

## DEPARTMENT OF WATER RESOURCES PLAN SUBMITTAL TAKE-IN CHECKLIST

**Note to Consultant:** The checklist was developed to aid the Design Engineer in the development of improvement plans for submittal to the Sacramento County Department of Water Resources. ***Adhering to the checklist during the development of your plans*** should expedite plan review by reducing the number of incomplete or unclear submittals. Completion of this checklist does not imply approval of the submitted improvement plan.

Please include the completed checklist with your plan submittals to Sacramento County. Submitting incomplete plans and/or an incomplete checklist may be cause to have the plans rejected or the review process suspended.

Contact Name:	Date of Submittal:
Firm:	
Email:	
Contact Phone:	Contact Fax:
Signature of Design Engineer: _____ Date: _____	

**Project Name:** \_\_\_\_\_  
**Check One:**     **Rough Grading**                       **Improvement Plans**  
**Site Address:** \_\_\_\_\_  
**Parcel Number:** \_\_\_\_\_  
**Planning Control Number:** \_\_\_\_\_

### **PRELIMINARY DRAINAGE PLAN SUBMITTAL CONTENT:**

Please make the appropriate notations on the checklist below as you prepare your plan submittal. Please provide justification in the space provided for any omissions. If justification for omission is not adequate, the plans may be rejected until complete information is submitted.

#### ***Drainage Study***

**NOTE:** Sacramento County Department of Water Resources requires that a drainage study be submitted to this office for review and approval. The design computations for drainage shall conform to Section 9-6 of the Sacramento County Improvement Standards (<http://www.msa.saccounty.net/dss/ldsir/ImprovementStandards.htm>) and shall include, but not be limited to, submittal of all shed maps in PDF format and modeling files (SacCalc, HEC-RAS, XP-STORM, CS Studio, etc.), and a written narrative describing assumptions used in the study, the study results and calculations supporting any interim facilities proposed. The hydrology standards to be used are found within the "Sacramento County Drainage Manual, Volume 2 – Hydrology" and are programmed into the "Sacramento County Hydrologic Calculator" (links for both located at <http://www.msa.saccounty.net/waterresources/files/Files.asp?c=dgen>). Please allow a minimum of 30 days for review of drainage studies.

Drainage Study not required (briefly explain why the study is not needed)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- Drainage Study submitted during planning and awaiting approval.  
Title: \_\_\_\_\_ Date: \_\_\_\_\_
- Drainage Study dated \_\_\_\_\_ was approved by Water Resources and was used in the preparation of the submitted plans.  
Title: \_\_\_\_\_ Date: \_\_\_\_\_
- Drainage Study is attached for review and approval.  
Title: \_\_\_\_\_ Date: \_\_\_\_\_
- Shed map included for both onsite and offsite watersheds in accordance with Section 9-6 of the Improvement Standards.  
\_\_\_\_\_  
\_\_\_\_\_
- Overland Release hydraulic computations for street and non-street releases (including fence/wall).
- Pipe Drainage Study Submitted (pipe network with nodes and sheds). Per Sacramento County requirements, the hydraulic grade line is to be a minimum of one-half foot (0.5') below the elevation of all inlet grates and a minimum one foot (1') below the elevation of manhole covers.
- The worst case tail water condition is used in the pipe analysis and is selected below:
  - Ultimate 10-year channel or basin water surface elevation.
  - One foot (1') below the elevation of downstream manhole cover.
  - Tail water HGL assumptions are described in the study.
  - Tail water HGL assumptions are described as follows if not one of above:  
\_\_\_\_\_  
\_\_\_\_\_

***Improvement Plans***

**NOTE:** Improvement plans must be in accordance with the Sacramento County Improvement Standards (<http://www.msa.saccounty.net/dss/ldsir/ImprovementStandards.htm>) and Sacramento County Construction Specifications (<http://www.saccountyspecs.net/default.htm>).

- All conditions of approval relating to drainage development in accordance with the approved Planning Application Control No. \_\_\_\_\_ have been addressed. Approved planning document is attached.
  - Not all conditions have been satisfied. Exceptions are as follows:  
\_\_\_\_\_
- Signature block includes drainage fee area.

Signature block below has been placed on the Title page (for projects in unincorporated County only).

