

PHOENIX VILLAGE OFFICE PARK AT WINGHAVEN

AREA "B" - PHASE ONE

A TRACT OF LAND BEING PART OF
U.S. SURVEY 1669, TOWNSHIP 45 NORTH, RANGE 2 EAST OF THE 5TH PRINCIPAL MERIDIAN
ST. CHARLES COUNTY, MISSOURI

IMPROVEMENT PLANS

LEGEND

EXISTING CONTOURS	----
PROPOSED CONTOURS	—
EXISTING SANITARY SEWERS	-----○-----
EXISTING STORM SEWERS	-----□-----
PROPOSED SANITARY SEWERS	-----●-----
PROPOSED STORM SEWERS	-----■-----
EXISTING RIGHT-OF-WAY	-----
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
WATER METER	W
UNDERGROUND TELEPHONE	T
ELECTRIC TRANSFORMER	⊠
UNDERGROUND ELECTRIC	E
FIRE HYDRANT	⊕
POWER POLE	⊕
SILTATION CONTROL	X
PROPOSED	PR
GRADE AT TOP OF WALL	tw
GRADE AT BOTTOM OF WALL	bw



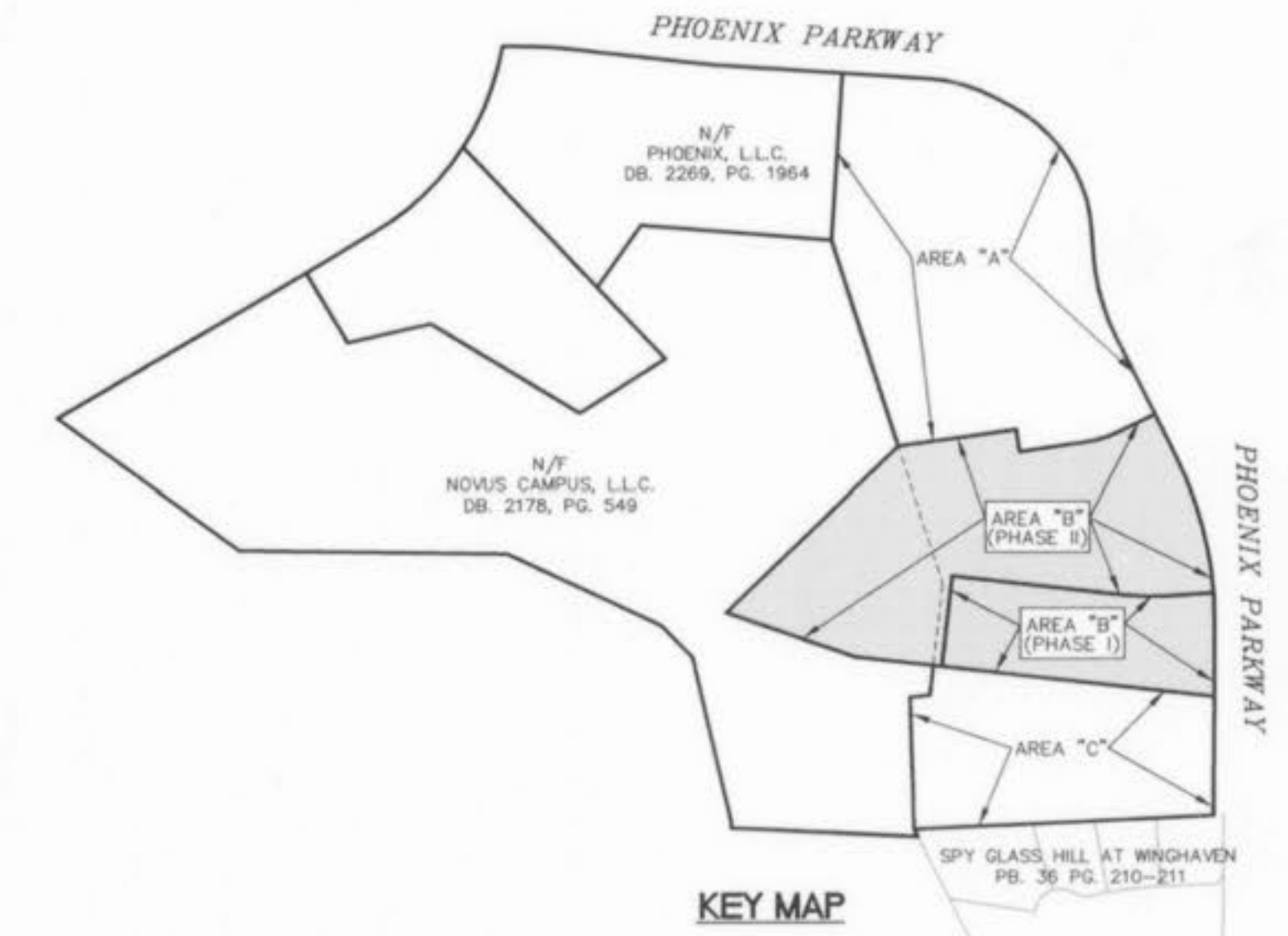
LOCATION MAP
NOT TO SCALE

PERTINENT DATA:

OWNER	=	TRISTAR Wing, L.L.C.
SITE ACREAGE	=	AREA A 8.06 Acres ± AREA B (PHASE 1 AND 2) 8.56 Acres ± AREA C 3.96 Acres ±
EXISTING ZONING	=	HTCD PUD
FIRE DISTRICT	=	O'FALLON FIRE PROTECTION DISTRICT
SEWER DISTRICT	=	DUCKETT CREEK
WATER SERVICE	=	PUBLIC WATER SUPPLY DISTRICT #2
GAS SERVICE	=	ST. CHARLES GAS CO.
ELECTRIC SERVICE	=	AMEREN U.E.
PHONE SERVICE	=	CENTURY-TEL
SITE ADDRESS	=	LOT 1 (9016-9018-9020-9022) PHOENIX PARKWAY LOT 2 (9101-9103-9105-9107) PHOENIX VILLAGE PARKWAY LOT 3 (9209-9211-9213-9215) PHOENIX VILLAGE PARKWAY LOT 4 (9317-9319-9321-9323) PHOENIX VILLAGE PARKWAY
ZIP CODE	=	63366
MDNR PERMIT	=	MOR105127

INDEX

C1.0	TITLE SHEET
C2.0	SPECIFICATIONS SHEET
C3.0	EXISTING CONDITIONS PLAN
C4.0	OVERALL SITE PLAN
C5.0	SITE GRADING PLAN
C6.0-C6.1	SITE GEOMETRICS, ROAD PROFILE & ENTRANCE WARPING PLAN
C7.0-C7.3	SEWER PROFILES, DETAILS & HYDRAULIC DATA
C8.0	DRAINAGE AREA PLAN



KEY MAP
LEGAL DESCRIPTION AREA "B"
OWNER: TRISTAR WING, L.L.C.

A tract of land being part of Monsanto Animal Agricultural Farm, a subdivision in U.S. Survey 1669, Township 45 North, Ranges 2 and 3 East of the 5th Principal Meridian according to the plat thereof recorded Plat Book 22 Page 165 of the Records Office in St. Charles County, Missouri and be part of a larger tract of land conveyed to Novus Campus, L.L.C. by Deed recorded in Book 2178 Page 549 and part of a larger tract of land conveyed to TRISTAR Wing, L.L.C. by Deed recorded in Book 2478 Page 109 of the above said records and being more particularly described as follows:

Commencing at the Northeastern corner of Lot 1 of Spy Glass Hill at Winghaven a subdivision according to Plat thereof recorded in Plat Book 36 Pages 210 through 211 of the above said records, being a point being on the Western line of Phoenix Parkway variable width along the Northern line of the above said Lot 1 South 87 degrees 17 minutes 16 seconds West 20.03 feet to a point on the Western line of Phoenix Parkway variable width thence along last said Western line North 00 degrees 14 minutes 58 seconds East to 241.28 feet to the True Point of Beginning the tract of land here described; thence leaving said Western line North 83 degrees 35 minutes 09 seconds West 725.10 feet; thence North 70 degrees 59 minutes 07 seconds West 260.18 feet; thence North 44 degrees 25 minutes 01 seconds East 476.72 feet to a point on the Western line of the above said TRISTAR Wing, L.L.C. property; thence leaving last said Western line North 81 degrees 57 minutes 02 seconds East 239.91 feet; thence South 08 degrees 02 minutes 52 seconds East 44.86 feet; thence North 81 degrees 57 minutes 02 seconds East 127.71 feet to a point of curvature; thence Eastwardly along a curve to the left whose radius point bears North 08 degrees 02 minutes 58 seconds West 225.000 feet on an arc length of 78.63 feet; thence North 63 degrees 42 minutes 04 seconds East 77.23 feet; to a point on the Western line of Phoenix Parkway; variable width, thence along last said Western line the following courses and distances: South 26 degrees 17 minutes 56 seconds East 91.77 feet to a point of curvature, Southeastwardly along a curve to the right whose radius point bears South 63 degrees 42 minutes 04 seconds West 750.00 feet on an arc length of 547.52 feet, and South 00 degrees 14 minutes 58 seconds West 153.14 feet to the point of beginning containing 372,838 square feet or 8.559 acres more or less.

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:

BENCHMARK

SC-13 ELEV=499.34 (U.S.G.S. DATUM)
LOCATED 2.70 MILES N/NW OF THE INTERSECTION OF HIGHWAY 94 AND HIGHWAY D ON THE NORTH SIDE OF WESTBOUND LANES OF HIGHWAY 40 NEAR A FIELD ENTRANCE GOING NORTH FOR THE WESTBOUND LANES OF HIGHWAY 40. IT IS 28.55 FEET NE OF A P.K. NAIL IN THE CENTER LINE OF WESTBOUND HWY 40, 39.2 FEET SW OF THE CENTER OF THE TOP OF THE NORTHWEST END OF A CORRUGATED METAL PIPE.

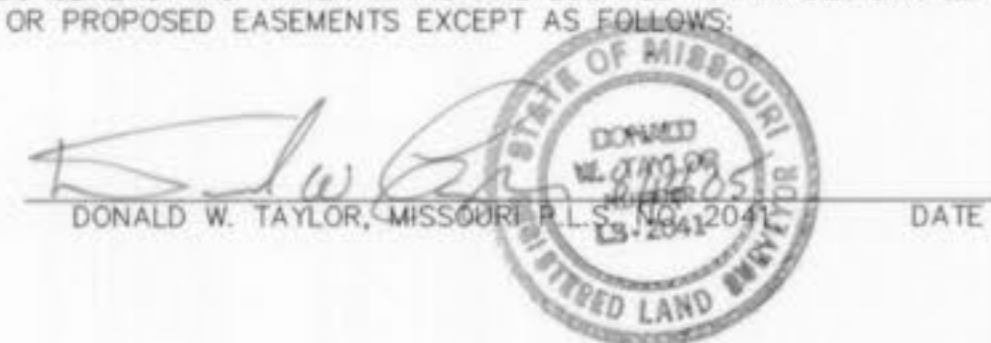
FLOOD NOTE:

Subject property lies within Flood Zone "X" (areas outside the 500-year floodplain) per the National Flood Insurance Program Flood Insurance Rate Map for St. Charles County, Missouri, and Incorporated Areas. The map is identified as Map No. 29183C0240 E with an effective date of August 2, 1996.

- 5 - 8/12/05 SEWER AS-BUILTS FOR CITY OF FALLON (D.S.H.)
4 - 10/21/03 AS-BUILTS
3 - 4/29/03 REVISED LAYOUT FOR PIPELINE SETBACK
2 - 4/03/03 REVISED PER CITY AND DUCKETT CREEK COMMENTS
1 - 3/19/03 REVISED PER CITY AND DUCKETT CREEK COMMENTS



13397 LAKEFRONT DRIVE
ST. LOUIS, MO. 63045
PHONE: (314) 291-9999
FAX: (314) 291-9191



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 WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE 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.

