

**GENERAL NOTES**

- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS. ALL CONSTRUCTION SHALL BE COMPLETED FOLLOWING CURRENT CITY STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
- THE CONTRACTOR WILL BE REQUIRED TO PROVIDE NOTICE TO UTILITY COMPANIES A MINIMUM OF SEVENTY-TWO (72) HOURS PRIOR TO ANY EXCAVATION, AS FOLLOWS:  
KANSAS ONE-CALL 687-2470  
THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:  
AT&T 1-800-246-8464  
BLACK HILLS ENERGY (GAS) 1-800-694-8989  
CITY OF WICHITA WATER 1-316-268-4555  
CITY OF WICHITA SEWER 1-316-268-4073  
CITY OF WICHITA STORMWATER 1-316-268-4090  
CITY OF WICHITA TRAFFIC 1-316-268-4034  
COX COMMUNICATIONS 1-888-249-3530  
KANSAS GAS SERVICE 1-888-482-4950  
WESTAR ENERGY 1-800-544-4857
- UTILITY SERVICE LINES, POLES, ETC. ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLAN, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
- RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS, IN THE OPINION OF THE ENGINEER, THAT WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.
- TREES AND SHRUBS IN PUBLIC RIGHT-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.
- THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS NOTICE PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
- THE WATER DISTRIBUTION DIVISION SHALL FIELD LOCATE WATER VALVES ONE TIME DURING CONSTRUCTION WHEN REQUESTED BY THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PRESERVE SUCH FIELD LOCATIONS DURING THE CONSTRUCTION PROCESS. WATER VALVES, VALVE BOXES OR FIRE HYDRANTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY CONTRACTOR AT HIS OWN EXPENSE. VALVE BOXES AND WATER METERS WITHIN THE PROJECT LIMITS SHALL BE ADJUSTED TO MATCH FIELD GRADES.
- THE CONTRACTOR SHALL NOTIFY THE CONSULTANT ENGINEER AND TOM MASON WITH THE CITY AT 316-268-4574 WITH THE ANTICIPATED CONSTRUCTION START DATE AND NOTIFY THEM OF PROJECT COMPLETION. STAKING FOR THIS PROJECT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. MKEC ENGINEERING, INC. WILL PROVIDE INSPECTION AT NO EXPENSE TO THE CONTRACTOR.
- IF TRAFFIC WILL BE IMPACTED BY CONSTRUCTION, A TRAFFIC CONTROL PLAN MUST BE SUBMITTED AND APPROVED BY THE CITY TRAFFIC ENGINEER, BRIAN COON AT [traffic@wichita.gov](mailto:traffic@wichita.gov) BEFORE CONSTRUCTION CAN BEGIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL MEASURES TO FACILITATE CONSTRUCTION. ALL CONSTRUCTION ZONE MARKINGS AND SIGNAGE SHALL CONFORM TO THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS PUBLISHED BY THE U.S. DEPT. OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION. ALL COSTS ASSOCIATED WITH CONSTRUCTION MARKINGS AND SIGNAGE SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- ALL ELEVATIONS SHOWN ARE U.S.G.S. DATUM (NAVD 88).
- ALL AREAS DISTURBED DURING CONSTRUCTION THAT WILL NOT BE UNDER PROPOSED PAVEMENT SHALL BE RESTORED TO MATCH EXISTING CONDITIONS WITHIN RIGHT-OF-WAY, UNLESS OTHERWISE NOTED IN PLANS.
- CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
- EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS COMPANIES AND FROM FIELD COMPANY UTILITY DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED.
- OPENING AND CLOSING OF WATER VALVES SHALL BE DONE SLOWLY TO PREVENT DAMAGE TO THE WATER DISTRIBUTIONS SYSTEM FROM WATER HAMMER. ALL VALVES CLOSED BY THE CONTRACTOR MUST BE REOPENED AS NEW CONSTRUCTION PERMITS. THE PROJECT INSPECTOR MUST ASCERTAIN THAT ANY VALVE CLOSED BY THE CONTRACTOR IS REOPENED. THE CONTRACTOR WILL BE PERMITTED TO OPERATE WATER VALVES ONLY WHEN THE PROJECT INSPECTOR ASSIGNED TO THE PROJECT IS PRESENT.
- THE CONTRACTOR SHALL LAY A TRACER WIRE AND SET TEST STATIONS ALONG ALL WATER PIPE INSTALLED IN ACCORDANCE WITH CITY SPECIFICATIONS AND TRACER WIRE DETAIL ON DETAIL SHEET WL-101.
- THE CONTRACTOR SHALL PROVIDE MATERIALS FOR TEMPORARY BLOWOFF OF WATERLINES. CONNECTIONS TO THE EXISTING WATERLINE(S) SHALL BE MADE WITH CLEAN, SWABBED PIPE AND FLUSHED UPON COMPLETION OF TIE-INS.
- REQUESTS FOR SHORT TERM WATER INTERRUPTIONS SHALL BE MADE TO THE CITY WATER DISTRIBUTION DIVISION AND WILL BE SUBJECT TO THEIR APPROVAL. THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO ANY PROPERTY OWNER, BUSINESS, AND/OR TENANTS THAT WILL HAVE WATER SERVICE INTERRUPTED AT LEAST 5 DAYS IN ADVANCE. SUCH NOTIFICATIONS SHOULD INDICATE THE TIME AND DATE THAT THE WATER WILL BE TURNED OFF AND WHEN THE SERVICE WILL BE RESTORED. NO BUSINESS, PROPERTY OWNER, AND/OR TENANTS SHALL BE WITHOUT WATER SERVICE FOR MORE THAN 8 HOURS. PROPOSED TIE IN LOCATIONS WHICH WILL AFFECT WATER SERVICE TO PROPERTY OWNERS SHALL BE PERFORMED DURING NON-PEAK HOURS.
- THE CONTRACTOR MUST SCHEDULE THE CONNECTIONS TO THE EXISTING MAIN WITH THE CITY SUCH THAT THERE IS A MINIMUM DISRUPTION OF SERVICE. CONNECTIONS SHALL BE MADE DURING PERIODS OF LOW WATER USAGE. THE CONTRACTOR SHALL SUBMIT HIS PROPOSED SCHEDULE FOR COMPLETING WORK FOR CITY APPROVAL AT LEAST 10 DAYS PRIOR TO BEGINNING CONSTRUCTION.
- DEFLECTIONS AT PIPE JOINT OR COUPLINGS SHALL NOT EXCEED THE PIPE MANUFACTURERS RECOMMENDED MAXIMUM. WHERE DEFLECTIONS ARE GREATER THAN THE MAXIMUM ALLOWED, THE CONTRACTOR SHALL UTILIZE CMJ LONG SLEEVE OR MULTIPLE JOINTS.
- ANY EXTENSION GREATER THAN ONE LENGTH OF PIPE SHALL REQUIRE TESTING.
- ANY EXISTING JOINT EXPOSED DURING EXCAVATION SHALL BE REPLACED IF WITHIN FOUR FEET OF PROPOSED JOINT.
- CITY MAINTENANCE OF WATER MAINS ENDS AT RIGHT-OF-WAY OR EASEMENT LINE.
- VALVES 12 INCH AND LARGER ARE TO BE OPERATED BY THE CITY WATER DISTRIBUTION DIVISION. 48 HOURS OF ADVANCE NOTICE IS REQUIRED.
- ALL WET TAPS SHALL BE INSTALLED BY THE CITY OF WICHITA. THE CONTRACTOR WILL REIMBURSE THE CITY FOR TAPPING FEES.
- THE CONTRACTOR SHALL PROTECT FROM DAMAGE AND SUPPORT EXISTING UTILITIES THROUGH CONSTRUCTION AS APPROVED BY THE UTILITY OWNER AND THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ANY SIDEWALK, DRIVE APPROACH, CURB, OR STREET PAVEMENT REMOVED WITHIN PUBLIC RIGHT-OF-WAY TO CONSTRUCT PROJECT MUST HAVE A PAVEMENT CUT PERMIT AND BE REPLACED BY THE CITY CONTRACTOR. PERMITS CAN BE OBTAINED BY CALLING 316-268-4501 OR 316-268-4480.
- ALL FUTURE BUILDINGS AND PAVEMENT IS SHOWN FOR INFORMATION ONLY AND ARE SUBJECT TO CHANGE.
- WORK DONE UNDER THIS PROJECT IS SUBJECT TO THE CITY OF WICHITA REQUIREMENTS FOR CONSTRUCTION OF INFRASTRUCTURE IMPROVEMENTS. THE CONTRACTOR SHALL BE FAMILIAR AND COMPLY WITH ALL OF THE REQUIREMENTS, INCLUDING BONDING, INSPECTION, TESTING, NOTIFICATION, PROVIDING AS-BUILT DRAWINGS, PAYING FOR ALL NECESSARY CONNECTIONS, AND/OR STREET REPAIR FEES AND PROVIDING PIPE MATERIAL AND OTHER CERTIFICATIONS.
- DEVELOPER FOR THIS PROJECT IS:  
WICHITA STATE UNIVERSITY, 1845 FAIRMOUNT ST., WICHITA, KS 67260  
ERIC KING - DIRECTOR FACILITIES PLANNING; (316) 978-3030

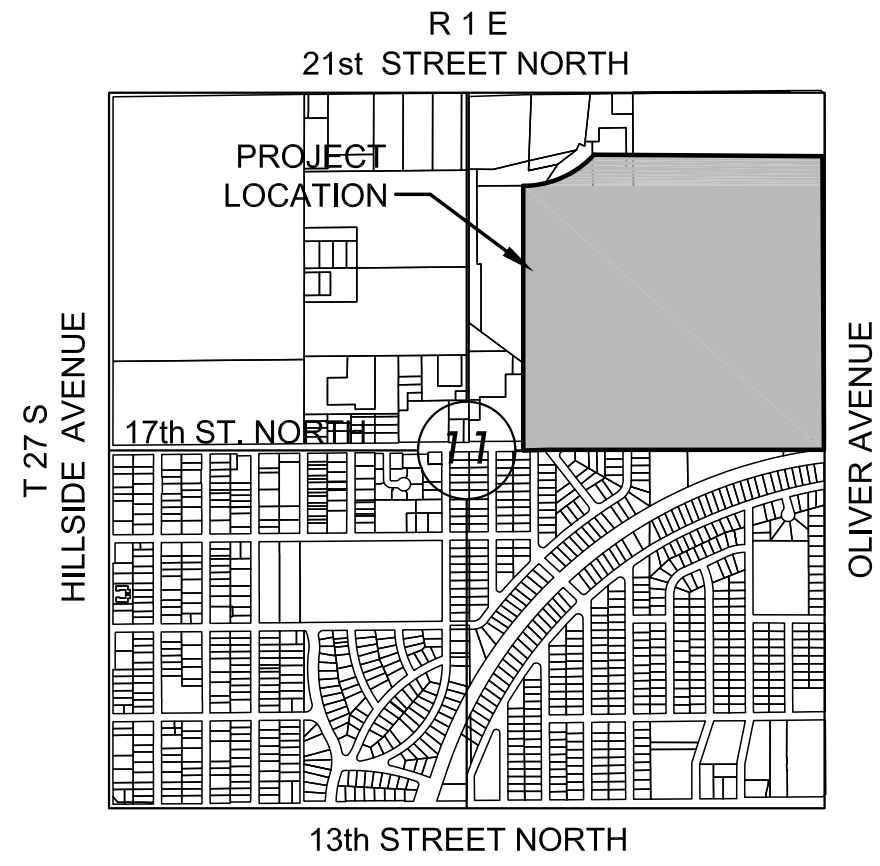
PRIVATE WATER DISTRIBUTION SYSTEM IMPROVEMENTS  
TO SERVE

**INNOVATION CAMPUS INFRASTRUCTURE**

**PHASE 1**

A PORTION OF  
WSU INNOVATION CAMPUS  
PROJECT NO. 1912PPW

THE CITY OF WICHITA, KANSAS  
GARY JANZEN, P.E. - CITY ENGINEER  
OCA 607853



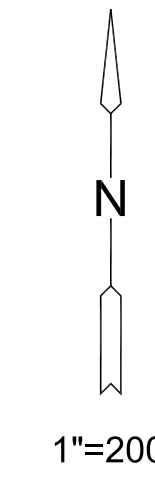
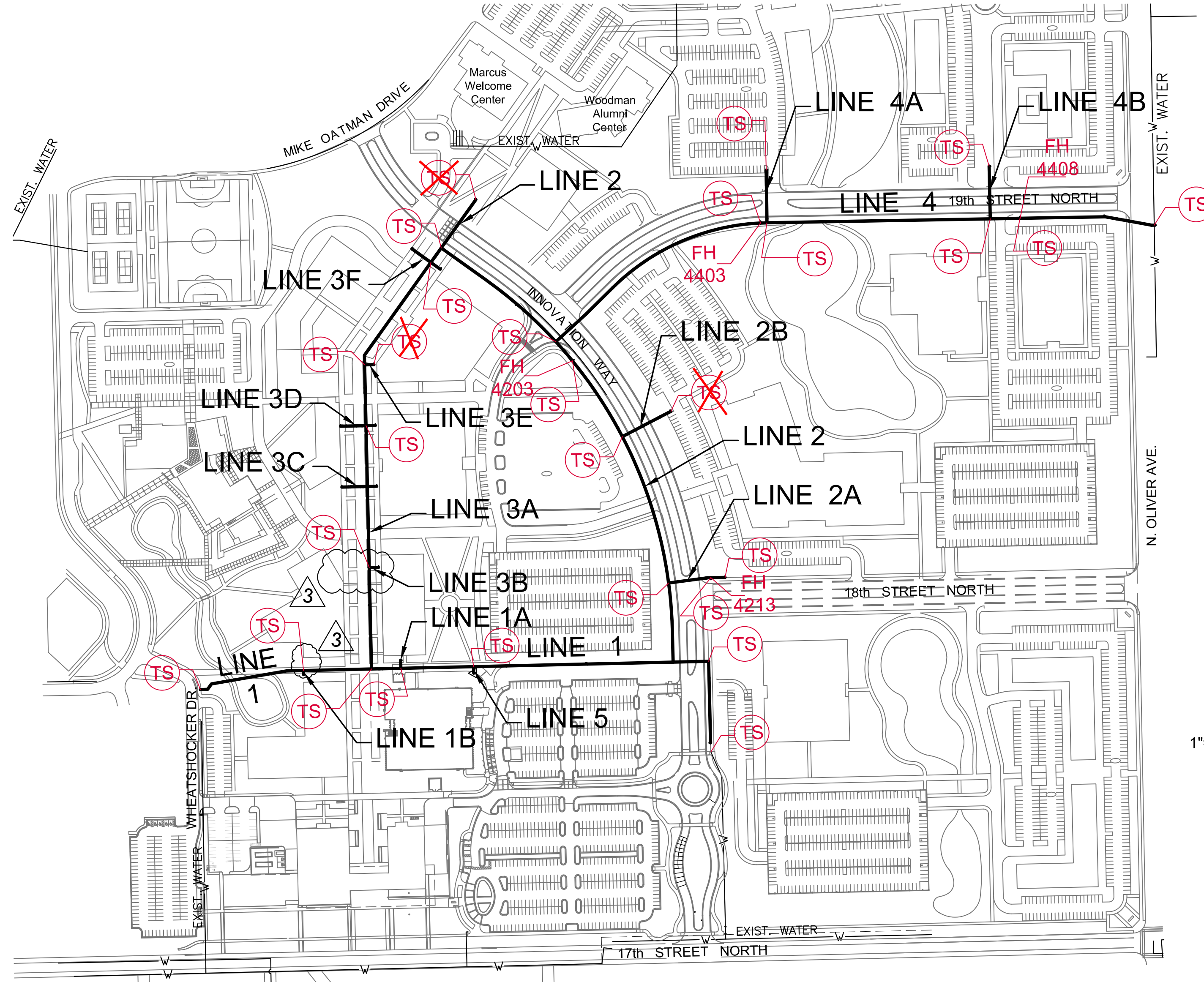
**VICINITY MAP**  
No Scale

**INDEX TO DRAWINGS**

SHEET NO.	DESCRIPTION
15	WATER LINE TITLE SHEET
16-17	WATER LINE DETAILS
18-28	WATER PLANS & PROFILES
29	WATER LINE BUBBLE MAP
29A	WATERLINE SECONDARY LOCATES AB
30-34	BMP DETAILS

**BENCHMARKS**

BENCHMARK & CONTROL POINT  
INFORMATION ON BUBBLE MAP,  
SHEET 29.



**AS-BUILT PLANS - APRIL 2016**

INSPECTED BY: LARRY SCHALLER, MKEC ENGINEERING, INC  
CONSTRUCTED BY: NOWAK CONSTRUCTION  
CONSTRUCTION DATE: OCTOBER 2015 TO MARCH 2016  
SUPPLIER: HD SUPPLY WATER WORKS

12"x12"x4" TEE:	1	4" VALVE (AMERICAN):	1	4" PVC:	16.0 LF
8"x8"x8" TEE:	2	8" VALVE (AMERICAN):	17	8" PVC:	936.23 LF
12"x12"x8" TEE:	6	12" VALVE (M&H VALVE CO.):	24	8" DICL:	64.52 LF
12"x8" REDUCER:	2			12" DICL:	42.28 LF
12"x8" CROSS:	3	FIRE HYDRANT (AMERICAN):	4	12" PVC:	5,484.72 LF
8" 45° BEND:	8				
8" 22.5° BEND:	8				
8" 11.25° BEND:	2				
12"x12"x12" TEE:	6				
12" 45° BEND:	2				
12" 22.5° BEND:	7				
12" 11.25° BEND:	4				

**LEGEND**

- EXISTING WATER
- PROPOSED WATER

**NOTE: WATER LINE VALVES TO BE OPERATED BY CONTRACTOR ONLY IF WATER INSPECTOR IS ON SITE.**

APPROVED AS NOTED  
BY WICHITA PUBLIC WORKS  
ENGINEERING DIVISION  
& BY WICHITA FIRE DEPARTMENT

Engineering: *Reuben Divil 11/3/15*  
Utilities: *Dina Kelly 11-03-15*  
Fire Department: *11/3/15*

NOTE TO CONTRACTORS

Public Property:  
Inspection and testing for the water line 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 rights-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 of Wichita Specifications and Standards and Special Provision (on file and available in the City Engineer's office) or on the City's Website.

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.

An approved copy of these plans signed by City staff is required on-site.

NOTE: ALL LINES TO BE INSTALLED BY OTHERS ARE SUBJECT TO MABCD REVIEW.



REVISION	DATE
3 REVISIONS	12/02/15
2 REVISIONS	10/07/15

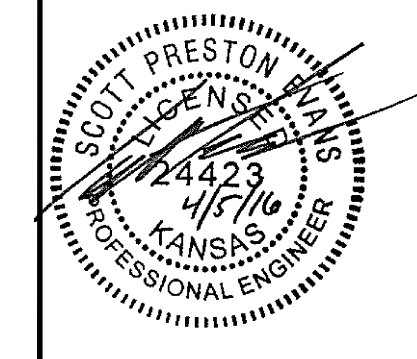
DIVISION OF ADMINISTRATION & FINANCE  
FACILITIES PLANNING  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0047  
Phone 316-978-3030

Department of Administration & Procurement  
Office of Facilities & Procurement Management  
Design, Construction & Compliance  
800 SW Jackson, Suite 700  
Topeka, Kansas 66612-1216  
Phone 785-296-8899

WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE**  
**PHASE 1**  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: KKL  
DATE: 8/18/2015

**WATER LINE TITLE SHEET**  
A-012817  
15 OF 34  
ORIGINAL CONTRACT DOCUMENTS

J:\PROJECTS\2015\1501010265\_WSU\_Innovation\_Infrastructure\150265\_CAD\SHITS\05\_Civil\Wtr\15285\_CT.dwg



REVISION	DATE
3 REVISIONS	12/20/15
2 REVISIONS	10/07/15
1	

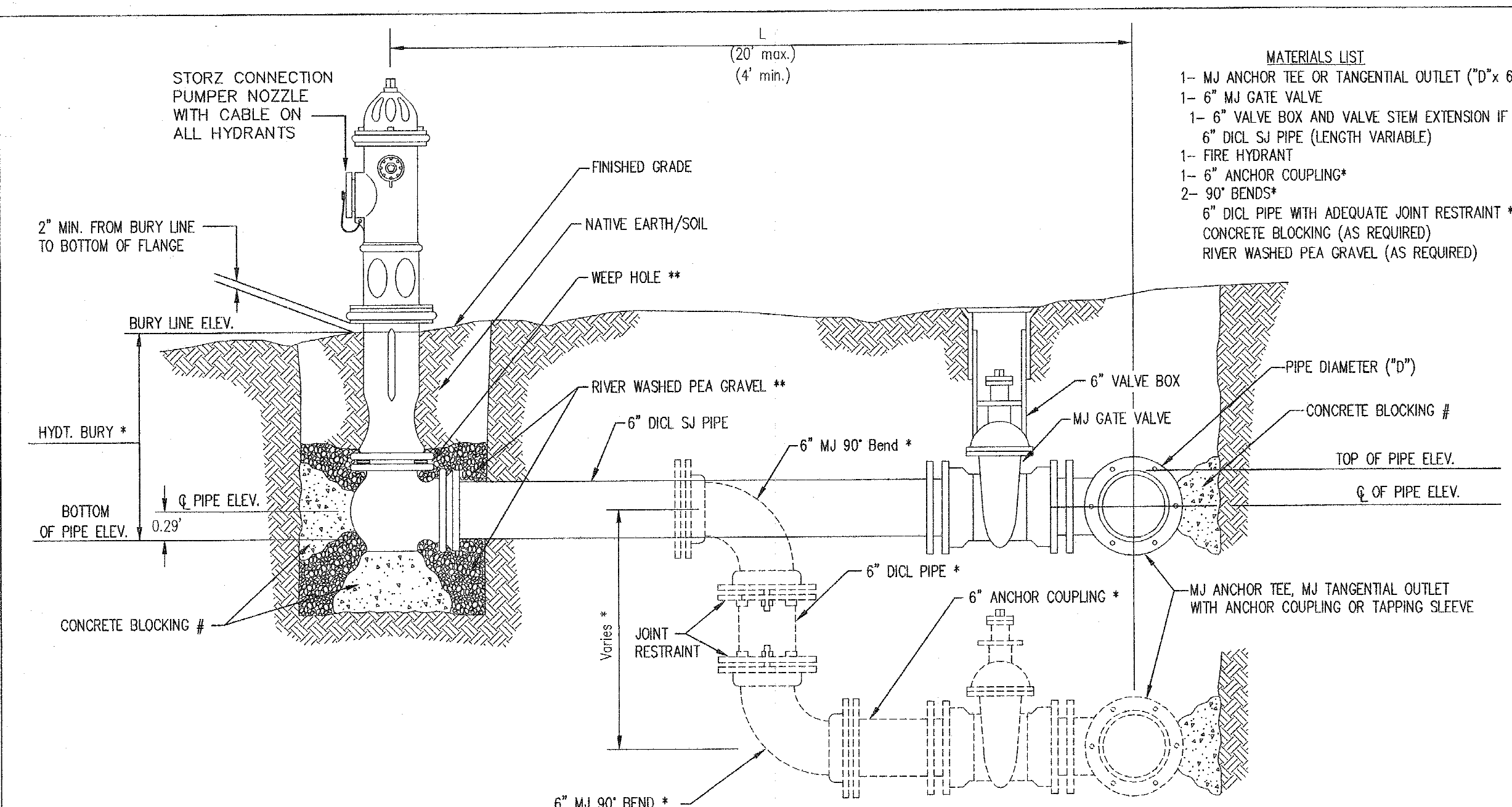
DIVISION OF ADMINISTRATION & FINANCE  
FACILITIES PLANNING  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0047  
Phone 316-978-3030

Department of Administration & Procurement  
Office of Facilities & Procurement Management  
Design, Construction & Compliance  
800 SW Jackson, Suite 700  
Topeka, Kansas 66612-1216  
Phone 785-296-8899

WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE PHASE 1**  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: KKL  
CHECKED BY: BLB

**WATER LINE DETAILS**  
A-012817  
16 OF 34  
ORIGINAL CONTRACT DOCUMENTS

STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*	VALVE STEM EXT. REQUIRED (ft)*
18+00.00, LINE 2	1413.44	1408.78	5.5'	1
11+05.00, LINE 2A	1410.78	1405.12	6.5'	3
16+00.00, LINE 4	1404.20	1400.04	5'	N/A
22+40.00, LINE 4	1408.23	1402.57	6.5'	3

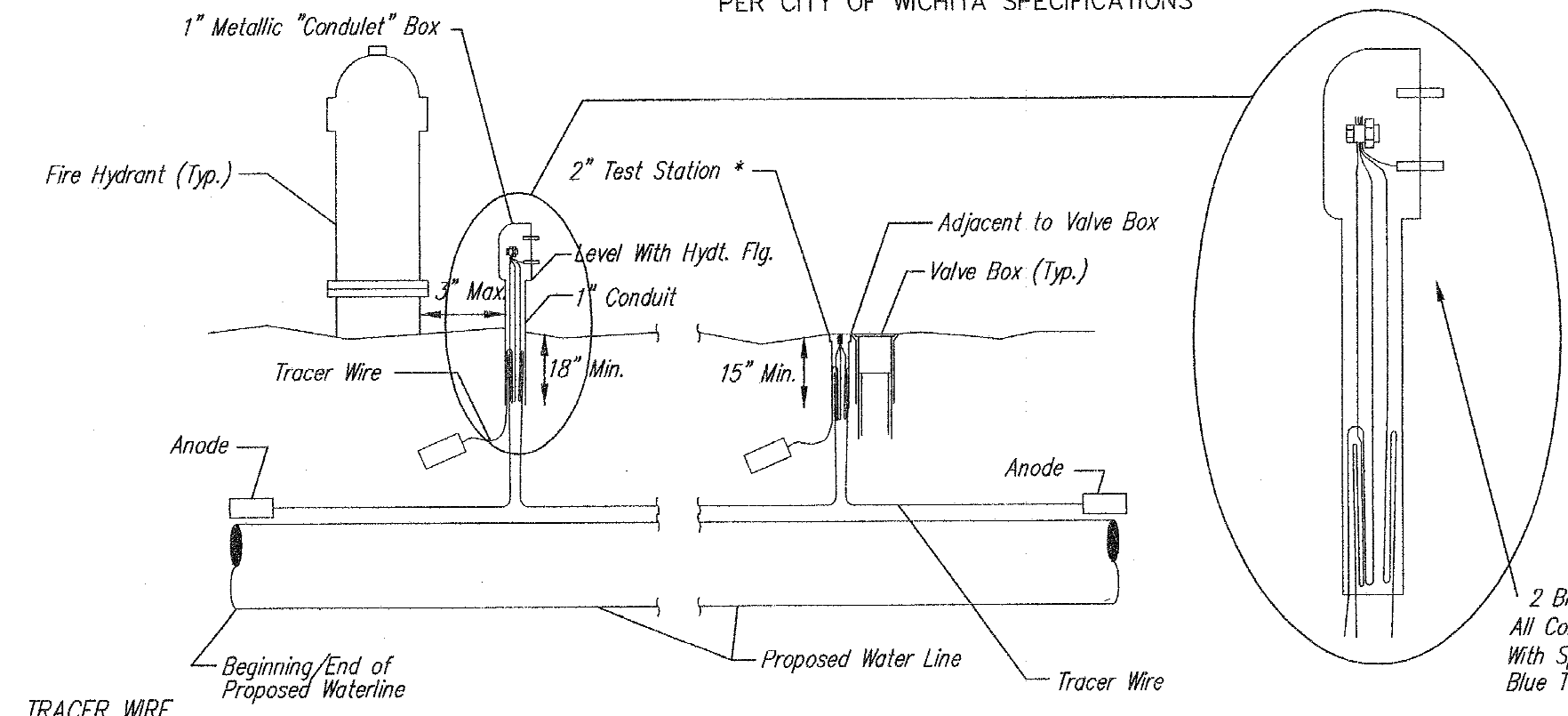


\* IF THE REQUIRED HYDRANT BURY IS IN EXCESS OF 5', BUT LESS THAN 7', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY. IF THE REQUIRED HYDRANT BURY IS GREATER THAN 7', CONTRACTOR SHALL USE 5' HYDRANT BURY, 2-MJ 90° BENDS, 6" ANCHOR COUPLING AND 6" DICL PIPE AS NECESSARY FOR VERTICAL ADJUSTMENT. THE CONTRACTOR SHALL PROVIDE ADEQUATE THRUST BLOCKING AT HYDRANT AND MEAGALUGS, OR SIMILAR RESTRAINT BETWEEN 90° BENDS TO SECURE ALL FITTINGS DURING TESTING AND OPERATION. THE CONTRACTOR SHALL PROVIDE A VALVE STEM EXTENSION PER DETAIL THIS SHEET.

\*\* CAUTION: WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES. PLACE 1 CUBIC FOOT OF RIVER WASHED PEA GRAVEL AROUND EACH WEEP HOLE.

# CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.

**FIRE HYDRANT ASSEMBLY**  
PER CITY OF WICHITA SPECIFICATIONS



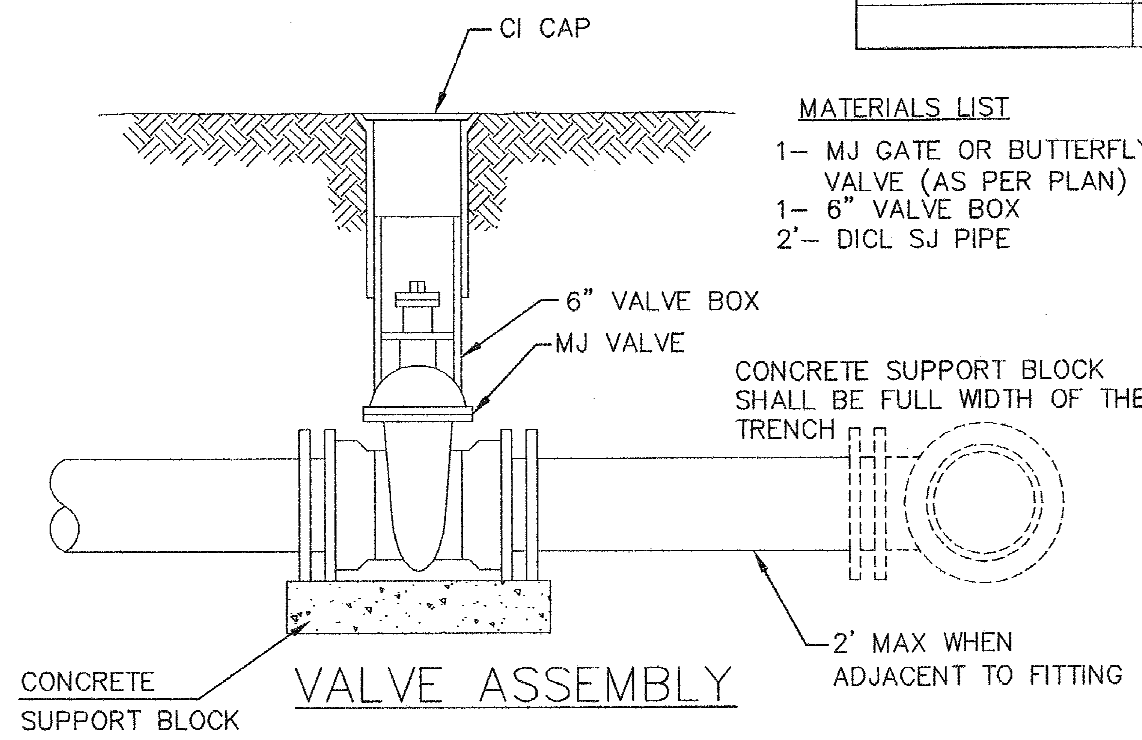
**TRACER WIRE**  
Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. A waterproof connector shall be used at splice locations. Test stations shall be installed adjacent to all fire hydrants along the waterline and at blowoffs or valves near the ends of waterlines. Any exception to the location shall be approved by the engineer. At each test station, the tracer wire shall be connected to a 3 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 AWG CCS with 3045 mil HDPE 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 be installed with proposed water main to any tracer wire installed with adjacent waterline projects.

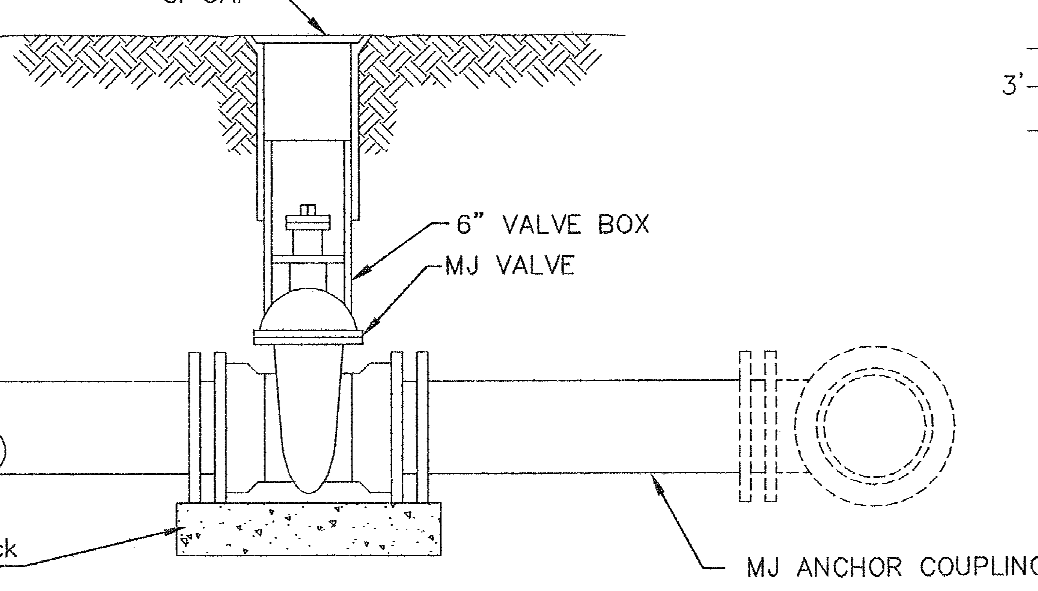
**TEST STATIONS**  
A complete list of approved Tracer Wire can be found on City of Wichita's website at [www.wichita.gov](http://www.wichita.gov). The test station for fire hydrant applications shall be a 1 inch galvanized "conduit" style test station as manufactured by AGRA Industries with a removable 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 HANDLEY Industries or approved equal. The "conduit" style test station 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 in 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 3 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 12 AWG CCS which shall be extended to the test station.

