### **UTILITY INFORMATION** TELEPHONE COMPANY CONTACT ARIZONA PUBLIC SERVICE CO. 120 N. MARINA STREET KERRIE LONG (928) 443-6696 PRESCOTT, ARIZONA 86301 CENTURYLINK ARMEN MCNERLIN 1445 MASONRY WAY (928) 776-2510 **DELL HOWARD** PRESCOTT, AZ 86301 UNISOURCE ENERGY SERVICES 6405 WILKINSON DRIVE MALI ROSS (928) 771-7227 PRESCOTT, ARIZONA 86301 SPARKLIGHT 3201 TOWER ROAD **DOUG HAMILTON** (928) 443-3305 PRESCOTT, ARIZONA 86305 TOWN OF CHINO VALLEY FRANK MARBURY PUBLIC WORKS **PUBLIC WORKS** (928) 636-7140 1020 W. PALOMINO ROAD DIRECTOR CHINO VALLEY, ARIZONA 86323 | DIAL :811

# **BENCHMARK**

TOWN OF CHINO VALLEY CONTROL POINT #101, 3" ALUMINUM CAP STAMPED "RLS 26405, 2007" IN CHINO VALLEY, AZ, SECTION 29, TOWNSHIP 16N, RANGE 2W, N:363555.598, E:129797.117, ELEV=4832.12

# NOTES

ALL EASEMENTS CALLED OUT IN THESE CONSTRUCTION DRAWINGS SHALL BE DEDICATED BY A RECORDED LEGAL DESCRIPTION UNLESS OTHERWISE NOTED AS "EXISTING" WITH BOOK & PAGE LOCATION OF RECORDING.

NO PORTION OF THIS PROJECT IS LOCATED WITHIN A FEMA DESIGNATED 100-YEAR FLOODPLAIN PER FEMA FIRM MAP#: 04025C1315G EFFECTIVE: SEPTEMBER 3, 2010

TOWN OF CHINO VALLEY PERMIT REQUIRED PRIOR TO CONSTRUCTION.

CONTRACTOR IS TO USE EXTREME CAUTION WHEN WORKING NEAR HIGH VOLTAGE OVERHEAD POWER LINES AND UNDERGROUND WATER, SEWER, AND UTILITY LINES.

CONTRACTOR TO LOCATE AND DELINEATE TEMPORARY CONSTRUCTION EASEMENTS NO ACTIVITY SHALL OCCUR OUTSIDE OF TEMPORARY CONSTRUCTION EASEMENTS.

ACCESS TO CONSTRUCTION SITE SHALL BE ON A LIMITED BASIS. ROW ENCROACHMENT PERMITS WILL BE REQUIRED PRIOR TO CONSTRUCTION.



1650 Willow Creek Road, Prescott, Arizona 86301 Phone: (928) 776-1750, Fax: (928) 776-0605

# OWNER

CLIENT

PROJECT CONTACT: JOHN SCHOLL 650 E. CENTER STREET CHINO VALLEY, AZ 86323 (928) 636-2458

MAYOR

DARRYL L. CROFT

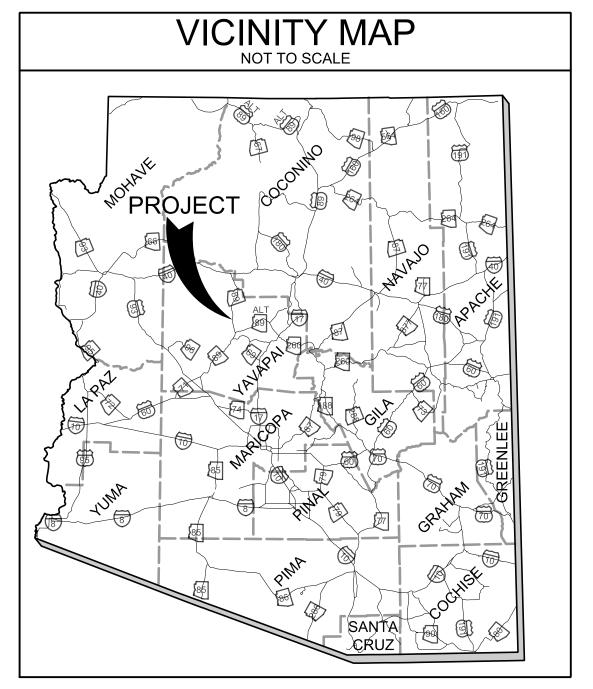
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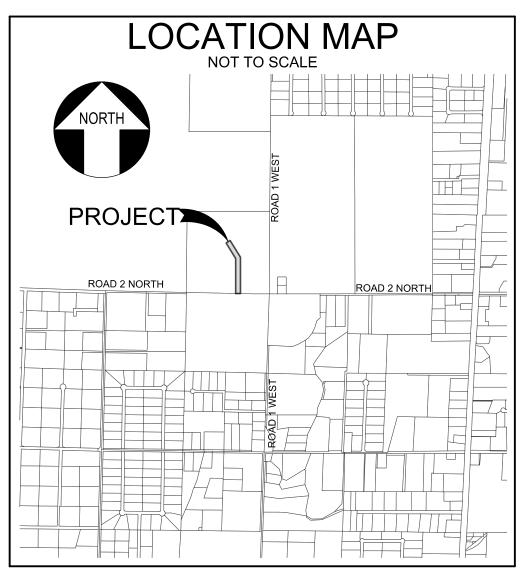
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MIKE BEST	COREY MENDOZA	LON TURNER
	SUBMITTED BY	_
Scott A. Lyon, P.E. NAME		APRIL 2020 DATE
President TITLE		35898 ARIZONA REGISTRATION NO.
_	APPROVED BY	_
CHINO VALLEY TOWN ENGINEER		 DATE



# TOWN OF CHINO VALLEY CHINO VALLEY UNIFIED SCHOOL DISTRICT IMPROVEMENT PROJECT FINAL DESIGN PLANS





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## WATER NOTES

- 1. All work shall conform to MAG Standards and Spec. which are on file in the Office of the Town Engineer.
- 2. All frames, covers, valve boxes, and manholes shall be adjusted to finished grade upon completion of paving or related construction.
- 3. Any quantities shown on plans are not verified by the Town of Chino Valley.
- 4. All work and materials which do not conform to the specifications are subject to removal and replacement at the contractor's expense.
- 5. Any work performed without the knowledge of the Inspector or his representative is subject to removal and replacement of same to be done at the contractors expense.
- 6. The contractor shall provide sufficient men and equipment on the job at all times during construction to comply with the construction schedule, and specifications, to complete work.
- 7. Inspection shall be performed by a qualified representative of an engineer licensed in the State of Arizona. The degree of inspection will be determined at the pre-construction conference. Inspection must meet all requirements set forth by ADEQ.
- 8. Contractor to notify the owner 48 hours (2 working days) in advance of construction to schedule staking.
- 9. The contractor is to uncover all existing lines being tied into, and verify grades before any other construction.
- 10. It is the contractor's responsibility to locate all underground pipelines, telephone, and electrical conduits and structures in advance of any construction; and will observe all possible precautions to avoid any damage to such. The engineer and/or owner will not guarantee any locations as shown on these plans or those omitted from same.
- 11. Contractor shall notify "Blue Stake" at (811) at least 48 hours prior to construction.
- 12. Contractor shall verify all quantities shown. If any discrepancy in quantities is found, the contractor shall notify the engineer/owner as such.
- 13. Arizona Department of Environmental Quality requirements shall be complied with.
- 14. All Water lines and appurtenances shall be provided with 14-gauge, single-strand, direct bury copper wire. Trace wire shall be subject to a traceability test. Trace wire to be blue in color.
- 15. All plans, signed by the Town of Chino Valley Public Works, are null and void one year from date of signature if construction has not started.
- 16. Contractor shall be responsible for submitting to the Town Engineer for approval, traffic control as needed to perform construction activities.
- 17. Water Sewer separation shall be pursuant to AAC R18-5-502C.
- 18. Water mains shall be subject to a pressure and leakage test in accordance with AWWA C-600 Standard.
- 19. Water mains shall be disinfected in accordance with ADEQ Engineering Bulletin No. 8, "Disinfection of Water Systems"
- 20. Operation of valves to be done by Town Personnel only.
- 21. PVC & Ductile Iron Pipe to be installed per manufacturer's
- 22. All materials used in the installation of water mains shall be pursuant to AAC R-18-4-119.
- 23. All revisions to original plans must be approved by the Town of Chino Valley Public Works prior to construction. Any unapproved revisions are subject to removal and or replacement at contractors and or owners expense.
- 24. The contractor and or owner shall warrant all work for a minimum of a 2 year period from the final acceptance date by the Town of Chino Valley.
- 25. All appurtenances and valves shall match the pressure rating
- 26. PVC pipe shall be NSF approved for potable water and bear the NSF potable water seal.
- 27. Water line bedding, shading, and utility trench to be per Quad City Std. Det. 200Q-1.
- 28. All water service lines to be placed a minimum of 1' above sewer main lines from outside of pipe to outside of pipe. Maintain 1' vertical separation between water service lines and drainage pipes from outside of pipe to outside of pipe. Maintain 2' horizontal separation between water and sewer services from outside of pipe to outside of pipe.
- 29. All fire hydrants located behind sidewalk to be placed 1' minimum from face of hydrant to back of sidewalk.
- 30. All water line joints under concrete box culverts and vertical bends adjacent to concrete box culverts to be installed with restrained joints per MAG 303-1 & 303-2.

