

SECTION - 6

GENERAL NOTES

ENGINEERING STANDARDS

SECTION 6 - GENERAL NOTES

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WATER GENERAL NOTES
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1. All work and materials shall be in accordance with the "Standard Specifications for Road, Bridge, and Municipal Construction," Washington State Department of Transportation and American Public Works Association, Washington State Chapter, current edition, together with the latest edition of the City of Mountlake Terrace Engineering Standards.
2. An approved copy of these plans must be on site whenever construction is in progress.
3. It shall be the sole responsibility of the contractor to obtain street use and any other related permits prior to any construction activity in City right-of-way.
4. Prior to any construction activity, the City of Mountlake Terrace Engineering Department (776-1161) must be contacted for a preconstruction meeting.
5. All locations of existing utilities shown hereon have been established by field survey or obtained from available records and should therefore be considered approximate only and not necessarily complete. It is the sole responsibility of the contractor to independently verify the accuracy of all utility locations shown, and to further discover and avoid any other utilities not shown hereon which may be affected by the implementation of this plan. The contractor shall contact the utilities underground location service (1-800-424-5555) prior to construction. The owner or his representative shall be immediately contacted if a utility conflict exists.
6. The water main distribution system shall be constructed according to the approved plans which are on file on the City of Mountlake Terrace Engineering Department. Any deviation from the approved plans will require written approval from the proper agency.
7. Connections to existing facilities shall be sealed off until construction is completed. No connections will be allowed until the new water mains have passed all pressure and purity tests.
8. Water main pipe, bedding and trench compaction:
 - A. All water main pipe to be cement lined, Class 52 ductile iron, conforming to Standard Specifications 9-30.1(1). Cement mortar lining and seal coating shall conform to ANSI/AWWA C110/A21.10-82, or latest revision.
 - B. Pipe joints to be push-on, mechanical or flange joints.
 - C. All water main pipe fittings to be cement lined, Class 250 cast iron, conforming to ANSI/AWWA C110/A21.10-82, or latest revision.
 - D. Pipe bedding shall conform to Section 7-10.3(9)A, and pipe bedding material shall conform to Section 9-03.15, Standard Specifications.
 - E. All water main cement concrete thrust blocks to conform to standard details shown on the plans.
 - F. All water main trench backfill shall be compacted to minimum 95% dry optimum density per A.S.T.M. D-1557-70 (modified Proctor) prior to testing water mains for acceptance.
9. Maintain a minimum cover of 36" over finished grade on all water main pipe. Where utility conflicts occur, other than sanitary sewer water mains are to be lowered to clear. See "Criteria for Sewage Design", Washington State Department of Ecology for sewer conflicts.

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10. All water mains shall be pressure tested and disinfected in accordance with the specifications of the Washington State Health Department and City of Mountlake Terrace Standard Plan No. 209. All inspection and pressure testing shall be done in the presence of, and under the supervision of, the City Engineer and/or his representative.
11. Contractor to provide plugs and/or temporary blow-off assemblies for testing and purity acceptance prior to final tie in.
12. All gate valves to be resilient seated and shall be manufactured to meet or exceed the requirements of A.W.W.A. Standard C-509, or latest revision.
13. Fire Hydrants:
 - A. All fire hydrants shall conform to the City of Mountlake Terrace Standard Plan No. 201.
 - B. All fire hydrant ports shall face perpendicular to curb and toward driveway as shown on the plans.
14. Water Main Services:
 - A. All water main service lines to be type "K" copper. Service connections shall be in accordance with City of Mountlake Terrace Standard Plan No. 202 or No. 203 (double straps and corporation stops).
 - B. Water meters 2" and smaller to be supplied and installed by the City of Mountlake Terrace.
15. The water main shall be set a minimum of 5 feet toward the roadway centerline from the curb. Buildings shall not be permitted within 10 feet, or carports within 5 feet, of the spring line of any water main where applicable, unless otherwise shown on the plans.
16. All water mains not in public right-of-way require 10 foot wide easements to the City of Mountlake Terrace.
17. All valves, existing and new, shall be operated only by the City of Mountlake Terrace. **NO EXCEPTIONS!**
18. A state approved backflow prevention device must be installed on all irrigation systems, fire systems, industrial water systems, and any other water connection that may have a possibility of a cross contamination connection as determined by a certified cross connection technician.
19. Construction of dewatering systems shall be in accordance with Standard Specification Section 7-11.3(1).
20. An as built water plan shall be submitted for all developments, short plats and subdivisions.
21. All tapping sleeves shall be cast iron MJ or as designated by the City Engineer.

