General Contractor's
As-Built Drawings

CITY OF WICHITA, KANSAS

IMPROVEMENTS TO THE S-WELL SYSTEM

(WITH EQUUS BEDS WELLFIELD LINE VALVE IMPROVEMENTS)

JUNE 1996

PLANS PREPARED BY:

MID-KANSAS ENGINEERING CONSULTANTS, INC.
WICHITA, KANSAS

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D.L. Moore
6-11-96

MID-KANSAS ENGINEERING CONSULTANTS, INC
411 N WEBB ROAD
WICHITA, KS 67206
316 684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-...
PROJECT NAME

TITLE SHEET
SHEET TITLE

DAC	RRT
DESIGN BY:	DRAWN BY:
AUGUST, 1995	93001
DATE	JOB NO.

As-Builts S-Wells

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTAIN HIS OPERATIONS TO PERMIT TRAFFIC THROUGH AND ALONG ALL COUNTY, CITY AND STATE ROADS. THE CONTRACTOR SHALL ERECT WARNING SIGNS, DETOUR SIGNS, FLASHING LIGHTS, AND BARRICADES TO ENSURE SAFETY AS DIRECTED IN THE GENERAL CONDITIONS OF THE SPECIFICATIONS. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.

2. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE CITY AND ALL UTILITY COMPANIES THROUGH DIG SAFE PRIOR TO THE BEGINNING OF CONSTRUCTION AND SHALL REQUEST THAT ANY EXISTING LINES BE FLAGGED.

   CITY OF WICHITA WATER & SEWER DEPARTMENT
   455 NORTH MAIN
   WICHITA, KANSAS 67202
   ATTN: JERRY BLAIN, SUPERINTENDENT OF PRODUCTION AND PUMPING
   (316)268-4963

   CITY OF WICHITA DEPT. OF PARKS & RECREATION
   455 NORTH MAIN
   WICHITA, KANSAS 67202
   ATTN: TIM MARTZ, ACTING DIRECTOR
   (316)268-4638

   BOTANICA
   701 AMIDON
   WICHITA, KANSAS 67203
   ATTN: DON BUMA, DIRECTOR
   (316)264-0448

   DIG SAFE
   1-(800) 344-7233

3. THE UTILITIES (WATER, GAS, TELEPHONE, ELECTRICAL, ETC.) AS LOCATED ON THE PLANS ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING TRENCHING OPERATIONS TO AVOID DAMAGING THESE LINES. THE CONTRACTOR SHOULD COORDINATE ANY TRENCHING OPERATIONS THROUGH DIG SAFE TO AVOID ANY DAMAGE TO THE LINES. IF ANY LINES ARE DAMAGED THEY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

4. THE CONTRACTOR SHALL RESTORE ALL DITCHES, CHANNELS, BANK STABILIZATION, SWALES, ROADS, SHOULDERS, PAVEMENT ENTRANCES, AND BANKS TO THEIR ORIGINAL SLOPE AND GRADES. WHERE EXISTING ENTRANCE PIPE, DRAINAGE PIPE, SPRINKLER SYSTEMS, ROADS, SIDEWALKS, DRIVES, SIGNS, MAILBOXES, FENCES, ETC., CONFLICT WITH THE PROPOSED WORK HEREIN THEY SHALL BE REMOVED AND REPLACED OR RESET IN LIKE KIND. ALL OF THE ABOVE INCLUDING TREES, SHRUBS, GRASS, SOD AND OTHER LANDSCAPING, SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR PIPE.

5. POSITIVE DRAINAGE SHALL BE PROVIDED FOR ALL AREAS ON OR NEAR SPOIL AREAS. NATURAL DRAINAGE WAYS SHALL BE MAINTAINED.

6. DEMOLITION MATERIALS SHALL BE REMOVED FROM THE SITE TO AN APPROVED DISPOSAL SITE.

7. ALL CONCRETE SHALL BE CLASS I (SEE SPECIFICATIONS). ALL CONCRETE SHALL HAVE A SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF f'c = 4000 PSI.

   ALL GROUT SHALL BE SAND MIX. CHAMFER ALL EXPOSED EDGES WITH 3/4 INCH MOLDING.

8. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. MIN. LAP LENGTHS ARE AS FOLLOWS: #4 – 1'-4", #5 – 1'-8", #6 – 2'-0".

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL 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 OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH STATE LAWS.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW OF RAW WATER THROUGH CONSTRUCTION (SEE "CONSTRUCTION PRIORITY LIST"). COST OF MAINTAINING FLOW OF RAW WATER THROUGH CONSTRUCTION WILL NOT BE PAID FOR SEPARATELY AND SHALL BE CONSIDERED SUBSIDIARY TO THE OTHER ITEMS OF WORK. THIS SHALL NOT BE LIMITED TO THE FOLLOWING, BUT INCLUDE SOME OF THE FOLLOWING:
    a.) TEMPORARY ELECTRICAL.
    b.) TEMPORARY PIPING.
    c.) TEMPORARY PUMPING

11. ALL ELEVATIONS ARE CITY DATUM.

12. ANY EXCESS EXCAVATION SHALL BE REMOVED FROM THE SITE AT CONTRACTOR'S EXPENSE, UNLESS DIRECTED OTHERWISE ON THE SITE PLANS.

13. ALL BACKFILL AT THE SITE AND ALL TRENCHES IN STREETS AND UNDER PAVED PARKING SHALL BE COMPACTED TO MINIMUM OF 95% OF ASTM D-698.

14. ALL OTHER TRENCHES SHALL BE COMPACTED TO MINIMUM OF 90 % OF ASTM D-698

15. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE REPLANTED BY THE CONTRACTOR, AS FOLLOWS.

    GRASS SEED – FESCUE, K-31 GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF 250 LBS. PER ACRE.

    FERTILIZER – FERTILIZER SHALL CONTAIN A MINIMUM OF 12% NITROGEN, 24% PHOSPHORUS, AND 12% POTASSIUM. FERTILIZER SHALL BE DISTRIBUTED AT A MINIMUM RATE OF 200 LBS. PER ACRE.

    MULCH – MULCH SHALL BE APPLIED TO ALL AREAS WITH SLOPES GREATER THAN 5:1. APPLY MULCHING AT THE RATE OF 2 TONS PER ACRE. SEE SPECIFICATIONS FOR APPLICATION METHOD.

16. ALL BACKFILL IN TRENCHES SHALL BE TYPE 1 UNLESS SPECIFIED OTHERWISE. EXISTING MATERIAL WITH ROCKS 3" IN DIAMETER AND SMALLER CAN BE USED FOR BACKFILL MATERIAL ABOVE PIPE ZONE IN THE PIPE TRENCH ZONE.

17. ALL BOLTS AND NUTS FOR BURIED PIPE SHALL BE CORTEN.

18. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL PIPE LENGTHS PRIOR TO ORDERING MATERIAL

19. PIPE DEFLECTIONS AS CALLED OUT ON THE DRAWINGS SHALL BE MADE USING A COMBINATION OF FITTINGS AND PIPE JOINT DEFLECTIONS. PIPE JOINT DEFLECTIONS SHALL NOT EXCEED THE PIPE MANUFACTURER'S RECOMMENDATIONS.

20. GRADING IS SHOWN ON THE ELECTRICAL DUCTBANK PLAN SHEETS. CONTRACTOR SHALL GRADE FILL AREAS TO DRAIN. CONTRACTOR SHALL PROVIDE AND PLACE FILL AND SHALL GRADE SITES AS SHOWN SUBSIDIARY TO OTHER ITEMS OF WORK.

21. AFTER COMPLETION OF OTHER WORK, THE CONTRACTOR SHALL RESTORE ALL PAVEMENT, BIKE PATH, WALKING PATH, EXERCISE AREAS, GUARD POSTS AND SIGNS DAMAGED OR REMOVED BY HIS OPERATIONS. PAVEMENT AND BIKE PATH REMOVAL AND REPLACEMENT IS CALLED OUT ON THE ELECTRICAL DUCTBANK PLAN SHEETS. EXISTING SIM PARK DRIVE PAVEMENT IS ASPHALT WITH AN 18" WIDE CONCRETE PAD ALONG BOTH EDGES. THE CONTRACTOR WILL NOT BE REQUIRED TO REPLACE PORTIONS OF THE 18" CONCRETE PAD REMOVED BY HIS OPERATIONS.

22. THE CONTRACTOR SHALL ADJUST NEW WELLHOUSE LOCATIONS ACCORDING TO COMPLETED NEW WELL LOCATIONS.

23. THE CONTRACTOR MAY REMOVE TREES MARKED ON THE PLAN SHEETS WITH AN "X". THE CONTRACTOR SHALL NOT REMOVE TREES THAT ARE NOT MARKED FOR REMOVAL WITHOUT THE PRIOR APPROVAL OF THE ENGINEER. TREE REMOVAL SHALL BE SUBSIDIARY TO OTHER ITEMS OF WORK.

CONSTRUCTION PRIORITY LIST

LEVEL 1 – HIGHEST PRIORITY

A. SHUT DOWN AND DRAIN S-WELL PIPELINE.
B. CONNECT NEW 20" PIPE INTO EXISTING S-WELL PIPE AND INSTALL 20" BUTTERFLY VALVE @ STA. 10+06.50.
C. DISCONNECT POWER AND CONTROL WIRING TO S-6 AND S-7.
D. WITH COMPLETED INSTALLATION AND THRUST RESTRAINT OF THE NEW 20" BUTTERFLY VALVE, WELLS S-1 THROUGH S-5 SHALL BE AVAILABLE FOR OPERATION.

LEVEL 2 – CAN BE STARTED AFTER LEVEL 1 IS COMPLETED.

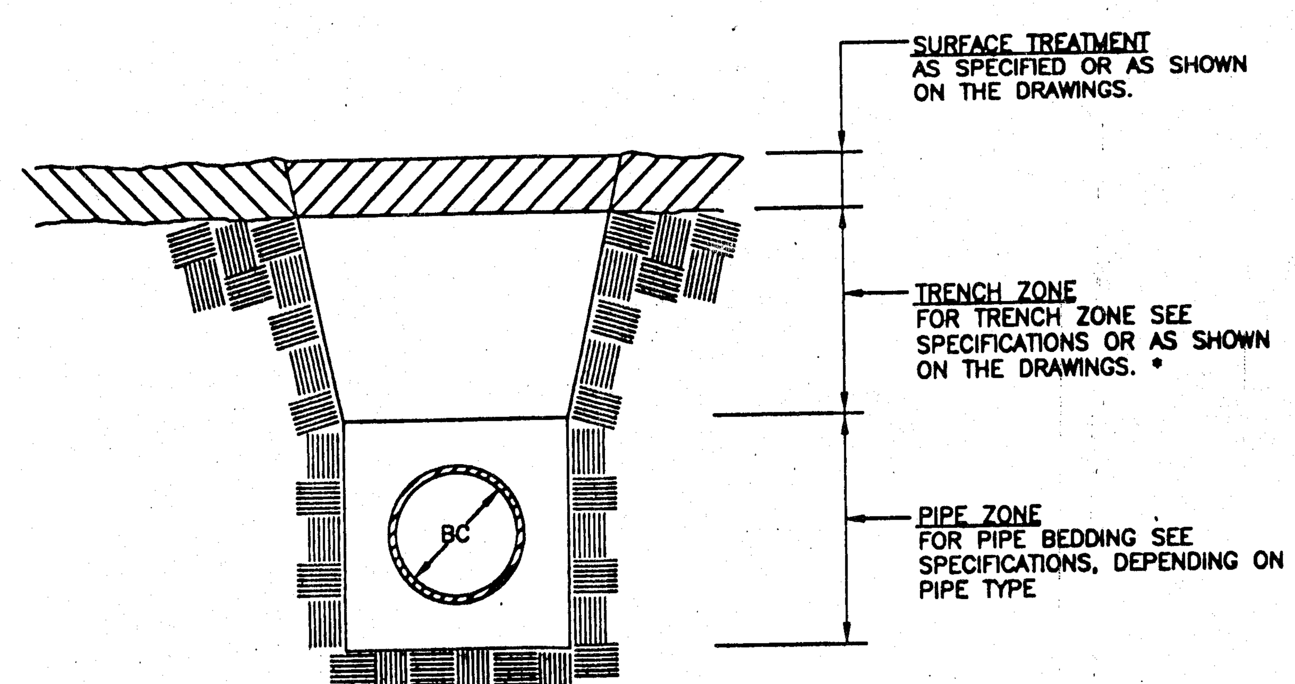
A. INSTALL NEW TRANSMISSION PIPE.
B. CONSTRUCT NEW WELLS S-6, S-9, S-10, AND S-11.
C. CONSTRUCT NEW WELLHOUSES S-6, S-9, S-10, AND S-11. ADJUST WELLHOUSE LOCATIONS ACCORDING TO COMPLETED NEW WELL LOCATIONS.
D. CONSTRUCT IMPROVEMENTS TO WELLHOUSE S-7.
E. CONSTRUCT MAIN ELECTRICAL DUCT BANK AND BRANCH ELECTRICAL DUCT BANKS (BRANCH ELECTRICAL DUCT BANK S-1E SHALL BE CONSTRUCTED DURING JANUARY AND FEBRUARY).
F. ABANDON EXISTING S-WELL PIPELINE FROM S-5 TO S-7.
G. ABANDON 20" N-WELL TIE LINE IN PLACE.
H. DEMOLISH EXISTING WELLHOUSES S-6, N-2, AND N-3.

LEVEL 3 – CAN BE STARTED AFTER LEVEL 2 IS COMPLETED

A. SHUT DOWN & DRAIN S-WELL PIPELINE.
B. INSTALL NEW RESTRAINED BUTTERFLY VALVES IN WELLHOUSES S-1 TO S-5.
C. START OPERATION OF S-6, S-7, S-9, S-10, AND S-11.

LEVEL 4 – CAN BE STARTED AFTER LEVEL 3 IS COMPLETED

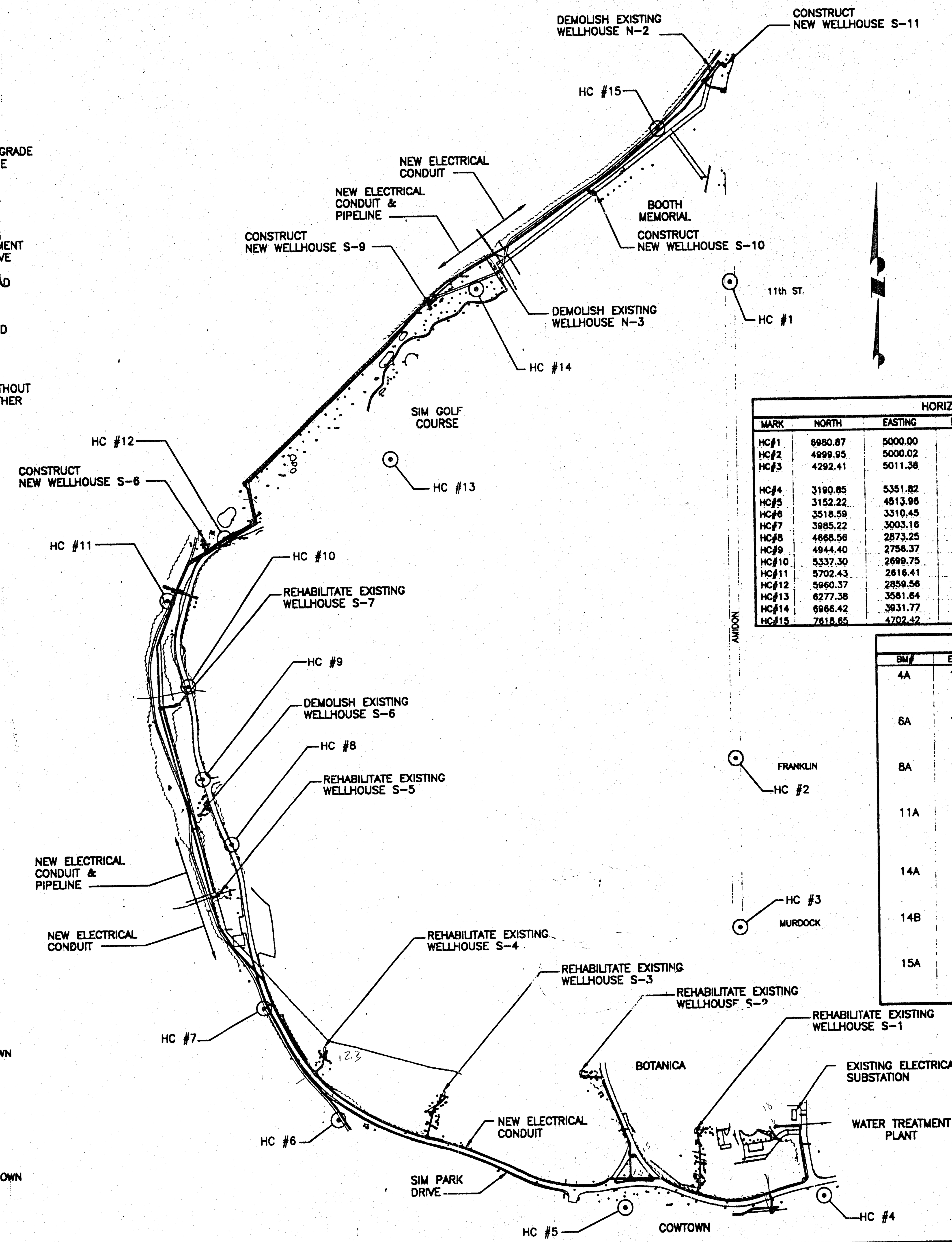
A. CONSTRUCT IMPROVEMENTS TO WELLHOUSES S-1 TO S-5. BRING WELLHOUSES ON LINE AS THEY ARE COMPLETED.
B. CONSTRUCT IMPROVEMENTS TO S-8.



*NOTE: EXISTING MATERIAL FREE OF ROCKS 3" AND LARGER CAN BE USED FOR BACKFILL IN THE TRENCH ZONE PROVIDED THE MATERIAL CAN BE COMPACTED TO 95% OF ASTM D 698 UNDER STREETS.

TYPICAL SECTION OF BURIED PIPE

NO SCALE



HORIZONTAL CONTROL				
MARK	NORTH	EASTING	ELEVATION	DESCRIPTION
HC#1	6980.87	5000.00	–	THIMBLE @ ℄ AMIDON & 11th
HC#2	4999.95	5000.02	–	THIMBLE @ ℄ AMIDON & FRANKLIN
HC#3	4292.41	5011.38	–	5/8" REBAR W/MKEC ID. CAP 48' S. & 11' E. ℄ AMIDON & MURDOCK
HC#4	3190.85	5351.82	112.31	5/8" REBAR W/MKEC ID. CAP
HC#5	3152.22	4513.96	112.86	5/8" REBAR W/MKEC ID. CAP
HC#6	3518.59	3310.45	114.78	5/8" REBAR W/MKEC ID. CAP
HC#7	3985.22	3003.16	122.34	5/8" REBAR W/MKEC ID. CAP
HC#8	4668.56	2873.25	119.52	5/8" REBAR W/MKEC ID. CAP
HC#9	4944.40	2756.37	128.35	5/8" REBAR W/MKEC ID. CAP
HC#10	5337.30	2699.75	128.80	5/8" REBAR W/MKEC ID. CAP
HC#11	5702.43	2616.41	115.59	5/8" REBAR W/MKEC ID. CAP
HC#12	5960.37	2859.56	122.69	5/8" REBAR W/MKEC ID. CAP
HC#13	6277.38	3561.64	123.14	5/8" REBAR W/MKEC ID. CAP
HC#14	6966.42	3931.77	121.39	5/8" REBAR W/MKEC ID. CAP
HC#15	7618.65	4702.42	120.08	5/8" REBAR W/MKEC ID. CAP

BENCHMARKS		
BM#	ELEVATION	DESCRIPTION
4A	114.114	"□" CUT ON EAST CORNER INLET @ WEST DRIVE ENTRANCE SOUTH OF THE WATER TREATMENT PLANT
6A	115.61	"□" CUT ON SOUTH SIDE CONCRETE BASE OF STEEL HLP ± 150' E.S.E. OF HC #6
8A	115.04	"□" CUT ON CONCRETE SIDEWALK @ N.E. CORNER OUTSIDE FITNESS CENTER ± 250' SOUTH OF HC #[illegible]
11A	118.228	"□" CUT ON S.E. CORNER CONCR[illegible] BASE OF WATER TRANSMISSION L[illegible] CROSSING RIVER ± 80' NORTH OF HC #11
14A	114.83	"□" CUT ON CONCRETE BASE OF DRINKING FOUNTAIN WEST OF H[illegible] #14
14B	124.06	TOP AND CENTER OF CONCRE[illegible] WATER LINE MONUMENT N.W. [illegible] HC #14
15A	120.675	RR SPIKE IN NORTH FACE [illegible] @ S.W. CORNER OF AMIDON [illegible] 12th ST. NORTH

KEY MAP

SCALE: 1" = 300'

300 0 300 600

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WE[illegible]
PROJECT NAME

KEY MAP AND GENERAL N[illegible]
SHEET TITLE

DAC
DESIGN BY:

RRT
DRAWN BY:

AUGUST, 1995
DATE

93001
JOB NO.


S-WELL IMPROVEMENTS
PIPING PLAN/PROFILE
WICHITA WATER & SEWER DEPARTMENT
M.K.E.C. INC.
DESIGN BY: DAC/DLM DRAWN BY: RRT
CHECKED BY: DLM DATE: AUGUST
CAUTION!! EXISTING 2400V DIRECT BURY POWER CABLE IS ADJACENT TO THE EXIST. WATER PIPE.
STA. 0+00.00 N 4462.40 E 2772.76 BEGIN NEW PIPELINE. LOCATE AND REMOVE EXISTING 16"x20" CONC. REDUCER. REMOVE 16" CONC. PIPE AS REQ'D. INSTALL 20" ADAPTER (AS REQ'D.) 45° BEND.
CONNECT INTO EXISTING PIPING
PLUG EXISTING 16" PIPE WITH CONCRETE.
NEW ELECTRICAL DUCTBANK. SEE ELECTRICAL DUCTBANK PLAN SHEETS.
CAUTION!! 2400V POWER CABLE
EXISTING 16" CONC. PIPE ABANDON IN PLACE.
DEMOLISH EXIST. WELLHOUSE S-6. SEE SHEET 22 FOR WELLHOUSE DEMOLITION PLANS.
STA. 5+99.50 N 5037.76 E 2646.17 P.I.
EXISTING 12" CI PIPE ABANDON IN PLACE.
INSTALL NEW 20" PIPE
CAUTION!! EXISTING 2400V DIRECT BURY POWER CABLE IS ADJACENT TO THE EXISTING WATER PIPE.
STA. 10+01.50 = STA. 19+92.23 N 5435.61 E 2588.55
STA. 20+94.39 N 5537.74 E 2585.95 P.I.
BIKE PATH
REMOVE EXIST. 12" PIPE AS REQ'D. PLUG END OF EXIST. PIPE WITH CONCRETE.
STA. 0+57.43 N 4514.13 E 2786.31 20" BUTTERFLY VALVE W/VALVE BOX
STA. 0+37.43 N 4494.81 E 2791.49 45° BEND
6°41'57"
6°47'03"
PLUG EXISTING 12" PIPE WITH CONCRETE.
STA. 8+19.80 N 5255.89 E 2614.58 20"x20"x12" TEE
SIM PARK DRIVE
REHABILITATE EXISTING WELLHOUSE S-5. SEE SHEET 23 FOR WELLHOUSE REHABILITATION PLANS.
REHABILITATE EXISTING WELLHOUSE S-7. SEE SHEET 23 FOR WELLHOUSE REHABILITATION PLANS.
BIKEPATH Removed & Replaced on this entire sheet.
Existing Line 22" Above New Line.
PLAN
SCALE: 1"=40'
PIPE ELEVATIONS ARE TO TOP OF PIPE UNLESS SPECIFIED OTHERWISE.
PROFILE
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'
20" ADAPTER (AS REQ'D) & 45° BEND
45° BEND
20" BUTTERFLY VALVE W/VALVE BOX
HORIZONTAL DEFLECTION
20"x20"x12" TEE
HORIZONTAL DEFLECTION
MATCH LINE
EXISTING GRADE ON ℄ OF PIPE
TOP OF PROPOSED 20" PIPE
STA. 0+14.9 PROPOSED ELECTRICAL DUCT
20" PIPE @ 0.22%
20" PIPE @ +0.56%
20" PIPE @ 8.10%
STA. 0+00.00 BEGIN PIPELINE
STA. 0+20.00
STA. 0+37.43
STA. 0+57.43
STA. 5+99.50
(20') STA. 8+19.80
(20') STA. 10+01.50 = STA. 19+92.23
STA. 20+94.39
120
110
100
110.42
108.80
108.84
108.88
108.97
109.19
109.41
109.62
109.84
110.05
110.27
110.49
110.53
111.06
111.64
111.64
112.19
112.22
0 1 2 3 4 5 6 7 8 9 10 20 21
3

S-WELL IMPROVEMENTS
PIPING PLAN/PROFILE
WICHITA WATER & SEWER DEPARTMENT
M.K.E.C. INC.
DESIGN BY: DAC/DLM DRAWN BY: RRT
CHECKED BY: DLM DATE: AUGUST, 1995
FOR GRADING AT 66" PIPELINE CROSSING SEE ELECTRICAL DUCTBANK PLANS.
Bikepath Removed & Replaced to This Point.
CONSTRUCT NEW WELLHOUSE S-6. ROOF SLAB TOP EL=123.10 SEE SHEET 25.
CONSTRUCT NEW WELL S-6. N 5956.17 E 2722.17 SEE SHEET 24.
INSTALL NEW 16" PIPE
INSTALL NEW 20" PIPE
NEW ELECTRICAL DUCTBANK. SEE ELECTRICAL DUCTBANK PLAN SHEETS.
FOR SITE GRADING, SEE ELECTRICAL DUCTBANK PLANS.
S-6 STA. 1+45.59 NEW WELLHOUSE WALL T.O.P. EL. (10") = 117.16
STA. 29+43.03 N 6191.42 E 2964.46 P.I.
SAME ANGLES WERE KEPT ON ADJUSTED LINE
3°51'12.0"
26°49'29.0"
58°16'58.5"
21°12'00.0"
71°16'58.0"
GREEN
S-6 STA. 1+43.59 N 5944.93 E 2778.55 12"x10" REDUCER
36'-0"
STA. 23+33.87 N 5763.14 E 2666.85 P.I.
STA. 23+02.28 N 5733.41 E 2656.18 AIR RELEASE ASSEMBLY
Depth of 20" well line 3'6" to top of pipe
TH 1-95 N 5926± E 2768±
STA. 24+32.93 N 5853.92 E 2706.50 P.I.
STA. 25+37.51 N 5905.54 E 2797.46 AIR RELEASE ASSEMBLY
SIM PARK DRIVE
EXISTING 66" RCP WATER MAIN
STA. 25+40.51 = S-6 STA. 1+00 N 5907.02 E 2800.07 20"x20"x12" TEE 20"x16" REDUCER
STA. 20+94.39 N 5537.74 E 2585.95 P.I.
STA 24+23.28
STA. 27+67.56 N 6019.10 E 2997.53 P.I.
REFER TO SHEET 3 FOR CONTINUATION.
REFER TO SHEET 5 FOR CONTINUATION.
PLAN
SCALE: 1"=40'
NOTES:
1. CONTRACTOR SHALL SCHEDULE HIS WORK AT FAIRWAY CROSSING(BETWEEN STA. 27+67.56 AND STA. 29+43.03 SO THAT NO MORE THAN ONE HALF OF THE FAIRWAY IS OBSTRUCTED AT ANY TIME DURING GOLF COURSE HOURS. CONTRACTOR SHALL COORDINATE WITH THE PARKS DEPARTMENT.
2. CONTRACTOR SHALL REPAIR ANY DAMAGE DONE BY HIS OPERATIONS TO THE EXISTING SPRINKLER SYSTEM AT FAIRWAY CROSSING.
DARREL LYNN MOORE LICENSED 9065 KANSAS PROFESSIONAL ENGINEER 6-11-96
PIPE ELEVATIONS ARE TO TOP OF PIPE UNLESS SPECIFIED OTHERWISE.
3'6" to top of 20" from proposed Elev
MATCH LINE
22.5° BEND (UP)
22.5° BEND (DOWN)
AIR RELEASE
EXIST. 66" RCP
22.5° BEND (DOWN)
22.5° BEND (UP)
HORIZ. DEFLECTION
AIR RELEASE
20"x20"x12" TEE & 20"x16" REDUCER
BEGIN 16" PIPING
PROFILE
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'
EXISTING GRADE ON ℄ OF PIPE.
TOP OF PROPOSED 16" PIPE.
PROPOSED GRADE
TOP OF PROPOSED 20" PIPE.
120
110
100
20" PIPE @ 0.58%
20" PIPE @ +1.04%
20" PIPE @ +2.68%
16" PIPE @ 0.00%
16" PIPE @ -2.60%
16" PIPE @ -0.93%
16" PIPE @ -0.11%
STA. 22+93.81
STA. 23+02.28
STA. 23+10.28
(66") STA. 23+10.28
STA. 23+30.28
STA. 23+26.48
STA. 23+33.87
STA. 24+32.93
STA. 25+37.51
(20") STA. 25+40.51
STA. 25+45.21
STA. 26+11
STA. 27+31
STA. 27+67.56
STA. 28+78
STA. 29+43.03
112.22
112.80
113.34
116.02
113.05
115.16
113.59
113.67
114.36
114.70
116.50
117.50
117.58
117.52
117.52
117.52
115.21
113.88
113.72
113.42
112.70
112.68
112.63
112.57
112.46
112.35
112.24
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S-WELL IMPROVEMENTS
PIPING PLAN/PROFILE
WICHITA WATER & SEWER DEPARTMENT
M.K.E.C. INC.
DESIGN BY: DAC/DLM — DRAWN BY: RRT
CHECKED BY: DLM — DATE: AUGUST, 1995

