

GRADING AND DRAINAGE PLAN with OFFSITE IMPROVEMENTS (COMBINATION) for HEAD START - TOLLESON

2504 SOUTH 91ST AVENUE PHOENIX, ARIZONA
A PORTION NORTHEAST QUARTER OF SECTION 16, TOWNSHIP 1 NORTH, RANGE 1 EAST OF THE
GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA

CITY OF PHOENIX - GRADING & DRAINAGE NOTES

- A GRADING PERMIT IS REQUIRED UNDER CHAPTER 32A OF THE PHOENIX CITY CODE.
- WHEN HAUL PERMITS ARE REQUIRED, THEY MUST BE OBTAINED PRIOR TO OR CONCURRENTLY WITH THE GRADING AND DRAINAGE PERMIT.
- EXCAVATING CONTRACTOR MUST GIVE LOCATION FOR WASTING EXCESS EXCAVATION AND A LETTER FROM THE OWNER GIVING PERMISSION FOR DUMPING PRIOR TO STARTING ON-SITE CONSTRUCTION. IF EXCESS EXCAVATION EXCEEDS 100 CUBIC YARDS, THE DISPOSAL SITE WILL ALSO REQUIRE A GRADING AND DRAINAGE PERMIT.
- PLANNING AND DEVELOPMENT DEPARTMENT FIELD INSPECTION GROUP SHALL BE NOTIFIED 48 HOURS BEFORE ANY ON-SITE AND/OR OFF-SITE CONSTRUCTION BEGINS, TELEPHONE (602) 262-7811.
- STAKING FINISH FLOOR ELEVATIONS IS THE RESPONSIBILITY OF THE OWNER AND HIS PROFESSIONAL ENGINEER. THE OWNER'S PROFESSIONAL ENGINEER SHALL SUBMIT THREE SEALED COPIES OF THIS GRADING AND DRAINAGE PLAN DESIGNATED AS "RECORD DRAWING" (BEARING AN ORIGINAL SIGNATURE) PRIOR TO THE REQUEST FOR FINAL INSPECTION.
- PAD CERTIFICATIONS WILL BE REQUIRED ON ALL LOTS WITHIN THE SUBDIVISION AND SUBMITTED TO THE CIVIL/SITE INSPECTOR PRIOR TO ANY CONCRETE CONSTRUCTED IN THE RIGHT-OF-WAY. PAD CERTIFICATION CAN BE SUBMITTED TO THE CIVIL/SITE INSPECTOR BY EITHER SUBMITTING ONE APPROVED BLACK-LINE AS-BUILT GRADING AND DRAINAGE PLAN OR IN LETTER FORMAT SHOWING THE DESIGN AND AS-BUILT PAD ELEVATIONS AS SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN. IT IS REQUIRED THAT THE AS-BUILT PLAN AND LETTER BE SEALED BY A CIVIL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF ARIZONA.
- A SEPARATE PERMIT IS NECESSARY FOR ANY OFFSITE CONSTRUCTION.
- AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
- GRADING AND DRAINAGE PLAN APPROVAL INCLUDES THE CONSTRUCTION OF ALL SURFACE IMPROVEMENTS SHOWN ON THE APPROVED PLAN, INCLUDING, BUT NOT LIMITED TO, RETENTION AREAS, SEDIMENTATION BASINS, AND/OR OTHER DRAINAGE FACILITIES, DRAINAGE PATTERNS, WALLS, CURBS, ASPHALT PAVEMENT, AND BUILDING FLOOR ELEVATION.
- GRADES SHOWN IN RETENTION BASINS ARE DESIGNED FINISHED GRADES. SHOULD THE CONTRACTOR OR ANY SUBCONTRACTOR PLAN TO PLACE SPOIL DIRT FROM FOOTINGS, UTILITY TRENCHES, LANDSCAPING, SWIMMING POOLS, ETC. IN THE BASINS, THE BASINS SHOULD BE SUFFICIENTLY OVER-EXCAVATED DURING THE ROUGH GRADING OPERATION TO ALLOW FOR THE PLACEMENT OF THE FILL OR LANDSCAPING MATERIALS.
- CONTRACTOR IS RESPONSIBLE FOR LOCATING AND CONFIRMING DEPTHS OF ALL THE EXISTING UTILITY LINES WITHIN PROPOSED RETENTION BASIN AREAS. IF THE BASIN CANNOT BE CONSTRUCTED PER PLAN BECAUSE OF CONFLICTS, THE CONTRACTOR SHOULD DISCUSS MODIFICATION OF BASIN CONFIGURATION WITH THE CITY INSPECTOR TO DETERMINE IF A PLAN REVISION OR A FIELD CHANGE IS REQUIRED.
- ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTOR DITCHES, PIPES, PROTECTIVE BERMS, BARRIER WALLS, CONCRETE CHANNELS, OR OTHER MEASURES DESIGNED TO PROTECT ADJACENT BUILDING OR PROPERTY FROM STORM RUNOFF MUST BE COMPLETED PRIOR TO BUILDING CONSTRUCTION.
- PER SECTION 6.8.7 OF THE CITY OF PHOENIX STORM WATER POLICIES AND STANDARDS, SIDE SLOPES OF STORM WATER STORAGE FACILITIES SHALL BE NO STEEPER THAN 5:1 FOR IRRIGATED GRASS AREAS AND 3:1 FOR LANDSCAPE AREAS. SLOPE STABILIZATION MEASURES ARE REQUIRED FOR ALL SLOPES GREATER THAN 5:1. THE SLOPE STABILIZATION MEASURES MUST BE READILY MAINTAINABLE USING COMMON MAINTENANCE EQUIPMENT AND BE DESIGNED WITH CONSIDERATION TO AESTHETICS. THE SLOPE STABILIZATION MEASURES SHALL BE CONSISTENT WITH COMMONLY USED ENGINEERING PRACTICES. UNSTABILIZED DECOMPOSED GRANITE IS NOT ALLOWED ON SLOPES GREATER THAN 5:1
- ALL RETAINING WALLS ARE TO BE REVIEWED, PERMITTED, AND INSPECTED BY THE BUILDING SAFETY BRANCH OF THE PLANNING & DEVELOPMENT DEPARTMENT. ALL RETAINING WALLS ARE TO BE IN ACCORDANCE WITH SECTION 703 OF THE ZONING ORDINANCE AND SECTION 32-32 OF THE SUBDIVISION ORDINANCE FOR SPECIFIC WALL HEIGHT REQUIREMENTS.
 - USE PERMIT FOR IS REQUIRED FOR ALL OVER-HEIGHT RETAINING WALLS
- ALL RAMPS MUST MEET 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND CITY OF PHOENIX SUPPLEMENT TO M.A.G. UNIFORM STANDARD SPECIFICATIONS AND DETAILS; 2% MAX. CROSS SLOPES AND 12:1 MAX LONGITUDINAL SLOPES.
- CERTIFICATE OF OCCUPANCY (C. OF O.) AND/OR FINAL ELECTRICAL CLEARANCE FOR ANY BUILDING IS DENIED UNTIL ALL GRADING AND DRAINAGE IMPROVEMENTS ARE COMPLETED.
- EXISTING OR NEWLY DAMAGED AND/OR DISPLACED CONCRETE CURB, GUTTER, SIDEWALK, OR DRIVEWAY SLAB THAT IS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED, AS NOTED BY CITY INSPECTORS, BEFORE FINAL ACCEPTANCE OF THE WORK.
- THE ENGINEERING DESIGN ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. CONSTRUCTION QUANTITIES ON THESE PLANS ARE NOT VERIFIED BY THE CITY. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT THE CITY FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE, HEALTH, SAFETY, OR OTHER DESIGN ISSUES.

CITY OF PHOENIX - GRADING & DRAINAGE NOTES (CONT'D)

- THE CITY OF PHOENIX POLICE DEPARTMENT ENFORCES LAWS REGULATING THE OPERATION OF COMMERCIAL VEHICLES. THIS INCLUDES ENFORCEMENT OF FEDERAL, STATE, COUNTY, AND LOCAL LAWS AND ORDINANCES. QUESTIONS REGARDING COMMERCIAL VEHICLE ENFORCEMENT MAY BE DIRECTED TO THE COMMERCIAL VEHICLE ENFORCEMENT SUPERVISOR AT (602) 495-7813 (TRAFFIC BUREAU SOUTH) OR (602) 495-6784 (TRAFFIC BUREAU NORTH).
- PLAN APPROVAL IS VALID FOR 12 MONTHS. PRIOR TO PLAN APPROVAL EXPIRATION, ALL ASSOCIATED PERMITS SHALL BE PURCHASED OR THE PLANS SHALL BE RESUBMITTED FOR EXTENSION OF PLAN APPROVAL. THE EXPIRATION, EXTENSION, AND REINSTATEMENT OF CIVIL ENGINEERING PLANS AND PERMITS SHALL FOLLOW THE SAME GUIDELINES AS THOSE INDICATED IN THE PHOENIX BUILDING CONSTRUCTION CODE ADMINISTRATIVE PROVISIONS SECTION 105.3 FOR BUILDING PERMITS.
- CONSTRUCTION WITHIN THE RIGHT-OF-WAY SHALL CONFORM TO THE LATEST APPLICABLE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS AND THE LATEST CITY OF PHOENIX SUPPLEMENT TO THE MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS.
- COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601.
- OBSTRUCTIONS TO PROPOSED IMPROVEMENTS IN THE RIGHT-OF-WAY SHALL BE REMOVED OR RELOCATED BEFORE BEGINNING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
- THE ACTUAL POINT OF PAVEMENT MATCHING AND/OR TERMINATION SHALL BE DETERMINED IN THE FIELD BY THE CITY OF PHOENIX, PLANNING & DEVELOPMENT DEPARTMENT FIELD INSPECTOR.
- PAVEMENT REPLACEMENT THICKNESS AND TYPE ARE TO BE PER M.A.G. SECTION 336 AND C.O.P. DETAIL P1200 -TYPE B. CURB AND GUTTER REPLACEMENT SHALL BE A MINIMUM OF ONE (1) FULL SECTION, PER M.A.G. STANDARD DETAIL 220. SIDEWALK REPLACEMENT SHALL BE A MINIMUM OF ONE (1) FULL PANEL PER C.O.P. DETAIL P1230.
- TREES AND SHRUBBERY IN THE RIGHT-OF-WAY THAT CONFLICT WITH PROPOSED IMPROVEMENTS SHALL NOT BE REMOVED WITHOUT APPROVAL OF THE CITY LANDSCAPE ARCHITECT OR HIS ASSIGNEES. THE PERMITTEE SHALL BE RESPONSIBLE FOR OBTAINING AUTHORIZATION TO REMOVE AND/OR RELOCATE SAID TREES OR SHRUBBERY BY CALLING THE PARKS AND RECREATION DEPARTMENT AT (602) 262-6501 AND TRANSPORTATION DEPARTMENT AT 602-534-9898.
- PER THE CITY OF PHOENIX ORDINANCE G-6308. ALL STREET PAVEMENT CUTS WILL REQUIRE ASPHALT RESURFACING TREATMENTS BASED ON THE AGE OF PAVEMENT. FOR STREETS LESS THAN TWO YEARS OLD, THE PERMITTEE MUST APPLY AN ASPHALT MILL AND OVERLAY PAVEMENT TREATMENT. FOR STREETS GREATER THAN TWO YEARS OLD, THE PERMITTEE MUST APPLY A SLURRY SEAL AND/OR MICROSEAL TREATMENT.

