APPENDIX A

Application for Site Plan Review

APPLICATION FOR SITE PLAN REVIEW
City of Whitefish

Please complete all of the following information (type or print):

Project Name: _____
Project Address/Location: _____
Description: _____
Addition _____Multi-Family _____Commercial _____Institutional _____ Subdivision/P.U.D.'s _____

Send Review Comments To:
Contact Person: _____
Company Name: _____
Address: _____
City, State, Zip: _____
Phone Number: _____ Fax Number: _____
Cell Phone Number: _____ Email Address: _____

Owner/Developer (If different from above):
Contact Person: _____
Company: _____
Address: _____
City, State, Zip: _____
Phone Number: _____ Fax Number: _____

Description of Proposed Site Plan: _____
_____
_____
_____

Parcel No./Lot No.:_____
Zoning District: _____
Lot Dimensions/Acreage: _____

Date Submitted: _____ Received by: _____

Eight (8) copies of a site plan, drawn to an acceptable engineering scale (typically 1" = 20') and accurately dimensioned shall be submitted to Sherri Baccaro at the Public Works Department. If a complete site plan application and a site plan are submitted a minimum of seven (7) days prior to the regular Thursday Site Review meeting, the site plan review will be placed on the agenda for that meeting (applications must be received by 5:00 p.m. the Thursday prior to the following meeting). All site plans shall include the following information:

_____ 1. North arrow.

_____ 2. Vicinity map clearly showing streets and location within the City.

_____ 3. Indication of scale.

_____ 4. All property lines with dimensions.

_____ 5. Internal and perimeter streets and drives.

_____ 6. All existing improvements on the property (structures, fences, driveways, sidewalks).

_____ 7. All adjacent rights-of-way.

_____ 8. All proposed improvements, including new construction, parking, landscaping, fencing, sidewalks, driveways, refuse disposal, snow storage areas, lighting, drainage, and any other proposed changes to the property (depending on project).

_____ 9. All existing utilities and utility easements and all proposed utility mains, extensions, and easements.

_____ 10. Existing and proposed fire hydrant location(s) and/or any proposed fire code related features. **If building being proposed is over two stories, the Fire Department needs building elevations.**

ALL ABOVE ITEMS MUST BE INCLUDED WITH THE APPLICATION. INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED.

_____ _____

Signature Date

APPENDIX B

Stormwater Facility Planting Guidelines

APPENDIX B
Planting Guidelines For Stormwater Facilities

TYPE	ZONE	POND DEPTH
Edges and Upland	Transition	
Seasonally Flooded	SHALLOW	0-3"
Submerged, semi-permanently Flooded	MID	3"-18"
Permanently Flooded	DEEP or FLOAT	18-64"

NATIVE PLANTS

						Availability		
						SEEDS	PLANTS	CUTTINGS
Trees	*Alnus incana*	Thin-leaf Alder		Transition	SHALLOW	S	P	
	Betula occidentalis	Water Birch		Transition	SHALLOW		P	
	Populus balsamifera ssp.trichocarpa	Black Cottonwood		Transition			P	
	Populus tremuloides	Quaking Aspen		Transition			P	
Shrubs	*Acer glabrum*	Rocky Mountain Maple		Transition		S	P	C
	Actaea rubra	Baneberry		Transition		S	P	
	Amelanchier alnifolia	Saskatoon Serviceberry		Transition		S	P	
	Cornus stolonifera	Red-Osier Dogwood		Transition	SHALLOW	S	P	C
	Crataegus douglasii	Hawthorn		Transition	SHALLOW		P	
	Holodiscus discolor	Mountain Spray		Transition		S	P	
	Prunus virginiana	Common Chokecherry		Transition		S	P	
	Ribes cereum	Squaw Currant		Transition		S	P	
	Rosa woodsii	Woods Rose		Transition		S	P	
	Rubus parviflorus	Thimbleberry		Transition		S	P	
	Salix boothii	Booth's Willow		Transition	SHALLOW		P	C
	Salix bebbiana Sarg.	Bebb Willow		Transition	SHALLOW		P	C
	Salix drummondiana	Drummond Willow		Transition	SHALLOW		P	C
	Salix exigua	Coyote Willow		Transition	SHALLOW		P	C
	Salix geyeriana	Geyer's Willow		Transition	SHALLOW		P	C
	Sambucus racemosa	Elderberry		Transition		S	P	
	Symphoricarpos albus	Snowberry		Transition		S	P	
Forbs	*Adiantum pedatum*	Maidenhair Fern		Transition			P	
	Aster chilensis	Pacific Aster		Transition		S	P	
	Athyrium filix-femina	Lady Fern		Transition			P	
	Dryopteris expansa	Spiny Wood Fern		Transition			P	
	Geum macrophyllum	Large-Leaf Avens		Transition	SHALLOW	S		
	Iris missouriensis	Iris		Transition	SHALLOW	S	P	
	Maianthemum racemosa (Smilacina racemosa)	False Solomon's Seal		Transition			P	
	Mentha arvensis	Wild Mint		Transition	SHALLOW	S	P	
	Penstemon confertus	Yellow Penstemon		Transition			P	
	Pteridium aquilinum	Bracken Fern		Transition			P	
	Sisyrinchium montanum	Mountain Blue-Eyed -Grass	Swales, Wet meadows, Ditches	Transition		S	P	
	Solidago canadensis	Canada Goldenrod		Transition		S		
	Tellima grandiflora	Fringecup		Transition	SHALLOW		P	
	Trollius laxus	American Globeflower		Transition			P	
	Myosotis laxa	Small Flowered Forget -Me -Not		SHALLOW			P	
	Nuphar lutea ssp. polysepala	Yellow Waterlily		SHALLOW	MID	S		
	Potentilla anserina	Silverweed Cinquefoil		SHALLOW		S		
	Sagittaria latifolia	Duck Potato		SHALLOW			P	
	Veronica americana	American Speedwell		SHALLOW			P	
	Hippuris vulgaris	Mare's Tail		MID			P	
	Alisma plantago-aquatica	American Water-Plantain		MID	FLOAT		P	
	Caltha leptosepala	White Marsh Marigold		MID	FLOAT		P	

* For questions concerning Planting Guidelines, contact;
Dru Dennison 863-2410, City of Whitefish, Neighborhood Resource Officer

APPENDIX B
Planting Guidelines For Stormwater Facilities

						Availability		
						SEEDS	PLANTS	CUTTINGS
Grass Like Species	*Agrostis exarata*	Spike Bentgrass	Rhizomatous	Transition	SHALLOW	S		
	Calamagrostis canadensis	Blue Joint Reed Grass	Bunch, Aggressive	Transition		S		
	Elymus glaucus	Blue Wildrye		Transition	SHALLOW	S	P	
	Elymus lanceolatus (Agropyron dastachyum)	Streambank Wheatgrass	Critana, Cultivar	Transition		S		
	Juncus balticus	Baltic Rush		Transition	SHALLOW	S	P	
	Juncus ensifolius	Daggerleaf Rush		Transition	SHALLOW		P	
	Juncus mertensianus	Merten's Rush		Transition	SHALLOW		P	
	Juncus tenuis	Slender Rush		Transition	SHALLOW		P	
	Pascopyrum smithii (Elymus or Agropyrum)	Western Wheatgrass	Sod Forming, rhizomatus	Transition		S		
	Alopecurus aequalis	Shortawn Foxtail	Wet Meadows, Streambanks, Ditches	SHALLOW			P	
	Beckmannia syzigachne	American Sloughgrass	Rapid early est. for 4-5 yrs till outcompeted	SHALLOW		S		
	Carex aquatilis	Water Sedge	Obligate	SHALLOW	DEEP	S	P	
	Carex lasiocarpa	Sleder Wetland Sedge		SHALLOW	MID		P	
	Carex nebrascensis	Nebraska Sedge		SHALLOW		S		
	Carex pellita (lanuginosa)	Wooly Sedge		SHALLOW	MID	S	P	
	Carex stipata	Owlfruit sedge		SHALLOW		S	P	
	Carex utriculata	Beaked Sedge		SHALLOW	MID		P	
	Carex vesicaria	Blister Sedge		SHALLOW	MID	S		
	Deschampsia cespitosa	Tufted Hairgrass		SHALLOW	MID	S		
	Glyceria elata	Fowl Mannagrass	Creeks, Ditch Bottoms	SHALLOW	MID	S	P	
	Eleocharis palustris	Common Spike Rush		MID	DEEP	S	P	
	Schoenoplectus (Scirpus) acutus	Hardstem Bulrush		MID		S	P	
	Schoenoplectus (Scirpus) microcarpus	Small-Flowered Bulrush		MID		S	P	
	Schoenoplectus (Scirpus validus) tabernaemontani	Softstem Bulrush		MID		S	P	
	Typha latifolia	Common Cattail	Will seed by itself- aggressive	MID				

Note: When seeding Wetland species; seeds need light to germinate.
Mix organic weed free compost into the top 4" of the soil, then seed, pressing seeds lightly into soil.

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Permanently Flooded	DEEP or FLOAT	18-64"

ORNAMENTAL PLANTS

These species are ornamental and are suitable for urban wetlands in a non- native setting.

						Availability		
						SEEDS	PLANTS	CUTTINGS
Trees	*Acer negundo 'Sensation'*	Sensation Maple		Transition	SHALLOW		P	
	Acer rubrum 'Northwood'	Northwood Red Maple		Transition	SHALLOW		P	
	Celtis occidentalis	Common Hackberry		Transition	SHALLOW		P	
	Fraxinus pennsylvanica 'Patmore'	Patmore Green Ash		Transition	SHALLOW		P	
	Gleditsia triacanthos 'Skyline'	Skyline Honeylocust		Transition	SHALLOW		P	
Shrubs	*Aronia arbutifolia*	Red Chokeberry		Transition	SHALLOW		P	
	Clethra alnifolia 'Hummunigbird'	Hummingbird Summersweet		Transition	SHALLOW		P	
	Cornus alba 'Argenteo-marginata'	Euro. Variegated Dogwood		Transition	SHALLOW		P	
	Cornus alba 'Bailhalo'	Ivory Halo Dogwood		Transition	SHALLOW		P	
	Cornus sericea 'Flaviramea'	Yellow-Twigged Dogwood		Transition	SHALLOW		P	
	Cornus sericea 'Isanti'	Isanti Red-Twigged Dogwood		Transition	SHALLOW		P	
	Ribes aureum	Yellow Flowering Currant		Transition	SHALLOW		P	
	Rhus aromatica 'Grow Low'	Grow-Low Fragrant Sumac		Transition	SHALLOW		P	
	Viburnum trilobum (various cultivars)	American Cranberrybush		Transition	SHALLOW		P	

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APPENDIX B
Planting Guidelines For Stormwater Facilities

						Availability		
						SEEDS	PLANTS	CUTTINGS
Perennials	*Achillea millefolium cultivars*	Yarrow		Transition			P	
	Actaea racemosa (Cimicifuga racemosa)	Bugbane	Part to Full Shade	Transition			P	
	Adiantum pedatum	Maidenhair Fern	Part to Full Shade; Rich, moist soils	Transition	SHALLOW		P	
	Ajuga reptans	Ajuga	Part to Full Shade, Aggressive	Transition	SHALLOW		P	
	Aquilegia spp.	Columbine		Transition			P	
	Anemone canadensis	Canada anenome		Transition			P	
	Aruncus dioicus 'Kneiffii'	Kneiffiii Goat's-beard	Part to Full Shade; Rich, moist soils	Transition			P	
	Aster novae-angliae 'Alma Potschke'	Alma Potschke Aster		Transition			P	
	Aster novae-anglia 'Purple Dome'	Purple Dome Aster		Transition			P	
	Astilbe spp.	Astilbe		Transition			P	
	Baptisia australis	False Blue Indigo		Transition			P	
	Bergenia cordifolia	Bergenia	Part to Full Shade	Transition			P	
	Chelone glabra	Turtlehead	Part Shade	Transition	SHALLOW		P	
	Echinacea purpurea	Purple Coneflower		Transition			P	
	Eupatorium maculatum	Joe Pye Weed		Transition			P	
	Filipendula rubra 'Venusta'	Queen of the Prairie	Part to Full Shade; Rich, moist soils	Transition			P	
	Heliopsis helianthoides ' Summer Sun'	False Sunflower		Transition			P	
	Hemerocallis spp.	Daylilly		Transition			P	
	Iris ensata	Japanese Iris		Transition			P	
	Iris pumila	Dwarf Iris		Transition			P	
	Iris reticulata	Dwarf Iris		Transition			P	
	Iris siberica	Siberian Iris		Transition			P	
	Liatris spicata	Gayfeather		Transition			P	
	Ligularia stenocephala 'The Rocket'	The Rocket Ligularia	Afternoon Shade	Transition	SHALLOW		P	
	Ligularis stenocephala 'Little Rocket'	Little Rocket Ligularia	Afternoon Shade	Transition	SHALLOW		P	
	Lobelia cardinalis	Cardinal Flower		Transition	SHALLOW		P	
	Matteuccia struthiopteris	Ostrich Fern	Part to Full Shade; Rich, moist soils	Transition			P	
	Monarda didyma	Bee- Balm	Afternoon Shade	Transition			P	
	Osmunda cinnamomea	Cinnamon Fern	Part to Full Shade; Rich, moist soils	Transition			P	
	Penstemon digitalis	Penstemon		Transition			P	
	Rodgersia spp.	Rodgersia	Part to Full Shade	Transition	SHALLOW		P	
	Rudbeckia hirta	Becky Black Eyed Susan		Transition			P	
	Rudbeckia fulgida 'Goldsturm'	Goldsturm Black Eyed Susan		Transition			P	
	Scabiosa columbaria 'Butterfly Blue'	Butterfly Blue Pincushion Flower		Transition			P	
	Scabiosa columbaria 'Pink Mist'	Pink Mist Pincushion Flower		Transition			P	
	Solidago hybrids	Goldenrod		Transition			P	
	Thalictrum rochebrunianum	Lavender Mist meadow Rue	Part to Full Shade; Rich, moist soils	Transition			P	
	Tiarella cordifolia (various cultivars)	Foam Flower	Part to Full Shade; Rich, moist soils	Transition			P	
	Trollius chinensis 'Golden Queen'	Golden Queen Globeflower		Transition			P	
	Trollius laxus	Globeflower		Transition			P	
	Verbena hastata	Blue Vervain		Transition	SHALLOW		P	
	Asclepias incarnate	Swamp Milkweed		SHALLOW			P	
	Caltha palustris	Marsh marigold		SHALLOW			P	
	Iris versicolor	Blue Flag Iris		SHALLOW			P	
	Menyanthes trifoliata	Bog Bean		SHALLOW			P	
	Mertensia virginica	Virginia Bluebell		SHALLOW			P	
	Saururus cernus	Lizards's Tail		SHALLOW	MID		P	
	Nymphaea 'Comanche'	Hardy Water Lily		MID	DEEP		P	
	Nymphaea 'James Brydon'	Tropical Water Lily		MID	DEEP		P	
	Nymphaea 'Marliacea Chromatella'	Hardy Water Lily		MID	DEEP		P	
	Nymphaea 'Pygmaea Helvola'	Hardy Water Lily		MID	DEEP		P	
	Nymphaea 'Sunny Pink'	Hardy Water Lily		MID	DEEP		P	

