

PRIVATE WATERLINE PLANS

TO SERVE

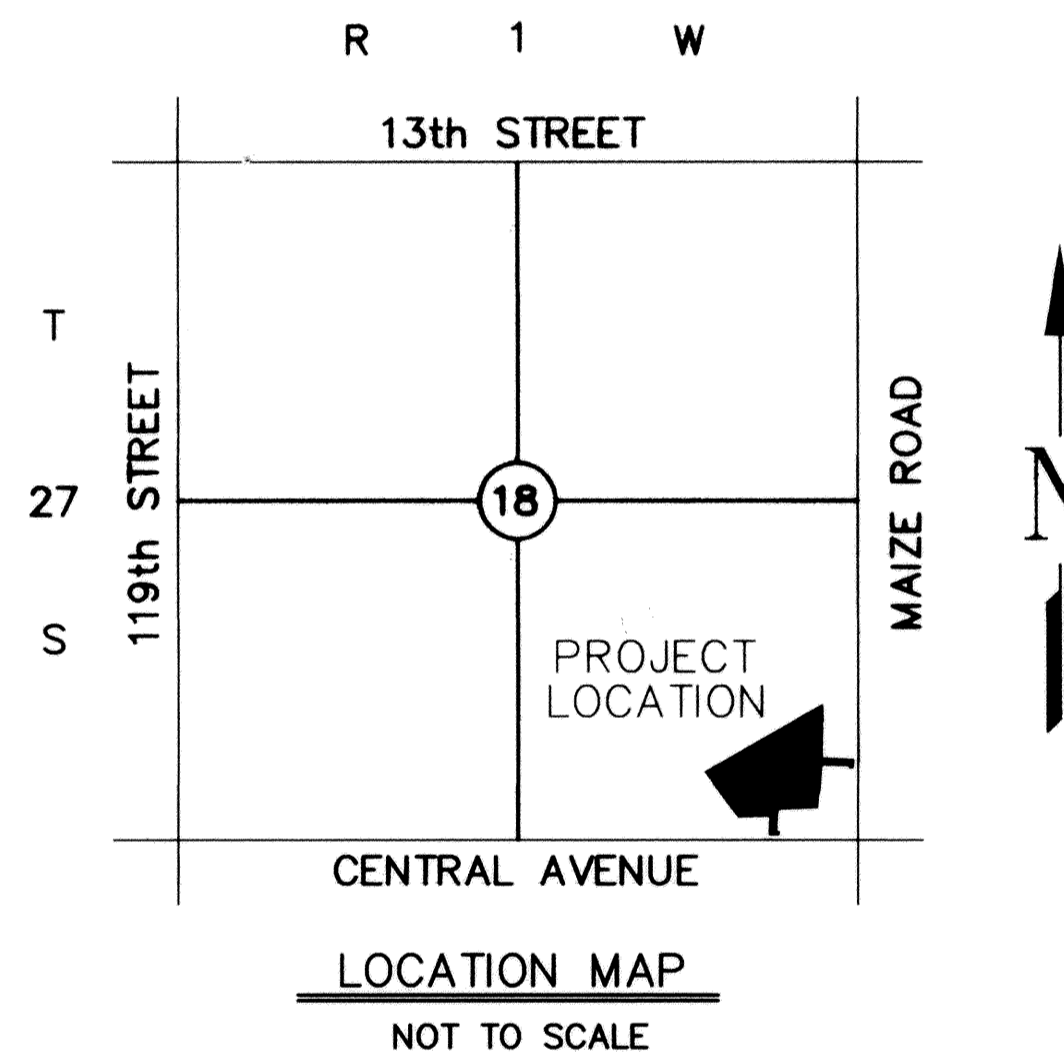


MARKET STORE #5855-00

CENTRAL AVENUE & MAIZE ROAD
 WICHITA, SEDGWICK COUNTY, KANSAS
 CITY OF WICHITA PRIVATE PROJECT NO.
 1571PPW (607853)

2010

Clow Valves
 Clow Hydrants



CITY RESOURCE LIST

CITY MANAGER CITY MANAGER'S OFFICE CITY OF WICHITA 455 N. MAIN - CITY HALL WICHITA, KS 67202 CONTACT: ROBERT LAYTON PH: (316) 268-4351 FAX: (316) 858-7712	CITY ENGINEER PUBLIC WORKS CITY OF WICHITA 455 N. MAIN - CITY HALL WICHITA, KS 67202 CONTACT: JIM ARMOUR PH: (316) 268-4266 FAX: (316) 268-4114	PLANNING / ZONING METROPOLITAN AREA PLANNING DEPARTMENT CITY OF WICHITA 455 N. MAIN - CITY HALL WICHITA, KANSAS 67202 CONTACT: BILL LONGNECKER PH: (316) 268-4494 FAX: (316) 268-4390
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OWNERS' ADDRESS

WALMART STORES, INC.
 702 S.W. 8th STREET
 BENTONVILLE, AR 72716
 PH. (479) 273-4000

BENCH MARKS:

BM #1 - 6" CHISELED ON TOP OF CURB ELEV=1329.74	BM #2 - 6" CHISELED ON TOP OF CURB ELEV=1343.64
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- (1) An effort has been made to locate and show approximate location of underground utility lines. Buried utilities are not necessarily shown. It is the Contractors responsibility to locate and preserve all utility services.
- (2) Proposed utility services have been coordinated with the local utility companies. Contractor is responsible for contacting all utility companies prior to construction.
- (3) All quantity estimates shown in this set of plans are the Engineer's estimate and are provided for general information only! The contractor is solely responsible for calculating his/her own quantities!
- (4) Contractor shall acquire Licensing to work in City of Wichita, shall maintain Insurance Verification per Walmart and City's requirements and shall submit necessary bonds to satisfy City of Wichita's requirements.

NOTE TO CONTRACTOR
 CALL KANSAS ONE
 1-800-522-6543

This number is to be used for information on the location of all underground utilities. Contact this number prior to any excavation.

ALERT TO CONTRACTOR:

1. THE SITEWORK FOR THE WALMART PORTION OF THIS PROJECT SHALL MEET OR EXCEED THE "SITE SPECIFIC SPECIFICATIONS."
2. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO CONTRACT COMPLETION AND THE FINAL CONNECTION OF SERVICES.

AS BUILT PLANS

Contractor: Mies
 Inspector: Don Eddingfield, Baughman Co.
 pdf's by: KEK, 3/21/11

SHEET INDEX

C-9.0	TITLE SHEET
C-9.1	WATER LINE LOCATION PLAN
C-9.2	WATER LINE "A" PLAN & PROFILE
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C-9.4	WATER LINE "A" CONT. & "C" PLAN & PROFILE
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C-9.6	PRIVATE WATER LINE DETAILS
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C-9.8	STANDARD VAULT DETAILS AND METER ASSEMBLIES
C-9.9	VARIOUS WATER DETAILS

APPROVED AS NOTED
 BY CITY ENGINEER OF WICHITA,
 BY WICHITA WATER & SEWER DEPARTMENT,
 & BY WICHITA FIRE DEPARTMENT

Public Works *Shawn Melliss* 12-30-10
 Water & Sewer *Dog Tels* 1-4-11
 Fire *[Signature]* 1-5-2011

NOTE TO CONTRACTORS

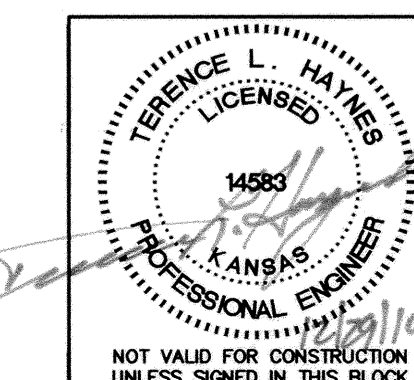
Public Property:
 Inspection and testing for the waterline is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Professional Engineer Licensed in the state of Kansas. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall any work be commenced without written authorization by the City Engineer. All Construction and Materials shall comply with the City or Wichita Specifications and Standards (on file and available in the City Engineer's Office).

Private Property:
 Installation and testing for the fire protection line is to be performed by a City of Wichita licensed fire protection contractor in accordance with the fire codes as adopted by the City of Wichita. All material and construction practices for the fire protection line shall comply with the fire codes as adopted by the City of Wichita (available from the City of Wichita Fire Department). The Contractor shall not commence work without notification and approval of the Wichita Fire Department. Inspection of the fire protection line is to be provided by a licensed Engineering Firm under contract with the Owner/Developer and the Fire Department. The contractor shall not start work until the project inspector is assigned to the project and present on the site. Any work done without inspection will be required to be uncovered for inspection.

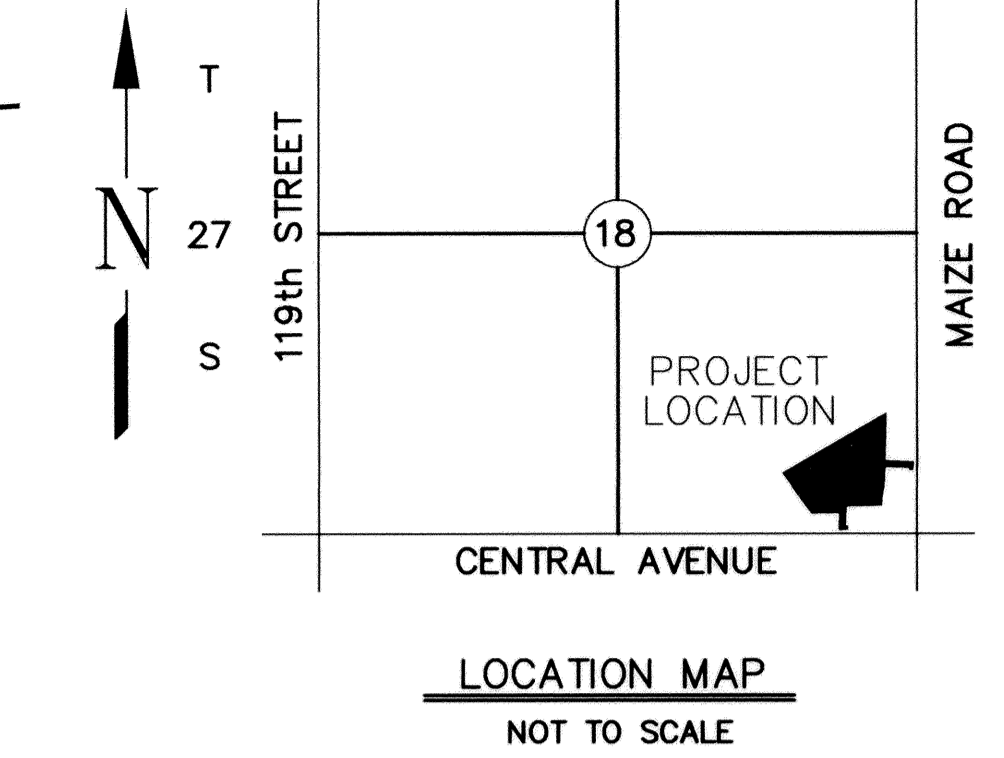
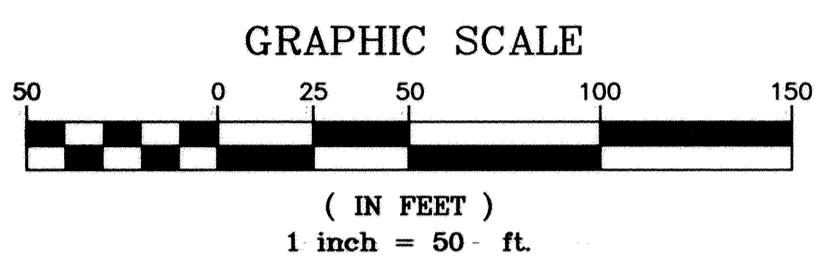
I, Terence L. Haynes, Kansas Professional Engineer, #14583, do hereby state that these Private water line plans, prepared by me or under my direct, responsible supervision, are in strict conformance with the applicable Codes of the City of Wichita and the sound principles and practice of the Civil Engineering profession

Terence L. Haynes
 TERENCE L. HAYNES, P.E. #14583

TITLE SHEET PRIVATE WATER LINE PLANS			
WALMART MARKET #5855-00			
CENTRAL AVE. & MAIZE RD. WICHITA, KANSAS			
SMC Consulting Engineers, P.C. 815 West Main - Oklahoma City, OK 73106 PH: 405-232-7715 Fax: 405-232-7859			
KANSAS CERTIFICATE OF AUTHORIZATION NO. E-335 EXP. DEC. 31, 2008			
SMC			
No.	Revision	By	Date
1	City Review Comments	MDS	12/21/10
2	Change Directive #1	MDS	12/23/10
3	City Review Comments	MDS	12/29/10
DATE: 12/02/10		SCALE:	SHEET NO.
DRAWN BY: TAB		NONE	C-9.0
PROJECT NO.: 4348.10		ENGINEER: TERENCE L. HAYNES, P.E. #14583	

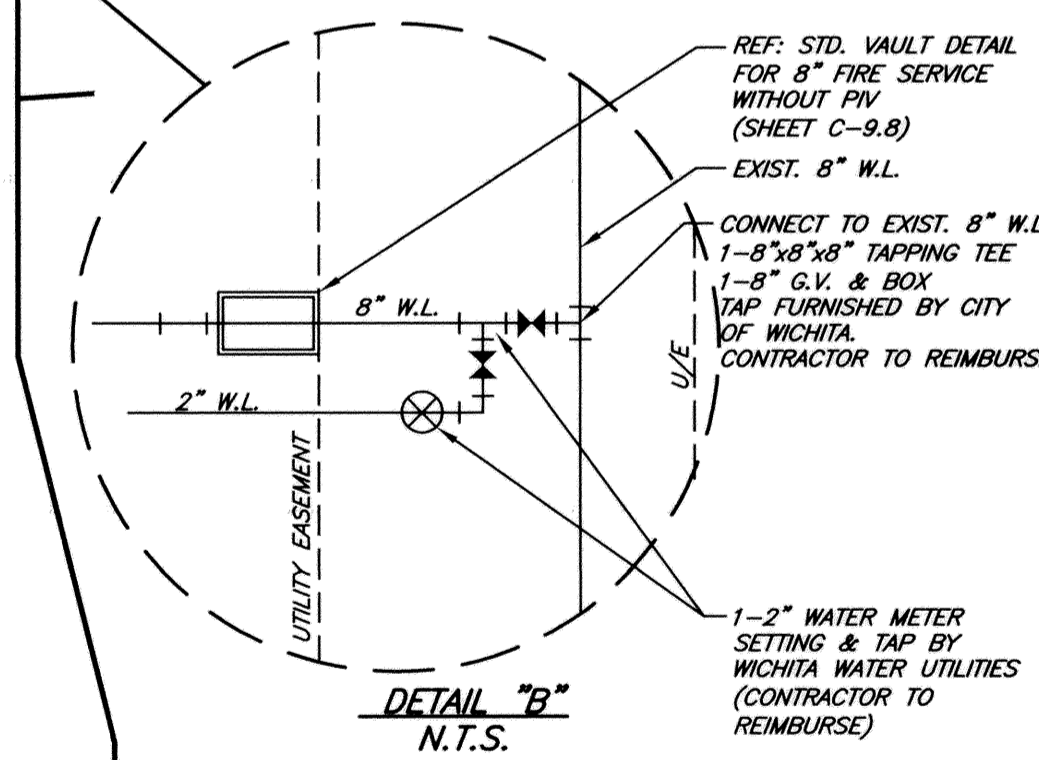


SMC Consulting Engineers, P.C.
 Oklahoma City, Oklahoma



LEGEND

—	SIGN (i.e. STOP, YIELD, etc...)	-X-	PROPOSED CONTOUR & CONTOUR ELEVATION
□	LIGHT POLE AND FIXTURE TYPE	■	STORM SEWER INLET
○	STORM SEWER CURB INLET	●	STORM SEWER MANHOLE (STS M.H.)
○	S.S. MANHOLE	○	S.S. CLEANOUTS
○	S.S. CLEANOUTS	---	POWER UNDERGROUND BY CONTRACTOR
---	POWER UNDERGROUND BY CONTRACTOR	---	TELEPHONE UNDERGROUND (PER CITY STDS)
---	TELEPHONE UNDERGROUND (PER CITY STDS)	---	POWER OVERHEAD
---	POWER OVERHEAD	---	GAS LINE
---	GAS LINE	---	FLOW DIRECTION
---	FLOW DIRECTION	---	STORM SEWER
---	STORM SEWER		



WATER LINE LOCATION PLAN

WALMART MARKET #5855-00

CENTRAL AVE. & MAIZE RD. WICHITA, KANSAS

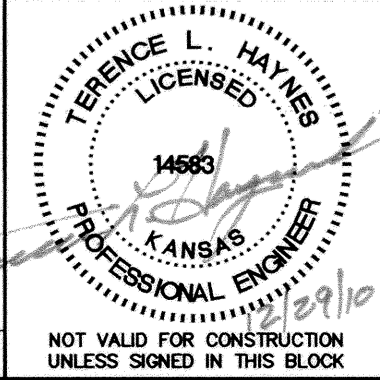
SMC Consulting Engineers, P.C.
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No.	Revision	By	Date
1	3rd Party Peer review & City Comments	MDS	10/22/10
2	SMC O.C. review	MDS	11/04/10
3	City Review Comments	MDS	12/21/10
4	Change Directive #1	MDS	12/23/10
5	City Review Comments	MDS	12/29/10

DATE: 09/20/10 SCALE: 1"=50'

