



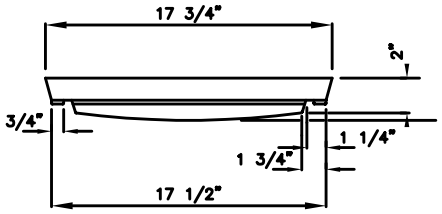
TOP VIEW



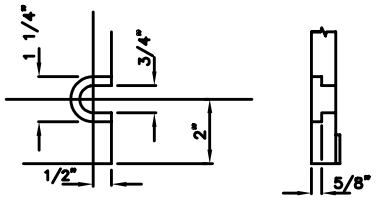
BOTTOM VIEW



SIDE VIEW

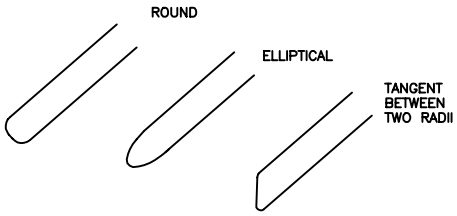


END VIEW



SLOT DETAIL

SEE NOTE 1



OPTIONAL DESIGN FOR
GRATE OPENINGS ENDS

NOTES:

1. SLOT FORMED AND RECESSED FOR 5/8"–11 NC X 2" SOCKET HEAD (ALLEN HEAD) BOLT.
2. GRATE SHALL BE DUCTILE IRON.
3. SHALL CONFORM TO SEC. 9–05.15 OF THE STANDARD SPECIFICATIONS.
4. USE VANED GRATE IN CURB LINE.
5. USE FRAME SHOWN IN STANDARD DETAIL SW–6.

CITY OF NEWCASTLE

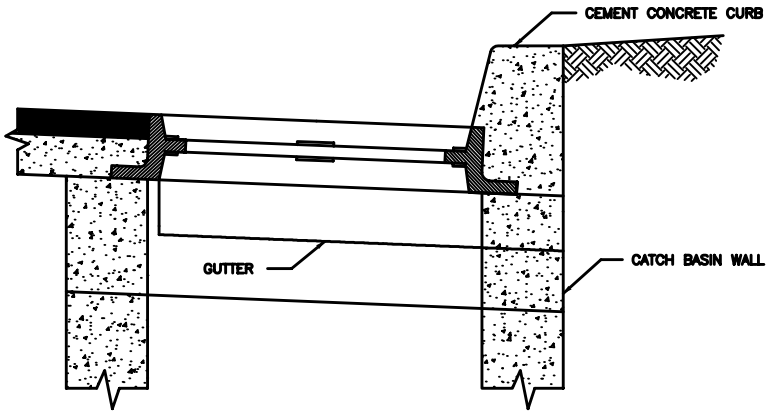
PARKING LOT AREA GRATE

APPROVED:

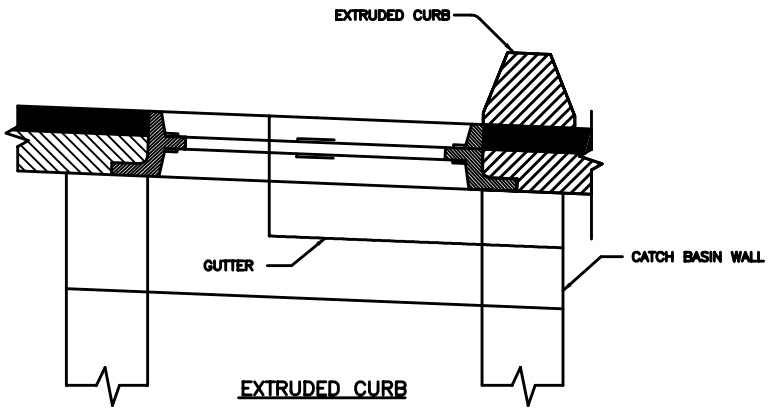
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

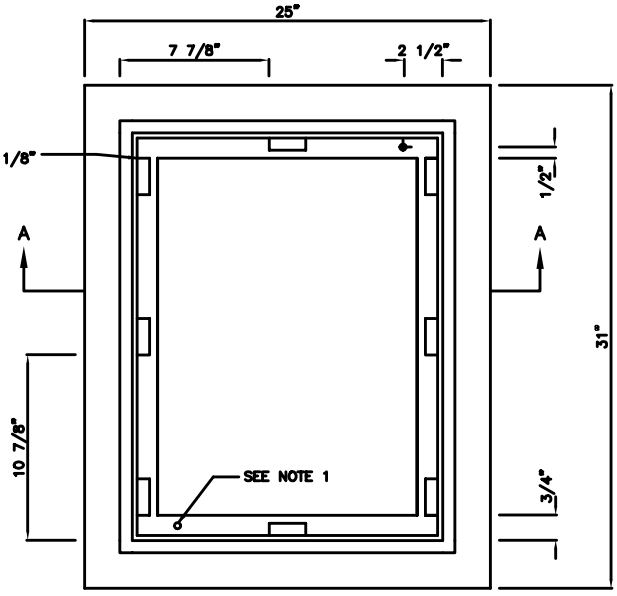
DWG. NO. SW–5



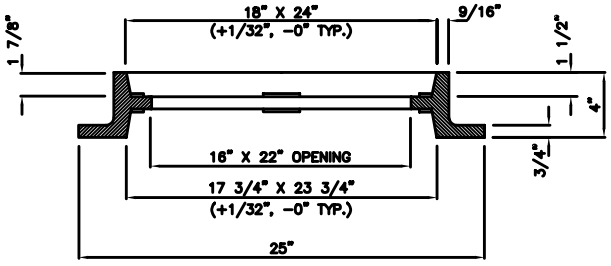
VERTICAL CURB



EXTRUDED CURB



PLAN



SECTION A–A

NOTES:

1. DRILL AND TAP FOR, AND PROVIDE, TWO LOCKING BOLTS 5/8"–11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG.
2. FRAME MATERIAL IS CAST IRON PER ASTM A48 CLASS 30 OR BETTER.
3. SET FRAME TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.

CITY OF NEWCASTLE

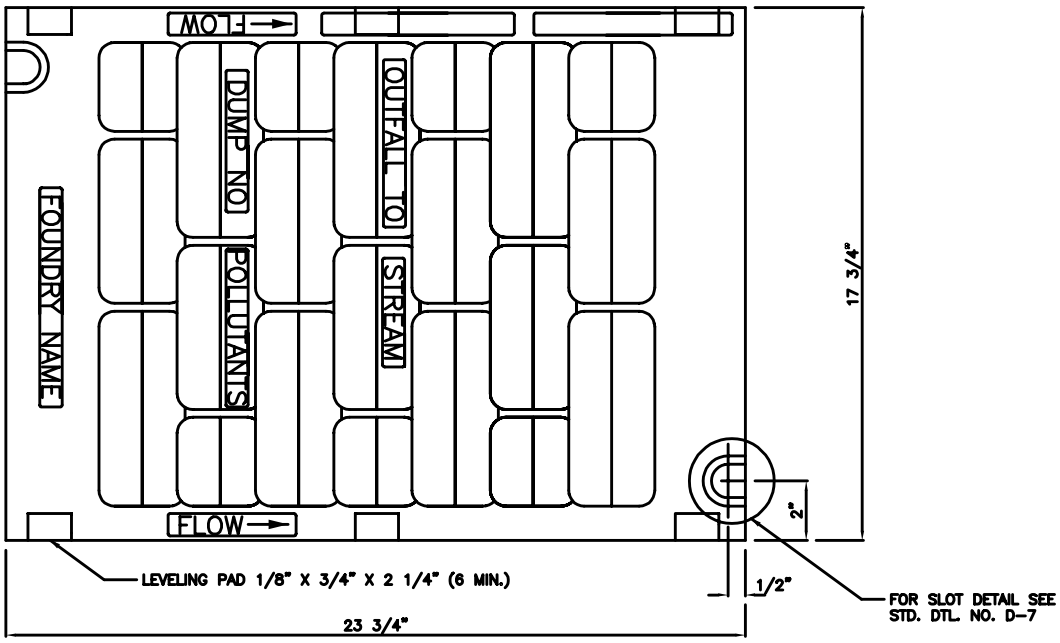
STANDARD FRAME INSTALLATION

APPROVED:

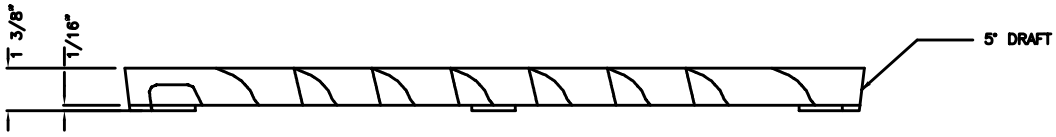
ROGER KUYKENDALL, P.E. 8/1/2000

BY CITY DATE

DWG. NO. SW–6



PLAN



ELEVATION

NOTES:

1. SELF-LOCK VANED GRATE MANUFACTURER SUBJECT TO APPROVAL BY ENGINEER.
2. USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG. NOTE SLOT DETAIL.
3. MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80-55-06.
4. "OUTFALL TO STREAM DUMP NO POLLUTANTS" IN RAISED LETTERS SHALL BE LOCATED ON GRATE AS SHOWN, OR ON BORDER AREA.
5. SHALL CONFORM TO SEC. 7.05 OF THE STANDARD SPECIFICATIONS.
6. WELDING IS NOT PERMITTED.
7. EDGES SHALL HAVE 0.125" RADIUS, 0.125" CHAMBER OR COMPLETE DEBURRING.
8. USE A BI-DIRECTIONAL VANED GRATE IN SAG VERTICAL CURVES.

CITY OF NEWCASTLE

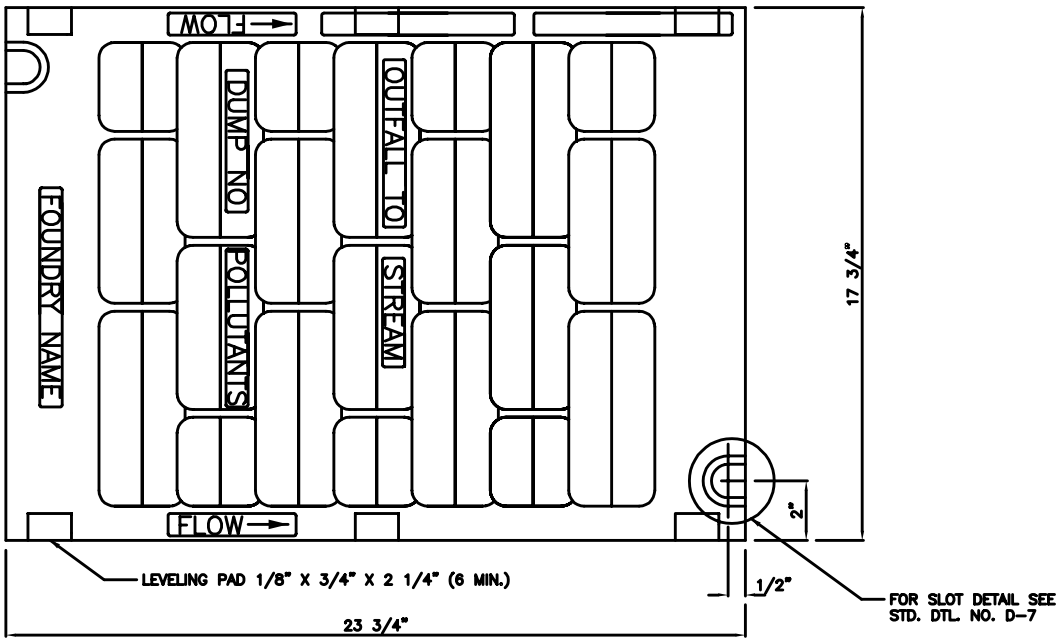
VANED GRATE

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW-7



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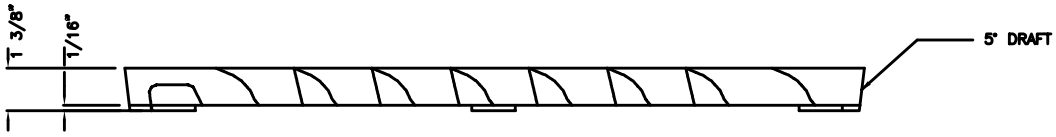

ELEVATION

NOTES:

1. SELF-LOCK VANED GRATE MANUFACTURER SUBJECT TO APPROVAL BY ENGINEER.
2. USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG. NOTE SLOT DETAIL.
3. MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80-55-06.
4. "OUTFALL TO STREAM DUMP NO POLLUTANTS" IN RAISED LETTERS SHALL BE LOCATED ON GRATE AS SHOWN, OR ON BORDER AREA.
5. SHALL CONFORM TO SEC. 7.05 OF THE STANDARD SPECIFICATIONS.
6. WELDING IS NOT PERMITTED.
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8. USE A BI-DIRECTIONAL VANED GRATE IN SAG VERTICAL CURVES.

CITY OF NEWCASTLE

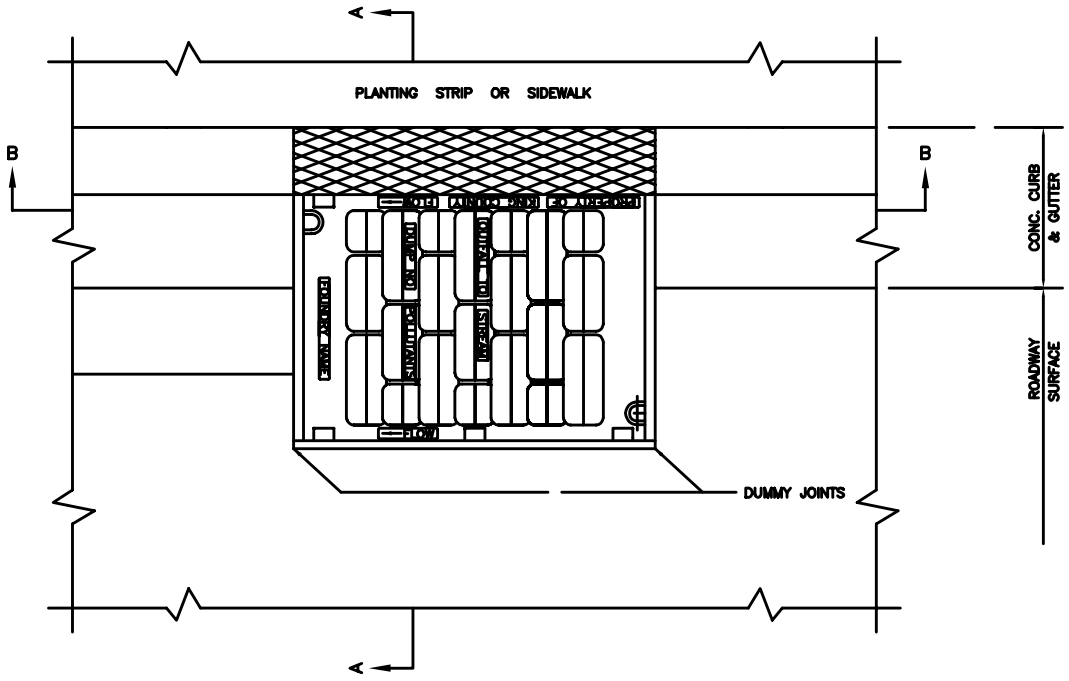
VANED GRATE

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW-7



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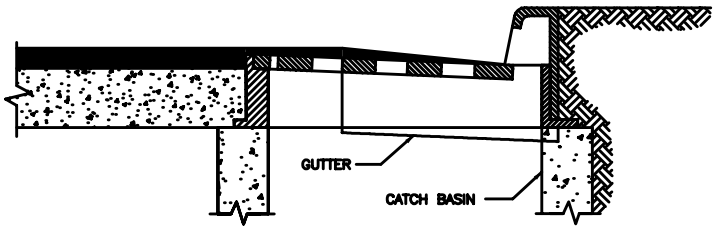
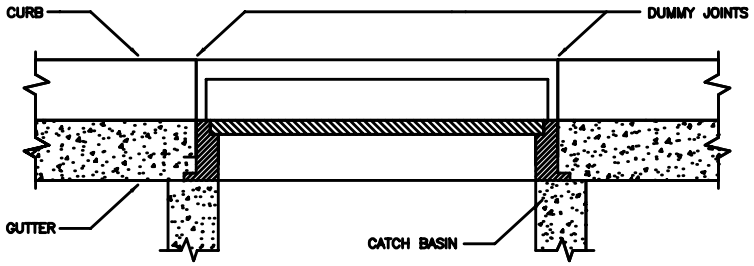


SECTION A–A

NOTES:

1. SET TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.



SECTION B–B

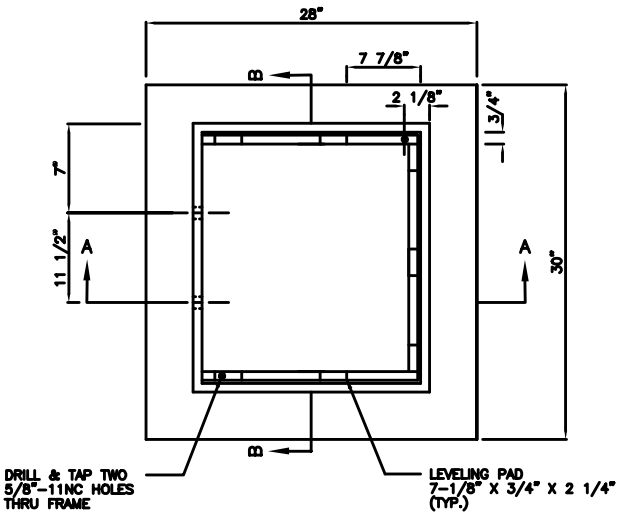
CITY OF NEWCASTLE
THROUGH CURB INLET FRAME & GRATE WITH VERTICAL CURB

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW–8



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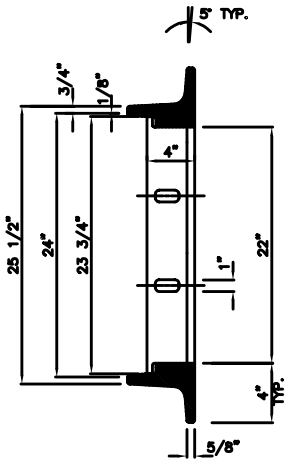
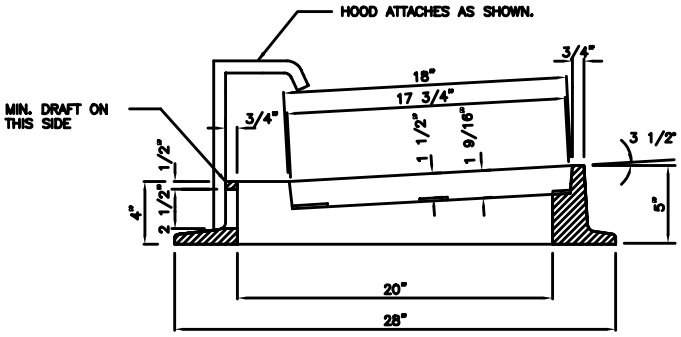
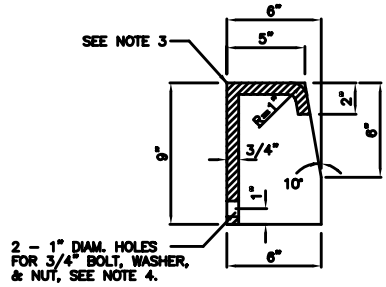


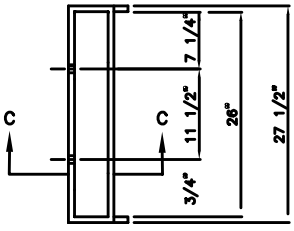
SECTION B–B



SECTION A–A



SECTION C–C



HOOD DETAIL

NOTES:

1. MATERIAL SHALL CONFORM TO SECTION 9–05.15(2) OF THE STANDARD SPECIFICATIONS.
2. PATTERN ON TOP SURFACE OF HOOD SHALL BE 3/16" NON–SKID DIAMOND.
3. BOLT, WASHER, AND NUT SHALL BE GALVANIZED OR CORROSION RESISTANT.

