

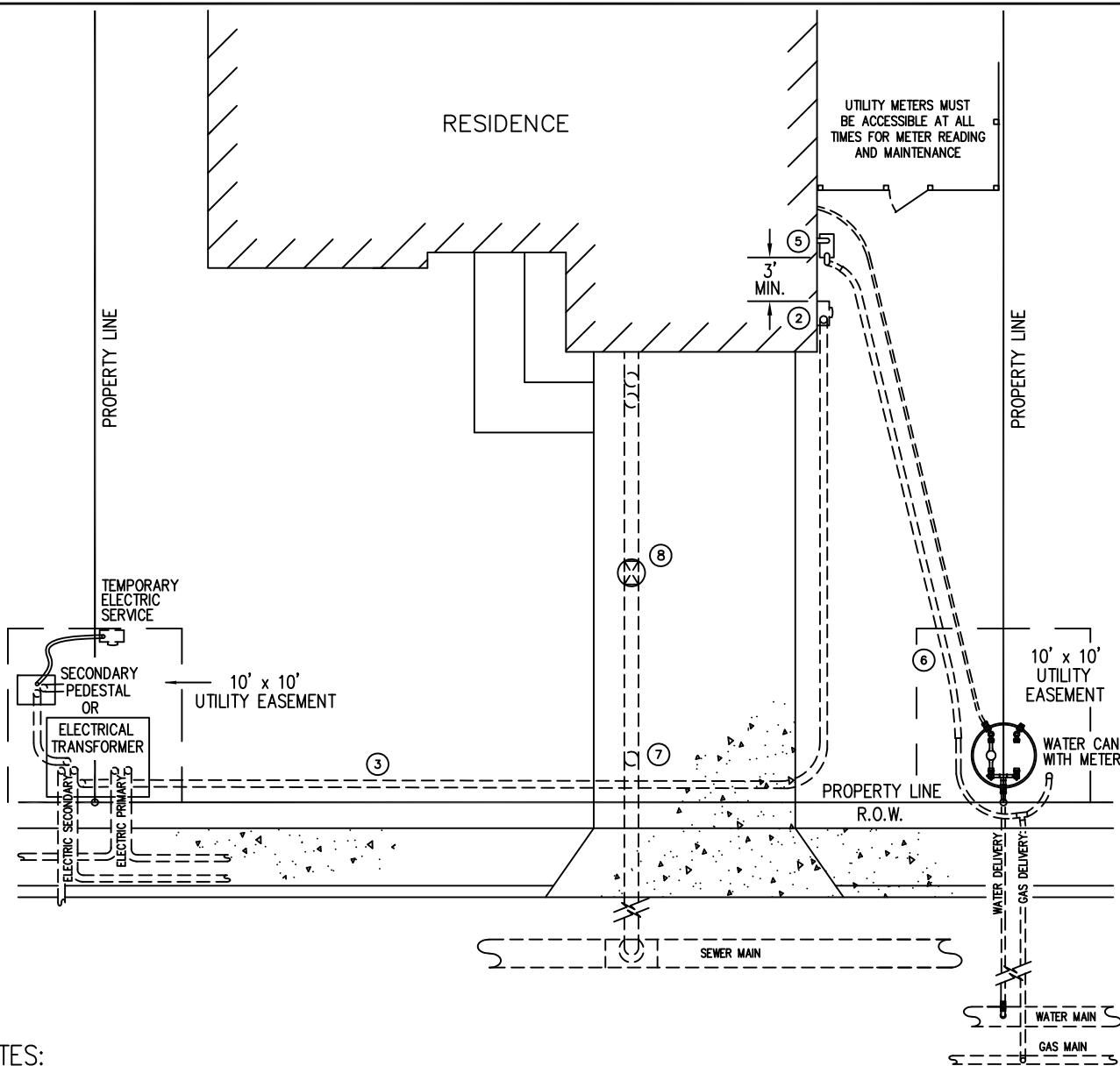
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DATE: APRIL 2018



NOTES:

- ① PRIOR TO TRENCHING FOR GAS AND ELECTRIC SERVICE LINES FROM UTILITY STUB TO PROPOSED METER LOCATIONS, THE METER AND SERVICE ROUTE LOCATION MUST BE APPROVED BY LOS ALAMOS COUNTY UTILITIES ENGINEERING. CUSTOMER MUST CALL FOR UTILITY LOCATES BEFORE TRENCHING.
 ELECTRIC –
- ② CUSTOMER MUST INSTALL ELECTRIC METER BASE WITH A 2" OR 3" RGS OR SCHEDULE 80 CONDUIT RISER ON OUTSIDE OF EXTERIOR WALL WITH A 24" RADIUS 90° ELBOW, 24" BELOW FINISH GRADE.
- ③ CUSTOMER MUST PREPARE TRENCH TO HAVE A MINIMUM OF 24" DEPTH FROM TOP OF PIPE. FOR 200 AMP SERVICE, LOS ALAMOS COUNTY WILL INSTALL 2" ELECTRICAL CONDUIT, CONDUCTOR AND METER AFTER RECEIVING NEW MEXICO CONSTRUCTION INDUSTRIES DIVISION FINAL ELECTRICAL INSPECTION APPROVAL AND THE COUNTY UTILITY TRENCH INSPECTION APPROVAL.
 GAS –
- ④ IN ALL CASES BACK FILLING ON GAS LINE AND RISER AREA MUST BE DIRECTLY SUPERVISED BY LOS ALAMOS COUNTY UTILITIES OPERATOR QUALIFIED PERSONNEL BEFORE METER INSTALLATION.
- ⑤ GAS REGULATOR MUST BE LOCATED PER STANDARD DRAWING 2006
- ⑥ CUSTOMER MUST PREPARE TRENCH TO HAVE A MINIMUM OF 24" DEPTH FROM TOP OF PIPE PER DETAIL DRAWING 2006. LOS ALAMOS COUNTY WILL INSTALL 3/4" MDPE GAS SERVICE PIPE INSERTED IN 1.25" MDPE PIPE, RISER AND METER AFTER RECEIVING NEW MEXICO CONSTRUCTION INDUSTRIES DIVISION FINAL MECHANICAL INSPECTION APPROVAL AND THE COUNTY UTILITY TRENCH INSPECTION APPROVAL.
 SEWER –
- ⑦ THERE SHALL BE A 4" SEWER CLEAN-OUT INSTALLED AT THE PROPERTY LINE SWEEPING TOWARDS COUNTY MAIN.
- ⑧ AN ACCESSIBLE CUSTOMER OWNED SEWER BACKWATER VALVE SHALL BE INSTALLED IF LOWEST PLUMBING FIXTURE IS BELOW UPSTREAM MANHOLE.
- ⑨ AN EXCESS FLOW VALVE SHALL BE INSTALLED PER SPECIFICATION 301 GAS SYSTEMS.
- ⑩ PROVIDE IPC APPROVED BACKFLOW PREVENTION DEVICE IF CONNECTION TO SPRINKLER SYSTEM IS PROVIDED.
- ⑪ CUSTOMER OWNED DOUBLE SWEEP CLEANOUT

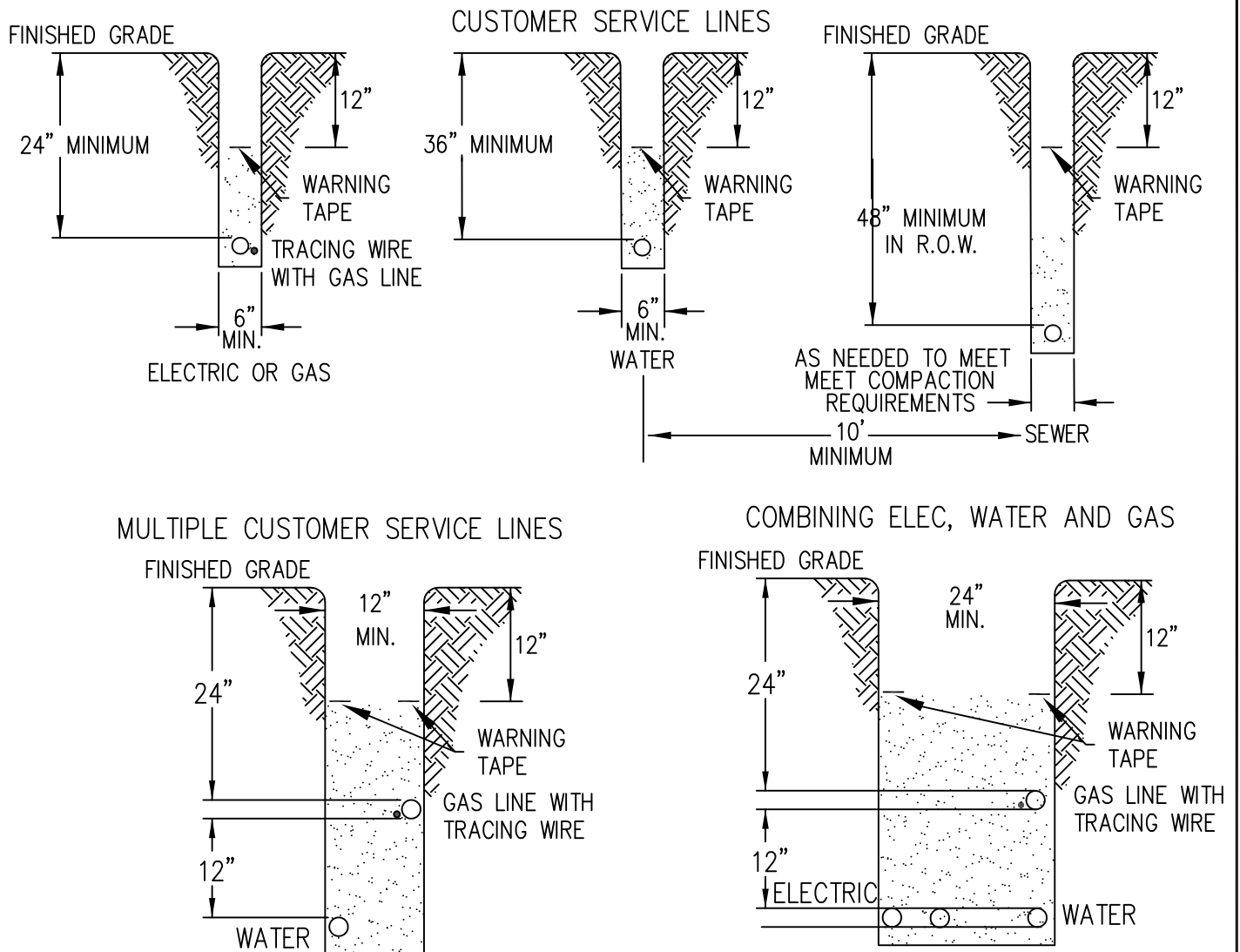
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NOTES:

- 1.) WHERE APPLICABLE, COMPACTION IN COUNTY OR STATE RIGHT-OF-WAY SHALL MEET OR EXCEED MINIMUM SPECIFIED REQUIREMENTS OF ORGANIZATION HAVING AUTHORITY. COMPACTION OUTSIDE ROAD RIGHT-OF-WAY SHALL BE 85%.
- 2.) BEDDING MATERIAL TO BE SANDY SOIL WITH NO SHARP ROCKS OR ROCKS LARGER THAN 1/2 INCH. 3 INCHES OF BEDDING MATERIAL REQUIRED AT TRENCH BOTTOM.
- 3.) IF TRENCH-RUN MATERIAL MEETS BEDDING MATERIAL TYPE REQUIREMENTS 3 INCH BEDDING MAY BE OMITTED PROVIDED THE TRENCH BOTTOM IS SMOOTH, FLAT AND WITHOUT IRREGULARITIES.
- 4.) A MINIMUM OF 3 INCHES OF APPROVED BEDDING UNDER AND 6 INCHES OF APPROVED SHADING OVER THE UTILITIES IS REQUIRED.
- 5.) LATEST OSHA TRENCH SAFETY REQUIREMENTS SHALL BE STRICTLY OBSERVED.
- 6.) TRACER WIRE TO BE INSTALLED WITH GAS SERVICE PIPE. SEE SPECIFICATION 301 GAS SYSTEMS.
- 7.) WHERE UTILITIES CROSS ONE ANOTHER, A 12 INCH SEPARATION IS RECOMMENDED WITH A MIN. OF 4 INCHES WITH WRITTEN APPROVAL OF DPU.
- 8.) TRENCH MUST BE INSPECTED AND APPROVED BY DEPARTMENT OF PUBLIC UTILITIES PRIOR TO SERVICE LINE INSTALLATION.
- 9.) IN ALL CASES MINIMUM UTILITY SEPARATION WILL BE REQUIRED AND BACK FILLING ON GAS LINE MUST BE DIRECTLY SUPERVISED BY LOS ALAMOS COUNTY OPERATOR QUALIFIED PERSONNEL.
- 10.) WARNING TAPE MUST BE A MINIMUM OF 6" WIDE AND READ: CAUTION – BURIED (GAS, WATER, SEWER ELECTRIC) LINE. WARNING TAPE MUST BE CONSISTENT WITH UTILITY LINE BEING INSTALLED AND MUST BE ABOVE THE UTILITY LINE EXTENDED THE ENTIRE DISTANCE OF THE LINE BEING INSTALLED. THIS REQUIREMENT INCLUDES ALL GAS, WATER, SEWER AND ELECTRIC RESIDENTIAL SERVICES.
- 11.) IF SEWER LINE IS ABOVE WATERLINE, SEWER LINE MUST BE ENCASED.

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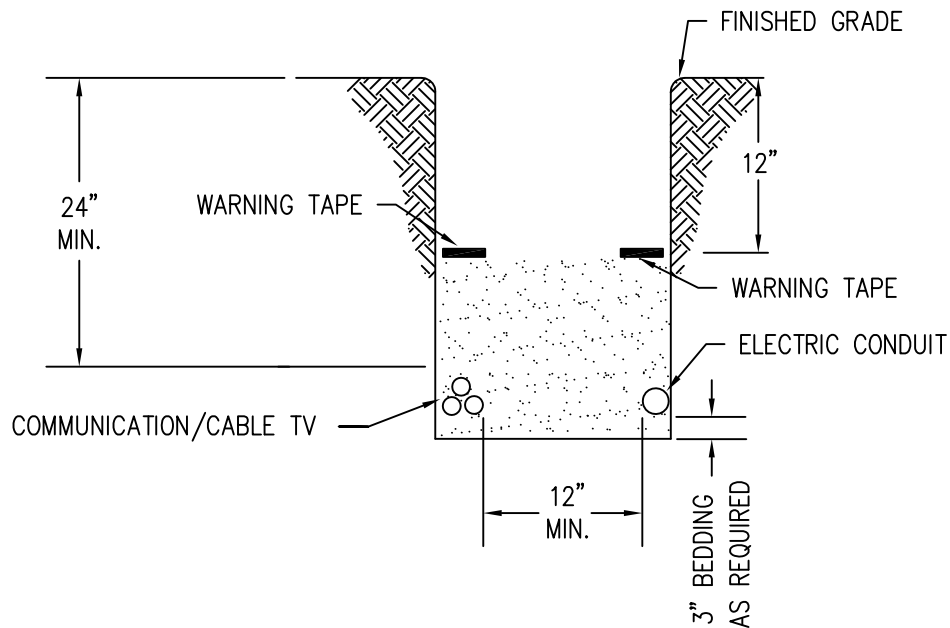
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ELECTRIC AND COMMUNICATIONS JOINT TRENCH



NOTES:

- 1.) WHERE APPLICABLE, COMPACTION IN COUNTY OR STATE RIGHT-OF-WAY SHALL MEET OR EXCEED MINIMUM SPECIFIED REQUIREMENTS OF ORGANIZATION HAVING AUTHORITY. COMPACTION OUTSIDE ROAD RIGHT-OF-WAY, SHALL BE 85%.
- 2.) BEDDING MATERIAL TO BE SANDY SOIL WITH NO SHARP ROCKS OR ROCKS LARGER THAN 1/2 INCH. 3 INCHES OF BEDDING MATERIAL REQUIRED AT TRENCH BOTTOM.
- 3.) IF TRENCH-RUN MATERIAL MEETS BACK FILL MATERIAL TYPE REQUIREMENTS 3 INCH BEDDING MAY BE OMITTED PROVIDED THE TRENCH BOTTOM IS SMOOTH, FLAT AND WITHOUT IRREGULARITIES.
- 4.) A MINIMUM OF 6 INCHES OF APPROVED BEDDING OVER THE UTILITIES IS REQUIRED.
- 5.) LATEST OSHA TRENCH SAFETY REQUIREMENTS SHALL BE STRICTLY OBSERVED.
- 6.) WHERE UTILITIES CROSS ONE ANOTHER, 12 INCH SEPARATION IS RECOMMENDED WITH A MIN. OF 4 INCHES WITH WRITTEN APPROVAL OF DPU.
- 7.) TRENCH MUST BE INSPECTED AND APPROVED BY DEPARTMENT OF PUBLIC UTILITIES PRIOR TO SERVICE LINE INSTALLATION.
- 8.) WARNING TAPE MUST BE A MINIMUM OF 6" WIDE AND READ: CAUTION – BURIED (GAS, WATER, SEWER ELECTRIC) LINE. WARNING TAPE MUST BE CONSISTENT WITH UTILITY LINE BEING INSTALLED AND MUST BE ABOVE THE UTILITY LINE EXTENDED THE ENTIRE DISTANCE OF THE LINE BEING INSTALLED. THIS REQUIREMENT INCLUDES ALL GAS, WATER, SEWER AND ELECTRIC RESIDENTIAL SERVICES.
- 9.) 3" BEDDING BELOW PIPE/CONDUIT ONLY ALLOWED IN SERVICE LINE TRENCHED WITHIN PRIVATE PROPERTY. ALL OTHER LOCATIONS AS SPECIFIED ELSEWHERE IN STANDARDS.

**ELECTRIC AND GAS
SERVICE LINE CROSSING**

SECTION
2000
2004

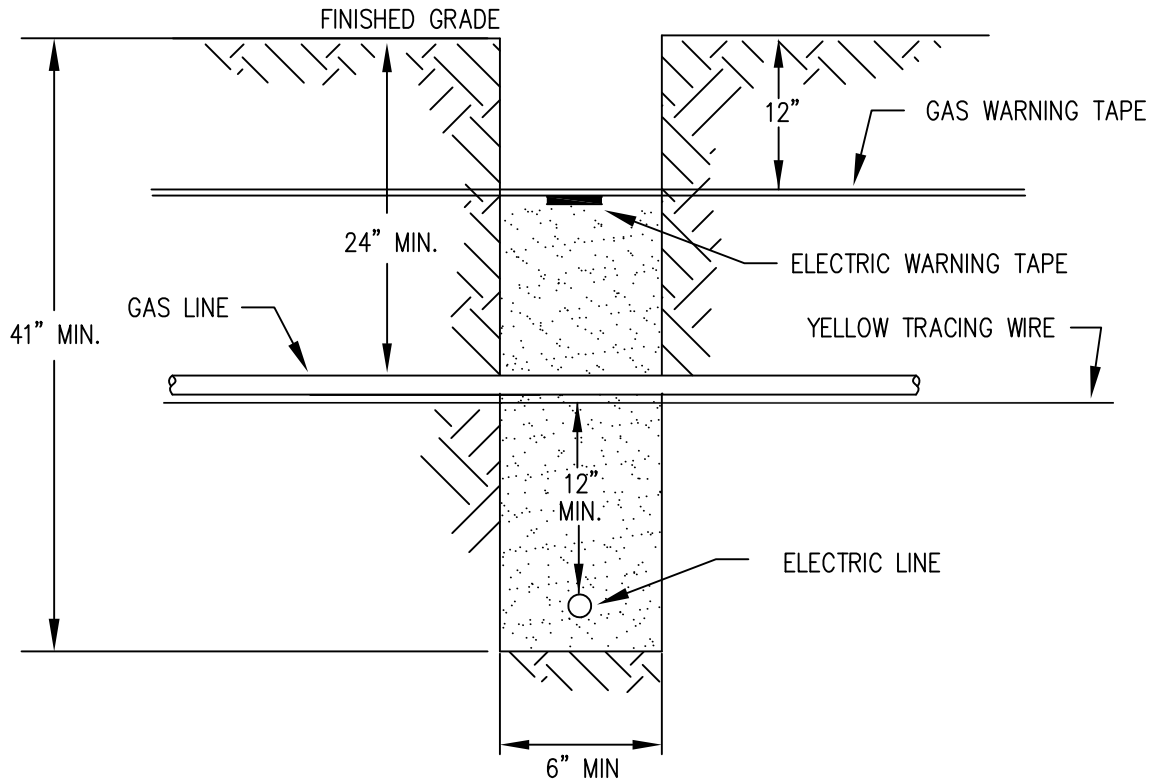
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NOTES:

- 1.) WHERE APPLICABLE, COMPACTION IN COUNTY OR STATE RIGHT-OF-WAY SHALL MEET OR EXCEED MINIMUM SPECIFIED REQUIREMENTS OF ORGANIZATION HAVING AUTHORITY. COMPACTION OUTSIDE ROAD RIGHT-OF-WAY SHALL BE 85%.
- 2.) BEDDING MATERIAL TO BE SANDY SOIL WITH NO SHARP ROCKS OR ROCKS LARGER THAN 1/2 INCH. 3 INCHES OF BEDDING MATERIAL REQUIRED AT TRENCH BOTTOM.
- 3.) IF TRENCH-RUN MATERIAL MEETS BEDDING MATERIAL TYPE REQUIREMENTS 3 INCH BEDDING MAY BE OMITTED PROVIDED THE TRENCH BOTTOM IS SMOOTH, FLAT AND WITHOUT IRREGULARITIES.
- 4.) A MINIMUM OF 6 INCHES OF APPROVED BEDDING SHADING OVER THE UTILITIES IS REQUIRED.
- 5.) LATEST OSHA TRENCH SAFETY REQUIREMENTS SHALL BE STRICTLY OBSERVED.
- 6.) TRACER WIRE TO BE INSTALLED WITH GAS SERVICE PIPE. SEE SPECIFICATION 301 GAS SYSTEMS.
- 7.) WHERE UTILITIES CROSS ONE ANOTHER, A 12 INCH SEPARATION IS RECOMMENDED WITH A MIN. OF 4 INCHES WITH WRITTEN APPROVAL OF DPU.
- 8.) TRENCH MUST BE INSPECTED AND APPROVED BY DEPARTMENT OF PUBLIC UTILITIES PRIOR TO SERVICE LINE INSTALLATION.
- 9.) IN ALL CASES MINIMUM UTILITY SEPARATION WILL BE REQUIRED AND BACK FILLING ON GAS LINE MUST BE DIRECTLY SUPERVISED BY LOS ALAMOS COUNTY OPERATOR QUALIFIED PERSONNEL.
- 10.) WARNING TAPE MUST BE A MINIMUM OF 6" WIDE AND READ: CAUTION – BURIED (GAS, WATER, SEWER ELECTRIC) LINE. WARNING TAPE MUST BE CONSISTENT WITH UTILITY LINE BEING INSTALLED AND MUST BE ABOVE THE UTILITY LINE EXTENDED THE ENTIRE DISTANCE OF THE LINE BEING INSTALLED. THIS REQUIREMENT INCLUDES ALL GAS, WATER, SEWER AND ELECTRIC RESIDENTIAL SERVICES.
- 11.) 3" BEDDING BELOW PIPE/CONDUIT ONLY ALLOWED IN SERVICE LINE TRENCHED WITHIN PRIVATE PROPERTY. ALL OTHER LOCATIONS AS SPECIFIED ELSEWHERE IN STANDARDS.

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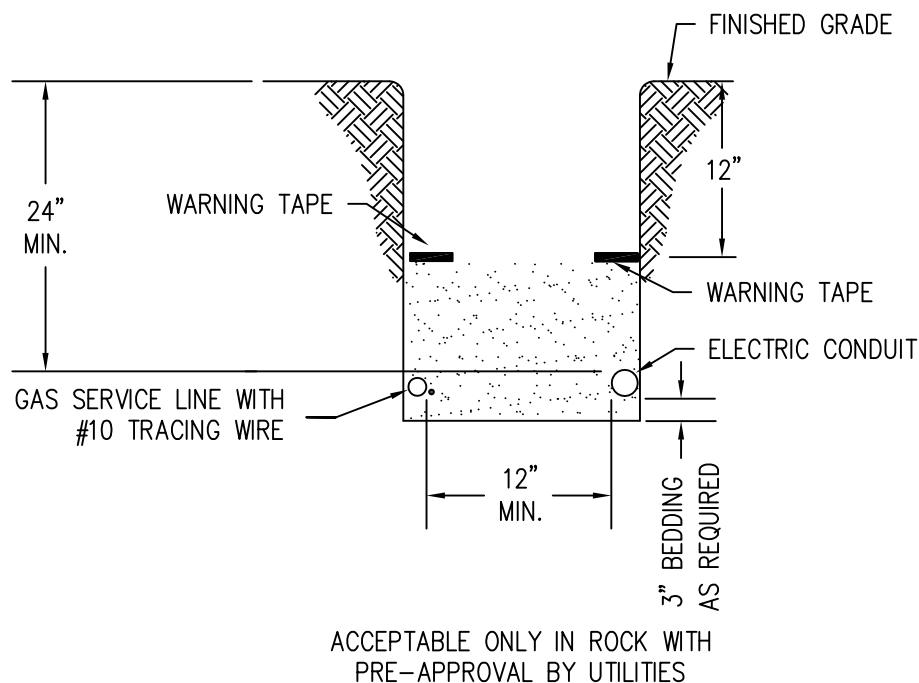
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ELECTRIC AND GAS SERVICE LINE JOINT TRENCH



NOTES:

- 1.) WHERE APPLICABLE, COMPACTION IN COUNTY OR STATE RIGHTS-OF-WAY SHALL MEET OR EXCEED MINIMUM SPECIFIED REQUIREMENTS OF ORGANIZATION HAVING AUTHORITY. COMPACTION OUTSIDE ROAD RIGHT-OF-WAY, SHALL BE 85%.
- 2.) SHADING AND BEDDING MATERIAL TO BE SANDY SOIL WITH NO SHARP ROCKS OR ROCKS LARGER THAN 1/2 INCH. 3 INCHES OF BEDDING MATERIAL REQUIRED AT TRENCH BOTTOM.
- 3.) IF TRENCH-RUN MATERIAL MEETS BACK FILL MATERIAL TYPE REQUIRMENTS 3 INCH BEDDING MAY BE OMITTED PROVIDED THE TRENCH BOTTOM IS SMOOTH, FLAT AND WITHOUT IRREGULARITIES.
- 4.) A MINIMUM OF 6 INCHES OF APPROVED BACK FILL SHADING OVER THE UTILITIES IS REQUIRED.
- 5.) LATEST OSHA TRENCH SAFETY REQUIREMENTS SHALL BE STRICTLY OBSERVED.
- 6.) TRACER WIRE TO BE INSTALLED WITH GAS SERVICE PIPE.
- 7.) WHERE UTILITIES CROSS ONE ANOTHER A 12 INCH SEPARATION IS REQUIRED.
- 8.) TRENCH MUST BE INSPECTED AND APPROVED BY LOS ALAMOS COUNTY UTILITIES PRIOR TO SERVICE LINE INSTALLATION.
- 9.) IN ALL CASES MINIMUM UTILITY SEPERATION WILL BE REQUIRED AND BACKFILLING ON GAS LINE MUST BE DIRECTLY SUPERVISED BY LOS ALAMOS COUNTY OPERATOR QUALIFIED PERSONNEL.
- 10.) WARNING TAPE MUST BE A MINIMUM OF 3" WIDE AND READ: CAUTION – BURIED (GAS, WATER, SEWER ELECTRIC) LINE. WARNING TAPE MUST BE CONSISTENT WITH UTILITY LINE BEING INSTALLED AND MUST BE ABOVE THE UTILITY LINE EXTENDED THE ENTIRE DISTANCE OF THE LINE BEING INSTALLED. THIS REQUIREMENT INCLUDES ALL GAS, WATER, SEWER AND ELECTRIC RESIDENTIAL SERVICES.

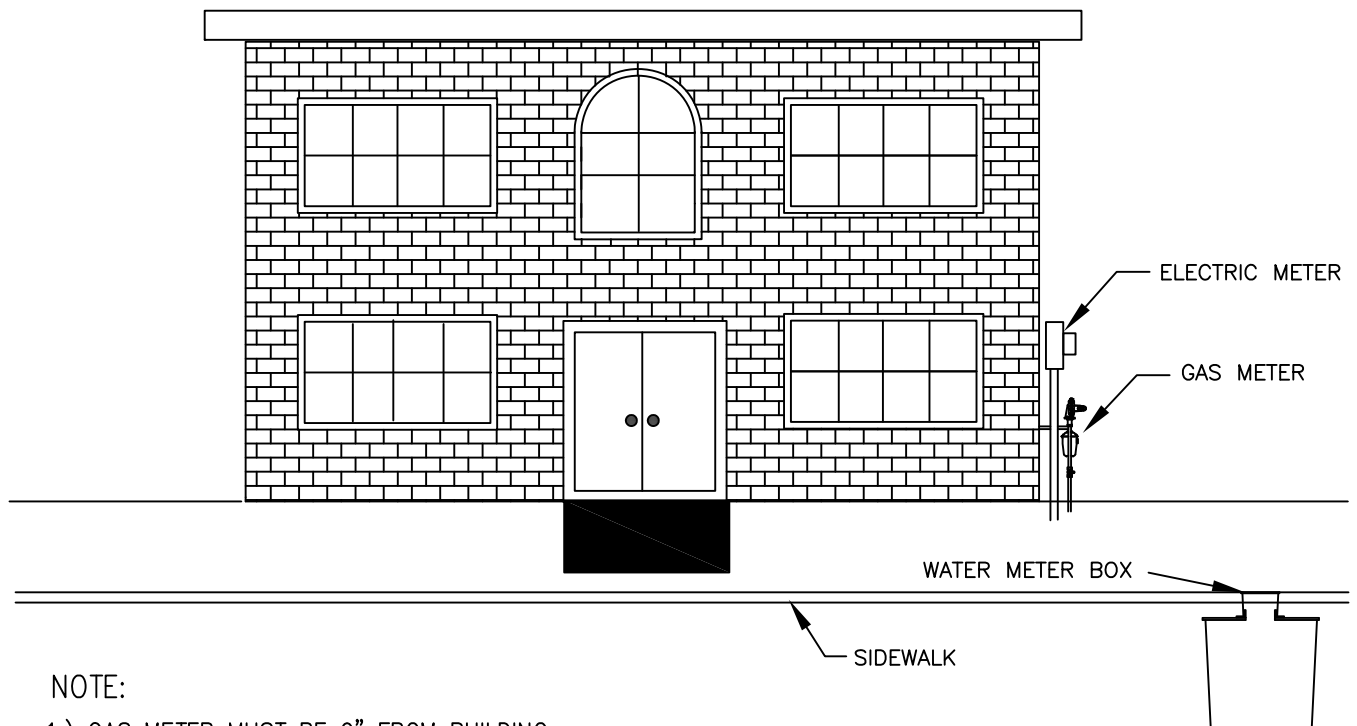
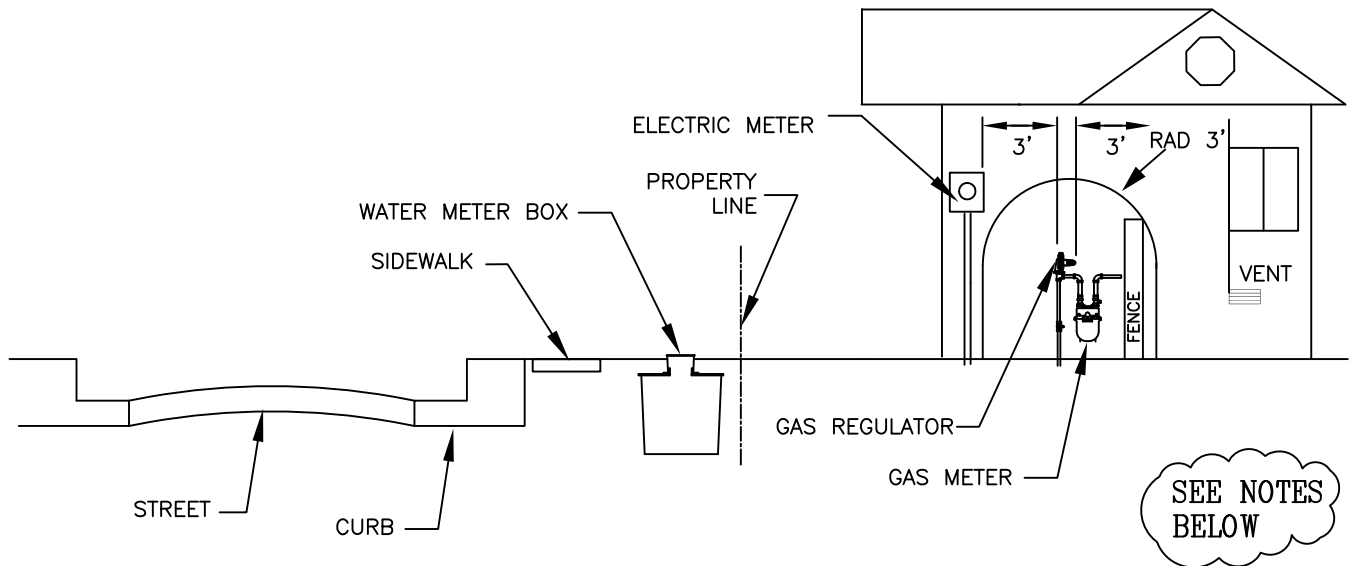
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NOTE:

- 1.) GAS METER MUST BE 9" FROM BUILDING.
- 2.) GAS METER REGULATOR SHALL NOT BE ANY CLOSER THAN 3' MEASURED CIRCUMFERENTIALLY FROM A WINDOW, DOOR OR VENT. LOCATE PER DWG 3006.
- 3.) WATER METER MUST BE AT PROPERTY LINE WITH METER CAN UP TO FINISH GRADE.
- 4.) UTILITY METERS SHALL NOT BE OBSTRUCTED, AND MUST BE ACCESSIBLE AT ALL TIMES.
- 5.) GAS METER SHALL BE 10" ABOVE FINISHED GRADE.

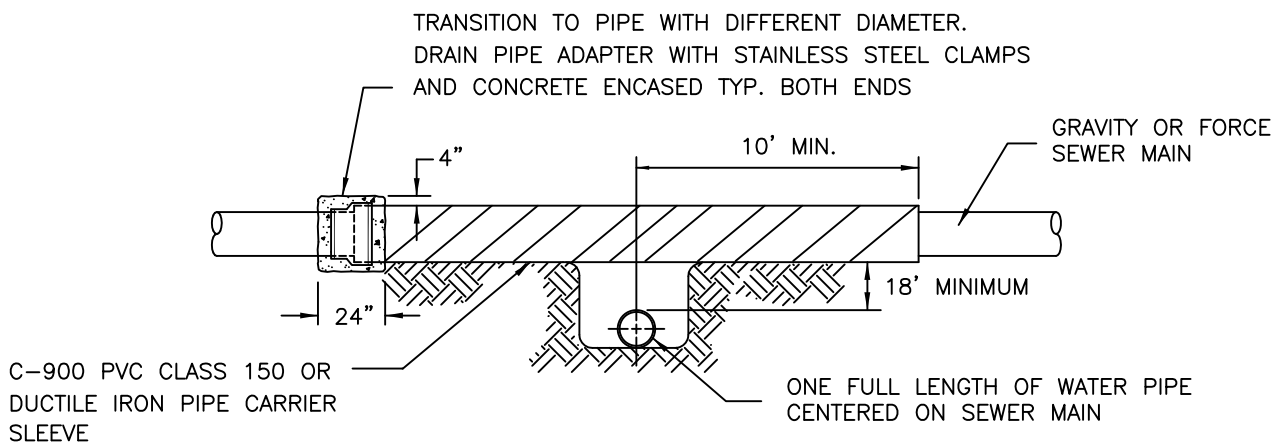
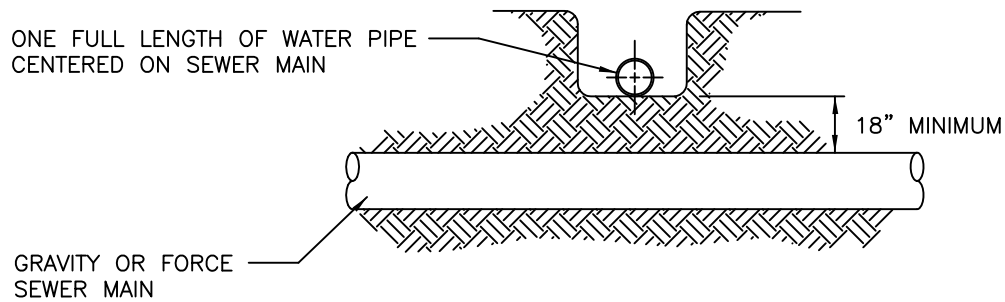
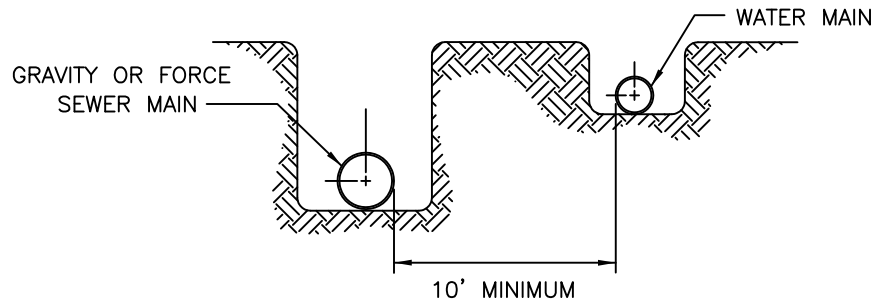
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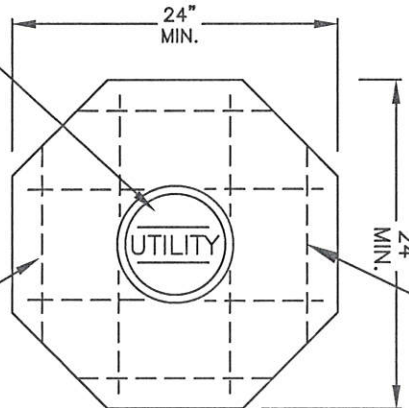
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LID MUST INDICATE UTILITY THAT
 VALVE OPERATES. GAS, WATER,
 OR NON POTABLE WATER OR
 PLAIN FOR NON POTABLE WATER

IN STREET

4000 PSI MINIMUM
 CONCRETE COLLAR WITH
 REINFORCING 4"x4"x10 GAUGE
 WIRE MESH



NOTE:
 INDICATE ON CONCRETE COLLAR
 THE TYPE OF MATERIAL USED(MDPE,
 HDPE, STEEL ETC.) THE TYPE OF
 UTILITY (GAS, WATER, NON-POT ETC.)
 AND INDICATE THE DIRECTION OF FLOW

NOT IN STREET

3000 PSI MINIMUM
 CONCRETE COLLAR WITH
 REINFORCING WIRE MESH

VALVE BOX, LID AND CONCRETE COLLAR
 MUST BE LEVEL WITH FINISHED GRADE
 OF ASPHALT OR CONCRETE SURFACE

6"
 MIN.

3.5" MIN

SLOPE/CHAMFER ON ALL COLLARS
 NOT IN ASPHALT OR CONCRETE AREA
 TO MATCH UP TO FINISHED GRADE

FINISHED GRADE

#10 SOLID COPPER
 INSULATED TRACING WIRE
 COLOR CODED PER UTILITY

5 1/4" SLIP TYPE
 ADJUSTABLE PLASTIC
 VALVE BOX

INSULATED #10 SOLID COPPER WIRE

UTILITY TYPE	WIRE COLOR
GAS	YELLOW
WATER	BLUE
EFFLUENT	PURPLE
SEWER FORCE MAIN	GREEN

USE BRICKS AS NEEDED TO
 SUPPORT VALVE BOXES TO KEEP
 LOADS FROM VALVE AND PIPE

NOTES:

- 1.) CONCRETE COLLAR IS REQUIRED FOR ALL GAS, WATER OR EFFLUENT WATER VALVES
- 2.) WHEN STREET IS RECONSTRUCTED OR OVERLAID, EXISTING WATER AND GAS VALVE BOX SHALL BE RAISED TO NEW FINISH GRADE AND CONCRETE COLLAR INSTALLED.

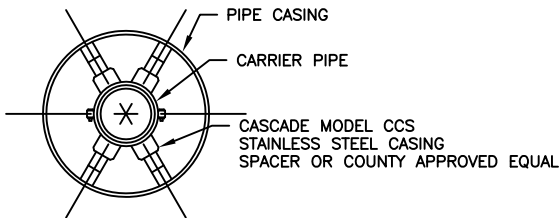
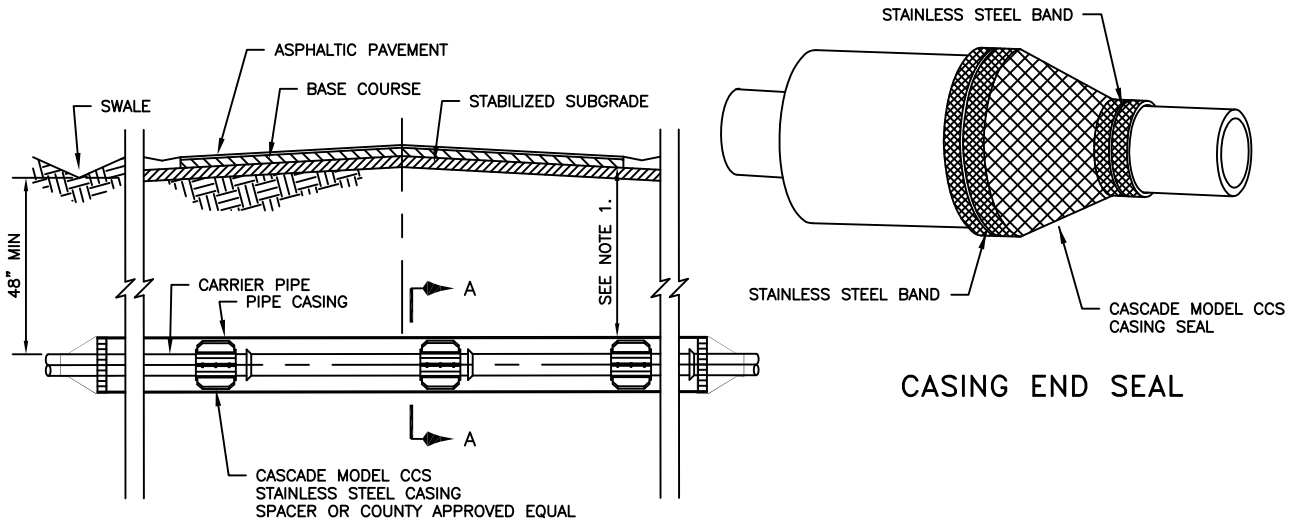
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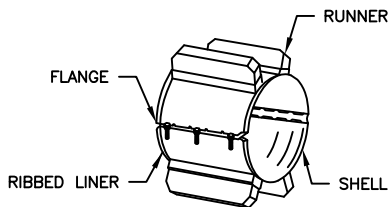
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SECTION A-A



SPACER

STANDARD NUMBER OF RUNNERS REQUIRED

UP TO 14" CARRIER PIPE	- 4 REQUIRED
OVER 14" THROUGH 36" CARRIER PIPE	- 6 REQUIRED

STAINLESS STEEL SPACERS:

1. SPACERS SHALL BE BOLT-ON STYLE WITH A TWO PIECE SOLID SHELL MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS. THE SHELL SHALL BE LINED WITH A RIBBED PVC SHEET OF A 0.090" THICKNESS THAT OVERLAPS THE EDGES. RUNNERS MADE FROM UHMW POLYMER SHALL BE ATTACHED TO RISERS AT APPROPRIATE POSITIONS TO PROPERLY LOCATE THE CARRIER WITHIN THE CASING AND TO EASE INSTALLATION. RISERS SHALL BE MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS AND SHALL BE ATTACHED TO THE SHELL BY WELDING. ALL FASTENERS SHALL BE MADE FROM T-304 STAINLESS STEEL. CASING SPACERS SHALL BE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MFG COMPANY OF YORKVILLE, ILLINOIS OR COUNTY APPROVED EQUAL.

PLACEMENT OF SPACERS ON CARRIER PIPE:

1. GENERAL- ONE SPACER SHALL BE PLACED NOT MORE THAN TWO FEET FROM EACH END OF CASING. SUBSEQUENT SPACERS SHALL BE PLACED AT 6' INTERVALS WITHIN THE CASING, OR IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATIONS.

CARRIER PIPE:

1. CARRIER PIPE SHALL BE CENTERED WITHIN CASING BY USE OF MODEL CCS STAINLESS STEEL CASING SPACERS AS MANUFACTURED BY CASCADE WATERWORKS MFG COMPANY OR COUNTY APPROVED EQUAL.
2. SEE SPECIFICATIONS FOR CARRIER PIPE AND CASING PIPE REQUIREMENTS.

LOCATE WIRE IN VALVE BOX SPLICE AND THERMITE WELD

SECTION
 2000
 2010

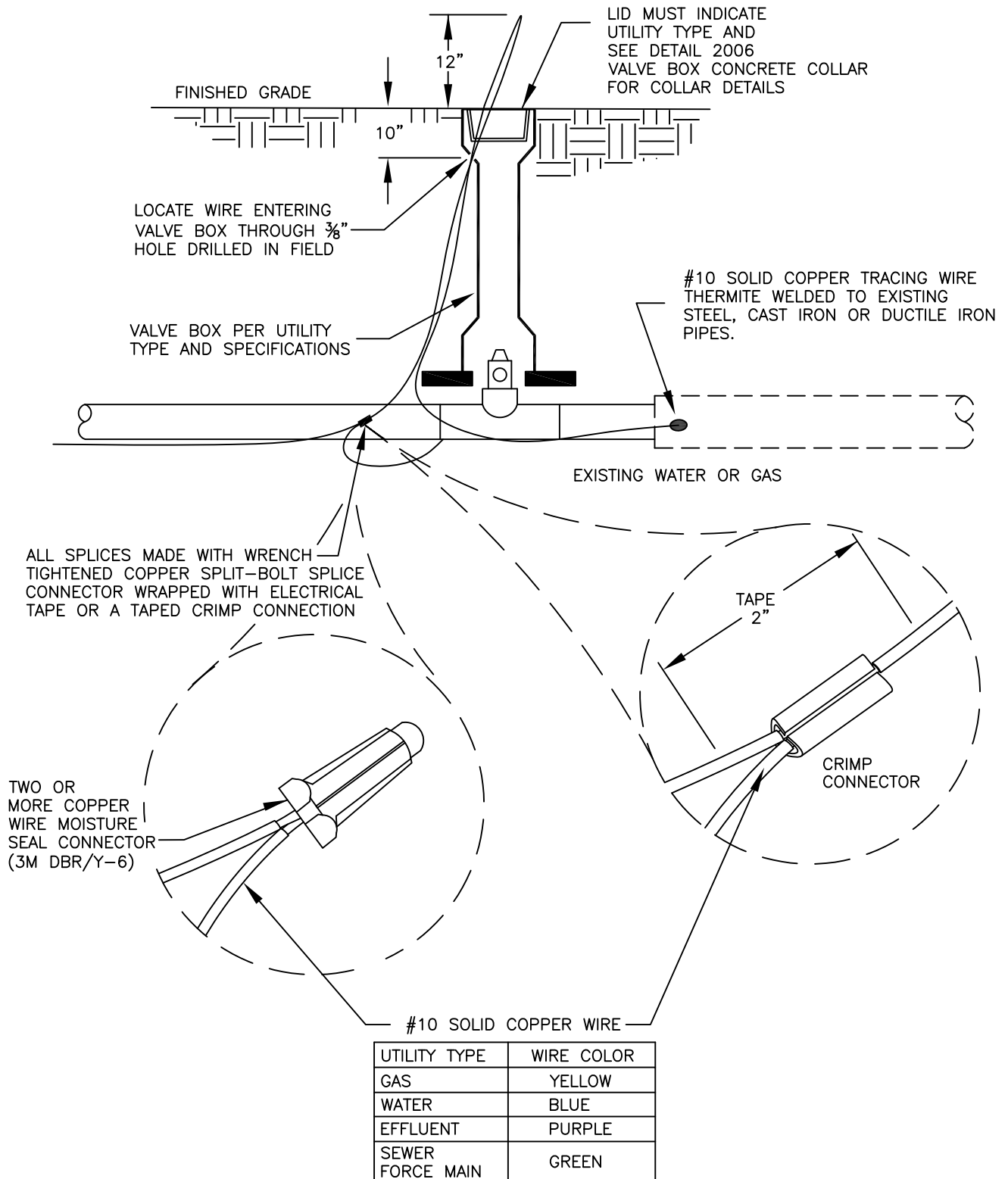
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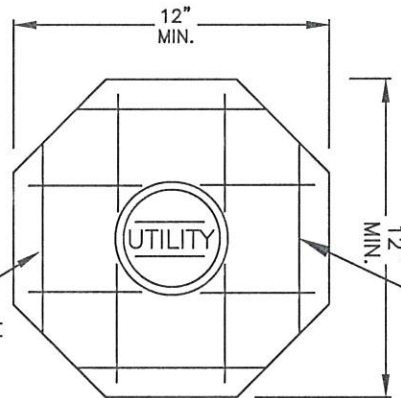
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IN STREET

4000 PSI MINIMUM
CONCRETE COLLAR WITH
REINFORCING 4"x4"x10 GAUGE WIRE
MESH

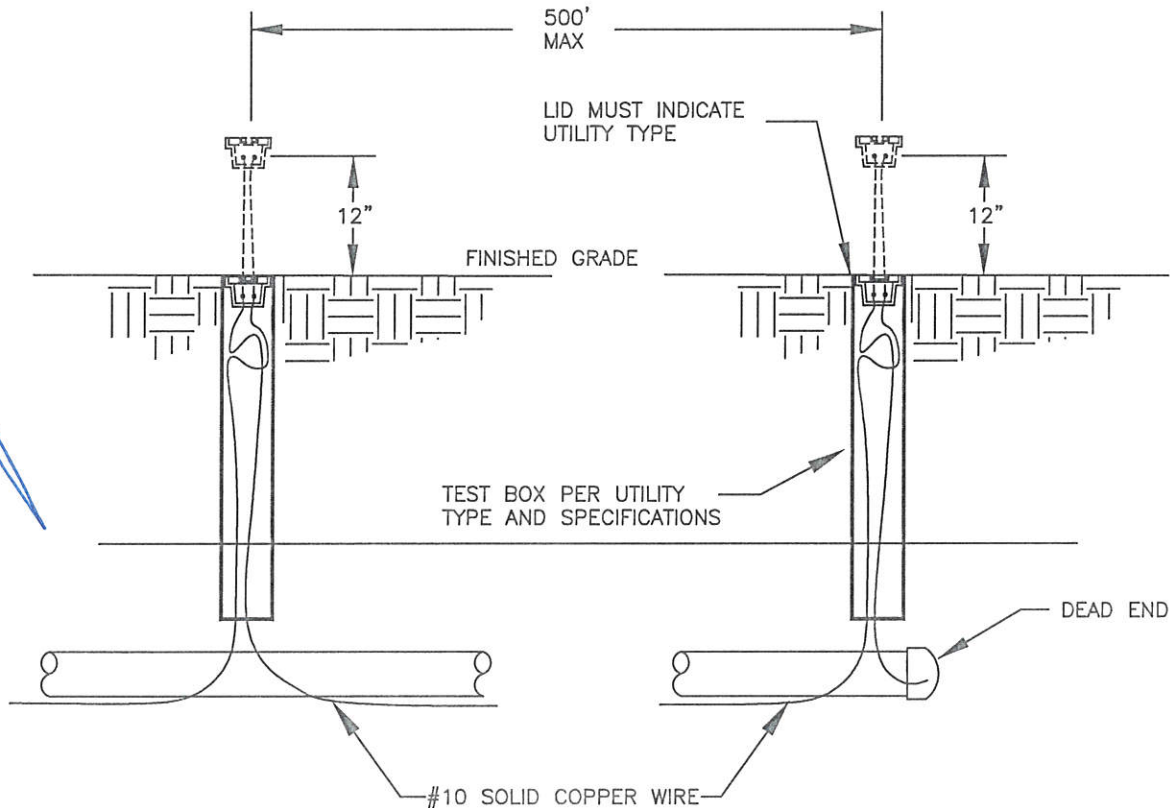
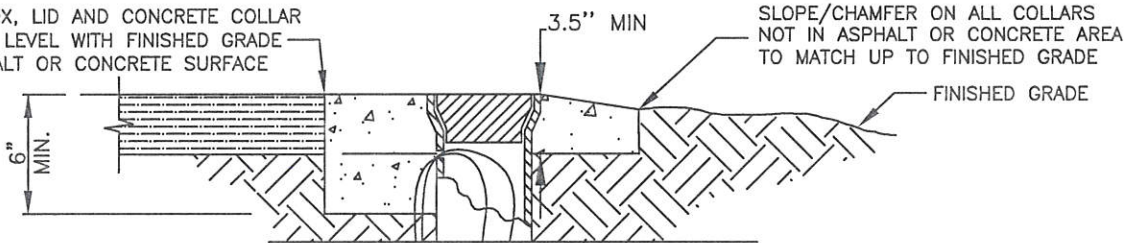


NOT IN STREET

3000 PSI MINIMUM
CONCRETE COLLAR WITH
REINFORCING 4"x4"x10 GAUGE WIRE
MESH

NOTE:
INDICATE ON CONCRETE COLLAR
THE TYPE OF UTILITY (GAS, WATER,
SEWER, NON-POTABLE).

VALVE BOX, LID AND CONCRETE COLLAR
MUST BE LEVEL WITH FINISHED GRADE
OF ASPHALT OR CONCRETE SURFACE



NOTES:

- 1.) LOCATE WIRE SHALL TERMINATE IN A TEST BOX AT ALL DEAD END PIPELINES.
- 2.) TEST BOXES SHALL BE LOCATED A MAXIMUM OF EVERY 500 FEET ALONG PIPELINE.
- 3.) SPLICES SHALL BE MINIMIZED.
- 4.) LOCATE WIRE SHALL BE ACCESSIBLE AT EACH VALVE BOX, WATER SERVICE CAN, GAS SERVICE RISER, AIR VACUUM VALVE AND FIRE HYDRANT.
- 5.) TO CORRESPOND WITH DESIGNATED COLOR TO MATCH FACILITY BEING INSTALLED.

STEEL BOLLARD

SECTION
 2000
 2012

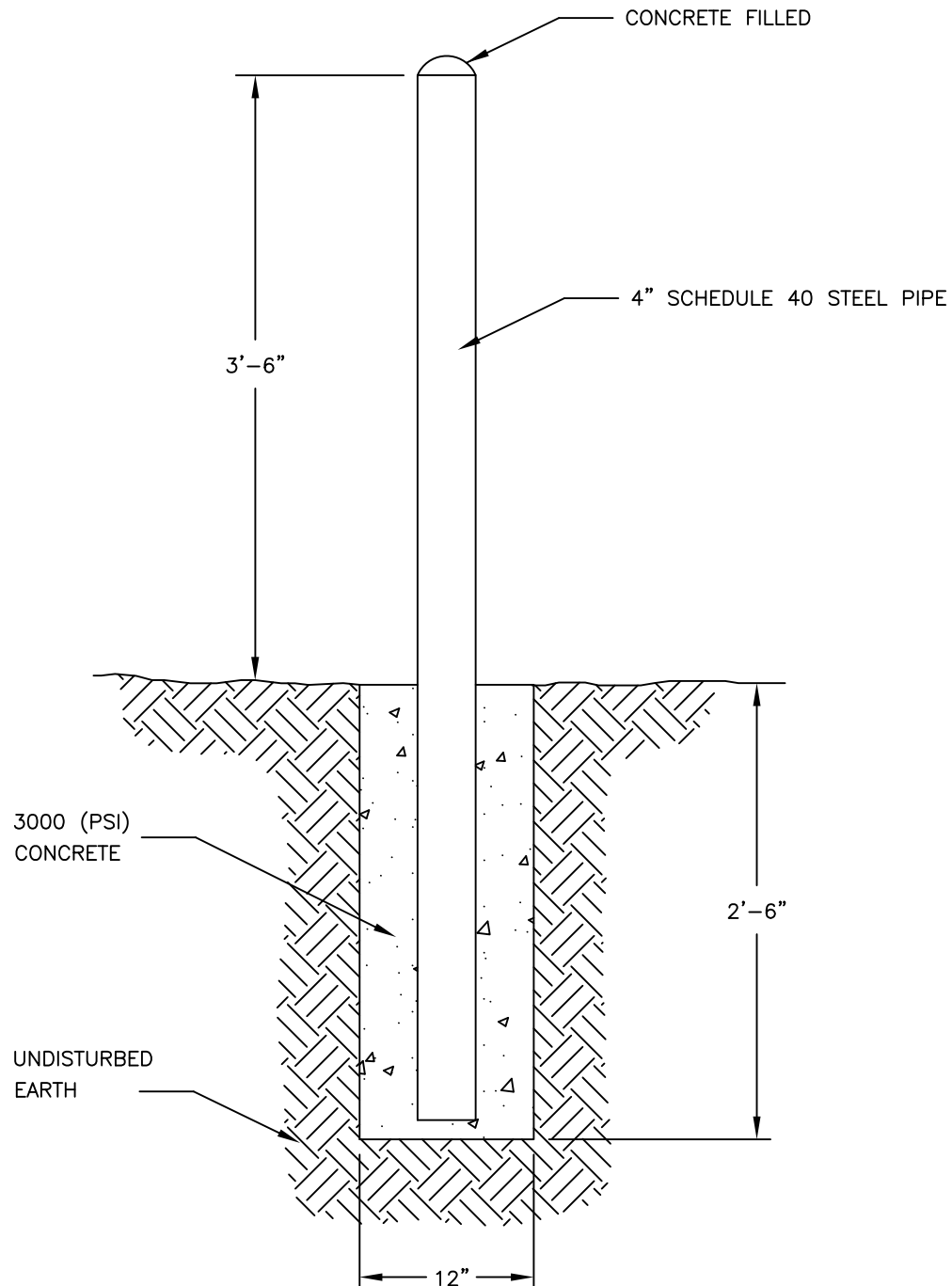
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NOTES

- (1) BOLLARD MUST BE PAINTED WITH WATER BASED PRO-CRYL UNIVERSAL INDUSTRIAL PRIMER AND TWO COATS OF WATER BASED INDUSTRIAL ENAMEL BY SHERWIN WILLIAMS OR APPROVED EQUAL
 COLOR: SAFETY YELLOW.

STEEL MARKER POST

SECTION
 2000
 2013

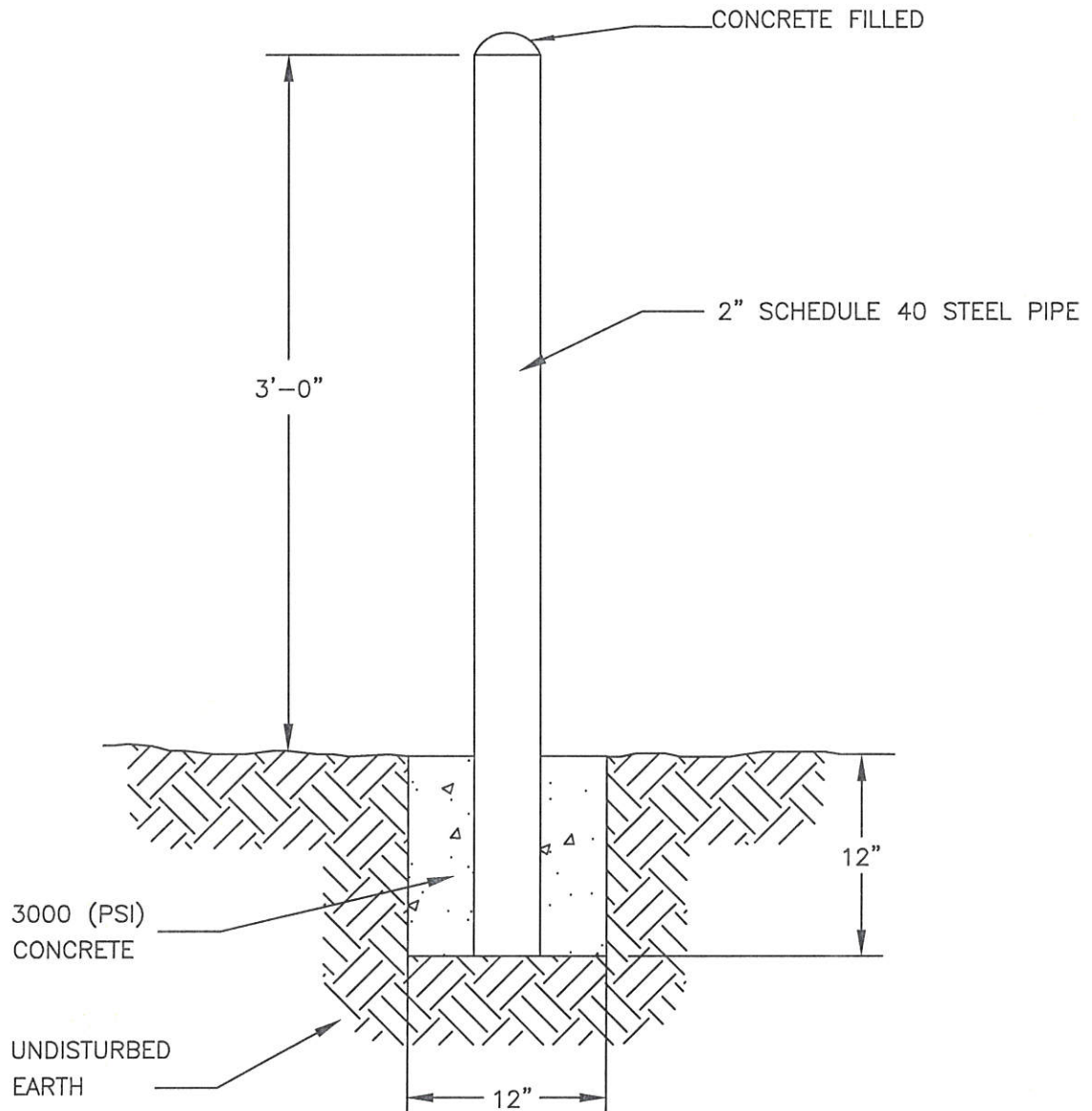
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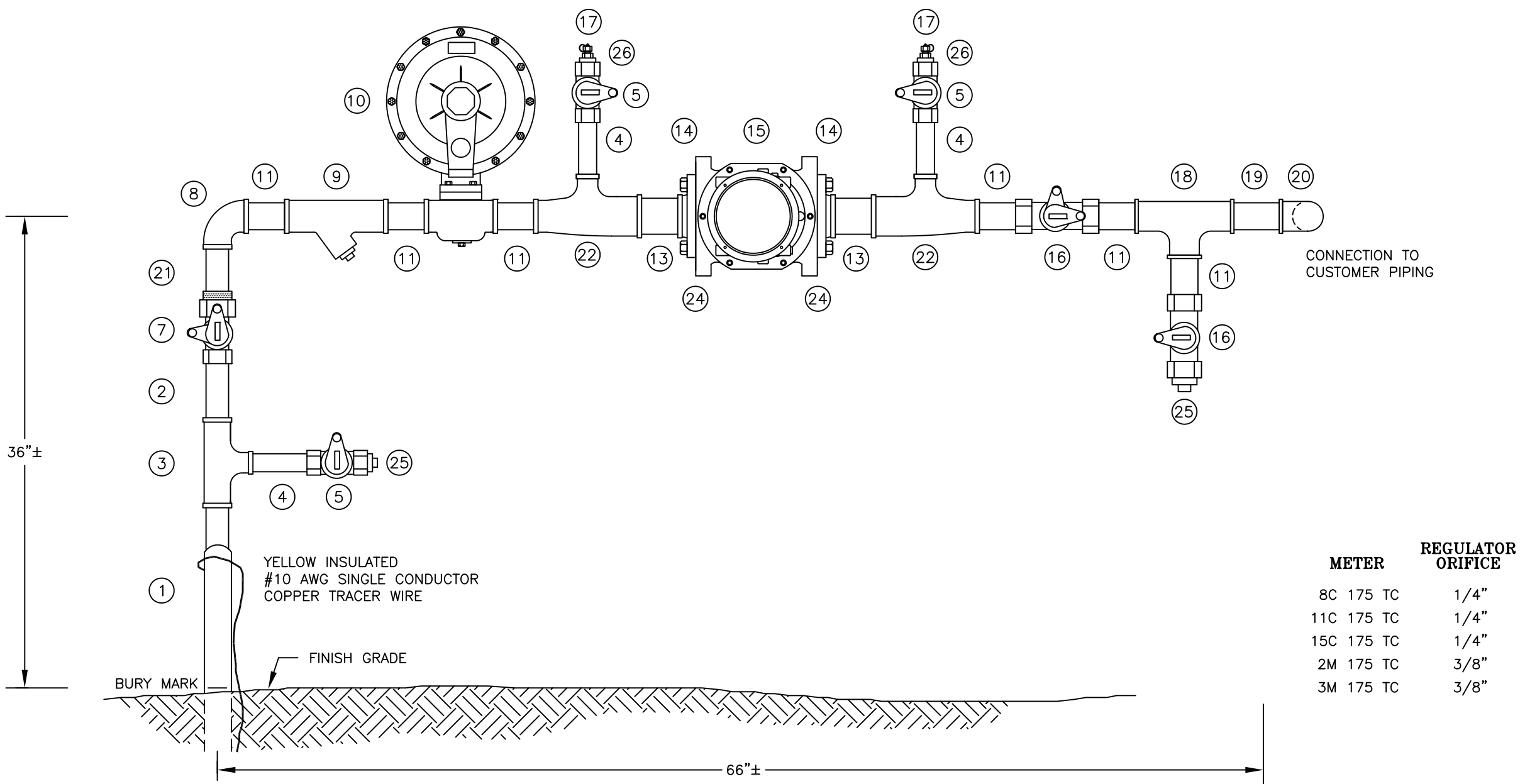
- (1) MARKER POSTS SHALL BE PLACED WITHIN 3 FEET OF THE EDGE OF THE VALVE OR TEST BOX COVER ON A SIDE OF THE VALVE THAT DOES NOT CONFLICT WITH VALVE ACCESS BY MAINTENANCE CREWS AND EQUIPMENT.
- (2) IF TWO OR MORE VALVE OR TEST BOXES ARE LOCATED IN A CLUSTER (WITHIN APPROXIMATELY 6 FEET OF EACH OTHER – PER DPU FIELD DECISION) A SINGLE MARKER POST PLACED EQUIDISTANT FROM ALL VALVES OR TEST BOXES IN THE CENTER OF THE CLUSTER SHALL BE CONSTRUCTED.
- (3) SINGLE MARKER POSTS SHALL HAVE A CLEARLY VISIBLE WELD BEAD ARROW SYMBOL (">") ON THE SIDE OF THE POST WITHIN 4 INCHES FROM THE POST TOP WITH THE FINAL PLACEMENT OF THE POST HAVING THE ARROW POINTING TOWARD THE VALVE.
- (4) MULTIPLE CLUSTER MARKER POSTS SHALL HAVE A CLEARLY VISIBLE WELD BEAD STATING THE NUMBER OF VALVES OR TEST BOXES IN THE CLUSTER ("3")
- (5) POST MUST BE PAINTED WITH WATER BASED PRO-CRYL UNIVERSAL INDUSTRIAL PRIMER AND TWO COATS OF WATER BASED INDUSTRIAL ENAMEL BY SHERWIN WILLIAMS OR APPROVED EQUAL. COLOR: GAS = YELLOW; WATER = BLUE; NON-POTABLE = PURPLE; SEWER = GREEN.
- (6) MARKER POSTS FOR GAS "KEY VALVES" OR WATER "NORMALLY CLOSED" VALVES SHALL HAVE A RED 4-INCH-WIDE STRIPE PAINTED AT THE TOP OF THE POST; IN ADDITION TO THE DESIGNATED SYSTEM COLOR IN NOTE 5

1. Service line shall not be installed closer than 12" to any utility line or structure.
2. Service line shall be buried a minimum of 24" with warning tape 12" below finished grade, and tracing wire below pipe.
3. Test Service line to 90 psig and soap all connections
4. After State Plumbing Inspector has approved and tagged the house gas piping the meter can be set.
5. Service line shall be bedded with sand 3" below and 6" above pipe or sleeved with MDPE pipe.
6. All MDPE Pipe shall be approved pipe.
7. In all cases utility separation will be required and backfilling and bedding gas line must be directly supervised by Department of Public Utilities Operator Qualified personnel.
8. Gas meter regulator shall not be any closer than 3' from a window, door or vent.
9. Gas service lines different than $\frac{3}{4}$ " shall have installation sizes approved by DPU Engineer.
10. Excess flow valve tag shall be affixed to gas meter.