<b>SACRAMENTO COUNTY MUNICIPAL SERVICES AGENCY</b>	
PROJECT TITLE:	
ASSESORS PARCEL NUMBER:	
MAP COORDINATES:	
APPROVED:	
ORDER NUMBER:	DRAINAGE FEE:
CHECKED BY:	DRAINAGE APPROVED:

MSA signature block not used because project is within the incorporated City of \_\_\_\_\_

Notes Section

The following notes have been added to the Drainage Notes Section

1. All construction and materials for drainage shall be in accordance with the latest edition of the county of Sacramento Improvement Standards and Standard Construction Specifications. Where discrepancies exist, appropriate notes shall be added to the plans, taking precedence over the Standard Construction Specifications.
2. The minimum cover requirements during construction for temporary construction vehicle loading shall be 4-feet for metal and plastic pipe, and 3-feet for reinforced concrete pipe.
3. The contractor shall place the proper strength pipe if trench conditions encountered differ from the design trench.
4. Drainage in public row and drainage easements shall conform to the following:  
Drainage pipe material shall conform to section 36 and section 50 (excluding 50-20, which is not allowed) of the standard construction specifications.  
Drainage manholes shall conform to section 39 of the standard construction specifications.
5. Testing of drainage systems  
Drainage in public row and drainage easements shall conform to the following:  
Drainage pipes, including drain inlet laterals, shall be tested in conformance with section 38-10 of the standard construction specifications.  
Storm drain manholes shall be tested in conformance with Section 39-4.02 of the Standard Construction Specifications.
6. Resilient connectors, in conformance with Section 39-2.02 and STD DWG 9-7A of the Standard Construction Specifications, are required between pre-cast manhole and pipe, and between pre-cast drop inlet and pipe. Water stops are required for pipe to cast-in-place manhole/drop inlet connections.
7. Erosion Control Structures (STD DWG 9-27) shall be Class B concrete, not grouted cobble.
8. All drainage inlets in public row and drainage easements shall have a permanent storm drain message "No Dumping – Flows to Creek" or other approved message consistent with 11-10A and 11-10B of the Sacramento County Improvement Standards.
9. All connections to drainage inlets must be on the face or side allowing a minimum of 6 inches from corner. Connections to corners of drain inlets is not allowed.

Exceptions to the above notes are as follows (briefly explain reason for each exception):

\_\_\_\_\_

\_\_\_\_\_

- High Density Polypropylene (HDPE) shall not be used in this project.

General

- The type and size of storm drain pipes are clearly shown on drainage plan.
- All manholes and junction structures have been sized in accordance with Improvement Standards Section 9-13 and the types and sizes are clearly indicated on the drainage plans.
- Details for custom manholes or junction structures are shown on sheets \_\_\_\_\_ and were designed in accordance with the following standards or design specifications:

\_\_\_\_\_  
\_\_\_\_\_

- Inlet type is clearly indicated on the drainage plan.
- There are no connections to the corner of any drainage inlet. For all questionable locations where severe angles exist the following note has been placed with the proposed inlet information:

NOTE: Connections to drainage inlet must be on the face or side allowing a minimum of 6-inches from the corner of the inlet. A connection to corners of drain inlets is not allowed.

- Details are shown for all debris and access racks for each inlet and outlet pipe that is 24-inch diameter or larger is provided.
- A copy of the applicable permits from the U.S. Army Corps of Engineers, State Fish and Game, and State Water Quality Control Board is attached.
- No permits from any state or federal agencies were required for this project.

- The entire storm drain system is within the public right-of-way and or County drainage easements and shall be maintained by Sacramento County.

- The system is to be a private system, and is clearly labeled as such on the improvement plans and the maintenance will be performed by \_\_\_\_\_. A copy of the approved and executed private maintenance agreement describing who will do the maintenance and to what standard is attached. The maintenance agreement also states that the owner shall hold the County harmless of any claims associated with the failure of the private drainage system and shall ensure that the system is in good repair and serviceable at all times. In addition, the following text has been added to the plans concerning the onsite private drainage maintenance:

"Owner, or owner's designate, at Owner's or owner's designate's sole cost and expense, shall maintain the private drainage pipeline in good working order and repair commensurate with the County's standards for similar drainage pipelines such that water flows freely through the system as and when weather events or other sources of surface water runoff occur. Owner shall at all times take all necessary action to keep the drainage pipeline free from debris, trash, foliage and any other obstruction which may disrupt, alter, impede or change the flow of water. Owner shall also perform any relocation of the drainage pipeline pursuant to the standard specifications of the County should relocation be necessary due to pipe failure or blockage. Owner shall hold County harmless of any claims associated with the failure of the private drainage system and shall assure the system is in good repair and serviceable at all times."

