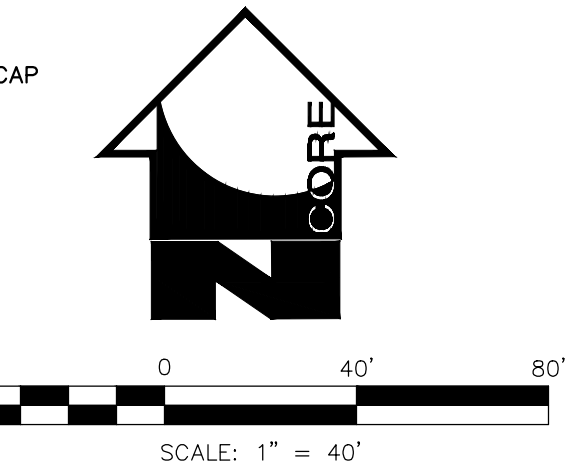


WATER SCHEDULE OF WORK

20	2" BLOWOFF VALVE WITH THRUST BLOCK	-SEE DETAIL A,B,&C/3	1 EA
21	12" CLASS 150 C900 PVC WATERLINE	-SEE DETAIL F/3	790 LF
22	12" X 12" X 12" TEE AND THRUST BLOCK (COST INCLUDED IN WATERLINE)	-SEE DETAILS B&C/3	1 EA
23	12" GATE VALVE WITH ANCHOR, VALVE BOX, COVER, AND COLLAR AT FINAL GRADE	-SEE DETAILS D&E/3	1 EA
24	REMOVE EX. BLOWOFF VALVE AND THRUST BLOCK, CONNECT NEW 12" WATERLINE TO EXISTING		1 EA
25	ABANDON 3" WATERLINE (NO PAYMENT)		NPI
26	REMOVE VALVE, CUT AND PLUG EXISTING 3" WATERLINE AFTER 12" WATERLINE IS CONSTRUCTED AND ACCEPTED		1 EA
27	6" FIRE HYDRANT ASSEMBLY INCLUDES 12"X12"X6" TEE, 6" CLASS 150 C900 WATERLINE, AND ANCHOR VALVE AND THRUST BLOCK	-SEE DETAILS B,C,D,E,F,&G/3	3 EA



38+00

39+00

40+00

41+00

42+00

43+00

44+00

149+00

150+00

151+00

152+00

APN 227-23-001
5.0826
ACRES

PORTION OF APN 227-33-033
GREATER YUMA PORT AUTHORITY
ZONING: LIGHT INDUSTRIAL

PORTION OF APN 227-33-033
GREATER YUMA PORT AUTHORITY
ZONING: LIGHT INDUSTRIAL
FUTURE PHASE 3
MAGRINO INDUSTRIAL PARK

UTILITY WARNING

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM THE FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

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

Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-11 (782-3348)
In Maricopa County: (602) 263-1100

DRAWING RECORD:	
DATE:	
No.:	

