

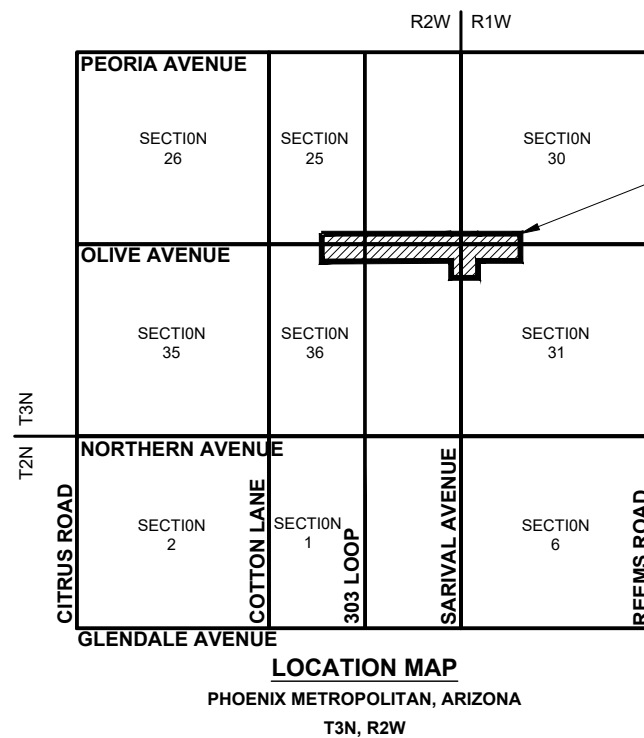
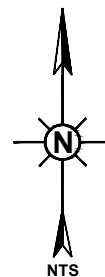
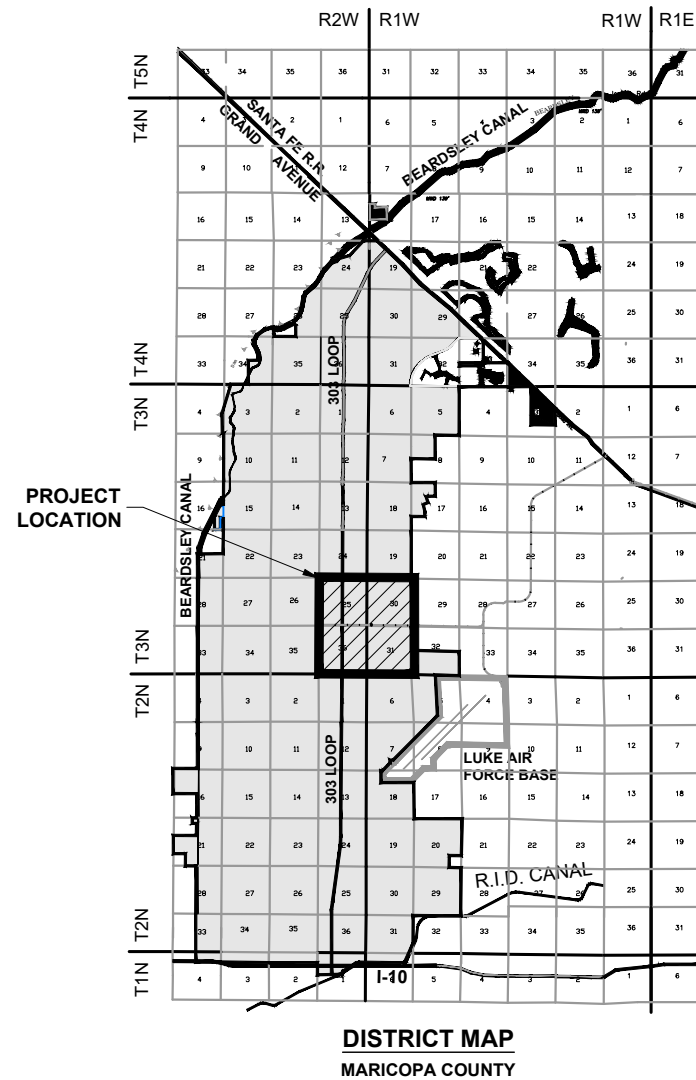


MARICOPA WATER DISTRICT MCDOT OLIVE AVENUE

**FINAL
JANUARY 2020**

LATERAL 9 AND LATERAL 9 SUBLATERAL G SR 303L TO SARIVAL AVENUE RELOCATIONS (MCDOT TT0561)

PROJECT PLANS MARICOPA COUNTY, ARIZONA



APPROVED BY:

1/27/20

MARICOPA WATER DISTRICT
GLEN VORTHERMS, P.E.

DATE

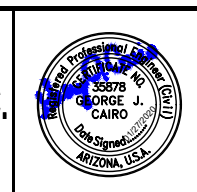
* PLAN APPROVAL BY MWD IS VALID 1 YEAR FROM DATE OF APPROVAL.



Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

**COVER AND
LOCATION MAPS**

G - 1

SHEET INDEX

DWG ID	SHEET NO.	DESCRIPTION
G-1	1	COVER AND LOCATION MAPS
G-2	2	SHEET INDEX AND CONSTRUCTION QUANTITIES
G-3	3	DISTRICT AND CONSTRUCTION NOTES
G-4	4	STRUCTURAL NOTES
G-5	5	ABBREVIATIONS AND DRAWING DETAIL DESIGNATIONS
G-6	6	LEGEND AND SURVEY CONTROL
G-7	7	KEY PLAN
G-8A	8	GEOMETRIC LAYOUT PLAN AND COORDINATE DATA TABLE LATERAL 9
G-8B	9	GEOMETRIC LAYOUT PLAN AND COORDINATE DATA TABLE LATERAL 9 SUBLATERAL G
G-9	10	HYDRAULIC PROFILE LATERAL 9 AND LATERAL 9 SUBLATERAL G
P-1	11	LATERAL 9 PLAN AND PROFILE STA 84+97 TO STA 87+36
P-2	12	LATERAL 9 PLAN AND PROFILE STA POB TO STA 17+50
P-3	13	LATERAL 9 PLAN AND PROFILE STA 17+50 TO STA 25+50
P-4	14	LATERAL 9 PLAN AND PROFILE STA 25+50 TO STA 34+50
P-5	15	LATERAL 9 PLAN AND PROFILE STA 34+50 TO POE
P-6	16	LATERAL 9 SUBLATERAL G PLAN AND PROFILE POB TO POE
SP-1	17	LATERAL 9 FCS #1 SITE PLAN
SP-2	18	LATERAL 9 FCS #2 SITE PLAN
S-1A	19	FLOW CONTROL STRUCTURES #1 PLAN, SECTIONS AND COVER
S-1B	20	FLOW CONTROL STRUCTURES #2 PLAN, SECTIONS AND COVER
S-2A	21	FLOW CONTROL STRUCTURE #3 PLAN AND MESH COVER
S-2B	22	FLOW CONTROL STRUCTURE #3 SECTIONS
S-2C	23	FLOW CONTROL STRUCTURE #3 SECTION
S-3	24	TYPICAL MANHOLE PLAN, SECTIONS, AND SCHEDULE
S-4A	25	MANHOLE #4 PLAN AND SECTIONS
S-4B	26	MANHOLE #5 PLAN AND SECTIONS
S-5	27	OUTLET HEADWALL #1 AND #2 PLAN AND SECTIONS
S-6A	28	FLOW MEASUREMENT STRUCTURE #1 PLAN, SECTIONS, AND COVER
S-6B	29	FLOW MEASUREMENT STRUCTURE #2 PLAN, SECTIONS, AND COVER
D-1	30	STANDARD DETAILS
D-2	31	STANDARD DETAILS
D-3	32	STANDARD DETAILS
D-4	33	STANDARD DETAILS
D-5	34	STANDARD DETAILS
D-6	35	STANDARD DETAILS
D-7	36	STANDARD DETAILS
D-8	37	STANDARD DETAILS
D-9	38	STANDARD DETAILS
D-10	39	STANDARD DETAILS
D-11	40	STANDARD DETAILS
D-12	41	STANDARD DETAILS

QUANTITIES

REMOVAL QUANTITIES

ITEM	QUANTITY	UNIT
END PIPE STICK AND MASONRY PIPE PLUG	3	EA
FLOW CONTROL STRUCTURE	1	EA
MANHOLE STRUCTURE	3	EA
HEADWALL STRUCTURE	10	EA
SLIDE GATE	2	EA
CONCRETE LINED DITCH	3,724	LF
36" DIA CLASS IV RGRCP	153	LF
30" DIA CLASS IV RGRCP	166	LF
30" DIA CLASS III RGRCP	362	LF
30" RCP	54	LF
24" CMP	291	LF

CONSTRUCTION QUANTITIES

ITEM	QUANTITY	UNIT
FLOW CONTROL STRUCTURE	3 <i>AB</i>	EA
FLOW MEASUREMENT STRUCTURE	2 <i>AB</i>	EA
MANHOLE STRUCTURE	5 <i>AB</i>	EA
OUTLET HEADWALL STRUCTURE	2 <i>1 AB</i>	EA
CONCRETE LINED PIPE OUTLET TRANSITION	1 <i>AB</i>	EA
30" DIA CLASS V RGRCP	1,156 <i>AB</i>	LF
36" DIA CLASS V RGRCP	3,047 <i>AB</i>	LF
CONCRETE COLLAR	3 <i>AB</i>	EA
PIPE PLUG	5	EA

NOTE

- ALL QUANTITIES ARE APPROXIMATE FOR BIDDING PURPOSES AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Z:\GCE Projects\MWD-49\dwg\01_MWD-49_G_dwg\evansr 01/27/20 8:33pm

REV.	DATE	REVISION DESCRIPTION	BY

GEORGE CAIRO ENGINEERING, INC.
 STAPLEY CENTER
 1630 S. STAPLEY DR., SUITE 117
 MESA, ARIZONA 85204
 WWW.GCAIROINC.COM



DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA



Call at 1 before
 Dial 8-1-1 In Maric
 i, INC.

ull working day
 in excavation.
 i, INC.
 *AKE-IT (782-534
 r: (602) 263-1100

**SHEET INDEX AND
 CONSTRUCTION
 QUANTITIES**

G - 2

MARICOPA WATER DISTRICT (MWD) GENERAL NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) SPECIFICATIONS AND STANDARD DETAILS AND LATEST REVISIONS UNLESS NOTED OTHERWISE ON PLANS.
- CONTACT, NOTIFICATION AND COORDINATION WITH MARICOPA WATER DISTRICT (MWD) SHALL BE MADE WITH MARICOPA WATER DISTRICT'S ADMINISTRATION OFFICE AT (623) 546-8266.
- ALL SHOP DRAWINGS WILL REQUIRE MARICOPA WATER DISTRICT'S APPROVAL BEFORE CONSTRUCTION CAN BEGIN.
- 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.
- ALL COMPACTION AND BACKFILL SHALL CONFORM TO THE MAG STANDARD SPECIFICATIONS, DETAILS, AND LATEST REVISIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE FINAL GRADE ADJUSTMENTS OF ALL IRRIGATION STRUCTURES AND MANHOLES TO THE SATISFACTION OF MWD.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY MWD PERMITS, RIGHTS-OF-ENTRY, **NOTICES TO PROCEED**, AND APPROVALS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY MWD IN WRITING AT LEAST 72 HOURS IN ADVANCE OF ANY CONSTRUCTION.
- THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH MWD FOR THE "DRY-UP" OF EXISTING IRRIGATION FACILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. IT WILL BE MWD'S SOLE DETERMINATION OF THE TIME AND DURATION OF THIS "DRY-UP" PERIOD.**
- THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH MWD FOR THE REMOVAL OF EXISTING IRRIGATION FACILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND COORDINATING WITH MWD FOR THE INSPECTION OF ALL CONSTRUCTION WORK. **NOTICE MUST BE GIVEN TO MWD OR MWD'S AGENT A MINIMUM OF 48 HOURS PRIOR TO INSTALLATION OF ANY WORK REQUIRING FIELD OBSERVATION/INSPECTION OR APPROVALS TO PROCEED.**
- ALL CONSTRUCTION WORK IS SUBJECT TO MWD'S INSPECTION AND APPROVAL. CONSTRUCTION WORK CONCEALED WITHOUT INSPECTION BY MWD SHALL BE SUBJECT TO EXPOSURE AT THE CONTRACTOR'S EXPENSE.
- AS-BUILT PLANS AND CERTIFICATIONS SHALL BE PROVIDED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION TO MWD BY THE CONTRACTOR PERFORMING THE INSTALLATION OF MWD FACILITIES. AS-BUILT PLANS SHALL FEATURE BOTH HORIZONTAL AND VERTICAL AS-BUILT INFORMATION FOR ANY **NEW** UTILITIES INSTALLED WITHIN THE MWD EASEMENT. **MWD DOES NOT REQUIRE THE AS-BUILT DRAWINGS TO REFLECT THE AS-BUILT INVERT OF EXISTING UTILITIES THAT CROSS MWD'S FACILITIES, HOWEVER, THE 2' MINIMUM CLEARANCE SEPARATION BETWEEN THE EXISTING UTILITY AND MWD'S FACILITY WILL NEED TO BE AS-BUILT.** FINAL AS-BUILTS ARE TO BE PROVIDED TO MWD 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).
- AS-BUILT PLANS OF MWD'S FACILITIES SHALL BE REFLECTED ON THE CORRESPONDING AS-BUILT PAVING AND WATER IMPROVEMENT PLANS WHERE APPLICABLE.
- IF A CONFLICT IN NOTES ON THIS DESIGN PLAN IS IDENTIFIED, THE MWD GENERAL NOTES SHALL SUPERSEDE ANY OTHER NOTES.
- CONTRACTOR SHALL PURCHASE AND INSTALL MWD'S CUSTOM DETECTABLE UNDERGROUND WARNING TAPE AT THE SPECIFIED DEPTH FOR ALL LENGTHS OF BURIED MWD 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 MWD IRRIGATION FACILITIES BURIED BELOW CONTACT MWD AT 623-975-1125. CONTACT MWD FOR ORDERING AND INSTALLATION INFORMATION.
- CONTRACTOR SHALL BE REQUIRED TO HYDRO TEST ALL NEW MWD FACILITIES ACCORDING TO MWD STANDARD TESTING REQUIREMENTS AND SPECIFICATIONS.**
- 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.
- CONTRACTOR SHALL PURCHASE AND ARRANGE FOR DELIVERY OF ALL STAFF GAUGES, STEEL STEPS, STAFF GAUGE EXTENSIONS, AND OTHER MATERIALS IDENTIFIED FOR INSTALLATION BY MWD. CONTRACTOR SHALL CONTACT MWD PRIOR TO DELIVERY BY CALLING (623) 546-8266.
- THE CONTRACTOR SHALL, CONTACT AND COORDINATE WITH MWD IN WRITING TO REQUEST AN IRRIGATION BYPASS. CONTRACTOR'S PROPOSED BYPASS DESIGN SHALL BE REVIEWED AND APPROVED BY MWD. **IT WILL BE MWD'S SOLE DETERMINATION OF THE TIME AND DURATION OF THIS "DRY-UP" PERIOD.**

CONSTRUCTION NOTES

GENERAL

- THE CONTRACTOR SHALL OBTAIN ALL PERMITS THAT ARE REQUIRED BY ALL LEVELS OF REGULATORY AGENCIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL COMPLY WITH ALL SAFETY REQUIREMENTS ESTABLISHED BY ALL LEVELS OF REGULATORY AGENCIES DURING THE ENTIRE PERIOD OF THE CONSTRUCTION.
- 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.
- 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.
- 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.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MANAGE ROADWAY DUST, AND TAKE WHATEVER MEASURES ARE NECESSARY TO ENSURE THAT ALL ROADS ARE MAINTAINED IN A CLEAN, MUD- AND DUST-FREE CONDITION AT ALL TIMES.

PIPING AND GATES

- ALL EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH MAG STANDARD SPECIFICATIONS PART 200.
- 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.
- TRENCH EXCAVATION, BACKFILL AND COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH MAG STANDARD SPECIFICATION SECTION 601 AND TRENCH DETAILS AS SHOWN ON THE DRAWINGS. ALL PIPE BACKFILL ADJACENT TO A STRUCTURE SHALL BE ONE SACK SLURRY TO SPRING LINE OF PIPE.
- ALL REINFORCED CONCRETE PIPES SHALL BE CLASS V AND SHALL CONFORM TO MAG STANDARD SPECIFICATIONS SECTION 735. RUBBER GASKETS FOR CONCRETE PIPE SHALL CONFORM TO MAG STANDARD SPECIFICATIONS SECTION 765.
- DISPOSAL AND STOCKPILING OF EXCESS MATERIAL WITHIN MWD'S EASEMENT SHALL BE DONE AT THE DIRECTION OF THE DISTRICT.
- ALL MATERIAL DESIGNATED FOR SALVAGE SHALL BE TRANSPORTED TO THE MWD EQUIPMENT YARD OR TO THE SPECIFIED LOCATION AS DIRECTED BY MWD DURING EXECUTION OF THE WORK.
- ALL FABRICATED 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 GATE SHALL HAVE J-SEAL. THE GATES SHALL CONFORM TO FRESNO SERIES 8200 OR AN APPROVED EQUAL.
- 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.
- ALL DUCTILE IRON PIPE 24" DIAMETER AND LARGER SHALL BE CLASS 250 HP LOK RESTRAINED JOINT PIPE OR APPROVED EQUAL UNLESS NOTED OTHERWISE.
- ALL PVC PIPE SHALL BE DR41 C900 UNLESS NOTED OTHERWISE.

PAINTING AND COATING

- EXPOSED METAL INCLUDING PIPE, FITTINGS, VALVES, STRAP ANCHORS, VALVE AND PIPE SUPPORTS, AND SIMILAR ITEMS NOT OTHERWISE COVERED, SHALL BE PAINTED AS FOLLOWS:
 - EXPOSED DUCTILE IRON SURFACES THAT HAVE BEEN COATED WITH COALTAR VARNISH SHALL BE GIVEN TWO (2) COATS OF TNEMEC N69 HI-BUILD EXPOLINE II PRIMER (SAND BEIGE) 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 TNEMEC 1075 ENDURA-SHIELD II APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF TWO (2) TO FIVE (5) MILS.
 - EXPOSED GALVANIZED STEEL SURFACES SHALL BE SOLVENT WASHED FOLLOWED BY TWO (2) COATS OF TNEMEC N69 HI-BUILD EXPOLINE II PRIMER (SAND BEIGE) 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 TNEMEC 1075 ENDURA-SHIELD II APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF TWO (2) TO FIVE (5) MILS.
 - BARE FERROUS METAL SURFACES SHALL BE GIVEN TWO (2) COATS OF TNEMEC N69 HI-BUILD EXPOLINE II PRIMER (SAND BEIGE) 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 TNEMEC 1075 ENDURA-SHIELD II APPLIED AT A RATE THAT WILL PROVIDE A MINIMUM DRY FILM THICKNESS OF TWO (2) TO FIVE (5) MILS.
- NON EXPOSED METALS:
 - BEFORE BACKFILLING, ALL COUPLINGS, BOLTS, NUTS, ANCHOR BOLTS AND RODS, AND ALL NON-EXPOSED STEEL SHALL RECEIVE ONE (1) BRUSH COAT OF TNEMEC 46H-413 HI-BUILD TNEME-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.
 - 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 610.6.
 - PERMATAX ANTI-SEIZE LUBRICANT, LOCTITE HEAVY-DUTY ANTI-SEIZE LUBRICANT, OR SAF-T-EZE REGULAR GRADE ANTI-SEIZE SHALL BE APPLIED TO ALL MANHOLE BOLT THREAD PRIOR TO SECURING LIDS PER MANUFACTURER SPECIFICATIONS.
- NO MEASUREMENT OR SEPERATE PAYMENT WILL BE MADE FOR PAINTING OR COATING ITEMS AS SUCH; THE COST THEREOF SHALL BE INCLUDED IN THE COST OF THE ITEM.



REV.	DATE	REVISION DESCRIPTION	BY

GEORGE CAIRO ENGINEERING, INC.
 STAPLEY CENTER
 1630 S. STAPLEY DR., SUITE 117
 MESA, ARIZONA 85204
 WWW.GCAIROINC.COM



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

DISTRICT AND CONSTRUCTION NOTES

G - 3

STRUCTURAL NOTES

GENERAL:

- 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 (MAG), AND AS ADDITIONALLY REQUIRED BY THE PROJECT PLANS AND SPECIAL PROVISIONS.
- FEATURES OF STRUCTURE CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME CHARACTER AS SHOWN FOR SIMILAR CONDITIONS.
- 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.
- 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.
- NO STRUCTURAL MEMBERS SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER PRIOR TO CONSTRUCTION.
- FOR ABBREVIATIONS NOT LISTED, SEE "ABBREVIATIONS FOR USE ON DRAWINGS AND TEXT", PUBLISHED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE INC. (ANSI).
- 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.
- DESIGN LOADS:
WALKWAYS AND PLATFORMS = 150 PSF

CONCRETE:

- 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 MAG 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.
- 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 MAG 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.
- 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'-4"	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.

- 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
- ALL EMBEDDED ITEMS SHALL BE POSITIVELY SECURED IN PLACE BEFORE PLACING CONCRETE. ALL EMBEDDED BOLTS SHALL BE STAINLESS STEEL.
- ROUGHEN AND CLEAN ALL CONSTRUCTION JOINTS IN WALLS AND SLABS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE.
- CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" TYPICAL, TO 6" BELOW FINISHED GRADE UNLESS SHOWN OTHERWISE.
- STRUCTURAL POURS SHALL BE PLACED AT (4') MAXIMUM VERTICAL LIFTS VIBRATED THROUGH AND THROUGH AS SPECIFIED PER MAG SECTION 505.
- ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL DRILLED ADHESIVE ANCHORS HILTI HY-150 MAX, FASTANAL ANCHORING SYSTEMS, OR STRONGTIE SET HIGH STRENGTH EPOXY-TIE ANCHORING ADHESIVE.

STRUCTURAL STEEL AND STEEL FABRICATIONS:

- 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
- 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.
- ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, CURRENT EDITION.
- 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.
- ALL WELDS FOUND DEFECTIVE SHALL BE REPAIRED (OR REPLACED) AND RETESTED FOR ADEQUACY AT THE CONTRACTOR'S EXPENSE.
- 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.
- 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 CONCRETE
AHR	ANCHOR	FDN	FOUNDATION	REINF	REINFORCE
AL	ALUMINUM	FG	FINISHED GRADE	RST	REINFORCING STEEL
ALTN	ALTERNATE	FTG	FOOTING		
APVD	APPROVED				
BOT	BOTTOM				
BF	BOTTOM FACE	GALV	GALVANIZE	SIM	SIMILIAR SPECIFICATIONS
BM	BEAM		"HOT DIP"	SQ	SQUARE
BRG	BEARING	GVL	GRAVEL	STD	STANDARD
C TO C	CENTER TO CENTER	HAS.	HEADED ANCHOR STUD	STIF	STIFFENER
CJ	CONSTRUCTION JOINT	HDR	HORIZONTAL	STL	STEEL
CL	CENTER LINE	HDR	HORIZONTAL	STR	STRAIGHT
CLR	CLEARANCE	HORIZ	HORIZONTAL	STRUCT	STRUCTURES
COL	COLUMN	I.F.	INSIDE FACE	SYMM	SYMMETRICAL
CONC	CONCRETE			T&B	TOP AND BOTTOM
CONN	CONNECTION	LNTL	LINTEL	TC	TOP OF CONCRETE
CONT	CONTINUOUS	LONG.	LONGITUDINAL		TOP FACE
CTR	CENTER	MAX	MAXIMUM	TF	THICK
DBA	DEFORMED BAR ANCHOR	MB	MACHINE BOLTS	THK	THICK
DIA	DIAMETER	MIN	MINIMUM	TRANSV	TRANSVERSE
DIR	DIRECTION			TST	TOP OF STEEL
DWG	DRAWING	NIC	NOT IN CONTRACT	TW	TOP OF WALL
EA	EACH	NTS	NOT TO SCALE	TYP	TYPICAL
EF	EACH FACE			VERT	VERTICAL
EL	ELEVATION				
EQL SP	EQUALLY SPACED	O.C.	ON CENTER	WS	WATERSTOP OR WATER SURFACE
EW	EACH WAY	O.F.	OUTSIDE FACE		WELDED WIRE FABRIC
EXP JT	EXPANSION JOINT	O TO O	OUT TO OUT	WWF	WELDED WIRE FABRIC
EXST	EXISTING	OPNG	OPENING		
		PJF	PREMOLDED JOINT FILLER		
		PLYWD	PLYWOOD		
		PRCST	PRECAST		
		P	PILASTER		



Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

REV.	DATE	REVISION DESCRIPTION	BY	<p>GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM</p>		DESIGNED BY: R. RILEY	<p>MARICOPA WATER DISTRICT P.O. BOX 900 WADDELL, ARIZONA 85355 (623) 546-8266</p>	<p>MCDOT OLIVE AVENUE SR 303L TO SARIVAL AVENUE (MCDOT TT0561) WADDELL, ARIZONA</p>	<p>STRUCTURAL NOTES</p>	<p>G - 4</p>
						DRAWN BY: T. IBARRA				
						APPROVED BY: G. CAIRO				
						DRAWING: MWD-49				
						PLOT DATE: JAN, 2020				

Z:\GCE Projects\MWD-49\dwg\01_MWD-49_G.dwg 01/17/20 - 8:33pm

ABBREVIATIONS:

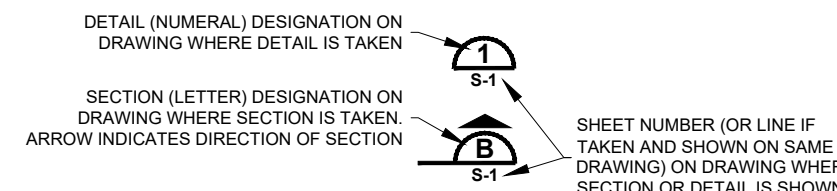
Table of abbreviations and their meanings, organized in columns. Includes terms like AT (AGGREGATE BASE), MAG (MARI COPA ASSOCIATION OF GOVERNMENTS), and many others.

DRAWING DESIGNATION

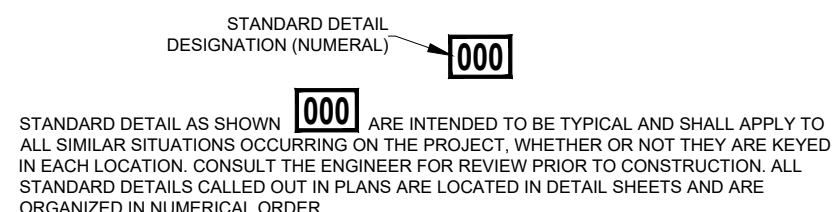
DISCIPLINE C-2 DRAWING NUMBER (SEE TABLE)

Table with 2 columns: LETTER and DISCIPLINE. Lists codes like C (CIVIL), DX (STANDARD DETAILS), E (ELECTRICAL), etc.

SECTION AND DETAIL STANDARDS



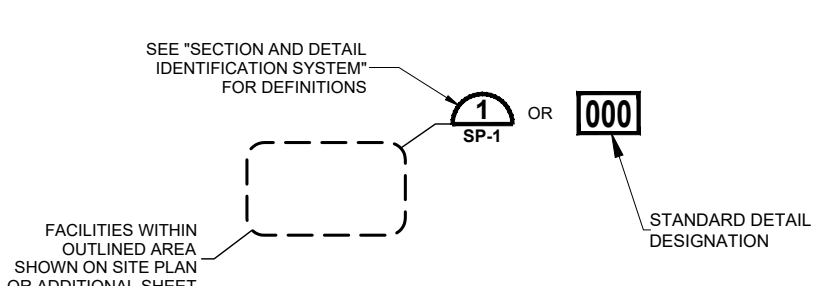
STANDARD DETAILS DESIGNATION



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...

SITE PLAN / STANDARD DETAIL DESIGNATION



Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

Project information footer including revision table, GCE Inc. logo, Maricopa Water District logo, designer R. Riley, and project address: MCDOT OLIVE AVENUE, SR 303L TO SARIVAL AVENUE (MCDOT TT0561), WADDELL, ARIZONA.

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.

Z:\GCE Projects\MWD-49\dwg\01_MWD-49_Geogevmar 01/27/20 - 8:33pm

LEGEND

- NEW SLOPES (CONCRETE)
- NEW SLOPES (EARTHEN)
- EX SLOPES (CONCRETE)
- EX SLOPES (EARTHEN)
- NEW ASPHALT PAVEMENT
- EX ASPHALT PAVEMENT
- FUTURE CONC - CLIENT FILES (HATCH OPTIONAL)
- NEW IRRIGATION PIPE
- EX IRRIGATION PIPE
- NEW/EX STAND PIPE
- NEW/EX IRRIGATION STRUCTURE
- NEW/EX IRRIGATION MANHOLE
- NEW/EX IRRIGATION HEADWALL
- DEMOLISH AND REMOVAL HATCH
- DIRT HATCH
- CONCRETE HATCH
- ROCK RIPRAP (AS NOTED)
- EL. 1422.23 NEW SPOT ELEVATION
- EL. 1452.22 EX SPOT ELEVATION
- 55 CONSTRUCTION NOTE
- 55 SALVAGE NOTE
- 55 REMOVAL NOTE
- PROJECT BENCHMARK
- TEMP BENCH MARK
- SECTION CORNER
- NEW/EX DOWN GUY
- POWER POLE
- TRAFFIC LIGHT
- STREET LIGHT
- LIGHT POST
- FIRE HYDRANT
- WATER VALVE
- STREET SIGNS
- BARRICADE
- EX TREE, PALM OR SHRUB
- SECTION LINE
- ESMT/PIE
- PUE
- TEMP CONST ESMT
- RIGHT OF WAY
- ALLOTMENT
- PROPERTY
- W NEW WATER LINE
- W EX WATER LINE
- G NEW GAS LINE
- G EX GAS LINE
- OHE NEW OVERHEAD ELECTRIC
- OHE EX OVERHEAD ELECTRIC
- UGE EX UNDERGROUND ELECTRIC
- FO NEW FIBER OPTICS
- FO EX FIBER OPTICS
- UGT EX UNDERGROUND TELEPHONE
- SD NEW STORM DRAIN
- SD EX STORM DRAIN
- SS NEW SEWER LINE
- SS EX SEWER LINE
- X NEW/EX BARBED WIRE
- O NEW/EX CHAIN LINK
- NEW/EX IRON POST FENCE
- F GRADING - DAYLIGHT
- C GRADING - CUT

SURVEY CONTROL

BENCHMARK

FOUND 1,195' WEST OF SARIVAL AVENUE SECTION LINE AND 350' SOUTH OF OLIVE AVENUE SECTION LINE 2" ALUM CAP ON 1/2" REBAR STAMPED C.P. 103

NORTHING: 833555.933
EASTING: 548649.536

ELEV = 1,156.27 FEET NAVD 88 DATUM

FOUND 2,760' FEET NAVD 88 DATUM

FOUND 2,760' EAST OF REEMS SECTION LINE AND 1,310' SOUTH OF OLIVE AVENUE SECTION LINE 2" ALUM CAP ON 1/2" REBAR STAMPED C.P. 104

NORTHING: 382461.495
EASTING: 557483.141

NOTE: ALL SURVEY INFORMATION REFERENCED FROM TYLIN INTERNATIONAL OLIVE AVENUE SR 303 TO SARIVAL ROAD PROJECT NO. TT0561 100% PLANS DATED 6-25-2019. BENCHMARK REFERENCE ON SHEET 2 OF 132, GENERAL NOTES. CONTROL POINTS REFERENCE ON SHEET 12 OF 132, GEOMETRIC CONTROL.

Z:\GCE Projects\MWD-49\dwg\01_MWD-49_G.dwg 01/27/20 - 8:34pm



Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

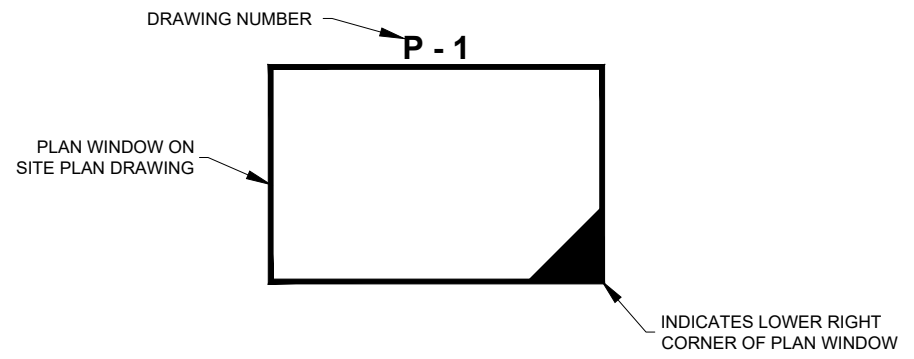
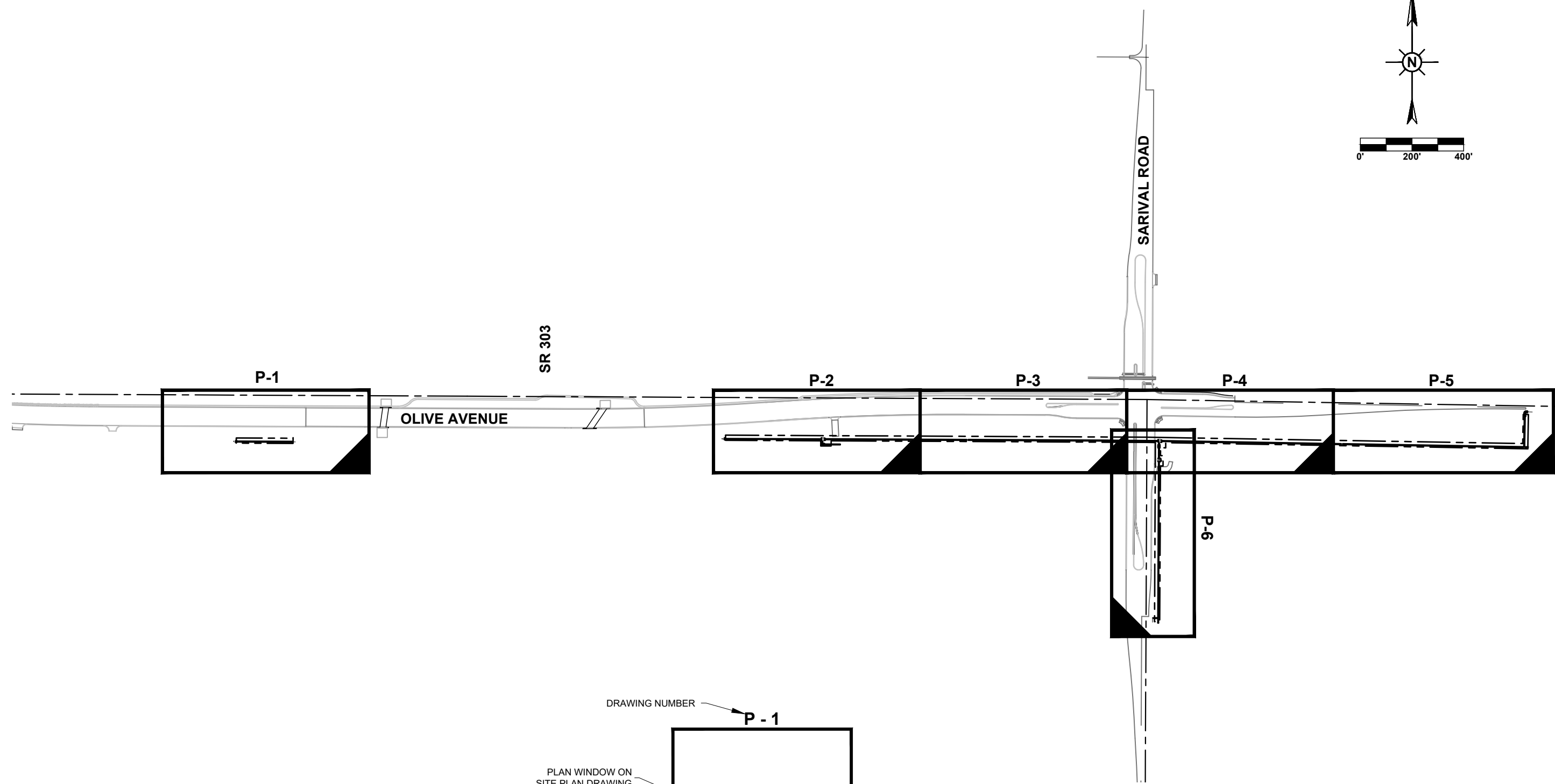
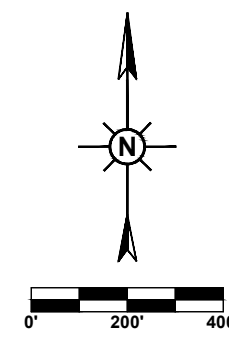
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

LEGEND AND SURVEY CONTROL

G - 6

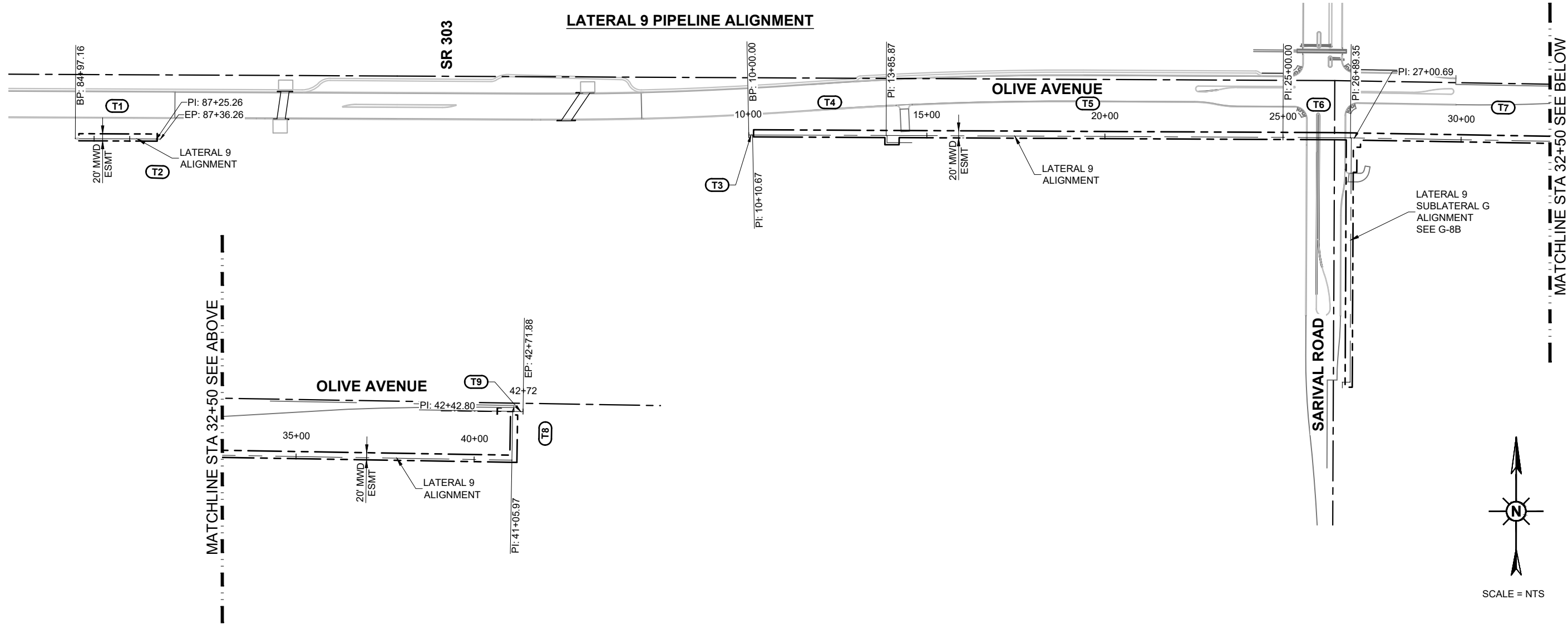
REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



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		 DESIGNED BY: R. RILEY DRAWN BY: T. IBARRA APPROVED BY: G. CAIRO DRAWING: MWD-49 PLOT DATE: JAN, 2020		 MARICOPA WATER DISTRICT P.O. BOX 900 WADDELL, ARIZONA 85355 (623) 546-8266		MCDOT OLIVE AVENUE SR 303L TO SARIVAL AVENUE (MCDOT TT0561) WADDELL, ARIZONA		KEY PLAN	G - 7

Z:\GCE Projects\MWD-49\dwg\01_MWD-49_G.dwg vmar 01/27/20 - 8:34pm

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



LATERAL 9 TANGENT TABLE				
TANGENT #	BEARING	DISTANCE	START POINT (N, E)	END POINT (N, E)
T1	S89°43'36"E	228.10	(383742.52,546311.19)	(383741.44,546539.29)
T2	S88°17'19"E	11.00	(383741.44,546539.29)	(383741.11,546550.28)
T3	N88°52'27"E	10.67	(383752.55,548202.29)	(383752.76,548212.96)
T4	S89°48'56"E	375.21	(383752.76,548212.96)	(383751.55,548588.16)
T5	S89°43'13"E	1114.13	(383751.55,548588.16)	(383746.11,549702.27)
T6	S89°33'24"E	189.35	(383746.11,549702.27)	(383744.64,549891.62)
T7	S89°02'09"E	1405.28	(383744.45,549902.96)	(383720.81,551308.04)
T8	N0°57'51"E	136.83	(383720.81,551308.04)	(383857.61,551310.34)
T9	S89°13'00"E	29.08	(383857.61,551310.34)	(383857.21,551339.42)



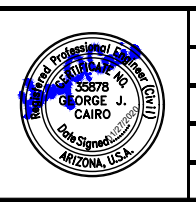
Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

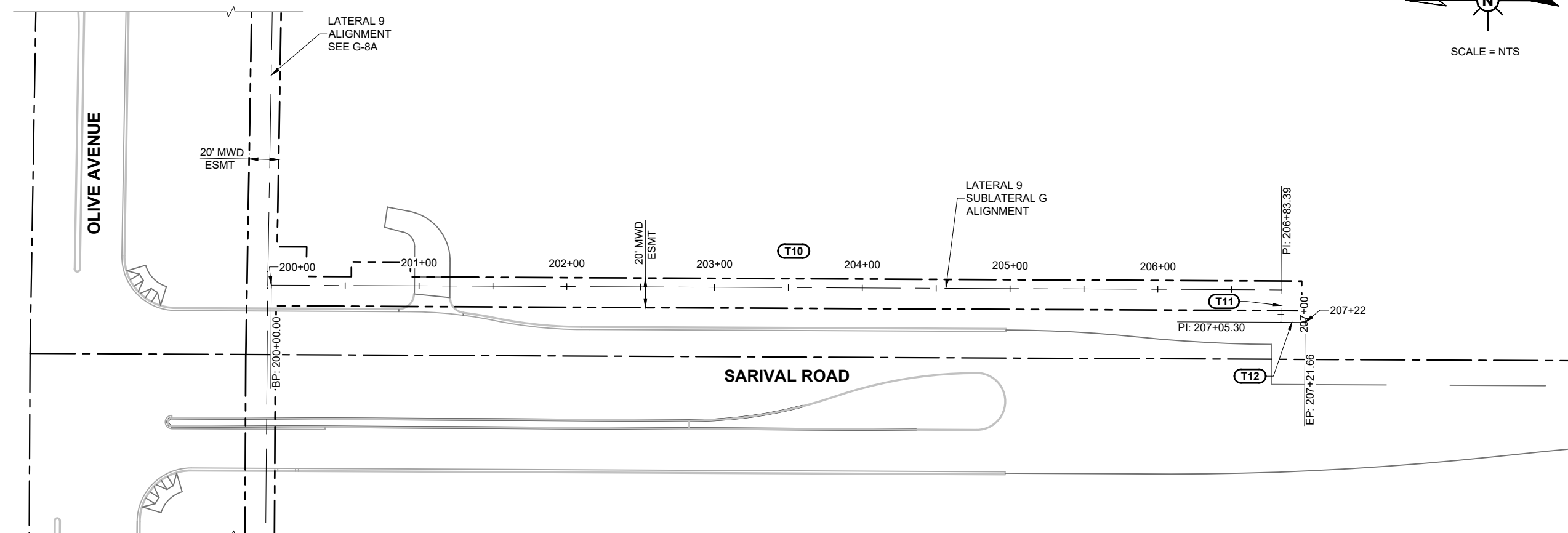
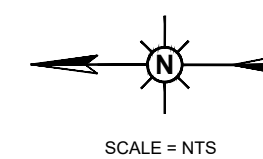
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

GEOMETRIC LAYOUT PLAN AND COORDINATE DATA TABLES
LATERAL 9

G - 8A

Z:\GCE Projects\MWD-49\dwg\01_MWD-49_Geometric.dwg 01/27/20 - 8:35pm



LATERAL 9 SUBLATERAL G PIPELINE ALIGNMENT

TANGENT TABLE				
TANGENT #	BEARING	DISTANCE	START POINT (N, E)	END POINT (N, E)
T10	S0°16'09"W	683.39	(383742.19, 549893.94)	(383058.80, 549890.73)
T11	N89°43'51"W	21.91	(383058.80, 549890.73)	(383058.91, 549868.82)
T12	S0°20'17"W	16.36	(383058.91, 549868.82)	(383042.55, 549868.73)



Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

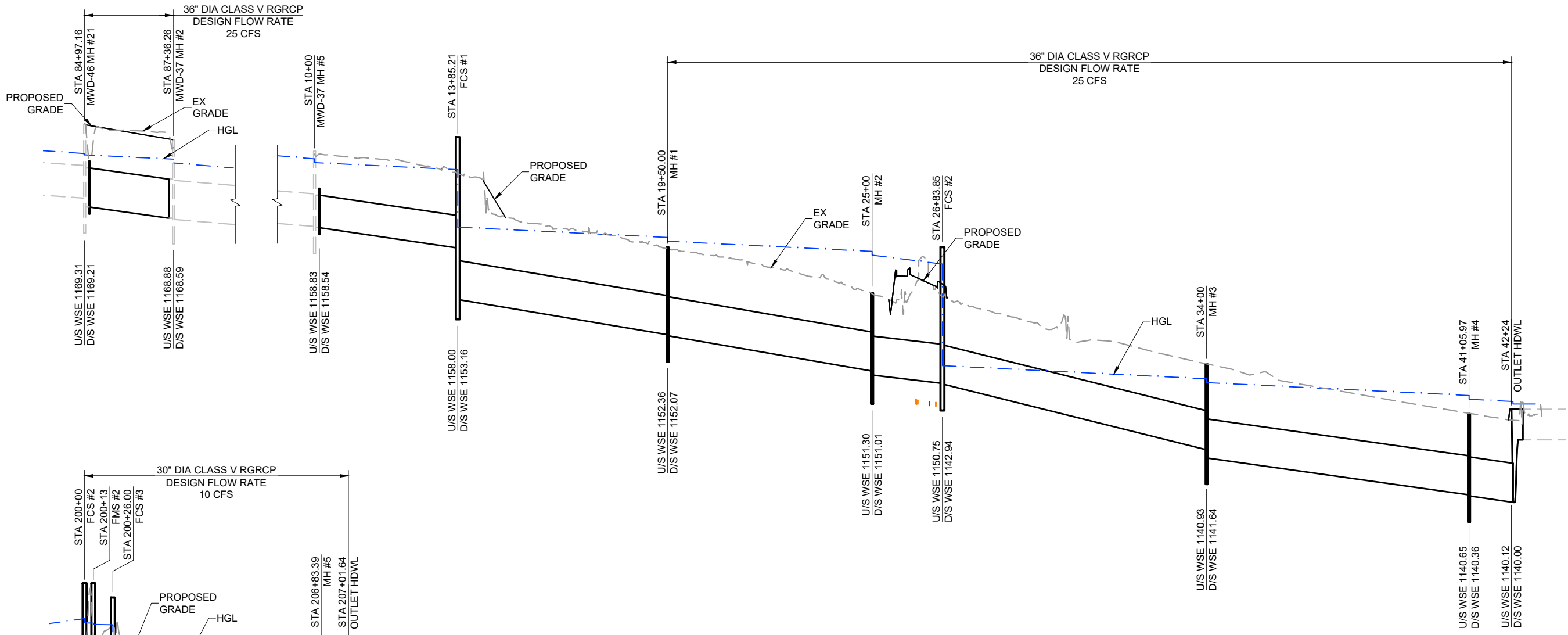
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

GEOMETRIC LAYOUT PLAN
AND COORDINATE DATA
TABLE
LATERAL 9
SUBLATERAL G

G - 8B

Z:\GCE Projects\MWD-49\dwg\01_MWD-49_G.dwg vmsr 01/27/20 - 8:36pm

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



LATERAL 9 HYDRAULIC PROFILE
NTS

SUBLATERAL G HYDRAULIC PROFILE
NTS

- LEGEND**
- PROPOSED GRADE
 - - - HGL AT DESIGN FLOW RATE
 - - - EXISTING GRADE



Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

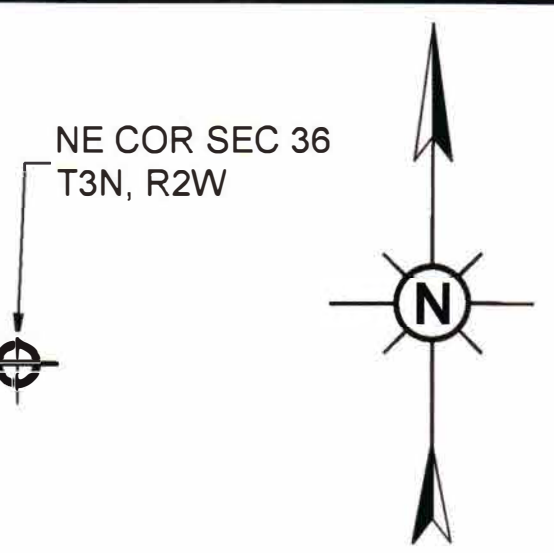
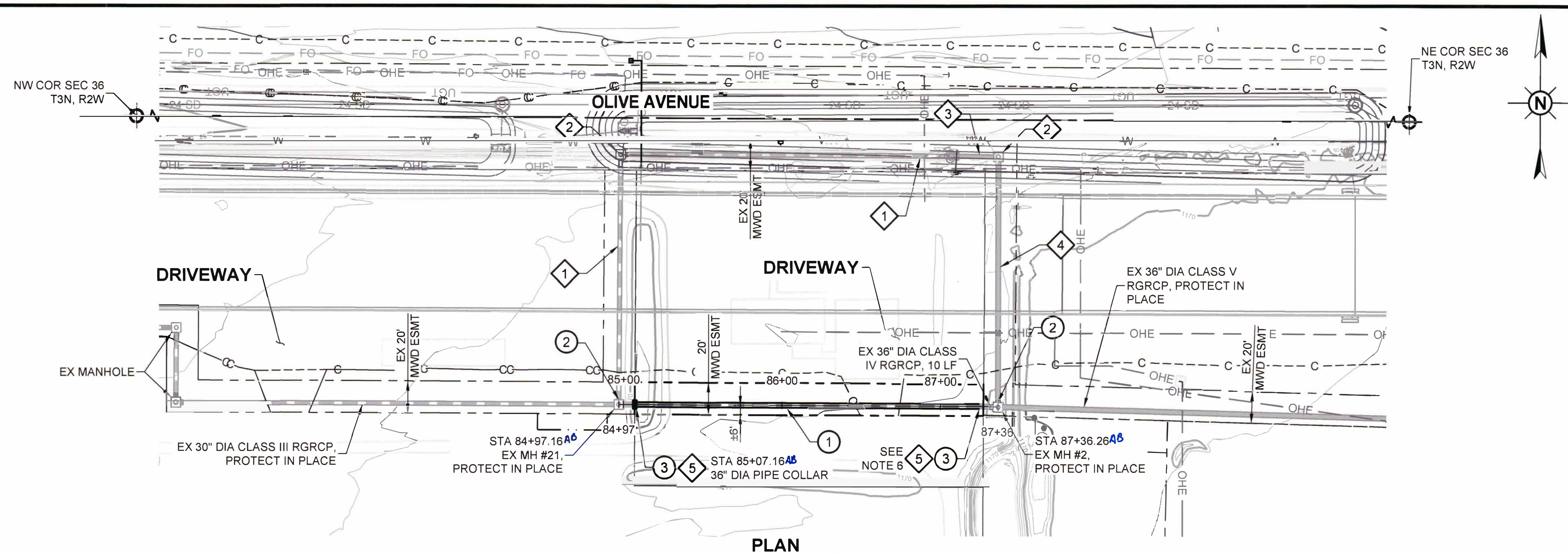
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

HYDRAULIC PROFILE
LATERAL 9 AND
LATERAL 9
SUBLATERAL G

G - 9

Z:\GCE Projects\MWD-49\dwg\01_MWD-49_G.dwg 01_MWD-49_G.dwg 01/27/20 - 8:37pm

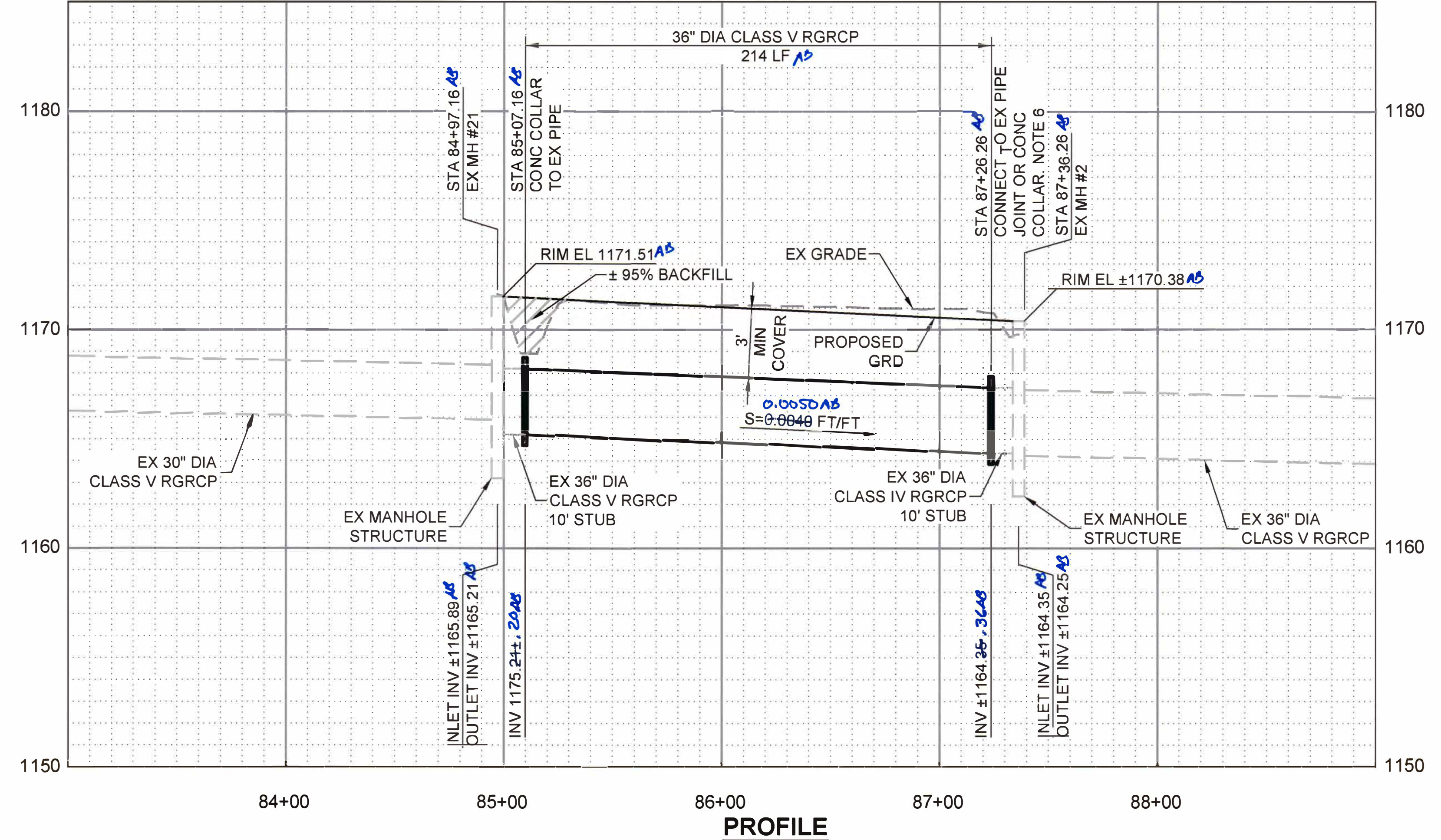
REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	30" DIA CLASS III RGRCP	362	LF
2	MANHOLE STRUCTURE	2	EA
3	30" DIA CLASS IV RGRCP	26	LF
4	36" DIA CLASS IV RGRCP	153	LF
5	END PIPE STICK AND MASONRY PIPE PLUG	2	EA

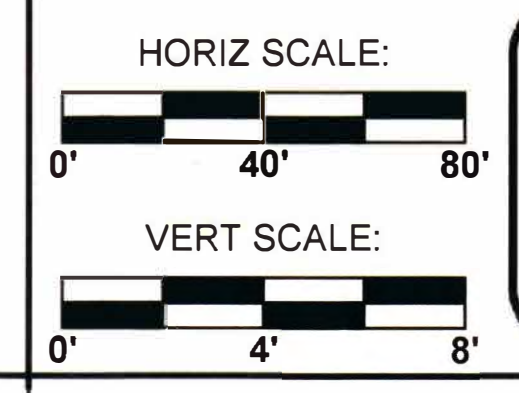
CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	214	LF
2	541 CONSTRUCT PIPE PLUG ON NORTH 30" PIPE OF EX MH #21 AND NORTH 36" PIPE OF EX MH #2	2	EA
3	726 CONSTRUCT 36" DIA PIPE COLLAR BETWEEN EX 36" PIPE AND NEW 36" PIPE	2	EA

PLAN



PROFILE

- GENERAL NOTES**
- TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 - FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 - FOR PIPELINE ALIGNMENT INFORMATION SEE G-8 SERIES.
 - CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 - CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT PRIOR TO CONSTRUCTION.
 - CONTRACTOR SHALL TAKE CARE IN REMOVAL OF PIPE PLUG. CONTRACTOR SHALL REPLACE PIPE GASKET AND GET ENGINEER APPROVAL PRIOR TO PLACEMENT OF NEW PIPE.



Call at least before you excavation.

ARI
Arizona Bit

Dial 8-1-1 or 1-In Maricopa

It working da excavation.

A811
Inc.

KE-IT (782-53-602) 263-110

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT

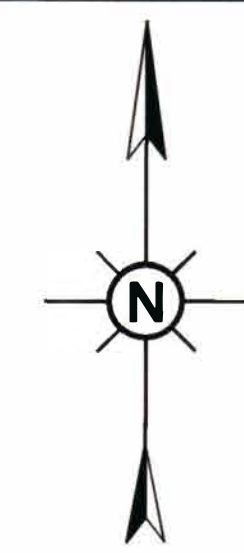
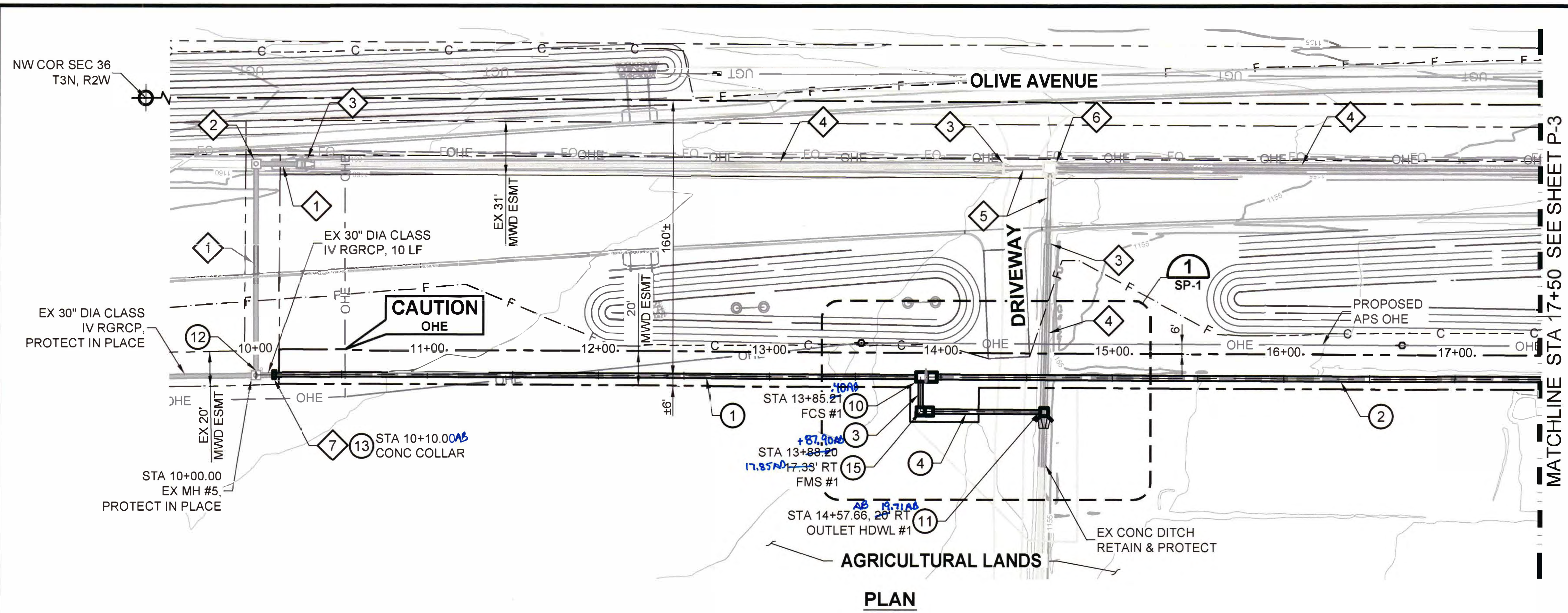
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

LATERAL 9
PLAN AND PROFILE
STA 84+97 TO STA 87+36

P - 1

Z:\GCE Projects\MWD-49\Ang02_MWD-49_P_Ang02.dwg 01/27/20 - 8:38pm



PLAN

REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	30" DIA CLASS IV RGRCP	140	LF
2	MANHOLE STRUCTURE	1	EA
3	HEADWALL STRUCTURE	3	EA
4	CONC LINED DITCH	716	LF
5	24" CMP	64	LF
6	FLOW CONTROL STRUCTURE	1	EA
7	END PIPE STICK AND MASONRY PIPE PLUG	1	EA

CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 30" DIA CLASS V RGRCP	376	LF
2	INSTALL 36" DIA CLASS V RGRCP	353	LF
3	INSTALL 30" DIA CLASS V RGRCP	16	LF
4	INSTALL 30" DIA CLASS V RGRCP	64	LF
10	CONSTRUCT FLOW CONTROL STRUCTURE #1. SEE S-1A.	1	EA
11	CONSTRUCT OUTLET HEADWALL STRUCTURE #1. SEE SHEET S-5.	1	EA
12	541 CONSTRUCT PIPE PLUG ON NORTH 30" PIPE OF EX MH #5	1	EA
13	726 CONSTRUCT 36" DIA PIPE COLLAR BETWEEN EX 30" PIPE AND NEW 36" PIPE	1	EA
15	CONSTRUCT FLOW MEASUREMENT STRUCTURE #1. SEE SHEET S-6A.	1	EA

- GENERAL NOTES**
- TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 - FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 - FOR PIPELINE ALIGNMENT INFORMATION SEE G-8 SERIES.
 - CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 - CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT PRIOR TO CONSTRUCTION.

HORIZ SCALE: 1" = 40'

VERT SCALE: 1" = 4'

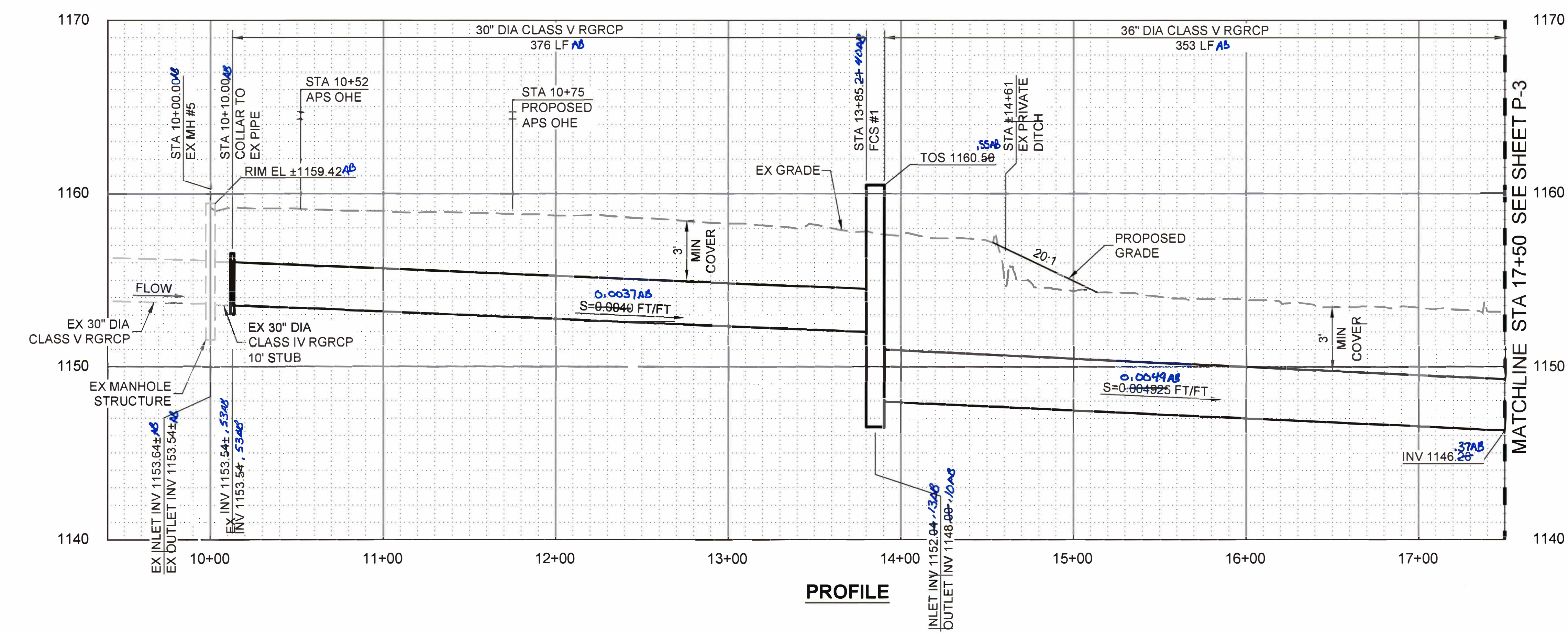
Call at le before excavation.

AR Arizona

Dial 8-1-1 c In Maric

A811 Inc.

KE-IT (762-534) (602) 263-1100



PROFILE

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



DESIGNED BY: R. RILEY
DRAWN BY: T. IBARRA
APPROVED BY: G. CAIRO
DRAWING: MWD-49
PLOT DATE: JAN, 2020

MWD

MARICOPA WATER DISTRICT

P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

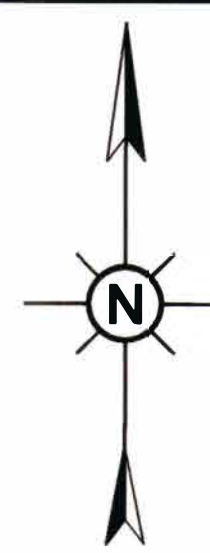
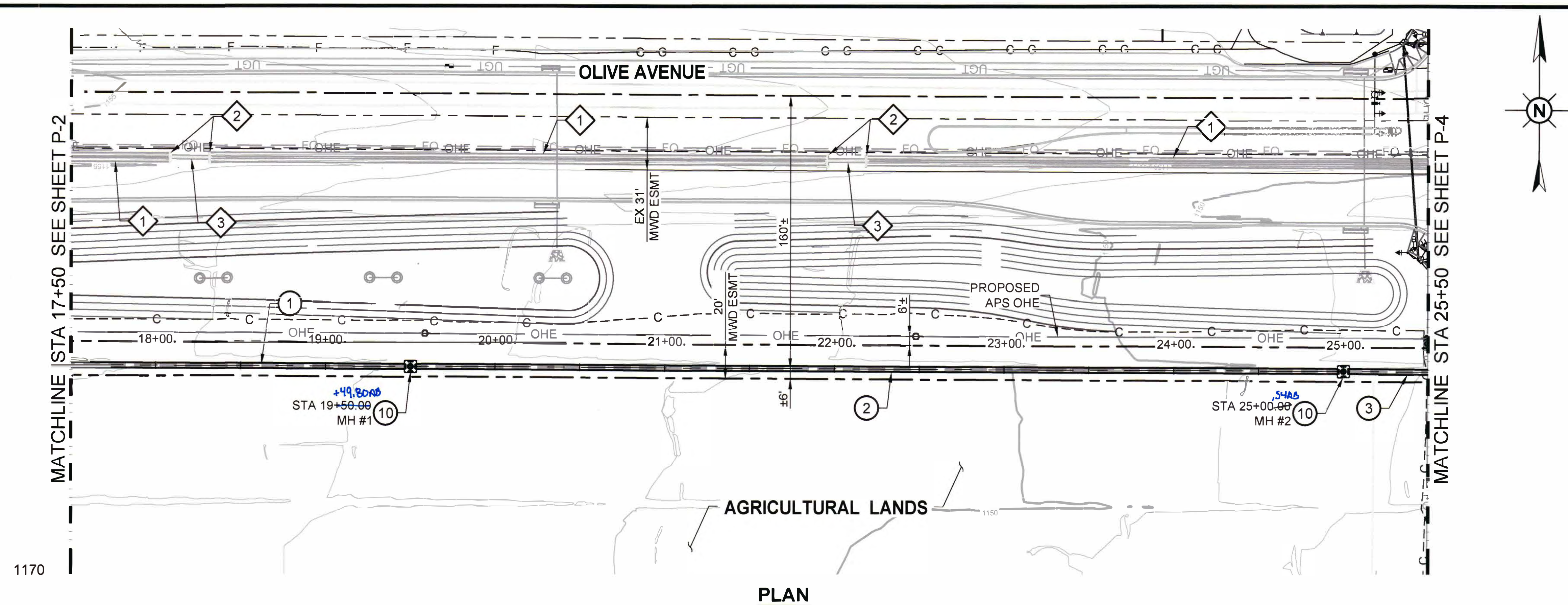
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

LATERAL 9
PLAN AND PROFILE
POB TO STA 17+50

P - 2

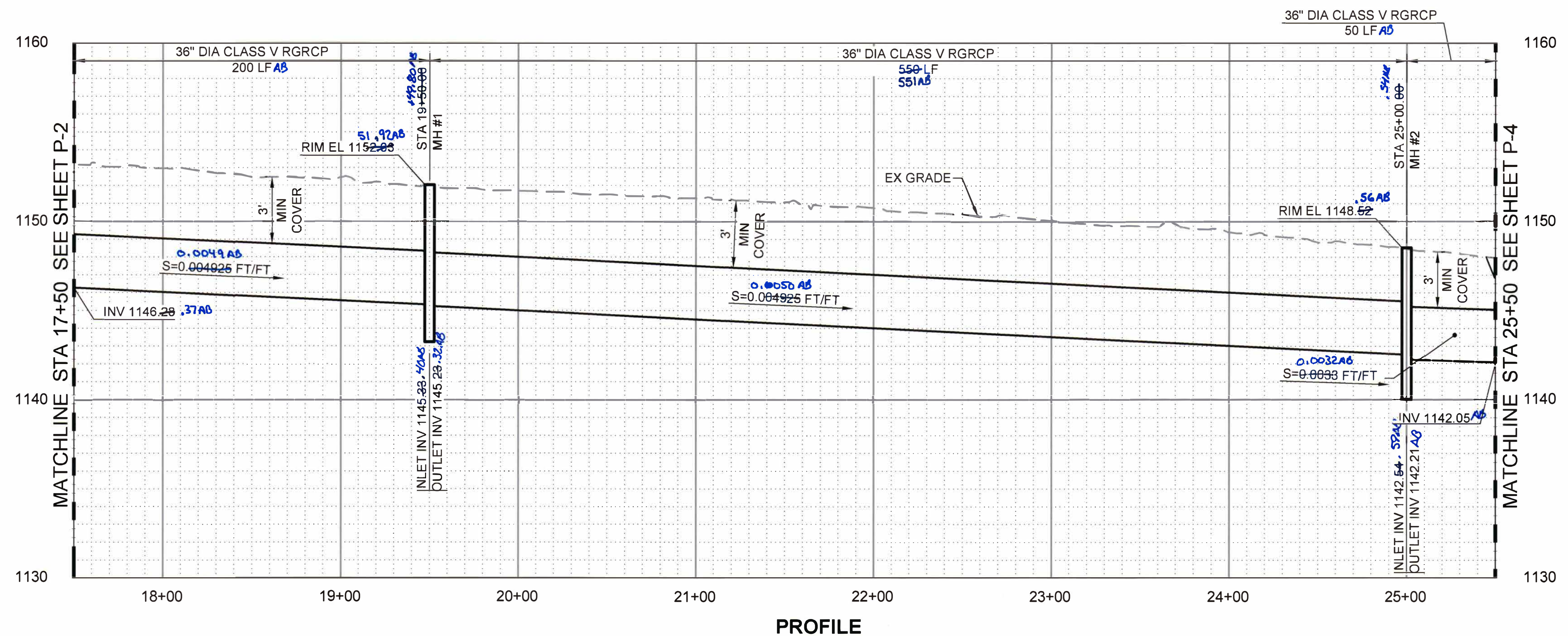
Z:\GCE\Projects\MWD-49\Ang02_MWD-49_P.dwg 01/27/20 - 8:38pm

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.

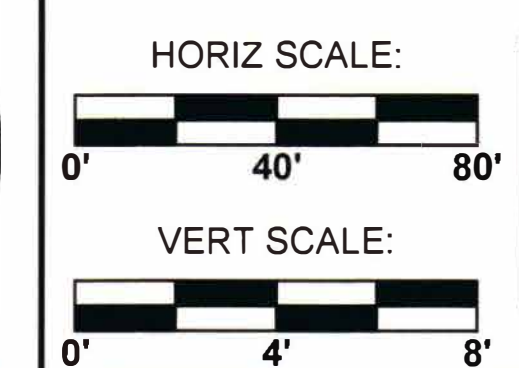


REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONC LINED DITCH	753	LF
2	HEADWALL STRUCTURE	4	EA
3	24" CMP	47	LF

CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	200	LF
2	INSTALL 36" DIA CLASS V RGRCP	550	LF
3	INSTALL 36" DIA CLASS V RGRCP	50	LF
10	CONSTRUCT MANHOLE STRUCTURES. SEE SHEET S-3.	2	EA



- GENERAL NOTES**
1. TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 2. FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 3. FOR PIPELINE ALIGNMENT INFORMATION SEE G-8 SERIES.
 4. CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 5. CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT PRIOR TO CONSTRUCTION.



Call at least before you excavation.