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
P-C1	573.00	82.35	41.25	82.28	N45°36'18.3"E	08°14'03.2"
P-C2	573.00	111.90	56.13	111.72	S55°19'00.1"W	11°11'20.5"

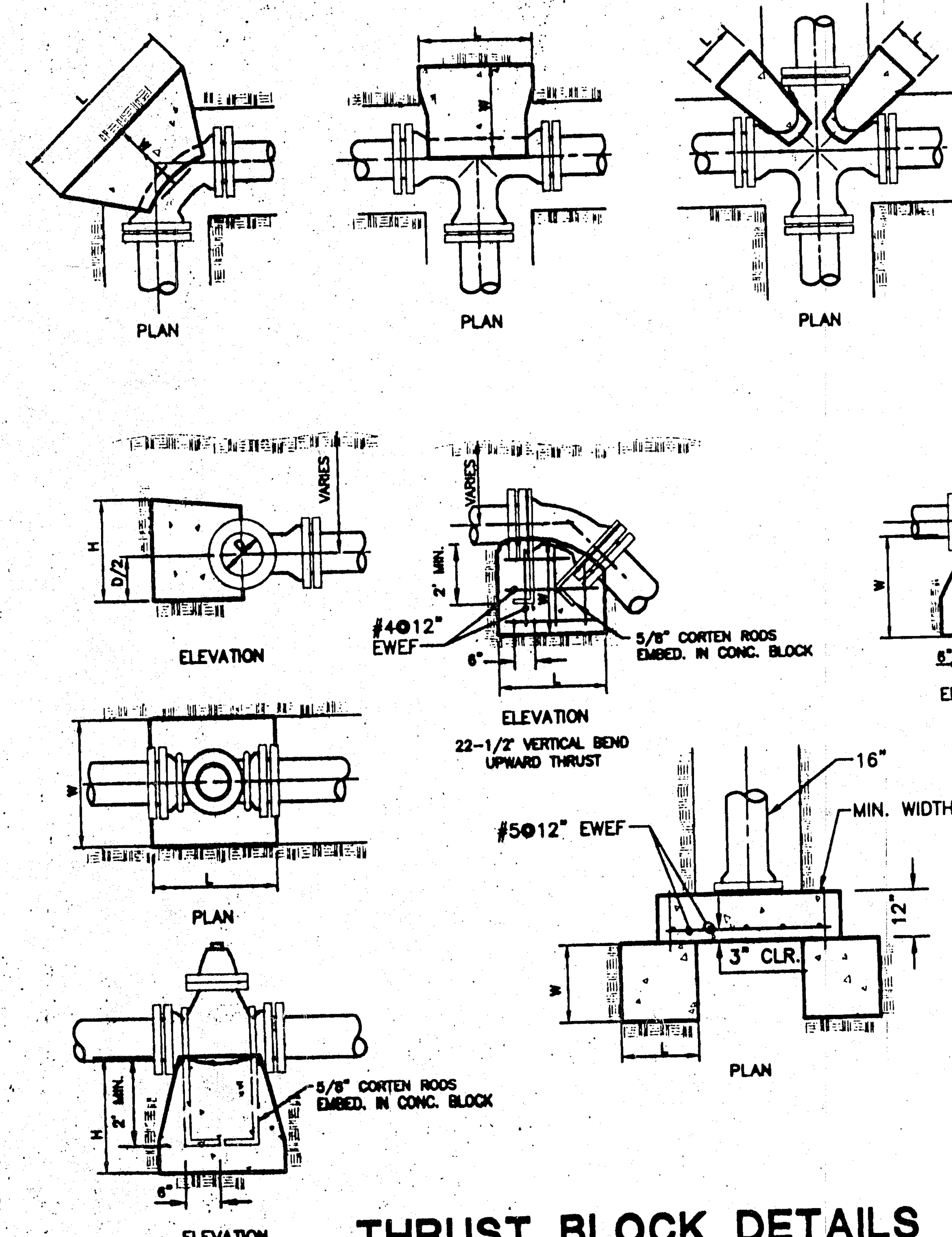
PLAN

SCALE: 1"=40'

PIPE ELEVATIONS ARE TO TOP OF PIPE UNLESS SPECIFIED OTHERWISE.

PROFILE

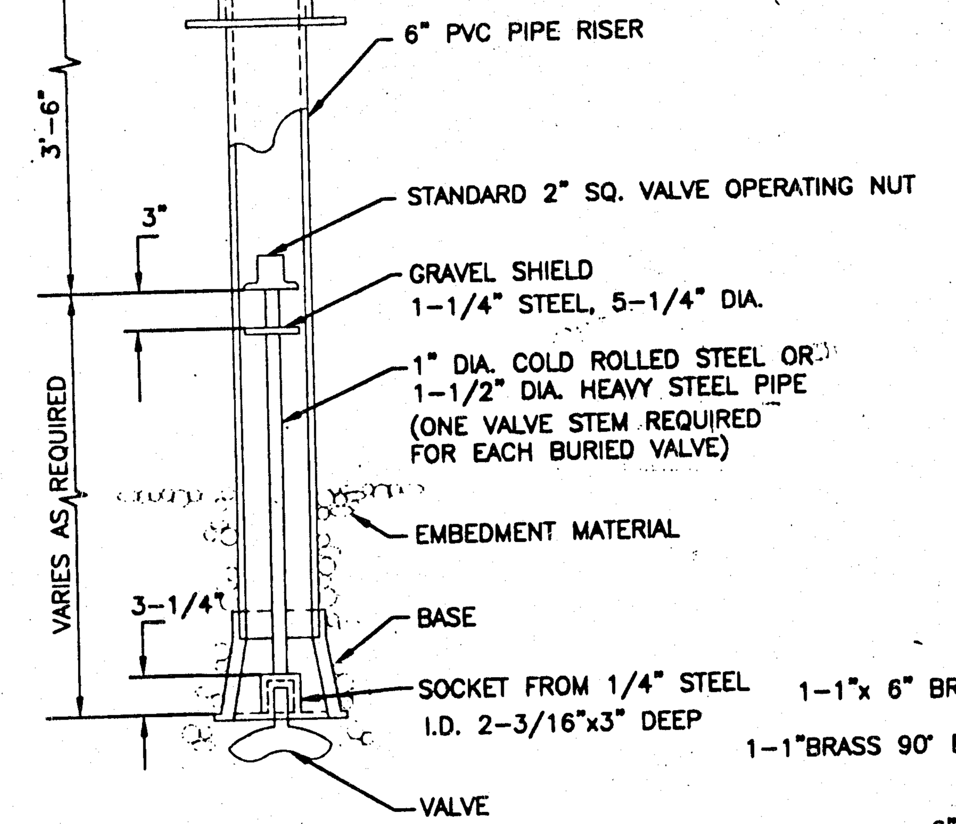
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



THRUST BLOCK DETAILS

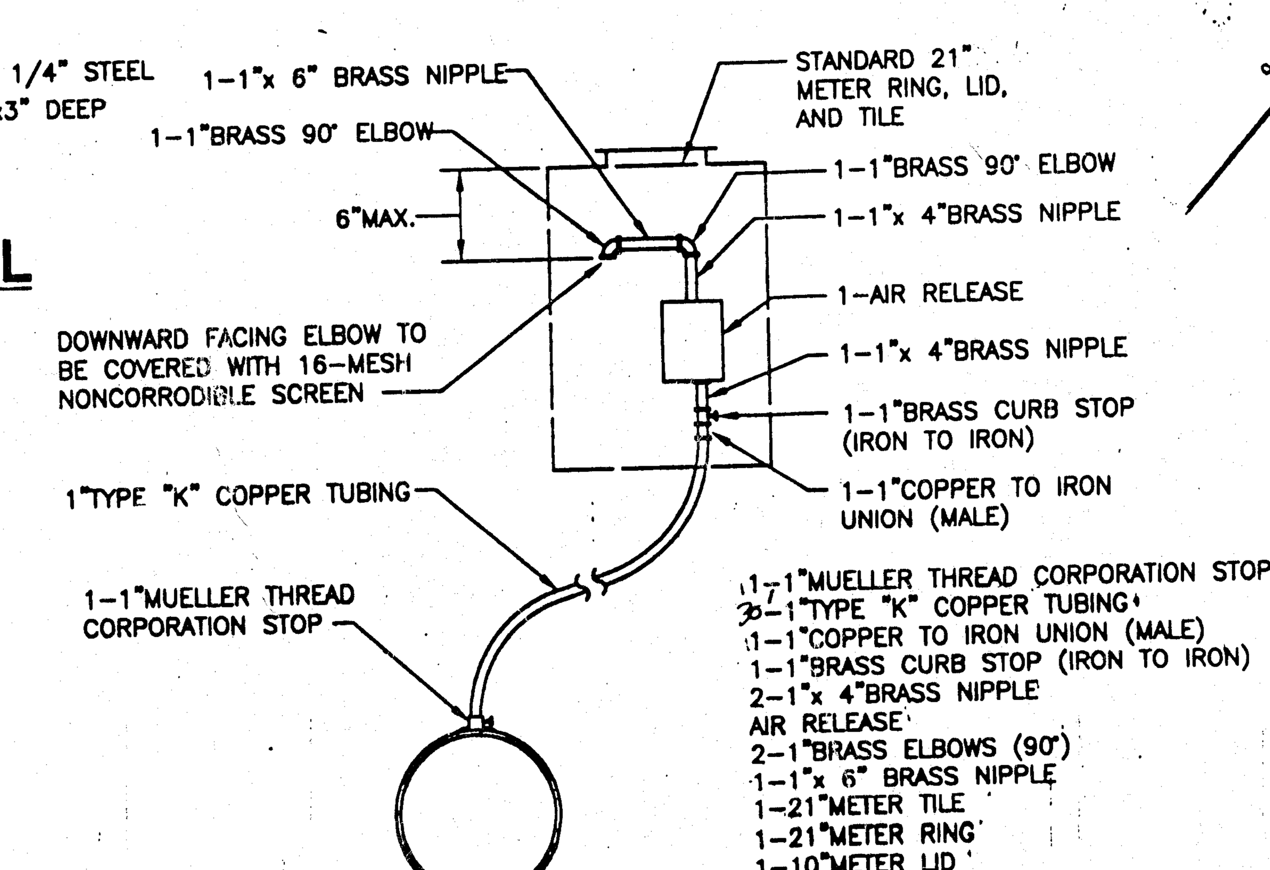
NO SCALE

THRUST BLOCK SCHEDULE				
LINE	FITTINGS & ANGLE	DIM "L"	DIM. "W"	DIM "H"
20"	45° BEND	6'-6"	4'-6"	6'-6"
20"	22.5° BEND	4'-6"	3'-0"	4'-6"
20"	11.25° BEND	3'-6"	2'-0"	3'-6"
20"	VALVE	5'-0"	7'-0"	7'-0"
20"	PLUG	5'-0"	3'-6"	5'-0"
20"x12"	TEE	5'-0"	3'-6"	5'-0"
20"x16"	REDUCER	3'-0"	4'-6"	4'-6"
16"	45° BEND	5'-0"	3'-6"	5'-0"
16"	22.5° BEND	3'-6"	2'-6"	3'-6"
16"	11.25° BEND	2'-6"	2'-0"	2'-6"
16"	PLUG	4'-6"	3'-0"	4'-6"
16"x10"	TEE	4'-6"	3'-0"	4'-6"
12"x10"	REDUCER	2'-0"	2'-6"	2'-6"



VALVE BOX DETAIL

NO SCALE



1-1"MUELLER THREAD CORPORATION STOP
30'-1"TYPE "K" COPPER TUBING
1-1"COPPER TO IRON UNION (MALE)
1-1"BRASS CURB STOP (IRON TO IRON)
2-1"x 4"BRASS NIPPLE
AIR RELEASE
2-1"BRASS ELBOWS (90°)
1-1"x 6" BRASS NIPPLE
1-21"METER TILE
1-21"METER RING
1-10"METER LID

AIR RELEASE ASSEMBLY

NO SCALE

DARREL LYNN MOORE
LICENSED
9055
KANSAS
PROFESSIONAL ENGINEER

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SY
PROJECT NAME

PIPING PLAN AND DETAILS
SHEET TITLE

DLM/DAC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECK
AUGUST, 1995	93001	6
DATE	JOB NO.	SHEET

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	671.19	223.73	112.91	222.70	N00°31'40.0"E	19°05'55.3"
C2	366.99	204.89	105.19	202.24	N88°20'36.1"W	31°59'19.3"
C3	443.15	128.44	64.67	127.99	S64°47'07.1"E	16°36'21.8"
C4	114.40	63.86	32.79	63.04	N67°34'39.1"E	31°59'10.5"
C5	640.68	201.70	101.69	200.87	N84°26'44.1"W	18°02'16.3"

NOTES:
1) CORE DRILL THROUGH SIDE OF EXISTING CONTROL CIRCUIT MANHOLE. SEAL AROUND CONDUITS TO PREVENT MOISTURE SEEPAGE INTO MANHOLE. REMOVE EXISTING CONDUIT AND EXISTING WIRES IN THE MANHOLE. REUSE EXISTING 4" CONDUIT TO THE EAST TO ROUTE CONTROL WIRES BACK TO CONTROL ROOM.
2) INSTALL ±80 LF DUCTBANK WITH SWEEPS INTO KG&E METERING CABINET. INSTALL CUSTOMER SIDE CABLES INTO METERING CABINET. ALL TERMINATIONS INSIDE CABINET WILL BE BY KG&E. CONTRACTOR SHALL COORDINATE STUB-UP LOCATIONS WITH KG&E.
3) METERING CABINET, DUCTWORK BETWEEN JUNCTION CABINET AND METERING CABINET, CABLE BETWEEN JUNCTION CABINET AND METERING CABINET, AND ALL CABLE TERMINATIONS IN THE METERING CABINET WILL BE INSTALLED BY KG&E.
4) PULL CABLE FROM XFR-S2 TO MH-S2 TO PREVENT CABLE DAMAGE.

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL
PROJECT NAME

ELECTRICAL DUCTBANK PLAN #1
SHEET TITLE

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

DANIEL LYNN MOORE LICENSED 9055 6-11-96 KANSAS PROFESSIONAL ENGINEER

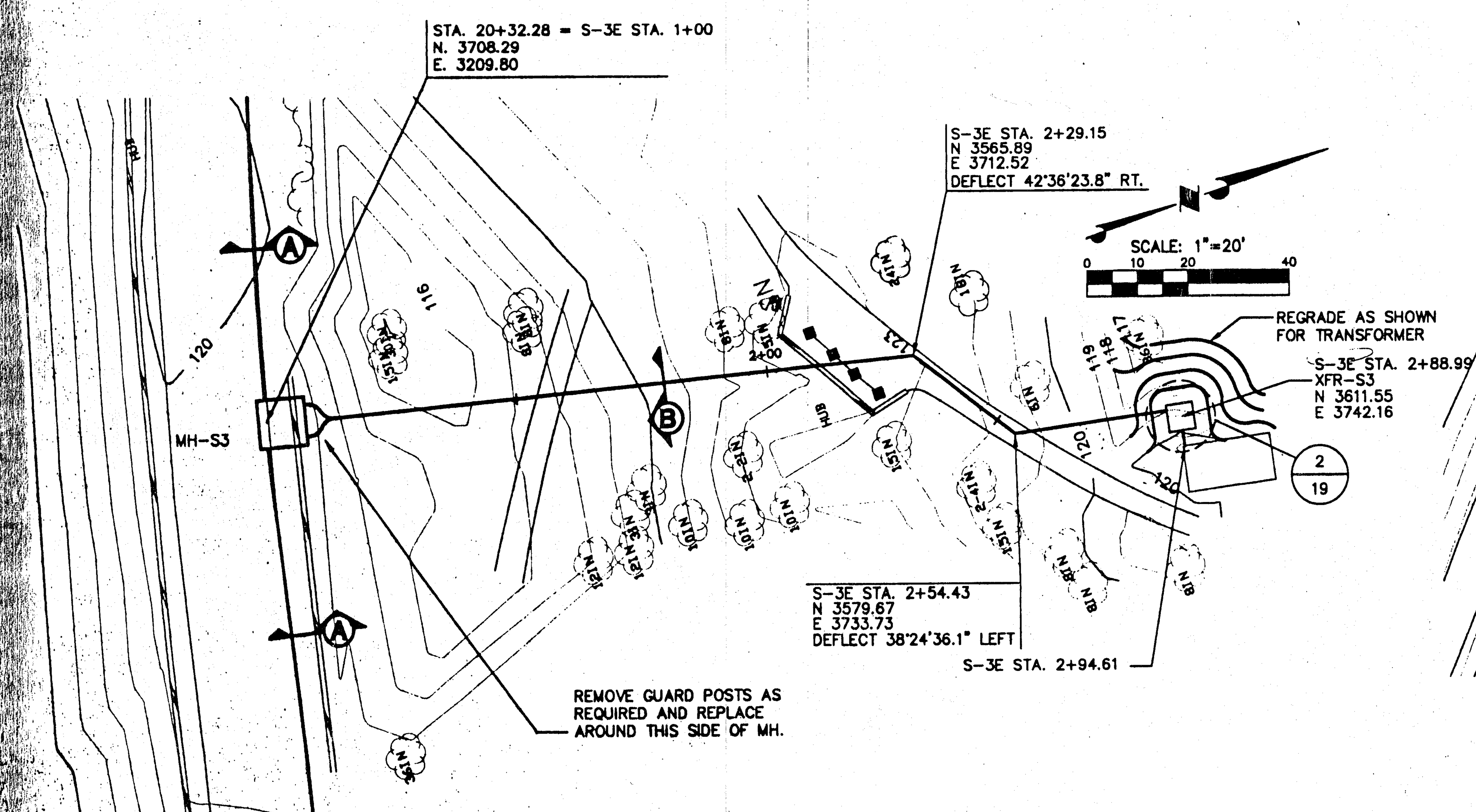
JWM/PBC	RRT
DESIGN BY:	DRAWN BY:
AUGUST, 1995	93001
DATE	JOB NO.

SHEET 7

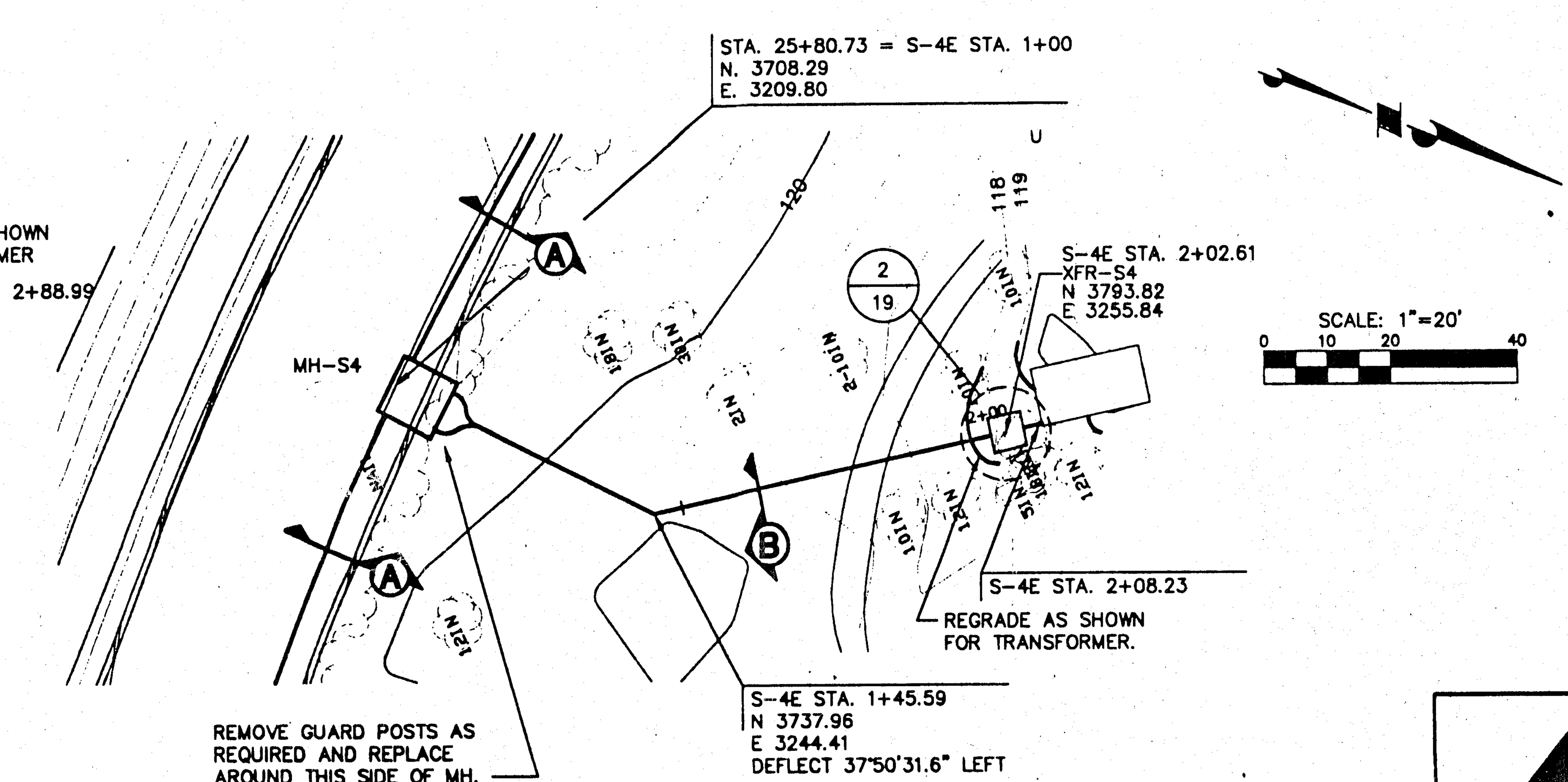
CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C6	337.85	96.18	48.42	95.86	S70°20'23.2"E	16°18'40.2"
C7	1198.57	174.09	87.20	173.93	N74°54'46.3"W	08°19'19.1"
C8	1131.31	360.51	181.79	358.98	N66°21'41.2"W	18°15'29.1"
C9	662.39	171.20	86.08	170.73	N51°21'29.1"W	14°48'31.7"
C10	886.91	241.52	121.51	240.77	N33°21'12.1"W	15°36'09.3"

NOTE:
ALL CONDUIT BENDS SHALL HAVE A MINIMUM OF 36" RADIUS.

ELECTRICAL DUCTBANK PLAN



WELLHOUSE S-3 ELECTRICAL FEED PLAN



WELLHOUSE S-4 ELECTRICAL FEED PLAN

NOTE:
C6 THROUGH C10 INDICATE CURVES IN THE ELETRICAL DUCTBANK. REFER TO CURVE TABLE ON THIS SHEET FOR CURVE INFORMATION.

DARREL LYNN MOORE
LICENSED 8055 KANSAS
PROFESSIONAL ENGINEER

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYS
PROJECT NAME

ELECTRICAL DUCTBANK PLAN #2
SHEET TITLE

JWM/PBC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED
AUGUST, 1995	93001	8
DATE	JOB NO.	SHEET

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C10	886.91	241.52	121.51	240.77	N33°21'12.1"W	15°36'09.3"
C11	921.70	230.00	115.60	229.41	N23°44'18.2"W	14°17'51.7"

ELECTRICAL DUCTBANK PLAN

No Trees were Removed on This Sheet

NOTE:
ALL CONDUIT BENDS SHALL HAVE A MINIMUM OF 36" RADIUS.

NOTE:
C10 AND C11 INDICATE CURVES IN THE ELECTRICAL DUCTBANK. REFER TO THE CURVE TABLE ON THIS SHEET FOR CURVE INFORMATION.

DARREL LYNN MOORE
7-10-95
KANSAS
PROFESSIONAL ENGINEER

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

ELECTRICAL DUCTBANK PLAN #3
SHEET TITLE

JWM/PBC
DESIGN BY:

RRT
DRAWN BY:

AUGUST, 1995
DATE

93001
JOB NO.

NOTE:
ALL CONDUIT BENDS SHALL HAVE A MINIMUM OF 36" RADIUS.

ELECTRICAL DUCTBANK PLAN

SCALE: 1"= 40'
0 20 40 80

DARREL LYNN MOORE LICENSED PROFESSIONAL ENGINEER KANSAS 7-10-96

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS IMPROVEMENTS TO THE S-WELL SYSTEM		
PROJECT NAME		
ELECTRICAL DUCTBANK PLAN #4		
SHEET TITLE		
JWM/PBC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST, 1995	93001	10
DATE	JOB NO.	SHEET

Paving was Removed & Area was Reseeded with Bermuda Grass Per Harold Cantrell, C.O.W. & Ron w/ Sims Golf Course.

ELECTRICAL DUCTBANK PLAN

NOTES
1. CONTRACTOR SHALL SCHEDULE HIS WORK AT FAIRWAY CROSSING (BETWEEN STA. 52+35.31 AND MH-P2) SO THAT NO MORE THAN ONE HALF OF THE FAIRWAY IS OBSTRUCTED AT ANY TIME DURING GOLF COURSE HOURS. CONTRACTOR SHALL COORDINATE WITH THE PARKS DEPARTMENT.
2. CONTRACTOR SHALL REPAIR ANY DAMAGE DONE BY HIS OPERATIONS TO THE EXISTING SPRINKLER SYSTEM AT FAIRWAY CROSSING.

NOTE:
ALL CONDUIT BENDS SHALL HAVE A MINIMUM OF 36" RADIUS.

SCALE: 1"= 40'
0 20 40 80

DARREL LYNN MOORE
PROFESSIONAL ENGINEER
KANSAS
7-10-96

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

ELECTRICAL DUCTBANK PLAN #5
SHEET TITLE

JWM/PBC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST, 1995	93001	11 / 41
DATE	JOB NO.	SHEET OF

NOTE:
ALL CONDUIT BENDS SHALL HAVE A MINIMUM OF 36" RADIUS.