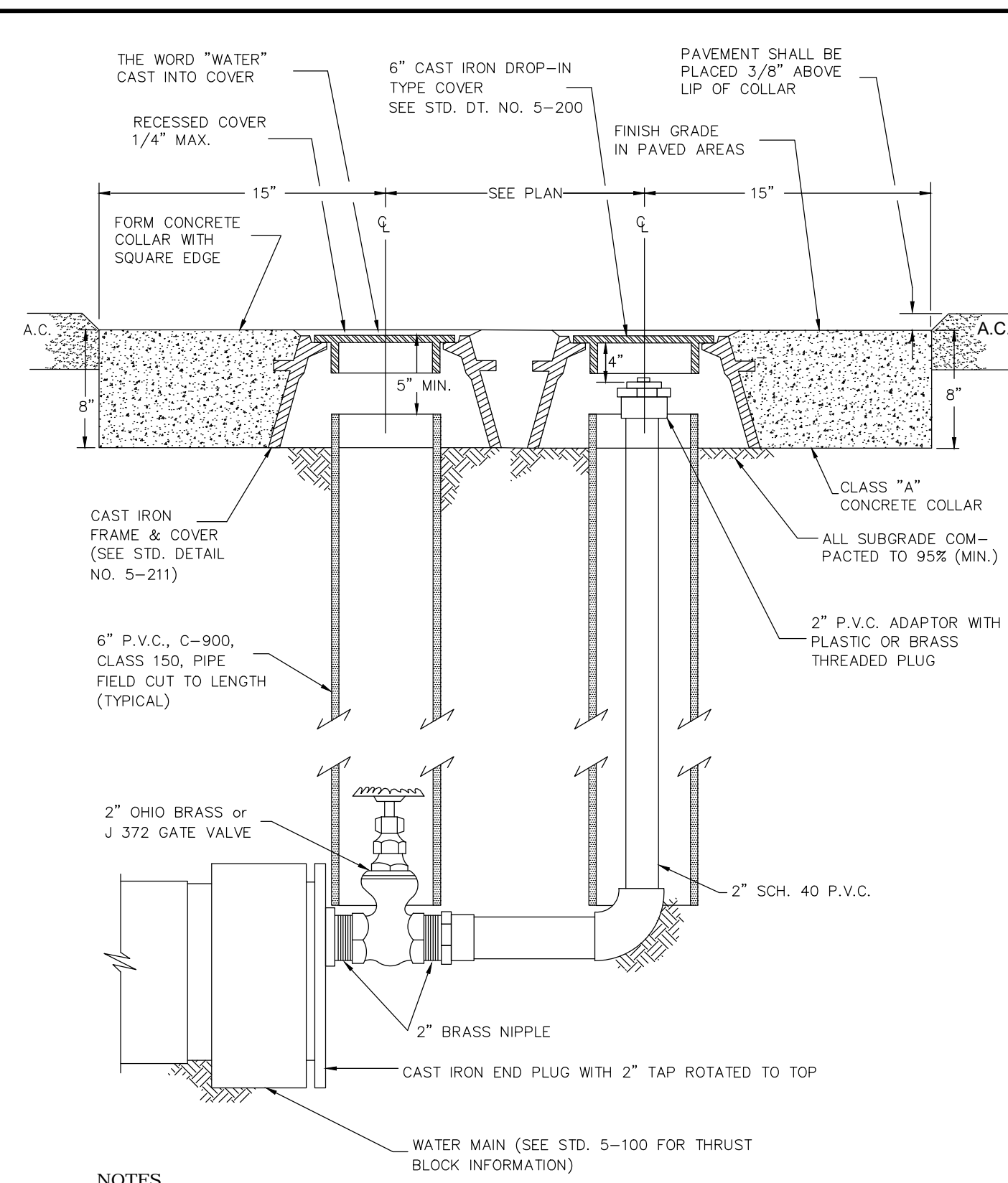
CORE ENGINEERING GROUP, PLLC
200 East 16th Street, Suite 150
Yuma, AZ 85364
V - 928.344.5931 F - 928.344.5932
www.CoreEngineeringGroup.com
Core@core-e-g.com

**MAGRINO INDUSTRIAL PARK
WATERLINE MAIN EXTENSION**
CITY OF SAN LUIS
YUMA COUNTY, ARIZONA
WATER PLAN

Date: APRIL 2019
Designed: D.J.N.
Drawn: J.R.K.
Checked: D.J.N.
Proj. No.: 19-026

