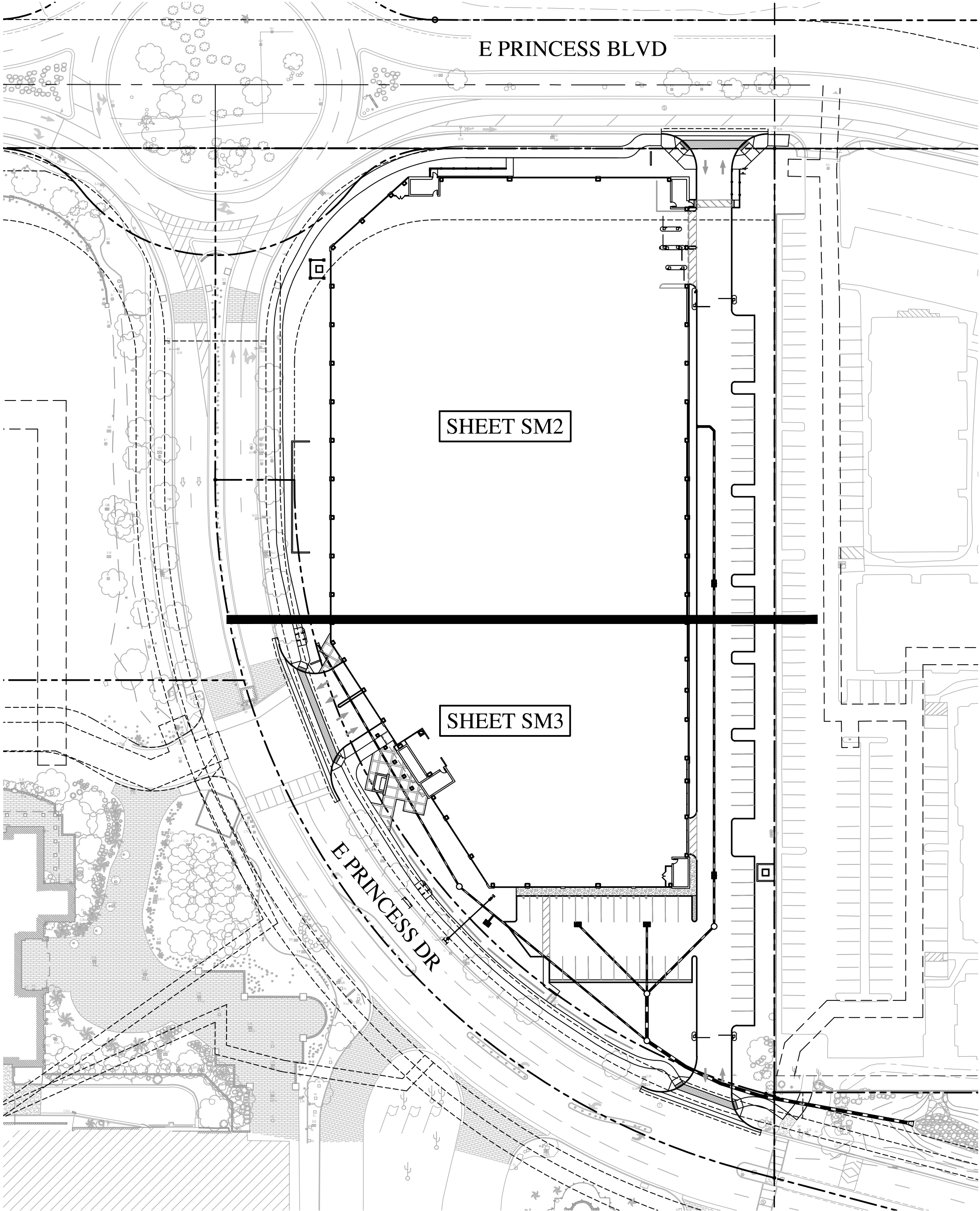


ENGINEER'S NOTES

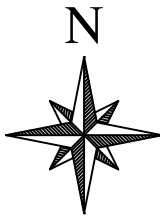
- MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTALS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THIS PLAN IN THEIR ENTIRETY.
- ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE WITH THE M.A.G. STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL CITY OR TOWN UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY CONCERNS ASSOCIATED WITH THIS PROJECT DURING CONSTRUCTION, UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THIS PLAN OR ELSEWHERE IN THE CONTRACT.
- THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THIS PLAN.
- THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR GENERAL INFORMATIONAL PURPOSES ONLY AND MIGHT NOT REFLECT ACTUAL QUANTITIES AND SITE CONDITIONS. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.
- A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL 48 HOURS IN ADVANCE FOR BLUE STAKE (1-800-STAKE-IT) PRIOR TO ANY EXCAVATION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
- ALL PAVING, GRADING, EXCAVATION, TRENCHING, PIPE BEDDING, CUT FILL AND BACKFILL SHALL COMPLY WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL BE AWARE THAT CERTAIN UTILITIES REQUIRE PROPER ATTENTION AND CAREFUL PLANNING DURING SITE CONSTRUCTION. PLEASE NOTE THAT UTILITIES ON THESE PLANS MAY NOT EXHIBIT THE FULL PROTECTIVE COVER REQUIRED DURING THE SUBGRADE PREPARATION PHASE OF THE CONSTRUCTION. IN SUCH INSTANCES, THE CONTRACTOR SHALL PROVIDE ADDITIONAL PROTECTION (SUCH AS RAMPING) OR INCREASED PIPE STRENGTH TO PROVIDE THE NECESSARY PROTECTION REQUIRED TO PREVENT DAMAGE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL HOLD THE ENGINEER HARMLESS IN ALL CASES FOR DAMAGES TO UTILITIES WHERE INADEQUATE PROTECTIVE MEASURES OCCUR.
- THE CONTRACTOR IS TO VERIFY THE LOCATION AND THE ELEVATIONS OF ALL EXISTING UTILITIES AT POINTS OF TIE-IN PRIOR TO COMMENCING ANY NEW CONSTRUCTION. SHOULD ANY LOCATION OR ELEVATION DIFFER FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.
- CONTRACTOR TO VERIFY AND COORDINATE ALL DIMENSIONS AND SITE LAYOUT WITH ARCHITECT'S FINAL SITE PLAN AND FINAL BUILDING DIMENSIONS BEFORE STARTING WORK. REPORT DISCREPANCIES TO OWNER'S AGENT.
- COORDINATION BETWEEN ALL PARTIES IS ESSENTIAL PART OF CONTRACT.
- CONTRACTOR IS RESPONSIBLE FOR PROJECT AND SITE CONDITIONS, AND TO WORK WITH WEATHER CONDITIONS AS THE PROJECT SITE MAY BE LOCATED IN A FLOOD PRONE AREA AND SUBJECT TO FLOODING AND ITS HAZARDS.
- THE CONTRACTOR IS TO VERIFY THE LOCATION, ELEVATION, CONDITION, AND PAVEMENT CROSS-SLOPE OF ALL EXISTING SURFACES AT POINTS OF TIE-IN AND MATCHING, PRIOR TO COMMENCEMENT OF GRADING, PAVING, CURB AND GUTTER, OR OTHER SURFACE CONSTRUCTION. SHOULD EXISTING LOCATIONS, ELEVATIONS, CONDITION, OR PAVEMENT CROSS-SLOPE DIFFER FROM THAT SHOWN ON THESE PLANS, RESULTING IN THE DESIGN INTENT REFLECTED ON THESE PLANS NOT ABLE TO BE CONSTRUCTED, THE CONTRACTOR SHALL NOTIFY THE OWNER'S AGENT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL COSTS ASSOCIATED WITH CORRECTIVE ACTION IF THESE PROCEDURES ARE NOT FOLLOWED.
- CONTRACTOR IS RESPONSIBLE TO COORDINATE UTILITY CROSSINGS AT CULVERT CROSSINGS BEFORE STARTING WORK ON CULVERT. COORDINATE WITH OWNER REPRESENTATIVE. VERIFY UTILITY LINES AND/OR CONDUITS ARE IN PLACE BEFORE STARTING CULVERT WORK.
- CONSTRUCT RETENTION BASIN AS SHOWN. CONTRACTOR TO SCARIFY BOTTOM OF BASIN TWO FEET DEEP AND NOT ALLOW COMPACTION OVER 80%.
- THIS PROJECT REQUIRES A REGULAR ONGOING MAINTENANCE PROGRAM FOR THE DESIGNED DRAINAGE SYSTEM(S) TO PRESERVE THE DESIGN INTEGRITY AND THE ABILITY TO PERFORM ITS OPERATIONAL INTENT. FAILURE TO PROVIDE MAINTENANCE WILL JEOPARDIZE THE DRAINAGE SYSTEM(S) PERFORMANCE AND MAY LEAD TO ITS INABILITY TO PERFORM PROPERLY AND/OR CAUSE DAMAGE ELSEWHERE IN THE PROJECT.
- SEWER LINES DESIGNED IN PROFILE AND PUBLIC WATER LINES ARE REQUIRED TO BE ASBUILT AND THE INSTALLATION AND TESTING WITNESSED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH ARIZONA ADMINISTRATIVE CODES R18-9-E301 "4.01 GENERAL PERMIT: SEWAGE COLLECTIONS SYSTEMS" AND R18-5-507 AND 508 "APPROVAL OF CONSTRUCTION" AND "RECORD DRAWINGS", RESPECTIVELY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY OWNER 72 HOURS IN ADVANCE WHEN THOSE SYSTEMS ARE READY TO BE WITNESSED.
- THE WORK PRODUCT PRESENTED IS BELIEVED TO BE COMPLIANT WITH THE INTENT OF THE CURRENT AMERICANS DISABILITIES ACT (ADA) REQUIREMENTS AS INTERPRETED BY THE REVIEWING AGENCY(S). IF CONSTRUCTION OF THE PROJECT IS DELAYED, THIS WORK PRODUCT SHOULD BE UPDATED TO ACCOUNT FOR ANY RELEVANT ADA UPDATES BEFORE CONSTRUCTION BEGINS.
- LOWEST FLOOR (LF) REFERS TO EITHER FLOOR/SLAB ELEVATION OR TOP OF BASEMENT SLAB. LF ELEVATIONS ON THE GRADING AND DRAINAGE PLANS FOR RESIDENTIAL UNITS REFLECT SLAB ON GRADE CONDITIONS AND CANNOT BE LOWERED WITHOUT AGENCY APPROVAL IN LOCATIONS WHERE 'SPECIAL FLOOD HAZARD AREAS' EXIST. IN NON-FLOOD HAZARD LOCATIONS, TO ENSURE THAT ADEQUATE RESIDENTIAL LOT DRAINAGE CAN BE ACHIEVED, A PROFESSIONAL ENGINEER SHOULD BE CONSULTED IF THE LF FOR THE SLAB IS PROPOSED TO BE LOWERED, OR IF A BASEMENT IS TO BE CONSTRUCTED.