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APPENDIX B
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						Availability		
						SEEDS	PLANTS	CUTTINGS
Grass Like Species	*Carex flacca*	Blue Sedge		Transition			P	
	Deschampsia caespitosa	Tufted Hair Grass		Transition			P	
	Deschampsia caespitosa ' Bronzeschleier'	Bronze Veiled Tufted Hair Grass		Transition			P	
	Deschampsia caespitosa ' Goldgehaenge'	Golden Pendant Tufted Hair Grass		Transition			P	
	Deschampsia caespitosa ' Schottland'	Scottish Tufted Hair Grass		Transition			P	
	Dryopteris expansa	Spiny Wood Fern		Transition			P	
	Osmunda cinnamomea	Cinnamon Fern		Transition			P	
	Panicum virgatum ' Prairie Sky'	Prairie Sky Switch Grass		Transition			P	
	Panicum virgatum ' Rotstrahlbusch'	Red Switch Grass		Transition	SHALLOW		P	
	Schizachyrium scoparium	Little Bluestem Grass		Transition			P	
	Sorghastrum nutans	Indian Grass		Transition			P	
	Carex grayi	Gray's Sedge		SHALLOW			P	
	Carex riparia 'Variegata'	Variegated Greater Pond Sedge		SHALLOW	MID		P	
	Carex squarrosa	Squarrose sedge		SHALLOW	MID		P	
	Carex vulpinoidea	Fox Sedge		SHALLOW			P	
	Typha minima	Bullrush		SHALLOW			P	

* For questions concerning Planting Guidelines, contact;
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APPENDIX C

Excavation/Right of Way Permit

PERMIT#_____

EXCAVATION/RIGHT OF WAY PERMIT DATE:_____

NOTE: No permit shall be issued without **CURRENT** Montana Contractors License, Insurance and Bonding on file with the Public Works Department.
It is the CONTRACTORS RESPONSIBILITY to use OSHA approved shoring

PROPERTY OWNER:_____

PROJECT LOCATION:_____

CONTRACTOR:_____CONTACT PHONE:_____

MT CONTRACTORS LIC. #_____CITY BUSINESS LIC. #_____

CURRENT BONDING? _____ CURRENT INSURANCE? _____

PURPOSE OF PERMIT (check all that apply):

_____Water Tap/Line	_____Elect. Utility	_____Driveway
_____Sanitary Sewer Tap/Line	_____Phone Utility	_____Curb/Gutter
_____Storm Sewer Tap/Line	_____Sidewalk	_____General Excavation
_____Gas Utility	_____Other_____	

Description of Work:_____

Plumber (If Water Sewer or Storm) or Firm_____

_____

If fire hydrant is to be shut off or moved or road closed, applicant must notify the Fire Dept.

START DATE:_____ END DATE:_____

DESTINATION OF EXCAVATED MATERIALS:_____
(physical address)

I am familiar with the portions of the Standards for design and Construction for the City of Whitefish and any subsequent requirements that apply to the work I have described above and agree to abide by such. I have in effect the required Liability Insurance and Bonding.

SIGNED:_____ DATE:_____ FEE: $25.00 CHECK:_____ CASH_____
(contractor)

PERMIT ISSUED BY:_____

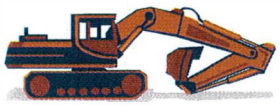
TRAFFIC PLAN APPROVED BY:_____

INSPECTION BY:_____ DATE:_____ APPROVAL_____

REMARKS:_____

_____

City of Whitefish - Public Works Department
Construction & Maintenance Division



EXCAVATION GUIDELINES

<u>This is a general guideline and check-list and does not contain all the necessary information or all of the requirements needed for excavating within the City of Whitefish.</u>

The Excavating Contractor should be familiar with the latest editions of the following documents: The City of Whitefish Standards for Design and Construction, the Montana Public Works Standard Specifications, the Manual on Uniform Traffic Control Devices, the Montana Department of Transportation's Manual for Work Zone Safety, OSHA and all other applicable Federal, State and Local laws and requirements.

<u>Permits</u>

- ☐ The Excavating Contractor must have a completed, signed, and approved copy of a City of Whitefish Excavation/Right-of-Way Permit in their possession **<u>prior to excavating</u>** in any City R.O.W.

- ☐ Additional permits may be required before an excavation begins depending on the location and the nature of the excavation, i.e., State and County R.O.W. permits, and City grading and utility permits.

- ☐ The Contractor must have a current City of Whitefish Business License, proof of insurance, and have the required bond on file with the City Clerk's office.

<u>Utility Locates</u>

- ☐ A One-Call System (UDIG) utility locate request must be fulfilled prior to beginning any excavation within the City of Whitefish. Forty-eight (48) hour advance notification is required and will be enforced.

- ☐ The Contractor will mark the proposed excavation site with **white** paint and/or **white** marking flags in accordance with APWA/UULC Standards.

Traffic Control

☐ A Traffic Control Plan must be submitted to the Public Works Department for approval, at least forty-eight (48) hours prior to the commencing of an excavation. The contractor must also notify the City Police and Fire Departments at least forty-eight (48) hours prior to any street or alley closure. A news release to the news media is also required at least two (2) days prior to the beginning of any construction activity that requires road or lane closures.

☐ All traffic control devices used must meet the MUTCD 2003, Montana Public Works Standard Specifications and City of Whitefish Standards for Design and Construction. Devices remaining during night hours will be constructed of reflective material, illuminated or lighted as required.

☐ **All traffic control devices must be in-place prior to the commencement of the excavation and left intact until the street is reopened to the general public.**

Tracking Pads

☐ Only one access route is allowed to an excavation or construction site. A single tracking pad must be installed before excavating or hauling commences. All vehicles and equipment must enter/exit thru the tracking pad. The pad will be replaced or cleaned as needed when the material becomes contaminated and no longer functions. *(See City of Whitefish Standards for Design and Construction for the detail on tracking pads.)*

Inspection

☐ The City may require a pre excavation "walk thru" inspection of the proposed site prior to startup with the Excavating Contractor.

☐ The Contractor must place a request with the Public Works Department, **at least two (2) hours** prior to backfilling, for an inspection of the excavated area, available compaction equipment and backfill materials. Inspections during compaction and a final inspection after paving will also be required.

Backfill Requirements

☐ 100% imported backfill is required in all City R.O.W.; the use of specific types of native backfill may be accepted, however exclusive approval by the City Engineer must be obtained first All excavated materials will be immediately loaded into trucks, removed from the site and disposed of by the Contractor. Excavated materials will not be stockpiled on City R.O.W.

☐ The Contractor is only allowed to excavate the amount of trench which can be compacted and backfilled within each work day.

☐ All City of Whitefish Standards for Design and Construction and/or Montana Public Works Standard Specifications requirements for the type and compaction

of backfill materials must be met. Density and gradation submittals on the backfill material may be required.

☐ Compaction testing may be required by the City at the Contractor's expense.

☐ The Contractor will be responsible for **daily** maintenance of the excavation until final asphalt paving is completed. 3/4 inch minus crushed top surfacing will be used for this purpose.

Asphalt Pavement

☐ Pavements must be cut with a saw or pneumatic asphalt breaker **prior** to excavating. The trench will be cut along a neat vertical line **a minimum of 12" from each edge of the trench opening.** (For example: If the excavator bucket width is 2', then the width of the asphalt cut must be a minimum of 4', with the excavation centered between the two cuts.)

☐ If any adjacent longitudinal or transverse joints or cracks are less than 3' from the cut lines, the pavement will be removed and replaced to that joint or crack.

☐ Additional asphalt cuts will be required if the cut edges or adjoining sections of asphalt are disturbed during excavation.

☐ **All permanent paving must be completed within seven (7) working days.**

☐ Trench edges must be cleaned and a tack coat (SS-1, SS-1h or approved equal) applied before placing asphalt.

☐ Do not place asphalt hot-mix when the air temperature is less than 40°F and rising. Do not place asphalt upon a surface which is frozen or that has a temperature less than 32°F. Paving is not allowed during rainfall or if standing water is encountered.

☐ Pavement replacement: A **minimum** of four (4) inches' of Hot-mix Asphalt (PG 64-34) placed in two (2) properly compacted lifts. In no case will the new replacement be less than the existing section. Compaction testing may be required by the City at the Contractor's expense.

☐ Temporary paving with a "winter" mix asphalt such as UPM or QPR is allowed only when Hot-mix Asphalt is not available; a three (3) inch minimum thickness is required. The contractor will maintain the temporary repair until final paving with Hot-Mix is completed. The Public Works Department may require the use of lean concrete in place of the cold-mix asphalt.

☐ Crack sealing of all asphalt joints may be required.

Gravel Surfaced Roads & Alleys

☐ Backfill and compaction requirements are the same as for paved roads, except

that the final lift of material will be eight (8) inches of 3/4 inch minus crushed top surfacing.

☐ Excavated areas in gravel must be regularly maintained by the Contractor for a period of two (2) years after backfill has been completed.

Haul Routes - Site & Route Cleanup

☐ A haul route map showing proposed direction of travel must be submitted and approved by the Inspector before excavating begins.

☐ The excavation site and truck haul routes **must** be cleaned of all debris, dirt or dust prior to the end of **each** project day by the Contractor. A vacuum style street sweeper must be used. Additional cleaning(s) during the day may be necessary as conditions warrant. Failure to comply may result in the issuance of a monetary fine or a stop work order.

Warranty

☐ The Contractor is responsible for maintaining and or repairing any and all defects or failures in the excavation area; including but not limited to ditch settlement and asphalt failure for a period of two (2) years. The City will give notice of observed defects with reasonable promptness. In the event the Contractor fails to make such repairs, The City will have the repairs performed and charge the Contractor the cost thereby incurred.

Other

☐ **Federal (OSHA) regulations require that the excavation be designed to provide worker protection if the excavation is greater than 5' deep or if it less than 5' deep and there is indication of a potential collapse or cave-in. A trained Competent Person should be onsite at all excavations.**

☐ If construction fabric or geotextiles are encountered and disturbed in the existing road base, repairs to the fabric must meet the requirements of the Fabric Manufacturer and the Whitefish Public Works Department. The fabric is to be uniformly cut, not torn, ripped, or pulled by the excavator. Typically the repair consists of overlapping the existing fabric by 2' with the newly placed section.

☐ Any existing facility that is damaged during the excavation such as water and sewer lines, manholes and covers, valve boxes, storm inlets, culverts, concrete sidewalks, curb or gutter sections, and traffic or street signs must be repaired or replaced immediately.

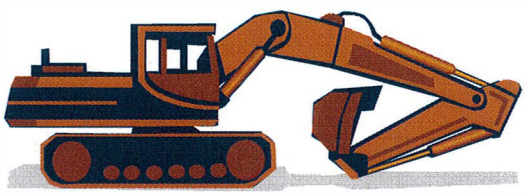
☐ Any paint striping such as center lines, edge lines, parking lanes, or x-walk lines disturbed must be repainted within three (3) working days. Temporary lane markings or traffic control devices will be used until final striping is completed.

☐ The shallowest portion of any buried pipeline, conduit or other facility should not be less then forty-two (42) inches below the roadway surface.

City of Whitefish - Public Works Department
418 E. 2nd Street
P.O. Box 158
Whitefish, MT 59937

406.863.2456 or 406.863.2457
Fax: 406.863.2419

http://www.whitefish.govoffice.com/



APPENDIX D

Engineered Plan Requirements, Plan Review Checklist & General Notes

ENGINEERING PLAN REQUIREMENTS

1. Title Sheet

a. Project name and legal description of property

b. A location map showing the project site, road names, north arrow, scale, and associated landmarks

c. Key map, on drawing sets of three sheets or more, of a scale reflecting the entire project

d. Index of sheets

e. Location of existing and proposed utilities

f. Development data including size and quantity of improvements

g. Legend and abbreviations

h. Design Engineer's name, registration number, and signature (Note: all original sheets of plans shall have a seal and original signature of the design engineer)

i. Name, address, and telephone number of the project proponent and of his/her representative who will act in authority for the project proponent

j. The Approval Block (**Standard Detail SD-1a)**

k. General Notes

l. Record Drawings Certificate (**Standard Detail SD-1b)**

m. All improvement plans with City of Whitefish facilities shall include the correct City of Whitefish horizontal and vertical control on the plans

n. Designate all streets and utilities that are privately owned

2. Plan and Profile Sheets

The size of the plans shall be 24"x36". The plans shall show all existing facilities and improvements to be constructed. Scales shall be 1"=40' horizontal and 1"=4' vertical; or 1"=50' horizontal and 1"=5' vertical; or other scales may be used as necessary to show plan details. The stationing interval shall be 50' or 100'.