STANDARD DESIGN for ROTARY METER
Set at 4 oz. up to 3M

Item#	Qty	Description	Item#	Qty	Description
1.	1	1¼" ANODELESS RISER	14.	2	2" FIP 125 or 150 ANSI FLANGE
2.	1	1¼"x4" NIPPLE BLACK IRON	15.	1	METER ROOTS 8C175TC or 15C175TC or 2M175TC or 3M175TC
3.	1	1¼"x1¼"x1" FIP TEE BLACK IRON	16.	2	1½" FIP CAST IRON LOCKING SERVICE VALVE 175psig MIN. MULLER
4.	3	1"x4" NIPPLE BLACK IRON	17.	2	¼" MIP PETES PLUG BRASS
5.	3	1" FIP CI LOCKING SERVICE VALVE 175psig MIN. MULLER	18.	1	1½"x1½"x1½" FIP TEE
6.	1	1" MIP PLUG BLACK IRON	19.	1	1½" NIPPLE SIZED TO CONNECT TO STRUCTURE PIPING
7.	1	1¼" FIP CI LOCKING INSULATED SERVICE VALVE 175psig MIN. MULLER	20.	1	1½" 90° ELBOW OR OTHER FITTING TO CONNECT TO STRUCTURE PIPING
8.	1	1¼"x1½" FIP REDUCING ELBOW	21.	1	1¼" NIPPLE SIZED TO CUSTOMER PIPING HEIGHT
9.	1	1½" FIP STRAINER CI 125psig MINIMUM	22.	1	2"x1½"x1" FIP REDUCING TEE BLACK IRON
10.	1	1½" FIP SENSUS 243-12-2 REGULATOR	23.	-	-
11.	6	1½"x3" NIPPLE BLACK IRON	24.	2	2" FLANGE GASKET 4 HOLE
12.	1	1"x1½"x2" FIP REDUCER TEE BLACK IRON	25.	1	1½" MIP PLUG BLACK IRON
13.	2	2"x3" NIPPLE BLACK IRON	26.	2	1"x¼" BUSHING BLACK IRON

NOTE: DPU MUST APPROVE IN WRITING DETAILS FOR ALL METERS LARGER THAN 3M.



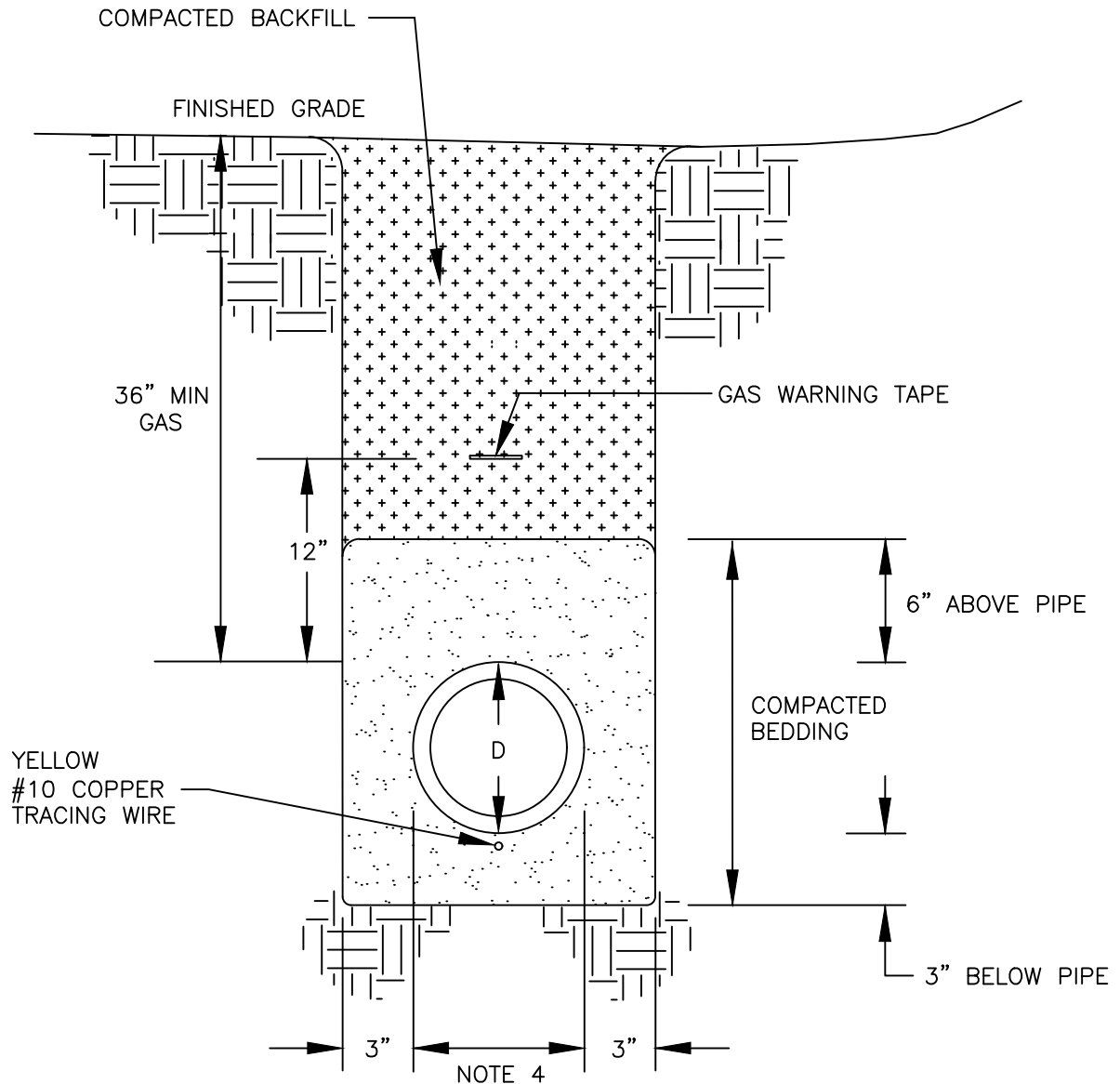
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REVISION:

APPROVED BY:

DATE: FEBRUARY 2022



NOTES:

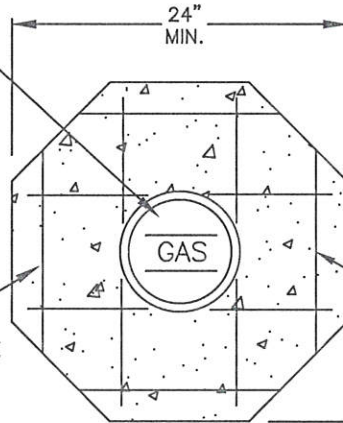
- 1.) D IS THE OUTSIDE PIPE DIAMETER IN INCHES.
- 2.) 95% COMPACTION REQUIRED UNDER PAVED ROADS, SIDEWALK AND CURB.
- 3.) 85% COMPACTION REQUIRED AT ALL LOCATIONS NOT IN NOTE 2.
- 4.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST PIPE PLUS 6 INCHES.
- 5.) DEPTH OF MAIN MAY BE LESS THAN 36 INCHES UPON APPROVAL OF DPU PROJECT MANAGER WITH WRITTEN EXCEPTION STATING JUSTIFICATION OF SECTION OF MAIN WHERE 36 INCHES CAN NOT BE OBTAINED MIN. OF 24 INCHES IS REQUIRED.

NOTE:
 INDICATE ON CONCRETE COLLAR
 THE TYPE OF MATERIAL USED(MDPE,
 HDPE, STEEL ETC.) THE TYPE OF
 UTILITY (GAS, WATER, NON-POT ETC.)
 AND INDICATE THE DIRECTION OF FLOW
 AND SIZE OF PIPE

LID MUST INDICATE UTILITY THAT
 VALVE OPERATES. GAS, WATER,
 AND OR NON POTABLE WATER

IN STREET

4000 PSI MINIMUM
 CONCRETE COLLAR WITH
 REINFORCING 4"x4"x10 GAUGE WIRE
 MESH



24"
 MIN.

NOT IN STREET

3000 PSI MINIMUM
 CONCRETE COLLAR WITH
 REINFORCING 4"x4"x10 GAUGE WIRE
 MESH

VALVE BOX, LID AND CONCRETE COLLAR
 MUST BE LEVEL WITH FINISHED GRADE
 OF ASPHALT OR CONCRETE SURFACE

6"
 MIN.

LID MUST INDICATE UTILITY MARKED "GAS"

3.5" MIN

SLOPE/CHAMFER ON ALL COLLARS
 NOT IN ASPHALT OR CONCRETE AREA
 TO MATCH UP TO FINISHED GRADE

FINISHED GRADE

WARNING TAPE

#10 SOLID COPPER
 YELLOW INSULATED
 TRACING WIRE

5 1/4" SLIP TYPE
 ADJUSTABLE PLASTIC
 VALVE BOX

USE BRICKS AS NEEDED TO
 SUPPORT VALVE BOXES TO KEEP
 LOADS FROM VALVE AND PIPE

GAS VALVE

No.

DATE:

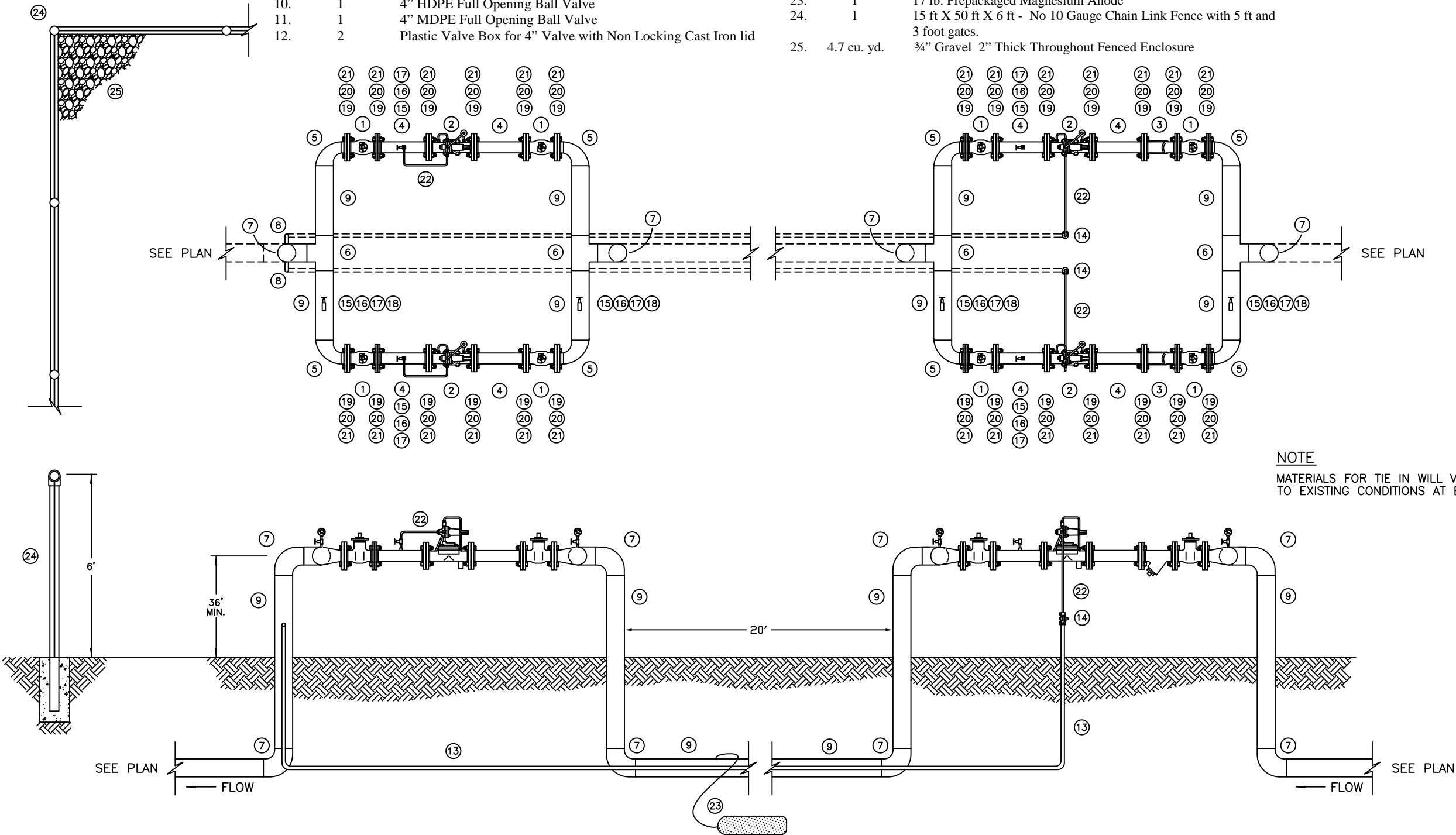
REVISION:

APPROVED BY:

DATE: SEPTEMBER 2022

DEPARTMENT OF PUBLIC UTILITIES REGULATOR STATION

Item #	Qty	Description	Item #	Qty	Description
1.	8	2" Balon Ball Valve Flanged 150 ANSI	13.	90 ft	¾" Coated Steel Pipe .113" wall thickness Grade B
2.	4	Mooney 2 X1 Flanged Flowgrid Regulator 150 ANSI with Series 20 Pilot and pilot filter.	14.	2	¾" Mueller Gas Locking Meter Valve 175 psig WP
3.	2	Mueller 2" Strainer Flanged 150 ANSI	15.	4	¼" X 4" threadolet
4.	8 ft	2" bare Steel Pipe .154" wall thickness Grade B or X42	16.	4	¼" X 4" steel nipple
5.	8	4" X 2" Std Weld Reducing 90° Elbow	17.	8	¼" needle valve
6.	4	4" Std Weld Tee	18.	4	¼" Pressure gauges 0 to 100 psig
7.	8	4" Std Weld 90° Elbow	19.	24	2" Weld Neck Flange 150 ANSI
8.	2	¾ X ¾ Mueller Autoperf Service Tee	20.	26	2" Flange Gasket 150 ANSI
9.	85 ft	4" Bare Steel Pipe .237" wall thickness Grade B or X42	21.	104	5/8 " X 3 ¼" threaded bolt with 2 nuts
10.	1	4" HDPE Full Opening Ball Valve	22.	10 ft	¼" Seamless Stainless steel Tubing .035" wall thickness
11.	1	4" MDPE Full Opening Ball Valve	23.	1	17 lb. Prepackaged Magnesium Anode
12.	2	Plastic Valve Box for 4" Valve with Non Locking Cast Iron lid	24.	1	15 ft X 50 ft X 6 ft - No 10 Gauge Chain Link Fence with 5 ft and 3 foot gates.
			25.	4.7 cu. yd.	¾" Gravel 2" Thick Throughout Fenced Enclosure



DATE: APRIL 2018

APPROVED BY:

REVISION:

DATE:

No.

UTILITY CONSTRUCTION STANDARDS - GAS

SECTION
3000
3005

REGULATOR STATION

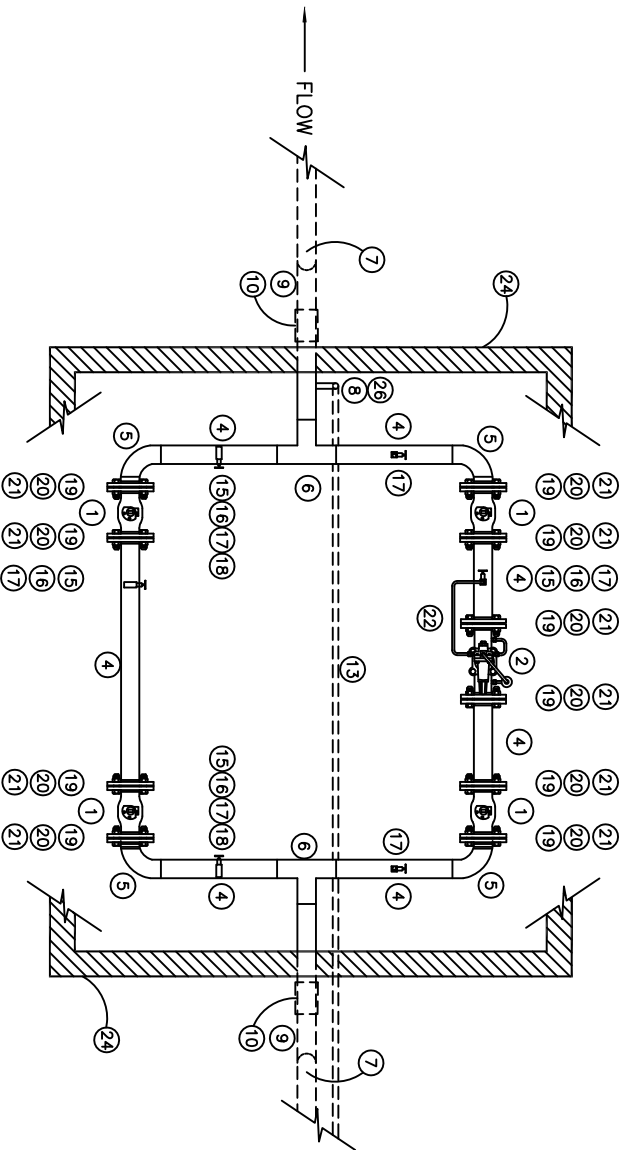
DEPARTMENT OF PUBLIC UTILITIES REGULATOR STATION

Item #	Qty	Description
1.	8	2" Balon Ball Valve Flanged 150 ANSI
2.	2	Mooney Flanged Flowgrid Regulator 150 ANSI with Series 20 Pilot and pilot filter.
3.	2	Mueller 2" Strainer Flanged 150 ANSI
4.	8	2" Bare Steel Pipe .154" wall thickness Grade B or X42
5.	8	2" Sid Weld 90° Elbow
6.	4	2" Sid Weld Tee
7.	4	2" HDPE Sid Weld 90° Elbow
8.	1	¾ X ¾ Mueller Autoperf Service Tee
9.	1	2" HDPE Yellow Stripe Pipe
10.	4	2" HDPE to Steel Transition Fitting
11.	1	2" MDPE Full Opening Ball Valve
12.	2	Plastic Valve Box for 2" Valve with Non Locking Cast Iron lid

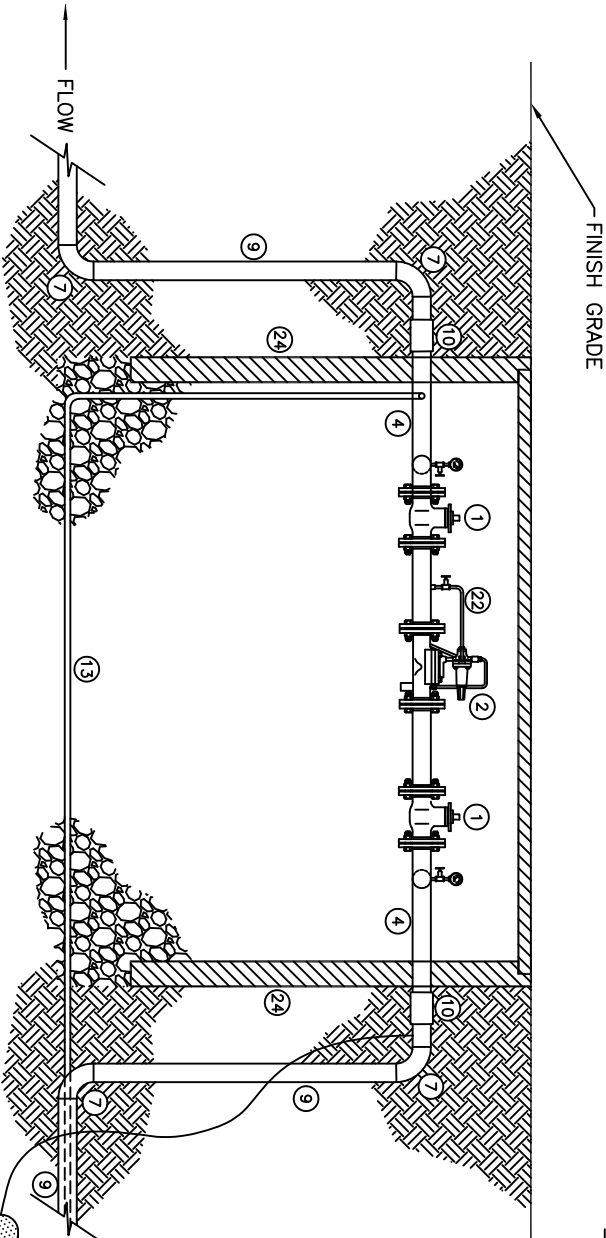
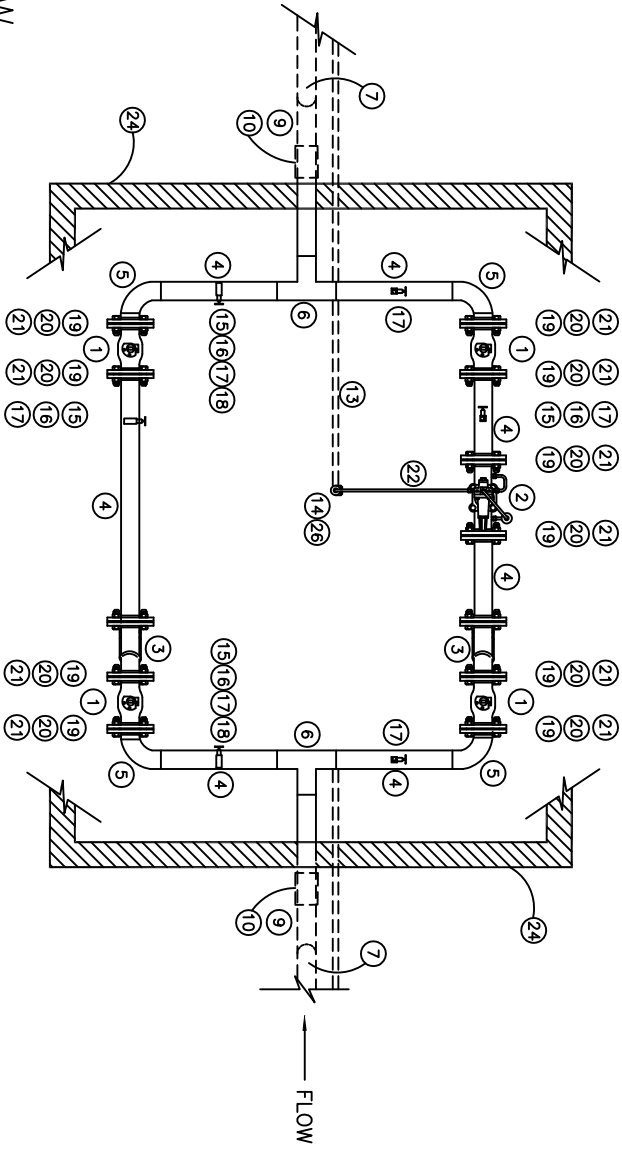
Item #	Qty	Description
13.	2	1" HDPE
14.	4	¾" Mueller Gas Locking Meter Valve 175 psig WP
15.	4	¼" X 2" threaded
16.	4	¼" X 2" steel nipple
17.	8	¼" needle valve
18.	4	Pressure gauges 0 to 100 psig
19.	24	2" Weld Neck Flange 150 ANSI
20.	26	2" Flange Gasket 150 ANSI
21.	104	5/8" X 3 ¼" threaded bolt with 2 nuts
22.	10 ft	¼" Seamless Stainless steel Tubing .035" wall thickness
23.	2	17 lb. Prepackaged Magnesium Anode
24.	1	48" x 96" Quazite PG Polymer Concrete Vault
25.	1	¾" Gravel (2" Thick Throughout Vault Enclosure)
26.	4.7 cu. yd.	1" HDPE Anodeless Riser

NOTES

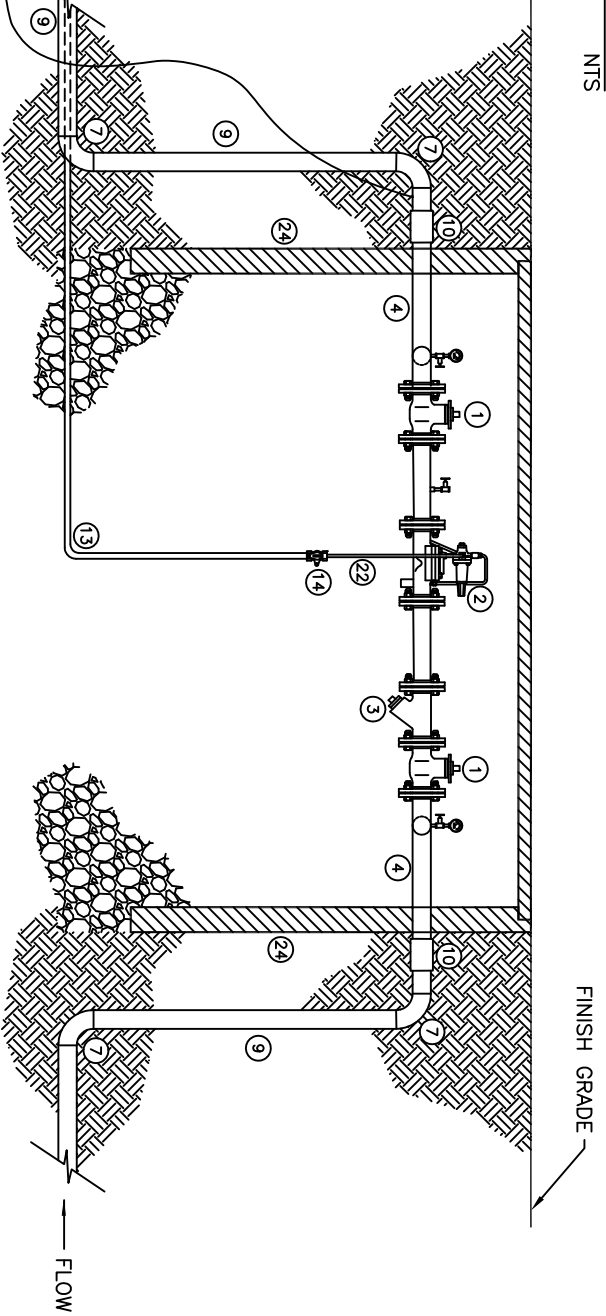
- MATERIALS FOR THE IN WILL VARY ACCORDING TO EXISTING CONDITIONS AT EACH LOCATION.
- RECOMMEND 10' SEPARATION BETWEEN VAULTS, VAULTS TO VALVES & VALVES TO THE-INS.
- BYPASS RUN NOT SHOWN ON ELEVATION VIEW.
- STICK HDPE AND MDPE PIPE TO BE USED FOR FABRICATION OF STATION.



PLAN VIEW
NTS



ELEVATION VIEW
NTS



DATE: APRIL 2018

APPROVED BY:

REVISION:

DATE:

No.

**GAS METER MINIMUM
SAFETY CLEARANCE**

SECTION
3000
3006

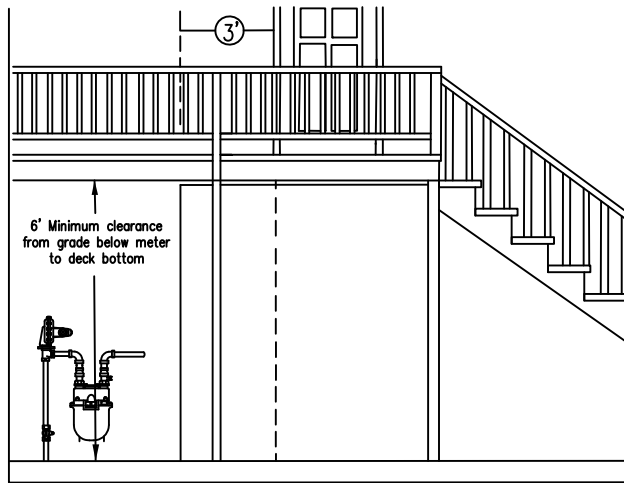
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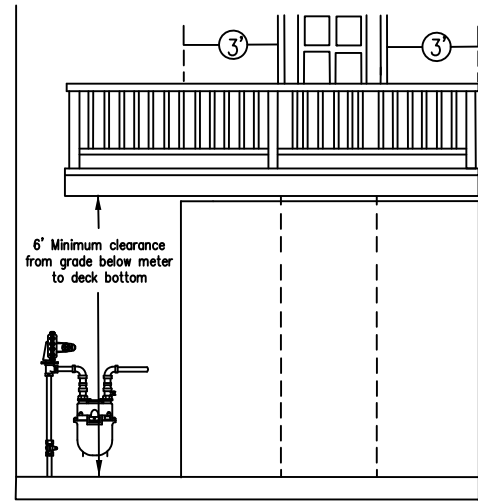
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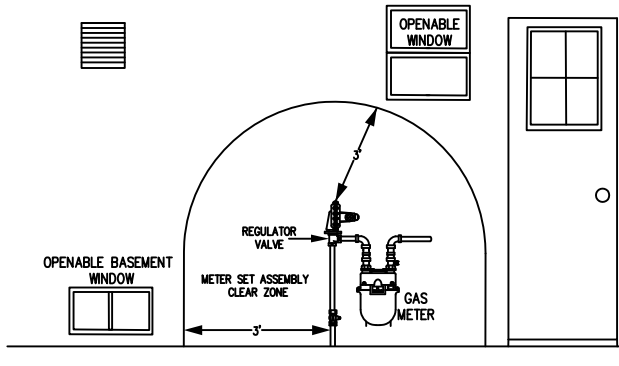
DATE: APRIL 2018



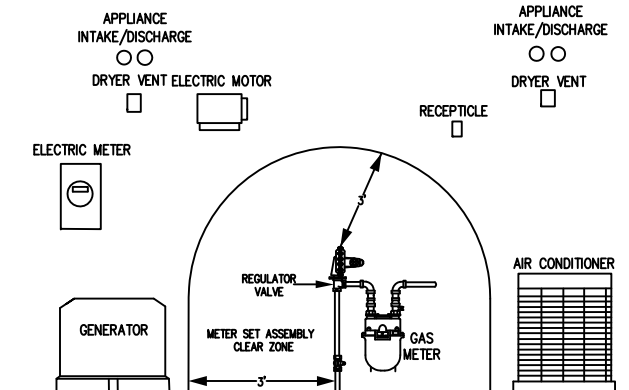
CLEARANCE ZONE UNDER DECKS AND PORCHES
(METER MUST NOT BE LOCATED UNDER STAIRS OR
ANYWHERE BETWEEN DOORS AND STAIRS).



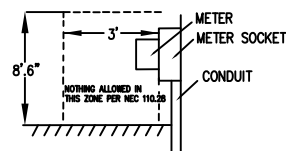
CLEARANCE ZONE UNDER BALCONIES
(NO STAIRS TO GROUND LEVEL)



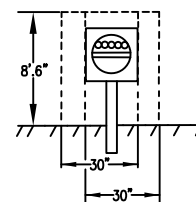
CLEARANCES TO GAS METERS



3'-CLEAR ZONE IN FRONT OF
ELECTRIC METER



HORIZONTAL CLEAR ZONE FROM
ABOVE THE METER



NOTE:

- 1.) Exhaust vents which may leak water, condensate, grease, oil or other substances are not allowed above gas meters or other controls.
- 2.) Avoid short overhangs which could cause ice problems in the winter.
- 3.) The National Electric Code 110.26 requires 3'-0" in front of electrical equipment including the electric meter socket. This clearance zone applies from the ground up to 6.5 feet.
- 4.) The 3-foot radius clearance applies to clearances between the electric meter and the vents on LP regulators
- 5.) Meters are not permitted under porches, or overhangs greater than 3'.0" from building wall without being vented in accordance with NSPA 54/ANSI 223.1 Section 5.8.5.1

SECONDARY RISER

SECTION
 4000
 4002

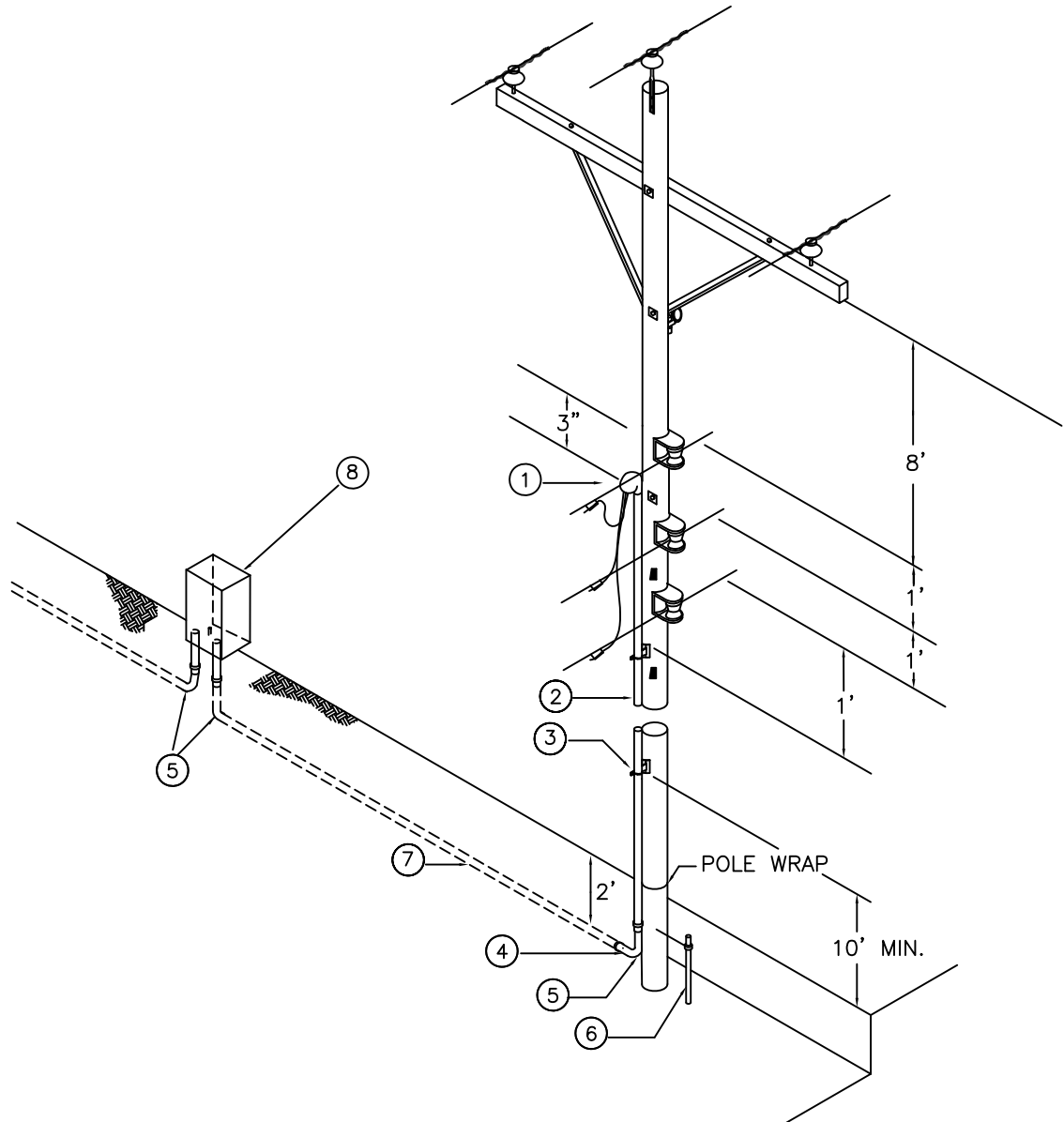
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REVISION:

APPROVED BY:

DATE: APRIL 2018



- ① CLAMP TYPE WEATHERHEAD
- ② RIGID GALVANIZED CONDUIT - CONTRACTOR TO INSTALL FIRST 10' INCLUDING SUPPORT BRACKET (DRAWING 4008) AND PROVIDE MATERIALS FOR THE UPPER SECTION, THE UTILITY WILL INSTALL UPPER SECTIONS.
- ③ SUPPORT BRACKET - SEE RISER SUPPORT BRACKET DETAIL DRAWING
- ④ RIGID CONDUIT TO ADAPTER - SUPPLIED BY CONTRACTOR
- ⑤ RIGID GALVANIZED STEEL ELBOW 24" RADIUS MINIMUM TAPE WITH 3M 10 MIL.
- ⑥ 5/8" X 8' GROUND ROD
- ⑦ 2 1/2" SCHEDULE 40 PVC SECONDARY CONDUIT
- ⑧ SECONDARY PEDESTAL - SUPPLIED BY L.A.C.U.

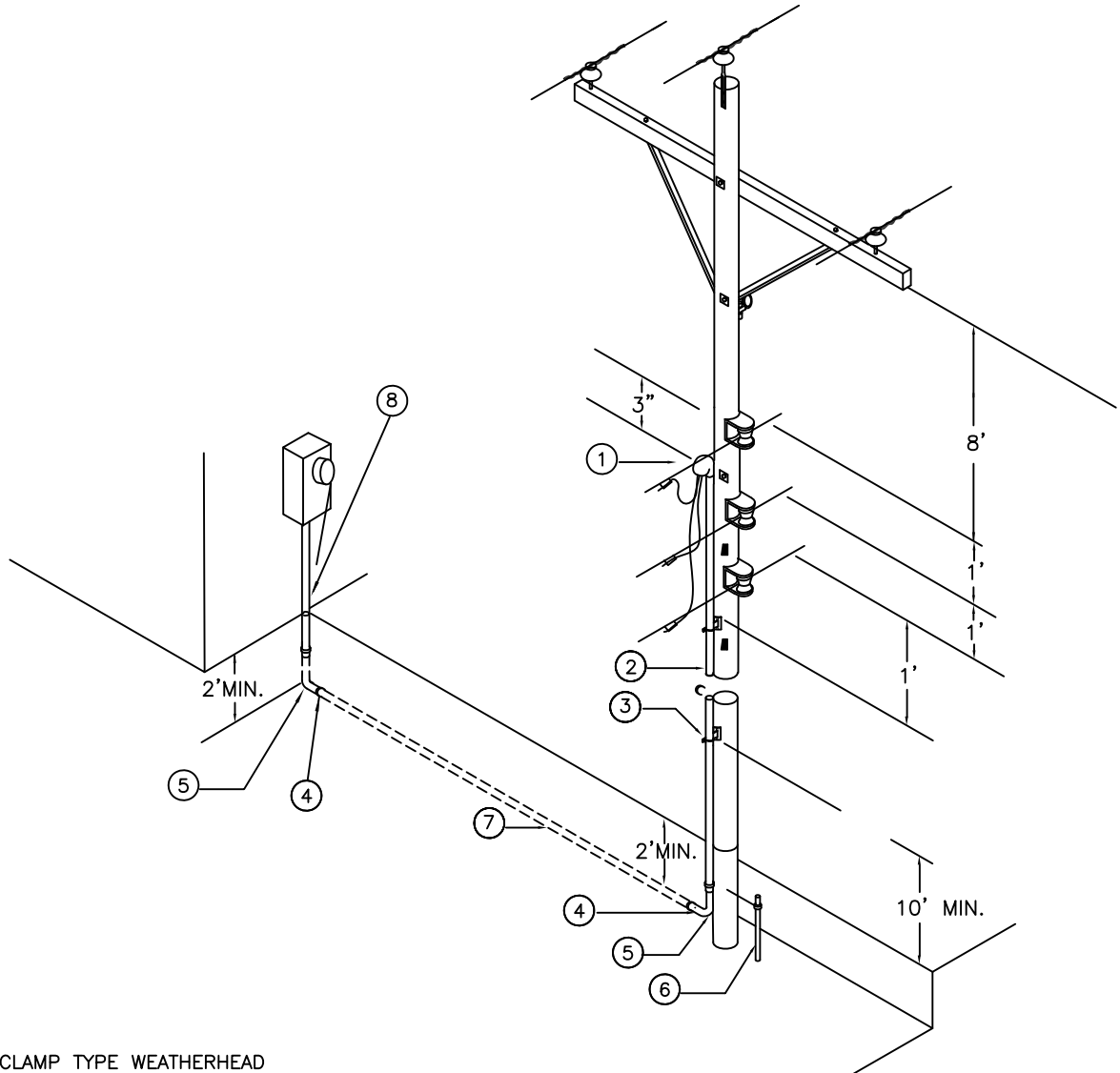
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REVISION:

APPROVED BY:

DATE: APRIL 2018



- ① CLAMP TYPE WEATHERHEAD
- ② RIGID GALVANIZED CONDUIT – CONTRACTOR TO INSTALL FIRST 10' INCLUDING SUPPORT BRACKET (DRAWING 4008) AND PROVIDE MATERIALS FOR THE UPPER SECTION, THE UTILITY WILL INSTALL UPPER SECTIONS.
- ③ SUPPORT BRACKET – SEE RISER SUPPORT BRACKET (DRAWING 4008)
- ④ RIGID GALVANIZED PIPE TO PVC CONDUIT ADAPTER
- ⑤ 2 1/2" RIGID GALVANIZED STEEL ELBOW 24" RADIUS MINIMUM TAPE WITH 3M TO MIL.
- ⑥ 5/8" X 8' GROUND ROD
- ⑦ 2 1/2" SCHEDULE 40 PVC SERVICE CONDUIT SUPPLIED BY D.P.U.
- ⑧ METER RISER 2 1/2" RGS or SCHEDULE 80 PVC

ALL MATERIALS SUPPLIED BY CONTRACTOR UNLESS OTHERWISE SPECIFIED

2" CONDUIT WILL BE USED FOR 100A AND 150A SERVICES. 2 1/2" CONDUIT WILL BE USED FOR 200A SERVICES

IN SPECIAL CASES, THE ACTUAL CONDUIT SIZE MAY INCREASE, CONDUIT SIZE WILL BE DETERMINED BY D.P.U. ENGINEERING.

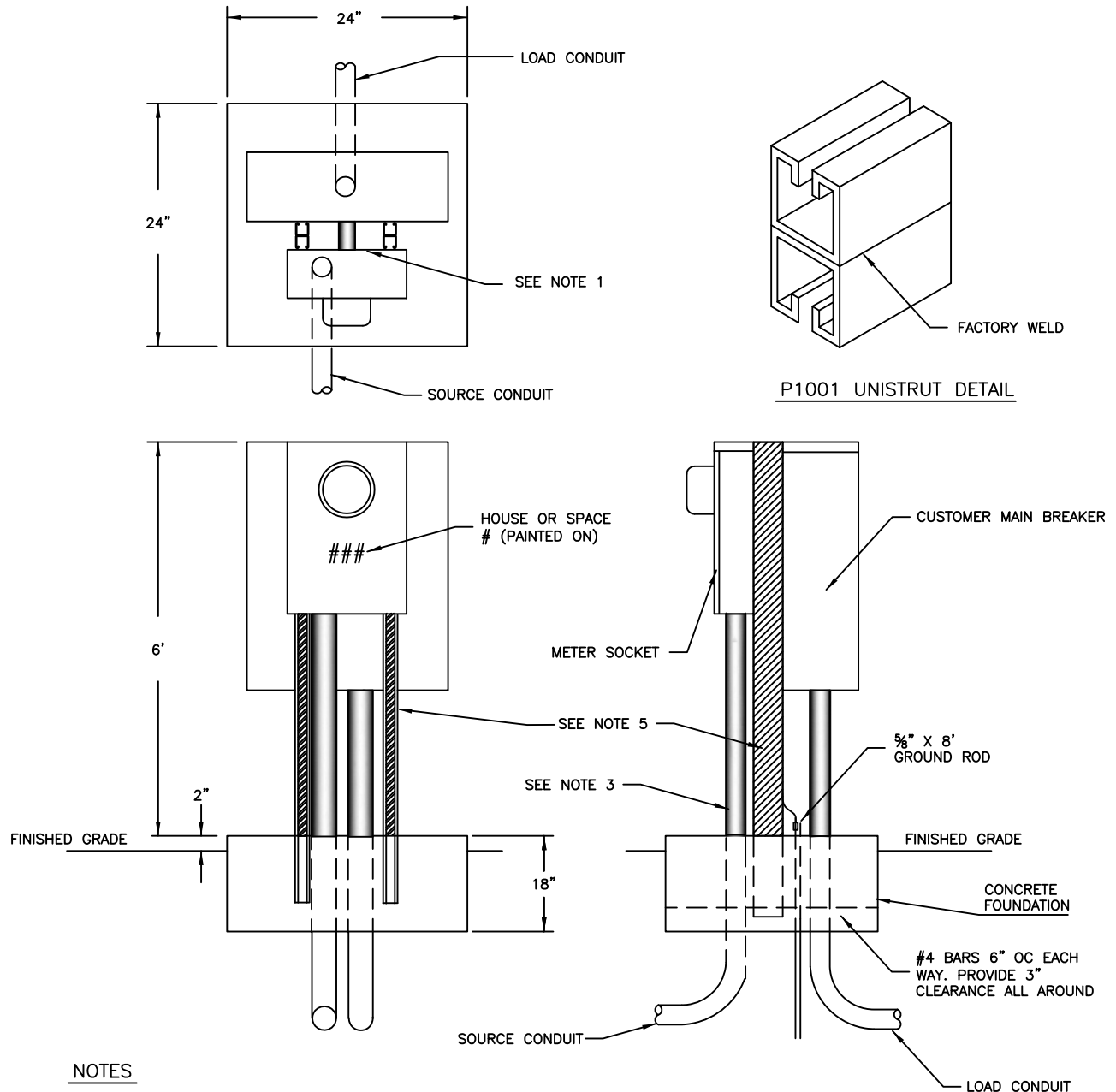
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APPROVED BY:

DATE: APRIL 2018



NOTES

- 1.) USE 1" RIGID NIPPLE BETWEEN INSTRUMENT TRANSFORMER ENCLOSURE AND METER ENCLOSURE FOR SECONDARY WIRING.
- 2.) ENCLOSURES SHALL BE SECURELY ATTACHED TO SUPPORT MEMBERS EITHER BOLTED DIRECTLY OR MOUNTED TO METAL CHANNEL OR UNISTRUT CROSS MEMBERS.
- 3.) RIGID GALVANIZED OR SCHEDULE 80 PVC CONDUIT SHALL BE USED FOR SOURCE AND LOAD CONDUITS. NO JUNCTION BOX OR CABLE TROUGH IS PERMITTED AHEAD OF THE METERING ENCLOSURE. SIZE DETERMINED BY LACU ENGINEERING.
- 4.) GUARD POSTS WILL BE REQUIRED IN TRAFFIC AREAS AS SPECIFIED.
- 5.) ACCEPTABLE SUPPORT MEMBERS ARE AS FOLLOWS:
 - 3" X 3 1/2" ANGLE
 - 3" X 4.1 LBS/FT CHANNEL
 - 2" X 2 3/16" BOX STEEL
 - 2 1/2" STANDARD PIPE
 - SEE UNISTRUT DETAIL

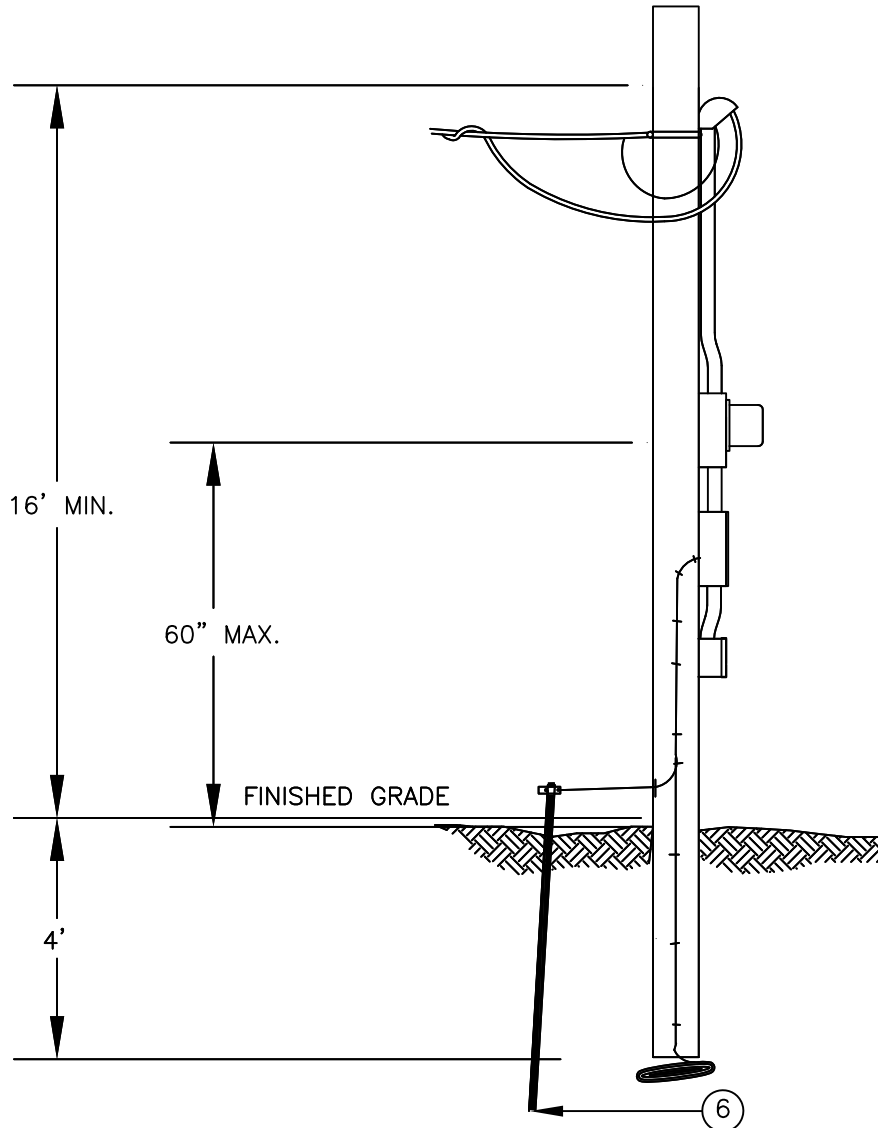
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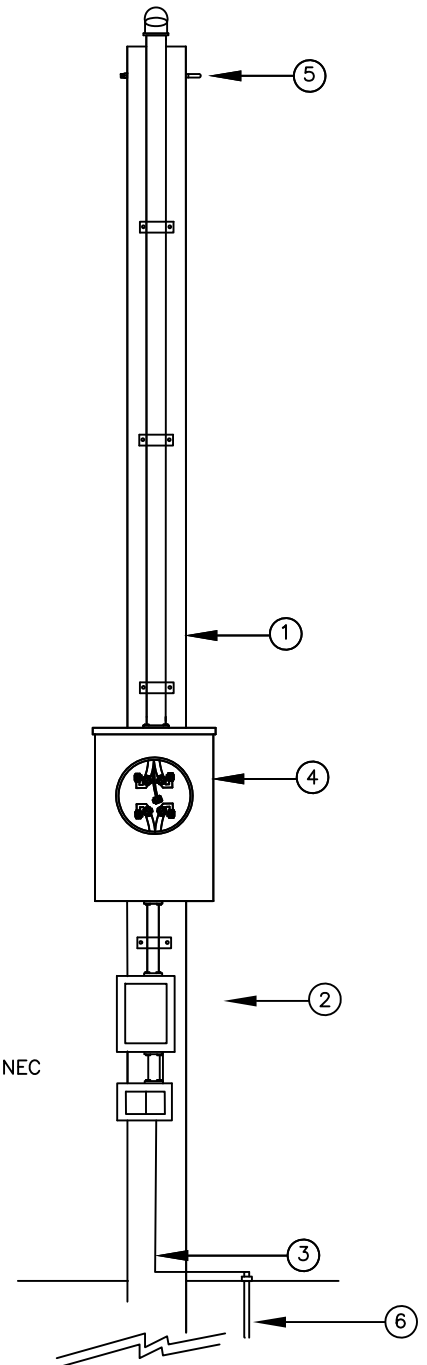
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DATE: APRIL 2018



ITEM DESCRIPTION

- ① WOOD POLE SIZE 25' CLASS 6 MINIMUM
- ② RAINLIGHT BREAKER PANEL, OUTLETS TO BE GFCI PROTECTED
- ③ GROUND WIRE – SIZE, INSTALLATION AND BONDING PER MOST CURRENT NEC
- ④ 4 PRONG METER SOCKET MOUNTED USING THE MANUFACTURERS MOUNTING INSTRUCTIONS.
- ⑤ POINT OF ATTACHMENT. NESC CLEARANCES REQUIRED.
- ⑥ 8' – 5/8" GROUND ROD – MAXIMUM 6" EXPOSED AND BONDED PER N.E.C.



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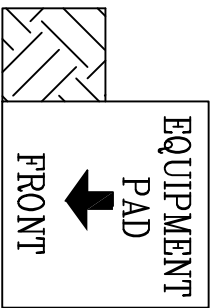
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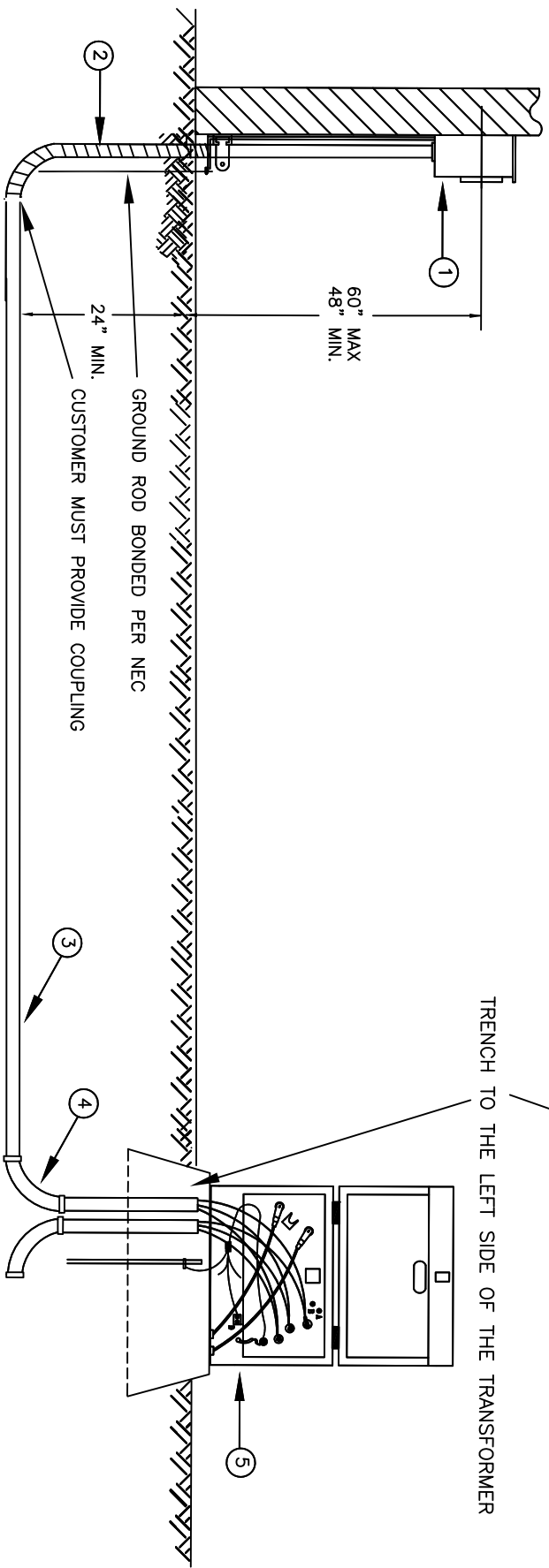
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1. NO MORE THAN 3 – 90 DEGREE BENDS WILL BE ALLOWED IN ANY SERVICE RUN.
2. THE SERVICE TRENCH MUST EXTEND FAR ENOUGH TO ALLOW ONE 90 DEGREE SWEEP INTO THE ELECTRIC TRANSFORMER, COORDINATE EXCAVATION WITH L.A.C.U.
3. THE TRENCH ROUTE MUST BE APPROVED BY D.P.U. ENGINEERING DEPT.
4. THE ROUTE SHOWN ON THE PERMIT MUST BE FOLLOWED.
5. THE TRENCH DIMENSIONS SHALL MATCH PERMIT REQUIREMENTS.
6. THE TRENCH MUST BE INSPECTED PRIOR TO CONDUIT INSTALLATION.
7. THE TRENCH MUST BE ALIGNED TO MINIMIZE BENDS..

- ① 200A 4- PRONG METER BASE (CUSTOMER INSTALLED)
- ② 2 1/2" RGS WRAPPED WITH 3M 10MIL TAPE BELOW GRADE & 4" ABOVE GRADE OR SCHEDULE 80 PVC IF APPROVED BY D.P.U.
- ③ 2 1/2" SCHEDULE 40 PVC (INSTALLED BY D.P.U.)
- ④ 2 1/2" SCHEDULE 40 – 90 DEGREE ELBOW (CUSTOMER INSTALLED)
- ⑤ ELECTRIC TRANSFORMER



TRENCH TO THE LEFT SIDE OF THE TRANSFORMER



No.

