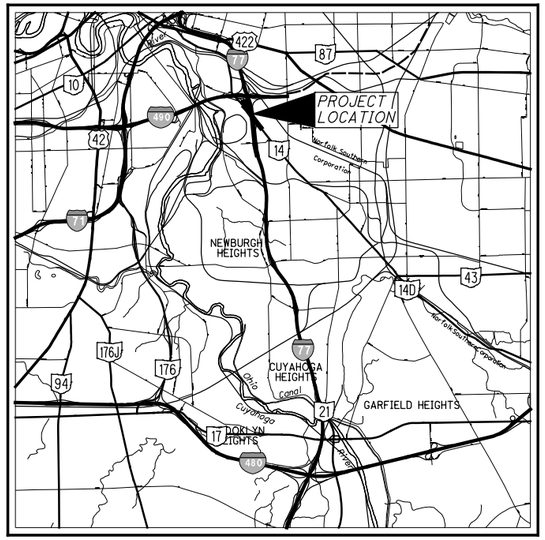

LOCATION MAP

LATITUDE: 41°28'27" LONGITUDE: 81°39'35"

SCALE IN MILES

0 1 2 3 4

N

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

CUY-77-13.80 (CCG6B)
BUILDABLE UNIT 7

CITY OF CLEVELAND

CUYAHOGA COUNTY

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
FEDERAL ROUTES
STATE ROUTES
COUNTY & TOWNSHIP ROADS
OTHER ROADS

INDEX OF SHEETS:

PROJECT DESCRIPTION

RELOCATION OF WATER LINES.

PROJECT EARTH DISTURBED AREA: N/A ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES
(SEE BU-6 FOR PROJECT EARTH DISTURBED AREA)

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

DESIGN DESIGNATION

	I.R. 77 NORTH OF BROADWAY	I.R. 77 SOUTH OF BROADWAY	RAMP J5 & J6	FRONTAGE ROAD	BROADWAY AVENUE
CURRENT ADT (2017)	32,770	54,050	21,280	2,340	18,170
DESIGN YEAR ADT (2037)	41,220	63,300	22,080	2,300	18,410
DESIGN HOURLY VOLUME AM/PM (2037)	2,340/4,970	4,900/6,470	2,560/1,500	110/310	1,580/1,160
DIRECTIONAL DISTRIBUTION AM/PM	55%/61%	57%/60%	N/A	N/A	62%/65%
TRUCKS (24 HOUR B&C)	8%	8%	7%	37%	6%
DESIGN SPEED	60	60	50 (490E), 35 (490W)	40	35
LEGAL SPEED	50	60	N/A	35	35
DESIGN FUNCTIONAL CLASSIFICATION:	URBAN INTERSTATE	URBAN INTERSTATE	DIRECTIONAL RAMP	FRONTAGE ROAD	URBAN ARTERIAL
NHS PROJECT	YES	YES	YES	YES	YES

DESIGN EXCEPTIONS

NONE

RELEASED FOR CONSTRUCTION

BU07_2018-01-16.CCG6B.BU7 RFC Plans_FC23.p	
01/18/2018	Brian.Link

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES TWO WORKING DAYS **BEFORE YOU DIG.**

OHIO Utilities Protection SERVICE — *Call Before You Dig* **1-800-362-2764**

(Non-members must be called directly)

OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE **1-800-925-0988**

PLAN PREPARED BY:

E.L. ROBINSON ENGINEERING
1468 West 9th Street • Cleveland, Ohio 44113
www.elrobinsonengineering.com

ENGINEERS SEAL:

STATE OF OHIO
CHAD M. LEWIS
E-70934
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: 1/16/2018

ENGINEERS SEAL:

SIGNED:
DATE:

STANDARD CONSTRUCTION DRAWINGS	SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
	800 7/30/16	

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

BU7 - WATERWORKS

NO.	DATE	DESCRIPTION
1	7/21/17	SEE SHEET 15
2	8/1/17	SEE SHEET 15
3	1/16/18	SEE SHEET 14

ISSUE RECORD

FEDERAL PROJECT NO. E131(492)

PID NO. 82388

CONSTRUCTION PROJECT NO. 173001

RAILROAD INVOLVEMENT NONE

CUY-77-13.80

1/15

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CLEVELAND DIVISION OF WATER NOTES FOR NEW WATER MAIN INSTALLATION (PER STD-11, 12-05-2016):

CONTRACTOR IS TO ABIDE BY THE MOST CURRENT VERSION OF THE CLEVELAND DIVISION OF WATER NOTES AND DETAILS. THE MOST UP-TO-DATE VERSION CAN BE FOUND AT WWW.CLEVELANDWATER.COM.

GENERAL:

1. ALL WATER WORK REQUIRED, WHETHER SHOWN ON THE PLANS OR AS DIRECTED BY THE CLEVELAND DIVISION OF WATER, SHALL BE AT THE EXPENSE OF THE PROJECT.

2. THE INFORMATION SHOWN ON THE CLEVELAND DIVISION OF WATER'S SUMMARY OF WORK/CHARGE LETTER AND STRIP MAPS ARE TAKEN FROM EXISTING AVAILABLE RECORDS, AND THEIR ACCURACY IS NOT GUARANTEED.

3. CALL THE INSPECTION AND ENFORCEMENT UNIT AT 216-664-2342 TO SCHEDULE A PRECONSTRUCTION MEETING AT LEAST 1 WEEK PRIOR TO STARTING CONSTRUCTION. THE OPERATION OF ANY VALVE OR ALTERATION OF ANY PART OF THE WATER SYSTEM BY CONTRACTORS OR THEIR EMPLOYEES IS PROHIBITED WITHOUT THE SUPERVISION OF THE CLEVELAND DIVISION OF WATER INSPECTOR.

4. THE PROJECT'S PROFESSIONAL ENGINEER OR A DESIGNATED PROFESSIONAL SURVEYOR SHALL OBTAIN ACTUAL FIELD MEASUREMENTS OF THE MAIN DURING INSTALLATION AND SHALL FURNISH THE CLEVELAND WATER INSPECTOR WITH RECORD PRINTS IN A FORM ACCEPTABLE TO CLEVELAND WATER. CLEVELAND WATER WILL REQUIRE THE DELIVERY AND ACCEPTANCE OF THREE COPIES OF RECORD (AS BUILT) PRINTS BEFORE THE PRESSURE TEST AND CHLORINATION/DISINFECTION OF THE MAIN WILL BE PERMITTED.

5. FOR THE PURPOSES OF CHLORINATION AND BACTERIOLOGICAL TESTING OF THE WATER MAINS THE CONTRACTOR SHALL PROVIDE AND INSTALL, AT EACH OF THE CHLORINATION PIT LOCATIONS SHOWN AND AT OTHER LOCATIONS DETERMINED BY CLEVELAND WATER. FLUSHING/SAMPLING TAP SIZES ARE TO BE DETERMINED BY CLEVELAND WATER. CHLORINATION PITS SHALL BE SIX (6) FOOT SQUARE AND ARE TO MEET OSHA STANDARDS.

6. A TWO YEAR WARRANTY, COMMENCING FROM THE DATE OF ACCEPTANCE OF THE FINAL CHLORINATION OF THE WATER MAIN INSTALLATION SHALL BE PROVIDED BY THE BUILDER/DEVELOPER AND/OR CONTRACTOR FOR ALL WATER MAINS AND SERVICE CONNECTION WORK PERFORMED BY THE CONTRACTOR, INCLUDING TAPS IF PERFORMED. SHOULD ANY LEAKS OCCUR AND REPAIRS BE REQUIRED DUE TO DEFECTIVE MATERIAL OR POOR WORKMANSHIP.

7. USE BACKFILL MATERIAL AS SPECIFIED AND COMPACT SUFFICIENTLY IN THOSE AREAS WHERE EXISTING MAINS AND WATER SERVICE CONNECTIONS ARE EXPOSED. (SEE CLEVELAND WATER STANDARD DETAIL STD-001)

8. ALL MATERIALS, INCLUDING BUT NOT LIMITED TO WATER MAINS, FIRE HYDRANTS, VALVES, CONNECTION MATERIALS AND OTHER WATER APPURTENANCES, SHALL BE NEW AND UNUSED AND SHALL CONFORM TO THE MOST CURRENT CLEVELAND WATER SPECIFICATIONS. ALL MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH CLEVELAND WATER'S STANDARDS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING WATER MAINS AND APPURTENANCES THEREOF WHEN CONSTRUCTING OR CONNECTING THE NEW WATER MAIN. THIS SHALL INCLUDE LEADED JOINTS IN EXISTING FITTINGS WHICH MAY REQUIRE REPLACEMENT FITTINGS AT THE DISCRETION OF THE INSPECTOR IF IT IS DETERMINED THEY WERE DISTURBED. ALL REPAIRS TO DAMAGED EXISTING FACILITIES SHALL BE MADE BY THE CONTRACTOR, AT THE PROJECT'S EXPENSE, TO THE SATISFACTION OF CLEVELAND WATER.

10. ALL HYDROSTATIC PRESSURE TESTING SHALL BE DONE BY THE CONTRACTOR IN THE PRESENCE OF THE CLEVELAND WATER INSPECTOR. THE HYDROSTATIC TEST PRESSURE SHALL BE 75 PSI ABOVE THE STATIC PRESSURE PREVAILING AT THE SITE, BUT IN NO CASE LESS THAN 150 PSI. THE PRESSURE TEST SHALL BE FOR A DURATION OF TWO (2) HOURS WITH THE PRESSURE BEING MAINTAINED WITHIN 5 PSI OF THE REQUIRED TEST PRESSURE. SHOULD THE PRESSURE TEST FAIL THE CONTRACTOR SHALL FIND AND CORRECT THE DEFICIENCY(IES) TO THE SATISFACTION OF CLEVELAND WATER AND REPEAT THE TWO (2) HOUR PRESSURE TEST.

11. ALL BURIED WATER MAINS, FITTINGS, VALVES, FIRE HYDRANT BRANCH PIPING AND APPURTENANCES SHALL BE ENCASED WITH POLYETHYLENE WRAPPING IN ACCORDANCE WITH THE MOST CURRENT REVISION OF ANSI/AWWA C-105/A21.5 INSTALLATION METHOD "A". ALTERNATE INSTALLATION METHOD A FOR WET TRENCH CONDITIONS SHALL BE USED WHEN WATER MAINS ARE INSTALLED IN UNPAVED LOCATIONS SUCH AS TREE LAWNS AND EASEMENTS TRAVERSING PRIVATE PROPERTY.

WATER MAINS:

12. ALL PIPE, UNLESS OTHERWISE CALLED FOR, SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED HAVING PUSH-ON JOINTS WITH RADIALLY COMPRESSED RUBBER RING GASKET AND INSTALLED AS PER THE MOST CURRENT REVISION OF AWWA C600.

13. ALL FITTINGS, UNLESS OTHERWISE CALLED FOR, SHALL BE APPROVED DUCTILE IRON, CLASS 350, CEMENT LINED OR FUSION BONDED EPOXY COATED. ALL FITTINGS AND PIPE CONNECTED TO FITTINGS SHALL BE RESTRAINED USING A "RETAINED" MECHANICAL JOINT CONFORMING TO THE MATERIAL AND PERFORMANCE REQUIREMENTS OF ANSI/AWWA C-110/A21.10 AND ANSI/AWWA C-111/A21.11 OR "COMPACT" FITTINGS IN ACCORDANCE WITH ANSI/AWWA C-153/A21.53. EXCEPT FOR ANCHOR TEES, REDUCERS OR OTHER SPECIAL CIRCUMSTANCES WHEN BY CLEVELAND WATER, ALL FITTINGS ARE TO HAVE BELL BENDS.

14. ALL BOLTS AND NUTS ON ALL "RETAINED" MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING.

15. WHERE SHOWN ON THE PLANS, OR WHEN OTHERWISE CALLED FOR, PIPE AND FITTINGS SHALL HAVE AN APPROVED "TYPE 1" OR "TYPE II" BOLTLESS RESTRAINED PUSH-ON JOINTS TO THE LIMITS SHOWN ON THE DRAWINGS.

16. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL PLUG ALL OPEN PIPE ENDS WITH WATER TIGHT PLUGS AS PER THE "PREVENTATIVE AND CORRECTIVE MEASURES DURING CONSTRUCTION" SECTION OF THE MOST CURRENT REVISION OF AWWA C-651 AS TO PREVENT THE INFILTRATION OR INTRUSION OF ANY FOREIGN OBJECTS OR MATERIALS. DATE STAMPED DIGITAL PHOTOS SHALL BE PROVIDED FOR EACH WORKDAY DEMONSTRATING THAT PROPER AWWA C-651 METHODS WERE USED TO PLUG ALL OPEN WATER MAIN ENDS. EACH PHOTO SHALL CLEARLY IDENTIFY THE STATION AT WHICH THE PIPE IS PLUGGED. THE STATIONING SHALL BE SHOWN BY THE USE OF A STATION MARKER PLACED AT THE PLUGGED PIPE END.

PHOTOS SHALL BE SUBMITTED ON A DAILY BASIS UNLESS OTHERWISE DEFINED BY THE CLEVELAND WATER INSPECTOR OR ENGINEER. ALL PHOTOS TAKEN OVER THE COURSE OF THE PROJECT SHALL BE SUBMITTED BY THE CONTRACTOR AS PART OF THE AS-BUILT SUBMITTAL. PHOTOS ARE TO INCLUDE STATIONING MARKERS. AS-BUILTS SHALL BE DEEMED INCOMPLETE WITHOUT SAID COLLECTION OF DIGITAL PHOTOS.

HYDRANTS:

17. IN ALL HYDRANT INSTALLATIONS THE CONTRACTOR SHALL FACE ALL HYRDRANTS 4" (STEAMER) NOZZLE TOWARD THE PAVEMENT PRIOR TO TESTING AND CHLORINATION OF WATER MAINS. CONTRACTOR SHALL CONSULT WITH THE LOCAL MUNICIPALITY'S ENGINEERING OR SERVICE DEPARTMENT TO OBTAIN HYDRANT MODEL AND NOZZLE THREAD REQUIREMENTS IF NOT INCLUDED ON THE APPROVED PLANS.

VALVES:

18. ALL VALVES SHALL BE APPROVED MODEL RESILIENT SEATED GATE VALVES AS PER THE MOST CURRENT VERSION OF AWWA C509 OR C515. VALVE OPERATING NUTS SHALL BE TAPERED (1 7/8" TO 2" FROM TOP TO BOTTOM) AND 2" DEEP. VALVES MORE THAN 10 YEARS OLD AT TIE IN POINTS TO EXISTING MAINS SHALL BE REPLACED AT THE PROJECT'S EXPENSE UNLESS OTHERWISE DIRECTED.