Streets

a. Vertical and horizontal curve data

b. Indicate roadway centerline and stationing along centerline

c. Indicate slopes of centerline, sidewalks and gutter lines if necessary

d. Indicate right-of-way location and survey monuments

e. Indicate radii and grades at the ends, midpoint and ¼ points of curb returns
f. Indicate drainage system and location
g. Typical section
h. Demonstrate that streets may be extended through adjacent properties if so required
i. Show location, direction, size and type of MUTCD number of all permanent street signing on a separate plan sheet
j. Show location and size of any postal delivery boxes to be placed on public right-of-way
k. Show location of streetlights
l. Appropriate site distances
m. Handicap ramps at all sidewalk intersections
n. Curb inlet basins on all arterial and collector streets
o. Drainage control at low spots and storm sewers at sag curves
p. Slope easements
q. Clear vision area at intersection

Sewer

a. Location of manholes, sewer line and services
b. Stationing along sewer line
c. In and out invert elevations at manholes
d. Sewer is designed and extended to provide service to adjacent properties.
e. Special details
f. A profile demonstrating that sufficient cover shall be maintained and showing finished street where applicable
g. All utilities with conflicts indicated
h. Sewer service provided to each lot with station and offset at end of service line
i. 4-inch minimum schedule 40 sewer service size
j. Sewer manholes located on street centerline for 36-foot or wider streets and 6-feet from centerline on narrower streets.
k. Slopes, distances and diameter of main runs
l. Manholes identified

Water

a. Location of valves, fittings, fire hydrants and services

b. Stationing along waterline
c. Water system is designed and extended to provide service to adjacent properties
d. Special details
e. A profile demonstrating that sufficient cover shall be maintained and showing finished street grade where applicable
f. Fire flow requirement
g. All utilities with conflicts indicated
h. Service to each lot with station and offset at end of service line
i. 6-feet minimum cover
j. Pipe curvature radius and/or joint deflection angle
k. Fittings specified with stations
l. All fire service lines shall require an engineered plan and profile signed by a Professional Engineer

Grading and Drainage Plan

a. Existing and proposed contours extending 50 ft. into adjacent properties; clearly identify areas of cut or fill
b. Existing roadways and structures
c. Erosion control and slope stabilization measures to be in place prior to and during construction
d. Erosion control/slope stabilization/re-vegetation measures following final grading
e. Dust control and other mitigation measures to be used during grading/clearing and until re-vegetation or stabilization has been completed for all graded areas and slopes
f. Tree plan showing all trees 8-inch diameter at breast height (dbh) and larger
g. Construction access/gravel construction entrances shown
h. Temporary drainage control measures for entire site
i. Permanent drainage improvement plan, including drainage basin boundaries, areas, and test volume calculations
j. Location by station for drywells/drainage facilities
k. Drainage easements
l. Existing or natural drainage courses, canals, rivers, ponds
m. Areas of cut or fill greater than two feet
n. Critical areas to be preserved.
o. Soils information where required

Signage

a. Show location, direction, size and type of MUTCD number of all permanent street signing

Street Lighting

a. Show location of City of Whitefish approved streetlights and the wiring plan.

Landscaping

a. Show the location of the required landscaping

GENERAL NOTES

The following standard general construction notes to be shown on the title sheet:

a. "All work shall be performed in accordance with the "Design and Construction Standards" of the City of Whitefish, and shall be completed to the satisfaction of the Director of Public Works. In the event that a design element does not reflect City standards, the matter must be immediately brought to the attention of the Engineer and the Director of Public Works. The Engineer shall be responsible for recommending a solution or alternative solutions to the City for review and approval."

b. "These Plans have been checked by the City of Whitefish only for conformance with the "Design and Construction Standards," compliance with development agreement conditions, and for general conceptual approval of public improvements as shown. The City's review does not verify or ensure the accuracy of existing or proposed dimensions, lines, coordinates, or grades shown, including all existing utilities shown or not shown."

c. "Utility locations shown reflect available record data. The Contractor shall take precautionary measures to protect all utility lines shown and other utility lines otherwise located. The Contractor shall contact the "Montana One Call Center / U-DIG" at (406) 752-6811 for utility locates giving a minimum of 2-full working days notice prior to beginning construction." Once located it shall be the contractor's responsibility to maintain markings.

d. "Before work begins, the Contractor shall obtain a permit to work in the right of-way from the City and must notify the City Right-of-Way Inspection staff at least 24 hours in advance of commencing construction activities."

e. "The Contractor shall obtain and maintain a complete and approved set of Construction Plans. These drawings, and any required permits, shall be available at the project site at all times and shall be made available to the City staff upon request. If construction plans are not readily available at the project site, the Director of Public Works may issue a stop work order and halt all construction activities pending compliance by the Contractor."

f. "The Contractor agrees to comply with the provisions of the Traffic Control Plan and the "Manual on Uniform Traffic Control Devices," Part IV, for construction signage and traffic control."

g. "All surplus materials, tools, and temporary structures, furnished by the Contractor, shall be removed from the project site by the contractor. All debris and rubbish caused by the operations of the Contractor shall be removed, and the area occupied during construction activities shall be restored

to its original conditions, within 48 hours of project completion, unless otherwise directed by the Director of Public Works."

h. "The Contractor is required to provide and maintain erosion and sediment control measures in accordance with the approved erosion control plan. The Director of Public Works may require the contractor to provide additional erosion control measures due to unforeseen erosion problems or if the plans do not function as intended."

i. "A Pre-Construction meeting with the City of Whitefish is required prior to the start of construction."

j. "All work shall be performed by City approved Contractors."

CITY OF WHITEFISH
PLAN REVIEW CHECKLIST

SUBDIVISION NAME _____ **DATE SUBMITTED** _____

REVIEWING ENGINEER _____ **DATE REVIEWED** _____

YES	NO	N/A	*Preliminary Items*
			Provide four (4) set of plans to Public Works Dept. (distributed to Denny, Karin/Greg, Whitefish Water District, Doug Loy-Fire Department)
			Plan review fee paid. Note if ½ of full fee or full fee paid.
			Review Preliminary Plat Conditions and attach to the plan checklist. Check Preliminary Plat layout and compare.
			Compare to City Master Waster, Sewer and Drainage Plans. Do sewer and water extend to property limits? How does this project fit with adjacent proposed projects? Do we want main extensions if only a few services are included?
			Conditions when individual services are required: Duplex – same owner; 2 water and 1 shared sewer service. Town home – separate owner; 2 water and 2 sewer services.

YES	NO	N/A	*General Plan and Cover Sheet Review*
			Title Block (Engineer's name, address and phone number, project name, name of sheet, sheet __ of __, date designed, dates drawn, surveyed, checked and revised).
			Engineer's Stamp (signed, dated) on cover
			Approval Block for Public Works Director and Fire Marshal signatures (on cover sheet).
			Table of Contents (on cover sheet).
			Vicinity Map required for all plan sets.
			North Arrow & Bar Scale on Each Plan Sheet.
			Legend & Abbreviations.
			Benchmarks and Datum (must be NAVD 88 and located on cover or plan sheet).
			Overall Site Utility Plan (showing all exiting utilities and easements). Overall site plan required if more than 4 plan sheets. This can be at a smaller scale i.e. 1"=100' or so.
			Engineering Design Report required.
			Traffic Study required if stated as a condition of preliminary plat.
			Check that 10' Utility Easement is provided for behind ROW line.
			Separate sheets shall be used for streets, sewer, storm, and water. Sewer and water shall not be shown on the same plan and profile sheets.

YES	NO	N/A	*Street System Review*
			Include 5 foot utility easement for gas, electrical, cable.
			Street Plan/Profile (show existing and proposed grades and alignments for streets, sidewalks, curb and gutters, boulevards, right-of-ways, signage). Profile Views Provide 0.5% minimum grade to provide lateral storm water drainage to basins or other relief features (on roads with curb and gutter). Grades must be shown in decimal form with (+ or -) slope on all profile views.

			Vertical information, low point, high point, VPI, BVC, EVC, need to be clearly shown on all profile views.
			Plan Views - Stationing and Layout PC, PT, PI and Intersections shall be stationed accordingly. Curve information, delta, radius, length, and tangent shall be noted. Provide spot elevations, curb returns, begin curb radius (BCR) and end curb radius (ECR). Provide stationing for all proposed streets.
			Sidewalks Provide with and type of driveway entrances proposed. Provide handicap ramps as required, provide detail on ramps. Provide for boulevards.
			Driveways Max width of 22' for residential lots. Nearest edge of driveway shall not be less than 35' to the closest edge of the pavement of an adjacent intersection. 6" of concrete is required for approaches. Show distance between driveways.
			Road Sections Show pavement widths and thicknesses, gravel widths and thicknesses, stabilization fabric with specifications. Provide minimum 2% crown or cross sloping on all sections for surface drainage.
			Snow Removal Provide snow removal locations, especially around cul-de-sac areas. Provide drainage plan for melting snow.
			Standard Curb and Gutter Street section shows standard curb and gutter (drive over curb is not allowed).
			Trench Cuts into New City Streets Streets built within the last 10 years have geotextile fabric. Include not that a 2-foot overlap of the fabric is required; fabric shall be cut and not ripped. The City inspector or engineer must inspect the overlap of fabric. Also match existing section of street.
			Street Signage Sheet Street name and traffic control signs – specifications on materials and posts Need location sheet with conflicts of trees and lights. Show trees and other obstacles.
			Right-of-Way Width and boundary shall be clearly marked and identified.

YES	NO	N/A	***Grading and Erosion Control Sheet***
			Existing Topography show (existing buildings, trees, bodies of water, etc.). Existing and proposed contours of at least 2-foot intervals.
			Proposed Final Grades (contours or spot elevations) and Site Topography.
			Catch basin inlet protection, tracking pad, stabilization of disturbed areas, construction sequence, phasing of large projects, clearing limits, silt fence or wattles on down slope property line.
			Show trees that are going to be removed.

YES	NO	N/A	***Storm Drain Review***
			Drainage plan required when >5000 sq. ft. impervious surface is added to the site.
			Profile Views Provide profile view for proposed storm drains (required for primary drainage lines > 100 feet). Provide stationing, offsets, and elevations for all storm drain elements. Provide maximum spacing on 400 feet between manholes.
			Plan Views - Easements and Right-of-ways Check slopes and widths of proposed drainage ditches with provided easements and right-of-ways. When drainage easements are required, make sure they are recorded. Check minimum grade requirements for drainage pipe. Put pipe sizes on Plan View.
			Material and Sizing Minimum diameter of 12 inches shall be used for all storm drains (Variance allowed for 8" where engineering report justifies). Minimum diameter of 8 inches shall be used for inlet laterals.
			Maintenance Plan Required for Privately Maintained Detention and Conveyance Facilities – (Note on Cover Sheet).
			Details

			Provide details for inlets, manholes and lids, concrete collars. Cover and manhole ring shall be Inland Foundry 772-A, Olympic Model 37 or approved equal.

YES	NO	N/A	*Sanitary Sewer System Review*
			Profile Views Invert and rim elevations shown. Size, length and grades of pipe clearly shown. Show exiting and proposed utilities.
			Plan Views Flow direction clearly shown. Provide service to property boundary of each lot with proposed or existing buildings. Distance to existing and proposed water mains and services clearly shown.
			Maximum Manhole Spacing 400' for slopes from 0.4% to 4.0% 300' for slopes from 4.0% to 8.0% 200' for slopes greater than 8.0%
			Manhole Type Designation Manholes shallower that 3' are impractical. Doghouses are not allowed. Manhole fillet on bottom to be precast (not cast in place). All manholes shall be numbered with station and offsets on all plan and profile views.
			Drop Manhole Use drop manhole if sewer drop > 24".
			Core Drilling Existing Manhole For existing manhole to be core drilled use link seal or approved equal to seal hole. (Link Seal LS-475-C-12)
			Manhole Rubberized Chimney Seals Chimney Seals shall be Cretex (or approved equal) meeting ASTM C-923 with a minimum thickness of 3/16".
			Pipe Sizing (part of engineering report) Verify that sewer improvements meet proposed and future flow demands per state regulations.
			Check Sewer Grades and Verify Inverts: 8" dia., 0.4% min. slope; 10" dia., 0.28% min. slope; 12" dia., 0.22% min. slope. Place at minimum grade for future extensions where practical.
			Sewage Velocities All systems shall be designed to transport sewage between the ranges of 2 to 10 feet per second. If > ___ fps. Blocking requirement per DEQ.
			Sewer Line is Straight Incorporate alignment changes into manholes. Flow angles shall not be less than 90 degrees through manholes.
			Sewer Line Terminal Ends Terminate with manhole. Install stub-outs when possible past pavements. Extend sewer to end of property.
			Manhole and Cleanout Locations All manholes and cleanouts shall be placed within right of ways and shall avoid low-lying areas to prevent storm water inflows.
			Minimum Sewer Clearances with Other Utilities 12" min. vertical separation with storm sewers (**guideline**). 18" min. vertical separation with water mains. 10' min. horizontal separation with water mains. 5' min horizontal separation with storm sewer and sanitary force mains (**guideline**).
			Sanitary Sewer Cover Min. 4 feet of cover is required. Determined by proposed final grade. Max. 15 feet of cover from proposed final grade to sewer invert elevation (**guideline**). Detectable warning tape 18" below finish grade along all sewer trenches is required. Min. 6 feet for force mains. Material for Manhole Ring and Cover –East Jordon Iron Works Model 3772Z1 or approved equal. Sealed lids with O-Ring in wet areas.
			Pipe Changes All pipe size and material changes shall take place only at manholes.
			Sewer Service Laterals Extend out perpendicular from the gravity main to right-of-way. Must extend a min. of 3 feet beyond property line to prevent damage to sidewalk.
			Materials Sanitary Sewer Services – PVC schedule 40. Sanitary Sewer Mains – PVC SDR 35. Sewer Saddles – Use Romac Saddle: CB-4.63 U.N. (for any main type).

			Septic Tank Abandonment If existing septic tank, provide note that tank is abandoned in accordance with UPC latest edition.
			Sewer Line Location Limitations Shall not be placed underneath sidewalks, curb and gutter, etc. Exception would be crossings for a short length.

YES	NO	N/A	***Sanitary Sewer Pumping Station Review***
			Study Detailing Proposed Development Impacts to Existing Lift Stations
			Study Detailing Proposed Development with the Addition of a New Lift Station
			Pumping Stations Limitations Stations shall only be used when gravity systems are not feasible.
			Emergency Power Supply Shall be required unless approved by the Public Works Director.
			Alarm System Phonetics Inc. / Sensaphone 1400 shall be used and linked by telephone dialer system. Appropriate phone numbers to be programmed by the City.
			Electrical Surge Protection Required for all stations.

YES	NO	N/A	***Sanitary Sewer Force Main System Review***
			Materials HDPE SDR 11 with butt fusion joints or HDPE 160 SDR11.
			Thrust Blocks Shall be used at all tees, bonds, offsets or plugged ends.
			Dead Ends A valve with thrust block shall be installed at all dead ends.
			Compliance with the City's Master Sewer Plan and State Regulations
			Air Release Valves To be placed at all high points on force main lines.
			Cleanout Spacing Cleanouts need to be spaced a min. of 300 feet. Check cleanout detail.
			Service Details Check service details for connection to force main.
			Existing Force Main Connections Valves shall be placed at all new force main connections to existing lines. Valve shall be placed on the upstream side of the connection and secured by a thrust block.

YES	NO	N/A	***Water System Review***
			Profile Views Provide profile view for all proposed water mains. Provide stationing, offsets and elevations for all water system elements.
			Plan Views with System Map Showing existing and proposed with main size, valves, hydrants and services. Show water main separation distances to sewer utilities. Service provided to each lot, including undeveloped. Provide backflow prevention devices as required per FCCHR.
			Materials Water main shall be PVC-C-900 DR 18 (235 psi) pipe for pipe < 12" diameter only. Minimum water main diameter shall be 8 inches.
			Fittings Provide thrust blocks for all fittings. Provide an eccentric or rotated 'T' at low point in main for sediment removal.
			Sewer Separation 18" min. vertical separation with sanitary and storm sewer lines. 10' min. horizontal separation with sanitary and storm sewer lines.
			Pressure Relief Valves Show on plans which lots require PRV's.