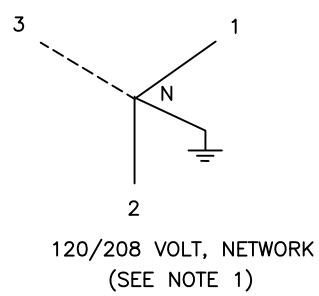
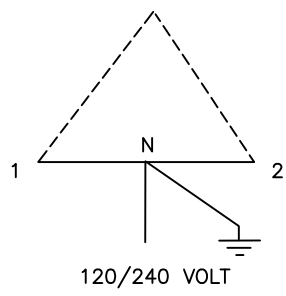
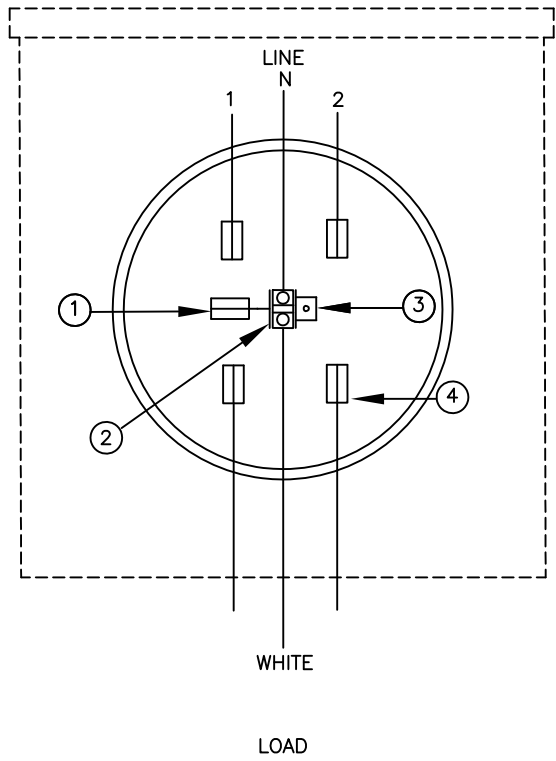
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DATE: APRIL 2018

METER SOCKET WIRING DIAGRAM 100/150/200 AMP RESIDENTIAL SERVICE



- ① A FIFTH TERMINAL (STINGER) IN THE 9 O'CLOCK POSITION IS REQUIRED FOR 120/208 VOLT SERVICE.
- ② THE NEUTRAL TERMINAL IS BONDED TO THE ENCLOSURE.
- ③ GROUND LUG
- ④ LUGS SUITABLE FOR CABLE SIZES FROM #2 TO 350 MCM

ACTUAL CONDUCTOR SIZE WILL BE SPECIFIED IN THE CONSTRUCTION PERMIT

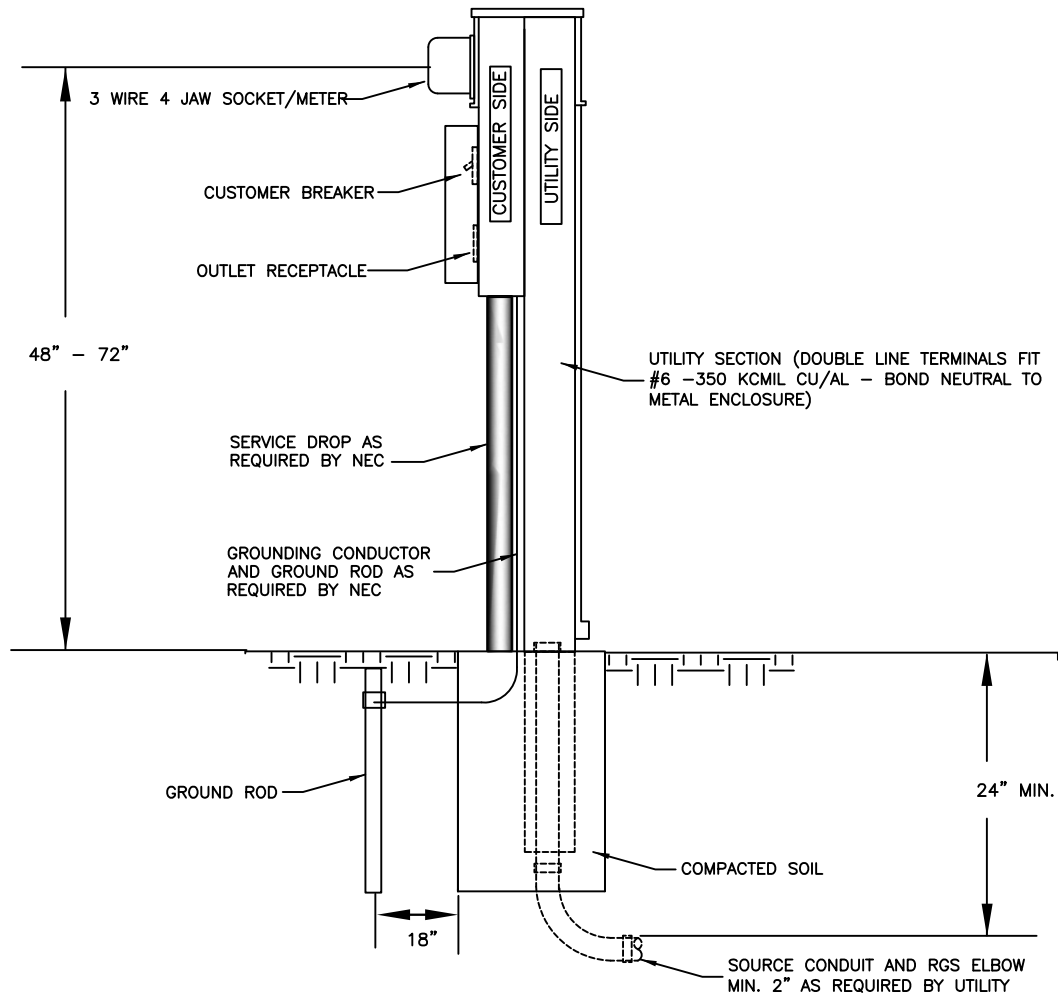
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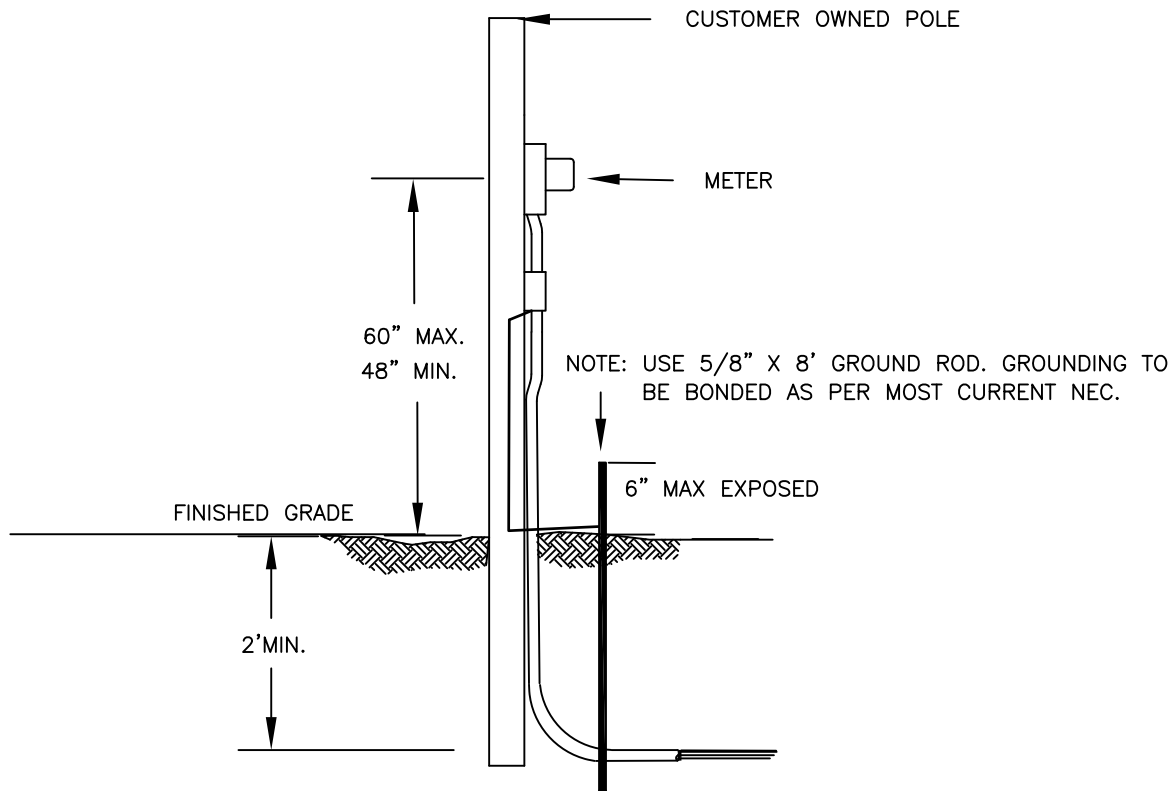
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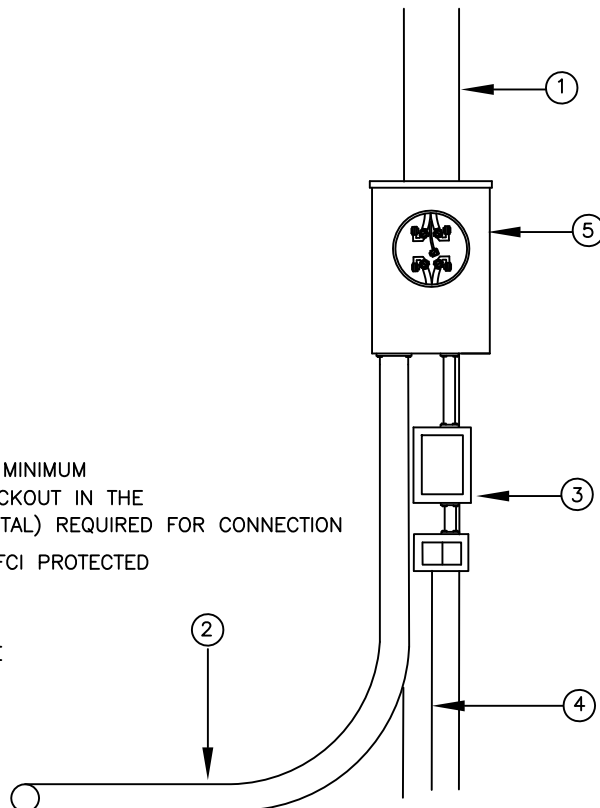
NOTES:

- ① MAY BE USED FOR COMMERCIAL SERVICES, IE., TRAFFIC SIGNALS, SITE LIGHTING, SPRINKLER SYSTEMS, AS WELL AS MOBILE HOME SITES
- ② PEDESTAL AND RELATED EQUIPMENT FURNISHED BY CUSTOMER.
- ③ INSTALLATION BY CUSTOMER WITH CONSTRUCTION INDUSTRIES INSPECTION.
- ④ INSTALLATION AND TRENCHING MUST MEET L.A.C.U. CONSTRUCTION STANDARDS.

ALL INSTALLATIONS ARE SUBJECT TO D.P.U. AND STATE APPROVAL



- ① MINIMUM TIMBER SIZE 4" X 4"
- ② SCHEDULE 40 OR RGS OR LT FLEX- 1 1/4" MINIMUM AND REDUCER FOR CONNECTION TO A 2" KNOCKOUT IN THE TRANSFORMER OR PEDESTAL. 6' TAIL (HORIZONTAL) REQUIRED FOR CONNECTION
- ③ RAIN TIGHT BREAKER PANEL, OUTLETS TO BE GFCI PROTECTED
- ④ #6 GROUND WIRE - MINIMUM
- ⑤ 4 PRONG METER SOCKET MOUNTED USING THE MANUFACTURERS MOUNTING INSTRUCTIONS. rated 10,000 A.I.C.



No.

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DATE: APRIL 2018

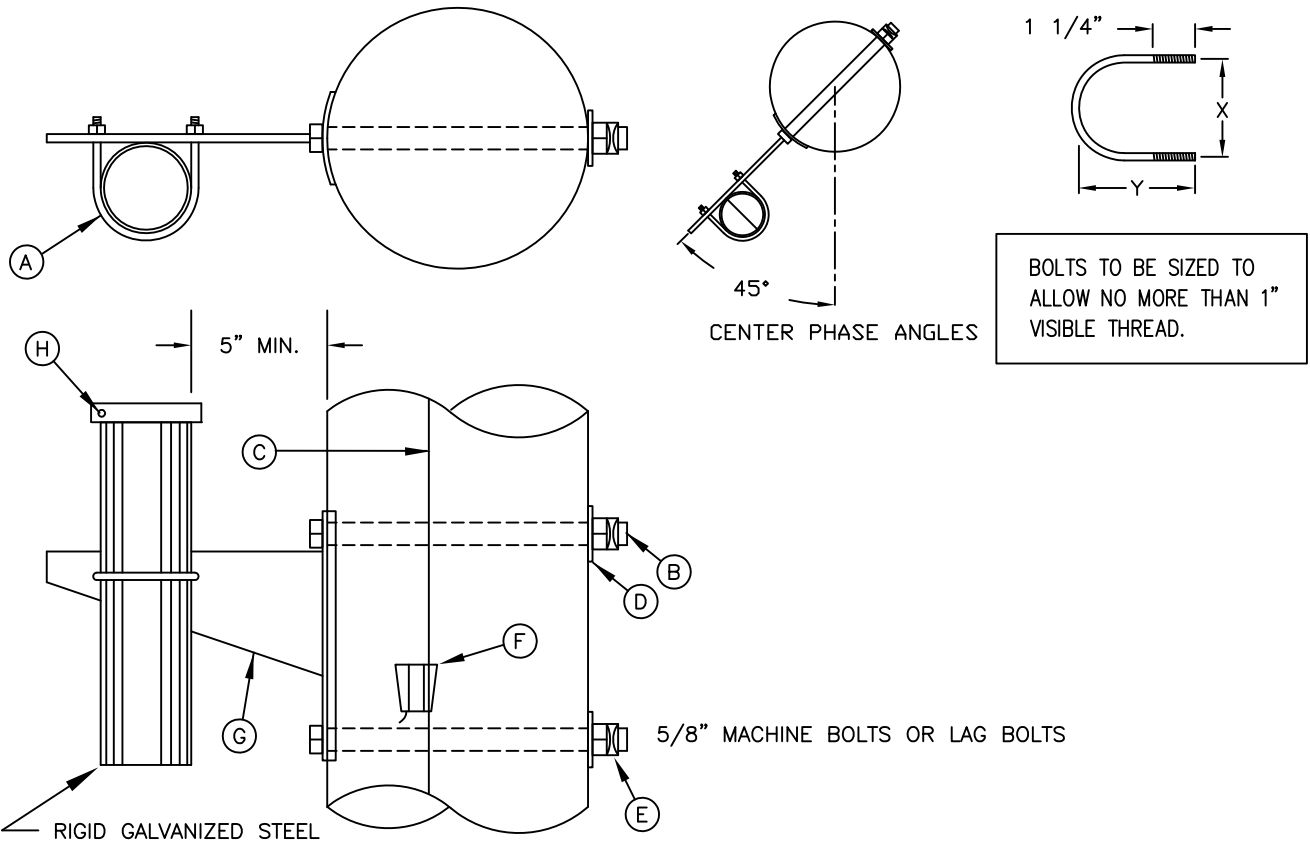
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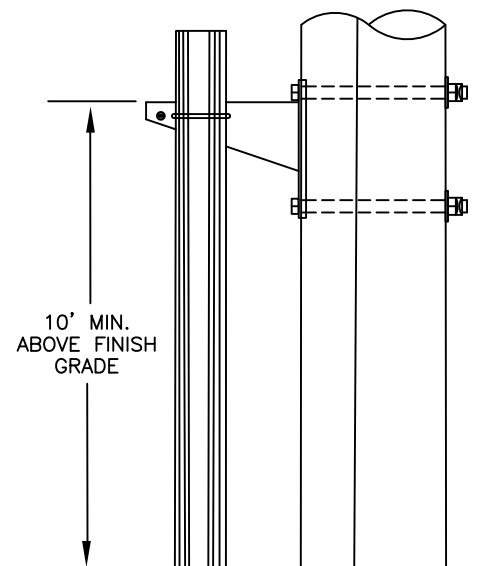


SIZE CONDUIT	X	Y
2"	2 7/8"	3 5/8"
3"	2 7/8"	3 5/8"
4"	5"	5 3/4"
6"	5"	5 3/4"

MATERIAL LIST		
ITEM	QUAN.	DESCRIPTION
A	1	___ U BOLT
B	2	5/8" MACHINE BOLTS OR LAG BOLTS
C		#4 SOLID CU WIRE
D	2	2 1/4" SQUARE WASHER
E	2	5/8" MF LOCKNUT
F	1	LINE TAP
G	1	SUPPORT BRACKET
H	1	GROUNDING LUG— GROUND AT RISER CAP

NOTES:

- (1) BRACKET TO BE FASTENED TO POLE WITH 5/8" GALVANIZED MACHINE BOLTS.
- (2) BRACKET SUITABLE FOR TWO 2", OR ONE 3" TO 6" CONDUIT.
- (3) TWO HOLE STRAPS ATTACHED AT 30" INTERVALS WITH 2" LAG SCREW MAY BE USED INSTEAD OF THE SUPPORT BRACKET WHEN THE CONDUIT IS 1" OR LESS. A MAXIMUM OF TWO CONDUITS MAY BE STRAPPED DIRECTLY TO THE POLE. MULTIPLE CONDUITS MUST BE ON SAME POLE QUADRANT.
- (4) BRACKET MAY BE FASTENED WITH LAG BOLTS



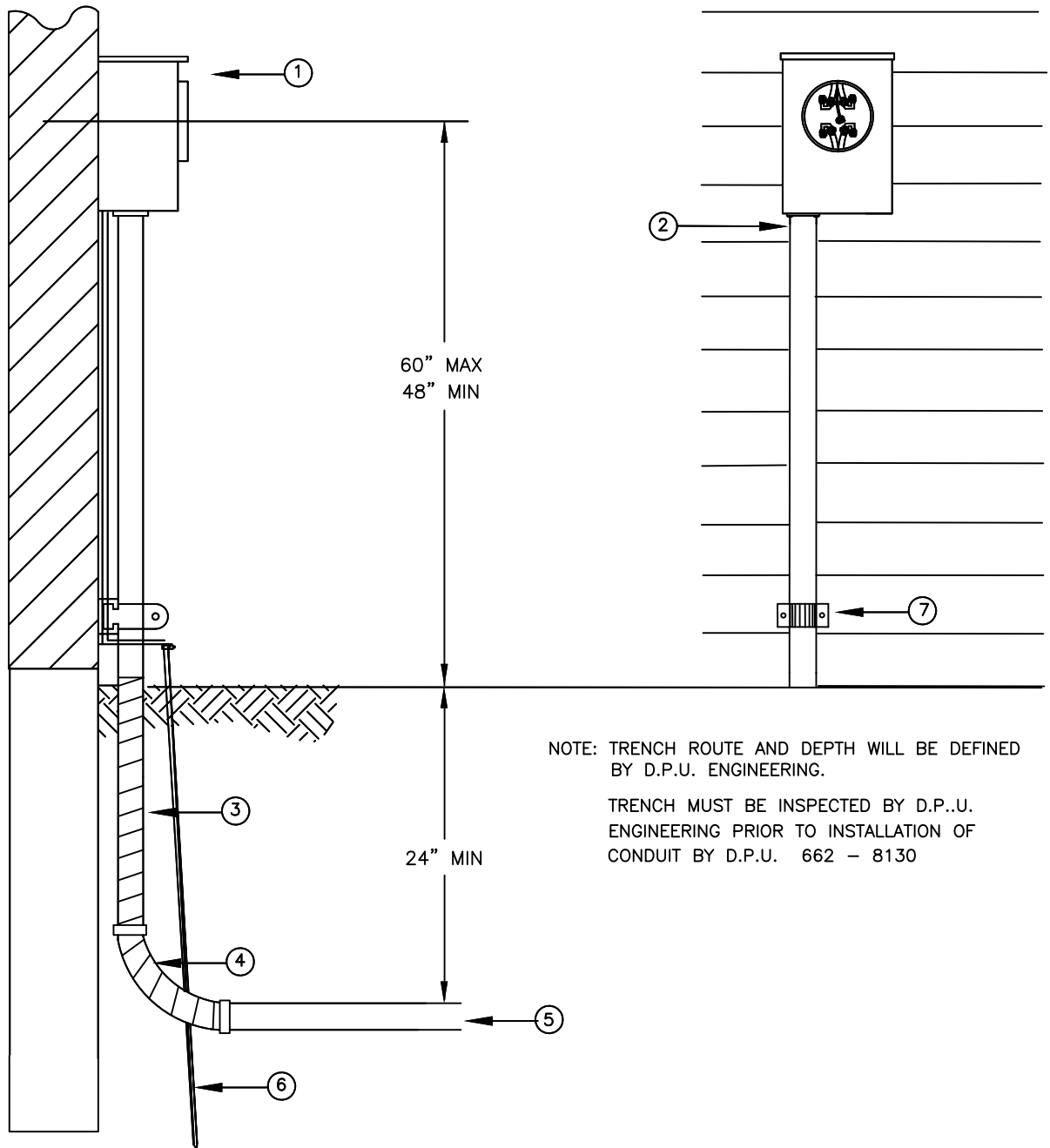
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DATE: APRIL 2018



NOTE: TRENCH ROUTE AND DEPTH WILL BE DEFINED BY D.P.U. ENGINEERING.

TRENCH MUST BE INSPECTED BY D.P.U. ENGINEERING PRIOR TO INSTALLATION OF CONDUIT BY D.P.U. 662 - 8130

- ① 4 PRONG METER SOCKET MOUNTED USING THE MANUFACTURERS MOUNTING INSTRUCTIONS. RATED 100A/150A/200A, 10,000 A.I.C.
- ② RGS OR SCHEDULE 80 - 100A/150A 2" AND 200A 2" MINIMUM. RISER SHOULD ENTER BOX THROUGH THE BOTTOM LEFT OR RIGHT KNOCKOUT TO FACILITATE TRAINING OF SERVICE WIRE.
- ③ RGS CONDUIT WRAPPED BELOW GRADE AND 4" ABOVE GRADE WITH 3M 10 MIL TAPE FOR CORROSION PROTECTION
- ④ RGS ELBOW OR SCH. 80 PVC WITH MINIMUM 24" RADIUS INSTALLED BY CONTRACTOR.
- ⑤ SCHEDULE 40 PVC CONDUIT INSTALLED BY THE UTILITY.
- ⑥ 5/8" X 8 FOOT GROUND ROD MAXIMUM 6" EXPOSED AND BONDED PER N.E.C..
- ⑦ ANCHOR TO BUILDING WITH PIPE STRAP

DATE: APRIL 2018

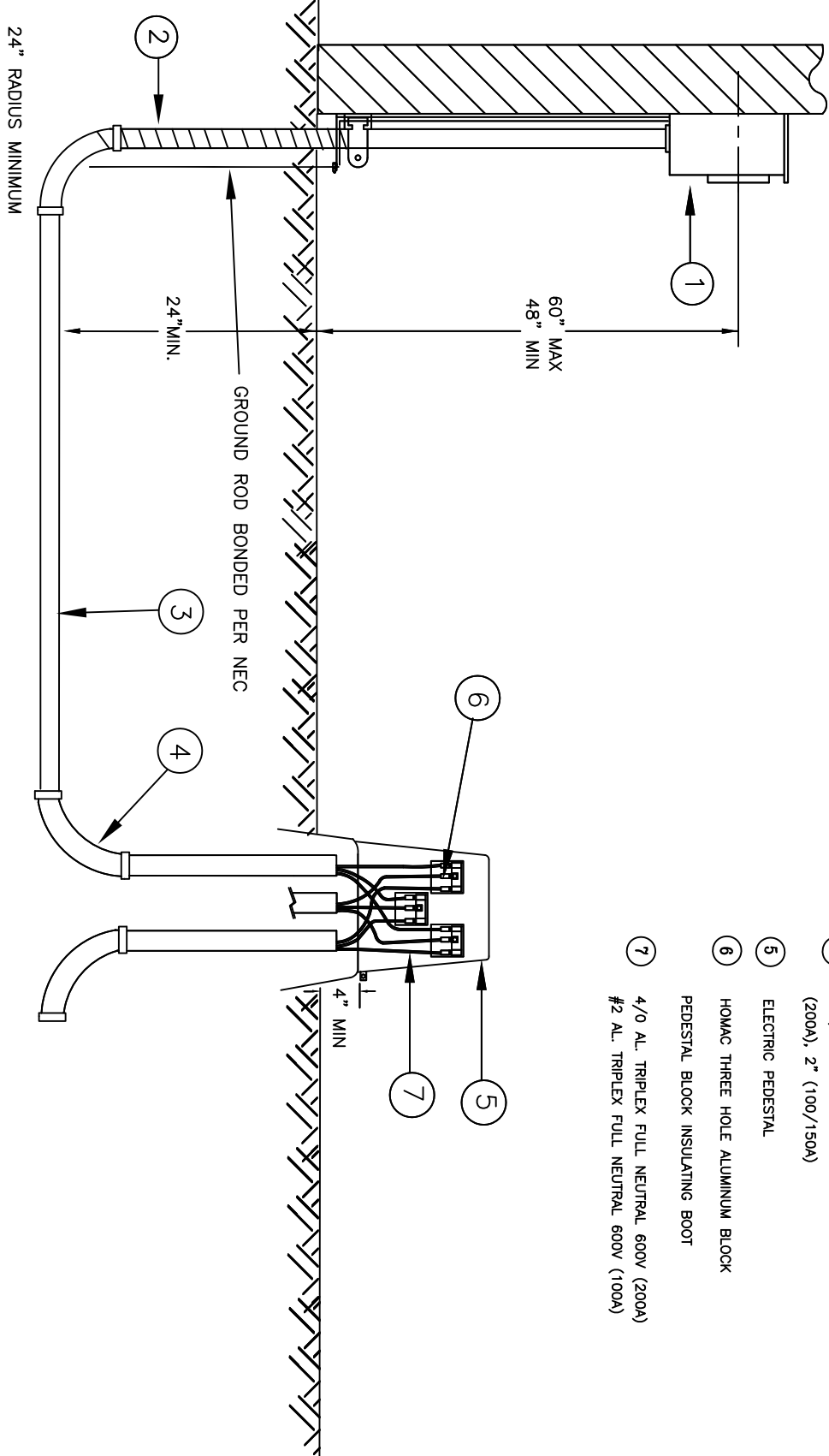
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No.

1. NO MORE THAN 3 - 90 DEGREE BENDS WILL BE ALLOWED IN ANY SERVICE RUN
2. THE SERVICE TRENCH MUST EXTEND FAR ENOUGH TO ALLOW ONE 90 DEGREE
3. SWEEP INTO THE ELECTRIC PEDESTAL, COORDINATE EXCAVATION WITH L.A.C.U.
4. THE TRENCH ROUTE MUST BE APPROVED BY D.P.U. ENGINEERING DEPT.
5. THE ROUTE SHOWN ON THE PERMIT MUST BE FOLLOWED.
6. THE TRENCH DIMENSIONS SHALL MATCH PERMIT REQUIREMENTS.
7. THE TRENCH MUST BE INSPECTED PRIOR TO CONDUIT INSTALLATION.
8. THE TRENCH MUST BE ALIGNED TO MINIMIZE BENDS.

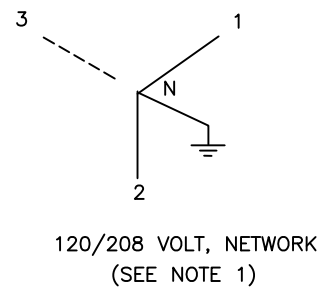
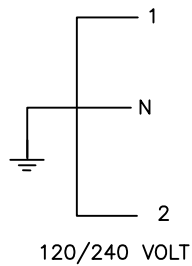
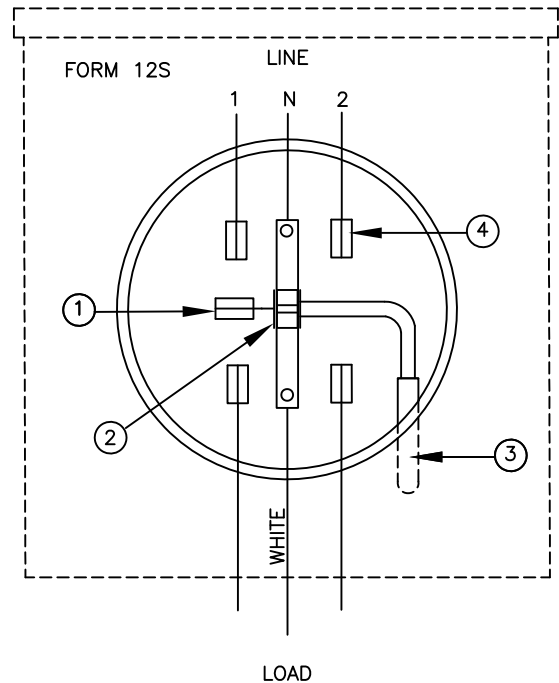
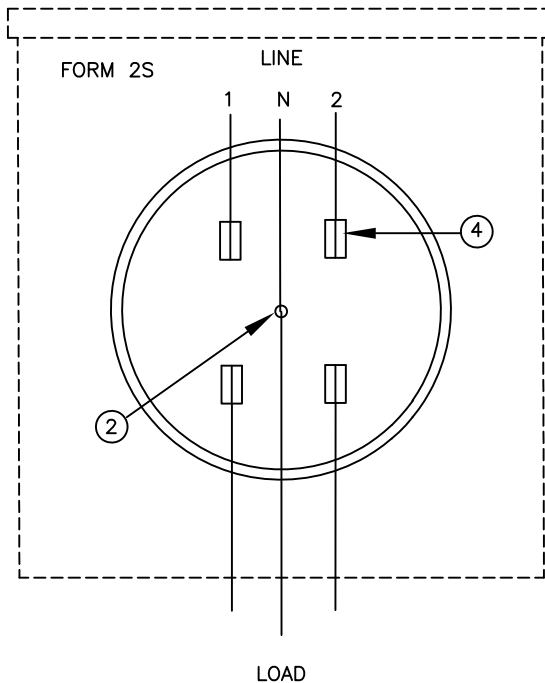


- 1 4- PRONG METER BASE (CUSTOMER INSTALLED)
- 2 200A SERVICE -2 1/2" RGS WRAPPED BELOW GRADE AND 4" ABOVE OR SCHEDULE 80 PVC
100A OR 150A SERVICE -2" RGS WRAPPED BELOW GRADE AND 4" ABOVE GRADE OR SCHEDULE 80 PVC
- 3 2 1/2" SCHEDULE 40 PVC
(200A), 2" (100/150A)
- 4 2 1/2" SCHEDULE 40 - 90 DEGREE ELBOW
(200A), 2" (100/150A)
- 5 ELECTRIC PEDESTAL
- 6 HOMAC THREE HOLE ALUMINUM BLOCK
- 7 PEDESTAL BLOCK INSULATING BOOT
- 4/0 AL. TRIPLEX FULL NEUTRAL 600V (200A)
#2 AL. TRIPLEX FULL NEUTRAL 600V (100A)

RINGLESS METER SOCKET WIRING DIAGRAM

SINGLE PHASE, 3 WIRE, 120/240 VOLT

SINGLE PHASE, 3 WIRE, 120/208 VOLT, NETWORK
(100 AND 200 AMP COMMERCIAL)



- ① A FIFTH TERMINAL (STINGER) IN THE 9 O'CLOCK POSITION IS REQUIRED FOR 120/208 VOLT SERVICE.
 - ② THE NEUTRAL TERMINAL IS BONDED TO THE ENCLOSURE.
 - ③ LEVER BYPASS 120/208 SERVICE
 - ④ LUGS SUITABLE FOR CABLE SIZES FROM #2 TO 350 MCM
- ACTUAL CONDUCTOR SIZE WILL BE SPECIFIED IN THE CONSTRUCTION PERMIT

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DATE: APRIL 2018

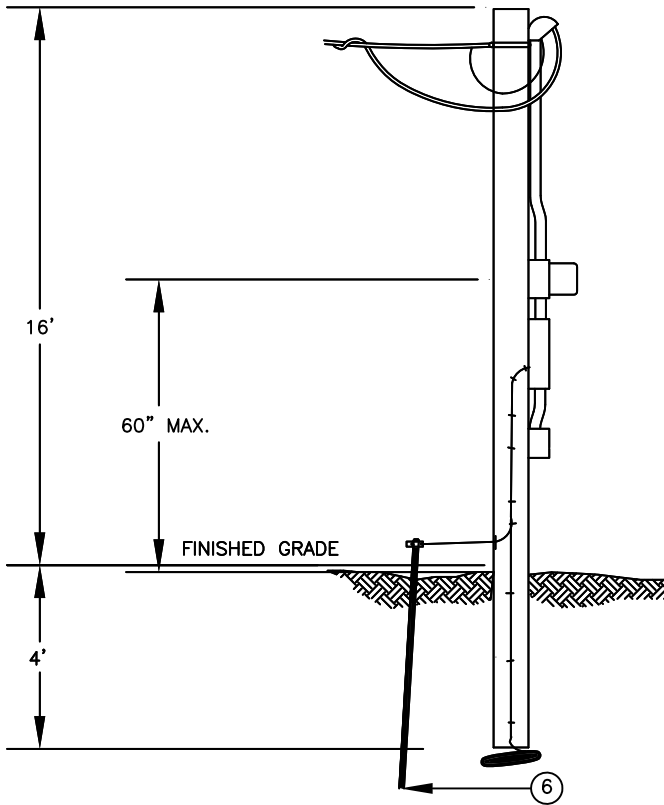
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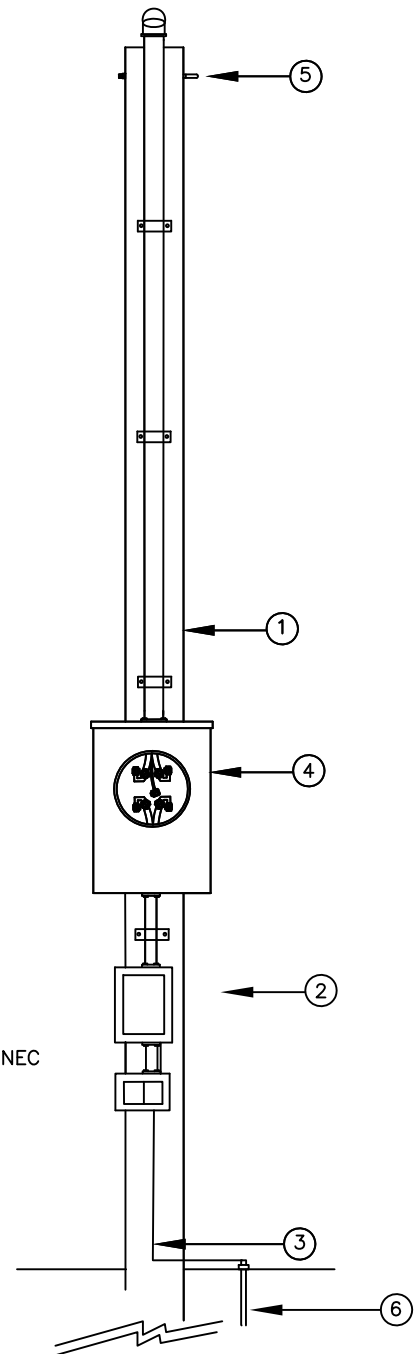
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ITEM DESCRIPTION

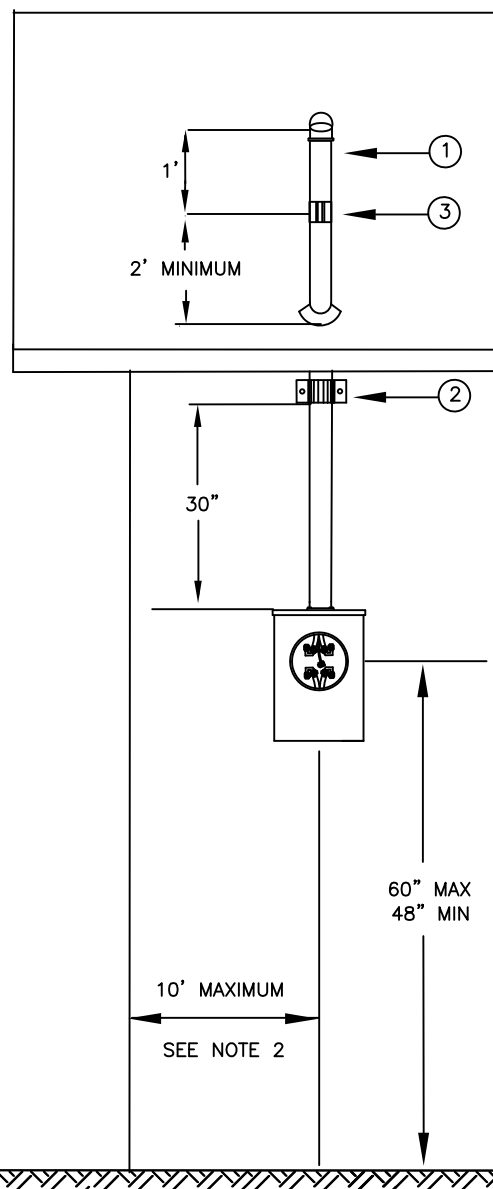
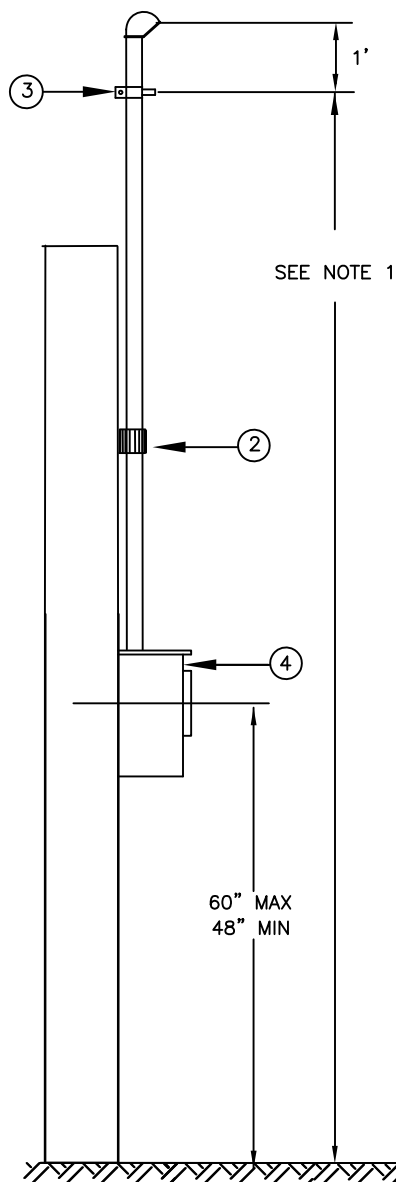
- ① WOOD POLE SIZE 6" X 6" X 20'
- ② RAINLIGHT BREAKER PANEL, OUTLETS TO BE GFCI PROTECTED
- ③ GROUND WIRE - SIZE, INSTALLATION AND BONDING PER MOST CURRENT NEC
- ④ 4 PRONG METER SOCKET MOUNTED USING THE MANUFACTURERS MOUNTING INSTRUCTIONS. rated 10,000 A.I.C.
- ⑤ POINT OF ATTACHMENT. NESC CLEARANCES REQUIRED.
- ⑥ 8' - 5/8" GROUND ROD - MAXIMUM 6" EXPOSED AND BONDED PER N.E.C.



NOTES

- (1) POINT OF ATTACHMENT NOT LESS THAN 12' ABOVE FINISH GRADE.
- (2) LOCATE METER WITHIN 10' OF THE STREET SIDE OF THE HOUSE, BUT NOT BEHIND STEMWALLS, SIDEWALLS OR OTHER ENCUMBRANCES.

- ① MINIMUM 2" RIGID GALVANIZED RISER.
- ② RISER ATTACHMENT TO THE BUILDING. MAXIMUM 36" BETWEEN CONDUIT STRAPS.
- ③ SERVICE ATTACHMENT TO WITHSTAND 400 LBS. TENSION, MAY REQUIRE GUY WIRE.
- ④ 4 PRONG METER BASE.
- ⑤ BOTTOM OF WEATHERHEAD TO BE AT LEAST 3' ABOVE PENETRATION OR PARAPET.
 IF PARAPET IS GREATER THAN 12' THE WEATHERHEAD CAN BE ATTACHED DIRECTLY TO THE WALL.



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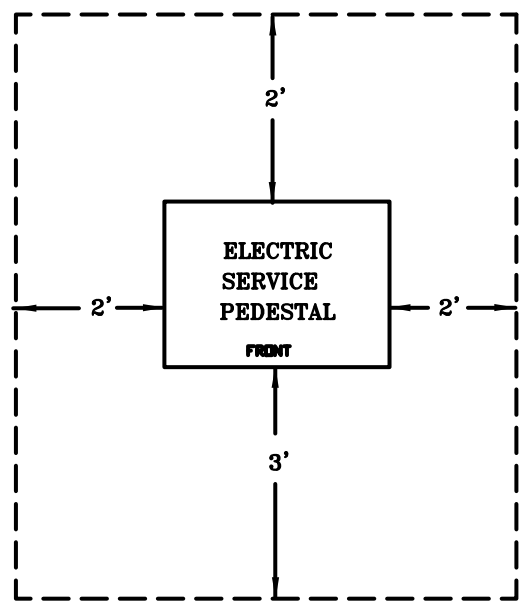
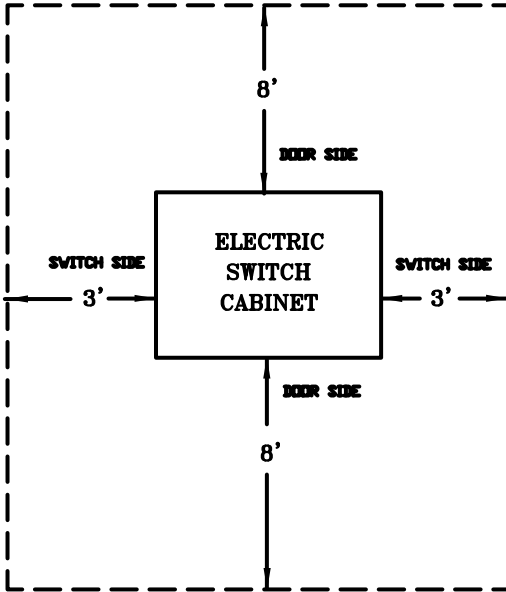
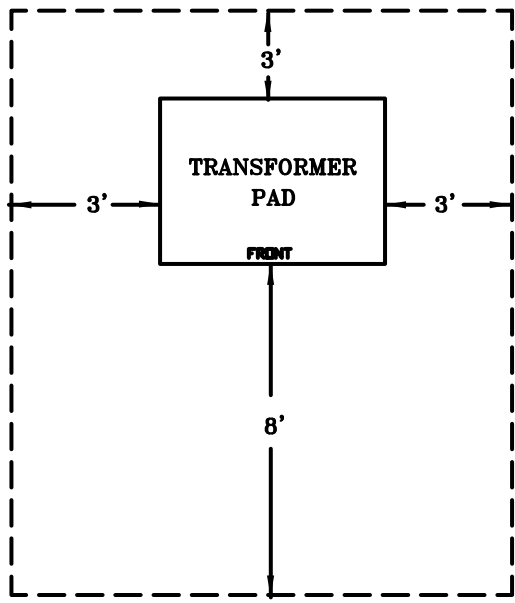
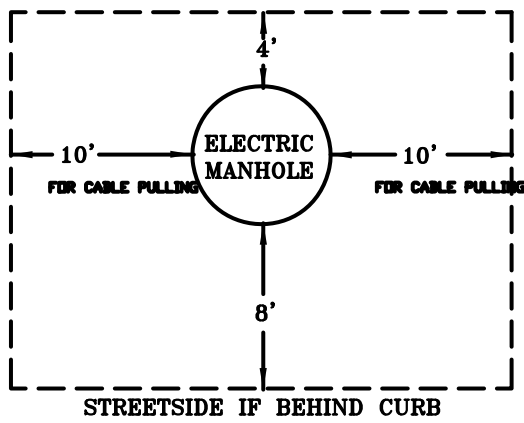
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THE SPECIFIED CLEARANCES ARE REQUIRED IN ORDER TO PROVIDE A SAFE WORKING DISTANCE.



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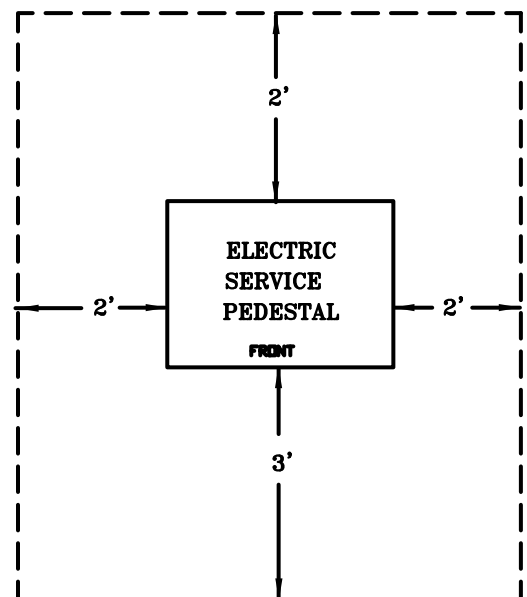
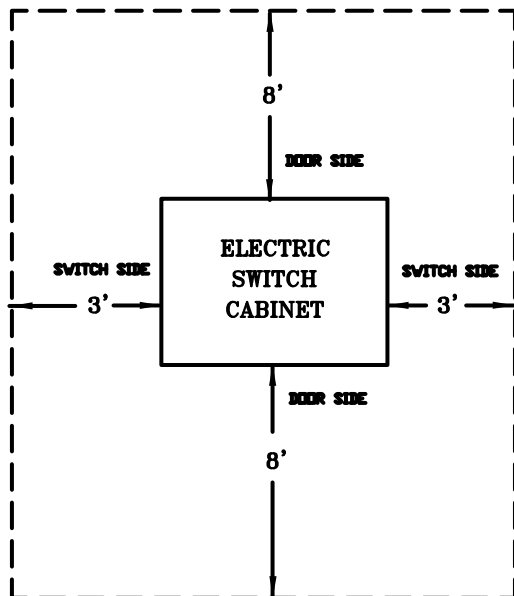
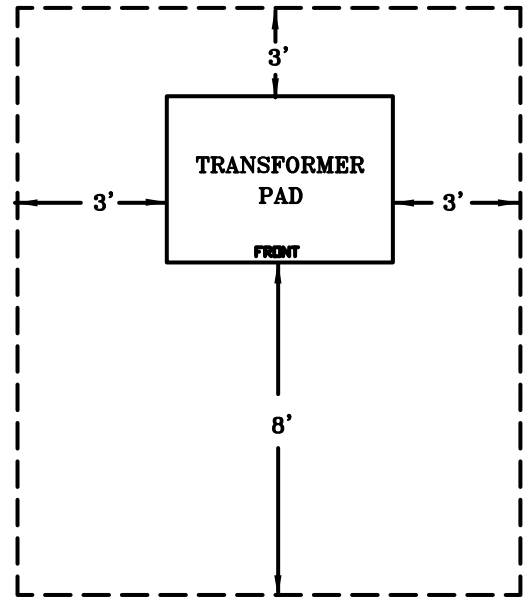
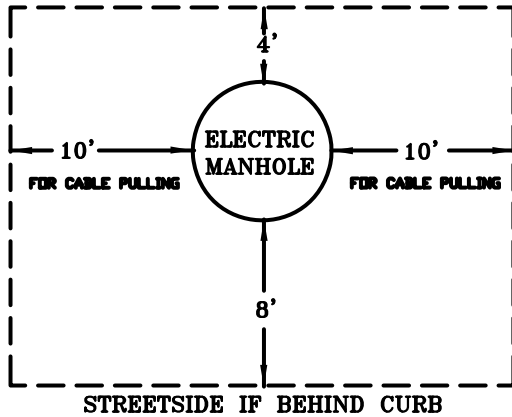
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THE SPECIFIED CLEARANCES ARE REQUIRED IN ORDER TO PROVIDE A SAFE WORKING DISTANCE.



CLEARANCE FROM TRANSFORMER

SECTION
4000
4018

No.

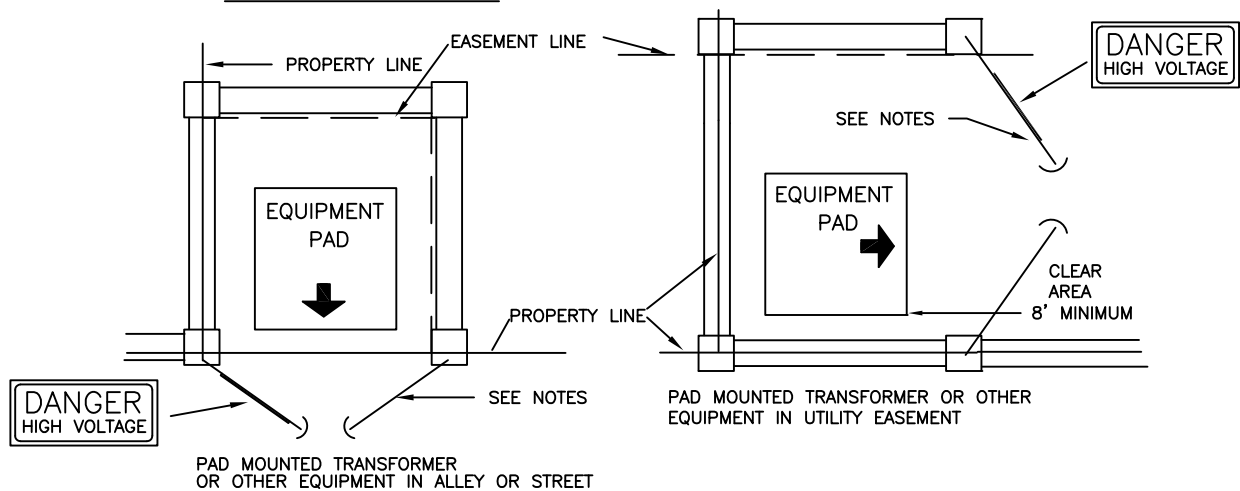
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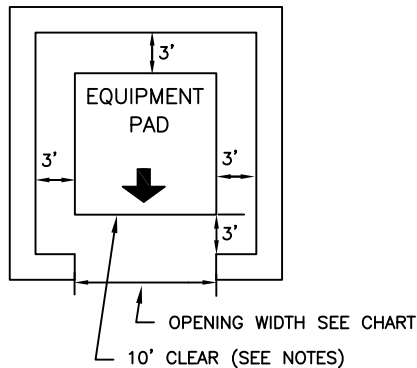
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CAUTION: BURIED HIGH VOLTAGE CABLE !



ENCLOSURE OR FENCE



TYPE OF EQUIPMENT	MINIMUM OPENING WIDTH
ALL EXCEPT 3Ø TRANSFORMERS BELOW	6½ FT.
150–500 KVA TRANSFORMERS	9 FT.
750–1000 KVA TRANSFORMERS	11 FT.

LEGEND:
↓ INDICATES DOOR OPENING SIDE

NOTES:

- DO NOT BUILD FENCE, GATE POSTS OR SUPPORT STRUCTURES INSIDE EASEMENT LINES.
- NO BUILDING ADDITION, BUILDING OVERHANG OR STRUCTURE SHALL BE BUILT CLOSER THAN 10 FT. HORIZONTALLY FROM THE EDGE OF ANY EQUIPMENT PAD UNLESS APPROVED IN WRITING.
- THERE SHALL BE NO ROOF OR COVERING OVER ANY FENCE OR ENCLOSURE.
- A GATE THE FULL WIDTH OF THE OPENING, AS ILLUSTRATED, IS PERMISSIBLE. THE GATE MAY BE OF SOLID MATERIAL IF 6" CLEARANCE FOR VENTILATION IS MAINTAINED BETWEEN BOTTOM OF GATE AND GROUND LEVEL. THE GATE IS ALLOWED LOWER THAN 6" IF CONSTRUCTED OF MESH, BAR, LOUVER OR SIMILAR VENTILATING MATERIAL. GATE MUST OPEN AT LEAST 90 DEGREES FOR FULL OPENING WIDTH ACCESS AND MUST BE FREE OF LOCKS WHICH WOULD INHIBIT ACCESS BY UTILITY PERSONNEL. ANY GATE MUST BE FURNISHED BY THE CUSTOMER.
- IF A SOLID GATE IS INSTALLED ON AN ENCLOSURE AROUND A TRANSFORMER, THEN VENTILATION OPENINGS SHALL BE PROVIDED ON TWO OPPOSITE SIDES. (SPACE UNDER THE GATE MAY COUNT AS ONE OF THEM.) THE OPENINGS SHALL BE LOCATED NEAR THE BOTTOM OF THE ENCLOSURE WITH THE FOLLOWING MINIMUM AREA FOR AIR FLOW:

TRANSFORMER RATING	VENT OPENING (EACH SIDE)
UP TO 150 KVA	40 SQ. IN.
225 & 300 KVA	80 SQ. IN.
500 & 750 KVA	190 SQ. IN.

- NO OBSTRUCTION. INCLUDING BUT NOT LIMITED TO. FENCES, SHRUBS, OR OTHER SIMILAR LARGE VEGETATION AND LARGE ROCKS, SHALL BE PERMITTED WITHIN 10 FT. OF THE OPENING SIDE OF TRANSFORMERS. THE BACK AND SIDES OF ALL TRANSFORMERS REQUIRE AT LEAST 3' OF CLEARANCE FROM THE EDGE OF THE PAD TO ANY OBSTRUCTION.

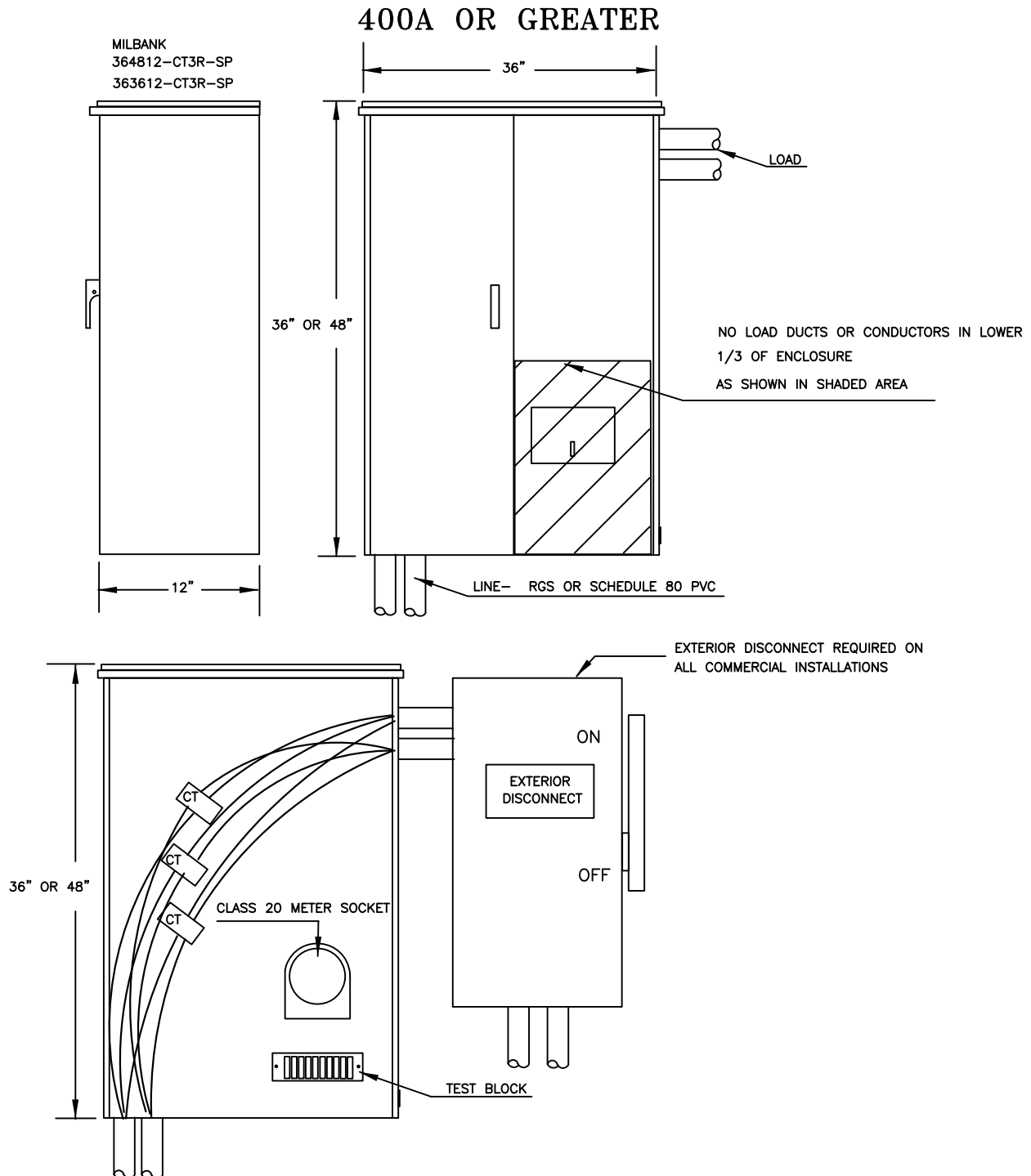
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Manufacturer	Item	Mfg. Part#
(1) Brooks Utility Products	20A 13T Ringless Socket	601U3060C13
(2) Cutler Hammer	20A 13T Ringless Socket	98378513CH
(3) Eaton	20A 13T Ringless Socket	USTS132CCH
(4) Eaton	20A 13T Ringless Socket	98378513
(5) Milbank	20A 13T Ringless Socket	UC3423-XL

- (1) METERING SPECIFICATIONS DETERMINED BY LACDPU ENGINEERING
- (2) REQUIRES 3/4" PLYWOOD BACKING IN THE ENCLOSURE
- (3) CONDUIT SIZE DETERMINED BY LACDPU ENGINEERING
- (4) COORDINATE CONDUCTOR INSTALLATION WITH UTILITY

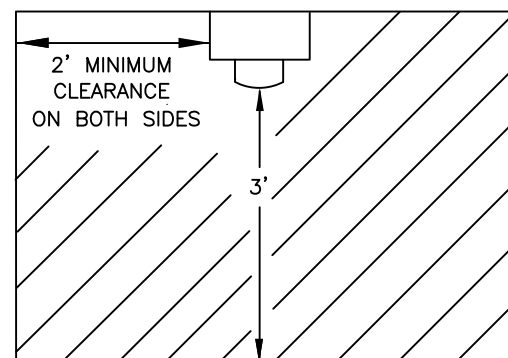
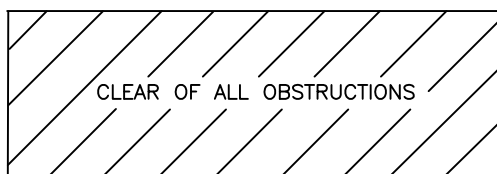
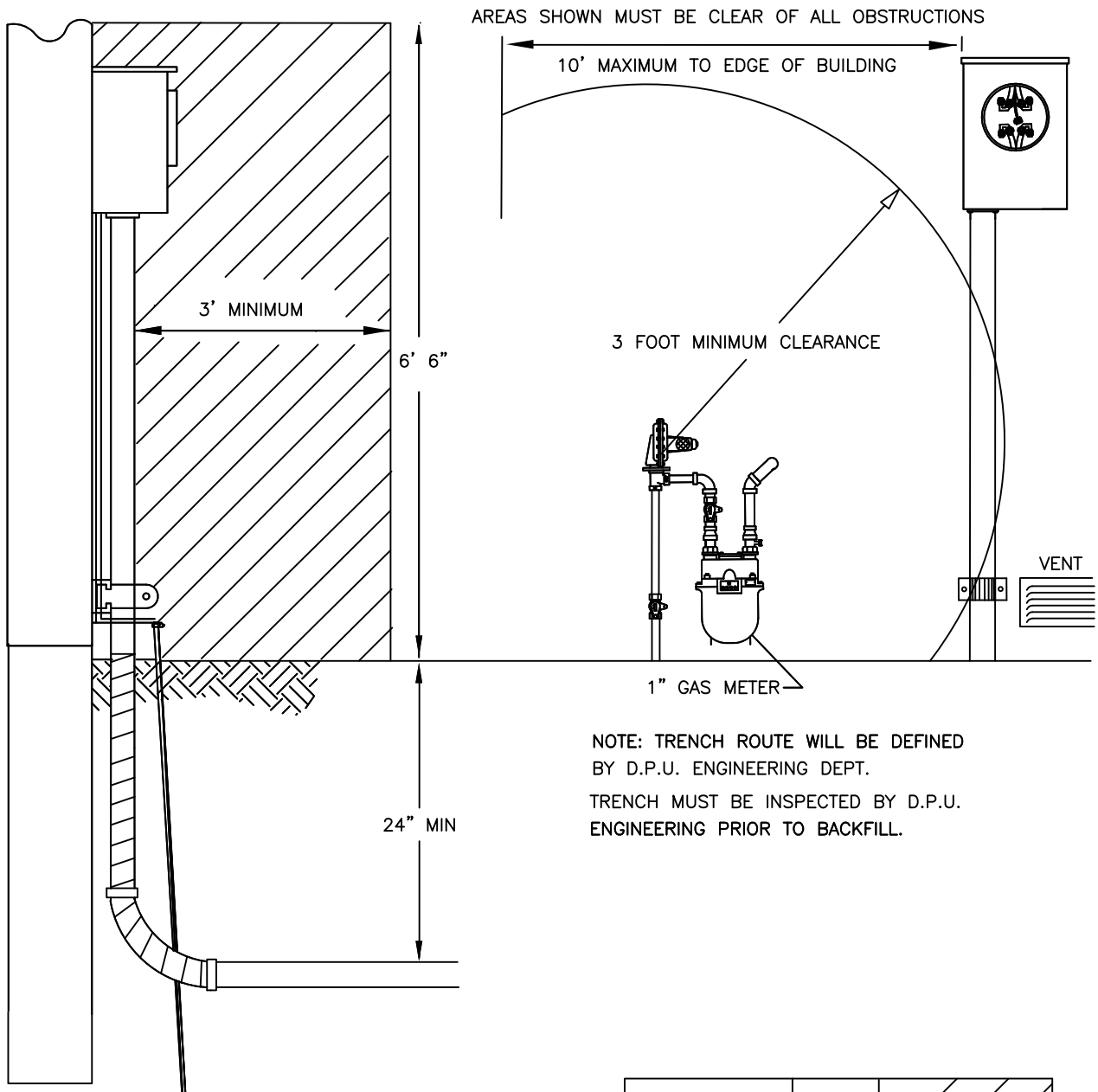
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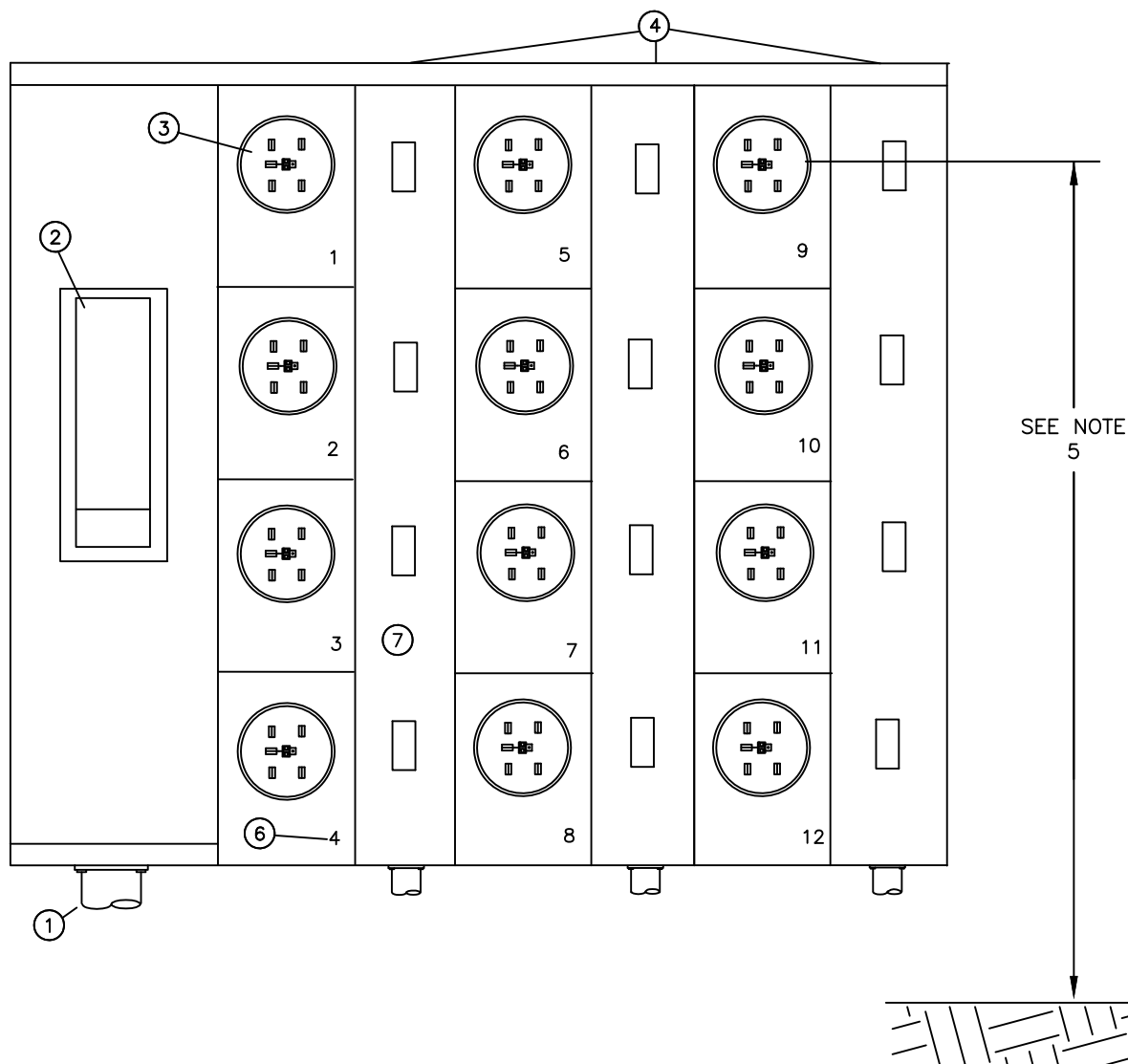
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- ① LINE CONDUIT MUST BE RIGID GALVANIZED OR IMC, COORDINATE SIZE AND NUMBER OF LINE CONDUITS WITH D.P.U.
- ② MAIN DISCONNECT IS REQUIRED ON THE LINE SIDE OF ANY GROUP TO MEET NEC AND STATE CODES.
- ③ SOCKET JAWS MUST BE MINIMUM OF 125 A. FIFTH TERMINAL TO BE IN 9 O'CLOCK POSITION.
- ④ LOAD CONDUCTORS MAY EXIT EITHER TOP OR BOTTOM OF TENANT BREAKER SECTION.
- ⑤ TOP METER SHALL BE A MAXIMUM OF 72" FROM FINISH GRADE.

