

CITY OF MESA - GENERAL NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO THE CURRENT UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION AS FURNISHED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS AND AS AMENDED BY THE CITY OF MESA. ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THESE AMENDED SPECIFICATIONS AND DETAILS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- SEPARATE RIGHT-OF-WAY PERMITS ARE REQUIRED FOR ALL PUBLIC UTILITIES, PUBLIC STREET IMPROVEMENTS, AND RIGHT-OF-WAY LANDSCAPING. FOR INFORMATION REGARDING AVAILABILITY AND COST OF RIGHT-OF-WAY PERMITS, CONTACT THE PERMIT SERVICES SECTION OF THE BUILDING SAFETY DIVISION AT (480) 644-4273 OR AT [HTTP://WWW.MESAAZ.GOV/DEVSUSTAIN/CONSTRUCTIONPERMITS.ASPX](http://www.mesaaz.gov/devsustain/constructionpermits.aspx). THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED UNLESS OTHERWISE NOTED. CONTRACTORS MUST HOLD THE APPROPRIATE CLASS OF LICENSE AND SHALL HAVE ON FILE WITH THE PERMIT SERVICES SECTION PROOF OF INSURANCE COVERAGE. PERMITS BECOME INVALID AND MUST BE UPDATED IF WORK HAS NOT BEGUN WITHIN NINETY (90) DAYS. PERMITS ALSO BECOME INVALID IF THE CONTRACTOR'S INSURANCE LAPSES OR IS VOIDED.
- TWENTY FOUR (24) HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK, CONSTRUCTION OR INSTALLATIONS ASSOCIATED WITH THIS PERMIT, THE PERMITTEE SHALL NOTIFY CITY OF MESA ENGINEERING CONSTRUCTION SERVICES AT (480) 644-2253 OF INTENT TO BEGIN AND REQUEST/SCHEDULE PRELIMINARY FIELD REVIEW AT THE PROJECT SITE WITH THE CITY OF MESA ENGINEERING CONSTRUCTION INSPECTOR. FAILURE TO PROVIDE PROPER INSPECTION NOTIFICATION AS PRESCRIBED ABOVE, SHALL RESULT IN THIS PERMIT BECOMING INVALID AND WORK BEING STOPPED.
- CONTRACTOR'S SHALL COMPLY WITH THE REQUIREMENTS TO OBTAIN THE NECESSARY RIGHT-OF-WAY PERMITS AND SHALL COMPLY WITH THE RIGHT-OF-WAY PERMIT CONDITIONS AS FOUND ON THE BACK OF THE PERMIT FORM.
- THE CITY OF MESA PARKS & RECREATION DIVISION IS NOT REPRESENTED BY BLUE STAKE. WHEN THE CONTRACTOR EXCAVATES NEAR OR ADJACENT TO A CITY PARK, THE CONTRACTOR SHALL CONTACT THE PARKS & RECREATION ADMINISTRATION SECTION AT (480) 644-2354 TO REQUEST ASSISTANCE IN LOCATING ALL THEIR UNDERGROUND FACILITIES.
- THE CONTRACTOR SHALL OBTAIN AN EARTH-MOVING PERMIT FROM THE MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT AND SHALL COMPLY WITH ITS REQUIREMENTS FOR DUST CONTROL.
- THE ENGINEER HEREBY CERTIFIES AS EVIDENCED BY A PROFESSIONAL SEAL & SIGNATURE, THAT ALL AFFECTED UTILITY COMPANIES BOTH PUBLIC AND PRIVATE HAVE BEEN CONTACTED AND ALL EXISTING AND/OR PROPOSED UTILITY LINES AND OTHER RELATED INFORMATION HAVE BEEN TRANSFERRED ONTO THESE PLANS. THE ENGINEER OR ARCHITECT ALSO HEREBY CERTIFIES THAT ALL EXISTING AND/OR PROPOSED PUBLIC RIGHT-OF-WAY OR EASEMENT HAVE BEEN CORRECTLY PLOTTED/SHOWN.
- THE ENGINEER, OR LAND SURVEYOR OF RECORD SHALL CERTIFY UPON COMPLETION OF CONSTRUCTION THAT ALL PUBLIC IMPROVEMENTS (WATER AND SEWER UTILITIES, STORM SEWER, CONCRETE, PAVING, STREET LIGHTS, ETC.) HAVE BEEN INSTALLED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE APPROVED PLANS. ANY CHANGES SHALL BE REFLECTED ON "AS-BUILT" DRAWINGS PROVIDED BY THE ENGINEER TO THE CITY'S ENGINEERING DEPARTMENT.
- THE REGISTERED ENGINEER OR LAND SURVEYOR SHALL CERTIFY THAT THE MINIMUM HORIZONTAL AND VERTICAL SEPARATION BETWEEN UTILITIES WITHIN PUBLIC RIGHT-OF-WAY OR EASEMENTS HAS BEEN MAINTAINED AS REQUIRED BY LAW OR POLICY.
- THE DEVELOPER SHALL PROVIDE ALL CONSTRUCTION STAKING FOR THE PROJECT.
- THE DEVELOPER OR THE ENGINEER IS RESPONSIBLE FOR ARRANGING FOR THE RELOCATION OR REMOVAL OF ALL UTILITIES OR FACILITIES THAT ARE IN CONFLICT WITH THE PROPOSED PUBLIC IMPROVEMENTS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE RELOCATION OF ALL UTILITIES, POWER POLES, IRRIGATION DRY-UPS, RESETS REMOVALS BY OTHERS, ETC.
- THE CONTRACTORS SHALL LOCATE ALL UTILITIES PRIOR TO EXCAVATION AND AVOID DAMAGE TO SAME. CALL (602) 263-1100 FOR BLUE STAKE TWO WORKING DAYS PRIOR TO DIGGING. CALL SALT RIVER PROJECT FOR POLE BRACING, ELECTRIC SERVICE OR CONSTRUCTION SCHEDULING AT (602) 273-8888.
- WHEN GAS MAINS AND/OR SERVICES ARE EXPOSED, CONTACT THE CITY OF MESA AT (480) 644-2261 FOR INSPECTION OF THE EXPOSED PIPE AND COATING PRIOR TO BACKFILLING OF THE TRENCH.
- CONTRACTORS SHALL COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AND BARRICADING PER THE CURRENT CITY OF MESA TRAFFIC BARRICADE MANUAL.
- IF A FIRE HYDRANT IS NEEDED TO OBTAIN CONSTRUCTION WATER, THE CONTRACTOR SHALL OBTAIN A FIRE HYDRANT METER FROM PERMIT SERVICES AND PAY ALL APPLICABLE FEES AND CHARGES.
- IF DURING THE CONSTRUCTION OF A PUBLIC FACILITY, THE CONTRACTOR FAILS TO OR IS UNABLE TO COMPLY WITH A REQUEST OF THE ENGINEERING CONSTRUCTION INSPECTOR, AND IT IS NECESSARY FOR CITY FORCES TO DO WORK THAT IS NORMALLY THE CONTRACTOR'S RESPONSIBILITY, THE CITY SHALL BE JUSTIFIED IN BILLING THE CONTRACTOR. EACH INCIDENT REQUIRING WORK BY CITY FORCES SHALL BE COVERED BY A SEPARATE BILLING AT THE CURRENT APPLICABLE RATES.
- THE CONTRACTOR IS ADVISED THAT DAMAGE TO PUBLIC SERVICES OR SYSTEMS AS A RESULT OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AND INSPECTED BY THE CITY INSPECTOR. UNLESS OTHERWISE APPROVED BY THE CITY, ALL REPAIRS SHALL BE DONE WITHIN 24 HOURS. THE CONTRACTOR IS ADVISED THAT ANY COSTS RELATED TO REPAIR OR REPLACEMENT OF DAMAGED PUBLIC SERVICES AND SYSTEMS AS A RESULT OF CONTRACTOR'S ACTIVITIES SHALL BE BORNE BY THE CONTRACTOR.

