

WATERLINE PLANS (PRIVATE)

TO SERVE



MARKET STORE #5991-00

31st ST. SOUTH & SENECA ST.
WICHITA, SEDGWICK COUNTY, KANSAS
CITY OF WICHITA PRIVATE PROJECT NO.

1592 PPW (607853)

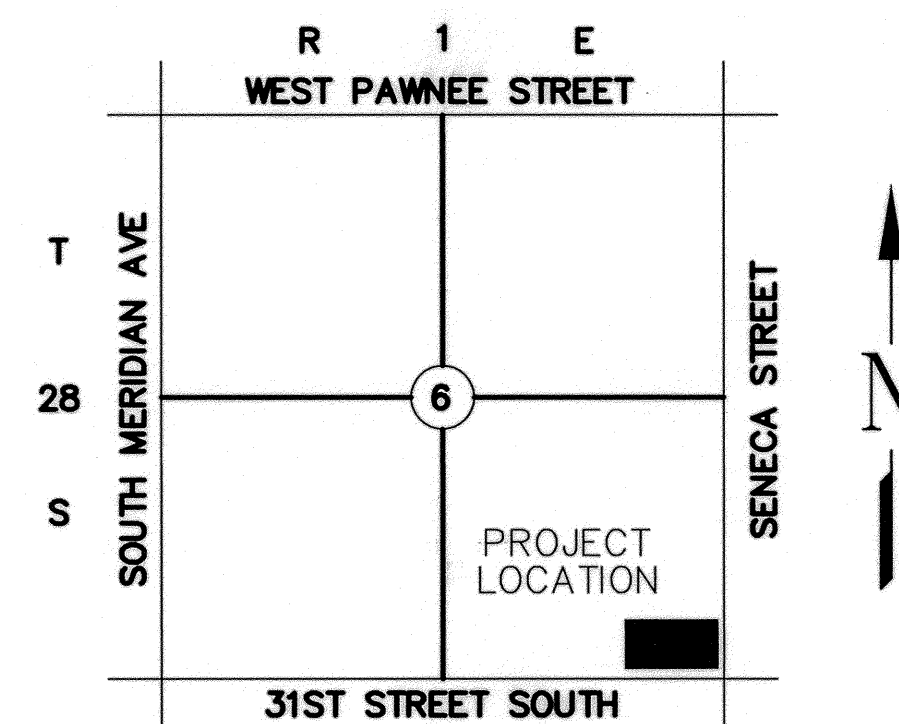
2011

OWNERS' ADDRESS

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

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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LOCATION MAP
NOT TO SCALE

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.

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.

- (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 Contractor's 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.

INDEX OF SHEET

- C-11.0.0 TITLE SHEET
- C-11.0.1 WATERLINE LOCATION PLAN
- C-11.0.2 WATERLINE PLAN & PROFILE
- C-11.1 WATERLINE DETAILS
- C-11.2 STANDARD WATER ASSEMBLY DETAILS
- C-11.3 VARIOUS WATER DETAILS

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

Public Works: *[Signature]* 5/24/11
Water & Sewer: *[Signature]* 5/24/11
Fire: *[Signature]* 5-24-2011

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 Public Water Line plans & 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

[Signature]
TERENCE L. HAYNES, P.E. #14583

1 CHANGE DIRECTIVE #1 ~ 05/19/11

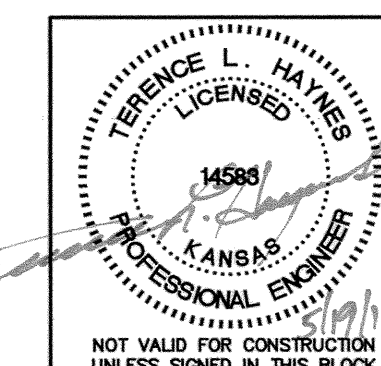
BENCH MARKS:

BM #1 " " CHISELED ON TOP OF CURB ELEV=1284.05 DATUM = NAVD 1988	BM #2 " " CHISELED ON TOP OF CURB ELEV=1283.13 DATUM = NAVD 1988
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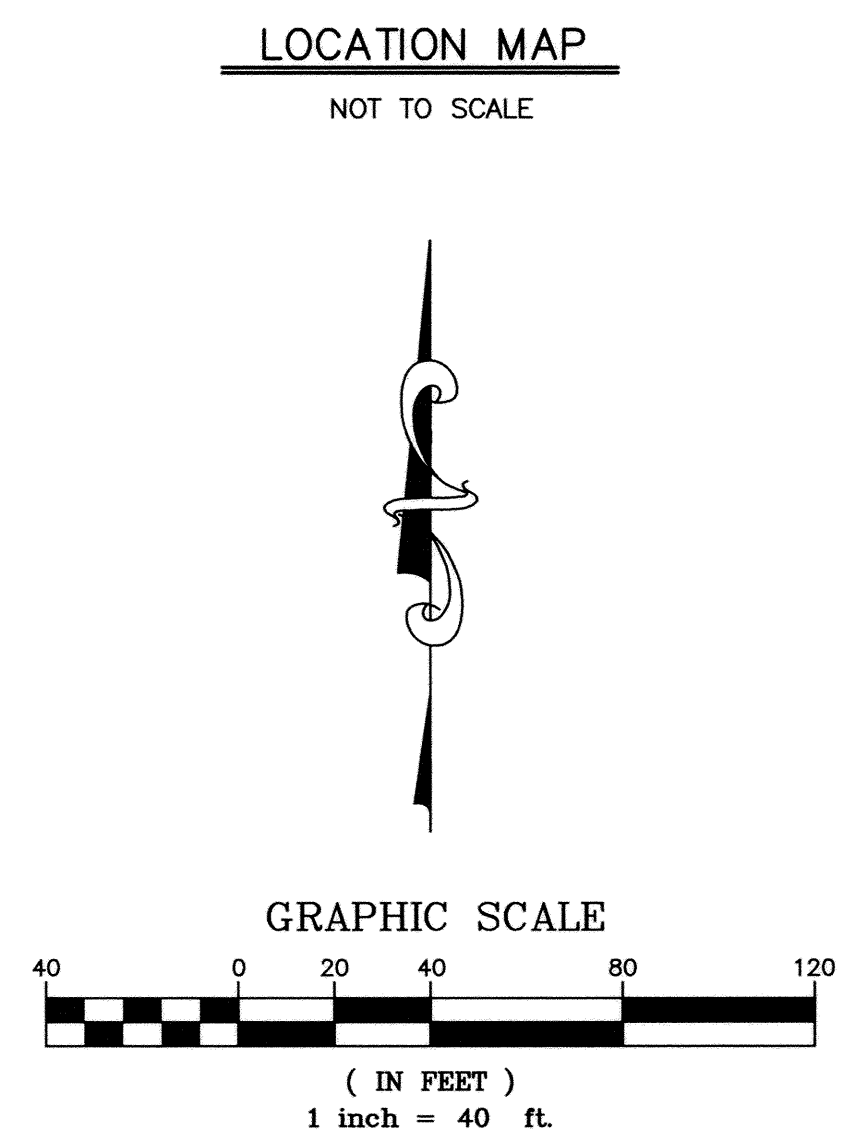
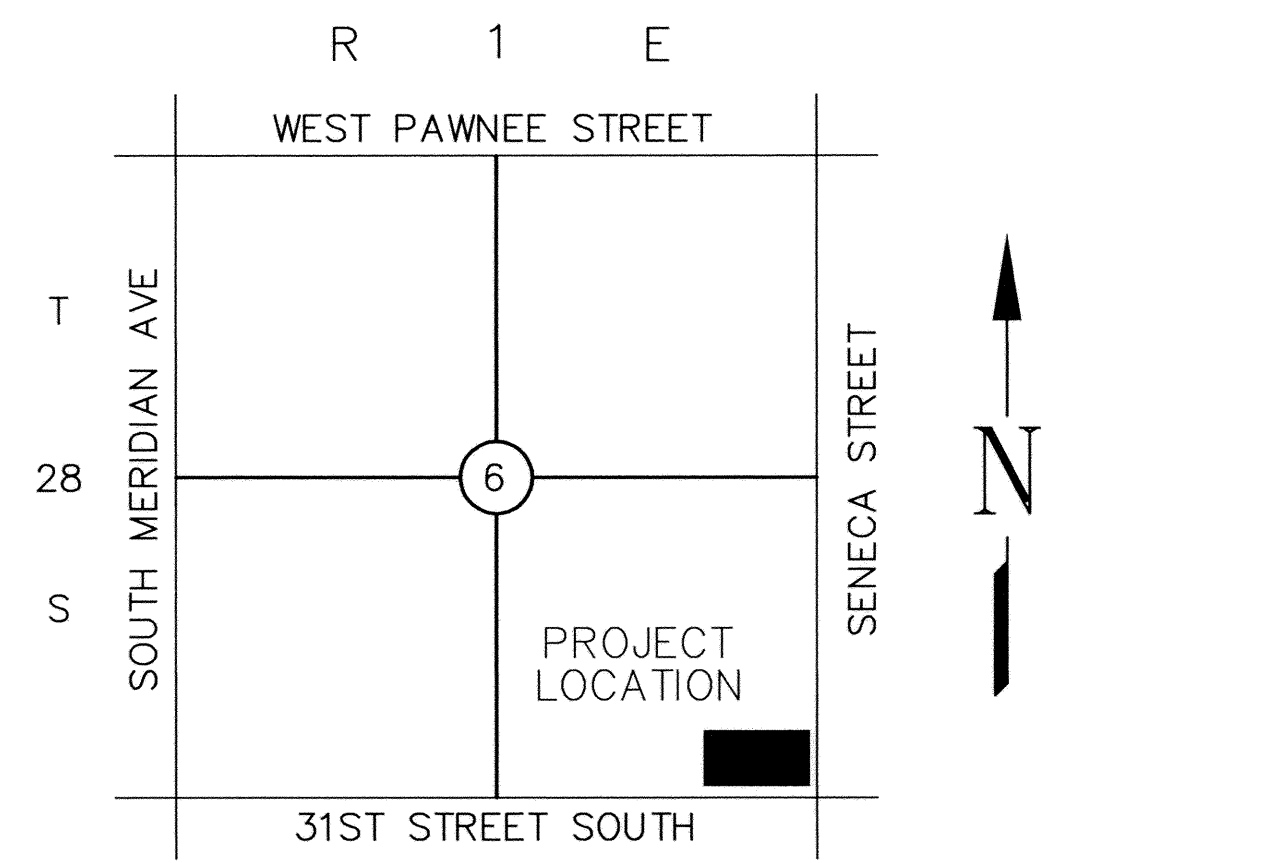
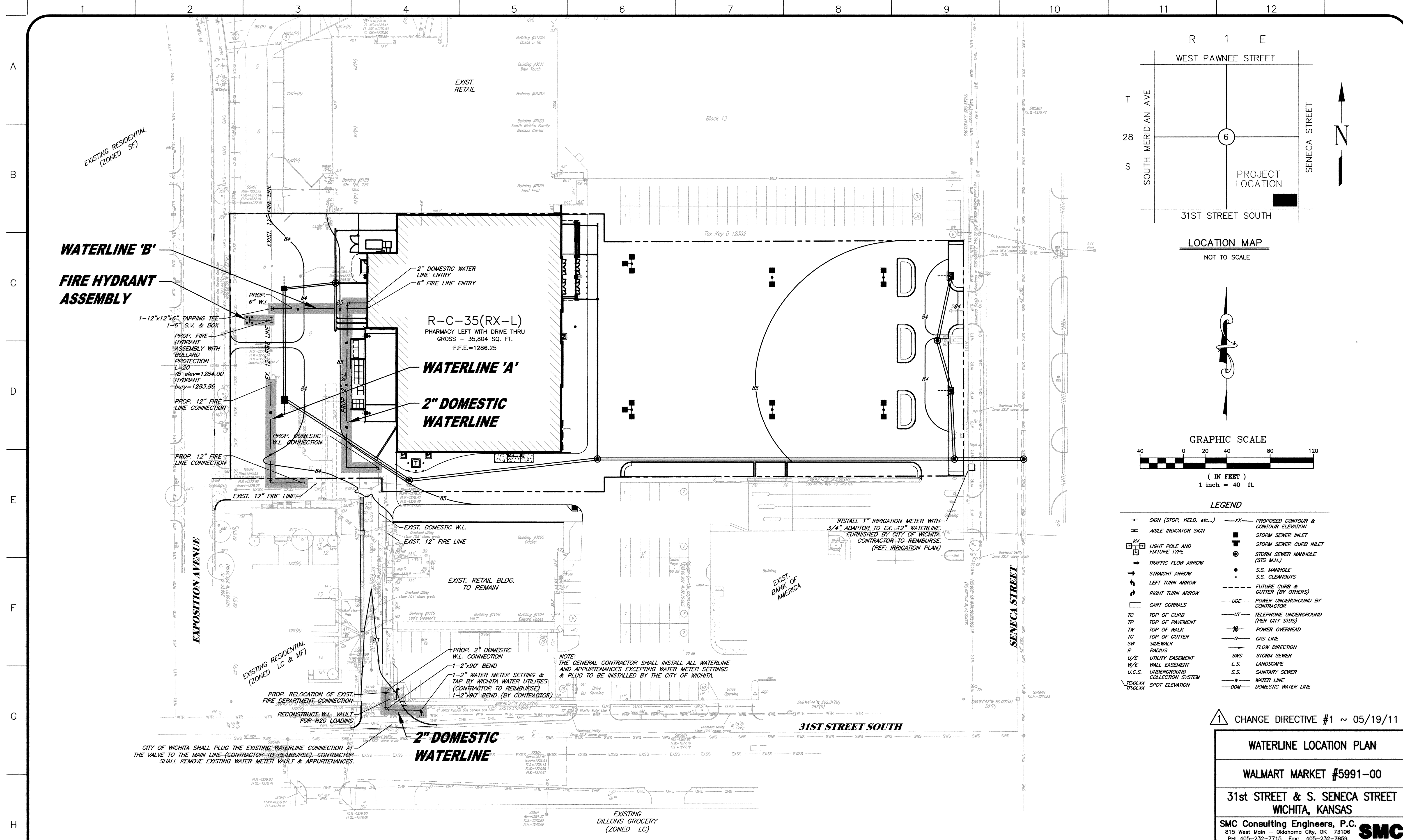
SMC Consulting Engineers, P.C.
Oklahoma City, Oklahoma

TITLE SHEET
WATERLINE PLANS (PRIVATE)
WALMART MARKET #5991-00
31st STREET & S. SENECA STREET
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, 2011



No. 7	Revision Change Directive #1	By TAB	Date 05/19/11
DATE: 04/28/11	SCALE: NTS	SHEET NO. C-11.0.0	
DRAWN BY: TAB	PROJECT NO.: 4966.00	ENGINEER: TERENCE L. HAYNES, P.E. #14583	



LEGEND

-	SIGN (STOP, YIELD, etc...)	-XX-	PROPOSED CONTOUR & CONTOUR ELEVATION
-	ISLE INDICATOR SIGN	■	STORM SEWER INLET
□	LIGHT POLE AND FIXTURE TYPE	■	STORM SEWER CURB INLET
→	TRAFFIC FLOW ARROW	●	STORM SEWER MANHOLE (STS M.H.)
→	STRAIGHT ARROW	●	S.S. MANHOLE
↪	LEFT TURN ARROW	●	S.S. CLEANOUPS
↩	RIGHT TURN ARROW	- - -	FUTURE CURB & GUTTER (BY OTHERS)
□	CART CORRALS	-UG-	POWER UNDERGROUND BY CONTRACTOR
TC	TOP OF CURB	-UT-	TELEPHONE UNDERGROUND (PER CITY STDS)
TP	TOP OF PAVEMENT	-PH-	POWER OVERHEAD
TW	TOP OF WALK	-G-	GAS LINE
TG	TOP OF GUTTER	→	FLOW DIRECTION
SW	SIDEWALK	→	UTILITY EASEMENT
R	RADIUS	W/E	WALL EASEMENT
U/E	UTILITY EASEMENT	U.C.S.	UNDERGROUND COLLECTION SYSTEM
W/E	WALL EASEMENT	-W-	WATER LINE
U.C.S.	UNDERGROUND COLLECTION SYSTEM	-DOM-	DOMESTIC WATER LINE
-W-	WATER LINE		
-DOM-	DOMESTIC WATER LINE		
XXLXX	SPOT ELEVATION		

△ CHANGE DIRECTIVE #1 ~ 05/19/11

WATERLINE LOCATION PLAN

WALMART MARKET #5991-00

31st STREET & S. SENeca STREET WICHITA, KANSAS

SMC Consulting Engineers, P.C.
815 West Main - Oklahoma City, OK 73106
PH: 405-232-7715 Fax: 405-232-7859
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1	Change Directive #1	TAB	05/19/11

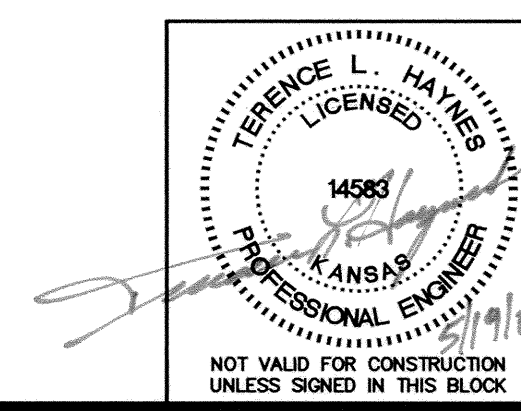
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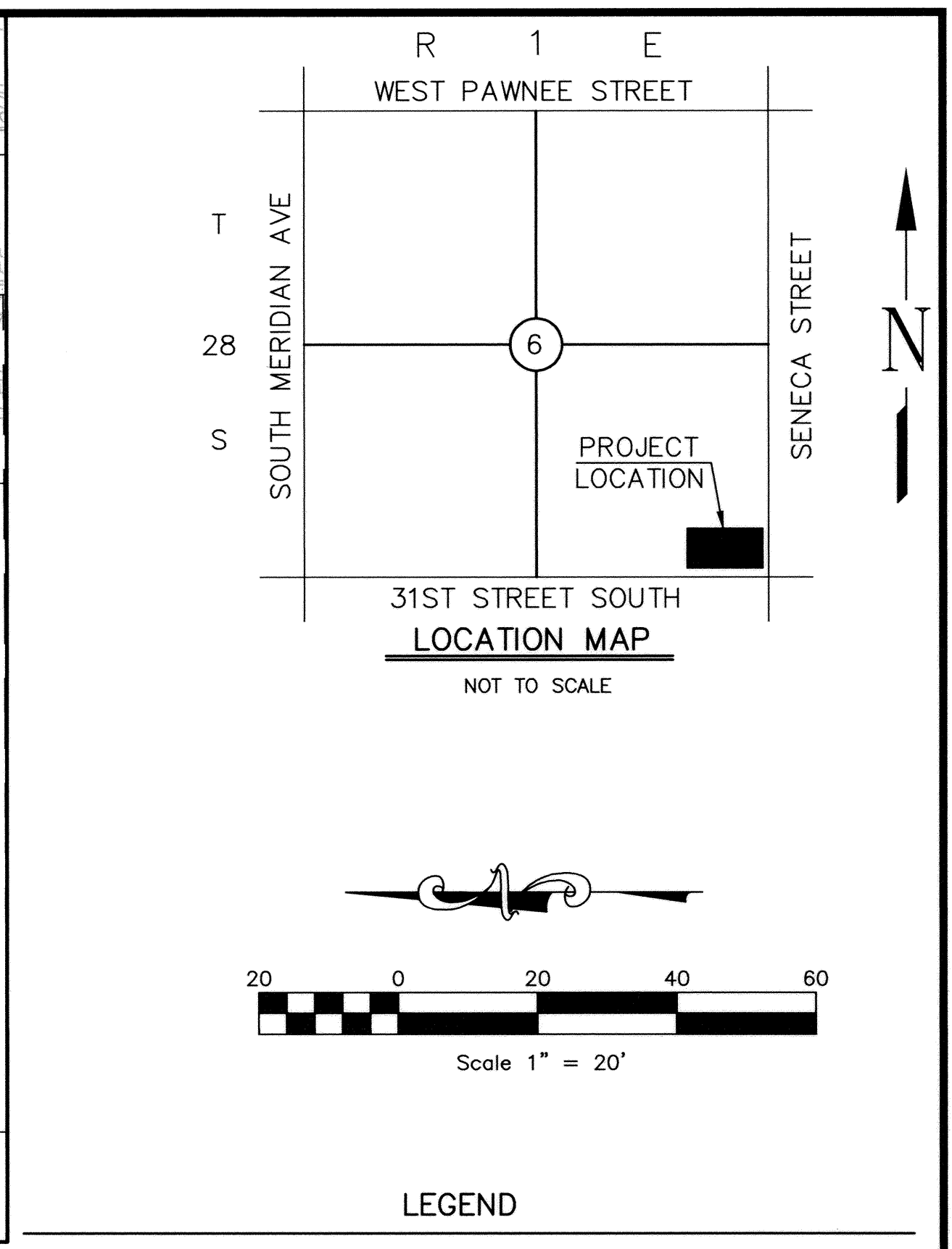
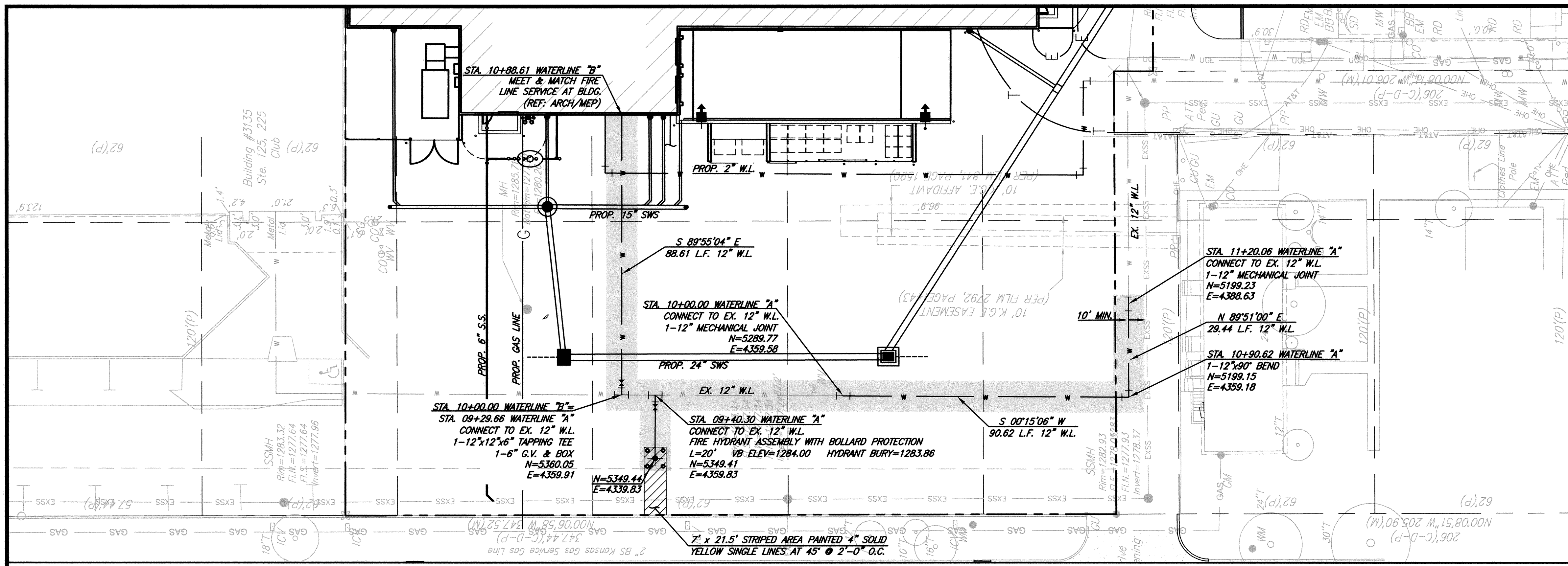
DRAWN BY: TAB SHEET NO. C-11.0.1

PROJECT NO.: 4966.00 ENGINEER: TERENCE L. HAYNES, P.E. #14583

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.