NOTES:

1. THREE PHASE SERVICES WILL NOT BE ADDED TO THIS GEAR.
2. APARTMENT OR UNIT NUMBER MUST BE PERMANENTLY PAINTED ON PROPER METER PANELS
3. LINE BUS FEED MUST HAVE METAL BARRIER WHEN PASSING THROUGH TENANT BREAKER SECTION FOR SAFETY.
4. D.P.U. REQUIRES A MINIMUM CLEARANCE OF 48" BETWEEN FRONT OF SOCKETS AND ANY WALL OR OBSTRUCTION.
5. ALL LINE FEED SECTIONS SHALL BE LOCKABLE AND SEALABLE.
6. ALL UNITS SHALL BE COMPLETE WITH SOCKETS AND BREAKERS AT THE TIME OF THE INITIAL SET OF FIRST METER.
7. GUARD POSTS WILL BE REQUIRED IN TRAFFIC AREAS.

6'-4" x 4'-0" x 4'-0"
PRECAST CONCRETE VAULT

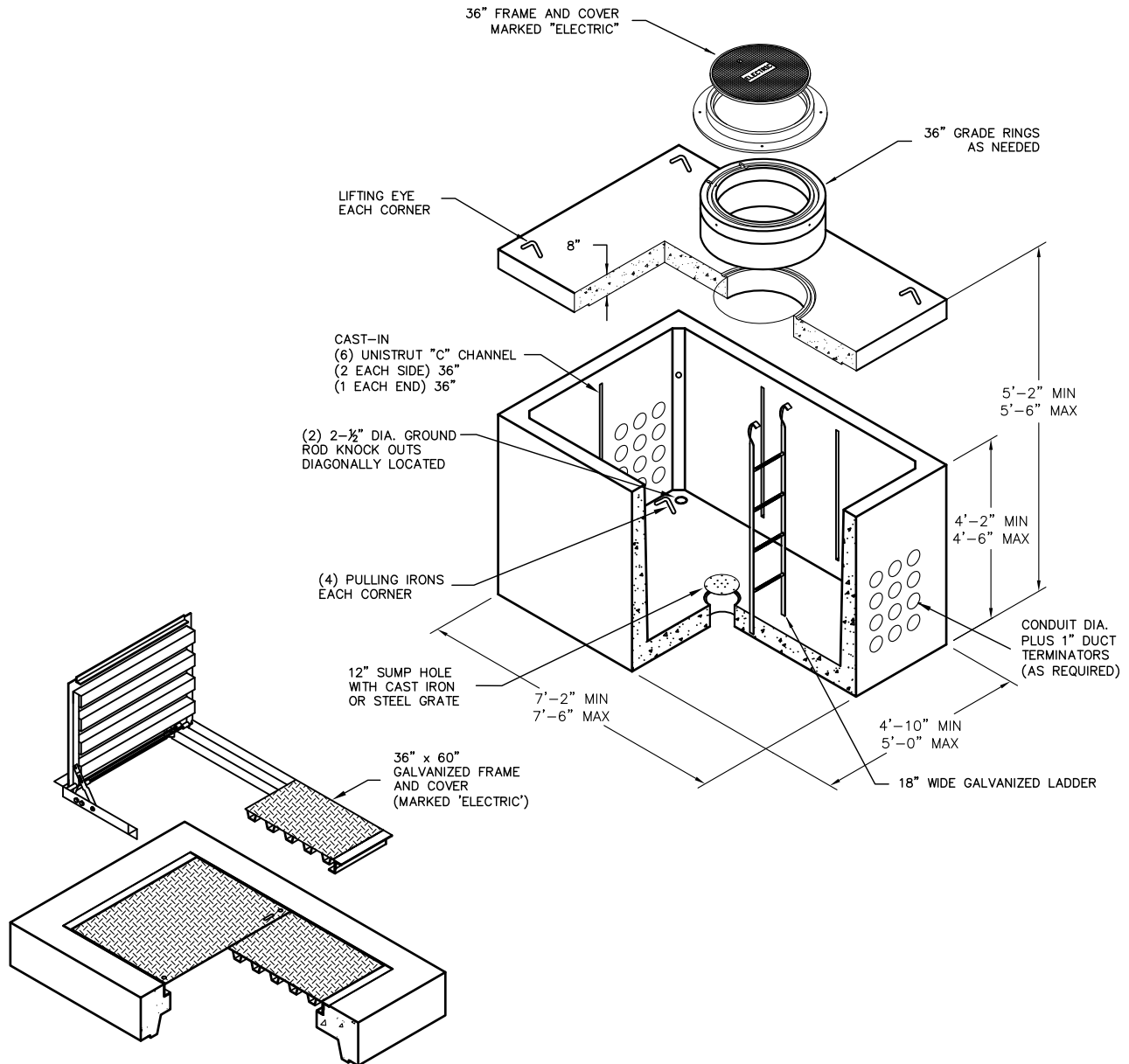
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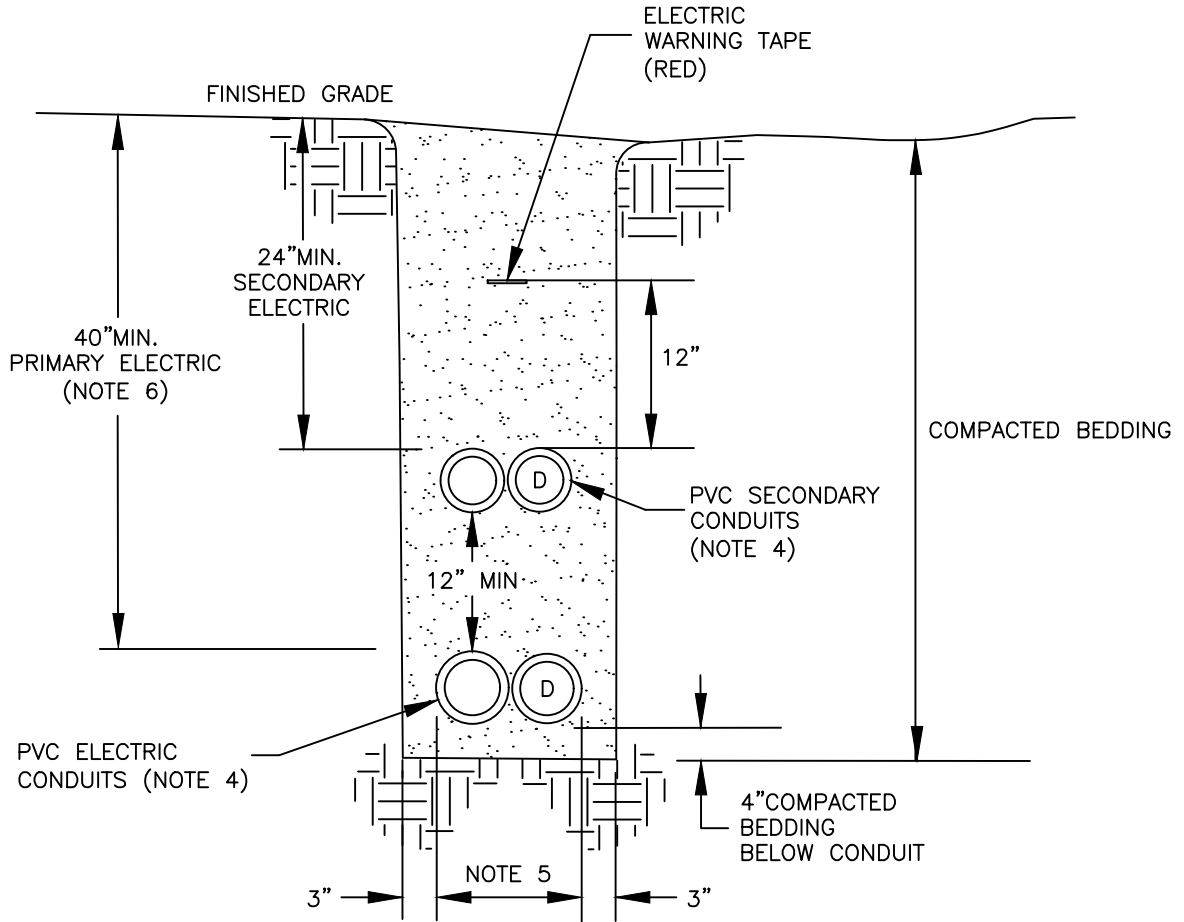
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VAULT CONSTRUCTION NOTES

- 1.) VAULT TO BE USED FOR H-20 TRAFFIC DESIGN LOADING. ALL LIVE LOADS SHALL BE FOR HS-20-44 (MS-18) AS PER AASHTO STANDARD SPECIFICATION, DIV 1, SEC. 3
- 2.) VAULT EXCAVATION AND BACKFILL TO CONFORM TO LOS ALAMOS COUNTY UTILITIES SPECIFICATIONS
- 3.) BUTYL RUBBER OR NEOPRENE GASKET SEAL REQUIRED BETWEEN VAULT SECTION AND OR EXTENSIONS
- 4.) UNISTRUT OR 1/2" INSERTS WILL BE CAST INTO VAULT WALL.
- 5.) LIDS TO BE MARKED "ELECTRIC"
- 6.) ALL WEIGHTS TO BE CLEARLY MARKED
- 7.) INSTALL GROUNDING AND PROVIDE ATTACHMENT WITHIN VAULT
- 8.) 2/0 CU GROUNDING GRID IS REQUIRED IN THIS VAULT
- 9.) DELIVERY OF THE VAULT REQUIRES COORDINATION WITH LOS ALAMOS COUNTY UTILITIES ENGINEERING
- 10.) PRECAST CONCRETE VAULTS SHALL COMPLY WITH LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 401. UNDERGROUND DUCTBANK SYSTEMS.
- 11.) FIELD CUT BOX AS NEEDED TO RECEIVE CONDUITS.



ELECTRICAL PVC CONDUIT SIZE

D	CONDUCTOR TYPE	DEPTH (TOP PIPE)
2"	120/240 VOLT SERVICE 100/150A	24"
2½"	120/240 VOLT SERVICE 200A	24"
* 3" OR 4"	THREE PHASE SECONDARY	24"
2"	SINGLE PHASE PRIMARY	48"
* 4" OR 6"	THREE PHASE PRIMARY	48"

* AS PER LOS ALAMOS COUNTY UTILITIES ENGINEER

NOTES:

- 1.) 95% COMPACTION REQUIRED UNDER PAVED ROADS, SIDEWALK AND CURB, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 202 EXCAVATION, TRENCHING AND BACKFILL.
- 2.) 85% COMPACTION REQUIRED AT ALL LOCATIONS NOT IN NOTE 1, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 202 EXCAVATION, TRENCHING AND BACKFILL.
- 3.) CONDUIT PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 401. UNDERGROUND DUCTBANK SYSTEMS.
- 4.) NUMBER OF CONDUITS AS SHOWN ON PLANS.
- 5.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST CONDUITS PLUS 6 INCHES.
- 6.) WHEN APPROVED BY LOS ALAMOS COUNTY UTILITY ENGINEERING DEPARTMENT, ELECTRIC PRIMARY DUCTBANK CAN BE INSTALLED WITH A MINIMUM COVER OF 24 INCHES IF THE FOLLOWING REQUIREMENTS ARE MET.
 - A 6 INCH THICK CONCRETE CAP IS PLACED 6 INCHES ABOVE CONDUIT THE ENTIRE TRENCH WIDTH
 - 6 INCH BEDDING MATERIAL BETWEEN CAP AND CONDUIT
 - WARNING TAPE PLACED OVER CONCRETE CAP
 - CONCRETE CAP SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 (PSI)

No.

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DATE: FEBRUARY 2022

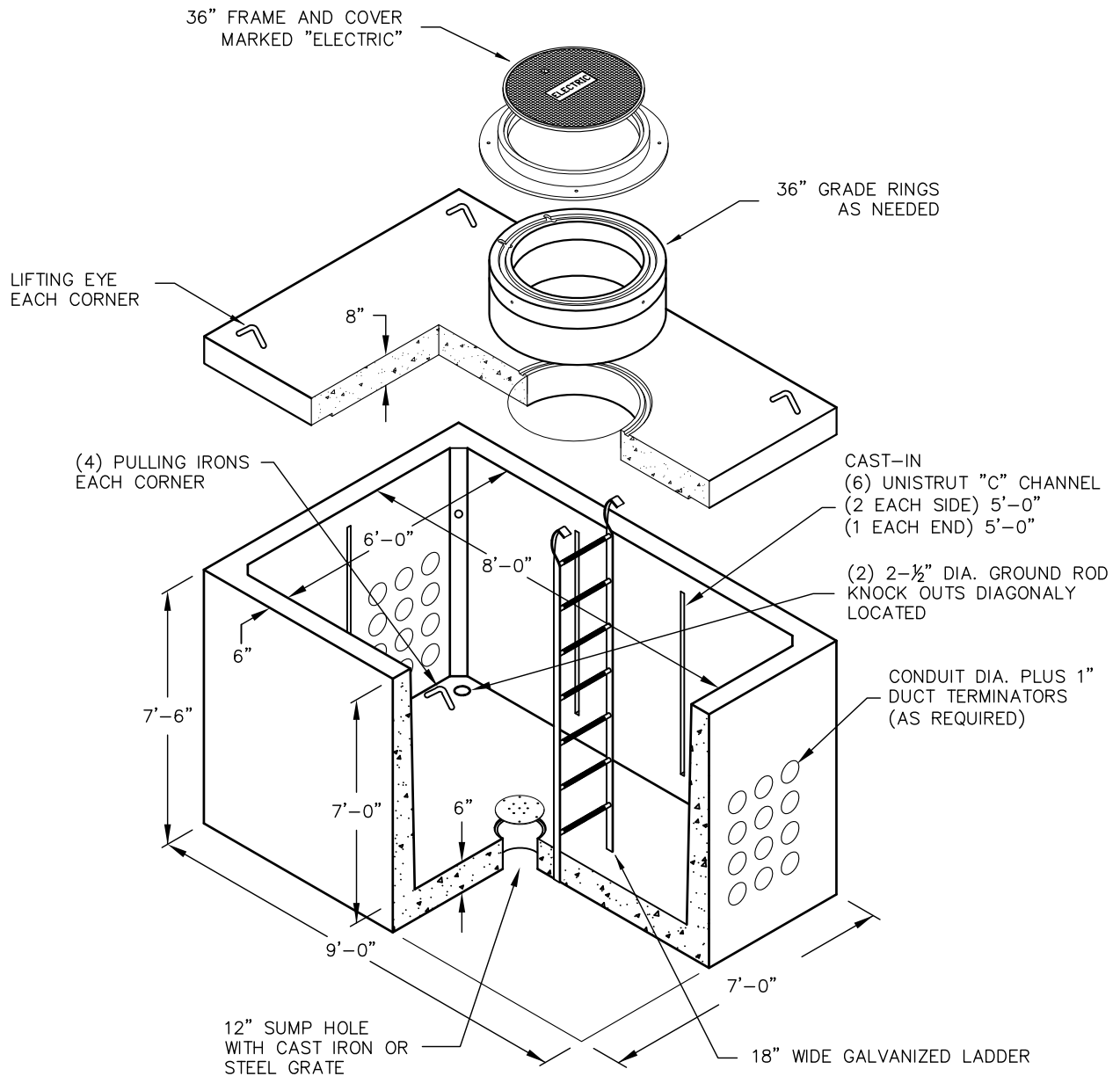
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VAULT CONSTRUCTION NOTES

- 1.) VAULT TO BE USED FOR H-20 TRAFFIC DESIGN LOADING. ALL LIVE LOADS SHALL BE FOR HS-20-44 (MS-18) AS PER AASHTO STANDARD SPECIFICATION, DIV 1, SEC. 3
- 2.) VAULT EXCAVATION AND BACKFILL TO CONFORM TO LOS ALAMOS COUNTY UTILITIES SPECIFICATIONS
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- 11.) FIELD CUT BOX AS NEEDED TO RECEIVE CONDUITS.

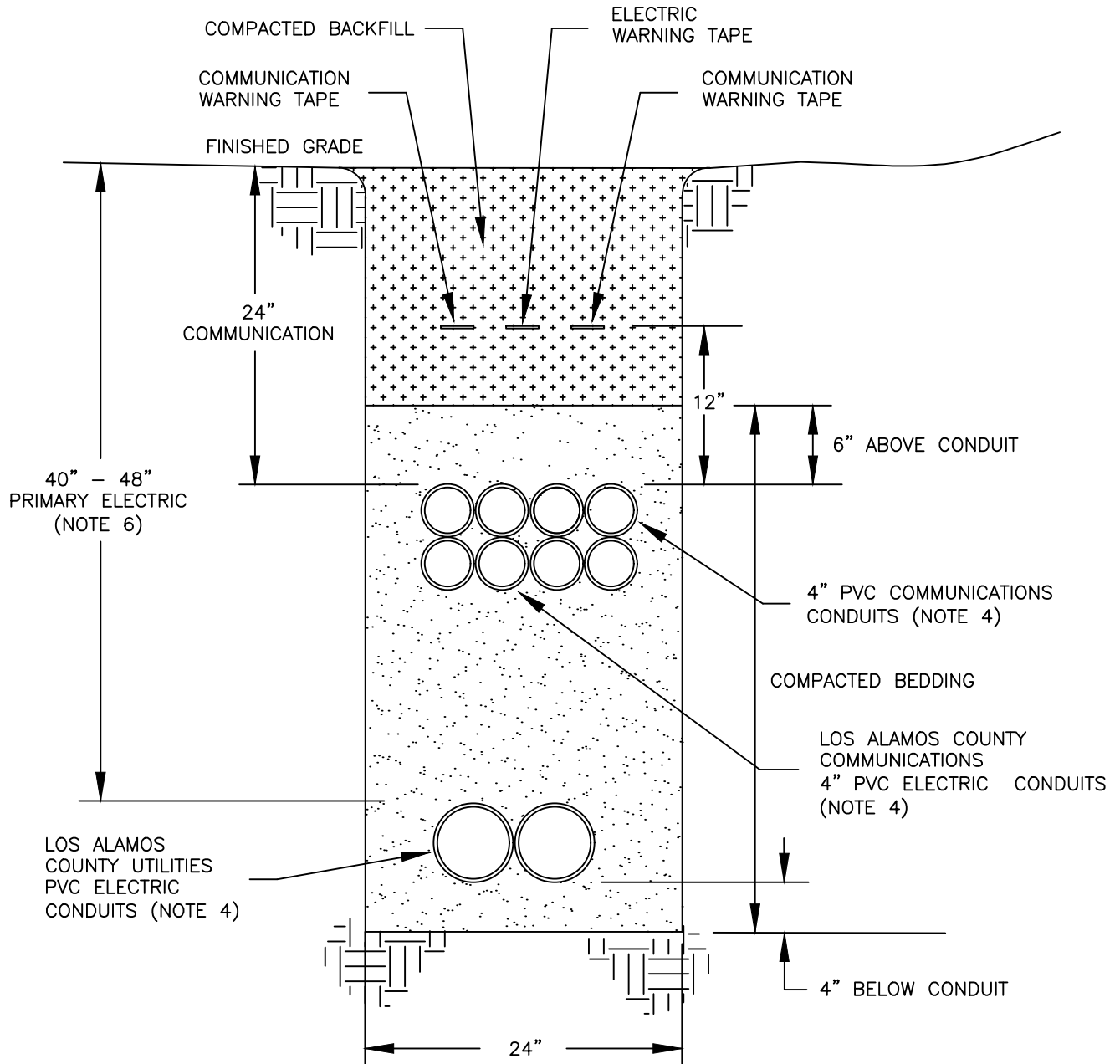
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NOTES:

- 1.) 95% COMPACTION REQUIRED UNDER PAVED ROADS, SIDEWALK AND CURB, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 202.
- 2.) 85% COMPACTION REQUIRED AT ALL LOCATIONS NOT IN NOTE 1, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 202.
- 3.) CONDUIT PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 401.
- 4.) NUMBER OF CONDUITS AS SHOWN ON PLANS.
- 5.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST CONDUITS PLUS 6 INCHES.
- 6.) WHEN APPROVED BY LOS ALAMOS COUNTY UTILITY ENGINEERING DEPARTMENT, ELECTRIC PRIMARY DUCTBANK CAN BE INSTALLED WITH A MINIMUM COVER OF 24 INCHES IF THE FOLLOWING REQUIREMENTS ARE MET.
 - A 6 INCH THICK CONCRETE CAP IS PLACED 6 INCHES ABOVE CONDUIT THE ENTIRE TRENCH WIDTH
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 - WARNING TAPE PLACED OVER CONCRETE CAP
 - CONCRETE CAP SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 (PSI)

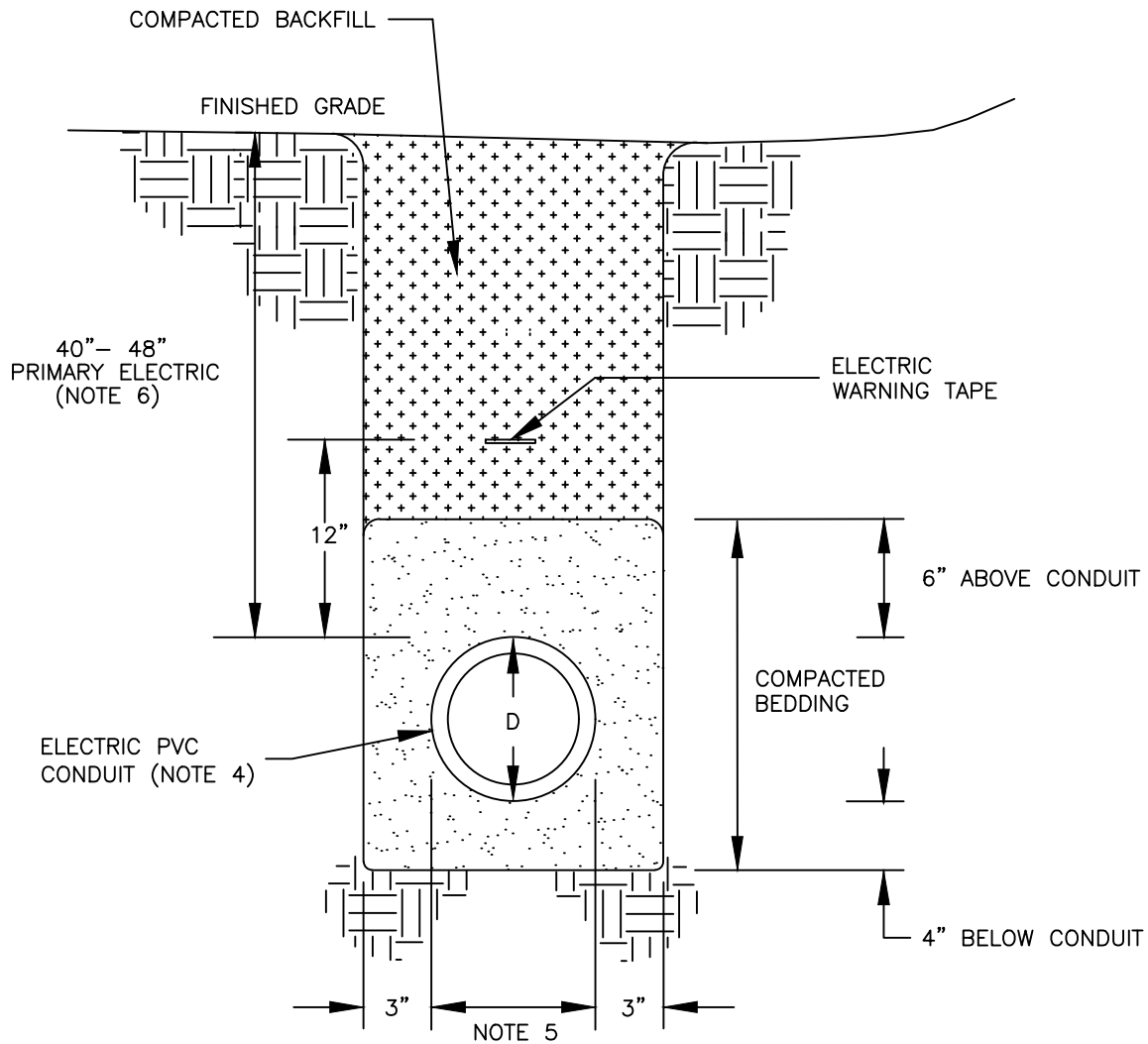
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ELECTRICAL PVC CONDUIT SIZE

D	CONDUCTOR TYPE
3"	SINGLE PHASE PRIMARY
* 4" OR 6"	THREE PHASE PRIMARY

NOTES:

- 1.) 95% COMPACTION REQUIRED UNDER PAVED ROADS, SIDEWALK AND CURB, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION - SPECIFICATION 202.
- 2.) 85% COMPACTION REQUIRED AT ALL LOCATIONS NOT IN NOTE 1, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION - SPECIFICATION 202.
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 - WARNING TAPE PLACED OVER CONCRETE CAP
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* 4" BY LACU PERMISSION ONLY- EX: SHORT RUNS OF 1/0 15KV

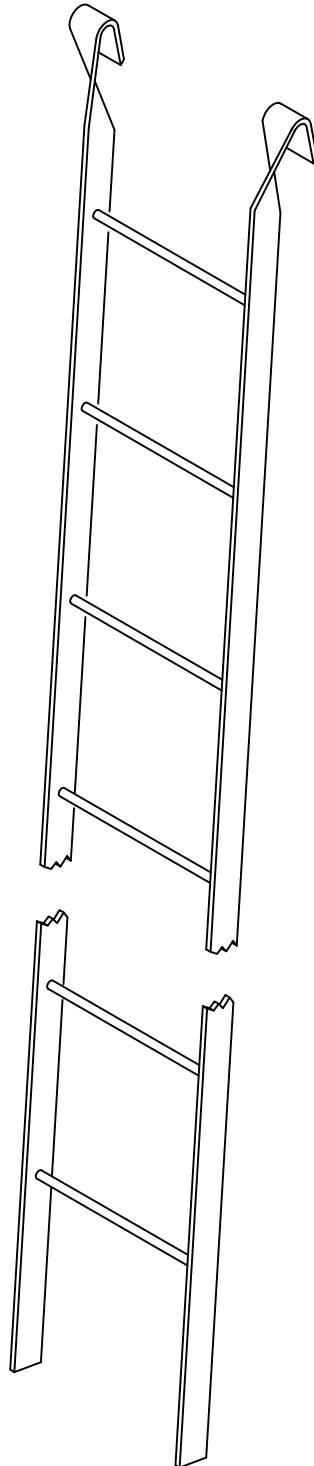
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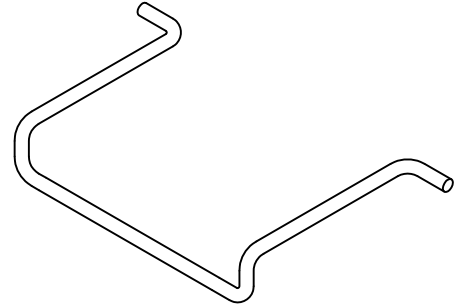
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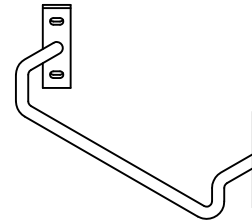
HOOK LADDER

18" WIDE LADDER CONSTRUCTED WITH 3/4" DIA. (#6 REBAR)
 RUNGS ON 12" CENTERS SIDE RAILS ARE 2-1/2" x 3/8"
 FLAT BAR WITH (2) (2) MOUNTING BRACKETS. HOT DIPPED GALVANIZED



GRADE RING STEP

3/4" REBAR, 16" WIDE
 HOT DIPPED GALVANIZED



BOLT-ON GRADE RING STEP

3/4" REBAR, 16" WIDE
 HOT DIPPED GALVANIZED

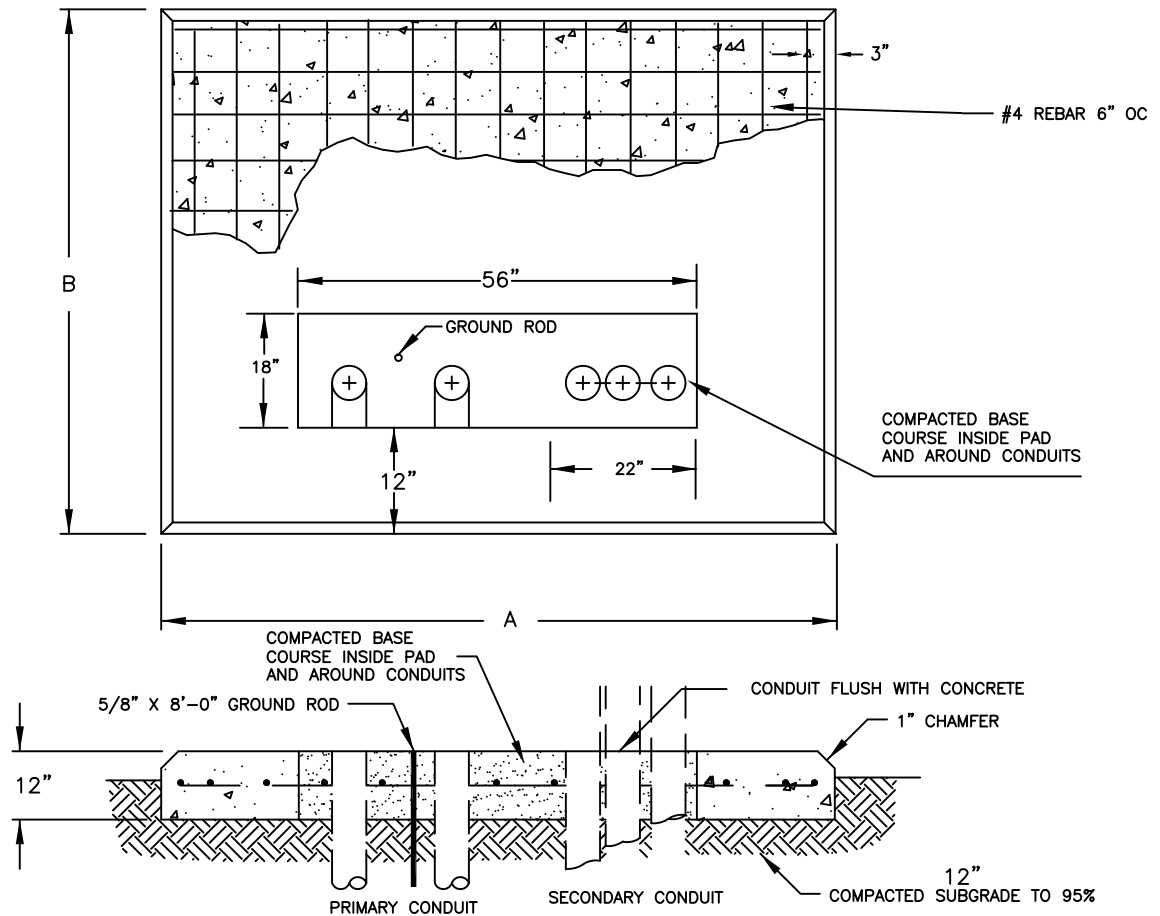
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PAD	TRANSFORMER SIZE (KVA)	DIMENSIONS	
		A	B
#1	75, 150, 300, 500	84	66
#2	750, 1000, 1500	96	72

NOTES

- (1) NO CONCRETE IN TROUGH AREA.
- (2) BRING CONDUITS UP FLUSH WITH PAD.
- (3) GUARD POSTS ARE REQUIRED IN TRAFFIC AREAS.
- (4) CONCRETE PAD SHALL BE POURED WITH 3000 PSI CONCRETE; LEVEL WITHIN $\pm 1/4$ " IN 5ft AND TROWEL FINISHED TO PROVIDE A TRUE PLANE WITHIN $1/16$ " IN 5ft AS DETERMINED BY A 5ft STRAIGHT EDGE.
NO PREFABRICATED PADS WILL BE ACCEPTED.
- (5) EXISTING GRADE AND 12" BASECOURSE LAYER UNDER CONCRETE PAD SHALL BE COMPACTED TO 95%.
- (6) PRIMARY SIDE CONDUIT SHALL BE 6" RIGID UNLESS NOTED OTHERWISE (UND).
SECONDARY CONDUITS SHALL BE 4".
- (7) MINIMUM 22" X 14" TO BE MAINTAINED FOR SECONDARY DUCT AREA TO ALLOW UP TO 8-4" DUCTS.
- (8) CUSTOMER SHALL INSTALL POLYETHYLENE PULL STRINGS WITH MINIMUM BREAKING STRENGTH OF 210LBS

CONTACT ELECTRICAL ENGINEERING DEPARTMENT FOR CONDUIT AND TRANSFORMER ORIENTATION.

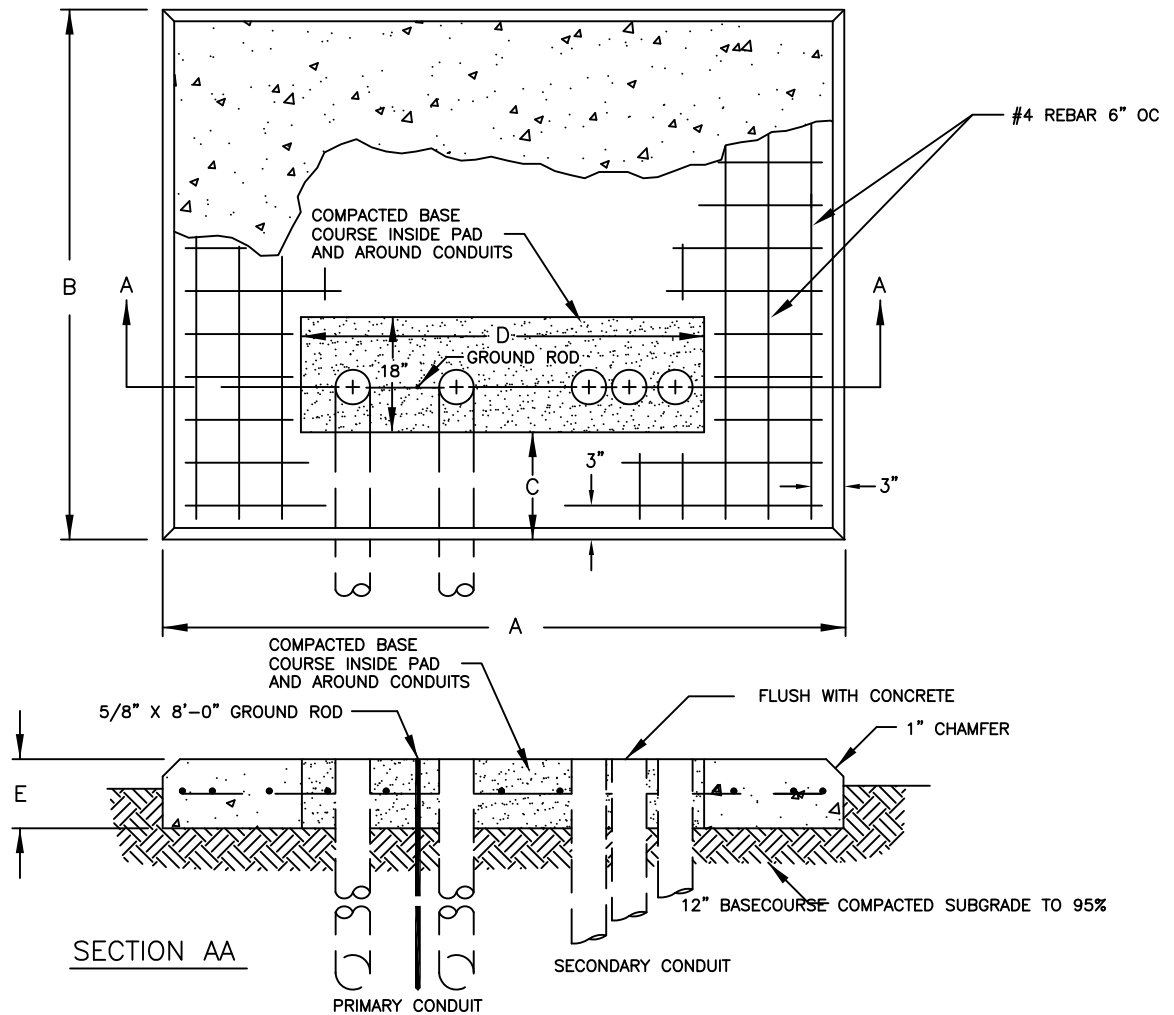
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MAXIMUM NUMBER OF SECONDARY CONDUCTORS PER PHASE							
SECONDARY VOLTAGE	TRANSFORMER KVA SIZE						
	150	300	500	750	1000		
208Y / 120	6	8	8	8	N/A		
480Y / 277	6	6	8	8	8		

PAD	3-PHASE TRANSF. KVA	DIMENSIONS IN INCHES					REINFORCING BARS
		A	B	C	D	E	
#1	150, 300, 500	84	66	12	56	12	#4 REBAR 6" OC
#2	750, 1000	96	72	12	56	12	

NOTES

- 1.) CONCRETE PAD SHALL BE POURED WITH 3000 PSI MIX. SIZE AND NUMBER OF CONDUITS AS SHOWN ON PLANS.
- 2.) CONCRETE AND REINFORCEMENT SHALL COMPLY WITH LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 701. REINFORCED CONCRETE
- 3.) IF PRIMARY CONDUCTOR IS FOUND TO BE DIRECT BURY CONTACT LOS ALAMOS COUNTY UTILITIES ENGINEERING DEPARTMENT FOR SECONDARY CONDUIT ORIENTATION.

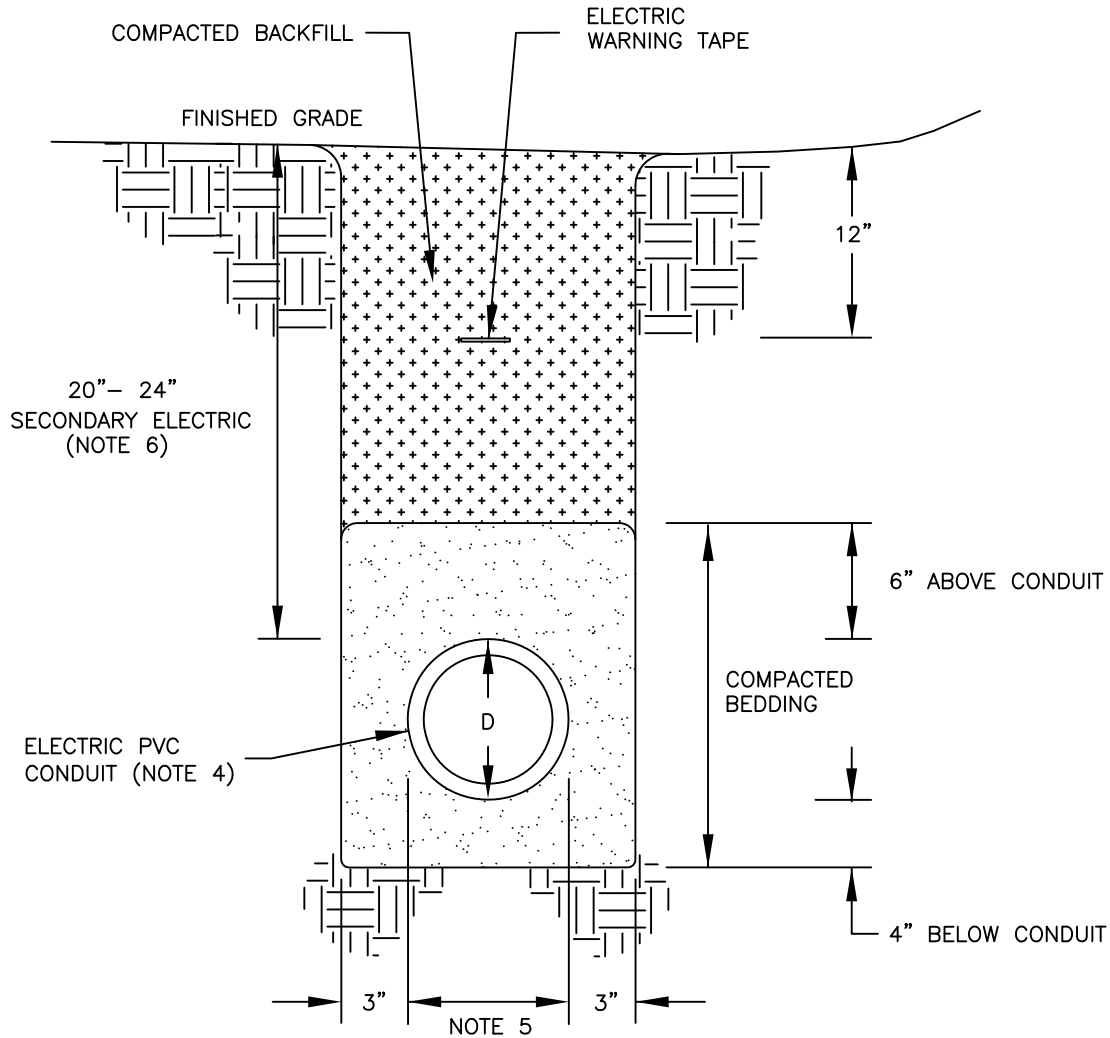
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DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



ELECTRICAL PVC CONDUIT SIZE

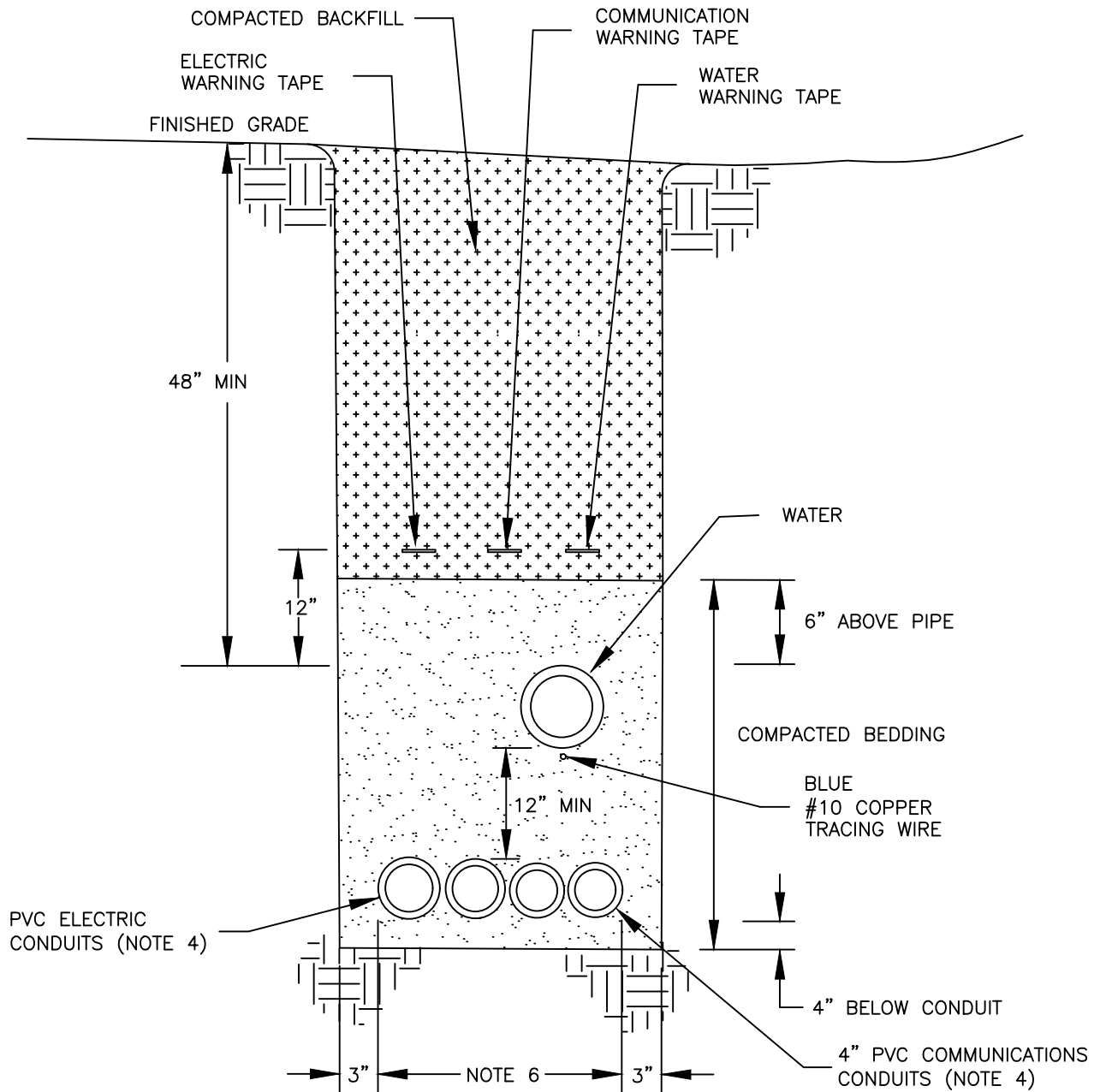
	D	CONDUCTOR TYPE
*1	2" OR 3"	120/240 VOLT SERVICE
*2	3" OR 4"	THREE PHASE SECONDARY

*1 AS PER LOS ALAMOS COUNTY UTILITIES ENGINEER

*2 2" < 100' AND 3" > 100'

NOTES:

- 1.) 95% COMPACTION REQUIRED UNDER PAVED ROADS, SIDEWALK AND CURB, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 202.
- 2.) 85% COMPACTION REQUIRED AT ALL LOCATIONS NOT IN NOTE 1, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 202.
- 3.) CONDUIT PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 401.
- 4.) NUMBER OF CONDUITS AS SHOWN ON PLANS.
- 5.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST CONDUITS PLUS 6 INCHES.
- 6.) WHEN APPROVED BY LOS ALAMOS COUNTY UTILITY ENGINEERING DEPARTMENT, ELECTRIC DUCTBANK CAN BE INSTALLED WITH A MINIMUM COVER OF 20 INCHES IF THE FOLLOWING REQUIREMENTS ARE MET.
 - A 6 INCH THICK CONCRETE CAP IS PLACED 6 INCHES ABOVE CONDUIT THE ENTIRE TRENCH WIDTH
 - 6 INCH BEDDING MATERIAL BETWEEN CAP AND CONDUIT
 - WARNING TAPE PLACED OVER CONCRETE CAP
 - CONCRETE CAP SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 (PSI)



NOTES:

- 1.) 95% COMPACTION REQUIRED UNDER PAVED ROADS, SIDEWALK AND CURB, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 202.
- 2.) 85% COMPACTION REQUIRED AT ALL LOCATIONS NOT IN NOTE 1, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 202.
- 3.) CONDUIT PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 401.
- 4.) NUMBER OF CONDUITS AS SHOWN ON PLANS.
- 5.) WATERLINE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 601 OR 602.
- 6.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST CONDUITS PLUS 6 INCHES.

No.

DATE:

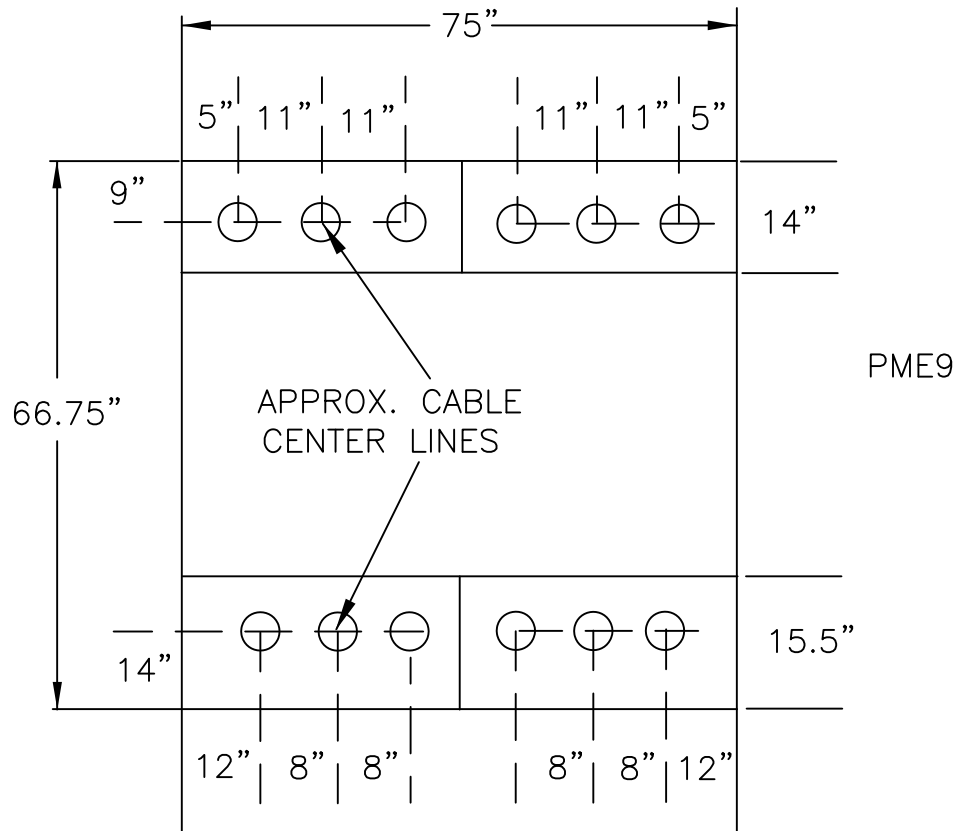
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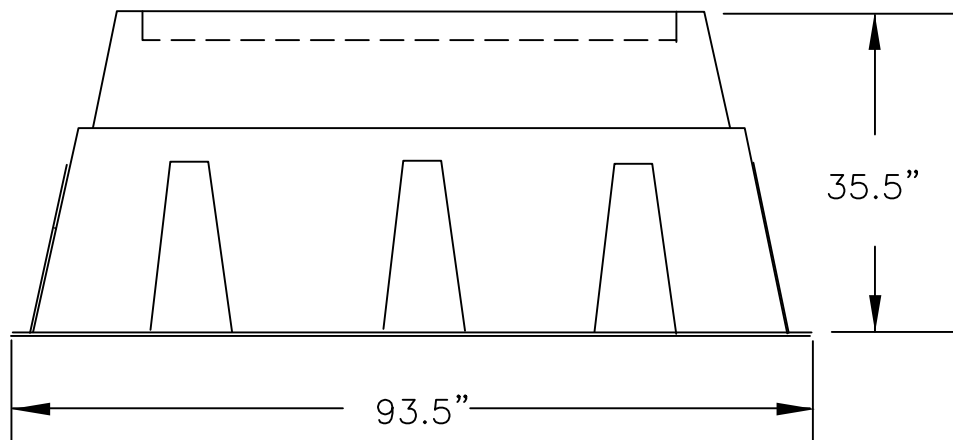
DATE: FEBRUARY 2022

CONDUIT PLACEMENT DETAIL

FUSE COMPARTMENTS
 DOOR SIDE



SWITCH COMPARTMENTS
 DOOR SIDE



No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018

No.

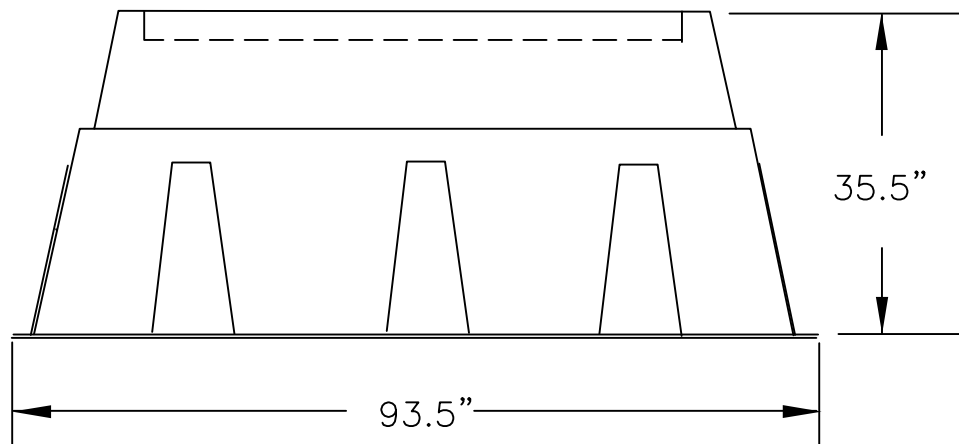
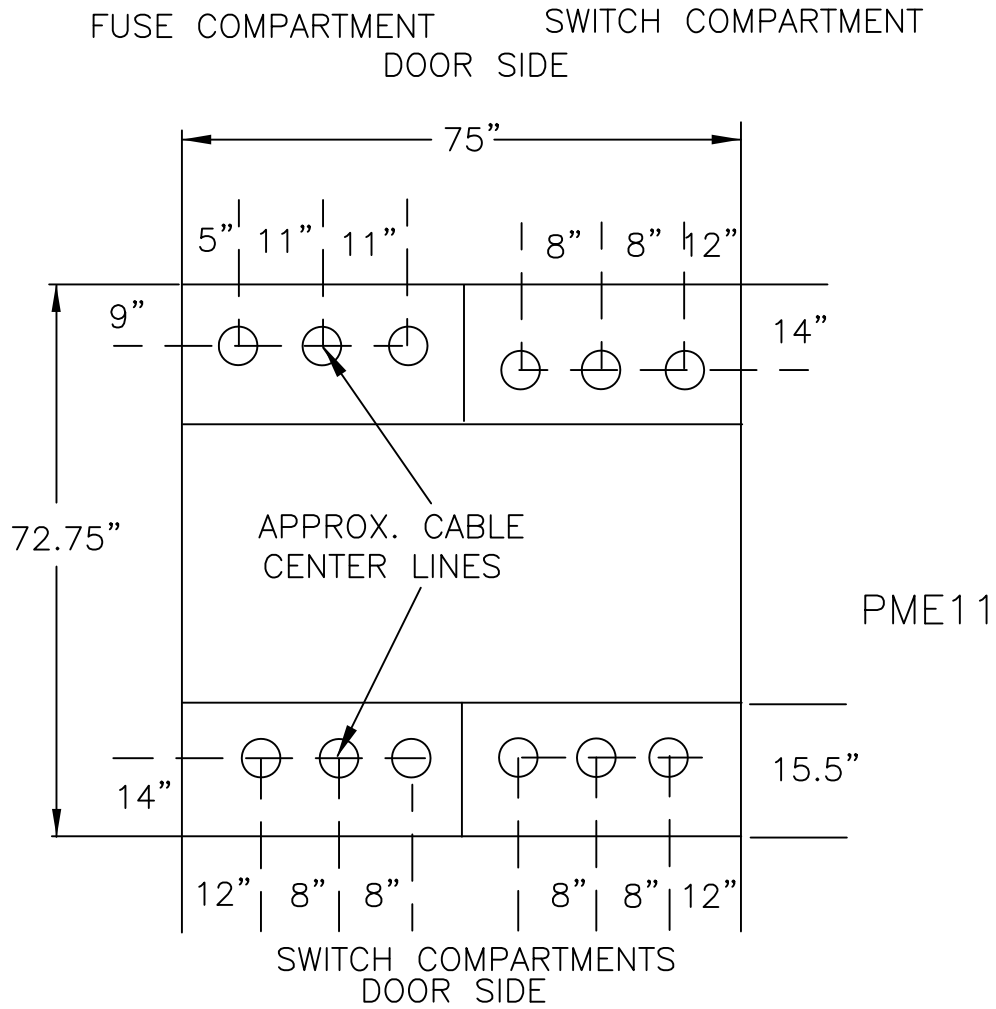
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DATE: APRIL 2018

CONDUIT PLACEMENT DETAIL



No.

DATE:

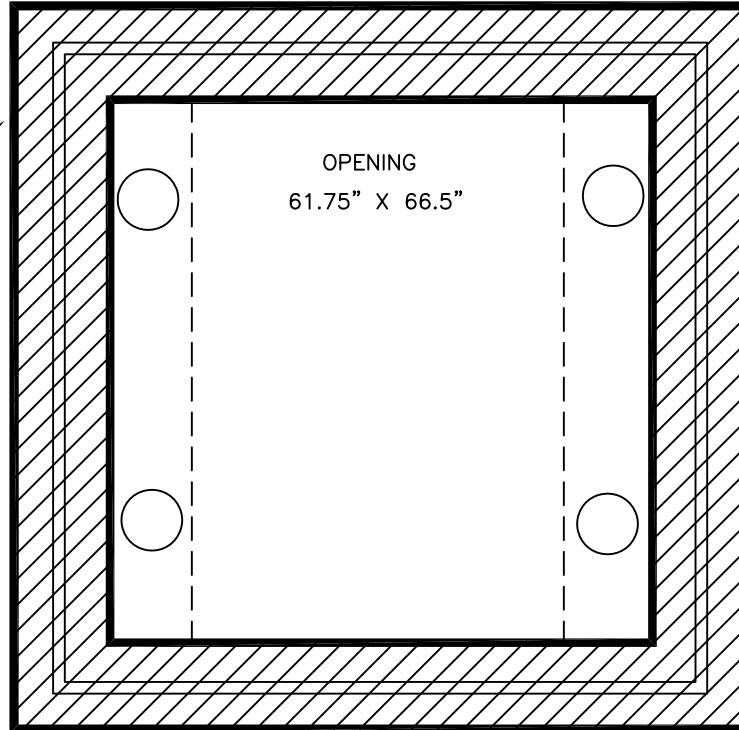
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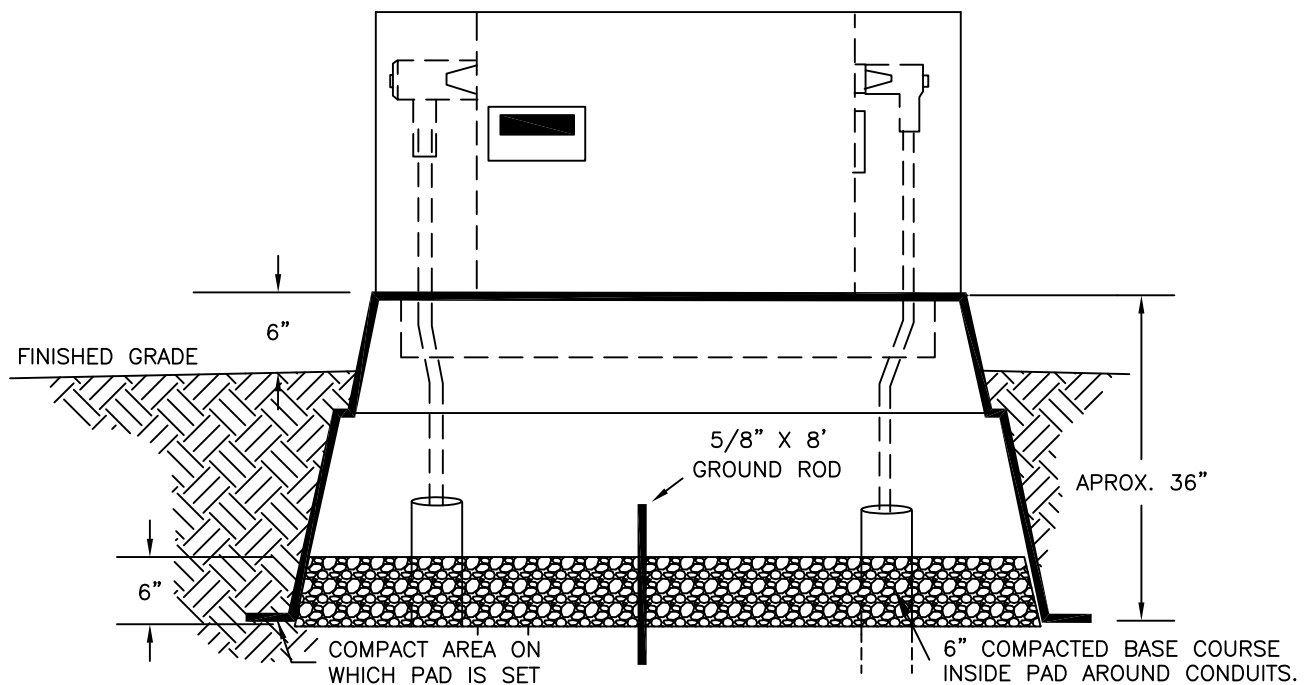
DATE: APRIL 2018

NORDIC SLEEVE #
 GS-75-73-36 MG OR EQUAL

PRE CAST
 FIBERGLASS
 VAULT 91" X 93.5"
 BOTTOM EDGE



NUMBER OF CONDUITS AND SIZE
 WILL BE DETERMINED BY LACU
 ELECTRICAL DEPT. ACCORDING TO
 APPLICATION AND LOCATION.



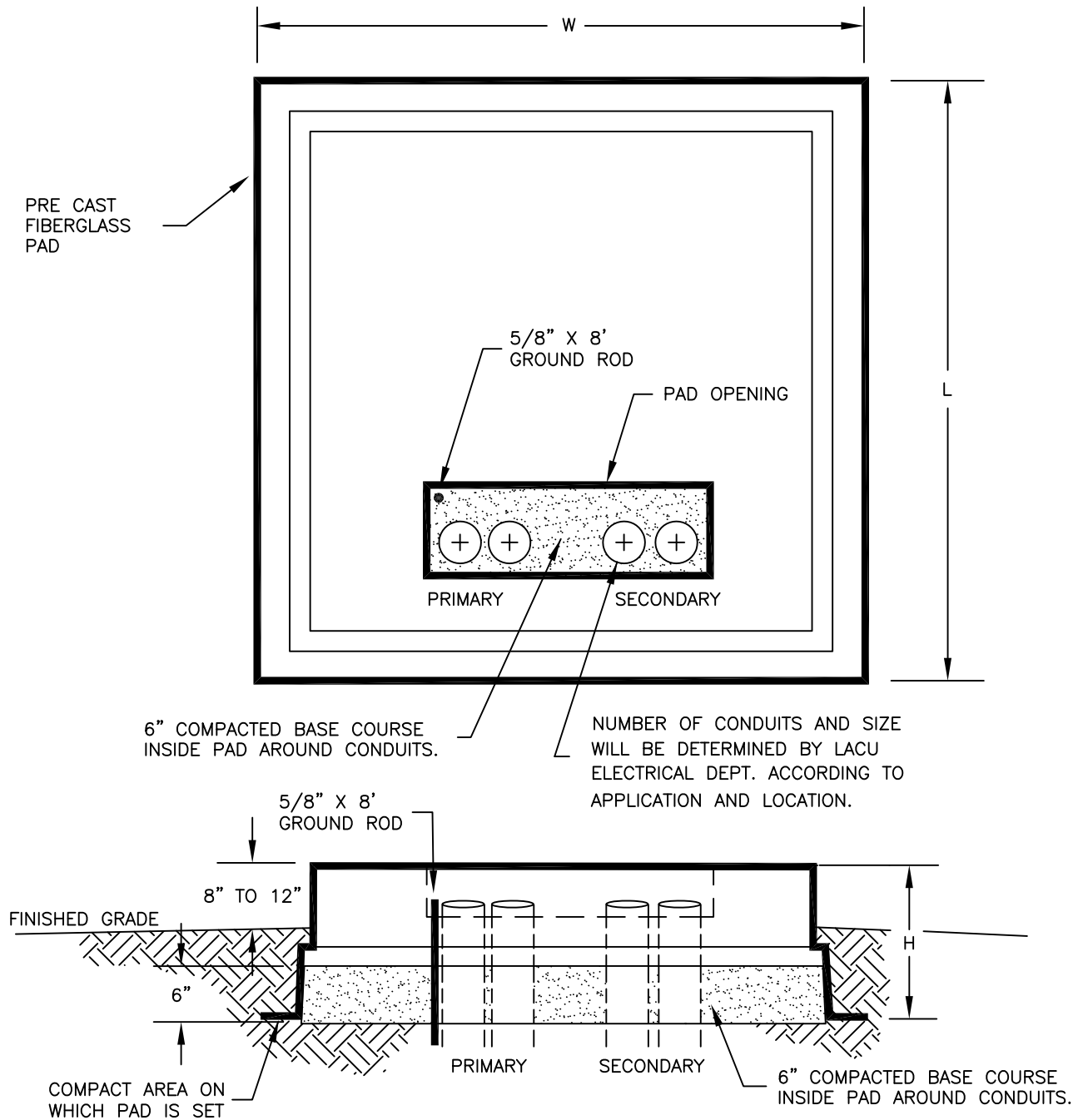
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DATE: APRIL 2018



FIBERGLASS BOX PAD FOR
 SINGLE AND THREE PHASE TRANSFORMERS

TRANSFORMER TYPE	L	W	H	PAD OPENING
SINGLE PHASE	42"	48"	15"	22" X 13"
THREE PHASE	69"	65"	36"	58" X 18"

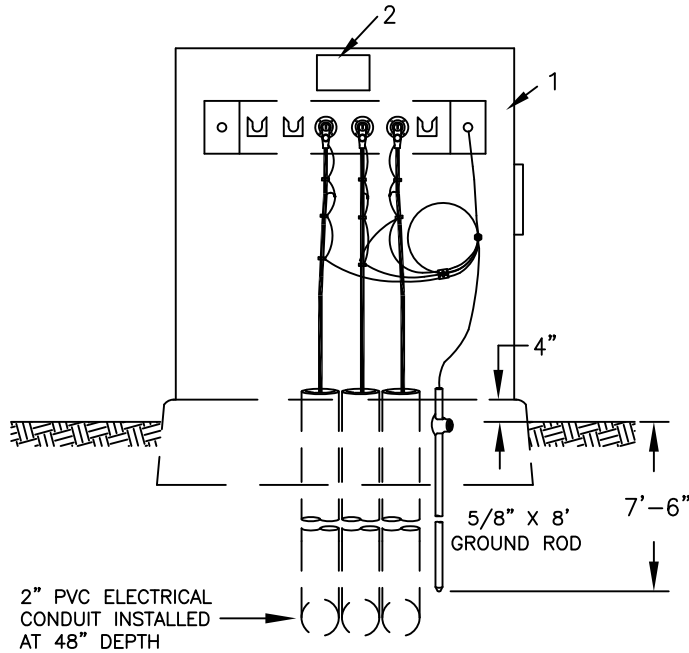
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DATE: APRIL 2018



NOTE:

1. THE FOLLOWING UNITS/ASSEMBLIES ARE NOT PART OF THIS UNIT. SPECIFY SEPARATELY:
 - A. MULTIPOINT TERMINATION AND OTHER ACCESSORIES
 - B. FUSED OR NON-FUSED LOADBREAK ELBOWS
 - C. GROUNDING ASSEMBLIES OR OTHER
 - D. PAD OR SLEEVE (IF REQUIRED)
2. INSTALL "WARNING" SIGN ON OUTSIDE SURFACE OF ENCLOSURE AND "DANGER" SIGN INSIDE ENCLOSURE.
3. PROVIDE SUFFICIENT PRIMARY NEUTRAL PIGTAIL AND CABLE SLACK TO PERMIT READY DISCONNECTION OF ELBOW AND MOUNTING ON PARKING STAND.
4. SEE (CLEARANCE FROM TRANSFORMER)
MINIMUM WORKING SPACE REQUIREMENTS FOR 1Ø AND 3Ø TRANSFORMERS.
5. ALL 90° BENDS MUST BE RIGID GALVANIZED, WRAPPED WITH 3M 10 MIL. TAPE.