Plan & Profile

- All plan and profile sheets include the following:

- Flowline elevations of each manhole or junction structure.
- Rim elevations for all drainage structures.
- Pipe sizes, material type, class, length and slope.
- Manhole type and size.
- The hydraulic grade lines have been shown on the plans wherever the hydraulic grade line is above the soffit of the pipe and a note has been placed on the plans in the profile view indicating stationing where the hydraulic grade line is below the soffit of the pipe.
- All flowlines for all cross culverts are shown in the plan view.
- All structures have been shown in both plan and profile views.

Exceptions (briefly explain)

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Easements

- Easement has been shown in accordance with Section 9-27 of the latest Sacramento County Improvement Standards (October 2006).
- Easements meet minimum width of fifteen feet (15’).
- Easement is not split by property line.
- Exception to standard easement requirements (briefly explain reason for exception).

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Grading

- Grading plan has been prepared in accordance with Section 10 the latest version of the Sacramento County Improvement Standards (April 2018).
- Minimum pad elevations have been clearly indicated.
- Overland release path and flowline elevations are clearly indicated on grading plan.
- A detail of the overland release discharge point is provided along with any permanent release paths in accordance with Section 9-15 of the latest Sacramento County Improvement Standards (2006).
- Items pertaining to erosion and sediment control are not shown on the grading plans but presented on a separate sheet titled “Erosion and Sediment Control Plan”.

**NOTE:** To obtain permission to rough grade the site concurrently with the improvement plan review, applicants may seek a **Rough Grading Permit (also Mass Grading, Advance Grading, etc.)**. The submittal for a rough grading permit shall include the improvement plan cover sheet with the title changed from “Project X Improvement Plans” to “Project X Rough Grading Plan”, and the erosion and sediment control plan sheet(s). Rough grading plans shall not include any drainage structures. As rough grading is at-risk, the following note must be added to the rough grading plan.

- Rough Grading Plan Note-** The following note has been added on the rough grading plans:
- “The Department of Water Resources considers these plans limited to rough grading activities only. As such, the review has been limited to checking for floodplain impacts and erosion and sediment control best management practices only. The Department of Water Resources will review the grading in detail as part of the improvement plan review. As such, it is understood that all grading activities by the developer and their agents are considered at-risk.”

Erosion and Sediment Control

**NOTE:** Section 11 of the Sacramento County Improvement Standards contains standard details for various erosion and sediment control measures. If reference is made to these drawings, it is not necessary to replicate the drawings on the erosion and sediment control plans.

- As required by Water Resources, an Erosion & Sediment Control Plan for the subgrade phase has been included in the improvement plans as separate sheet(s) and all specified BMPs have been presented in accordance with the latest edition of Section 11 of the Improvement Standards.
- The following notes have been added to the Erosion and Sediment Control Plan.
1. All erosion and sediment control measures shall be constructed and maintained in accordance with the current edition of the County of Sacramento Improvement Standards.
  2. Erosion control best management practices (BMPs) shall be installed and maintained during the wet season (October 1 through April 30). Sediment control BMPs shall be installed and maintained year round.
  3. All drainage inlets immediately downstream of the work areas and within the work areas shall be protected with sediment control year round. Sediment control protection shall be removed from the drainage inlets prior to acceptance of the public improvements by the County.
  4. All stabilized construction access locations shall be constructed per Standard drawing 11-1 where construction traffic enters or leaves paved areas. The stabilized access shall be maintained on a year round basis until the completion of construction.
  5. All areas disturbed during construction by grading, trenching, or other activities, shall be protected from erosion during the wet season (October 1 through April 30). Hydroseed, if utilized, must be placed by September 15. Hydroseed placed during the wet season shall use a secondary erosion protection method.
  6. Sensitive areas and areas where existing vegetation is being preserved shall be protected with construction fencing. Sediment control BMPs shall be installed where active construction areas drain into sensitive or preserved vegetation areas.
  7. Sediment control BMPs shall be placed along the project perimeter where drainage leaves the project. Sediment control BMPs shall be maintained year round until the construction is complete or the drainage pattern has been changed and no longer leaves the site.