CITY OF NEWCASTLE

THROUGH CURB INLET FRAME

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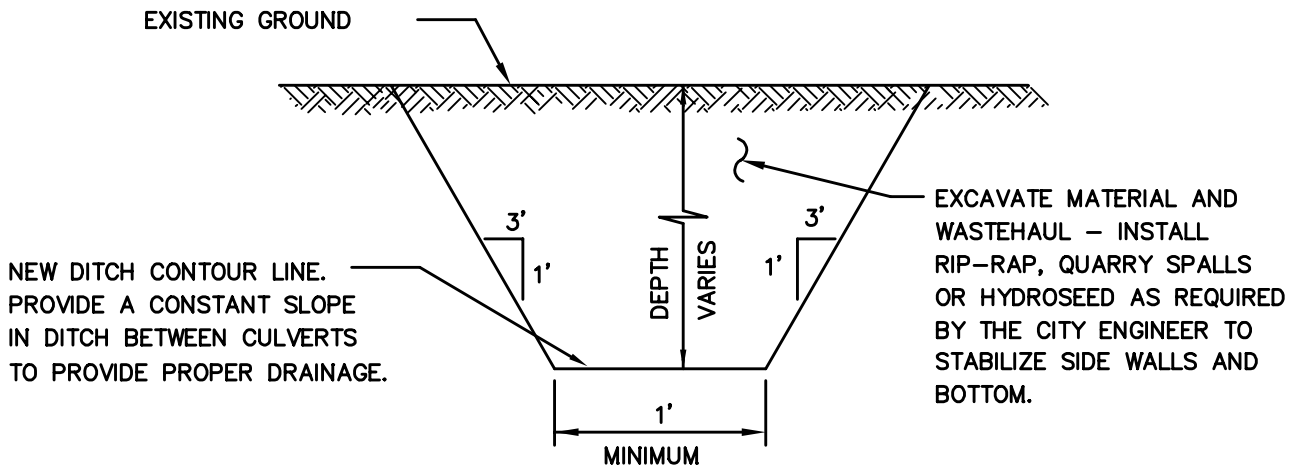
ROGER KUYKENDALL, P.E. 8/1/2000

BY CITY DATE

DWG. NO. SW–9



CITY OF NEWCASTLE

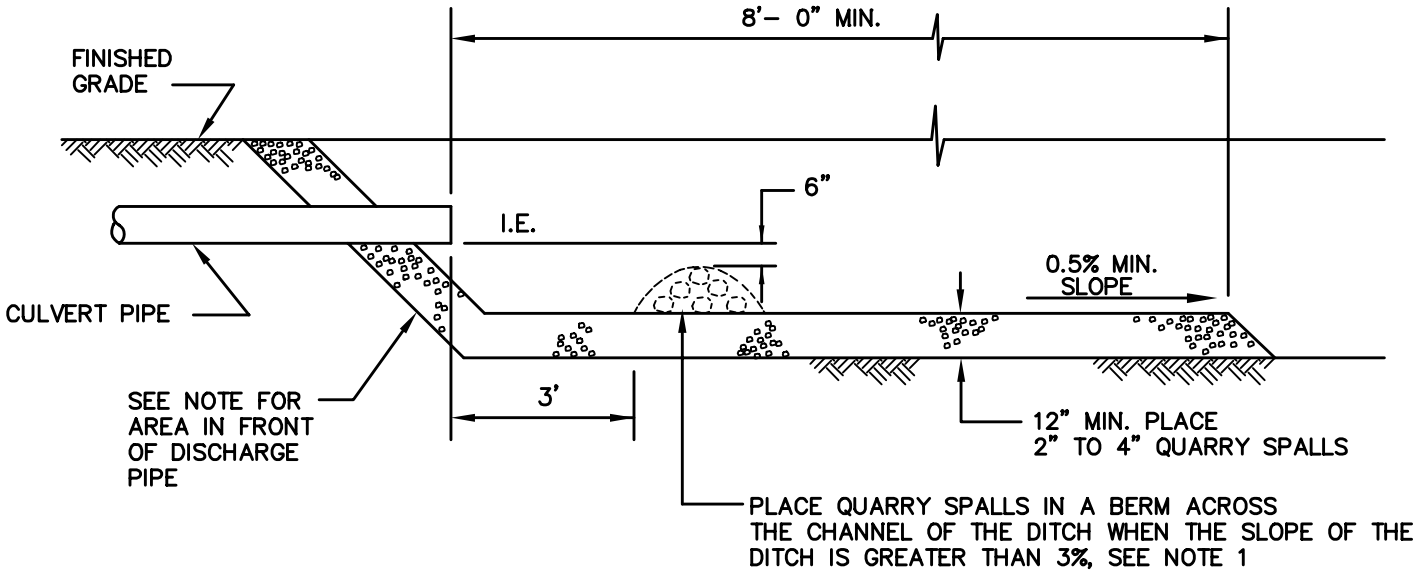
NEW DITCH CONSTRUCTION DETAIL

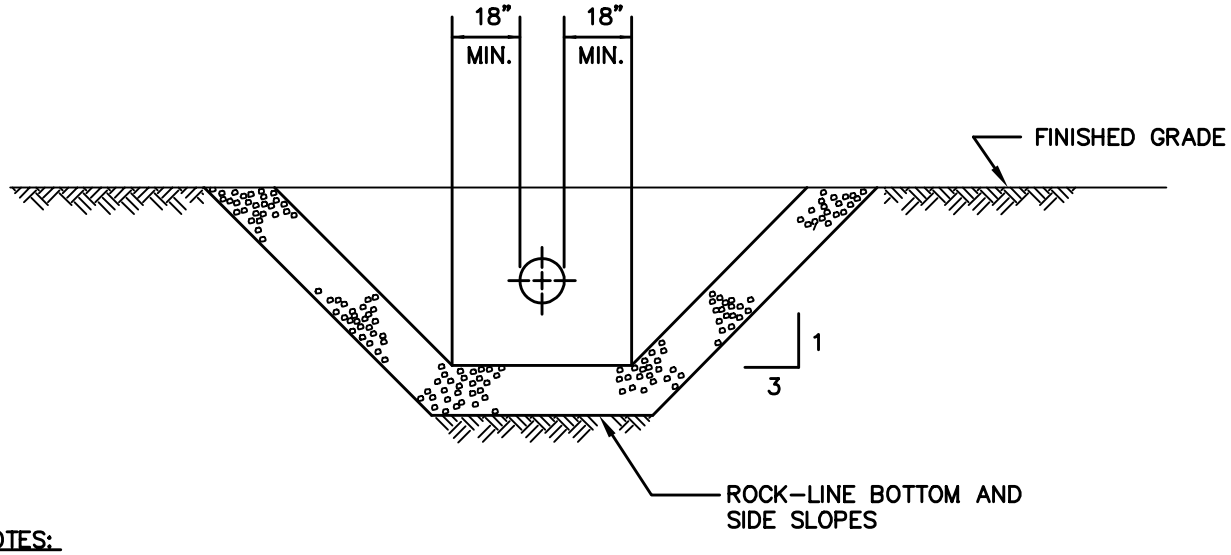
APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW–10





NOTES:

1. PLACE QUARRY SPALLS IN FRONT OF CULVERT DISCHARGE, ENGINEER SHALL SIZE QUARRY SPALL BERM

RIPRAP AND ENERGY DISSIPATION FOR DITCH

CITY OF NEWCASTLE

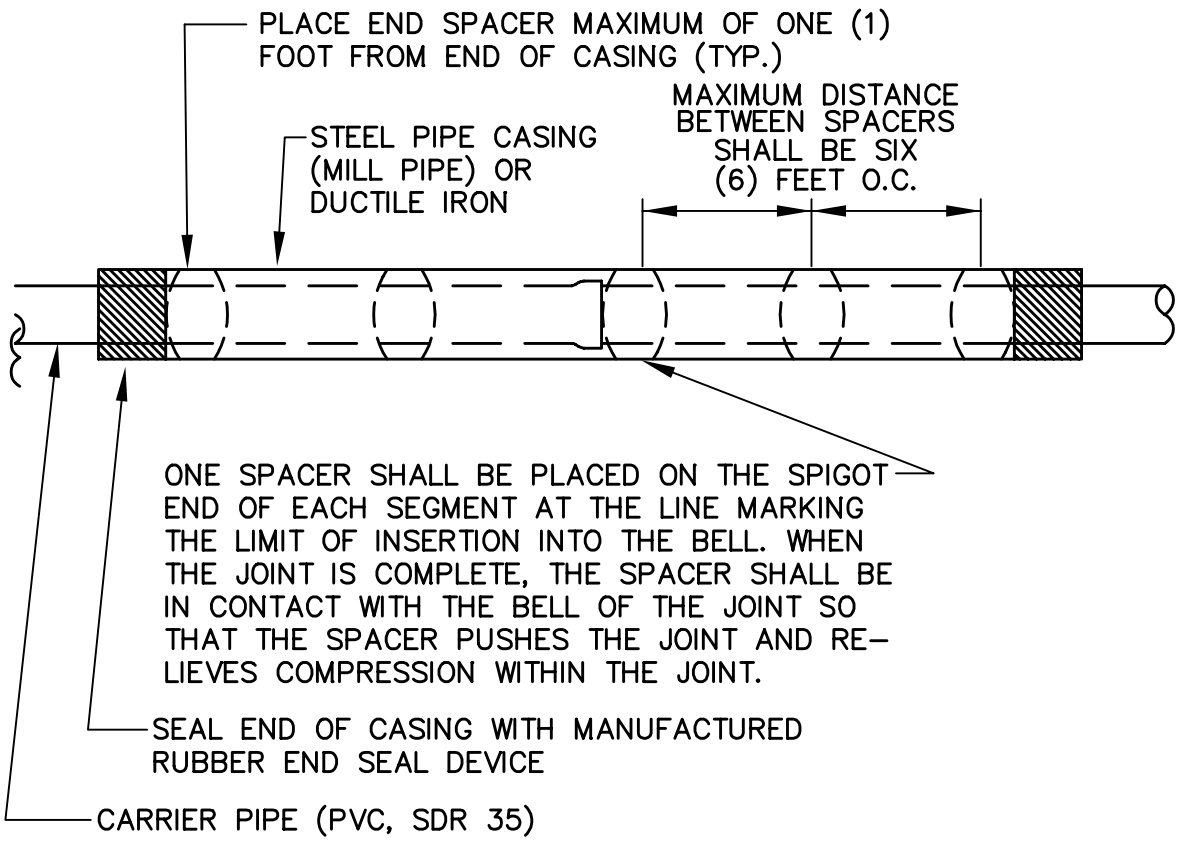
RIPRAP/DITCH DETAIL

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW–11



CASING SPACERS (SEE APPROVED MATERIALS LIST)

CARRIER PIPE DIAMETER	4"	6"	8"	10"	12"
CASING DIAMETER	10"	12"	14"	16"	20"
STEEL CASING THICKNESS	0.25"	0.25"	0.25"	0.25"	0.25"
SPACER BAND WIDTH	8"	8"	8"	8"	8"

ANTICORROSIVE COATING THICKNESS:
CASING – 8 MILLS DFT

NOTES:

1. CASING SPACERS SHALL BE "CENTER POSITIONING" TYPE.
2. MINIMUM RUNNER WIDTH SHALL BE 2 INCHES.
3. RUNNER HEIGHT SHALL BE SIZED TO PROVIDE:
   A. MINIMUM 0.75" BETWEEN CARRIER PIPE BELL AND CASING PIPE WALL AT ALL TIMES.
   B. MINIMUM 1" CLEARANCE BETWEEN RUNNERS AND TOP OF CASING WALL TO PREVENT JAMMING DURING INSTALLATION.
4. STEEL CASING DIAMETERS ARE "OUTSIDE DIAMETER" FOR 16" AND LARGER.
5. SPACER BAND WIDTH SHALL BE 12" FOR CARRIER PIPES THAT ARE 36" DIAMETER OR GREATER

CITY OF NEWCASTLE

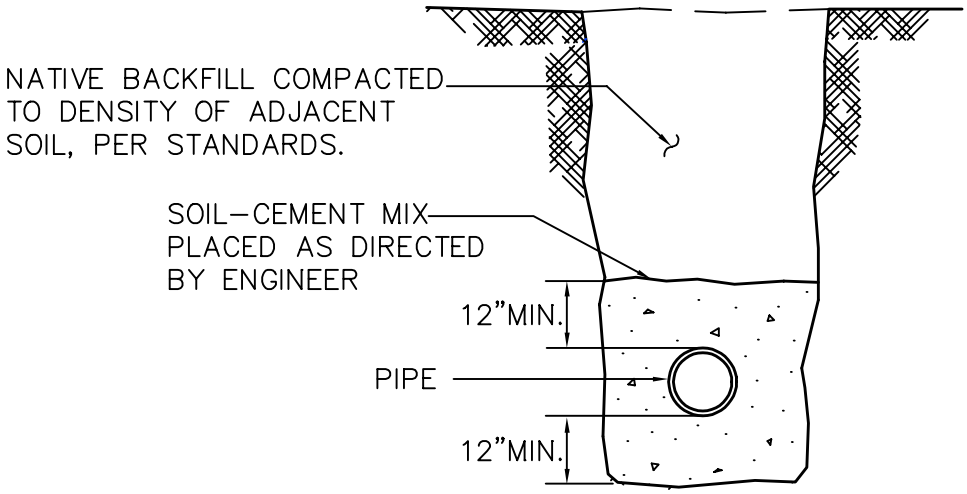
CASING INSTALLATION

APPROVED:

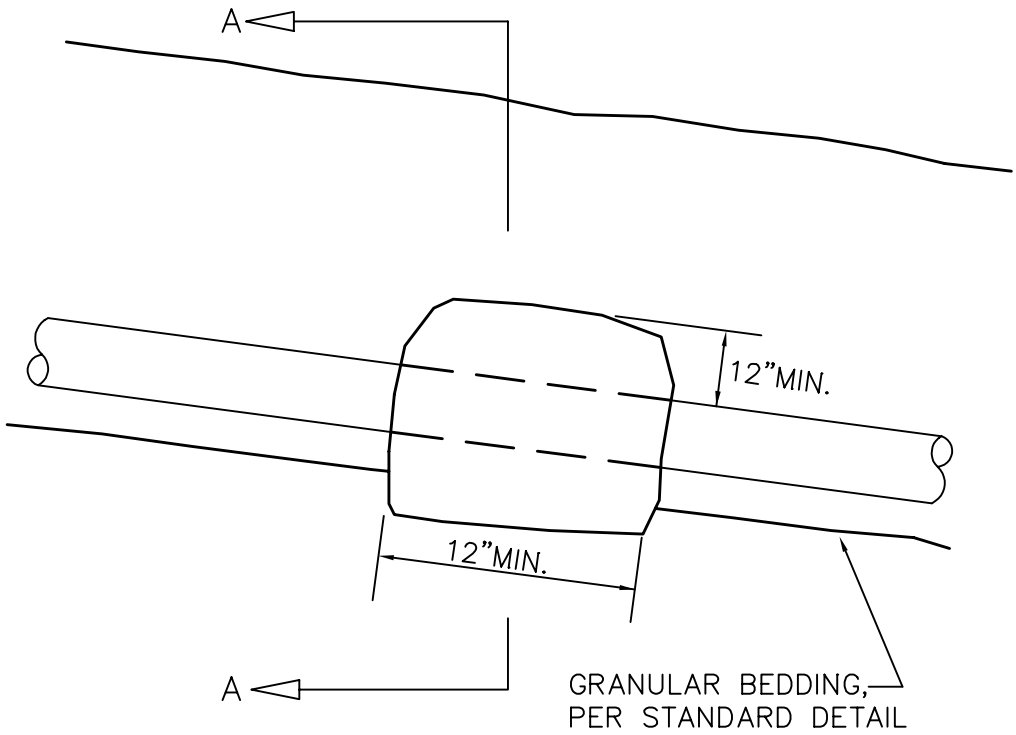
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW-12



SECTION A–A



NOTE:

SOIL CEMENT BLOCKS PLACED OVER AND AROUND PIPE. TAMPED INTO PLACE BEFORE PLACING BACKFILL. USE 10% CEMENT WITH 90% NATIVE SOIL AND WATER TO SUIT TO FORM A DRY MIX THAT WILL HOLD ITS SHAPE WHEN MOLDED INTO A BALL. SOIL SHAPE WHEN MOLDED INTO A BALL. SOIL OR GREATER. CITY ENGINEER MAY REQUIRE ADDITIONAL ENGINEERING OF ANCHOR BLOCKS DEPENDING ON SITE CONDITIONS AND PIPE SLOPE.

CITY OF NEWCASTLE

SOIL/CEMENT PIPE ANCHOR

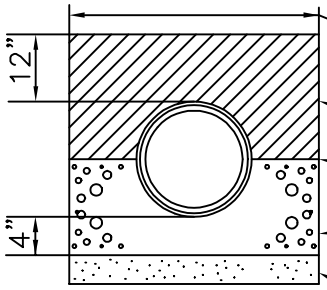
APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW–13

RIGID PIPE BEDDING



30" MAXIMUM FOR PIPE UP TO AND INCLUDING 12"
FOR PIPE LARGER THAN 12", O.D. OF PIPE PLUS 16".

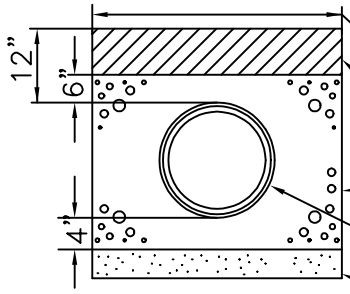
HAND COMPACTED BACKFILL

SPRING LINE

COMPACTED BEDDING GRAVEL PER SECTION 9-03.12(3), "GRAVEL BACKFILL FOR PIPE ZONE BEDDING", OF THE STANDARD SPECIFICATIONS, OR CONCRETE IF SPECIFIED.

FOUNDATION GRAVEL, IF REQUIRED (SEE NOTE 2.)

FLEXIBLE PIPE BEDDING



SEE ABOVE FOR TRENCH WIDTH

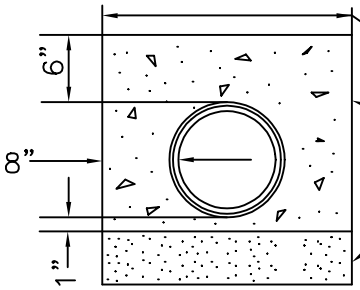
HAND COMPACT BACKFILL

COMPACTED BEDDING GRAVEL PER SECTION 9-03.16, "BEDDING MATERIAL FOR THERMOPLASTIC PIPE" OF STANDARD SPECIFICATIONS, OR CONCRETE IF SPECIFIED.

PVC PIPE

FOUNDATION GRAVEL, IF REQUIRED (SEE NOTE 2.)

CONCRETE ENCASEMENT

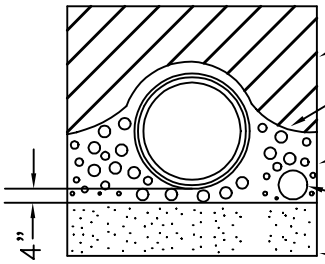


SEE ABOVE FOR TRENCH WIDTH

CONCRETE, 2000 PSI (SEE NOTE 3.)

FOUNDATION GRAVEL, IF REQUIRED (SEE NOTE 2.)

DETENTION PIPES WITH UNDERDRAINS (SEE NOTE 4.)



RIGID OR FLEXIBLE PIPE BEDDING (PER ABOVE).

FILTER FABRIC ABOVE GRAVEL BACKFILL FOR DRAINS. PROVIDE 12" MIN. OVERLAP AT SEAMS.

GRAVEL BACKFILL FOR DRAINS PER SECTION 9-03. 12(4) OF THE STANDARD SPECIFICATIONS FROM BOTTOM OF UNDERDRAIN PIPE TO SPRINGLINE OF DETENTION PIPE.

UNDERDRAIN PIPE (TYP.) 6" MIN. PERF. PER STANDARDS (SEE NOTE 5.).

FOUNDATION GRAVEL, IF REQUIRED (SEE NOTE 2.)

NOTES:

1. COMPACTED CRUSHED SURFACING TOP COURSE PER SECTION 9-03.9(3), "CRUSHED SURFACING", OF THE STANDARD SPECIFICATIONS CAN ALSO BE USED AS BEDDING GRAVEL.
2. EXCAVATE UNSTABLE MATERIAL DOWN TO FIRM SOIL AND REPLACE WITH FOUNDATION GRAVEL PER SECTION 9-03.9(1), "BALLAST", OF THE STANDARD SPECIFICATIONS
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANCHORING PIPE TO PREVENT FLOTATION DURING CONCRETE PLACEMENT.
4. WHEN THE DESIGN OF TANKS OR PIPES DOES NOT TAKE INTO ACCOUNT BOUYANCY, UNDERDRAINS SHALL BE PROVIDED.
5. PROVIDE CLEANOUTS ON UNDERDRAIN PIPE, EVERY 100 FEET, AND AT BENDS OR JUNCTIONS.

CITY OF NEWCASTLE

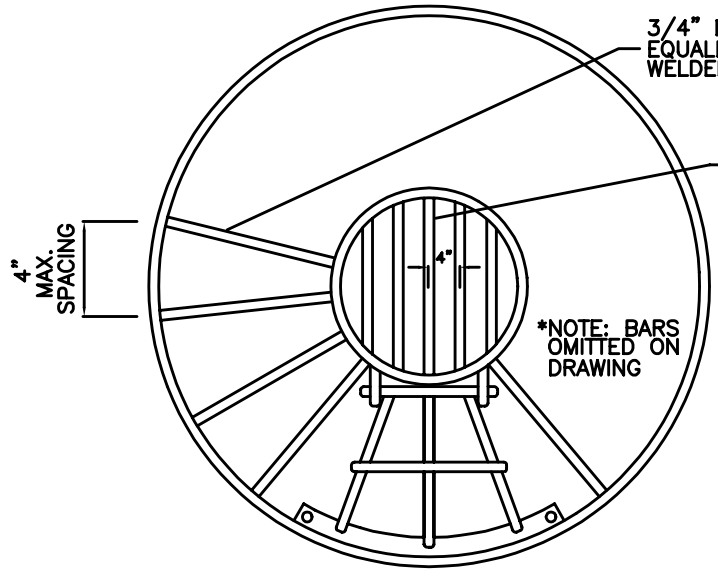
PIPE BEDDING DETAIL

APPROVED:

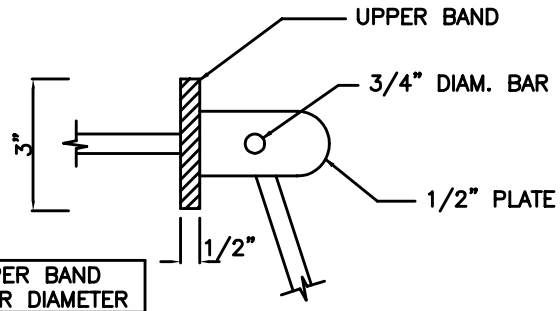
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

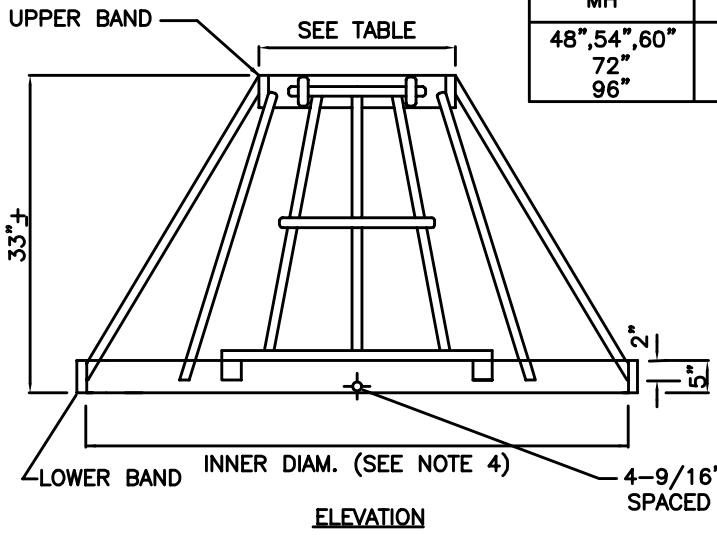
DWG. NO. SW-14



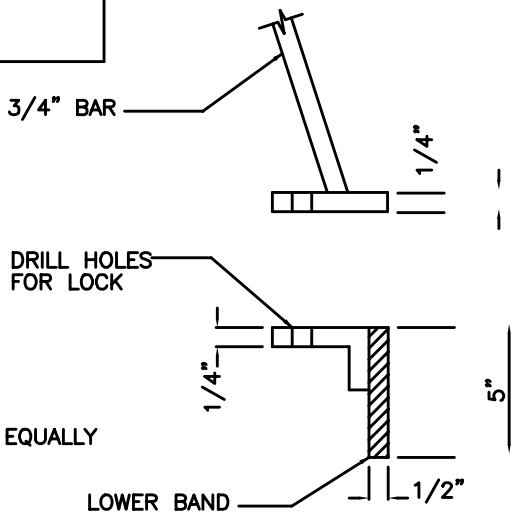
PLAN



MH	UPPER BAND OUTER DIAMETER
48",54",60"	36"
72"	
96"	42"



ELEVATION



ENTRY GATE DETAIL

NOTES:

1. ALL STEEL IN PLATES, BARS AND BANDS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36.
2. STEEL DEBRIS CAGE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 (AASHTO M111).
3. ALUMINUM IS AN OPTIONAL CAGE MATERIAL.
4. COVER BAND DIMENSIONS TO MATCH STRUCTURE.