CITY OF MESA - MISCELLANEOUS NOTES

- THE FOLLOWING NOTE(S) ARE REQUIRED WHENEVER THE PRIVATE LAND DEVELOPMENT PROJECT CONSTRUCTS, INSTALLS OR MODIFIES PUBLIC STREET IMPROVEMENTS. THESE NOTES ARE IN ADDITION TO THE GENERAL REQUIREMENT NOTES.
- THE DEVELOPER AND THE CONTRACTOR ARE REQUIRED TO COORDINATE THE PLACEMENT OR INSTALLATION OF DRIVEWAYS IN ORDER TO AVOID CONFLICT WITH UTILITY SERVICES.
- ALL FRAMES, COVERS, VALVE BOXES, MANHOLES, ETC., SHALL BE INSTALLED TO FINISH GRADE OR SHALL BE ADJUSTED TO FINISH GRADE AFTER PLACING OF ASPHALTIC SURFACE COURSE BY THE CONTRACTOR PER M.A.G. STANDARD DETAIL 270 AND 422.
- THE CONTRACTOR SHALL ADJUST ALL FRAMES, COVERS, VALVE BOXES, MANHOLES, ETC. THAT ARE LOCATED WITHIN THE PARKWAY AREA AFTER FINAL GRADING AND INSTALLATION OF LANDSCAPING.
- ALL LANDSCAPING IMPROVEMENTS, INCLUDING IRRIGATION SYSTEMS WITHIN THE PUBLIC RIGHT-OF-WAY OR RETENTION BASINS THAT ARE TO BE MAINTAINED BY THE CITY OF MESA, SHALL BE IN ACCORDANCE WITH THE LANDSCAPING AND IRRIGATION STANDARDS BOOKLET.
- THE STREET PAVING PERMITTEE/CONTRACTOR IS HEREBY NOTIFIED THAT IN THE EVENT THAT ACCEPTANCE OF THE PUBLIC STREET PAVING IS DELAYED, SIX MONTHS OR MORE AFTER THE PAVEMENT WAS INSTALLED, THE PERMITTEE/CONTRACTOR SHALL APPLY A SEAL COAT TO THE PAVEMENT. TYPE OF MATERIAL AND RATE OF APPLICATION WILL BE DIRECTED BY THE CITY OF MESA ENGINEERING DEPARTMENT - FIELD SUPERVISING ENGINEER.
- A STANDARD RESIDENTIAL DRIVEWAY APPROACH SHALL BE CONSTRUCTED TO A MAXIMUM WIDTH OF 30 FEET UNLESS SPECIAL APPROVAL HAS BEEN OBTAINED.

ENGINEERS NOTES

- CONTRACTOR SHALL NOTIFY WESTWOOD PROFESSIONAL SERVICES OF ANY DISCREPANCIES BETWEEN THE CIVIL PLANS AND SITE CONDITIONS. A MINIMUM OF 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION IN THE AFFECTED AREA. FAILURE TO DO SO SHALL RESULT IN ANY DISCREPANCIES BEING THE RESPONSIBILITY OF THE CONTRACTOR.
- DURING CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE CONTROL OF EARTH SPILLAGE, RUNOFF AND CONSTRUCTION WATER AND SHALL PROTECT ADJACENT PROPERTY AND EXISTING STRUCTURES FROM SUCH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE, MAINTENANCE, REPAIR OR REPLACEMENT OF EXISTING IMPROVEMENTS AND UTILITIES IN THE WORK AREA AND ON ADJACENT PROPERTIES WHICH HAVE BEEN REMOVED OR DAMAGED DURING THE COURSE OF CONSTRUCTION. ALL REPAIR, REPLACEMENT OR CLEANUP SHALL BE DONE TO THE SATISFACTION OF AND AT NO ADDITIONAL EXPENSE TO THE UTILITY COMPANY AND OWNER.
- THE CONTRACTOR SHALL GIVE FORTY-EIGHT (48) HOURS NOTICE WHEN HE SHALL REQUIRE THE SERVICES OF THE ENGINEER OR ANY OTHER PERSON PROPERLY AUTHORIZED FOR SUCH PURPOSE FOR LAYING OUT OR TESTING ANY PORTION THE WORK.
- THE CONTRACTOR SHALL PRESERVE ALL STAKES SET FOR THE LINES, LEVELS OR MEASUREMENTS OF THE WORK IN THEIR PROPER PLACES UNTIL AUTHORIZED TO REMOVE THEM BY THE ENGINEER. ANY EXPENSE INCURRED IN REPLACING ANY STAKES WHICH THE CONTRACTOR OR HIS SUBORDINATES MAY HAVE FAILED TO PRESERVE SHALL BE CHARGED TO THE CONTRACTOR.
- ESTIMATED QUANTITIES SHOWN ARE FOR BONDING & PERMIT PURPOSES ONLY. CONTRACTOR TO MAKE HIS OWN DETERMINATION OF QUANTITIES.
- EXISTING UNDER GROUND UTILITIES SHOWN ARE PER UTILITY COMPANY RECORDS. CONTRACTOR TO FIELD VERIFY LOCATION/ELEVATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

