

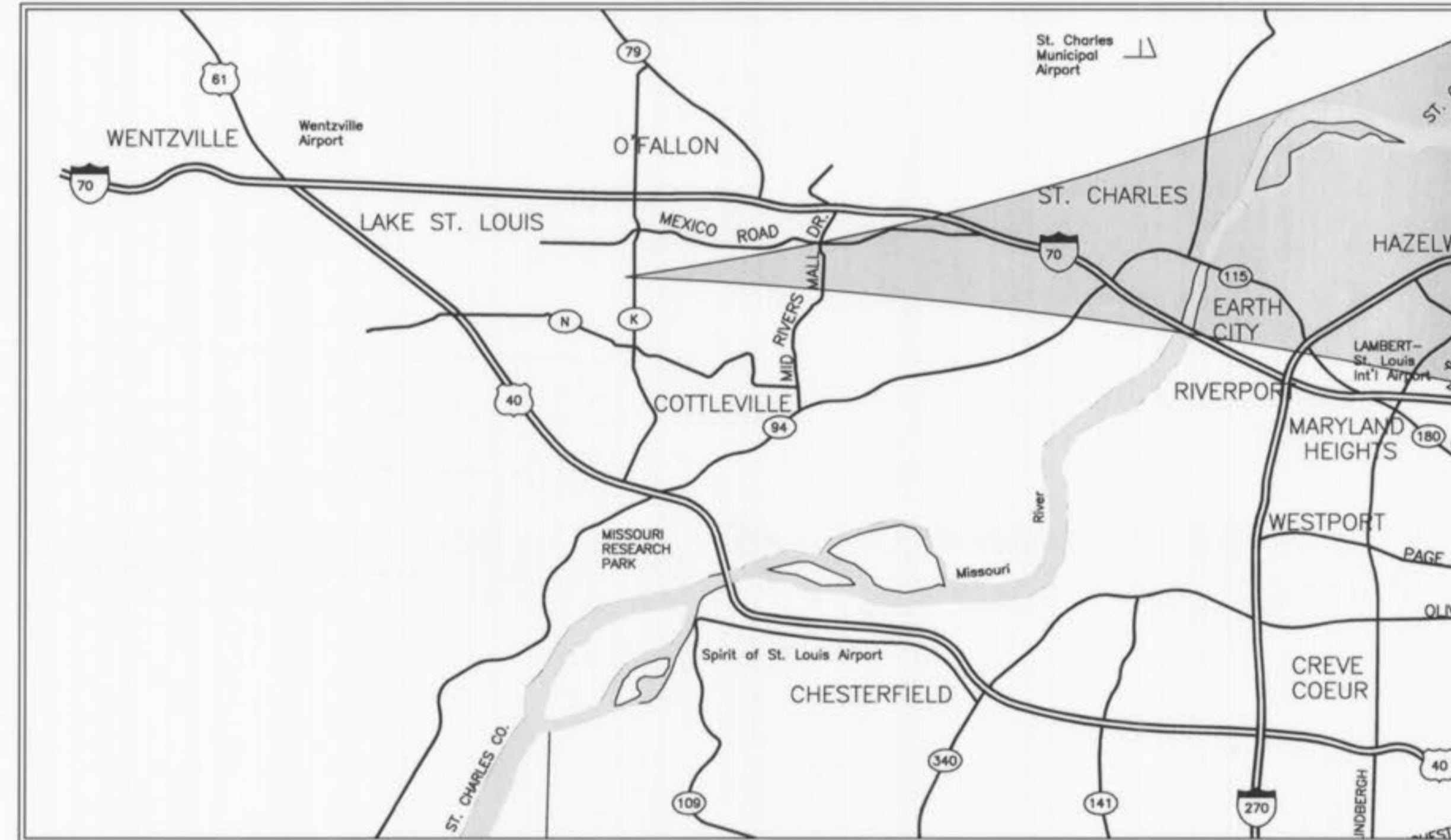
PROPOSED FACILITY FOR HEARTLAND BANK AT LOT 2 OF TERRA RETAIL SUBDIVISION

A TRACT OF LAND BEING PART OF TERRA RETAIL SUBDIVISION
AS RECORDED IN PLAT BOOK 41 PAGES 393 AND 394, TOWNSHIP 46 NORTH, RANGE 3 EAST OF THE 5TH PRINCIPAL MERIDIAN
ST. CHARLES COUNTY, MISSOURI

LEGEND

EXISTING CONTOURS	— 120 —
PROPOSED CONTOURS	— 120 —
EXISTING SANITARY SEWERS	— ○ —
EXISTING STORM SEWERS	— □ —
PROPOSED SANITARY SEWERS	— ● —
PROPOSED STORM SEWERS	— ■ —
EXISTING RIGHT-OF-WAY CENTERLINE	— — — — —
PROPOSED RIGHT-OF-WAY CENTERLINE	— — — — —
EASEMENT	— — — — —
NON-REINFORCED CONCRETE PAVEMENT	▒
EXISTING SPOT ELEVATION	+ EX. 120.15
PROPOSED SPOT ELEVATION	+ 120.10
SWALE	— / —
TO BE REMOVED	T.B.R.
TO BE REMOVED & RELOCATED	T.B.R. & R.
TO BE USED IN PLACE	U.I.P.
BACK OF CURB	B.C.
FACE OF CURB	F.C.
TRASH ENCLOSURE	⊗
LIGHT STANDARD	⊙
GAS MAIN	— G —
WATER MAIN	— W —
UNDERGROUND TELEPHONE	— T —
FIRE HYDRANT	⊕
POWER POLE	⊙
HAY BALE	⊗
SILTATION CONTROL	— — — — —
PROPOSED	PR