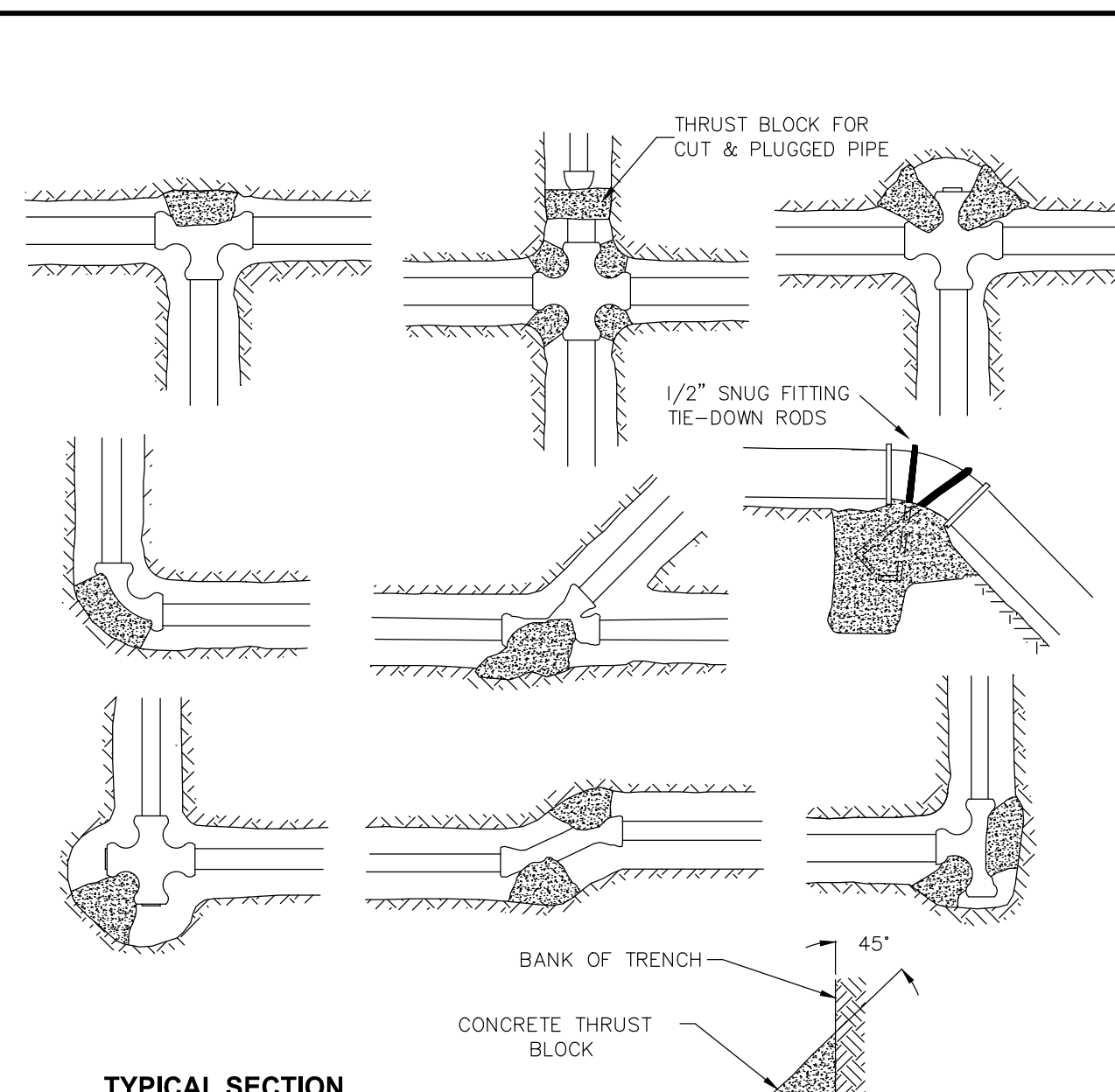
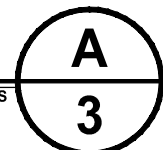
Map 10, Apr 2019 - 2:35pm, 2:\2019\19-026\Map10.dwg (19-026_MagrinoWaterlineMainExt.dwg) - Core Engineering Group, PLLC

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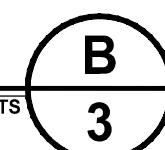
NOTES
 1. BLOWOFF SHALL BE LOCATED WITHIN 20' (MAX.) FROM LAST IN-LINE VALVE.
 2. TRACER WIRE SHALL BE INSTALLED ON ALL WATER MAINS AND EXTENSIONS. TRACER WIRE SHALL EXTEND INTO THE VALVE FRAME.