SANITARY SEWER GENERAL NOTES
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1. All work and materials shall be in accordance with the "Standard Specifications for Road, Bridge, and Municipal Construction," Washington State Department of Transportation and American Public Works Association, Washington State Chapter, current edition, together with the latest edition of the City of Mountlake Terrace Engineering Standards.
2. An approved copy of these plans must be on site whenever construction is in progress.
3. It shall be the sole responsibility of the contractor to obtain street use and any other related permits prior to any construction activity in City right-of-way.
4. Prior to any construction activity, the City of Mountlake Terrace Engineering Department (776-1161) must be contacted for a preconstruction meeting.
5. All locations of existing utilities shown hereon have been established by field survey or obtained from available records and should therefore be considered approximate only and not necessarily complete. It is the sole responsibility of the contractor to independently verify the accuracy of all utility locations shown, and to further discover and avoid any other utilities not shown hereon which may be affected by the implementation of this plan. The contractor shall contact the utilities underground location service (1-800-424-5555) prior to construction. The owner or his representative shall be immediately contacted if a utility conflict exists.
6. The sanitary sewer system shall be constructed according to the approved plans which are on file in the City of Mountlake Terrace Engineering Department. Any deviation from the approved plans will require written approval from the proper agency.
7. All new sanitary sewer lines shall be sealed off at the existing trunk connection point until all upstream construction is completed, cleaned, tested, lamped, and accepted by the City of Mountlake Terrace. All construction debris and water shall be removed from pipe prior to opening seal. At the end of the project and prior to acceptance, all sanitary sewer lines shall be inspected by TV viewing, recorded on VHS video tape, and submitted to the City as a permanent record.
8. **Manhole and Lids:**
 - A. All manholes shall be Mountlake Terrace Standard Plan No. 305 (typ.) type, with eccentric cone.
 - B. Outside drop connections shall be constructed in conformance to Mountlake Terrace Standard Plan No. 308.
 - C. All manholes shall have a minimum drop of 0.10 feet between inverts.
 - D. All manholes not in paved areas shall have locking lids.
 - E. It shall be the responsibility of the contractor to adjust all manhole tops to match final asphalt elevations and ground elevations in landscaped areas.
9. **Sewer pipe, bedding, and trench compaction:**
 - A. All sewer pipe shall be one of the following:
 1. P.V.C., conforming with A.S.T.M. D-3034, SDR 35.
 2. Ductile Iron, Class 50, conforming to A.W.W.A. C151.

SANITARY SEWER GENERAL NOTES
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3. Pipe may be any of the above provided:
 - a) Adjoining pipe lengths must be of the same materials and be provided with rubber gasket joints.
 - b) Where a pipe material is specifically shown on the plan, that material must be used.
- B. Pipe bedding shall conform to Section 7-17.3(1)B, Standard Specifications. Bedding material shall conform to Section 9-03.15.
- C. Trench backfill shall be compacted to minimum 95% dry optimum density per A.S.T.M. D-1557-70 (modified Proctor) prior to testing sewer lines for acceptance.
10. Side sewer laterals:
 - A. Side sewers shall be 6" minimum diameter with 1.0% minimum slope.
 - B. Side sewers shall be tested for leakage at the same time the main line sewer is tested. If not tested together, provide test tees at sewer connections.
 - C. Buildings with greater than 10 units shall be serviced by one of the following methods:
 1. Single 8" diameter service with cleanout connected to trunk into manholes only.
 2. Alternate connection methods in compliance with "Criteria for Sewage Design", Washington State Department of Ecology.
 - D. All lateral connections to sewer mains shall be made with a wye or sweeping tee. Where no tee, wye, or riser is available, use an approved saddle for sewer connection.
 - E. Cleanouts must be provided at the right-of-way line for laterals extending from City owned mains. All cleanouts must be brought to the surface in accordance with Standard Plan #303.
11. Construction of dewatering systems shall be in accordance with the Standard Specifications Section 7-17.3(1)A.
12. Whenever sewers must cross under water main the sewer shall be laid as specified in "Criteria for Sewage Design", Washington State Department of Ecology.
13. Buildings shall not be permitted within 10 feet, or carports within 5 feet, of the spring line of any sanitary sewer main. Side sewers 6" diameter or less may be located within 30" of a structure provided that the soil support prism is not disturbed for the adjacent foundation.
14. Prior to occupancy, the developer shall grant necessary sanitary sewer easements to the City of Mountlake Terrace. The width shall equal the nominal depth to the invert, but shall not be less than 10'.
15. An as built sanitary sewer drawing shall be submitted for all developments, short plats and subdivisions.