## SENERAL NOTES

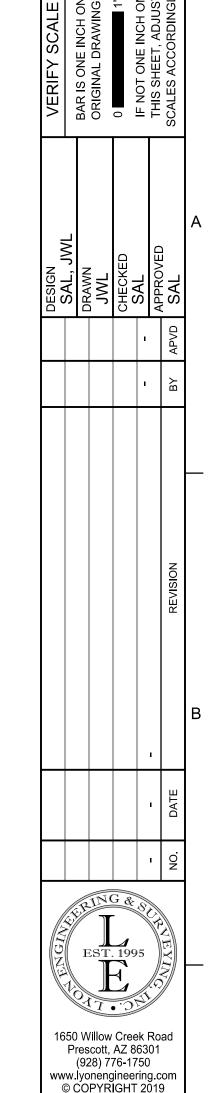
- 1. All grading shall conform to the current Town adopted edition of the International Building Code, and Town of Chino Valley Land Development Code.
- 2. All provisions of applicable soils reports and all subsequent addendums shall be complied with during operations.
- 3. Certification from a registered civil engineer and soils/ geological engineer stating that the rough grading has been completed per the approved plan, and a compaction report from the soils engineer on any fill areas that are required shall be provided prior to approval.
- 4. Parties named on ADEQ's N.O.I. are responsible for erosion, dust, mud, silt, debris, and temporary drainage control during grading operations.
- 5. Any improvement constructed in the public right of way will require separate plan approval and inspection from the Town Engineer.
- 6. Any walls, fences, structures and/or appurtenances adjacent to this project shall be protected in place. If grading operations damage or adversely affect said items in any way, the contractor and/or owner is responsible for working out an acceptable solution to the satisfaction of the affected property owner(s).
- 7. It shall be the Contractor's responsibility to call the Town Engineer's Office at (928) 636-7140 for any required civil inspection 24 hours prior to performing any work. Work performed without calling for inspection may be rejected and, if rejected, shall be removed solely at the Contractor's
- No grading shall commence without obtaining a Grading Permit and notifying the Grading Inspector to schedule a pregrading meeting two working days prior to the start
- 9. Prior to the start of grading all SWPPP measures shall be in place, all debris, including existing structures, footings, foundations and rubble shall be removed from the site to the satisfaction of the Soils Engineer
- 10. After removal of debris, any existing fill or disturbed natural soils shall be excavated to the satisfaction of the Soils Engineer.
- 11. The exposed soils shall then be inspected by the Soils Engineer, and any additional over-excavation shall then be made in accordance with the Soils Engineer's recommendations and as contained in the Soil's report.
- 12. The exposed soils shall the be scarified to provide a bond with new fill, brought to proper moisture content and compacted to at least 95% of the maximum density, as determined by ASTM D1557-78 or equivalent compaction shall be obtained by methods specified by the Soils Engineer. Road prism subgrade shall be compacted to at least 95% per Soils Engineer's recommendations.
- The Soils Engineer shall be responsible to inspect, verify and report that proper compaction has been obtained by subcontractors and agencies concerning utility line backfill including, but not limited to sewers, water lines, electrical, gas and landscape irrigation lines.
- 14. No fill shall be placed until stripping of vegetation, removal of unsuitable soils, and installation of subdrains (if any) have been inspected and approved by the Soils Engineer.
- 15. Grading shall not be started without first notifying Public Works required before start of grading with the following people present: Town Engineer, Grading Contractor, Design Civil Engineer, Soil Engineer/Geologist, Public Works Inspector, and when required, the archaeologist and paleontologist. The required inspections for grading will be explained at this meeting.
- 16. All existing fills shall be approved and certified by the Soils Engineer or removed prior to placing additional fills.
- 17. All trench backfills shall be tested and approved by the Town
- 18. The compaction report and approval from the Soils Engineer shall indicate the type of field testing performed. Each test shall be identified with the method of obtaining the in-place density, whether sand cone or nuclear gauge, and shall be so noted for each test.
- 19. Export soils must be transported to a legal dump or to a permitted site shown clearly on approved plans.
- 20. All existing drainage courses through this site shall remain open until facilities to handle storm water are approved and functional; however, in any case, the permittee shall be held liable for any damage due to obstructing natural drainage
- 21. Any damage by Contractor to adjacent Town or Private property shall be replaced to its original condition at the Contractors expense.

## **ENGINEERS NOTES**

- 1. Maricopa Association of Governments (MAG) Uniform Standard Specifications and Details for public works construction (latest edition including latest revisions and supplementals thereof per the Town of Chino Valley) are incorporated into these plans in their entirety.
- 2. All work required to complete the construction covered by these plans shall be in accordance with the YAG Standard Specifications and Details and current supplements thereof per the Town of Chino Valley unless specified otherwise in these plans or elsewhere. Contractors shall familiarize themselves with all required Standard Specifications, details and supplements prior to bidding the work for the construction covered by these plans.
- 3. The Contractor is to comply with all local, state, and federal laws and regulations applicable to the construction covered by these plans.
- 4. The Contractor is responsible for obtaining and complying with all permits required to complete all work covered by these plans.
- 5. The quantities and site conditions depicted in these plans are for informational purposes only and are subject to error and omission. Contractors shall satisfy themselves as to actual quantities and site conditions prior to bidding the work for the construction covered by these plans.
- 6. 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 for Blue Stake (811) prior to any excavation.
- 7. The Contractor is responsible for all coordination of construction affecting utilities and the coordination of any necessary utility relocation work.
- 8. The Contractor is to verify the location and the elevations of all existing utilities at points for 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.
- 9. The Contractor shall notify the Town of Chino Valley Public Works department at least 2 working days in advance of construction for inspection. Call (928) 636-7140.
- 10. The Contractor shall be required to install a night tie in for any new waterline that will affect existing service sufficient to warrant same in the opinion of the Town off-site inspector.
- 11. These plans are subject to the interpretation of intent by the Engineer. All questions regarding these plans shall be presented to the Engineer. Anyone who takes upon themselves the interpretation of the drawings or makes revisions to them without conferring with the Design Engineer shall be responsible for the consequences 15. Subgrade preparation and compaction to be per MAG Section
- 12. The final construction as-builts must be certified by an engineer licensed in the State of Arizona.
- 13. The Contractor shall make no claim against the Owner, the Engineer or Surveyor regarding inaccuracy of construction stakes set forth by the Engineer or Surveyor, unless all survey stakes set by the Engineer or Surveyor are maintained intact and can be verified as to their origin. If, in the opinion of the Engineer or Surveyor, the stakes are not maintained intact and cannot be verified as to their origin, any remedial work required to correct any item, shall be performed at the sole expense of the responsible Contractor or Subcontractor.
- 14. Nothing contained in the contract documents shall create, nor shall be construed to create, any contractual relationship between the Engineer and the Contractor or any Subcontractor.
- 15. The Engineer shall not be responsible for construction means. methods, techniques, sequences or procedures or for safety precautions or programs utilized in connection with the work. The Engineer will not be responsible for the Contractor's failure to carry out the work in accordance with the contract documents.
- 16. The Engineer makes no representation or guarantee regarding earthwork quantities or that the earthwork for this project will balance due to the varying field conditions, changing soil types, allowable construction tolerances and construction methods that are beyond the control of the Engineer.
- 17. Prior to bidding the work, the Contractor shall thoroughly satisfy himself as to the actual conditions, earthwork quantities, and requirements of work and excess or deficiency in earthwork quantities, if any. No claim shall be made against the Owner/Developer or Engineer for any excess or deficiency therein, actual or relative.

