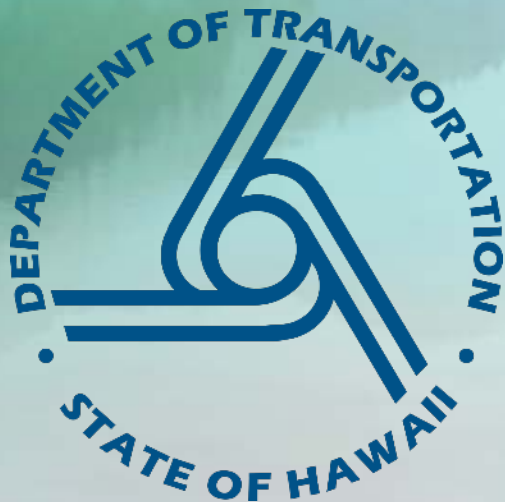


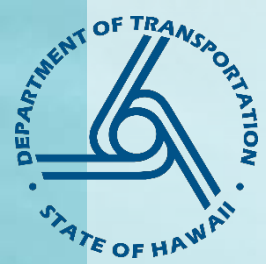
The world is PAVED with good intentions –
But sometimes you hit a pothole.



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Speaker

Claudia Akroyd, CHST, CISEC

BOWERS + KUBOTA CONSULTING

Project Inspector

Responsible for conducting independent inspections of DOT-HWYS Contract Construction projects in accordance with DOT-HWYS National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit on Oahu



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Items of Discussion

- Drip protection
- Staging Areas
- Construction Entrances
- Inlet Protection
 - Scuppers/Inlets Close to Pave Area
- Waste Asphalt/Cold Planed Material
- Related Issues
 - Over banding
 - Striping



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Drip Protection Rules

- All idle equipment need drip protection
- Appropriate drip pad or pan
- Pans need to be big enough to catch leaks
- For paving equipment must have protection under asphalt hopper, roller assembly, distributor truck spray apparatus
- Spill kit must be readily available



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Pad or Pan



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“Cookie Sheet Pans”



- Commercial pan
- Not a good choice for construction sites
- Light and little capacity
- Must be completely level
- Primarily designed for warehouse or motor pool use



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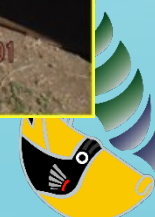
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Drip Pad Requirements

Impervious layer/Absorbent layer/Downslope berm



On steel plate/No absorbent layer or pan/No berm - NOT CONTAINED



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Paving Equipment



- Need protection under hopper, roller assembly and distributor truck spray arm in addition to engine block
- Can produce oil slick without protection from rain
- Fabric must be changed when saturated



Weather was sunny
and area dry



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Inadequate Drip Protection

No barrier material and oil soaks through



“Cookie Sheet” pans don’t hold much



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Inadequate Drip Protection

Too small - not a commercial pan



No drip pad with absorbent layer or pan



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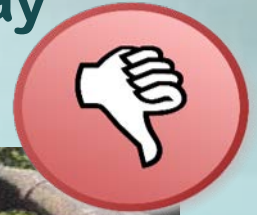
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In Some Cases, the Drip Pad is the Answer

Can't get pans under potential leak sites



Doesn't cover whole spray arm



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Mobile and Fixed Drip Pad

Scroll type configuration can move with equipment – can construct to any size



The berm should be placed under plastic to create pooling effect should there be a leak



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Drip Pad Construction Requirements



- Drip protection under entire asphalt hopper, roller assemblies and spray arms
- Plastic sheeting at least 10 mil
- Absorbent material over plastic
- Berm under impervious layer to create pooling effect
- Reference: SM-20 Paving Operations; 2021 BMP Manual
- Fabric repairable/plastic is not



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Evolution of a Drip Pad



Elapsed time start to finish was less than 15 minutes



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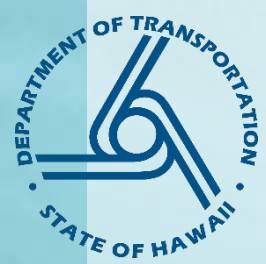
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General Requirements