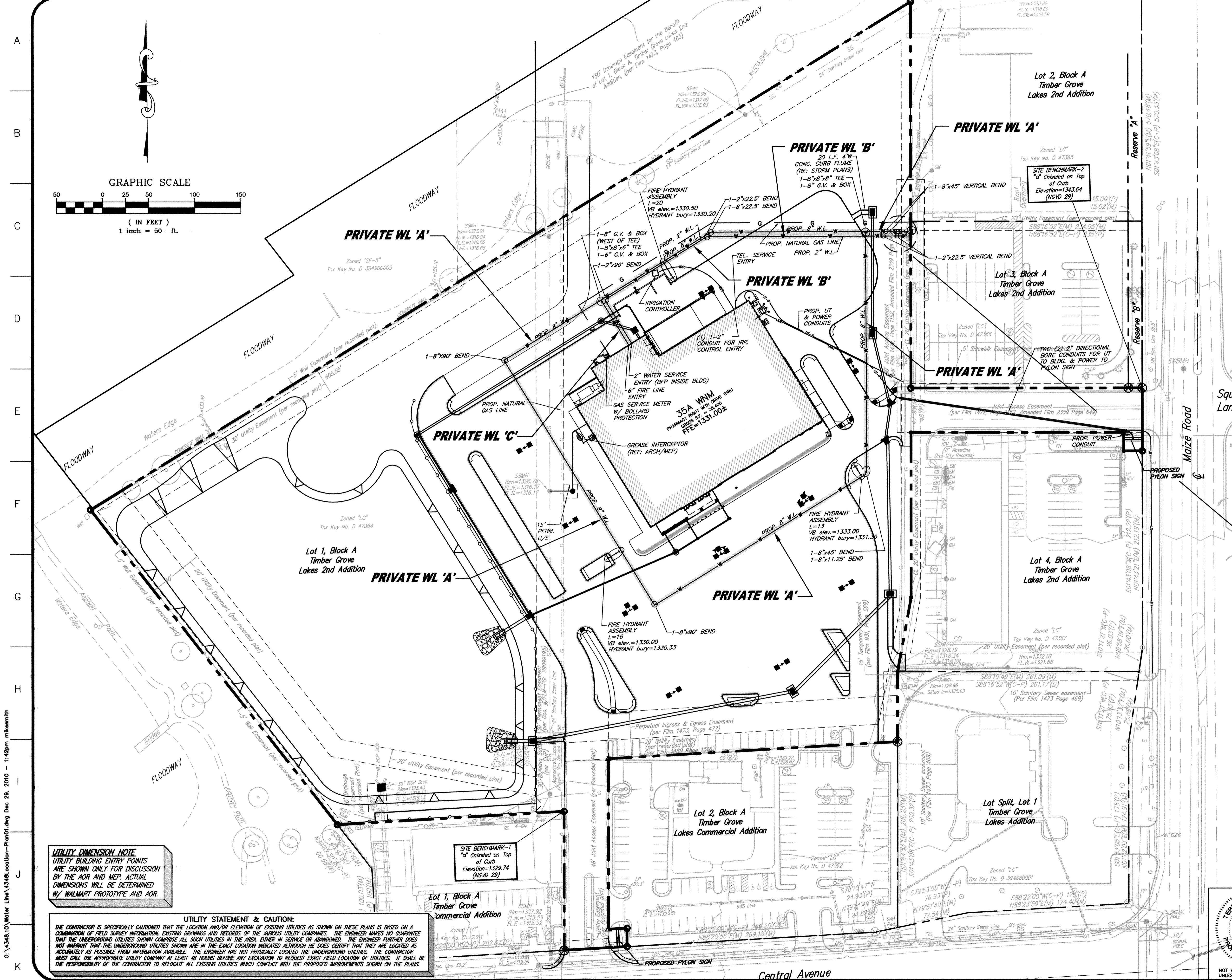
DRAWN BY: MDS PROJECT NO.: 4348.10 SHEET NO. C-9.1

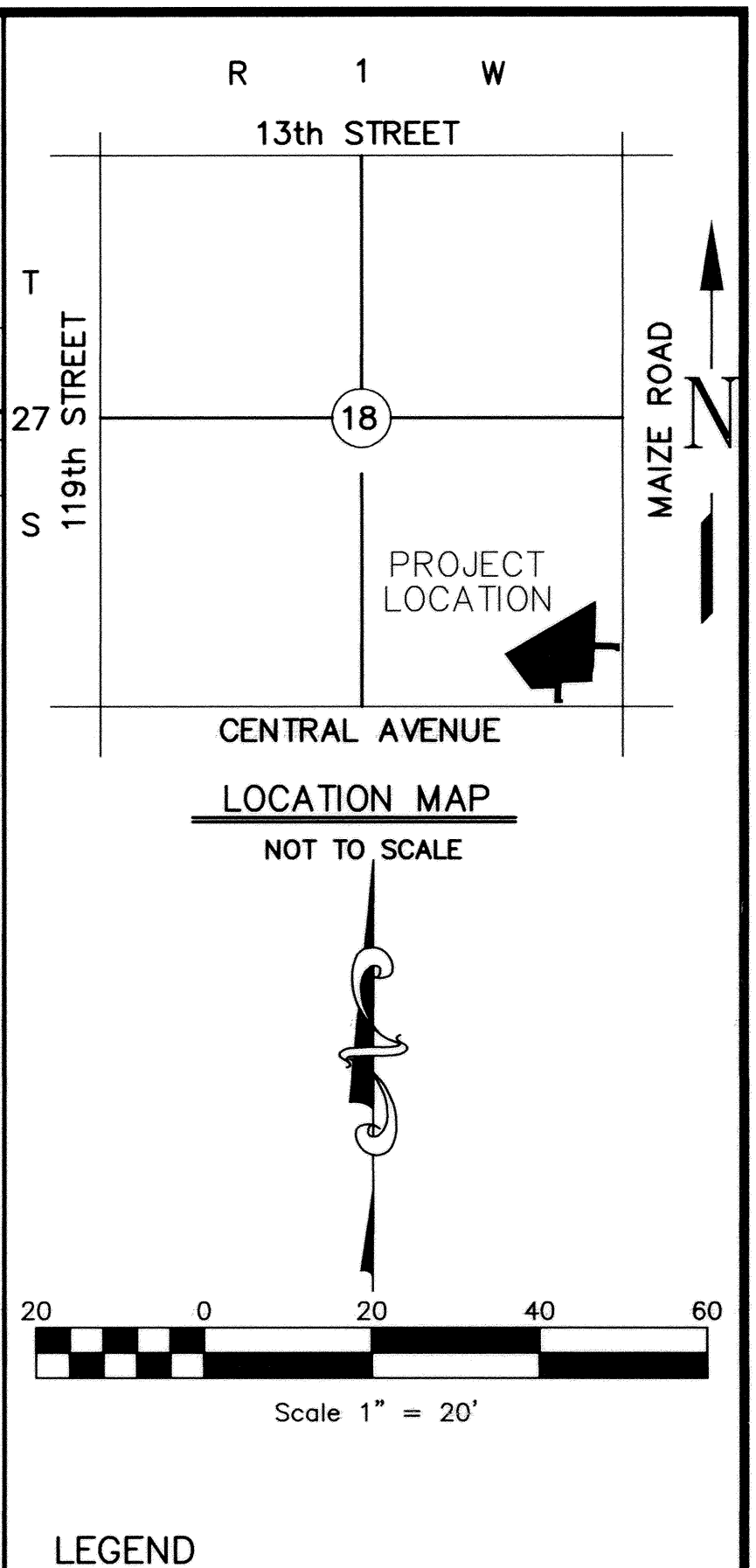
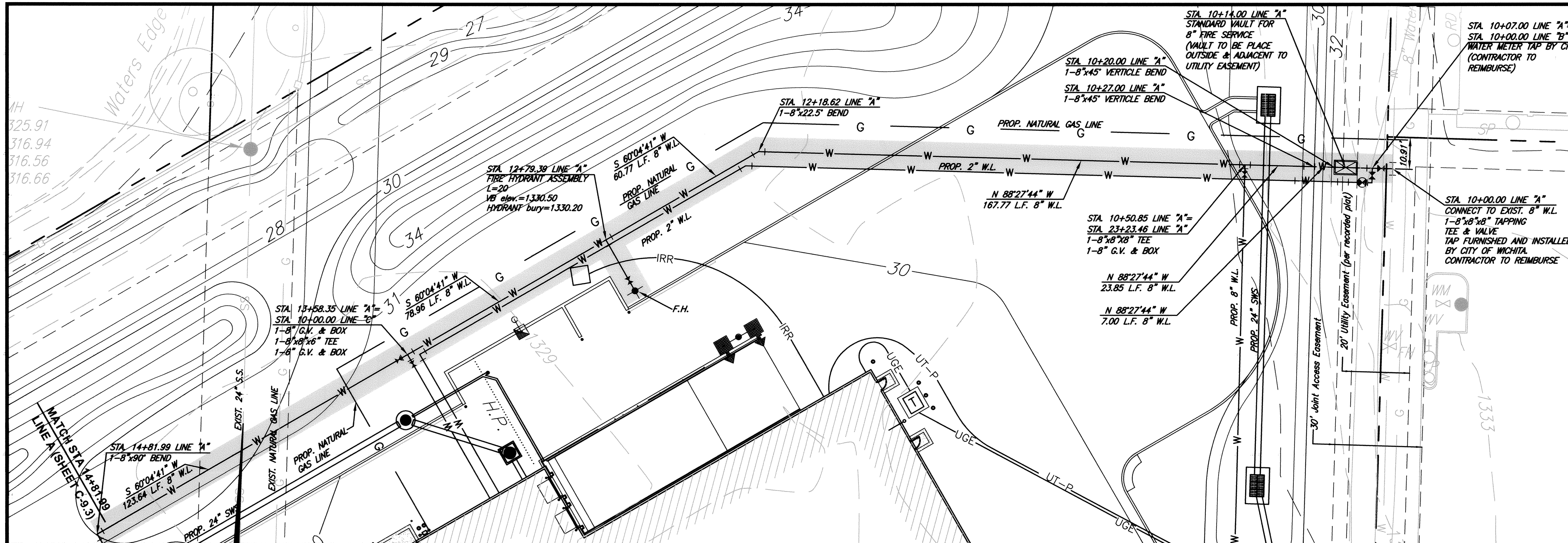
ENGINEER: TERENCE L. HAYNES, P.E. #14583



UTILITY DIMENSION NOTE
 UTILITY BUILDING ENTRY POINTS ARE SHOWN ONLY FOR DISCUSSION BY THE AOR AND MEP. ACTUAL DIMENSIONS WILL BE DETERMINED W/ WALMART PROTOTYPE AND AOR.

UTILITY STATEMENT & CAUTION:
 THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON A COMBINATION OF FIELD SURVEY INFORMATION, EXISTING DRAWINGS AND RECORDS OF THE VARIOUS UTILITY COMPANIES. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.





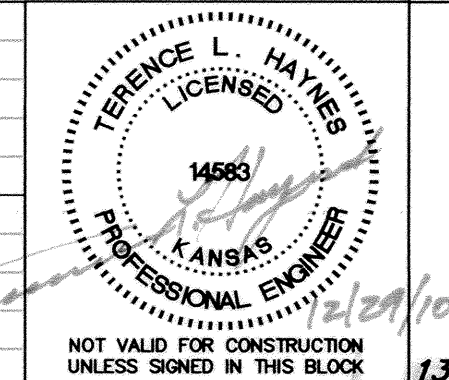
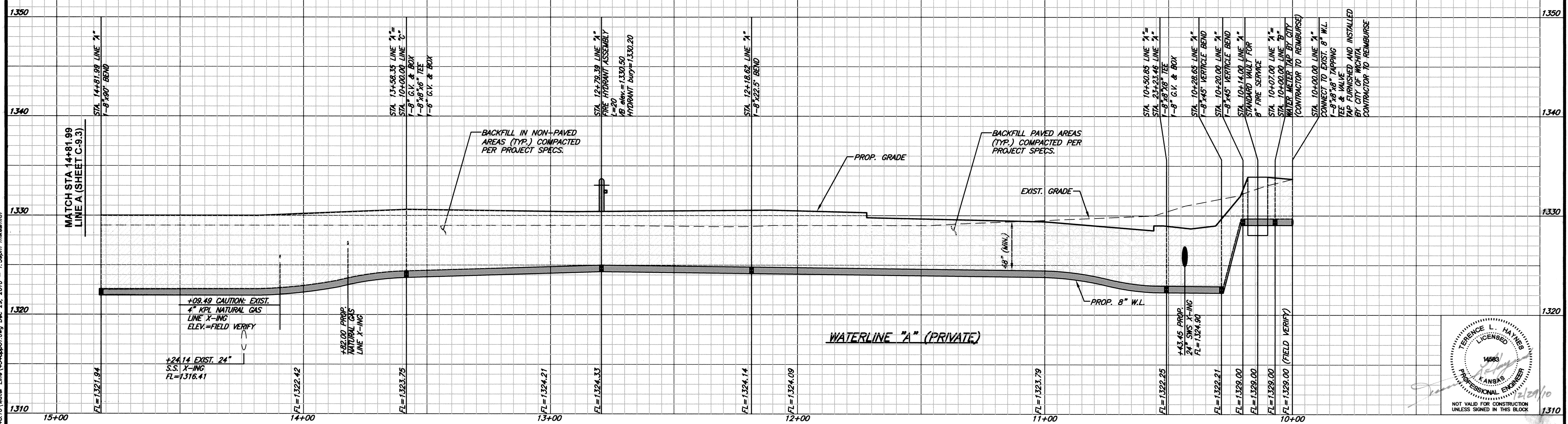
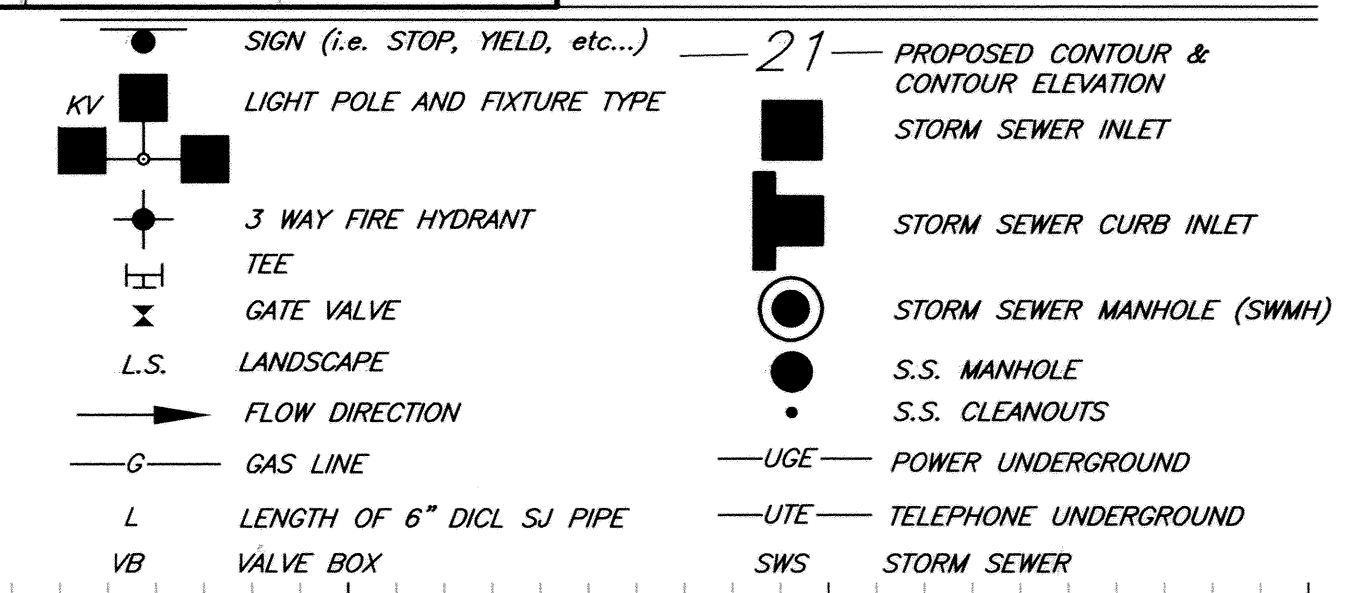
CAUTION: EXISTING SAN. SEW. & NATURAL GAS LINE CROSSING IN THIS AREA