FAIRMONT SCOTTSDALE PRINCESS  
FAIRMONT PARKING GARAGE  
STORM WATER MANAGEMENT PLAN  
SCOTTSDALE, ARIZONA

A PORTION OF SECTION 35, TOWNSHIP 4 NORTH, RANGE 4 EAST  
OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA



KEY MAP  
N.T.S.



SHEET INDEX

- SM1 - COVER SHEET
- SM2 - STORM WATER MANAGEMENT PLAN
- SM3 - STORM WATER MANAGEMENT PLAN
- SM4 - DETAILS
- SM5 - DETAILS

BENCHMARK

CITY OF SCOTTSDALE BRASS CAP FLUSH 450'± NORTH OF PRINCESS DRIVE ON SCOTTSDALE ROAD, BEING THE WEST QUARTER CORNER OF SECTION 35, TOWNSHIP 4 NORTH, RANGE 4 EAST.  
CITY OF SCOTTSDALE DATUM, NAVD88 DATUM  
ELEVATION=1553.22'

I HEREBY CERTIFY THAT ALL ELEVATIONS REPRESENTED ON THIS PLAN ARE BASED ON NAVD 1988, MCDOT, AND MEET THE FEMA BENCHMARK MAINTENANCE (BMM) CRITERIA.

PUBLIC UTILITIES

WATER	CITY OF SCOTTSDALE
SEWER	CITY OF SCOTTSDALE
ELECTRIC	APS
TELEPHONE	LUMEN
NATURAL GAS	SOUTHWEST GAS
CABLE TV	COX COMMUNICATIONS

PARCEL DESCRIPTION

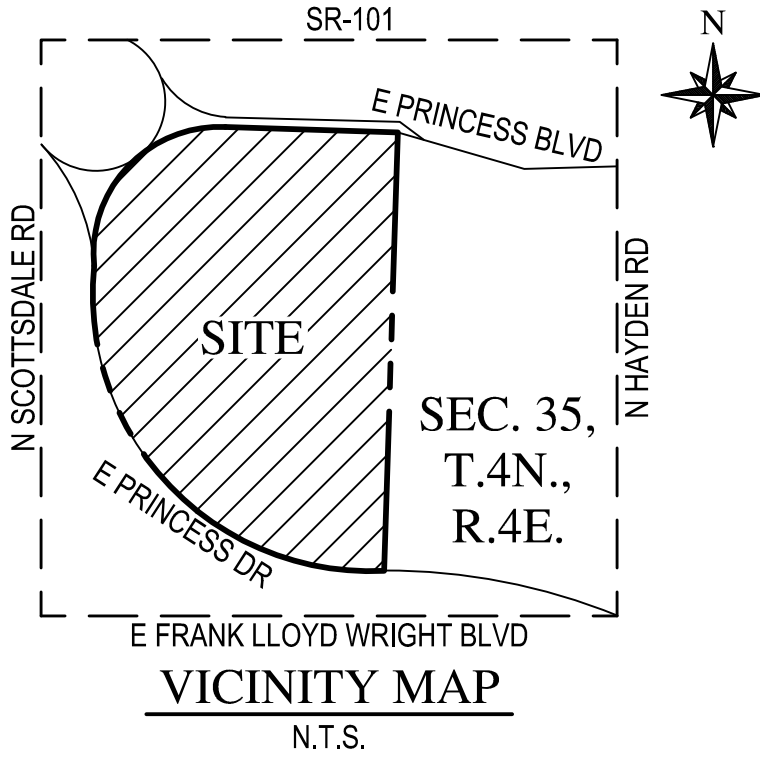
LOT 2 OF FAIRMONT SCOTTSDALE PRINCESS, AS SHOWN ON MINOR SUBDIVISION PLAT RECORDED IN BOOK 1104, PAGE 3, MARICOPA COUNTY RECORDS (MCR), LYING WITHIN SECTION 35, TOWNSHIP 4 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA.

FEMA FIRM NOTE (ZONE AO)

ACCORDING TO FEMA FLOOD INSURANCE RATE MAPPING, THE SUBJECT PROPERTY IS LOCATED IN 'SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD' "ZONE AO". ZONE AO IS DESCRIBED AS: "FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED."

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

MAP NUMBER	COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM	INDEX DATE	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
04013C	045012	1320	L	10/16/2013	07/20/2021	AO	1



OWNER / DEVELOPER

STRATEGIC HOTELS & RESORTS  
150 NORTH RIVERSIDE PLAZA, SUITE 4270  
CHICAGO, IL 60606  
CONTACT: TIMOTHY TAYLOR  
PHONE: (312) 658-6038

ENGINEER

WOOD, PATEL & ASSOCIATES, INC.  
2051 WEST NORTHERN AVENUE, SUITE 100  
PHOENIX, ARIZONA 85021  
CONTACT: DARIN MOORE, P.E.  
PHONE: (602) 335-8500  
FAX: (602) 335-8580

ARCHITECT

KOLLIN ALTOMARE ARCHITECTS  
4265 E. CONANT STREET, SUITE 101  
LONG BEACH, CA 90808  
CONTACT: PAUL ALTOMARE  
PHONE: (562) 597-8760

PROJECT SITE DATA

ASSESSOR PARCEL NUMBER(S):  
215-08-694  
PROJECT SITE ADDRESS:  
7575 E PRINCESS BLVD  
SCOTTSDALE, ARIZONA 85255  
PROJECT SITE AREA(S):  
NET AREA = 9.02 AC  
DISTURBED AREA = 5± AC  
ZONING:  
C2

WOOD  
PATEL

Wood, Patel & Associates, Inc.  
Civil Engineering  
Water Resources  
Land Survey  
Construction Management  
602.335.8500  
www.woodpatel.com



FAIRMONT SCOTTSDALE PRINCESS  
FAIRMONT PARKING GARAGE  
STORM WATER MANAGEMENT PLAN  
SCOTTSDALE, ARIZONA  
COVER SHEET

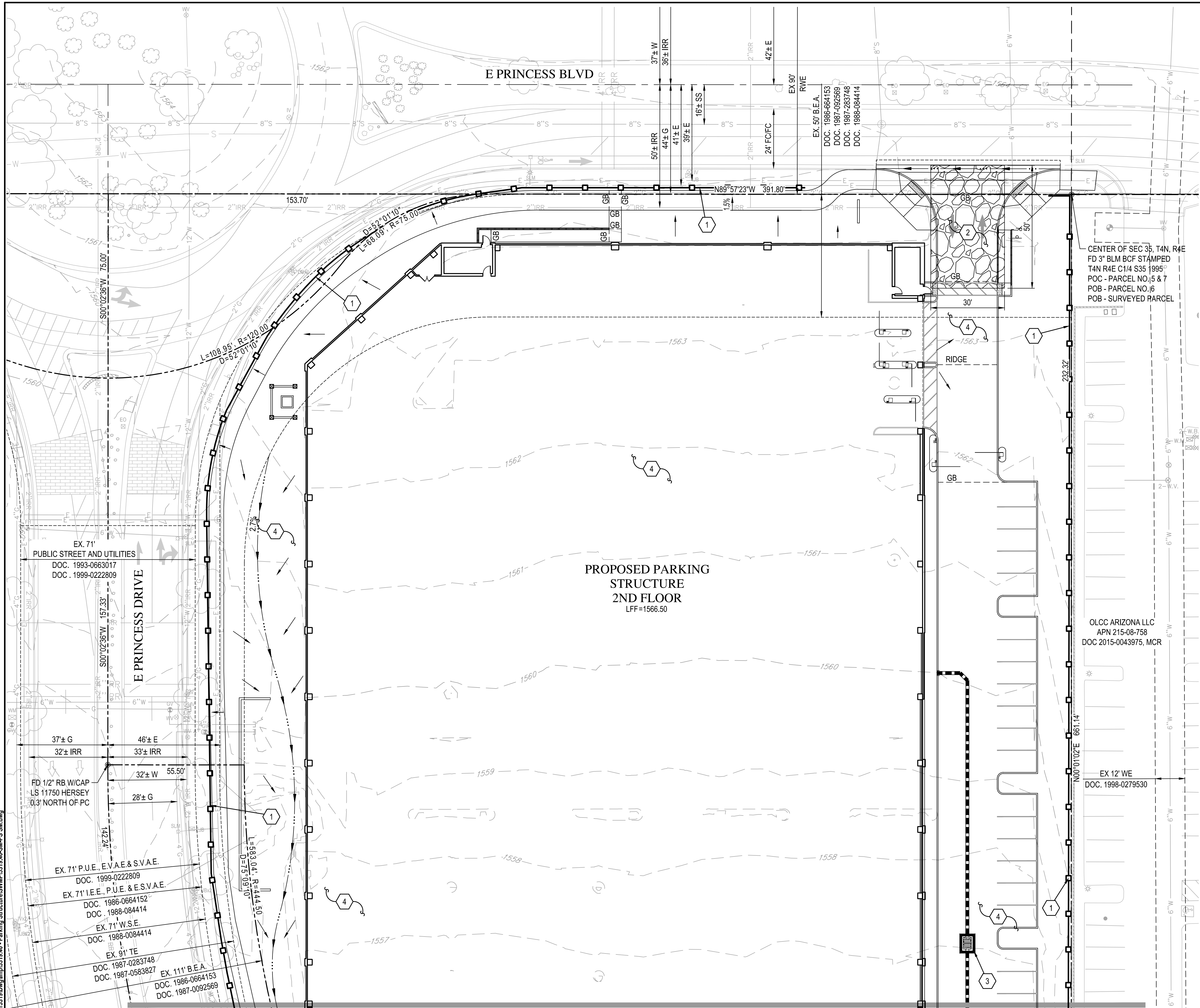
REV	DESCRIPTION	DATE



SCALE (HORIZ.) N/A  
SCALE (VERT.) N/A  
DATE 06/02/2023  
JOB NUMBER 215319.40  
SHEET  
SM1 OF 5

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2022\1215319\DWG\Imp\5319.40 - Parking Structure\SWMP\5319.40-SMPS SM.dwg







