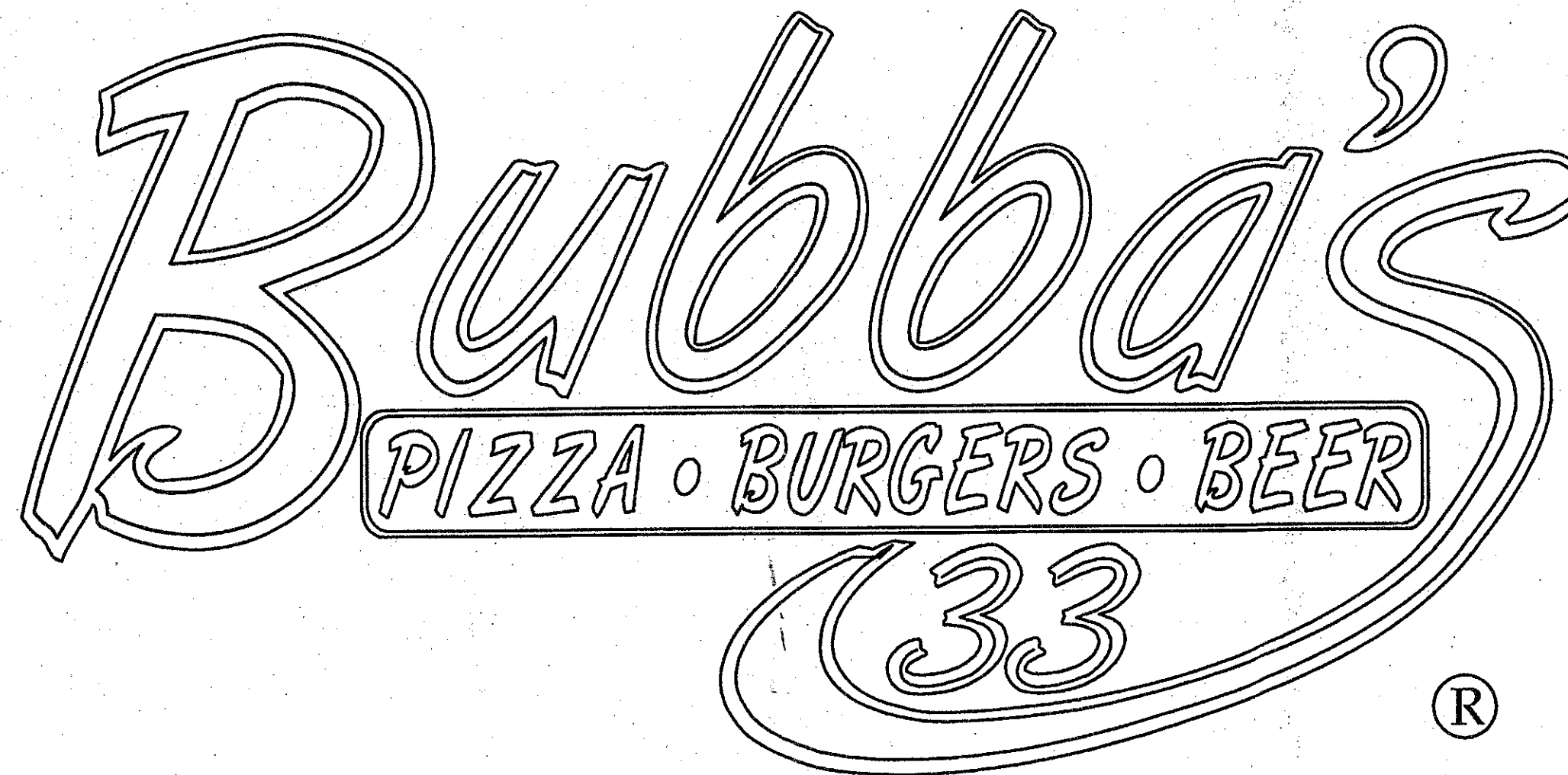


WATER IMPROVEMENTS  
TO SERVE



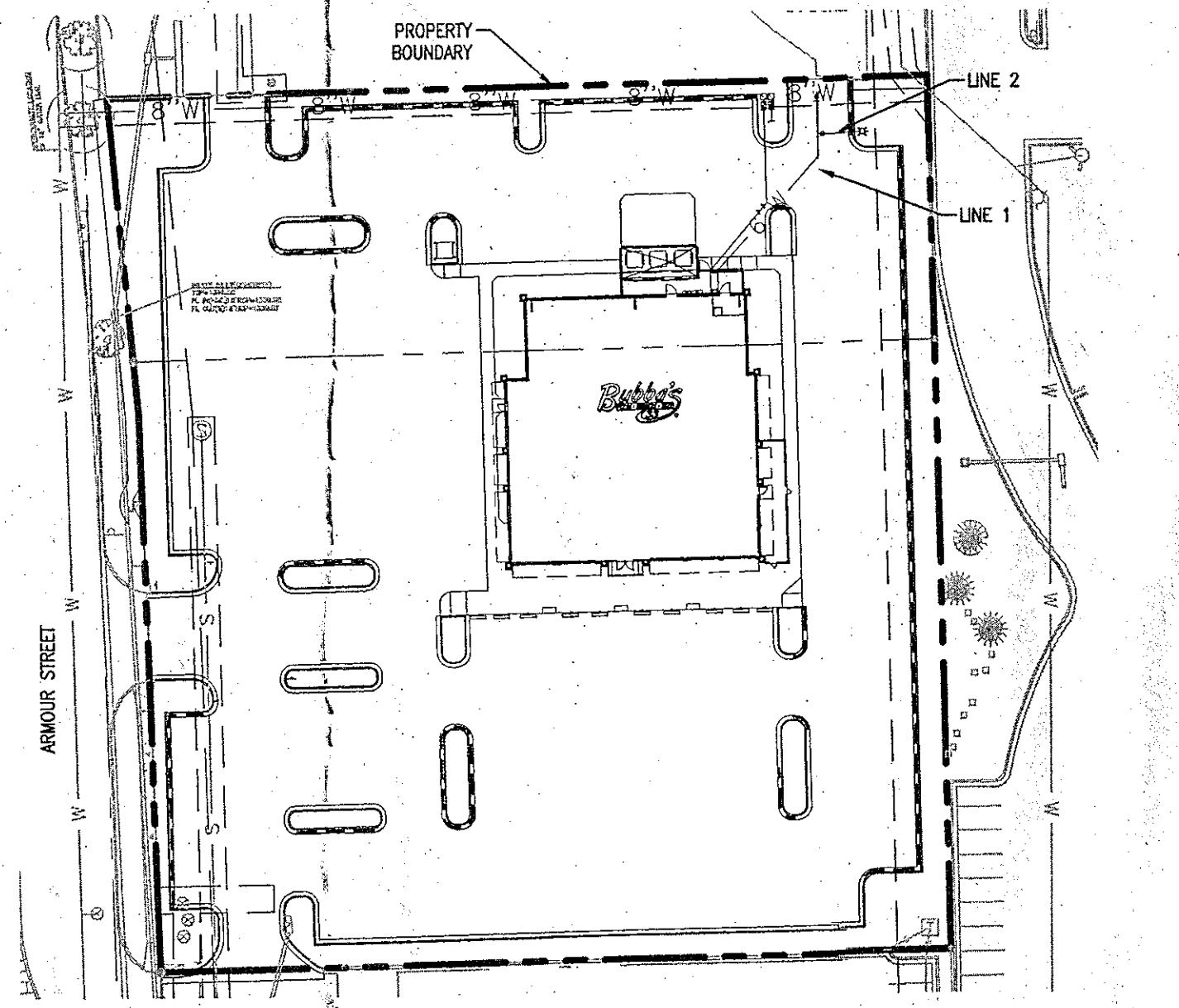
412 S. TOWNE EAST DRIVE  
SEDGWICK COUNTY

WICHITA, KS ZONING: LIMITED COMMERCIAL AND  
COMMUNITY UNIT PLAN

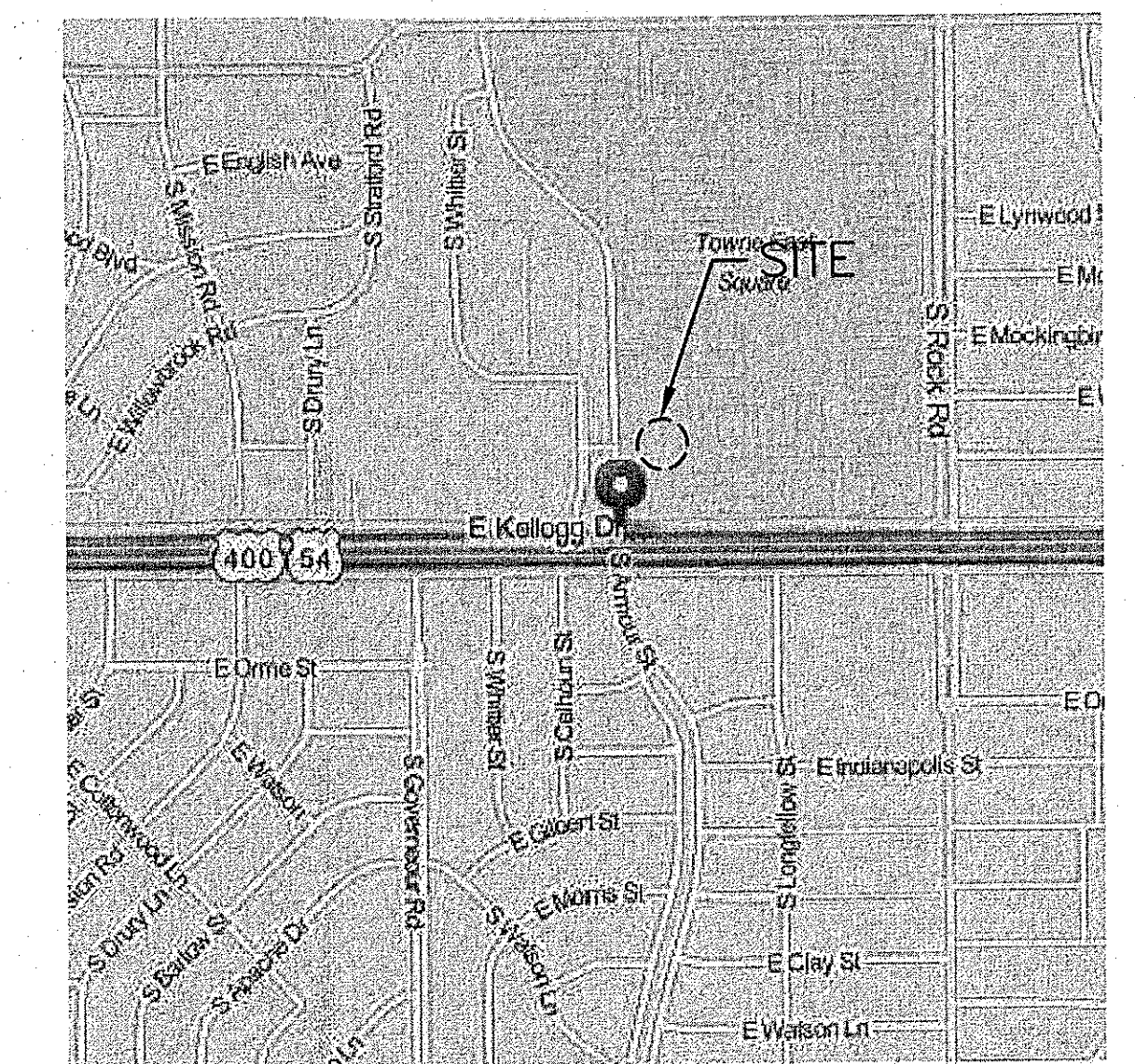
GARY L. JANZEN, P.E. CITY ENGINEER  
PROJECT NUMBER  
1910 PPW (607853)

SHEET INDEX:

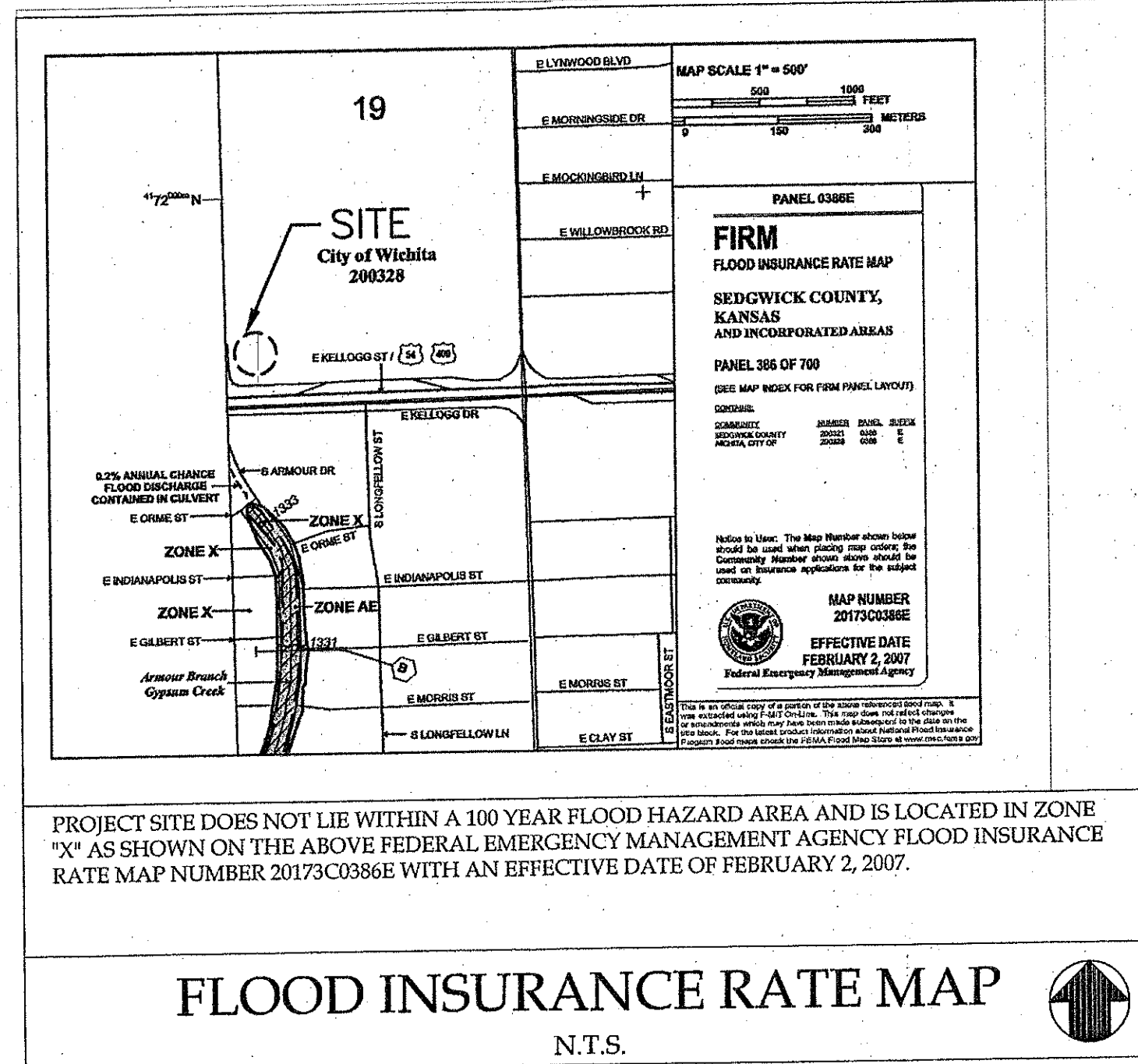
- C0.1 PPW COVER SHEET AND NOTES
- C1.0 GENERAL NOTES
- C2.0 DEMOLITION PLAN
- C4.0 GRADING AND DRAINAGE PLAN
- C5.0 OVERALL UTILITY PLAN
- C5.2 WATER PLAN
- C5.5 WATER PROFILES
- C6.0 STORMWATER POLLUTION PREVENTION PLAN
- C7.2-C7.6 EROSION DETAILS
- C7.10-C7.12 WATER DETAILS



1 inch = 60 ft.



PROJECT LOCATION MAP  
N.T.S.



PROJECT SITE DOES NOT LIE WITHIN A 100 YEAR FLOOD HAZARD AREA AND IS LOCATED IN ZONE "X" AS SHOWN ON THE ABOVE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NUMBER 20173C0386E WITH AN EFFECTIVE DATE OF FEBRUARY 2, 2007.

FLOOD INSURANCE RATE MAP  
N.T.S.

PPW NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS. ALL CONSTRUCTION SHALL BE COMPLETED FOLLOWING CURRENT CITY STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. 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 887-2470 THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:
  - AT&T 1-800-248-8464
  - BLACK HILLS ENERGY 1-800-694-8989
  - CITY OF WICHITA WATER 1-316-268-4553
  - 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
3. 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 THE CONTRACTOR OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, 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.
4. 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 WILL 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 WILL REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.
5. 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.
6. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ADJUTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS NOTICE PRIOR TO START OF CONSTRUCTION.
7. 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.
8. 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.
9. 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 AND INSPECTION FOR THIS PROJECT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. IF TRAFFIC IS IMPACTED BY CONSTRUCTION, A TRAFFIC CONTROL PLAN MUST BE SUBMITTED AND APPROVED BY THE CITY TRAFFIC ENGINEER, BRIAN COON AT 316-268-4574 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 US DEPT. OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION. ALL COSTS ASSOCIATED WITH CONSTRUCTION MARKINGS AND SIGNAGE SHALL BE THE CONTRACTORS RESPONSIBILITY.
11. ALL ELEVATIONS SHOWN ARE NAVD 88.
12. ALL AREAS DISTURBED DURING CONSTRUCTION THAT WILL NOT BE UNDER PROPOSED PAVEMENT SHALL BE RESTORED TO MATCH EXISTING CONDITIONS.
13. 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.
14. 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, COST IS SUBSIDIARY TO PIPE INSTALLATION.
15. 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.
16. 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.
17. 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.
18. 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 CI W/ LONG SLEEVE OR MULTIPLE JOINTS.
19. ANY EXTENSION GREATER THAN ONE LENGTH OF PIPE SHALL REQUIRE TESTING.
20. ANY EXISTING JOINT EXPOSED DURING EXCAVATION SHALL BE REPLACED IF WITHIN FOUR FEET OF PROPOSED JOINT.
21. CITY MAINTENANCE OF WATER MAINS ENDS AT RIGHT-OF-WAY OR EASEMENT LINE.
22. VALVES 12 INCH AND LARGER ARE TO BE OPERATED BY THE CITY WATER DISTRIBUTION DIVISION, 48 HOURS OF ADVANCE NOTICE IS REQUIRED.
23. ALL WET TAPS SHALL BE INSTALLED BY THE CITY OF WICHITA. THE CONTRACTOR WILL REIMBURSE THE CITY FOR TAPPING FEES.
24. THE CONTRACTOR SHALL PROTECT FROM DAMAGE AND SUPPORT EXISTING UTILITIES THROUGH CONSTRUCTIONS AS APPROVED BY THE UTILITY OWNER AND THE ENGINEER AT THE CONTRACTORS EXPENSE.
25. CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH OPENINGS OVERTNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
26. ANY SIDEWALK, DRIVE APPROACH, CURB, OR STREET PAVEMENT REMOVED 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.

AS BUILTS

Contractor: Wilks Underground  
Inspector: Larry Gann  
Date: 12/30/2015

**KEMILLER**  
ENGINEERING PA  
117 E. Lewis,  
Wichita, KS 67202  
(316)264-0242

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

Engineering *Rebecca Hill* 8/27/2015  
Utilities *Bolesen* 8-27-15  
Fire Dept. *Bolesen* 8/27/15

NOTE TO CONTRACTORS

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

ENGINEER:

**GreenbergFarrow**

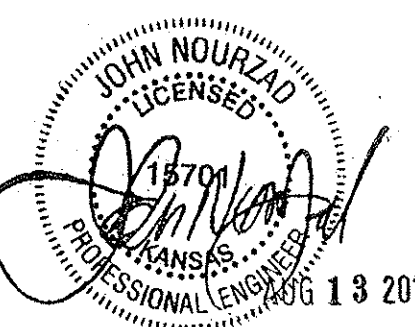
CONTACT: BRIAN OLESEN, P.E.  
21 S. EVERGREEN AVENUE, SUITE 200  
ARLINGTON HEIGHTS, ILLINOIS 60005

TEL: (920) 364-0610

EMAIL: BOLESEN@GREENBERGFARROW.COM

JOB NO. 20140568.0

DATE: 08-03-2015







**PROPOSED LEGEND:**

- PROPERTY LINE
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED DEPRESSED CONCRETE CURB AND GUTTER
- PROPOSED REVERSE PITCH CONCRETE CURB AND GUTTER
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- FFE: FINISHED FLOOR ELEVATION
- TO: TOP OF CURB ELEVATION
- FL: CURB FLOWLINE ELEVATION
- C: TOP OF CONCRETE ELEVATION
- P: TOP OF PAVEMENT ELEVATION
- FG: FINISHED GRADE ELEVATION
- ME: MATCH EXISTING ELEVATION
- PROPOSED SPOT ELEVATION EXPOSED CURB FACE VARIES
- PROPOSED GRADING RIDGE LINE
- PROPOSED DRAINAGE FLOW DIRECTION
- PROPOSED OVERLAND FLOW ROUTE
- PROPOSED STORM SEWER STRUCTURE WITH OPEN GRATE
- PROPOSED STORM SEWER STRUCTURE WITH CLOSED LID
- PROPOSED STORM SEWER CLEAN OUT
- PROPOSED HEAVY DUTY AREA DRAIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER STRUCTURES
- PROPOSED SANITARY SEWER GREASE INTERCEPTOR
- PROPOSED WATER STRUCTURES
- PROPOSED FIRE HYDRANT
- PROPOSED FIRE DEPARTMENT CONNECTION (FDC)

**ISSUE/REVISION RECORD**

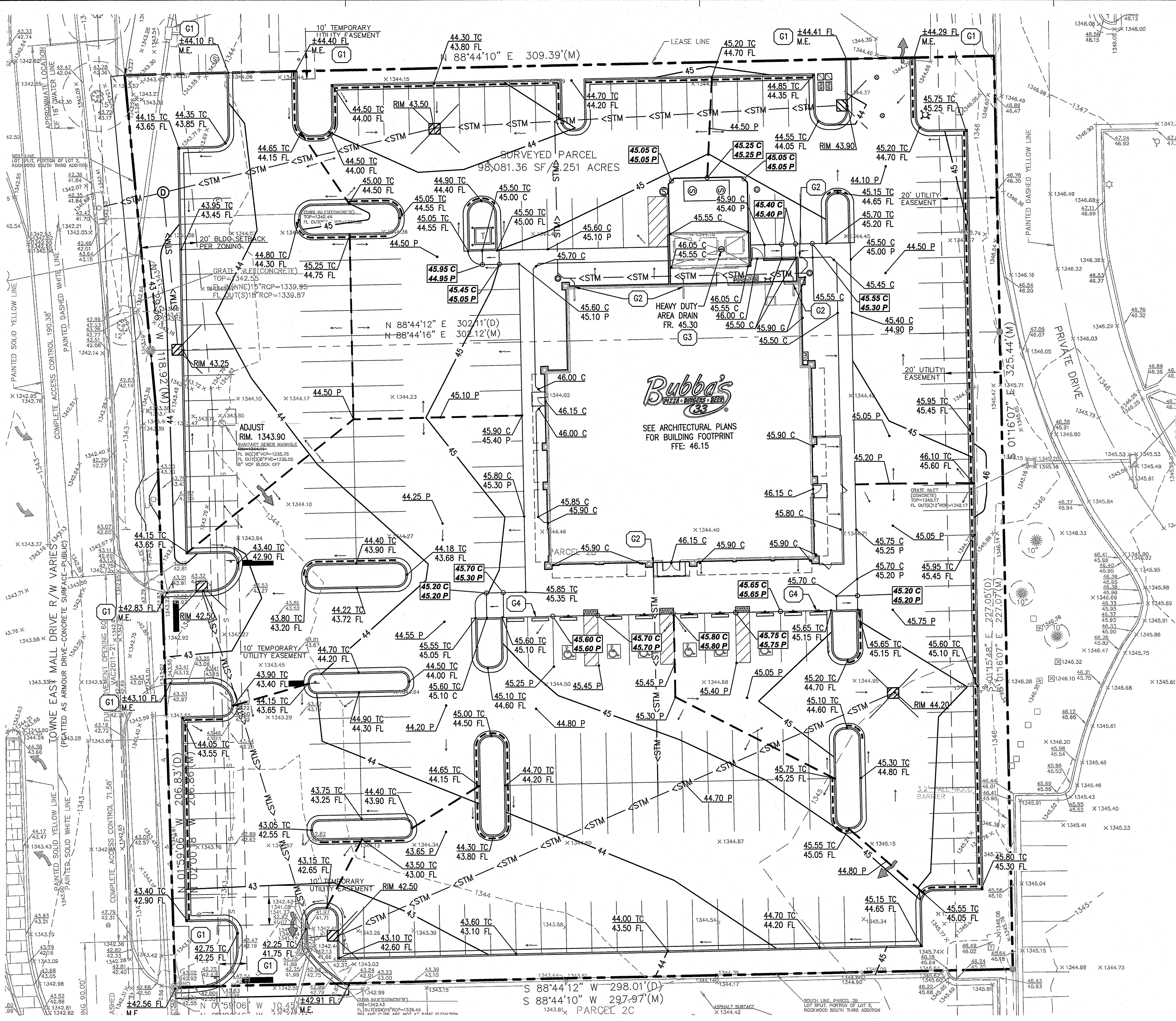
DATE	DESCRIPTION
06/02/15	COORDINATION SET
06/29/15	PERMIT SET
07/24/15	PERMIT RESUBMITTAL
08/03/15	BID SET