			Fire Hydrants Shall be placed at 360' intervals and in accordance with Fire Dept. requirements. Shall be placed on property lines fronting main. Concrete thrust block shall be noted on detail. All water systems shall meet minimum fire flow requirements. Mega lug restraints are required in addition to thrust blocks. Provide fire hydrant for blow off at high point and as blow off for dead end lines. At end of line provide fire hydrant, valve then 10 ft. stub.
			Curb Boxes Avoid placing in sidewalks, concrete or future driveway locations. Place inside street side of sidewalk centered in boulevard.
			Service Saddles Provide power seal, Romac stainless steel full circle design.
			Water Services and Curb Stops Service lines shall all be 1" Type K copper tubing or polyethylene pipe. Curb stop shall be ball valve Mueller 300 Ball Curb Valves with Insta-Tite or 110 compression fittings. SS liners are required for 110 compression fittings on PE pipe. Old services that are to be tied into new main need to be replaced to curb box as needed to meet current standards. Service must extend 3 feet beyond property line to prevent damage to sidewalk. Don't allow water services and curb stops within the concrete approach (City would be responsible to replace concrete in future). Check for abandonment notes for old services. Always abandon at corp. stop. Water services shall not be installed in the same trench excavated for fire hydrant leads. Min. 5 ft. separation between services and hydrant leads. Separation between water service taps min. 2.5 times the main pipe diameter.
			Couplings Mechanical Joint ductile iron solid sleeve only.
			Water Main Backfill Both toning wire and warning tape need to be called out in the details. Provide minimum of 6 feet of backfill to final grade upon all water mains. Each water sheet needs to have "minimum 6' bury" note on it.
			Valves All valves shall be fitted with a thrust block. Valves shall be located at not more that 800' intervals. Valves shall be placed at the ends of each main with a 10' capped stub. Dead ends shall be minimized by looping. Valves shall be positioned in a manner that allows system repair and maintenance upon the entire system. Check that a valve is provided for future extensions. At low point on main provide eccentric tee reducer or rotate tee downward for sediment removal.
			Tapping Contractor to install sleeve and test, City to tap. Tapping fee is $.
			Provide Anchoring Requirements on Steep Water Mains

YES	NO	N/A	***Utility Detail Sheet or General Notes***
			No Pea gravel allowed for pipe bedding.
			Sewer Manholes - Rings 2 maximum, 12 –inch max. (if 1 ring then 1-12 inch, if 2 rings then 2-6 inches). External Chimney seals are required on manholes.
			Include detail for blow off fire hydrant with eccentric reducer for air release. Include detail for an eccentric or rotated "T" at low point in main for sediment removal.
			Include water and sewer service detail with curb box location in boulevard.
			For condos (see water service and meter pit Standard Detail).
			Fire Hydrant detail needs to include a note that fire hydrant to be +/- 0.1 feet from finished grade to bury line.

YES	NO	N/A	***Lighting Plan Sheet***
			Show Location – Trees, Lights, and Signs on plans. Lights; number required, service (electricity) location and specify type. Conflicts – Sign Posts. Driveways – No poles across from driveways.

APPENDIX E

Cold Weather Construction Requirement Agreement and Inspection Log

Cold Weather Construction Requirements for Public Infrastructure

The following requirements shall apply to cold weather construction of new water mains, sewer mains, storm sewer mains, roads, appurtenances, and earthwork in the existing or proposed public right of way and shall be in effect when the air temperature is lower than 32 degrees or when frozen soils conditions exist. The Owner must indicate their acceptance of these requirements by signing below prior to the start of work.

Inspection Requirements

1. Full time inspection is required under the supervision of a Montana licensed civil engineer.
2. The Field Inspector shall document on-site activities using the DAILY INSPECTION LOG FOR COLD WEATHER CONSTRUCTION provided by the Pubic Works Department, or an approved equivalent. An inspection log shall be completed for each day of active construction, signed by both the Field Inspector and the Project Engineer, and submitted to the Public Works Department on the following business day.
3. The Project Engineer shall provide the Pubic Works Department with current proctor test results for all backfill material prior to use of that material.
4. The Field Inspector shall perform or oversee soil compaction testing for all backfill material to verify optimal moisture content and compliance with approved specifications. Compaction tests shall be at taken at horizontal intervals of less than 100 feet and at various depths, with 50% of the tests in the lower half of the trench or road section.

Warranty Requirements

1. Prior to connecting any new mains to existing City facilities, the Owner shall enter into a two year warranty agreement with the City for all water mains, sewer mains, storm sewer mains, roads, appurtenances, or earthwork constructed in the public right of way or proposed right of way during cold weather conditions. The warranty shall be enforced by means of a letter of credit issued by a local bank in the City's name. The letter of credit shall provide an amount equal to 20% of the Project Engineer's estimate for the cost of improvements. The Public Works Director must approve the cost estimate prior to issuance of the letter of credit.

Construction Requirements

1. A competent Project Supervisor, employed by the General Contractor, shall be on the job site continuously during periods of active construction.
2. No frozen material shall be placed in backfill areas and all frozen soil, aggregate, snow, ice or other frozen material shall be removed before appropriate material is placed in the fill area.
3. The length of open trenches shall be limited to not more than 50 feet during active construction.
4. Each trench shall be backfilled to match the surrounding grade when construction activity ceases for any period of more than one hour.
5. Soil compaction shall be in accordance with the optimal moisture results of pertinent Proctor tests and shall conform to the approved plans and specifications.

6. Pipe installers shall abide by the manufacturers' cold weather guidelines, as well as the Uni-Bell Handbook of PVC Pipe, or an equivalent standard regarding the handling and installation of pipe, gaskets, fittings, etc.

The Public Works Department reserves judgment and authority to schedule or limit work near existing City utilities at their discretion.

A lack of compliance with these requirements may be cause for the Public Works Department to issue a stop work order or require work to be redone as a condition of final acceptance.

I, _____, as the Owner of the _____ project, hereby accept these requirements for cold weather construction of public infrastructure. I will enter into a separate two year warranty agreement with the City and understand the warranty period will start upon the City Engineer's written acceptance of the overall project. I will provide copies of this letter to my Engineer, _____ and Contractor, _____, immediately and direct them and their subcontractors to abide by these requirements, as well.

_____
Signature

_____
Printed Name

_____
Company Name

CITY OF WHITEFISH

DAILY CONSTRUCTION REPORT

Date _____

Project _____ Project No. _____

Client _____ Project Manager _____

Contractor _____

Weather _____ Temperature _____

Wind _____ Precipitation _____

AVERAGE FIELD OFFICE			
Name of Contractor	Prime or Subcontractor	No. of Men on Project	Remarks

ENGINEER'S PERSONNEL			
Time	Name	Duties	Remarks

EQUIPMENT AT THE SITE	

CONSTRUCTION ACTIVITIES

By: _____ Title _____ F:\admin\office\rpaforms\dacnsrpt.doc

REMARKS

REMARKS

DAILY PHOTOS

Items of Work Completed	Location or Sta. To Sta.	Amount	Remarks

APPENDIX F

Latecomers Agreement Application

LATE-COMERS AGREEMENT

THIS AGREEMENT is entered into as of the _____ day of _____, 20__, by and between the City of Whitefish, a municipal corporation ("CITY"), and _____ ("DEVELOPER") with respect to the following facts:

A. The CITY owns and operates a domestic water system and a sewage disposal and treatment system that serves properties within the City of Whitefish and on its periphery.

B. DEVELOPER has developed the property commonly known as _____ and, in connection therewith, has installed water and/or sewer mains, or other utility facilities, which will benefit properties in addition to those developed by DEVELOPER. The parties have identified certain expenses associated with such water and sewer improvements for which DEVELOPER seeks reimbursement from properties that may eventually use the utility facilities installed by DEVELOPER.

THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. Entitlement to Reimbursement. The CITY agrees that DEVELOPER has installed the following utility facilities for which the CITY's existing policies entitle the DEVELOPER to seek reimbursement from future customers who use such facilities:

a. Water Facilities: _____

_____

_____

Based on evidence and information submitted by DEVELOPER, the CITY agrees that the DEVELOPER shall be entitled to seek reimbursement, for the facilities described above in the amount of _____ DOLLARS as set forth further herein.

b. Sewer Facilities: _____

_____

_____

Based on evidence and information submitted by DEVELOPER, the CITY agrees that the DEVELOPER shall be entitled to seek reimbursement, for the facilities described above in the amount of _____ DOLLARS as set forth further herein.

2. Identification of Properties. The parties agree that the properties identified on Exhibit "A," attached hereto and incorporated herein by reference, are those properties from which DEVELOPER is entitled to seek reimbursement, and the reimbursement that DEVELOPER is entitled to seek is the amount set forth on Exhibit "A" with respect to each property and each utility.

3. City's Efforts to Collect. The CITY agrees that it shall exercise its best, good faith efforts to assist DEVELOPER in collecting reimbursement as set forth herein. The CITY will exercise its best, good faith efforts to decline to allow the properties described on Exhibit "A" to connect to any of the facilities for which DEVELOPER is entitled to seek reimbursement unless and until such properties have deposited with the CITY the appropriate amount of reimbursement, as described on Exhibit "A." Other than exercising its best, good faith efforts to obtain reimbursement from those properties listed on Exhibit "A," the CITY shall have no further obligation to police connections to the CITY's water and/or sewer system. The CITY shall not incur liability for any unauthorized connection to the CITY's water and/or sewer system, and the CITY shall not be obligated to pay to DEVELOPER any amount of reimbursement as set forth therein until the CITY has actually collected such amount from the properties described on Exhibit "A." DEVELOPER acknowledges that the CITY has entered into this Agreement as an accommodation and as a convenience to DEVELOPER, and the CITY does not guaranty that any amount of reimbursement will be collected for DEVELOPER; nor will the CITY be liable if it fails, through negligence or otherwise, to collect from a particular property.

4. Combination or Subdivision of Properties.

a. In the event that the number of properties identified on Exhibit "A" is reduced by the combining of one or more properties into a single property, the amount of reimbursement per property shall remain the same, and the total amount of reimbursement that DEVELOPER is entitled to, as set for in Section 1, shall be reduced accordingly. For example, if initially ten properties each owe $1,000.00 in reimbursement, and two properties are combined to form one, the nine remaining properties shall each owe $1,000.00, and the total reimbursement to which DEVELOPER is entitled shall be reduced to $9,000.00.

b. In the event that the number of properties identified on Exhibit "A" is increased, by the subdivision of one or more properties, the amount of a particular property's reimbursement shall be divided and spread equally over the number of subdivided lots that result, and the total amount of reimbursement that DEVELOPER is entitled to, as set forth in Section 1, shall remain the same. For example, if initially ten properties each owe $1,000.00 in reimbursement, and one property is subdivided into five subdivided lots, then each of the five subdivided lots shall owe $200.00, and the total reimbursement to which DEVELOPER is entitled shall remain $10,000.00. In no event shall the total amount of reimbursement to which DEVELOPER is entitled, as set forth in Section 1, be increased.

5. Payment to Developer. Within thirty (30) days of the CITY's collection of reimbursement from one of the property owners described on Exhibit "A," the CITY shall

remit such amount to the DEVELOPER, less a service charge equal to seven (7) percent of the amount collected (but in no event exceeding $100.00) to defray the CITY's costs of administering this Agreement.

6. Term; Incorporation of Policies. This Agreement shall be in effect for a period of ten (10) years, after which time it shall automatically terminate. DEVELOPER shall have no right to reimbursement from any properties described on Exhibit "A" that connect to the CITY's water and/or sewer system after the termination of this Agreement; nor shall the CITY have any further obligation to monitor or identify properties that connect after the termination of this Agreement. This Agreement incorporates by reference those policies of the CITY with respect to reimbursement of Developers that are in effect at the time of the execution of this Agreement.

7. Attorneys' Fees. In the event of any litigation to enforce or interpret the provisions of this Agreement, or to remedy a breach thereof, the prevailing party shall be entitled to reasonable attorneys' fees as fixed by the court.

8. Entire Agreement. This Agreement contains the entire agreement of the parties hereto, and supersedes any prior written or oral agreements between them concerning the subject matter contained herein. There are no representations, agreements, arrangements, or understandings, oral or written, between the parties hereto relating to the subject matter contained in this Agreement which are not fully expressed herein. The provisions of this Agreement may be waived, altered, amended or repealed in whole or in part only upon the written consent of all parties to this Agreement.

9. Governing Law. The construction of this Agreement, and the rights and liabilities of the parties hereto, shall be governed by the laws of the State of Montana.

10. Forum. Any litigation to enforce or interpret the provisions of this Agreement or the parties' rights and liabilities arising out of this Agreement or the performance hereunder shall be maintained only in the courts in the County of Flathead, Montana.

11. Successors in Interest. This Agreement shall inure to the benefit of, and shall be binding upon, the assigns, successors in interest, personal representatives, estate, heirs, and legatees of each of the parties hereto.

12. Notices. All notices, requests, payments, demands and other communications required or permitted to be given under this Agreement shall be in writing and shall either be delivered in writing personally or be sent by telegram or by regular or certified first-class mail, postage prepaid, deposited in the United States mail, and properly addressed to the party at his address set forth on the signature page of this Agreement, or at any other address that such party may designate by written notice to the other party.