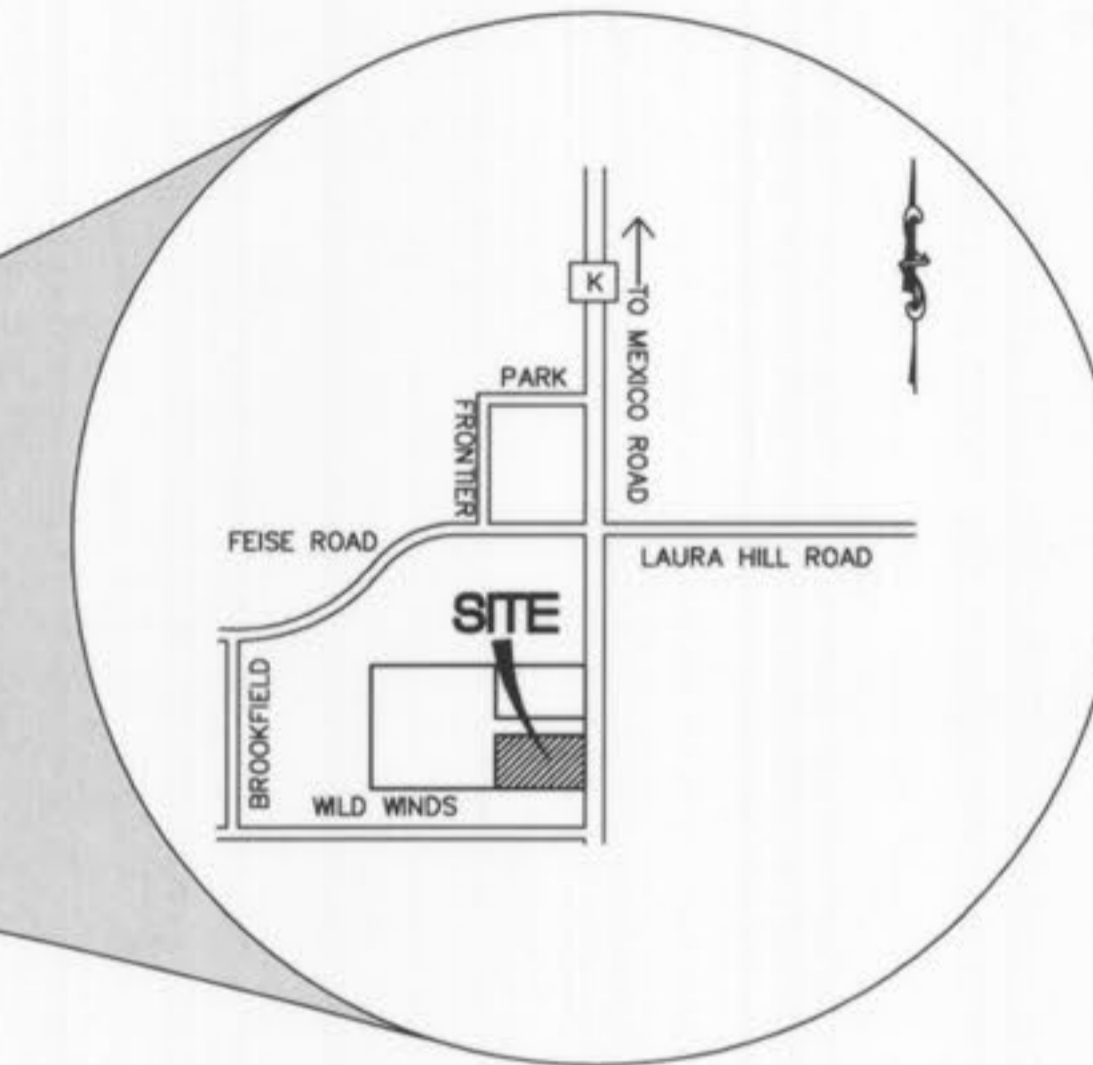
AS-BUILT PLANS



LOCATION MAP
(NOT TO SCALE)

PERTINENT DATA

OWNER	= HIGHWAY K INVESTMENTS, L.L.C.
ZONING	= 'C-2' COMMERCIAL DISTRICT
SITE ACREAGE	= 1.313 ± Acres
SITE ADDRESS	= 2341 HIGHWAY K O'FALLON, MISSOURI 63366
FIRE DISTRICT	= O'FALLON FIRE PROTECTION DISTRICT
SEWER DISTRICT	= CITY OF O'FALLON
WATER SHED	= DARDENNE CREEK
WATER SERVICE	= ST. CHARLES WATER NO. 2
GAS SERVICE	= LACLEDE GAS COMPANY
ELECTRIC SERVICE	= AmerenUE ELECTRIC COMPANY
PHONE SERVICE	= CENTURY-TEL TELEPHONE
DEED BOOK	= DB. 3280 PG. 1135
PARCEL ID#	= 2-0067-S005-00-2
F.I.R.M. MAP	= 29183C0239 E (REVISED AUGUST 2, 1996)
WUNNENBERG'S	= PG. 45, GRID SS-18



ABBREVIATIONS

C.O.	- CLEANOUT
DB.	- DEED BOOK
E	- ELECTRIC
FL	- FLOWLINE
FT	- FEET
FND.	- FOUND
G	- GAS
M.H.	- MANHOLE
N/F	- NOW OR FORMERLY
PB.	- PLAT BOOK
PG.	- PAGE
P.V.C.	- POLYVINYL CHLORIDE PIPE
R.C.P.	- REINFORCED CONCRETE PIPE
D.I.P.	- DUCTILE IRON PIPE
SQ.	- SQUARE
T	- TELEPHONE CABLE
V.C.P.	- VETRIFIED CLAY PIPE
W	- WATER
(86'W)	- RIGHT-OF-WAY WIDTH
N.T.S.	- NOT TO SCALE

INDEX

C1	TITLE SHEET
C5	UTILITY PLAN
C7	STORM SEWER PROFILES, DETAILS AND HYDRAULICS

AS-BUILT

SEWER AND WATER LINE MEASUREMENTS

THE EXISTING WATER MAIN (PER STAKED OUT LOCATION), EXISTING SEWER LENGTHS, SIZES, FLOWLINES, DEPTHS OF STRUCTURES AND SEWERS AND LOCATIONS WITH RESPECT TO EXISTING OR PROPOSED EASEMENTS HAVE BEEN MEASURED. THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS. SINCE THE WYE LOCATIONS HAVE BEEN PLOTTED FROM INFORMATION PROVIDED BY THE SEWER CONTRACTOR OR OTHER SOURCES, I DISCLAIM ANY RESPONSIBILITY FOR THAT SPECIFIC INFORMATION.

ALL PUBLIC SEWERS AND WATER MAINS ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS EXCEPT AS FOLLOWS:

Randall S. Rosson 7/23/07
Randall S. Rosson, Missouri P.L.S. No. 2006000171



- △ 07-23-07 CITY OF O'FALLON AS-BUILT
- △ 02-08-07 ADDED WATER LINE EXHIBITS TO SHEET C5
- △ 01-22-07 REVISED GRADES AND WATER LINE AT NORTHEAST CORNER
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- △ 02-06-06 BID SET
- △ 01-23-06 REVISED BUILDING FOOTPRINT PER ARCHITECT
- △ 11-18-05 REVISED PER CITY COMMENT LETTER DATED 10-19-05

CURRENT PROPERTY OWNER:
HEARTLAND BANK
212 SOUTH CENTRAL, SUITE 200
CLAYTON, MO 63015
(314) 512-8500
(314) 512-8501 (fax)

U.S.G.S. BENCHMARK
ELEV. 568.69 CHISELED SQUARE ON THE WEST SIDE OF
2 FOOT DIAMETER CONCRETE BASE OF FLASHING YELLOW
LIGHT WITH PEDESTRIAN CROSSING SIGN ON THE EAST
SIDE OF HIGHWAY K, 106± NORTH OF BABBLE CREEK.