**PROFESSIONAL SEAL**

JOHN NOURZAD  
LICENSED PROFESSIONAL ENGINEER  
LICENSE NO. 15701

**GENERAL GRADING NOTES:**

- ALL GRADING AND SITE PREPARATION WORK SHALL CONFORM WITH THE RECOMMENDATIONS AND SPECIFICATIONS CONTAINED IN THE GEOTECHNICAL REPORT.
- CONTRACTOR SHALL CAREFULLY PRESERVE ALL SITE BENCHMARKS AND REFERENCE POINTS DURING CONSTRUCTION OPERATIONS.
- CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED SITE IMPROVEMENTS SHOWN ON THE PLANS.
- CONTRACTOR SHALL INSTALL APPROPRIATE TREE PROTECTION MEASURES PRIOR TO COMMENCEMENT OF SITE GRADING OPERATIONS.
- ALL PROPOSED GRADING, PAVEMENT, APRONS, CURBS, WALKS, ETC. SHALL MATCH EXISTING GRADES FLUSH.
- CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE TO ALL STORM DRAINAGE STRUCTURES. AREAS OF SURFACE PONDING SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- ALL EXISTING AND PROPOSED TOP OF FRAME ELEVATIONS FOR STORM, SANITARY, WATER AND OTHER UTILITY STRUCTURES SHALL BE ADJUSTED TO MEET FINISHED GRADE WITHIN THE PROJECT LIMITS.
- CONTRACTOR SHALL UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
- CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
- MAXIMUM CROSS SLOPES AND LONGITUDINAL SLOPES FOR ALL CONCRETE SIDEWALKS AND HANDICAP ACCESSIBLE ROUTES SHALL NOT EXCEED 2% AND 5%, RESPECTIVELY.
- MAXIMUM SLOPES WITHIN THE HANDICAP ACCESSIBLE PARKING AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION.
- MAXIMUM GRADE DIFFERENCE BETWEEN PAVEMENT SURFACES AND ADJACENT CONCRETE SIDEWALKS FOR THE ACCESSIBLE ROUTE TO THE BUILDING SHALL NOT EXCEED 1/4" VERTICAL OR 1/2" WHEN BEVELED.
- ALL HANDICAP ACCESSIBLE EXTERIOR DOORWAY LOCATIONS REQUIRE AN EXTERIOR LANDING THAT IS A MINIMUM OF FIVE (5) FEET IN LENGTH WITH A SLOPE NOT EXCEEDING 2% IN ANY DIRECTION.
- EXCAVATION SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. SHORING SHALL BE IN ACCORDANCE WITH ALL O.S.H.A. AND LOCAL REGULATIONS.
- ALL STRUCTURE BENCH WALLS SHALL BE SHAPED AND FORMED FOR A CLEAN TRANSITION WITH PROPER HYDRAULICS TO ALLOW THE SMOOTH CONVEYANCE OF FLOWS THROUGH THE MANHOLE OR BOX INLET. THE BENCH WALL SHALL FORM A DEFINED CHANNEL, TO A MINIMUM HEIGHT OF 80-PERCENT OF THE INSIDE DIAMETER OF THE INLET AND OUTLET PIPES TO FORM A "U" SHAPED CHANNEL, CONSTRUCTED AT A MINIMUM 1/2-INCH PER FOOT SLOPE TO THE MANHOLE WALL.
- ALL STORM WATER INLETS AND CATCH BASIN CASTINGS SHALL HAVE THE WORDS "NO DUMPING, DRAINS TO STREAM", OR SIMILARLY APPROVED MESSAGE, CAST IN RAISED OR RECESSED LETTERS AT A MINIMUM OF 1" IN HEIGHT. IN ADDITION, A SYMBOL OF A FISH SHALL ALSO BE CAST WITH THE LETTERS.
- SEE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



**GRADING & DRAINAGE KEY NOTES:**

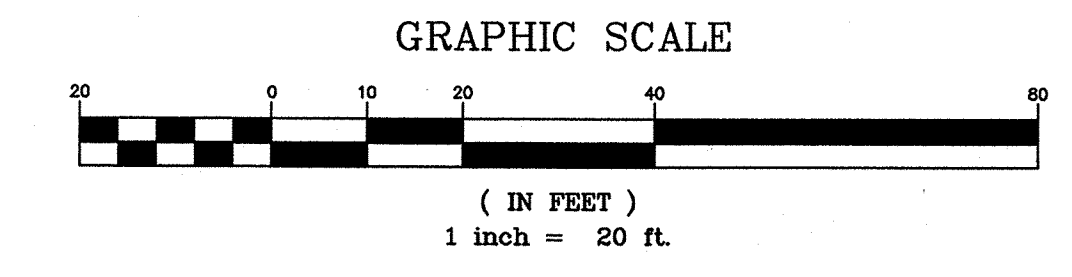
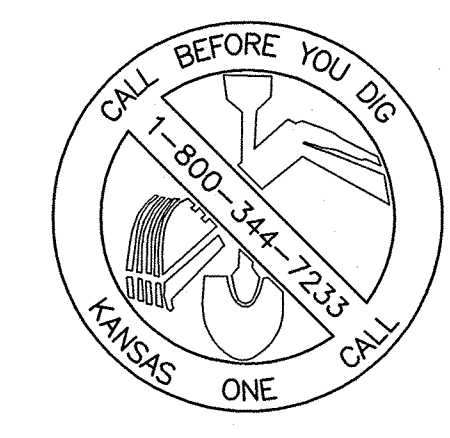
- G1 FIELD VERIFY AND MATCH EXISTING ELEVATION AT PROJECT SCOPE OF WORK LIMITS (TYP.)
- G2 PROPOSED ROOF DRAIN LOCATION (SEE UTILITY PLAN FOR MORE INFORMATION)
- G3 PROPOSED ZURN Z505 AREA DRAIN (SEE UTILITY AND PLUMBING PLANS)
- G4 CURB TRANSITION FOR 0" TO 6" IN HEIGHT

**PROJECT BENCHMARKS:**

- SITE BENCHMARKS:**
- BM #1: CHISELED "SQUARE" ON SOUTHWEST CORNER OF CURB INLET, 50± EAST OF SOUTHWEST CORNER OF PARCEL 2B. ELEVATION=1342.47
  - BM #2: CHISELED "SQUARE" ON TOP CURB AT WEST SIDE CURB ISLAND WITHOUT LIGHT POLE, 200± SOUTH SOUTHWEST OF NORTHEAST CORNER OF LOT ELEVATION=1348.87
  - BM #3: CHISELED "SQUARE" ON TOP CURB AT POINT OF INTERSECTION FOR OLD CHICAGO NORTHWEST PARKING LOT, 62± NORTH OF THE SOUTHWEST CORNER OF PARCEL 2B. ELEVATION=1346.46

**FLOOD NOTE:**

PROJECT SITE DOES NOT LIE WITHIN A 100 YEAR FLOOD HAZARD AREA AND IS LOCATED IN ZONE "X" AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NUMBER 2017300386E, LAST REVISED FEBRUARY 2, 2007.



**WICHITA KANSAS**  
412 S. TOWNE EAST DRIVE

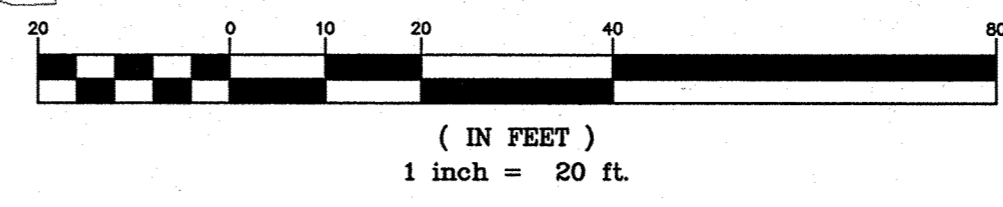


**PROJECT NUMBER**  
201405680.0

**SHEET TITLE**  
**GRADING AND DRAINAGE PLAN**

**SHEET NUMBER**  
**C4.0**

GRAPHIC SCALE



**PROPOSED LEGEND:**

- PROPERTY LINE
- STM>--- PROPOSED STORM SEWER
- SAN>--- PROPOSED SANITARY SEWER
- SAN>--- PROPOSED SANITARY SEWER [BY OTHERS]
- 6"W--- PROPOSED 6" FIRE PROTECTION WATER LINE
- 2"W--- PROPOSED 2" DOMESTIC WATER SERVICE
- 1"W--- PROPOSED 1" IRRIGATION WATER SERVICE
- E--- PROPOSED ELECTRIC SERVICE LINE
- GAS--- PROPOSED GAS SERVICE LINE
- T--- PROPOSED TELEPHONE SERVICE LINE
- PROPOSED STORM SEWER STRUCTURE WITH OPEN GRATE
- PROPOSED STORM SEWER STRUCTURE WITH CLOSED LID
- PROPOSED STORM SEWER CLEAN OUT
- HEAVY DUTY AREA DRAIN
- PROPOSED SANITARY SEWER CLEAN OUT
- PROPOSED SANITARY SEWER GREASE INTERCEPTOR
- PROPOSED SANITARY SEWER SAMPLING WELL
- PROPOSED STORM SEWER GREASE INTERCEPTOR
- PROPOSED WATER SERVICE, VALVE AND VALVE BOX
- PROPOSED GATE VALVE AND VALVE BOX
- PROPOSED WATER METER AND VAULT
- PROPOSED FIRE HYDRANT
- PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
- PROPOSED LIGHT POLE [TBD]
- PROPOSED GAS METER
- PROPOSED ELECTRIC METER, CT CABINET AND DISCONNECT
- PROPOSED TRANSFORMER

NOTE: SEE GENERAL NOTES SHEET C1.0 FOR EXISTING LEGEND

**GENERAL UTILITY NOTES:**

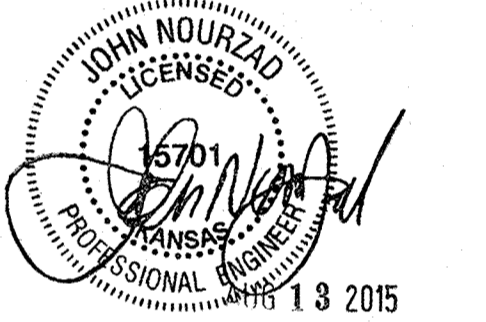
- CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED SITE IMPROVEMENTS SHOWN ON THE PLANS.
- CONTRACTOR SHALL UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
- CONTRACTOR SHALL EXCAVATE AND VERIFY IN FIELD ALL EXISTING UTILITY LOCATIONS, SIZES, CONDITIONS AND ELEVATIONS AT PROPOSED POINTS OF CONNECTION PRIOR TO COMMENCING ANY UNDERGROUND CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO PROCEEDING WITH CONSTRUCTION.
- ALL PROPOSED CONNECTIONS TO EXISTING UTILITY STRUCTURES OR PIPING SHALL BE IN ACCORDANCE WITH THE APPLICABLE GOVERNING AUTHORITY REQUIREMENTS AND SPECIFICATIONS.
- CONTRACTOR SHALL CONTINUOUSLY MAINTAIN ALL EXISTING SEWER SYSTEMS DURING CONSTRUCTION OPERATIONS AS NECESSARY TO PREVENT SILT OR DEBRIS ACCUMULATION.
- SEE THE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS INCLUDING ALL PIPE MATERIAL AND JOINT SPECIFICATIONS.

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**ISSUE/REVISION RECORD**

DATE	DESCRIPTION
05/02/15	COORDINATION SET
08/29/15	PERMIT SET
07/24/15	PERMIT RESUBMITTAL
08/03/15	BID SET

**PROFESSIONAL SEAL**



**PROFESSIONAL IN CHARGE**

**JOHN NOURZAD**  
PROFESSIONAL ENGINEER  
LICENSE NO. 15701

**PROJECT MANAGER**

BRIAN OLESEN

**QUALITY CONTROL**

LARRY DIEHL

**DRAWN BY**

PETIA STOYANOVA-POUHALEVA

**PROJECT NAME**

**BUBBA'S 33**

**WICHITA KANSAS**

412 S. TOWNE EAST DRIVE



**PROJECT NUMBER**

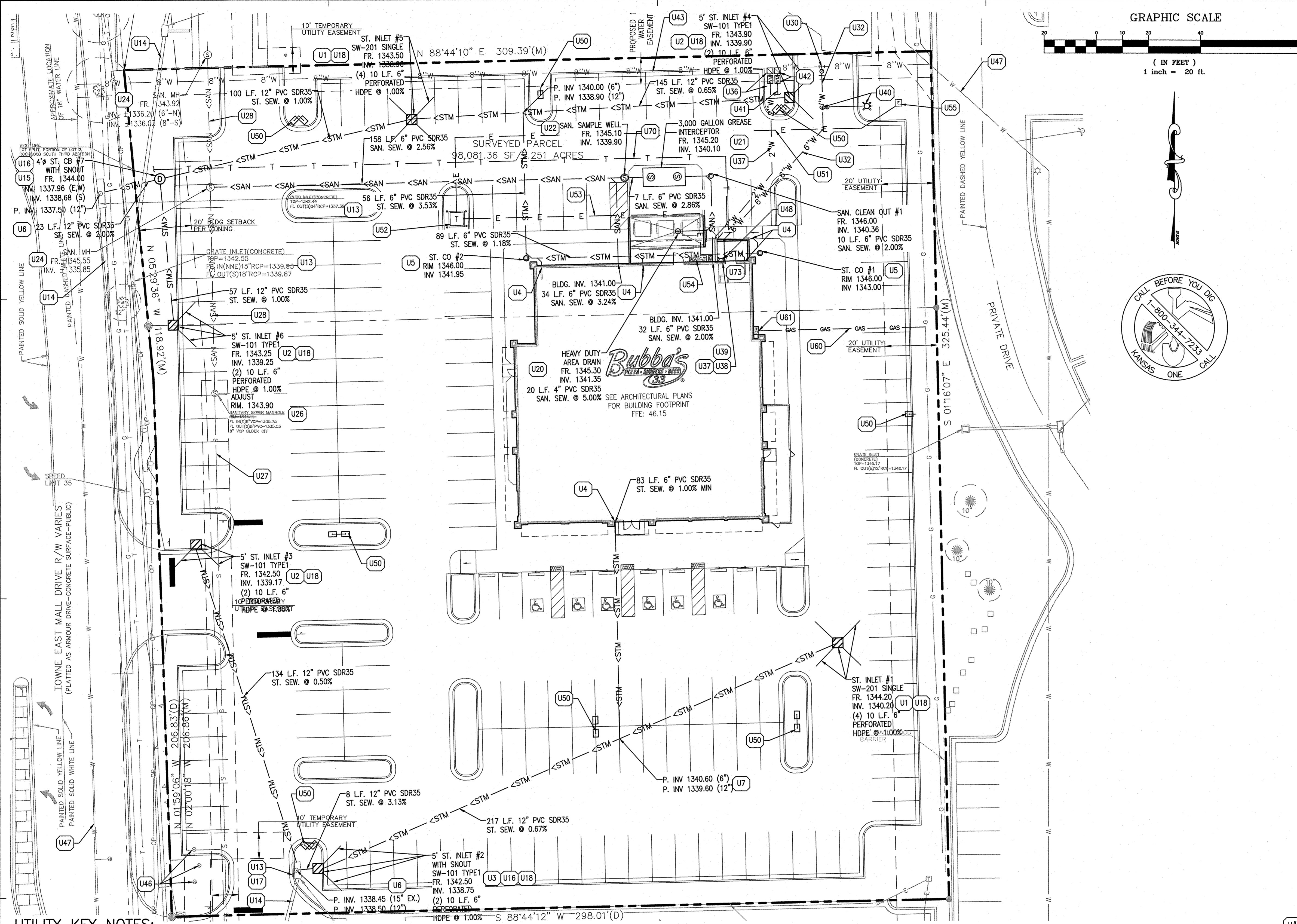
201405680.0

**SHEET TITLE**

**OVERALL UTILITY PLAN**

**SHEET NUMBER**

**C5.0**



**UTILITY KEY NOTES:**

- U1 PROPOSED PRECAST CONCRETE SINGLE DROP INLET PER CITY OF WICHITA STANDARD DETAIL SW-201 WITH AN 18" APRON
- U2 PROPOSED PRECAST CONCRETE STANDARD TYPE 1 CURB INLET WITH 5" OPENING PER CITY OF WICHITA STANDARD DETAIL SW101
- U3 PROPOSED PRECAST CONCRETE STANDARD TYPE 1 CURB INLET WITH 5" OPENING PER CITY OF WICHITA STANDARD DETAIL SW101, MODIFIED WITH A 40" SUMP BELOW OUTLET ELEVATION
- U4 PROPOSED BUILDING ROOF DRAIN CONNECTION (COORDINATE EXACT LOCATIONS AND PIPE SIZES WITH ARCHITECTURAL AND PLUMBING PLANS). CONTRACTOR SHALL INSTALL NEW WYE FITTING AT PROPOSED STORM SEWER CONNECTION POINTS
- U5 PROPOSED STORM SEWER CLEAN OUT CORE DRILL AND CONNECT PROPOSED STORM SEWER LINE TO EXISTING STORM SEWER STRUCTURE PER LOCAL CODES (CONTRACTOR TO FIELD VERIFY ELEVATION OF EXISTING INVERTS PRIOR TO CONSTRUCTION.)
- U13 EXISTING STORM SEWER STRUCTURE TO REMAIN
- U14 EXISTING STORM SEWER LINE TO REMAIN
- U15 PROPOSED PRECAST CONCRETE STORM CATCH BASIN WITH NEENAH R-1772 FRAME AND LID
- U16 PROPOSED B.M.P. SNOOT TO BE INSTALLED ON OUTLET PIPE
- U17 CONTRACTOR SHALL CONSTRUCT APRON ON EXISTING STORM STRUCTURE PER STANDARD DETAIL
- U18 PROPOSED 6" PERFORATED HDPE UNDERDRAINS CONNECTED TO NEW STORM SEWER STRUCTURES PER LOCAL CODES (SEE PERFORATED PIPE UNDERDRAIN DETAIL ON SHEET)
- U20 PROPOSED ZURN Z505 HEAVY DUTY AREA DRAIN WITH REMOVABLE SOLID COVER OPTION-SC TO CONNECT TO SANITARY SEWER SYSTEM (COORDINATE WITH ARCHITECTURAL AND PLUMBING PLANS)
- U21 PROPOSED 3,000 GALLON SANITARY SEWER GREASE INTERCEPTOR (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
- U22 PROPOSED SANITARY SEWER SAMPLING WELL (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
- U23 PROPOSED SANITARY SEWER CLEAN OUT
- U24 PROPOSED PRECAST CONCRETE SANITARY SEWER MANHOLE PER CITY OF WICHITA STANDARDS [BY OTHERS]
- U26 EXISTING SANITARY SEWER STRUCTURE TO REMAIN AND BE ADJUSTED TO FINISHED GRADE
- U27 EXISTING SANITARY SEWER LINE TO REMAIN
- U28 PROPOSED SANITARY SEWER LINE [BY OTHERS]
- U30 PROPOSED TAPPING SLEEVE AND VALVE BY CITY OF WICHITA (CONTRACTOR TO REIMBURSE CITY OF WICHITA FOR TAP)
- U32 PROPOSED 6" D.I.P. CLASS 53 PRIVATE FIRE LINE
- U33 PROPOSED 1" TYPE K COPPER IRRIGATION WATER SERVICE LINE
- U36 PROPOSED 2" STANDARD WATER SERVICE TAP AND 2" METER PER LOCAL CODES
- U37 PROPOSED 2" TYPE K COPPER DOMESTIC WATER SERVICE LINE
- U38 PROPOSED 2" DOMESTIC BACKFLOW PREVENTION DEVICE TO BE LOCATED INSIDE BUILDING MECHANICAL ROOM (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- U39 PROPOSED FIRE PROTECTION WATER SERVICE DOUBLE CHECK VALVE BACKFLOW PREVENTION DEVICE TO BE LOCATED INSIDE BUILDING MECHANICAL ROOM (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- U40 PROPOSED FIRE HYDRANT AND AUXILIARY VALVE PER LOCAL CODES
- U41 PROPOSED 1" TYPE K COPPER IRRIGATION WATER LINE STUB
- U42 PROPOSED 1" STANDARD IRRIGATION SERVICE TAP AND 1" METER PER LOCAL CODES
- U43 PROPOSED 8" WATER LINE [BY OTHERS PP 448-90672]
- U46 EXISTING WATER VALVE TO BE PLUGGED AND RAISE VALVE BOX TO FINISHED GRADE
- U47 EXISTING WATER LINE TO REMAIN
- U48 PROPOSED FIRE DEPARTMENT CONNECTION (FDC) PER LOCAL CODES
- U49 PROPOSED LIGHT POLE (SEE PHOTOMETRIC PLAN AND BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
- U51 PROPOSED PRIMARY ELECTRIC SERVICE LINE (CONTRACTOR SHALL COORDINATE NEW BUILDING ELECTRIC SERVICE ROUTING AND INSTALLATION REQUIREMENTS WITH POWER COMPANY PRIOR TO ANY EXCAVATION OR INSTALLATION OF CONDUITS. SEE BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- U52 PROPOSED ELECTRIC TRANSFORMER LOCATION (CONTRACTOR SHALL COORDINATE TRANSFORMER LOCATION, SIZE AND DESIGN WITH POWER COMPANY)
- U53 PROPOSED SECONDARY ELECTRIC SERVICE LINE. CONTRACTOR SHALL INSTALL (4) 4" PVC SCHEDULE 80 CONDUITS WITH PULL WIRE FROM EXISTING ELECTRICAL STUBS TO NEW BUILDING (CONTRACTOR SHALL COORDINATE NEW BUILDING ELECTRIC SERVICE INSTALLATION WITH POWER COMPANY PRIOR TO ANY EXCAVATION OR INSTALLATION OF CONDUITS. SEE BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
- U54 PROPOSED ELECTRIC SERVICE METER, CT CABINET AND DISCONNECT LOCATION (SEE BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
- U55 PROPOSED ELECTRICAL JUNCTION BOX TO BE INSTALLED BY POWER COMPANY (CONTRACTOR SHALL COORDINATE INSTALLATION WITH POWER COMPANY)
- U60 PROPOSED GAS SERVICE LINE (CONTRACTOR SHALL COORDINATE ROUTING AND INSTALLATION REQUIREMENTS WITH GAS COMPANY. SEE BUILDING MECHANICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
- U61 PROPOSED GAS SERVICE METER (CONTRACTOR SHALL COORDINATE METER LOCATION WITH GAS COMPANY AND BUILDING MECHANICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
- U70 PROPOSED (2) 2" PVC SCHEDULE 80 CONDUITS WITH PULL WIRE FOR NEW TELEPHONE AND CABLE TELEVISION SERVICE LINES (CONTRACTOR SHALL COORDINATE ROUTING AND INSTALLATION REQUIREMENTS WITH TELEPHONE AND CABLE COMPANIES. SEE BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
- U73 PROPOSED BUILDING MECHANICAL ROOM (SHOWN FOR REFERENCE ONLY)

**UTILITY SERVICE NOTES:**  
CONTRACTOR SHALL COORDINATE ALL PROPOSED UTILITY SERVICE LINE POINT OF CONNECTIONS WITH BUILDING MEP PLANS.