CALL 2 WORKING DAYS BEFORE YOU DIG! SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.
1-800-DIG-RITE
1-800-344-7483

PHOENIX VILLAGE OFFICE PARK AT WINGHAVEN			
TITLE SHEET - AREA "B" PHASE 1			
FILE NO. 9831.43-3			
		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: GEORGE M. STOCK E-25116 DATE: 01/06/03 CHECKED BY: G.M.S. DATE: 01/06/03 JOB NUMBER: 202-2855 SHEET: C1.0 of 8	

Phoenix Vill Office Area B App 8/12/05, PAK
AS-BUILTS

N/F
TRISTAR Wing, L.L.C.
BK. 2478, PG. 109
ZONED HTCD PUD

AREA "A"
8.06 ACRES ±

AREA "B" - PHASE II
8.56 ACRES ±
(AREA B-PHASE I AND II)
FUTURE DEVELOPMENT

AREA "B" - PHASE II
FUTURE DEVELOPMENT

AREA "B" - PHASE I

AREA "C"
3.96 ACRES ±

ZONED HTCD PUD
N/F
NOVUS CAMPUS, L.L.C.
DB. 2178, PG. 549

SANITARY M.H. N-1
TOP=529.27
DROP=522.16
FL=516.57

A SANITARY M.H. N-2
TOP=545.93
DROP=534.05
FL=528.73
FL IN=528.73 (NEW 8" PVC)

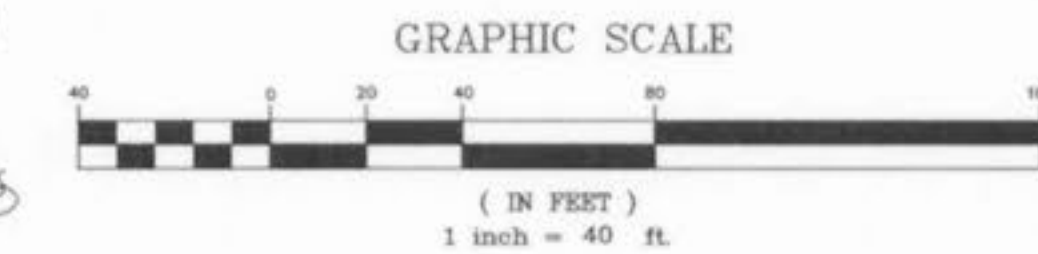
B SAN. M.H.
TOP=539.00
FL=528.99

C SAN. M.H.
TOP=540.00
FL=528.88 OVT
FL=534.46 IN

STA 0+00
SAN. M.H.
TOP=550.00
FL=544.80

APPROXIMATE LOCATION
BURIED TELEPHONE LINES
(FIBER OPTIC & CABLE)

APPROXIMATE LOCATION
"10" WATER MAIN



SITE NOTES:

- PARKING CALCULATIONS:
 - OFFICE: 1 SPACE/300 s.f. OF FLOOR AREA
 - LOT 1 (0.78 Acres ±)
BUILDING "A": 5,034 s.f. FLOOR AREA
REQUIRED PARKING = 17 SPACES
PROVIDED PARKING = 25 SPACES
 - LOT 2 (0.51 Acres ±)
BUILDING "B": 4,029 s.f. FLOOR AREA
REQUIRED PARKING = 14 SPACES
PROVIDED PARKING = 19 SPACES
 - LOT 3 (0.51 Acres ±)
BUILDING "C": 4,029 s.f. FLOOR AREA
REQUIRED PARKING = 14 SPACES
PROVIDED PARKING = 18 SPACES
 - LOT 4 (0.60 Acres ±)
BUILDING "D": 5,055 s.f. FLOOR AREA
REQUIRED PARKING = 17 SPACES
PROVIDED PARKING = 20 SPACES

- SITE COVERAGE CALCULATIONS:
 - LOT 1
BUILDING AREA = 0.78 Acres ± (100%)
PAVEMENT AREA = 5,034 s.f. (15%)
GREENSPACE = 12,599 s.f. (37%)
GREENSPACE = 16,313 s.f. (48%)
 - LOT 2
BUILDING AREA = 0.51 Acres ± (100%)
PAVEMENT AREA = 4,029 s.f. (18%)
GREENSPACE = 9,246 s.f. (42%)
GREENSPACE = 8,874 s.f. (40%)
 - LOT 3
BUILDING AREA = 0.51 Acres ± (100%)
PAVEMENT AREA = 4,029 s.f. (18%)
GREENSPACE = 8,732 s.f. (40%)
GREENSPACE = 9,272 s.f. (42%)
 - LOT 4
BUILDING AREA = 0.60 Acres ± (100%)
PAVEMENT AREA = 5,055 s.f. (19%)
GREENSPACE = 8,466 s.f. (33%)
GREENSPACE = 12,414 s.f. (48%)

- MINIMUM SETBACKS PER ZONING DISTRICT ARE AS FOLLOWS:
 - FRONT YARD = 30 FEET
 - SIDE YARD = 20 FEET
 - REAR YARD = 35 FEET
- MINIMUM SETBACKS PER "PUD" AS FOLLOWS:
 - SETBACK FROM PHOENIX PARKWAY IS 30'
 - FRONT YARD = 15 FEET
 - SIDE YARD = 15 FEET
 - REAR YARD = 15 FEET

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 REFLECT 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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STATE OF MISSOURI
DONALD W. TAYLOR, MISSOURI REGISTERED PROFESSIONAL LAND SURVEYOR
NO. 2041
DATE 9/16/05

- SITE ADDRESS =
- LOT 1 (9016-9018-9020-9022) PHOENIX PARKWAY
 - LOT 2 (9101-9103-9105-9107) PHOENIX VILLAGE PARKWAY
 - LOT 3 (9205-9211-9213-9215) PHOENIX VILLAGE PARKWAY
 - LOT 4 (9317-9319-9321-9323) PHOENIX VILLAGE PARKWAY
- 7 - 8/12/05 SEWER AS-BUILTS FOR CITY OF FALLON (D.S.H.)
 6 - 8/26/04 ADDED SITE ADDRESSES
 5 - 10/21/03 SEWER AS-BUILTS FOR DUCKETT CREEK
 4 - 4/23/03 REVISED LAYOUT FOR PIPELINE SETBACK
 3 - 4/14/03 REVISED PER DUCKETT CREEK COMMENTS
 2 - 3/03/03 REVISED PER CITY AND DUCKETT CREEK COMMENTS
 1 - 3/19/03 REVISED PER CITY AND DUCKETT CREEK COMMENTS