ARI
Arizona Bit
Dial 8-1-1 or 1- In Maricopa

A811
Inc.
KE-IT (782-534- (802) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

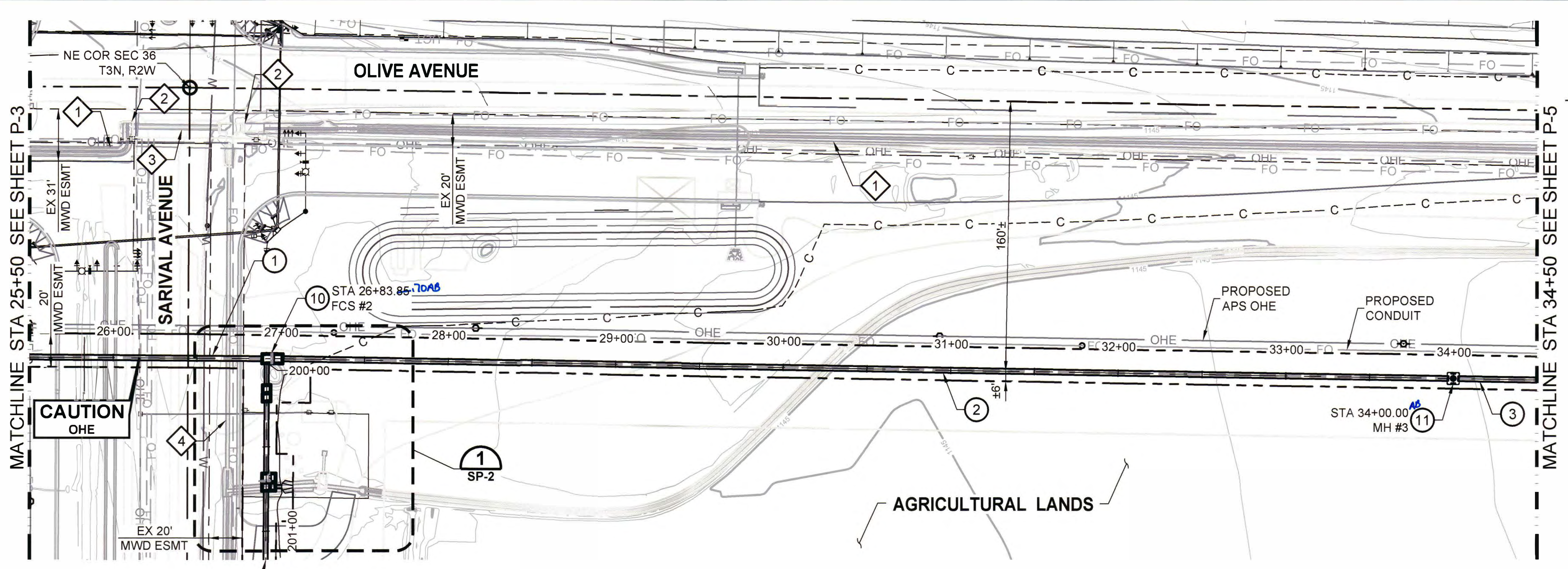
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

LATERAL 9
PLAN AND PROFILE
STA 17+50 TO STA 25+50

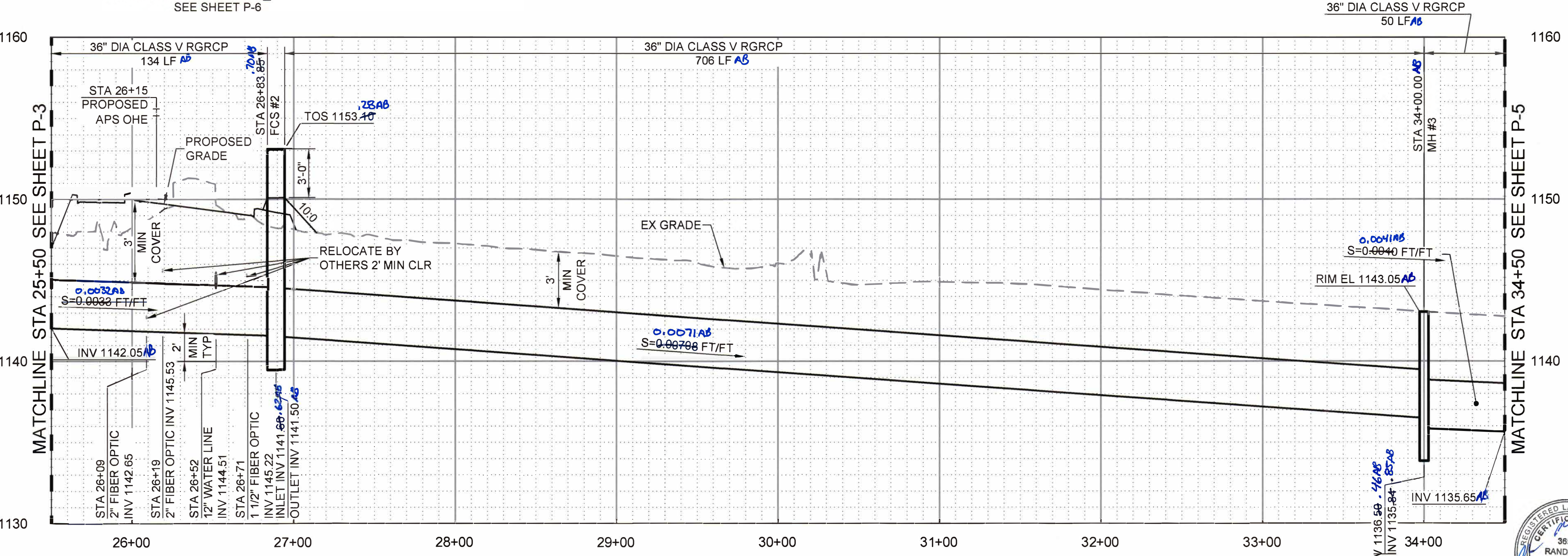
P - 3

Z:\GCE\Projects\MWD-49\dwg\02_MWD-49_P.dwg 01/27/20 - 8:38pm

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



PLAN



PROFILE

REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONC LINED DITCH	745	LF
2	HEADWALL STRUCTURE	2	EA
3	30" RCP	54	LF
4	24" CMP	180	LF

CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	134	LF
2	INSTALL 36" DIA CLASS V RGRCP	706	LF
3	INSTALL 36" DIA CLASS V RGRCP	50	LF
10	CONSTRUCT FLOW CONTROL STRUCTURE #2. SEE S-1B.	1	EA
11	CONSTRUCT MANHOLE STRUCTURE #3. SEE SHEET S-3.	1	EA

- GENERAL NOTES**
1. TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 2. FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 3. FOR PIPELINE ALIGNMENT INFORMATION SEE G-8 SERIES.
 4. CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 5. CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT PRIOR TO CONSTRUCTION.

HORIZ SCALE: 0' 40' 80'

VERT SCALE: 0' 4' 8'

Call at least before you excavate.

ARI Arizona Bit Inc. Dial 8-1-1 or 1-800-4-A-RIZONA

A811 Inc. KE-IT (782-534-602) 263-1100

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



DESIGNED BY: R. RILEY
 DRAWN BY: T. IBARRA
 APPROVED BY: G. CAIRO
 DRAWING: MWD-49
 PLOT DATE: JAN, 2020

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

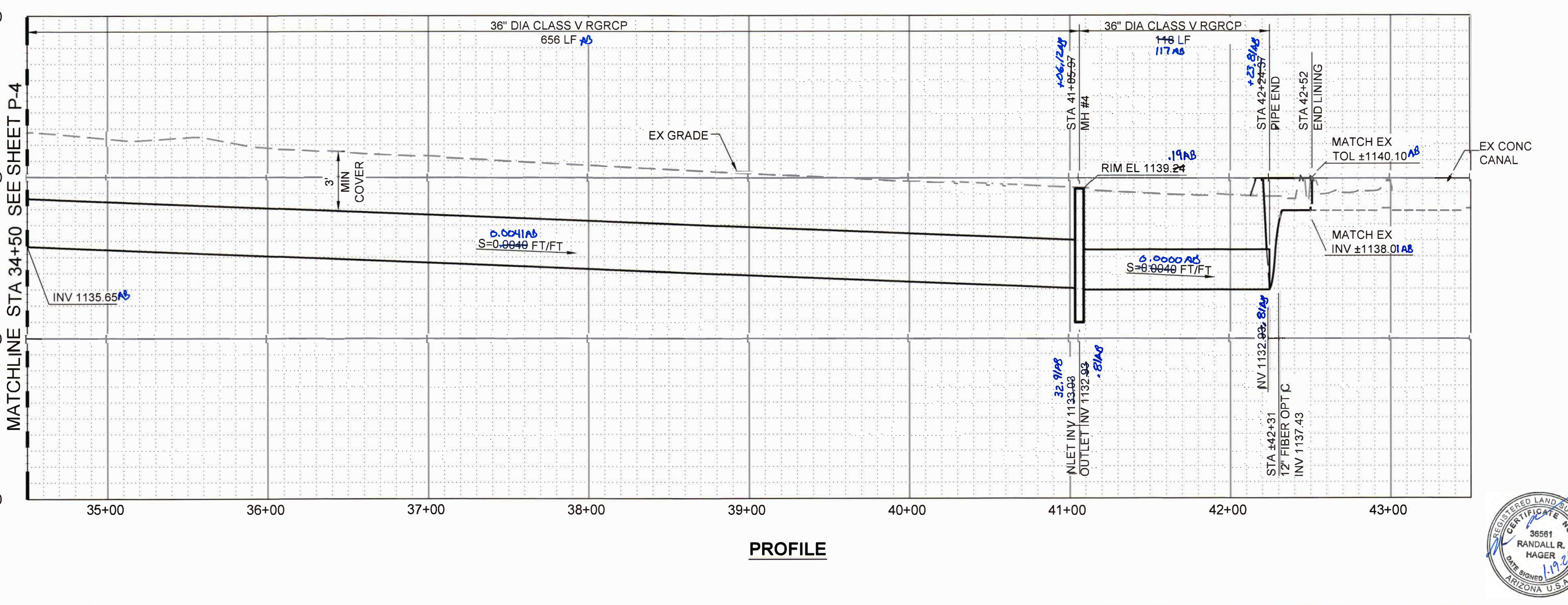
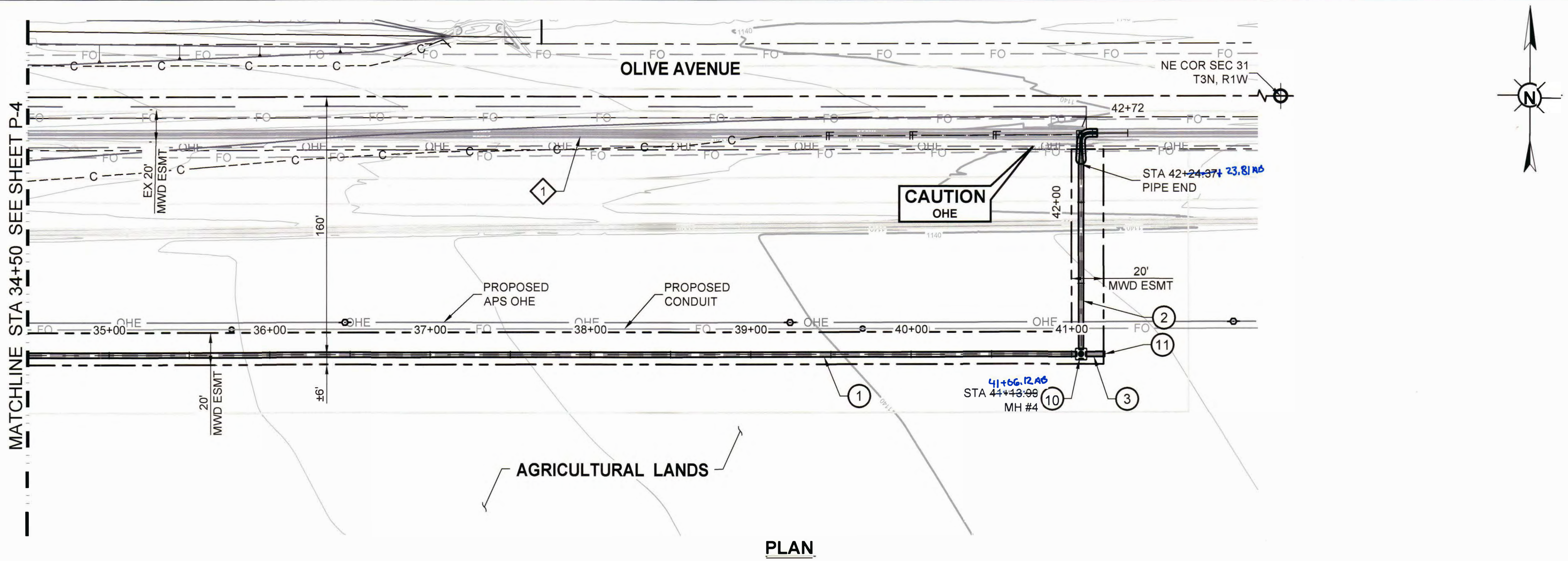
MCDOT OLIVE AVENUE
 SR 303L TO SARIVAL AVENUE
 (MCDOT TT0561)
 WADDELL, ARIZONA

LATERAL 9
PLAN AND PROFILE
STA 25+50 TO STA 34+50

P - 4

Z:\GCE\Projects\MWD-49\dwg\p02_MWD-49_P.dwg\dwg\01/27/20 - 8:38pm

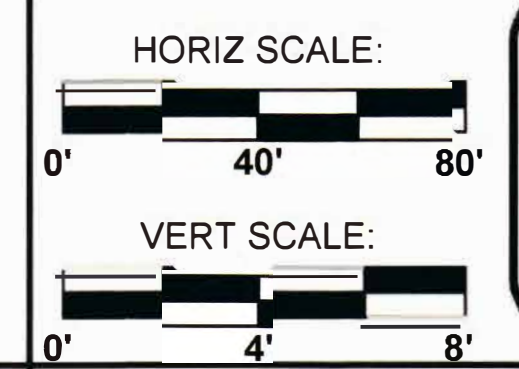
REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONC LINED DITCH	831	LF

CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	656	LF
2	INSTALL 36" DIA CLASS V RGRCP	118	LF
3	INSTALL 36" DIA CLASS V RGRCP	16	LF
10	CONSTRUCT MANHOLE STRUCTURE #3. SEE SHEET S-4A.	1	EA
11	541 CONSTRUCT PIPE PLUG ON EAST PIPE OF MH #4	1	EA
12	105 CONSTRUCT LINING TRANSITION	25	LF

- GENERAL NOTES**
- TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 - FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 - FOR PIPELINE ALIGNMENT INFORMATION SEE G-8 SERIES.
 - CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 - CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT PRIOR TO CONSTRUCTION.



Call at 1e before excavation.

AR Arizona

Dial 8-1-1 in Maricopa

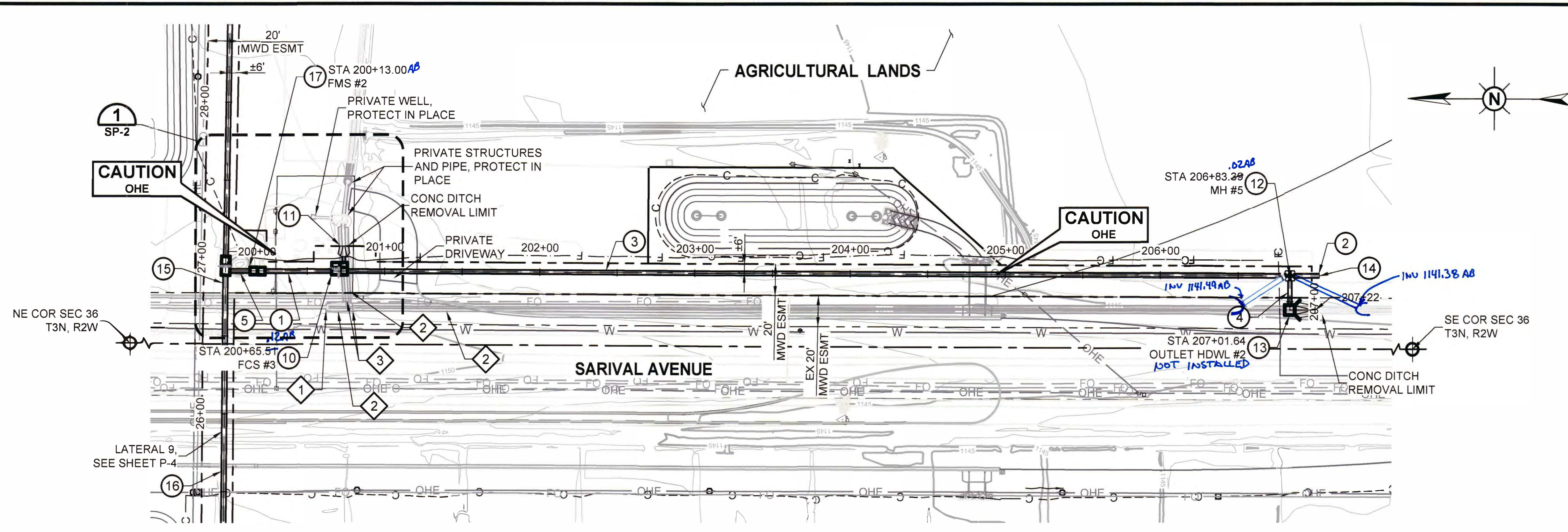
A811 inc.

KE-1T (782-534) (602) 263-1100

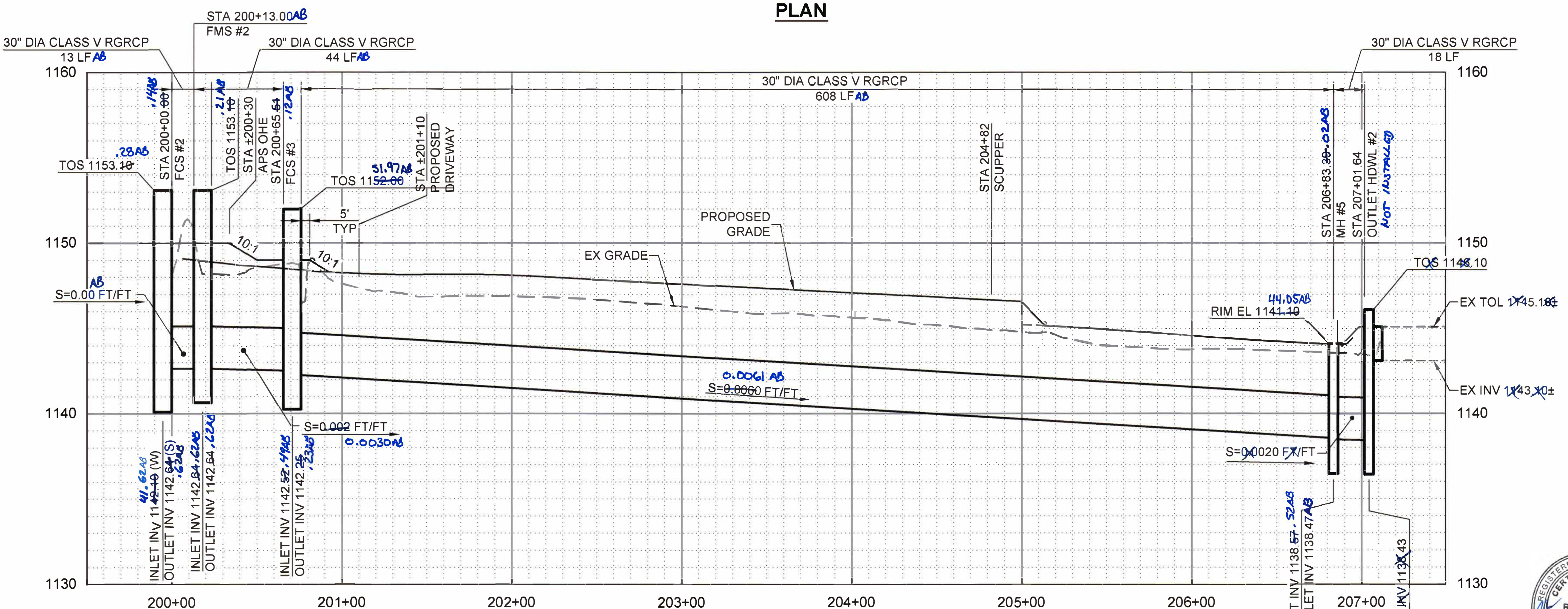
<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV	DATE	REVISION DESCRIPTION	BY													<p>GCE inc. GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM</p>	<p>DESIGNED BY: R. RILEY</p> <p>DRAWN BY: T. IBARRA</p> <p>APPROVED BY: G. CAIRO</p> <p>DRAWING: MWD-49</p> <p>PLOT DATE: JAN, 2020</p>	<p>MWD MARICOPA WATER DISTRICT P.O. BOX 900 WADDELL, ARIZONA 85355 (623) 546-8266</p>	<p>MCDOT OLIVE AVENUE SR 303L TO SARIVAL AVENUE (MCDOT TT0561) WADDELL, ARIZONA</p>	<p>LATERAL 9 PLAN AND PROFILE STA 34+50 TO POE</p>	<p>P - 5</p>
REV	DATE	REVISION DESCRIPTION	BY																			

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.

Z:\GCE Projects\MWD-49\dwg\02_MWD-49_P_dwg\planar 01/27/20 - 8:38pm



PLAN



PROFILE

REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	HEADWALL STRUCTURE	1	EA
2	CONC LINED DITCH	679	LF
3	SLIDE GATE	2	EA

CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 30" DIA CLASS V RGRCP	44	LF
2	INSTALL 30" DIA CLASS V RGRCP	16	LF
3	INSTALL 30" DIA CLASS V RGRCP	608	LF
4	INSTALL 30" DIA CLASS V RGRCP	18	LF
5	INSTALL 30" DIA CLASS V RGRCP	14	LF
10	CONSTRUCT FLOW CONTROL STRUCTURE #3. SEE S-2 SERIES.	1	EA
11	CONSTRUCT CONC LINED PIPE OUTLET TRANSITION. SEE SHEET D-1.	1	EA
12	CONSTRUCT MANHOLE STRUCTURE #5. SEE SHEET S-4B.	1	EA
13	CONSTRUCT OUTLET HEADWALL STRUCTURE #2. SEE SHEET S-5.	1	EA
14	541 CONSTRUCT PIPE PLUG ON SOUTH PIPE OF MH #5	1	EA
15	CONSTRUCT FLOW CONTROL STRUCTURE #2. SEE S-1B.		
16	LATERAL 9 PIPELINE. SEE SHEET P-4.		
17	CONSTRUCT FLOW MEASUREMENT STRUCTURE #2. SEE S-6B.	1	EA

- GENERAL NOTES**
- TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 - FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 - FOR PIPELINE ALIGNMENT INFORMATION SEE G-8 SERIES.
 - CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 - CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT PRIOR TO CONSTRUCTION.

HORIZ SCALE: 1" = 40'

VERT SCALE: 1" = 4'

Call it before excavation. **AR** Arizona Dial 8-1-1 c In Maricopa

It working day excavation. **A811** Inc. KE-IT (752-534 (602) 263-1100

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



DESIGNED BY: R. RILEY
 DRAWN BY: T. IBARRA
 APPROVED BY: G. CAIRO
 DRAWING: MWD-49
 PLOT DATE: JAN, 2020

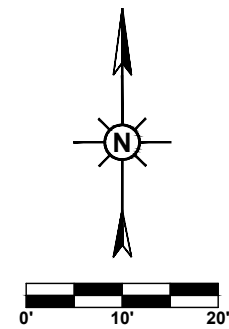
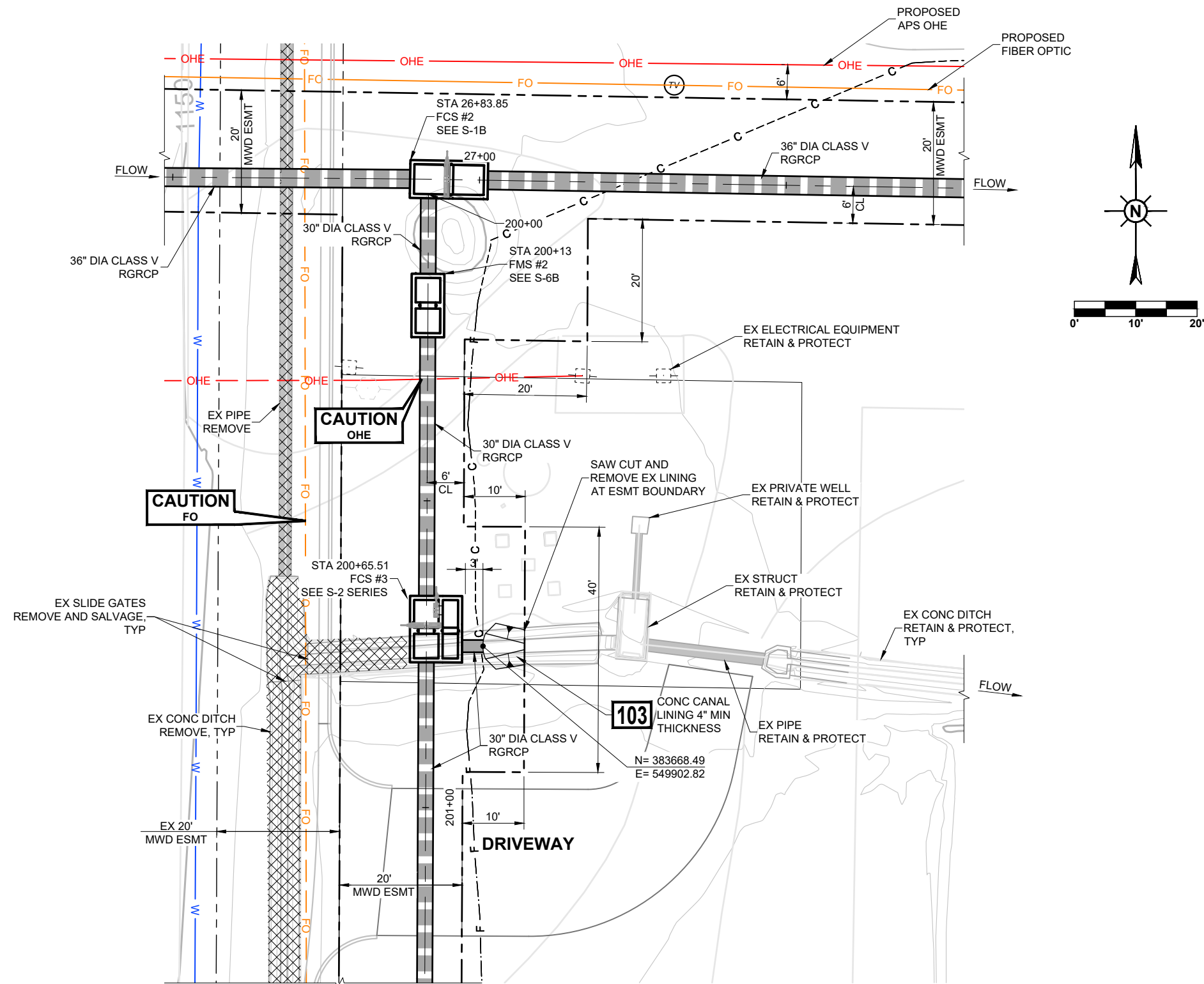
MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

LATERAL 9
SUBLATERAL G
PLAN AND PROFILE
POB TO POE

P - 6

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



LATERAL 9 FCS #2 SITE PLAN 1
P-4
P-6

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

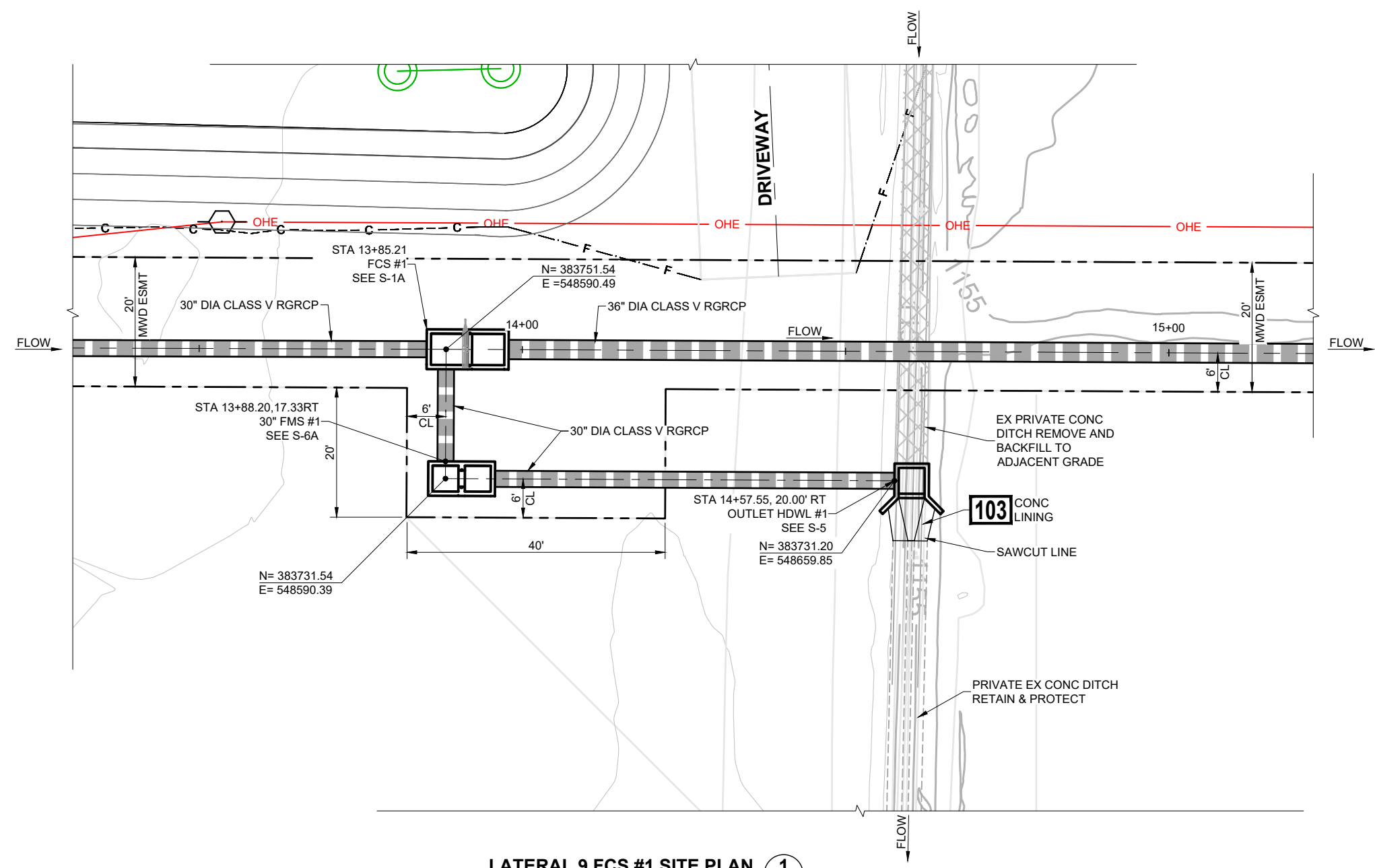
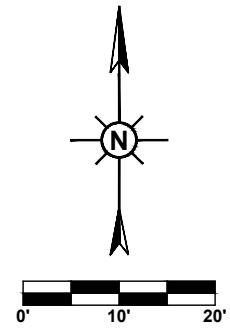
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

LATERAL 9
FCS #2
SITE PLAN

SP - 2

Z:\GCE Projects\MWD-49\dwg\03_MWD-49_SP-2.dwg 01/27/20 - 8:39pm

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



LATERAL 9 FCS #1 SITE PLAN 1
P-2

Call at least two full working days before you begin excavation.
ARIZONA 811
 Arizona Blue Stake, Inc.
 Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
 In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

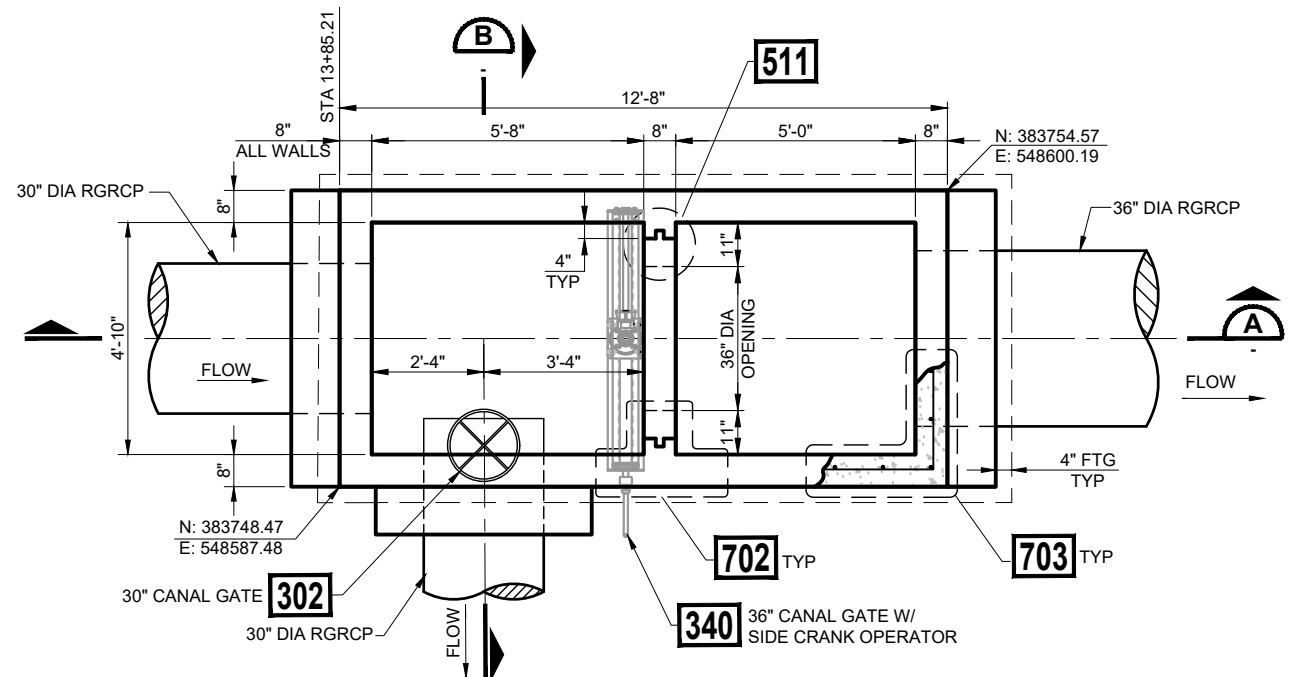
MCDOT OLIVE AVENUE
 SR 303L TO SARIVAL AVENUE
 (MCDOT TT0561)
 WADDELL, ARIZONA

LATERAL 9
 FCS #1
 SITE PLAN

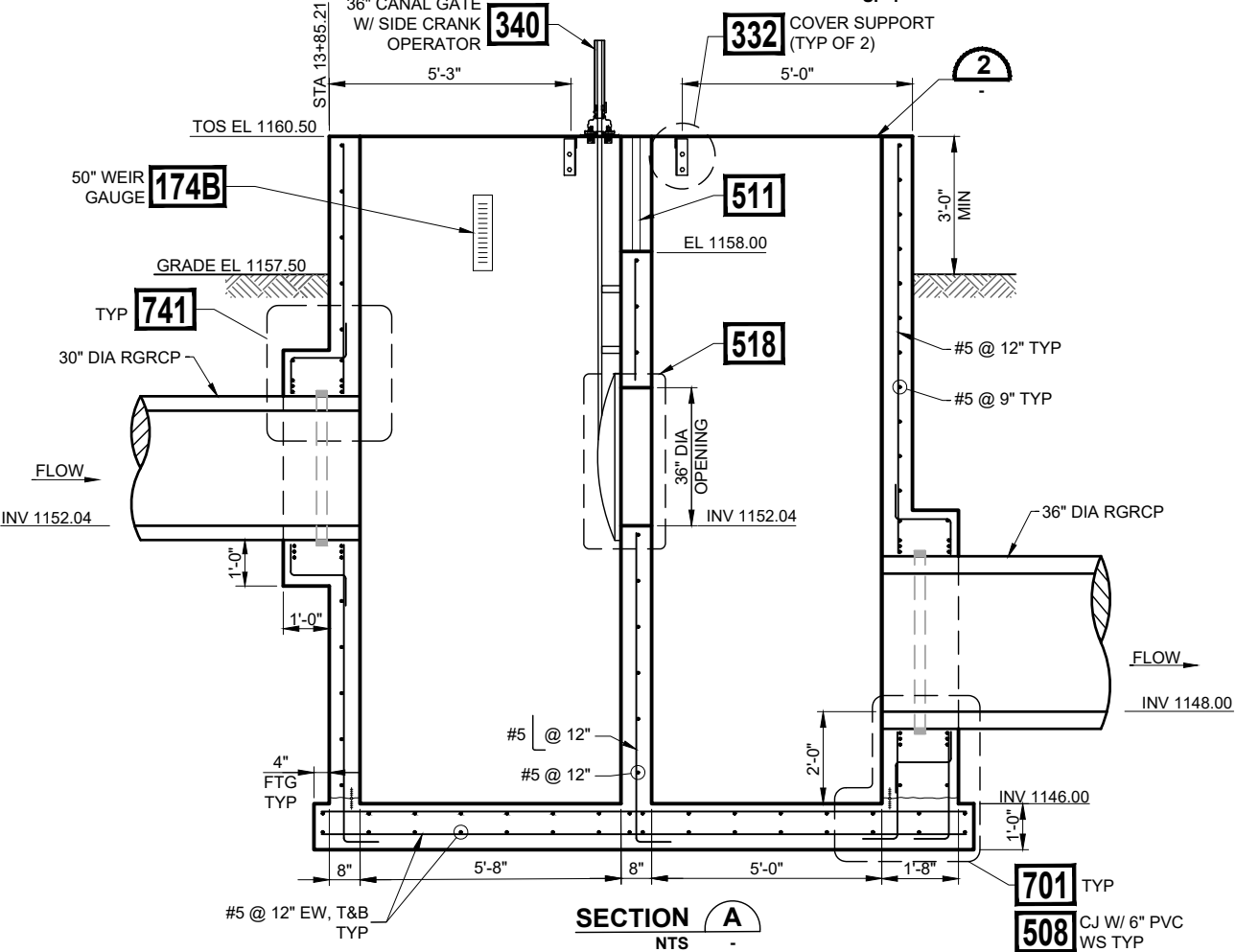
SP - 1

Z:\GCE Projects\MWD-49\dwg\03_MWD-49_SP-1.dwg 01/12/20 - 8:39pm

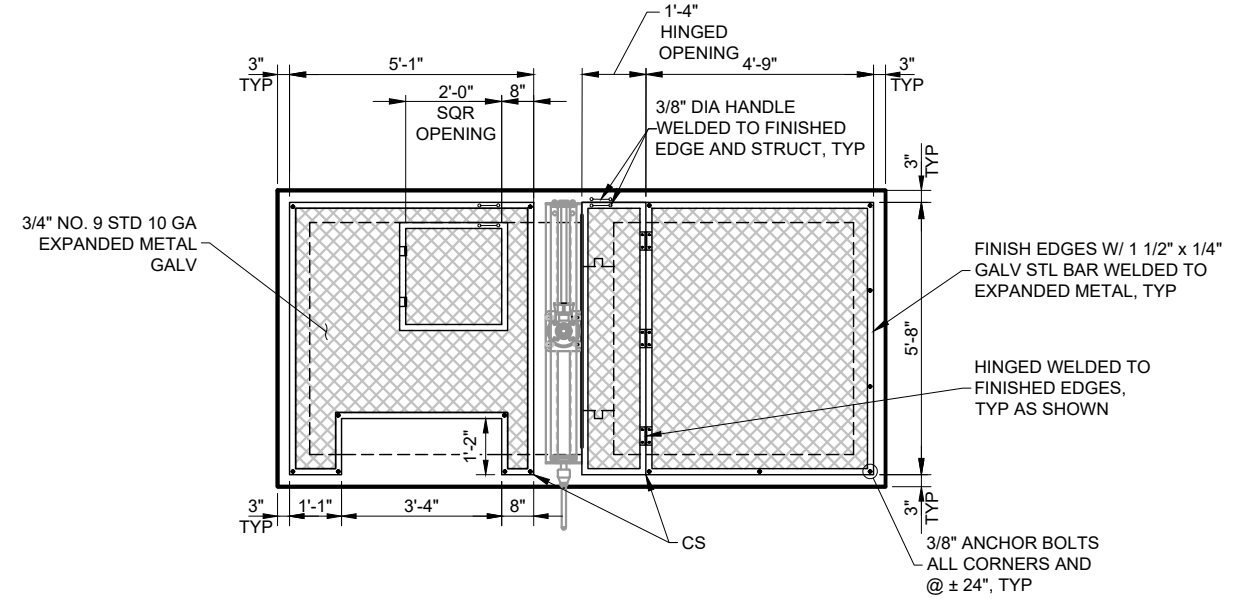
REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



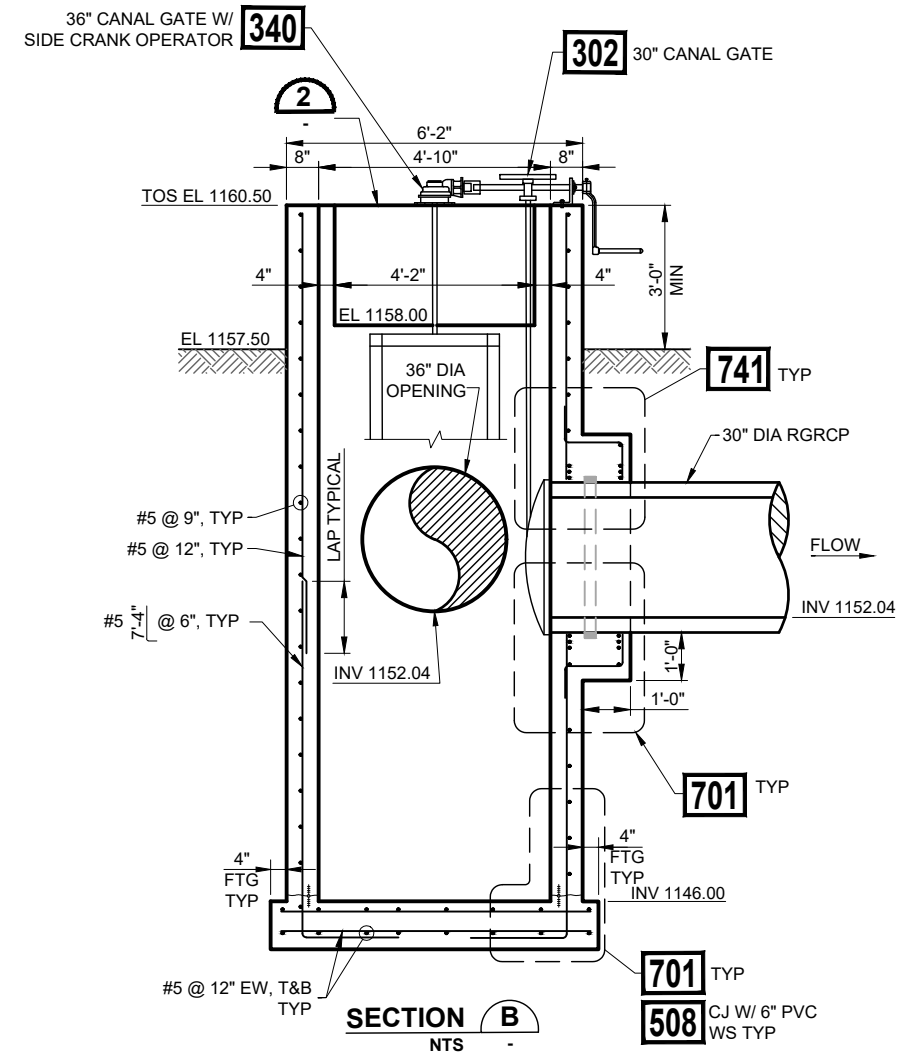
FLOW CONTROL STRUCTURE #1 PLAN 1
NTS
P-2
SP-1



SECTION A
NTS



MESH COVER PLAN 2
NTS



SECTION B
NTS

- NOTES:**
- CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:
 - 174B** 50" CONTRACTED WEIR GAUGE
 - 4 AMERICAN LOCK SERIES 1305 PADLOCKS. CONTACT MWD TO ORDER LOCKS.
 - CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
 - CS = **332** COVER SUPPORT

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

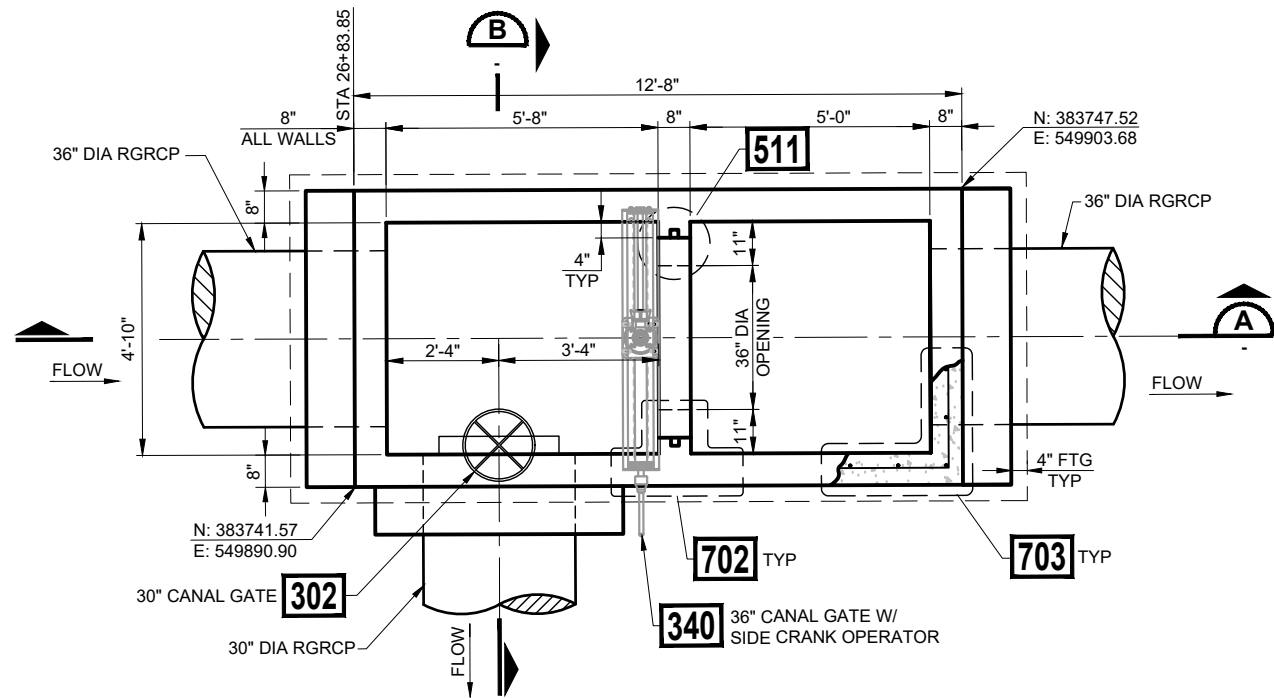
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

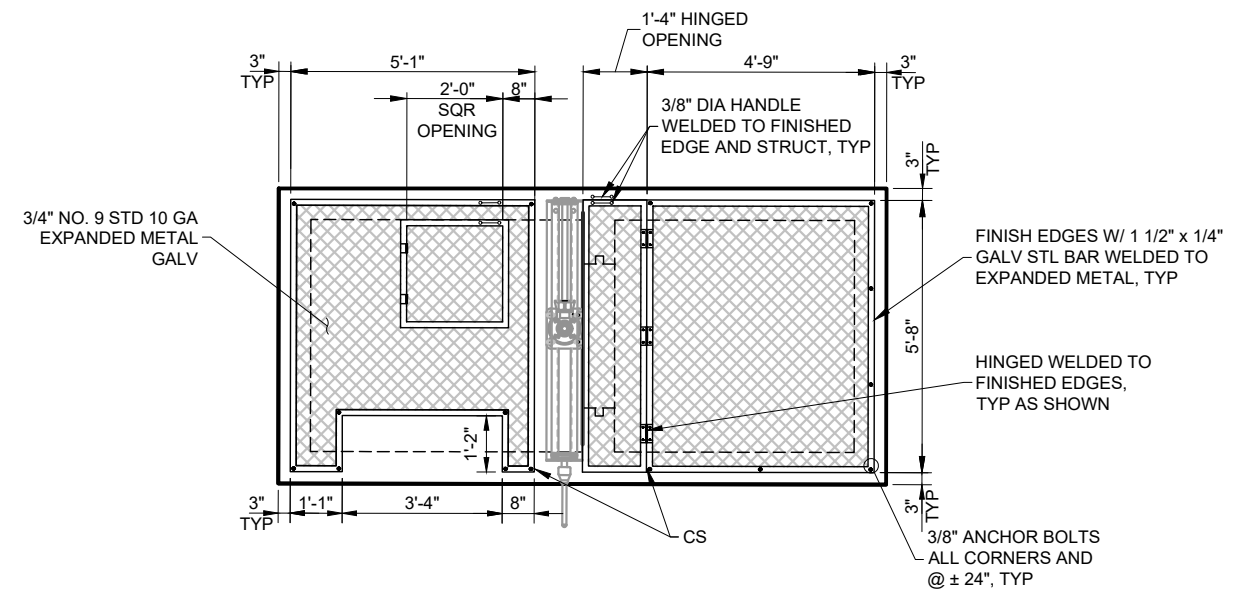
FLOW CONTROL STRUCTURE #1 PLAN, SECTIONS AND COVER

S - 1A

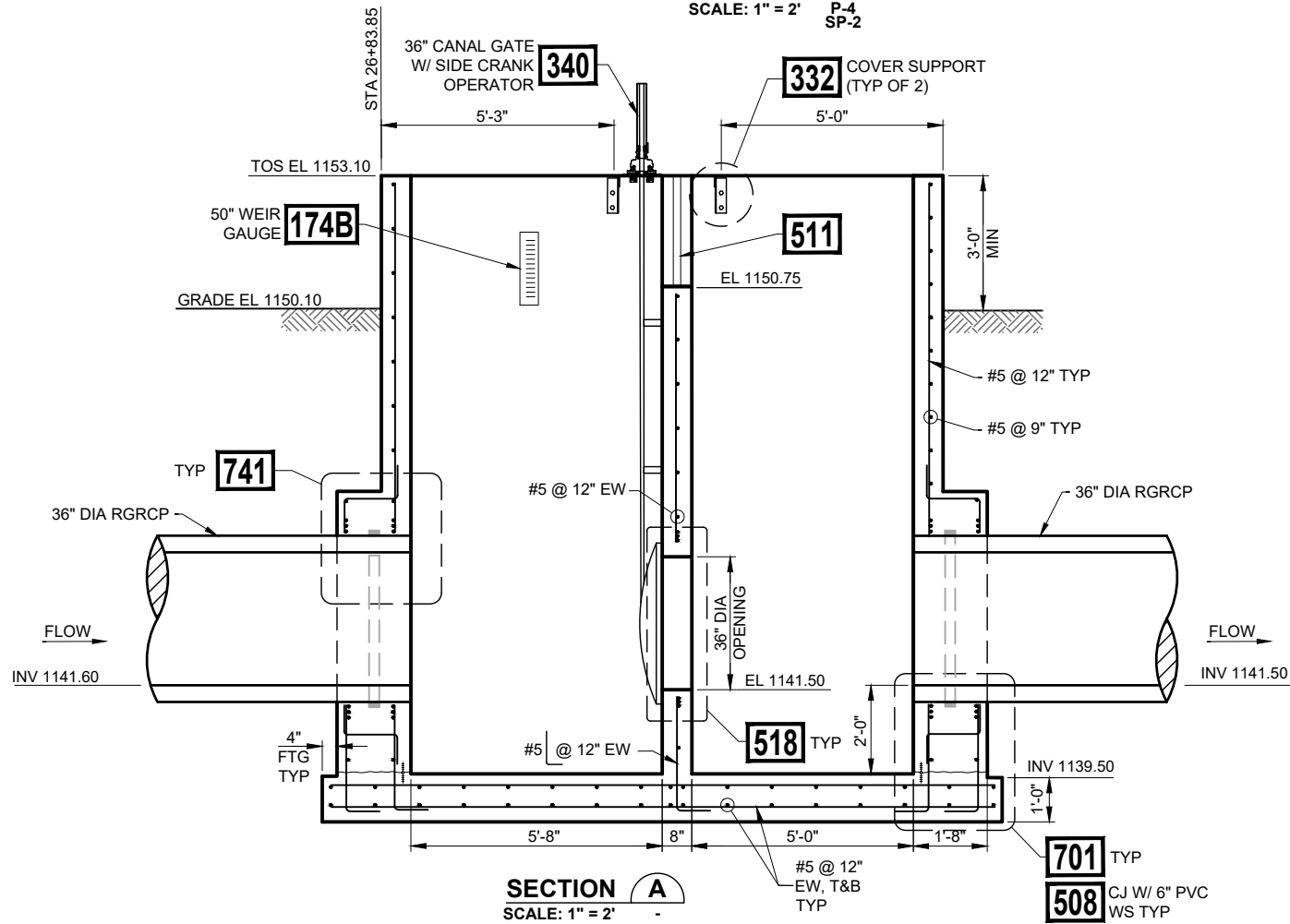
Z:\GCE Projects\MWD-49\dwg\04_MWD-49_S.dwg\varner 01/27/20 - 8:39pm



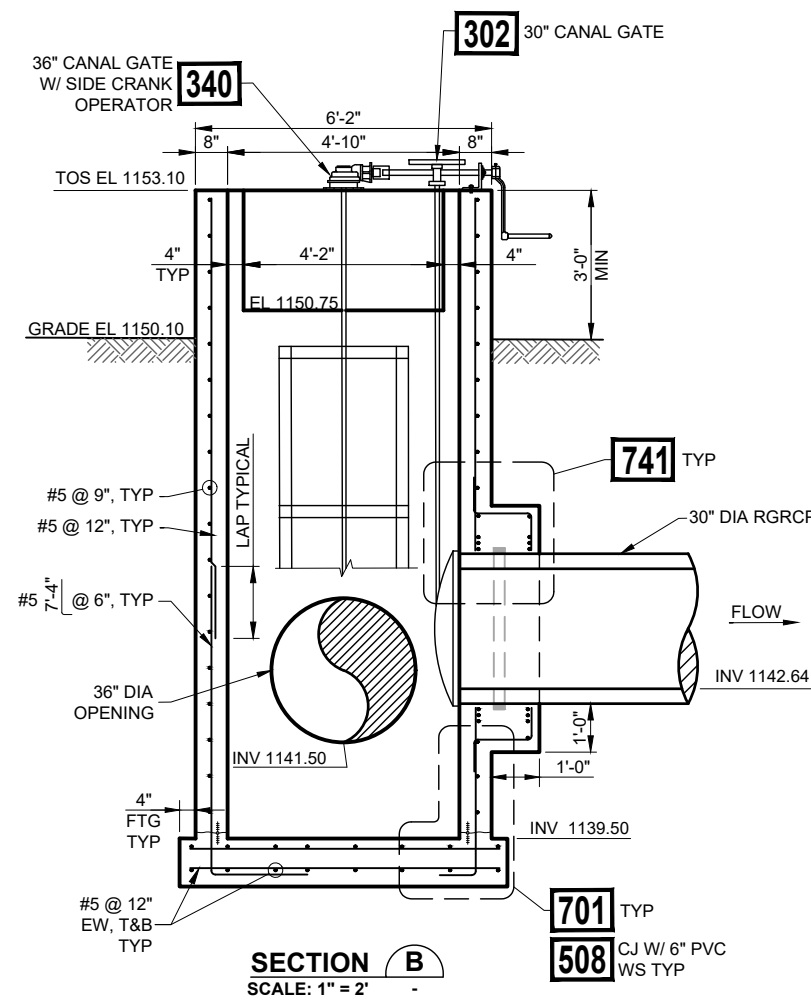
FLOW CONTROL STRUCTURE #2 1
SCALE: 1" = 2' P-4 SP-2



MESH COVER PLAN 2
NTS



SECTION A
SCALE: 1" = 2'

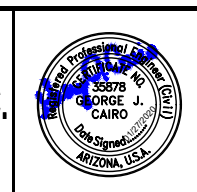


SECTION B
SCALE: 1" = 2'

- NOTES:**
- CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:
 - 174B 50" CONTRACTED WEIR GAUGE
 - 4 AMERICAN LOCK SERIES 1305 PADLOCKS. CONTACT MWD TO ORDER LOCKS.
 - CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
 - CS = 332 COVER SUPPORT

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



DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

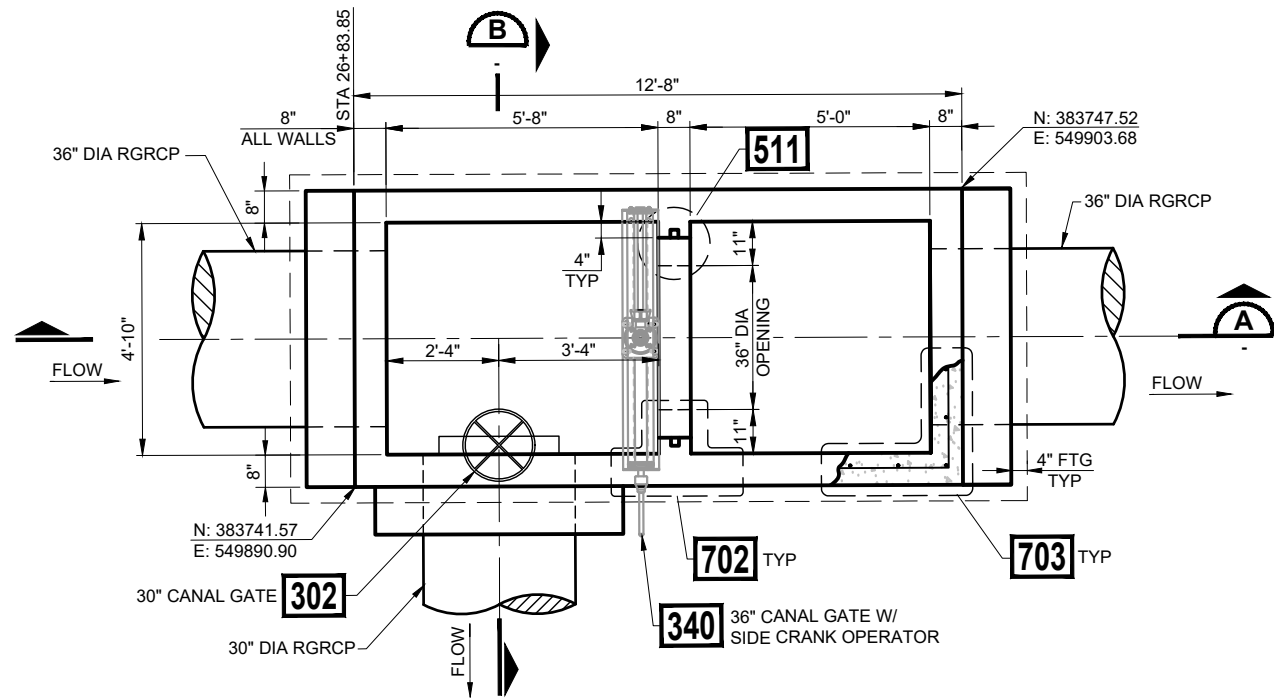
MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

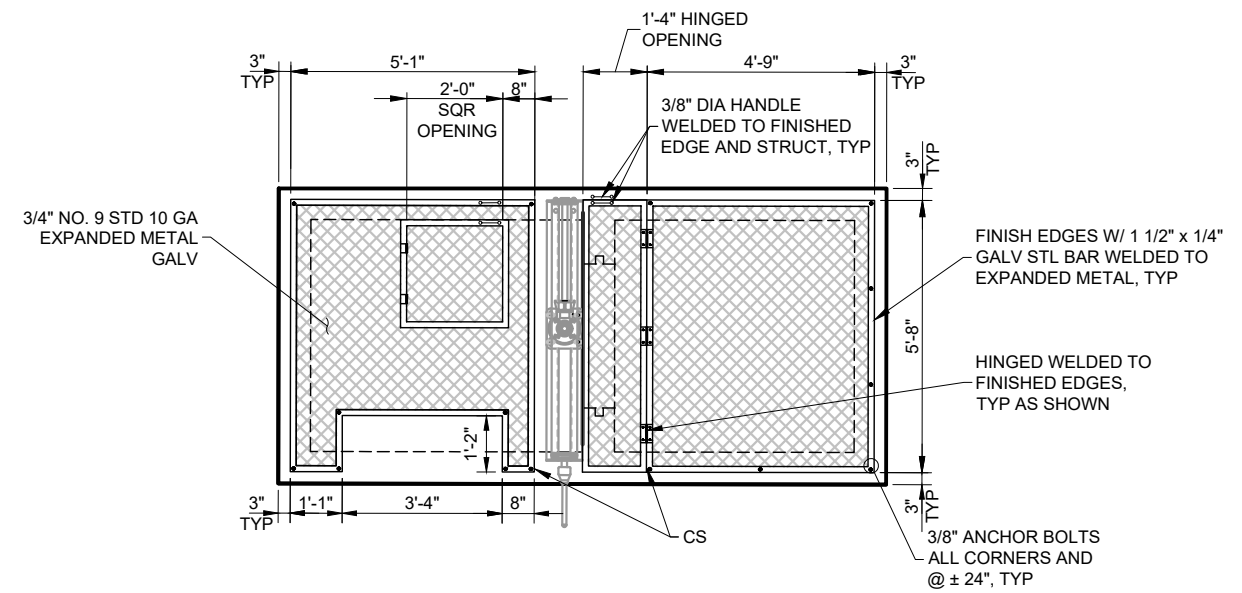
FLOW CONTROL STRUCTURE #2
PLAN, SECTIONS AND COVER

S - 1B

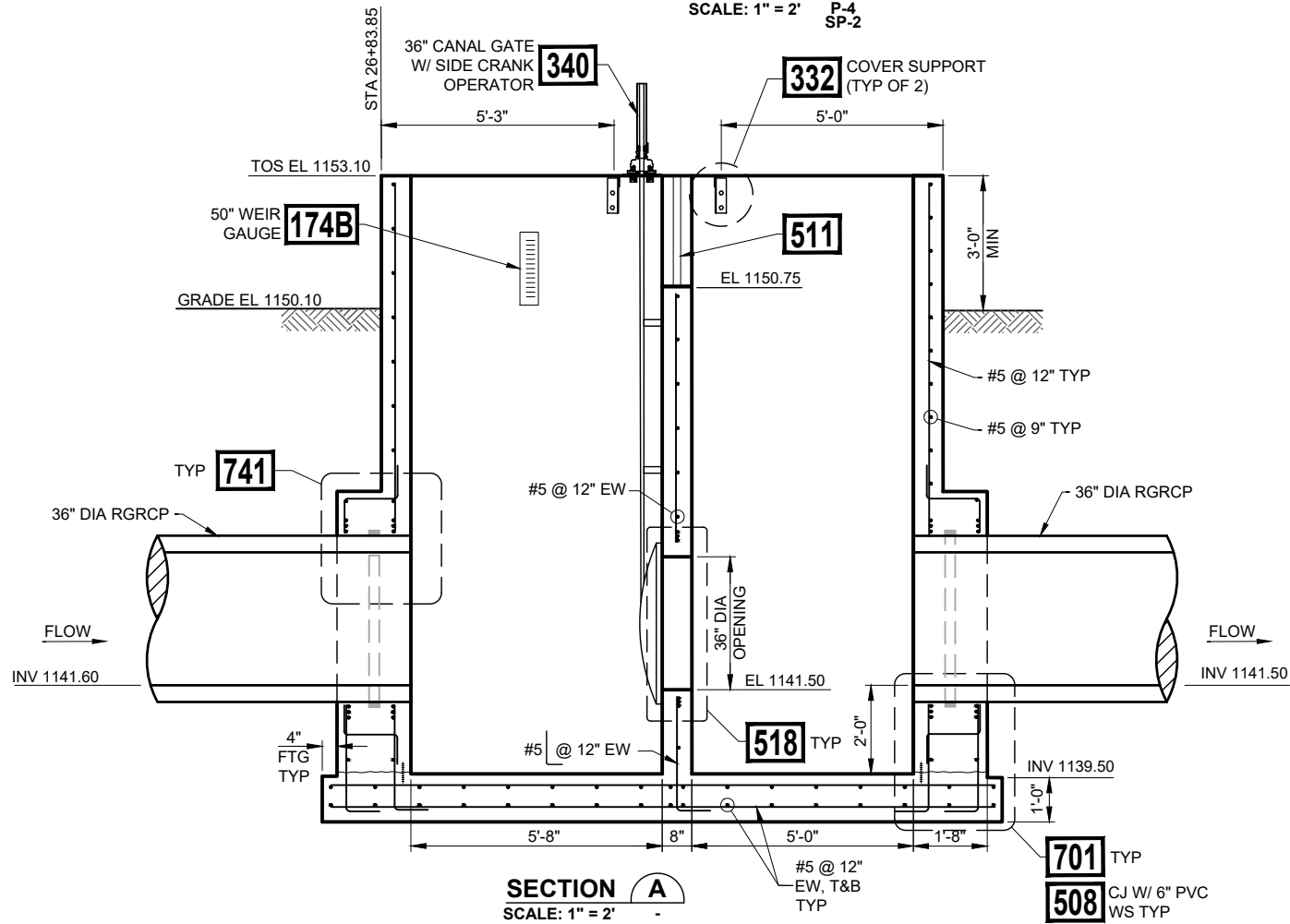
Z:\GCE Projects\MWD-49\dwg\04_MWD-49_S.dwg\varner 01/27/20 - 8:38pm



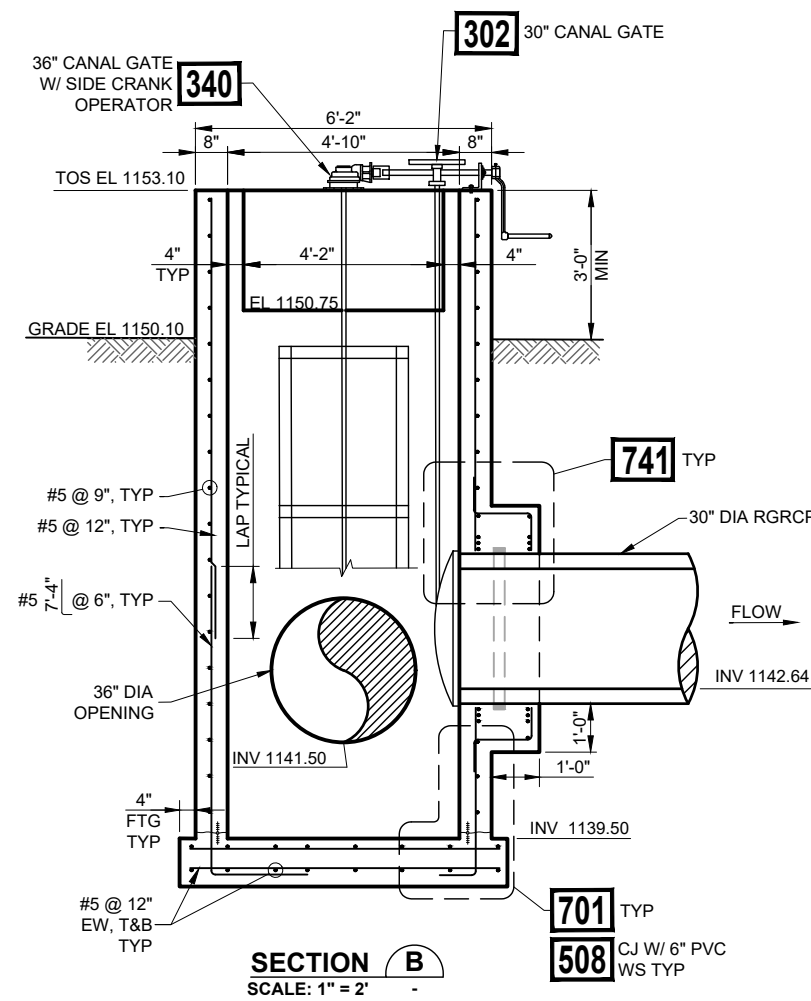
FLOW CONTROL STRUCTURE #2 1
SCALE: 1" = 2' P-4 SP-2



MESH COVER PLAN 2
NTS



SECTION A
SCALE: 1" = 2'



SECTION B
SCALE: 1" = 2'

NOTES:

- CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:
 - 174B 50" CONTRACTED WEIR GAUGE
 - 4 AMERICAN LOCK SERIES 1305 PADLOCKS. CONTACT MWD TO ORDER LOCKS.
- CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
- CS = 332 COVER SUPPORT

Z:\GCE Projects\MWD-49\dwg\04_MWD-49_S.dwg\varner 01/27/20 - 8:38pm

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

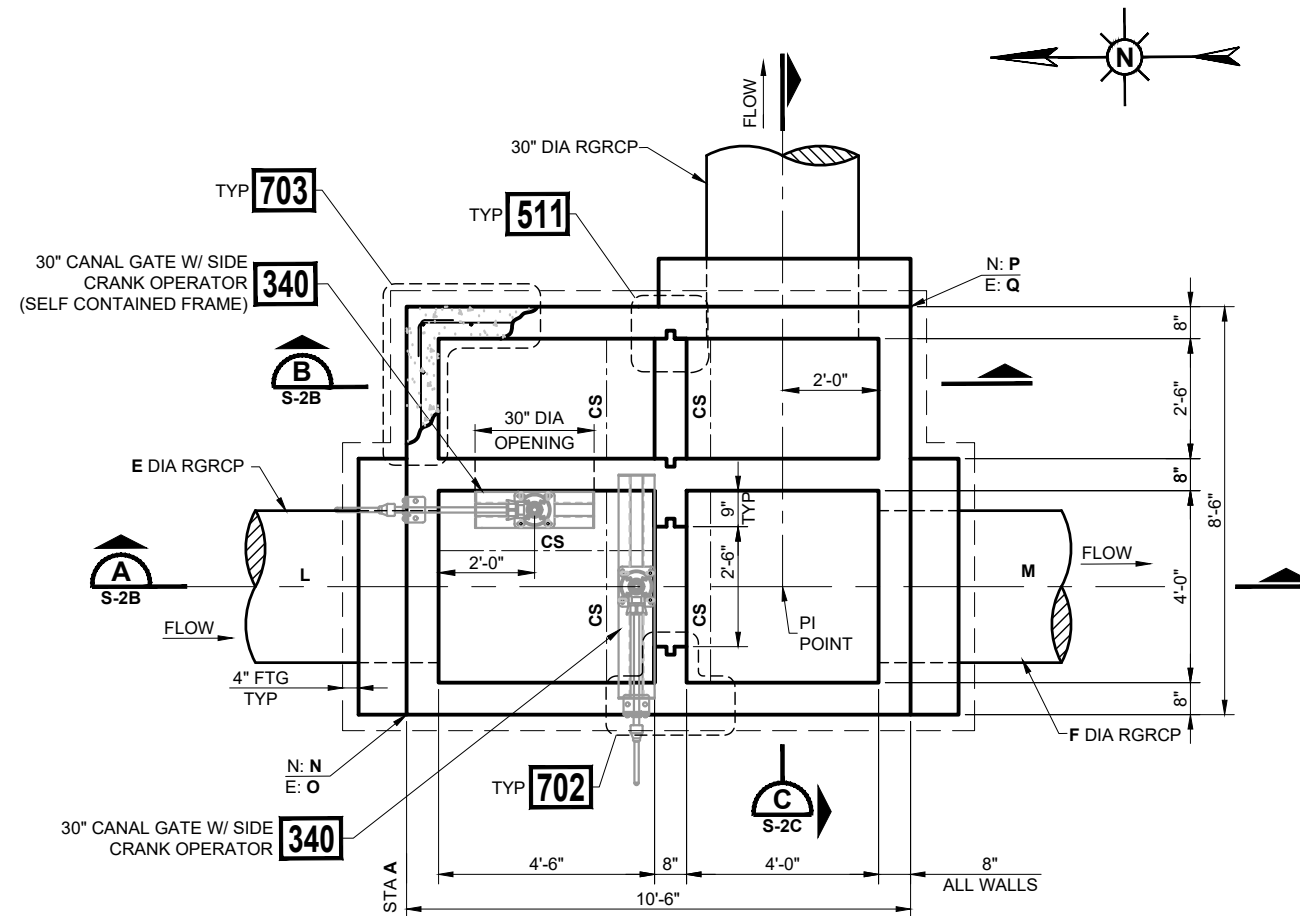
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

FLOW CONTROL STRUCTURE #2
PLAN, SECTIONS AND COVER

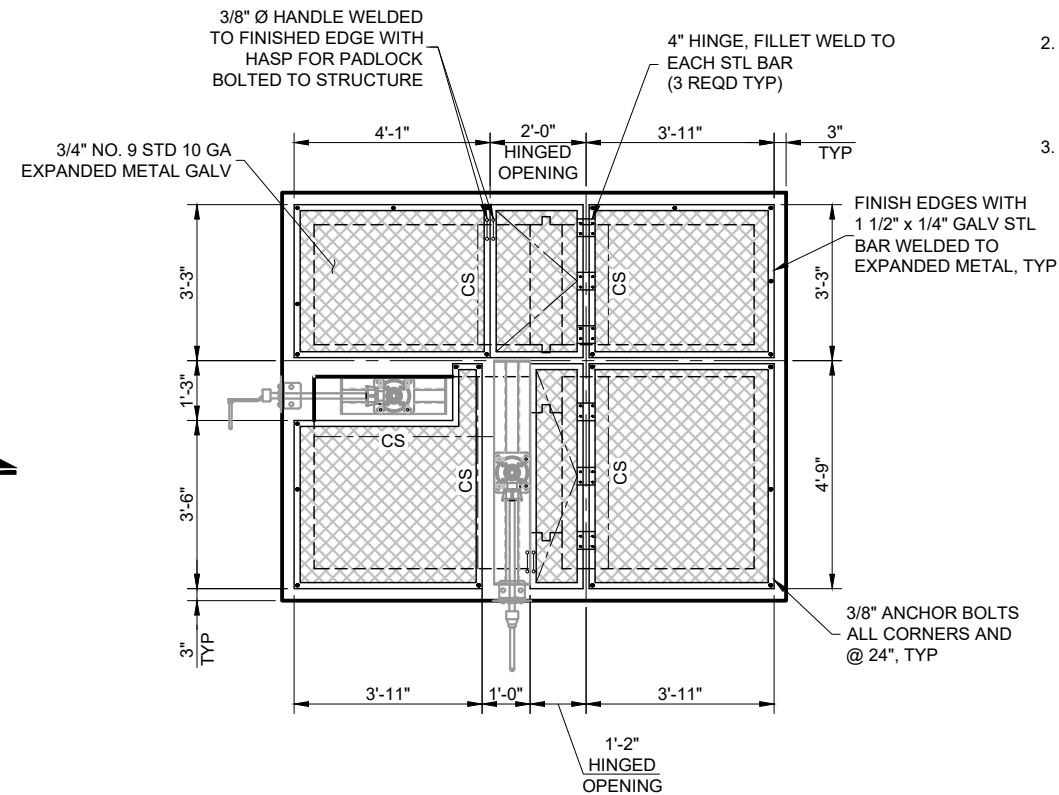
S - 1B

NOTES:

- CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:
 - 33" x 60" x 1/4" STL PLATE
 - 20' OF 1 1/2" x 1 1/2" x 1/4" STL ANGLE IRON
 - **170A** 30" CONTRACTED WEIR GAUGE
 - **169A** 30" SUPPRESSED WEIR GAUGE
 - 1/2 GALLON OF CARBOLINE 300M OR APPROVED EQUAL. SEE SPECIFICATIONS.
 - 4 AMERICAN LOCK SERIES 1305 PADLOCKS. CONTACT MWD TO ORDER.
- CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
- CS = **332** COVER SUPPORT



FLOW CONTROL STRUCTURE PLAN (1)
NTS



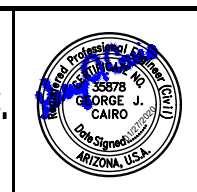
MESH COVER PLAN (2)
NTS

FLOW CONTROL STRUCTURE SCHEDULE

FCS	STATION A	P SHEET	SP SHEET	U/S PIPE INV B	D/S PIPE INV C	STRUCT INV D	PIPE DIA (IN) E	PIPE DIA (IN) F	TOW G	TOS H	FINISHED GRADE I	TOW J	TURNOUT INV K	BEARINGS		COORDINATES			
														L	M	N	O	P	Q
3	200+68.48	P-6	SP-2	1142.52	1142.25	1140.25	30"	30"	1150.00	1152.00	1149.00	1145.33	1145.33	T10	T10	383676.35	549890.44	383665.82	549899.91

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



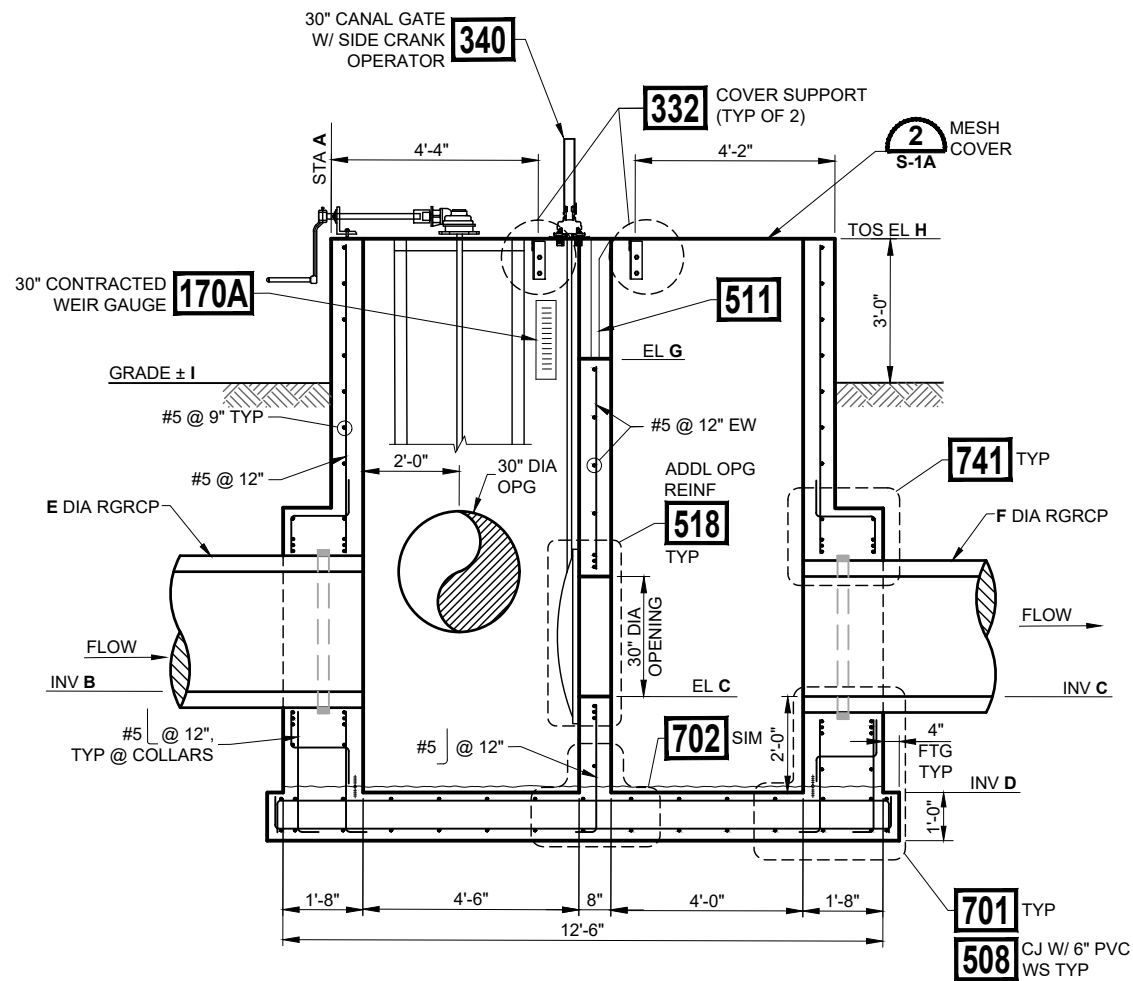
DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

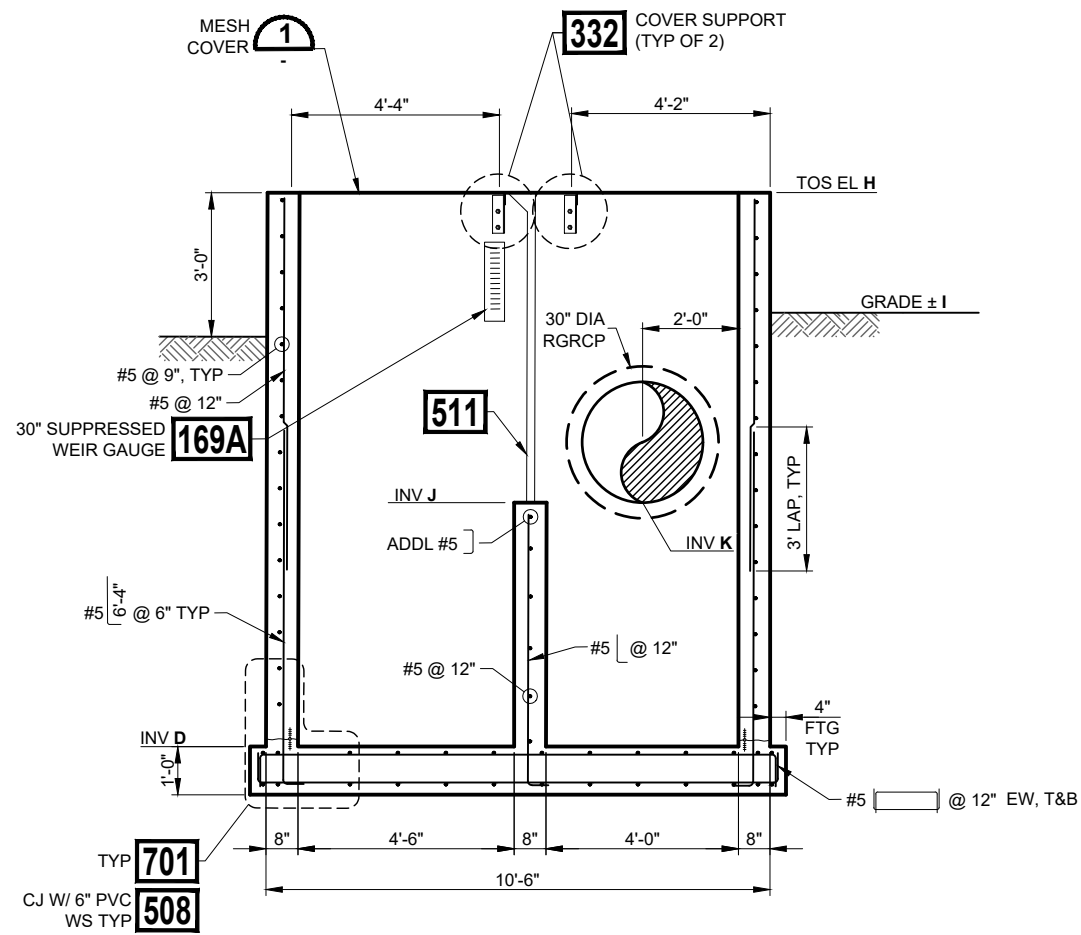
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

FLOW CONTROL STRUCTURE #3
PLAN AND MESH COVER

S - 2A



SECTION A
NTS S-2A



SECTION B
NTS S-2A

FLOW CONTROL STRUCTURE SCHEDULE

FCS	STATION A	P SHEET	SP SHEET	U/S PIPE INV B	D/S PIPE INV C	STRUCT INV D	PIPE DIA (IN) E	PIPE DIA (IN) F	TOW G	TOS H	FINISHED GRADE I	TOW J	TURNOUT INV K	BEARINGS		COORDINATES			
														L	M	N	O	P	Q
#3	200+68.48	P-6	SP-2	1142.52	1142.25	1140.25	30"	30"	1150.00	1152.00	1149.00	1145.33	1145.33	T10	T10	383676.35	549890.44	383665.82	549899.91

NOTES:

1. SEE S-2A FOR ALL STRUCTURE NOTES.

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



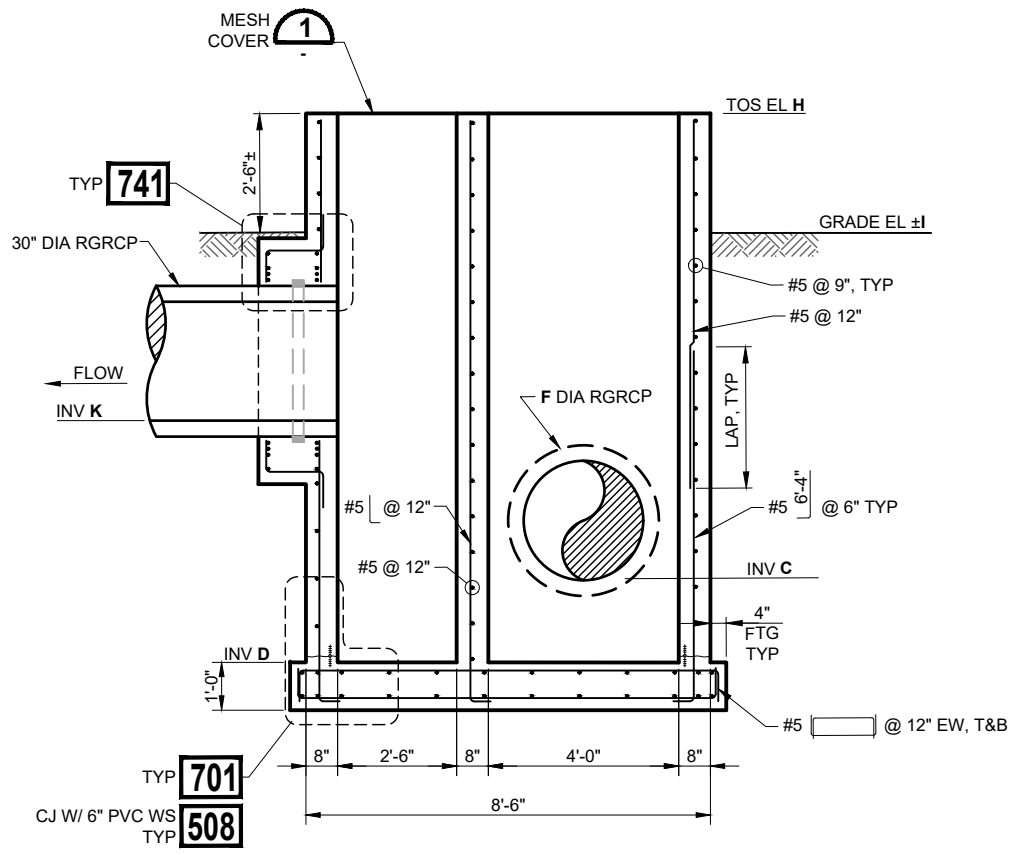
DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

FLOW CONTROL STRUCTURE #3 SECTIONS

S - 2B



SECTION C
NTS S-2A

FLOW CONTROL STRUCTURE SCHEDULE																			
FCS	STATION A	P SHEET	SP SHEET	U/S PIPE INV B	D/S PIPE INV C	STRUCT INV D	PIPE DIA (IN) E	PIPE DIA (IN) F	TOW G	TOS H	FINISHED GRADE I	TOW J	TURNOUT INV K	BEARINGS		COORDINATES			
														L	M	N	O	P	Q
3	200+68.48	P-6	SP-2	1142.52	1142.25	1140.25	30"	30"	1150.00	1152.00	1149.00	1145.33	1145.33	T10	T10	383676.35	549890.44	383665.82	549899.91

NOTES:
1. SEE S-2A FOR ALL STRUCTURE NOTES.