SITE BENCHMARK
ELEV. 515.12
IRON PIPE AT SOUTHEAST CORNER OF RICHARD AND
DOROTHY WOLF PROPERTY AS DESCRIBED IN DEED BOOK
404 PAGE 418; 5.8' WEST OF DOUBLE UTILITY POLE.

UTILITY NOTE:
UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND, THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.

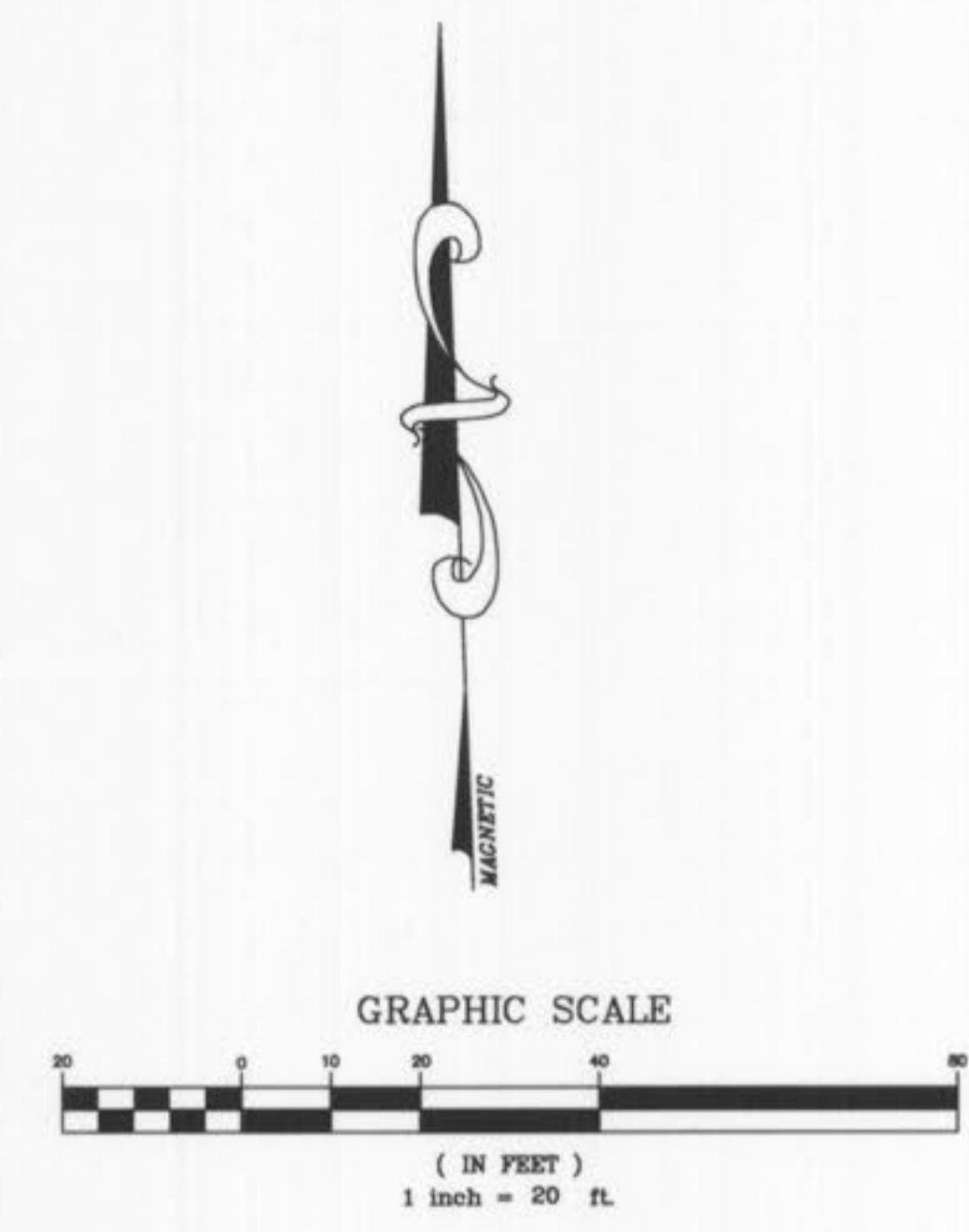
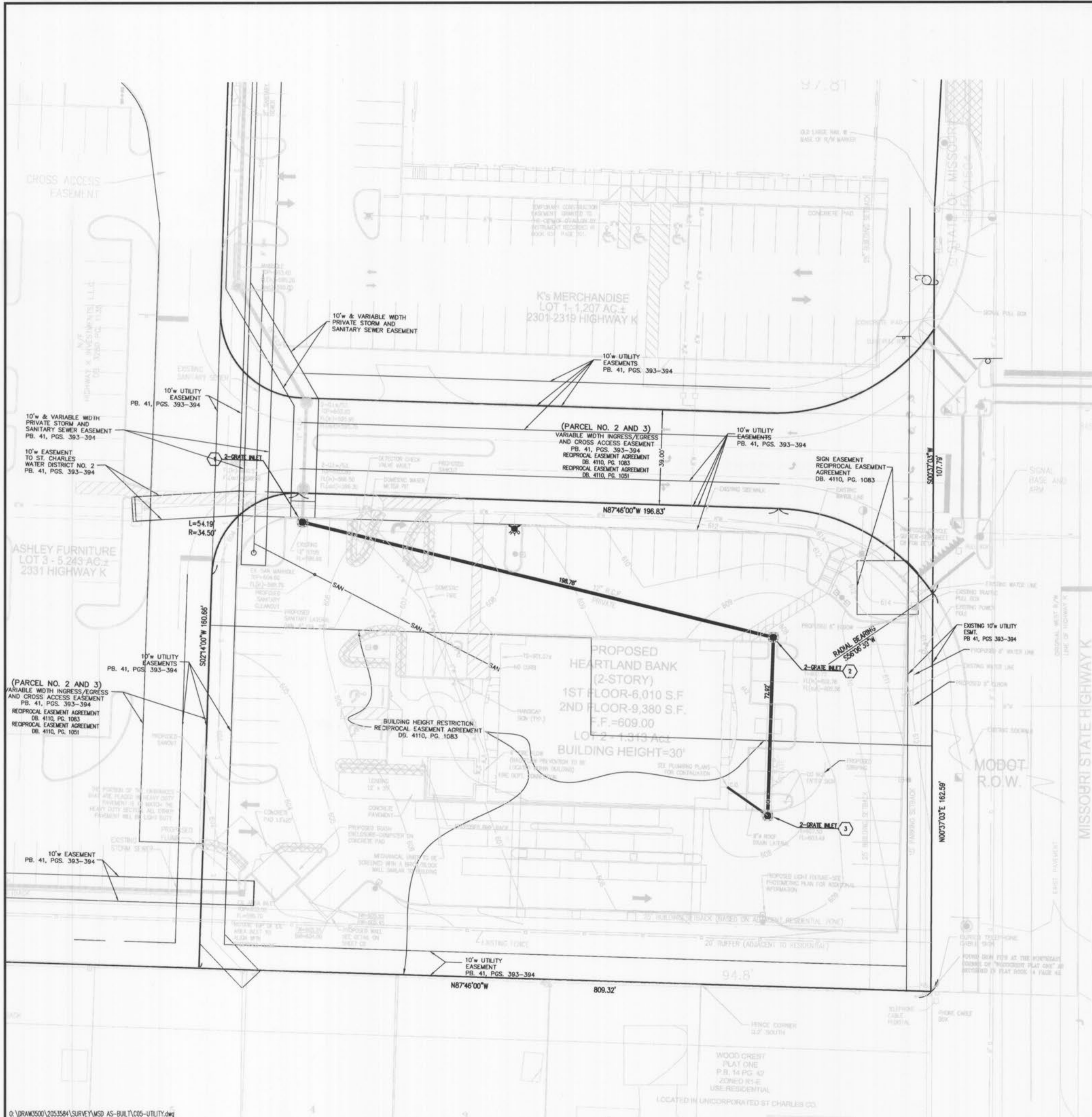