PHOENIX VILLAGE OFFICE PARK AT WINGHAVEN
SITE & GRADING PLAN - AREA "B" PHASE 1

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

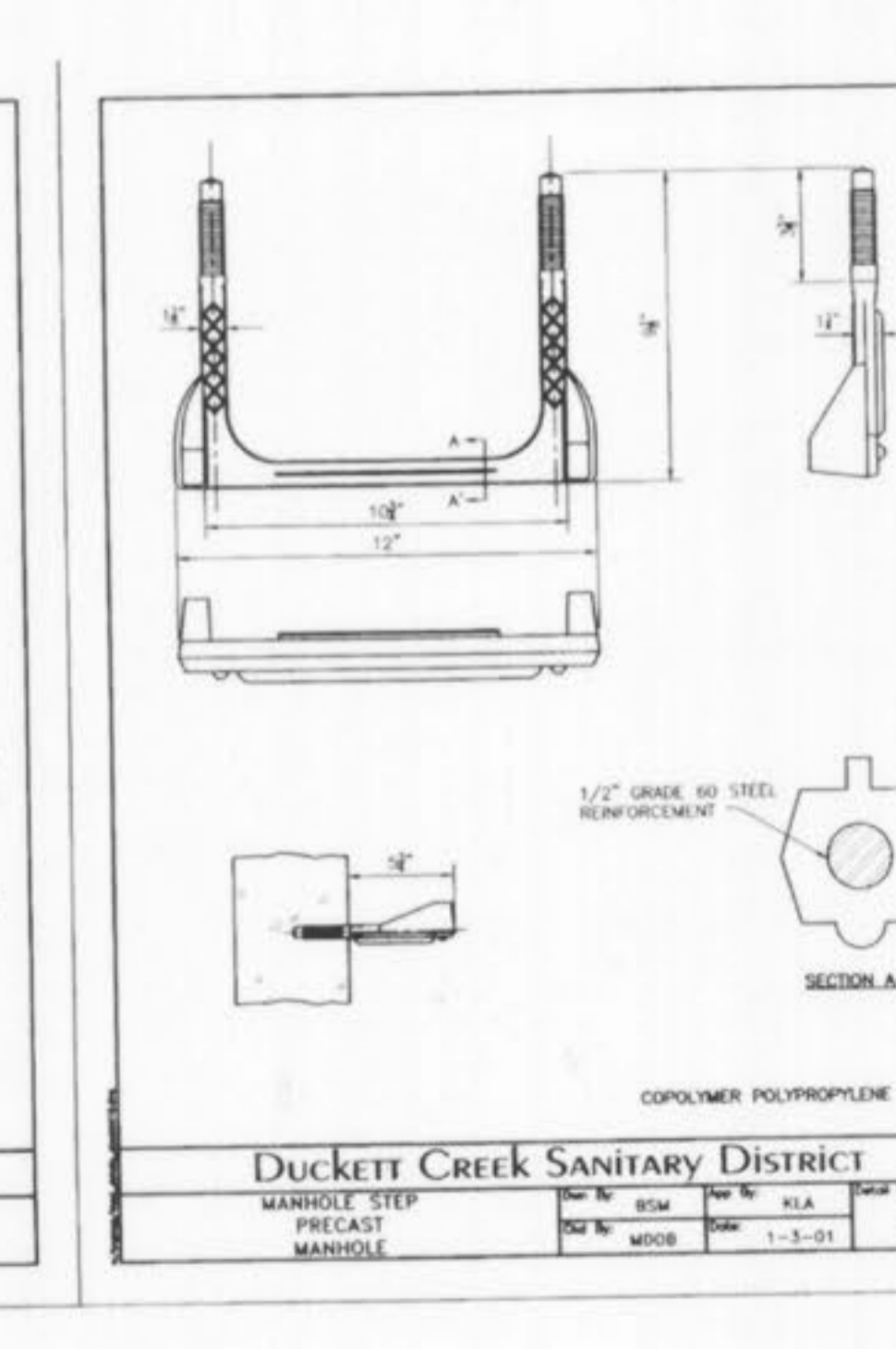
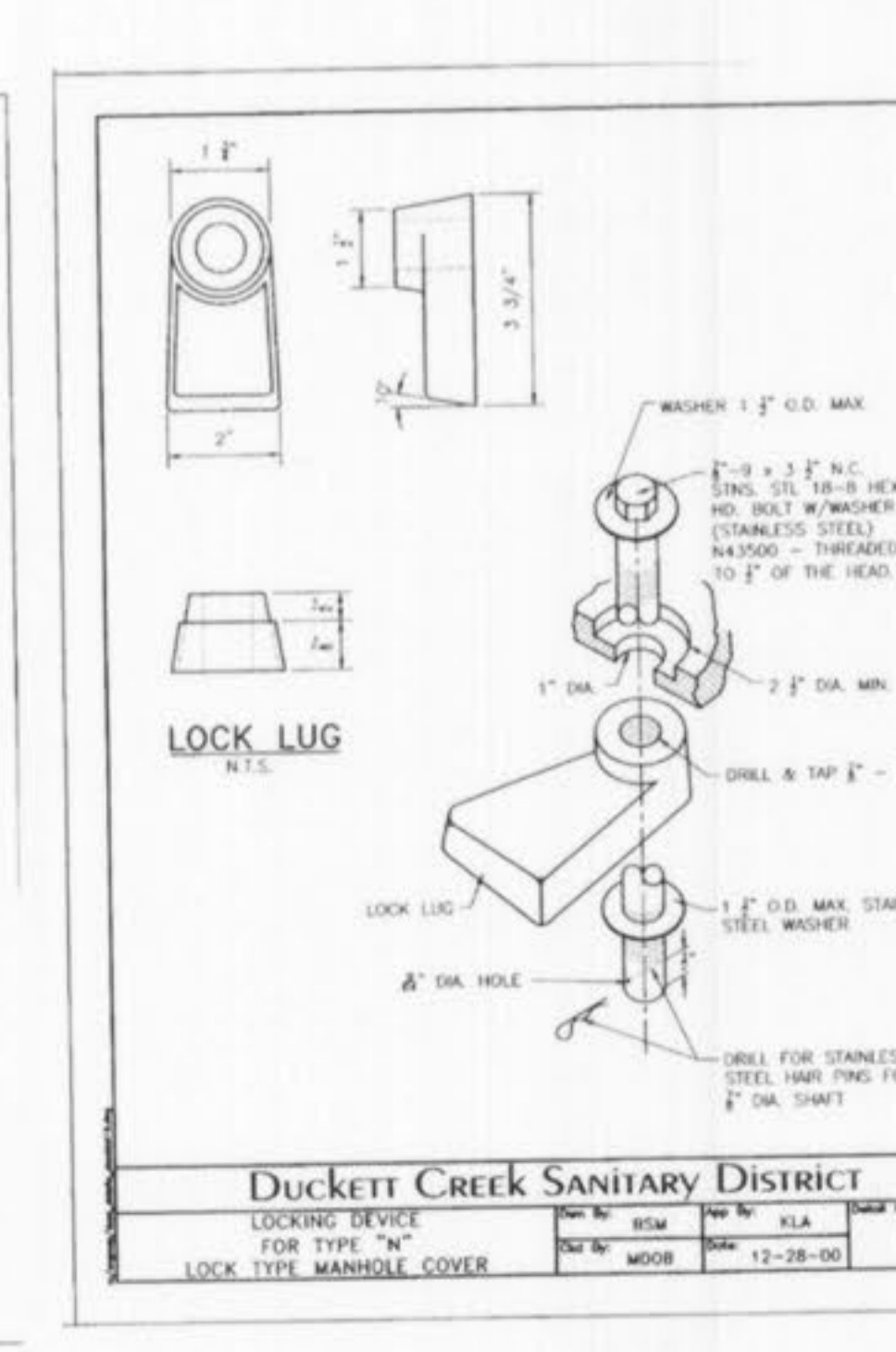
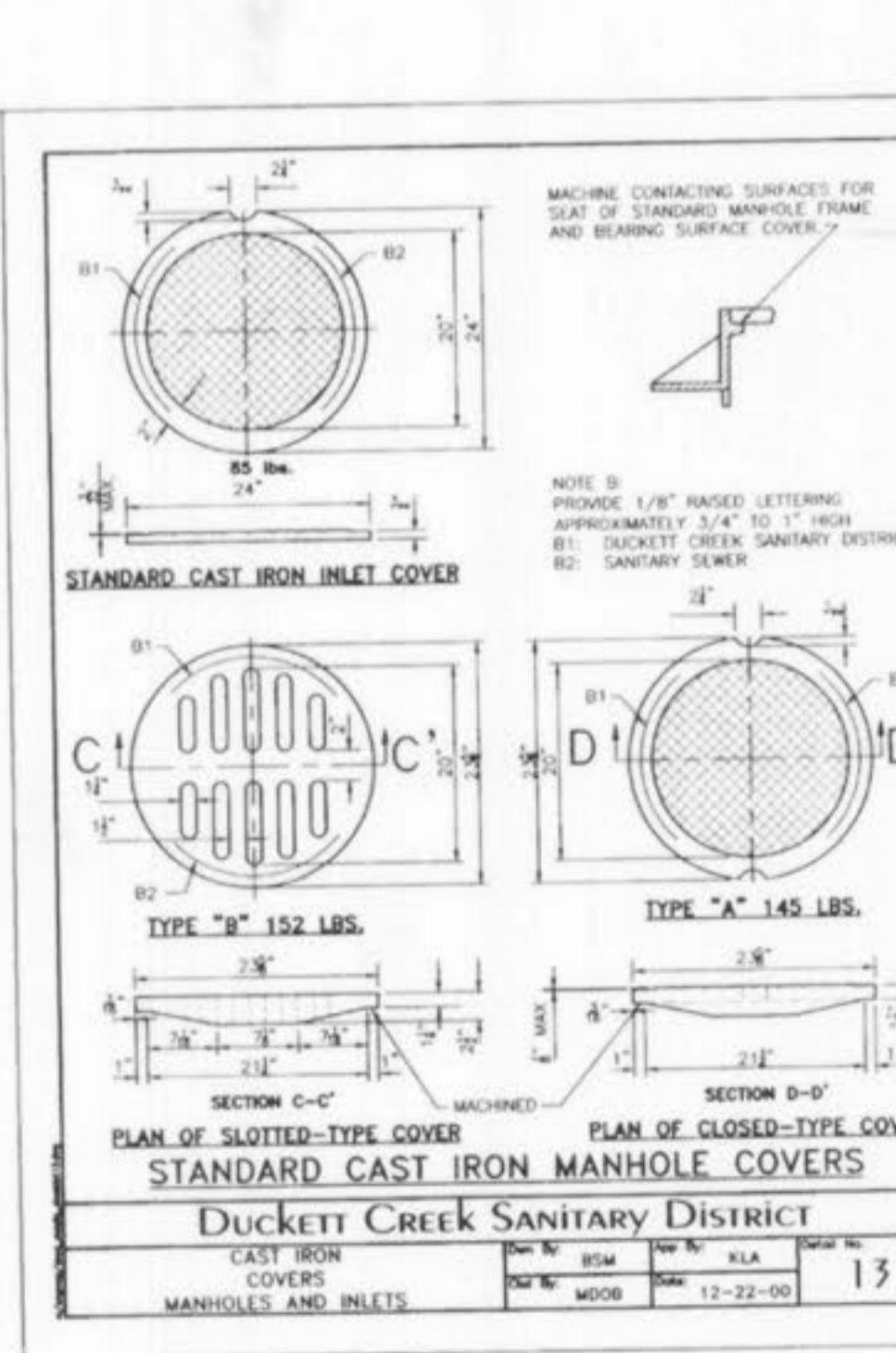
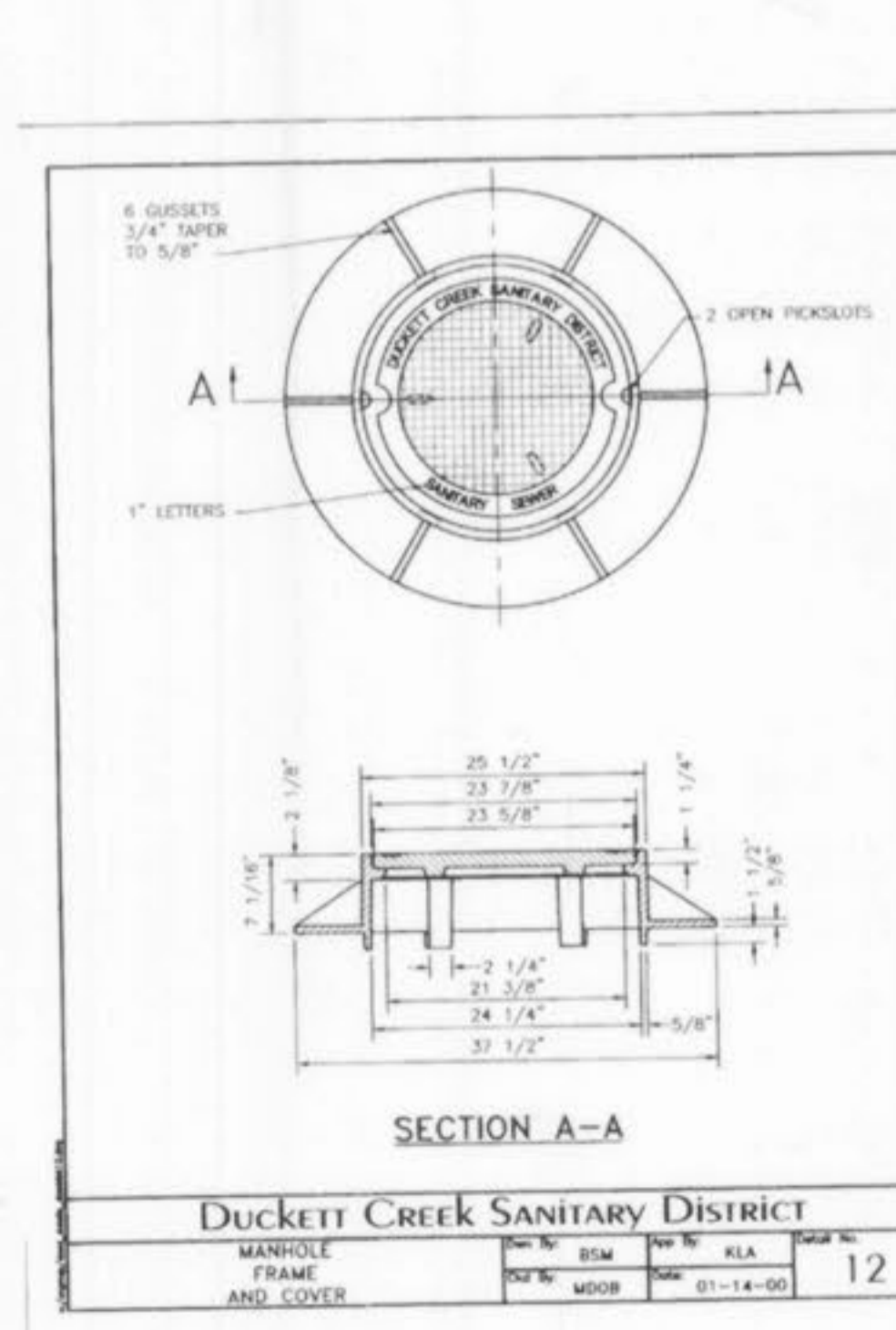