- Location identified in the SWPPP
- SWPPP must allow stock/spoil piles
- If area is not specifically identified – AMEND the SWPPP
- Area included in project disturbed area – Cumulative
- Layout



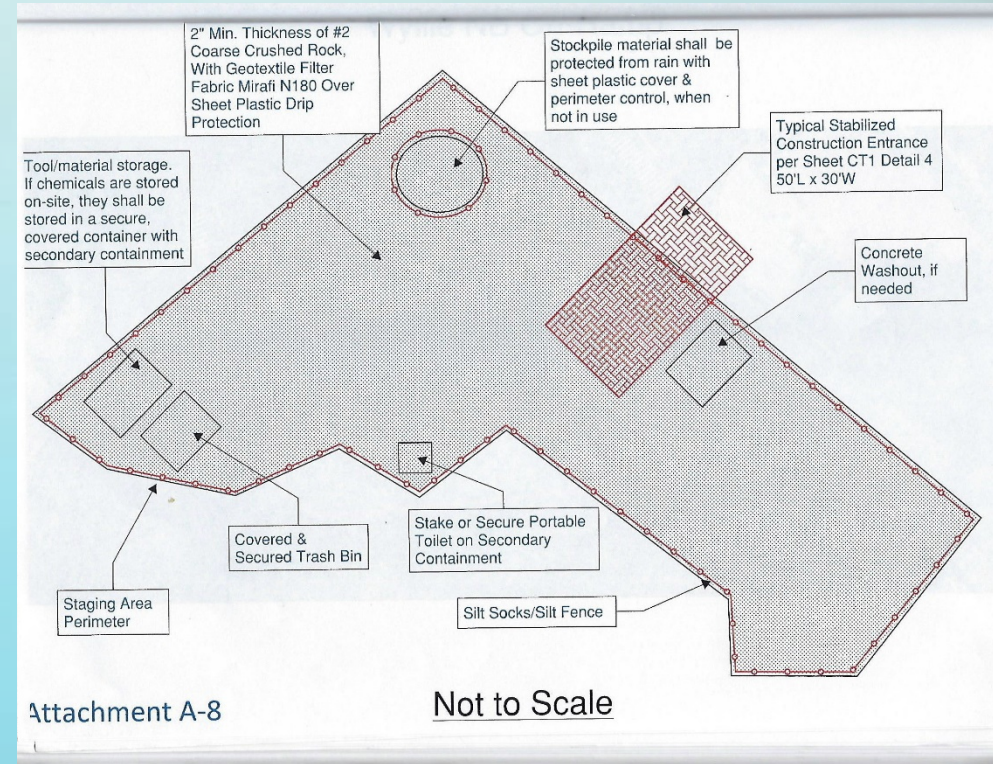
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Location/Layout Examples