WATERMAIN BLOWOFF
 CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STD. NO. 5-140 (MODIFIED)



TYPICAL THRUST BLOCK INSTALLATION
 CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STD. NO. 5-990 (FEB 2009)

- NOTES
 1. SEE STANDARD DETAIL NO. 5-100 FOR CALCULATING SAFE BEARING AREAS.
 2. ALL FERROUS FITTINGS, PIPE, CONNECTORS, AND APPURTENANCES SHALL RECEIVE A 10 MIL. (MIN.) POLYETHYLENE WRAP TO PREVENT DIRECT CONTACT WITH THE SOIL.
 3. THRUST BLOCKS SHALL CONSIST OF CLASS "B" CONCRETE.
 4. CONCRETE SHALL NOT COME IN DIRECT CONTACT WITH PIPE.
 5. 3/16" STAINLESS STEEL TIE-DOWN RODS REQUIRED FOR PIPE LARGER THAN 8".
 6. PLACE A MINIMUM OF 8" CONCRETE UNDER ALL FITTINGS.



THRUST AT FITTINGS IN POUNDS AT 150 POUNDS PER SQUARE INCH OF WATER PRESSURE ALL PIPE & FITTINGS SHALL BE CLASS 150 (MINIMUM)

SIZE	TEES & DEAD ENDS	90° BEND	45° BEND	22 1/2° BEND	PER DEGREES OF DEFLECTION
2"	1,740	2,460	1,335	675	30.3
4"	2,715	3,840	2,085	1,065	47.3
6"	5,625	7,950	4,320	2,190	98.3
8"	9,780	13,800	7,500	3,795	171.0
10"	16,050	22,650	12,300	6,225	280.5
12"	22,800	32,250	17,550	8,850	399.0
14"	31,050	42,300	23,850	12,075	543.0
16"	40,200	57,000	30,750	15,600	705.0