MoDOT 314-340-4100

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS UNDER THE UNDERSIGNED ENGINEER'S SEAL. APPLICABLE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

P&Z NOS: 98-126.06

TERRA RETAIL DEVELOPMENT/HEARTLAND BANK	
STOCK & ASSOCIATES Consulting Engineers, Inc.	
257 Chesterfield Business Parkway St. Louis, MO 63005 PH. (636) 530-9100 FAX (636) 530-9130 e-mail: general@stockassoc.com Web: www.stockassoc.com	
DRAWN BY: J.P.P. DATE: 9/27/05 CHECKED BY: G.M.S. DATE: 9/27/05 SHEET: 205-3584 C1 of 12	P&Z NOS: 98-126.06 E-25116



AS-BUILT

SEWER AND WATER LINE MEASUREMENTS

THE EXISTING WATER MAIN (PER STAKED OUT LOCATION), EXISTING SEWER LENGTHS, SIZES, FLOWLINES, DEPTHS OF STRUCTURES AND SEWERS AND LOCATIONS WITH RESPECT TO EXISTING OR PROPOSED EASEMENTS HAVE BEEN MEASURED. THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS. SINCE THE WYE LOCATIONS HAVE BEEN PLOTTED FROM INFORMATION PROVIDED BY THE SEWER CONTRACTOR OR OTHER SOURCES, I DISCLAIM ANY RESPONSIBILITY FOR THAT SPECIFIC INFORMATION.

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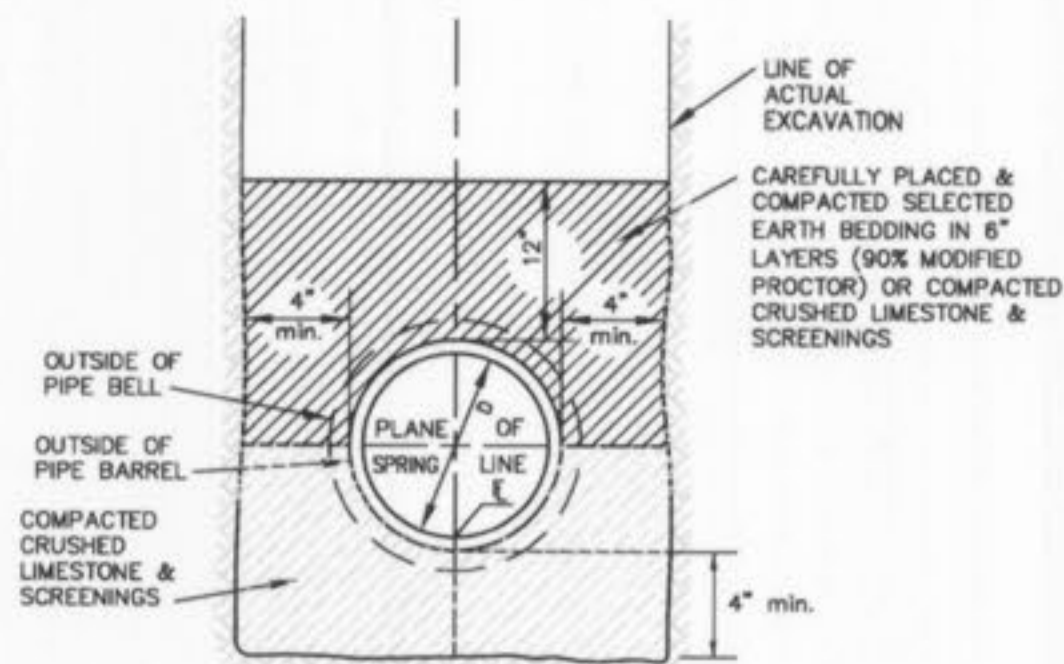
UTILITY PLAN
 TERRA RETAIL DEVELOPMENT/HEARTLAND BANK

P&Z NOS: 98-126.06

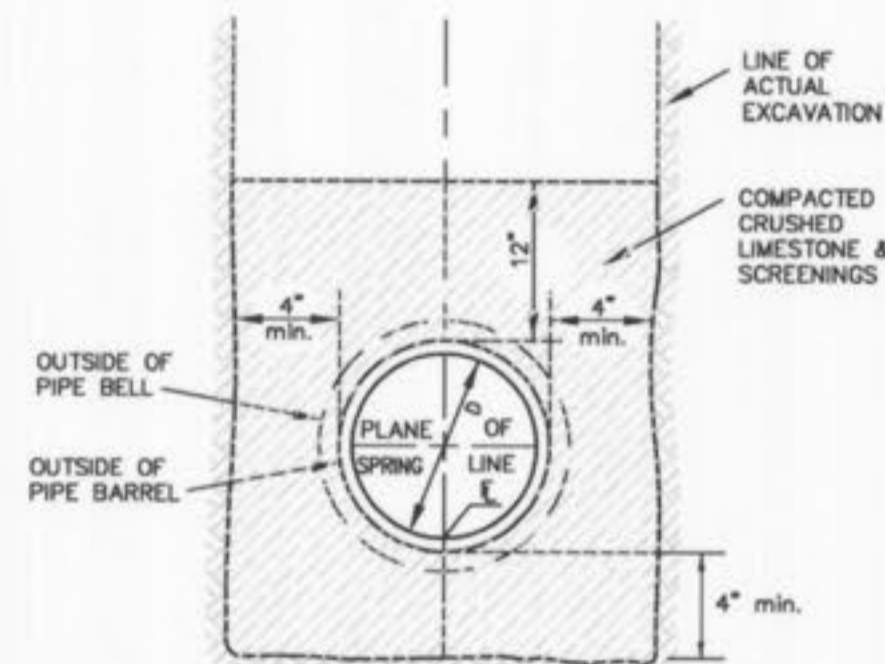
STOCK & ASSOCIATES
 Consulting Engineers, Inc.