**UTILITY TRENCH NOTES:**  
ALL UTILITY TRENCHES THAT PENETRATE BENEATH THE BUILDING SHALL BE PROVIDED WITH A TRENCH PLUG THAT EXTENDS 5' FROM THE FACE OF THE BUILDING EXTERIOR. PLUG MATERIAL SHALL BE FLOWABLE FILL OR IMPERVIOUS CLAY. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

**TEMPORARY ELECTRIC NOTE:**  
TEMPORARY POWER SERVICE IS NOT AVAILABLE. CONTRACTOR SHALL SUPPLY GENERATOR FOR TEMPORARY POWER.

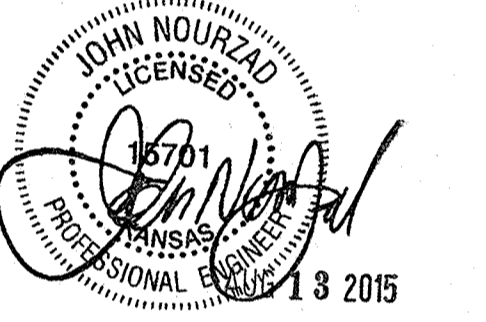
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**ISSUE/REVISION RECORD**

DATE	DESCRIPTION
05/02/15	COORDINATION SET
08/29/15	PERMIT SET
07/24/15	PERMIT RESUBMITTAL
08/03/15	BID SET

**PROFESSIONAL SEAL**



**PROFESSIONAL IN CHARGE**  
**JOHN NOURZAD**  
PROFESSIONAL ENGINEER  
LICENSE NO. 15701

**PROJECT MANAGER**  
BRIAN OLESEN

**QUALITY CONTROL**  
LARRY DIEHL  
**DRAWN BY**  
PETA STOYANOVA-POUHALEVA

**PROJECT NAME**  
**BUBBA'S 33**

**WICHITA KANSAS**  
412 S. TOWNE EAST DRIVE



**PROJECT NUMBER**  
201405680.0

**SHEET TITLE**  
**WATER PLAN**

**SHEET NUMBER**  
**C5.2**

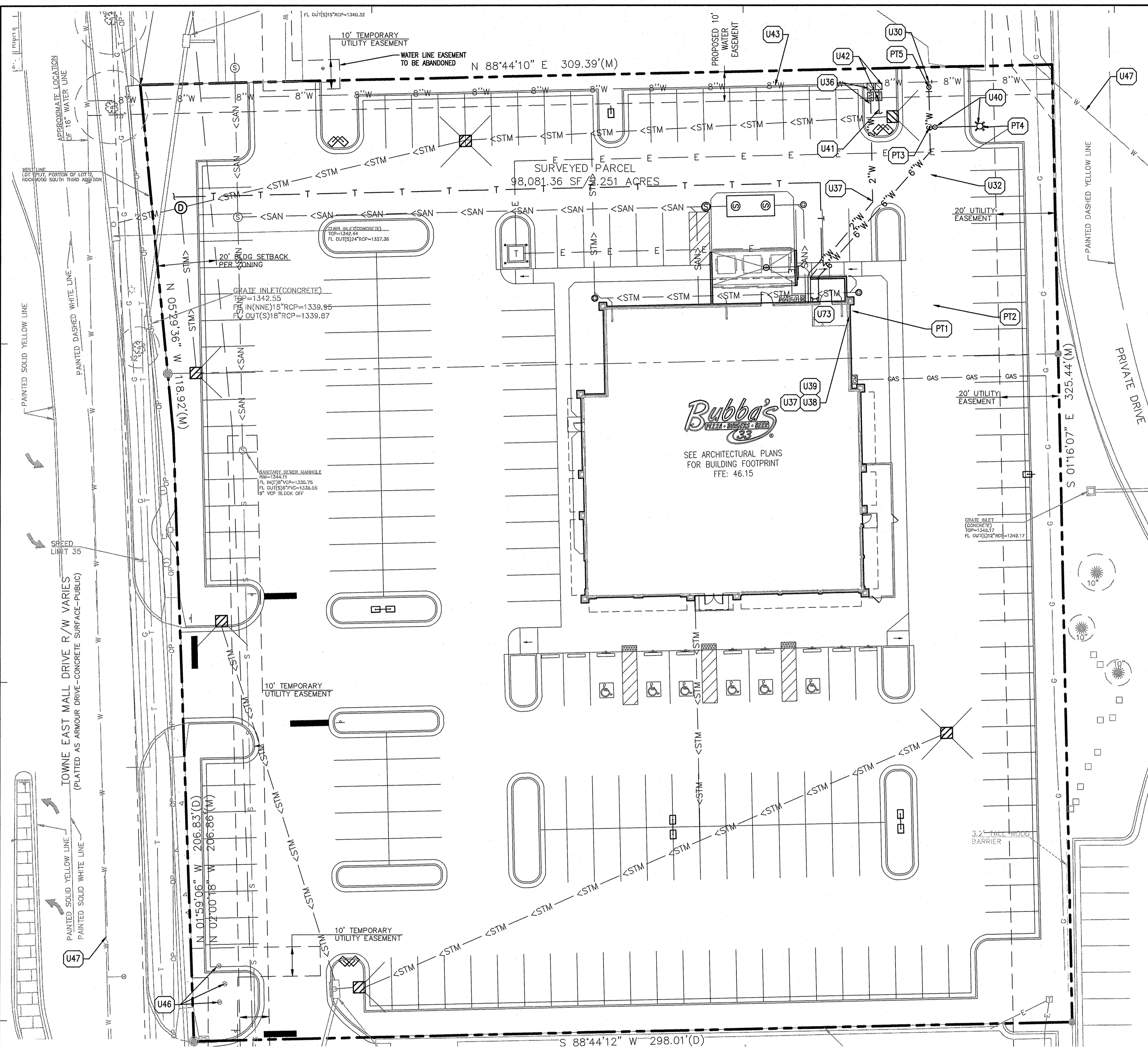
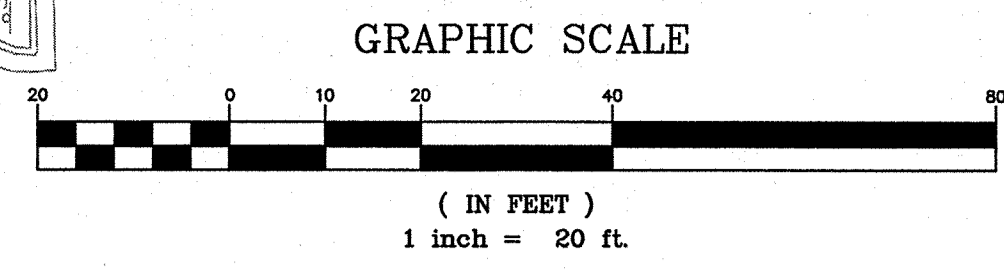
**PROPOSED LEGEND:**

- PROPERTY LINE
- STM> PROPOSED STORM SEWER
- SAN> PROPOSED SANITARY SEWER
- SAN> PROPOSED SANITARY SEWER [BY OTHERS]
- 6"W PROPOSED 6" FIRE PROTECTION WATER LINE
- 2"W PROPOSED 2" DOMESTIC WATER SERVICE
- 1"W PROPOSED 1" IRRIGATION WATER SERVICE
- E PROPOSED ELECTRIC SERVICE LINE
- GAS PROPOSED GAS SERVICE LINE
- T PROPOSED TELEPHONE SERVICE LINE
- [Symbol] PROPOSED STORM SEWER STRUCTURE WITH OPEN GRATE
- [Symbol] PROPOSED STORM SEWER STRUCTURE WITH CLOSED LID
- [Symbol] PROPOSED STORM SEWER CLEAN OUT
- [Symbol] HEAVY DUTY AREA DRAIN
- [Symbol] PROPOSED SANITARY SEWER CLEAN OUT
- [Symbol] PROPOSED SANITARY SEWER GREASE INTERCEPTOR
- [Symbol] PROPOSED SANITARY SEWER SAMPLING WELL
- [Symbol] PROPOSED STORM SEWER GREASE INTERCEPTOR
- [Symbol] PROPOSED WATER SERVICE, VALVE AND VALVE BOX
- [Symbol] PROPOSED GATE VALVE AND VALVE BOX
- [Symbol] PROPOSED FIRE METER AND VAULT
- [Symbol] PROPOSED FIRE HYDRANT
- [Symbol] PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
- [Symbol] PROPOSED LIGHT POLE
- [Symbol] PROPOSED GAS METER
- [Symbol] PROPOSED ELECTRIC METER, CT CABINET AND DISCONNECT
- [Symbol] PROPOSED TRANSFORMER

NOTE: SEE GENERAL NOTES SHEET C1.0 FOR EXISTING LEGEND

**GENERAL UTILITY NOTES:**

- CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED SITE IMPROVEMENTS SHOWN ON THE PLANS.
- CONTRACTOR SHALL UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
- CONTRACTOR SHALL EXCAVATE AND VERIFY IN FIELD ALL EXISTING UTILITY LOCATIONS, SIZES, CONDITIONS AND ELEVATIONS AT PROPOSED POINTS OF CONNECTION PRIOR TO COMMENCING ANY UNDERGROUND CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO PROCEEDING WITH CONSTRUCTION.
- ALL PROPOSED CONNECTIONS TO EXISTING UTILITY STRUCTURES OR PIPING SHALL BE IN ACCORDANCE WITH THE APPLICABLE GOVERNING AUTHORITY REQUIREMENTS AND SPECIFICATIONS.
- CONTRACTOR SHALL CONTINUOUSLY MAINTAIN ALL EXISTING SEWER SYSTEMS DURING CONSTRUCTION OPERATIONS AS NECESSARY TO PREVENT SILT OR DEBRIS ACCUMULATION.
- SEE THE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS INCLUDING ALL PIPE MATERIAL AND JOINT SPECIFICATIONS.



**UTILITY KEY NOTES:**

- U30 PROPOSED 6" TAPPING SLEEVE AND VALVE BY CITY OF WICHITA (CONTRACTOR TO REIMBURSE CITY OF WICHITA FOR TAP)
- U32 PROPOSED 6" D.I.P. CLASS 53 PRIVATE FIRE LINE
- U33 PROPOSED 1" TYPE K COPPER IRRIGATION WATER SERVICE LINE
- U36 PROPOSED 2" STANDARD WATER SERVICE TAP AND 2" METER PER LOCAL CODES
- U37 PROPOSED 2" TYPE K COPPER DOMESTIC WATER SERVICE LINE
- U38 PROPOSED 2" DOMESTIC BACKFLOW PREVENTION DEVICE TO BE LOCATED INSIDE BUILDING MECHANICAL ROOM (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- U39 PROPOSED FIRE PROTECTION WATER SERVICE DOUBLE CHECK VALVE BACKFLOW PREVENTION DEVICE TO BE LOCATED INSIDE BUILDING MECHANICAL ROOM (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- U40 PROPOSED FIRE HYDRANT AND AUXILIARY VALVE PER LOCAL CODES
- U41 PROPOSED 1" TYPE K COPPER IRRIGATION WATER LINE STUB
- U42 PROPOSED 1" STANDARD IRRIGATION SERVICE TAP AND 1" METER PER LOCAL CODES
- U43 PROPOSED 8" WATER LINE [BY OTHERS PP 448-90672]
- U46 EXISTING WATER VALVE TO BE PLUGGED AND RAISE VALVE BOX TO FINISHED GRADE
- U47 EXISTING WATER LINE TO REMAIN
- U48 PROPOSED FIRE DEPARTMENT CONNECTION (FDC) PER LOCAL CODES
- U73 PROPOSED BUILDING MECHANICAL ROOM (SHOWN FOR REFERENCE ONLY)

**PROJECT BENCHMARKS:**

- SITE BENCHMARKS:**
- BM #1: CHISELED "SQUARE" ON SOUTHWEST CORNER OF CURB INLET, 50'± EAST OF SOUTHWEST CORNER OF PARCEL 2B. ELEVATION=1342.47
  - BM #2: CHISELED "SQUARE" ON TOP CURB AT WEST SIDE CURB ISLAND WITHOUT LIGHT POLE, 200'± SOUTH SOUTHEAST OF NORTHEAST CORNER OF LOT ELEVATION=1348.87
  - BM #3: CHISELED "SQUARE" ON TOP CURB AT POINT OF INTERSECTION FOR OLD CHICAGO NORTHWEST PARKING LOT, 82'± NORTH OF THE SOUTHWEST CORNER OF PARCEL 2B. ELEVATION=1346.46

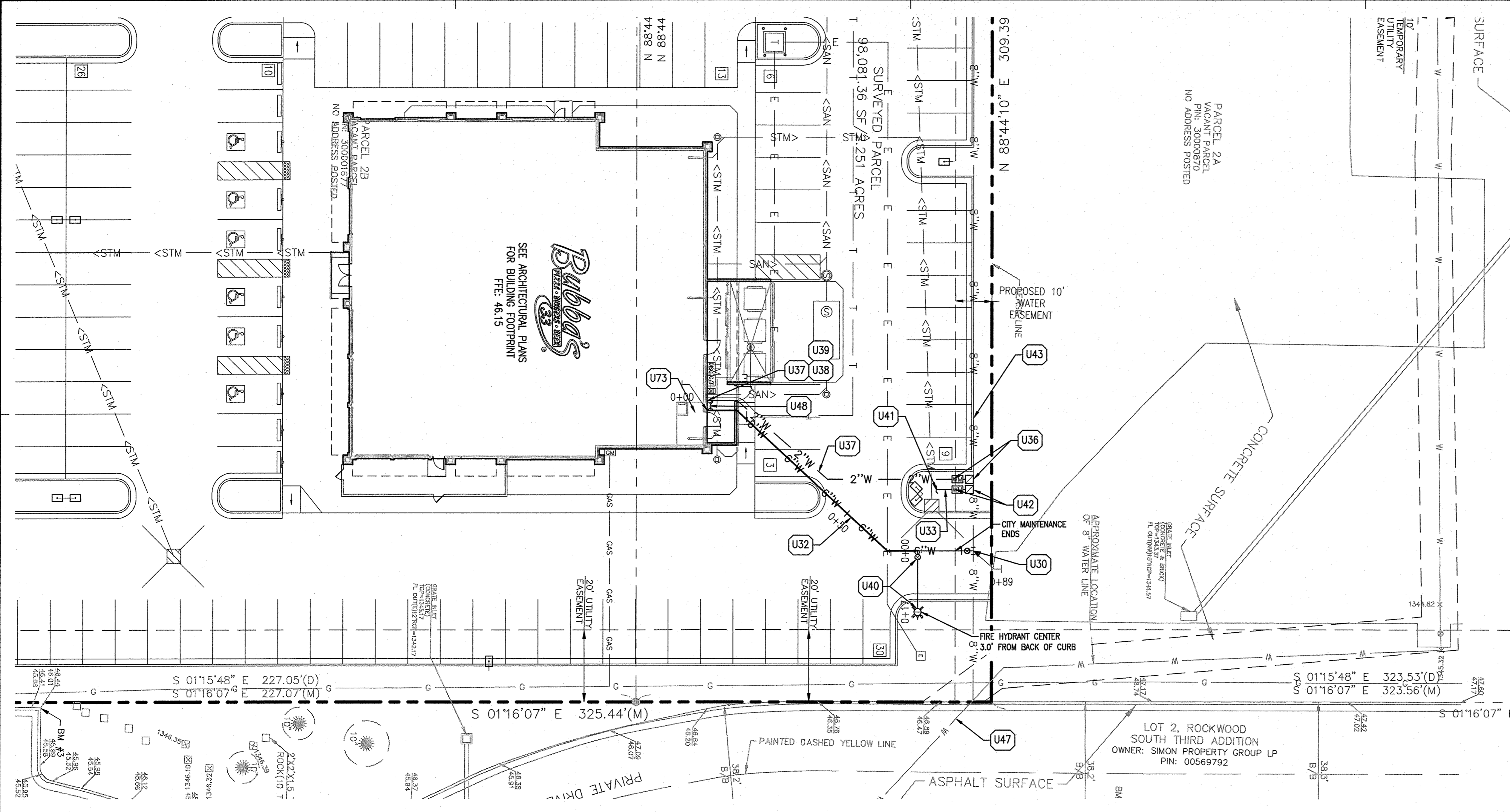
**UTILITY SERVICE NOTES:**  
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**UTILITY TRENCH NOTES:**  
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**WATER POINTS**

PNT. NO.	NORTHING	EASTING	DESCRIPTION
PT1	1684155.1317	1674280.6470	FDC
PT2	1684157.2455	1674309.1515	90° BEND
PT3	1684217.5968	1674307.8200	6"x6"x6" TEE
PT4	1684217.9707	1674324.7697	FIRE HYDRANT
PT5	1684231.2865	1674307.5180	6" GATE VALVE AND VALVE BOX

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**UTILITY KEY NOTES:**

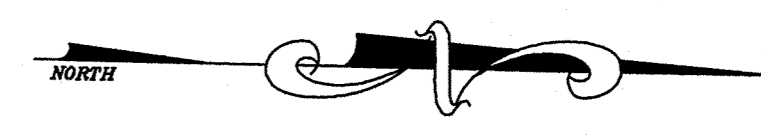
- U30 PROPOSED 6" TAPPING SLEEVE AND VALVE BY CITY OF WICHITA (CONTRACTOR TO REIMBURSE CITY OF WICHITA FOR TAP)
- U32 PROPOSED 6" D.I.P. CLASS 53 PRIVATE FIRE LINE
- U33 PROPOSED 1" TYPE K COPPER IRRIGATION WATER SERVICE LINE
- U36 PROPOSED 2" STANDARD WATER SERVICE TAP AND 2" METER PER LOCAL CODES
- U37 PROPOSED 2" TYPE K COPPER DOMESTIC WATER SERVICE LINE
- U38 PROPOSED 2" DOMESTIC BACKFLOW PREVENTION DEVICE TO BE LOCATED INSIDE BUILDING MECHANICAL ROOM (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- U39 PROPOSED FIRE PROTECTION WATER SERVICE DOUBLE CHECK VALVE BACKFLOW PREVENTION DEVICE TO BE LOCATED INSIDE BUILDING MECHANICAL ROOM (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- U40 PROPOSED FIRE HYDRANT AND AUXILIARY VALVE PER LOCAL CODES
- U41 PROPOSED 1" TYPE K COPPER IRRIGATION WATER LINE STUB
- U42 PROPOSED 1" STANDARD IRRIGATION SERVICE TAP AND 1" METER PER LOCAL CODES
- U43 PROPOSED 8" WATER LINE [BY OTHERS PP 448-90672]
- U47 EXISTING WATER LINE TO REMAIN
- U48 PROPOSED FIRE DEPARTMENT CONNECTION (FDC) PER LOCAL CODES
- U73 PROPOSED BUILDING MECHANICAL ROOM (SHOWN FOR REFERENCE ONLY)

**PUBLIC PROJECT 448-90672 NOTE:**  
PROJECT MUST BE COMPLETED AND ACCEPTED BY THE CITY PRIOR TO THIS EXTENSION

**AS BUILTS**



**KEMILLER ENGINEERING PA**  
117 E. Lewis,  
Wichita, KS 67202 (316)264-0242



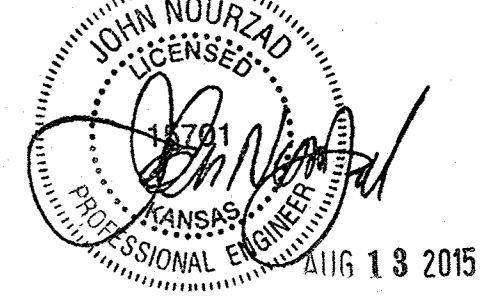
**PLAN VIEW**  
1" = 20'

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**ISSUE/REVISION RECORD**

DATE	DESCRIPTION
06/02/15	COORDINATION SET
06/29/15	PERMIT SET
07/24/15	PERMIT RESUBMITTAL
08/03/15	BID SET

**PROFESSIONAL SEAL**



**PROFESSIONAL IN CHARGE**  
**JOHN NOURZAD**  
PROFESSIONAL ENGINEER  
LICENSE NO. 15701

**PROJECT MANAGER**  
BRIAN OLESEN

**QUALITY CONTROL**  
LARRY DIEHL

**DRAWN BY**  
PETIA STOYANOVA-POUHALEVA

**PROJECT NAME**  
**BUBBA'S 33**

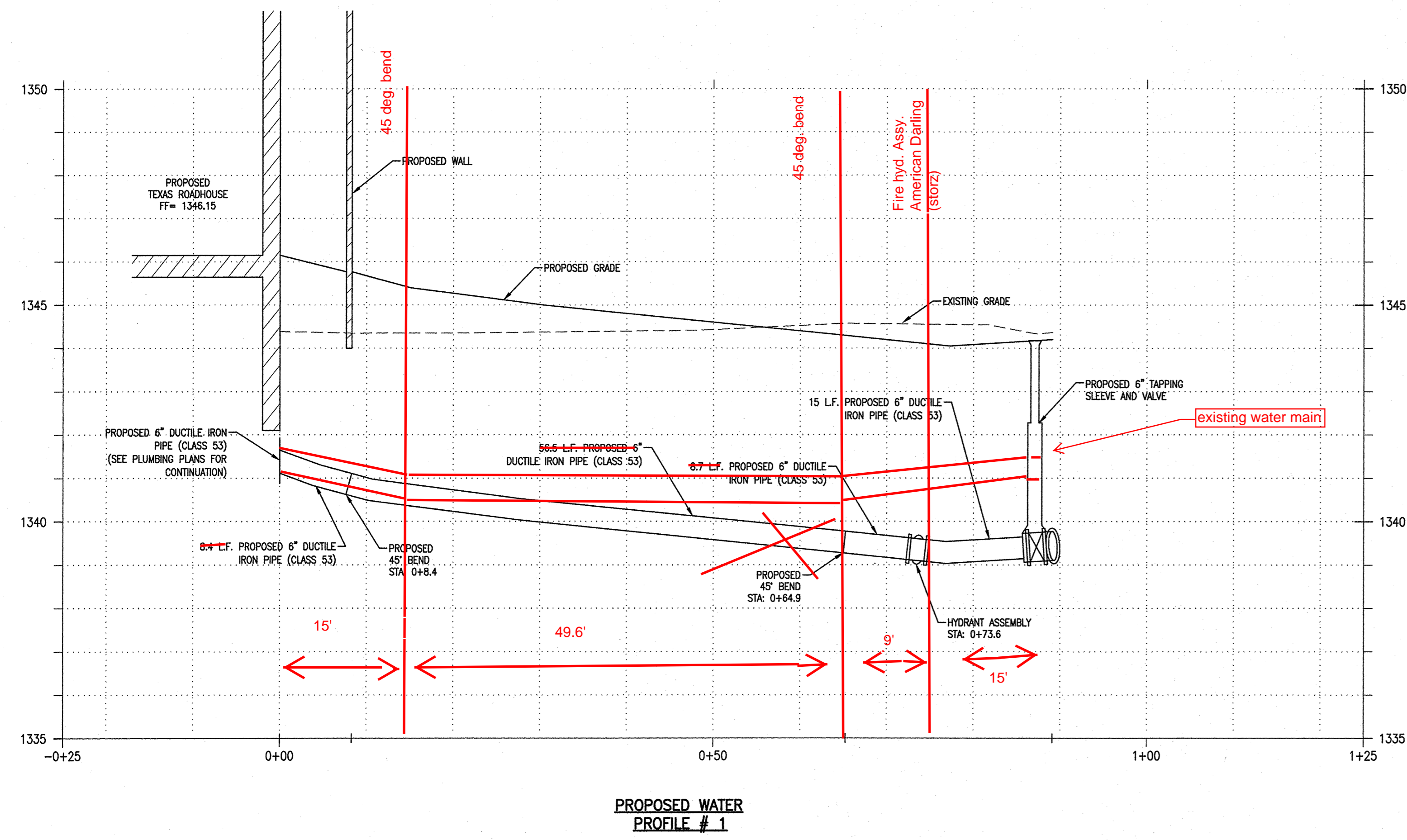
**WICHITA KANSAS**  
**412 S. TOWNE EAST DRIVE**



