

UTILITIES INFORMATION:

ELECTRIC, WATER, & GAS CITY UTILITIES
301 E. CENTRAL ST.
SPRINGFIELD, MO 65802
(417) 863-9000

SANITARY SEWER: CITY OF SPRINGFIELD
840 BOONVILLE AVE
SPRINGFIELD, MO 65802
(417) 864-1919

TELEPHONE: AT&T MISSOURI
1111 S. CLESTON AVE.
SPRINGFIELD, MO 65804
(417) 864-3700

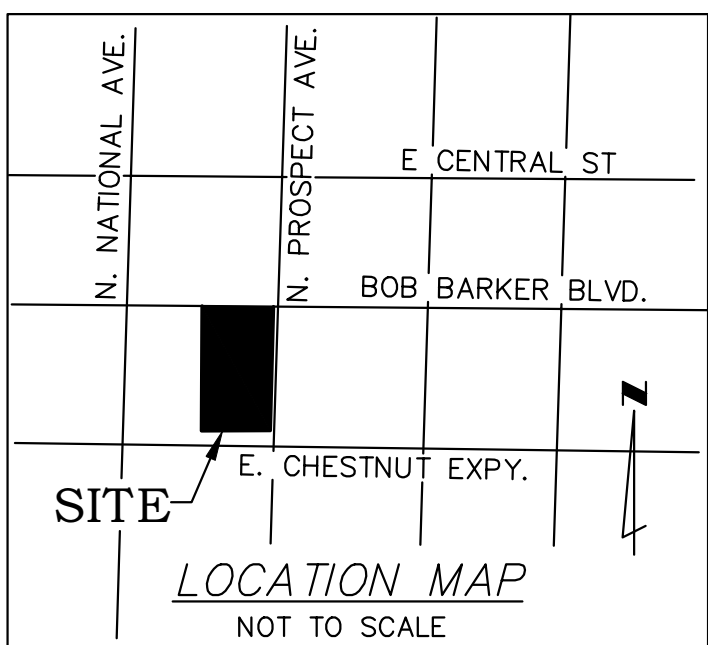
SAWCUT NOTE:

WHERE NEW UTILITY SERVICES ARE ROUTED UNDER EXISTING PAVED AREAS, ALL EXISTING PAVINGS SHALL BE REMOVED IN THE FOLLOWING STEP:

- 1) SAWCUTTING PAVING.
- 2) REMOVAL AND TRENCHING.
- 3) INSTALLATION OF UTILITY.
- 4) BACKFILL AND COMPACTION

INSTALLATION OF NEW PAVING THAT MATCHES THE EXISTING SURROUNDING PAVING BOTH MATERIAL AND ELEVATION. OWNER/DEVELOPER SHALL COORDINATE, OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND LICENSES TO PERFORM THIS WORK AND SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL WHILE PERFORMING SAWCUTTING OPERATIONS AS NECESSARY.

CONTRACTOR NOTE:
CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR DEMOLITION OF EXISTING UTILITIES TO EXISTING STRUCTURE TO BE DEMOLISHED. EXISTING UTILITY TAP SHALL BE USED IF FOUND TO BE IN GOOD CONDITION.



CAUTION:
INFORMATION ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERE TO.

SAFETY NOTICE TO CONTRACTOR

1. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
2. THE DUTY OF THE ENGINEER OR OWNER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

CONTRACTOR CAUTION!!
VERIFY SEWER LINE ELEVATION

BEFORE STARTING ANY BUILDING PAD GRADING AND PLUMBING WORK, THE CONTRACTOR SHALL FIELD VERIFY LOCATION, MATERIAL, CONDITION, ACCESSIBILITY (INCLUDING STATE HIGHWAY OR OTHER RIGHTS-OF-WAY) AND WORKABLE FLOW LINE ELEVATION OF THE EXISTING SANITARY SEWER SERVICE LINE OR MAIN.

IF A WORKABLE FLOW LINE HAS NOT BEEN ESTABLISHED AT THE TIME OF FINAL SANITARY SEWER SERVICE CONNECTION, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXPENSES ASSOCIATED WITH THE INSTALLATION OF A NEW GRINDER PUMP SYSTEM TO MEET OWNER AND LOCAL REQUIREMENTS.