Dated: _____

CITY OF WHITEFISH

By: _____
City Manager
CITY OF WHITEFISH
P. O. Box 158
Whitefish, Montana 59937

Dated: _____

DEVELOPER

By: _____

Address: _____

_____

APPENDIX G

Water and Sewer Material Specifications List

CITY OF WHITEFISH
WATER AND SEWER MATERIAL SPECIFICATIONS

WATER MAIN PIPE	6" thru 12" - PVC AWWA C-900 DR18 (formerly Class 150) 12" and larger - PVC AWWA C-905
GATE VALVES **MJ X MJ**	Mueller Resilient Wedge Gate Valve - 12" & under Mueller Butterfly - larger than 12"
TAPPING VALVES	Mueller Resilient Wedge Tapping Valve
TAPPING SLEEVES	Romac – Model SST III Mueller - Model H-304SS
VALVE BOXES	EJIW 8560 Series 3 pc. - Screw Type Tyler 6860 Series "DD" - Screw Type #6 Bases for Water - #4 Bases for Sewer Lids to be marked "WATER" or "SEWER"
ADJUSTABLE V.B. RISERS	Tyler 6860 - Screw Type, 67 - 69
MAIN COUPLINGS	Solid Sleeve - MJ SSB - Ductile Iron (Long) Class 350
MAIN FITTINGS	MJ SSB - Ductile Iron Class 350
JOINT RESTRAINT	MPWSS for Thrust Blocking (Megalug 2000 - on approval ONLY)
FIRE HYDRANTS	Mueller Super Centurion 250, 5-1/4", 3-way, MJ Shoe "RED" color

SEWER MAIN PIPE - GRAVITY	8" Minimum – PVC SDR 35
SEWER MAIN PIPE - PRESSURE	HDPE 200 psi – with butt fusion joints
SEWER SERVICE PIPE	**Gravity = SCH. 40 PVC Only.** Pressure = HDPE SDR 11 psi
SEWER SADDLES	Romac Saddle: CB-4.50 (For any main type) PVC Saddle: O-ring/gasket seal w/stainless steel clamps - (PVC main only)

WATER SERVICE PIPE	1. Type K Seamless Copper - ¾" to 2" 2. PE Pipe (IPS) SDR 7 - ¾" & 1" * 3. PE Tube (CTS) SDR 9 - 1½" & 2" * ***1. Toning wire required - see water service detail.*** ***2. Beveling tool must be used on IPS. Inserts on CTS.***
CURB STOPS	Mueller 300 Ball Curb Valves with Insta-Tite or compression fittings. SS liners are required for 110 compression fittings on PE pipe.
CURB BOXES	Mueller H-10314 or H-10334 Stationary rod required for all boxes
CORPORATION STOPS	¾" - 2" (CTS) Mueller B-25008 ¾" - 1" (IPS P.E.) Mueller B-25005
WATER SERVICE SADDLES	Romac Model 306 2" - 12" Romac Model 305 10" - 32"
METER WELLS	¾" & 1" - Mueller/ McCullough /Thermal - Coil Meter Box (Insulated w/cast iron lid & attached alum. bottom) *Meter wells for larger than 1" meters -* requires specific approval from the Public Works Department
BACKFLOW DEVICES	Devices must meet: The "Cross Connection Control Committee Pacific NW - Section AWWA - Cross Connection Manual" and/or The "Manual of Cross-Connection Control - University of Southern California – FCCHR".

STORM SEWER PIPE	12" minimum Material type & size as approved by the City Engineer
MANHOLE F/C	Olympic Foundry MH37A East Jordan Iron Works 3772
CURB INLET F/G	Olympic Foundry SM49B East Jordan Iron Works 7222
CATCH BASIN F/G	Olympic Foundry MH11 East Jordan Iron Works 3719

Printed On: 2/11/2009

APPENDIX H

Public Works Department Review Fee Information

Whitefish Public Works Department
Plan Review and Construction Oversight Fee
Calculation Worksheet

Please submit this completed form and payment along with infrastructure improvement plans and related documents to the Public Works Administrative Assistant.

Date: _____

Name of Project: _____

Consultant: _____ Project Manager: _____

Mailing Address: _____

Telephone: _____ Email: _____

Please provide the following information (leave the line blank if an item does not apply to your project).

a. Type of Development (check one and describe as indicated):
   - Subdivision ..... ___
     - Number of lots ___ - Major subdiv. if 6 or more lots
   - Multi-family residential - 6-plex and larger ..... ___
   - Commercial ..... ___
   - Other (i.e. simple water or sewer main extension) ..... ___
     - Description _____

b. Utility Extension Information
   - Length of new water main: _____ feet
   - Length of new sewer main: _____ feet

c. Does the project include water or sewer pumping facilities which will be owned by the City after construction? ___ yes ___ no

You may refer to the attached fee schedule and apply information from items a, b, and c above to perform your own fee calculation. The Public Works Department will calculate fees as project documents are received.

A.	Base Plan	_____
B.	Water main extension	_____
	Sewer main extension	_____
C.	Pumping facilities	_____
	Total	_____

50% of the fee is due with the submittal of construction plans and related documents. The balance is due prior to the start of construction. Checks should be made payable to the City of Whitefish. Please review the attached fee schedule or contact the Public Works Department at 863-2460 for more information.

Last Revision March 12, 2004

Whitefish Public Works Department
Plan Review and Construction Oversight Fees

		Major Subdivision	Minor Subdivision	Multi-Family or Commercial Site
A.	Base Plan - site, streets, bike/ped facilities, drainage, lighting, etc.	$500 + $50 per lot	$300	$200
B.	Water and Sanitary Sewer Main Extensions (fee for each utility)	0 to 500 LF		$200
		More than 500 up to 2500 LF		$350
		More than 2500 LF		$450
C.	Water or Sewer Pumping Facilities (City owned and operated)	$400	$200	$200
D.	Independent Consultant Review (for specialized design features)	$150 + actual consultant fees		
E.	Additional Plan/Report Submittal and Review	$100 per additional submittal		

1 Fees for items A, B, and C are intended to cover City costs for 1 pre-design meeting, 2 final plan/document reviews, pre-construction and progress meetings, field inspection, warranty inspection and follow-up, record maintenance, and general administration.

2 For the purpose of this fee schedule, multi-family development is defined as a residential development project, other than a subdivision, including 6 or more dwelling units. A major subdivision is one which creates 6 or more lots.

3 Fees for stand-alone water or sanitary sewer main extension projects will be calculated using only Item B.

4 50% of fees calculated under items A, B, and C must be paid prior to start of final plan review.

5 The balance of fees calculated under items A, B, and C must be paid prior to the start of construction.

6 The need for independent consultant review will be determined by the Public Works Director and payment (Item D) is due prior to Public Works issuance of approval letter.

7 The review fee for additional submittals (Item E) is due prior to start of review for each additional submittal.

Last Revision Februry 17, 2004

APPENDIX I

GIS Control Points and Map

CITY OF WHITEFISH
GIS CONTROL POINTS

OWNERS: CITY OF WHITEFISH

PURPOSE: COORDINATE CONVERSION FOR WHITEFISH CITY GIS CONTROL POINTS

ROBERT PECCIA & ASSOCIATES
804 DUSTIN STREET
KALISPELL, MT 59901 (406) 257-0348
1960 COOPERATIVE WAY, SUITE 200
HERRIMAN, UT 84065 (801) 727-0429

FILENAME: CONVERSION.DWG DATE: DECEMBER, 2007 1 OF 1

1000 0 1000 2000
(SCALE IN FEET)

Basis of Bearings:
Grid North
Coordinates:
State Plane International Feet
Montana 2500, NAD83 (1999)
Elevations:
US Survey Feet Above MSL
NAVD88

LEGEND
- Control from original city survey (by Eby & Associates)
- Control from Montana Department of Transportation projects
- Control from local Robert Peccia & Associates projects

K:\Kal-Proj-Data\07124.000 - Whitefish GIS\07124_000-Proj\dwg\Survey\Conversion.dwg Dec 19, 2007

CITY OF WHITEFISH - GIS CONTROL POINTS

COORDINATES:

STATE PLANE INTERNATIONAL FEET
MONTANA 2500, NORTH AMERICAN DATUM 1983 (NAD83(1999))

ELEVATIONS:

US SURVEY FEET ABOVE MEAN SEA LEVEL (MSL)
NORTH AMERICAN VERTIVAL DATUM 1988 (NAVD88)

POINT NUMBER	NORTHING	EASTING	ELEVATION	POINT # ORIGINAL	MONUMENT DESCRIPTION
12710	1553127.279	794802.920	3035.54	MDT 127J	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12711	1553160.706	794453.333	3034.40	MDT 127K	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12712	1553169.884	794182.253	3031.95	MDT 127L	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12810	1553197.800	793834.938	3013.58	MDT 128J	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12811	1553166.538	793490.539	3013.87	MDT 128K	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12812	1553249.022	792836.784	3030.88	MDT 128L	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12813	1553281.727	792453.571	3030.87	MDT 128M	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12814	1553274.315	791874.094	3036.81	MDT 128N	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12815	1553377.290	791090.371	3044.02	MDT 128O	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12816	1553380.531	790300.338	3085.61	MDT 128P	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12817	1553455.771	789023.147	3084.60	MDT 128Q	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12904	1550807.136	784170.026	3304.57	MDT 129D	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12910	1553503.319	788160.261	3101.16	MDT 129J	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12911	1553502.961	787554.969	3101.15	MDT 129K	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12912	1553273.687	786849.271	3129.96	MDT 129L	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12913	1552298.283	785696.934	3183.73	MDT 129M	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
12925	1553044.914	786415.459	3162.26	MDT 129Y	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13005	1551585.784	780091.536	3184.86	MDT 130E	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13010	1550541.335	783595.174	3307.74	MDT 130J	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13011	1551523.798	781287.900	3177.30	MDT 130K	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13023	1550350.121	783368.445	3290.96	MDT 130W	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13024	1550401.194	782514.419	3233.73	MDT 130X	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13025	1551258.401	781857.219	3202.55	MDT 130Y	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13110	1551549.565	778900.567	3182.15	MDT 131J	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13111	1550488.705	776072.709	3109.59	MDT 131K	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13112	1549977.551	774574.180	3118.50	MDT 131L	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13124	1551634.903	777924.617	3156.78	MDT 131X	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13125	1551455.294	777046.203	3143.46	MDT 131Y	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13126	1550041.955	775042.651	3110.49	MDT 131Z	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13202	1549037.766	772578.415	3099.20	MDT 132B	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13203	1549120.226	772000.978	3069.03	MDT 132C	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
13310	1550364.954	768899.950	3022.91	MDT 133J	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
50104	1549427.960	794910.577	3033.85	MDT D501	NGS BRASS DISC
50106	1553470.230	789811.867	3087.68	MDT F501	NGS BRASS DISC
50107	1551707.646	785009.964	3217.20	MDT G501	NGS BRASS DISC
50110	1551608.399	778562.065	3182.19	MDT J501	NGS BRASS DISC
50111	1549717.438	773727.294	3114.33	MDT K501	NGS BRASS DISC
50112	1550204.167	769536.281	3018.91	MDT L501	NGS BRASS DISC
50116	1563281.178	761864.380	3041.74	MDT P501	NGS BRASS DISC
620	1549921.736	770223.863	3018.39	MDT T-6	5/8" REBAR WITH MDOT ALUMINUM CONTROL CAP STAMPED "T-6 1992"

10001	1562703.118	796926.339	3236.43	EBY 1	3.25" EBY AC
10002	1551322.963	786661.390	3433.79	EBY 2	3.25" EBY AC
10003	1546356.553	797769.914	3035.21	EBY 3	5/8" REBAR
10004	1547285.783	793044.062	3091.88	EBY 4	5/8" REBAR
10005	1552343.977	801953.944	3052.08	EBY 5	5/8" REBAR
10006	1563868.692	792882.993	3087.41	EBY 6	5/8" REBAR
10007	1564031.859	791240.402	3107.60	EBY 7	5/8" REBAR
10008	1561393.717	793960.936	3000.95	EBY 8	5/8" REBAR
10009	1559956.560	794242.013	3006.02	EBY 9	5/8" REBAR
10010	1557276.507	791955.048	3000.04	EBY 10	5/8" REBAR
10011	1555902.655	793303.334	3043.57	EBY 11	MAGNAIL
10012	1555629.251	797148.627	3054.49	EBY 12	5/8" REBAR
10013	1555486.129	799816.409	3046.57	EBY 13	5/8" REBAR
10014	1553859.315	804650.051	3079.26	EBY 14	MAGNAIL
10015	1551519.337	799517.791	3068.30	EBY 15	1.25 YPC C4
10016	1551374.729	801803.700	3059.91	EBY 16	MAGNAIL
10017	1554878.060	789686.045	3036.35	EBY 17	5/8" REBAR
10018	1559135.042	786640.660	3003.26	EBY 18	5/8" REBAR
10019	1556426.907	786390.806	3093.88	EBY 19	5/8" REBAR
10020	1546249.144	803698.029	3055.42	EBY 20	5/8" REBAR
10021	1546151.908	799911.289	3028.05	EBY 21	5/8" REBAR
10022	1542100.355	801737.812	3036.87	EBY 22	5/8" REBAR
10023	1537892.838	803509.385	3045.01	EBY 23	5/8" REBAR
10024	1538264.878	799799.367	3039.00	EBY 24	5/8" REBAR
10025	1542628.315	798988.014	3029.61	EBY 25	5/8" REBAR
10026	1540520.338	796608.070	3060.75	EBY 26	5/8" REBAR
10027	1538519.769	796896.219	3079.92	EBY 27	5/8" REBAR
10028	1540602.558	792263.441	3168.55	EBY 28	5/8" REBAR
10029	1540713.618	789179.725	3125.65	EBY 29	5/8" REBAR
10030	1546963.587	790692.351	3141.84	EBY 30	5/8" REBAR
10031	1549738.005	789223.797	3150.51	EBY 31	5/8" REBAR
10032	1551287.889	792870.236	3041.84	EBY 32	MAGNAIL
10033	1550724.411	795390.674	3035.82	EBY 33	1.25" RPC
10034	1549793.305	785700.966	3199.22	EBY 34	5/8" REBAR
10035	1552037.177	786252.900	3244.67	EBY 35	5/8" REBAR
10036	1561079.440	797653.063	3103.05	EBY 36	5/8" REBAR
10038	1552078.758	797564.167	3033.82	EBY 38	SPIKE IN PAVEMENT
10039	1552143.825	797498.815	3034.70	EBY 39	WHITEFISH 1959
10040	1546817.023	796936.319	3033.59	EBY 40	5/8" REBAR
10101	1538286.246	799989.972	3035.89	EBY 101	NGS BRASS DISC "L509"
11005	1555093.520	793933.719	3039.95	MDT 0E	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11006	1556639.358	793980.743	3051.46	MDT 0F	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11101	1558212.815	794073.121	3060.51	MDT 1A	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11102	1559067.102	794125.147	3043.51	MDT 1B	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11201	1560583.946	794212.842	3009.04	MDT 2A	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11202	1562059.338	794291.430	3020.24	MDT 2B	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11203	1562834.777	794338.813	3035.55	MDT 2C	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11301	1563699.266	793744.532	3096.15	MDT 3A	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11302	1563802.969	793144.403	3082.63	MDT 3B	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11303	1563920.504	791406.918	3107.82	MDT 3C	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11401	1564326.993	790828.273	3115.48	MDT 4A	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11402	1565069.989	790641.155	3121.78	MDT 4B	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET
11403	1565810.049	790547.977	3126.76	MDT 4C	2" MDT ALUMINUM CAPS SET ON A 5/8" X 30" REBAR STAMPED WITH POINT NAME AND YEAR SET