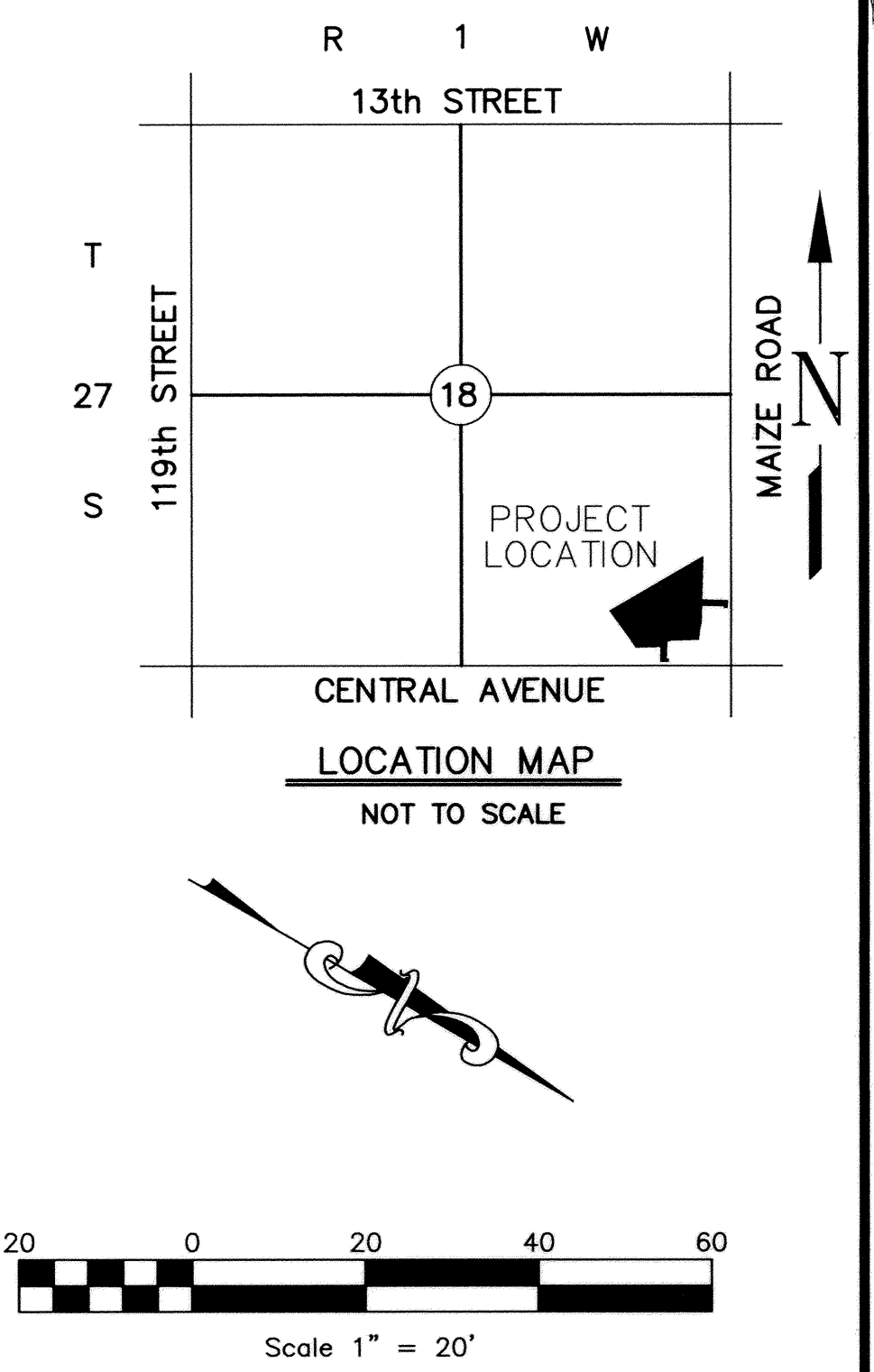
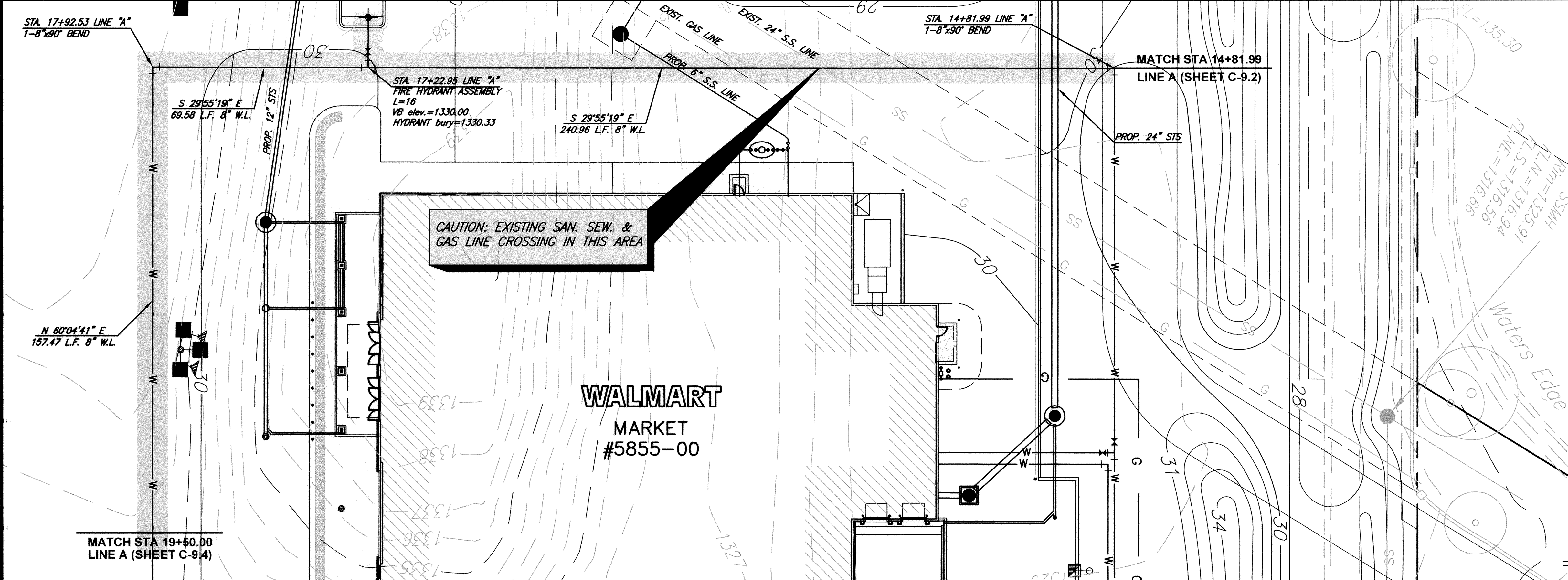
1. USE RESTRAINED JOINTS ON VERTICAL BENDS. ALL PRIVATE WATER PIPE LINES SHALL BE ANWA C-900 PVC DR-14 (CLASS 150) UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL INSTALL #12 COATED COPPER WIRE OVER PVC WATER LINE.
3. STEAMER NOZZLE ELEVATION OF THE FIRE HYDRANT SHALL BE BETWEEN 18" TO 24" ABOVE THE FINISHED GRADES.
4. REFER OTHER PLAN & PROFILE SHEETS FOR FITTINGS NOT LISTED HERE.
5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAKING ALL ADJUSTMENTS OF EXISTING UTILITIES TO ALLOW THE DESIGN TO BE BUILT.

CONTRACTOR SHALL REF. TRENCHING AND BEDDING DETAIL FOR BACKFILL AND BEDDING UNDER PAVED & NON-PAVED AREAS. COMPACT FILL SHALL BE LOW VOLUME CHANGE SOIL WITH PLASTICITY INDEX BETWEEN 5-18 AND LIQUID LIMIT NOT TO EXCEED 40.

NOTE: THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAKING ALL ADJUSTMENTS OF EXISTING UTILITIES TO ALLOW THE DESIGN TO BE BUILT.

CAUTION - NOTICE TO CONTRACTOR
 THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.





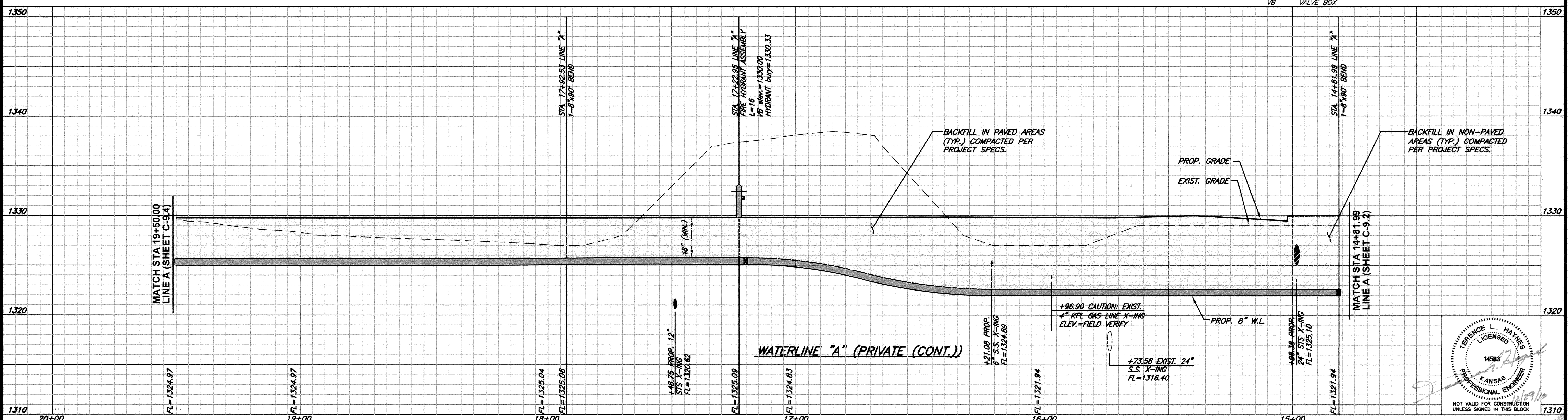
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- LEGEND**
- SIGN (i.e. STOP, YIELD, etc...)
 - LIGHT POLE AND FIXTURE TYPE
 - 3 WAY FIRE HYDRANT TEE
 - ⊥ GATE VALVE
 - L.S. LANDSCAPE
 - FLOW DIRECTION
 - G GAS LINE
 - SWS STORM SEWER
 - L LENGTH OF 6" DI CL SJ PIPE
 - VB VALVE BOX
 - 21— PROPOSED CONTOUR & CONTOUR ELEVATION
 - STORM SEWER INLET
 - STORM SEWER CURB INLET
 - STORM SEWER MANHOLE (STS M.H.)
 - S.S. MANHOLE
 - S.S. CLEANOUTS
 - UGE — POWER UNDERGROUND
 - UTE — TELEPHONE UNDERGROUND

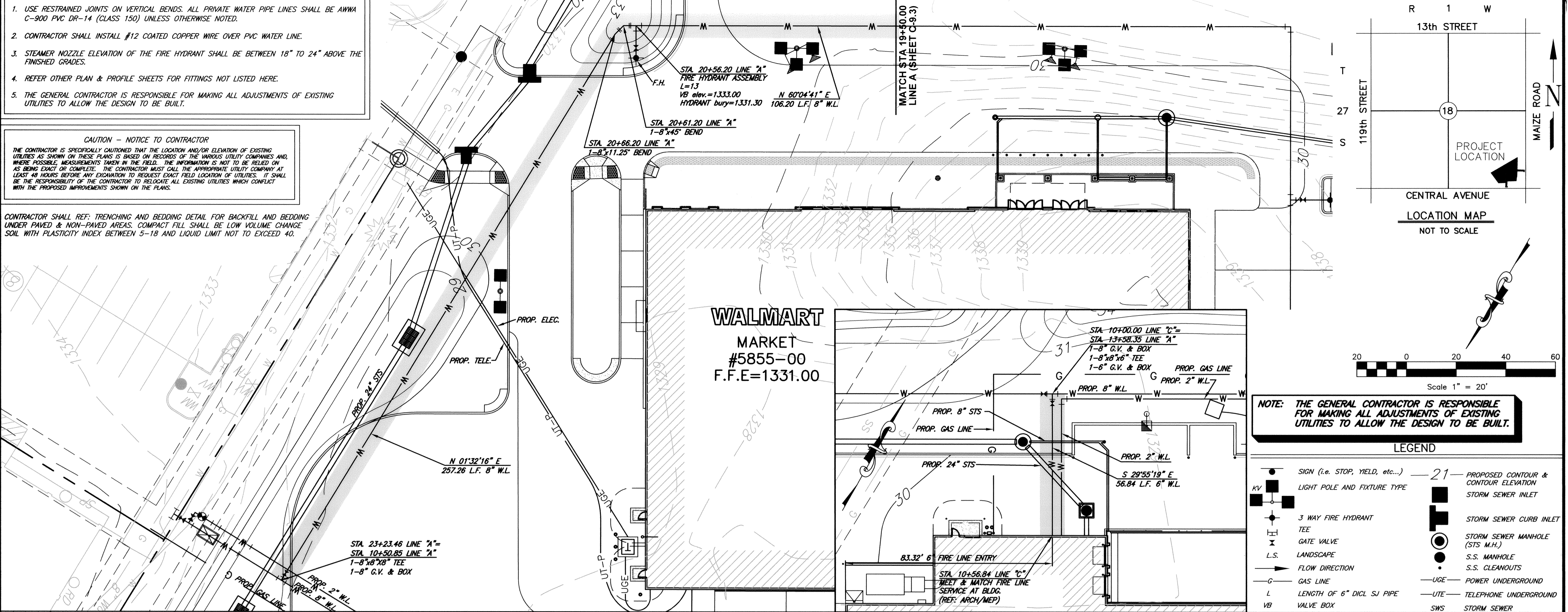


- USE RESTRAINED JOINTS ON VERTICAL BENDS. ALL PRIVATE WATER PIPE LINES SHALL BE AWWA C-900 PVC DR-14 (CLASS 150) UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL INSTALL #12 COATED COPPER WIRE OVER PVC WATER LINE.
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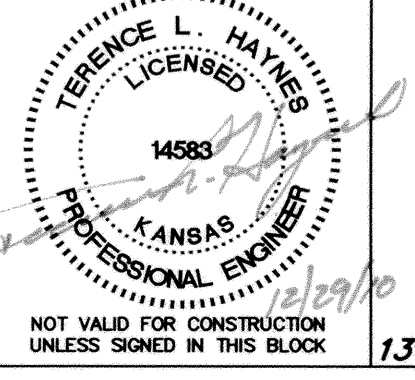
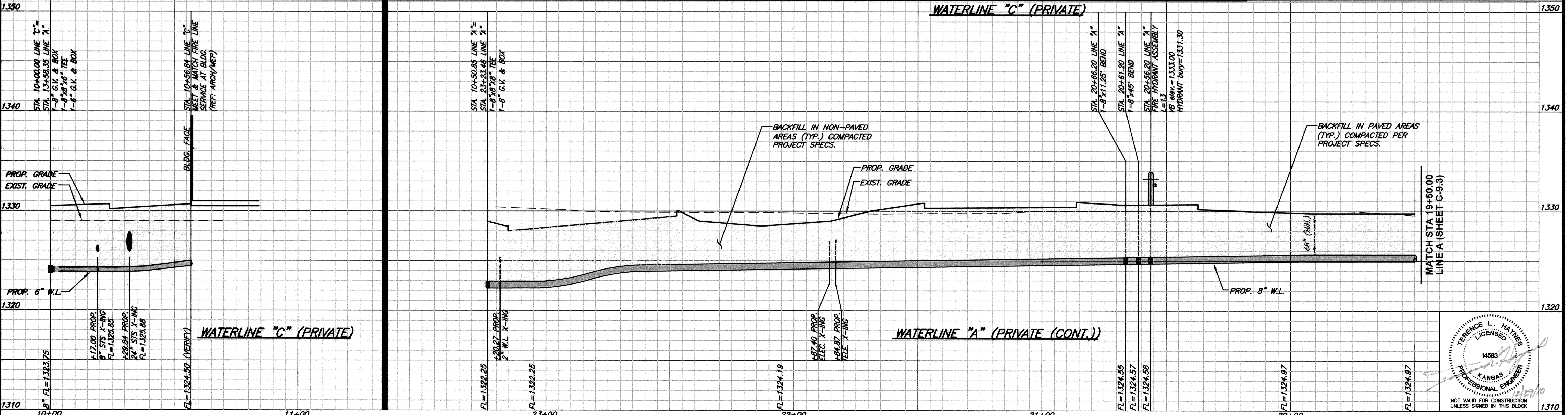
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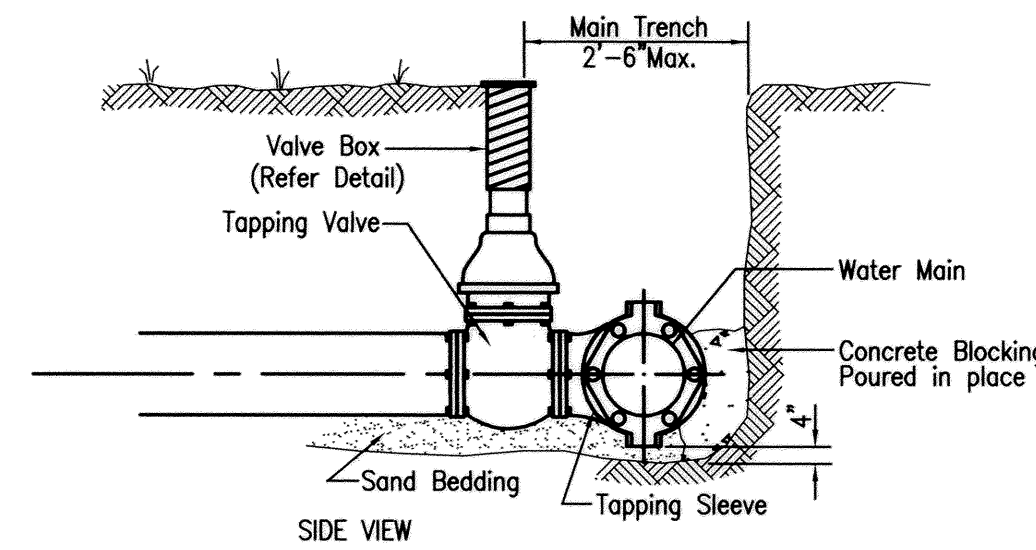
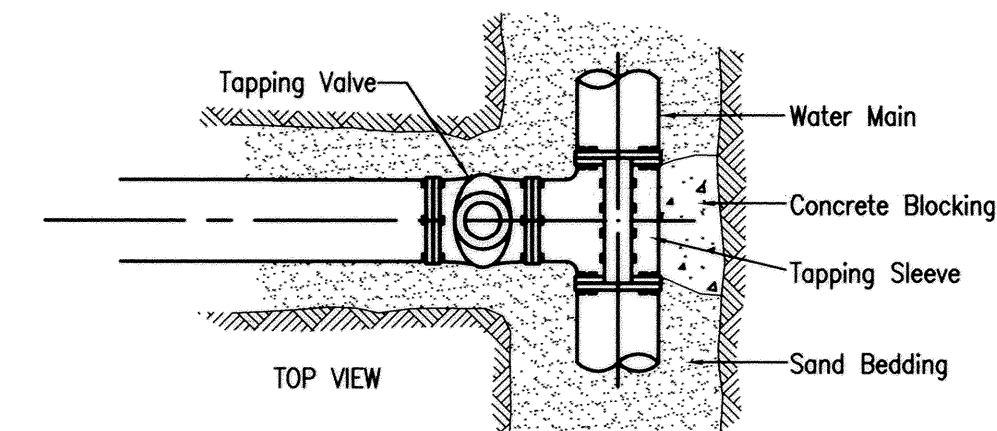


NOTE: THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAKING ALL ADJUSTMENTS OF EXISTING UTILITIES TO ALLOW THE DESIGN TO BE BUILT.

LEGEND

●	SIGN (i.e. STOP, YIELD, etc...)	— 21 —	PROPOSED CONTOUR & CONTOUR ELEVATION
KV	LIGHT POLE AND FIXTURE TYPE	■	STORM SEWER INLET
⊕	3 WAY FIRE HYDRANT	⊕	STORM SEWER CURB INLET
⊕	TEE	⊕	STORM SEWER MANHOLE (STS M.H.)
⊕	GATE VALVE	⊕	S.S. MANHOLE
X	LANDSCAPE	⊕	S.S. CLEANOUTS
→	FLOW DIRECTION	— UGE —	POWER UNDERGROUND
G	GAS LINE	— UTE —	TELEPHONE UNDERGROUND
L	LENGTH OF 6" DI CL SJ PIPE	VB	VALVE BOX
L	LENGTH OF 6" DI CL SJ PIPE	SWS	STORM SEWER





TAPPING TEE DETAIL
N.T.S.