CITY OF NEWCASTLE

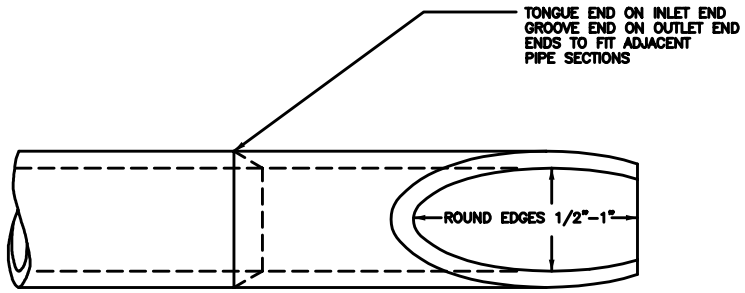
DEBRIS CAGE

APPROVED:

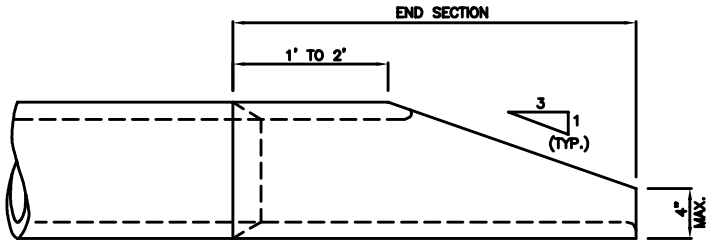
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW-16

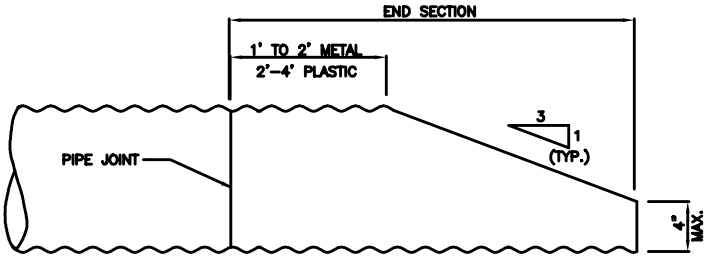


PLAN



ELEVATION

CONCRETE PIPE



METAL & THERMO–PLASTIC PIPE

NOTE:

SIDE SLOPE SHALL BE WARPED TO MATCH THE BEVELED PIPE END. WHEN CULVERT IS ON SKEW, BEVELED END SHALL BE ROTATED TO CONFORM TO SLOPE. IF SLOPE DIFFERS FROM 3:1, PIPE SHALL BE BEVELED TO MATCH SLOPE.

CITY OF NEWCASTLE

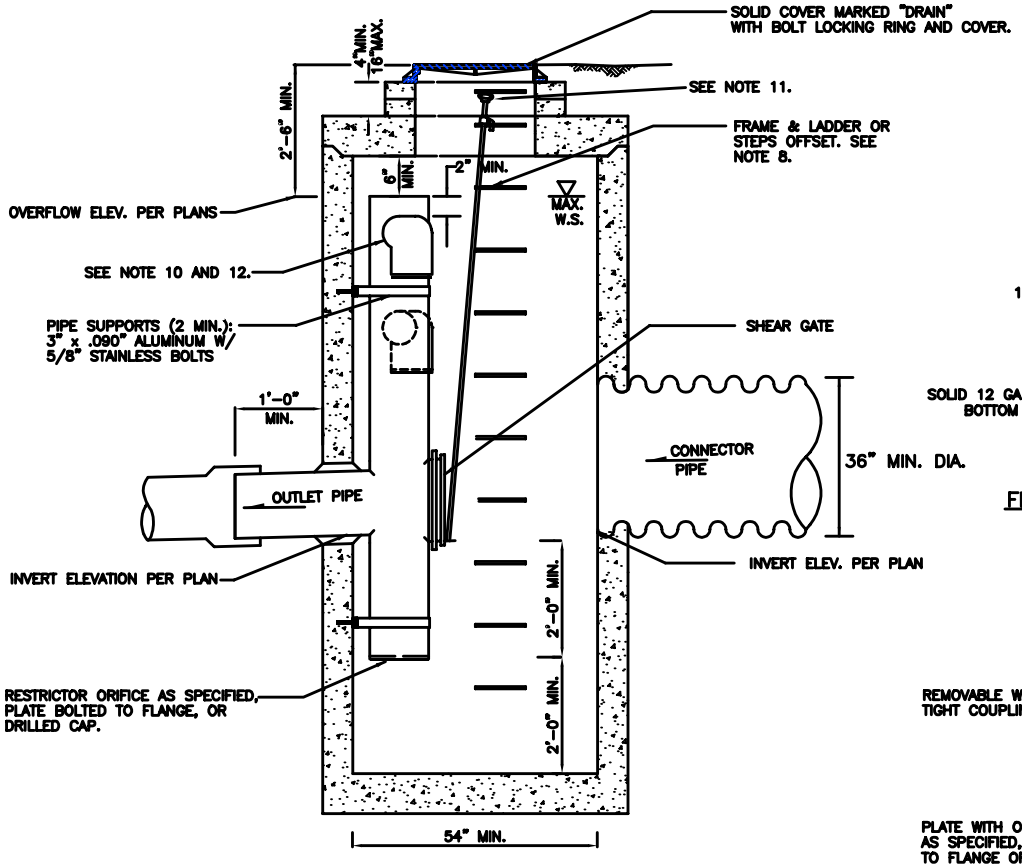
BEVELED END PIPE SECTION

APPROVED:

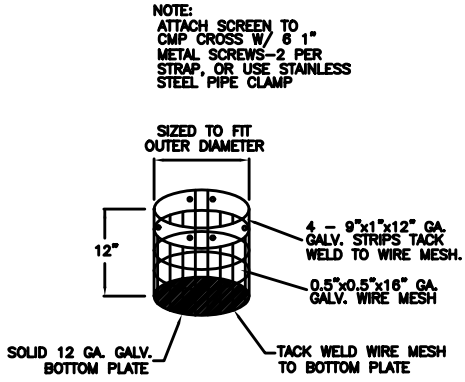
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

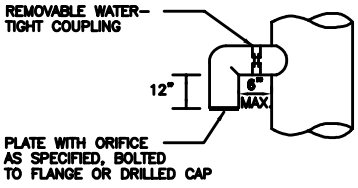
DWG. NO. SW–17



CATCH BASIN TYPE 2
DIAM. AS REQUIRED



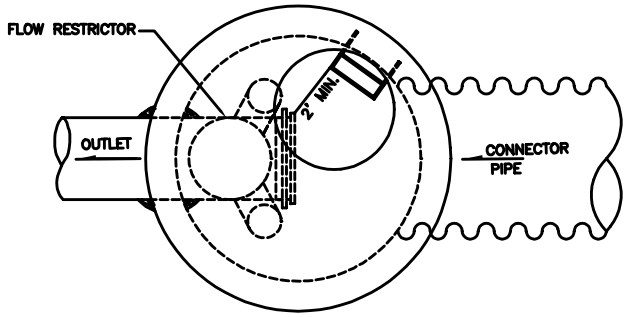
FLOW CONTROL SCREEN



ELBOW DETAIL

NOTES:

1. PIPE SIZES, INVERT ELEVATIONS, ORIFICE SIZES, OVERFLOW ELEVATIONS AND SLOPES; PER PLANS.
2. OUTLET CAPACITY: NOT LESS THAN COMBINED INLETS.
3. EXCEPT AS SHOWN OR NOTED, UNITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS FOR CATCH BASIN TYPE 2, 54" MIN. DIAM.
4. PIPE SUPPORTS AND RESTRICTOR SHALL BE OF SAME MATERIAL, AND BE ANCHORED AT 3' MAX. SPACING BY 5/8" DIAM. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED 2" IN WALL.
5. THE RESTRICTOR SHALL BE FABRICTED FROM .060" ALUMINUM, PVC, CPE, OR HDPE PIPE PER THESE ENGINEERING STANDARDS.
6. OUTLET SHALL BE CONNECTED TO CULVERT OR SEWER PIPE WITH SUITABLE COUPLER OR GROUTED INTO THE BELL OF CONCRETE PIPE.
7. THE VERTICAL RISER STEM OF THE RESTICTOR SHALL BE THE SAME DIAM. AS THE HORIZONTAL OUTLET PIPE, WITH AN 8" MIN. DIAM.
8. FRAME AND LADDER OR STEPS OFFSET SO THAT:
   A. SHEAR GATE IS VISIBLE FROM TOP.
   B. CLIMB DOWN SPACE IS CLEAR OF RISER AND SHEAR GATE.
   C. FRAME IS CLEAR OF CURB.
9. IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE: OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4".
10. MULTI-ORIFICE ELBOWS MAY BE LOCATED AS SHOWN OR ALL ON ONE SIDE OF RISER TO ASSURE LADDER CLEARANCE.
11. SHEAR GATE HANDLE SHALL BE ATTACHED TO LADDER/ STEP LOCATED WITHIN 24" ACCESS SECTION.
12. IF NOTCHED WIER IS USED IN LIEU OF ELBOW, BAFFLE SHALL NOT OBSTRUCT ACCESS TO THE STRUCTURE.



PLAN

CITY OF NEWCASTLE

FLOW RESTRICTOR TEE TYPE

APPROVED:

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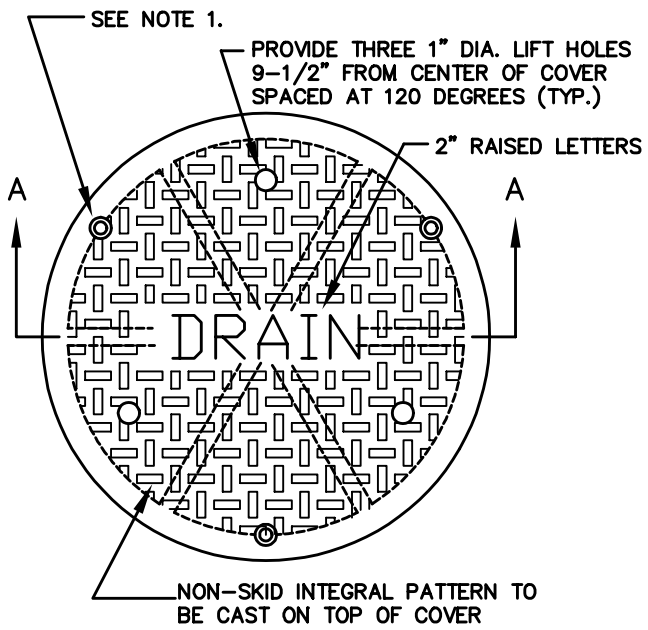
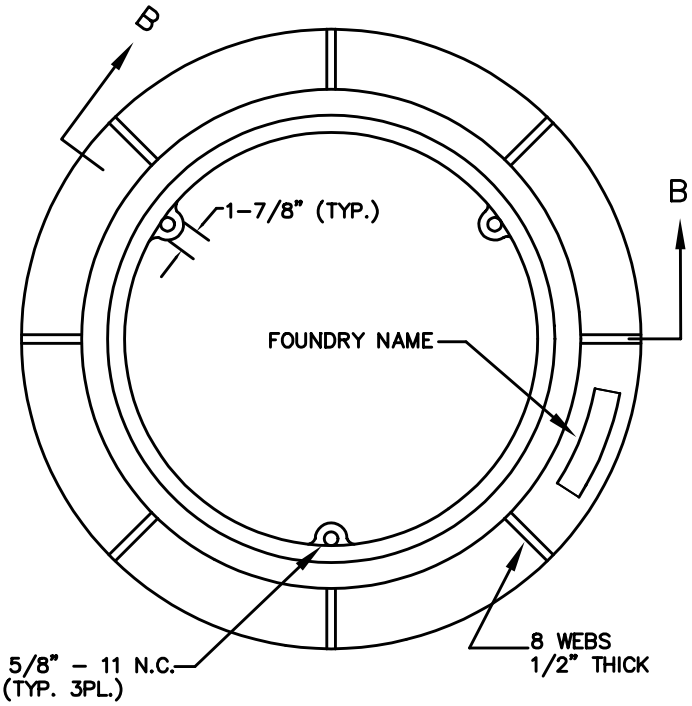
BY CITY — DATE

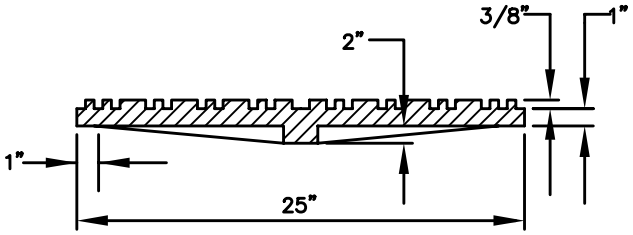
DWG. NO. SW-18



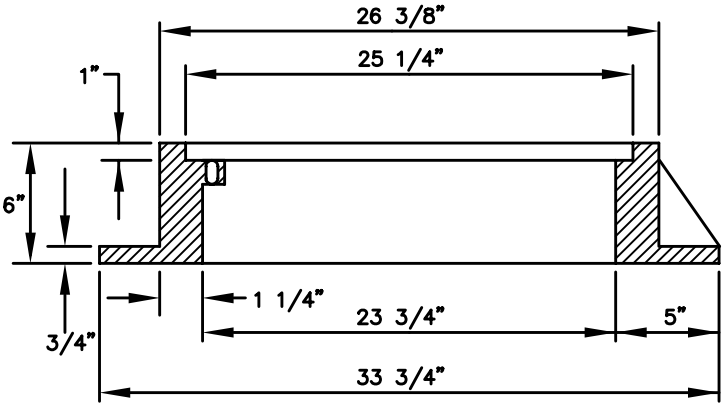
COVER PLAN



RING PLAN



SECTION A-A



SECTION B-B

COVER NOTES:

1. USE WITH THREE LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG. DRILL HOLES SPACED 120°, TO MATCH HOLES IN RING.
2. COVER MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80-55-06.
3. SHALL CONFORM TO SEC. 9-05.15 OF THE STANDARD SPECIFICATIONS, AS MODIFIED HEREIN.
4. APPROXIMATE WEIGHT OF COVER IS 150 LBS.
5. RATING - H20.

RING NOTES:

1. DRILL AND TAP THREE 5/8"-11 NC HOLES THROUGH RING AT 120°.
2. RING MATERIAL IS GREY IRON, ASTM A-48 CLASS 30.
3. SHALL CONFORM TO SEC. 9-05.15 OF THE STANDARD SPECIFICATIONS, AS MODIFIED HEREIN.
4. APPROXIMATE WEIGHT OF RING IS 215 LBS.
5. RATING - H20.

OLYMPIC FOUNDRY MH30AD/T , OR EQUAL.

CITY OF NEWCASTLE

24" BOLT-LOCKING MANHOLE RING & COVER

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. SW-19

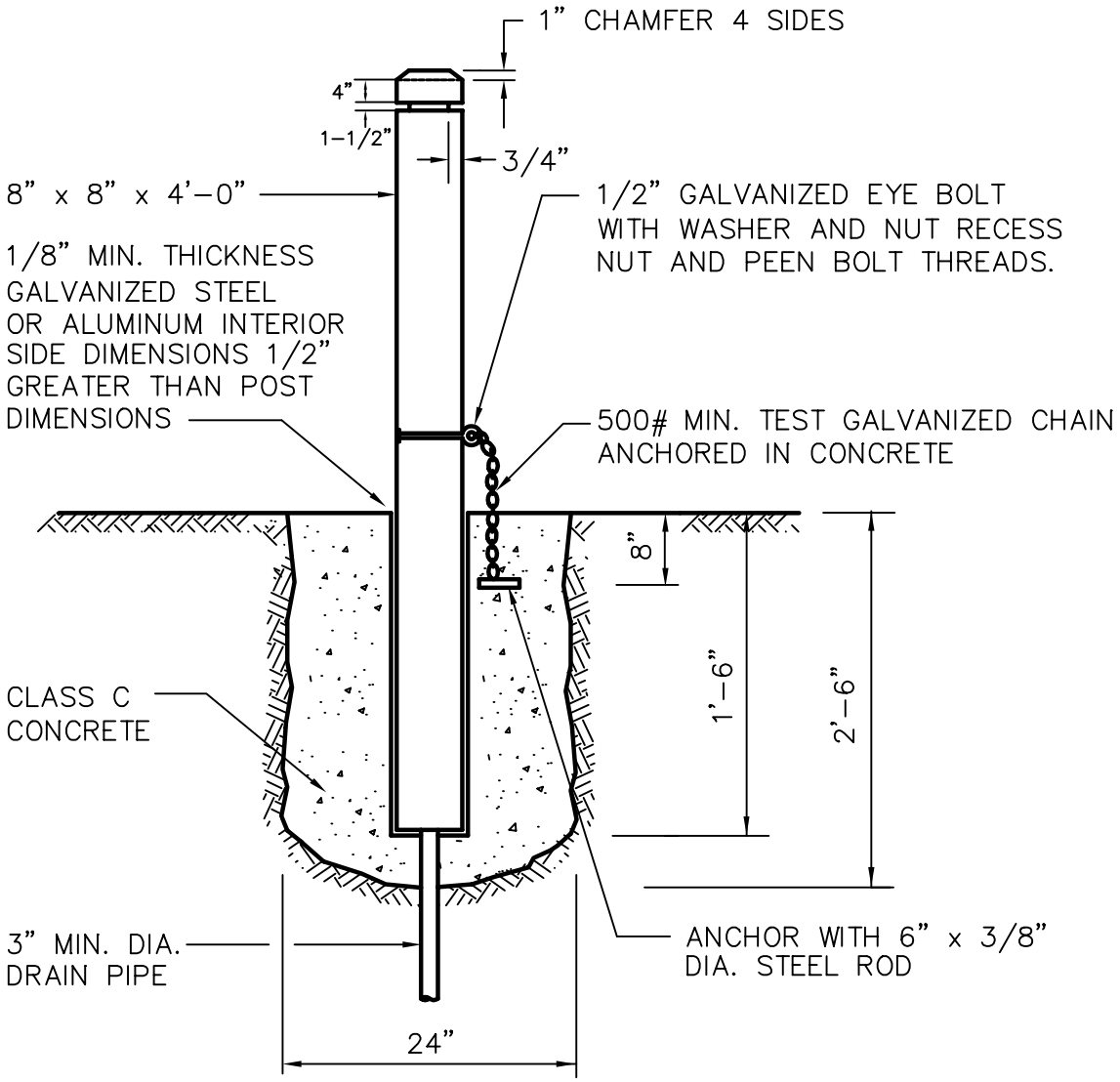
SANITARY SEWER DETAILS

Sanitary sewer service is provided by Coal Creek Utility District (CCUD). All standards and details must be obtained from CCUD (425) 235-9200.

WATER SYSTEM DETAILS

Water service is provided by Coal Creek Utility District (CCUD). All standards and details must be obtained from CCUD (425) 235-9200.

MISCELLANEOUS DETAILS



NOTES:

1. TIMBER SHALL BE DOUGLAS FIR, DENSE CONSTRUCTION GRADE, AND SHALL BE PENTACHLOROPHENOL PRESSURE TREATED BY EMPTY CELL PROCESS WITH MINIMUM NET RETENTION OF 0.05 LB/CF OF THE DRY SALT. (USE LIGHT PETROLEUM SOLVENT)
2. STEEL TUBE SHALL CONFORM TO ASTM 453 OR ASTM A53 GRADE A.
3. NUTS, BOLTS & WASHERS SHALL CONFORM TO WSDOT STANDARD.
4. ALL STEEL PARTS SHALL BE GALVANIZED.
5. CONCRETE SHALL BE CLASS C.