ELECTRICAL DUCTBANK PLAN

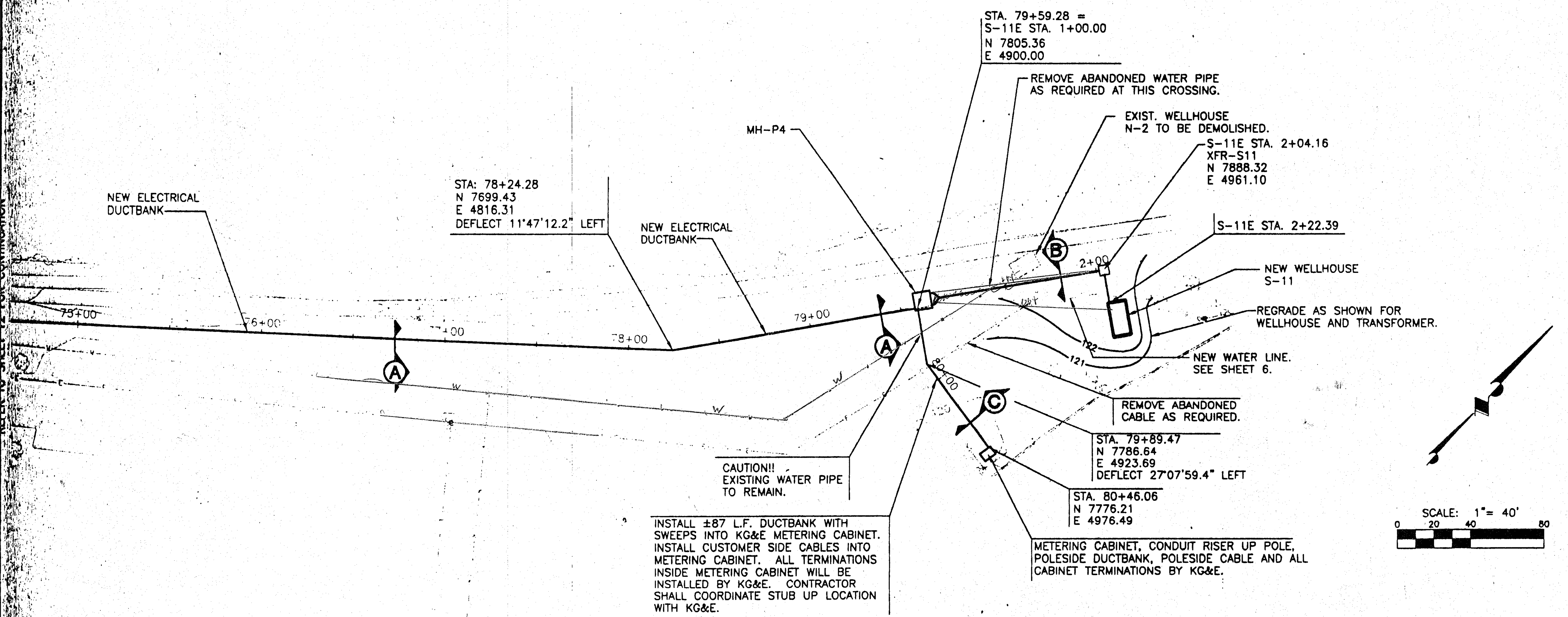
SCALE: 1"= 40'
0 20 40 80

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

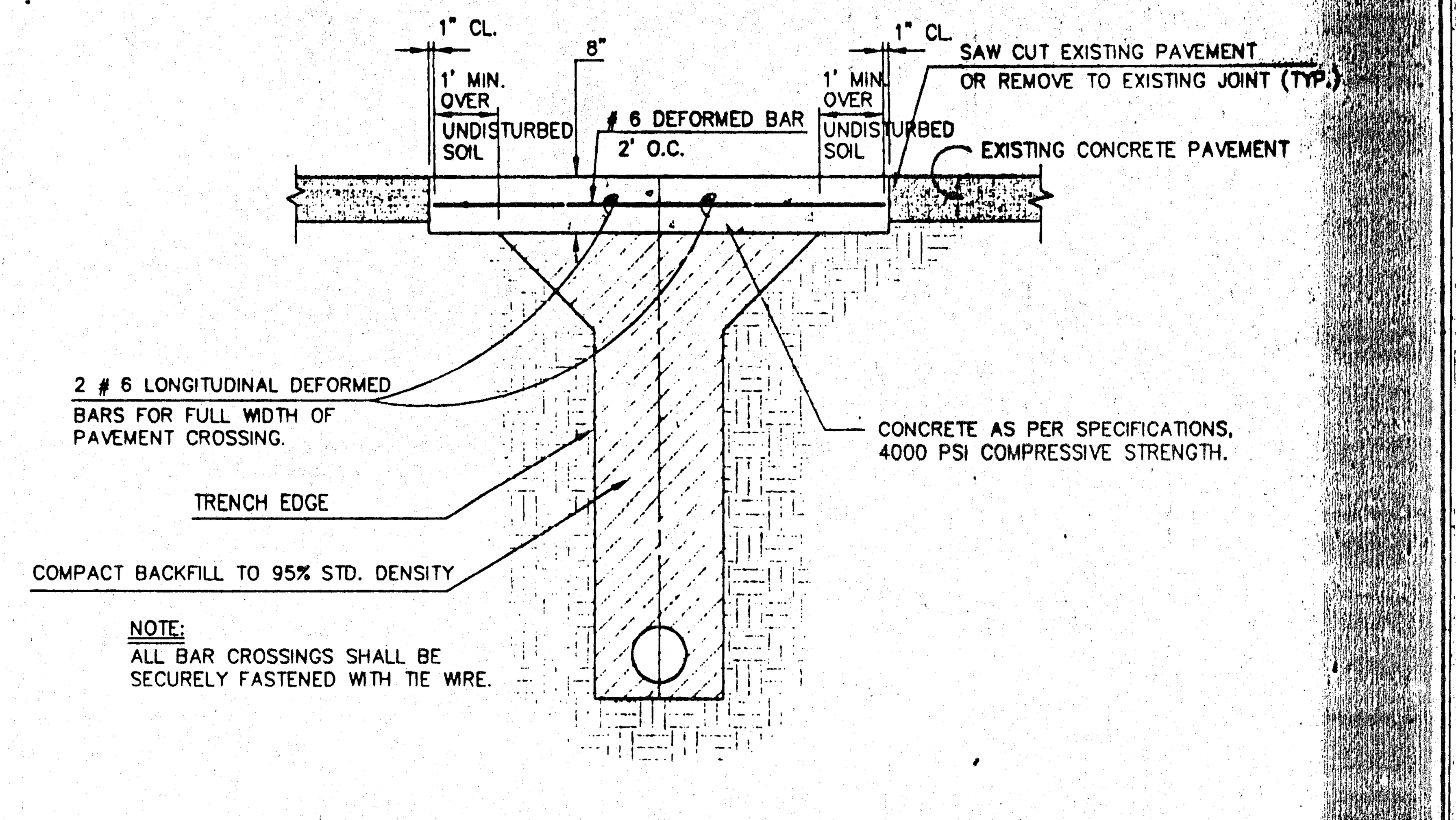
ELECTRICAL DUCTBANK PLAN #6
SHEET TITLE

JWM/PBC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST, 1995	93001	12 / 41
DATE	JOB NO.	SHEET/OF

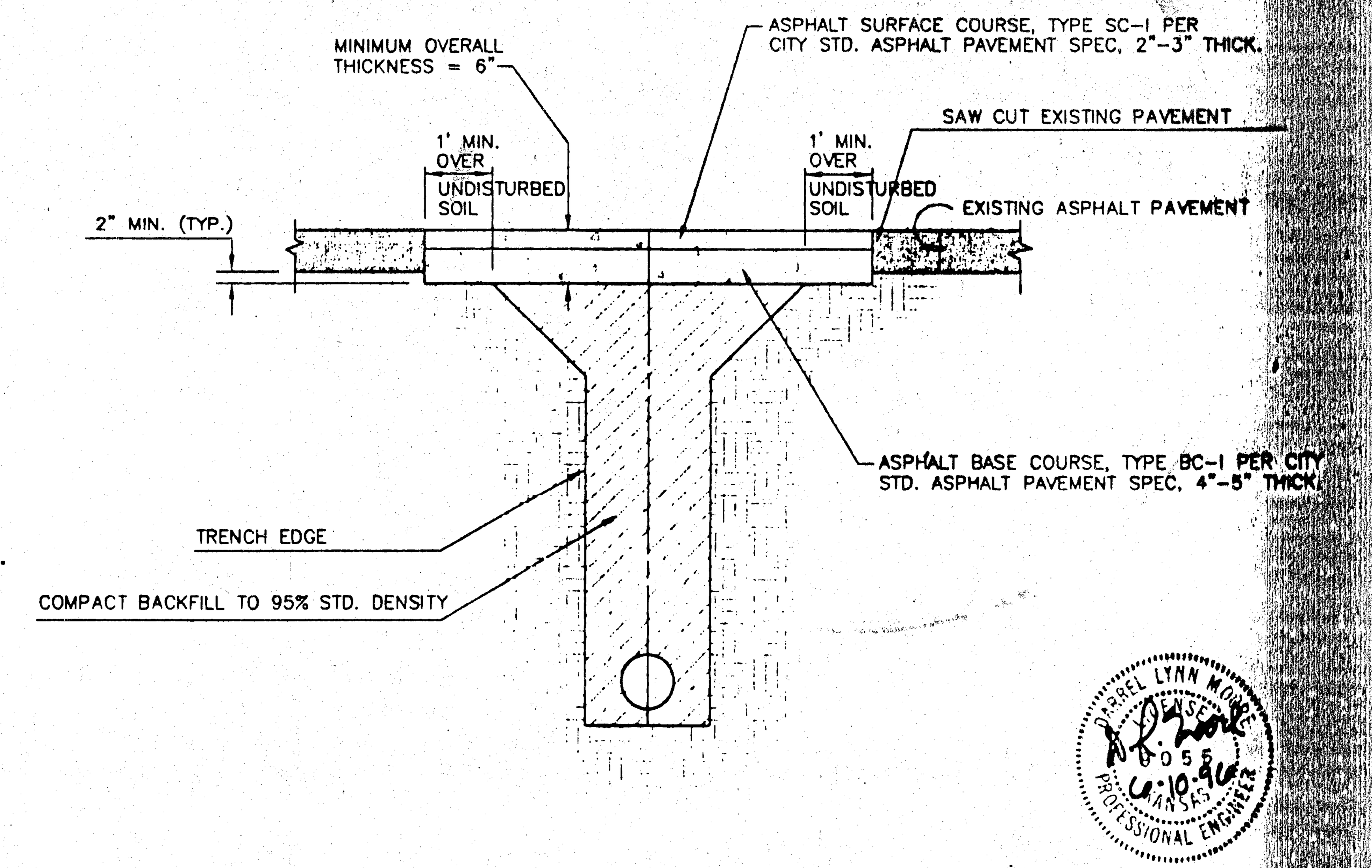


ELECTRICAL DUCTBANK PLAN

NOTE:
ALL CONDUIT BENDS SHALL HAVE A MINIMUM OF 36" RADIUS.



CONCRETE PAVEMENT REPLACEMENT DETAIL



ASPHALT PAVEMENT REPLACEMENT DETAIL

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

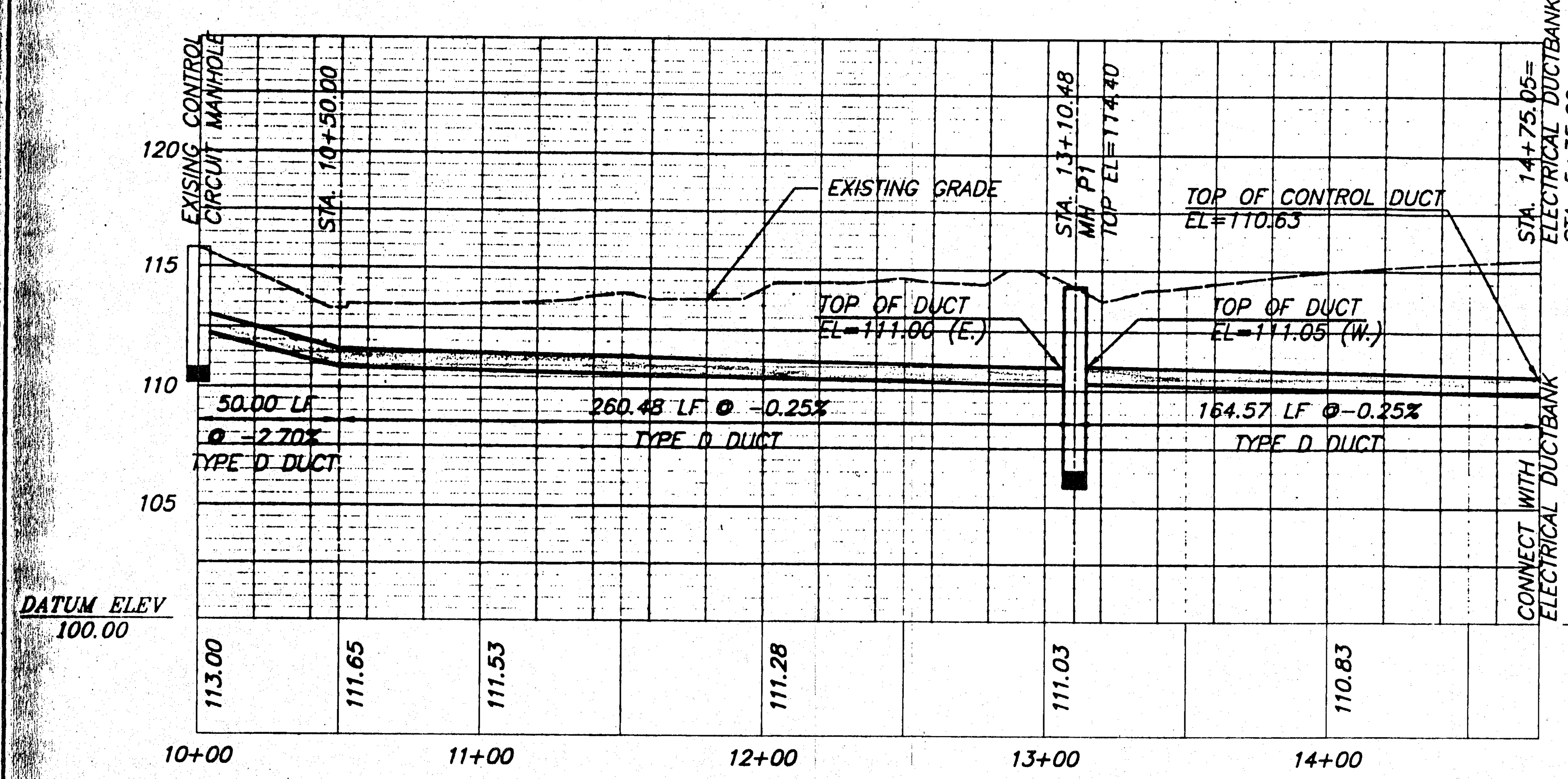
ELECTRICAL DUCTBANK PLAN #7
& PAVEMENT DETAIL
SHEET TITLE

JWM/PBC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST, 1995	93001	13 / 41
DATE	JOB NO.	SHEET/OF

WICHITA WATER & SEWER DEPARTMENT
S-WELL IMPROVEMENTS
ELECTRICAL DUCTBANK PROFILE #1
M.K.E.C. INC.
DESIGN BY: JWM/DLM DRAWN BY: RRT
CHECKED BY: DLM DATE: AUGUST, 1995

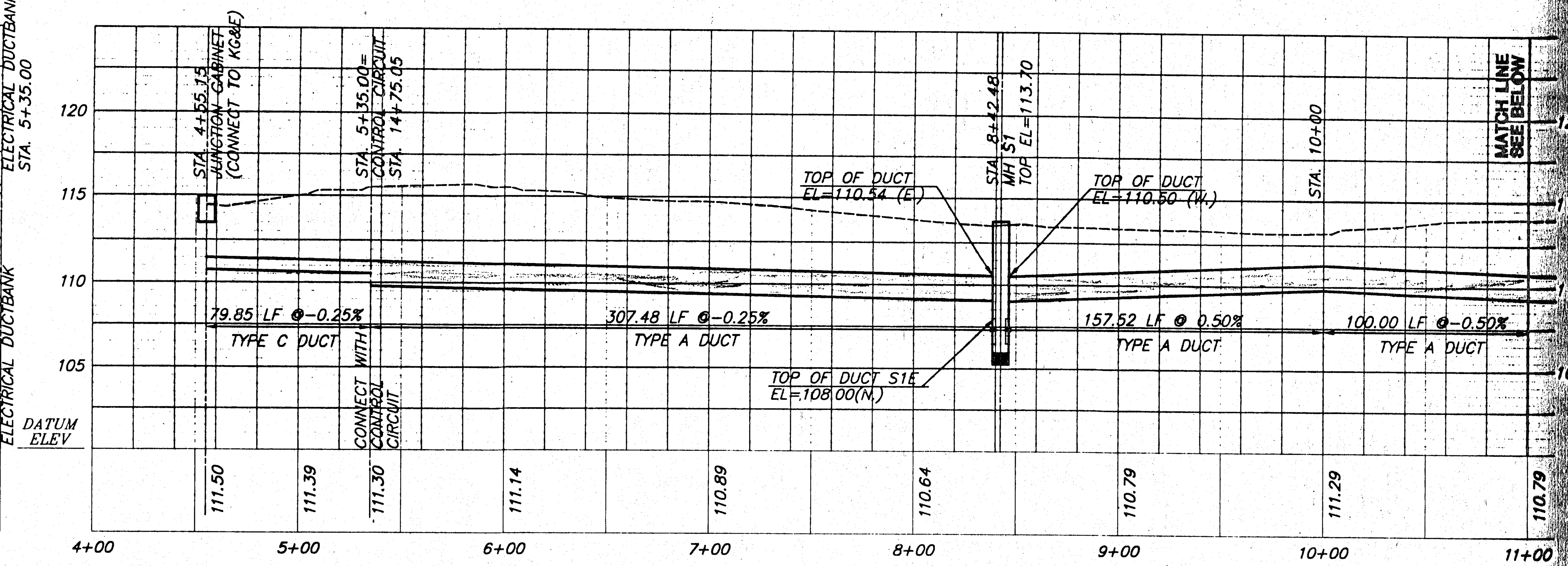
CONTROL PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



NOTE:

1. UTILITY LINES SHOWN ON THIS DRAWING ARE BASED ON AVAILABLE MAPS AND RECORDS AND HAVE BEEN FIELD VERIFIED WHEREVER POSSIBLE. THERE MAY BE OTHER UTILITY LINES THAT ARE NOT SHOWN. THE CONTRACTOR SHALL USE CAUTION WHEN DIGGING.
2. CONTRACTOR SHALL INSTALL THE ELECTRICAL CONDUIT TO THE GRADES SHOWN.

PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'

DARREL LYNN MOORE
LICENSED
9058
KANSAS
PROFESSIONAL ENGINEER

14 / 41

WICHITA WATER & SEWER DEPARTMENT
S-WELL IMPROVEMENTS
ELECTRICAL DUCTBANK PROFILE #2
M.K.E.C. INC.
DESIGN BY: JWM/DLM DRAWN BY: RRT
CHECKED BY: DLM DATE: AUGUST, 1995

PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'

NOTE:

1. UTILITY LINES SHOWN ON THIS DRAWING ARE BASED ON AVAILABLE MAPS AND RECORDS AND HAVE BEEN FIELD VERIFIED WHEREVER POSSIBLE. THERE MAY BE OTHER UTILITY LINES THAT ARE NOT SHOWN. THE CONTRACTOR SHALL USE CAUTION WHEN DIGGING.
2. CONTRACTOR SHALL INSTALL THE ELECTRICAL CONDUIT TO THE GRADES SHOWN.

PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'

DARREL LYNN MOORE
LICENSED
9058
KANSAS
PROFESSIONAL ENGINEER

WICHITA WATER & SEWER DEPARTMENT
S-WELL IMPROVEMENTS
ELECTRICAL DUCTBANK PROFILE #3
M.K.E.C. INC.
DESIGN BY: JWM/DLM DRAWN BY: RRT
CHECKED BY: DLM DATE: AUGUST, 1995

PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'

NOTE:

1. UTILITY LINES SHOWN ON THIS DRAWING ARE BASED ON AVAILABLE MAPS AND RECORDS AND HAVE BEEN FIELD VERIFIED WHEREVER POSSIBLE. THERE MAY BE OTHER UTILITY LINES THAT ARE NOT SHOWN. THE CONTRACTOR SHALL USE CAUTION WHEN DIGGING.
2. CONTRACTOR SHALL INSTALL THE ELECTRICAL CONDUIT TO THE GRADES SHOWN.

PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'

DARREL LYNN MOORE
LICENSED
9055
11-9-95
KANSAS
PROFESSIONAL ENGINEER

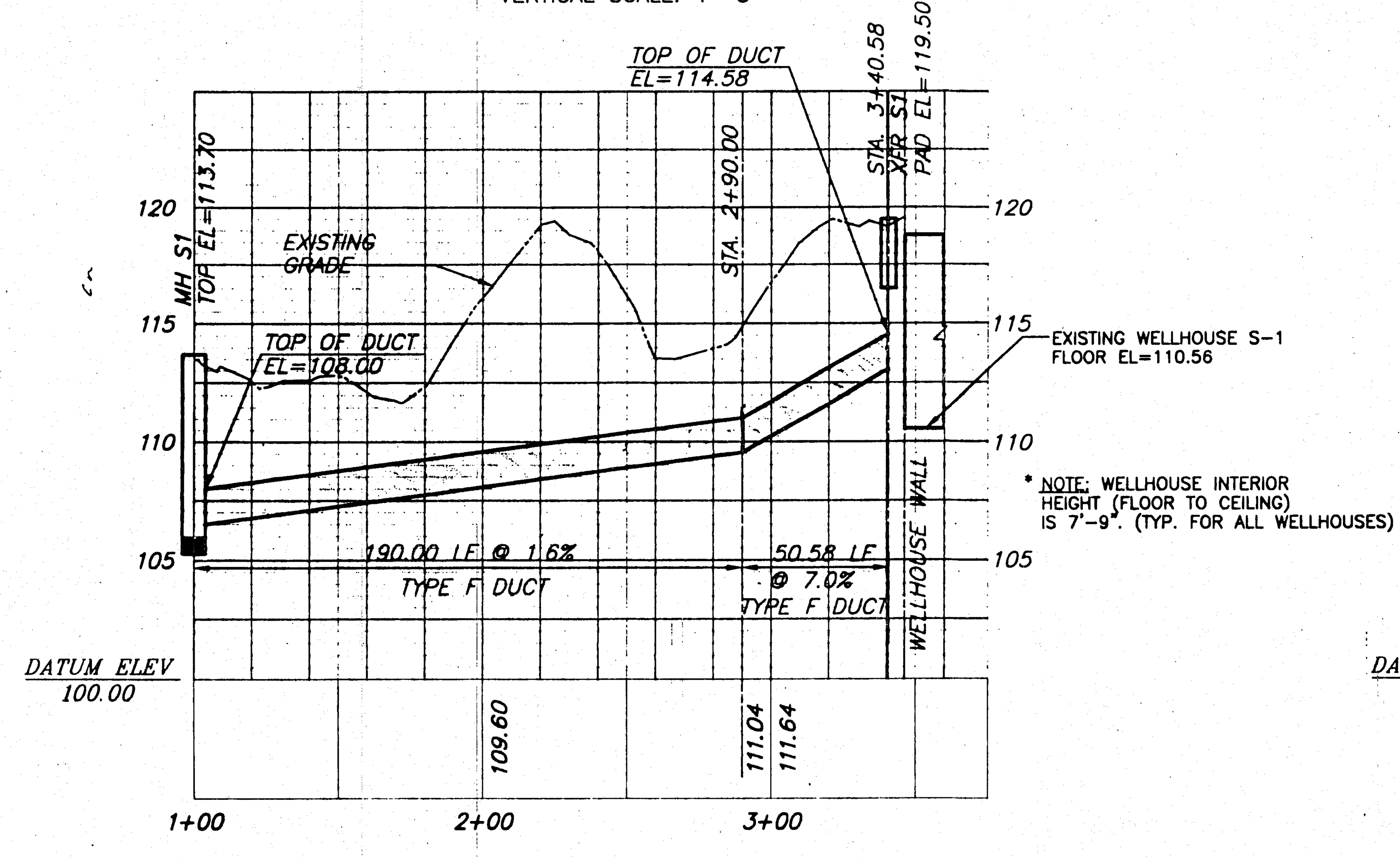
PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'

NOTE:
1. UTILITY LINES SHOWN ON THIS DRAWING ARE BASED ON AVAILABLE MAPS AND RECORDS AND HAVE BEEN FIELD VERIFIED WHEREVER POSSIBLE. THERE MAY BE OTHER UTILITY LINES THAT ARE NOT SHOWN. THE CONTRACTOR SHALL USE CAUTION WHEN DIGGING.
2. CONTRACTOR SHALL INSTALL THE ELECTRICAL CONDUIT TO THE GRADES SHOWN.

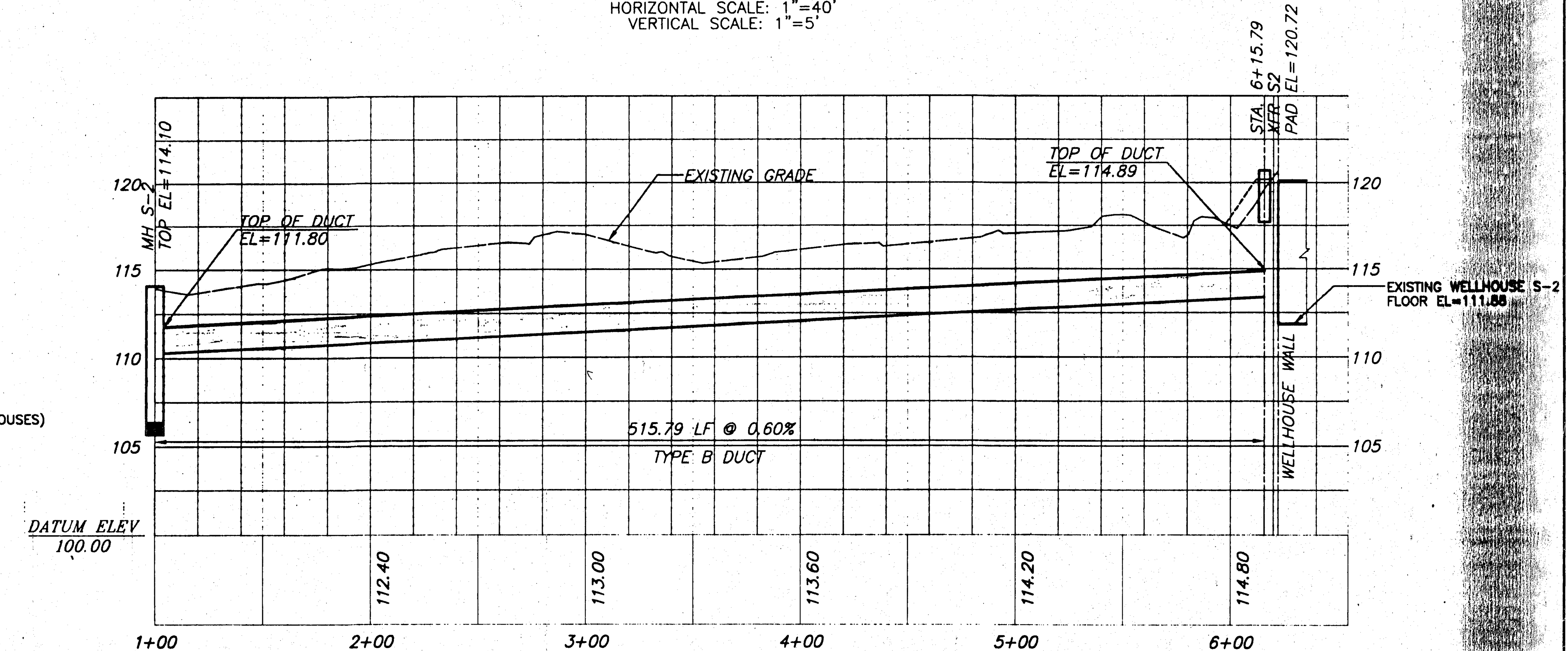
S-1E PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