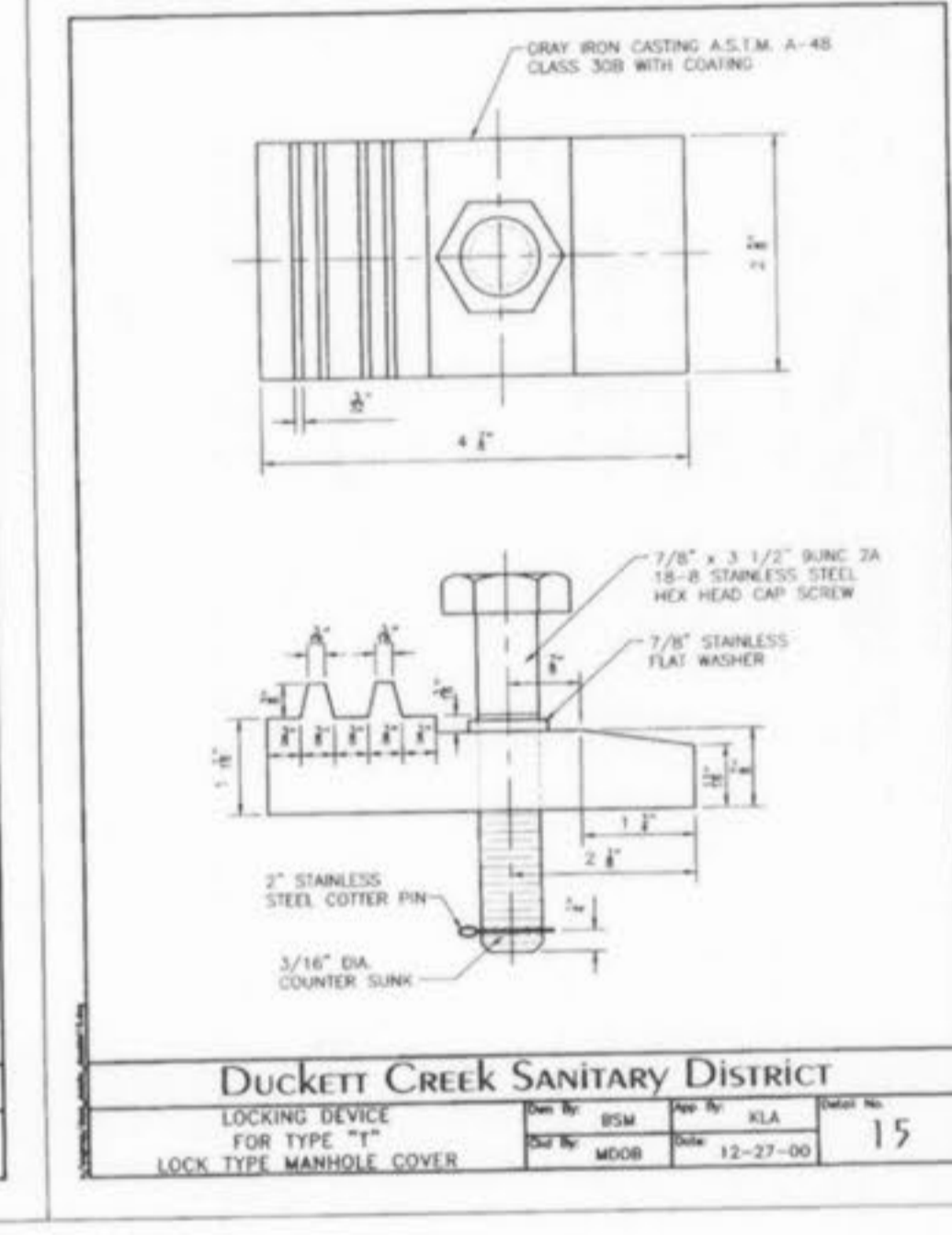
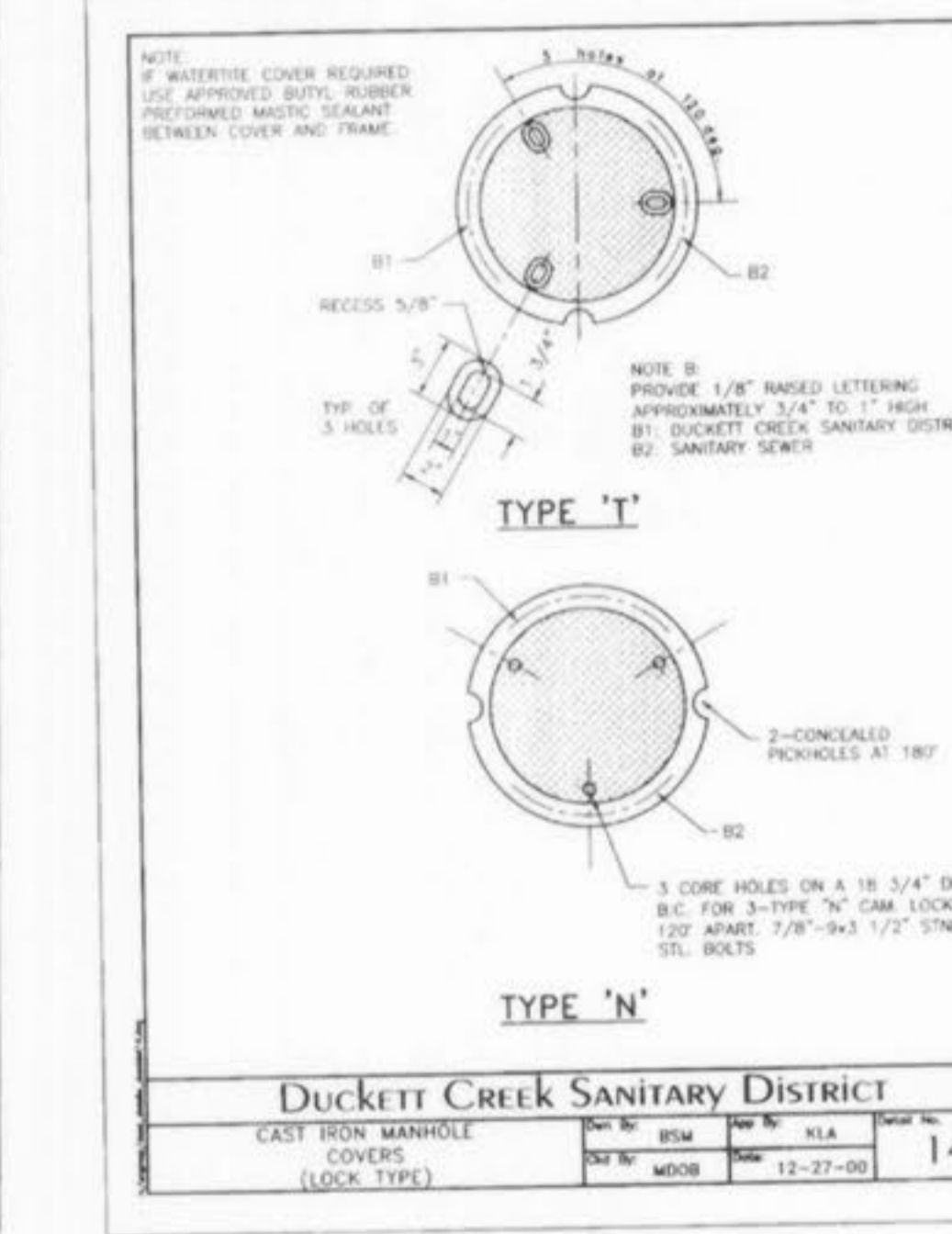
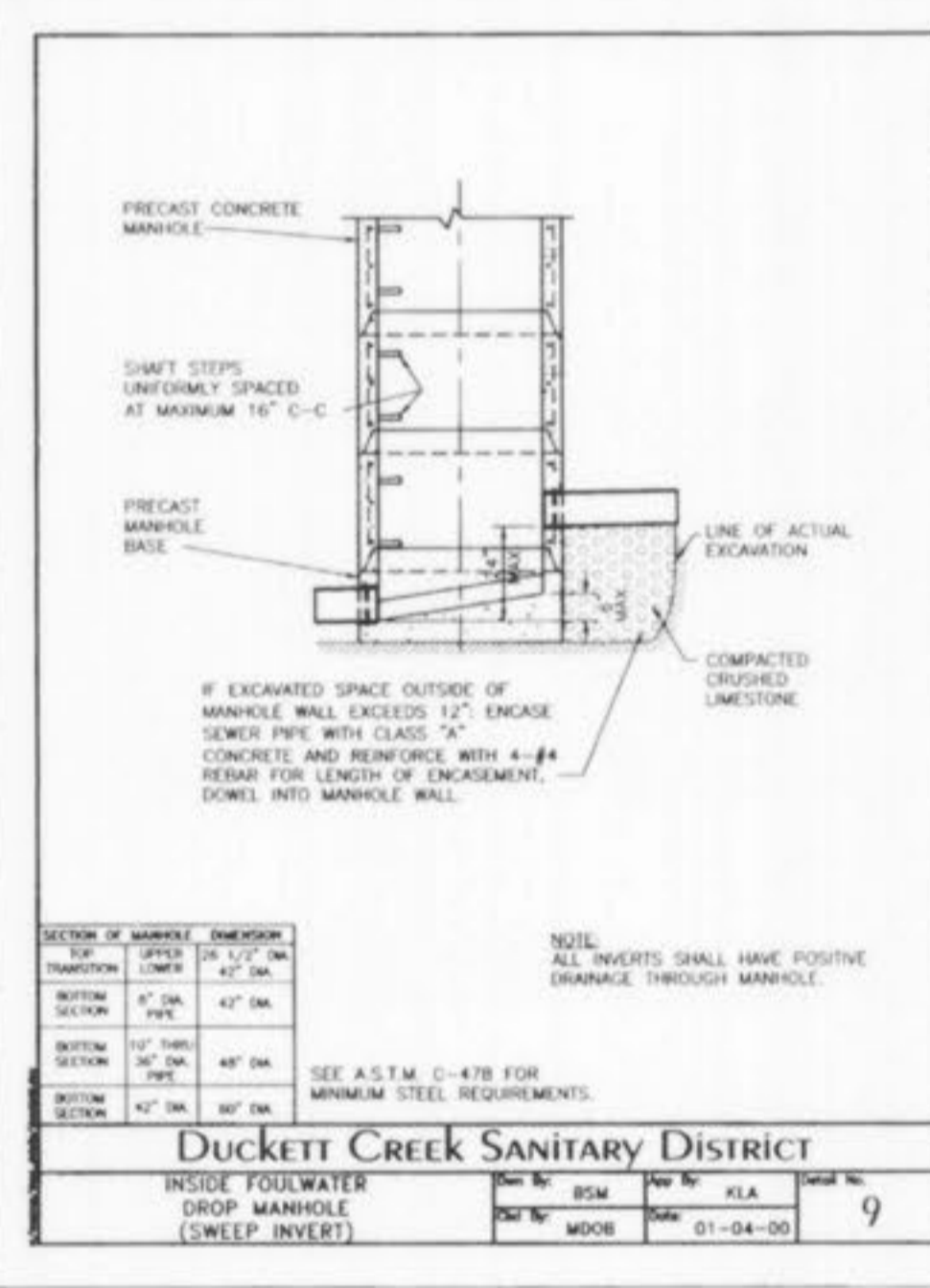
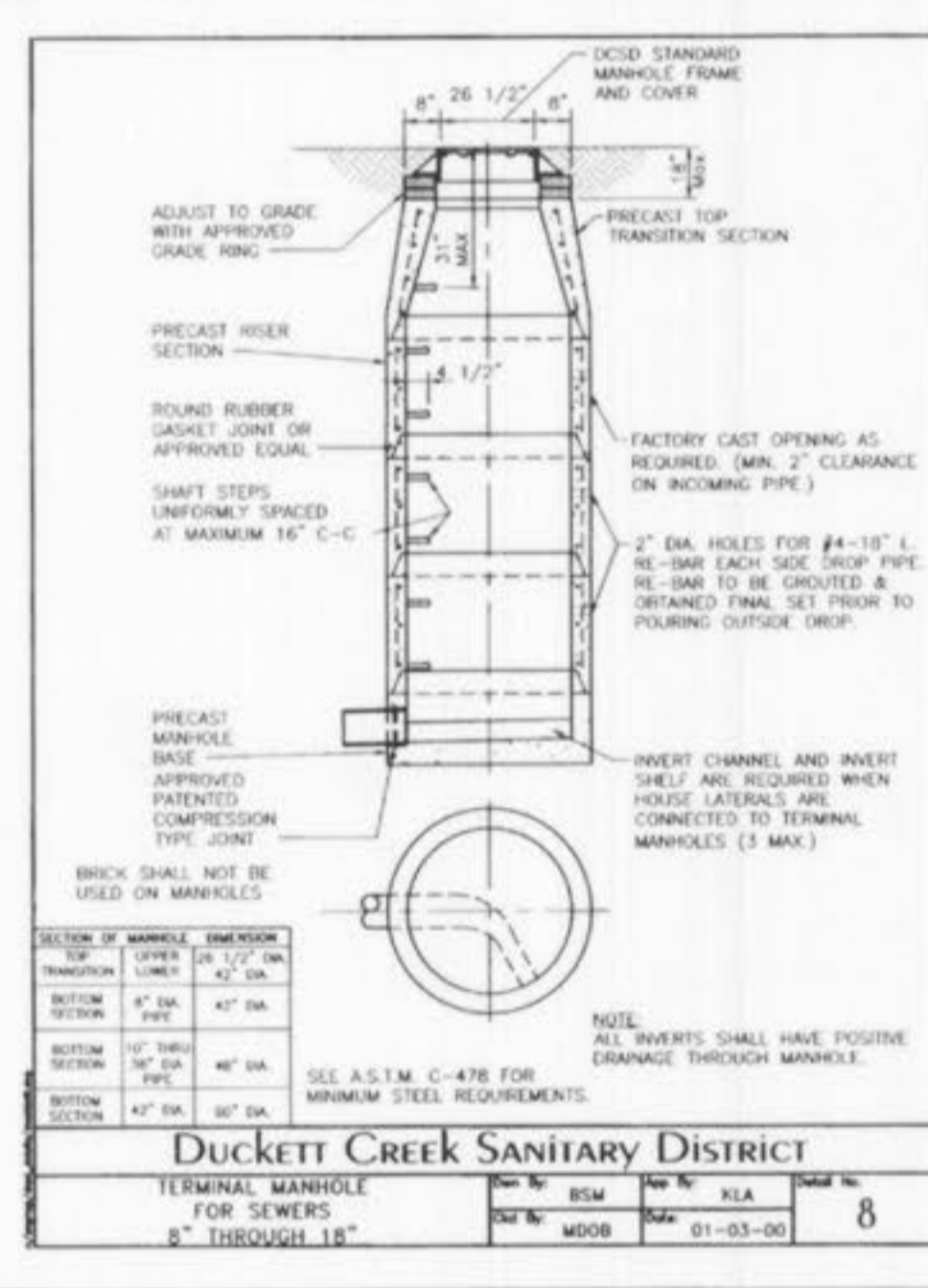
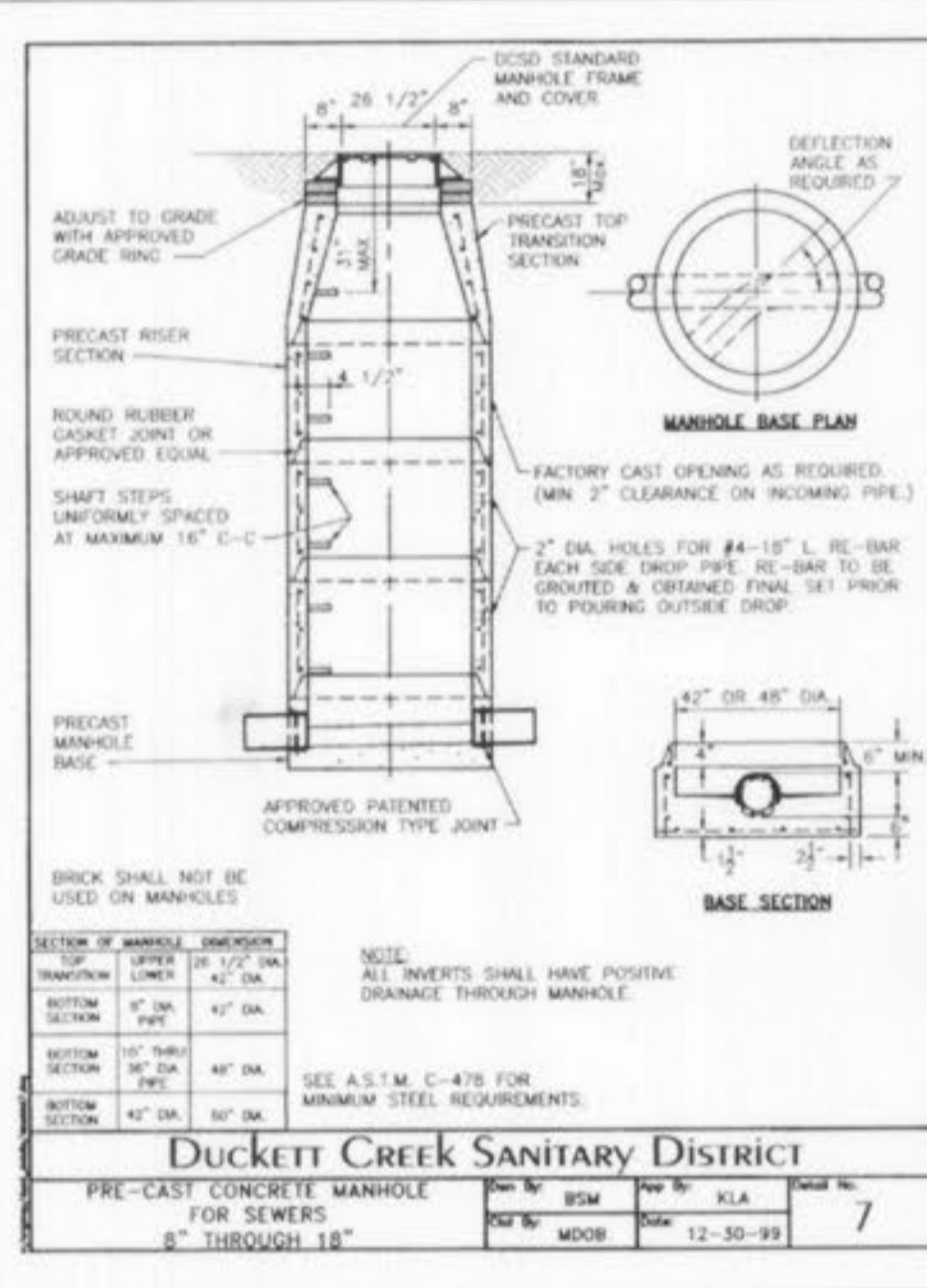
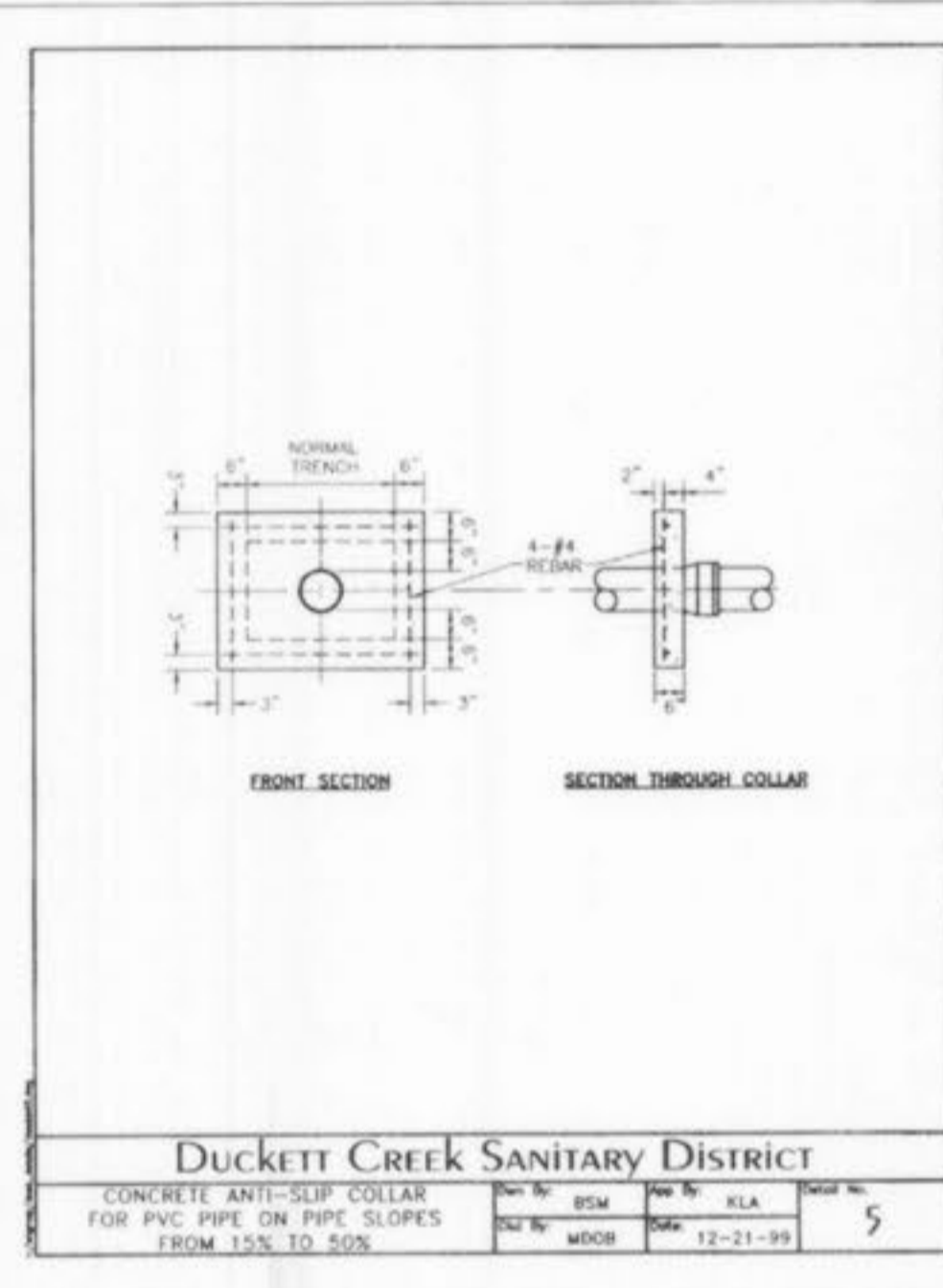