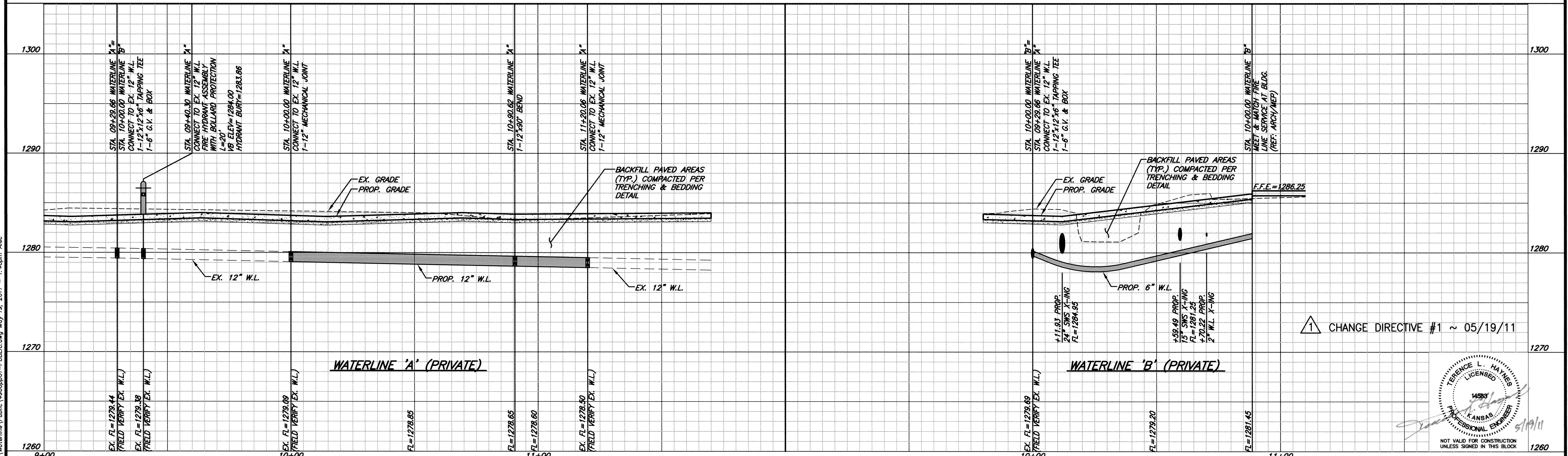


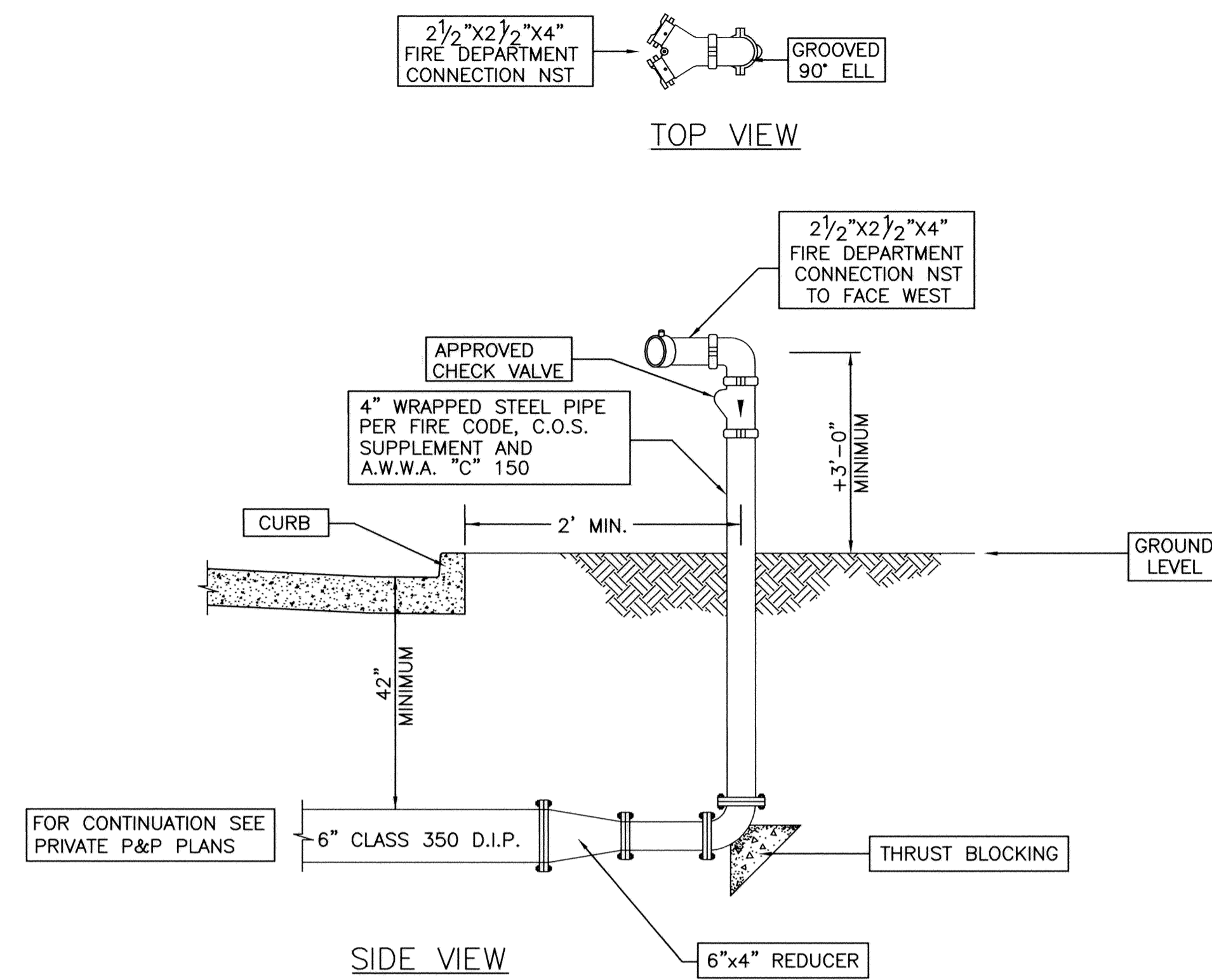


CAUTION - NOTICE TO CONTRACTOR

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.

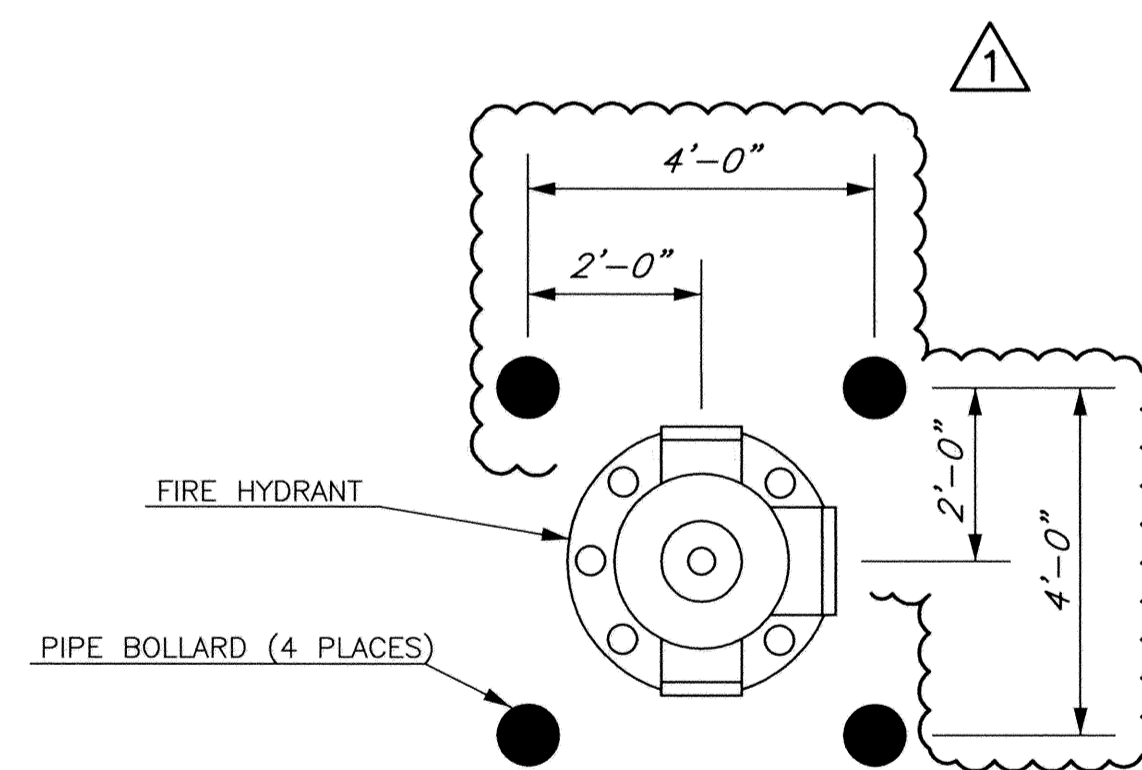
NOTE: THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAKING ALL ADJUSTMENTS OF EXISTING UTILITIES TO ALLOW THE DESIGN TO BE BUILT.





FIRE DEPARTMENT CONNECTION DETAIL

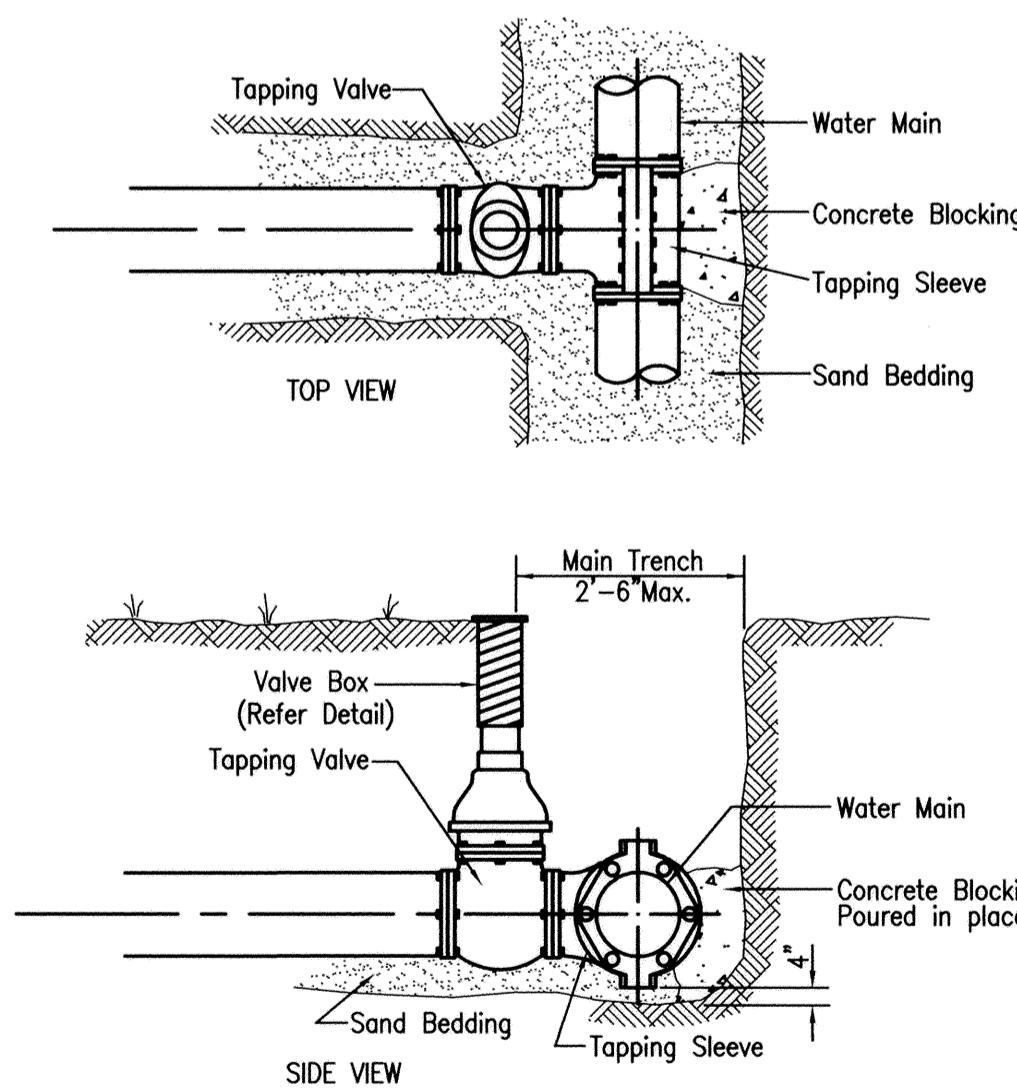
N.T.S.



FIRE HYDRANT PROTECTION DETAIL

N.T.S.

CONSTRUCT PIPE BOLLARDS TO PROTECT FIRE HYDRANT IN PARKING LOT AREA TO PREVENT DAMAGE TO FIRE HYDRANT.



TAPPING TEE DETAIL

N.T.S.

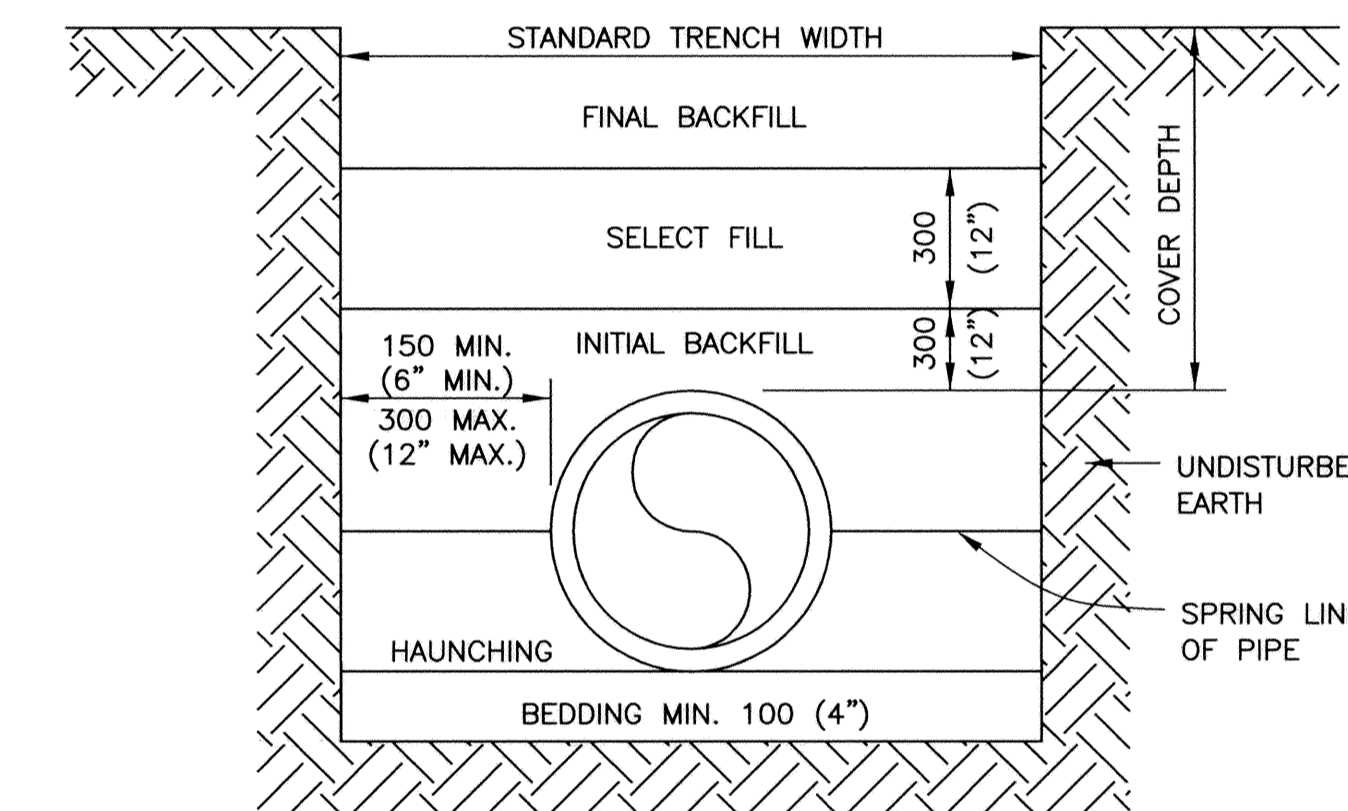
NOTES:

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.)

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

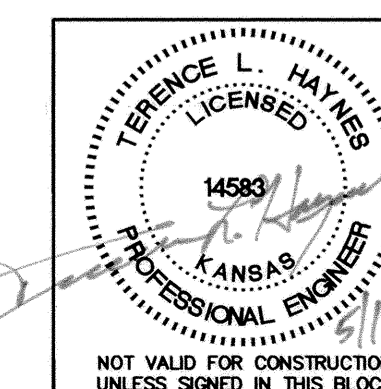


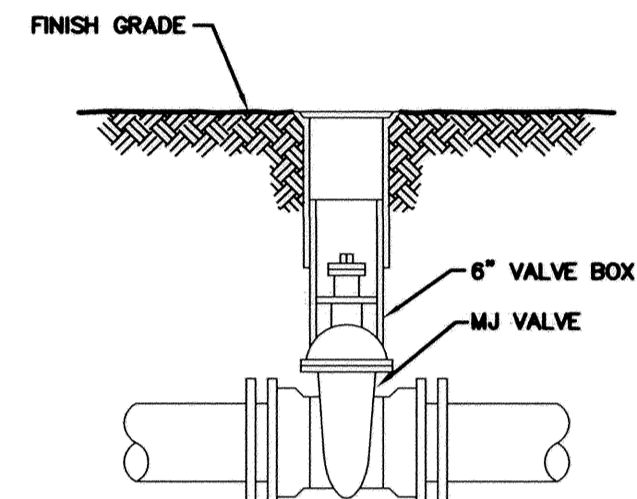
WATER PIPE TRENCHING AND BEDDING

N.T.S.