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



DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

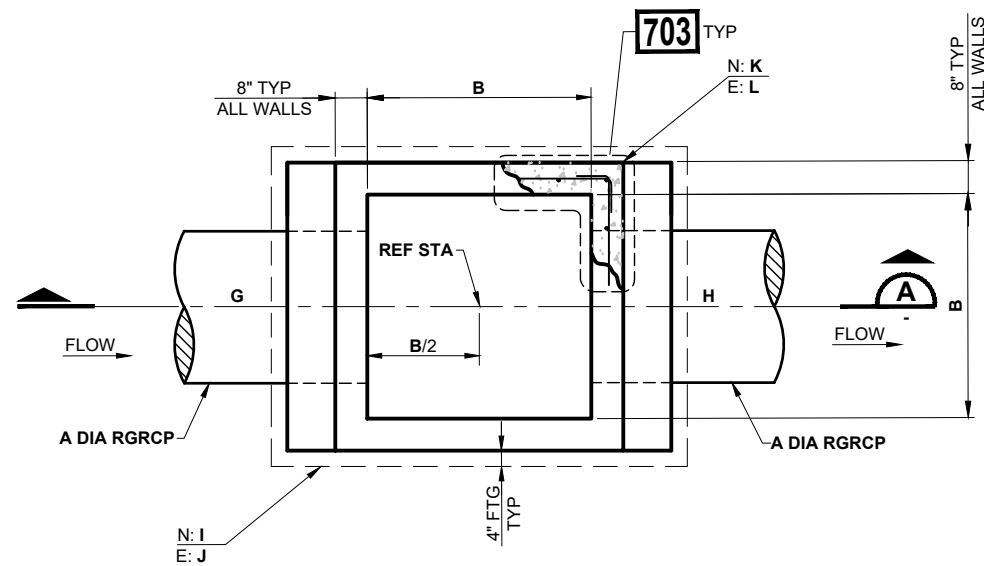
MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

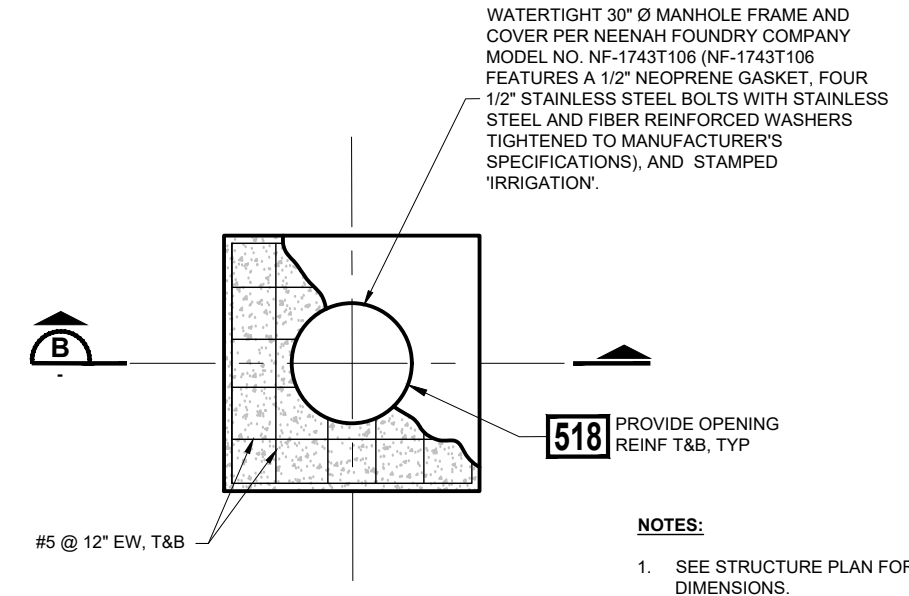
FLOW CONTROL STRUCTURE #3 SECTION

S - 2C

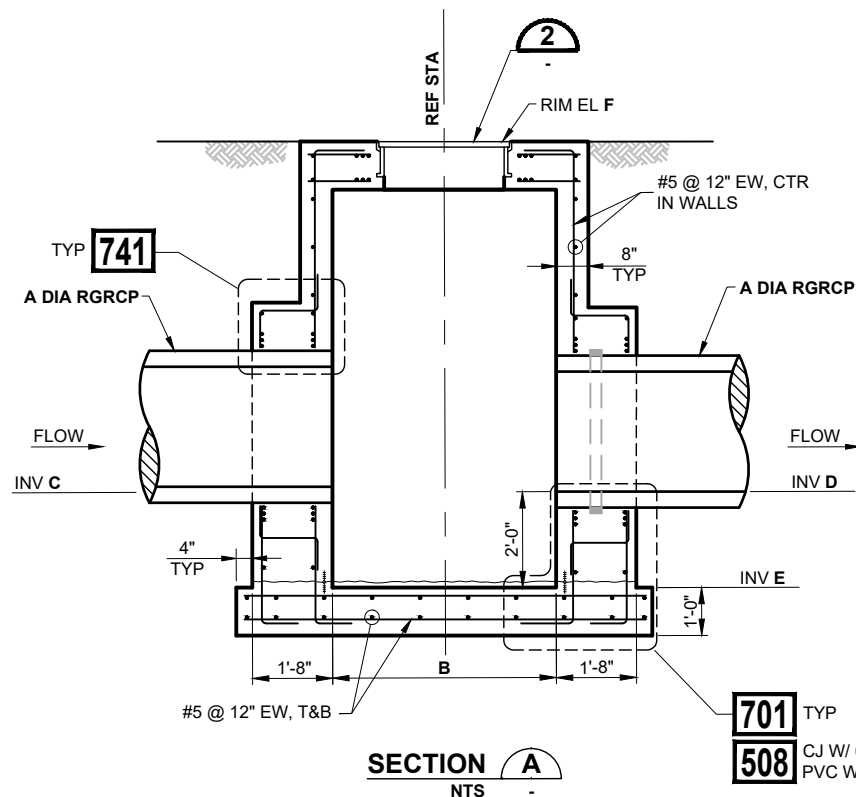
Z:\GCE Projects\MWD-49\dwg\04_MWD-49_S.dwg vmar 01/27/20 - 8:40pm



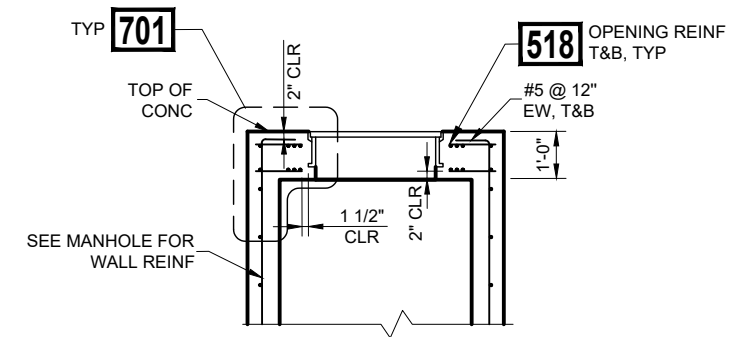
TYPICAL MANHOLE 1
NTS



TYPICAL MANHOLE TOP SLAB PLAN 2
NTS



SECTION A
NTS



TYP TOP SECTION B
NTS

TYPICAL MANHOLE STRUCTURE SCHEDULE														
MH	REF STATION	P SHEET	PIPE SIZE A	STRUCT LENGTH B	U/S PIPE INV C	D/S PIPE INV D	STRUCT INV E	RIM EL F	BEARINGS		COORDINATES			
									G	H	I	J	K	L
#1	19+50.00	P-3	36"	4'-10"	1145.33	1145.23	1140.23	1152.03	T5	T5	383745.73	549149.18	383751.86	549155.38
#2	25+00.00	P-3	36"	4'-10"	1142.54	1142.21	1140.21	1148.52	T5	T5	383729.66	550599.03	383735.71	550605.30
#3	34+00.00	P-4	36"	4'-10"	1136.50	1135.84	1133.84	1143.05	T7	T7	383717.78	551304.90	383723.83	551311.18

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



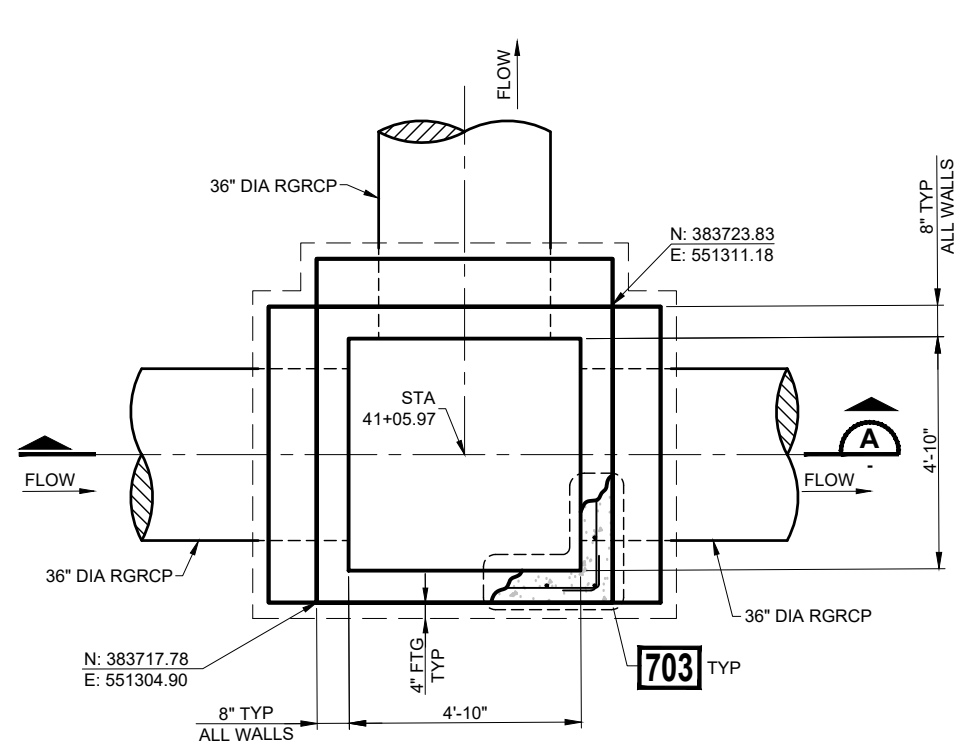
DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

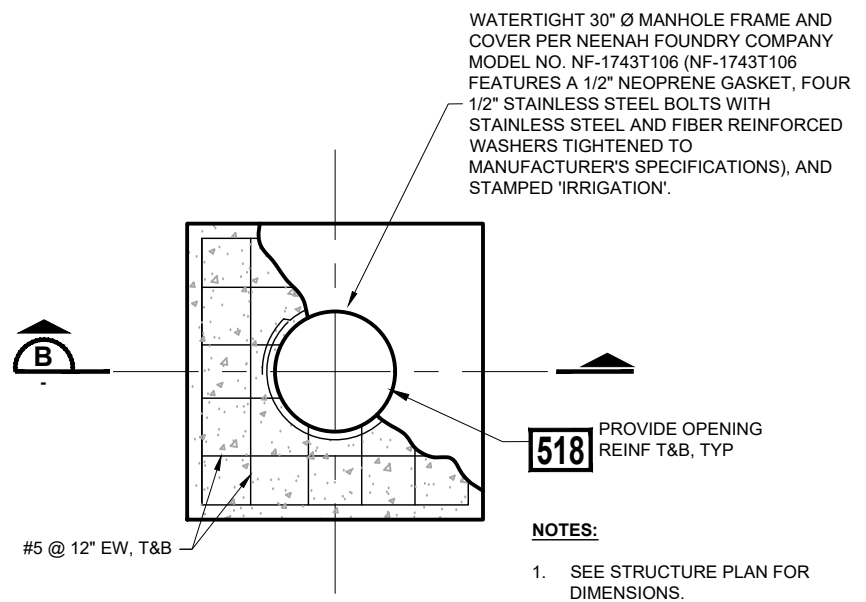
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

TYPICAL MANHOLE PLAN, SECTIONS, AND SCHEDULE

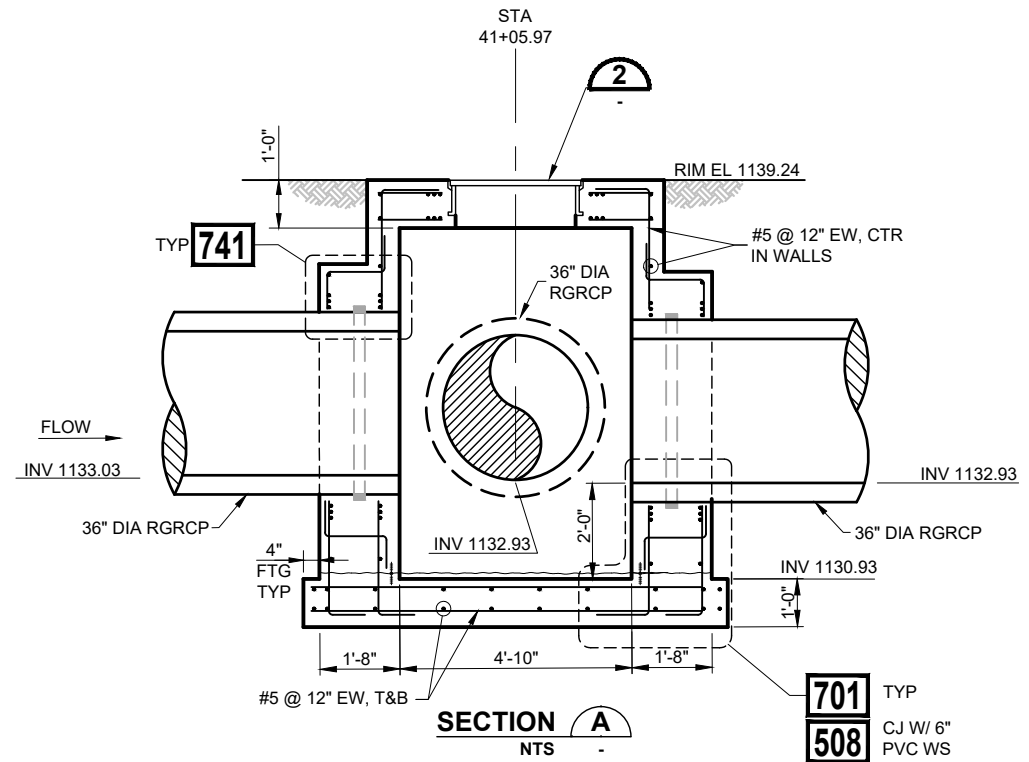
S - 3



MANHOLE #4 1
NTS P-5

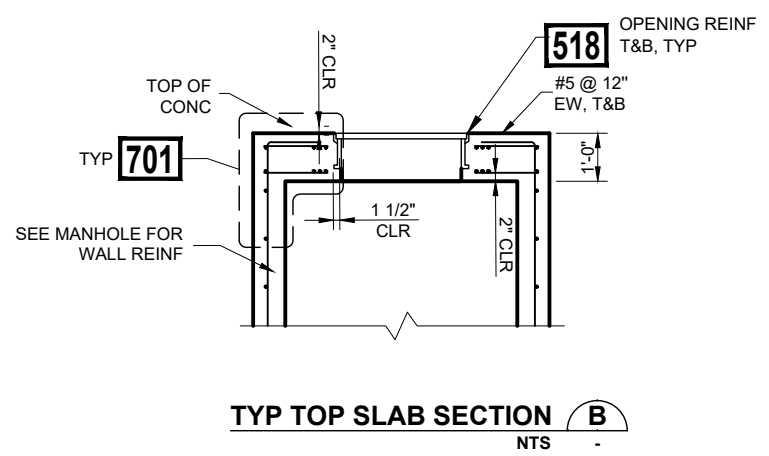


TYP TOP SLAB PLAN 2
NTS S-4B



SECTION A
NTS

701 TYP
CJ W/ 6"
508 PVC WS



TYP TOP SLAB SECTION B
NTS

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

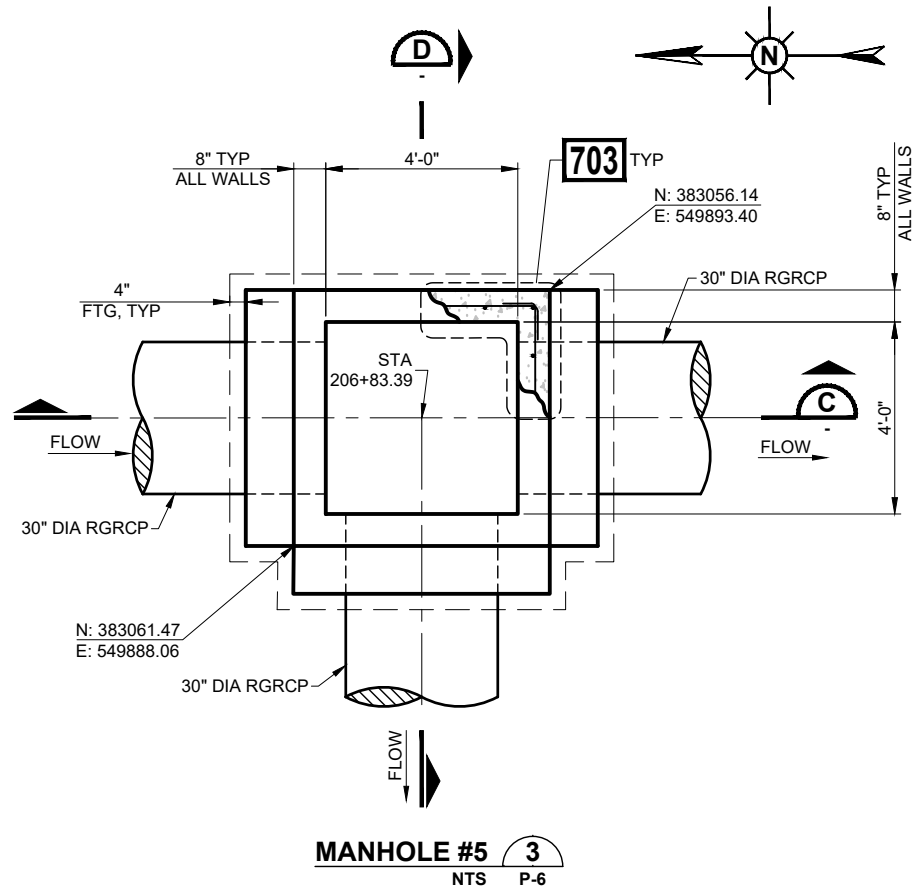
MCDOT OLIVE AVENUE
 SR 303L TO SARIVAL AVENUE
 (MCDOT TT0561)
 WADDELL, ARIZONA

MANHOLE #4
PLAN AND SECTIONS

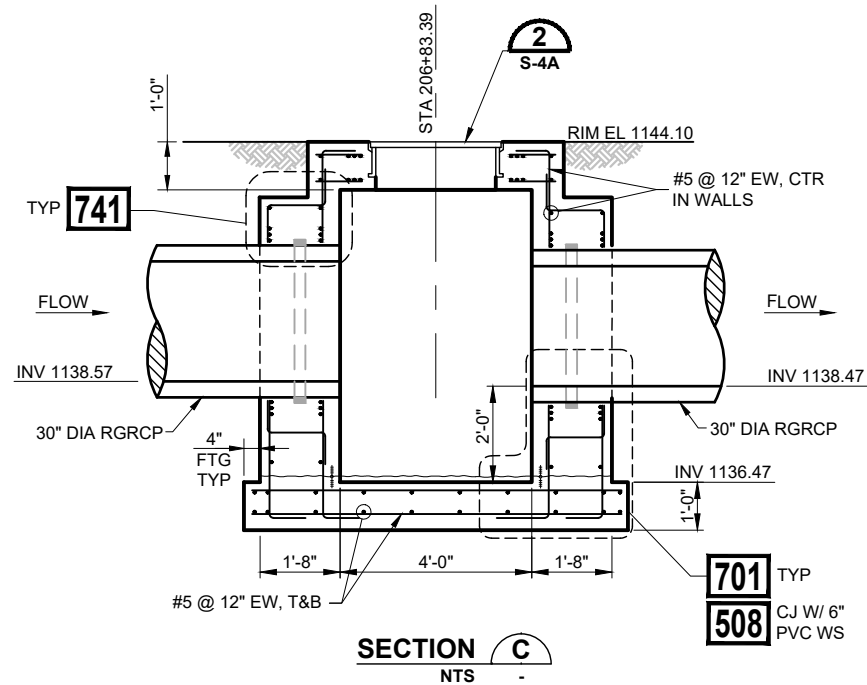
S - 4A

Z:\GCE Projects\MWD-49\dwg\04_MWD-49_S.dwg 01/27/20 - 8:40pm

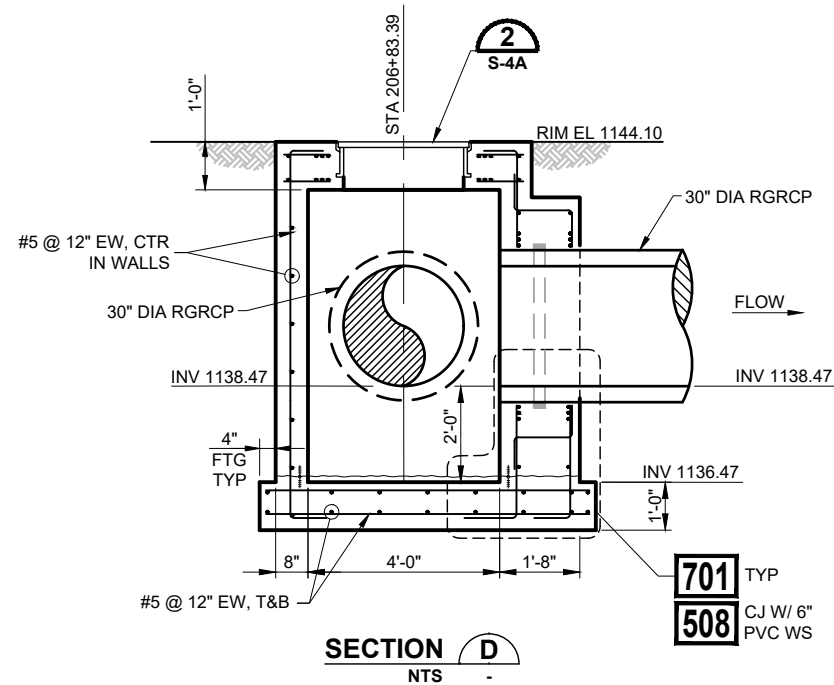
REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



MANHOLE #5 3
NTS P-6



SECTION C
NTS



SECTION D
NTS

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



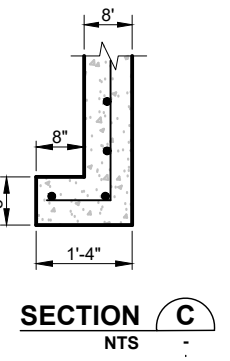
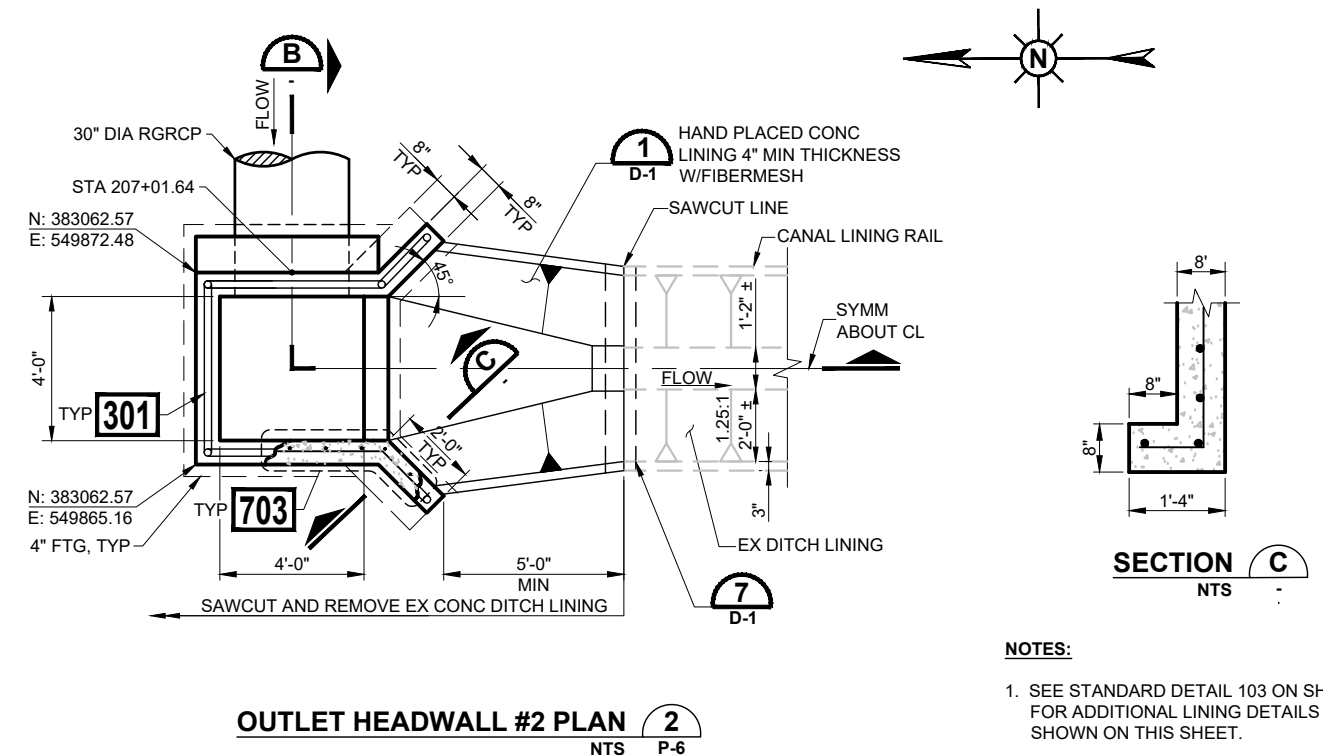
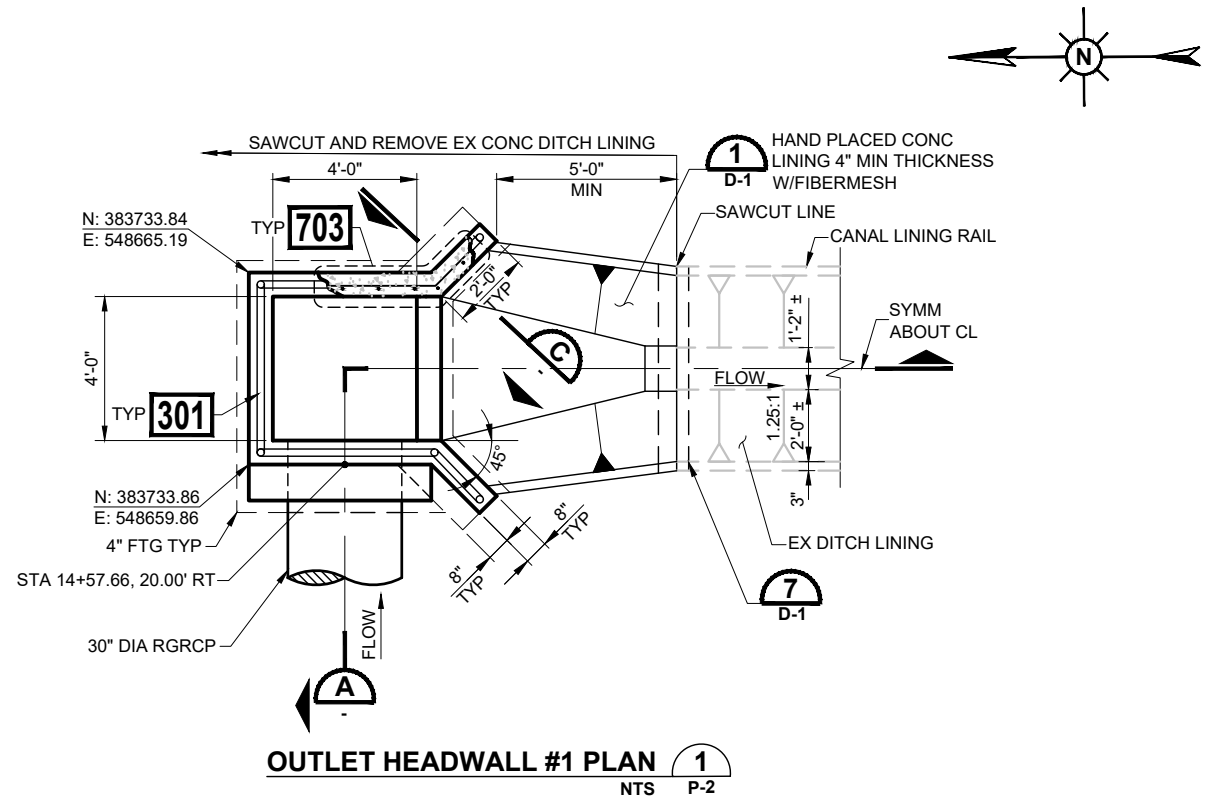
DESIGNED BY: **R. RILEY**
DRAWN BY: **T. IBARRA**
APPROVED BY: **G. CAIRO**
DRAWING: **MWD-49**
PLOT DATE: **JAN, 2020**

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

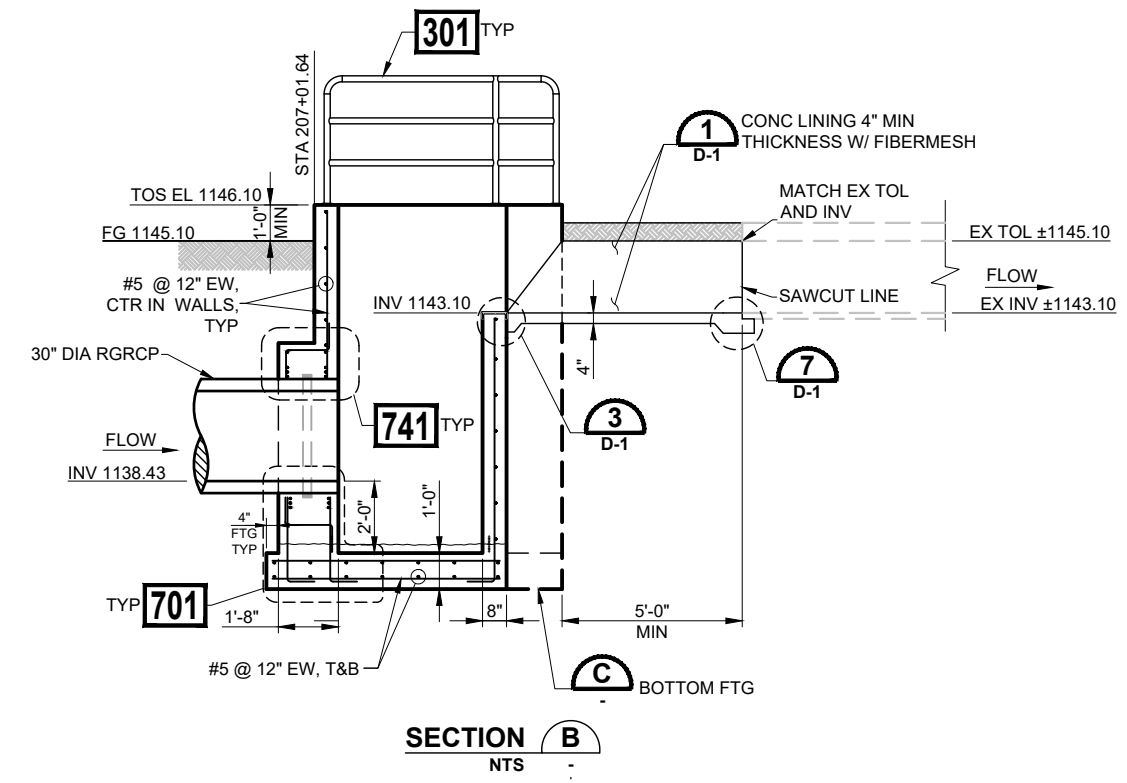
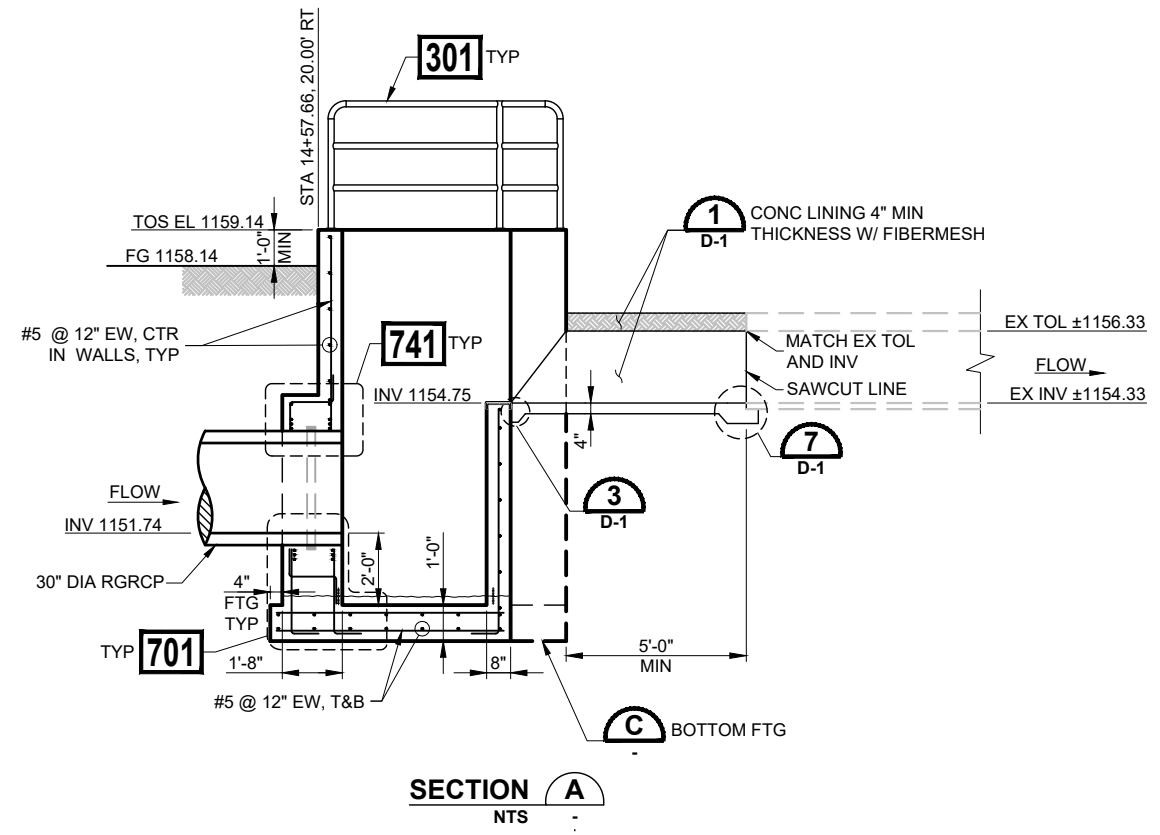
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

MANHOLE #5
PLAN AND SECTIONS

S - 4B



- NOTES:**
- SEE STANDARD DETAIL 103 ON SHEET D-1 FOR ADDITIONAL LINING DETAILS NOT SHOWN ON THIS SHEET.
 - MATCH OUTLET WALL ELEVATION AND LINING DIMENSIONS TO FUTURE LINING CONSULT WITH LANDOWNER TO VERIFY SIZES AND ELEVATIONS, PRIOR TO CONSTRUCT OF STRUCTURE.



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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

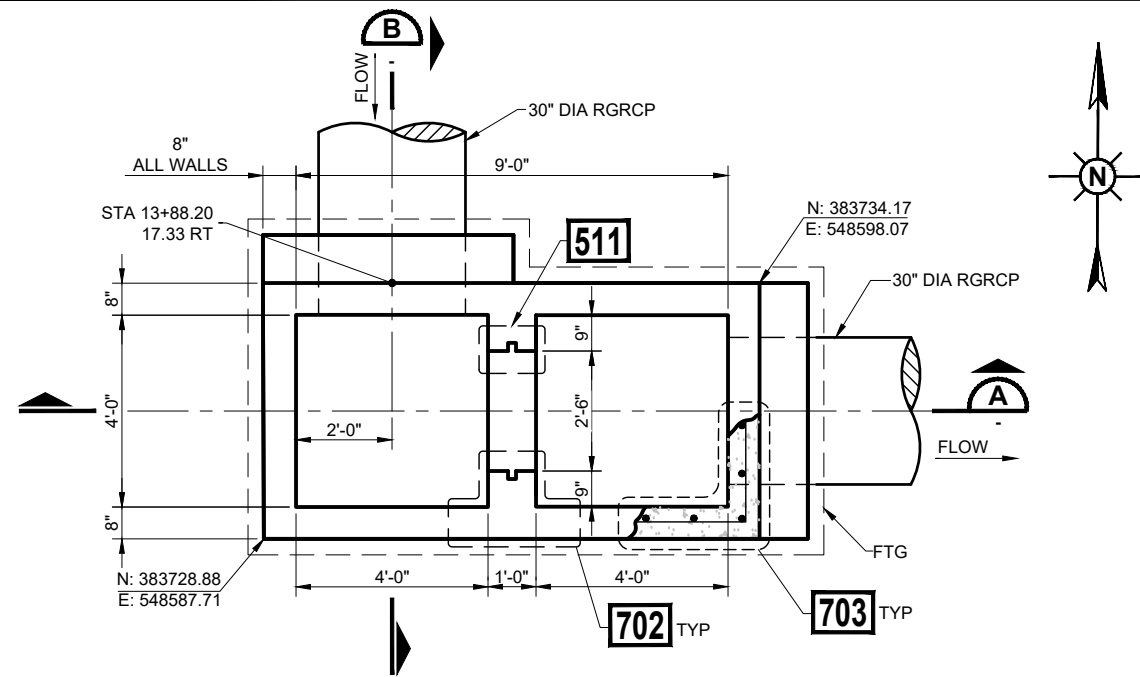
MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
 SR 303L TO SARIVAL AVENUE
 (MCDOT TT0561)
 WADDELL, ARIZONA

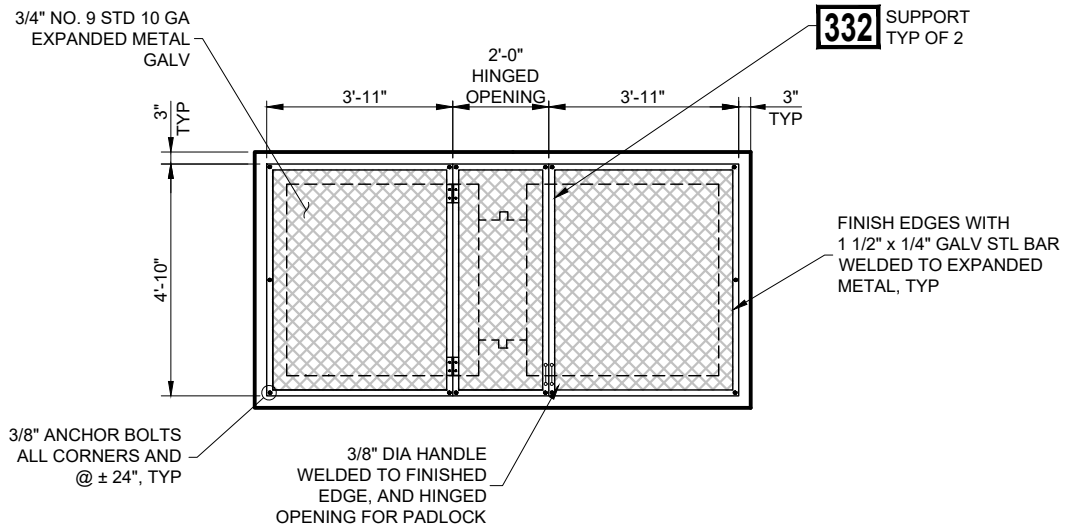
OUTLET HEADWALL #1 AND #2
PLAN AND SECTIONS

S - 5

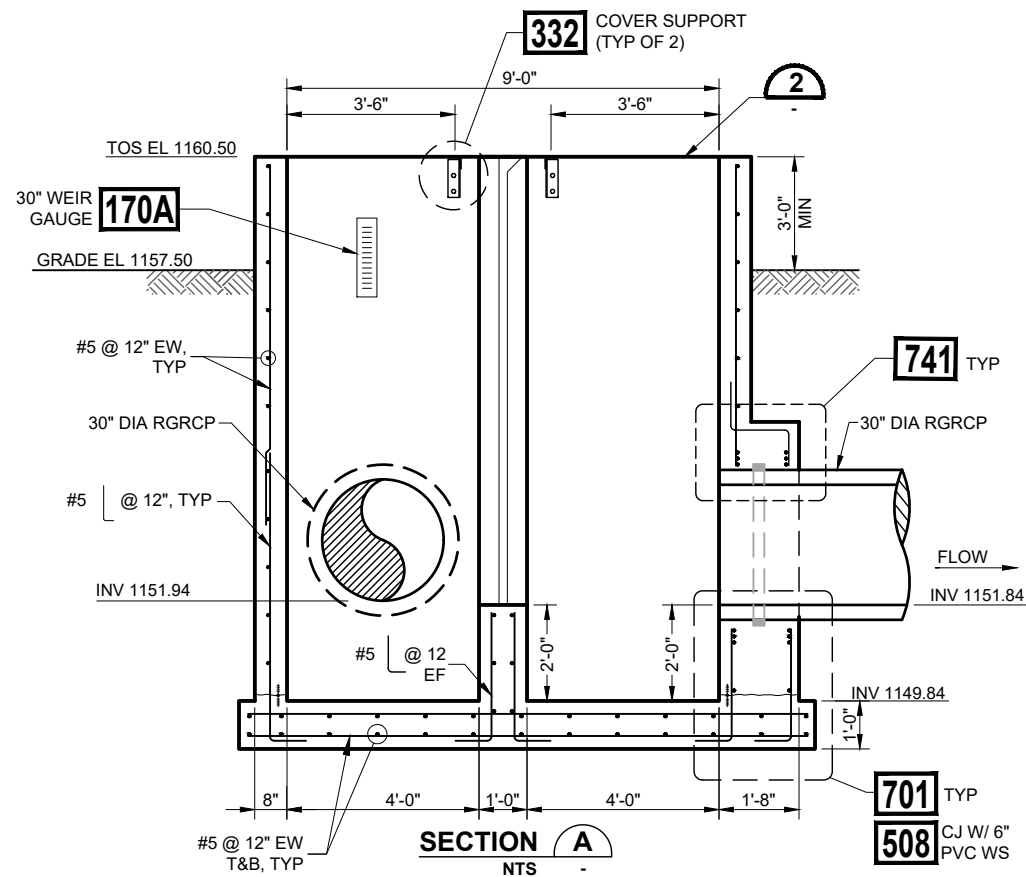
Z:\GCE Projects\MWD-49\dwg\04_MWD-49_S.dwg vamar 01/27/20 - 8:40pm



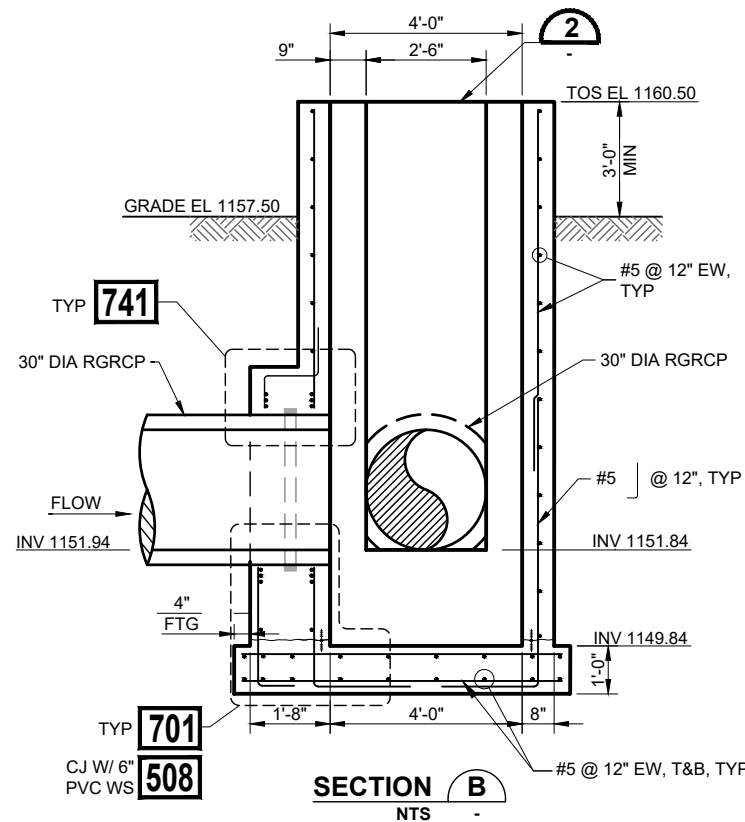
30" FLOW MEASUREMENT STRUCTURE #1 1
NTS P-2 SP-1



MESH COVER PLAN 2
NTS



SECTION A
NTS



SECTION B
NTS

NOTES:

- CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:
 - 33" x 60" x 1/4" STL PLATE
 - 30' OF 1 1/2" x 1 1/2" x 1/4" STL ANGLE IRON
 - **170A** 30" CONTRACTED WEIR GAUGE
 - 1/2 GALLON OF CARBOLINE 300M OR APPROVED EQUAL. SEE SPECIFICATIONS.
 - 1 AMERICAN LOCK SERIES 1305 PADLOCK. CONTACT MWD TO ORDER LOCKS.
- CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
- CS = **332** COVER SUPPORT

Z:\GCE Projects\MWD-49\dwg\04_MWD-49_S.dwg vamar 01/27/20 - 8:40pm

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

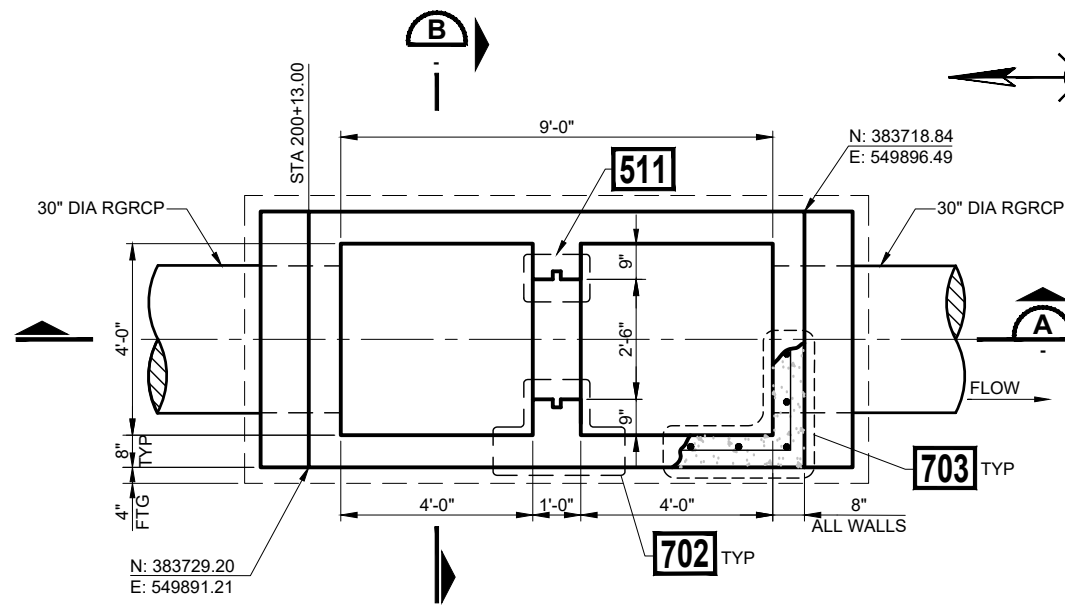
DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

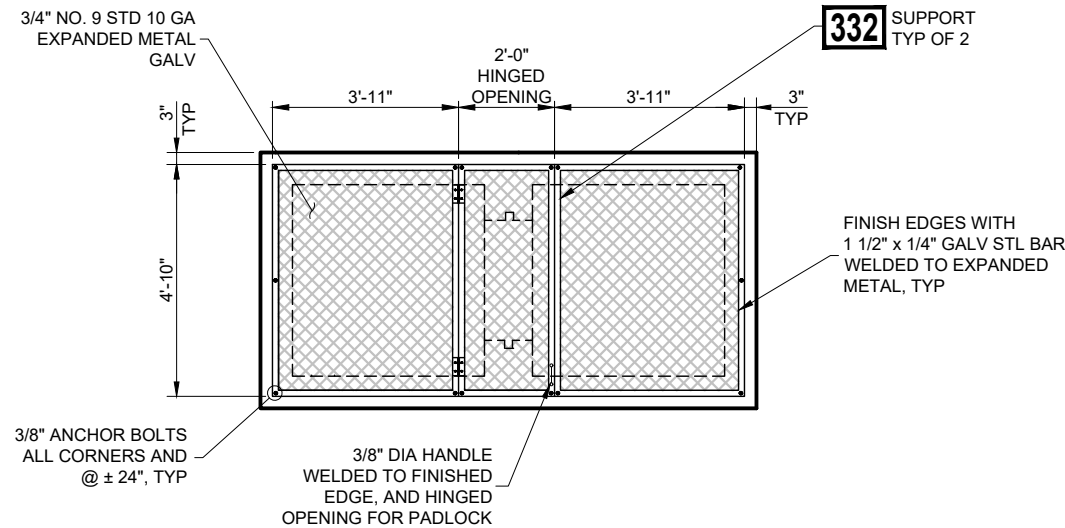
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

FLOW MEASUREMENT STRUCTURE #1
PLAN, SECTIONS, AND COVER

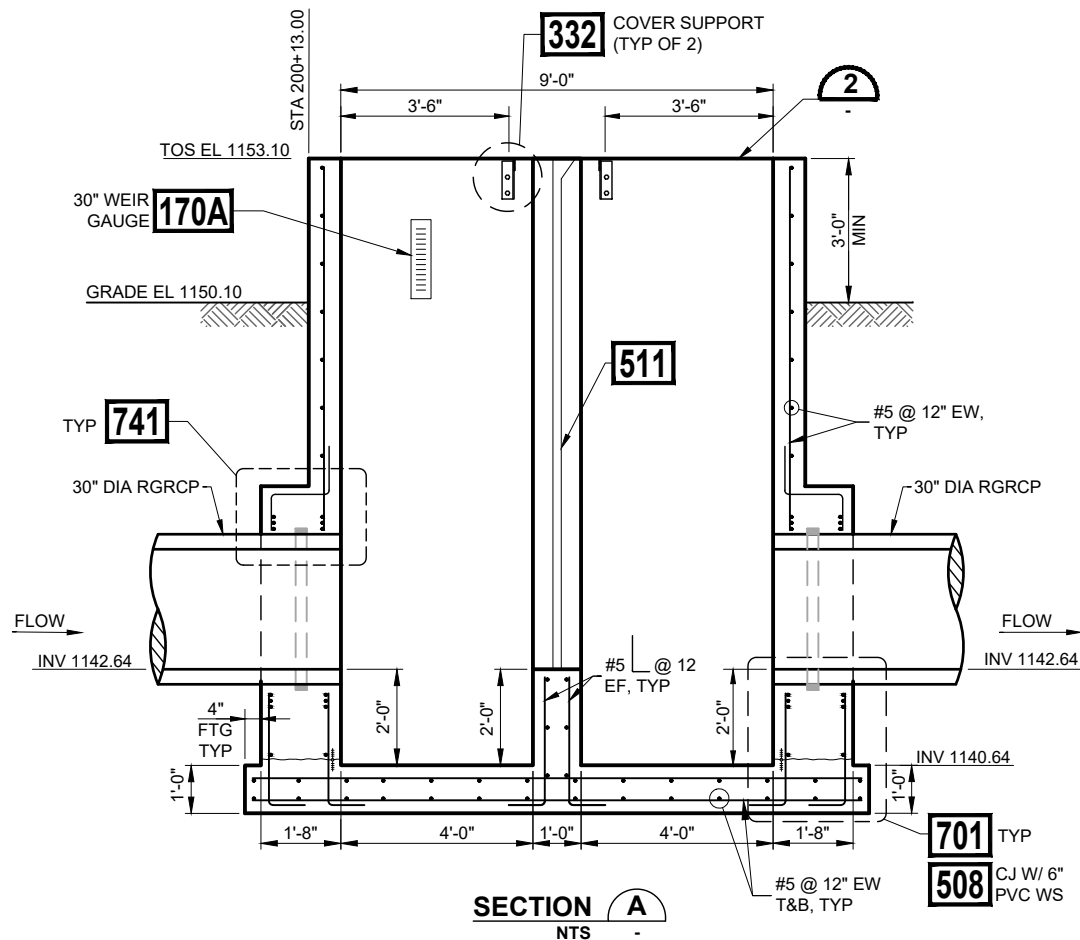
S - 6A



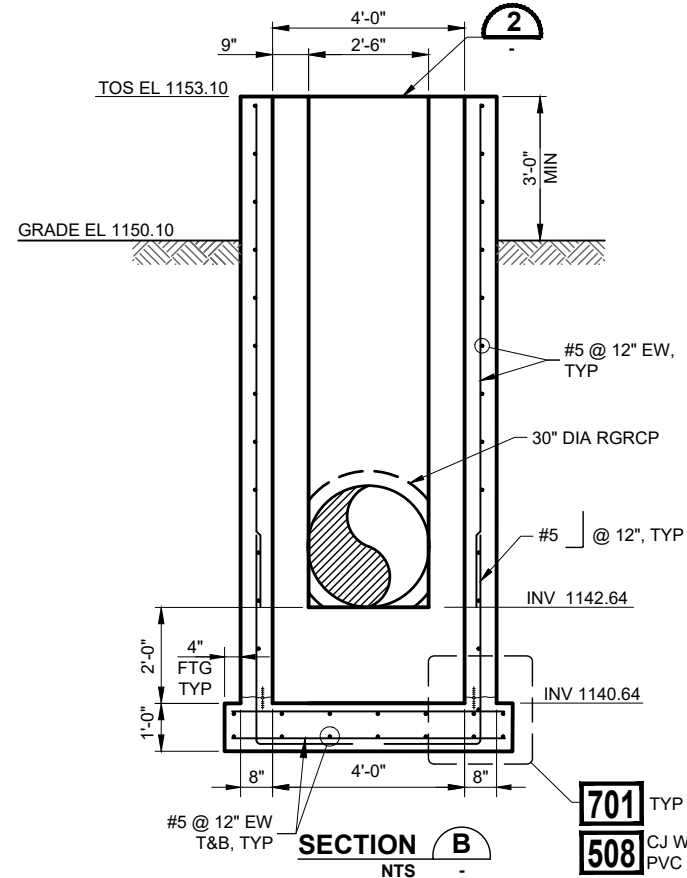
30" FLOW MEASUREMENT STRUCTURE #2 1
NTS P-4 SP-2



MESH COVER PLAN 2
NTS



SECTION A
NTS



SECTION B
NTS

NOTES:

- CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:
 - 33" x 60" x 1/4" STL PLATE
 - 30' OF 1 1/2" x 1 1/2" x 1/4" STL ANGLE IRON
 - **170A** 30" CONTRACTED WEIR GAUGE
 - 1/2 GALLON OF CARBOLINE 300M OR APPROVED EQUAL. SEE SPECIFICATIONS.
 - 1 AMERICAN LOCK SERIES 1305 PADLOCK. CONTACT MWD TO ORDER LOCKS.
- CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
- CS = **332** COVER SUPPORT

Z:\GCE Projects\MWD-49\dwg\04_MWD-49_S.dwg 01/27/20 - 8:40pm

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



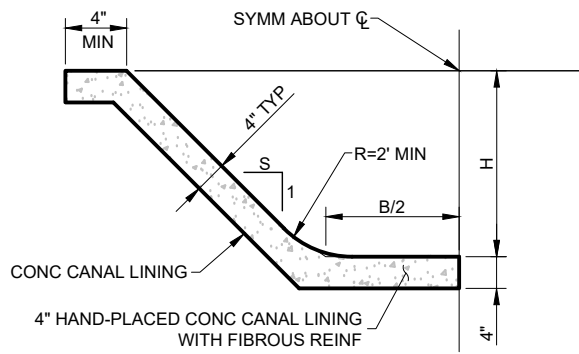
DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

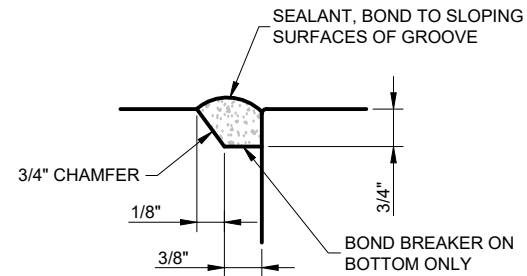
FLOW MEASUREMENT STRUCTURE #2
PLAN, SECTIONS, AND COVER

S - 6B

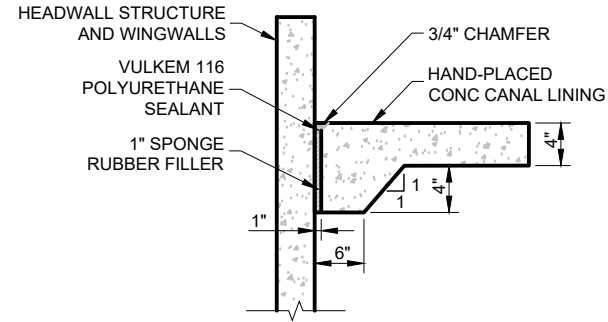


NOTE:
SEE PLANS FOR S, B AND H DIMENSION.

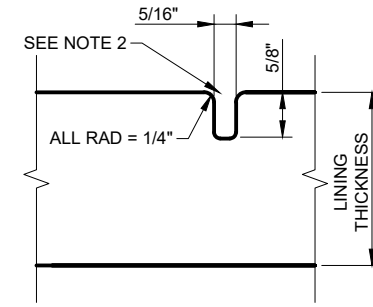
TYPICAL HAND-PLACED CONC CANAL LINING 1
NTS



CONTROL SEALANT JOINT 2
NTS

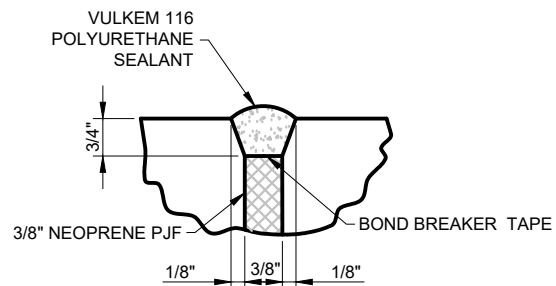


EXPANSION JOINT DETAIL 3
NTS

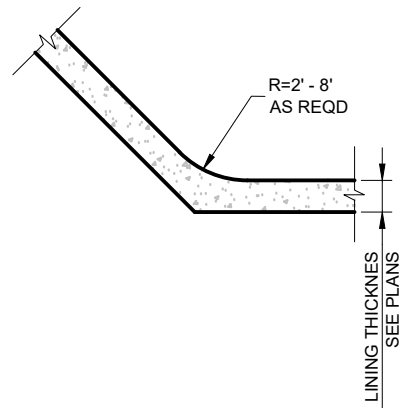


NOTES:
1. CONTRACTION JOINT IN CONCRETE LINING SHALL BE PLACED TRANSVERSE AT 10 FOOT INTERVALS.
2. CONTRACTOR SHALL USE A TEMPLATE APPROVED BY THE ENGINEER TO CONSTRUCT TRANSVERSE CONTRACTION JOINTS.

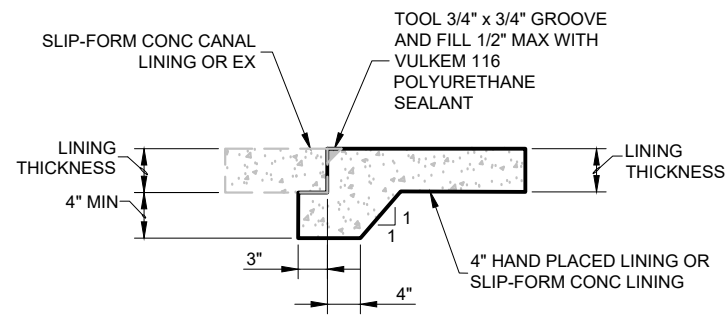
CONSTRUCTION JOINT DETAIL 4
NTS



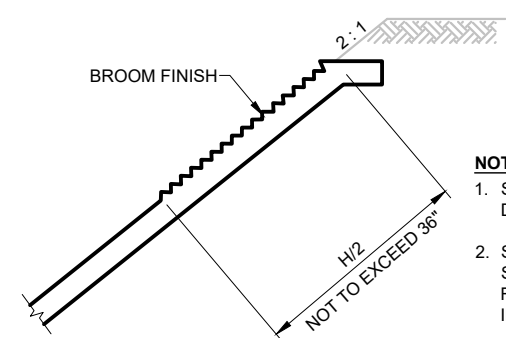
EXPANSION SEALANT JOINT 5
NTS



LINING DETAIL 6
NTS

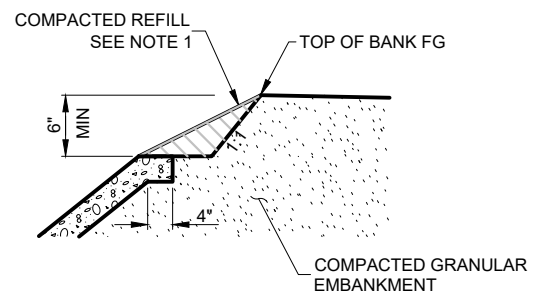


JOINT FOR EXIST TO NEW LATERAL AND DITCH CONNECTION 7
NTS



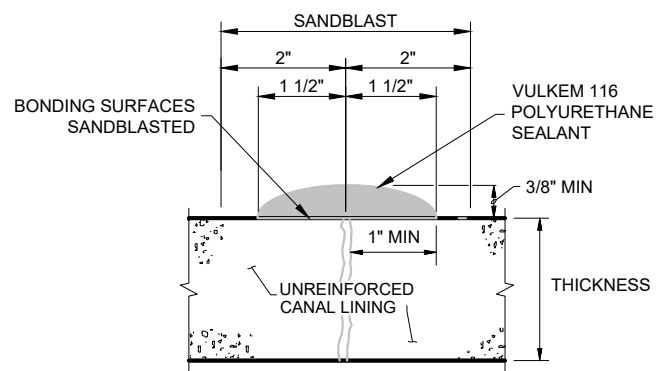
NOTES:
1. SEE PLANS FOR DIMENSIONS OF H
2. SEE PLANS FOR CANAL SECTIONS TO BE BROOM FINISHED AND LIMITS OF INSTALLATION

CONCRETE FINISH DETAIL 8
NTS



NOTE:
OVER EXCAVATION IS PERMITTED IF NEEDED TO ACCOMMODATE LINING.

CANAL RAIL REFILL 9
NTS



NOTES:
1. CONTRACTOR TO SANDBLAST SURFACES.
2. IMMEDIATELY PRIOR TO SEALANT APPLICATION, THE CONCRETE SHALL BE BLASTED WITH OIL-FREE COMPRESSED AIR TO REMOVE RESIDUE, DUST, AND DEBRIS.
3. CONCRETE AND AMBIENT TEMPERATURE SHALL BE A MINIMUM OF 50° F.
4. SEE PLANS FOR EXTRUDING AND TOOLING VULKEM 116 POLYURETHANE SEALANT.

CAP SEAL FOR RANDOM CRACKS 10
NTS

NOTE:
THIS IS A STANDARD DETAIL SHEET AND NOT ALL DETAILS ARE REQUIRED. SEE PLANS FOR SPECIFIC INSTALLATIONS.