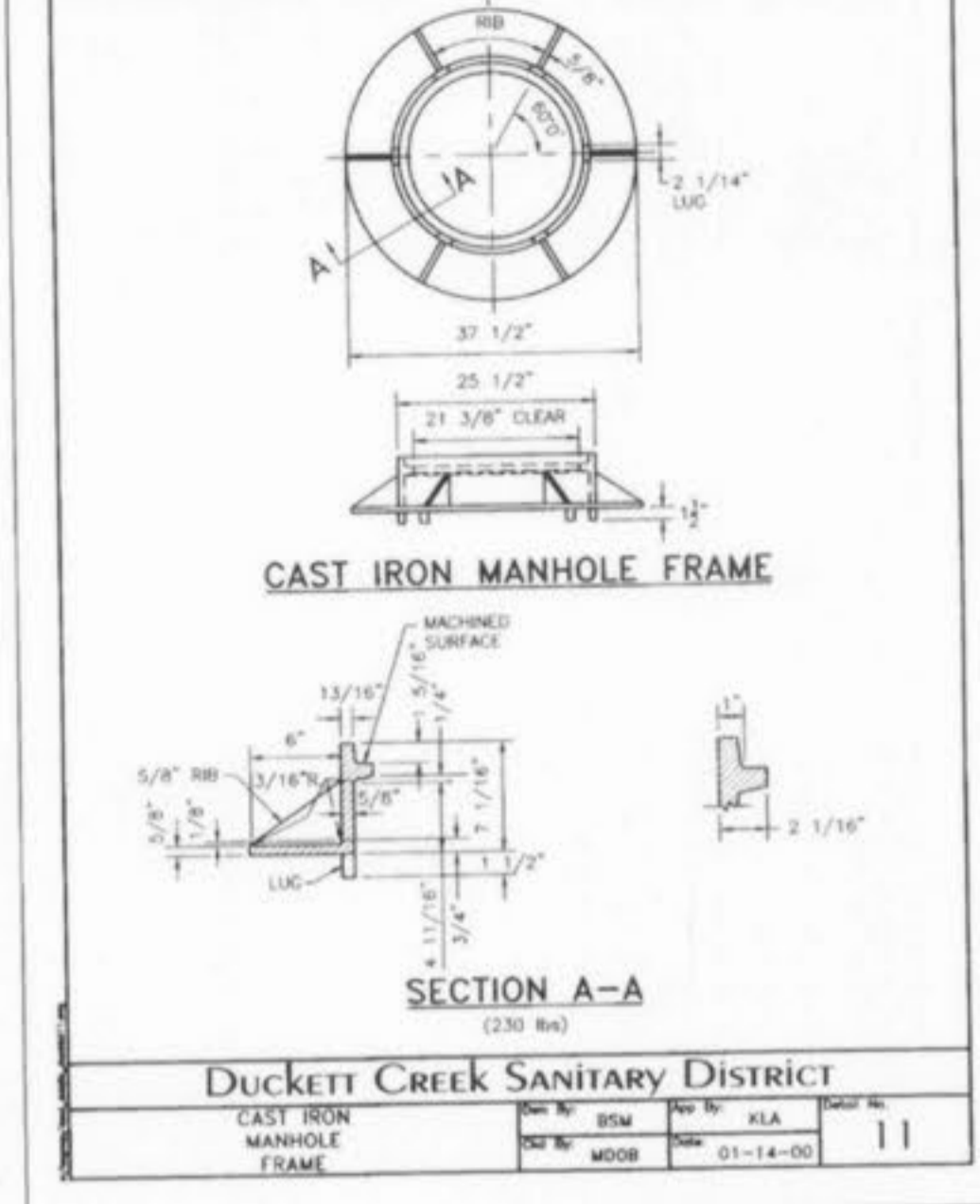
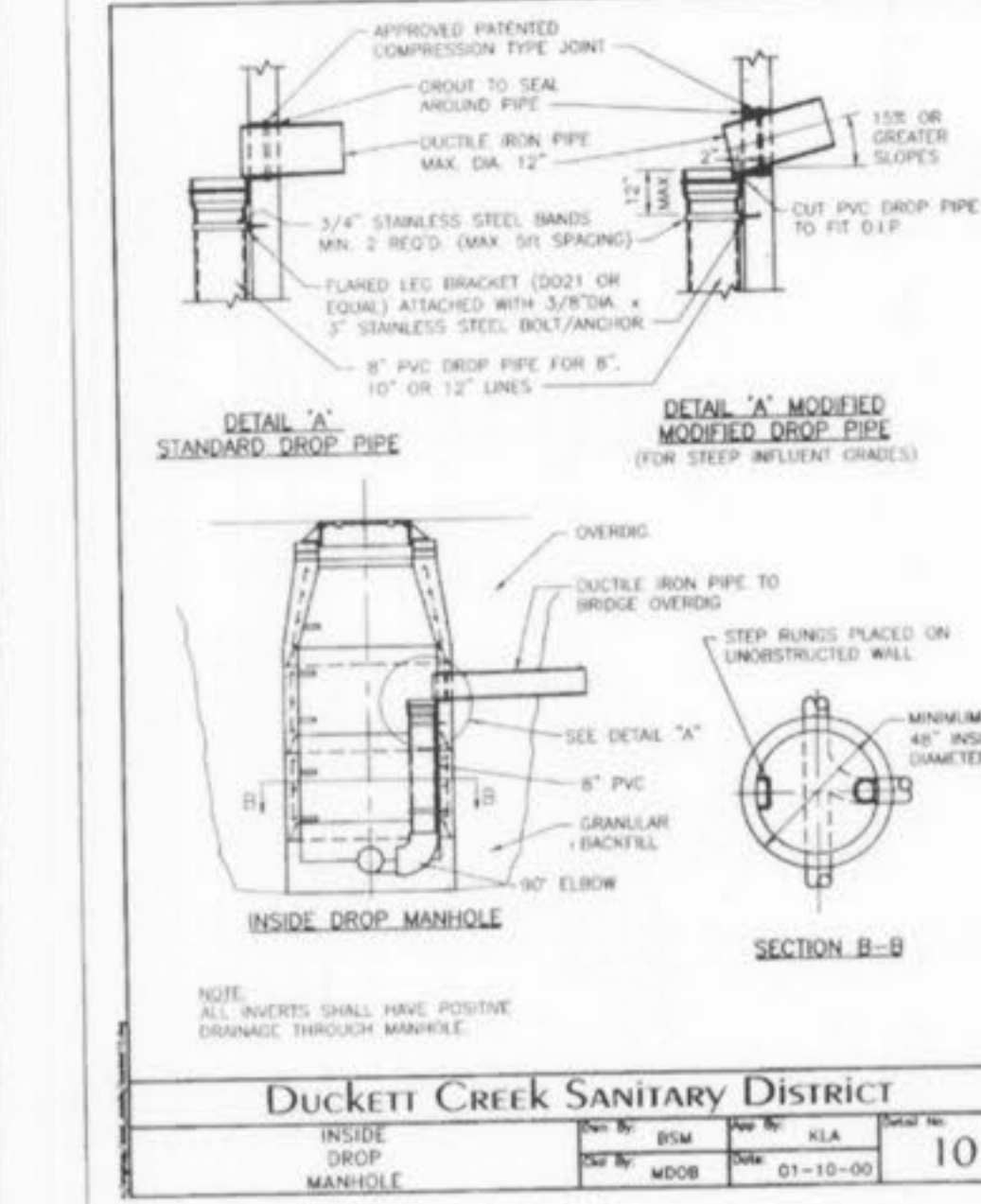
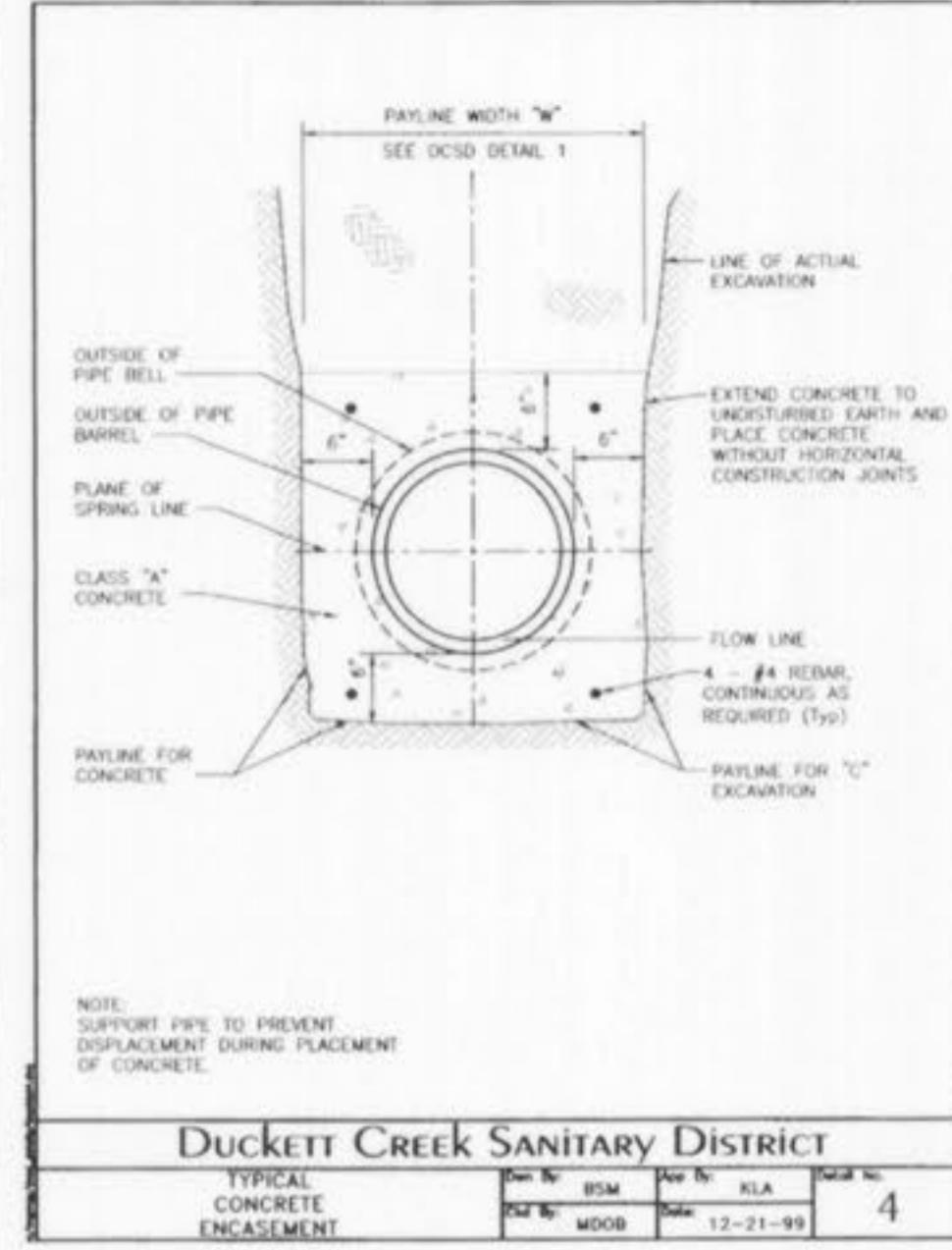
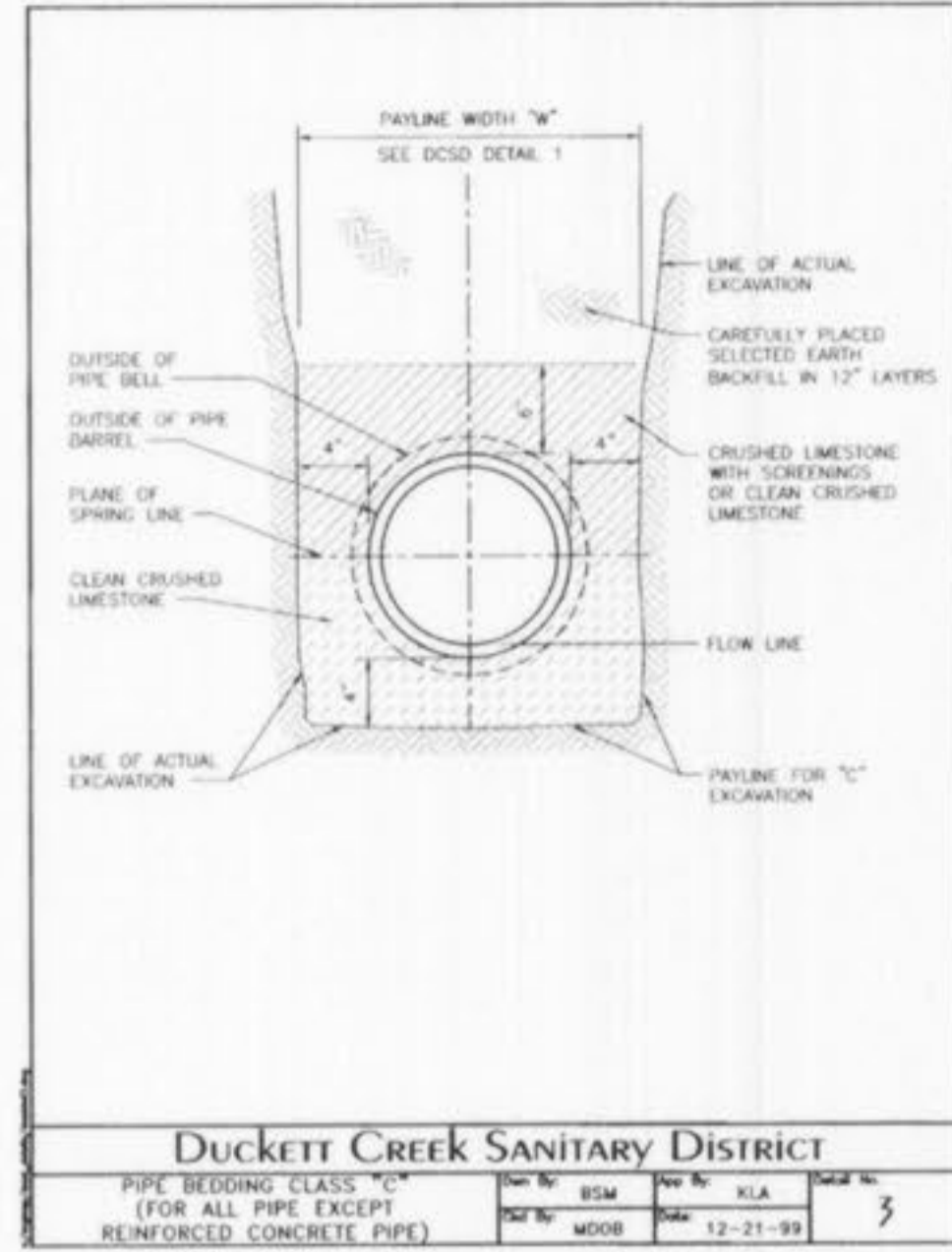
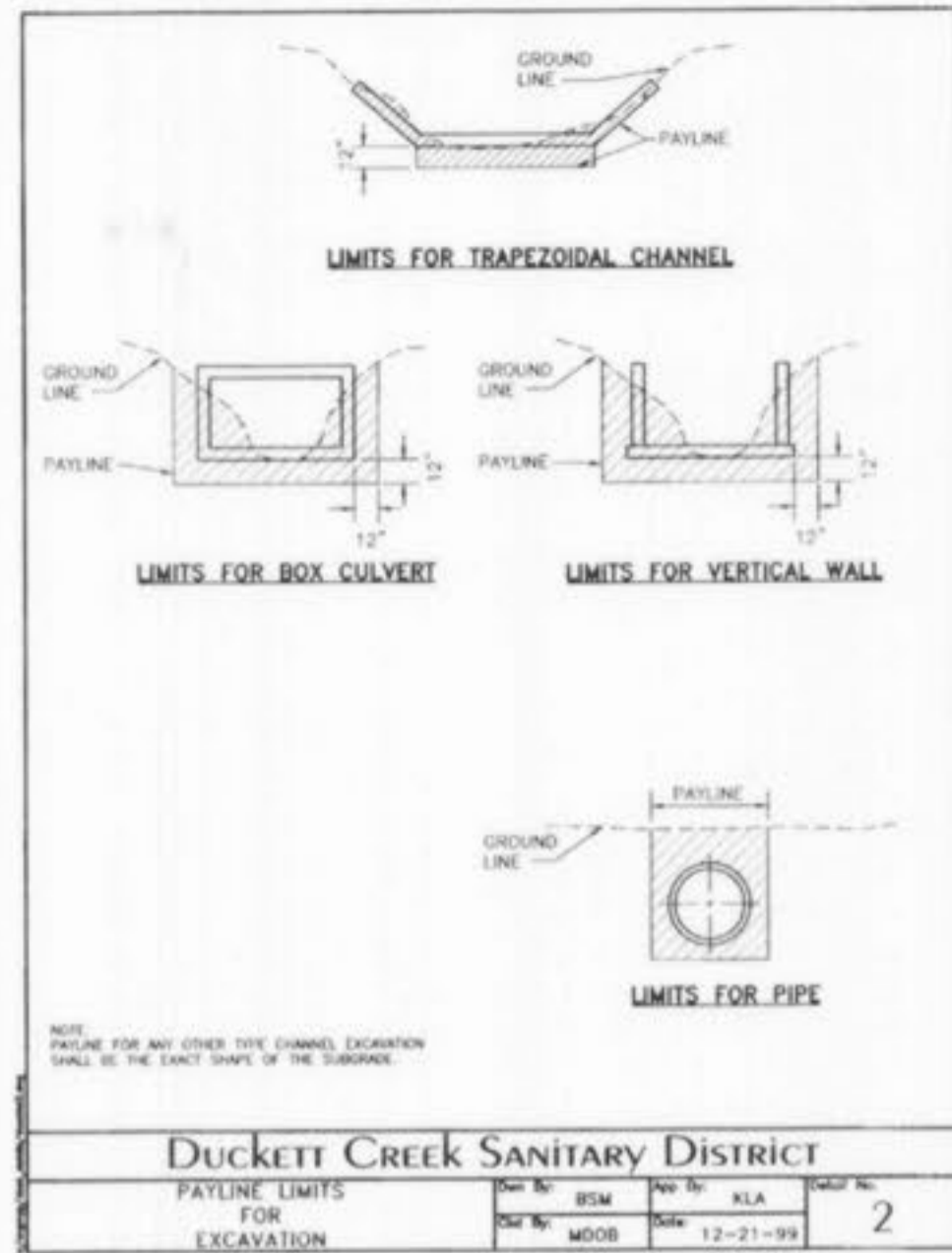
DRAWN BY: P.M.G. 01/06/03 DATE CHECKED BY: G.M.S. 01/06/03 DATE: 202-2855 SHEET: C5.0 of 8