CITY OF NEWCASTLE

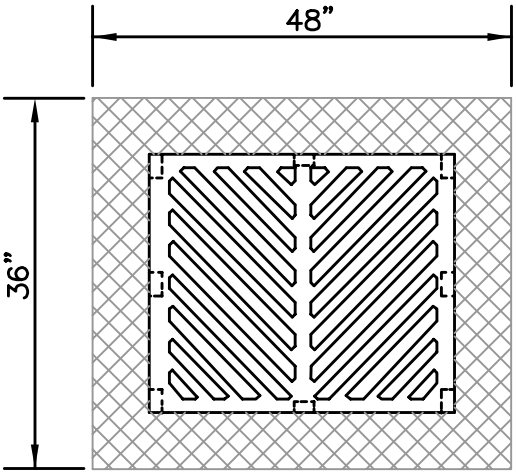
REMOVABLE BOLLARD DETAIL

APPROVED:

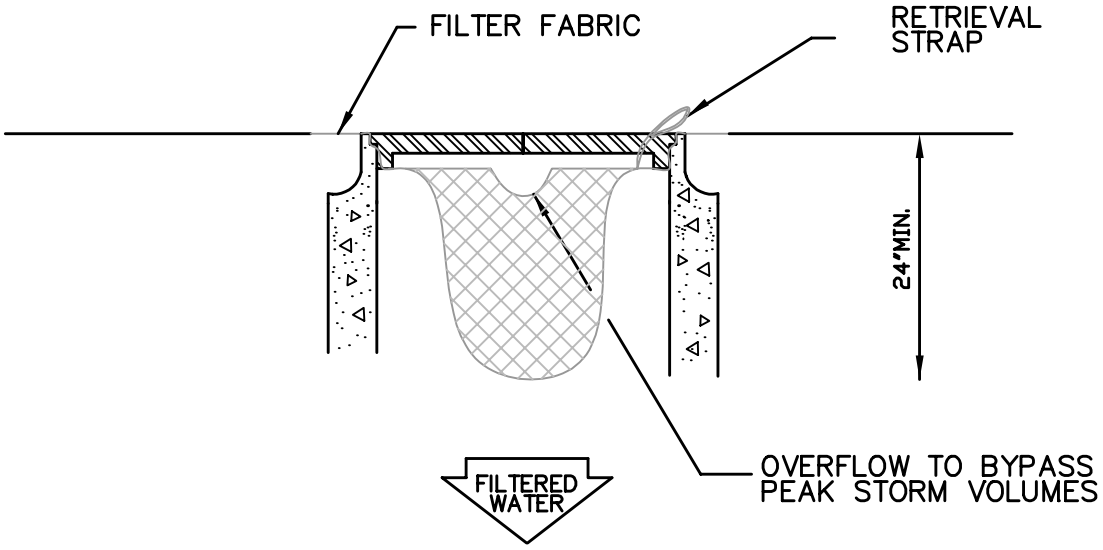
ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. MD-1



PLAN



PROFILE

NOTES:

1. REMOVE CATCH BASIN GRATING.
2. CLEAN DIRT AND DEBRIS FROM GRATING LEDGE.
3. LAY THE CATCH BASIN INSERT INSIDE THE BASIN
4. REPLACE THE GRATING, PINCHING THE INSERT FABRIC BETWEEN THE GRATING AND THE CATCH BASIN FRAME.
5. CUT OFF THE EXCESS FABRIC OFF WITH A BLADE KNIFE. A 3 TO 5 INCH WIDE STRIP OF FABRIC SHOULD BE LEFT AROUND THE OUTSIDE OF THE GRATING IF THE INSERT IS TO BE USED MORE THAN ONCE.

CITY OF NEWCASTLE

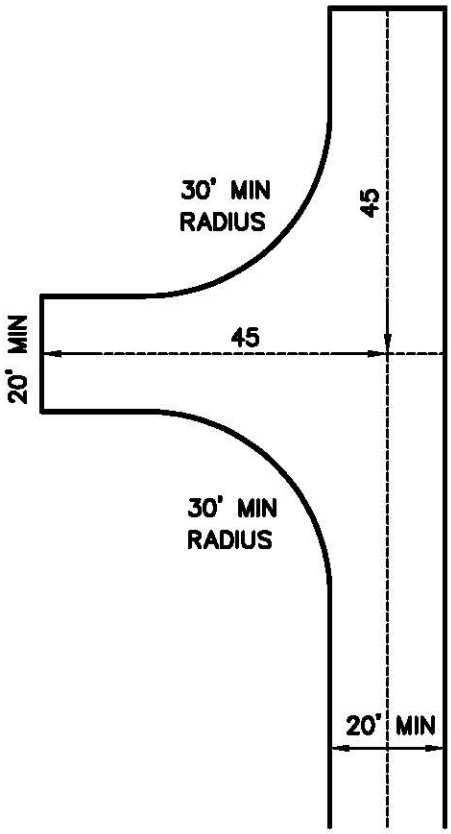
FILTER FABRIC CATCH BASIN INSERT FOR SEDIMENT ONLY

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. MD-2



NOTES:

1. THIS ACCESS TURNAROUND SHALL ONLY BE UTILIZED IF SPECIFICALLY APPROVED IN WRITING BY THE CITY FIRE MARSHALL
2. THESE DRAWINGS ILLUSTRATE TYPICAL APPROVED FIRE APPARATUS ACCES TURNAROUNDS. THE SIDE ACCESS DESIGN MAY BE RIGHT OR LEFT (LEFT DIRECTION SHOWN).
3. ALL DIMENSIONS ARE MINIMUM REQUIREMENTS.
4. OTHER SHAPED ACCESS TURNAROUNDS ARE AN ACCEPTABLE ALTERNATIVE TO THOSE SHOWN, PROVIDED THE DESIGN MEETS THE MINIMUM DIMENSION REQUIREMENTS SHOWN ABOVE.
5. THE ALTERNATIVE FIRE ACCESS TURNAROUND SHALL BE MARKED AS A FIRE LANE IN ACCORDANCE WITH K.C.C. 17.04.070.
6. MINIMUM ROAD WIDTH SHOWN DOES NOT INCLUDE ANY SHOULDER DIMENSIONS OR CURB DIMENSIONS IF REQUIRED.

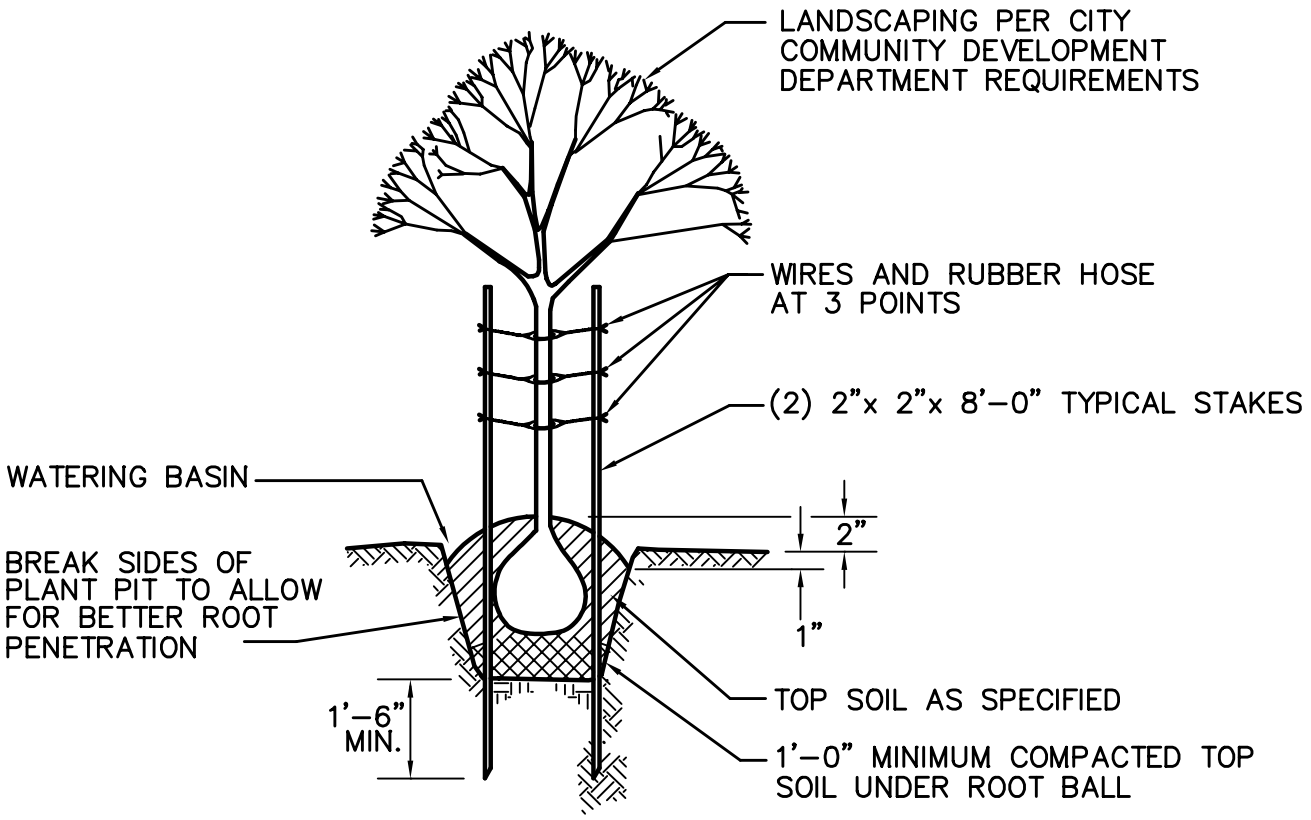
NEWCASTLE FIRE ACCESS CRITERIA:

A. ALL LEGS OF THE TURNAROUND SHALL BE A MINIMUM OF 20 FEET OF UNDISTURBED WIDTH.
B. THERE SHALL BE A MINIMUM OF 30 FEET INSIDE RADIUS BETWEEN THE FIRE ACCESS ROAD AND THE LEGS.
C. THERE SHALL BE A MINIMUM OF 60 FEET FROM THE INTERSECTION OF THE CENTERLINE OF THE FIRE APPARATUS ACCESS ROAD AND THE CENTERLINE OF THE LEG TO THE END OF ALL LEGS.
D. THE ALTERNATIVE FIRE APPARATUS ACCESS TURNAROUND SHALL BE MARKED AS A FIRE LANE PER CITY FIRE MARSHALL.
E. THE ALTERNATIVE FIRE APPARATUSS ACCESS TURNAROUND SHALL MEET THE SAME GRADE AND SURFACING STANDARDS APPLIED TO FIRE ACCESS ROADS.
F. THE MAXIMUM CROSS SLOPE ON AN ALTERNATIVE FIRE APPARATUS ACCESS TURNAROUND SHALL NOT EXCEED SIX PERCENT.
G. ALTERNATIVE DESIGNS THAT DO NOT MEET THE CRITERIA ESTABLISHED IN THIS SECTION MAY BE APPROVED BY THE CITY FIRE MARSHALL.

CITY OF NEWCASTLE

ALTERNATIVE FIRE ACCESS TURNAROUND

APPROVED:		DWG. NO.
ROGER KUYKENDALL, P.E.	8/1/2000	MD-3
BY CITY	DATE	



NOTES:

1. PLANT ALL TREES ONE INCH HIGHER THAN LEVEL AT WHICH GROWN IN NURSERY
2. TAKE CARE TO AVOID ROOTS WITH STAKES
3. PLANT PIT 3'-0" ø OR 1'-0" LARGER THAN ROOT SPREAD, WHICHEVER IS GREATER.

CITY OF NEWCASTLE

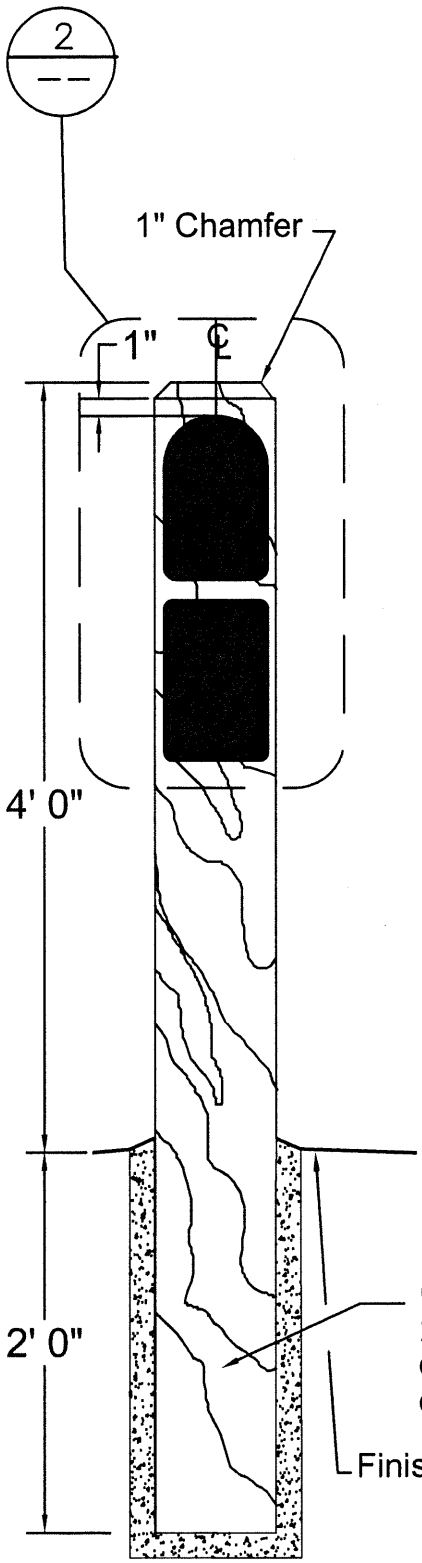
STREET TREE AND STAKING DETAIL

APPROVED:

ROGER KUYKENDALL, P.E. — 8/1/2000

BY CITY — DATE

DWG. NO. MD-4



1 POST DETAIL

SCALE: 1" = 1' - 0"

6' long pressure treated douglas fir 8" X 8" post; set post 2' into ground in concrete or gravel/native material as directed by the City. Slope concrete away from post on all sides.

1.25" Ø City of Newcastle logo and text style Helvetica w/ 1/2" caps painted opaque white.

3.25" radius typical.

8-3/4" X 1/8" dia. galvanized steel allen head wood screws (counter sunk).

Walking symbol 6", Symbol and text painted opaque white.

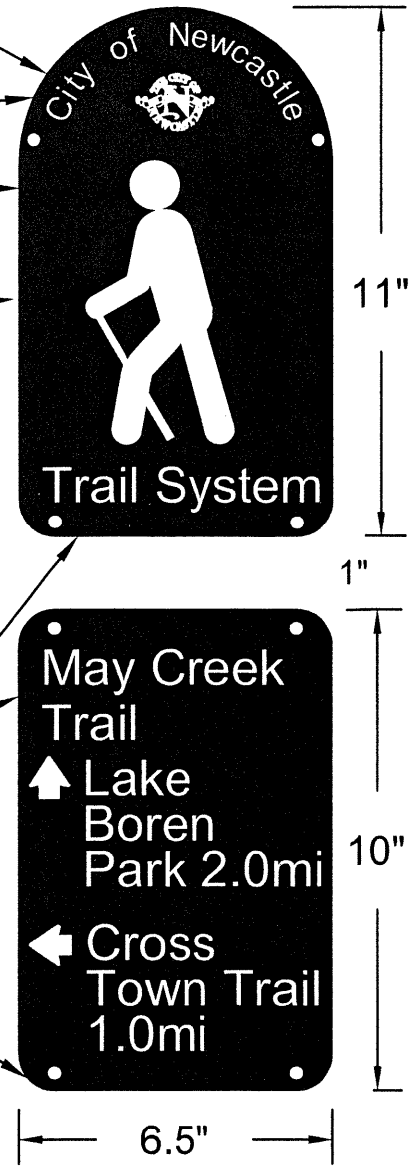
Sign face 0.125 flat sheet aluminum lettered and painted. Paint w/ baked on powder coat, color PMS #188 (Maroon), or performance equivalent and color match. Rout wood bollard 1/4" deep in shape of each sign plaque on one or more sides as directed by the city.

Trail name and arrow text style Helvetica w/ 3/4" high caps (mixed upper and lower case). Trail names and arrows white outdoor grade pressure sensitive vinyl, 3M Scotchal #3470 or equivalent.

3/4" radius typical.

Note: Text as approved by City of Newcastle - text shown is for reference only.

All posts shall be affixed with a metal plate with a unique 3 digit inventory number. Number shall be assigned by the City.



2 SIGN DETAIL

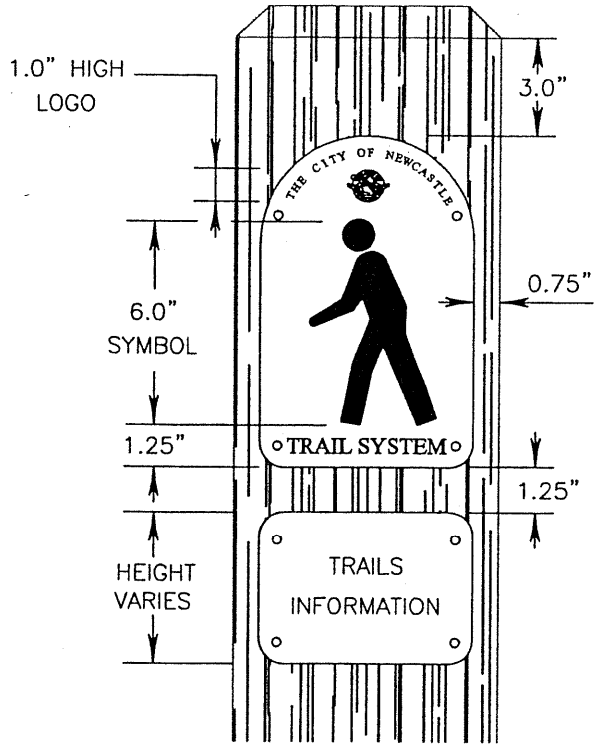
SCALE: 3" = 1' - 0"

REVISED 3/15/02

CITY OF NEWCASTLE

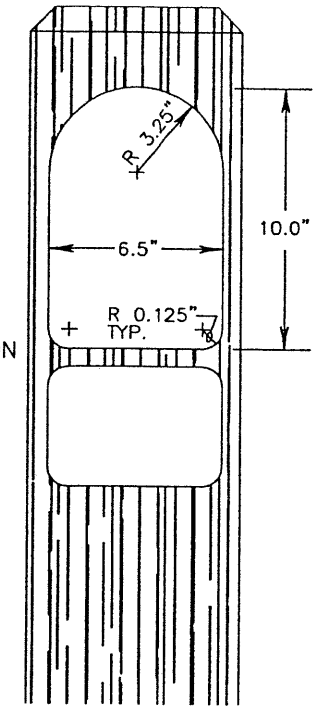
PARKS & TRAILS BOLLARD DETAIL

APPROVED: MARY VAN WAGNEN BY CITY ____ DATE			DWG. NO. TR-1
DATE: 3/02	DRWN: S.K.	CHKD: R.K.	SCALE: NONE

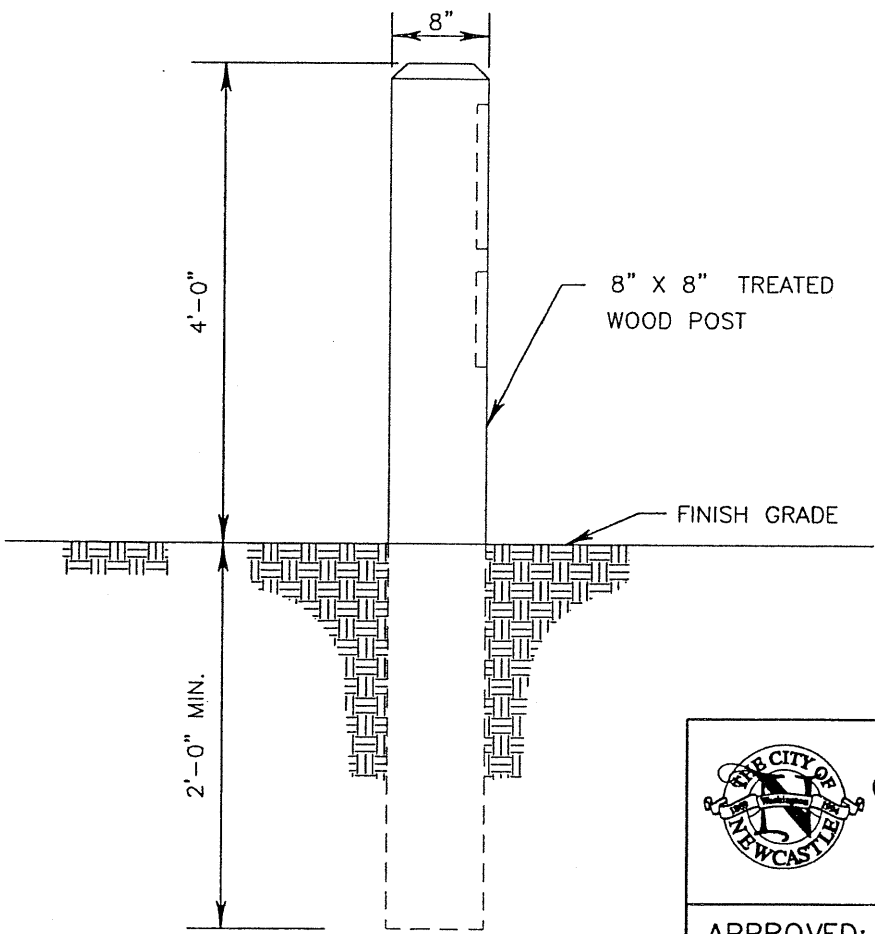


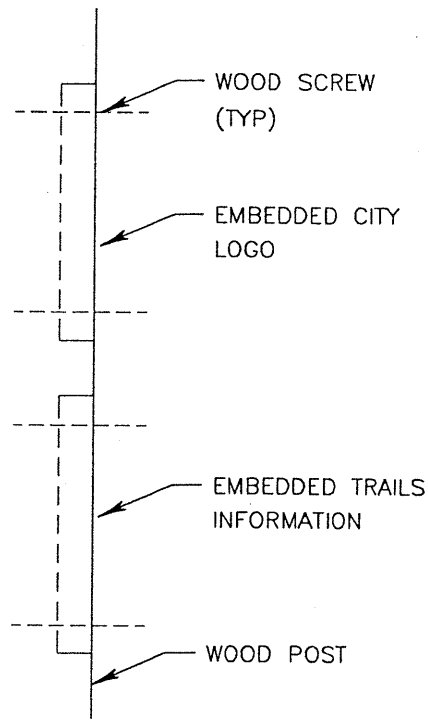
NOTE:

1. SIGN SHALL BE REQUIRED ON ALL SIDES AS DIRECTED BY THE CITY.
2. SIGN TO BE PLACED WITH 4 TO 6 2" GALVANIZED WOOD SCREWS, EXTERIOR PHILIPS HEAD.
3. SIGN INFORMATION SHALL BE OF A PRE-APPROVED FORMAT PER THE CITY PARKS MANAGER.
4. SIGN INFORMATION WILL VARY BASED ON TRAIL INFORMATION.
5. ALUMINUM SIGN TO BE INSTALLED FLUSH WITH FACE OF POST.
6. ALUMINUM SIGN TO BE PAINTED BURGUNDY WITH WHITE "TIMES NEW ROMAN" TEXT AND SYMBOLS.
7. "TRAIL SYSTEM" TEXT SHALL BE 0.5" IN HEIGHT AND ALL OTHER TEXT SHALL BE 0.25" IN HEIGHT.