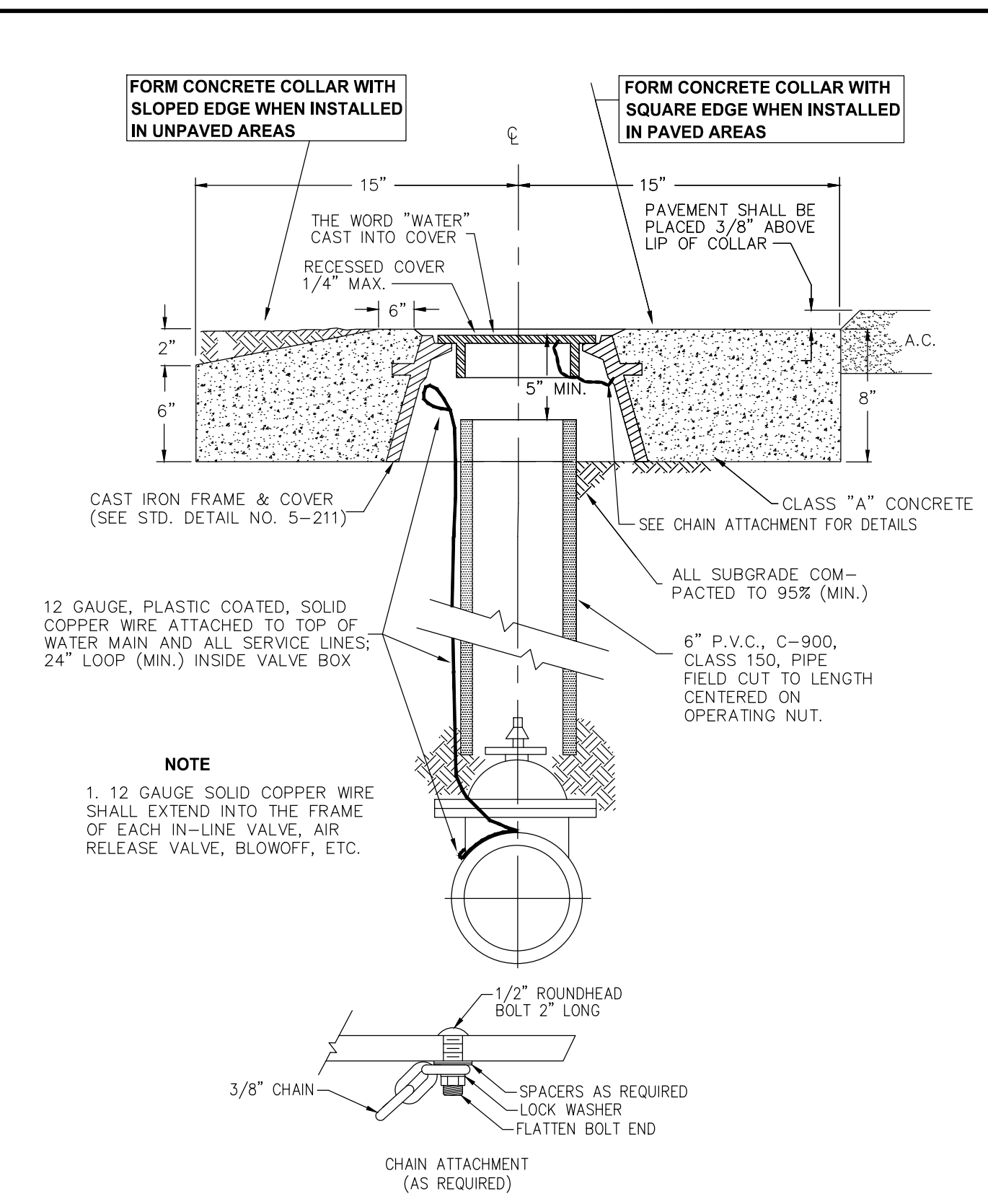
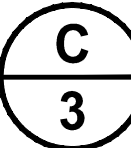
SAFE BEARING LOAD POUNDS PER SQUARE FOOT

SOIL	SAFE BEARING LOAD POUNDS PER SQUARE FOOT
MUCK, PEAT, ETC.	0
SOFT CLAY	1000
SAND	2000
SAND & GRAVEL	3000
SAND & GRAVEL CEMENTED WITH CLAY	4000

TO CALCULATE THE AREA OF A NEEDED THRUST BLOCK
 DIVIDE THRUST BY SAFE BEARING LOAD. THRUST BLOCK AREA FOR 6" AND LARGER PIPE SHALL NOT BE LESS THAN THREE (3) SQUARE FEET.