1 CHANGE DIRECTIVE #1 ~ 05/19/11

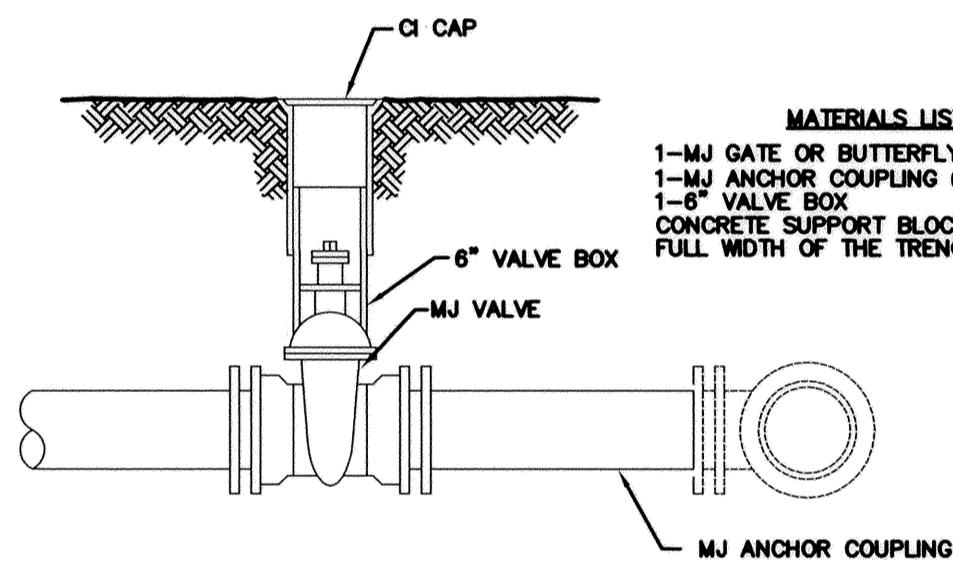
WATER LINE DETAILS			
WALMART MARKET #5991-00			
31st STREET & S. SENECA WICHITA, KANSAS			
SMC Consulting Engineers, P.C. 815 West Main - Oklahoma City, OK 73106 PH: 405-232-7715 Fax: 405-232-7859 KANSAS CERTIFICATE OF AUTHORIZATION NO. E-335 EXP. DEC. 31, 2011			
No.	Revision	By	Date
1	Change Directive #1	TAG	05/19/11
DATE: 01/20/11		SCALE:	SHEET NO.
DRAWN BY: MDS		N.T.S.	C-11.1
PROJECT NO.: 4966.00		ENGINEER: TERENCE L. HAYNES, P.E. #14583	





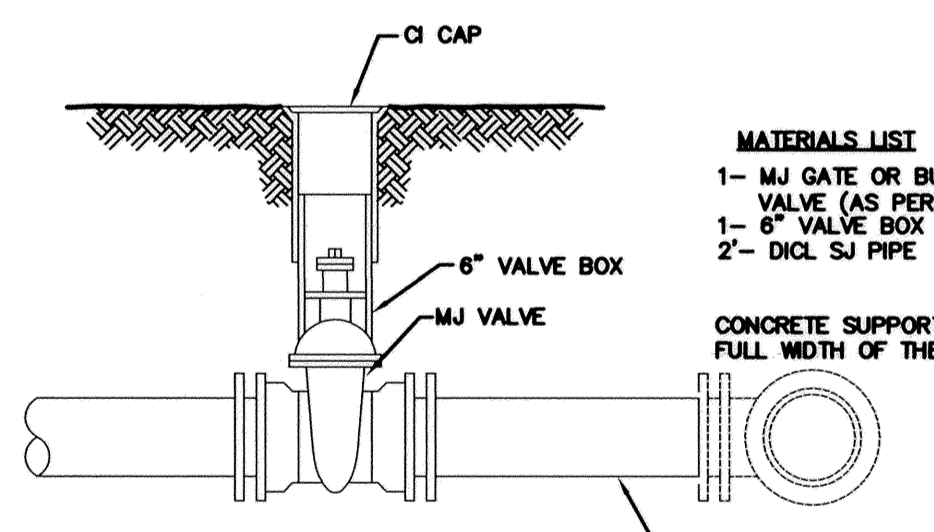
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-6" VALVE BOX
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

LINE VALVE ASSEMBLY



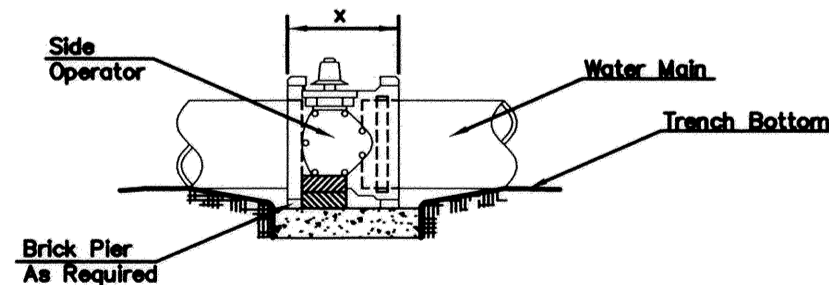
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-MJ ANCHOR COUPLING (12" OR SMALLER)
 - 1-6" VALVE BOX
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

ANCHORED VALVE ASSEMBLY



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

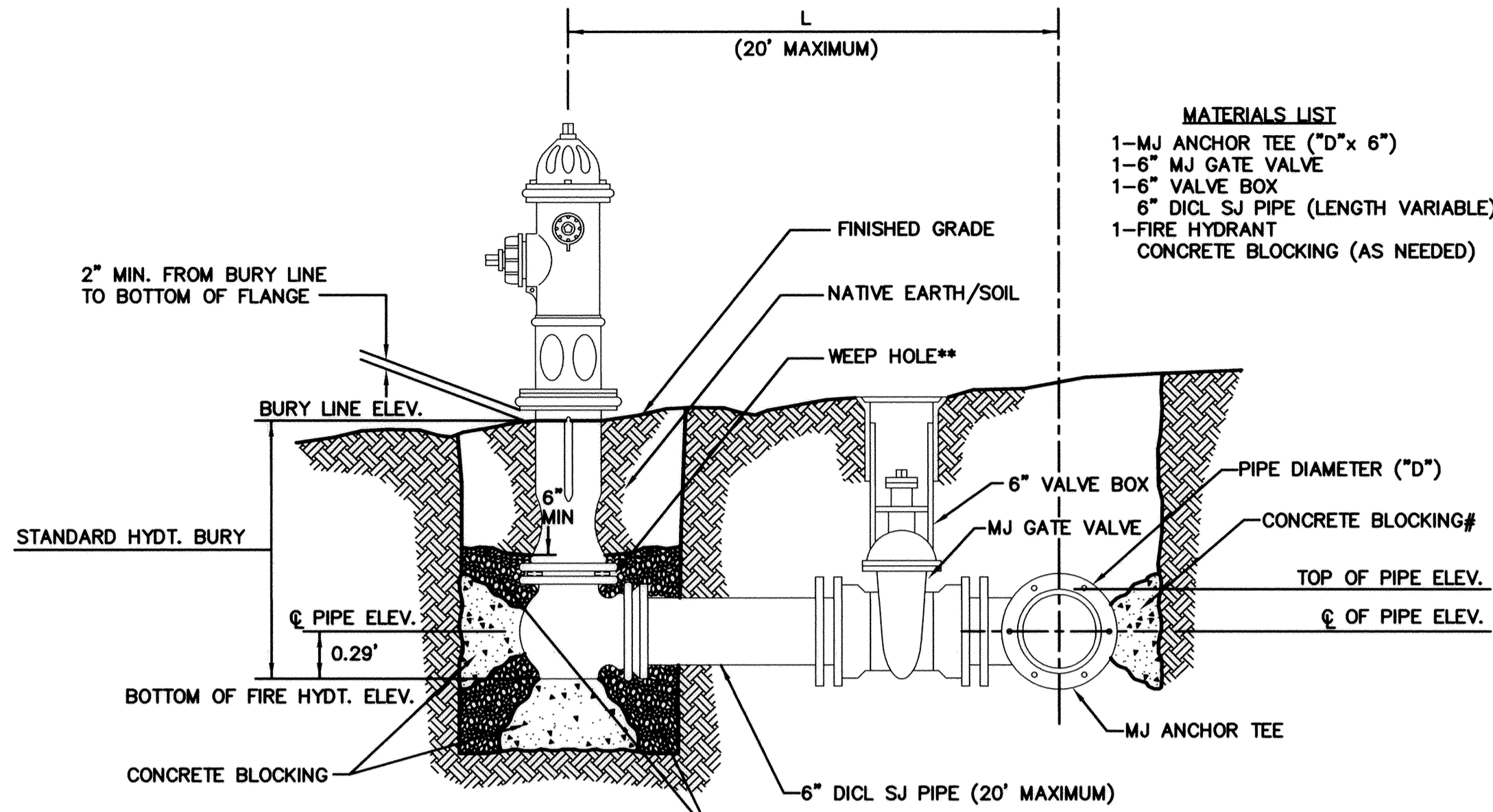
VALVE ASSEMBLY



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" DI. SJ PIPE (LENGTH VARIABLE)
 - 1-FIRE HYDRANT
 - CONCRETE BLOCKING (AS NEEDED)

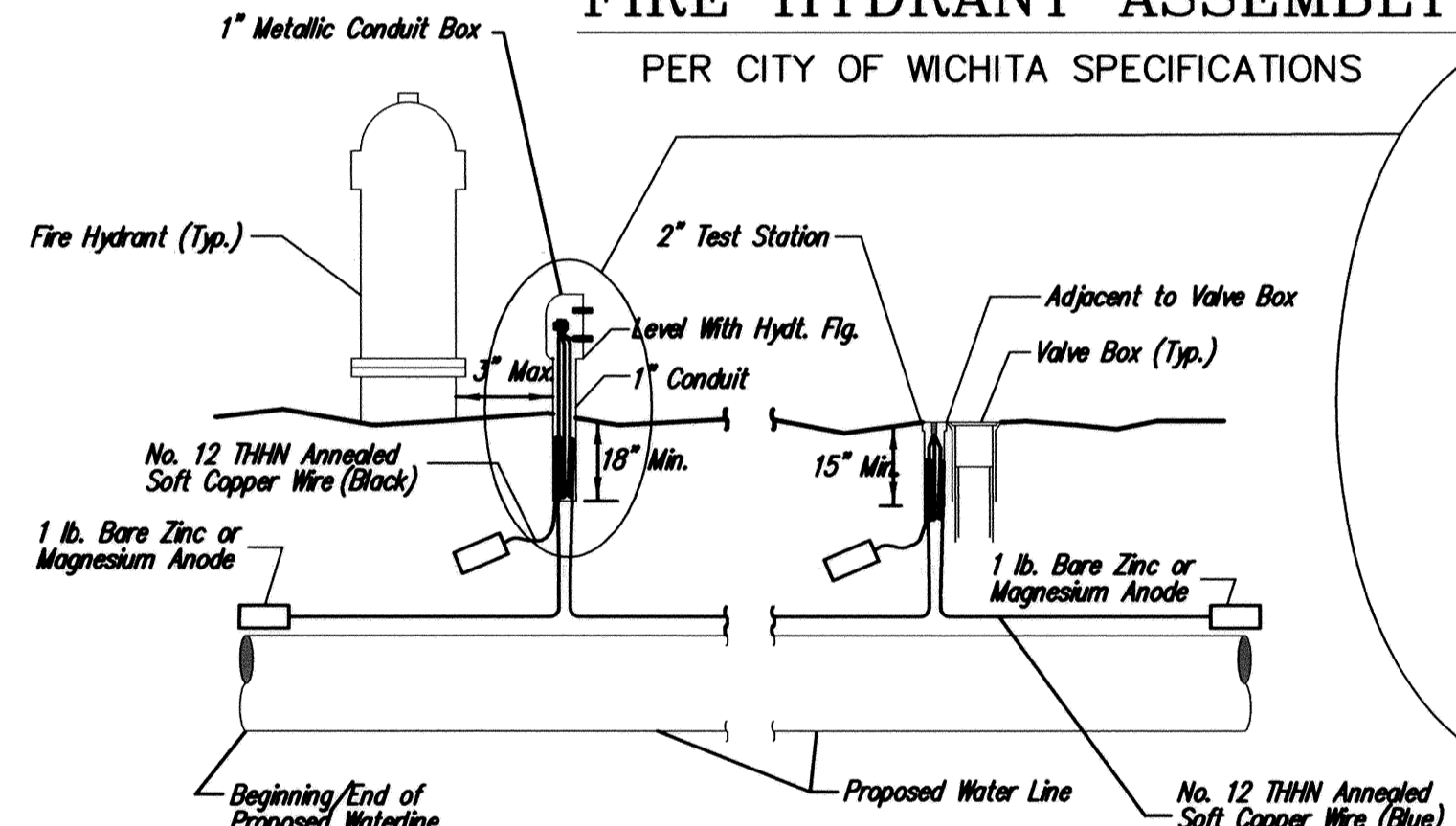
- ** CAUTION! WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES.**
- # CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.**
- * IF HYDRANT BURY IS IN EXCESS OF 5', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY.**
- ## MINIMUM 1 CU. FT. PER WEEP HOLE**

PEA GRAVEL ##
GRADATION REQUIREMENT

SIEVE SIZE	SPECIFICATION % RETAINED
3/4"	0 - 5
1/2"	5 - 35
3/8"	40 - 85
# 4	95 - 100
# 8	97 - 100

FIRE HYDRANT ASSEMBLY

PER CITY OF WICHITA SPECIFICATIONS

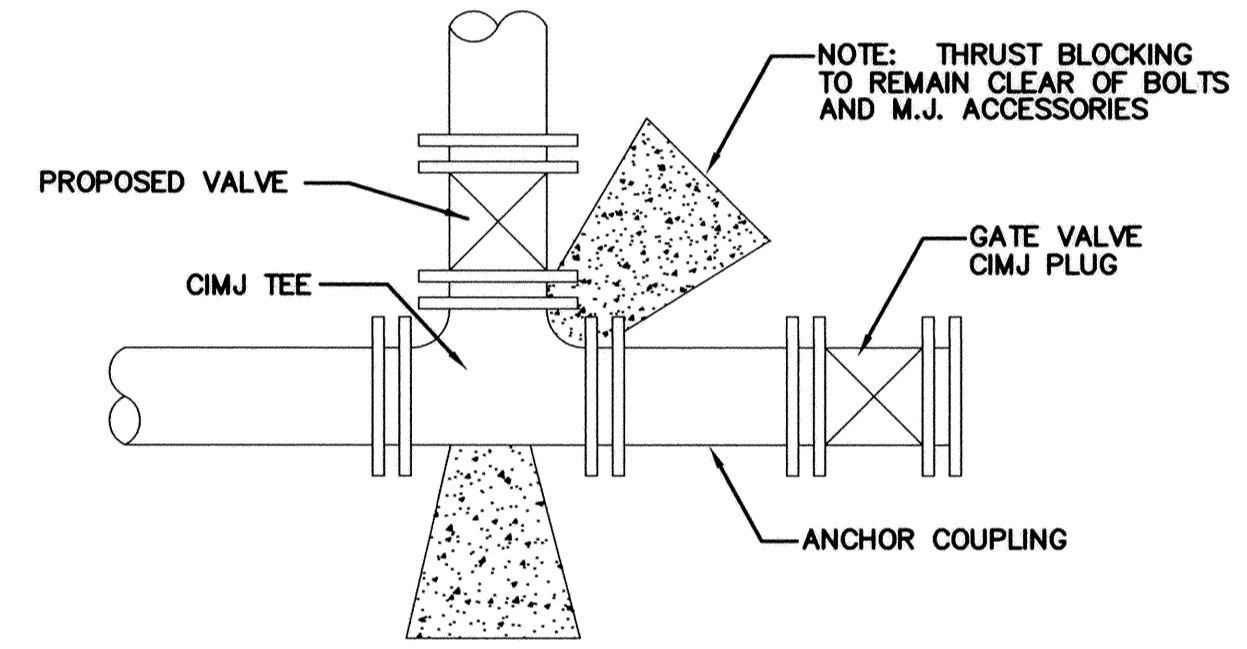


TRACER WIRE
Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. Split-bolt connectors shall be used at splice 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.

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 T2PS3B as manufactured by HANDELY 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.

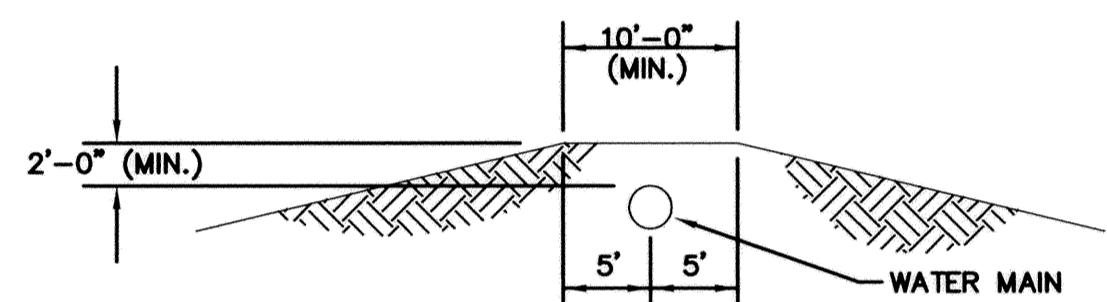
ANODES
The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

TRACER WIRE DETAIL
COST IS SUBSIDIARY TO PIPE INSTALLATION



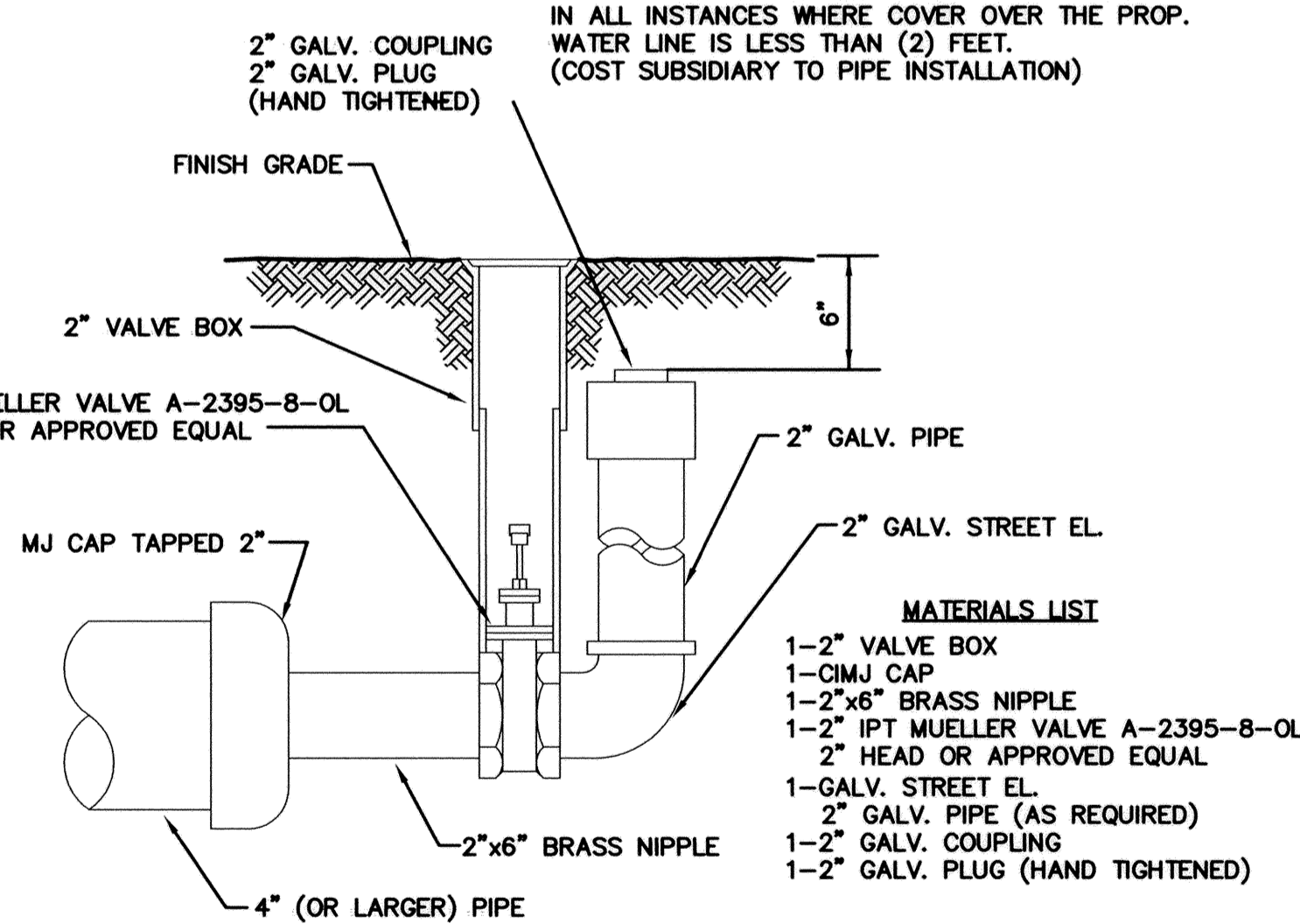
KEY BLOCK DETAIL

- 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

FIRE HYDRANTS REQUIRED

STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*
09+40.30 W.L. 'A'	1283.86	1284.00	4'