TRAILS INFORMATION SIGN DETAIL





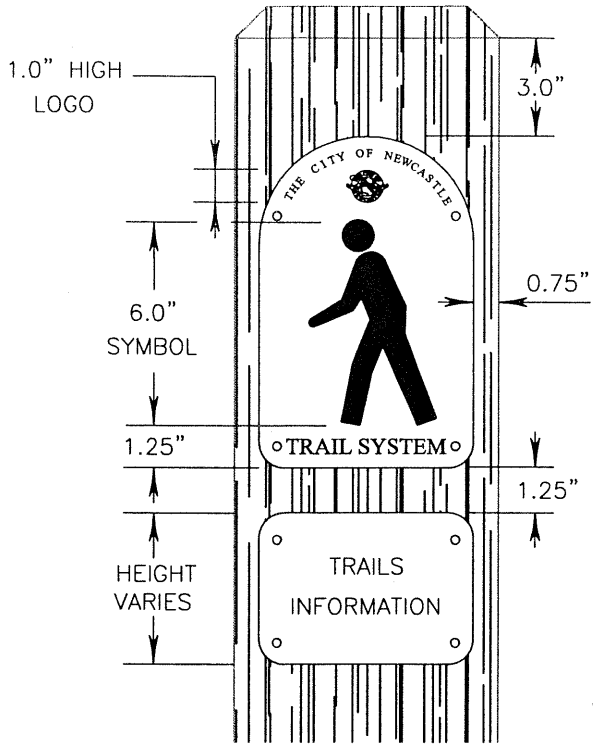
NOT TO SCALE

THE CITY OF NEWCASTLE

CITY OF NEWCASTLE

PARKS & TRAILS BOLLARD DETAIL

APPROVED: MARY VAN WAGNEN — 9/26/2001 BY CITY — DATE			DWG. NO. TR-1
DATE: 11/00	DRWN: S.K.	CHKD: R.K.	SCALE: NONE



NOTE:

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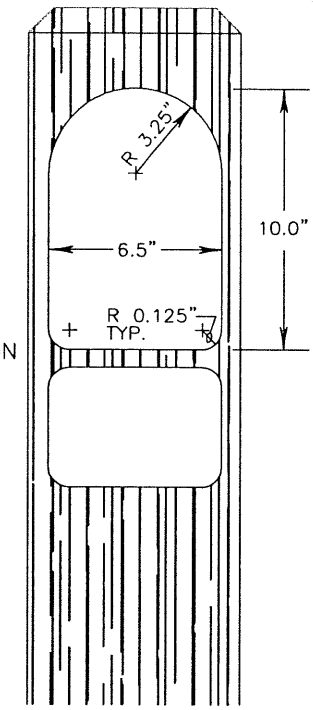
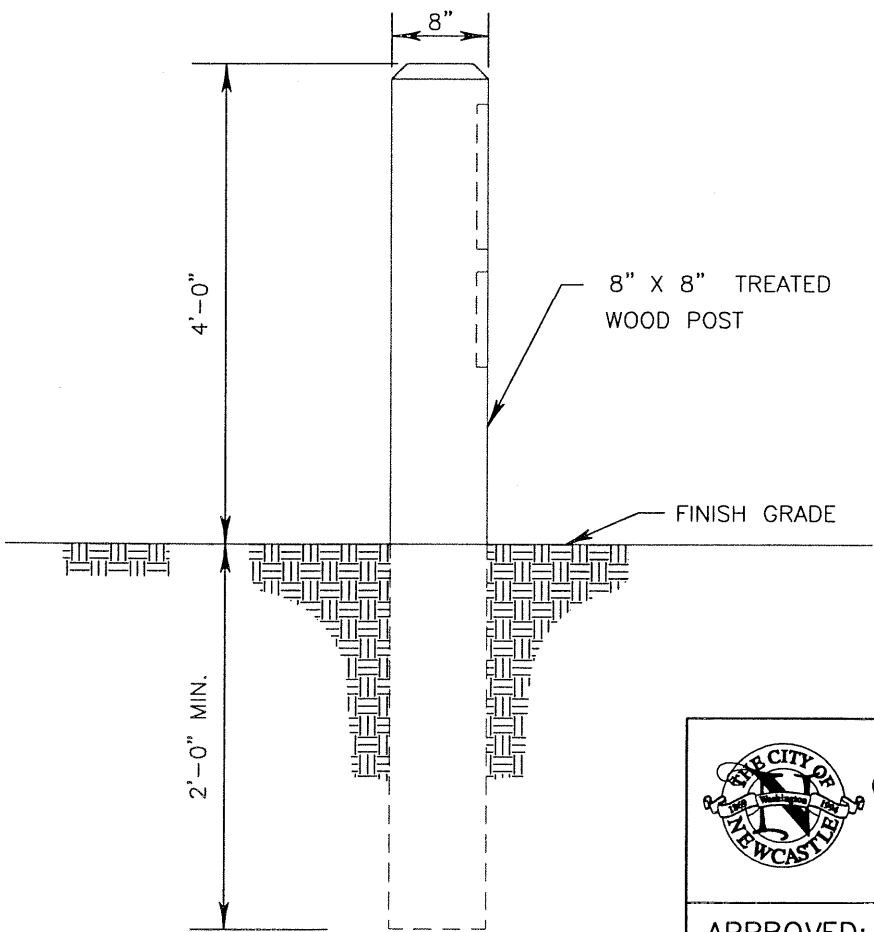
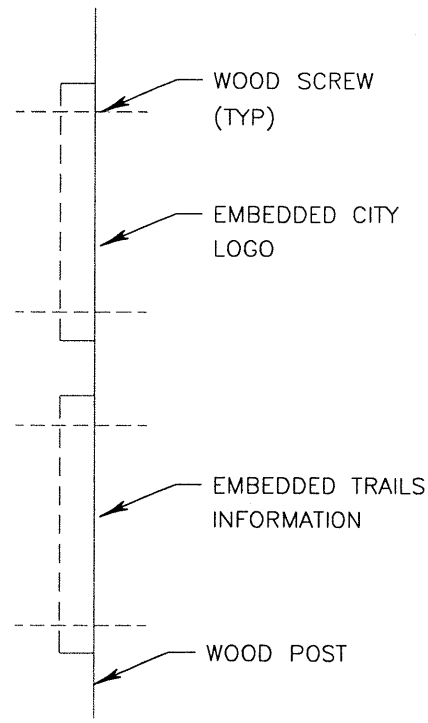


TRAILS INFORMATION SIGN DETAIL





NOT TO SCALE

CITY OF NEWCASTLE

PARKS & TRAILS BOLLARD DETAIL

APPROVED: MARY VAN WAGNEN BY CITY — 9/26/2001 DATE			DWG. NO. TR-1
DATE: 11/00	DRWN: S.K.	CHKD: R.K.	SCALE: NONE

SECTION 10

MISCELLANEOUS CITY DOCUMENTS

SECTION 10 MISCELLANEOUS CITY DOCUMENTS

- Developer Extension Agreement
- Sample Easement Document
- Sample Bill of Sale Document
- Affidavit of "No Liens" on Project
- Developer Extension Checklist
- Developer's Bond Document
- Sample Right-of-Way Construction Permit (2 pages)
- Bond Quantity Work Sheet
- Engineering Plan Checklist Minimum Requirements
- Pre-application Checklist
- Pre-Construction Checklist

SAMPLE COPY

CITY OF NEWCASTLE

DEVELOPER AGREEMENT

THIS AGREEMENT, by and between the City of Newcastle, a municipal corporation, hereinafter referred to as "City", and _____, hereinafter referred to as "Developer":

WITNESSETH: That whereas the City of Newcastle, a municipal corporation, provides storm and roadway service within this area, and the above-named Developer is preparing to construct an extension or modification or additions thereto, and said development requires the City's service;

WHEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. Developer agrees to construct the storm and/or roadway system, or additions thereto, to be connected to the City's infrastructure, and to maintain such additions until such time as the improvements are accepted by the City, with the agreements conditioned as set forth below. The improvements, extension, or additions thereto, shall be located within that area commonly referred to as _____, which property is described in Exhibit "A" attached hereto and referred to hereinafter as "Premises".

2. As a condition precedent to City obligations under this agreement, the Developer shall construct the proposed storm and/or roadway system, or additions thereto, within said premises in conformance with the minimum standards as set forth in the City's currently adopted Public Works Standards, as adopted together with any amendments thereto hereinafter made, and further to conform with the City's comprehensive planning documents, which agreement shall include oversizing of mains necessitated by the comprehensive plan.

3. The developer agrees that the construction of any infrastructure items, or additions thereto, shall not commence until the following conditions have been fulfilled:

    a. The developer shall furnish the City with four (4) sets of detailed plans for the proposed improvements, or additions thereto, at Developer's own expense, prepared by a qualified engineer currently licensed in the State of Washington.

    b. The above plans shall require the review and approval by the City and its Engineer, and the cost of such review shall be at the Developer's own expense.

    c. Minimum requirements for all plans, or additions thereto, submitted to the City for review are:

(1) Four (4) sets of all plans and documents shall be submitted, wherein three (3) sets will be retained by the City, and one (1) set will be returned to the applicant.

(2) A preliminary plat of the area in which said improvement, or additions thereto, are to be constructed, which plat has been approved by the City.

(3) A map showing the location of the plat in relation to the surrounding area.

(4) A contour map of the plat with contour intervals of five feet or less extending fifty (50') feet beyond the plat/property lines.

(5) A map showing the location and depth of all proposed utilities and any connections and/or interconnections to existing facilities or future extensions and connections.

(6) A 1" = 50' plan and profile view of the proposed improvements showing streets, lot lines, dimensions, and location of bench marks (City datum) and monuments for the proposed plat, together with an indication of the development of the adjacent property, as may be applicable.

(7) A profile 1" = 50' horizontal and 1" = 5' vertical of the finished road grades with any proposed utility system improvements and other pertinent underground utilities located, with elevations noted thereon. The elevation datum shall be the same as used by the City. It shall be the responsibility of the Developer to confirm such datum with the City.

(8) Full-sized detail sheets shall be included as part of the construction drawings, as required to clearly indicate the details for all of the infrastructure improvements not otherwise provided for in this text, or additions thereto, to be constructed, consistent with City standards.

(9) Specifications sufficient to fully describe the work, consistent with the City's minimum and currently adopted Public Works Standards.

(10) Approvals from all regulatory agencies.

d. Construction requirements in addition to the City standards and details for developer extensions, as adopted, are as follows:

(1) All streets and/or roadways shall be graded to within six inches of final grade before installation of utility improvements, unless otherwise approved by the City Engineer.

(2) All lots shall be fully staked to assist all parties involved in the proper location of utility services.

(3) All contractors and subcontractors shall have a current Washington State Contractors License on file with the City.

(4) The Developer's proposed improvements, or additions thereto, on Premises shall not be connected to the City system until authorized by the City, and such connection shall be performed only under the supervision and approval of the City.

e. For the purpose of applying RCW 4.24.115 to this Contract, the Developer and the City agree that the term "damages" applies only to the finding in a judicial proceeding and is exclusive of third party claims for damages preliminary thereto.

The Developer agrees to indemnify and hold harmless the City from all claims for damages by third parties, including costs and reasonable attorney's fees in the defense of claims for damages, arising from performance of the Developer's express or implied obligations under this Agreement. The Developer waives any right of contribution against the City.

It is agreed and mutually negotiated that in any and all claims against the City or any of its agents or employees by any employee of the Developer, any contractor or subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation hereunder shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Developer or any contractor or subcontractor under Workman's Compensation Acts, disability benefits acts or other employees' benefit acts. The City and the Developer agree that all third part claims for damages against the City for which the Developer's insurance carrier does not accept defense of the City may be tendered by the City by the Developer who shall, if so tendered by the City, accept and undertake to defend or settle with the Claimant. The City retains the right to approve claim investigation and counsel assigned to said claim and all investigation and legal work product regarding said claim shall be performed under a fiduciary relationship to the City. In the event that the City agrees or a court finds that the claim arises from the sole negligence of the City, this indemnification shall be void and the City shall be responsible for all damages payable to the third party claimant. In the event that the City and the Developer agree or a court finds that the claim arises from or includes negligence of both the Developer and the City, the Developer shall be responsible for all damages payable by the Developer to the third party claimant under the court findings, and, in addition thereto, the Developer shall hereunder indemnify the City for all damages paid or payable to the City under the court findings in an amount not to exceed the percentage of total fault attributable to the Developer. For example, where the Developer is 25% negligent, the Developer shall not be required to indemnify the City for any amount in excess of 25% of the claimant's total damages.

f. In the event the Developer in his operation damages or disrupts existing improvements, the repairs shall be made at the Developer's expense. In the event they are so damaged or the service disrupted and the Developer fails or is unable to immediately restore the service, then the Owners of the improvements may cause the repairs to be made by others and all costs for the same shall be at the Developer's own expense.

Where the construction crosses or is adjacent to existing utilities, the Developer shall exercise extreme care to protect such utilities from damage.

If any damage is done to an existing utility, the Developer shall notify the utility company involved, who will dispatch a crew to repair the damage at the Developer's expense. All costs for the same shall be at the Developer's own expense.

The Developer shall be aware that some existing City owned facilities and other facilities within the City are known to contain asbestos cement pipe. The Developer shall conduct all work related to existing asbestos cement pipe in strict accordance with current WISHA safety regulations and provisions contained within WAC 296-62-077. All costs related to work in compliance with established rules and regulations shall be the responsibility of the Developer. Demolition of existing asbestos cement pipe, if required, will be permitted only after the proper permits are obtained from the Puget Sound Air Pollution Control Agency. The Developer shall be responsible for all associated fees and permits required for asbestos removal and disposal. Work crews shall be provided with proper protective clothing and equipment. Hand tools shall be used, and the asbestos cement pipe shall be scored and broken in lieu of the sawing or other methods which release fibers into the atmosphere. Waste asbestos pipe shall be buried in the trench. Asbestos pipe to be abandoned in place shall not be disturbed, except as noted herein, and shall remain in its original position.

The Developer is cautioned that all existing drainage systems, whether open ditch, buried pipe, or drainage structures, are not on record. It shall be the responsibility of the Developer to repair or replace all such systems found during construction, which are damaged by the Developer's construction in a manner which is satisfactory to the City.

Where the Developer is allowed to use private property adjacent to the work, the property so used shall be returned to its original or superior condition. The Developer shall make all arrangements in advance with such property owners, to insure that no conflicts will ensue after the property is restored as described above. The Developer will be required to furnish the City with a written release from said private property owners, if the City deems it to be necessary to obtain such document.

4. The construction of the Developer's proposed improvements, or additions thereto, on the Premises shall be supervised by the City in such a manner and at such times as the City deems reasonably necessary to assure that construction of the system will conform with the above-mentioned plans and specifications and minimum City

Standards. The Developer herewith agrees to allow such inspections and agrees to cooperate providing reasonable advance notice on his construction schedule during the various construction phases as requested by the City. The Developer further agrees to reimburse the City for all engineering fees and expenses incurred by the City for such supervision.

5. The Developer's proposed improvements, or additions thereto, on Premises shall not be accepted for service and use until the same have been fully inspected and approved, and the following requirements have been performed:

    a. Submit to the City in Auto-CADD format, latest revision, the computer file supplied on a three and one half (3-1/2) inch disc or compact disc accompanied by the original "fixed line" mylars, with all changes from the original design clearly marked to reflect the as-built conditions. The Developer's Engineer shall certify the accuracy of the record drawings and shall affix his seal and signature.

    b. Payment of all permit fees and equivalent assessment charges and any other applicable City charges required for Premises.

    c. Payment of all plan check and inspection fees and related fees.

    d. Prepare and furnish the required easements in accordance with City's standard form, and furnish same to the City for approval by the City Attorney, along with the necessary recording fees.

    e. Furnish the City with an affidavit warranting there are no liens against the improvements constructed on Premises by the Developers, this affidavit shall be in the form prescribed by the City.

    f. Furnish the City with a Bill of Sale conveying the storm and/or roadway system to the City, which shall include a two-year guarantee that the conveyed systems or improvements or additions thereto shall be free of defects in labor and materials. Form shall be as prescribed by the City.

    g. Payment of all applicable bills, invoices, fees, etc., have been paid in full.

6. In the event any warranty repairs are required, the City agrees, whenever feasible, to provide the Developer with reasonable notice before directly undertaking such repairs. The City reserves the right, however, to effect emergency repairs as deemed necessary by the City. The City shall be reimbursed by the Developer for all costs thereof.

7. Upon performing all requirements, including those as set forth in Paragraph 5 above, the City shall accept the storm and/or roadway improvements, and agree therewith to operate and maintain said system.

SUBMITTED this ____ day of _____, 20__.

BY DEVELOPER: _____
Printed Name

_____
Signature

_____
Date

State of Washington)
) ss.
County of King)

On this _____ day of _____, 20__, before, me the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____, to me known to be the person who executed the foregoing instrument, and acknowledged the said instrument to be his free and voluntary act and deed, for the uses and purposes therein mentioned, and acknowledged that he/she had the legal authority to execute said agreement on behalf of the "Developer".

WITNESS my hand and official seal affixed the day and year first above written.

_____
Notary Public in and for the State
(INDIVIDUAL) of Washington, residing at _____

CITY OF NEWCASTLE

DEVELOPER AGREEMENT

EXHIBIT "A"

PLAT NAME: _____

DEVELOPER: _____

_____

_____

LEGAL DESCRIPTION: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

SAMPLE DOCUMENT

EASEMENT FOR UTILITY MAINS & APPURTENANCES

_____ (herein called the "grantor") hereby dedicates, conveys, and grants to City of Newcastle (herein called the "grantee") and its successors and assigns an easement for City utility mains and appurtenances thereto under and upon the following described property situated in King County, Washington, more particularly described as follows: (Described here or attach legal description to form):

(INSERT)

That said grantee shall have the right without prior institution of any suit or proceeding at law, at times as may be necessary, to enter upon said property and adjoining property owned by the grantor and his assigns and successors to install, lay, construct, renew, operate and maintain mains and necessary facilities and other equipment, for the purposes of serving the property or other properties with water and other utility service.

The grantor covenants that no permanent structure shall be erected, and no large trees or large shrubs shall be planted in the area of ground for which the easement in favor of City of Newcastle has been provided herein. Grantor may construct a fence or other obstruction, excluding rock or retaining walls, on grantor's property, PROVIDED however that grantor does not prohibit or impede grantee;'s access to the easement.

This easement and the covenants herein shall be covenants running with the land and shall be binding on the successors, heirs, and assigns of both parties hereto.
The grantor warrants that the grantor has good title to the above property and warrants the grantee title to and quiet enjoyment of the easement conveyed herein.

No other easements for utilities shall be granted within the afore described easement area except for necessary crossings as may be mutually approved by the grantor and grantee and the grantee shall have exclusive right to construct and/or maintain City owned utilities within the easement area except for necessary crossings.

By_____ By_____
Grantor Grantor

State of Washington)
) ss.
County of King)

On this _____ day of _____, 20__, before, me the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____, to me known to be the person who executed the foregoing instrument, and acknowledged the said instrument to be his free and voluntary act and deed, for the uses and purposes therein mentioned.

WITNESS my hand and official seal affixed the day and year first above written.

_____
Notary Public in and for the State
of Washington, residing at _____

(INDIVIDUAL)

*Note: Different form is required for Corporate Ownership.

SAMPLE COPY

CITY OF NEWCASTLE

BILL OF SALE

KNOW ALL BY THESE PRESENTS that for and in consideration of the sum of One Dollar ($1.00) and other good and sufficient consideration, receipt whereof is hereby acknowledged, the undersigned grantor(s) _____ do(es) by these presents hereby convey, set over, assign, transfer and sell to the City of Newcastle, King County, Washington, a municipal corporation, the following described storm and/or roadway system and all appurtenances thereto, situated in the City of Newcastle, King County, Washington:

DESCRIPTION	ALONG	FROM	TO	SIZE	LENGTH

the said grantor(s) hereby warrants that he, they, it, is/are the sole owner(s) of all the property above described; that they have full power to convey all rights herein conveyed and agree to hold the City of Newcastle harmless from any and all claims which might result from execution of this document.

IN WITNESS WHEREOF the grantor(s) has/have executed these presents this _____ day of _____, 20__.

STATE OF WASHINGTON)
) ss.
KING COUNTY)

On this _____ day of _____, 20__, before me the undersigned Notary Public personally appeared _____, to me known to be the individual(s) who executed the within and foregoing instrument and acknowledged that___ he___ signed and sealed the same as _____ free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal the day and year in this certificate above written.

_____
Notary Public in and for the State of Washington

Residing at _____

_____

SAMPLE COPY

CITY OF NEWCASTLE

AFFIDAVIT OF NO LIENS

STATE OF WASHINGTON)
) ss
KING COUNTY)

Re: _____

The undersigned, being first duly sworn upon oath, depose and say:

I am the developer of a road and/or storm systems, or additions thereto, for the above-referenced project, and hereby certify as follows:

1. That there are no liens against or which may be filed against said project.

2. That all debts, labor bills, and the state sales taxes have been paid in connection with the above-referenced project.

_____
By:_____

SUBSCRIBED AND SWORN to before me this ___ day of _____, 20__.

_____
Notary Public in and for the State of Washington, residing at

(Notary Seal)

CITY OF NEWCASTLE
PUBLIC WORKS

DEVELOPER EXTENSION CHECKLIST

NAME OF PROJECT/PLAT _____

PROJECT NUMBER _____

DEVELOPER/OWNER _____

CONTACT PERSON _____ PHONE _____

DEVELOPER'S ENGINEER _____ PHONE _____

CONTRACTOR _____ PHONE _____

RESIDENTIAL _____ MULTI-FAMILY _____ COMMERCIAL _____

INDUSTRIAL _____ MIXED _____

NOTES: _____

Completion Checklist

Approvals	Type	Date Approved
	SEPA	
	Resolution	
	Director	

Permits	Type	Date Issued
	C&G	
	Site Develop.	
	ROW	
	NPDES	
	HPA	
	FPA	

Bonds	Type	Date Posted
	Site Restoration	
	Performance	
	ROW	
	Maintenance	
	Wetland	
	Site Develop.	