IRRIGATION CANAL LINING DETAILS 103
NTS

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

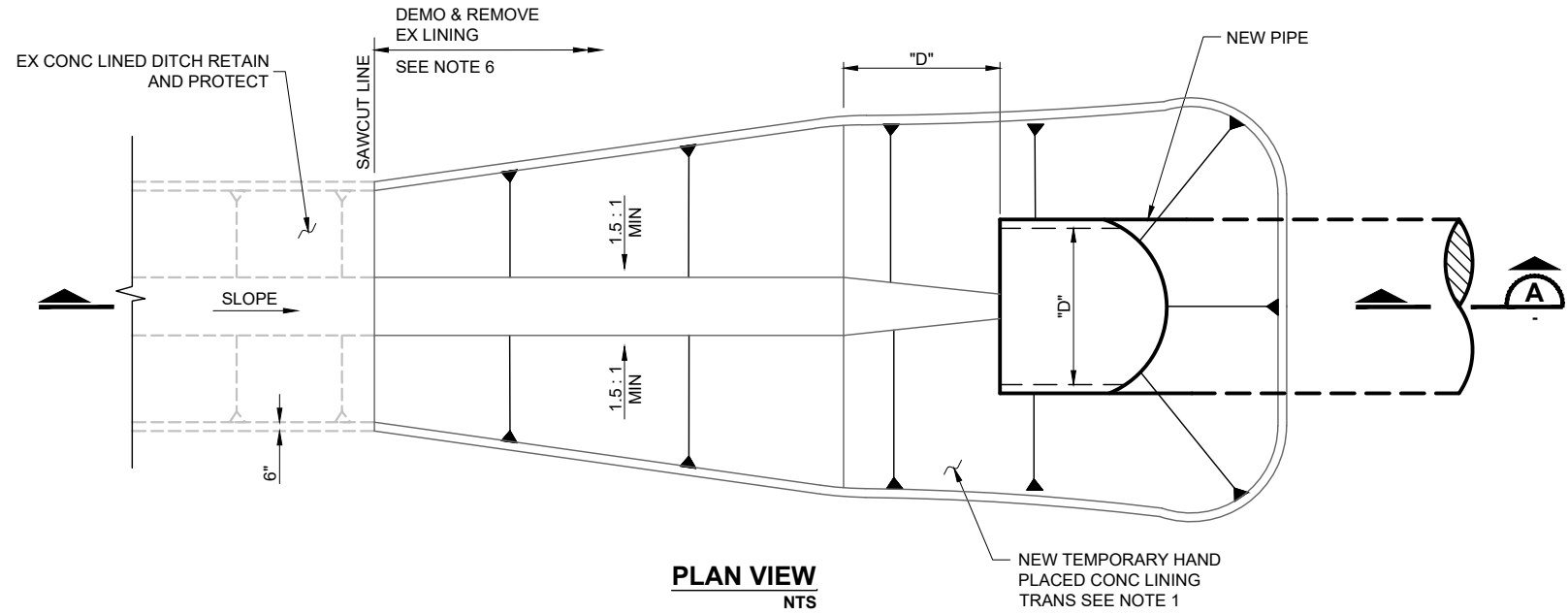
DESIGNED BY: **R. RILEY**
DRAWN BY: **T. IBARRA**
APPROVED BY: **G. CAIRO**
DRAWING: **MWD-49**
PLOT DATE: **JAN, 2020**

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

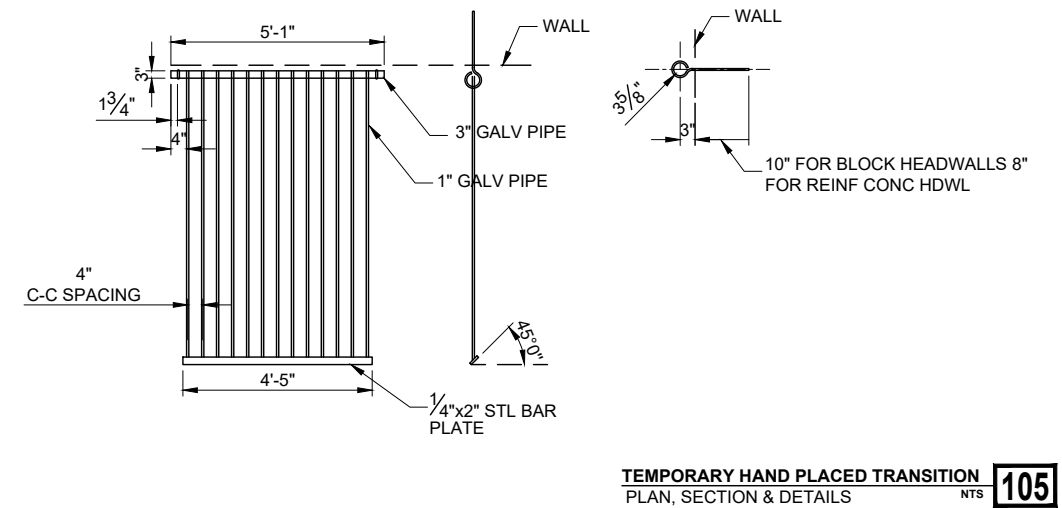
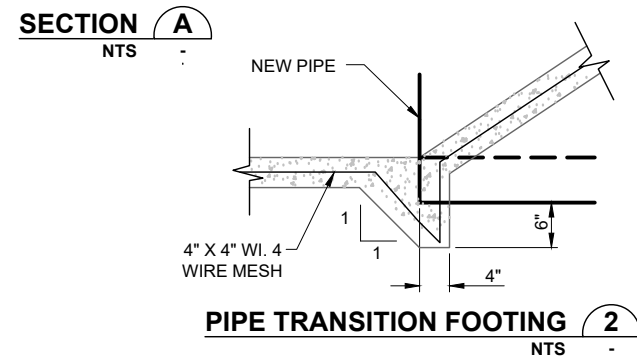
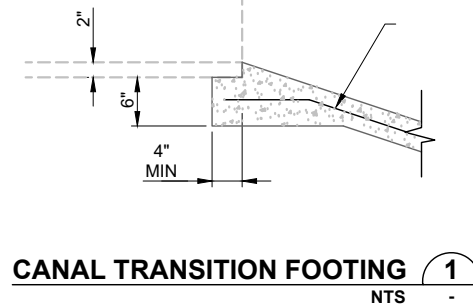
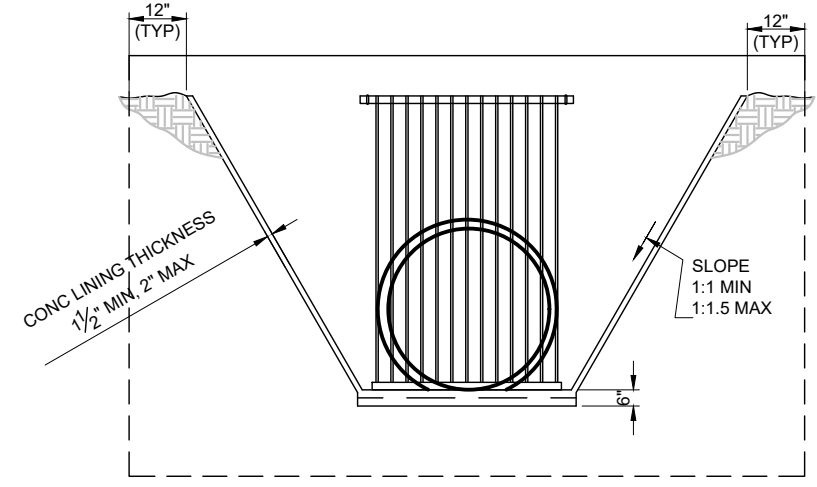
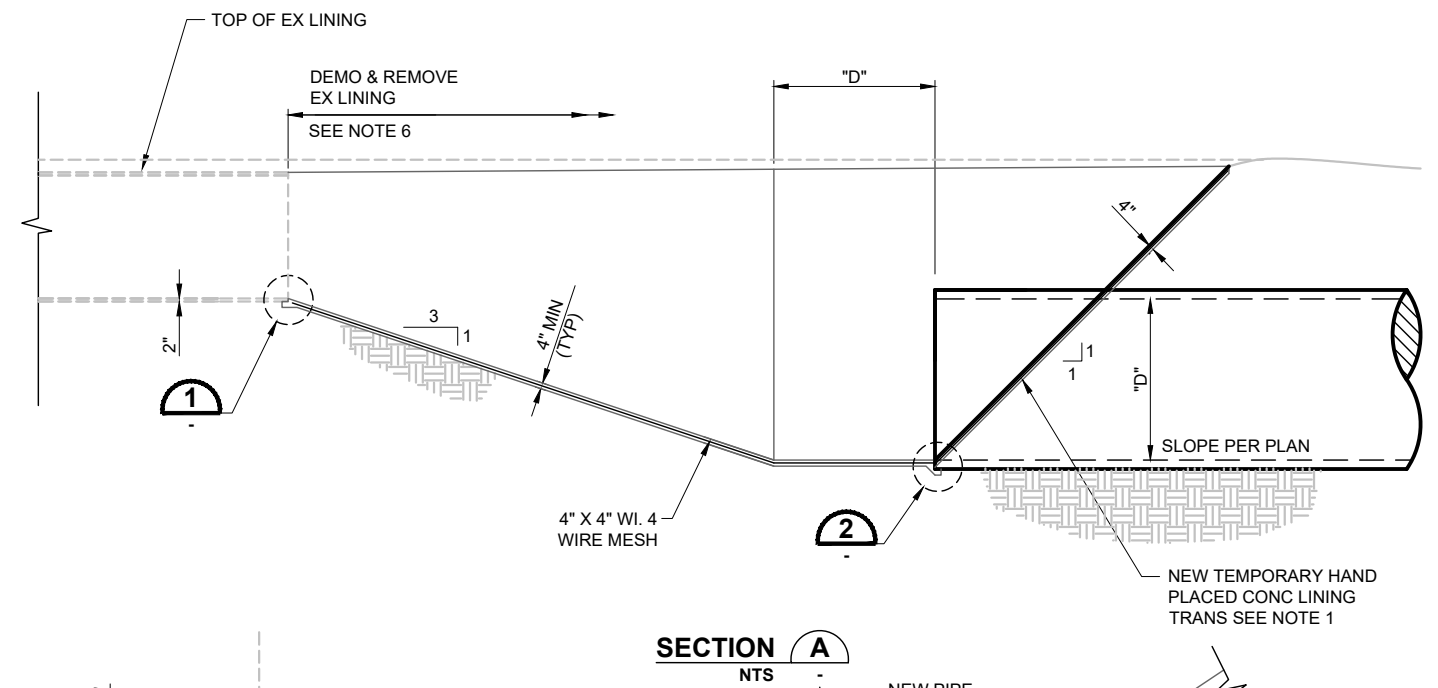
STANDARD DETAILS

D - 1



NOTES:

1. HAND PLACED BOWL TRANSITION AS SHOWN IS A GRAPHICAL REPRESENTATION. CONTRACTOR SHALL FIELD MODIFY AND CONFORM SHAPE AS REQUIRED TO THE SPECIFIC SITE CONDITIONS, ANY DEVIATIONS FROM THE GENERAL CONCEPT SHALL BE APPROVED BY THE ENGINEER.
2. FLOWS IN THE EXISTING DITCH SHALL NOT BE INTERRUPTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MOST CURRENT MAG STANDARD DETAILS AND SPECIFICATIONS.
4. EXISTING LINING TO BE DEMOLISHED AND REMOVED IS NOT SHOWN FOR CLARITY. CONCRETE SHALL BE DISPOSED IN AN APPROVED LANDFILL.
5. CONCRETE SHALL BE CLASS "B" 2000 PSI MINIMUM PER MAG 725.
6. SAWCUT AT A MIN OF 10' OR AT CONTROL JOINT.



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



DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

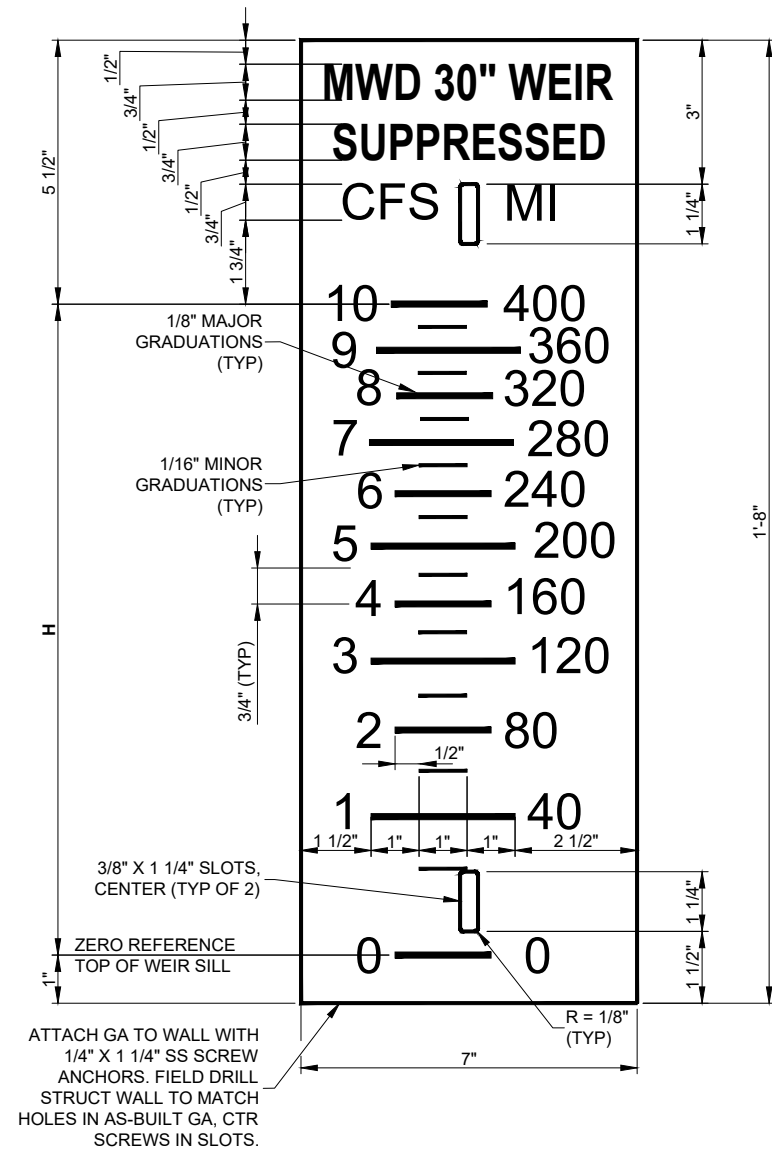
MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 2

Z:\GCE Projects\MWD-49\dwg\05_MWD-49_Dwg\revmwr 01/27/20 - 8:40pm



MWD 30" WEIR SUPPRESSED
CFS MI

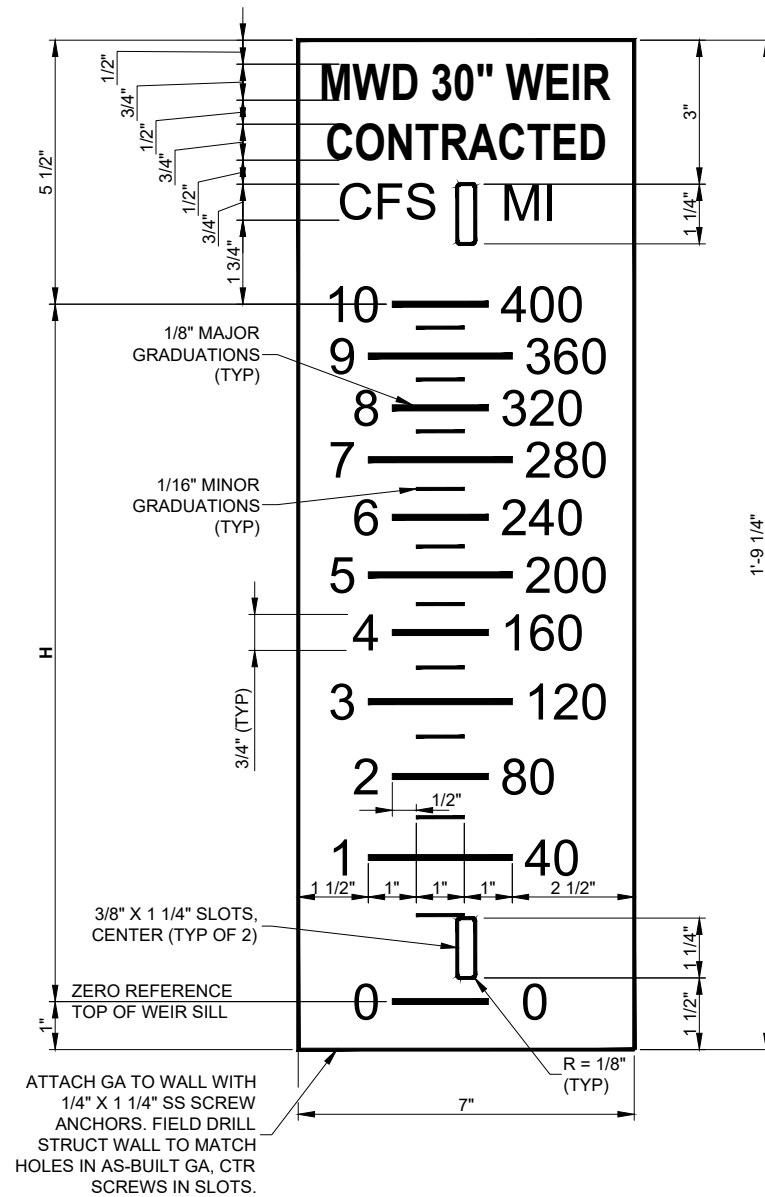
10	400
9	360
8	320
7	280
6	240
5	200
4	160
3	120
2	80
1	40
0	0

SYMBOLS:
CFS - CUBIC FEET PER SECOND
MI - MINER'S INCHES
FT - FEET
H - HEIGHT ABOVE WEIR SILL

SUPPRESSED 30" WEIR GAUGE		
LOCATION OF FLOW MEASUREMENT LINES ON WEIR GAUGE		
CFS	MI	H (FT)
0	0	0.00
0.5	20	0.15
1	40	0.24
1.5	60	0.32
2	80	0.39
2.5	100	0.45
3	120	0.51
3.5	140	0.56
4	160	0.61
4.5	180	0.66
5	200	0.71
5.5	220	0.76
6	240	0.80
6.5	260	0.85
7	280	0.89
7.5	300	0.93
8	320	0.97
8.5	340	1.01
9	360	1.05
9.5	380	1.09
10	400	1.13

- NOTES:**
- GAUGES TO BE MADE OF NO. 18 GAUGE (U.S. STANDARD) MILD STEEL PLATE AND TO BE COVERED WITH VITREOUS ENAMEL WITH MINIMUM THICKNESS OF 12 MILS ON NUMERAL SIDE AND 3 MILS ON THE REVERSE SIDE AND ON EDGES WHERE PLATE HAS BEEN CUT, PUNCHED OR DRILLED.
 - ALL CUTTING, DRILLING AND PUNCHING OF THE PLATES SHALL BE COMPLETED BEFORE THE VITREOUS ENAMEL IS APPLIED.
 - THE FACE OF THE GAUGE SHALL BE BRIGHT WHITE AND ALL NUMERALS AND GRADUATIONS SHALL BE BLACK.
 - GRADUATIONS SHALL BE SHARP AND ACCURATE TO THE DIMENSIONS SHOWN.
 - FOLLOWING CONSTRUCTION ALL GAUGE CALIBRATION DATA INCLUDED IN THIS TABLE MUST BE VERIFIED.
 - POSITION ZERO REFERENCE ON GAUGE EXACTLY LEVEL WITH TOP OF WEIR SILL.
 - CENTER GAUGE HORIZONTAL IN UPSTREAM CELL OF STRUCTURE.
 - EQUATION FOR SUPPRESSED WEIR: $Q=3.33 L H^{3/2}$.
 - CONTRACTOR SHALL SUPPLY STAFF GAUGE TO MWD FOR INSTALLATION BY MWD.
 - PROVIDE STAFF GAUGE AND EXTENSION WITH STAFF GAUGE AS A SINGLE UNIT SYSTEM: (CALM WATER CONTROL PRODUCTS PHONE #303-881-9093) OR APPROVED EQUAL.

30" SUPPRESSED WEIR GAUGE FOR 10 CFS NTS **169A**



MWD 30" WEIR CONTRACTED
CFS MI

10	400
9	360
8	320
7	280
6	240
5	200
4	160
3	120
2	80
1	40
0	0

SYMBOLS:
CFS - CUBIC FEET PER SECOND
MI - MINER'S INCHES
FT - FEET
H - HEIGHT ABOVE WEIR SILL

CONTRACTED 30" WEIR GAUGE		
LOCATION OF FLOW MEASUREMENT LINES ON WEIR GAUGE		
CFS	MI	H (FT)
0	0	0.00
0.5	20	0.15
1	40	0.25
1.5	60	0.32
2	80	0.39
2.5	100	0.46
3	120	0.52
3.5	140	0.58
4	160	0.64
4.5	180	0.69
5	200	0.74
5.5	220	0.79
6	240	0.84
6.5	260	0.89
7	280	0.94
7.5	300	0.99
8	320	1.03
8.5	340	1.08
9	360	1.12
9.5	380	1.17
10	400	1.21

- NOTES:**
- GAUGES TO BE MADE OF NO. 18 GAUGE (U.S. STANDARD) MILD STEEL PLATE AND TO BE COVERED WITH VITREOUS ENAMEL WITH MINIMUM THICKNESS OF 12 MILS ON NUMERAL SIDE AND 3 MILS ON THE REVERSE SIDE AND ON EDGES WHERE PLATE HAS BEEN CUT, PUNCHED OR DRILLED.
 - ALL CUTTING, DRILLING AND PUNCHING OF THE PLATES SHALL BE COMPLETED BEFORE THE VITREOUS ENAMEL IS APPLIED.
 - THE FACE OF THE GAUGE SHALL BE BRIGHT WHITE AND ALL NUMERALS AND GRADUATIONS SHALL BE BLACK.
 - GRADUATIONS SHALL BE SHARP AND ACCURATE TO THE DIMENSIONS SHOWN.
 - FOLLOWING CONSTRUCTION ALL GAUGE CALIBRATION DATA INCLUDED IN THIS TABLE MUST BE VERIFIED.
 - POSITION ZERO REFERENCE ON GAUGE EXACTLY LEVEL WITH TOP OF WEIR SILL.
 - CENTER GAUGE HORIZONTAL IN UPSTREAM CELL OF STRUCTURE.
 - EQUATION FOR CONTRACTED WEIR: $Q=3.33 (L-0.2H) H^{3/2}$.
 - CONTRACTOR SHALL SUPPLY STAFF GAUGE TO MWD FOR INSTALLATION BY MWD.
 - PROVIDE STAFF GAUGE AND EXTENSION WITH STAFF GAUGE AS A SINGLE UNIT SYSTEM: (CALM WATER CONTROL PRODUCTS PHONE #303-881-9093). GAUGE AND EXTENSION SHALL BE SUPPLIED TO MWD FOR INSTALLATION BY MWD.

30" CONTRACTED WEIR GAUGE FOR 10 CFS NTS **170A**

Z:\GCE Projects\MWD-49\dwg\05_MWD-49_Dwg\revise\012720-84.dwg

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



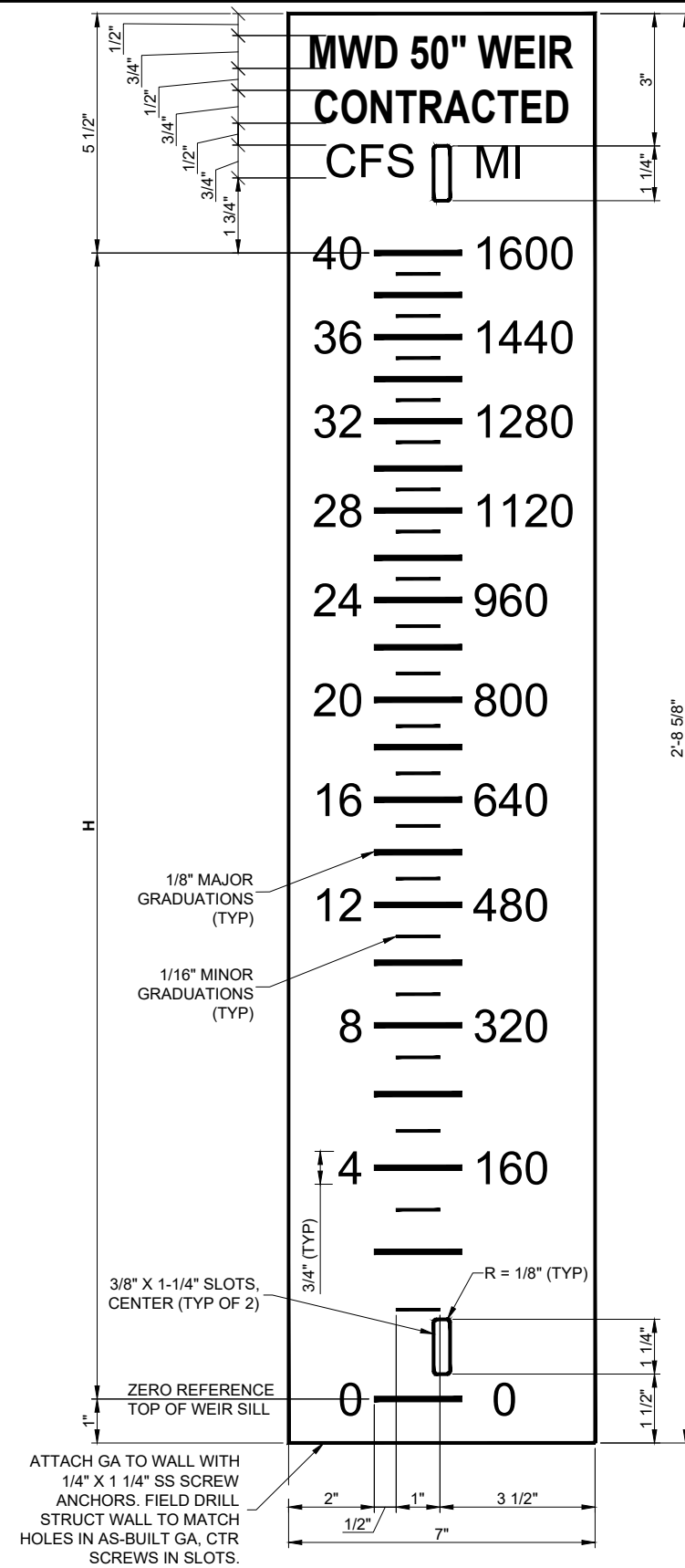
DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 3



SYMBOLS:

CFS - CUBIC FEET PER SECOND
 MI - MINER'S INCHES
 FT - FEET
 H - HEIGHT ABOVE WEIR SILL

CONTRACTED 50" WEIR GAUGE		
LOCATION OF FLOW MEASUREMENT LINES ON WEIR GAUGE		
CFS	MI	H (FT)
0	0	0.00
1	40	0.17
2	80	0.28
3	120	0.36
4	160	0.44
5	200	0.51
6	240	0.58
7	280	0.65
8	320	0.71
9	360	0.77
10	400	0.83
11	440	0.88
12	480	0.94
13	520	0.99
14	560	1.04
15	600	1.09
16	640	1.14
17	680	1.19
18	720	1.24
19	760	1.28

CFS	MI	H (FT)
20	800	1.33
21	840	1.38
22	880	1.42
23	920	1.47
24	960	1.51
25	1000	1.56
26	1040	1.60
27	1080	1.65
28	1120	1.69
29	1160	1.73
30	1200	1.77
31	1240	1.82
32	1280	1.86
33	1320	1.90
34	1360	1.94
35	1400	1.98
36	1440	2.02
37	1480	2.06
38	1520	2.10
39	1560	2.14
40	1600	2.18

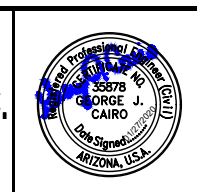
NOTES:

- GAUGES TO BE MADE OF NO. 18 GAUGE (U.S. STANDARD) MILD STEEL PLATE AND TO BE COVERED WITH VITREOUS ENAMEL WITH MINIMUM THICKNESS OF 12 MILS ON NUMERAL SIDE AND 3 MILS ON THE REVERSE SIDE AND ON EDGES WHERE PLATE HAS BEEN CUT, PUNCHED OR DRILLED.
- ALL CUTTING, DRILLING AND PUNCHING OF THE PLATES SHALL BE COMPLETED BEFORE THE VITREOUS ENAMEL IS APPLIED.
- THE FACE OF THE GAUGE SHALL BE BRIGHT WHITE AND ALL NUMERALS AND GRADUATIONS SHALL BE BLACK.
- GRADUATIONS SHALL BE SHARP AND ACCURATE TO THE DIMENSIONS SHOWN.
- FOLLOWING CONSTRUCTION ALL GAUGE CALIBRATION DATA INCLUDED IN THIS TABLE MUST BE VERIFIED.
- POSITION ZERO REFERENCE ON GAUGE EXACTLY LEVEL WITH TOP OF WEIR SILL.
- CENTER GAUGE HORIZONTAL IN UPSTREAM CELL OF STRUCTURE.
- EQUATION FOR CONTRACTED WEIR: $Q=3.33 (L-0.2H) H^{3/2}$.
- CONTRACTOR SHALL SUPPLY STAFF GAUGE TO MWD FOR INSTALLATION BY MWD.
- STAFF GAUGE AND EXTENTION WITH STAFF GAUGE AS A SINGLE UNIT SYSTEM: (CALM WATER CONTROL PRODUCTS PHONE #303-881-9093) OR APPROVED EQUAL.

50" CONTRACTED WEIR GAUGE FOR 40 CFS **174B**
 NTS

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



DESIGNED BY: **R. RILEY**
 DRAWN BY: **T. IBARRA**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-49**
 PLOT DATE: **JAN, 2020**

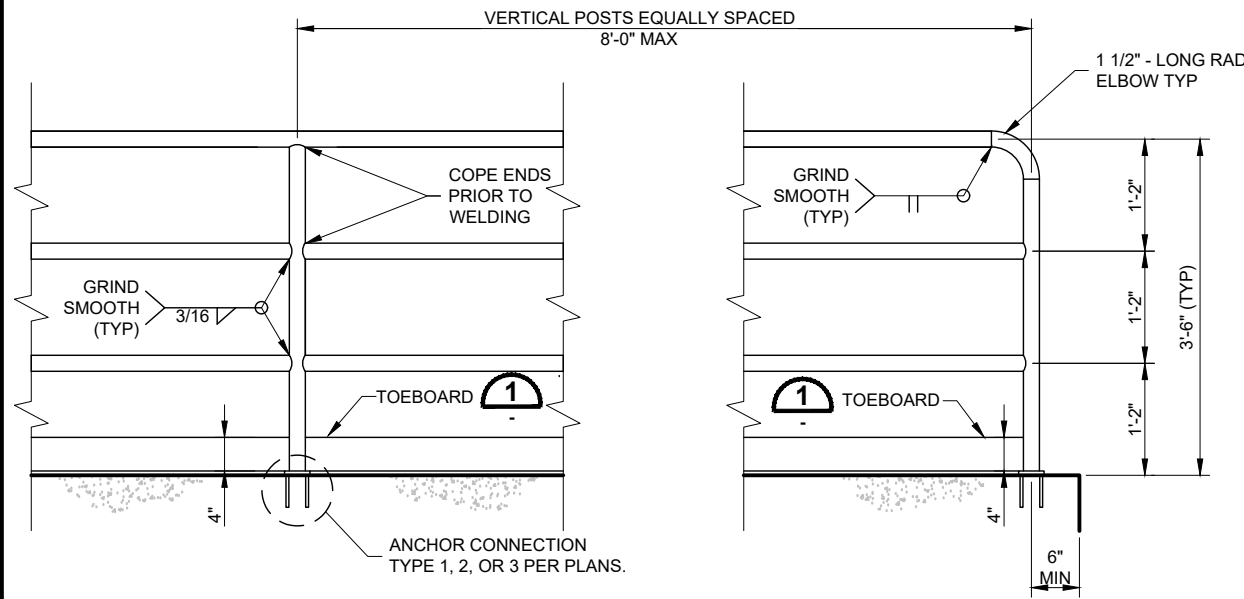
MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 4

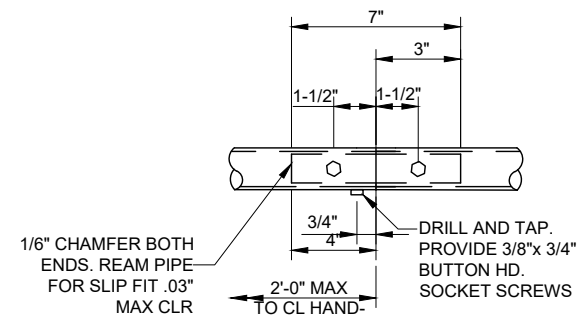
Z:\GCE Projects\MWD-49\dwg\05_MWD-49_Dwg\revs\01\2720-814.rvt



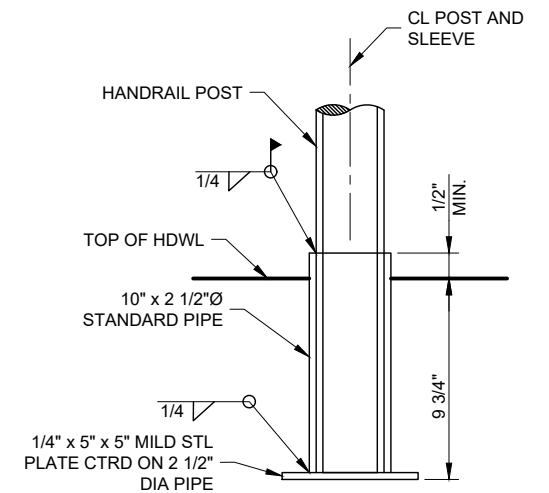
HANDRAIL DETAIL
NTS

NOTES:

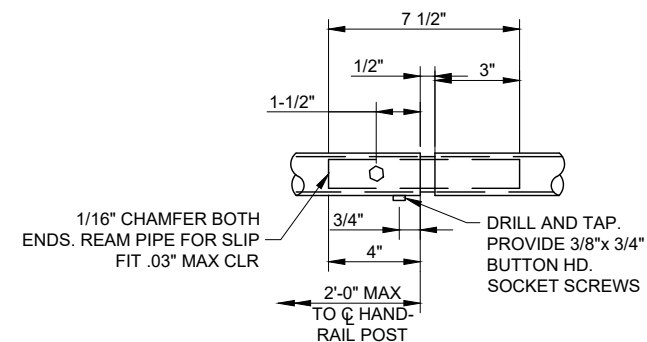
- HORIZONTAL RAILS SHALL BE 1.50" DIAMETER STANDARD WEIGHT PIPE. POSTS SHALL BE 1.50" DIAMETER X-STRONG PIPE (ASTM A53) GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. SHOP PRIME WITH RUST INHIBITING PRIMER (FIELD REPAIR PRIMER AS NEEDED).
- PAINT HANDRAIL PER GENERAL PAINTING AND COATING NOTES.
- VERTICAL POSTS TO BE EVENLY SPACED.
- HANDRAILS TO BE PLACED ON ALL HEADWALLS
- AFTER ENGINEER APPROVED INSTALLATION TACK WELD ALL BOLT AND NUT CONNECTIONS.



SPLICE FIXED JOINT
NTS

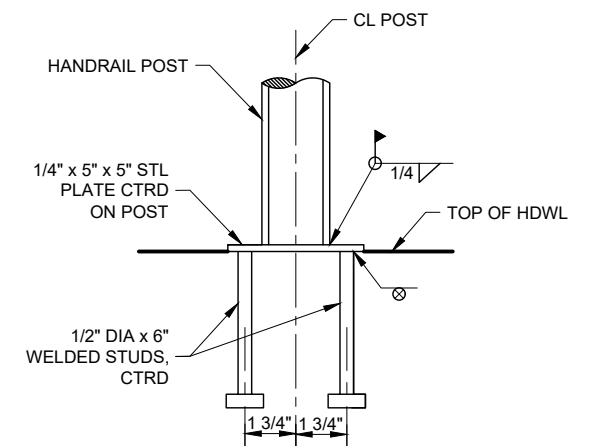


TYPE 1 "PIPE SLEEVE"
NTS

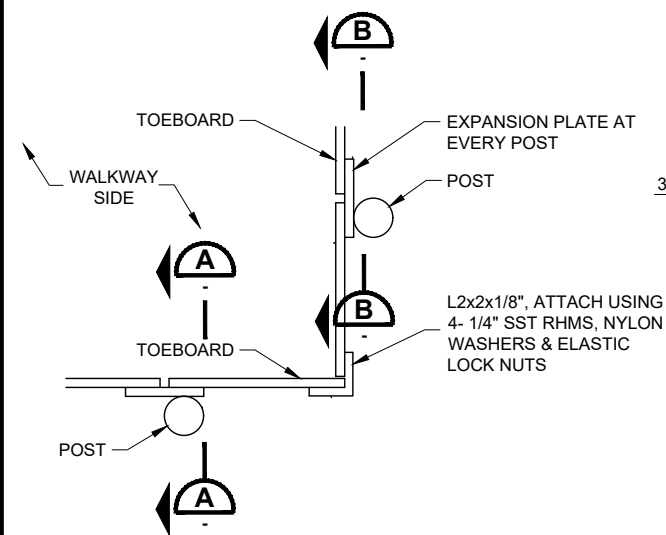


- NOTES:**
- SPLICE EXPANSION JOINT REQUIRED AT EACH CONCRETE EXPANSION JOINT.

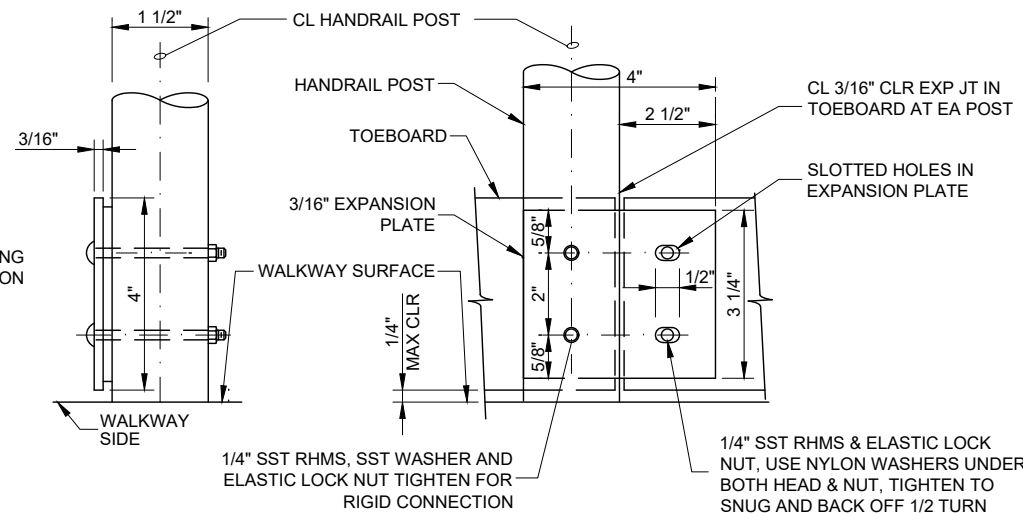
SPLICE EXPANSION JOINT
NTS



TYPE 2 "ANCHOR PLATE"
NTS



TOEBOARD PLAN
NTS

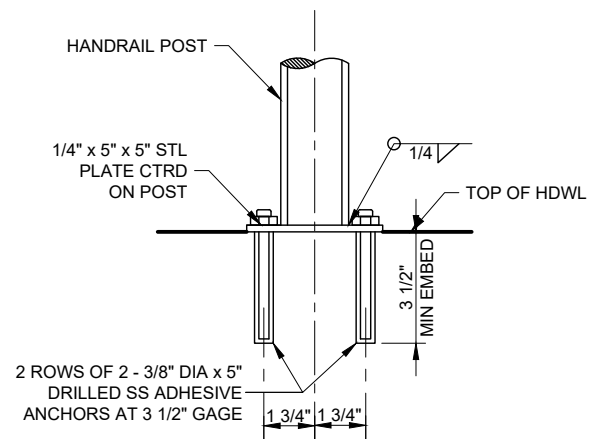


SECTION A
NTS

SECTION B
NTS

NOTES:

- WHERE BOLTED BASE PLATE EXTENDS ABOVE WALKWAY SURFACE, NOTCH TOEBOARD TO FIT AROUND BASE PLATE WITH MAXIMUM OF 1/4" GAP.
- TOEBOARD TO BE MOUNTED ON WALKWAY SIDE OF HANDRAIL.
- RHMS = ROUND HEAD MACHINE SCREW AS SPECIFIED, SST.

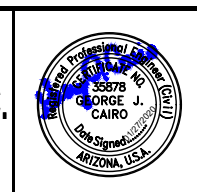


TYPE 3 "ADHESIVE ANCHORS"
NTS

HANDRAIL WITH TOEBOARD
NTS **301**

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

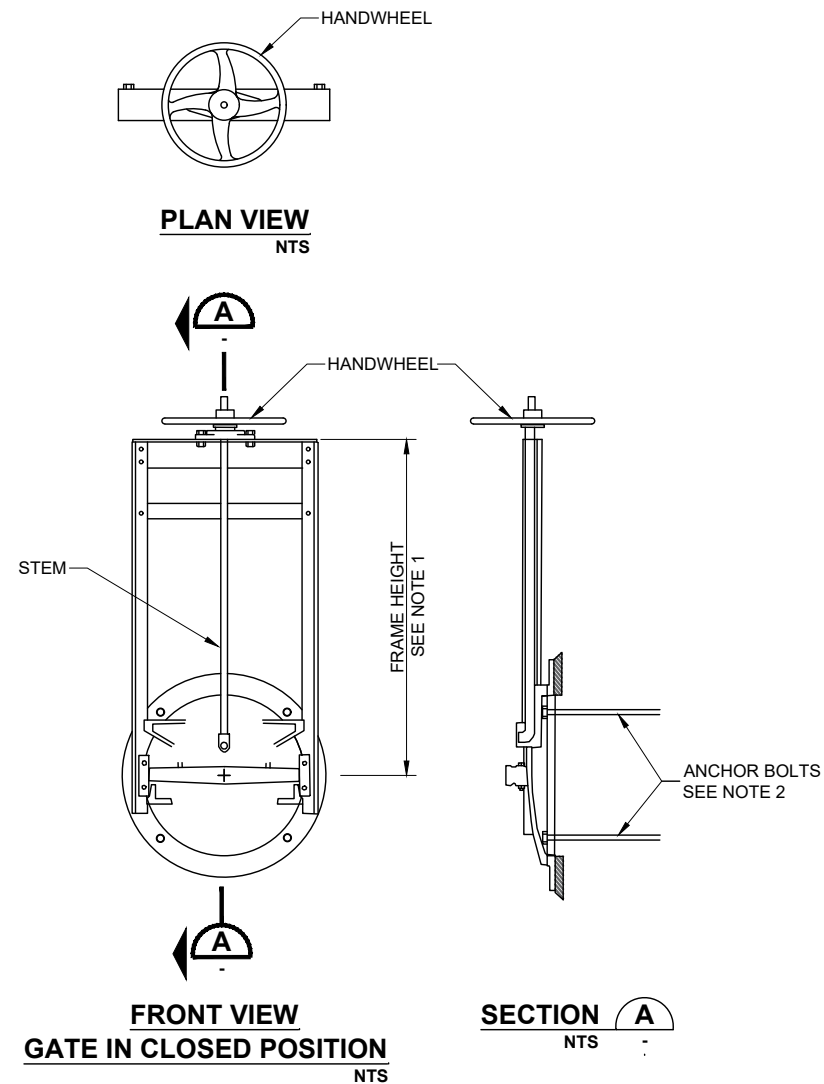
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 5

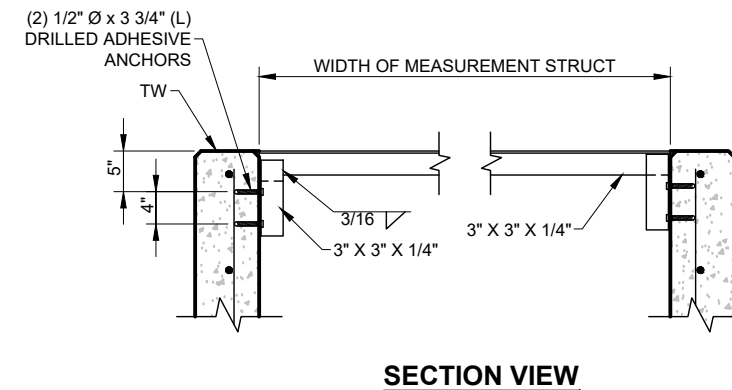
Z:\GCE Projects\MWD-49\dwg\05_MWD-49_Dwg\revise 01/27/20 - 8:41pm



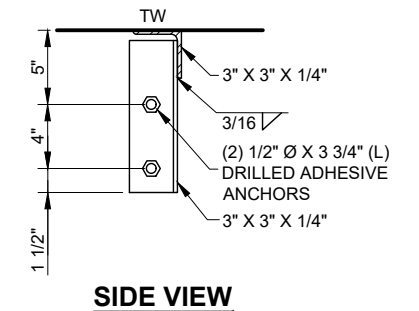
NOTES:

1. FURNISH FRAME HEIGHT TO POSITION HANDWHEEL 6" MINIMUM ABOVE TOP OF STRUCTURE OR GRATING, WHICHEVER IS HIGHER AND SET 36" ABOVE FINISHED GRADE.
2. PROVIDE 3" CLEARANCE MINIMUM BETWEEN ANCHOR BOLTS AND PIPE OD
3. ALL CANAL GATES SHALL BE SELF CONTAINED FLATBACK TYPE, WITH GALVANIZED STEEL RAILS AND YOKE, SUITABLE FOR HEADWALL MOUNTING. LIFT NUTS SHALL BE BRONZE. THE GATE SHALL BE FURNISHED WITH A HAND WHEEL OPERATOR. ALL GATES SHALL BE FACTORY COATED PER MANUFACTURER'S RECOMMENDATION. THE GATES SHALL CONFORM TO FRESNO SERIES 6400 MODEL 20-10C SLIDE GATE.

CANAL GATE
NTS **302**



SECTION VIEW



SIDE VIEW

MESH COVER SUPPORT
NTS **332**

Z:\GCE Projects\MWD-49\dwg\05_MWD-49_Dwg\revise\012720-814.rvt

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



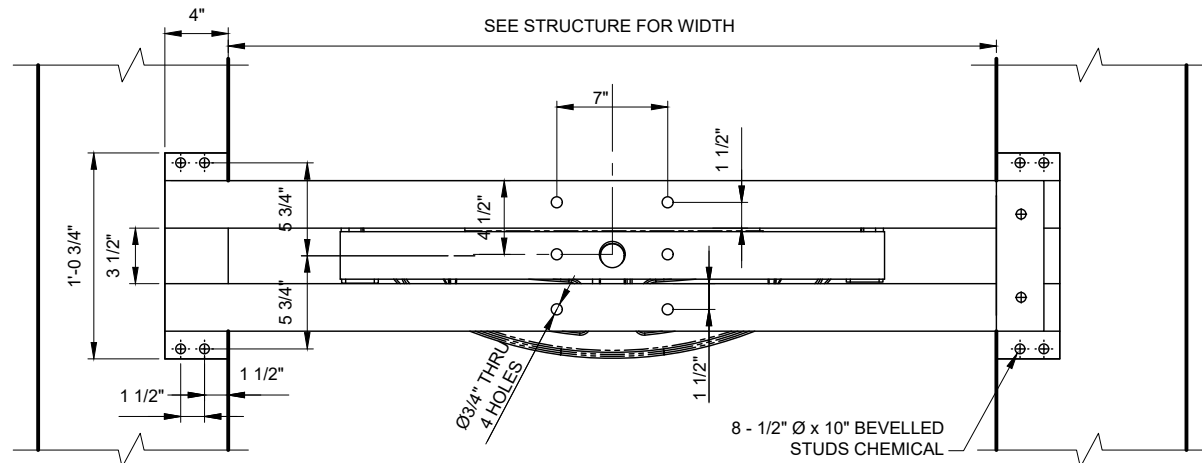
DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

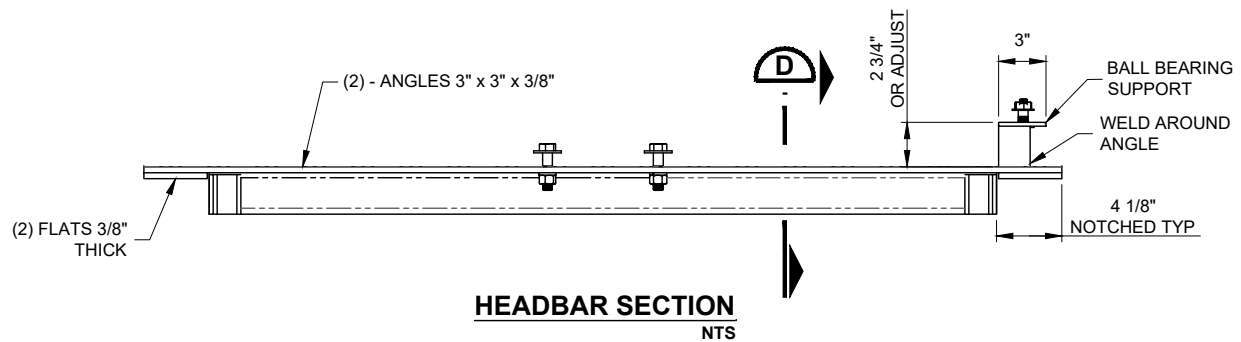
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

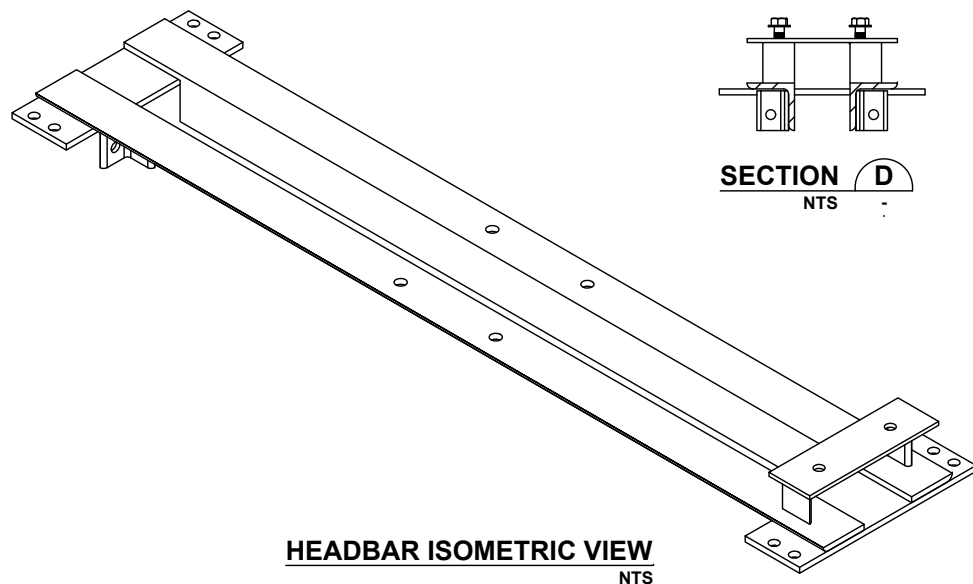
D - 6



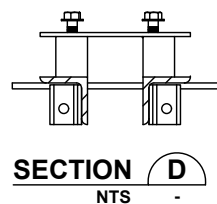
HEADBAR DETAIL
NTS



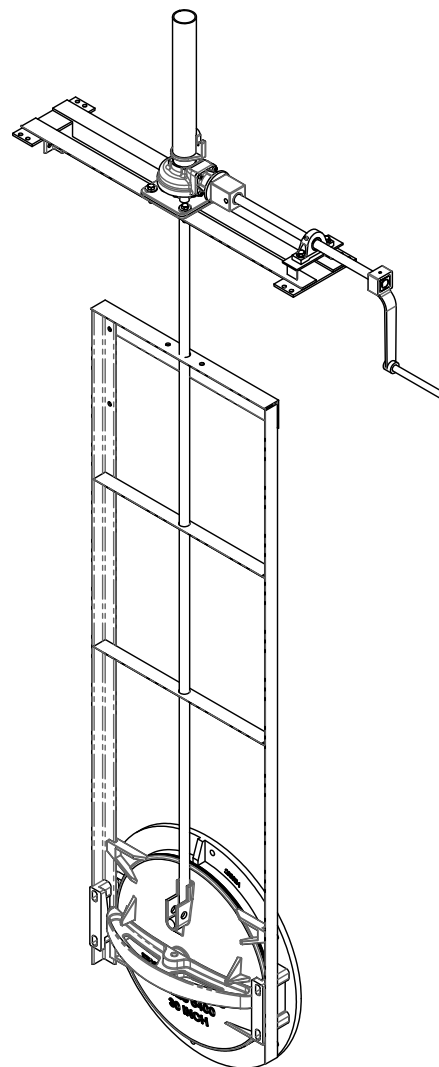
HEADBAR SECTION
NTS



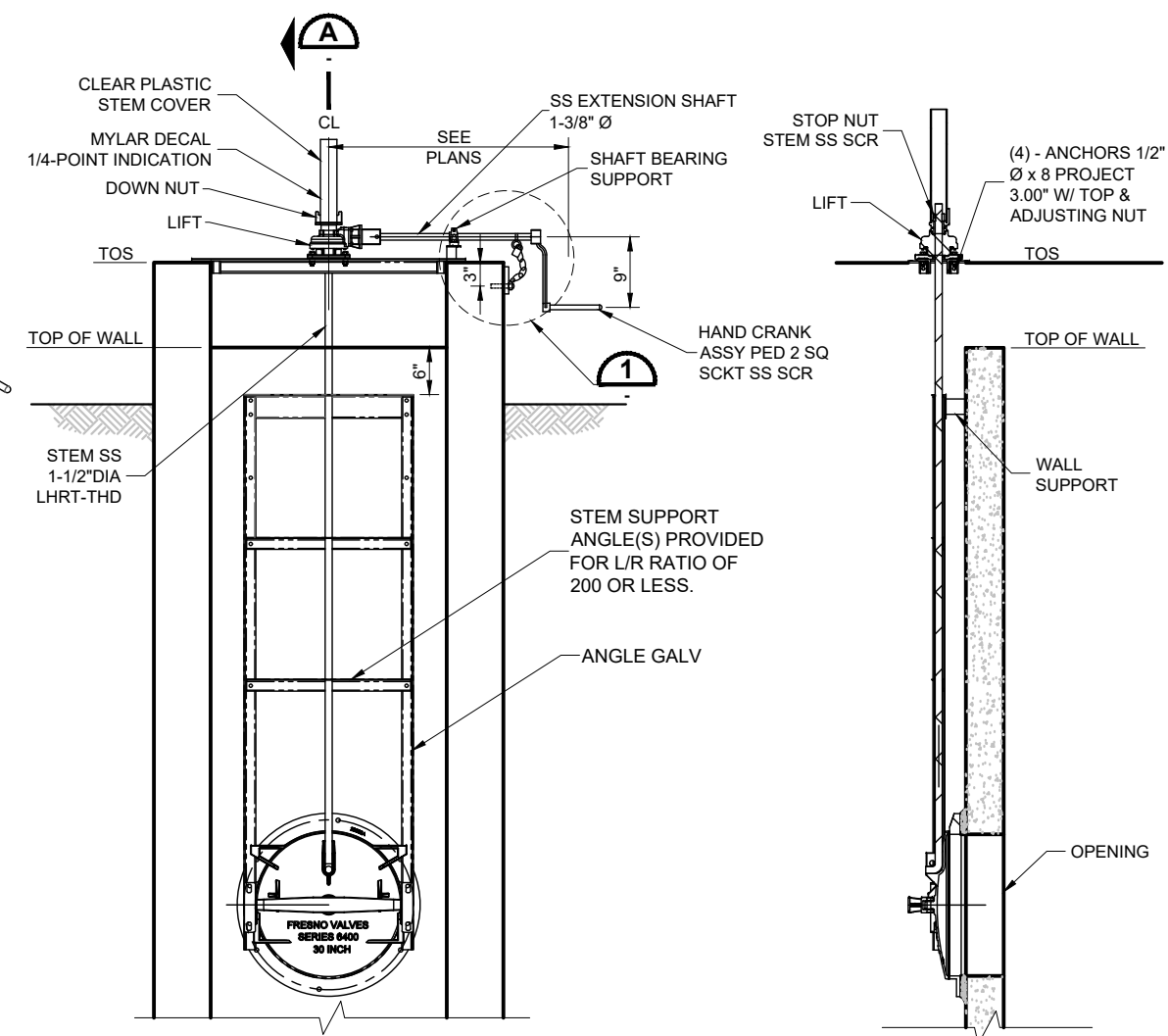
HEADBAR ISOMETRIC VIEW
NTS



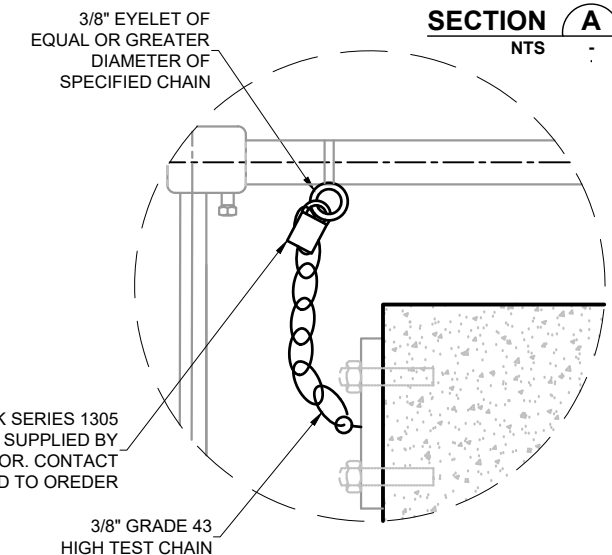
SECTION D
NTS



ISOMETRIC VIEW
NTS



FRONT VIEW
NTS



DETAIL 1
NTS

SECTION A
NTS

NOTES:

1. THE OPERATOR MUST HAVE A GEAR BOX A CHAIN DRIVE HORIZONTAL EXTENSIONS WILL NOT BE PERMITTED.
2. THE GEAR BOX SHALL BE SIZED TO OPEN THE GATE WITH NO MORE THAN A 40 LB. PULL. THE GEAR BOX SHALL BE ROTORK GEAR OR A PREAPPROVED EQUAL.
3. THE EXTENSION SHAFT SHALL BE SOLID SHAFT AND RUN PARALLEL TO THE HEAD BAR OF THE GATE. THE EXTENSION SHAFT SHALL BE CONNECTED TO THE GEAR BOX OUTPUT SHAFT BY A COUPLER OR SOCKET AND NUT ASSEMBLY. THE EXTENSION SHAFT SHALL NOT BE WELDED TO THE GEAR BOX OUTPUT SHAFT. THE EXTENSION SHAFT SHALL EXTEND TO THE EDGE OF THE GATE FRAME UNLESS OTHERWISE SHOWN. THE EXTENSION SHAFT SHALL BE ADEQUATELY SUPPORT BY A MINIMUM OF 1 FLANGE BEARING AND PILLOW BEARINGS IF REQUIRED TO.
4. THE FLANGE BEARING SHALL BE SUPPORTED TO THE HEAD BAR OF THE GATE TO ACCEPT THE INPUT FORCE OF THE OPERATOR.
5. THERE SHALL BE A HAND WHEEL, HAND CRANK OR 2" OPERATING NUT TO TURN THE EXTENSION SHAFT UNLESS OTHERWISE SPECIFIED.
6. ALL SIDE CRANK OPERATED GATES PLACED ON FULL STRUCTURE HEIGHT WALLS SHALL BE SELF CONTAINED WITHOUT ANY CENTER BEAM BRACING.

EXTENDED SIDE HAND CRANK OPERATOR
NTS **340**

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



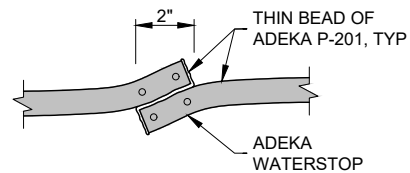
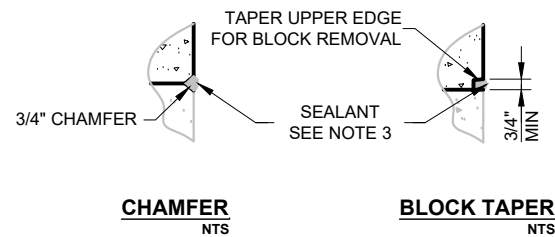
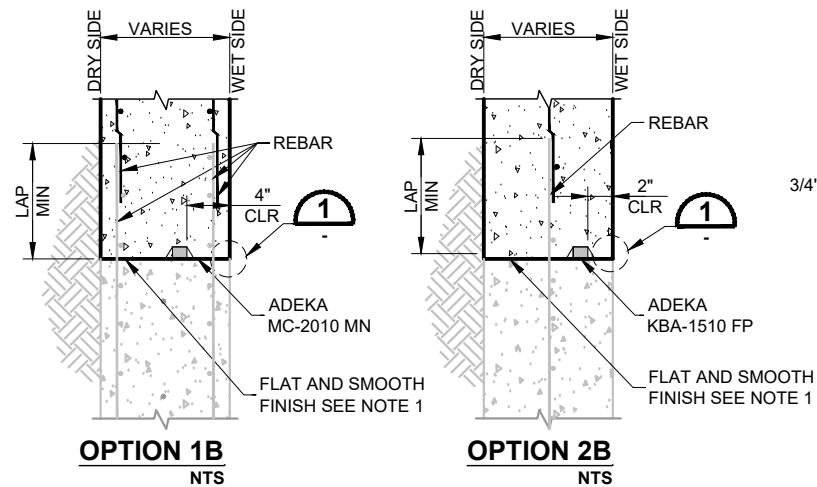
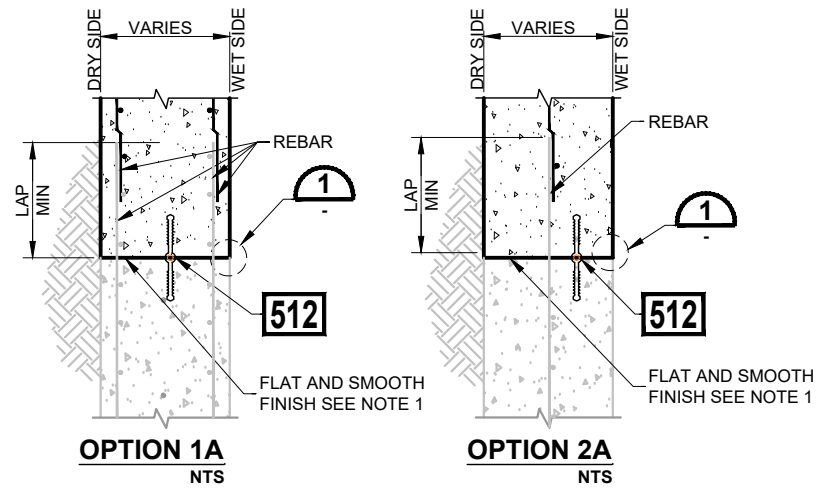
DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 7

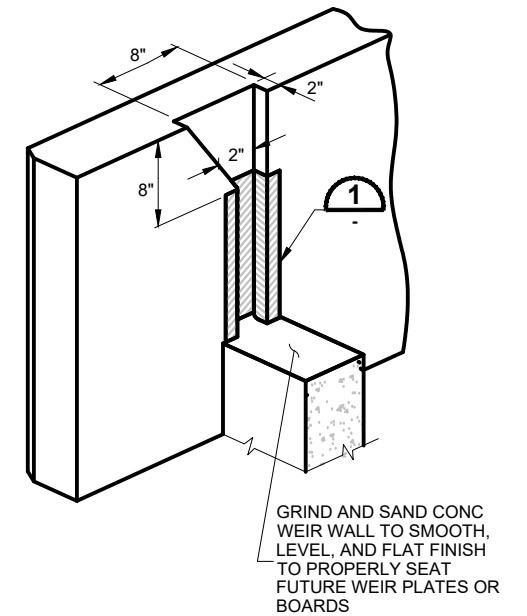
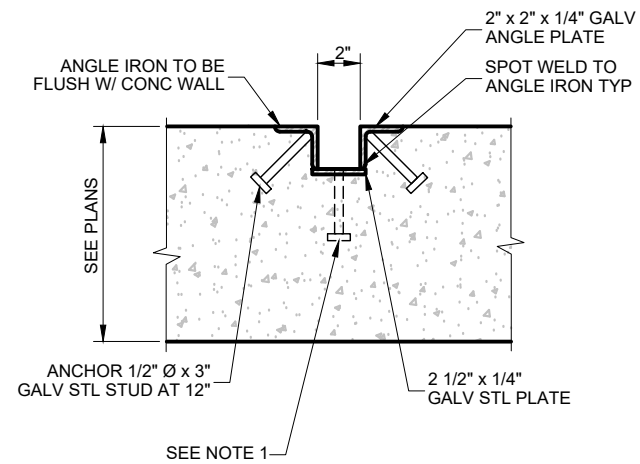


NOTES:

1. BLAST AND CLEAN SURFACE OF EXISTING STRUCTURE, REFER TO SPECIFICATIONS.
2. CONCRETE SHALL BE PLACED IN 4 FOOT MAXIMUM LIFTS THOROUGHLY VIBRATED TO BOTTOM.
3. SEALANT SHALL BE VULKUM 116 SEALANT OR APPROVED EQUAL.
4. CONTRACTOR MAY USE ALTERNATIVE ADEKA WATERSTOP IN COLD JOINT PER DETAIL AND AS APPROVED BY ENGINEER.

WATERSTOP COLD-JOINT DETAIL
NTS

MANHOLE / STAND BOX STRUCTURE COLD JOINT
NTS **508**



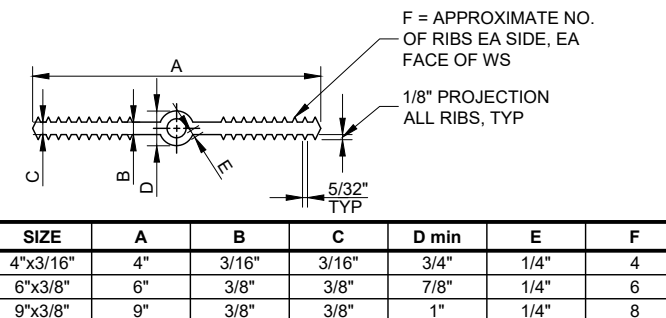
GROOVE SLOT OPENING
(SIDE PLAN VIEW) NTS

GROOVE SLOT OPENING
(ISOMETRIC VIEW) NTS

GROOVE SLOT
NTS **511**

NOTES:

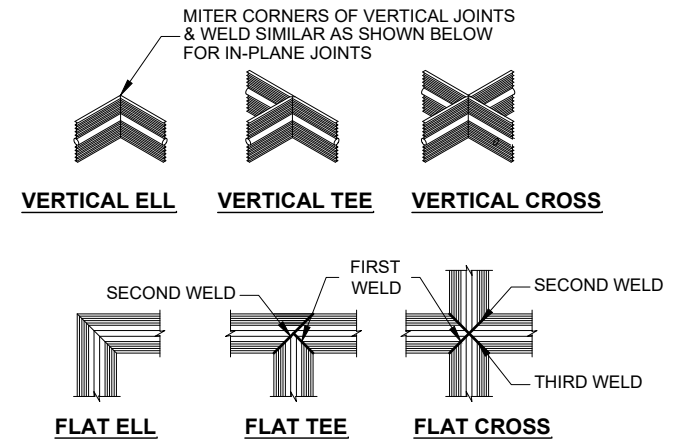
1. FOR GROOVES ON THE WALL ENDS LESS THAN 12" WIDE USE ONE ANCHOR 1/2" Ø x 3" GALV STEEL STUD @ 12" OC.



NOTES:

1. NON-ROUND CENTER BULBS SHALL HAVE A MINIMUM OUTSIDE DIMENSION OF 'D'.
2. BULB TYPE WATERSTOP SHOWN IS REQUIRED FOR EXPANSION AND CONTROL JOINTS.
3. USE 6 INCH WATERSTOPS IN ALL CONSTRUCTION JOINTS UNLESS SPECIFICALLY SHOWN OTHERWISE.
4. SECURE WATERSTOP TO REINFORCEMENT WITH WIRE TIES AS REQUIRED TO ASSURE WATERSTOP WILL NOT FOLD DURING CONCRETE PLACEMENT.

PLASTIC WATERSTOP
NTS



NOTE:

ALL WELDS SHALL BE PER WATERSTOP MANUFACTURER'S RECOMMENDATIONS.

WATERSTOP JOINTS
NTS

WATERSTOP DETAILS
NTS **512**

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



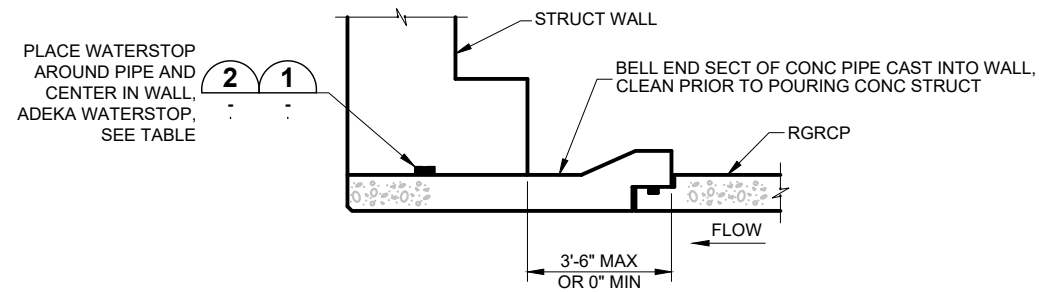
DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

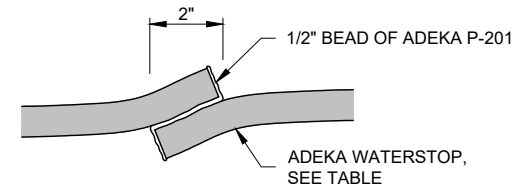
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 8

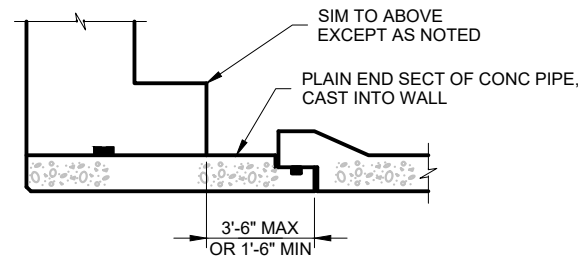


TYPICAL RGRCP BELL END PIPE SECTION
NTS



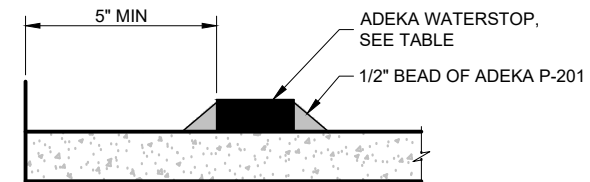
NOTE:
INSTALL SIDE BY SIDE SPLICE ON TOP OF PIPE

SIDE BY SIDE WATERSTOP SPLICE 1
NTS



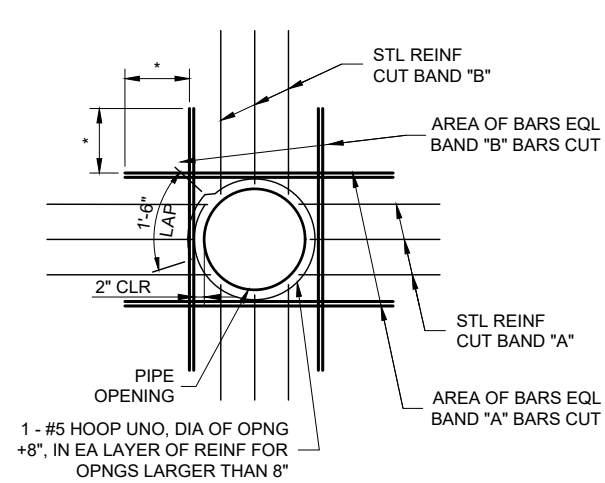
TYPICAL RGRCP PLAIN END PIPE SECTION
NTS

ADEKA TYPE	PIPE DIA (IN)
MC-2010MN	36" AND LARGER
MC-2005T	30" AND SMALLER

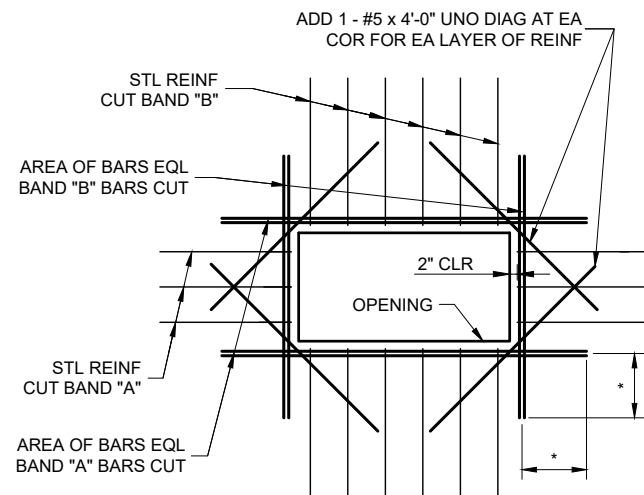


WATERSTOP PLACEMENT 2
NTS

RGRCP WALL PENETRATION AND SEAL 516
NTS



FOR ALL PIPE OPENINGS
NTS



FOR ALL RECTANGULAR OPENINGS
NTS

REBAR	AREA (SQ IN)
#4	0.1963
#5	0.3067
#6	0.4418
#7	0.6013
#8	0.7854

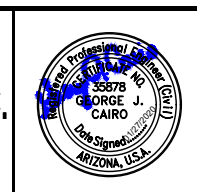
NOTES:

- SEE PLANS FOR MAIN WALL REINFORCING.
- TYPICAL ALL OPENINGS IN CONCRETE WALLS OR SLAB.
- PROVIDE MINIMUM LAP AS SHOWN ON PLANS, TYPICAL. WHERE LAP DISTANCE IS NOT AVAILABLE, TERMINATE BARS WITH STD HOOK 2" CLR OF FACE OF CONCRETE.
- * PROVIDE MINIMUM LAP SPLICE AS NOTED OR SHOWN ON PLANS TYPICAL.

ADDITIONAL WALL REINFORCEMENT 518
NTS

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



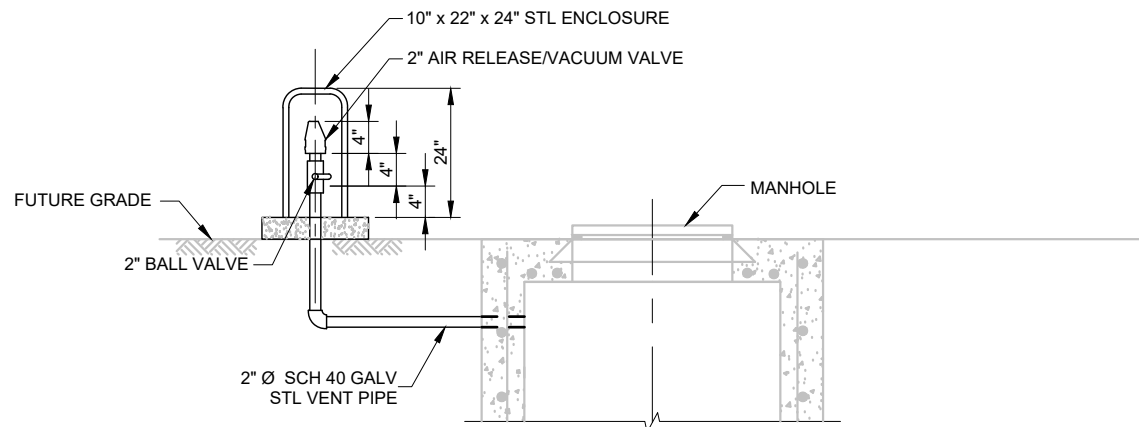
DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

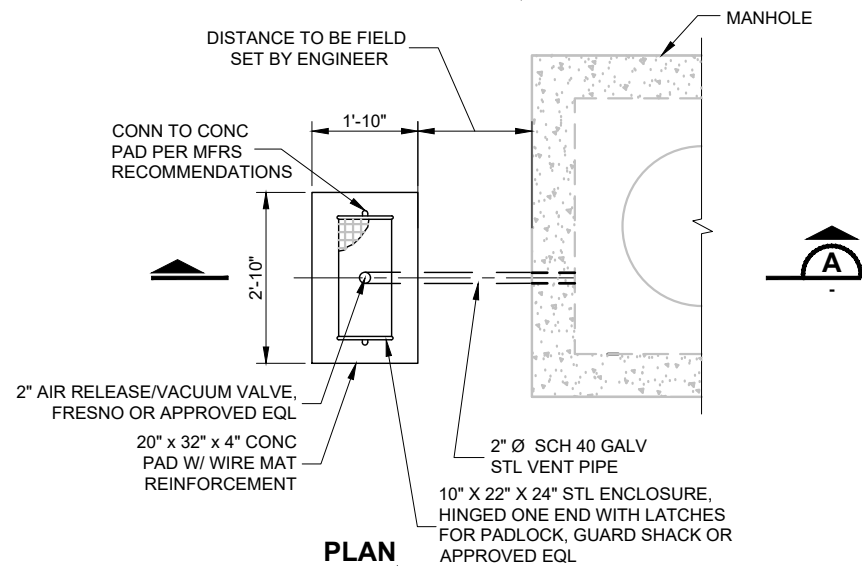
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 9



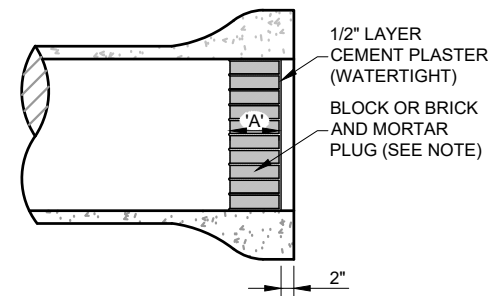
SECTION A
NTS



PLAN
NTS

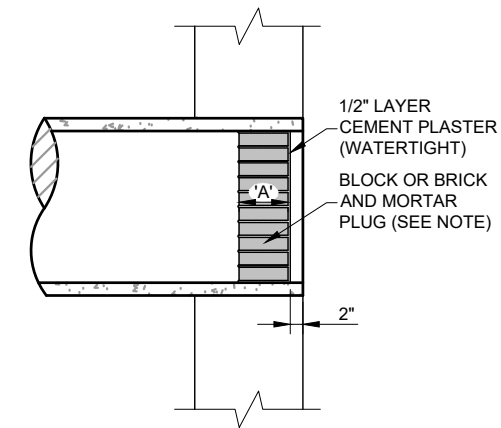
MANHOLE AIR VALVE AND ENCLOSURE
NTS **532**

NOTE:
1. REFER TO PLANS FOR INSTALLATION LOCATIONS.