## PAVING AND DRAINAGE NOTES

- 1. All construction to conform to MAG and Quad City Standard Specifications and Details, latest revisions, unless modified on the plans.
- 2. Town of Chino Valley Public Works Department permit will be required for all off-site construction and construction within public right-of-way and easements.
- 3. The Chino Valley Engineering Department shall be notified 48 hours or 2 working days prior to beginning of construction.
- Work performed without the approval of the Town Engineer and/or owner and all work materials not in conformation with the plans and specifications is subject to removal and replacement at the contractor's expense.
- 5. No job will be considered complete until all curbs, pavement and sidewalks have been swept clean of all dirt and debris.
- 6. The contractor shall keep suitable equipment on hand at the job site for maintenance dust control, and shall control dust as directed by the appropriate agencies.
- 7. A thorough attempt has been made to show the locations of all underground obstruction and utility lines in the work area; however, the contractor shall be responsible for any damage to obstructions and utility lines encountered during construction, and shall determine the exact location of utilities in advance of trenching. The engineer and/or developer will not guarantee any elevations or locations of existing underground utilities shown on these plans.
- 8. All frames, covers, valve boxes, manholes, etc., shall be adjusted to finished asphalt or curb grades after placement of surface course and prior to chip seal by the contractor as per MAG Standard Detail 422.
- 9. The contractor shall be responsible for coordinating the relocation of all utilities, power poles, etc., that may be necessary.
- 10. Base course will not be placed on subgrade until subgrade requirements have been completed and accepted by the Town
- 11. No paving construction shall be started until all underground utilities within the roadway prism are completed and testing has been approved.
- 12. The contractor is required to contact Blue Stake two working days (48 hours) prior to commencement of construction
- 13. All obstructions in right-of-way shall be removed before any construction is permitted.
- Any quantities shown on the plans are not verified by the Town of Chino Valley.
- 16. All A.C. shall be C- 3/4 " as per applicable M.A.G. Specifications Mix design shall be submitted prior to start of construction.
- 17. All plans, signed by the Town of Chino Valley Public Works, are null and void one year from date of signature if construction has not started.
- Contractor shall be responsible for submitting to the Town Engineer for approval, traffic control plans which shall be made part of the plan review request.
- 19. The contractor and or owner shall warrant all work for a date by the Town of Chino Valley.
- 20. All HDPE and RGRCP storm drain pipe shall be smooth bore.
- 21. All HDPE to be per MAG Spec. 738 (2010 Edition) with water tight fittings and gaskets.
- 22. If erosion control mattress chosen by contractor differs from this plan set he must submit specifications to project engineer and Town of Chino Valley for written approval prior to installation.
- 23. All rip-rap to be hand placed per MAG Standards unless otherwise indicated as loose or dumped rip-rap.
- 24. All HDPE, CMP, and RGRCP to be installed per manufacturers recommendations