Fees	Type	Date Paid
	Plat	
	Inspection	

Insurance	Type	Date Issued
	Liability C&G	
	Liability ROW	
	General	

Approved Plans	Type	Date Plans Approved	Date Work Completed
	Road & Storm		
	C&G		
	TESC		
	TIR		
	Water		
	Sewer		
	Illumination		
	Channelization		
	Signage		
	Wetland		
	Parks		
	Landscaping		
	Tree-Retention		
	Off-Site		

Other	Type	Date
	Precon. Mtg.	

Construction	Item	Date
	Pre-con Mtg.	
	Start of Const.	
	Punch List	
	Final Inspection	
	As-builts Approved	
	Improvements Accepted	
	2-Year Maintenance Begins	
	2-Year Inspection	
	Other	
	Other	
	Other	
	Project Close-out	

PERFORMANCE SECURITY AGREEMENT

THIS AGREEMENT is entered into between _____ _____ ("applicant") and the CITY OF NEWCASTLE, Washington ("City").

1. The applicant has applied for approval of a _____ in the City File No. _____ for a project known as _____ generally located at _____ _____ prior to completing the following work:

_____
_____
_____
_____
_____
_____.

2. The City has determined that the estimated cost to fully perform the work described in paragraph 1 is $_____. The applicant shall file with the City as security for performance of the work (check appropriate method below):

_____ a. An assignment of funds on deposit in bank account (Acct. No. _____). Attach "**SECURITY AGREEMENT AND ASSIGNMENT OF BANK ACCOUNT FOR CONSTRUCTION OF IMPROVEMENTS"** form;

_____ b. An assignment of existing construction loan proceeds (Acct. No. _____). Attach "**SECURITY AGREEMENT AND ASSIGNMENT OF LOAN PROCEEDS FOR CONSTRUCTION OF IMPROVEMENTS"** form;

_____ c. An irrevocable letter of credit issued by a federal or state chartered bank having a banking office in the State of Washington (Acct. No. _____). Attach letter of credit;

_____ d. A cash deposit in lieu of bond (Check No. _____);

_____ e. A performance bond issued by a surety company licensed as such in the State of Washington (Bond No. _____). Attach **"CONSTRUCTION AND IMPROVEMENT PERFORMANCE BOND"** form;

3. If the applicant fails to complete the work described in paragraph 1 above to the satisfaction of the City, the City shall take all steps necessary to enforce the security device listed in paragraph 2. Funds received by the City from the security device shall be used solely for the purpose of completing the work described in Paragraph 1. If the funds received by the City from the security device are insufficient to pay in full for the work, the City shall pay the additional

cost of the work, and the applicant shall reimburse the City for the additional cost. If the applicant does not pay the additional cost to the City within 60 days of demand, the additional cost shall constitute a lien upon the real property described in City File No. _____, upon the filing by the City of such a lien. If the funds received by the City from the security device exceed the actual cost of the work required to be completed by the City, any surplus remaining following completion of the work shall be returned to the order of the applicant and the surety or bank, if applicable. If requested by the applicant and certified by the City Engineer, partial payments may be made in accordance with the schedule in Attachment A.

4. If either party is required to file suit to enforce this agreement or to enforce or collect on any security provided pursuant to this agreement, the prevailing party shall be entitled to recover all reasonable costs and attorneys' fees incurred therein.

5. This agreement shall be binding on the heirs, assigns, successors, administrators, and executors of the parties.

DATED this _____ day of _____, 20___.

_____	_____
(Applicant)	(City)
By:_____	By:_____
(Print name)	(Print name)
_____	_____
(Signature)	(Signature)
Its:_____	Its:_____

EXHIBIT A

SCHEDULE OF DRAW DOWN FROM CASH FUND

PERCENT OF WORK COMPLETE	AMOUNT OF FUNDS TO BE RELEASED
0-40 %	0%
50%	50%
75%	75%
100%	90%
Final City approval and as builts	100%

The amount of the funds released is based on obtaining the percentage completion indicated above and no prorated percentages other than those indicated will be allowed.

SECURITY AGREEMENT AND ASSIGNMENT OF BANK ACCOUNT FOR CONSTRUCTION OF IMPROVEMENTS

PROJECT NAME: _____

CITY OF NEWCASTLE ("CITY") FILE NO.: _____

DEVELOPER: _____
(Name)

_____
(Address)
Phone No.: _____

KNOWN ALL MEN BY THESE PRESENCE that _____ ("Developer") authorizes and directs _____ ("Financial Institution") to hold from the funds on deposit in Bank Account No. _____ the sum of $_____, excluding all bank penalty charges ("security value"), for the construction and completion of all improvements required by the City in the above described project.

The improvements include all improvements within the project, together with all conditions on which approval of the project was made subject by the city, as specified in City File No. _____, and include but are not limited to _____
_____
_____
_____.
All of the improvements shall be constructed and completed pursuant to the provisions of the City's subdivision, zoning, and other applicable ordinances, and according to the City's standards and specifications.

If the Developer fails to complete any of the improvements to the satisfaction of the City, the Financial Institution is authorized and directed by the Developer to pay the City such sums, within the limits of the security value, as are determined by the City to be necessary to construct or complete the improvements, including maintenance for the time required by the City after construction of the improvements, from the security value held under this agreement.

If improvements are constructed in accordance with the City's subdivision, zoning and other applicable ordinances and the City's standards and specifications, and the conditions imposed by the City have been met as determined by the City, and the City executes a certificate of partial compliance, then the Financial Institution is further authorized to release from this agreement the amount certified in the certificate of partial compliance by the City.

The City shall have first claim and priority on the security value in the event of any default in construction or completion of the improvements. The Financial Institution and The Developer

understand and agree that the City's priority claim to the security value is paramount to the claim of any party, including the Developer. The Developer agrees that the security value, or any balance remaining after approved partial compliance releases, shall be held available to satisfy any claim by the City that improvements were not constructed or completed notwithstanding termination of any bank account agreement between the Financial Institution and Developer for any reason whatsoever.

Upon completion and acceptance of improvements, the Developer agrees to furnish to the City a maintenance bond or maintenance security agreement in the amount determined by the City. Upon furnishing of a maintenance bond or maintenance security agreement to the City's satisfaction any balance of the security value remaining subject to this agreement shall be released.

DATED this _____ day of _____, 20___.

_____	_____
(Principal)	(Financial Institution)
By:_____	By:_____
(Print name)	(Print name)
_____	_____
(Signature)	(Signature)
Its:_____	Its:_____

SECURITY AGREEMENT AND ASSIGNMENT OF LOAN PROCEEDS FOR CONSTRUCTION OF IMPROVEMENTS

PROJECT NAME:_____

CITY OF NEWCASTLE ("CITY") FILE NO.:_____

Developer:_____
(Name)

_____
(Address)

Financial Institution:_____
(Name)

_____
(Address)

Loan Account No.:_____ Phone No.:_____

KNOW ALL MEN BY THESE PRESENTS that _____ ("Developer") authorizes and directs _____ ("Financial Institution") to hold from the proceeds of the Development Loan No. _____ the sum of $_____ ("security value"), for the construction and completion of all improvements required by the City in the above described project.

The improvements include all improvements within the project, together with all conditions on which approval of the project was made subject by the City, as specified in City File No. _____, and include but are not limited to _____
_____
_____
_____.
All of the improvements shall be constructed and completed pursuant to the provisions of the City's subdivision, zoning, and other applicable ordinances, and according to the City's standards and specifications.

If the Developer fails to complete any of the improvements to the satisfaction of the City, the Financial Institution is authorized and directed by the Developer to pay the City such sums, within the limits of the security value, as are determined by the City to be necessary to construct or complete the improvements, including maintenance for the time required by the City after construction of the improvements, from the security value held under this agreement.

If improvements are constructed in accordance with the City's subdivision, zoning, and other applicable ordinances and the City's standards and specifications and the conditions imposed by the City have been met as determined by the City, and the City executes a certificate of partial

compliance, then the Financial Institution is further authorized to release from this agreement the amount certified in the certificate of partial compliance by the City.
The City shall have first claim and priority on the security value in the event of any default in construction or completion of the improvements. The Financial Institution and the Developer understand and agree that the City's priority claim to the security value is paramount to the claim of any party, including the Developer. The Developer agrees that the security value, or any balance remaining after approved partial compliance releases, shall be held available to satisfy any claim by the City that improvements were not constructed or completed, notwithstanding termination of the bank account agreement between the Financial Institution and Developer for any reason whatsoever.

Upon completion and acceptance of improvements, the Developer agrees to furnish to the City a maintenance bond or maintenance security agreement in the amount determined by the City. Upon furnishing of a maintenance bond or maintenance security agreement to the City's satisfaction, any balance of the security value remaining subject to this agreement shall be released.

DATED this _____ day of _____, 20___.

_____	_____
(Principal)	(Financial Institution)
By:_____	By:_____
(Print name)	(Print name)
_____	_____
(Signature)	(Signature)
Its:_____	Its:_____

CONSTRUCTION AND IMPROVEMENT PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that _____ as principal and _____, a corporation organized and existing under the laws of _____, and licensed to do business as surety within the State of Washington, as surety, are held and firmly bound to the CITY OF NEWCASTLE, Washington ("City"), in the penal sum of $_____, for the payment of which principal and surety firmly bind themselves, and their heirs, executors, administrators, and assigns, jointly and severally.

WHEREAS, principal has applied for and received final approval from the City of:

A _____ identified as _____ and situated in Section _____, Township _____, Range _____, Newcastle, King County, Washington, and is about to record same with the King County Auditor. (City File No. _____).

NOW, THEREFORE, if the principal, within one year from the date of the City's approval of the _____ described above, fully performs and completes to the satisfaction of and in compliance with the standard specifications of the City, all public and special improvements, including payment of all costs and expenses of the improvements, and all specifications and conditions, as may have been required by the City for approval, as specifically set forth and itemized in City File No._____; and

If the principal fully complies with all other terms and conditions of the City's approval as set forth in City File No. _____, and with all applicable provisions of the laws of the State of Washington and the ordinances, rules, and regulations of the City; and

If upon acceptance of the improvements by the City, principal files with the City a maintenance security device to maintain the improvements for the period required by the City, and to indemnify and save the City free and harmless from any and all claims, actions, or damages of every kind and description, which may occur to or be suffered by any person by reason of the use or occupation of the areas of construction or installation which become dedicated to public use, and which may occur to or be suffered by any person by reason of improper materials or workmanship in regard to any of the improvements;

Then this obligation shall be void, otherwise, it shall remain in full force and effect.

IT IS FURTHER AGREED that the City shall have the right to sue on this bond in its own name to recover for any loss, injury, damage, or liability (excluding damages based upon or arising out of tortious injury to any person or property) sustained or incurred by reason of any breach of performance by the principal, as to a condition of this bond or of approval of the project referenced above, including the performance of any improvements or payment for any improvements. The City

may commence such action against both the principal and surety as joint and several obligers with or without prior notice of such breach of performance by principal having been given to surety.

If suit is brought upon this bond, the prevailing party shall be entitled to recover its reasonable attorney's fees incurred therein.

Nothing of any kind or nature shall discharge or release the surety that does not also discharge or release the principal, regardless of any law or rule of equity or usage relating to the liability of sureties to the contrary.

SIGNED, SEALED and DATED this ___ day of _____, 20___.

NOTE: If this bond is to be signed by an attorney-in-fact for the surety company, a certified copy of the power of attorney must be attached to this bond.

_____	_____
(Principal)	(Financial Institution)
By:_____	By:_____
(Print name)	(Print name)
_____	_____
(Signature)	(Signature)
Its:_____	Its:_____

IMPROVEMENTS MAINTENANCE BOND

WHEREAS, _____, Principal, has installed improvements in the approved _____ known as _____ , City File No. _____ ; and

WHEREAS, the Principal has applied to the City of Newcastle, Washington ("City") for final _____ approval; and

WHEREAS, the City's code requires the Principal to secure the successful operation of the improvements for a period of _____ months in an amount and form satisfactory to the Director of the Department of Community Development; and

WHEREAS, the Director has determined that a maintenance bond of _____ _____ dollars ($_____) is an appropriate form of maintenance security;

NOW, THEREFORE, the Principal and _____, Surety, are held and firmly bound unto the City in the penal sum of dollars ($_____), for the payment of which sum the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Principal, its heirs, executors, administrators, successors or assigns shall repair and correct any defects appearing or developing in the materials or workmanship provided in the construction and installation of the improvements within a period of _____ months from the final approval, the release of the performance security for the improvements or the acceptance by the City of the improvements, whichever occurs last, and shall indemnify and hold harmless the City from any damages or expenses by reason of the failure of such performance, then this obligation shall become null and void; otherwise, it shall remain in full force and effect, and if suit is brought on this bond, the Principal and Surety will pay to the City such reasonable attorneys' fees as shall be fixed by the court.

SIGNED, SEALED AND DATED this ___ day of _____, 20____.

_____	_____
(Principal)	(Financial Institution)
By:_____	By:_____
(Print name)	(Print name)
_____	_____
(Signature)	(Signature)
Its:_____	Its:_____

LANDSCAPING MAINTENANCE BOND

WHEREAS, _____, Principal, has installed landscaping in connection with the development known as _____ (City File No. ____) in accordance with the approved landscape planting plan; and

WHEREAS, the City of Newcastle, Washington ("City"), has accepted the landscaping; and

WHEREAS, the City requires the Principal to replace any unhealthy or dead plant materials in the approved landscape planting plan and to provide a maintenance assurance device for a period of _____ months after acceptance by the City of the new plantings and transplantings in an amount of not less than _____ dollars ($_____) and in a form determined by the Community Development Director; and

WHEREAS, the Community Development Director has determined that a maintenance bond is an appropriate form of maintenance assurance device;

NOW, THEREFORE, the Principal and _____, Surety, are held and firmly bound unto the City in the penal sum of _____ _____ dollars ($_____), for the payment of which sum the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Principal, its heirs, executors, administrators, successors or assigns shall replace any unhealthy or dead plant materials in conformance with the approved landscape planting plan within a period of two years after the date of acceptance by the City of the new plantings and transplantings, and shall indemnify and hold harmless the City from any damages or expenses by reason of the failure of such performance, then this obligation shall become null and void; otherwise, it shall remain in full force and effect, and if suit is brought on this bond, the Principal and Surety will pay to the City such reasonable attorneys' fees as shall be fixed by the court.

SIGNED, SEALED AND DATED this ___ day of _____, 20___.

_____	_____
(Principal)	(Financial Institution)
By:_____	By:_____
(Print name)	(Print name)
_____	_____
(Signature)	(Signature)
Its:_____	Its:_____

MUST CALL THE CITY'S PUBLIC WORKS DEPARTMENT 425-649-4444: ATTENTION: CITY ENGINEER, P.E.
24 HOURS PRIOR TO STARTING WORK
CITY OF NEWCASTLE PUBLIC WORKS DEPARTMENT
13020 S.E. 72nd Place
Newcastle, Washington 98059-3030

PERMIT FOR WORK IN STREET RIGHTS-OF-WAY

Subject to all terms, conditions and provisions written or printed below or on any part of this form, PERMISSION IS HEREBY GRANTED TO: **(Name of Utility Owner)** (the "Grantee"), Telephone number _____ Address _____ City/Town _____ State _____ Zip _____
to construct:

(Project Description)

Section _____ Township _____ Range _____

1. Utility to be placed/installed per City approved drawing (attached hereto).

2. All trenches to have a backfill of not less than 36 inches (depth - to top of the pipe) and the finished surface will conform with the original surface, unless otherwise approved in writing by the City Public Works Director.

3. All trenches located beneath paved (asphalt or concrete) surfaces or driveways, or located beneath roadway shoulders (within 3' of edge of road) shall be backfilled with crushed surfacing top course (5/8" minus), controlled density fill (CDF), or imported gravel base, Class B. Backfill shall be placed and compacted in maximum 6-inch lifts to 95% of standard density. Native excavated materials cannot be utilized for backfill in these areas.

4. All trenches located outside of paved (asphalt or concrete) surfaces or driveways, or outside roadway shoulders shall be backfilled in 6-inch lifts with suitable excavated material compacted to 95% of standard density. When unsuitable on-site native backfill material exists (material cannot achieve minimum compaction requirements), then trenches shall be backfilled with import gravel base, Class B, material as furnished and supplied by the Grantee. This permit does not warrant the availability or presence of suitable native materials for trench backfill.

5. All compaction shall be mechanically tamped to achieve the desired level of compaction. Water settling will not be allowed.

6. All asphalt pavement restoration shall be made with a minimum 12-inch lift of compacted (95% standard density) crushed rock top course (5/8" minus) and 2-inch minimum (compacted thickness) of asphalt concrete class "B". The pavement restoration shall extend a minimum of 12-inch (each side) beyond the constructed trench widths. When existing asphalt thickness is found to be greater than 2-inches, asphalt concrete Class "B" shall be placed, in maximum 2-inch lifts, to a depth equal to or exceeding existing pavement thickness. Seal edges with sealer CSS1 and seal surface joint with hot asphalt (AR4000W) and sand blanket.

7. Special trench and pavement restoration will be required for trenching through concrete or "asphalt over concrete" pavement roadways. The grantee shall procure those additional requirements from the City prior to commencing work under this permit.

8. Before repair of oil mat and/or asphalt concrete cuts, the City shall be notified (24 hour notice) of the pending work and all such work shall be made by experienced personnel with adequate equipment. All paving material shall be hot asphalt concrete Class "B".

9. No pavement cuts across streets, roads or driveways constructed of asphalt concrete or Portland cement concrete shall be made unless approval has been granted by the City Engineer, or his authorized representative in writing for such crossing and all pavement cuts shall be made only by mechanical saws specifically made for this purpose.

10. Property owners and/or residents along this project shall have the right of safe ingress and egress at all times.

11. At no time during construction will any roadway be entirely closed. At a minimum one-way traffic shall be maintained at all times. All traffic control and construction signs shall be provided, installed, and maintained in accordance with the latest issue of the Manual on Uniform Traffic Control Devices (MUTCD). All flaggers shall be State certified.

12. A 4-foot wide crushed rock (minimum 2-inch compacted thickness) surface shall be placed for gravel shoulder restoration. Where grass sod currently exists, a 4-inch lift of compacted topsoil and grass sod or hydroseed shall be reinstalled. Where construction occurs on a graveled surface, a 2-inch compacted lift of crushed rock surfacing (5/8" minus) shall be provided to all disturbed graveled surfaces.

13. Once work commences, it shall be diligently pursued until completed to the satisfaction of the City Engineer.

14. A temporary patch of cold mix asphalt (4-inch minimum compacted thickness) will be placed and maintained on road crossings and driveways after backfilling until a permanent patch can be placed. Permanent patching will be done by the permittee.

15. A COPY OF THIS PERMIT AND ALL APPROVED PLANS MUST BE PRESENT AT THE WORK SITE AT ALL TIMES. WORK MUST CONFORM 100% TO PERMIT.

16. No work shall be done under this permit until the party or parties to whom it is granted shall have communicated with and received instructions, if required from the local school district, police, private utility companies, and local Fire Marshall. The Fire Marshall and Police Department must be notified prior to and after completion of the work or project.

17. This permit covered by Surety Number _ in the amount of $_____, with _____
_____

18. This permit subject to existing Franchise dated: _____

19. Any underground work shall require notification by the applicant to prevent damage to other underground installations, Gas, Power, Telephone, Cable T.V., Water, Sewer.

20. This Permit shall be void unless the work herein contemplated shall have been completed before: _____
_____

21. Payment of all permit fees shall be calculated by the City of Newcastle and paid by the Permitee before issuance of this permit.