CITY OF MESA - STORMWATER DRAINAGE

- THE ENGINEER, OR LAND SURVEYOR SHALL CERTIFY THAT THE REQUIRED STORM WATER RETENTION HAS BEEN PROVIDED. THE CERTIFICATION SHALL ALSO INDICATE THE ACTUAL VOLUME PROVIDED. SUCH CERTIFICATION SHALL BE PROVIDED TO BUILDING SAFETY DIVISION - BUILDING INSPECTIONS WHEN THE RETENTION AREA IS TO REMAIN PRIVATE PROPERTY AND TO ENGINEERING CONSTRUCTION SERVICES WHEN THE RETENTION AREA IS TO BECOME CITY OF MESA PROPERTY.
- ALL DRYWELLS SHOWN ON THIS PROJECT SHALL BE MAINTAINED BY THE OWNERS AND ARE TO BE REPLACED BY THE OWNERS WHEN THEY CEASE TO DRAIN WATER IN A 36HOUR PERIOD. REGULAR MAINTENANCE OF THE DRYWELL-SILTING CHAMBER IS REQUIRED TO ACHIEVE THE BEST OPERATION OF THE DRYWELL. IN ACCORDANCE WITH ARIZONA REVISED STATUTES, DRYWELLS ARE REQUIRED TO BE REGISTERED WITH THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (A.D.E.Q.) IT IS THE OWNER'S RESPONSIBILITY TO REGISTER ALL DRYWELLS. AN AQUIFER PROTECTION PERMIT MAY BE REQUIRED BY A.D.E.Q. FOR DRYWELLS DEEMED TO BE HAZARDOUS TO GROUNDWATER.

CITY OF MESA - MISCELLANEOUS NOTES (CONT.)

- VERTICAL CONSTRUCTION WITH COMBUSTIBLE MATERIALS SHALL NOT BEGIN PRIOR TO THE ACCEPTANCE OF FIRE ACCESS ROAD AND FIRE HYDRANTS, 2006 I.F.C. SECTION 501.4
- STRUCTURE CONSTRUCTION, ALTERATION OR DEMOLITION SHALL COMPLY WITH REQUIREMENTS OF I.F.C. CHAPTER 14 AND N.F.P.A. 241, 2006 I.F.C. SECTION 1401.1
- CONTRACTORS SHALL VERIFY ALL INVERT ELEVATIONS BEFORE PROCEEDING WITH THE BALANCE OF THE UTILITY TRENCHING.
- ALL MANHOLES PER M.A.G. DETAILS MUST NECK DOWN TO USE THE STANDARD 30INCH FRAME AND COVER. STEPS SHALL NOT BE INSTALLED WITHIN THE MANHOLE.

PRELIMINARY GRADING AND DRAINAGE PLAN  
ASPIRE AT SUN VALLEY  
BEING A PART OF THE NORTH HALF OF  
SECTION 19, TOWNSHIP 1 NORTH, RANGE 7 EAST, OF THE  
GILA & SALT RIVER BASE & MERIDIAN,  
MARICOPA COUNTY, ARIZONA

SHEET INDEX

COVER SHEET	C-1
DETAIL SHEET	C-2
PRELIMINARY GRADING AND DRAINAGE	C-3

RETENTION CALCULATIONS

VOLUME REQUIRED - 100 YEAR 2 HOUR STORM EVENT

$V_R = C \times P / 12 \times A$

WHERE:	
$V_R$	= VOLUME REQUIRED (CU.FT.)
P	= 2.16 (100YR. 2HR FROM NOAA ATLAS 14)
C	= RUNOFF COEFFICIENT (0.85)
A	= AREA IN SQUARE FEET (NET)

VOLUME REQUIRED:	
$V_R$	= 2.16/12 x143,879 SQ.FT. x 0.85
$V_R$	= 22,013 C.F.

VOLUME PROVIDED:	
SURFACE RETENTION:	
RETENTION BASINS:	
PROVIDED	= 5,487 C.F.

UNDERGROUND RETENTION:	
STORMTECH STORAGE TANKS	
- 450 LF =	16,735 CF

TOTAL VOLUME PROVIDED: 22,222 C.F.

RETENTION VOLUME TABLE

RETENTION TYPE	VOLUME REQUIRED (CF)	VOLUME PROVIDED (CF)	AS-BUILT VOLUME (CF)
BASIN 1		4,452	
BASIN 2		1035	
STORMTECH STORAGE TANK	22,013	16,735	
TOTAL	22,013	22,222	

SITE DATA

GROSS ALLOWABLE DU/AC	=	143,879 SQ. FT. OR 3.30 ACRES MORE OR LESS
NUMBER OF UNITS	=	15 DU/AC
ZONING DISTRICT	=	49 UNITS TOTAL RM-2

BENCHMARK

CITY OF MESA, BRASS TAG ON TOP OF CURB LOCATED ON THE SOUTHEAST CORNER OF EAST UNIVERSITY DRIVE AND NORTH SOSSAMAN ROAD.