SERVICE CONNECTIONS:

19. ANY CITYSIDE LEAD SERVICE CONNECTION ENCOUNTERED SHALL BE REPLACED WITH TYPE K COPPER OR OTHER APPROVED MATERIAL. IF OWNERSIDE LEAD WILL REMAIN, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY CWD BY CALLING 216-664-2882 AND LEAVING A CLEVELAND WATER SUPPLIED CUSTOMER NOTIFICATION DOORHANGER ON ALL ACCESSIBLE POINTS OF ENTRY TO THE HOME.

20. AS PART OF THE AS BUILT SUBMISSION IN NOTE 4, THE CONTRACTOR SHALL PROVIDE A TABLE SHOWING ALL EXISTING CONNECTIONS, IDENTIFIED BY CLEVELAND WATER CONNECTION NUMBER, SHOWING THE FOUND CONNECTION MATERIAL FOR BOTH THE CITYSIDE AND OWNERSIDE CONNECTION, AS WELL AS THE NEW CONNECTION MATERIAL FOR ALL CONNECTIONS REPLACED. THE TABLE SHALL ALSO NOTE ANY REVISED CONNECTION MEASUREMENTS AND SIZES. A SAMPLE TABLE WILL BE PROVIDED. THE SUBMISSION SHALL BE IN MICROSOFT EXCEL FORMAT. CLEVELAND WATER SHALL REQUIRE THE DELIVERY AND ACCEPTANCE OF THIS TABLE BEFORE THE PRESSURE TEST AND CHLORINATION/ DISINFECTION OF THE MAIN WILL BE PERMITTED.

21. NEW WATER SERVICE CONNECTIONS LOCATIONS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY AND ARE NOT PART OF THE WATER MAIN APPROVAL. THE SPECIFIC LOCATION FOR EACH CONNECTION WILL BE DETERMINED BY CLEVELAND WATER PRIOR TO THE TAPS BEING INSTALLED.

SERVICE CONNECTIONS (CONTINUED):

ALL PERMITS FOR TAPS AND METERS FOR PARCELS ASSOCIATED WITH THE WATER MAINS INSTALLED ON THIS PROJECT ARE TO BE OBTAINED BY THE LAND OWNER OF SAID IMPROVEMENT PLANS. IT IS THE LAND OWNER'S RESPONSIBILITY TO ARRANGE FOR OBTAINING PERMITS FOR ALL WATER SERVICE CONNECTIONS BEFORE ANY SERVICE CONNECTION WORK MAY PROCEED. ALL FEES CAN BE OBTAINED FROM THE CLEVELAND WATER PERMITS AND SALES SECTION AT 216-664-3130 PROMPT #7 OR 216-664-2444 X75209.

ACCOUNTS SHALL BE INITIATED IN THE LAND OWNER'S NAME AS PART OF THE PERMITTING PROCESS. ALL RESPONSIBILITIES ASSOCIATED WITH EACH WATER SERVICE, INCLUDING, THE OWNER SIDE INSPECTIONS, METER SET/ METER PIPING INSPECTION AND THE METER INSTALLATION SHALL BE THE RESPONSIBILITY OF SAID OWNER.

METER INSTALLATIONS WILL NOT BE AUTHORIZED TO BE INSTALLED UNTIL ALL INSPECTIONS HAVE BEEN COMPLETED. ESTIMATED BILLS MAY ENSUE IF A HOME IS IDENTIFIED AS HAVING WATER SERVICE BUT NO METER HAS BEEN INSTALLED. IF NEW OWNERS, ONCE PARCELS ARE SOLD OFF AND TRANSFER TITLE, DO NOT CONTACT CLEVELAND WATER TO ESTABLISH ACCOUNTS IN THEIR NAME, ACCOUNTS AND THEIR ASSOCIATED BILLS WILL REMAIN IN THE NAME OF OUR LAST OWNER OF RECORD WHICH MAY BE THE DEVELOPER OR BUILDER. IT IS THE RESPONSIBILITY OF THE NEW OWNER TO TRANSFER ACCOUNTS INTO THEIR NAME WHEN THE PROPERTIES LEGALLY TRANSFER. UPON TRANSFER OF PROPERTY, SELLER OF PROPERTY MUST COMMUNICATE ALL UNCOMPLETED PORTIONS OF THE REFERENCED RESPONSIBILITIES TO THE NEW OWNER.

22. ONE INCH SERVICE CONNECTIONS SHALL BE PERMITTED TO SERVICE NEW HOMES BASED ON THE FOLLOWING CRITERIA:
    - -PEAK FLOW DEMANDS DO NOT EXCEED 25 GPM FOR AN INDIVIDUAL HOME/UNIT. INCLUSIVE OF ALL USAGE (DOMESTIC AND/OR IRRIGATION),
    - -LENGTH OF ONE INCH CONNECTION DOES NOT EXCEED 75 FEET AS MEASURED FROM THE MAIN TO THE POINT OF ENTRY INTO THE PROPOSED HOME/UNIT.
    - -THE CONNECTIONS DO NOT INCLUDE LIMITED AREA OR NFPA 13D SPRINKLER SYSTEMS

ANY SERVICE REQUESTS DIFFERING FROM THE STATED CRITERIA SHALL REQUIRE THE SUBMITTAL OF A COMPLETE WATER SERVICE APPLICATION FOR EACH WATER SERVICE REQUESTED.

23. ALL CURB VALVE BOXES & METER VAULTS WILL BE INSTALLED IN GRASS AREAS WHEN POSSIBLE. IF VALVE BOXES OR METER VAULTS ARE INSTALLED OUTSIDE OF A DEDICATED RIGHT OF WAY OR EASEMENT FOR THE PURPOSES OF WATER SUPPLY, A STANDARD CLEVELAND EASEMENT FOR A VAULT SHALL BE PROVIDED.

EMERGENCIES:

24. IF A WATER MAIN OR SERVICE CONNECTION BREAK OCCURS DURING CONSTRUCTION AND EMERGENCY ASSISTANCE IS REQUIRED, PLEASE NOTIFY CLEVELAND WATER AT 216-664-3060.

RELEASED FOR CONSTRUCTION

2017-07-12.CCG6B.BU7 RFC Plans.pdf

07/13/2017 | brian.link

BU7 - WATERWORKS		
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED SEO | CHECKED CML

CLEVELAND WATER NOTES

CUY-77-13.80

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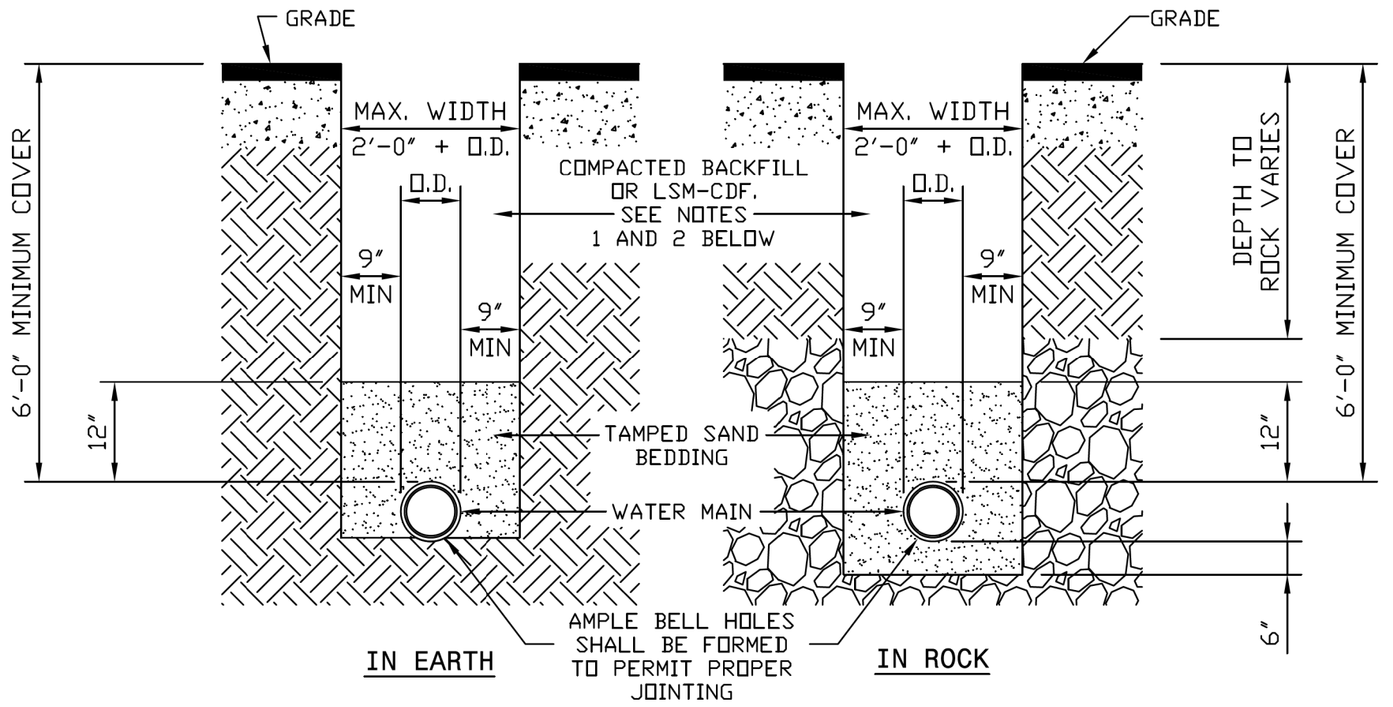

WATER MAIN TRENCH DETAILS

- NOT TO SCALE -

NOTES:

1) PREMIUM BACKFILL CONSISTING OF LOW STRENGTH MORTAR - CONTROLLED DENSITY FILL (LSM-CDF) "FLOWABLE FILL" IS REQUIRED:
   A) UNDER ALL EXISTING OR FUTURE PAVEMENTS, SIDEWALKS AND DRIVES WITHIN THE CITY OF CLEVELAND CORPORATION LIMITS.
   B) AS SPECIFIED IN LOCAL MUNICIPALITIES SERVED BY CWD (SEE LOCAL REQUIREMENTS)
2) WHEN PREMIUM BACKFILL IS REQUIRED BY THE LOCAL MUNICIPALITY FOR CASES OTHER THAN THOSE LISTED IN NOTE 1 ABOVE, IT SHALL BE LIMESTONE GRADED PER ODOT 304.02 OR ODOT 411. NO SLAG IS PERMITTED.
3) CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING, SO AS TO AVOID SCRAPING OF THE EXTERIOR COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME. THE SAND BEDDING SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
4) MINIMUM COMPACTION FOR ALL SAND BEDDING, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% STANDARD PROCTOR.
5) PAVEMENT, SIDEWALK OR DRIVES TO BE INSTALLED IN ACCORDANCE WITH LOCAL MUNICIPALITY'S SPECIFICATIONS.

STD-001 | DATE: 6-21-2012

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2017-07-12.CCG6B.BU7 RFC Plans.pdf
07/13/2017
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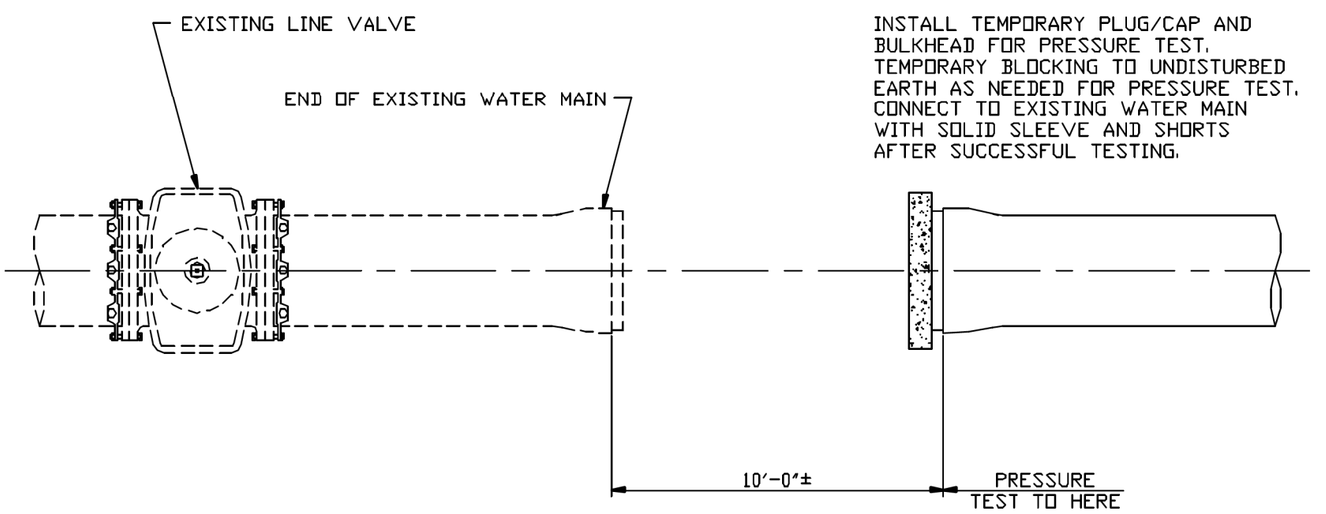


NOTE:
PRESSURE TESTING OF WATER MAINS:
WHERE NEW/EXTENDED WATER MAINS ARE CONNECTED TO AN EXISTING WATER MAIN FOR PRESSURE TEST, RESULTING IN FAILURE OF THE PRESSURE TEST OR ANY DAMAGE TO THE EXISTING WATER MAIN , OR ITS APPURTENANCES, THE REPAIR THEREOF SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
ALL REPAIRS SHALL BE DONE TO THE SATISFACTION OF THE DIVISION OF WATER.