CITY OF PHOENIX - DRYWELL NOTES

- THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR REGISTERING THE DRY WELLS SHOWN ON THE GRADING AND DRAINAGE PLAN WITH THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (A.D.E.Q.). FOR INFORMATION ABOUT SPECIFIC REQUIREMENTS, CONTACT THE WATER PERMITS UNIT AT (602) 771-4686.
- DRY WELLS MUST BE DRILLED A MINIMUM OF 10 FEET INTO PERMEABLE POROUS STRATA OR PERCOLATION TESTS WILL BE REQUIRED. THE GRADING AND DRAINAGE INSPECTOR MUST BE PRESENT BEFORE BACKFILL OR WELL PIPES ARE PLACED WITHIN ANY DRY WELLS.
- THE OWNER/DEVELOPER IS RESPONSIBLE FOR INSTALLING DRYWELL(S) SHOULD THE RETENTION BASINS FAIL TO DRAIN WITHIN 36 HOURS.

PROJECT INFORMATION

SCOPE:
THE PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW SINGLE-STORY PRESCHOOL BUILDING WITH REQUIRED GRADING & DRAINAGE AND PAVING IMPROVEMENTS.

ADDRESS:
2504 SOUTH 91ST AVENUE
PHOENIX, ARIZONA 85353

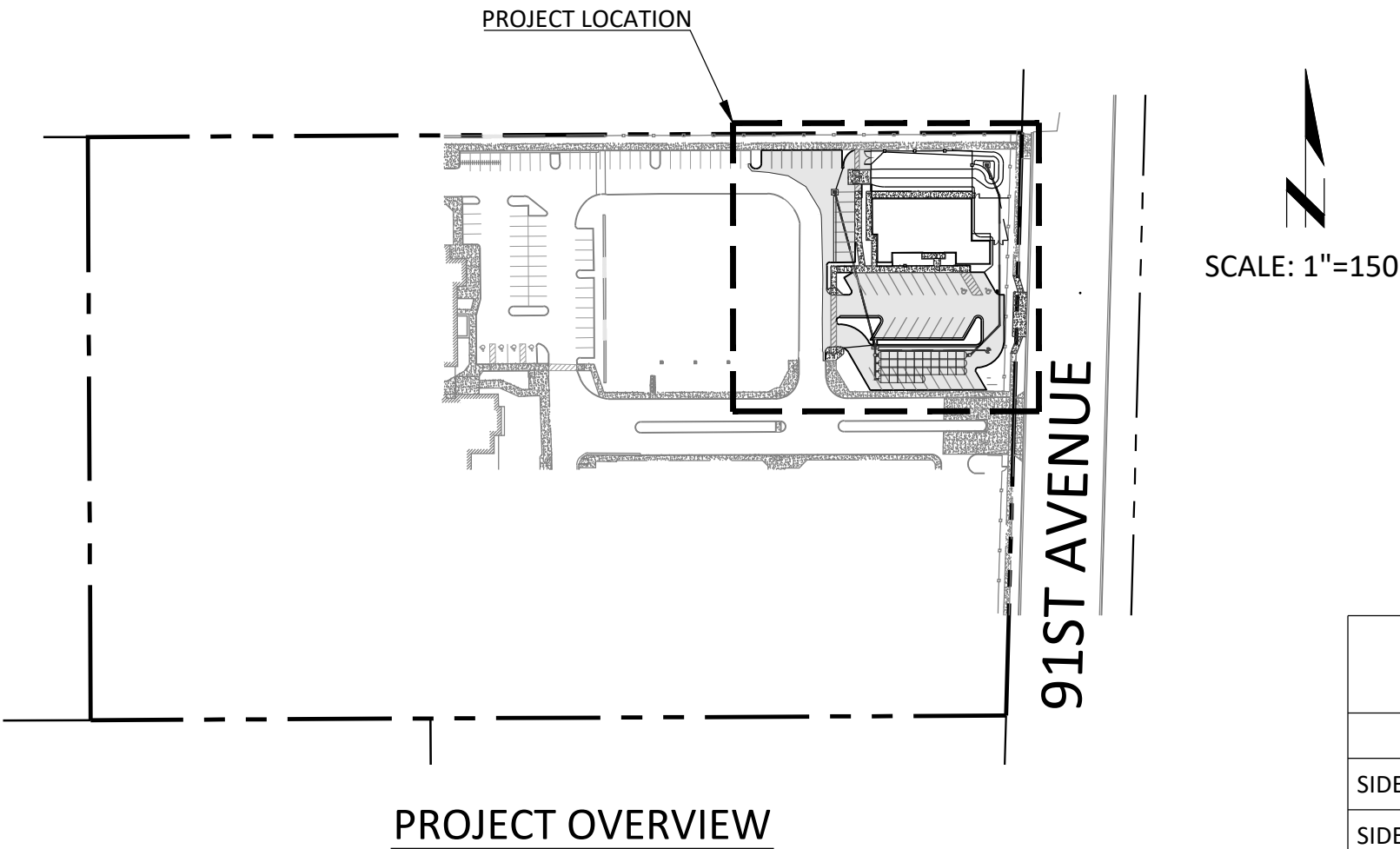
APN: 101-14-007D

ZONING: S-1

AREA
TOTAL: 435,602 SF (10.000 AC)
DISTURBED: 35,416 SF (0.813 AC)

SURVEY NOTES

- THE SURVEY FOR THIS PROJECT WAS PERFORMED BY:
SUPERIOR SURVEYING SERVICES, INC.
2122 WEST LONE CACTUS DRIVE, SUITE 11
PHOENIX, ARIZONA 85027
PH: 623-869-0223
CONTACT: DAVID S. KLEIN, R.L.S.
- THE BASIS OF BEARINGS FOR THIS PROJECT IS THE MONUMENT LINE OF LOWER BUCKEYE ROAD, ALSO BEING THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SECTION 16, USING A BEARING OF SOUTH 89°43'00" WEST, PER THE PLAT OF THE HOME DEPOT 91ST AVENUE AND LOWER BUCKEYE, BOOK 958 OF MAPS, PAGE 7, RECORDS OF MARICOPA COUNTY, ARIZONA.
- THE BASIS OF ELEVATION FOR THIS PROJECT IS THE CITY OF PHOENIX POINT ID: 19, HAVING A DESCRIBED LOCATION AND ELEVATION AS "SALT RIVER VALLEY WATER USERS ASSOCIATION BRASS CAP ON EAST SIDE OF IRRIGATION BOX LOCATED AT THE NORTHWEST CORNER OF INTERSECTION OF 83RD AVENUE AND LOWER BUCKEYE ROAD". TEMPORARY BENCHMARK ELEVATION = 1003.945', NGVD29.



RIGHT-OF-WAY IMPROVEMENT QUANTITIES	
ITEM	QTY
SIDEWALK REMOVAL	348 SF
SIDEWALK	160 SF
BUS PAD	1 EA

LEGAL DESCRIPTION

PART OF THE SOUTHEAST QUARTER OF SECTION 16, TOWNSHIP 1 NORTH, RANGE 1 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 16;
THENCE NORTH 01°36'40" EAST, ALONG THE EAST SECTION LINE OF SAID SECTION 16, A DISTANCE OF 760.90 FEET;
THENCE SOUTH 89°45'51" WEST, A DISTANCE OF 33.02 FEET TO THE WEST RIGHT-OF-WAY LINE OF 91ST AVENUE AND THE TRUE POINT OF BEGINNING;
THENCE CONTINUING SOUTH 89°45'51" WEST, A DISTANCE OF 844.60 FEET;
THENCE NORTH 00°13'48" WEST, A DISTANCE OF 524.18 FEET;
THENCE NORTH 89°45'51" EAST, A DISTANCE OF 861.45 FEET TO THE SAID WEST RIGHT-OF-WAY LINE OF 91ST AVENUE;
THENCE SOUTH 01°36'40" WEST, A DISTANCE OF 524.45 FEET TO THE TRUE POINT OF BEGINNING;
EXCEPT THE EAST 22 FEET THEREOF AS CONVEYED TO THE CITY OF PHOENIX BY QUIT-CLAIM DEED RECORDED IN INSTRUMENT NO. 2005-1552374; AND ALSO EXCEPT ALL MINERALS, ORES, AND METALS OF EVERY KIND AND CHARACTER AND ALL COAL, ASPHALTUM, OIL, GASES, FERTILIZERS, FOSSILS, AND OTHER LIKE SUBSTANCES IN OR UNDER SAID LAND AS RESERVED BY THE STATE OF ARIZONA IN THE PATENT TO SAID LAND RECORDED IN BOOK 130 OF DEEDS, PAGE 239; AND ALSO EXCEPT ALL MINERALS, OIL AND GAS, AND HYDROCARBON SUBSTANCES UNDERLYING SAID LAND AS RESERVED IN DEED RECORDED IN DOCKET 1952, PAGE 192, RECORDS OF MARICOPA COUNTY, ARIZONA.

BENCHMARK

THE BENCHMARK USED FOR THIS PLAN IS THE CITY OF PHOENIX POINT ID: 19, HAVING A DESCRIBED LOCATION AND ELEVATION AS "SALT RIVER VALLEY WATER USERS ASSOCIATION BRASS CAP ON EAST SIDE OF IRRIGATION BOX LOCATED AT THE NORTHWEST CORNER OF INTERSECTION OF 83RD AVENUE AND LOWER BUCKEYE ROAD". TEMPORARY BENCHMARK ELEVATION = 1003.945', NGVD29.

DRAINAGE STATEMENT

-SITE IS IN A SPECIAL FLOOD HAZARD AREA - NO
-OFFSITE FLOWS AFFECT THIS SITE - NO
-RETENTION PROVIDED IS 100-YR, 2-HR FOR DEVELOPED AREA
-EXTREME STORM OUTFALLS THE SITE AT THE SOUTHEAST DRIVEWAY ENTRANCE TO THE DEVELOPMENT AT THE ELEVATION OF 993.18

FLOODPLAIN INFORMATION

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP PANEL NUMBER 04013C2170M, DATED NOVEMBER 4, 2015 THE PARCEL IS LOCATED IN THE ZONE X (SHADED) AREA, WHICH IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD 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.