8. Erosion and sediment control measures for the project should be in substantial compliance at all times with the stormwater pollution prevention plan (SWPPP) prepared for the project in accordance with the State of California General Construction Permit. This permit requires that the SWPPP be kept up to date to reflect the changing site conditions and the SWPPP to be available on site at all times for review by state inspectors.

9. Effective erosion control BMPs shall be in place prior to any storm events.

The following items are shown on the Erosion & Sediment Control plans:

Disturbed areas and all retained existing vegetation.

Numerical value of acreage disturbed during construction.

Because 1.0 acre or more is disturbed, a Waste Discharge Identification (WDID) number, and blank information block to be filled out at the pre-construction meeting containing the name and telephone number of the qualified person responsible for implementing the SWPPP are included. OR

Project disturbs less than one acre.

A statement of quantities of material excavated and/or filled, whether such excavation or fill is temporary or permanent, and the amount of such material to be imported to or exported from the site.

Existing and proposed topography (contours and spot elevations) has been provided onsite and offsite a minimum distance of 50 feet.

On-site drainage patterns, surface drainage discharge points, and details of surface discharge points are shown.

Off-site drainage patterns are clearly indicated where they enter the site and/or where they are routed around the site. The shed area of any offsite watershed conveyed through the project or routed around the project is stated. Details are shown to describe how the offsite shed is being conveyed through the project or routed around the project (dimensioned cross sections and flowlines, etc. of temporary channels, etc.)

All structural and non-structural BMPs (non-structural BMPs are those statements governing the scheduling and location of structural BMPs).

A BMP installation schedule for various phases of the project. The schedule includes the BMPs for both the wet season and dry season and addresses the initial phase (clearing, grubbing, and rough grading activities), site improvement construction phase (cut/fill activities, underground piping, streets, curbs gutters, etc), and final phase (completion of site improvements, prior to construction of housing or commercial structures). All proposed BMPs are listed in this schedule.

A proposed maintenance schedule of all erosion and sediment control BMPs to be used during various phases of construction.

Measures of dust control to be taken during construction activity.

Location and detail reference for stabilized construction access.

Location(s) and detail reference for concrete washouts.

Locations for equipment/material storage area, debris/solid waste stockpiles, spoils storage and vehicle/equipment maintenance, fueling and washing areas

Structural BMPs at:

project boundary

- limits of disturbed areas
  - site perimeter (show section at perimeter of existing and proposed conditions)
  - overland flow locations such as ditches, creeks, and swales
  - tops and toes of slopes and stockpiles
  - perimeter of equipment/material storage areas, waste stockpiles, spoils storage areas, vehicle/equipment maintenance, fueling and washing areas.
- Measures (e.g. sediment basin, sediment trap, etc) taken during the **rough grading or grading process** to intercept and detain sediment laden run-off to allow the sediment to settle in accordance with Section 11. Sediment basin is sized to capture 100% of the two year, three day storm event from the onsite and/or offsite shed area. Included in design are dewatering procedures demonstrating (graphically or verbally) how the storm water run-off shall be evacuated from sediment traps and sediment basins (or any excavated low areas), the point of discharge to the public storm drain system, the method of secondary filtration proposed to treat discharge that appears to have high concentrations of suspended particles, and verbiage stating that alternative effective measures shall be implemented if the proposed method fails.
  - Method for post-grading stabilization of all disturbed soil.
  - A statement that straw mulch, soil binder or erosion control blankets/mats shall be used in conjunction with hydroseeding during the wet season for the temporary protection of disturbed soil (hydroseeding may be used alone only if there is sufficient time to ensure adequate vegetation establishment before the start of the rainy season).