ALTERNATE PRESSURE TESTING DETAIL

- NOT TO SCALE -

STD-002 | DATE: 10-1-97 | BY: RSK

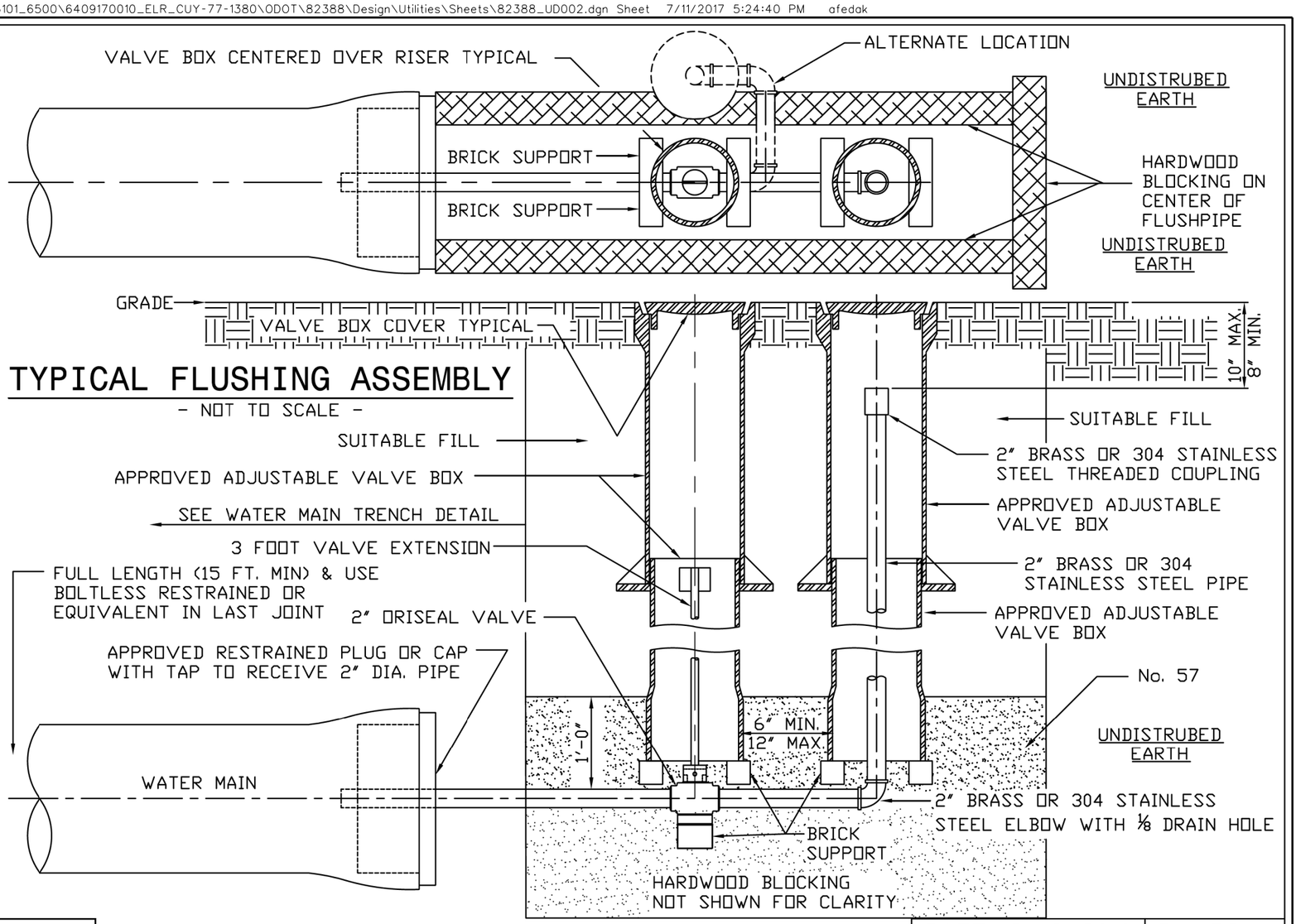
ISSUE RECORD

NO.	DATE	DESCRIPTION

BU7 - WATERWORKS

CUY-77-13.80 | CLEVELAND WATER DETAILS | CALCULATED SEO | CHECKED CML

2018-01-16.BU-7 Waterworks - RFC Plans



TYPICAL FLUSHING ASSEMBLY

- NOT TO SCALE -

STD-003	DATE: 8-19-2010	BY: RSK

RELEASED FOR CONSTRUCTION
2017-07-12.CCG6B.BU7 RFC Plans.pdf
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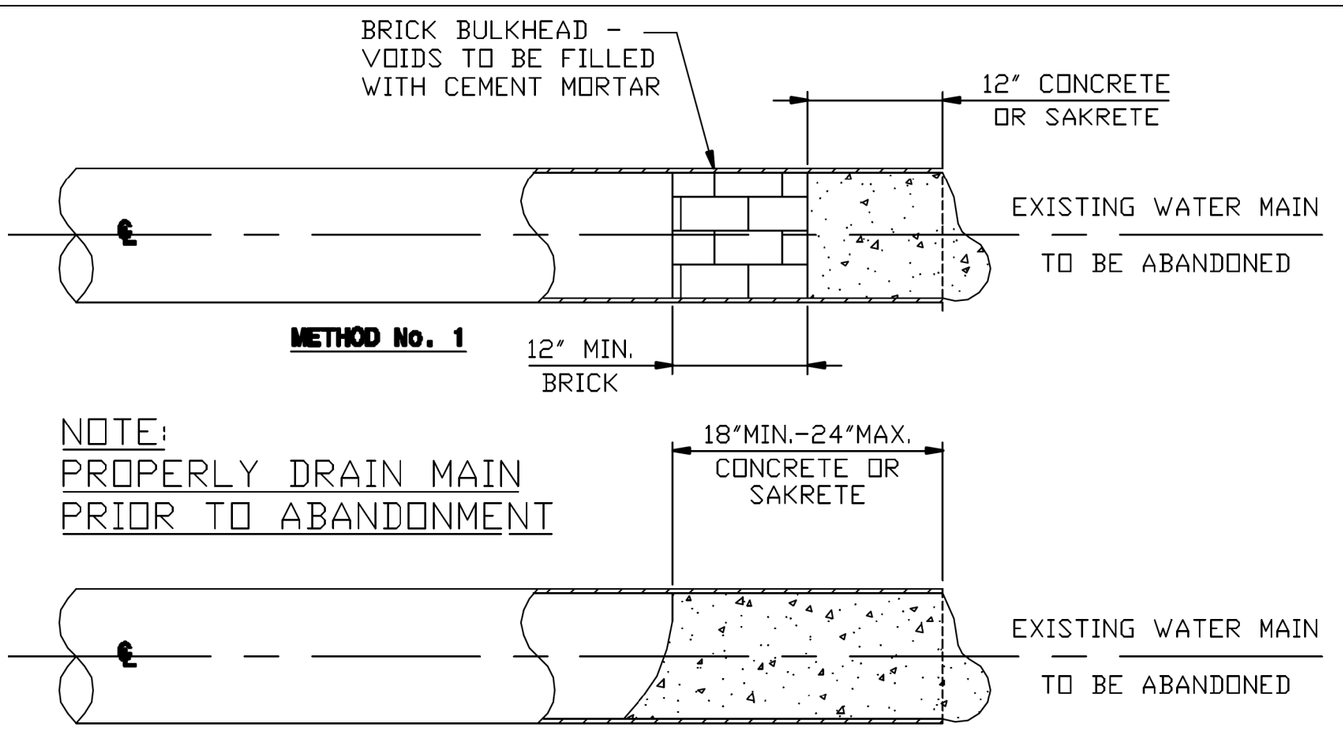

PLUGGING ABANDONED WATER MAIN ENDS

- NOT TO SCALE -

STD-004	DATE: 10-1-97	BY: RSK

ISSUE RECORD

NO.	DATE	DESCRIPTION

BU7 - WATERWORKS

2018-01-16.BU-7 Waterworks - RFC Plans

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*CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

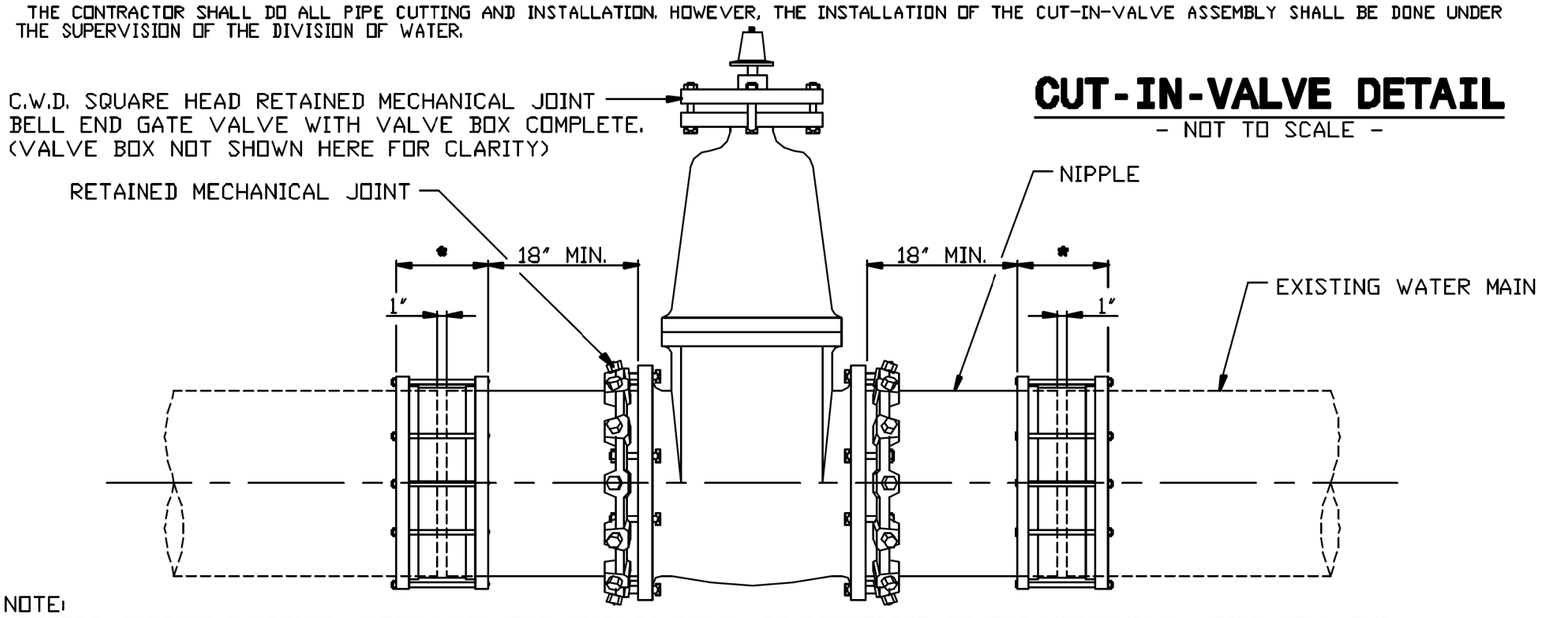
ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE 'RETAINED' TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS 'C', METHOD 'B'.

THE DIVISION OF WATER WILL DETERMINE THE FIELD LOCATION OF THE CUT-IN-VALVE ASSEMBLY. THE DIVISION OF WATER WILL ALSO SET THE TIME OF INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY.

THE CONTRACTOR SHALL DO ALL PIPE CUTTING AND INSTALLATION. HOWEVER, THE INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY SHALL BE DONE UNDER THE SUPERVISION OF THE DIVISION OF WATER.

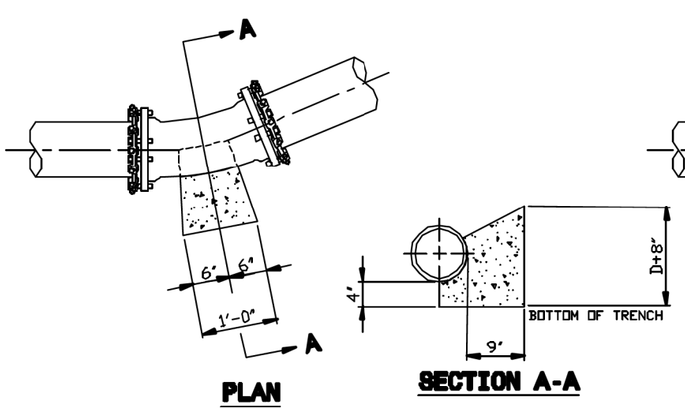
CUT-IN-VALVE DETAIL

- NOT TO SCALE -



NOTE:
BEFORE CUTTING EXISTING WATER MAIN, THE NIPPLES SHALL BE CONNECTED TO THE MECHANICAL JOINT BELL END GATE VALVE. AFTER CUTTING PIPE, FINAL CONNECTIONS SHALL BE MADE WITH COUPLINGS/SOLID SLEEVES AS SPECIFIED.

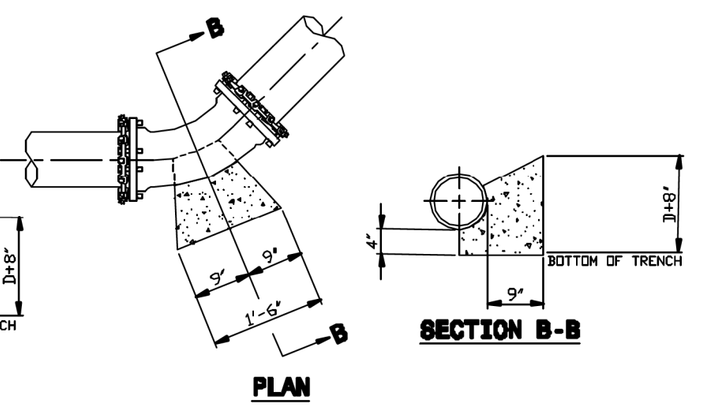
STD-005 | DATE: 10-1-97 | BY: RSK



PLAN

SECTION A-A

(22-1/2 DEGREE) BEND



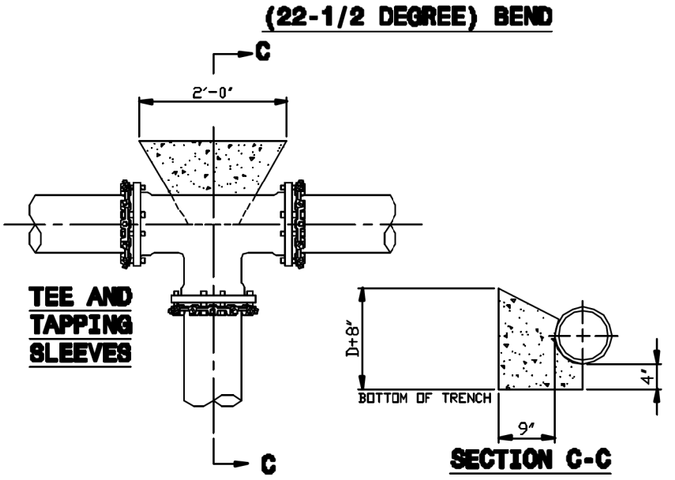
PLAN

SECTION B-B

(45 DEGREE) BEND

TYPICAL THRUST BLOCK DETAIL FOR HORIZONTAL DEFLECTION FOR PIPE UP TO 16" DIAMETER

- NOT TO SCALE -
D = PIPE DIAMETER



TEE AND TAPPING SLEEVES

PLAN

SECTION C-C

NOTE 1: ALL DIMENSIONS SHOWN HEREON ARE MINIMUM; THRUST BLOCK SHALL BE POURED TO UNDISTURBED EARTH.