SCHOOL PROJECT VALLEY UNIFIED S IMPROVEMENT F 0<u>N</u> **APRIL 2020** 

LYON PROJECT #

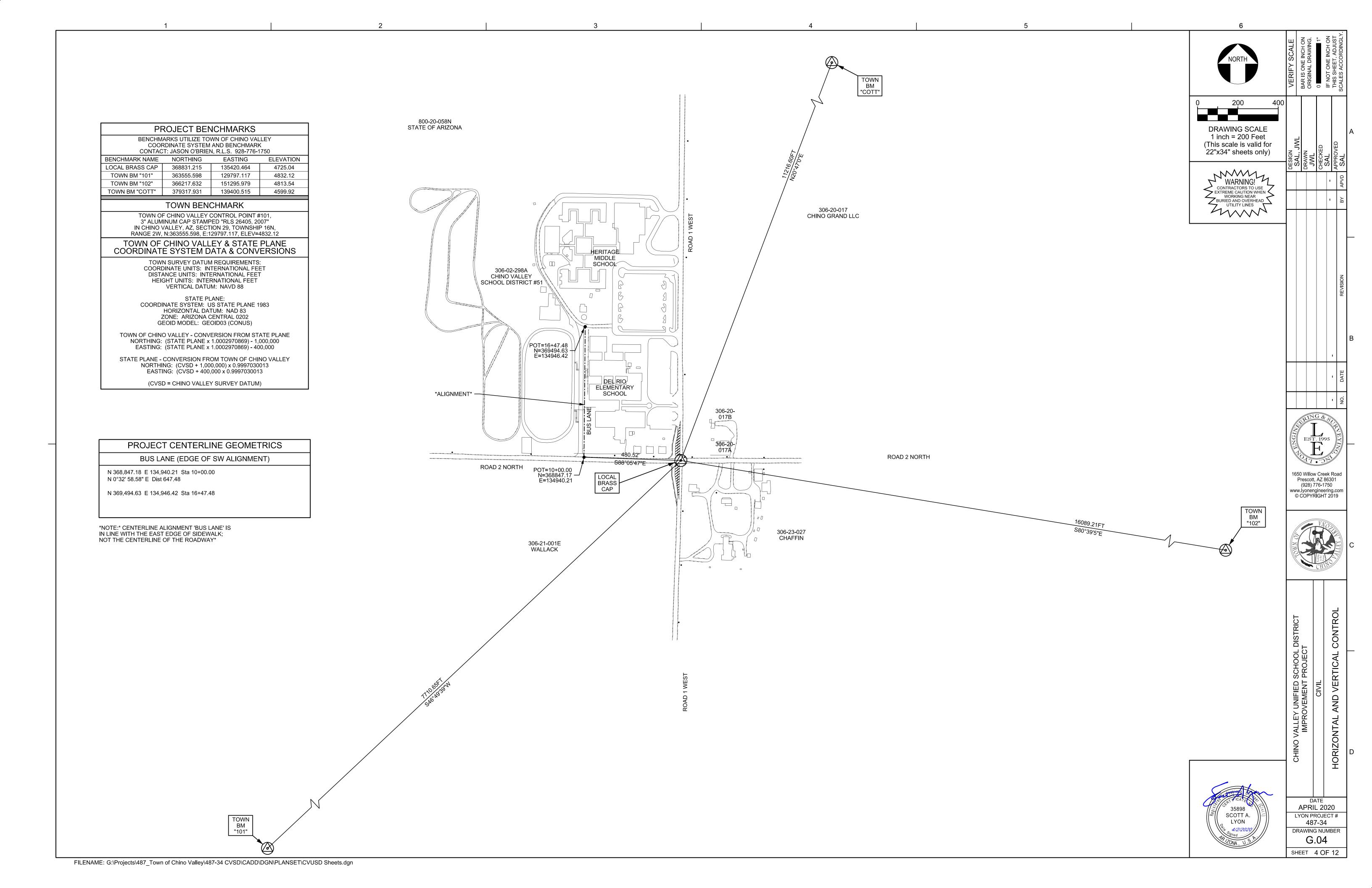
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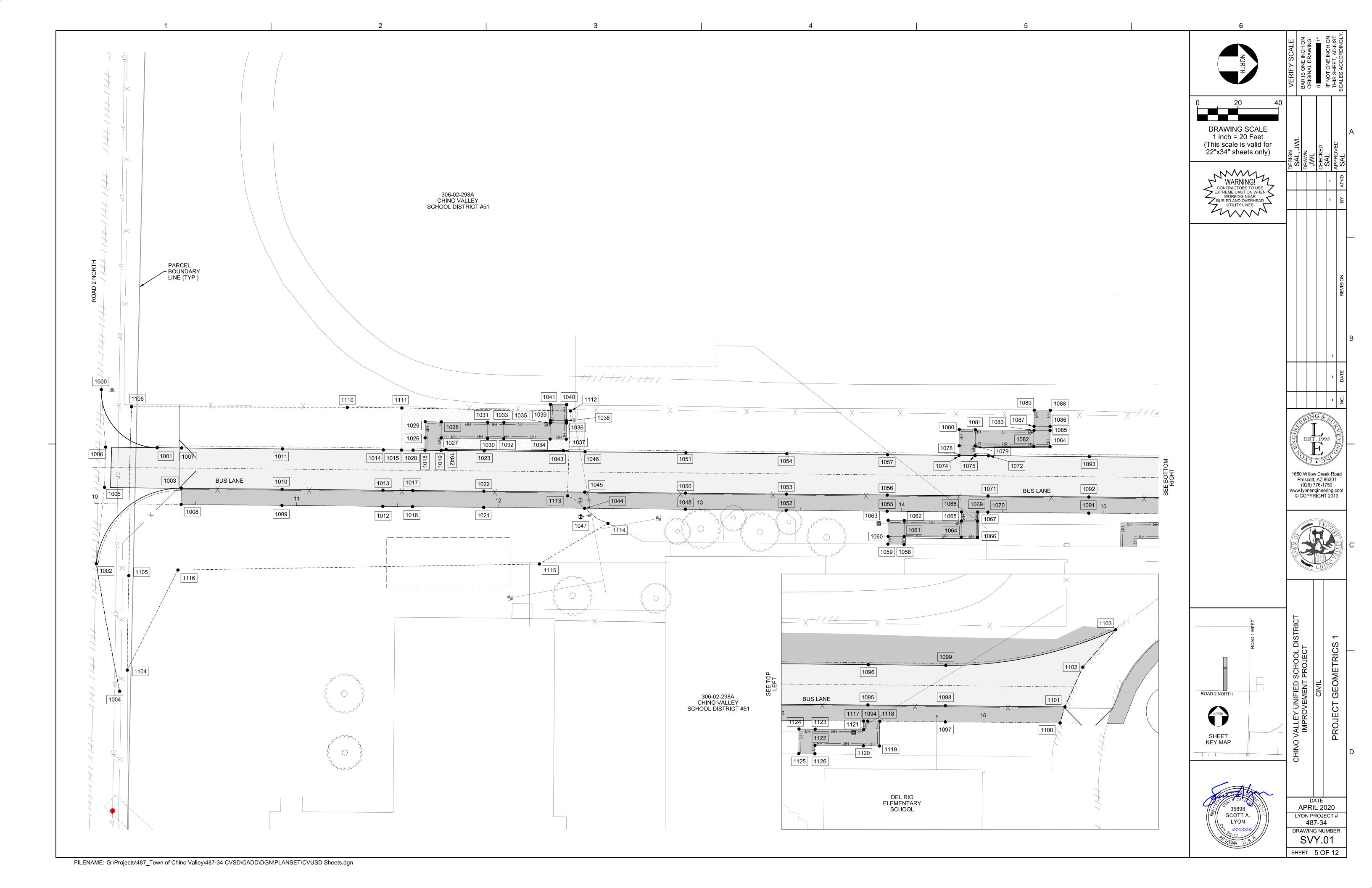
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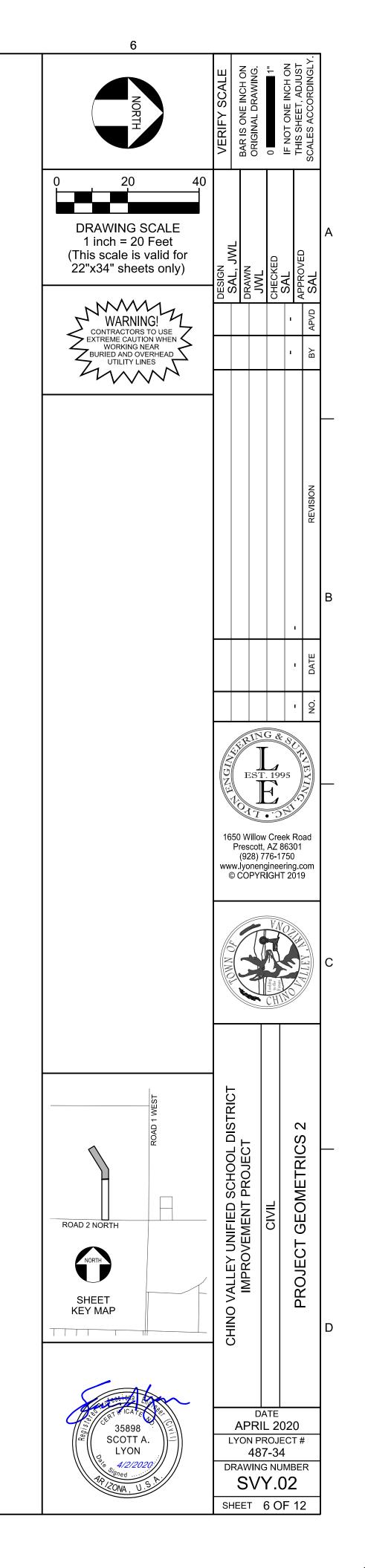
PROJECT QUANTITIES PLANS SYMBOL LEGEND ABBREVIATION LEGEND WATER & SEWER A.B.C. AGGREGATE BASE COURSE TOTAL UNITS DESCRIPTION OF ITEM EARTHWORK ADOT ARIZONA DEPARTMENT OF TRANSPORTATION SEWER MANHOLE APPROX. APPROXIMATELY Cut 432 CY ARIZONA PUBLIC SERVICE 514 CY ARACFC ASPHALT-RUBBER ASPHALTIC CONCRETE FRICTION COURSE REMOVALS AND ABANDONMENTS AIR RELEASE VALVE ASSEMBLY **EXISTING SEWER MANHOLE** BFV.B.&C. BUTTERFLY VALVE BOX & COVER Sawcut Pavement 341 LF Remove Existing Pavement Section 1993 SY **BLOW OFF** 68 BOC BOP Remove Chain Linked Fence BACK OF CURB 12"S SEWER MAIN **BEGINNING OF PROJECT** Remove Block Wall 61 LF CONCRETE ELEVATION ROADWAY CB CMP CO 12"S CATCH BASIN SEWER STUB Asphaltic Concrete, Type C 3/4", 3" Thick 1,456 SY CORRUGATED METAL PIPE **CLEAN OUT** Recycled Asphalt Pavement (RAP) Millings from Exist, Pavement Removal, 2.5" Thick 910 SY CONC. EX.12"S CONCRETE Aggregate Base Course, 6" Thick 243 CY **EXISTING SEWER MAIN CUBIC YARDS** Thickened Pavement Edge 645 DOUBLE EX.24"EFF 325 DETAIL 8" Roadway Subgrade Prep EXISTING EFFLUENT MAIN DMH DIAM. DRAINAGE MANHOLE Concrete for Sidewalk and ADA Ramps 7,137 DIAMETER Single Curb 63 DUCTILE IRON PIPE 12"W WATER MAIN DVWY DRIVEWAY 654 6' Valley Gutter, 240Q-1 EFFLUENT Handrail 493 \_\_\_ EX.12"W\_\_\_\_ EL ELEC ENG. **ELEVATION EXISTING WATER MAIN** Install New Sign Post, Q.C.S.D. 131Q EΑ 4 **ELECTRIC ENGINEERED** 545 Install 4'-High Chain-Linked Fence LF EOC EOP EOS **EDGE OF CONCRETE** Replace 6'-High Chain-Linked Fence 55 LF FIRE HYDRANT EDGE OF PAVEMENT EΑ EDGE OF SHOULDER Swinging Double Cantilever Gate Assembly 2 **ESMT** EASEMENT Retaining Wall for ADA Ramps 91 LF AIR RELEASE **EXISTING** DRAINAGE FINISH GRADE ELEVATION 118 Hand-Placed Riprap (D50=9") SY FIRE HYDRANT **BLOW OFF** FIBER FIBER OPTIC Adjust Storm Drain Manhole & Replace Grate w/ 24" Manhole Cover, MAG 423-1 1 EΑ FINISH FLOW LINE Relocate Existing Fire Hydrant VALVE EΑ 1 FORCE MAIN FACE OF GUARD RAIL FO-GRD SEWER G.V.B.&C. GATE VALVE BOX & COVER Adjust Existing Sewer Cleanout Cover EΑ 1 BEND TOP OF GRATE ELEVATION HDPE HIGH-DENSITY POLYETHYLENE PIPE HORIZ. HORIZONTAL UTILITY POTHOLE LOCATION HEADWALL INVERT ELEVATION **IRRIGATION MAIN ROAD & DRAINAGE** LENGTH LENGTH LINEAR FEET DRAINAGE CULVERT LPS LOW PRESSURE SEWER LUMP SUM MAG HEADWALL MAG MARICOPA ASSOCIATION OF GOVERNMENTS MAX. MAXIMUM MH MIN. MANHOLE MAG DROP INLET HEADWALL MINIMUM MPH MILES PER HOUR NO. PC NUMBER ADOT HEADWALL POINT OF CURVATURE PCCP PRE-STRESSED CONCRETE CYLINDER PIPE PG. **EX.EDGE OF PAVEMENT** POINT OF INTERSECTION POINT OF TANGENCY PVC PVT POLYVINYL CHLORIDE PIPE **GUARD RAIL** PAVEMENT GRADE PROP. PROPERTY PRV PRESSURE REDUCING VALVE RIP-RAP **RGRCP** RUBBER GASKETED REINFORCED CONCRETE PIPE R.O.W. RIGHT-OF-WAY 1650 Willow Creek Road ROW **RIGHT-OF-WAY** BARB WIRE FENCE Prescott, AZ 86301 RIM RIM GRADE (928) 776-1750 RADIUS POINT www.lyonengineering.cor © COPYRIGHT 2019 RIGHT  $\overline{\phantom{a}}$ TRAFFIC SIGN SEWER SD STORM DRAIN LYON ENGINEERING SQUARE FOOT PROJECT BENCHMARK SHLDR SHOULDER STREET INTERSECTION SPEC SSD STA. SPECIFICATIONS **EXISTING CONTOUR** STOPPING SIGHT DISTANCE STATION STD SQ STANDARD PROPOSED CONTOUR SQUARE SIDEWALK SQUARE YARDS THRUST BLOCKING TEMPORARY CONSTRUCTION ESMT. DRY UTILITIES TOC EL TOP OF CURB ELEVATION TOC OF CURB ToCV TRANS TOWN OF CHINO VALLEY **EXISTING CABLE** TRANSITION TOP OF WALL ELEVATION TYPICAL EXISTING FIBER OPTIC UNS UNISOURCE GAS VERT. VERTICAL **VALLEY GUTTER** EXISTING GAS VERTICAL LINEAR FEET SCHOOL PROJECT VPC VERTICAL POINT OF CURVATURE VERTICAL POINT OF INTERSECTION **EXISTING ELECTRIC** VPT VERTICAL POINT OF TANGENCY POTABLE WATER **EXISTING TELEPHONE** UNIFIED S XING CROSSING YAG YAVAPAI ASSOCIATION OF GOVERNMENTS YDS EXISTING OVERHEAD POWER HINO VALLEY I **EARTHWORK NOTES** 1. ALL VOLUMES DO NOT INCLUDE SPOILS FROM UTILITY TRENCHES. THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO THE VARYING FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER. PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS, EARTHWORK QUANTITIES, AND REQUIREMENTS OF WORK AND EXCESS OR DEFICIENCY IN EARTHWORK APRIL 2020 QUANTITIES, IF ANY. NO CLAIM SHALL BE MADE AGAINST THE OWNER OR SCOTT A. LYON PROJECT# ENGINEER FOR ANY EXCESS OR DEFICIENCY THEREIN, ACTUAL OR RELATIVE. LYON 487-34 4. EARTHWORK QUANTITIES DO NOT INCLUDE OVEREXCAVATION FOR RIPRAP. DRAWING NUMBER G.03