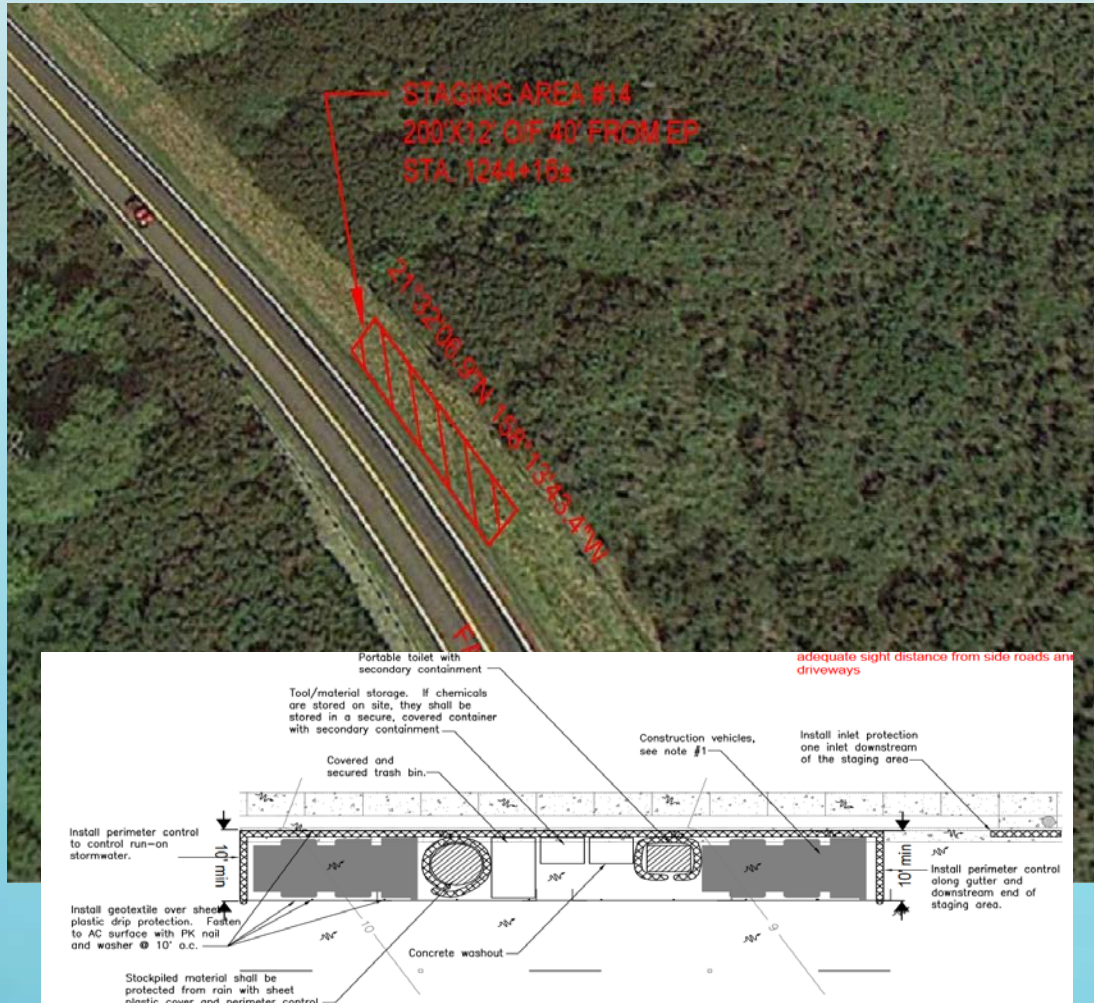


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Paving Project Example



- Long and linear
- Can include a standard layout for shoulder staging area
- May not be specifically identified at SWPPP development
- Again, must specify area – Amendment
- May need to add acreage to project acreage if not in construction area



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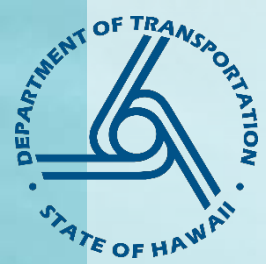
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Construction Entrance Requirement

- Per Section 209 (1/14/22) of the DOT Specifications: “Include Stabilized Construction Entrance at all points that exit onto paved roads”
- HAR 11-55, Appendix C, paragraph 5.1.2.3. also states that sediment removal from tires must occur prior to exiting onto paved roads.
- Rock entrances are traditional, but not the only answer
- Commercial alternatives are available – many may not work very well with heavy paving equipment
- Can use a modified entrance in conjunction to roadside staging areas



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Alternative Entrance Types - GEOTERRA Grid

Can pick up and use at next site

Grid cells need to be cleaned to be effective



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Thinking Outside the Box

Geoterra Grid use for load distribution for boggy area



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Alternative Entrance Types – Track out Plates

Can use separately or in conjunction with another type of entrance



Place so vehicles must drive over not around

Need to keep clean or get tracking – easy to fix



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Other Alternatives

Mud Mats – when damaged
must replace

FODS – Purchase by the sheet
- cost



Damaged beyond
repair



202



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Modified Entrance for Paving Equipment

Nothing to prevent mud tracking onto road

Everything needs to fit on the drip pad



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Modified Entrance for Paving Equipment



Exit to Street



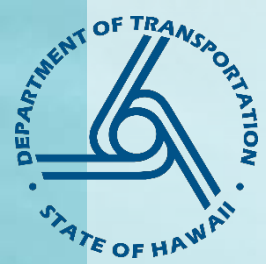
Drip pad to edge of asphalt
Will need to pivot to exit