NOTE 2: ALL CONCRETE FOR THRUST BLOCKS SHALL BE CLASS "C" HAVING 4,000 PSI 28 DAY COMPRESSIVE STRENGTH.

NOTE 3: DO NOT COVER BOLTS WITH CONCRETE ON MECHANICAL JOINTS.

NOTE 4: USE FORMS WHEN POURING CONCRETE TO MAINTAIN SHAPE AND DIMENSIONS OF THRUST BLOCKS.

STD-006 | DATE: 1-15-98 | BY: RSK

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2017-07-12 CCG6B BU7 RFC Plans.pdf
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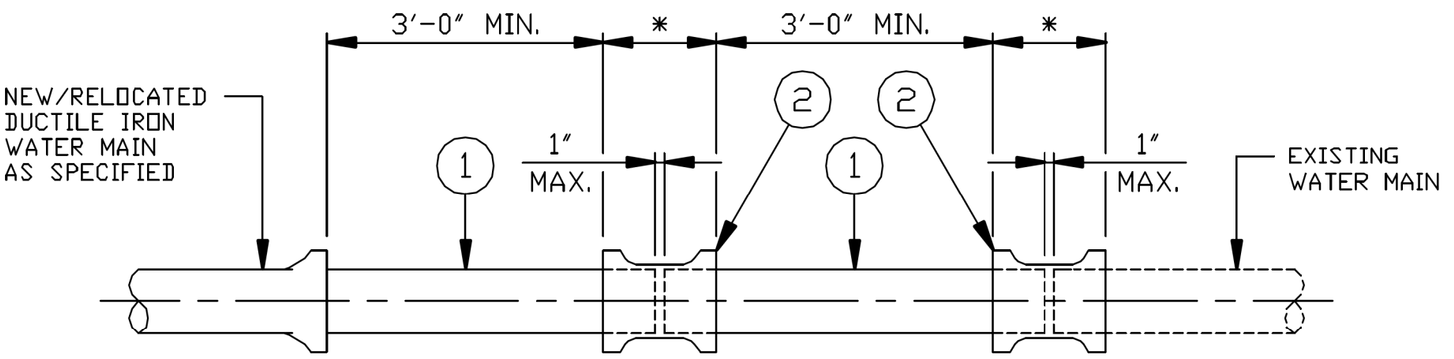
ISSUE RECORD

NO.	DATE	DESCRIPTION

BU7 - WATERWORKS

2018-01-16 BU-7 Waterworks - RFC Plans



SLEEVE-IN INSTALLATION DETAIL

- NOT TO SCALE -

1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).

2) *CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

STD-007	DATE: 10-1-97	BY: RSK

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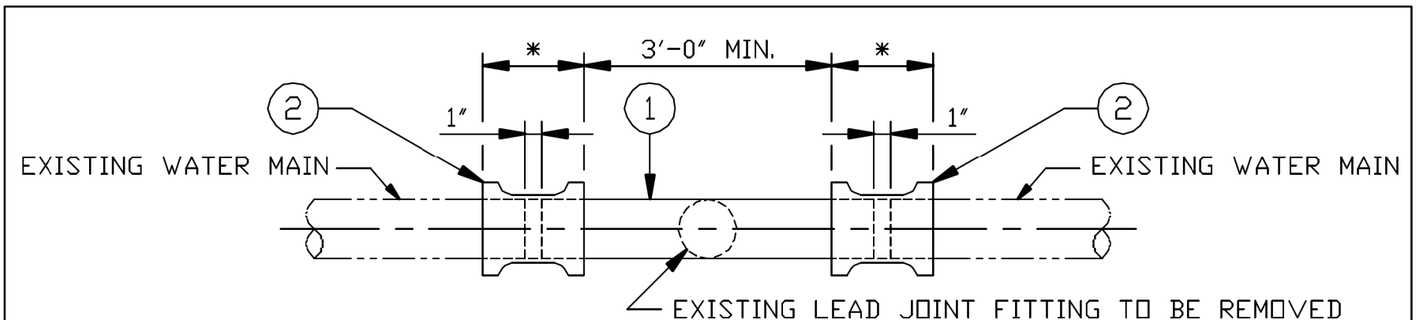

SPOOL PIECE INSTALLATION DETAIL

NOT TO SCALE

1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).

2) *CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

STD-008	DATE: 10-1-97	BY: RSK

ISSUE RECORD

NO.	DATE	DESCRIPTION

BU7 - WATERWORKS

2018-01-16.BU-7 Waterworks - RFC Plans

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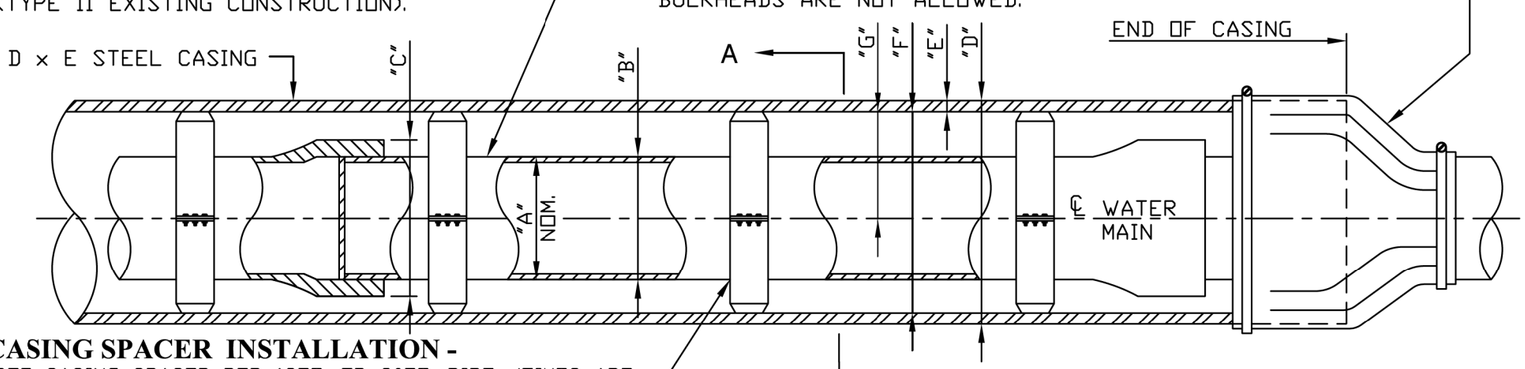
DUCTILE IRON CLASS 52 CEMENT LINED BOLTLESS RESTRAINED PUSH-ON JOINT PIPE (TYPE I NEW CONSTRUCTION) (TYPE II EXISTING CONSTRUCTION).

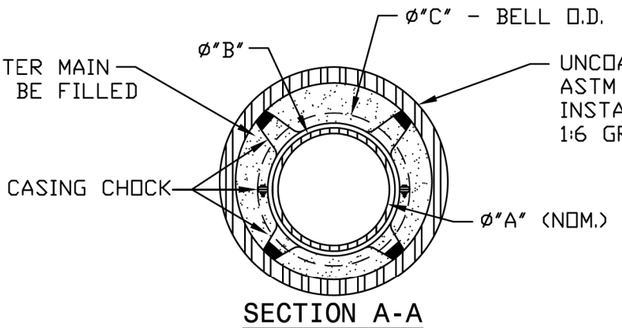
WRAP AROUND RUBBER END SEALS ARE TO BE USED FOR SINGLE CARRIER PIPES, OR MOLDED END SEALS FOR CLUSTER CARRIER PIPES. ALL FASTNERS ARE TO BE STAINLESS STEEL. BRICK BULKHEADS ARE NOT ALLOWED.



- CASING SPACER INSTALLATION -

THREE CASING SPACER PER 18FT. OR 20FT. PIPE JOINTS ARE TO BE USED FOR MAXIMUM CARRIER PIPE SUPPORT; ONE BEHIND THE BELL, ONE AT THE SPIGOT END MAKE-UP LINE, AND ONE CENTERED BETWEEN THE AFOREMENTIONED TWO SPACERS. CASING SPACERS SHOULD CENTER & RESTRAIN THE CARRIER PIPE. WOODEN SKIDS ARE NOT ALLOWED.

A	B	C*	D	E	F	G
8"	9.05"	11.89"	16"	3/8"	15 1/4"	8.00"
12"	13.20"	16.35"	20"	3/8"	19 1/4"	10.00"
16"	17.40"	20.84"	24"	1/2"	23"	12.00"



SECTION A-A

- CASING SPACER DETAIL -

CASING SPACERS ARE TO BE STAINLESS STEEL, OR POLYMER COATED CARBON STEEL. STAINLESS STEEL IS NOT ALLOWED IF GROUTING IS REQUIRED. SPACER BAND WIDTHS ARE TO BE 8" CARRIER PIPES THROUGH 24" AND 21" FOR 26" AND LARGER. RUNNERS ARE TO BE GLASS-FILLED POLYMER PLASTIC AND LINER IS TO BE EPDM OR PVC.

NOTES:
1. CONTRACTOR'S FAILURE TO MAINTAIN THE CASING PIPE ON THE LINE AND GRADE AS SHOWN OR DIRECTED, RESULTING IN THE USE OF ADDITIONAL PIPE AND/OR FITTINGS TO MAKE CONNECTIONS TO EXISTING WATER MAIN WILL BE CAUSE FOR REJECTION OF CASING INSTALLATION.

*2. OUTSIDE DIAMETER OF BELL OF BOLTLESS RESTRAINED PIPE MAY VARY WITH MANUFACTURE, THEREFORE, CONTRACTOR SHALL VERIFY O.D. OF BELL AND INCREASE SIZE OF STEEL CASING AS REQUIRED.

STD-016	CASING DETAIL No. 2 END OF CASING AND CASING CHOCK DETAIL	DATE: 1-21-2010	BY: RSK

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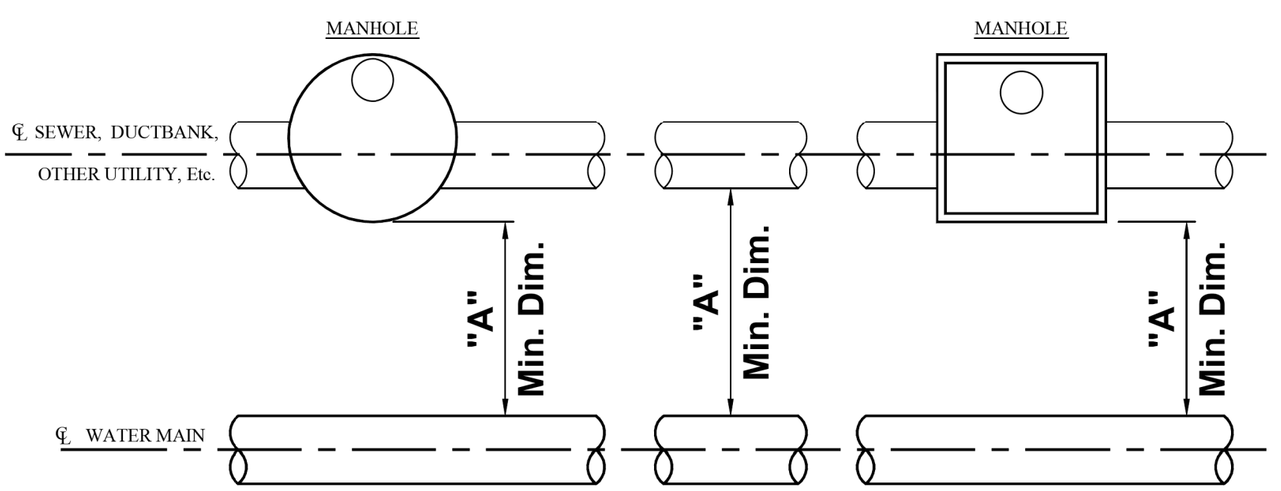


PLAN VIEW

- SEE STD-018 FOR PROFILE VIEW -

HORIZONTAL CLEARANCE	STORM SEWER	SANITARY SEWER	GAS, DUCTBANK, OTHER UTILITY, Etc.
"A"	10'-0" MIN.	10-0" MIN.	5'-0" MIN.