**PROJECT NUMBER**  
201405680.0

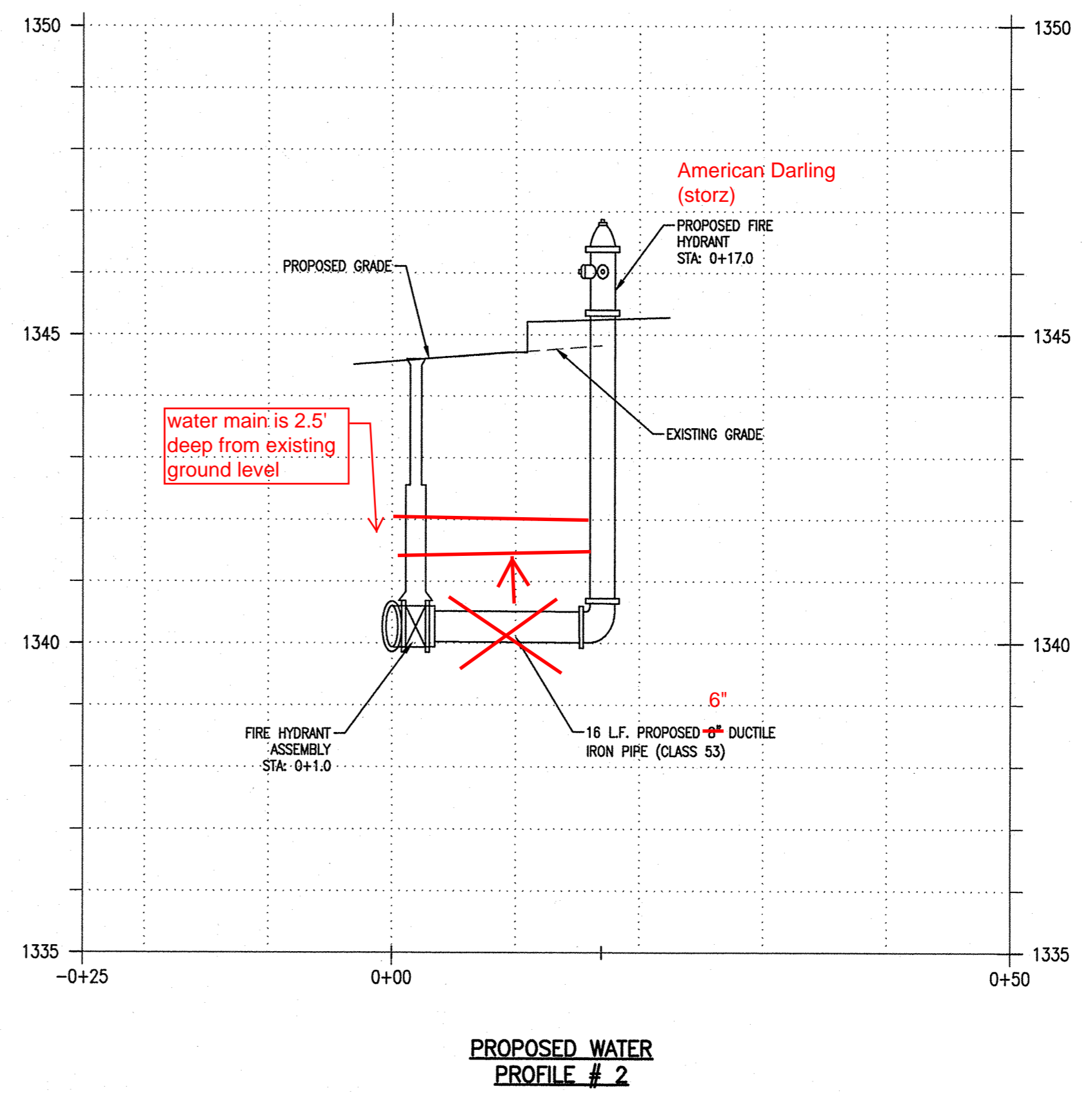
**SHEET TITLE**  
**WATER MAIN PROFILE**

**SHEET NUMBER**  
**C5.5**



**AMERICAN DICI STAR FITTINGS  
FLOW CONTROL VALVE  
AMERICAN DARLING (STORZ)**

**FROM NORTHEAST  
CORNER OF BUILDING  
TAPPING VALVE = 28' EAST +  
70' NORTH  
FIRE HYDRANT = 44' EAST +  
56' NORTH  
FIRE HYDRANT VALVE IS 16'  
WEST OF FIRE HYDRANT**



**PROFILE VIEW**  
H: 1" = 10'  
V: 1" = 2'

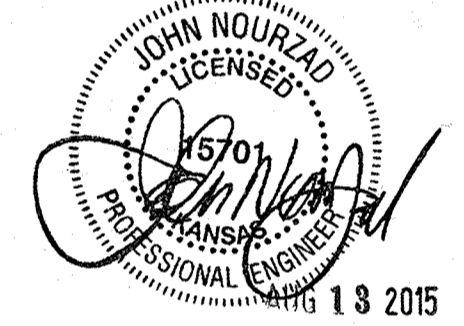
Drawn by: J. Stoyanova-Pouhaleva, Checked by: J. Nourzad, Date: 08/03/15, Scale: 1" = 20', Project: 201405680.0, Sheet: C5.5

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**LARRY DIEHL**

**DRAWN BY**

**PETIA STOYANOVA-POUHALEVA**

**PROJECT NAME**

**BUBBA'S 33**

**WICHITA KANSAS**

**412 S. TOWNE EAST DRIVE**



**PROJECT NUMBER**

201405680.0

**SHEET TITLE**

**STORMWATER POLLUTION PREVENTION PLAN**

**SHEET NUMBER**

**C6.0**

**PROPOSED LEGEND:**

- PROPERTY LINE
- 50 --- PROPOSED CONTOUR
- LAND DISTURBANCE LIMITS (SEE DISTURBED AREA TABLE)
- SF --- PROPOSED SILT FENCE
- ⊕ --- PROPOSED INLET PROTECTION INSERT
- SW4 --- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- SW5 --- PROPOSED TEMPORARY TOPSOIL STOCKPILE (SUGGESTED LOCATION)
- SW6 --- PROPOSED CONCRETE WASHOUT (SUGGESTED LOCATION)
- SW7 --- PROPOSED CONTRACTOR STAGING AREA (SUGGESTED LOCATION)
- PROPOSED GRADING RIDGE LINE
- --- PROPOSED DRAINAGE FLOW DIRECTION
- --- PROPOSED OVERLAND FLOOD ROUTE
- ⊕ --- PROPOSED STORM SEWER STRUCTURES
- STM> --- PROPOSED STORM SEWER

**SWPPP KEY NOTES:**

- SW1 PROPOSED PROJECT LAND DISTURBANCE LIMITS
- SW2 PROPOSED SILT FENCE
- SW3 PROPOSED INLET PROTECTION PER CITY STANDARDS
- SW4 PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- SW5 PROPOSED TEMPORARY TOPSOIL STOCKPILE WITH DOUBLE SILT FENCE PROTECTION
- SW6 PROPOSED CONCRETE WASHOUT WITH MINIMUM 30-MIL POLYETHYLENE LINING AND LOCATION SIGNAGE
- SW7 PROPOSED CONTRACTOR STAGING AREA INCLUDING MATERIALS STORAGE, COVERED TRASH DUMPSTER, AND PORTABLE TOILET FACILITIES

**SWPPP/SESC CONSTRUCTION SCHEDULE:**

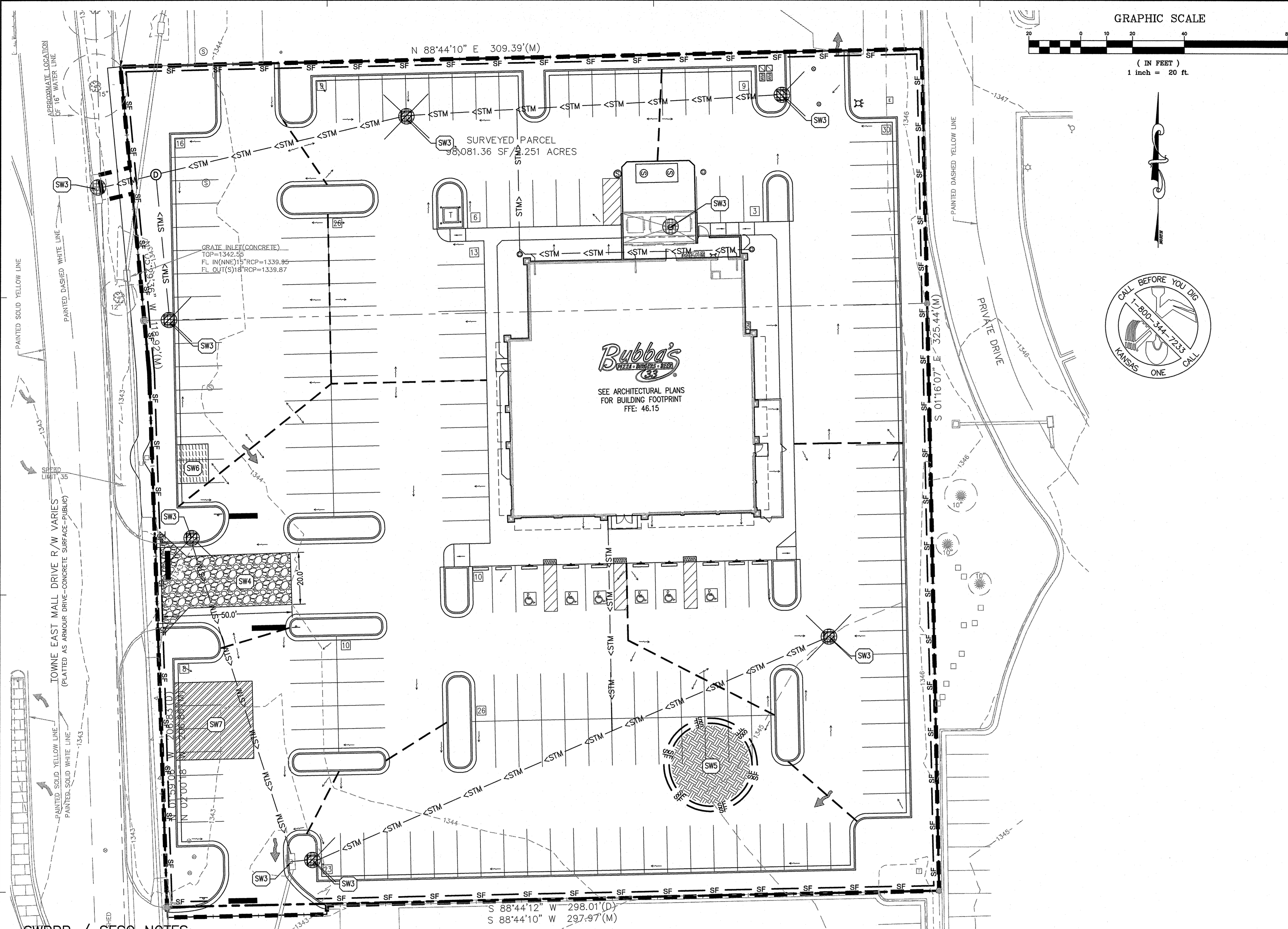
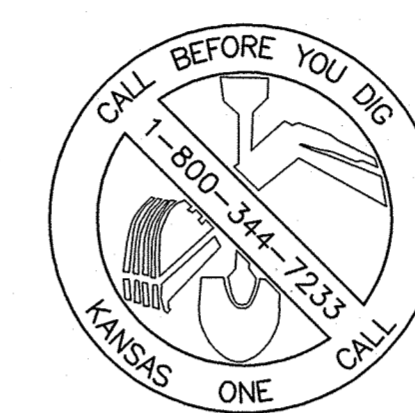
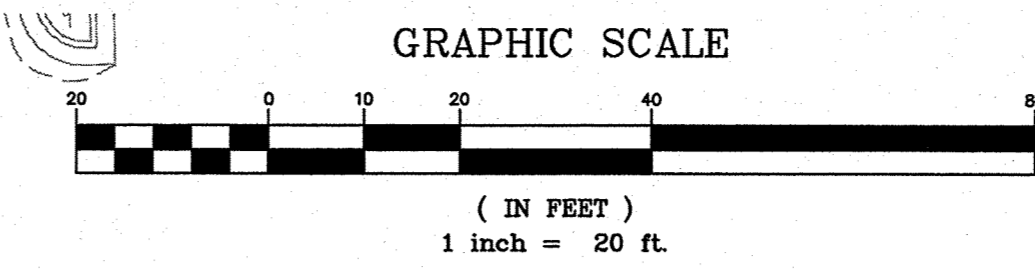
- OBTAIN ALL APPLICABLE SITE PERMITS AND THOROUGHLY REVIEW PROJECT'S SOIL EROSION AND SEDIMENT CONTROL PLAN (SESC) OR STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND UPDATING THE SWPPP/SESC THROUGHOUT THE DURATION OF CONSTRUCTION AS NECESSARY UNTIL FINAL SITE STABILIZATION IS ACHIEVED.
- INSTALL PERIMETER SEDIMENT CONTROL MEASURES (I.E. SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE).
- INSTALL INLET PROTECTION DEVICES FOR EXISTING STORM SEWER INLETS AND DRAINAGE STRUCTURES.
- PERFORM SITE INSPECTIONS ON A WEEKLY BASIS AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A RAINFALL EVENT THAT IS 0.5 INCH OR GREATER (OR EQUIVALENT SNOWFALL). AT A MINIMUM, THE INSPECTIONS SHALL INCLUDE THE DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED, ALL STRUCTURAL CONTROL MEASURES, LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE, AND ANY ADDITIONAL BEST MANAGEMENT PRACTICES IDENTIFIED IN THE SWPPP/SESC.
  - ALL SITE EROSION AND SEDIMENT CONTROL MEASURES AND BEST MANAGEMENT PRACTICES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE CONTINUOUSLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. CONTRACTOR SHALL MAKE AND COMPLETE THE REQUIRED REPAIRS WITHIN FORTY-EIGHT (48) HOURS OF THE INSPECTION.
  - CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL STRUCTURAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE SITE INSPECTIONS.
- INSTALL NEW STORM SEWERS AND OTHER SITE UTILITIES AS INDICATED ON THE PLANS.
- PROVIDE TEMPORARY SEEDING AND/OR MULCHING FOR ALL DISTURBED SITE AREAS THAT WILL NOT BE WORKED ON FOR MORE THAN FOURTEEN (14) DAYS.
- INSTALL TEMPORARY CONCRETE WASHOUT FACILITY PRIOR TO COMMENCEMENT OF ANY CONCRETE WORK ON SITE.
- INSTALL CURBS AND BEGIN SITE PAVING OPERATIONS (I.E. DRIVEWAYS, SIDEWALKS, ETC.)
- PERFORM STREET CLEANING OPERATIONS AND OTHER BEST MANAGEMENT PRACTICES AS NEEDED FOR AREAS ADJACENT TO THE PROJECT SITE.
- INSTALL BUILDING FOUNDATION AND COMPLETE BUILDING CONSTRUCTION AND REMAINING SITE IMPROVEMENTS.
- REMOVE ALL TEMPORARY SITE EROSION AND SEDIMENT CONTROL MEASURES WITHIN THIRTY (30) DAYS OF FINAL SITE STABILIZATION ONCE PERMANENT STABILIZATION OF THE ENTIRE SITE HAS BEEN COMPLETED AND ALL GROUND COVER IS ESTABLISHED.

**DISTURBED SITE AREA TABLE:**

TOTAL DISTURBED AREA:	98,081 SQ. FT. / 2.25 ACRES
IMPERVIOUS AREA:	82,529 SQ. FT. / 1.90 ACRES
PERVIOUS AREA:	15,552 SQ. FT. / 0.35 ACRES

**24-HOUR CONTACT:**

DOUG DRUEN  
TEXAS ROADHOUSE  
6040 DUTCHMAN LANE, SUITE 400  
LOUISVILLE, KY 40205  
(502) 515-7212



**SWPPP / SESC NOTES:**

- COPIES OF THE APPROVED SOIL EROSION AND SEDIMENT CONTROL (SESC) PLANS OR STORMWATER POLLUTION PREVENTION PLANS (SWPPP) SHALL BE MAINTAINED ON THE SITE AT ALL TIMES ALONG WITH ANY NECESSARY PERMITS AND INSPECTION FORMS.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES AND DEVICES SHALL BE INSTALLED AND FUNCTIONAL BEFORE THE SITE IS OTHERWISE DISTURBED. THEY SHALL BE KEPT OPERATIONAL AND MAINTAINED CONTINUOUSLY THROUGHOUT THE PERIOD OF LAND DISTURBANCE UNTIL PERMANENT SITE STABILIZATION HAS BEEN ACHIEVED.
- CONTRACTOR SHALL IMPLEMENT SITE SPECIFIC BEST MANAGEMENT PRACTICES (BMPs) AS SHOWN AND REQUIRED BY THE SWPPP/SESC. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED BY THE CONTRACTOR AS DICTATED BY SITE CONDITIONS OR THE PROJECT GOVERNING AUTHORITIES AT NO ADDITIONAL COST TO THE OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
- ALL BEST MANAGEMENT PRACTICES AND CONTROLS SHALL CONFORM TO THE APPLICABLE FEDERAL, STATE, OR LOCAL REQUIREMENTS, STANDARDS, AND SPECIFICATIONS OR MANUAL OF PRACTICE.
- IF AFTER REPEATED FAILURE ON THE PART OF THE CONTRACTOR TO PROPERLY CONTROL SOIL EROSION, SEDIMENT AND/OR POLLUTION FROM THE PROJECT SITE, THE GOVERNING AUTHORITIES RESERVE THE RIGHT TO EFFECT NECESSARY CORRECTIVE MEASURES AND CHARGE ANY COSTS TO THE CONTRACTOR.
- INLET PROTECTION SHALL BE INSTALLED AROUND EACH INLET OR CATCH BASIN WITHIN THE VICINITY OF THE DISTURBED AREA LIMITS AS SHOWN ON THE PLANS. THESE SHALL BE MAINTAINED UNTIL THE TRIBUTARY DRAINAGE AREAS HAVE ADEQUATE GRASS COVER AND/OR APPROPRIATE GROUND STABILIZATION.
- ALL STREETS ADJACENT TO THE PROJECT SITE SHALL BE KEPT FREE OF DIRT, MUD AND DEBRIS. CONTRACTOR SHALL CLEAN ADJACENT PAVEMENTS AT THE END OF EACH WORKING DAY WHEN NECESSARY.
- CONTRACTORS SHALL MINIMIZE BARE EARTH SURFACES DURING CONSTRUCTION TO THE EXTENT PRACTICABLE.
- ALL DISTURBED AREAS SHALL BE SEEDING OR SODDED AS SOON AS IS PRACTICABLE.
- IF DURING CONSTRUCTION OPERATIONS ANY LOOSE MATERIALS ARE DEPOSITED IN THE FLOW LINE OF GUTTERS, DRAINAGE STRUCTURES, OR DITCHES SUCH THAT THE NATURAL FLOW LINE OF WATER IS OBSTRUCTED, THIS LOOSE MATERIAL SHALL BE REMOVED.
- ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY EXISTING STORM DRAINAGE SYSTEMS BY THE USE OF INLET PROTECTION OR OTHER APPROVED FUNCTIONAL METHODS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SEDIMENT RESULTING FROM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT.
- CONSTRUCTION ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A WAY AS TO PREVENT TRACKING OF MUD OR SOIL ONTO PUBLIC THOROUGHFARES. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
- SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLotation BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
- DUST SHALL BE ADEQUATELY CONTROLLED ON THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
- RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED TRASH CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER

- DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
- DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED OR OTHERWISE DISCHARGED FROM THE SITE INTO SEDIMENT BASINS, SILT TRAPS, DEWATERING BAGS OR POLYMER MIXING WALES. DEWATERING DIRECTLY INTO FIELD TILES OR STORMWATER SYSTEMS IS PROHIBITED.
- ALL DISTURBED AREAS SHALL BE SEEDING OR SODDED WITHIN THREE (3) DAYS OF FINAL DISTURBANCE.
- ALL SOIL STOCKPILES SHALL BE STABILIZED WITHIN THREE (3) DAYS OF FORMING THE STOCKPILE.
- STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED AS FOLLOWS:
  - WHEN THE INITIATION OF STABILIZATION MEASURES BY THE 7TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.
  - WHEN CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 14 DAYS FROM WHEN ACTIVITIES CEASED (I.E. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 14 DAYS), THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE 7TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASES.
  - PRE-QUALIFIED PERSONNEL (PROVIDED BY THE CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY
- STABILIZED, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A RAINFALL EVENT THAT IS 0.5 INCH OR GREATER (OR EQUIVALENT SNOWFALL). REQUIRED REPAIRS SHOULD BE COMPLETED WITHIN FORTY-EIGHT (48) HOURS OF THE INSPECTION.
- EROSION CONTROL BLANKETS SHALL BE USED IN AREAS OF 4:1 SLOPE OR STEEPER.
- ALL TEMPORARY EROSION CONTROL AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE PROPERLY STABILIZED OR DISPOSED OF OFF SITE BY THE CONTRACTOR.
- PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN THOSE INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO ADDITIONAL PHASES OF DEVELOPMENT AND OFF-SITE BORROW OR WASTE AREAS) A SUPPLEMENTARY STORM WATER POLLUTION PREVENTION PLAN SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR REVIEW.
- ALL CONSTRUCTION VEHICLE TRAFFIC MUST REMAIN WITHIN THE LIMITS OF CONSTRUCTION.