If inlets are present:

- Drainage inlet protection in accordance with Section 11-13 and 11-14 has been provided. All inlets within the curb and gutter are shown as protected with an Inlet Sediment Control Barrier (DWG 11-7 in Improvement Standards). A custom Inlet Sediment Control Barrier is detailed for inlets not located in the curb and gutter. An inlet filter bag (DWG 11-8 in Improvement Standards) is included in all drain inlets.
- Concrete stamps or exposed plaques for a permanent storm drain message “No Dumping- Flows to Creek” or other approved message consistent with Section 9-14G of the Sacramento County Improvement Standards is specified.

If colloidal soils are anticipated:

- A temporary treatment basin and treatment system designed to treat and evacuate 50% of the two year, three day storm event within one week, along with all supporting calculations is included in plans. The treatment system may be shown as a contingency.

If a creek is present:

- Special BMPs implemented during creek improvements in order to prevent erosion during construction.
- Method to re-stabilize creek after completion of improvements.
- A buffer adjacent to the creek a minimum of 20 feet wide disallowing stockpiling or staging.
- The above list has been carefully reviewed and the Water Resources plan reviewer should be aware of the following exceptions:

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## Drainage Channel & Detention Basin (when required)

Department of Water Resources requires that grading plans and improvement plans for regional channels and basins be prepared separately from those for the subdivision units, villages and road plans.

- Check here if there are no regional basins or constructed channels associated with these improvement plans and proceed to SWPPP section, OR continue below.
- Any Creek/Channel Improvements conform to Section 9-20 C12 of the latest Improvement Standards and have included the following:
  - Typical sections and cross sections.
  - Profile of existing channel and top of bank profile.
  - Ten and one hundred year water surface elevation.
  - Any road crossings with road profile indicating overland release.
- River station labels on the improvement plans for channels match those in the approved drainage study.
- Sheet(s) of cross-sections and details for the  channel  basin are included in the plans; details include outfall structure, inflow pipe, etc.
- Sheets for mechanical, structural, and electrical details (e.g. pump, automated trash rack) are included in the plans.
- Plan and profile plan for connecting channel and/or pipe is included in the plans.
- Permanent erosion control has been designed and detailed for each outlet pipe and culvert.
- Utility Plan with utility easements is shown.
- Grading plan is included with approved grades at the basin bottom, inlet and outlet inverts, 10 and 100 year water surface elevations, easements shown, a certification block for use by engineer or land surveyor, and calculations in accordance with the drainage master plan including:
  - Depth-volume rating curve for stormwater quality and/or
  - Depth-volume rating curve for flood control
  - Stormwater quality volume and/or
  - Flood control volume
- Debris and access racks are detailed for each inlet or outlet pipe that is 24" in diameter or larger.
- Any interim facility is clearly labeled as interim and all the pertinent design information is included in the plans (e.g. weir elevation). Calculations supporting the design of the interim facility have been included in the Drainage Master Plan.

### ***Operation and Maintenance Manual for Basins and Channels***

- Operation and Maintenance Manual for detention basin and channels is/are included in this submittal and includes the following items:
  - A vicinity map and narrative describing the location of the basin.

- A shed map of the area served by the basin.
- Landscaping / plantings / irrigation operation and maintenance plan
- A narrative describing the operation of the basin (i.e., the basin provides flood detention and wet stormwater quality treatment, shed area served, peak flows, etc.).
- Certified grading plan is included with approved grades at the basin bottom, inlet and outlet inverts, 10 and 100 year water surface elevations, easements shown, a certification block for use by engineer or land surveyor, and calculations in accordance with the drainage master plan including:
  - Depth-volume rating curve for stormwater quality and/or
  - Depth-volume rating curve for flood control
  - Stormwater quality volume and/or
  - Flood control volume
- A map of the basin identifying any jurisdictional or open space areas, plantings to be protected, etc.
- A signed narrative describing what maintenance activities are acceptable and any prohibitions against maintenance activities within the basin.
- A copy of any and all Corps permits, Fish and Game permits, preserve maintenance agreements, etc. that may limit maintenance activities in or around the basin.

Stormwater Pollution Prevention Plan (SWPPP) (when required)

Note: The Sacramento County Department of Water Resources reviews SWPPP's for inclusion of punchlist items only and not for adequacy or completeness of information therein. Completion of this checklist does not imply approval of the SWPPP.