HORIZONTAL CLEARANCE FOR UTILITIES

NOT TO SCALE

STD-017	DATE: 7-02-2014	BY: MTA

ISSUE RECORD

NO.	DATE	DESCRIPTION

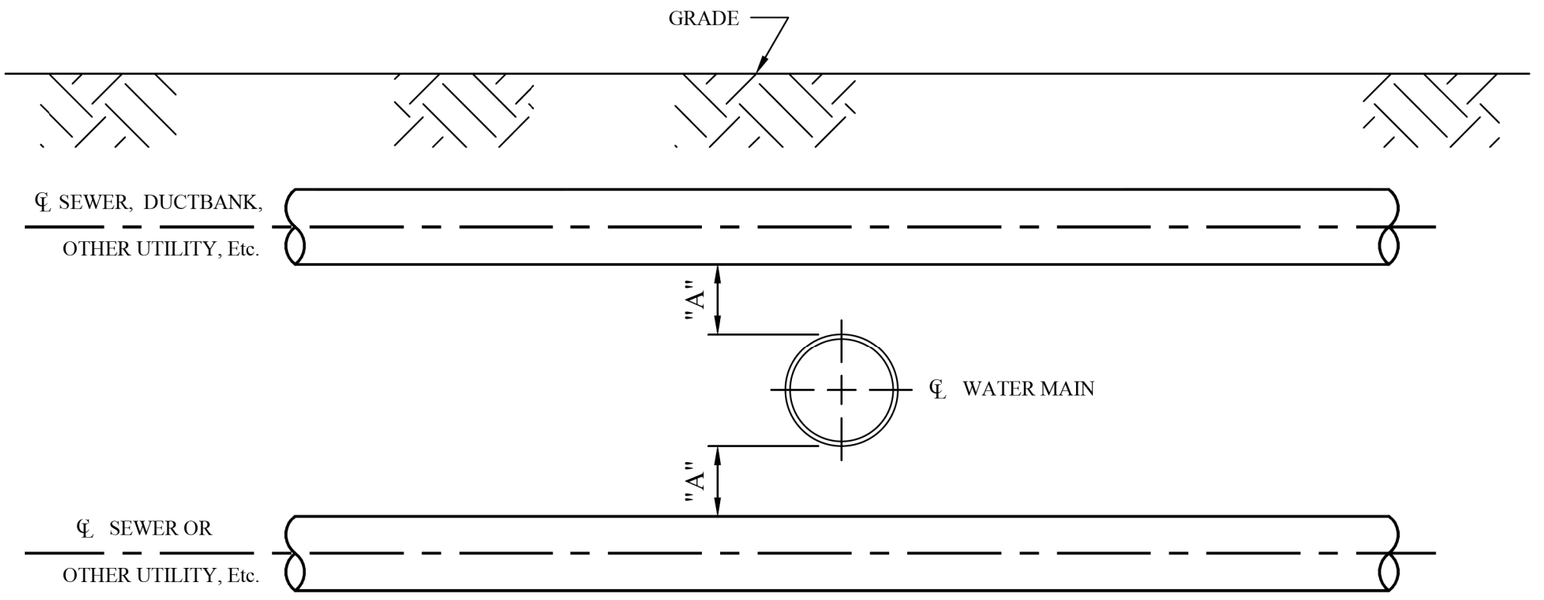
BU7 - WATERWORKS

CUY-77-13.80

CLEVELAND WATER DETAILS

CALCULATED SEO
CHECKED CML

2018-01-16.BU-7 Waterworks - RFC Plans



PROFILE VIEW

- SEE STD-017 FOR PLAN VIEW -

VERTICAL CLEARANCE	SANITARY SEWER LESS THAN 24"	SANITARY SEWER 24" & LARGER	STORM SEWER, DUCTBANK, GAS, OTHER UTILITY LESS THAN 24"	STORM SEWER, DUCTBANK, GAS, OTHER UTILITY 24" & LARGER	REMARKS
"A"	18" Min.	18" Min.	18" Min.	18" Min.	IF CANNOT ACHIEVE MIN. CLEARANCE WATER MAIN TO BE LOWERED

VERTICAL CLEARANCE FOR UTILITIES

NOT TO SCALE

STD-018	DATE: 7-02-2014	BY: MTA

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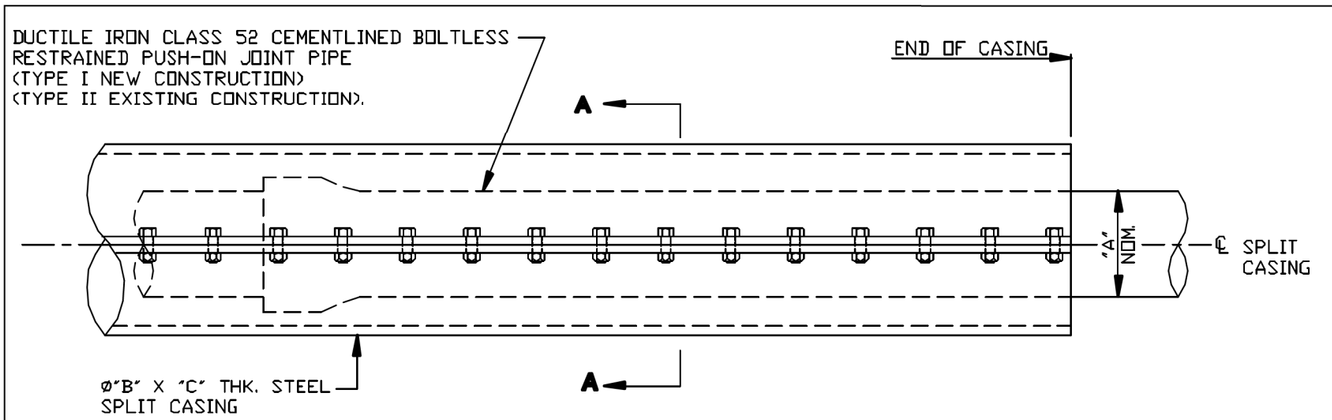
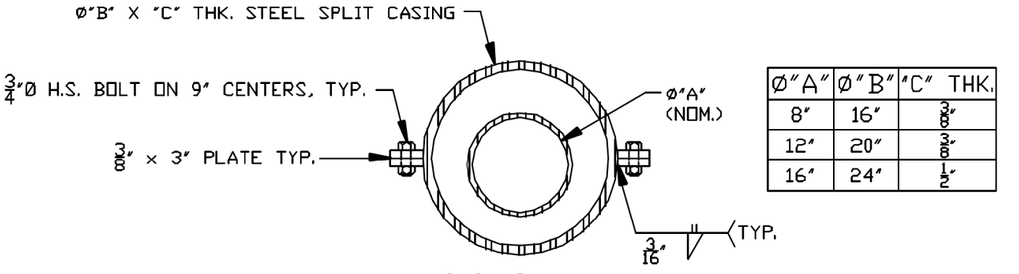


SEE STD-015 & STD-016 FOR DETAILED CASING INFORMATION.



Ø"A"	Ø"B"	"C" THK.
8"	16"	3/8"
12"	20"	3/8"
16"	24"	1/2"

SECTION A-A

SPLIT CASING DETAIL

- NOT TO SCALE -

STD-021	DATE: 9-16-1999	BY: RSK

ISSUE RECORD

NO.	DATE	DESCRIPTION

BU7 - WATERWORKS

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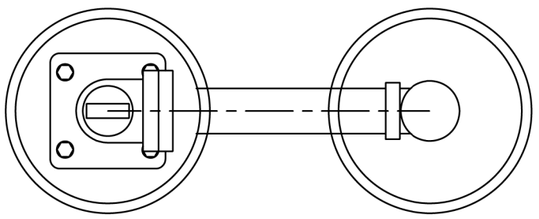
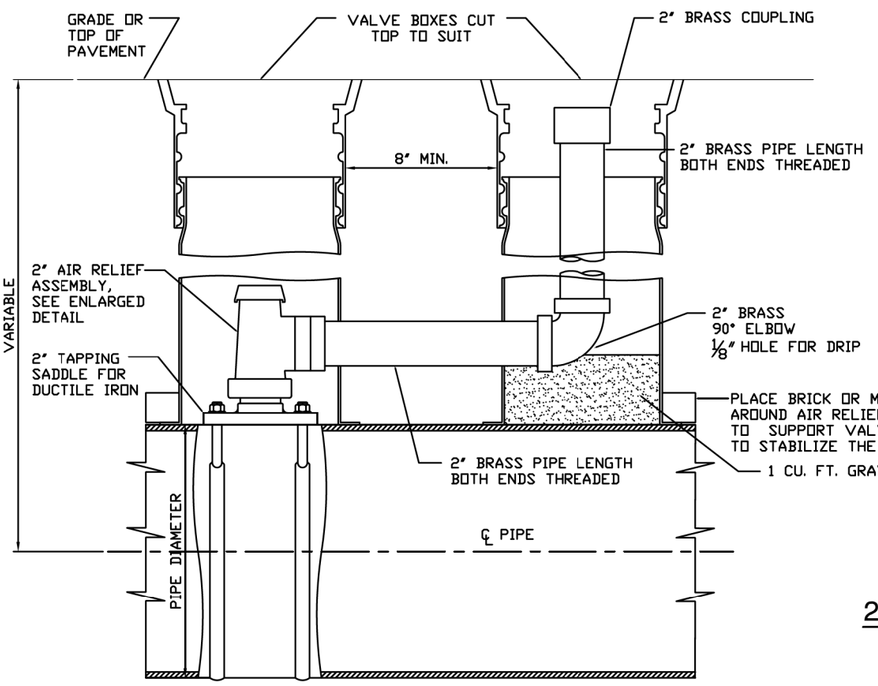
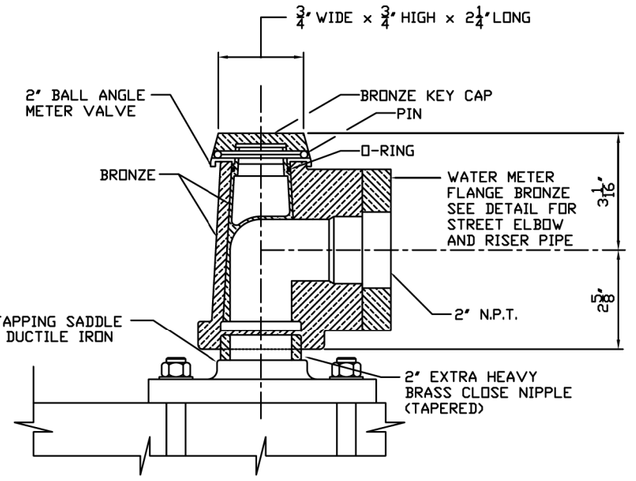




DOUBLE VALVE BOX ASSEMBLY



AIR RELIEF VALVE ASSEMBLY

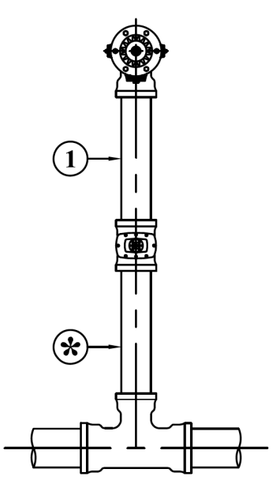
2" AIR RELIEF/FLUSHING OUTLET VALVE FOR DUCTILE IRON WATER MAINS

STD-A03 | DATE: 5-15-2007 | BY: RSK

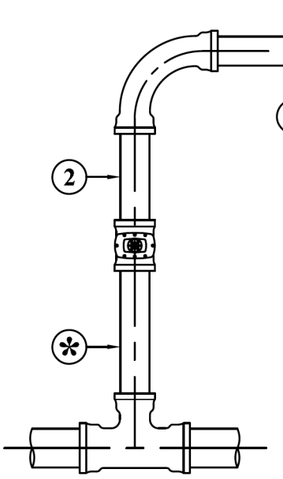
✻ IF CUTS ARE REQUIRED BETWEEN THE TEE AND VALVE, TOTAL REPLACEMENT WILL BE REQUIRED. SEE DETAILS STD-H06 STD-H07.

✻✻ IF EXISTING HYDRANT BRANCH VALVE IS 4" IN DIAMETER TOTAL REPLACEMENT WILL BE REQUIRED UNLESS SPECIFIC PERMISSION IS GRANTED BY THE DIVISION OF WATER ON A CASE BY CASE BASIS.

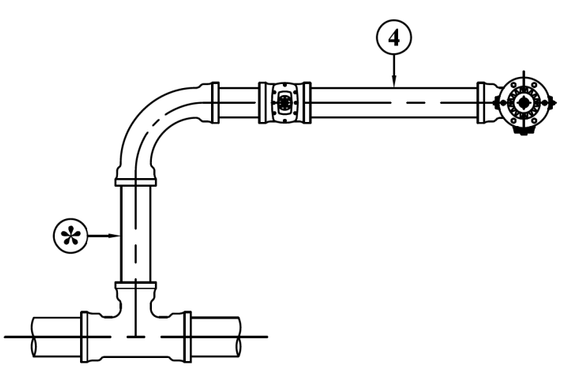
CUT AT	SEE DETAIL
1	STD-H02 FOR STRAIGHT TYPE
2	STD-H03 FOR OFFSET TYPE 1
3	STD-H04 FOR OFFSET TYPE 2
4	STD-H05 FOR OFFSET TYPE 3
TOTAL REPLACEMENT	STD-H06 FOR STRAIGHT TYPE STD-H07 FOR OFFSET TYPE 1 & TYPE 2 & TYPE 3



STRAIGHT TYPE



OFFSET TYPE 1 & 2



OFFSET TYPE 3

DISTURBING EXISTING LEADED HYDRANTS AND LEADED FITTINGS

- NOT TO SCALE -

STD-H01 | DATE: 5-4-2006 | BY: RSK

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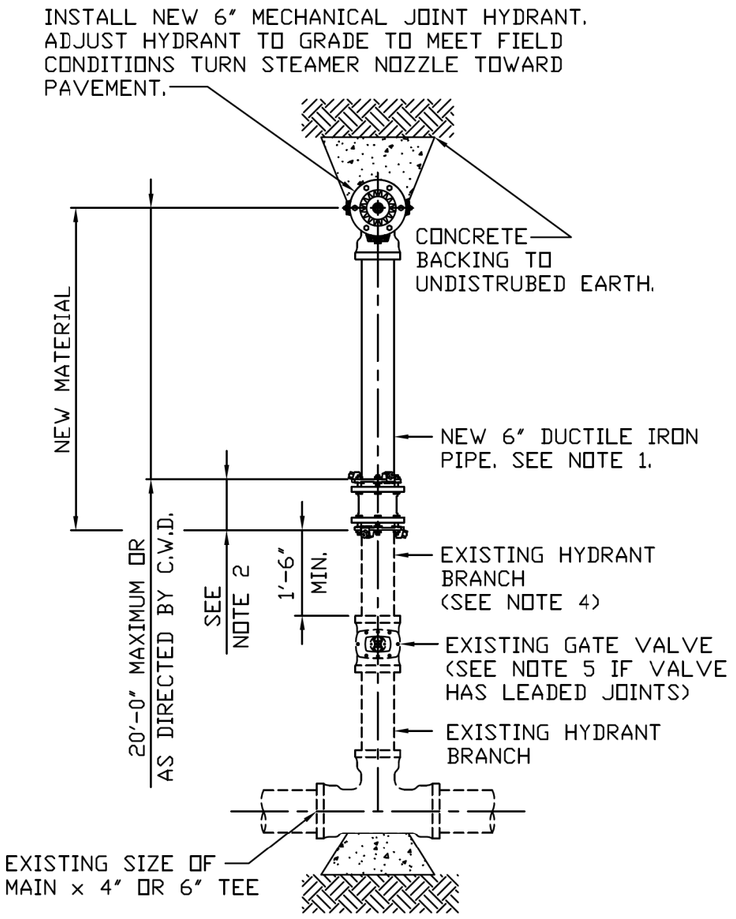

STRAIGHT TYPE

1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).

2) CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250, RETAINED MECHANICAL JOINT REDUCERS WHERE EXISTING PIPE IS 4" IN DIAMETER, OR COMPRESSION COUPLINGS WITH ROD AND CLAMPS AS DIRECTED BY C.W.D. INSPECTOR.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS. MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536). THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 (STRAIGHT TYPE), 162 (TRANSITION TYPE), 253 (REDUCING TYPE); OR SMITH-BLAIR 441 (STRAIGHT AND TRANSITION TYPE), R441 (REDUCING TYPE); OR ROMAC STYLE 501 (STRAIGHT AND TRANSITION TYPE), STYLE RC501 (REDUCING TYPE).

IF THE BRANCH IS TO BE SHORTENED, NO NEW IS PIPE REQUIRED.