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**PROFESSIONAL IN CHARGE**  
**JOHN NOURZAD**  
PROFESSIONAL ENGINEER  
LICENSE NO. 15701

**PROJECT MANAGER**  
BRIAN OLESEN

**QUALITY CONTROL**  
LARRY DIEHL

**DRAWN BY**  
PETIA STOYANOVA-POUHALEVA

**PROJECT NAME**  
**BUBBA'S 33**

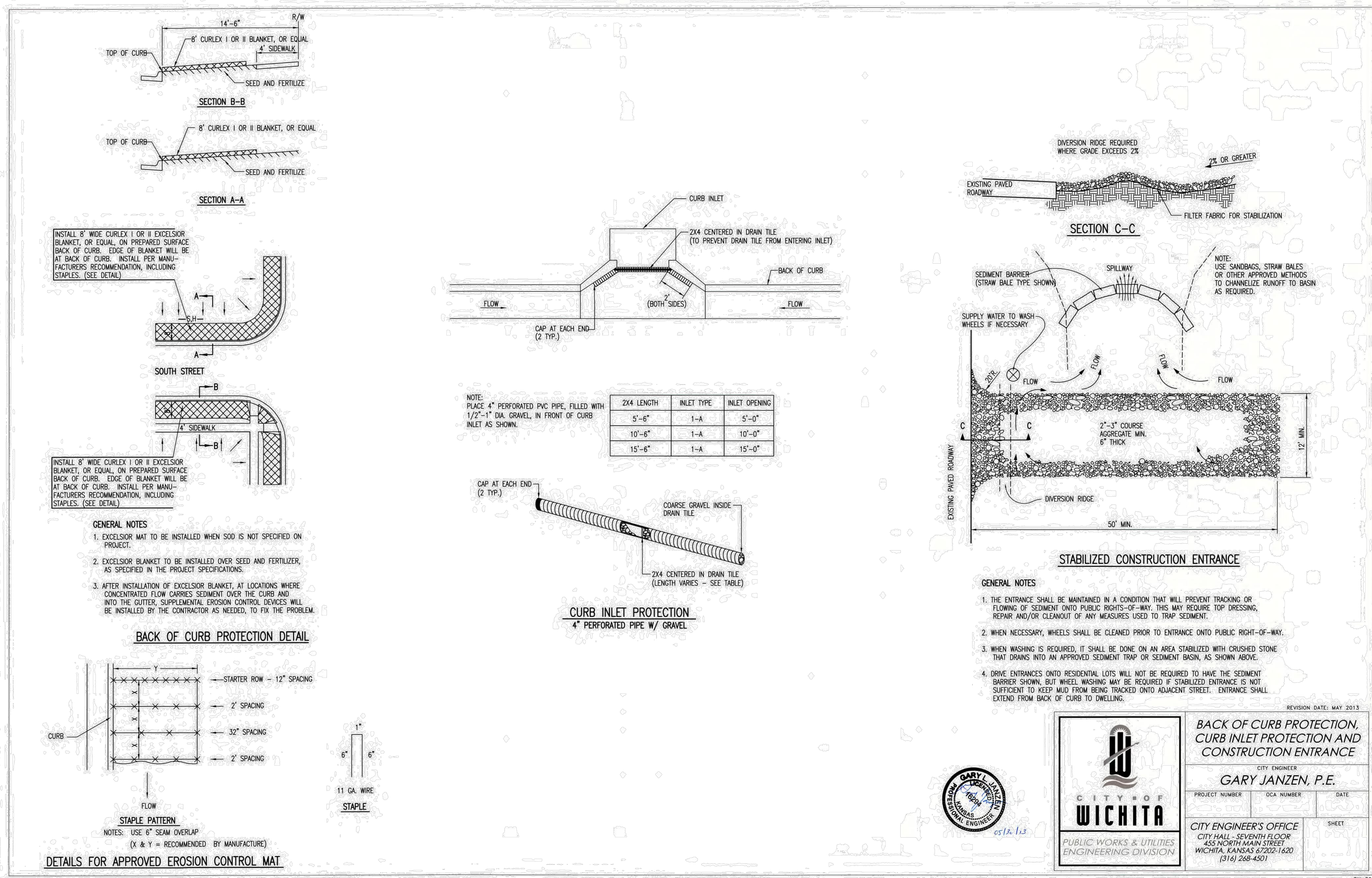
**WICHITA KANSAS**  
**412 S. TOWNE EAST DRIVE**



**PROJECT NUMBER**  
201405680.0

**SHEET TITLE**  
**EROSION CONTROL DETAILS**

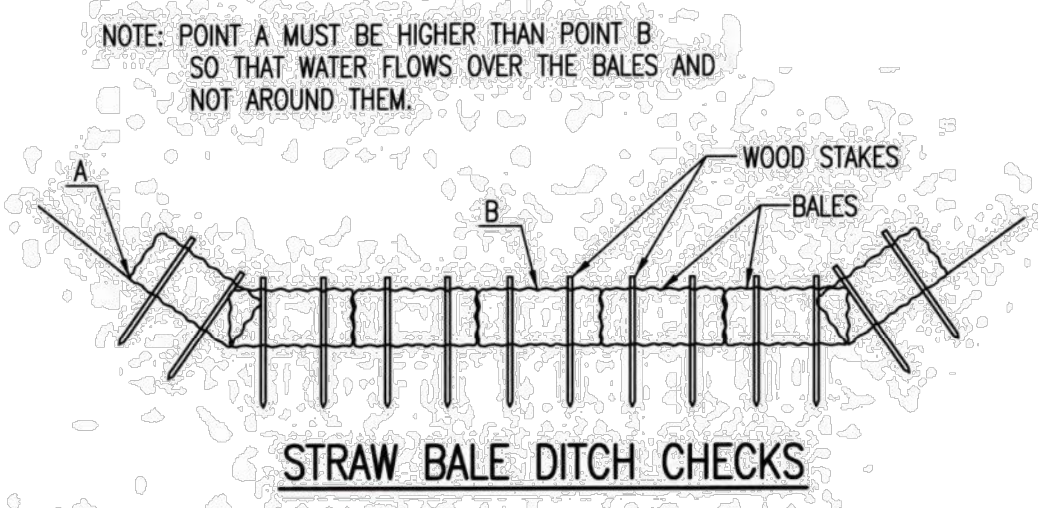
**SHEET NUMBER**  
**C7.2**



Drawn: 11/15/15 (150600000) GJK, Checked: 11/15/15 (150600000) JKL, Date: 11/15/15, 2:30pm by wmf

SW-501





**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.

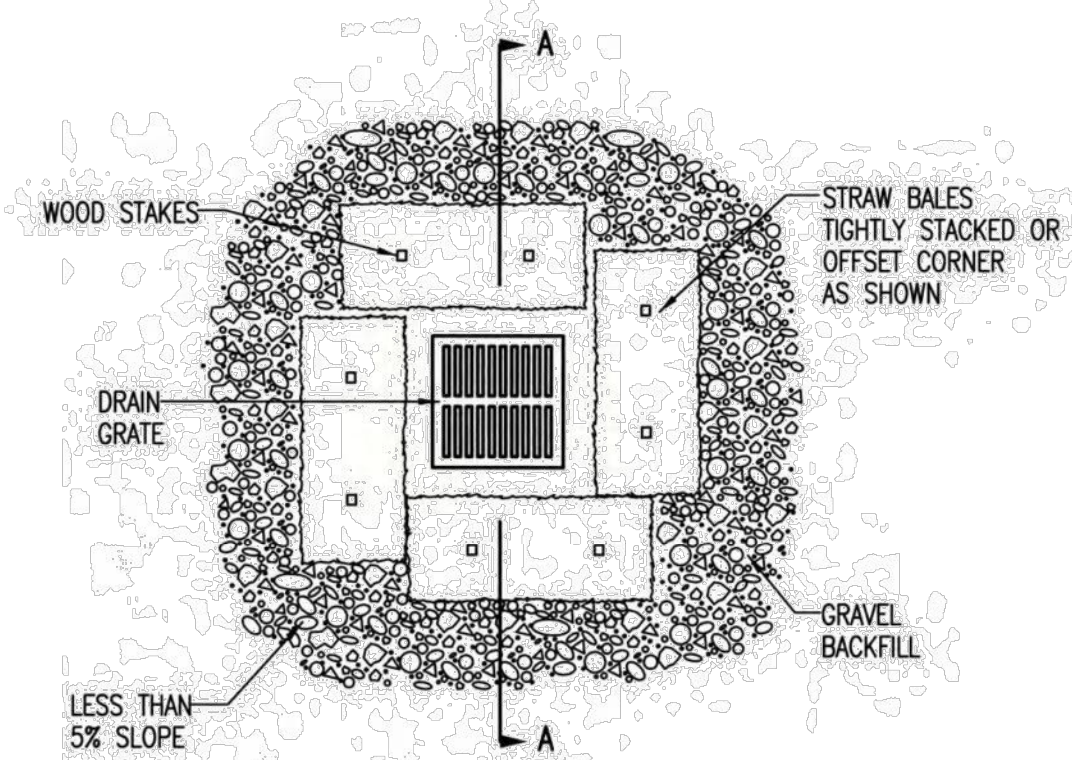
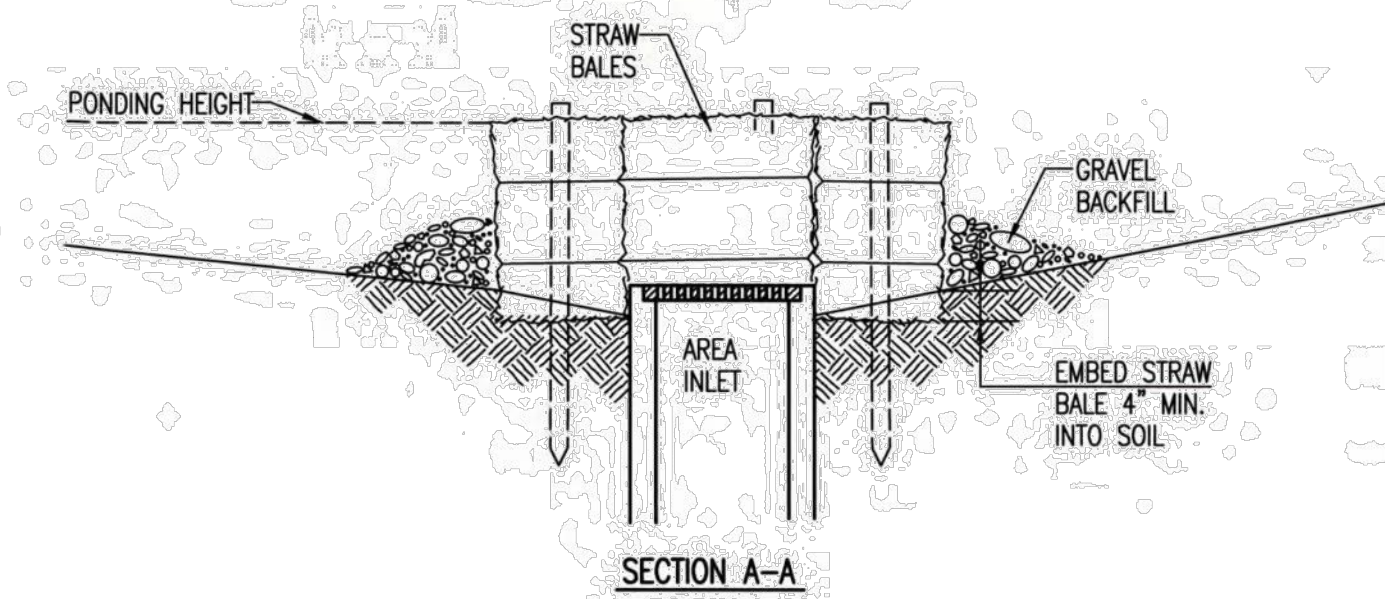
**PLACEMENT:**  
BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK.  
STRAW BALE 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 CHECK 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 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)**

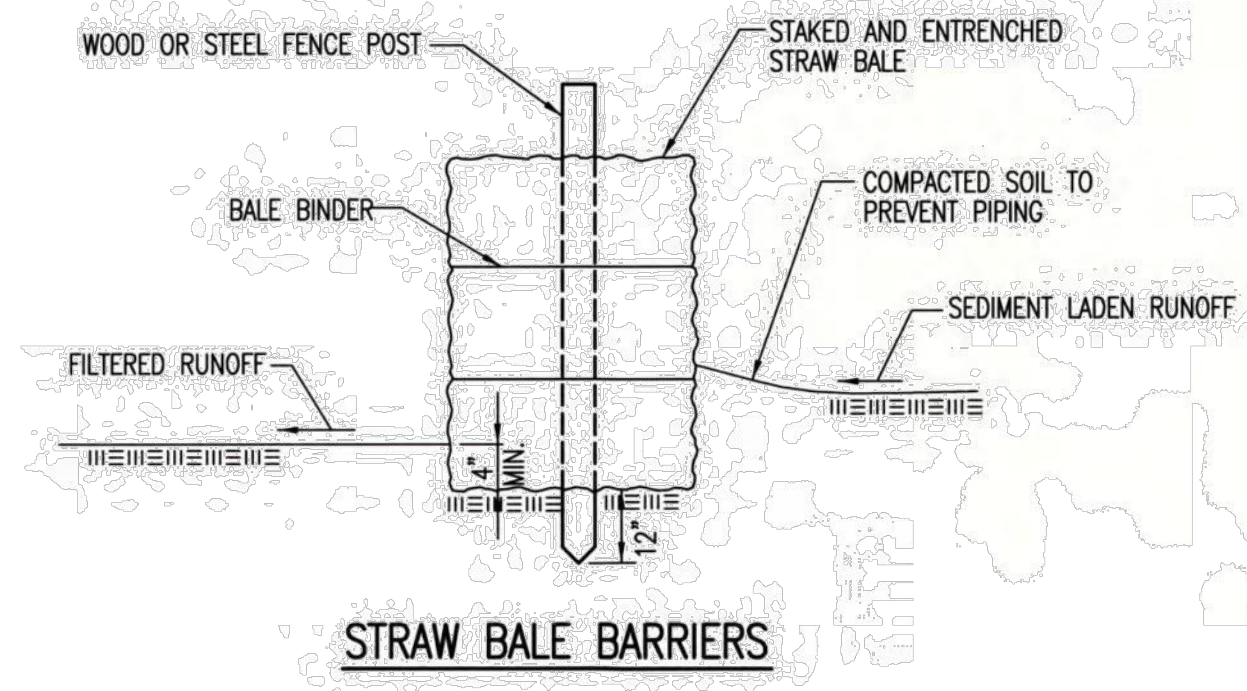
**MATERIAL SPECIFICATION:**  
BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING 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 DRAMATICALLY 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 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?



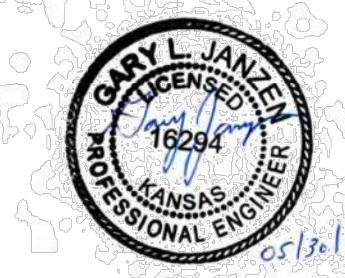
**MATERIAL SPECIFICATION:**  
BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM 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 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, 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: \_\_\_\_\_ OCA NUMBER: \_\_\_\_\_ 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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**PROFESSIONAL IN CHARGE**  
**JOHN NOURZAD**  
PROFESSIONAL ENGINEER  
LICENSE NO. 15701

**PROJECT MANAGER**  
BRIAN OLESEN

**QUALITY CONTROL**  
LARRY DIEHL  
**DRAWN BY**  
PETIA STOYANOVA-POUHALEVA

**PROJECT NAME**  
**BUBBA'S 33**

**WICHITA KANSAS**  
**412 S. TOWNE EAST DRIVE**



**PROJECT NUMBER**  
201405680.0

**SHEET TITLE**  
**EROSION DETAILS**

**SHEET NUMBER**  
**C7.4**





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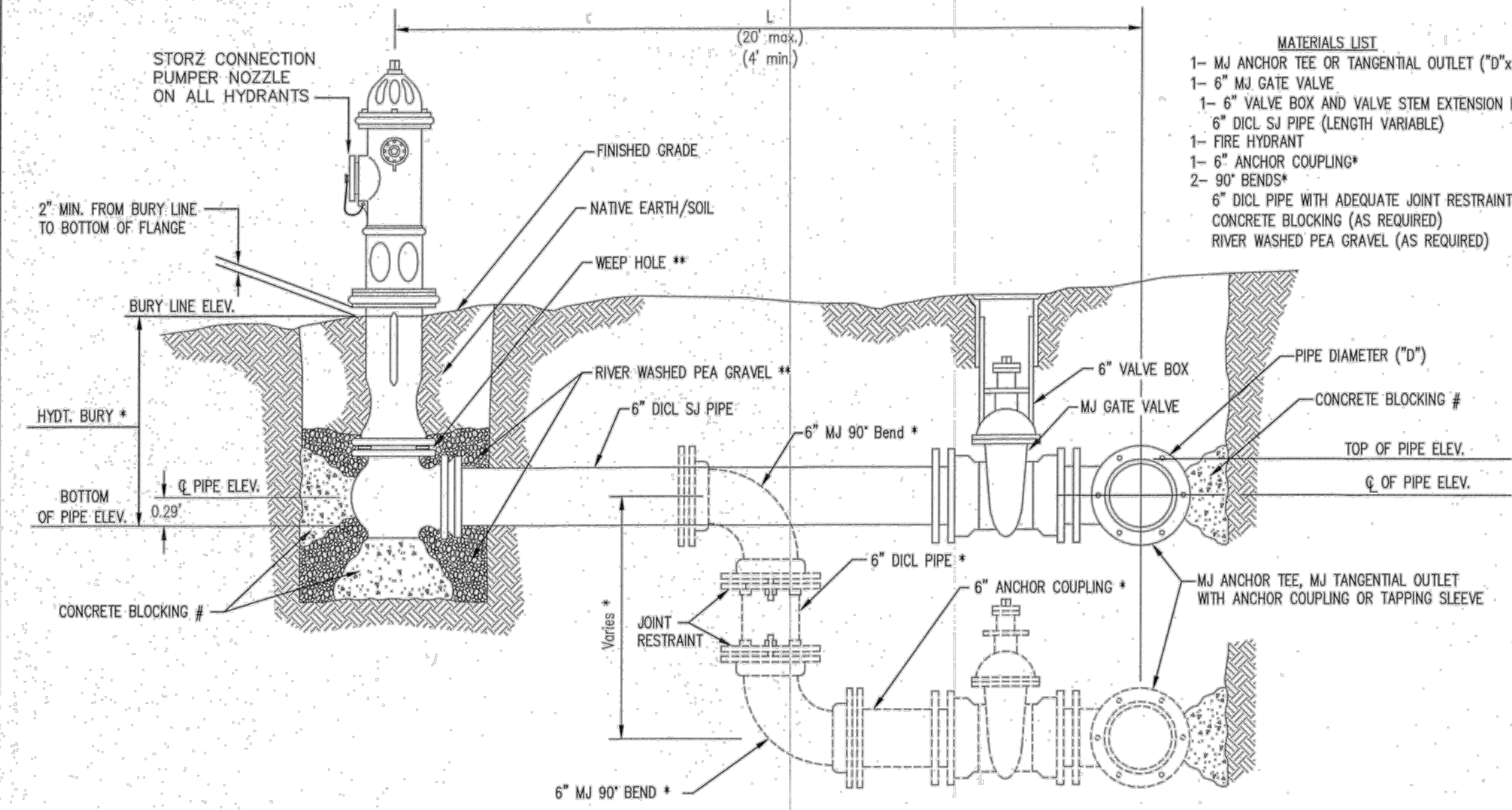
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201405680.0

**SHEET TITLE**  
**WATER DETAILS**

**SHEET NUMBER**  
**C7.10**

**FIRE HYDRANTS REQUIRED**

STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*	VALVE STEM EXT. REQUIRED (ft)*
0+17	1345.25'	1340.25'	5'	N/A

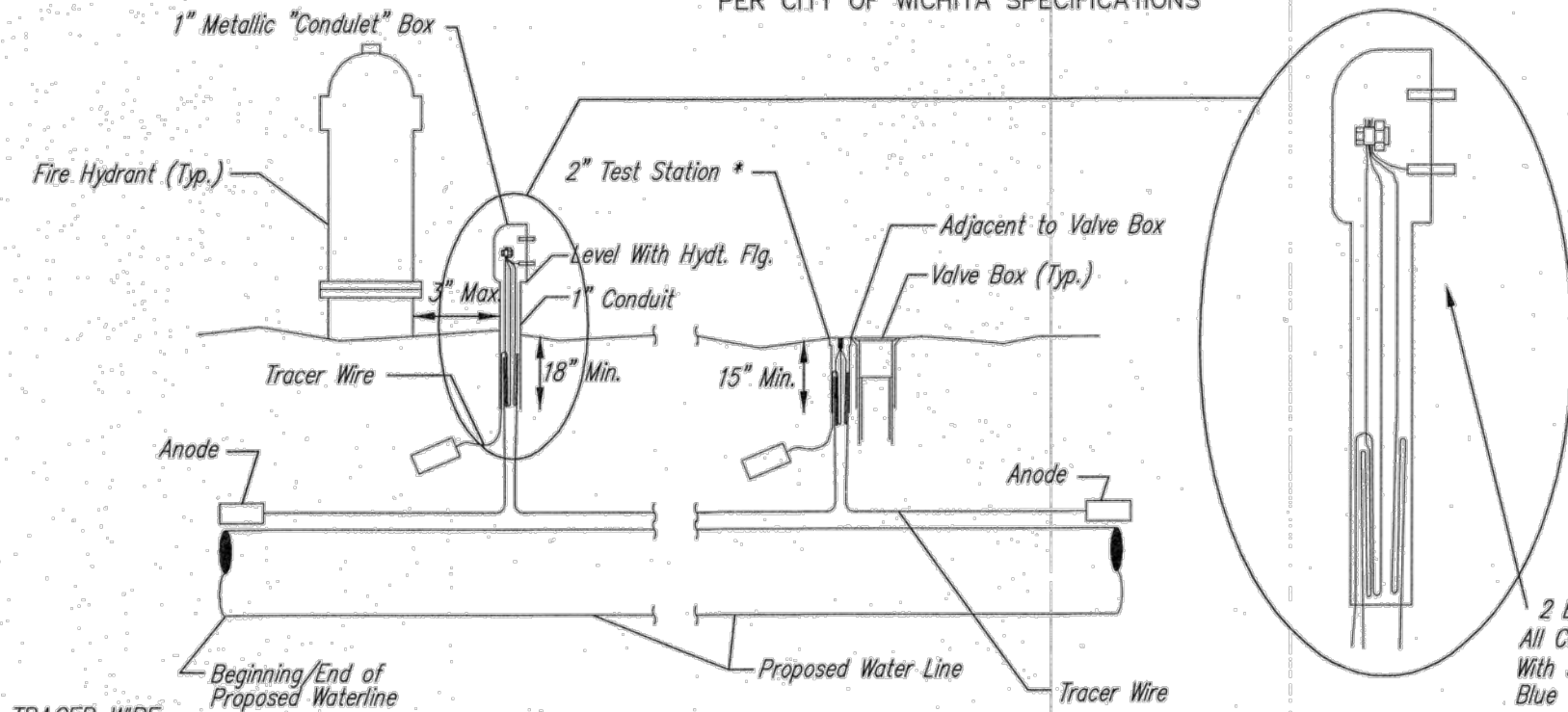


- MATERIALS LIST**
- 1-MJ ANCHOR TEE OR TANGENTIAL OUTLET (10"x 6")
  - 1-6" MJ GATE VALVE
  - 1-6" VALVE BOX AND VALVE STEM EXTENSION IF REQUIRED \*
  - 6" DICL SJ PIPE (LENGTH VARIABLE)
  - 1-FIRE HYDRANT
  - 1-6" ANCHOR COUPLING\*
  - 2-90° BENDS\*
  - 6" DICL PIPE WITH ADEQUATE JOINT RESTRAINT \*
  - CONCRETE BLOCKING (AS REQUIRED)
  - RIVER WASHED PEA GRAVEL (AS REQUIRED)

\* 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 MEAGALUS, 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.