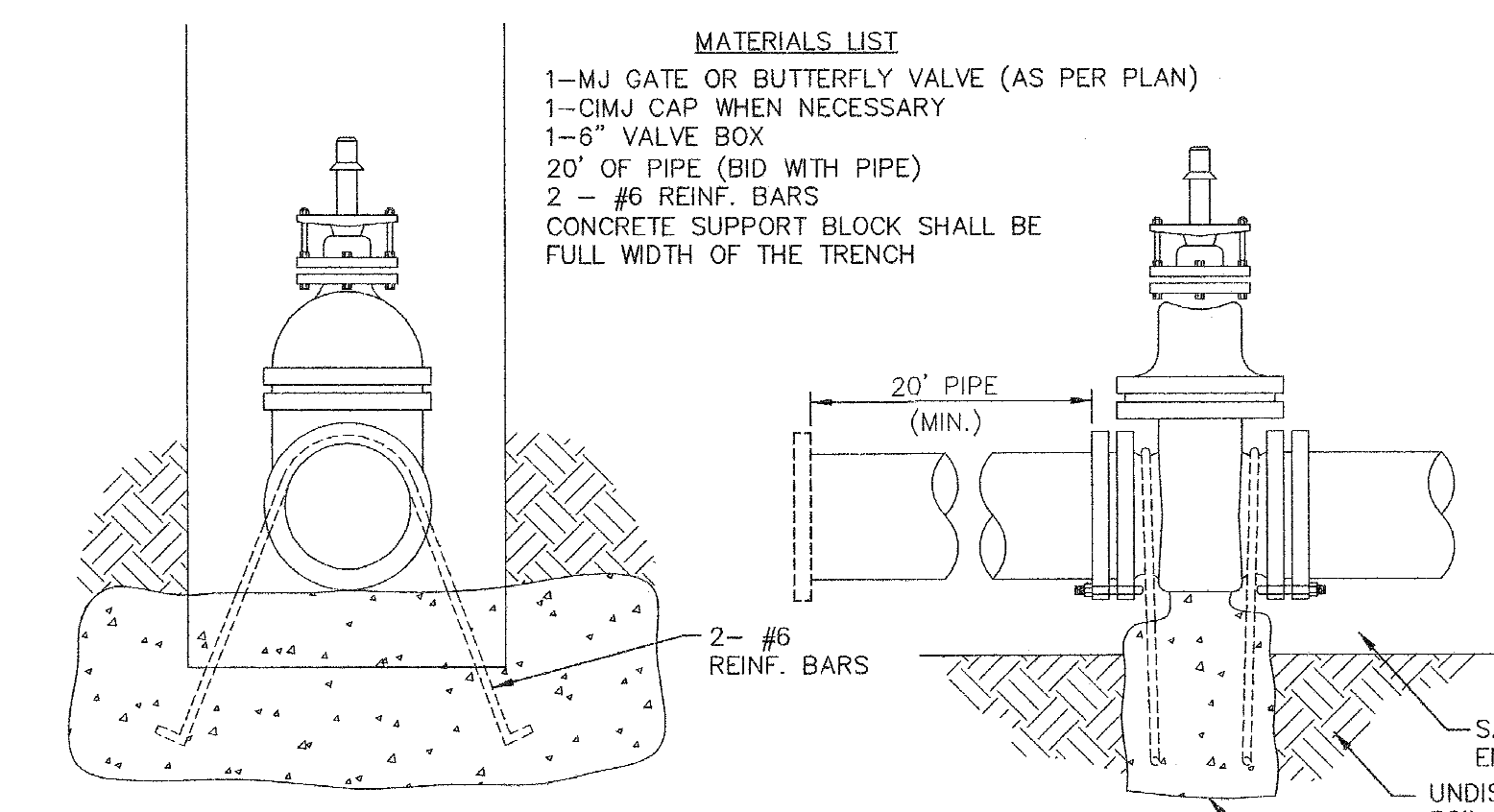
**TRACER WIRE DETAIL**  
COST IS SUBSIDIARY TO PIPE INSTALLATION



**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

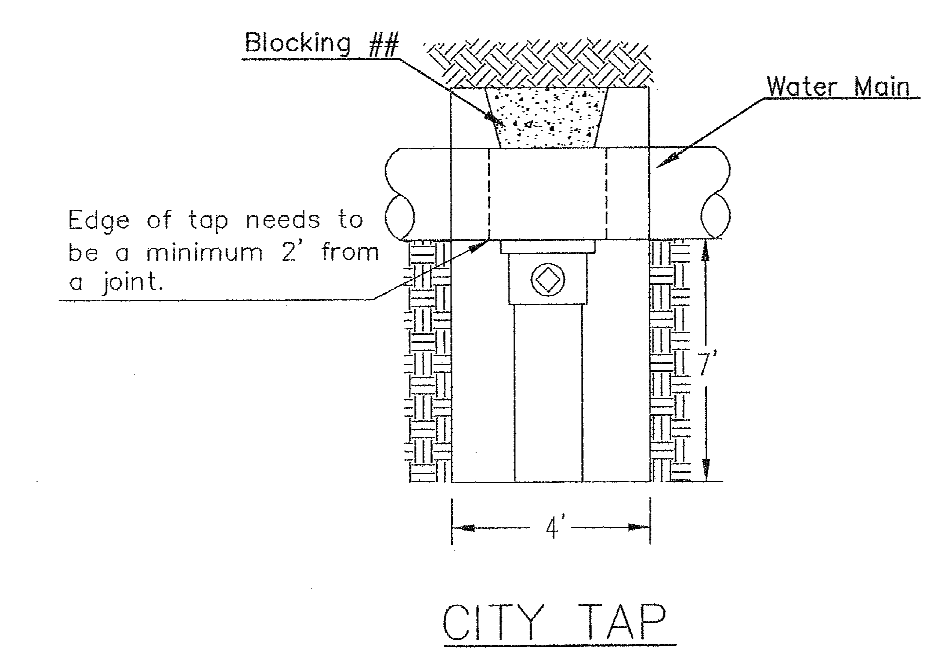


**ANCHORED VALVE ASSEMBLY, SPECIAL**

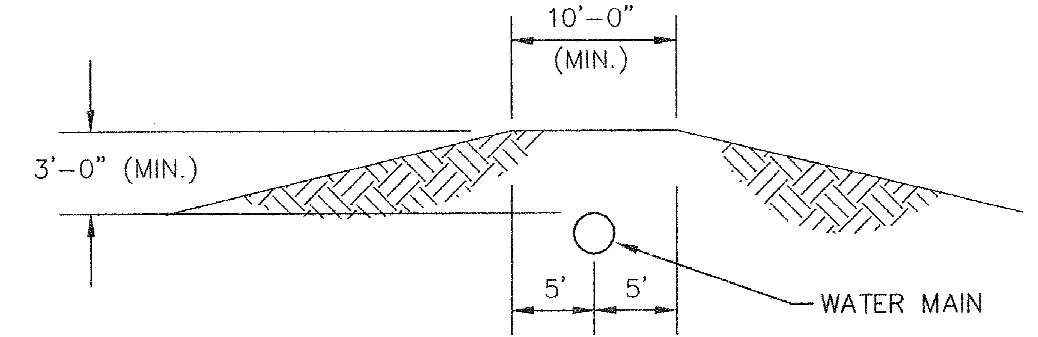


**Notes:**  
1. Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.  
2. The thrust block shall be constructed such that bolts, nuts,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

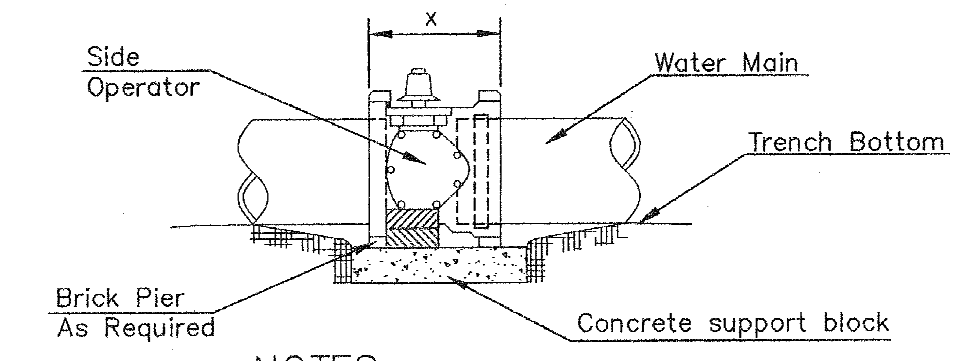
VALVE	THRUST AT 150 #/sq ft
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.



## When the City of Wichita makes tap, blocking is to be done by Contractor

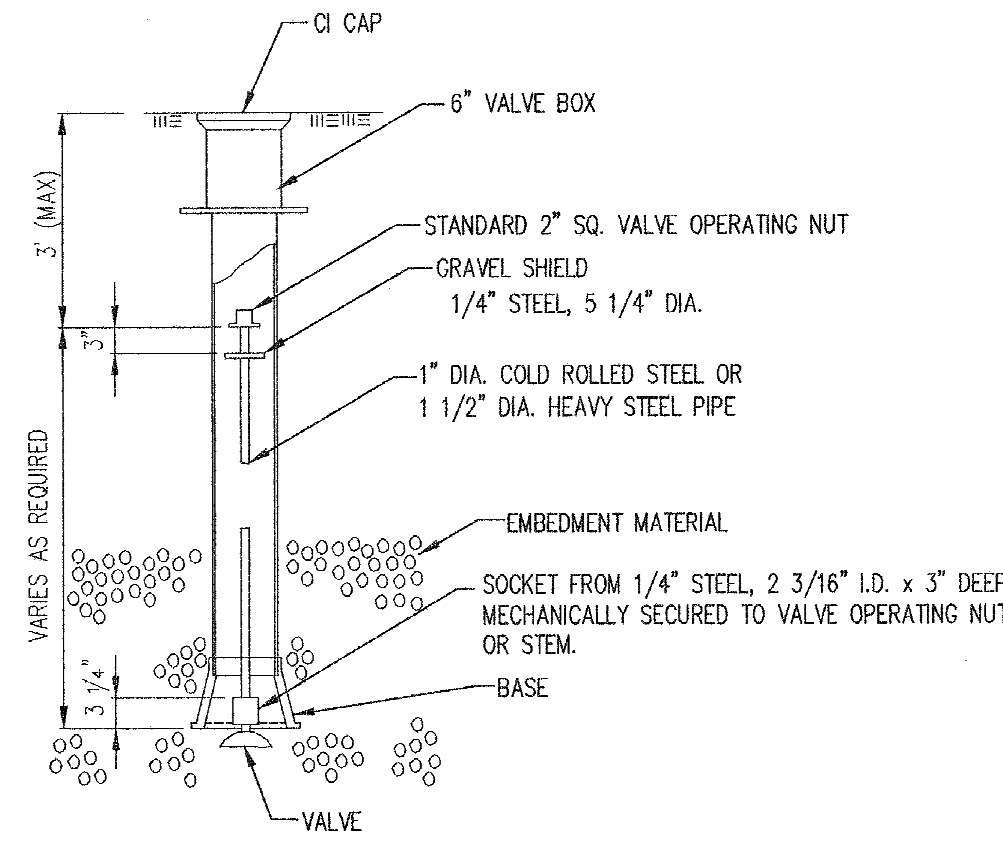


MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN 3". (COST SUBSIDIARY TO PIPE INSTALLATION)



**NOTES**  
1. This detail covers Butterfly Valve installation, inclusive, regardless of type of pipe or joint used. 24" and larger lines to be detailed on plans.  
2. 6" Valve Box and Cover required per City of Wichita Std. Specifications.  
3. Conc. Support Block to be full width of trench.

**CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION**

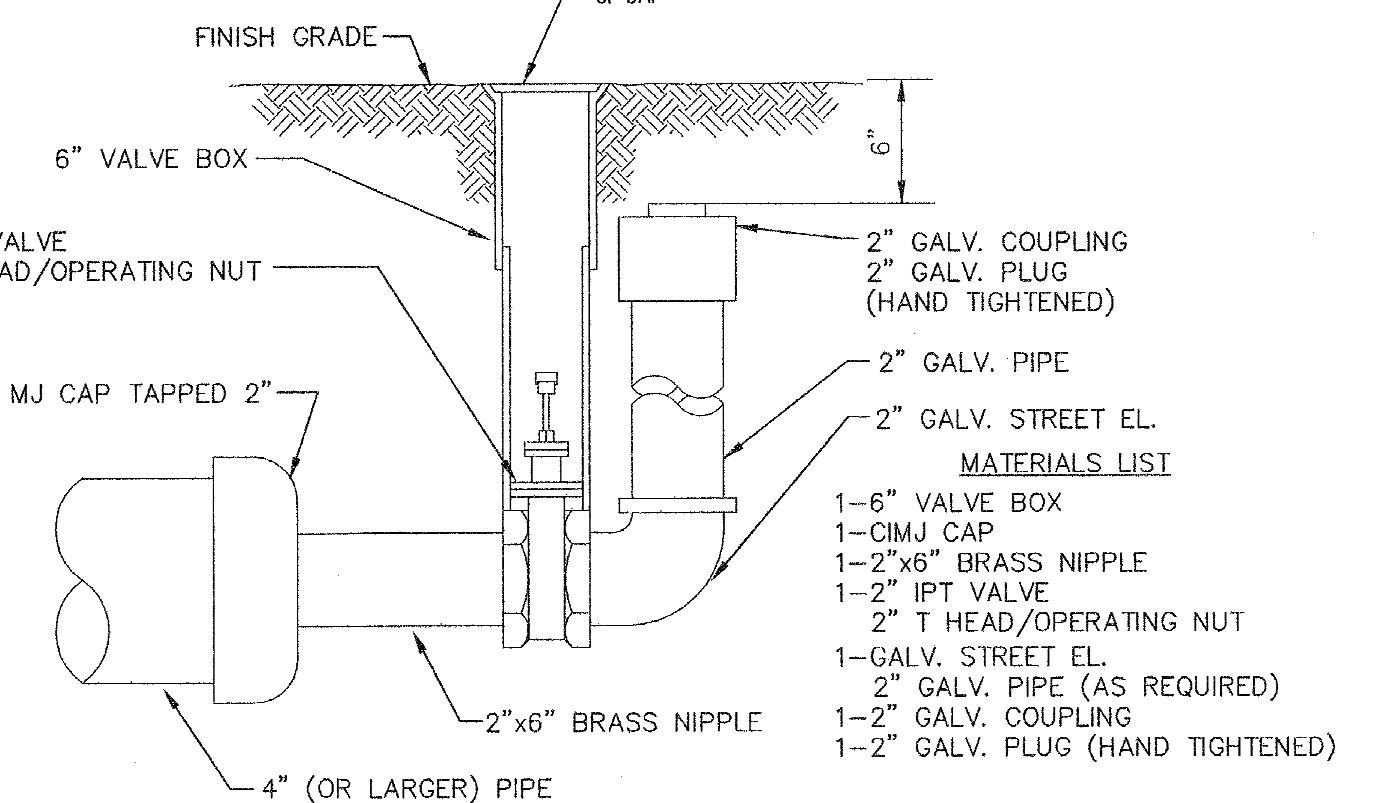


**VALVE STEM EXTENSION DETAIL**

NOTE: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.

**AS-BUILT PLANS - APRIL 2016**

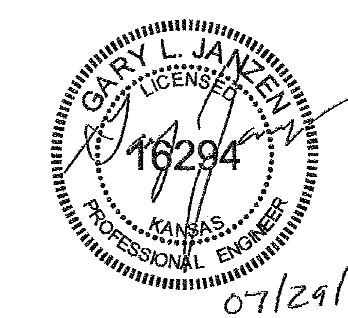
**2" BLOWOFF ASSEMBLY**

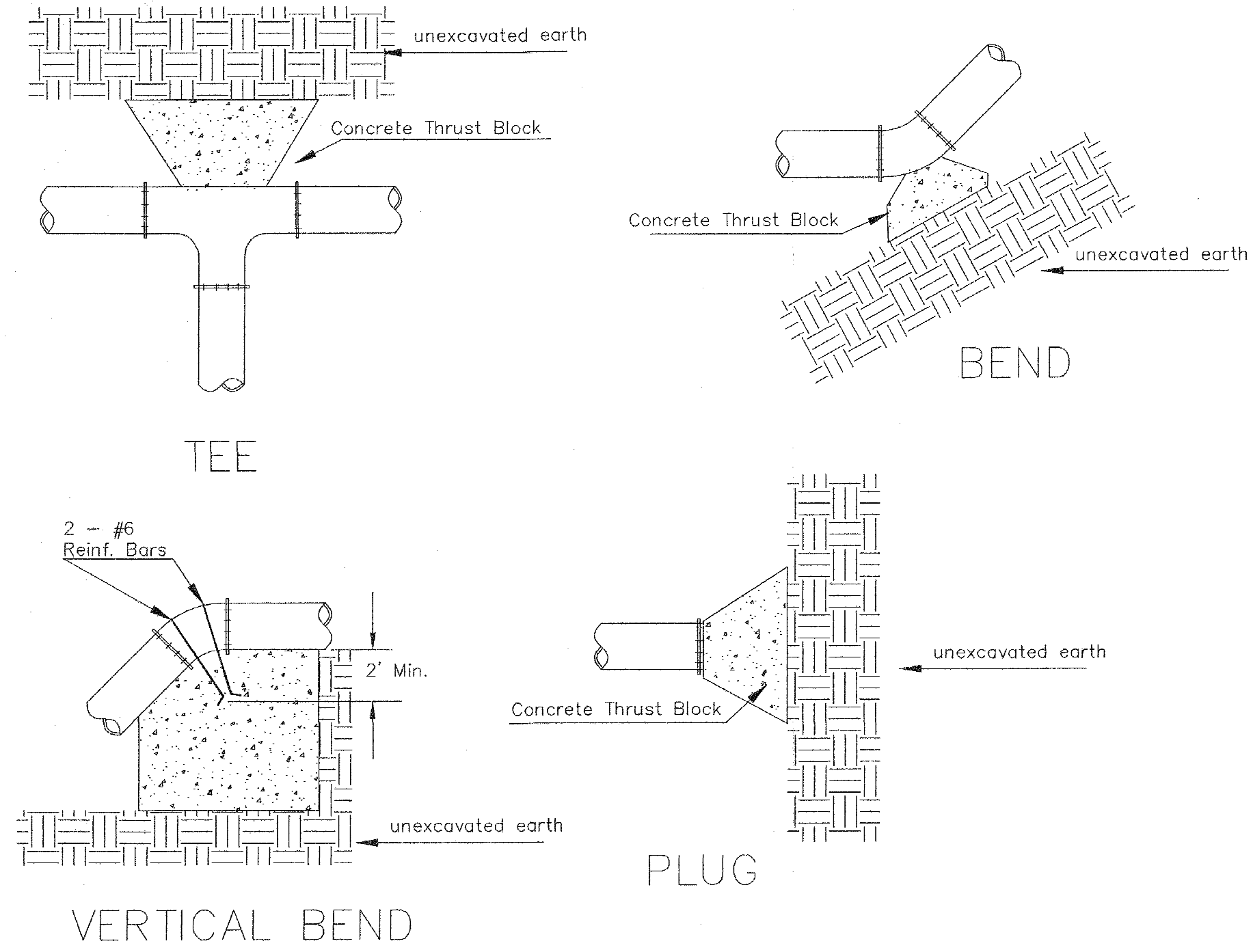


STANDARD WATER ASSEMBLY DETAIL  
CITY ENGINEER  
**GARY JANZEN, P.E.**

PROJECT NUMBER <b>1912PPW</b>	OCA NUMBER <b>607853</b>	DATE
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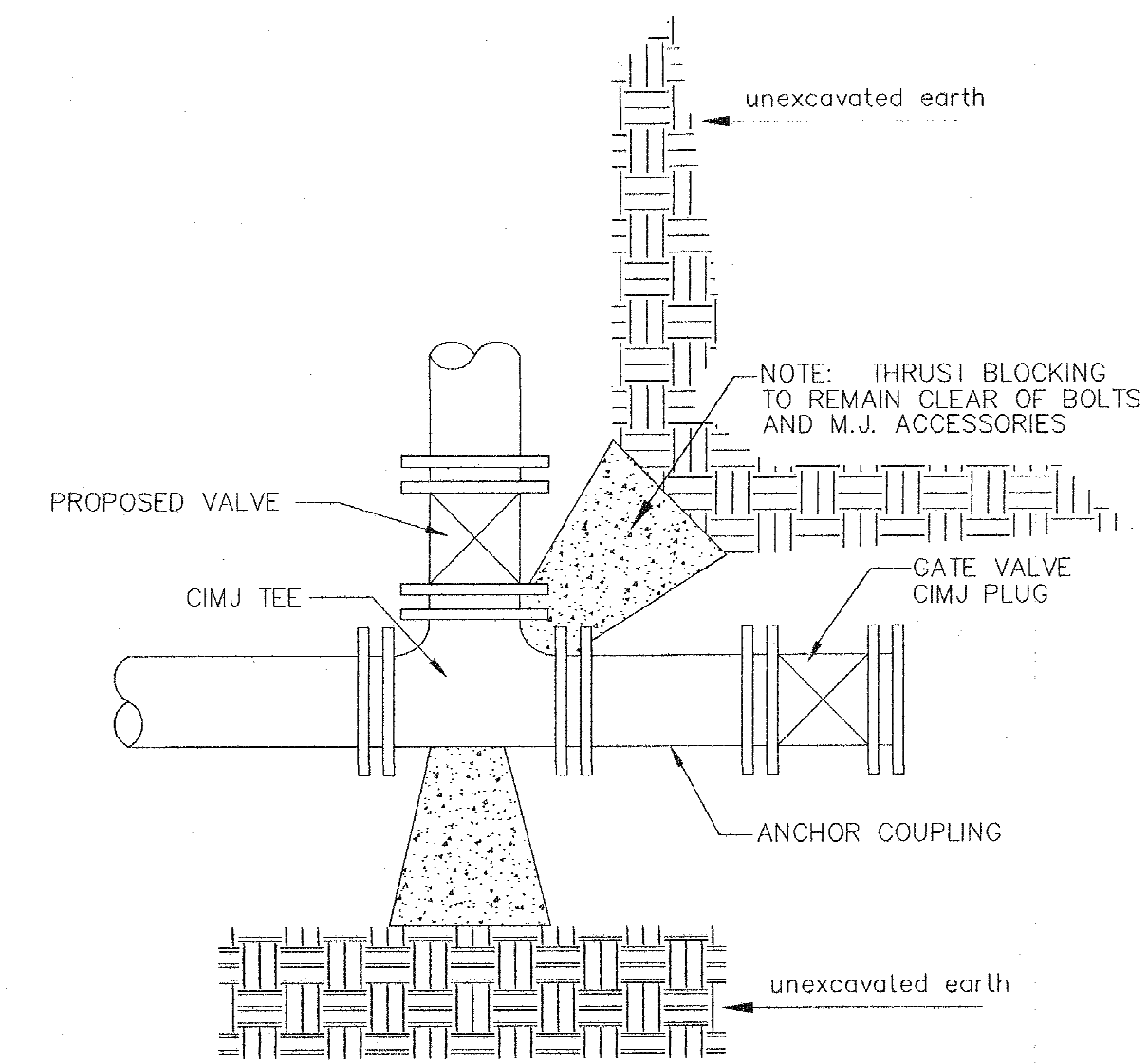
CITY ENGINEER'S OFFICE  
CITY HALL - SEVENTH FLOOR  
455 NORTH MAIN STREET  
WICHITA, KANSAS 67202-1620  
(316) 268-4501



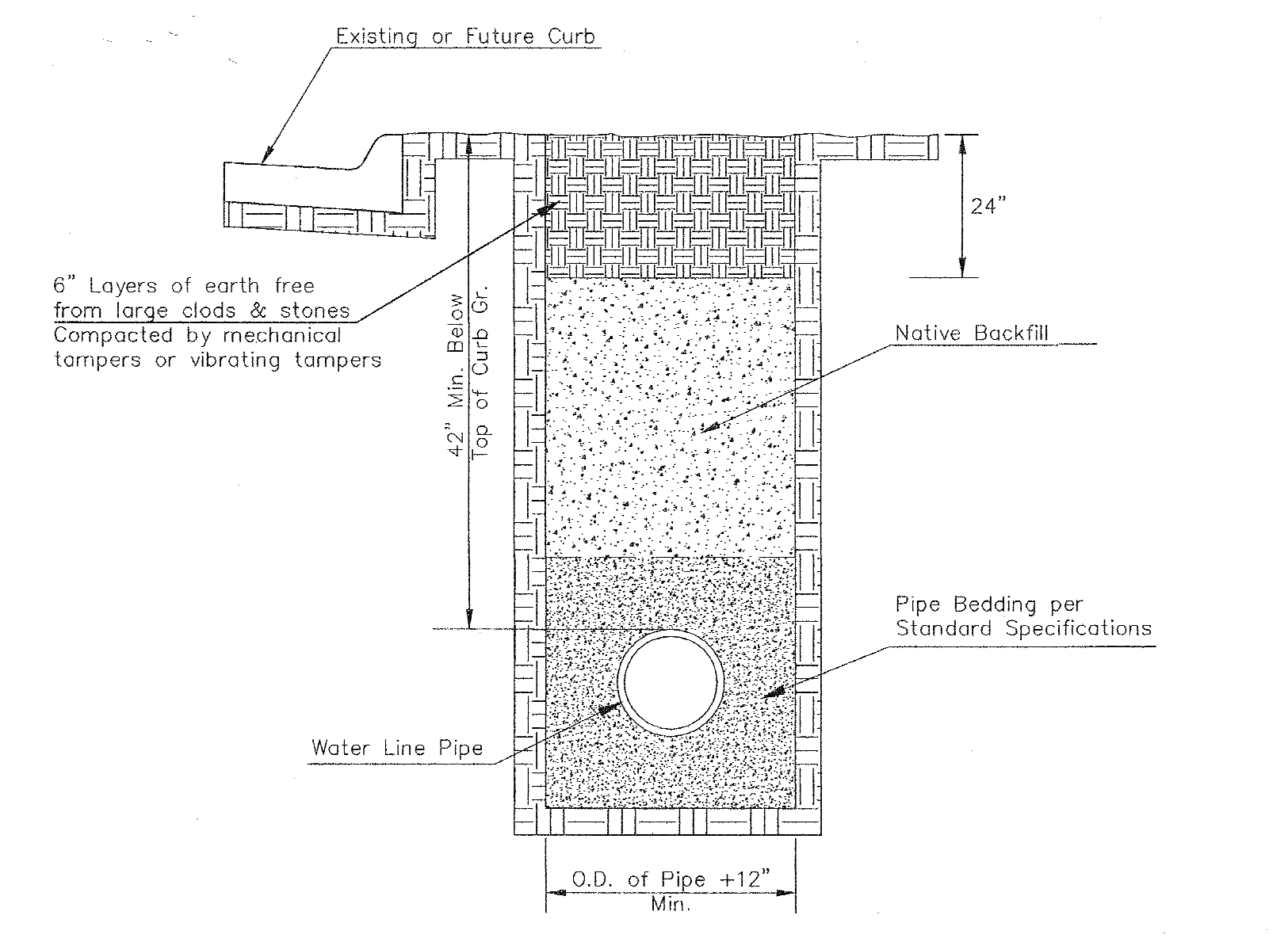


PIPE SIZE	THRUST AT FITTINGS IN TONS--AT 150#/IN <sup>2</sup> P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75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

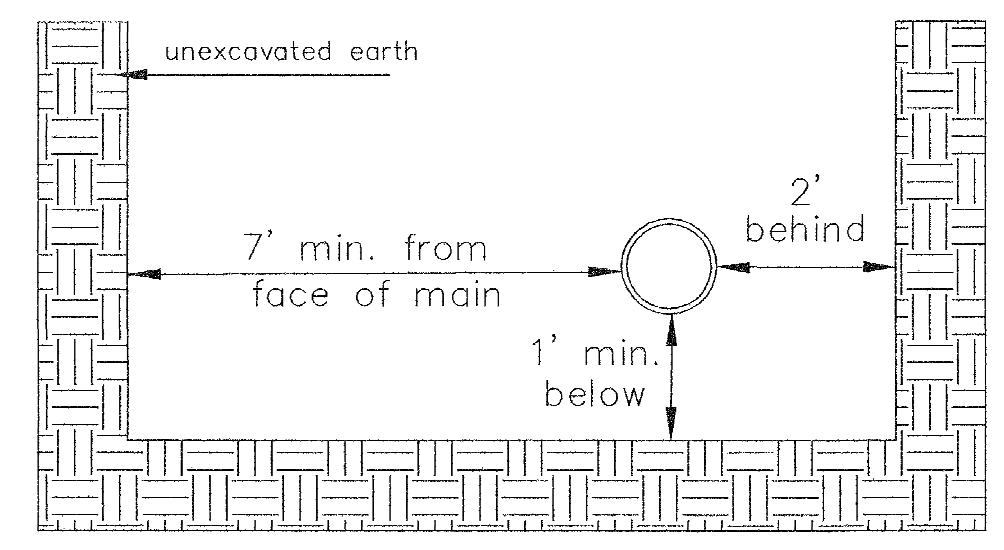
TYPICAL THRUST BLOCKS



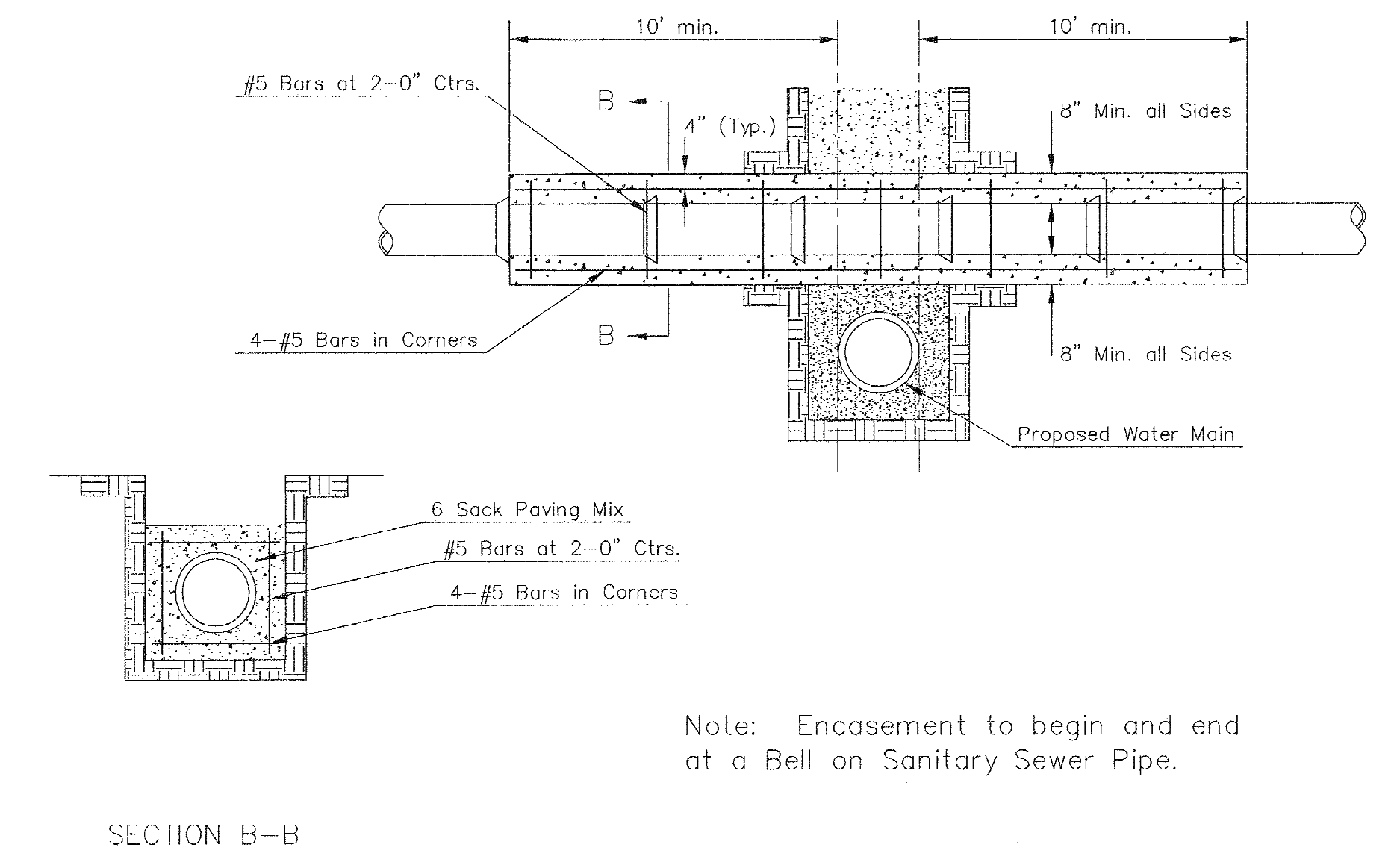
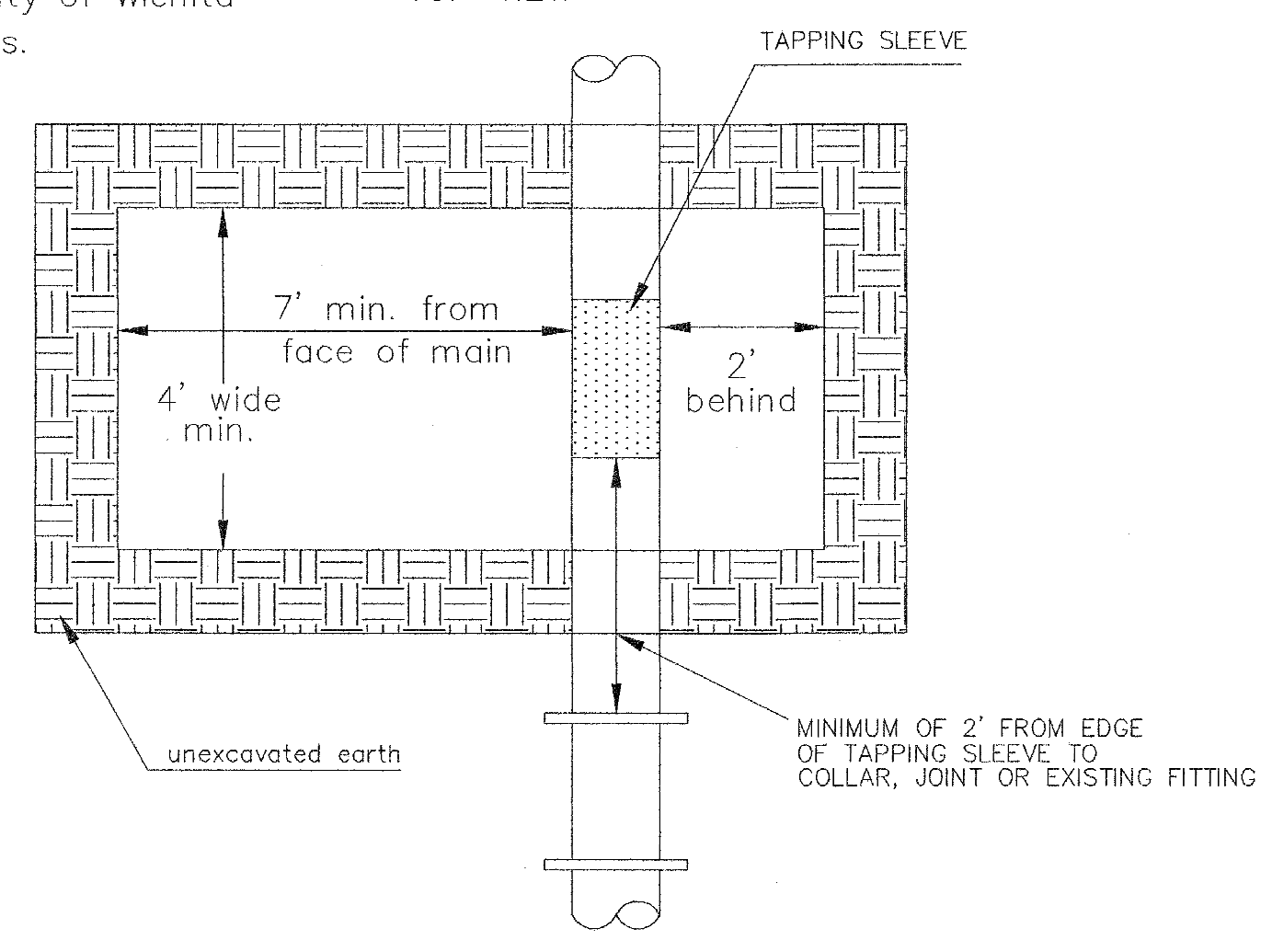
\* PLANS GOVERN UNLESS OTHERWISE NOTED ON PLANS



TRENCH COMPACTION IN ROAD RIGHT-OF-WAY

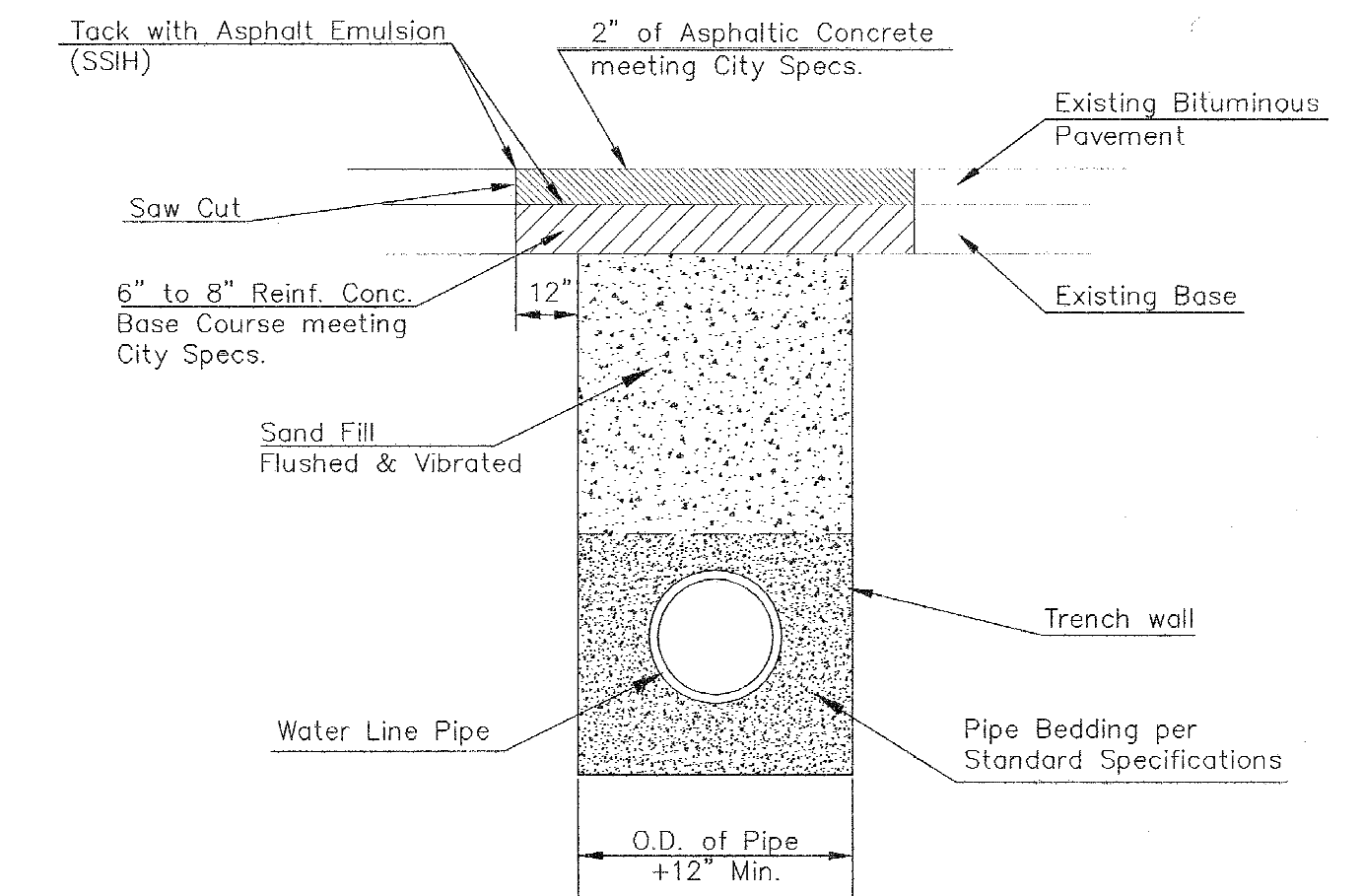


Note: When shoring is required it is to be per The City of Wichita Standard Specifications.