257 Chesterfield Business Parkway
 St. Louis, MO 63005
 PH. (636) 530-9100
 FAX (636) 530-9130
 e-mail: general@stockassoc.com
 Web: www.stockassoc.com

DATE: 2-08-07	DATE: 9/27/05	DATE: 9/27/05	DATE: 205-3584	DATE: C5 of 12
GEORGE M. STOCK	J.P.P.	G.M.S.		



PIPE BEDDING CLASS "C"
(MODIFIED FOR REINFORCED CONCRETE PIPE)



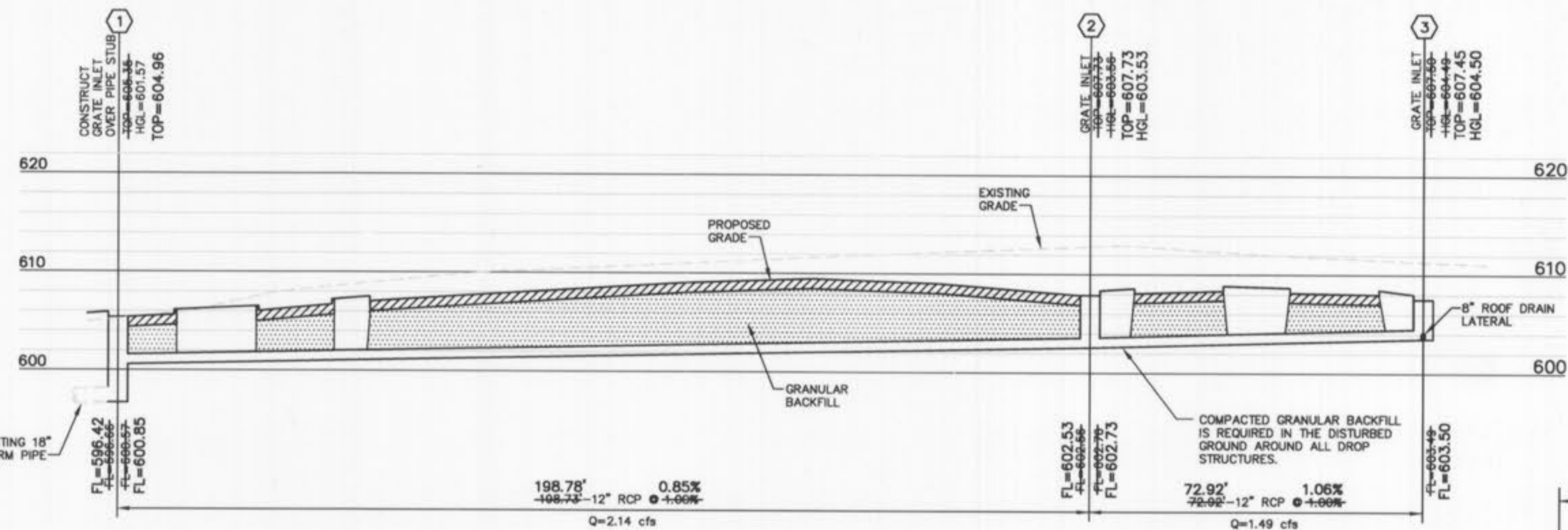
PIPE BEDDING CLASS "C"
(FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)

PIPE BEDDING DETAILS
(n.t.s.)

HYDRAULIC CALCULATION SHEET (SEE DRAINAGE AREA MAP SHEET C9.2 FOR P.I. AND Q (inflow) FOR EACH STRUCTURE)

Project name: HEARTLAND BANK		Calculated By: JPP		Checked By: GMS		Date: 07-20-07 (AS-BUILTS)		Bend Coefficients:																			
Project number: 295-3584		Star: 15p-20min.		Date: 07-20-07 (AS-BUILTS)		Date: 07-20-07 (AS-BUILTS)																					
LINE		FLOW LINE		Length (ft)		Flowline Grade (ft)		Pipe Size (in.)		Full Flow Total (Q) (cfs)		Mean Full Flow Vel (ft/s)		Cof.		HEAD LOSS		Hydraulic Elevations									
Structure Number	Upper structure	Lower structure	Upper structure	Lower structure	(ft)	(ft)	(ft)	(ft)	(in.)	(cfs)	(cfs)	(ft/s)	(ft/s)	(ft)	(ft)	(ft)	(ft)	Total H _m + Dia. + H _L	Upper H.L.	Lower H.L.	Structure H.L. + H _L	Free Structure Elevation	Structure Number				
3	3	2	603.50	602.73	72.92	0.0106	12	3.67	1.49	1.90	0.06	0.08	0.013	0.13	0.00	0.00	0.00	604.50	603.86	603.73	604.50	607.45	2.95	A3			
2	2	1	602.53	600.85	198.78	0.0085	12	3.28	2.14	2.72	0.12	0.25	0.013	0.72	0.00	0.00	0.00	603.53	602.57	601.85	603.53	607.73	4.20	A2			

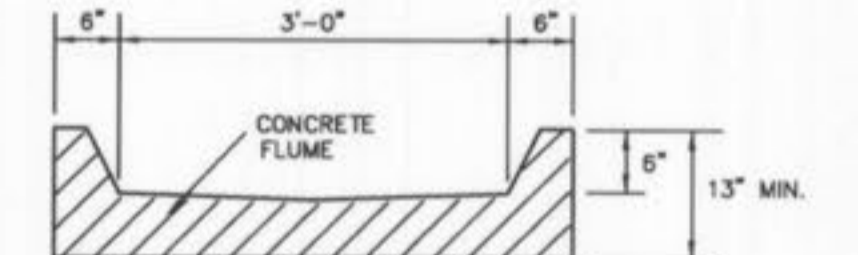
FORMULAS:
MEAN FULL FLOW VELOCITY: $V = Q_{full} / A_{pipe}$
FRICTION LOSS (H): $H_f = 2.47 L V^{1.49} / (C^2 D^{4.75})$
VELOCITY HEAD: $V_h = V^2 / 2g$
JUNCTION LOSSES (JUNC.): $J = Q_{in} V_{in} / \sum (Q_{in} V_{in}) \times 1.33 / Q_{out}$
BEND LOSSES (BEND) = $(V_h) \times$ ANGLE COEFFICIENT
Note: 1. IF MORE THAN ONE COMING LINE, CALCULATE EACH BEND LOSS AND ADD TOGETHER.
2. NO STRUCTURE LOSSES TO BE CALCULATED AT A DROP
3. IF $Q_{min} > Q_{max}$, NO JUNCTION LOSSES TO BE CALCULATED.