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Inlet/Scupper Protection

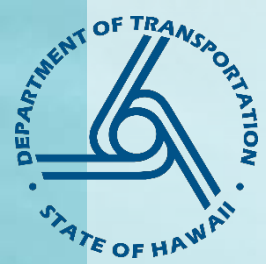
- Protection must be in place during paving/cold planing operations
- Some inlet protection better suited than others for close operations
- May not be able to avoid material in drain or scupper if paving to the edge
- Any material that enters must be cleaned out immediately following operation – asphalt does not allow drainage
- Duct tape and plastic can be your friend in some circumstances



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Where Likely Will Find Problem Inlets/Scuppers

- Roads with no concrete shoulder/gutters
- Near median on highways such as H-1
- Anywhere there is no distance between the paved areas and inlets
- Scuppers on bridges/elevated roadways
- Sometimes scuppers and even drains are uncovered during cold planing



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Examples of Problem Inlets



Old road/no gutter



After paving/cut
out down to inlet



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Scupper Types



Scupper is a drain near the edge of the deck to allow accumulated rainwater to drain

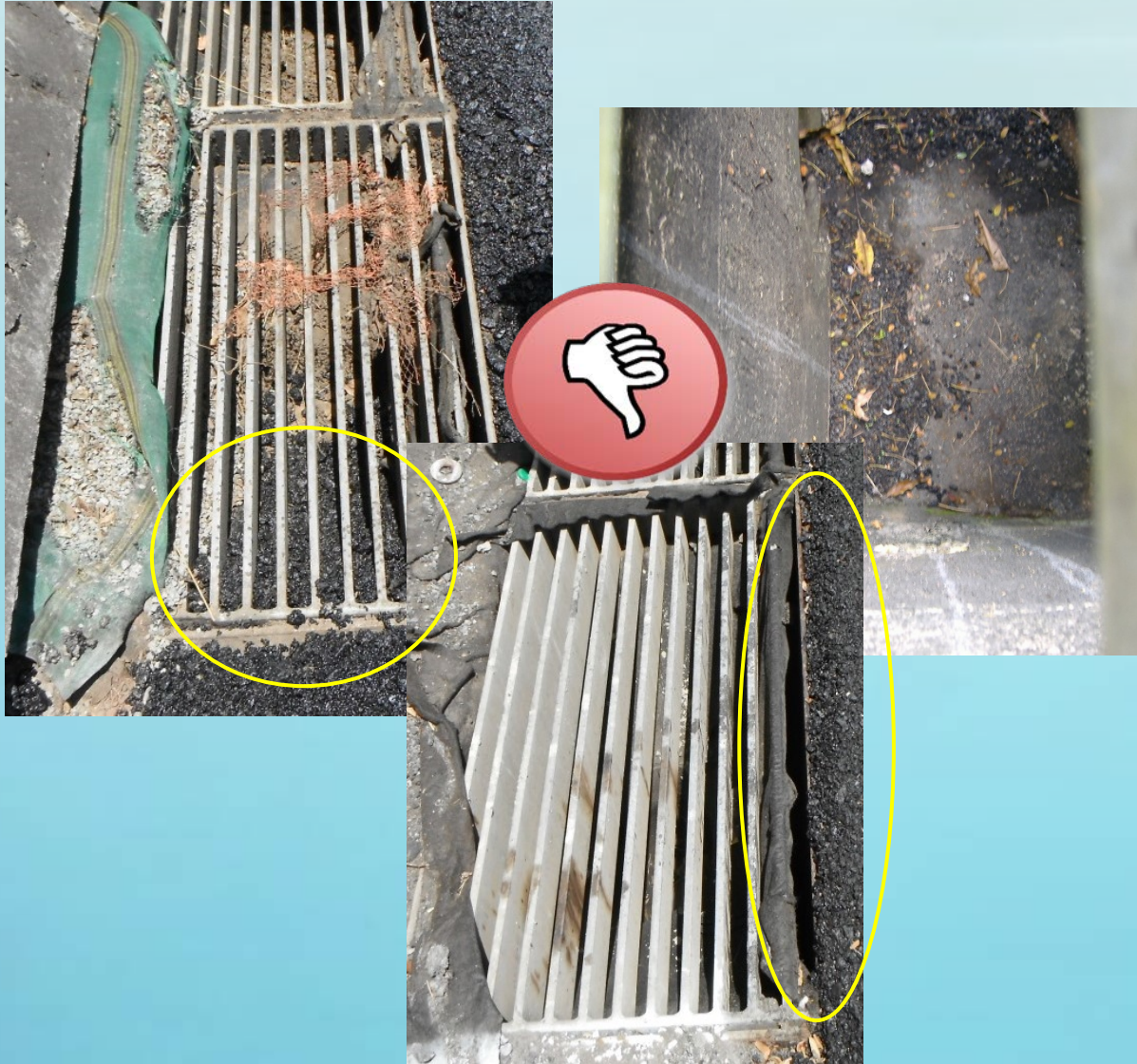


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Asphalt in Drains



- Asphalt must be cleared immediately – won't allow drainage
- Watch out for gaps in the protection
- Must check drain box and clear immediately – heavy rain can take loose material or oil to outlet or stream



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Try Thinking Outside the Box (examples)



- Take excess fabric and cover over the drain – stuff any gaps with fabric
- Cover with plastic and tape down
- Stuff the scupper

**REMOVE THESE MEASURES
IMMEDIATELY AFTER
PAVING FOR DRAINAGE**



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Surprise!



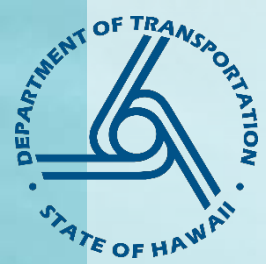
- Kamehameha Hwy bridge was cold planed
- No scuppers were located on the bridge prior to cold planning
- Found after cold planning
- Inlets are sometimes paved over as well



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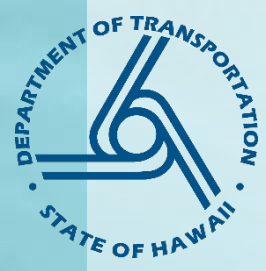
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Some Basic Asphalt Rules

- Asphalt is a petroleum-based product
- Waste asphalt must be contained – on impervious material/covered/perimeter control
