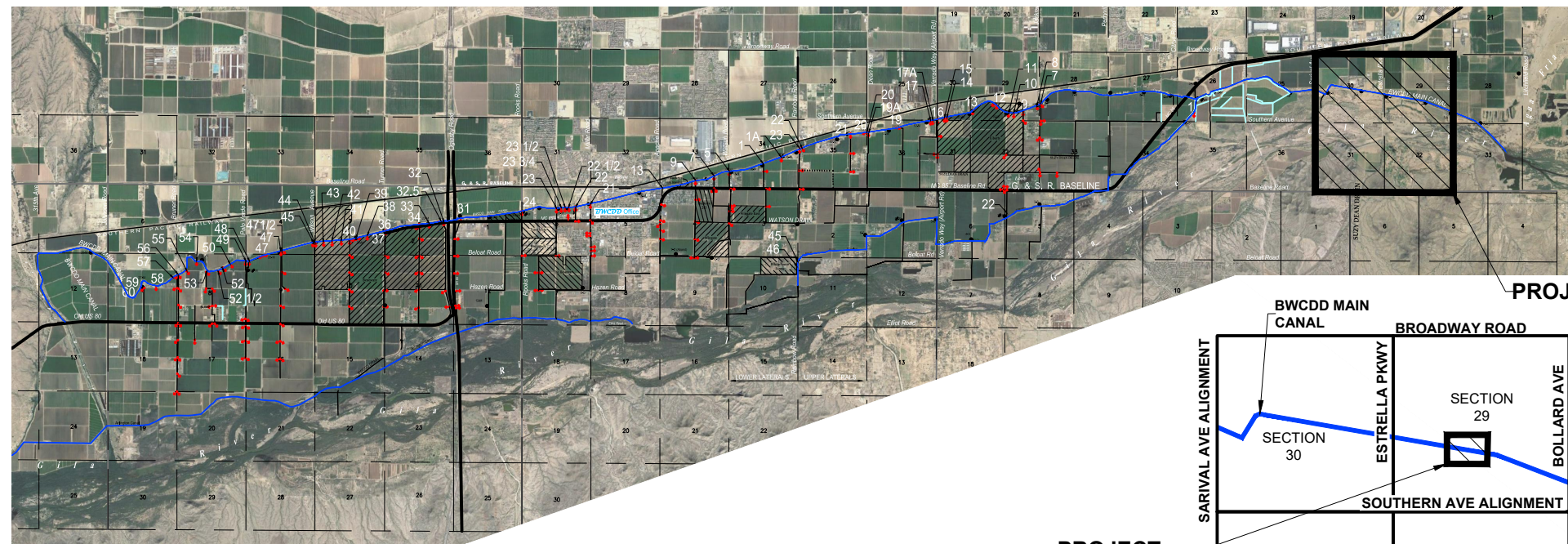




BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT BULLARD WASH CROSSING REHABILITATION PROJECT PLANS GOODYEAR, ARIZONA

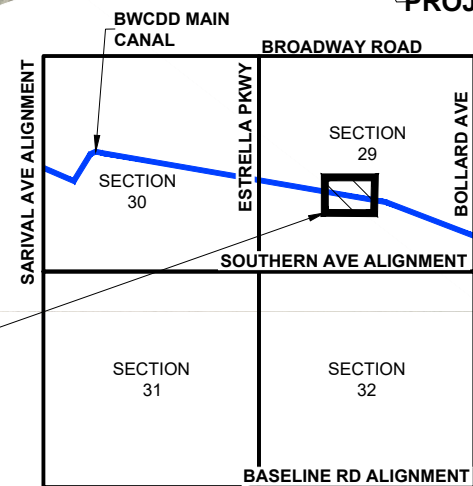
100% SUBMITTAL
MARCH 2022

GROUTED RIPRAP
REHABILITATION



DISTRICT MAP
GOODYEAR, ARIZONA

PROJECT
AREA



LOCATION MAP
GOODYEAR, ARIZONA
T1N, R1W

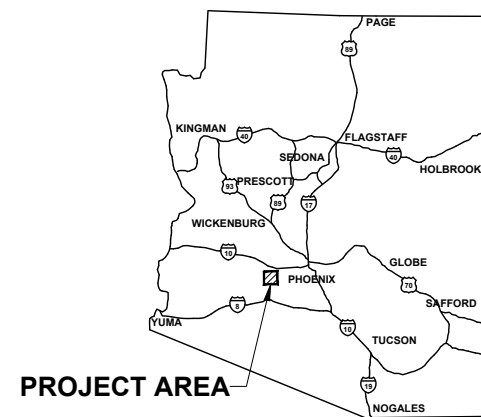
PROJECT AREA

APPROVED BY:

DATE:

BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT
GENERAL MANAGER - NOEL CARTER
APPROVAL EXPIRES ONE YEAR FROM DATE ABOVE

DATE:



STATE MAP
ARIZONA

PROJECT AREA

Contact Arizona 811 at least two full
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REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM		NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	COVER AND LOCATION MAPS	G-1
							DRAWN BY: A. SOTO				
							APPROVED BY: G. CAIRO				
							PROJECT No.: BWC-2118				
							PLOT DATE: MAR, 2022				

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GCE PROJECT No.: BWC-2118

DBA PROJECT No.: XXXXX

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BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT (BWCD) GENERAL NOTES

1. WHERE DEDICATED EASEMENT IS NOT NOTED ON PROJECT PLANS, THE DISTRICT STILL MAINTAIN PRESCRIPTIVE RIGHTS TO OPERATE AND MAINTAIN IRRIGATION FACILITIES FOR THE PURPOSE OF IRRIGATION CONVEYANCE AND DELIVERY.

2. ALL CONSTRUCTION SHALL CONFORM TO THE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) SPECIFICATIONS AND STANDARD DETAILS AND LATEST REVISIONS UNLESS NOTED OTHERWISE ON PLANS.

3. CONTACT, NOTIFICATION AND COORDINATION WITH BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT (BWCD) SHALL BE MADE WITH BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT'S ADMINISTRATION OFFICE AT (623) 386-2196.

4. ALL SHOP DRAWINGS WILL REQUIRE BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT'S APPROVAL BEFORE CONSTRUCTION CAN BEGIN.

5. ALL IRRIGATION STRUCTURES SHALL BE MONOLITHIC CAST-IN-PLACE REINFORCED CONCRETE UNLESS OTHERWISE APPROVED BY ENGINEER OR AS SHOWN ON PLANS AND SHALL HAVE A WALL THICKNESS OF EIGHT INCHES UNLESS NOTED OTHERWISE.

6. ALL COMPACTION AND BACKFILL SHALL CONFORM TO THE MAG STANDARD SPECIFICATIONS, DETAILS, AND LATEST REVISIONS.

7. THE CONTRACTOR IS RESPONSIBLE FOR THE FINAL GRADE ADJUSTMENTS OF ALL IRRIGATION STRUCTURES AND MANHOLES TO THE SATISFACTION OF BWCD.

8. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY BWCD PERMITS, RIGHTS-OF-ENTRY, **NOTICES TO PROCEED**, AND APPROVALS PRIOR TO CONSTRUCTION.

9. THE CONTRACTOR SHALL NOTIFY BWCD IN WRITING AT LEAST 72 HOURS IN ADVANCE OF ANY CONSTRUCTION.

10. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH BWCD FOR THE "DRY-UP" OF EXISTING IRRIGATION FACILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. IT WILL BE BWCD'S SOLE DETERMINATION OF THE TIME AND DURATION OF THIS "DRY-UP" PERIOD.

11. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH BWCD FOR THE REMOVAL OF EXISTING IRRIGATION FACILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION.

12. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND COORDINATING WITH BWCD FOR THE INSPECTION OF ALL CONSTRUCTION WORK. **NOTICE MUST BE GIVEN TO BWCD OR BWCD'S AGENT A MINIMUM OF 48 HOURS PRIOR TO INSTALLATION OF ANY WORK REQUIRING FIELD OBSERVATION/INSPECTION OR APPROVALS TO PROCEED.**

13. ALL CONSTRUCTION WORK IS SUBJECT TO BWCD'S INSPECTION AND APPROVAL. CONSTRUCTION WORK COMPLETED WITHOUT INSPECTION BY BWCD SHALL BE SUBJECT TO EXPOSURE AT THE CONTRACTOR'S EXPENSE.

14. AS-BUILT PLANS AND CERTIFICATIONS SHALL BE PROVIDED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION TO BWCD BY THE CONTRACTOR PERFORMING THE INSTALLATION OF BWCD FACILITIES. AS-BUILT PLANS SHALL FEATURE BOTH HORIZONTAL AND VERTICAL AS-BUILT INFORMATION FOR ANY **NEW** UTILITIES INSTALLED WITHIN THE BWCD EASEMENT. **BWCD DOES NOT REQUIRE THE AS-BUILT DRAWINGS TO REFLECT THE AS-BUILT INVERT OF EXISTING UTILITIES THAT CROSS BWCD'S FACILITIES, HOWEVER, THE 3' MINIMUM CLEARANCE SEPARATION BETWEEN THE EXISTING UTILITY AND BWCD'S FACILITY WILL NEED TO BE AS-BUILT.** FINAL AS-BUILTS ARE TO BE PROVIDED TO BWCD IN ALL OF THE FOLLOWING FORMS: ORIGINAL MYLAR SET (1), COPIES OF MYLAR SET (2), DISC WITH COPY OF SCANNED MYLAR SET (1), AND 11x17 COPIES OF MYLAR SET (3).

15. AS-BUILT PLANS OF BWCD'S FACILITIES SHALL BE REFLECTED ON THE CORRESPONDING AS-BUILT PAVING AND WATER IMPROVEMENT PLANS WHERE APPLICABLE.

16. IF A CONFLICT IN NOTES ON THIS DESIGN PLAN IS IDENTIFIED, THE BWCD GENERAL NOTES SHALL SUPERSEDE ANY OTHER NOTES.

17. CONTRACTOR SHALL PURCHASE AND INSTALL BWCD'S CUSTOM DETECTABLE UNDERGROUND WARNING TAPE AT THE SPECIFIED DEPTH FOR ALL LENGTHS OF BURIED BWCD FACILITIES. DETECTABLE UNDERGROUND WARNING TAPE SHALL BE PRESCO (PART # D6105B1549), REEF INDUSTRIES TERRA TAPE, OR SETON CUSTOM UNDERGROUND WARNING TAPES, THE COLOR BLUE, 6" WIDE AND READ AS FOLLOWS; CAUTION BWCD IRRIGATION FACILITIES BURIED BELOW CONTACT BWCD AT 623-386-2196. CONTACT BWCD FOR ORDERING AND INSTALLATION INFORMATION.

18. **CONTRACTOR SHALL BE REQUIRED TO HYDRO TEST ALL NEW BWCD FACILITIES ACCORDING TO BWCD STANDARD TESTING REQUIREMENTS AND SPECIFICATIONS.**

19. EXISTING UTILITIES AS SHOWN ON THE DRAWINGS ARE IN ACCORDANCE WITH THE AVAILABLE RECORDS AT THE TIME OF DESIGN. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF UTILITIES 14 DAYS PRIOR TO CONSTRUCTION OR REMOVALS OF EXISTING FACILITIES AND NOTIFY
- ENGINEER OF ANY DISCREPANCIES OR DIFFERENCES. CONTACT ARIZONA BLUE STAKE CENTER TWO WORKING DAYS PRIOR TO CONSTRUCTION AT (800) 782-5348 OR (602) 263-1100 TO LOCATE AND FLAG UNDERGROUND FACILITIES.

20. CONTRACTOR SHALL PURCHASE AND ARRANGE FOR DELIVERY OF ALL STAFF GAUGES, STEEL STEPS, STAFF GAUGE EXTENSIONS, AND OTHER MATERIALS IDENTIFIED FOR INSTALLATION BY BWCD. CONTRACTOR SHALL CONTACT BWCD PRIOR TO DELIVERY BY CALLING (623) 386-2196.

21. ITEMS DESIGNATED FOR SALVAGE SHALL BE DELIVERED TO BWCD DISTRICT OFFICE LOCATED AT 205 EAST ROOSEVELT AVENUE; BUCKEYE, ARIZONA 85326. CONTACT BWCD AT 623-386-2196 TO COORDINATE DELIVERY.

22. WHERE CROSSING UNDER EXISTING BWCD OPEN CHANNELS, THE BWCD PREFERRED METHOD OF NEW UTILITY INSTALLATION IS BORE AND JACK, WHERE INSTALLATION IS PERFORMED USING OPEN CUT METHOD, COMPLETE REPLACEMENT OF THE DITCH TO DISTRICT STANDARD IS REQUIRED. ALL CROSSINGS WILL REQUIRE AN ENCROACHMENT PERMIT AND INSPECTION BY BWCD.

23. WHERE NEW UTILITIES CROSS UNDER EXISTING BWCD IRRIGATION PIPES, AND WHERE MECHANICAL COMPACTION OF THE BACKFILL IS NOT ACHIEVABLE, ONE SACK SLURRY BACKFILL SHALL BE REQUIRED TO THE SPRINGLINE OF THE EXISTING BWCD PIPE, AS DIRECTED BY THE BWCD INSPECTOR.

24. WHERE SAW CUTTING INTO AN EXISTING PANEL FOR HAND-PLACED TRANSITION, CONTRACTOR SHALL REPLACE A MINIMUM OF 10' OF LINING OR TO THE NEXT CLEAN JOINT, MAXIMUM 20'.

25. ALL BWCD FACILITIES SHALL REMAIN IN SERVICE THROUGHOUT THE DURATION OF ALL CONSTRUCTION ACTIVITY EXCEPT DURING DRY-UP PERIODS APPROVED BY BWCD.

26. MAINTAIN A MINIMUM OF 3' OF CLEARANCE BETWEEN EXISTING BWCD FACILITIES AND ANY PROPOSED UTILITIES UNLESS OTHERWISE SHOWN.

27. THE CONTRACTOR SHALL MAINTAIN IRRIGATION DELIVERIES TO ALL EXISTING AND ACTIVE IRRIGATION SYSTEMS DURING CONSTRUCTION UNLESS AUTHORIZED BY THE OWNER TO DISCONTINUE THESE DELIVERIES.

28. LOCATIONS FOR FACILITIES WHICH ARE NOT SPECIFICALLY LOCATED WITH ACTUAL VERTICAL AND HORIZONTAL CONTROL SHOULD BE CONSIDERED ONLY APPROXIMATE PER THE BEST AVAILABLE INFORMATION.

29. UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXISTING ITEMS INCLUDING BUT NOT LIMITED TO, GROUNDWATER WELLS, TREES, OTHER LANDSCAPING, SIGNS, FENCES, ETC. SHALL BE PROTECTED BY THE CONTRACTOR; AND IF SUCH ITEMS ARE DAMAGED, CONTRACTOR SHALL REPLACE THE ITEMS AT NO COST TO BWCD TO THE SAME OR BETTER CONDITION THAN THEY WERE BEFORE.

30. WHERE FACILITIES ARE CALLED OUT TO REMAIN IN PLACE THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT FACILITIES DURING CONSTRUCTION. FACILITIES SHOULD NOT BE DISTURBED UNLESS IT IS SHOWN ON THE DRAWINGS THAT THE CONTRACTOR IS TO MAKE IMPROVEMENTS.

31. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

32. PROTECTING OF EXISTING INSTALLATIONS:

A. IN PERFORMING WORK IN THE VICINITY OF EXISTING INSTALLATIONS, THE CONTRACTOR SHALL TAKE ALL THE NECESSARY PRECAUTIONS TO SAFEGUARD EXISTING INSTALLATION WHICH ARE TO REMAIN IN PLACE. THE CONTRACTOR SHALL OBTAIN THE LOCATION OF CONDUIT, PIPE, CABLE, GROUND MAT, AND OTHER BURIED INFRASTRUCTURE ITEMS PRIOR TO PERFORMING ANY EXCAVATIONS NEARING THE EXISTING INSTALLATIONS AND SHALL USE PROPER METHODS FOR PROTECTION DURING EXCAVATION, INSTALLATION, AND BACKFILLING OPERATIONS. THE CONTRACTOR SHALL PROTECT ADJACENT INSTALLATIONS WHEN INSTALLING EQUIPMENT AND MATERIALS.

B. ALL PROTECTIVE MEASURES AND INSTALLATIONS SHALL BE ARRANGED SO AS TO PERMIT OPERATION OF THE EXISTING EQUIPMENT AND FACILITIES BY THE OWNER WHILE WORK UNDER THIS CONTRACT IS IN PROGRESS. THE CONTRACTOR SHALL REMOVE ALL PROTECTIVE MEASURES AND INSTALLATIONS PROVIDED BY HIM/HER AFTER THEY HAVE SERVED THEIR PURPOSE. THE MATERIALS FURNISHED BY THE CONTRACTOR TO PROVIDE PROTECTION SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

C. THE CONTRACTOR SHALL BE RESPONSIBLE, FOR REPAIR, AT HIS/HER OWN EXPENSE, ANY DAMAGES TO EXISTING INSTALLATIONS DUE TO THE CONTRACTOR'S OPERATIONS OR HIS FAILURE TO PROVIDE PROPER PROTECTION; AND IN THE OPINION OF BWCD, ANY SUCH DAMAGES INCURRED MAY BE REPAIRED BY THE OWNER, AND THE CONTRACTOR WILL BE BACK CHARGED FOR THE REPAIR COSTS TO SAID EXISTING INSTALLATIONS THEREOF.

SHEET INDEX

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G-5	5	ABBREVIATIONS, DRAWING DETAIL DESIGNATIONS, AND LEGEND
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G-7	7	GEOMETRIC LAYOUT AND COORDINATE TABLE
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SP-1A	9	REMOVALS - BULLARD WASH CROSSING BWCD MAIN CANAL
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DC-3	16	TYPICAL BWCD SHOTCRETE DETAILS
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D-1	24	STANDARD DETAILS
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REV.

DATE

REVISION DESCRIPTION

BY



GEORGE CAIRO ENGINEERING, INC.

STAPLEY CENTER
1630 S. STAPLEY DR., SUITE 117
MESA, ARIZONA 85204
WWW.GCAIROINC.COM

NOT FOR CONSTRUCTION

100% SUBMITTAL

03/03/22

DESIGNED BY: B. JONES

DRAWN BY: A. SOTO

APPROVED BY: G. CAIRO

PROJECT No.: BWC-2118

PLOT DATE: MAR, 2022



BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT

205 EAST ROOSEVELT AVENUE
BUCKEYE, ARIZONA 85326
(623) 386-2196

BULLARD WASH CROSSING REHABILITATION

GOODYEAR, ARIZONA

DISTRICT NOTES AND SHEET INDEX

G-2

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GCE PROJECT No.: BWC-2118

DBA PROJECT No.: XXXXX

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BLUE STAKE, INC.