CHANGE DIRECTIVE #1 ~ 05/19/11
REV: 8-14-01, MCG



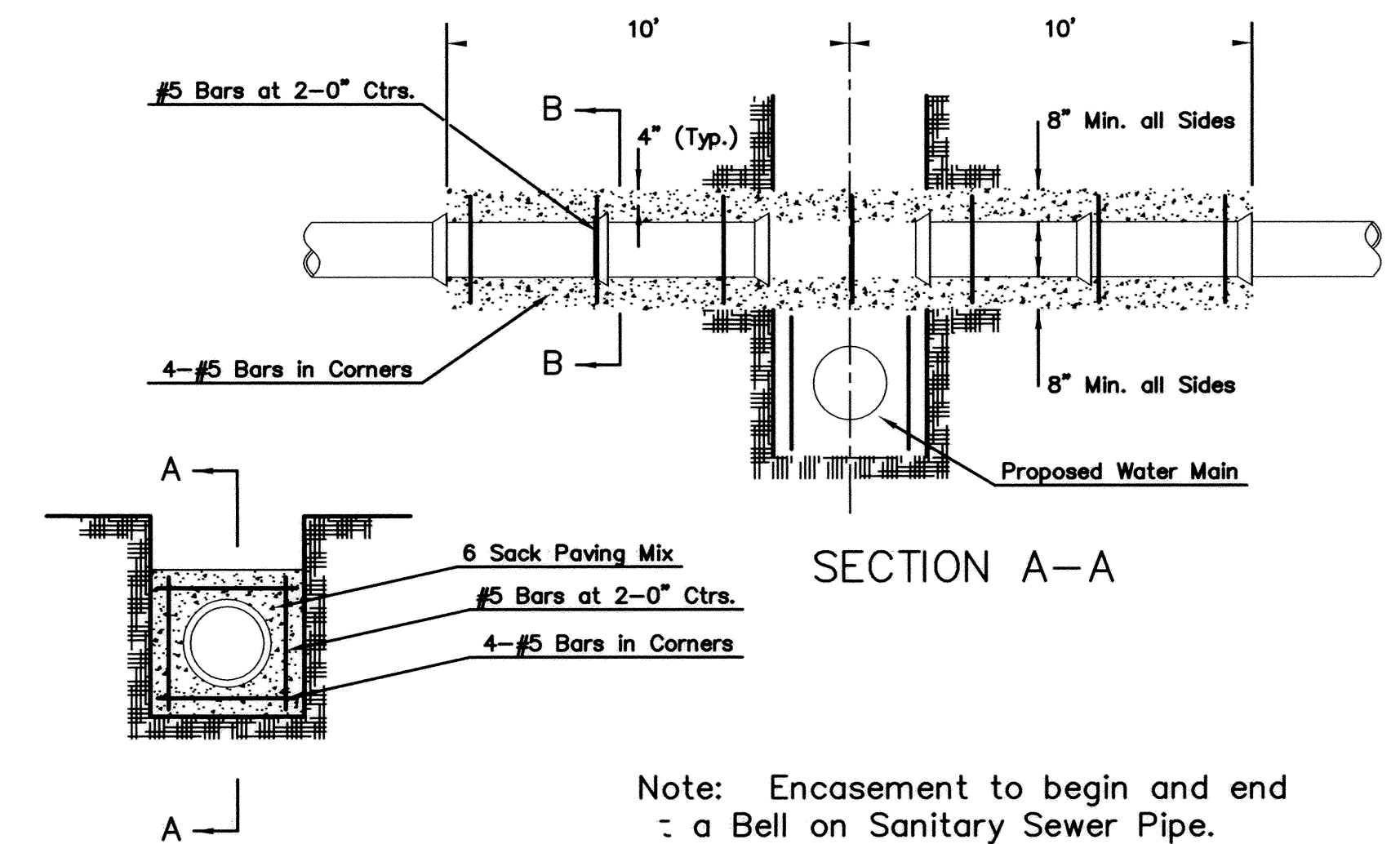
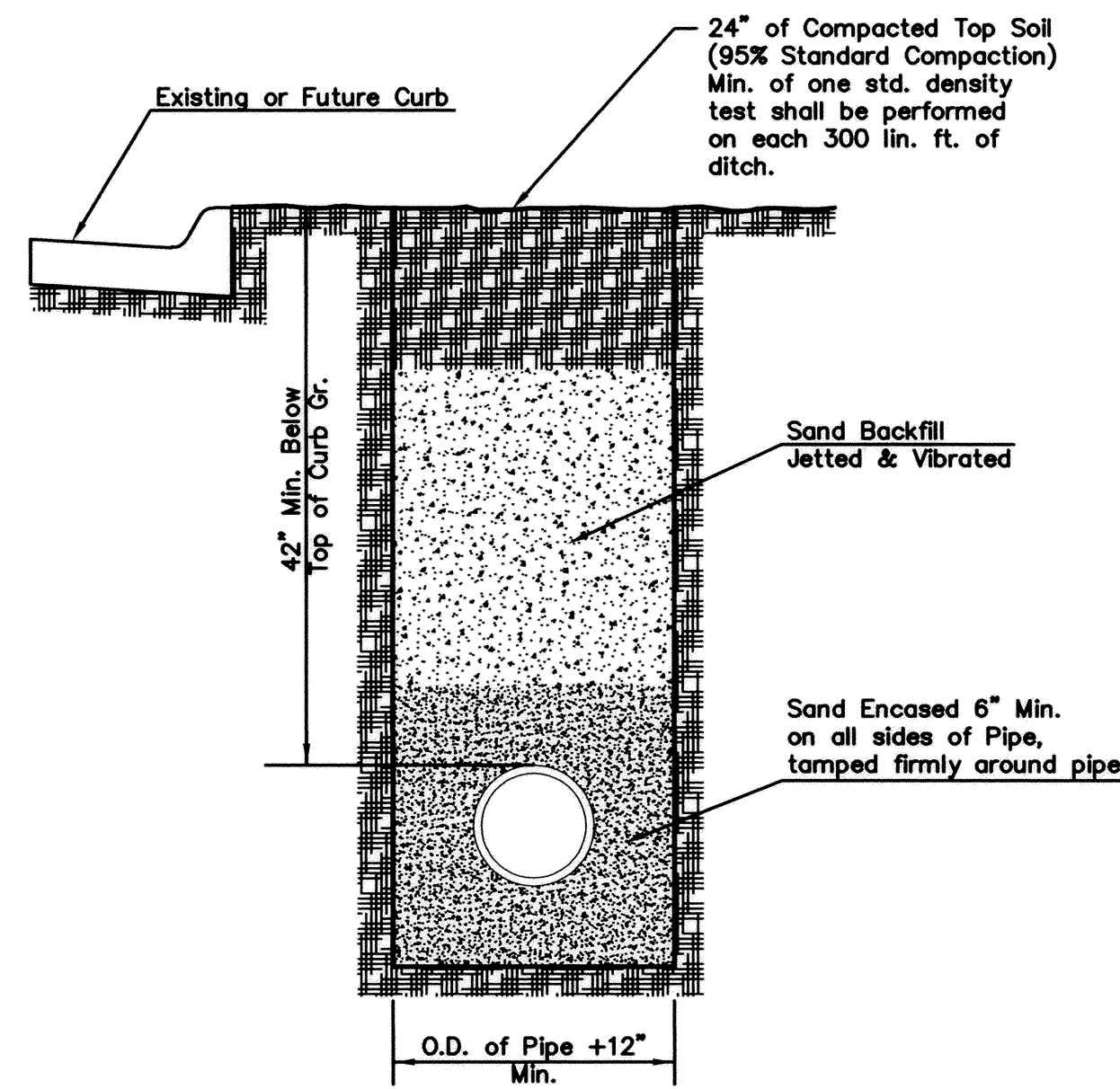
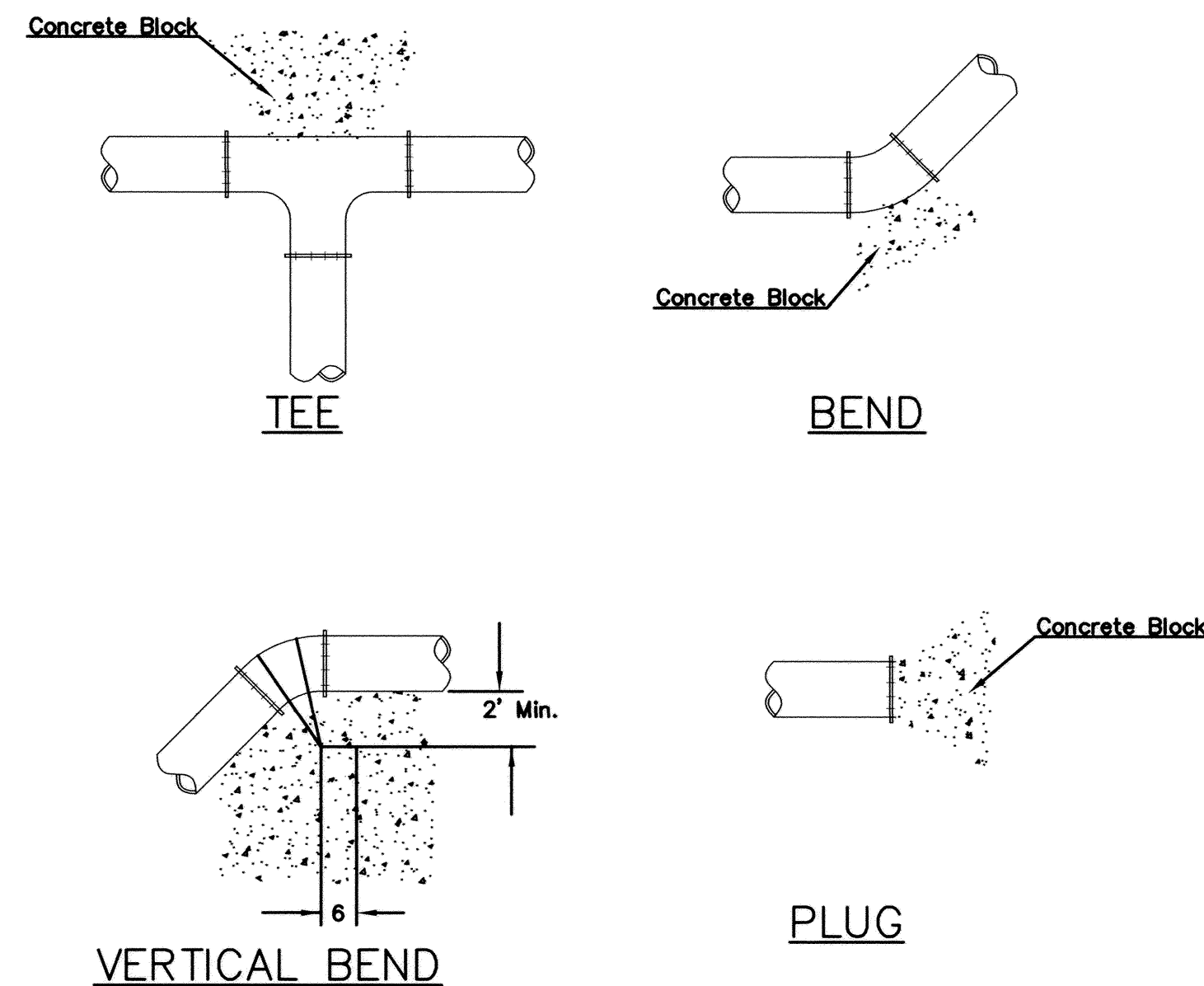
STANDARD WATER ASSEMBLY DETAILS

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

PROJECT NUMBER: XXX-XXXXX
DATE: MM/YY

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501
(316) 268-4114 FAX

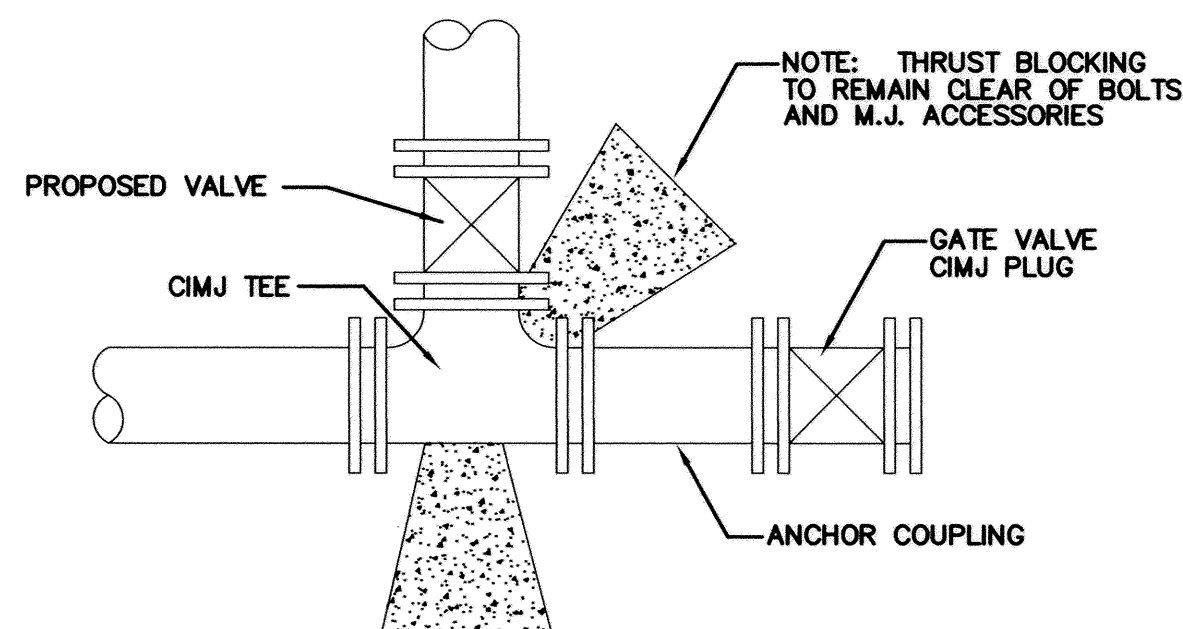
DESIGN: ABC
DRAWN: DEF
SHEET: C-11.2



REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER

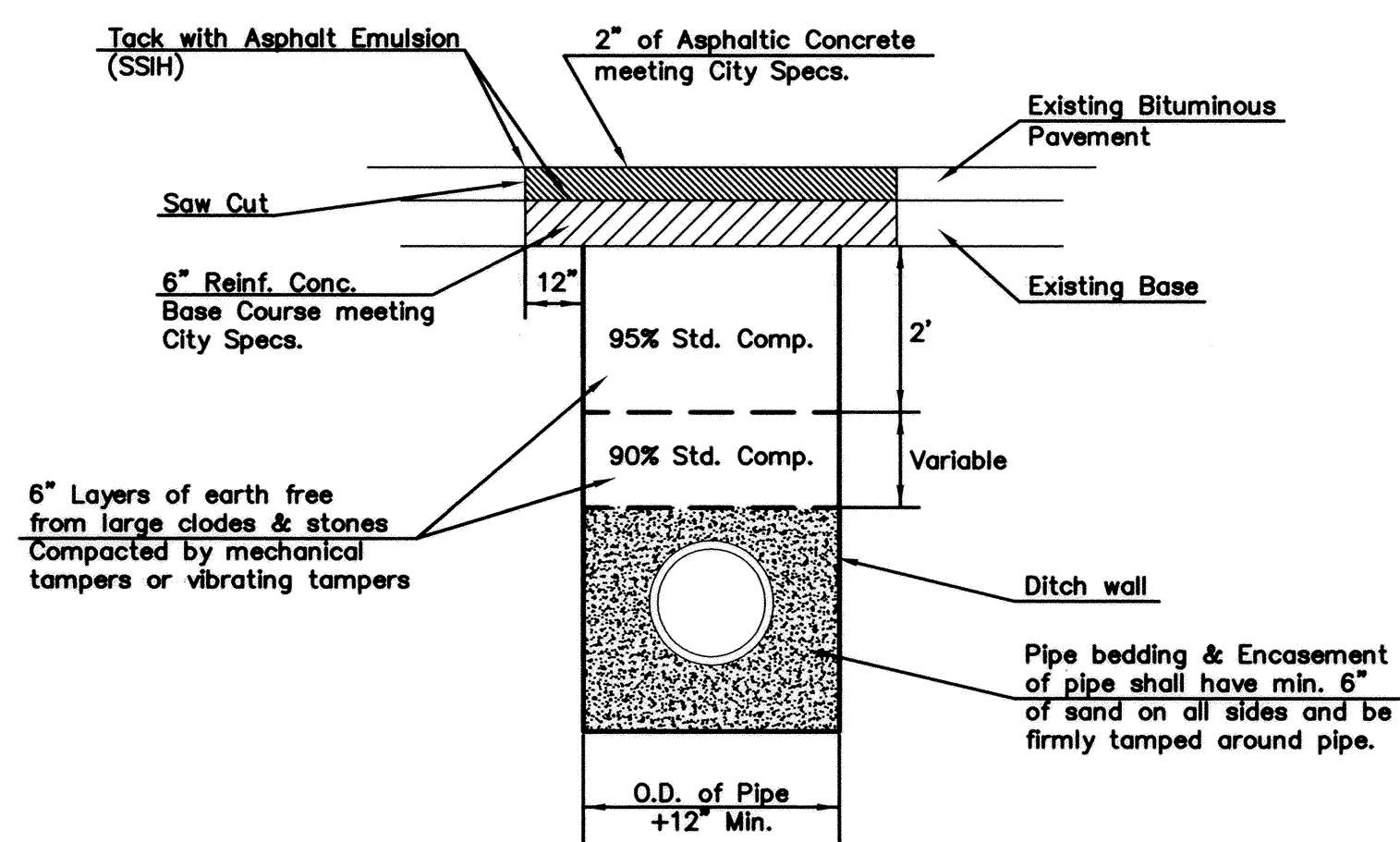
PIPE SIZE	THRUST AT FITTINGS IN TONS-AT 150#/IN ² P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

TYPICAL THRUST BLOCKS



KEY BLOCK DETAIL

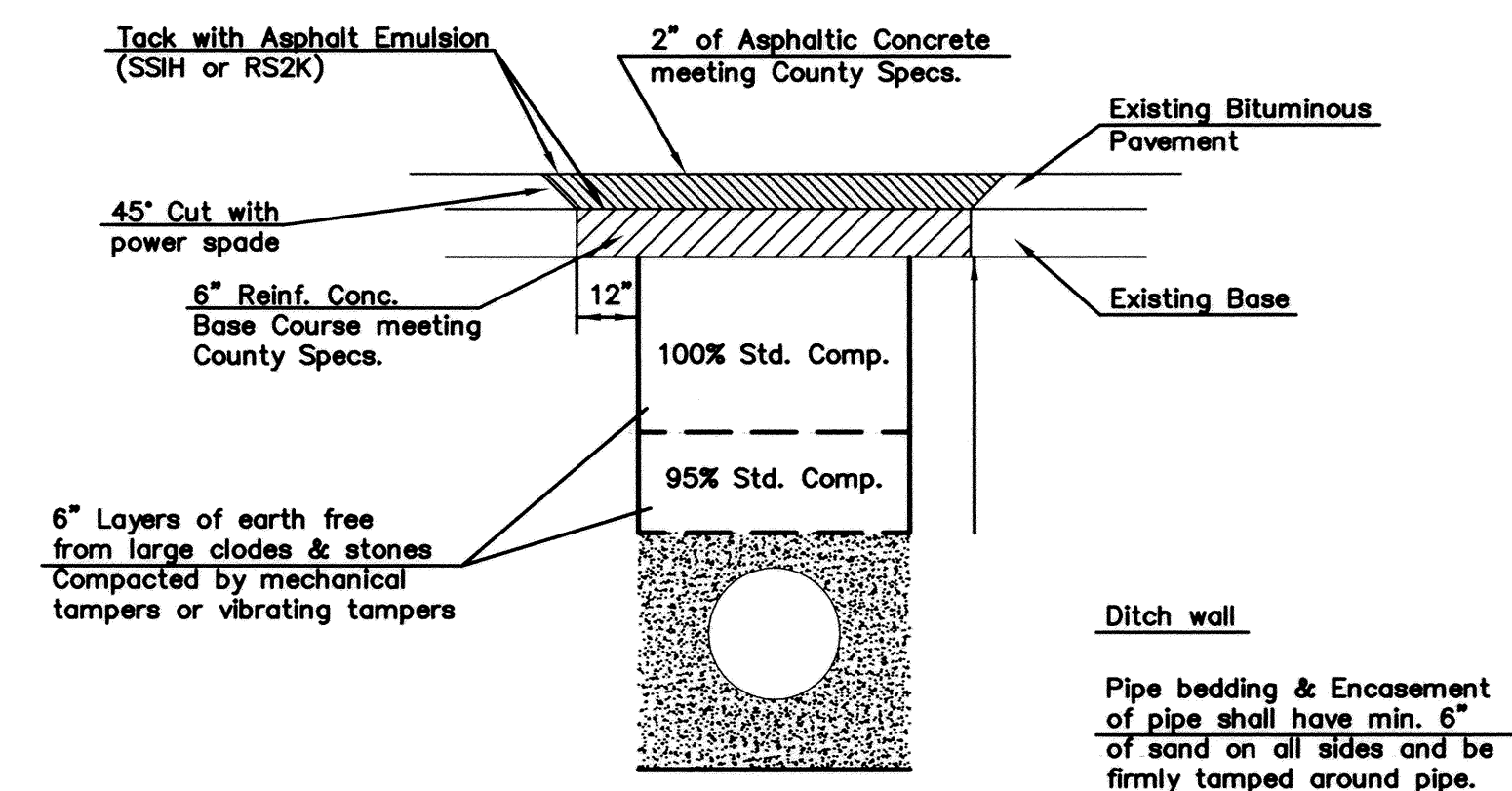
SETTLEMENT & COMPACTION ON CITY AND COUNTY ROAD RIGHT-OF-WAY EXCEPT UNDER PAVEMENT



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



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PAVEMENT REPLACEMENT & DITCH COMPACTION UNDER EXISTING AND PROPOSED COUNTY ROADS

REVISED APR 97

	CITY ENGINEER		
	JAMES L. ARMOUR, P.E., L.S.		
	PROJECT NUMBER	DCA NUMBER	DATE
	XXX-XXXXX	XXXXXX	MM/YY
CITY ENGINEER'S OFFICE			DESIGN
CITY HALL - SEVENTH FLOOR			ABC
455 NORTH MAIN STREET			DEF
WICHITA, KANSAS 67202-1820			SHEET
(316) 268-4501			C-11.3
(316) 268-4114 FAX			

WATERLINE PLANS (PRIVATE)

TO SERVE



MARKET STORE #5991-00

31st ST. SOUTH & SENECA ST.
WICHITA, SEDGWICK COUNTY, KANSAS
CITY OF WICHITA PRIVATE PROJECT NO.