SANITARY SEWER GENERAL NOTES
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16. All sewers shall be designed and constructed to give mean velocities, when flowing full, of not less than 2 feet per second.
17. Sand collars or other City approved couplings are required on all PVC pipe connections to concrete manholes.

STORM DRAINAGE GENERAL NOTES
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1. All work and materials shall be in accordance with the "Standard Specifications for Road, Bridge, and Municipal Construction," Washington State Department of Transportation and American Public Works Association, Washington State Chapter, current edition, together with the latest edition of the City of Mountlake Terrace Engineering Standards.
2. An approved copy of these plans must be on site whenever construction is in progress.
3. It shall be the sole responsibility of the contractor to obtain street use and any other related permits prior to any construction activity in City right-of-way.
4. Prior to any construction activity, the City of Mountlake Terrace Engineering Department (776-1161) must be contacted for a preconstruction meeting.
5. All locations of existing utilities shown hereon have been established by field survey or obtained from available records and should therefore be considered approximate only and not necessarily complete. It is the sole responsibility of the contractor to independently verify the accuracy of all utility locations shown, and to further discover and avoid any other utilities not shown hereon which may be affected by the implementation of this plan. The contractor shall contact the utilities underground location service (1-800-424-5555) prior to construction. The owner or his representative shall be immediately contacted if a utility conflict exists.
6. Catch basins, inlets, yard drains, and grates:
 - A. All catch basins, inlets, or yard drains shall be one of the following:
 1. Yard drain - WSDOT/APWA Standard Plan B-20f, or equal.
 2. Inlet - WSDOT/APWA Standard Plan B-26, or equal.
 3. Catch basin - type I - WSDOT/APWA Standard Plan B-1, or equal.
 4. Catch basin - type IL - WSDOT/APWA Standard Plan B-1a, or equal.
 5. Catch basin - type II - WSDOT/APWA Standard Plan B-1e, or equal.
 6. Other catch basin types shall be approved for installation by the City Engineer.
 7. All Type II catch basins shall have ladders or safety steps per WSDOT/APWA Standard Plan B-1e.
 - B. Locking grates are required on all City right-of-way and City easement installations. All grates shall be one of the following:
 1. Catch basins to be constructed with a through-curb inlet grate. See Mountlake Terrace Standard Plan No. 406, and 407.
 2. All other grates shall be ductile iron, and of the locking type. See Mountlake Terrace Standard Plan No. 408.
 3. All catch basin frame and grates in the curb line shall be depressed 0.10 feet below pavement/curb level. Solid frame and lids in the traveled roadway shall be flush.