S-2E PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



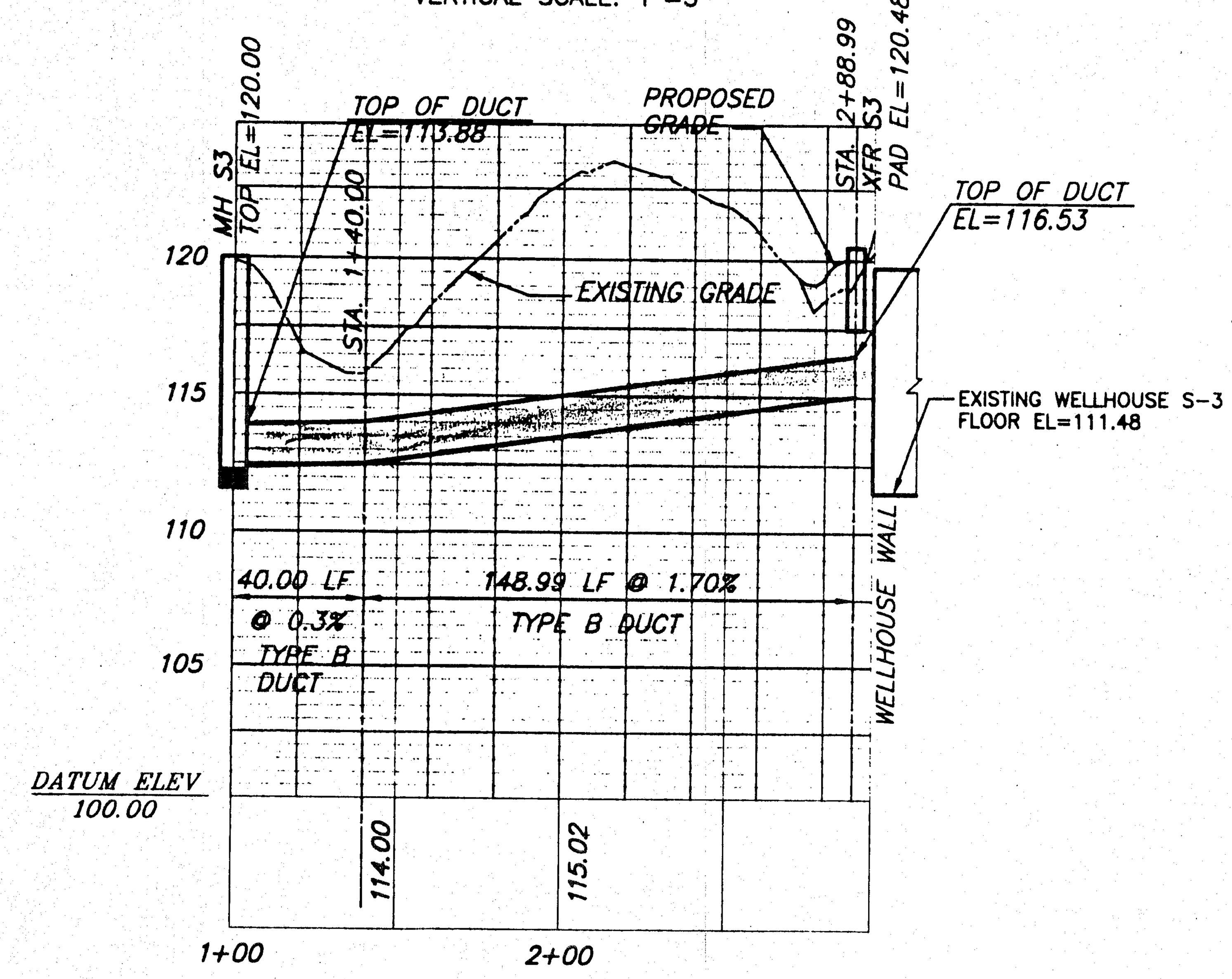
DARREL LYNN MOORE LICENSED 9065 6-11-96 KANSAS PROFESSIONAL ENGINEER

I:\ENVR\93001\MS-WELLS\ELECPR04 Mon Jun 10 18:56:09 1996

WICHITA WATER & SEWER DEPARTMENT
S-WELL IMPROVEMENTS
ELECTRICAL DUCTBANK PROFILE #5
M.K.E.C. INC.
DESIGN BY: JWM/DLM DRAWN BY: RRT
CHECKED BY: DLM DATE: AUGUST, 1995

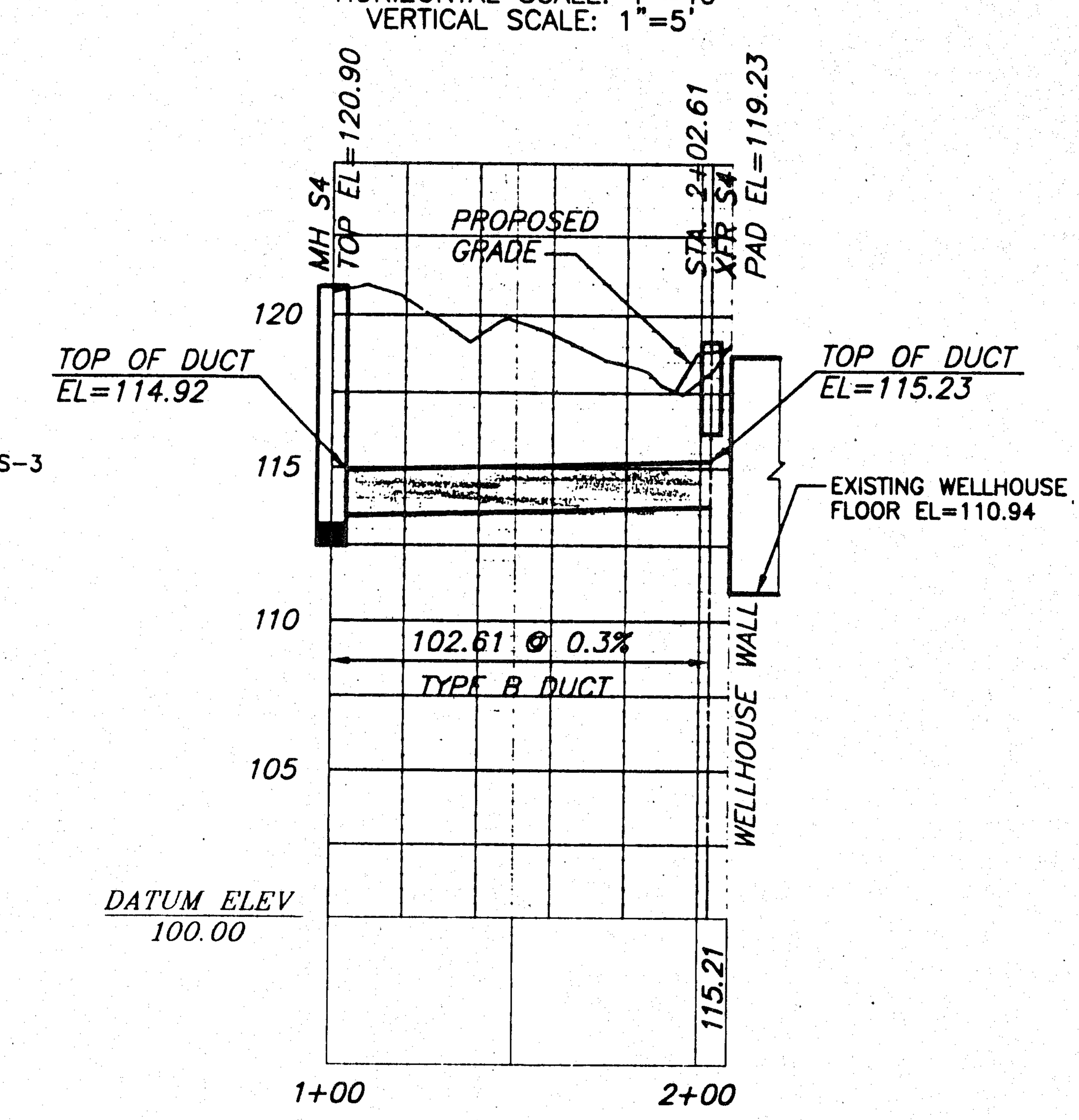
S-3E PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



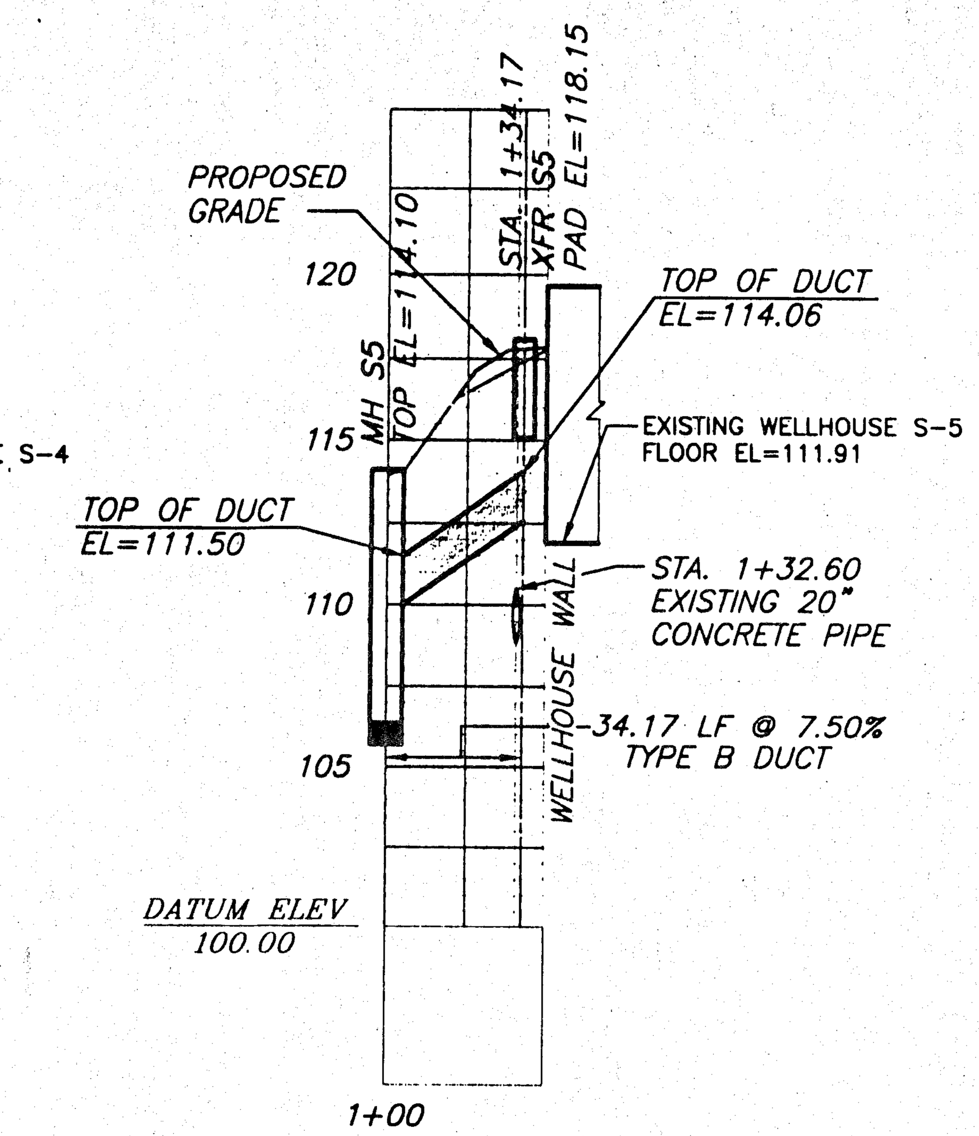
S-4E PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



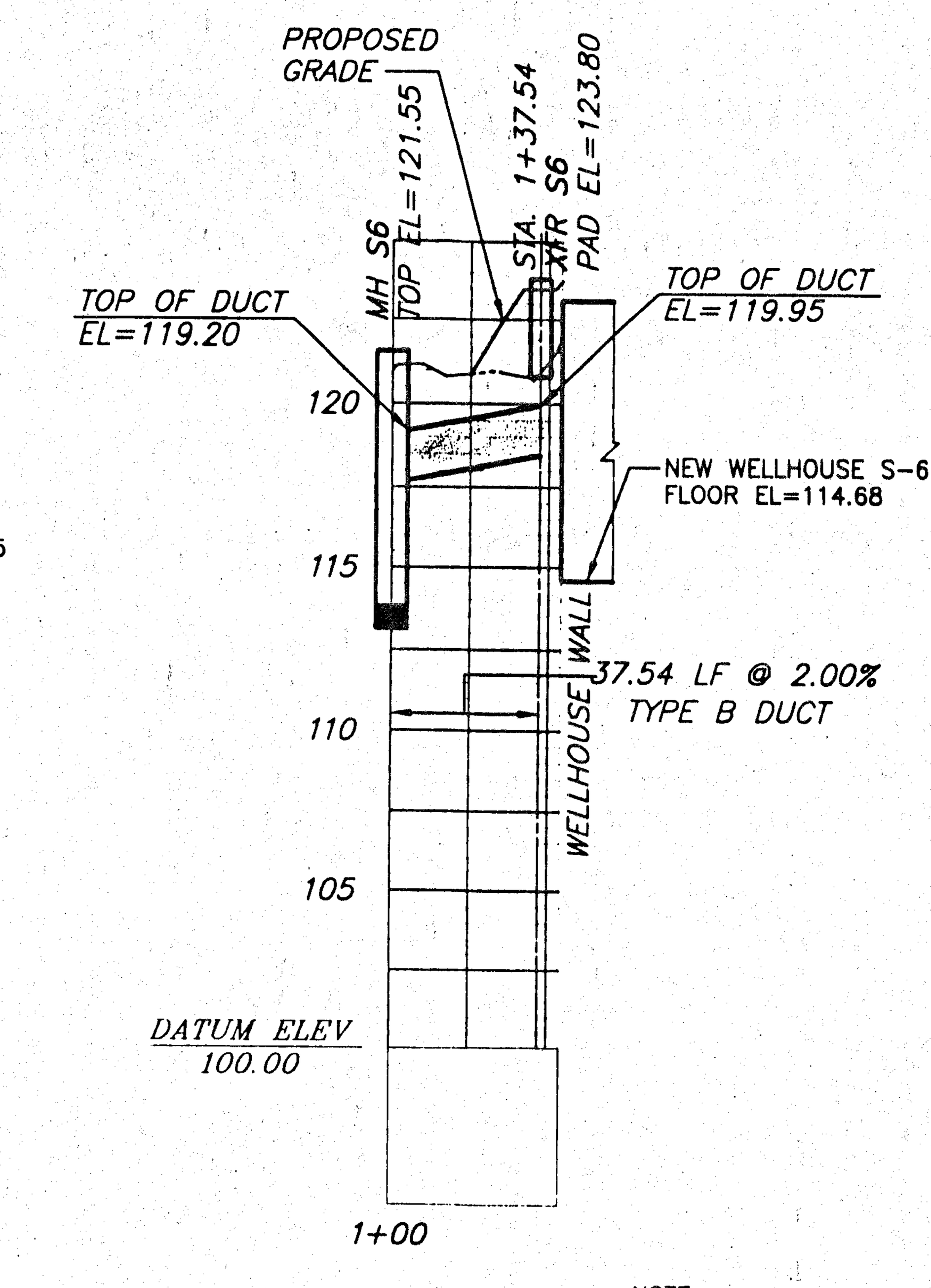
S-5E PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



S-6E PROFILE

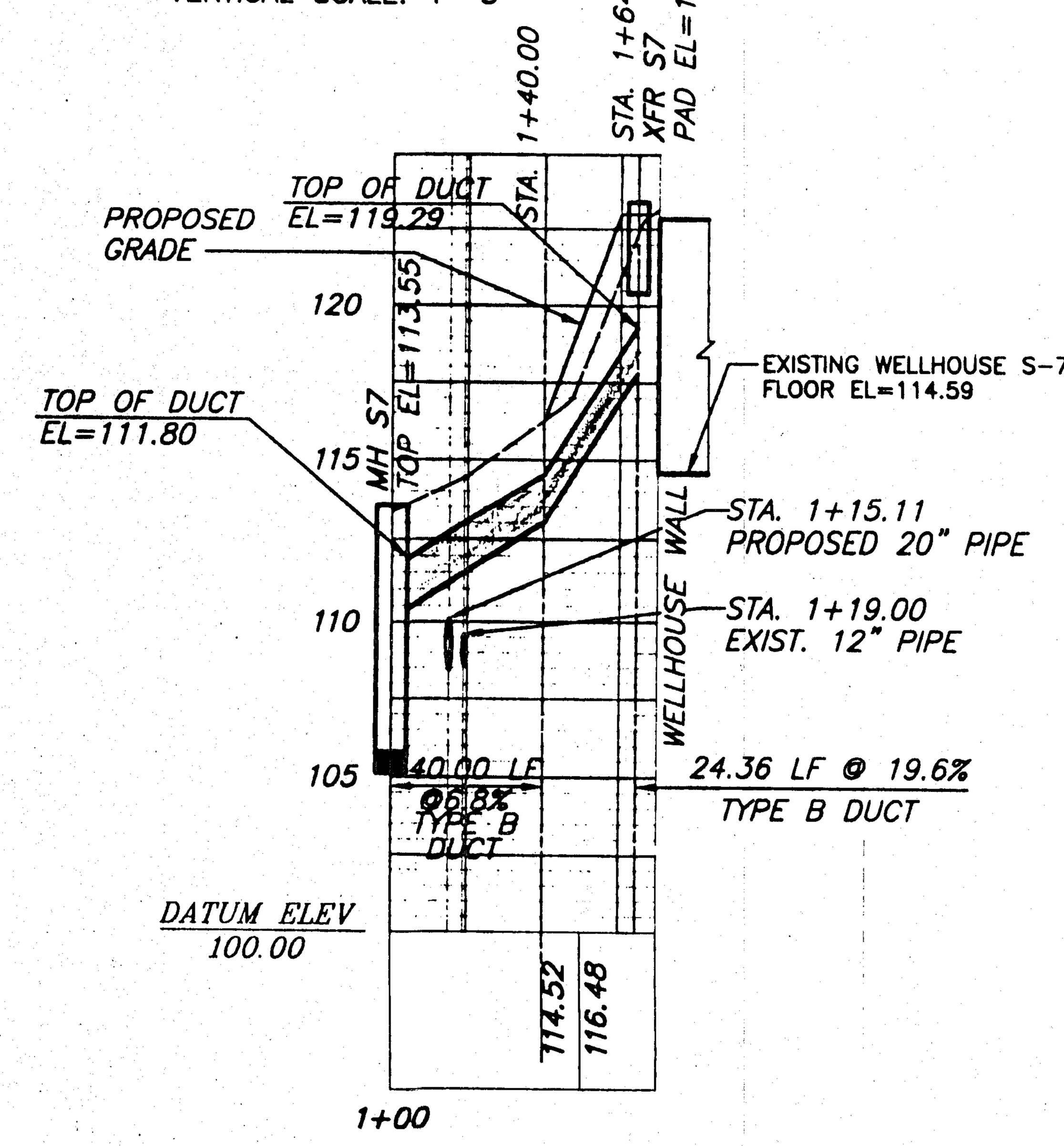
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



NOTE:
1. UTILITY LINES SHOWN ON THIS DRAWING ARE BASED ON AVAILABLE MAPS AND RECORDS AND HAVE BEEN FIELD VERIFIED WHEREVER POSSIBLE. THERE MAY BE OTHER UTILITY LINES THAT ARE NOT SHOWN. THE CONTRACTOR SHALL USE CAUTION WHEN DIGGING.
2. CONTRACTOR SHALL INSTALL THE ELECTRICAL CONDUIT TO THE GRADES SHOWN.

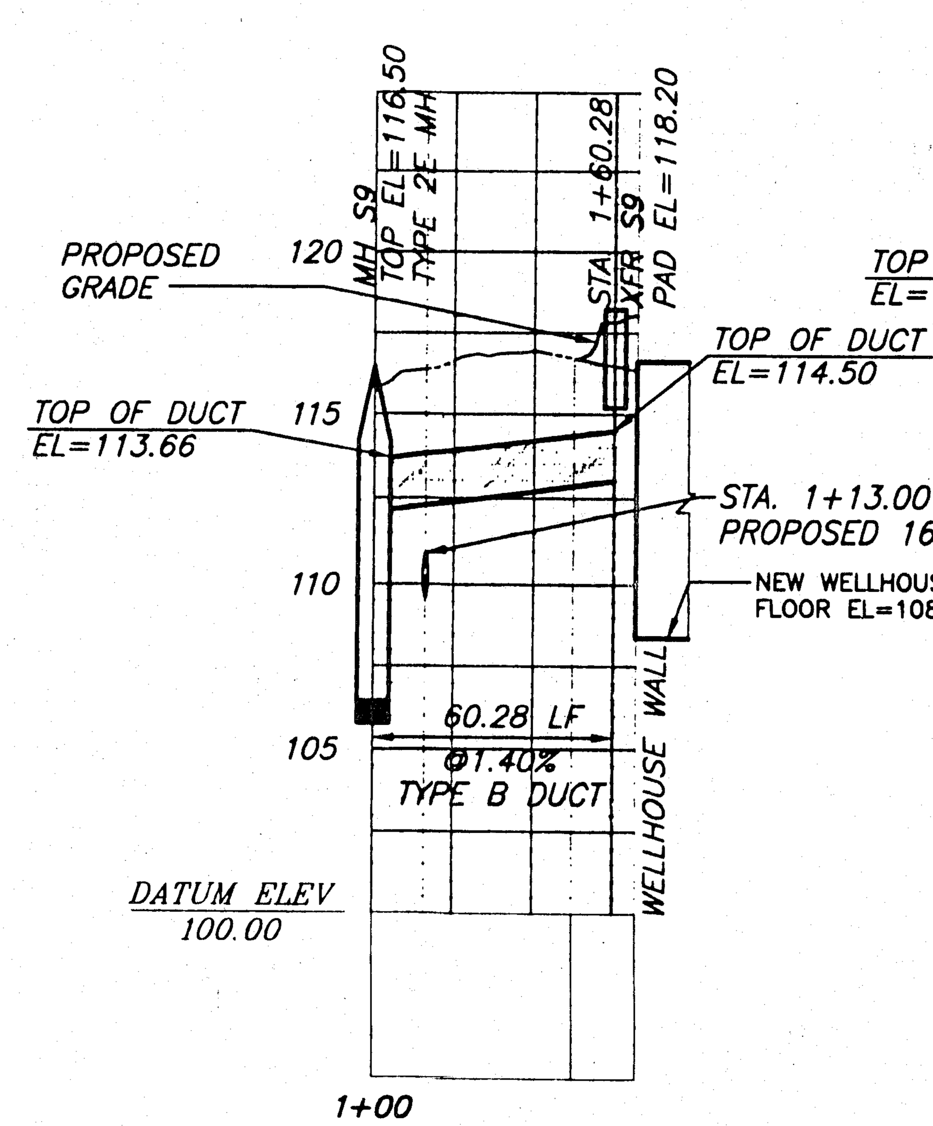
S-7E PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



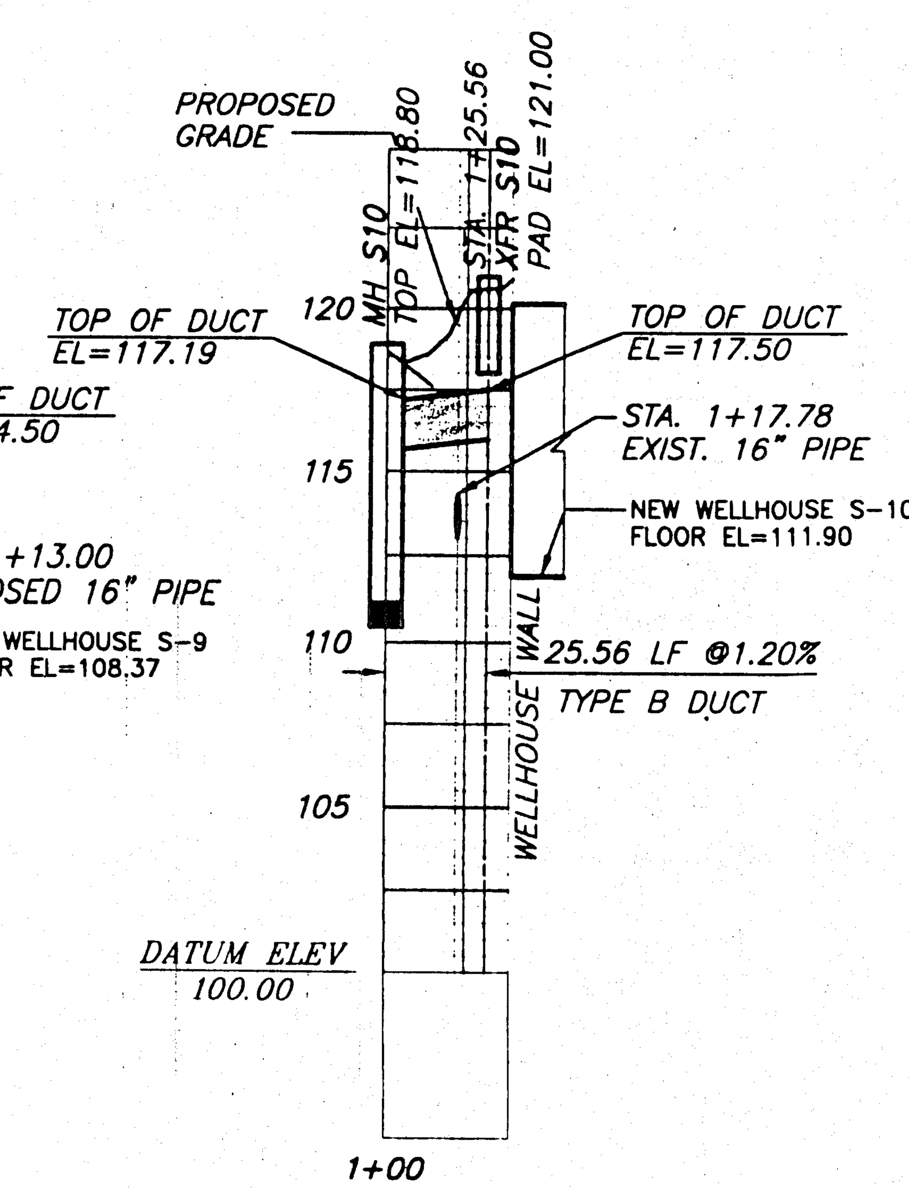
S-9E PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



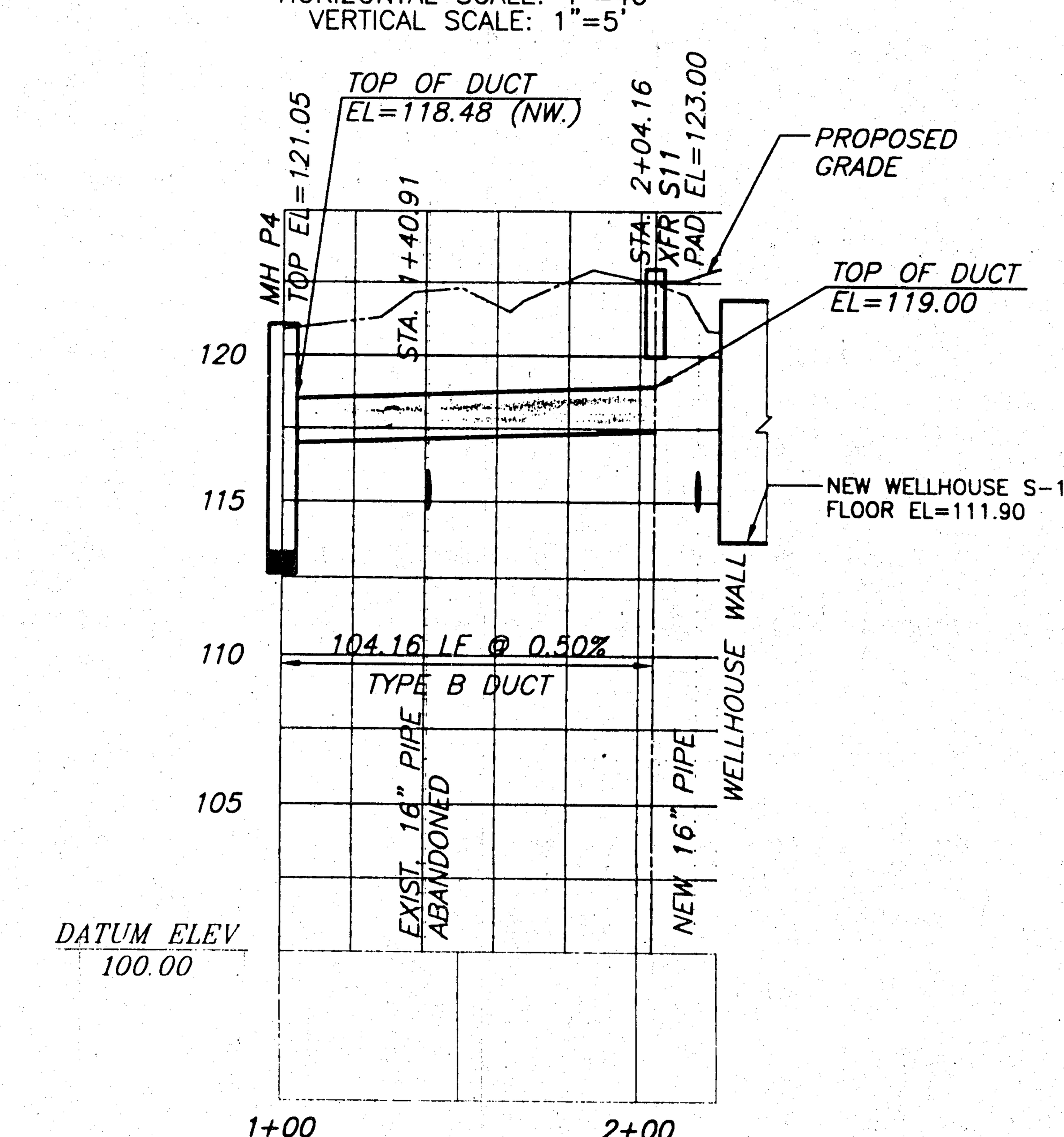
S-10E PROFILE

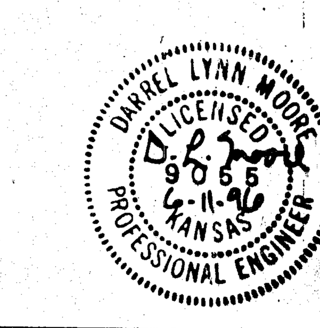
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'

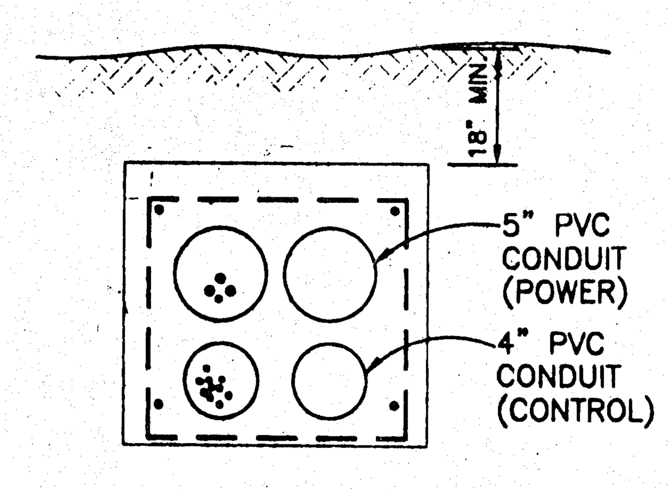


S-11E PROFILE

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=5'



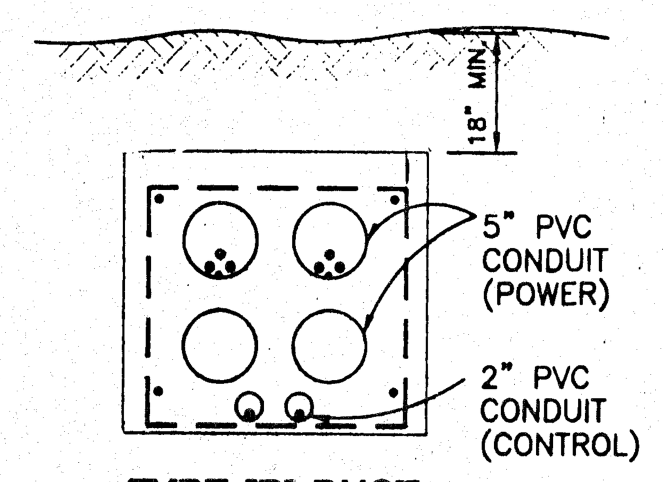




TYPE "A" DUCT

NOTE: SEE "TYPICAL CONCRETE ENCASED DUCTBANK CROSS SECTION" THIS SHEET FOR ADDITIONAL REQUIREMENTS.