1592 PPW (607853)

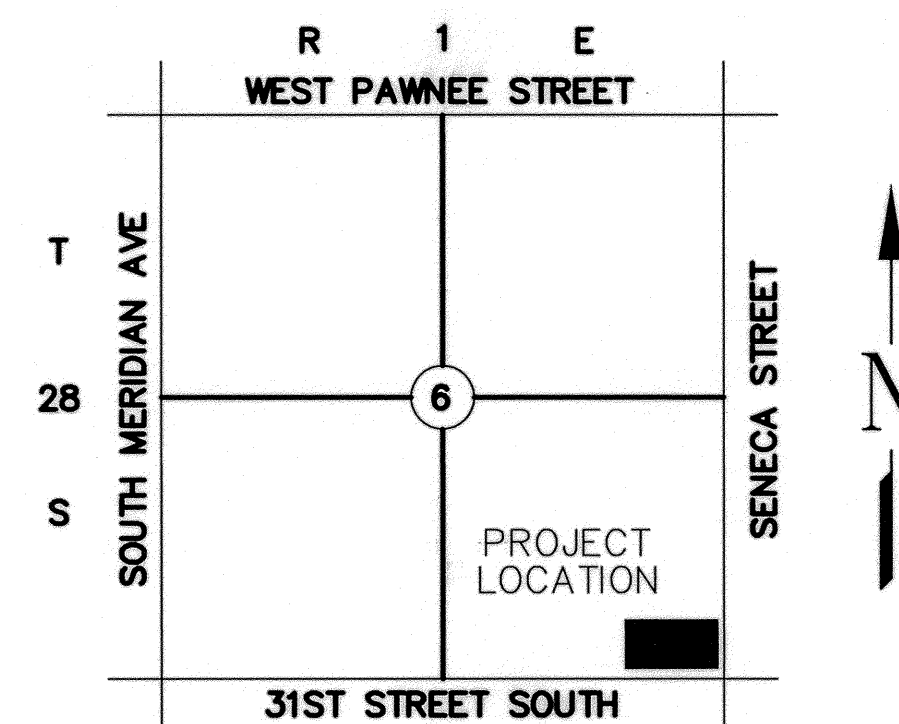
2011

OWNERS' ADDRESS

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

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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LOCATION MAP
NOT TO SCALE

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.

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.

- (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 Contractor's 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.

INDEX OF SHEET

C-11.0.0	TITLE SHEET
C-11.0.1	WATERLINE LOCATION PLAN
C-11.0.2	WATERLINE PLAN & PROFILE
C-11.1	WATERLINE DETAILS
C-11.2	STANDARD WATER ASSEMBLY DETAILS
C-11.3	VARIOUS WATER DETAILS

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

Public Works: *[Signature]* 5/24/11
Water & Sewer: *[Signature]* 5/24/11
Fire: *[Signature]* 5-24-2011

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 Public Water Line plans & 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

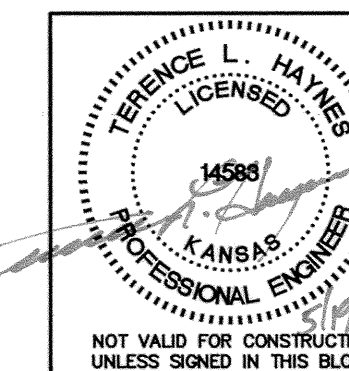
[Signature]
TERENCE L. HAYNES, P.E. #14583

1 CHANGE DIRECTIVE #1 ~ 05/19/11

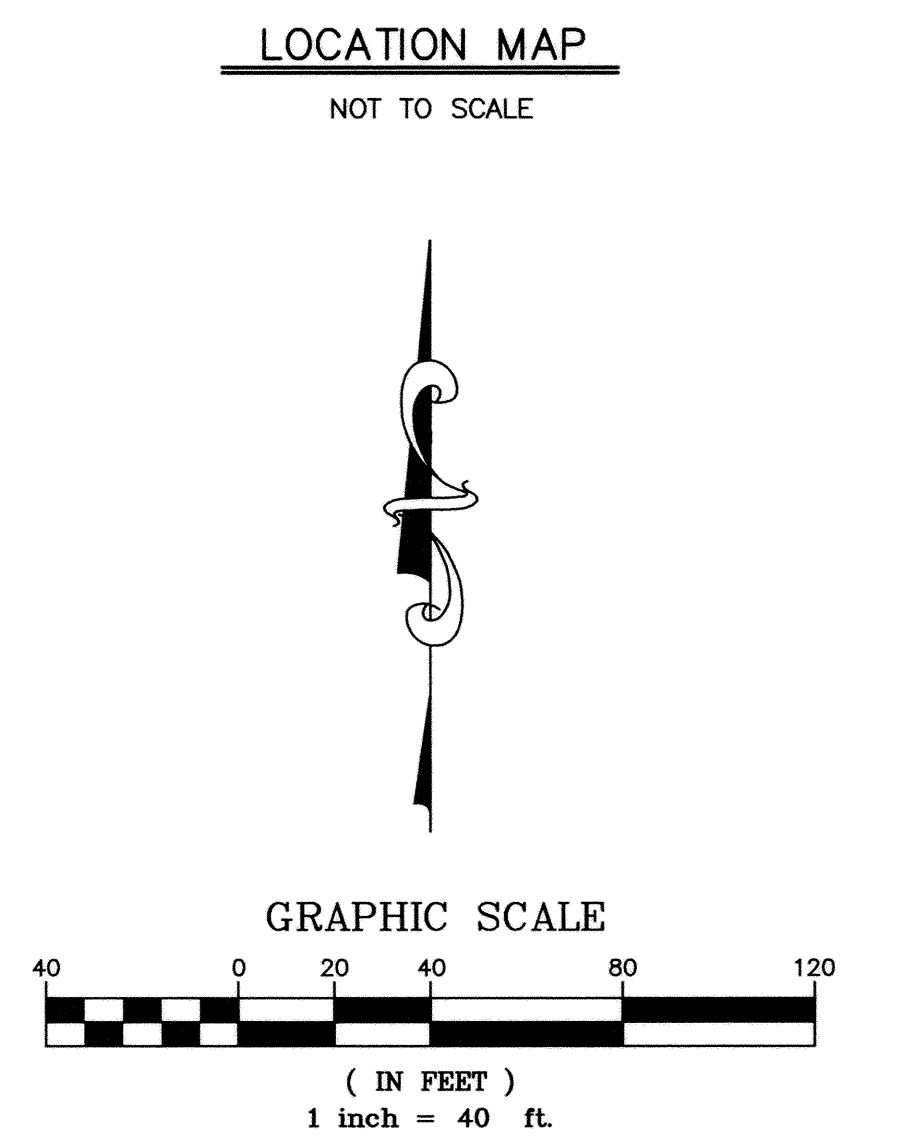
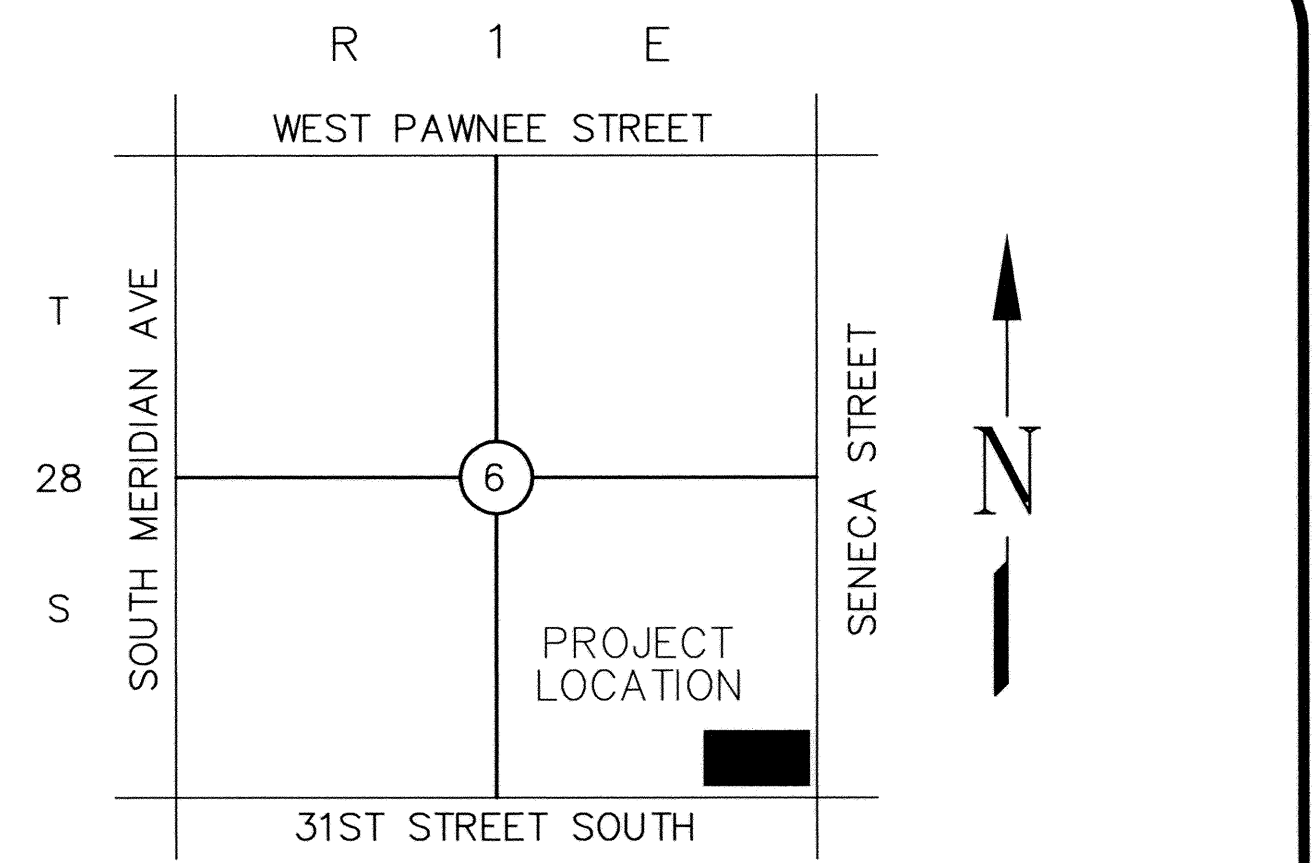
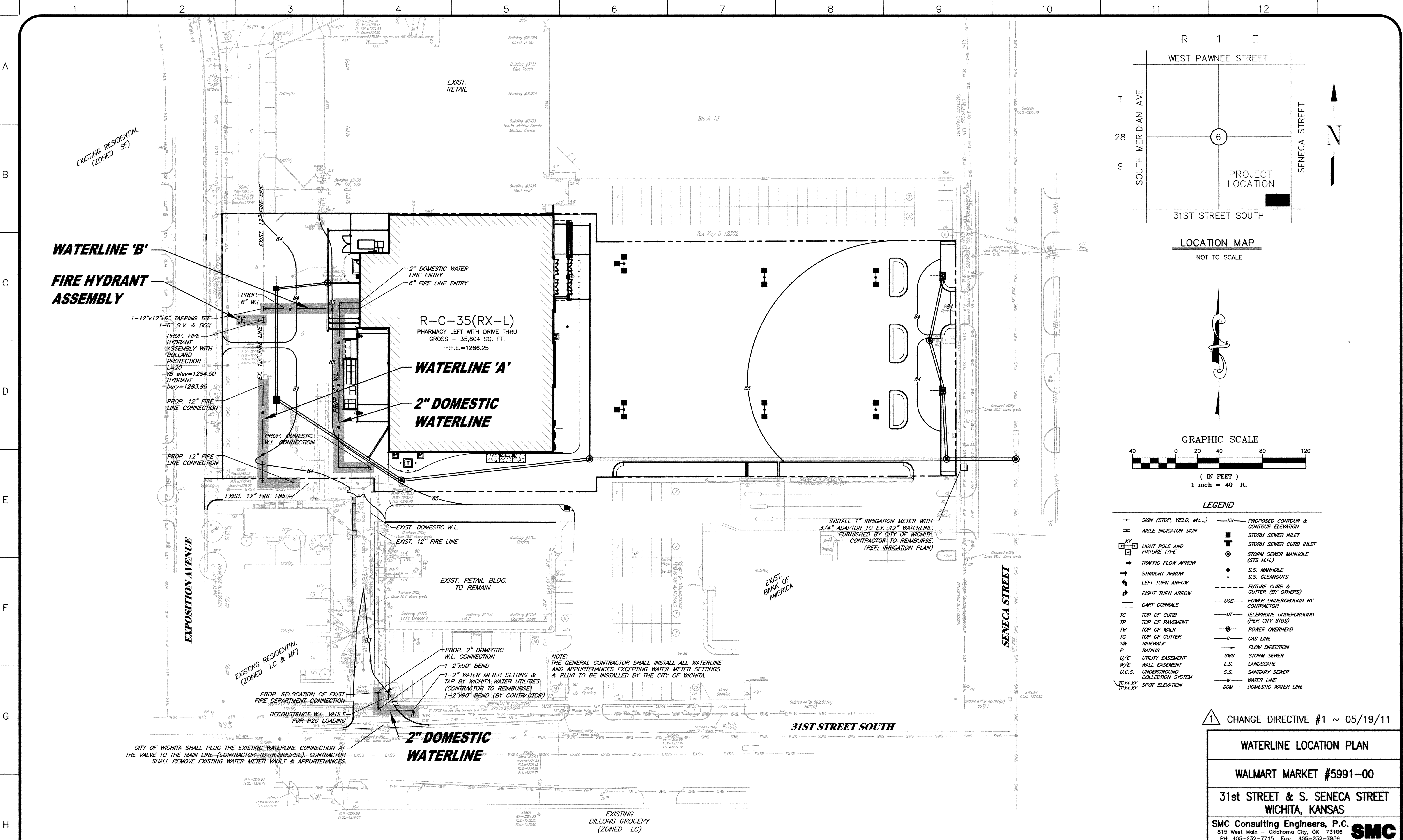
BENCH MARKS:

BM #1 " " CHISELED ON TOP OF CURB ELEV=1284.05 DATUM = NAVD 1988	BM #2 " " CHISELED ON TOP OF CURB ELEV=1283.13 DATUM = NAVD 1988
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SMC Consulting Engineers, P.C.
Oklahoma City, Oklahoma



TITLE SHEET	
WATERLINE PLANS (PRIVATE)	
WALMART MARKET #5991-00	
31st STREET & S. SENECA STREET 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, 2011	
No. 7	Revision Change Directive #1
By	TAB
Date	05/19/11
DATE: 04/28/11	SCALE: NTS
DRAWN BY: TAB	SHEET NO. C-11.0.0
PROJECT NO.: 4966.00	ENGINEER: TERENCE L. HAYNES, P.E. #14583



LEGEND

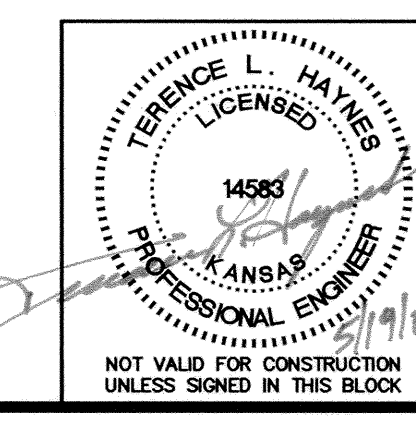
—XX—	PROPOSED CONTOUR & CONTOUR ELEVATION
—	STORM SEWER INLET
—	STORM SEWER CURB INLET
—	STORM SEWER MANHOLE (STS M.H.)
—	S.S. MANHOLE
—	S.S. CLEANOUPS
—	FUTURE CURB & GUTTER (BY OTHERS)
—UG—	POWER UNDERGROUND BY CONTRACTOR
—UT—	TELEPHONE UNDERGROUND (PER CITY STDS)
—	POWER OVERHEAD
—	GAS LINE
—	FLOW DIRECTION
—SWS	STORM SEWER
—L.S.	LANDSCAPE
—U.C.S.	UNDERGROUND COLLECTION SYSTEM
—W	WATER LINE
—DOM	DOMESTIC WATER LINE
—	STORM SEWER INLET
—	STORM SEWER CURB INLET
—	STORM SEWER MANHOLE (STS M.H.)
—	S.S. MANHOLE
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—L.S.	LANDSCAPE
—U.C.S.	UNDERGROUND COLLECTION SYSTEM
—W	WATER LINE
—DOM	DOMESTIC WATER LINE

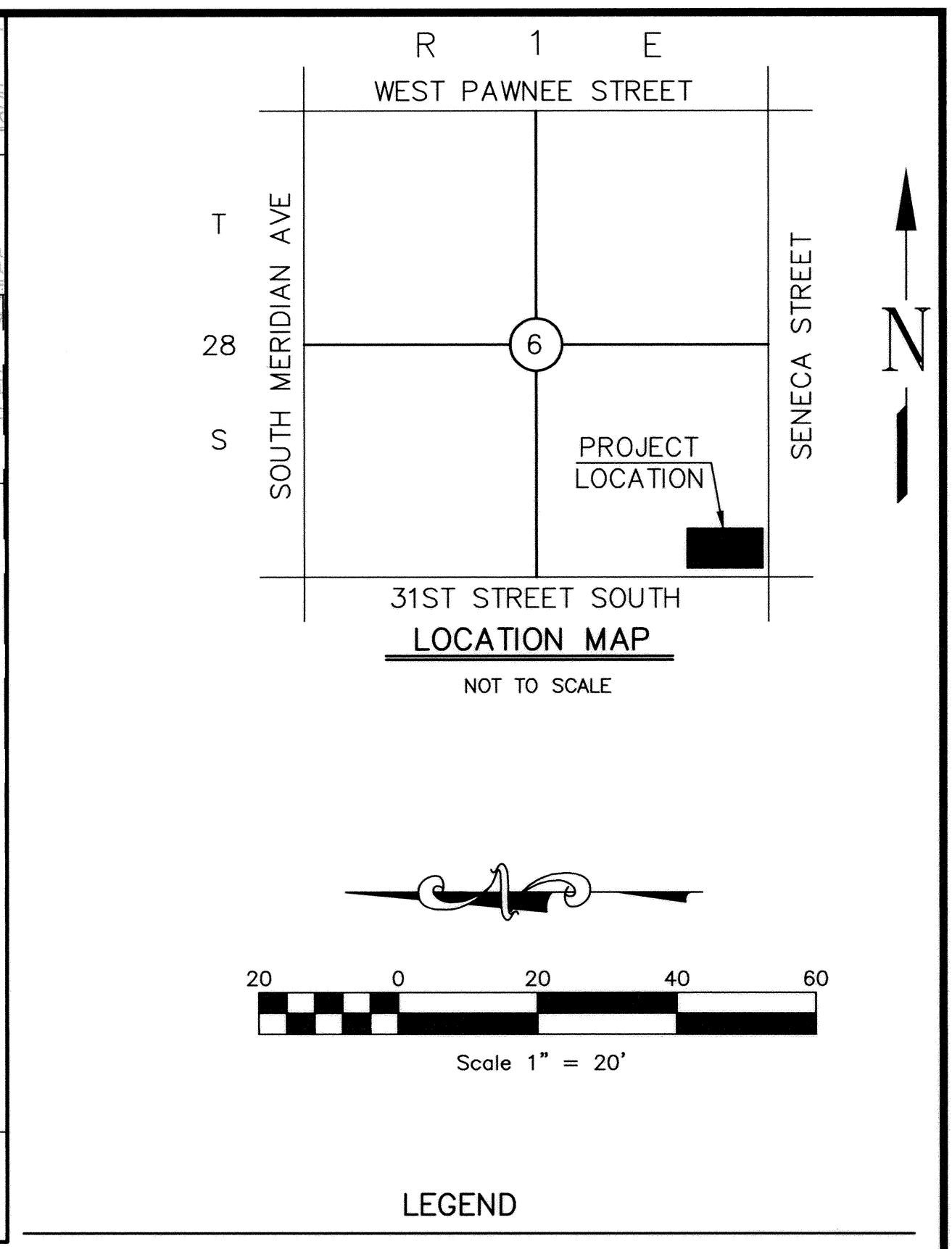
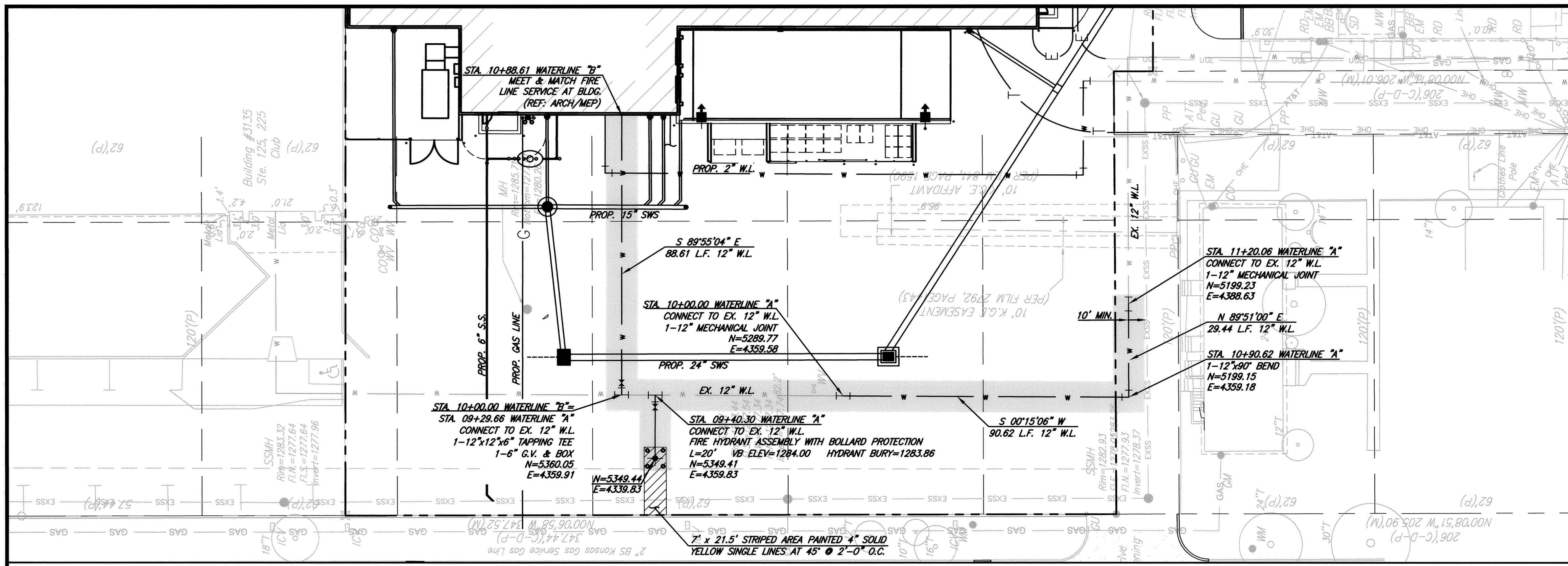
△ CHANGE DIRECTIVE #1 ~ 05/19/11

WATERLINE LOCATION PLAN	
WALMART MARKET #5991-00	
31st STREET & S. SENECA STREET 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, 2011	
No. Revision 1 Change Directive #1	By TAB Date 05/19/11
DATE: 04/28/11 DRAWN BY: TAB PROJECT NO.: 4966.00	SCALE: 1"=40' SHEET NO. C-11.0.1
ENGINEER: TERENCE L. HAYNES, P.E. #14583	

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.