3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

4) IF EXISTING PIPING IS 4" USE 4" TO 6" REDUCING MJ REDUCER OR REDUCING TRANSITION COUPLING WITH ROD & CLAMP IF APPROVED BY CWD.

5) IN HIGH PRESSURE AREAS THE EXISTING VALVE MAY NEED TO BE RESTRAINED TO EXISTING TEE OR FITTING USING ROD & CLAMP AS DIRECTED BY CWD.
SEE STD-H01 FOR EXISTING LEAD JOINT REQUIREMENTS.

EXTEND, SHORTEN AND ADJUST HYDRANT TO GRADE, STRAIGHT TYPE

- NOT TO SCALE -

STD-H02 | DATE: 8-20-2012 | BY: RSK

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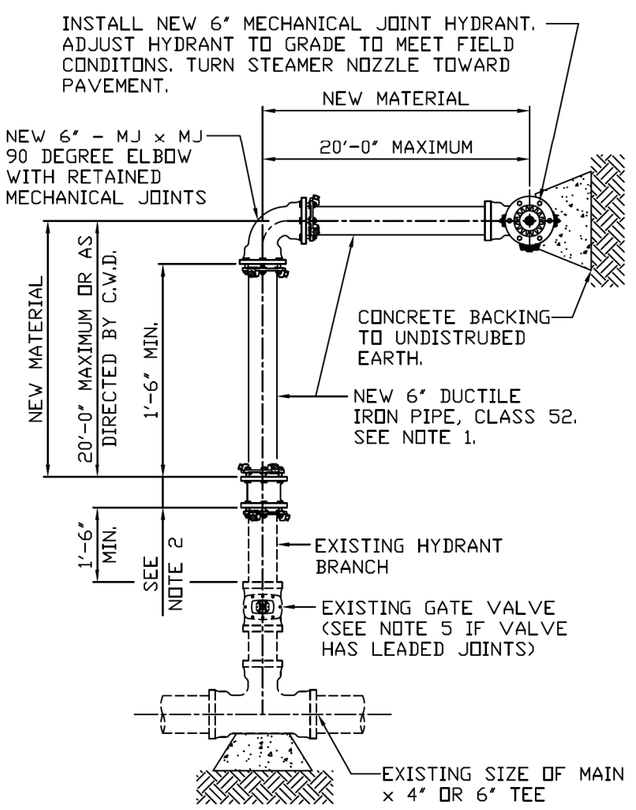


OFFSET TYPE 1

1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).

2) CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250, RETAINED MECHANICAL JOINT REDUCERS WHERE EXISTING PIPE IS 4" IN DIAMETER, OR COMPRESSION COUPLINGS WITH ROD AND CLAMPS AS DIRECTED BY C.W.D. INSPECTOR.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS. MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536). THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 (STRAIGHT TYPE), 162 (TRANSITION TYPE), 253 (REDUCING TYPE); OR SMITH-BLAIR 441 (STRAIGHT AND TRANSITION TYPE), R441 (REDUCING TYPE); OR ROMAC STYLE 501 (STRAIGHT AND TRANSITION TYPE), STYLE RC501 (REDUCING TYPE).

IF THE BRANCH IS TO BE SHORTENED, NO NEW IS PIPE REQUIRED.

3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

4) IF EXISTING PIPING IS 4" USE 4" TO 6" REDUCING MJ REDUCER OR REDUCING TRANSITION COUPLING WITH ROD & CLAMP IF APPROVED BY CWD.

5) IN HIGH PRESSURE AREAS THE EXISTING VALVE MAY NEED TO BE RESTRAINED TO EXISTING TEE OR FITTING USING ROD & CLAMP AS DIRECTED BY CWD.
SEE STD-H01 FOR EXISTING LEAD JOINT REQUIREMENTS.

EXTEND, SHORTEN AND ADJUST HYDRANT TO GRADE, OFFSET TYPE 1

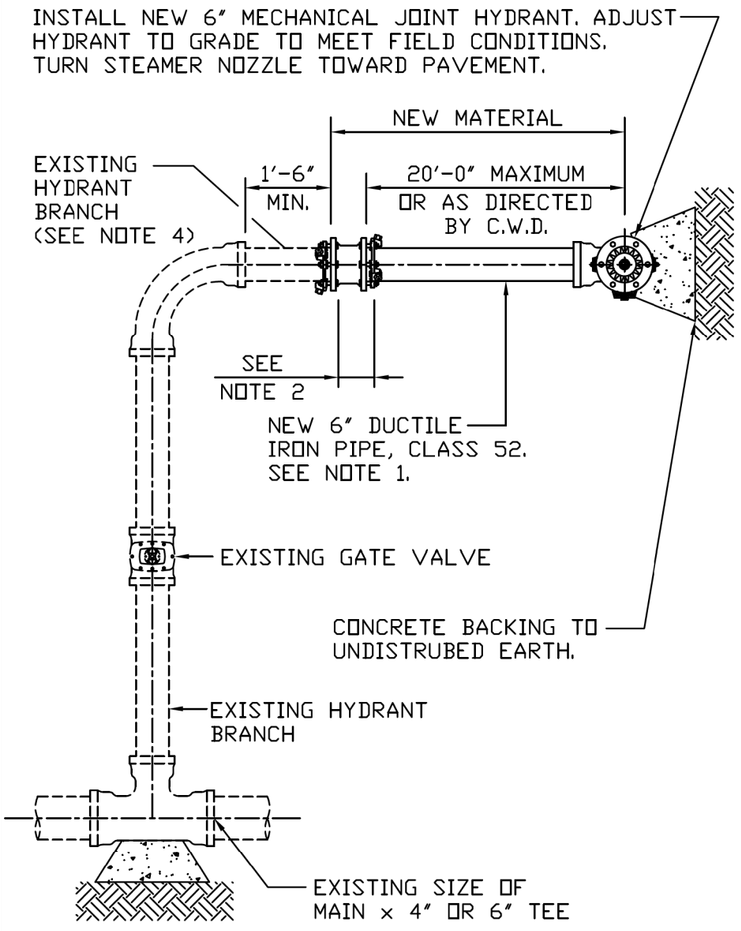
- NOT TO SCALE -

STD-H03 | DATE: 8-20-2012 | BY: RSK

NO.	DATE	DESCRIPTION
		ISSUE RECORD

BU7 - WATERWORKS

2018-01-16.BU-7 Waterworks - RFC Plans



OFFSET TYPE 2

1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).

2) CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250, RETAINED MECHANICAL JOINT REDUCERS WHERE EXISTING PIPE IS 4" IN DIAMETER, OR COMPRESSION COUPLINGS WITH ROD AND CLAMPS AS DIRECTED BY C.W.D. INSPECTOR.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS. MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536). THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 (STRAIGHT TYPE), 162 (TRANSITION TYPE), 253 (REDUCING TYPE); OR SMITH-BLAIR 441 (STRAIGHT AND TRANSITION TYPE), R441 (REDUCING TYPE); OR ROMAC STYLE 501 (STRAIGHT AND TRANSITION TYPE), STYLE RC501 (REDUCING TYPE).

IF THE BRANCH IS TO BE SHORTENED, NO NEW IS PIPE REQUIRED.

3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

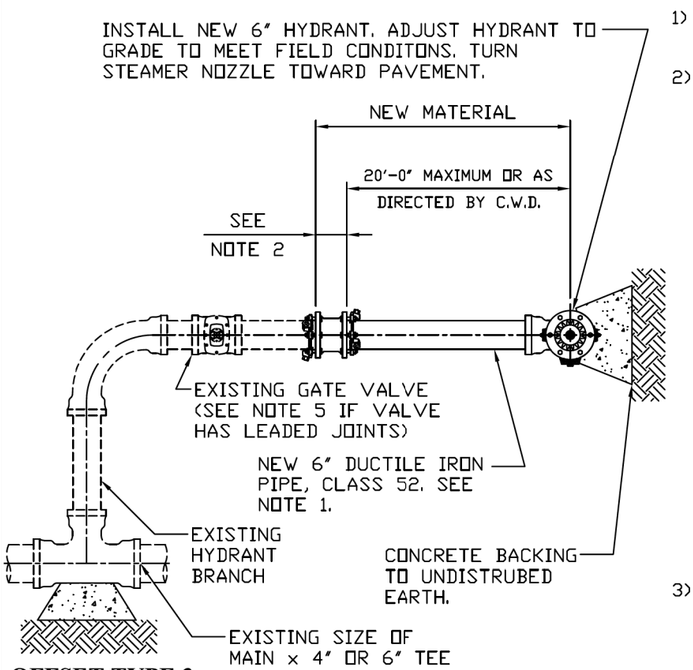
4) IF EXISTING PIPING IS 4" USE 4" TO 6" REDUCING MJ REDUCER OR REDUCING TRANSITION COUPLING WITH ROD & CLAMP IF APPROVED BY CWD.

5) IN HIGH PRESSURE AREAS THE EXISTING VALVE MAY NEED TO BE RESTRAINED TO EXISTING TEE OR FITTING USING ROD & CLAMP AS DIRECTED BY CWD.
SEE STD-H01 FOR EXISTING LEAD JOINT REQUIREMENTS.

EXTEND, SHORTEN AND ADJUST HYDRANT TO GRADE, OFFSET TYPE 2

- NOT TO SCALE -

STD-H04 | DATE: 8-20-2012 | BY: RSK



OFFSET TYPE 3

1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).

2) CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250, RETAINED MECHANICAL JOINT REDUCERS WHERE EXISTING PIPE IS 4" IN DIAMETER, OR COMPRESSION COUPLINGS WITH ROD AND CLAMPS AS DIRECTED BY C.W.D. INSPECTOR.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS. MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536). THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 (STRAIGHT TYPE), 162 (TRANSITION TYPE), 253 (REDUCING TYPE); OR SMITH-BLAIR 441 (STRAIGHT AND TRANSITION TYPE), R441 (REDUCING TYPE); OR ROMAC STYLE 501 (STRAIGHT AND TRANSITION TYPE), STYLE RC501 (REDUCING TYPE).

IF THE BRANCH IS TO BE SHORTENED, NO NEW IS PIPE REQUIRED.

3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

4) IF EXISTING PIPING IS 4" USE 4" TO 6" REDUCING MJ REDUCER OR REDUCING TRANSITION COUPLING WITH ROD & CLAMP IF APPROVED BY CWD.

5) IN HIGH PRESSURE AREAS THE EXISTING VALVE MAY NEED TO BE RESTRAINED TO EXISTING TEE OR FITTING USING ROD & CLAMP AS DIRECTED BY CWD.
SEE STD-H01 FOR EXISTING LEAD JOINT REQUIREMENTS.

EXTEND, SHORTEN AND ADJUST 6" HYDRANT TO GRADE, OFFSET TYPE 3

- NOT TO SCALE -

STD-H05 | DATE: 8-20-2012 | BY: RSK

RELEASED FOR CONSTRUCTION
2017-07-12:CCG6B.BU7 RFC Plans.pdf
07/13/2017
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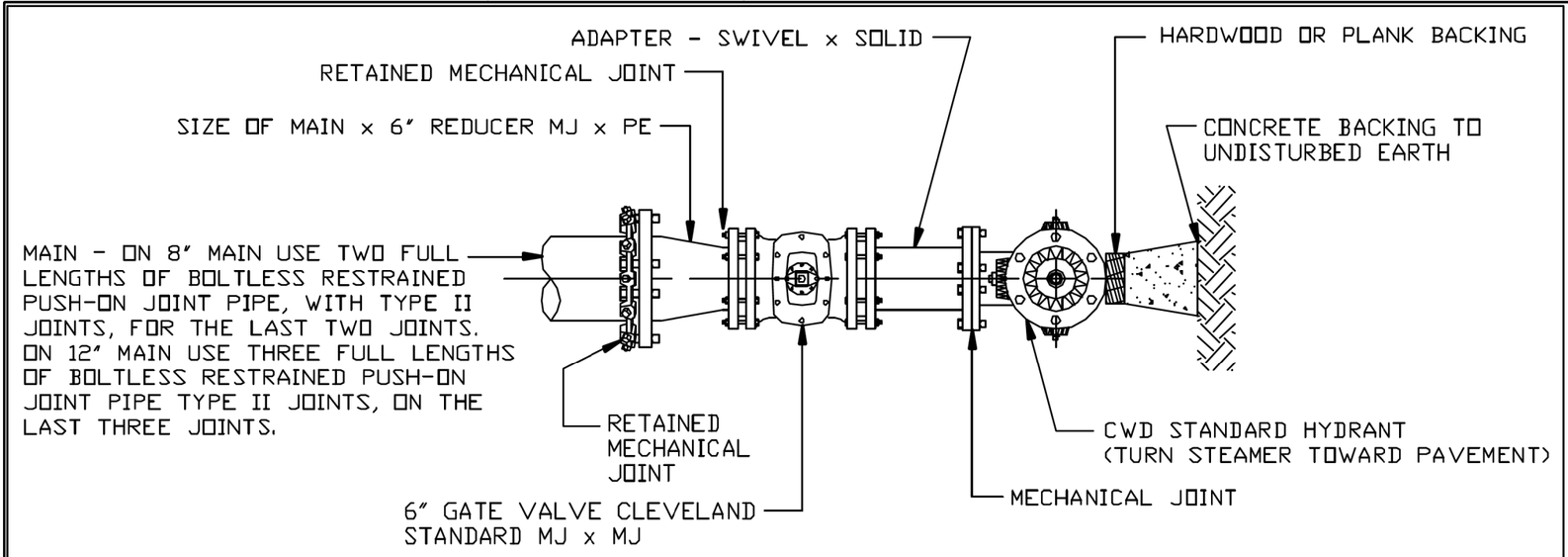
ISSUE RECORD

NO.	DATE	DESCRIPTION

BU7 - WATERWORKS

2018-01-16.BU-7 Waterworks - RFC Plans



TYPICAL NEW HYDRANT INSTALLATION DETAIL "C"