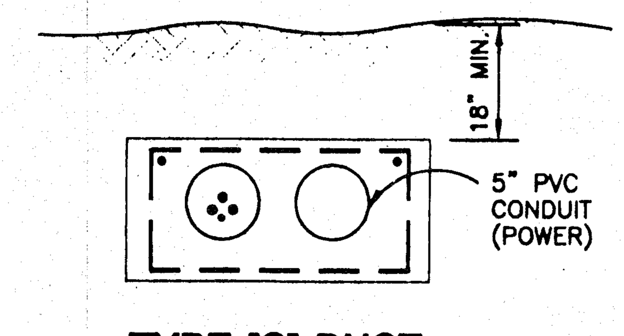
SECTION (A)
NO SCALE



TYPE "B" DUCT

NOTE: SEE "TYPICAL CONCRETE ENCASED DUCTBANK CROSS SECTION" THIS SHEET FOR ADDITIONAL REQUIREMENTS.

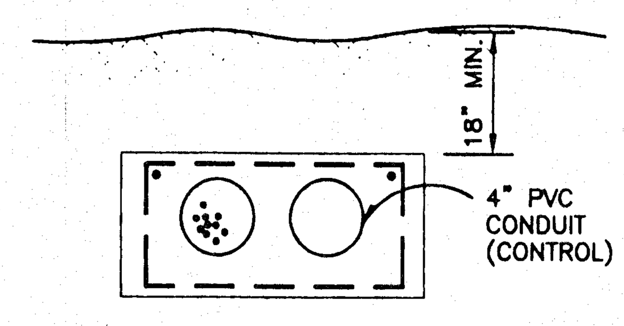
SECTION (B)
NO SCALE



TYPE "C" DUCT

NOTE: SEE "TYPICAL CONCRETE ENCASED DUCTBANK CROSS SECTION" THIS SHEET FOR ADDITIONAL REQUIREMENTS.

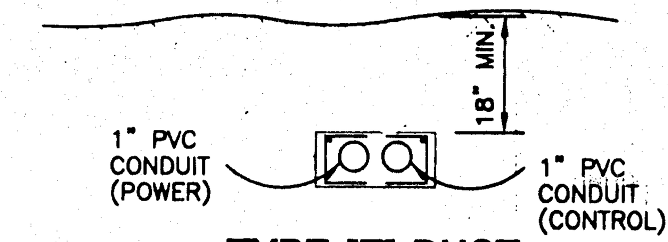
SECTION (C)
NO SCALE



TYPE "D" DUCT

NOTE: SEE "TYPICAL CONCRETE ENCASED DUCTBANK CROSS SECTION" THIS SHEET FOR ADDITIONAL REQUIREMENTS.

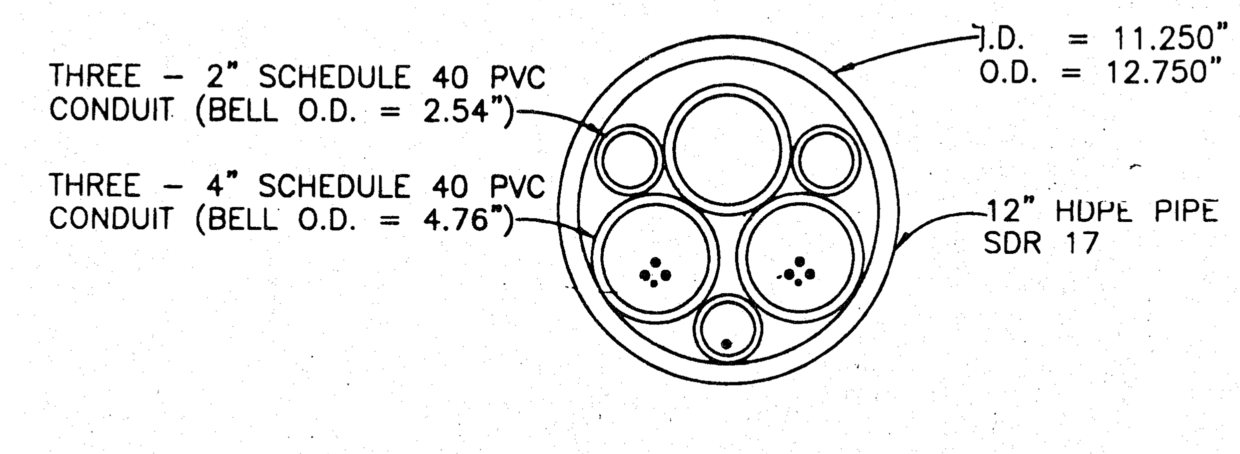
SECTION (D)
NO SCALE



TYPE "E" DUCT

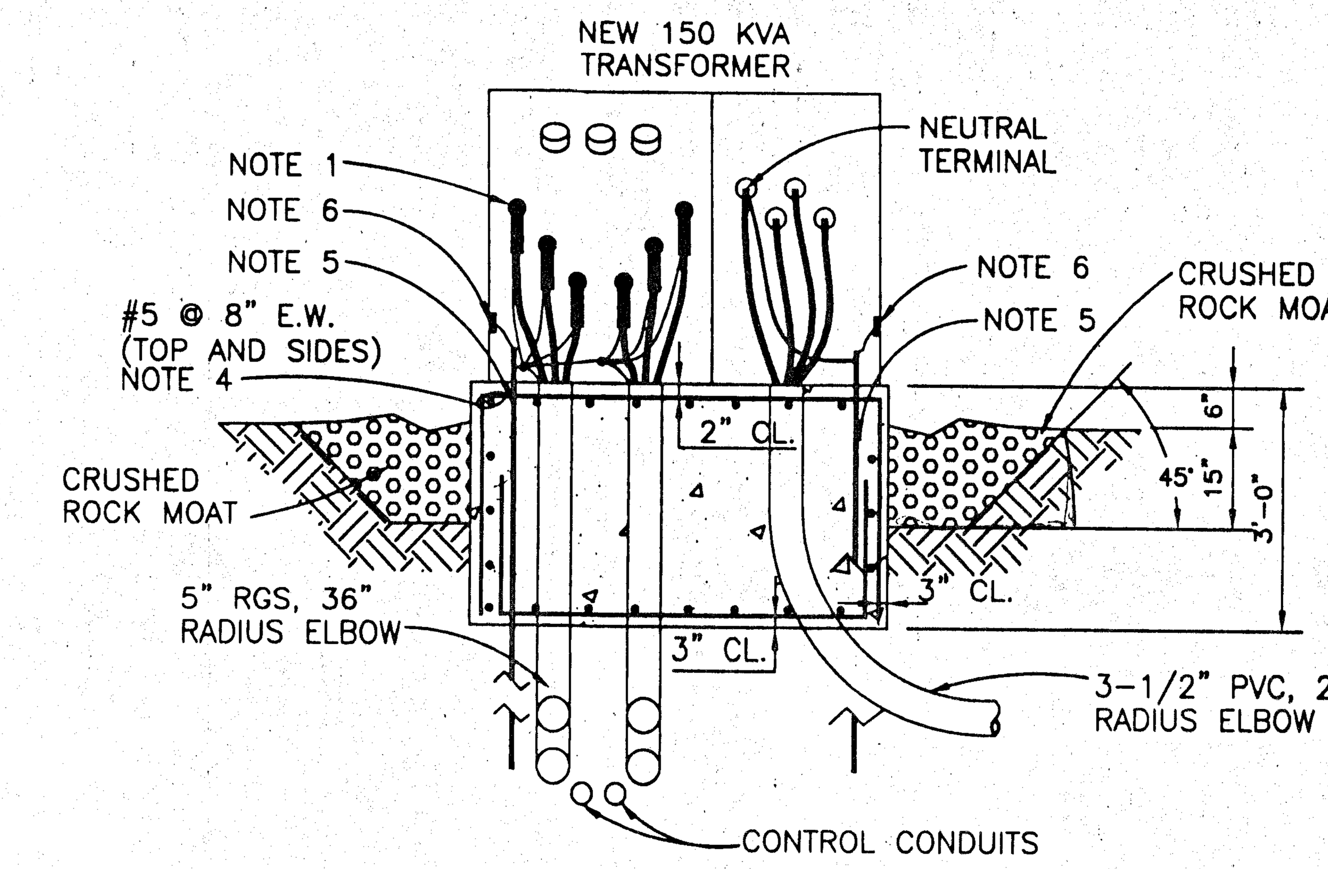
NOTE: SEE "TYPICAL CONCRETE ENCASED DUCTBANK CROSS SECTION" THIS SHEET FOR ADDITIONAL REQUIREMENTS.

SECTION (E)
NO SCALE



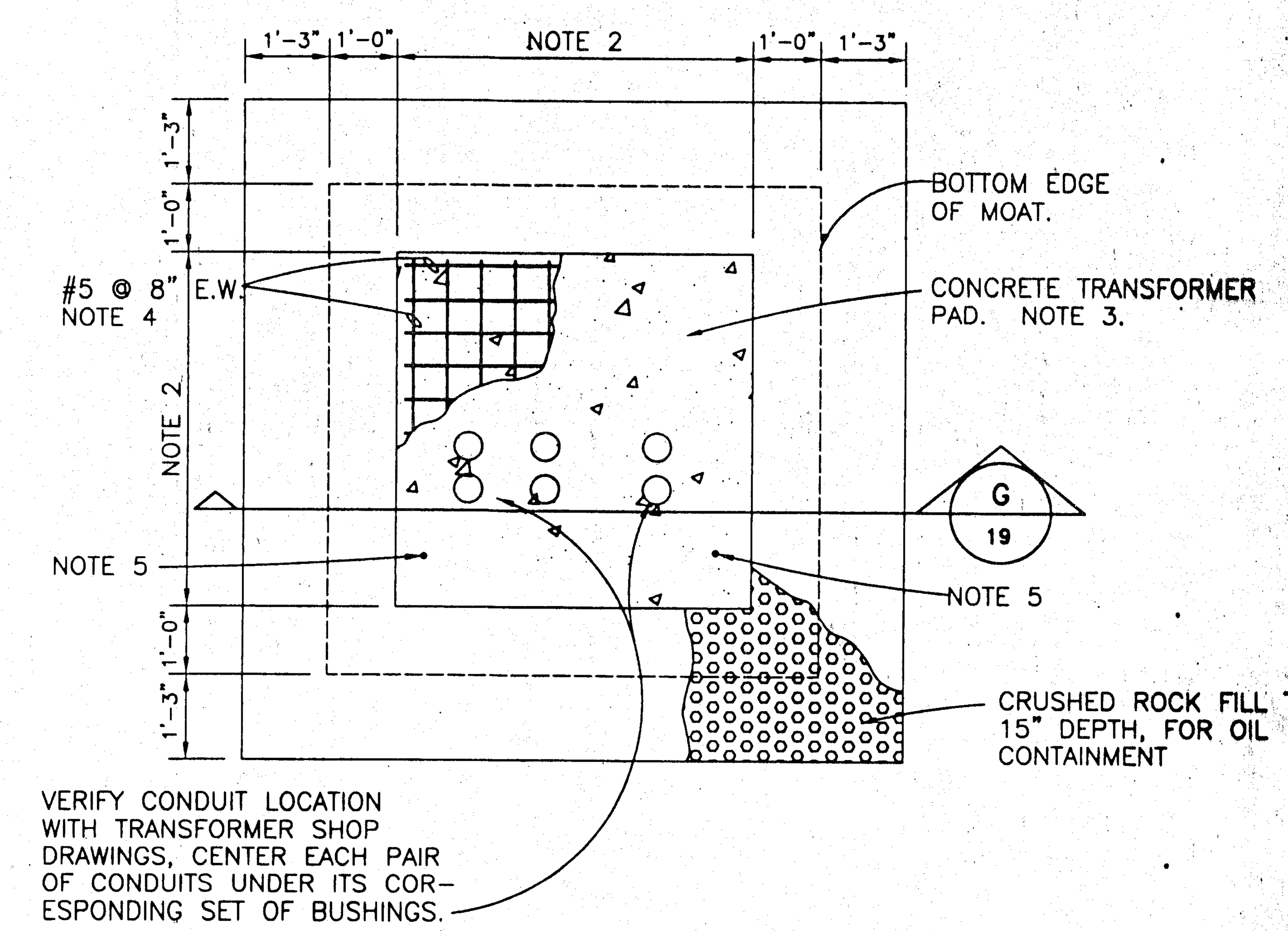
DIRECTIONALLY BORED DUCT

SECTION (F)
NO SCALE



ELEVATION VIEW

SECTION (G)
NO SCALE

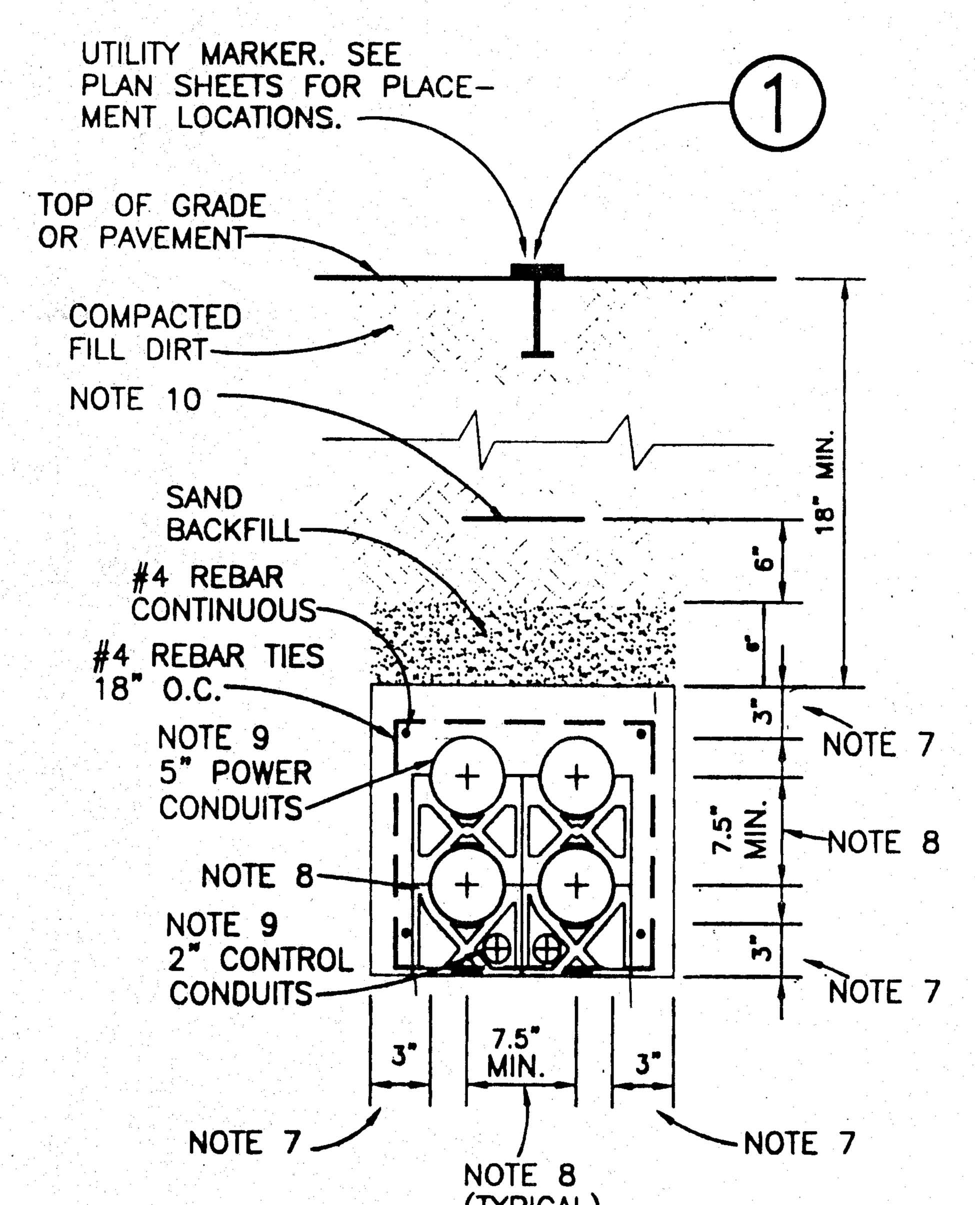


PLAN VIEW

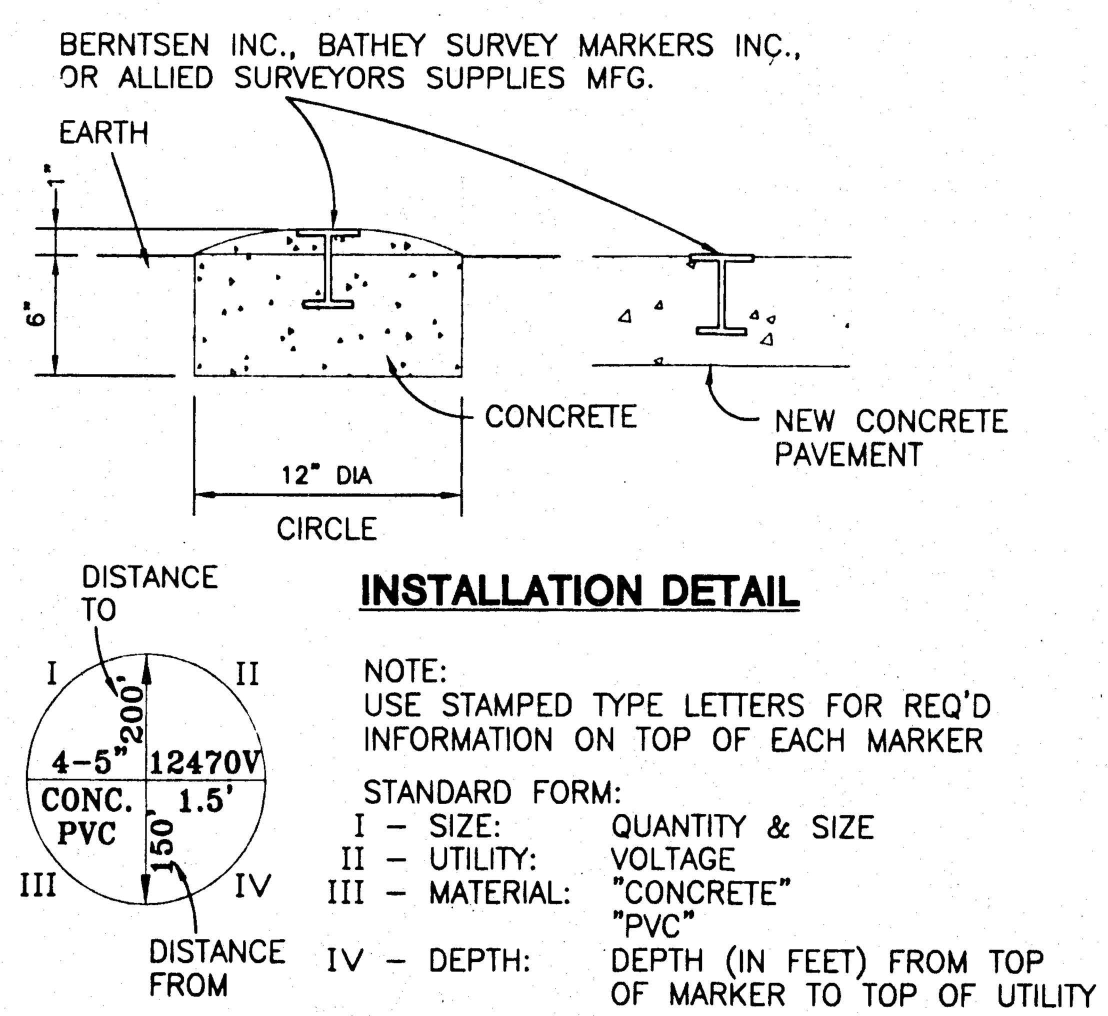
NEW 150 KVA TRANSFORMER PAD DETAILS

(PARTIAL REINFORCING SHOWN FOR CLARITY)

DETAIL (2)
NO SCALE



TYPICAL CONCRETE ENCASED DUCTBANK CROSS SECTION
(NO SCALE)



INSTALLATION DETAIL

NOTE:
USE STAMPED TYPE LETTERS FOR REQ'D INFORMATION ON TOP OF EACH MARKER

STANDARD FORM:
I – SIZE: QUANTITY & SIZE
II – UTILITY: VOLTAGE
III – MATERIAL: "CONCRETE" "PVC"
IV – DEPTH: DEPTH (IN FEET) FROM TOP OF MARKER TO TOP OF UTILITY

USE ARROWS TO SHOW DIRECTION OF UTILITY AND DISTANCE TO AND FROM NEXT MARKER.

UTILITY MARKER DETAIL

DETAIL (1)
NO SCALE

NOTES

1) 200 A,15KV DEAD FRONT TERMINATIONS WITH CABLE END SEAL. USE #8 DRAIN WIRE TO GROUND SHIELD TO #8 GROUND WIRE IN CONDUIT.
2) VERIFY DIMENSIONS WITH TRANSFORMER SHOP DRAWINGS.
3) ALL CONCRETE SHALL BE 4000 PSI, 611 LBS/CU. YD. OF TYPE 1 CEMENT.
4) ALL REBAR SHALL BE ASTM A615 GRADE 60.
5) 3/4" X 10' DRIVEN GROUND ROD. EXTEND GROUND ROD TO 6" ABOVE THE FINISHED PAD. VERIFY BEST GROUND ROD LOCATION WITH TRANSFORMER SHOP DRAWINGS. DO NOT DAMAGE UNDERGROUND UTILITIES WHEN DRIVING GROUND ROD.
6) GROUND TRANSFORMER TANK AND SECONDARY NEUTRAL BUSHING (XO) TO GROUND ROD WITH #6 BARE COPPER WIRE.
7) 3" MINIMUM CONCRETE ENCASEMENT ON ALL SIDES, TOP AND BOTTOM. 3000 PSI CONCRETE. 3/4" MAX. AGG. POUR WITH 4" TO 5" SLUMP. CONCRETE SHALL BE COLORED RED WITH RED DYE.
8) MAINTAIN 7-1/2" MINIMUM CENTER TO CENTER DISTANCE BETWEEN POWER CONDUITS. CONTRACTOR SHALL VERIFY DIMENSIONS ACCORDING TO SPACERS USED. USE CARLON OR EQUIVALENT. SPACERS SHALL BE INSTALLED AT A MINIMUM OF 5' INTERVALS.
9) SCHEDULE 40 PVC CONDUIT.
10) UNDERGROUND WARNING TAPE FOR ELECTRICAL, TERRA TAPE STANDARD 250, RED, 2 MIL. TO READ, "CAUTION HIGH VOLTAGE BURIED BELOW".