FIRE FLOW CALCULATIONS

FIRE-FLOW REQUIREMENTS PER IFC 2012 APPENDIX B AND APPENDIX C
BUILDING CONSTRUCTION TYPE = V-B
FIRE-FLOW CALCULATION AREA = 45,297 SQUARE FEET (LARGEST BUILDING)

HYDRANT #20378 PROVIDED FIRE-FLOW:
Q20 = 0.1 (HP) 0.54 / (100.54)
STATIC FLOW (Qf) = 1,550 GPM
STATIC PRESSURE (Ps) = 62 PSI
RESIDUAL PRESSURE (Pr) = 58 PSI
Hf = 62 PSI - 20 PSI = 42 PSI
Hf = 62 PSI - 58 PSI = 4 PSI
FLOW AT 20 PSI = 1,550 * (42/0.54 / 4/0.54) = 5,518 GPM
PROVIDED FIRE-FLOW = 5,518 GPM

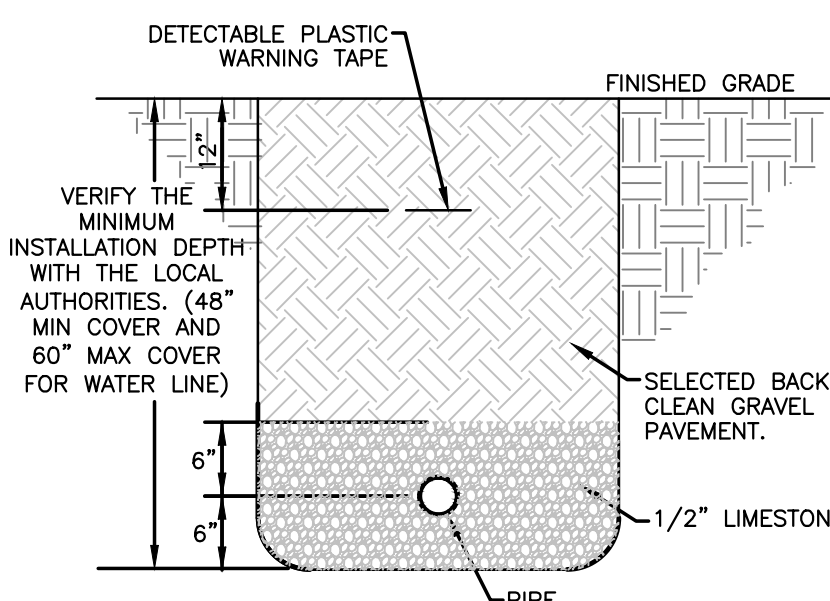
REQUIRED FIRE-FLOW:
REQUIRED FIRE-FLOW PER TABLE B105.1 = 5,750 GPM
ALLOWED 15% REDUCTION DUE TO BUILDING FIRE SPRINKLER SYSTEM = 5,750 * 0.25 = 1,438 GPM
REQUIRED FIRE-FLOW (5,518 GPM) > REQUIRED FIRE-FLOW (1,438 GPM)

REQUIRED FIRE HYDRANTS:
REQUIRED # OF HYDRANTS PER TABLE C105.1 = 1 FIRE HYDRANT
FIRE HYDRANTS PROVIDED: 2 (ALONG BROWER STREET & PROSPECT AVE)