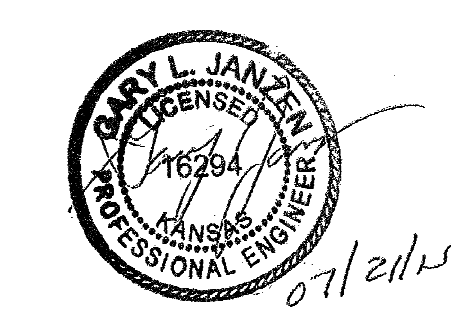
Note: Encasement to begin and end at a Bell on Sanitary Sewer Pipe.

REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER



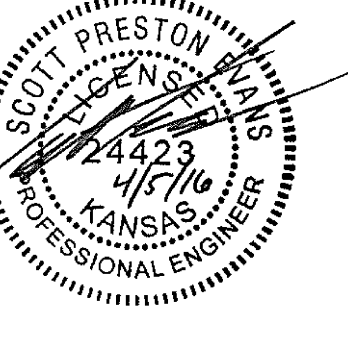
AS-BUILT PLANS - APRIL 2016

PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS



**CITY OF WICHITA**  
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION

MISCELLANEOUS WATER DETAILS		
CITY ENGINEER <b>GARY JANZEN, P.E.</b>		
PROJECT NUMBER 1912PPW	OCA NUMBER 607853	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET



REVISION	DATE

DIVISION OF ADMINISTRATION & FINANCE  
FACILITIES PLANNING  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0047  
Phone 316-978-3030

Department of Administration  
Office of Facilities & Procurement Management  
Design, Construction & Compliance  
800 SW Jackson, Suite 700  
Topeka, Kansas 66612-1216  
Phone 785-296-8899

WICHITA STATE UNIVERSITY  
INNOVATION CAMPUS INFRASTRUCTURE PHASE 1  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: KKL  
CHECKED BY: BLB

DATE: 8/18/2015  
WATER LINE DETAILS  
A-012817  
17 OF 34

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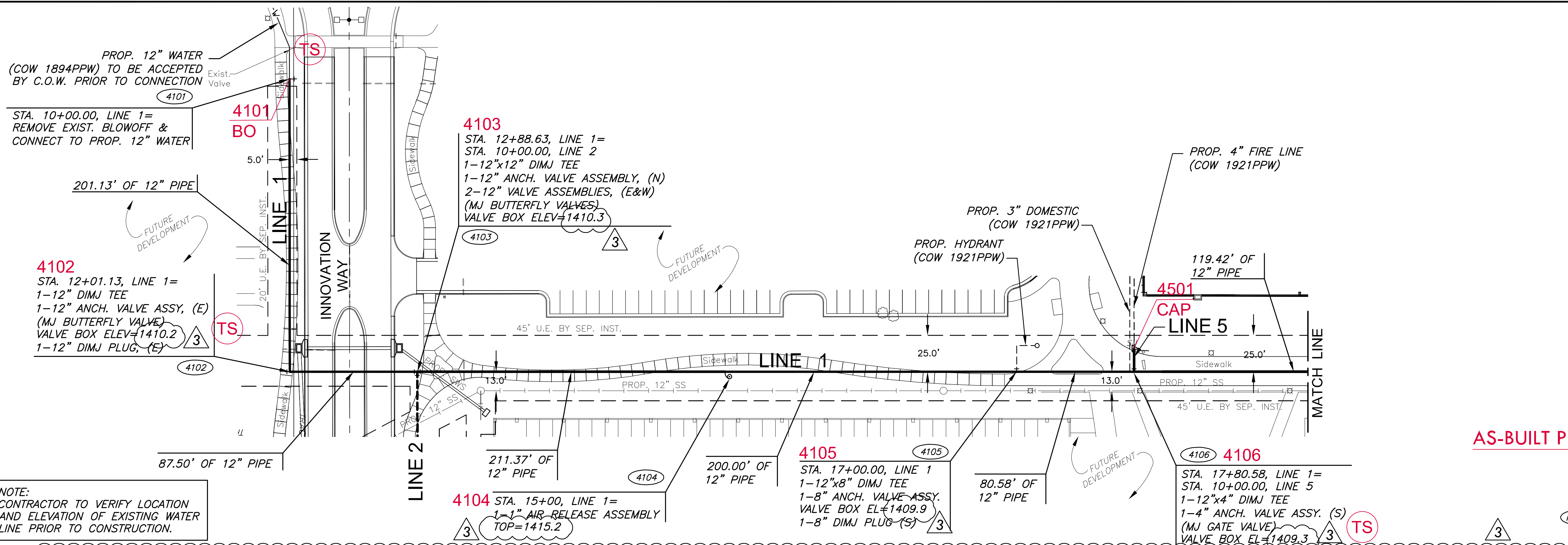
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2	10/07/15

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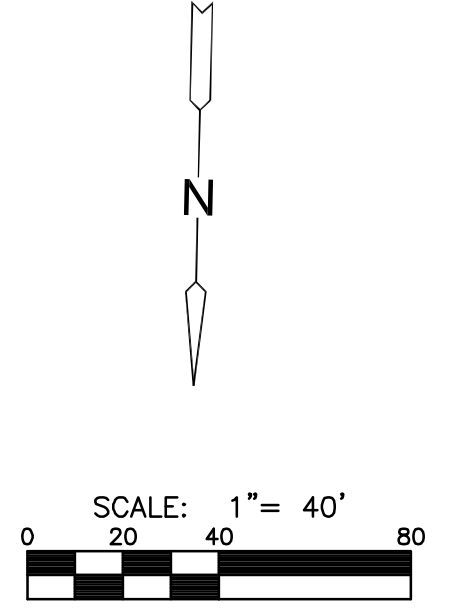
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WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE**  
PHASE 1  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: KKL  
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DATE: 8/16/2015

WATER LINE 1  
A-012817  
18 OF 34  
ORIGINAL CONTRACT DOCUMENTS



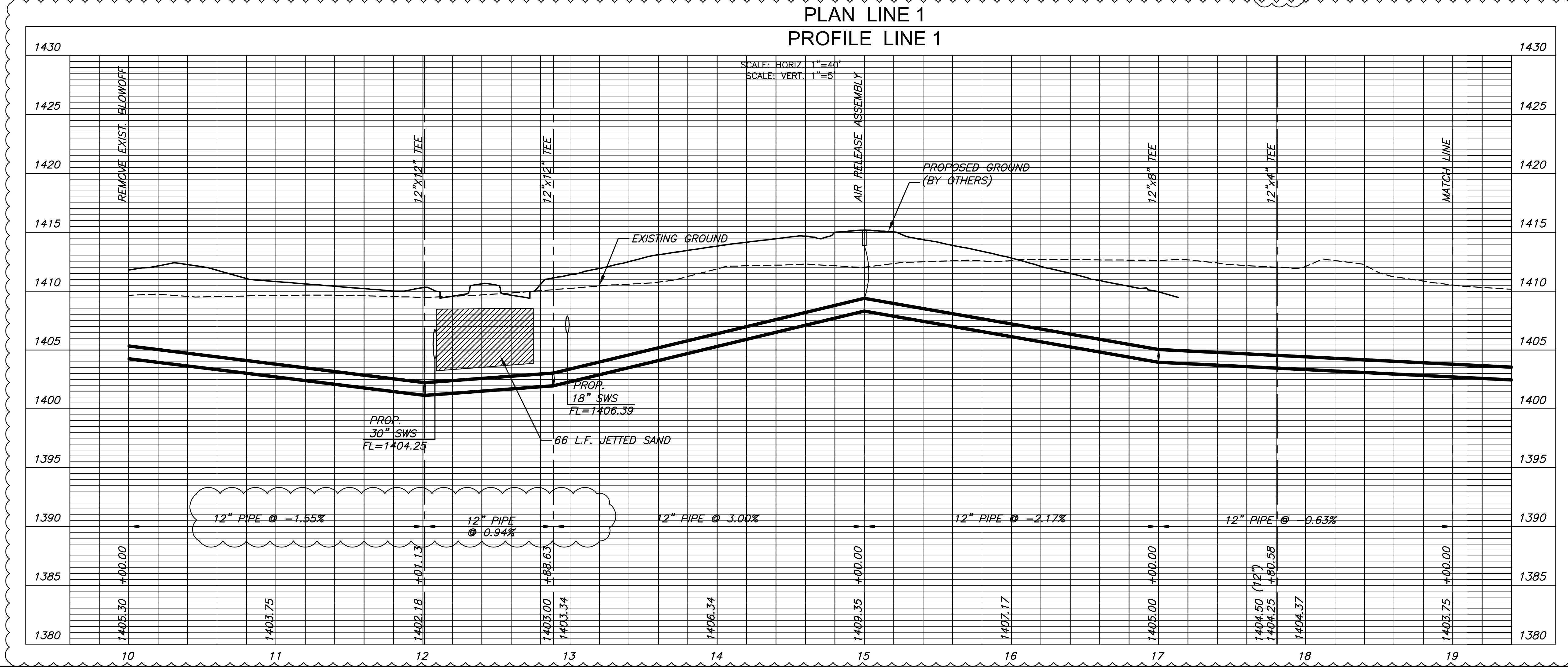
NOTE:  
CONTRACTOR TO VERIFY LOCATION  
AND ELEVATION OF EXISTING WATER  
LINE PRIOR TO CONSTRUCTION.



AS-BUILT PLANS - APRIL 2016

**LEGEND**

PT.## BUBBLE MAP POINT NUMBER



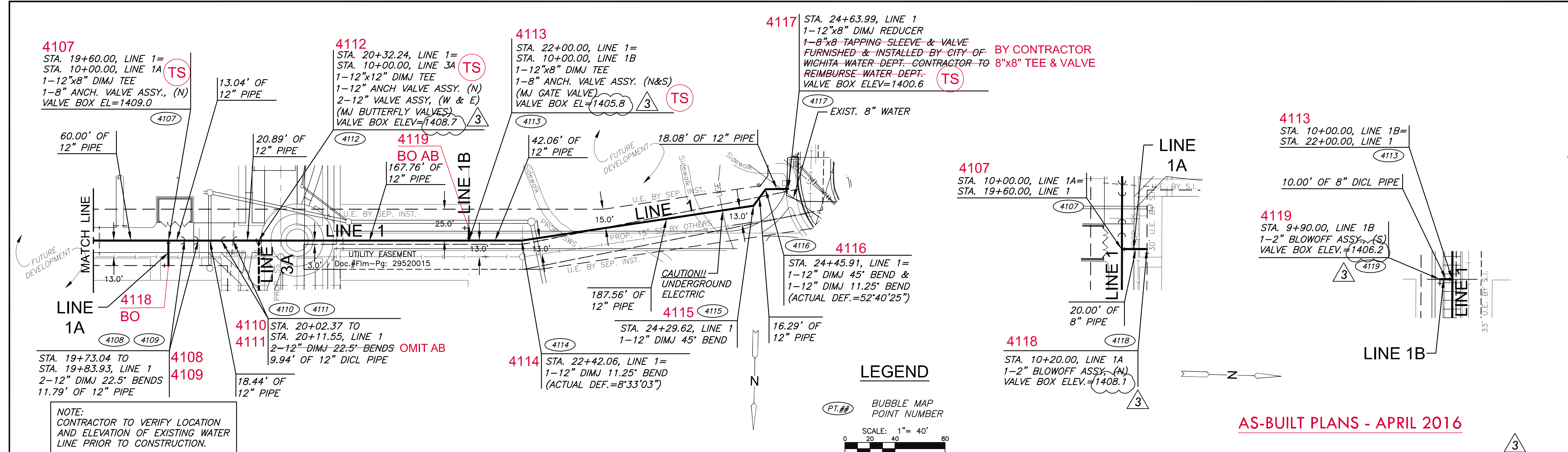
REVISION	DATE
3	12/02/15
2	10/07/15

DIVISION OF ADMINISTRATION & FINANCE  
FACILITIES PLANNING  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0047  
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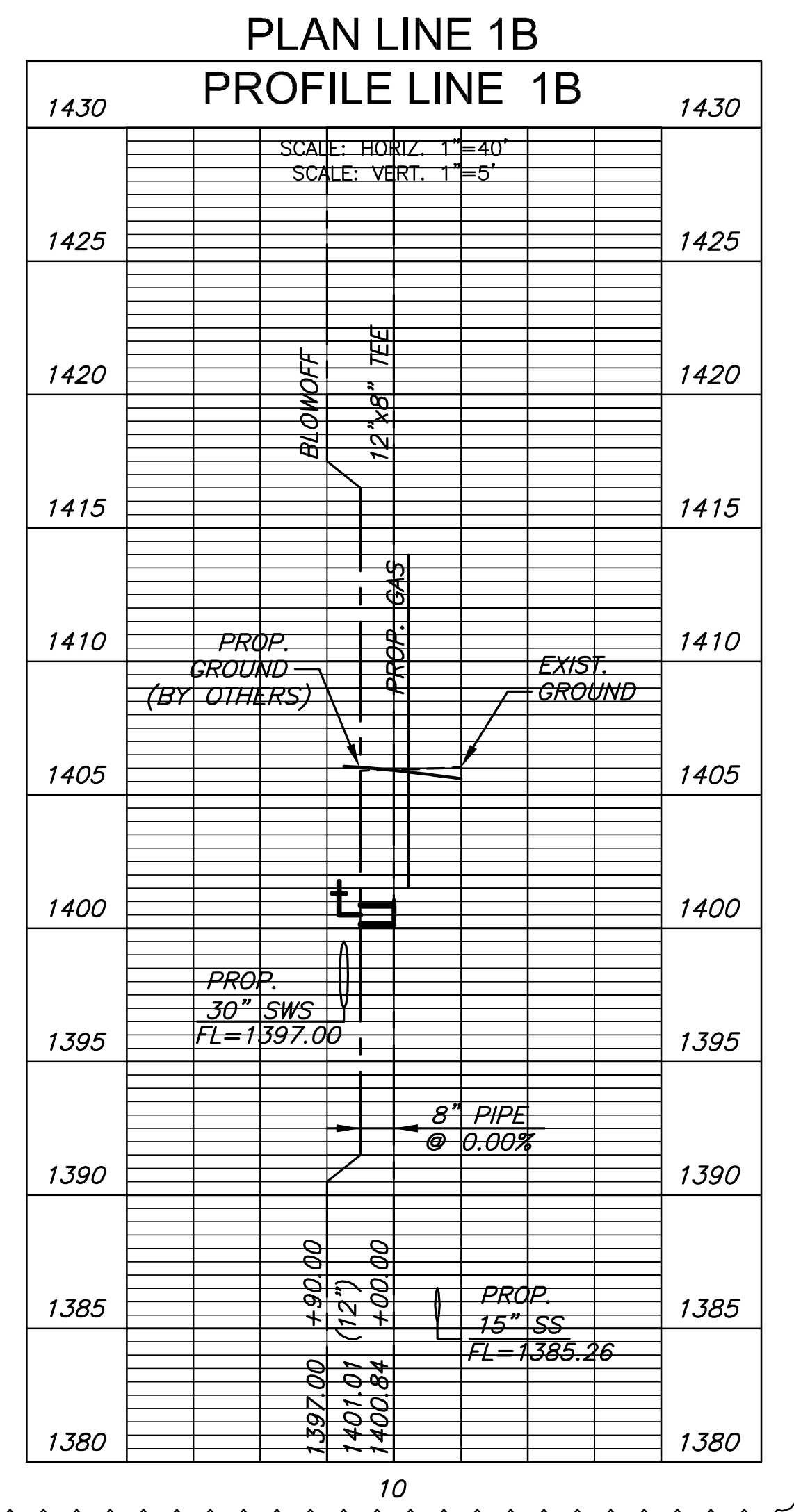
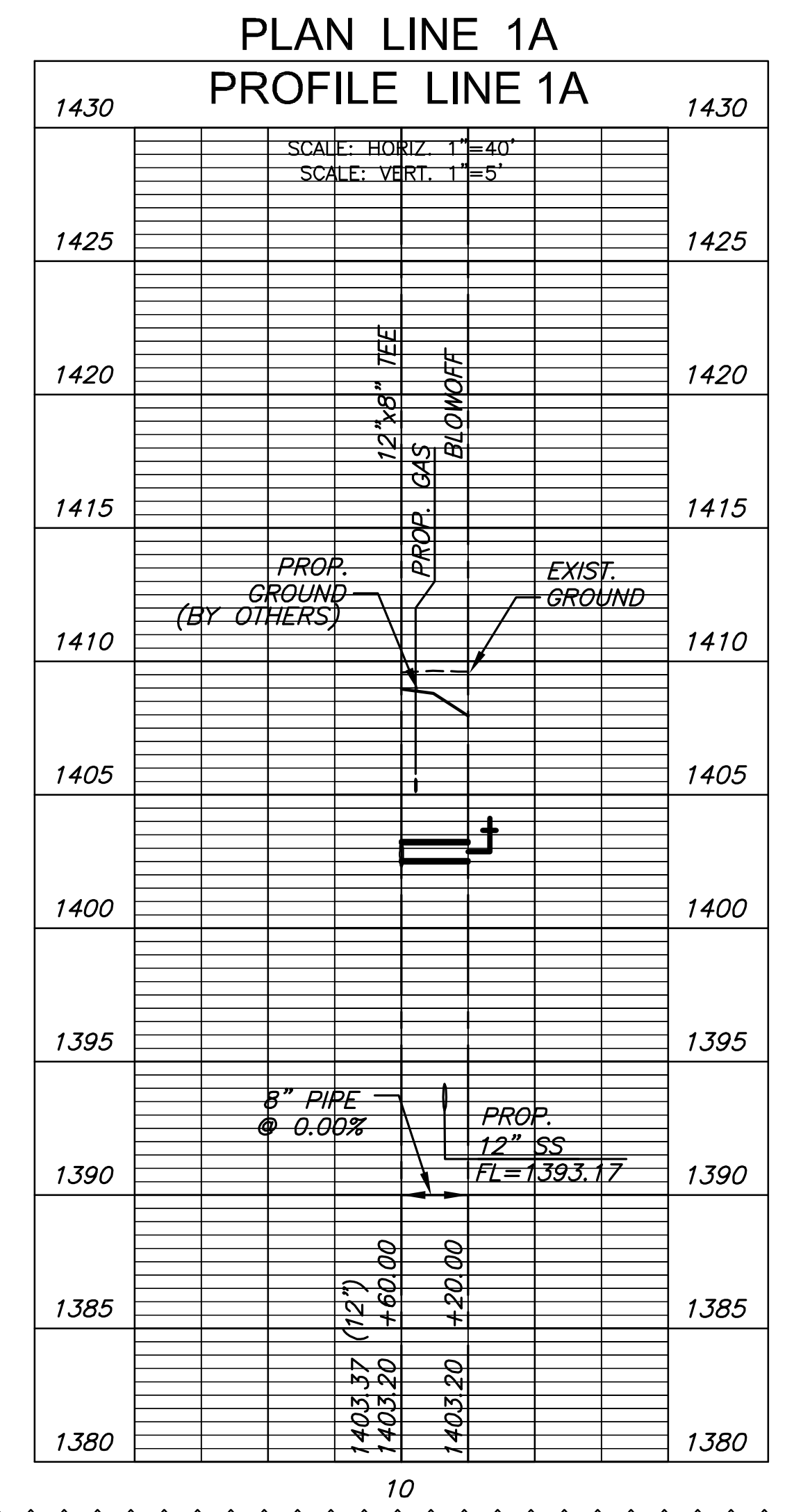
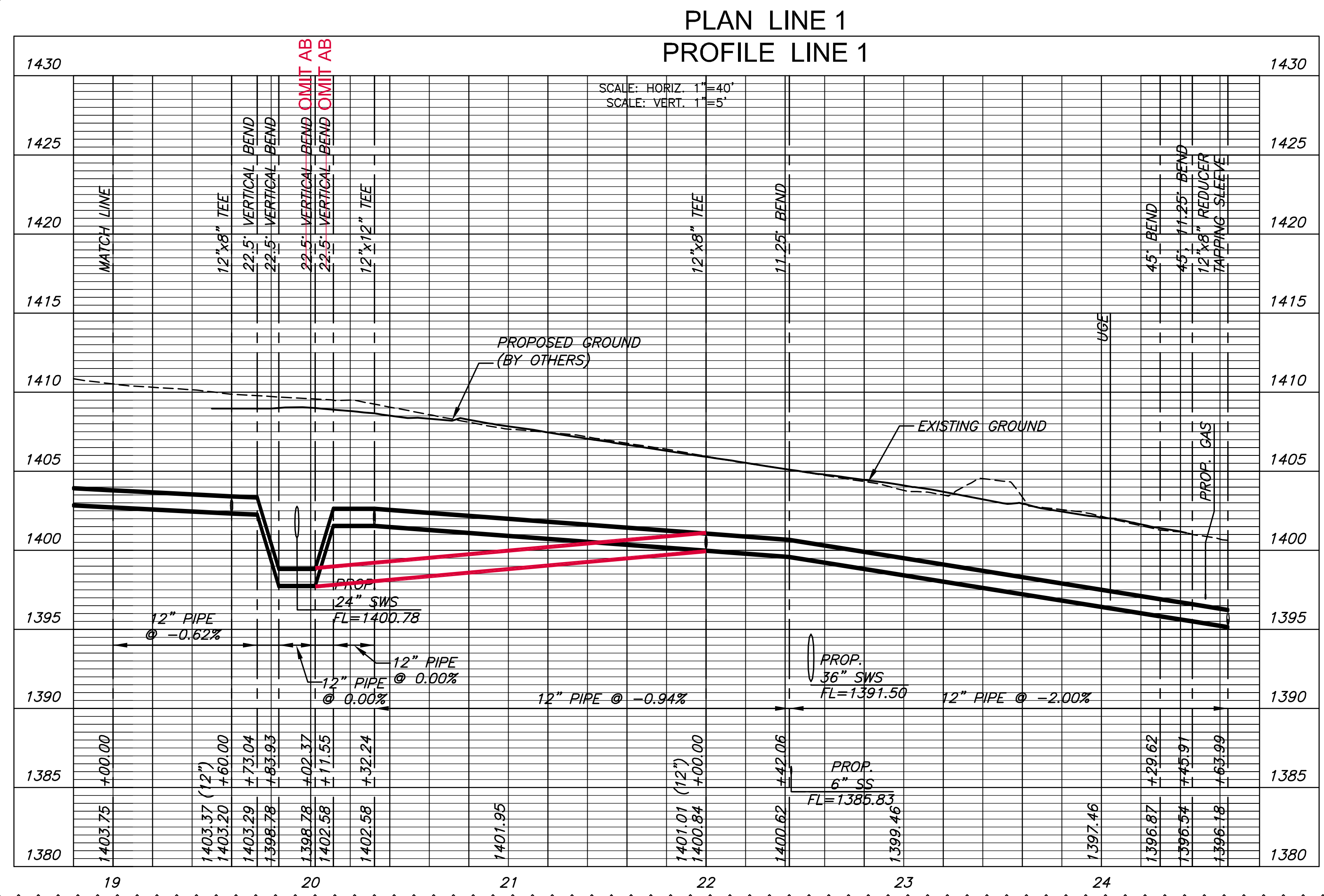
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Topeka, Kansas 66612-1216  
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WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE**  
PHASE 1  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: KKL  
CHECKED BY: BLB  
DATE: 8/16/2015

WATER LINES 1, 1A & 1B  
A-012817  
19 OF 34  
ORIGINAL CONTRACT DOCUMENTS



AS-BUILT PLANS - APRIL 2016



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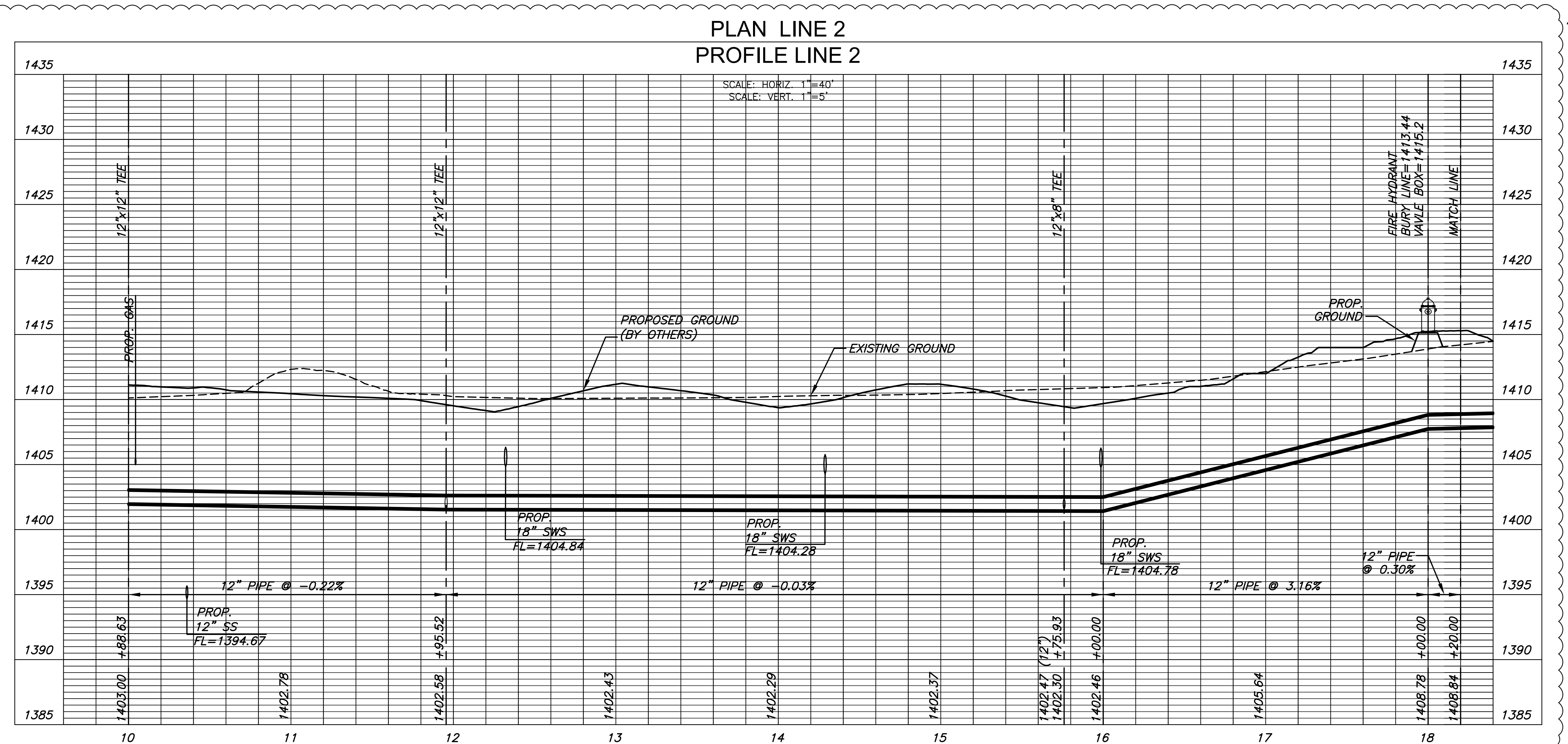
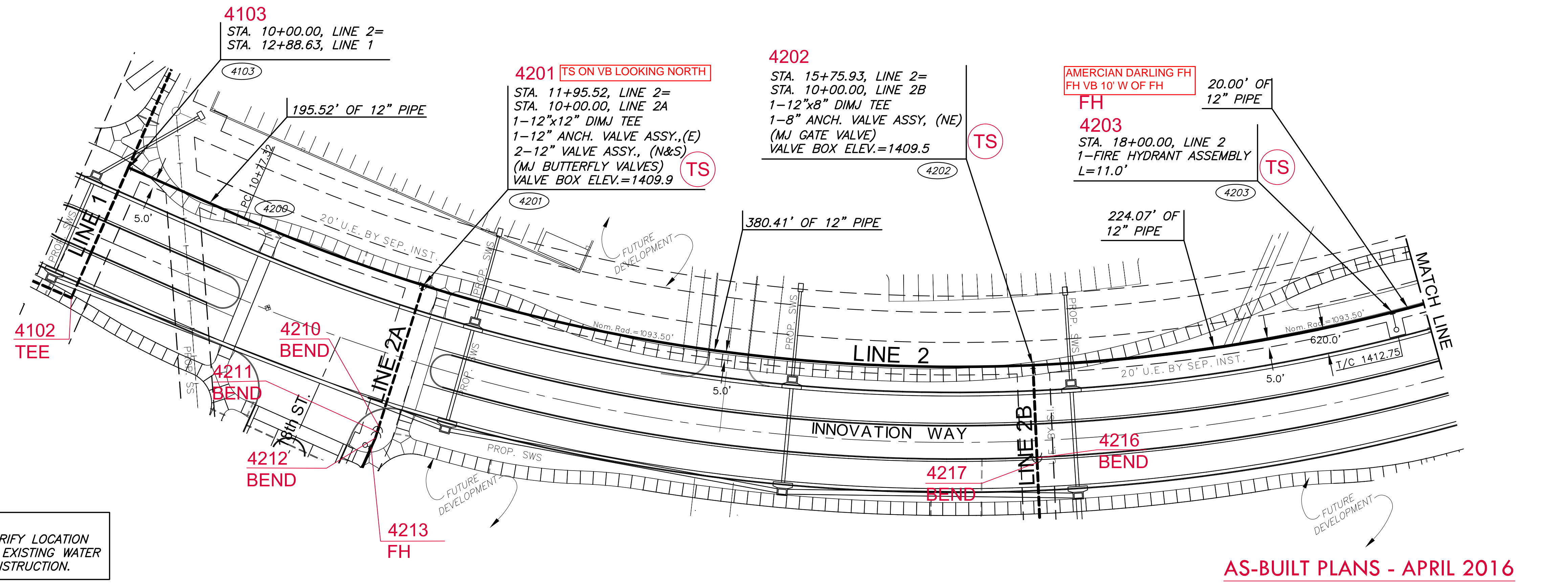
REVISION	DATE
3	12/02/15
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**INNOVATION CAMPUS INFRASTRUCTURE  
PHASE 1**  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
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DATE: 8/18/2015

WATER LINE 2  
A-012817  
20 OF 34  
ORIGINAL CONTRACT DOCUMENTS



**4204** TEST STATION ON ALL 3 VALVES  
 STA. 18+62.39, LINE 2=  
 STA. 10+00.00, LINE 4  
 1-12"x12" DIMJ TEE  
 1-12" ANCH. VALVE ASSY. (NE)  
 2-12" VALVE ASSEMBLIES, (NW & SE)  
 (MJ BUTTERFLY VALVES)  
 VALVE BOX ELEV.=1415.1

**4205**  
 STA. 20+00.00, LINE 2  
 1-1" AIR RELEASE ASSEMBLY  
 TOP=1414.5

**4207**  
 STA. 22+28.28 LINE 2=  
 STA. 20+98.94, LINE 3  
 1-12"x12" DIMJ TEE  
 1-12" ANCH. VALVE ASSY. (SE)  
 2-12" VALVE ASSEMBLIES, (NE & SW)  
 (MJ BUTTERFLY VALVES)  
 VALVE BOX ELEV.=1413.6  
 1-12"x8" DIMJ REDUCER (NE)

**4317 BEND**  
 31.72' OF 8" PIPE

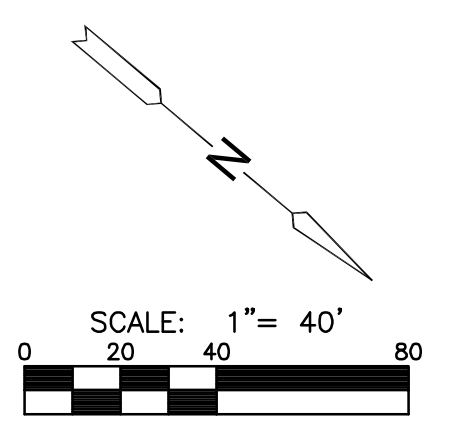
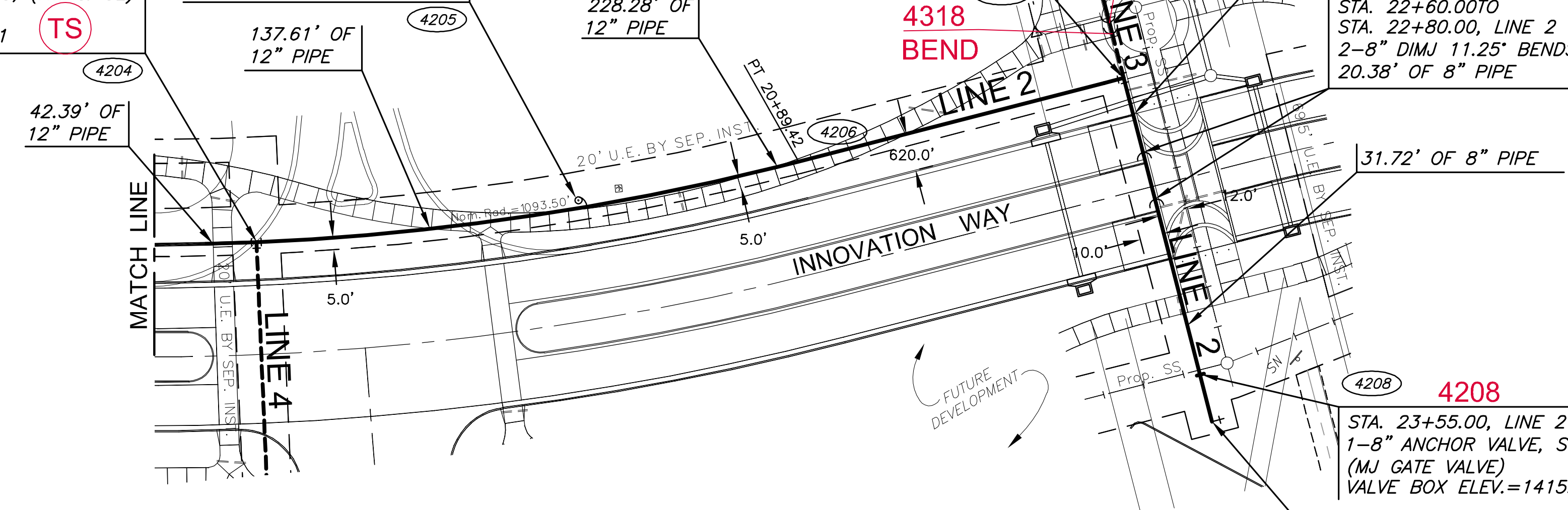
**4318 BEND**

STA. 22+60.00 TO  
 STA. 22+80.00, LINE 2  
 2-8" DIMJ 11.25' BENDS  
 20.38' OF 8" PIPE

**4208**  
 STA. 23+55.00, LINE 2  
 1-8" ANCHOR VALVE, SPECIAL  
 (MJ GATE VALVE)  
 VALVE BOX ELEV.=1415.5

**4209**  
 STA. 23+75.00, LINE 2  
 1-2" BLOWOFF ASSEMBLY  
 VALVE BOX ELEV.=1416.3

TRACER WIRE WAS EXTENDED TO THE BLOWOFF TO BE ABLE TO HOOK ON TO WHEN LINE IS EXTENDED IN FUTURE.