STORM DRAINAGE GENERAL NOTES

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4. All oil/water separator and detention control catch basin grates shall be of the locking type.
7. Storm Sewer Pipe:
 - A. All storm sewer conveyance pipe shall be one of the following:
 1. Concrete, per A.S.T.M. C-14, Class II, non-reinforced bell and spigot (with bell flush with C.B. wall if used), with rubber gaskets.
 2. PVC conforming to A.S.T.M. D-3034 - SDR 35.
 3. Profile wall PVC conforming to AASHTO M 304.
 4. Ductile iron Class 50 conforming to AWWA C 151.
 5. Pipe may be any of the above provided:
 - a) Pipe joints must be of the same materials.
 - b) Where a pipe material is specifically shown on the plan, that material must be used.
 5. Minimum pipe cover shall be 2.0 feet.
8. All pipe bedding shall conform to Section 9-03.15, Standard Specifications for ductile iron, PVC pipe, or concrete pipe. All trench backfill shall be compacted to 95% minimum dry density per A.S.T.M. D-1557-70.
9. All pipe shall be laid on a properly prepared foundation according to Standard Specification 7-04.3(2)B. This shall include necessary leveling of the trench bottom or the top of the foundation material as well as placement and compaction of required bedding material to uniform grade so that the entire length of the pipe will be supported on a uniformly dense unyielding base. If the native material in the bottom of the trench meets the requirements for "Gravel Backfill for Pipe Bedding," Section 9-03.12(3), the first lift of pipe bedding may be omitted, provided the material in the bottom of the trench is loosened, regraded, and compacted to form a dense unyielding base.
10. All roof and footing drains shall be located in the field and adjusted as necessary to avoid impacting existing trees to be saved as denoted on the grading plan. Drain lines should be located outside the dripline of trees to be saved whenever possible.
11. The storm drainage system shall be constructed according to the approved plans which are on file in the Engineering Department. Any deviation from the approved plans will require written approval from the proper agency.
12. Buildings shall not be permitted within 10 feet of the spring line of any storm drain pipe, or within 15 feet of the top of a channel bank. Storm sewers 6" diameter or less may be located within 30" of a structure provided that the soil support prism is not disturbed for the adjacent foundation.
13. Prior to occupancy, the permanent storm drainage system must be cleaned out by pumping. (Do not pump or dispose of this waste into any stream, storm sewer, or sanitary sewer system.)

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14. Rip rap rock for erosion protection shall be of sound quarry rock placed to a minimum depth of one (1) foot. Rock aggregate to be as follows:

<u>Rock Size</u>	<u>Percentage</u>
8"	40% to 70%
2" to 4"	20% to 40%
1/2" to 2"	10% to 40%

15. Testing of all storm sewer pipe will be at the option of the City of Mountlake Terrace. All pipe will be inspected by TV viewing.
16. When plain aluminum pipe arch is used where it will be in contact with concrete or concrete pipe, all aluminum surfaces in contact with the concrete or concrete pipe shall be painted with two coats of paint. The aluminum pipe to be painted shall be cleaned with solvent to remove contaminants. After cleaning, the pipe shall be painted with two coats of paint conforming to Federal Specification TT-P-645 (Primer, Paint, Zinc Chromate, Alkyd Vehicle).
17. An as built storm sewer drawing shall be submitted for all developments, short plats, and subdivisions.
18. Sand collars or other City approved couplings are required on all PVC pipe connections to concrete catch basins or manholes.
19. All storm sewers shall be designed and constructed to give mean velocities, when flowing full, of not less than 3 feet per second.
20. For City maintained storm systems, trash racks shall be installed on the upstream end of pipes or culverts.

GRADING GENERAL NOTES

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1. All work and materials shall be in accordance with the "Standard Specifications for Road, Bridge, and Municipal Construction," Washington State Department of Transportation and American Public Works Association, Washington State Chapter, current edition, together with the latest edition of the City of Mountlake Terrace Engineering Standards.
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6. The temporary erosion/sedimentation control facilities shall be constructed prior to any grading or extensive land clearing in accordance with the approved Temporary Erosion/Sedimentation Control plans. These facilities must be satisfactorily maintained until construction and landscaping is completed and the potential for on-site erosion has passed.
7. All rockeries shall conform with the City of Mountlake Terrace Standard Plan No. 501. A four (4) inch minimum diameter PVC perforated pipe, or equal, will be installed behind the rockery at or below the bottom of the lowest rock in the rockery backfill (see detail). This pipe shall be directly connected to the underground storm drainage system with nonperforated PVC pipe or as otherwise shown on the plans.
8. All earthwork under paving shall be compacted to minimum 95% dry optimum density per ASTM D-1557-70 (modified Proctor).
9. Unless otherwise noted, all elevations shown in paved areas on the plans are top of paving.
10. See Temporary Erosion/Sedimentation Control General Notes for acceptable erosion control measures upon completion of grading.
11. Major exposed graded slopes shown on these plans shall be protected with plastic sheets until such time as the vegetative cover has been established sufficiently to eliminate erosion.
12. Grades shown represent the Engineer's estimate of approximate minimum earthwork, preservation of the maximum number of existing trees, and other grading/soil considerations. The contractor may alter the grades shown to better achieve these results, provided that any alteration is subject to the prior approval in writing by the engineer, owner, and the appropriate departments of the City of Mountlake Terrace.
13. The site work improvements shall be constructed according to the approved plans which are on file in the Engineering Department. Any deviation from the approved plans will require approval from the proper agency.