6-11-96

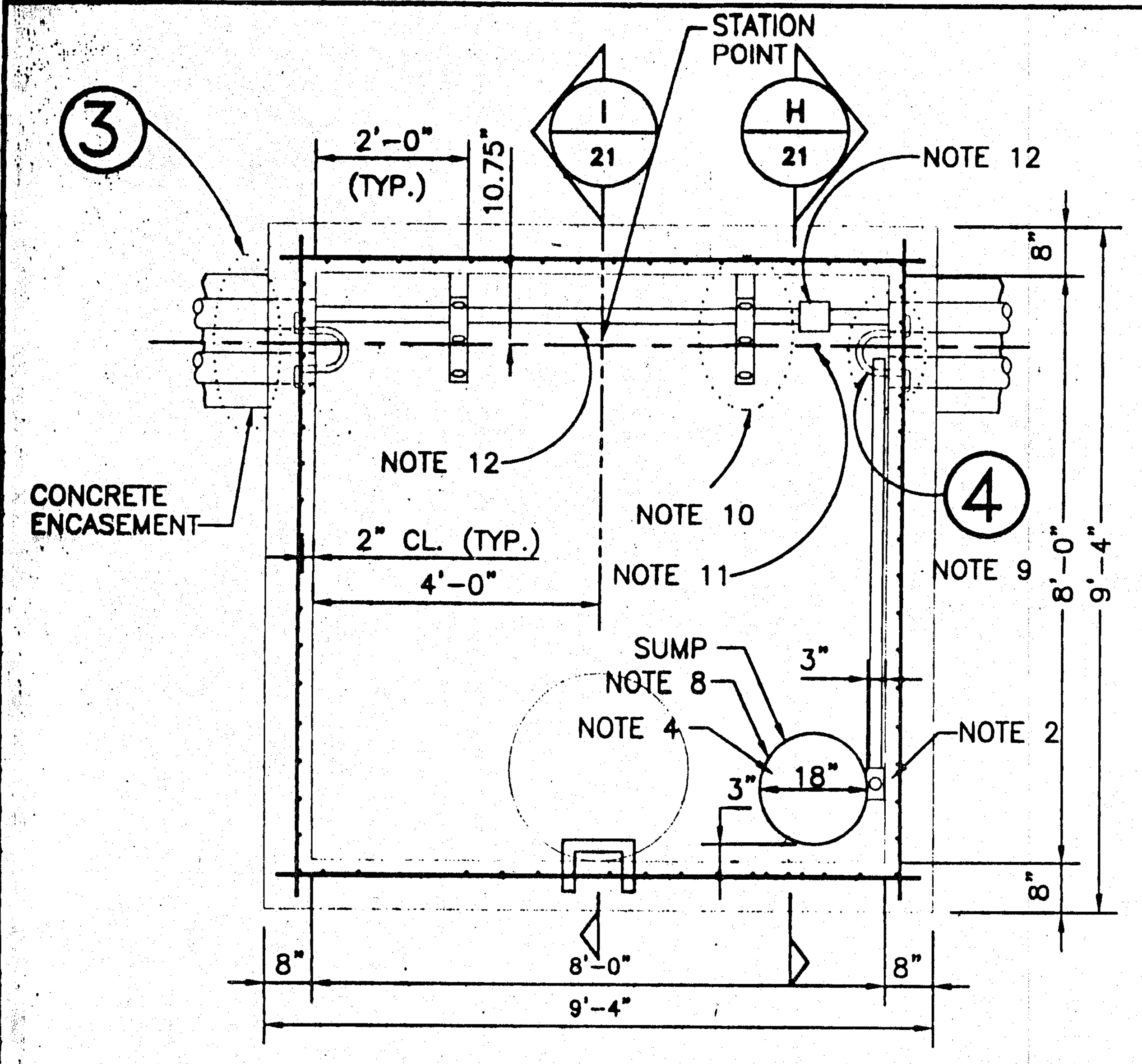
MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

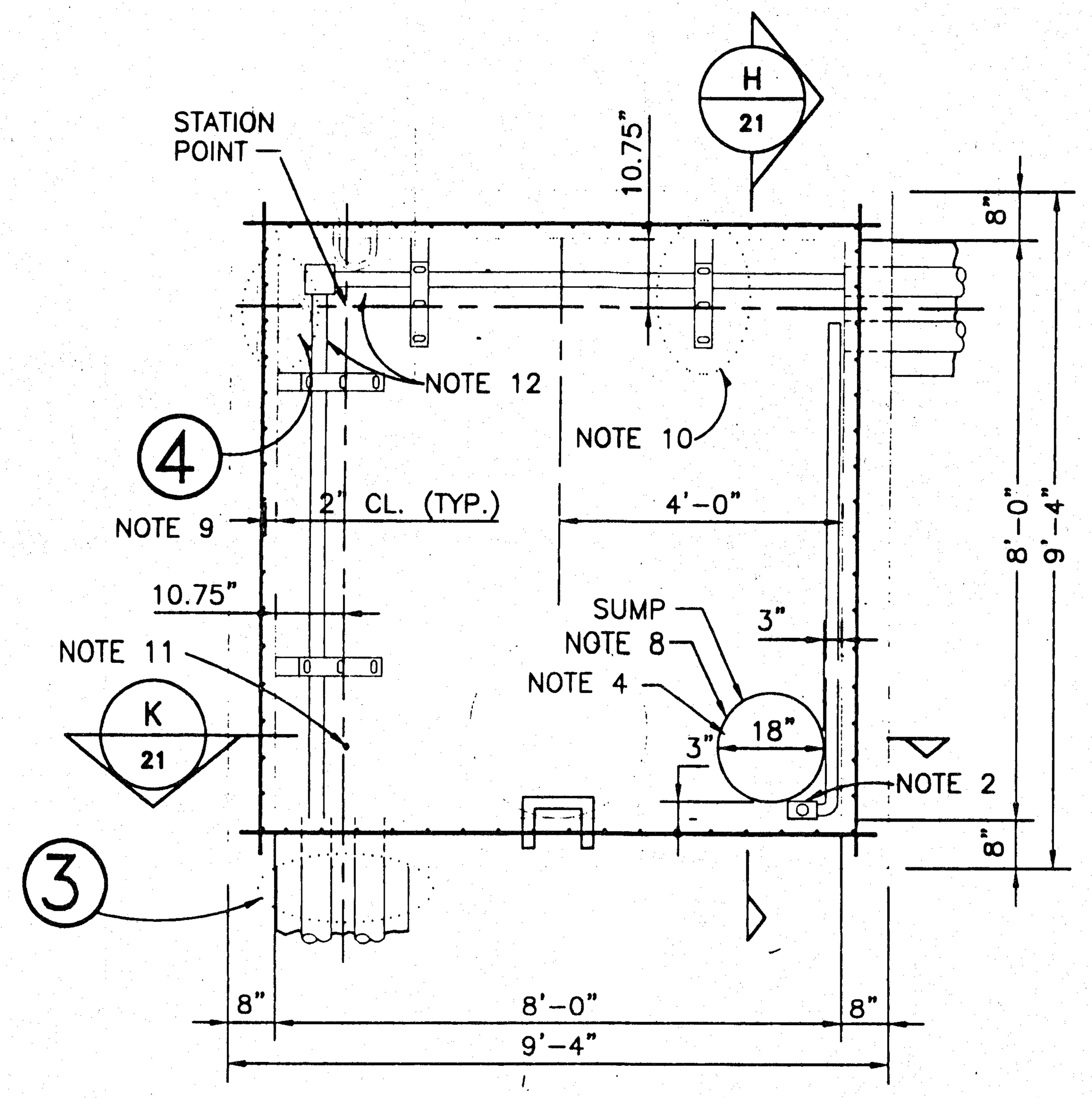
ELECTRICAL CONDUIT AND PAD DETAILS
SHEET TITLE

DESIGN BY:	DRAWN BY:	CHECKED BY:
JWM/KJS	RRT	DLM

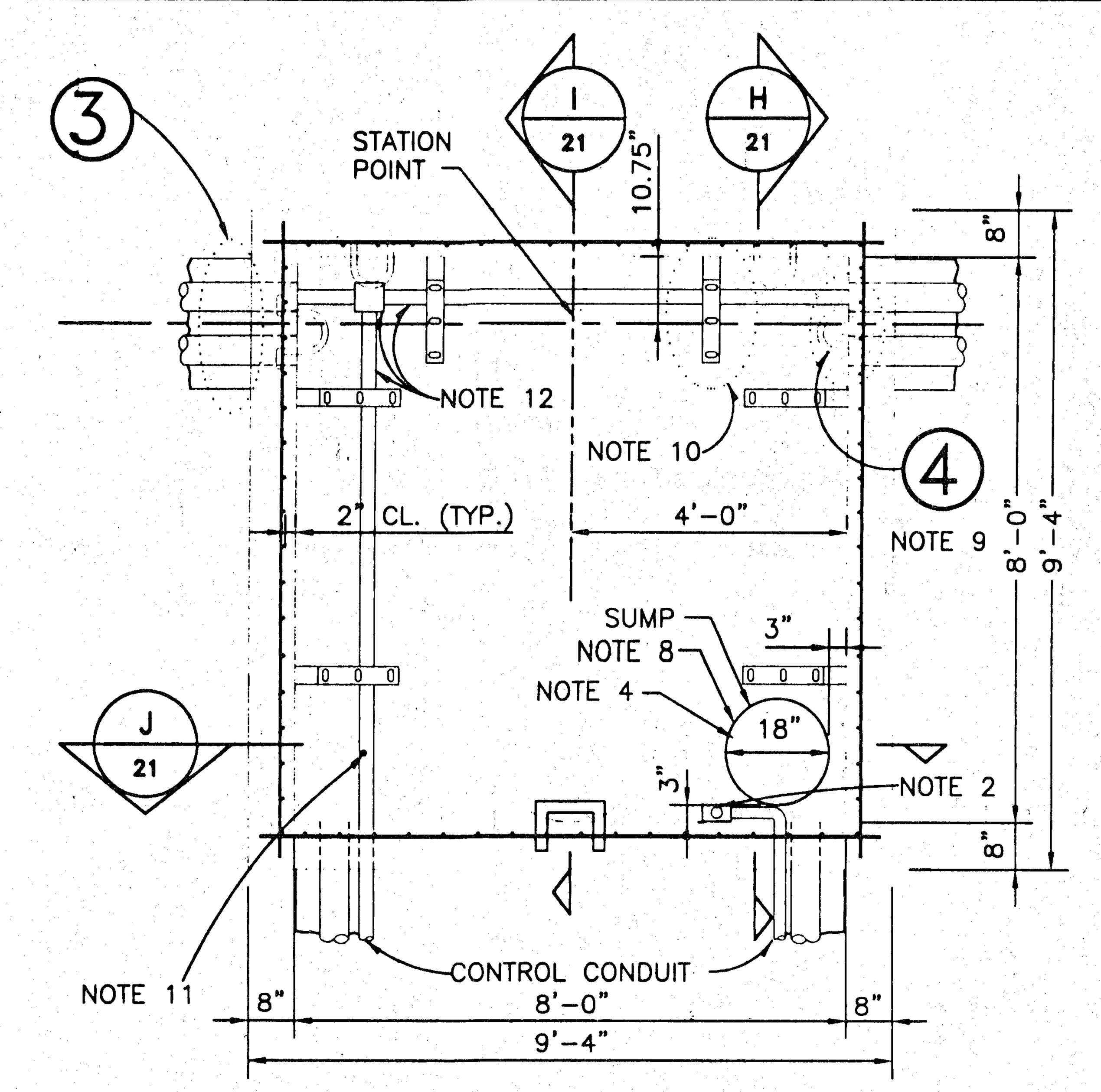
DATE	JOB NO.	SHEET/OF
JUNE, 1996	93001	19 / 41



PLAN "THROUGH" MANHOLE
(MH - P1, P3)



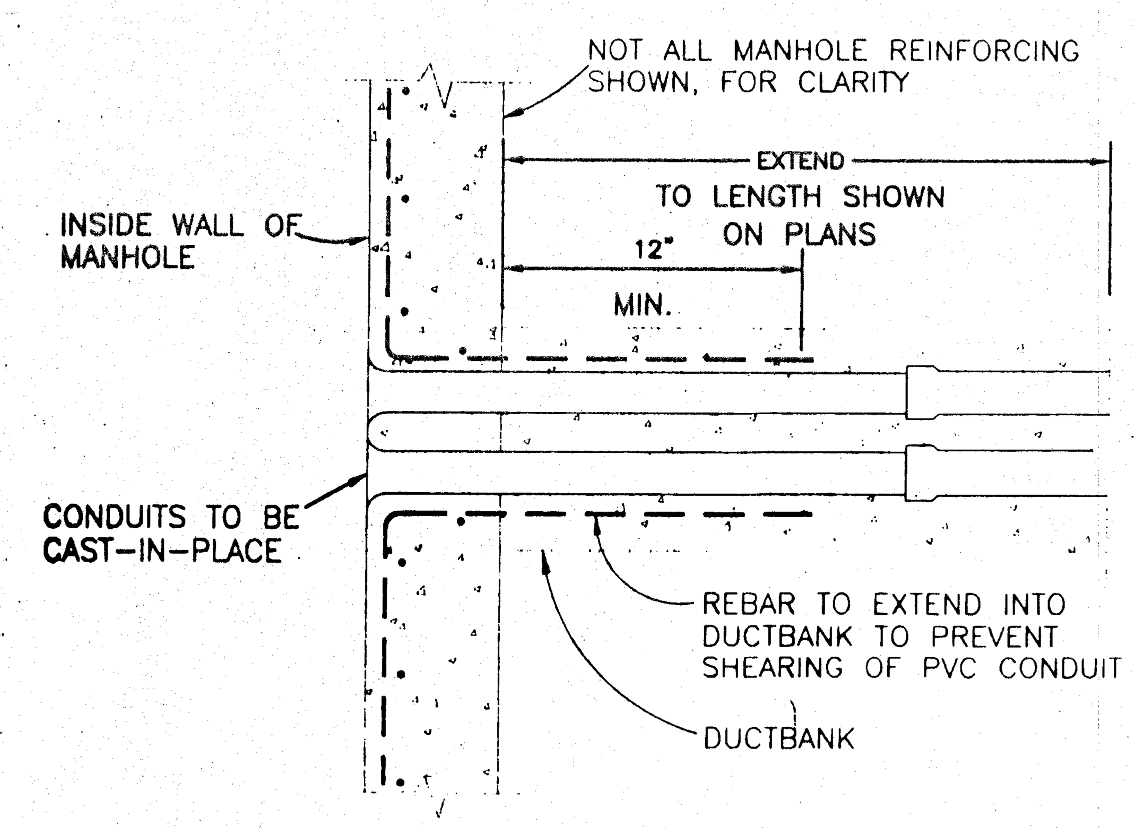
PLAN "THROUGH" MANHOLE
(MH - P2)



PLAN "TEE" MANHOLE
(MH - S1,S2,S3,S4,S5,S6,S7,S9,S10)

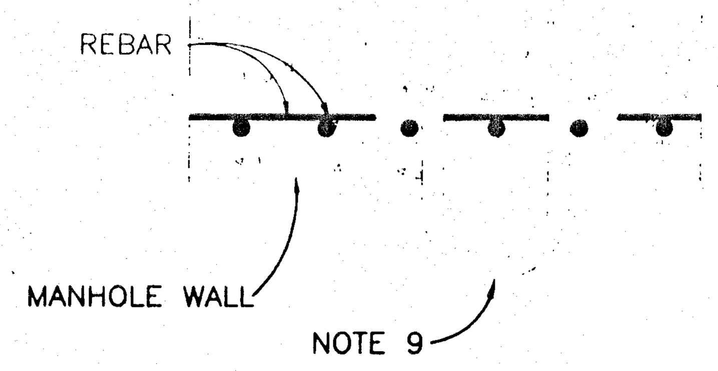
NOTES

1) 2-#6 ADDITIONAL EACH WAY, IN BOTTOM OF SLAB (TYPICAL EACH SIDE OF ACCESS HOLE)
2) SUPPLY AND INSTALL 1" PVC CONDUIT AND 250V, 3 WIRE, 1Ø, 15 AMP LOCKING RECEPTACLE NEAR SUMP FOR SUMP PUMP.
3) COMPACT BACKFILL TO 95% OF STANDARD DENSITY (ASTM D698).
4) INSTALL SUMP PUMP - WEIL SERIES 1400 SUBMERSIBLE, 35 GPM AT 20 FT., ELECTRICAL - 240/60/1 - 1/3 HP MOTOR, MICRO PRESSURE SWITCH CONTROL, PROVIDE 1 1/4" SCH. 40 GALV. DISCHARGE LINE THROUGH ROOF, WITH GOOSENECK. SEE ROOF PIPING PENETRATION DETAIL ON SHT. 25.
5) CIRCULAR MANHOLE FRAME AND LOCKING LID WITH GASKET. NEENAH: R-6078 ~~(DUCTILE IRON)~~ LEGEND: "POWER" ~~Deeter 1038~~ Deeter 1038 B
6) MANHOLE STEPS SHALL BE CAST IN CONCRETE TO A MINIMUM OF 3" AND BE SPACED 12" APART. STEPS SHALL BE NEENAH
7) DUCTBANK SHALL BE MINIMUM 18" BELOW GRADE. ELEVATION WILL VARY.
8) SLOPE FLOOR TO DRAIN INTO SUMP.
9) PROVIDE PULLING IRONS ACROSS FROM AND CENTERED 6" BELOW EACH DUCTBANK OPENING. PULLING IRON SHALL BE CHANCE NO. 8120.
10) FOR CABLE RACK DETAILS SEE THIS SHEET DETAIL 6. PROVIDE A MINIMUM 4 ARMS PER RACK.
11) 3/4" X 10' COPPER CLAD, DRIVEN, GROUND ROD TO BE LOCATED APPROX. 1' X 1' FROM THE CORNER OF THE MANHOLE AND TO EXTEND 6" ABOVE THE FINISHED FLOOR.
12) CONTROL WIRES AND POWER WIRES MUST BE SEPARATED IN THE MANHOLE WITH PVC CONDUIT. EXTEND CONTROL CONDUITS THROUGH MANHOLE WITH SPLICE BOXES FOR PULLING. SUPPORT CONDUIT PER NEC.



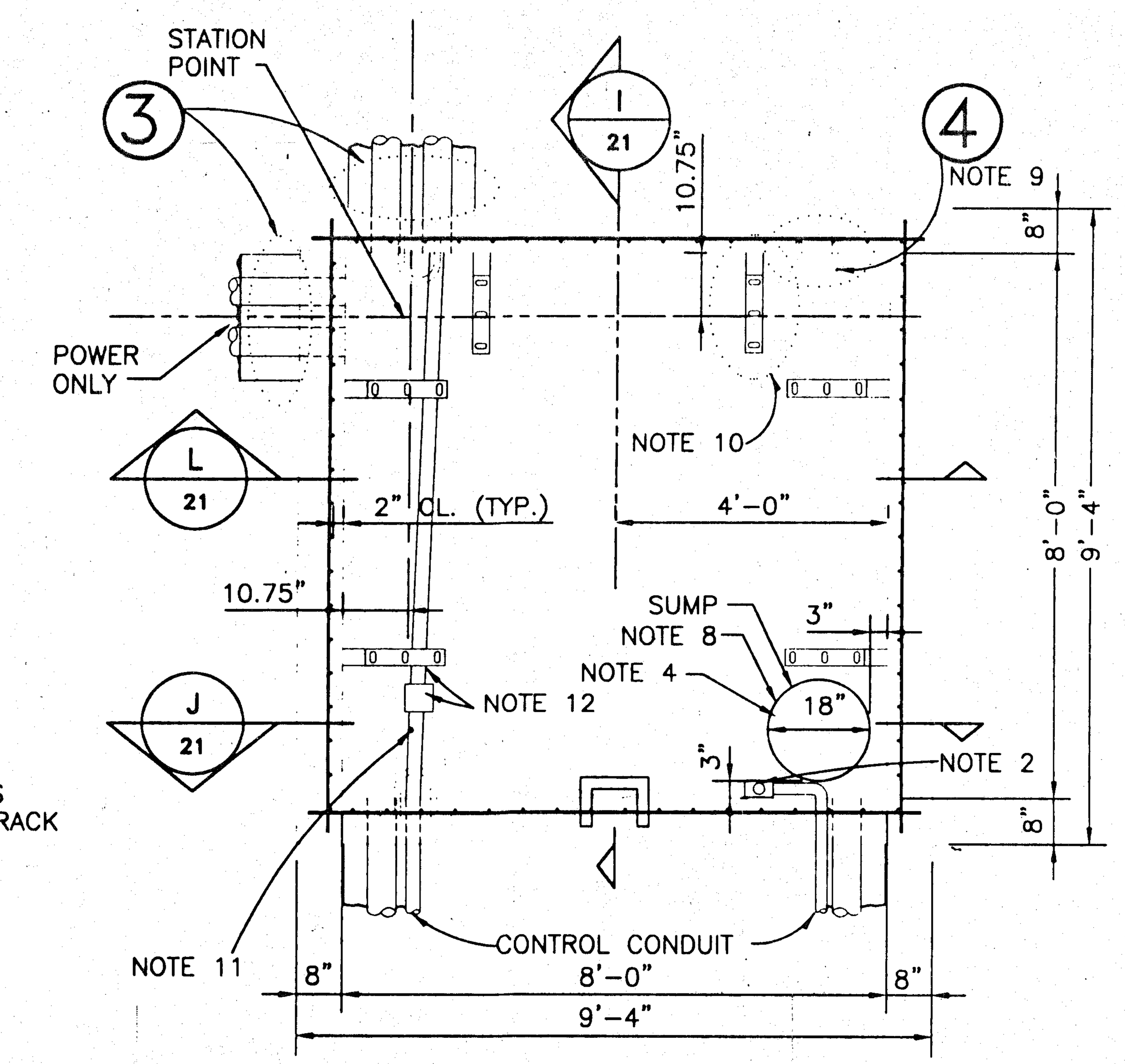
TYPICAL CONSTRUCTION OF JOINT FROM DUCTBANK TO MANHOLE

DETAIL 3
NO SCALE

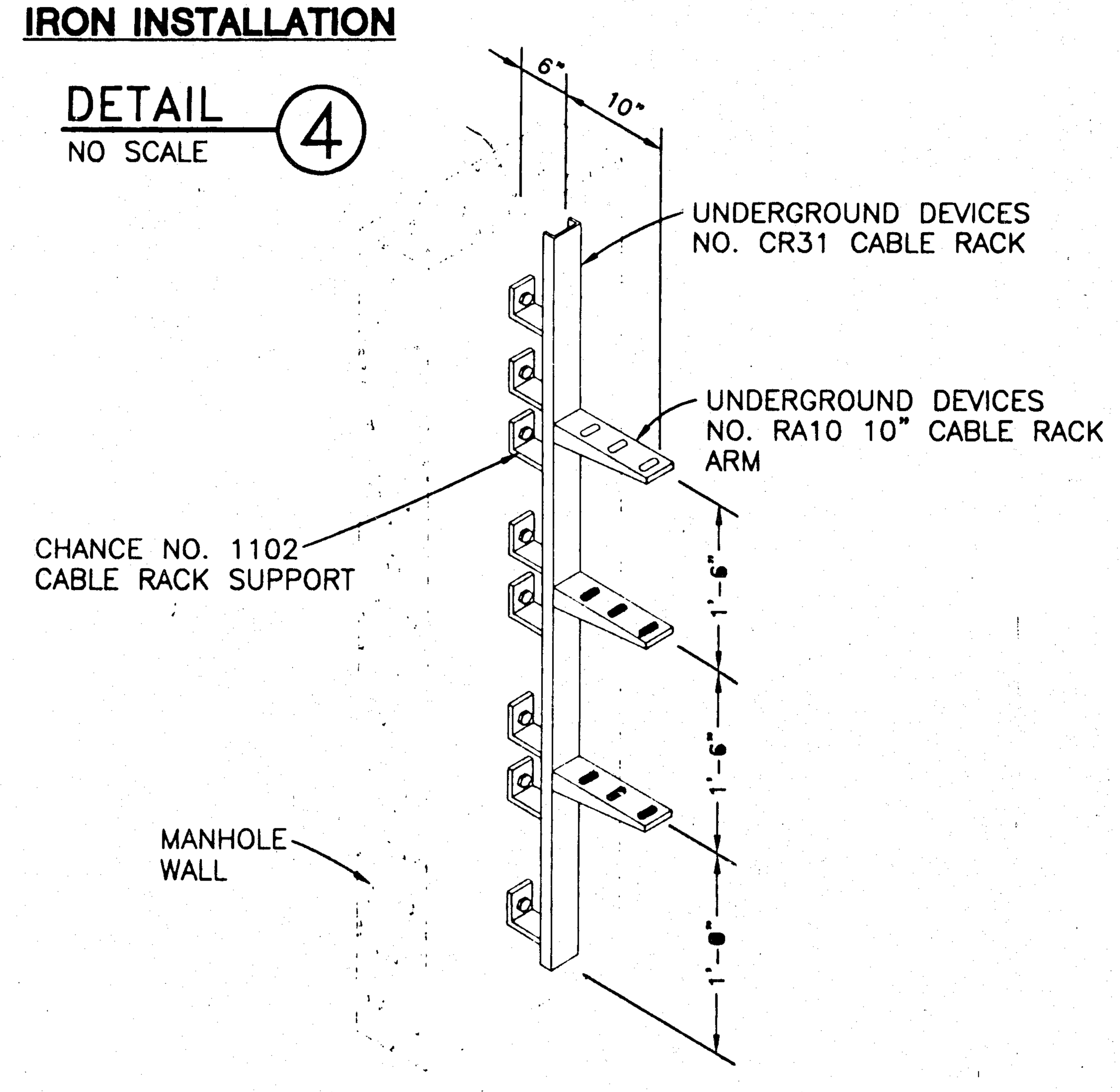


TYPICAL PULLING IRON INSTALLATION

DETAIL 4
NO SCALE

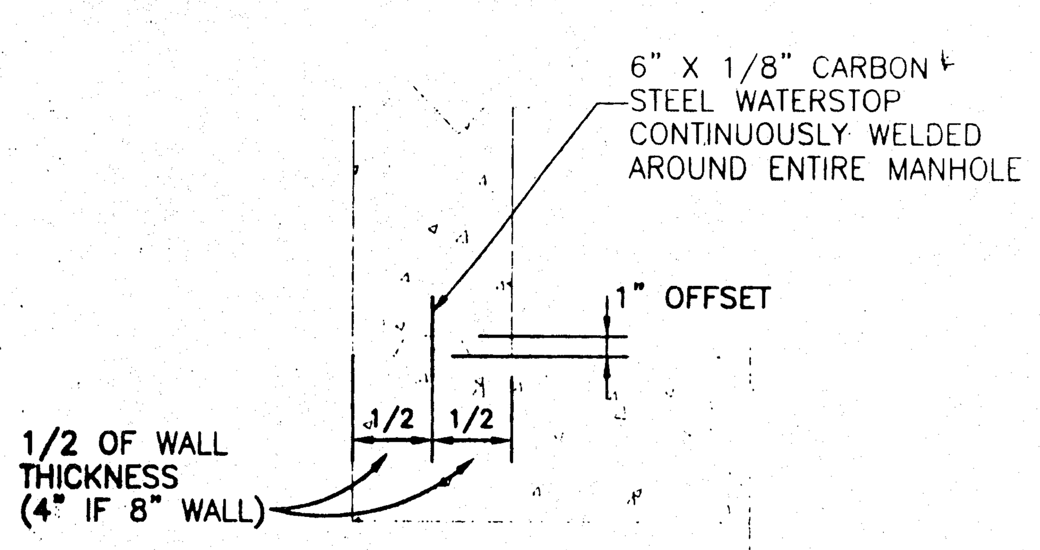


PLAN "TEE" MANHOLE 2E
(MH - P4)



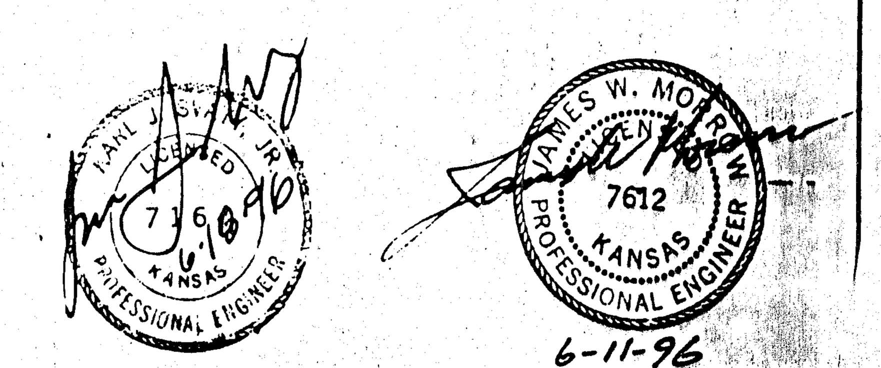
MANHOLE CABLE RACK DETAIL

DETAIL 6
NO SCALE



TYPICAL WATERSTOP
(REBAR NOT SHOWN FOR CLARITY)

DETAIL 5
NO SCALE



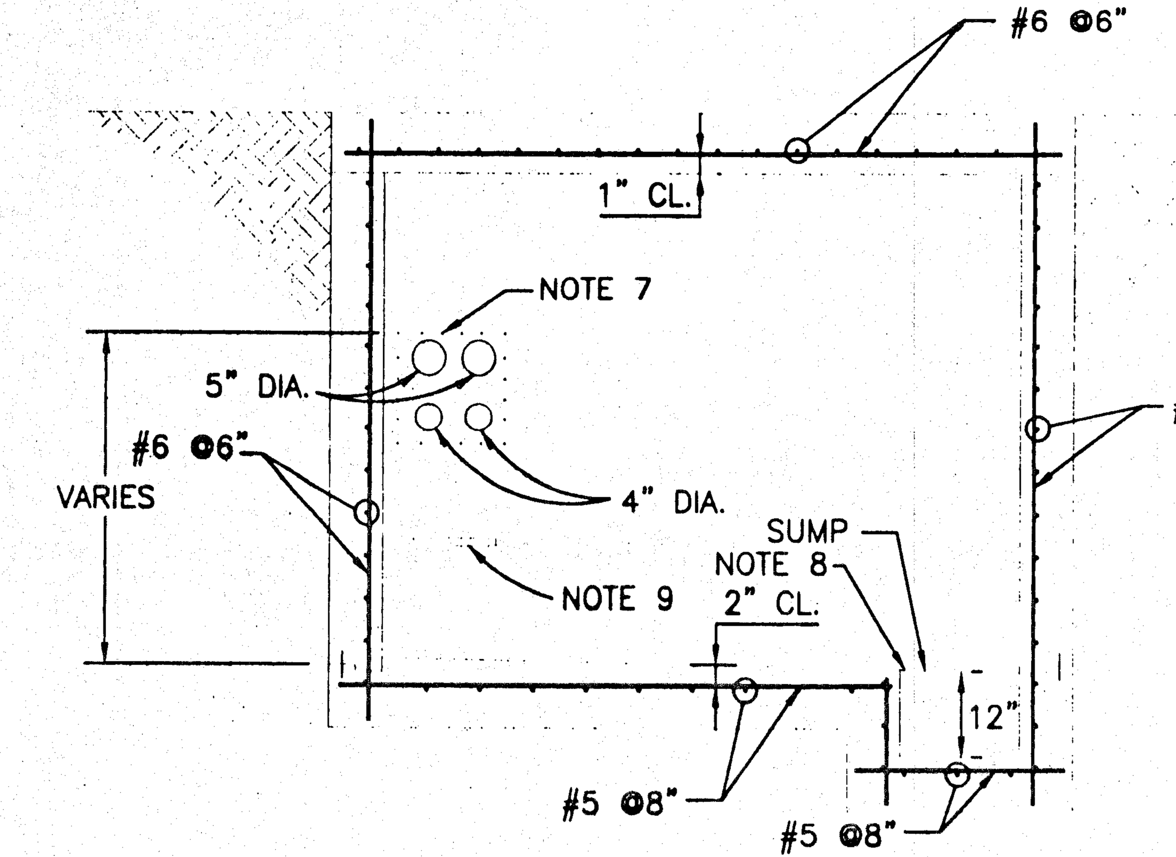
MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTE
PROJECT NAME