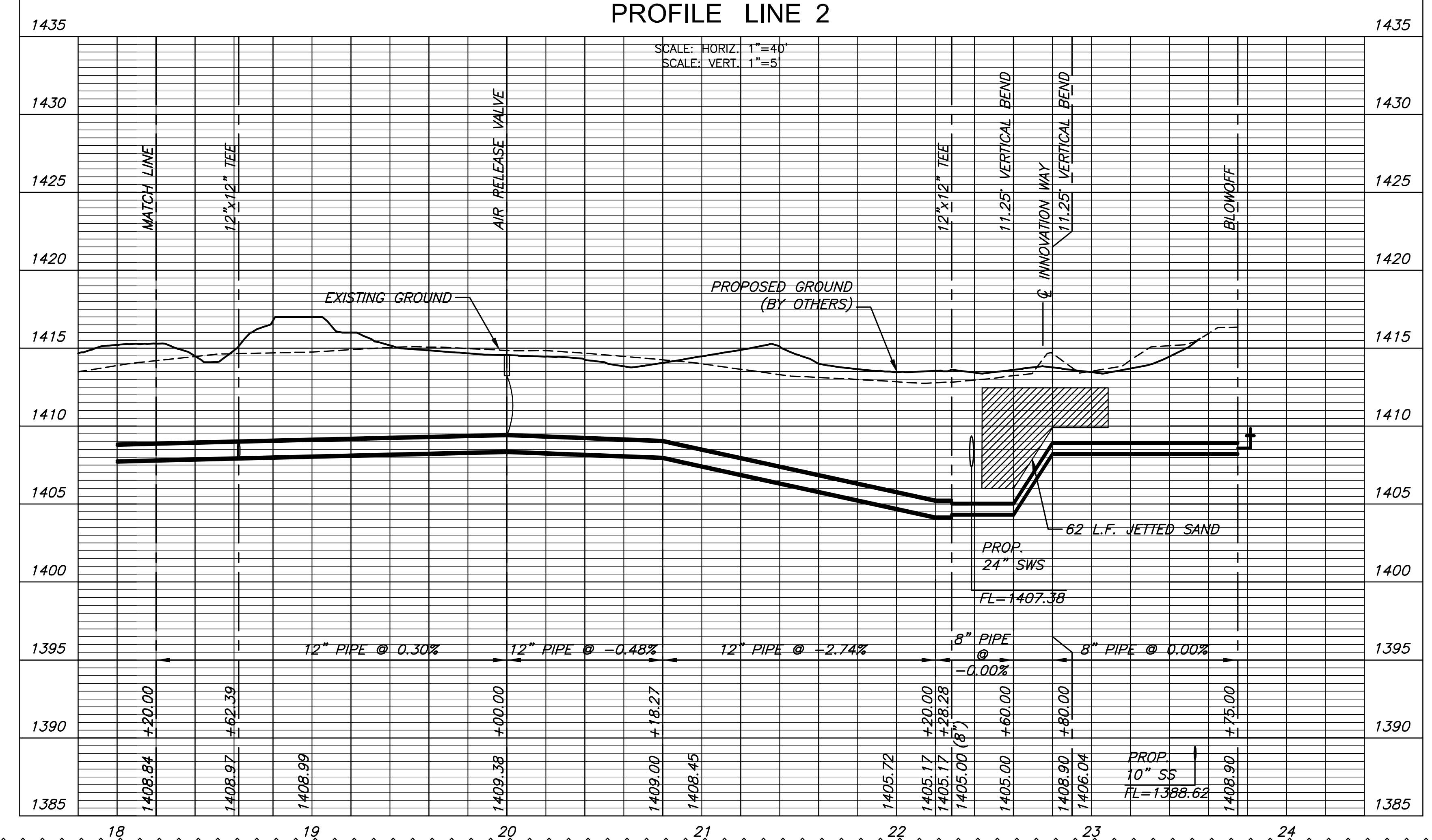


**LEGEND**

PT.## BUBBLE MAP POINT NUMBER

NOTE:  
 CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING WATER LINE PRIOR TO CONSTRUCTION.

**PLAN LINE 2  
 PROFILE LINE 2**



AS-BUILT PLANS - APRIL 2016



REVISION	DATE
3 REVISIONS	12/02/15
2 REVISIONS	10/07/15

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**INNOVATION CAMPUS INFRASTRUCTURE  
 PHASE 1**  
 1845 FAIRMOUNT ST.  
 WICHITA, KANSAS 67260-0023  
 DRAWN BY: KKL CHECKED BY: BLB

WATER LINE 2  
 A-012817  
 21 OF 34  
 ORIGINAL CONTRACT DOCUMENTS

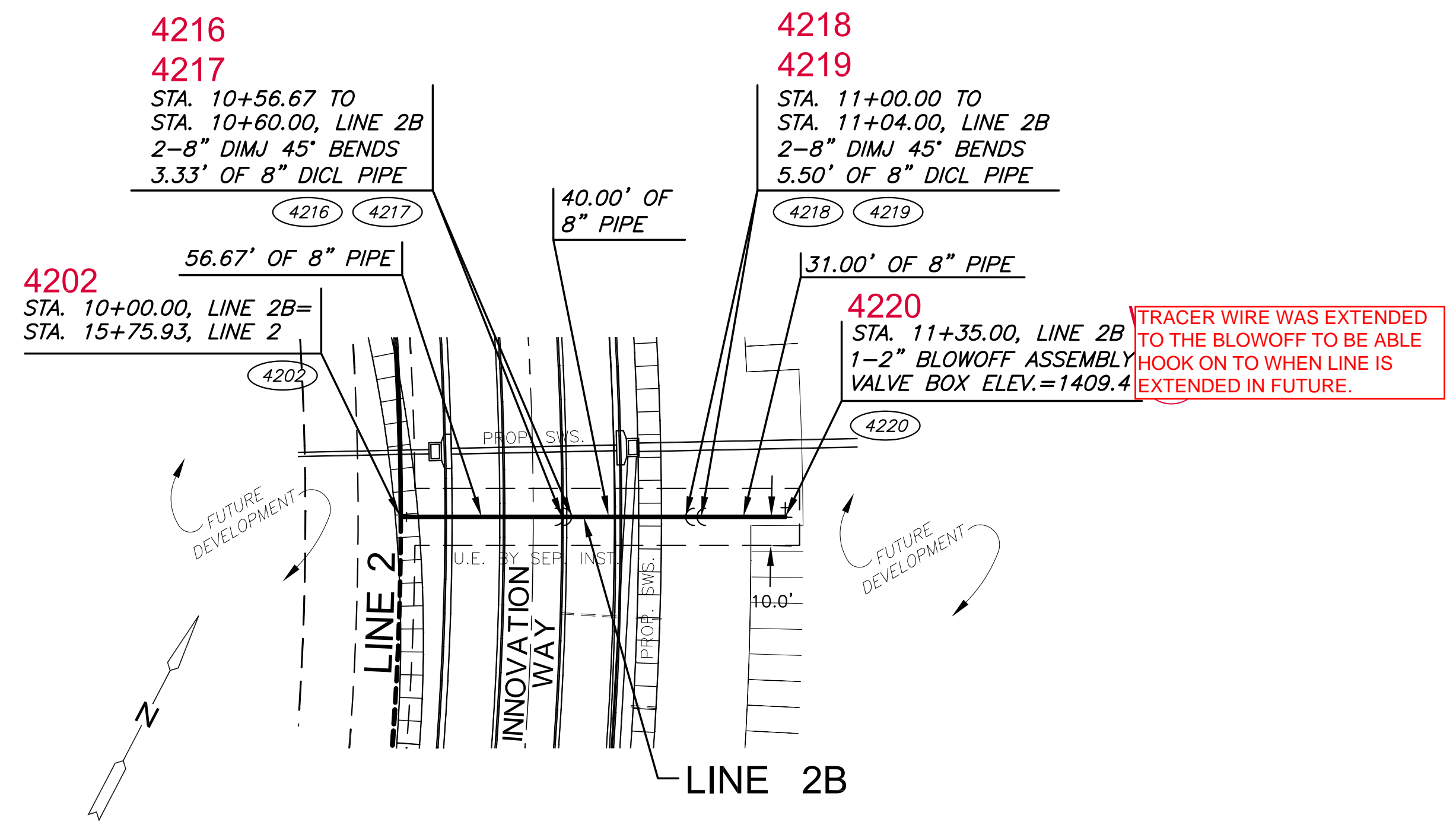
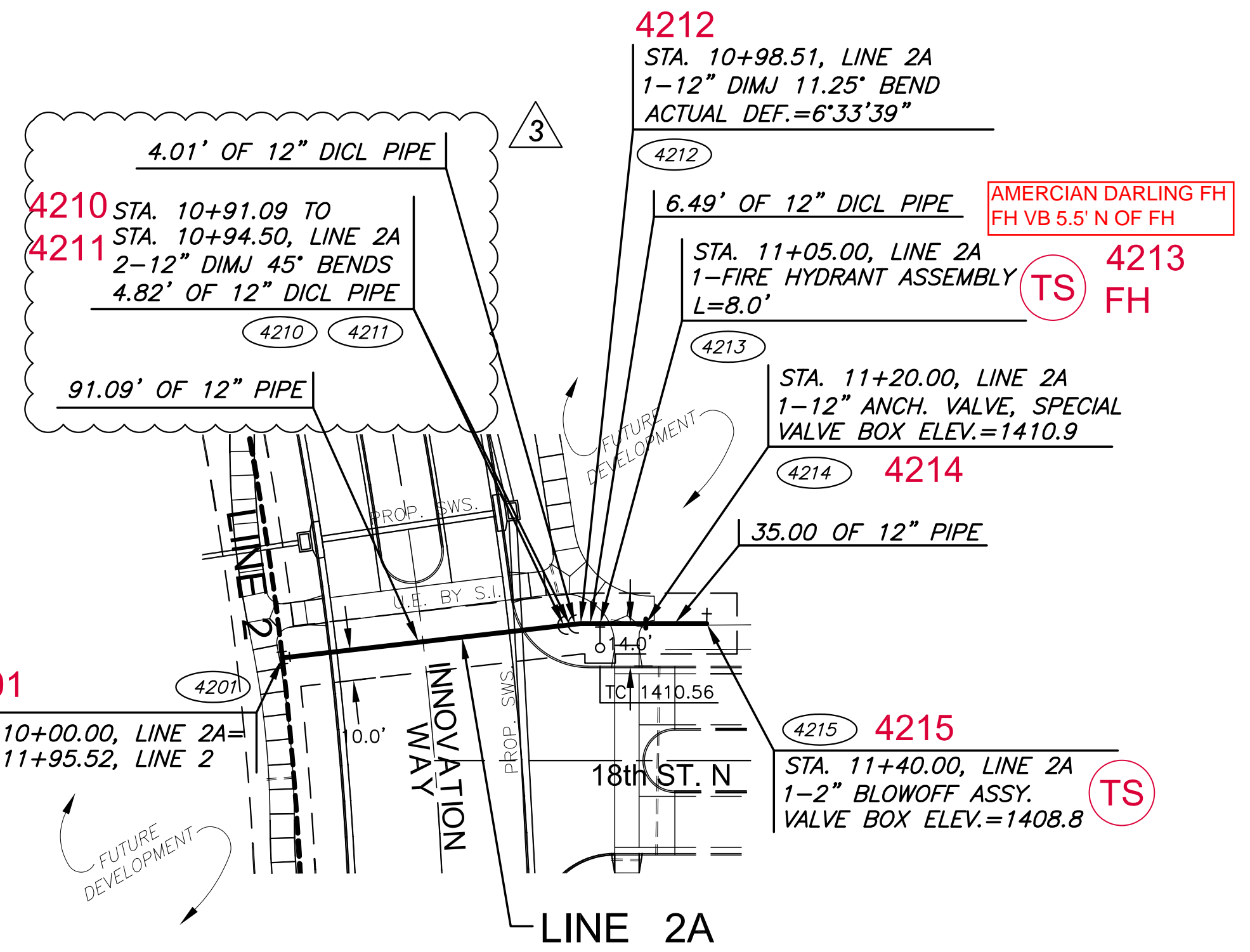
REVISION	DATE
3	12/20/15
2	10/07/15
1	

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WICHITA, KANSAS 67260-0047  
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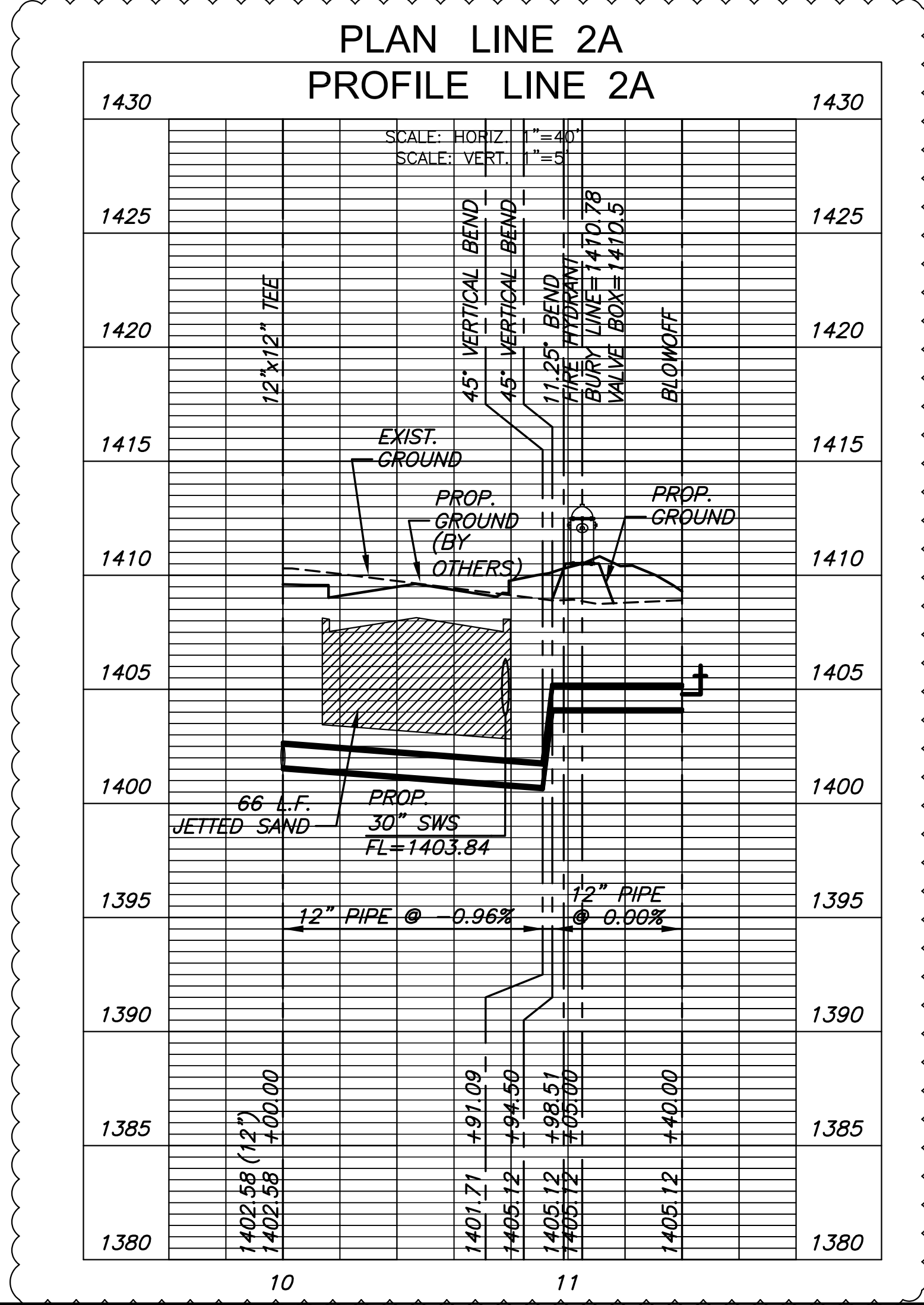
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Topeka, Kansas 66612-1216  
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WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE  
PHASE 1**  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: RKL  
CHECKED BY: BLB  
DATE: 8/18/2015

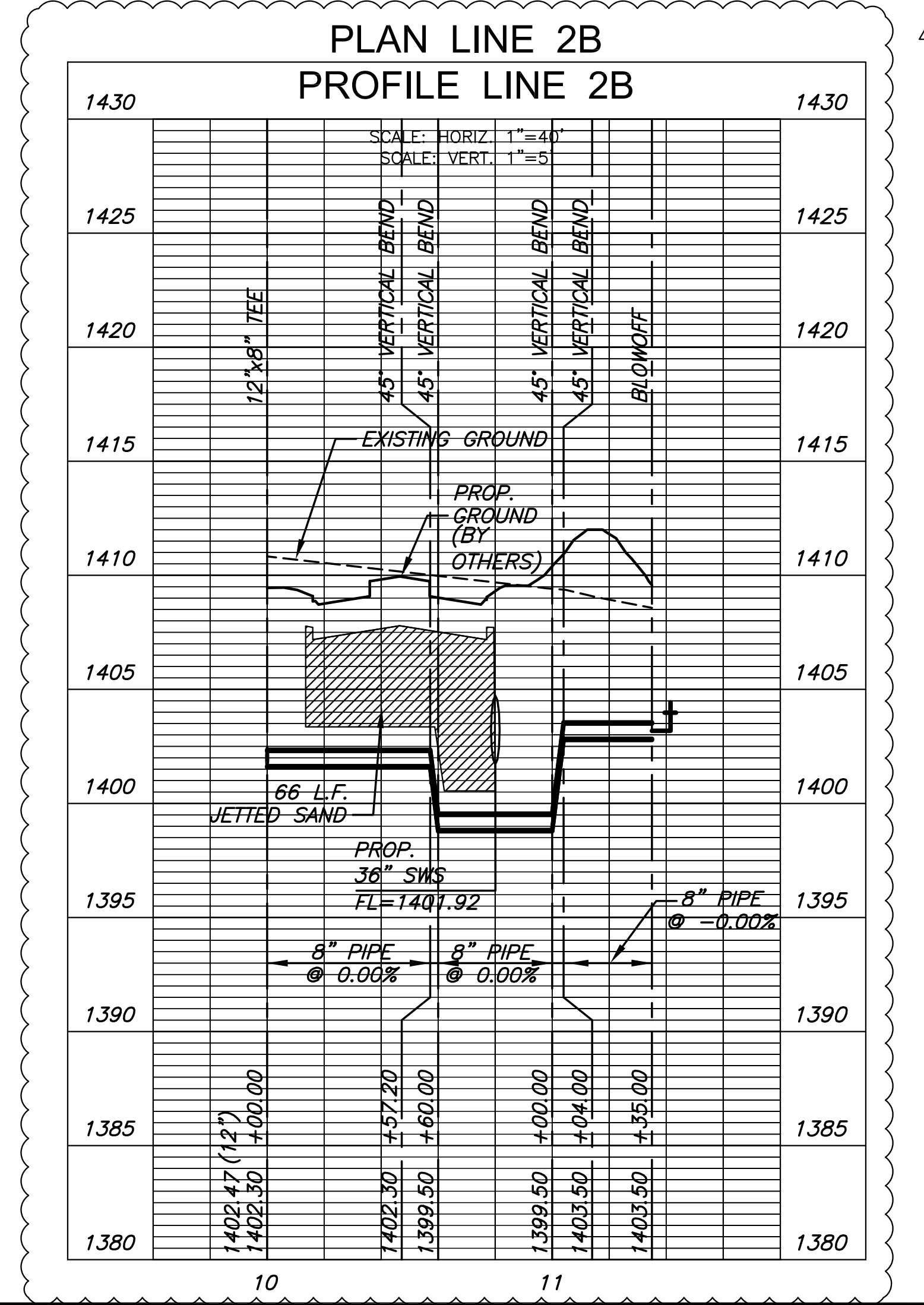
WATER LINES  
2A & 2B  
A-012817  
22 OF 34  
ORIGINAL  
CONTRACT  
DOCUMENTS

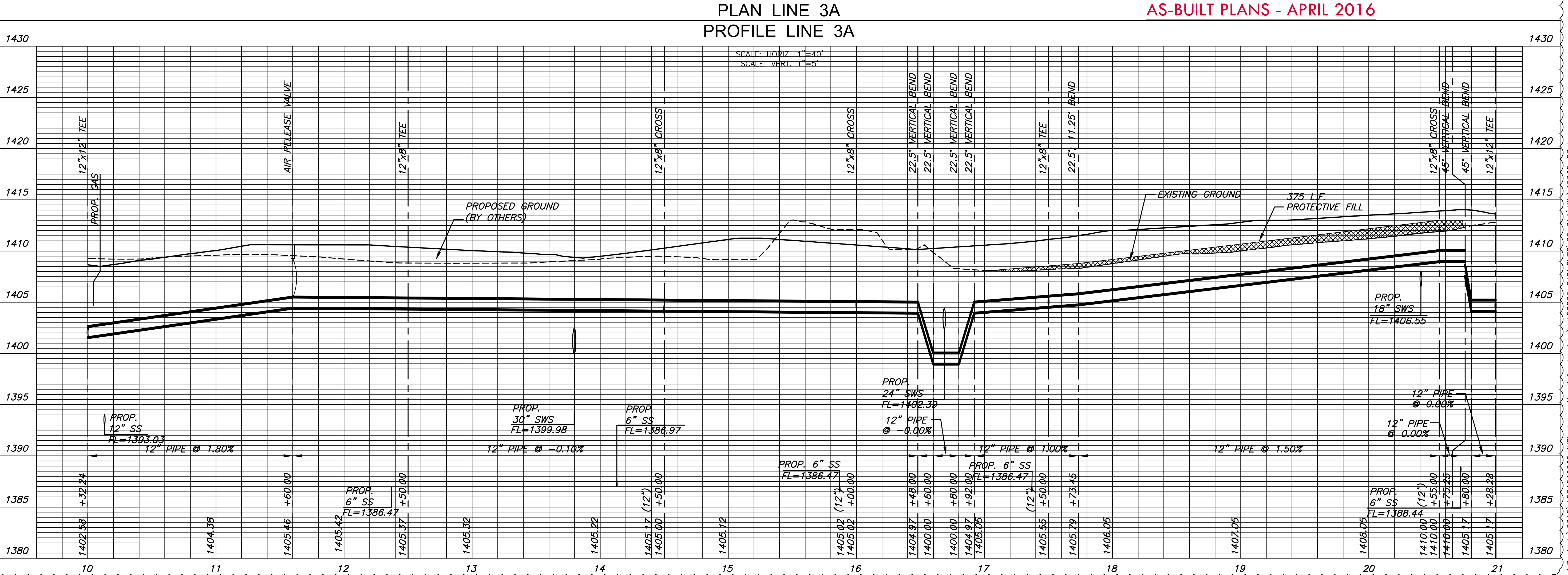
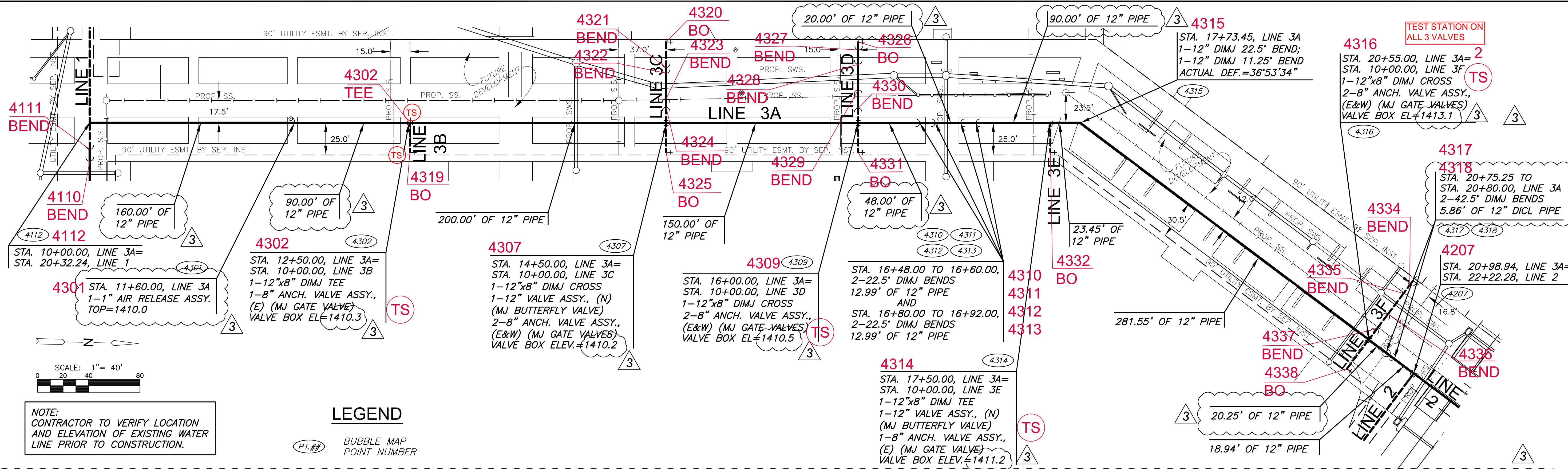


NOTE:  
CONTRACTOR TO VERIFY LOCATION  
AND ELEVATION OF EXISTING WATER  
LINE PRIOR TO CONSTRUCTION.



**LEGEND**  
PT.# BUBBLE MAP POINT NUMBER





**MKEC**  
Wichita, KS - 316-684-9600

SCOTT PRESTON  
Professional Engineer  
KANSAS  
1007715

REVISION	DATE
3	12/20/15
2	10/07/15

DIVISION OF ADMINISTRATION & FINANCE

FACILITIES PLANNING

1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0047  
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Topeka, Kansas 66612-1216  
Phone 785-296-8899

**INNOVATION CAMPUS INFRASTRUCTURE PHASE 1**

WICHITA STATE UNIVERSITY

1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023

DRAWN BY: KKL  
CHECKED BY: BLB

DATE: 8/18/2015

**WATER LINE 3A**

A-012817

23 OF 34

ORIGINAL CONTRACT DOCUMENTS

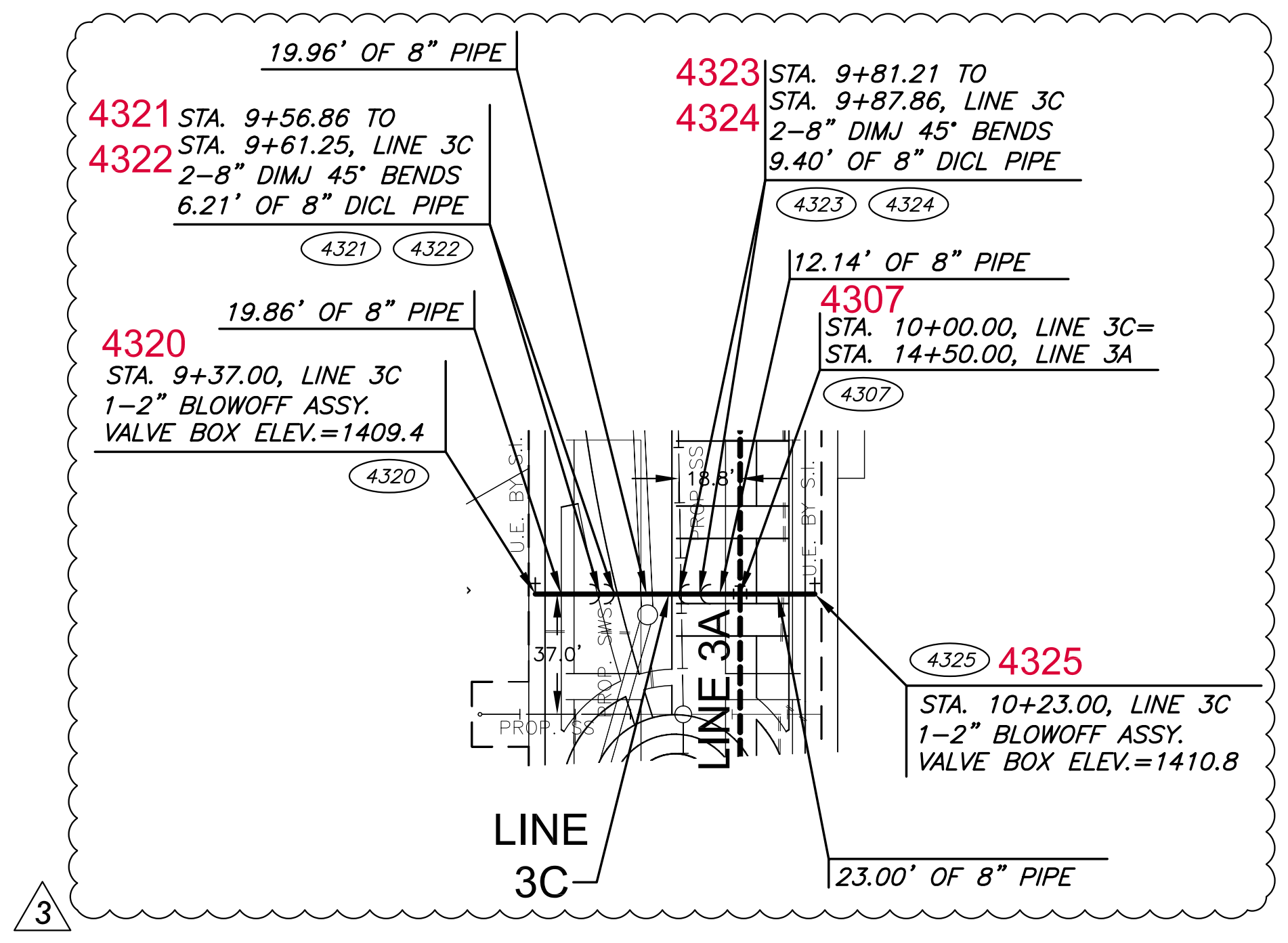
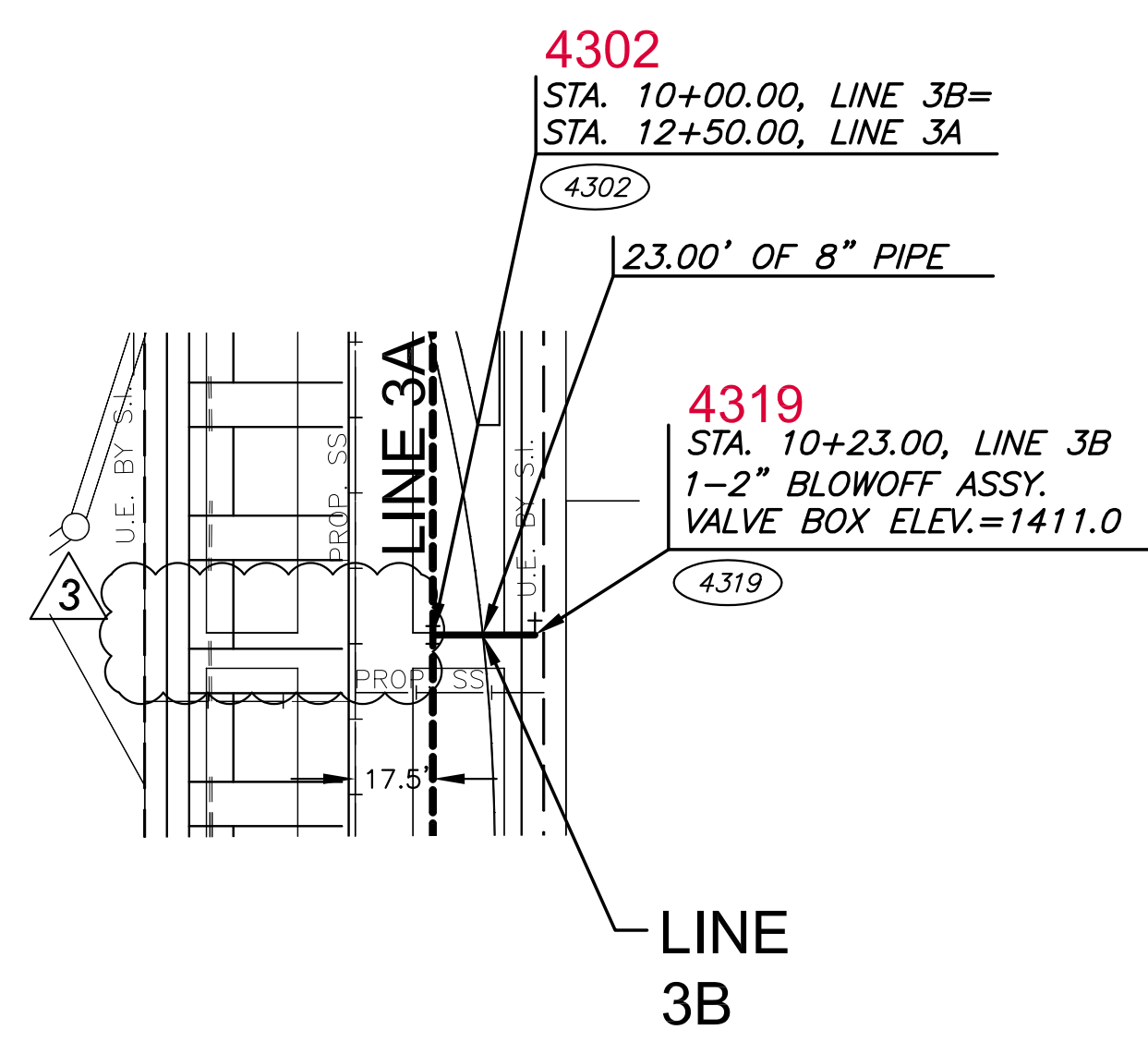
REVISION	DATE
3	12/20/15
2	10/07/15