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(APPLICABLE ONLY WITHIN CITY OF GOODYEAR RIGHT-OF-WAY)

GENERAL

- A. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
- B. ALL CONSTRUCTION SHALL CONFORM TO THE CITY EDS&PM, CITY STANDARD DETAILS, AND CURRENT MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION.
- C. THIS SET OF PLANS HAS BEEN REVIEWED FOR COMPLIANCE WITH CITY REQUIREMENTS PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS. HOWEVER, SUCH REVIEW SHALL NOT PREVENT THE CITY FROM REQUIRING CORRECTION OF ERRORS IN PLANS FOUND TO BE IN VIOLATION OF ANY LAW OR ORDINANCE.
- D. THE CITY DOES NOT WARRANT ANY QUANTITIES SHOWN ON THESE PLANS.
- E. THE CITY APPROVAL IS FOR GENERAL LAYOUT IN THE RIGHT-OF-WAY ONLY. THIS APPROVAL IS VALID FOR A PERIOD OF 1-YEAR. CONSTRUCTION PERMITS SHALL BE OBTAINED DURING THIS PERIOD OR THE PLANS SHALL BE RESUBMITTED FOR REVIEW AND APPROVAL.
- F. AN APPROVED SET OF PLANS SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES.
- G. THE CITY CONSTRUCTION INSPECTOR SHALL BE NOTIFIED 48-HOURS PRIOR TO ANY CONSTRUCTION WORK AND INSPECTIONS (602-882-7979). CONSTRUCTION WORK CONCEALED WITHOUT INSPECTION BY THE CITY CONSTRUCTION INSPECTOR SHALL BE SUBJECT TO EXPOSURE AT THE CONTRACTOR'S EXPENSE.
- H. ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE CITY ENGINEER, OR DESIGNEE, AND ANY WORK/MATERIAL NOT IN CONFORMANCE WITH CITY ENGINEERING STANDARDS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- I. RIGHT-OF-WAY IMPROVEMENTS SHALL NOT BE ACCEPTED UNTIL "AS-BUILT" PLANS HAVE BEEN SUBMITTED AND APPROVED BY THE CITY. (SEE AS-BUILT REQUIREMENTS)
- J. THE DEVELOPER IS RESPONSIBLE FOR THE REMOVAL OR RELOCATION OF ALL OBSTRUCTIONS WITHIN THE RIGHT-OF-WAY PRIOR TO STARTING NEW CONSTRUCTION.
- K. THE DEVELOPER IS RESPONSIBLE FOR ARRANGING THE RELOCATION AND ASSOCIATED COSTS OF ALL UTILITIES. A UTILITY RELOCATION SCHEDULE SHALL BE SUBMITTED PRIOR TO THE ISSUANCE OF PERMITS.
- L. THE DEVELOPER IS RESPONSIBLE FOR OBTAINING OR DEDICATING ALL REQUIRED RIGHTS-OF-WAY AND EASEMENTS TO THE CITY PRIOR TO ISSUANCE OF PERMITS.
- M. THE CONTRACTOR SHALL CONTACT BLUE STAKE (602-263-1100) AT LEAST 48-HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL LOCATE ALL CONFLICTS PRIOR TO CONSTRUCTION.
- N. THE CONTRACTOR SHALL BARRICADE CONSTRUCTION SITES AT ALL TIMES PER THE CITY OF PHOENIX TRAFFIC BARRICADE MANUAL. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL IN ADVANCE OF CONSTRUCTION.
- O. POTABLE WATER IS NOT AVAILABLE FOR CONSTRUCTION USE OTHER THAN THE FILLING AND TESTING OF NEW LINES. THE UNLAWFUL REMOVAL OF WATER FROM A FIRE HYDRANT OR ANY OTHER SOURCE IS A VIOLATION OF THE MUNICIPAL CODE, PUNISHABLE BY FINE AND/ OR IMPRISONMENT.
- P. PRIOR TO MOVING OR DESTROYING PROTECTED NATIVE PLANT SPECIES, THE CONTRACTOR SHALL FILE A FORMAL NOTICE OF INTENT WITH THE ARIZONA DEPARTMENT OF AGRICULTURE (602-542-6408).
- Q. THE CONTRACTOR SHALL COMPLY WITH THE ENVIRONMENTAL PROTECTION AGENCY NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REQUIREMENTS ESTABLISHED FOR CONSTRUCTION SITES, ADEQ GENERAL PERMIT FOR DISCHARGE FROM CONSTRUCTION ACTIVITIES, AND THE CITY OF GOODYEAR STORM WATER MANAGEMENT PLAN.
- R. NO PERSON SHALL USE ANY MECHANICAL EQUIPMENT FOR LAND LEVELING OR CLEARING, ROAD CONSTRUCTION, TRENCHING, EXCAVATING, DEMOLITION, NOR ENGAGE IN ANY EARTHMOVING ACTIVITY WITHOUT FIRST OBTAINING A PERMIT FROM THE MARICOPA COUNTY AIR QUALITY DEPARTMENT (602-506-0666), 1001 N. CENTRAL AVENUE, SUITE 150, PHOENIX, AZ 85003. (THIS NOTICE IS ISSUED PURSUANT TO A.R.S. 36-779.07, NOTICE OF BUILDING AGENCIES.)
- S. THESE PLANS REFLECT CONDITIONS AS THEY EXIST AT THE TIME OF DESIGN. IF EXISTING CONDITIONS HAVE CHANGED BY THE TIME OF CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE CITY AND THESE PLANS MAY HAVE TO BE AMENDED PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES.
- T. ALL IMPROVEMENTS DAMAGED OR REPLACED DURING CONSTRUCTION SHALL BE REPLACED WITH IMPROVEMENTS THAT MEET THE CURRENT CITY STANDARDS.

GENERAL

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS THAT ARE REQUIRED BY ALL LEVELS OF REGULATORY AGENCIES PRIOR TO CONSTRUCTION.
2. ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE DISTRICT AND/OR ALL WORK AND MATERIAL NOT IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE TRAFFIC CONTROL PLANS FROM GOVERNING AUTHORITIES AND ENFORCE THE APPROVED TRAFFIC CONTROL PLAN DURING THE ENTIRE PERIOD OF CONSTRUCTION.
4. ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE DISTRICT AND/OR ALL WORK AND MATERIAL NOT IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
5. AN APPROVED SET OF PLANS SHALL BE MAINTAINED AT THE JOB SITE AT ALL TIMES THAT WORK IS IN PROGRESS. DEVIATION FROM THE PLANS SHALL NOT BE ALLOWED WITHOUT THE DISTRICT'S APPROVAL.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MANAGE ROADWAY DUST, AND TAKE WHATEVER MEASURES ARE NECESSARY TO INSURE THAT ALL ROADS ARE MAINTAINED IN A CLEAN, MUD- AND DUST-FREE CONDITION AT ALL TIMES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SOIL TESTING THE BACKFILL MATERIAL FROM THE BORROW SITE. PRIOR TO SOIL RELOCATION, THE UNITED STATES BUREAU OF RECLAMATION (USBR) SHALL APPROVE THE ENVIRONMENTAL SITE ASSESSMENT AND THE SOIL TEST REPORT. THE TESTING RESULTS SHALL COME FROM A STATE OF ARIZONA CERTIFIED LABORATORY.

PIPING AND GATES

1. ALL EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH MAG STANDARD SPECIFICATIONS SECTION 200.
2. THE CONTRACTOR SHALL UNCOVER ALL EXISTING IRRIGATION LINES BEING TIED INTO, TO VERIFY THEIR LOCATION. THE CONTRACTOR SHALL LOCATE OR HAVE LOCATED ALL EXISTING UNDERGROUND UTILITIES (ELECTRIC, TELEPHONE, PIPELINES, ETC.) AND STRUCTURES IN ADVANCE OF CONSTRUCTION AND SHALL ELIMINATE ALL CONFLICTS PRIOR TO THE START OF CONSTRUCTION.
3. TRENCH EXCAVATION, BACKFILL AND COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH MAG STANDARD SPECIFICATION SECTION 601, AND TRENCH DETAILS AS SHOWN ON THE DRAWINGS.
4. ALL REINFORCED CONCRETE PIPES SHALL BE CLASS V UNLESS OTHERWISE INDICATED ON THE PLANS AND SHALL CONFORM TO MAG STANDARD SPECIFICATIONS SECTION 735. RUBBER GASKETS FOR CONCRETE PIPE SHALL CONFORM TO MAG STANDARD SPECIFICATIONS SECTION 765.
5. DISPOSAL AND STOCKPILING OF EXCESS MATERIAL WITHIN THE PROJECT AREA SHALL BE DONE AT THE DIRECTION OF THE DISTRICT.
6. ALL MATERIAL DESIGNATED FOR SALVAGE SHALL BE TRANSPORTED TO THE DISTRICT EQUIPMENT YARD OR TO THE SPECIFIED LOCATION AS DIRECTED BY THE DISTRICT DURING EXECUTION OF THE WORK.
7. ALL FABRICATED SLIDE GATES SHALL BE FLATBACK TYPE, SELF-CONTAINED, FLUSH BOTTOM SEAL, THREE SIDED "J" SEAL AND 316 STAINLESS STEEL STEM, RAILS AND YOKE, SUITABLE FOR HEADWALL MOUNTING. LIFT NUTS SHALL BE BRONZE. THE GATE SHALL BE FURNISHED WITH SIDE CRANK HANDLE AND STEM COVER LIFTING EQUIPMENT WITH 3:1 MINIMUM SEALED GEAR RATIO AND 2 INCH SQUARE OPERATING NUT PER HYDROGATE CPS4 OR APPROVED EQUAL. ALL GATES SHALL BE FACTORY COATED PER MANUFACTURER'S RECOMMENDATION. THE GATES SHALL CONFORM TO HYDROGATE FABRICATED SELF-CONTAINED SLIDE GATE, FRESNO SERIES 8200 OR AN APPROVED EQUAL.
8. ALL CANAL GATES SHALL BE FLATBACK TYPE, WITH GALVANIZED STEEL RAILS AND YOKE, SUITABLE FOR HEADWALL MOUNTING. LIFT NUTS SHALL BE BRONZE. THE GATE SHALL BE FURNISHED WITH A HANDWHEEL OPERATOR. ALL GATES SHALL BE FACTORY COATED PER MANUFACTURER'S RECOMMENDATION. THE GATES SHALL CONFORM TO FRESNO SERIES 6400 MODEL 20-10C SLIDE GATE OR AN APPROVED EQUAL.

PAINTING AND COATING

1. EXPOSED METALS: INCLUDING PIPE, FITTINGS, VALVES, STRAP ANCHORS, RANCH ANCHORS, AND PIPE SUPPORTS, AND SIMILAR ITEMS NOT OTHERWISE COVERED, SHALL BE PAINTED AS FOLLOWS:
 - A. EXPOSED DUCTILE IRON SURFACES THAT HAVE BEEN COATED WITH COALTAR VARNISH SHALL BE GIVEN TWO (2) COATS OF TNAMEC N69 HI-BUILD EXPOLINE II PRIMER (SAFETY YELLOW) APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF FOUR (4) TO SIX (6) MILS. FOLLOWED BY ONE (1) TOPCOAT OF TNAMEC 1075 ENDURA-SHIELD II APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF TWO (2) TO FIVE (5) MILS.
 - B. EXPOSED GALVANIZED STEEL SURFACES SHALL BE SOLVENT WASHED FOLLOWED BY TWO (2) COATS OF TNAMEC N69 HI-BUILD EXPOLINE II PRIMER (SAFETY YELLOW) APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF FOUR (4) TO SIX (6) MILS. FOLLOWED BY ONE (1) TOPCOAT OF TNAMEC 1075 ENDURA-SHIELD II APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF TWO (2) TO FIVE (5) MILS.
 - C. BARE FERROUS METAL SURFACES SHALL BE GIVEN TWO (2) COATS OF TNAMEC N69 HI-BUILD EXPOLINE II PRIMER (SAFETY YELLOW) APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF FOUR (4) TO SIX (6) MILS. FOLLOWED BY ONE (1) TOPCOAT OF TNAMEC 1075 ENDURA-SHIELD II APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF TWO (2) TO FIVE (5) MILS.
2. NON EXPOSED METALS:
 - A. BEFORE BACKFILLING, ALL COUPLINGS, BOLTS, NUTS, ANCHOR BOLTS AND RODS, AND ALL NON-EXPOSED STEEL SHALL RECEIVE ONE (1) BRUSH COAT OF TNAMEC 46H-413 HI-BUILD TNAME-TAR COAL TAR EPOXY APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF NOT LESS THAN TWENTY (20) MILS. THE COATING SHALL BE WITHOUT FLAW WHEN COVERED WITH BACKFILL.
 - B. IN ADDITION TO COATING AS REQUIRED UNDER 2.A ABOVE, ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED WITH POLYWRAP CONFORMING TO MAG STANDARD SPECIFICATIONS SECTION 610.5.
 - C. PERMATEx ANTI-SEIZE LUBRICANT, LOCTITE HEAVY-DUTY ANTI-SEIZE LUBRICANT, OR SAF-T-EZE REGULAR GRADE ANTI-SEIZE SHALL BE APPLIED TO ALL MANHOLE BOLT THREADS PRIOR TO SECURING LIDS PER MANUFACTURER SPECIFICATIONS.

REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	DISTRICT AND CONSTRUCTION NOTES	G-3
						DRAWN BY: A. SOTO				
						APPROVED BY: G. CAIRO				
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				

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GCE PROJECT No.: BWC-2118

DBA PROJECT No.: XXXXX

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STRUCTURAL NOTES

GENERAL:

1.

ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST ADOPTED EDITION (INCLUDING REVISIONS) OF THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" SPONSORED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.), AND AS ADDITIONALLY REQUIRED BY THE PROJECT PLANS AND SPECIAL PROVISIONS.
2.

FEATURES OF STRUCTURE CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME CHARACTER AS SHOWN FOR SIMILAR CONDITIONS.
3.

BEFORE COMMENCING WORK, THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES. DIMENSIONS OF AND DIMENSIONS WHICH LOCATE EXISTING FEATURES SHALL BE VERIFIED BEFORE COMMENCING WORK.
4.

WHERE DIMENSIONS ARE SHOWN FOR EXISTING STRUCTURES THEY ARE APPROXIMATE AND FOR REFERENCE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL CONTROLLING DIMENSIONS PRIOR TO ORDERING OR FABRICATING ANY MATERIAL. ANY VARIATIONS BETWEEN EXISTING DIMENSIONS AND ELEVATIONS AND THE PLANS SHALL BE REPORTED TO THE ENGINEER.
5.

NO STRUCTURAL MEMBERS SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER PRIOR TO CONSTRUCTION.
6.

FOR ABBREVIATIONS NOT LISTED, SEE "ABBREVIATIONS FOR USE ON DRAWINGS AND TEXT", PUBLISHED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE INC. (ANSI).
7.

CONSTRUCTION, SHORING AND BRACING OF FORMWORK SHALL BE IN ACCORDANCE WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 347 "GUIDE TO FORMWORK FOR CONCRETE". THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL FORMWORK AND SHORING.
8.

DESIGN LOADS:
WALKWAYS AND PLATFORMS = 150 PSF

CONCRETE:

1.

EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE, ALL CAST-IN-PLACE STRUCTURAL CONCRETE SHALL BE CLASS AA (MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI) CONFORMING TO SECTIONS 725 AND 726 OF THE M.A.G. STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. CONCRETE MIXTURE SHALL INCLUDE FIBERMESH (PROPEX FIBERMESH 150, FORTA-FERRO ECONO-NET, OR NYCON MULTIMESH WITH A DOSAGE RATE OF 1.5 LBS PER CUBIC YARD), WATER REDUCING ADMIXTURE (WRA), AIR ENTRAINMENT, AND FLYASH AT 15% OF CEMENTITIOUS CONTENT. FLYASH FACTOR SHALL BE 1.2 POUNDS OF FLYASH FOR EVERY POUND OF CEMENT DEDUCTED.
2.

EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE, ALL CAST-IN-PLACE CONCRETE LINING SHALL BE CLASS A (MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI) CONFORMING TO SECTIONS 725 AND 726 OF THE M.A.G STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. CONCRETE MIXTURE SHALL INCLUDE FIBERMESH (PROPEX FIBERMESH 650, FORTA-FERRO, OR NYCON XL WITH A DOSAGE RATE OF 3.0 LBS PER CUBIC YARD). ALL CONCRETE AGGREGATE SHALL BE NO GREATER THAT 3/4" DIAMETER.
3.

EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE ALL SHOTCRETE LINING SHALL BE CLASS A (MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI) CONFORMING TO SECTIONS 725 AND 726 OF THE M.A.G STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. CONCRETE MIXTURE SHALL INCLUDE FIBERMESH (PROPEX FIBERMESH 650, FORTA-FERRO, OR NYCON XL WITH A DOSAGE RATE OF 3.0 LBS PER CUBIC YARD). ALL CONCRETE AGGREGATE SHALL BE NO GREATER THAT 3/8" DIAMETER. SHOTCRETE MAY BE SALT RIVER PROJECT (SRP) STOCK CODE NUMBER 0000234 WITH 3 POUNDS PER CUBIC YARD FIBROUS ADMIXTURE. MINIMUM SHOTCRETE SLOPE THICKNESS SHALL BE 3 INCHES ON THE MAINLINE CANAL SIDE SLOPES, 4 INCHES FOR BOTTOM, AND 4 INCHES ON TRANSITIONS.
4.

REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706 GRADE 60. FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1 "MANUAL OF STANDARD PRACTICE" AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".

UNLESS OTHERWISE NOTED ALL REINFORCING BAR SPLICES SHALL BE:

	#3	#4	#5	#6	#7	#8	#9
TOP BAR*	1'-4"	1'-8"	2'-0"	2'-5"	3'-6"	4'-0"	4'-11"
OTHER BAR	1'-4"	1'-4"	1'-7"	1'-11"	2'-9"	3'-1"	3'-10"

* TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

5.

MINIMUM CLEARANCE FOR REINFORCEMENT BARS, UNLESS SHOWN OTHERWISE, SHALL BE AS FOLLOWS:

3" WHERE CONCRETE IS PLACED AGAINST EARTH
2" WHERE CONCRETE IS PLACED AGAINST FORMS
1" WHERE CONCRETE IS PLACED AGAINST PIPE
6.

ALL EMBEDDED ITEMS SHALL BE POSITIVELY SECURED IN PLACE BEFORE PLACING CONCRETE. ALL EMBEDDED BOLTS SHALL BE STAINLESS STEEL.
7.

ROUGHEN AND CLEAN ALL CONSTRUCTION JOINTS IN WALLS AND SLABS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE.
8.

CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" TYPICAL, TO 6" BELOW FINISHED GRADE UNLESS SHOWN OTHERWISE.
9.

STRUCTURAL POURS SHALL BE PLACED AT (4') MAXIMUM VERTICAL LIFTS VIBRATED THROUGH AND THROUGH AS SPECIFIED PER M.A.G. SECTION 505.
10.

ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL DRILLED ADHESIVE ANCHORS HILTI HY-200 MAX, FASTENAL ANCHORING SYSTEMS, OR STRONGTIE SET HIGH STRENGTH EPOXY-TIE ANCHORING ADHESIVE.

STRUCTURAL STEEL AND STEEL FABRICATIONS:

1.

ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36 UNLESS SHOWN OTHERWISE. SQUARE OR RECTANGULAR STEEL TUBING SHALL CONFORM TO ASTM A-500 GRADE B. STEEL PIPE SHALL CONFORM TO ASTM A-501; OR A53 TYPES E OR S, GRADE B
2.

ALL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A325-N UNLESS OTHERWISE SHOWN. BOLTS INDICATED AS MACHINE BOLTS (MB) SHALL CONFORM TO ASTM A307 FOR CARBON STEEL, A193 FOR STAINLESS STEEL AND A153 FOR GALVANIZED STEEL. ANCHOR BOLTS EMBEDDED IN CONCRETE SHALL BE STAINLESS STEEL CONFORMING TO ASTM A193.
3.

ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, CURRENT EDITION.
4.

ALL WELDS SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO AWS D1.1, LATEST EDITION. SUBMIT COPY OF ALL CERTIFICATIONS TO THE ENGINEER. ALL BUTT WELDS ARE FULL PENETRATION UNLESS INDICATED OTHERWISE. WELD FILLER METAL SHALL BE AWS A5.1 OR A5.5 E70XX ELECTRODES.
5.

ALL WELDS FOUND DEFECTIVE SHALL BE REPAIRED (OR REPLACED) AND RETESTED FOR ADEQUACY AT THE CONTRACTOR'S EXPENSE.
6.

AT ALL FIELD WELDS WHERE PLATES AND ANGLES ARE EMBEDDED IN CONCRETE, LOW HEAT AND INTERMITTENT WELDS SHALL BE UTILIZED TO AVOID SPALLING OR CRACKING THE EXISTING CONCRETE.
7.

HOT DIP GALVANIZE ALL STRUCTURAL STEEL MEMBERS AND STEEL FABRICATIONS AFTER FABRICATION IS COMPLETED. GALVANIZING SHALL CONFORM TO ASTM A123. GALVANIZE COMPONENTS OF BOLTED ASSEMBLIES SEPARATELY BEFORE ASSEMBLY.