QTY.	MATERIAL
	Connectors, as required
	Jumpers, as required
1	Enclosure
2	Signs, "DANGER" and "WARNING"

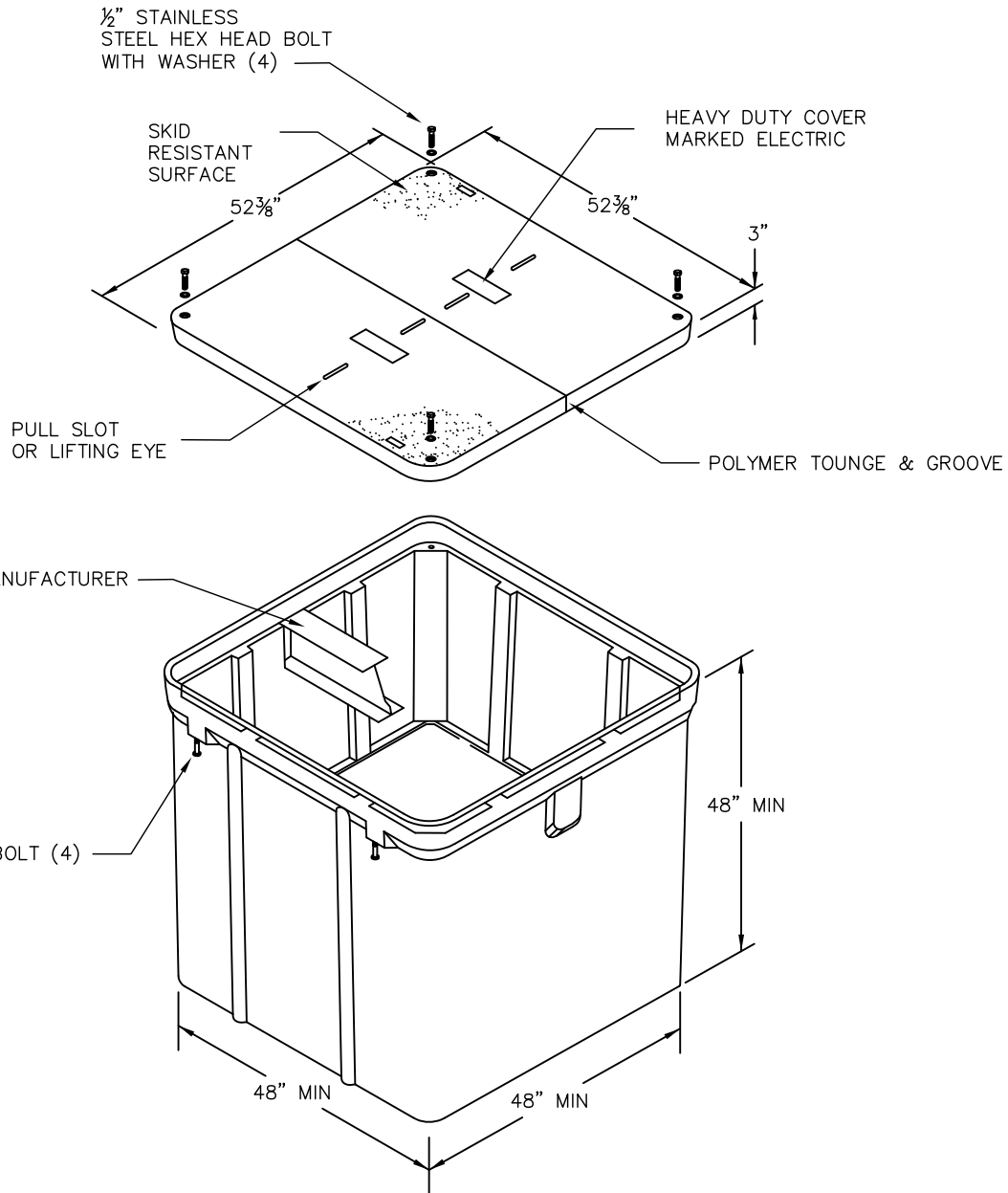
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DATE: APRIL 2018



VAULT CONSTRUCTION NOTES

- 1.) VAULT TO BE USED FOR H-20 TRAFFIC DESIGN LOADING. ALL LIVE LOADS SHALL BE FOR HS-20-44 (MS-18) AS PER AASHTO STANDARD SPECIFICATION, DIV 1, SEC. 3
- 2.) VAULT EXCAVATION AND BACKFILL TO CONFORM TO LOS ALAMOS COUNTY UTILITIES SPECIFICATIONS
- 3.) BUTYL RUBBER OR NEOPRENE GASKET SEAL REQUIRED BETWEEN VAULT SECTION AND OR EXTENSIONS
- 4.) LIDS TO BE MARKED "ELECTRIC"
- 5.) ALL WEIGHTS TO BE CLEARLY MARKED
- 6.) DELIVERY OF THE VAULT REQUIRES COORDINATION WITH LOS ALAMOS COUNTY UTILITIES ENGINEERING
- 7.) POLYMER CONCRETE VAULTS SHALL COMPLY WITH LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION – SPECIFICATION 401. UNDERGROUND DUCTBANK SYSTEMS.
- 8.) FIELD CUT BOX AS NEEDED TO RECEIVE CONDUITS.

**MULTI PHASE PRIMARY
 SECTIONALIZING ENCLOSURE**

SECTION
 4000
 4039

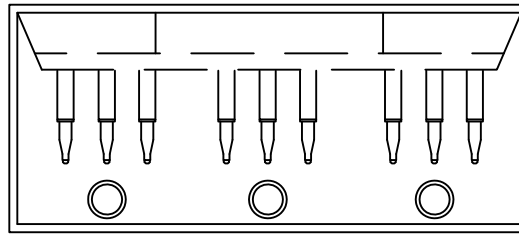
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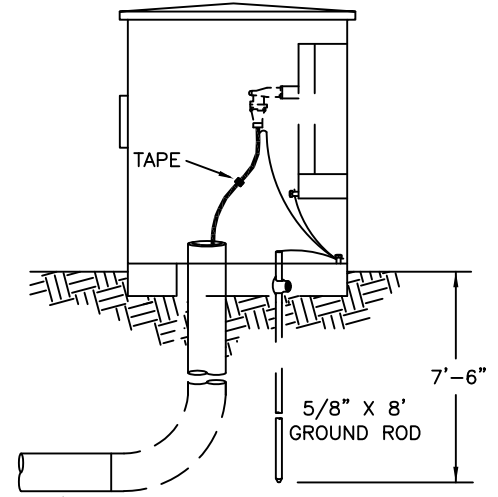
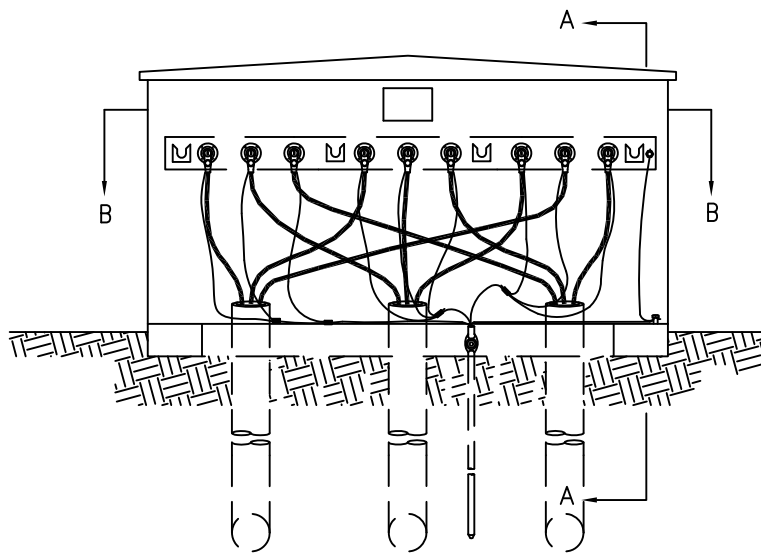
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SECTION "B-B"



PVC ELECTRICAL
 CONDUIT INSTALLED
 AT 48" DEPTH

SECTION "A-A"

NOTES:

- THE FOLLOWING UNITS/ASSEMBLIES ARE NOT PART OF THIS UNIT. SPECIFY SEPARATELY:
 - MULTIPOINT TERMINATIONS AND OTHER ACCESSORIES
 - FUSED OR NON-FUSED LOADBREAK ELBOWS
 - GROUNDING ASSEMBLIES OR OTHER
 - PAD OR SLEEVE ASSEMBLIES (IF REQUIRED)
- ALL NEUTRALS AND METALLIC NON-CURRENT CARRYING PARTS SHALL BE INTERCONNECTED GROUNDED AND BONDED.
- INSTALL "WARNING" SIGN ON OUTSIDE SURFACE OF ENCLOSURE AND "DANGER" SIGN INSIDE ENCLOSURE.
- ALL 90° BENDS MUST BE RIGID GALVANIZED, WRAPPED WITH 3M 10 MIL. TAPE.

QTY.	MATERIAL
	Connectors, as required
	Jumpers, as required
1	Enclosure
2	Signs, "DANGER" and "WARNING"

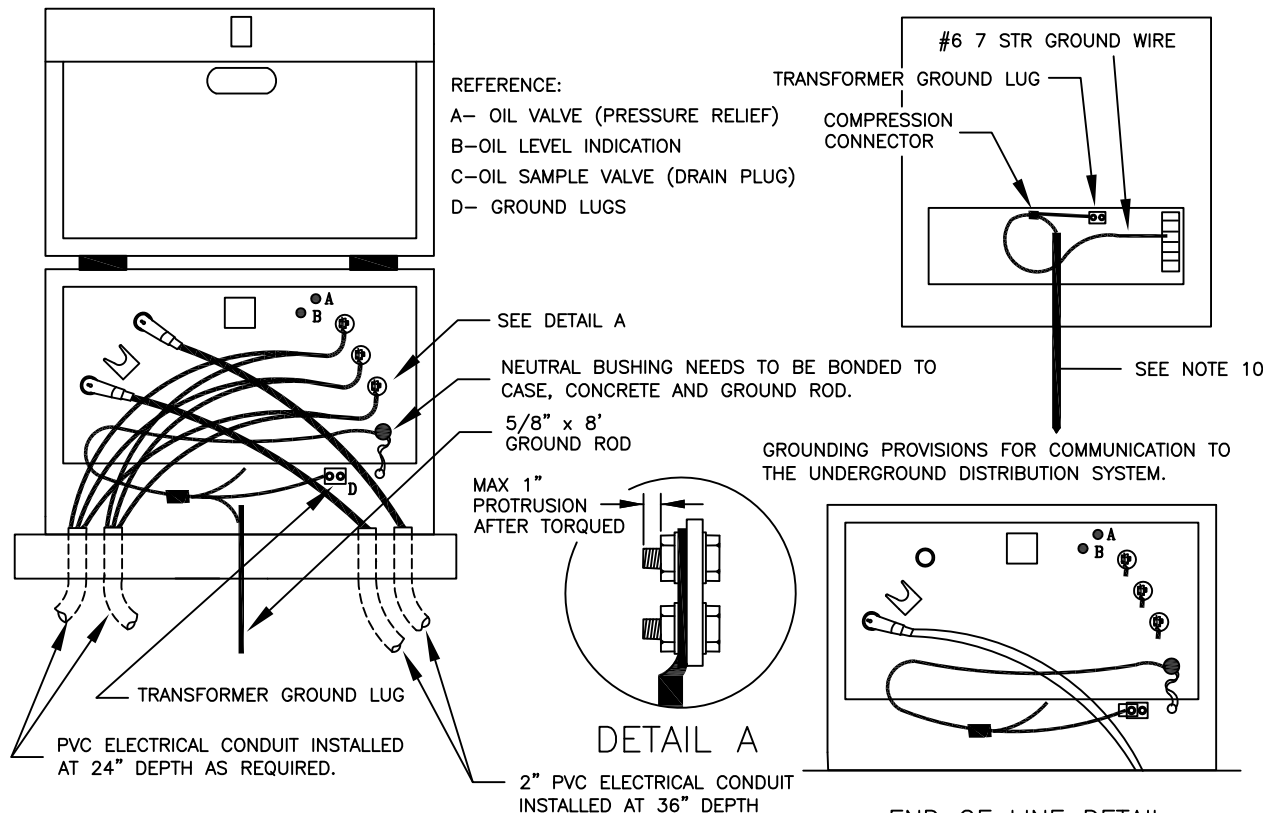
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DATE: APRIL 2018



MATERIAL LIST	
QUAN	DESCRIPTION
1	SYSTEM PADLOCK
1	SACK PREMIX CONCRETE
1	TRANSFORMER PAD
1	PRIMARY FAULT INDICATOR
2	COMPRESSION CONNECTORS
1	TEE BOLT
AS REQD	SECONDARY LUGS
AS REQD	1/2" X 1/2" BOLTS (2 BLOTS PER EACH MULTI-TAP CONNECTOR)
AS REQD	1/2" ROUND WASHERS (USE FOR ITEM 8)
2	LOAD BREAK ELBOW CONNECTORS
2	1/2" X 1 1/2" CADIUM PLATED OR GALVANIZED CAP SCREWS (FOR FASTENING TRANSFORMER CASE TO PAD)
2	CADIUM PLATED OR GALVANIZED UNI STRUT SPRING NUTS (USE FOR ITEM 13)
2	CADIUM PLATED OR GALVANIZED 1/2" ROUND WASHERS (USE FOR ITEM 13)
AS REQD	#6 SOLID COPPER WIRE
1	COMPRESSION CONNECTOR
1	TRANSFORMER GROUND LUG

AT END OF LINE USE ONE ELBOW AND ONE BUSHING COVER.

NOTES:

- 1.) INSTALL A FAULT INDICATOR ON OUT GOING (DOWN STREAM) CABLE.
- 2.) LEAVE ENOUGH CONCENTRIC NEUTRAL EXTENDING BEYOND NOSE CLAMP SO LOAD BREAK ELBOW MAY BE OPERATED.
- 3.) FILL ANY CRACK THAT EXIST BETWEEN THE CABINET AND PAD WITH GROUT.
- 4.) THE TRANSFORMER IS ATTACHED TO PAD BY ONE PART OF A SALVAGED 3-BOLT CLAMP ATTACHED TO UNISTRUT.
- 5.) FOR END OF LINE OR LOOP OPEN POINTS, CAP 1 PLUG WITH AN INSULATED BUSHING COVER, SEE DETAIL.
- 6.) TO REMOVE BAYONET FUSE: (IF USED ON TRANSFORMER).
A. RELIEVE TRANSFORMER TANK PRESSURE WITH PRESSURE TEST VALVE ON UPPER FACE OF TRANSFORMER.
B. UNLOCK AND REMOVE BAYONET FUSE.
- 7.) TRAIN THE PRIMARY CABLE SO THAT IT DOES NOT GET TOO CLOSE TO THE SECONDARY TERMINAL AREA.
- 8.) FOR BYPASSING TRANSFORMER, USE FEED THROUGH CONNECTOR FOR GROUNDING CABLE, USE FEED THRU CONNECTOR AND GROUNDING ROD.
- 9.) RUN # 6 SOLID COPPER WIRE ALONG CENTER LINE UNDER FRONT OF PAD TO A POINT 12" OUT AND 6" BELOW GROUND SURFACE.
- 10.) 5/8" X 8' GROUNDING ROD IN EACH TRANSFORMER.

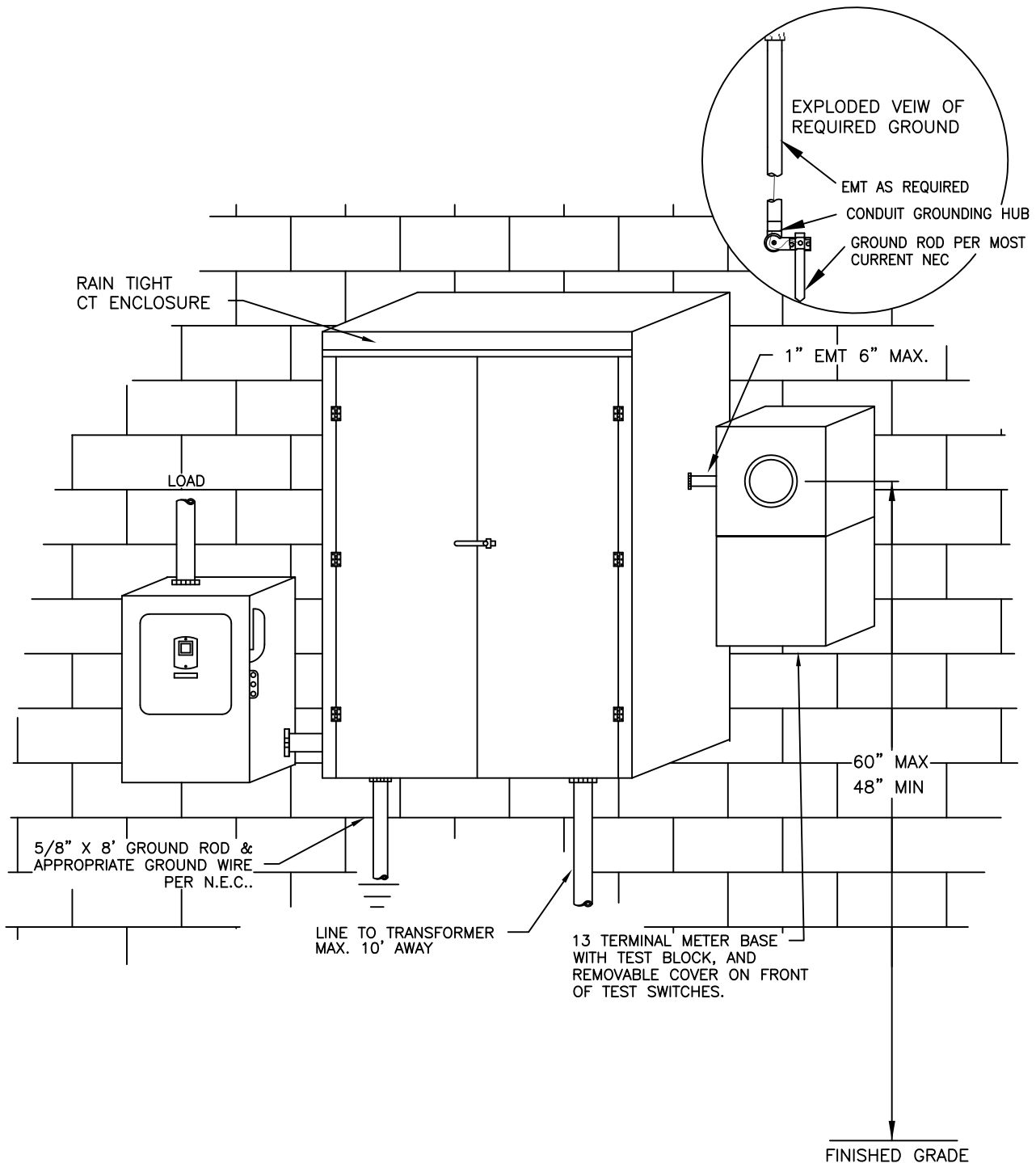
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DATE: APRIL 2018



NOTES

- 1.) WALL MOUNTED ENCLOSURES – MAX DISTANCE TO TRANSFORMER IS 150 FEET.
- 2.) CT BOX SIZE MUST MEET N.E.C. SPECIFICATIONS AND SIZE AS REQUIRED BY NEW MEXICO CONSTRUCTION INDUSTRIES DIVISION.

SECONDARY RISER

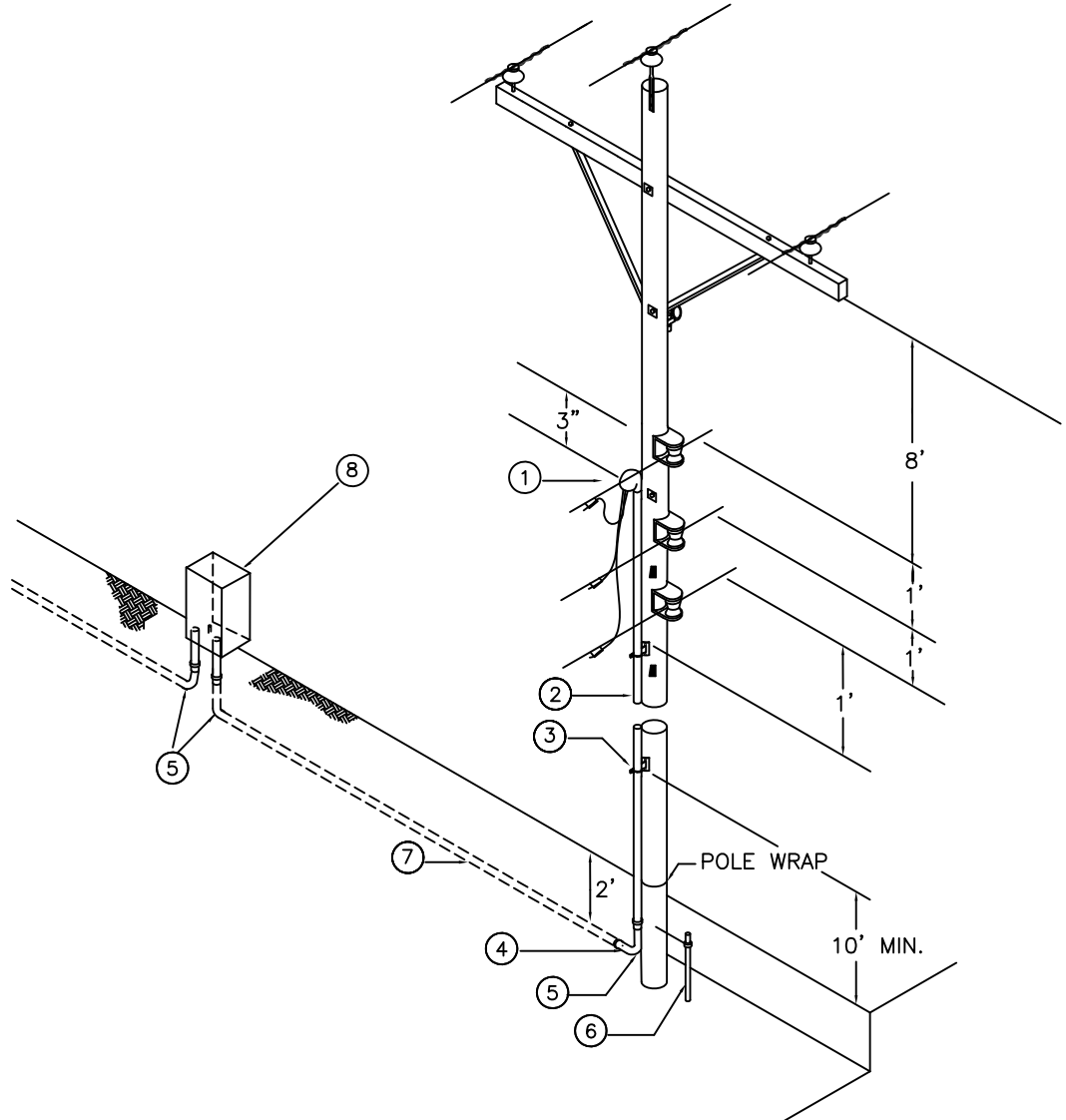
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- ① CLAMP TYPE WEATHERHEAD
- ② RIGID GALVANIZED CONDUIT - CONTRACTOR TO INSTALL FIRST 10' INCLUDING SUPPORT BRACKET (DRAWING 4008) AND PROVIDE MATERIALS FOR THE UPPER SECTION, THE UTILITY WILL INSTALL UPPER SECTIONS.
- ③ SUPPORT BRACKET - SEE RISER SUPPORT BRACKET DETAIL DRAWING
- ④ RIGID CONDUIT TO ADAPTER - SUPPLIED BY CONTRACTOR
- ⑤ RIGID GALVANIZED STEEL ELBOW 24" RADIUS MINIMUM TAPE WITH 3M 10 MIL.
- ⑥ 5/8" X 8' GROUND ROD
- ⑦ FOR STRAIGHT RUNS THAT ARE <100' USE 2" SCHEDULE 40 PVC CONDUIT AND FOR RUNS >100' USE 3" SCHEDULE 40 PVC CONDUIT
- ⑧ SECONDARY PEDESTAL - SUPPLIED BY L.A.C.U.

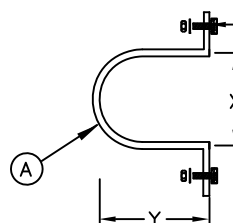
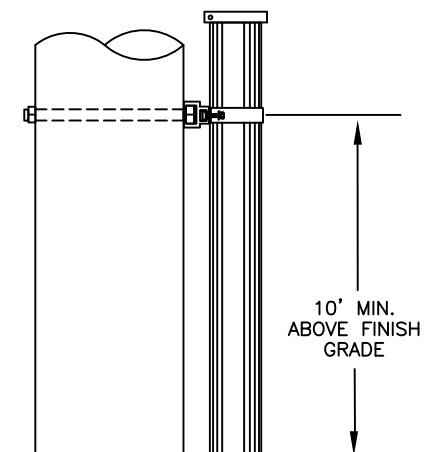
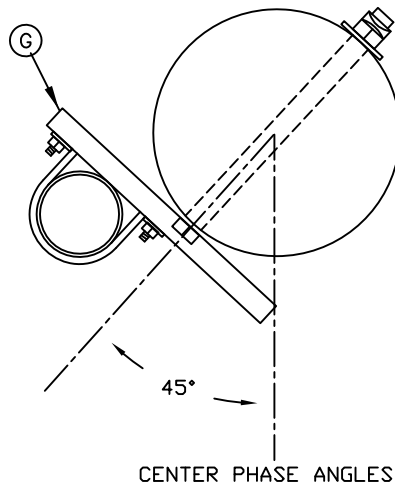
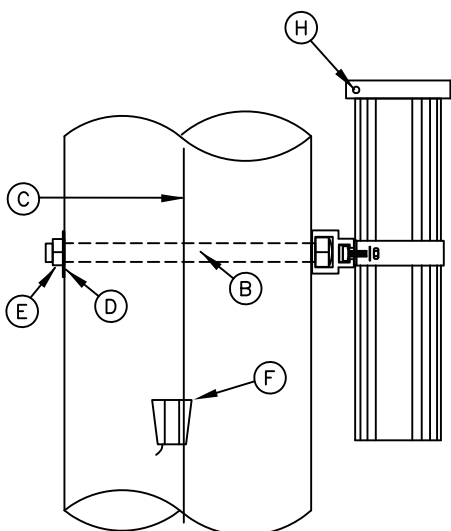
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DATE: APRIL 2018



SIZE CONDUIT – STRAP	X	Y
2" – CSTK2	2 3/8"	2 1/4"
3" – CSTK3	3 1/2"	3 3/8"
4" – CSTK4	4 1/2"	5 3/8"
6" – CSTK6	6 5/8"	6 1/2"

MATERIAL LIST		
ITEM	QUAN.	DESCRIPTION
A	1	CSTK_ U STRAP
B	2	5/8" MACHINE BOLTS OR LAG BOLTS
C		#4 SOLID CU WIRE
D	2	2 1/4" SQUARE WASHER
E	2	5/8" MF LOCKNUT
F	1	LINE TAP
G	1	SUPPORT BRACKET
H	1	GROUNDING LUG— GROUND AT RISER CAP

NOTES:

- (1) BRACKET TO BE FASTENED TO POLE WITH 5/8" GALVANIZED MACHINE BOLTS.
- (2) BRACKET SUITABLE FOR TWO 2", OR ONE 3" TO 6" CONDUIT.
- (3) TWO HOLE STRAPS ATTACHED AT 30" INTERVALS WITH 2" LAG SCREW MAY BE USED INSTEAD OF THE SUPPORT BRACKET WHEN THE CONDUIT IS 1" OR LESS. A MAXIMUM OF TWO CONDUITS MAY BE STRAPPED DIRECTLY TO THE POLE. MULTIPLE CONDUITS MUST BE ON SAME POLE QUADRANT.

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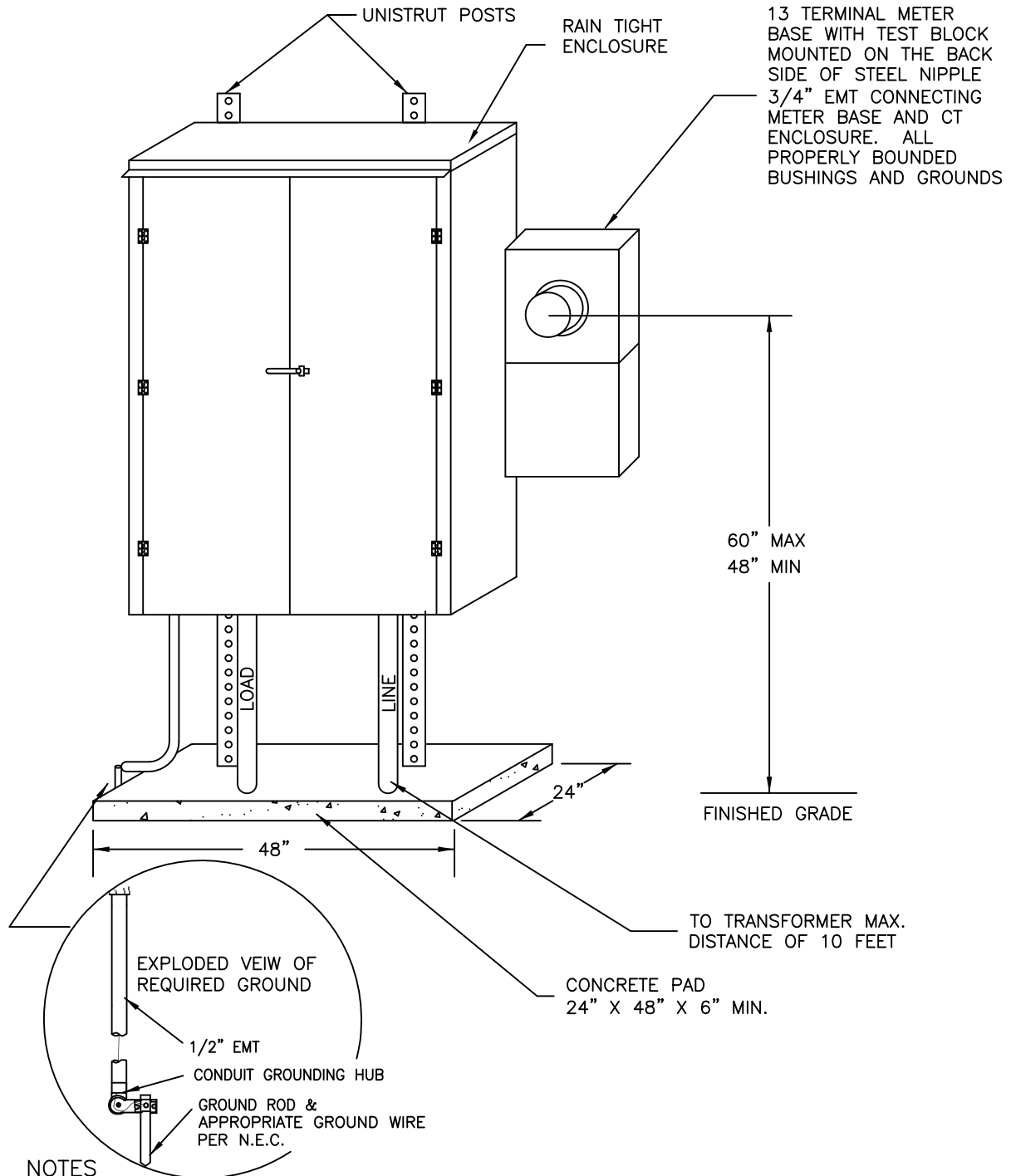
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DATE: APRIL 2018

MINIMUM DIMENSIONS / RAIN TIGHT ENCLOSURES FOR CT'S



NOTES

- 1.) VEHICLE BARRIER POST MAY BE REQUIRED.
- 2.) ALL UNDERGROUND CONDUIT MUST HAVE MIN. 1/4" NYLON PULL LINE OR ROPE 300 # TENSILE STRENGTH ENTIRE LENGTH OF PIPE EXTENDING OUT BOTH ENDS.
- 3.) CT BOX SIZE MUST MEET N.E.C. SPECIFICATIONS AND SIZE AS REQUIRED BY NEW MEXICO CONSTRUCTION INDUSTRIES DIVISION.

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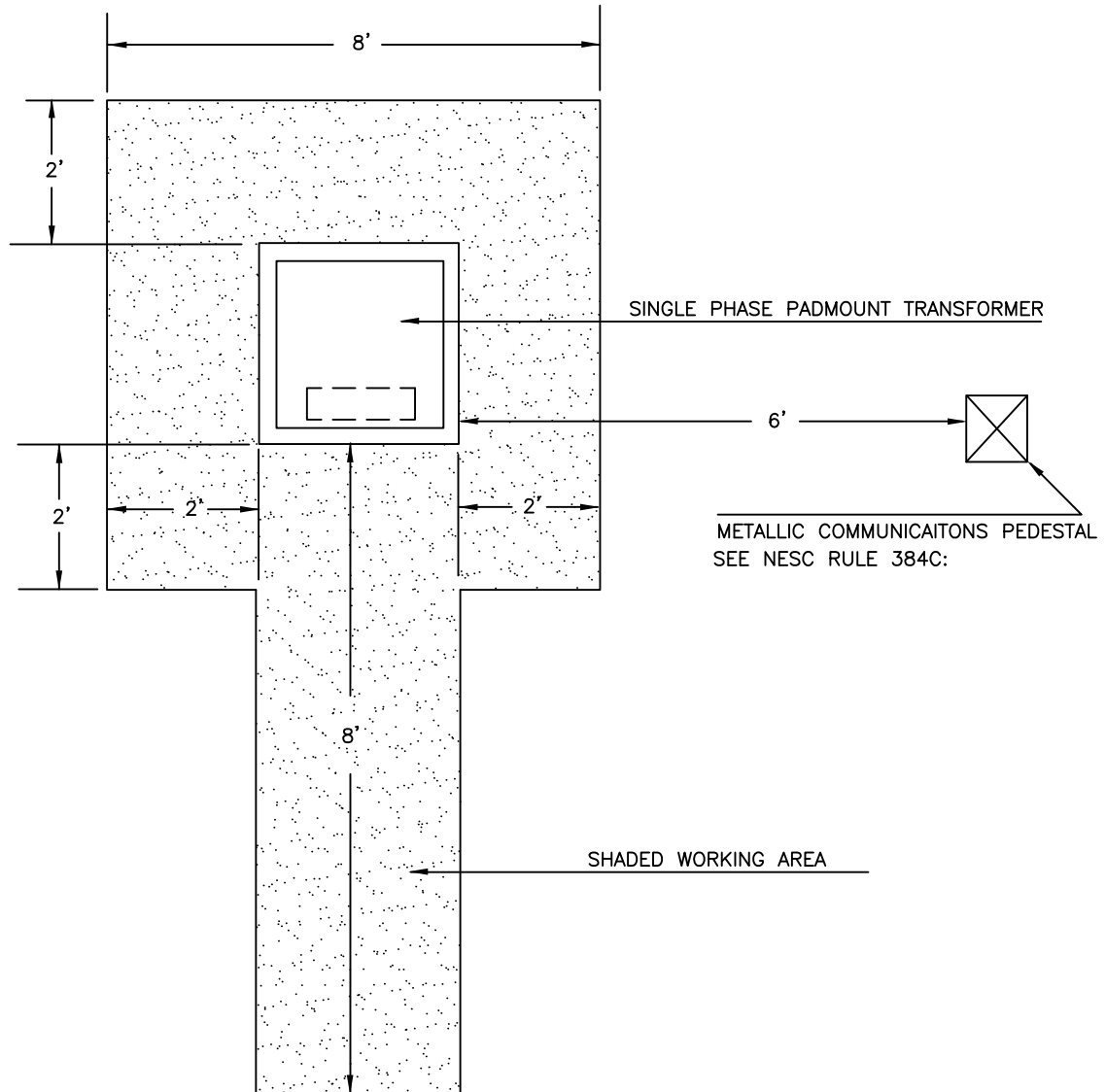
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DATE: APRIL 2018

2' X 8' CLEAR WORKING AREA SHALL BE MAINTAINED AROUND ALL TRANSFORMERS, AS SHOWN ABOVE



IN THE EVENT OF AN EQUIPMENT FAILURE OR POWER OUTAGE, IT IS NECESSARY FOR UTILITY CREWS TO HAVE ADEQUATE ACCESS TO PADMOUNT EQUIPMENT FOR SAFE OPERATION AND REPAIR WORK. ACCESS TO THE OPERATING SIDES SHALL BE 8 FEET, ACCESS TO THE NON-OPERATING SIDES SHALL BE 2 FEET AS SHOWN. NO TREES, SHRUBS, FENCES, LARGE LANDSCAPE ROCKS, OR OTHER OBSTRUCTIONS SHALL BE PERMITTED IN ACCESS AREAS. TREES SHOULD BE PLANTED FAR ENOUGH FROM THE EQUIPMENT SO THAT WHEN THEY REACH MATURITY, OVERHANGING BRANCHES WILL NOT OBSTRUCT A CRANE FROM SETTING OR REMOVING EQUIPMENT.

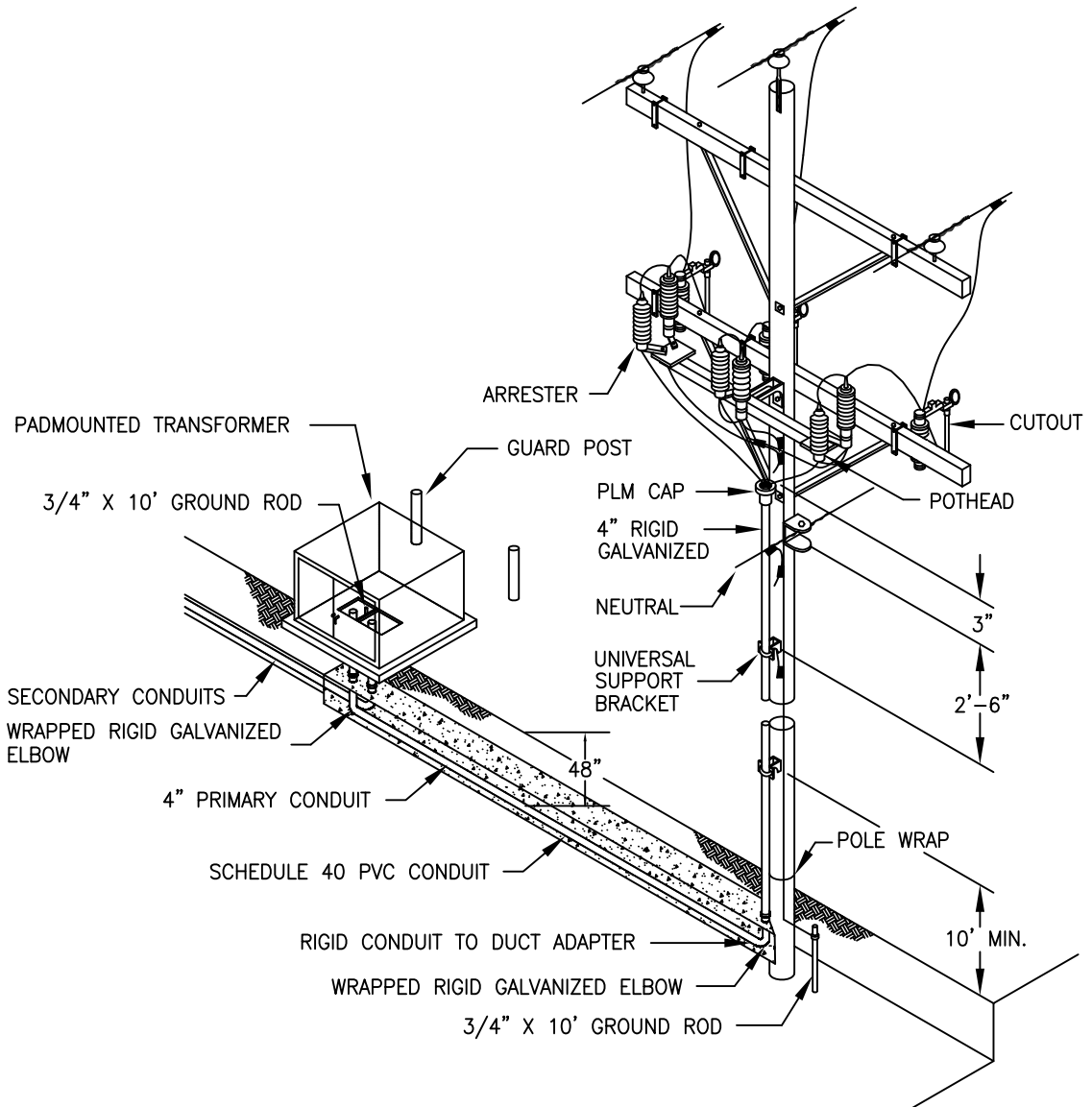
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DATE: APRIL 2018



NOTES

- 1.) REFER TO "LOS ALAMOS COUNTY UTILITY CONSTRUCTION STANDARDS – ELECTRIC SECTION 4000.4008" ELECTRIC RISER SUPPORT BRACKET.
- 2.) CONTRACTOR TO INSTALL FIRST BRACKET AND 4" RGS RISER TO 10'. LOS ALAMOS COUNTY UTILITIES WILL COMPLETE INSTALLATION WITH CONTRACTOR SUPPLIED MATERIALS TO TERMINATIONS.

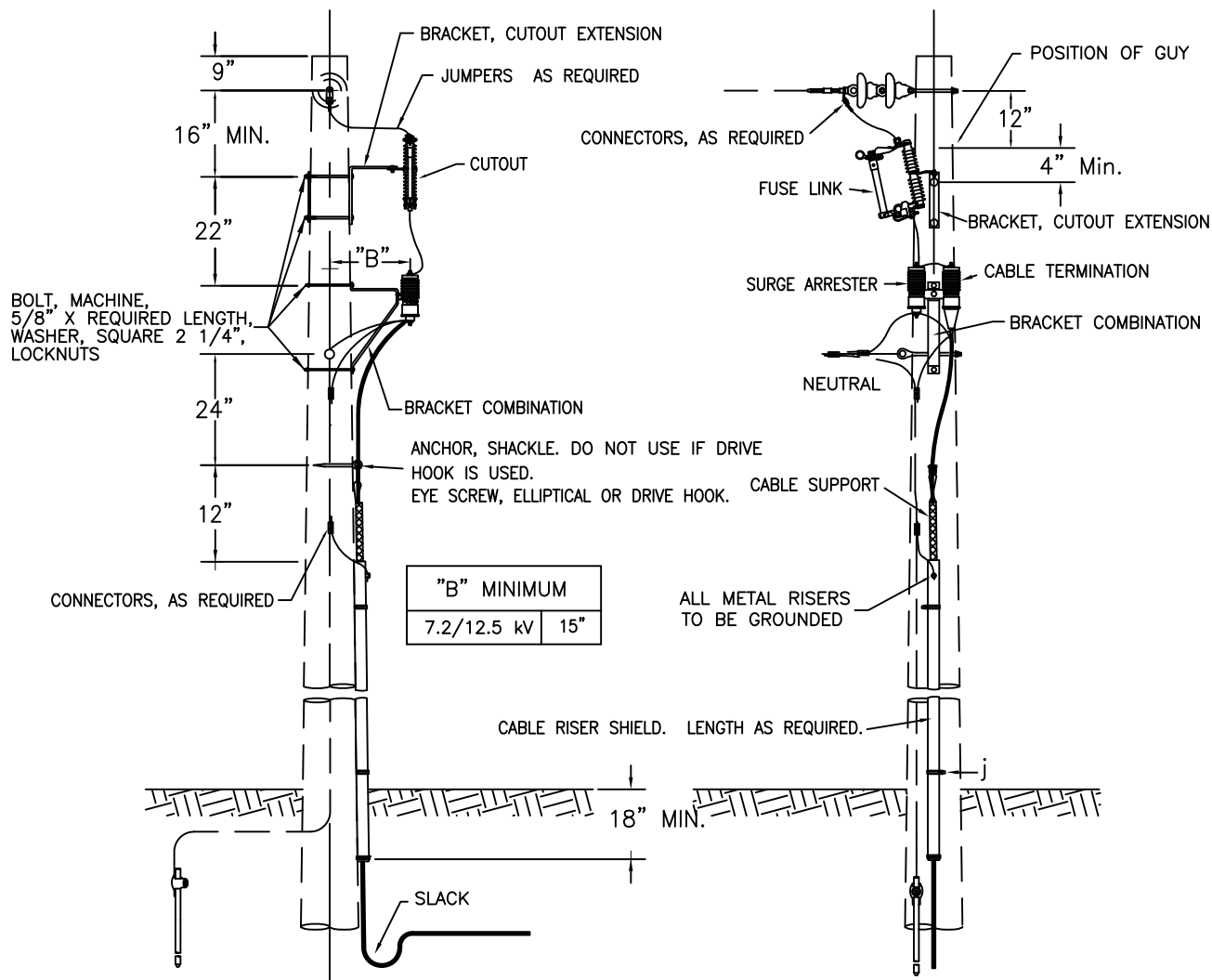
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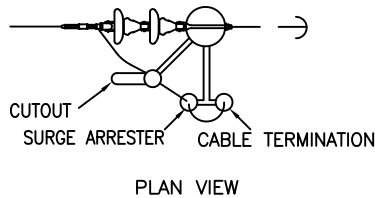
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QTY.	MATERIAL
4	Bolt, machine, 5/8" x required length.
4	Washer, square 2 1/4".
	Screws, lag 1/2" X 4" as required.
	Connectors, as required.
1	Fuse link.
1	Cutout
	Jumpers, as required.
1	Anchor, shackle. Do not use if drive hook is used.
1	Eye screw, elliptical or drive hook.
4	Locknuts
1	Bracket, cutout extension.
1*	Surge arrester
1	Cable riser shield. Length as required.
1	Cable termination.
1	Cable support.
1	Bracket combination.



NOTES:

1. TOTAL ARRESTER LEAD LENGTH MUST BE UNDER 3'.
2. NO BENDS PERMITTED WITHIN 6" OF CABLE TERMINAL BASE.
3. ALLOW MINIMUM CABLE SLACK OF 24" AT BOTTOM OF RISER.

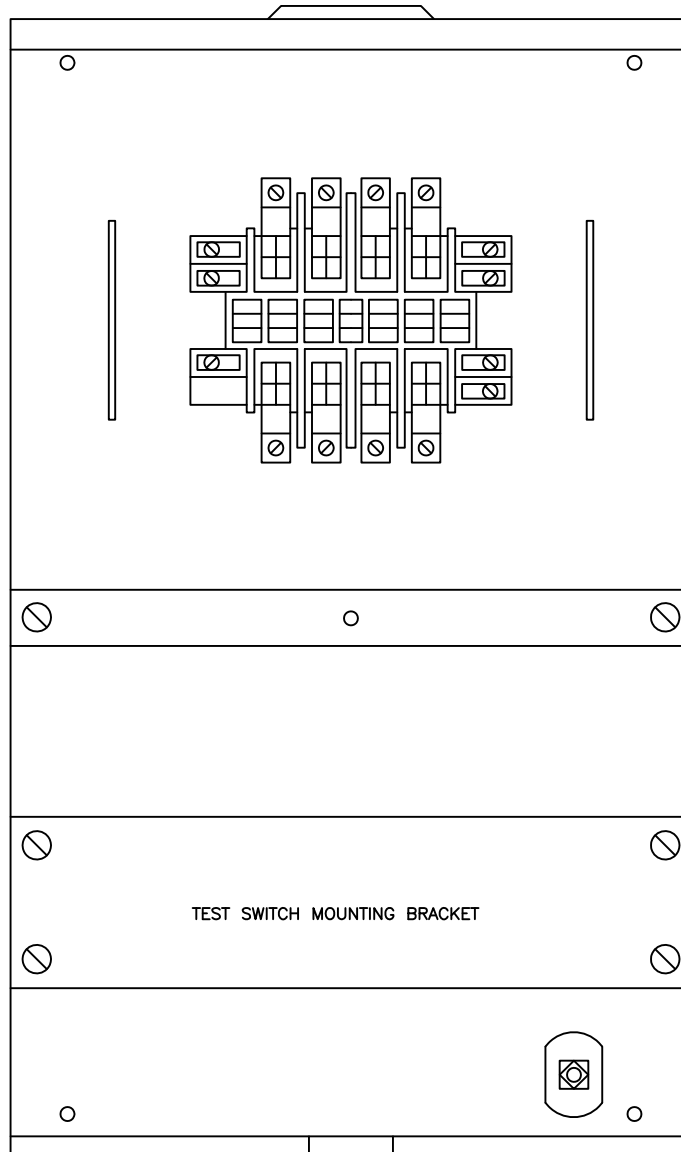
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APPROVED EQUIPMENT

MANUFACTURER	ITEM	PART #
DURHAM	20A 13-TERMINAL	#STS-13-2C
LANDIS & GYR	20A 13-TERMINAL	#9837-8513
MILBANK	20A 13-TERMINAL	#UC3423-XL

NOTES

- 1.) SOCKET TO BE UNDERWRITERS LABORATORY (UL) LISTED AND SAME AS, OR SIMILAR TO THE ABOVE DRAWING.
- 2.) SOCKET SHALL BE 20A CLASS ONLY.
- 3.) SOCKET SHALL HAVE TWO SEPARATE COVERS FOR METER AND TEST SWITCH COMPARTMENTS.
- 4.) LATCHING BOTTOM COMPARTMENT SHALL LOCK BOTH COVERS.

TRANSFORMER SECONDARY SPADE CONNECTIONS

SECTION
4000
4049

No.

DATE:

REVISION:

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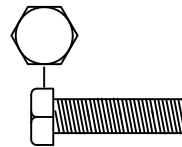
DATE: APRIL 2018

USE ONLY APPROVED STACKING LUGS
ON BOTH SIDES IF NEEDED FOR
NUMBER OF CABLES PER PHASE

MAXIMUM 1" BOLT
PROTRUSION AFTER TORQUED.

1/2" SPRING TYPE (BELLEVILLE) WASHER.
MINIMUM 3000 LBS FLAT LOAD
1 5/8" OD (CROWN FACES BOLT HEAD)

1/2" SPLIT LOCK WASHER
PLATED STEEL



1/2" PLATED
STEEL BOLT



1/2" HEX NUT,
STEEL PLATED

1/2" WIDE FLAT STEEL
WASHER 1 5/8" OD

NOTE : TORQUE APPLIED TO
SECONDARY BUSHINGS SHALL
NOT EXCEED 150 FT/LBS AND
SPADES MUST REMAIN
VERTICAL AFTER ATTACHING
ALL CABLES

NOTE : TORQUE UNTIL THE
BELLEVILLE WASHER IS FLAT

STAGGER CABLES EVENLY ONTO BOTH
SIDES OF TRANSFORMER SPADES TO
AVOID EXCESSIVE TORQUE ON BUSHINGS.

9/16" DIA. HOLES

1-3/4"
(NEMA)

1-3/4"
(NEMA)

1-3/4"
(NEMA)

1-3/4"
(NEMA)

TO TRANSFORMER
BUSHING

NOTE : TORQUE APPLIED TO
SECONDARY BUSHINGS SHALL
NOT EXCEED 150 FT/LBS AND
SPADES MUST REMAIN
VERTICAL AFTER ATTACHING
ALL CABLES

CONNECTOR PER ANSI C119.4.
2 BOLTS PER POSITION AS SHOWN.
CONNECTOR NOT TO BLOCK ADJACENT
SPADE POSITIONS.

- ## NOTES

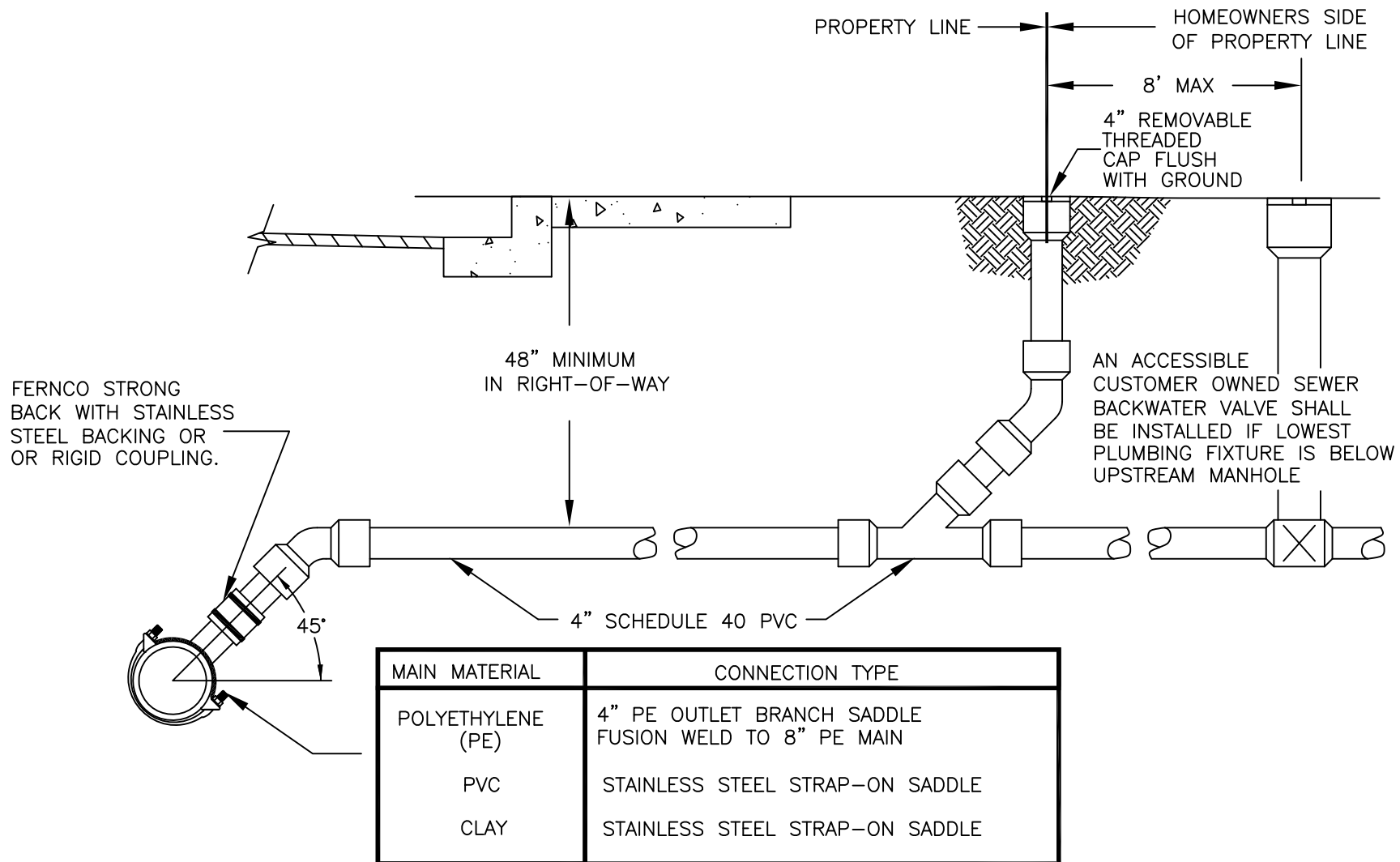
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REVISION:

DATE:

No.



- 1.) FOR A NEW SERVICE TAP TO SEWER MAIN THE CUSTOMER MUST COMPLETE AND SUBMIT ALL NECESSARY PERMITTING, APPLICATION FOR UTILITY SERVICE REQUEST, STREET EXCAVATION, AND UTILITY SYSTEM PENETRATION.
- 2.) WHERE APPLICABLE, COMPACTION IN COUNTY OR STATE RIGHT-OF-WAY SHALL MEET OR EXCEED MINIMUM SPECIFIED REQUIREMENTS OF ORGANIZATION HAVING AUTHORITY. 95% COMPACTION REQUIRED UNDER PAVED ROADS, SIDEWALK, AND CURB. OTHERWISE, 90% COMPACTION REQUIRED AT ALL LOCATIONS NOT MENTIONED.
- 2.) LOS ALAMOS COUNTY UTILITIES WILL PROVIDE AND INSTALL SERVICE SADDLE AND TAP SEWER MAIN PER SCHEDULE FEE IN LOS ALAMOS COUNTY UTILITIES DEPARTMENT RULES AND REGULATIONS.