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FACILITIES PLANNING  
1845 FAIRMOUNT ST.  
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Phone 316-978-3030

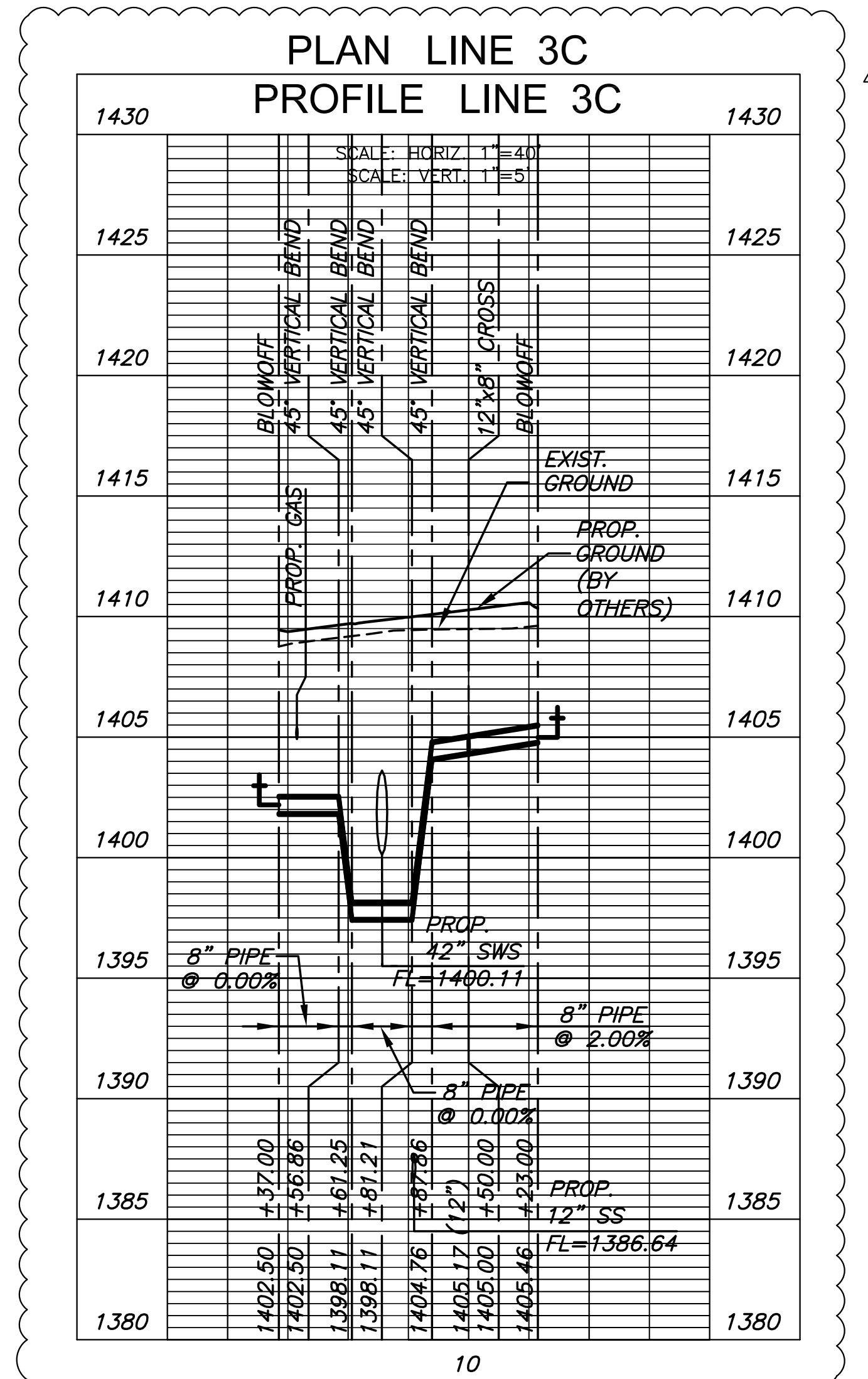
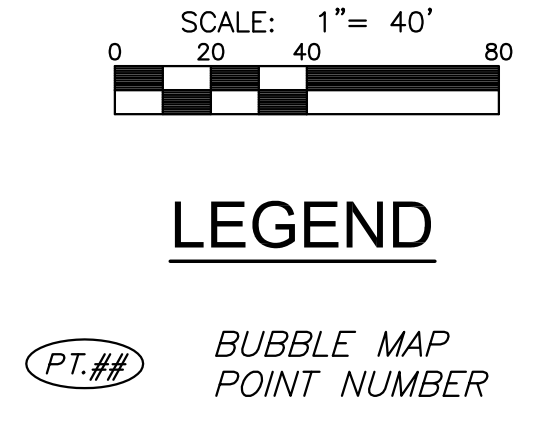
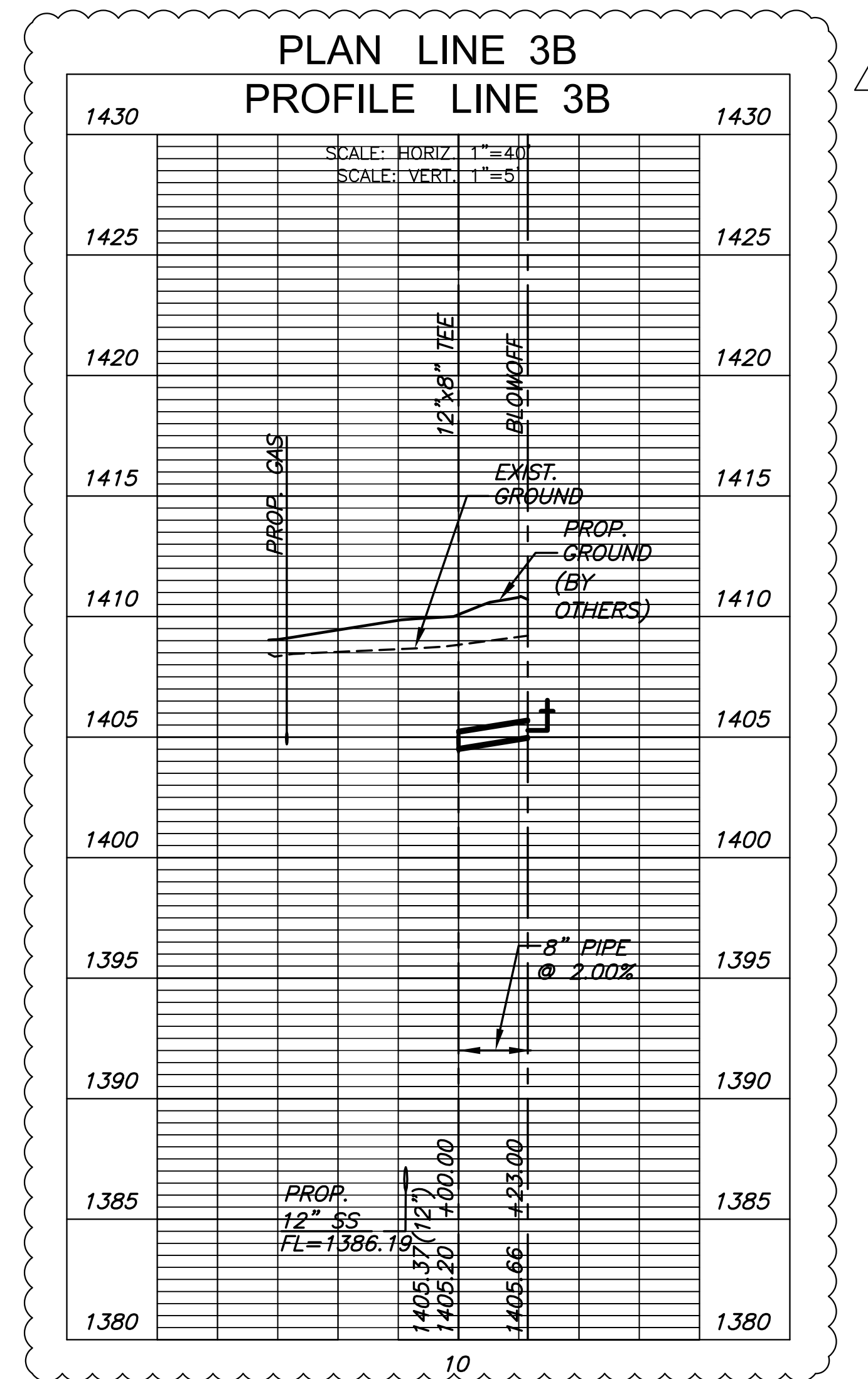
Department of Administration  
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Phone 785-296-8899

WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE  
PHASE 1**  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
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CHECKED BY: BLB

WATER LINES  
3B & 3C  
A-012817  
24 OF 34  
ORIGINAL  
CONTRACT  
DOCUMENTS



NOTE:  
CONTRACTOR TO VERIFY LOCATION  
AND ELEVATION OF EXISTING WATER  
LINE PRIOR TO CONSTRUCTION.



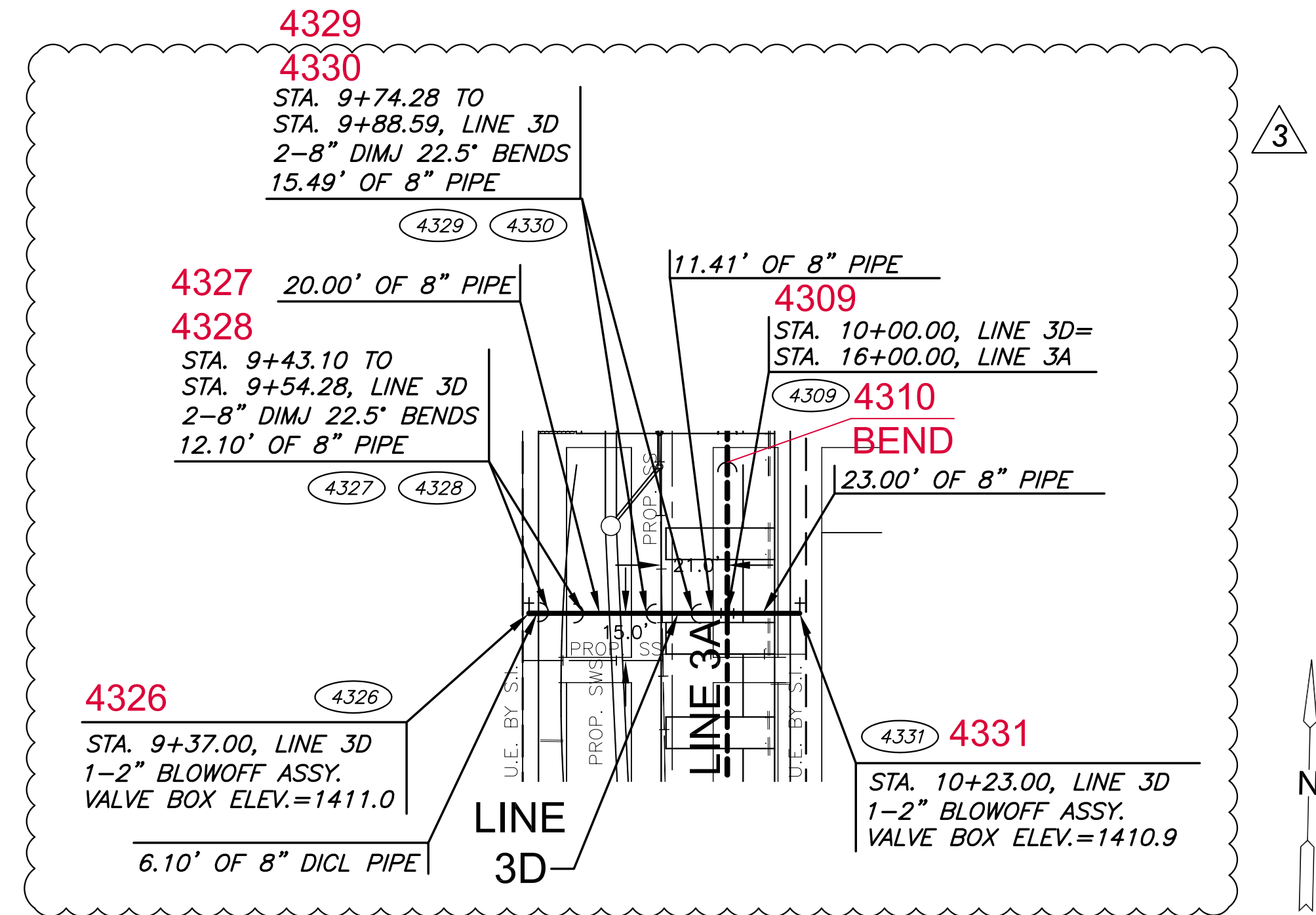
REVISIONS	DATE
3 REVISIONS	12/20/15
2 REVISIONS	10/07/15

DIVISION OF ADMINISTRATION & FINANCE  
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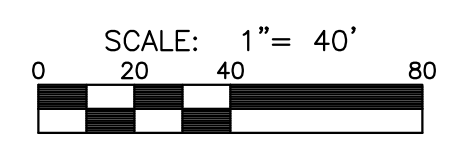
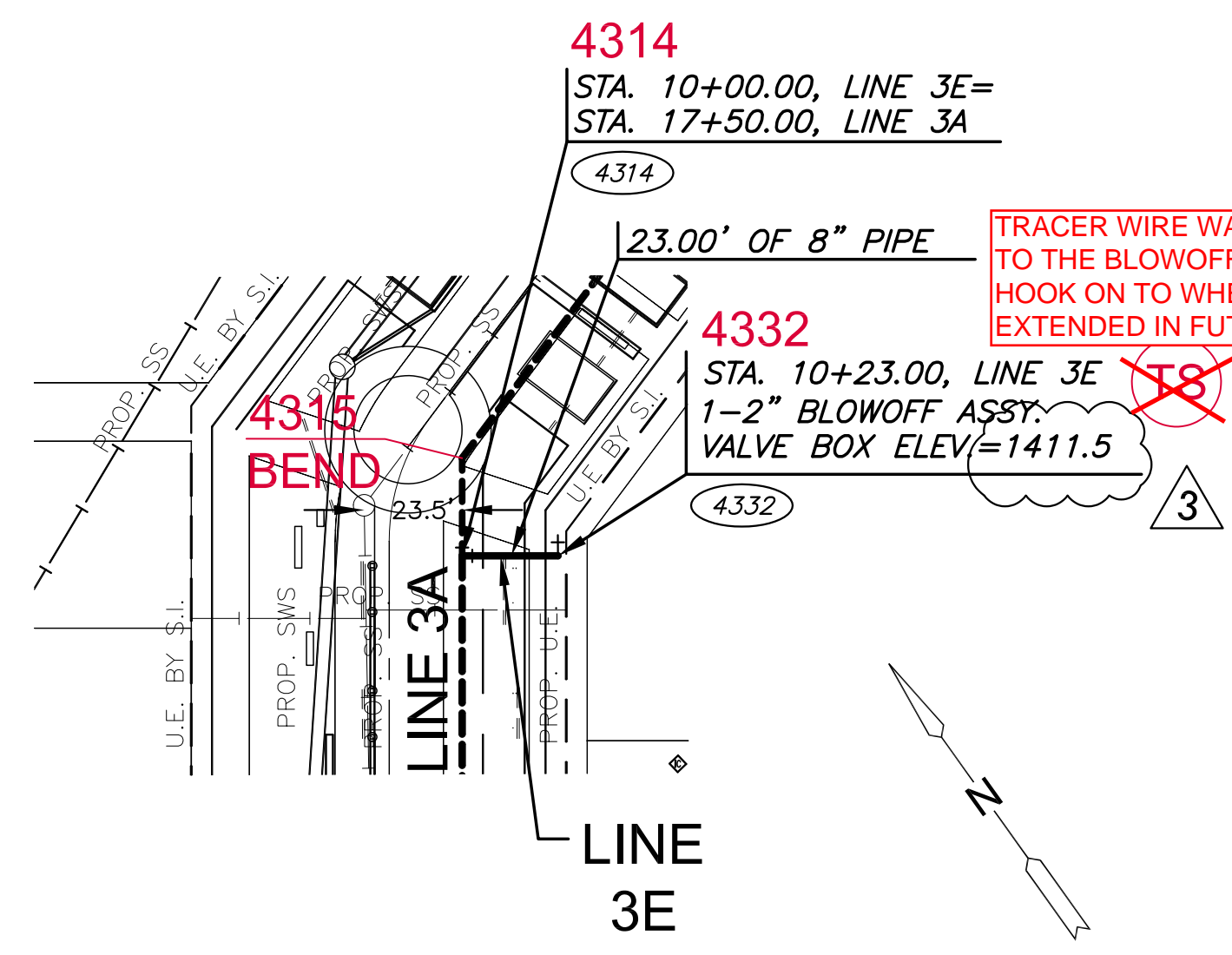
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WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE  
PHASE 1**  
1845 FAIRMOUNT ST.  
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WATER LINES  
3D, 3E, & 3F  
A-012817  
25 OF 34  
ORIGINAL  
CONTRACT  
DOCUMENTS

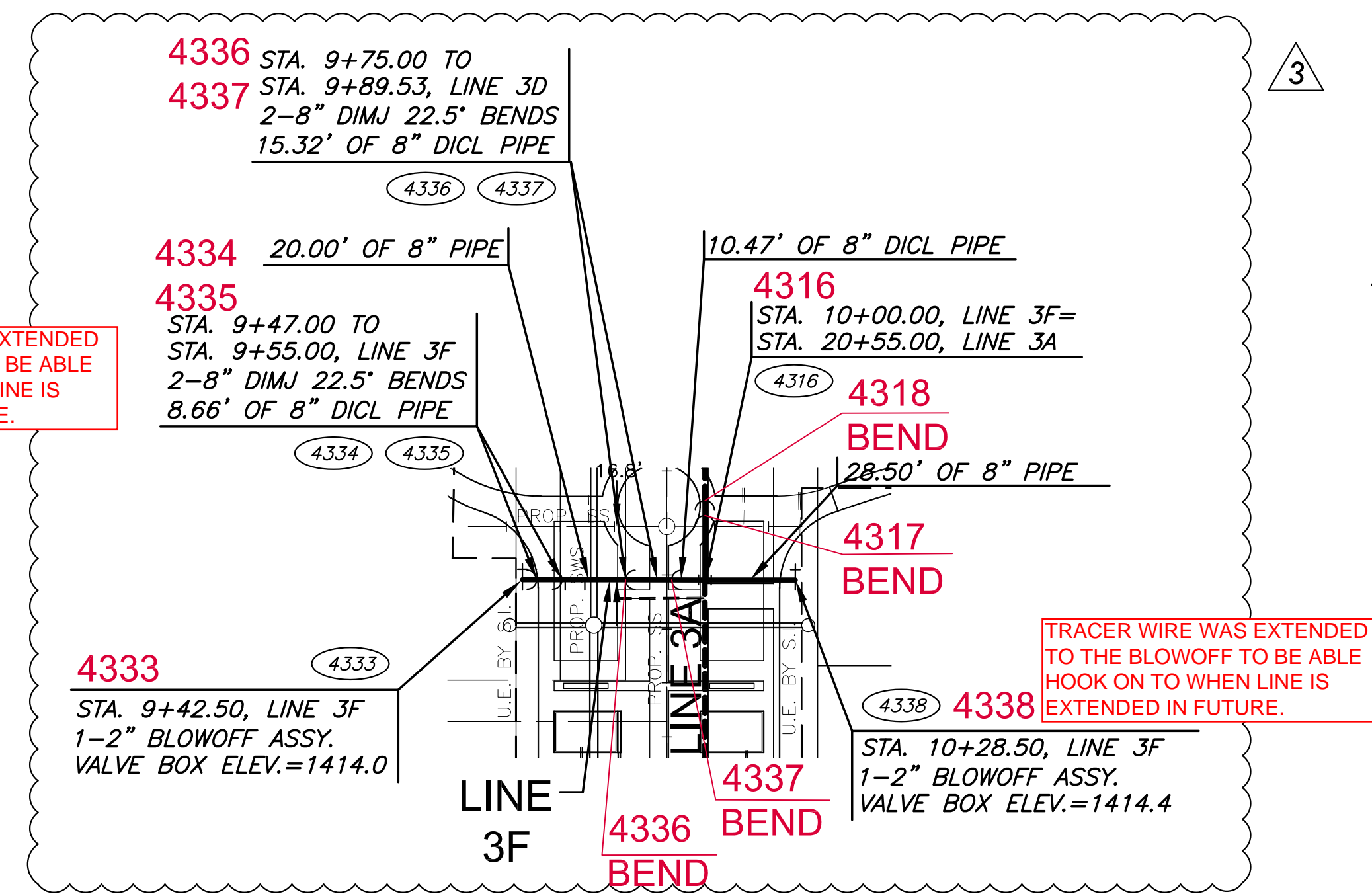


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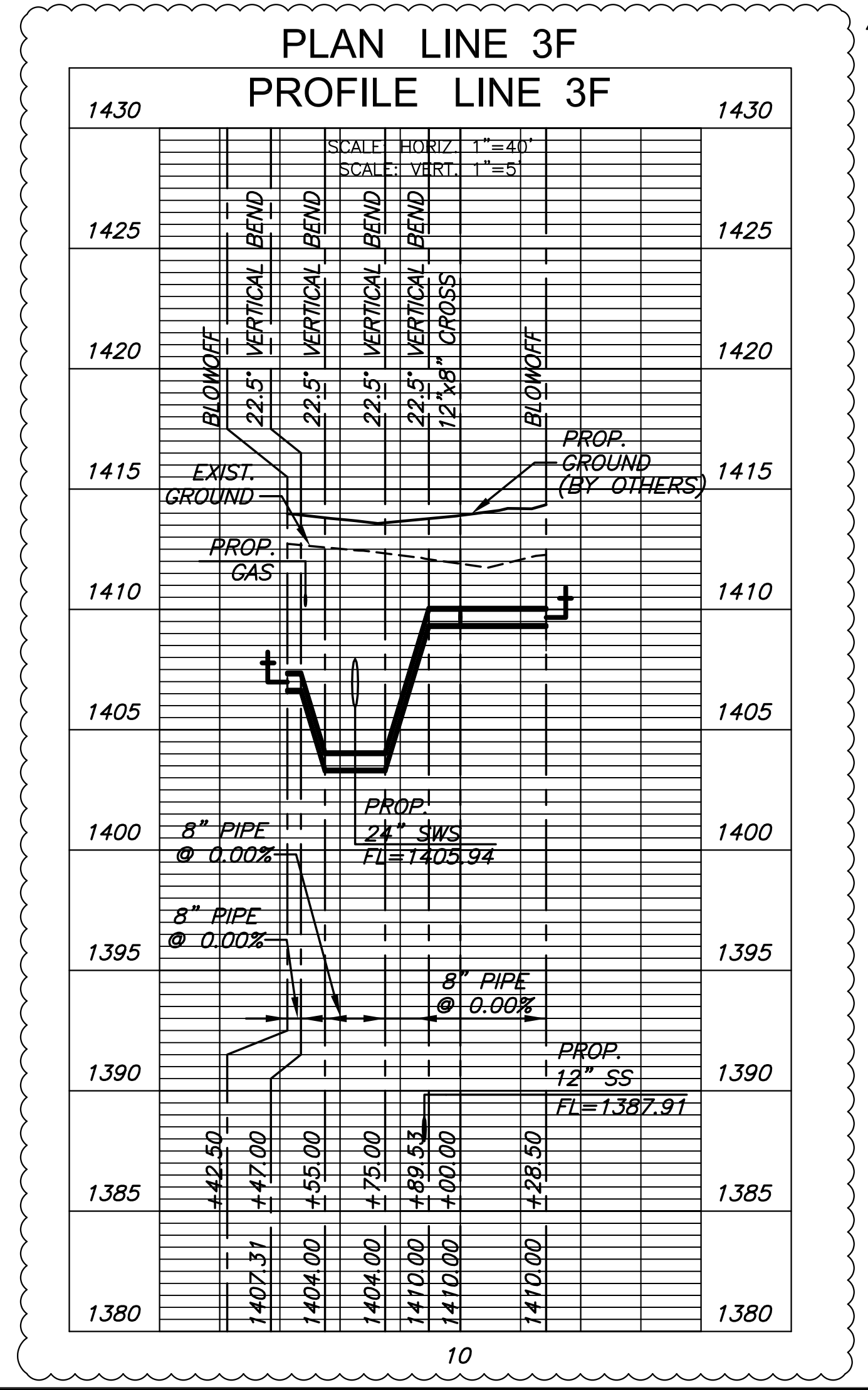
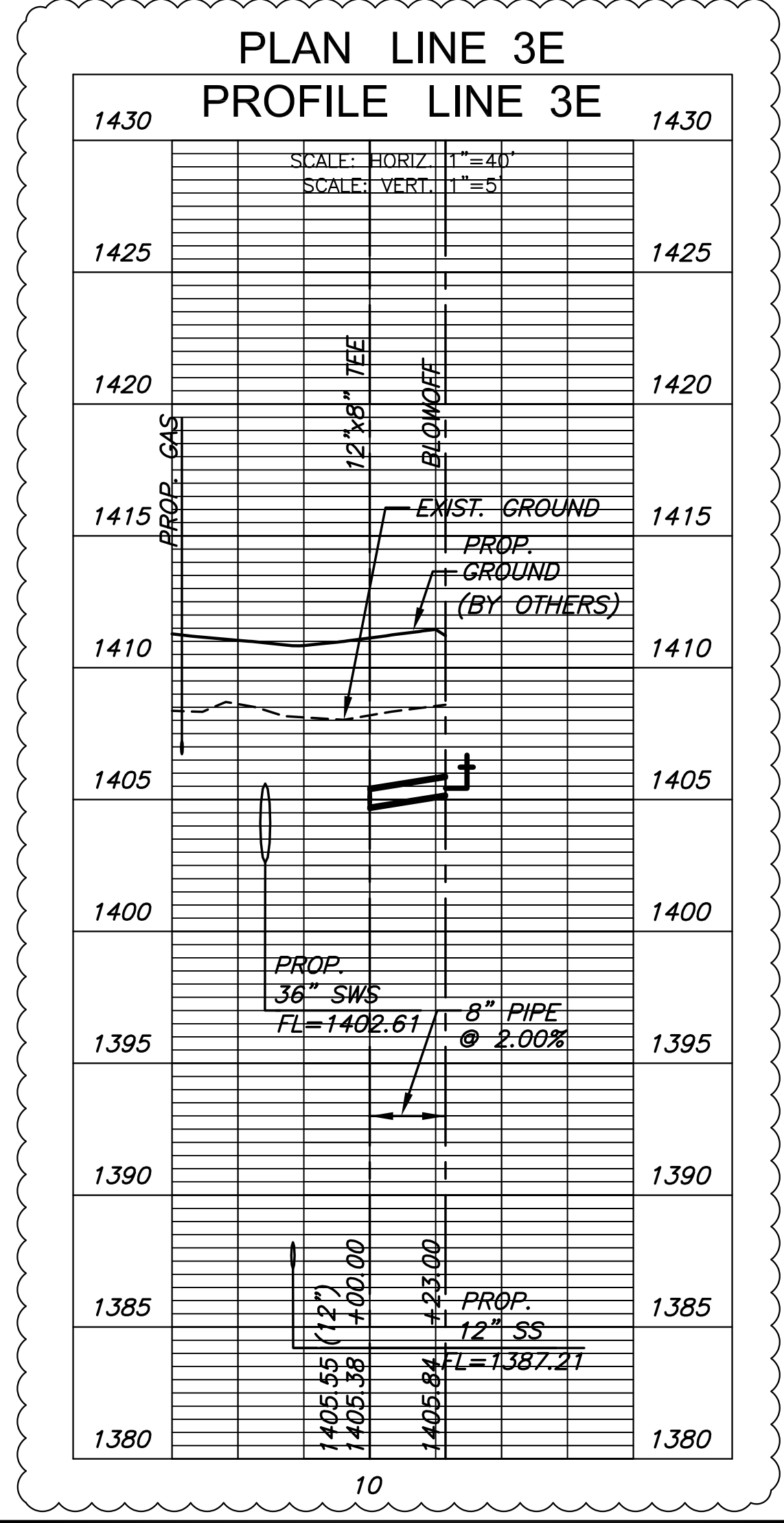
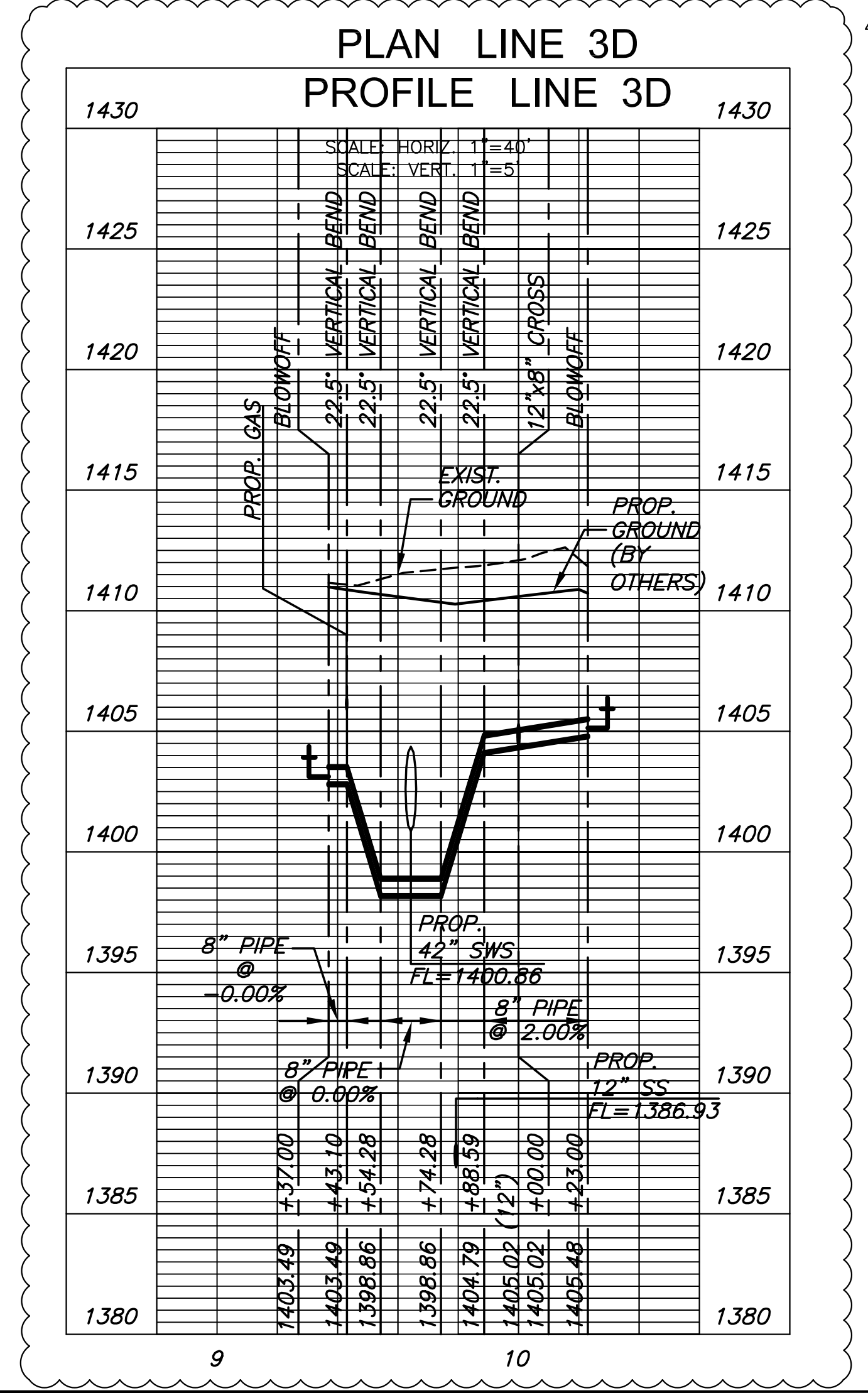