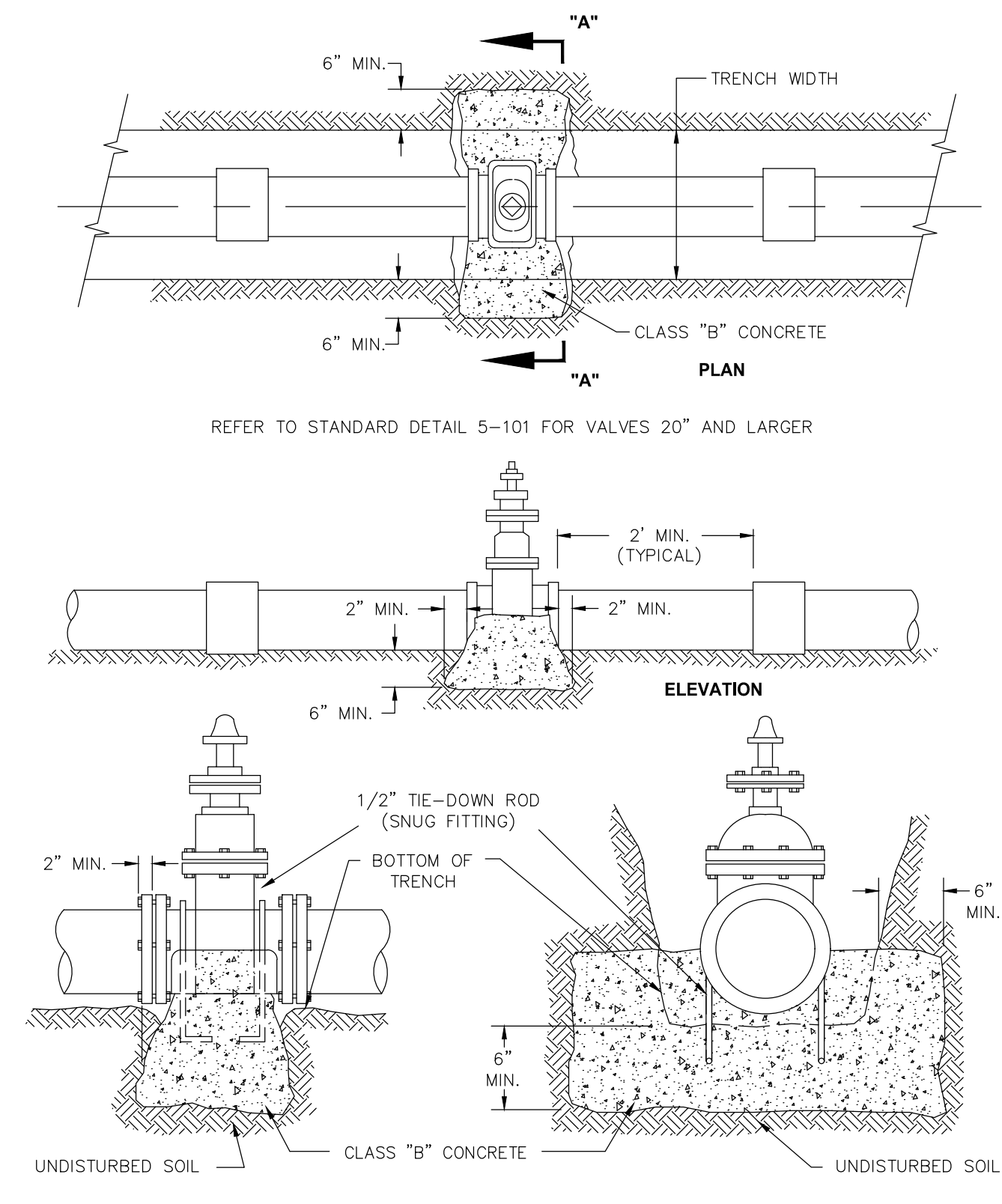
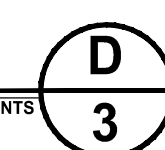
- NOTES
 1. ALL DOMESTIC PIPE AND FITTINGS SHALL BE CLASS 150 (MIN.) UNLESS OTHERWISE NOTED.
 2. ALL PRIVATE FIRE SUPPRESSION PIPE AND FITTINGS SHALL HAVE A MINIMUM CLASS OF 150 (P.S.I.).
 3. FOR PIPE SIZE GREATER THAN 16", THRUST BLOCK AREA WILL BE DETERMINED BY SOIL TESTS.
 4. CONCRETE SHALL NOT COME IN DIRECT CONTACT WITH PIPE.