EARTHWORK QUANTITIES

PROJECT EARTHWORK (UNADJUSTED)(APPROXIMATE):

TOTAL CUT 900 CY	TOTAL FILL 0 CY	COMPOSITE 900 CY (C)
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IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALCULATE HIS OWN EARTHWORK QUANTITIES AND SUBMIT HIS BID THEREON. EARTHWORK QUANTITIES SHOWN HEREON ARE ESTIMATED FOR PERMITTING PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING OR PAYMENT QUANTITIES.

PROJECT RETENTION

PROJECT REQUIRED:
100-YR, 2-HR RETENTION VOLUME:
VOLUME [CF] = $C_w \times (P [IN] / 12) \times \text{AREA [SF]}$

DEVELOPED AREA
 $V = 0.90 \times (2.26/12) \times 35,416 = 6,004 \text{ CF}$

PROVIDED:
STORMTECH MC-3500 CHAMBER SYSTEM (30% VOID RATIO) SPECIFICATIONS:

- STORMTECH MC-3500 STORM WATER CHAMBERS
- (35) STORMTECH MC-3500 CHAMBERS @ 158.7 CF PER CHAMBER = 5,554 CF
- (8) STORMTECH MC-3500 END CAPS @ 37.6 CF PER END CAP = 300 CF
- INSTALLED WITH 12" COVER STONE AND 9" BASE STONE.
- STONE SHALL HAVE 30% VOID RATIO

CHAMBER VOLUME = 5,854 CF
SURFACE BASIN = 300 CF NORTH OF NEW BUILDING
TOTAL INSTALLED VOLUME = 6,154 CF

DRYWELL CALCULATIONS

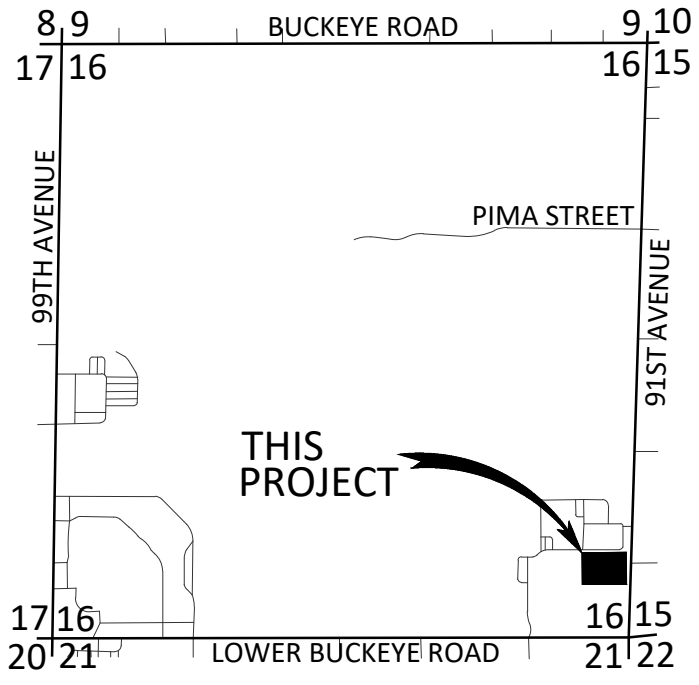
TOTAL RETAINED VOLUME = 6,154 CF

DRYWELL DISSIPATION RATE = 0.1CFS

TIME [SEC] = VOLUME [CF] / RATE [CFS]

$t = 6,154 / 0.1 = 61,540 \text{ SEC} = 17.1 \text{ HOURS}$

RETENTION BASIN TABLE		
VOLUME REQUIRED	VOLUME PROVIDED	AS-BUILT VOLUME
300 CF	300CF	



IN THE SE 1/4 OF THE SE 1/4 OF SECTION 16,
T. 1 N., R. 1 E., G. & S. R. M.,
CITY OF PHOENIX, ARIZONA COUNTY, ARIZONA
LOCATION MAP
NORTH
3" = 1 MILE

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED ENGINEER/LAND SURVEYOR

DATE

REGISTRATION NUMBER

OWNER/DEVELOPER

CATHOLIC CHARITIES WESTSIDE HEAD START
7400 WEST OLIVE AVENUE
PEORIA, ARIZONA 85345
PH: 623-486-9868
ATTN: YATIN DUA

CIVIL ENGINEER

RICK ENGINEERING
2401 WEST PEORIA AVENUE, #130
PHOENIX, ARIZONA 85029
PH: 602-957-3350
ATTN: JEFF HUNT, PE

ARCHITECT

ARCHITECTURAL RESOURCE TEAM
1055 EAST INDIAN SCHOOL ROAD
PHOENIX, ARIZONA 85014
PH: 602-307-5399
ATTN: TERRI SOLIMAN

UTILITIES

WATER:	CITY OF PHOENIX
SEWER:	CITY OF PHOENIX
ELECTRIC:	SALT RIVER PROJECT
GAS:	SOUTHWEST GAS
TELEPHONE:	CENTURYLINK
CABLE:	COX COMMUNICATIONS

SHEET INDEX

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- NOTES
- GRADING AND DRAINAGE PLAN
- DETAILS
- CROSS SECTIONS
- STORMTECH DETAILS

RICK
ENGINEERING COMPANY
2401 W peoria avenue, #130
phoenix, arizona 85029
p: 602.957.3350
e: jhunt@rickengineering.com

GRADING AND DRAINAGE PLAN for
HEAD START - TOLLESON
2504 SOUTH 91ST AVENUE PHOENIX, ARIZONA

cover



DRAWN:	PT
DESIGNED:	JH
CHECKED:	JH
DATE:	06-12-2023
JOB NO:	22.152
SHEET NUMBER	

ENGINEER'S GRADING NOTES

1.

ALL ONSITE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION OF THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" AND THE "UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" AS SPONSORED AND DISTRIBUTED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.), AND CITY OF PHOENIX SUPPLEMENTS TO MAG (MEASUREMENT AND PAYMENT TERMS TO NOT APPLY).
2.

SUBGRADE PREP SHALL CONFORM TO THE LATEST MAG STANDARD SPECIFICATIONS SECTION 301.
3.

AGGREGATE BASE COURSE SHALL CONFORM TO THE LATEST MAG STANDARD SPECIFICATION SECTION 310.
4.

ASPHALTIC CONCRETE SHALL CONFORM TO THE LATEST MAG STANDARD SPECIFICATION SECTION 321, 3/4" MIX.
5.

ALL CONCRETE SHALL CONFORM TO THE LATEST MAG STANDARD SPECIFICATION SECTION 725, CLASS B (2,500 PSI COMPRESSIVE STRENGTH AT 28 DAYS), CLASS A (3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS), OR CLASS AA (4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS).
6.

ALL PERMITS FROM APPLICABLE GOVERNMENT AGENCIES NECESSARY FOR CONSTRUCTION SHALL BE ACQUIRED PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS NECESSARY FOR THE COMPLETION OF THIS PROJECT.
7.

ALL REQUIRED AND APPLICABLE TRAFFIC CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR AND SUBJECT TO REVIEW OF THE CITY AND SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF PHOENIX TRAFFIC BARRICADE MANUAL.
8.

THE CONTRACTOR SHALL VERIFY ALL QUANTITIES, INCLUDING EXCAVATION, BORROW EMBANKMENT, SHRINK OR SWELL, GROUND COMPACTION, HAUL AND ANY OTHER ITEMS AFFECTING THE BID TO COMPLETE THE GRADING TO THE ELEVATIONS SHOWN ON THESE PLANS AND TO BASE THE BID SOLELY UPON HIS OWN CALCULATED QUANTITIES. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE OWNER/DEVELOPER PRIOR TO CONSTRUCTION OF ANY MAJOR DISCREPANCIES BETWEEN HIS ESTIMATED QUANTITIES AND THOSE SHOWN ON THE PLANS. ALL GRADE ADJUSTMENTS SHALL BE APPROVED IN WRITING BY THE OWNER PRIOR TO MAKING ANY CHANGES.
9.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATE SITE CONDITIONS WITH THE DRAWINGS PRIOR TO CONSTRUCTION, ANY DISCREPANCIES AND OMISSIONS SHALL BE RESOLVED WITH THE PROJECT ENGINEER. DO NOT USE SCALED DIMENSIONS.
10.

THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS FOR CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING PUBLIC STREETS, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS AND TAKE WHATEVER MEANS NECESSARY TO INSURE THAT ALL ROADS ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
11.

AN APPROVED SET OF PLANS SHALL BE MAINTAINED ON THE JOB SITE AT ALL TIMES WORK IS IN PROGRESS. DEVIATION FROM THE PLANS WILL NOT BE ALLOWED WITHOUT AN APPROVED PLAN REVISION.
12.

THE CONTRACTOR SHALL INSTALL ALL FRAMES AND COVERS FOR MANHOLES, VALVES, AND CLEANOUTS TO THE FINISHED GRADE IN ACCORDANCE WITH M.A.G. STANDARD DETAILS 270 AND 422, AS APPLICABLE. ALL UTILITY ACCESS POINTS PLACED IN TRAFFIC AREAS SHOULD BE TRAFFIC RATED.
13.

CUT AND FILL SLOPES SHALL BE TRIMMED TO THE FINISH GRADE TO PRODUCE A SMOOTH SURFACE AND UNIFORM CROSS-SECTION. THE SLOPE OF THE EXCAVATIONS OR EMBANKMENTS SHALL BE SHAPED AND TRIMMED AS SHOWN ON THE PLANS AND LEFT IN A NEAT AND ORDERLY CONDITION. ALL STONES, ROOTS, OR OTHER WASTE MATTER EXPOSED ON EXCAVATION OR EMBANKMENT SLOPES SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE BY THE CONTRACTOR.
14.

THE CONTRACTOR SHALL RETAIN THE SERVICES OF A REGISTERED LAND SURVEYOR TO PROVIDE THE CONSTRUCTION LAYOUT. THE SURVEYOR SHALL VERIFY THE KNOWN BENCHMARK AND COMPARE THE SITE CONDITIONS WITH THE PLANS AND SHALL NOTIFY THE OWNER OF ANY DISCREPANCIES OBSERVED SHOULD ANY BENCHMARK, GRADE OR DESIGN INDICATED ON THE PLANS BE SUSPECT. THE OWNER SHALL BE NOTIFIED OF SAID BENCHMARK, GRADE OR DESIGN PROBLEM AT LEAST TWENTY-FOUR (24) HOURS BEFORE CONSTRUCTION IS SCHEDULED TO BEGIN IN THE AFFECTED AREA.
15.