PIPE END
NTS

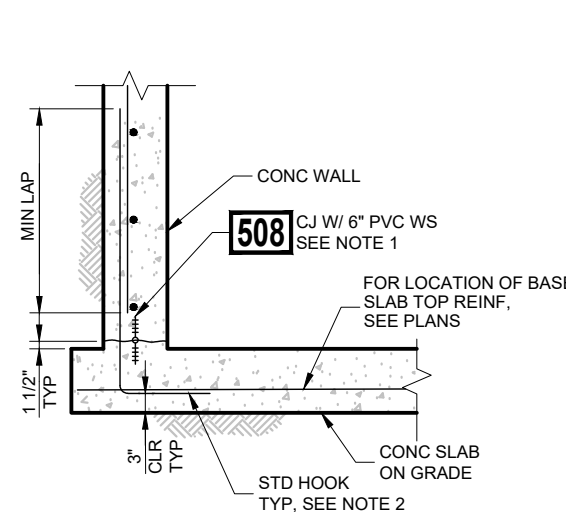
PIPE PLUG SIZING	
PIPE SIZE	PLUG THICKNESS "A"
12"-36"	8"
39"-48"	12"
51"-72"	18"
75"-90"	24"
96"-114"	32"
120"-132"	36"
138"-150"	40"



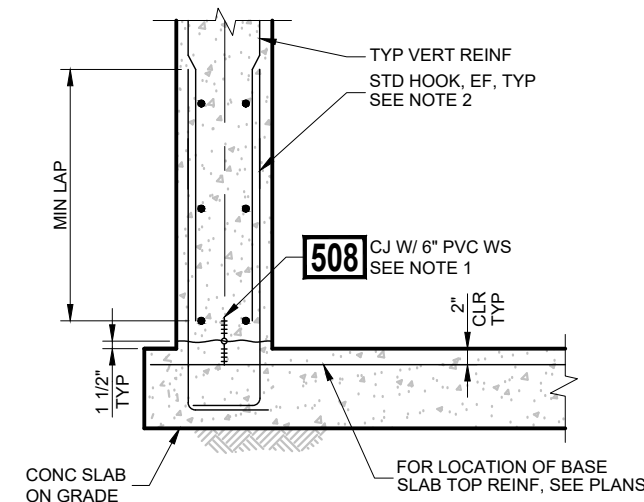
PIPE WALL OPENINGS
NTS

NOTES:
1. NOTE: COMPACT SOIL AT END OF PIPE OR WALL OPENING TO 95% OF MAXIMUM DENSITY.
2. IF DEPTH OF COVER IS LESS THAN 5' OR GREATER THAN 10' INCREASE PLUG THICKNESS A MINIMUM OF 4'.

TYPICAL PIPE OR WALL OPENING PLUG
NTS **541**



SINGLE REINFORCING MAT
NTS



DOUBLE REINFORCING MAT
NTS

NOTES:
1. SEE MWD GENERAL NOTES, EXCEPT WHERE SPECIFICALLY NOTED OR DETAILED ON PLANS, ALL CONCRETE STRUCTURES SHALL BE POURED MONOLITHICALLY. CONTRACTOR MAY SUBMIT RFI TO REQUEST A MULTIPLE POUR OPTION.
2. REINFORCING SIZE SHALL MATCH TYPICAL VERTICAL WALL REINFORCEMENT AND SPACING, UNLESS OTHERWISE NOTED.
3. FOR LAP SPLICE LENGTHS REFER TO TABLE IN THE GENERAL STRUCTURAL NOTES.

TYPICAL WALL TO SLAB REINFORCEMENT DETAILS
NTS **701**

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



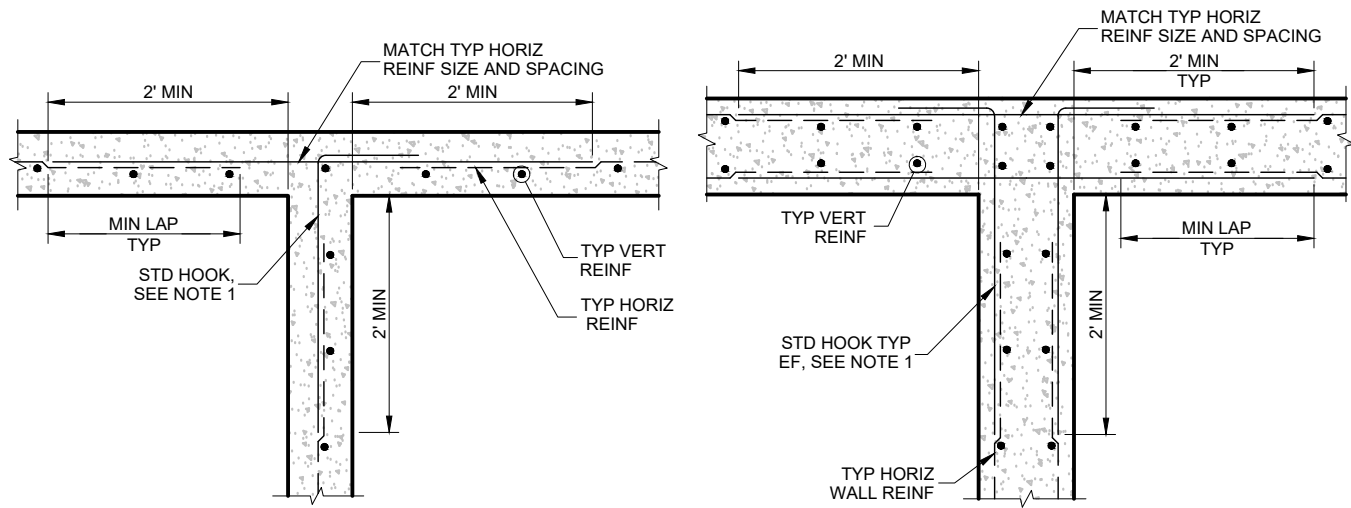
DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 10



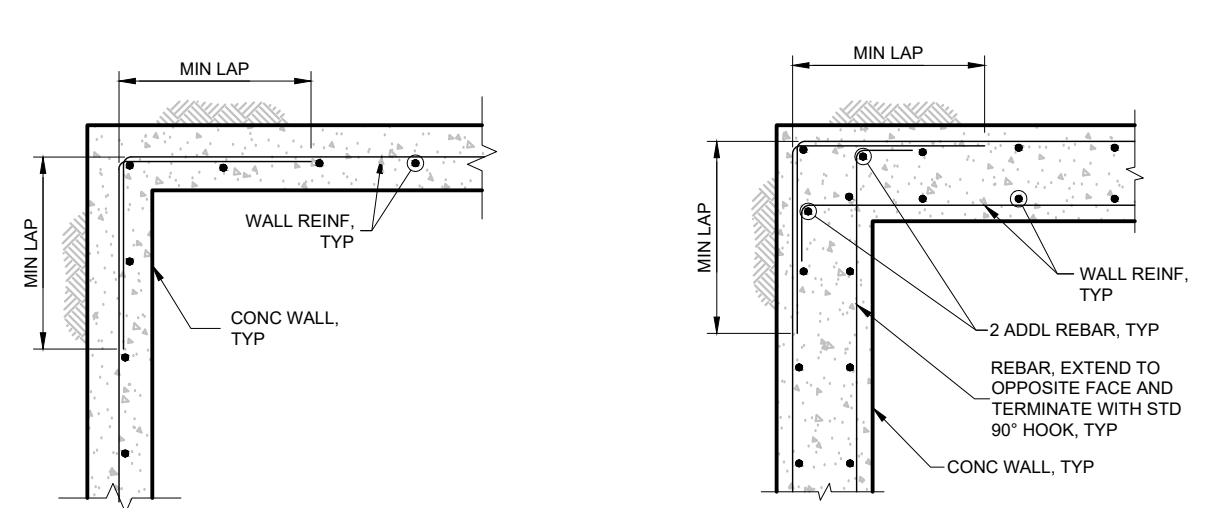
SINGLE REINFORCING MAT
NTS

DOUBLE REINFORCING MAT
NTS

NOTES:

1. REINFORCING SIZE SHALL MATCH TYPICAL HORIZONTAL WALL REINFORCEMENT AND SPACING, UNLESS OTHERWISE NOTED.
2. FOR LAP SPLICE LENGTHS REFER TO TABLE IN THE GENERAL STRUCTURAL NOTES.

TYPICAL WALL INTERSECTION REINFORCING DETAILS **702**
NTS



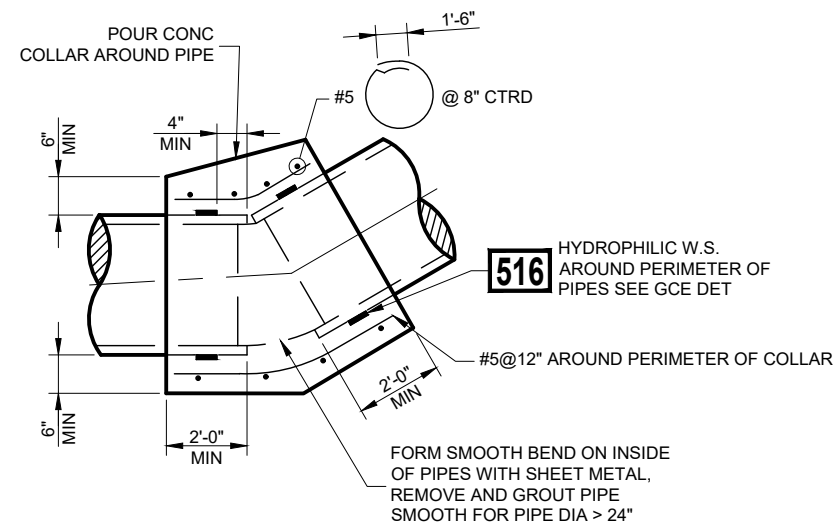
SINGLE REINFORCING MAT
(ALL CORNERS) NTS

DOUBLE REINFORCING MAT
(ALL CORNERS) NTS

NOTES:

1. DETAIL APPLIES TO ALL WALL TO WALL CORNER CONNECTIONS.
2. FOR LAP SPLICE LENGTHS REFER TO TABLE IN THE GENERAL STRUCTURAL NOTES.

TYPICAL CORNER REINFORCEMENT DETAILS **703**
NTS



NOTES:

1. PIPE SUPPLIER'S SHOP BUILT ELBOWS WITH RUBBER RING JOINTS MAY BE USED.
2. ELBOW USED FOR BOTH HORIZONTAL ANGLE CHANGES AND VERTICAL ELEVATION CHANGES.

FIELD FABRICATED HORIZONTAL BEND FOR CONCRETE PIPE **726**
NTS

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



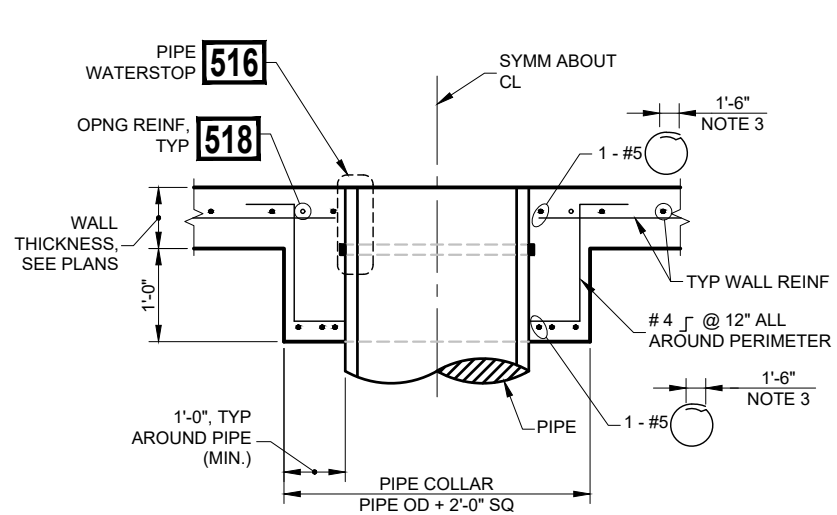
DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

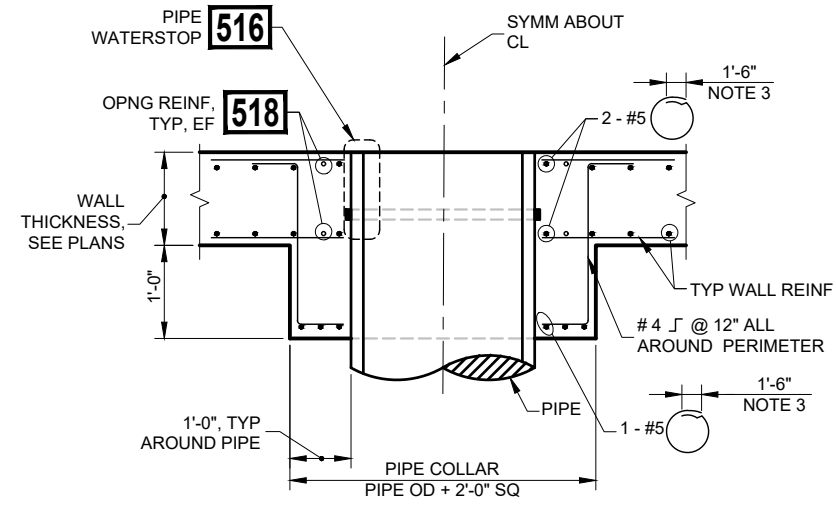
MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD
DETAILS

D - 11



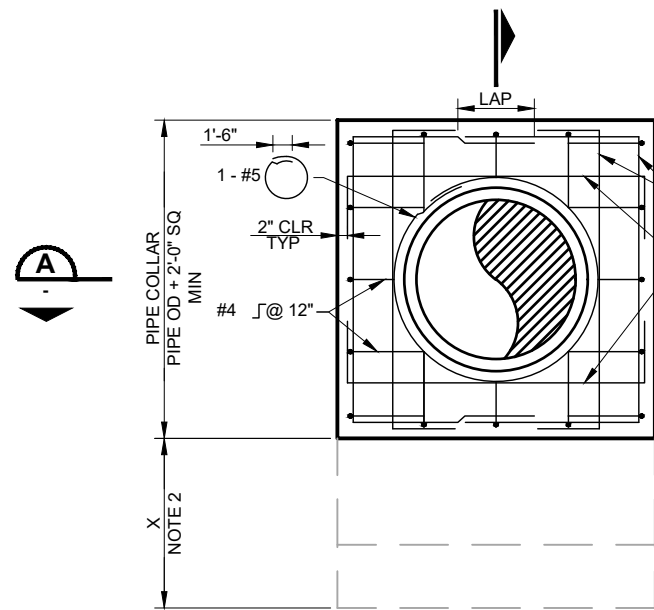
SECTION A
NTS



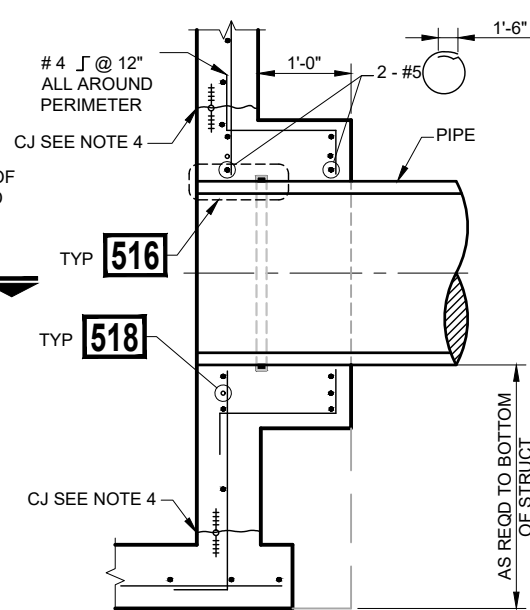
SECTION B
NTS

NOTES:

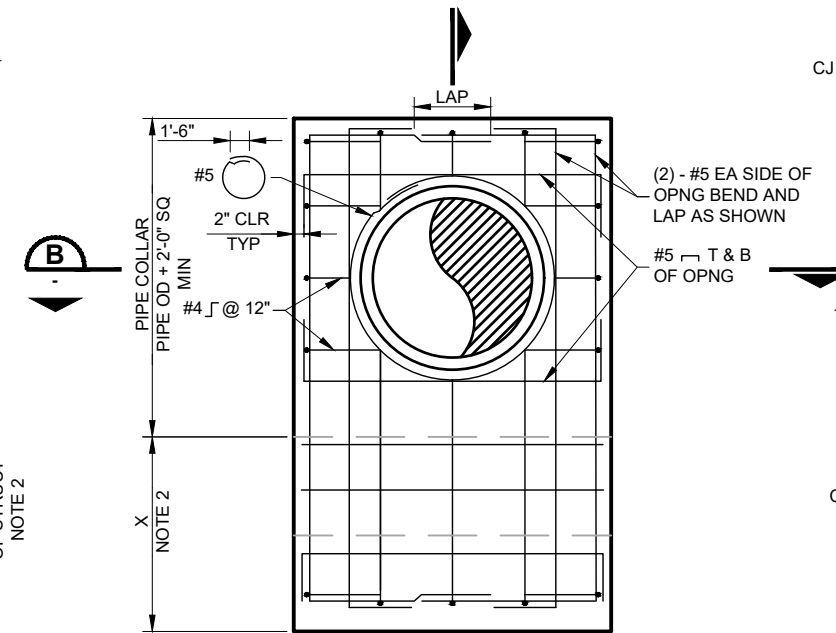
1. IF STRUCTURE WIDTH MATCHES COLLAR WIDTH REPLACE ∟ SIDE #4 ∟ @ 12" WITH #4 @ 12".
2. WHERE X < 2'. EXTEND COLLAR TO BOTTOM OF SLAB WHERE X > 2' EXTEND COLLAR AT CONTRACTORS OPTION AT EXTENDED COLLARS, MATCH AND EXTEND TYP WALL AND COLLAR REINFORCEMENT.
3. HOOP DIAMETER = PIPE OD + 4" CLEAR. INCREASE DIAMETER AS REQUIRED WHERE HOOKS OR OTHER BARS ARE SHOWN BETWEEN HOOP AND PIPE OR OPENING.
4. CONSTRUCTION JOINT WITH 6" PVC WATERSTOP DETAIL 508 SHALL ONLY BE INSTALLED WHERE SPECIFICALLY CALLED OUT ON PLANS. SEE PLANS FOR SPECIFIC JOINT LOCATIONS.
5. ALL PIPES IN AND OUT OF STRUCTURE SHALL HAVE A FLEXIBLE JOINT PER RGRCP WALL PENETRATION AND SEAL DETAIL 516.



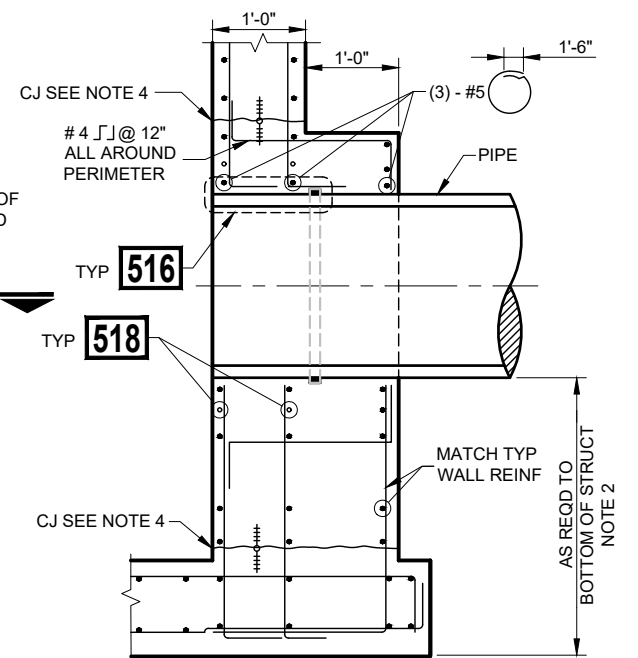
COLLAR ELEVATION
NTS



SECTION C
NTS



COLLAR ELEVATION
NTS



SECTION D
NTS

SINGLE MAT REINFORCEMENT
NTS

RGRCP PIPE COLLAR DETAIL 741
NTS

DOUBLE MAT REINFORCEMENT
NTS

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



DESIGNED BY:	R. RILEY
DRAWN BY:	T. IBARRA
APPROVED BY:	G. CAIRO
DRAWING:	MWD-49
PLOT DATE:	JAN, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE
SR 303L TO SARIVAL AVENUE
(MCDOT TT0561)
WADDELL, ARIZONA

STANDARD DETAILS

D - 12

Z:\GCE Projects\MWD-49\dwg\05_MWD-49_Dwg\revised\012720-814.rvt



MARICOPA WATER DISTRICT MCDOT OLIVE AVENUE

**FINAL SUBMITTAL
DECEMBER 2020
PHASE 1 AND PHASE 2**

LATERAL 9 AND LATERAL 9 SUBLATERAL I SARIVAL AVENUE TO REEMS ROAD RELOCATIONS (MCDOT TT0562)

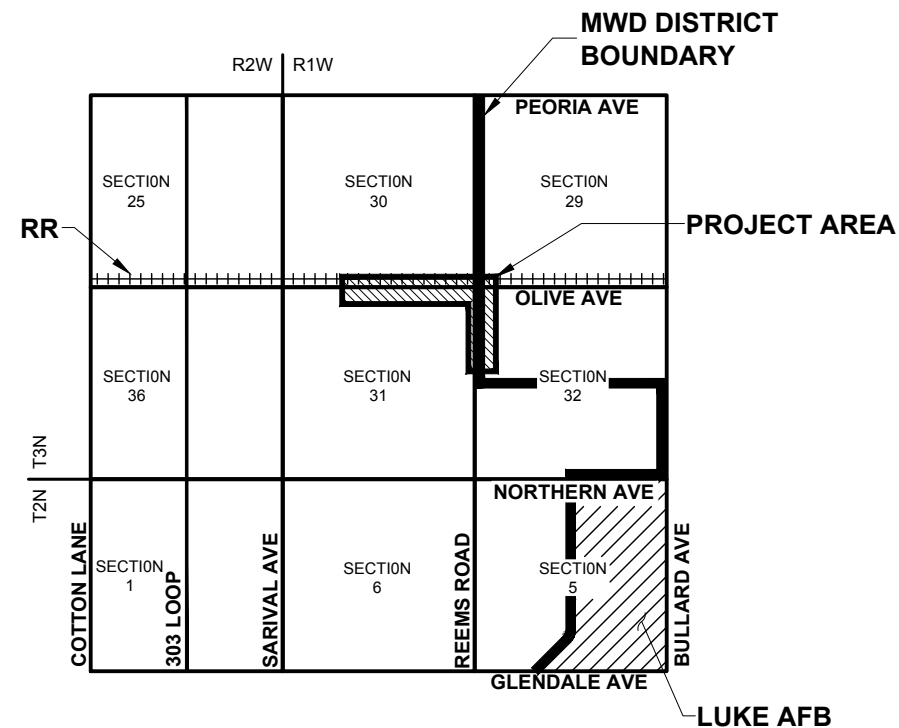
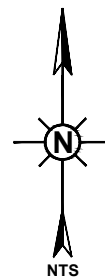
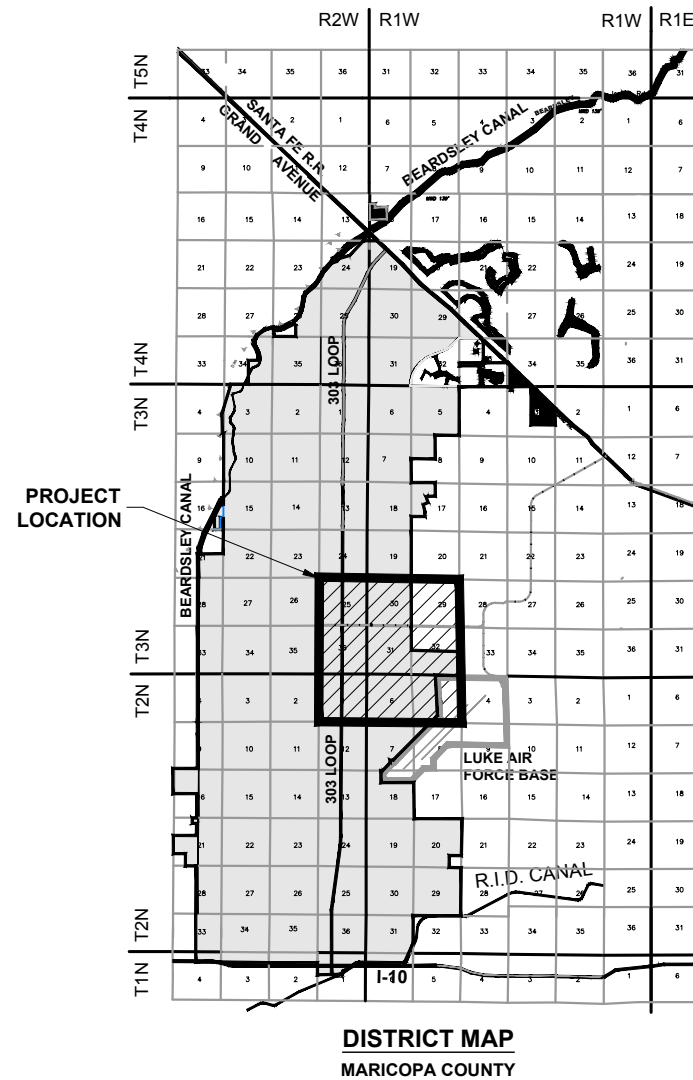
PROJECT PLANS MARICOPA COUNTY, ARIZONA

APPROVED BY: *

12/04/2020
DATE

MARICOPA WATER DISTRICT
GLEN VORTHERMS, P.E.

* PLAN APPROVAL BY MWD IS VALID 1 YEAR FROM DATE OF APPROVAL.

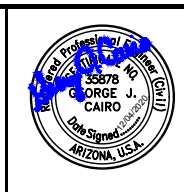


CONTRACTOR SHALL OBTAIN A WRITTEN CONFIRMATION FROM DEVELOPER VERIFYING THAT FINAL GRADES OF THE PLANNED DEVELOPMENT ARE REPRESENTED IN THESE PLANS CORRECTLY. WRITTEN CONFIRMATION SHALL BE PROVIDED AND APPROVED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. FAILURE TO COORDINATE FINAL GRADES AND CONSTRUCTION OF IRRIGATION FACILITIES THAT DO NOT MATCH TO FINAL GRADES AS ILLUSTRATED ON THESE PLANS SHALL BE RECONSTRUCTED AT THE CONTRACTORS EXPENSE.

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL I
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**COVER AND
LOCATION MAPS**

G - 1

SHEET INDEX

DWG ID	SHEET NO.	DESCRIPTION
G-1	1	COVER AND LOCATION MAPS
G-2	2	SHEET INDEX AND CONSTRUCTION QUANTITIES
G-3	3	DISTRICT AND CONSTRUCTION NOTES
G-4	4	STRUCTURAL NOTES
G-5	5	ABBREVIATIONS AND DRAWING DETAIL DESIGNATIONS
G-6	6	LEGEND AND SURVEY CONTROL
G-7	7	KEY PLAN
G-8	8	GEOMETRIC LAYOUT PLAN AND COORDINATE DATA TABLES
G-9	9	HYDRAULIC PROFILE LATERAL 9 AND LATERAL 9 SUBLATERAL I
P-1	10	LATERAL 9 PLAN AND PROFILE STA POB TO STA 47+50
P-2	11	LATERAL 9 PLAN AND PROFILE STA 47+50 TO STA 55+50
P-3	12	LATERAL 9 PLAN AND PROFILE STA 55+50 TO STA 63+50
P-4	13	LATERAL 9 PLAN AND PROFILE STA 63+50 TO STA 71+50
P-5	14	LATERAL 9 PLAN AND PROFILE STA 71+50 TO STA 75+50
P-6	15	LATERAL 9 PLAN AND PROFILE STA 75+50 TO STA POE
P-7	16	TAILWATER PIPELINE PLAN AND PROFILE STA POB TO STA POE
SP-1	17	LATERAL 9 TAILWATER PIPELINE SITE PLAN
SP-2	18	LATERAL 9 REEMS RD AND OLIVE AVE SITE PLAN
S-1A	19	FLOW CONTROL STRUCTURE #1 PLAN AND MESH COVER
S-1B	20	FLOW CONTROL STRUCTURE #1 SECTIONS
S-2	21	FLOW MEASUREMENT STRUCTURE #1 PLAN, SECTIONS, AND MESH COVER
S-3	22	TYPICAL MANHOLE PLAN, SECTIONS, AND SCHEDULE
S-4	23	STAND BOX PLAN AND SECTIONS
S-5	24	MANHOLE #5 PLAN AND SECTIONS
S-6	25	OUTLET HEADWALL #1 PLAN AND SECTIONS
S-7	26	INLET HEADWALL #1 PLAN AND SECTIONS
D-1	27	STANDARD DETAILS
D-2	28	STANDARD DETAILS
D-3	29	STANDARD DETAILS
D-4	30	STANDARD DETAILS
D-5	31	STANDARD DETAILS
D-6	32	STANDARD DETAILS
D-7	33	STANDARD DETAILS
D-8	34	STANDARD DETAILS
D-9	35	STANDARD DETAILS
D-10	36	STANDARD DETAILS

PHASE 1 QUANTITIES

PHASE 1 CONSTRUCTION QUANTITIES		
ITEM	QUANTITY	UNIT
FLOW CONTROL STRUCTURE	1	EA
FLOW MEASUREMENT STRUCTURE	1	EA
MANHOLE STRUCTURE	6	EA
STAND BOX	1	EA
OUTLET HEADWALL STRUCTURE	1	EA
INLET HEADWALL STRUCTURE	1	EA
30" DIA CLASS V RGRCP	227	LF
36" DIA CLASS V RGRCP	3,776	LF
24" DIA CLASS 165 PVC PIPE	239	LF
PIPE PLUG	3	EA
CONCRETE PIPE COLLAR	1	EA
2" AIR RELEASE / VACUUM VALVE	2	EA

PHASE 1 REMOVALS QUANTITIES		
ITEM	QUANTITY	UNIT
PIPE PLUG	1	EA
CONCRETE LINED DITCH	4,050	LF
CONCRETE PIPE	138	LF
24" DIA PVC PIPE	77	LF
30" DIA PVC PIPE	30	LF

NOTE:

1. ALL QUANTITIES ARE APPROXIMATE FOR BIDDING PURPOSES AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

PHASE 2 QUANTITIES

PHASE 2 CONSTRUCTION QUANTITIES		
ITEM	QUANTITY	UNIT
24" DIA CLASS 165 PVC PIPE	239	LF

PHASE 2 REMOVALS QUANTITIES		
ITEM	QUANTITY	UNIT
PIPE PLUG	2	EA

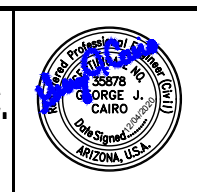
NOTE:

1. ALL QUANTITIES ARE APPROXIMATE FOR BIDDING PURPOSES AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.



REV.	DATE	REVISION DESCRIPTION	BY

GEORGE CAIRO ENGINEERING, INC.
 STAPLEY CENTER
 1630 S. STAPLEY DR., SUITE 117
 MESA, ARIZONA 85204
 WWW.GCAIROINC.COM



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL I
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

**SHEET INDEX AND
 CONSTRUCTION
 QUANTITIES**

G - 2

MARICOPA WATER DISTRICT (MWD) GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) SPECIFICATIONS AND STANDARD DETAILS AND LATEST REVISIONS UNLESS NOTED OTHERWISE ON PLANS.
2. CONTACT, NOTIFICATION AND COORDINATION WITH MARICOPA WATER DISTRICT (MWD) SHALL BE MADE WITH MARICOPA WATER DISTRICT'S ADMINISTRATION OFFICE AT (623) 546-8266.
3. ALL SHOP DRAWINGS WILL REQUIRE MARICOPA WATER DISTRICT'S APPROVAL BEFORE CONSTRUCTION CAN BEGIN.
4. 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.
5. ALL COMPACTION AND BACKFILL SHALL CONFORM TO THE MAG STANDARD SPECIFICATIONS, DETAILS, AND LATEST REVISIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE FINAL GRADE ADJUSTMENTS OF ALL IRRIGATION STRUCTURES AND MANHOLES TO THE SATISFACTION OF MWD.
7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY MWD PERMITS, RIGHTS-OF-ENTRY, **NOTICES TO PROCEED**, AND APPROVALS PRIOR TO CONSTRUCTION.
8. THE CONTRACTOR SHALL NOTIFY MWD IN WRITING AT LEAST 72 HOURS IN ADVANCE OF ANY CONSTRUCTION.
9. **THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH MWD FOR THE "DRY-UP" OF EXISTING IRRIGATION FACILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. IT WILL BE MWD'S SOLE DETERMINATION OF THE TIME AND DURATION OF THIS "DRY-UP" PERIOD.**
10. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH MWD FOR THE REMOVAL OF EXISTING IRRIGATION FACILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION.
11. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND COORDINATING WITH MWD FOR THE INSPECTION OF ALL CONSTRUCTION WORK. **NOTICE MUST BE GIVEN TO MWD OR MWD'S AGENT A MINIMUM OF 48 HOURS PRIOR TO INSTALLATION OF ANY WORK REQUIRING FIELD OBSERVATION/INSPECTION OR APPROVALS TO PROCEED.**
12. ALL CONSTRUCTION WORK IS SUBJECT TO MWD'S INSPECTION AND APPROVAL. CONSTRUCTION WORK CONCEALED WITHOUT INSPECTION BY MWD SHALL BE SUBJECT TO EXPOSURE AT THE CONTRACTOR'S EXPENSE.
13. AS-BUILT PLANS AND CERTIFICATIONS SHALL BE PROVIDED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION TO MWD BY THE CONTRACTOR PERFORMING THE INSTALLATION OF MWD FACILITIES. AS-BUILT PLANS SHALL FEATURE BOTH HORIZONTAL AND VERTICAL AS-BUILT INFORMATION FOR ANY **NEW** UTILITIES INSTALLED WITHIN THE MWD EASEMENT. **MWD DOES NOT REQUIRE THE AS-BUILT DRAWINGS TO REFLECT THE AS-BUILT INVERT OF EXISTING UTILITIES THAT CROSS MWD'S FACILITIES, HOWEVER, THE 2' MINIMUM CLEARANCE SEPARATION BETWEEN THE EXISTING UTILITY AND MWD'S FACILITY WILL NEED TO BE AS-BUILT.** FINAL AS-BUILTS ARE TO BE PROVIDED TO MWD IN ALL OF THE FOLLOWING FORMS: ORIGINAL MYLAR SET (1), COPIES OF MYLAR SET (2), USB FLASH DRIVE OF SCANNED MYLAR SET (1), AND 11x17 COPIES OF MYLAR SET (3).
14. AS-BUILT PLANS OF MWD'S FACILITIES SHALL BE REFLECTED ON THE CORRESPONDING AS-BUILT PAVING AND WATER IMPROVEMENT PLANS WHERE APPLICABLE.
15. IF A CONFLICT IN NOTES ON THIS DESIGN PLAN IS IDENTIFIED, THE MWD GENERAL NOTES SHALL SUPERSEDE ANY OTHER NOTES.
16. CONTRACTOR SHALL PURCHASE AND INSTALL MWD'S CUSTOM DETECTABLE UNDERGROUND WARNING TAPE AT THE SPECIFIED DEPTH FOR ALL LENGTHS OF BURIED MWD 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 MWD IRRIGATION FACILITIES BURIED BELOW CONTACT MWD AT 623-975-1125. CONTACT MWD FOR ORDERING AND INSTALLATION INFORMATION.
17. **CONTRACTOR SHALL BE REQUIRED TO HYDRO TEST ALL NEW MWD FACILITIES ACCORDING TO MWD STANDARD TESTING REQUIREMENTS AND SPECIFICATIONS.**
18. 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.
19. CONTRACTOR SHALL PURCHASE AND ARRANGE FOR DELIVERY OF ALL STAFF GAUGES, STEEL STEPS, STAFF GAUGE EXTENSIONS, AND OTHER MATERIALS IDENTIFIED FOR INSTALLATION BY MWD. CONTRACTOR SHALL CONTACT MWD PRIOR TO DELIVERY BY CALLING (623) 546-8266.
20. THE CONTRACTOR SHALL, CONTACT AND COORDINATE WITH MWD IN WRITING TO REQUEST AN IRRIGATION BYPASS. CONTRACTOR'S PROPOSED BYPASS DESIGN SHALL BE REVIEWED AND APPROVED BY MWD. **IT WILL BE MWD'S SOLE DETERMINATION OF THE TIME AND DURATION OF THIS "DRY-UP" PERIOD.**

CONSTRUCTION NOTES

GENERAL

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS THAT ARE REQUIRED BY ALL LEVELS OF REGULATORY AGENCIES PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL COMPLY WITH ALL SAFETY REQUIREMENTS ESTABLISHED BY ALL LEVELS OF REGULATORY AGENCIES DURING THE ENTIRE PERIOD OF THE CONSTRUCTION.
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 ENSURE THAT ALL ROADS ARE MAINTAINED IN A CLEAN, MUD- AND DUST-FREE CONDITION AT ALL TIMES.

PIPING AND GATES

1. ALL EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH MAG STANDARD SPECIFICATIONS PART 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. ALL PIPE BACKFILL ADJACENT TO A STRUCTURE SHALL BE ONE SACK SLURRY TO SPRING LINE OF PIPE.
4. ALL REINFORCED CONCRETE PIPES SHALL BE CLASS V 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 MWD'S EASEMENT SHALL BE DONE AT THE DIRECTION OF THE DISTRICT.
6. ALL MATERIAL DESIGNATED FOR SALVAGE SHALL BE TRANSPORTED TO THE MWD EQUIPMENT YARD OR TO THE SPECIFIED LOCATION AS DIRECTED BY MWD DURING EXECUTION OF THE WORK.
7. ALL FABRICATED 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 GATE SHALL HAVE J-SEAL. THE GATES SHALL CONFORM TO 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.
9. ALL DUCTILE IRON PIPE 24" DIAMETER AND LARGER SHALL BE CLASS 250 HP LOK RESTRAINED JOINT PIPE OR APPROVED EQUAL UNLESS NOTED OTHERWISE.
10. ALL PVC PIPE SHALL BE DR41 C900 UNLESS NOTED OTHERWISE.

PAINTING AND COATING

1. EXPOSED METAL INCLUDING PIPE, FITTINGS, VALVES, STRAP ANCHORS, VALVE 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 TNE MEC N69 HI-BUILD EXPOLINE II PRIMER (SAND BEIGE) 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 TNE MEC 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 TNE MEC N69 HI-BUILD EXPOLINE II PRIMER (SAND BEIGE) 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 TNE MEC 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 TNE MEC N69 HI-BUILD EXPOLINE II PRIMER (SAND BEIGE) 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 TNE MEC 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 TNE MEC 46H-413 HI-BUILD TNE ME-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 610.6.
 - C. PERMATAX 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.
3. NO MEASUREMENT OR SEPERATE PAYMENT WILL BE MADE FOR PAINTING OR COATING ITEMS AS SUCH; THE COST THEREOF SHALL BE INCLUDED IN THE COST OF THE ITEM.

REV.	DATE	REVISION DESCRIPTION	BY



GEORGE CAIRO ENGINEERING, INC.
 STAPLEY CENTER
 1630 S. STAPLEY DR., SUITE 117
 MESA, ARIZONA 85204
 WWW.GCAIROINC.COM



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020



MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL 1
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

**DISTRICT AND
 CONSTRUCTION NOTES**

G - 3

STRUCTURAL NOTES

GENERAL:

- 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 (MAG), AND AS ADDITIONALLY REQUIRED BY THE PROJECT PLANS AND SPECIAL PROVISIONS.
- FEATURES OF STRUCTURE CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME CHARACTER AS SHOWN FOR SIMILAR CONDITIONS.
- 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.
- 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.
- NO STRUCTURAL MEMBERS SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER PRIOR TO CONSTRUCTION.
- FOR ABBREVIATIONS NOT LISTED, SEE "ABBREVIATIONS FOR USE ON DRAWINGS AND TEXT", PUBLISHED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE INC. (ANSI).
- 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.
- DESIGN LOADS:
WALKWAYS AND PLATFORMS = 150 PSF

CONCRETE:

- 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 MAG 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.
- 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 MAG 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 THAN 3/4" DIAMETER.
- 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'-4"	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.

- 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
- ALL EMBEDDED ITEMS SHALL BE POSITIVELY SECURED IN PLACE BEFORE PLACING CONCRETE. ALL EMBEDDED BOLTS SHALL BE STAINLESS STEEL.
- ROUGHEN AND CLEAN ALL CONSTRUCTION JOINTS IN WALLS AND SLABS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE.
- CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" TYPICAL, TO 6" BELOW FINISHED GRADE UNLESS SHOWN OTHERWISE.
- STRUCTURAL POURS SHALL BE PLACED AT (4') MAXIMUM VERTICAL LIFTS VIBRATED THROUGH AND THROUGH AS SPECIFIED PER MAG SECTION 505.
- ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL DRILLED ADHESIVE ANCHORS HILTI HY-150 MAX, FASTANAL ANCHORING SYSTEMS, OR STRONGTIE SET HIGH STRENGTH EPOXY-TIE ANCHORING ADHESIVE.




STRUCTURAL STEEL AND STEEL FABRICATIONS:

- 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
- 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.
- ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, CURRENT EDITION.
- 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.
- ALL WELDS FOUND DEFECTIVE SHALL BE REPAIRED (OR REPLACED) AND RETESTED FOR ADEQUACY AT THE CONTRACTOR'S EXPENSE.
- 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.
- 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 CONCRETE
AHR	ANCHOR	FDN	FOUNDATION	REINF	REINFORCE
AL	ALUMINUM	FG	FINISHED GRADE	RST	REINFORCING STEEL
ALTN	ALTERNATE	FTG	FOOTING		
APVD	APPROVED				
BOT	BOTTOM				
BF	BOTTOM FACE	GALV	GALVANIZE	SIM	SIMILIAR SPECIFICATIONS
BM	BEAM		"HOT DIP" GRAVEL	SQ	SQUARE
BRG	BEARING	GVL		STD	STANDARD
C TO C	CENTER TO CENTER	HAS.	HEADED ANCHOR STUD	STIF	STIFFENER
CJ	CONSTRUCTION JOINT	HDR	HORIZONTAL	STL	STEEL
CL	CENTER LINE	HORIZ	HORIZONTAL	STR	STRAIGHT
CLR	CLEARANCE			STRUCT	STRUCTURES
COL	COLUMN	I.F.	INSIDE FACE	SYMM	SYMMETRICAL
CONC	CONCRETE			T&B	TOP AND BOTTOM
CONN	CONNECTION	LNTL	LINTEL	TC	TOP OF CONCRETE
CONT	CONTINUOUS	LONG.	LONGITUDINAL		TOP FACE
CTR	CENTER	MAX	MAXIMUM	TF	THICK
DBA	DEFORMED BAR ANCHOR	MB	MACHINE BOLTS	THK	THICK
DIA	DIAMETER	MIN	MINIMUM	TRANSV	TRANSVERSE
DIR	DIRECTION			TST	TOP OF STEEL
DWG	DRAWING	NIC	NOT IN CONTRACT	TW	TOP OF WALL
EA	EACH	NTS	NOT TO SCALE	TYP	TYPICAL
EF	EACH FACE			VERT	VERTICAL
EL	ELEVATION				
EQL SP	EQUALLY SPACED	O.C.	ON CENTER	WS	WATERSTOP OR WATER SURFACE
EW	EACH WAY	O.F.	OUTSIDE FACE		
EXP JT	EXPANSION JOINT	O TO O	OUT TO OUT	WWF	WELDED WIRE FABRIC
EXST	EXISTING	OPNG	OPENING		
		PJF	PREMOLDED JOINT FILLER		
		PLYWD	PLYWOOD		
		PRCST	PRECAST		
		P	PILASTER		



REV.	DATE	REVISION DESCRIPTION	BY	 GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM				DESIGNED BY: R. RILEY DRAWN BY: B. JONES APPROVED BY: G. CAIRO DRAWING: MWD-51 PLOT DATE: DEC, 2020	 MARICOPA WATER DISTRICT P.O. BOX 900 WADDELL, ARIZONA 85355 (623) 546-8266	MCDOT OLIVE AVENUE LATERAL 9 AND LATERAL 9 SUBLATERAL 1 SARIVAL AVENUE TO REEMS ROAD (MCDOT TT0562) WADDELL, ARIZONA	STRUCTURAL NOTES	G - 4

ABBREVIATIONS:

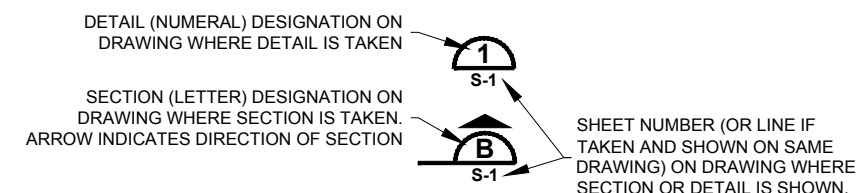
@	AT	E	EAST, ELECTRIC	M	MEASURED	S	SEWER, SOUTH
AB	AGGREGATE BASE	EA	EACH	MAG	MARICOPA ASSOCIATION OF GOVERNMENTS	SB	SOIL BORING, SOUTHBOUND
ABC	AGGREGATE BASE COURSE	EB	EASTBOUND	MAINT	MAINTENANCE	SCH	SCHEDULE
ABDN	ABANDONED	ECC	ECCENTRIC	MATL	MATERIAL	SD	STORM DRAIN
ABUTMT	ABUTMENT	EF	EACH FACE	MAX	MAXIMUM	SE	SOUTHEAST
AC	ASPHALTIC CONCRETE	EX GR	EXISTING GRADE	MCC	MOTOR CONTROL CENTER	SEC	SECTION
ACI	AMERICAN CONCRETE INSTITUTE	EL, ELEC	ELECTRIC, ELECTRICAL, ELEVATION	MCDOT	MARICOPA DEPARTMENT OF TRANSPORTATION	SH	SHEET
ACP	ASBESTOS CEMENT PIPE	ELB	ELBOW	MECH	MECHANICAL	SIM	SIMILAR
ADDL	ADDITIONAL	ELEC	ELECTRICAL LOAD CENTER	MFR, MFRS	MANUFACTURER, MANUFACTURERS	SL	SECTION LINE
ADJ	ADJACENT, ADJUSTABLE	ELEV	ELEVATION	MH	MANHOLE	SLF	SLOPE LENGTH FEET
ADOT	ARIZONA DEPARTMENT OF TRANSPORTATION	ENGR	ENGINEER	M&I	MUNICIPAL AND INDUSTRIAL	SLP	SLOPE
AFF	AT FINISH FLOOR	EOR	EDGE OF ROAD	MIN	MINIMUM	SP	SPACE, SPACES
AG	AGRICULTURAL	EP	EDGE OF PAVEMENT	MISC	MISCELLANEOUS	SPECS	SPECIFICATIONS
AGGR	AGGREGATE	EQL	EQUAL	MJ	MECHANICAL JOINT	SPECD	SPECIFIED
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	EQL SP	EQUALLY SPACED	MO	MASONRY OPENING, MONTH	SPG	SPACING
AL	ALUMINUM	EQPT	EQUIPMENT	MON	MONUMENT	SPLY	SUPPLY
ALTN	ALTERNATE	ESMT	EASEMENT	MTD	WALL MOUNTED	SQ	SQUARE
ANG	ANGLE	EVC	END OF VERTICAL CURVE	MTG	MOUNTING	SQ FT	SQUARE FOOT
ANOD	ANODIZED	EW	EACH WAY	MTL	METAL	SQ IN.	SQUARE INCH
APPROX	APPROXIMATE, APPROXIMATELY	EX	EXISTING	MW	MONITORING WELL	SR	STATE ROUTE
APVD	APPROVED	EXP	EXPOSED	MWD	MARICOPA WATER DISTRICT	SST, SS	STAINLESS STEEL
ARCH	ARCHITECTURAL	EXP JT	EXPANSION JOINT	MWS	MAXIMUM WATER SURFACE	ST	STREET
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	FAB	FABRICATION	N/A	NOT APPLICABLE	STA	STATION
ASSY	ASSEMBLY	FC	FLEXIBLE COUPLING	N/C	NOT IN CONTRACT	STD	STANDARD
AUTO	AUTOMATIC	FCA	FLANGED COUPLING ADAPTER	N	NORTH	STL	STEEL
AUX	AUXILIARY	FCS	FLOW CONTROL STRUCTURE	NAVD	NORTH AMERICAN VERTICAL DATUM	STRL	STRUCTURAL
AVE	AVENUE	FD	FOUND	NB	NORTHBOUND	STRUC	STRUCTURE
AVG	AVERAGE	FDN	FOUNDATION	NE	NORTHEAST	SUSP	SUSPEND
AWWA	AMERICAN WATER WORKS ASSOCIATION	FIN GR	FINISH GRADE	NO	NUMBER	SW	SOUTHWEST
		FIG	FIGURE	NOM	NOMINAL	SYMM	SYMMETRICAL
BC	BRASS CAP	FL	FLOW LINE	NORM	NORMAL		
BEG	BEGIN, BEGINNING	FLX	FLEXIBLE	NP	NATIONAL PIPE THREAD	T	TANGENT, TOWNSHIP, TREAD
BF	BLIND FLANGE, BOTTOM FACE	FLNG	FLANGE	NTS	NOT TO SCALE	T&B	TOP AND BOTTOM
BK	BACK	FLR	FLOOR	NW	NORTHWEST	TBM	TEMPORARY BENCH MARK
BLDG	BUILDING	FLTR	FILTER	NWS	NORMAL WATER SURFACE	TC	TOP OF CONCRETE, TOP OF CURB
BM	BENCHMARK	FLTR	FILTER			TCE	TEMPORARY CONSTRUCTION EASEMENT
BOTT	BOTTOM	FMS	FLOW MEASUREMENT STRUCTURE	O/H	OVERHEAD	TDH	TOTAL DYNAMIC HEAD
BRG	BEARING	F.O.	FIBER OPTIC	O&M	OPERATION & MAINTENANCE	TECH	TECHNICAL
BTWN	BETWEEN	F.O.	FACE OF WALL	O.C.	ON CENTER	TEL	TELEPHONE
BV	BALL VALVE, BUTTERFLY VALVE	FOW	FOOT, FEET	O.D.	OUTSIDE DIAMETER	TEMP	TEMPORARY
BVC	BEGINNING OF VERTICAL CURVE	FT	FOOT, FEET	OF	OUTSIDE FACE, OVERFLOW	TF	TOP FACE
BW	BARBED WIRE	FTG	FOOTING	OG	ORIGINAL GROUND	THD	THREAD
		FWD	FORWARD	OPNG	OPENING	THK	THICK
		G	GAS	OPP	OPPOSITE	THRD	THREADED
C/L	CHAINLINK	GA	GAUGE	OSD	OPEN SITE DRAIN	T.O.	TOP OF, TURNOUT
CONC	CONCRETE	GAL	GALLON	O TO O	OUT TO OUT	TOB	TOP OF BANK
CAP	CAPACITY OR CENTRAL ARIZONA PROJECT	GALV	GALVANIZED	OVFL	OVERFLOW	TOL	TOP OF LINING
CATV	CABLE TELEVISION	GALVI	GALVANIZED IRON	P&ID	PROCESS AND INSTRUMENTATION DIAGRAM	TOP	TOP OF PIPE
CB	CATCH BASIN	GALVS	GALVANIZED STEEL	PC	POINT OF CURVATURE	TORL	TOP OF RAISED LINING
CCP	CONCRETE CYLINDER PIPE	GB	GRAB BAR, GRADE BREAK	PE	PERMANENT EASEMENT, POLYETHYLENE	TP	TELEPHONE POLE, TEST PIT, TURNING POINT
CD	CROSS-DRAINAGE STRUCTURE	GC	GROOVED COUPLING	PERM	PERMANENT	TPI	TURNOUT POINT OF INTERSECTION
CFM	CUBIC FEET PER MINUTE	GCF	GROOVED COUPLING FITTING	PI	POINT OF INTERSECTION	TRANS	TRANSITION
CFS	CUBIC FEET PER SECOND	GND	GROUND	PIE	PERMANENT IRRIGATION EASEMENT	TRANSV	TRANSVERSE
CI	CAST IRON	GPD	GALLONS PER DAY	PJF	PREMOLDED JOINT FILLER	TRS	TRAFFIC SIGNAL
CJ	CONSTRUCTION JOINT	GPH	GALLONS PER HOUR	PL	PROPERTY LINE	TS	TRAFFIC SIGN
CL	CENTERLINE	GPM	GALLONS PER MINUTE	POB	POINT OF BEGINNING	TST, TOS	TOP OF STEEL, TOP OF STRUCTURE
CLR	CLEAR, CLEARANCE	GRTG	GRATING	POC	POINT OF CURVATURE	TT	THRUST TIE
CLSM	CONTROL LOW STRENGTH MATERIAL	GSP	GALVANIZED STEEL PIPE	POE	POINT OF ENDING	TW	TOP OF WALL
CMP	CORRUGATED METAL PIPE	GT, GTR	GUTTER	POT	POINT OF TANGENT	TYP.	TYPICAL
CMU	CONCRETE MASONRY UNITS	GTV	GATE VALVE	PP	POWER POLE	U/G	UNDERGROUND
C.O.	CLEANOUT	GV	GAS VALVE	PPL	POLYPROPYLENE LINED	UBC	UNIFORM BUILDING CODE
CONN	CONNECTION	GVL	GRAVEL	PRC	POINT OF REVERSE CURVE	UNK	UNKNOWN
CONST	CONSTRUCTION	HA	HAND AUGER	PRCST	PRECAST	UNO	UNLESS NOTED OTHERWISE
CONT	CONTINUOUS	HB	HOSE BIB	PREFAB	PREFABRICATED	USBR	UNITED STATES BUREAU OF RECLAMATION
COORD	COORDINATE	HDPE	HIGH DENSITY POLYETHYLENE	PRESS.	PRESSURE	VC	VERTICAL CURVE
COR	CORNER	HDW	HARDWARE	PRI	PRIMARY	V.C.&G.	VERTICAL CURVE AND GUTTER
CP	CONTROL POINTS	HDWL	HEADWALL	PROP	PROPERTY	VERT	VERTICAL
CPLG	COUPLING	HGL	HYDRAULIC GRADE LINE	PS	PUMP STATION	VOL	VOLUME
CT	COURT	HGT	HEIGHT	PSF	POUNDS PER SQUARE FOOT	VPI	VERTICAL POINT OF INTERSECTION
C TO C	CENTER TO CENTER	HH	HAND HOLE	PSI	POUNDS PER SQUARE INCH	VTR	VENT THRU ROOF
CTR	CENTER	HM	HOLLOW METAL	PSIG	POUNDS PER SQUARE INCH, GAUGE	VWC	VINYL WALL COVERING
CTR	CENTERED	HORIZ	HORIZONTAL	PT	POINT, POINT OF TANGENCY		
CU FT	CUBIC FOOT	HP	HORSEPOWER	PUE	PUBLIC UTILITY EASEMENT		
CU IN.	CUBIC INCH	HW	HIGH WATER	PV	PLUG VALVE	W/	WITH
CU YD	CUBIC YARD	HWY	HIGHWAY	PVC	POLYVINYL CHLORIDE	W	WATER, WEST
CULV	CULVERT	I&C	INSTRUMENTATION AND CONTROL	PVMT	PAVEMENT	WB	WESTBOUND
CV	CHECK VALVE	I.D.	INSIDE DIAMETER	PVT	POINT OF VERTICAL TANGENCY	WI	WROUGHT IRON
CWS	CHECKED WATER SURFACE	IE	INVERT ELEVATION	Q	FLOW RATE (CFS)	WM	WATER METER
		IF	INSIDE FACE	QDRNT	QUADRANT	WS	WATER STOP, WATER SURFACE
D/W	DRIVEWAY	IN.	INCH	QTY	QUANTITY	WSEL	WATER SURFACE ELEVATION
D	DEPTH	INSTL	INSTALL	R/W	RIGHT OF WAY	W SH ST	WEATHERING SHEET STEEL
DBA	DEFORMED BAR ANCHOR	INSTM	INSTRUMENTATION	R	RECORD	WSP	WELDED STEEL PIPE
DBL	DOUBLE	INSUL	INSULATION	RAD	RADIUS	WWM	WELDED WIRE MESH
DC	DEPRESSED CURB	INT	INTERIOR	RB	REBAR	WV	WATER VALVE
DEG	DEGREE	INV.	INVERT	RC	REINFORCED CONCRETE	X	ELECTRICAL TRANSFORMER
DEMO	DEMOLITION	IRR	IRRIGATION, IRRIGATION VALVE	R.C.&G.	ROLL CURB AND GUTTER	YD	YARD
DET	DETAIL			RCP	REINFORCED CONCRETE PIPE	YR	YEAR
DG	DOWN GUY	JT	JOINT	RD	ROAD		
DIA	DIAMETER	L	LENGTH	RDCR	REDUCER		
DIAG	DIAGONAL	LAT	LATERAL	REF	REFER, REFERENCE		
DIM	DIMENSION	LB, LBS	POUND, POUNDS	REHAB	REHABILITATED, REHABILITATION		
DIP	DUCTILE IRON PIPE	LB/CU FT	POUNDS PER CUBIC FOOT	REINF	REINFORCE, REINFORCED, REINFORCING		
DIR	DIRECTION	LF	LINEAR FEET	REQD	REQUIRED		
DIS	DISTANCE	LG	LONG	RESIL	RESILIENT		
DISCH	DISCHARGE	LH	LEFT HAND	RH	ROD HOLE		
DN	DOWN	LN	LANE	RM	ROOM		
DOI	U.S. DEPARTMENT OF THE INTERIOR	LONG	LONGITUDINAL	RR	RAILROAD		
DR	DRIVE	LR	LONG RADIUS	RST	REINFORCING STEEL		
DRW	DROUGHT RELIEF WELL	LS	LAND SURVEYOR	RTN	RETURN		
DWG, DWGS	DRAWING, DRAWINGS	LT	LIGHT				
DWS	DESIGN WATER SURFACE						

DRAWING DESIGNATION

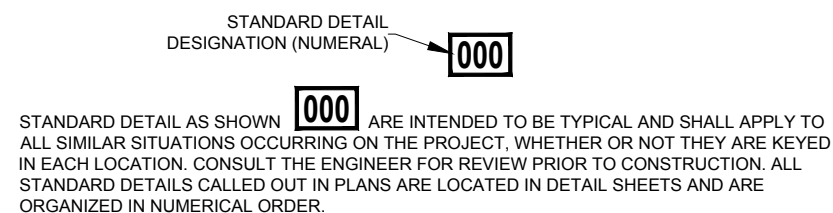
C-2
DISCIPLINE _____ DRAWING NUMBER
(SEE TABLE)

LETTER	DISCIPLINE
C	CIVIL
DX	STANDARD DETAILS (X=DISCIPLINE)
E	ELECTRICAL
G	GENERAL
P	PLAN AND PROFILE
SP	SITE PLAN
S	STRUCTURAL

SECTION AND DETAIL STANDARDS



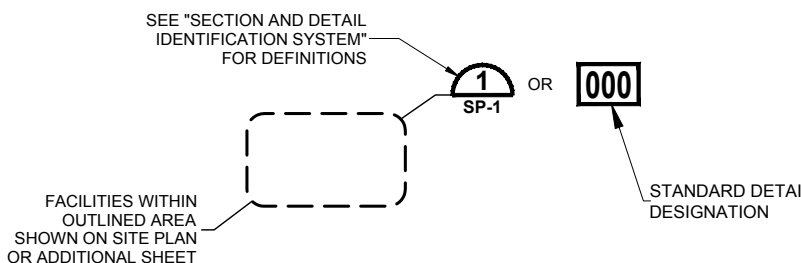
STANDARD DETAILS DESIGNATION



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.

SITE PLAN / STANDARD DETAIL DESIGNATION



Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

REV.	DATE	REVISION DESCRIPTION	BY	<p>GEORGE CAIRO ENGINEERING, INC. STAPLEY CENTER 1630 S. STAPLEY DR., SUITE 117 MESA, ARIZONA 85204 WWW.GCAIROINC.COM</p>		DESIGNED BY: R. RILEY	<p>MARICOPA WATER DISTRICT P.O. BOX 900 WADDELL, ARIZONA 85355 (623) 546-8266</p>	<p>MCDOT OLIVE AVENUE LATERAL 9 AND LATERAL 9 SUBLATERAL 1 SARIVAL AVENUE TO REEMS ROAD (MCDOT TT0562) WADDELL, ARIZONA</p>	<p>ABBREVIATIONS AND DRAWING DETAIL DESIGNATIONS</p>	<p>G - 5</p>
						DRAWN BY: B. JONES				
						APPROVED BY: G. CAIRO				
						DRAWING: MWD-51				
						PLOT DATE: DEC, 2020				

LEGEND

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

SURVEY CONTROL

BENCHMARK

FOUND 1,195' WEST OF SARIVAL AVENUE SECTION LINE AND 350' SOUTH OF OLIVE AVENUE SECTION LINE 2" ALUM CAP ON 1/2" REBAR STAMPED C.P. 103

NORTHING: 833555.933
EASTING: 548649.536

ELEV = 1,156.27 FEET NAVD 88 DATUM

FOUND 2,760' FEET NAVD 88 DATUM

FOUND 2,760' EAST OF REEMS SECTION LINE AND 1,310' SOUTH OF OLIVE AVENUE SECTION LINE 2" ALUM CAP ON 1/2" REBAR STAMPED C.P. 104

NORTHING: 382461.495
EASTING: 557483.141

NOTE: ALL INFORMATION REFERENCED FROM TYLIN INTERNATIONAL OLIVE AVENUE SARIVAL AVENUE TO REEMS ROAD PROJECT NO. TT0562 PLANS. BENCHMARK REFERENCE ON SHEET 2 OF 105, GENERAL NOTES. CONTROL POINTS REFERENCE ON SHEET 11 OF 105, GEOMETRIC CONTROL.

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

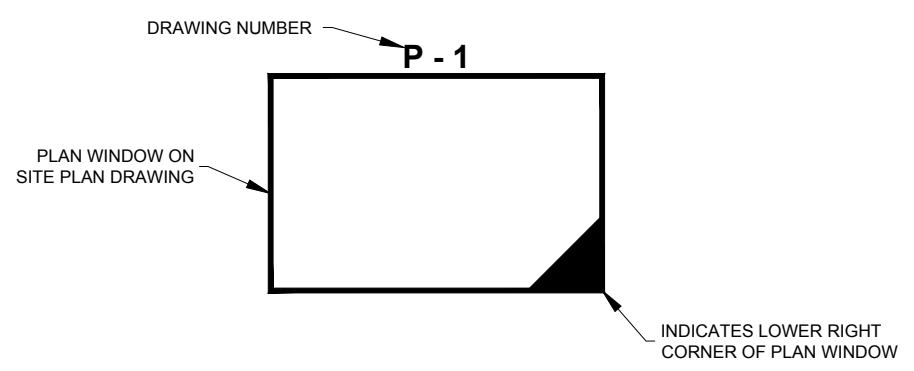
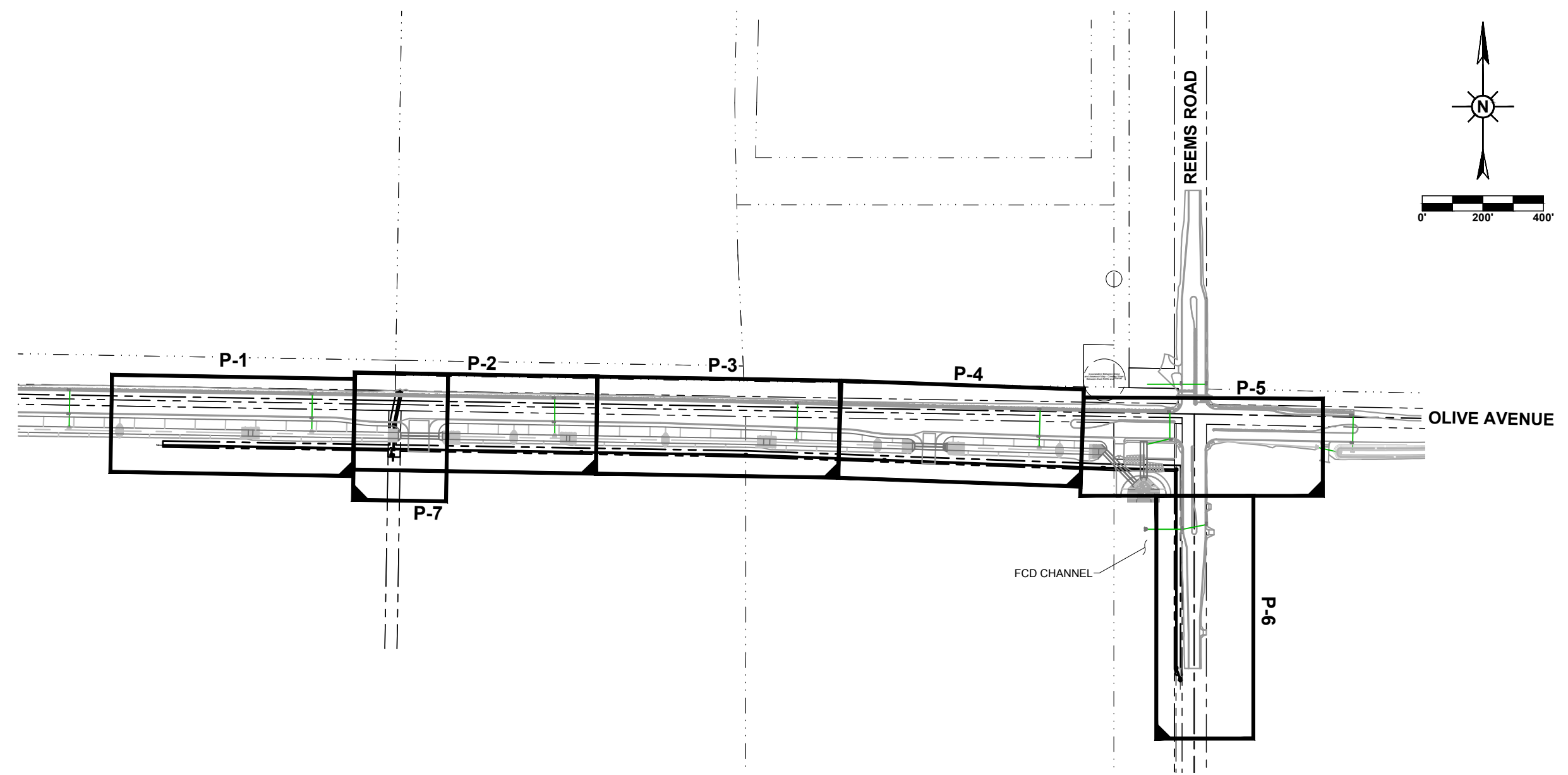
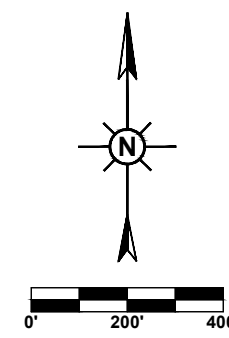
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**LEGEND AND SURVEY
CONTROL**

G - 6

Z:\GCE Projects\MWD-51\dwg\01_MWD-51_G.dwg 12/04/20 - 3:15pm



REV.	DATE	REVISION DESCRIPTION	BY


GEORGE CAIRO ENGINEERING, INC.
 STAPLEY CENTER
 1630 S. STAPLEY DR., SUITE 117
 MESA, ARIZONA 85204
 WWW.GCAIROINC.COM



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

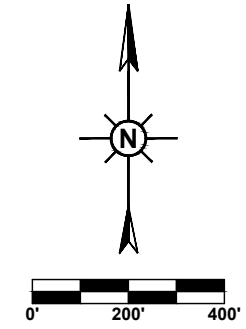
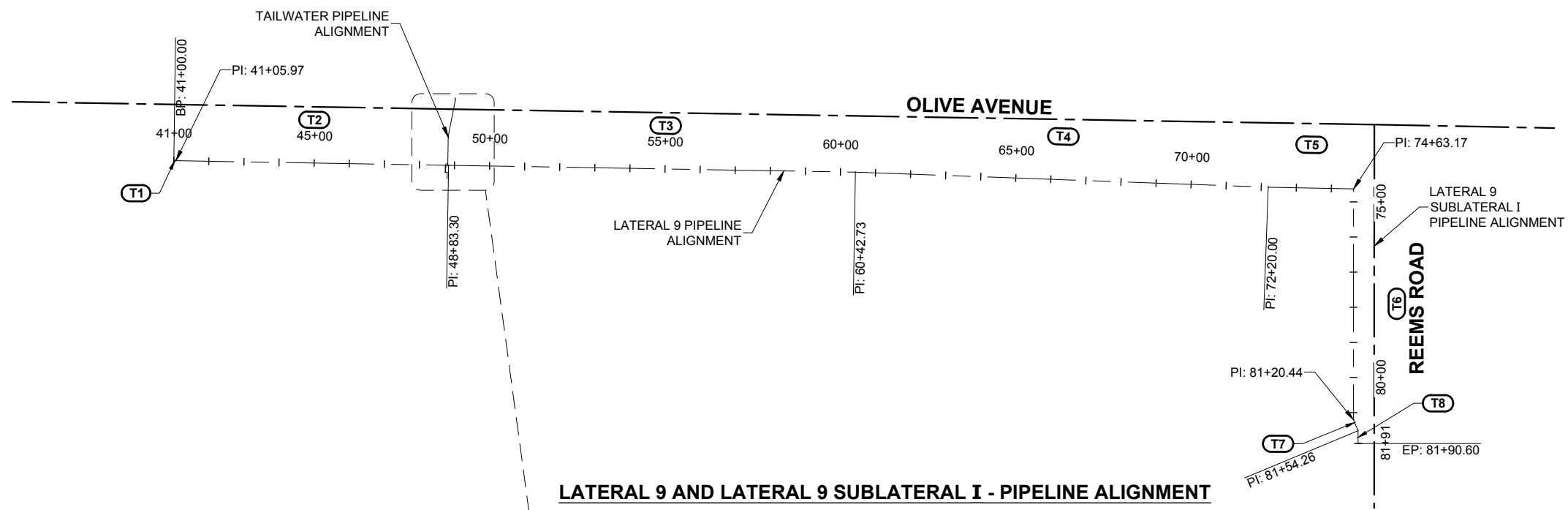

MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL 1
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

KEY PLAN

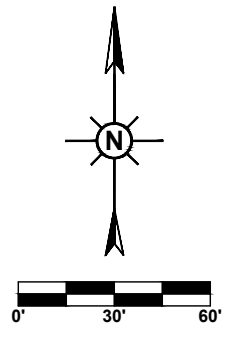
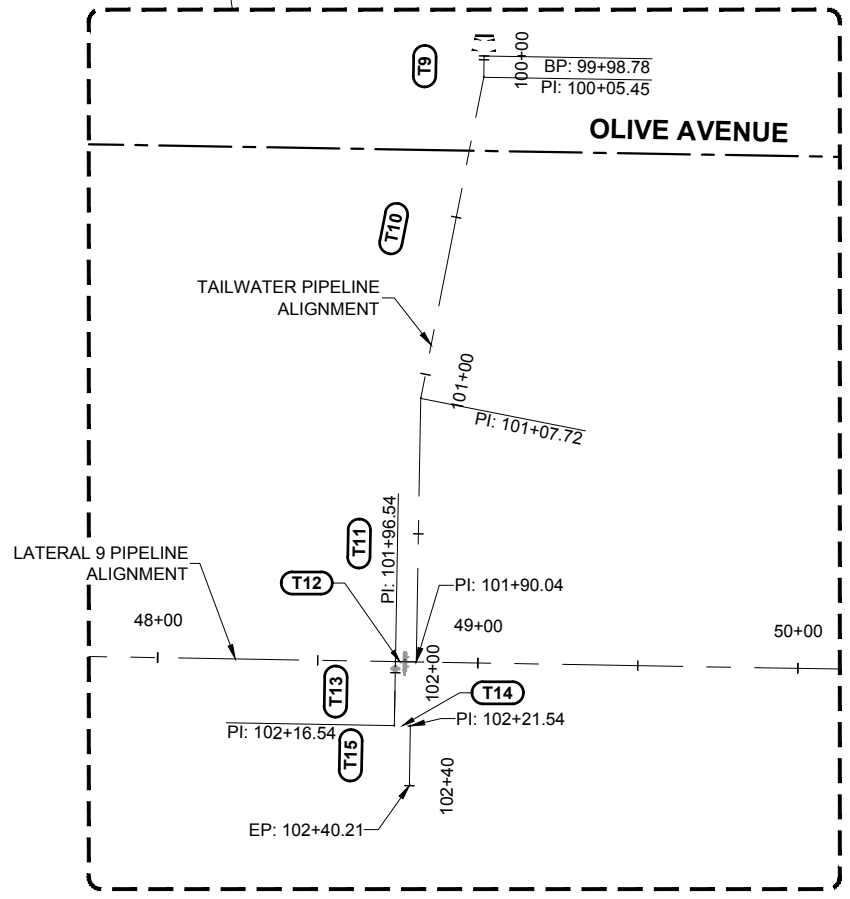
G - 7

Z:\GCE Projects\MWD-51\dwg\01_MWD-51_G.dwg 12/04/20 - 3:15pm



LATERAL 9 & LATERAL 9 SUBLATERAL I COORDINATE TABLE				
TANGENT #	BEARING	DISTANCE	START POINT (N, E)	END POINT (N, E)
T1	S 89°14'04" E	5.97'	(383720.91,551302.07)	(383720.83,551308.04)
T2	S 89°02'06" E	777.33'	(383720.83,551308.04)	(383707.73,552085.26)
T3	S 89°02'25" E	1159.43'	(383707.73,552085.26)	(383688.31,553244.52)
T4	S 87°54'30" E	1177.27'	(383688.31,553244.52)	(383645.35,554421.01)
T5	S 88°52'02" E	243.17'	(383645.35,554421.01)	(383640.54,554664.14)
T6	S 00°00'58" W	657.26'	(383640.54,554664.14)	(382983.28,554663.95)
T7	S 22°35'03" E	33.82'	(382983.28,554663.95)	(382952.05,554676.94)
T8	S 00°00'58" W	36.34'	(382952.05,554676.94)	(382915.71,554676.93)

LATERAL 9 AND LATERAL 9 SUBLATERAL I - PIPELINE ALIGNMENT



TAILWATER COORDINATE TABLE				
TANGENT #	BEARING	DISTANCE	START POINT (N, E)	END POINT (N, E)
T9	S 00°56'49" W	6.67'	(383897.11,552103.94)	(383890.44,552103.83)
T10	S 11°06'02" W	102.27'	(383890.44,552103.83)	(383790.09,552084.14)
T11	S 00°57'54" W	82.32'	(383790.09,552084.14)	(383707.78,552082.75)
T12	N 89°02'06" W	6.50'	(383707.78,552082.75)	(383707.89,552076.25)
T13	S 00°57'37" W	20.00'	(383707.89,552076.25)	(383687.89,552075.92)
T14	S 89°03'48" E	5.00'	(383687.89,552075.92)	(383687.80,552080.92)
T15	S 00°57'34" W	18.67'	(383687.80,552080.92)	(383669.14,552080.60)

TAILWATER - PIPELINE ALIGNMENT

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

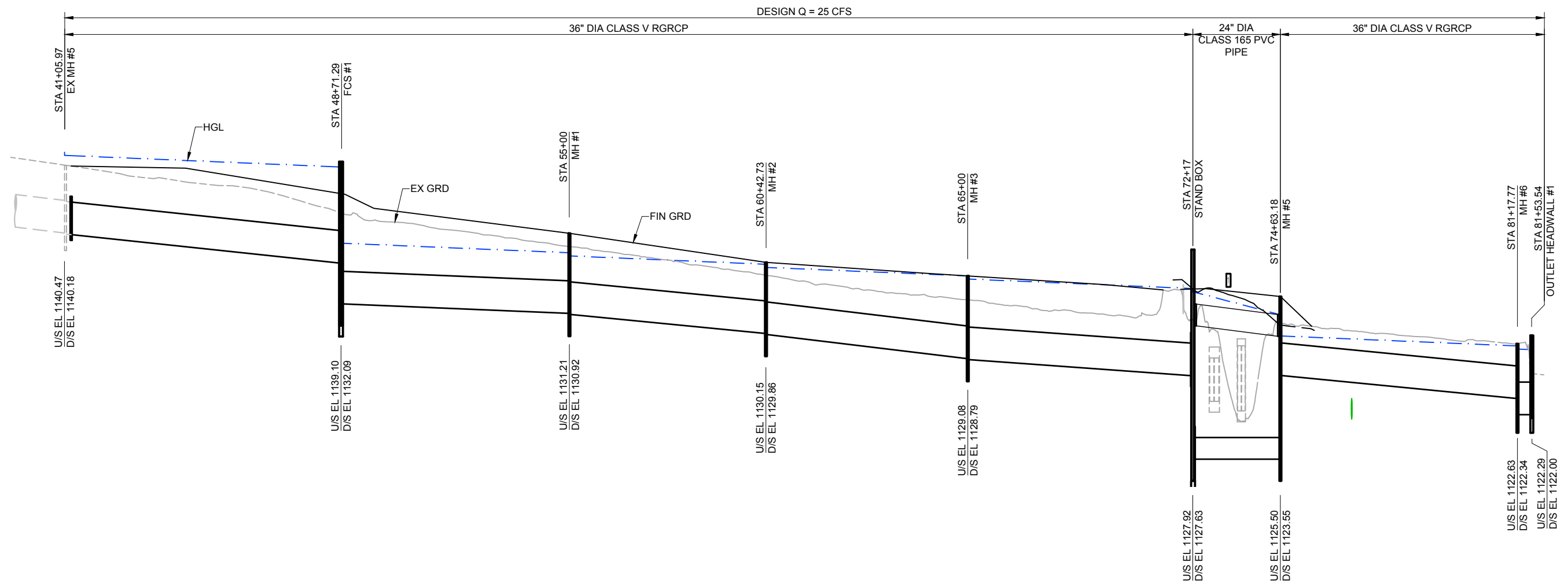
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL I
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**GEOMETRIC LAYOUT PLAN
AND COORDINATE
DATA TABLES**

G - 8

Z:\GCE Projects\MWD-51\dwg\01_MWD-51_G.dwg 12/04/20 - 3:15pm



LATERAL 9 AND LATERAL 9 SUBLATERAL I HYDRAULIC PROFILE
NTS

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

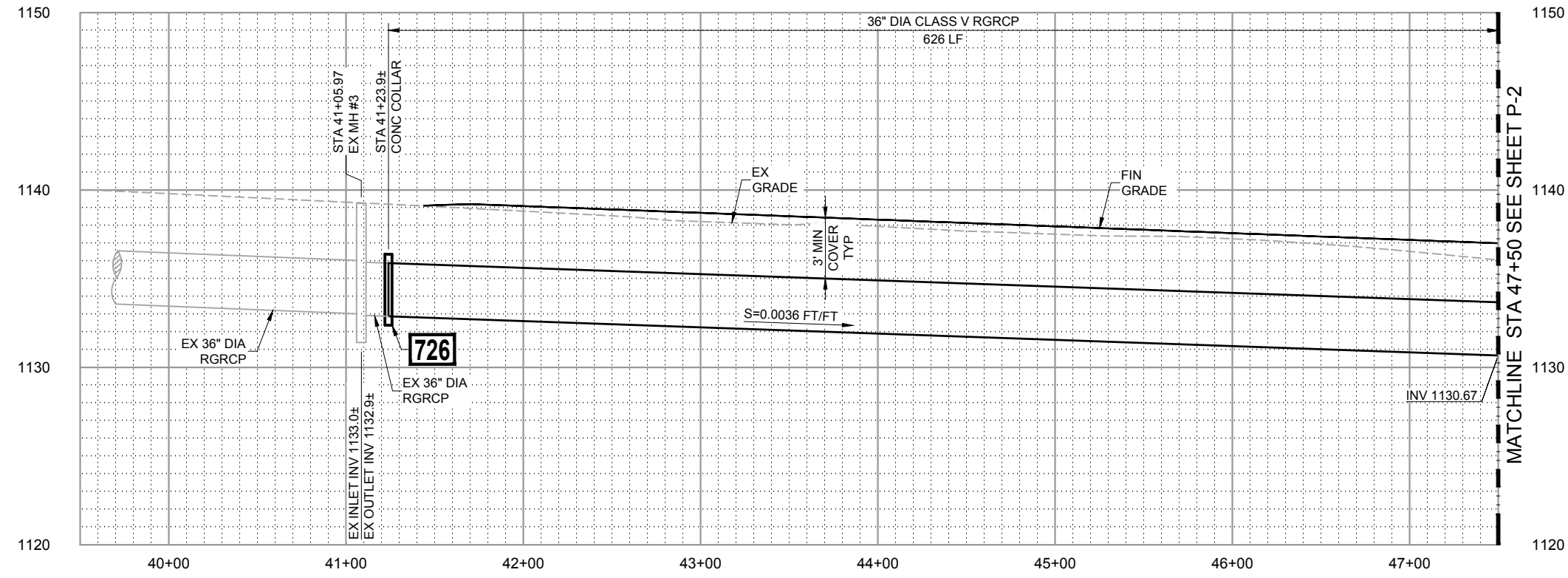
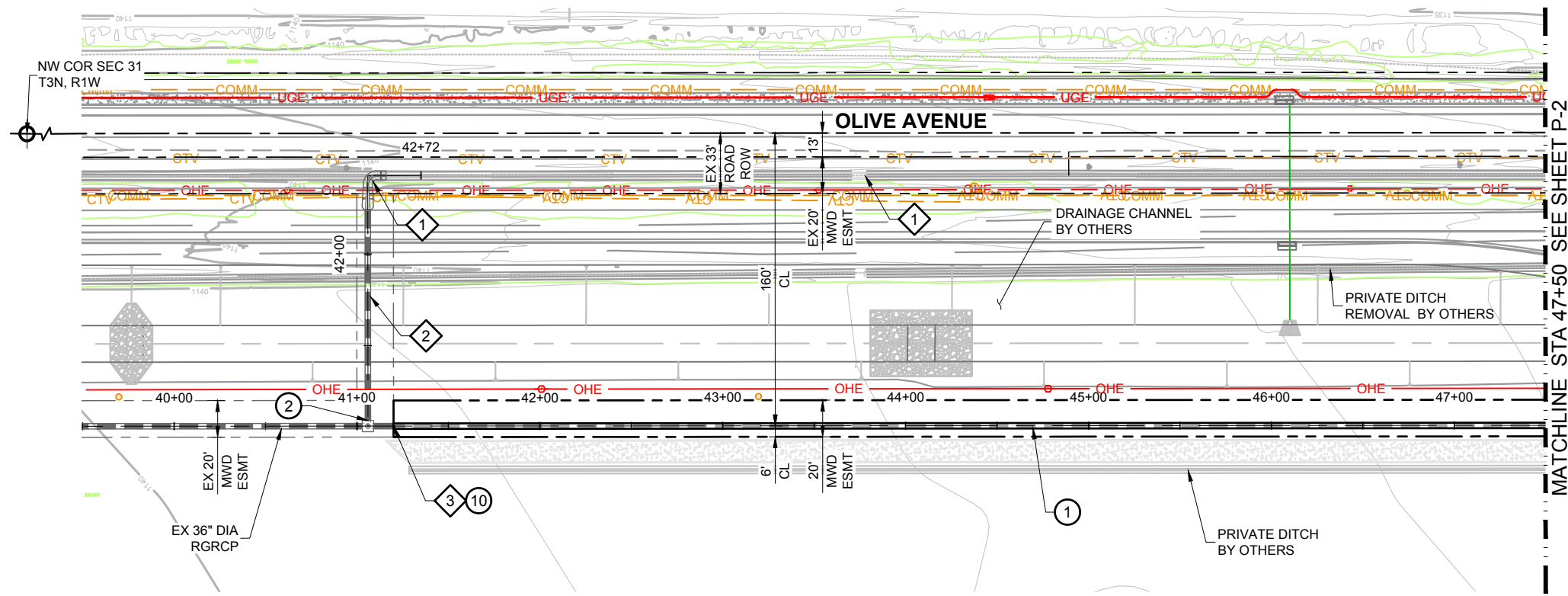
**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL I
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**HYDRAULIC PROFILE
LATERAL 9 AND
LATERAL 9
SUBLATERAL I**

G - 9

Z:\GCE Projects\MWD-51\dwg\01_MWD-51_Gawporonad 12/04/20 - 3:15pm

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONCRETE LINED DITCH	600	LF
2	CONCRETE PIPE	110	EA
3	PIPE PLUG	1	EA

PHASE 1 CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	626	LF
2	541 CONSTRUCT 30" DIA PIPE PLUG ON NORTH PIPE STICK OF EX MH	1	EA
10	726 CONCRETE PIPE COLLAR EXISTING 36" DIA PIPE TO NEW 36" DIA PIPE	1	EA

- GENERAL NOTES**
- TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 - FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 - FOR PIPELINE ALIGNMENT INFORMATION SEE G-8.
 - CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 - CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT OR ROAD RIGHT-OF-WAY PRIOR TO CONSTRUCTION.