22. A record "as built" must be provided to the City in an "approved" format upon completion of the project.

23. At a minimum, streets shall be cleaned at the end of each day.

SPECIAL CONDITIONS: _____

_____

_____

IMPORTANT: SEE REVERSE SIDE

GENERAL PROVISIONS APPLICABLE TO ALL PERMITS

a. A surety is required for the protection of the City. Minimum Street Restoration Surety shall be $10,000. Higher surety may be required at the discretion of the City.

b. During the progress of the work, such barriers and warning signs (per MUTCD manual) shall be erected and maintained by the grantee as may be necessary or as may otherwise be directed by the City for the protection of the traveling public; the barriers shall be properly lighted when necessary and promptly removed when the project is completed.

c. In accepting this Permit, the Petitioner, his successors or assigns, agrees to protect the city and save it harmless from all claims, actions or damages of every kind and description which may accrue to or be suffered by any person or persons, corporation or property by reason of the performance of any such work, character of materials used or manner of installation, maintenance and operation or by the improper occupancy of rights of way of public place or public structure, and in case any suit or action is brought against said City for damages arising out of or by reason of any of the above causes, the petitioner, his successor or assigns will upon notice to him or them of commencement of such action, defend the same at his or their own sole cost and expense and will satisfy judgment after the said suit or action shall have finally been determined if adverse to the City.

d. Except as herein authorized, no excavation shall be made or obstacle placed within the limits of a city street or easement in such a manner as to interfere with the travel over said road, or create a safety hazard.

e. If the work done under the Permit interferes in any way with the drainage of the city streets, or causes damage, the grantee shall wholly and at his own expense make such provisions as the City Engineer may direct to take care of said drainage and/or damage. Installation of any utilities in any City storm conveyance system is strictly prohibited (except right angle crossings). When ditch sections or open conveyance systems are disturbed, the ditch section or conveyance system shall be restored and armour plated with quarry spalls to the City's satisfaction. The grantee is responsible for protecting the storm system from erosion. Existing systems shall be protected and cleaned as required. The grantee shall utilize Best Management Practices outlined by the Surface Water Design Manual.

f. On completion of said work herein contemplated, all rubbish and debris shall be immediately removed and the roadway and roadside shall be left neat and presentable and satisfactory to the City Engineer.

g. Grantee shall comply with the Washington State Electrical Code, Washington State Department of Highways Standards and Standard Specification of Road and Bridge Construction, current edition. Where any conflicts exists, the City shall be the sole judge as to the prevailing requirement(s).

h. No work shall be permitted on Saturday, Sunday or City Holiday, or between the hours of 7:00 p.m. and 7:00 a.m. of any working day, except in case of emergency and then only upon notification and approval of the City.

i. Notify local Fire District, Police Department, and City Public Works Department before opening any trench across any roadway and again when project is completed.

j. All of the work herein contemplated shall be done under the supervision and to the satisfaction of the City's Engineer. The entire expense of said supervision to include the procurement of any "outside" consultants, as may be required by the City, shall be borne by the party or parties to whom this Permit is issued. Outside consultants may include, but are not limited to, engineers, materials testing laboratories, geotechnical, etc.

k. The City hereby reserves the right to order the change of location or the removal of any structure or structures authorized by the Permit, at any time, said change or removal to be made at the sole expense of the party or parties to whom this Permit is issued, or their successors and assigns.

l. All such changes, reconstruction or relocation by the grantees shall be done in such manner as will cause the least interference with any of the City's work and the City shall in no way be held liable for any damage to the grantee by reason of any such work by

the City, its agents or representatives or by the exercise of any rights by the City upon the roads, streets, public places or structures in question.

m. The Grantee recognizes and agrees that it is responsible for and will make at its own expense any changes that may be required and approved by the City in the location of work described herein.

n. The Permit or privilege shall not be deemed or held to be an exclusive one and shall not prohibit the City from granting other permits or franchise rights of like or other nature to other public or private utilities, nor shall it prevent the City form using any of its roads, streets, or public places, or affect its right to full supervision and control over all or any part of them, none of which is hereby surrendered.

o. The City may revoke, annul, change, amend, amplify, or terminate the Permit or any of the conditions herein enumerated if grantee fails to comply with any or all of its provisions, requirements or regulations as herein set forth or through willful or unreasonable neglect, fails to heed or comply with notices given or if the utility herein granted is not installed or operated and maintained in conformity herewith or at al or for any cause or reason whatsoever.

p. The party or parties to whom the Permit is issued shall maintain at his or their sole expense the structure or object for which this permit is granted in condition satisfactory to the City Engineer or his authorized representative.

q. In accepting this Permit, the grantee, his successors and assigns, agree that any damage or injury done to the property of the grantee or any expense incurred by him through the operation of a contractor, working for the City or of any City employee shall be at the sole expense of the grantee, his successors or assigns.

r. Clean-up of excavation and debris material shall be accomplished concurrently with the burying operation. At no time shall there be debris and/or excavated material extending along the area of construction for more than 500 feet without specific additional written approval of the City.

I have read and understand all terms and conditions contained on both pages of this document. The undersigned, hereby accepts this Permit subject to the terms and conditions as herein set forth.

Issued by: _____ Signed: _____

City Engineer, P.E. Print Name: _____

Title: _____ Title: _____

Date: _____ Telephone No. _____ Fax No. _____

Dated this _____ day of _____, 20____

WITNESS

_____

Site Improvement Bond Quantity Worksheet

King County Department of Development & Environmental Services
900 Oakesdale Avenue Southwest
Renton, Washington 98055-1219

Project Name: _____

Location: _____

Date: _____

SIERRA Project No.: _____

SIERRA Activity No.: _____

Clearing greater than or equal to 5000 board feet of timber?

_____ yes _____ no

If yes,

Forest Practice Permit Number: _____

(RCW 76.09)

Note: All prices include labor, equipment, materials, overhead and profit. Prices are from RS Means data adjusted for the Seattle area or from local sources if not included in the RS Means database.

Unit prices updated 12/97
Revision date: 8/22/98

Site Improvement Bond Quantity Worksheet

	Reference #	Unit Price	Unit	Quantity	# of Applications	Cost
EROSION/SEDIMENT CONTROL						
Backfill & compaction-embankment		$ 4.89	CY			
Check dams, 4" minus rock	SWDM 5.4.6.3	$ 58.70	Each			
Crushed surfacing 1 1/4" minus	WSDOT 9-03.9(3)	$ 74.30	CY			
Ditching		$ 7.03	CY			
Excavation-bulk		$ 1.30	CY			
Fence, silt	SWDM 5.4.3.1	$ 1.20	LF			
Fence, Temporary (NGPE)		$ 1.20	LF			
Hydroseeding	SWDM 5.4.2.4	$ 0.51	SY			
Jute Mesh	SWDM 5.4.2.2	$ 1.26	SY			
Mulch, by hand, straw, 3" deep	SWDM 5.4.2.1	$ 1.75	SY			
Mulch, by machine, straw, 2" deep	SWDM 5.4.2.1	$ 0.46	SY			
Piping, temporary, CPP, 6"		$ 9.30	LF			
Piping, temporary, CPP, 8"		$ 14.00	LF			
Piping, temporary, CPP, 12"		$ 18.00	LF			
Plastic covering, 6mm thick, sandbagged	SWDM 5.4.2.3	$ 2.00	SY			
Rip Rap, machine placed; slopes	WSDOT 9-13.1(2)	$ 33.98	CY			
Rock Construction Entrance, 50'x15'x1'	SWDM 5.4.4.1	$ 1,273.34	Each			
Rock Construction Entrance, 100'x15'x1'	SWDM 5.4.4.1	$ 2,546.68	Each			
Sediment pond riser assembly	SWDM 5.4.5.2	$ 1,695.11	Each			
Sediment trap, 5' high berm	SWDM 5.4.5.1	$ 15.57	LF			
Sed. trap, 5' high, riprapped spillway berm section	SWDM 5.4.5.1	$ 59.60	LF			
Seeding, by hand	SWDM 5.4.2.4	$ 0.44	SY			
Sodding, 1" deep, level ground	SWDM 5.4.2.5	$ 5.24	SY			
Sodding, 1" deep, sloped ground	SWDM 5.4.2.5	$ 6.48	SY			
TESC Supervisor		$ 65.00	HR			
Water truck, dust control	SWDM 5.4.7	$ 85.00	HR			
WRITE-IN-ITEMS						
			Each			

ESC SUBTOTAL: COLUMN: $ - (A)

Unit prices updated 12/97
Revision date: 8/22/98

Site Improvement Bond Quantity Worksheet

			Existing Right-of-Way		Future Public Road Improvements & Drainage Facilities		Private Improvements		Bond Reduction*	
	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant. Complete	Cost
GENERAL ITEMS										
Backfill & Compaction- embankment	$ 4.89	CY								
Backfill & Compaction- trench	$ 7.42	CY								
Clear/Remove Brush, by hand	$ 0.31	SY								
Clearing/Grubbing/Tree Removal	$ 7,718.40	Acre								
Excavation - bulk	$ 1.30	CY								
Excavation - Trench	$ 3.53	CY								
Fencing, cedar, 6' high	$ 16.13	LF								
Fencing, chain link, vinyl coated, 6' high	$ 11.69	LF								
Fencing, chain link, gate, vinyl coated, 20'	$ 1,105.92	Each								
Fencing, split rail, 3' high	$ 10.54	LF								
Fill & compact - common barrow	$ 19.63	CY								
Fill & compact - gravel base	$ 22.16	CY								
Fill & compact - screened topsoil	$ 32.91	CY								
Gabion, 12" deep, stone filled mesh	$ 47.23	SY								
Gabion, 18" deep, stone filled mesh	$ 65.09	SY								
Gabion, 36" deep, stone filled mesh	$ 115.20	SY								
Grading, fine, by hand	$ 1.76	SY								
Grading, fine, with grader	$ 0.83	SY								
Monuments, 3' long	$ 117.50	Each								
Sensitive Areas Sign	$ 2.50	Each								
Sodding, 1" deep, sloped ground	$ 6.49	SY								
Surveying, line & grade	$ 685.44	Day								
Surveying, lot location/lines	$ 1,353.60	Acre								
Traffic control crew (2 flaggers)	$ 74.07	HR								
Trail, 4" chipped wood	$ 6.60	SY								
Trail, 4" crushed cinder	$ 7.24	SY								
Trail, 4" top course	$ 7.12	SY								
Wall, retaining, concrete	$ 38.40	SF								
Wall, rockery	$ 8.25	SF								
SUBTOTAL										

*KCC 27A authorizes only one bond reduction.

Unit prices updated 12/97
Revision date: 8/22/98

Site Improvement Bond Quantity Worksheet

			Existing Right-of-way		Future Public Road Improvements & Drainage Facilities		Private Improvements		Bond Reduction*	
	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant. Complete	Cost
ROAD IMPROVEMENT										
AC Grinding, 4' wide machine < 1000sy	$ 20.00	SY								
AC Grinding, 4' wide machine 1000-2000sy	$ 5.00	SY								
AC Grinding, 4' wide machine > 2000sy	$ 1.20	SY								
AC Removal/Disposal/Repair	$ 35.77	SY								
Barricade, type I	$ 26.11	LF								
Barricade, type III (Permanent)	$ 39.17	LF								
Curb & Gutter, rolled	$ 11.54	LF								
Curb & Gutter, vertical	$ 8.43	LF								
Curb and Gutter, demolition and disposal	$ 11.81	LF								
Curb, extruded asphalt	$ 2.12	LF								
Curb, extruded concrete	$ 2.23	LF								
Sawcut, asphalt, 3" depth	$ 1.61	LF								
Sawcut, concrete, per 1" depth	$ 1.47	LF								
Sealant, asphalt	$ 0.86	LF								
Shoulder, AC, (see AC road unit price)	$ -	SY								
Shoulder, gravel, 4" thick	$ 6.55	SY								
Sidewalk, 4" thick	$ 26.54	SY								
Sidewalk, 4" thick, demolition and disposal	$ 24.11	SY								
Sidewalk, 5" thick	$ 30.38	SY								
Sidewalk, 5" thick, demolition and disposal	$ 30.13	SY								
Sign, handicap	$ 74.16	Each								
Striping, per stall	$ 5.06	Each								
Striping, thermoplastic, (for crosswalk)	$ 2.07	SF								
Striping, 4" reflectorized line	$ 0.22	LF								

SUBTOTAL _____ _____ _____ _____

*KCC 27A authorizes only one bond reduction.

S:PUBLIC\LUSD\LUIS\REF8D SITE BOND QUANTITY WORKSHEET

Unit prices updated 12/97
Revision date: 8/22/98

Site Improvement Bond Quantity Worksheet

			Existing Right-of-way		Future Public Road Improvements & Drainage Facilities		Private Improvements		Bond Reduction*	
	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant. Complete	Cost
ROAD SURFACING (4" Rock = 2.5 base & 1.5" top course) For '93 KCRS (6.5" Rock= 5" base & 1.5" top course)										
For KCRS '93, (additional 2.5" base) add:	$ 3.13	SY								
AC Overlay, 1.5" AC	$ 6.43	SY								
AC Overlay, 2" AC	$ 7.61	SY								
AC Road, 2", 4" rock, First 2500 SY	$ 14.99	SY								
AC Road, 2", 4" rock, Qty. over 2500SY	$ 11.62	SY								
AC Road, 3", 4" rock, First 2500 SY	$ 17.12	SY								
AC Road, 3", 4" rock, Qty. over 2500 SY	$ 13.75	SY								
AC Road, 5", First 2500 SY	$ 12.67	SY								
AC Road, 5", Qty. Over 2500 SY	$ 12.12	SY								
AC Road, 6", First 2500 SY	$ 14.57	SY								
AC Road, 6", Qty. Over 2500 SY	$ 14.02	SY								
Asphalt Treated Base, 4" thick	$ 8.01	SY								
Gravel Road, 4" rock, First 2500 SY	$ 9.92	SY								
Gravel Road, 4" rock, Qty. over 2500 SY	$ 6.55	SY								
PCC Road, 5", no base, over 2500 SY	$ 18.70	SY								
PCC Road, 6", no base, over 2500 SY	$ 19.02	SY								
Thickened Edge	$ 5.99	LF								
		SUBTOTAL								

*KCC 27A authorizes only one bond reduction.

Unit prices updated 12/97
Revision date: 8/22/98

Site Improvement Bond Quantity Worksheet

			Existing Right-of-way		Future Public Road Improvements & Drainage Facilities		Private Improvements		Bond Reduction*	
	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant. Complete	Cost
DRAINAGE (CPP = Corrugated Plastic Pipe, N12 or Equivalent) For Culvert prices, Average of 4' cover was assumed. Assume perforated PVC is same price as solid pipe.										
Access Road, R/D	$ 14.56	SY								
Bollards - fixed	$ 209.34	Each								
Bollards - removable	$ 393.34	Each								
* (CBs include frame and lid)										
CB Type I	$ 1,093.60	Each								
CB Type IL	$ 1,246.60	Each								
CB Type II, 48" diameter	$ 1,768.32	Each								
for additional depth over 4'	$ 379.58	FT								
CB Type II, 54" diameter	$ 1,906.56	Each								
for additional depth over 4'	$ 423.07	FT								
CB Type II, 60" diameter	$ 2,044.80	Each								
for additional depth over 4'	$ 466.56	FT								
CB Type II, 72" diameter	$ 2,793.60	Each								
for additional depth over 4'	$ 601.92	FT								
Through-curb Inlet Framework (Add)	$ 318.34	Each								
Cleanout, PVC, 4"	$ 113.52	Each								
Cleanout, PVC, 6"	$ 152.09	Each								
Cleanout, PVC, 8"	$ 194.95	Each								
Culvert, PVC, 4"	$ 7.51	LF								
Culvert, PVC, 6"	$ 10.96	LF								
Culvert, PVC, 8"	$ 11.59	LF								
Culvert, PVC, 12"	$ 18.93	LF								
Culvert, CMP, 8"	$ 15.00	LF								
Culvert, CMP, 12"	$ 23.00	LF								
Culvert, CMP, 15"	$ 28.46	LF								
Culvert, CMP, 18"	$ 32.82	LF								
Culvert, CMP, 24"	$ 46.37	LF								
Culvert, CMP, 30"	$ 62.13	LF								
Culvert, CMP, 36"	$ 97.49	LF								
Culvert, CMP, 48"	$ 122.46	LF								
Culvert, CMP, 60"	$ 204.74	LF								
Culvert, CMP, 72"	$ 263.11	LF								

SUBTOTAL

*KCC 27A authorizes only one bond reduction.

S:PUBLIC\LUSD\LUIS\REF8D SITE BOND QUANTITY WORKSHEET

Unit prices updated 12/97
Revision date: 8/22/98

Site Improvement Bond Quantity Worksheet

DRAINAGE CONTINUED			Existing Right-of-way		Future Public Road Improvements & Drainage Facilities		Private Improvements		Bond Reduction*	
	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant. Complete	Cost
Culvert, Concrete, 8"	$ 18.28	LF								
Culvert, Concrete, 12"	$ 26.13	LF								
Culvert, Concrete, 15"	$ 32.47	LF								
Culvert, Concrete, 18"	$ 38.70	LF								
Culvert, Concrete, 24"	$ 53.10	LF								
Culvert, Concrete, 30"	$ 90.59	LF								
Culvert, Concrete, 36"	$ 119.68	LF								
Culvert, Concrete, 42"	$ 137.76	LF								
Culvert, Concrete, 48"	$ 152.99	LF								
Culvert, CPP, 6"	$ 9.30	LF								
Culvert, CPP, 8"	$ 14.00	LF								
Culvert, CPP, 12"	$ 18.00	LF								
Culvert, CPP, 15"	$ 20.00	LF								
Culvert, CPP, 18"	$ 24.00	LF								
Culvert, CPP, 24"	$ 32.00	LF								
Culvert, CPP, 30"	$ 42.00	LF								
Culvert, CPP, 36"	$ 48.00	LF								
Ditching	$ 7.03	CY								
Flow Dispersal Trench (1,436 base+)	$ 22.60	LF								
French Drain (3' depth)	$ 19.65	LF								
Geotextile, laid in trench, polypropylene	$ 2.09	SY								
Infiltration pond testing	$ 65.00	HR								
Mid-tank Access Riser, 48" dia, 6' deep	$ 1,396.00	Each								
Pond Overflow Spillway	$ 12.18	SY								
Restrictor/Oil Separator, 12"	$ 908.86	Each								
Restrictor/Oil Separator, 15"	$ 952.66	Each								
Restrictor/Oil Separator, 18"	$ 996.66	Each								
Riprap, placed	$ 33.98	CY								
Tank End Reducer (36" diameter)	$ 870.00	Each								
Trash Rack, 12"	$ 184.32	Each								
Trash Rack, 15"	$ 206.32	Each								
Trash Rack, 18"	$ 233.82	Each								
Trash Rack, 21"	$ 266.82	Each								

SUBTOTAL _____

*KCC 27A authorizes only one bond reduction.

Unit prices updated 12/97
Revision date: 8/22/98

Site Improvement Bond Quantity Worksheet

	Unit Price	Unit	Existing Right-of-way Quant.	Existing Right-of-way Price	Future Public Road Improvements & Drainage Facilities Quant.	Future Public Road Improvements & Drainage Facilities Cost	Private Improvements Quant.	Private Improvements Cost	Bond Reduction* Quant. Complete	Bond Reduction* Cost
PARKING LOT SURFACING										
2" AC, 2" top course rock & 4" borrow	$ 13.77	SY								
2" AC, 1.5" top course & 2.5" base course	$ 14.99	SY								
4" select borrow	$ 3.96	SY								
1.5" top course rock & 2.5" base course	$ 9.92	SY								
WRITE-IN-ITEMS										
		EA.								
		EA.								

	B	C	D	E
SUBTOTAL				
SUBTOTAL (SUM ALL PAGES):				
30% CONTINGENCY & MOBILIZATION:				
GRANDTOTAL:				
COLUMN:				

*KCC 27A authorizes only one bond reduction.

S:PUBLIC\LUSD\LUIS\REF8D SITE BOND QUANTITY WORKSHEET

Unit prices updated 12/97
Revision date: 8/22/98

Site Improvement Bond Quantity Worksheet

Original bond computations prepared by:

Name: _____ **Date:** _____

PE Registration Number: _____ **Tel. #:** _____

Firm Name: _____

Address: _____

	Column	PERFORMANCE BOND* AMOUNT	PUBLIC ROAD IMPROVEMENTS & DRAINAGE FACILITIES MAINTENANCE/DEFECT BOND* AMOUNT
Stabilization/Erosion Sediment Control (ESC)	(A)	$ -	
Existing Right-of-Way Improvements	(B)	$ -	
Future Public Road Improvements & Drainage Facilities	(C)	$ -	(B+C) X 0.25 = $ -
Private Improvements	(D)	$ -	
(A+B+C+D) =TOTAL (T) PERFORMANCE BOND AMOUNT		$ - Minimum bond amount is $1000.	
SITE RESTORATION BOND (First $7,500 of bond shall be cash.)	(A)	$ -	
RIGHT-OF-WAY BOND	(B)	$ -	
TOTAL RIGHT-OF-WAY & SITE RESTORATION BOND** (First $7,500 of bond shall be cash.)	(A+B)	$ -	
PERFORMANCE BOND:TOTAL AFTER BOND REDUCTION***	(T-E)	_____	

NAME OF PERSON PREPARING BOND REDUCTION: _____ Date: _____

***NOTE:** The word "bond" is used to represent any financial guarantee acceptable to King County.

****NOTE:** KCC 27A authorizes bonds to be combined when both are required.

*****NOTE:** Per KCC 27A, total bond amounts remaining after reduction shall not be less than 30% of the original amount.

S:PUBLIC\LUSD\LUIS\REF8D SITE BOND QUANTITY WORKSHEET

Unit prices updated 12/97
Revision date: 8/22/98

CITY OF NEWCASTLE
PLAN CHECKLIST

Project: _____

Applicant: _____ **Engineer:** _____

Date Submitted: _____ **Phone:**_____

GENERAL

Vicinity Map
Legend (APWA Standard Symbols)
North Arrow
Scale Bar
Datum-Bench Mark Elevation and Location (on all sheets where elevations are referenced)
Title Block:
- Title:
- Design By:
- Drawn By:
- Date:
- Checked By:
- Signature Approval Block (see above example):
- Sheet Number of Total Sheets:

Section, Township and Range (every plan/profile sheet)
Engineers Stamp (signed and dated)
Project Title (cover sheet)
Utility System Map (showing all proposed utilities on one drawing)
Revision Block
Horizontal Scale: 1"=50' (or as other wise approved by the City)
Approval Block (in upper right corner of each drawing)

APPROVED FOR CONSTRUCTION

BY: _____ DATE:_____
CITY OF NEWCASTLE

These drawings are approved for construction for a period of 12 months from the date shown hereon. The City reserves the right to make revisions, additions, deletions, or modifications should construction be delayed beyond this time limitation. The City, by approving these drawings, assumes no liability in regards to their accuracy or omissions.

PLAN STANDARD ITEMS

Centerline and Stations
Edge of Pavement and Width
Right-of-Way and Width
Proposed Survey Monumentation Locations and Details
Sidewalk and Width
Roadway Sections
Existing Utilities (above and below ground)
Adjacent Property Lines, Ownership, Parcel Number, and Street Address
Identify Street Names, Right-of-Way, Lots
Identify/Match Existing Sheet Numbers and Stations
Easements, Width and Type
Define Survey Baseline
Stations for Structures
Flow Direction Arrows

PROFILE PORTION STANDARD ITEMS

Profile Grades (%)
Existing Ground
Scale (horizontal and vertical)
Stationing
Vertical Elevation Increments
Existing Utilities (if available)

Miscellaneous:

Detail Sheet
General Notes

SANITARY SEWER

Coal Creek Utility District (CCUD) owns, maintains, and operates the sanitary sewer system within the City of Newcastle. The City will not approve any road and storm drainage plans prior to reviewing and approving a final set of sanitary sewer plans that have been approved by CCUD. The City prefers that preliminary plans be submitted so that the City may review and comment on the plans prior to CCUD approving the final plans. The City will then review and approve all final plans approved by CCUD.

WATER

Coal Creek Utility District (CCUD) owns, maintains and operates the water system within the City of Newcastle. The City will not approve any road and storm drainage plans prior to reviewing and approving a final set of water plans that have been approved by CCUD. The City prefers that preliminary plans be submitted so that the City may review and comment on the plans prior to CCUD approving the final plans. The City will then review and approve all final plans approved by CCUD.