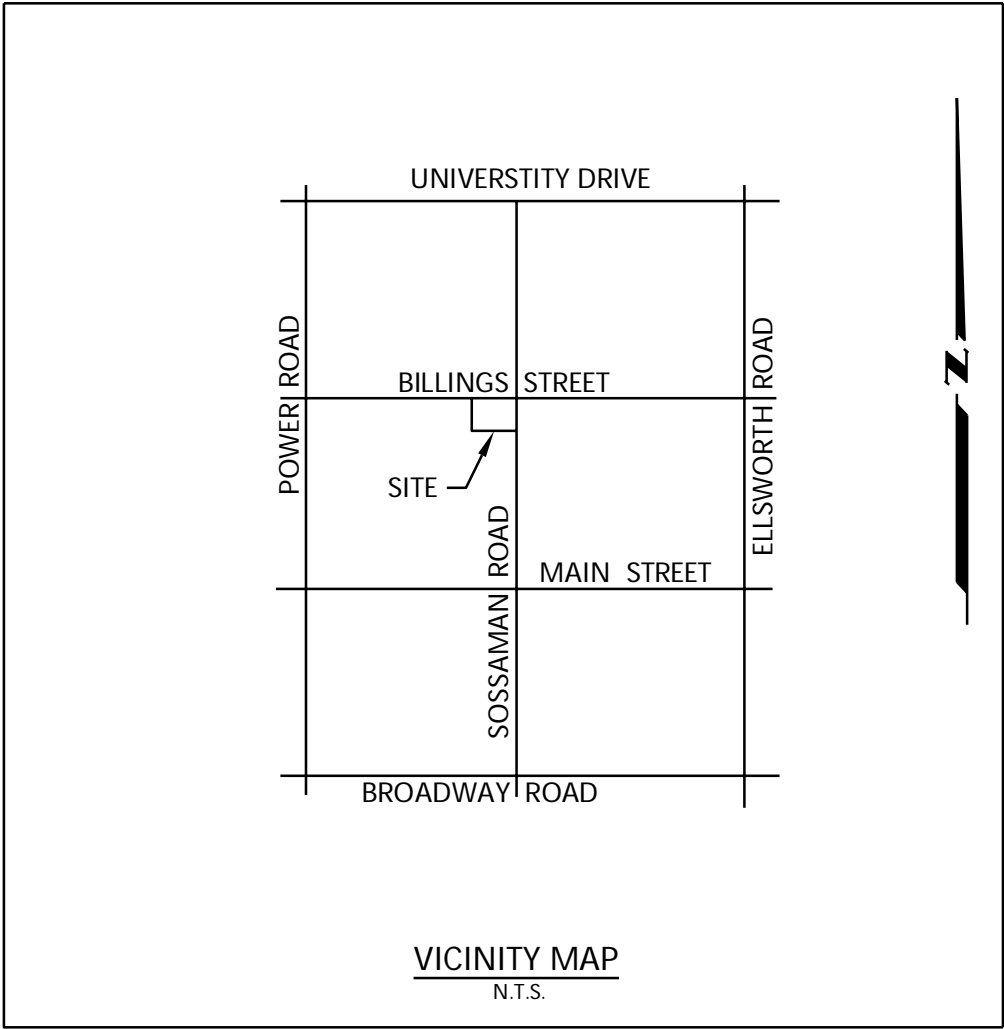
ELEVATION: 1470.12 NAVD88

FLOOD PLAIN

THE SUBJECT PROPERTY IS LOCATED WITHIN SHADED ZONE "X" DEFINED AS "AREAS OF 0.2% ANNUAL CHANCE FLOOD: AREAS OF 1% ANNUAL FLOOD CHANCE WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE: AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD" PER FIRM MAP NO. 04013C2295L DATED OCTOBER 16, 2013.

ZONING

THE PROPOSED ZONING IS RM-2 PAD PER CITY OF MESA PLANNING DIVISION.



ENGINEER

WESTWOOD PROFESSIONAL SERVICES  
6909 EAST GREENWAY PARKWAY, SUITE 250  
SCOTTSDALE, AZ 85254  
TELE: 480-747-6558  
CONTACT: DAVID BOHN, P.E.  
EMAIL: DAVID.BOHN@WESTWOODPS.COM

LEGEND

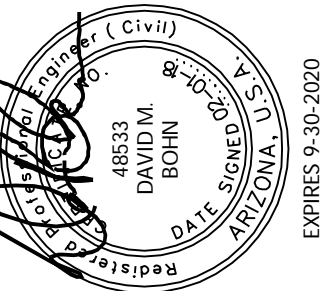
---	PROPERTY LINE	D	UNDERGROUND STORM DRAIN
---	RIGHT OF WAY LINE	C.O.	DRAIN CLEAN-OUT
---	SECTION LINE	T	UNDERGROUND TELEPHONE
---	CENTER LINE	T.C.B.	TELEPHONE CABINET
---	EASEMENT LINE	T.R.D.	TELEPHONE RISER
---	HIGH WATER LINE	W	UNDERGROUND WATER
---	CONTOUR LINE	W.M.	WATER METER
---	UNDERGROUND UTILITY	W.V.	WATER VALVE
---	SIGN	F.H.	FIRE HYDRANT
OHCTV	OVERHEAD CABLE TV	C.O.M.	CITY OF MESA
E	UNDERGROUND ELECTRIC	(R&M)	RECORD & MEASURED
OHE	OVERHEAD ELECTRIC	FND.	FOUND
D.G.	DOWN GUY	R.O.W.	RIGHT OF WAY
P.P.	POWER POLE	M.C.R.	MARICOPA COUNTY RECORDER OFFICE
S.L.B.	POWER POLE W/LIGHT	A.P.N.	ASSESSOR PARCEL NUMBER
---	STREET LIGHT W/ MAST ARM	TC	TOP CURB ELEVATION
G	UNDERGROUND GAS	G	GUTTER ELEVATION
G.MRK	GAS MARKER	P	PAVEMENT ELEVATION
S	UNDERGROUND SEWER	C	CONCRETE ELEVATION
---	SEWER MANHOLE	NG	NATURAL GROUND
---		INV	INVERT