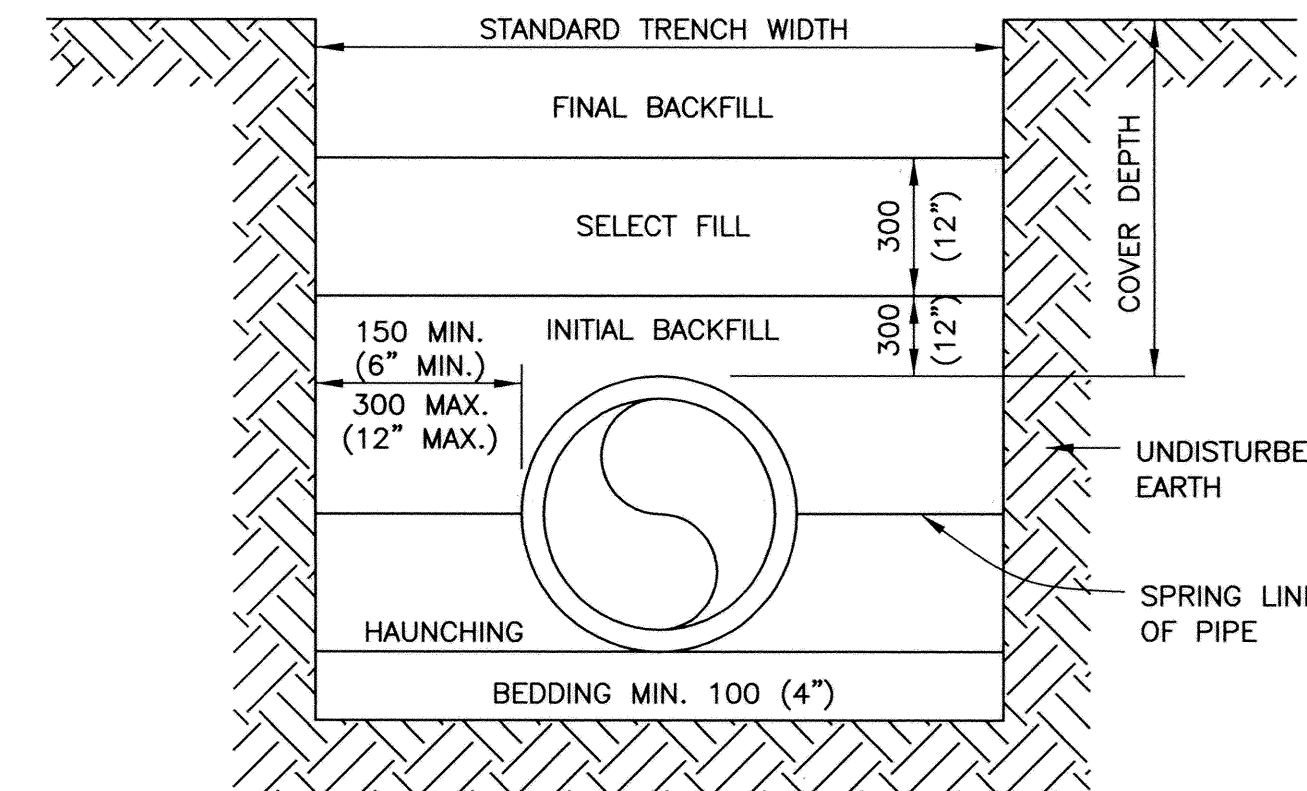
BEDDING MATERIALS						
BACKFILL DESCRIPTION	NON-PAVED AREAS			PAVED AREAS (See Note 7)		
	P V C	DUCTILE IRON	H D P E	P V C	DUCTILE IRON	H D P E
FINAL BACKFILL	EXCAVATED MATERIAL	EXCAVATED MATERIAL	EXCAVATED MATERIAL	SBM	SBM	SBM
SELECT BACKFILL	SELECT FILL	SELECT FILL	SELECT FILL	SBM	SBM	SBM
INITIAL BACKFILL	COVER ≤ 10'-SAND OR SBM > 10'-SBM	SELECT FILL	COVER ≤ 10'-SAND OR SBM > 10'-SBM	SBM	SBM	SBM
HAUNCHING	COVER ≤ 10'-SAND OR SBM > 10'-SBM	SELECT FILL	COVER ≤ 10'-SAND OR SBM > 10'-SBM	SBM	SBM	SBM
BEDDING	See Note 3	See Note 3	See Note 3	See Note 3	See Note 3	See Note 3

PIPE INSIDE DIAMETER		STANDARD TRENCH WIDTH	
MM	IN.	MM	IN.
150	6	450	18
200	8	600	24
250	10	750	30
300	12	750	30
375	15	900	36
450	18	900	36
525	21	1,050	42
600	24	1,050	42
675	27	1,200	48
750	30	1,200	48
900	36	1,350	54
1,050	42	1,500	60
1,200	48	1,650	66

NOTES:

1. INSTALLATION AND BACK FILLING SHALL MEET MANUFACTURERS RECOMMENDATIONS.
2. SELECT FILL CONSISTS OF EXCAVATED MATERIALS CONTAINING NO ROCKS LARGER THAN 50 MM (2").
3. STANDARD BEDDING MATERIAL (SBM) SHALL CONFORM TO KDOT AB-3 AGGREGATE BASE OR FLOWABLE FILL OR APPROVED EQUAL.
4. COMPACTION REQUIREMENTS: 95% MAXIMUM STANDARD PROCTOR DENSITY.
5. IN SANDY SOIL, CONTRACTOR MAY BACKFILL WITH NATIVE MATERIAL AND USE WARNING TAPE 18" ABOVE PIPE.
6. NO WATER JETTING ALLOWED.
7. THE BACKFILL MATERIAL SHALL EXTEND A MINIMUM OF 2- FEET BEHIND THE BACK OF CURB, OR THE EDGE OF PAVEMENT WHERE NO CURB EXISTS.

(METRIC UNITS ARE IN MM WITH ENGLISH UNITS IN PARENTHESIS, UNLESS INDICATED OTHERWISE.)

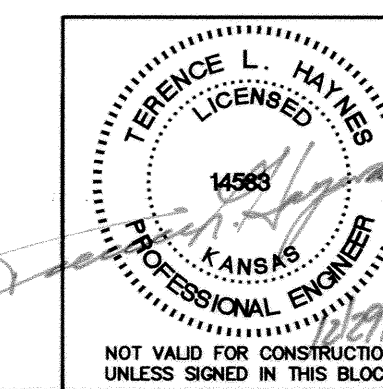


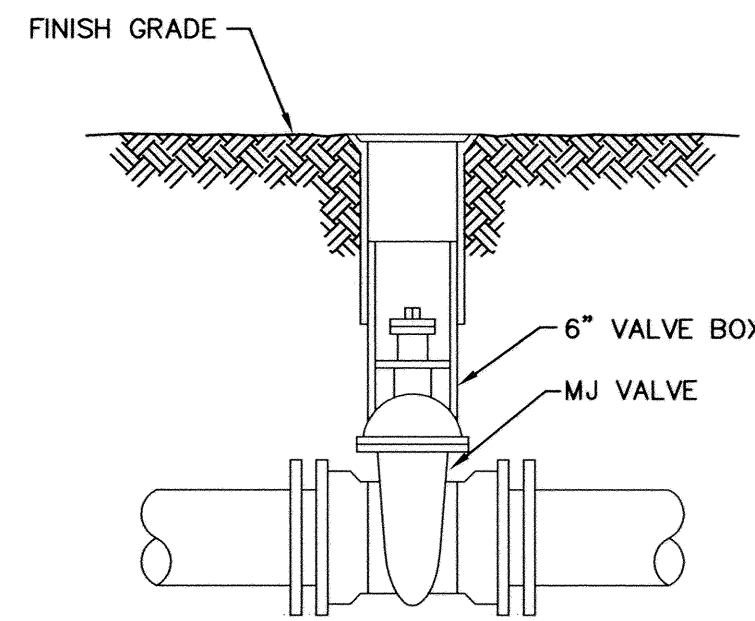
WATER PIPE TRENCHING AND BEDDING

N.T.S.

G:\1448\10\Water Line\1448d01.dwg Dec 29, 2010 - 2:01pm mlkeasmth

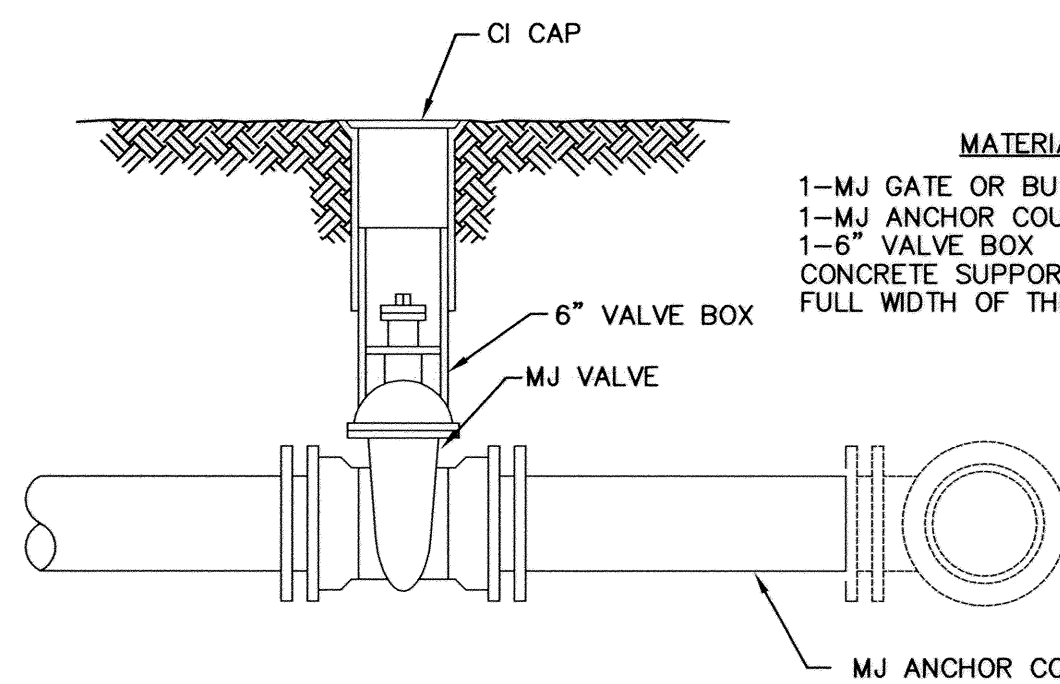
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DRAWN BY: MDS		N.T.S.	
PROJECT NO.: 4344.00		SHEET NO.	
ENGINEER: TERENCE L. HAYNES, P.E. #14583		C-9.6	





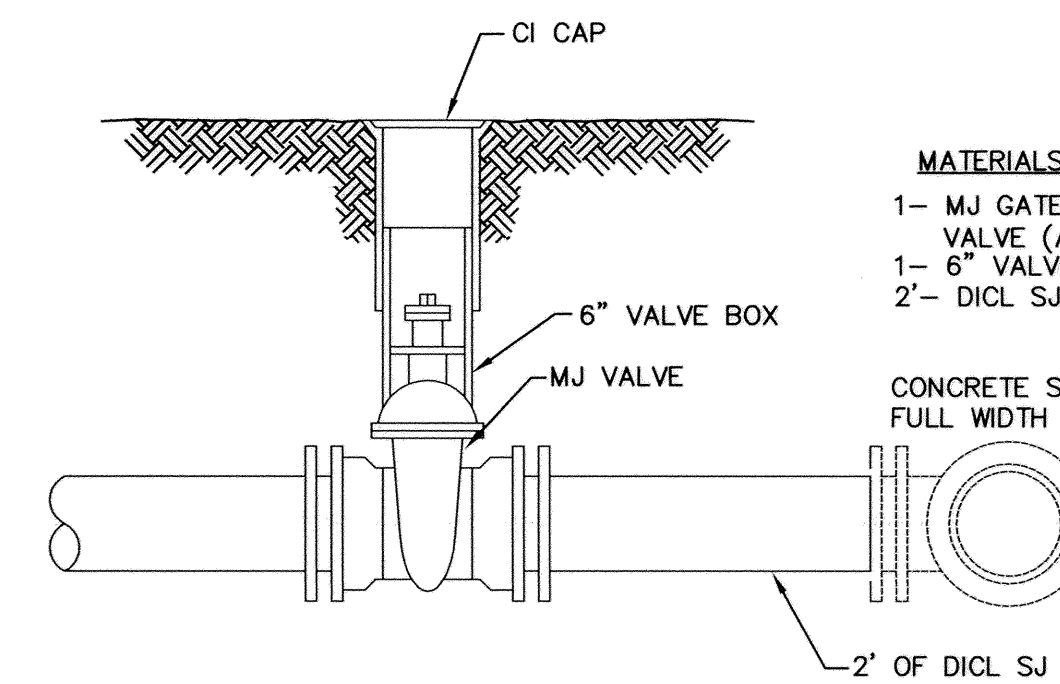
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-6" VALVE BOX
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

LINE VALVE ASSEMBLY



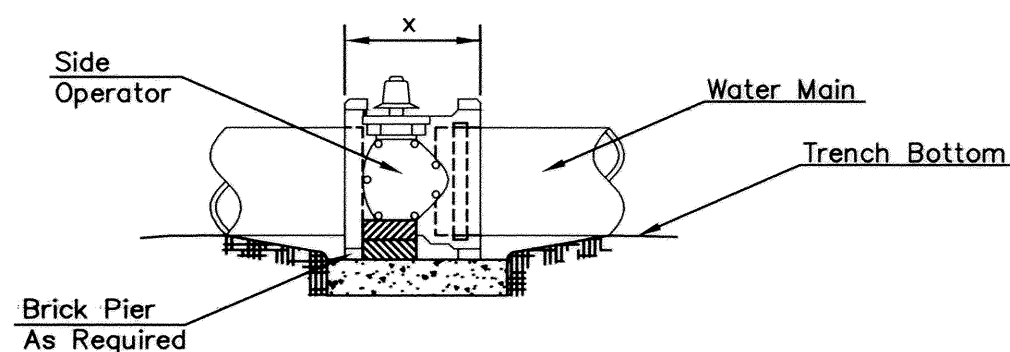
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-MJ ANCHOR COUPLING (12" OR SMALLER)
 - 1-6" VALVE BOX
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

ANCHORED VALVE ASSEMBLY



- MATERIALS LIST**
- 1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1- 6" VALVE BOX
 - 2- DICL SJ PIPE
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

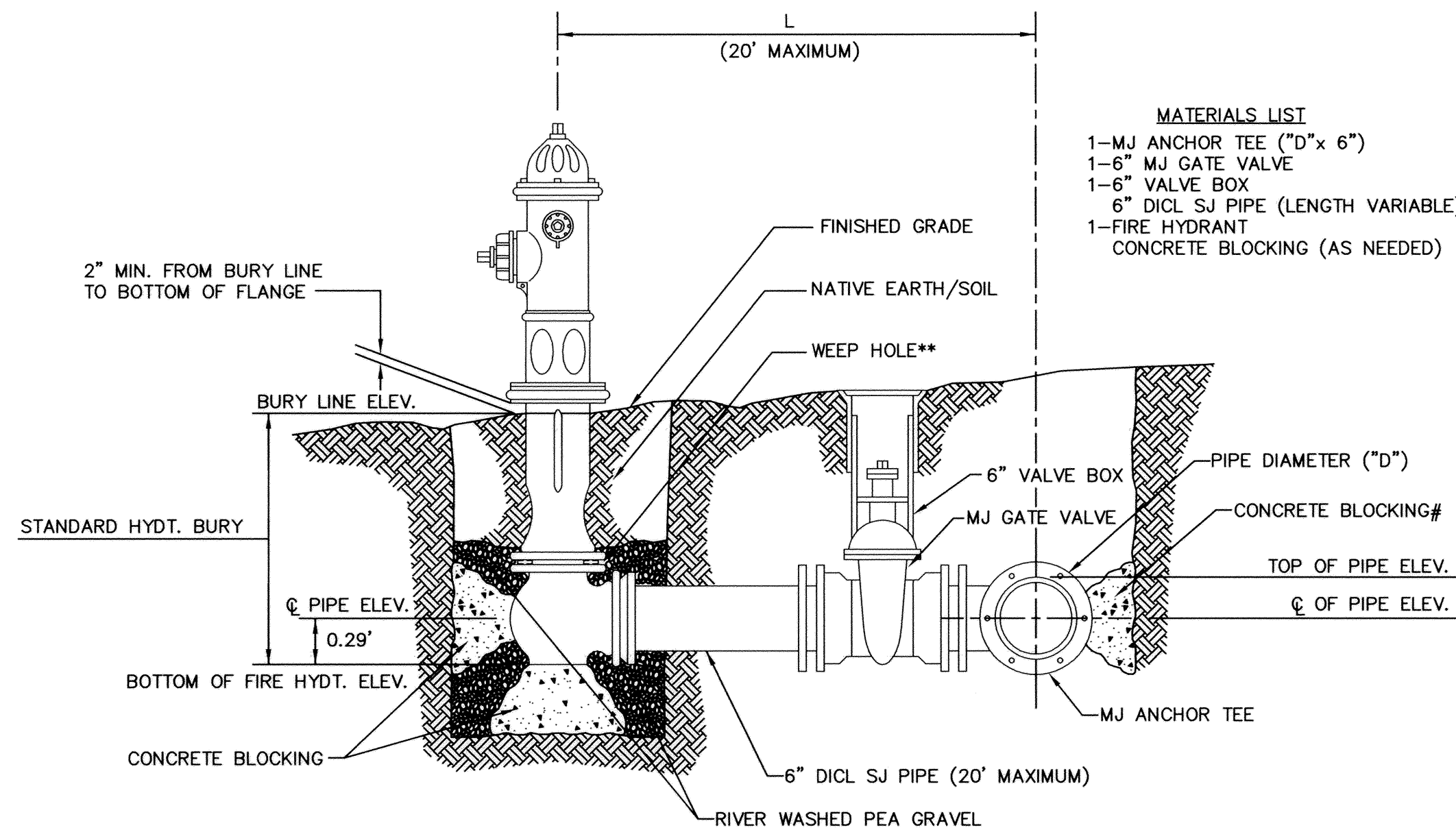
VALVE ASSEMBLY



NOTES

- This detail covers Butterfly Valve installation, inclusive, regardless of type of pipe or joint used. Larger lines to be detailed on plans.
- 6" Valve Box and Cover required per City of Wichita Std. Specifications.
- Conc. Support Block to be full width of trench.

CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION

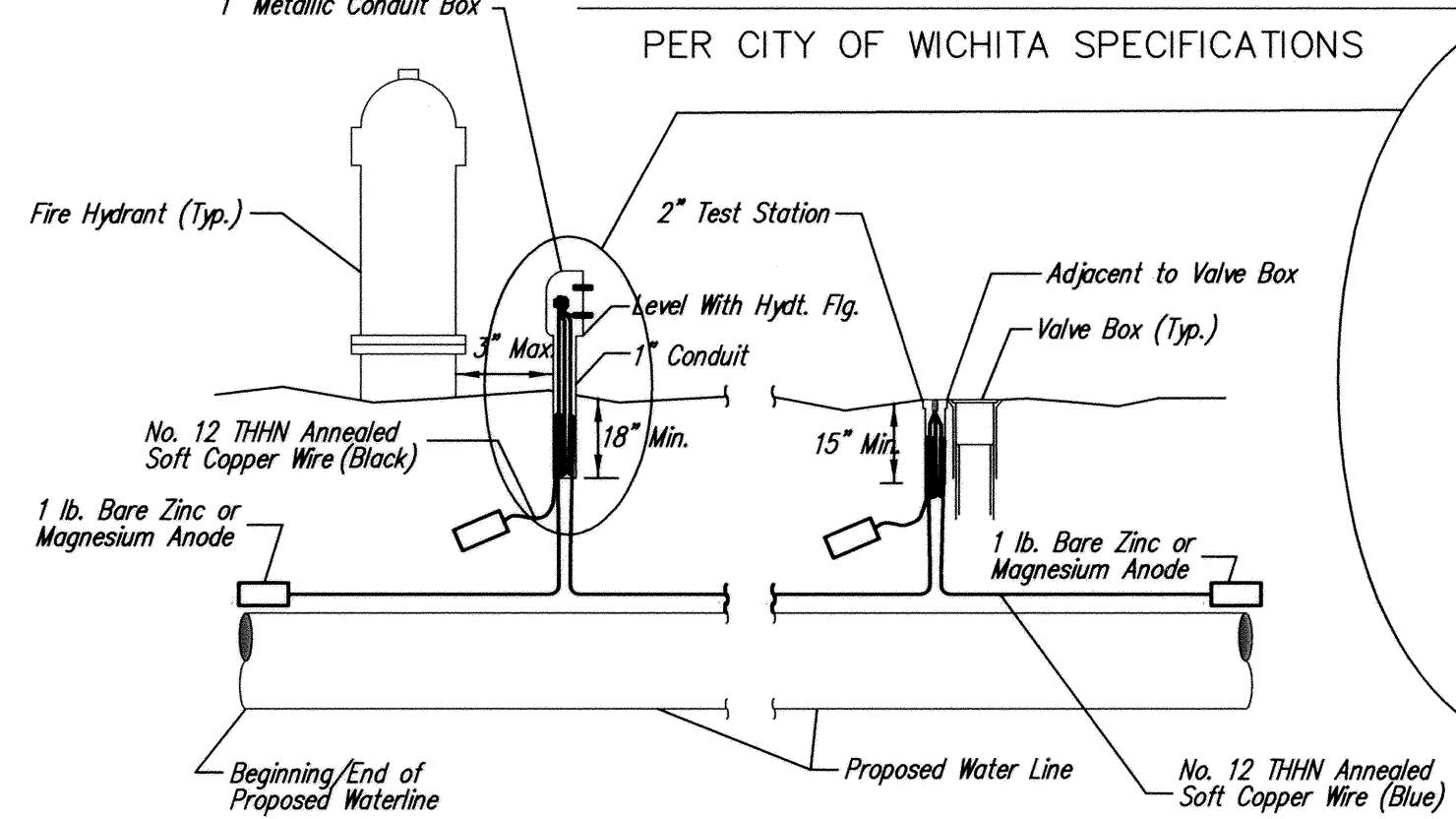


- MATERIALS LIST**
- 1-MJ ANCHOR TEE ("D"x 6")
 - 1-6" MJ GATE VALVE
 - 1-6" VALVE BOX
 - 6" DICL SJ PIPE (LENGTH VARIABLE)
 - 1-FIRE HYDRANT
 - CONCRETE BLOCKING (AS NEEDED)

- ** CAUTION! WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES.**
- # CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.**
- * IF HYDRANT BURY IS IN EXCESS OF 5', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY.**

FIRE HYDRANTS REQUIRED			
STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*

FIRE HYDRANT ASSEMBLY



TRACER WIRE

Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. Split-bolt connectors shall be used at splice locations. Electrical tape shall cover all splices so no bare wire is exposed. Test stations shall be installed adjacent to all fire hydrants along the waterline and at blowoffs or valves near the ends of the waterlines. Any exceptions to the location of test stations shall be approved by the engineer. At each test station, the tracer wire shall be connected to a 1 lb. Zinc or magnesium anode. Anodes shall also be attached to the tracer wire at both the beginning and the end of the proposed waterline. A typical layout of the tracer wire and test station is provided in the above figure.

WIRE

The tracer wire shall be Blue No. 12 THHN annealed soft copper wire with thermal plastic insulation. The insulation shall be heat, oil, and gasoline resistant as manufactured by Temple Electric or approved equal. To allow for grade adjustment, a minimum of 12" of excess wire shall be coiled at the bottom of the test station for all wires. The insulation sheathing shall be removed such that 1" bare copper wire is exposed at all points of connection. Contractor shall attach wire being installed with proposed water main to any tracer wire installed with adjacent waterline projects.

TEST STATIONS

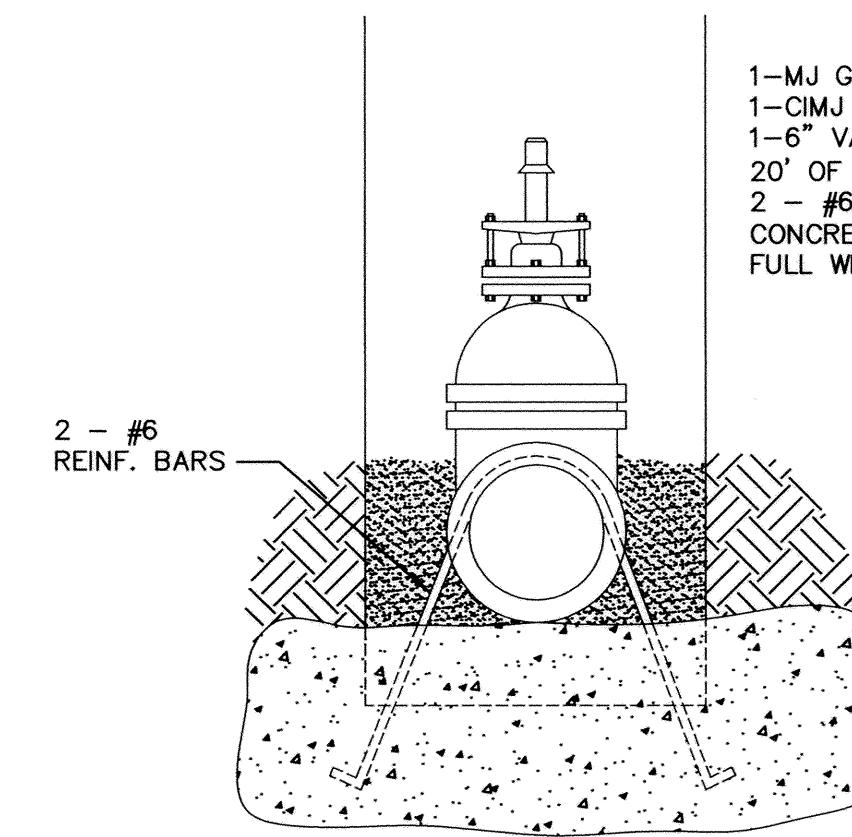
The test station for fire hydrant applications shall be a 1 inch galvanized conduit style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for valve applications shall be 2 inch flush style test station 12PS3B as manufactured by HANDLEY Industries or approved equal. The conduit style shall be attached to a 1 inch rigid galvanized conduit with a minimum length of 36" and plastic end bushing. The flush style shall have the word "WATER" stamped or molded into the lid. All test stations shall be manufactured using molded blue tops or sufficiently coated with blue enamel paint. The tracer wire and the anode wire shall be installed to allow 10 inches of wire within the test station. In concrete environments such as sidewalks or in the downtown area the contractor shall use the flush style test station. The location of all test stations shall be approved by the engineer, recorded, and shown in the as-built drawings.

ANODES

The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

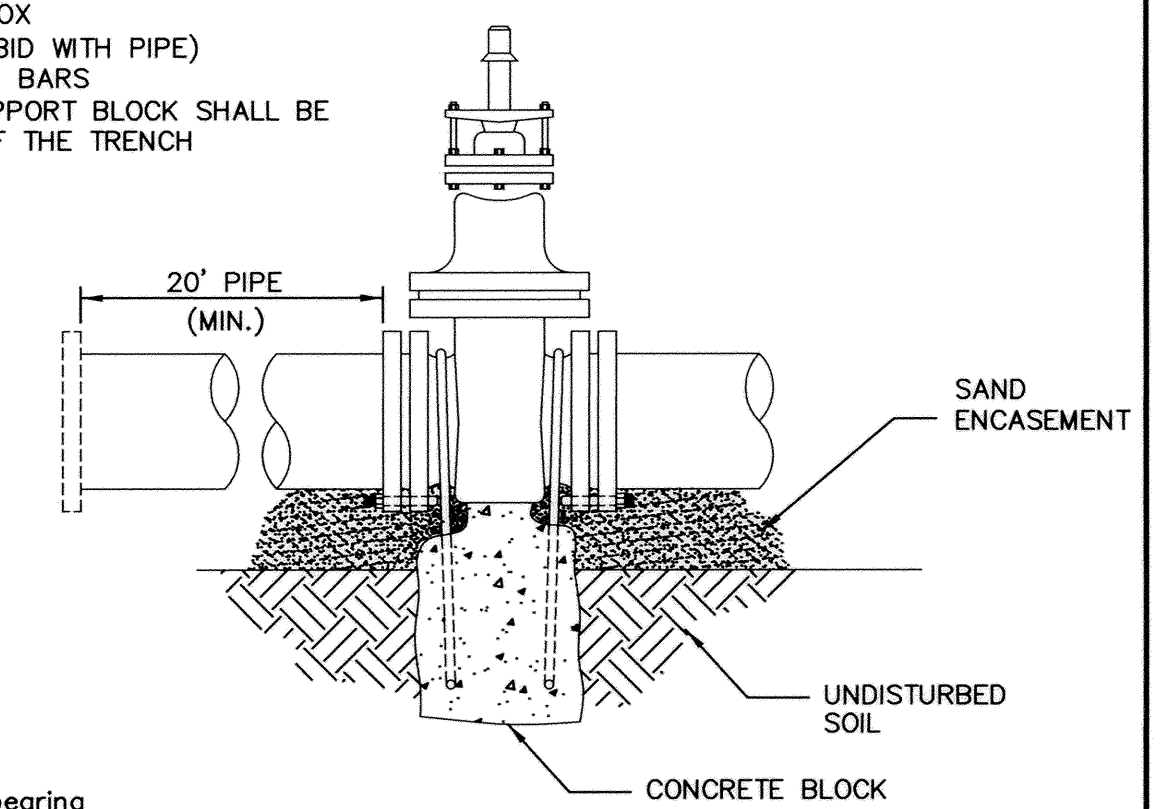
TRACER WIRE DETAIL

COST IS SUBSIDIARY TO PIPE INSTALLATION



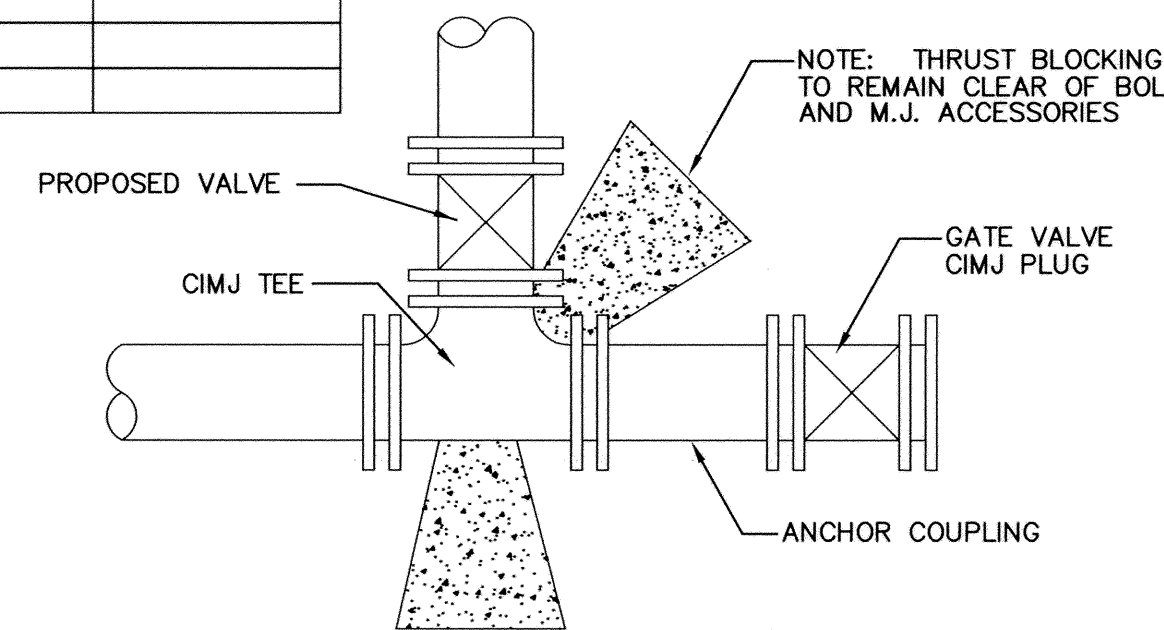
- Notes:**
- Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.
 - The thrust block shall be constructed such that bolts, nuts, and other MJ accessories are kept clear of concrete.
 - All valves at dead ends and at other locations as called out on the plans shall be blocked as shown here.

- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-CIMJ CAP WHEN NECESSARY
 - 1-6" VALVE BOX
 - 20' OF PIPE (BID WITH PIPE)
 - 2 - #6 REINF. BARS
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH



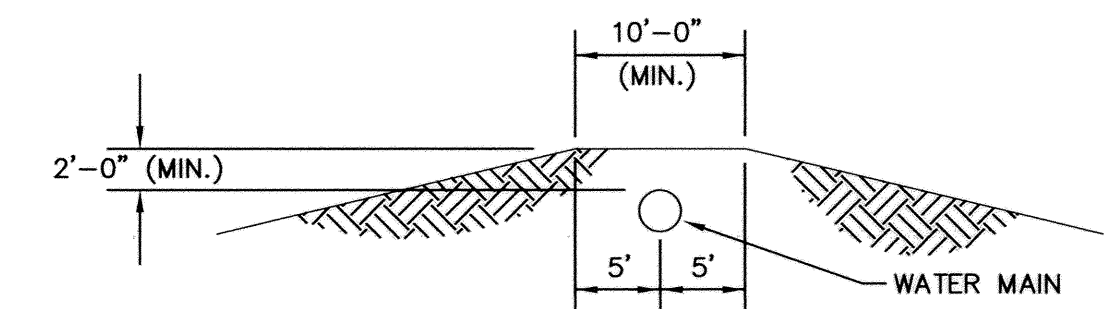
THRUST AT VALVES	
VALVE	THRUST AT 150 #/sq ft
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

ANCHORED VALVE ASSEMBLY, SPECIAL



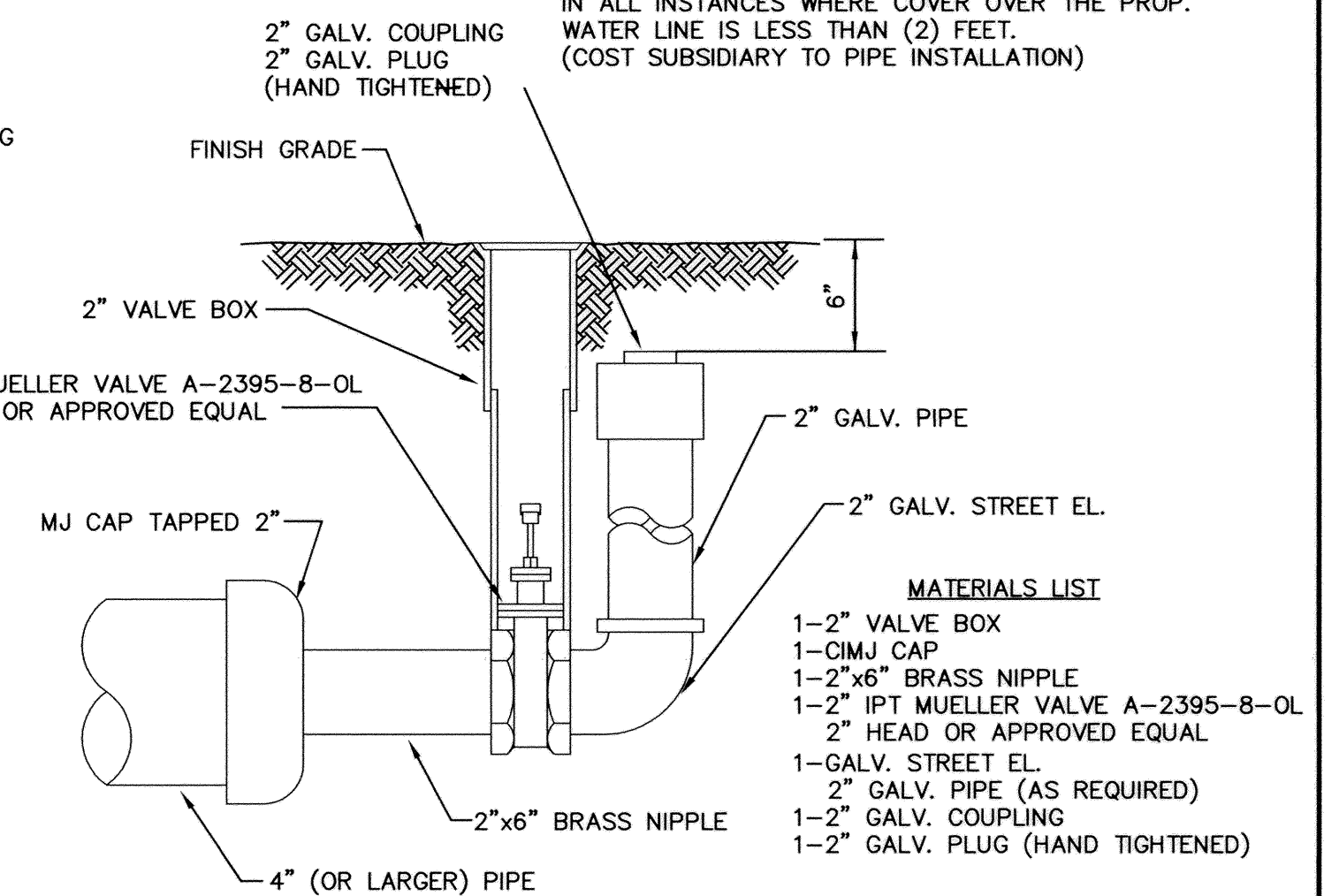
KEY BLOCK DETAIL

2 Blue Wires and 1 Black Wire
All Connected to Single Test Lead
With Split Bolt Connection and Blue No. 12 THHN Annealed Soft Copper Wire



PROTECTIVE FILL DETAIL

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN (2) FEET. (COST SUBSIDIARY TO PIPE INSTALLATION)



- MATERIALS LIST**
- 1-2" VALVE BOX
 - 1-CIMJ CAP
 - 1-2"x6" BRASS NIPPLE
 - 1-2" IPT MUELLER VALVE A-2395-8-OL
 - 2" HEAD OR APPROVED EQUAL
 - 1-GALV. STREET EL.
 - 2" GALV. PIPE (AS REQUIRED)
 - 1-2" GALV. COUPLING
 - 1-2" GALV. PLUG (HAND TIGHTENED)