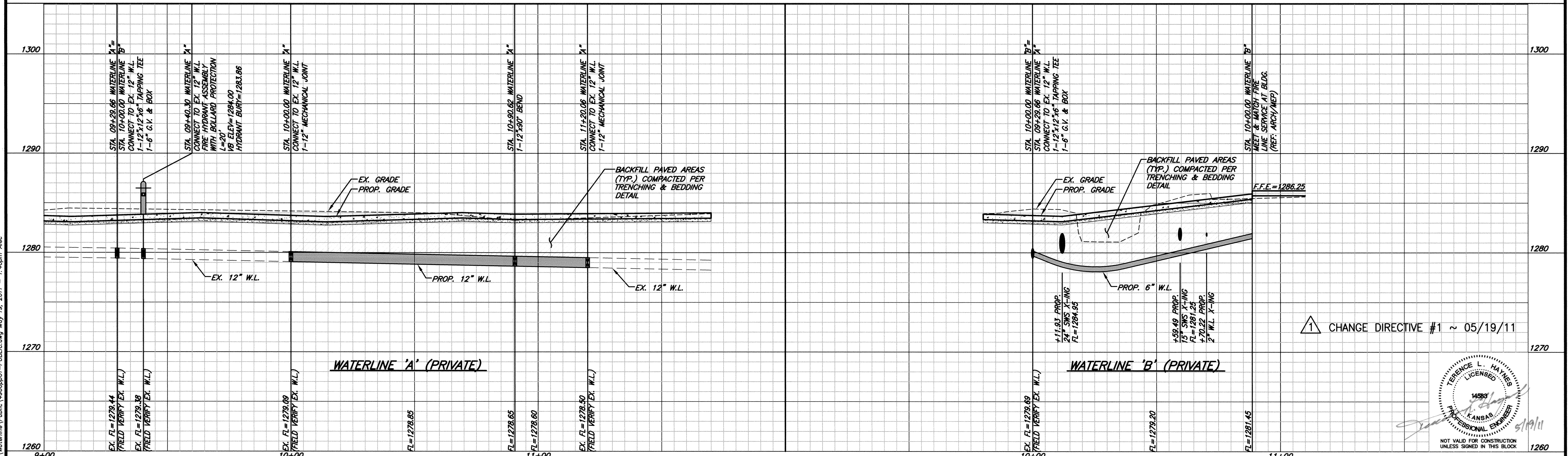


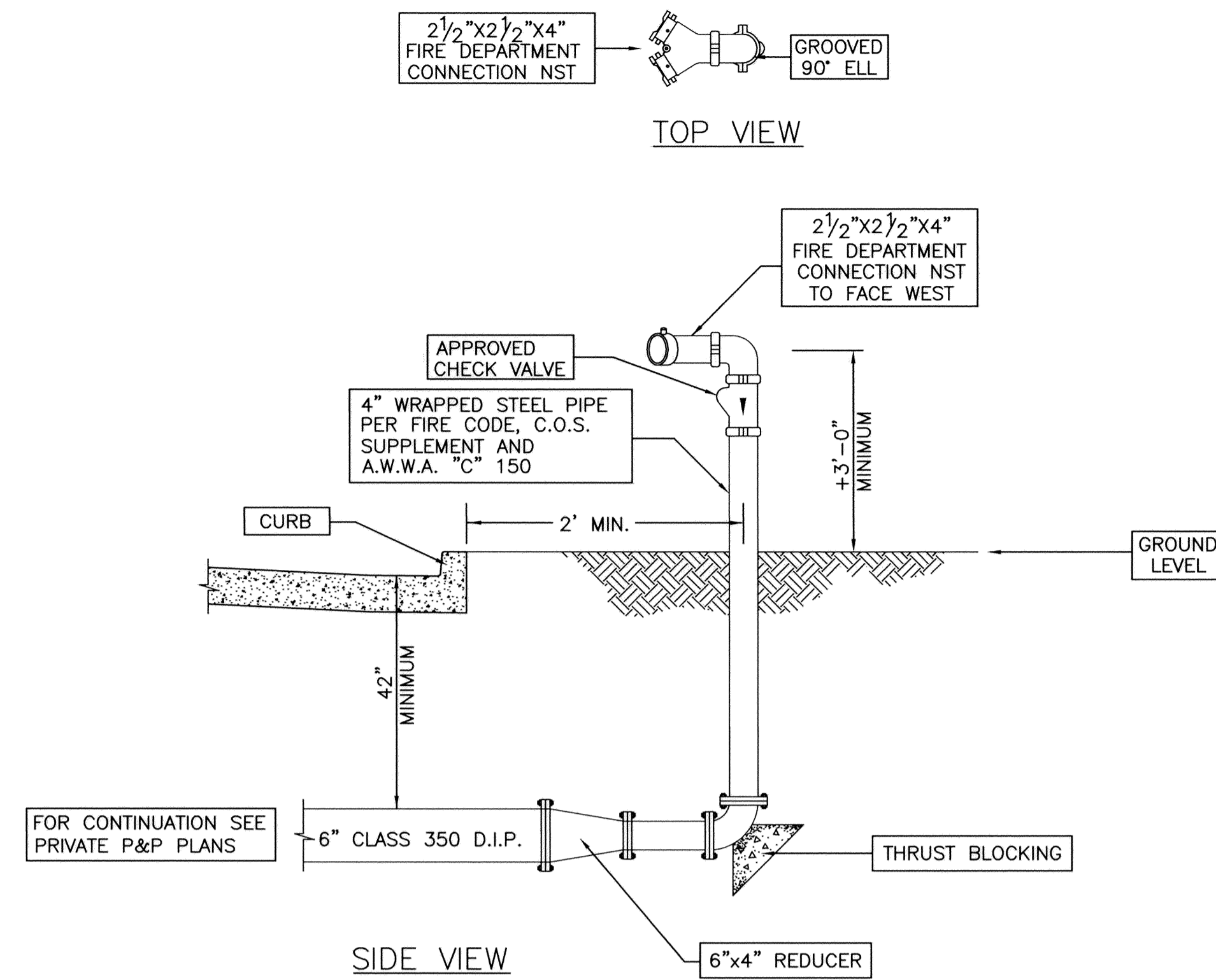


CAUTION - NOTICE TO CONTRACTOR

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.

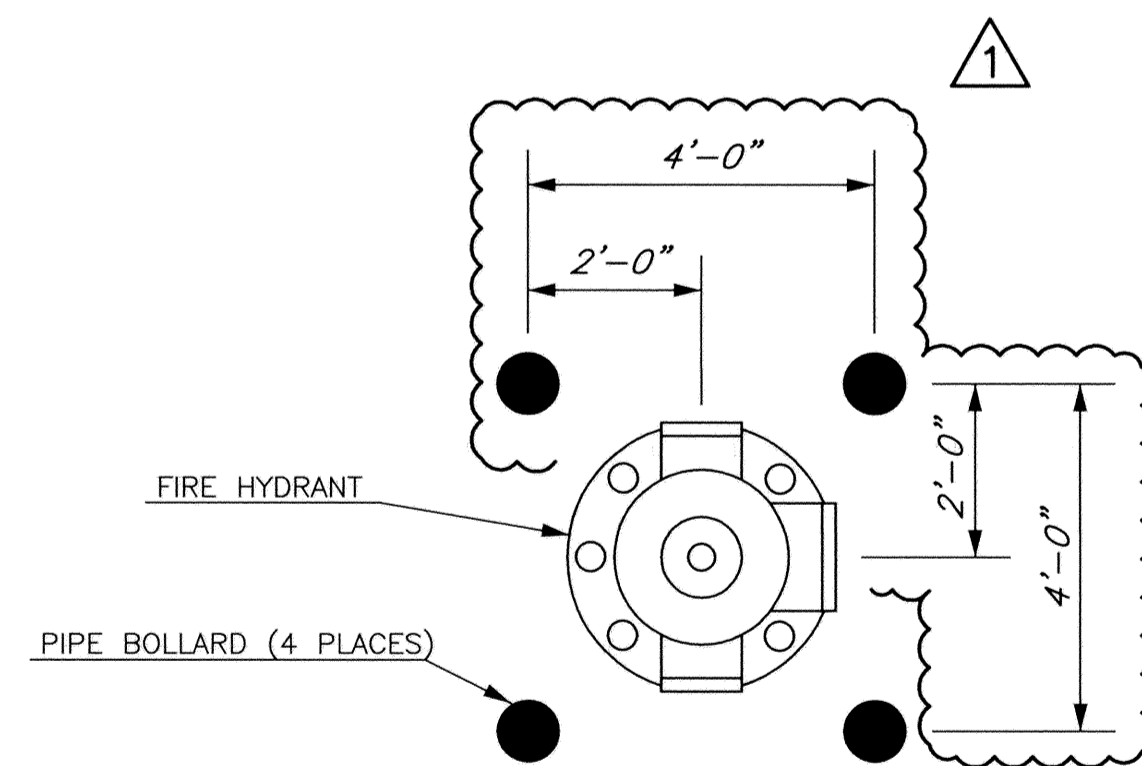
NOTE: THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAKING ALL ADJUSTMENTS OF EXISTING UTILITIES TO ALLOW THE DESIGN TO BE BUILT.





FIRE DEPARTMENT CONNECTION DETAIL

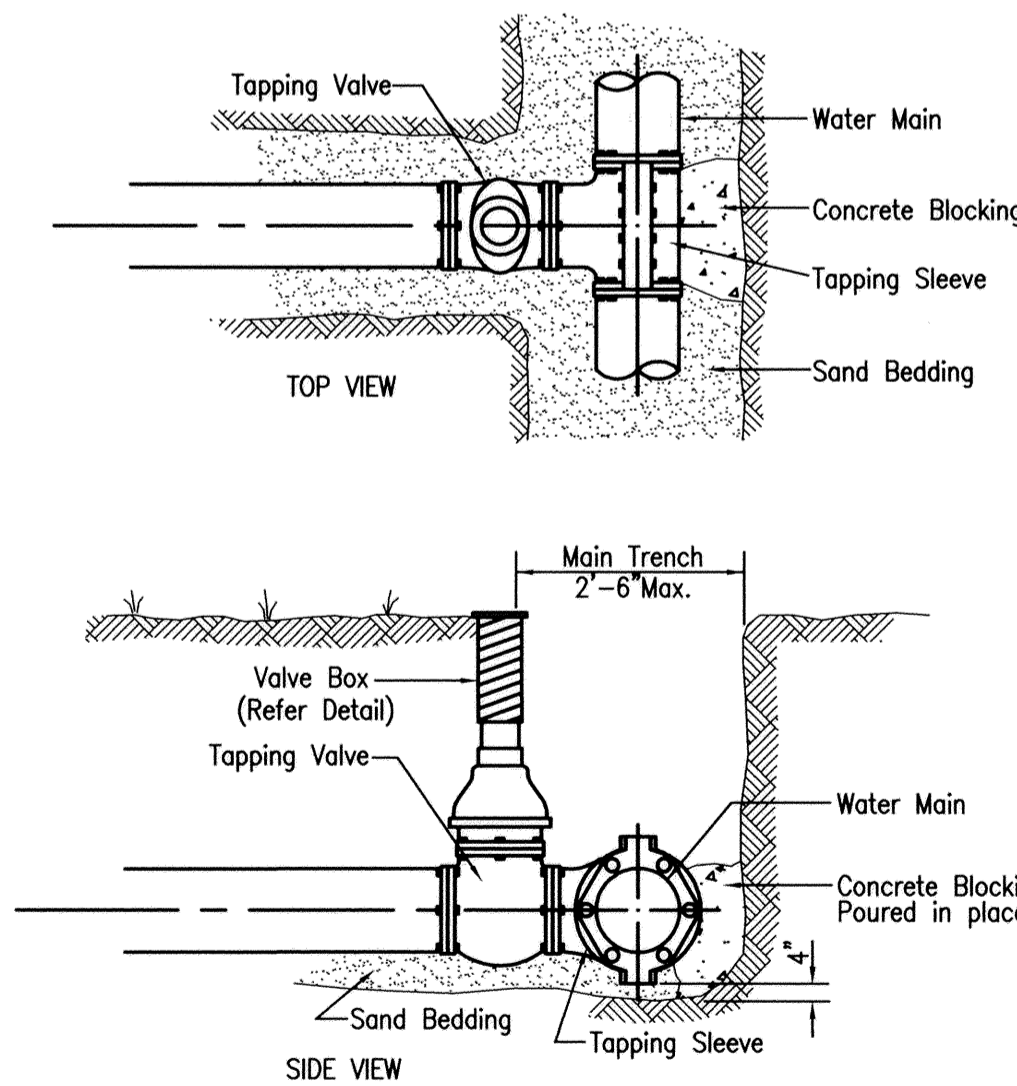
N.T.S.



FIRE HYDRANT PROTECTION DETAIL

N.T.S.

CONSTRUCT PIPE BOLLARDS TO PROTECT FIRE HYDRANT IN PARKING LOT AREA TO PREVENT DAMAGE TO FIRE HYDRANT.



TAPPING TEE DETAIL

N.T.S.

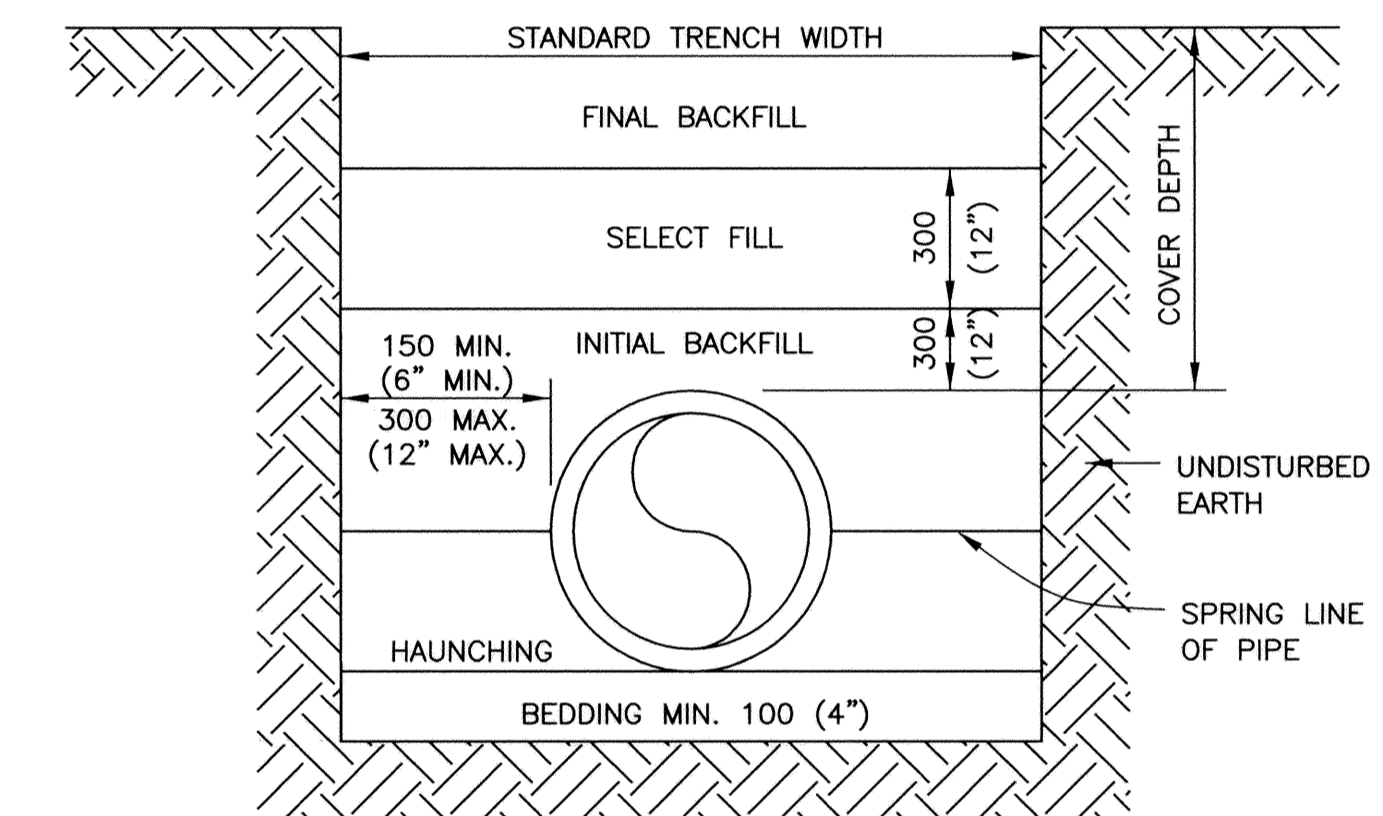
NOTES:

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.)

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

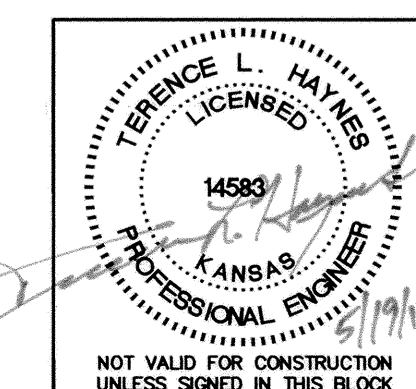


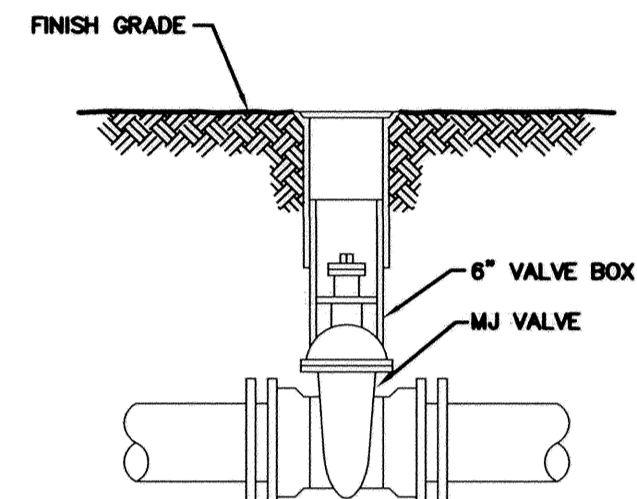
WATER PIPE TRENCHING AND BEDDING

N.T.S.