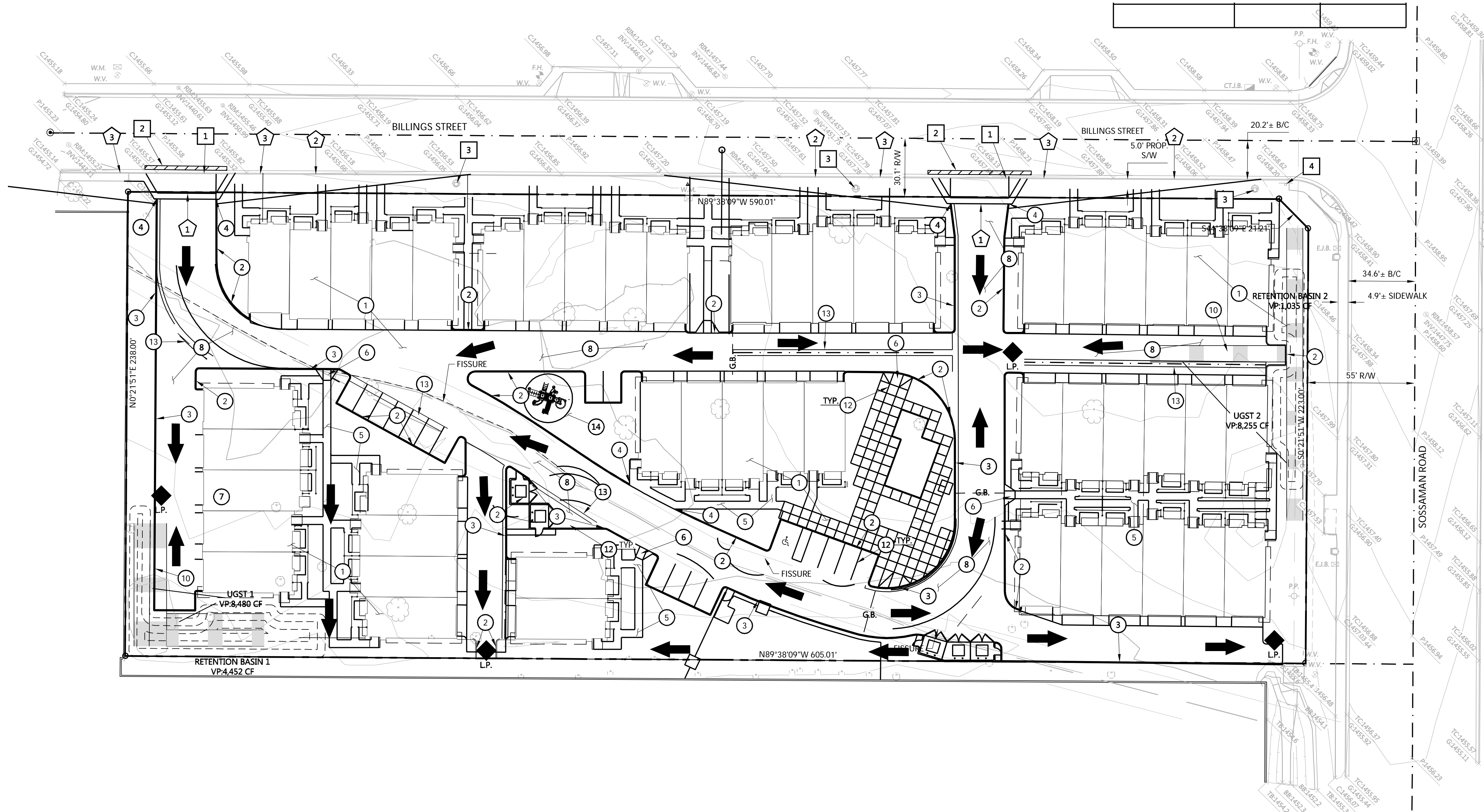
COVER SHEET  
ASPIRE AT SUN VALLEY

SHEET NUMBER:

3  
OF  
C-1

DATE: 02/01/2018  
PROJ: 14287





REMOVALS & RELOCATIONS

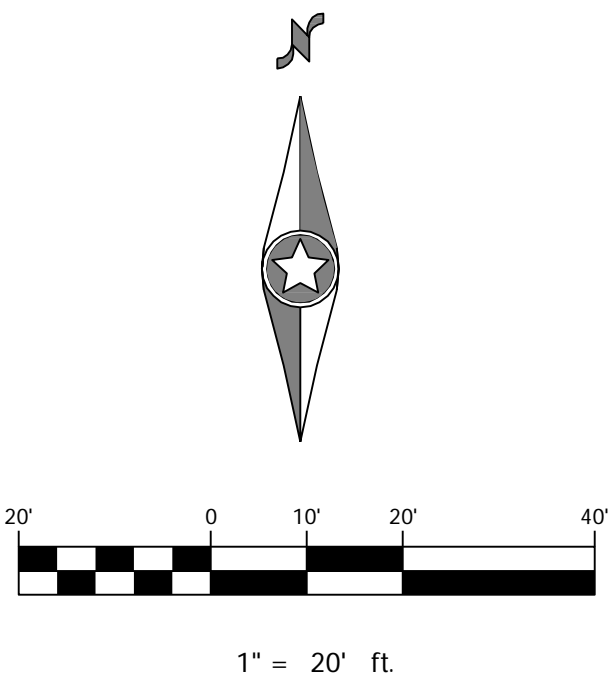
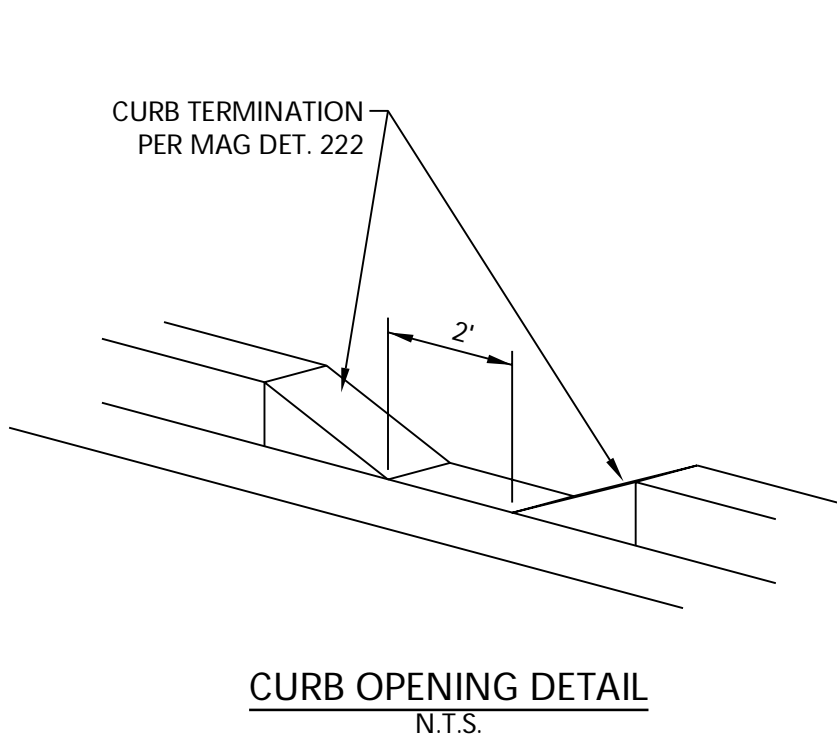
- 1 SAWCUT & REMOVE EXISTING CONCRETE SIDEWALK / CONCRETE CURB
- 2 SAWCUT & REMOVE EXISTING ASPHALT PAVEMENT, 2' WIDE MIN.
- 3 REMOVE AND RELOCATE EXISTING STREET LIGHT AND BASES.
- 4 REMOVE AND RELOCATE STREET SIGN AND BASES.