Phoenix Vill Office Area B App 8/14/05 ASB
As built

DRAWING FILE: O:\WORK\2005\200505\Survey\Phoenix-Village-Office-AS-Built.dwg LAYOUT: Model PLOTTED: Aug 12, 2005 - 10:44am PLOTTED BY: mmm

ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
ROUNDER DIAMETER OF PIPE (INCHES)	PAVING WIDTH OF TRENCH (INCHES)	PAVING WIDTH OF TRENCH (FEET)	CONCRETE (CY)	INSIDE DIAMETER OF PIPE (INCHES)	PAVING WIDTH OF TRENCH (INCHES)	PAVING WIDTH OF TRENCH (FEET)	CONCRETE (CY)
4	30	2.50	3.28				
6	30	2.50	3.59				
8	30	2.50	3.97				
10	30	2.50	4.09				
12	30	2.50	4.25				
15	36	3.00	5.55				
18	36	3.00	5.77	14 x 23	41	3.42	5.94
21	36	3.00	6.61				
24	42	3.50	7.59	19 x 30	49	4.08	7.68
27	42	3.50	8.18	22 x 34	53	4.42	8.61
30	42	3.50	8.30	24 x 38	58	4.83	9.70
33	42	3.50	8.53	27 x 42	62	5.17	10.71
36	42	3.50	8.77	29 x 45	66	5.50	11.72
39		DISCONTINUED		32 x 49	71	5.92	13.14
42	63	5.25	13.38	34 x 53	75	6.25	14.05
48	70	5.83	15.67	38 x 60	83	6.92	16.18
54	77	6.42	18.15	43 x 68	92	7.67	18.81
60	84	7.00	20.73	48 x 76	101	8.42	21.59
66	91	7.58	23.45	53 x 83	109	9.08	24.35
72	98	8.17	26.37	58 x 91	118	9.83	27.45
78	105	8.75	29.39	63 x 98	126	10.50	30.50
84	112	9.33	32.57	68 x 106	135	11.25	33.91
90	119	9.92	35.90	72 x 113	143	11.92	36.99
96	126	10.50	39.37	77 x 121	152	12.67	40.69
102	133	11.08	42.99	82 x 128	160	13.35	44.45
108	140	11.67	46.75	87 x 136	168	14.00	47.79
114	147	12.25	50.66	92 x 143	176	14.67	51.70
120	154	12.83	54.72	97 x 151	185	15.42	56.01
126	161	13.42	58.92				
132	168	14.00	63.27	106 x 164	202	16.83	64.48
144	182	15.17	72.40	116 x 180	218	18.17	73.50

Duckett Creek Sanitary District
PAVING WIDTHS OF TRENCH AND PAY-QUANTITIES OF CONCRETE
Sheet No. BSM Date 12-21-99 1



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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DONALD W. TAYLOR
MISSOURI REGISTERED PROFESSIONAL ENGINEER
NO. 2041
DATE 8/2/06
3 - 8/2/06 SEWER AS-BUILTS FOR CITY OF FALLON (D.S.H.)
REVISED PER CITY AND DUCKETT CREEK COMMENTS
LAN/10/03 REVISED PER CITY AND DUCKETT CREEK COMMENTS

PHOENIX VILLAGE OFFICE PARK AT WINGHAVEN
SEWER DETAILS - AREA "B" PHASE 1

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: P.M.G. DATE: 01/06/03 CHECKED BY: G.M.S. DATE: 01/06/03 JOB NUMBER: 202-2855 SHEET: C7.1 of 8

Phoenix Vill office Area B... 8/11/05 ASB
AS-BUILTS

SDR-35 x C900 BELL & SPIGOT ADAPTERS

SIZE	CATALOG NO.	A	B	C	D	E	F	G	H	CT	PT
4"	335-040	4.56	8.23	4.25	4.10	3.94	4.80	2.72	2.7	32	25
6"	335-060	6.68	9.93	6.31	4.57	5.88	6.90	3.72	3.5	45	36

Duckett Creek Sanitary District
SDR-35 x C900 BELL AND SPIGOT ADAPTERS
BSM No. MOOB Date 1-3-01 19A

SDR-35 x C900 BELL & SPIGOT ADAPTERS

SIZE	CATALOG NO.	A	L	STYLE
4"	335-040	3.2	10.0	FABRICATED
6"	335-060	2.8	13.5	FABRICATED
8"	335-080	4.0	12.5	FABRICATED

Duckett Creek Sanitary District
SDR-35 x C900 BELL AND SPIGOT SPECIAL 4", 6" & 8" ADAPTERS
BSM No. MOOB Date 1-3-01 19B

SDR-35 x C900 BELL & SPIGOT ADAPTERS

SIZE	CATALOG NO.	OD	OD	ID	ID	L	CTN	CTN
4x4	337-040	4.80	4.215	4.86	4.25	10.0	1	4
6x6	337-060	6.90	6.275	6.96	6.32	11.13	1	8
8x8	337-080	9.05	8.400	9.15	8.45	12.50	1	15

Duckett Creek Sanitary District
SDR-35 x C900 BELL AND SPIGOT 4", 6" & 8" ADAPTERS
BSM No. MOOB Date 1-3-01 19C

PLASTIC SADDLE TEE OR WYE FITTING (SOLVENT WELD)

WHEN CONNECTION TO A PLASTIC PIPE IS ALLOWED AND A CONNECTION IS LARGER THAN 6" IN DIAMETER, A SOLVENT WELD WYE OR TEE FITTING OF A SIMILAR MATERIAL MUST BE USED. (EXAMPLE: 10" x 8") THIS IS ACCOMPLISHED BY CAREFULLY CUTTING A HOLE WITH A SAW IN THE MAIN AT THE REQUIRED LOCATION AFTER CUTTING AND SHAPING THE HOLE TO THE SIZE OF THE FITTING. THE FOLLOWING STEPS SHOULD BE TAKEN:

- CLEAN AND DRY BOTH INSIDE THE SADDLE WYE SURFACE AND PIPE SURFACE TO BE SOLVENT CEMENTED.
- MIXING: APPLY A LIBERAL HEAVY COAT OF ONE-STEP SOLVENT CEMENT TO THE INSIDE SURFACE OF THE SADDLE WYE AND TO THE EXTERIOR WELDING SURFACE TO THE PIPE.
- WITHOUT DELAY WET THE SURFACES AND TAMP DOWN THOROUGHLY. A BEAD OF SOLVENT SHOULD APPEAR AFTER THE SADDLE HAS BEEN TAMPED DOWN THOROUGHLY.
- USING A RAG OR PAPER TOWEL, Wipe BEAD AND ANY EXCESS SOLVENT CEMENT OFF PIPE AND SADDLE.
- ALLOW 30-60 MINUTES FOR SET-UP TIME BEFORE BACKFILLING. CURE TIME DEPENDS ON SIZE OF MATERIALS BEING INSTALLED AND VARIOUS CLIMATE CONDITIONS.
- DISCARD OLD SOLVENT IF IT BECOMES JELLED OR LUMPY.
- A CLEAN DRY BEARING SURFACE IS REQUIRED AROUND THE COMPLETED CONNECTION BEFORE BACKFILLING. THE BEARING SURFACE SHOULD BE ONE OF THE FOLLOWING:
 - 1 TO 2 INCHES TO SAND W/
 - 2" FREE-MIX CONCRETE.
 - 200 APPROVED BEDDING FOR SANITARY SEWERS.