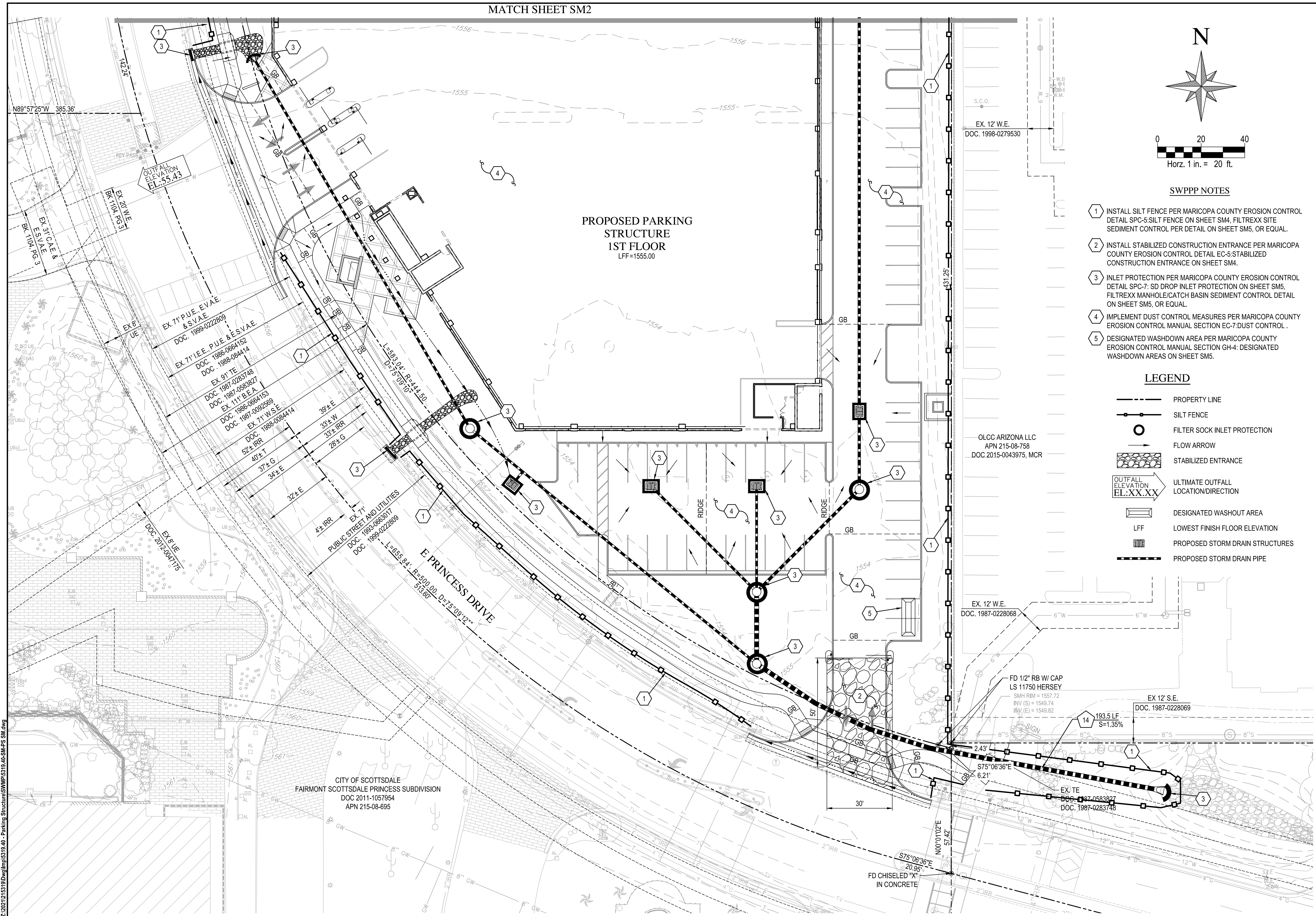
**FAIRMONT SCOTTSDALE PRINCESS  
FAIRMONT PARKING GARAGE  
STORM WATER MANAGEMENT PLAN  
SCOTTSDALE, ARIZONA  
STORM WATER MANAGEMENT PLAN**

DATE	DESCRIPTION	REV

EXPIRES 06-30-25

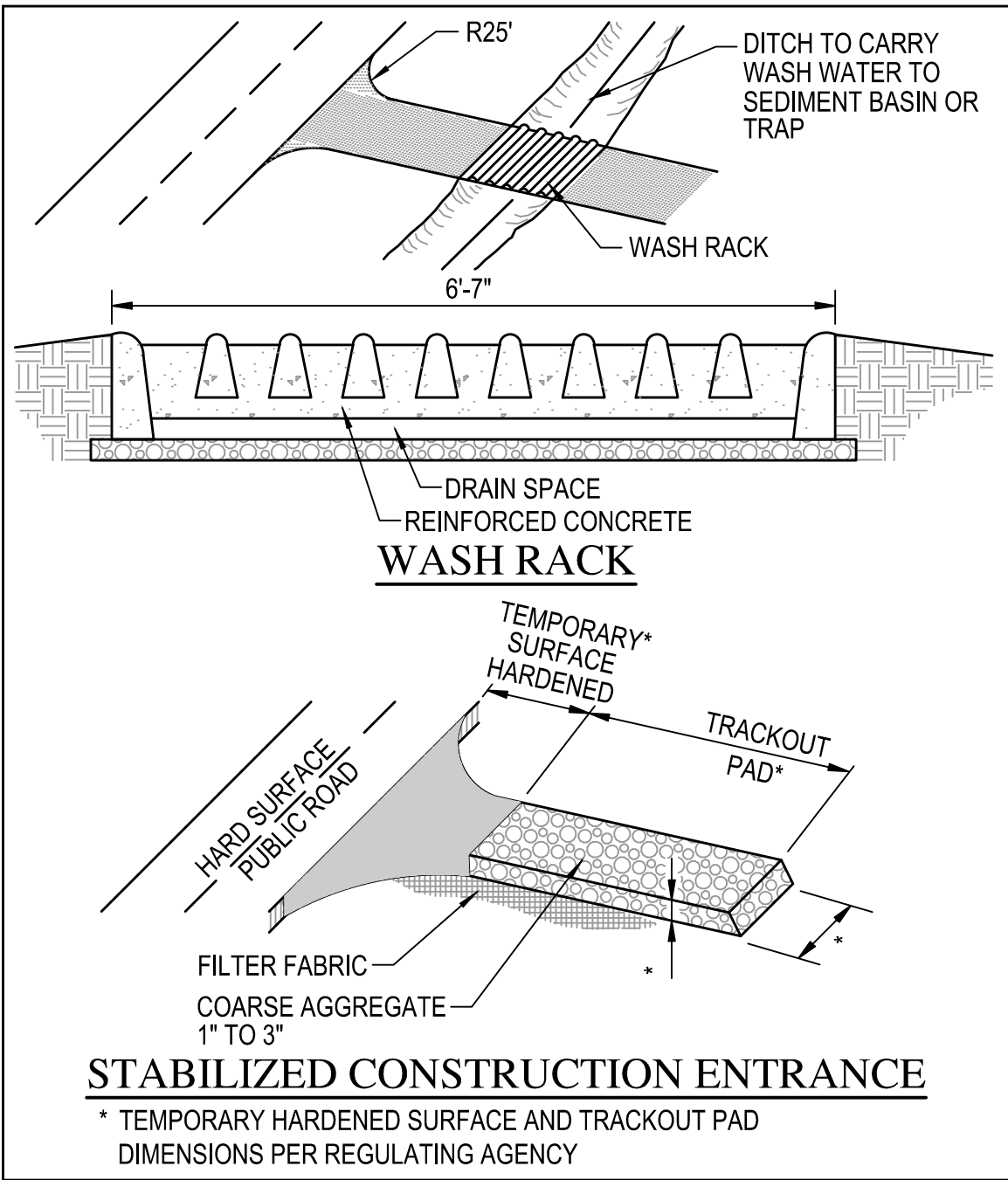
SCALE (HORIZ.)	1" = 20'
SCALE (VERT.)	N/A
DATE	06/02/2023
JOB NUMBER	215319.40
SHEET	SM3 OF 5

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS





Z:\2022\1214319\DWG\Imp\5319.40 - Parking Structure\SWMP\5319.40-DT-PS SM.dwg



EC-5

DEFINITION

A HARDENED SURFACE COMBINED WITH A STABILIZED PAD OF AGGREGATE UNDERLAIN WITH FILTER CLOTH LOCATED WHERE TRAFFIC WILL BE ENTERING OR EXITING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY, SIDEWALK OR PARKING AREA. FOR ADDED EFFECTIVENESS, A WHEEL WASH OR WASH RACK AREA CAN BE INCORPORATED INTO THE DESIGN TO FURTHER REDUCE SEDIMENT TRACKING.

PURPOSE

STABILIZED CONSTRUCTION ENTRANCES REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAYS OR STREETS. REDUCING TRACKOUT OF SEDIMENTS AND OTHER POLLUTANTS ONTO PAVED ROADS HELPS PREVENT DEPOSITION OF SEDIMENTS INTO LOCAL STORM DRAIN AND PRODUCTION OF AIRBORNE DUST. IT ALSO CAN DIRECT TRAFFIC TO A SINGLE LOCATION, REDUCING THE NUMBER OF DISTURBED AREAS ON THE SITE AND PROVIDING TRAFFIC CONTROL.

APPROPRIATE APPLICATIONS

A STABILIZED CONSTRUCTION ENTRANCE SHOULD BE USED AT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS. USE AT CONSTRUCTION SITES:

- WHERE DIRT OF MUD CAN BE TRACKED ONTO PUBLIC ROADS.
- ADJACENT TO WATER BODIES.
- WHERE CLAYEY OR SILTY SOILS ARE ENCOUNTERED.
- WHERE DUST IS A PROBLEM DURING DRY WEATHER CONDITIONS.

AZDESNDPES PERMITS AND MARICOPA COUNTY DUST CONTROL REGULATIONS REQUIRE THAT APPROPRIATE MEASURES ARE IMPLEMENTED TO PREVENT TRACKOUT OF SEDIMENTS ONTO PAVED ROADWAYS.

LIMITATIONS

STABILIZED CONSTRUCTION ENTRANCES MAY NOT BE COMPLETELY EFFECTIVE AGAINST PREVENTING THE DEPOSITION OF SEDIMENTS ONTO PAVED SURFACES. TO FURTHER REDUCE THE CHANCE OF THESE SEDIMENTS POLLUTING STORMWATER RUNOFF, SWEEPING OF THE PAVED AREA ADJACENT TO THE STABILIZED SITE ENTRANCE IS RECOMMENDED.

PLANNING CONSIDERATIONS

LIMIT POINTS OF ENTRANCE/EXIT TO ONLY STABILIZED LOCATIONS. STABILIZED CONSTRUCTION ENTRANCES ARE MOST EFFECT WHEN USED IN CONJUNCTION WITH EC-6: CONSTRUCTION ROAD STABILIZATION, EC-7: DUST CONTROL, AND GH-6: ROAD SWEEPING/TRACKOUT CLEANING.

RECOMMENDED STANDARDS AND SPECIFICATIONS

STABILIZED CONSTRUCTION ENTRANCES ALONE ARE NOT VERY EFFECTIVE IN REMOVING SEDIMENT FROM EQUIPMENT LEAVING A CONSTRUCTION SITE. EFFICIENCY IS GREATLY INCREASED, THOUGH, WHEN A WASHING RACK IS INCLUDED AT THE POINT OF EGRESS.

DESIGN & SIZING CONSIDERATIONS

THE AGGREGATE FOR STABILIZED CONSTRUCTION ENTRANCE APRONS SHOULD HAVE A NOMINAL DIAMETER OF 1 TO 3 INCHES IN SIZE, WASHED, WELL-GRADED GRAVEL OR CRUSHED ROCK. THE APRON DIMENSIONS SHALL FOLLOW THE REQUIREMENTS OF THE REGULATING AGENCY.