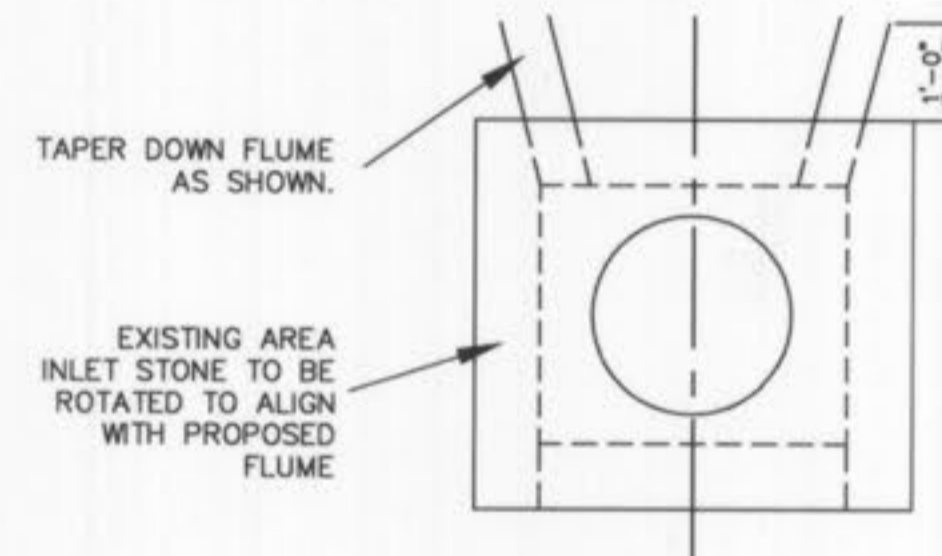
STORM SEWER PROFILE (PRIVATE)
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=10'

LINETYPE LEGEND

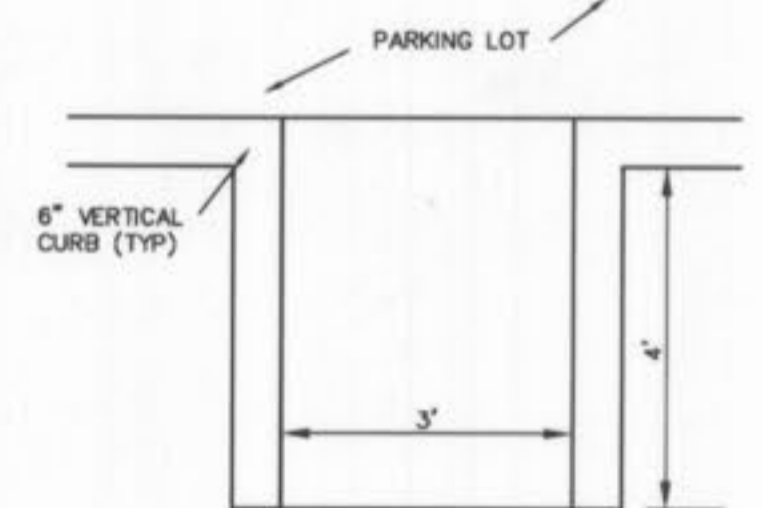
EXISTING GRADE.....	--- --
PROPOSED GRADE.....	— — — —
HYDRAULIC GRADE.....	— · — · — ·
PROPOSED PAVEMENT.....	▨ ▨ ▨ ▨
GRANULAR BACKFILL.....	▧ ▧ ▧ ▧
COMPACTED FILL.....	▩ ▩ ▩ ▩