**LEGEND**

PT.# BUBBLE MAP POINT NUMBER



**AS-BUILT PLANS - APRIL 2016**







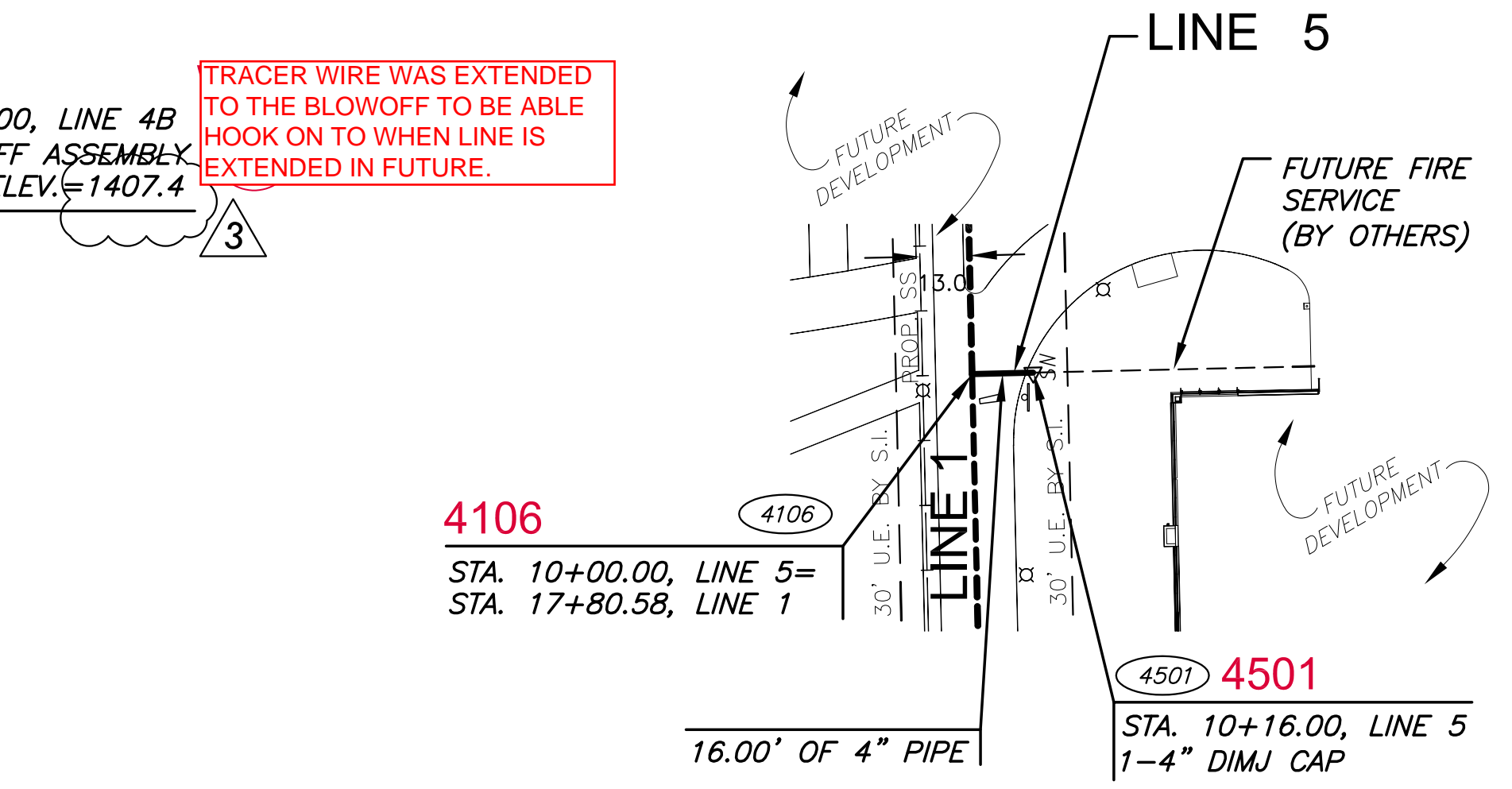
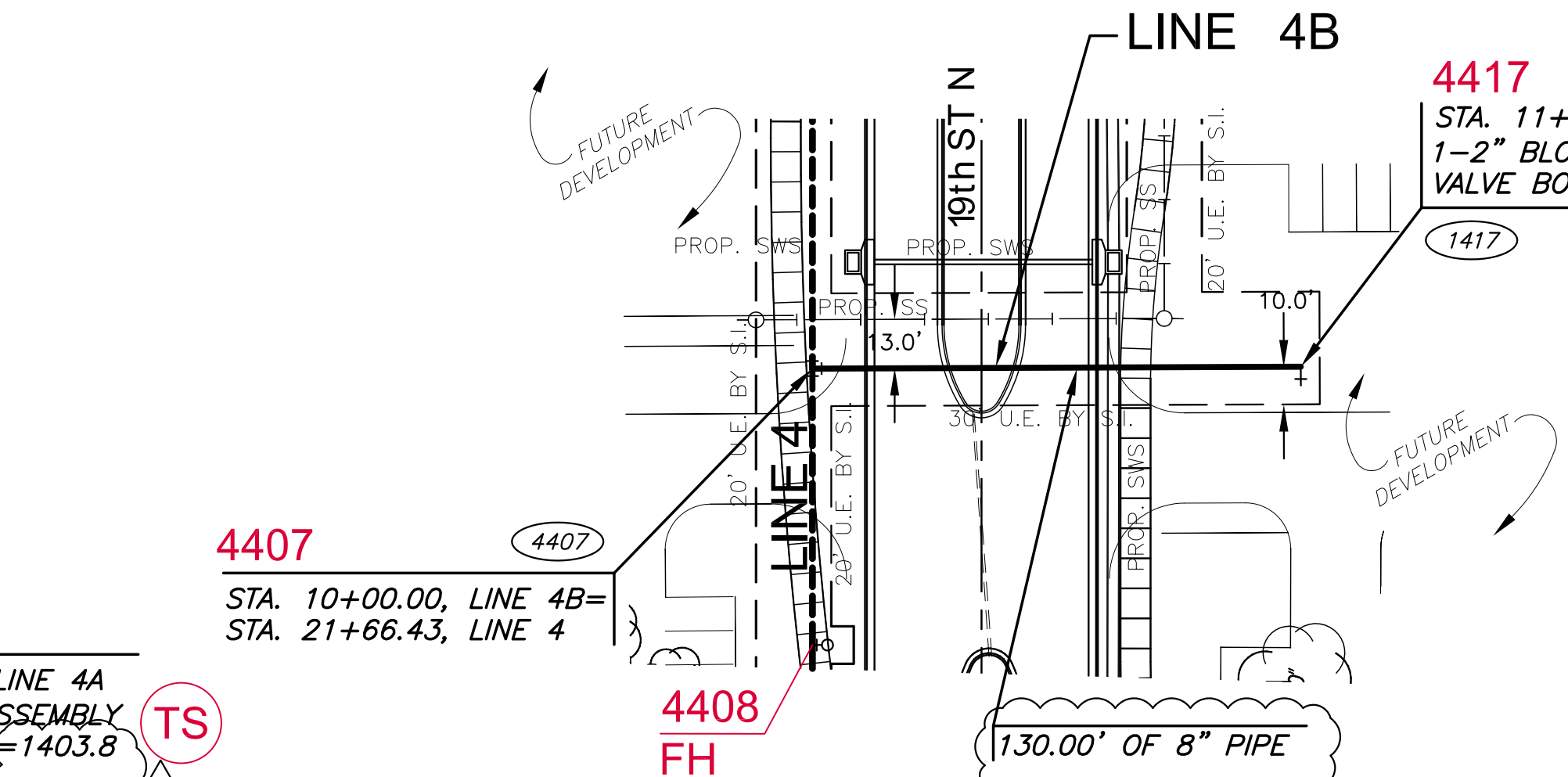
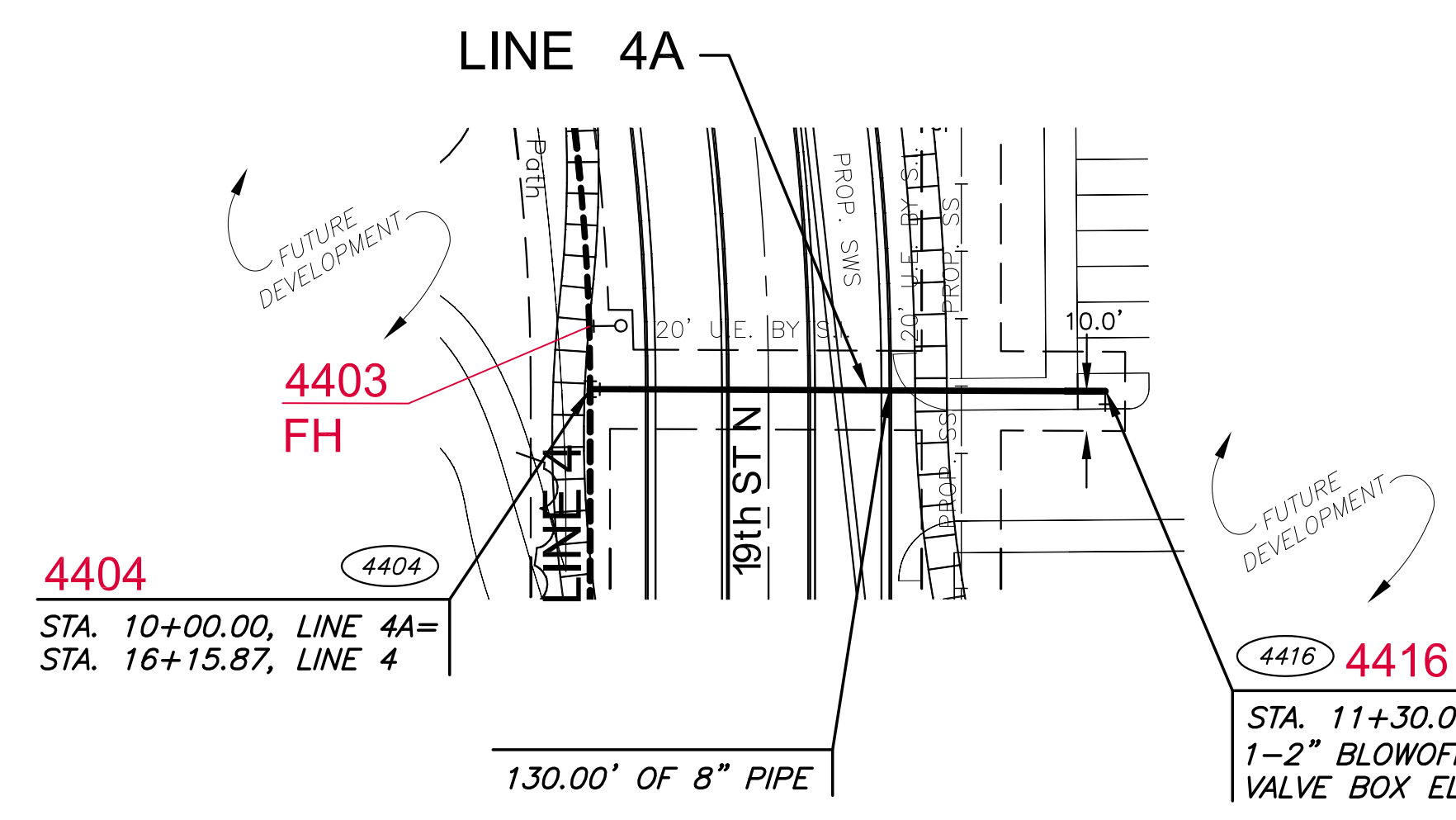
REVISION	DATE
3 REVISIONS	12/22/15
2 REVISIONS	10/27/15
1 REVISION	10/07/15

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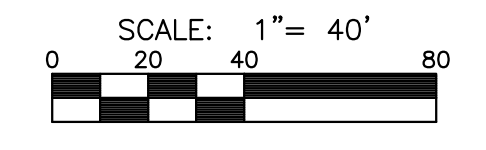
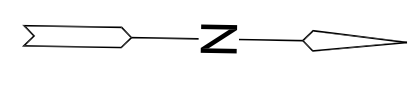
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WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE  
PHASE 1**  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: KKL  
CHECKED BY: BLB

WATER LINES  
4A, 4B, & 5  
A-012817  
28 OF 34  
ORIGINAL  
CONTRACT  
DOCUMENTS



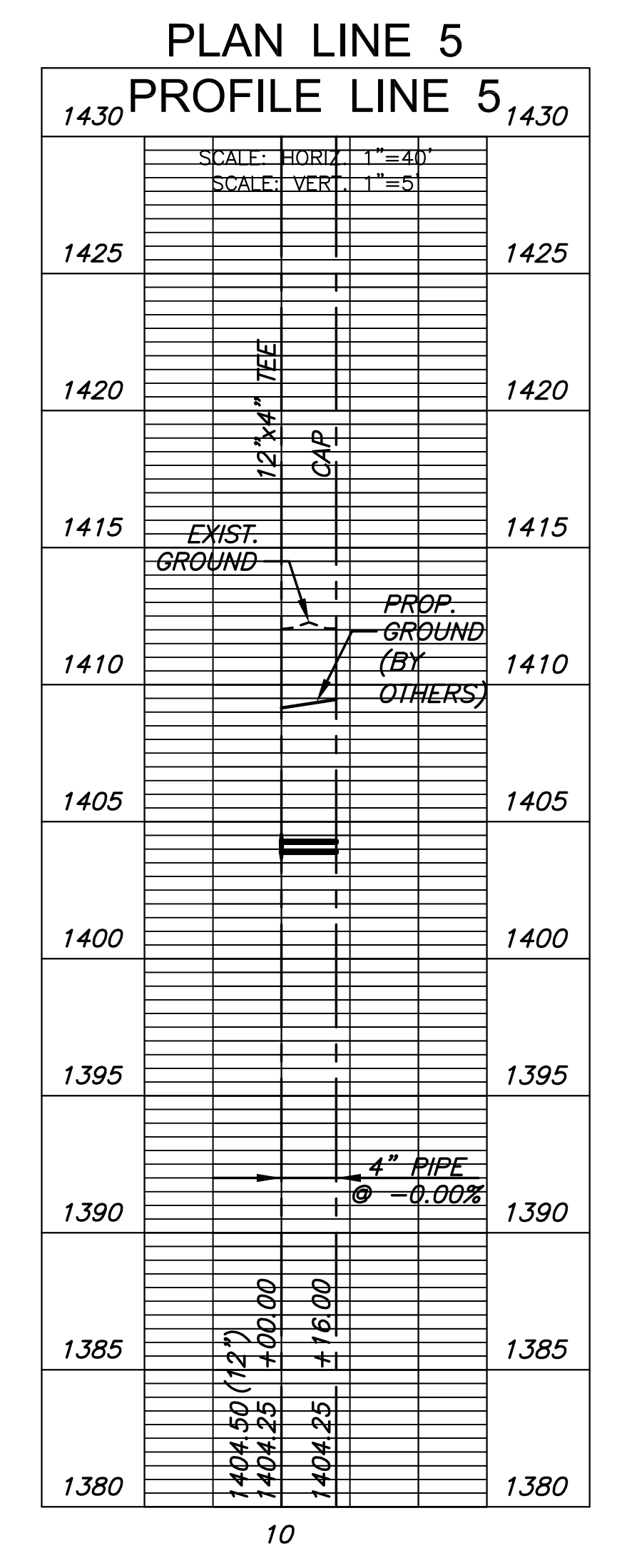
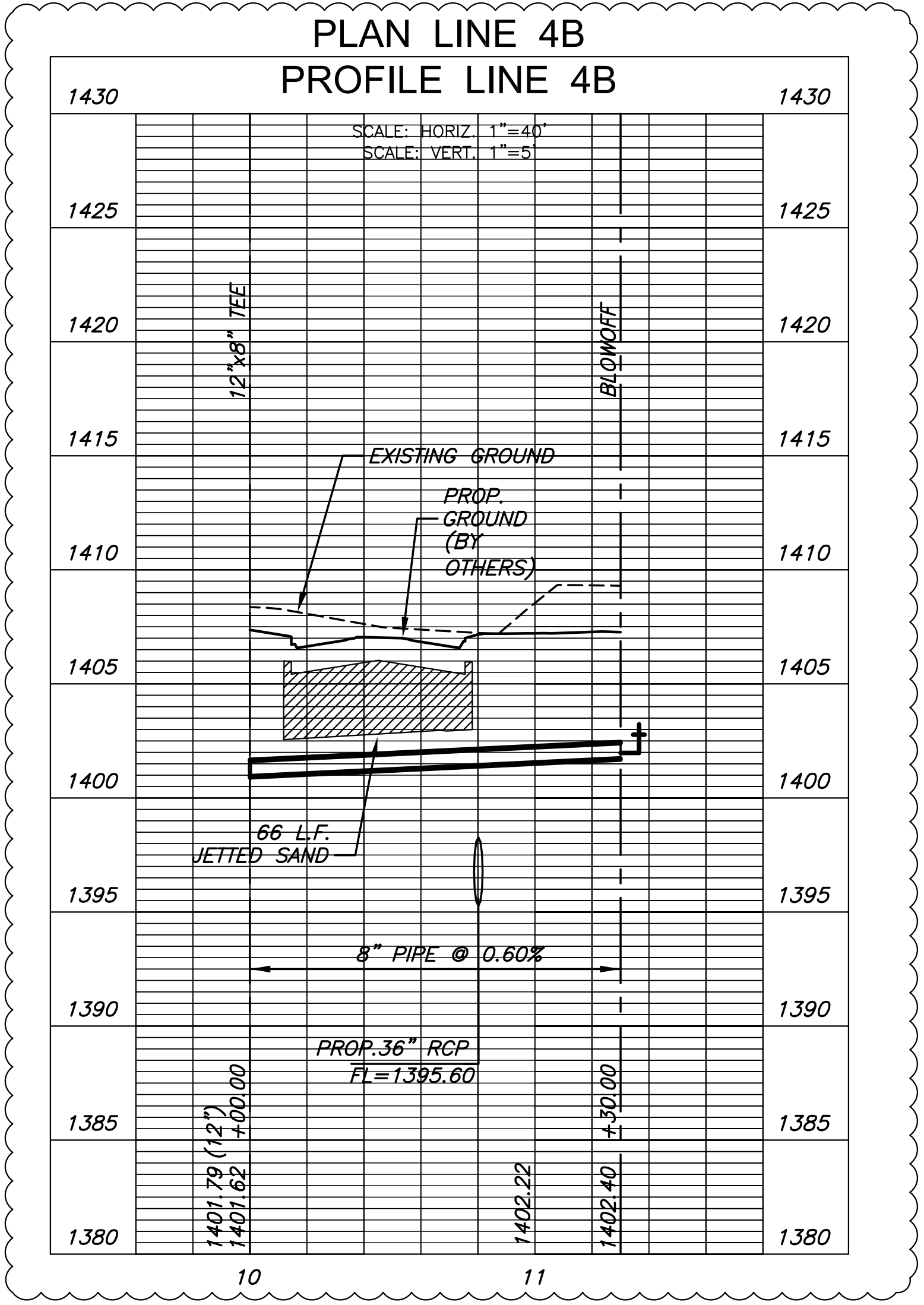
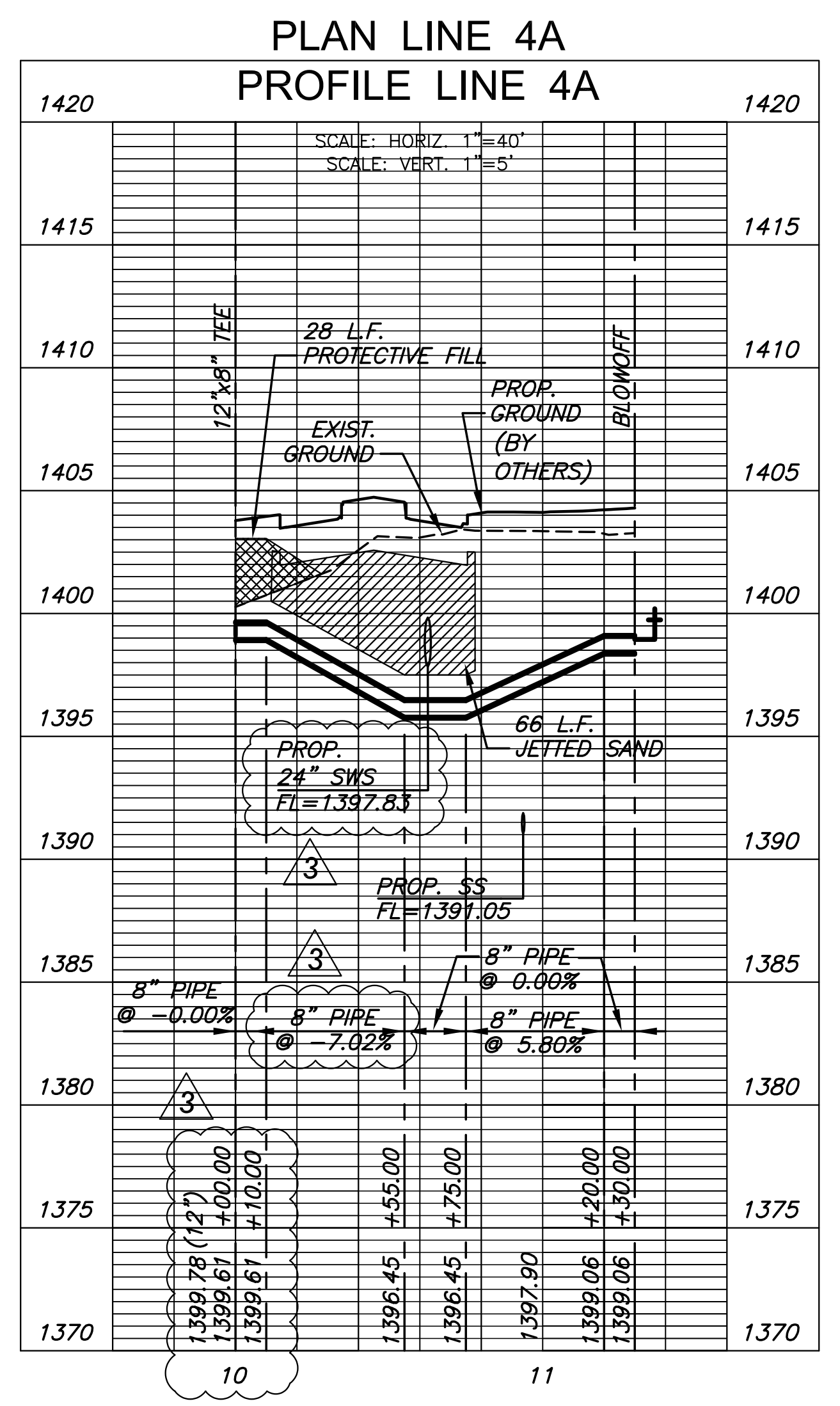
NOTE:  
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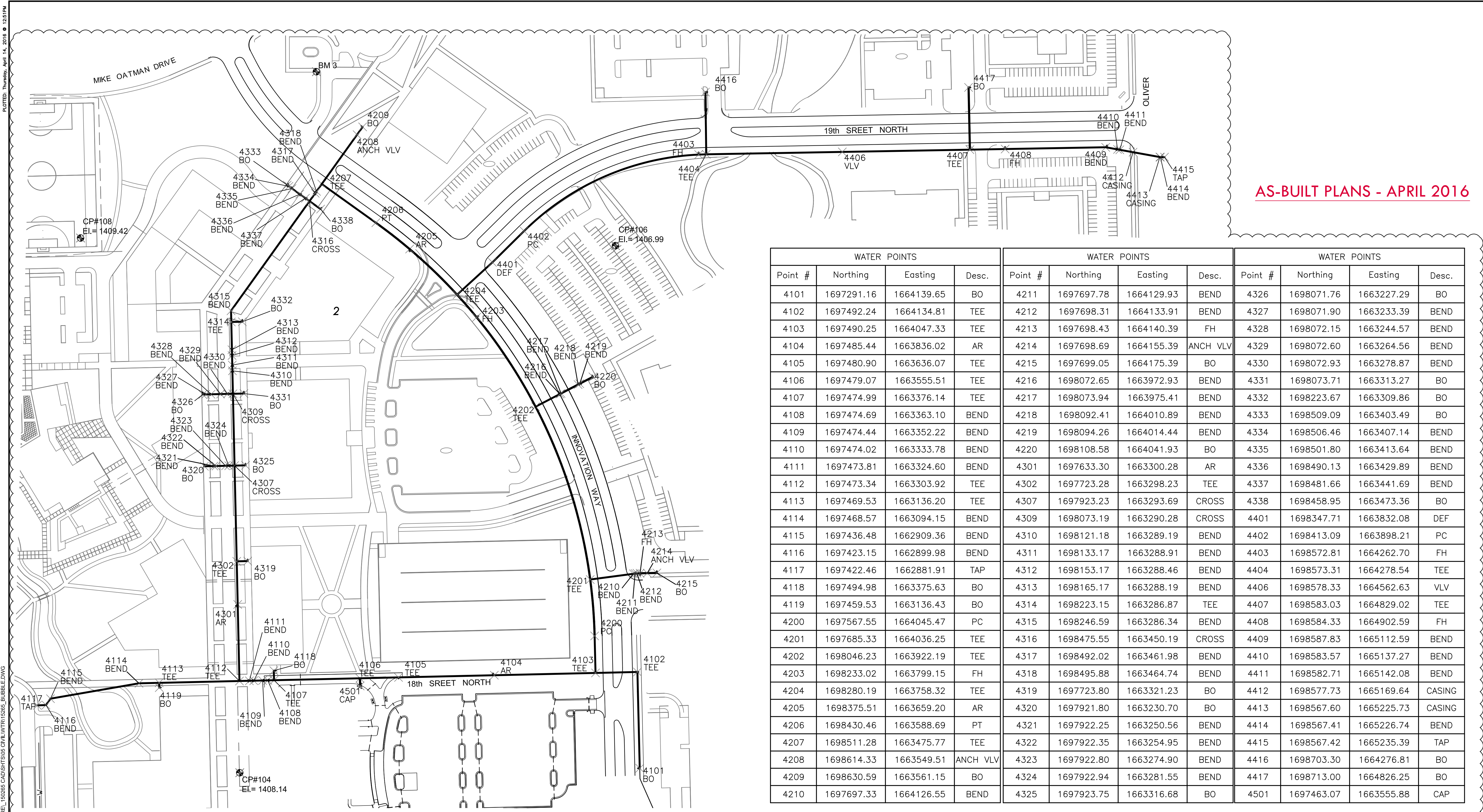
**LEGEND**

PT.## BUBBLE MAP POINT NUMBER

**AS-BUILT PLANS - APRIL 2016**



**AS-BUILT PLANS - APRIL 2016**



WATER POINTS				WATER POINTS				WATER POINTS			
Point #	Northing	Easting	Desc.	Point #	Northing	Easting	Desc.	Point #	Northing	Easting	Desc.
4101	1697291.16	1664139.65	BO	4211	1697697.78	1664129.93	BEND	4326	1698071.76	1663227.29	BO
4102	1697492.24	1664134.81	TEE	4212	1697698.31	1664133.91	BEND	4327	1698071.90	1663233.39	BEND
4103	1697490.25	1664047.33	TEE	4213	1697698.43	1664140.39	FH	4328	1698072.15	1663244.57	BEND
4104	1697485.44	1663836.02	AR	4214	1697698.69	1664155.39	ANCH VLV	4329	1698072.60	1663264.56	BEND
4105	1697480.90	1663636.07	TEE	4215	1697699.05	1664175.39	BO	4330	1698072.93	1663278.87	BEND
4106	1697479.07	1663555.51	TEE	4216	1698072.65	1663972.93	BEND	4331	1698073.71	1663313.27	BO
4107	1697474.99	1663376.14	TEE	4217	1698073.94	1663975.41	BEND	4332	1698223.67	1663309.86	BO
4108	1697474.69	1663363.10	BEND	4218	1698092.41	1664010.89	BEND	4333	1698509.09	1663403.49	BO
4109	1697474.44	1663352.22	BEND	4219	1698094.26	1664014.44	BEND	4334	1698506.46	1663407.14	BEND
4110	1697474.02	1663333.78	BEND	4220	1698108.58	1664041.93	BO	4335	1698501.80	1663413.64	BEND
4111	1697473.81	1663324.60	BEND	4301	1697633.30	1663300.28	AR	4336	1698490.13	1663429.89	BEND
4112	1697473.34	1663303.92	TEE	4302	1697723.28	1663298.23	TEE	4337	1698481.66	1663441.69	BEND
4113	1697469.53	1663136.20	TEE	4307	1697923.23	1663293.69	CROSS	4338	1698458.95	1663473.36	BO
4114	1697468.57	1663094.15	BEND	4309	1698073.19	1663290.28	CROSS	4401	1698347.71	1663832.08	DEF
4115	1697436.48	1662909.36	BEND	4310	1698121.18	1663289.19	BEND	4402	1698413.09	1663898.21	PC
4116	1697423.15	1662899.98	BEND	4311	1698133.17	1663288.91	BEND	4403	1698572.81	1664262.70	FH
4117	1697422.46	1662881.91	TAP	4312	1698153.17	1663288.46	BEND	4404	1698573.31	1664278.54	TEE
4118	1697494.98	1663375.63	BO	4313	1698165.17	1663288.19	BEND	4406	1698578.33	1664562.63	VLV
4119	1697459.53	1663136.43	BO	4314	1698223.15	1663286.87	TEE	4407	1698583.03	1664829.02	TEE
4200	1697567.55	1664045.47	PC	4315	1698246.59	1663286.34	BEND	4408	1698584.33	1664902.59	FH
4201	1697685.33	1664036.25	TEE	4316	1698475.55	1663450.19	CROSS	4409	1698587.83	1665112.59	BEND
4202	1698046.23	1663922.19	TEE	4317	1698492.02	1663461.98	BEND	4410	1698583.57	1665137.27	BEND
4203	1698233.02	1663799.15	FH	4318	1698495.88	1663464.74	BEND	4411	1698582.71	1665142.08	BEND
4204	1698280.19	1663758.32	TEE	4319	1697723.80	1663321.23	BO	4412	1698577.73	1665169.64	CASING
4205	1698375.51	1663659.20	AR	4320	1697921.80	1663230.70	BO	4413	1698567.60	1665225.73	CASING
4206	1698430.46	1663588.69	PT	4321	1697922.25	1663250.56	BEND	4414	1698567.41	1665226.74	BEND
4207	1698511.28	1663475.77	TEE	4322	1697922.35	1663254.95	BEND	4415	1698567.42	1665235.39	TAP
4208	1698614.33	1663549.51	ANCH VLV	4323	1697922.80	1663274.90	BEND	4416	1698703.30	1664276.81	BO
4209	1698630.59	1663561.15	BO	4324	1697922.94	1663281.55	BEND	4417	1698713.00	1664826.25	BO
4210	1697697.33	1664126.55	BEND	4325	1697923.75	1663316.68	BO	4501	1697463.07	1663555.88	CAP

**DATUM**

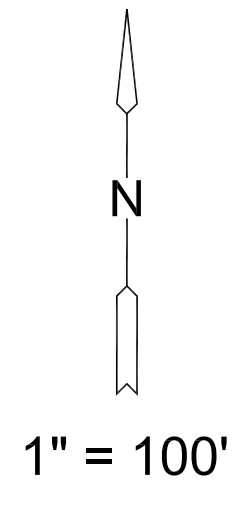
1 - The Project Horizontal Datum is based on the NAD83, Kansas State Plane Coordinate System, South Zone, (US Survey Feet Definition), with a Combined Adjustment Factor (CAF) of 1.0001200144.  
All coordinates and dimensions shown on these plans are modified to Ground values.

The following equations can be used for conversion:  
Ground Coordinates to State Plane Coordinates = Ground x 1/CAF  
State Plane Coordinates to Ground Coordinates = State Plane x CAF

2 - The Vertical Datum used is NAVD88.

**BENCHMARKS**

BM #3  
Chiseled "+" on north side of water meter vault, southeast of Mike Oatman Drive, south side of golfer drop off area.  
Elev. = 1416.07 NAVD 88  
N = 1698745.82 E = 1663464.625



**CONTROL POINTS**

PT. 106  
5/8" rebar with red "MKEC Control Point" cap  
N = 1698382.648 E = 1664089.055  
Elev. = 1406.59 NAVD 88  
88' southwest of a golf course green  
12' southeast of a 30' tree  
9.4' west of west edge cart path  
75' northwest of a covered bench

PT. 108  
5/8" rebar with red "MKEC Control Point" cap  
N = 1698398.52 E = 1662972.17  
Elev. = 1409.42 NAVD 88  
63' ENE of a golf course tee  
45' north of north edge golf cart path

PT. 110  
5/8" rebar with red "MKEC Control Point" cap  
N = 1698125.20 E = 1665099.67  
Elev. = 1409.12 NAVD 88  
19.5' west of west edge golf cart path  
In line with hedge row to the east

PT. 111  
5/8" rebar with red "MKEC Control Point" cap  
N = 1697537.84 E = 1664719.37  
Elev. = 1409.14 NAVD 88  
29' southwest of #18 tee  
11.0' south of south edge golf cart path circle

PT. 112  
5/8" rebar with 2" aluminum MKEC cap  
N = 1697537.84 E = 1664719.37  
Elev. = 1409.14 NAVD 88  
29' southwest of #18 tee  
11.0' south of south edge golf cart path circle

PT. 113  
5/8" rebar with red "MKEC Control Point" cap  
N = 1698125.20 E = 1665099.67  
Elev. = 1409.12 NAVD 88  
19.5' west of west edge golf cart path  
In line with hedge row to the east

PT. 114  
5/8" rebar with 2" aluminum MKEC cap  
N = 1699194.07 E = 1664792.88  
Elev. = 1403.24 NAVD 88  
21' NW of northwesterly edge golf cart path 46'  
WNW of a 12' tree on southwest corner of 21st Street North and Oliver

EVERY ATTEMPT HAS BEEN MADE TO INSURE ALL COORDINATE VALUES SHOWN ARE AN ACCURATE AND TRUE REPRESENTATION OF THE CURRENT PLANS. ALL VALUES ARE TO BE CONFIRMED WITH THE FINAL SIGNED PLAN SET BEFORE USE.