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14. The contractor shall keep parking lots and streets clean at all times by sweeping. Washing of any streets, parking lots or driveways to remove construction related dirt is strictly forbidden and subject to fines.
15. All parking and driveway areas to have positive drainage to collection, conveyance systems or overland sheet drain areas at a minimum of one percent slope. Plan details shall not supersede this requirement.
16. Open-cut road crossings for utility trenches on existing traveled roadways shall be backfilled in accordance with City of Mountlake Terrace Standard Plan No. 107 and mechanically compacted. Cuts into the existing asphalt shall be neat line cut with saw in a continuous line. A temporary cold mix patch must be placed immediately after backfill and compaction. A permanent hot mix patch shall be placed within 30 days and shall be the thickness of the original asphalt, or three (3) inches, whichever is greater.
17. Extruded cement concrete curbs around asphalt edges shall be constructed in accordance with City of Mountlake Terrace Standard Plan No. 105.

TEMPORARY EROSION/SEDIMENTATION CONTROL
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1. Prior to any construction, reconstruction, or renovation activity, the City of Mountlake Terrace Engineering Department must be contacted for a preconstruction meeting (776-1161).
2. An approved copy of these plans must be on site at all times.
3. All limits of clearing and areas of vegetation preservation as prescribed on the plans shall be clearly flagged in the field and maintained during construction.
4. Where possible, maintain natural vegetation for silt control and to minimize erosion control measures, and direct surface runoff away from the exposed areas, steep slopes, or erosion hazard area.
5. All required sedimentation/erosion control facilities must be constructed and in operation prior to any land clearing and/or other construction to insure that sediment-laden water does not enter the natural drainage system or off-site storm drains. (See construction sequence.) All erosion and sediment facilities shall be maintained in a satisfactory condition until such time that clearing and/or construction is completed and the potential for on-site erosion has passed. System implementation, maintenance, and replacement shall be the responsibility of the permittee, along with any required additions.
6. The erosion and sedimentation control systems depicted are intended to be minimum requirements to meet anticipated site conditions. As construction progresses and unexpected or seasonal conditions dictate, the permittee should anticipate that more erosion and sedimentation control facilities may be necessary to insure complete erosion and sediment control on the site. During the course of construction, it shall be the obligation and responsibility of the permittee to address any new conditions that may be created by his activities and to provide additional facilities, over and above minimum requirements shown, as may be needed to protect adjacent properties and water quality of the receiving drainage system. Additional measures may also be required by the City of Mountlake Terrace Inspector.
7. Approval of the plan is for erosion/sedimentation control only. It does not constitute an approval of storm drainage design, size or location of pipes, restrictors, channels, or retention facilities.
8. In any work which has been stripped of vegetation and where no further work is anticipated for a period of 30 days or more, all disturbed areas must be immediately stabilized with by mulching, hydroseeding, or other approved erosion control measure applicable to the time of year in question. Grass seeding alone will be acceptable only during the months of April through September inclusive. Seeding may proceed whenever it is in the interest of the permittee, but must be augmented with mulching, netting, or other measures approved by the City of Mountlake Terrace, outside of the specified time period.
9. Grass seeding shall be done using an approved type hydro-seeder, or as otherwise approved by the City of Mountlake Terrace. Seed mix shall consist of rapid, persistent, and legume grasses (min. 80lb. per acre) as noted below unless otherwise approved by the City Engineer:
 - 20% annual, perennial, of hybrid rye grass.
 - 40% creeping red fescue.
 - 40% white clover.
10. Straw mulch shall consist of a minimum thickness of four (4) inches spread evenly over the surface to be protected. Mulch must be properly anchored to the ground. Netting may be required to hold mulch in place on steep slopes.

TEMPORARY EROSION/SEDIMENTATION CONTROL GENERAL NOTES
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11. A minimum three (3) foot high chain link fence shall be constructed around any pond used for sedimentation and/or detention when it can be expected that the water depth will exceed one (1) foot.
12. The contractor shall assure that no concrete or concrete by-products, chemicals, paints, glues, or any other pollutants enter the storm drainage system or natural stream courses.
13. Remove all temporary erosion control measures when the erosion hazard is completely over. Remove all deposited sediment and debris and rehabilitate the disturbed areas by planting vegetative cover as required by the City of Mountlake Terrace.