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



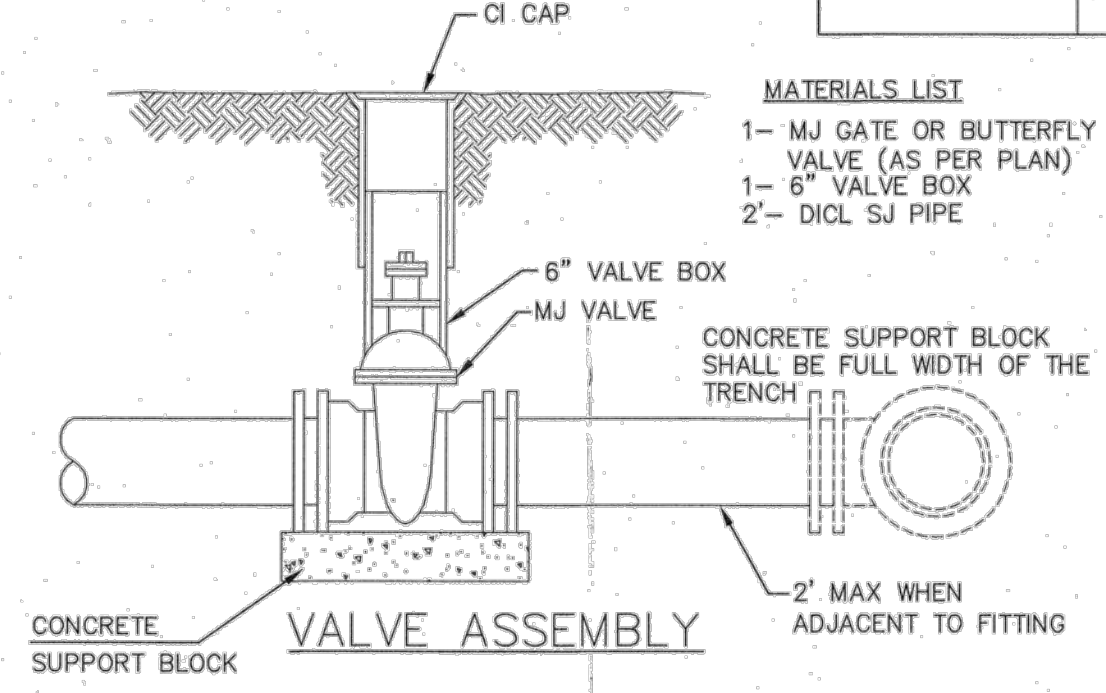
**TRACER WIRE**  
Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. A waterproof connector shall be used 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 at all points of connection. Contractor shall attach wire being installed with proposed water main to any tracer wire installed with adjacent waterline projects.

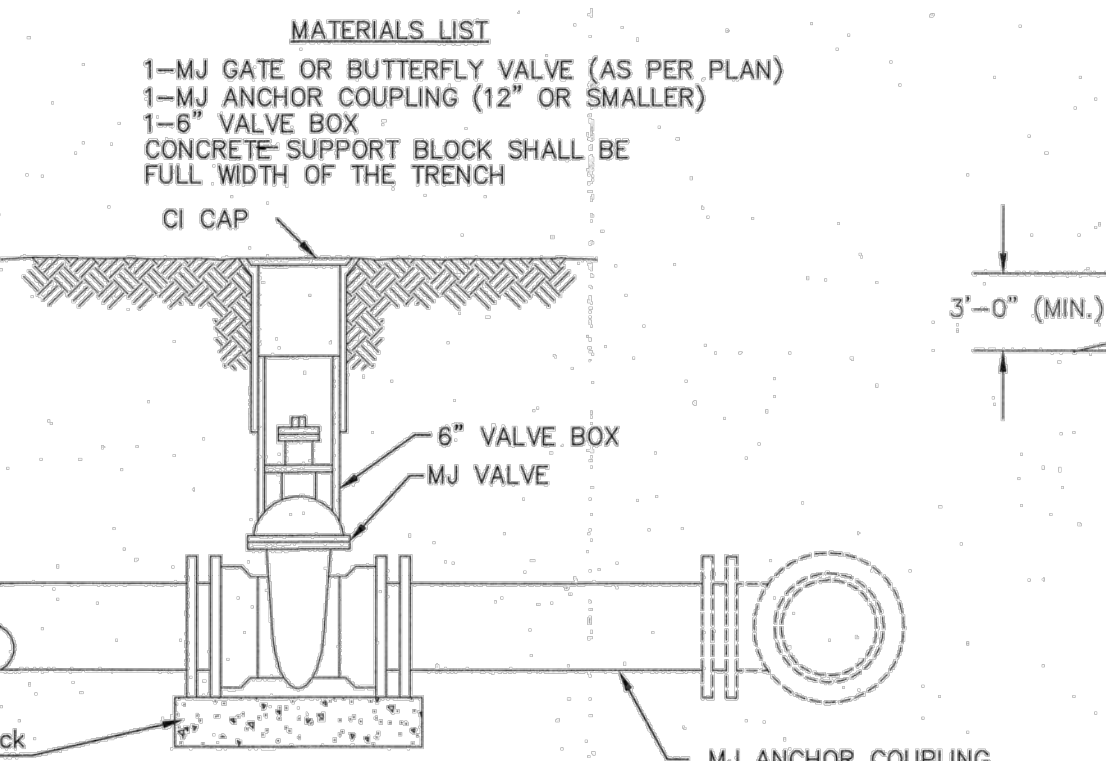
**TEST STATIONS**  
A complete list of approved Tracer Wire can be found on City of Wichita's website at [www.wichita.gov](http://www.wichita.gov). The test station for fire hydrant applications shall be a 1 inch galvanized "conduit" style test station as manufactured by AGRA Industries with a removable 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 into the lid. All test stations shall be manufactured using molded blue taps 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.

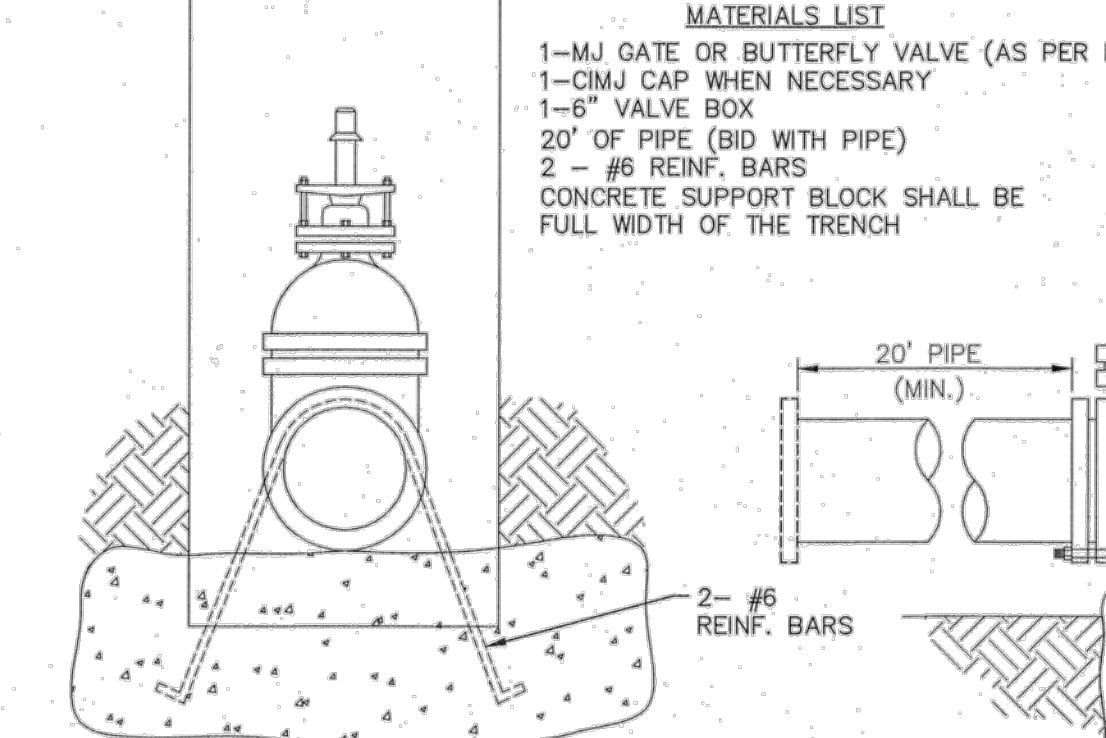
**TRACER WIRE DETAIL**  
COST IS SUBSIDIARY TO PIPE INSTALLATION



- 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**

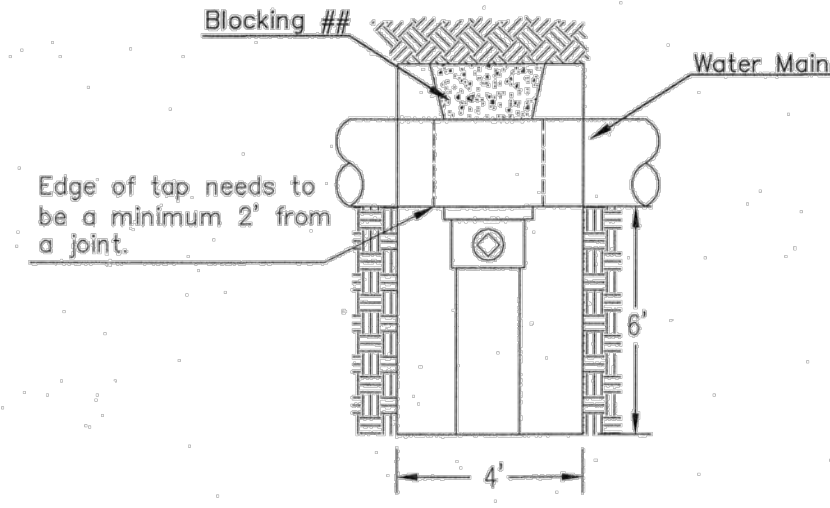


**Notes:**

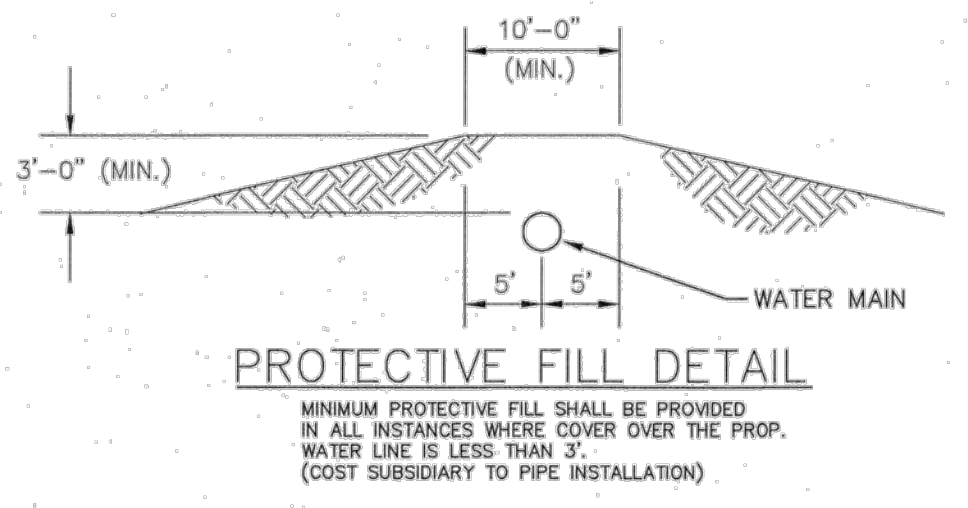
- Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.
- The thrust block shall be constructed such that bolts, nuts, and other MJ accessories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

**THRUST AT VALVES**

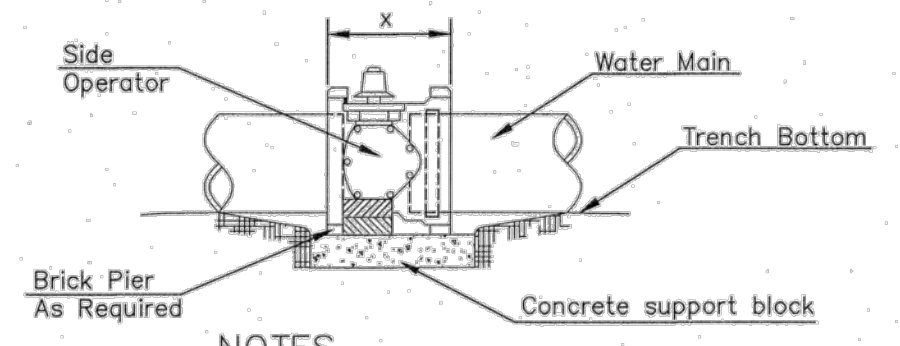
VALVE	THRUST AT 150 #/sq
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.



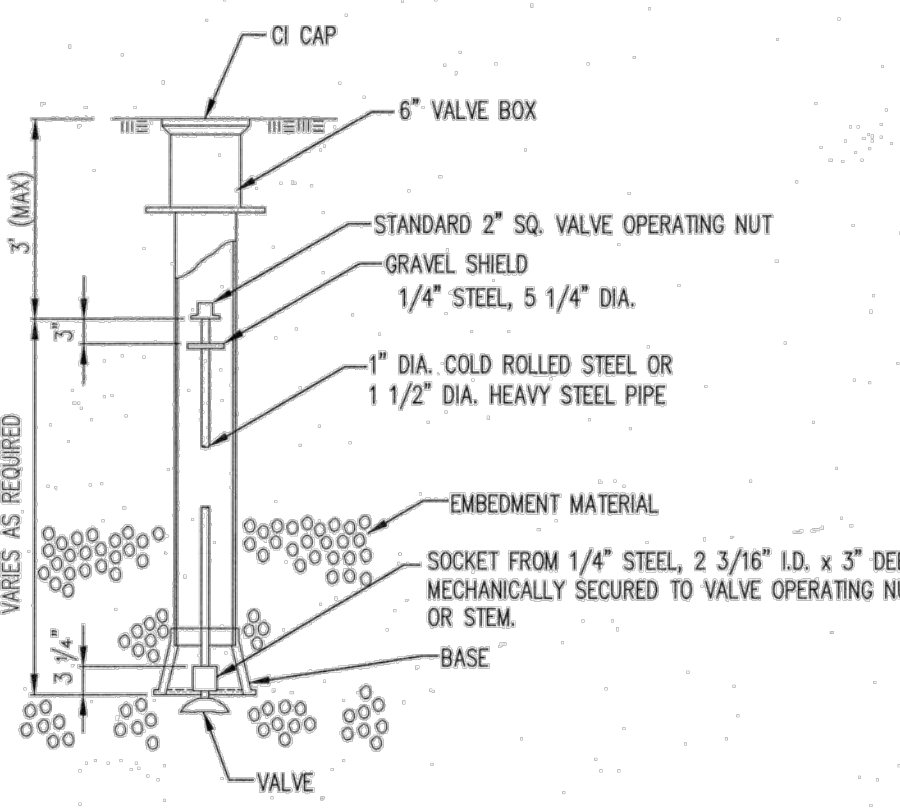
**CITY TAP**



**PROTECTIVE FILL DETAIL**

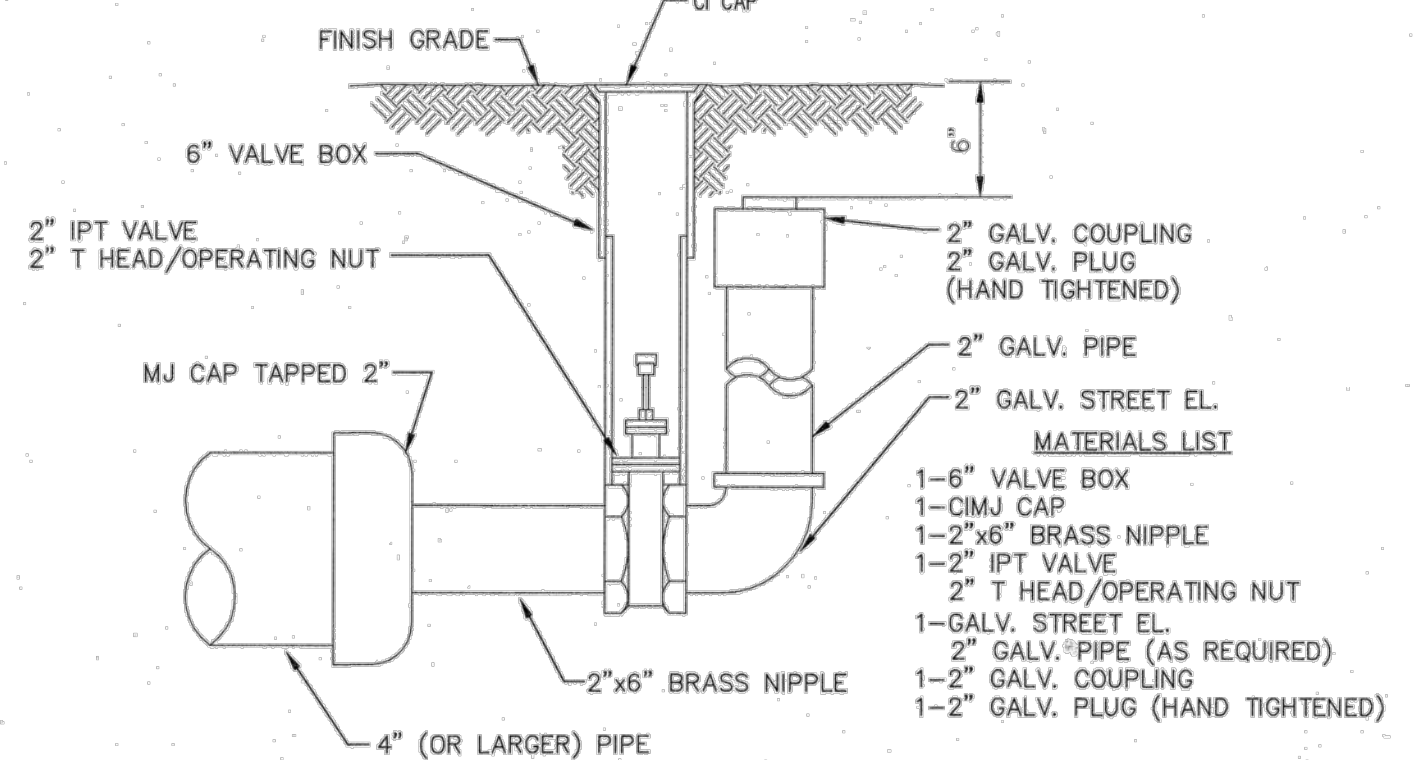


**CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION**



**VALVE STEM EXTENSION DETAIL**

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



**2" BLOWOFF ASSEMBLY**



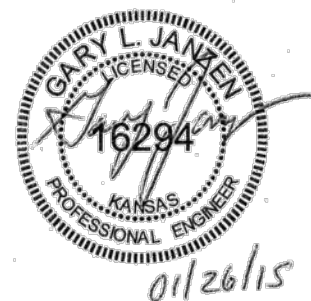
**STANDARD WATER ASSEMBLY DETAIL**

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

PROJECT NUMBER: [ ] OCA NUMBER: [ ] DATE: 04/2013

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

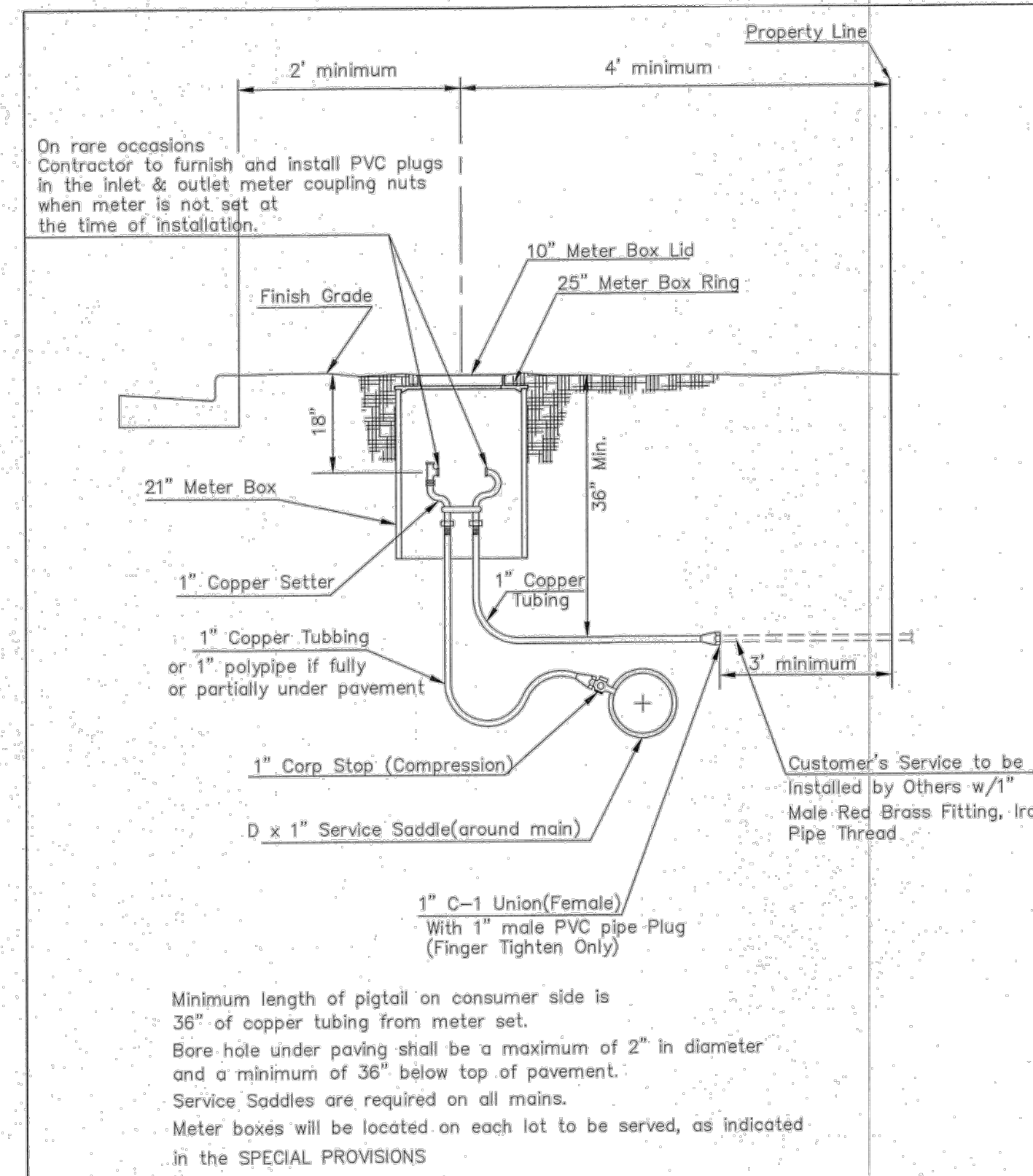
SHEET [ ] of [ ]