**SEWER DELIVERY LINE AND
 CLEANOUT ON NEW MAIN**

SECTION
 5000
 5002

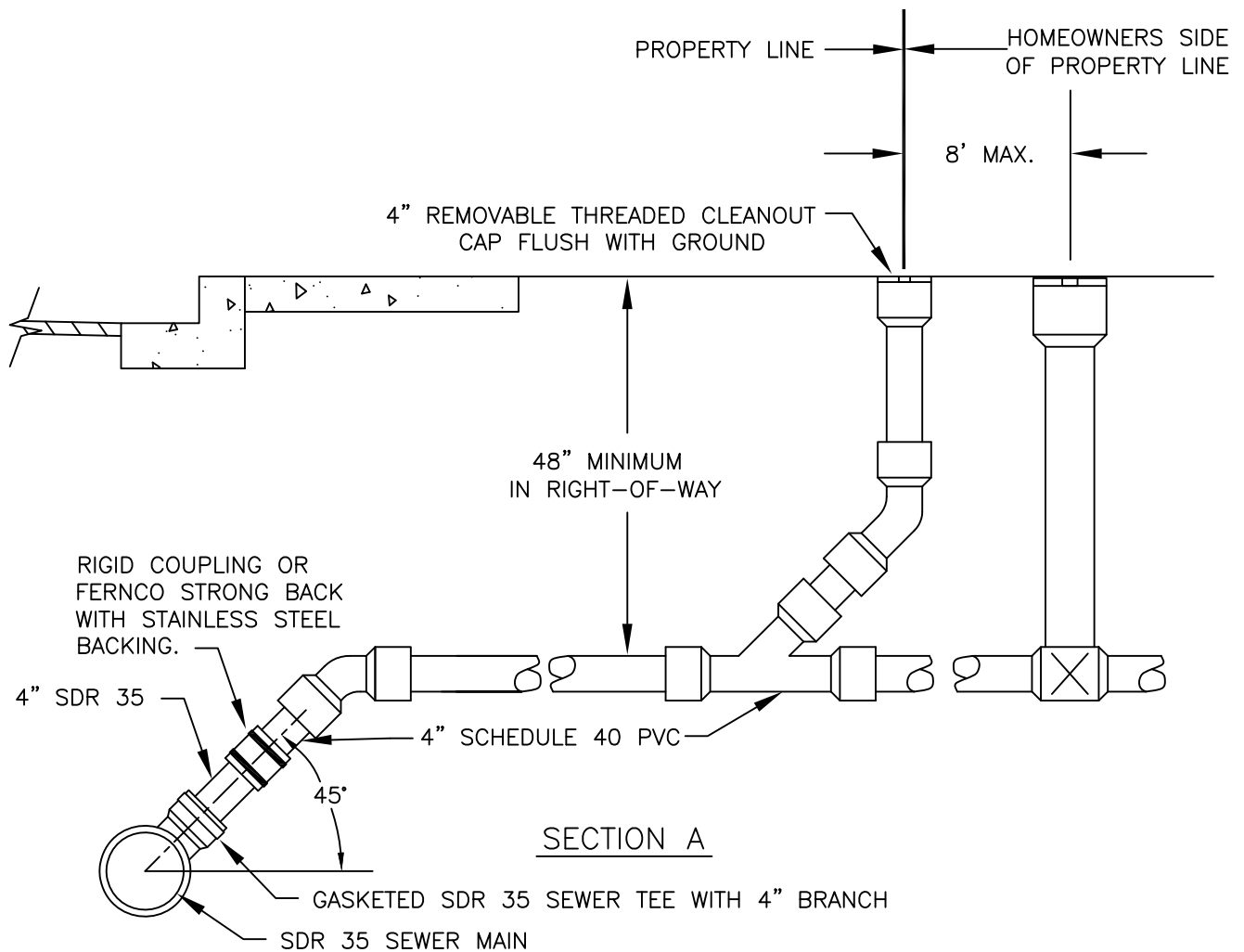
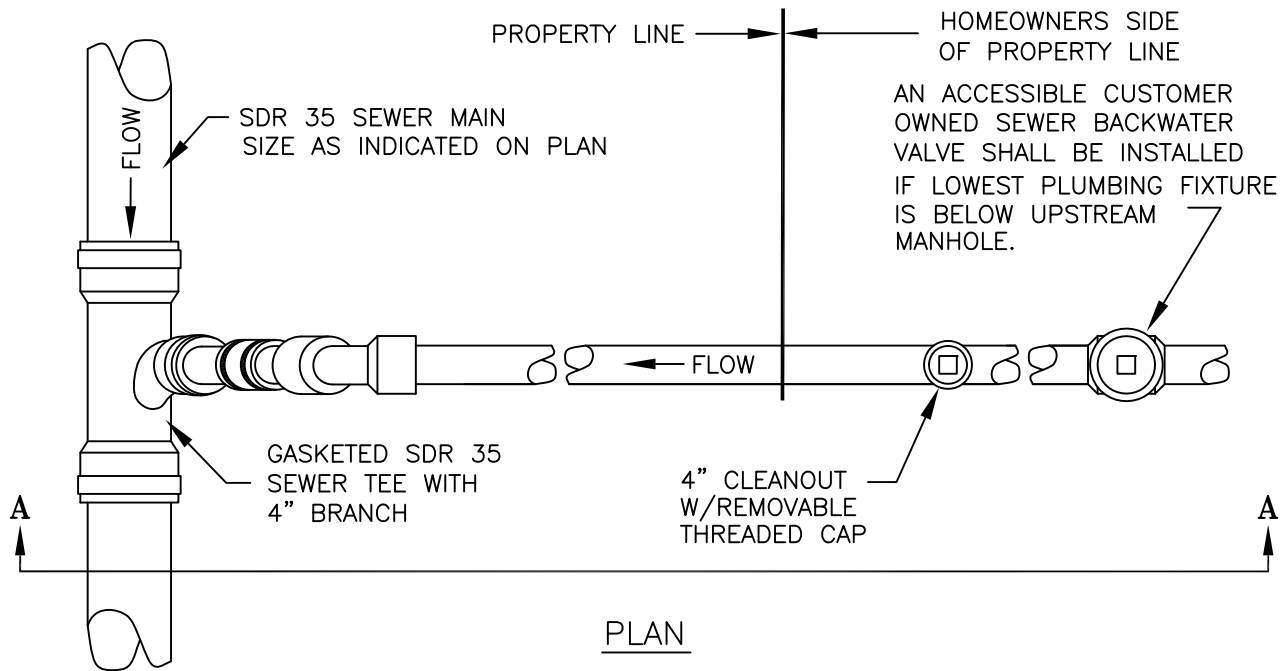
No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



**GRAVITY SEWER MAIN
 TRENCH DETAIL**

SECTION
 5000

5003

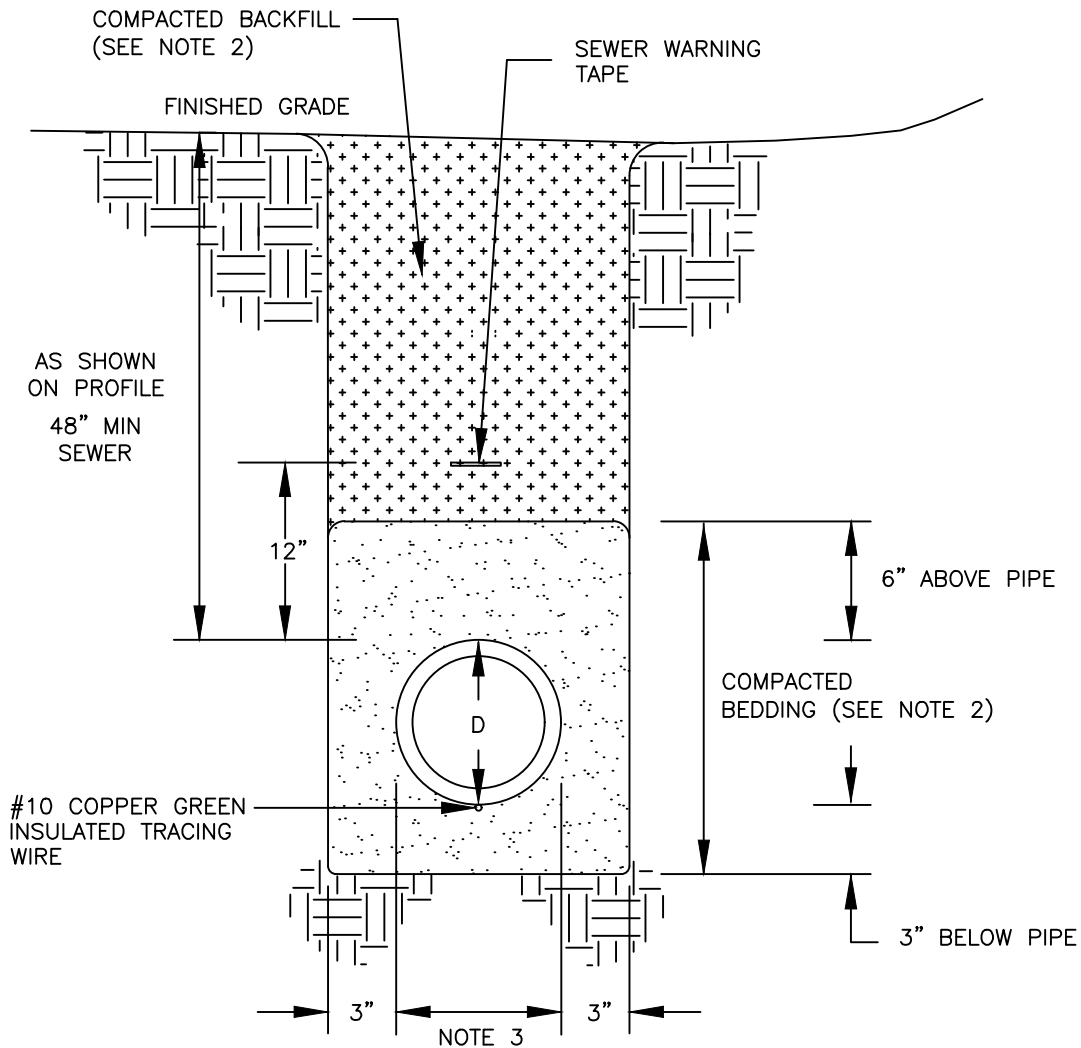
No.

DATE:

REVISION:

APPROVED BY:

DATE: FEBRUARY 2022



NOTES:

- 1.) D IS THE OUTSIDE PIPE DIAMETER IN INCHES.
- 2.) SEE COMPACTION SPECIFICATIONS (SECTION 202) FOR ALL REQUIREMENTS.
- 3.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST PIPE PLUS 6 INCHES.

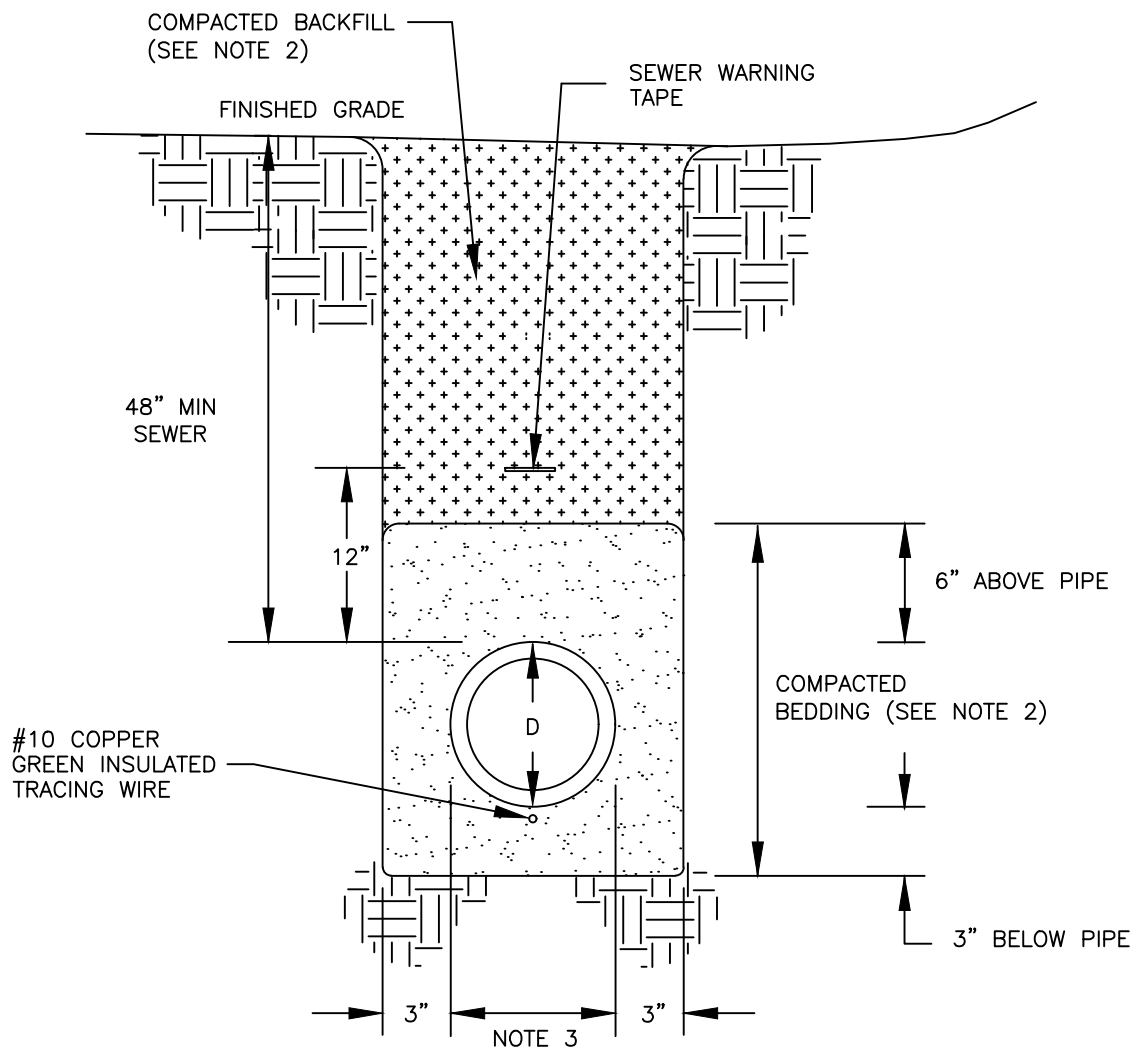
No.

DATE:

REVISION:

APPROVED BY:

DATE: FEBRUARY 2022



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- 2.) SEE COMPACTION SPECIFICATIONS (SECTION 202) FOR ALL REQUIREMENTS.
- 3.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST PIPE PLUS 6 INCHES.

PRECAST ECCENTRIC MANHOLE

SECTION
5000
5005

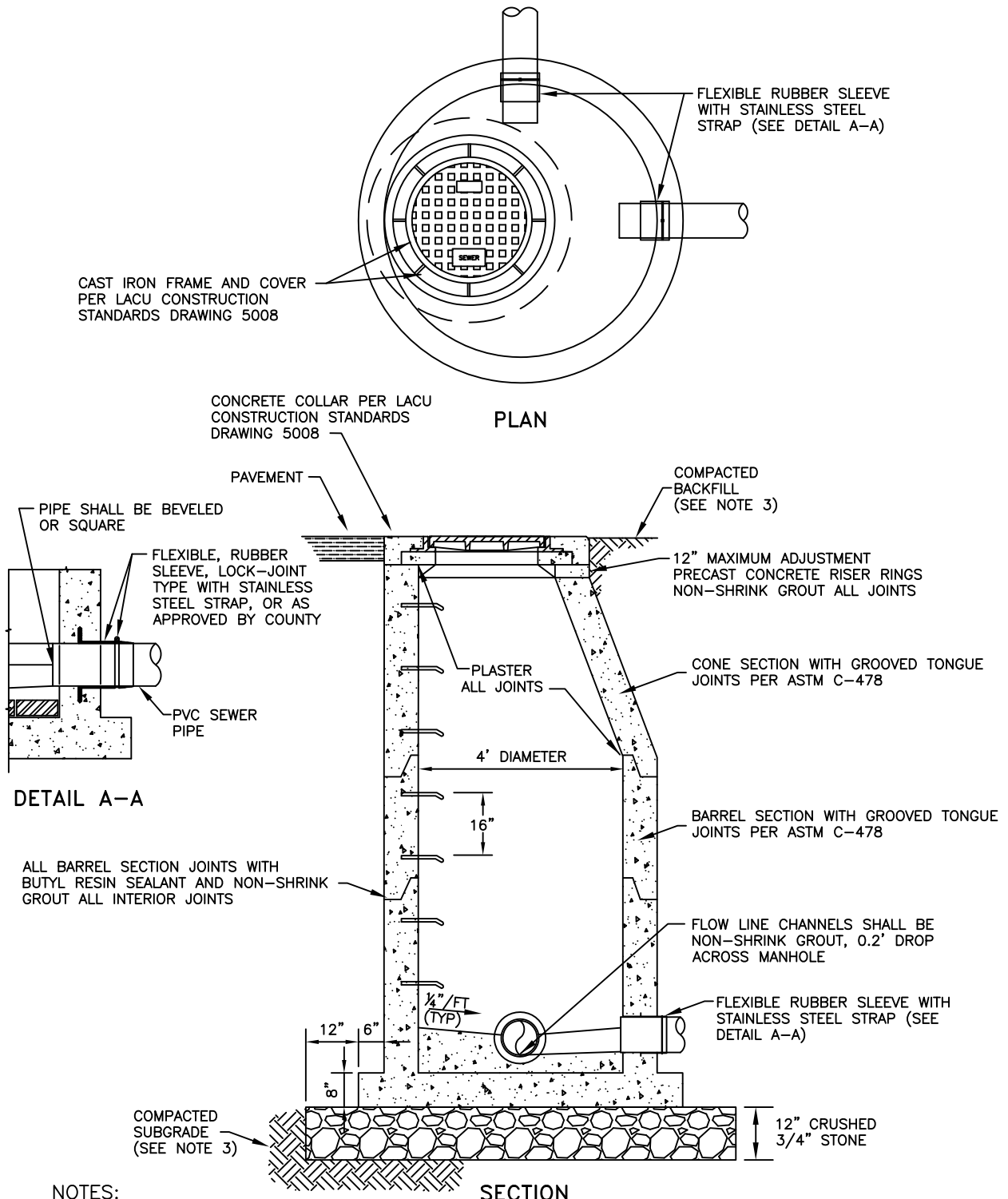
No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



NOTES:

- 1.) MANHOLE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 502 SEWER MANHOLES.
- 2.) NON-SHRINK GROUT PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 702 GROUT.
- 3.) COMPACTION AND BACKFILL PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 202, EXCAVATION TRENCHING AND BACKFILL.
- 4.) MANHOLE STEPS TO BE PLASTIC COATED STEEL STEPS 10"-12" TREAD SPACED 12" PER ASTM D-41 TOP STEP 6" BELOW TOP OF CONE.

FLAT TOP MANHOLE

SECTION
5000
5006

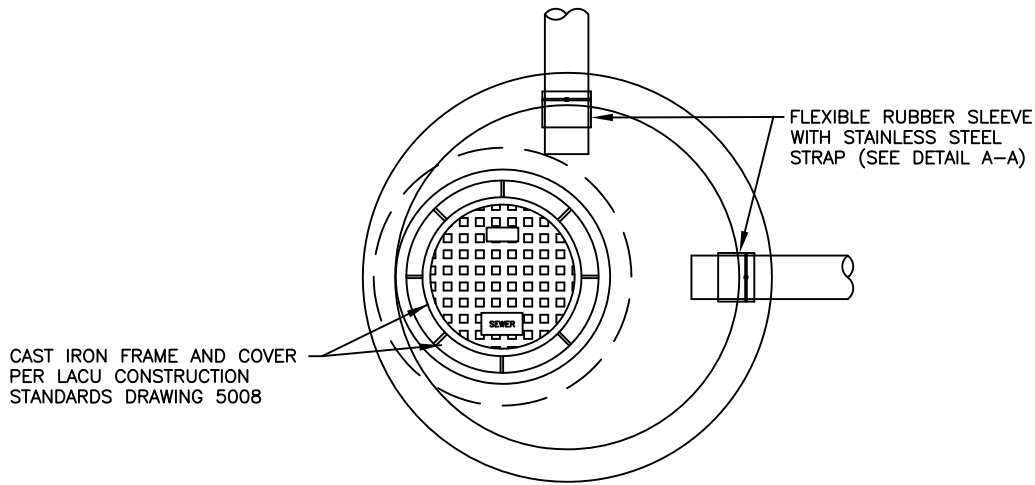
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DATE:

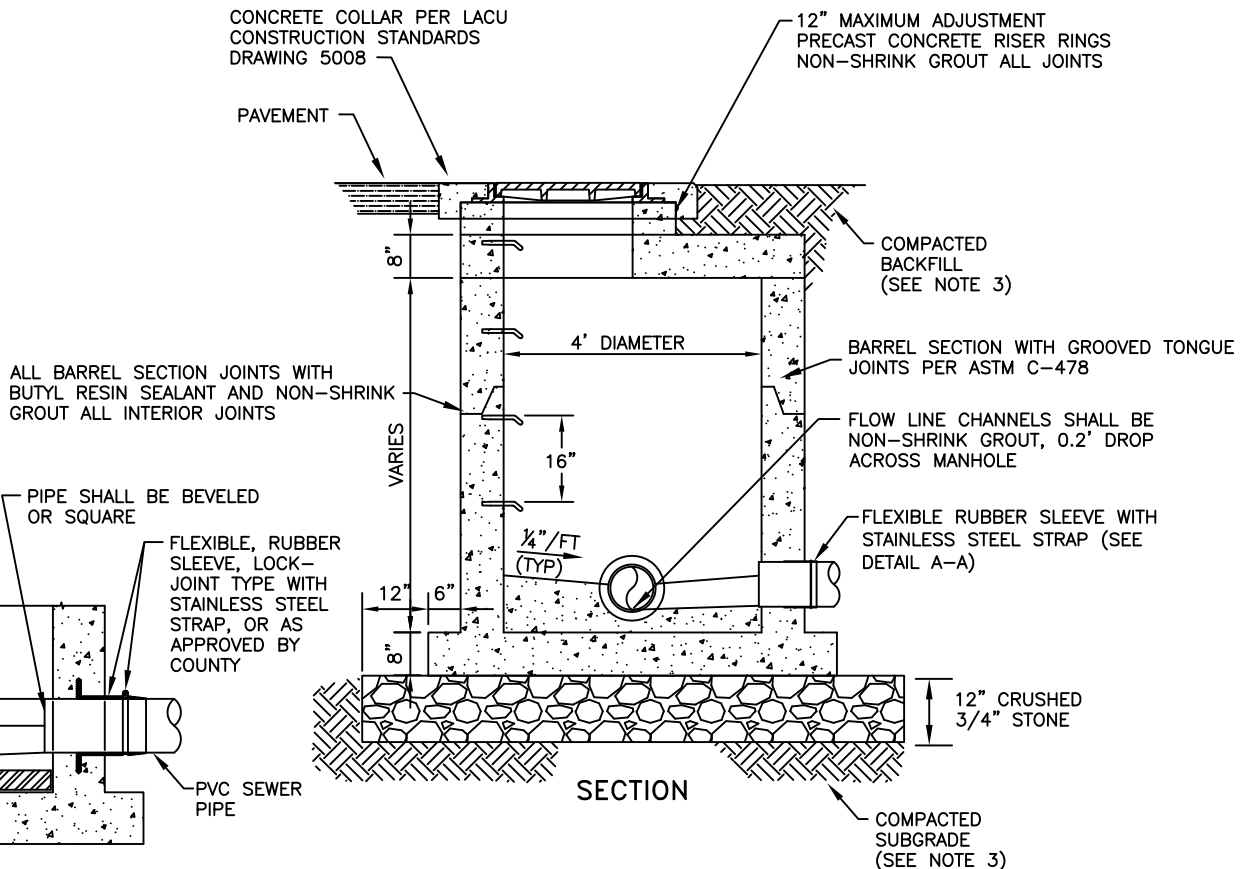
REVISION:

APPROVED BY:

DATE: APRIL 2018



PLAN



SECTION

DETAIL A-A

NOTES:

- 1.) MANHOLE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 502 SEWER MANHOLES.
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- 3.) COMPACTION AND BACKFILL PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 202, EXCAVATION TRENCHING AND BACKFILL.
- 4.) MANHOLE STEPS TO BE PLASTIC COATED STEEL STEPS 10"-12" TREAD SPACED 12" PER ASTM D-41 TOP STEP 6" BELOW TOP OF BARREL.

ECCENTRIC DROP MANHOLE

SECTION
5000
5007

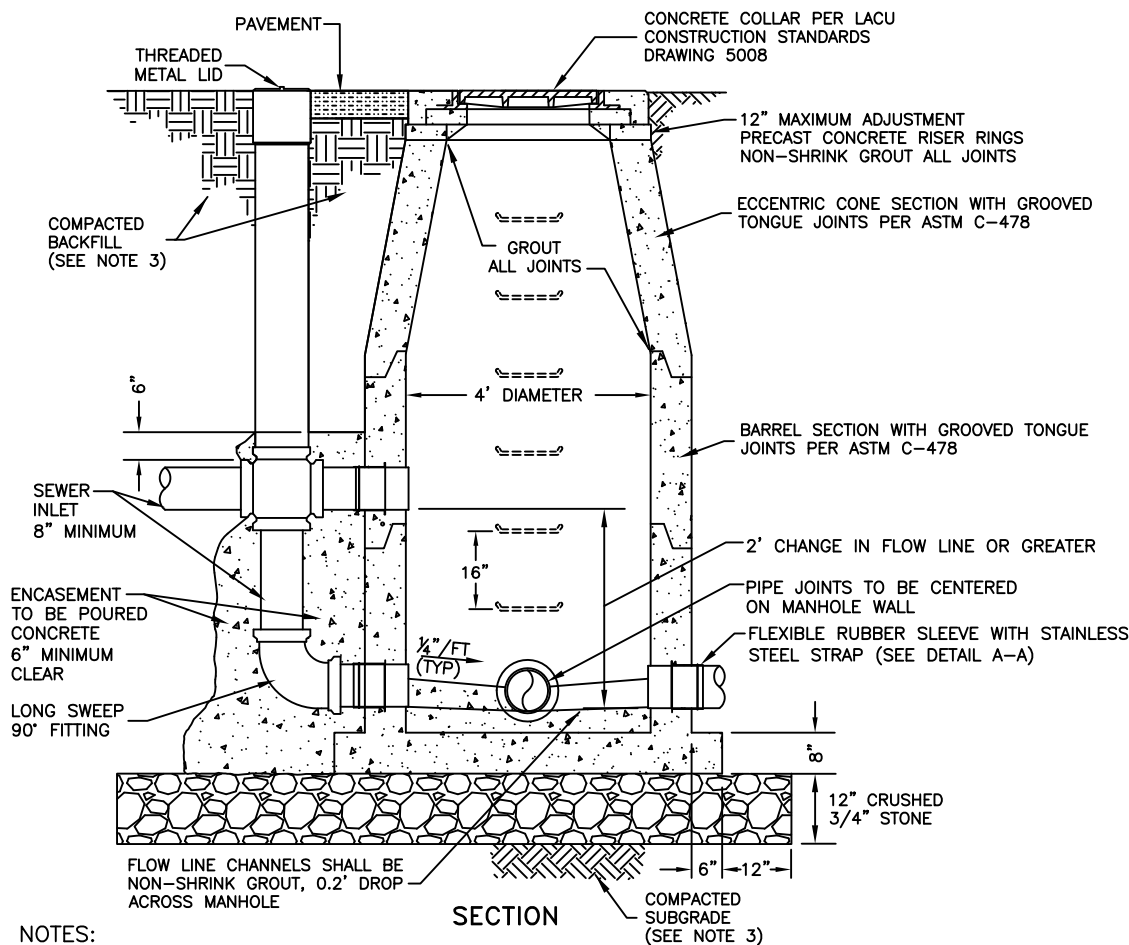
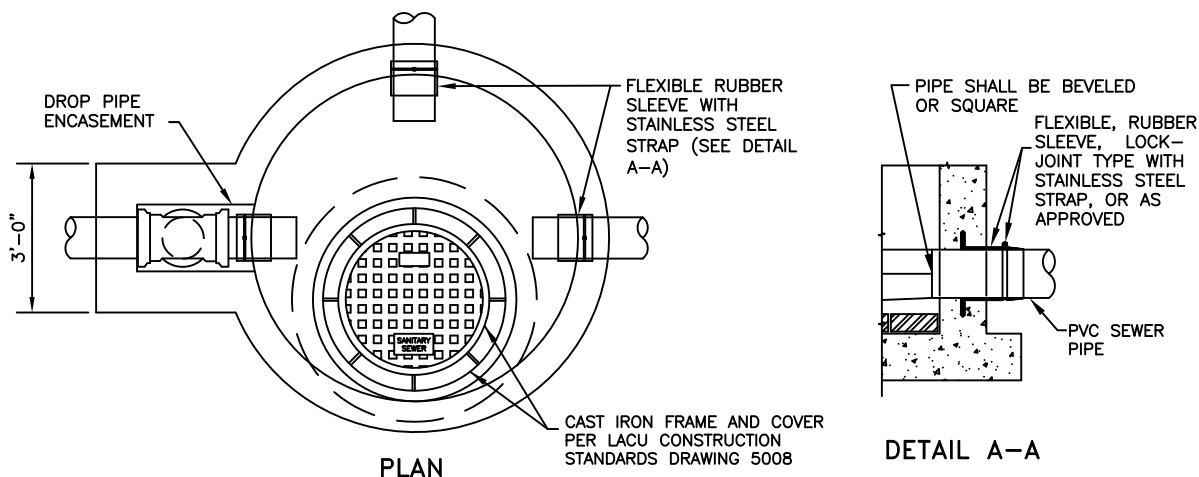
No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



NOTES:

- 1.) MANHOLE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 502 SEWER MANHOLES.
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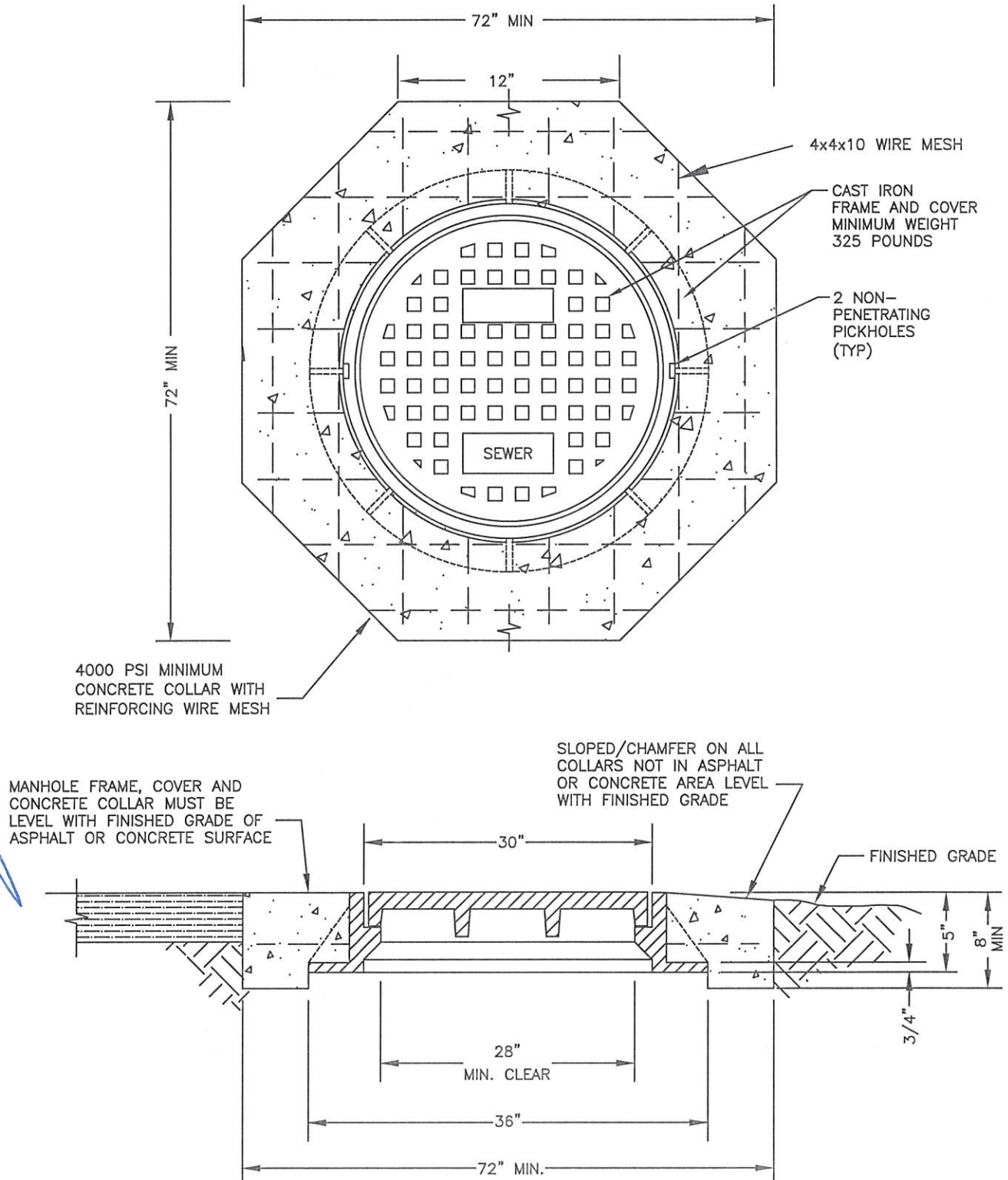
No.

DATE:

REVISION:

APPROVED BY:

DATE: SEPTEMBER 2022



NOTES:

- 1.) RING AND COVER PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 502 STRUCTURE.
- 2.) CONCRETE COLLAR PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 701 CAST-IN-PLACE CONCRETE.

No.

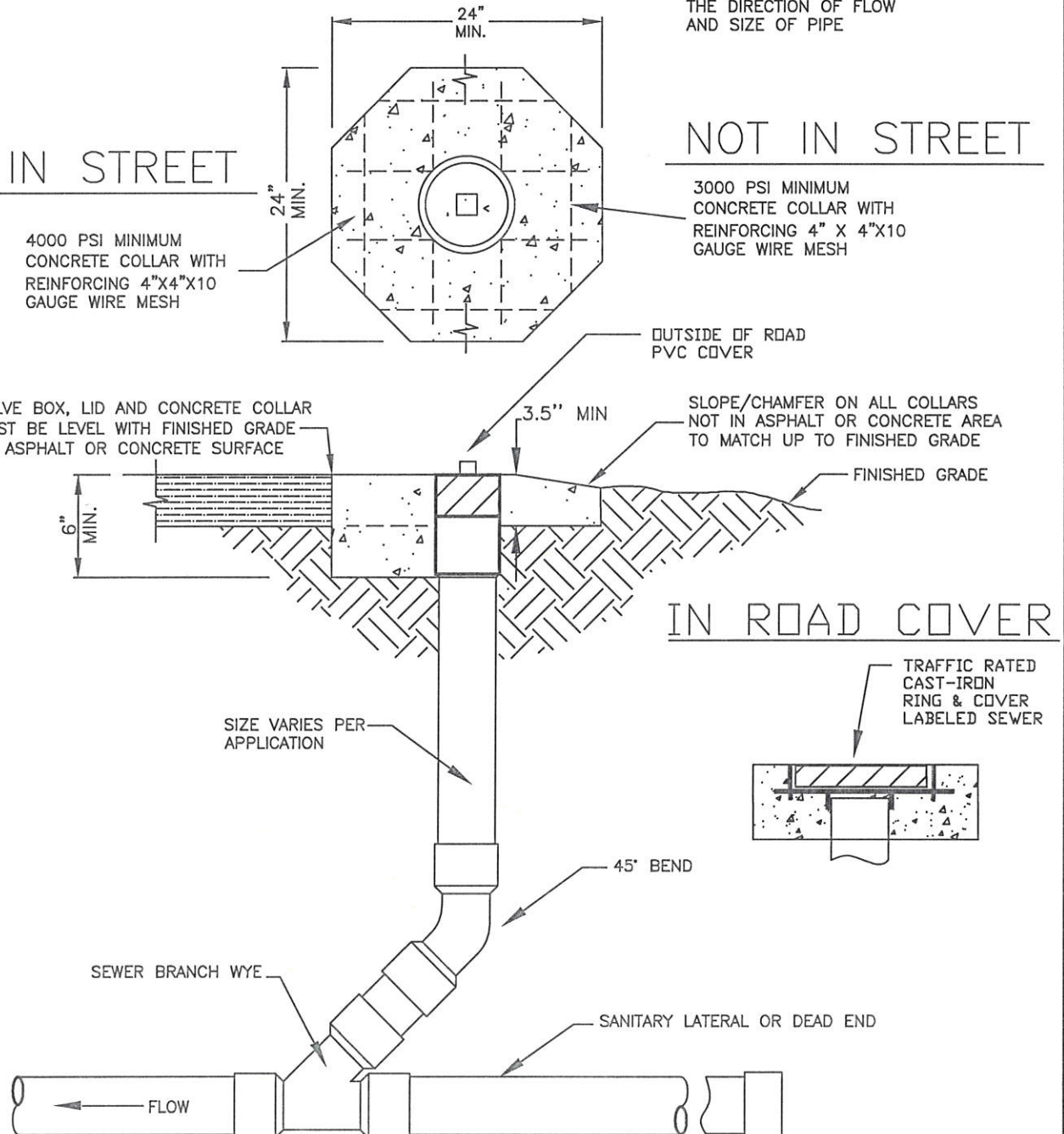
DATE:

REVISION:

APPROVED BY:

DATE: SEPTEMBER 2022

NOTE:
 INDICATE ON CONCRETE COLLAR
 THE DIRECTION OF FLOW
 AND SIZE OF PIPE



MANHOLE COVER ADJUSTMENT

SECTION
 5000
 5009

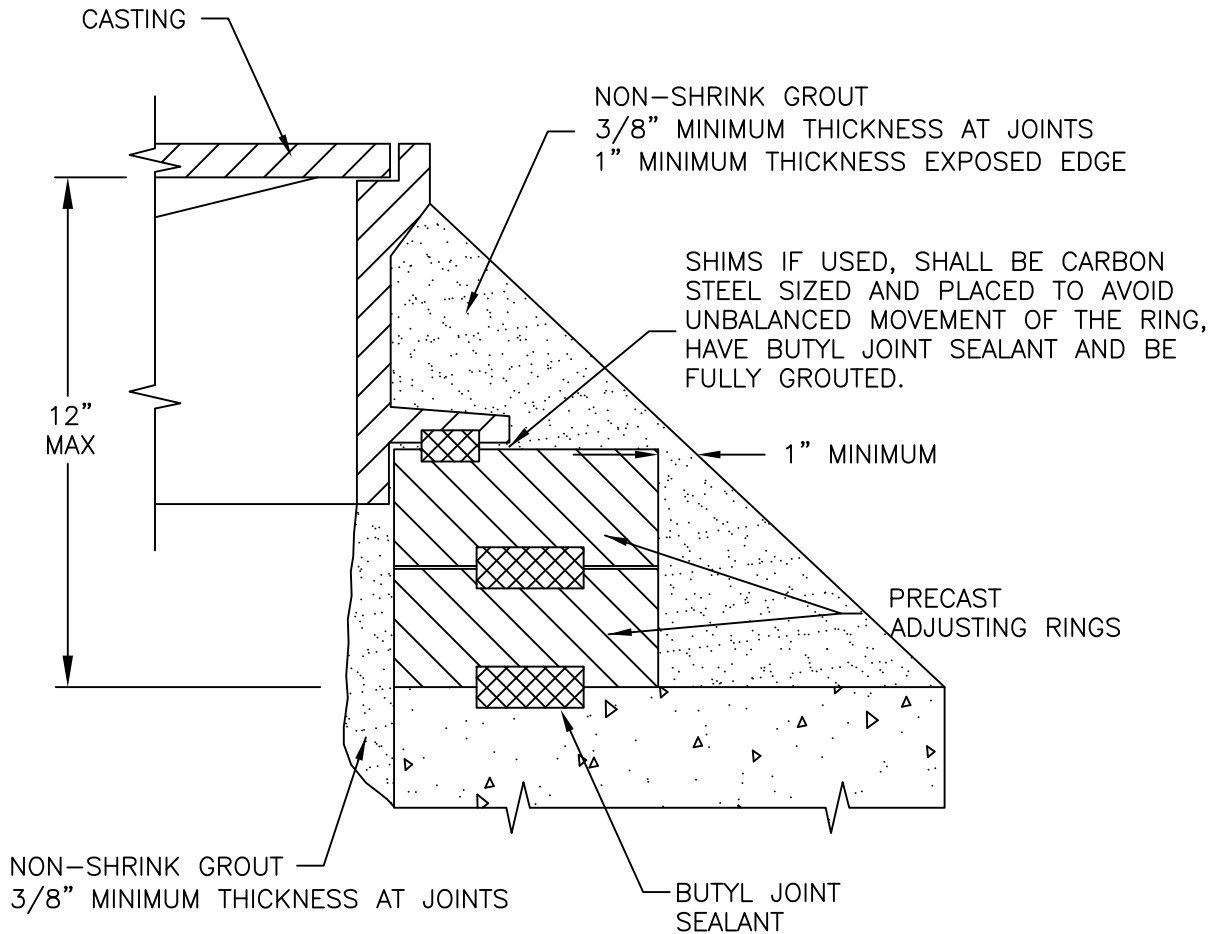
No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



NOTES:

- 1.) ALL SHIMS REQUIRE DPU APPROVAL. SHIMS IF USED ARE REQUIRED TO BE METAL AND NEED TO BE GROUTED AND SEALED WITH BUTYL JOINT SEALER.

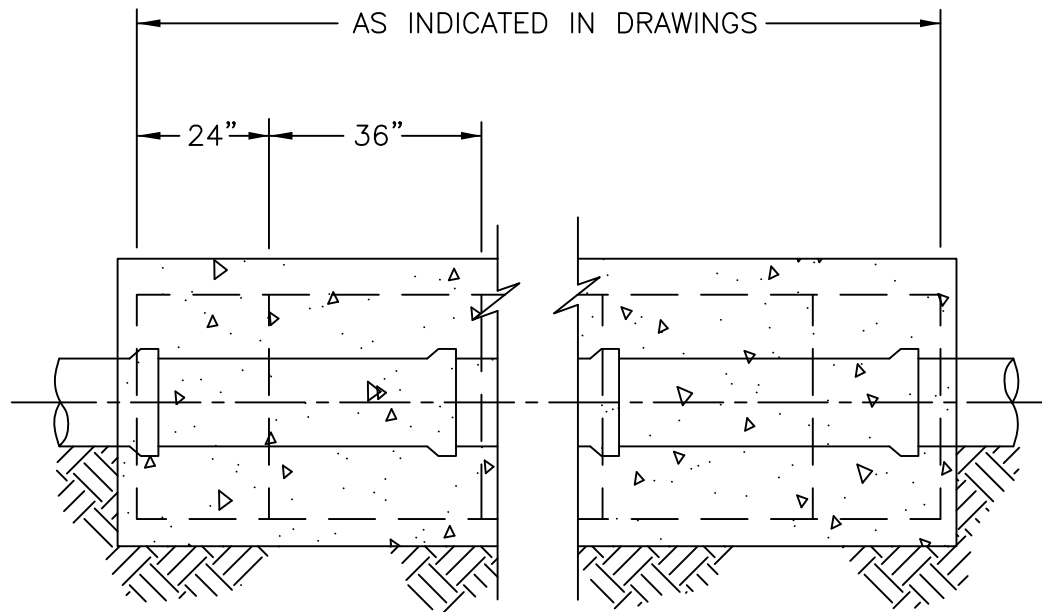
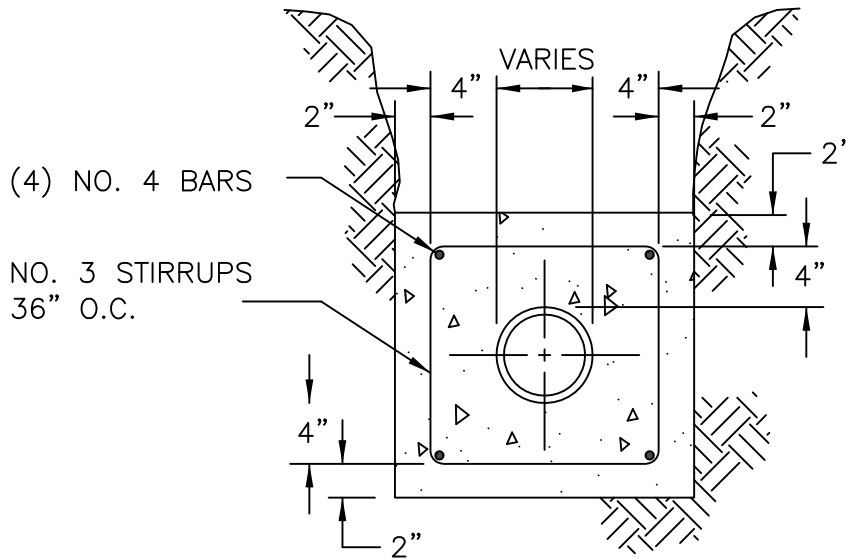
No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



NOTES:

- 1.) 3000 PSI CONCRETE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD SPECIFICATION 701 CAST IN PLACE CONCRETE.

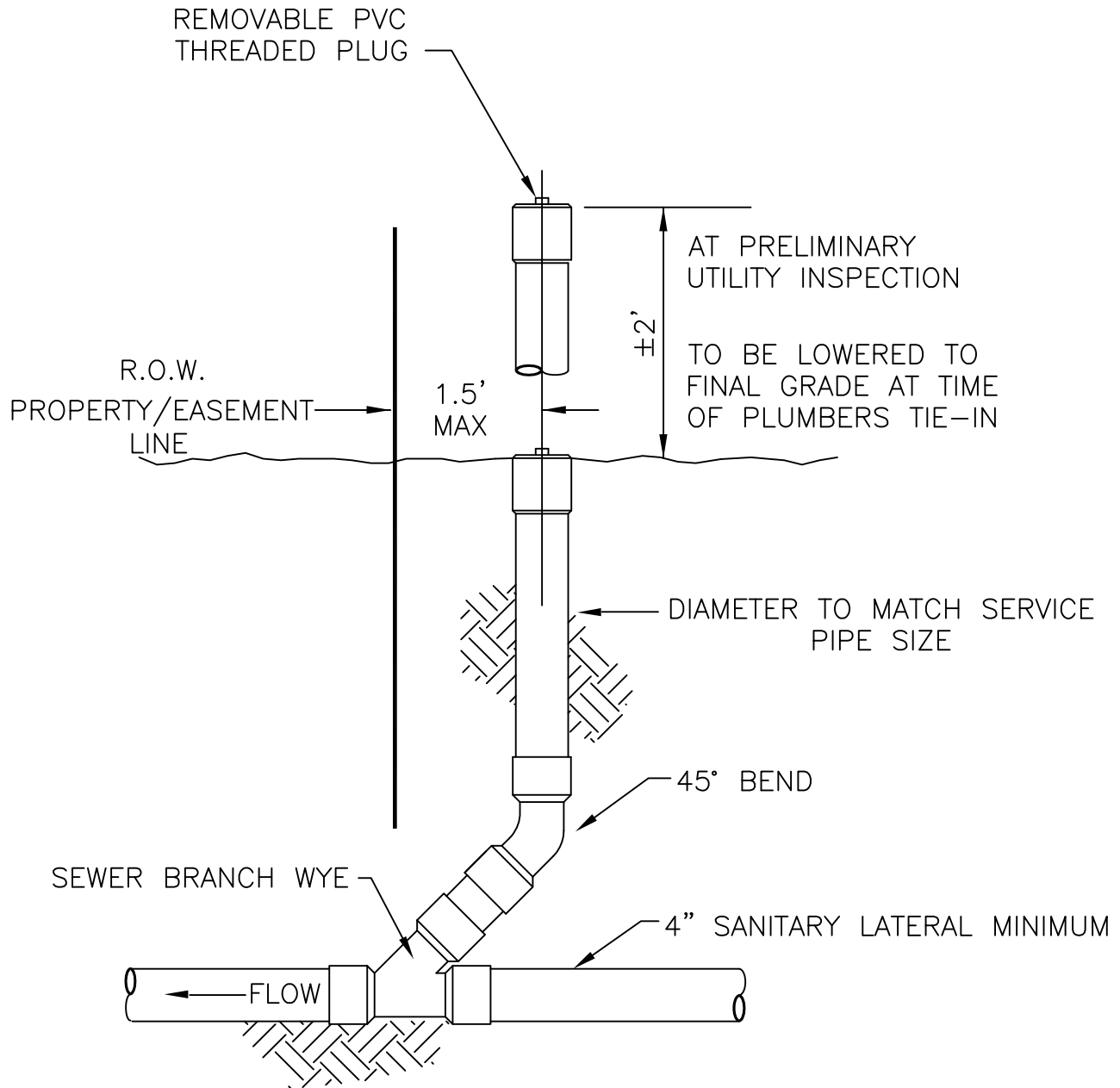
No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



1. PROPERTY LINE CLEANOUT SHALL BE INDICATED TO LOS ALAMOS COUNTY DPU UPON COUNTY ACCEPTANCE OF COMPLETION.
2. NO ADDITIONAL PIPES SHALL EVER BE CONNECTED TO THE PROPERTY LINE CLEANOUT.

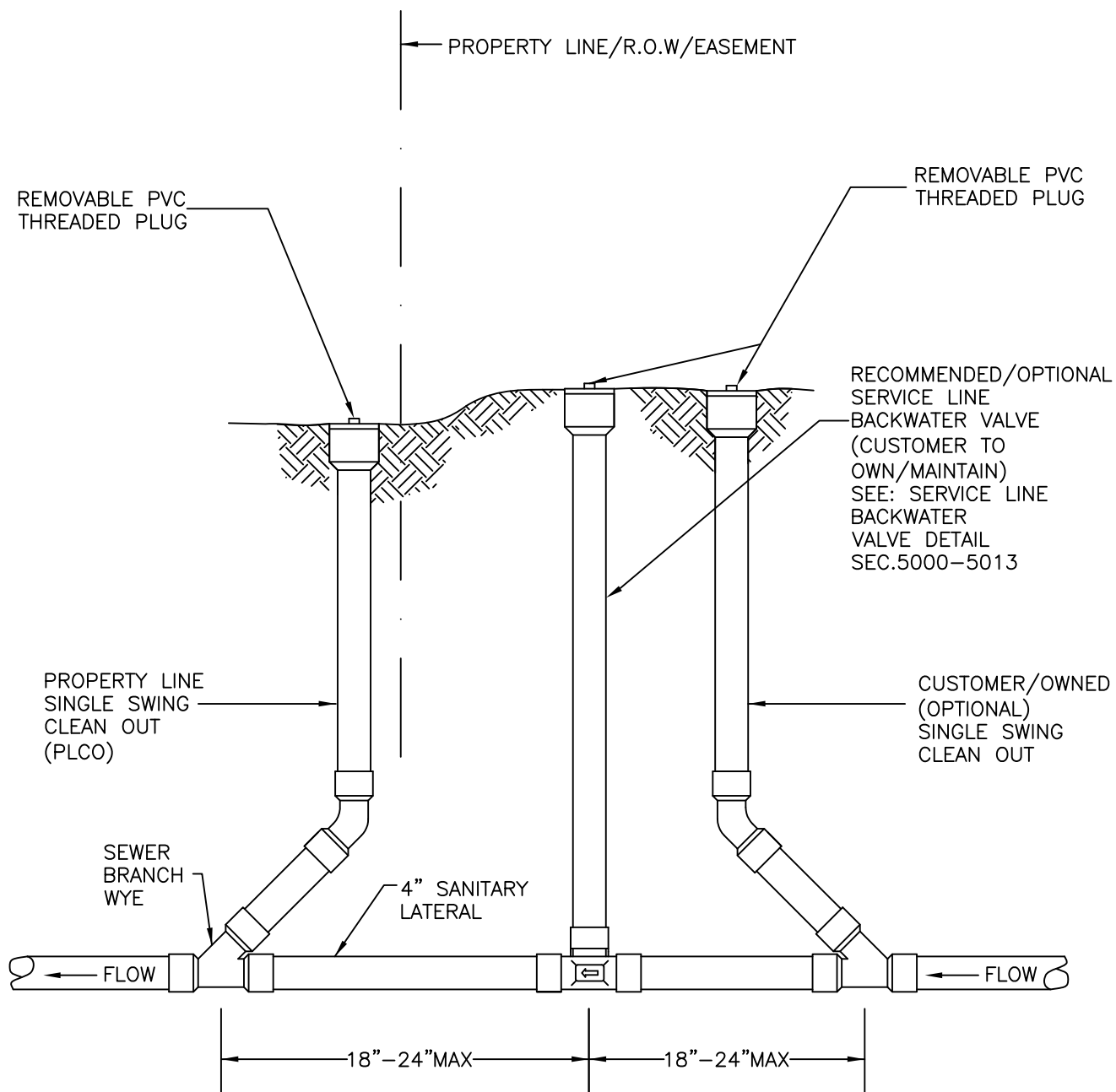
No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



NOTES:

- 1.) MATERIALS SHALL BE 4" SCH-40 PVC GRAVITY SEWER PIPE
- 2.) DPU MUST INSPECT THE INSTALLATION OF THE PLCO, BEFORE ACCEPTING THE INSTALLATION FOR O&M.

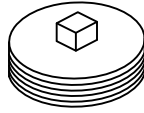
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DATE:

REVISION:

APPROVED BY:

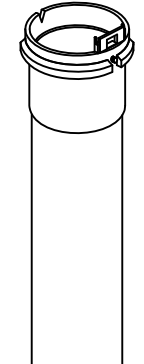
DATE: APRIL 2018



6" PVC THREADED PLUG

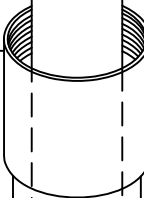


4" PVC COLLAR WITH STAINLESS
STEEL THUMB SCREW



4" PVC RISER INSERT PIPE

FINISHED GRADE



6" PVC FEMALE ADAPTER



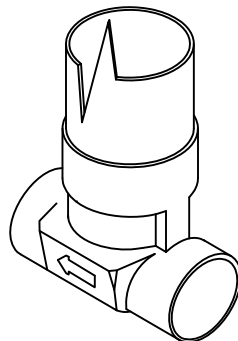
6" PVC RISER PIPE CUT THE REQUIRED
LENGTH FROM SEWER SERVICE LINE TO
TO GROUND LEVEL



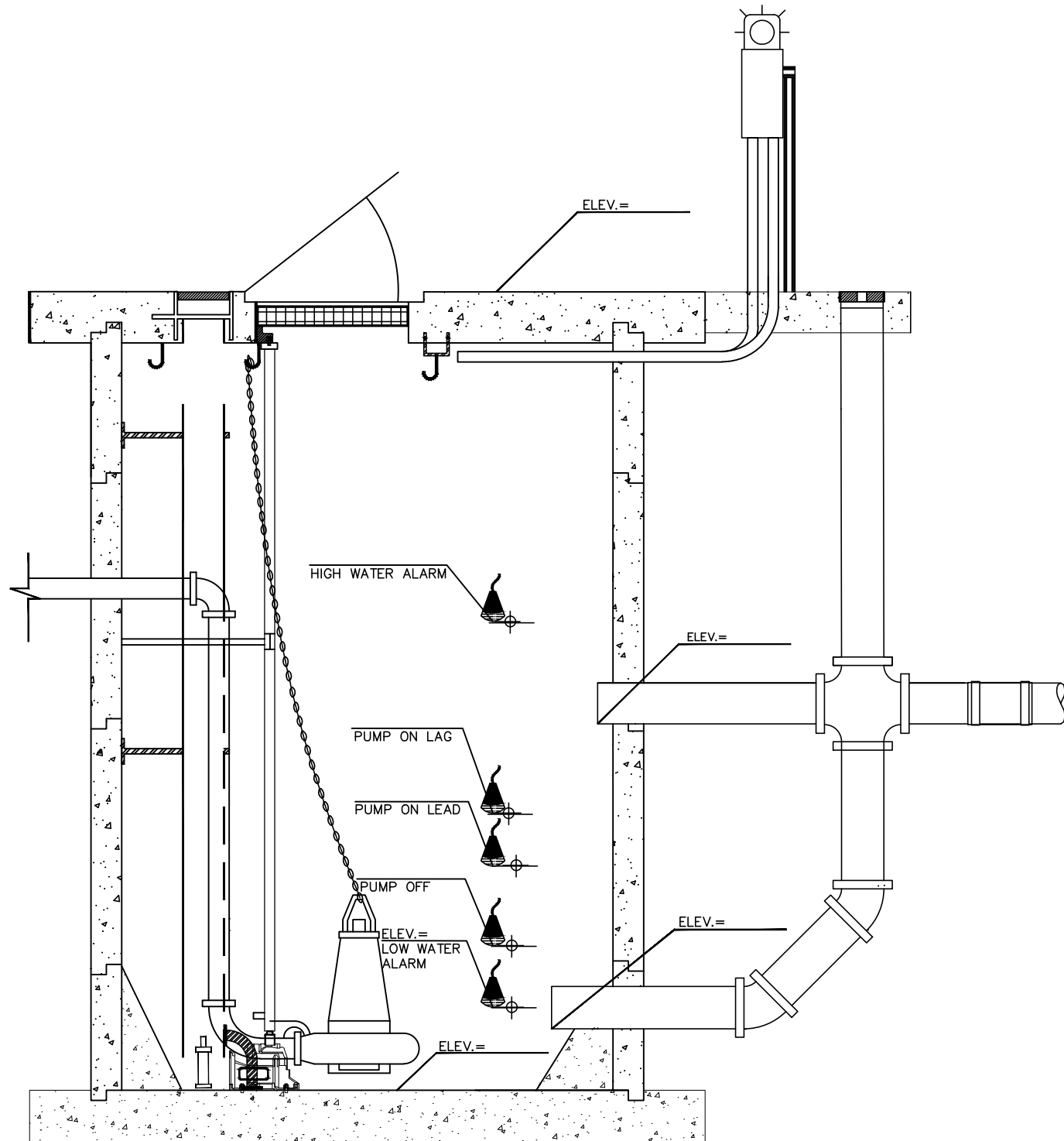
4" PVC FLAPPER ASSEMBLY



4" REPLACEABLE PVC FLAPPER



4" PVC VALVE BODY



ELEVATION / PUMP SETTINGS
NTS

LOS ALAMOS

Department of Public Utilities

Electric, Gas, Water, and Wastewater Services

LOS ALAMOS COUNTY DEPARTMENT OF PUBLIC UTILITIES LIFT STATION EQUIPMENT SCHEDULE

PROJECT NAME: _____

PROJECT LOCATION: _____

PUMP AND MOTOR (2 EACH)

PUMP & MOTOR MODEL: _____

IMPELLER TYPE/SIZE: _____

	DESIGN	AS-BUILD TESTED
OPERATING POINT:	TDH (FT) _____	_____
	FLOW (GPM) _____	_____
MOTOR:	HORSEPOWER (HP) _____	_____
	RPM _____	_____
	VOLTAGE & PHASE _____	_____

DISCHARGE PIPE

STATION: _____ SIZE (INCHES): _____ LENGTH (FEET): _____ MATERIAL: _____

FORCE MAIN: _____ SIZE (INCHES): _____ LENGTH (FEET): _____ MATERIAL: _____

ALUMINUM DOORS

	LENGTH (INCHES)	WIDTH (INCHES)	LOAD RATING
WET WELL DOORS:	_____	_____	H-20 300 PSI
VALVE VAULT DOORS:	_____	_____	H-20 300 PSI

DESIGN

AS-BUILD TESTED

ENGINEER: _____ DATE: _____

DATE: DECEMBER 2021

APPROVED BY: _____

REVISION: _____

1

DATE: 12/17/21

No. _____

UTILITY CONSTRUCTION STANDARDS – SEWER

WASTE WATER LIFT STATION
ELEVATIONS AND EQUIPMENT SCHEDULE

SECTION
5000

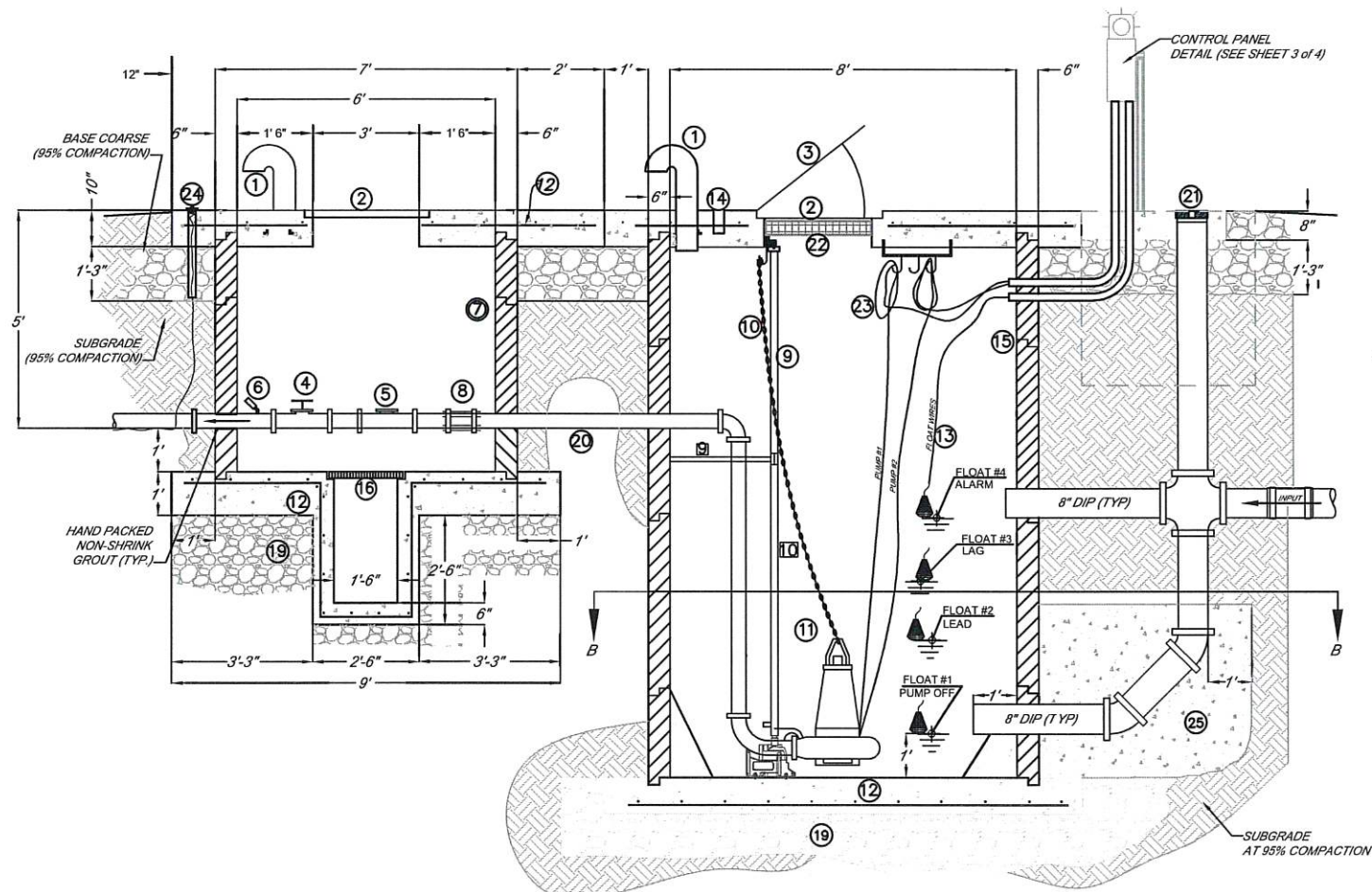
5014A

LOS ALAMOS

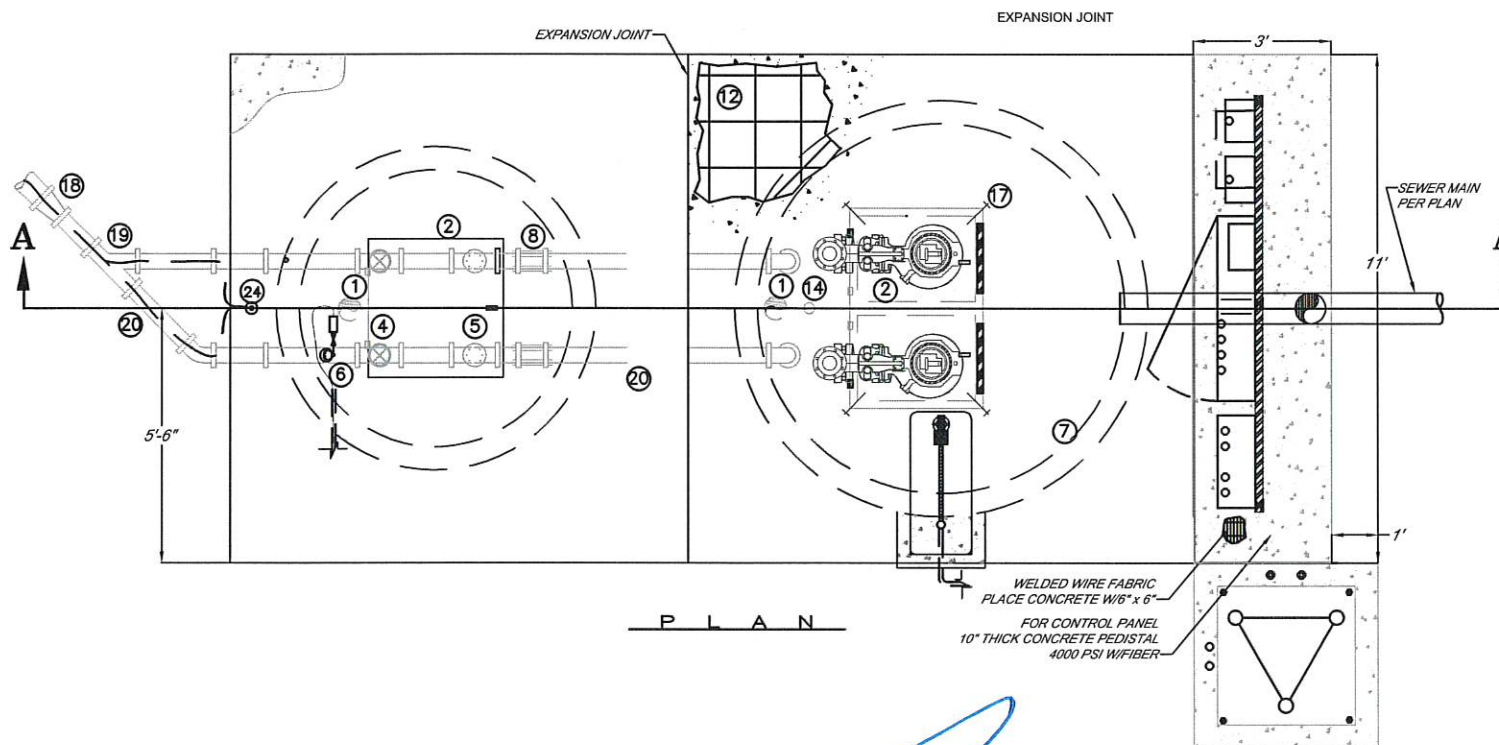
Department of Public Utilities

Electric, Gas, Water, and Wastewater Services

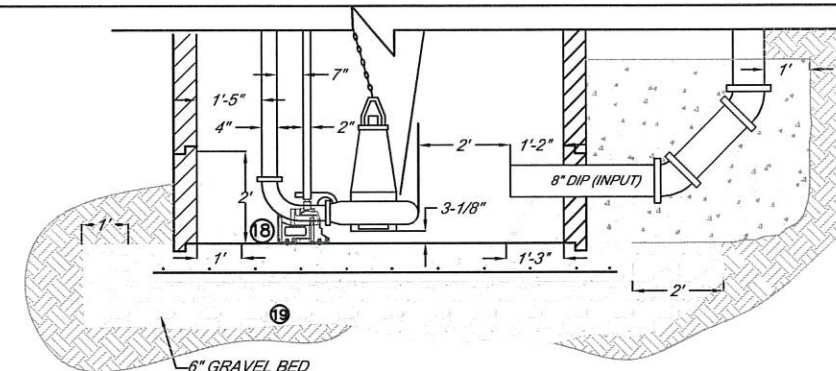
STANDARD WASTEWATER LIFT STATION DETAIL



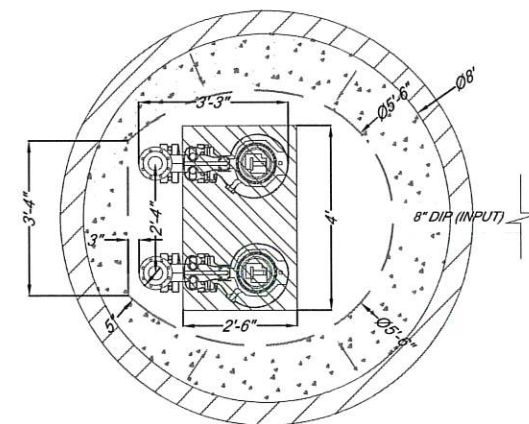
SECTION A-A



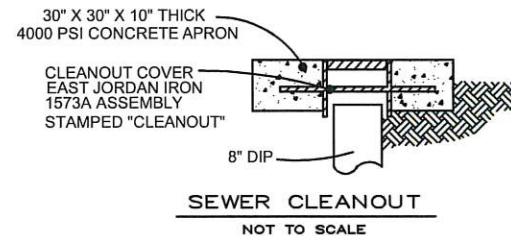
PLAN



DETAIL / DIMENSIONS



SECTION B-B



SEWER CLEANOUT
NOT TO SCALE

KEYED NOTES:

1. 6" DIA. SCH. 40 STEEL VENT PIPE W/EXPAND MESH BUG SCREEN WELDED TO VENT ON THE INSIDE OF UPPER PORTION OF VENT PIPE.
2. ALUMINUM COVER WITH 90° LOCKING HINGED ACCESS DOOR AND LIFTING RINGS ON EACH CORNER (PROVIDED BY PUMP VENDOR) PER SCHEDULE.
3. ACCESS DOOR SHALL OPEN AWAY FROM CONTROL PANEL TO ALLOW VIEW INTO WET WELL FROM CONTROL PANEL.
4. ISOLATION PLUG VALVE BALLCENTRIC, DE ZURICK (TYP. OF 2 - PROVIDED BY PUMP VENDOR) SIZE AS NEEDED.
5. SPRING LOADED SWING CHECK VALVE (TYP. OF 2 - PROVIDED BY PUMP VENDOR) SIZE AS NEEDED.
6. 0 TO 50 PSI PRESSURE GAUGE & TRANSMITTER MOUNTED AT 45° TO ALLOW VISIBILITY FROM TOP OF PIT (TYP. OF 1 PROVIDED BY PUMP VENDOR). DETAIL SHEET 3/4.
7. 6" MIN. DIAMETER PRECAST CONCRETE MANHOLE SECTIONS FOR VAULT.
8. DRESSER COUPLINGS (TYP. OF 2) OR M.J. HARD SLEEVE, ALL HARDWARE STAINLESS STEEL.
9. STAINLESS STEEL GUIDE RAILS (TYP. OF 4 - PROVIDED BY PUMP VENDOR).
10. STAINLESS STEEL LIFTING CHAINS (TYP. OF 2 - PROVIDED BY PUMP VENDOR).
11. SUBMERSIBLE PUMP, DISCHARGE, EQUIPPED WITH MIX/FLUSH VALVE ON ONE PUMP, MODEL & TYPE PER SCHEDULE, SIZE DISCHARGE AS NEEDED.
12. #5 BARS @ 12" O.C. EACH WAY, WITH ONE 36" #5 BAR DIAGONAL AT EACH CORNER OF OPENING ON TOP SLAB.
13. FLOATS AND CABLES (TYP. OF 4) SET AT ELEVATION ON SHEET 1/4.
14. 2 7/8" I.D. GALVANIZED SCH. 40 STEEL PIPE SOCKET FOR LIFTING HOIST (SEE GENERAL NOTE 1).
15. 8" DIAMETER PRECAST CONCRETE MANHOLE SECTIONS FOR WET WELL WET WELL INTERIOR COATED PER SPECIFICATION 502.
16. 1" x 1" CHANNEL FRAME AROUND SUMP W/ALUMINUM REMOVABLE 1" GRATING OVER OPENING.
17. 1/2" D x 8" L STAINLESS STEEL EYE BOLTS ANCHORED INTO CONCRETE LID AT EACH CORNER.
18. MAINTAIN 6" CLEARANCE FROM SLOPED SLAB TO PUMP MOUNTING HARDWARE.
19. 6" OF 3/4" GRAVEL.
20. DUCTILE IRON PIPE AND FITTINGS SIZED PER SCHEDULE.
21. 8" CLEAN-OUT COVER PER DETAIL ON THIS SHEET.
22. RETRACTABLE FALL THROUGH PREVENTION RAIL AND NET SYSTEM SHALL BE INSTALLED. MUST MEET ALL FEDERAL, STATE AND LOCAL PERSONNEL SAFETY NETTING SPECIFICATIONS.
23. PUMP CONTROL CABLE FROM CONTROLS. CABLE/CONDUIT THROUGH WETWELL SIDEWALL AND HANG CABLE FROM HOOK ANCHORED IN TOP SLAB (TYP. OF 2).
24. 3" TRACING WIRE TEST CAP (WIRE TO BE GREEN 10 GA.)
25. CONCRETE FLOW FILL PIPE SUPPORT.