2" BLOWOFF ASSEMBLY

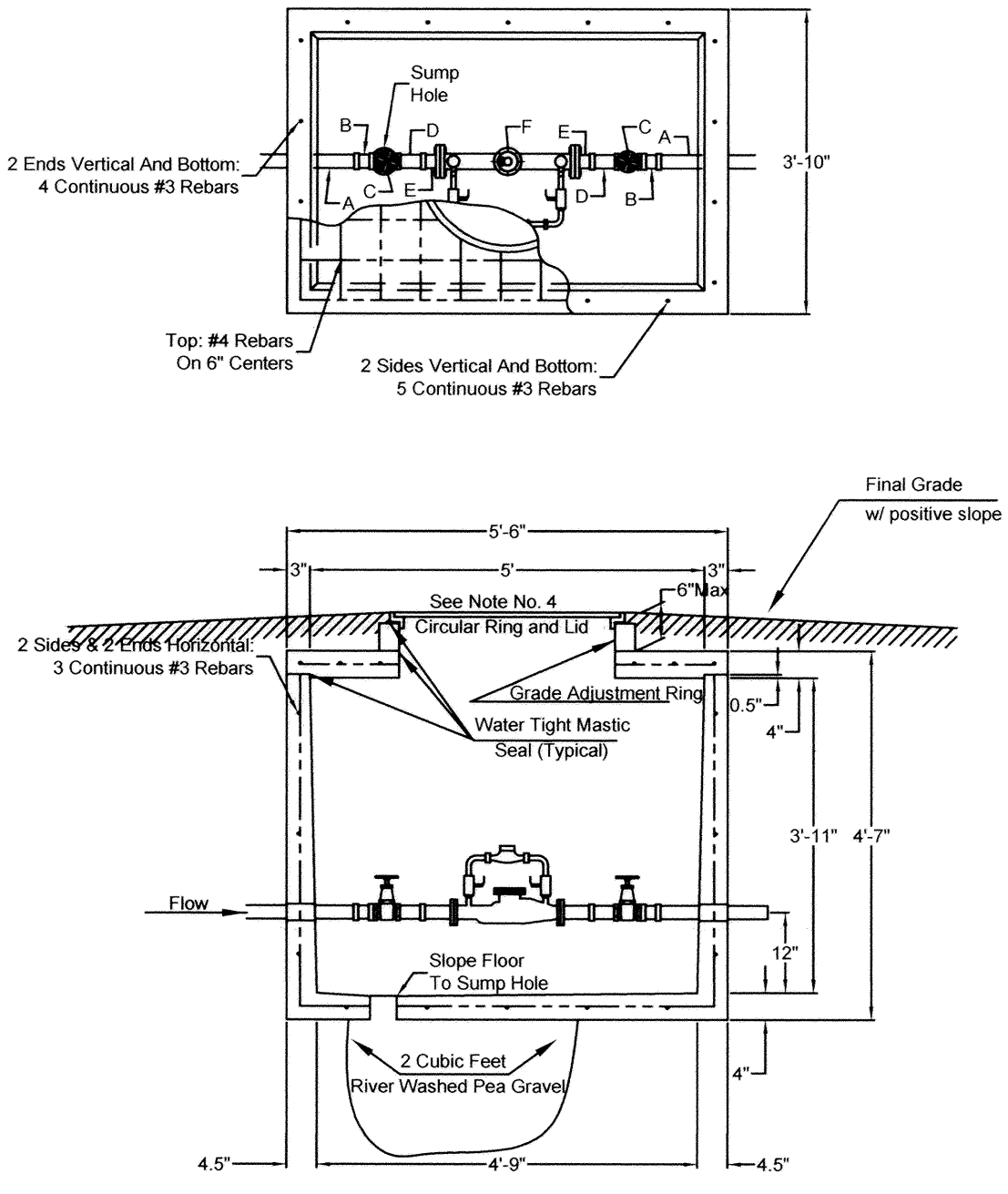
<p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4500 (316) 268-4114 FAX</p>	STANDARD WATER ASSEMBLY DETAILS	
	NEIL D. CABLE, P.E. - CITY ENGINEER	
	PROJECT NUMBER XXX-XXXX	INDEX CODE XXXXXX
	DATE DEC 98	C-9.7

REV: 8-14-01, MCG

Notes For All Services - 2" thru 12":

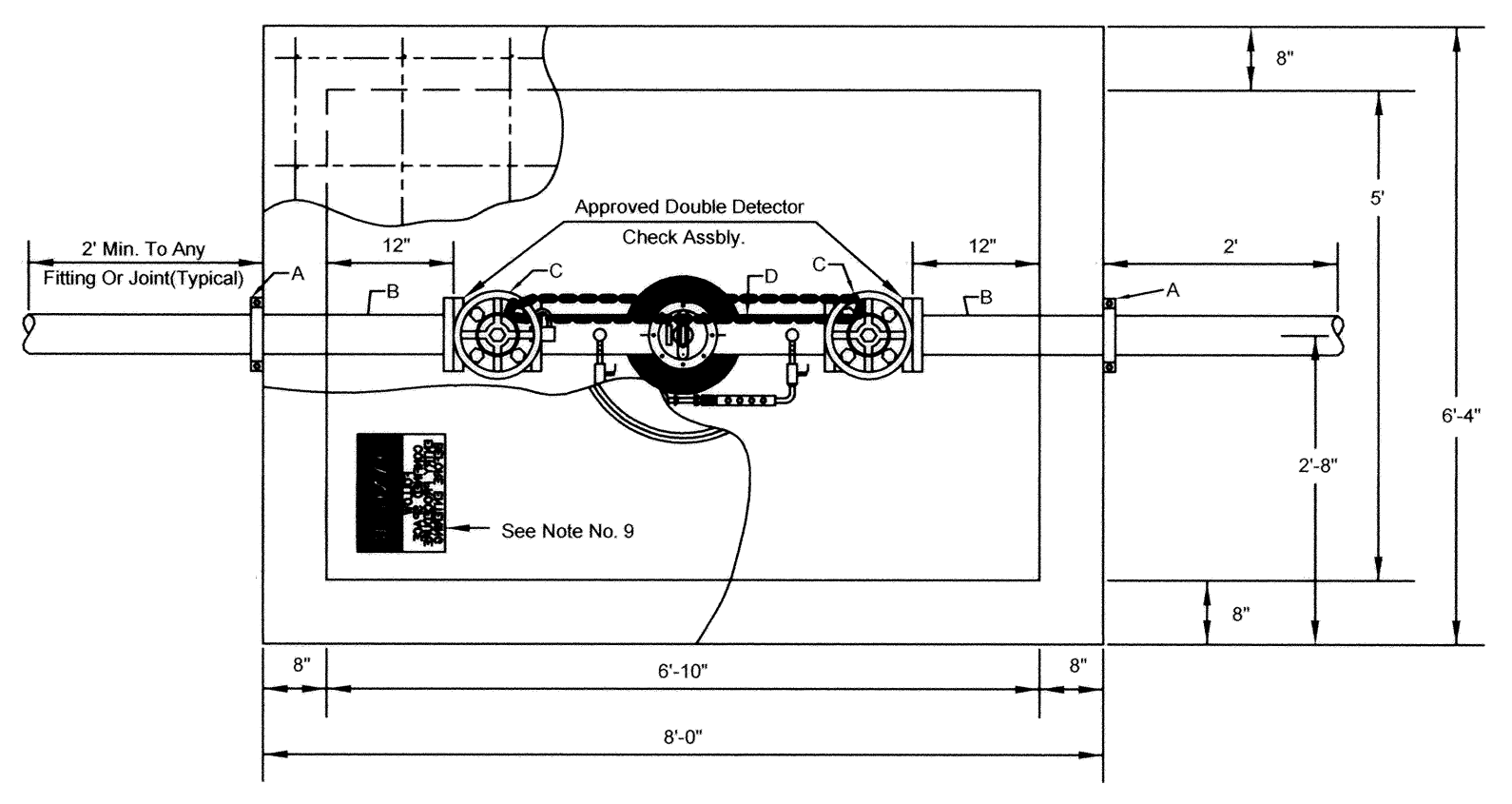
- When the standard vault dimensions are not applicable, such as when additional space is required for special pipe, fittings, additional meters, etc. the design engineer shall design a vault with the required dimensions for Water & Sewer Dept. approval and Public Works approval.
- The vault shall be poured concrete, cement blocks (voids to be completely filled with 2500 P.S.I. concrete), or approved precast structure (such as Clutter Inc. vaults approved 8/1/2000). The intent of these details shall not be limited by drawings or standards of precast structures.
- Vault location to be determined by Wichita Water & Sewer prior to construction and approved by Department's field supervisor prior to installation. A final inspection will be required for acceptance. Vault location standards include but not limited to: not to be located where subjected to vehicular loads, not to be located in any right-of-way or utility easement, and must be located on the property being served.
- The manhole ring and lid shall be Neenah R-6034 Frame with Type "C" Solid Lid and Drop Down Handle or US Foundry APS-30x30 (Aluminum). Where applicable the standard 10" Wichita Water & Sewer pattern meter reading lid and ring shall be located directly above water meter register. All meter registers shall have an approved lid directly vertical above. All joints of concrete to concrete or metal to concrete in the construction of the vault shall have an approved water tight mastic joint seal.
- Any fittings or appurtenances required to achieve proper elevation of pipe through the vault shall be provided by the contractor and appropriately noted on as-builts submitted by the inspecting engineer. Such fittings shall be a minimum of 2' from the exterior wall of vault.
- For all services larger than 2" the contractor shall provide an outlet flange connection as shown 12-inches from the inside wall. Inlet and outlet wall sleeves shall be provided and installed by the contractor and shall be in alignment with one another. The inlet and outlet pipe shall be ductile iron pipe, cement lined, Class 150 per Standard Specifications and shall be continuous through vault wall and joint no less than two(2) feet from the exterior wall of vault. Flanges of inlet and outlet pipes shall be in proper alignment and both pattern shall be rotated in such a way that valves and other fittings shall be in their proper vertical alignment when installed.
- For all services 4" and larger the contractor shall install a mega lug, restrained joint, or approved equal on the exterior walls of the vault, which shall be manufactured of ductile iron conforming to ASTM A 536-80, heat treated to a minimum hardness of 370 BHN and have a working pressure of at least 250 P.S.I. For all services smaller than 4" the contractor shall install an approved vault clamp on the exterior walls of the vault.
- All valves, meters, assemblies, and fittings shall be provided with sufficient concrete or other approved supports to the vault floor.
- The "Confined Space Warning" sign shall be fastened to the top of all vaults. If necessary for landscaping or site considerations, the sign may be fastened to the vault lid if it does not impede access to the handle. Acceptable materials: Aluminum 73415HH, Plastic 73439HH, or S.A. Vinyl 73463HH.
- All meters shall have an electronic read register compatible with the current City of Wichita meter reading system. All detector meters shall be an 5/8 cubic foot Badger meter with ERT register or approved equal. Gallon meters shall not be accepted.

- 11. Additional Notes For Fire Services:**
- A post indicator valve (PIV) is an option for the outlet valve and may be requested by the architect or owner. The PIV is not required by City of Wichita ordinance.
 - When Siamese connections are required by the Wichita Fire Department, refer to the current City Code Section 15.
 - If due to any reason the completed vault retains ground or drainage water in excess of 4" in depth from the floor of the vault, the property owner shall be responsible for providing and installing an appropriate automatic sump pump or approved equal, as well as any other appurtenances required to make such system function as intended.
 - The property owner is responsible for completing an "Application for Private Fire Protection" prior to final acceptance of the project.



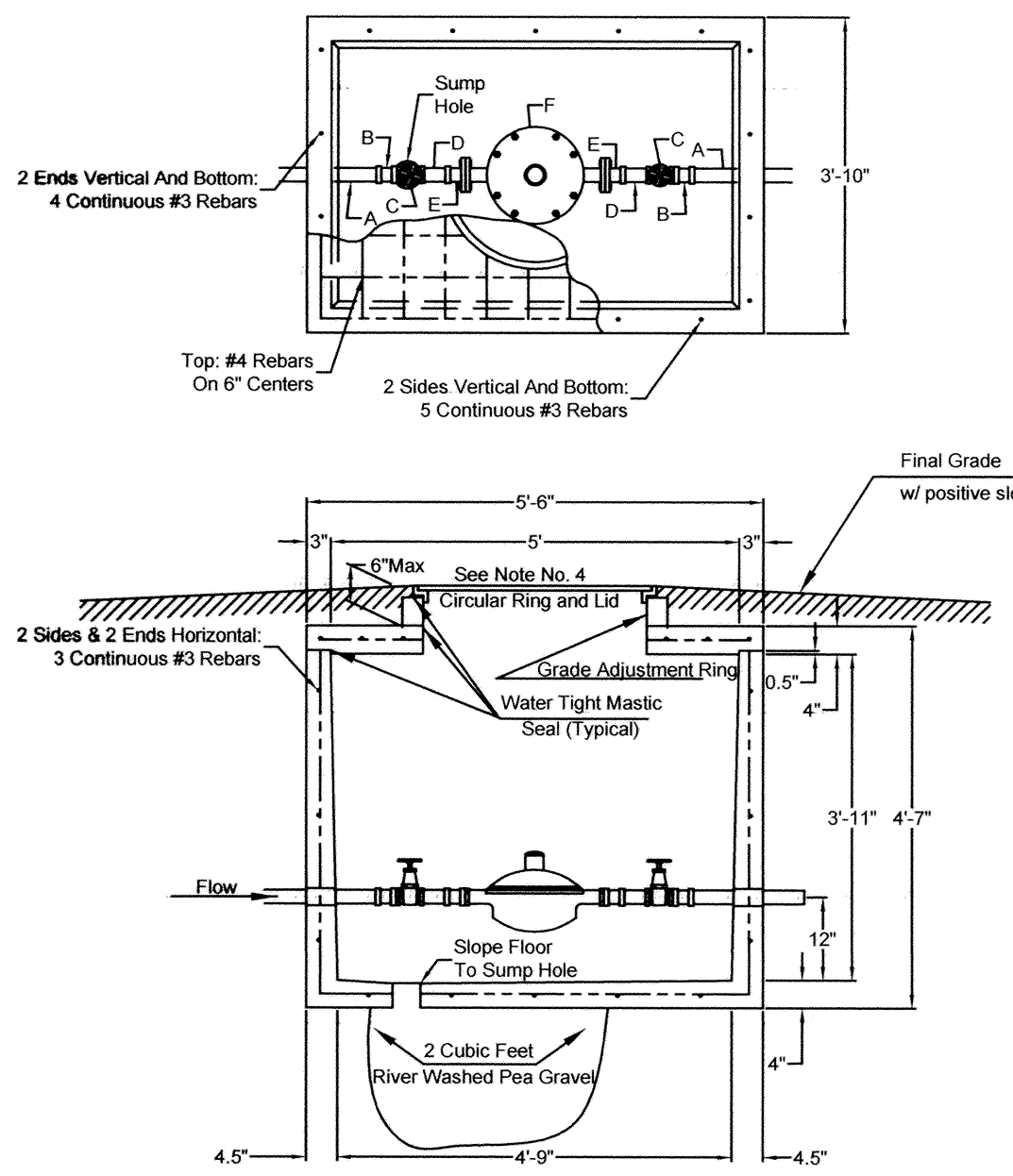
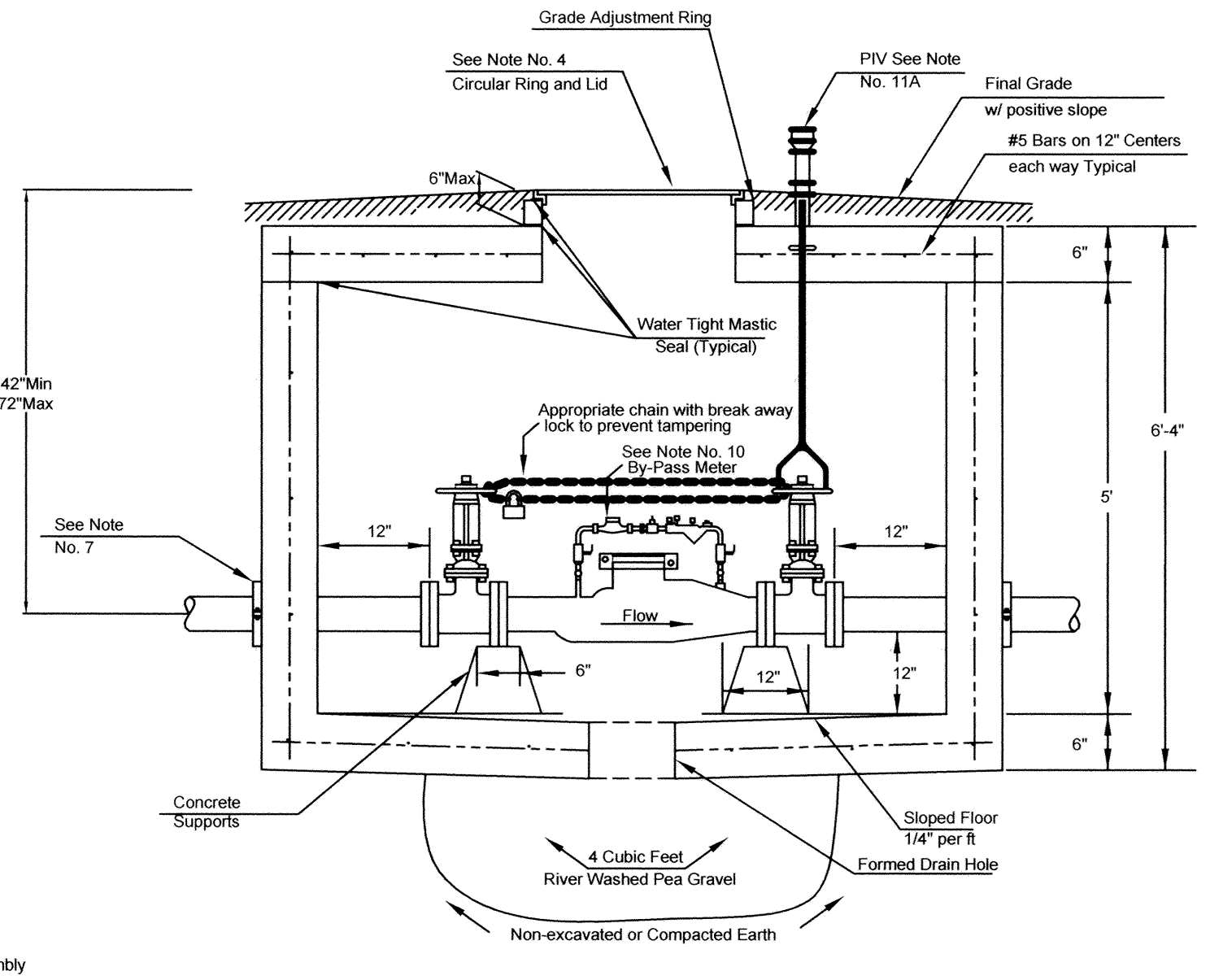
- A - 2" PVC or Copper
- B - 2" F PVC to M Iron or 2" F Copper to M Iron
- C - 2" Bronze IPT Gate Valve, Wheel Operated
- D - 2" x 4" or 2" x 6" Brass Nipple
- E - Lok-Pak Meter Couplings
- F - 2" Febco Model 406 Detector Check or approved equal with metered bypass assembly