NOT TO SCALE

NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

STD-H11 | DATE: 3-4-2002 | BY: RSK

RELEASED FOR CONSTRUCTION
2017-07-12.CCG6B.BU7 RFC Plans.pdf
07/13/2017
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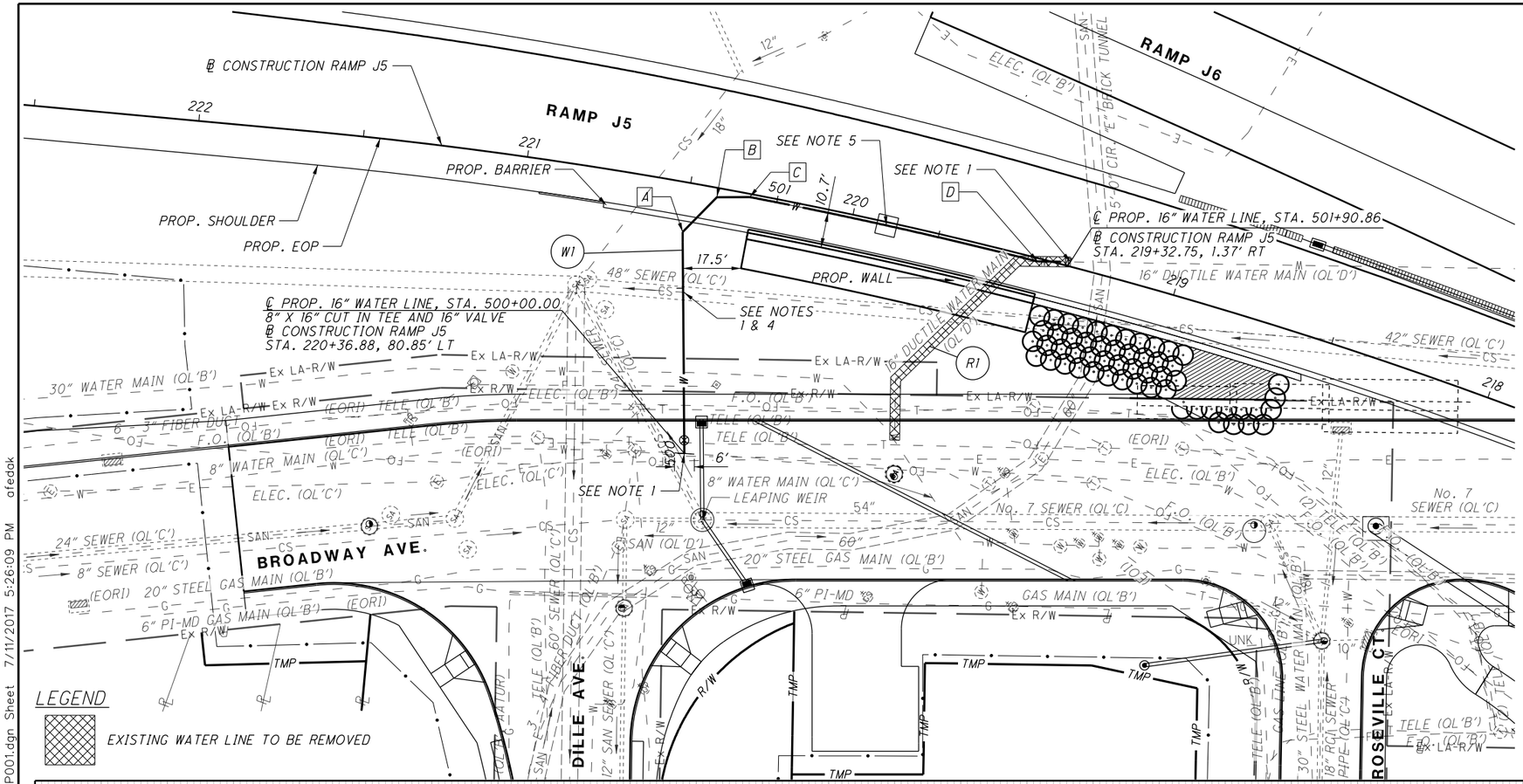
ISSUE RECORD

NO.	DATE	DESCRIPTION

BU7 - WATERWORKS

2018-01-16.BU-7 Waterworks - RFC Plans



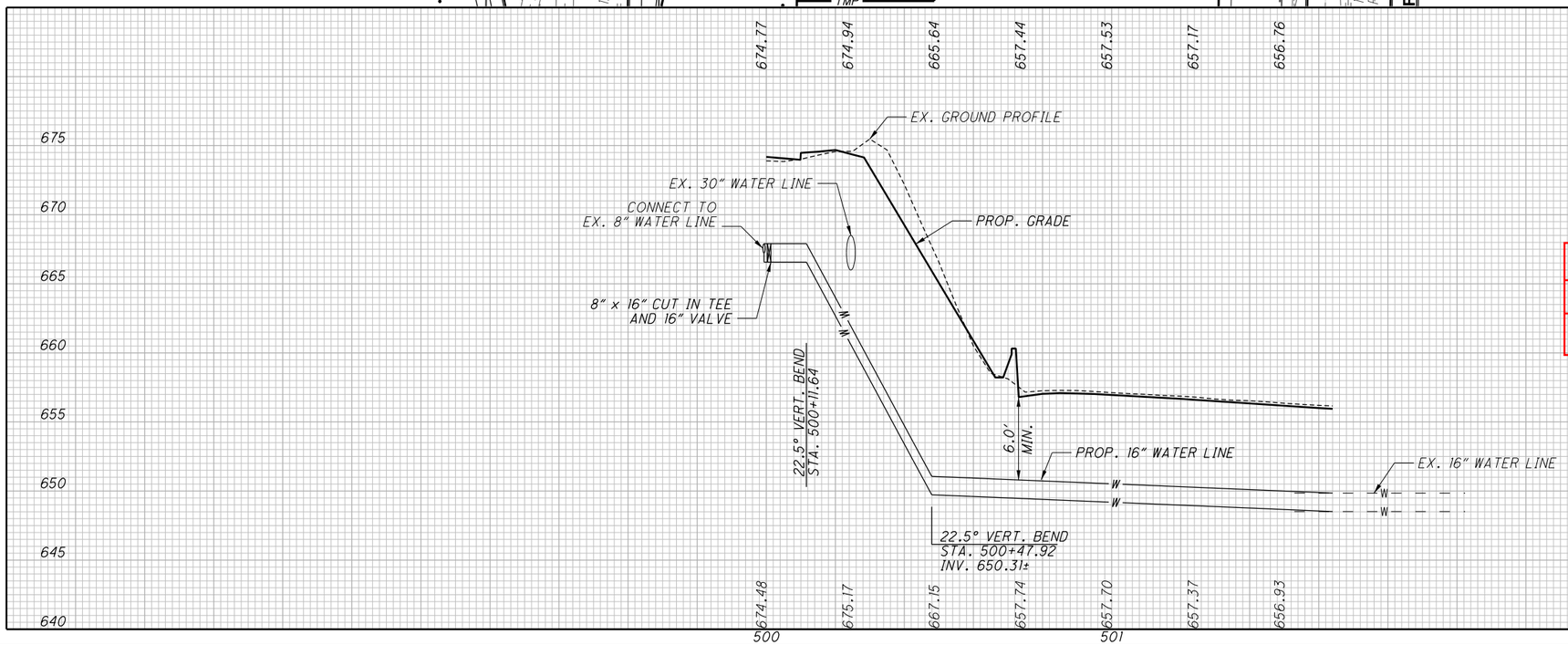
WATER LINE ALIGNMENT TABLE

REF.	BEND ANGLE	℄ PROP. 16" WATER LINE STA.	℄ CONSTRUCTION RAMP J5 STA.	℄ CONSTRUCTION RAMP J5 OFFSET
A	45.00°	500+67.00	220+49.83	15.03' LT
B	45.00°	500+81.73	220+41.47	2.87' LT
C	11.25°	501+80.86	220+31.67	0.96' LT
D	11.25°	501+54.00	219+42.46	1.00' LT

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZE, LOCATION, AND DEPTH AND REPORT ANY INCONSISTENT FINDINGS TO THE PROJECT ENGINEER PRIOR TO DEVIATING FROM THESE PLANS. CONTRACTOR SHALL LOCATE AND FIELD VERIFY ALL UTILITY MAIN LINE AND CROSSINGS OF OTHER UTILITIES PRIOR TO CROSSING SAID UTILITY AND REPORT ANY INCONSISTENT FINDINGS TO THE PROJECT ENGINEER PRIOR TO DEVIATING FROM THESE PLANS.
2. DEVIATION OF THESE PLANS IN THE VERTICAL AXIS OF MORE THAN 6" SHALL NEED TO BE ACCOMPANIED BY A WRITTEN AND SIGNED STATEMENT OF CONSENT FROM THE CITY OF CLEVELAND, DIVISION OF WATER PRIOR TO ALLOWING CONSTRUCTION TO COMMENCE.
3. DEVIATION OF THESE PLANS IN ACCEPTABLE VERTICAL CLEARANCES FROM OTHER UTILITIES SHALL NEED TO BE ACCOMPANIED BY A WRITTEN AND SIGNED STATEMENT OF CONSENT FROM THE CITY OF CLEVELAND, DIVISION OF WATER, AND THE UTILITY BEING CROSSED, PRIOR TO ALLOWING CONSTRUCTION TO COMMENCE.
4. 48" STM INV = 631.08' AS PER RECORD PLAN CUY-77-(13.77)(14.94), YEAR: 1963.
5. 6' X 6' CHLORINATION PIT
   STA. 501+33.89
   ℄ CONSTRUCTION RAMP J5
   STA. 219+89.45, 1.00' LT
6. CONTRACTOR SHALL MAINTAIN 10 FT. OF CLEARANCE FROM THE PROPOSED WALL FOOTING.

BU7 - WATERWORKS		
NO.	DATE	DESCRIPTION
ISSUE RECORD		



RELEASED FOR CONSTRUCTION

2017-07-12.CCG6B.BU7 RFC Plans.pdf

07/13/2017 | brian.link

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED SEO | CHECKED CML

PLAN AND PROFILE - CONFLICT ID 300
STA. 500+00.00 TO STA. 501+90.86

CUY-77-13.80

13
15

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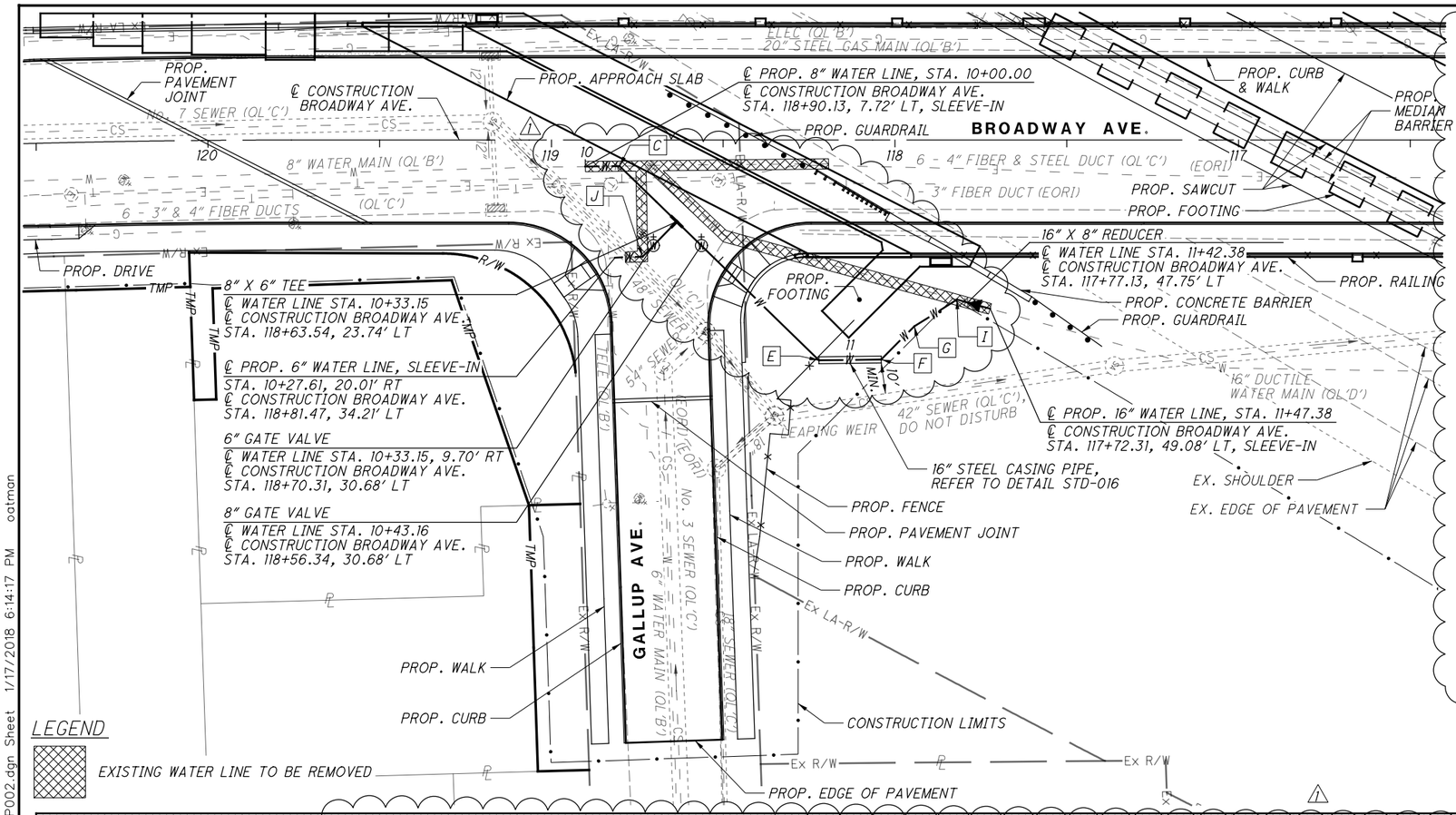


WATER LINE ALIGNMENT TABLE

REF.	BEND ANGLE	BEND TYPE	℄ PROP. WATER LINE STA.	℄ CONSTRUCTION BROADWAY AVE. STA.	℄ CONSTRUCTION BROADWAY AVE. OFFSET
A	22.5°	VERT.	10+05.00	118+85.13	7.65' LT
B	22.5°	VERT.	10+07.00	118+83.13	7.62' LT
C	45°	HORIZ.	10+10.00	118+80.13	7.58' LT
D	22.5°	VERT.	10+71.25	118+36.25	50.32' LT
E	45°	HORIZ.	10+91.97*	118+22.13	64.08' LT
F	45°	HORIZ.	11+09.09**	118+04.01	63.84' LT
G	11.25°	HORIZ.	11+22.78	117+94.33	54.16' LT
H	22.5°	VERT.	11+33.48	117+85.25	48.48' LT
I	45°	HORIZ.	11+37.38	117+81.95	46.42' LT
J	45°	HORIZ.	10+33.15, 14.24' RT	118+73.48	33.94' LT