THRUST BLOCK DATA
 CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STD. NO. 5-100 (FEB 2009)



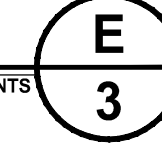
NOTE
 1. 12 GAUGE SOLID COPPER WIRE SHALL EXTEND INTO THE FRAME OF EACH IN-LINE VALVE, AIR RELEASE VALVE, BLOWOFF, ETC.

VALVE BOX INSTALLATION
 CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STD. NO. 5-210 (FEB 2009)



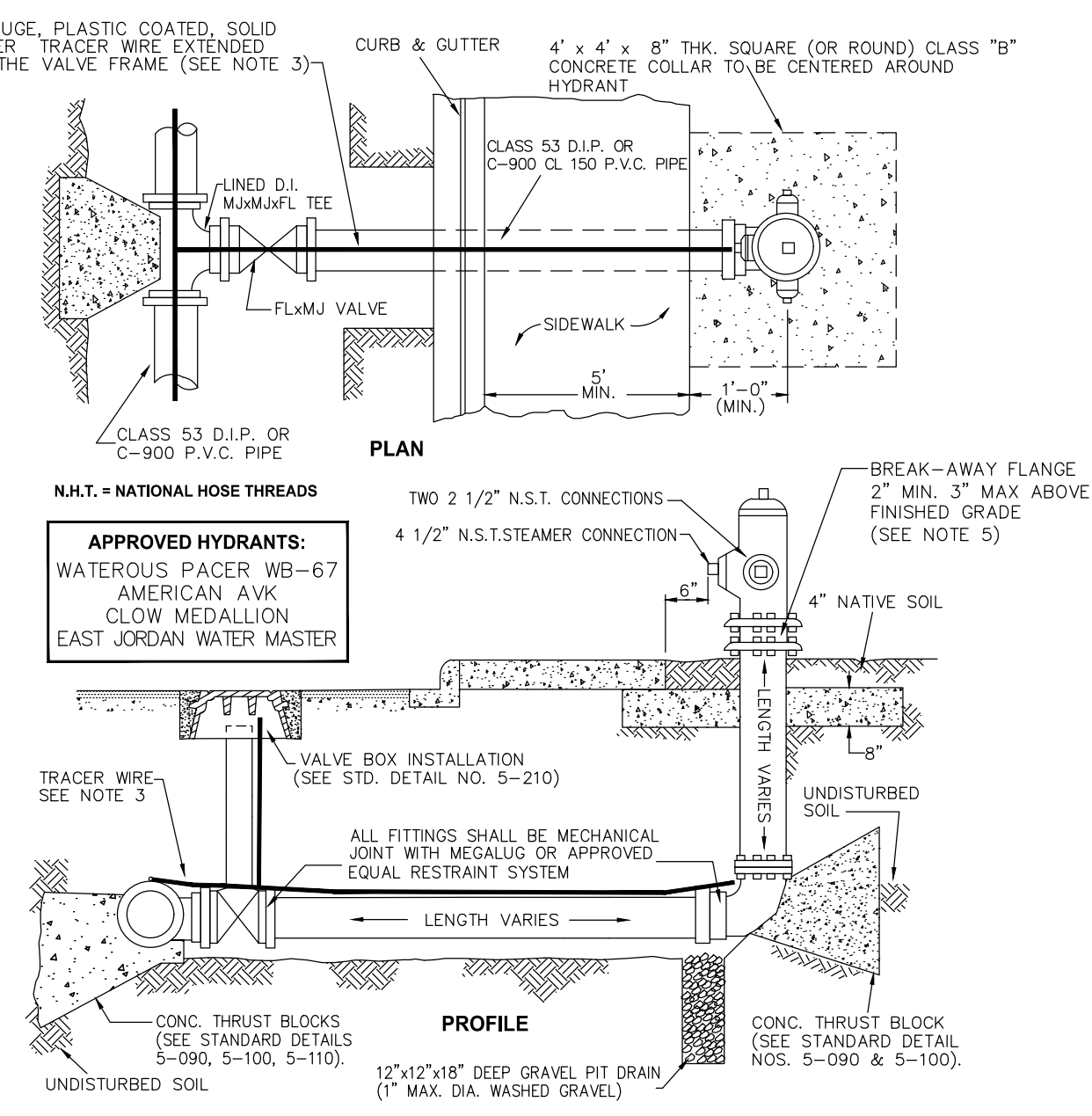
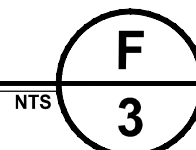
- NOTES
 1. THIS DETAIL COVERS WATER VALVES 4" OR LARGER.
 2. ALL BURIED IRON AND FERROUS FITTINGS SHALL RECEIVE A 10 MIL. (MIN.) POLYETHYLENE PLASTIC WRAP TO PREVENT DIRECT CONTACT WITH SOIL.
 3. TIE DOWN RODS REQUIRED FOR PIPES LARGER THAN 8".
 4. CONCRETE SHALL NOT COME IN CONTACT WITH WATER PIPE.
 5. REFER TO STANDARD DETAIL 5-101 FOR VALVES TWENTY INCH (20") AND LARGER.