UPON COMPLETION OF THE WORK, THE CONTRACTOR AND HIS SURVEYOR SHALL CERTIFY IN WRITING TO THE OWNER THAT THE PROJECT CIVIL ENGINEERING IMPROVEMENTS WERE STAKED AND BUILT IN SUBSTANTIAL CONFORMANCE TO THE LINES AND GRADES SHOWN. UNLESS NOTED OTHERWISE, SUBSTANTIAL CONFORMANCE SHALL MEAN THAT BUILDING SITES HAVE BEEN CONSTRUCTED TO WITHIN 0.10± FEET OF FINISH BUILDING PAD ELEVATIONS AS DESIGNED BY THE ENGINEER. PARKING AREAS SHALL BE CONSTRUCTED TO WITHIN 0.10± FEET OF FINISH GRADE AS DESIGNED BY THE ENGINEER. SITE FEATURES SHALL BE WITHIN 0.25 FEET OF SPECIFIED POSITION.
16.

ACCESSIBLE STANDARDS MUST BE MET PER 2012 IBC, CHAPTER 11, AND 2009 ICC A117.1.

THE MINIMUM WIDTH OF THE HANDICAP ACCESSIBLE ROUTE SHALL BE 36". THE MAXIMUM SLOPE SHALL BE 8.33% AT RAMPS (6" MAXIMUM RISE) AND 5% ELSEWHERE WITHOUT HANDRAILING AND WITH HANDRAILING WHERE GREATER THAN 5%. THE MAXIMUM CROSS SLOPE SHALL BE 2%. NO LEVEL CHANGES OR STEPS SHALL BE PERMITTED ALONG THIS ROUTE.
17.

THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN INDEPENDENT ENGINEERING TESTING LABORATORY ACCEPTABLE TO PROVIDE THE CONSTRUCTION TESTING OF THE PROJECT EARTHWORK, ASPHALT PLACEMENT, AND CIVIL CONCRETE PLACEMENT. THE GEOTECHNICAL ENGINEER SHALL VERIFY THAT INITIAL SITE CONDITIONS CONFORM WITH THE PLANS AND SHALL NOTIFY THE OWNER OF ANY DISCREPANCIES OBSERVED SHOULD ANY SOIL CONDITION ON THE SITE BE SUSPECT OF DETRIMENTAL CHARACTERISTICS. THE OWNER SHALL BE NOTIFIED OF CONCERNS AT LEAST TWENTY-FOUR (24) HOURS BEFORE CONSTRUCTION IS SCHEDULED TO BEGIN ON THE AFFECTED AREA.
18.

DURING THE COURSE OF CONSTRUCTION, TEST RESULTS SHALL BE SUBMITTED TO THE CONTRACTOR AND OWNER WHICH INDICATE IF WORK IS BEING DONE IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
19.

CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS.

ENGINEER'S GRADING NOTES

18.

DURING THE COURSE OF CONSTRUCTION, TEST RESULTS SHALL BE SUBMITTED TO THE CONTRACTOR AND OWNER WHICH INDICATE IF WORK IS BEING DONE IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
19.

CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS.
20.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND MAINTENANCE OF EXISTING IMPROVEMENTS AND VEGETATION IN THE WORK AREA. PAVEMENT, CURBS, AND ANY OTHER OBSTRUCTION DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR.
21.

IF UNANTICIPATED CONDITIONS ARE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION AND ARE BEYOND THE SCOPE OF THE DESIGN, THE OWNER SHALL BE NOTIFIED IMMEDIATELY.
22.

CYPRESS CIVIL HEREBY CERTIFIES THAT ALL FINISHED GRADED AND PAVED AREAS CONTAINED WITHIN THIS DEVELOPMENT ARE DESIGNED WITH SLOPES OF AT LEAST 0.5%. CYPRESS CIVIL FURTHER CERTIFIES THAT THE PROPOSED DESIGN PROVIDES POSITIVE DRAINAGE THROUGHOUT THE DEVELOPMENT EXCEPT WITHIN DETENTION/RETENTION AREAS SPECIFIED WITHIN THE APPROVED DRAINAGE ANALYSIS FOR THIS PROJECT.
23.

THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOBSITE CONDITIONS DURING THE COURSE OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND CYPRESS CIVIL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR CYPRESS CIVIL.
24.

IF THERE ARE ANY QUESTIONS REGARDING THESE PLANS OR FIELD STAKES, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION BEFORE DOING ANY WORK BY CALLING CYPRESS CIVIL AT 623-282-2498.

UTILITY NOTE

EXISTING UTILITY LOCATIONS, AS SHOWN ON THE PLANS, WERE COMPILED AND ARE PRESENTED BASED UPON PRELIMINARY INFORMATION AVAILABLE TO CYPRESS CIVIL DEVELOPMENT. UTILITY LOCATIONS AS SHOWN ARE NOT INTENDED TO BE EXACT OR COMPLETE AND CYPRESS CIVIL DEVELOPMENT DOES NOT ACCEPT LIABILITY OR RESPONSIBILITY FOR ANY INACCURACIES IN THE UTILITY LOCATIONS OR ANY UTILITY RELOCATIONS THAT MAY BE NECESSARY. PRIOR TO EXCAVATION, ARIZONA STATUTES REQUIRE THAT ANYONE WHO INTENDS TO EXCAVATE MUST PROVIDE TWO FULL WORKING DAYS NOTICE TO THE OWNERS OF ALL UTILITIES WITHIN THE PROJECT AREA. EXCAVATORS SHOULD CONTACT "ARIZONA BLUE STAKE" @ 1-800-782-5348 TWO (2) FULL WORKING DAYS PRIOR TO EXCAVATION. SATURDAYS, SUNDAYS, AND STATE HOLIDAYS ARE NOT CONSIDERED WORKING DAYS. ALSO BE ADVISED THAT THERE MAY BE OTHER UTILITIES IN THE PROJECT AREA THAT ARE NOT MEMBERS OF "ARIZONA BLUE STAKE". THE CONTRACTOR IS RESPONSIBLE TO POTHOLE ALL UTILITIES (SHOWN OR NOT SHOWN ON THE PLANS) MARKED BY BLUE STAKE PRIOR TO COMMENCING CONSTRUCTION OPERATIONS.

EARTHWORK + MATERIALS TESTING

1.

THE CONTRACTOR SHALL RETAIN THE SERVICES OF, AND FACILITATE THE WORK OF, AN INDEPENDENT ENGINEERING TESTING LABORATORY ACCEPTABLE TO PROVIDE THE CONSTRUCTION TESTING OF THE PROJECT EARTHWORK, UTILITY BACKFILL, ASPHALT PLACEMENT, AND CIVIL CONCRETE PLACEMENT. THE GEOTECHNICAL ENGINEER SHALL VERIFY THAT INITIAL SITE CONDITIONS CONFORM WITH THE PLANS AND SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES OBSERVED SHOULD ANY SOIL CONDITION ON THE SITE BE SUSPECT OF DETRIMENTAL CHARACTERISTICS. THE CONTRACTOR SHALL BE NOTIFIED OF CONCERNS AT LEAST TWENTY-FOUR (24) HOURS BEFORE CONSTRUCTION IS SCHEDULED TO BEGIN ON THE AFFECTED AREA.
2.

DURING THE COURSE OF CONSTRUCTION, TEST RESULTS SHALL BE SUBMITTED TO THE CONTRACTOR AND OWNER WHICH INDICATE IF WORK IS BEING DONE IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
3.

THE CONTRACTOR SHALL PROVIDE POSITIVE GRADE AWAY FROM ALL BUILDING FOUNDATIONS.

STORM DRAIN NOTE

1.

ALL ON-SITE PRIVATE HDPE STORM DRAIN MATERIAL SHALL MEET THE REQUIREMENTS OF ASTM F2648 AND SHALL BE WATER TIGHT JOINTS UNLESS OTHERWISE NOTED ON THE PLANS. THE DESIGN MANNINGS 'N' VALUE SHALL BE 0.012. JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D3212, ASTM F2487, AND ASTM F1417. PIPES SHALL BE DESIGNED TO SUPPORT H-25 LOADING WITH 1-FOOT OF COVER. INSTALL PIPE PER MANUFACTURER SPECIFICATIONS, AS WELL AS, MAG STANDARD SPECIFICATION SECTION 601.
2.

FITTINGS SHALL BE IN ACCORDANCE WITH ASTM F2306 AND ASTM F2648. WATERTIGHT FITTINGS SHALL PROVIDE A JOINT THAT MEETS THE WATERTIGHT REQUIREMENTS OF ASTM D3212. TO INSURE COMPATIBILITY IN THE FIELD, THE PIPE MANUFACTURER SHALL PROVIDE ALL FITTINGS.

CITY OF PHOENIX - DRYWELL NOTES

1.

THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR REGISTERING THE DRY WELLS SHOWN ON THE GRADING AND DRAINAGE PLAN WITH THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (A.D.E.Q.). FOR INFORMATION ABOUT SPECIFIC REQUIREMENTS, CONTACT THE WATER PERMITS UNIT AT (602) 771-4686.
2.

DRY WELLS MUST BE DRILLED A MINIMUM OF 10 FEET INTO PERMEABLE POROUS STRATA OR PERCOLATION TESTS WILL BE REQUIRED. THE GRADING AND DRAINAGE INSPECTOR MUST BE PRESENT BEFORE BACKFILL OR WELL PIPES ARE PLACED WITHIN ANY DRY WELLS.
3.

THE OWNER/DEVELOPER IS RESPONSIBLE FOR INSTALLING DRYWELL(S) SHOULD THE RETENTION BASINS FAIL TO DRAIN WITHIN 36 HOURS.

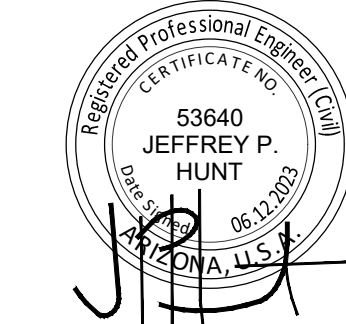
LEGEND

	PROJECT RIGHT-OF-WAY		NEW SEWER CLEANOUT
	EXISTING RIGHT-OF-WAY		NEW WATER VALVE
	PROJECT/NEW PROPERTY LINE		NEW WATER METER
	EXISTING PROPERTY LINE		NEW BACKFLOW PREVENTER
	ROADWAY CENTERLINE		NEW FIRE CONNECTION
	FLOW-LINE		NEW FIRE BACKFLOW PREVENTER
	EXISTING EASEMENT		NEW DRYWELL
	NEW EASEMENT		NEW SITE LIGHT
	EXISTING CONTOUR		SURVEY MONUMENT AS NOTED
	NEW CONTOUR		SPOT ELEV. (EXIST. GRADE)
	EXISTING CONCRETE		SPOT ELEV. (NEW GRADE)
	NEW ASPHALT		RIGHT-OF-WAY
	NEW CONCRETE		BACK OF CURB
	NEW WALL		BACK OF SIDEWALK
	EXISTING CURB		PAVEMENT (ASPHALT)
	EXISTING PAINT STRIPE		CONCRETE
	EXISTING FENCE		GUTTER
	NEW CURB		TOP OF CURB
	NEW PAINT STRIPE		FINISHED GRADE
	NEW FENCE		LOW POINT
	EXISTING UNDERGROUND ELECTRIC		HIGH POINT
	EXISTING COMMUNICATION LINE		GRADE BREAK
	EXISTING OVERHEAD ELECTRIC		FINISHED FLOOR ELEVATION
	EXISTING IRRIGATION LINE		FINISH GRADE HIGH
	EXISTING SEWER LINE		FINISH GRADE LOW
	EXISTING WATER LINE		PUBLIC UTILITY EASEMENT
	EXISTING FIRE SERVICE		MATCH EXISTING
	EXISTING GAS LINE		RIM
	NEW STORM DRAIN PIPE		INVERT
	NEW SEWER LINE		LENGTH
	NEW WATER LINE		SLOPE
	NEW FIRE SERVICE		
	EXISTING SEWER MANHOLE		
	EXISTING SEWER CLEANOUT		
	EXISTING WATER VALVE		
	EXISTING WATER METER		
	EXISTING BACKFLOW PREVENTER		
	EXISTING FIRE HYDRANT		
	EXISTING SIGN		
	EXISTING SITE LIGHT		
	EXISTING STREET LIGHT		
	EXISTING ELECTRIC PULL BOX		
	EXISTING COMMUNICATION PULL BOX		
	EXISTING LIGHT PULL BOX		
	EXISTING UTILITY POLE		