**ANCHORED VALVE ASSEMBLY, SPECIAL**

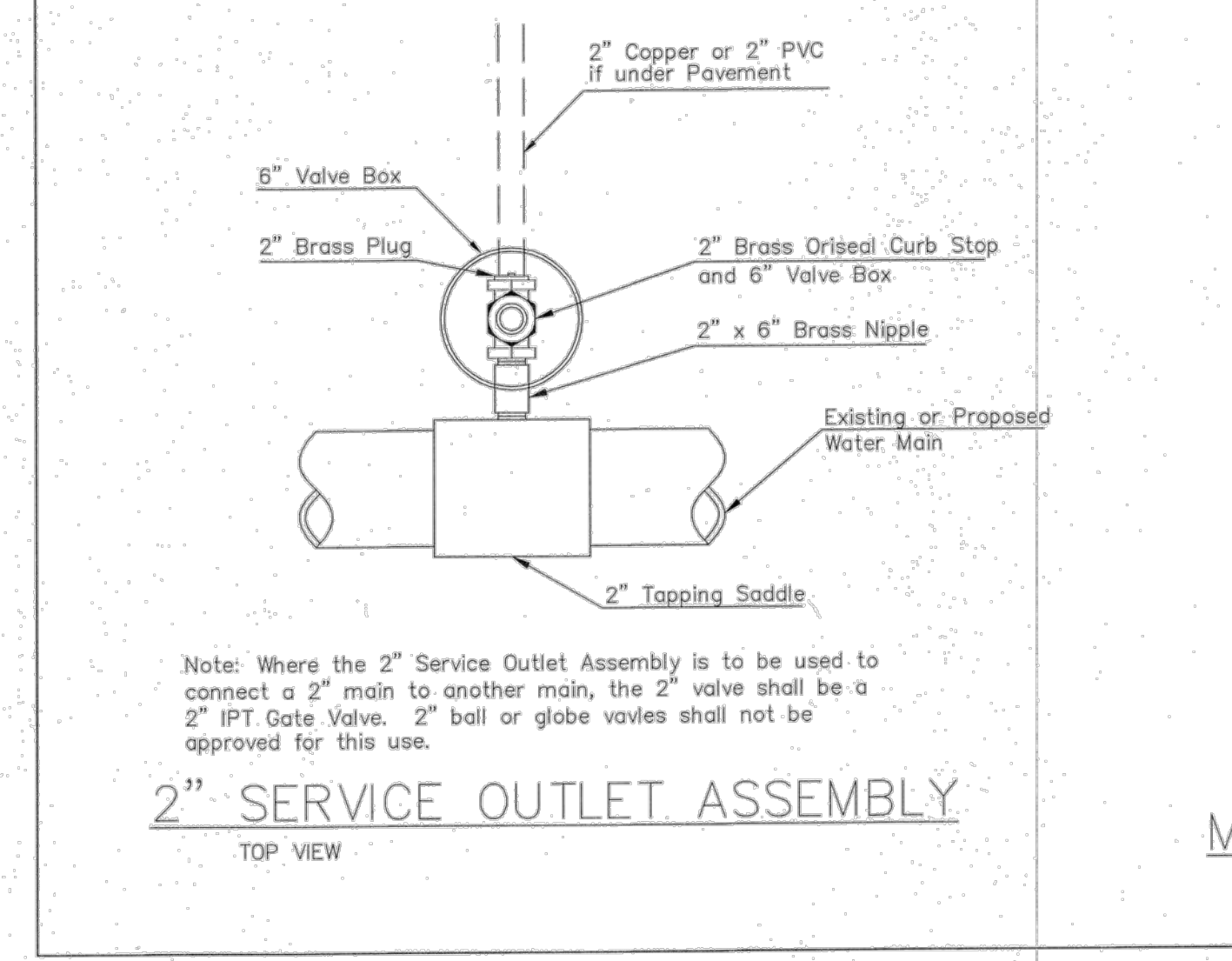
REVISED JANUARY 2015

WL-101



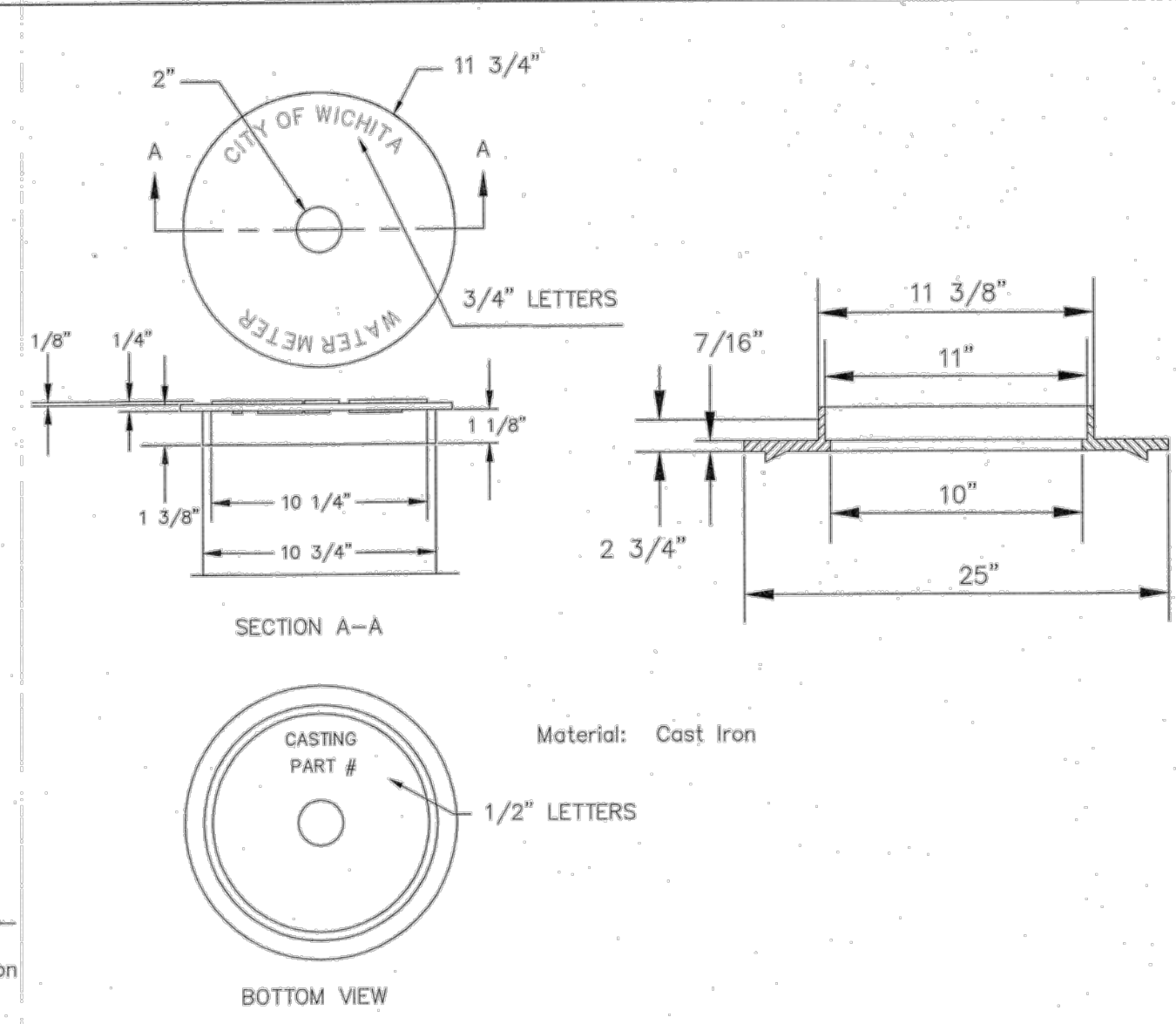
TYPICAL 1" METER SETTING

Minimum length of pigtail on consumer side is 36" of copper tubing from meter set.  
 Bore hole under paving shall be a maximum of 2" in diameter and a minimum of 36" below top of pavement.  
 Service Saddles are required on all mains.  
 Meter boxes will be located on each lot to be served, as indicated in the SPECIAL PROVISIONS



2" SERVICE OUTLET ASSEMBLY  
 TOP VIEW

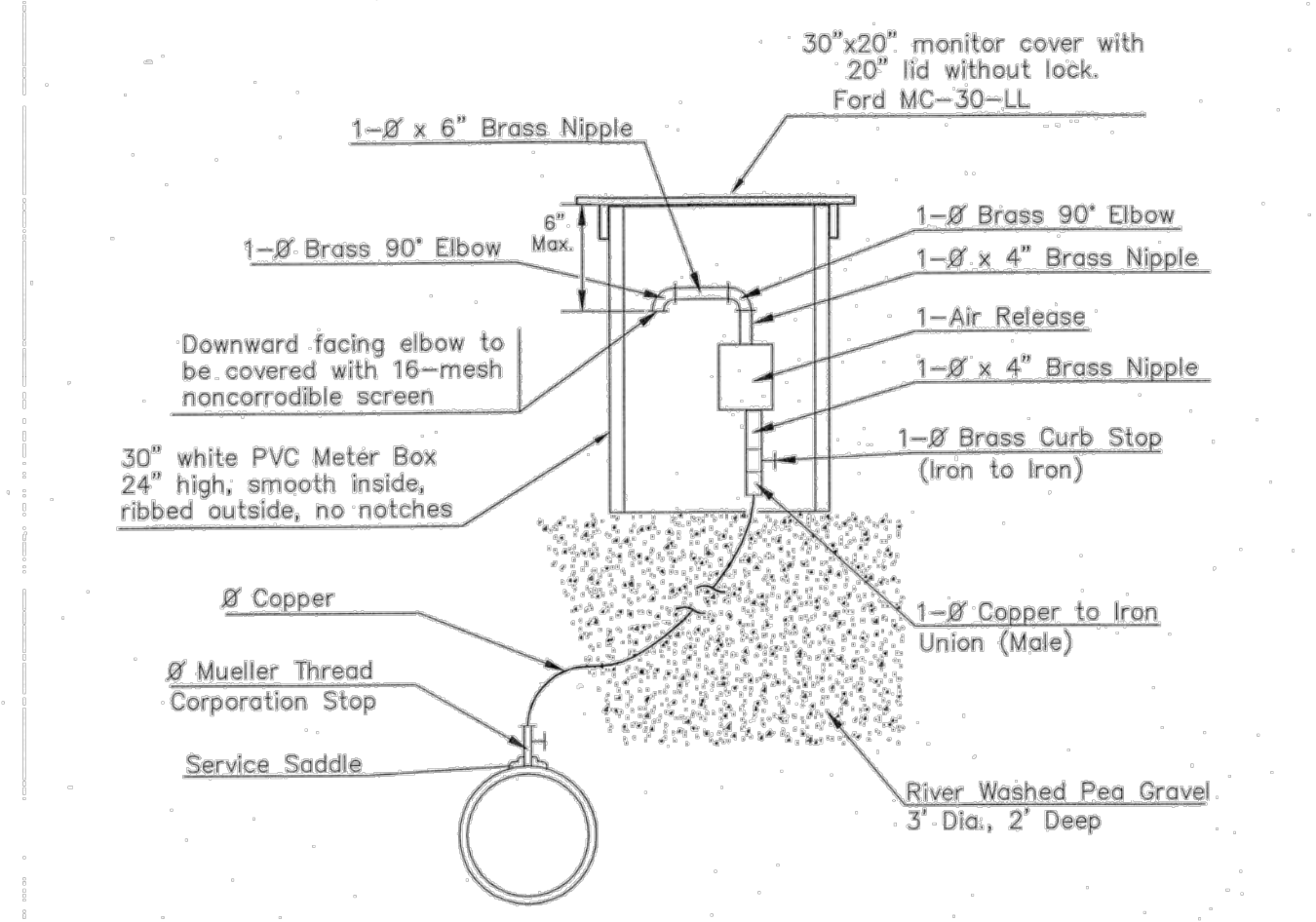
Note: Where the 2" Service Outlet Assembly is to be used to connect a 2" main to another main, the 2" valve shall be a 2" IPT Gate Valve. 2" ball or globe valves shall not be approved for this use.



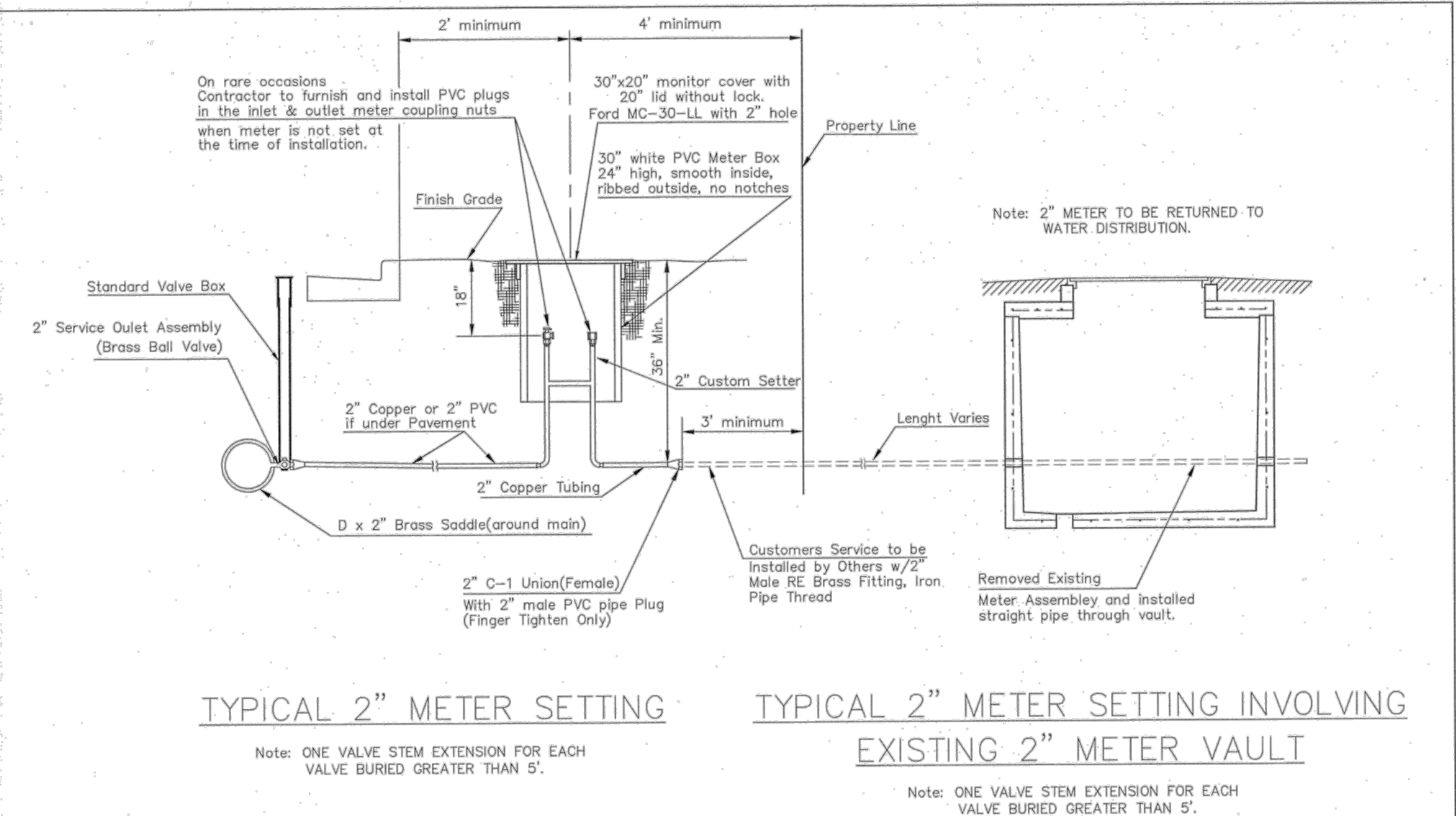
NOT TRAFFIC RATED  
 RING & LID FOR 1" METER BOX

- 1 - 1/2" Mueller Thread Corporation Stop
  - 1 - 1/2" Type "K" Copper Tubing
  - 1 - 1/2" Copper to Iron Union (Male)
  - 1 - 1/2" Brass Curb Stop (Iron to Iron)
  - 2 - 1/4" Brass Nipple
- Air Release  
 2 - 1/2" Brass Elbows (90°)  
 1 - 1"x6" Brass Nipple  
 1 - 30" Monitor Cover  
 1 - 20" Meter Lid

NOTE:  
 THE 1 1/2" AIR RELEASE ASSEMBLY WILL TYPICALLY BE USED ON WATER MAINS 24" AND SMALLER, AS SPECIFICALLY DESIGNATED IN THE PLANS. COMBINATION AIR RELEASE ASSEMBLIES WILL BE SPECIFICALLY DESIGNED FOR PROJECTS WITH LARGER MAINS, AND WILL BE INCLUDED IN THE PLANS.



MATERIALS FOR 1" or 2" AIR RELEASE ASSEMBLY  
 Ø = 1" or 2"

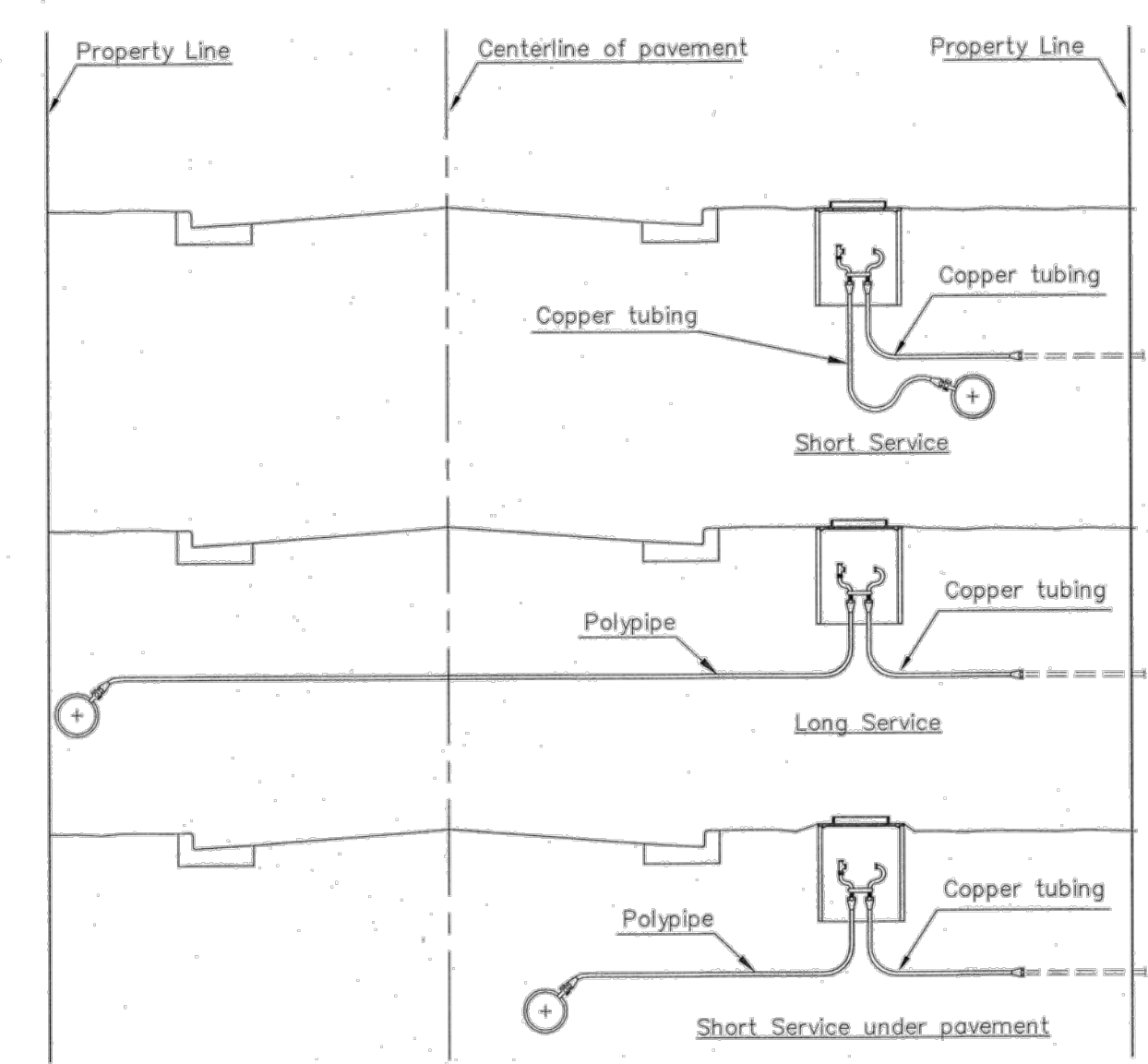


TYPICAL 2" METER SETTING

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

TYPICAL 2" METER SETTING INVOLVING EXISTING 2" METER VAULT

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



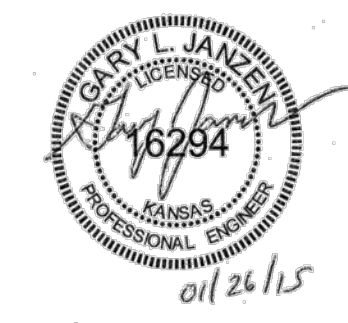
SERVICE TYPES

REVISED: JANUARY 2015

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

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

PROJECT NUMBER	DCA NUMBER	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		
SHEET		
- of -		



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ISSUE/REVISION RECORD	
DATE	DESCRIPTION
06/02/15	COORDINATION SET
06/29/15	PERMIT SET
07/24/15	PERMIT RESUBMITTAL
08/03/15	BID SET