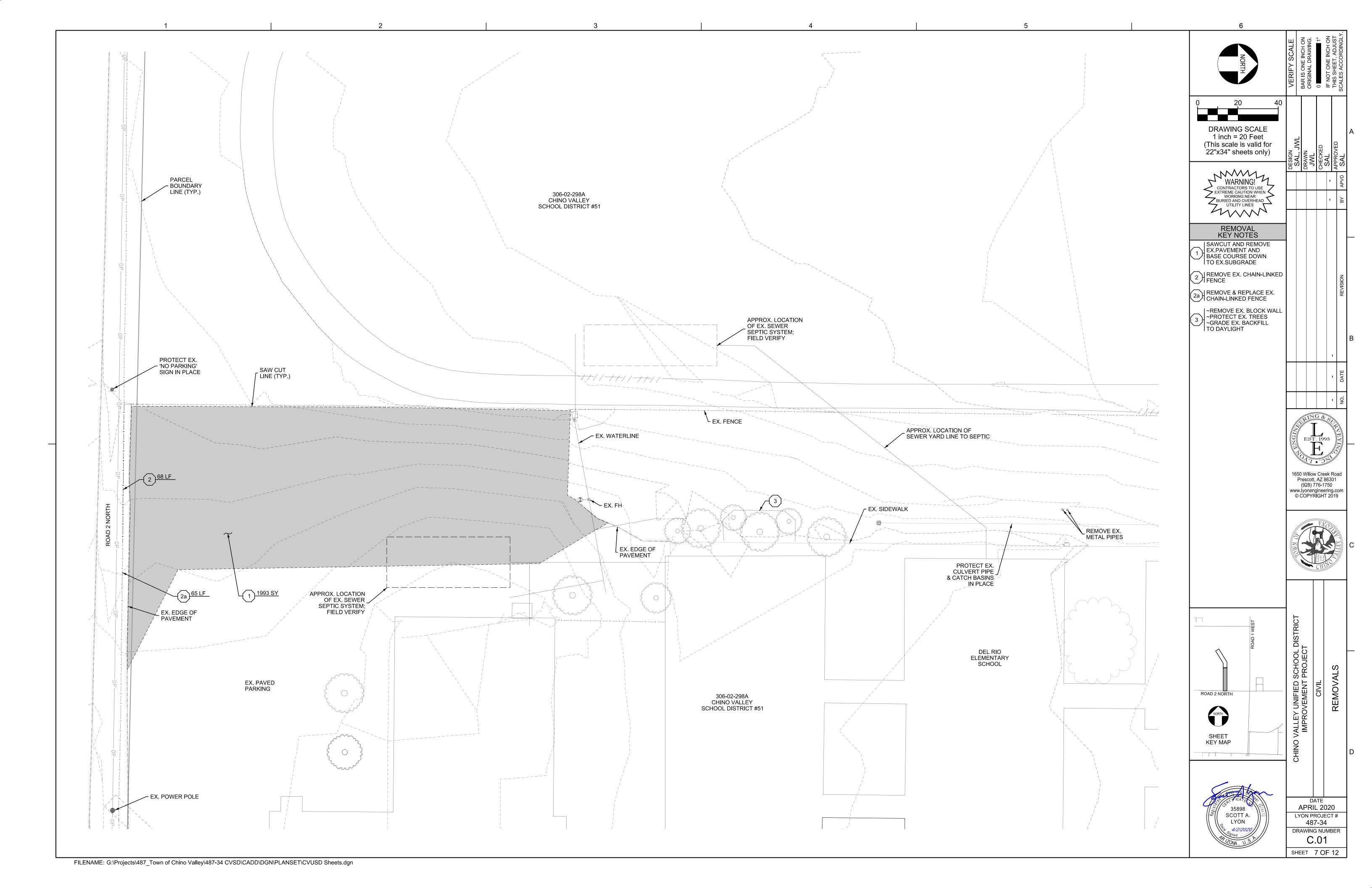
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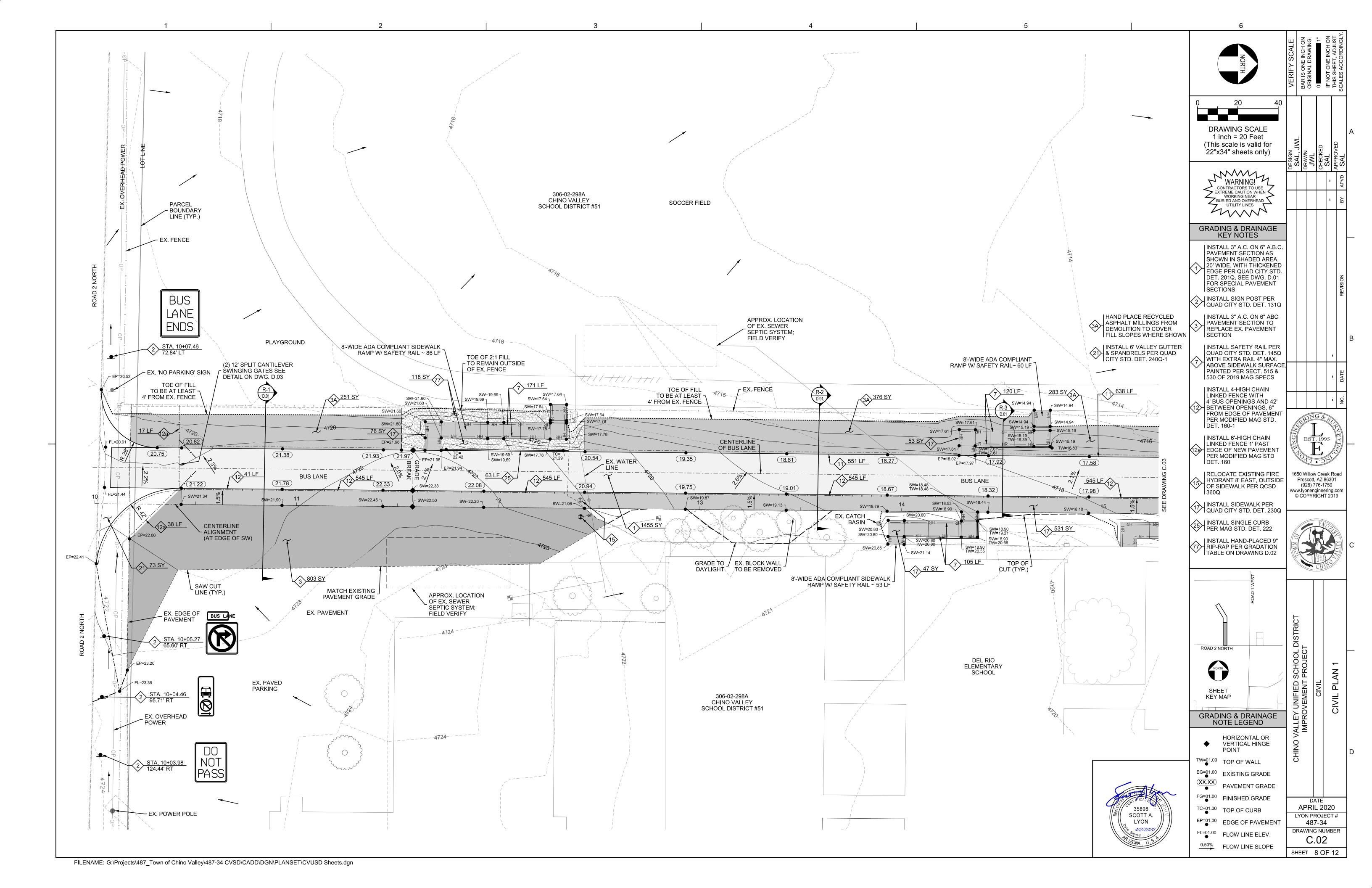