STRUCTURAL ABBREVIATIONS

AB	ANCHOR BOLT	FD	FLOOR DRAIN	RC	REINFORCED
AHR	ANCHOR	FDN	FOUNDATION	REINF	CONCRETE
AL	ALUMINUM	FG	FINISHED	RST	REINFORCE
ALTN	ALTERNATE		GRADE		REINFORCING
APVD	APPROVED	FTG	FOOTING		STEEL
BOT	BOTTOM				
BF	BOTTOM FACE	GALV	GALVANIZE	SIM	SIMILIAR
BM	BEAM		"HOT DIP"	SPECS	SPECIFICATIONS
BRG	BEARING	GVL	GRAVEL	SQ	SQUARE
C TO C	CENTER TO			STD	STANDARD
	CENTER	HAS.	HEADED	STIF	STIFFENER
CJ	CONSTRUCTION	HDR	ANCHOR STUD	STL	STEEL
	JOINT	HORIZ	HEADER	STR	STRAIGHT
CL	CENTER LINE		HORIZONTAL	STRUCT	STRUCTURES
CLR	CLEARANCE			SYMM	SYMMETRICAL
COL	COLUMN	I.F.	INSIDE FACE		
CONC	CONCRETE			T&B	TOP AND
CONN	CONNECTION	LNTL	INTEL		BOTTOM
CONT	CONTINUOUS	LONG.	LONGITUDINAL	TC	TOP OF
CTR	CENTER				CONCRETE
		MAX	MAXIMUM	TF	TOP FACE
DBA	DEFORMED	MB	MACHINE	THK	THICK
	BAR ANCHOR		BOLTS	TRANSV	TRANSVERSE
DIA	DIAMETER	MIN	MINIMUM	TST	TOP OF STEEL
DIR	DIRECTION			TW	TOP OF WALL
DWG	DRAWING	NIC	NOT IN	TYP	TYPICAL
			CONTRACT		
EA	EACH	NTS	NOT TO SCALE	VERT	VERTICAL
EF	EACH FACE				
EL	ELEVATION				
EQL SP	EQUALLY	OC	ON CENTER	WS	WATERSTOP
	SPACED	O.F.	OUTSIDE FACE		OR WATER
EW	EACH WAY	O TO O	OUT TO OUT		SURFACE
EXP JT	EXPANSION	OPNG	OPENING	WWF	WELDED WIRE
	JOINT				FABRIC
EXST	EXISTING	PJF	PREMOLDED		
			JOINT FILLER		
		PLYWD	PLYWOOD		
		PRCST	PRECAST		
		P	PILASTER		

NOTES

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REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES DRAWN BY: A. SOTO APPROVED BY: G. CAIRO PROJECT No.: BWC-2118 PLOT DATE: MAR, 2022	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	STRUCTURAL NOTES	G-4
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ABBREVIATIONS:

@	AT	I.D.	INSIDE DIAMETER	T	TANGENT, TOWNSHIP, TREAD
AB	AGGREGATE BASE	IE	INVERT ELEVATION	T&B	TOP AND BOTTOM
ABC	AGGREGATE BASE COURSE	IF	INSIDE FACE	TBM	TEMPORARY BENCH MARK
AC	ASPHALTIC CONCRETE	IN.	INCH	TC	TOP OF CONCRETE, TOP OF CURB
ACI	AMERICAN CONCRETE INSTITUTE	INV.	INVERT	TCE	TEMPORARY CONSTRUCTION EASEMENT
ADDL	ADDITIONAL	IRR	IRRIGATION, IRRIGATION VALVE	TEMP	TEMPORARY
ADJ	ADJACENT, ADJUSTABLE			TOB	TOP OF BANK
ADOT	ARIZONA DEPARTMENT OF TRANSPORTATION	JT	JOINT	TOL	TOP OF LINING
AG	AGRICULTURAL			TOP	TOP OF PIPE
AL	ALUMINUM	L	LENGTH	TRANS	TRANSITION
APPROX	APPROXIMATE, APPROXIMATELY	LAT	LATERAL	TST, TOS	TOP OF STEEL, TOP OF STRUCTURE
APVD	APPROVED	LF	LINEAR FEET	TYP	TYPICAL
AVE	AVENUE	LN	LANE		
AVG	AVERAGE	LS	LAND SURVEYOR	U/G	UNDERGROUND
AWWA	AMERICAN WATER WORKS ASSOCIATION			UBC	UNIFORM BUILDING CODE
		M	MEASURED	UNK	UNKNOWN
BC	BRASS CAP	MAG	MARICOPA ASSOCIATION OF GOVERNMENTS	UNO	UNLESS NOTED OTHERWISE
BEG	BEGIN, BEGINNING	MATL	MATERIAL	USBR	UNITED STATES BUREAU OF RECLAMATION
BLDG	BUILDING	MAX	MAXIMUM		
BM	BENCHMARK	MH	MANHOLE	VC	VERTICAL CURVE
BOTT	BOTTOM	MIN	MINIMUM	VERT	VERTICAL
BW	BARBED WIRE	MISC	MISCELLANEOUS		
BWCDD	BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT	MON	MONUMENT	W/	WITH
		MTL	METAL	W	WATER, WEST
				WB	WESTBOUND
C/L	CHAIN LINK	N/A	NOT APPLICABLE	WM	WATER METER
CONC	CONCRETE	N/C	NOT IN CONTRACT	WS	WATER STOP, WATER SURFACE
CAP	CAPACITY OR CENTRAL ARIZONA PROJECT	N	NORTH	WSEL	WATER SURFACE ELEVATION
CFS	CUBIC FEET PER SECOND	NAVD	NORTH AMERICAN VERTICAL DATUM	WV	WATER VALVE
CJ	CONSTRUCTION JOINT	NE	NORTHEAST		
CL	CENTERLINE	NO.	NUMBER	X	ELECTRICAL TRANSFORMER
CLR	CLEAR, CLEARANCE	NOM	NOMINAL		
CLSM	CONTROL LOW STRENGTH MATERIAL	NORM	NORMAL	YD	YARD
CMP	CORRUGATED METAL PIPE	NP	NATIONAL PIPE THREAD	YR	YEAR
COR	CORNER	NTS	NOT TO SCALE		
CP	CONTROL POINTS	NW	NORTHWEST		
C TO C	CENTER TO CENTER	NWS	NORMAL WATER SURFACE		
CTR	CENTER				
CU	CUBIC	O/H	OVERHEAD		
CU FT	CUBIC FOOT	O&M	OPERATION & MAINTENANCE		
CU IN.	CUBIC INCH	O.C.	ON CENTER		
CU YD	CUBIC YARD	O.D.	OUTSIDE DIAMETER		
CULV	CULVERT	OPNG	OPENING		
CV	CHECK VALVE				
CWS	CHECKED WATER SURFACE	PI	POINT OF INTERSECTION		
		PIE	PERMANENT IRRIGATION EASEMENT		
D/W	DRIVEWAY	PL	PROPERTY LINE		
D	DEPTH	POB	POINT OF BEGINNING		
DEG	DEGREE	POC	POINT OF CURVATURE		
DEMO	DEMOLITION	POE	POINT OF ENDING		
DET	DETAIL	POT	POINT OF TANGENT		
DG	DOWN GUY	PP	POWER POLE		
DIA	DIAMETER	PRCST	PRECAST		
DIP	DUCTILE IRON PIPE	PSF	POUNDS PER SQUARE FOOT		
DR	DRIVE	PSI	POUNDS PER SQUARE INCH		
DWG, DWGS	DRAWING, DRAWINGS	PUE	PUBLIC UTILITY EASEMENT		
DWS	DESIGN WATER SURFACE	PVC	POLYVINYL CHLORIDE		
		PVMT	PAVEMENT		
E	EAST, ELECTRIC	Q	FLOW RATE (CFS)		
EA	EACH	QTY	QUANTITY		
EF	EACH FACE				
EX GR	EXISTING GRADE	R/W	RIGHT OF WAY		
EL, ELEC	ELECTRIC, ELECTRICAL, ELEVATION	RAD	RADIUS		
ELEV	ELEVATION	RB	REBAR		
ENGR	ENGINEER	RC	REINFORCED CONCRETE		
EP	EDGE OF PAVEMENT	RCP	REINFORCED CONCRETE PIPE		
EQL	EQUAL	RD	ROAD		
ESMT	EASEMENT	REINF	REINFORCE, REINFORCED, REINFORCING		
EW	EACH WAY	REQD	REQUIRED		
EX	EXISTING	RR	RAILROAD		
EXP JT	EXPANSION JOINT				
		S	SEWER, SOUTH		
FAB	FABRICATION	SCH	SCHEDULE		
FD	FOUND	SD	STORM DRAIN		
FIN GR	FINISH GRADE	SE	SOUTHEAST		
FLEX	FLEXIBLE	SEC	SECTION		
F.O.	FIBER OPTIC	SIM	SIMILAR		
FT	FOOT, FEET	SPECS	SPECIFICATIONS		
FTG	FOOTING	SQ	SQUARE		
		SQ FT	SQUARE FOOT		
G	GAS	SQ IN.	SQUARE INCH		
GALV	GALVANIZED	SST, SS	STAINLESS STEEL		
GB	GRAB BAR, GRADE BREAK	ST	STREET		
GND	GROUND	STA	STATION		
GPM	GALLONS PER MINUTE	STD	STANDARD		
GRTG	GRATING	STL	STEEL		
GT, GTR	GUTTER	STRUCT	STRUCTURE		
GV	GAS VALVE	SUSP	SUSPEND		
		SW	SOUTHWEST		
HDPE	HIGH DENSITY POLYETHYLENE	SYMM	SYMMETRICAL		
HDWL	HEADWALL				
HGL	HYDRAULIC GRADE LINE				
HGT	HEIGHT				
HORIZ	HORIZONTAL				
HW	HIGH WATER				
HWY	HIGHWAY				

NOTE:

FOR ABBREVIATIONS NOT LISTED IN THIS STANDARD LIST, SEE "ABBREVIATIONS FOR USE ON DRAWINGS AND TEXT", PUBLISHED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

LEGEND

	NEW SLOPES (CONCRETE)		NEW/EX DOWN GUY		PROPERTY
	NEW SLOPES (EARTHEN)		POWER POLE		ESMT/PIE
	EX SLOPES (CONCRETE)		TRAFFIC LIGHT		DRAINAGE ESMT
	EX SLOPES (EARTHEN)		STREET LIGHT		TEMP CONST ESMT
	NEW ASPHALT PAVEMENT		LIGHT POST		SECTION LINE
	EX ASPHALT PAVEMENT		FIRE HYDRANT		RIGHT OF WAY
	FUTURE CONC - CLIENT FILES (HATCH OPTIONAL)		WATER VALVE		NEW WATER LINE
	NEW IRRIGATION PIPE		STREET SIGNS		EX WATER LINE
	EX IRRIGATION PIPE		BARRICADE		NEW GAS LINE
			EX TREE, PALM OR SHRUB		EX GAS LINE
			NEW SPOT ELEVATION		EX STORM DRAIN
			EX SPOT ELEVATION		NEW SEWER LINE
			CONSTRUCTION NOTE		EX SEWER LINE
			SALVAGE NOTE		NEW RECLAIMED WATER LINE
			REMOVAL NOTE		EX RECLAIMED WATER LINE
			PROJECT BENCHMARK		GRADE EX
			TEMP BENCH MARK		EX RECLAIMED WATER LINE
			SECTION CORNER		NEW/EX FENCE
			DEMOLISH AND REMOVAL HATCH		NEW/EX CHAIN LINK
			DIRT HATCH		NEW/EX IRON POST FENCE
			CONCRETE HATCH		GRADING - DAYLIGHT
			ROCK RIPRAP (AS NOTED)		GRADING - CUT

DRAWING DESIGNATION

DISCIPLINE S-2 DRAWING NUMBER

(SEE TABLE)

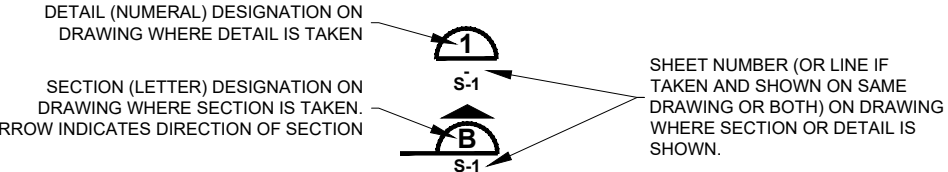
LETTER	DISCIPLINE
D	DETAILS
G	GENERAL
P	PLAN & PROFILE
S	STRUCTURAL
SP	SITE PLAN

SCREENING

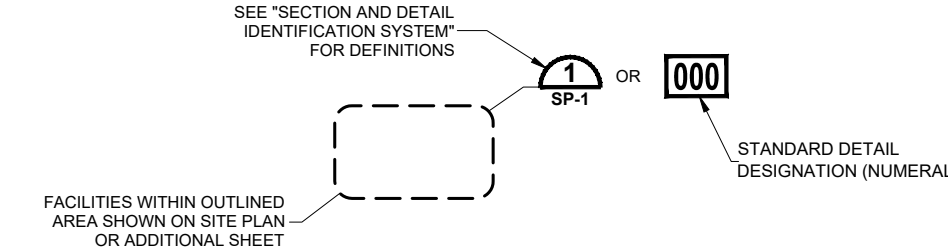
SCREENED ELEMENTS ON AREA MAPPING REPRESENT EXISTING FACILITIES OR ELEVATIONS.

SCREENED BACKGROUNDS ON OTHER DRAWINGS CAN REPRESENT EXISTING FACILITIES OR FACILITIES TO BE CONSTRUCTED UNDER THIS CONTRACT, WHICH, IF DRAWN IN SOLID LINES, WOULD OBSCURE THE PARTICULAR DETAILS BEING SHOWN. CONSULT THE ENGINEER IF SCREENING OF ANY ELEMENT IS NOT SELF-EXPLANATORY.

SECTION AND DETAIL STANDARDS



SITE PLAN / STANDARD DETAIL DESIGNATION



STANDARD DETAIL AS SHOWN **000** ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS OCCURING ON THE PROJECT, WHETHER OR NOT THEY ARE KEYED IN EACH LOCATION. CONSULT THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

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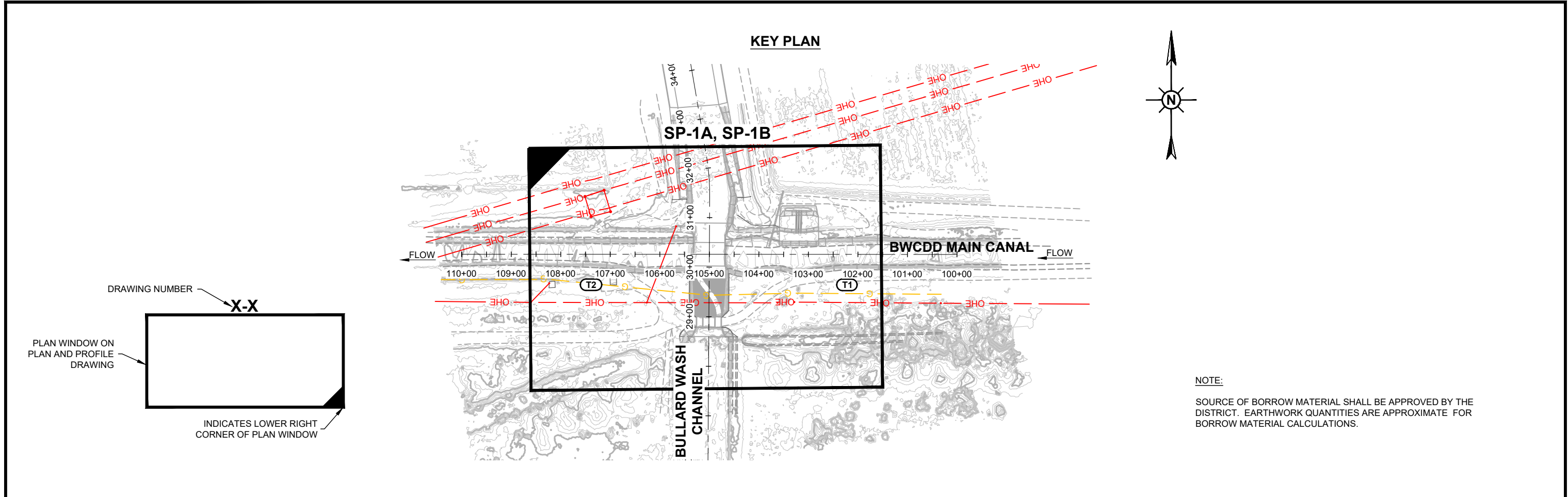
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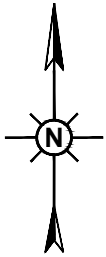
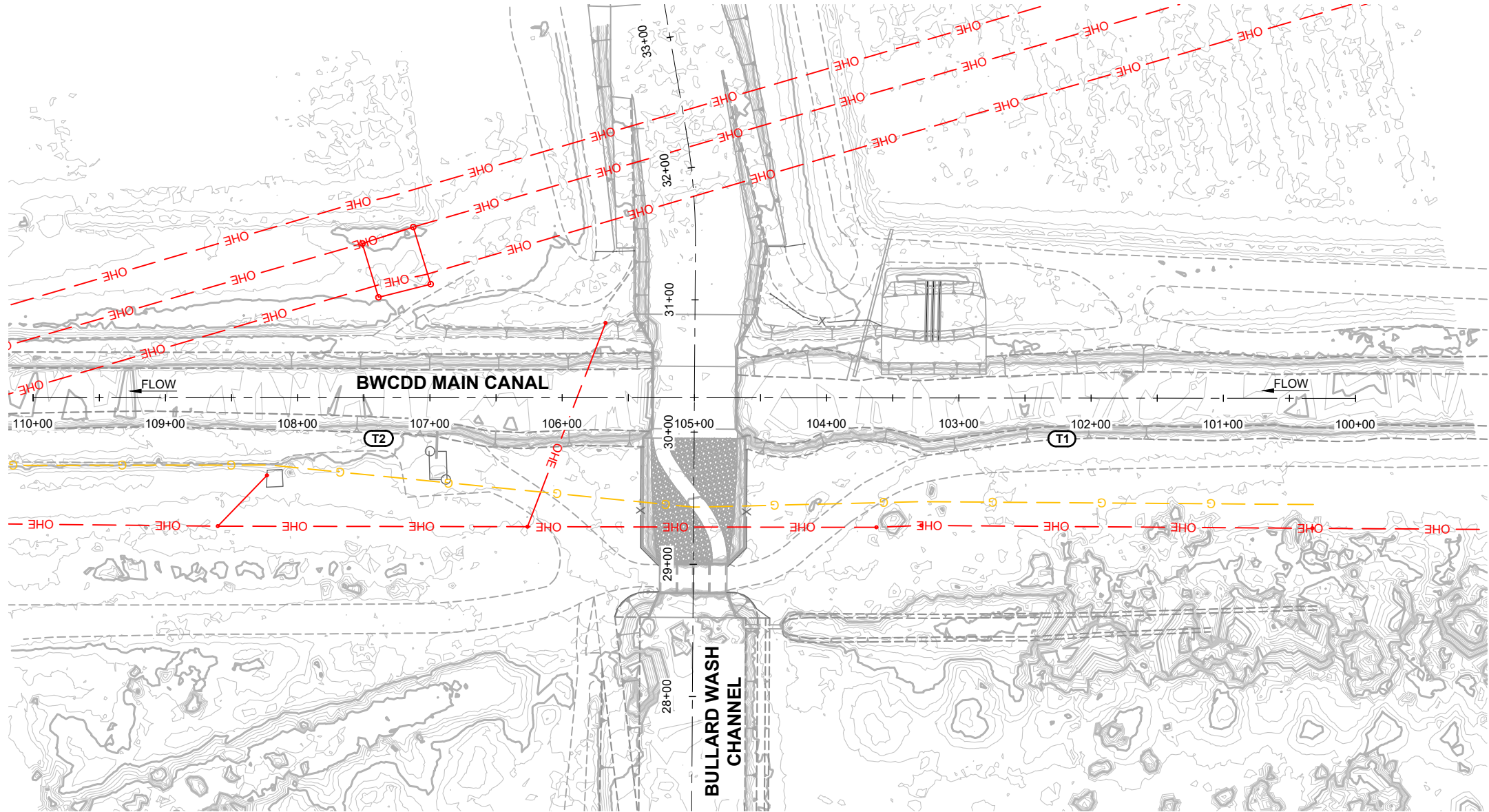
REV.	DATE	REVISION DESCRIPTION	BY		DESIGNED BY: B. JONES		BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT	BULLARD WASH CROSSING REHABILITATION	CONSTRUCTION NOTES	G-5
				GEORGE CAIRO ENGINEERING, INC.	DRAWN BY: A. SOTO		205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196			
				STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	APPROVED BY: G. CAIRO					
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TANGENT COORDINATE TABLE						
TANGENT #	START STA	BEARING	DISTANCE	END STA	START POINT (N, E)	END POINT (N, E)
T1	100+00.00	N80°29'28"W	500.00'	105+00.00	(41306.34,46750.41)	(41388.94,46257.28)
T2	105+00.00	N80°33'07"W	500.18'	110+00.18	(41388.94,46257.28)	(41471.05,45763.89)