- THE ENTRANCE MUST BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
- INSTALL A WASHRACK AT GROUND ELEVATION.
- WHEN WASH AREAS ARE PROVIDED, WASHING SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO A PROPERLY CONSTRUCTED SEDIMENT TRAP OR BASIN (POND).
- THE DIMENSIONS OF THE TEMPORARY HARDENED SURFACE SHALL MEET THE REQUIREMENTS OF THE REGULATING AGENCY.

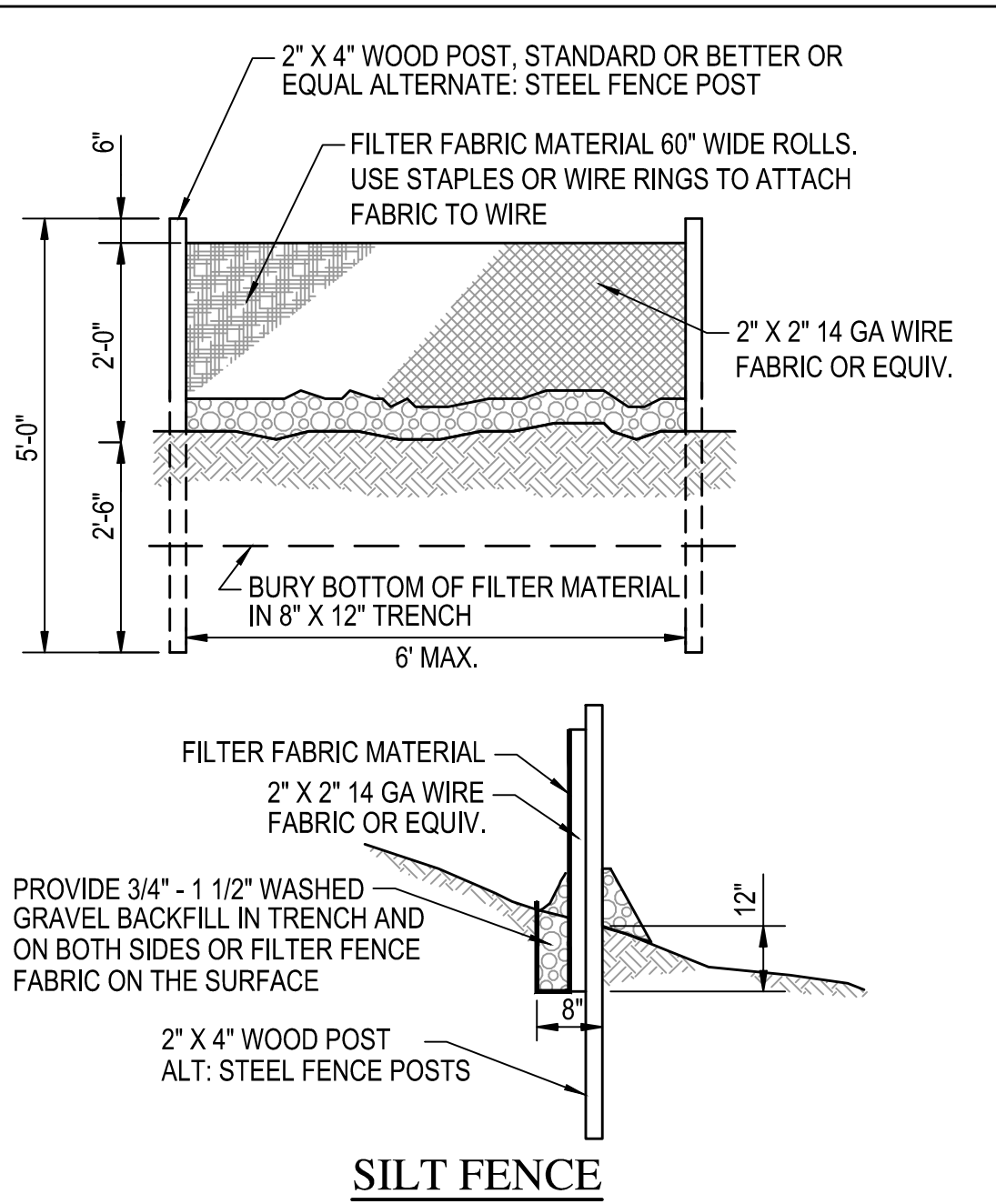
RECOMMENDED MAINTENANCE AND INSPECTION

- INSPECTION INTERVAL PER REGULATING AGENCY.
- REPLACE GRAVEL MAT WHEN SURFACE VOIDS ARE NO LONGER VISIBLE. PERIODIC TOP DRESSING WITH ADDITIONAL STONE WILL BE REQUIRED.
- ALL SEDIMENTS DEPOSITED ON PAVED ROADWAYS MUST BE REMOVED WITHIN 24 HOURS.
- REMOVE TEMPORARY HARDENED SURFACE, GRAVEL AND FILTER FABRIC UPON COMPLETION OF CONSTRUCTION.

NOTE: IF WORKING ON A PROJECT THAT IS SUBJECT TO A MARICOPA COUNTY DUST CONTROL PERMIT UNDER RULE 310, FOLLOW THE PERMIT REQUIREMENTS FOR STABILIZED CONSTRUCTION ENTRANCE DESIGN AND SIZING.

POST CONSTRUCTION METHODS

NONE



SPC-5

DEFINITION

A GEOTEXTILE FABRIC STRETCHED BETWEEN EITHER WOODEN OR METAL POSTS WITH THE LOWER EDGE OF THE FABRIC SECURELY EMBEDDED IN THE SOIL. THE FENCE IS TYPICALLY LOCATED DOWNSTREAM OF DISTURBED AREAS TO INTERCEPT SHEET FLOW RUNOFF.

PURPOSE

- THERE ARE TWO MAIN PURPOSES FOR SILT FENCES:
- TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE.
  - TO DECREASE THE VELOCITY OF SHEET FLOWS AND LOW-TO-MODERATE LEVEL CHANNEL FLOWS.

APPROPRIATE APPLICATIONS

SILT FENCES, AS THE NAME IMPLIES, ARE MORE EFFECTIVE WITH SANDY OR SILTY SOIL TYPES. FOR VERY FINE GRAINED SOILS, SUCH AS CLAYS, A SOILS ENGINEER SHOULD CONFIRM THE SUITABILITY OF A SILT FENCE FOR THAT AREA.

SILT FENCES ARE GENERALLY APPLICABLE TO CONSTRUCTION SITES WITH RELATIVELY SMALL DRAINAGE AREAS. SILT FENCES ARE NOT INTENDED FOR USE IN DETAINING CONCENTRATED FLOWS. THEY ARE APPROPRIATE WHERE RUN-OFF IS A LOW-LEVEL SHALLOW FLOW, NOT EXCEEDING 0.5 CUBIC FOOT PER SECOND (CFS). THE DRAINAGE AREA FOR SILT FENCES GENERALLY SHOULD NOT EXCEED 0.25 ACRE PER 100 FEET (FT) OF FENCE LENGTH. SLOPE LENGTH ABOVE THE FENCE SHOULD NOT EXCEED 100 FT.

SILT FENCES MAY BE USED:

- BELOW DISTURBED AREAS WHERE RUNOFF MAY OCCUR IN THE FORM OF SHEET AND RILL EROSION; WHEREVER RUNOFF HAS THE POTENTIAL TO IMPACT DOWNSTREAM RESOURCES.
- PARALLEL TO MINOR SWALES OR DITCH LINES FOR UP TO ONE ACRE OF CONTRIBUTING DRAINAGE AREAS.
- FOR BOTH SITE DEVELOPMENT AREAS AND LINEAR ROADWAY TYPE PROJECTS.

LIMITATIONS

- SILT FENCES ARE LESS EFFECTIVE IN AREAS WITH PREDOMINATELY CLAY SOIL TYPES.
- SILT FENCES WILL CREATE A TEMPORARY SEDIMENTATION POND ON THE UPSTREAM SIDE OF THE FENCE, WHICH MAY CAUSE TEMPORARY FLOODING.
- SILT FENCES ARE NOT PRACTICAL FOR LARGE FLOWS. DRAINAGE AREAS SHOULD BE RESTRICTED TO LESS THAN ONE ACRE AND A FLOW RATE LESS THAN 0.5 CFS. DO NOT ALLOW WATER DEPTH TO EXCEED 1.5 FT AT ANY POINT IN FRONT OF THE SILT FENCE.
- SILT FENCES MAY NOT FILTER RUNOFF EFFECTIVELY IF THE PORE SIZE OF THE FABRIC IS INCORRECTLY SELECTED. IMPROPERLY INSTALLED FENCES ARE SUBJECT TO FAILURE FROM UNDERCUTTING, OVERTOPPING, OR COLLAPSING.

PLANNING CONSIDERATIONS

IF THE SITE CONTAINS A HIGH CONTENT OF CLAYS, CONSULT A SOILS ENGINEER BEFORE INSTALLING A SILT FENCE. THE VIRGINIA HIGHWAY AND TRANSPORTATION RESEARCH COUNCIL HAS SHOWN THAT SILT FENCES CAN TRAP A MUCH HIGHER PERCENTAGE OF SUSPENDED SEDIMENTS THAN STRAW BALES CAN. SILT FENCES ARE PREFERABLE TO STRAW BARRIERS IN MANY CASES. HOWEVER, WHILE THE FAILURE RATE OF SILT FENCES IS LOWER THAN THAT OF STRAW BARRIERS, THERE ARE MANY INSTANCES LOCALLY IN WHICH SILT FENCES HAVE BEEN IMPROPERLY INSTALLED. THE INSTALLATION METHODS OUTLINED HERE CAN IMPROVE PERFORMANCE.

- ANCHOR THE SITE FENCE FABRIC BELOW THE GROUND SURFACE SUFFICIENTLY TO PREVENT FLOW FROM UNDERCUTTING THE FENCE.
- CONSTRUCT ALONG A LEVEL CONTOUR.
- SILT FENCES SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.
- PROVIDE SUFFICIENT ROOM FOR SEDIMENT REMOVAL EQUIPMENT BETWEEN THE SILT FENCE AND TOES OF SLOPES OR OTHER OBSTRUCTIONS.
- THE ENDS OF THE FILTER FENCE SHOULD BE TURNED UPHILL TO PREVENT STORMWATER FROM FLOWING AROUND THE FENCE.
- PROVIDE AN UNDISTURBED OR STABILIZED OUTLET SUITABLE FOR SHEET FLOW.
- DO NOT CONSTRUCT IN LIVE STREAMS OR INTERMITTENTLY FLOWING CHANNELS.

AS ALTERNATIVES TO SILT FENCES, CONSIDER USING THE FOLLOWING: DIVERSION DIKES, ORGANIC FILTER BARRIER, GRAVEL FILTER BERMS, SAND BAG BARRIER, REVEGETATION, OR STORM DRAIN INLET PROTECTION.