GENERAL NOTES:

1. INSTALL 2 7/8" I.D. SOCKET, 8" DEEP, FINAL LOCATION TO BE DETERMINED BY LOS ALAMOS COUNTY ACCORDING TO PUMP SIZE FROM CENTER OF PUMPS FOR USE OF A LIFTING HOIST.
2. CONCRETE TOP OF WET WELL TO BE 4000 PSI WITH BROOM FINISH, AND CLEAR SEALER APPLIED.
3. GRADE GROUND SURFACE TO DRAIN AWAY FROM LIFT STATION IN ALL DIRECTIONS.
4. SURFACES OF ALUMINUM IN CONTACT WITH CONCRETE TO BE PAINTED OR OTHERWISE COATED WITH A PROTECTIVE COATING.
5. DUPLEX SUBMERSIBLE PUMP SYSTEM EQUIPPED WITH THE MIX/FLUSH VALVE FEATURE ON ONE PUMP.
6. PUMP VENDOR TO SUPPLY ALUMINUM ACCESS COVERS 1/4" THICK WITH A 90° LOCKING MECHANISM, STAINLESS STEEL LIFTING CHAINS, CHECK VALVES AND ISOLATION VALVES, STAINLESS STEEL GUIDE BARS, GUIDE BAR BRACKETS, AND CAST IRON PEDESTAL ELBOWS FOR PUMPS.
7. ALL FASTENERS AND MOUNTING BRACKETS TO BE STAINLESS STEEL.
8. ALL PUMP DISCHARGE PIPING TO BE DUCTILE IRON OR SCHEDULE 40 STEEL WITH COATING ON PIPING INSIDE WET WELL TO MATCH STRUCTURE.
9. CONTRACTOR/INSTALLER TO PROVIDE L.A.C.U. WITH CONTROL PANEL, AND MOTOR OPERATING MANUALS.
10. CONTROLS SHALL BE PROVIDED BY PUMP VENDOR.
11. PUMP PLACEMENT AND MOUNTING HARDWARE LOCATION PER MANUFACTURER REQUIREMENTS.
12. STRUCTURES PER SPECIFICATION 502.
13. REFER TO SPECIFICATION SEWER MANHOLES 505 WASTEWATER LIFT STATION.

DATE: OCTOBER 2022

APPROVED BY:

REVISION:

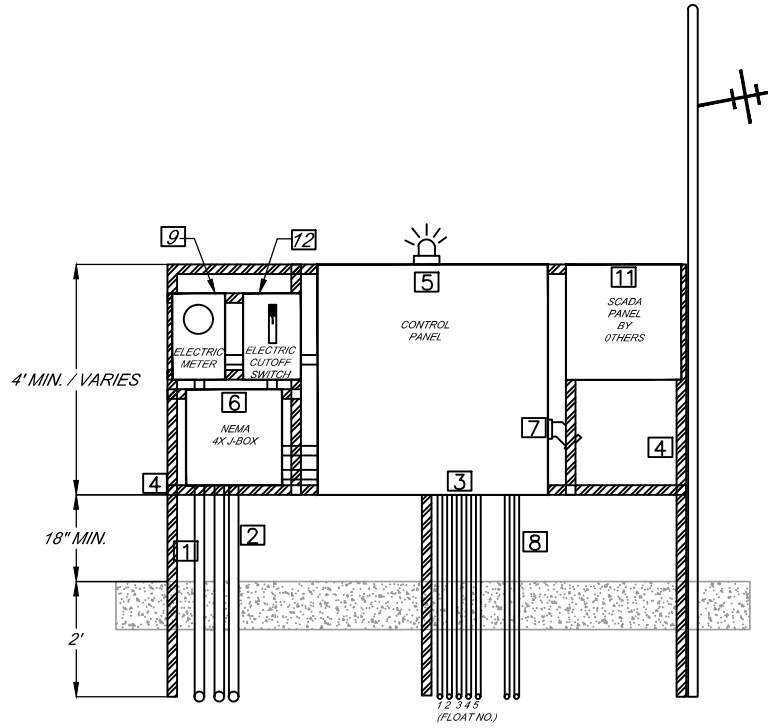
DATE: 10/20/22 No.

UTILITY CONSTRUCTION STANDARDS - SEWER

SECTION 5000

WASTEWATER LIFT STATION
CIVIL AND MECHANICAL COMPONENTS

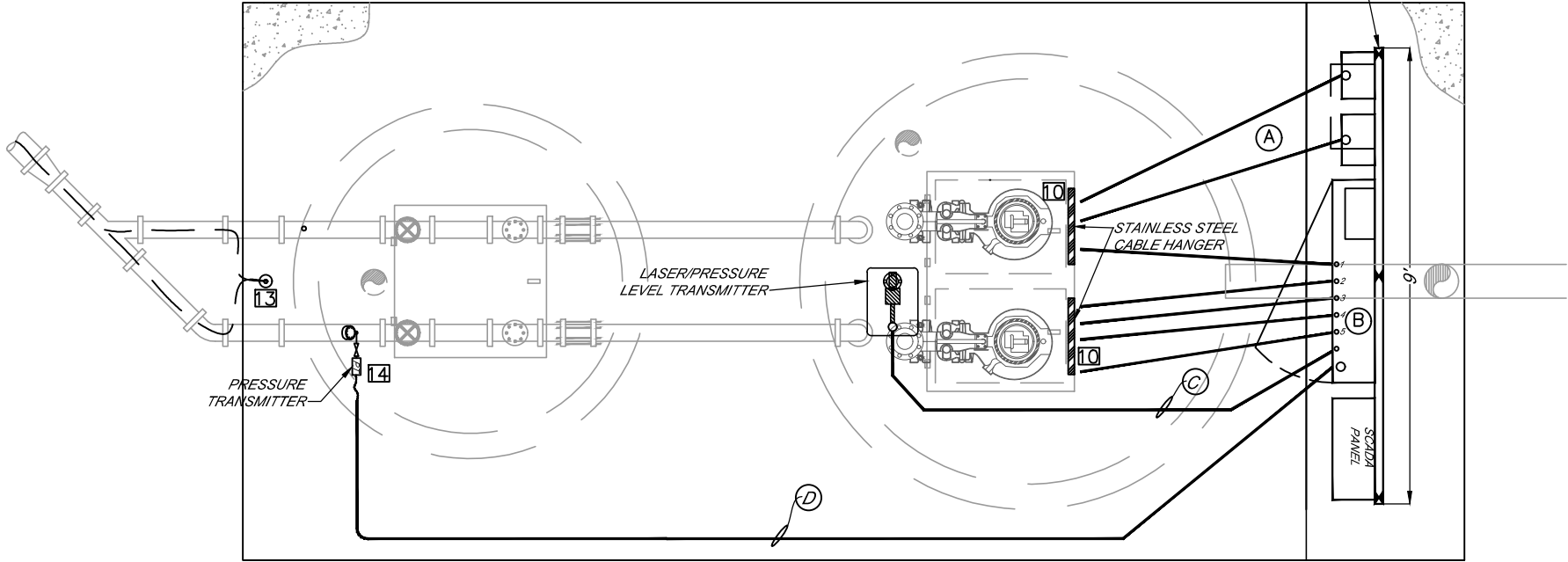
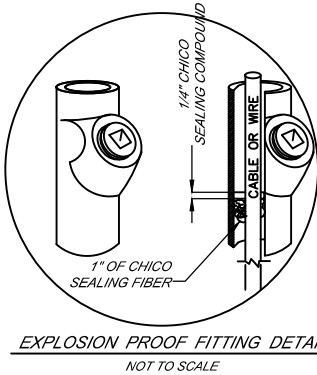
5014B



CONTROL PANEL

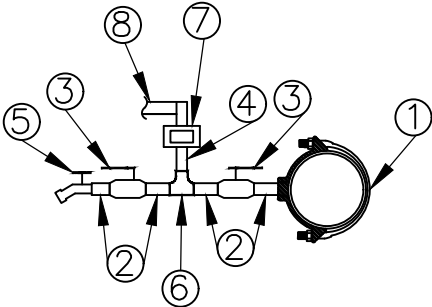
ELECTRICAL KEYED NOTES - CONTROL PANEL

- 1. 3" STATION POWER SUPPLY RMC CONDUIT
- 2. 2-2" PUMP POWER SUPPLY RMC CONDUIT
- 3. 5-1" RMC CONDUIT FOR PUMP CONTROL WIRE (FROM FLOATS)
- 4. 2" SQUARE GALVANIZED TUBE OR STAINLESS STEEL UNI-STRUT. THREE COLUMNS AND TWO HORIZONTAL RUNS WITH INTERMEDIATE BRACES AS REQUIRED BY EQUIPMENT.
- 5. HIGH-LEVEL WATER ALARM LIGHT
- 6. 20" x 20" x 8" NEMA 4 x J-BOX FOR PUMP POWER CONDUCTORS.
- 7. BRYANT STANDBY GENERATOR POWER CONNECTOR IEC 309 SERIES I + II RECEPTACLE.
- 8. 2 - 1" PVC CONDUITS FOR PRESSURE TRANSMITTER AND LEVEL TRANSMITTER.
- 9. ELECTRIC METER BASE
- 10. PRE-MANUFACTURED WIRE HANGER ANCHORED PER MANUFACTURED RECOMMENDATIONS
- 11. SCADA PANEL (24"x24") BY OTHERS. REFER TO SHEET 4 / 4
- 12. ELECTRIC CUT-OFF SWITCH
- 13. FORCE MAIN LOCATE WIRE TEST BOX.
- 14. COMBINATION PRESSURE TRANSMITTER AND PRESSURE GAGE PER DETAIL SHEET 3/4



ELECTRICAL CONDUIT AND PANEL LAYOUT

NOTE:
RMC CONDUIT ABOVE GROUND/SLAB.
CONDUIT IN SLAB, UNDERGROUD OR IN WET WELL MAY BE SCH.
40 PVC CONDUIT FOR PUMP AND FLOAT CABLES SHALL END
WITHIN 6" OF CABLE HANGER AND FASTENED TO WET WELL
CEILING PER NEC USING STAINLESS STEEL BRACKETS AND
FASTENERS.



PRESSURE TRANSDUCER
NOT TO SCALE

KEYED NOTES FORE DRY WELL PRESSURE TRANSDUCER INSTALLATION	
1	PIPE MAIN SIZE BY 1" SADDLE. 1" FIPT THREADS. MOUNTED SO APPURTENANT PIPING IS HORIZONTAL AND HOSE BID IS NOT CLOSER TO WALL THAN 6".
2	1" X CLOSE NIPPLE. STAINLESS STEEL. MIP
3	1" BALL VALVE. STAINLESS STEEL FULL PORT. LEVER HANDLE FIP
4	ADAPTER. 1" MALE BSPT X 1" MIP. STAINLESS STEEL.
5	HOSE BIBB. STAINLESS STEEL. WHEEL OR "T" HANDLE. 3/4" FIP X 3/4" GHT (GARDEN HOSE THREAD).
6	TEE. 1". FIP. STAINLESS STEEL.
7	PRESSURE TRANSDUCER. FLUSH DIAPHRAGM. INDUMART MODEL PTF 115, 0-30 PSI (TYPICAL PRESSURE RANGE - MAY BE A LARGER RANGE IF SPECIFIED BY ENGINEER), 1" BSPT PROCESS CONNECTION, AISI 316 STAINLESS STEEL, 4-20 MaMP, DIS 100 INDICATOR.
8	1" ELECTRIC CONDUIT. FMC BETWEEN TRANSDUCER AND WALL OR CEILING. RMC CONDUIT ALONG WALL OR CEILING. FASTEN RMC TO WALL OR CEILING WITH STAINLESS STEEL BRACKETS AND FASTENERS PER LATEST NEC.

CONDUIT SCHEDULE							
ID	COUNT	SIZE	DEPTH	MATERIAL	FROM	TO	DESCRIPTION
A	2	2"	11"	RMC/PVC	NEMA J-BOX	WET WELL	PUMP CABLES
B	5	1"	11"	RMC/PVC	CONTROL PANEL	WET WELL	FLOATS (1-5)
C	1	1"	IN SLAB	RMC/PVC	CONTROL PANEL	LEVEL INSTRUMENT	LEVEL INSTRUMENT
D	1	2"	24"	PVC	CONTROL PANEL	DRY WELL	PRESSURE TRANSMITTER

ELECTRICAL NOTES:

- CONTROL PANEL TO BE NEMA 4 RATED WITH EXTERNAL CONNECTION FOR GENERATOR DURING EMERGENCY OPERATION TO BE DETERMINED BY L.A.C.U. ENGINEERING, LOCATION IS SITE SPECIFIC.
- LIGHTING ARRESTOR, AND POWER SUPPLY CONTROLS TO BE MOUNTED IN CONTROL PANEL.
- CONTROL PANEL FRONT BLANK. LOCAL DEPTH GAUGE AND DISCHARGE PRESSURE, PUMP RUN STATUS LIGHTS, HOA SWITCHES, AMPMETER AND RUN TIME METERS FOR EACH PUMP MOUNT ON INNER DOOR.
- PUMP CONTROLS TO HAVE LEAD/LAG ALTERNATOR, TIME DELAY ON RE-START AFTER POWER FAILURE, AND PHASE/LOW VOLTAGE MONITOR. PUMPS CONTROLLED BY LEVEL TRANSDUCER WITH FLOAT CONTROL BACKUP.
- ANTI-CONDENSATION HEATER INSIDE PANEL, 100 WATT, THERMOSTAT CONTROLLED.
- PANEL MOUNTED 15 AMP, 110V CONVENIENCE GFI OUTLET WITH 20 AMP CIRCUIT BREAKER/ DRY TRANSFORMER 110.
- CONTRACTOR TO INSTALL 3" RMC CONDUIT AND WIRING AS NECESSARY TO CONNECT CONTROL PANEL TO NEW ELECTRIC SERVICE METER SOCKET.
- SCADA PANEL AND ANCILLARY EQUIPMENT SUPPLIED BY OTHERS. REFER TO SHEET 4/4
- REFER TO SPECIFICATION 505 FOR LIFT STATION EQUIPMENT.

**ECCENTRIC
INTERNAL DROP MANHOLE**

SECTION
5000
5016

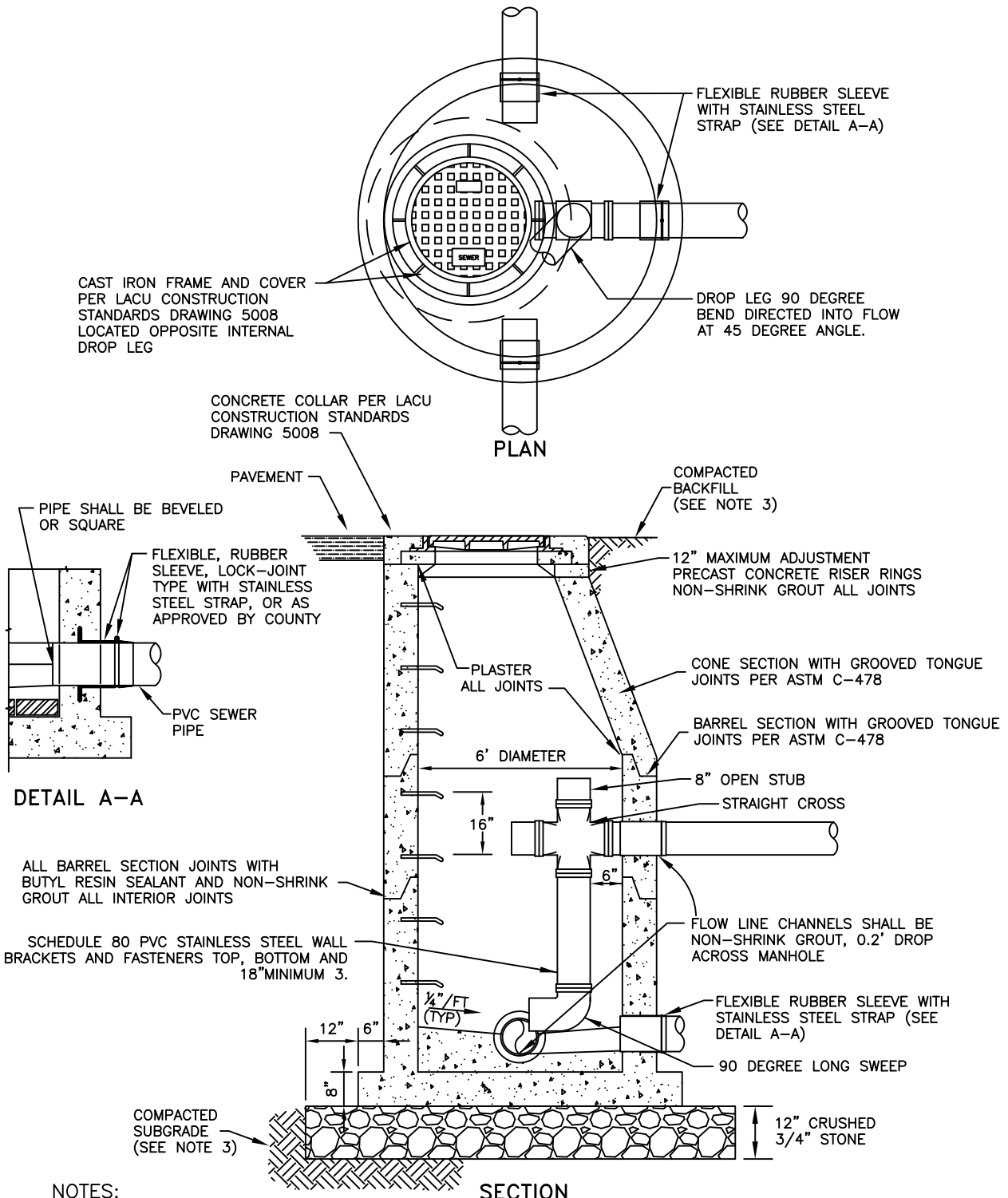
No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018



NOTES:

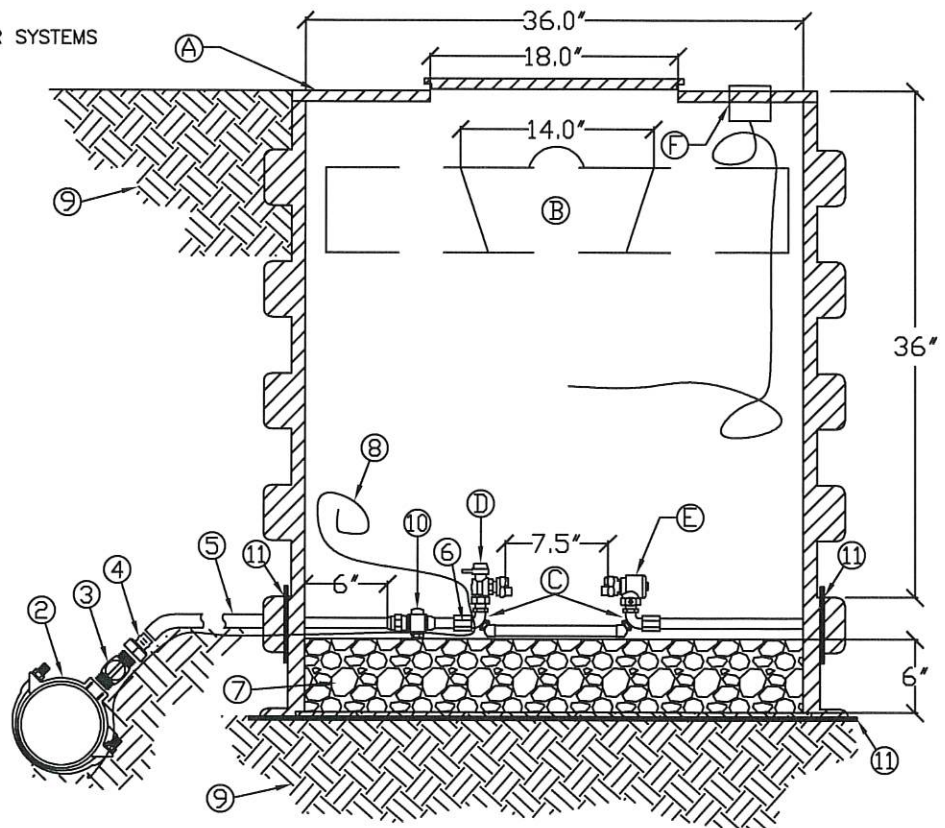
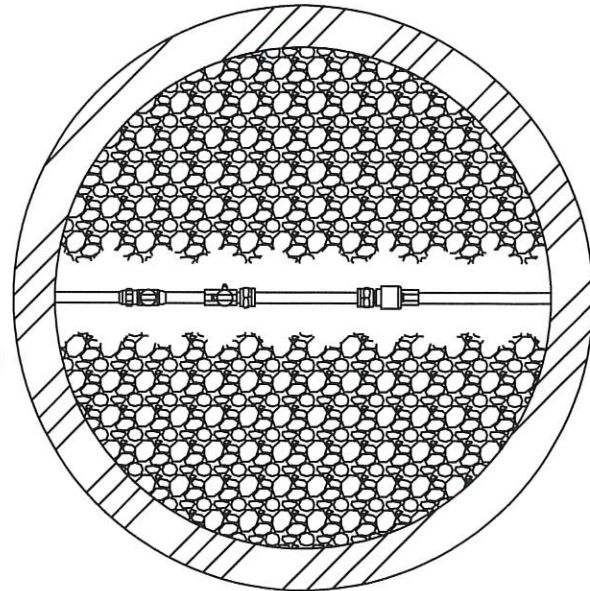
- 1.) MANHOLE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 502 SEWER MANHOLES.
- 2.) NON-SHRINK GROUT PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 702 GROUT.
- 3.) COMPACTION AND BACKFILL PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 202, EXCAVATION TRENCHING AND BACKFILL.
- 4.) MANHOLE STEPS TO BE PLASTIC COATED STEEL STEPS 10"-12" TREAD SPACED 12" PER ASTM D-41 TOP STEP 6" BELOW TOP OF CONE.

KEYED NOTES

- ① METER BOX ASSEMBLY
 - Ⓐ 36" DIA. CAST IRON METER BOX COVER WITH 18" DIA. KEY LOCK LID WITH 2" CUT OUT FOR TOUCH READ
 - Ⓑ HDPE METER BOX WITH SMOOTH INTERIOR
 - Ⓒ INSULATING PAD: CLOSED CELL POLYETHYLENE PAD, 6" THICK WITH 14" INNER PAD OPENING BY IN-FACT CORPORATION
 - Ⓓ 5/8" x 3/4" METER YOKE, STRAIGHT LINE INLET AND OUTLET. MIP INLET AND OUTLET
 - Ⓔ ANGLE SHUT OFF VALVE
 - Ⓕ 3/4" TOP ENTRY DUAL CHECK VALVE ASSE CERTIFIED (FIP x METER SADDLE NUT)
 - Ⓖ METER TOUCH READ ATTACHMENT WITH WIRE LOOPED FOR SLACK
- ② DUCTILE IRON BODY WITH DOUBLE STRAP SERVICE SADDLE
- ③ 1" CORPORATION STOP
- ④ 1 EA. 1" PEX x FIP BRASS FITTING
- ⑤ 1" PEX TUBING (WIRSBO) OR TYPE-K COPPER
- ⑥ 1" PEX TUBING TO 3/4" MIP BRASS FITTING
- ⑦ 3/4" GRAVEL 6" MINIMUM THICKNESS
- ⑧ #10 COPPER BLUE INSULATED TRACING WIRE
- ⑨ FOR COMPACTION(SEE SPECIFICATION SECTION 202)
- ⑩ 1" SERVICE VALVE
- ⑪ SEAL METER BOX BOTTOM OPENING WITH 1/4" x 1/4" STEEL MESH, 19 GAUGE OR LARGER, GALVANIZED OR 304 STAINLESS STEEL. SEAL PIPE ENTRY THROUGH METER BOX WALL WITH NON-SHRINK CEMENT GROUT, SPRAY FOAM INSULATION OR APPROVED EQUIVALENT.

NOTE:

REFER TO SPECIFICATION 601 WATER SYSTEMS



DATE: 7/13/21 No.

REVISION:

APPROVED BY:

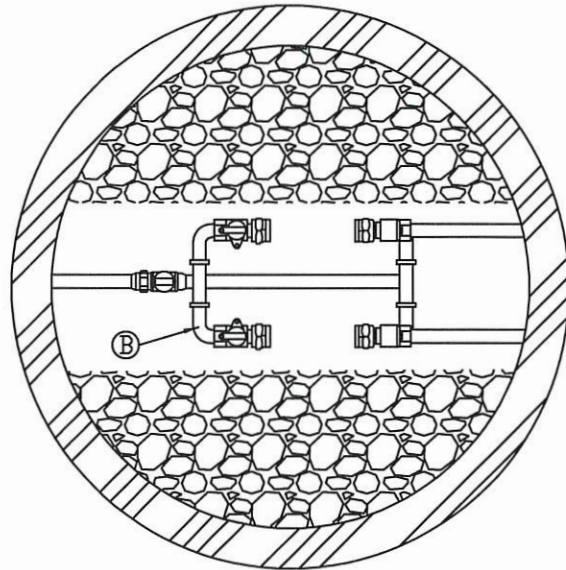
DATE: JULY 2021

5/8" x 3/4" DOUBLE WATER
METER PIT SETTER ASSEMBLY

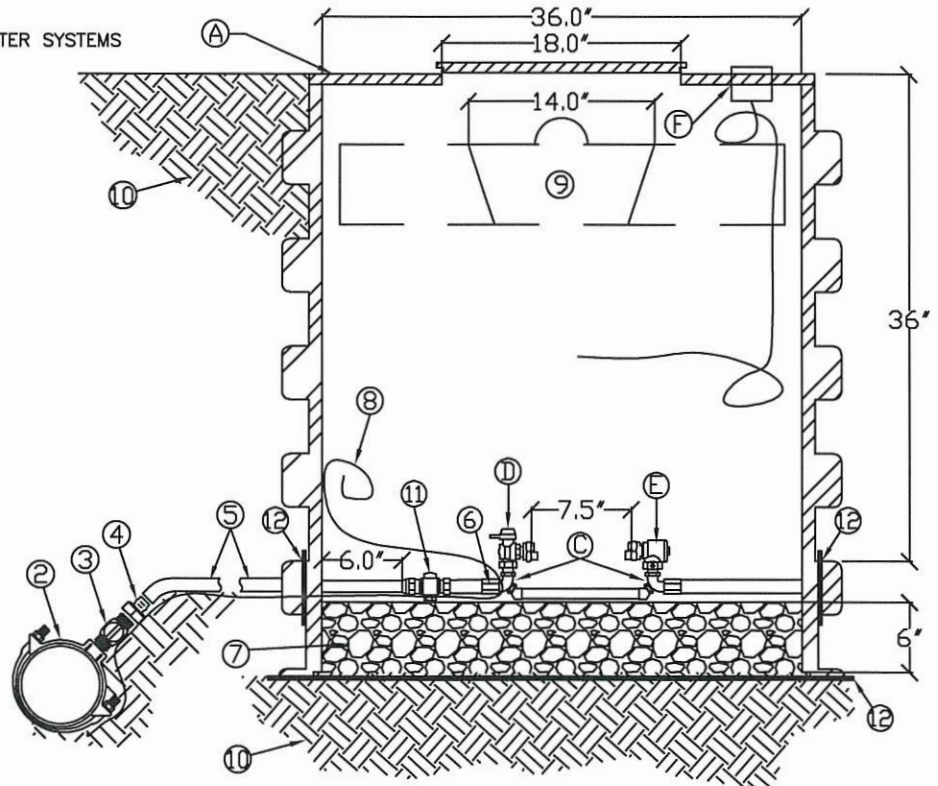
SECTION
6000
6002

KEYED NOTES

- ① METER BOX ASSEMBLY
 - (A) 36" DIA. CAST IRON METER BOX COVER WITH 18" DIA. KEY LOCK LID WITH 2" CUT OUT FOR TOUCH READ
 - (B) HDPE METER BOX WITH SMOOTH INTERIOR
 - (C) SPLITTER MANIFOLD
 - (D) 5/8" x 3/4" DOUBLE METER YOKE, STRAIGHT LINE INLET AND OUTLET. MIP INLETS AND OUTLETS.
 - (E) ANGLE SHUT OFF VALVE
 - (F) 3/4" TOP ENTRY DUAL CHECK VALVE ASSE CERTIFIED (FIP x METER SADDLE NUT)
 - (G) METER TOUCH READ ATTACHMENT WITH WIRE LOOPED FOR SLACK
- ② DUCTILE IRON BODY WITH DOUBLE STRAP SERVICE SADDLE
- ③ 1" CORPORATION STOP
- ④ 1 EA. 1" PEX x FIP BRASS FITTING
- ⑤ 1" PEX TUBING (WIRSBO) OR TYPE-K COPPER
- ⑥ 1" PEX TUBING TO 3/4" MIP BRASS FITTING
- ⑦ 3/4" GRAVEL 6" MINIMUM THICKNESS
- ⑧ #10 COPPER BLUE INSULATED TRACING WIRE
- ⑨ INSULATING PAD: CLOSED CELL POLYETHYLENE PAD, 6" THICK WITH 14" INNER PAD OPENING BY IN-FACT CORPORATION
- ⑩ FOR COMPACTION(SEE SPECIFICATION SEC.202)
- ⑪ 1" SERVICE VALVE
- ⑫ SEAL METER BOX BOTTOM OPENING WITH 1/4" X 1/4" STEEL MESH, 19 GAUGE OR LARGER, GALVANIZED OR 304 STAINLESS STEEL. SEAL PIPE ENTRY THROUGH METER BOX WALL WITH NON-SHRINK CEMENT GROUT, SPRAY FOAM INSULATION OR APPROVED EQUIVALENT.



NOTE:
REFER TO SPECIFICATION 601 WATER SYSTEMS



DATE: 7/13/21 No.

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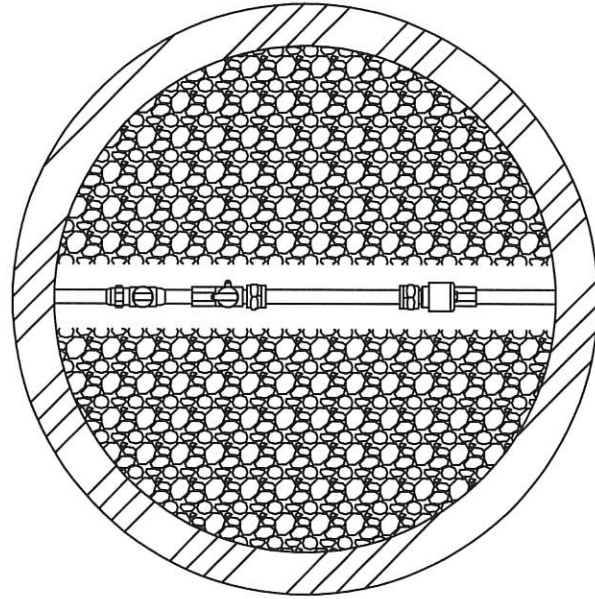
DATE: JULY 2021

**1" SINGLE WATER METER
PIT SETTER ASSEMBLY**

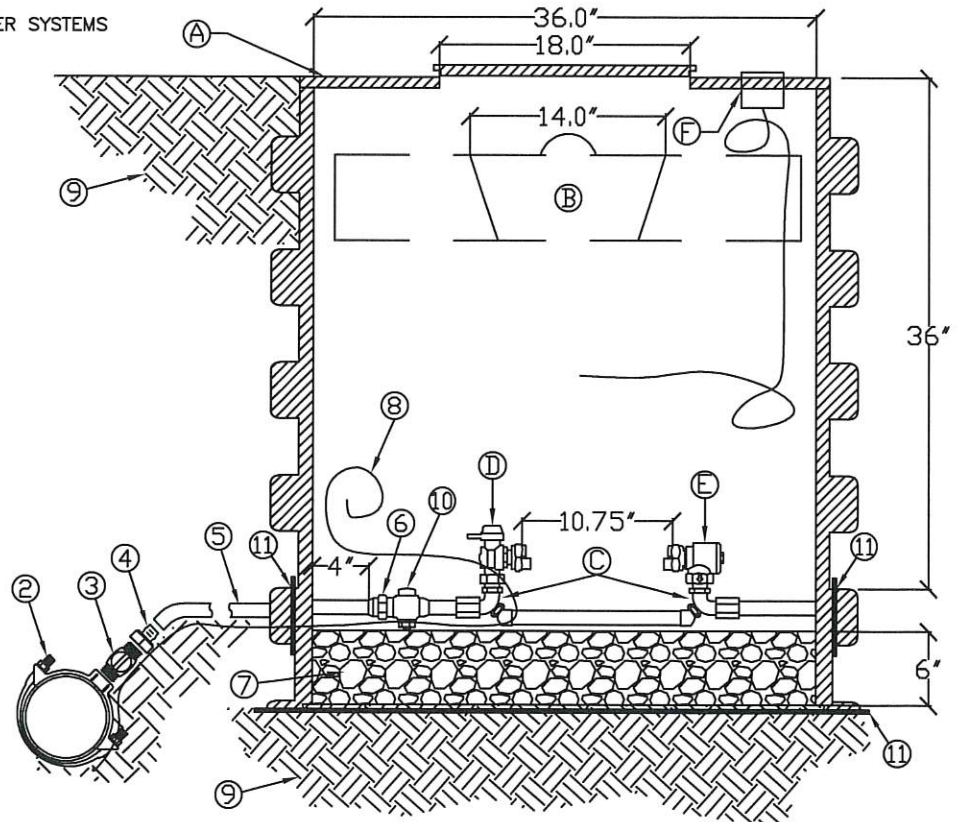
SECTION
6000
6003

KEYED NOTES

- ① METER BOX ASSEMBLY
 - (A) 36" DIA. CAST IRON METER BOX COVER WITH 18" DIA. KEY LOCK LID WITH 2" CUT OUT FOR TOUCH READ
 - (B) INSULATING PAD: CLOSED CELL POLYETHYLENE PAD, 6" THICK WITH 14" INNER PAD OPENING BY IN-FACT CORPORATION
 - (C) 1" METER YOKE, STRAIGHT LINE INLET AND OUTLET MIP INLET AND OUTLET
 - (D) ANGLE SHUT OFF VALVE
 - (E) 1" TOP ENTRY DUAL CHECK VALVE ASSE CERTIFIED (FIP x METER SADDLE NUT)
 - (F) METER TOUCH READ ATTACHMENT WITH WIRE LOOPED FOR SLACK
- ② DUCTILE IRON BODY WITH DOUBLE STRAP SERVICE SADDLE
- ③ 1" CORPORATION STOP
- ④ 1 EA. 1" PEX x FIP BRASS FITTING
- ⑤ 1" PEX TUBING (WIRSBO) OR TYPE-K COPPER
- ⑥ 1" PEX TUBING TO 1" MIP BRASS FITTING
- ⑦ 3/4" GRAVEL 6" MINIMUM THICKNESS
- ⑧ #10 COPPER BLUE INSULATED TRACING WIRE
- ⑨ FOR COMPACTION(SEE SPECIFICATION SECTION 202)
- ⑩ 1" SERVICE VALVE
- ⑪ SEAL METER BOX BOTTOM OPENING WITH 1/4" X 1/4" STEEL MESH, 19 GAUGE OR LARGER, GALVANIZED OR 304 STAINLESS STEEL. SEAL PIPE ENTRY THROUGH METER BOX WALL WITH NON-SHRINK CEMENT GROUT, SPRAY FOAM INSULATION OR APPROVED EQUIVALENT.



NOTE:
REFER TO SPECIFICATION 601 WATER SYSTEMS



DATE: 7/13/24 No.

REVISION:

APPROVED BY:

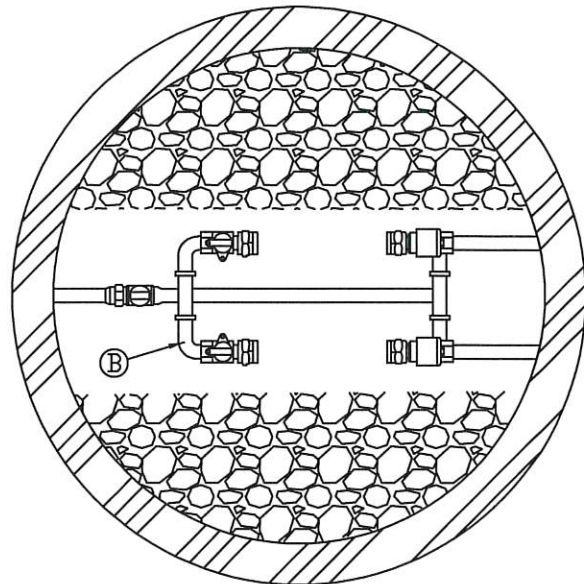
DATE: JULY 2021

**1" DOUBLE WATER METER
PIT SETTER ASSEMBLY**

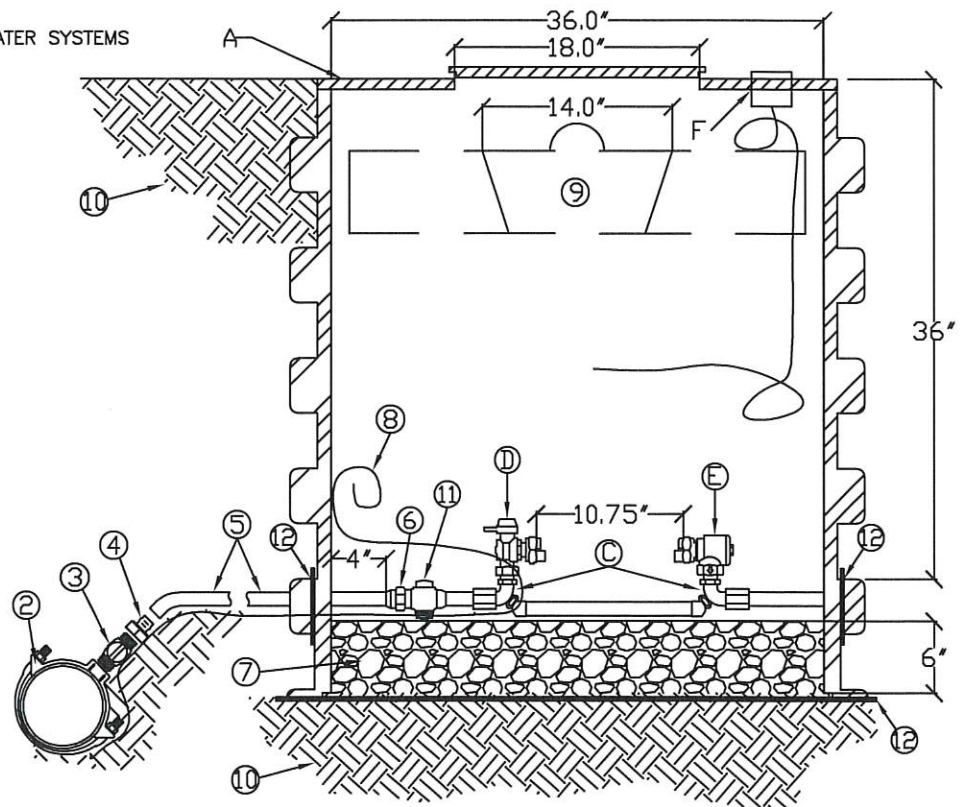
SECTION
6000
6004

KEYED NOTES

- ① METER BOX ASSEMBLY
 - (A) 36" DIA. CAST IRON METER BOX COVER WITH 18" DIA. KEY LOCK LID WITH 2" CUT OUT FOR TOUCH READ
 - (B) HDPE METER BOX WITH SMOOTH INTERIOR
 - (C) 2 EA. 1" METER YOKE
 - (D) ANGLE SHUT OFF VALVE
 - (E) 1" TOP ENTRY DUAL CHECK VALVE ASSE CERTIFIED (FIP x METER SADDLE NUT)
 - (F) METER TOUCH READ ATTACHMENT WITH WIRE LOOPED FOR SLACK
- ② DUCTILE IRON BODY WITH DOUBLE STRAP SERVICE SADDLE
- ③ 1" CORPORATION STOP
- ④ 1" PEX x FIP BRASS FITTING
- ⑤ 1" PEX TUBING (WIRSBO) OR TYPE-K COPPER
- ⑥ 1" PEX TUBING TO 1" MIP BRASS FITTING
- ⑦ 3/4" GRAVEL 6" MINIMUM THICKNESS
- ⑧ #10 COPPER BLUE INSULATED TRACING WIRE
- ⑨ INSULATING PAD: CLOSED CELL POLYETHYLENE PAD, 6" THICK WITH 14" INNER PAD OPENING BY IN-FACT CORPORATION
- ⑩ FOR COMPACTION(SEE SPECIFICATION SEC.202)
- ⑪ 1" SERVICE VALVE
- ⑫ SEAL METER BOX BOTTOM OPENING WITH 1/4" X 1/4" STEEL MESH, 19 GAUGE OR LARGER, GALVANIZED OR 304 STAINLESS STEEL. SEAL PIPE ENTRY THROUGH METER BOX WALL WITH NON-SHRINK CEMENT GROUT, SPRAY FOAM INSULATION OR APPROVED EQUIVALENT.



NOTE:
REFER TO SPECIFICATION 601 WATER SYSTEMS



DATE: 7/13/21 No.

REVISION:

APPROVED BY:

DATE: JULY 2021

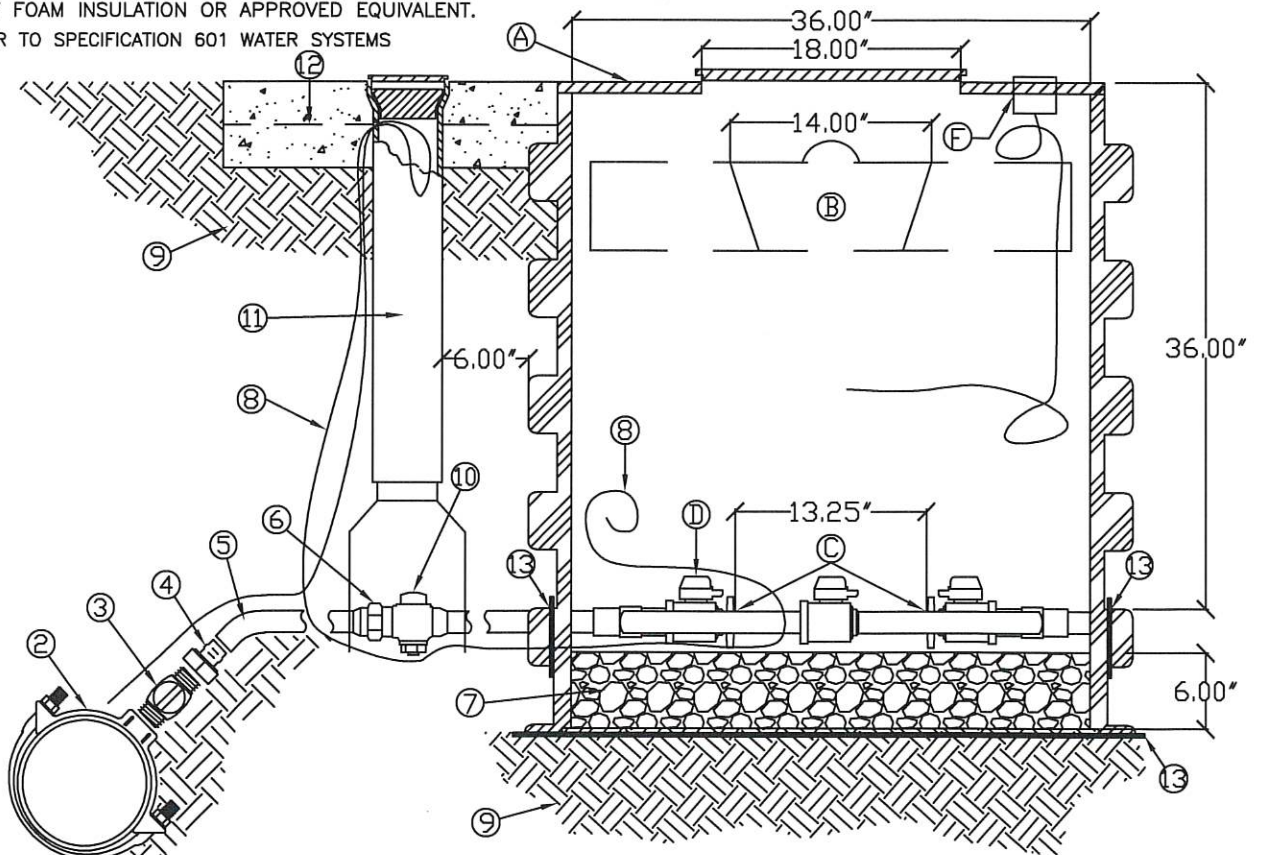
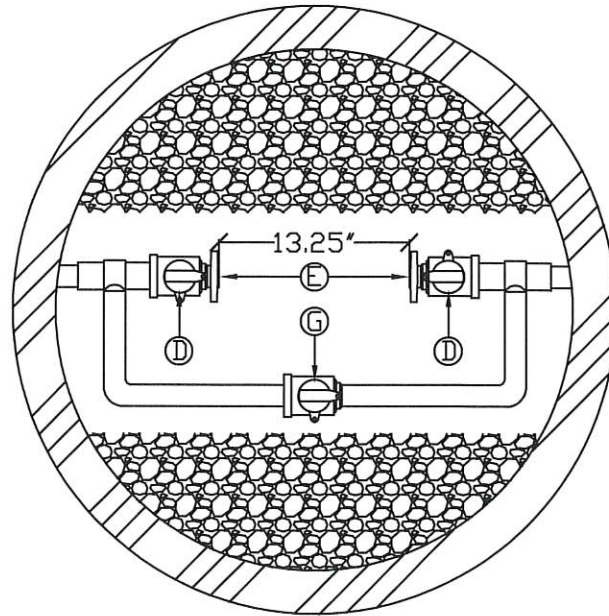
**1 1/2" WATER METER
PIT SETTER ASSEMBLY**

SECTION
6000
6005

KEYED NOTES

- ① METER BOX ASSEMBLY
 - Ⓐ 36" DIA. CAST IRON METER BOX COVER WITH 18" DIA. KEY LOCK LID WITH 2" CUT OUT FOR TOUCH READ
 - Ⓑ INSULATING PAD: CLOSED CELL POLYETHYLENE PAD, 6" THICK WITH 14" INNER PAD OPENING BY IN-FACT CORPORATION
 - Ⓒ 1-1/2" NO-RISE METER YOKE
 - Ⓓ 1-1/2" SERVICE VALVE
 - Ⓔ 1-1/2" METER FLANGE
 - Ⓕ METER TOUCH READ ATTACHMENT WITH WIRE LOOPED FOR SLACK
 - Ⓖ 1-1/2" BYPASS VALVE
- ② DUCTILE IRON BODY WITH DOUBLE STRAP SERVICE SADDLE
- ③ 1-1/2" CORPORATION STOP
- ④ 1-1/2" PEX x FIP BRASS FITTING
- ⑤ 1-1/2" PEX TUBING (WIRSBO) OR TYPE-K COPPER
- ⑥ 1-1/2" PEX TUBING TO 1-1/2" MIP BRASS FITTING
- ⑦ 3/4" GRAVEL 6" MINIMUM THICKNESS
- ⑧ #10 COPPER BLUE INSULATED TRACING WIRE
- ⑨ FOR COMPACTION (SEE SPECIFICATION SECTION 202)
- ⑩ 1-1/2" CURB STOP VALVE (FIP x FIP)
- ⑪ 2" WATER CURB BOX WITH CAST IRON LID LABELED "WATER" HANDLEY OR APPROVED EQUAL
- ⑫ INSTALL 12" x 12" x 6" THICK CONCRETE COLLAR WITH WIRE MESH REINFORCEMENT
- ⑬ SEAL METER BOX BOTTOM OPENING WITH 1/4" x 1/4" STEEL MESH, 19 GAUGE OR LARGER, GALVANIZED OR 304 STAINLESS STEEL. SEAL PIPE ENTRY THROUGH METER BOX WALL WITH NON-SHRINK CEMENT GROUT, SPRAY FOAM INSULATION OR APPROVED EQUIVALENT.

NOTE: REFER TO SPECIFICATION 601 WATER SYSTEMS



DATE: 7/3/21 No.

REVISION:

APPROVED BY:

DATE: JULY 2021

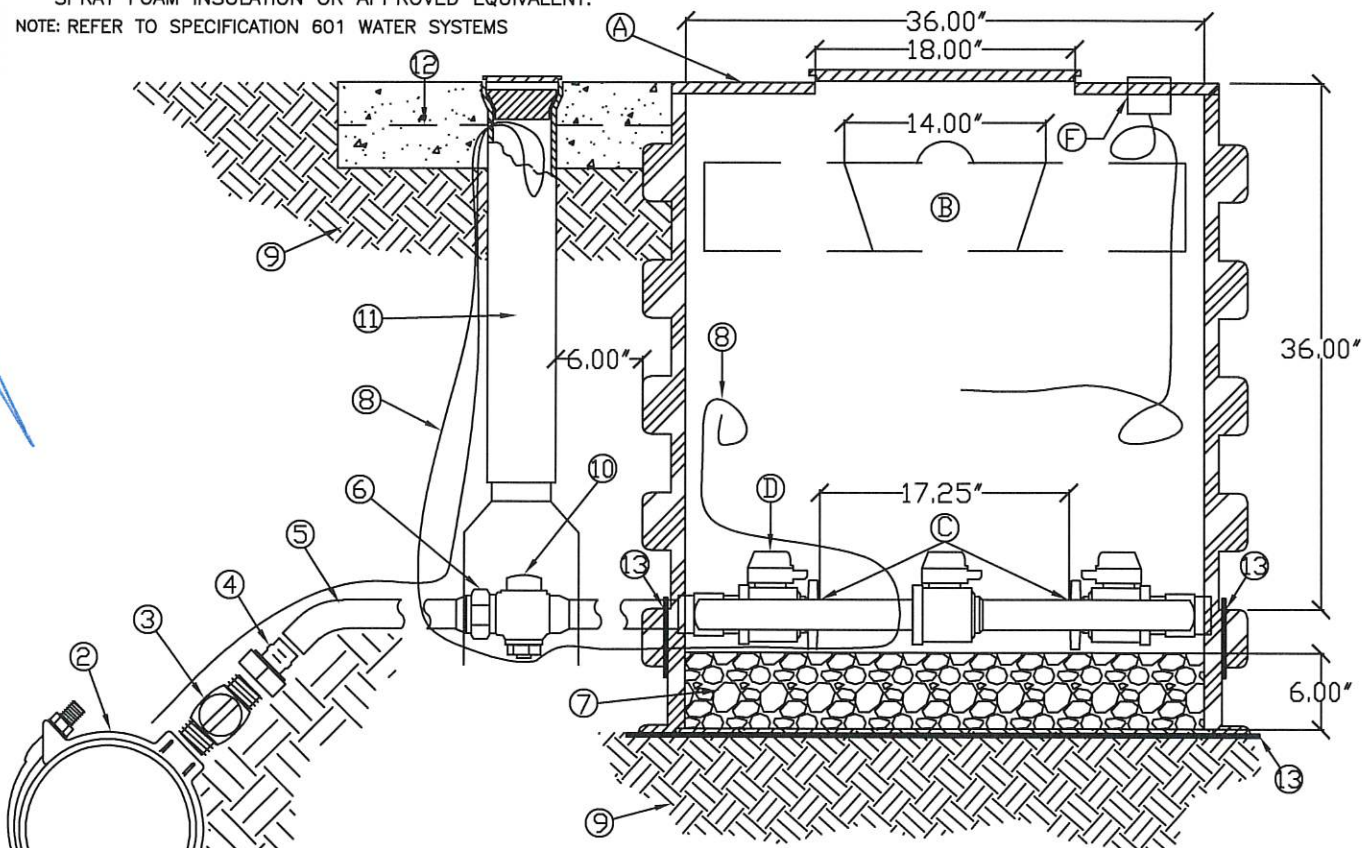
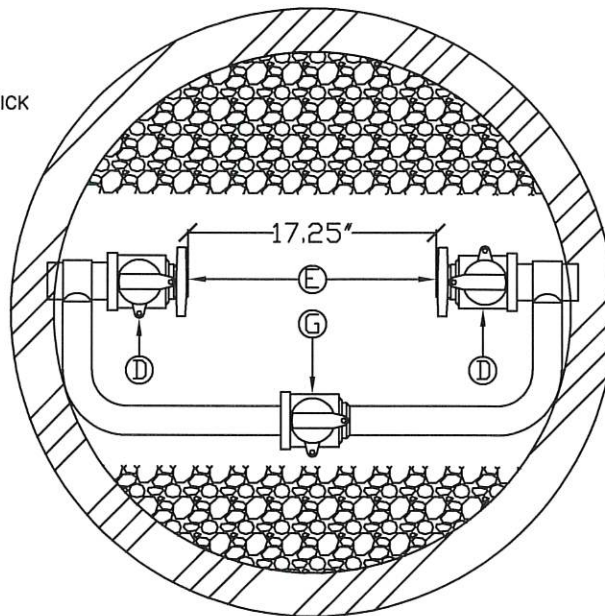
**2" WATER METER
PIT SETTER ASSEMBLY**

SECTION
6000
6006

KEYED NOTES

- ① METER BOX ASSEMBLY
 - (A) 36" DIA. CAST IRON METER BOX COVER WITH 18" DIA. KEY LOCK LID WITH 2" CUT OUT FOR TOUCH READ
 - HDPE METER BOX WITH SMOOTH INTERIOR
 - (B) INSULATING PAD: CLOSED CELL POLYETHYLENE PAD, 6" THICK WITH 14" INNER PAD OPENING BY IN-FACT CORPORATION
 - (C) 2" NO-RISE METER YOKE
 - (D) 2" SERVICE VALVE
 - (E) 2" METER FLANGE
 - (F) METER TOUCH READ ATTACHMENT WITH WIRE LOOPED FOR SLACK
 - (G) 2" BYPASS VALVE
- ② DUCTILE IRON BODY WITH DOUBLE STRAP SERVICE SADDLE
- ③ 2" CORPORATION STOP
- ④ 2" PEX x FIP BRASS FITTING
- ⑤ 2" PEX TUBING (WIRSBO) OR TYPE-K COPPER
- ⑥ 2" PEX TUBING TO 2" MIP BRASS FITTING
- ⑦ 3/4" GRAVEL 6" MINIMUM THICKNESS
- ⑧ #10 COPPER BLUE INSULATED TRACING WIRE
- ⑨ FOR COMPACTION (SEE SPECIFICATION SECTION 202)
- ⑩ 2" CURB STOP VALVE (FIP x FIP)
- ⑪ 2" WATER CURB BOX WITH CAST IRON LID LABELED "WATER" HANDLEY OR APPROVED EQUAL
- ⑫ INSTALL 12" x 12" x 6" THICK CONCRETE COLLAR WITH WIRE MESH REINFORCEMENT
- ⑬ SEAL METER BOX BOTTOM OPENING WITH 1/4" x 1/4" STEEL MESH, 19 GAUGE OR LARGER, GALVANIZED OR 304 STAINLESS STEEL. SEAL PIPE ENTRY THROUGH METER BOX WALL WITH NON-SHRINK CEMENT GROUT, SPRAY FOAM INSULATION OR APPROVED EQUIVALENT.

NOTE: REFER TO SPECIFICATION 601 WATER SYSTEMS

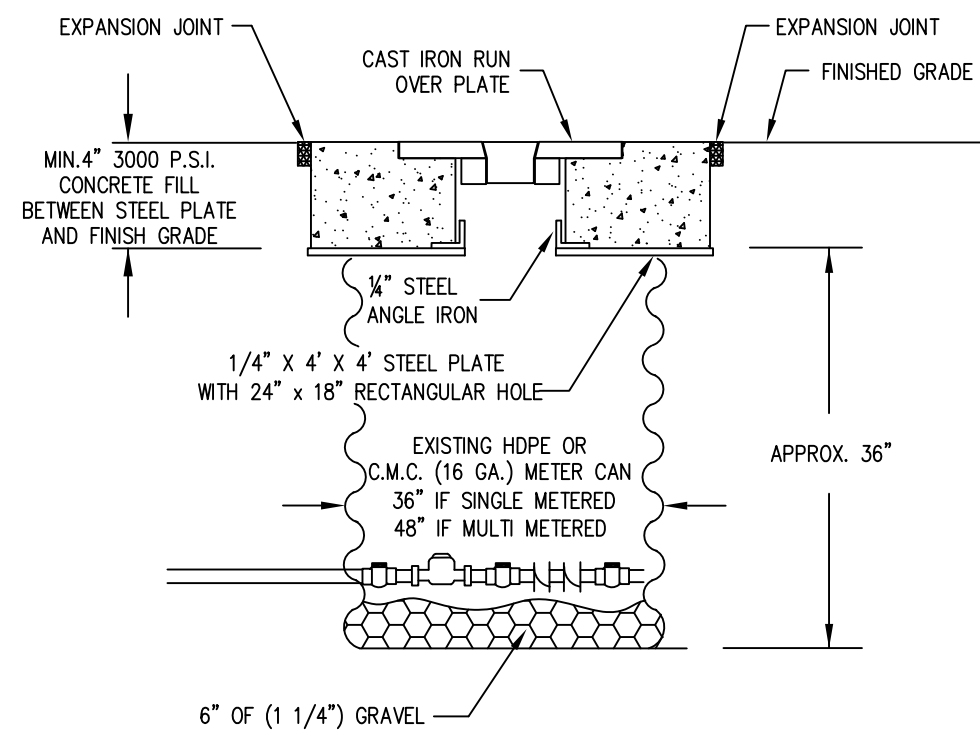
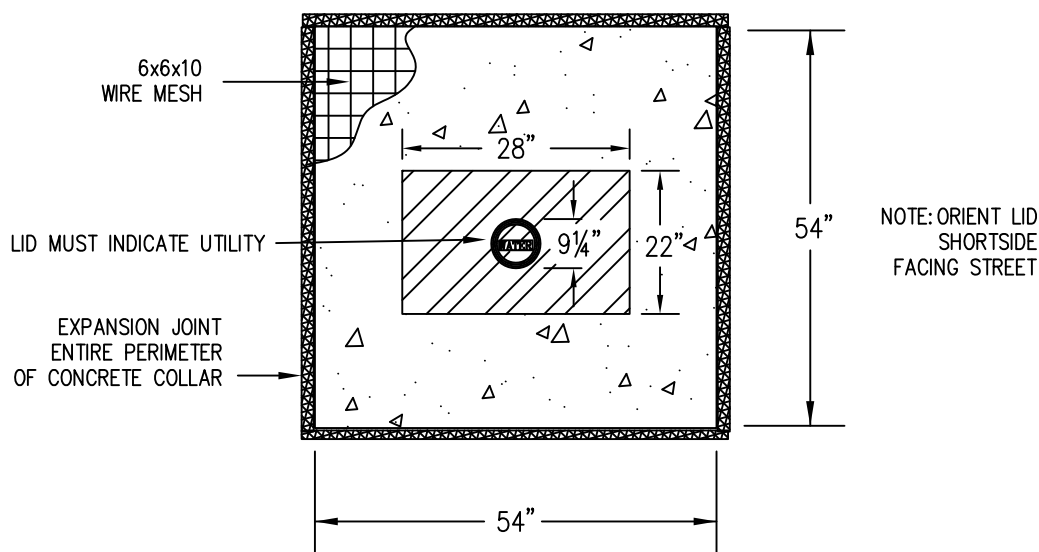


DATE: 7/13/21 No.