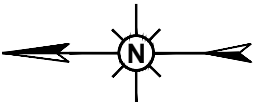
Contact Arizona 811 at least two full working days before you begin excavation


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REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	GEOMETRIC ALIGNMENT AND COORDINATE TABLE	G-7

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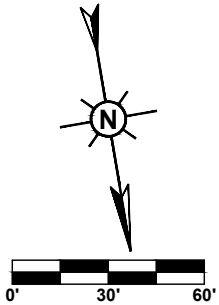
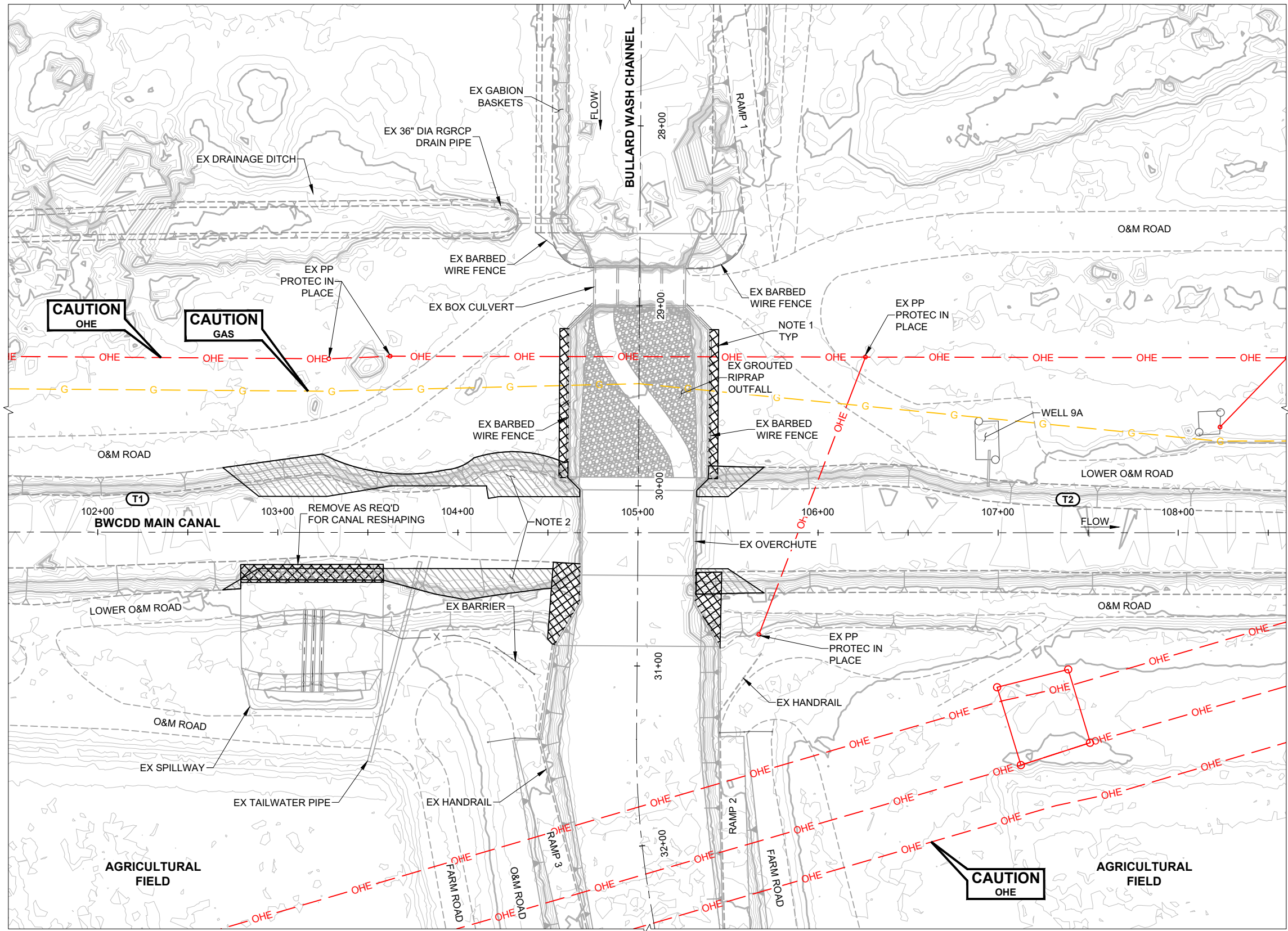
NOTES:

- 1. CONTRACTOR SHALL COORDINATE WITH CITY OF GOOD YEAR FOR LIMITS, CLEARING METHODS, AND DISPOSAL OF VEGETATION.

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REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	BULLARD WASH CHANNEL CLEARING LIMITS	G-8
						DRAWN BY: A. SOTO				
						APPROVED BY: G. CAIRO				
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				



- NOTES:**
1. SCARIFY 6 INCHES MINIMUM, MOISTURE CONDITION, AND COMPACT TO 95%. USE DETAILS ON DC-4, CANAL SUB-EXCAVATION AND STRUCTURE FOUNDATION STABILIZATION, FOR UNSUITABLE SUBGRADES.
 2. SOIL BORROW LOCATION TO BE DETERMINED.

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BLUE STAKE, INC.

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						DRAWN BY: A. SOTO				
						APPROVED BY: G. CAIRO				
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				

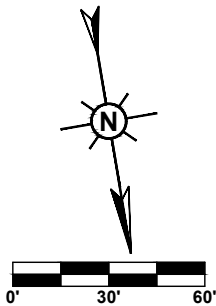
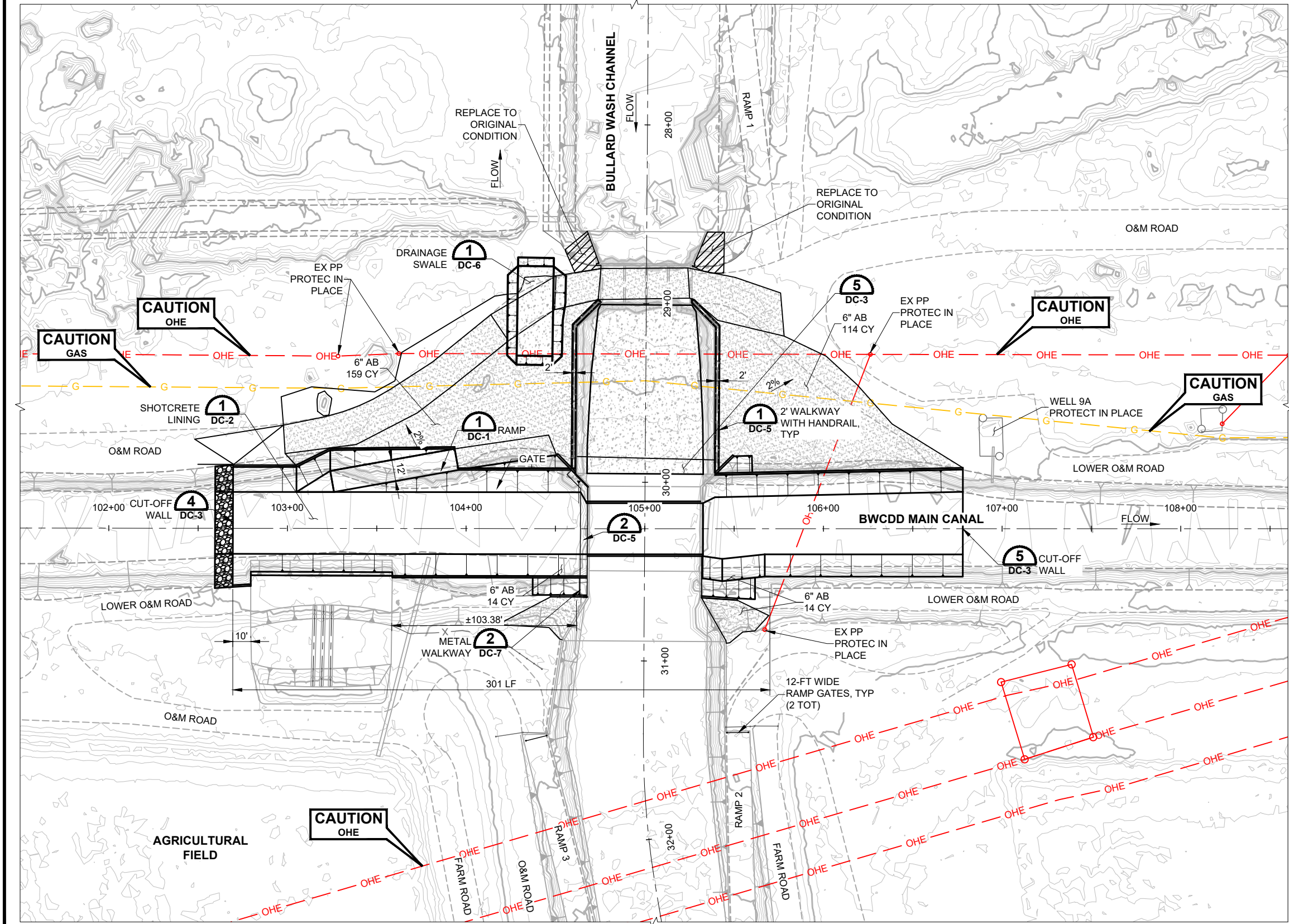
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ENTIRE SHEET



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STAPLEY CENTER
1630 S. STAPLEY DR., SUITE 117
MESA, ARIZONA 85204
WWW.GCAIROINC.COM

NOT FOR CONSTRUCTION
100%
SUBMITTAL
03/03/22

DESIGNED BY:	B. JONES
DRAWN BY:	A. SOTO
APPROVED BY:	G. CAIRO
PROJECT No.:	BWC-2118
PLOT DATE:	MAR, 2022



BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT
205 EAST ROOSEVELT AVENUE
BUCKEYE, ARIZONA 85326
(623) 386-2196

BULLARD WASH CROSSING REHABILITATION

GOODYEAR, ARIZONA

NEW BULLARD WASH CROSSING BWCCD MAIN CANAL

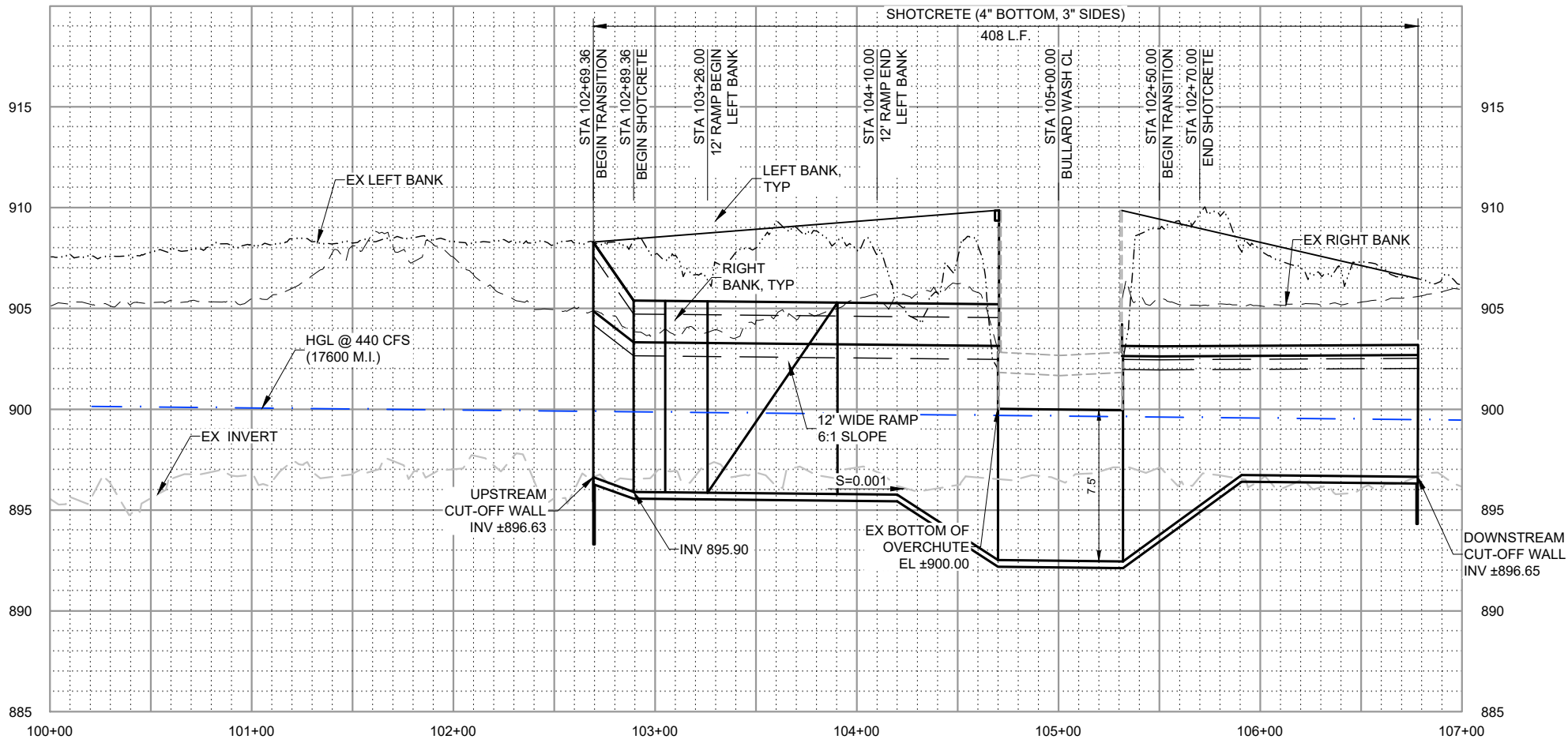
SP-1B

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BWCDD MAIN CANAL PROFILE
NTS

- NOTES:
- 1. SHOTCRETE CHANNEL SECTION SHALL BE APPROVED BY BWCCD, CITY OF GOODYEAR, AND GCE.
 - 2. THE HGL SHOWN UNDER STEADY STATE HYDRAULICS.

REV.	DATE	REVISION DESCRIPTION	BY



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STAPLEY CENTER
1630 S. STAPLEY DR., SUITE 117
MESA, ARIZONA 85204
WWW.GCAIROINC.COM

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03/03/22

DESIGNED BY:	B. JONES
DRAWN BY:	A. SOTO
APPROVED BY:	G. CAIRO
PROJECT No.:	BWC-2118
PLOT DATE:	MAR, 2022



**BUCKEYE WATER
CONSERVATION
AND DRAINAGE
DISTRICT**
205 EAST ROOSEVELT AVENUE
BUCKEYE, ARIZONA 85326
(623) 386-2196

**BULLARD WASH
CROSSING REHABILITATION**

GOODYEAR, ARIZONA

**NEW
BULLARD WASH
CROSSING BWCDD
MAIN CANAL
PROFILE**

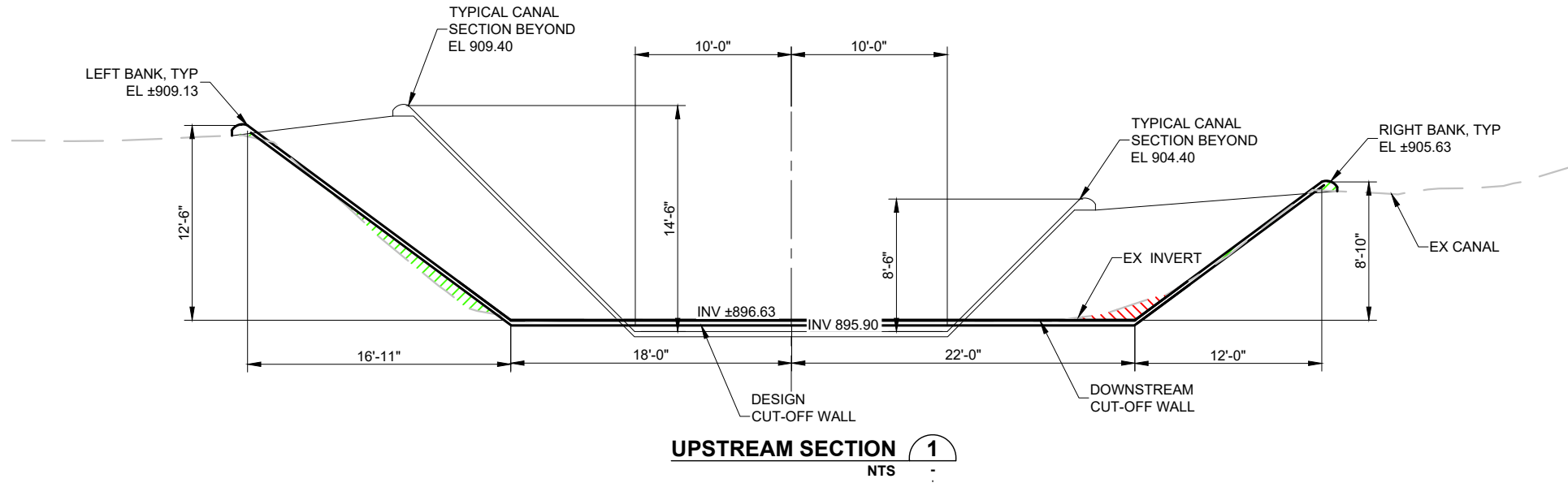
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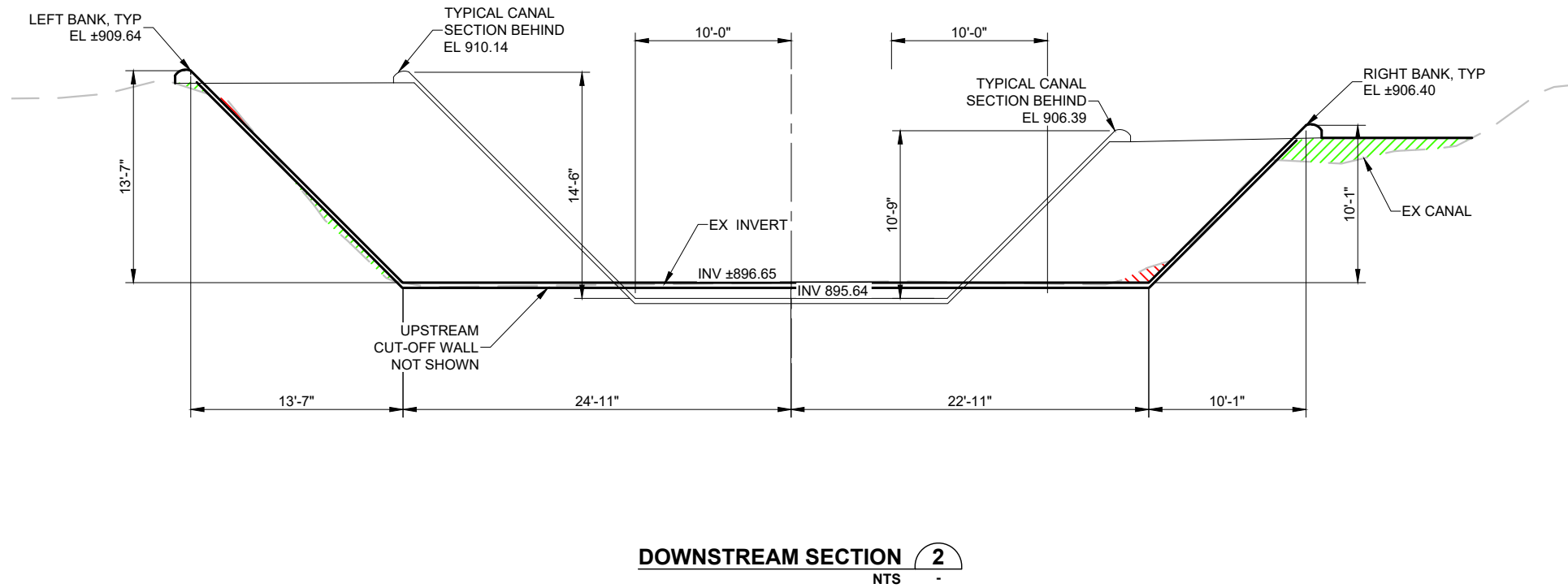


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NOTE:
SECTION CUTS ARE
LOOKING DOWNSTREAM.