RECOMMENDED STANDARDS AND SPECIFICATIONS

MATERIALS:

SELECTION OF A FILTER FABRIC IS BASED ON SOIL CONDITIONS AT THE CONSTRUCTION SITE, WHICH AFFECT THE EQUIVALENT OPENING SIZE (EOS) FABRIC SPECIFICATION, AND CHARACTERISTICS OF THE SUPPORT FENCE, WHICH AFFECT THE CHOICE OF TENSILE STRENGTH. THE DESIGNER SHOULD SPECIFY A FILTER FABRIC THAT RETAINS THE SOIL FOUND ON THE CONSTRUCTION SITE YET WILL HAVE OPENINGS LARGE ENOUGH TO PERMIT DRAINAGE AND PREVENT CLOGGING. IF 50 PERCENT (%) OR LESS OF THE SOIL, BY WEIGHT, PASSES THROUGH US STANDARD SIEVE NO. 200, SELECT THE EOS THAT WILL RETAIN 85% OF THE SOIL, BY WEIGHT. IN ADDITION, CONSIDER THE FOLLOWING RECOMMENDATIONS IN THE TABLE BELOW DURING THE SELECTION OF THE EQUIVALENT OPENING SIZE.

US STANDARD SIEVE NO.	SIEVE HOLE SIZE, INCHES	COMMENTS/EOS RECOMMENDATIONS
70	0.0083	THE EOS SHOULD NOT BE LARGER THAN THE OPENINGS OF US SIEVE NO. 70
100	0.0059	IF THERE IS DIRECT DISCHARGE TO A STREAM, LAKE, OR WESTLAND, THAN THE EOS SHOULD NOT BE GREATER THAN THE OPENINGS OF US SIEVE NO. 100
200	0.0029	IF GREATER THAN 85% OF THE SOIL PASSES THIS SIEVE HOLE SIZE, BY WEIGHT, DO NOT USE SILT FENCES. MOST OF THE PARTICLES IN SUCH A SOIL WOULD NOT BE RETAINED IF THE EOS WAS TOO LARGE OR THEY WOULD CLOG THE FABRIC QUICKLY IF THE EOS WAS TOO SMALL. CONSIDER TEMPORARY SEDIMENT BASINS AS AN ALTERNATIVE BMP.

FABRIC FENCES ARE SUPPORTED WITH WIRE MESH, AS RECOMMENDED BY THE FABRIC MANUFACTURER. FILTER FABRIC MATERIAL SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE LIFE AT A TEMPERATURE RANGE OF 0° F. TO 120° F.

INSTALLATION

THE FOLLOWING DRAINAGE AND TOPOGRAPHICAL CHARACTERISTICS OF THE SITE SHOULD BE CONSIDERED BEFORE INSTALLING SILT FENCES.

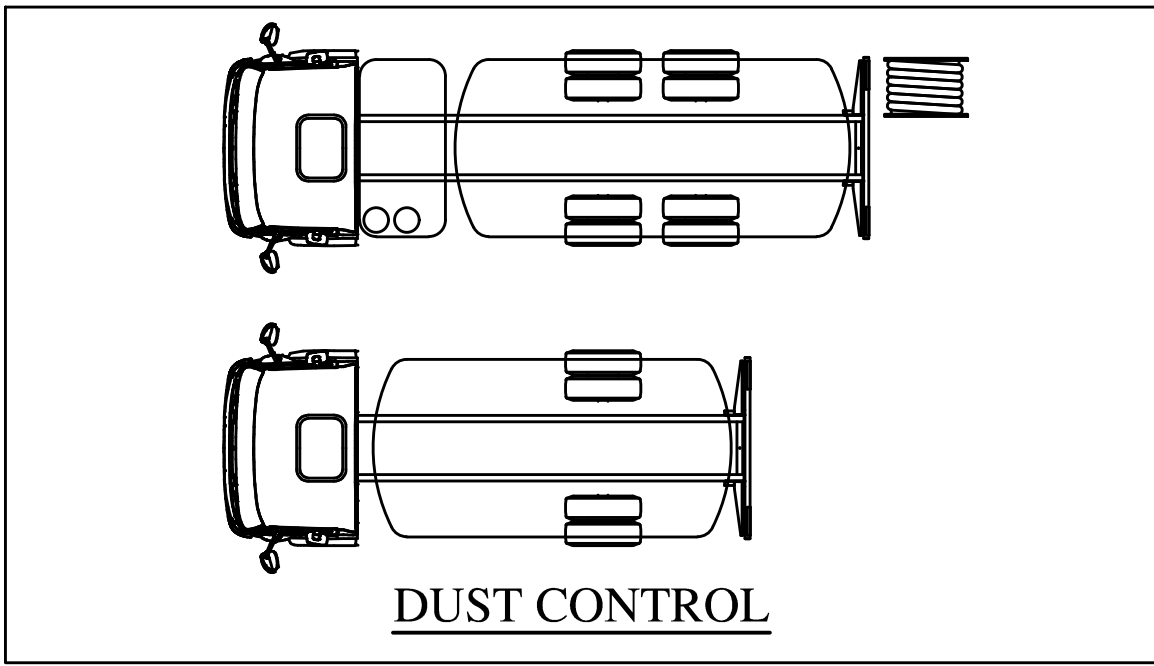
- UPSTREAM DRAINAGE AREA LIMITED TO 1 ACRE OR LESS WHEN USED ALONE OR IN COMBINATION WITH SEDIMENT BASIN IN A LARGER SITE.
- MAXIMUM SLOPE STEEPNESS PERPENDICULAR TO FENCE LINE IS 1:1.
- MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE FENCE IS 100 FEET.
- SILT FENCES ARE NOT INTENDED FOR CONCENTRATED FLOWS GREATER THAN 0.5 CFS. FILTER FENCES ARE TO BE CONSTRUCTED, AS DESCRIBED BELOW, ON A LEVEL CONTOUR TO MAXIMIZE THE AVAILABLE PONDING AREA AND PREVENT CONCENTRATION OF FLOW AGAINST THE FENCE.
- POSTS SHOULD BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 30 INCHES.
- A TRENCH SHOULD BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
- WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHOULD BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, THE WIRES OR HOG RINGS. THE WIRE SHOULD EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES.
- THE STANDARD STRENGTH FILTER FABRIC SHOULD BE STAPLED OR WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHOULD EXTEND INTO THE TRENCH. WHEN EXTRA-STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED AND THE FILTER FABRIC STAPLED OR WIRED DIRECTLY TO THE POSTS.
- THE USE OF JOINTS SHOULD BE AVOIDED. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHOULD BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST.
- THE TRENCH SHOULD BE BACKFILLED WITH 3/4-INCH MINIMUM DIAMETER WASHED GRAVEL OR COMPACTED NATIVE MATERIAL.

RECOMMENDED MAINTENANCE AND INSPECTION

SILT FENCES SHOULD BE INSPECTED REGULARLY AND FREQUENTLY AS WELL AS AFTER EACH RAINFALL EVENT TO ENSURE THAT THEY ARE INTACT AND THAT THERE ARE NO GAPS AT THE FENCE-GROUND INTERFACE OR TEARS ALONG THE LENGTH OF THE FENCE. IF GAPS OR TEARS ARE FOUND, THEY SHOULD BE REPAIRED OR THE FABRIC SHOULD BE REPLACED IMMEDIATELY. ACCUMULATED SEDIMENTS SHOULD BE REMOVED FROM THE FENCE BASE WHEN THE SEDIMENT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE FENCE. SEDIMENT REMOVAL SHOULD OCCUR MORE FREQUENTLY IF ACCUMULATED SEDIMENT IS CREATING NOTICEABLE STRAIN ON THE FABRIC AND THERE IS THE POSSIBILITY OF THE FENCE FAILING FROM A SUDDEN STORM EVENT. SILT FENCES SHOULD NOT BE REMOVED UNTIL THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED. WHEN THE SILT FENCE IS REMOVED, THE ACCUMULATED SEDIMENT ALSO SHOULD BE REMOVED.

POST CONSTRUCTION METHODS

NONE.



EC-7

DEFINITION

A COMPREHENSIVE PLAN TO LIMIT OFFSITE SEDIMENT DEPRESSION BY MINIMIZING OR CONTROLLING AIRBORNE FUGITIVE DUST.

PURPOSE

SEDIMENTS WHICH ARE TRANSPORTED FROM CONSTRUCTION SITES BY STORMWATER RUNOFF, WIND, EROSION AND VEHICLE TRACKOUT ARE OFTEN RE-DISPERSED TO THE AIR BY SUBSEQUENT VEHICULAR TRAFFIC AND HIGH WINDS. LIKEWISE, THESE SEDIMENTS MAY BE TRANSPORTED BY THE NEXT RAINFALL INTO PUBLIC STORM SEWER SYSTEMS. IMPLEMENTATION OF CONTROL MEASURES TO MINIMIZE THE GENERATION OF FUGITIVE DUST FROM CONSTRUCTION SITES WILL REDUCE PARTICULATE MATTER IN THE AIR, WHICH HAS SIGNIFICANT HEALTH EFFECTS TO WORKERS AND ANY NEARBY RESIDENTS. THERE ARE THREE METHODS OF DUST CONTROL: (1) GEOTEXTILES, MATS, PLASTIC COVERS, AND OTHER MECHANICAL METHODS (2) DUST PALLIATIVES (SOIL BINDERS), AND (3) REVEGETATION.

APPROPRIATE APPLICATIONS

DUST CONTROL MEASURES SHOULD BE APPLIED AT THE FOLLOWING LOCATIONS AND ACTIVITIES:

- GRADING OPERATIONS (LAND CLEARING AND EARTHMOVING)
- DRILLING AND BLASTING
- BATCH DROP OPERATIONS (LOADER OPERATION)
- EXPOSED AREAS, CLEARED UNSTABILIZED AREA.
- VEHICLE TRAFFIC ON UNPAVED SURFACES
- SEDIMENT TRACKING ON PAVED SURFACES
- BLASTING AND WRECKING BALL OPERATIONS
- SOIL AND DEBRIS STORAGE PILES

THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE MARICOPA COUNTY AIR QUALITY REGULATIONS. A SUMMARY OF THE BASIC REQUIREMENTS ARE AS FOLLOWS:

- PERMITS REQUIRE THE USE OF REASONABLY AVAILABLE DUST CONTROL MEASURES.
- ENFORCE VISIBLE OPACITY EMISSION LIMITS TO DETERMINE COMPLIANCE.
- REQUIRE DUST CONTROL PLANS FOR CONSTRUCTION OR LAND CLEARING PROJECTS.
- ENFORCEMENT ACTIVITIES WITH PRIORITY GIVEN TO CITIZEN COMPLAINTS.
- REQUIRE CONTRACTORS TO MAINTAIN RECORDS.

LIMITATIONS

DUST SUPPRESSANTS HAVE A RANGE OF LIMITATIONS AND PRECAUTIONS. REFER TO COMMONLY USED DUST SUPPRESSANTS TABLE FOR LIMITATIONS OF EACH TYPE OF DUST SUPPRESSANT.