OFF-SITE CONSTRUCTION NOTES

- 1 CONSTRUCT 30' WIDE DRIVEWAY PER C.O.M. DETAIL M-42
- 2 CONSTRUCT CONCRETE SIDEWALK PER M.A.G. STD. DTL. 230.
- 3 EXISTING CURB TO REMAIN. PROTECT FROM DAMAGE.
- M MATCH EXISTING

ON-SITE CONSTRUCTION NOTES

- 1 CLEAR SITE: REMOVE VEGETATION, DEBRIS AND EXISTING IMPROVEMENTS WITHIN LIMITS OF NEW CONSTRUCTION.
- 2 CONSTRUCT SINGLE CURB PER M.A.G. STD. DTL. 222, TYPE 'A'
- 3 CONSTRUCT CURB AND GUTTER PER M.A.G. STD. DTL. 220-1, TYPE 'A'
- 4 CONSTRUCT CURB TERMINATION PER M.A.G. STD. DTL. 222.
- 5 CONSTRUCT CONCRETE SIDEWALK PER M.A.G. STD. DTL. 230. SEE ARCHITECTURAL PLANS FOR FINISH AND SCORING DETAILS.
- 6 CONSTRUCT SIDEWALK RAMP.
- 7 INSTALL 2' CURB OPENING PER DETAIL ON THIS SHEET.
- 8 INSTALL ASPHALT PAVEMENT SECTION: 3" A.C. ON 6" A.B.C. OR PER SOILS REPORT WHICHEVER IS GREATER
- 9 INSTALL 8" ADS N-12 MEGA GREEN WT IB STORM DRAIN PIPE (ASTM F2487 PIPE) OR EQUIVALENT. LENGTH PER PLAN WITH 1% MINIMUM SLOPE TOWARD THE UNDERGROUND RETENTION. LENGTH PER PLAN.
- 10 INSTALL STORMTECH SYSTEM PER DETAILS ON SHEET 3.
- 11 CONSTRUCT CATCH BASIN PER M.A.G. DETAIL 535, TYPE F.
- 12 PAINT STRIPING. SEE ARCHITECTURAL PLANS FOR DETAILS.
- 13 CONSTRUCT CONCRETE VALLEY GUTTER PER M.A.G. STD. DTL. 240, MODIFIED TO BE 3' WIDE.
- 14 ARCHITECTURAL FEATURE. SEE ARCHITECTURAL PLANS FOR DETAILS.



PRELIMINARY GRADING & DRAINAGE PLAN  
ASPIRE AT SUN VALLEY

MESA, AZ

**Westwood**

6009 East Greenway Parkway, Suite 250  
Mesa, Arizona 85205  
(480) 747-6588  
(480) 376-5025  
www.westwoodaz.com

Westwood Professional Services, Inc.

DESIGNED:	CHECKED:	DATE:	SCALE:	1" =	HORIZONTAL	VERTICAL
DB	DB	DB	1" =	N/A	HORIZONTAL	VERTICAL

INITIAL ISSUE:	REV.	DATE
REV.	1	
REV.	2	
REV.	3	
REV.	4	

SHEET NUMBER:

2 OF 3

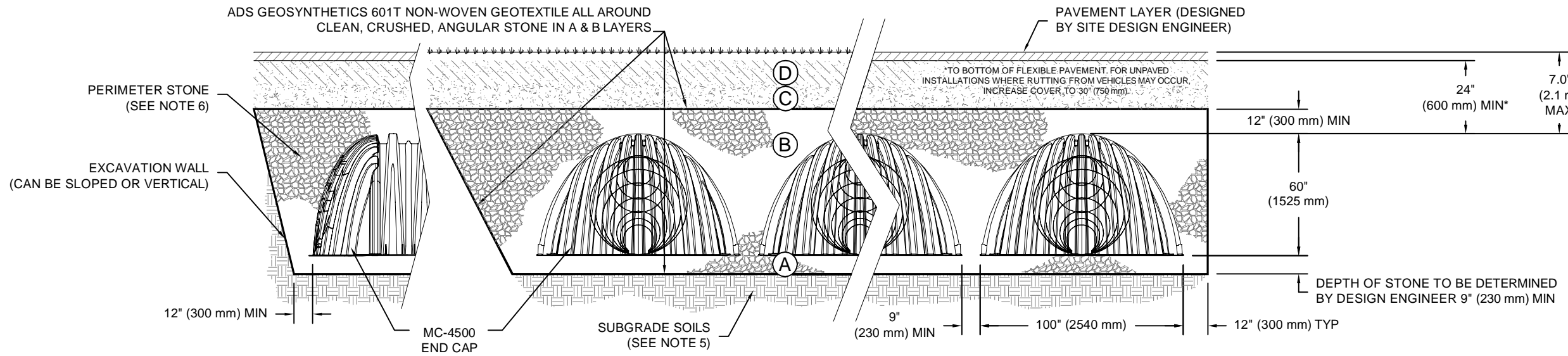
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ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	<b>FINAL FILL:</b> FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3 OR AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 <sup>1</sup> 3, 4	NO COMPACTION REQUIRED.
A	<b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 <sup>1</sup> 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>1,2</sup>