1 CHANGE DIRECTIVE #1 ~ 05/19/11

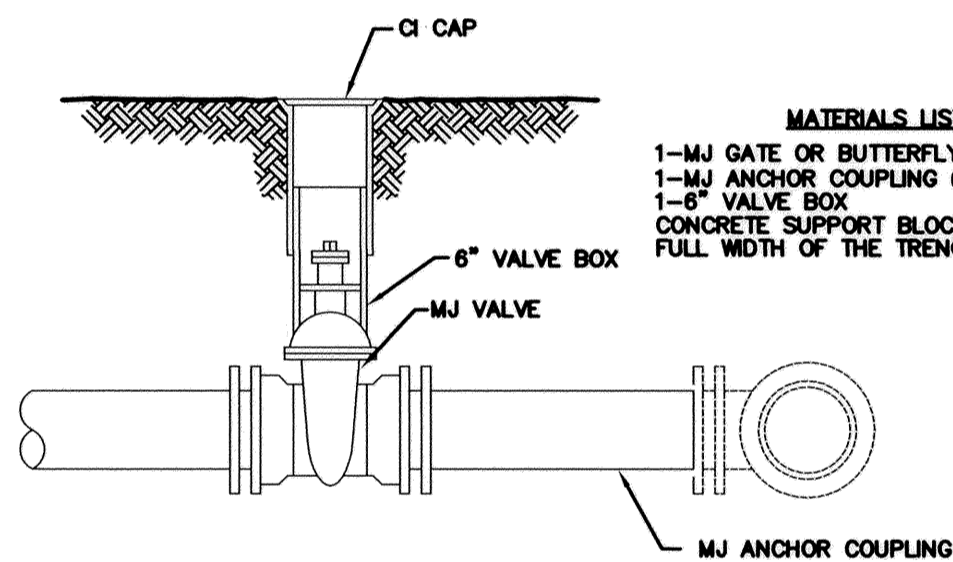
WATER LINE DETAILS			
WALMART MARKET #5991-00			
31st STREET & S. SENECA WICHITA, KANSAS			
SMC Consulting Engineers, P.C.			
815 West Main - Oklahoma City, OK 73106 PH: 405-232-7715 Fax: 405-232-7859			
KANSAS CERTIFICATE OF AUTHORIZATION NO. E-335 EXP. DEC. 31, 2011			
No.	Revision	By	Date
1	Change Directive #1	TAG	05/19/11
DATE: 01/20/11		SCALE:	SHEET NO.
DRAWN BY: MDS		N.T.S.	C-11.1
PROJECT NO.: 4966.00		ENGINEER: TERENCE L. HAYNES, P.E. #14583	





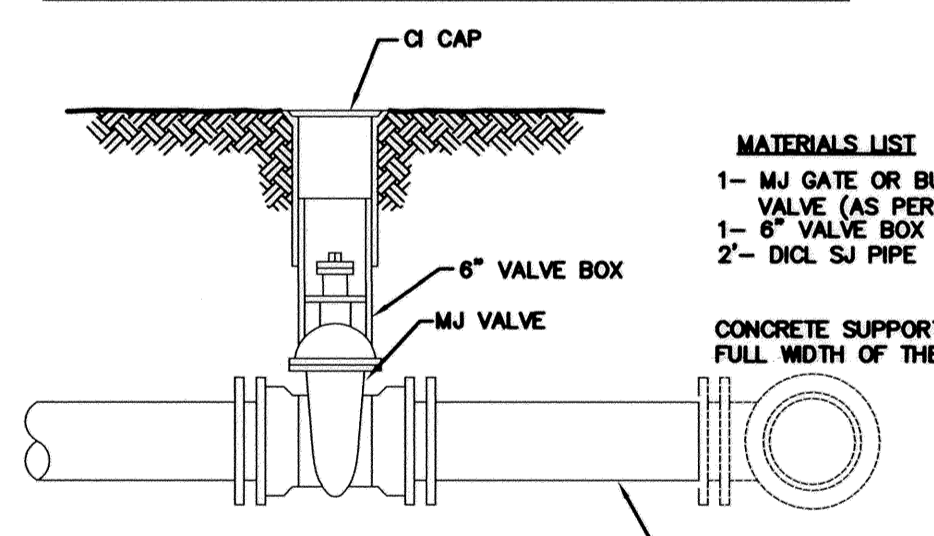
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-6" VALVE BOX
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

LINE VALVE ASSEMBLY



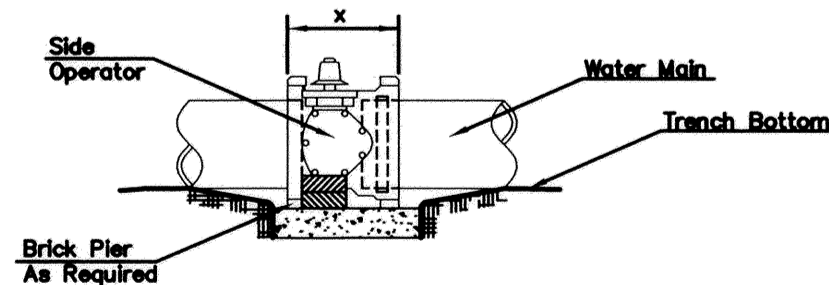
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-MJ ANCHOR COUPLING (12" OR SMALLER)
 - 1-6" VALVE BOX
 - CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

ANCHORED VALVE ASSEMBLY



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

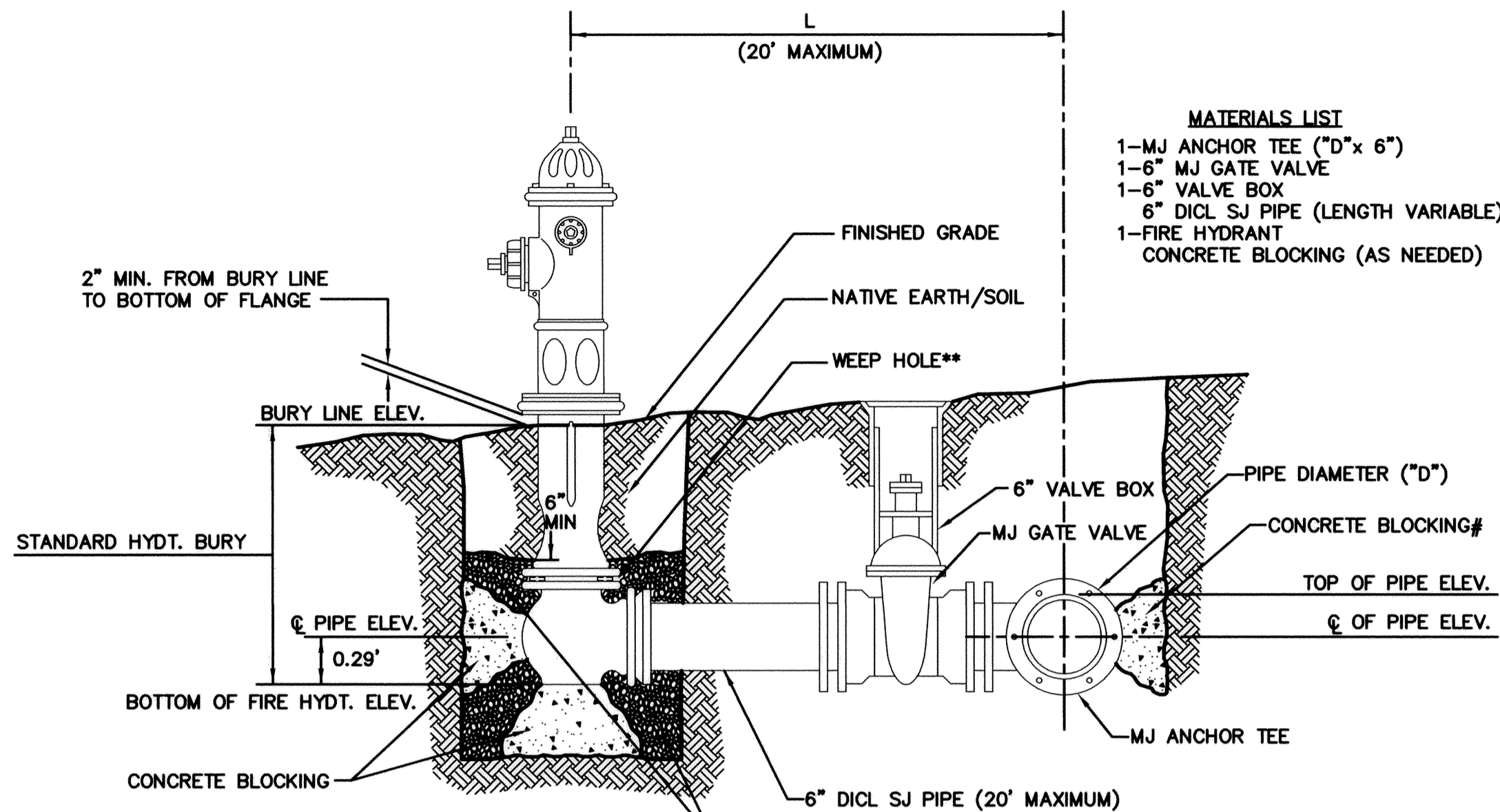
VALVE ASSEMBLY



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

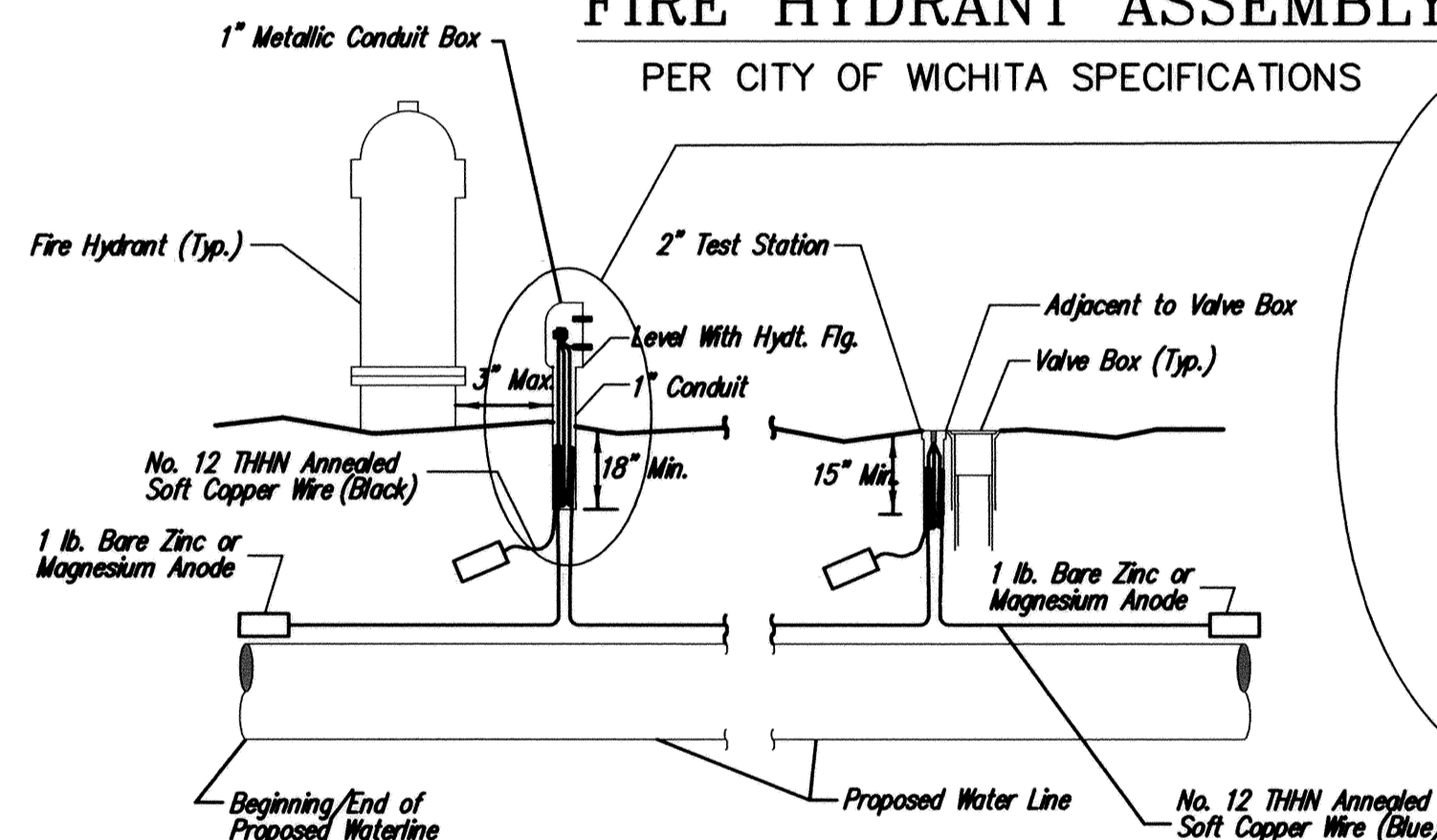


- MATERIALS LIST**
- 1-MJ ANCHOR TEE ("D"x 6")
 - 1-6" MJ GATE VALVE
 - 1-6" VALVE BOX
 - 6" DI. SJ PIPE (LENGTH VARIABLE)
 - 1-FIRE HYDRANT
 - CONCRETE BLOCKING (AS NEEDED)

- ** 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.**
- ## MINIMUM 1 CU. FT. PER WEEP HOLE**

PEA GRAVEL ## GRADATION REQUIREMENT	
SIEVE SIZE	SPECIFICATION % RETAINED
3/4"	0 - 5
1/2"	5 - 35
3/8"	40 - 85
# 4	95 - 100
# 8	97 - 100

FIRE HYDRANT ASSEMBLY
PER CITY OF WICHITA SPECIFICATIONS



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.

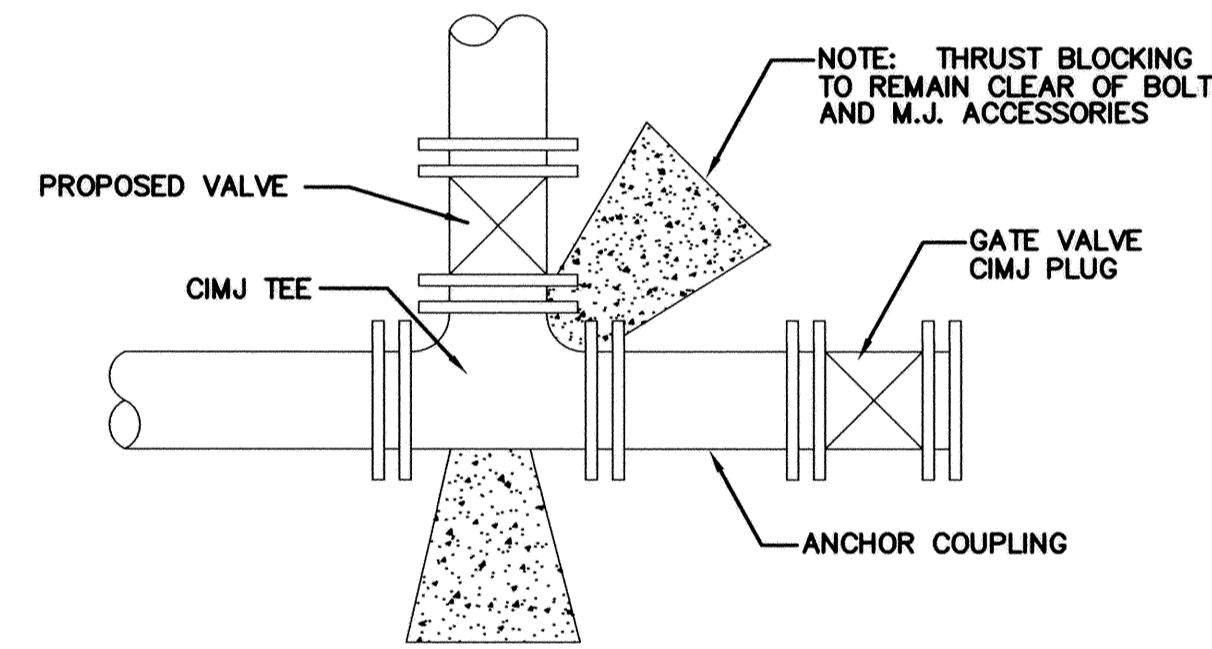
TEST STATIONS

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 T2PS3B as manufactured by HANDELY 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

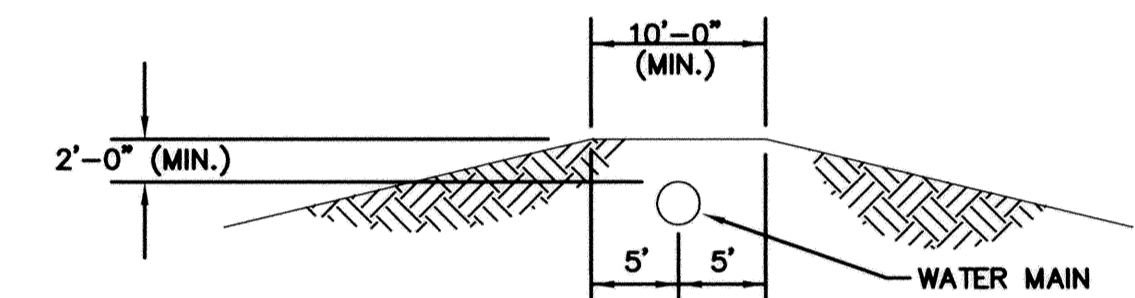
The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

TRACER WIRE DETAIL
COST IS SUBSIDIARY TO PIPE INSTALLATION



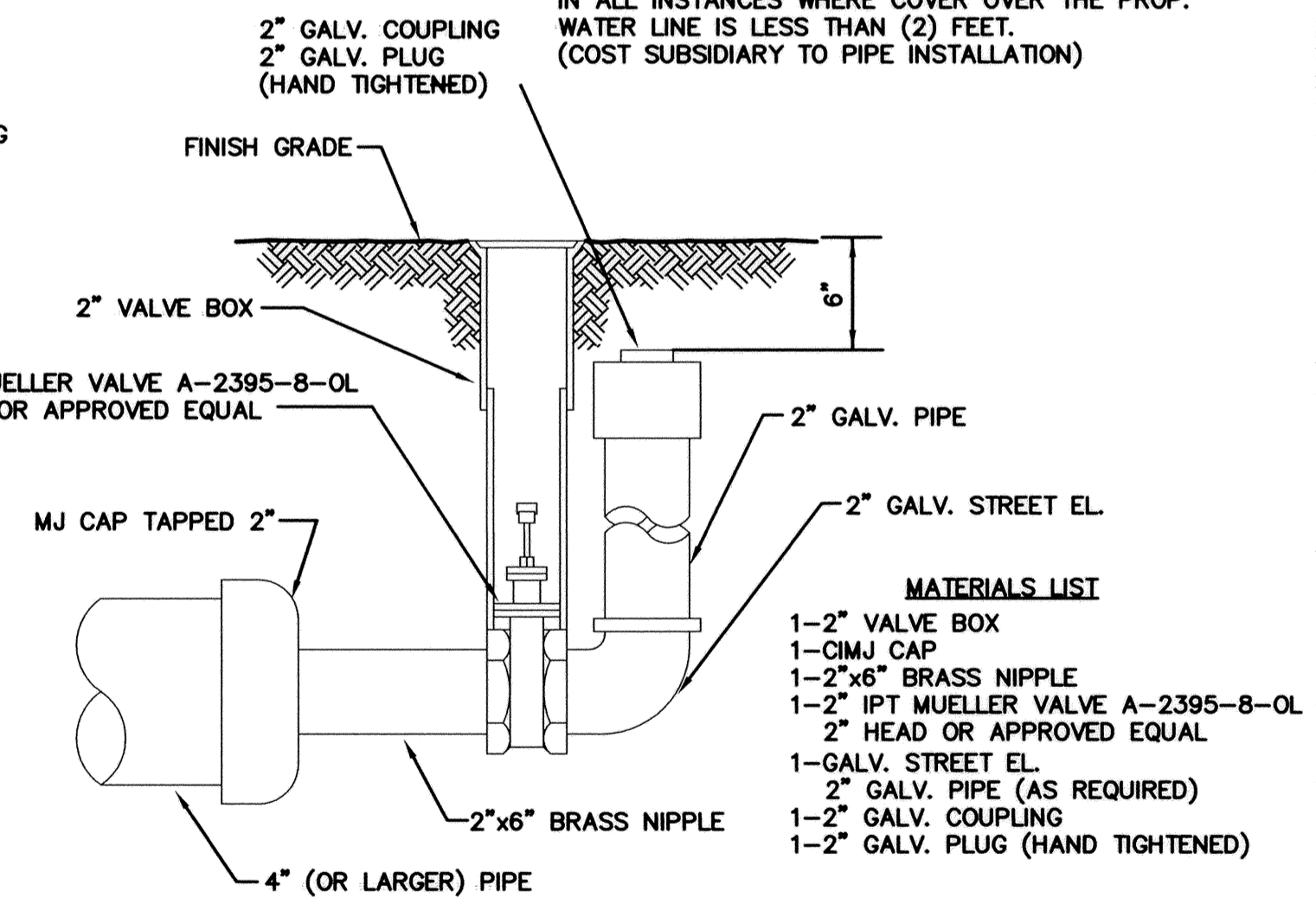
KEY BLOCK DETAIL

- 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

FIRE HYDRANTS REQUIRED			
STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*
09+40.30 W.L. 'A'	1283.86	1284.00	4'