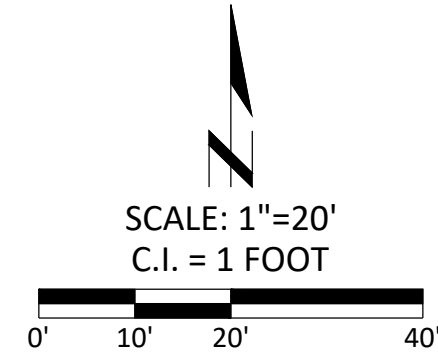


KIVA: 04-2913
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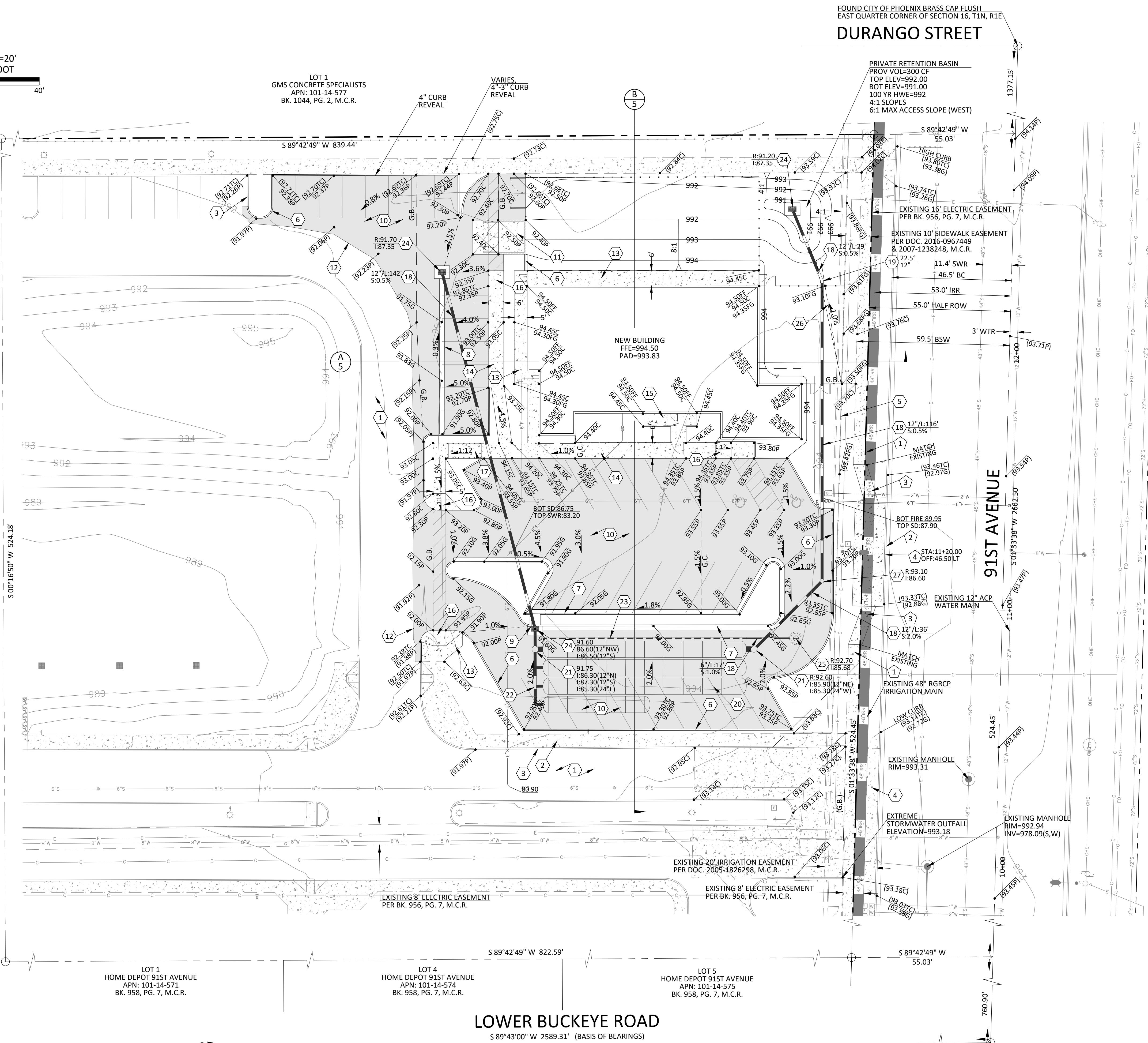
GRADING AND DRAINAGE PLAN for
HEAD START - TOLLESON
2504 SOUTH 91ST AVENUE PHOENIX, ARIZONA



DRAWN:	PT
DESIGNED:	JH
CHECKED:	JH
DATE:	06-12-2023
JOB NO:	22.152
SHEET NUMBER	



CITY OF PHOENIX
APN: 101-14-005G
2002-1304434, M.C.R.



FOUND CITY OF PHOENIX BRASS CAP FLUSH
EAST QUARTER CORNER OF SECTION 16, T1N, R1E

DURANGO STREET

PRIVATE RETENTION BASIN
PROV VOL=300 CF
TOP ELEV=992.00
BOT ELEV=991.00
100 YR HWE=992
4:1 SLOPES
6:1 MAX ACCESS SLOPE (WEST)

EXISTING 16' ELECTRIC EASEMENT
PER BK. 956, PG. 7, M.C.R.

EXISTING 10' SIDEWALK EASEMENT
PER DOC. 2016-0967449
& 2007-1238248, M.C.R.

EXISTING 12" ACP WATER MAIN

EXISTING 48" RGRCP IRRIGATION MAIN

EXISTING MANHOLE RIM=993.31

EXTREME STORMWATER OUTFALL ELEVATION=993.18

EXISTING 20' IRRIGATION EASEMENT
PER DOC. 2005-1826298, M.C.R.

EXISTING 8' ELECTRIC EASEMENT
PER BK. 956, PG. 7, M.C.R.

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CALCULATED POSITION, NOTHING FOUND OR SET
SOUTHEAST CORNER OF SECTION 16, T1N, R1E
ALSO FOUND CITY OF PHOENIX BRASS CAP FLUSH
(N 01°55'06" W 22.03')
STA:0+00.00

RIGHT-OF-WAY KEYNOTES

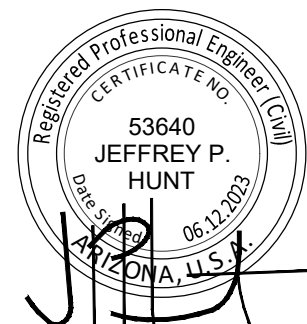
- 1 EXISTING CONCRETE SIDEWALK TO REMAIN.
- 2 EXISTING CURB AND GUTTER TO REMAIN.
- 3 INSTALL CONCRETE SIDEWALK PER CITY OF PHOENIX DETAIL P 1230.
- 4 INSTALL BUS SHELTER / ACCESSORY PAD PER CITY OF PHOENIX DETAIL P1260.

KEYNOTES

- 1 EXISTING ASPHALT PAVEMENT TO REMAIN.
- 2 EXISTING CONCRETE SIDEWALK TO REMAIN.
- 3 EXISTING CURB TO REMAIN.
- 4 EXISTING CONCRETE DRIVEWAY TO REMAIN.
- 5 EXISTING FENCE TO REMAIN.
- 6 NEW 6" VERTICAL CURB PER MAG DETAIL 222, TYPE 'A'.
- 7 NEW 6" VERTICAL CURB AND GUTTER PER MAG DETAIL 220, TYPE 'A'.
- 8 NEW 24" CONCRETE VALLEY GUTTER PER DETAIL A, SHEET 4.
- 9 CONTINUE CURB AND GUTTER THROUGH LANDSCAPE ISLAND AND INSTALL VERTICAL CURB TO ENCLOSE LANDSCAPE AREA. WIDTH OF GUTTER IS 36".
- 10 NEW 3" AC PAVEMENT OVER 6" ABC PER DETAIL B, SHEET 4.
- 11 NEW TRASH ENCLOSURE AND CONCRETE APRON. REFER TO ARCHITECTURAL PLANS FOR DETAILS AND DETAIL C, SHEET 4 FOR PAVEMENT SECTION DETAIL.
- 12 SAWCUT A MINIMUM 24" INTO THE EXISTING PAVEMENT, AT FULL DEPTH. REMOVE EXISTING ASPHALT, TACK, AND JOIN.
- 13 NEW CONCRETE SIDEWALK PER MAG DETAIL 230. MAXIMUM CROSS SLOPE = 1.8%, MAXIMUM RUNNING SLOPE = 4.8% PER ICC A117.1, CHAPTER 4, ACCESSIBLE ROUTES.
- 14 NEW MODIFIED CONCRETE SIDEWALK PER DETAIL D, SHEET 4. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL FINISH AND SCORING DETAILS.
- 15 NEW CONCRETE PAVEMENT PER DETAIL E, SHEET 4. 2.0% MAXIMUM SLOPE ALL DIRECTIONS. REFER TO ARCHITECTURAL PLAN FOR SCORING AND FINISH DETAILS.
- 16 NEW 6" CONCRETE ACCESS RAMP PER IBC CHAPTER 11 AND ICC A117.1, SECTION 405, RAMPS. PROVIDE TRACTION SURFACE CONSISTING OF 1/4"x1/4" TOOLED GROOVES, 1" O.C. REFER TO DETAIL F, SHEET 4.
- 17 NEW CONCRETE ACCESS RAMP PER IBC CHAPTER 11 AND ICC A117.1, SECTION 405, RAMPS. MAXIMUM CROSS SLOPE = 1.8%, MAXIMUM RAMP SLOPE = 1:12. REFER TO ARCHITECTURAL PLANS FOR HANDRAIL DETAILS.
- 18 NEW HDPE STORM DRAIN PIPE WITH MANNING n=0.012 AND WATER TIGHT JOINTS. SIZE, LENGTH, AND SLOPE INDICATED PER PLAN. REFER TO STORM DRAIN NOTES, SHEET 2.
- 19 NEW HDPE STORM DRAIN FITTING. TYPE AND SIZE INDICATED PER PLAN. REFER TO STORM DRAIN NOTES, SHEET 2.
- 20 NEW STORMTECH MC-3500 STORM WATER RETENTION CHAMBERS. REFER TO DETAIL, SHEET 6. TOTAL CHAMBERS = 35 EA. TOTAL VOLUME = 5,854 CF. TOP ELEVATION = 988.85. BOT ELEVATION = 985.10.
- 21 NEW 30" DIAMETER NYLOPLAST DRAINAGE BASIN WITH SOLID COVER AND 24" SUMP. REFER TO BASIN DETAIL, SHEET 5 AND SUMP DETAIL, SHEET 5.
- 22 NEW 12" INLET MANIFOLD PER STORMTECH DETAIL SHEET 6.
- 23 NEW 6" PERFORATED UNDERDRAIN PIPE PER STORMTECH DETAIL, SHEET 6.
- 24 NEW 24" DIAMETER NYLOPLAST DRAINAGE BASIN AND 2'x3' STEEL BAR GRATE. REFER TO SHEET 5 FOR DETAIL.
- 25 NEW SINGLE CHAMBER DRY WELL PER DETAIL G, SHEET 4. ADJUST RIM ELEVATIONS TO FINAL GRADE. DRY WELL AND UNDERDRAIN SYSTEM CAN BE ELIMINATED IF INFILTRATION TESTS SHOW THAT THE SYSTEM WILL DISSIPATE THE RETAINED VOLUME VIA NATURAL PERCOLATION WITHIN 36 HOURS.
- 26 NEW GRADED 'V'-DITCH CHANNEL WITH 1% CHANNEL SLOPE (MIN.) AND 4:1 SIDE SLOPES. INVERT ELEVATIONS INDICATED PER PLAN.
- 27 NEW 18" DIAMETER NYLOPLAST DRAINAGE BASIN WITH SOLID COVER. REFER TO BASIN DETAIL, SHEET 5.