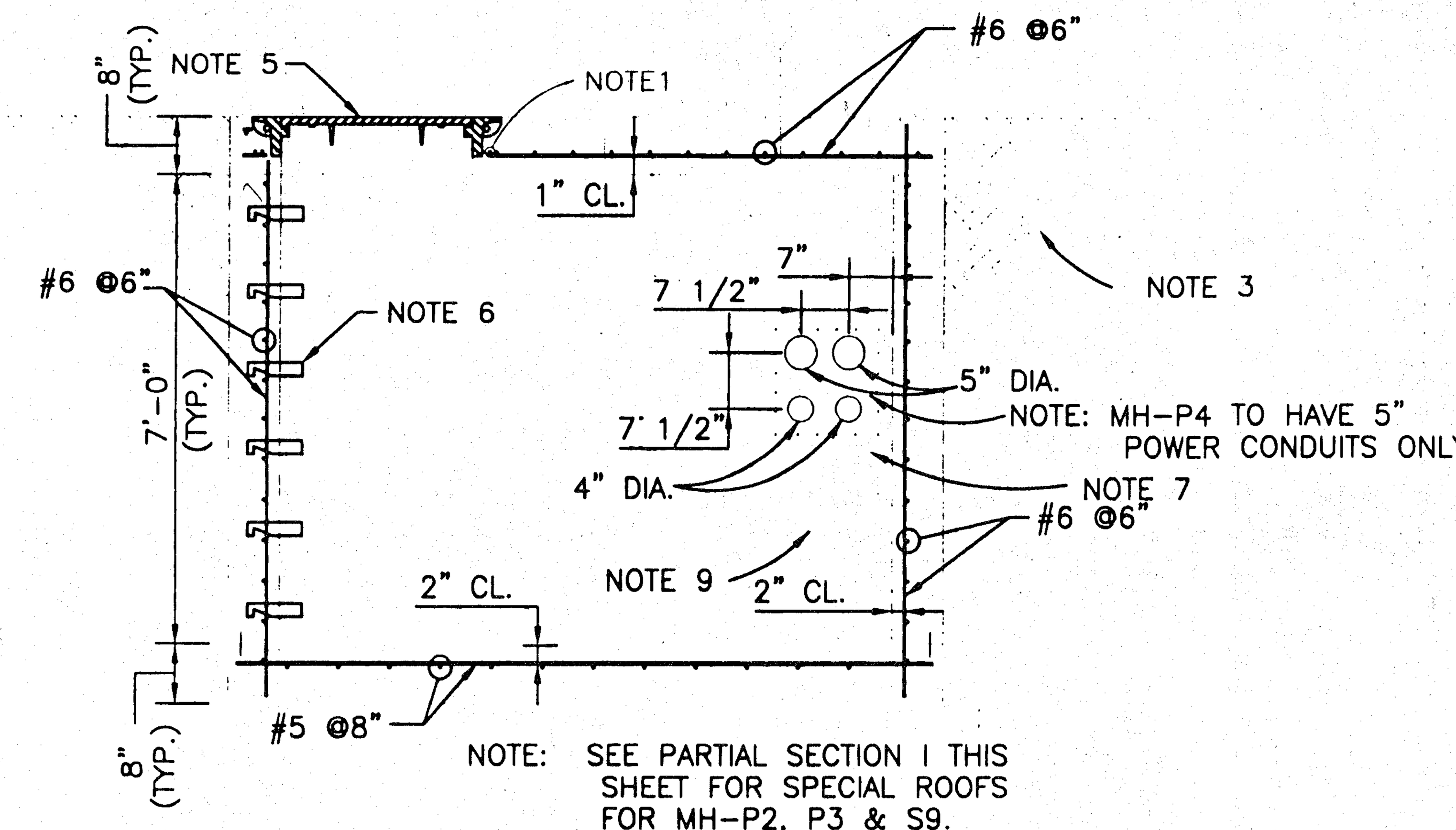
ELECTRICAL MANHOLE DETAILS
SHEET TITLE

DESIGN BY:	DRAWN BY:	CHECKED BY:
JWM/KJS	RRT	DLM

DATE	JOB NO.	SHEET/OF
AUGUST, 1995	93001	20

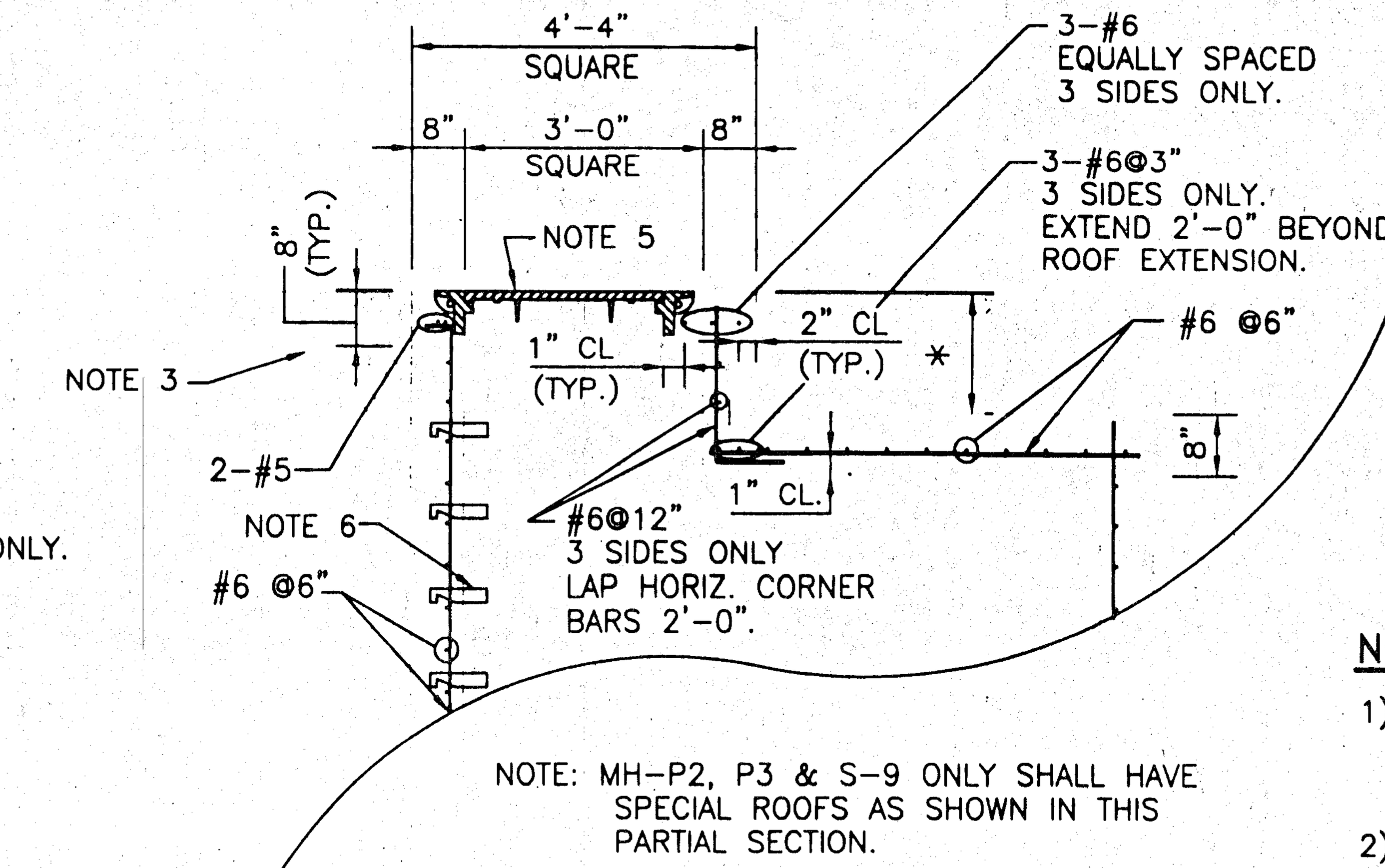


SECTION H
NO SCALE



SECTION I
NO SCALE

(TYPE 1E, TYPICAL)



PARTIAL SECTION I
NO SCALE

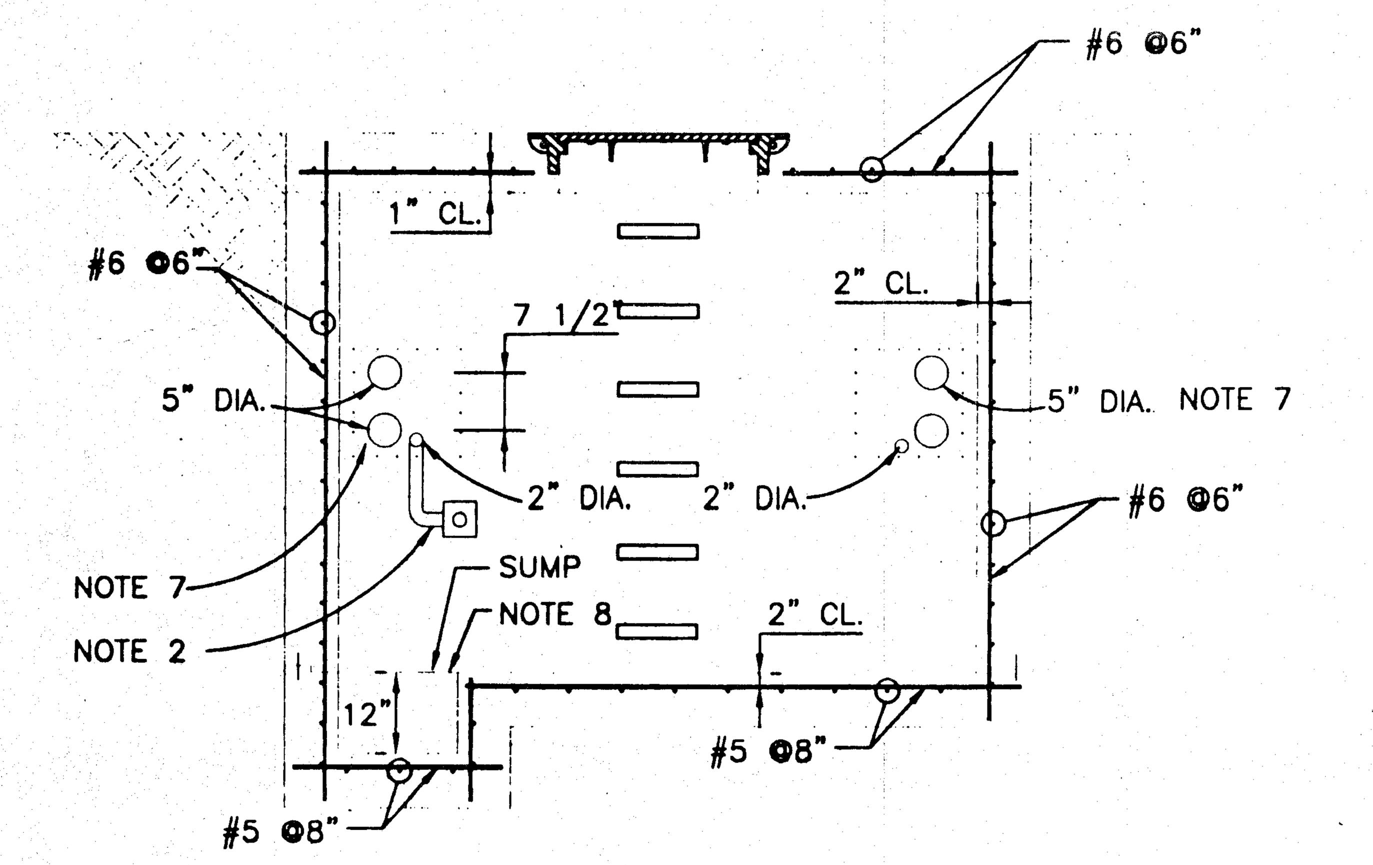
(TYPE 2E, TYPICAL)

MH	*
MH-P2	1'-6"
MH-P3	0'-8"
MH-S9	1'-6"

NOTES

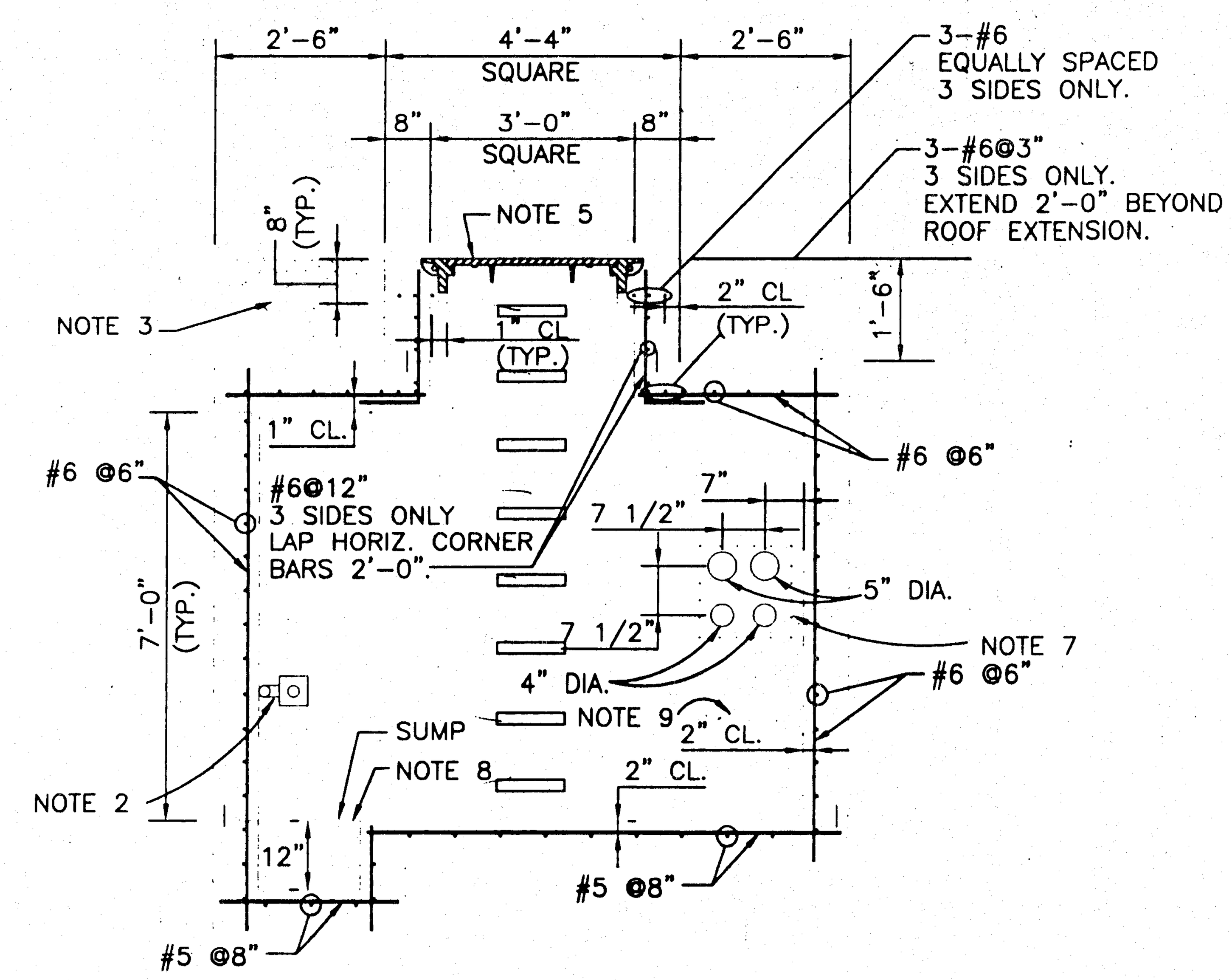
1) NOTE CALLOUTS ON THIS SHEET (E.G. "NOTE 7") REFER TO NOTES ON SHEET 20.

2) TYPE 2E MANHOLES (MH-P2, P3, & S9) SHALL HAVE SPECIAL ROOFS AS SHOWN ON THIS SHEET.



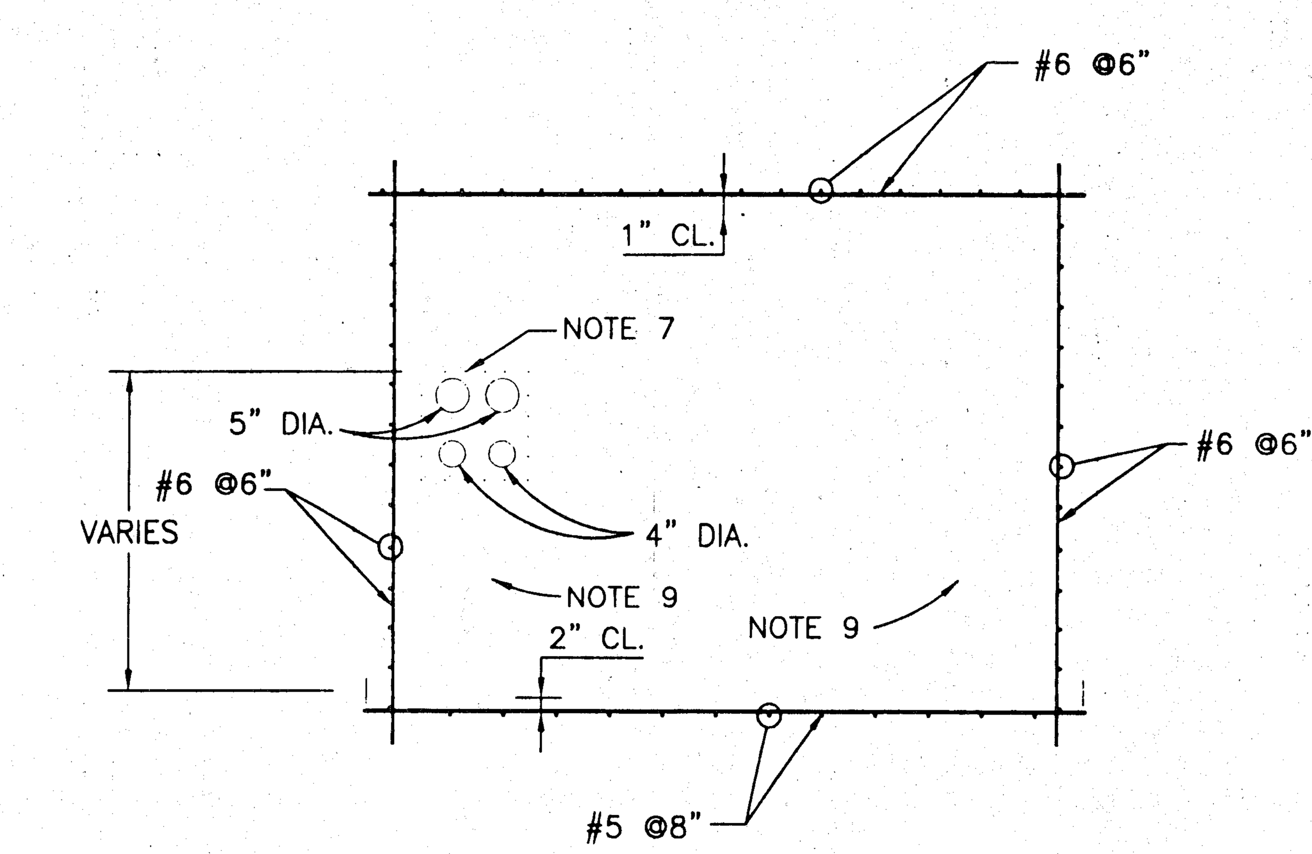
SECTION J
NO SCALE

(TYPE 1E, TYPICAL)



SECTION K
NO SCALE

(TYPE 2E, TYPICAL)



SECTION L
NO SCALE

KARL J. SWARTZ, JR. PROFESSIONAL ENGINEER

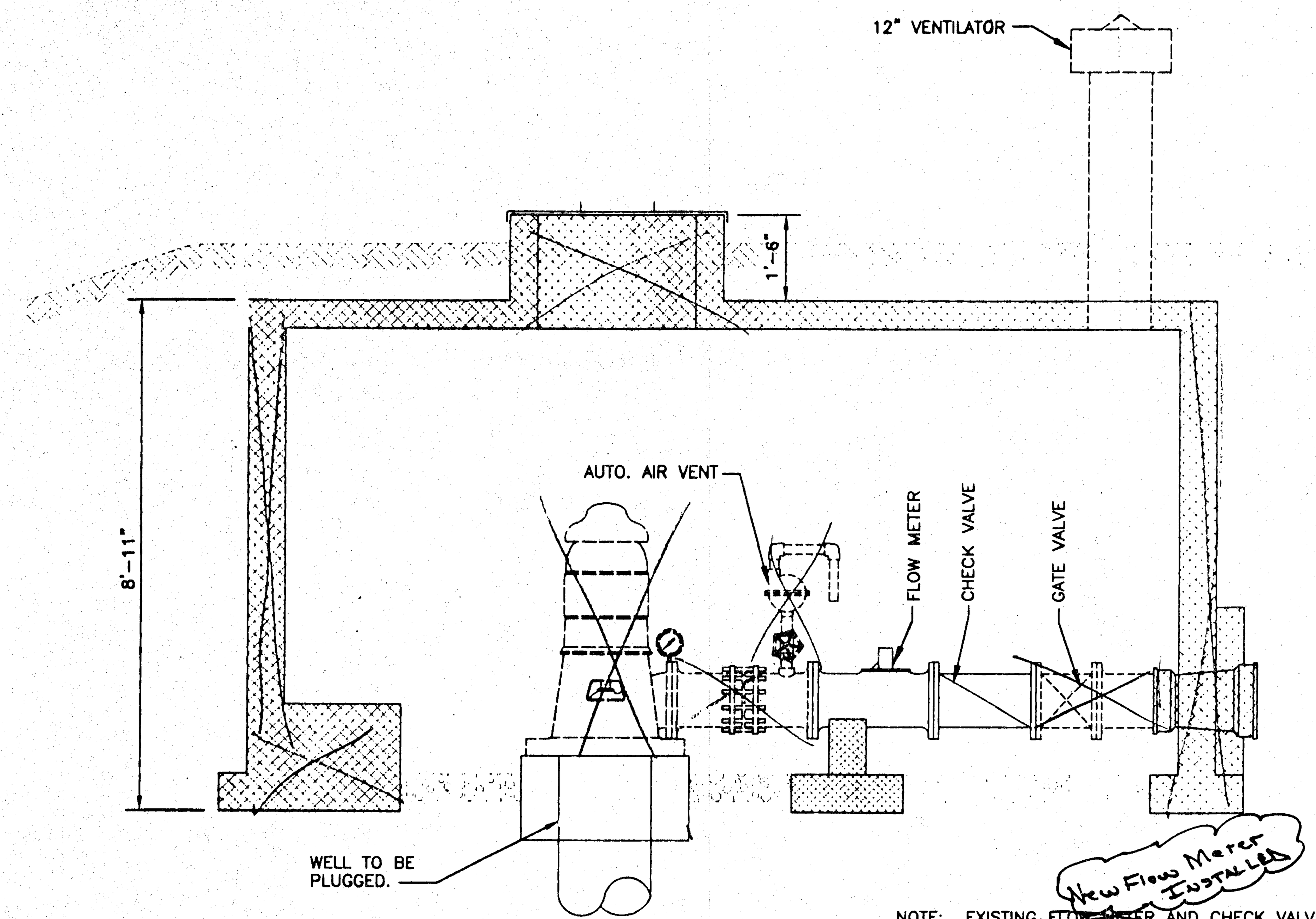
For Stevens - 601-544-2455

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYS
PROJECT NAME

ELECTRICAL MANHOLE DETAILS
SHEET TITLE

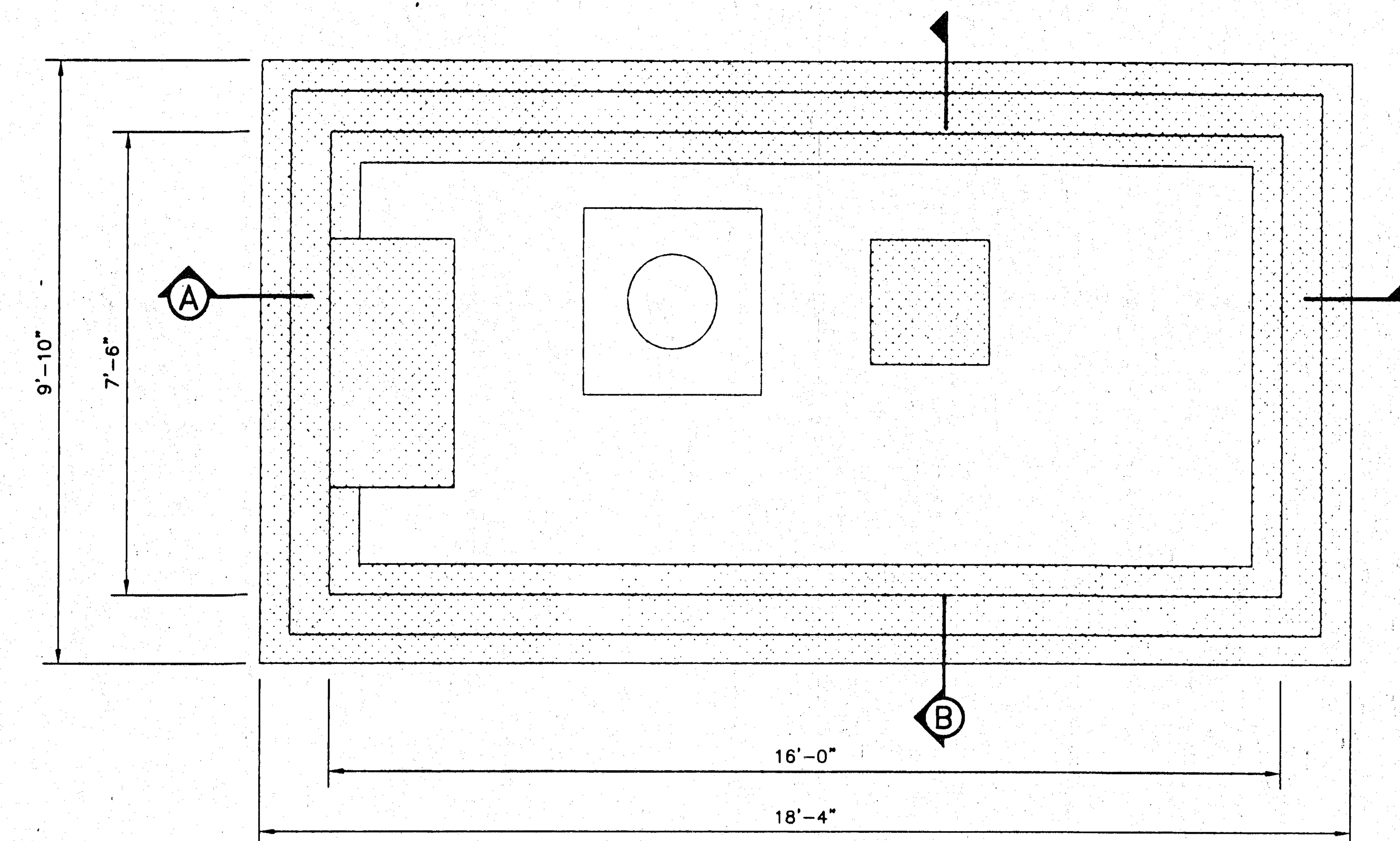
JWM/KJS	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED
AUGUST, 1995	93001	21 /
DATE	JOB NO.	SHEET/OF



NOTE: EXISTING ~~FLOW METER~~ AND CHECK VALVE SHALL BE RELOCATED AND REUSED IN NEW WELLHOUSE S-6.