- Not left or spread on bare soil
- Not to be mixed with other spoils such as soil per SM-20 of the 2021 BMP Manual
- Soil under waste asphalt is considered as contaminated



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Cold Patch

- Basically, the same rule apply as asphalt
- Plan ahead for delivery
- Consider how you will remove from pile – shovel or mechanical equipment
- Bags of asphalt patch also need containment/cover



All Bad



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Bad vs. Good



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Waste Asphalt in Staging Area



- In staging area – usually result of shuttle buggy clearing belt
- On impervious layer, cover with perimeter protection
- Simple solution – provide large sheet of plastic to catch debris from belt



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Cold Planing – General Rules for Millings

- Remove from site by covered truck
- Dispose of in appropriate disposal center or recycle
- Clean area at end of day of all millings
- Milling are not permitted for use in construction roads or construction entrances per 2021 BMP Manual
- Use elsewhere is regulated and may need to meet special conditions and/or permits – Check before you do it or you may need to absorb the cost of removal.
- If stockpiling is permitted by SWPPP, cover with perimeter control



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Gutter/Roadside Area



- Pay special attention to gutter
- If road is cold planed and not paved, asphalt will unravel and collect in gutter
- Sweeper broom angled wrong can cause milling to collect on side of road



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Over Banding



- Sealant applied to joints after paving
- Product is liquid with 2 components mixed prior to application
- BMPs must be in place
- If the component mix is off, it can be runny and take longer to cure.



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Striping



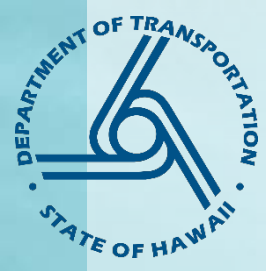
- BMPs must remain in place
- Exercise caution around inlets and scuppers
- Good place for use of plastic and/or duct tape – remove immediately after striping.



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OOPS!



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QUESTIONS?



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