30022	1552991.264	792884.042	3017.92	6TH 22	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
30023	1552859.333	792717.708	3029.53	6TH 23	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
30024	1552495.315	792727.587	3029.59	6TH 24	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
30025	1552168.547	792918.422	3037.45	6TH 25	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
30026	1551922.197	792878.327	3039.67	6TH 26	MAGNAIL
30027	1551879.426	793287.740	3032.82	6TH 27	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
30028	1551611.866	793264.495	3019.40	6TH 28	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
30029	1551561.107	793612.204	3007.66	6TH 29	MAGNAIL
30030	1551407.822	794018.775	3027.33	6TH 30	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
30031	1551424.875	794413.444	3016.05	6TH 31	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31001	1552420.923	798575.114	3020.14	EASTSIDE 1	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31002	1552893.991	798578.270	3029.44	EASTSIDE 2	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31003	1553083.834	798394.283	3022.34	EASTSIDE 3	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31004	1553186.294	798373.637	3021.62	EASTSIDE 4	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31005	1553375.896	798394.398	3038.25	EASTSIDE 5	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31006	1553685.684	798378.482	3024.11	EASTSIDE 6	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31007	1553868.989	798453.150	3047.06	EASTSIDE 7	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31008	1554082.938	798437.919	3046.88	EASTSIDE 8	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31009	1554222.487	798454.314	3033.39	EASTSIDE 9	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31010	1553442.706	798641.209	3042.63	EASTSIDE 10	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31011	1552876.035	798294.686	3027.02	EASTSIDE 11	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31012	1552868.441	798945.724	3045.06	EASTSIDE 12	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31013	1552027.113	798958.773	3040.20	EASTSIDE 13	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"
31014	1551527.066	799101.554	3044.53	EASTSIDE 14	5/8" REBAR WITH RED PLASTIC CAP "RPA CONTROL"

APPENDIX J

Weekly Inspection Summary Reports

CONSTRUCTION PROGRESS AND INSPECTION REPORT

Period Ending
Date, 2007

Project Name

Project, Whitefish, MT

Project Description	Contractor's Name
Excavation, Water Line, Sewer Line, Storm Drain, Paving and Sidewalk Construction	**Construction Company, Inc. Kalispell, MT**

1. Rough Estimate of Percent Completion to Date of Construction Phases *(Include items such as clearing, grading, drainage, base, surface, lighting, etc.)*

2. Work Completed or in Progress this period

3. Brief Weather Summary This Period Including Approximate Rainfall and Periods of Below Freezing Temperature
(On earthwork jobs include soil conditions)

4. Contract Time

No Days Charged To Date	Last Working Day Charged (Date)

5. Summary of Laboratory and Field Testing This Period *(note failing tests and any retests Summarize out-of-tolerance material. Identify material subject to pay reduction.)*

6. Describe Anticipated Work by Contractor for Next Period

7. Problem Areas/Other Comments *(Revisions to plans and specifications approved or denied, delays, difficulties, etc. and actions taken.)*

SPONSOR'S INSPECTOR OR REPRESENTATIVE

Date	Typed of Printed Name and Title	Signature

APPENDIX K

Pre-construction Meeting Checklist

PRECONSTRUCTION CONFERENCE AGENDA

Project Name:

Project Number:

Date: Time:

Location:

Attendees: *(Sign in on sheet)*

Discussion

1. Project Organization:

Owner: _____

_____

Engineer: _____

_____

Contractor: _____

_____

Subcontractors: _____

_____

_____

Utility Company Representatives: Gas: _____

Electric: _____

Telephone: _____

Cable TV: _____

2. Purpose of Meeting

- ☐ Introduce and designate responsible personnel
- ☐ Establish working relationship
- ☐ Discuss project requirements
- ☐ Coordination with Utility Companies

3. Contractor's Tentative Schedule

Contract Time:
Start Date:
Completion Date:
Normal Work Week:

4. **Contractor's Submittals**
   - ☐ Construction Schedules
   - ☐ Traffic Plan
   - ☐ Other Technical Specification sections
   - ☐ Substitutions

5. **Applications for Payment**
   - ☐ Review of General Conditions
   - ☐ Review of Measurement and Payment
   - ☐ Materials on site

6. **Specific Requirements and Procedures**
   - ☐ Traffic Control
   - ☐ Adjacent Construction Activities
   - ☐ Certified payrolls
   - ☐ Temporary Construction Permits

7. **Critical Work Sequencing**
   - ☐ Material ordering and delivery
   - ☐ Utility Companies related work

8. **Field Decisions, Work Directives, and Change Orders**
   - ☐ Review of General Conditions

9. **Use of Premises, Storage Areas, Security, Field Office**

10. **Contractor's Assignments for Safety and First Aid**
    - ☐ Review Safety Standards

11. **Progress Meetings**

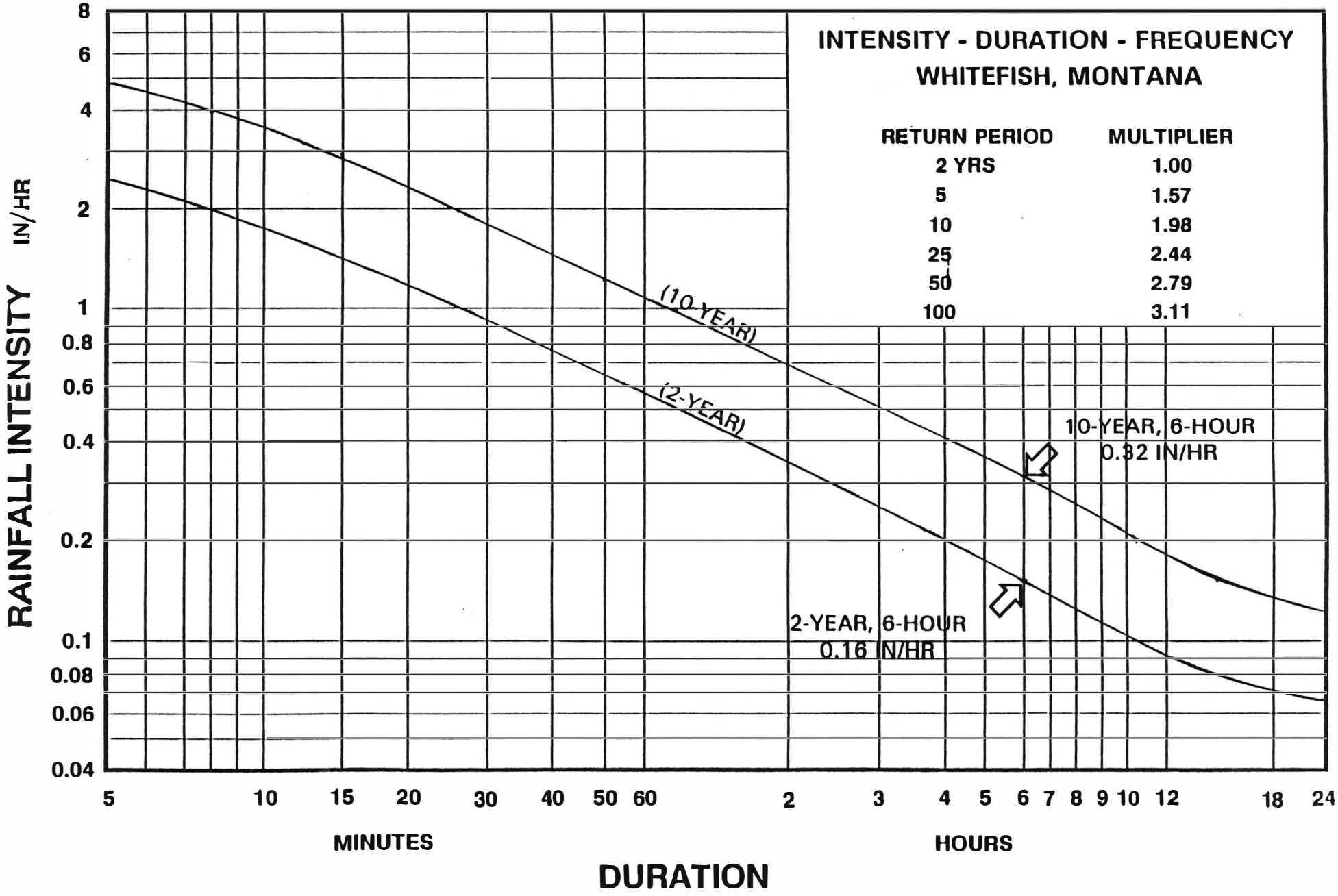
12. **Inspection and Testing**
    - ☐ Review Special Provisions No. 7

13. **Comments by Other Representatives**
    - ☐ Owner's Representative
    - ☐ Utility Companies

K:\Kal-Proj-Data\PROPOSALS\City of WF\Design Stds Update\PRECON_AGEN.DOC

APPENDIX L

Runoff Intensity – Duration – Frequency Chart


INTENSITY - DURATION - FREQUENCY
WHITEFISH, MONTANA
RETURN PERIOD MULTIPLIER
2 YRS 1.00
5 1.57
10 1.98
25 2.44
50 2.79
100 3.11
(10-YEAR)
(2-YEAR)
10-YEAR, 6-HOUR
0.32 IN/HR
2-YEAR, 6-HOUR
0.16 IN/HR
RAINFALL INTENSITY IN/HR
8
6
4
2
1
0.8
0.6
0.4
0.2
0.1
0.08
0.06
0.04
5 10 15 20 30 40 50 60 2 3 4 5 6 7 8 9 10 12 18 24
MINUTES
HOURS
DURATION

APPENDIX M

Municipal Facilities Exclusion Checklist Form (MFE)

MUNICIPAL FACILITIES EXCLUSION CHECKLIST

CERTIFICATION OF THE AVAILABILITY OF MUNICIPAL SERVICES

In accordance with ARM 17.36.602, the following information is provided to the Department of Environmental Quality for their consideration of the subdivision:

1. Name of Subdivision:

2. Location of Subdivision: (See attached location map)

_____¼ _____¼ Section _____ Township ___ Range

3. Name and Address of Applicant:

4. A copy of the _____ certificate of survey is attached
_____ preliminary plat is attached.
_____ final plat is attached.

5. Name and Address of Individual(s) of Firm to whom correspondence is to be sent:

_____

_____

_____

6. Location of the subdivision to the city or town, vicinity map attached: Yes ___ No ___

7. Number of parcels in this subdivision:

8. This property is within a Whitefish _____ zone. A copy of that section of the zoning ordinance is attached.

9. The City of Whitefish hereby certifies that adequate municipal facilities are available (or will be within one year) to provide the following services to the subdivision:

Water	_____ Yes	_____ No
Sewer Disposal	_____ Yes	_____ No
Solid Waste Disposal	_____ Yes	_____ No
Storm Sewer	_____ Yes	_____ No

10. Method of financing extension of water and/or sewer mains:

_____A water main already exists in the right-of-way adjacent to this subdivision; no extension of water main is required. The property owner will bear the cost of water service line installation.

_____ A water main extension is required. The cost of the extension will be financed by:

____ A sewer main already exists in the right-of-way adjacent to this subdivision; no extension of sewer main is required. The property owner will bear the cost of sewer service line installation.

_____ A sewer main extension is required. The cost of the extension will be financed by:

11. Will the owner of the municipal facilities own, operate and maintain the water supply, and sewage disposal facilities? Yes ____ No ____

12. Will the owner of the municipal facilities own, operate and maintain the solid waste facilities? Yes ____ No ____
If not will there be service available for disposal of solid waste to the Flathead County landfill? Yes ____ No ____

13. Will the owner of the municipal facilities own, operate and maintain the storm water facilities? Yes ____ No ____ If not, explain how maintenance of the facilities will be addressed.

14. Will all water and sewer mains or extensions as defined in 76-4-102, MCA, be under the control and maintenance of the certifying municipality? Yes ____ No ____

15. Exclusion Checklist review fee, $75, included: Yes ____ No _____

16. I certify that the governing body has reviewed and approved storm water drainage plans to ensure that adequate drainage is provided.

17. (Other):

Certified by: _____ Date:
City Engineer

Send with the $75 review fee to:

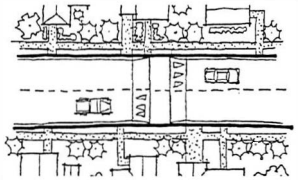
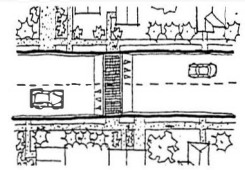
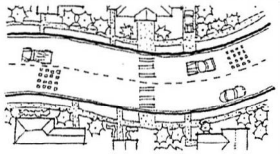
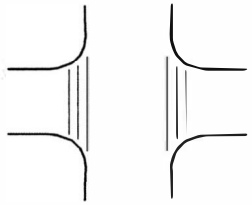
Montana Department of Environmental Quality
Subdivision Review Section/Water Protection Bureau
Permitting and Compliance Division
PO Box 200901
Helena, MT 59620

APPENDIX N

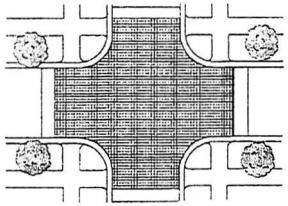
Traffic Calming Measures

Table 7-1 Types of Traffic Calming Measures

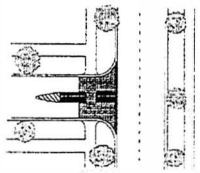
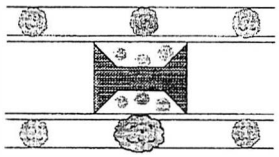
Vertical Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Speed Hump	Paved hump in the street that causes discomfort at high speeds. • Speed reduction • Possible traffic reduction	• Effective if used in series at 300 to 500 foot spacing. • Self-enforcing. • Relatively inexpensive.	• If not properly designed, drivers may skirt around to reduce impact. • Drivers may speed up between humps. • May increase volumes on other streets. • Difficult to properly construct.	• Emergency vehicles • Drainage • Signage • Snow removal Estimated Cost Range = $1,000 to $2,000
 Raised Crosswalk	Speed hump designed as a pedestrian crossing. • Speed reduction at crossing • Possible traffic reduction	• Highlights crosswalk. • Excellent pedestrian safe treatment. • Aesthetically pleasing if designed. • Relatively inexpensive.	• Drivers may speed up between humps. • May increase volumes on other streets. • Difficult to properly construct.	• Emergency vehicles • Drainage • Signage • Snow removal Estimated Cost Range = $1,000 to $2,000
 Rumble Strips	Patterned sections of rough pavement. • Possible speed reduction	• Relatively inexpensive to install. • Create driver awareness.	• High maintenance. • May adversely impact bicyclists. • Noisy by design, and not recommended for all areas.	• Emergency vehicles Estimated Cost Range = $1,000 to $2,000
 Surface Valley Gutters	Dips in the street that can be used to carry run-off as well as cause discomfort to drivers at high speeds. • Speed reduction • Possible traffic reduction	• Effective if used in series at 300 to 500 foot spacing. • Self-enforcing. • Relatively inexpensive during initial construction.	• Drivers may speed up between dips. • May increase volumes on other streets. • Not usually appropriate for existing streets with established drainage patterns.	• Emergency vehicles • Drainage • Signage Estimated Cost Range = $1,000 to $2,000