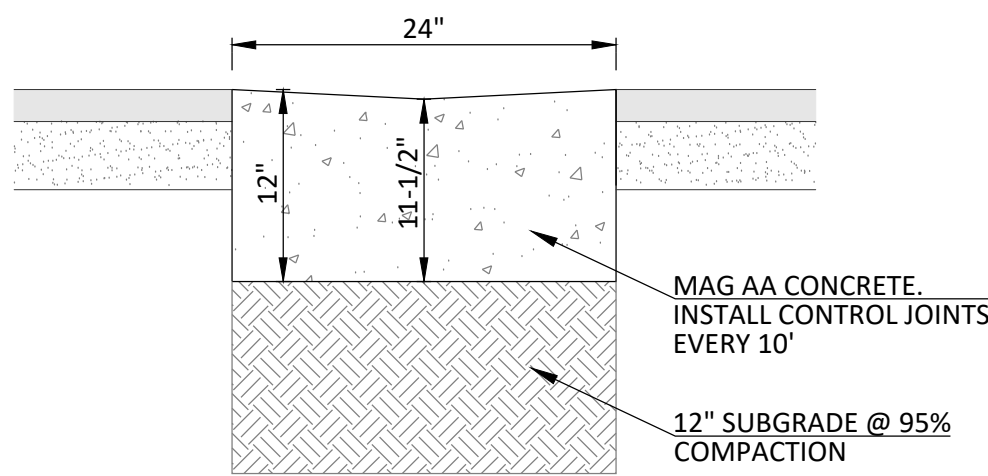
RICK
ENGINEERING COMPANY
2401 W. PEORIA AVENUE, #130
PHOENIX, ARIZONA 85029
P: 602.957.3350
E: jhunt@rickengineering.com

**GRADING AND DRAINAGE PLAN for
HEAD START - TOLLESON**
2504 SOUTH 91ST AVENUE PHOENIX, ARIZONA
grading and drainage plan

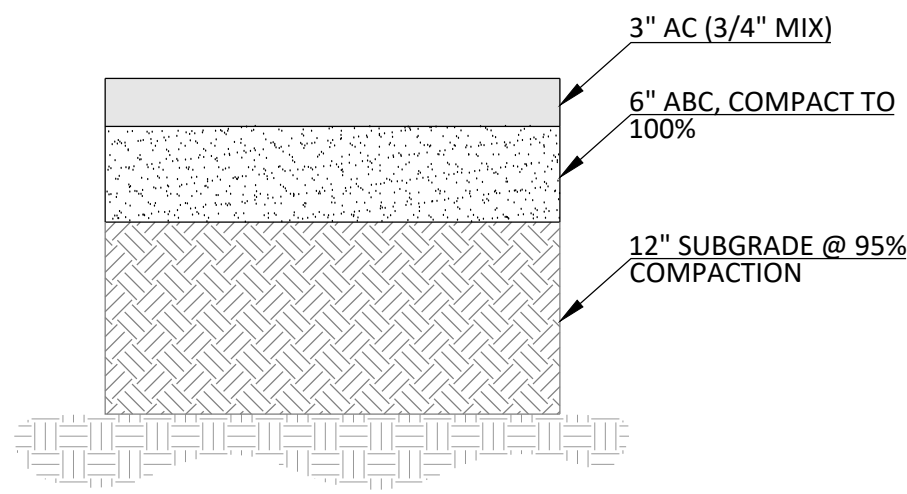


DRAWN: PT
DESIGNED: JH
CHECKED: JH
DATE: 06-12-2023
JOB NO: 22.152
SHEET NUMBER

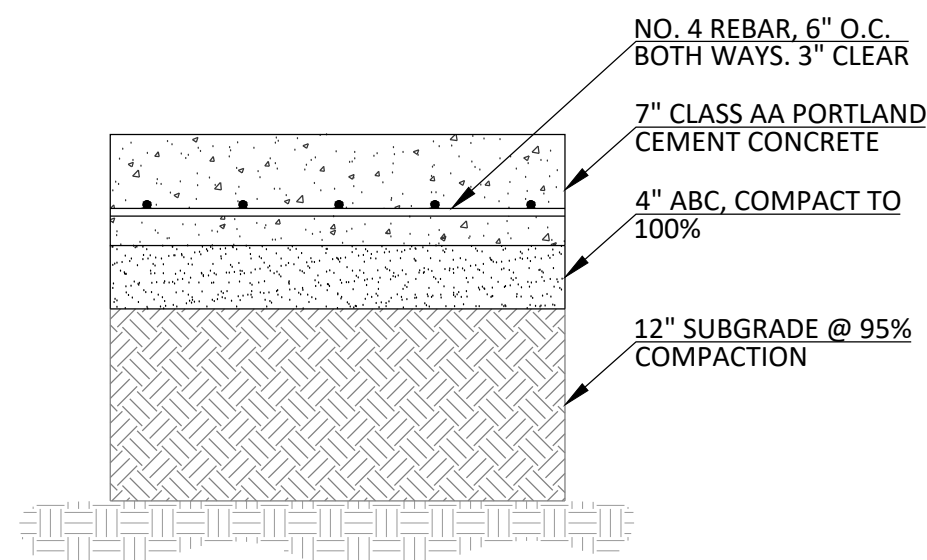
KIVA: 04-2913
CPGD:
Q.S.: 07-06



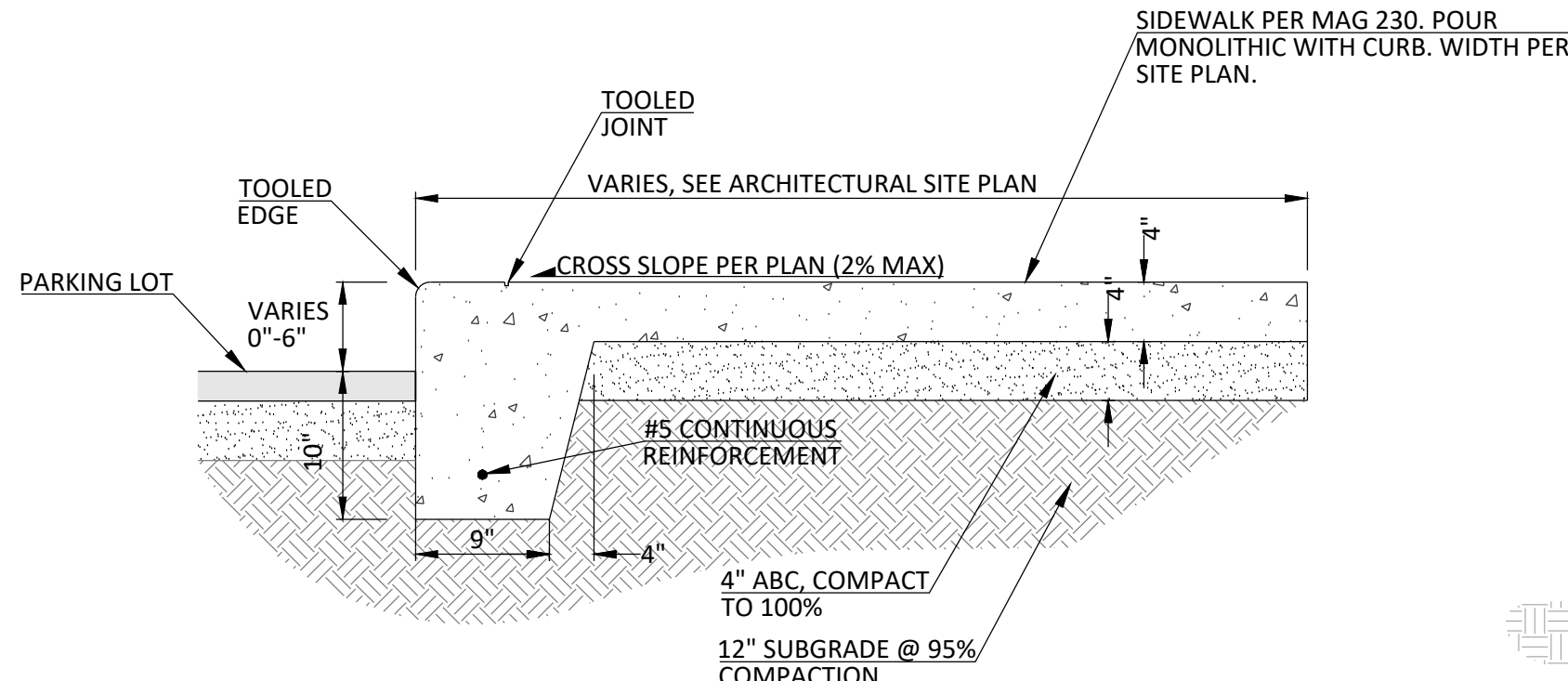
A VALLEY GUTTER
SCALE: 1"=1'