LEGEND	
	PROPOSED GRADE
	EXISTING GRADE
	CUT
	FILL

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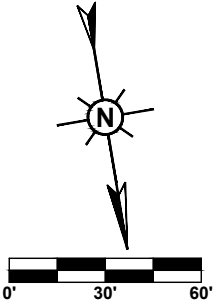
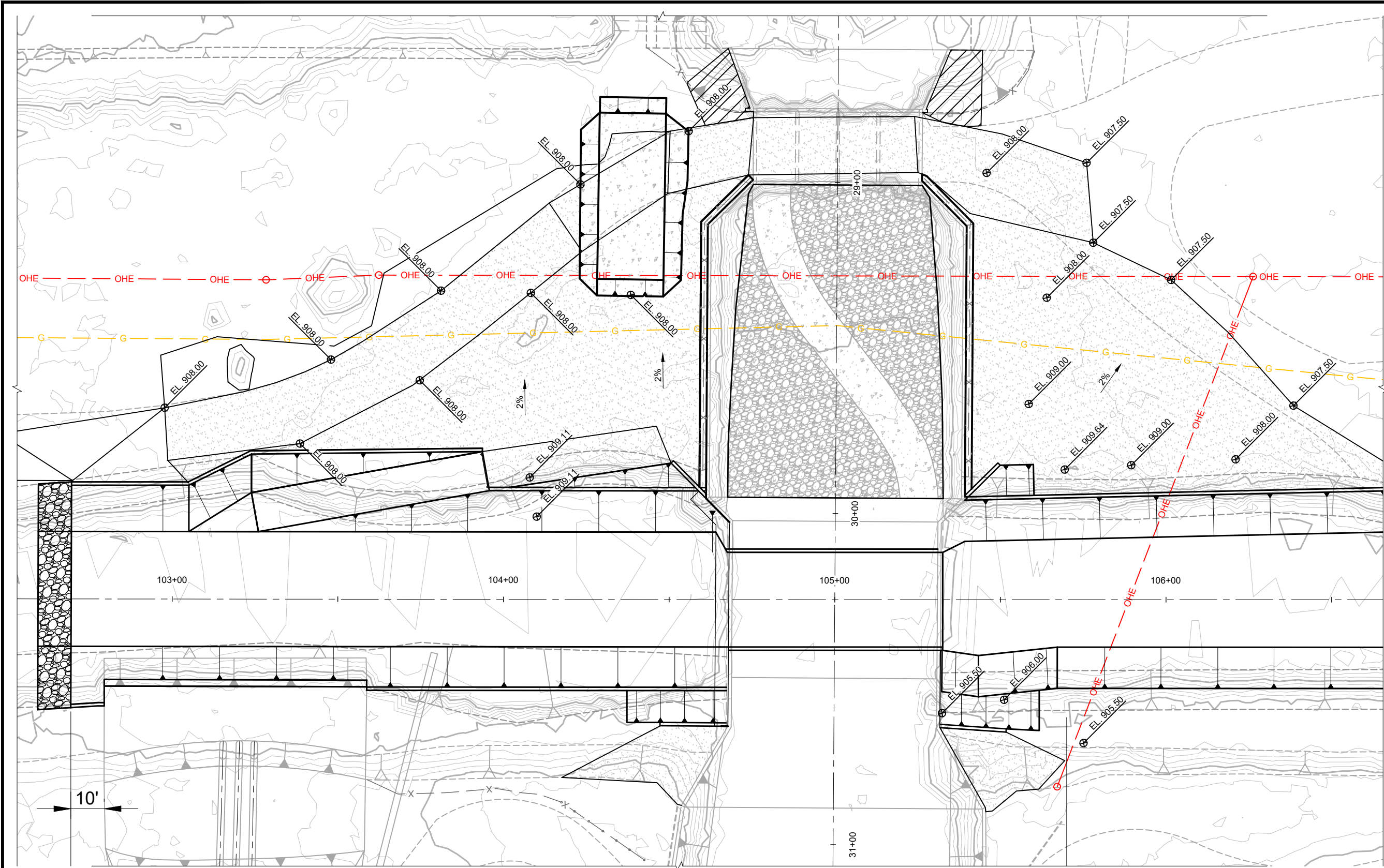
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							DRAWN BY: A. SOTO					
							APPROVED BY: G. CAIRO					
							PROJECT No.: BWC-2118					
							PLOT DATE: MAR, 2022					

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STAPLEY CENTER
1630 S. STAPLEY DR., SUITE 117
MESA, ARIZONA 85204
WWW.GCAIROINC.COM

NOT FOR
CONSTRUCTION
100%
SUBMITTAL
03/03/22

DESIGNED BY:	B. JONES
DRAWN BY:	A. SOTO
APPROVED BY:	G. CAIRO
PROJECT No.:	BWC-2118
PLOT DATE:	MAR, 2022



**BUCKEYE WATER
CONSERVATION
AND DRAINAGE
DISTRICT**
205 EAST ROOSEVELT AVENUE
BUCKEYE, ARIZONA 85326
(623) 386-2196

**BULLARD WASH
CROSSING REHABILITATION**

GOODYEAR, ARIZONA

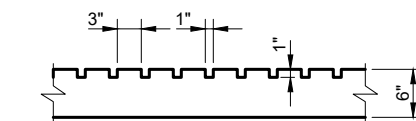
**BULLARD WASH
GRADING**

SP-2

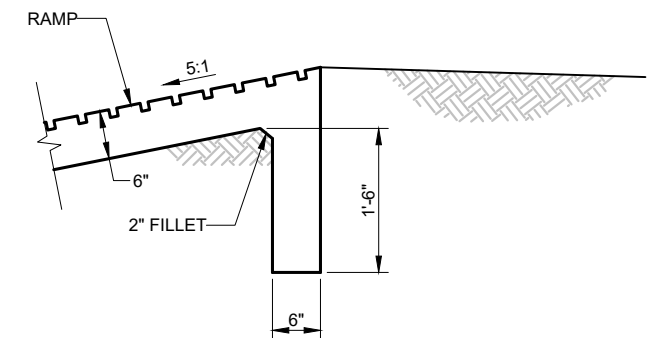
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GCE PROJECT No.: BWC-2118

DBA PROJECT No.: XXXXX



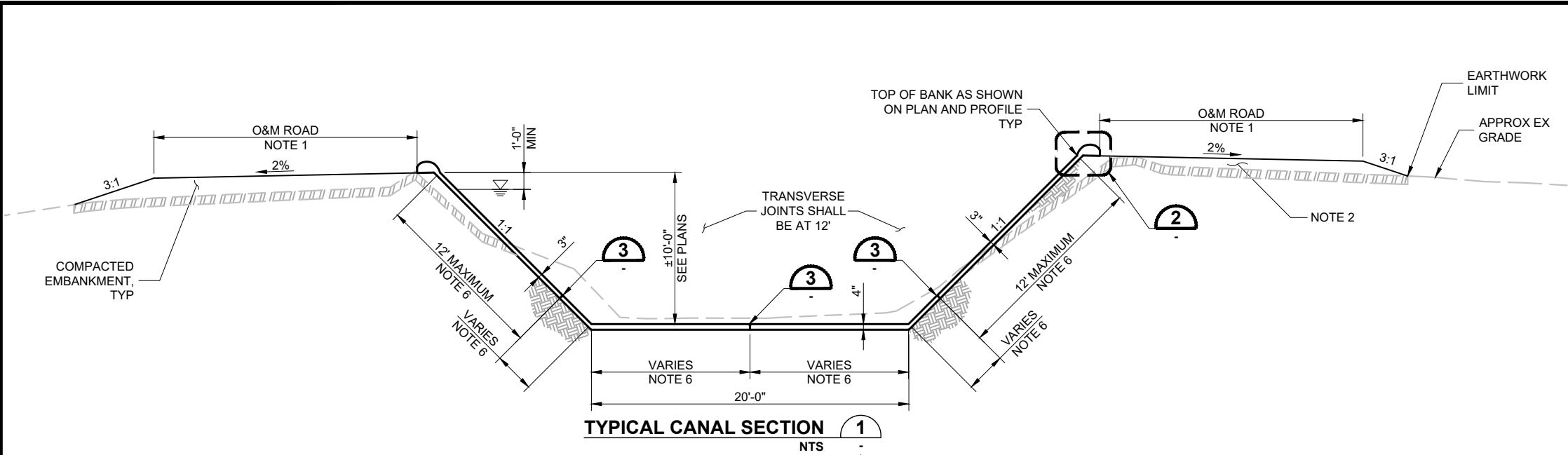
5. CORRUGATION TYPICAL ALONG ENTIRE RAMP SURFACE.



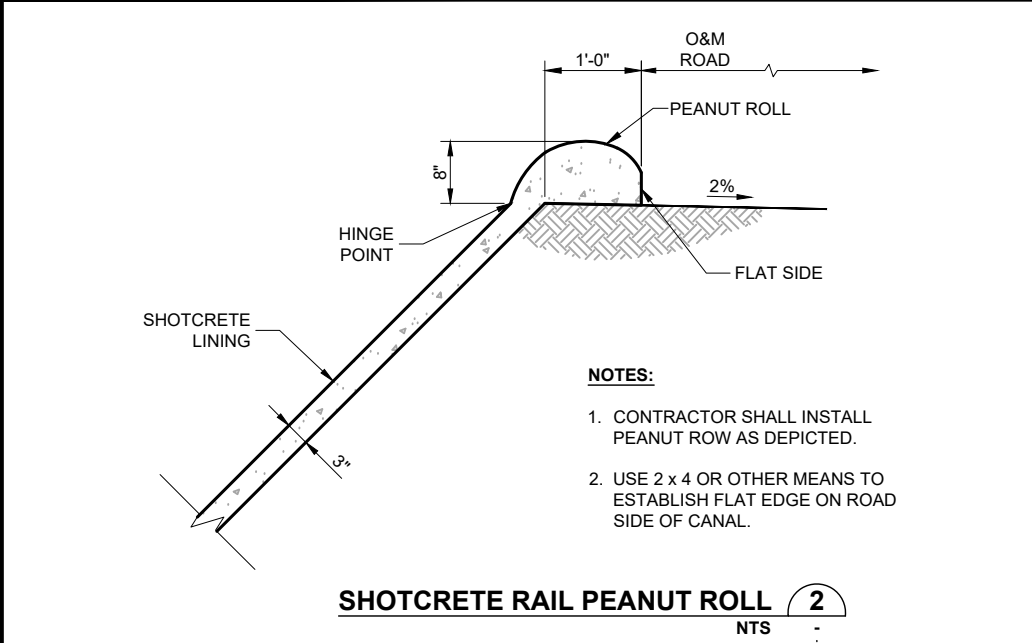
SECTION **B**
NTS -

1. SEE CONTRACTION JOINT DETAIL 3 ON DC-2.
2. MINIMUM RAMP LINING THICKNESS SHALL BE 6-INCHES.
3. CORRUGATED SURFACE TO BE FORMED USING CORRUGATED MOLD OR OTHER METHOD APPROVED BY THE ENGINEER.

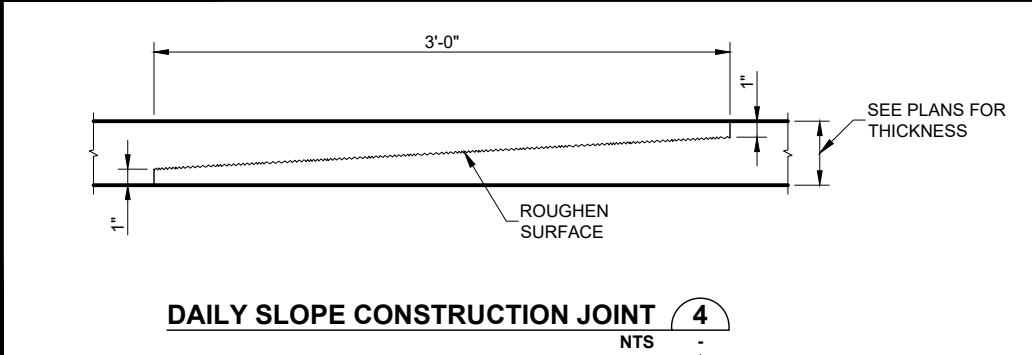
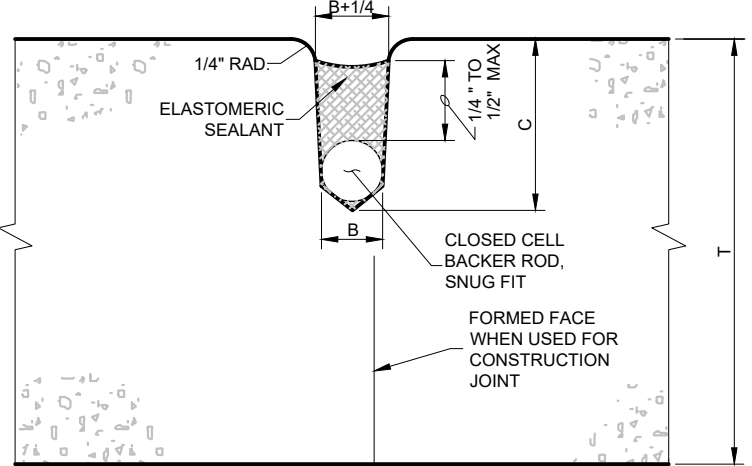
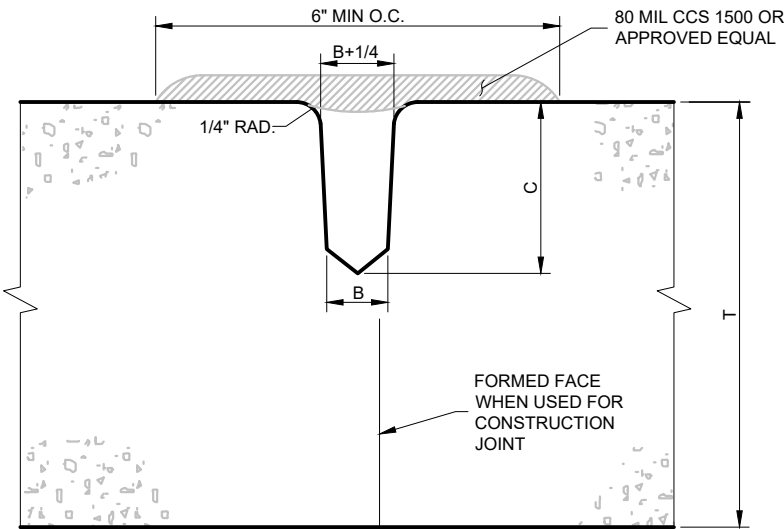
REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	RAMP PLAN, SECTION, AND DETAILS	DC-1
						DRAWN BY: A. SOTO				
						APPROVED BY: G. CAIRO				
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				



- NOTES:**
- O&M ROADS PER PROJECT PLANS, 16 FOOT MINIMUM.
 - SCARIFY 6 INCHES MINIMUM, MOISTURE CONDITION, AND COMPACT TO 95%. USE DETAILS ON DC-4 OR GCE DETAIL 680, CANAL SUB-EXCAVATION AND STRUCTURE FOUNDATION STABILIZATION, FOR UNSUITABLE SUBGRADES.
 - EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE ALL SHOTCRETE LINING SHALL BE CLASS A (MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI) CONFORMING TO SECTIONS 725 AND 726 OF THE M.A.G STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. CONCRETE MIXTURE SHALL INCLUDE FIBERMESH (PROPEX FIBERMESH 650, FORTA-FERRO, OR NYCON XL WITH A DOSAGE RATE OF 3.0 LBS PER CUBIC YARD). ALL CONCRETE AGGREGATE SHALL BE NO GREATER THAT 3/8" DIAMETER. SHOTCRETE MAY BE SALT RIVER PROJECT (SRP) STOCK CODE NUMBER 0000234 WITH 3 POUNDS PER CUBIC YARD FIBROUS ADMIXTURE. MINIMUM SHOTCRETE SLOPE THICKNESS SHALL BE 3 INCHES ON THE MAINLINE CANAL SIDE SLOPES, 4 INCHES FOR BOTTOM, AND 4 INCHES ON TRANSITIONS.
 - CONSTRUCT COMPACTED EMBANKMENT PER TYPICAL SECTION.
 - USE CUT-OFF WALL DETAILS 4 AND 5 ON DC-3 TO TIE INTO EXISTING EARTHEN CANAL, UNLESS NOTED OTHERWISE.
 - CONTRACTION JOINTS IN SHOTCRETE LINING SHALL BE PLACED TRANSVERSE AT 12 FOOT INTERVALS AND LONGITUDINAL A MAXIMUM 12 FOOT ON CENTER GRID AS APPROVED BY ENGINEER.
 - CONTRACTOR SHALL ADHERE TO JOINT GROOVE DETAIL 3, THIS SHEET, AND USE A TEMPLATE APPROVED BY THE ENGINEER TO INSTALL CONTRACTION JOINTS.
 - INSTALL LINING PEANUT ROLL ON BOTH SIDES, SEE DETAIL 2, THIS SHEET.



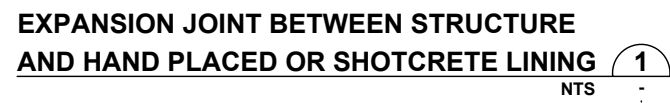
- NOTES:**
- CONTRACTOR SHALL INSTALL PEANUT ROW AS DEPICTED.
 - USE 2 x 4 OR OTHER MEANS TO ESTABLISH FLAT EDGE ON ROAD SIDE OF CANAL.



JOINT GROOVE DIMENSIONS			
T (IN)	B (IN)	C (IN)	APPROXIMATE GROOVE SPACING CENTER TO CENTER (FT-IN)
2 1/2	1/4 to 3/8	3/4 to 7/8	10 - 0
3	3/8 to 1/2	1 to 1 1/8	12 - 0
3 1/2	3/8 to 1/2	1 1/8 to 1 1/4	12 - 0
4	3/8 to 1/2	1 1/4 to 1 3/8	12 - 0
6	1/2 to 5/8	2 to 2 1/8	12 - 0

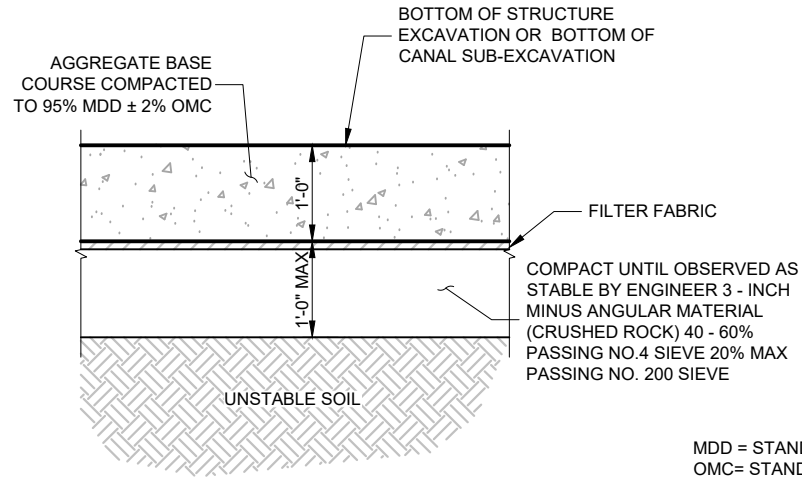
- NOTES:**
- B AND C SHOW ALLOWABLE RANGE.
 - CONTRACTION JOINT DETAIL SHALL BE PROVIDED FOR CONCRETE LINING CONSTRUCTION JOINTS AND WHERE SHOWN OR AS DIRECTED TO REPLACE IMPROPERLY INSTALLED PLASTIC WATERSTOP. JOINT MAY BE SAW CUT APPROXIMATELY AS SHOWN WHEN USED FOR REPAIR.
 - HEIGHT OF ELASTOMERIC SEALANT SHALL BE LESS THAN WIDTH OF JOINT.

REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION	TYPICAL BWCD SHOTCRETE SECTION	DC-2
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				



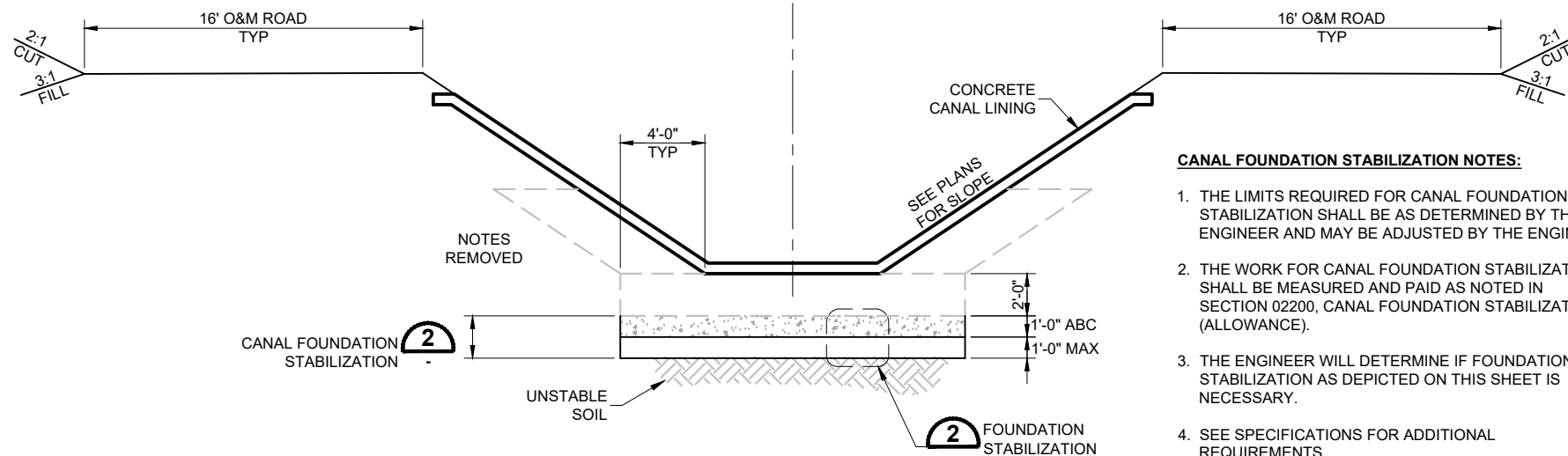
1. CUT-OFF WALL SECTION EXTENDS ACROSS INVERT AND UP EACH SIDE SLOPE TO TOP OF CONCRETE LINING TO DESIGN WATER SURFACE ELEVATION POURED LEVEL ACROSS O&M ROAD.

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						DRAWN BY: A. SOTO				
						APPROVED BY: G. CAIRO				
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				



MDD = STANDARD PROCTOR "MAXIMUM DRY DENSITY"
OMC = STANDARD PROCTOR "OPTIMUM MOISTURE CONTENT"

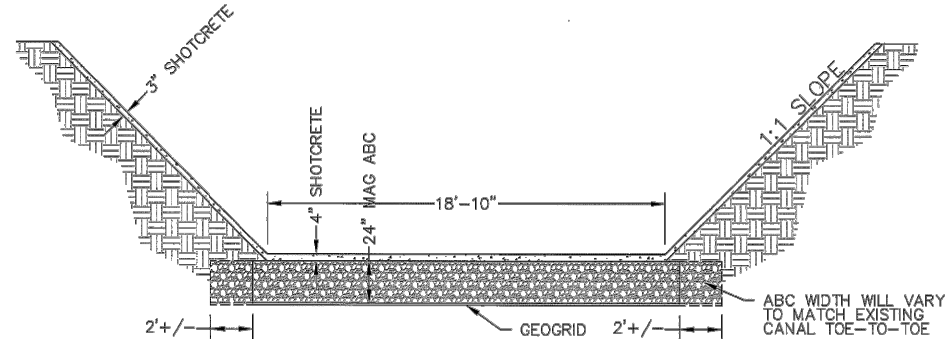
FOUNDATION STABILIZATION DETAIL 2
NTS



CANAL FOUNDATION STABILIZATION
TYPICAL SECTION
NTS

- CANAL FOUNDATION STABILIZATION NOTES:**
1. THE LIMITS REQUIRED FOR CANAL FOUNDATION STABILIZATION SHALL BE AS DETERMINED BY THE ENGINEER AND MAY BE ADJUSTED BY THE ENGINEER.
 2. THE WORK FOR CANAL FOUNDATION STABILIZATION SHALL BE MEASURED AND PAID AS NOTED IN SECTION 02200, CANAL FOUNDATION STABILIZATION (ALLOWANCE).
 3. THE ENGINEER WILL DETERMINE IF FOUNDATION STABILIZATION AS DEPICTED ON THIS SHEET IS NECESSARY.
 4. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 5. THIS DETAIL IS SIMILAR TO GCE DETAIL 680.

IF CONTRACTOR DIGS 24-INCHES IN UNSUITABLE SOIL AND IT APPEARS MARGINAL, CONTRACTOR SHALL USE DETAIL 3. IF AT 24-INCHES THE SOIL STILL IS WET AND UNSUITABLE USE DETAIL 1.



SIGNATURE *[Signature]*
NAME *Noel Carter*
TITLE *General Manager*

- NOTE:**
1. SOIL STABILIZATION DETAIL PROVIDED BY BWCCD AS ALTERNATIVE METHOD.

BWCCD SOIL STABILIZATION DETAIL 3
NTS

CANAL SUB-EXCAVATION AND
STRUCTURE FOUNDATION STABILIZATION 1
NTS

REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY:	B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	SOIL STABILIZATION DETAILS	DC-4
						DRAWN BY:	A. SOTO				
						APPROVED BY:	G. CAIRO				
						PROJECT No.:	BWC-2118				
						PLOT DATE:	MAR, 2022				

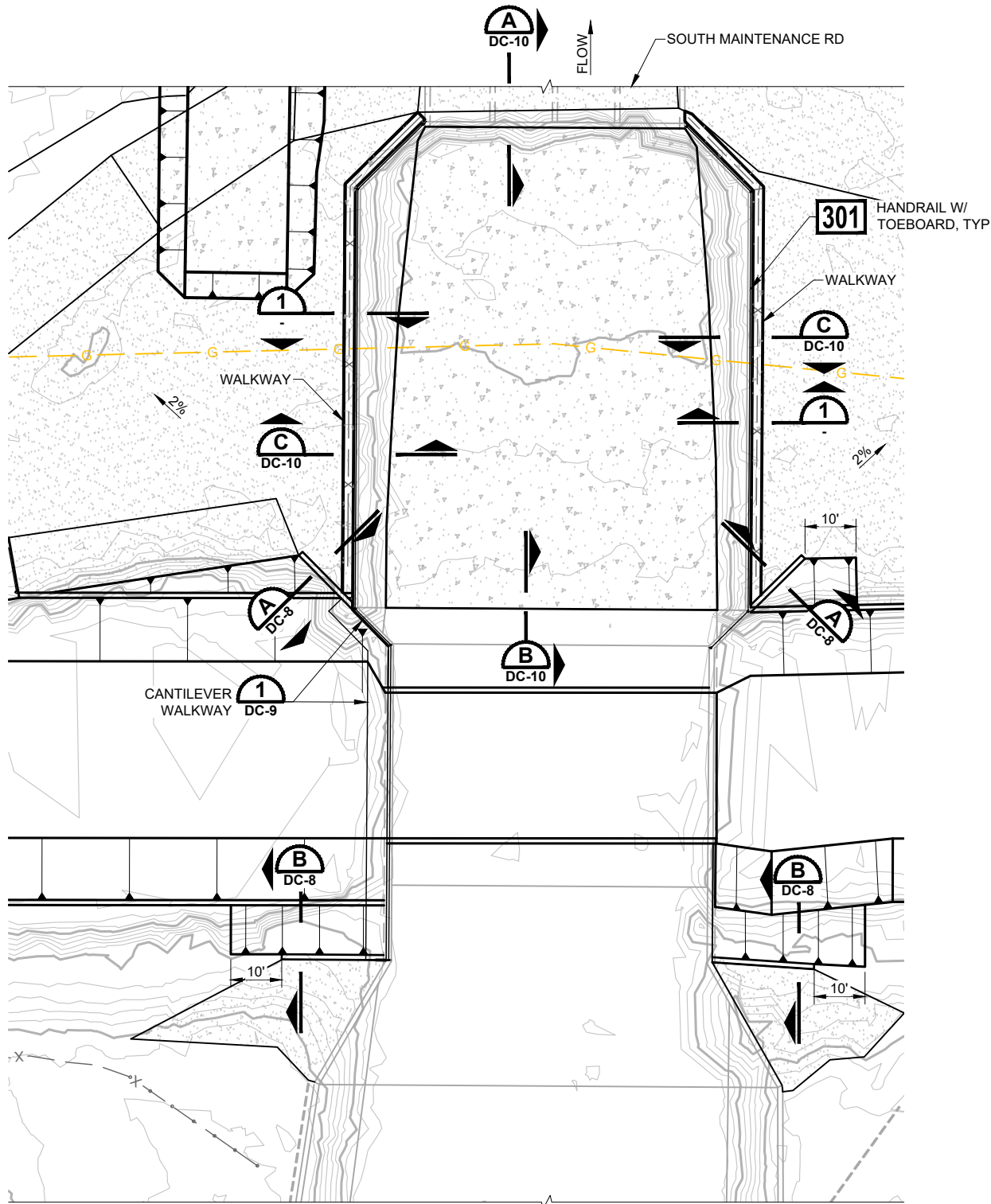
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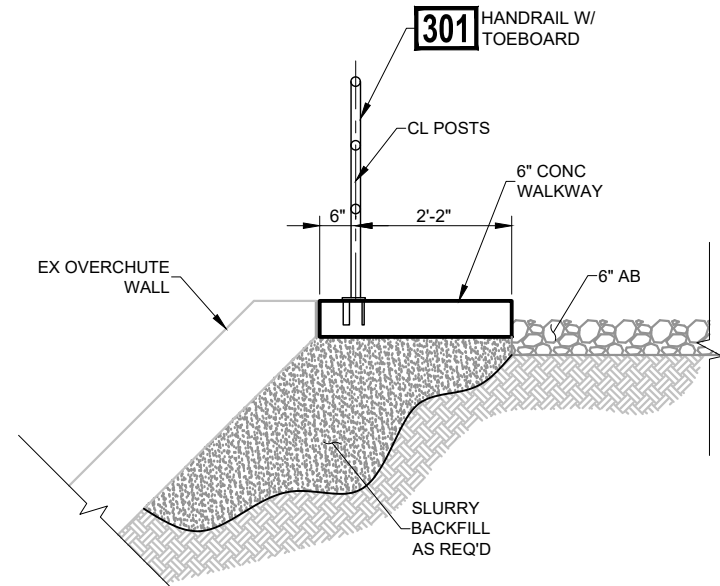
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DBA PROJECT No.: XXXXX

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OUTFALL WALKWAY AND HANDRAIL 1
NTS



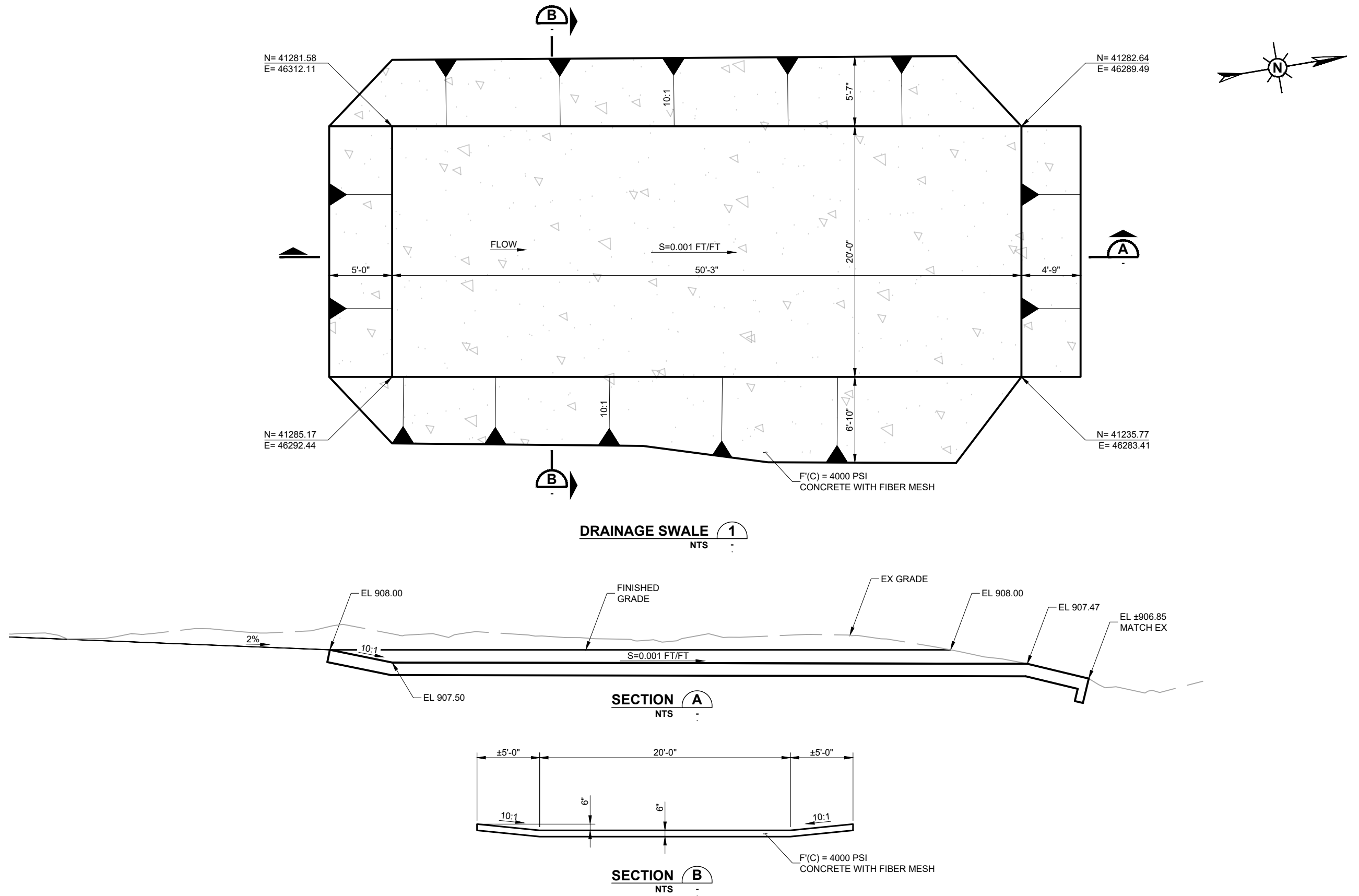
OUTFALL WALKWAY AND HANDRAIL 1
NTS

ENTIRE SHEET



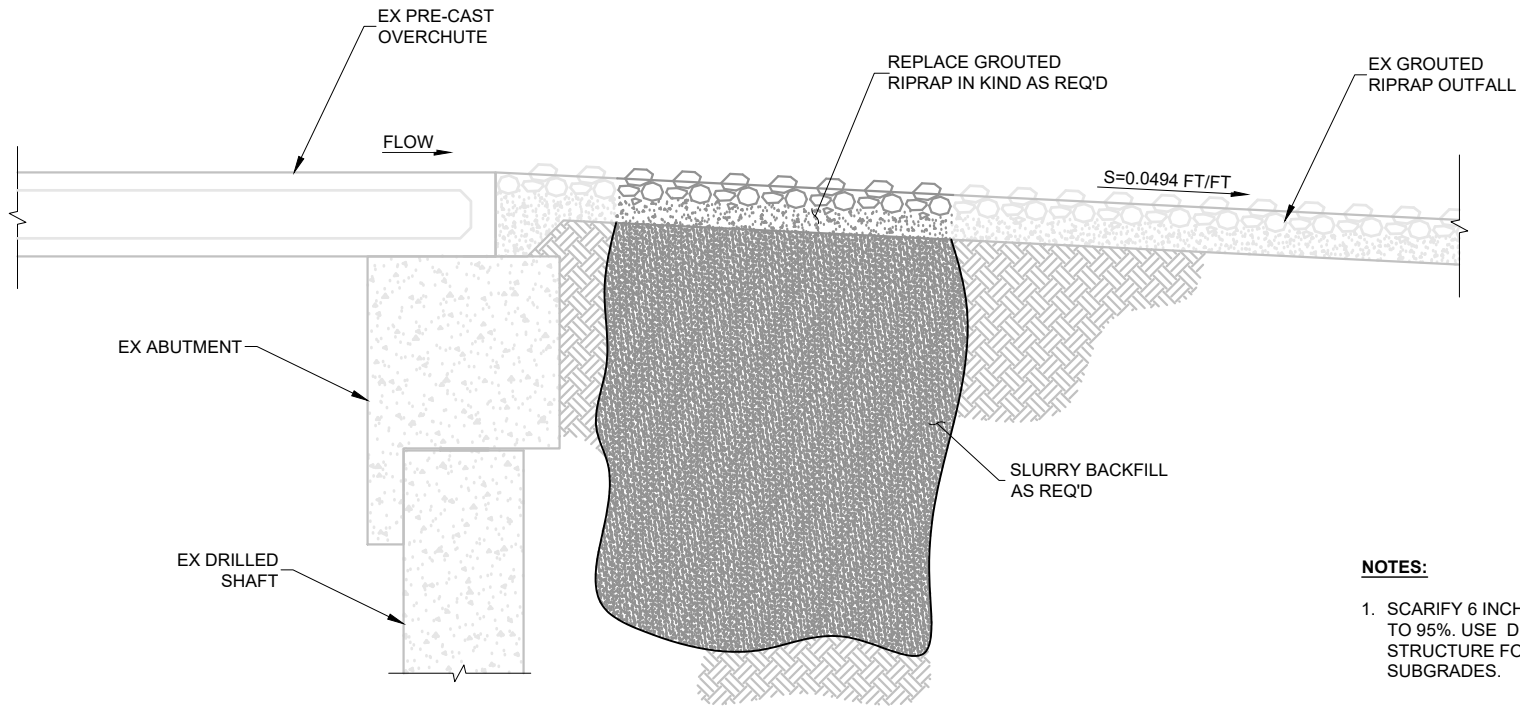
REV.	DATE	REVISION DESCRIPTION	BY	GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION	WALKWAY DETAILS	DC-5
					DRAWN BY: A. SOTO				
					APPROVED BY: G. CAIRO				
					PROJECT No.: BWC-2118				
					PLOT DATE: MAR, 2022				
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REV.	DATE	REVISION DESCRIPTION	BY	GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22 DESIGNED BY: B. JONES DRAWN BY: A. SOTO APPROVED BY: G. CAIRO PROJECT No.: BWC-2118 PLOT DATE: MAR, 2022 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196 BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA DRAINAGE SWALE DC-6

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- NOTES:**
- 1. SCARIFY 6 INCHES MINIMUM, MOISTURE CONDITION, AND COMPACT TO 95%. USE DETAILS ON DC-4, CANAL SUB-EXCAVATION AND STRUCTURE FOUNDATION STABILIZATION, FOR UNSUITABLE SUBGRADES.
 - 2. SEE SECTION D2 ON SHEET 10 OF 81 FOR EXISTING RIPRAP SECTION PER BULLARD WASH CHANNEL IMPROVEMENTS PROJECT, PROJECT NO. 4700731, RECORD DRAWING STAMPED 4/19/00 BY LEE HULBERT.