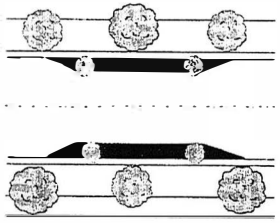
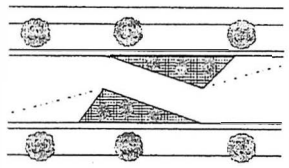
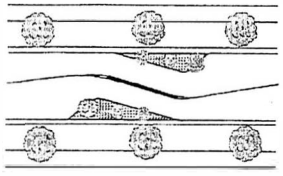
Vertical Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Raised Intersection	Raised plateau where streets intersect. • Speed reduction • Possible traffic reduction	• Slows vehicles in the most critical area, reducing conflict. • Highlights intersection. • Excellent pedestrian safety treatment. • Aesthetically pleasing if well designed. • Better for emergency vehicles than speed humps.	• Increases difficulty of making a turn. • Increased maintenance. • Requires adequate signage and driver education.	• Emergency vehicles • Drainage • Signage • Snow removal Estimated Cost Range = $4,000 to $6,000

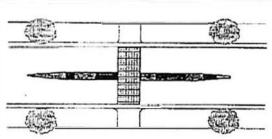
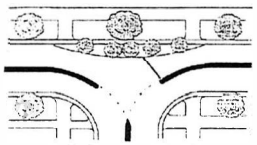
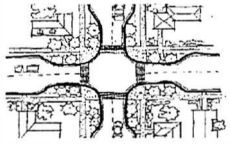
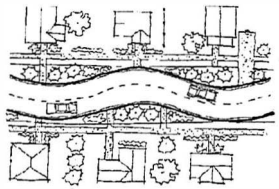
Horizontal Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Gateway Treatment	Entry treatment that communicates a sense of neighborhood identity and a change in traffic conditions. • Speed reduction at entry • Traffic reduction	• Positive indication of a change in environment from arterial road to residential street. • Reduces pedestrian crossing distances. • On wide streets, provides space for landscaping in the median.	• Low speed of turning vehicles may restrict flow on adjacent arterial.	• Emergency vehicle access • Lighting • Irrigation and maintenance of landscaping Estimated Cost Range = $5,000 to $25,000
Single-Lane Slow Point/  Lane Narrowing	Mid-block expansion of landscaped areas and/or on-street parking in order to physically narrow the street to a single traffic lane. • Speed Reduction • Traffic Reduction	• Minor inconvenience to drivers. • Minimal inconvenience to local traffic. • Shorter crossing distance for pedestrians. • Provides space for landscaping. • Effective when used in series.	• Unfriendly to bicyclists unless designed to accommodate them. • Conflict between opposing drivers arriving simultaneously could create problems. • Contrary to driver expectation of unobstructed flow.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $8,000 to $20,000

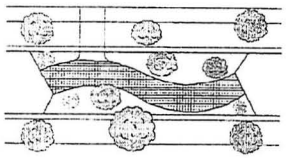
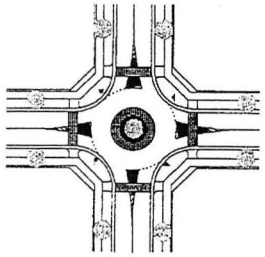
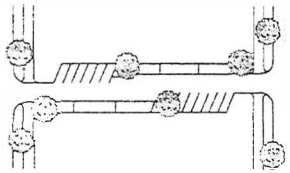
Horizontal Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Two-Lane Slow Point	Mid-block expansion of landscaped areas and/or on-street parking in order to physically narrow the street. • Speed reduction • Possible traffic reduction	• Minor inconvenience to drivers. • Regulates parking if bulb-outs are placed in no parking zones. • Protects parked vehicles. • Reduces pedestrian crossing distance. • Provides space for landscaping.	• Less effective in reducing speed and diverting traffic than the single-lane application. • Unfriendly to bicyclists unless designed to accommodate them.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $8,000 to $20,000
 Single-Lane Angled Slow Point	Offset curb extensions used to narrow the street to a single lane and create angled deviations in the path of travel. • Speed reduction • Traffic reduction	• Minor inconvenience to drivers. • Minimal inconvenience to local traffic. • Shorter crossing distance for pedestrians. • Provides space for landscaping. • Effective when used in series.	• Unfriendly to bicyclists unless designed to accommodate them. • Conflict between opposing drivers arriving simultaneously could create problems. • Contrary to driver expectation of unobstructed flow.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $8,000 to $20,000
 Two-Lane Angled Slow Point	Offset curb extensions used to narrow the street and create angled deviations in the path of travel. • Speed reduction • Possible traffic reduction	• Same as Single-Lane Angled Slow Point, except pedestrian safety is reduced.	• Same as Single-Lane Angled Slow Point, except less effective in controlling speeds because drivers can create a straighter through movement by driving over centerline.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $8,000 to $20,000

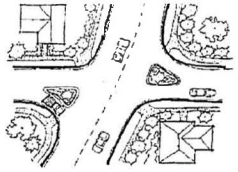
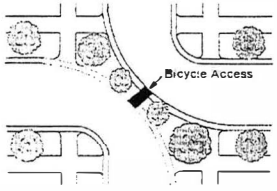
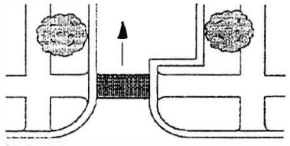
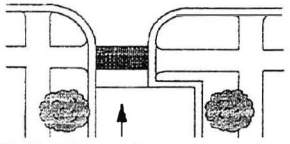
Horizontal Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Mid-Block Median	Island or barrier in the center of a street that narrows lanes and segregates traffic. • Possible speed reduction • Possible traffic reduction	• Provides a refuge for pedestrians and bicyclists. • Can improve the streetscape if landscaped.	• Limited reduction in vehicle speeds.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $5,000 to $10,000
 Modified "T" Intersection	Modification of "T" intersection layout which gives priority to turning traffic. • Speed reduction • Possible traffic reduction	• Reduces through traffic along the top of the "T". • May provide space for landscaping.	• Can cause confusion regarding priority movements, which may lead to accidents.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $5,000 to $10,000
 Neckdown/Curb Bulbs	Physical curb reduction of road width at an intersection. • Speed reduction	• Reduces pedestrian crossing distance. • Can be used in multiple applications or on a single segment of roadway. • Aesthetically pleasing if landscaped.	• Unfriendly to bicyclists unless designed to accommodate them. • Landscaping may cause sight line problems.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $20,000 to $30,000
 Deviation/Chicanes	Offset curb extensions that cause deviation in the path of travel. • Speed reduction • Possible traffic reduction	• Imposes minimal inconvenience on local traffic. • Reduces pedestrian crossing distance. • Provides large area for landscaping. • Reduces speed without significantly increasing emergency response time. • Aesthetically pleasing.	• May create opportunities for head-on conflicts on narrow streets. • Cost is greater than many other devices. • Unfriendly to bicyclists unless designed to accommodate them.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $20,000 to $30,000

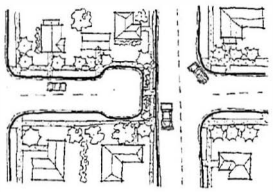
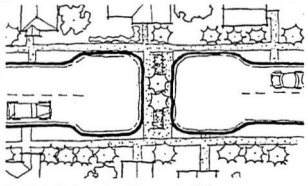
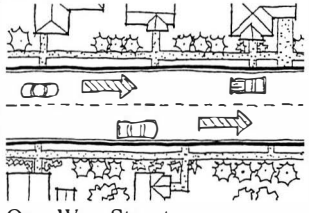
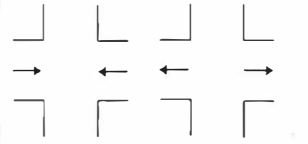
Horizontal Deflection

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Driveway Link	Narrow winding driveway section placed between two standard street segments. • Speed reduction • Traffic reduction	• Changes the initial impression of the street. Appears to be a road closure yet allows through movements for local traffic. • Provides a large area for landscaping.	• High cost can be prohibitive. Best installed in conjunction with street reconstruction or initial construction. • Unfriendly to bicyclists unless designed to accommodate them.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $20,000 to $50,000
 Traffic Circle/Roundabout	Raised circular area placed in the center of an intersection. Drivers travel in a counter-clockwise direction and are required to yield upon entry. • Speed reduction at intersection • Possible traffic reduction	• Reduces accidents by 50% to 90% over stop control. • Provides space for landscaping. • Cheaper to maintain than signals. • Effective at multi-leg intersections. • Provides equal access to intersections for all drivers. • Provides a good environment for bicyclists.	• May be restrictive for larger vehicles if designed to a low speed. (This can be minimized by the use of a mountable apron.) • Right of way may need to be purchased to accommodate left turns by large vehicles. • Initial safety issues as drivers adjust. • May increase volumes on adjacent streets.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $10,000 to $50,000
 Shared Zone	A block with narrow entry points and high-density parking which functions similarly to a parking lot. • Speed reduction • Traffic reduction	• Provides a low speed shared environment that is safe for all users. • Improves amenity without restricting access. • Provides flexibility for on-street parking.	• High cost unless part of original design. • May result in an increased number of low speed accidents.	• Emergency vehicle access • Signage Estimated Cost Range = $15,000 to $25,000

Obstruction

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Forced Turn Barriers/ Diverters	Small traffic islands installed at intersections to restrict and channelize turning movements. • Traffic reduction • Possible speed reduction	• Changes driving patterns • May reduce cut through traffic. • May be attractive if landscaped.	• May increase trip length for some drivers. • May increase response times for emergency vehicles.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $4,000 to $8,000
 Diagonal Road Closure	Barrier placed diagonally across a four-legged intersection, interrupting traffic flow across the intersection. • Traffic reduction • Speed reduction	• Eliminates through traffic • Provides area for landscaping. • Reduces traffic conflict points. • Increases pedestrian safety • Can include bicycle path connection.	• May inconvenience residents gaining access to their properties. • May inhibit access by emergency vehicles. • May divert through traffic to other local streets. • Altered traffic patterns may increase trip length.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $10.000 to $20,000
  Partial Street Closure	Blockage of one direction of traffic on a two-way street. The open lane of traffic is signed one-way, and traffic from the blocked lane is not allowed to drive around the barrier in the open lane. • Traffic reduction • Speed reduction	• Reduces through traffic in one direction. • Allows two-way traffic on the remainder of the street. • Shorter crossing distance for pedestrians. • Provides space for landscaping. • Two-way bicycle access can be maintained. • Emergency vehicles can drive around partial closure with care.	• Reduces access for residents. • Compliance with semi-diverters is not 100%. • May increase trip length.	• Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $10,000 to $20,000 each side of intersection

Obstruction

Measure	Definition/Application	Advantages	Disadvantages	Special Considerations
 Cul-De-Sac/Street Closure	Street closed to motor vehicles at the end of a block using planters, bollards, barriers, etc. • Traffic reduction • Speed reduction	• Eliminates through traffic. • Improves safety for all street users. • Pedestrian and bicycle access maintained.	• Reduces emergency vehicle access. • Reduces access to properties for residents. • May increase trip lengths. • May increase volumes on other streets.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $15,000 to $25,000
 Mid-Block Street Closure	Street closed to motor vehicles mid-block using planters, bollards, barriers, etc. • Traffic reduction • Speed reduction	• Eliminates through traffic. • Improves safety for all street users. • Pedestrian and bicycle access maintained.	• Reduces emergency vehicle access. • Reduces access to properties for residents. • May increase trip lengths. • May increase volumes on other streets.	• Emergency vehicle access • Lighting • Signage • Irrigation and maintenance of landscaping Estimated Cost Range = $15,000 to $25,000
 One-Way Street	Street upon which motor vehicles may operate in just one direction. • Possible traffic reduction	• Increased safety due to lack of opposing traffic. • Can be used to open up more resident parking. • Maintains reasonable access for emergency vehicles. • Can discourage through traffic.	• Can lead to increased vehicle speeds. • May increase trip lengths. • May increase volumes on other streets. • Initial safety concerns as drivers adjust. • Alternative route must exist.	• Signage Estimated Cost Range = $2,000 to $3,000
 Imploding/Exploding One-Way Street Intersections	Intersection at which opposing legs carry one-way traffic in different directions. • Traffic reduction	• Increased safety due to lack of opposing traffic. • Maintains reasonable access for emergency vehicles. • Interrupts the flow of through traffic.	• May increase trip lengths. • May increase volumes on other streets. • Initial safety concerns as drivers adjust. • Alternative route must exist.	• Signage Estimated Cost Range = $3,000 to $5,000

APPENDIX O

Example Covenants and Easements for Stormwater Facilities

EXAMPLE

COVENANTS FOR PERMANENT MAINTENANCE OF STORMWATER FACILITIES (CPMSF)

Covenants for Permanent Maintenance of Stormwater Facilities (CPMSF) is a permanent maintenance agreement that is recorded (and attached to the deed by reference) as a permanent contract in the official records of the Knox County Register of Deeds. The purpose of this document is to ensure perpetual and proper maintenance, repair and/or replacement of a stormwater facility by the current property owner as well as any future owners. The requirement for a permanent maintenance agreement for stormwater facilities is contained in the Knoxville Stormwater and Street Ordinance (Section 22.5-34). Maintenance of stormwater facilities on private property is the responsibility of the property owner rather than the City of Knoxville. The term *"covenants"* refers to multiple promises from the property owner to the City of Knoxville.

The Stormwater Engineering Division requires that the CPMSF must be properly signed and officially recorded before issuing a site development permit or a building permit. The plans reviewer in the Stormwater Engineering Division will notify the person submitting a site development plan if a CPMSF is required. The completed CPMSF Worksheet (Appendix A) is either mailed or faxed to the Stormwater Engineering Division. The CPMSF document is then prepared and forwarded to the property owner for execution. The property owner is responsible for signing the document and having it notarized. The attached basic CPMSF template is for a typical stormwater detention facility with first flush treatment. Additional requirements may be necessary, based upon the type of detention and/or stormwater quality treatment provided.