HORIZ SCALE: 0' 40' 80'

VERT SCALE: 0' 4' 8'

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

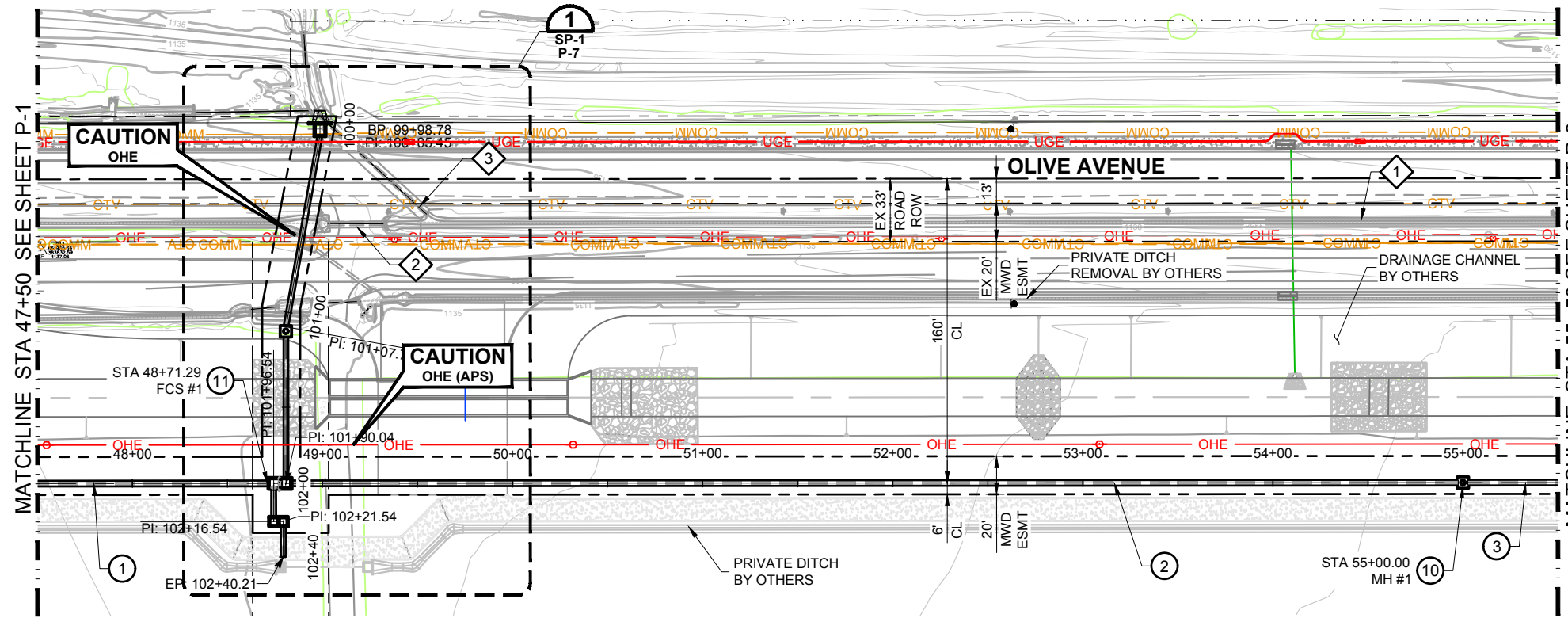
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

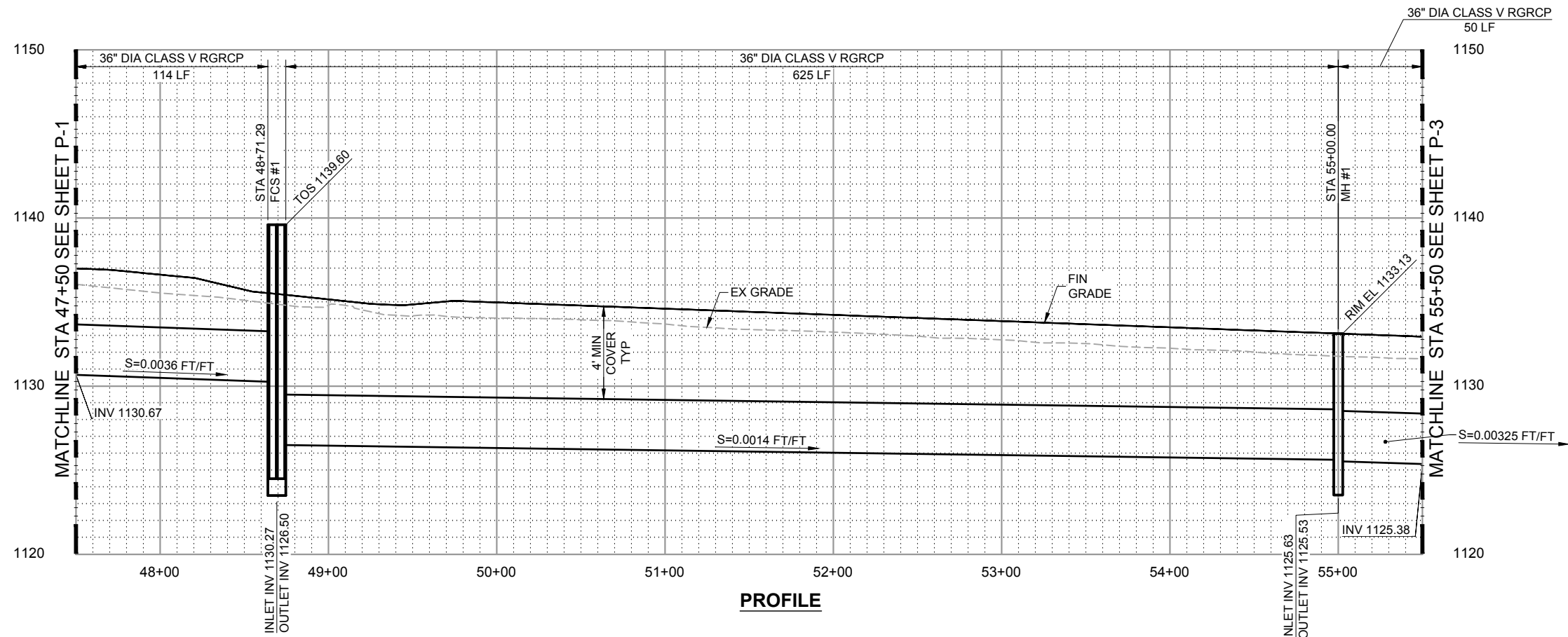
**LATERAL 9
PLAN AND PROFILE
STA POB TO STA 47+50**

P - 1

Z:\GCE Projects\MWD-51\dwg\02_MWD-51_P.dwg 12/04/20 - 3:15pm



PLAN



PROFILE

REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONCRETE LINED DITCH	750	LF
2	30" DIA PVC PIPE	30	LF
3	24" DIA PVC PIPE	77	LF

PHASE 1 CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	114	LF
2	INSTALL 36" DIA CLASS V RGRCP	625	LF
3	INSTALL 36" DIA CLASS V RGRCP	50	LF
11	CONSTRUCT FLOW CONTROL STRUCTURE #1. SEE S-1 SERIES.	1	EA
10	CONSTRUCT MANHOLE STRUCTURE #1. SEE SHEET S-3.	1	EA

- GENERAL NOTES**
1. TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 2. FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 3. FOR PIPELINE ALIGNMENT INFORMATION SEE G-8.
 4. CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 5. CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT OR ROAD RIGHT-OF-WAY PRIOR TO CONSTRUCTION.

HORIZ SCALE: 0' 40' 80'

VERT SCALE: 0' 4' 8'

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

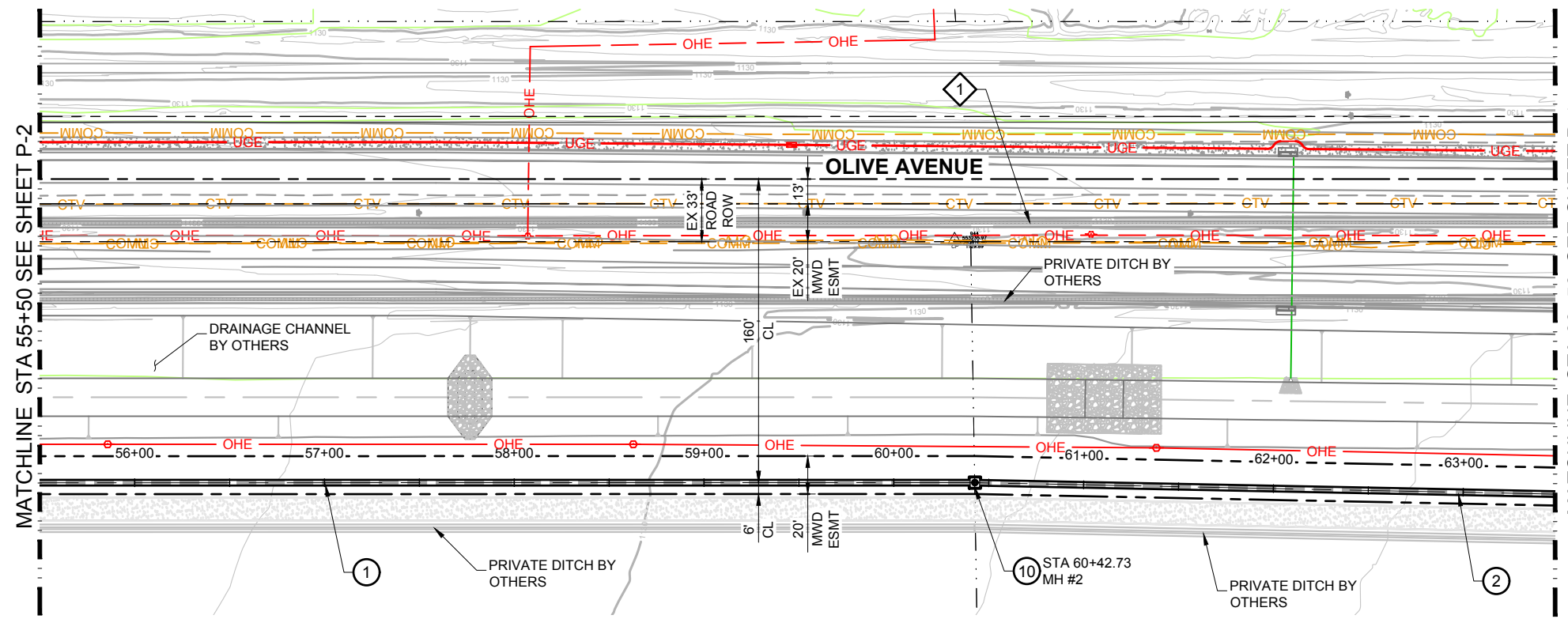
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

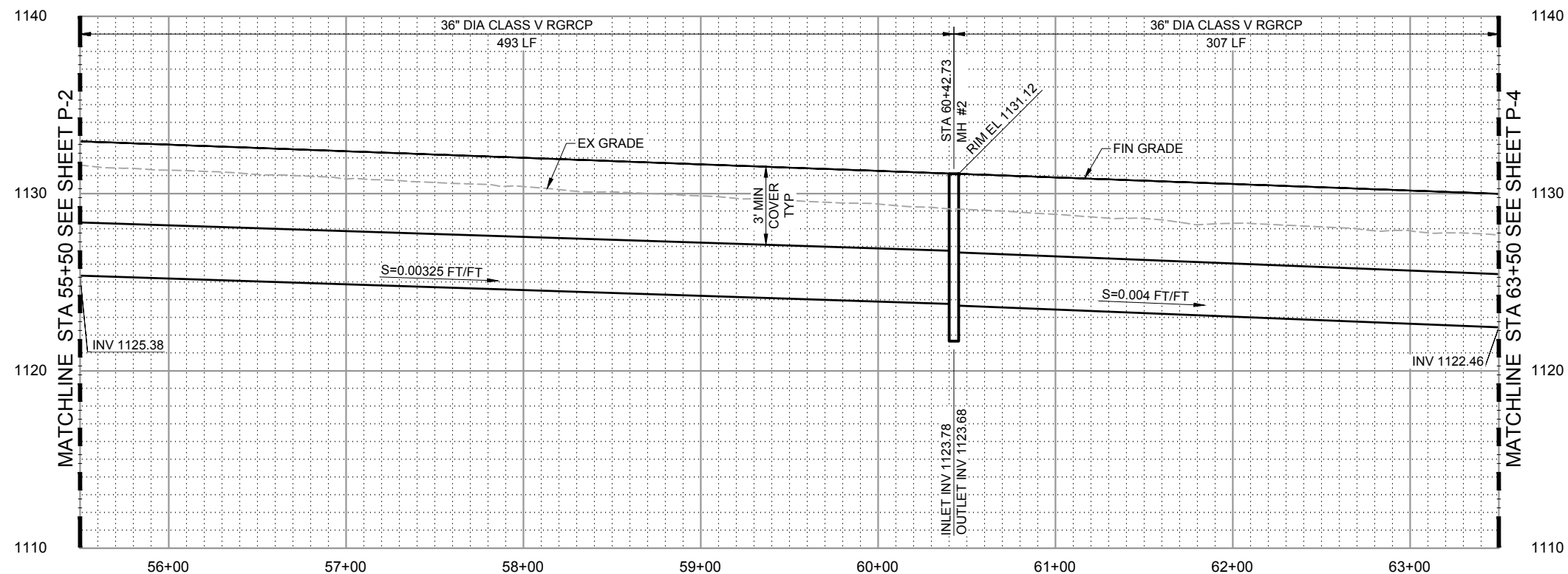
**LATERAL 9
PLAN AND PROFILE
STA 47+50 TO STA 55+50**

P - 2

Z:\GCE Projects\MWD-51\dwg\02_MWD-51_P.dwg 12/04/20 - 3:15pm



PLAN



PROFILE

REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONCRETE LINED DITCH	800	LF

PHASE 1 CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	493	LF
2	INSTALL 36" DIA CLASS V RGRCP	307	LF
10	CONSTRUCT MANHOLE STRUCTURE #2. SEE S-3.	1	EA

- GENERAL NOTES**
- TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 - FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 - FOR PIPELINE ALIGNMENT INFORMATION SEE G-8.
 - CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 - CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT OR ROAD RIGHT-OF-WAY PRIOR TO CONSTRUCTION.

HORIZ SCALE: 0' 40' 80'

VERT SCALE: 0' 4' 8'

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

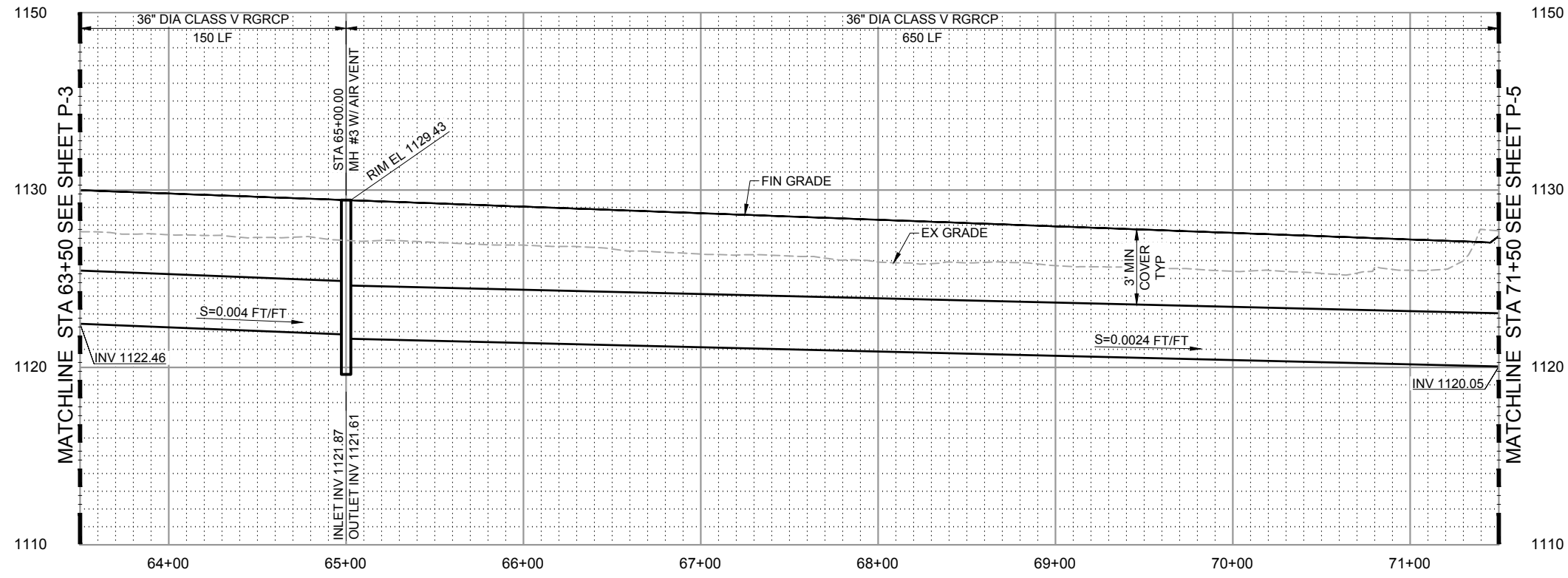
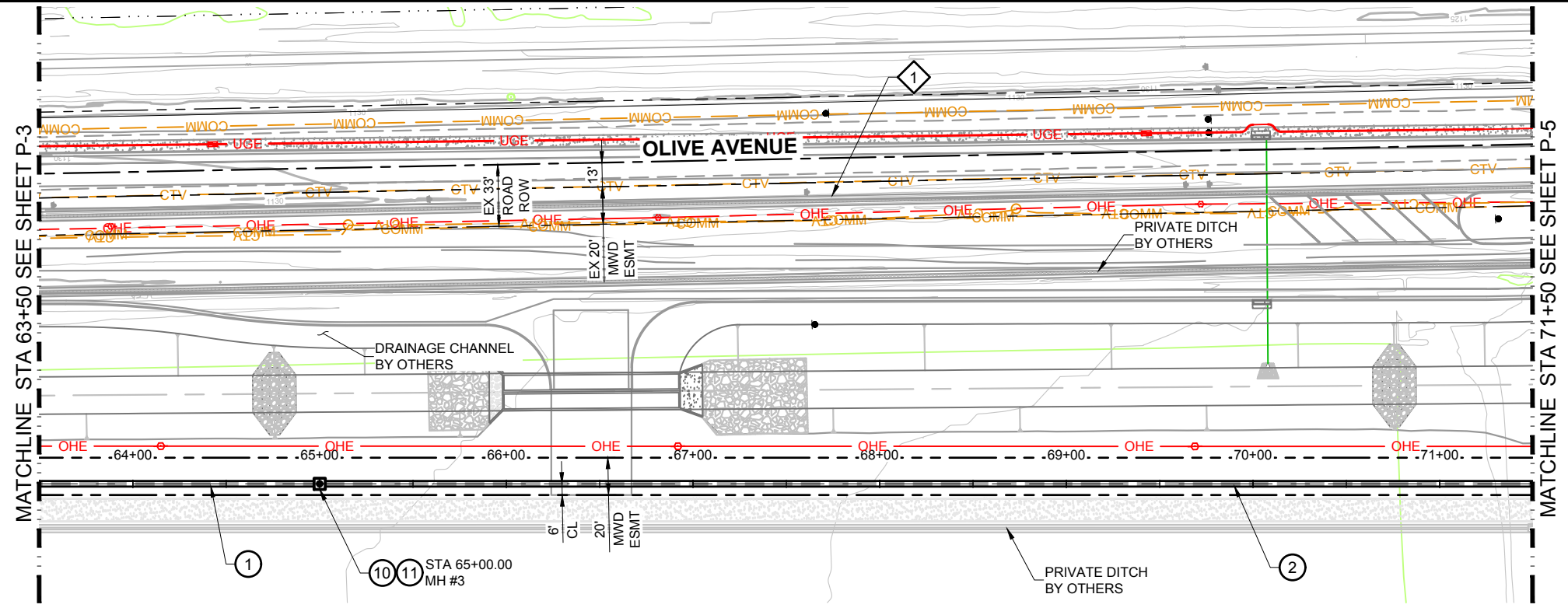
**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**LATERAL 9
PLAN AND PROFILE
STA 55+50 TO STA 63+50**

P - 3

Z:\GCE Projects\MWD-51\dwg\02_MWD-51_P.dwg 12/04/20 - 3:15pm

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONCRETE LINED DITCH	800	LF

PHASE 1 CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	150	LF
2	INSTALL 36" DIA CLASS V RGRCP	650	LF
10	CONSTRUCT MANHOLE STRUCTURE #3. SEE S-3.	1	EA
11	532 2" AIR RELEASE/VACUUM VALVE. ARI MODEL D-040C	1	EA

- GENERAL NOTES**
- TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 - FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 - FOR PIPELINE ALIGNMENT INFORMATION SEE G-8.
 - CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 - CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT OR ROAD RIGHT-OF-WAY PRIOR TO CONSTRUCTION.

HORIZ SCALE: 0' 40' 80'

VERT SCALE: 0' 4' 8'

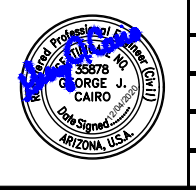
Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

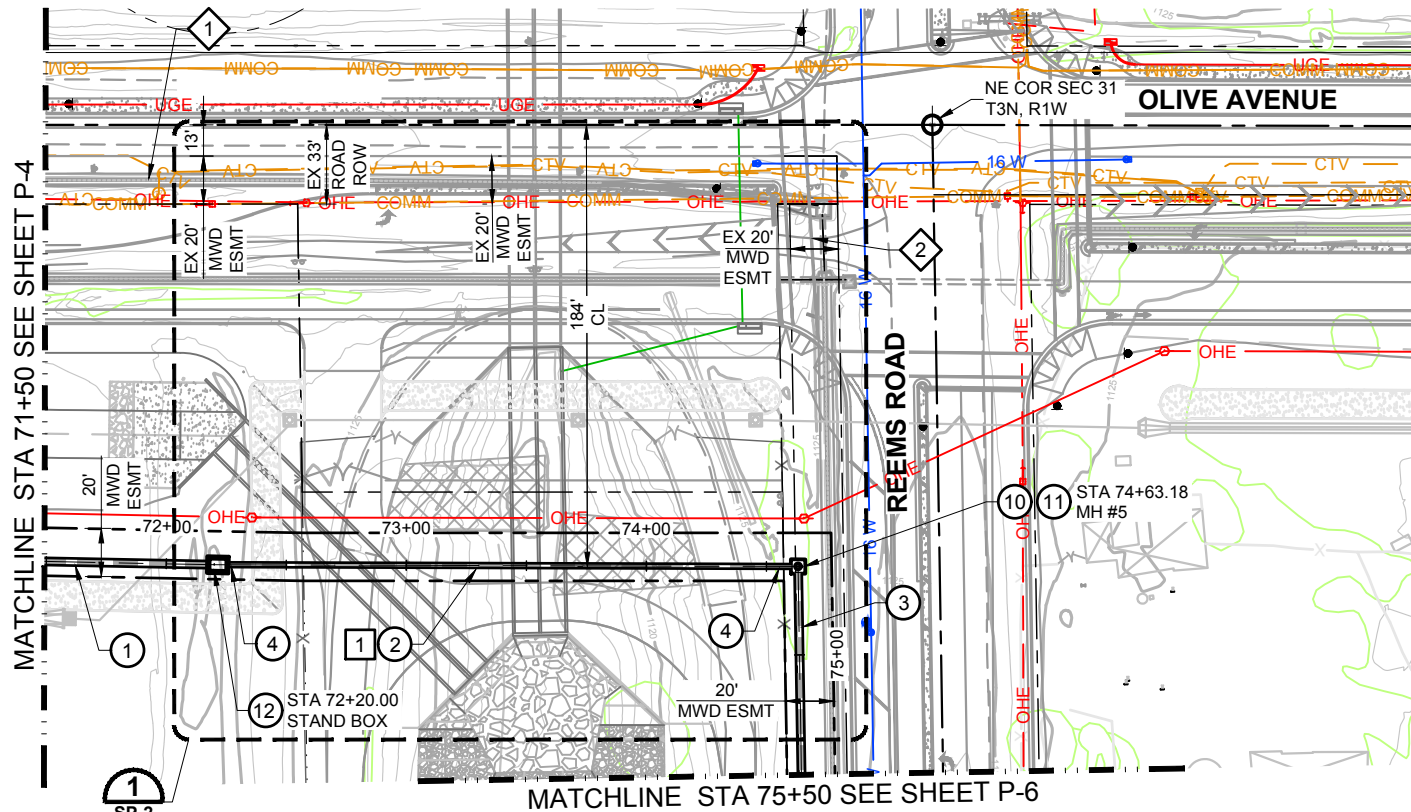
**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**LATERAL 9
PLAN AND PROFILE
STA 63+50 TO STA 71+50**

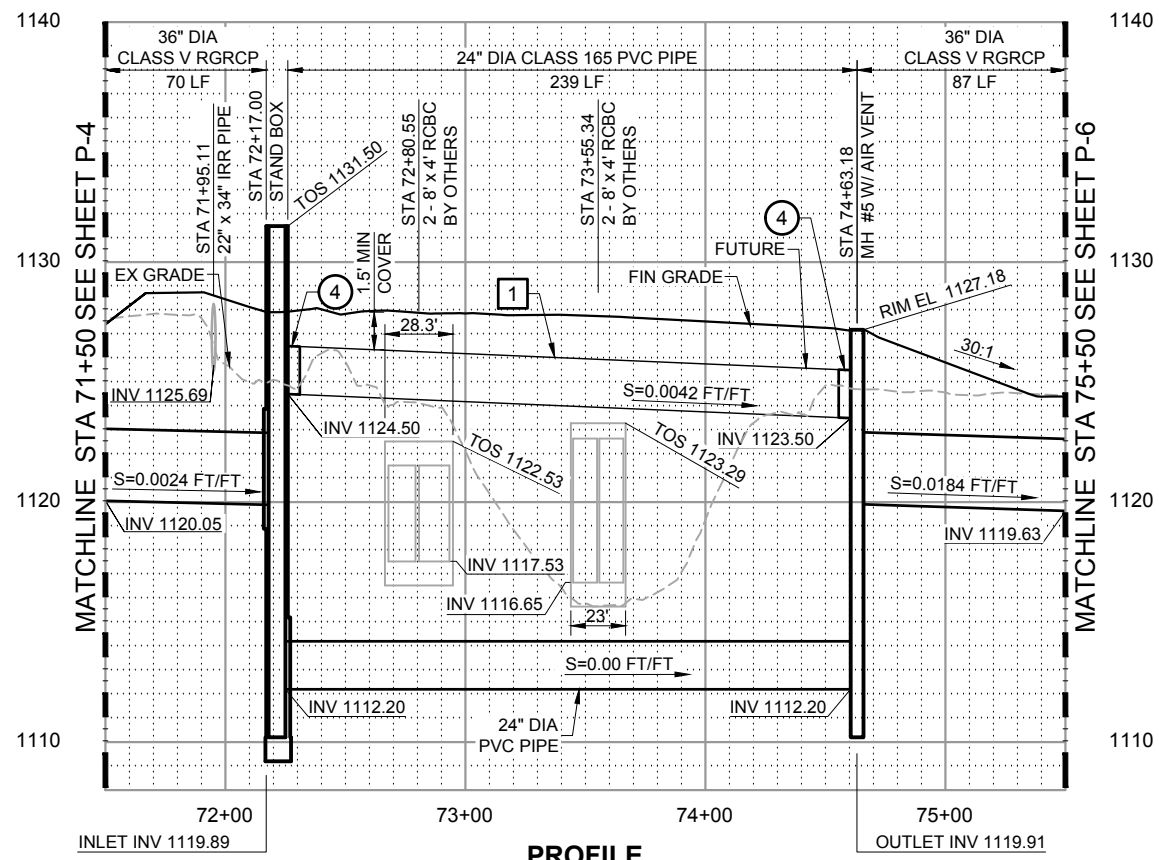
P - 4

Z:\GCE Projects\MWD-51\dwg\02_MWD-51_P.dwg 12/04/20 - 3:16pm

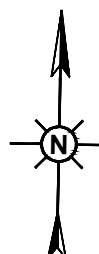
REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



PLAN



PROFILE



REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONCRETE LINED DITCH	490	LF
2	CONCRETE PIPE	28	LF

PHASE 1 CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	70	LF
2	INSTALL 24" DIA CLASS 165 PVC PIPE	239	LF
3	INSTALL 36" DIA CLASS V RGRCP	87	LF
4	INSTALL 24" DIA CLASS 165 PVC PIPE 10 LF AND PIPE PLUG. SEE PHASE 2 CONSTRUCTION NOTES	2	EA
10	CONSTRUCT MANHOLE STRUCTURE #5. SEE S-5 SERIES.	1	EA
11	532 2" AIR RELEASE/VACUUM VALVE. ARI MODEL D-040C	1	EA
12	CONSTRUCT STAND BOX STRUCTURE. SEE S-4	1	EA

PHASE 2 CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 24" DIA CLASS 165 PVC PIPE. REMOVE PIPE PLUGS TO INSTALL PVC PIPELINE	239	LF

- GENERAL NOTES**
- TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 - FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 - FOR PIPELINE ALIGNMENT INFORMATION SEE G-8.
 - CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 - CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT PRIOR TO CONSTRUCTION.

HORIZ SCALE: 1" = 40'

VERT SCALE: 1" = 4'

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

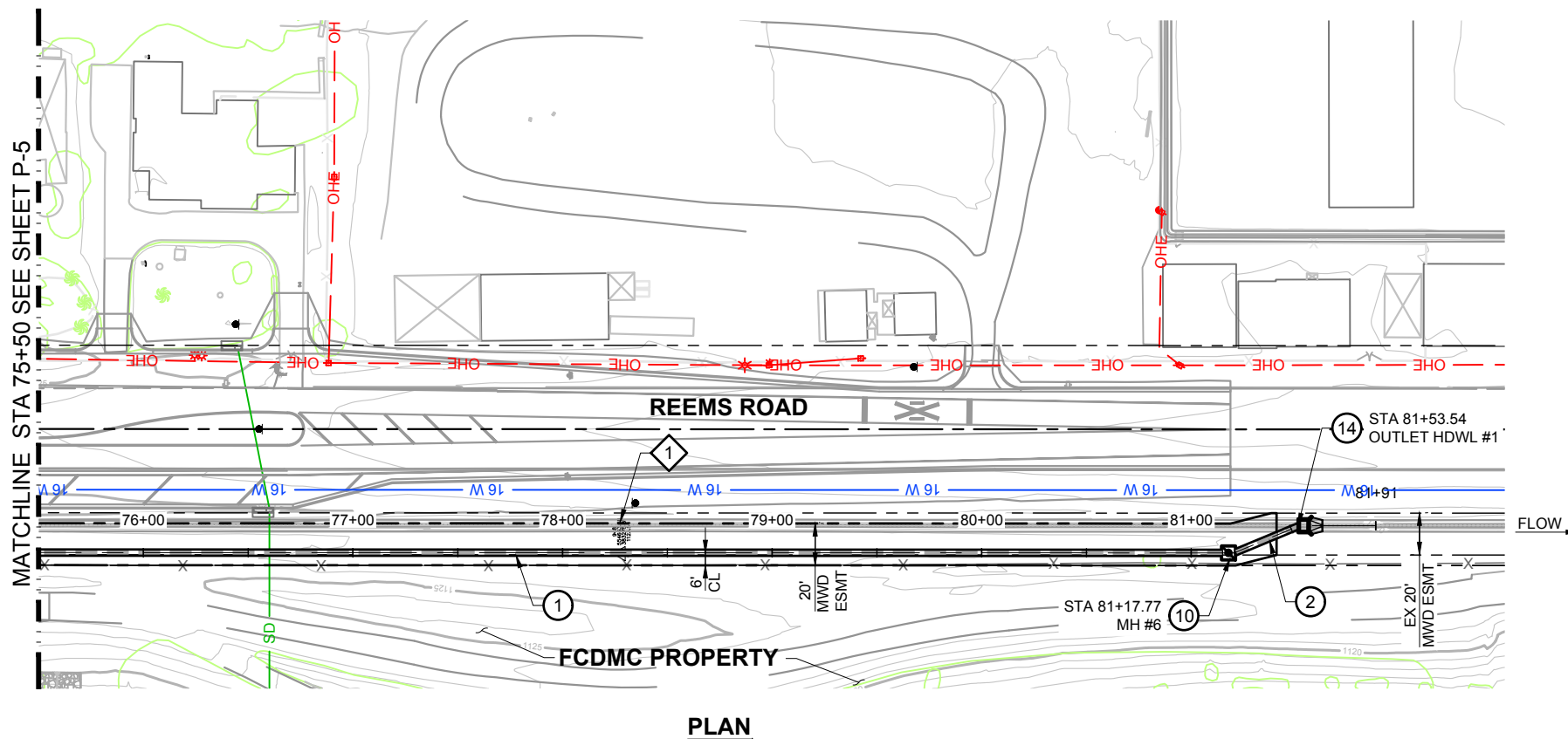
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

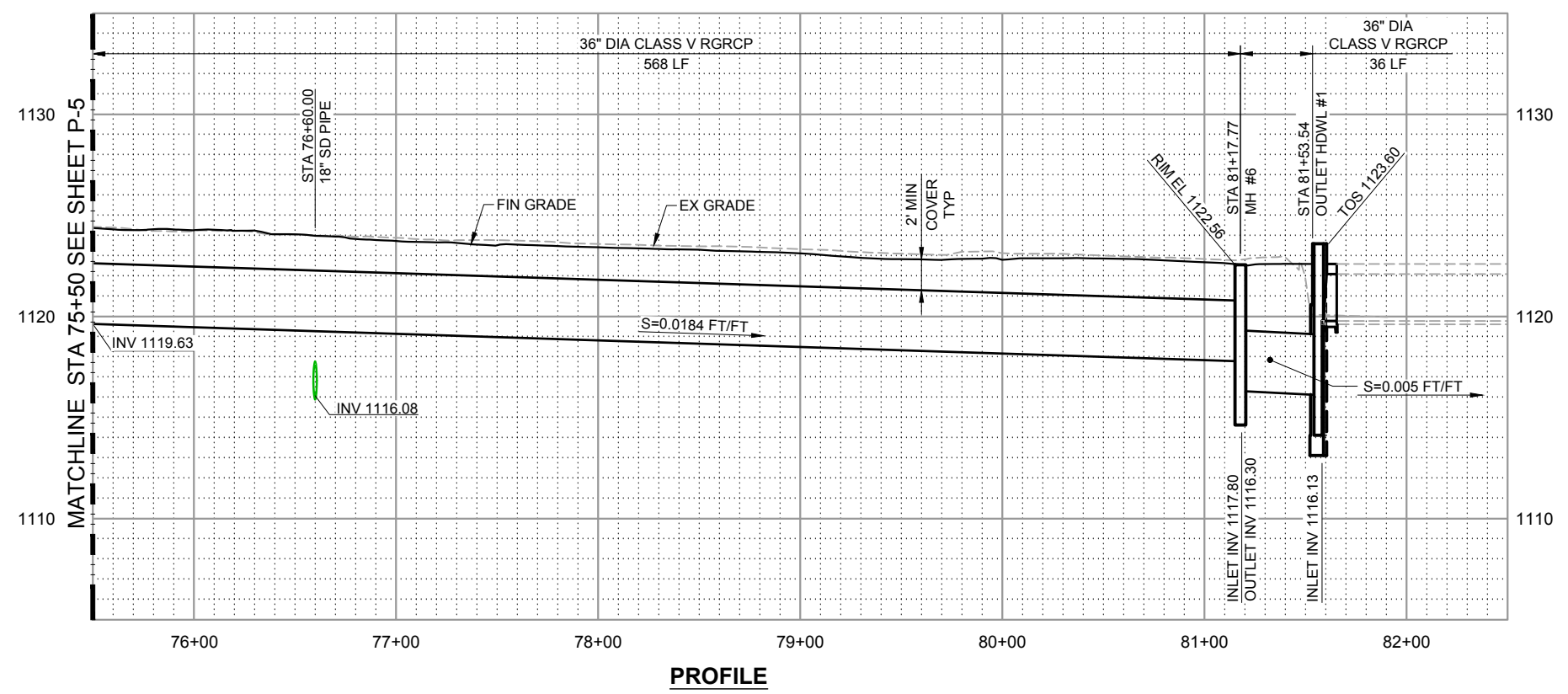
**LATERAL 9
PLAN AND PROFILE
STA 71+50 TO STA 75+50**

P - 5

Z:\GCE Projects\MWD-51\dwg\02_MWD-51_P.dwg 12/04/20 - 3:16pm



PLAN



PROFILE

REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	CONCRETE LINED DITCH	610	LF

PHASE 1 CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
1	INSTALL 36" DIA CLASS V RGRCP	568	LF
2	INSTALL 36" DIA CLASS V RGRCP	36	LF
10	CONSTRUCT MANHOLE STRUCTURE. SEE SHEET S-3.	1	EA
14	CONSTRUCT OUTLET HEADWALL STRUCTURE. SEE S-6 SERIES	1	EA

- GENERAL NOTES**
1. TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 2. FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 3. FOR PIPELINE ALIGNMENT INFORMATION SEE G-8.
 4. CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 5. CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT PRIOR TO CONSTRUCTION.

HORIZ SCALE: 1" = 40'

VERT SCALE: 1" = 4'

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

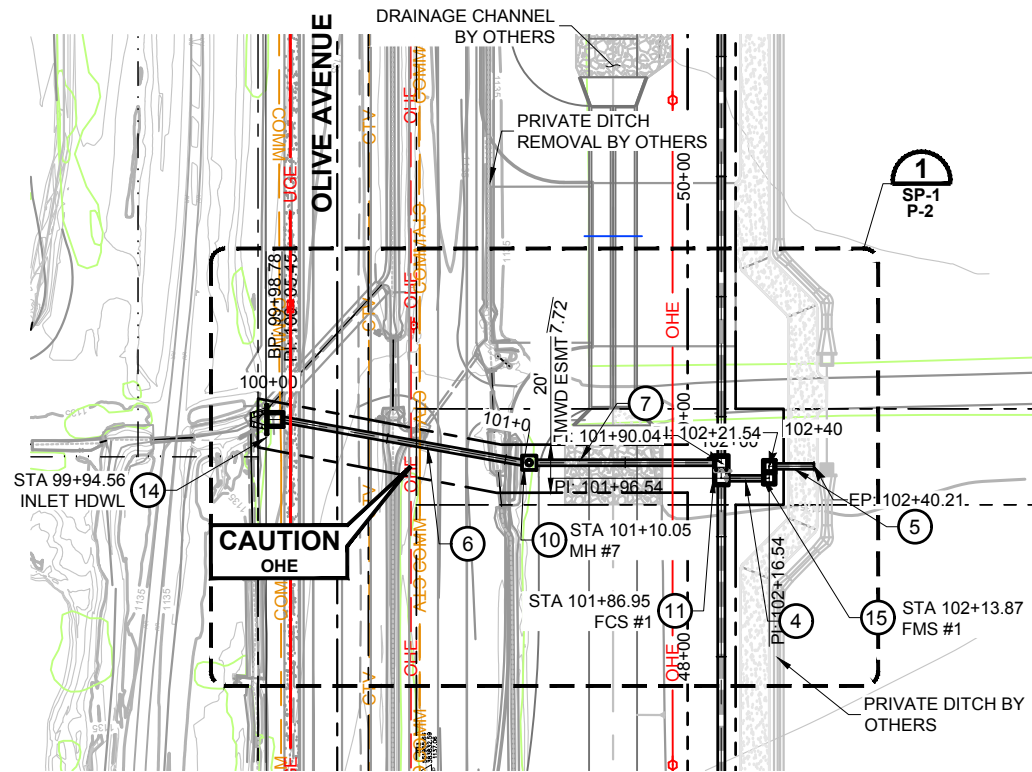
**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**LATERAL 9
PLAN AND PROFILE
STA 75+50 TO POE**

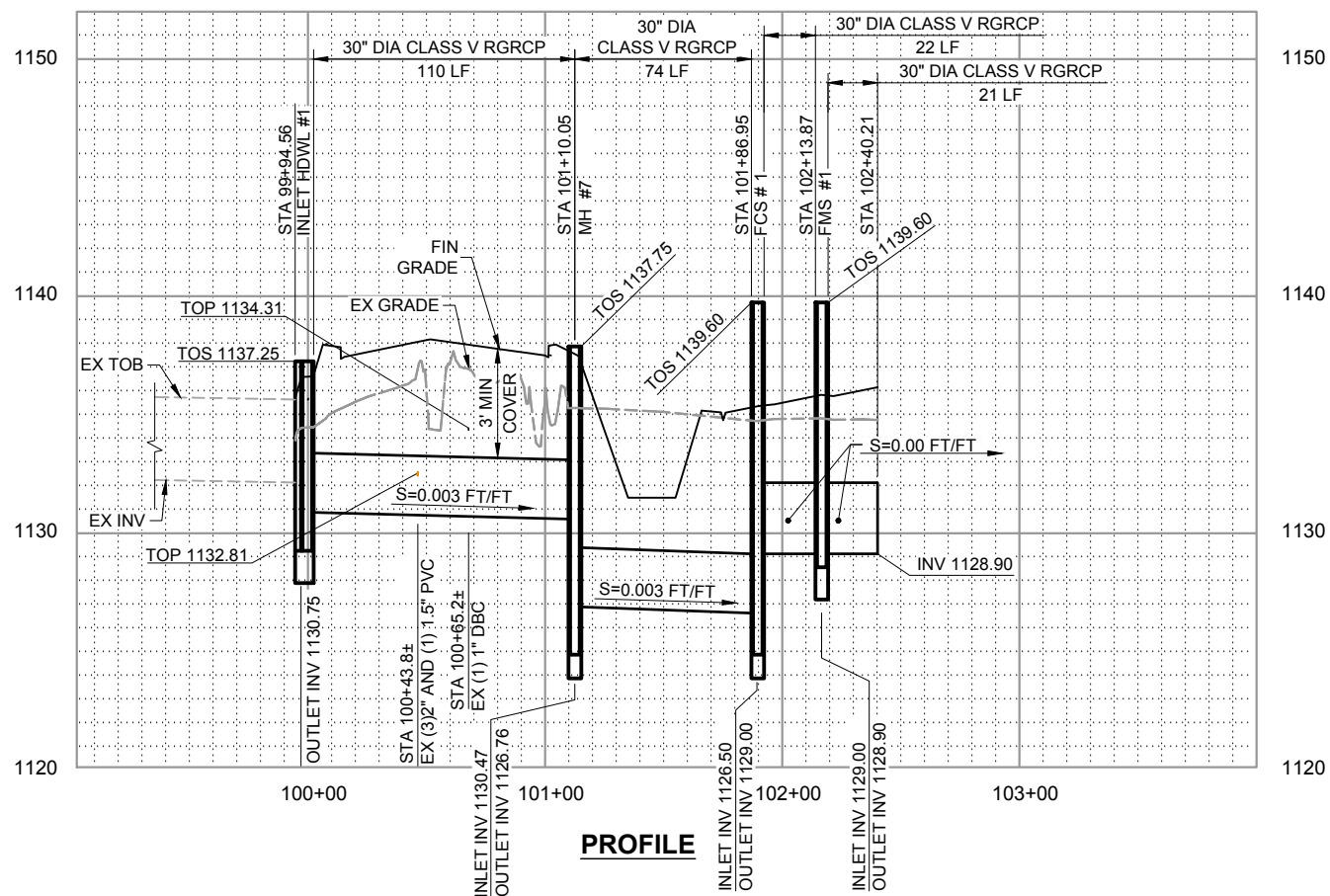
P - 6

Z:\GCE Projects\MWD-51\dwg\02_MWD-51_P.dwg 12/04/20 - 3:16pm

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.



PLAN



PROFILE

REMOVAL NOTES			
NO.	DESCRIPTION	QTY	UNIT

PHASE 1 CONSTRUCTION NOTES			
NO.	DESCRIPTION	QTY	UNIT
4	INSTALL 30" DIA CLASS V RGRCP	22	LF
5	INSTALL 30" DIA CLASS V RGRCP	21	LF
6	INSTALL 30" DIA CLASS V RGRCP	110	LF
7	INSTALL 30" DIA CLASS V RGRCP	74	LF
10	CONSTRUCT MANHOLE STRUCTURE #7. SEE S-3.	1	EA
11	CONSTRUCT FLOW CONTROL STRUCTURE #1. SEE S-1 SERIES.	1	EA
14	CONSTRUCT INLET HEADWALL STRUCTURE. SEE S-7.	1	EA
15	CONSTRUCT FLOW MEASUREMENT STRUCTURE #1. SEE S-2.	1	EA

- GENERAL NOTES**
1. TYPICAL DEMOLITION HATCHING IS NOT SHOWN FOR CLARITY.
 2. FUTURE ROADWAY IMPROVEMENTS AS SHOWN PROVIDED BY TYLIN INTERNATIONAL FOR ILLUSTRATION AND REFERENCE PURPOSES ONLY.
 3. FOR PIPELINE ALIGNMENT INFORMATION SEE G-8.
 4. CONTRACTOR SHALL OBTAIN PRIVATE LANDOWNER APPROVAL TO CONSTRUCT AND INSTALL FACILITIES OUTSIDE MWD EASEMENT.
 5. CONTRACTOR SHALL COORDINATE WITH PRIVATE LANDOWNER FOR REMOVAL OF FACILITIES OUTSIDE MWD EASEMENT OR ROAD RIGHT-OF-WAY PRIOR TO CONSTRUCTION.

HORIZ SCALE: 0' 40' 80'

VERT SCALE: 0' 4' 8'

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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

DESIGNED BY: **R. RILEY**
DRAWN BY: **B. JONES**
APPROVED BY: **G. CAIRO**
DRAWING: **MWD-51**
PLOT DATE: **DEC, 2020**

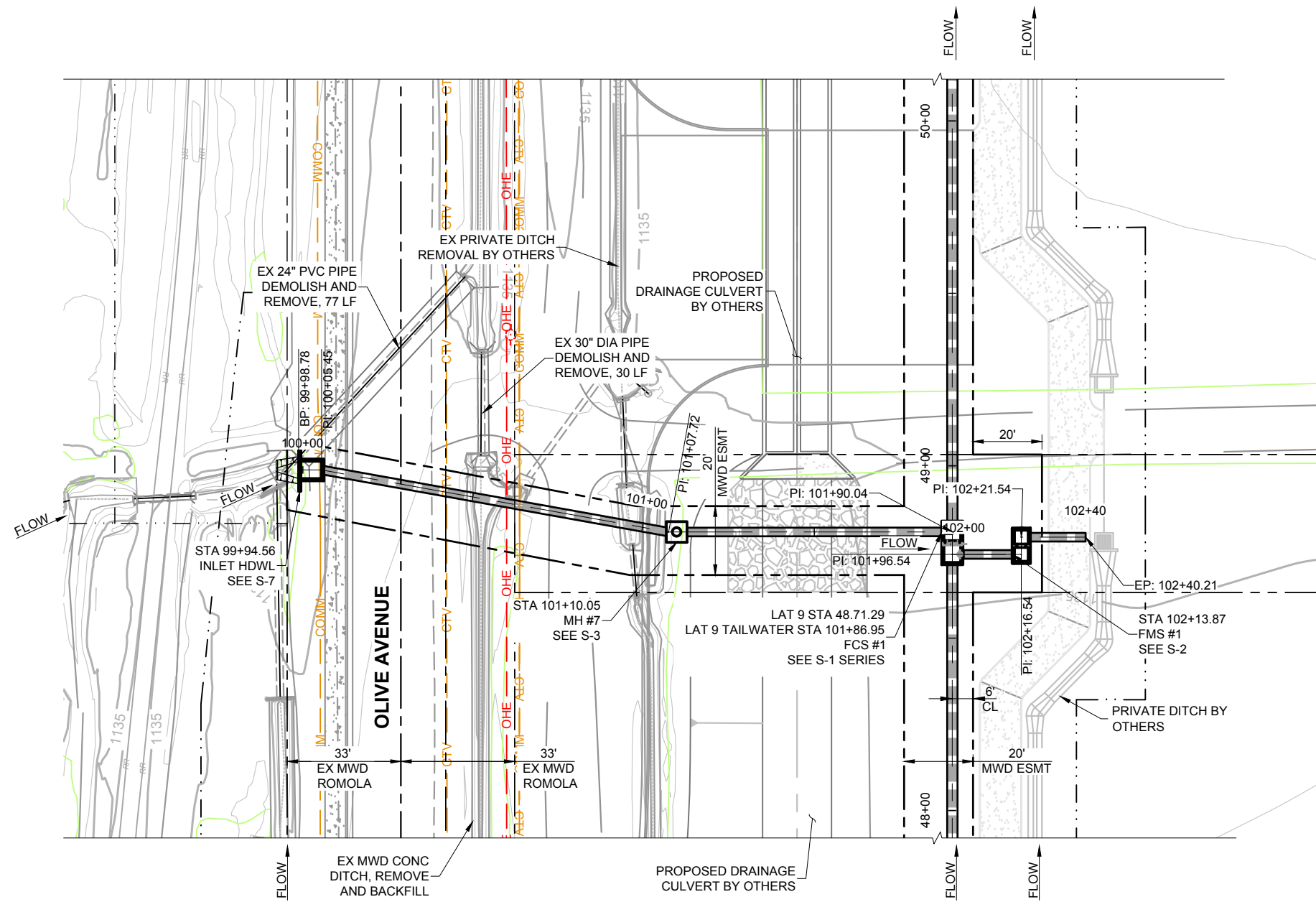
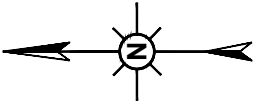
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**TAILWATER PIPELINE
PLAN AND PROFILE
STA POB TO STA POE**

P - 7

Z:\GCE Projects\MWD-51\dwg\02_MWD-51_P.dwg 12/04/20 - 3:16pm



LATERAL 9 TAILWATER SITE PLAN 1

P-2
P-7

Call at least two full working days before you begin excavation.

ARIZONA 811
Arizona Blue Stake, Inc.

Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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



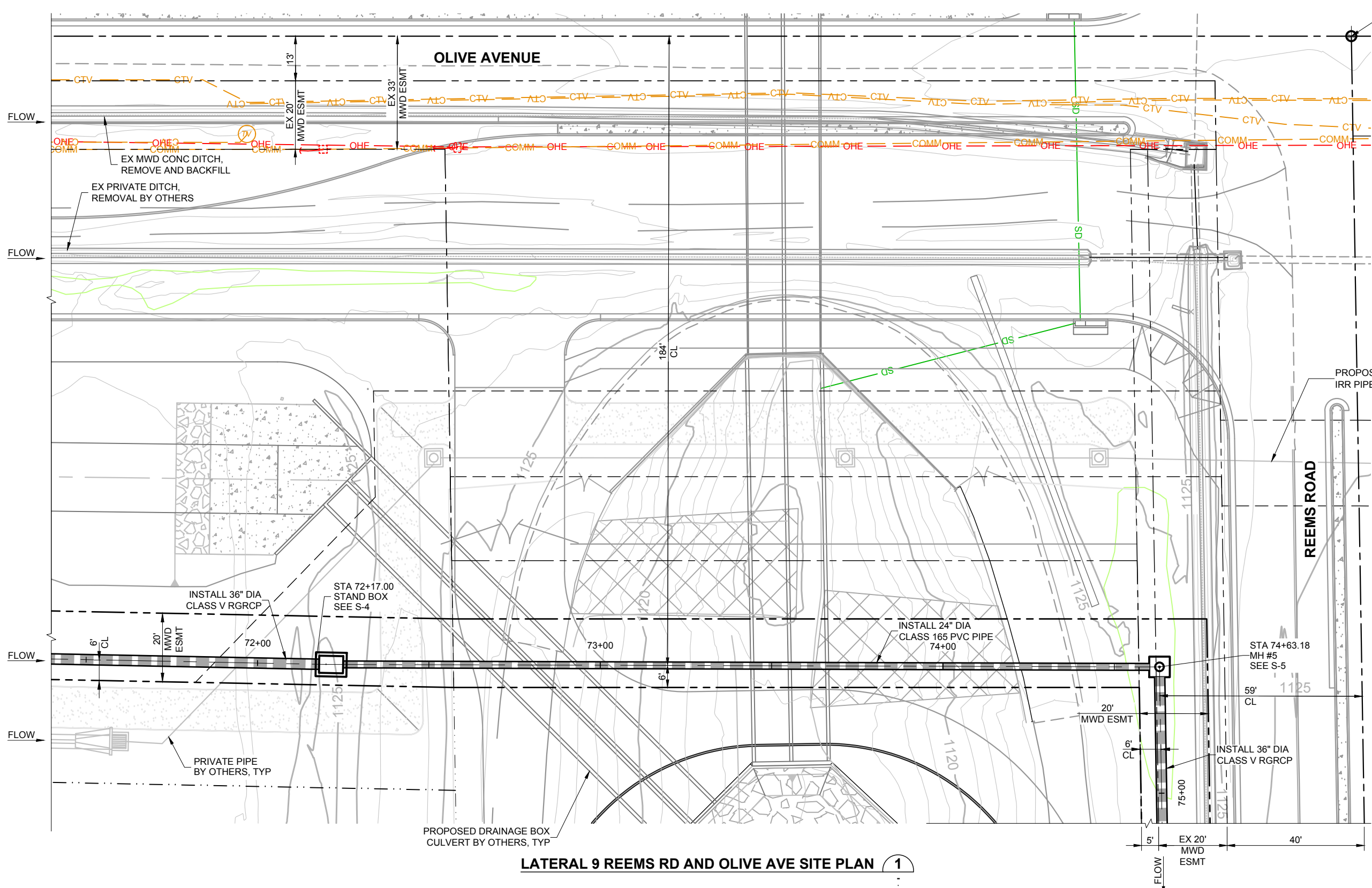
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**LATERAL 9
TAILWATER PIPELINE
SITE PLAN**

SP - 1



LATERAL 9 REEMS RD AND OLIVE AVE SITE PLAN 1

Call at least two full working days before you begin excavation.
ARIZONA 811
 Arizona Blue Stake, Inc.
 Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
 In Maricopa County: (602) 263-1100

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

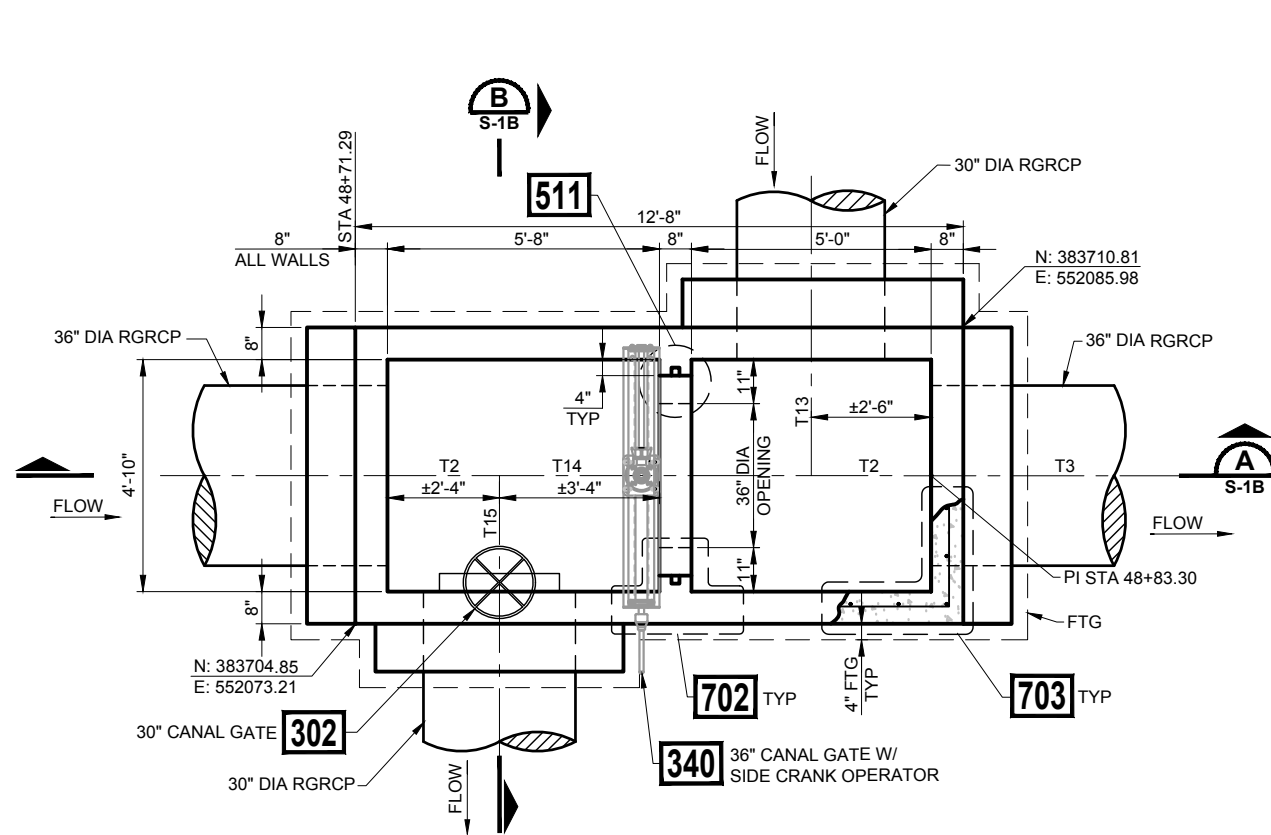
**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL 1
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

**LATERAL 9
 REEMS RD AND OLIVE AVE
 SITE PLAN**

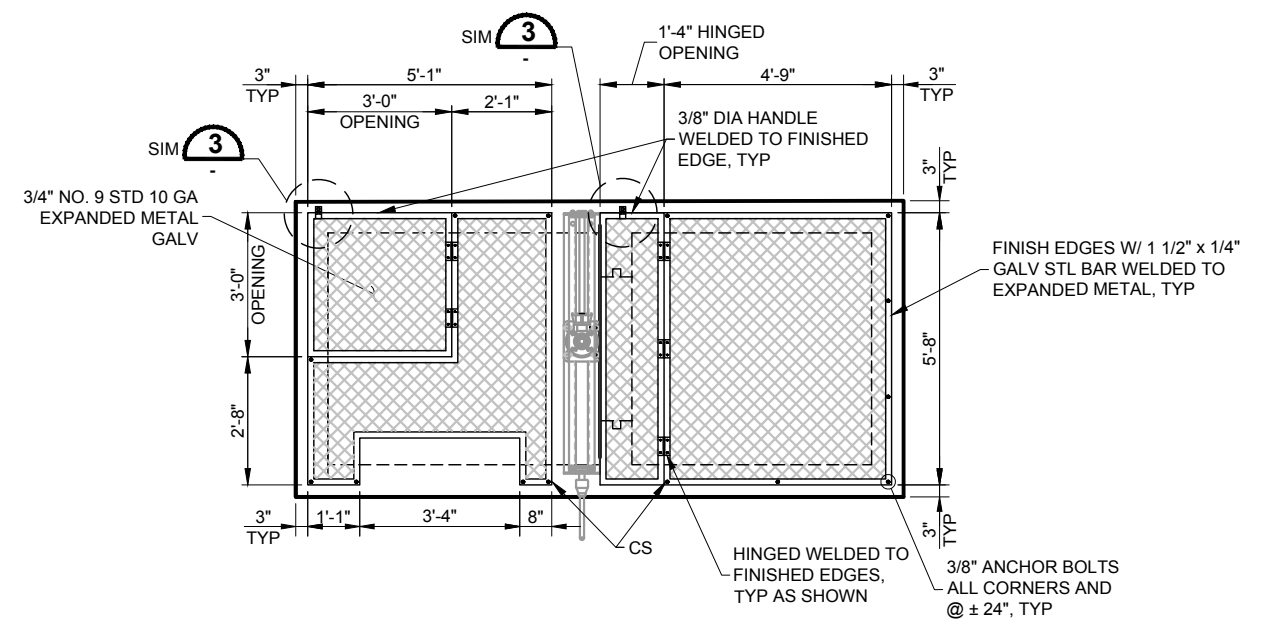
SP - 2

REUSE OF DOCUMENT: THESE PLANS & SPECIFICATIONS, AND THE IDEAS & DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF GCE, INC., AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION AND CONSENT OF GCE, INC.