STORM SEWER

References: Newcastle Municipal Code Section 13.10 Surface Water Management
King County Surface Water Design Manual
May Creek Critical Drainage Area, Public Rule KCPR 09.04.050
Bond Quantity Worksheet
Standard Specifications for Road, Bridge, and Road Construction

Technical Information Report (TIR):

I. Project Overview
II. Preliminary Conditions Summary
III. Off-Site Analysis
IV. Retention/Detention Analysis and Design
V. Conveyance System Analysis and Design
VI. Special Reports and Studies
VII. Basin and Community Planning Areas
VIII. Other Permits
IX. Erosion/Sedimentation Control Design
X. Bond Quantity Worksheet, Retention/Detention Facility Summary Sheet and Sketch, and Declaration of Covenant
XI. Maintenance and Operations Manual

Temporary Erosion and Sedimentation Control Plan (TESC):

I. General
II. Clearing Limits
III. Cover Measures
IV. Perimeter Protection

V. Traffic Area Stabilization
VI. Sediment Retention
VII. Surface Water Control
VIII. Wet Season Requirements
IX. Sensitive Area Restrictions

Erosion and Sediment Control Plan:

Delineate Clearing, Sensitive Area, and Easement Limits
Protection of Adjacent Properties
Construction Sequence
Cut and Fill Slopes
Controlling Offsite Erosion
Stabilization of Temporary Conveyance Channels and Outlets
Storm Drain Inlet Protection
Construction Access Routes
Removal of Temporary BMPs (upon City approval)
Dewatering Construction Sites
Control of Pollutants other then Sediment on Construction Sites
Construction Entrance Detail
Silt Fences and Traps
Mulching and Vegetation Plan
Location and Details of Temporary Sediment Ponds, including size calculation

Drawings and Specifications:

Vicinity Map
Project Boundaries
Contours
Major Drainage Features
Flow Path

Site Map:

Existing Topography at Least 50 Feet Beyond Site Boundaries
Finished Grades
Utilities
Easements, Both Existing and Proposed

Environmentally Sensitive Areas
100-Year Flood Plain Boundary
Existing Structures, Tanks, etc.
Proposed Structures Including Roads and Parking Surfaces
Lot Dimensions and Areas
Proposed Drainage Facilities and Sufficient Cross-Sections and Details to Build

Plan View - Conveyance System:

Station and Number at each Manhole/Catch Basin
Manhole/Catch Basin Type and Size
Manhole/Catch Basin Rim Elevation
Flow Direction with Arrow on Pipe/Channel
Type and Size of Pipe
Length of Pipe in Lineal Feet

Profile View - Conveyance System:

Station and Number at each Manhole/Catch Basin
Rim Elevation
Invert In and Out
Length of Pipe in Lineal Feet
Grades (%)

Miscellaneous

Detail Sheet
Storm General Notes

STREET

Plan View:

Flow Direction Arrows at Curb Returns Showing Grade
Spot Elevations on Curb Returns
Station PC, PT, PI and Intersections
Curve Information Delta, Radius, Length and Tangent

BCR and ECR (Begin Curb Radius, End Curb Radius)
Identify All Field Design Situations
Typical Sections
Pavement Marking Details with Station and Offset

Sidewalks:

Driveway Entrances:
Driveway Centerline Profile
Station
Width, Material
Driveway Type
Handicap Ramps-Detail and Type

Profile View:

Vertical Information VPI, BVC, EVC, Low Point, High Point
Show Grades in Percent Form with (+ Or -) Slope
Super Elevated Roadways:
Detail-Show Transitions
Special Detail Showing Gutter Flowing Adequately

Miscellaneous:

Detail Sheet
Street General Notes

ILLUMINATION (within ROW)

Lighting:

Station and Offset to Fixtures
Pole Type, Including Manufacturer and Model Number
Mounting Height, Arm Length
Power Source
Luminaire Type, Lamp Wattage
Location of Service Disconnects
J-Box Location (include station and offset)
Illumination Calculations

Miscellaneous:

Detail Sheet
Lighting General Notes

MISCELLANEOUS

Easements and/or Dedication Deeds

CITY OF NEWCASTLE
Pre-Application Checklist for the Public Works Division

☐ Development Process:
- Application
- SEPA
- Hearing
- Approval with Conditions
- Submittal/Approval of All Plans
- Clearing and Grading Permit/Notice to Proceed
- Right-of-Way Use Permit
- Pre-Construction Meetings
- Construction
- Final Plat Approval/Bonding

☐ Application Forms

☐ Public Works Standards:
- Variance Request
- Submittal Standards
- Frontage Improvements Required
- Pavement Overlay Required
- Must Address Future Street Layout
- Must Address Connectivity

☐ Geotechnical Report:
- Erosion
- Overall Stability
- Pond Design
- Rock and Retaining Walls
- Construction of Slopes
- Groundwater
- Pavement Design - onsite and offsite

☐ Level One Drainage Analysis:
- Per KCSWDM
- Identify Problems and Potential Solutions
- Identify Potential Mitigation Measures
- One-quarter mile or as instructed

☐ Technical Information Report:
- Per KCSWDM
- Assumptions
- Location of facility
- Operation and Maintenance
- Access

☐ Traffic Analysis:

- Trip Generation
- Traffic Analysis
- Level of Service
- Off-site Improvements

☐ Road and Storm Drainage Plans:
- Expected to be very detailed
- Grading Plans
- TESC Plans
- Channelization
- Signage

☐ Site Plan:
- Storm Drainage Facility Location
- Trails
- Streets
- Building Pads - Mass Grading
- Access
- Driveway Width/Location/Grade
- Setbacks
- Easements

☐ Approved Water and Sewer Plans

☐ Illumination Plans

☐ Other Plans:
- Landscape
- Park
- Trails
- Wetland Mitigation
- Offsite Improvements
- Irrigation
- Tree Retention

☐ Construction Issues:
- Permits
- Bonding (site restoration, performance, right-of-way, wetlands, etc.)
- Fees (development, permit, inspection)
- Proof of Liability Insurance
- Erosion Control (10-year storm ponds)
- Dust
- Noise
- Traffic Safety
- Encroachment beyond clearing limits
- Grading Season (May 1 to October 1)
- Field Changes

☐ Building Permits for Structural Walls and Vaults
- Drawings
- Calculations
- Special Inspection

☐ Other Permits:
- HPA
- Corps
- NPDES
- FPA

☐ Improvements allowed to be "Bonded":
- Street Trees
- Final Lift of Asphalt
- Sidewalks (until final inspection of first home)

☐ Final Plat Approval:
- Formal Request
- Plat Map
- Closure Calculations
- Conditions of Approval Completed
- Fees Paid
- As-builts Due Prior to Release of Performance Bonds
- Maintenance Bonds Due Prior to Final Plat Approval

CITY OF NEWCASTLE
Pre-Construction Checklist

Project Title: _____ Project No. _____

Location: _____ Date: _____

_____

Attendees	Company/Position	Phone

Notes:

Completion Checklist (to be completed prior to scheduling a Pre-Construction Meeting)

Approvals	Type	Date Approved
	SEPA	
	Resolution	
	Director	

Permits	Type	Date Issued
	C&G	
	Site Develop.	
	ROW	
	NPDES	
	HPA	
	FPA	

Bonds	Type	Date Posted
	Site Restoration	
	Performance	
	ROW	
	Maintenance	
	Wetland	
	Site Develop.	

Fees	Type	Date Paid
	Plat	
	Inspection	

Insurance	Type	Date Issued
	Liability C&G	
	Liability ROW	
	General	

Approved Plans	Type	Date Plans Approved	Date Work Completed
	Road & Storm		
	C&G		
	TESC		
	TIR		
	Water		
	Sewer		
	Illumination		
	Channelization		
	Signage		
	Wetland		
	Parks		
	Landscaping		
	Tree-Retention		
	Off-Site		

Other	Type	Date
	Precon. Mtg.	

CITY OF NEWCASTLE
Development Pre-Construction Meeting Checklist
for the Public Works Division

The following checklist is a summary of important issues to be addressed at the pre-construction meeting for development projects in the City of Newcastle. Pre-construction meeting must be scheduled at least one week in advance and no more than three weeks in advance of start. Attendance is required by the Public Works Department, City Inspector, and the Developer, Contractor, Engineer-of-Record and Geotechnical Engineer. All geotechnical inspection reports are required to be submitted to the City for review. Demarcation of clearing limits and sensitive areas and installation of erosion control measures are required before site development can begin. Verification of these items (including flagging, staking and fencing of the clearing limits and sensitive areas) must be approved by the City inspector before site development can begin.

☐ Introductions
☐ Documentation:
- Permits (C&G, NTP, ROW, Bldg, other)
- Fees
- Bonding - very little allowed
- Insurance
- Contacts
- Approved Plans

☐ Inspector
☐ Inspections - See Schedule
- Geotechnical Field Reports
- Engineer-of-Record

☐ Field Changes Approved in Writing if Significant
☐ Traffic Control:
- Warning Signs
- Flaggers
- Clean Road
- Traffic Revision
- Traffic Control Plan
- Storage of Materials and Equipment

☐ Water and Sewer - CCUD (425-235-9200)
☐ Illumination - PSE
☐ Wetland Mitigation
☐ Issues:
- Everything Constructed per Approved Plans
- Erosion Control - Drainage System Cleaned
- Dust
- Noise
- Haul Route
- Encroachment beyond clearing limits
- Grading Season (May 1 to October 1)
- Transmit all problems or complaints to the City immediately

Schedule of Inspections
per Newcastle Public Works Standards
Section 3.07

3.07 Inspection

A. General

The City shall exercise full right of inspection of all excavating, construction, and other invasions of City right-of-way or public easements. The City Engineer or designated official shall be notified on the working day prior to commencing any work in the City's right-of-way or public easements. The City Engineer and/or his authorized representative is authorized to and may issue immediate stop work orders in the event of noncompliance with this chapter and/or any of the terms and provisions of the permit or permits issued here under.

B. Requirements for subdivision, binding site plan, commercial and right-of-way land use inspection.

On all road and drainage facility construction, proposed or in progress, which relates to subdivision, binding site plan, commercial and right-of-way development, control and inspection will be done by the City Engineer. Unless otherwise instructed by the engineer, construction events which require monitoring or inspection are identified as follows:

(1) Pre-Construction Conference. Three working days' prior notice. Conference must precede the beginning of construction and include contractor, designing engineer, utilities, and other parties affected. Plan approvals and permits must be in hand prior to the conference.

(2) Clearing and Temporary Erosion/Sedimentation Control. One working day's notice prior to initial site work involving drainage and installation of temporary water retention/detention and siltation control. Such work to be in accordance with the Surface Water Design Manual and the approved plans.

(3) Utility and Storm Drainage Installation. One working day's notice prior to trenching and placing of storm sewers and underground utilities such as sanitary, water, gas, power, telephone, and TV lines.

(4) Utility and Storm Drainage Backfill and Compaction. One working day's notice before backfill and compaction of storm sewers and underground utilities.

(5) Subgrade Completion. One working day's notice at stage that underground utilities and roadway grading are complete, to include placement of gravel base if required. Inspection to include compaction tests and certifications described in the WSDOT standard specifications.

(6) Curb and Sidewalk Forming. One working day's notice to verify proper forming and preparation prior to pouring concrete.

(7) Curb and Sidewalk Placement. One working day's notice to check placement of concrete.

(8) Crushed Surfacing Placement. One working day's notice to check placement and compaction of crushed surfacing base course and top course.

(9) Paving. Three working days' notice in advance of paving with asphalt or portland cement concrete.

(10) Structural. Three working days' notice prior to each critical stage such as placing foundation piling or footings, placement and assembly of major components, and completion of structure and approaches. Tests and certification requirements will be as directed by the engineer.

C. Final Construction Inspection

Fifteen working days notice prior to overall check of road or drainage project site, to include completion of paving and associated appurtenances and improvements, cleaning of drainage system, and all necessary clean-up and site restoration.

D. Final Maintenance Inspection

Thirty days notice prior to the end of the maintenance period. Prior to release of the maintenance guarantee, there shall be successful completion of the maintenance period as described in Section 3.01, repair of any failed facilities and the payment of any outstanding fees.

CITY OF NEWCASTLE

STANDARD PLAN NOTES

Standard plan notes must be included on all plans. At the applicant's discretion, notes which in no way apply to the project may be omitted; however, the remaining notes must not be renumbered.

GENERAL NOTES

1. All construction shall be in accordance with the Newcastle Municipal Code (NMC), Newcastle Public Works Standards, and the City of Newcastle's conditions of approval. It shall be the sole responsibility of the applicant and the professional civil engineer to correct any error, omission, or variation from the above requirements found in these plans. All corrections shall be at no additional cost or liability to the City.

2. The design elements within these plans have been reviewed according to the Newcastle Department of Public Works Engineering Review checklist. Some elements may have been overlooked or missed by the plan reviewer. Any variance from adopted standards is not allowed unless specifically approved by the City prior to construction.

3. Approval of this road, grading, and drainage plan does not constitute an approval of any other construction (e.g., domestic water conveyance, sewer conveyance, gas, electrical, etc.).

4. Before any construction or development activity, a preconstruction meeting must be held between the Public Works Department, Community Development Department, the applicant, and the applicant's Construction Representative.

5. A copy of these approved plans must be on the job site whenever construction is in progress.

6. Construction noise shall be limited in accordance with NMC; normally this is 7 a.m. to 7 p.m. on weekdays and 9 a.m. to 6 p.m. on weekends and legal holidays.

7. It shall be the applicant's/contractor's responsibility to obtain all construction easements necessary before initiating offsite work within the road right-of-way.

8. Franchised utilities or other installations that are not shown on these approved plans shall not be constructed unless a permit has been issued by the City of Newcastle or its designated representative agency.

9. Datum shall be NAVD 1988 unless otherwise approved by the City.

10. Groundwater system construction shall be within a right-of-way or appropriate drainage easement, but not underneath the roadway section, unless specifically approved by the City. All groundwater systems must be constructed in accordance with Section B1 3.02 of the APWA Standard Specifications.

11. All utility trenches shall be backfilled and compacted to 95 percent maximum density, modified proctor.

12. All roadway subgrade shall be backfilled and compacted to 95 percent maximum density (WSDOT 2-06.3).

13. Open cutting of existing roadways is not allowed unless specifically approved by the City and noted on these approved plans. Any open cut shall be restored in accordance with the Newcastle Public Works Standards.

14. The contractor shall be responsible for providing adequate safeguards, safety devices, protective equipment, flaggers, and any other needed actions to protect the life, health, and safety of the public, and to protect property in connection with the performance of work covered by the contractor. Any work within the traveled right-of-way that may interrupt normal traffic flow shall require at least one flagger for each lane of traffic affected. Section 1-07.23, "Traffic Control," of the Standard Specifications shall apply in its entirety.

15. Call underground utility locate line 1-800-424-5555 a minimum of 48 hours prior to any excavation.

DRAINAGE NOTES

1. All fees, bonding, and proof of liability insurance shall be submitted to the City prior to the preconstruction meeting.

2. All storm mains and retention/detention areas shall be staked for grade and alignment by an engineering or surveying firm capable of performing such work, and currently licensed in the State of Washington to do so.

3. Storm drain pipelines shall be installed to the far property line(s) to serve adjacent tributary areas a may be warranted. They shall be appropriately sized to accommodate flows as further identified herein. Pipes shall be designed to facilitate a minimum 2 feet/second flow unless otherwise approved by the City Engineer.

4. All pipe and appurtenances shall be laid on a properly prepared foundation in accordance with WSDOT 7-02.3(1). This shall include leveling and compacting the trench bottom, the top of the foundation material, and any required pipe bedding to a uniform grade so that the entire pipe is supported by a uniformly dense unyielding base.

5. Steel pipe shall be galvanized and have asphalt treatment #1 or better inside and outside.

6. All drainage structures, such as catch basins and manholes, not located within a traveled roadway or sidewalk shall have solid locking lids. All drainage structures associated with a permanent retention/detention facility shall have solid locking lids.

7. All catch basin grates shall conform to City of Newcastle drawings, and shall include the stamping "OUTFALL TO STREAM, DUMP NO POLLUTANTS" and "PROPERTY OF CITY OF NEWCASTLE".

8. All driveway culverts located within the right-of-way shall be of sufficient length to provide a minimum 3:1 slope from the edge of the driveway to the bottom of the ditch. Culverts shall have beveled end sections to match the side slope (see City of Newcastle drawings).

9. Rock for erosion protection for roadway ditches, where required, must be of sound quarry rock, placed to a depth of one foot, and must meet the following specifications: 4"-8" rock/40-70% passing; 2"-4" rock/30-40% passing; and 2" minus rock/10-20% passing. Installation shall be in accordance with City of Newcastle drawings.

10. Drainage outlets (stub-outs) shall be provided for each individual lot or building, except for those lots approved for infiltration by the City. Stub-outs shall conform to the following:
    a) Each outlet shall be suitably located at the lowest elevation on the lot, so as to service all future roof downspouts and footing drains, driveways, yard drains, and any other surface or subsurface drain necessary to render the lots suitable for their intended use. Each outlet shall have free-flowing, positive drainage to an approved stormwater conveyance system or an approved outfall location.
    b) Outlets on each lot shall be marked with a five foot high, 2"x4" stake marked "storm" or "drain". The stub-out shall extend above surface level, be visible, and be secured to the stake.
    c) Pipe material shall be a minimum of 4 inches in diameter, perforated, smooth interior, rigid drain pipe. A metallic tracer wire shall be attached the entire length of the pipe.
    d) Individual lots stub-outs may connect directly to the roadway storm drainage system, PROVIDED, that said connection is made through use of a manufactured tee specifically for this purpose. If stub-outs must pass across individual lots, they shall be located in drainage easements.
    e) The applicant/contractor is responsible for coordinating the locations of all stub-out conveyance lines with respect to utilities (e.g., power, gas, phone, cable).
    f) All individual stub-outs shall be privately owned and maintained by the lot homeowner.

STRUCTURAL NOTES

1. These plans are approved for standard road and drainage improvements only. Plans for structures such as bridges, vaults, rockeries and retaining walls require a separate review and approval by the Building Department prior to construction.

2. Rockeries are considered to be a method of bank stabilization and erosion control. Rockeries shall not be constructed to serve as retaining walls. All rockeries in the City shall be constructed in accordance to the City of Newcastle drawings.

EROSION AND SEDIMENT CONTROL NOTES

The standard ESC plan notes must be included on all ESC plans. At the applicant's discretion, notes that in no way apply to the project may be omitted; however, the remaining notes must not be renumbered.

1. Approval of this erosion and sedimentation control (ESC) plan does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

2. The implementation of these ESC plans and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the applicant/ESC supervisor until all construction is approved.

3. The boundaries of the clearing limits show on this plan shall be clearly flagged by a continuous length of orange protection fencing prior to construction. During construction, no disturbance beyond the clearing limits shall be permitted. The clearing limits shall be maintained by the applicant/ESC supervisor until all construction is approved.

4. The ESC facilities shown on this plan must be constructed prior to or in conjunction with all clearing and grading so as to ensure that the transport of sediment to surface waters, drainage systems, and adjacent properties is prevented.

5. The ESC facilities shown on this plan are the minimum requirements for anticipated site conditions. During the course of construction, these ESC facilities shall be upgraded as needed for unexpected storm events and modified to account for changing site conditions.

6. The ESC facilities shall be inspected daily by the applicant/ESC supervisor and maintained to ensure continued proper functioning. Written records shall be kept of weekly reviews of the ESC facilities during the wet season (October 1 to April 30) and of monthly reviews during the dry season (May 1 to September 30).

7. Any areas of exposed soils, including roadway embankments, that will not be disturbed for two days during the wet season or seven days during the dry season shall be immediately stabilized with the approved ESC methods (e.g., seeding, mulching, plastic covering, etc.).

8. Any area needing ESC measures that do not require immediate attention shall be addressed within fifteen (15) days.

9. The ESC facilities on inactive sites shall be inspected and maintained a minimum of once a month or within 48 hours following a storm event.

10. At no time shall more than one (1) foot of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system.

11. Stabilized construction entrances and roads shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures, such as wash pads, may be required to ensure that all paved areas are kept clean for the duration of the project.

12. Any permanent flow control facility used as a temporary settling basin shall be modified with the necessary erosion control measures and shall provide adequate storage capacity. If the facility is to function ultimately as an infiltration system,

the temporary facility must be graded so that the bottom and sides are at least three feet above final grade of the permanent facility.

13. Where straw mulch for temporary erosion control is required, it shall be applied at a minimum thickness of 2 to 3 inches.

14. Prior to September 15, all disturbed areas shall be reviewed to identify which ones can be seeded in preparation for the winter rains. Disturbed areas shall be seeded prior to October 1. A sketch map of those areas to be seeded and those areas to remain uncovered shall be submitted to the City inspector. The City inspector can require seeding of additional areas in order to protect surface waters, adjacent properties, or drainage facilities.

CONSTRUCTION SEQUENCE

A recommended construction sequence is provided below:

1. Clearing limits, trees to be retained, and sensitive areas flagged, fenced, and inspected by the City.
2. Hold a pre-construction meeting.
3. Post a sign with the name and phone number of the project supervisor.
4. Install catch basin protection.
5. Grade and install construction entrance(s).
6. Install perimeter protection.
7. Construct sediment ponds and traps.
8. Grade and stabilize construction roads and staging areas.
9. Construct surface water controls (interceptor ditches, pipe slope drains, etc.) simultaneously with clearing and grading for project development.
10. Maintain erosion control measures in accordance with City standards and manufacturer's recommendations.
11. Relocate surface water controls or erosion control measures, or install new measures so that as site conditions change, the erosion and sediment control is always in accordance with the Erosion and Sediment Control Standards per the King County Surface Water Design Manual.
12. Cover all areas that will be unworked for more than seven days during the dry season or two days during the wet season with straw, wood fiber mulch, compost, plastic sheeting, or equivalent.
13. Stabilize all areas within seven days of reaching final grade.
14. Seed or sod any areas to remain unworked for more than 30 days.
15. Upon completion of the project, stabilize all disturbed areas and remove BMPs if appropriate.