REVISION	DATE
3 REVISIONS	12/20/15
2 REVISIONS	10/07/15

DIVISION OF ADMINISTRATION & FINANCE  
FACILITIES PLANNING  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0047  
Phone 316-978-3030

Department of Administration  
Office of Facilities & Procurement  
Management  
Design, Construction & Compliance  
800 SW Jackson, Suite 700  
Topeka, Kansas 66612-1216  
Phone 785-296-8899

WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE PHASE 1**  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: KKL  
CHECKED BY: BLB

**WATER LINE BUBBLE MAP**

A-012817

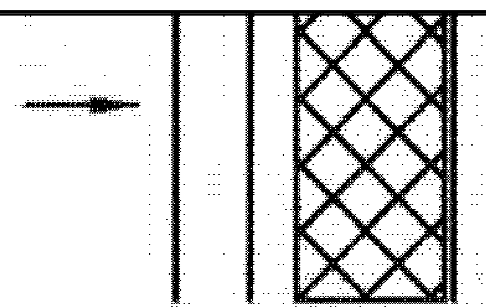
29 OF 34  
ORIGINAL CONTRACT DOCUMENTS

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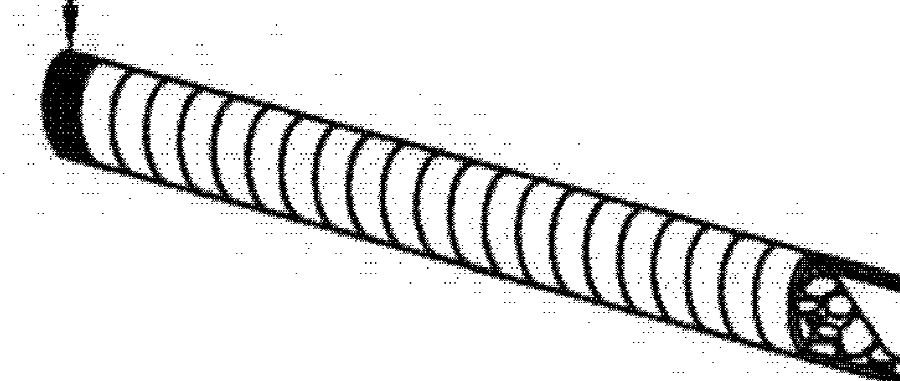
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Pt. Number	Northing	Easting	Descrtp.	Pt. Number	Distance from Hydrant at Point 4203		Descrtp.	Pt. Number	Distance from Hydrant at Point 4213		Descrtp.	Pt. Number	Distance from Hydrant at Point 4403		Pt. Number	Distance from Hydrant at Point 4408		Descrtp.	
					North	East			North	East			North	East		North	East		
4000	1696761.583	1665197.599	BM1	4000	-1471.44	1398.452	BM1	4000	-936.845	1057.208	BM1	4000	-1811.22	934.898	BM1	4000	-1822.75	295.057	BM1
4002	1696801.063	1662882.575	BM2	4002	-1431.96	-916.572	BM2	4002	-897.365	-1257.82	BM2	4002	-1771.74	-1380.12	BM2	4002	-1783.27	-2020.02	BM2
4003	1696845.843	1663464.555	BM3	4003	512.825	-134.592	BM3	4003	1047.415	-675.837	BM3	4003	173.0365	-798.145	BM3	4003	161.512	-1438.04	BM3
4004	1699416.21	1663136.271	BM4	4004	1183.19	1337.124	BM4	4004	1717.782	995.874	BM4	4004	843.4039	873.5716	BM4	4004	831.8794	233.6775	BM4
4005	1699392.894	1664386.4	BM5	4005	1159.874	587.2536	BM5	4005	1694.467	246.0087	BM5	4005	830.0883	123.7009	BM5	4005	808.5638	-516.193	BM5
4006	1696815.965	1664664.288	CP1	4006	-145.12	134.958	CP1	4006	-81.522	-476.103	CP1	4006	-1755.19	598.451	CP1	4006	-1767.43	-1238.31	CP1
4007	1696742.038	1664209.7	CP100	4007	-1485.98	410.553	CP100	4007	-93.139	69.3081	CP100	4007	-1825.77	52.9997	CP100	4007	-1837.29	-602.804	CP100
4008	1696719.417	1663077.78	CP101	4008	-1513.6	-721.367	CP101	4008	-979.011	-1062.61	CP101	4008	-1853.39	-1184.92	CP101	4008	-1864.91	-1824.81	CP101
4009	1696806.215	1663078.88	CP102	4009	-1426.81	-720.267	CP102	4009	-892.212	-1061.51	CP102	4009	-1766.59	-1183.82	CP102	4009	-1778.12	-1823.71	CP102
4010	1697029.699	1662810.969	CP103	4010	-1203.32	-988.178	CP103	4010	-668.728	-1329.42	CP103	4010	-1543.11	-1451.73	CP103	4010	-1554.63	-2091.63	CP103
4011	1697281.82	1663304.556	CP104	4011	951.2	-494.59	CP104	4011	-416.607	-835.835	CP104	4011	-1290.99	-958.143	CP104	4011	-1302.51	-1598.04	CP104
4012	1698382.648	1664089.089	CP106	4012	149.6279	289.9421	CP106	4012	684.2025	-51.3028	CP106	4012	-190.158	-173.611	CP106	4012	-201.683	-813.93	CP106
4013	1698398.52	1662972.16	CP108	4013	165.4999	-526.987	CP108	4013	700.0925	-1188.23	CP108	4013	-174.286	-1290.24	CP108	4013	-185.811	-1330.43	CP108
4014	1697534.673	1662765.078	CP111	4014	-708.348	1034.07	CP111	4014	-173.755	-1375.31	CP111	4014	-1048.19	-1497.62	CP111	4014	-1059.66	-2137.52	CP111
4015	1697537.838	1664719.406	CP112	4015	-495.182	300.2591	CP112	4015	-160.58	579.0142	CP112	4015	-1034.97	456.7064	CP112	4015	-1046.49	-183.188	CP112
4016	1698125.201	1665099.703	CP113	4016	-107.819	1300.556	CP113	4016	426.7735	959.3112	CP113	4016	-447.605	837.0034	CP113	4016	-459.13	197.1093	CP113
4017	1699194.071	1664792.876	CP114	4017	961.0509	993.7292	CP114	4017	1495.644	652.4843	CP114	4017	621.2649	530.1765	CP114	4017	609.7404	-109.718	CP114
4018	1699320.784	1663054.786	CP115	4018	1087.764	217.639	CP115	4018	1622.356	-123.606	CP115	4018	747.9779	-245.914	CP115	4018	736.4534	-885.808	CP115
4019	1698876.212	1665233.8	CP116	4019	643.1919	1434.653	CP116	4019	1177.785	1093.408	CP116	4019	303.4059	971.1004	CP116	4019	291.8814	331.2063	CP116
4101	169729.183	166439.851	BO	4101	-941.858	-340.5041	BO	4101	-447.265	0.7408	BO	4101	-1281.64	-121.089	BO	4101	-1293.37	-762.843	BO
4102	1697493.237	1664134.81	TEE	4102	-740.783	135.6633	TEE	4102	-206.19	-5.5818	TEE	4102	-1080.57	-127.89	TEE	4102	-1092.09	-767.794	TEE
4103	1697490.248	1664047.132	TEE	4103	-742.772	248.1896	TEE	4103	-208.179	-93.0933	TEE	4103	-1082.56	215.367	TEE	4103	-1094.08	-855.261	TEE
4104	1697485.441	1663836.02	AR	4104	-747.577	36.8734	AR	4104	-212.984	-304.372	AR	4104	-1087.36	-426.679	AR	4104	-1098.89	-1066.57	AR
4105	1697480.897	1663636.072	TEE	4105	-752.123	-163.075	TEE	4105	-217.531	-504.32	TEE	4105	-1091.91	-626.628	TEE	4105	-1103.43	-1266.52	TEE
4106	1697479.065	1663555.512	TEE	4106	-753.955	-243.635	TEE	4106	-219.362	-584.88	TEE	4106	-1093.74	-707.187	TEE	4106	-1105.27	-1347.08	TEE
4107	1697474.987	1663376.139	TEE	4107	-758.034	-423.008	TEE	4107	-223.441	-764.253	TEE	4107	-1097.82	-886.56	TEE	4107	-1109.34	-1526.45	TEE
4108	1697474.69	1663651.133	BEND	4108	-756.33	166.044	BEND	4108	-223.727	-777.289	BEND	4108	-1098.14	899.597	BEND	4108	-1109.64	-1339.89	BEND
4109	1697474.443	1663352.215	BEND	4109	-758.578	-446.931	BEND	4109	-223.985	-788.176	BEND	4109	-1098.36	-910.484	BEND	4109	-1109.89	-1550.38	BEND
4110	1697474.023	1663333.78	BEND	4110	-758.997	-465.367	BEND	4110	-224.404	-806.612	BEND	4110	-1098.78	-928.92	BEND	4110	-1110.31	-1568.81	BEND
4111	1697473.815	1663324.602	BEND	4111	-759.206	-474.544	BEND	4111	-224.613	-815.789	BEND	4111	-1098.99	-938.097	BEND	4111	-1110.52	-1577.99	BEND
4112	1697473.344	1663303.516	TEE	4112	-759.676	-495.231	TEE	4112	-225.083	-836.476	TEE	4112	-1099.46	-958.784	TEE	4112	-1110.99	-1598.68	TEE
4113	1697469.531	1663136.201	TEE	4113	-763.489	-462.946	TEE	4113	-228.897	-1004.19	TEE	4113	-1103.28	-1126.5	TEE	4113	-1114.8	-1766.39	TEE
4114	1697468.575	1663094.154	BEND	4114	-764.446	-704.993	BEND	4114	-229.855	-1046.24	BEND	4114	-1104.23	-1168.55	BEND	4114	-1115.76	-1808.44	BEND
4115	1697459.475	1662909.39	BEND	4115	-796.545	-889.786	BEND	4115	-261.95	-123.03	BEND	4115	-1147.85	-1353.33	BEND	4115	-1147.85	-1399.23	BEND
4116	1697432.152	1662909.379	BEND	4116	-809.868	-409.188	BEND	4116	-275.275	-1240.41	BEND	4116	-1149.65	-1362.72	BEND	4116	-1161.18	-2002.61	BEND
4117	1697422.465	1662881.515	TAP	4117	-810.555	-917.232	TAP	4117	-275.963	-1258.48	TAP	4117	-1150.34	-1380.78	TAP	4117	-1161.87	-2020.68	TAP
4118	1697494.98	1663375.631	BO	4118	-738.04	-423.516	BO	4118	-203.448	-764.761	BO	4118	-1077.83	-887.069	BO	4118	-1089.35	-1526.96	BO
4119	1697459.533	1663136.428	BO	4119	-773.487	-662.718	BO	4119	-238.894	-1003.96	BO	4119	-1113.27	-1126.27	BO	4119	-1124.8	-1766.17	BO
4200	1697567.55	1664045.471	PC	4200	-665.47	246.3246	PC	4200	-130.878	-94.9203	PC	4200	-1005.26	-217.228	PC	4200	-1016.78	-857.122	PC
4201	1697685.33	1664036.252	TEE	4201	-547.69	237.1051	TEE	4201	-13.0971	-104.14	TEE	4201	-887.476	-226.448	TEE	4201	-899	-886.342	TEE
4202	1698064.232	1664921.133	TEE	4202	-186.788	123.0462	TEE	4202	341.8649	-218.199	TEE	4202	536.574	-340.507	TEE	4202	538.086	-880.401	TEE
4203	1698233.02	1663799.147	FH	4203	0	0	FH	4203	534.5906	-341.245	FH	4203	-339.766	-463.553	FH	4203	-351.31	-1103.45	FH
4204	1698280.189	1663758.317	TEE	4204	47.169	-40.8298	TEE	4204	581.7616	-382.075	TEE	4204	-292.617	-504.383	TEE	4204	-304.141	-1144.28	TEE
4205	1698375.509	1663659.198	AR	4205	142.4888	-139.948	AR	4205	677.0814	-481.193	AR	4205	-197.297	-603.501	AR	4205	-208.822	-1243.4	AR
4206	1698430.464	1663588.69	PT	4206	197.4437	-210.457	PT	4206	732.0363	-551.702	PT	4206	-142.342	-674.01	PT	4206	-153.867	-1313.9	PT
4207	1698511.28	1663475.766	TEE	4207	278.26	-323.381	TEE	4207	812.8526	-664.626	TEE	4207	-61.526	-786.933	TEE	4207	-73.0505	-1426.83	TEE
4208	1698614.326	1663549.513	ANCH VLV	4208	381.3058	-249.633	ANCH VLV	4208	915.8994	-590.878	ANCH VLV	4208	41.5198	713.186	ANCH VLV	4208	29.9953	-1353.08	ANCH VLV
4209	1698635.59	1663561.133	BO	4209	397.5099	-237.994	BO	4209	931.1624	-579.239	BO	4209	57.7838	-701.546	BO	4209	46.2393	-1341.44	BO
4210	1697697.335	1664126.548	BEND	4210	-535.685	327.4007	BEND	4210	-1.0928	-13.8443	BEND	4210	875.471	136.152	BEND	4210	886.996	-776.046	BEND
4211	1697697.784	1664129.528	BEND	4211	-535.236	330.7809	BEND	4211	-0.6434	-10.464	BEND	4211	-875.022	-132.772	BEND	4211	-886.546	-772.666	BEND
4212	1697698.313	1664133.906	BEND	4212	-534.707	334.7596	BEND	4212	-0.1145	-6.4853	BEND	4212	-874.493	-128.793					

INSTALL 8' WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)



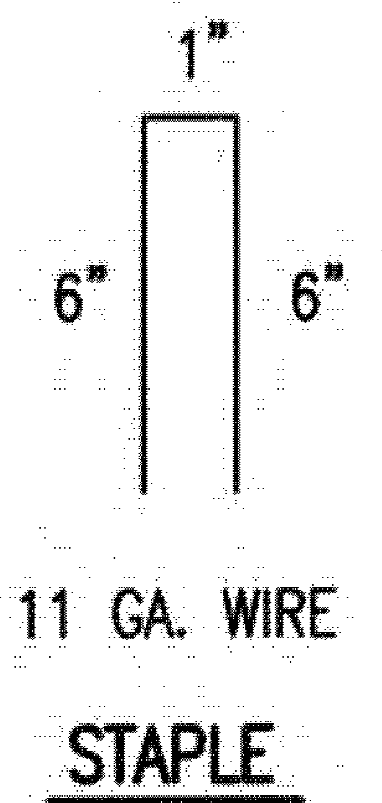
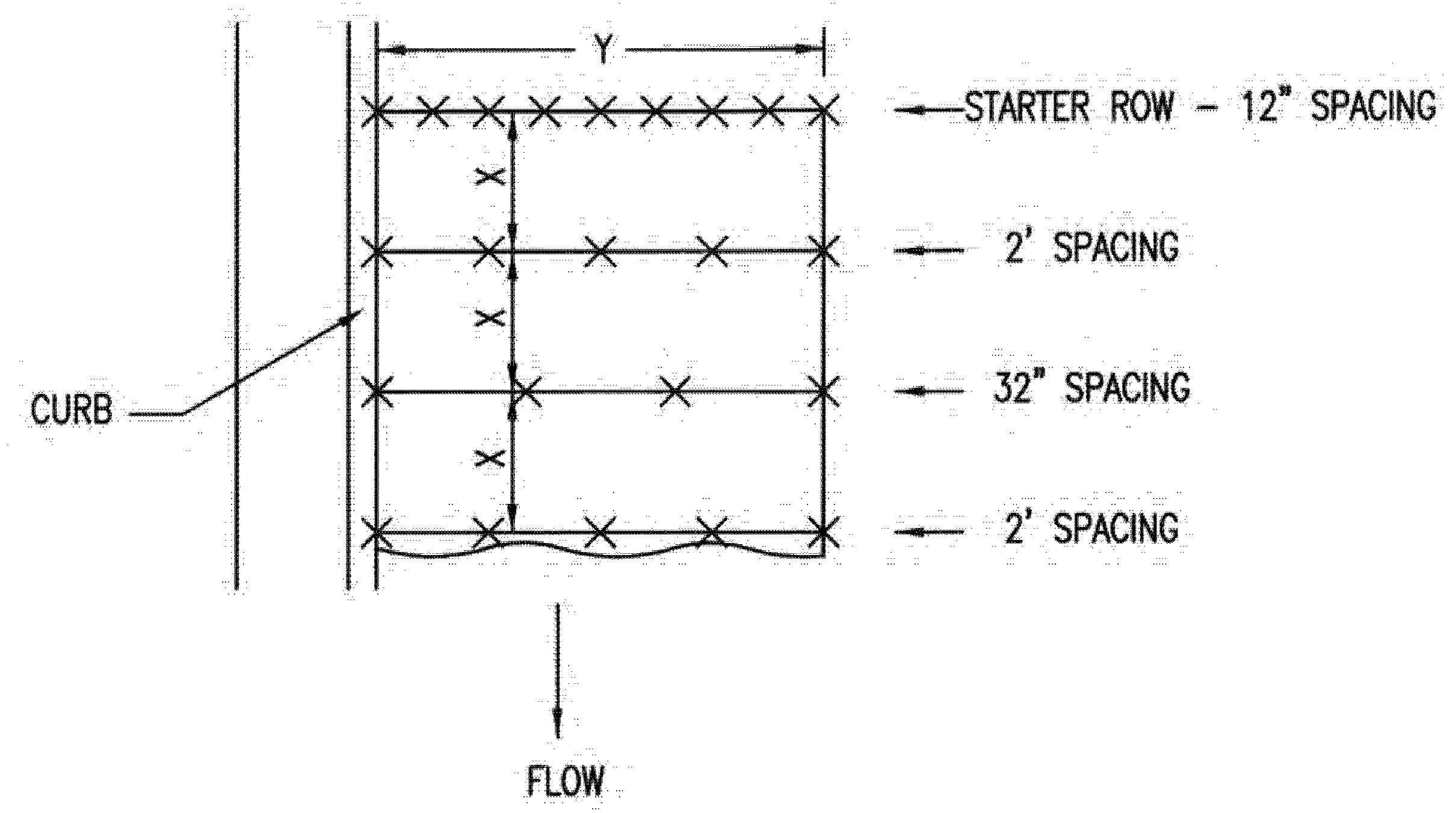
CAP AT EACH END  
(2 TYP.)



**GENERAL NOTES**

1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

**BACK OF CURB PROTECTION DETAIL**

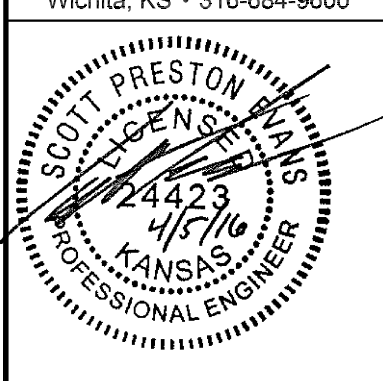


**STAPLE PATTERN**

NOTES: USE 6" SEAM OVERLAP  
(X & Y = RECOMMENDED BY MANUFACTURE)

**DETAILS FOR APPROVED EROSION CONTROL MAT**

**CURB INLET P  
4" PERFORATED PI**



REVISION	DATE

DIVISION OF ADMINISTRATION & FINANCE  
FACILITIES PLANNING  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0047  
Phone 316-978-3030

Department of Administration  
Office of Facilities & Procurement Management  
Design, Construction & Compliance  
800 SW Jackson, Suite 700  
Topeka, Kansas 66612-1216  
Phone 785-296-8899

WICHITA STATE UNIVERSITY  
INNOVATION CAMPUS INFRASTRUCTURE  
PHASE 1  
1845 FAIRMOUNT ST.  
WICHITA, KANSAS 67260-0023  
DRAWN BY: IKL  
CHECKED BY: BLB

AS-BUILT PLANS - APRIL 2016

1912PPW 607853

BMP DETAILS

A-012817

30 OF 34

ORIGINAL CONTRACT DOCUMENTS

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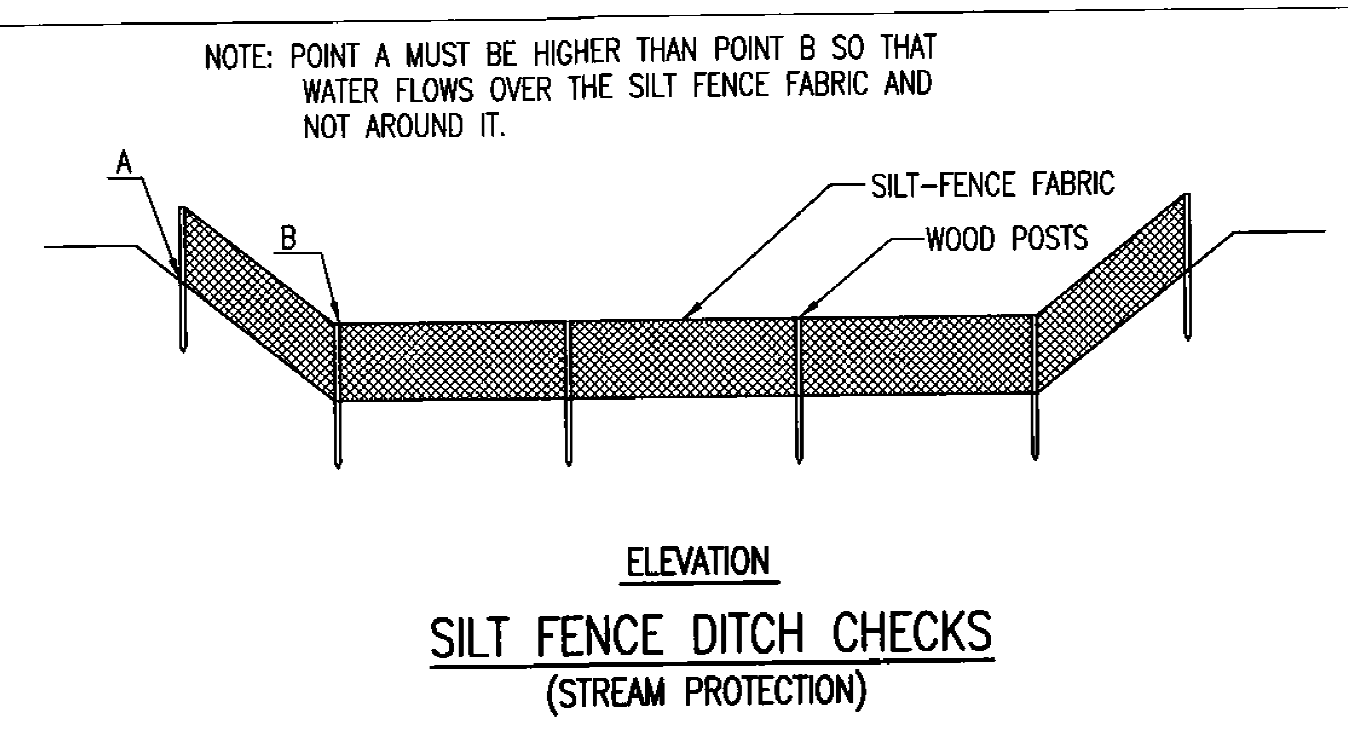
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BMP DETAILS  
A-012817  
31 OF 34  
ORIGINAL CONTRACT DOCUMENTS



**MATERIAL SPECIFICATION:**

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

**PLACEMENT:**

PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK, NOT OVER IT. SILT FENCE DITCH CHECKS OFTEN FAIL WHEN OVERTOPPED. SILT FENCE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE SILT FENCE SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE TOP OF THE LOW POINT OF THE FENCE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK. SILT FENCE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD. SILT FENCE SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH CHECK DITCH GRADE (%)	SPACING CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS AT LEAST 12" DEEP BY 6" WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSTREAM EDGE OF THE TRENCH. LINE TWO SIDES OF THE TRENCH WITH THE FABRIC AS SHOWN ON DETAIL. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE ON THE UPSTREAM SIDE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 24". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

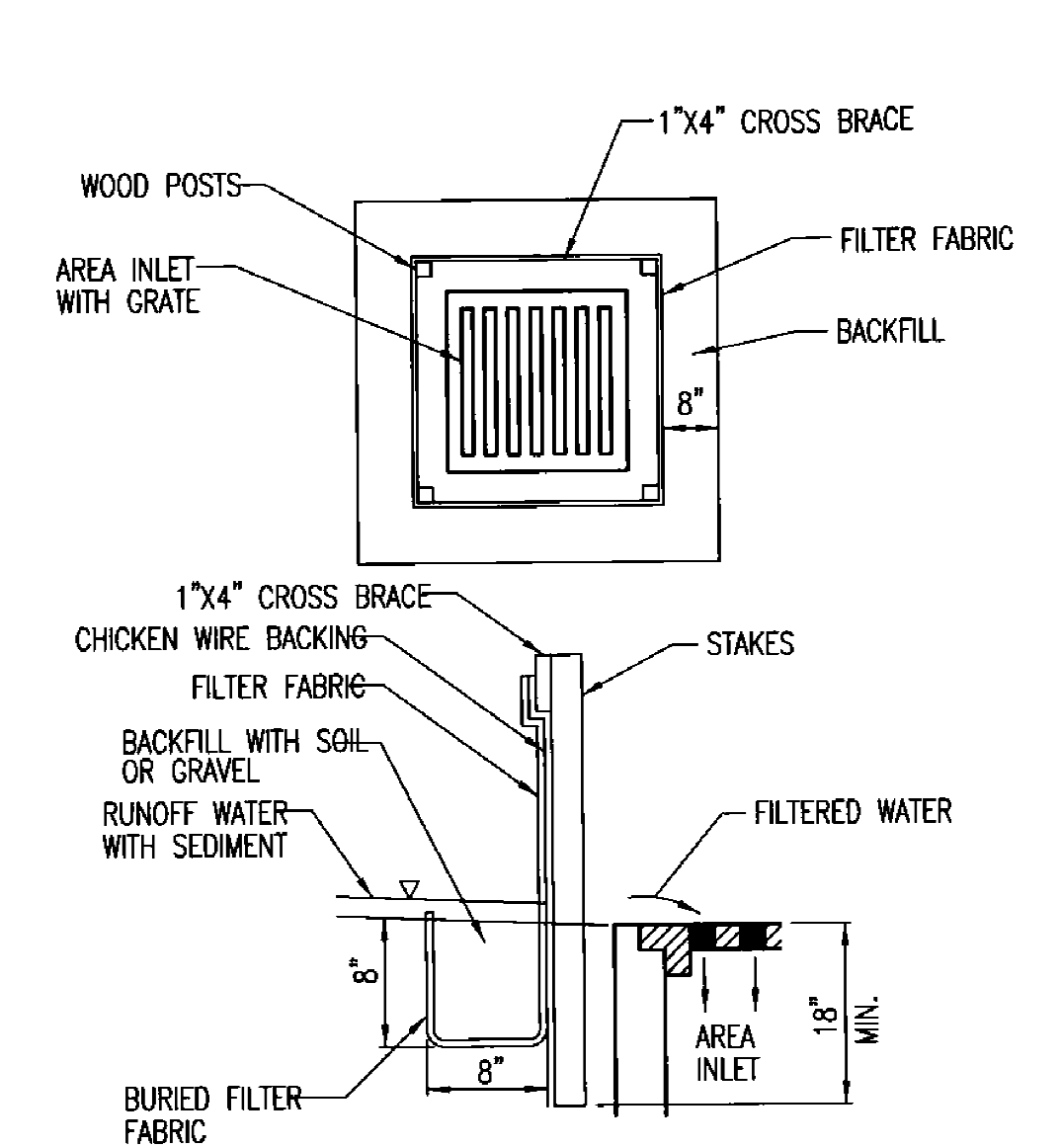
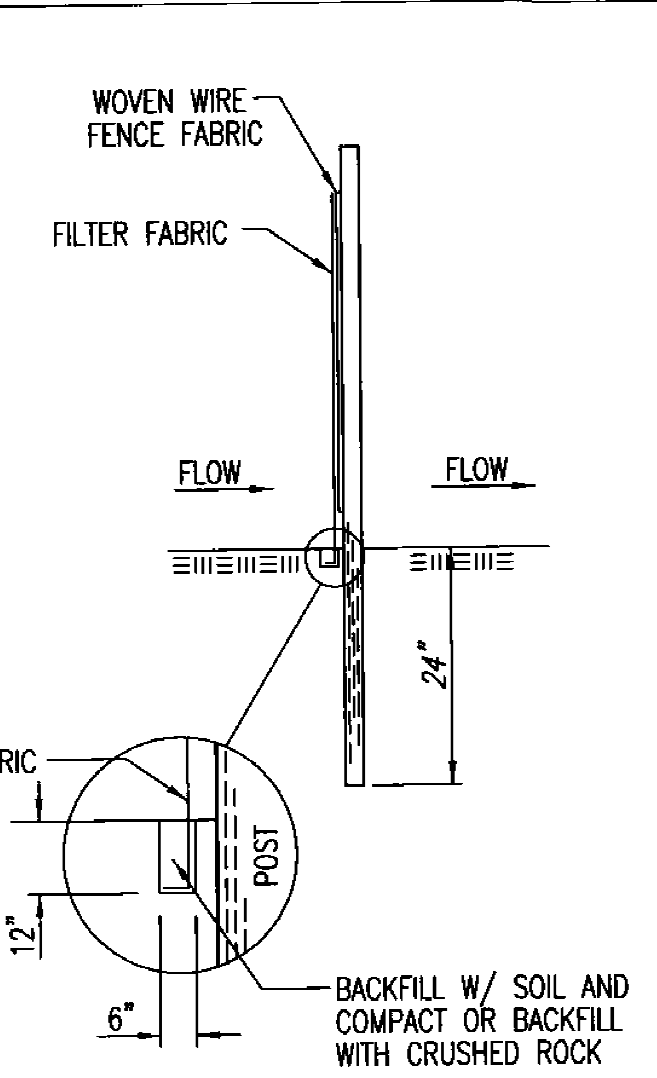
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK—NOT OVER IT. PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. SILT FENCE INSTALLATIONS QUICKLY DETERIORATE WHEN WATER OVERTOPS THEM. DO NOT PLACE SILT FENCE POSTS ON THE UPSTREAM SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE A SILT FENCE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW. DO NOT PLACE SILT FENCE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW. FOLLOW PRESCRIBED DITCH CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS. DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE LOW POINT ON THE TOP OF THE FENCE. DO NOT PLACE SILT FENCE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

**INSPECTION AND MAINTENANCE:**

SILT FENCE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

- DOES WATER FLOW AROUND THE DITCH CHECK?
- DOES WATER FLOW UNDER THE DITCH CHECK?
- DOES THE SILT FENCE SAG EXCESSIVELY?
- HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



**MATERIAL SPECIFICATION:**

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE WIRE OR POLYMERIC MESH BACKING USED TO HELP SUPPORT THE SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. THE MATERIAL USED TO FRAME THE TOPS OF THE POSTS SHOULD BE 1" BY 4" BOARDS. SILT FENCE FABRIC AND SUPPORT BACKING SHOULD BE ATTACHED TO THE WOODEN POSTS AND FRAME WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

**PLACEMENT:**

PLACE A SILT FENCE DROP INLET BARRIER IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. WATER SHOULD FLOW THROUGH SILT FENCE, NOT OVER IT. SILT FENCE BARRIERS FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED. WHEN USED AS A BARRIER FOR AREA INLETS, SILT FENCE FABRIC AND POSTS MUST BE SUPPORTED AT THE TOP BY A WOODEN FRAME. WHEN A SILT FENCE BARRIER FOR AREA INLETS IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 8" DEEP BY 8" WIDE. DRIVE POSTS TO A DEPTH OF AT LEAST 18" AROUND THE PERIMETER OF THE AREA INLET. THE DISTANCE BETWEEN POSTS SHOULD BE 4' OR LESS. IF THE DISTANCE BETWEEN TWO ADJACENT CORNER POSTS IS MORE THAN 4', ADD ANOTHER POST(S) BETWEEN THEM. CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN FRAME MADE OF 1" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING. ATTACH THE WIRE OR POLYMERIC-MESH BACKING TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC LONG ENOUGH TO WRAP AROUND THE PERIMETER OF THE AREA INLET. ADD MORE LENGTH FOR OVERLAPPING THE FABRIC JOINT. PLACE THE EDGE OF THE FABRIC IN THE TRENCH, STARTING AT THE OUTSIDE EDGE OF THE TRENCH. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED. ATTACH THE SILT FENCE TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. THE JOINT SHOULD BE OVERLAPPED TO THE NEXT POST.

NOTE: WHEN A SILT FENCE BARRIER FOR AREA INLET IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

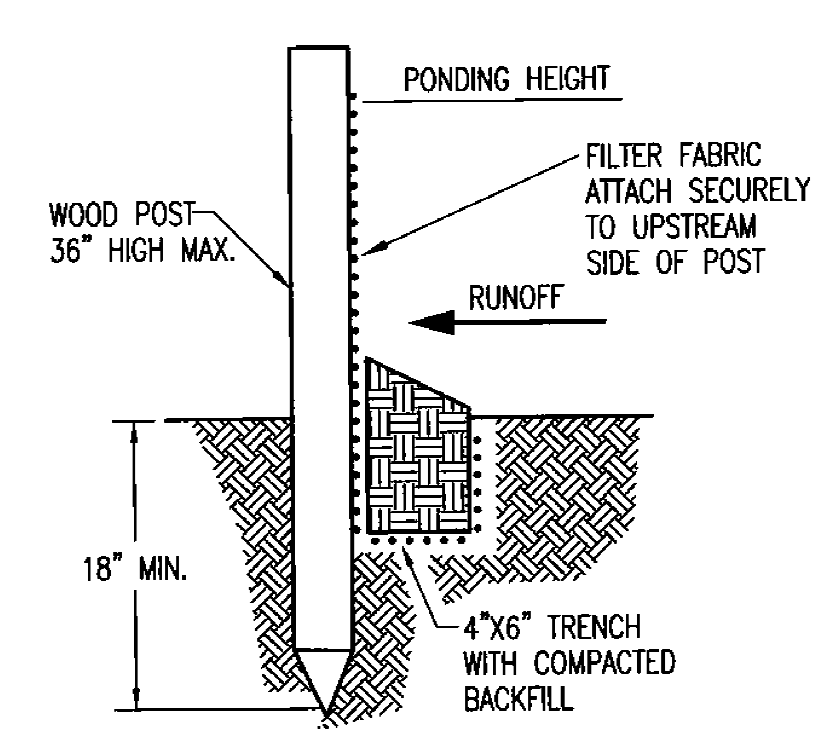
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

WATER SHOULD FLOW THROUGH A SILT FENCE BARRIER FOR AREA INLET—NOT OVER IT. PLACE A SILT FENCE BARRIER FOR AREA INLET IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. SILT FENCE BARRIER FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED. DO NOT PLACE POSTS ON THE OUTSIDE OF THE SILT FENCE BARRIER FOR AREA INLET. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT INSTALL SILT FENCE BARRIER FOR AREA INLETS WITHOUT FRAMING THE TOP OF THE POSTS. THE CORNER POSTS AROUND AREA INLETS ARE STRESSED IN TWO DIRECTIONS WHEREAS A NORMAL SILT FENCE IS ONLY STRESSED IN ONE DIRECTION. THIS ADDED STRESS REQUIRES MORE SUPPORT.

**INSPECTION AND MAINTENANCE:**

SILT FENCE BARRIER FOR AREA INLETS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

- DOES WATER FLOW UNDER THE SILT FENCE?
- DOES THE SILT FENCE SAG EXCESSIVELY?
- HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



**MATERIAL SPECIFICATION:**

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

**PLACEMENT:**

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT. WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT-FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**


WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES. DO NOT PLACE SILT-FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT. SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND—SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

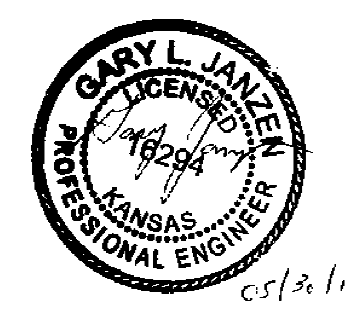
**INSPECTION AND MAINTENANCE:**

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

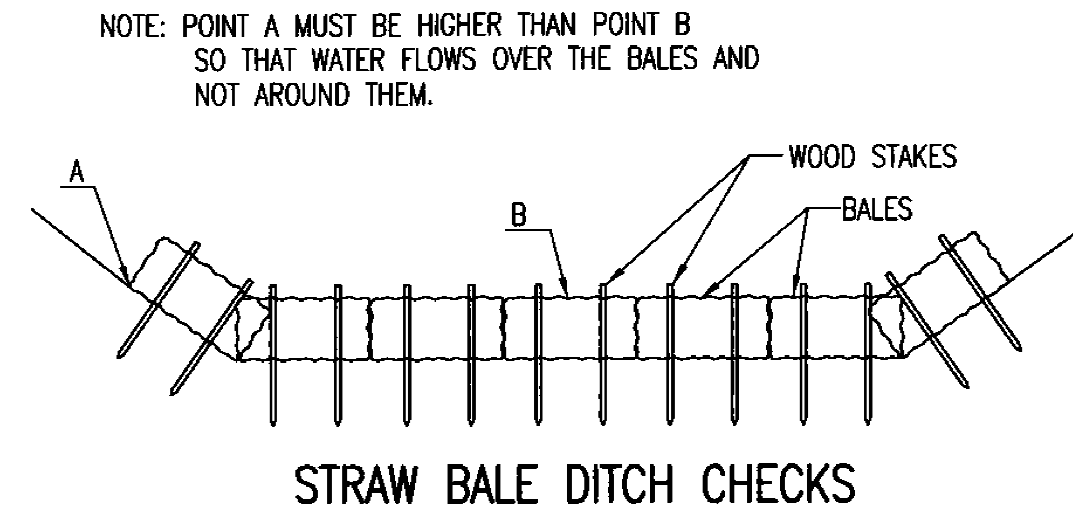
- ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
- DOES WATER FLOW UNDER THE SLOPE BARRIER?
- DO THE SILT FENCES SAG EXCESSIVELY?
- HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

REVISION DATE: MAY 2013

 <p>CITY OF WICHITA PUBLIC WORKS &amp; UTILITIES ENGINEERING DIVISION</p>			SILT FENCE DITCH CHECK AND BARRIER DETAILS		
			CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER 1912PPW	OCA NUMBER 607853	DATE	SHEET		
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501			DATE: 08/19/2015		



AS-BUILT PLANS - APRIL 2016



**NOTE:** POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE BALES AND NOT AROUND THEM.

**STRAW BALE DITCH CHECKS**

**MATERIAL SPECIFICATION:**

BALE DITCH CHECKS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. OPTIONAL: THE DOWNSTREAM SCOUR APRON SHOULD BE CONSTRUCTED OF A DOUBLE-NETTED STRAW EROSION-CONTROL BLANKET AT LEAST 6' WIDE. OPTIONAL: THE METAL LANDSCAPE STAPLES USED TO ANCHOR THE EROSION-CONTROL BLANKET SHOULD BE AT LEAST 8" LONG.