- ALL DUST SUPPRESSANTS ARE TEMPORARY IN NATURE AND MAY NEED REAPPLICATION(S) THROUGHOUT THE LIFE OF A PROJECT.
- DUST SUPPRESSANTS REQUIRE A MINIMUM CURING TIME UNTIL FULLY EFFECTIVE, AS PRESCRIBED BY THE MANUFACTURER, WHICH MAY BE 24 HOURS OR LONGER. REAPPLICATION MAY BE NECESSARY AFTER A STORM EVENT.
- DUST SUPPRESSANTS WILL GENERALLY EXPERIENCE SPOT FAILURES DURING HEAVY RAINFALL EVENTS. IF RUNOFF PENETRATES THE SOIL AT THE TOP OF A SLOPE TREATED WITH A SOIL BINDER, THE RUNOFF MAY COMPLETELY UNDERCUT THE STABILIZED SOIL LAYER AND DISCHARGE AT A POINT FURTHER DOWN THE SLOPE.
- DUST SUPPRESSANTS MAY NOT PENETRATE SOIL SURFACES MADE UP PRIMARILY OF SILT AND CLAY, PARTICULARLY WHEN COMPACTED.
- SOME DUST SUPPRESSANTS CAN BE ENVIRONMENTALLY HAZARDOUS, ESPECIALLY IF THE DUST SUPPRESSANT DISSOLVES IN WATER. DISSOLVED CHEMICALS CAN MIGRATE WITH THE RUNOFF OR PERCOLATE FURTHER BELOW THE GROUND SURFACE. FOR ADDITIONAL INFORMATION, REFER TO THE EPA DOCUMENT, "POTENTIAL ENVIRONMENTAL IMPACTS OF DUST SUPPRESSANTS: AVOIDING ANOTHER TIMES BEACH", REFERENCED AT THE END OF THIS BMP.
- SOME DUST SUPPRESSANTS DO NOT PERFORM WELL WITH LOW RELATIVE HUMIDITY, WHILE OTHERS BECOME SLIPPERY OR LEACH OUT OF THE SOIL UNDER HEAVY PRECIPITATION.

PLANNING CONSIDERATIONS

MANY OF THE REASONABLY AVAILABLE CONTROL MEASURES FOR CONTROLLING FUGITIVE DUST FROM CONSTRUCTION SITES CAN ALSO BE IMPLEMENTED AS BEST MANAGEMENT PRACTICES FOR STORMWATER POLLUTION PREVENTION. THOSE BEST MANAGEMENT PRACTICES INCLUDE:

- PAVE, VEGETATE, OR CHEMICALLY STABILIZE ACCESS POINTS TO PAVED ROADS.
- PROVIDE COVERS FOR TRUCKS TRANSPORTING MATERIALS THAT CONTRIBUTE DUST.
- PROVIDE FOR WET SUPPRESSION OR CHEMICAL STABILIZATION OF EXPOSED SOILS.
- PROVIDE FOR RAPID CLEANUP OF SEDIMENTS DEPOSITED ON PAVED ROADS.
- FURNISH STABILIZED CONSTRUCTION ROAD ENTRANCES AND VEHICLE WASH DOWN AREAS.
- STABILIZE UNPAVED HAUL ROADS, PARKING AND STAGING AREAS.
- IMPLEMENT DUST CONTROL MEASURES FOR MATERIAL STOCKPILES.
- PREVENT DRAINAGE OF SEDIMENT-LADEN STORMWATER ONTO PAVED SURFACES.
- STABILIZE ABANDONED CONSTRUCTION SITES USING VEGETATION OR CHEMICAL STABILIZATION METHODS.

RECOMMENDED STANDARDS AND SPECIFICATIONS

THERE ARE MANY PRODUCTS AVAILABLE AS DUST SUPPRESSANTS FOR CHEMICALS AVAILABLE AND RECOMMENDATIONS FOR THEIR USE ARE SUMMARIZED IN COMMONLY USED DUST SUPPRESSANTS TABLE.

RECOMMENDED MAINTENANCE AND INSPECTION

DUST CONTROL IS AN ONGOING PROCESS DURING SITE CONSTRUCTION. RE-APPLICATION OF DUST CONTROL MEASURE MAY BE NECESSARY UNTIL CONSTRUCTION IS COMPLETE.

POST CONSTRUCTION METHODS

CONSIDER REVEGETATION OR EMULSION CHIP SEALS FOR MORE PERMANENT DUST CONTROL AFTER THE CONSTRUCTION PROJECT HAS BEEN COMPLETED.



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STORM WATER MANAGEMENT PLAN  
SCOTTSDALE, ARIZONA  
DETAILS

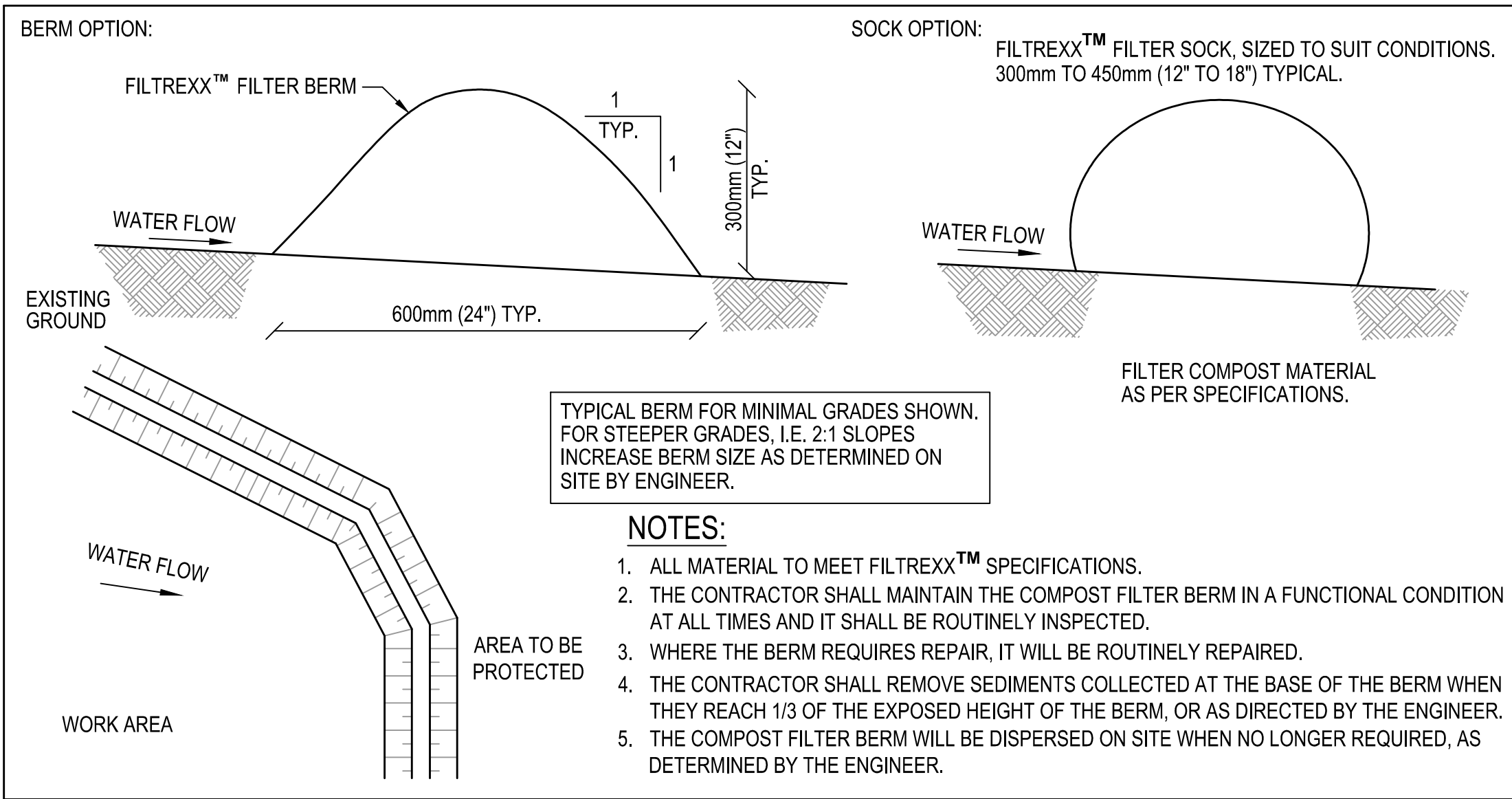
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SCALE (HORIZ.)	N/A
SCALE (VERT.)	N/A
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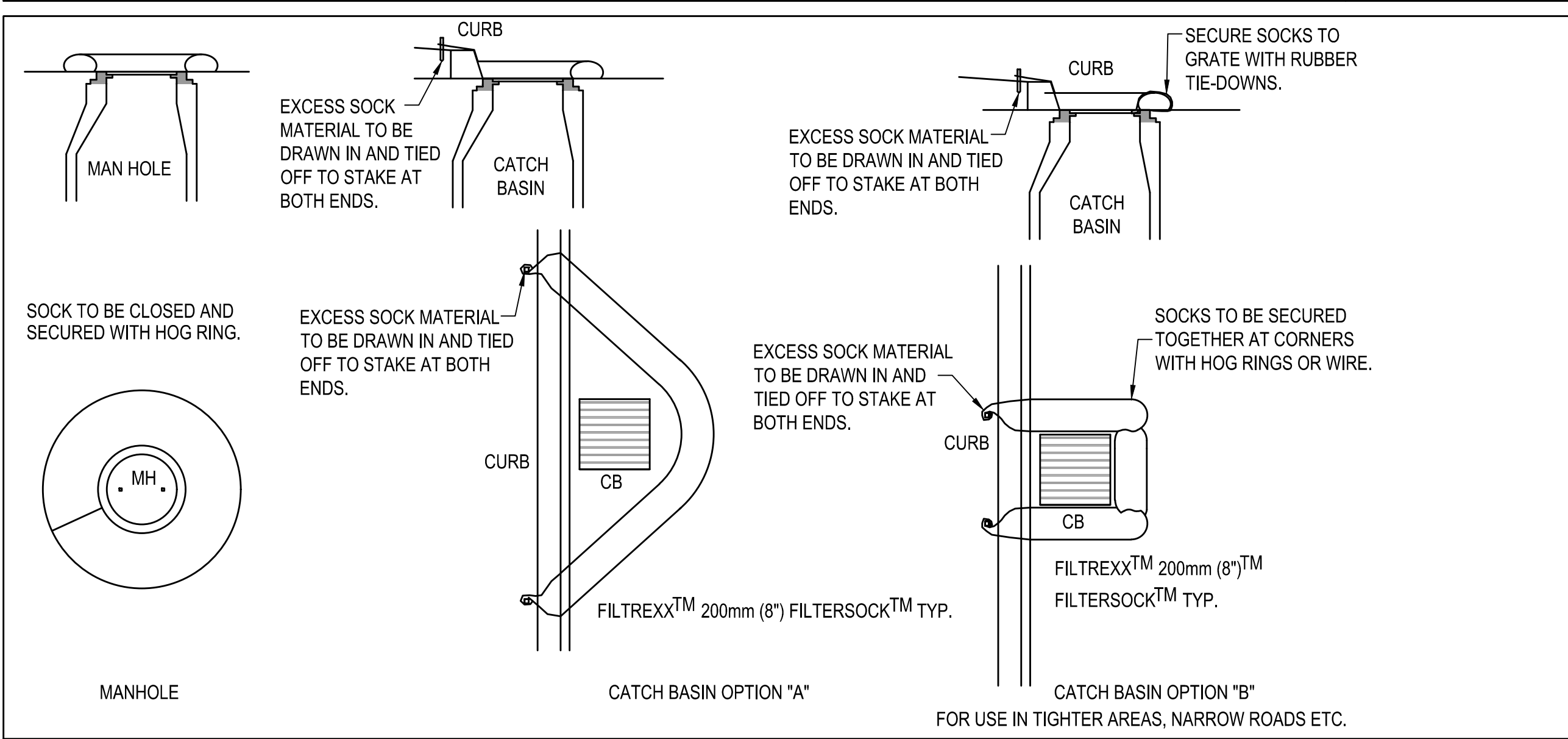
**SITE SEDIMENT CONTROL**