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
  - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

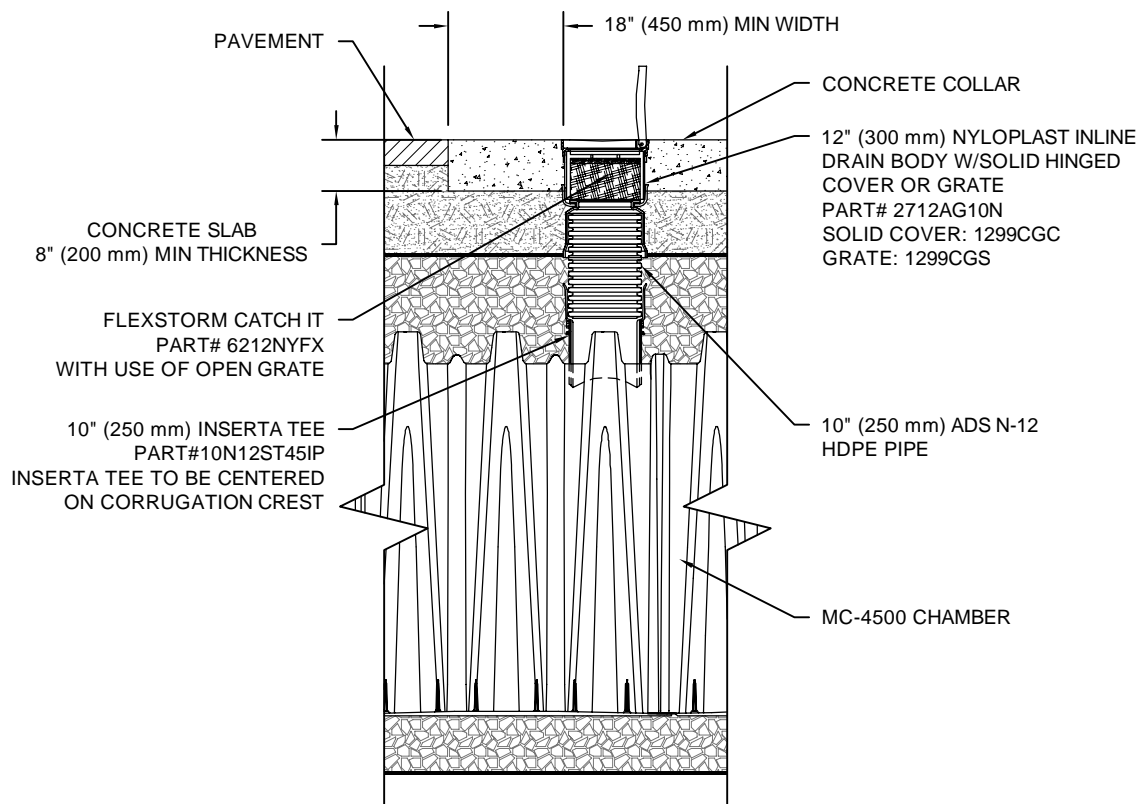
- MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
- REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
- A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - MIRRORS OR POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS. RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