GROUTED RIPRAP REHABILITATION 1
NTS

REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	GROUTED RIPRAP REHABILITATION	DC-7
						DRAWN BY: A. SOTO				
						APPROVED BY: G. CAIRO				
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				

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WALL FOOTING JOINT DETAIL 1
NTS -

WALL JOINT DETAIL **2**
NTS -

RETAINING WALL PLAN AND SECTION 3
NTS -

SECTION **A**
NTS -

- NOTES:**
1. SEE DETAIL 1 FOR NEW TO EXISTING WALL FOOTING JOINT DETAIL.
 2. SEE DETAIL 2 FOR NEW TO EXISTING WALL FOOTING JOINT DETAIL.

RETAINING WALL PLAN AND SECTION 4
NTS -

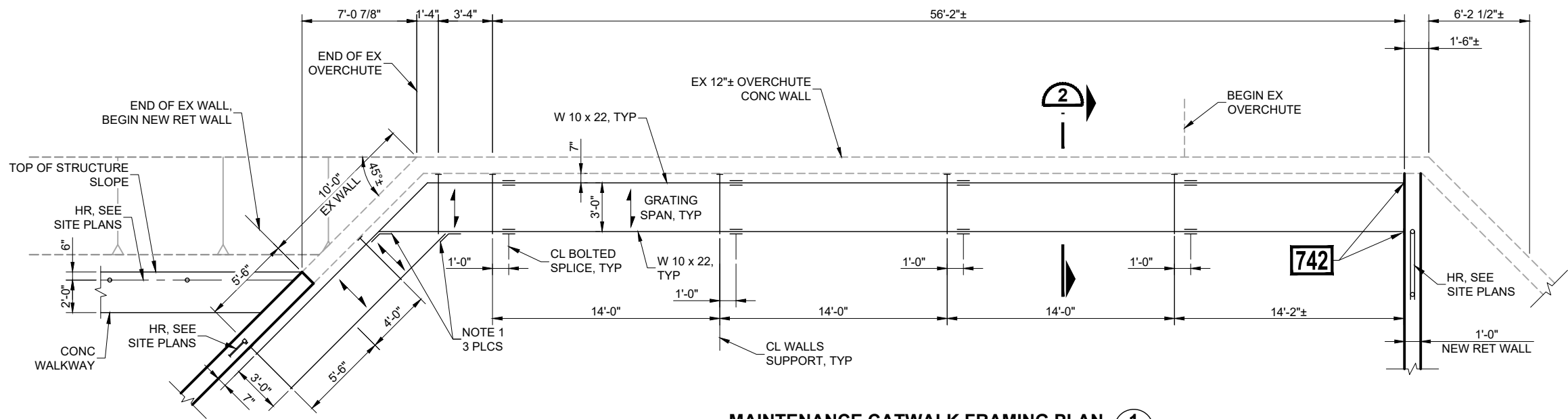
SECTION **B**
NTS -

- NOTES:**
1. SEE DETAIL 1 SIMILAR FOR NEW TO EXISTING WALL FOOTING JOINT DETAIL.
 2. SEE DETAIL 2 SIMILAR FOR NEW TO EXISTING WALL FOOTING JOINT DETAIL.

NEW SHEET

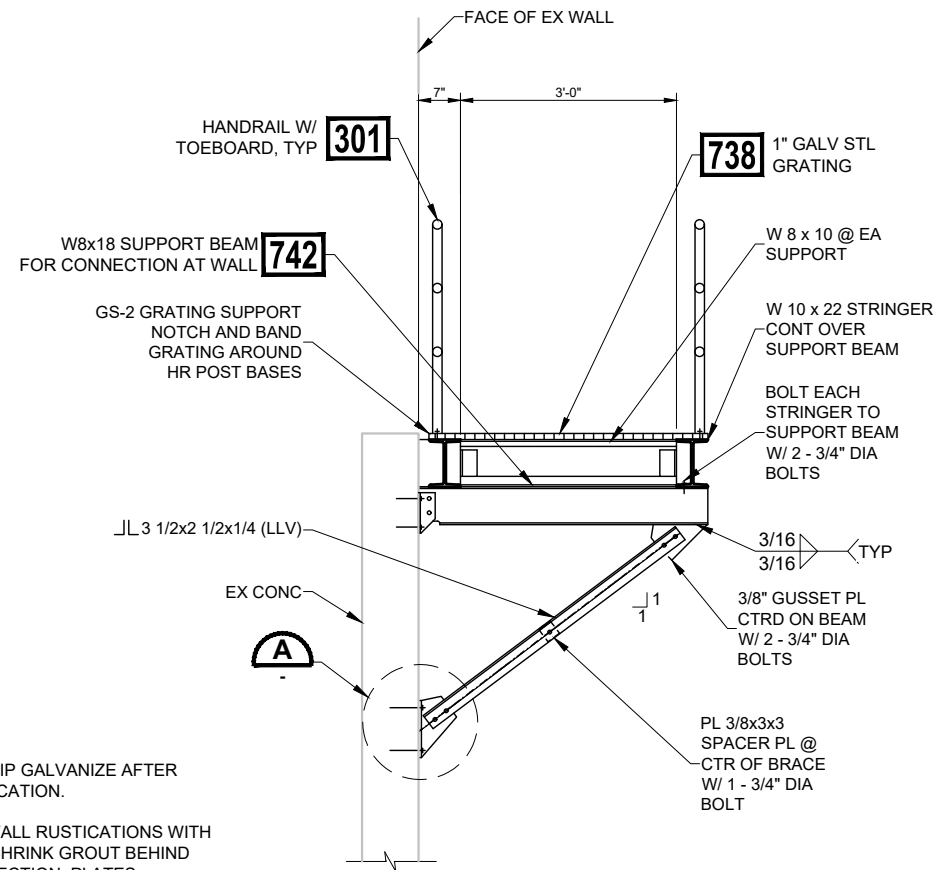


REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION	GROUTED RIPRAP REHABILITATION	DC-8
						DRAWN BY: A. SOTO				
						APPROVED BY: G. CAIRO				
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				



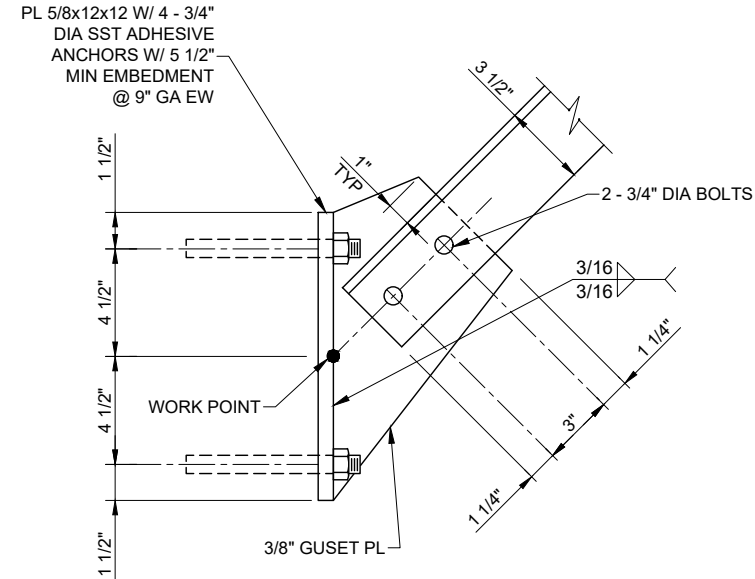
- NOTES:**
1. BOLTED SPLICE WITH SINGLE BENT PLATE. SEE BOLTED SPLICE DETAIL, SIMILAR.

MAINTENANCE CATWALK FRAMING PLAN 1
NTS



- NOTE:**
1. HOT-DIP GALVANIZE AFTER FABRICATION.
 2. FILL WALL RUSTICATIONS WITH NON-SHRINK GROUT BEHIND CONNECTION PLATES.
 3. SEE FRAMING PLAN FOR DETAILS NOT SHOWN

OVERCHUTE CANTILEVER WALKWAY 2
NTS

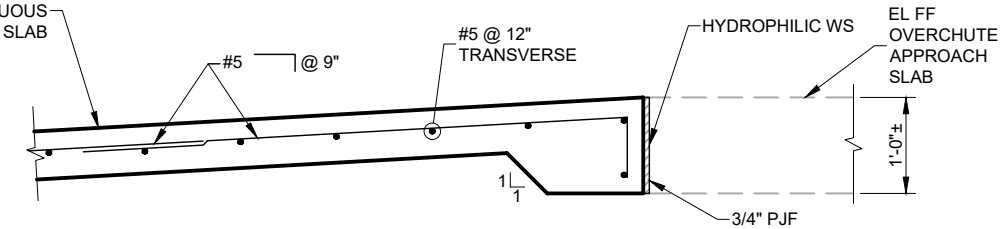
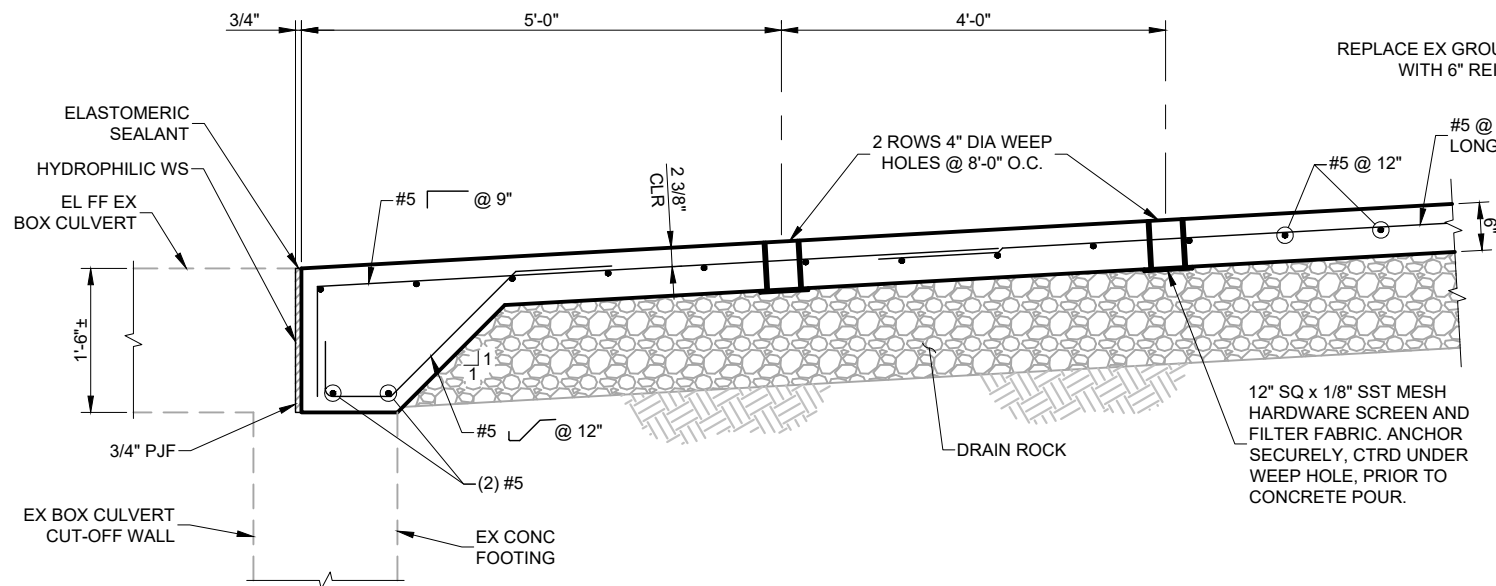


DETAIL A
NTS

NEW SHEET

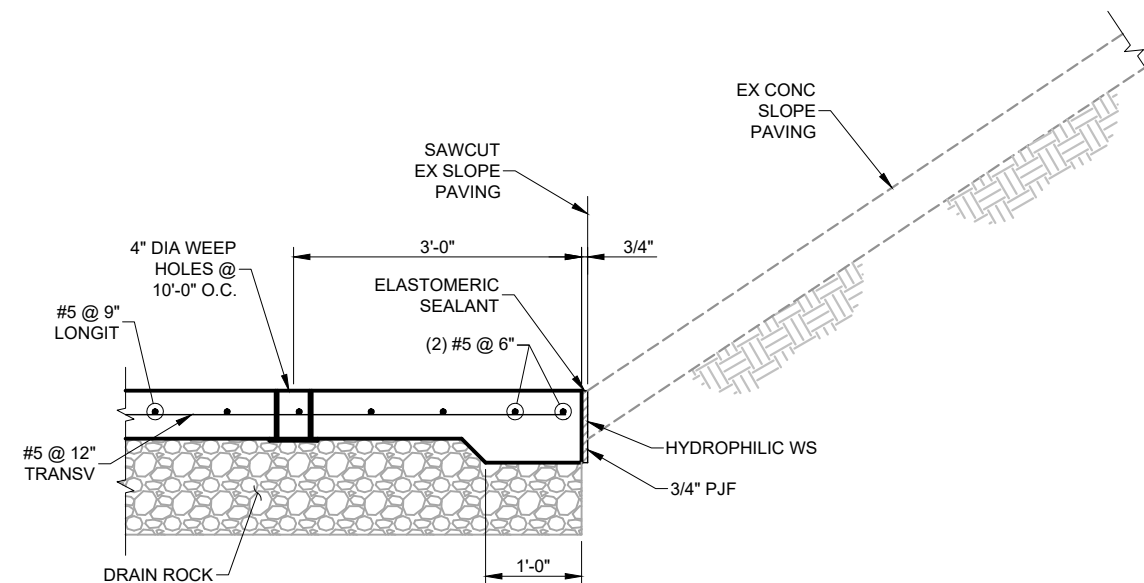
REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM		NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22		DESIGNED BY: B. JONES DRAWN BY: A. SOTO APPROVED BY: G. CAIRO PROJECT No.: BWC-2118 PLOT DATE: MAR, 2022		 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196		BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA		MAINTENANCE CATWALK FRAMING PLAN		DC-9	

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SECTION A
1"=1'-0" DC-5

SECTION B
1"=1'-0" DC-5

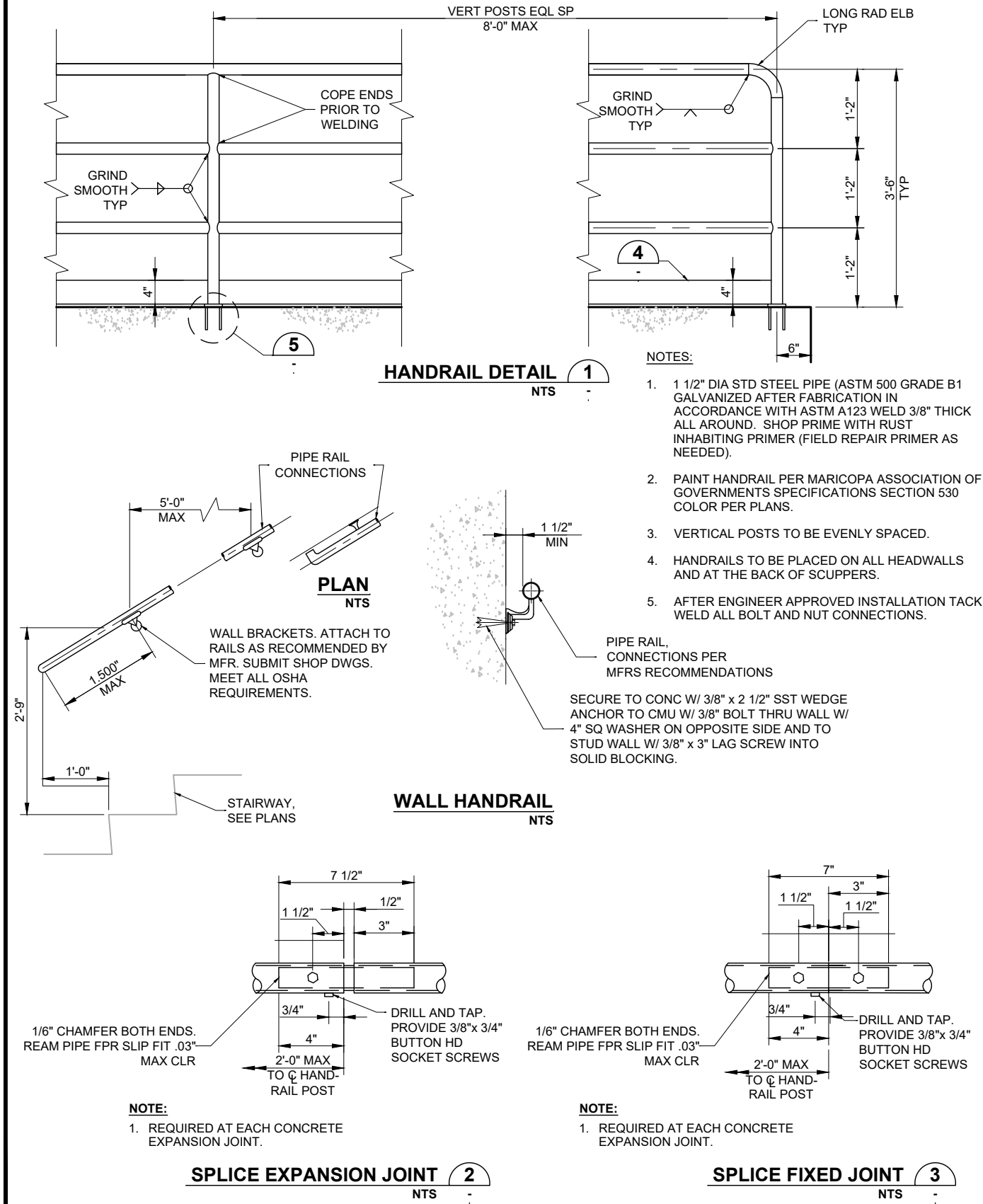


SECTION C
1"=1'-0"

NEW SHEET

REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM		NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22		DESIGNED BY: B. JONES	 BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	OVERCHUTE DROP SLAB LONGITUDE SECTIONS	DC-10
								DRAWN BY: A. SOTO					
								APPROVED BY: G. CAIRO					
								PROJECT No.: BWC-2118					
								PLOT DATE: MAR, 2022					

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REV.	DATE	REVISION DESCRIPTION	BY