SECTION VIEW



PLAN VIEW



PLAN VIEW

AS-BUILT
SEWER AND WATER LINE MEASUREMENTS

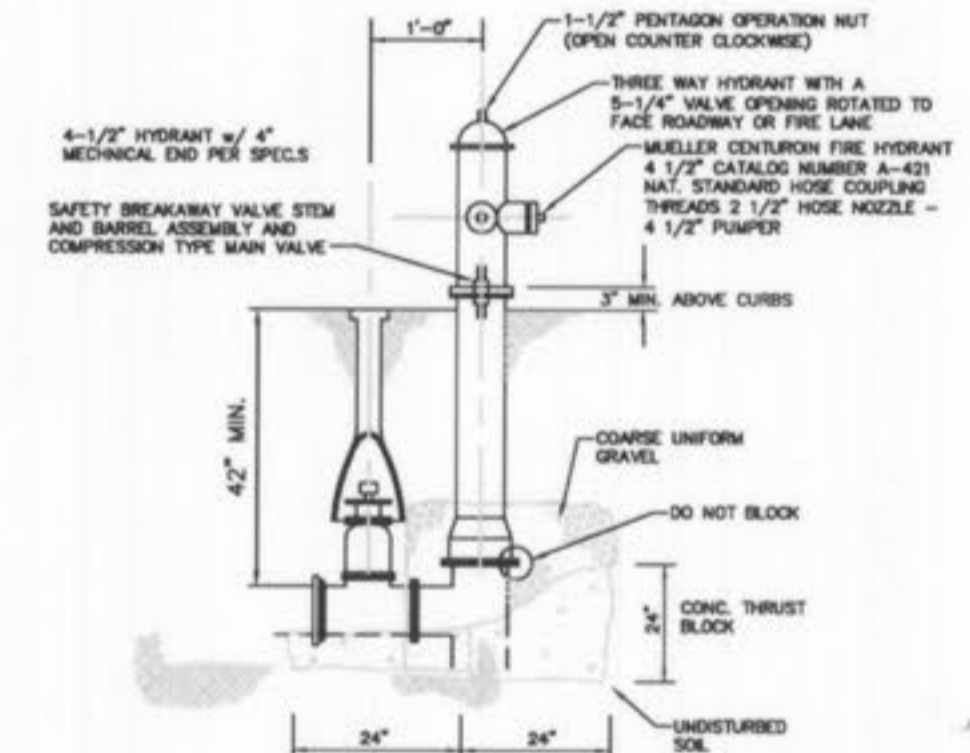
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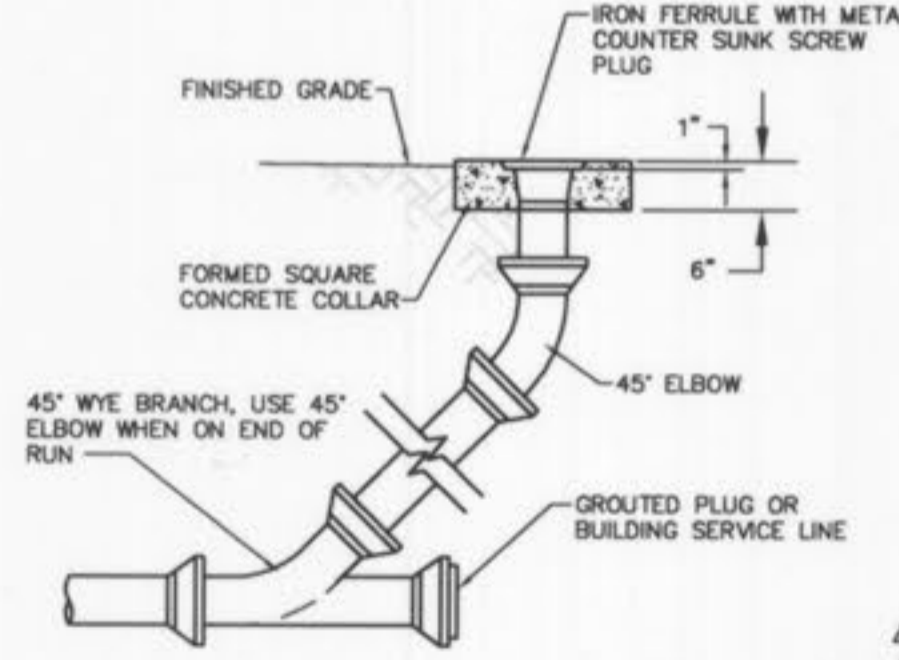
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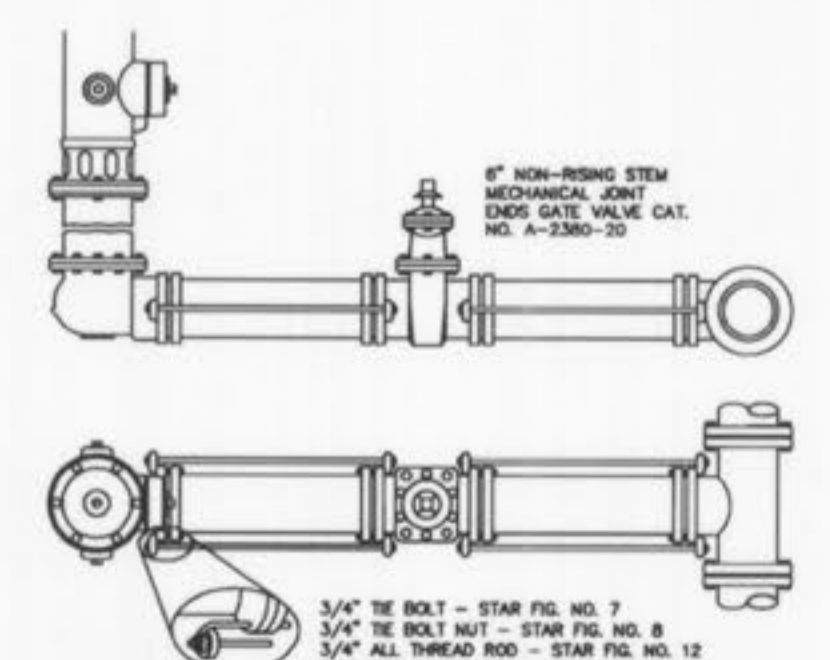
TYPICAL FLUME DETAIL



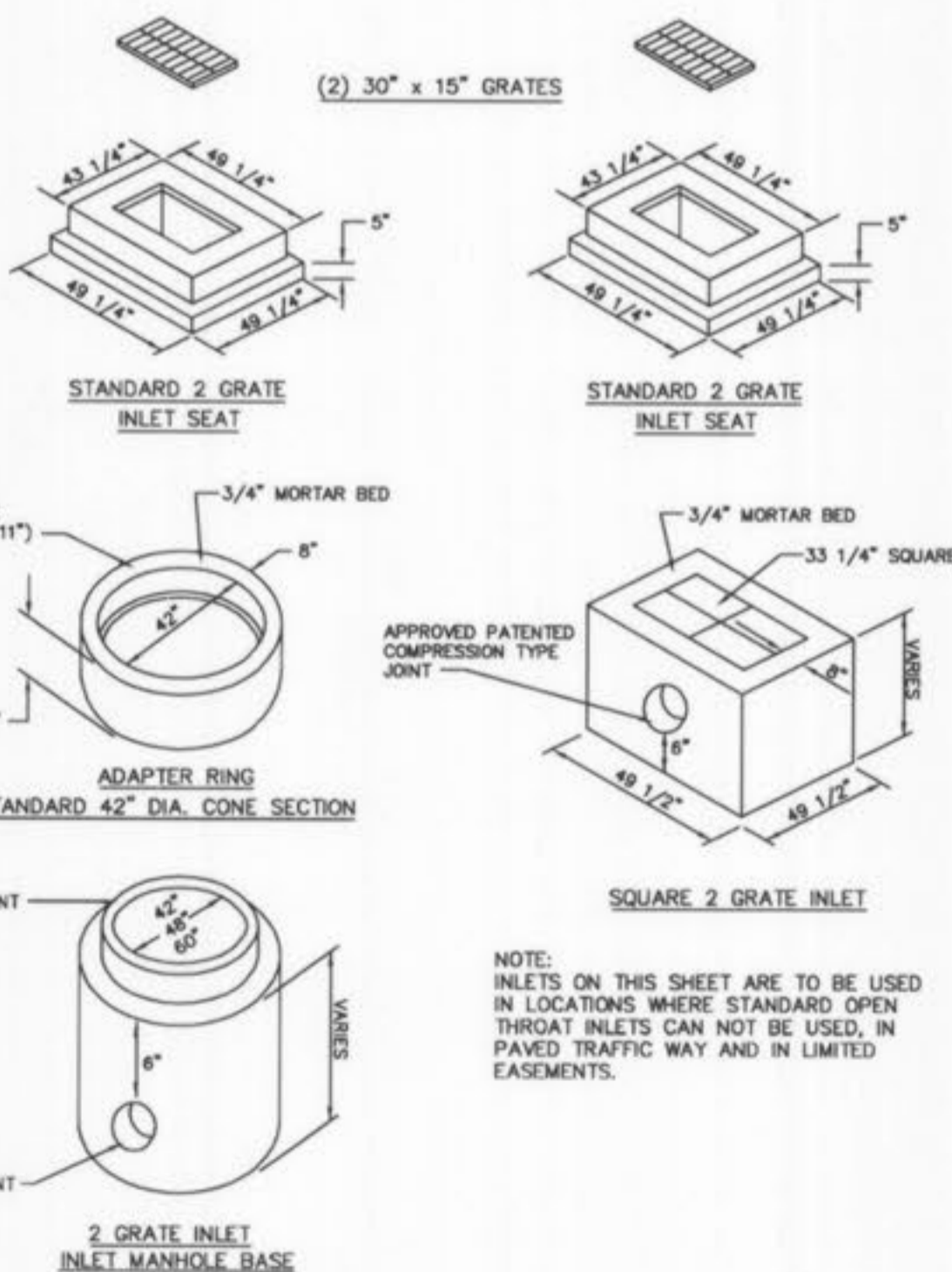
FIRE HYDRANT NOTES
1. THE FIRE HYDRANT SHALL BE PROVIDED WITH A CONTROL VALVE IN THE HYDRANT CONNECTION SUCH THAT THE HYDRANT CAN BE REMOVED FROM SERVICE WITHOUT SHUTTING OFF WATER SUPPLY TO OTHER FIRE HYDRANTS.
2. THE FIRE HYDRANT SHALL HAVE NOT LESS THAN TWO 2-1/2 INCH OUTLETS AND ONE 4-1/2 INCH OUTLET. A 5-1/4 INCH VALVE, A 8 INCH BARREL, AND SHALL BE OF THE BREAKAWAY DESIGN, FREE FROM CHAIN, LEFT HAND OPEN DESIGN AND HAVE NATIONAL STANDARD THREADS.
SCALE = N.T.S.