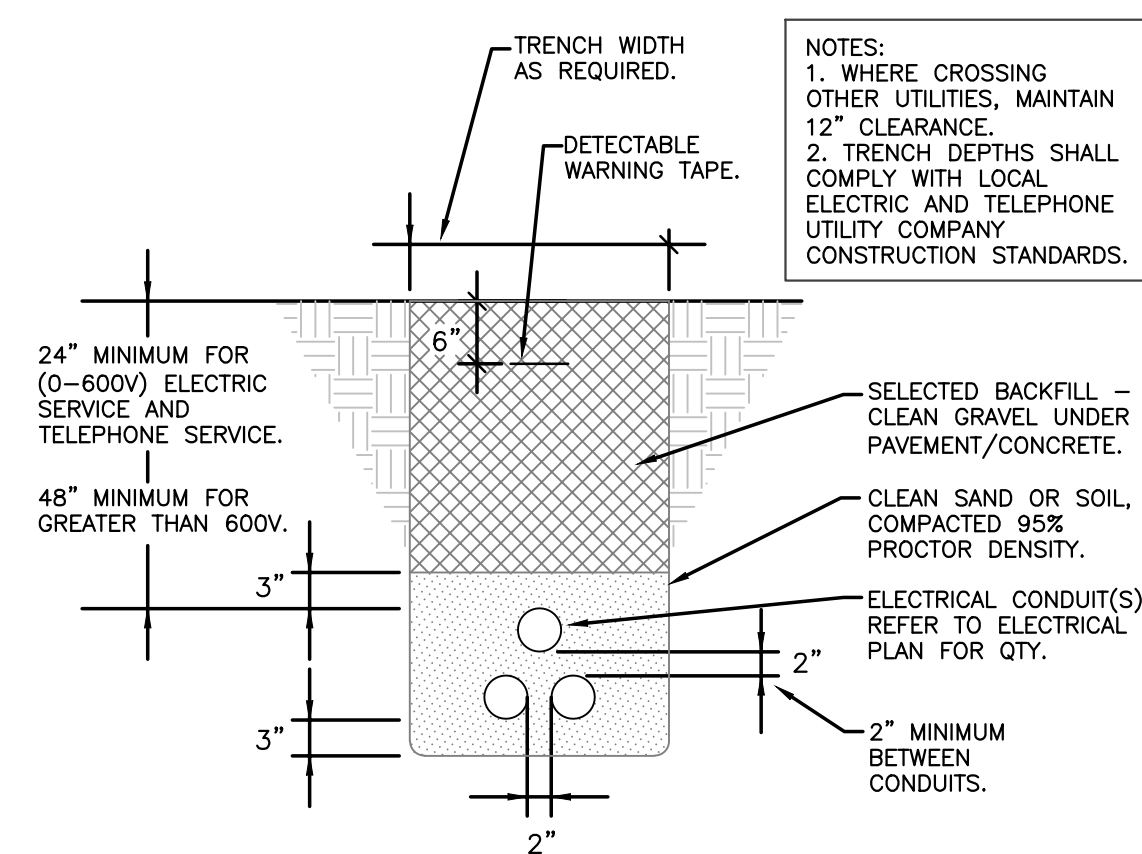
PROVIDED FIRE HYDRANTS (2) > REQUIRED FIRE HYDRANTS (1)

FIRE-FLOW AND FIRE HYDRANT REQUIREMENTS OF IFC 2012 ARE MET

IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND MOVE ANY AFFECTED UTILITIES. THE ENGINEER DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN ON THESE PLANS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE CITY OF SPRINGFIELD, MO OR OTHER SUPPLIERS OF UTILITIES AND ARRANGE FOR ANY NECESSARY MODIFICATIONS REQUIRED TO FACILITATE CONSTRUCTION ACTIVITIES.