DESIGN:	R.D.B.	SCALE:	
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SHEET:	5 of 7	DWG. No:	
DATE:			

TABLE 5.2 COMMONLY USED DUST SUPPRESSANTS			
Types	Functional Mechanism	Advantages	Limitations
Freshwater	Moisture wets particles, thereby increasing their mass and binding them together.	Usually readily available, low material cost, and easy to apply	Frequent light applications may be necessary during hot dry weather and can be labor intensive. Over application may result in loss of traction, erosion, or potholes of road failure.
Calcium Chloride	At a relative humidity greater than approximately 30% (77°F), the salts within the soil will pull moisture from the air above and retain it in the soil.	Reduces evaporation rate of surface moisture, lowers the freezing point of water, which reduces frost heave and freeze-thaw cycles, thereby reducing required road maintenance. Calcium Chloride also increases the compacted density of existing road base material. Effectiveness is retained after reblading.	Effectiveness in arid and semi-arid regions may be limited due to low relative humidity. It is very corrosive to aluminum alloys and slightly corrosive to steel. Solubility of calcium chloride results in leaching during heavy precipitation. Releases heat when mixed with water.
Magnesium Chloride	At a relative humidity greater than approximately 30% (77°F), the salts within the soil will pull moisture from the air above and retain it in the soil.	Reduces evaporation rate of surface moisture, lowers the freezing point of water, which reduces frost heave and freeze-thaw cycles, thereby reducing required road maintenance. Magnesium Chloride increases the compacted density of existing road base material more than Calcium Chloride. Effectiveness is retained after reblading.	Effectiveness in arid and semi-arid regions may be limited due to low relative humidity. It is very corrosive to aluminum alloys and slightly corrosive to steel. Solubility of calcium chloride results in leaching during heavy precipitation.
Lignin Derivatives	Act as adhesives by binding soil particles together and curing.	Greatly increases dry strength of soil, not humidity-dependent, imparts some plasticity to road surfaces, and lowers freezing point of road surface and base. Effectiveness is retained after reblading.	High solubility results in leaching during heavy precipitation. It is corrosive to aluminum alloys due to acidity (CaCl <sub>2</sub> can neutralize the acidity). Proper aggregate mix is important to performance. Becomes slippery when wet and brittle when dry.
Tree Resin Emulsions (tall oil)	Act as adhesives by binding soil particles together and curing.	Low solubility after curing minimizes leaching and provides degree of surface waterproofing. Imparts some plasticity to road surfaces, has a high bonding strength, and is non-corrosive.	Requires proper weather and time to cure. No residual effectiveness after reblading. Equipment requires prompt cleanup to avoid curing of resin in hoses and pipes.
Synthetic Polymer	Bind soil particles together by forming a polymerizing matrix; a function similar to adhesives.	Applicable to a range of emission sources and function well in sandy soil conditions. Some types allow seeded vegetation to grow through the polymer matrix.	Requires proper weather and time to cure. Water repellent. May be subject to UV (sunlight) degradation. Application equipment requires timely cleaning. There is no residual effectiveness after reblading.
Bitumens, Tars, and Resins	Asphalt and resinous products are adhesive binding soil particles together. Petroleum oil products coat soil particles, increasing their mass and binding them together.	Water insoluble when dry; provide a degree of surface waterproofing. Good residual effectiveness.	Surface crusting fracturing and potholing may develop. Long-term application may cause road to become too hard for reblading. Bitumens won't lower freezing point and petroleum oil products lack adhesive characteristics.
Cementitious Based Binders	High purity gypsum mixes with water and mulch to form a thin cement-like crust on the soil surface.	Flexible, durable, water permeable, and resists soil chemicals. Reduces amount of aggregate required during initial construction and has lower maintenance costs than other dust suppressants.	Cementitious based binders are only effective for dust control in non-traffic areas. Instead, consider mixing cementitious based binders with sub-base soils for greater soil strength.

DUST CONTROL TABLE

EC-7

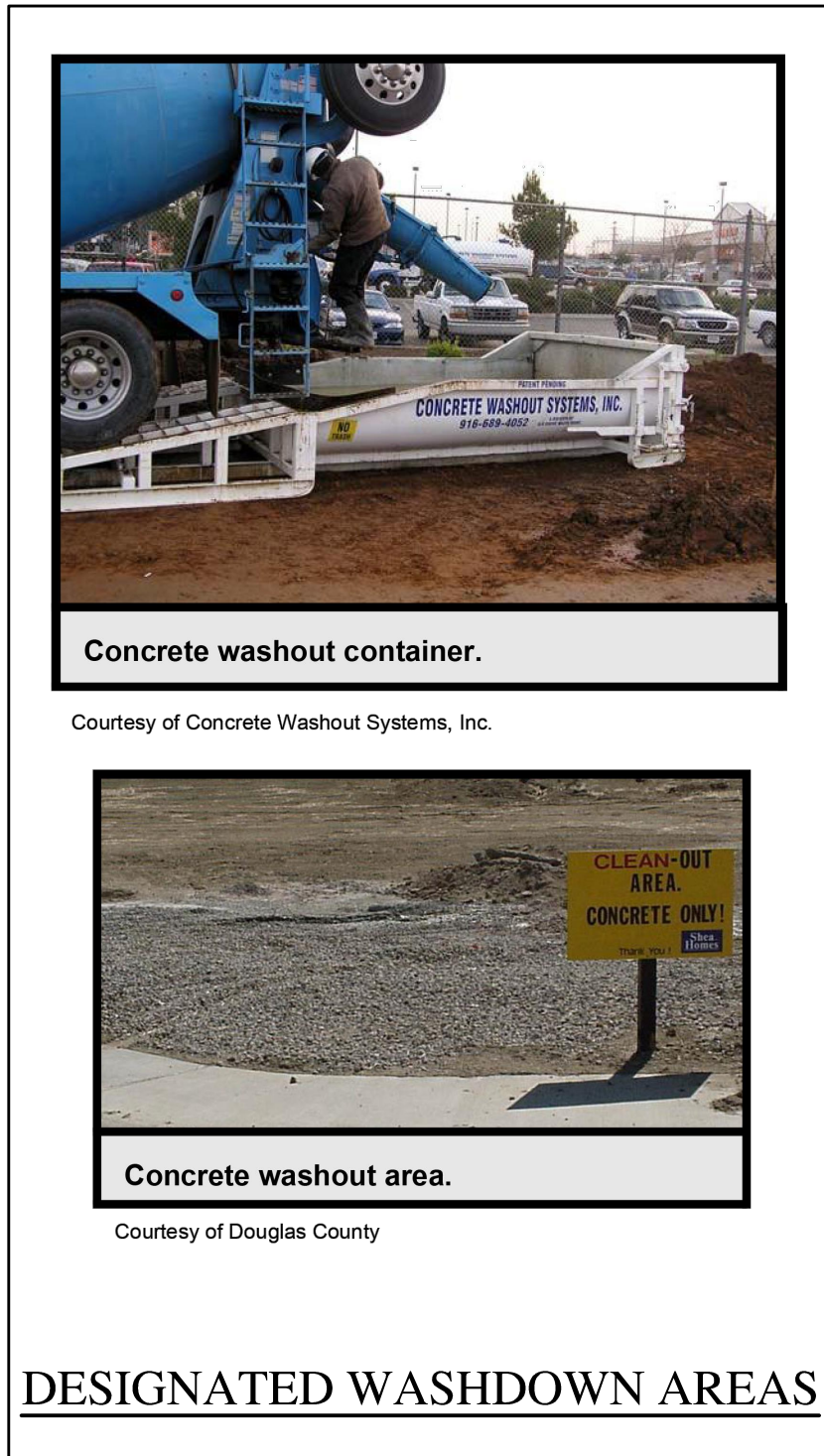


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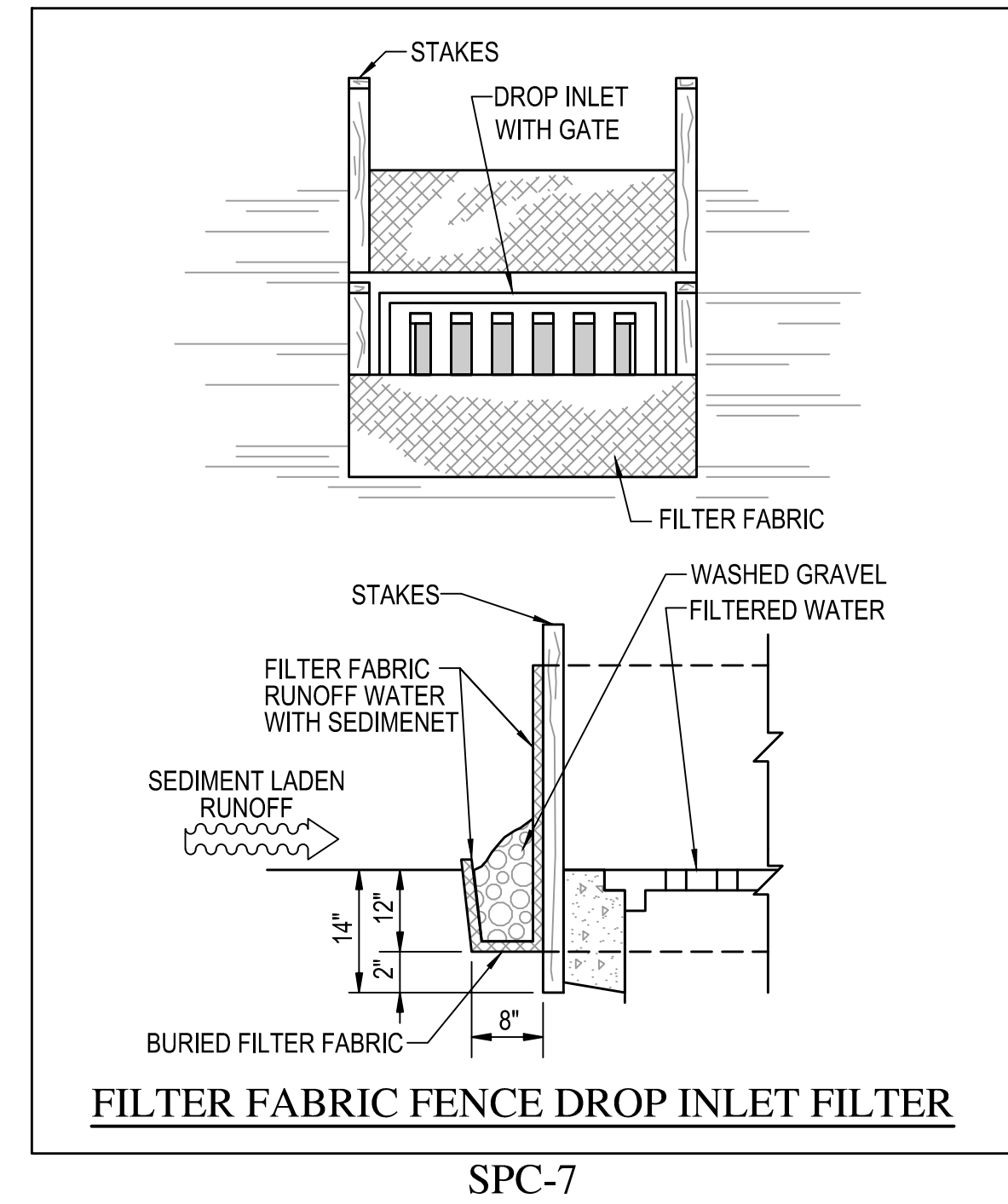
**MANHOLE/CATCH BASIN SEDIMENT CONTROL**