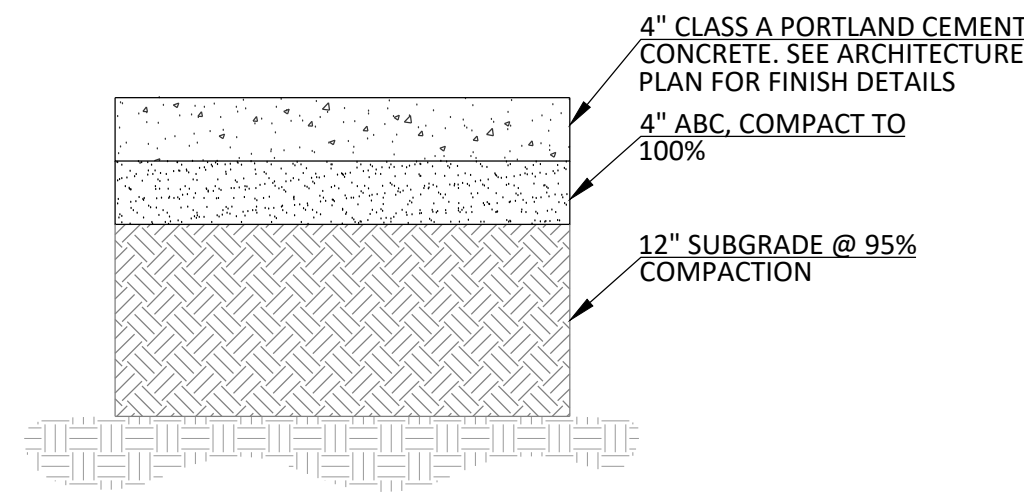
B AC PAVEMENT SECTION
SCALE: 1"=1'



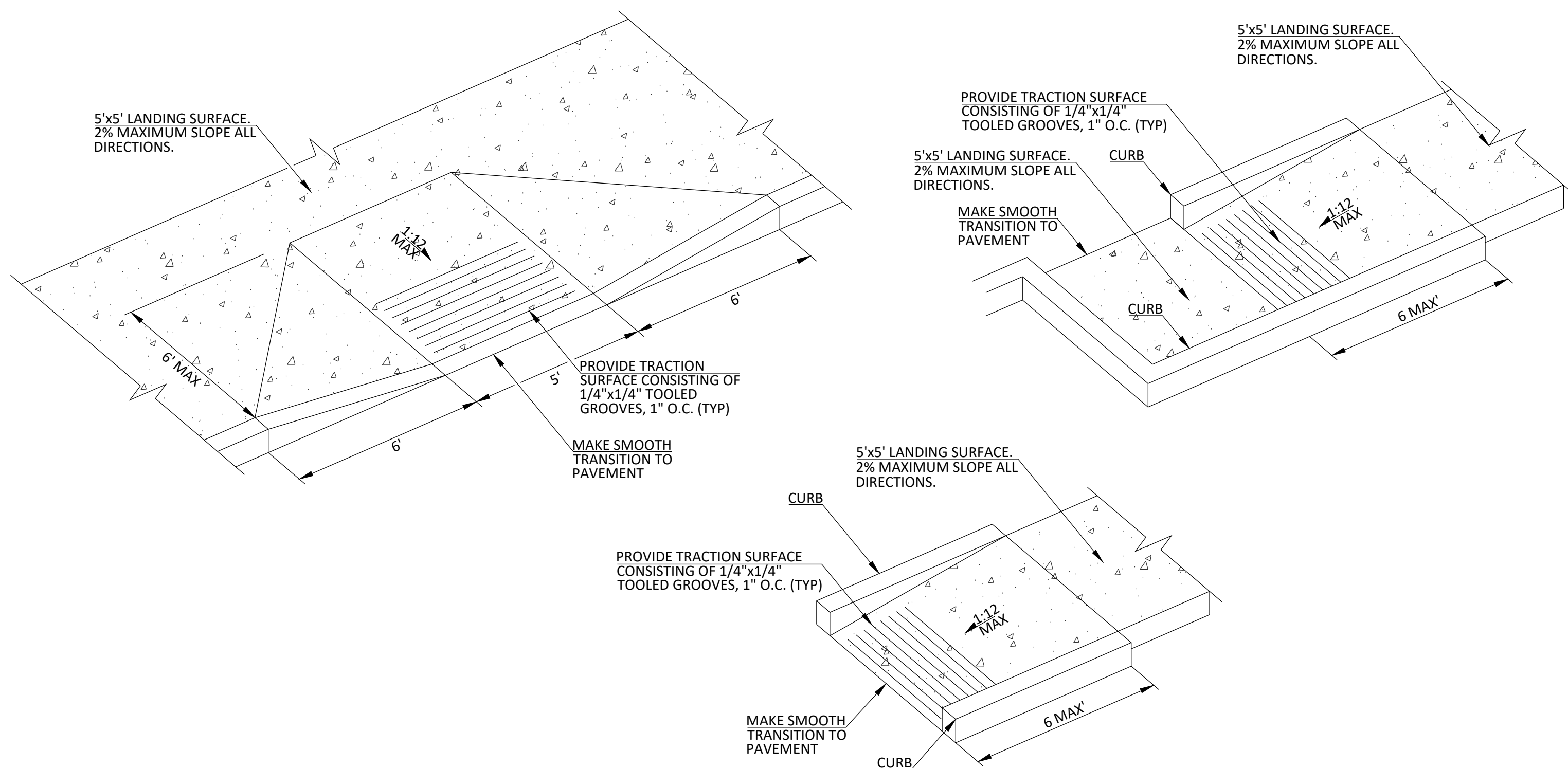
C PAVEMENT SECTION REINFORCED
SCALE: 1"=1'



D MODIFIED CONCRETE SIDEWALK
SCALE: 1"=1'

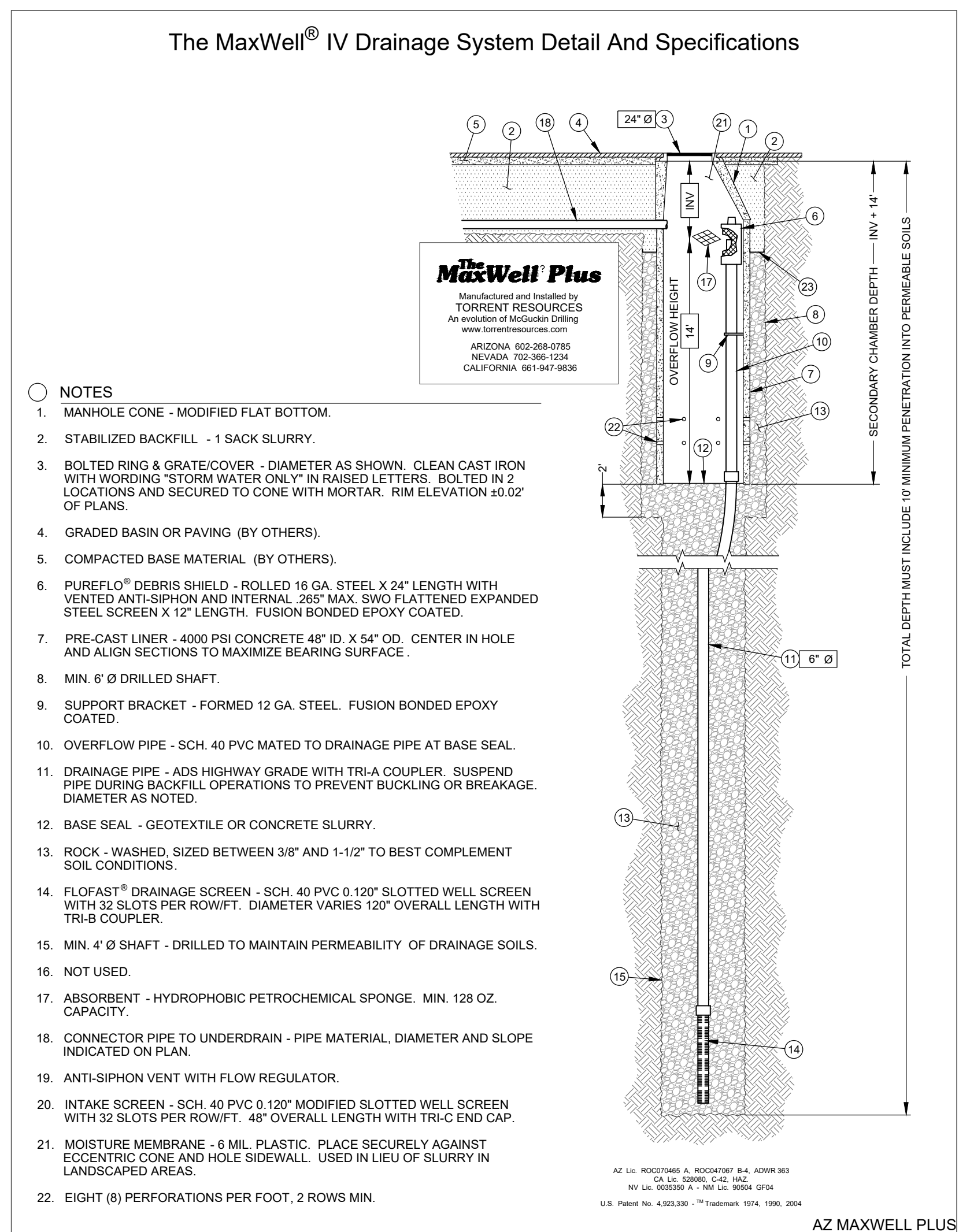


E CONCRETE SECTION
SCALE: 1"=1'



INSTALL RAMPS PER 2010 AMERICAN WITH DISABILITY ACT ACCESSIBLE GUIDELINES (ADAAG) AND MAG SPECIFICATION SECTION 340. TRUNCATED DOMES ARE NOT REQUIRED.

F ACCESSIBLE RAMP
N.T.S.



G SINGLE CHAMBER DRY WELL
SCALE: N.T.S.