* BEGIN 16" STEEL CASING PIPE
** END 16" STEEL CASING PIPE

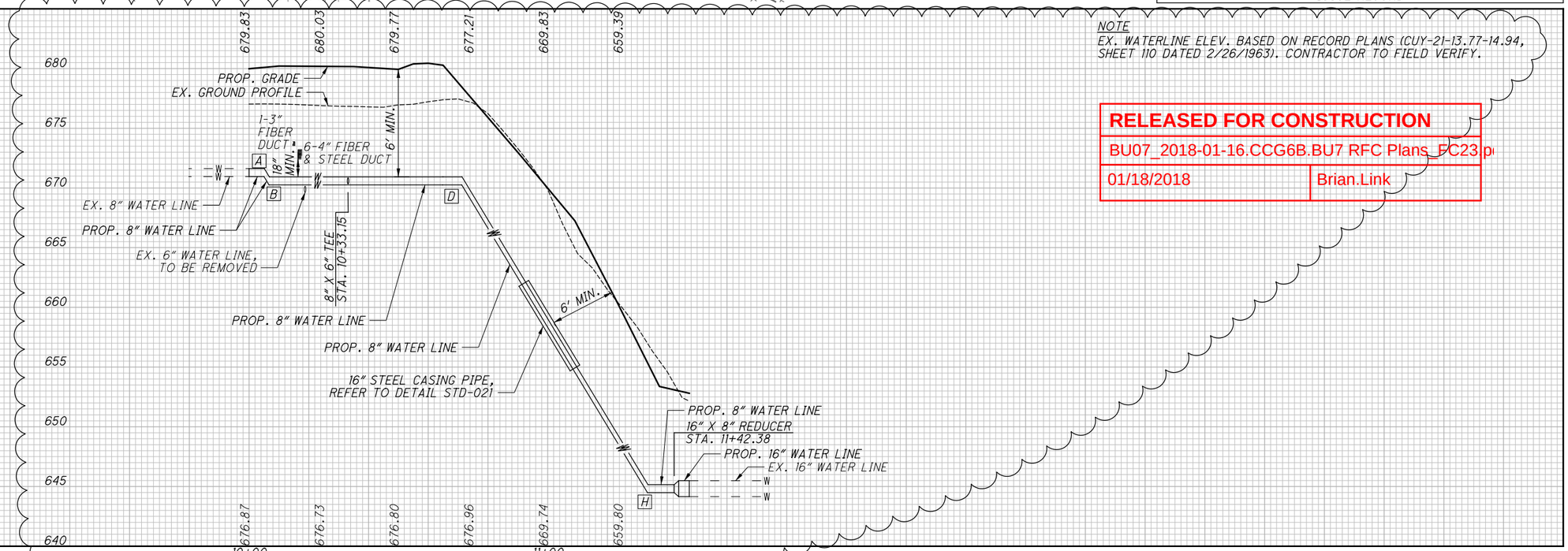
CONSTRUCTION NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN LOCATION AND DEPTH AND REPORT ANY INCONSISTENT FINDINGS TO THE PROJECT ENGINEER PRIOR TO DEVIATING FROM THESE PLANS. CONTRACTOR SHALL LOCATE AND FIELD VERIFY ALL UTILITY MAIN LINE AND CROSSINGS OF OTHER UTILITIES PRIOR TO CROSSING SAID UTILITY AND REPORT ANY INCONSISTENT FINDINGS TO THE PROJECT ENGINEER PRIOR TO DEVIATING FROM THESE PLANS.
2. DEVIATION OF THESE PLANS IN THE VERTICAL AXIS OF MORE THAN 6" SHALL NEED TO BE ACCOMPANIED BY A WRITTEN AND SIGNED STATEMENT OF CONSENT FROM THE CITY OF CLEVELAND, DIVISION OF WATER PRIOR TO ALLOWING CONSTRUCTION TO COMMENCE.
3. DEVIATION OF THESE PLANS IN ACCEPTABLE VERTICAL CLEARANCES FROM OTHER UTILITIES SHALL NEED TO BE ACCOMPANIED BY A WRITTEN AND SIGNED STATEMENT OF CONSENT FROM THE CITY OF CLEVELAND, DIVISION OF WATER, AND THE UTILITY BEING CROSSED, PRIOR TO ALLOWING CONSTRUCTION TO COMMENCE.
4. SLEEVE-IN INSTALLATION SHALL BE PER CWD DETAIL STD-007.

LEGEND

EXISTING WATER LINE TO BE REMOVED

NO.	DATE	DESCRIPTION
1	1/12/18	RELOCATION ADJUSTED TO ACCOMODATE WINGWALL
		ISSUE RECORD



NOTE
EX. WATERLINE ELEV. BASED ON RECORD PLANS (CUY-21-13.77-14.94, SHEET 110 DATED 2/26/1963). CONTRACTOR TO FIELD VERIFY.

RELEASED FOR CONSTRUCTION
BU07_2018-01-16.CCG6B.BU7 RFC Plans_FC23.p
01/18/2018 | Brian.Link

BU7 - WATERWORKS

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SEO
CHECKED CML

PLAN AND PROFILE - CONFLICT ID 301
STA. 10+00.00 TO STA. 11+47.38

CUY-77-13.80

14
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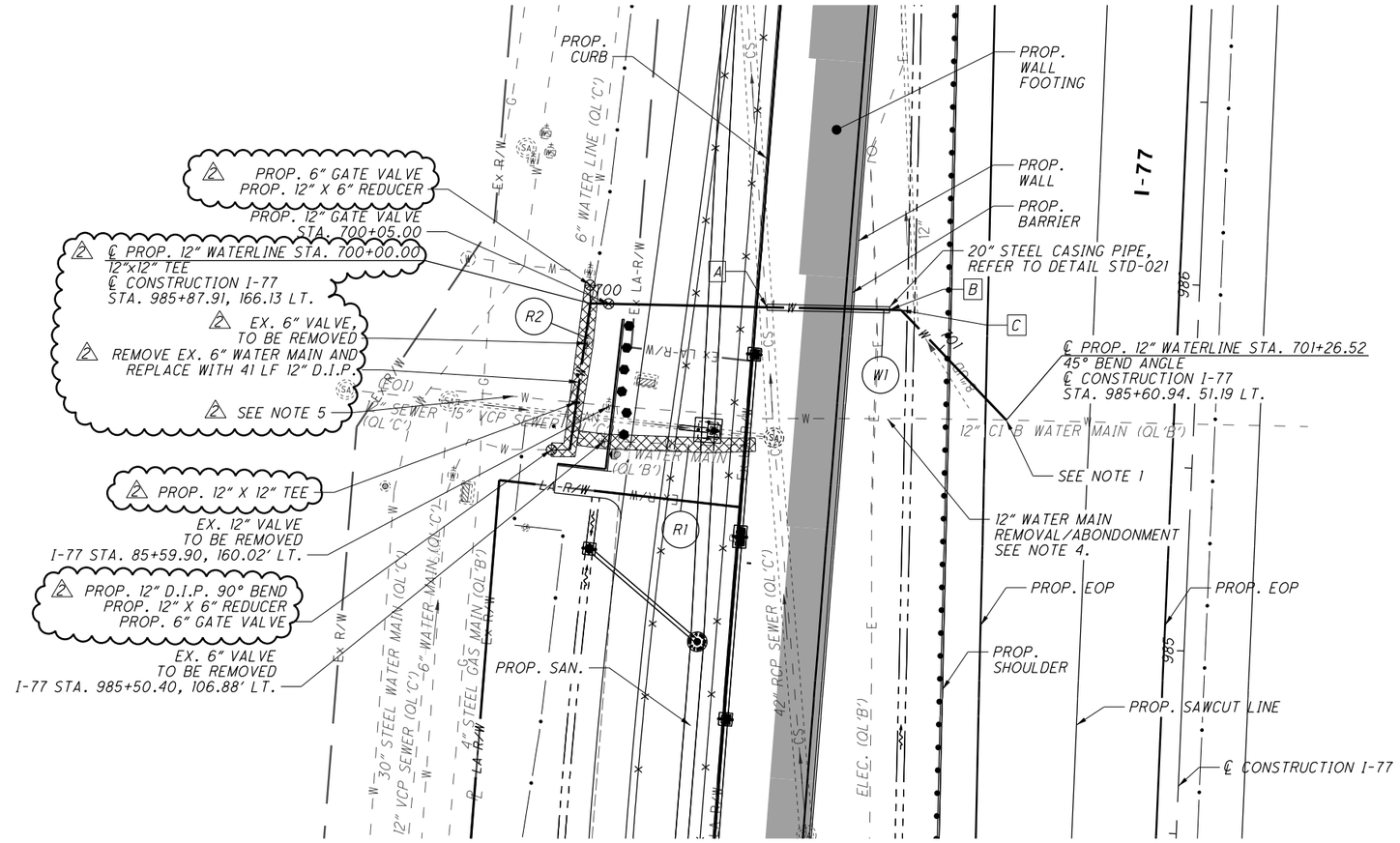


WATER LINE ALIGNMENT TABLE

REF.	BEND ANGLE	℄ PROP. 12" WATER LINE STA.	℄ CONSTRUCTION I-77 STA.	℄ CONSTRUCTION I-77 OFFSET
C	45.00°	700+84.93	985+89.71	81.21' LT

CONSTRUCTION NOTES:

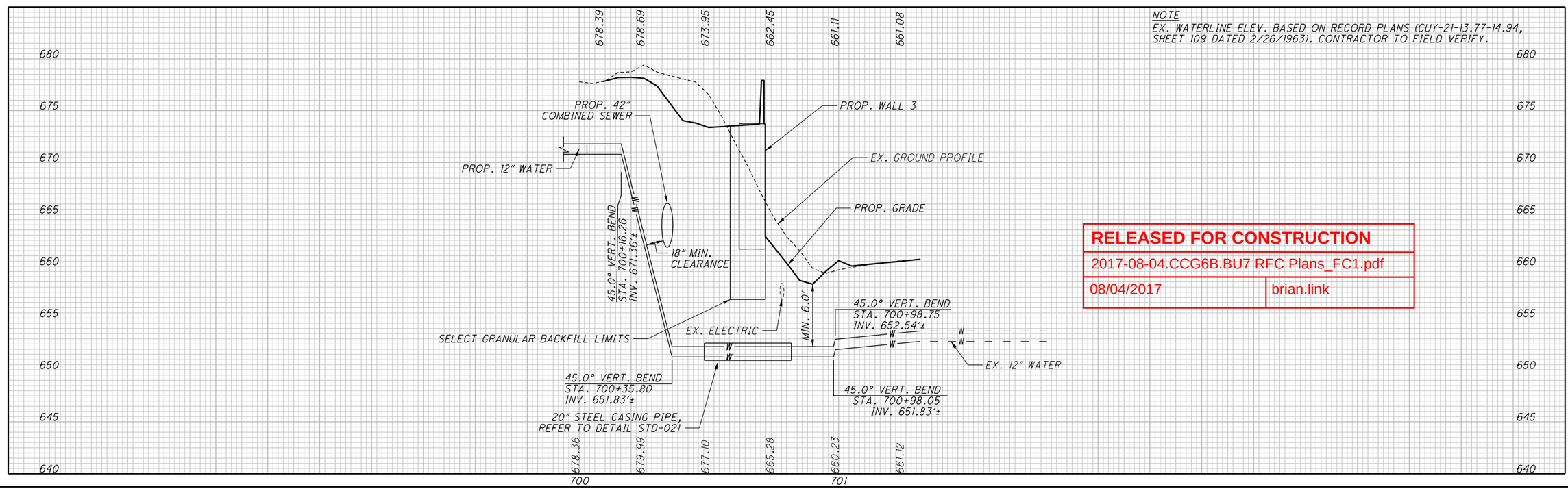
1. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN LOCATION AND DEPTH AND REPORT ANY INCONSISTENT FINDINGS TO THE PROJECT ENGINEER PRIOR TO DEVIATING FROM THESE PLANS. CONTRACTOR SHALL LOCATE AND FIELD VERIFY ALL UTILITY MAIN LINE AND CROSSINGS OF OTHER UTILITIES PRIOR TO CROSSING SAID UTILITY AND REPORT ANY INCONSISTENT FINDINGS TO THE PROJECT ENGINEER PRIOR TO DEVIATING FROM THESE PLANS.
2. DEVIATION OF THESE PLANS IN THE VERTICAL AXIS OF MORE THAN 6" SHALL NEED TO BE ACCOMPANIED BY A WRITTEN AND SIGNED STATEMENT OF CONSENT FROM THE CITY OF CLEVELAND, DIVISION OF WATER PRIOR TO ALLOWING CONSTRUCTION TO COMMENCE.
3. DEVIATION OF THESE PLANS IN ACCEPTABLE VERTICAL CLEARANCES FROM OTHER UTILITIES SHALL NEED TO BE ACCOMPANIED BY A WRITTEN AND SIGNED STATEMENT OF CONSENT FROM THE CITY OF CLEVELAND, DIVISION OF WATER, AND THE UTILITY BEING CROSSED, PRIOR TO ALLOWING CONSTRUCTION TO COMMENCE.
4. THE CONTRACTOR IS TO REMOVE PORTIONS OF THE WATER MAIN BETWEEN THE PORPOSED SPOOL AND PROPOSED CONNECTION TO THE EAST NECESSARY TO COMPLETE WORK IN THE AREA. ANY ABANDONMENT PORTIONS MUST COMPLY WITH CWD STD-004. THE WATER VALVE AT I-77 STA 985+59.90, 160.02' LT MUST BE REMOVED TO ITS BASE.
5. APPROXIMATE WATER MAIN LOCATION PER FINDINGS IN THE FIELD.

STEEL CASING PIPE DETAILS

A ℄ PROP. 20" STEEL CASING PIPE STA. 700+48.28
℄ CONSTRUCTION I-77
STA. 985+88.94, 117.86' LT

B ℄ PROP. 20" STEEL CASING PIPE STA. 700+81.80
℄ CONSTRUCTION I-77
STA. 985+89.65, 84.34' LT

BU7 - WATERWORKS		
1	7/21/17	PLAN REVISIONS
2	8/1/17	PLAN REVISIONS
NO.	DATE	DESCRIPTION
ISSUE RECORD		



NOTE
EX. WATERLINE ELEV. BASED ON RECORD PLANS (CUY-21-13.77-14.94, SHEET 109 DATED 2/26/1963). CONTRACTOR TO FIELD VERIFY.

RELEASED FOR CONSTRUCTION
2017-08-04.CCG6B.BU7 RFC Plans_FC1.pdf
08/04/2017 | brian.link

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED SEO
CHECKED CML

PLAN AND PROFILE - CONFLICT ID 302
STA. 700+00.00 TO STA. 701+26.52

CUY-77-13.80

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