DESIGN:	R.D.B.	SCALE:	NTS
CHECKED:	R.D.B.	DRAWN:	G.W.S.
SHEET:	2 of 7	DWG. No:	



DESIGNATED WASHDOWN AREAS

GH-4



**DEFINITION**  
A VARIETY OF METHODS OF INTERCEPTING SEDIMENT AT LOW POINT INLETS THROUGH THE USE OF STONE, FILTER FABRIC, INLET INSERTS, AND OTHER MATERIALS. THIS IS NORMALLY LOCATED AT THE INLET, PROVIDING EITHER DETENTION OR FILTRATION TO REDUCE SEDIMENT AND FLOATABLE MATERIALS IN STORMWATER.

**PURPOSE**  
STORM DRAIN INLET PROTECTION MEASURES PREVENT SOIL AND DEBRIS FROM SITE EROSION FROM ENTERING STORM DRAIN DROP INLETS AND CLOGGING THEM. TYPICALLY, THESE MEASURES ARE TEMPORARY CONTROLS THAT ARE IMPLEMENTED PRIOR TO LARGE-SCALE DISTURBANCE OF THE SURROUNDING SITE. THE EARLY USE OF STORM DRAINS DURING PROJECT DEVELOPMENT SIGNIFICANTLY REDUCES THE OCCURRENCE OF FUTURE EROSION PROBLEMS.

**APPROPRIATE APPLICATIONS**  
STORM DRAIN INLET PROTECTION IS APPROPRIATE WHERE STORM DRAIN INLETS ARE TO BE MADE OPERATIONAL BEFORE PERMANENT STABILIZATION OF THE DISTURBED DRAINAGE AREA. THERE ARE A VARIETY OF TYPES OF STRUCTURES THAT ARE APPLICABLE TO DIFFERENT CONDITIONS:

- FILTER FABRIC FENCE – APPLICABLE WHERE THE INLET DRAINS A RELATIVELY SMALL (LESS THAN 1 ACRE) FLAT AREA (LESS THAN 5 PERCENT SLOPE). INTENDED FOR RELATIVELY LOW FLOWS.
- EXCAVATED DROP INLET SEDIMENT TRAP – INTENDED FOR RELATIVELY HIGH FLOWS. AN EXCAVATED DROP INLET TRAP PROVIDES PROTECTIONS AGAINST SEDIMENT ENTERING A STORM DRAIN INLET CAN BE PROVIDED BY EXCAVATING AN AREA IN THE APPROACH TO THE DRAIN. THE EXCAVATION VOLUME SHOULD BE APPROXIMATELY 1800 TO 3600 CUBIC FEET PER ACRE OF DISTURBED AREA DRAINED.
- BLOCK AND GRAVEL PROTECTION – USED WHEN THE FLOWS EXCEED 0.5 CUBIC FEET PER SECOND (CFS) AND IT IS NECESSARY TO ALLOW FOR OVERTOPPING TO PREVENT FLOODING AROUND THE INLET AREA.
- FOAM OR FIBER ROLL BARRIERS - USE FOR RELATIVELY LOW FLOWS IN AREAS WHERE THEY CAN BE ANCHORED TO THE SURFACE. MOST APPROPRIATE FOR INLETS ON AN UNPAVED SURFACE.

**LIMITATIONS**

- SPECIAL CAUTION SHOULD BE EXERCISED WHEN INSTALLING INLET PROTECTION ON PUBLICLY TRAVELED STREETS OR IN DEVELOPED AREAS.
- INLET PROTECTION IS ONLY VIABLE AT LOW POINT INLETS. INLETS THAT ARE ON SLOPE CANNOT BE EFFECTIVELY PROTECTED BECAUSE STORMWATER WILL BYPASS THE INLET AND CONTINUE DOWNSTREAM, CAUSING AN OVERLOAD ON DOWNSTREAM INLETS.
- PONDING WILL OCCUR AT THE INLET WITH POSSIBLE SHORT TERM FLOODING.
- CURB INLETS ON SLOPES CANNOT BE EFFECTIVELY PROTECTED BECAUSE THE STORMWATER WILL BYPASS THE INLET AND CONTINUE DOWNGRADE.
- FILTER FABRIC FENCES ARE LIMITED TO STORM DRAIN INLETS FOR SMALL DRAINAGE AREAS OF FIVE ACRES OR LESS. FILTER FABRIC FENCES ARE NOT APPROPRIATE IN PAVED AREAS. FOR LARGER DRAINAGE AREAS, SMALLER SEDIMENT CATCHMENT AREAS ARE RECOMMENDED.

**PLANNING CONSIDERATIONS**  
WHERE STORM SEWERS ARE MADE OPERATIONAL BEFORE THEIR DRAINAGE AREA IS STABILIZED, OR WHERE CONSTRUCTION IS ADJACENT TO AN EXISTING STORM SEWER, LARGE AMOUNTS OF SEDIMENT MAY ENTER THE STORM SEWER SYSTEM. IN CASES OF EXTREME SEDIMENT LOADING, THE STORM SEWER ITSELF MAY CLOG AND LOSE A MAJOR PORTION OF ITS CAPACITY. TO AVOID THESE PROBLEMS, IT IS NECESSARY TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM AT THE INLETS.

THIS PRACTICE CONTAINS SEVERAL TYPES OF INLET FILTERS AND TRAPS WHICH HAVE DIFFERENT APPLICATIONS DEPENDENT UPON SITE CONDITIONS AND TYPE OF INLET. OTHER INNOVATIVE TECHNIQUES FOR ACCOMPLISHING THE SAME PURPOSE ARE ENCOURAGED, BUT ONLY AFTER SPECIFIC PLANS AND DETAILS ARE SUBMITTED TO AND APPROVED BY THE LOCAL GOVERNMENT.

**RECOMMENDED STANDARDS AND SPECIFICATIONS**  
INSTALL INLET PROTECTION IN ACCORDANCE WITH THE FOLLOWING:

- FILTER FABRIC FENCE: PLACE 2 INCH BY 2 INCH WOODEN STAKES AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FEET APART AND DRIVE THEM AT LEAST 8 INCHES INTO THE GROUND. EXCAVATE A TRENCH APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP AROUND THE OUTSIDE PERIMETER OF THE STAKES. STAPLE THE FILTER FABRIC (FOR MATERIAL SPECIFICATIONS. SEE SPC-5: SILT FENCE TO WOODEN STAKES SO THAT 32 INCHES OF THE FABRIC EXTENDS OUT AND CAN BE FORMED INTO THE TRENCH. USE HEAVY-DUTY WIRE STAPLES AT LEAST 1/2 INCH IN LENGTH. BACKFILL THE ENTIRE TRENCH WITH 3/4 INCH OR LESS WASHED GRAVEL.
- EXCAVATED DROP INLET SEDIMENT TRAP: CONSTRUCT THE INLET TRAP AS SHOWN IN THE STORM DRAIN DROP INLET PROTECTION DRAWING. ENSURE THAT THE EXCAVATION VOLUME CAN CONTAIN APPROXIMATELY 1800 TO 3600 CUBIC FEET PER ACRE OF DISTURBED AREA.
- GRAVEL BAG FILTER: IF THERE IS A HIGH CONTENT OF CLAYS AND SILTS, USE FILTER FABRIC IN CONJUNCTION WITH GRAVEL FOR ADDITIONAL FILTERING CAPACITY. CONSTRUCT THE GRAVEL BAG FILTER AS SPECIFIED BY GRAVEL FILTER BERMS.
- FOAM OR FIBER ROLL BARRIER: FOAM OR FIBER ROLL IS PLACED AROUND THE INLET AND MUST BE ANCHORED TO THE CURB SURFACE. SO THAT IT IS NOT CARRIED AWAY BY RUNOFF FLOWS.

**RECOMMENDED MAINTENANCE AND INSPECTION**  
FOR SYSTEMS USING FILTER FABRIC, INSPECTIONS SHOULD BE MADE ON A REGULAR BASIS, ESPECIALLY AFTER LARGE STORM EVENTS. IF THE FABRIC BECOMES CLOGGED, IT SHOULD BE REPLACED. SEDIMENT SHOULD BE REMOVED WHEN IT REACHES APPROXIMATELY HALF THE HEIGHT OF THE FENCE. IF AN EXCAVATED INLET SEDIMENT TRAP IS USED, SEDIMENT SHOULD BE REMOVED WHEN IT FILLS APPROXIMATELY HALF THE DEPTH OF THE HOLE.

**POST CONSTRUCTION METHODS**  
FOLLOWING THE COMPLETION OF CONSTRUCTION PROJECTS IN RESIDENTIAL AND MUNICIPAL AREAS, MORE PERMANENT DROP-INLET PROTECTION DEVICES CAN BE INSTALLED IN STORM DRAIN INLETS. THE LINK UNDER THE VENDOR PRODUCTS SECTION LISTS SEVERAL DIFFERENT DROP-INLET PROTECTION DEVICES.

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STORM WATER MANAGEMENT PLAN**  
SCOTTSDALE, ARIZONA  
DETAILS

REV	DESCRIPTION	DATE

EXPIRES 06-30-25

SCALE (HORIZ.)	N/A
SCALE (VERT.)	N/A
DATE	06/02/2023
JOB NUMBER	215319.40
SHEET	SM5 OF 5