**PLACEMENT:**

BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK. STRAW BALE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD. BALES SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED. THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH-IT WILL BE USED LATER. OPTIONAL: ON THE DOWNSTREAM SIDE OF THE TRENCH, ROLL OUT A LENGTH OF EROSION-CONTROL BLANKET (SCOUR APRON) EQUAL TO THE LENGTH OF THE TRENCH. PLACE THE UPSTREAM EDGE OF THE EROSION-CONTROL BLANKET ALONG THE BOTTOM UPSTREAM EDGE OF THE TRENCH. THE EROSION CONTROL BLANKET SHOULD BE ANCHORED IN THE TRENCH WITH ONE ROW OF 8" LANDSCAPE STAPLES PLACED ON 18" CENTERS. THE REMAINDER OF THE EROSION-CONTROL BLANKET (THE PORTION THAT IS NOT LYING IN THE TRENCH) WILL SERVE AS THE DOWNSTREAM SCOUR APRON. THIS SECTION OF THE BLANKET SHOULD BE ANCHORED TO THE GROUND WITH 8" LANDSCAPE STAPLES PLACED AROUND THE PERIMETER OF THE BLANKET ON 18" CENTERS. THE REMAINDER OF THE BLANKET SHOULD BE ANCHORED USING TWO EVENLY SPACED ROWS OF 8" LANDSCAPE STAPLES ON 18" CENTERS PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSTREAM SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP AND EXTEND UPSTREAM NO MORE THAN 24".

**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

DO NOT PLACE A BALE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW.

DO NOT PLACE BALE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW.

FOLLOW PRESCRIBED DITCH-CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS.

DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE.

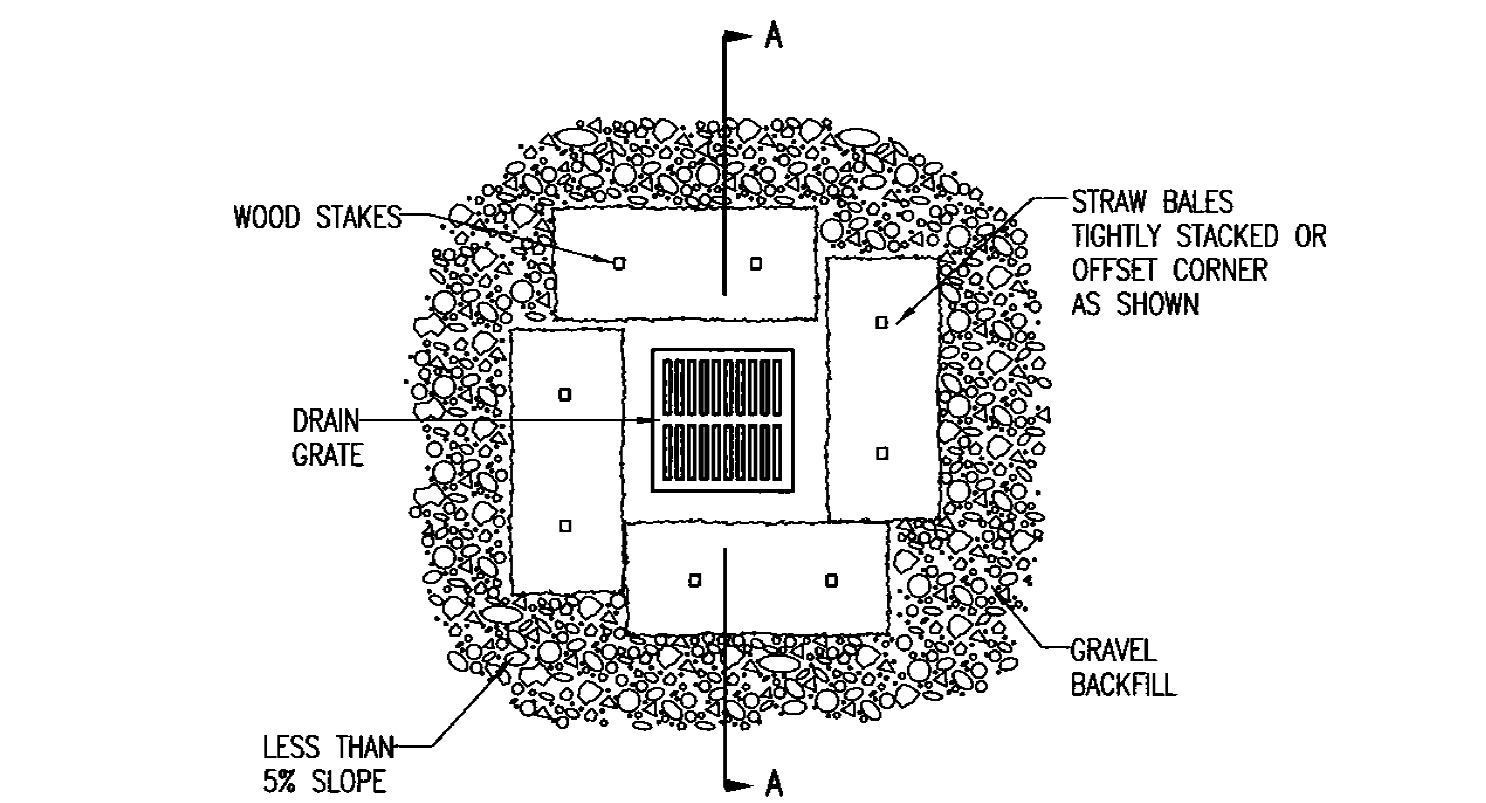
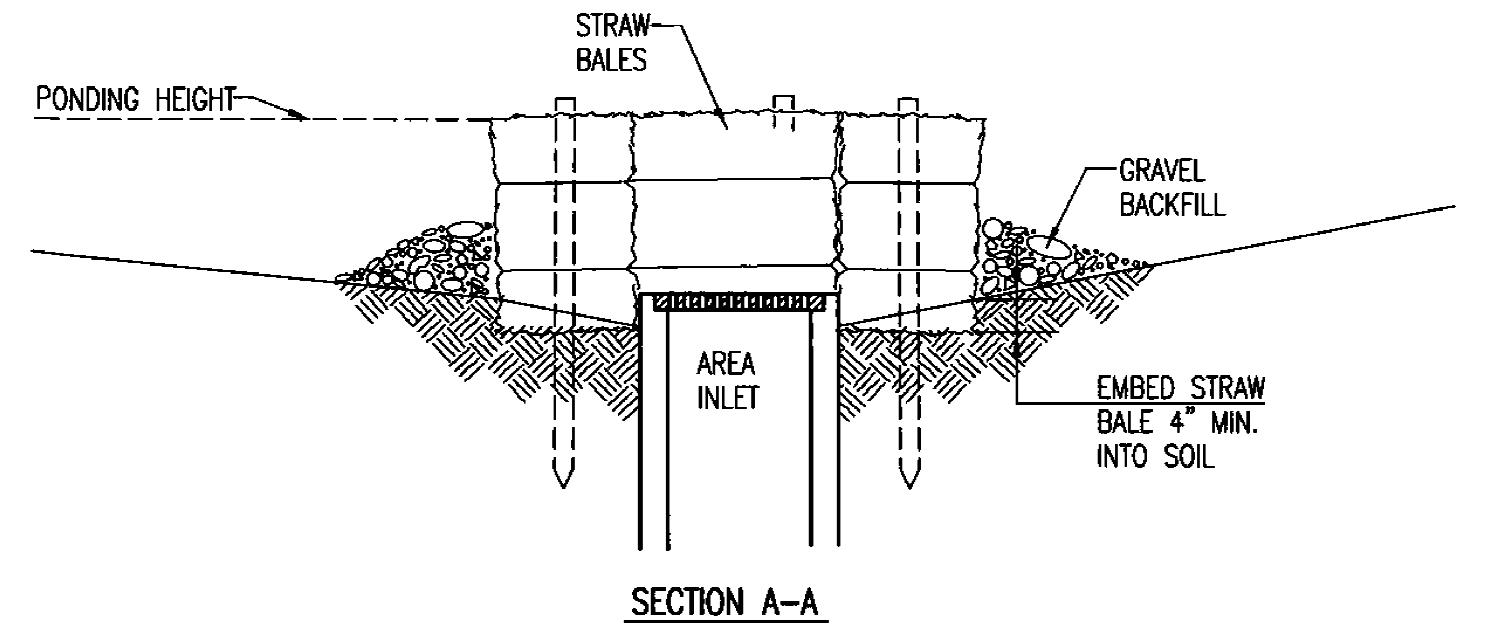
DO NOT PLACE BALE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

BALE DITCH CHECKS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE CHECK.

**INSPECTION AND MAINTENANCE:**

BALE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?  
 DOES WATER FLOW UNDER THE DITCH CHECK?  
 DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?  
 ARE ANY BALES AND/OR SCOUR APRONS (OPTIONAL) DISLODGED?  
 ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?  
 DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



**STRAW BALE BARRIERS FOR AREA INLETS (INLET PROTECTION)**

**MATERIAL SPECIFICATION:**

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

**PLACEMENT:**

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET. WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRastically REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

**NOTE:** WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

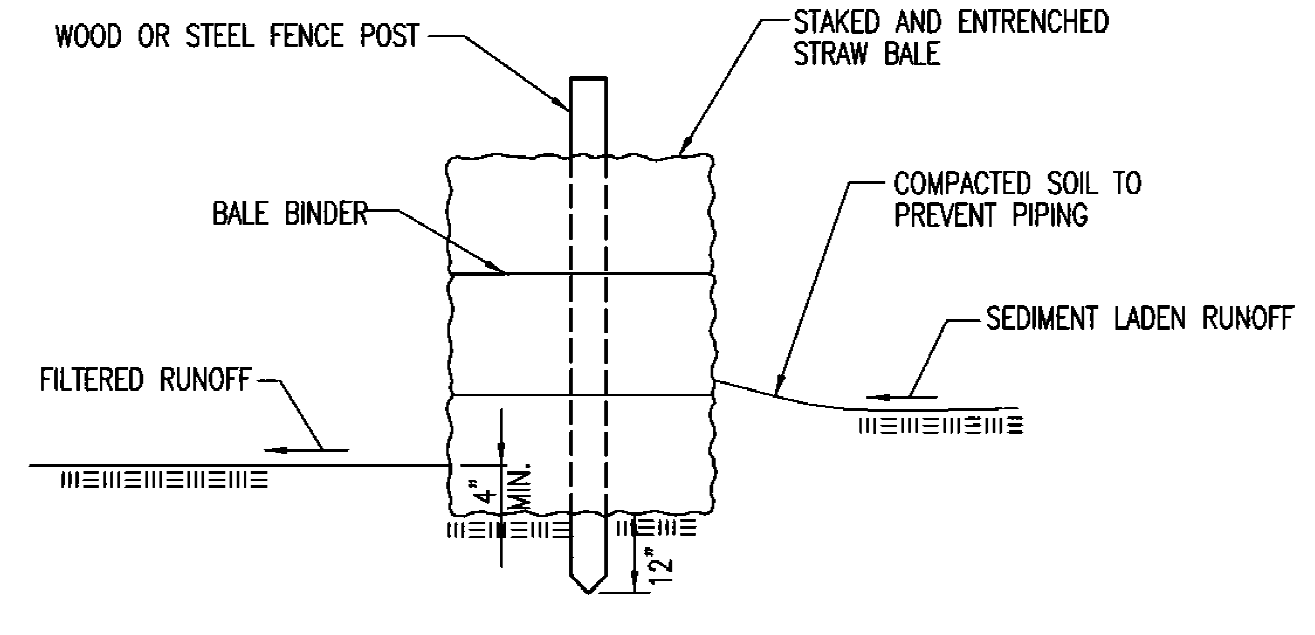
**LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:**

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR. BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

**INSPECTION AND MAINTENANCE:**

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE AREA INLET BARRIER?  
 DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?  
 ARE ANY BALES DISLODGED?  
 ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?  
 DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



**STRAW BALE BARRIERS**

**MATERIAL SPECIFICATION:**

BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

**PLACEMENT:**

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER IS PLACED ALONG FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT. WHEN PRACTICABLE, BALE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. BALE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

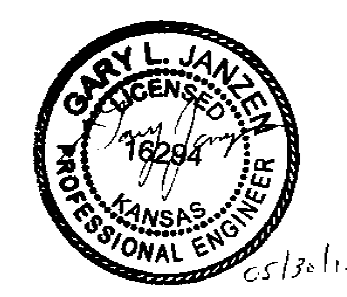
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS. DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT. BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

**INSPECTION AND MAINTENANCE:**

BALE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?  
 DOES WATER FLOW UNDER THE SLOPE BARRIER?  
 DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?  
 ARE ANY BALES DISLODGED?  
 ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?  
 DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?



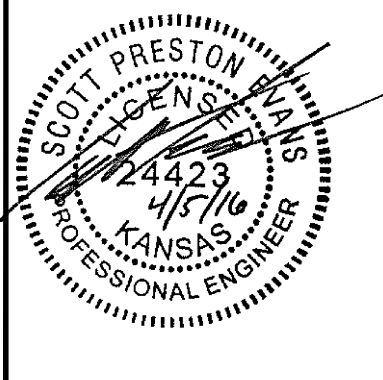
**CITY OF WICHITA**  
PUBLIC WORKS & UTILITIES  
ENGINEERING DIVISION

**STRAW BALE DITCH CHECK AND BARRIER DETAILS**

CITY ENGINEER  
**GARY JANZEN, P.E.**

PROJECT NUMBER <b>1912PPW</b>	OCA NUMBER <b>607853</b>	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET

**AS-BUILT PLANS - APRIL 2016**



REVISION	DATE

DIVISION OF ADMINISTRATION & FINANCE  
 FACILITIES PLANNING  
 1845 FAIRMOUNT ST.  
 WICHITA, KANSAS 67260-0047  
 Phone 316-978-3030

Department of Administration  
 Office of Facilities & Procurement Management  
 Design, Construction & Compliance  
 800 SW Jackson, Suite 700  
 Topeka, Kansas 66612-1216  
 Phone 785-296-8899

WICHITA STATE UNIVERSITY  
**INNOVATION CAMPUS INFRASTRUCTURE PHASE 1**  
 1845 FAIRMOUNT ST.  
 WICHITA, KANSAS 67260-0023  
 DRAWN BY: IKL  
 CHECKED BY: BLB

**BMP DETAILS**  
 A-012817  
 32 OF 34  
 ORIGINAL CONTRACT DOCUMENTS

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SW-503

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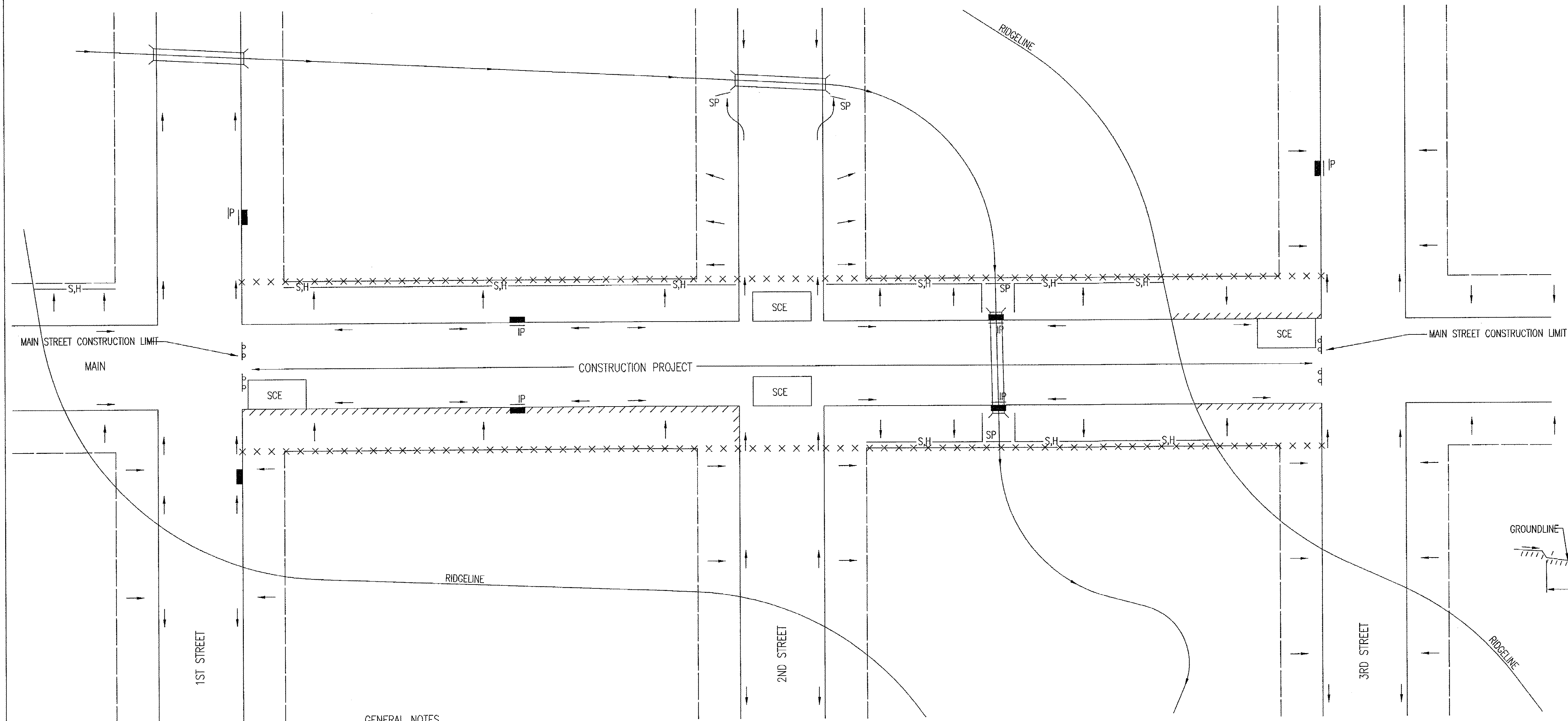
REVISION: JUNE 2015  
**STREET IMPROVEMENT PROJECTS**  
CITY ENGINEER  
**GARY JANZEN, P.E.**  
PROJECT NUMBER: 1912PPW  
OCA NUMBER: 607853  
DATE:                      

CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501	SHEET
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**BMP DETAILS**  
A-012817  
33 OF 34  
ORIGINAL CONTRACT DOCUMENTS

**GENERAL NOTES**

- THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
- EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.
- IF THE PROJECT WILL DISTURB 1 ACRE OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.
- FOR PROJECTS DISTURBING LESS THAN 1 ACRE, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES MUST BE USED ON ALL PROJECTS.
- FAILURE TO USE AND MAINTAIN EROSION CONTROL DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.
- THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT DEVICE OTHER THAN THOSE SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.

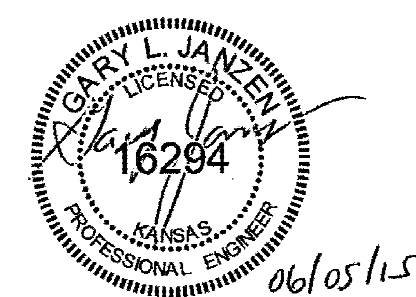


**LEGEND**

- R-O-W LIMITS
- DRAINAGE FLOW PATH
- x x x x x R/W LIMIT WITHIN CONSTRUCTION LIMIT
- STORM WATER INLETS
- IP INLET PROTECTION
- S,H SILT FENCE OR HAY BALE BARRIER
- SP STREAM PROTECTION
- SCE STABILIZED CONSTRUCTION ENTRANCE
- //// BACK OF CURB PROTECTION

**GENERAL NOTES**

- THE INTENT OF ALL EROSION CONTROL DEVICES IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, LAKES, AND OTHER DRAINAGE FACILITIES, AND OFF OF STREETS.
- THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT-OF-WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.
- EROSION CONTROL DEVICES WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.
- INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.
- EROSION CONTROL DEVICES SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.
- STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.
- ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.
- THE CONTRACTOR WILL BE REQUIRED TO PLACE EROSION CONTROL DEVICES BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES. IN ACCORDANCE WITH THE FOLLOWING:
  - THE DEVICE REQUIRED WILL BE APPROVED EROSION CONTROL MAT LISTED ON THE CITY'S APPROVED MATERIAL LIST. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE SOIL EROSION BMPs - BACK OF CURB SEDIMENT BARRIER DETAILS)
  - THIS DEVICE SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMP'S MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
  - ADDITIONALLY, OTHER EROSION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
  - SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT-OF-WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE CURB BACKFILL DETAIL)

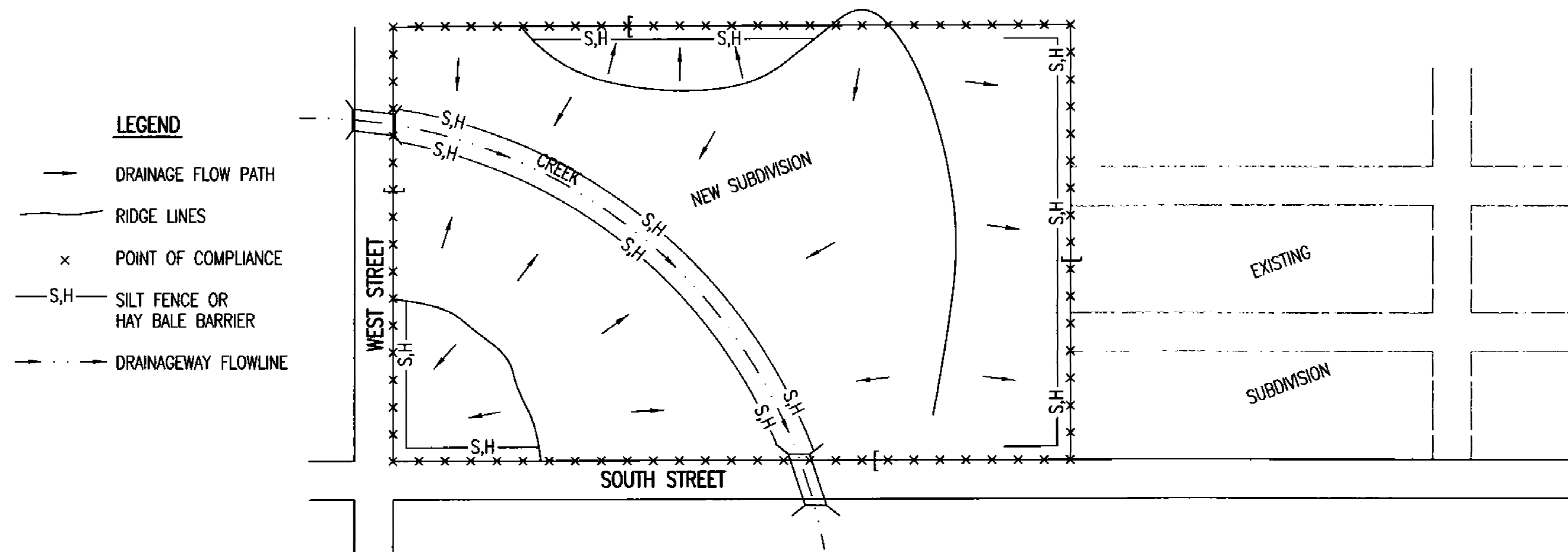


**AS-BUILT PLANS - APRIL 2016**



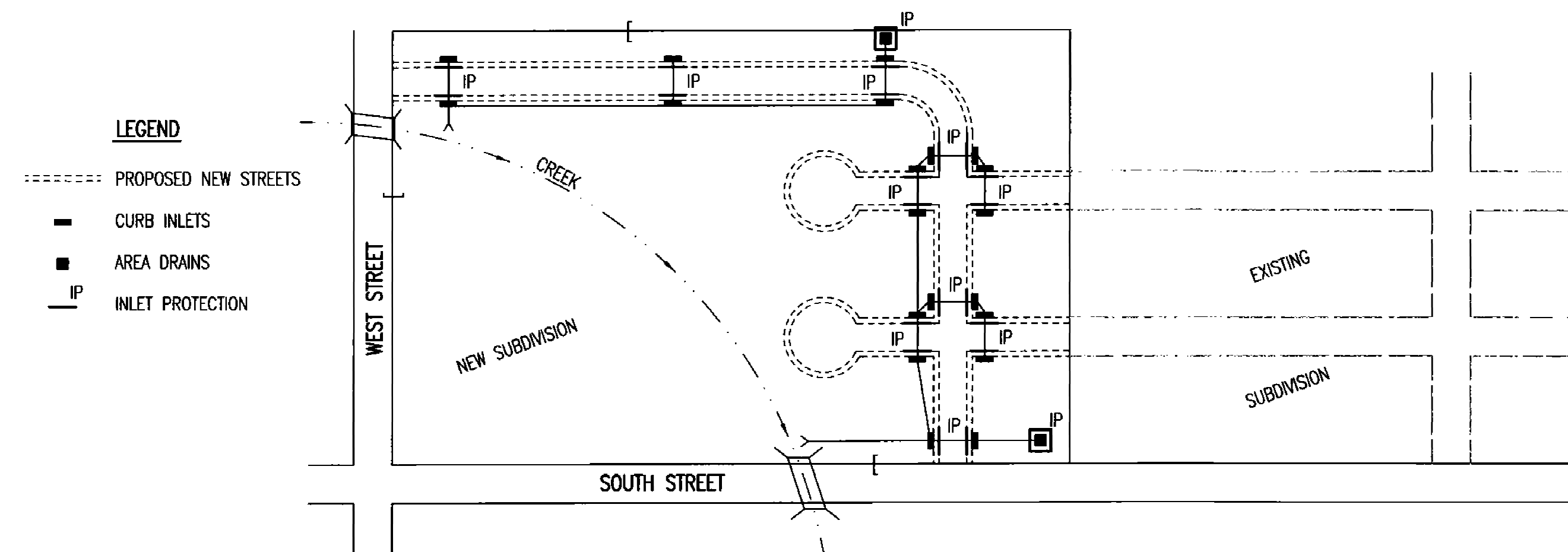
CITY ENGINEER <b>GARY JANZEN, P.E.</b>		
PROJECT NUMBER 1912PPW	OCA NUMBER 607853	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET

**PHASE 1 - INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)**



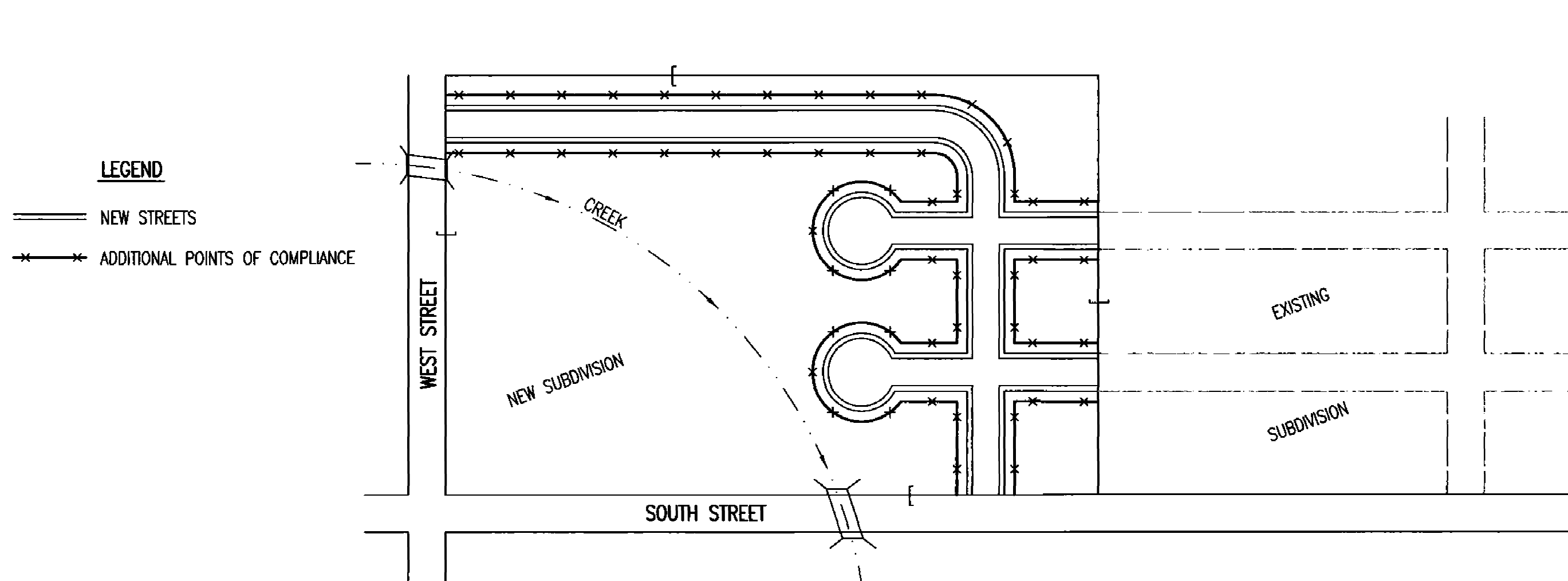
- DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
- HAY BALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE EROSION CONTROL DEVICES WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
- SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR STREETS ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE EROSION CONTROL DEVICES WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
- ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED WITHIN 48 HOURS OR BY FRIDAY AT 6:00 PM, WHICHEVER IS EARLIER.
- CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL EROSION CONTROL DEVICES AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE EROSION CONTROL DEVICES AT THEIR WORK LOCATIONS, AS NEEDED.
- UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
- IF THE INITIAL EARTH WORK AND UTILITIES ARE DONE AS PART OF A PUBLIC IMPROVEMENT PROJECT, THESE EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE INDIVIDUAL PROJECT CONTRACTS. THE CONTRACTOR WILL MAINTAIN THE DEVICES UNTIL COMPLETION OF THE CONTRACT, AT WHICH TIME THE DEVELOPER WILL ASSUME MAINTENANCE RESPONSIBILITIES. IF THESE CONTRACTS ARE NOT PUBLIC IMPROVEMENT PROJECTS, THE DEVELOPER WILL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THESE DEVICES.
- WITHIN 14 DAYS OF COMPLETION OF EARTHWORK ACTIVITIES IN ANY GIVEN AREA, THAT AREA SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED.

**PHASE 2 - INSTALLATION OF STORM SEWER**



- DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
- AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
- AREA DRAINS - AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAY BALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
- CURB OPENING INLETS - AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION DEVICES MUST BE INSTALLED. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION. SEE PHASE 3 - STREET CONSTRUCTION.
- THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE DEVICES.
- THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE EROSION CONTROL DEVICES ONCE INSTALLED.
- ALL DISTURBED GROUND WILL BE FINAL GRADED AND TEMPORARILY OR PERMANENTLY SEEDED WITHIN 14 DAYS IF COMPLETION OF WORK IN ANY GIVEN PART OF THE SUBDIVISION.
- ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

**PHASE 3 - STREET CONSTRUCTION**

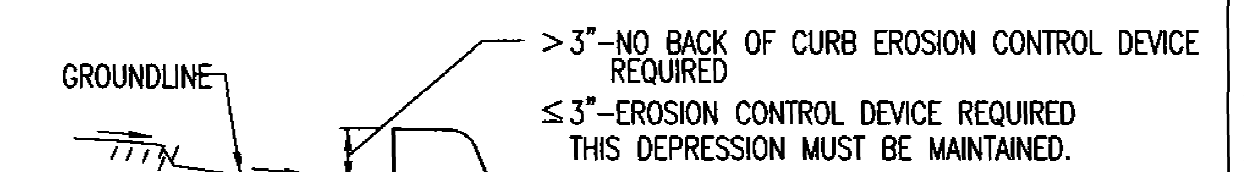


- DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL EROSION CONTROL DEVICES INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
- CURB OPENING INLET PROTECTION:
  - SUMP AREAS - INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
  - NON-SUMP LOCATIONS - PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
- EROSION CONTROL DEVICES WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), ADDITIONAL DEVICES WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
- SEE DETAIL SHEET FOR BACK OF CURB PROTECTION.
- THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAY BALE OR SILT FENCE EROSION CONTROL DEVICES AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
- THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB EROSION CONTROL DEVICES.
- THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB EROSION CONTROL DEVICES IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

**GENERAL NOTES**

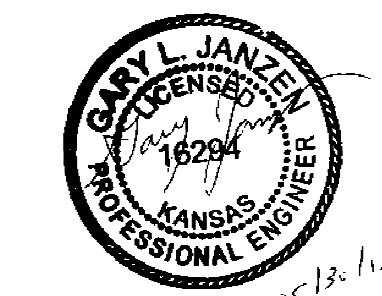
- THE INTENT OF ALL EROSION CONTROL DEVICES IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, LAKES, STREETS OR ANY OTHER OTHER DRAINAGE FEATURE.
- THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
- EROSION CONTROL DEVICES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON SOIL EROSION BMP'S DETAIL SHEETS.
- PERSONS DESTROYING EROSION CONTROL DEVICES SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT DEVICES.
- THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 1 ACRE OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL DEVICES ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLANS.
- FOR SUBDIVISIONS SMALLER THAN 1 ACRE, SOIL EROSION DEVICES ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
- FAILURE TO USE AND MAINTAIN SOIL EROSION DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
- THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE DEVICES OTHER THAN THAT SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
- A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

SEE DETAIL SHEET FOR BACK OF CURB PROTECTION DETAIL



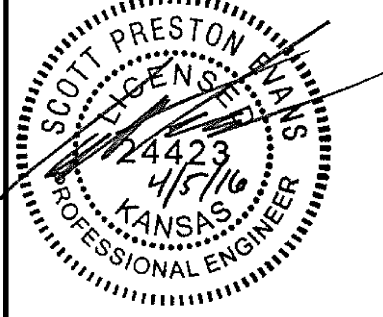
**CURB BACKFILL DETAIL (STREET CONSTRUCTION ONLY)**

THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.



<b>SUBDIVISION DEVELOPMENT PROCESS</b>		
CITY ENGINEER <b>GARY JANZEN, P.E.</b>		
PROJECT NUMBER 1912PPW	OCA NUMBER 607853	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET

**AS-BUILT PLANS - APRIL 2016**



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