Duckett Creek Sanitary District
8" & LARGER CONNECTION TO PLASTIC MAIN
BSM No. MOOB Date 1-4-01 20A

METAL FRAME AND COVER TYPE CLEANOUT

NOTES:

- CROCKETED RIP-RAP IS REQUIRED AT ALL CREEK CROSSINGS WHERE THE EMBANKMENTS EXCEED ONE FEET OR MORE THAN A VERTICAL TO 2 HORIZONTAL BATH SLOPE, AND ALSO WHERE THERE IS 3 FEET OR LESS COVER OVER THE TOP OF THE SEWER MAIN.
- PLACE RIP-RAP ON LOWER 3/4 OF SLOPE. GRADE UPPER 1/4 OF SLOPE AT 1 VERTICAL TO 2 HORIZONTAL SLOPE FOR SIDE OF 1 VERTICAL TO 2 HORIZONTAL SLOPE FOR SIDE AND TOP.
- RIP-RAP TO BE 3/4" GRADE, MINIMUM 1/2" THICK, CROCKETED WITH 8 SACK MIX SAND-CEMENT SLURRY, DROOM FINISH.
- ACCOMPANIE A 3 FEET DEEP TIE WALL ON EMBANKMENT'S UPPER EDGE OF RIP-RAP.
- TOP SURFACE OF RIP-RAP SHOULD NOT BE HIGHER THAN ADJACENT GROUND SURFACE.
- IF PIPE HAS LESS THAN 12" COVER, A FINED CHANNEL MAY BE REQUIRED.
- DUCTILE IRON PIPE IS REQUIRED WITHIN THE CREEK LIMITS.

Duckett Creek Sanitary District
TYPICAL CREEK CROSSING
BSM No. MOOB Date 1-8-01 24

ADJUSTABLE HEAD TYPE CLEANOUT

Duckett Creek Sanitary District
TYPICAL SEWER LATERAL CLEANOUT DETAILS
BSM No. MOOB Date 1-8-01 25

INSERTA TEE
THE USE OF AN INSERTA TEE REQUIRES DISTRICT APPROVAL.

INSTALLATION PROCEDURE:

- CURE THE PROPOSED HOLE. THE SIZE: 4", 6", 8", 10", 12", 15", 18", 24" (FOR EXISTING CLAY OR CONCRETE PIPE).
- INSERT THE RUBBER SLEEVE (1) IN THE CURED HOLE WITH THE GOLD VERTICAL LINE ON THE RUBBER SLEEVE (2) FACING TO THE SIDE OF THE MAIN LINE. THE UPPER SEGMENT SHOULD BE ON TOP OF THE MAIN LINE AND THE LOWER SEGMENT (ONE) PROFILE WALL, AND POLYURETHANE PIPE ONLY SHOULD BE ON THE INSIDE OF THE PIPE.
- APPLY THE INSERTA TEE SOLUTION SUPPLIED TO THE INSIDE OF THE RUBBER SLEEVE AND TO THE OUTSIDE OF THE PVC MAIN ADAPTER. CAUTION: DO NOT USE AN OIL BASED LUBRICANT.
- PLACE THE LINE RUBBER ADAPTER (3) INTO THE RUBBER SLEEVE. MAKE SURE THAT THE RED VERTICAL LINE ON THE PVC MAIN ADAPTER IS IN LINE WITH THE GOLD VERTICAL LINE (2) ON THE RUBBER SLEEVE.
- PLACE THE 2x4 BOARD OVER THE TOP OF THE PVC MAIN ADAPTER.
- PLACE THE RED HORIZONTAL LINE (4) AT THE TOP OF THE RUBBER ADAPTER IS A DEPTH MARK. THIS TELLS THE INSTALLER HOW FAR TO DRIVE THE ADAPTER INTO THE RUBBER SLEEVE. MAKE THE PVC MAIN ADAPTER INTO THE RUBBER SLEEVE TO MAKE THE HORIZONTAL RED LINE (4) ON THE PVC MAIN ADAPTER (3) MEETS THE TOP OF THE RUBBER SLEEVE (2).
- PLACE THE STAINLESS STEEL BAND (5) AROUND THE TOP OF THE RUBBER SLEEVE AND TIGHTEN DOWN.
- INSTALL PIPE IN NORMAL MANNER.

Duckett Creek Sanitary District
INSERTA TEE DETAILS AND SPECIFICATIONS
BSM No. MOOB Date 1-4-01 20B

ROLL-IN (FOR EXISTING CLAY OR CONCRETE PIPE)

NOTES:

- WHEN A CONNECTION IS ALLOWED LARGER THAN 6" DIAMETER, A SADDLE MAY BE USED IF THE ID OF THE CONNECTION PIPE IS NOT GREATER THAN ONE HALF (1/2) OF THE ID OF THE MAIN SEWER (EXAMPLE: 24" x 18").
- IF THE ID OF THE CONNECTION PIPE IS GREATER THAN ONE HALF (1/2) OF THE ID OF THE MAIN SEWER THE WYE OR TEE MUST BE "TWO-STEP" (EXAMPLE: 10" x 8").
- THIS IS ACCOMPLISHED BY BREAKING AWAY AND REMOVING ONE SECTION OF PIPE. THE TOP HALF OF THE BELL ON THE PIPE BEING REPLACED TO THE GAP IS CAREFULLY BROKEN OFF. THE TOP HALF OF THE BELL ON THE MAIN REPLACEMENT SECTION WITH A "TWO-STEP" FITTING IS ALSO BROKEN OFF. THE REPLACEMENT PIPE IS THEN PLACED IN THE LINE GAP WITH THE GOLD POINTED IN THE WELDING DIRECTION. THE GROUNDED SECTION OF THE REPLACEMENT PIPE MADE IF POSSIBLE FOR THE REPLACEMENT SECTION TO FIT INTO THE SEWER LINE WITHOUT DISTURBING THE ADJACENT PIPE SECTIONS. THE REPLACEMENT SECTION IS THEN INSTALLED TO THE DESIRED POSITION AND THE BELL AND BELL ARE ENGAGED WITH A 6" CLASS "X" CONCRETE ENCKEMENT.
- ID OF MAIN SEWER SHALL NOT BE DECREASED BY A HOLE IN CONNECTION.

Duckett Creek Sanitary District
ROLL-IN (FOR EXISTING CLAY OR CONCRETE PIPE)
BSM No. MOOB Date 1-5-01 21

BORING DETAIL

NOTES:

- INSIDE DIAMETER OF CASING PIPE TO BE MINIMUM OF 4" GREATER THAN COUPLING DIAMETER OF CARRIER PIPE.
- ENCKEMENTS TO BE INSTALLED UNDER THE ROAD BY MEANS OF JACKING IT THROUGH, OR BY DRY BORING A HOLE THAT WILL RECEIVE THE CASING WITH A SNAPE FIT.
- THE OUTSIDE DIAMETER OF THE CASING SHALL NOT BE LESS THAN, NOR MORE THAN ONE INCH GREATER THAN THE BORED HOLE.
- THE ANNUAL SPACE BETWEEN THE CASING PIPE AND THE BORED HOLE SHALL BE FILLED WITH GROUT.

SUPPORT OF CARRIER PIPE OR FORCE MAIN IN CASING

SECTION A-A'

Duckett Creek Sanitary District
ROADWAY BORING DETAIL
BSM No. MOOB Date 1-5-01 23

FORCE MAIN CLEANOUT (6" DIA. & SMALLER)

Duckett Creek Sanitary District
FORCE MAIN CLEANOUT (6" DIA. & SMALLER)
BSM No. MOOB Date 1-5-01 22

THRUST BLOCK DETAIL AND SIZE SCHEDULE

MAIN SIZE	A x B	A x B	A x B	A x B	TEE
2"	3" x 1"	3" x 1"	1" x 1"	1" x 1"	1" x 1"
4"	1" x 1"	1" x 1"	1.5" x 1"	1.5" x 1"	1" x 1"
6"	1" x 1"	1.5" x 1"	2" x 1"	1.5" x 1"	1.5" x 1"
8"	1" x 1"	2" x 1"	2" x 1"	2" x 1"	2" x 1"

Duckett Creek Sanitary District
LOW PRESSURE SEWER MAIN CONNECTION AT MANHOLE
BSM No. MOOB Date 1-9-01 28

TYPICAL SEWER LATERAL CLEANOUT DETAILS

Duckett Creek Sanitary District
TYPICAL SEWER LATERAL CLEANOUT DETAILS
BSM No. MOOB Date 1-8-01 25

TYPICAL SANITARY SEWER LATERAL PROFILE

Duckett Creek Sanitary District
TYPICAL SANITARY SEWER LATERAL PROFILE
BSM No. MOOB Date 1-9-01 26

SANITARY SEWER LATERAL RISER DETAIL

Duckett Creek Sanitary District
SANITARY SEWER LATERAL RISER DETAIL
BSM No. MOOB Date 1-9-01 27

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:

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

DONALD W. TAYLOR
REGISTERED LAND SURVEYOR
STATE OF MISSOURI
NO. 13-2041
DATE 8/10/05

4 - 8/12/05 SEWER AS-BUILTS FOR CITY OF FALLON (D.S.H.)
3 - 10/21/03 SEWER AS-BUILTS FOR DUCKETT CREEK
2 - 4/03/03 REVISED PER CITY AND DUCKETT CREEK COMMENTS
1 - 3/19/03 REVISED PER CITY AND DUCKETT CREEK COMMENTS

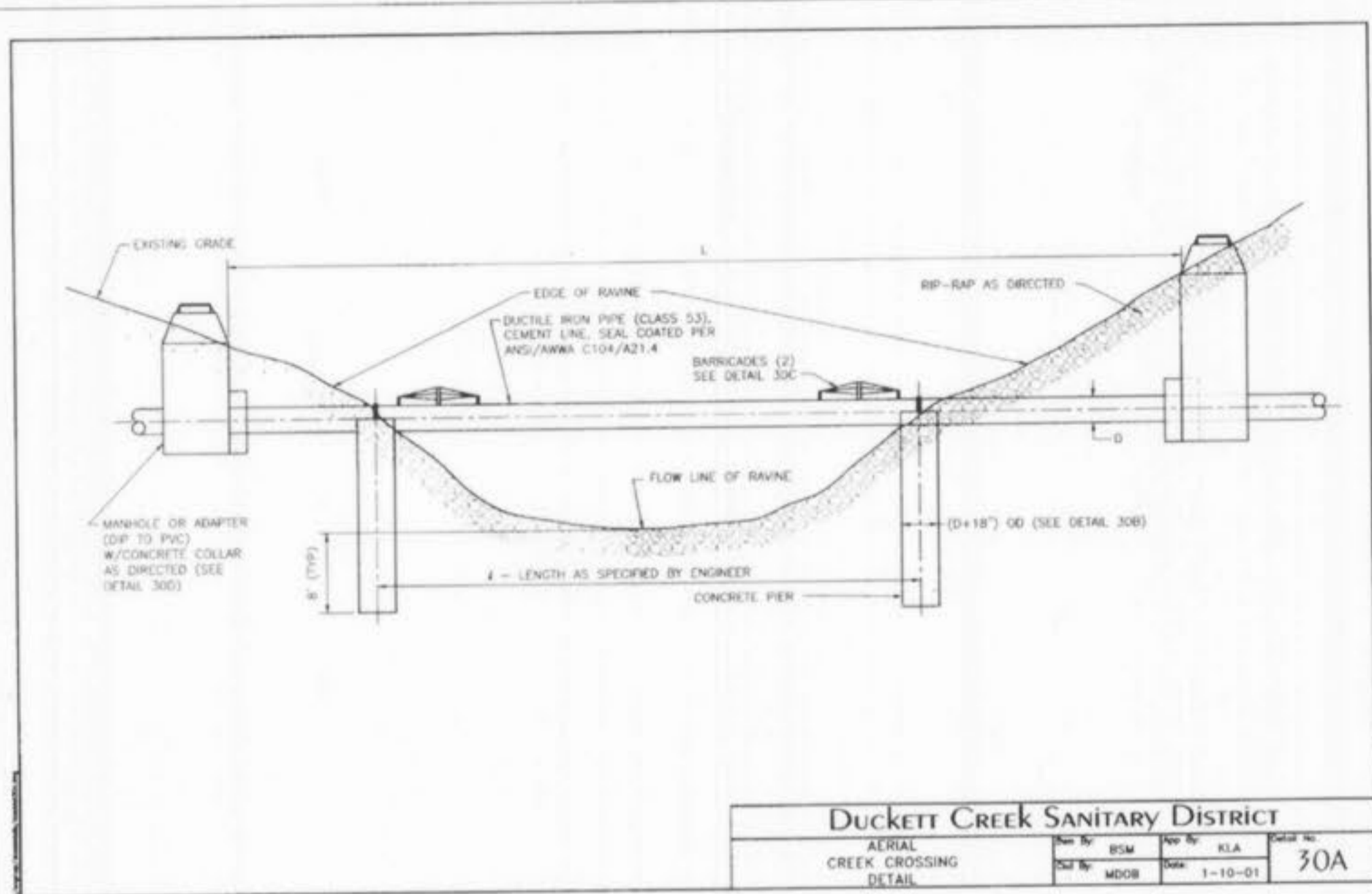
PHOENIX VILLAGE OFFICE PARK AT WINGHAVEN
SEWER DETAILS - AREA "B" PHASE 1

STOCK & ASSOCIATES
Consulting Engineers, Inc.