CHANGE DIRECTIVE #1 ~ 05/19/11
REV: 8-14-01, MCG

CITY OF WICHITA
PUBLIC WORKS
ENGINEERING

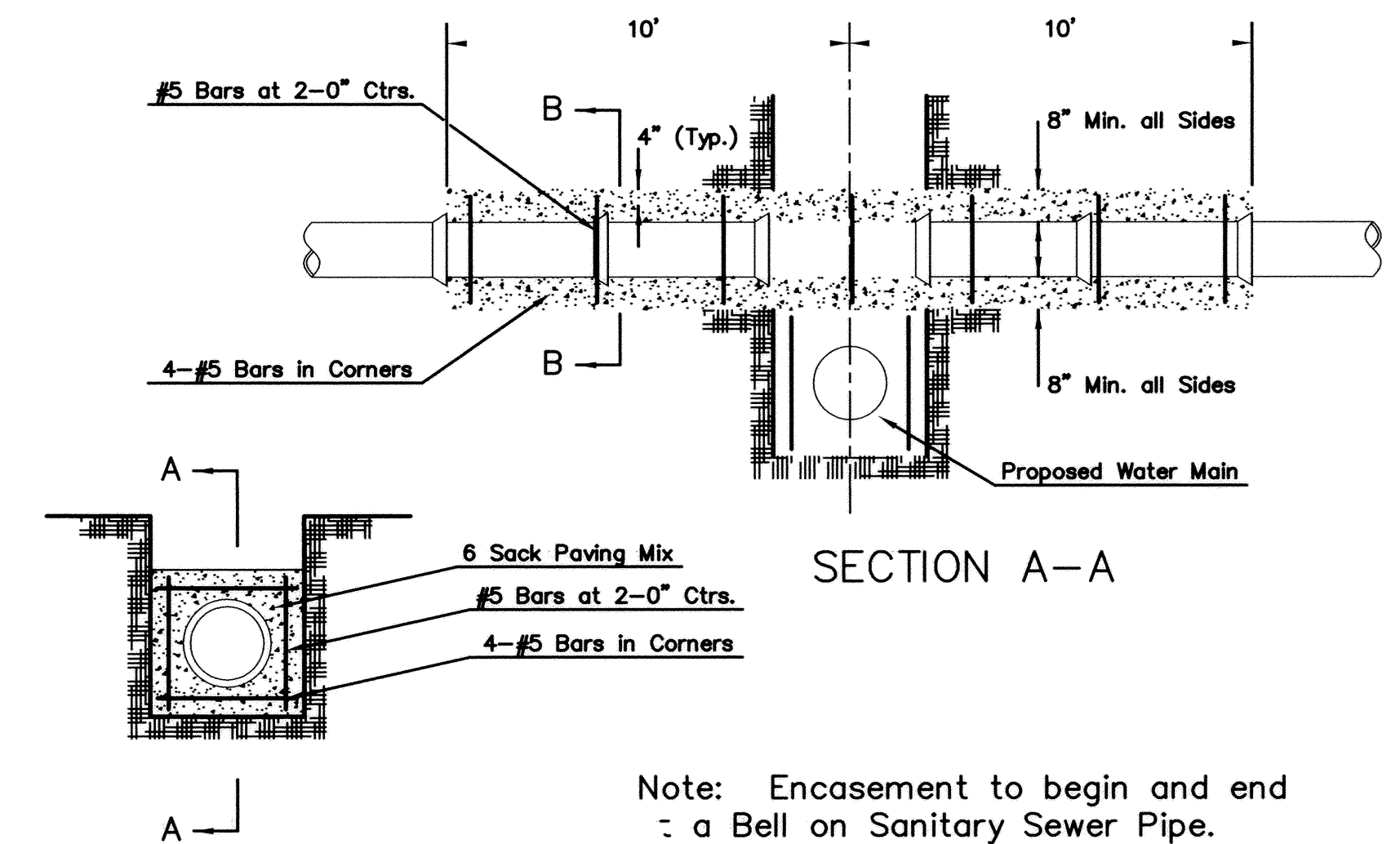
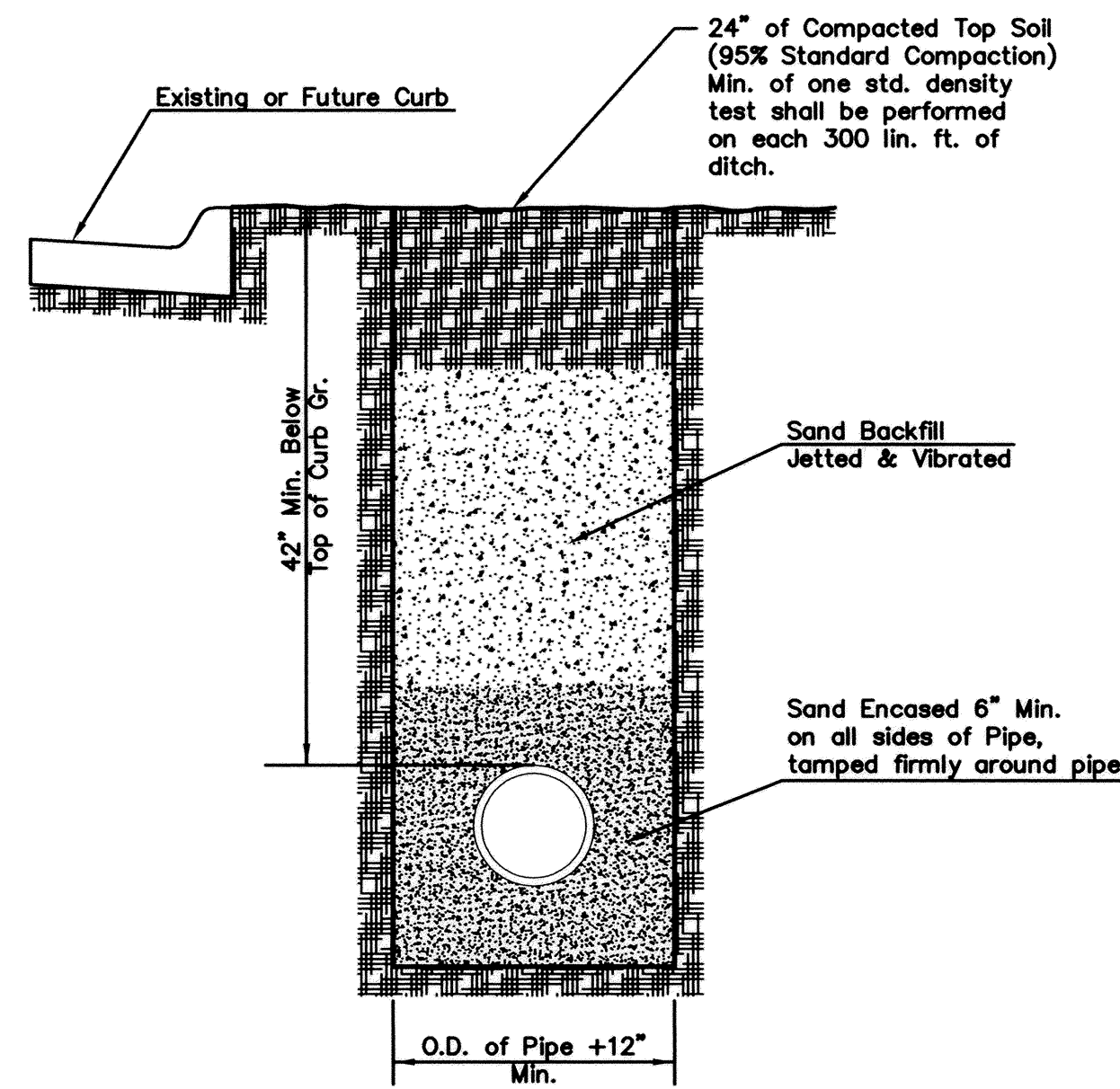
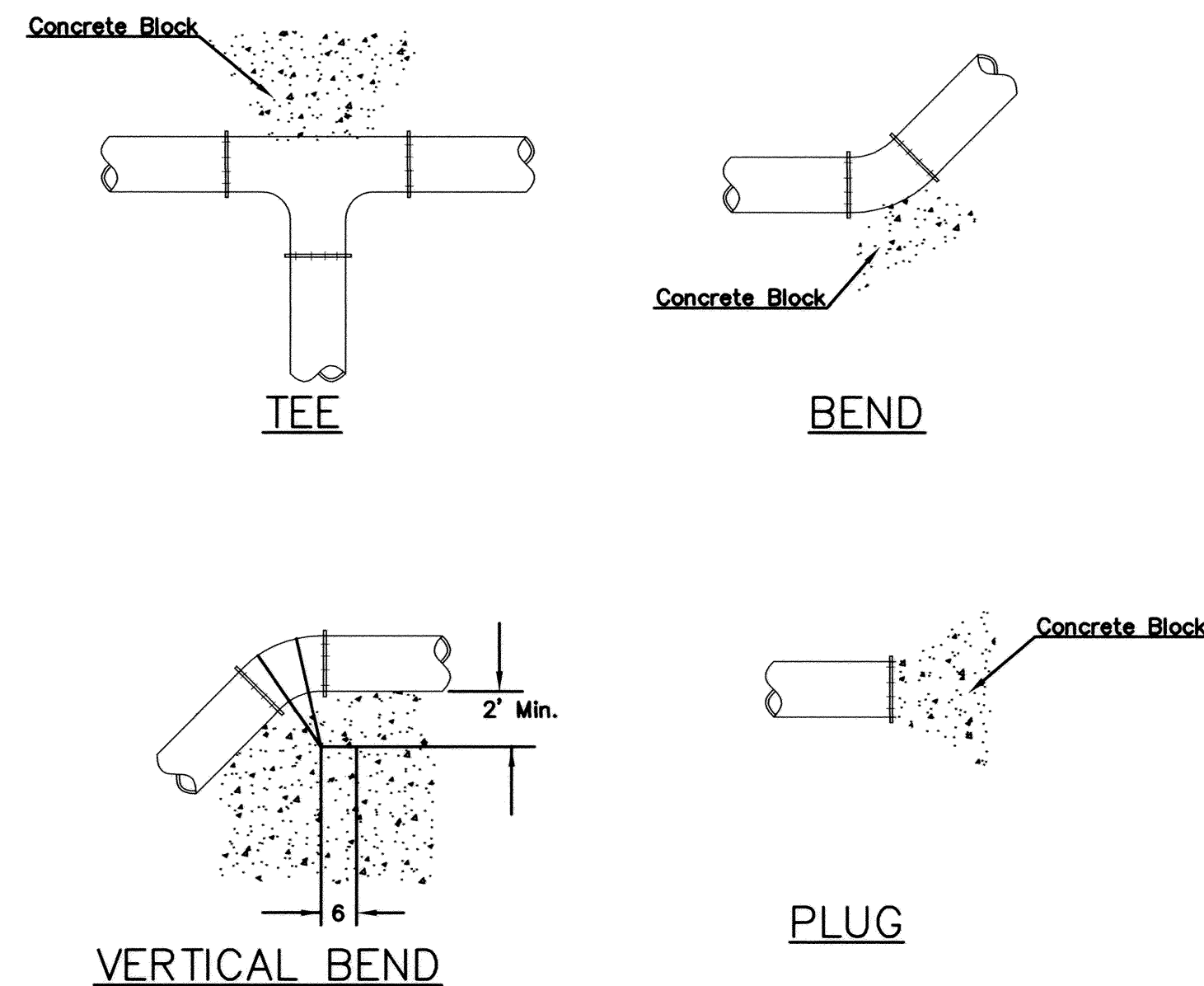
STANDARD WATER ASSEMBLY DETAILS

CITY ENGINEER
JAMES L. ARMOUR, P.E., L.S.

PROJECT NUMBER: XXX-XXXXX
DATE: MM/YY

DESIGN: ABC
DRAWN: DEF

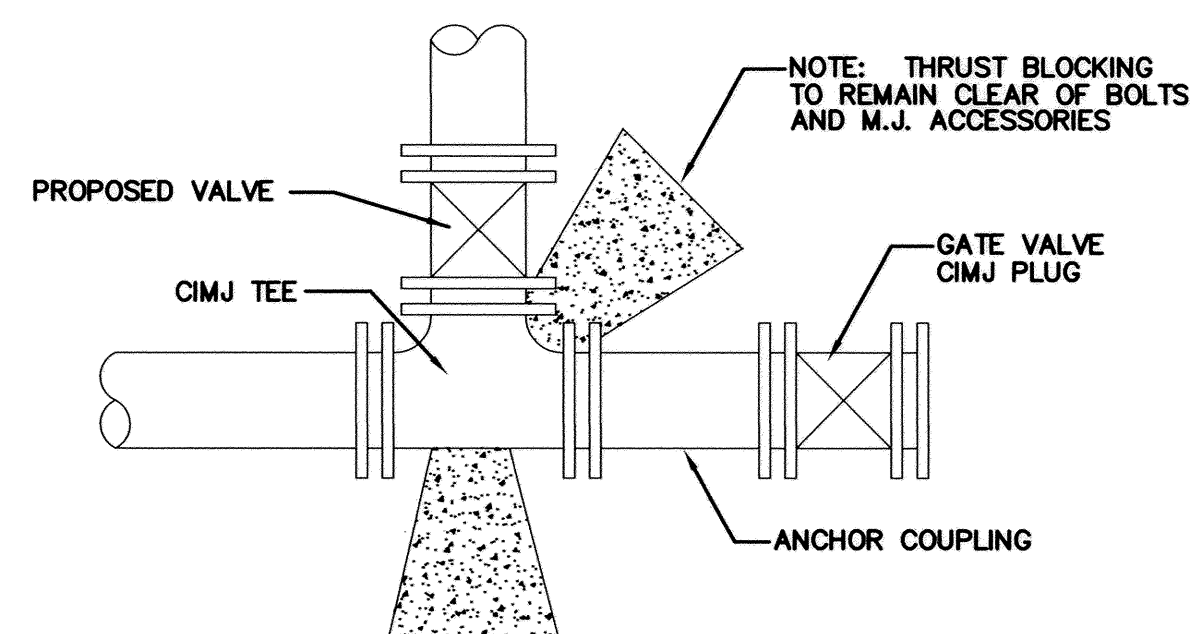
SHEET: C-11.2



REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER

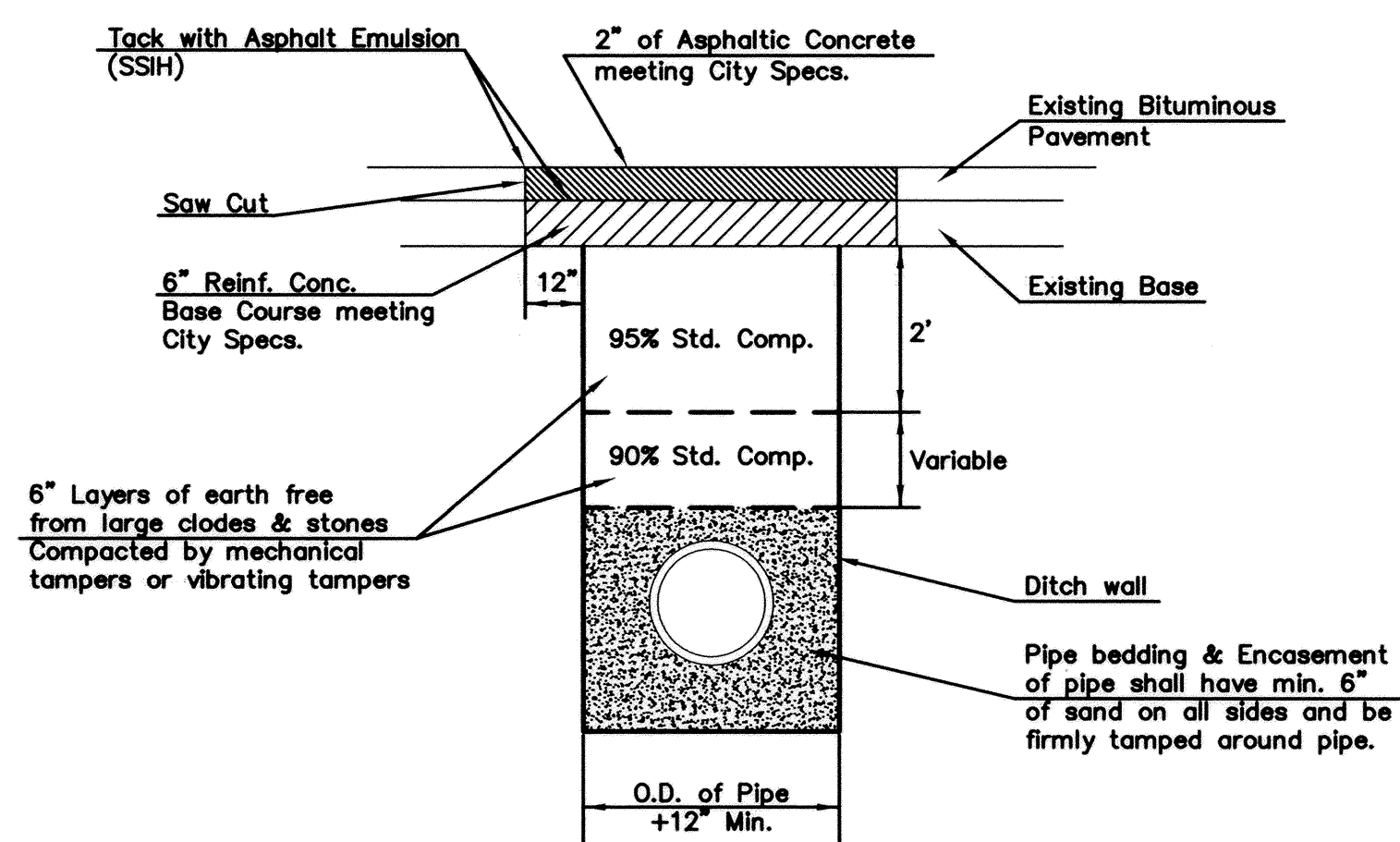
PIPE SIZE	THRUST AT FITTINGS IN TONS-AT 150#/IN ² P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

TYPICAL THRUST BLOCKS



KEY BLOCK DETAIL

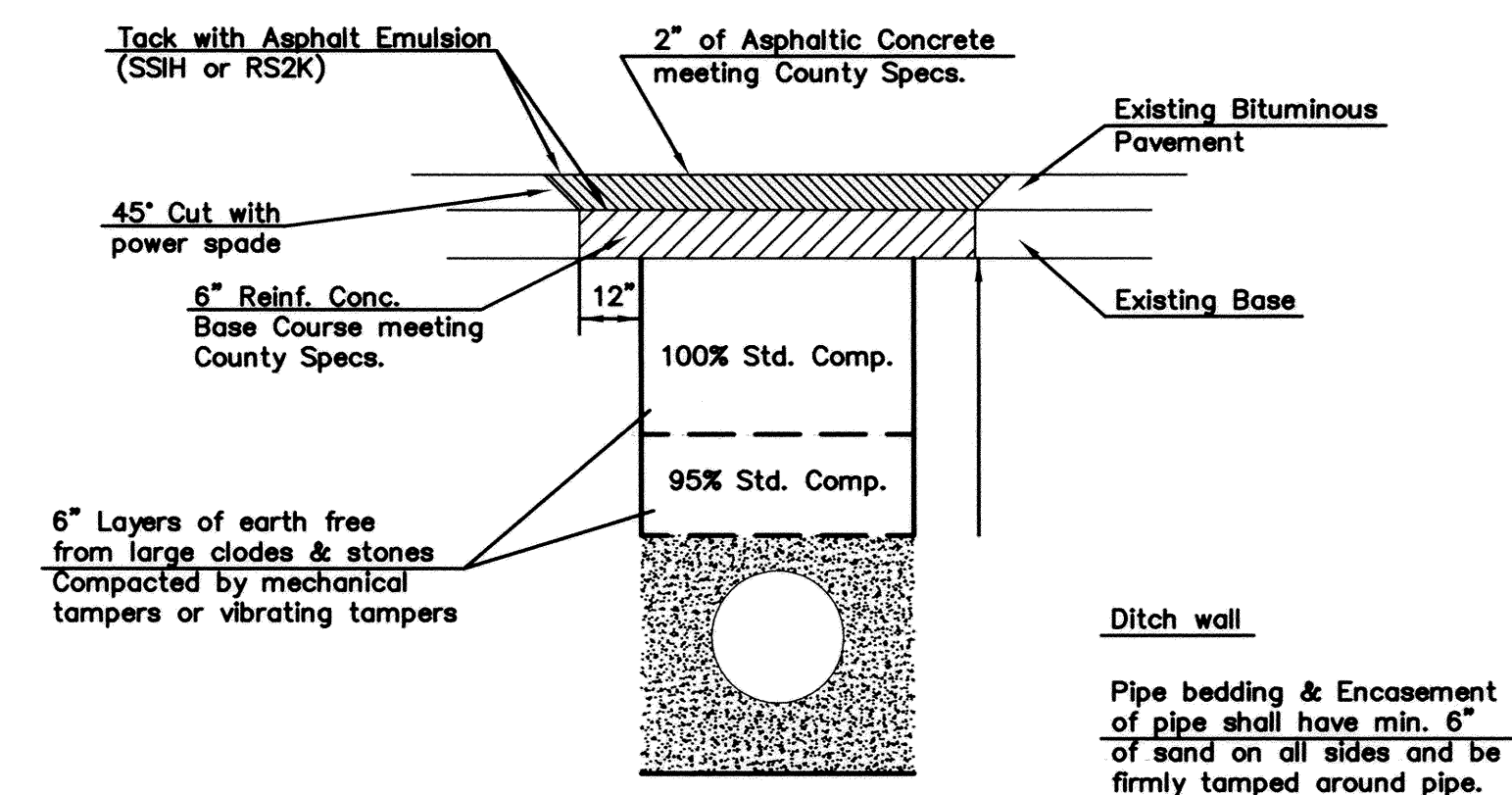
SETTLEMENT & COMPACTION ON CITY AND COUNTY ROAD RIGHT-OF-WAY EXCEPT UNDER PAVEMENT



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



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.

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PAVEMENT REPLACEMENT & DITCH COMPACTION UNDER EXISTING AND PROPOSED COUNTY ROADS

REVISED APR 97

	CITY ENGINEER		
	JAMES L. ARMOUR, P.E., L.S.		
	PROJECT NUMBER	DATE	DATE
	XXX-XXXXX	XXXXXX	MM/YY
CITY ENGINEER'S OFFICE			DESIGN
CITY HALL - SEVENTH FLOOR			ABC
435 NORTH MAIN STREET			DEF
WICHITA, KANSAS 67202-1820			SHEET
(316) 268-4501			C-11.3
(316) 268-4114 FAX			