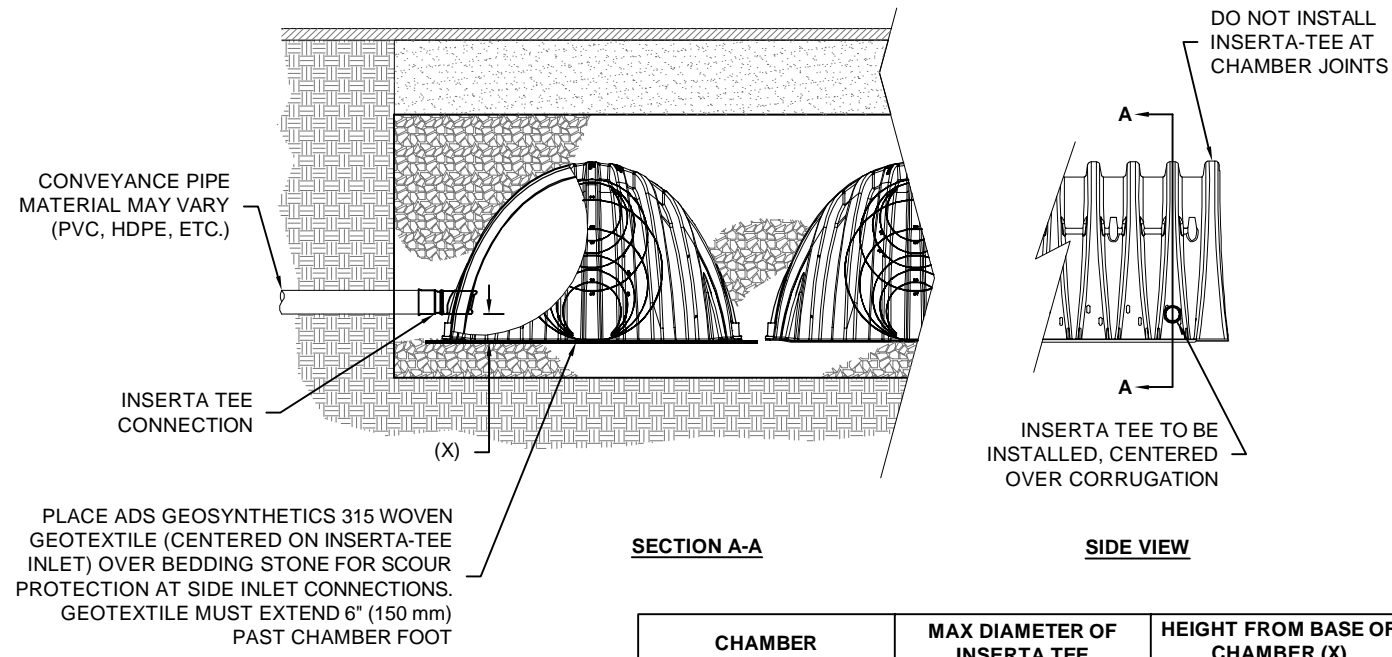


MC-4500 INSPECTION PORT DETAIL

NTS

INSERTA TEE DETAIL

NTS

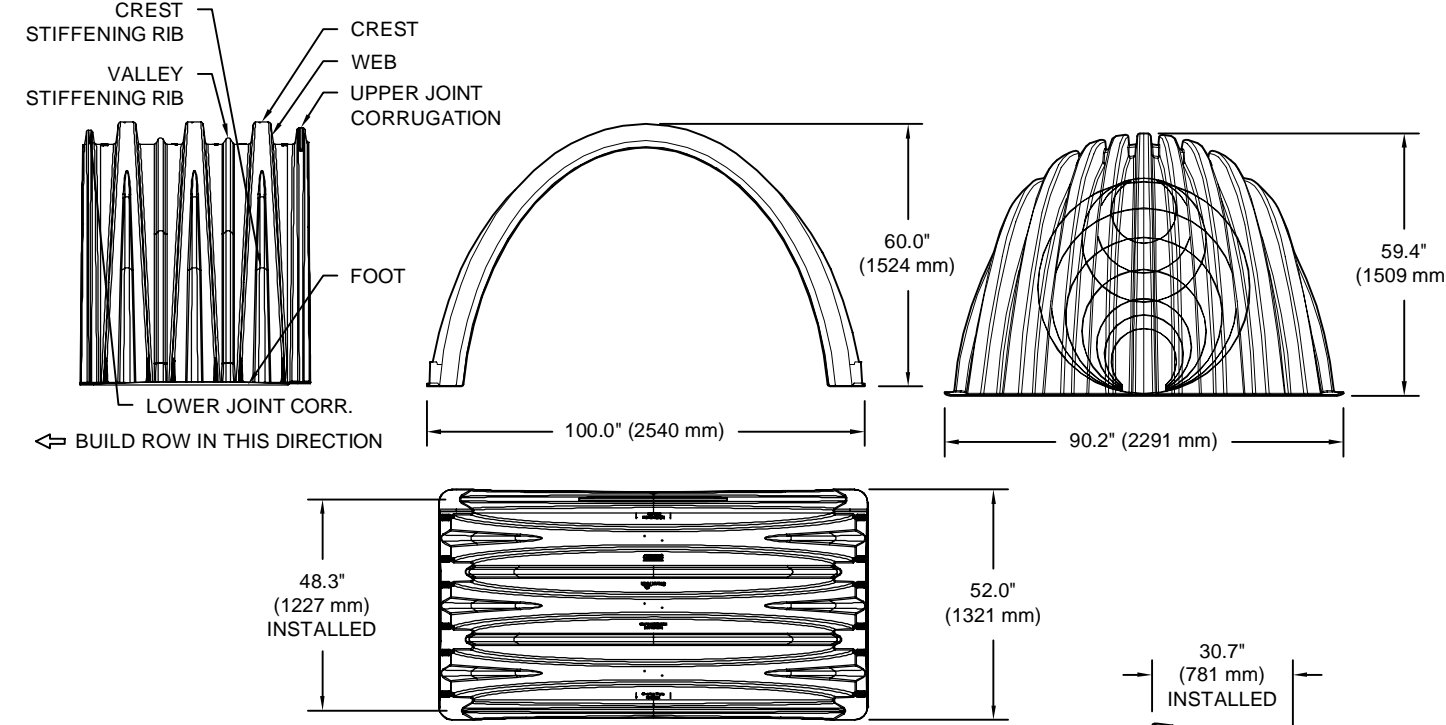


CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)

NOTE: PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

MC-4500 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS	SIZE (W X H X INSTALLED LENGTH)	CHAMBER STORAGE	MINIMUM INSTALLED STORAGE*	WEIGHT
	100.0' X 60.0' X 48.3'	106.5 CUBIC FEET (3.01 m³)	162.5 CUBIC FEET (4.60 m³)	130.0 lbs. (59.0 kg)

NOMINAL END CAP SPECIFICATIONS	SIZE (W X H X INSTALLED LENGTH)	END CAP STORAGE	MINIMUM INSTALLED STORAGE*	WEIGHT
	90.2' X 59.4' X 30.7'	35.7 CUBIC FEET (1.01 m³)	108.7 CUBIC FEET (3.08 m³)	135.0 lbs. (61.2 kg)

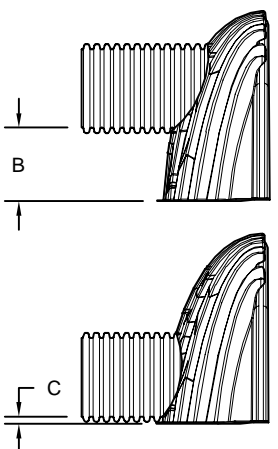
\*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"  
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1.081 m)	---
MC4500REPE08B	---	---	0.86" (22 mm)
MC4500REPE08T	8" (200 mm)	40.50" (1.029 m)	---
MC4500REPE08B	---	---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B	---	---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B	---	---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B	---	---	1.70" (43 mm)
MC4500REPE18TC	18" (450 mm)	29.36" (746 mm)	---
MC4500REPE18BC	---	---	1.97" (50 mm)
MC4500REPE24TC	24" (600 mm)	23.05" (585 mm)	---
MC4500REPE24BC	---	---	2.26" (57 mm)
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL.

CUSTOM PRECURED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.



MC-4500	STANDARD CROSS SECTION
DESCRIPTION	DATE: 11/18/14
REV	CHECKED: JLM
DRW	PROJECT #:
CHK	
Stormtech	
4640 TRUHEMAN BLVD HILLIARD, OH 43026 1-800-733-7473	
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCTS SPECIFIED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAW, REGULATIONS AND PROJECT REQUIREMENTS.	
SHEET	
1 OF 1	

MC-4500	ISOLATOR ROW DETAILS
DESCRIPTION	DATE: 11/18/14
REV	DRW
CHK	CHECKED: JLM
Stormtech	
4640 TRUHEMAN BLVD HILLIARD, OH 43026 1-800-733-7473	
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCTS SPECIFIED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAW, REGULATIONS AND PROJECT REQUIREMENTS.	
SHEET	
1 OF 1	