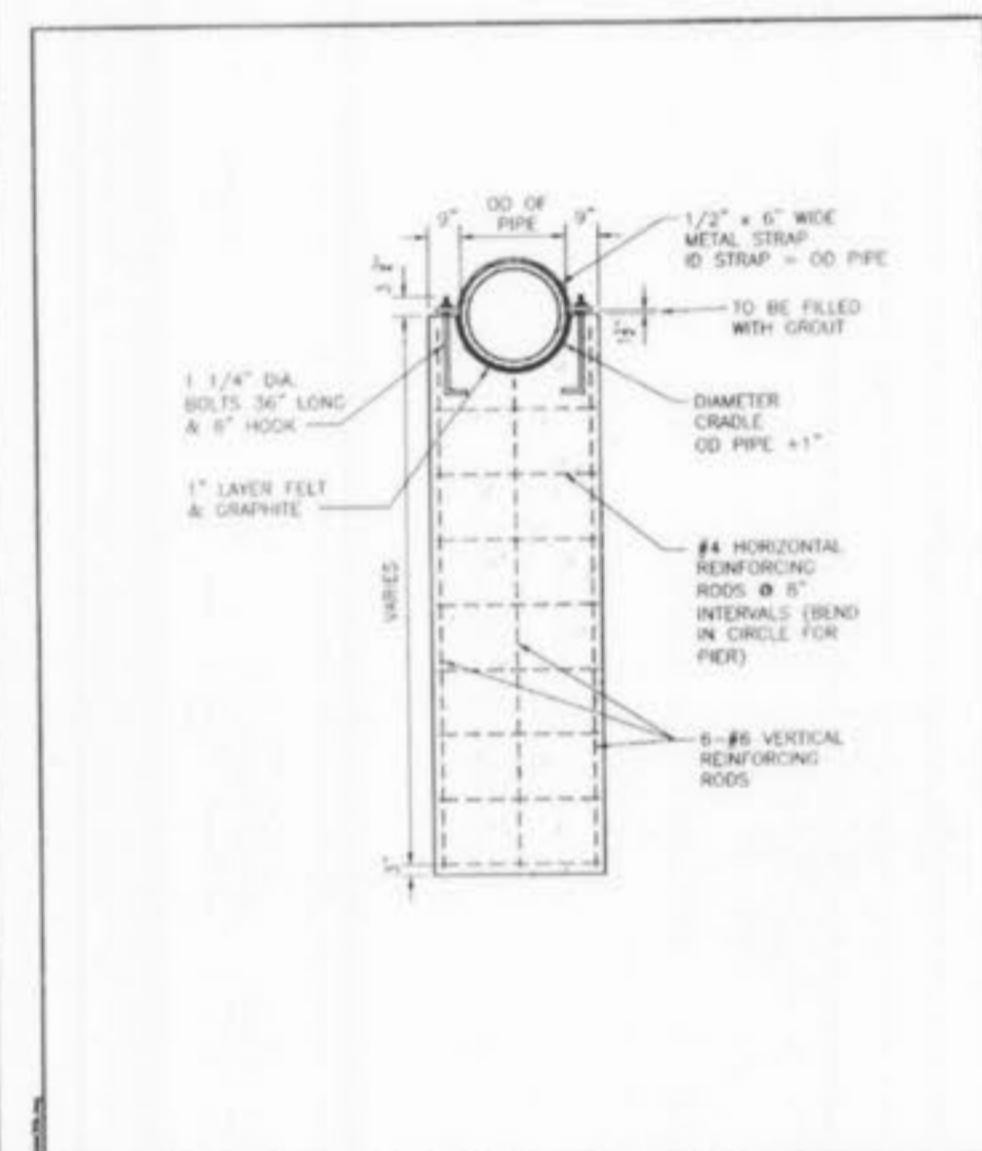
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FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY: P.M.G. DATE: 01/06/03 CHECKED BY: G.M.S. DATE: 01/06/03 JOB NUMBER: 202-2855 SHEET: C7.2 of 8

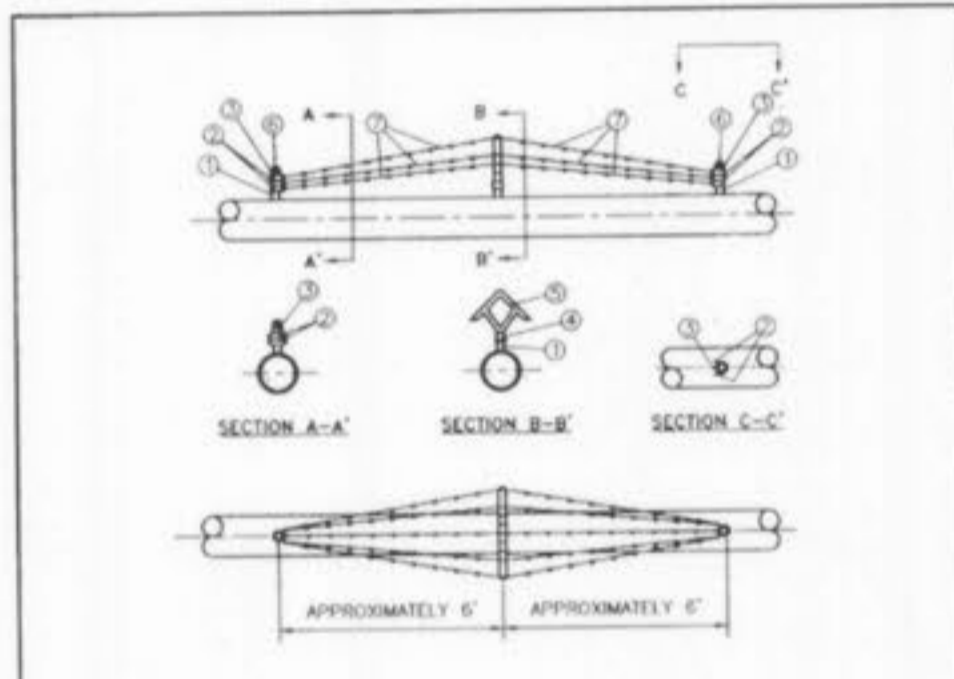
Phoenix office Area B 8/10/05 ABC
As built



DUCKETT CREEK SANITARY DISTRICT
AERIAL CREEK CROSSING DETAIL
Sheet No. BSM 30A
Date 1-10-01



DUCKETT CREEK SANITARY DISTRICT
CONCRETE PIER DETAIL
Sheet No. BSM 30B
Date 1-9-01

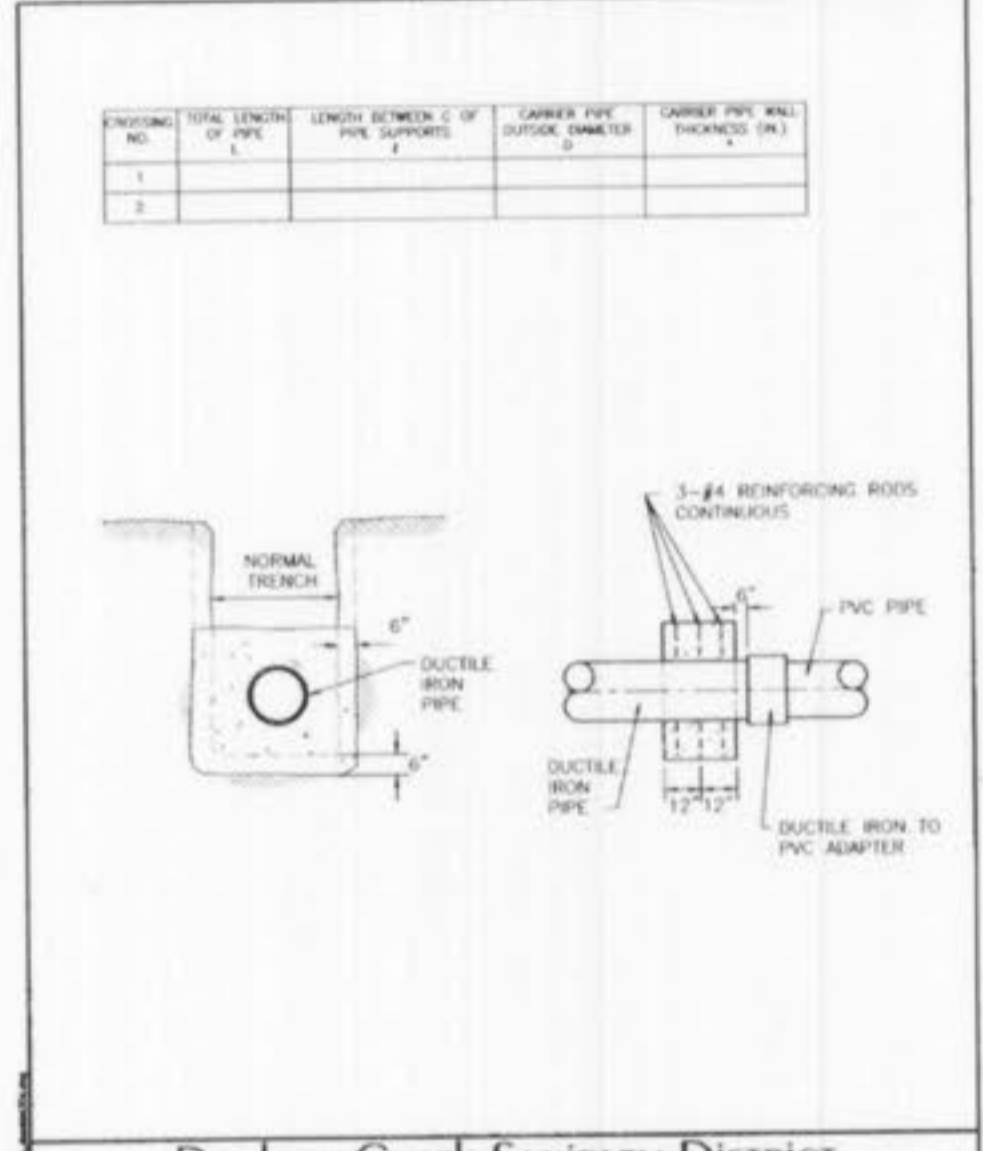


BILL OF MATERIALS

NO.	QTY	SYMBOL	SIZE	DESCRIPTION
1	2	W	2" x 3"	WALNUT OR SONG PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES
2	8	W	1/2" x 6"	WALNUT OR SONG PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES
3	2	W	1/2" x 6"	WALNUT OR SONG PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES
4	2	W	1/2" x 6"	WALNUT OR SONG PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES
5	2	W	1/2" x 6"	WALNUT OR SONG PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES
6	2	W	1/2" x 6"	WALNUT OR SONG PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES
7	2	W	1/2" x 6"	WALNUT OR SONG PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES
8	2	W	1/2" x 6"	WALNUT OR SONG PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES

NOTES:
1. "BILL OF MATERIALS" PROVIDES SUFFICIENT MATERIAL FOR TWO BARRICADES.
2. LOCATION OF BARRICADES ON PIPING SYSTEM TO BE AS SPECIFIED ON APPROVED CONSTRUCTION DRAWINGS.
3. TWO BARRICADES WILL BE REQUIRED, ONE AT EACH END OF THE CROSSING AS A DETERMINANT AGAINST FOOT TRAFFIC. IN SOME INSTANCES ADDITIONAL BARRICADES MAY BE REQUIRED.
4. COAT ANY EXPOSED PIPE WITH MAINT. STOCK #1887.

DUCKETT CREEK SANITARY DISTRICT
AERIAL CROSSING BARRICADE DETAIL
Sheet No. BSM 30C
Date 1-9-01



DUCKETT CREEK SANITARY DISTRICT
AERIAL CROSSING CONCRETE COLLAR DETAIL
Sheet No. BSM 30D
Date 1-9-01

AS-BUILT

SEWER AND WATER LINE MEASUREMENTS

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Donald W. Taylor, MISSOURI PROFESSIONAL LAND SURVEYOR
DATE

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PHOENIX VILLAGE OFFICE PARK AT WINGHAVEN
SEWER DETAILS - AREA "B" PHASE 1

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DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
P.M.G.	01/06/03	G.M.S.	01/06/03	202-2855	C7.3 of 8

Phoenix Office Area B App 8/19/05 PAK
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