Z:\GCE Projects\MWD-51\dwg\03_MWD-51_SP.dwg 12/04/20 - 3:16pm



FLOW CONTROL STRUCTURE #1 1
SCALE: 1" = 2' P-2 SP-1

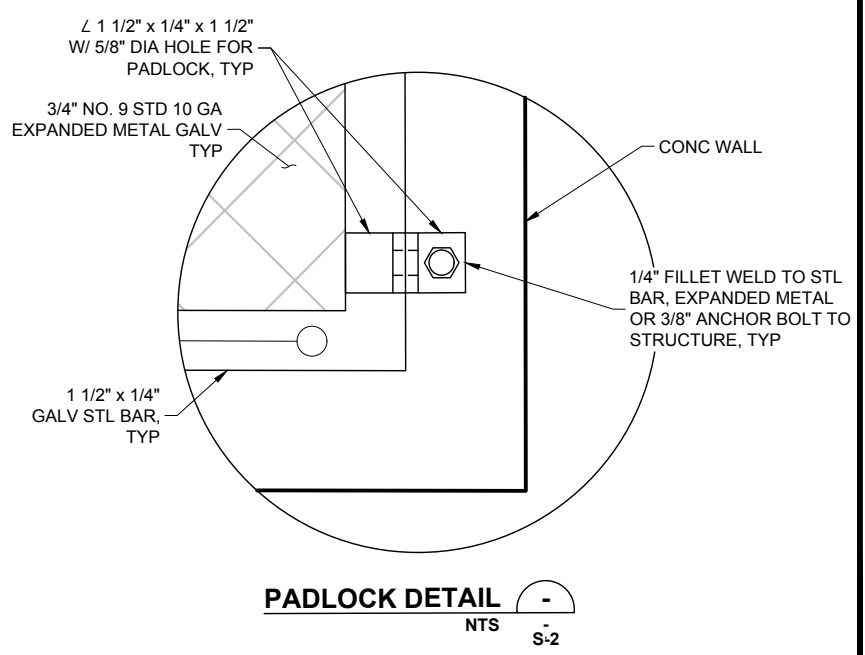


MESH COVER PLAN 2
NTS

NOTES:

- CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:

- 5 AMERICAN LOCK SERIES 1305 PADLOCKS. CONTACT MWD TO ORDER LOCKS.
- CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
- CS = **332** COVER SUPPORT



PADLOCK DETAIL -
NTS S-2

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**FLOW CONTROL
STRUCTURE #1
PLAN AND MESH COVER**

S - 1A

Z:\GCE Projects\MWD-51\dwg\04_MWD-51_S.dwg 12/04/20 - 3:16pm

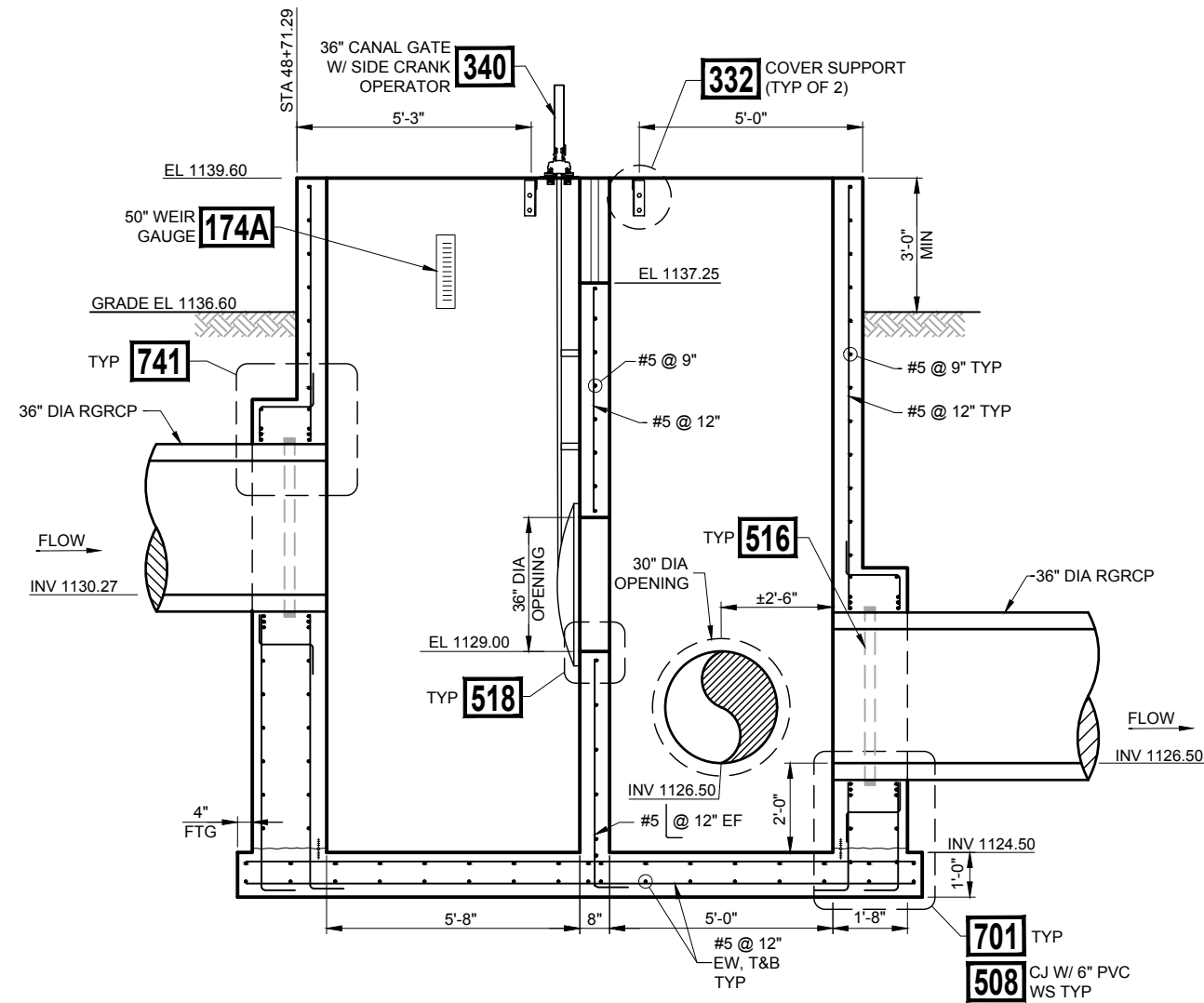
NOTES:

1. CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:

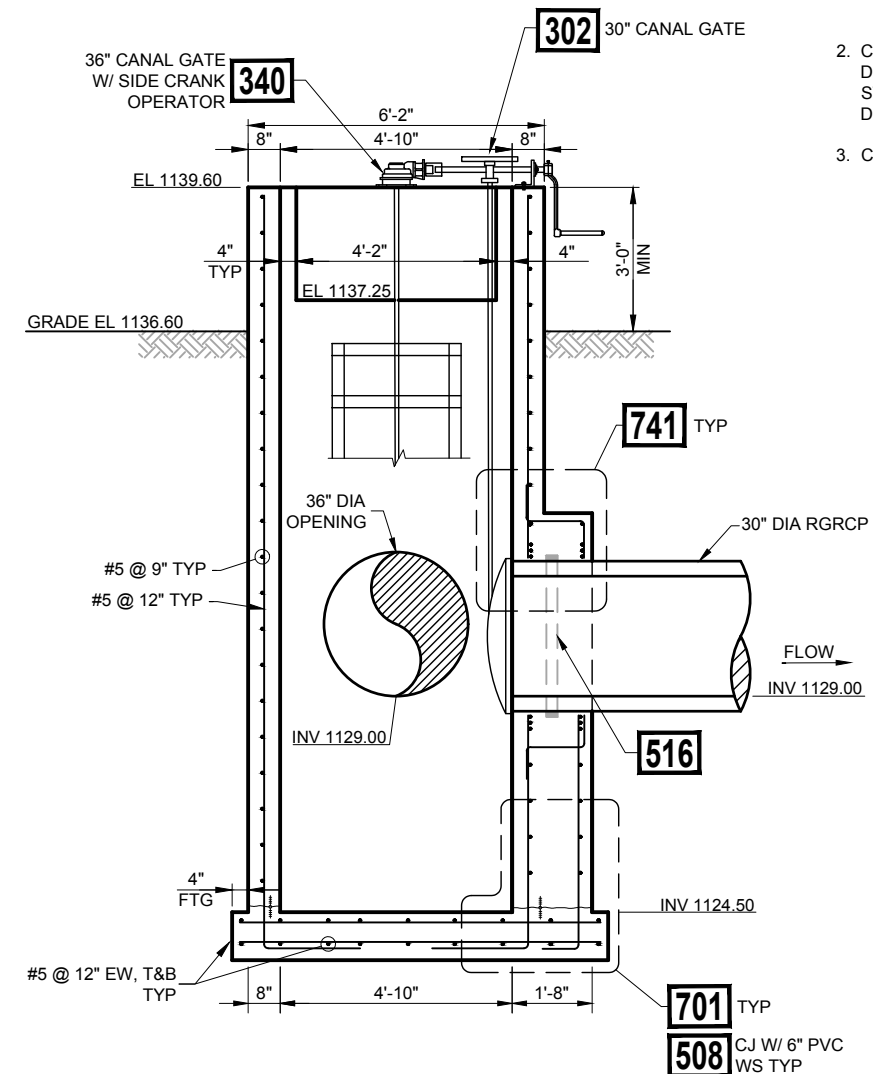
- **174A** 50" CONTRACTED WEIR GAUGE

2. CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.

3. CS = **332** COVER SUPPORT



SECTION A
SCALE: 1" = 2'



SECTION B
SCALE: 1" = 2'

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



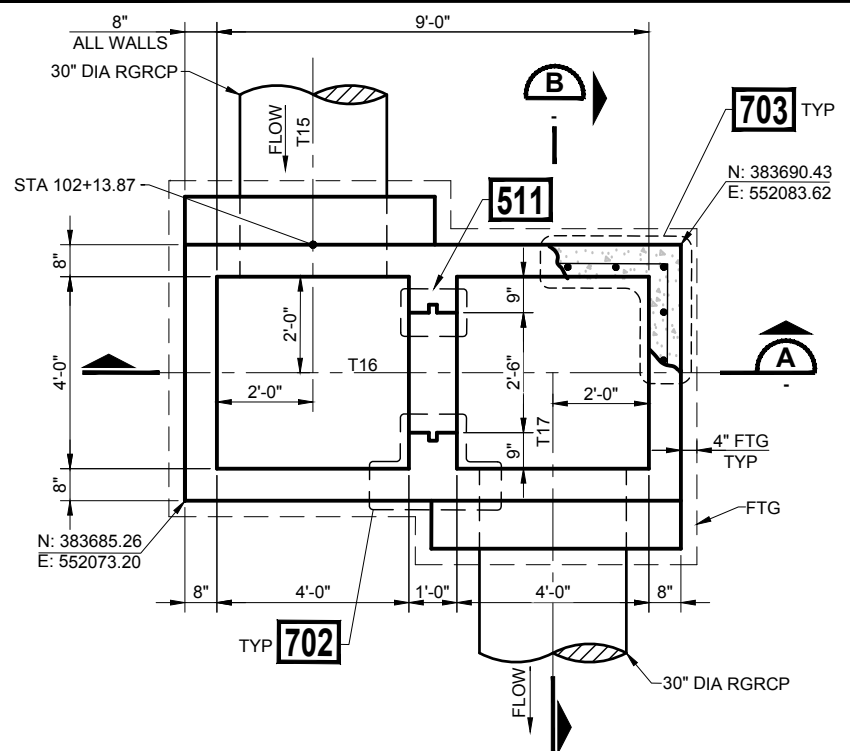
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

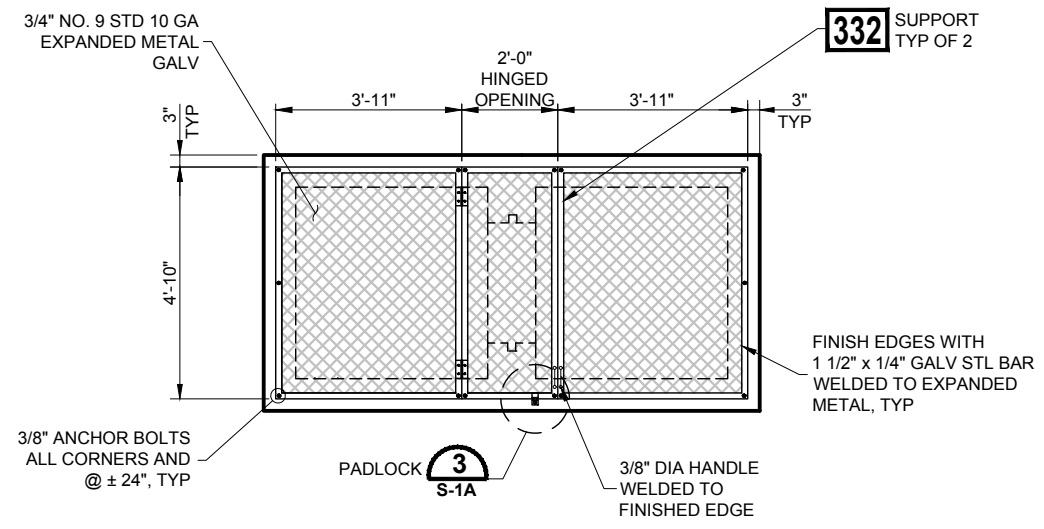
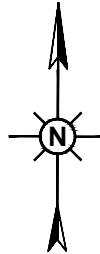
**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**FLOW CONTROL
STRUCTURE #1
SECTIONS**

S - 1B

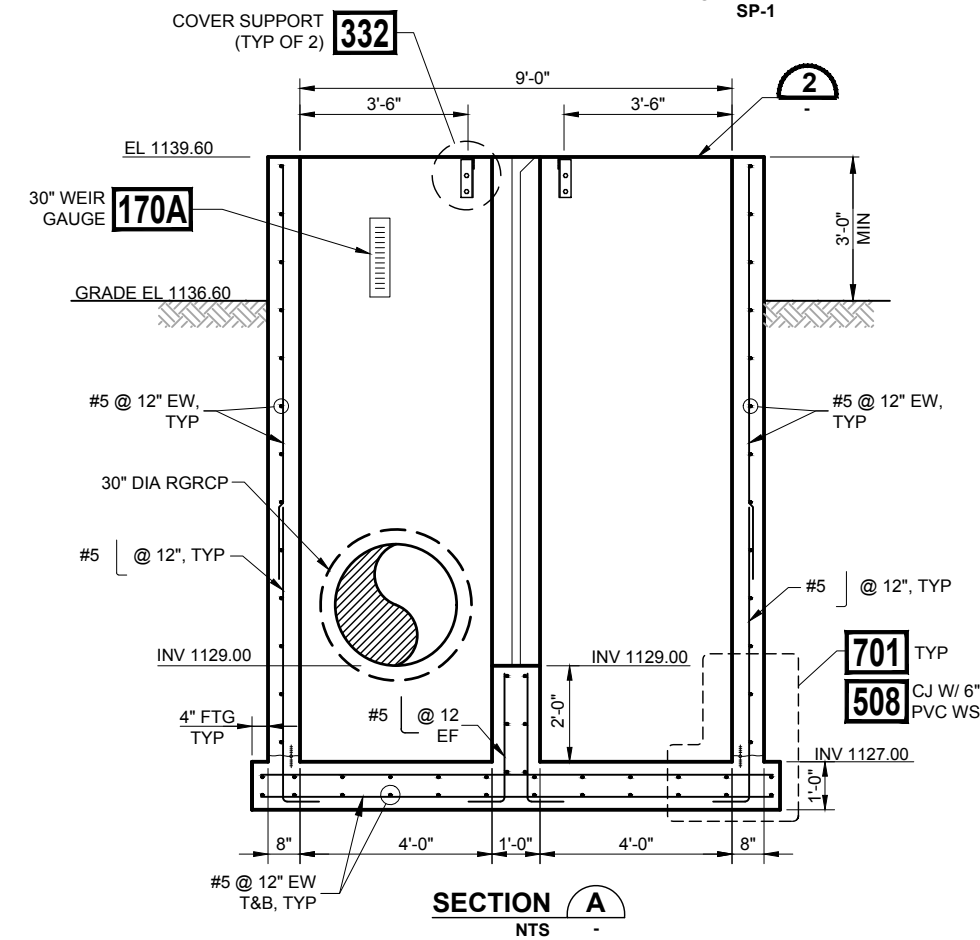


30" FLOW MEASUREMENT STRUCTURE #1 1
NTS P-7 SP-1

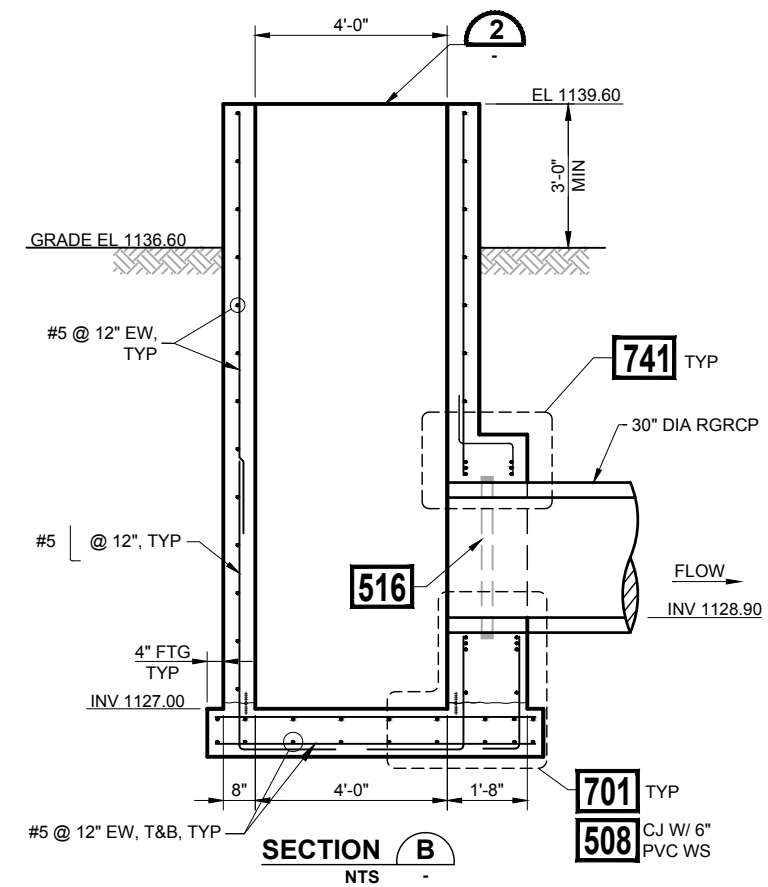


MESH COVER PLAN 2
NTS

- NOTES:**
- CONTRACTOR SHALL SUPPLY THE FOLLOWING MATERIAL TO MWD FOR INSTALLATION AND FABRICATION BY MWD:
 - 33" x 60" x 1/4" STL PLATE
 - 30' OF 1 1/2" x 1 1/2" x 1/4" STL ANGLE IRON
 - **170A** 30" CONTRACTED WEIR GAUGE
 - 1/2 GALLON OF CARBOLINE 300M OR APPROVED EQUAL. SEE SPECIFICATIONS.
 - CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
 - CS = **332** COVER SUPPORT



SECTION A
NTS



SECTION B
NTS

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

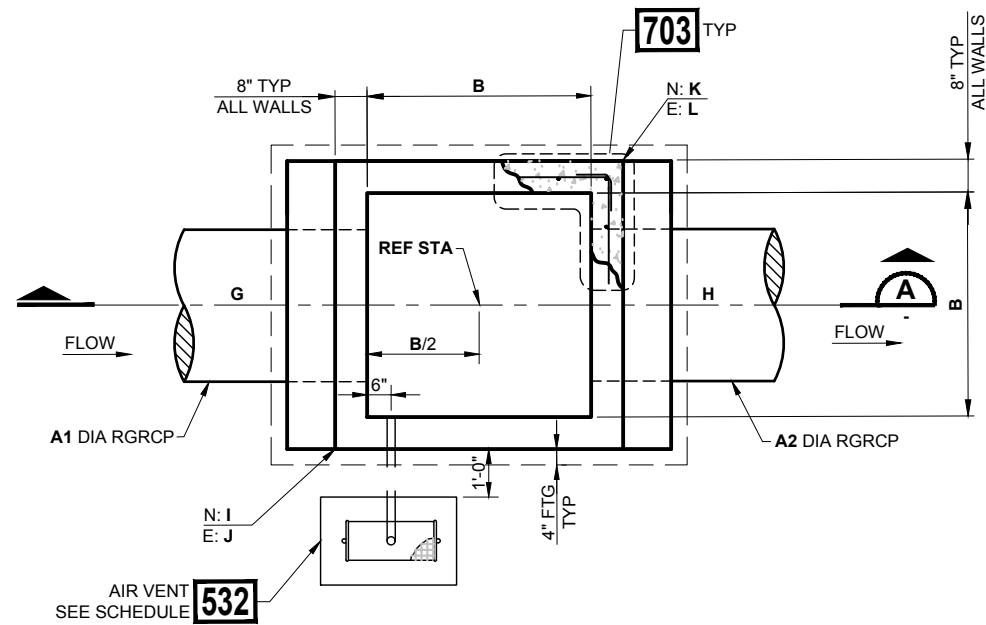
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

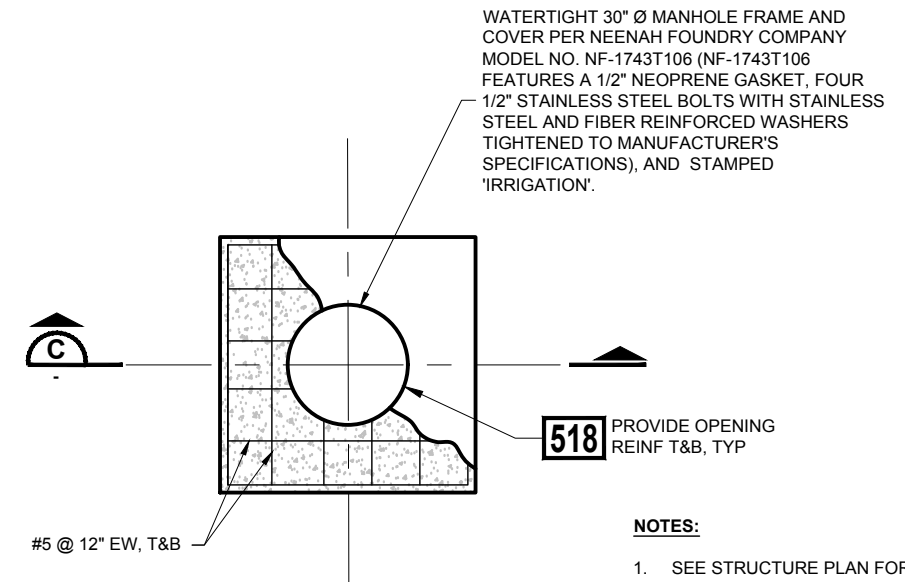
**FLOW MEASUREMENT
STRUCTURE #1
PLAN, SECTIONS,
AND MESH COVER**

S - 2

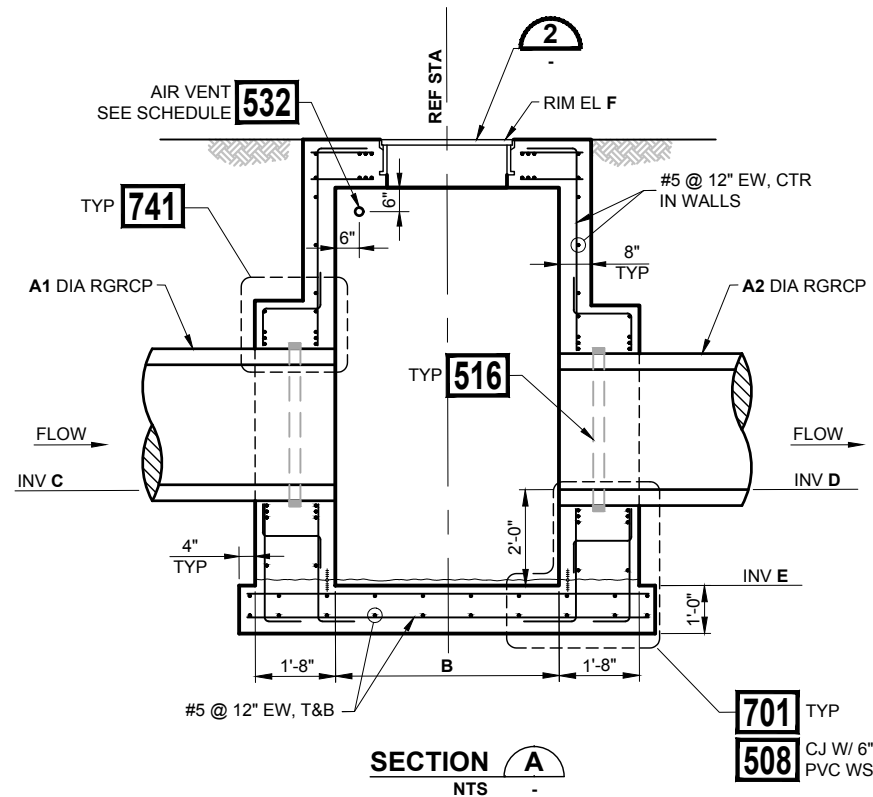
Z:\GCE Projects\MWD-51\dwg\04_MWD-51_S.dwg 12/04/20 - 3:16pm



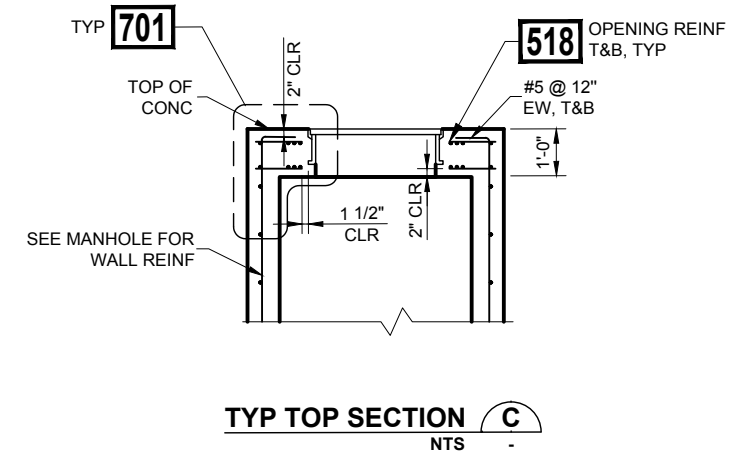
TYPICAL MANHOLE 1
NTS



TYPICAL MANHOLE TOP SLAB PLAN 2
NTS



SECTION A
NTS



TYP TOP SECTION C
NTS

MH	REF STATION	PI STATION	P SHEET	UPSTREAM PIPE SIZE A1	DOWNSTREAM PIPE SIZE A2	STRUCT LENGTH B	U/S PIPE INV C	D/S PIPE INV D	STRUCT INV E	RIM EL F	BEARINGS		COORDINATES				AIR VENT
											G	H	I	J	K	L	
#1	55+00.00		P-2	36"	36"	4'-8"	1125.63	1125.53	1123.53	1133.13	T3	T3	383694.45	552698.81	383700.35	552704.91	NO
#2	60+42.73	60+42.73	P-3	36"	36"	4'-8"	1123.78	1123.68	1121.68	1131.12	T3	T4	383685.37	553241.47	383691.26	553247.57	NO
#3	65+00.00		P-4	36"	36"	4'-8"	1121.87	1121.61	1119.61	1129.43	T4	T4	383665.09	553798.27	383670.86	553804.49	YES
#6	81+17.77	81+20.44	P-6	36"	36"	5'-4"	1117.80	1116.30	1114.30	1122.56	T6	T7	382982.61	554667.29	382989.27	554660.62	NO
#7	101+10.05	101+07.72	P-7	30"	30"	4'-8"	1130.47	1126.76	1124.76	1137.75	T12	T13	383784.71	552087.05	383790.80	552081.15	NO

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



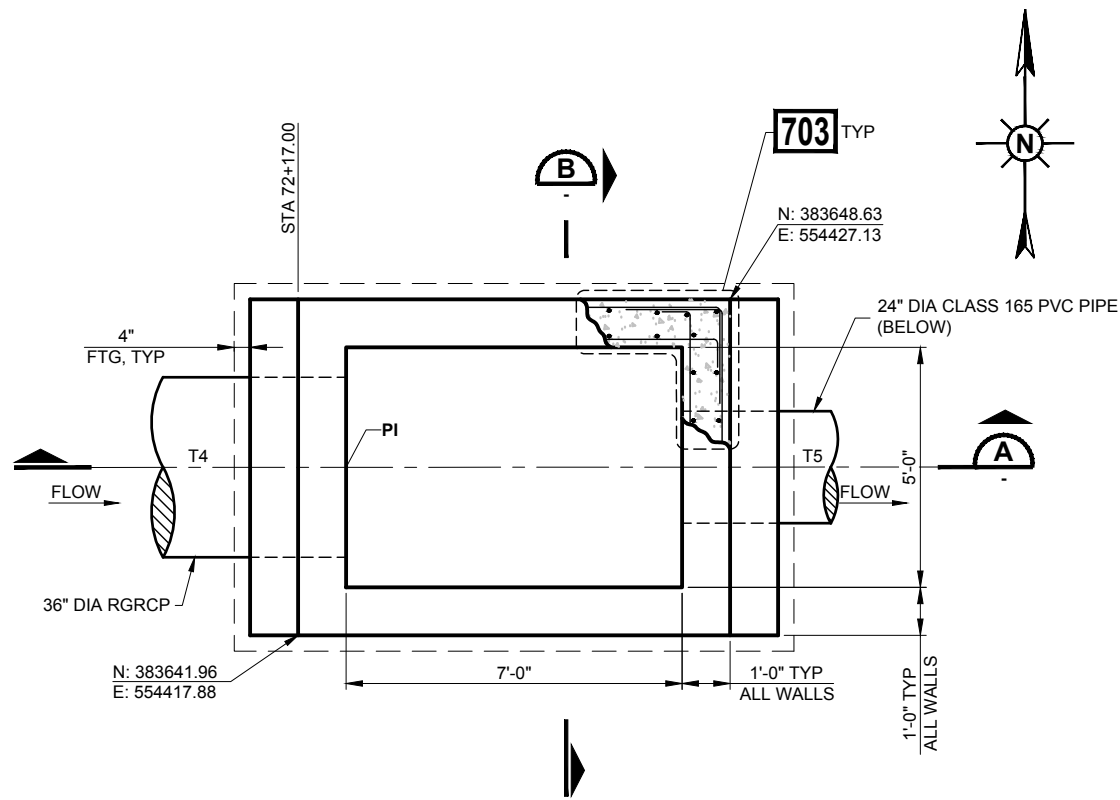
DESIGNED BY: **R. RILEY**
 DRAWN BY: **B. JONES**
 APPROVED BY: **G. CAIRO**
 DRAWING: **MWD-51**
 PLOT DATE: **DEC, 2020**

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

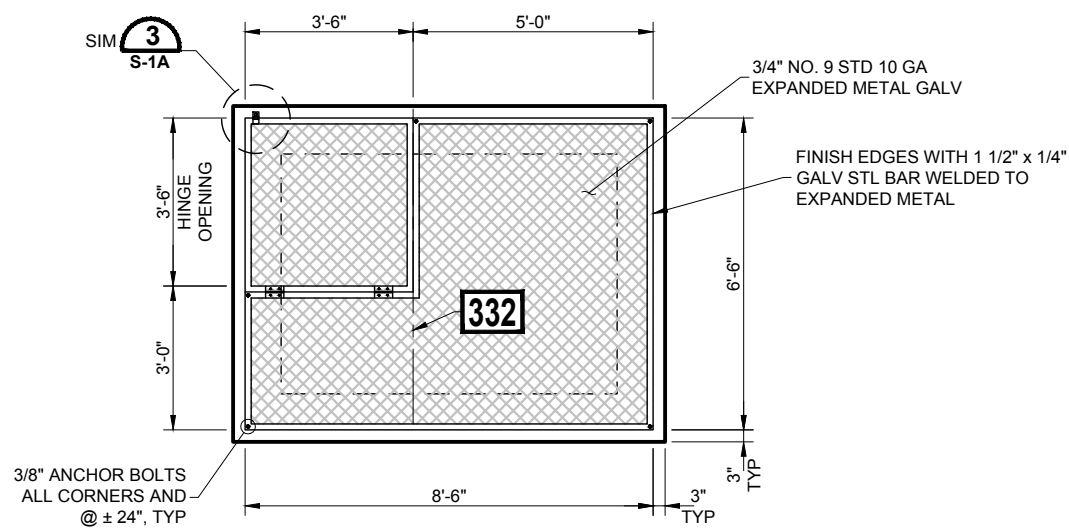
**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL 1
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

**TYPICAL MANHOLE PLAN,
 SECTIONS, AND
 SCHEDULE**

S - 3



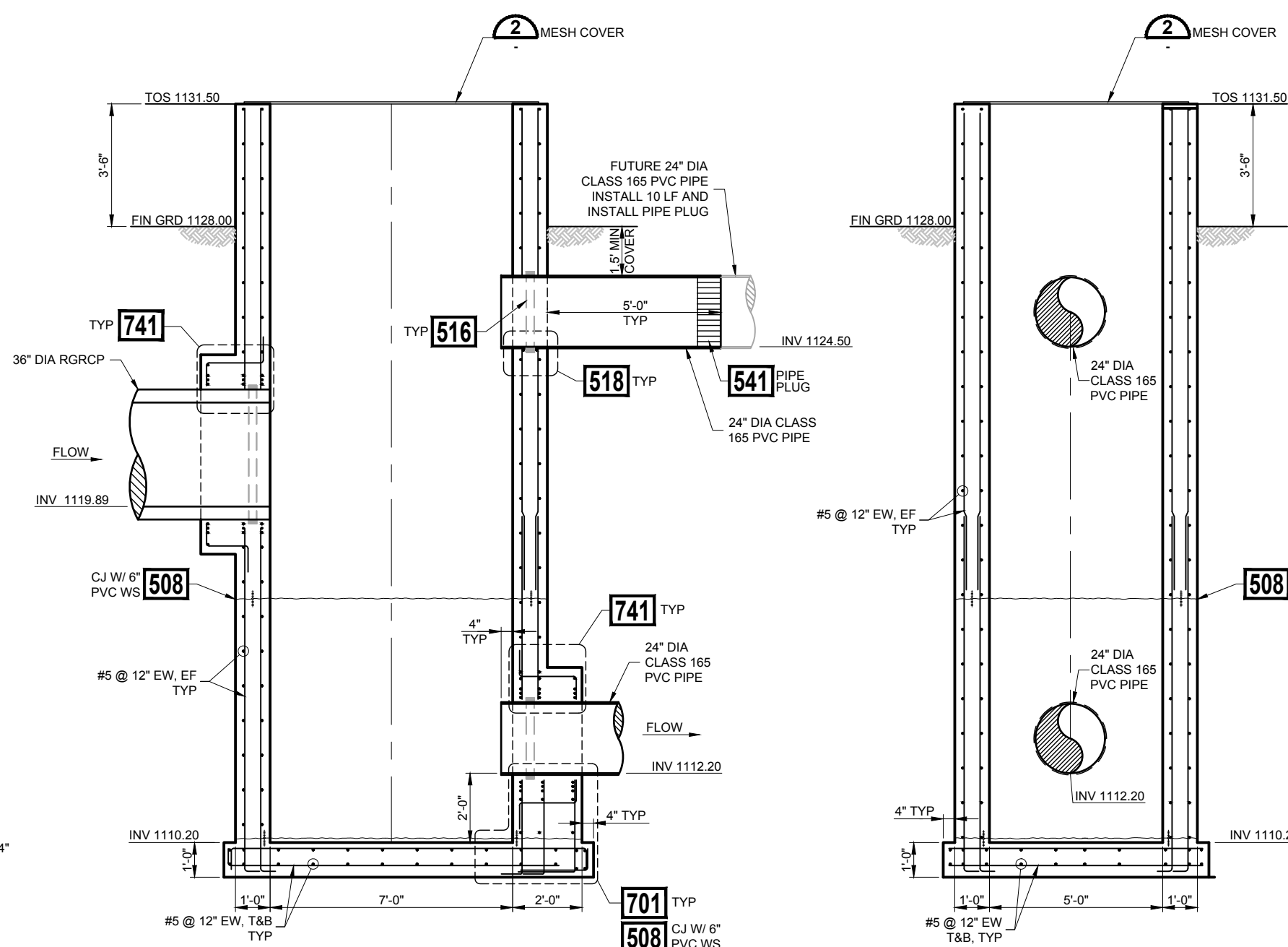
MANHOLE #4 PLAN
NTS P-5



MESH COVER PLAN
NTS

NOTES:

- CONTRACTOR SHALL FIELD VERIFY MESH COVER DIMENSIONS AND ADJUST AS REQUIRED AFTER STRUCTURE COMPLETION. SUBMIT FINAL DIMENSIONS FOR ENGINEER APPROVAL.
- CS = **332** COVER SUPPORT



SECTION A
NTS

SECTION B
NTS

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



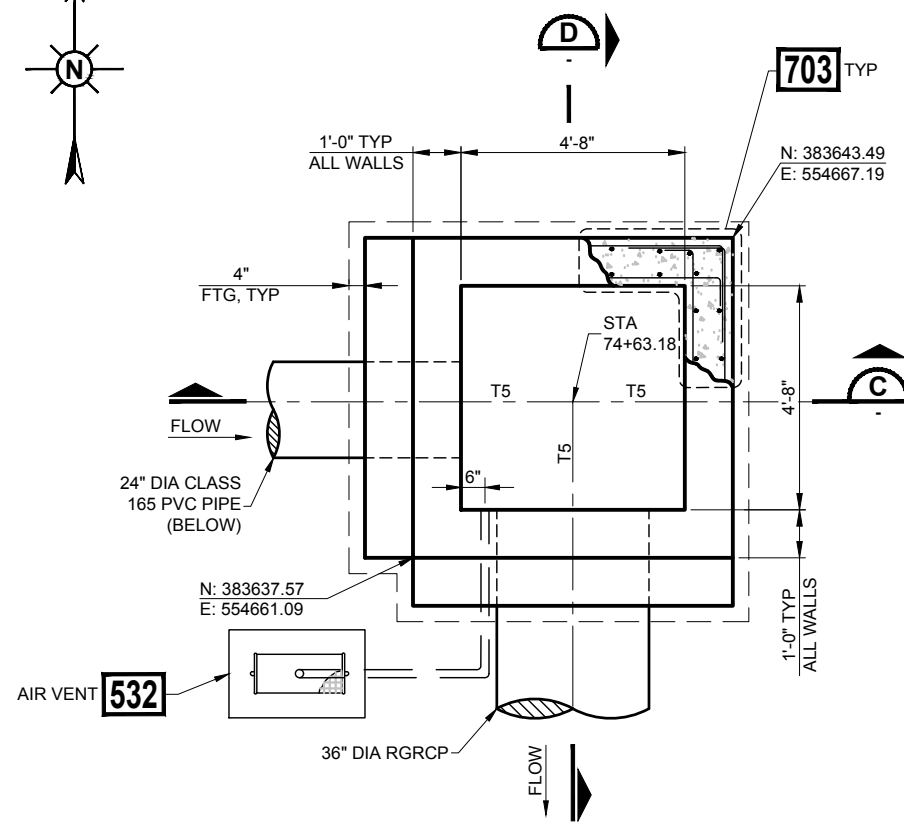
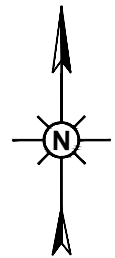
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

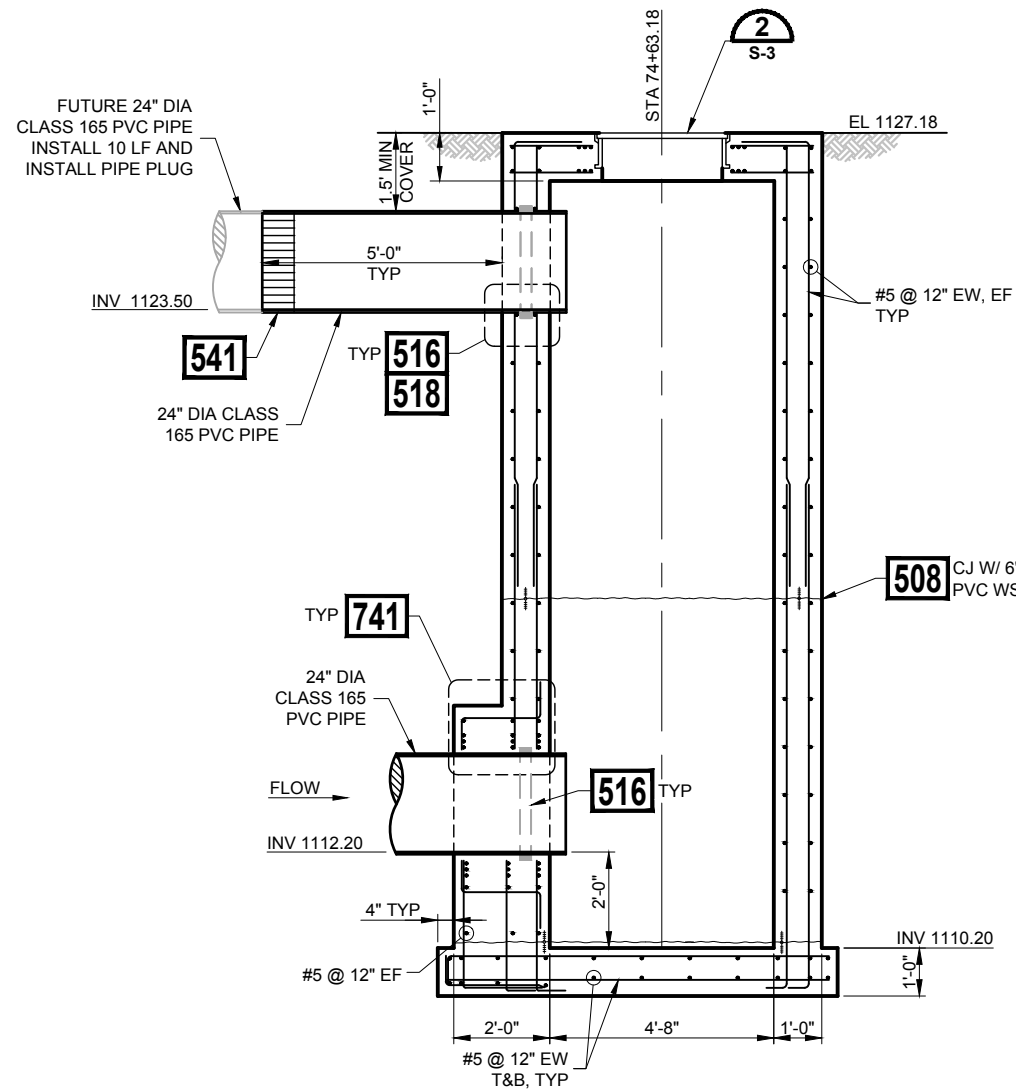
**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**STAND BOX
PLAN AND SECTIONS**

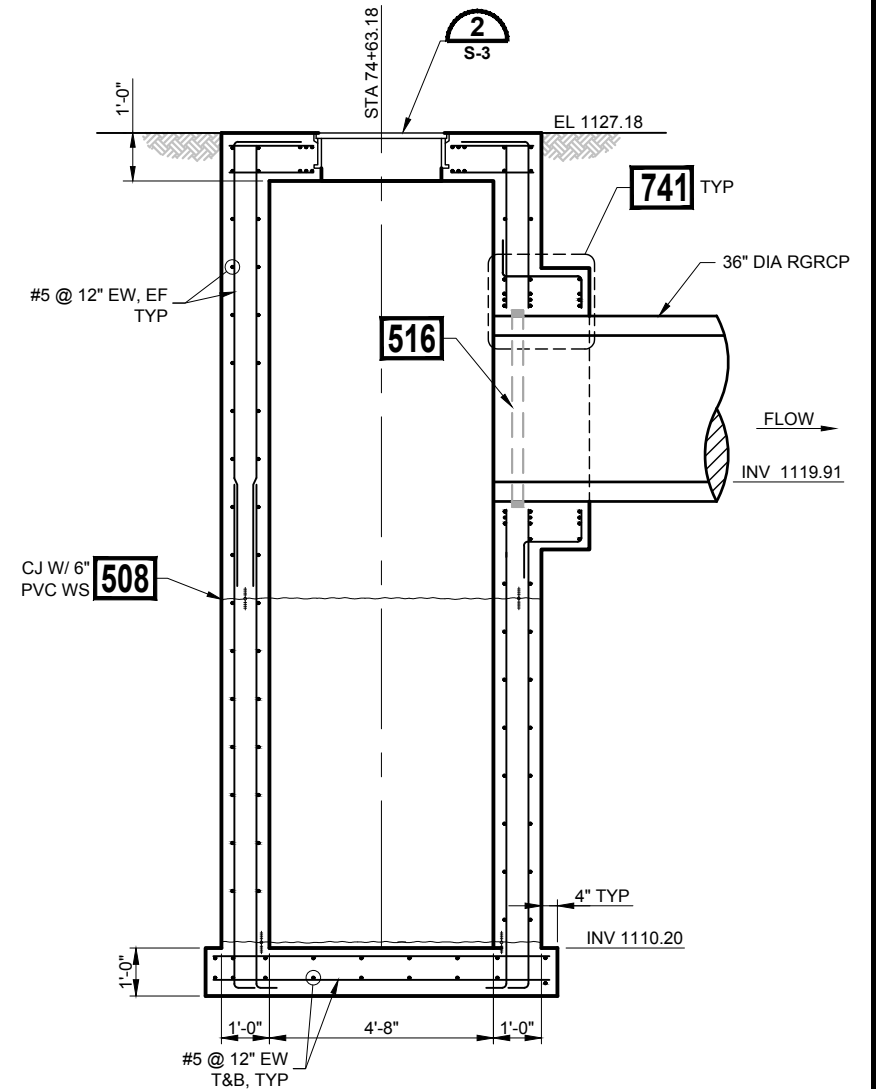
S - 4



MANHOLE #5 PLAN
NTS



SECTION C
NTS



SECTION D
NTS

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

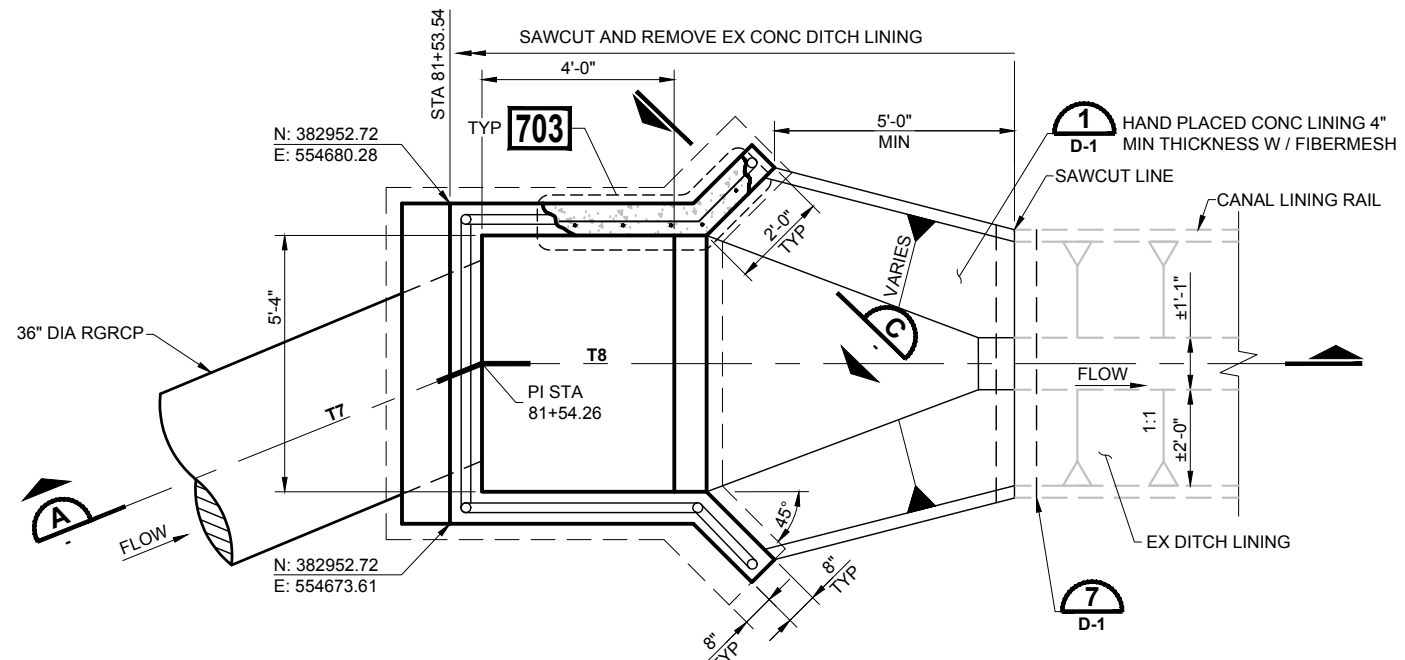
MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL 1
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

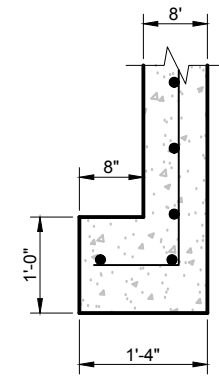
**MANHOLE #5
 PLAN AND SECTIONS**

S - 5

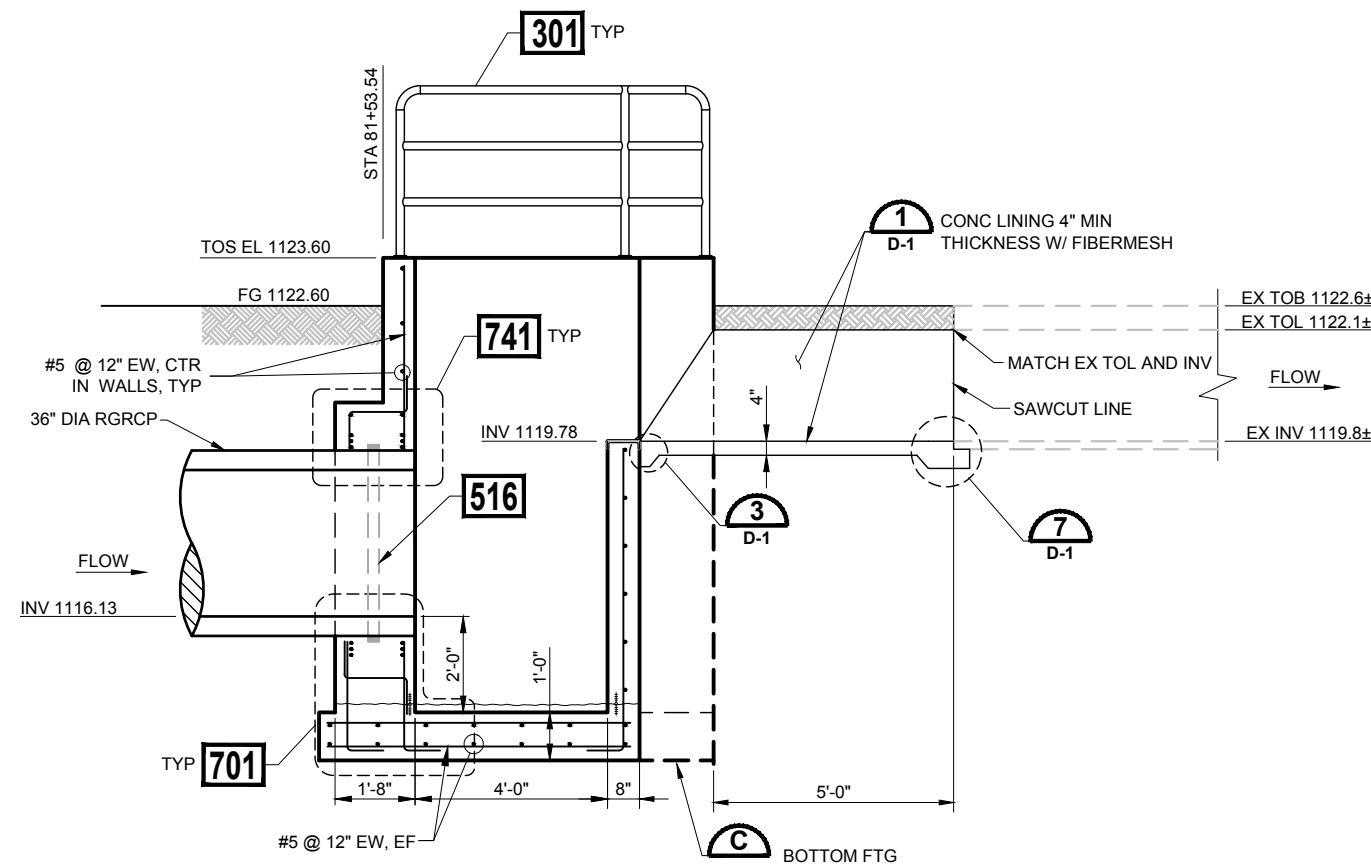
Z:\GCE Projects\MWD-51\dwg\04_MWD-51_S.dwg 12/04/20 - 3:16pm



OUTLET HEADWALL #1 PLAN (1)
NTS



SECTION C
NTS



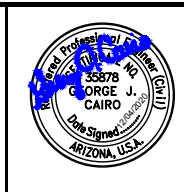
SECTION A
NTS

NOTES:

1. SEE STANDARD DETAIL 103 ON SHEET D-1 FOR ADDITIONAL LINING DETAILS NOT SHOWN ON THIS SHEET.

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

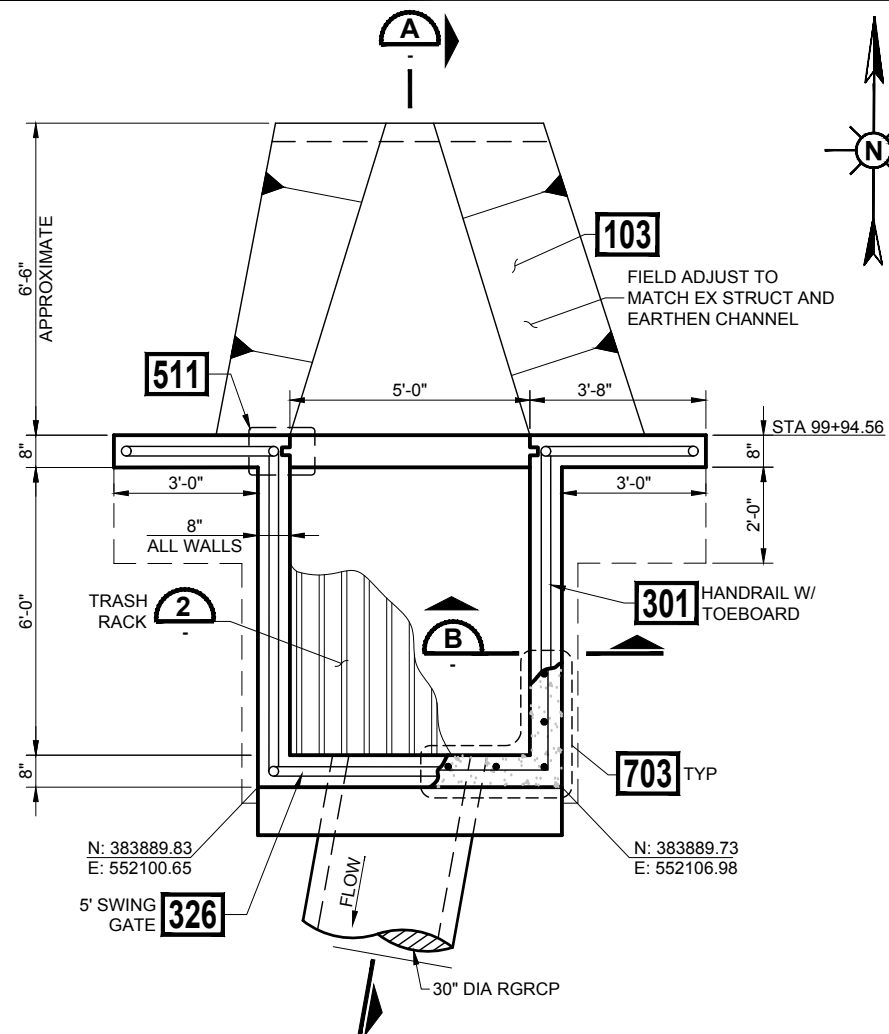
MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL 1
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

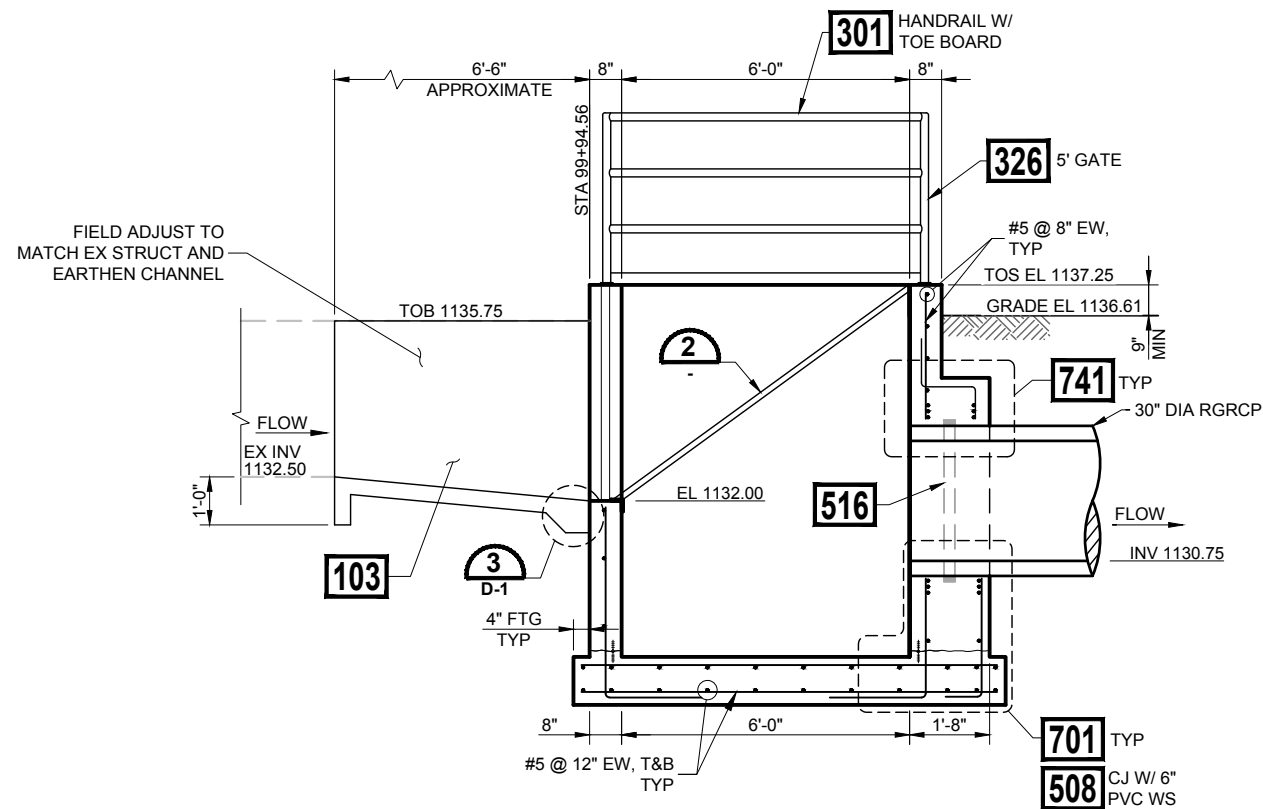
**OUTLET HEADWALL #1
 PLAN AND SECTIONS**

S - 6

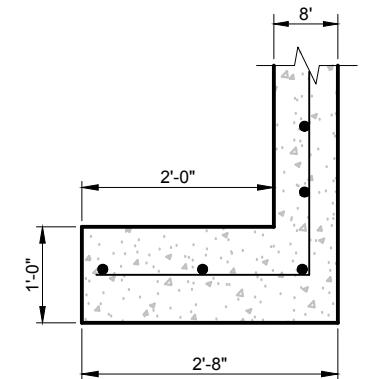
Z:\GCE Projects\MWD-51\dwg\04_MWD-51_S.dwg 12/04/20 - 3:16pm



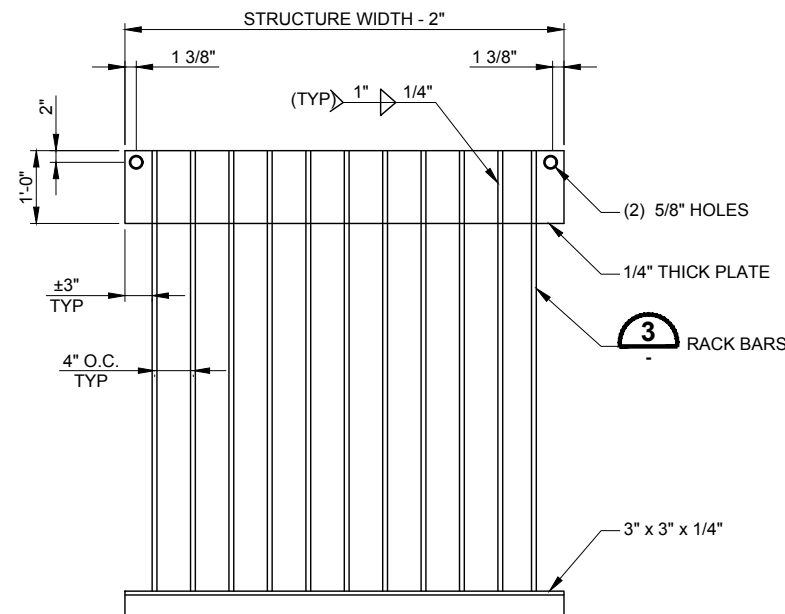
HEADWALL PLAN 1
NTS P-7



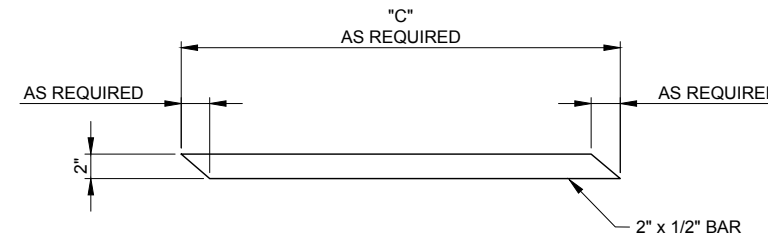
SECTION A
NTS



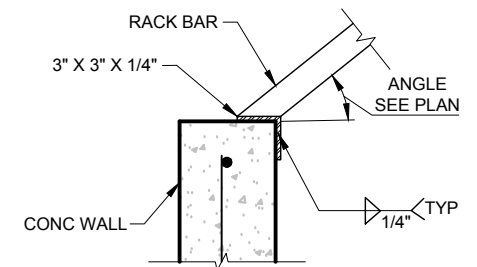
SECTION B
NTS



TRASH RACK 2
NTS



RACK BAR 3
NTS



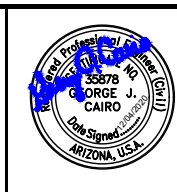
DETAIL 4
NTS

NOTE:

1. SEE STANDARD DETAIL 103 ON SHEET D-1 FOR ADDITION LINING DETAILS NOT SHOWN ON THIS SHEET.
2. SAWCUT EXISTING LINING PANEL FOR HAND-PLACED TRANSITION A MINIMUM 5 FEET OR TO NEXT CLEAN JOINT.
3. SEE G-7 FOR GEOMETRIC LAYOUT.

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



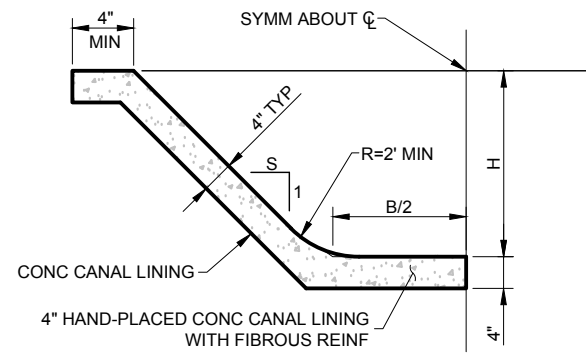
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

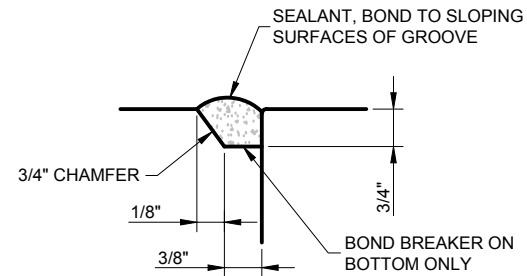
**INLET HEADWALL #1
PLAN AND SECTIONS**

S - 7

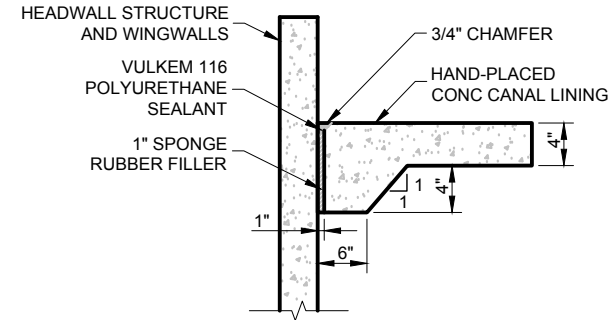


NOTE:
SEE PLANS FOR S, B AND H DIMENSION.

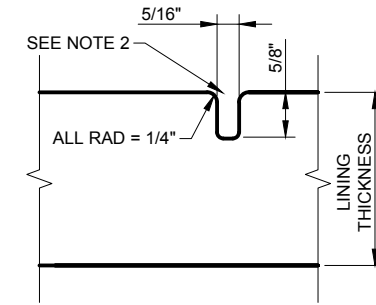
TYPICAL HAND-PLACED CONC CANAL LINING 1
NTS



CONTROL SEALANT JOINT 2
NTS

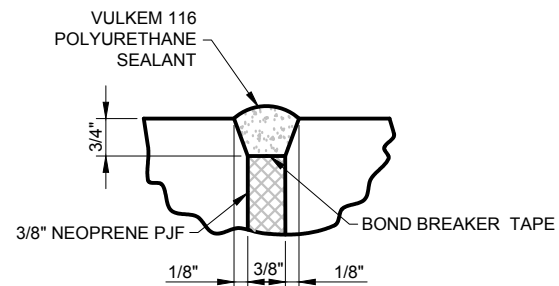


EXPANSION JOINT DETAIL 3
NTS

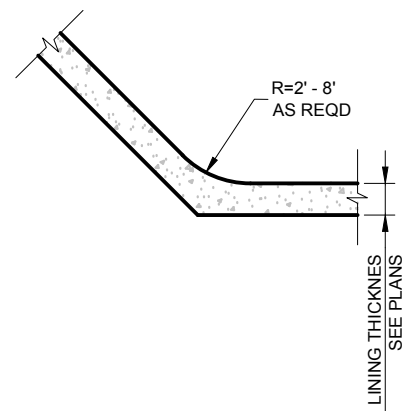


NOTES:
1. CONTRACTION JOINT IN CONCRETE LINING SHALL BE PLACED TRANSVERSE AT 10 FOOT INTERVALS.
2. CONTRACTOR SHALL USE A TEMPLATE APPROVED BY THE ENGINEER TO CONSTRUCT TRANSVERSE CONTRACTION JOINTS.

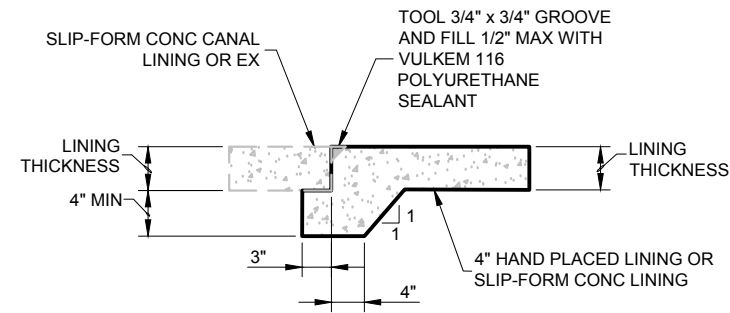
CONSTRUCTION JOINT DETAIL 4
NTS



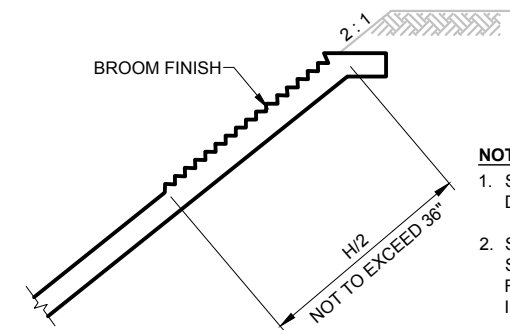
EXPANSION SEALANT JOINT 5
NTS



LINING DETAIL 6
NTS

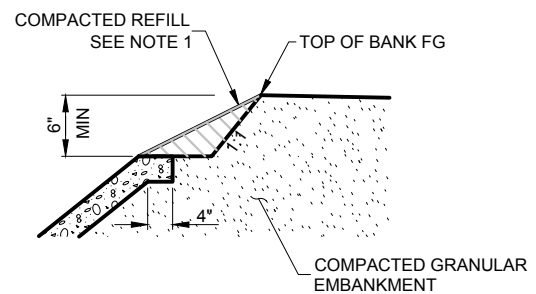


JOINT FOR EXIST TO NEW LATERAL AND DITCH CONNECTION 7
NTS



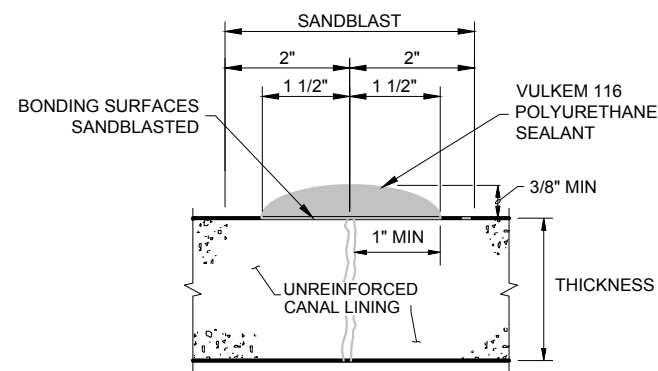
NOTES:
1. SEE PLANS FOR DIMENSIONS OF H
2. SEE PLANS FOR CANAL SECTIONS TO BE BROOM FINISHED AND LIMITS OF INSTALLATION

CONCRETE FINISH DETAIL 8
NTS



NOTE:
OVER EXCAVATION IS PERMITTED IF NEEDED TO ACCOMMODATE LINING.

CANAL RAIL REFILL 9
NTS



CAP SEAL FOR RANDOM CRACKS 10
NTS

NOTES:
1. CONTRACTOR TO SANDBLAST SURFACES.
2. IMMEDIATELY PRIOR TO SEALANT APPLICATION, THE CONCRETE SHALL BE BLASTED WITH OIL-FREE COMPRESSED AIR TO REMOVE RESIDUE, DUST, AND DEBRIS.
3. CONCRETE AND AMBIENT TEMPERATURE SHALL BE A MINIMUM OF 50° F.
4. SEE PLANS FOR EXTRUDING AND TOOLING VULKEM 116 POLYURETHANE SEALANT.

NOTE:
THIS IS A STANDARD DETAIL SHEET AND NOT ALL DETAILS ARE REQUIRED. SEE PLANS FOR SPECIFIC INSTALLATIONS.

IRRIGATION CANAL LINING DETAILS 103
NTS

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



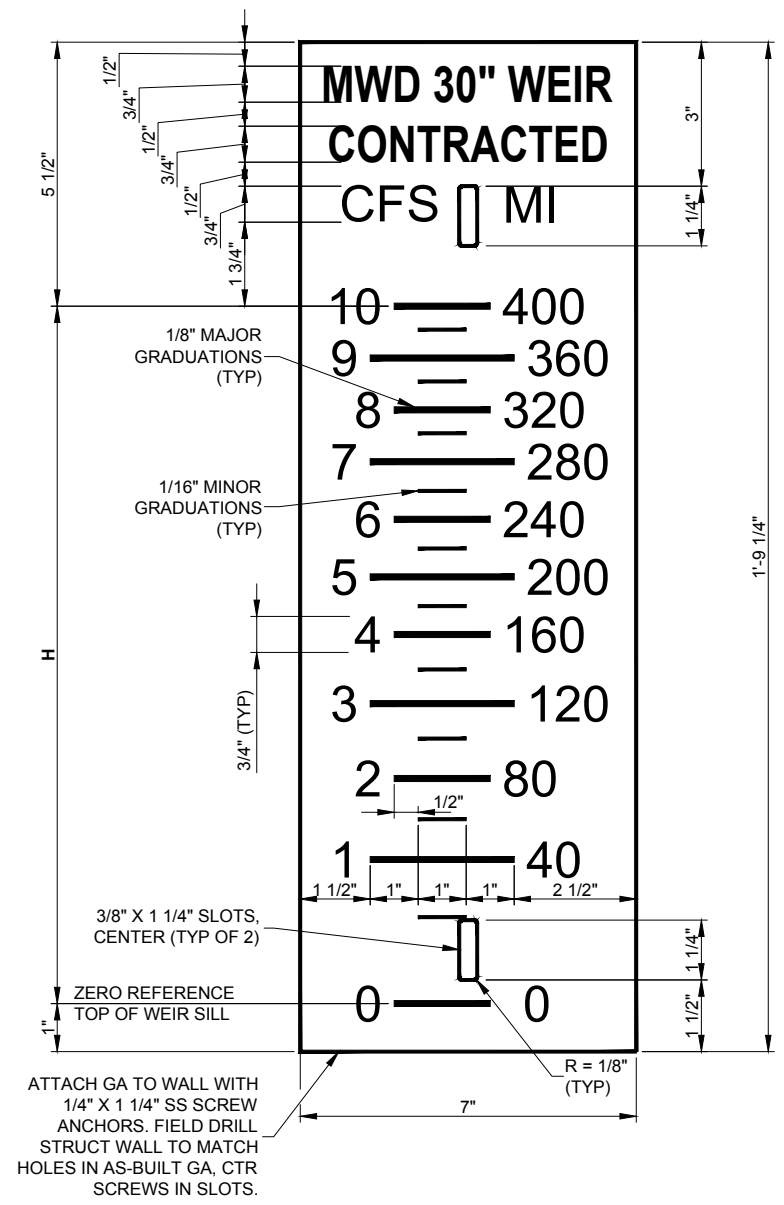
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

MCDOT OLIVE AVENUE LATERAL 9 AND LATERAL 9 SUBLATERAL 1 SARIVAL AVENUE TO REEMS ROAD (MCDOT TT0562) WADDELL, ARIZONA

STANDARD DETAILS

D - 1



**MWD 30" WEIR
CONTRACTED
CFS MI**

10	400
9	360
8	320
7	280
6	240
5	200
4	160
3	120
2	80
1	40
0	0

SYMBOLS:
CFS - CUBIC FEET PER SECOND
MI - MINER'S INCHES
FT - FEET
H - HEIGHT ABOVE WEIR SILL

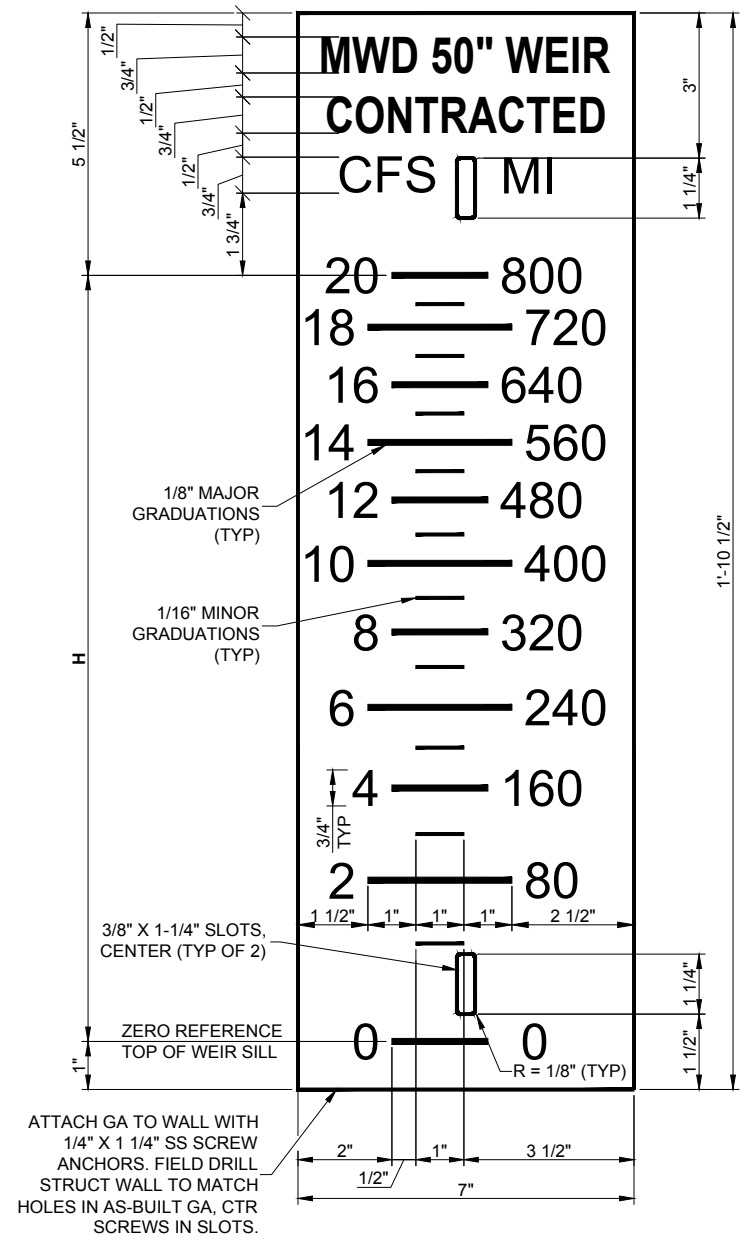
**CONTRACTED
30" WEIR GAUGE**

LOCATION OF FLOW MEASUREMENT LINES ON WEIR GAUGE

CFS	MI	H (FT)
0	0	0.00
0.5	20	0.15
1	40	0.25
1.5	60	0.32
2	80	0.39
2.5	100	0.46
3	120	0.52
3.5	140	0.58
4	160	0.64
4.5	180	0.69
5	200	0.74
5.5	220	0.79
6	240	0.84
6.5	260	0.89
7	280	0.94
7.5	300	0.99
8	320	1.03
8.5	340	1.08
9	360	1.12
9.5	380	1.17
10	400	1.21

- NOTES:**
- GAUGES TO BE MADE OF NO. 18 GAUGE (U.S. STANDARD) MILD STEEL PLATE AND TO BE COVERED WITH VITREOUS ENAMEL WITH MINIMUM THICKNESS OF 12 MILS ON NUMERAL SIDE AND 3 MILS ON THE REVERSE SIDE AND ON EDGES WHERE PLATE HAS BEEN CUT, PUNCHED OR DRILLED.
 - ALL CUTTING, DRILLING AND PUNCHING OF THE PLATES SHALL BE COMPLETED BEFORE THE VITREOUS ENAMEL IS APPLIED.
 - THE FACE OF THE GAUGE SHALL BE BRIGHT WHITE AND ALL NUMERALS AND GRADUATIONS SHALL BE BLACK.
 - GRADUATIONS SHALL BE SHARP AND ACCURATE TO THE DIMENSIONS SHOWN.
 - FOLLOWING CONSTRUCTION ALL GAUGE CALIBRATION DATA INCLUDED IN THIS TABLE MUST BE VERIFIED.
 - POSITION ZERO REFERENCE ON GAUGE EXACTLY LEVEL WITH TOP OF WEIR SILL.
 - CENTER GAUGE HORIZONTAL IN UPSTREAM CELL OF STRUCTURE.
 - EQUATION FOR CONTRACTED WEIR: $Q=3.33 (L-0.2H) H^{3/2}$.
 - CONTRACTOR SHALL SUPPLY STAFF GAUGE TO MWD FOR INSTALLATION BY MWD.
 - PROVIDE STAFF GAUGE AND EXTENSION WITH STAFF GAUGE AS A SINGLE UNIT SYSTEM: (CALM WATER CONTROL PRODUCTS PHONE #303-881-9093). GAUGE AND EXTENSION SHALL BE SUPPLIED TO MWD FOR INSTALLATION BY MWD.

30" CONTRACTED WEIR GAUGE FOR 10 CFS NTS **170A**



**MWD 50" WEIR
CONTRACTED
CFS MI**

20	800
18	720
16	640
14	560
12	480
10	400
8	320
6	240
4	160
2	80
0	0

SYMBOLS:
CFS - CUBIC FEET PER SECOND
MI - MINER'S INCHES
FT - FEET
H - HEIGHT ABOVE WEIR SILL

**CONTRACTED
50" WEIR GAUGE**

LOCATION OF FLOW MEASUREMENT LINES ON WEIR GAUGE

CFS	MI	H (FT)
0	0	0.00
1	40	0.17
2	80	0.28
3	120	0.36
4	160	0.44
5	200	0.51
6	240	0.58
7	280	0.65
8	320	0.71
9	360	0.77
10	400	0.83
11	440	0.88
12	480	0.94
13	520	0.99
14	560	1.04
15	600	1.09
16	640	1.14
17	680	1.19
18	720	1.24
19	760	1.28
20	800	1.33

- NOTES:**
- GAUGES TO BE MADE OF NO. 18 GAUGE (U.S. STANDARD) MILD STEEL PLATE AND TO BE COVERED WITH VITREOUS ENAMEL WITH MINIMUM THICKNESS OF 12 MILS ON NUMERAL SIDE AND 3 MILS ON THE REVERSE SIDE AND ON EDGES WHERE PLATE HAS BEEN CUT, PUNCHED OR DRILLED.
 - ALL CUTTING, DRILLING AND PUNCHING OF THE PLATES SHALL BE COMPLETED BEFORE THE VITREOUS ENAMEL IS APPLIED.
 - THE FACE OF THE GAUGE SHALL BE BRIGHT WHITE AND ALL NUMERALS AND GRADUATIONS SHALL BE BLACK.
 - GRADUATIONS SHALL BE SHARP AND ACCURATE TO THE DIMENSIONS SHOWN.
 - FOLLOWING CONSTRUCTION ALL GAUGE CALIBRATION DATA INCLUDED IN THIS TABLE MUST BE VERIFIED.
 - POSITION ZERO REFERENCE ON GAUGE EXACTLY LEVEL WITH TOP OF WEIR SILL.
 - CENTER GAUGE HORIZONTAL IN UPSTREAM CELL OF STRUCTURE.
 - EQUATION FOR CONTRACTED WEIR: $Q=3.33 (L-0.2H) H^{3/2}$.
 - CONTRACTOR SHALL SUPPLY STAFF GAUGE TO MWD FOR INSTALLATION BY MWD.
 - STAFF GAUGE AND EXTENSION WITH STAFF GAUGE AS A SINGLE UNIT SYSTEM: (CALM WATER CONTROL PRODUCTS PHONE #303-881-9093) OR APPROVED EQUAL.
 - SHADED DEPTHS SHALL BE MAJOR GRADUATIONS WITH CORRESPONDING DEPTH LABELED.