2" Fire Service



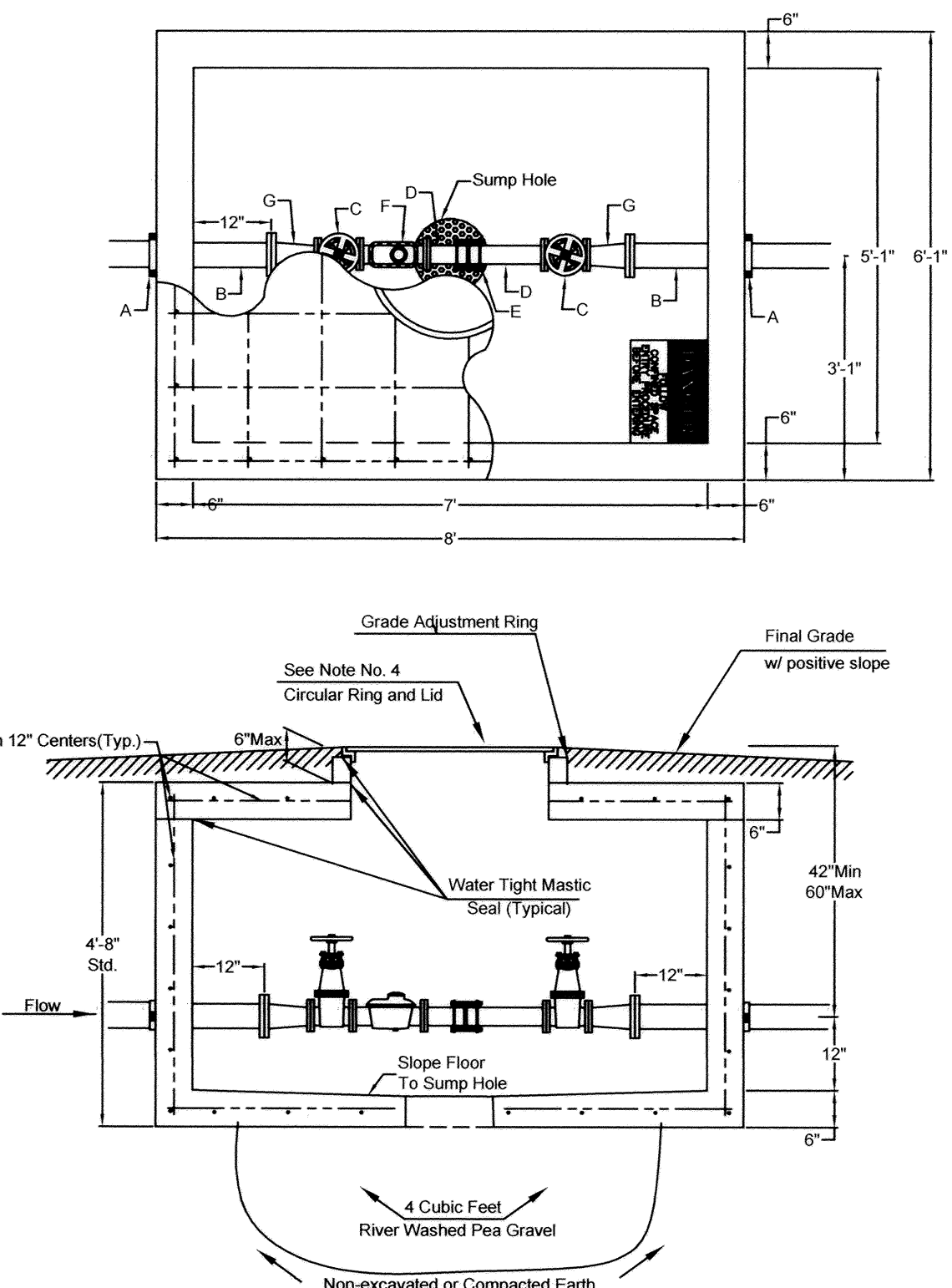
- A - Mega Lug (See Note 7)
- B - Min. 3'-8" Piece of FL x PE DCL Pipe
- C - Flange Gate Valve, Wheel Operated
- D - Ames Model 3001SS or approved equal with metered (cubic foot) by-pass assembly

4" thru 8" Fire Service



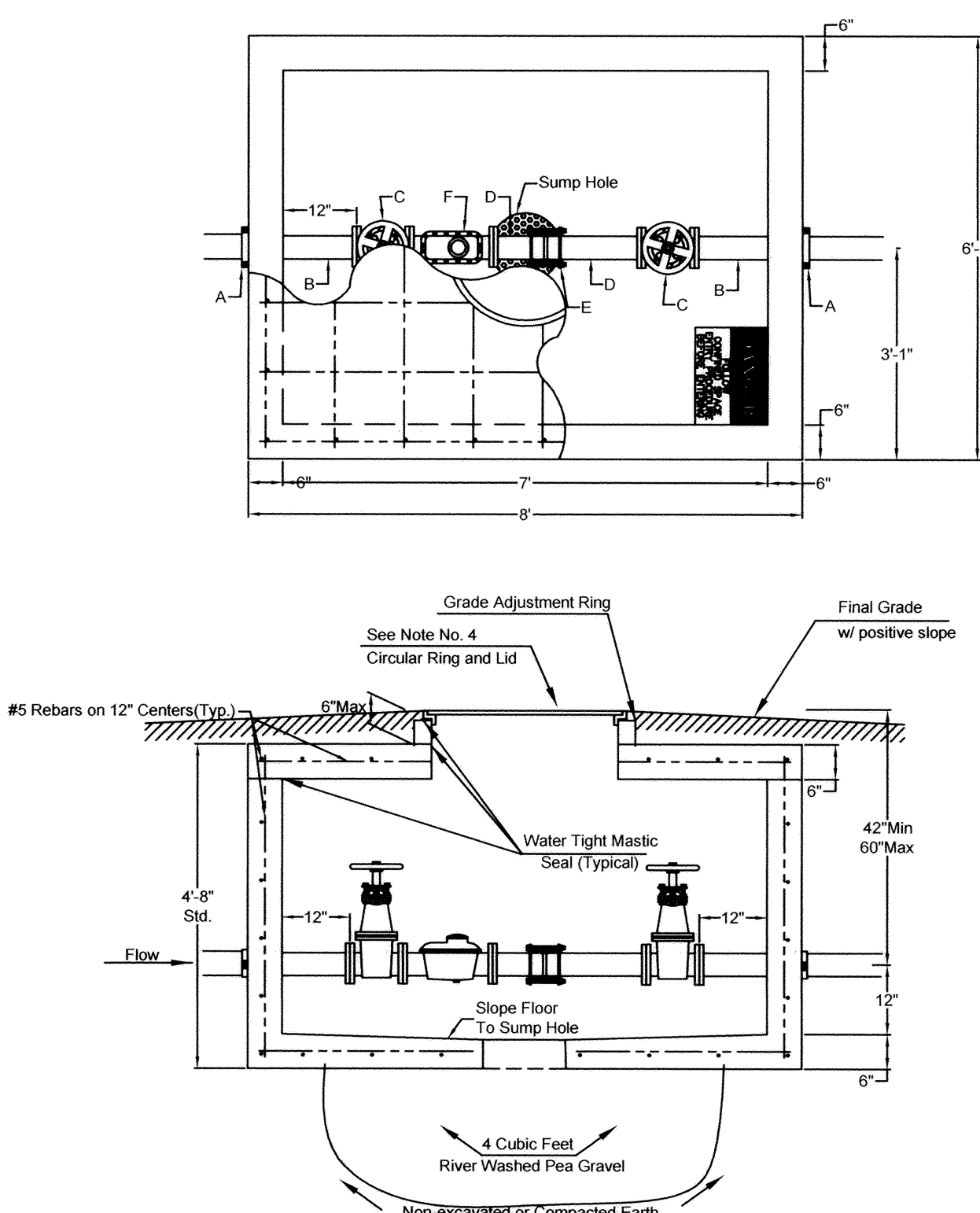
- A - 2" PVC or Copper (to be extended completely through vault to ensure proper alignment)
- B - 2" F PVC to M Iron or 2" F Copper to M Iron
- C - 2" Bronze IPT Gate Valve, Wheel Operated
- D - 2" x 4" or 2" x 6" Brass Nipple
- E - Lok-Pak Meter Couplings
- F - 2" Meter

2"DS



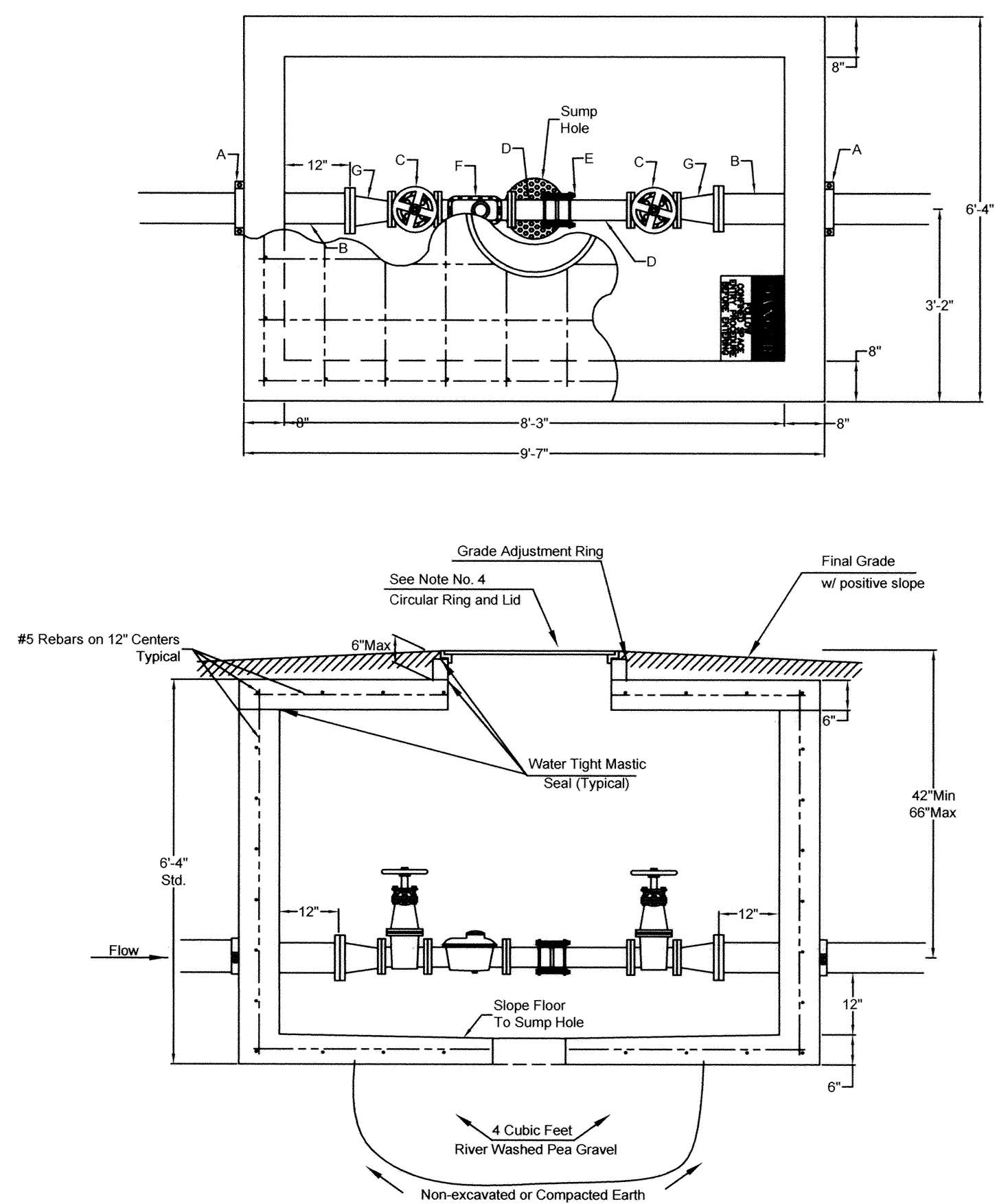
- A - 4" Vault Clamp
- B - Min. 3' Piece of 4" FL x PE DCL Pipe
- C - 3" Flange Non-rising Stem Gate Wheel Valve
- D - 3" FL x PE Pipe
- E - 3" Flex Coupling
- F - 3" Badger Recordall II Turbo Cubic Foot Meter with ERT Register or Sensus W-3500R Cubic Foot Meter with AMR Register.
- G - 3" x 4" FL Reducer

3"DS



- A - 4" Vault Clamp
- B - Min. 3' Piece of 4" FL x PE DCL Pipe
- C - 4" Flange Non-rising Stem Gate Wheel Valve
- D - 4" FL x PE Pipe
- E - 4" Flex Coupling
- F - 4" Badger Recordall II Turbo Cubic Foot Meter with ERT Register or Sensus W-1000DR Cubic Foot Meter with AMR Register.

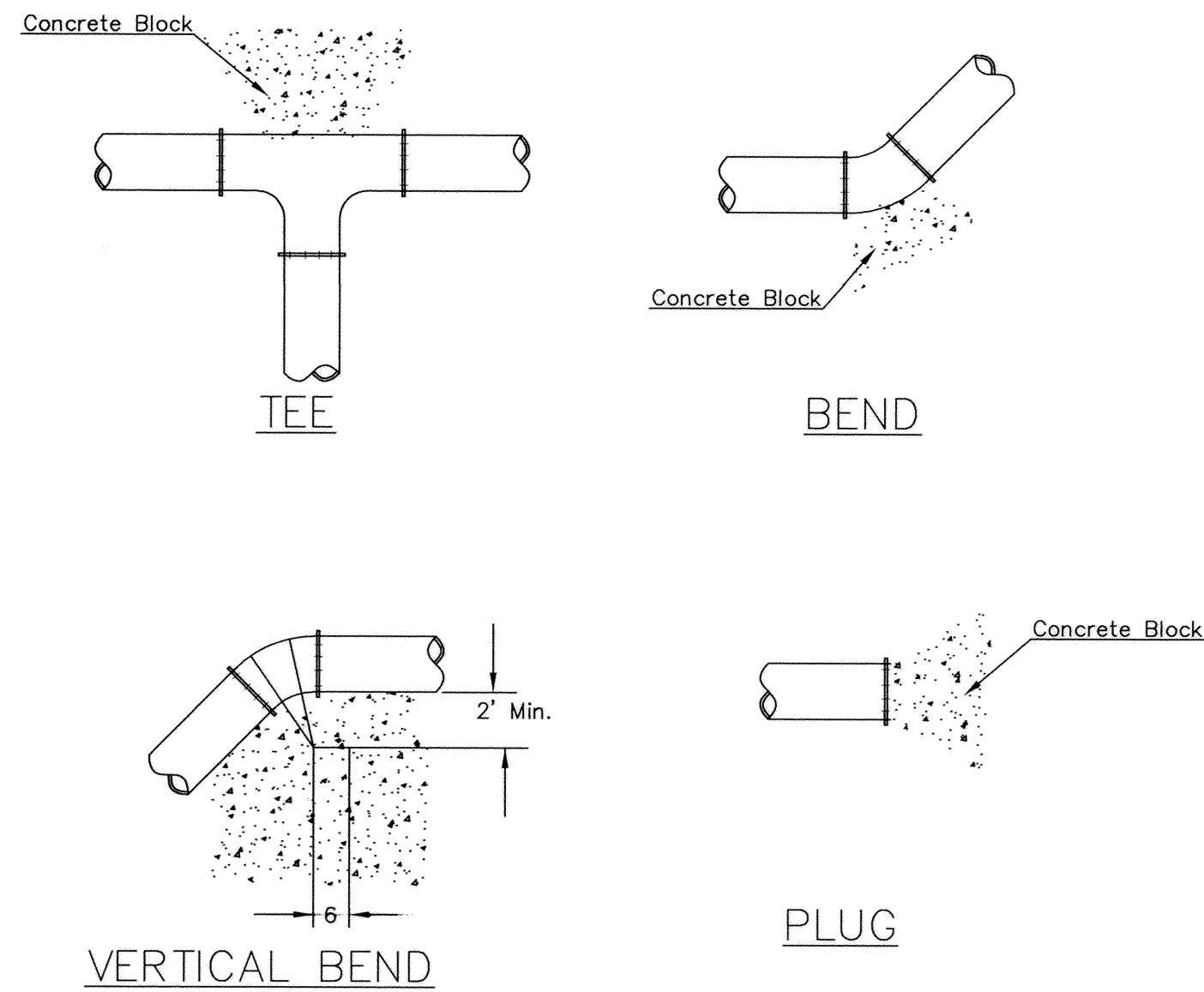
4"DS



- A - 6" Mega Lug (See Note 7)
- B - Min. 3' Piece of 6" FL x PE DCL Pipe
- C - 4" Flange Non-rising Stem Gate Wheel Valve
- D - 4" FL x PE Pipe
- E - 4" Flex Coupling
- F - 4" Badger Recordall II Turbo Cubic Foot Meter with ERT Register or Sensus W-1000DR Cubic Foot Meter with AMR Register.
- G - 6" x 4" Flange Reducer