GCE inc. GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES DRAWN BY: A. SOTO APPROVED BY: G. CAIRO PROJECT No.: BWC-2118 PLOT DATE: MAR, 2022
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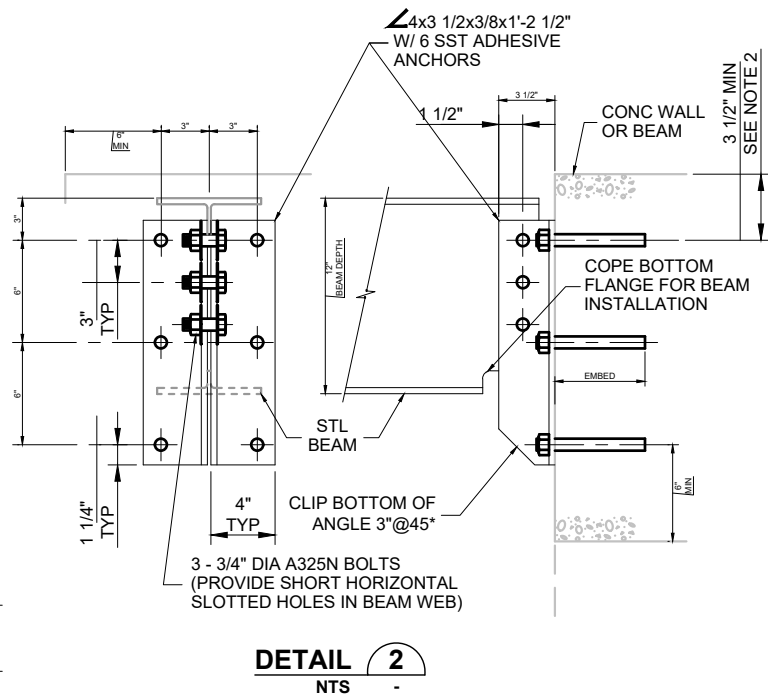
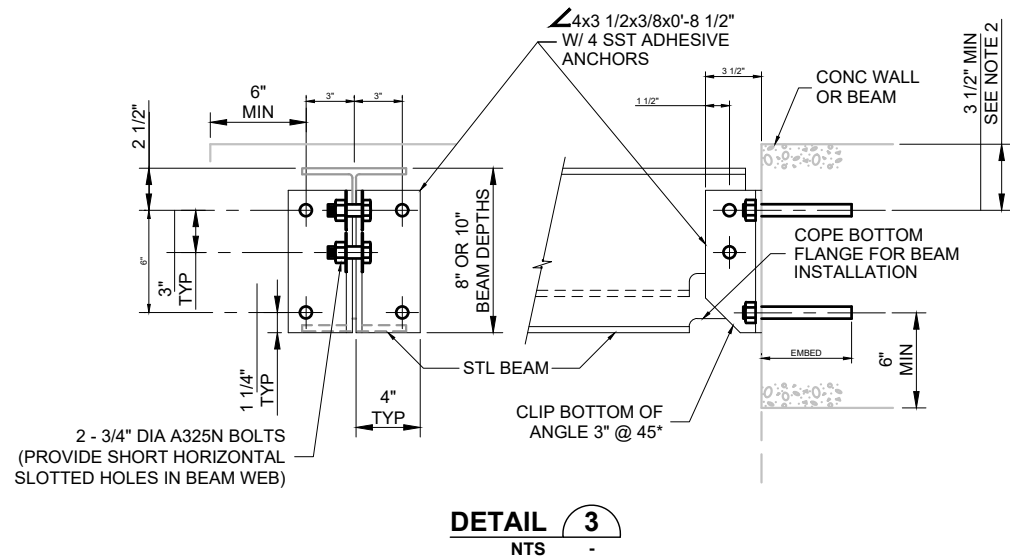
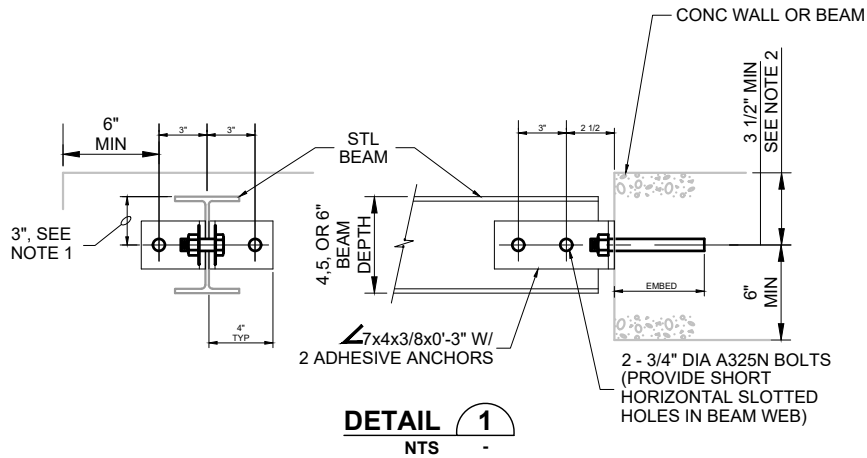
BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT
205 EAST ROOSEVELT AVENUE
BUCKEYE, ARIZONA 85326
(623) 386-2196

BULLARD WASH CROSSING REHABILITATION
GOODYEAR, ARIZONA

STANDARD DETAILS

D-1

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ADHESIVE ANCHORS		
CONC. WALL THICKNESS	ADH ANCHOR DIA.	EMBEDMENT REQ'D
6"	1/2"	4"
8"	5/8"	5 3/8"
10" OR GREATER	3/4"	6 5/8"

NOTES:

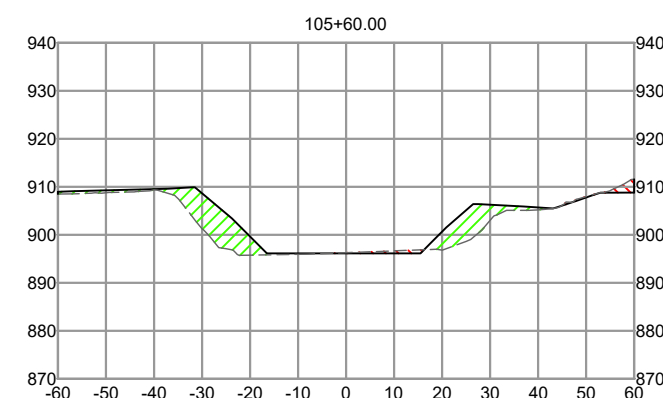
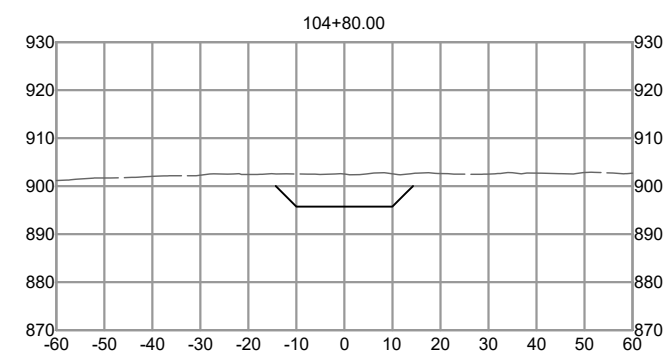
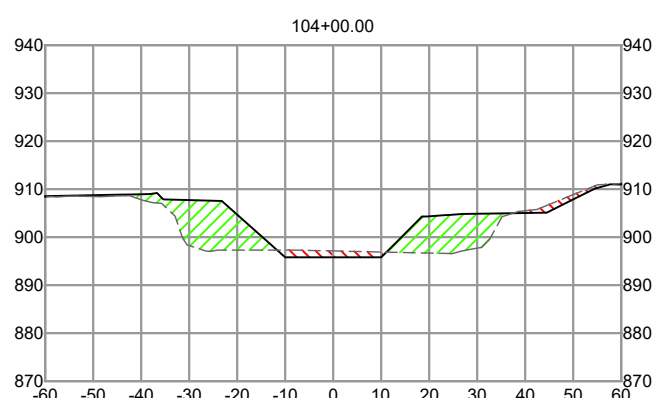
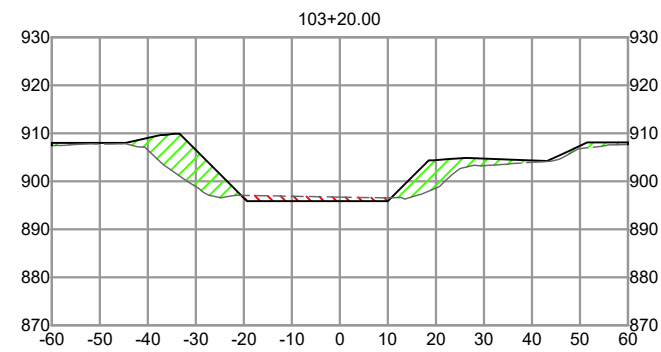
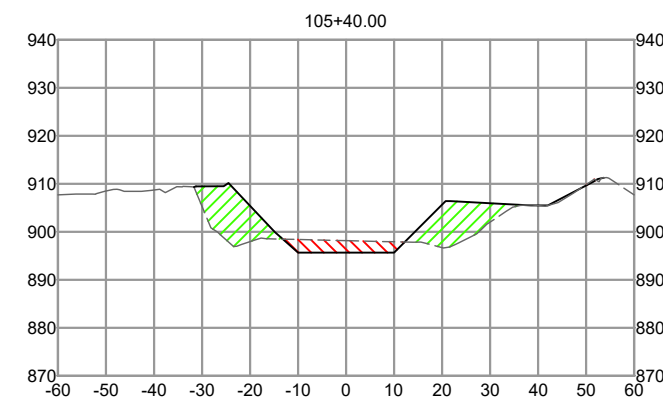
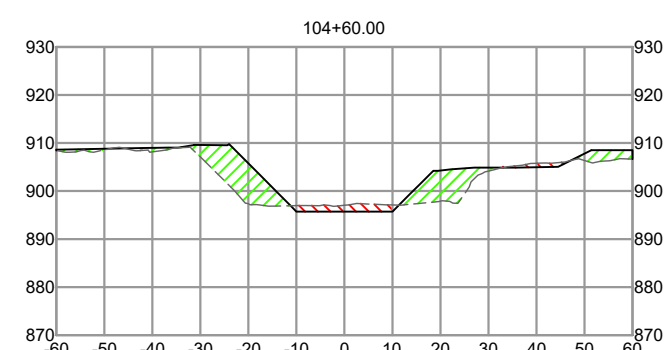
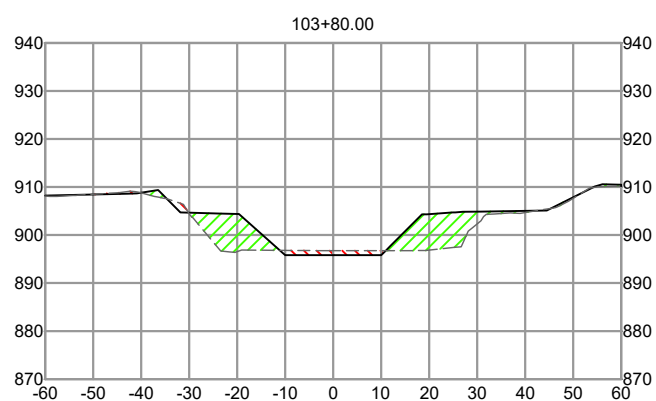
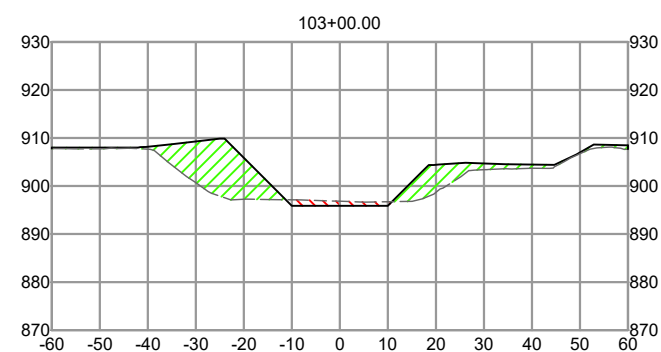
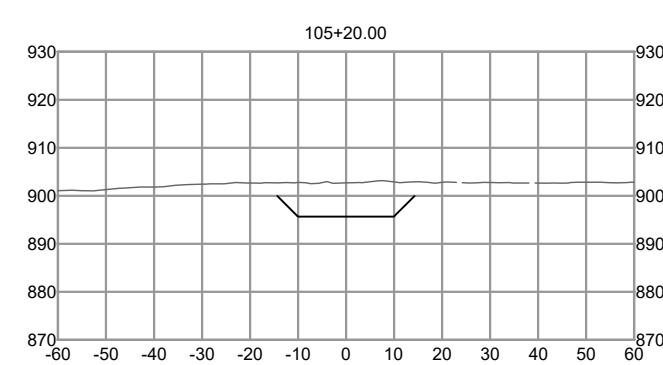
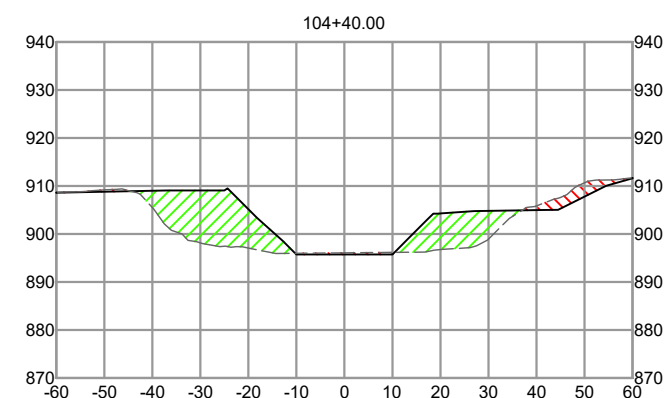
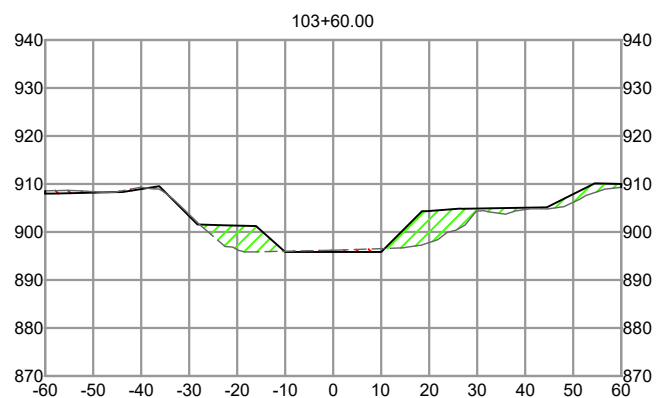
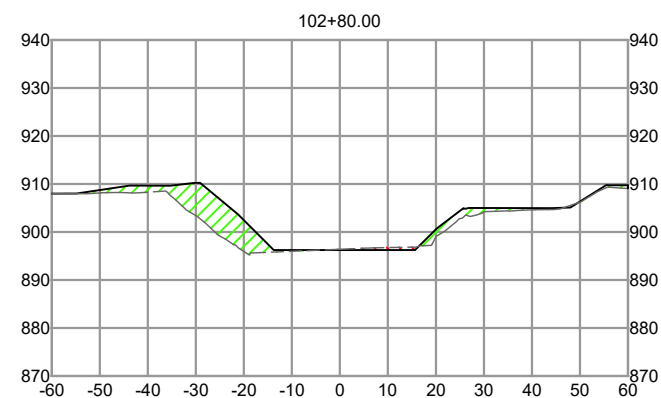
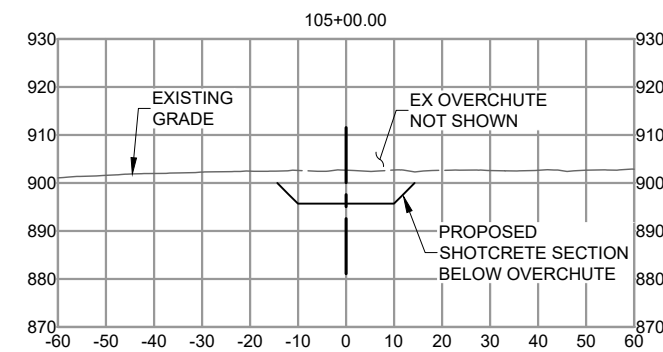
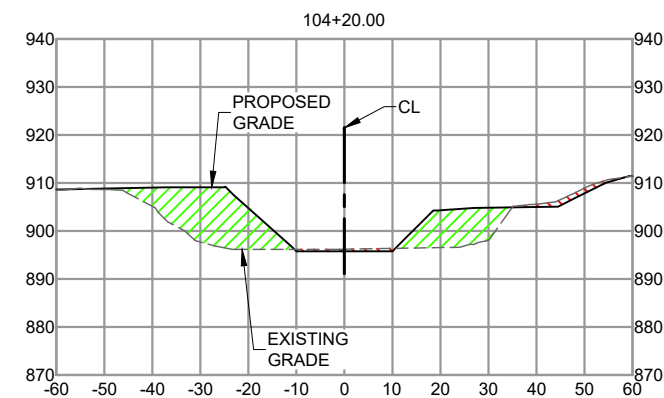
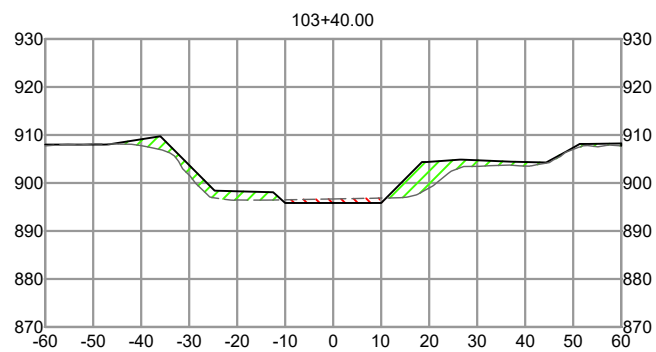
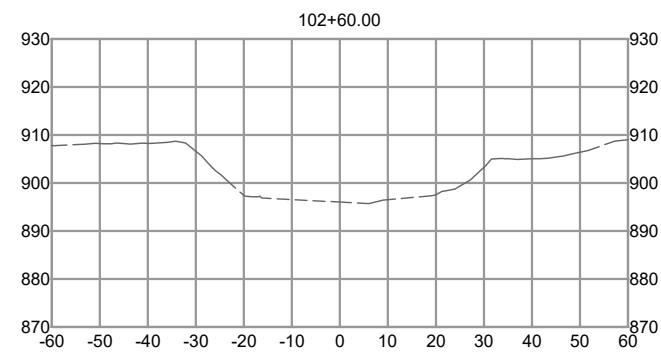
- 3" DIMENSION TYPICAL EXCEPT 2 1/2" FOR 5" BEAM AND 2" FOR 4" BEAMS
- DO NOT CUT EXISTING CONCRETE BEAM TOP REINFORCING DURING DRILL-IN ANCHOR INSTALLATION. FIELD LOCATE BEAM REINFORCING PRIOR TO FABRICATION. ADD LENGTH TO CLIP ANGLES AS REQUIRED TO LOWER ANCHORS TO CLEAR REINFORCING WHILE MAINTAINING SPACING AND EDGE DISTANCE AS SHOWN.
- UNLESS OTHERWISE SHOWN, ADHESIVE ANCHOR DIAMETER & EMBEDMENT SHALL BE AS SPECIFIED IN THE "ADHESIVE ANCHORS" TABLE.
- ADHESIVE ANCHORS SHALL BE HILTI HY150 TYPE 316 STAINLESS STEEL (ICBO ER-5193) ADHESIVE ANCHOR SYSTEM OR EQUAL.

THIS DETAIL IS INTENDED FOR LIGHTLY LOADED BEAMS, SUCH AS GRATING OR CHECKERED PLATE SUPPORT BEAMS.

CONNECTION BETWEEN WALL AND BEAM 742

REV.	DATE	REVISION DESCRIPTION	BY	GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM	NOT FOR CONSTRUCTION 100% SUBMITTAL 03/03/22	DESIGNED BY: B. JONES	BUCKEYE WATER CONSERVATION AND DRAINAGE DISTRICT 205 EAST ROOSEVELT AVENUE BUCKEYE, ARIZONA 85326 (623) 386-2196	BULLARD WASH CROSSING REHABILITATION GOODYEAR, ARIZONA	STANDARD DETAILS	D-2
						DRAWN BY: A. SOTO				
						APPROVED BY: G. CAIRO				
						PROJECT No.: BWC-2118				
						PLOT DATE: MAR, 2022				

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LEGEND

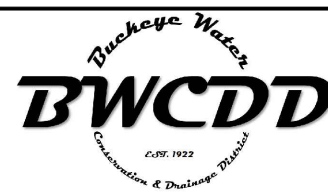
 PROPOSED GRADE
 EXISTING GRADE
 CUT
 FILL

REV.	DATE	REVISION DESCRIPTION	BY



NOT FOR
CONSTRUCTION
100%
SUBMITTAL
03/03/22

DESIGNED BY:	B. JONES
DRAWN BY:	A. SOTO
APPROVED BY:	G. CAIRO
PROJECT No.:	BWC-2118
PLOT DATE:	MAR, 2022



**BUCKEYE WATER
CONSERVATION
AND DRAINAGE
DISTRICT**
205 EAST ROOSEVELT AVENUE
BUCKEYE, ARIZONA 85326
(623) 386-2196

BULLARD WASH CROSSING REHABILITATION

GOODYEAR, ARIZONA

CROSS SECTIONS

XS-1