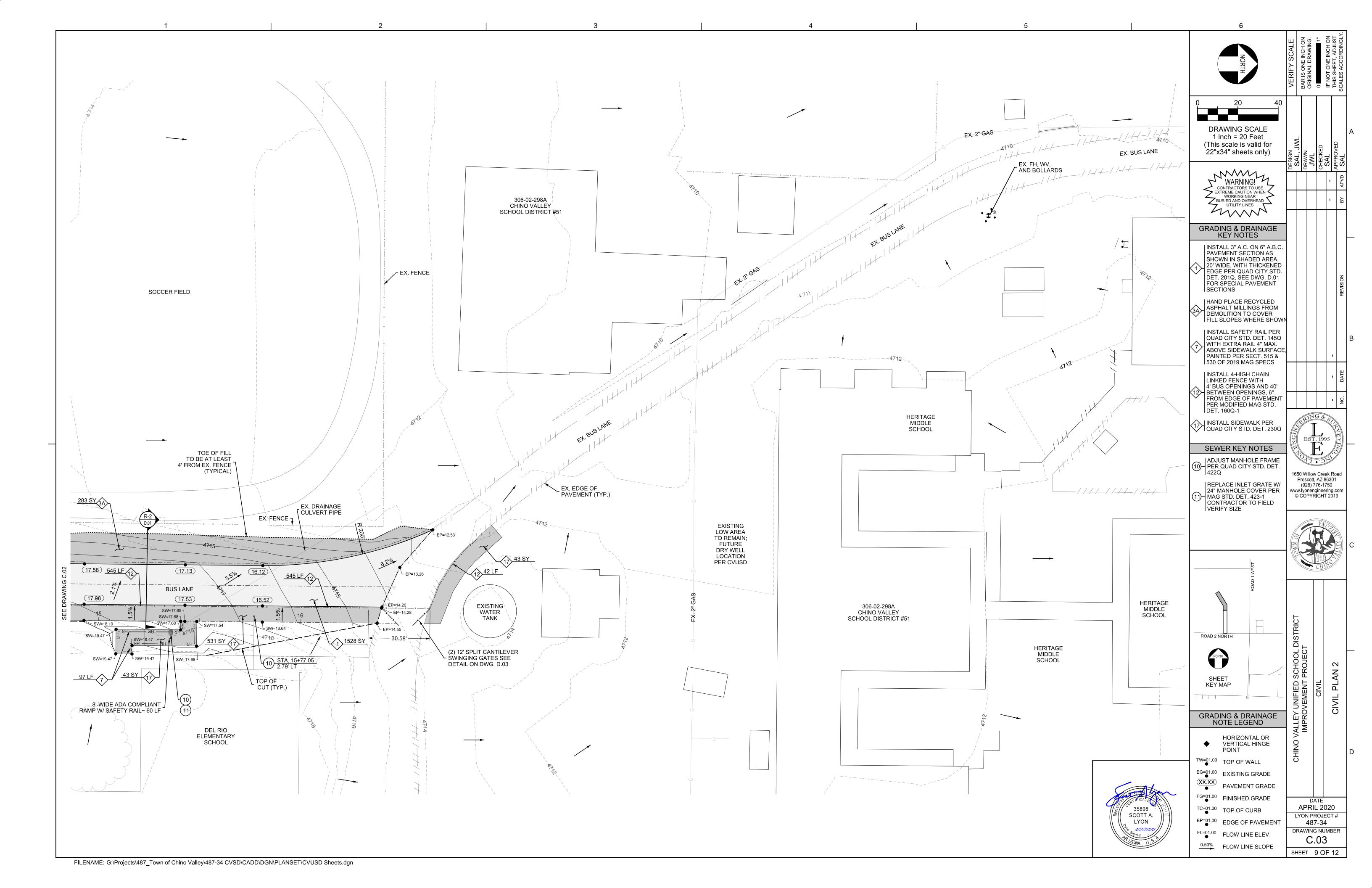


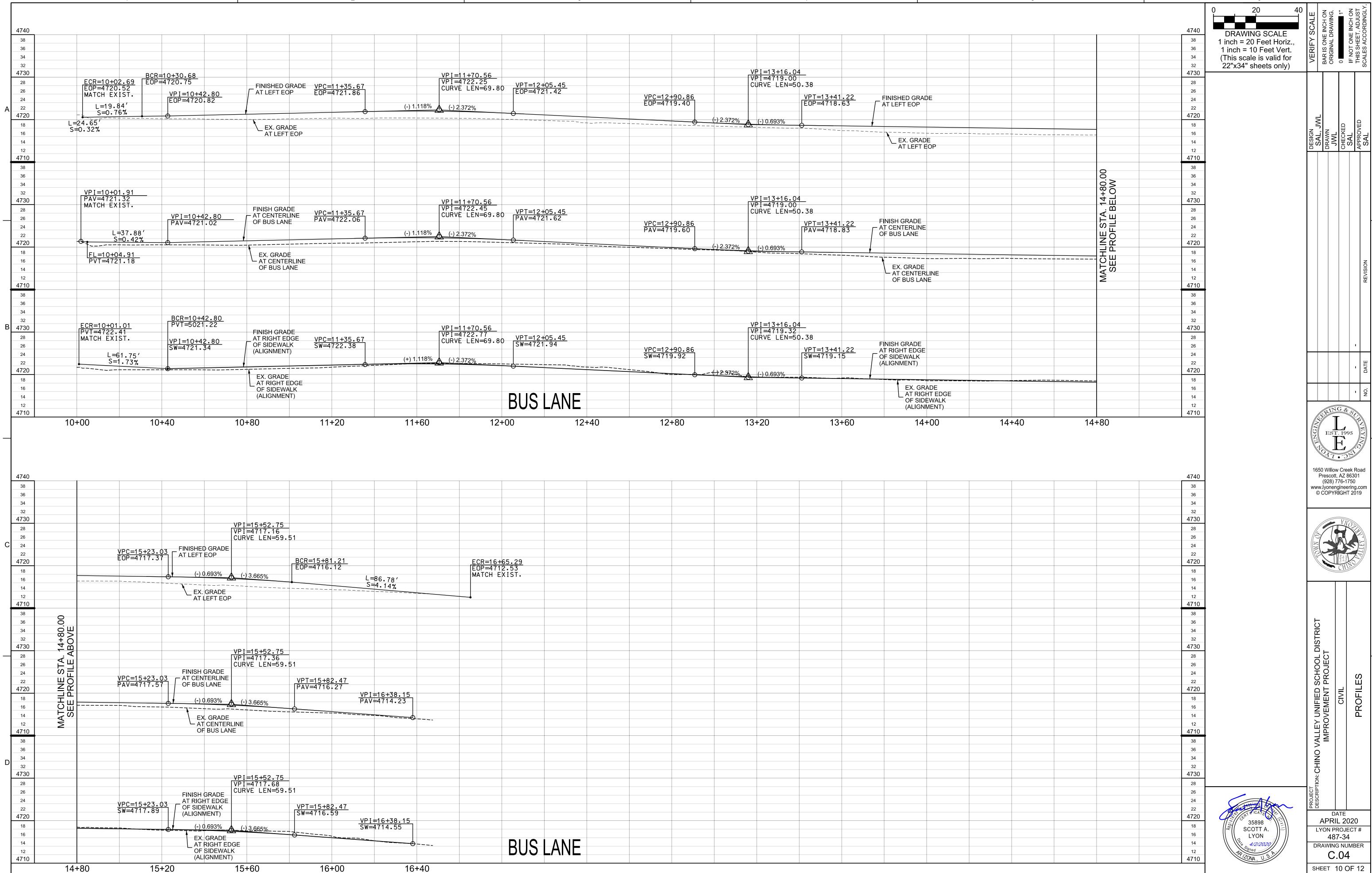
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PT# NORTHING EASTING ELEVATION DESC.	PT# NORTHING EASTING ELE	VATION DESC.	PT# NORTHING	EASTING	ELEVATION DESC.	PT#	NORTHING	EASTING ELEVA	TION DESC.
1000 368,850.4079 134,883.7220 4,720.5200 ECR	1039 369,072.9956 134,899.0444 4,71	17.6400 EDGE-SW	1082 369.312.7259	134.911.8805	4,715.1900 EDGE-SW	1079	369.283.7104	134,907.3218 4,717.6	300 EDGE-SW
1001 368,878.1284 134,912.5019 4,720.7000 BCR	1040 369,081.0831 134,891.1328 4,71		1083 369,312.8026	•	4,715.1900 EDGE-SW	1080	•	134,902.2741 4,717.6	
1002 368,847.9016 134,970.0006 4,722.4100 ECR	1041 369,073.0836 134,891.0449 4,71		1084 369,320.7255	•	4,715.1900 EDGE-SW	1081	369,283.7584	,	
1003 368,890.0501 134,932.6172 4,721.0700 BCR	1042 369,021.3670 134,913.3759 4,72		1085 369,320.8023		4,715.1900 EDGE-SW	1087	•	134,907.6138 4,715.	
1004 368,859.4704 135,033.2146 4,722.0000 FL	1043 369,079.4370 134,913.9330 4,72		1086 369,320.8214	•		1002		134,902.6140 4,715.	
1005 368,851.9627 134,932.1900 4,721.4400 FL			1087 369,312.8218	•	4,714.9400 EDGE-SW	1003	•	134,907.6617 4,715.	
1006 368,852.5670 134,912.1948 4,720.9100 FL			1088 369,320.8982	•	4,714.9400 EDGE-SW	1004	•	· · · · · · · · · · · · · · · · · · ·	
	, , , , , , , , , , , , , , , , , , , ,		•	•	•	1085	•	134,902.6620 4,715.	
1007 368,890.2420 134,912.6181 4,720.8200 EOP	1046 369,090.2328 134,914.5366 4,72		1089 369,312.8991	·	4,714.9400 EDGE-SW	1086	,	134,898.9423 4,714.9	
1008 368,889.9734 134,940.6168 4,721.3400 EDGE-SW	1047 369,088.0993 134,946.7822	NEW-FH	1091 369,339.9527	•	4,718.1000 EDGE-SW	1087	*	134,898.8944 4,714.9	
1009 368,939.9711 134,941.0964 4,721.9000 EDGE-SW	1048 369,139.9619 134,943.0149 4,71		1092 369,340.0294		4,717.9800 EOP	1088	•	134,893.9426 4,714.9	
1010 368,940.0478 134,933.0968 4,721.7800 EOP	1050 369,140.0386 134,935.0153 4,71		1093 369,340.2213	·	4,717.5800 EOP	1089	•	134,893.8946 4,714.9	
1011 368,940.2397 134,913.0977 4,721.3800 EOP	1051 369,140.2305 134,915.0162 4,71		1094 369,389.9504	•	4,717.6500 EDGE-SW	1090	·	134,916.2381 4,718.2	
1012 368,989.9688 134,941.5761 4,722.4500 EDGE-SW	1052 369,189.9596 134,943.4945 4,71		1095 369,390.0271		4,717.5300 EOP	1091	•	134,944.9334 4,718.	
1013 368,990.0455 134,933.5764 4,722.3300 EOP	1053 369,190.0363 134,935.4949 4,71	19.0100 EOP	1096 369,390.2190	134,917.4143	4,717.5130 EOP	1092	369,340.0294	134,936.9337 4,717.9	800 EOP
1014 368,990.2374 134,913.5773 4,721.9300 EOP	1054 369,190.2282 134,915.4958 4,71	18.6100 EOP	1097 369,428.3611	134,945.7814	4,717.6400 EDGE-SW	1093	369,340.2213	134,916.9346 4,717.	800 EOP
1015 368,999.2550 134,913.6639 4,721.9700 EOP	1055 369,239.9573 134,943.9741 4,71	18.7900 EDGE-SW	1098 369,428.4378	3 134,937.7818	4,717.5200 EOP	1094	369,389.9504	134,945.4130 4,717.6	500 EDGE-SW
1016 369,004.6990 134,941.7174 4,722.5000 EDGE-SW	1056 369,240.0340 134,935.9745 4,71	18.6700 EOP	1099 369,428.6297	134,917.7827	4,717.1200 EOP	1095	369,390.0271	134,937.4133 4,717.	300 EOP
1017 369,004.7758 134,933.7187 4,722.3800 EOP	1057 369,240.2259 134,915.9754 4,71	18.2700 EOP	1100 369,485.2980	134,946.3276	4,714.5500 EOP	1096	369,390.2190	134,917.4143 4,717.	130 EOP