PROFESSIONAL SEAL

PROFESSIONAL IN CHARGE  
**JOHN NOURZAD**  
 PROFESSIONAL ENGINEER  
 LICENSE NO. 15701

PROJECT MANAGER  
 BRIAN OLESEN

QUALITY CONTROL  
 LARRY DIEHL

DRAWN BY  
 PETIA STOYANOVA-POUHALEVA

PROJECT NAME  
**BUBBA'S 33**

WICHITA  
 KANSAS  
 412 S. TOWNE EAST DRIVE

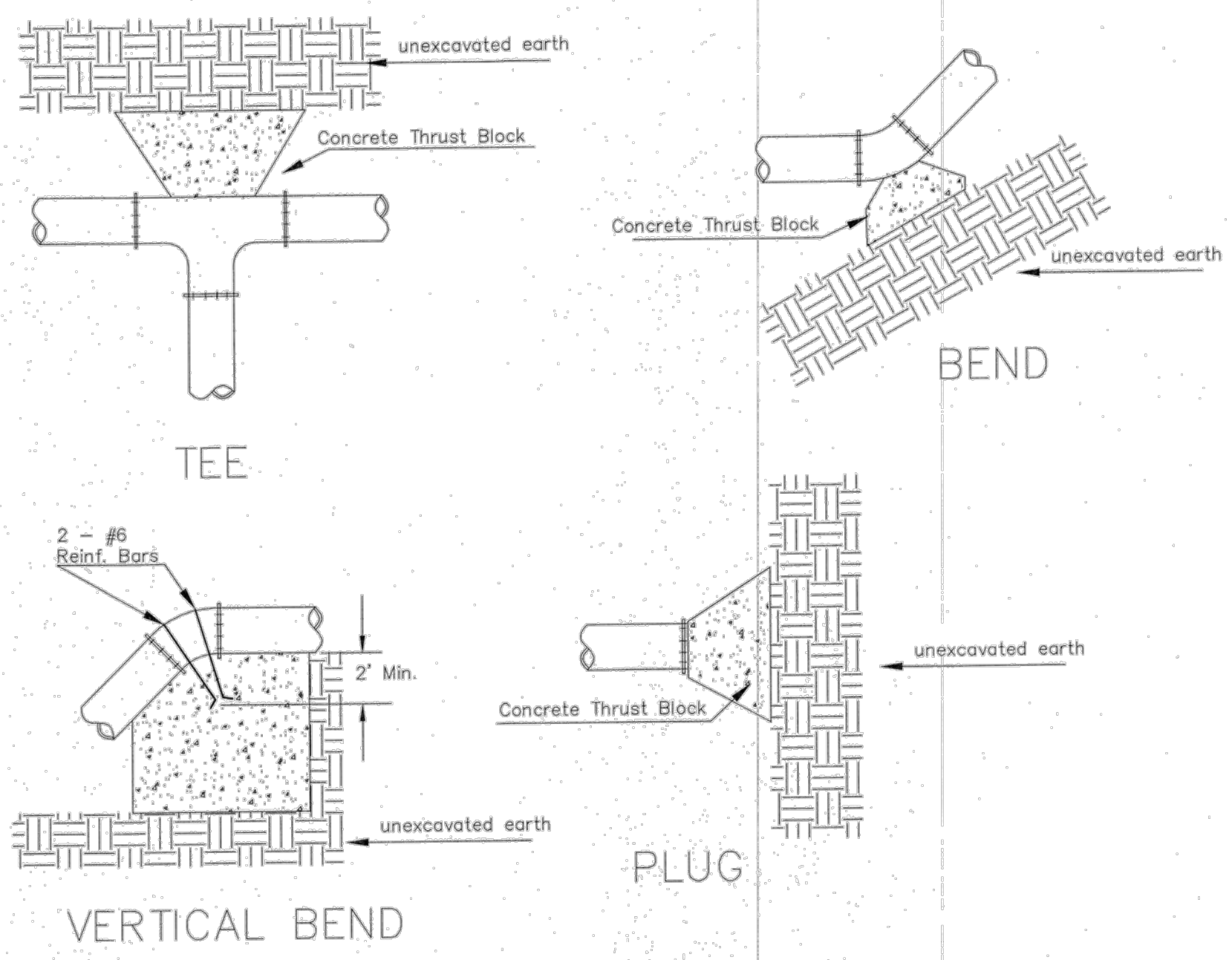


PROJECT NUMBER  
 201405680.0

SHEET TITLE  
**WATER DETAILS**

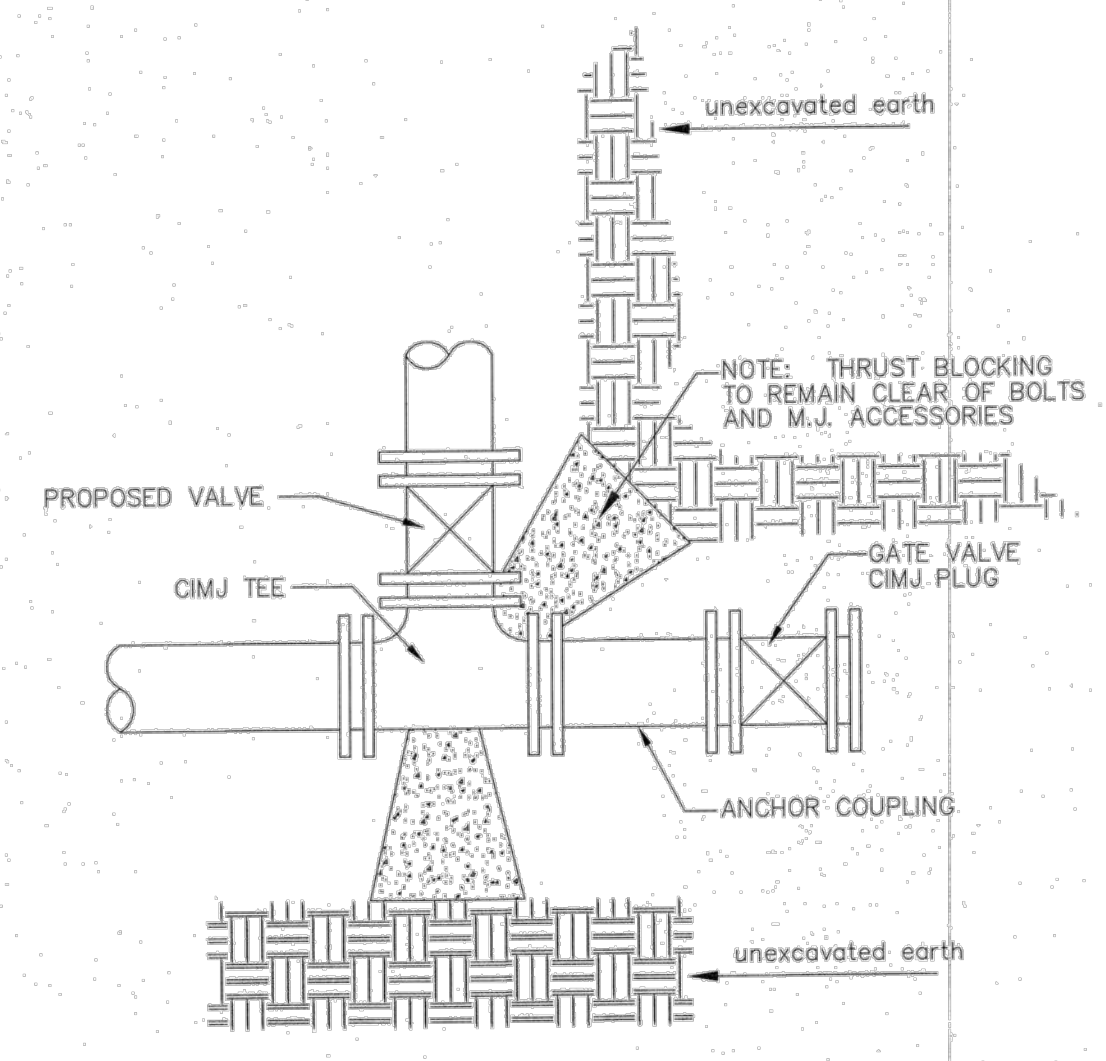
SHEET NUMBER  
**C7.11**

Drawn: 1/15/15 (10:00:00 AM) by: G. Janzen (10:00:00 AM) Date: 1/15/15  
 Checked: 1/15/15 (10:00:00 AM) by: G. Janzen (10:00:00 AM) Date: 1/15/15  
 Title: 1/15/15 (10:00:00 AM) by: G. Janzen (10:00:00 AM) Date: 1/15/15



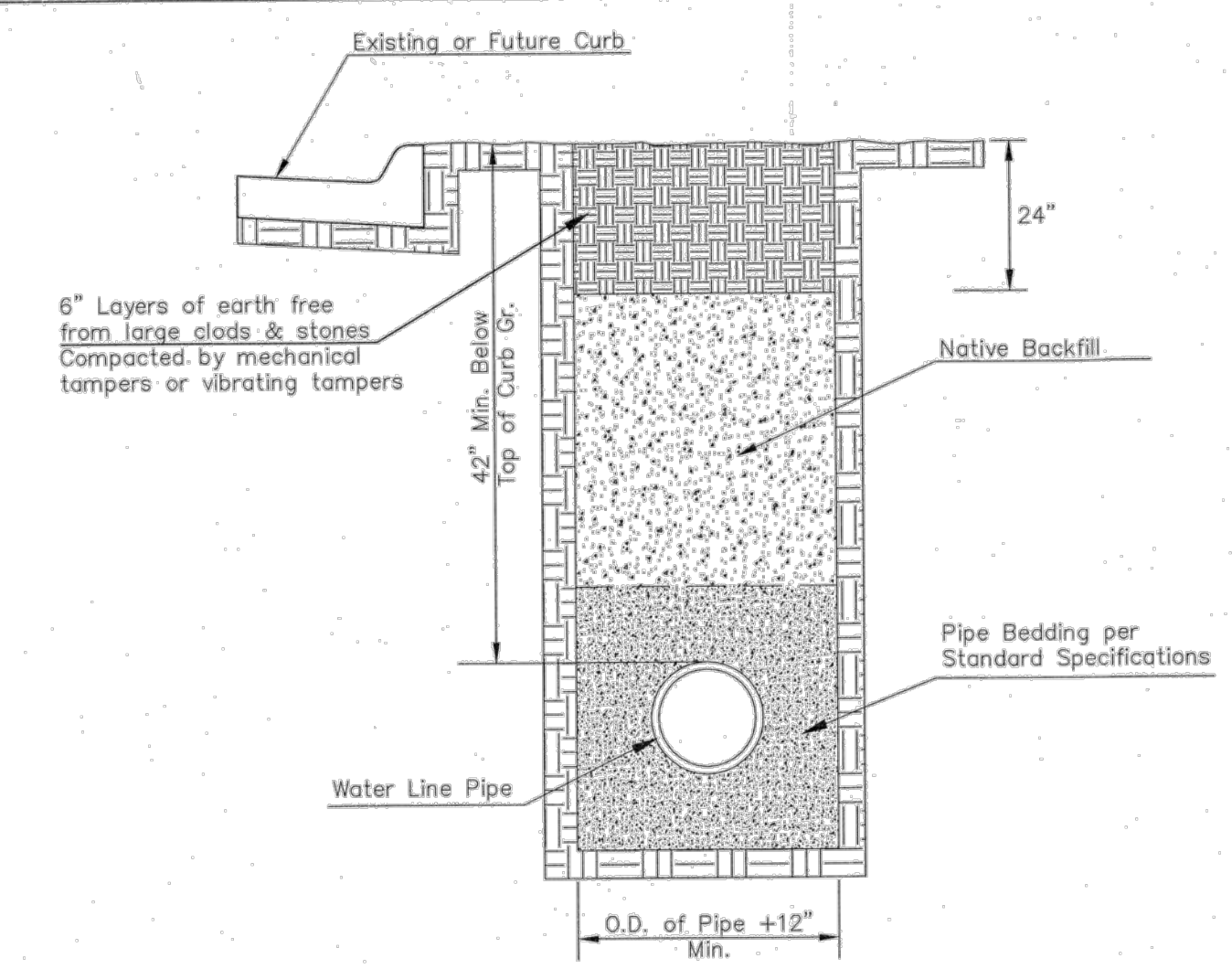
PIPE SIZE	THRUST AT FITTINGS IN TONS—AT 150#/IN <sup>2</sup> P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

TYPICAL THRUST BLOCKS

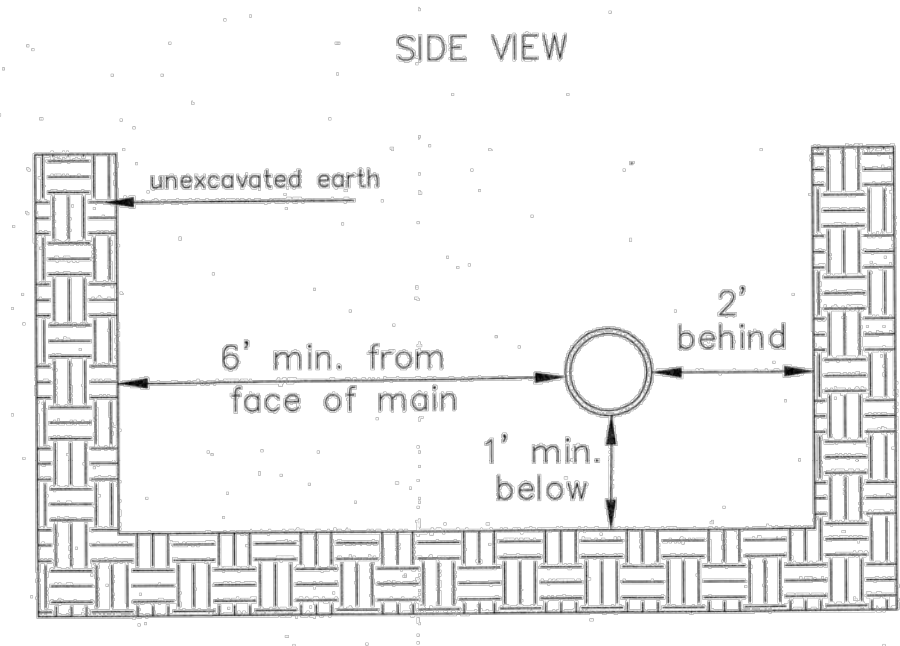


KEY BLOCK DETAIL

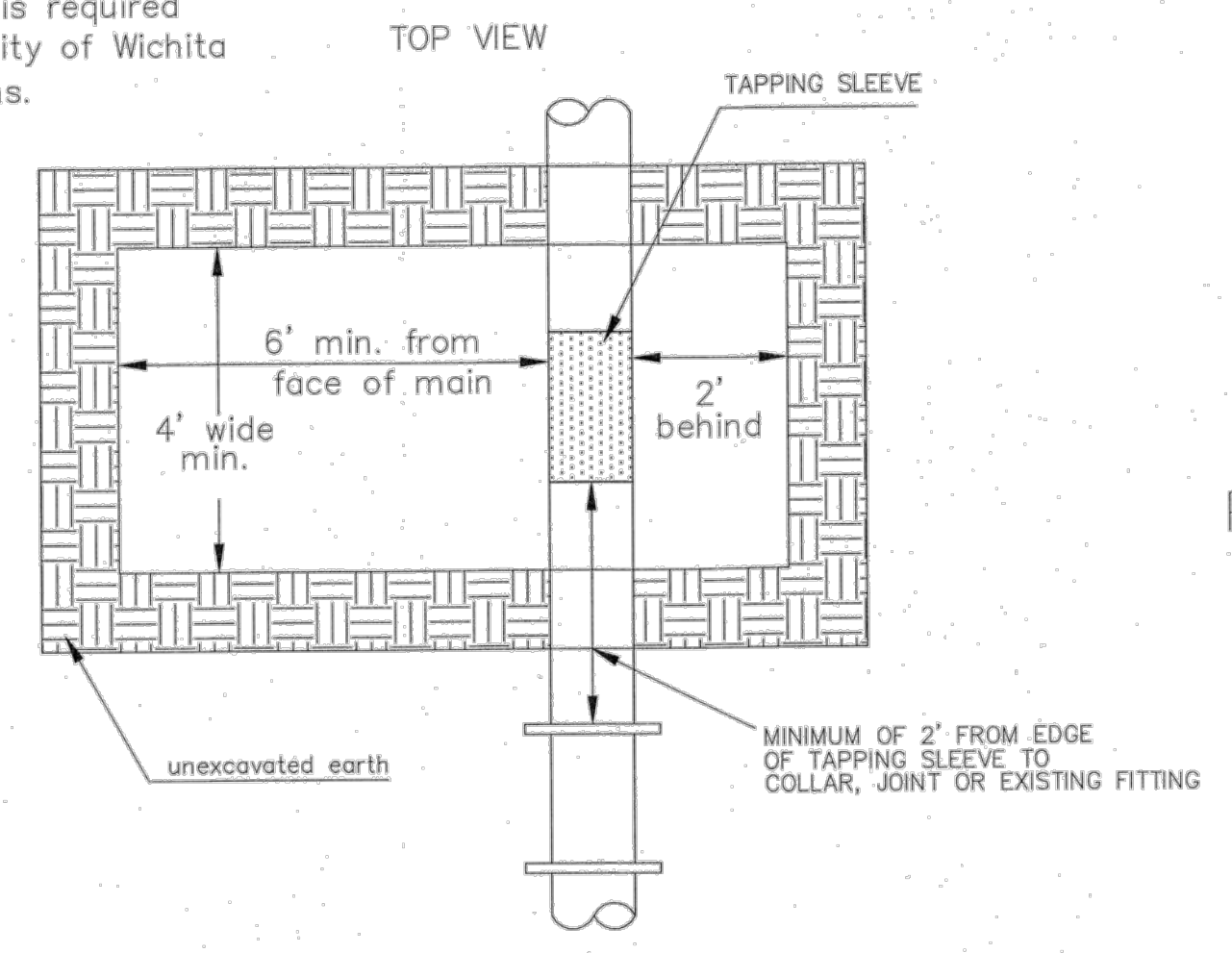
\* PLANS GOVERN  
 UNLESS OTHERWISE NOTED ON PLANS



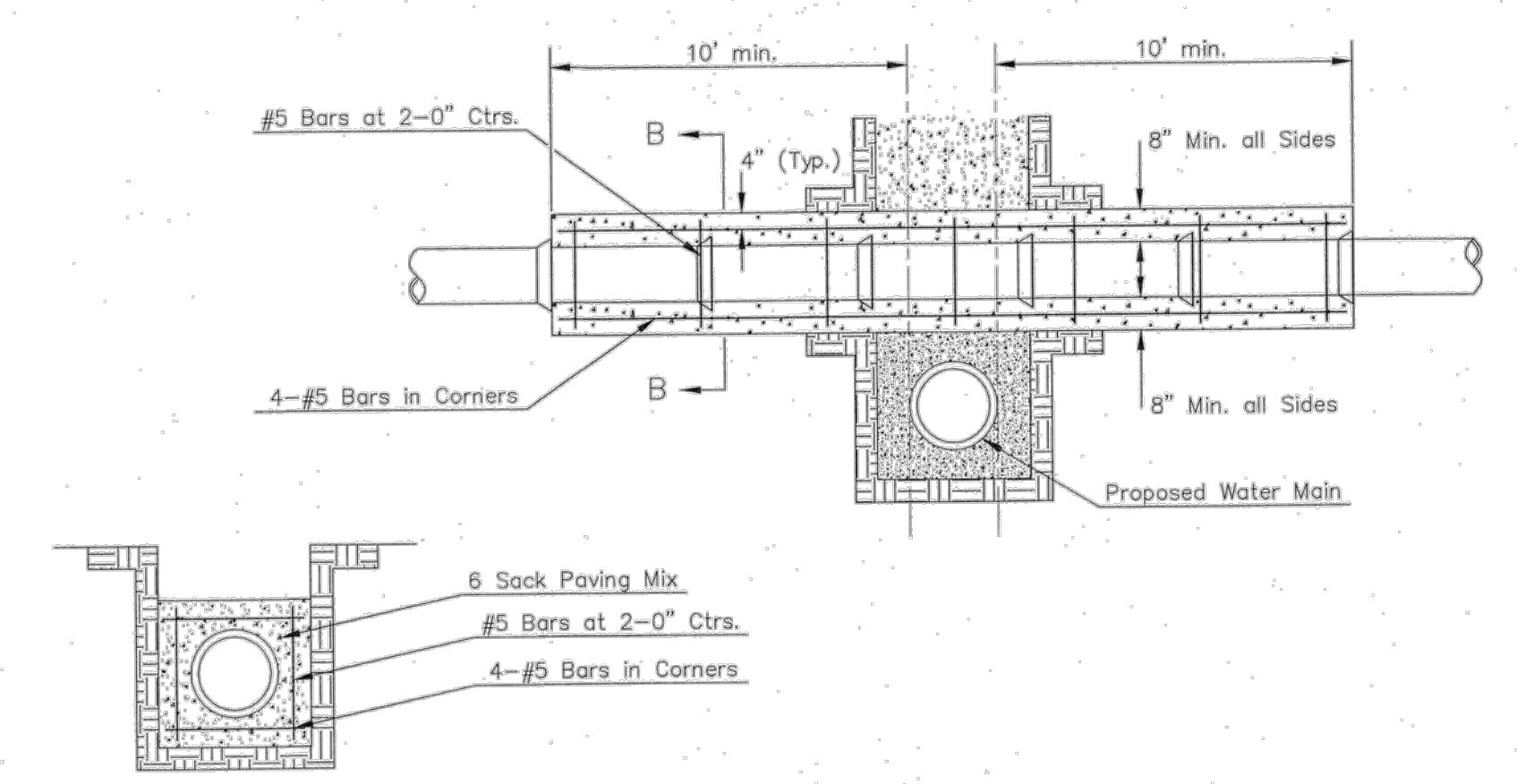
TRENCH COMPACTION IN ROAD RIGHT-OF-WAY



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



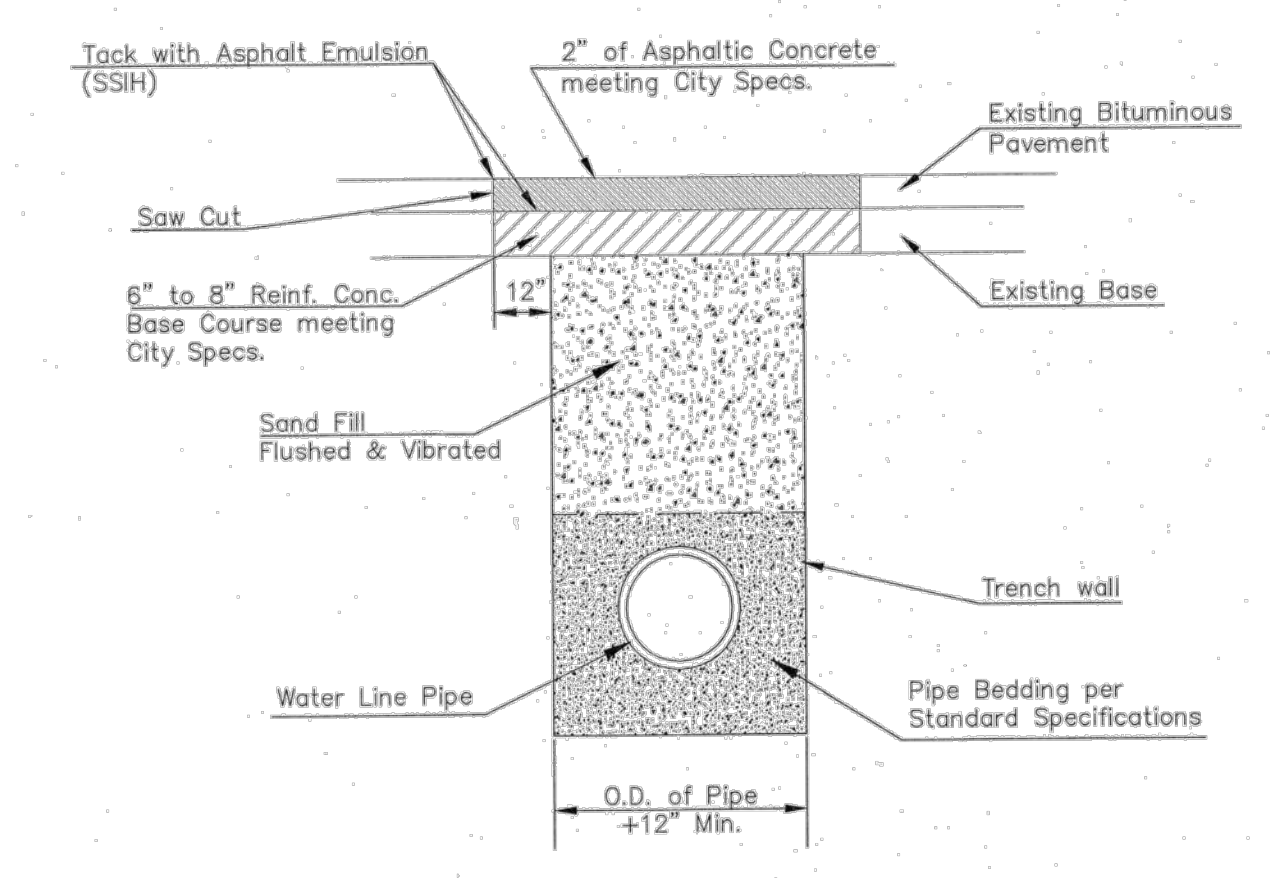
EXCAVATION FOR WET TAP



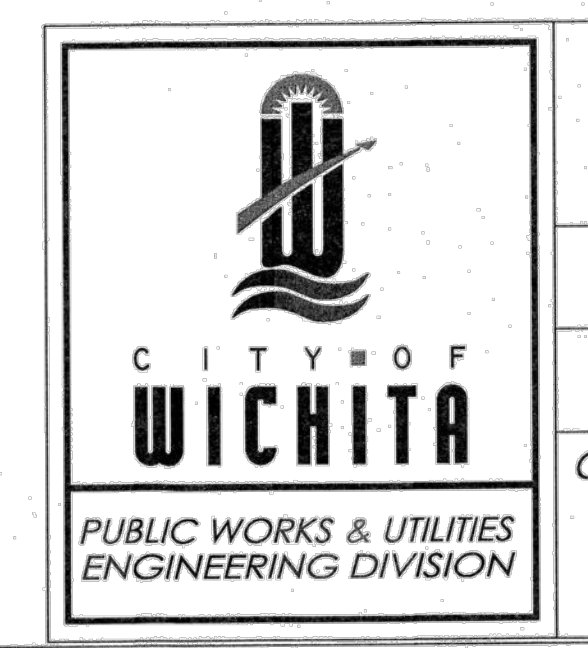
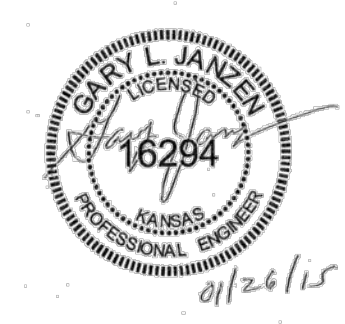
SECTION B-B

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

REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER



PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS



MISCELLANEOUS WATER DETAILS		
CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER	OCA NUMBER	DATE
		04/2014
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4301		SHEET
		_ of _

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**ISSUE/REVISION RECORD**

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**PROFESSIONAL SEAL**

**PROFESSIONAL IN CHARGE**  
**JOHN NOURZAD**  
 PROFESSIONAL ENGINEER  
 LICENSE NO. 15701  
**PROJECT MANAGER**  
 BRIAN OLESEN  
**QUALITY CONTROL**  
 LARRY DIEHL  
**DRAWN BY**  
 PETIA STOYANOVA-POUHALEVA

**PROJECT NAME**  
**BUBBA'S 33**

**WICHITA KANSAS**  
 412 S. TOWNE EAST DRIVE



**PROJECT NUMBER**  
 201405680.0

**SHEET TITLE**  
**WATER DETAILS**

**SHEET NUMBER**  
**C7.12**

Drawn: 11/15/15 11:00:00 AM by: Gary L. Janzen (16294) Date: 11/15/15 11:00:00 AM  
 Checked: 11/15/15 11:00:00 AM by: Gary L. Janzen (16294) Date: 11/15/15 11:00:00 AM  
 Title: 11/15/15 11:00:00 AM by: Gary L. Janzen (16294) Date: 11/15/15 11:00:00 AM