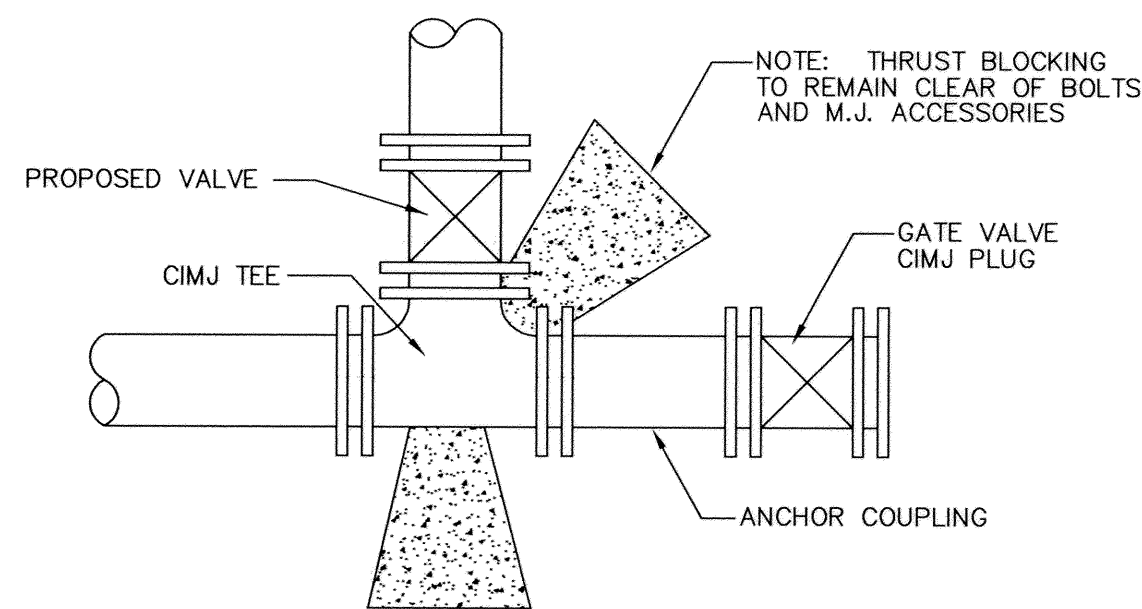
6" DS w/ 4" meter

<p>THE CITY OF WICHITA WATER & SEWER DEPT.</p>	<p>STANDARD VAULT DETAILS AND METER ASSEMBLIES</p>	
	<p>D. R. WARREN - DIRECTOR</p>	
	<p>PROJECT NUMBER XXX-XXXXX</p>	<p>INDEX CODE XXXXXX</p>
	<p>DATE JULY 2000</p>	<p>SHEET C-9.8</p>

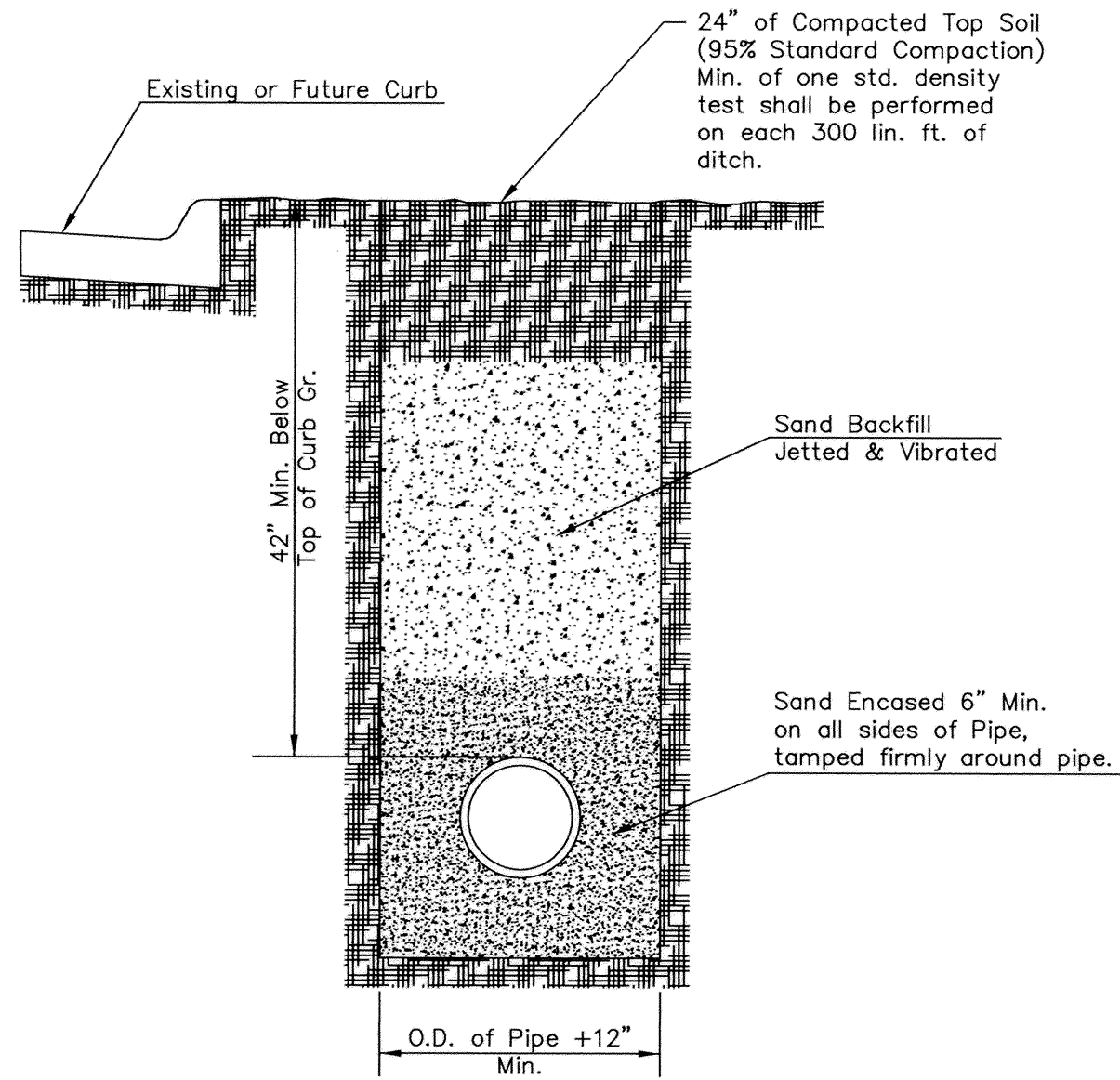


PIPE SIZE	THRUST AT FITTINGS IN TONS-AT 150#/IN ² P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

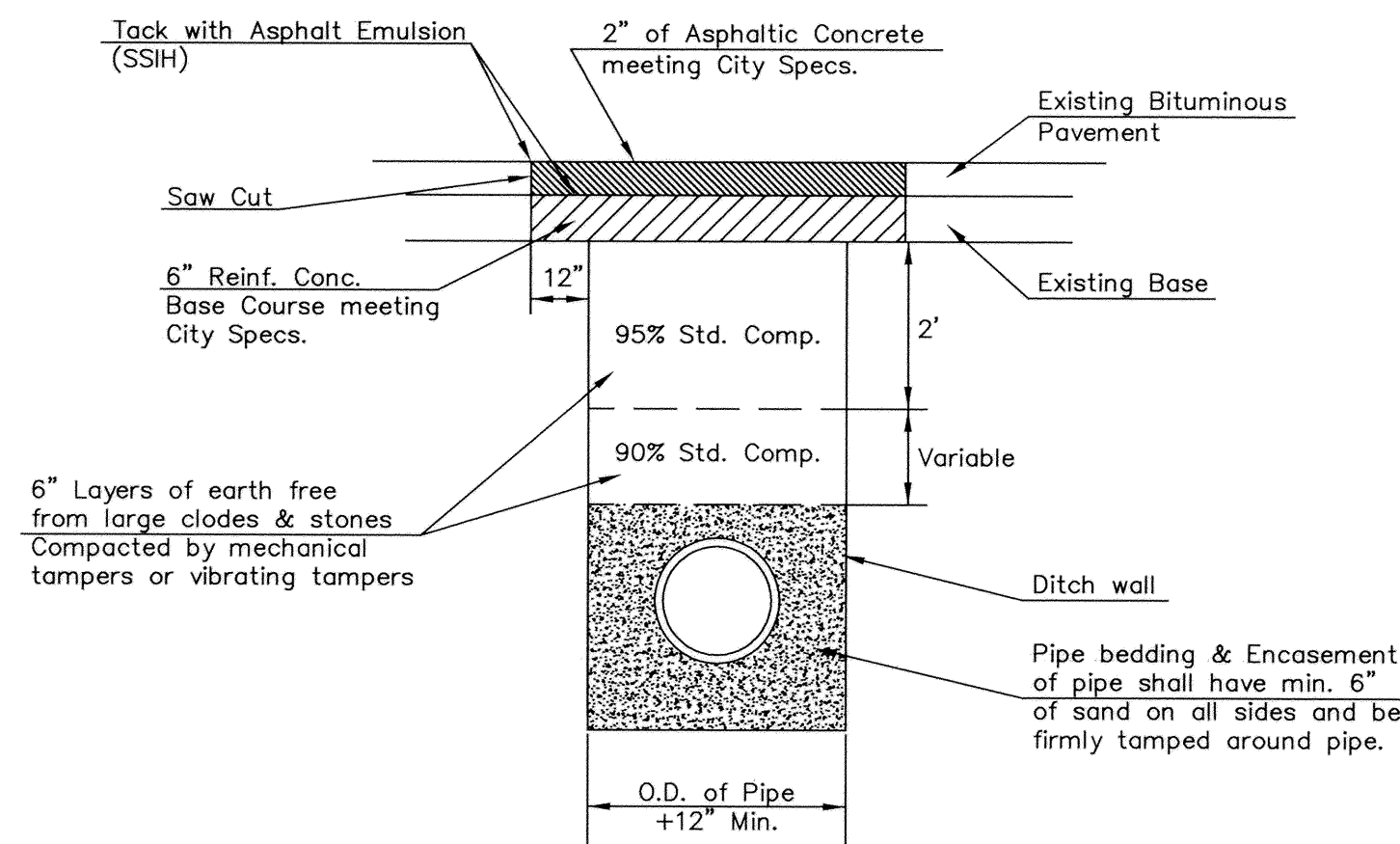
TYPICAL THRUST BLOCKS



KEY BLOCK DETAIL



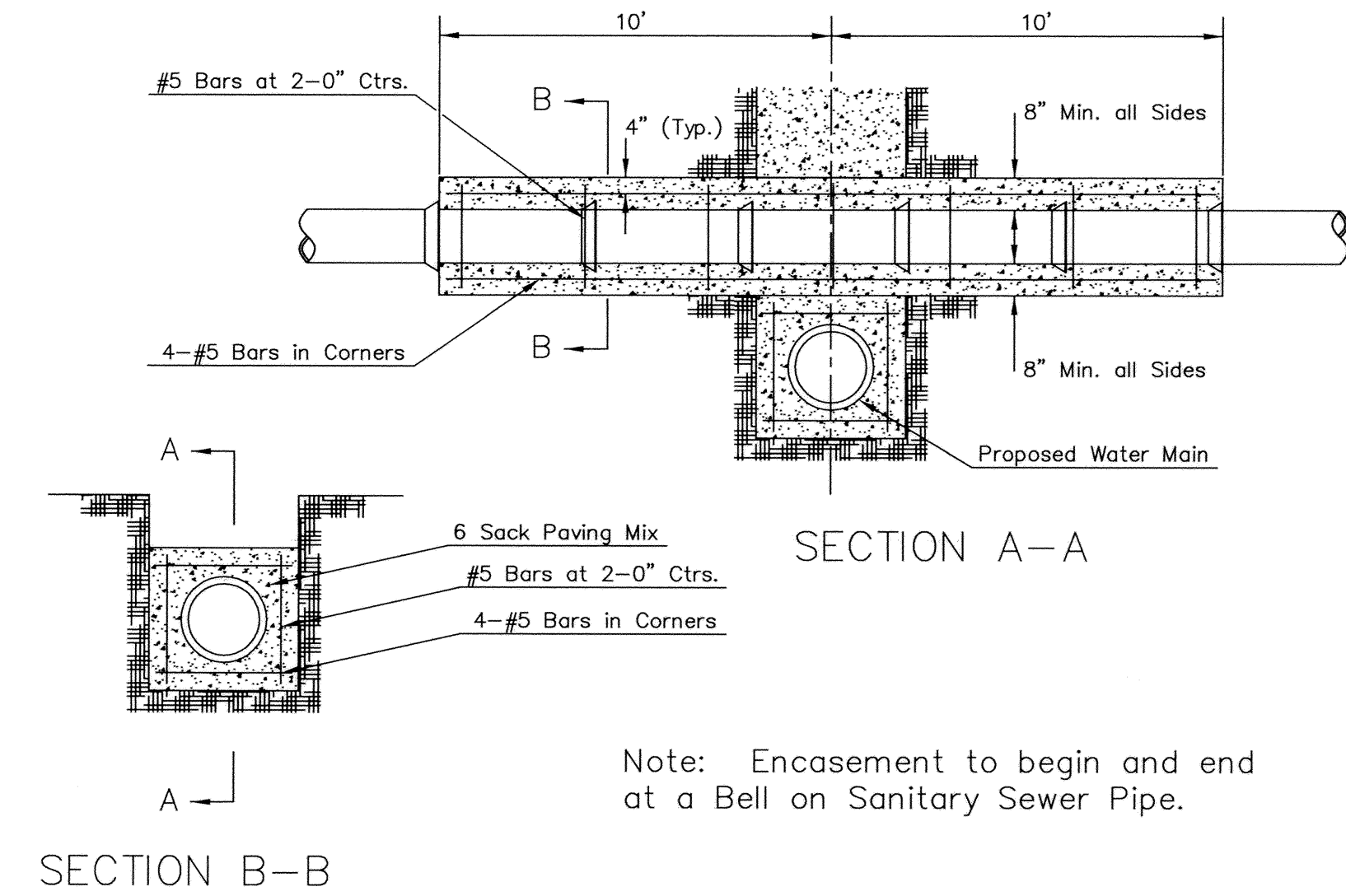
SETTLEMENT & COMPACTION ON CITY AND COUNTY ROAD RIGHT-OF-WAY EXCEPT UNDER PAVEMENT



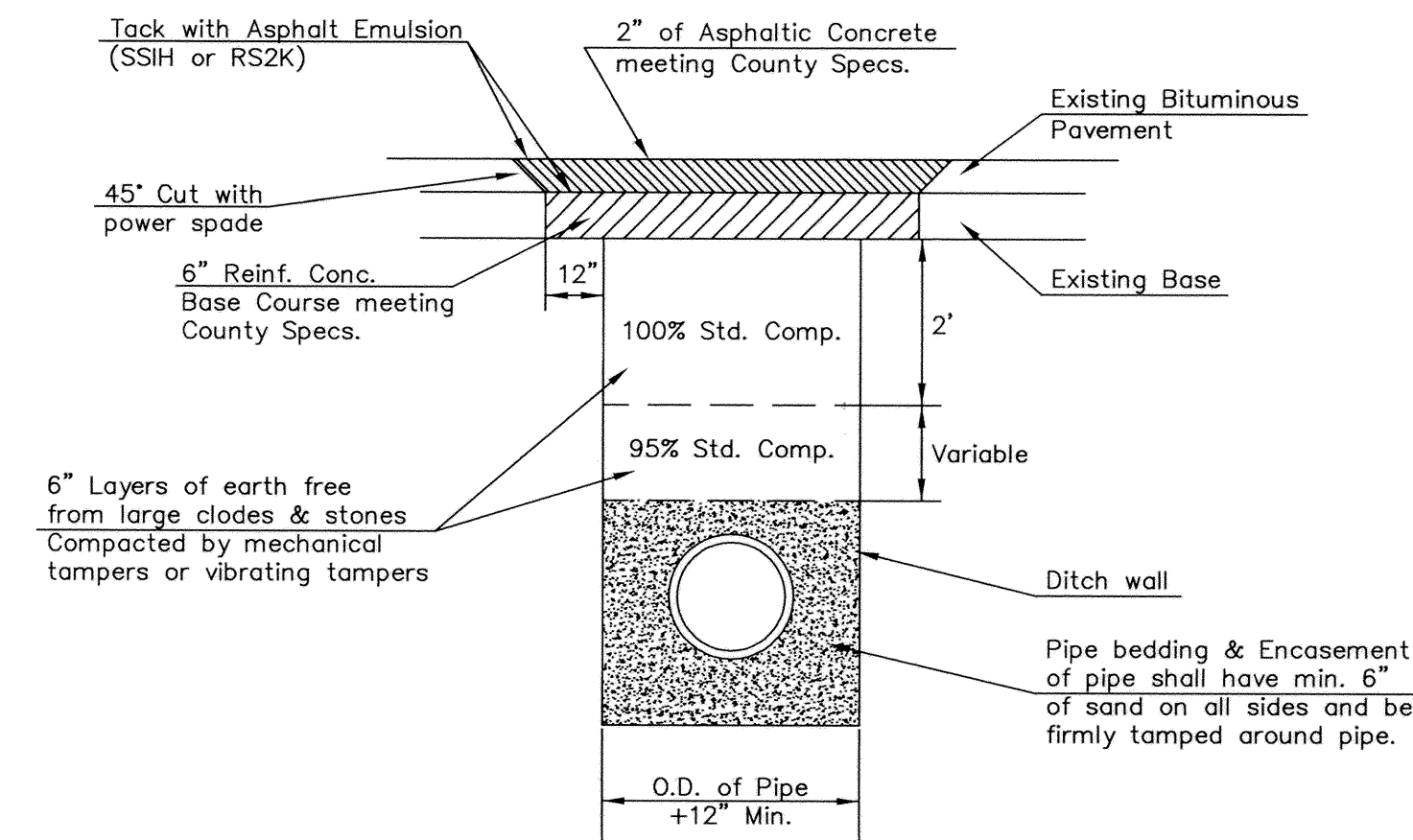
Standard Density Test, as described in the latest addition of ASTM D698, shall be performed to verify the above requirements to the Satisfaction of the Sedgwick County Director of Public Works. All testing cost shall be included in the unit price bid for the pipe in place.

When laying under paving, parallel with the centerline of the street, a minimum of one (1) Standard Density Test shall be performed on each 300 lineal feet of ditch.

PAVEMENT REPLACEMENT & DITCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS



REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER



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PAVEMENT REPLACEMENT & DITCH COMPACTION UNDER EXISTING AND PROPOSED COUNTY ROADS

REVISED APR 97



VARIOUS WATER DETAILS			
CITY ENGINEER			
JAMES L. ARMOUR, P.E., L.S.			
ACTING			
PROJECT NUMBER	OCA NUMBER	DATE	
XXX-XXXX	XXXXXX	MM/YY	
CITY ENGINEER'S OFFICE		DESIGN	DRAWN
CITY HALL - SEVENTH FLOOR		ABC	DEF
435 NORTH MAIN STREET		SHEET	
WICHITA, KANSAS 67202-1620		C-9.9	
(316) 288-4501			
(316) 268-4114 FAX			

WATER3.DWG