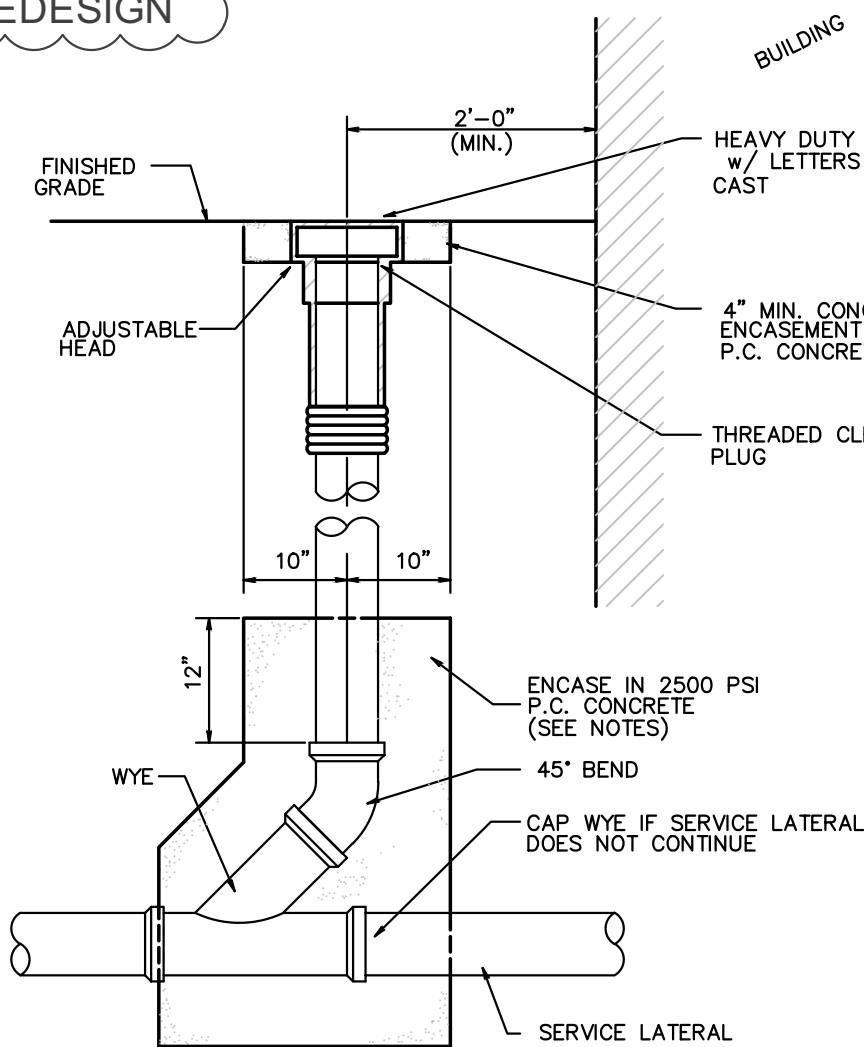


3 PIPE INSTALLATION DETAIL
C1.5 SCALE: NOT TO SCALE



4 UNDERGROUND ELECTRICAL CONDUITS
C1.5 SCALE: NOT TO SCALE

SANITARY SEWER PIPING REDESIGN



NOTE:
1. ALL LATERALS SHALL HAVE A ONE-WAY CLEAN-OUT EVERY 50' OR A TWO-WAY CLEAN-OUT EVERY 100'.
2. IF THE SERVICE LATERAL IS LESS THAN 12' DEEP, THE CONCRETE ENCASMENT IS NOT REQUIRED.

2 SANITARY SEWER CLEANOUT
C1.5 SCALE: NOT TO SCALE

NEW UTILITIES SYMBOLS

(SYMBOLS APPLY ONLY WHEN USED ON DRAWINGS)	
— G —	GAS SERVICE
— W —	WATER SERVICE
— FS —	FIRE SERVICE
— SS —	SANITARY SEWER SERVICE
— UGE —	U/G ELECTRIC
— UT —	U/G PHONE
— T —	U/G PHONE (BY PHONE CO.)
— OHE —	OVERHEAD ELECTRIC
— OHT —	OVERHEAD PHONE
— FO —	FIBER OPTIC CABLE
	SAWCUT
	BORE

P.O.C. = POINT OF CONNECTION BETWEEN SITE PIPING (SP EC 33.00.00) AND BUILDING PIPING (SP EC 22.00.00, 21.13.13), AS NECESSARY - SP EC 22.00.00 DENOTES LANDSCAPE IRRIGATION.

APPROVED FOR CONSTRUCTION BY THE CITY OF SPRINGFIELD, MO
BUILDING OFFICIAL

REVIEWED FOR COMPLIANCE WITH THE CITY OF SPRINGFIELD, MO BUILDING CODES, ORDINANCES, AND RESOLUTIONS. THIS REVIEW DOES NOT RELIEVE THE DESIGNER OF ANY RESPONSIBILITIES OR OBLIGATIONS UNDER ANY APPLICABLE CONTRACTS, AGREEMENTS, OR AGREEMENTS. THE DESIGNER'S LIABILITY IS LIMITED TO THE PROFESSIONAL SERVICES PROVIDED BY THE DESIGNER.

ANDERSON ENGINEERING
EMPLOYEE OWNED
ENGINEERS - SURVEYORS - ARCHITECTS - DRAINAGE
2045 W. WOODLAND - SPRINGFIELD, MISSOURI 65807 - PHONE (417) 863-9000
ANDERSON.COM 000002 JARED M. DAVIS, PE#2016017614

SWD ARCHITECTS
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ARCHITECTURAL CORPORATION
MISSOURI CERTIFICATE OF AUTHORITY NO. 000073

Y GARDENS APARTMENTS
1255 E. CHESTNUT
SPRINGFIELD, GREENE COUNTY, MISSOURI 65802

SEAL
CIVIL ENGINEER - JARED M. DAVIS
PE#2016017614

SITE UTILITY PLAN

ISSUE DATE:
2.4.2019

REVISIONS:
REVISION - 3/8/2019
REVISION - 9/12/2019

PROJECT NO.: 1817

C1.5

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