1018 369,010.8627 134,913.7752 4,721.9800 EOP	1058 369,248.3920 134,960.5082 4,72		1101 369,487.6980	•	4,714.2600 EOP	1097		134,945.7814 4,716.6	
1019 369,018.8623 134,913.8519 4,721.9400 EOP	1059 369,240.3938 134,960.2809 4,72		1102 369,496.5526	,	4,713.2600 EOP	1098		134,937.7818 4,716.5	
1020 369,004.9676 134,913.7187 4,721.8900 EOP	1060 369,240.4303 134,956.4792 4,72		1103 369,512.8868	·		1099	369,428.6297	134,917.7827 4,716.	
1021 369,039.9665 134,942.0557 4,722.2000 EDGE-SW	1061 369,248.4299 134,956.5560 4,72		1104 368,863.3188	•	EDGE-SAW	1100	369,485.2980	134,946.3276 4,714.5	
1022 369,040.0432 134,934.0560 4,722.0800 EOP	1062 369,248.5066 134,948.5622 4,72		1105 368,864.0248		EDGE-SAW	1101	369,487.6980	134,938.3503 4,714.3	
1023 369,040.2351 134,914.0570 4,721.6800 EOP	1063 369,240.5070 134,948.4855 4,72		1106 368,865.3708	·	EDGE-SAW		•		
			•	•			·		
	, , , , , , , , , , , , , , , , , , , ,		1107 368,872.4339		EDGE-SAW		,	134,900.0564 4,712.5	
	1065 369,276.8120 134,948.8279 4,71		1108 368,878.6277	·	EDGE-SAW		,	•	EDGE-SAW
1026 369,010.9218 134,907.6180 4,721.6000 EDGE-SW	1066 369,284.7349 134,956.9042 4,71		1109 368,904.1723	•	EDGE-SAW		368,864.0248	*	EDGE-SAW
1027 369,018.9214 134,907.6948 4,721.6000 EDGE-SW	1067 369,284.8124 134,948.8279 4,71		1110 368,972.3547	•	EDGE-SAW		368,864.9317	•	EDGE-SAW
1028 369,018.9981 134,899.6951 4,721.6000 EDGE-SW	1068 369,276.8552 134,944.3281 4,71		1111 368,999.4063	·	EDGE-SAW		368,872.4339	•	EDGE-SAW
1029 369,010.9985 134,899.6184 4,721.6000 EDGE-SW	1069 369,284.8548 134,944.4048 4,71		1112 369,082.9759	•	EDGE-SAW		,	134,909.4854	EDGE-SAW
1030 369,041.9203 134,907.9154 4,719.6900 EDGE-SW	1070 369,289.9550 134,944.4537 4,71		1113 369,081.5402		EDGE-SAW		368,904.1723	· · · · · · · · · · · · · · · · · · ·	EDGE-SAW
1031 369,041.9971 134,899.9158 4,719.6900 EDGE-SW	1071 369,290.0317 134,936.4541 4,71		1114 369,101.6130	·	EDGE-SAW	1110	368,972.3547	134,892.5186	EDGE-SAW
1032 369,049.9200 134,907.9921 4,719.6900 EDGE-SW	1072 369,290.2236 134,916.4550 4,71		1115 369,067.5666	134,970.1443	EDGE-SAW	1111	368,999.4063	134,892.8109	EDGE-SAW
1033 369,049.9967 134,899.9925 4,719.6900 EDGE-SW	1074 369,275.6430 134,916.3152 4,71	18.0200 EOP	1116 368,888.3872	2 134,973.1412	EDGE-SAW	1112	369,074.2770	134,893.2180	EDGE-SAW
1034 369,072.9189 134,908.2128 4,717.7800 EDGE-SW	1075 369,283.6234 134,916.3919 4,71				4,717.6800 EDGE-SW		369,073.0630		<b>EDGE-SAW</b>
1035 369,072.9956 134,900.2131 4,717.7800 EDGE-SW	1078 369,275.6889 134,911.5252 4,71		•	•	4,717.5400 EDGE-SW		369,071.0480		EDGE-SAW
1036 369,080.9953 134,900.2899 4,717.7800 EDGE-SW	1079 369,283.6694 134,911.6018 4,71		•	•	4,717.6800 EDGE-SW		369,069.8039	•	EDGE-SAW
1037 369,080.9185 134,908.2895 4,717.7800 EDGE-SW	1080 369,275.7657 134,903.5256 4,71				4,717.6800 EDGE-SW		368,936.6321		EDGE-SAW
1038 369,080.9952 134,899.1324 4,717.6400 EDGE-SW	1081 369,283.7461 134,903.6021 4,71				4,717.6800 EDGE-SW		100,000.0021	,	
	1,71				4,719.4700 EDGE-SW				
					4,719.4700 EDGE-SW				
					4,719.4700 EDGE-SW				
			· · · · · · · · · · · · · · · · · · ·	·					
					4,714.4700 EDGE-SW				
			1120 369,363.7451	134,901.5834	4,719.4700 EDGE-SW				