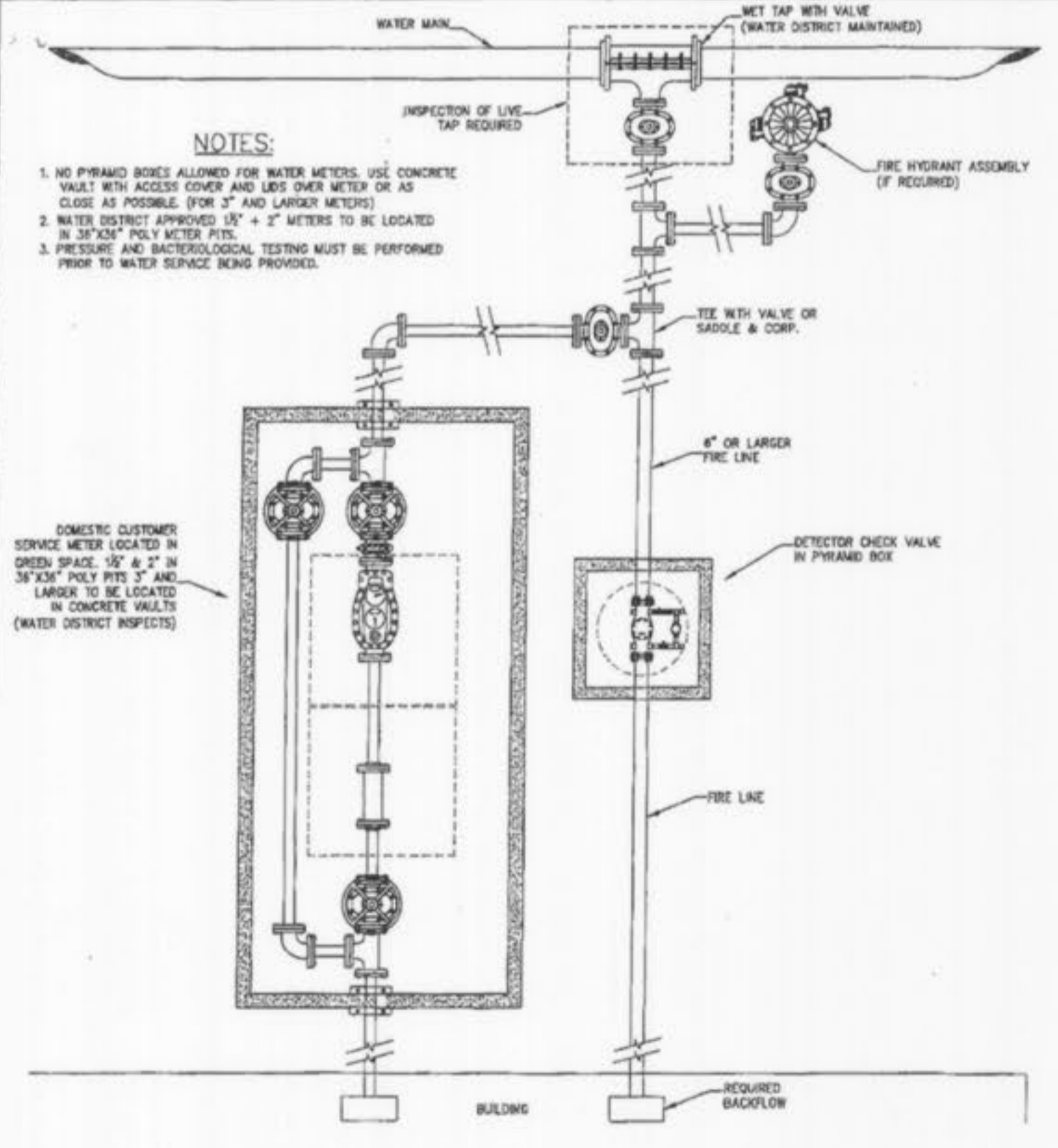
CLEANOUT DETAIL
(n.t.s.)



HYDRANT SETTING
(n.t.s.)



2-GRATE INLET DETAIL
(n.t.s.)



TYPICAL COMMERCIAL SERVICE CONNECTION WITH FIRE PROTECTION
(n.t.s.)

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SEWER PROFILES, DETAILS, AND HYDRAULICS
TERRA RETAIL DEVELOPMENT/HEARTLAND BANK

STOCK & ASSOCIATES
Consulting Engineers, Inc.

257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

P&Z NOS: 98-126.06

2-08-07
GEORGE M. STOCK E-25116

DRAWN BY: J.P.P. DATE: 9/27/05
CHECKED BY: G.M.S. DATE: 9/27/05

205-3584

SHEET: C7 of 12