VALVE ANCHORS
 CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STD. NO. 5-110 (FEB 2009)



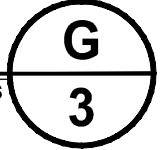
- NOTES
 1. NATIVE SOIL MAY BE USED FOR BACKFILL WHEN APPROVED BY THE CITY ENGINEER.
 2. BEDDING SHOWN IS A MINIMUM STANDARD FOR SHALLOW TRENCHES AND ACCEPTABLE NATIVE BASE. EXACT TYPE OF BEDDING SHALL BE DETERMINED BY THE CITY ENGINEER.
 3. DITCH SIDES SHALL BE SLOPED OR SHORED AS REQUIRED PER O.S.H.A. STANDARDS.
 4. ALL TRENCHES SHALL BE COLD-PATCHED IF LEFT OPEN TO TRAFFIC. ALL TRENCHES SHALL BE PAVED (HOT-MIX) WITHIN 2 WEEKS FROM IT'S EXCAVATION.

TYPICAL WATER AND SEWER MAIN LINE TRENCH BACKFILL
 CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STD. NO. 5-080



- NOTES
 1. 4" THRU 12" GATE VALVES SHALL BE AMERICAN DARLING RESILIENT WEDGE 80 CSR, WATEROUS SERIES 500 RESILIENT WEDGE, AMERICAN AVK RESILIENT WEDGE OR CLOW RESILIENT WEDGE.
 2. ALL BURIED DUCTILE IRON PIPE MUST BE WRAPPED WITH 10 MIL (MINIMUM) POLYETHYLENE PLASTIC WRAP.
 3. TRACER WIRE REQUIRED ON LINE FROM MAIN TO HYDRANT.
 4. NO BREAK-AWAY FLANGE BOLTS MAY MAKE CONTACT WITH SOIL.
 5. UTILIZE A MJ GRADELOCK OR OFFSET TO OBTAIN MEASUREMENT.

FIRE HYDRANT
 CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STD. NO. 5-120



DRAWING RECORD:
 DATE:
 No.:

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 Core@core-e-g.com

CORE ENGINEERING GROUP, PLLC
 REGISTERED PROFESSIONAL ENGINEER
 CERTIFICATE NO. 32329
 DOUGLAS J. NICHOLLS
 State of Arizona, U.S.A.

MAGRINO INDUSTRIAL PARK WATERLINE MAIN EXTENSION
 CITY OF SAN LUIS
 YUMA COUNTY, ARIZONA
 DETAILS

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Date: APRIL 2019
 Designed: D.J.N.
 Drawn: J.R.K.
 Checked: D.J.N.
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3 OF 3
 SHEET