- Because 1.0 acre or more is disturbed, a SWPPP is required and included with this submittal.
  - SWPPP will be submitted by \_\_\_\_\_ under separate cover.
- The following items are included in the SWPPP:
  - WDID number proof of NOI submittal (copy of completed and signed NOI, mail certification and copy of check to Regional Board).
  - Vicinity map showing general topography, geographic features, construction site perimeter and nearby roadways.
  - Site map showing the project in detail (i.e. Erosion and Sediment Control plan).
  - Detailed, site specific listing of potential sources of storm water pollution.
  - Description of the type & location of erosion & sediment control BMPs to be used.
  - Information block for name & telephone number of the qualified person responsible for implementing the SWPPP.
  - Certification/signature by the landowner or authorized representative.
- A SWPPP is not required for this project for the following reason

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### Post-Construction Stormwater Quality Treatment Requirement (when required)

If your project matches one of the selections below (see “Control Measure Selection Matrix” link at <http://www.sactostormwater.org/SSQP/development.asp> for more details), it will require post-construction stormwater quality treatment. Please indicate which one most closely matches your project description and then find it on the Selection Matrix to determine which type of treatment is allowed.

- Residential development 20.0 acres or more.
- Multi-family (condominiums, apartments, etc.) residential development, or redevelopment, of 1.0 acre or more total area.
- Commercial development, or redevelopment, of 1.0 acre or more of impervious surfaces such as flat work, parking lots, and rooftops.

### Post-Construction Stormwater Quality Treatment Plan (PCSQP)

- The PCSQP is included with improvement plans and shows Post Construction Control Measures that meet the requirements of the local, state and federal requirements as listed on the “Control Measure Selection Matrix”.
- The PCSQP contains design detail and calculations to demonstrate the adequacy of the post construction control method, and includes the following items:
  - Post Construction Grades
  - Existing & proposed buildings and other structures
  - Location of fences (gates) to ensure access for maintenance of the stormwater quality treatment device.
  - Location of roof downspout (identify directly connected or disconnected)
  - Pavement
  - Landscaping
  - Areas requiring source control measures (loading areas, fueling areas, etc.)
  - Drainage systems
  - Contributing shed delineation
  - Post Construction Control Measures, including the following information where applicable:
    - Dimensions and setbacks from property lines and structures
    - Profile view, including typical cross-sections with dimensions
    - Water surface elevations/freeboard
    - Inlets, outlet structures, and release points
    - Vegetation & growing medium specifications
    - Filter fabric specifications
    - Infiltration material specifications
    - Installation requirements
  - Table of Post Construction Control Measures. This table shall list all Post Construction Control Measures, and for each show the type of control measure, impervious and pervious area of contributing sheds, and calculated flow (Stormwater quality, Nolte & 100 year flows if applicable).
- The following is included on the PCSQP:

Post Construction Control Measure Compliance

I hereby certify that the Post Construction Control Measures were constructed as shown on the plans approved by the County of Sacramento.

Project Engineer:

R.C.E. :

Date

Or, the project does not require a PCSQP, because \_\_\_\_\_

Low Impact Development Measures (when required - see Table 3-2 Stormwater Quality Design Manual)

- Include LID Credit Worksheet (Excel file) for either residential or commercial development.
- Provide shed map showing area draining to each LID measure including the proposed amount of pervious and impervious area.
- Provide design calculations for each LID measure.
- The improvement plans shall include all construction details for LID measures.
- Execution of maintenance covenant is required for LID measures.

Hydromodification Mitigation (when required - see Table 3-2 Stormwater Quality Design Manual)

- Provide exhibit showing location where site discharges to municipal storm drain system and/ or receiving waters.
- Provide SAHM Project Report and WHM file (from SAHM tool), if demonstrating compliance with hydromodification flow duration criteria.
- Provide erosion potential analysis or plan to implement instream measures to address hydromodification impacts, if applicable.
- The improvement plans shall include all construction details for hydromodification controls.
- Execution of maintenance covenant is required for hydromodification controls.

Full Trash Capture (when required – see Table 3-2 Stormwater Quality Design Manual)

- Provide LID systems that comply with the State's requirement for full trash capture.
- Provide non-LID devices that trap all particles that are 5 mm or greater.