NO.	DATE	REVISION

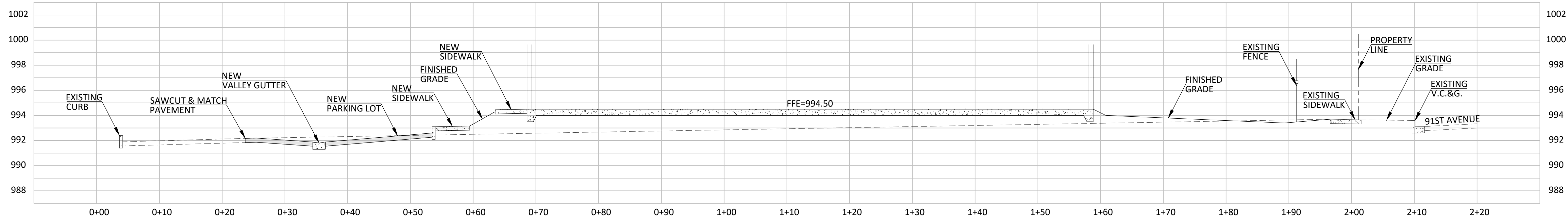
**GRADING AND DRAINAGE PLAN for
HEAD START - TOLLESON
2504 SOUTH 91ST AVENUE PHOENIX, ARIZONA**

details

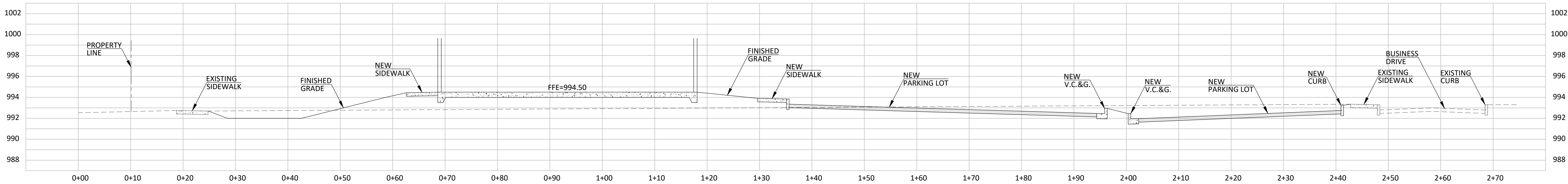


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DESIGNED:	JH
CHECKED:	JH
DATE:	06-12-2023
JOB NO:	22.152
SHEET NUMBER	

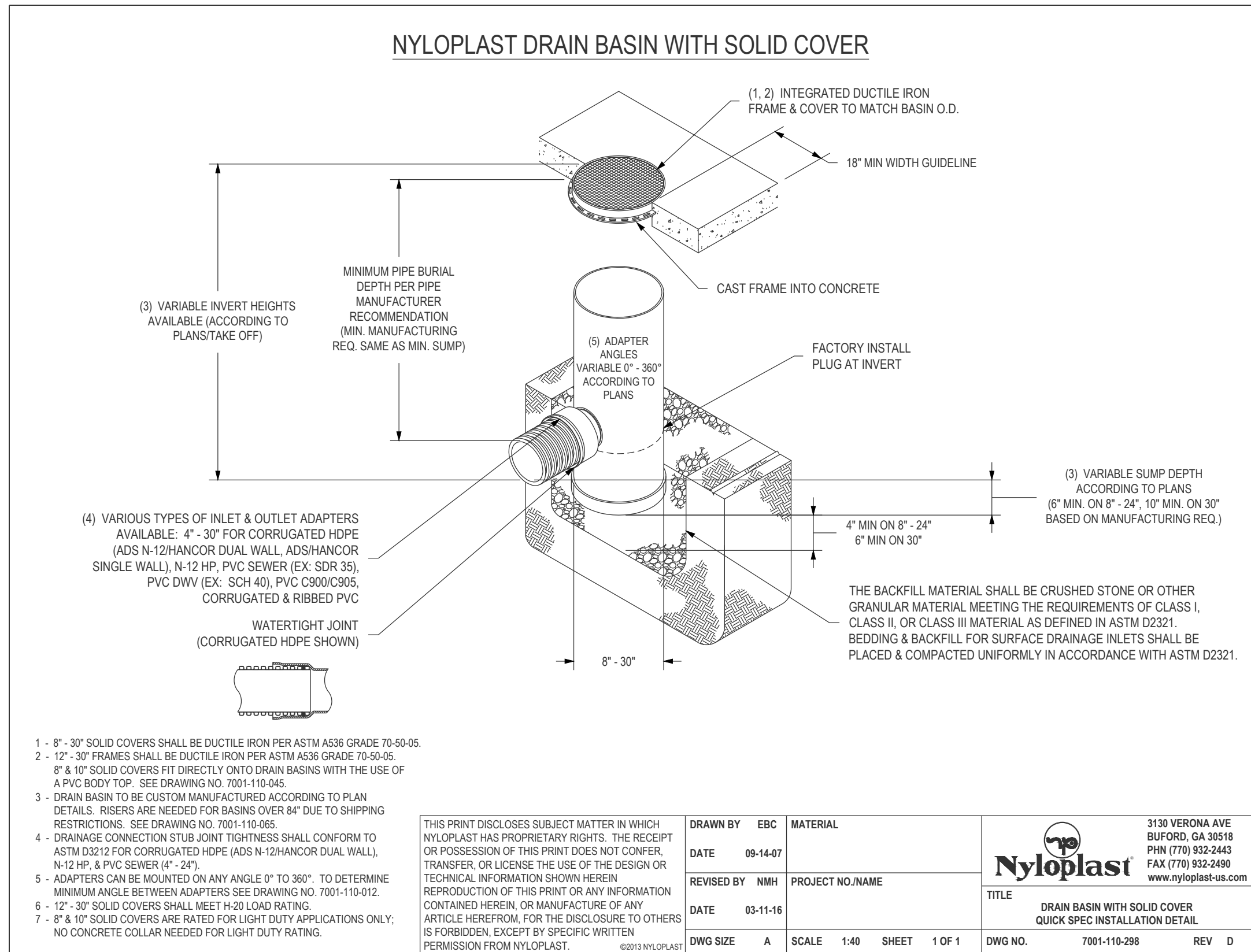
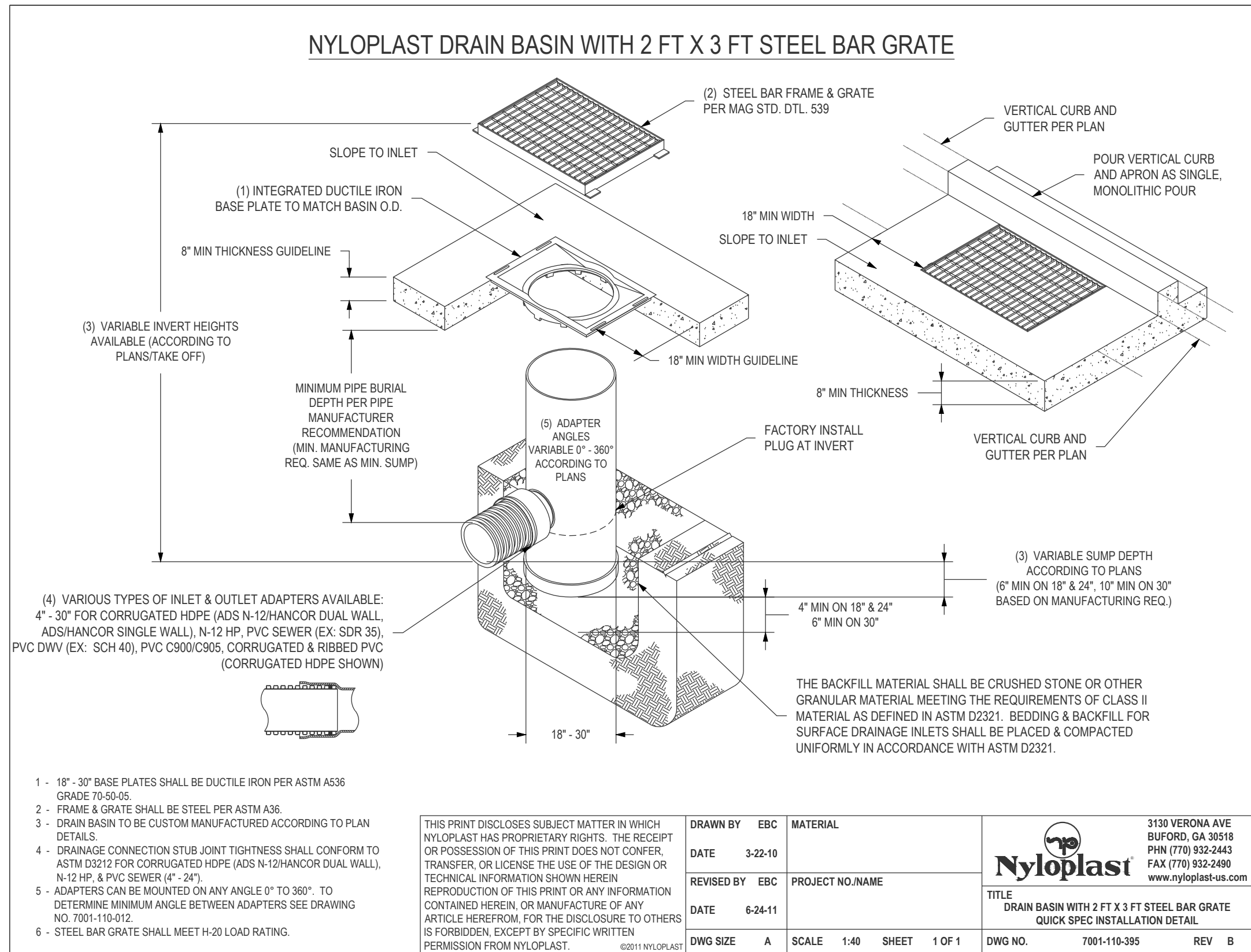
KIVA: 04-2913
CPGD:
Q.S.: 07-06



SECTION A-A
HORZ: 1"=10'
VERT: 1"=5'



SECTION B-B
HORZ: 1"=10'
VERT: 1"=5'



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E: jhunt@rickengineering.com

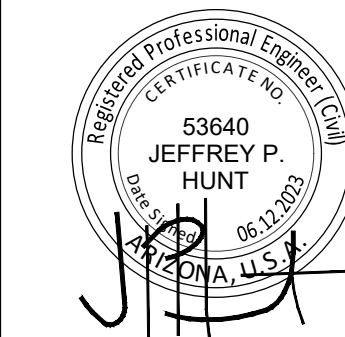
REVISION

DATE

NO.

**GRADING AND DRAINAGE PLAN for
HEAD START - TOLLESON**
2504 SOUTH 91ST AVENUE PHOENIX, ARIZONA

cross sections



DRAWN: PT
DESIGNED: JH
CHECKED: JH
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KIVA: 04-2913
CPGD:
Q.S.: 07-06

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: 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	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEERS PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEERS PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDEMMENT 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.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M141 ¹ A-1, A-2, A-3 OR AASHTO M31 ³ 3, 357, 4, 467, 5, 56, 57, 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 UNPAVED GRADED MIXTURES. A MIN. 98% DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDEMMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M31 ³ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M31 ³ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

1. 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".

2. STORMTECH COMPACTOR REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERSAGES WITH A VIBRATORY COMPACTOR.

3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTOR, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTOR EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTOR REQUIREMENTS.