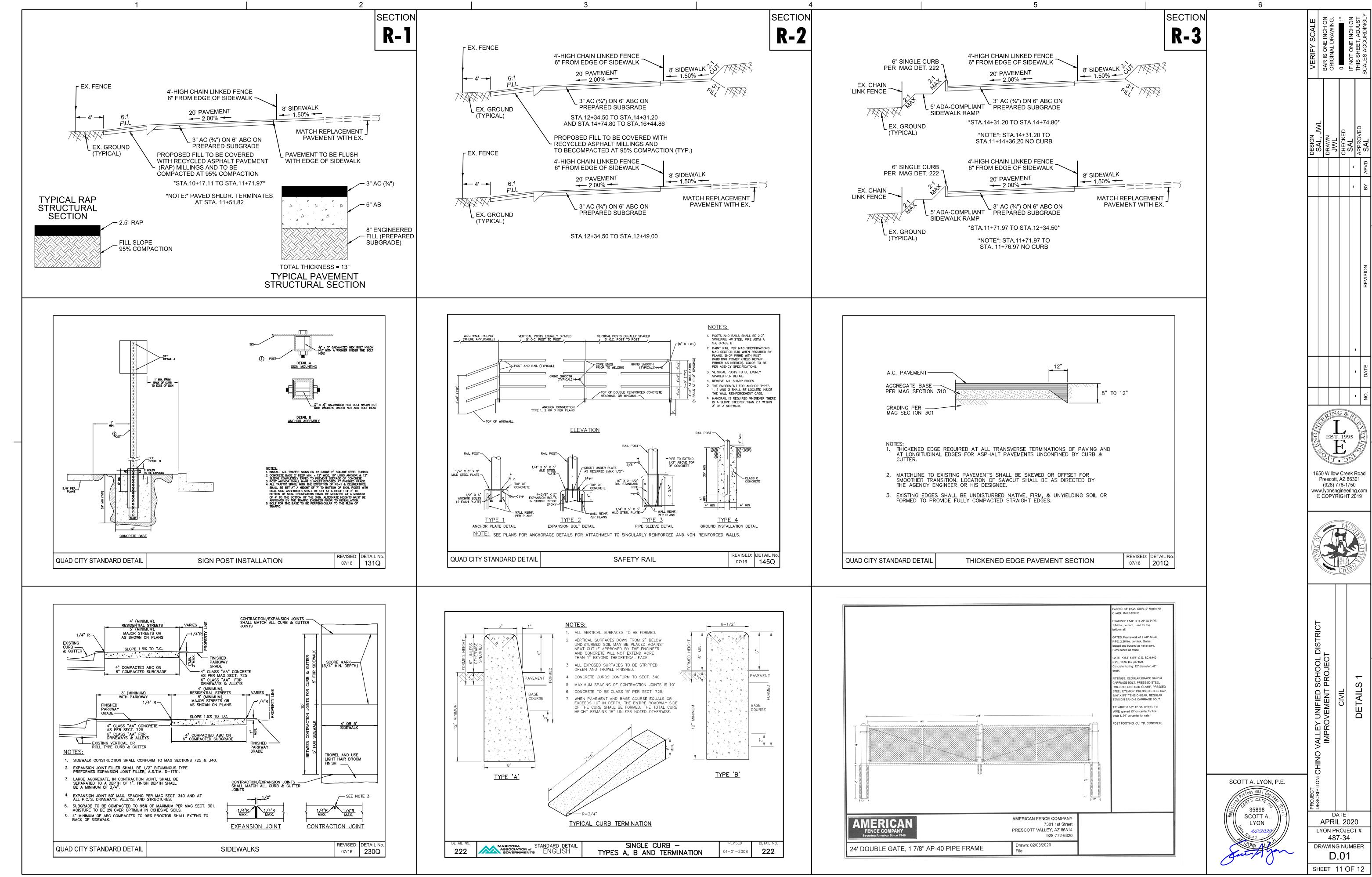












GROUTED RIP-RAP GRADATION CHART					
STONE SIZE RANGE	STONE WEIGHT RANGE	% OF GRADATION			
1.5 D50 TO 1.7 D50	3.0 W50 TO 5.0 W50	100			
1.2 D50 TO 1.4 D50	2.0 W50 TO 2.75 W50	85			
1.0 D50 TO 1.15 D50	1.0 W50 TO 1.5 W50	50			
0.4 D50 TO 0.6 D50	0.1 W50 TO 0.2 W50	0			

HAND PLACED RIP-RAP GRADATION CHART (USDOT, FHWA, HEC-11)					
STONE SIZE RANGE	STONE WEIGHT RANGE	% OF GRADATION			
1.5 D50 TO 1.7 D50	3.0 W50 TO 5.0 W50	100			
1.2 D50 TO 1.4 D50	2.0 W50 TO 2.75 W50	85			
1.0 D50 TO 1.15 D50	1.0 W50 TO 1.5 W50	50			
0.4 D50 TO 0.6 D50	0.1 W50 TO 0.2 W50	15			

ALL RIP-RAP, GROUTED AND NON-GROUTED TO BE KEYED IN AT UPSTREAM AND DOWN-STREAM TERMINATIONS PER RIP-RAP TO EXTEND 5' MIN. PAST TOP OF TOE OF SLOPE (IF APPLICABLE) SLOPE (IN SLOPE LOCATION ONLY) INSTALL GROUTED RIP-RAP ON CHANNEL SIDE SLOPES PER RIP-RAP DRAINAGE CHANNEL DETAIL ON THIS DRAWING PAD OR
ADJACENT
GRADE (TYP) CUT/FILL LOCATION SHOWN, ACTUAL APRON SLOPE VARIES PER SPECIFIC PLAN FLOW DIRECTION CHANNEL DEPTH – VARIES, SEE SPECIFIC PLAN DRAWINGS EXTEND 15' MIN. PAST TOE OF SLOPE (TYP) (IN SLOPE LOCATION) CHANNEL FLOW LINE (TYP) WHEN EROSION MATTRESS

IS USED ADJACENT TO RIPRAP, KEY IN MATTRESS TO FLOW DIRECTION DEPTH AS SHOWN KEY IN ALL RIP-RAP AT UPSTREAM TERMINATION, 4' MINIMUM DEPTH TOE OF SLOPE (IF APPLICABLE) AND 3' MINIMUM LENGTH FOR ENTIRE OVEREXCAVATE CHANNEL PER — RIP-RAP DRAINAGE CHANNEL DETAIL ON THIS DRAWING KEY IN ALL RIP-RAP AT DOWNSTREAM TERMINATION. 4' MINIMUM DEPTH AND 6' MINIMUM LENGTH FOR ENTIRE WIDTH OF APRON. FABRIC FILTER LINER MIRAFI TYPE 140NL NON-WOVEN OR APPROVED EQUAL WHEN EROSION MATTRESS IS USED ADJACENT TO RIP-RAP, KEY IN MATTRESS TO DEPTH AS SHOWN

GROUTED RIP-RAP DOWNSLOPE AND RIP-RAP KEY-IN DETAIL

NOT TO SCALE

1650 Willow Creek Road Prescott, AZ 86301 (928) 776**-**1750

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SCOTT A. LYON, P.E. SCOTT A.

APRIL 2020 LYON PROJECT # 487-34 DRAWING NUMBER D.02 SHEET 11 OF 12