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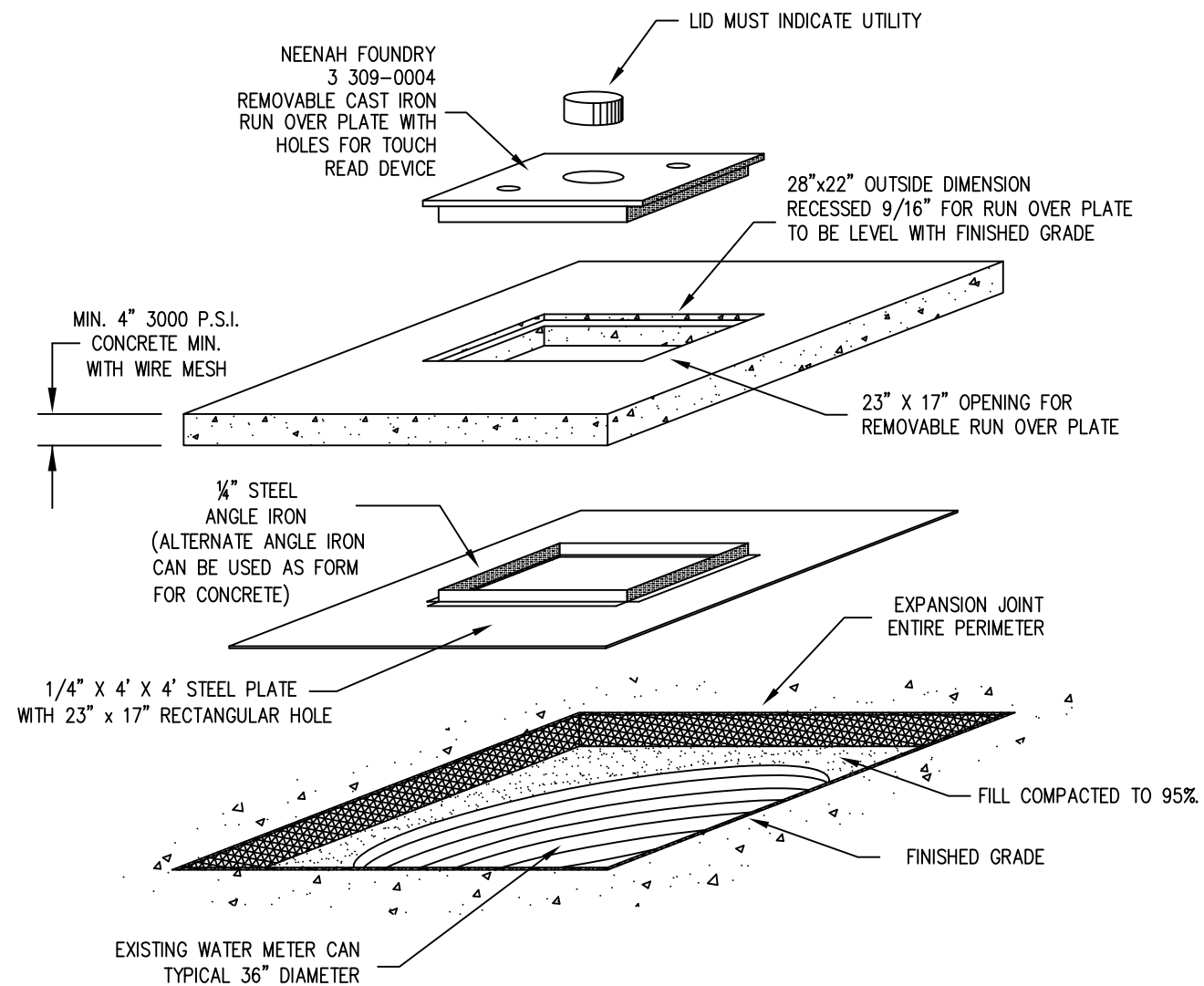
APPROVED BY:

DATE: JULY 2021



NOTE:

- 1.) TOP OF RUN OVER PLATE MUST BE LEVEL WITH FINISHED GRADE.
- 2.) CONCRETE IS REQUIRED WHEN METER CAN IS IN ANY PAVED AREA, DRIVEWAY OR SIDEWALK.
- 3.) 4" X 54" X 54" 3000 P.S.I. CONCRETE WITH REINFORCING WIRE MESH.
- 4.) 28" X 22" X 3/4" CAST IRON DRIVE OVER PLATE WITH 1-7/8" HOLE FOR TOUCH READ DEVICE IN LID. ONE HOLE FOR SINGLE SERVICE, TWO HOLES FOR DOUBLE SERVICE
- 5.) 28" X 22" X 3/4" RECESSED OR GROOVED FOR RUN OVER PLATE TO REST ON.
- 6.) 23" X 17" OPENING, RUN OVER PLATE MUST BE REMOVABLE.



**LARGE WATER
SERVICE LAYOUT METER**

SECTION
6000
6008

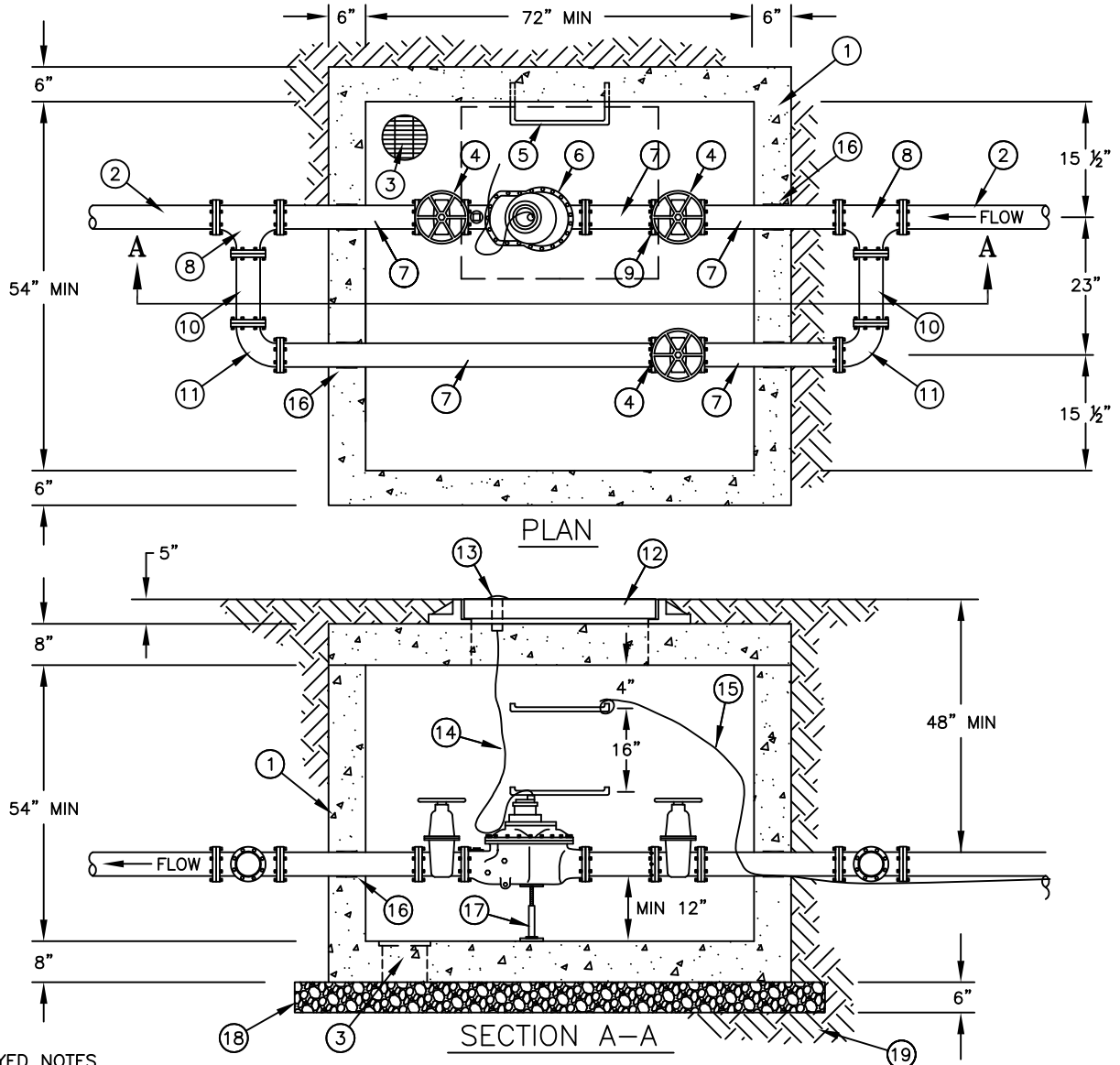
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REVISION:

APPROVED BY:

DATE: APRIL 2018



KEYED NOTES

- | | |
|--|--|
| ① PRE-CAST CONCRETE VAULT, 4000 PSI CONCRETE H2O RATED | ⑪ 3" MJ DUCTILE IRON 90° BEND WITH MECHANICAL RESTRAINTS |
| ② 3" DUCTILE IRON PIPE RESTRAINED JOINT AS REQUIRED | ⑫ ALUMINUM HINGED COVER 30" MINIMUM CLEAR, HEAVY DUTY H2O RATED |
| ③ 12" DIA. SUMP HOLE WITH BRASS GRATE | ⑬ TOUCH READ PAD |
| ④ 3" FLANGED GATE VALVE WITH RESILIENT SEAT (WHEEL OPERATED) | ⑭ SIGNAL WIRE TO METER/TOUCH READ PAD OR MODULE |
| ⑤ PLASTIC COATED MANHOLE STEPS BY MA INDUSTRIES | ⑮ #10 COPPER BLUE INSULATED TRACING WIRE |
| ⑥ 3" FLANGED TYPE TOUCH READ METER | ⑯ LINK SEAL OR APPROVED EQUAL WATER TIGHT JOINT (TYP 4 EA) 6" DIAMETER WALL PENETRATIONS 4 PLACES BY VAULT MANUFACTURER. |
| ⑦ 3" DUCTILE IRON X PLAIN END AS NEEDED | ⑰ PAINTED STEEL PIPE SUPPORT |
| ⑧ 3" X 3" DUCTILE IRON MJ TEE WITH MECHANICAL RESTRAINTS | ⑱ 3/4" GRAVEL 6" DEPTH |
| ⑨ 3" MEGA FLANGE | ⑲ SEE COMPACTION SPECIFICATIONS (SECTION 202) |
| ⑩ 3" DUCTILE IRON | |

NOTES:

- 1.) PRE MANUFACTURED VAULT SHALL BE 4000 PSI CONCRETE AND RATED FOR H2O LOADING.
- 2.) ALL PIPING AND CONNECTIONS IN VAULT SHALL BE FLANGED PER ANSI B16.1 CLASS 125.
- 3.) ALL PIPING INSIDE VAULT SHALL BE DUCTILE IRON AND FITTINGS PER AWWA C153 COMPACT DUCTILE IRON FITTINGS.
- 4.) ALL WORK PER SPECIFICATION 601 WATER SYSTEMS.
- 5.) ALL FASTENERS SHALL BE STAINLESS STEEL COATED TORQUE RATED.
- 6.) PIPE SIZES TO CORRESPOND TO METER SIZE. IF REDUCERS ARE INSTALLED THEY SHOULD BE LOCATED OUTSIDE OF BYPASS TEE FITTINGS.

WATER MAIN TRENCH DETAIL

SECTION
6000
 6009

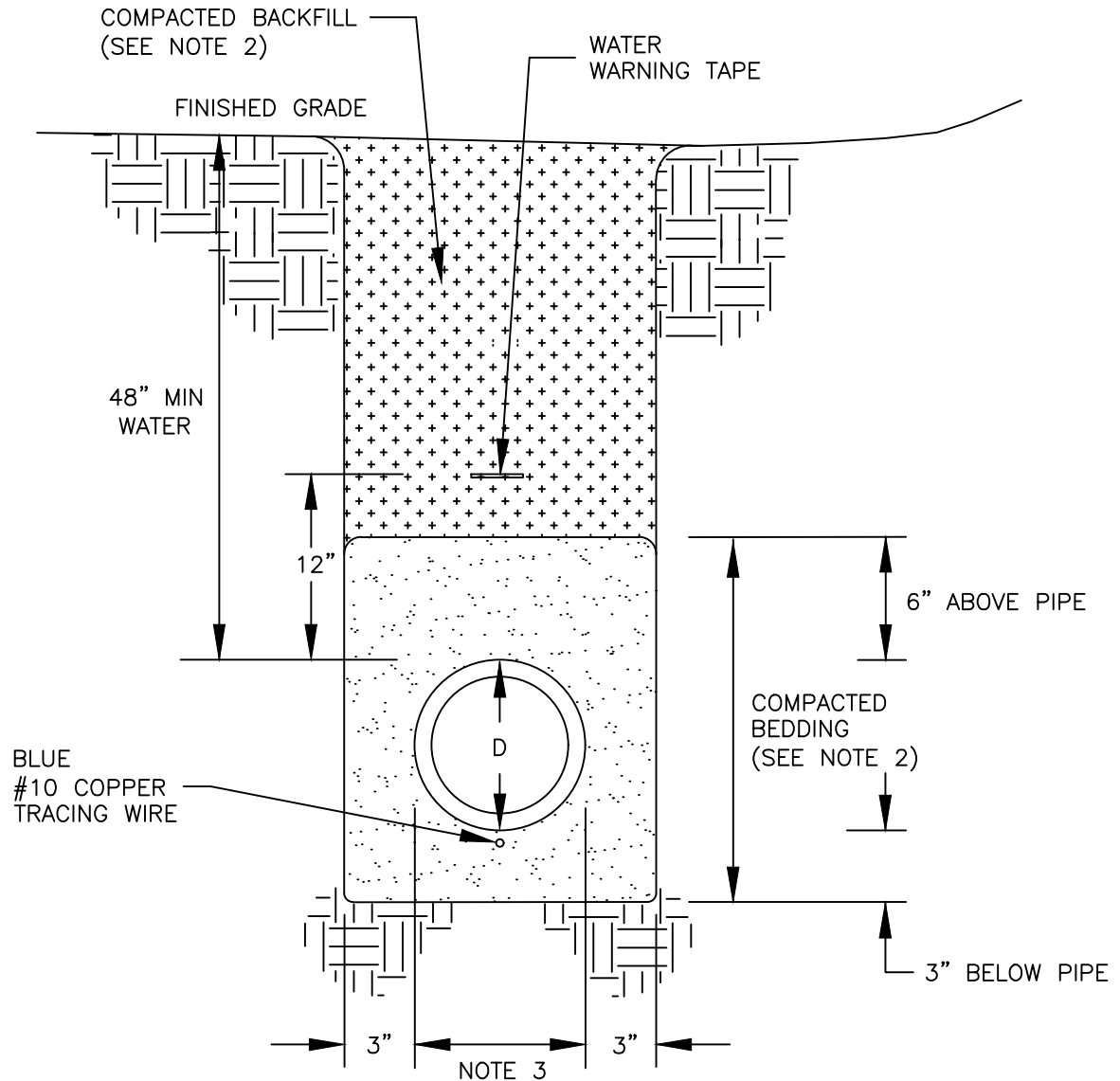
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APPROVED BY:

DATE: FEBRUARY 2022



NOTES:

- 1.) D IS THE OUTSIDE PIPE DIAMETER IN INCHES.
- 2.) SEE COMPACTION SPECIFICATIONS (SECTION 202) FOR ALL REQUIREMENTS.
- 3.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST PIPE PLUS 6 INCHES.

**WATER AND GAS MAIN
 COMMON TRENCH DETAIL**

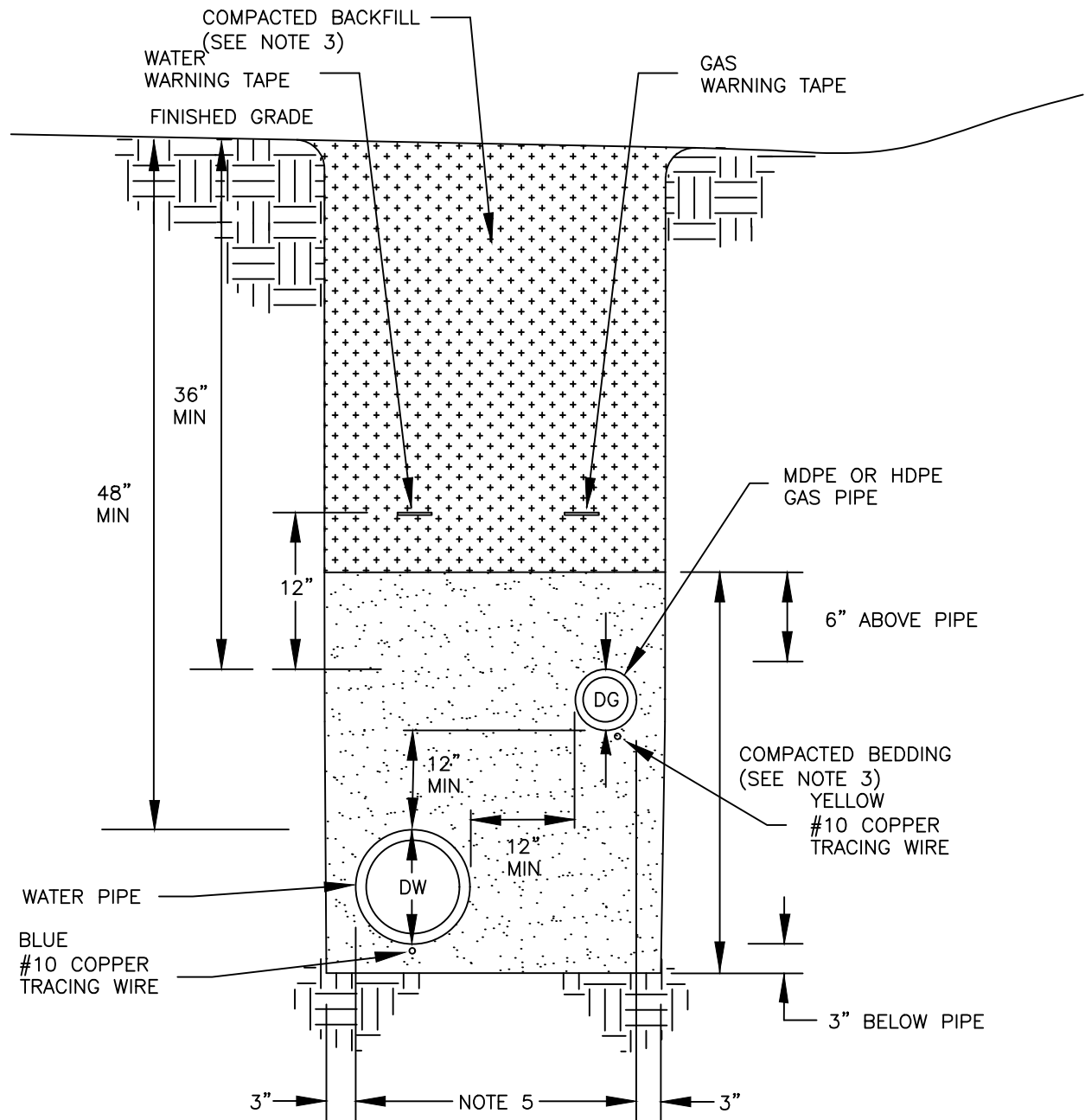
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DATE: FEBRUARY 2022



NOTES:

- 1.) DW IS THE OUTSIDE WATER PIPE DIAMETER IN INCHES.
- 2.) DG IS THE OUTSIDE GAS PIPE DIAMETER IN INCHES.
- 3.) SEE COMPACTION SPECIFICATIONS (SECTION 202) FOR ALL REQUIREMENTS.
- 4.) WATERLINE PER SPECIFICATION 601 OR 602.
- 5.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST PIPES PLUS 6 INCHES.

FIRE HYDRANT DETAIL

SECTION
6000
6011

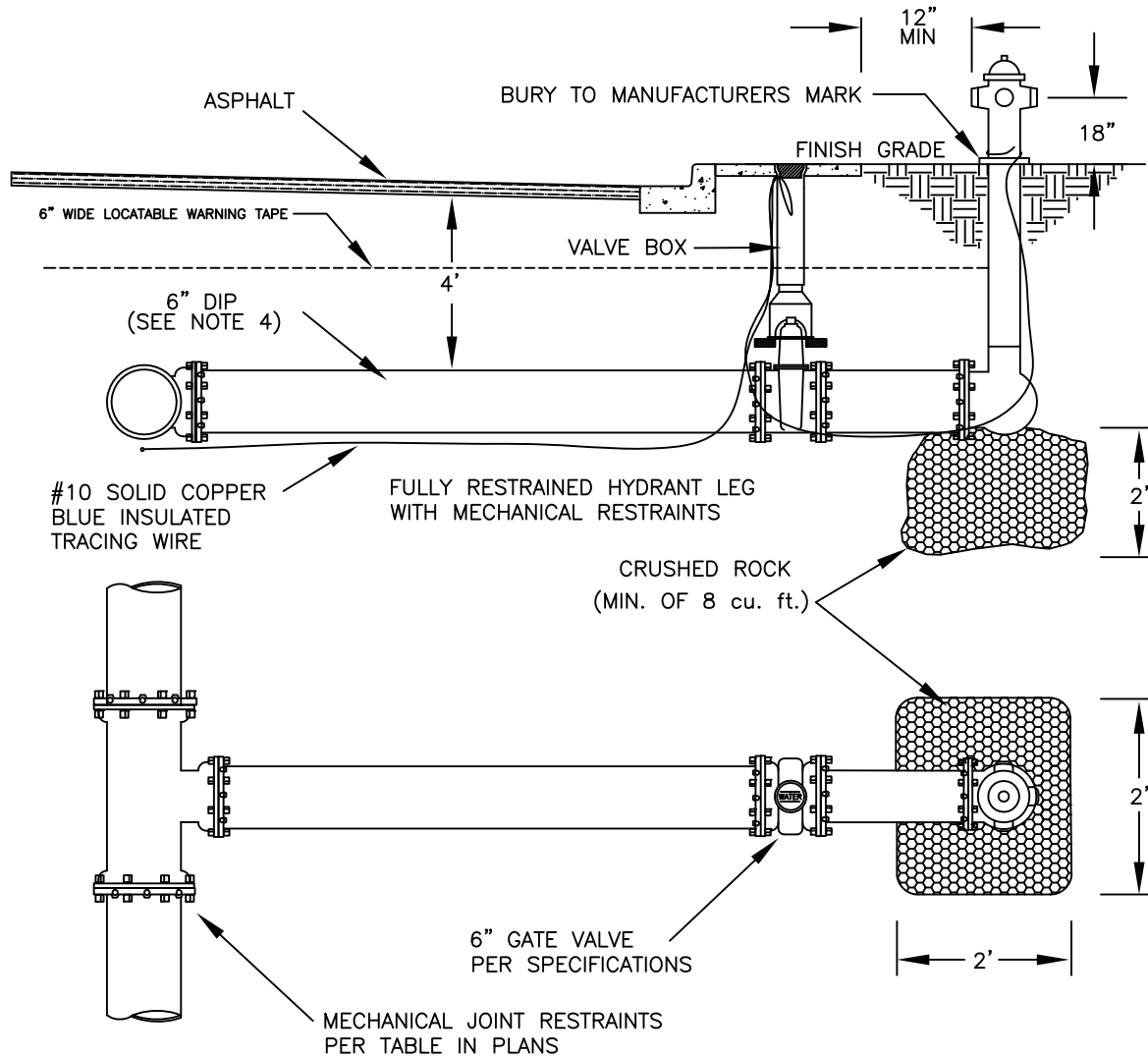
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DATE: APRIL 2018



NOTES:

- 1.) THE CENTER OF THE 4" PUMPER HOSE CONNECTION SHALL BE A MINIMUM OF 18" ABOVE ALL OBSTRUCTIONS, OR AT THE MANUFACTURERS BURY / DEPTH MARK ON BARREL OF THE HYDRANT.
- 2.) ALL FITTINGS AND JOINTS ON HYDRANT LEG SHALL BE MECHANICALLY RESTRAINED.
- 3.) FIRE HYDRANT BY MULLER, KENNEDY OR AMERICAN PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION SECTION 601 WATER SYSTEMS.
- 4.) HYDRANT LEG PIPE MATERIAL MUST BE DIP.
- 5.) ALL UNDERGROUND FLANGED FITTING FASTENERS MUST BE STAINLESS STEEL TORQUE RATED. MECHANICAL JOINT FITTING FASTENERS MAY BE TYPICAL CARBON STEEL.

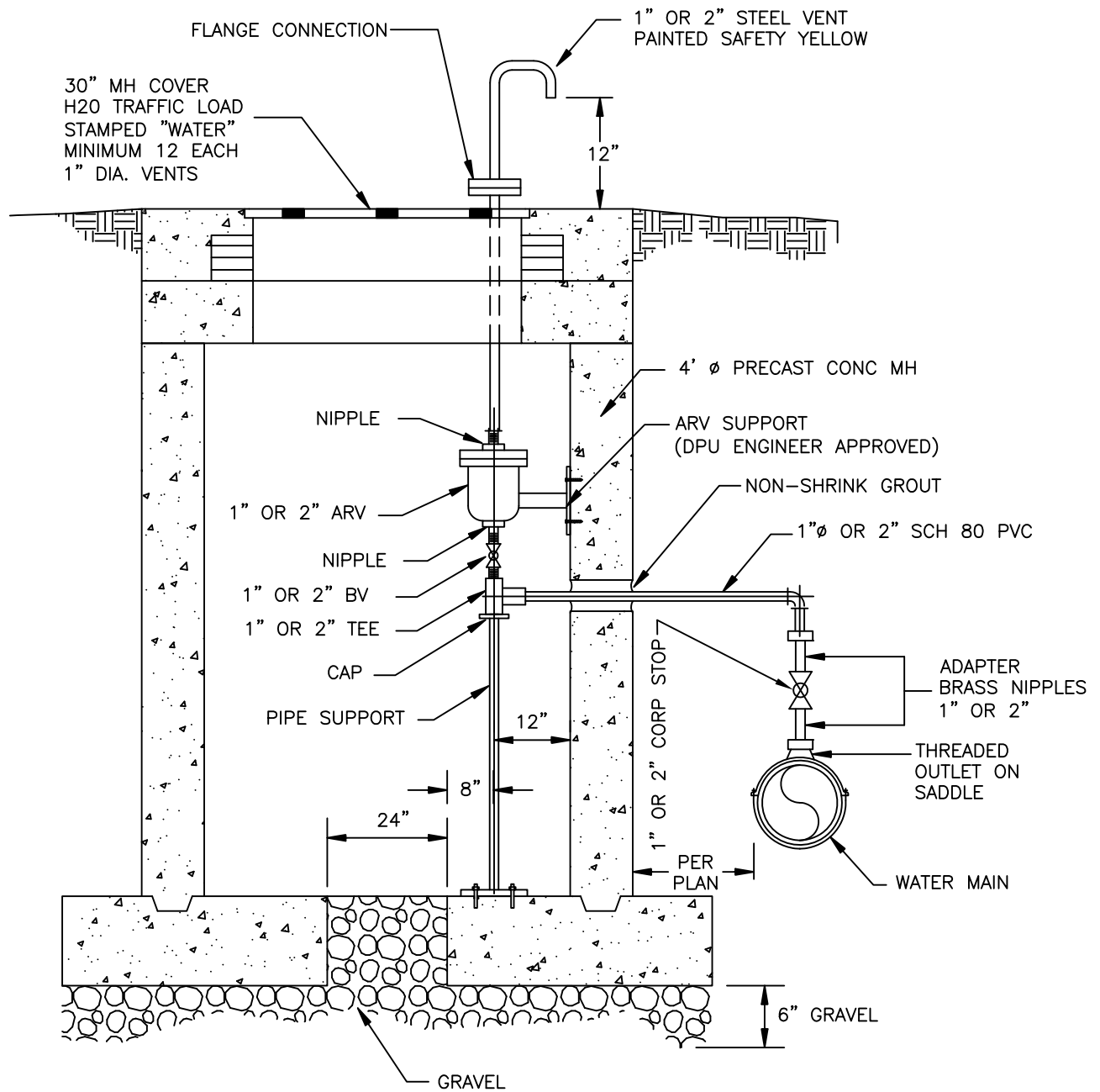
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APPROVED BY:

DATE: APRIL 2018



NOTES:

1. INSTALL 1" ARV ON 8" TO 12" POTABLE WATER LINES.
2. INSTALL 2" ARV ON 14" AND LARGER POTABLE WATER LINES.
3. ARV, SADDLE, BRASS FITTINGS AND VALVE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION 601 POTABLE WATER SYSTEMS.
4. MANHOLE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION 502 STRUCTURES.

WATER VALVE BOX

SECTION
6000
6013

NOTE:
INDICATE ON CONCRETE COLLAR
THE TYPE OF MATERIAL USED(MDPE,
HDPE, STEEL ETC.) THE TYPE OF
UTILITY (GAS, WATER, NON-POT ETC.)
AND INDICATE THE DIRECTION OF FLOW
AND SIZE OF PIPE

IN STREET

NOT IN STREET

4000 PSI MINIMUM
CONCRETE COLLAR WITH
REINFORCING 4"x4"x10
GAUGE WIRE MESH

3000 PSI MINIMUM
CONCRETE COLLAR WITH
REINFORCING 4"x4"x10
GAUGE WIRE MESH

VALVE BOX, LID AND CONCRETE COLLAR
MUST BE LEVEL WITH FINISHED GRADE
OF ASPHALT OR CONCRETE SURFACE

LID MUST INDICATE UTILITY MARKED "WATER"

SLOPE/CHAMFER ON ALL COLLARS
NOT IN ASPHALT OR CONCRETE AREA
TO MATCH UP TO FINISHED GRADE

FINISHED GRADE

WARNING TAPE

#10 SOLID COPPER
BLUE INSULATED
TRACING WIRE

5 1/4" SLIP ZETYPE
ADJUSTABLE PLASTIC
VALVE BOX

WATER VALVE

USE BRICKS AS NEEDED TO
SUPPORT VALVE BOXES TO KEEP
LOADS FROM VALVE AND PIPE

No.

DATE:

REVISION:

APPROVED BY:

DATE: SEPTEMBER 2022

No.

DATE:

REVISION:

APPROVED BY:

DATE: APRIL 2018

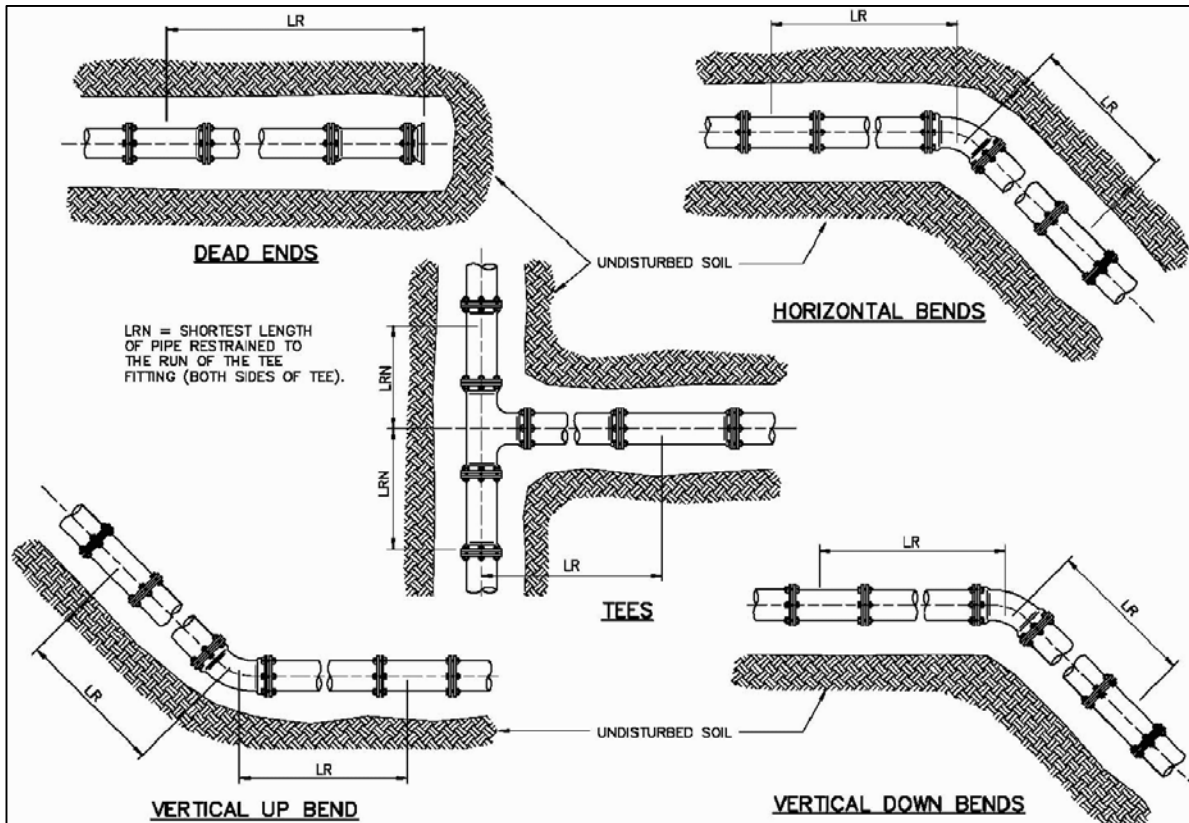
PVC Mechanical Joint Restraint Table

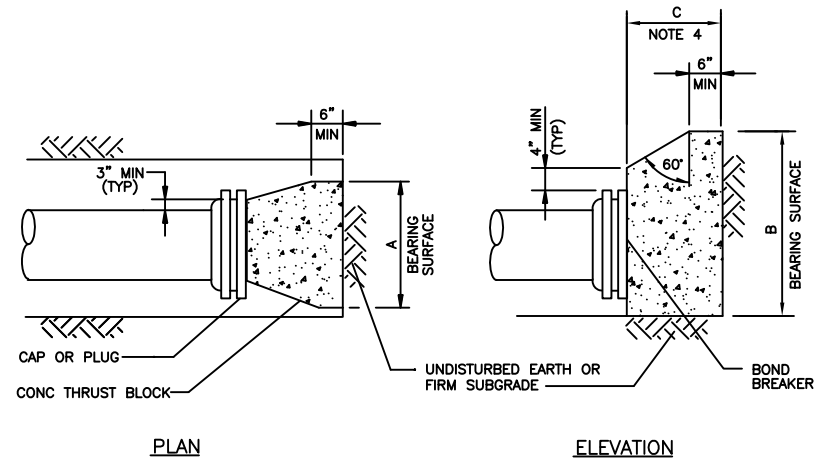
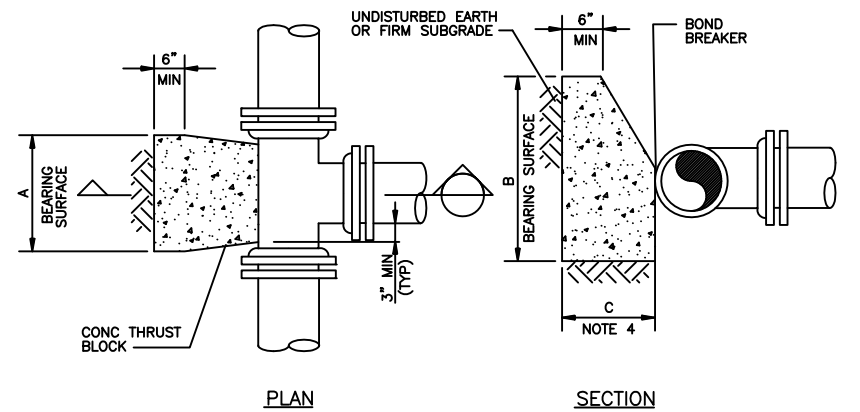
PIPE SIZE	BENDS				TEES			VERTICAL OFFSETS				DEAD ENDS & VALVES
	11 1/4	22 1/2	45	90	LRN = 5	LRN = 10	LRN = 20	45		22 1/2		
								DOWN	UP	DOWN	UP	
4"	2	4	7	18	15	1	1	16	4	8	2	39
6"	2	5	10	25	30	7	1	23	5	11	3	55
8"	3	7	14	33	48	24	1	30	7	15	3	73
10"	4	8	16	39	61	37	1	36	8	17	4	88
12"	5	9	19	46	76	52	5	43	10	21	5	104

Ductile Iron/Poly Wrap Mechanical Joint Restraint Table

PIPE SIZE	BENDS				TEES			VERTICAL OFFSETS				DEAD ENDS & VALVES
	11 1/4	22 1/2	45	90	LRN= 5	LRN = 10	LRN = 18	45		22 1/2		
								DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4"	2	4	9	21	23	1	1	24	4	12	2	59
6"	3	6	12	29	47	10	1	34	6	17	3	83
8"	4	8	16	38	74	37	1	45	8	22	4	109
10"	5	9	19	46	94	57	1	54	10	26	5	131
12"	5	11	22	54	118	80	20	64	12	31	6	155
14"	6	12	25	61	139	101	41	73	14	35	7	177
16"	7	14	29	69	162	124	63	83	15	40	7	200
18"	7	15	32	76	183	145	84	92	17	44	8	222

1. Restrained lengths provided are in feet.
2. Lr - the minimum attached length of solid pipe without joints, fittings, etc. to extend in each direction along the run of the tee.
3. Restrained lengths computed for pipe with 4' of cover from top of pipe.
4. Maximum test pressure of 150 psi.
5. All pipe joints and fittings within the restrained length specified in the table shall be restrained.

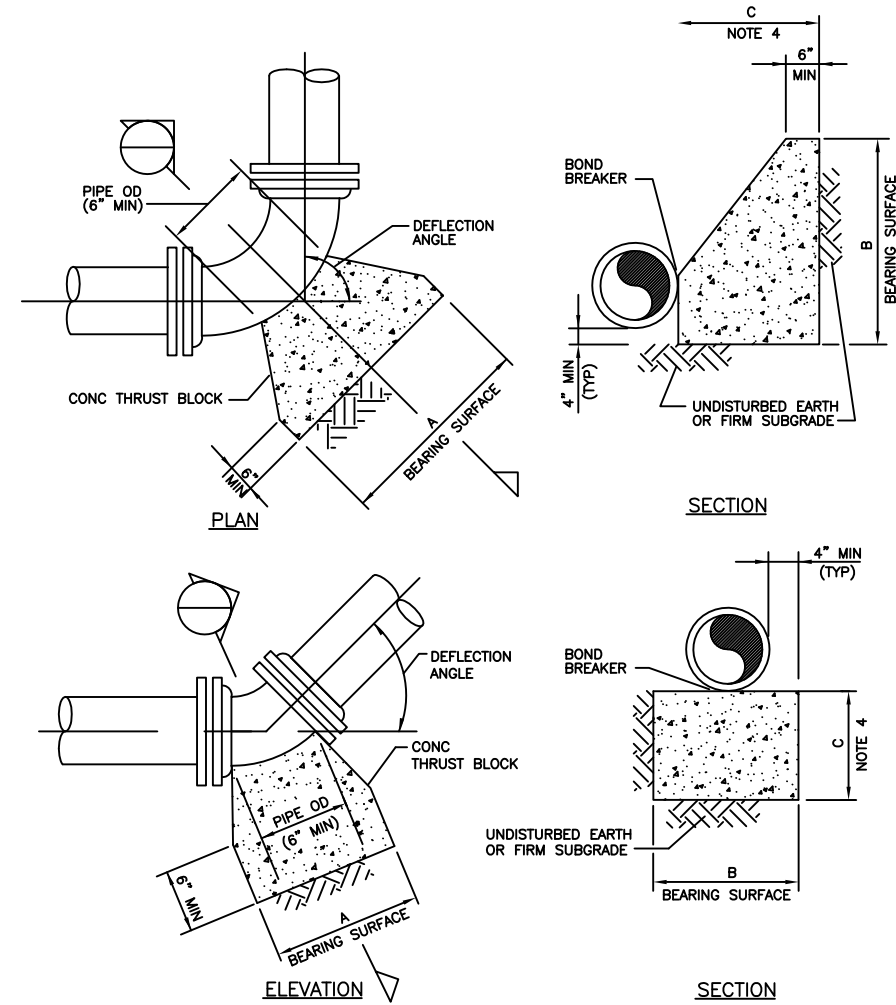




NOMINAL PIPE SIZE (IN)	MAXIMUM PIPE OD (IN)	REQUIRED BEARING AREA (SQ FT)
3	3.96	1.4
4	4.80	2.0
6	6.90	4
8	9.05	7
10	11.10	11
12	13.20	15
14	15.30	21
16	17.40	27
18	19.50	34
20	21.60	41
24	25.80	59

- NOTES:
1. MAXIMUM TEST PRESURE = 1.50x150 PSI
 2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
 3. BEARING AREA = A x B
 4. C SHALL BE GREATER THAN A/2 AND B/2.
 5. THIS DETAIL TO BE USED IN SITUATIONS WHERE EXISTING PIPE IS NOT RESTRAINED.
 6. CONTRACTOR TO USE AFTER APPROVAL BY THE PROJECT MANAGER.

THRUST BLOCK FOR TEES, CAPS AND PLUGS



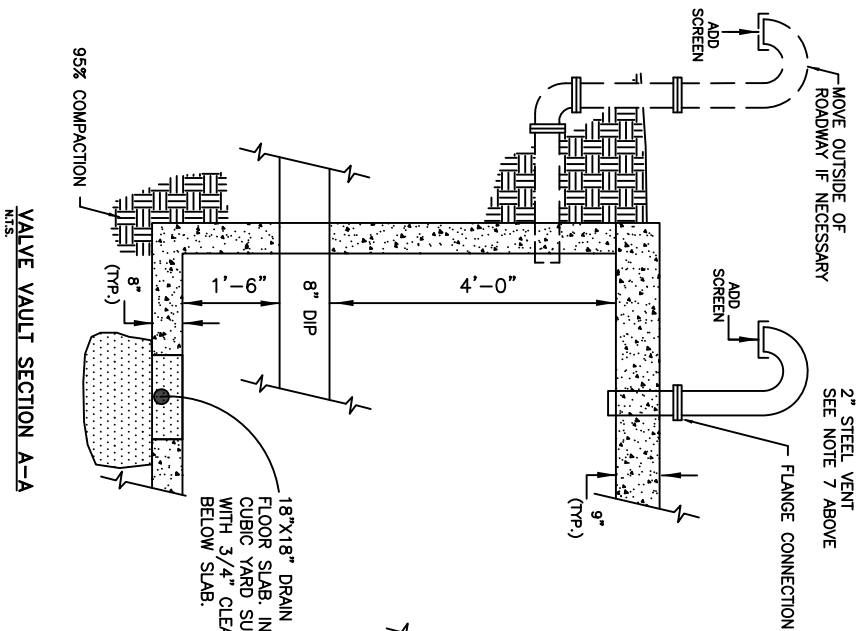
NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPE OD (INCHES)	REQUIRED BEARING AREA (SQ FT)			
		90 DEG	45 DEG	22.50 DEG	11.25 DEG
3	3.96	2.0	1.1	0.5	0.3
4	4.80	2.9	1.6	0.8	0.4
6	6.90	6	3	1.6	0.8
8	9.05	10	6	3	1.4
10	11.10	15	8	4	2.1
12	13.20	22	12	6	3
14	15.30	29	16	8	4
16	17.40	38	20	10	5
18	19.50	48	26	13	7
20	21.60	58	32	16	8
24	25.80	83	45	23	12

- NOTES:
1. MAXIMUM TEST PRESURE = 1.5 x 150 PSI
 2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
 3. BEARING AREA = A x B
 4. C SHALL BE GREATER THAN A/2 AND B/2.
 5. THIS DETAIL TO BE USED IN SITUATIONS WHERE EXISTING PIPE IS NOT RESTRAINED.
 6. CONTRACTOR TO USE AFTER APPROVAL BY THE PROJECT MANAGER.

THRUST BLOCKS FOR HORIZONTAL BENDS AND LOWER VERTICAL BENDS

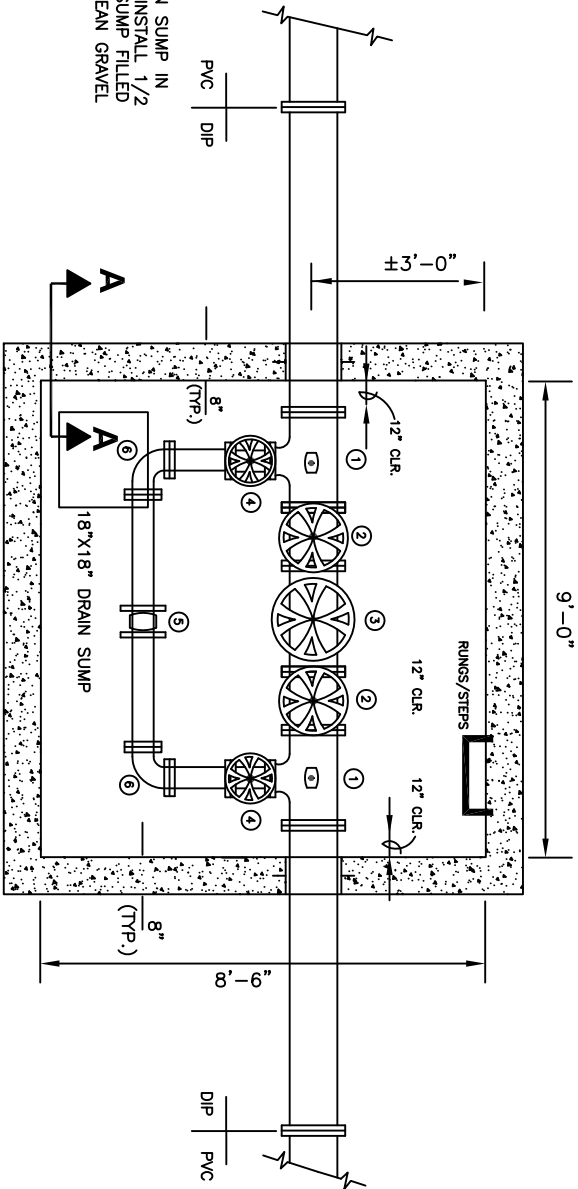
NOTES:

- 1) RUNG STEPS SHALL BE INSTALLED AT 1' O.C. ALIGNED WITH 36" ACCESS COVER.
 - 2) WALLS AND FLOOR SHALL BE 8" THICK, REINFORCED WITH #5 BARS AT 12" O.C.E.W., CENTERED.
 - 3) MINIMUM COVER ON REINFORCING STEEL SHALL BE 2".
 - 4) STEEL SHALL BE GRADE 60 DEFORMED BARS, CONCRETE SHALL BE 4000 PSI MINIMUM COMPRESSIVE STRENGTH, WITH 6% AIR ENTRAINMENT, AND 3/4" COARSE AGGREGATE. PER SPECIFICATION 701 CAST IN PLACE CONCRETE.
 - 5) COVERS SHALL BE FURNISHED W/4 LIFTING HOOKS, EACH LOCATED 12" INSIDE FROM EACH CORNER. LIFTING HOOKS SHALL BE FACTORY FABRICATED STEEL, RECESSED TO BE FLUSH WITH SURFACE, & TIED TO VAULT COVER REAR PER MANUFACTURER'S RECOMMENDATIONS. EACH HOOK SHALL HAVE A MINIMUM CAPACITY OF 3 TONS.
 - 6) COVERS SHALL NOT BE BONDED TO VAULT WALLS, THEY SHALL BE SEPARATELY FORMED & PLACED ONTO VAULT WALLS. PRIOR TO PLACEMENT, APPLY ONE STRIP OF LOFLAND BLUE STOP WATER STOP MATERIAL TO SEAL COVER TO WALLS. COVER SHALL BE FLUSH W/FINISHED GRADE.
 - 7) COVERS SHALL BE FURNISHED WITH 2"Ø STEEL VENT, W/180° ELBOW SET 4" ABOVE TOP. PROVIDE STAINLESS STEEL GRATING OVER END SECTION, AND PAINT W/2 COATS OF GREY MARINE PAINT, EXTEND OUTSIDE OF ROADWAY IF NECESSARY.
 - 8) INCOMING SYSTEM PRESSURES ARE SIGNIFICANTLY HIGHER THAN SERVICE PRESSURES. PRIOR TO PRESSURIZING THE NEW SYSTEM, THE CONTRACTOR SHALL CONTACT LAC UTILITIES TO ESTABLISH A TESTING PLAN WHICH WILL ENSURE NO DAMAGE TO DOWNSTREAM CUSTOMERS' PLUMBING.
 - 9) HEAVY DUTY RING AND COVER CAST INTO VAULT I.D. 475 LB. MINIMUM, 3" CLEAR OPENING, LABELED "WATER".
 - 10) SUBGRADE BELOW VAULT FLOOR SHALL BE COMPACTED TO 95% PER SPECIFICATIONS.
 - 11) LOCATE WIRE SHALL BE PLACED ALONG BY-PASS AND RAISED IN BY-PASS VALVE BOX AND THROUGH VAULT ALONG PIPING. ALL WIRE SHALL BE ELECTRICALLY CONTINUOUS.
- NOTE: I.D. VENTED WITH A MINIMUM OF 12 EACH 1" DIAMETER HOLES.

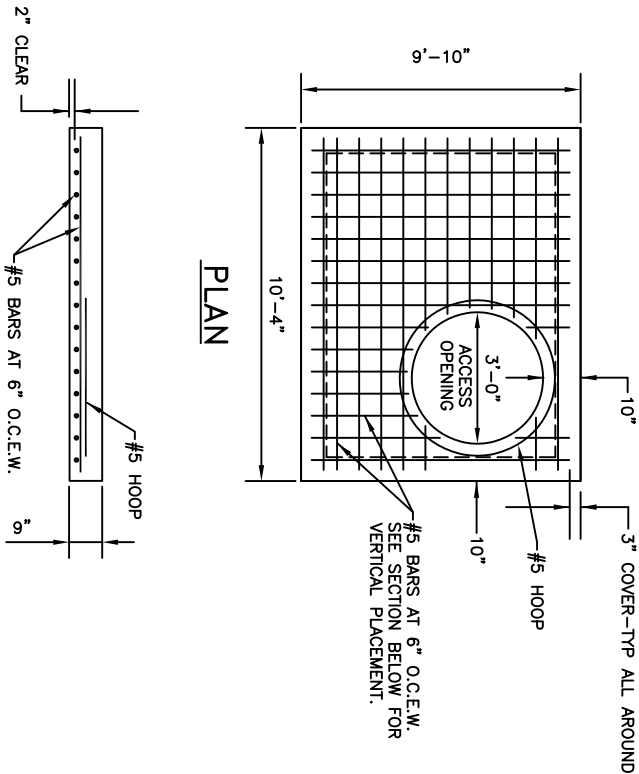


NOTE:
VALVE SIZES AND VAULT DIMENSIONS
CAN BE MODIFIED TO FIT PROJECT
REQUIREMENTS. DIMENSIONS SHOWN
ARE FOR AN 8'x4' PRV SET.

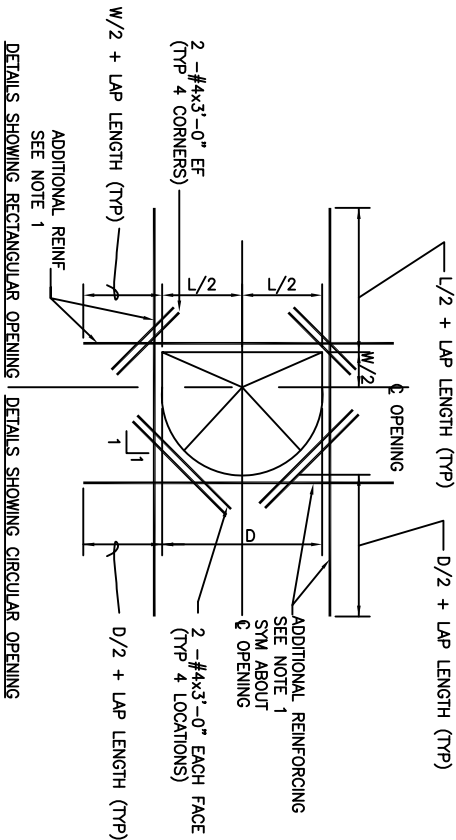
VALVE VAULT DETAILS PLAN
N.T.S.



CROSS SECTION



PRV VAULT STRUCTURAL DETAILS
N.T.S.



- NOTES:
1. ADDITIONAL REINFORCING SHALL BE THE SAME SIZE AS DISCONTINUOUS REINFORCEMENT AT OPENING. QUANTITY OF REINFORCING IN EACH DIRECTION SHALL BE EQUAL TO OR ONE GREATER THAN THE NUMBER OF DISCONTINUOUS BARS. PLACE 1/2 OF ADDITIONAL REINFORCING BARS EACH SIDE OF OPENING. PLACE ADDITIONAL REINFORCEMENT AT 3" O.C. (TYPICAL BOTH DIRECTIONS AND ALL LAYERS OF REINFORCEMENT)
 2. ADDITIONAL REINFORCING SHALL EXTEND BEYOND EDGE OF OPENING AS SHOWN ABOVE, UNLESS SHOWN OTHERWISE. ADDITIONAL BARS MAY TERMINATE AT THE END OF THE WALL WITH A STANDARD HOOK WHERE THE LENGTH OF THE WALL WILL NOT PERMIT BARS TO EXTEND AS SHOWN ABOVE.
 3. TYPICAL WALL OR SLAB REINFORCING NOT SHOWN FOR CLARITY. TERMINATE TYPICAL REINFORCING 2" CLEAR TO OPENING.
 4. ALL OPENINGS 12" OR LESS IN SLABS & IN WALLS NO EXTRA REBARS ARE REQUIRED UNLESS SHOWN OTHERWISE. TYPICAL REINFORCING SHALL BE SPREAD (NOT CUT) TO ALLOW FOR OPENINGS TO BE MADE.
 5. UNLESS SHOWN OTHERWISE ON DRAWINGS, PROVIDE EXTRA REINFORCING AROUND OPENINGS AS SHOWN AND INDICATED ABOVE.
 6. ALL FASTENERS SHALL BE TORQUE RATED STAINLESS STEEL.

DETAIL EXTRA REBARS AROUND OPENINGS
AND PENETRATIONS IN SLABS & WALLS
N.T.S.

KEYED NOTES FOR 8" WATER MAIN:

- ① 8" x 8" x 4" FLANGED TEE.
- ② 8" GATE VALVE (FL X FL)
- ③ 8" PRV, CUA-VAL #690-01 OR 90-1 WITH KD VALVE STEM OPTION, PROVIDE SHOP FABRICATED STEEL SUPPORT.
- ④ 4" GATE VALVE (FL X FL)
- ⑤ 4" PRV, CUA-VAL #690-01 OR 90-1 WITH KD VALVE STEM OPTION, PROVIDE SHOP FABRICATED STEEL SUPPORT.
- ⑥ 4" 90° STANDARD FLANGED ELBOW, PROVIDE PIPE SUPPORT.
- ⑦ WALL PENETRATIONS SHALL BE FURNISHED WITH STANDARD, FACTORY FABRICATED WALL SLEEVES WHICH ALLOW CARRIER PIPE TO BE INSERTED AFTER FORMING. SEAL CARRIER PIPE-TO-SLEEVE SPACING WITH LINK SEAL AND NON-SHRINK GROUT.
- ⑧ PRESSURE GAGES PER NOTE ② BELOW. INSTALL 1/2 INCH STAINLESS STEEL ISOLATION BALL VALVE AND STAINLESS STEEL NIPPLES AS NEEDED.
- ⑨ ALL PIPING AND FITTINGS IN VAULT SHALL BE CLASS 350 FLANGED DUCTILE DUCTILE IRON PER AWWA C151 AND AWWA C110.
- ⑩ A COMBINATION MAIN LINE PRV WITH INTEGRAL LOW FLOW BYPASS VALVE MAY BE SUBSTITUTED, IF APPROVED BY DPU.

NOTES:

- ① GATE VALVES INTERNAL TO THE VAULT SHALL BE HAND WHEEL OPERATED WITH NON-RISEING STEMS.
- ② PRESSURE GAGES SHALL BE ABLE TO REGISTER PRESSURES FROM 0 TO 150 PSI, AND HAVE GLYCERIN FILLED, FREEZE PROOF DIALS.
- ③ ALL PIPING AND VALVING SHALL BE SET SO THAT LARGEST DIAMETER PIPES IN STATIONS ARE SET 18" ABOVE FLOOR TO BOTTOM OF PIPE.

DATE: APRIL 2018

APPROVED BY:

REVISION:

DATE:

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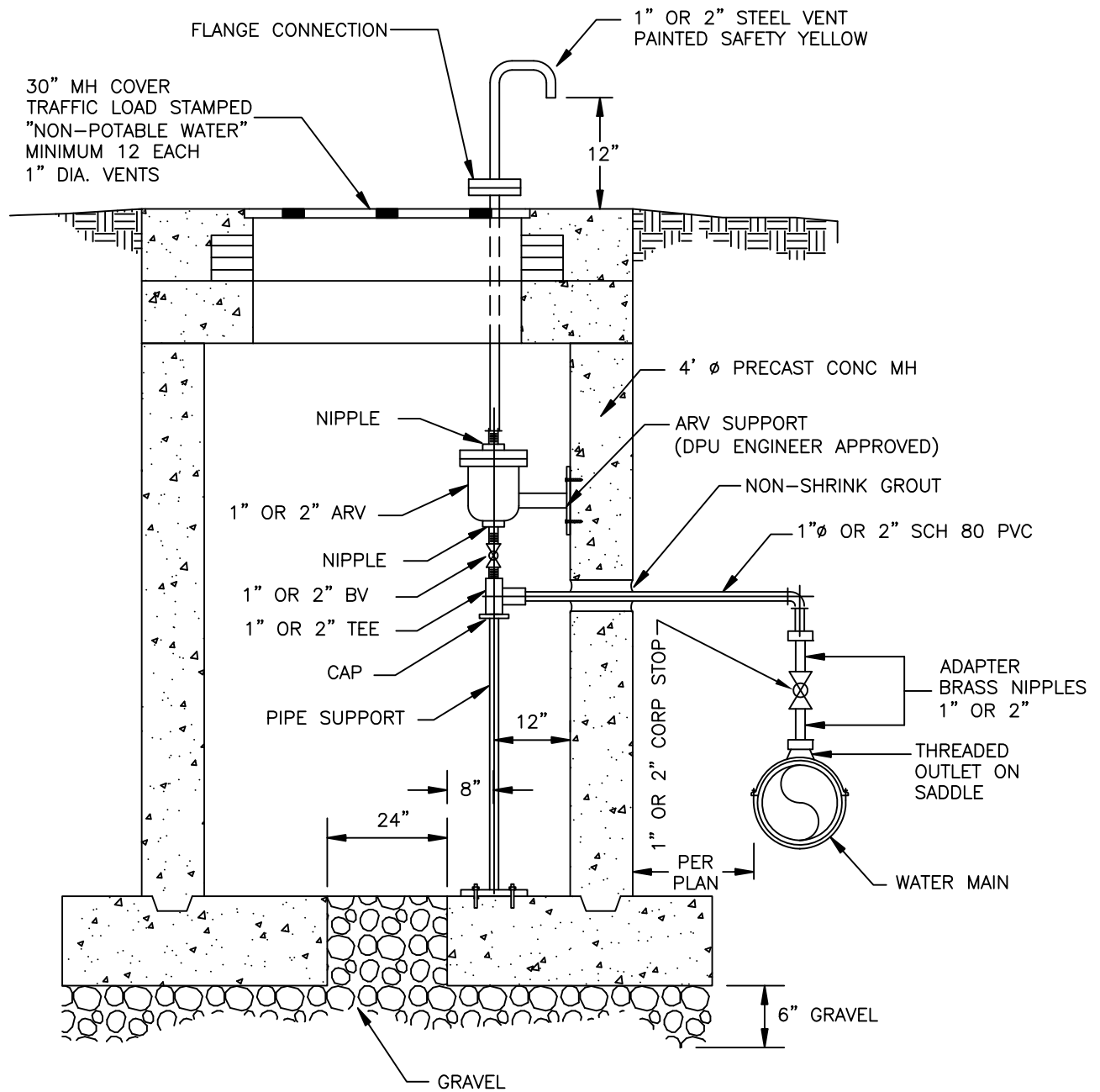
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DATE: APRIL 2018



NOTES:

1. INSTALL 1" ARV ON 8" TO 12" NON-POTABLE WATER LINES, APPROVED FOR N/P RAW SEWER USE.
2. INSTALL 2" ARV ON 14" AND LARGER NON-POTABLE WATER LINES, APPROVED FOR N/P RAW SEWER USE.
3. ARV, SADDLE, BRASS FITTINGS AND VALVE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION 801 NON-POTABLE WATER SYSTEMS.
4. MANHOLE PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARDS SPECIFICATION 502 STRUCTURES.

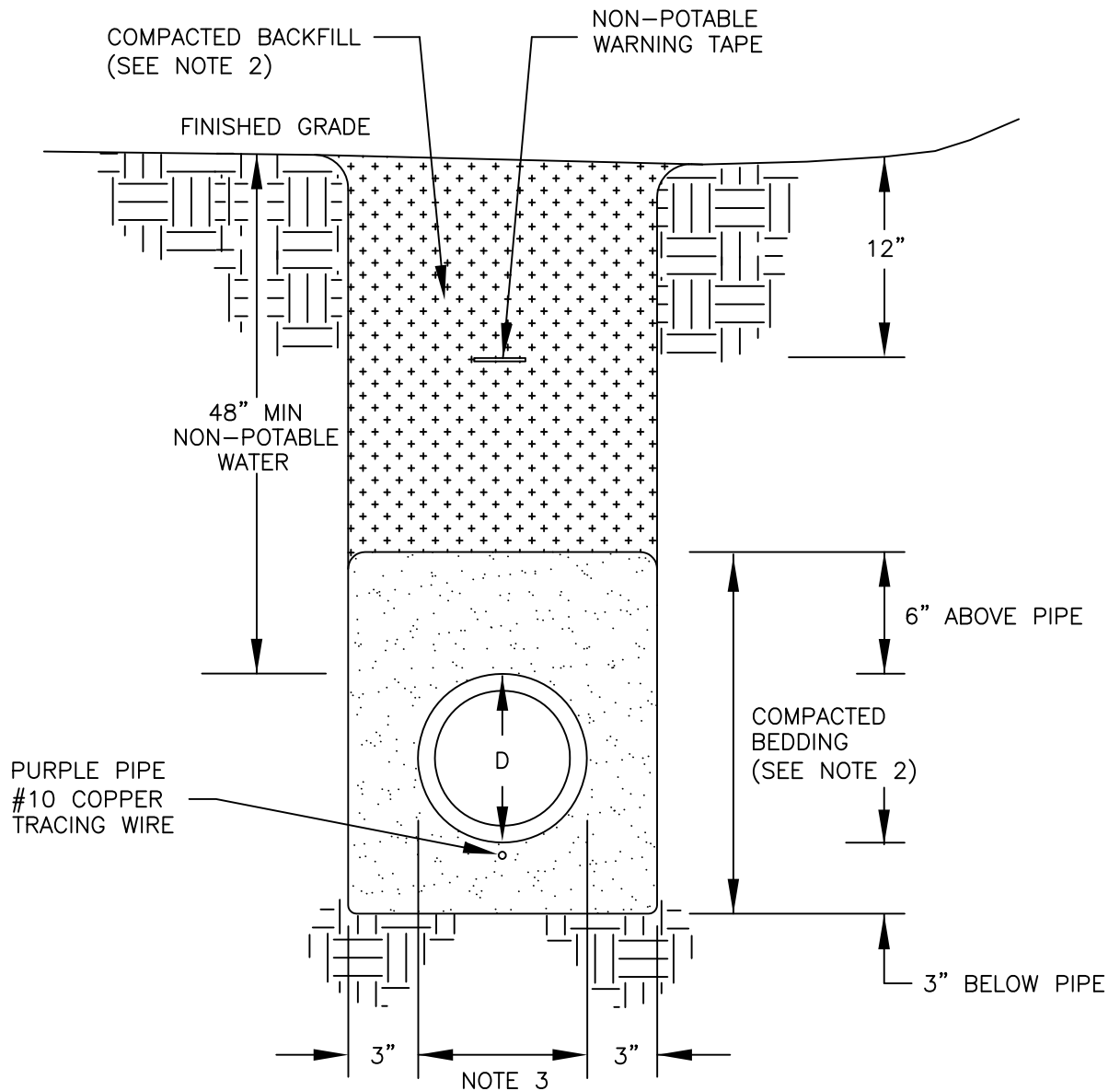
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NOTES:

- 1.) D IS THE OUTSIDE PIPE DIAMETER IN INCHES.
- 2.) SEE COMPACTION SPECIFICATIONS (SECTION 202) FOR ALL REQUIREMENTS.
- 3.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST PIPE PLUS 6 INCHES.