When the property owner has signed the document and had it notarized, return (1) the original document and (2) a check in the dollar amount specified and made payable to the Knox County Register of Deeds to:

Construction Bond Coordinator
City of Knoxville, Engineering Department
City County Building, Suite 480
400 Main Street
Knoxville, TN 37902

The Engineering Department records the document with the Register of Deeds for Knox County. The property owner will be sent a copy of the recorded CPMSF document along with a receipt.

The property owner is also responsible for the preparation and recording of a survey plat* that shows the stormwater facility and easement. A survey plat must be prepared by a Registered Land Surveyor (RLS) actively registered in the State of Tennessee. The Instrument Number assigned to the CPMSF by the Knox County Register of Deeds must be placed on the new survey plat, so that future property owners and others will have notice of the obligations that run with ownership of the property. The plat must show an easement boundary around each stormwater or water quality facility, complete with bearings and distances, and a tie line from each easement to a property corner. If the facility easement is not directly accessible from an adjoining public street or right-of-way, then a 20-foot traversable access easement must be shown for the stormwater facility.

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* NOTE: See the Minimum Subdivision Regulations for platting requirements. Consult the plat review form in Appendix A and the plat review flowcharts in Chapter 2 for additional information, or call the Stormwater Engineering Division (telephone 215-2148) as necessary.

CONTRACT NUMBER: _____

Form 5/10/2000
This instrument prepared by:
Sharon E. Boyce
Senior Attorney
City of Knoxville

THIS DOCUMENT IS A BLANK TEMPLATE USED BY STORMWATER ENGINEERING DIVISION IN PREPARING A CPMSF.

COVENANTS FOR PERMANENT MAINTENANCE OF STORMWATER FACILITIES

THE TERM "STORMWATER FACILITIES" MAY REFER TO WATER QUALITY AND/OR WATER QUANTITY FACILITIES (i.e. detention basins, retention basins, swales, pipes, oil/water separators, sand filtering devices, etc.)

_____ , (an individual/ a Tennessee or other state corporation/partnership), with its (office/residence) located at _____ , (hereinafter "Property Owner") grants these Covenants for Maintenance of Stormwater and/or Water Quality Facilities (hereinafter "Covenants") on this the __ day of _____ 2003.

TEMPLATE ONLY ! Do not use this form to execute CPMSF.

WITNESSETH:

WHEREAS, City of Knoxville Ordinance No. 0-155-03, Stormwater and Street Ordinance, as amended, requires property owners to enter into permanent maintenance agreements for stormwater and/or water quality facilities before the property is developed.

NOW THEREFORE, as a condition of the Department of Engineering's issuance of a Site Development Permit, the Property Owner warrants, covenants and grants as follows:

1. The Property Owner warrants that it is the owner of property located within the City of Knoxville at _____ (address); **CLT Number**: Map___ Insert___ Group___Parcel____; **City Block Number:** ____ **;** and more specifically of record by deed dated ____ in (**Warranty Book ____ Page ____** or **as Instrument Number** ___)

with the Knox County Register of Deeds, (hereinafter referred to as the "Property") and that it has the right to grant said Covenants.

2. The Property Owner desires to develop all or a portion of the above described Property according to the Site Development Permit to be issued by the City Engineering Department based on the Property Owner's site/subdivision plan entitled _____, dated _____ and prepared by _____ (hereinafter "Plan").

3. The Property Owner will construct and maintain the stormwater and/or water quality facilities in strict accord with the Plan, specifications, calculations, and conditions required by the Department of Engineering.

4. The Property Owner will provide a surety bond, letter of credit or cash bond acceptable to the City and in an amount to be determined by the Department of Engineering to guarantee that the stormwater and/or water quality facilities are constructed in accordance with the Plan.

5. To ensure that subsequent property owners have notice of these Covenants and the obligations therein, the Property Owner will include in all instruments conveying any or all of the above described Property on which the stormwater and/or water quality facilities are located, the specific instrument numbers referencing these Covenants and the recorded subdivision plat indicated in paragraph 12 herein.

6. The Property Owner will maintain the approved stormwater and/or water quality facilities in good working order acceptable to the City Department of Engineering. Minimum maintenance of the said facilities, shall include sediment, debris, oil, hydrocarbons, and foreign materials removal; cutting and removal of woody vegetation on an annual basis; and keeping emergency spillways functional and clear of woody vegetation and debris so that the operation and capacity of the stormwater and/or water quality facilities continue to meet the standards in said Plan.

7. In order to provide access to stormwater and/or water quality facilities by personnel, vehicles and equipment, the Property Owner will provide a twenty (20) foot wide access within an easement from a public street in strict accord with the Plan and any conditions required by the Department of Engineering. The Property Owner further covenants that no structure or building will be erected on the access easement; that no woody vegetation shall be allowed to grow on the easement; and that no use will be made which will interfere with the use of said easement for access to the facilities. If access to the facilities is obstructed and the City is required to remove the obstruction, the City will follow the notice procedure, double lien, and collection process as set forth in Paragraph 9 herein.

8. Property Owner grants permission to the City, its agents and employees, to enter upon the property to inspect and monitor said facilities whenever the City deems necessary and further for the City or its agents to repair, replace, maintain and reconstruct said facilities as permitted herein.

9. (a) If the City determines that the stormwater detention and/or water quality facilities are not being maintained in good working order and gives written notice to the current property owner to repair, replace, reconstruct or maintain said facilities within a reasonable time, and the property owner fails to comply with the City's notice within the time specified, Property Owner authorizes the City or its agents to enter upon the Property to repair, reconstruct, replace or perform maintenance on said facilities at the Property Owner's expense.

(b) Property Owner further authorizes the City to place a lien for double the amount of said expenses of repair, maintenance or reconstruction against the property.

(c) If the Property Owner fails to pay the City for the above expenses after forty-five (45) days written notice, the Property Owner authorizes the City to collect said expenses from the Property Owner through the appropriate legal action, with the

Property Owner to be liable for the reasonable expenses of collection, court costs, and attorney fees.

(d) Property Owner recognizes, however, that this remedy does not obligate the City to maintain or repair any stormwater facilities and/or water quality facilities or restrict the City from pursuing other or additional legal remedies against the Property Owner.

10. These Covenants shall be binding upon the Property Owner's heirs, administrators, executors, successors and assigns, and any and all subsequent property owners. Upon conveyance of the Property, these Covenants shall transfer to and be binding upon the new property owner, and the original Property Owner shall be released from any and all responsibilities and obligations under these Covenants.

11. These Covenants are permanent and shall run with the land.

12. Property Owner will record a plat showing and accurately defining the easements for stormwater and/or water quality facilities and an access easement to these facilities on a survey plat of record. The plat must reference the Instrument Number where these Covenants are recorded and contain a note that the property owner is responsible for maintaining the facility.

13. Property Owner will record these Covenants with the Knox County Register of Deeds and return the original to the Department of Engineering before the final plat is signed by the Department of Engineering, and before all or any portion of the property is transferred or conveyed.

APPROVED BY DEPARTMENT OF ENGINEERING:

By:_____

Title: _____

Date:_____

THIS DOCUMENT IS A BLANK TEMPLATE USED BY STORMWATER ENGINEERING DIVISION IN PREPARING A CPMSF.

PROPERTY OWNER: _____

BY: _____

TITLE: _____

THIS DOCUMENT IS A BLANK TEMPLATE USED BY STORMWATER ENGINEERING DIVISION IN PREPARING A NOTARY WITNESS FORM.

STATE OF TENNESSEE

COUNTY OF KNOX

Before me, _____, a Notary Public in and for the County and State aforesaid, personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who, upon oath, acknowledged himself to be the _____ (Title) of _____, the within named bargainor, a corporation, and that he/she being authorized so to do, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself/herself as _____ .

WITNESS, my hand and official seal at office this _____ day of _____ , 2003.

MY COMMISSION EXPIRES:

_____ _____

NOTARY PUBLIC

City of Knoxville, Tennessee
Stormwater Engineering Division
http://www.ci.knoxville.tn.us/engineering/

EXAMPLE

EASEMENTS FOR STORMWATER CONTROL AND WATER QUALITY FACILITIES

The City of Knoxville has been mandated by the federal government to provide for the permanent maintenance of stormwater facilities that manage stormwater runoff and affect stormwater quality entering our streams and other public waters. The *Knoxville Stormwater and Street Ordinance* gives design and development requirements for stormwater facilities. Consequently, the development of private property within the city requires property owners to formally accept responsibility for maintaining these facilities on their property. To acknowledge and facilitate this responsibility, the property owner must execute a special written document and dedicate easements before a site development permit or a building permit will be issued.

The special document is entitled ***Covenants for Permanent Maintenance of Stormwater Facilities*** (CPMSF, or also known as a Covenants document). Upon execution of this document, the property owner covenants or affirms that he will build these facilities according to design plans approved by the City Engineering Department, and that he or future owners of this property will maintain the stormwater facilities in good working order in perpetuity. This document must be recorded with the Knox County Register of Deeds and referenced in future survey plats and deeds. For assistance, contact the City Engineering Stormwater Division at 215-2148.

Section 22.5-34 of the Knoxville Stormwater and Street Ordinance stipulates that permanent easements must be established for stormwater and water quality facilities. These easements must be located, defined, dedicated and identified on a survey plat approved by the Metropolitan Planning Commission (MPC) and recorded with the Knox County Register of Deeds. If any facility is not constructed as shown on the approved design plans and located satisfactorily within the dedicated easement, the owner will be required to revise and re-record the document or plat that dedicates the original easement.

TYPES OF FACILITIES AND EASEMENTS

Easements are required for the following types of facilities, collectively referred to as "stormwater facilities":

- **Stormwater Control Facilities** (detention basin, retention basin, drywell, constructed wetlands)
- **Water Quality Facilities** (oil/water separator, sand filtration inlet, grit chamber, oil skimmer)
- **Drainage Channels and Piping** (culvert, pipe, grate inlet, curb inlet, flume, stream, ditch, swale)

Three types of easements may be required for Stormwater Control and Water Quality Facilities:

- **Facility Easements** (encompasses the facility)
- **Access Easements** (provides access from a public road to the *facility easement)*
- **Drainage Easements** (for open channels and pipes that carry flowing water)

Facility easements are required for all stormwater control and water quality facilities. The amount of easement needed and the location of easement boundaries for **stormwater control facilities** varies by type but can not be less that 20 feet x 20 feet. For detention and retention basins, the easement must be at least 5 feet outside the top of cut slope and at least 5 feet outside the toe of fill slope. The final location of all stormwater control facility easements must be coordinated by the design engineer and the surveyor, and then approved by the Engineering Department.

In addition to easements, a Special Pollution Abatement Permit (SPAP) is required for **water quality facilities.** Like stormwater control facilities, the amount and location of easements needed for water quality facilities must be approved by the Engineering Department but cannot be less than 20 feet x 20 feet. The surveyor, design engineer, and Department representative must coordinate closely in this effort as well.

Access easements are normally required when the facility easement does not directly abut a public road and there is not an easily traversable access route from a public road to the facility. When an access easement is required, it may not be merged with the facility easement.

Drainage easements are required for open channels, piping, and associated structures. This type of easement is required when drain blockage will result in flooding the property of others, or when deemed necessary by the Engineering Director. The width of these easements is determined by several factors, including size, shape, depth of pipe, maintenance equipment anticipated, type and material of pipe, etc. See Policy 04 (Drainage Easements) for minimum easement widths for common pipe sizes and shapes.

PLATTING REQUIREMENTS

Information that must be shown on the survey plat is listed below by the type of easement. Every stormwater control facility and every water quality facility must be located on a permanent easement that is not shared with any other type of utility or access easement.

- FACILITY EASEMENTS

1. Covenants Document Reference and Owner's Responsibility Note – Provide instrument number (15 digits) where the Covenants document is recorded and responsibility note similar to the following:

   "The property owner(s) is (are) responsible for maintaining stormwater facilities on this property. See Covenants document recorded with the Register of Deeds as Instrument No. _____."

2. Performance Bond Stamp – Appropriate stamp on plat and signed by the Stormwater Engineering Division; see Minimum Subdivision Regulations (MSR) Section 44-115.
3. Identification – Identify purpose of easement and if structure is existing or proposed, such as "Easement for As-Built Detention Basin" or "20-Ft. Easement for Proposed Oil/Water Separator".
4. Easement Location - Easement boundary plotted accurately and to scale.

5. Easement Description - Bearings & distances sufficient to permit confirmation of Category I ratio of precision (bearings to nearest minute or better, distances to nearest hundredth of a foot).
6. Property Ties - Bearings & distances sufficient to fix easement location relative to property boundary (bearings to nearest minute or better, distances to nearest hundredth of a foot).
7. Easement Area - Area of stormwater control and water quality facility easements in square feet.
8. Any additional information necessary to properly describe and locate the easement on the ground by field survey.

- ACCESS EASEMENTS

Every stormwater control and water quality facility must have traversable access from a public road. Therefore, an access easement will be required when the facility easement: 1) does not abut a public road, or 2) does not contain a traversable route from a public road to the facility. At the discretion of the Engineering Director, access easement widths may vary but must be at least 20 feet wide. An access easement may not be merged with the facility easement it serves. Minimum requirements for traversable access are contained in Policy 06, Maintenance Access for Stormwater Management Facilities.

Unlike easements that provide primary access to property, access easements to stormwater facilities do not normally require conveyance by a recorded written document. Also, property owners are not normally required to construct a roadway or trail. However, nothing is allowed in these easements that will substantially obstruct access when needed (large trees, buildings, manholes, utility poles, commercial signs, fences, etc.).

The following is required for access easements:

1. Identification and Width – Identify purpose and width of easement, such as "20-Ft. Detention Basin Access Easement" or "20-Ft. Water Quality Facility Access Easement" (also show perpendicular width graphically between right-of-way lines).
2. Easement Location – Easement right-of-way lines and centerline plotted accurately and to scale.
3. Easement Description – Bearings & distances labeled along right-of-way lines sufficient to permit confirmation of Category I ratio of precision (bearings to nearest minute or better, distances to nearest hundredth of a foot) [bearings & distances not required along right-of-way lines if labeling plotted centerline is preferred] .
4. Property Ties – Bearings & distances sufficient to fix easement location relative to public road right-of-way and property boundary (bearings to nearest minute or better, distances to nearest hundredth of a foot).
5. Easement Area – Not required.
6. Any additional information necessary to properly describe and locate the easement on the ground by field survey.