50" CONTRACTED WEIR GAUGE FOR 20 CFS NTS **174A**

Z:\GCE Projects\MWD-51\dwg\05_MWD-51_Dwg\05.dwg 12/04/20 - 3:16pm

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



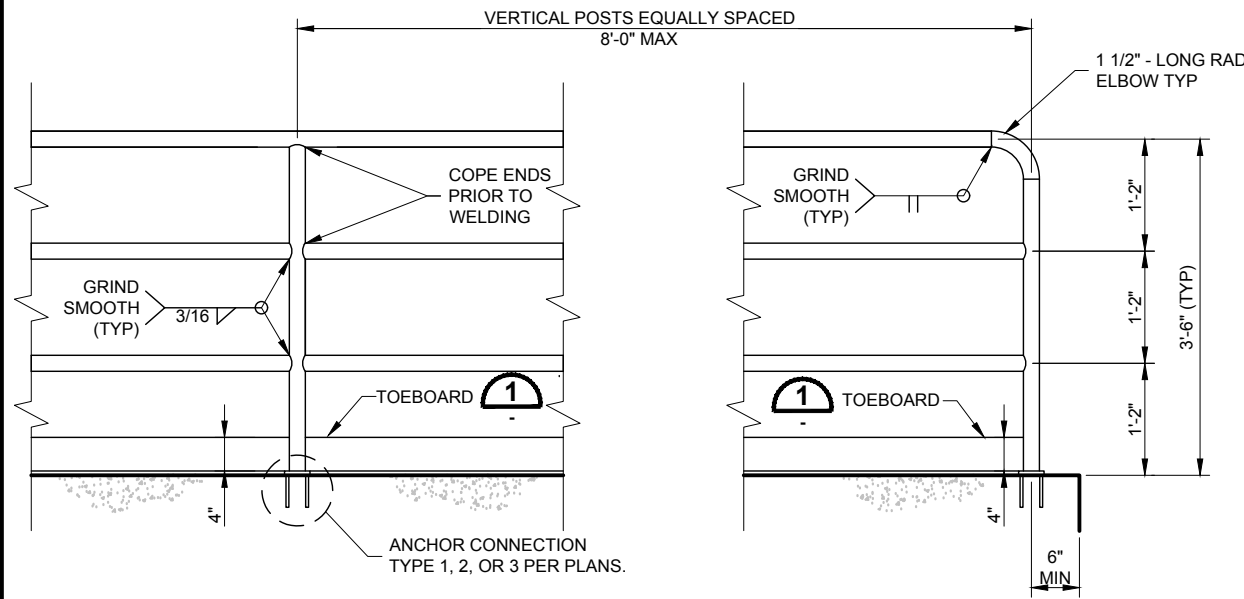
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**STANDARD
DETAILS**

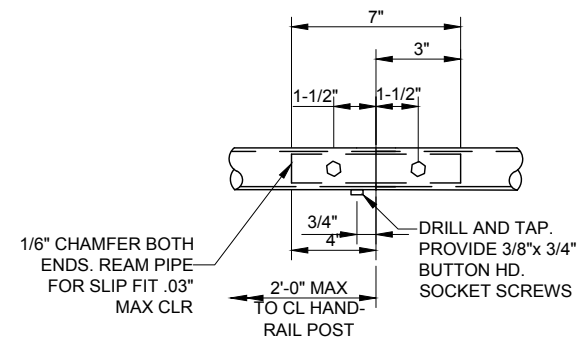
D - 2



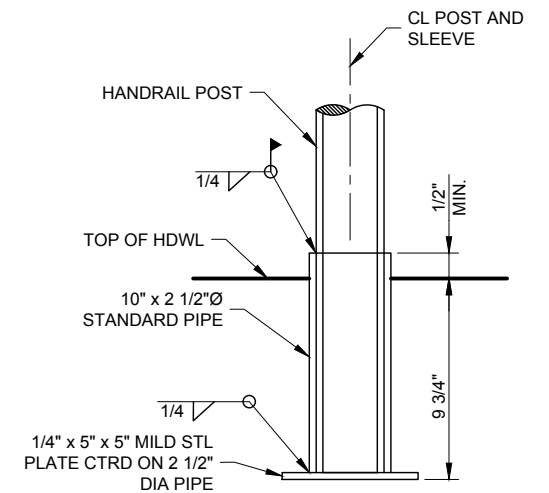
HANDRAIL DETAIL
NTS

NOTES:

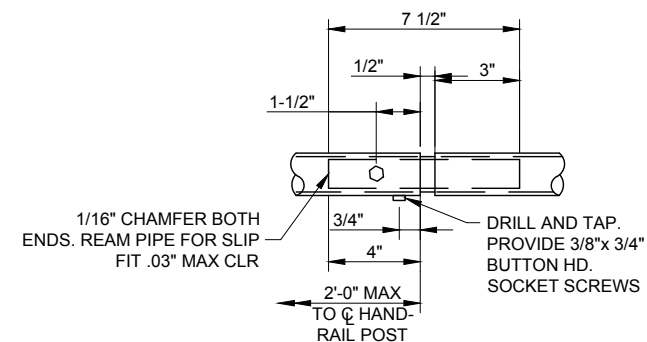
- HORIZONTAL RAILS SHALL BE 1.50" DIAMETER STANDARD WEIGHT PIPE. POSTS SHALL BE 1.50" DIAMETER X-STRONG PIPE (ASTM A53) GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. SHOP PRIME WITH RUST INHIBITING PRIMER (FIELD REPAIR PRIMER AS NEEDED).
- PAINT HANDRAIL PER GENERAL PAINTING AND COATING NOTES.
- VERTICAL POSTS TO BE EVENLY SPACED.
- HANDRAILS TO BE PLACED ON ALL HEADWALLS
- AFTER ENGINEER APPROVED INSTALLATION TACK WELD ALL BOLT AND NUT CONNECTIONS.



SPLICE FIXED JOINT
NTS

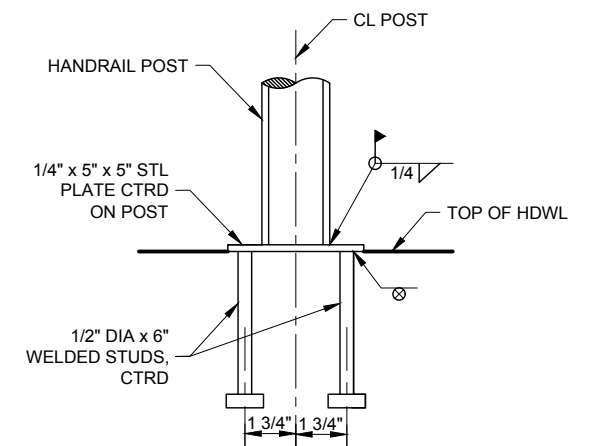


TYPE 1 "PIPE SLEEVE"
NTS

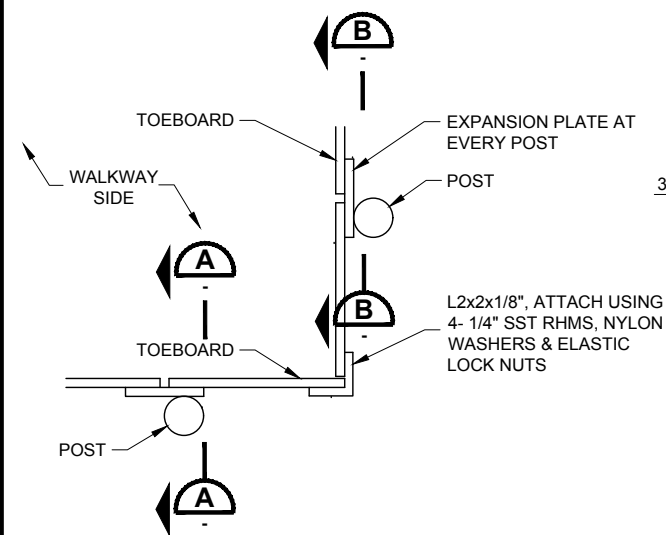


- NOTES:**
- SPLICE EXPANSION JOINT REQUIRED AT EACH CONCRETE EXPANSION JOINT.

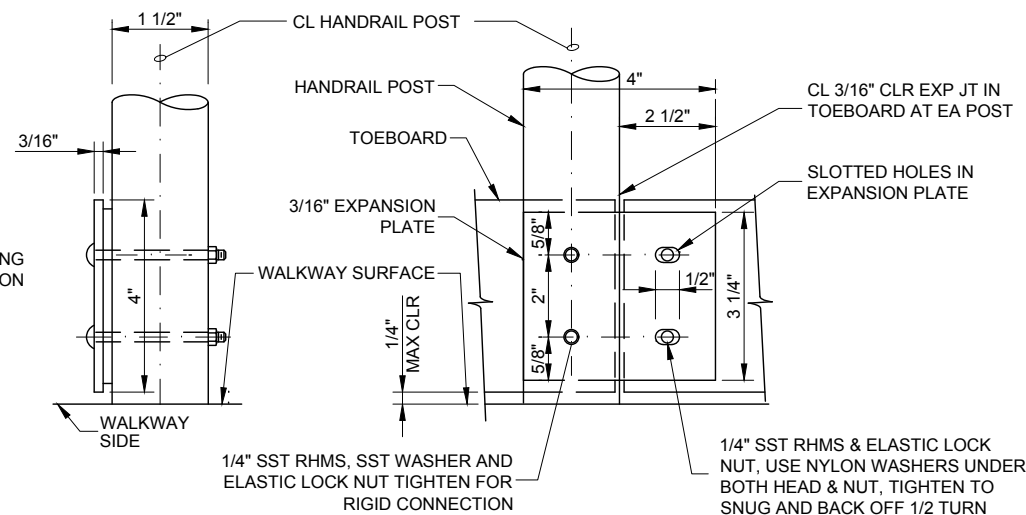
SPLICE EXPANSION JOINT
NTS



TYPE 2 "ANCHOR PLATE"
NTS



TOEBOARD PLAN
NTS

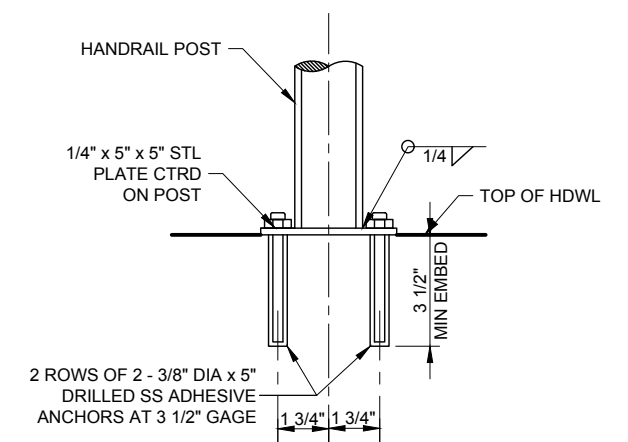


SECTION A
NTS

SECTION B
NTS

NOTES:

- WHERE BOLTED BASE PLATE EXTENDS ABOVE WALKWAY SURFACE, NOTCH TOEBOARD TO FIT AROUND BASE PLATE WITH MAXIMUM OF 1/4" GAP.
- TOEBOARD TO BE MOUNTED ON WALKWAY SIDE OF HANDRAIL.
- RHMS = ROUND HEAD MACHINE SCREW AS SPECIFIED, SST.

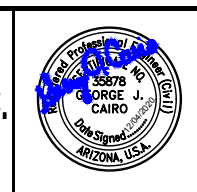


TYPE 3 "ADHESIVE ANCHORS"
NTS

HANDRAIL WITH TOEBOARD
NTS **301**

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



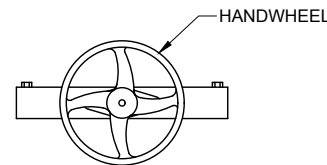
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

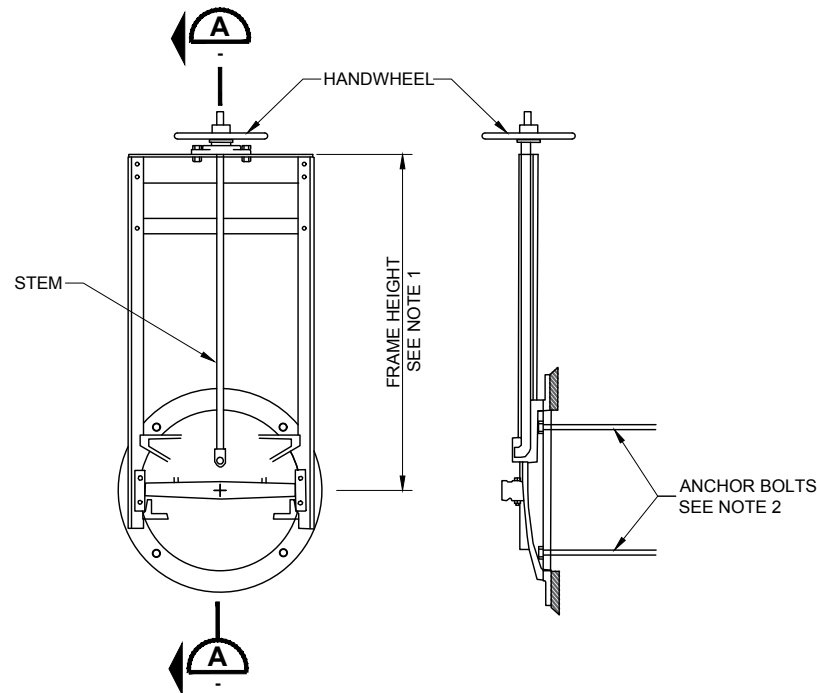
**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**STANDARD
DETAILS**

D - 3



PLAN VIEW
NTS



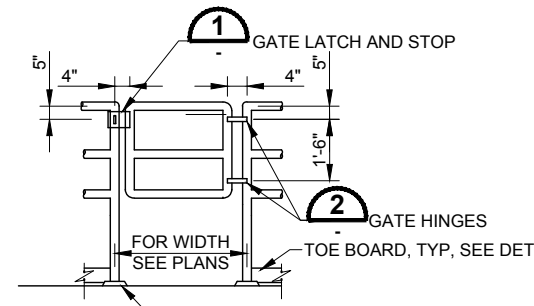
FRONT VIEW
GATE IN CLOSED POSITION
NTS

SECTION A
NTS

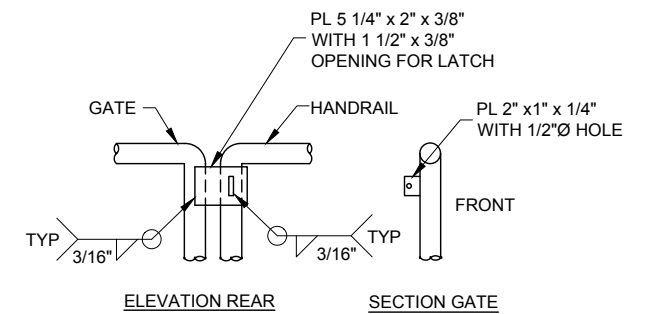
NOTES:

1. FURNISH FRAME HEIGHT TO POSITION HANDWHEEL 6" MINIMUM ABOVE TOP OF STRUCTURE OR GRATING, WHICHEVER IS HIGHER AND SET 36" ABOVE FINISHED GRADE.
2. PROVIDE 3" CLEARANCE MINIMUM BETWEEN ANCHOR BOLTS AND PIPE OD
3. ALL CANAL GATES SHALL BE SELF CONTAINED FLATBACK TYPE, WITH GALVANIZED STEEL RAILS AND YOKE, SUITABLE FOR HEADWALL MOUNTING. LIFT NUTS SHALL BE BRONZE. THE GATE SHALL BE FURNISHED WITH A HAND WHEEL OPERATOR. ALL GATES SHALL BE FACTORY COATED PER MANUFACTURER'S RECOMMENDATION. THE GATES SHALL CONFORM TO FRESNO SERIES 6400 MODEL 20-10C SLIDE GATE.

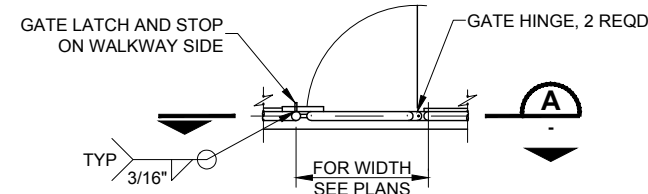
CANAL GATE
NTS **302**



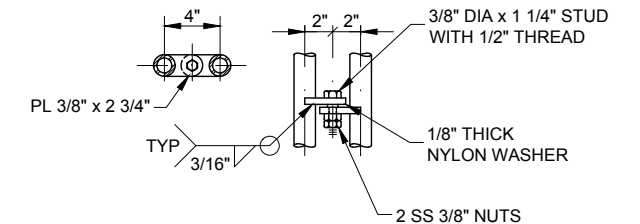
HANDRAIL HINGED GATE
NTS



GATE LATCH
NTS



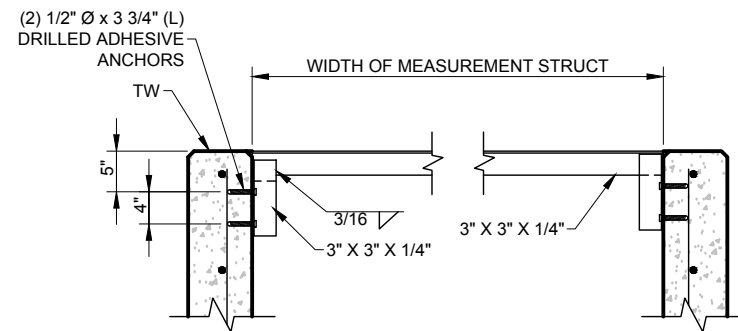
HANDRAIL GATE PLAN VIEW
NTS



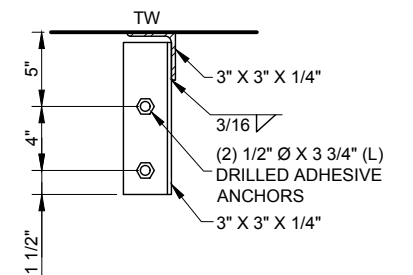
HINGE
NTS

NOTE:
HANDRAIL HINGED GATE TUBE SPACING, HEIGHT, MATERIAL AND COATING SHALL MATCH ADJOINING HANDRAIL

HANDRAIL HINGE GATE
NTS **326**



SECTION VIEW



SIDE VIEW

MESH COVER SUPPORT
NTS **332**

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



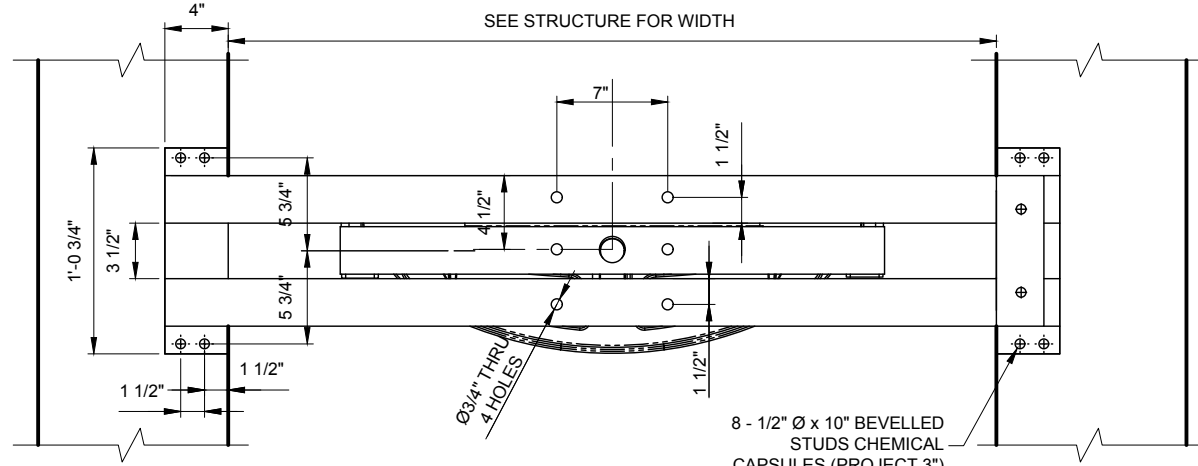
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

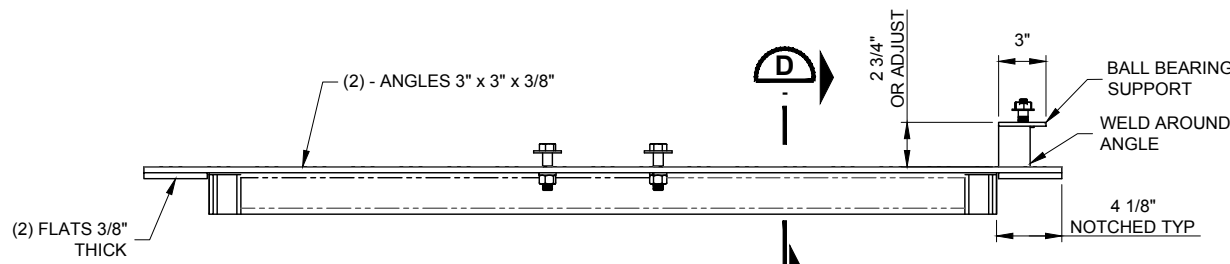
MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA

STANDARD
DETAILS

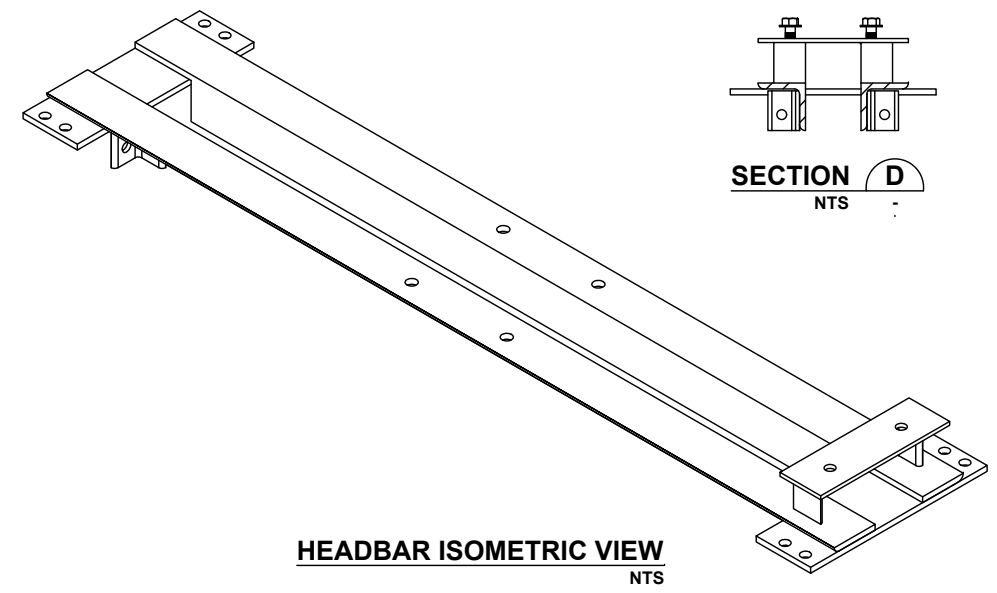
D - 4



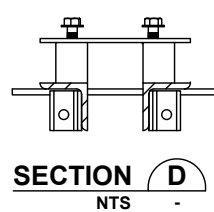
HEADBAR DETAIL
NTS



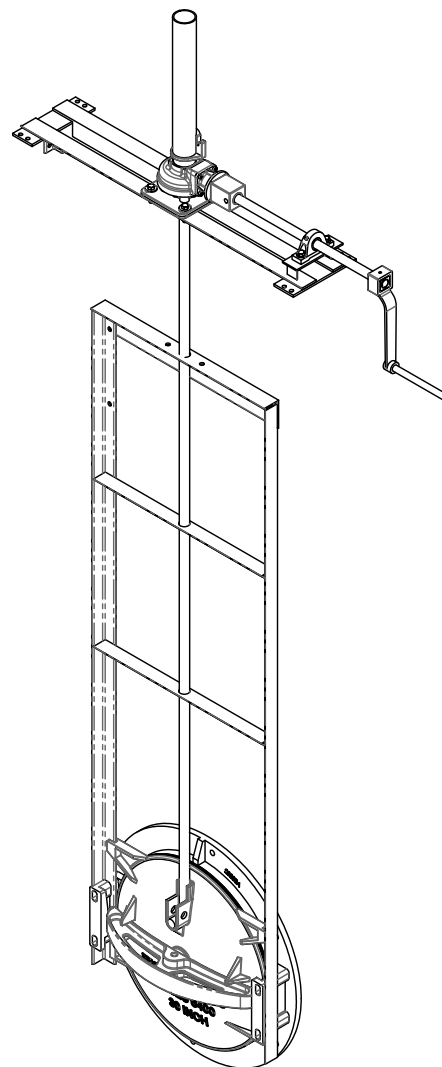
HEADBAR SECTION
NTS



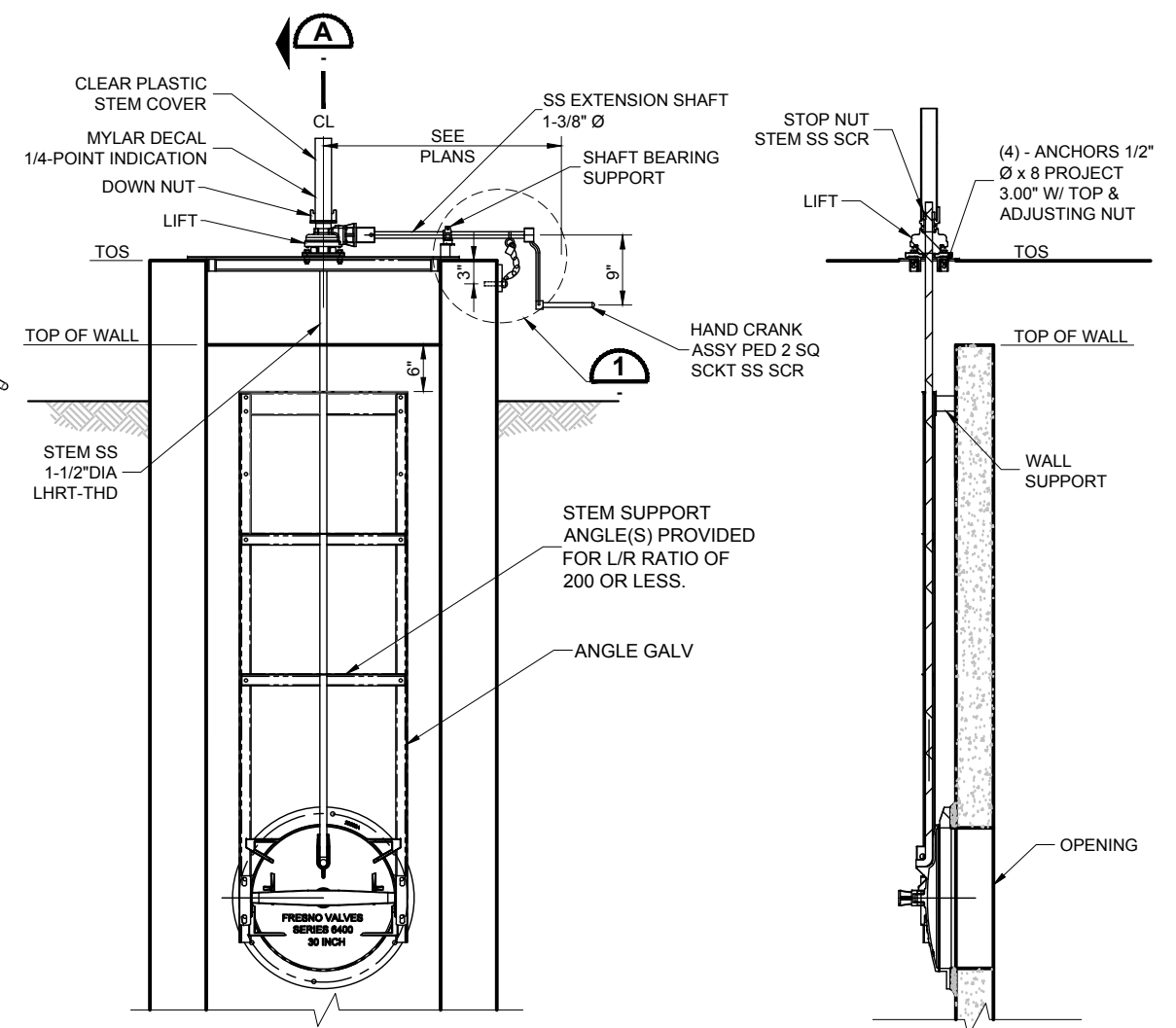
HEADBAR ISOMETRIC VIEW
NTS



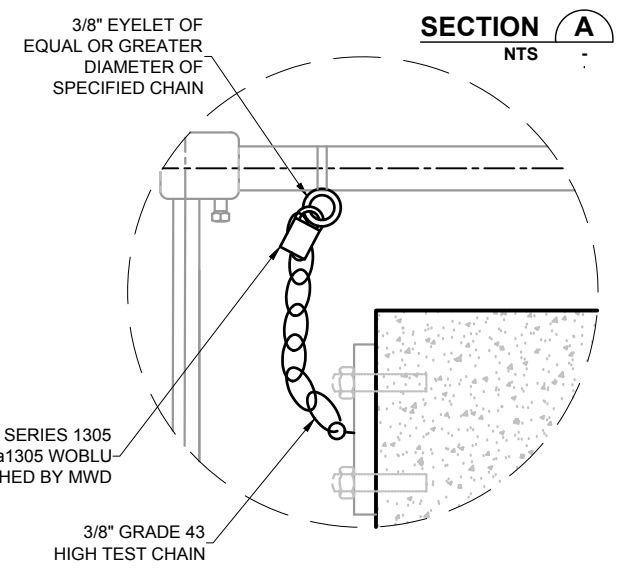
SECTION D
NTS



ISOMETRIC VIEW
NTS



FRONT VIEW
NTS



DETAIL 1
NTS

NOTES:

1. THE OPERATOR MUST HAVE A GEAR BOX A CHAIN DRIVE HORIZONTAL EXTENSIONS WILL NOT BE PERMITTED.
2. THE GEAR BOX SHALL BE SIZED TO OPEN THE GATE WITH NO MORE THAN A 40 LB. PULL. THE GEAR BOX SHALL BE ROTORK GEAR OR A PREAPPROVED EQUAL.
3. THE EXTENSION SHAFT SHALL BE SOLID SHAFT AND RUN PARALLEL TO THE HEAD BAR OF THE GATE. THE EXTENSION SHAFT SHALL BE CONNECTED TO THE GEAR BOX OUTPUT SHAFT BY A COUPLER OR SOCKET AND NUT ASSEMBLY. THE EXTENSION SHAFT SHALL NOT BE WELDED TO THE GEAR BOX OUTPUT SHAFT. THE EXTENSION SHAFT SHALL EXTEND TO THE EDGE OF THE GATE FRAME UNLESS OTHERWISE SHOWN. THE EXTENSION SHAFT SHALL BE ADEQUATELY SUPPORT BY A MINIMUM OF 1 FLANGE BEARING AND PILLOW BEARINGS IF REQUIRED TO.
4. THE FLANGE BEARING SHALL BE SUPPORTED TO THE HEAD BAR OF THE GATE TO ACCEPT THE INPUT FORCE OF THE OPERATOR.
5. THERE SHALL BE A HAND WHEEL, HAND CRANK OR 2" OPERATING NUT TO TURN THE EXTENSION SHAFT UNLESS OTHERWISE SPECIFIED.
6. ALL SIDE CRANK OPERATED GATES PLACED ON FULL STRUCTURE HEIGHT WALLS SHALL BE SELF CONTAINED WITHOUT ANY CENTER BEAM BRACING.

EXTENDED SIDE HAND CRANK OPERATOR
NTS **340**

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

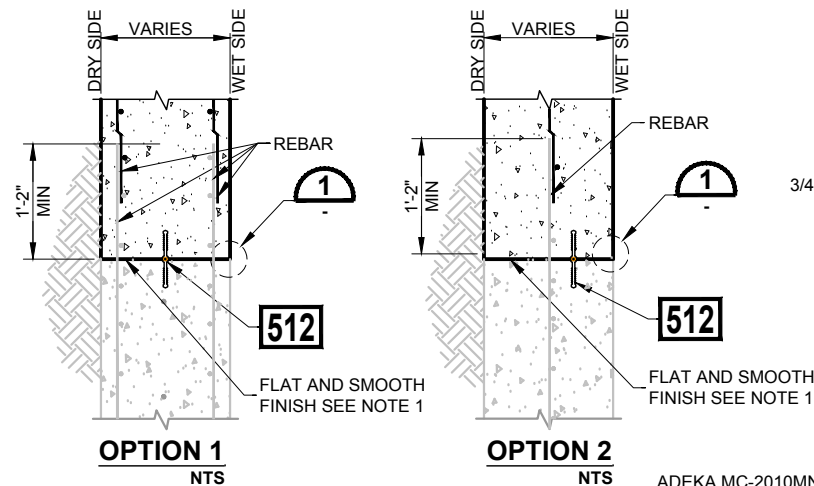
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**STANDARD
DETAILS**

D - 5

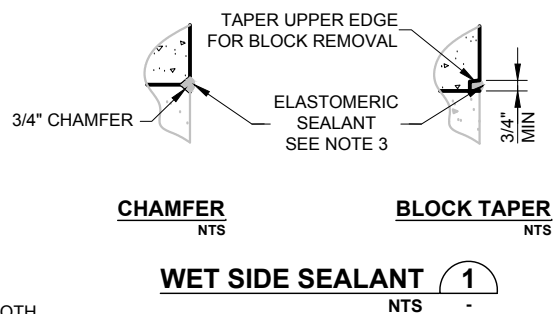
Z:\GCE Projects\MWD-51\dwg\05_MWD-51_D.dwg 12/04/20 - 3:16pm



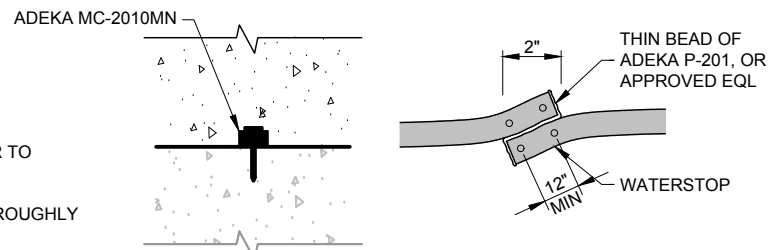
WATERSTOP COLD-JOINT DETAIL
NTS

NOTES:

1. BLAST AND CLEAN SURFACE OF EXISTING STRUCTURE, REFER TO SPECIFICATIONS.
2. CONCRETE SHALL BE PLACED IN 4 FOOT MAXIMUM LIFTS THOROUGHLY VIBRATED TO BOTTOM.
3. ELASTIC SEALANT SHALL BE SIKAFLEX TWO (2) COMPOUND NON-SAG (2C-NS) OR APPROVED EQUAL.
4. CONTRACTOR MAY USE ALTERNATIVE ADEKA WATERSTOP IN COLD JOINT PER DETAIL AND AS APPROVED BY ENGINEER.

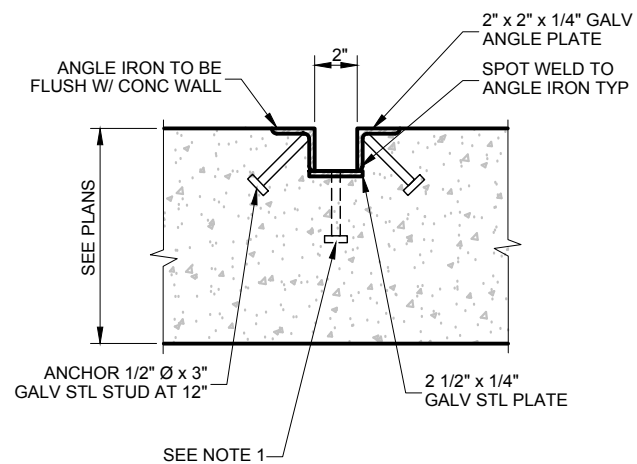


WET SIDE SEALANT
NTS

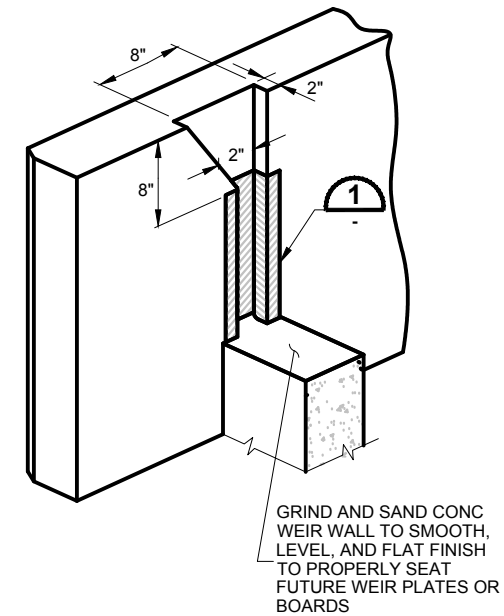


ALTERNATIVE ADEKA WATERSTOP DETAIL
NTS

MANHOLE / STAND BOX STRUCTURE COLD JOINT
NTS **508**



GROOVE SLOT OPENING
(SIDE PLAN VIEW) NTS

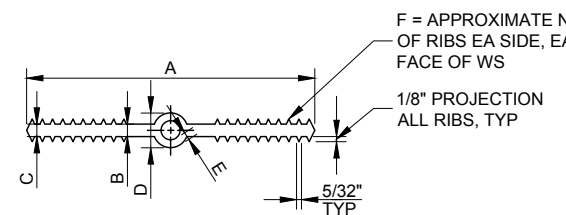


GROOVE SLOT OPENING
(ISOMETRIC VIEW) NTS

GROOVE SLOT
NTS **511**

NOTES:

1. FOR GROOVES ON THE WALL ENDS LESS THAN 12" WIDE USE ONE ANCHOR 1/2" Ø x 3" GALV STEEL STUD @ 12" OC.

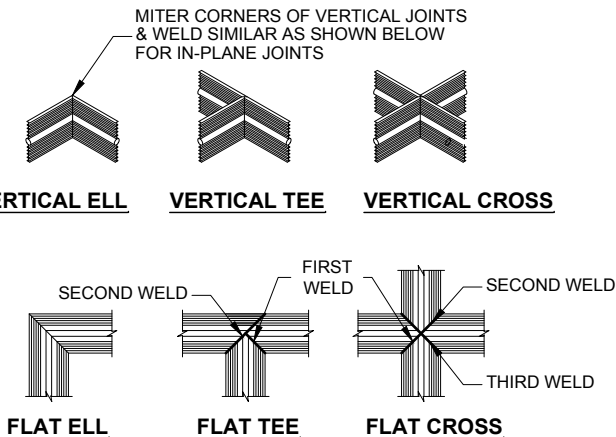


SIZE	A	B	C	D min	E	F
4"x3/16"	4"	3/16"	3/16"	3/4"	1/4"	4
6"x3/8"	6"	3/8"	3/8"	7/8"	1/4"	6
9"x3/8"	9"	3/8"	3/8"	1"	1/4"	8

NOTES:

1. NON-ROUND CENTER BULBS SHALL HAVE A MINIMUM OUTSIDE DIMENSION OF 'D'.
2. BULB TYPE WATERSTOP SHOWN IS REQUIRED FOR EXPANSION AND CONTROL JOINTS.
3. USE 6 INCH WATERSTOPS IN ALL CONSTRUCTION JOINTS UNLESS SPECIFICALLY SHOWN OTHERWISE.
4. SECURE WATERSTOP TO REINFORCEMENT WITH WIRE TIES AS REQUIRED TO ASSURE WATERSTOP WILL NOT FOLD DURING CONCRETE PLACEMENT.

PLASTIC WATERSTOP
NTS



WATERSTOP JOINTS
NTS

WATERSTOP DETAILS
NTS **512**

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



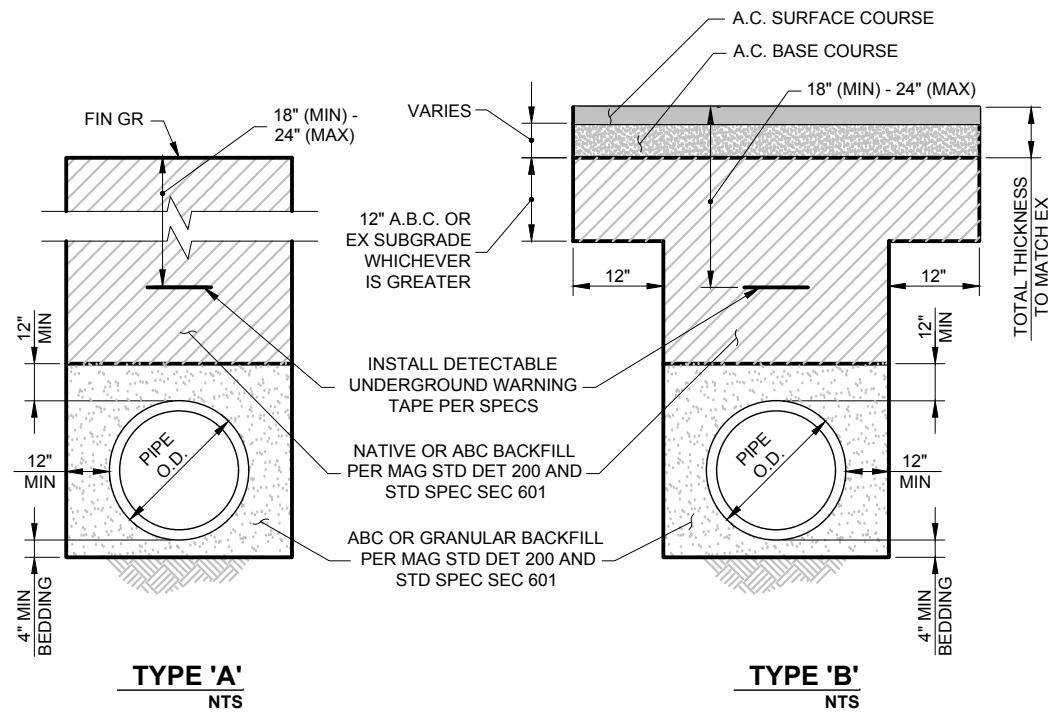
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

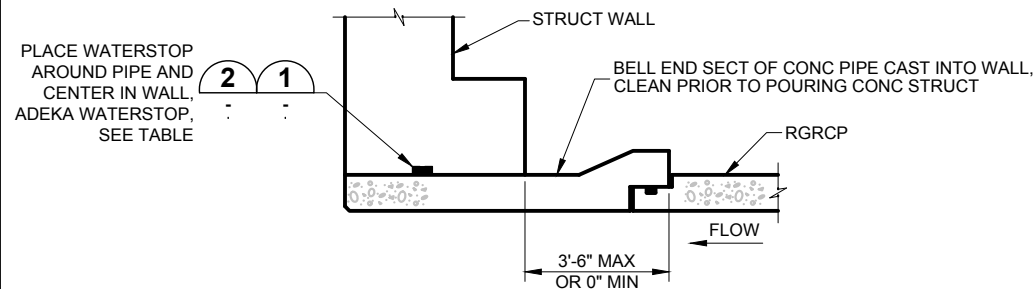
MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA

STANDARD
DETAILS

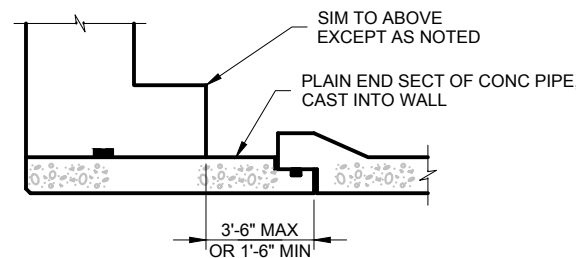
D - 6



TYPICAL PIPE TRENCH DETAILS NTS **513**



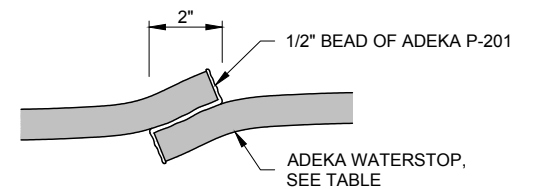
TYPICAL RGRCP BELL END PIPE SECTION NTS



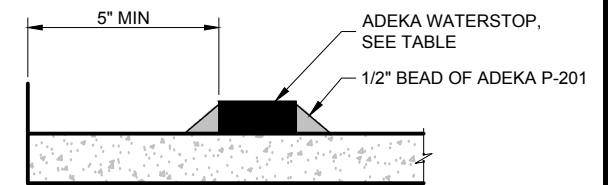
TYPICAL RGRCP PLAIN END PIPE SECTION NTS

ADEKA TYPE	PIPE DIA (IN)
MC-2010MN	36" AND LARGER
MC-2005T	30" AND SMALLER

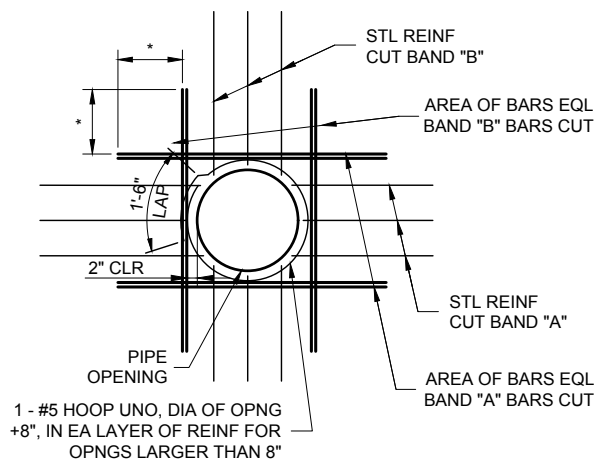
RGRCP WALL PENETRATION AND SEAL NTS **516**



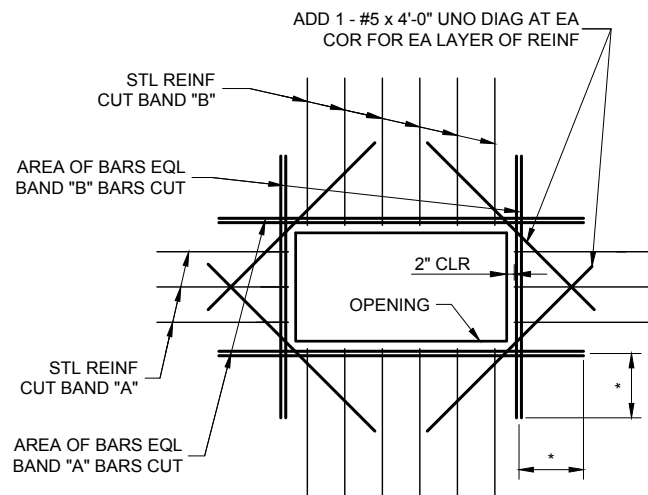
SIDE BY SIDE WATERSTOP SPLICE NTS **1**



WATERSTOP PLACEMENT NTS **2**



FOR ALL PIPE OPENINGS NTS



FOR ALL RECTANGULAR OPENINGS NTS

REBAR	AREA (SQ IN)
#4	0.1963
#5	0.3067
#6	0.4418
#7	0.6013
#8	0.7854

NOTES:

- SEE PLANS FOR MAIN WALL REINFORCING.
- TYPICAL ALL OPENINGS IN CONCRETE WALLS OR SLAB.
- PROVIDE MINIMUM LAP AS SHOWN ON PLANS, TYPICAL. WHERE LAP DISTANCE IS NOT AVAILABLE, TERMINATE BARS WITH STD HOOK 2" CLR OF FACE OF CONCRETE.
- * PROVIDE MINIMUM LAP SPLICE AS NOTED OR SHOWN ON PLANS TYPICAL.

ADDITIONAL WALL REINFORCEMENT NTS **518**

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



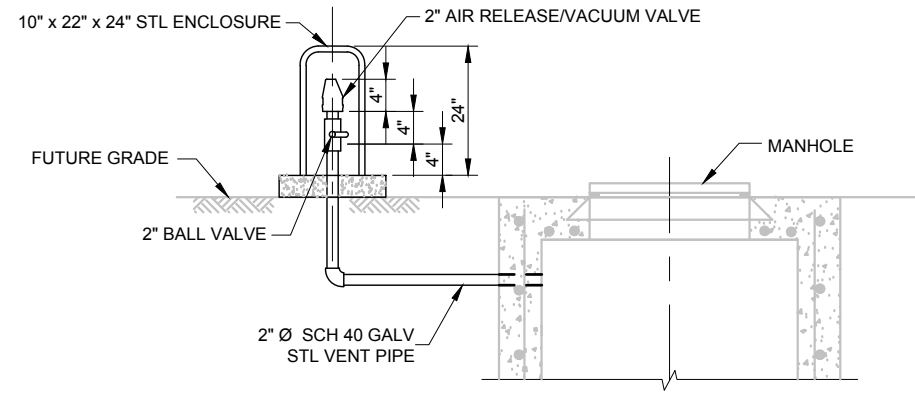
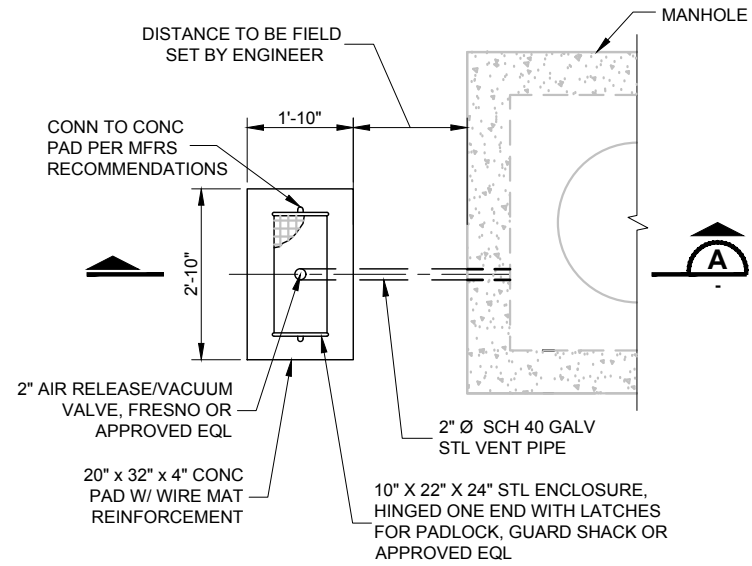
DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

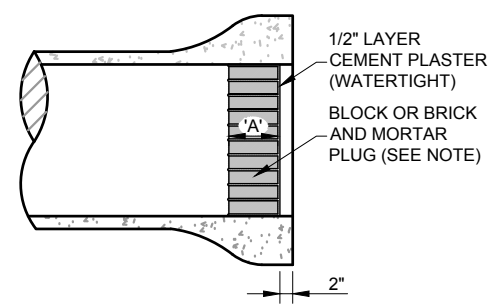
**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL 1
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

**STANDARD
 DETAILS**

D - 7

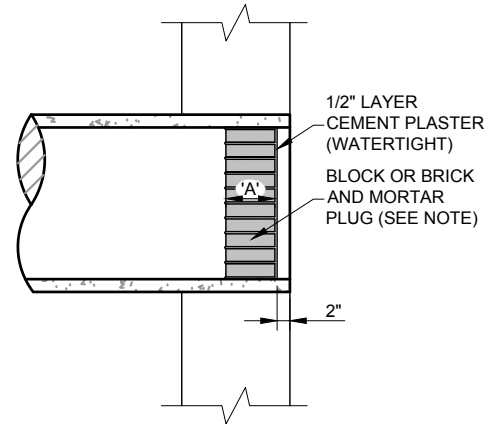


MANHOLE AIR VALVE AND ENCLOSURE 532
NTS



PIPE PLUG SIZING

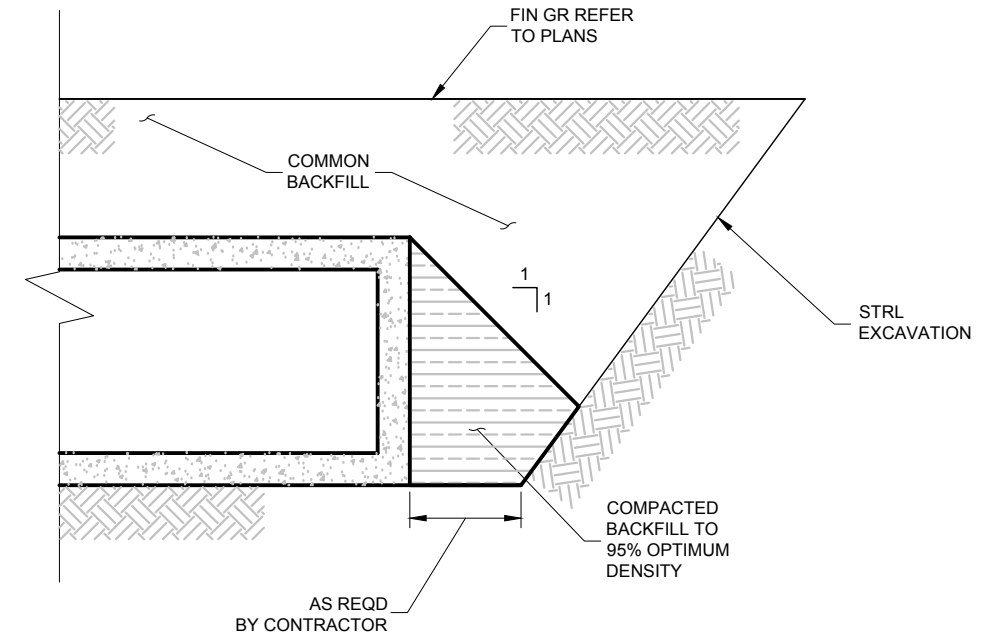
PIPE SIZE	PLUG THICKNESS "A"
12"-36"	8"
39"-48"	12"
51"-72"	18"
75"-90"	24"
96"-114"	32"
120"-132"	36"
138"-150"	40"



NOTE:
1. REFER TO PLANS FOR INSTALLATION LOCATIONS.

NOTES:
1. NOTE: COMPACT SOIL AT END OF PIPE OR WALL OPENING TO 95% OF MAXIMUM DENSITY.
2. IF DEPTH OF COVER IS LESS THAN 5' OR GREATER THAN 10' INCREASE PLUG THICKNESS A MINIMUM OF 4'.

TYPICAL PIPE OR WALL OPENING PLUG 541
NTS



NOTE:
COMPACTED BACKFILL SHALL BE CONSTRUCTED IN LIFTS AS SPECIFIED, OR DIRECTED BY ENGINEER.

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

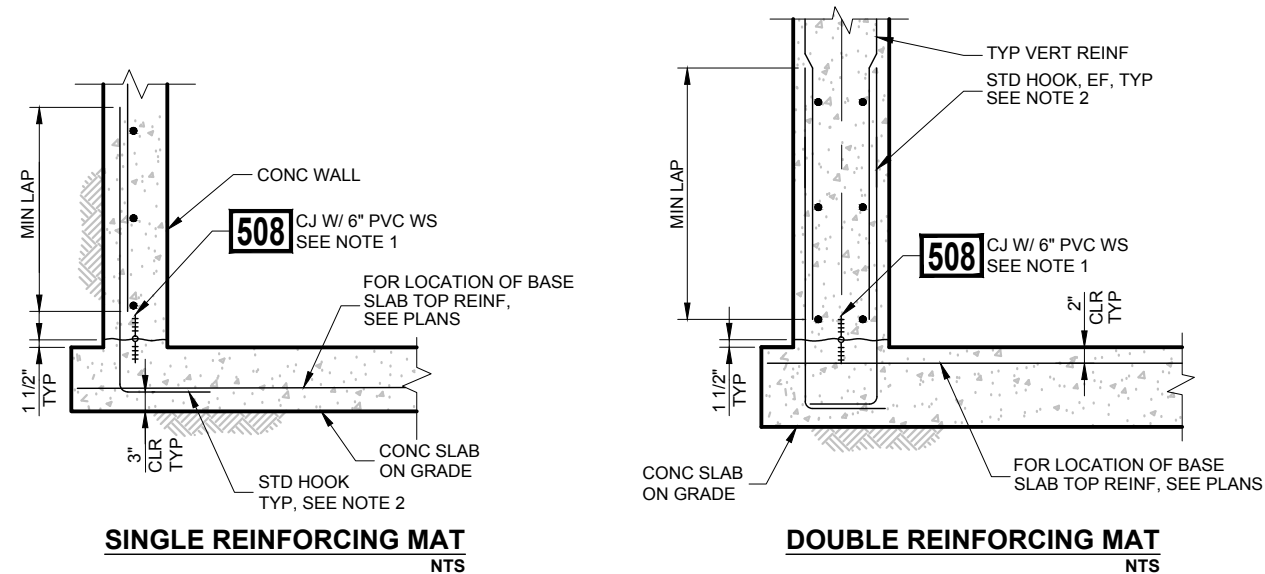
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

**STANDARD
DETAILS**

D - 8

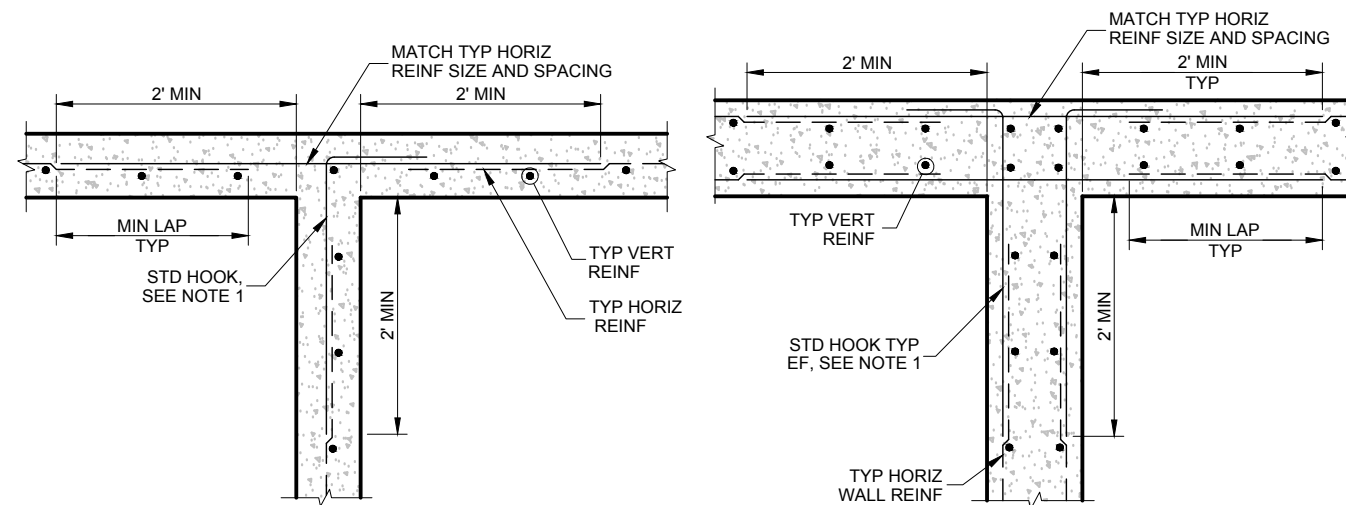
Z:\GCE Projects\MWD-51\dwg\05_MWD-51_Dwg\gcairo.dwg 12/04/20 - 3:17pm



NOTES:

1. SEE MWD GENERAL NOTES, EXCEPT WHERE SPECIFICALLY NOTED OR DETAILED ON PLANS, ALL CONCRETE STRUCTURES SHALL BE POURED MONOLITHICALLY. CONTRACTOR MAY SUBMIT RFI TO REQUEST A MULTIPLE POUR OPTION.
2. REINFORCING SIZE SHALL MATCH TYPICAL VERTICAL WALL REINFORCEMENT AND SPACING, UNLESS OTHERWISE NOTED.
3. FOR LAP SPLICE LENGTHS REFER TO TABLE IN THE GENERAL STRUCTURAL NOTES.

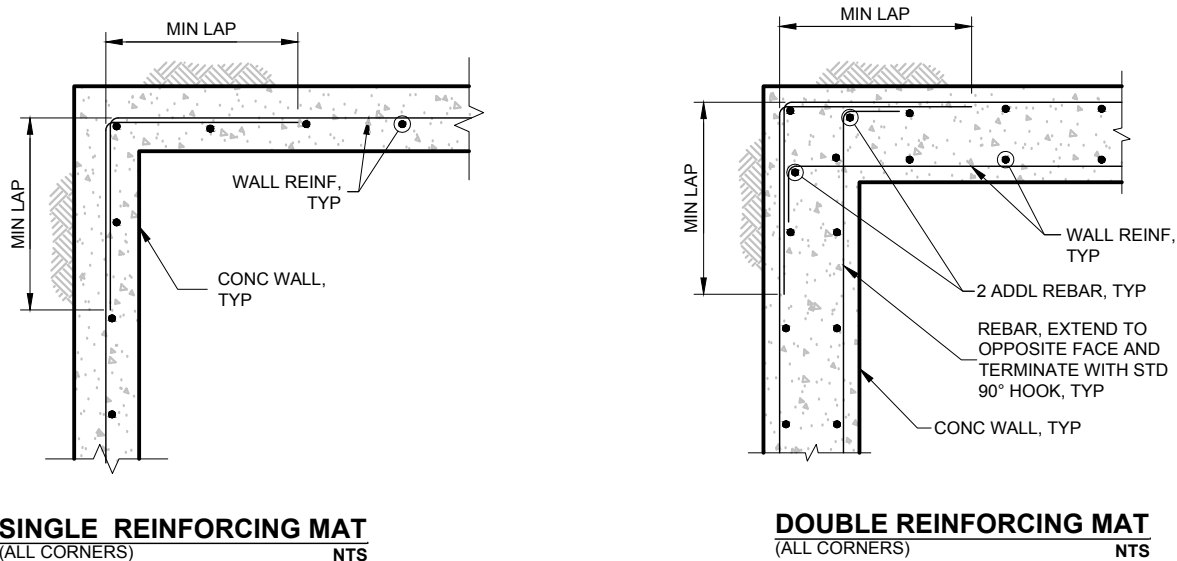
TYPICAL WALL TO SLAB REINFORCEMENT DETAILS **701**
NTS



NOTES:

1. REINFORCING SIZE SHALL MATCH TYPICAL HORIZONTAL WALL REINFORCEMENT AND SPACING, UNLESS OTHERWISE NOTED.
2. FOR LAP SPLICE LENGTHS REFER TO TABLE IN THE GENERAL STRUCTURAL NOTES.

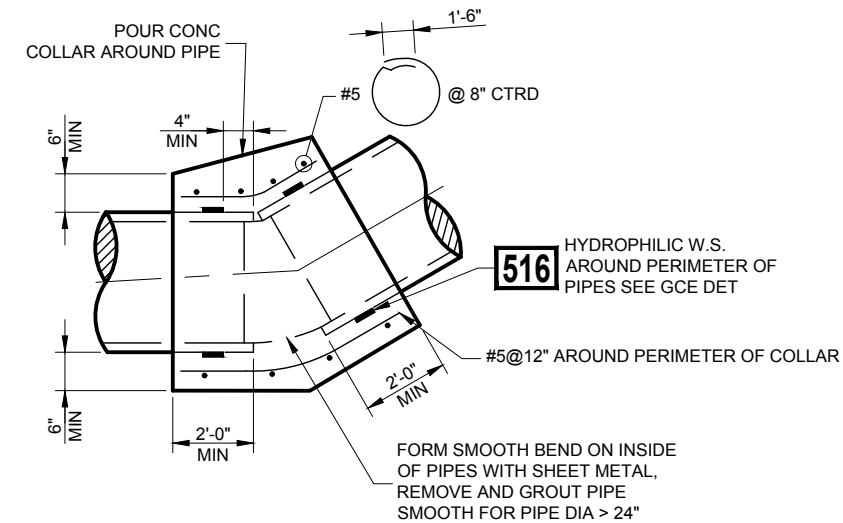
TYPICAL WALL INTERSECTION REINFORCING DETAILS **702**
NTS



NOTES:

1. DETAIL APPLIES TO ALL WALL TO WALL CORNER CONNECTIONS.
2. FOR LAP SPLICE LENGTHS REFER TO TABLE IN THE GENERAL STRUCTURAL NOTES.

TYPICAL CORNER REINFORCEMENT DETAILS **703**
NTS



NOTES:

1. PIPE SUPPLIER'S SHOP BUILT ELBOWS WITH RUBBER RING JOINTS MAY BE USED.
2. ELBOW USED FOR BOTH HORIZONTAL ANGLE CHANGES AND VERTICAL ELEVATION CHANGES.

FIELD FABRICATED HORIZONTAL BEND FOR CONCRETE PIPE **726**
NTS

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

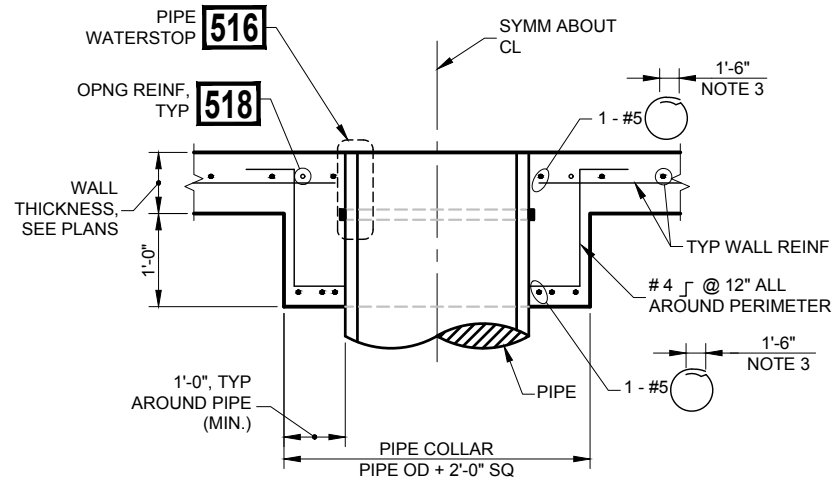
MWD
MARICOPA WATER DISTRICT
P.O. BOX 900
WADDELL, ARIZONA 85355
(623) 546-8266

**MCDOT OLIVE AVENUE
LATERAL 9 AND LATERAL 9
SUBLATERAL 1
SARIVAL AVENUE TO REEMS
ROAD
(MCDOT TT0562)
WADDELL, ARIZONA**

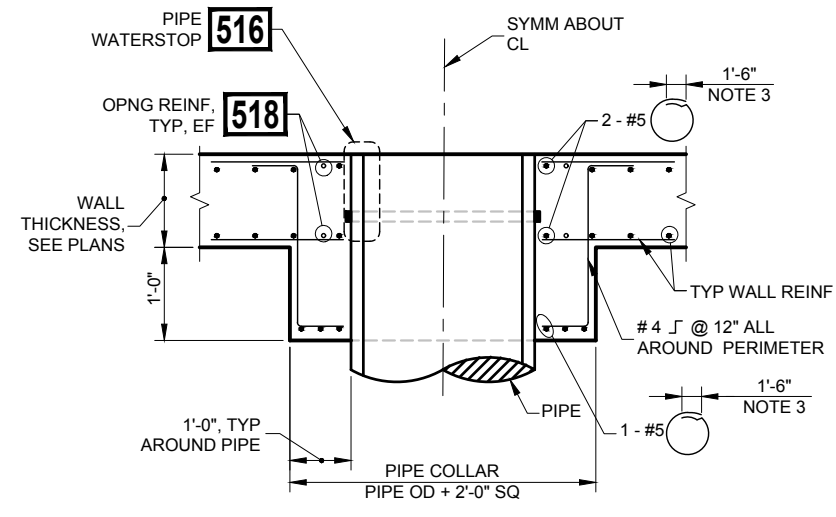
**STANDARD
DETAILS**

D - 9

Z:\GCE Projects\MWD-51\dwg\05_MWD-51_Dwg\gce\120420 - 317.pn

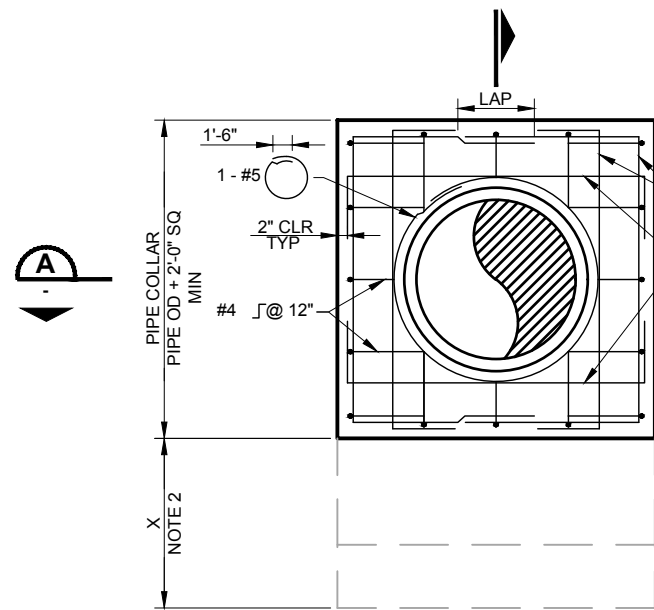


SECTION A
NTS

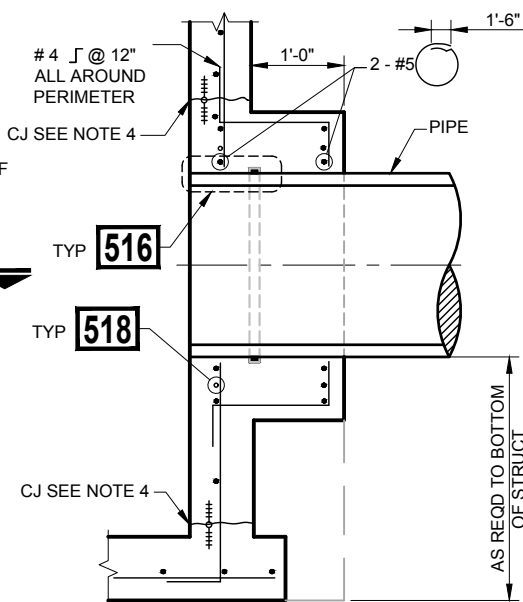


SECTION B
NTS

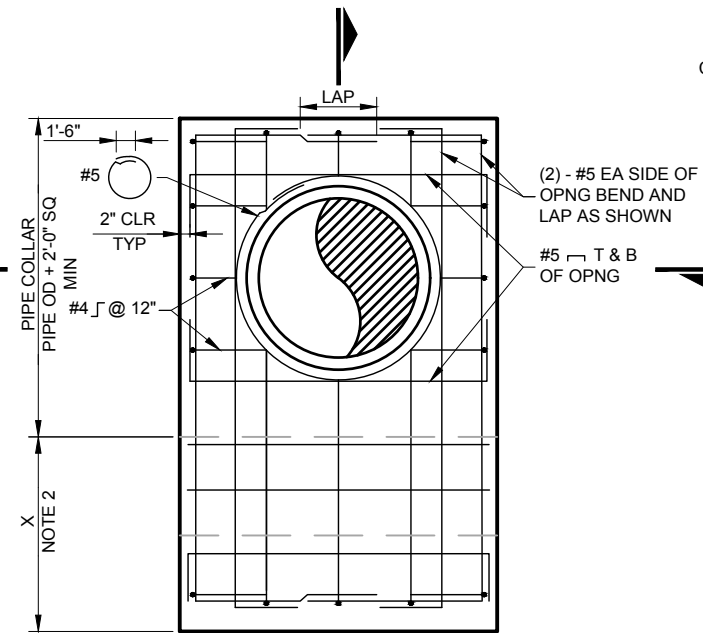
- NOTES:**
1. IF STRUCTURE WIDTH MATCHES COLLAR WIDTH REPLACE \lrcorner SIDE #4 \lrcorner @ 12" WITH #4 @ 12".
 2. WHERE $X < 2'$, EXTEND COLLAR TO BOTTOM OF SLAB WHERE $X > 2'$ EXTEND COLLAR AT CONTRACTORS OPTION AT EXTENDED COLLARS, MATCH AND EXTEND TYP WALL AND COLLAR REINFORCEMENT.
 3. HOOP DIAMETER = PIPE OD + 4" CLEAR. INCREASE DIAMETER AS REQUIRED WHERE HOOKS OR OTHER BARS ARE SHOWN BETWEEN HOOP AND PIPE OR OPENING.
 4. CONSTRUCTION JOINT WITH 6" PVC WATERSTOP DETAIL 508 SHALL ONLY BE INSTALLED WHERE SPECIFICALLY CALLED OUT ON PLANS. SEE PLANS FOR SPECIFIC JOINT LOCATIONS.
 5. ALL PIPES IN AND OUT OF STRUCTURE SHALL HAVE A FLEXIBLE JOINT PER RGRCP WALL PENETRATION AND SEAL DETAIL 516.



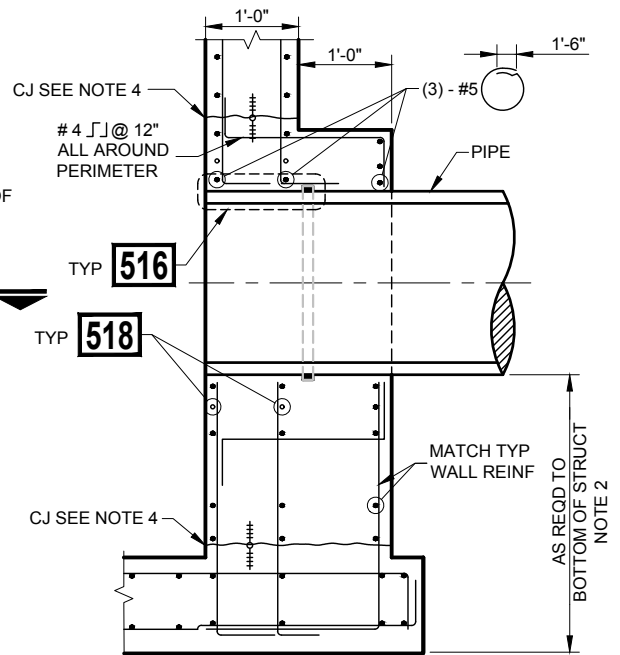
COLLAR ELEVATION
NTS



SECTION C
NTS



COLLAR ELEVATION
NTS



SECTION D
NTS

SINGLE MAT REINFORCEMENT
NTS

RGRCP PIPE COLLAR DETAIL 741
NTS

DOUBLE MAT REINFORCEMENT
NTS

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



DESIGNED BY:	R. RILEY
DRAWN BY:	B. JONES
APPROVED BY:	G. CAIRO
DRAWING:	MWD-51
PLOT DATE:	DEC, 2020

MWD
MARICOPA WATER DISTRICT
 P.O. BOX 900
 WADDELL, ARIZONA 85355
 (623) 546-8266

**MCDOT OLIVE AVENUE
 LATERAL 9 AND LATERAL 9
 SUBLATERAL 1
 SARIVAL AVENUE TO REEMS
 ROAD
 (MCDOT TT0562)
 WADDELL, ARIZONA**

**STANDARD
 DETAILS**

D - 10

Z:\GCE Projects\MWD-51\dwg\05_MWD-51_Dwg\standard 12/04/20 - 3:17pm