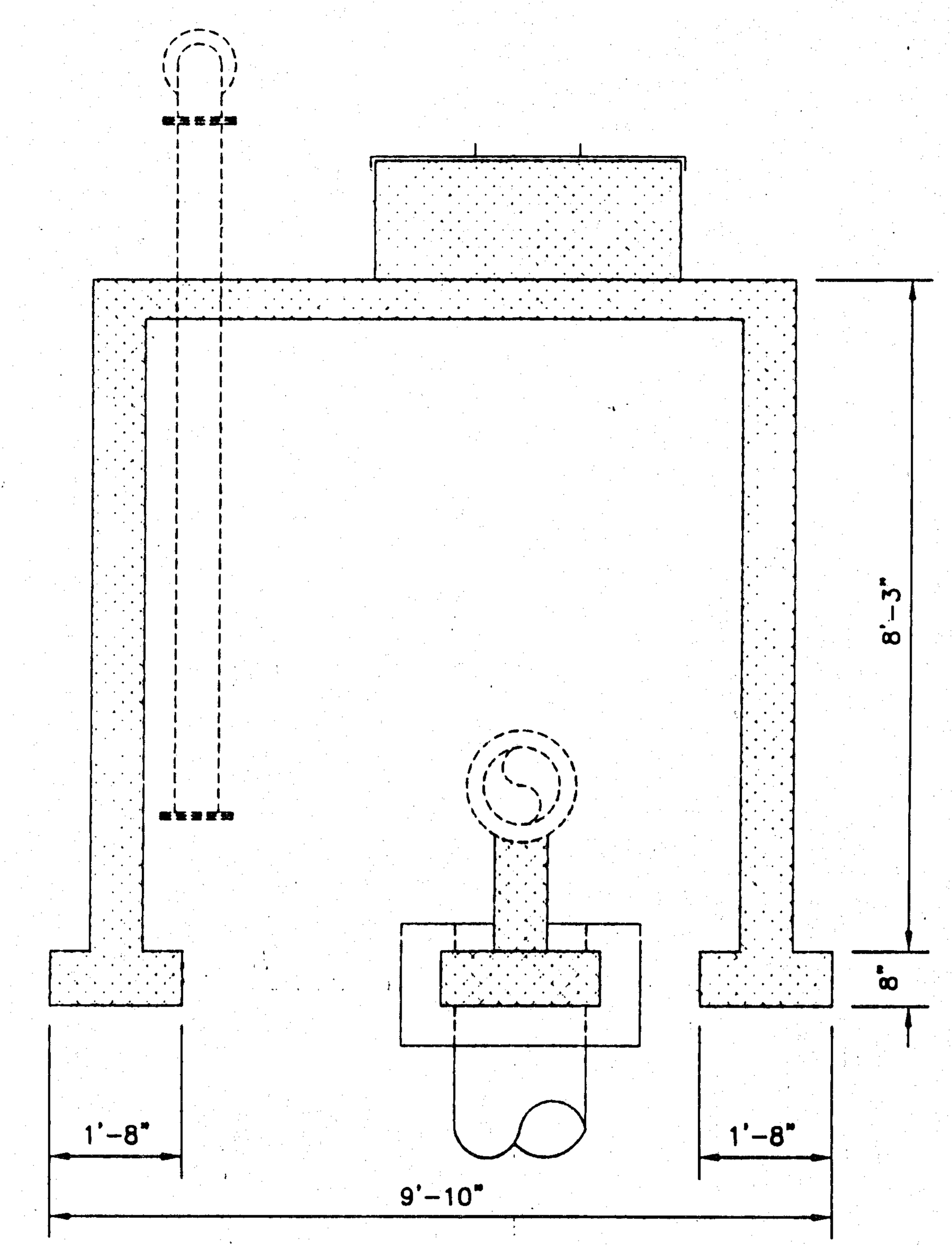
SECTION A

SCALE: 1/2"=1'-0"



SECTIONAL PLAN

SCALE: 1/2"=1'-0"



SECTION B

SCALE: 1/2"=1'-0"

GENERAL NOTES

1. EXISTING WELLHOUSE S-6 SHALL BE DEMOLISHED IN ACCORDANCE WITH THIS SHEET.
2. EXISTING WELLHOUSES N-2 AND N-3 ARE SIMILAR TO EXISTING WELLHOUSE S-6 AND SHALL BE DEMOLISHED IN LIKE MANNER. ALL PIPING AND APPURTENANCES IN EXISTING WELLHOUSES N-2 AND N-3 SHALL BE SALVAGED TO THE CITY. EXISTING WELLHOUSES N-2 AND N-3 DO NOT HAVE MOTORS, PUMPS OR ELECTRICAL FEEDS.
3. ALL ELECTRICAL EQUIPMENT AND APPURTENANCES SHALL BE REMOVED AND SALVAGED TO THE CITY.
4. PRIOR TO DEMOLISHING WELLHOUSE, THE CONTRACTOR SHALL PLUG THE WELL. SEE SPECIFICATIONS SECTION 02730 FOR PLUGGING REQUIREMENTS AND PROCEDURE.
5. FOLLOWING WELLHOUSE DEMOLITION, THE CONTRACTOR SHALL RESTORE THE EARTH AT THE WELLHOUSE LOCATION TO MATCH SURROUNDING GRADE (SEE SPECIFICATIONS FOR COMPACTION REQUIREMENTS).

LINE LEGEND

————	EXISTING PIPING AND STRUCTURE TO BE REUSED
— — —	EXISTING PIPING TO BE REMOVED AND SALVAGED TO CITY
(dotted bar)	EXISTING STRUCTURE TO BE DEMOLISHED

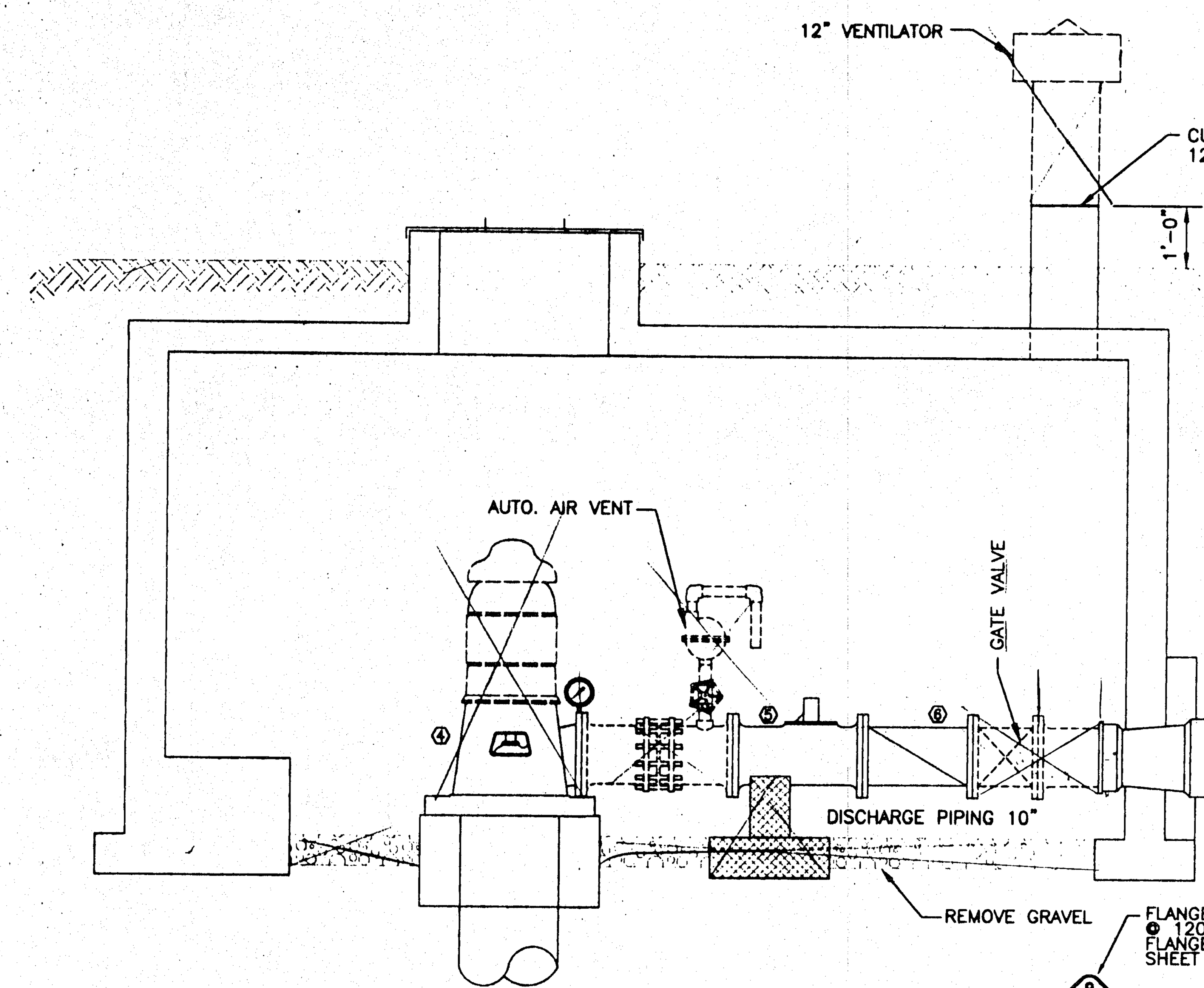
DARREL LYNN MOORE
LICENSED
KANSAS
PROFESSIONAL ENGINEER

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

WELLHOUSE DEMOLITION
SHEET TITLE

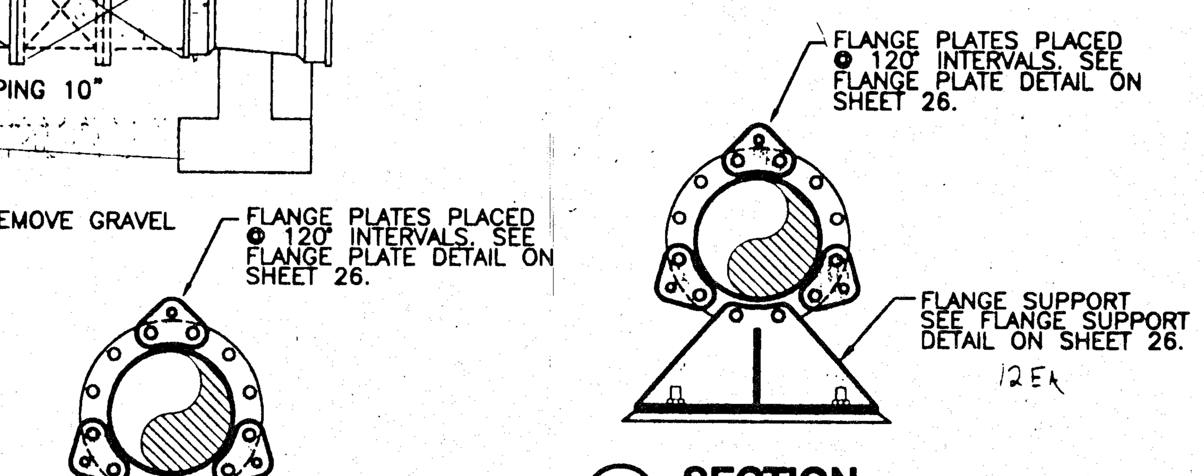
DAC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST, 1995	93001	22 / 4
DATE	JOB NO.	SHEET/OF



SECTION A - EXISTING

SCALE: 1/2"=1'-0"

LEGEND	
	EXISTING PIPING AND STRUCTURE TO BE REUSED
	EXISTING PIPING TO BE REMOVED AND SALVAGED TO CITY
	NEW PIPING AND STRUCTURE
	EXISTING STRUCTURE TO BE DEMOLISHED
(41)	SEE LIST OF MATERIALS
(4)	SEE PLAN NOTES.

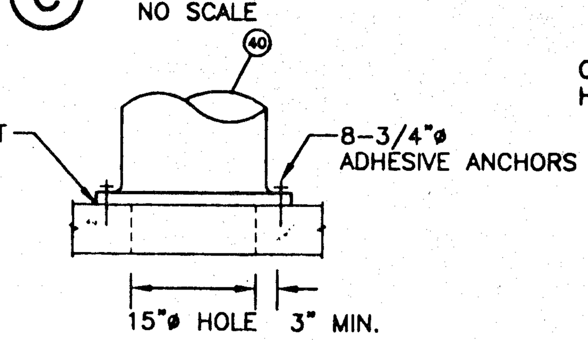


(D) SECTION

NO SCALE

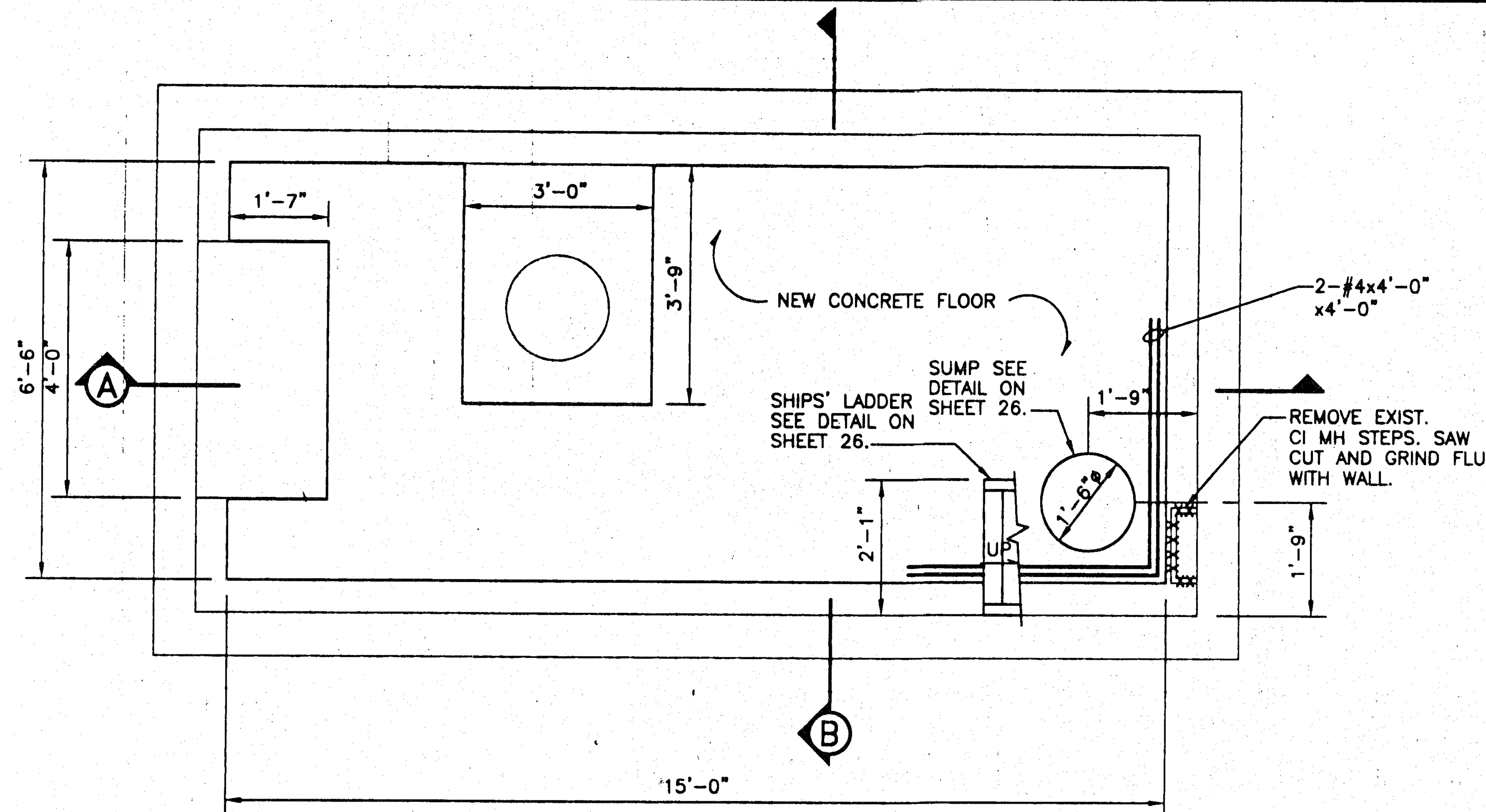
(C) SECTION

NO SCALE



AIR INTAKE PIPE MOUNTING DETAIL

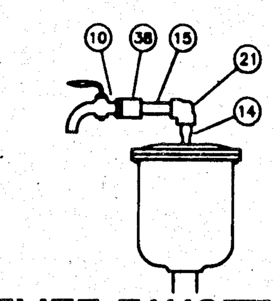
NO SCALE



SECTIONAL PLAN

SCALE: 1/2"=1'-0"

ABBREVIATIONS	
POC	POINT OF CONNECTION
BCP	BIDDING CONNECTION POINT
℄	CENTER LINE
R	RADIUS
DIA.	DIAMETER
EXIST	EXISTING
EXP	EXPANSION
NPT	NATIONAL PIPE THREAD
NST	NATIONAL STANDARD THREAD
TBE	THREADED BOTH ENDS
CLR	CLEARANCE
SCH.	SCHEDULE
GALV.	GALVANIZED
FLGD	FLANGED
PE	PLAIN END
CL	CLASS



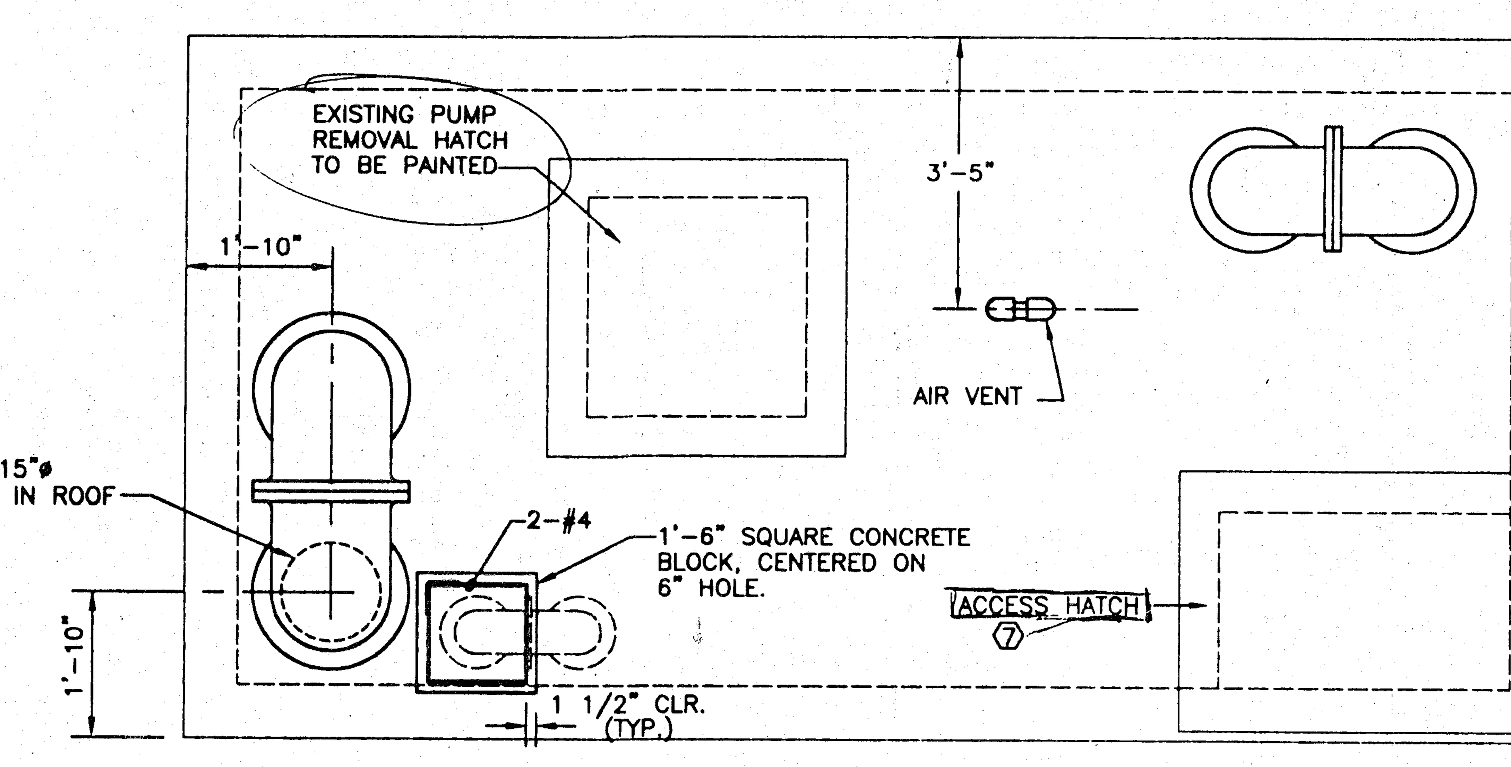
RELIEF FAUCET DETAIL

NO SCALE

	ITEM	SIZE	DESCRIPTION
	1	-	NUMBER NOT USED
	2	10"	FLOW METER (~~[illegible]~~)
	3	10"	EXPANSION JOINT, FLANGED
	4	10"	PIPE SPOOL, FLANGED, 10" DIA., CL 53, LENGTH AS REQ'D.
	5	-	NUMBER NOT USED
	6	10"	BUTTERFLY VALVE, FLANGED
12^60	7 ✓	2"	PIPE, SCH 40, GALV., NPT, LENGTH AS REQUIRED
4	8 ✓	2"	BALL VALVE, NPT
1	9 ✓	2" INLET	AIR RELEASE VALVE
1	10 ✓	3/4"	FAUCET
1	11 ✓	3/4"	UNION, CL 150, GALV., NPT
1	12 ✓	3/4"	BALL VALVE, NPT
1	13 ✓	2"x3/4"	SWAGED NIPPLE, SCH. 40, GALV., NPT, TBE
1	14 ✓	3/4"x1/2"	SWAGED NIPPLE, SCH. 40, GALV., NPT, TBE
3	15 ✓	3/4"	PIPE NIPPLE, SCH. 40 GALV., NPT, LENGTH AS REQ'D.
	16	0-60 PSI	PRESSURE GAUGE
1	17 ✓	2-1/2"x2"	SWAGED NIPPLE, SCH. 40, GALV., 2-1/2" NST x 2" NPT
			SOUTHPARK CORP., PART NO. HDN-3214AB
1	* 18 ✓	2-1/2"	PIPE CAP, NST, SOUTHPARK CORP., PART NO. HC-2708AB
2	19 ✓	2"	UNION, CL 150, GALV., NPT
7	20 ✓	2"x3"	PIPE NIPPLE, SCH. 40, GALV., NPT, 2" DIA. x 3"
2	21 ✓	3/4"	90° ELBOW, CL 150, GALV., NPT
3	22 ✓	2"	90° ELBOW, CL 150, GALV., NPT
	23	-	NUMBER NOT USED
	24	10"	PIPE SPOOL, FLGD x PE, 10"ø, CL53, LENGTH AS REQ'D.
	25	2"x10"	THREDOLET, 2" ON 10", SCH. 40, GALV.
	26	10"x12"	PIPE SPOOL, FLANGED, 10" DIA. x 12", CL 53
1	27 ✓	1/2"x3"	PIPE NIPPLE, SCH. 40, GALV., NPT, 1/2" DIA. x 3"
4	28 ✓	1/2"x4"	PIPE NIPPLE, SCH. 40, GALV., NPT, 1/2" DIA. x 4"
1	29 ✓	1/2"	TEE, CL 150, GALV., NPT
2	30 ✓	1/2"	BALL VALVE, NPT
1	31 ✓	1/2"	CAP, CL 150, GALV., NPT
24	32 ✓	2"	TEE, CL 150, GALV., NPT
	33	3/8"	ROD, THREADED ENDS, W/HEX NUTS & WASHERS
1	34 ✓	2"	RISER CLAMP, GRINNELL #261 OR APPROV. EQUAL, GALV.
2	35 ✓	3/8"	PIPE HANGER, GRINNELL #153 OR APPROV. EQUAL
1	36 ✓	1/2"	90° ELBOW, CL 150, GALV., NPT
1	37 ✓	2"x1/2"	REDUCER, CONCENTRIC, CL 150, GALV., NPT
1	38 ✓	3/4"	COUPLING, CL 150, GALV., NPT
2	39 ✓	16"	90° ELBOW, FLANGED, CL 53
1	40 ✓	16"x2'-0"	PIPE SPOOL, FLGD, 16"ø, CL 53, LENGTH AS REQ'D.
2	41 ✓	12"	90° ELBOW, FLANGED, CL 53

* PIPE CAP W/ 1-1/2"ø HOLE DRILLED IN END AND POLYETHYLENE HARDWARE CLOTH (NOM. OPENING 0.18") INSTALLED BETWEEN CAP AND CAP GASKET.

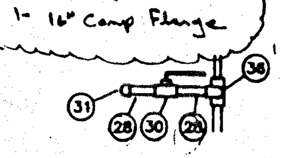
6 ea - 16" Comp Flange
6 ea - 10" Flges for 12" CIP
12 - 16" Bolt Sets
15 - 12" Bolt Sets



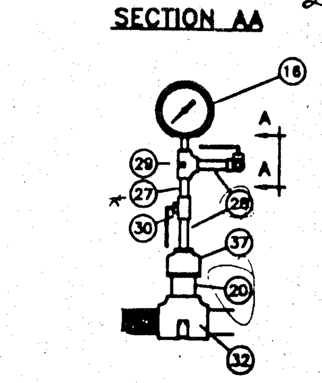
TOP PLAN

SCALE: 1/2"=1'-0"

1- 12" Unit Flange
3- 12" Fly Bolt Sets
1- 12" Comp Flange
3- 16" Fly Bolt Sets
1- 16" Comp Flange

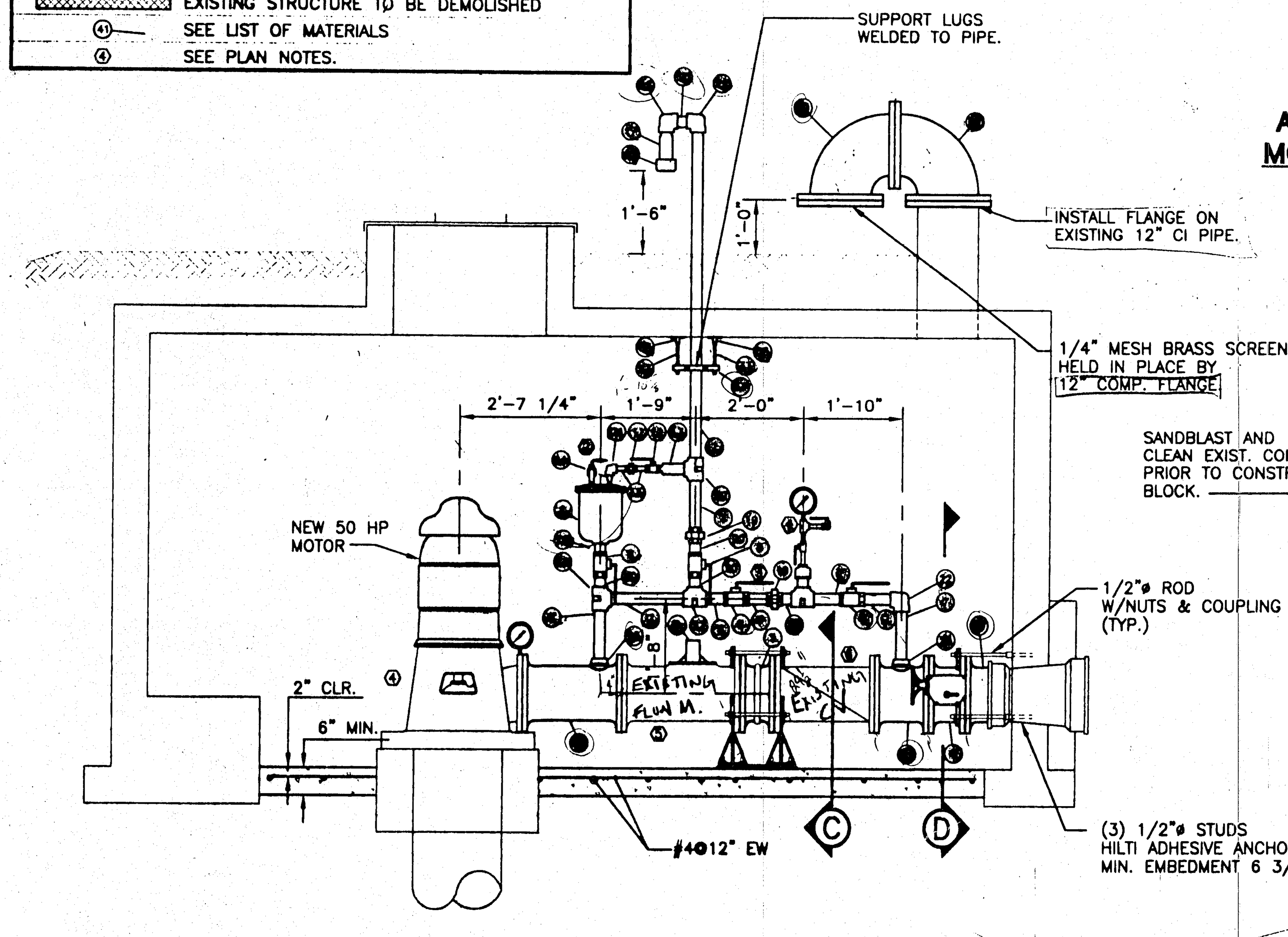


SECTION AA



PRESSURE GAUGE DETAIL

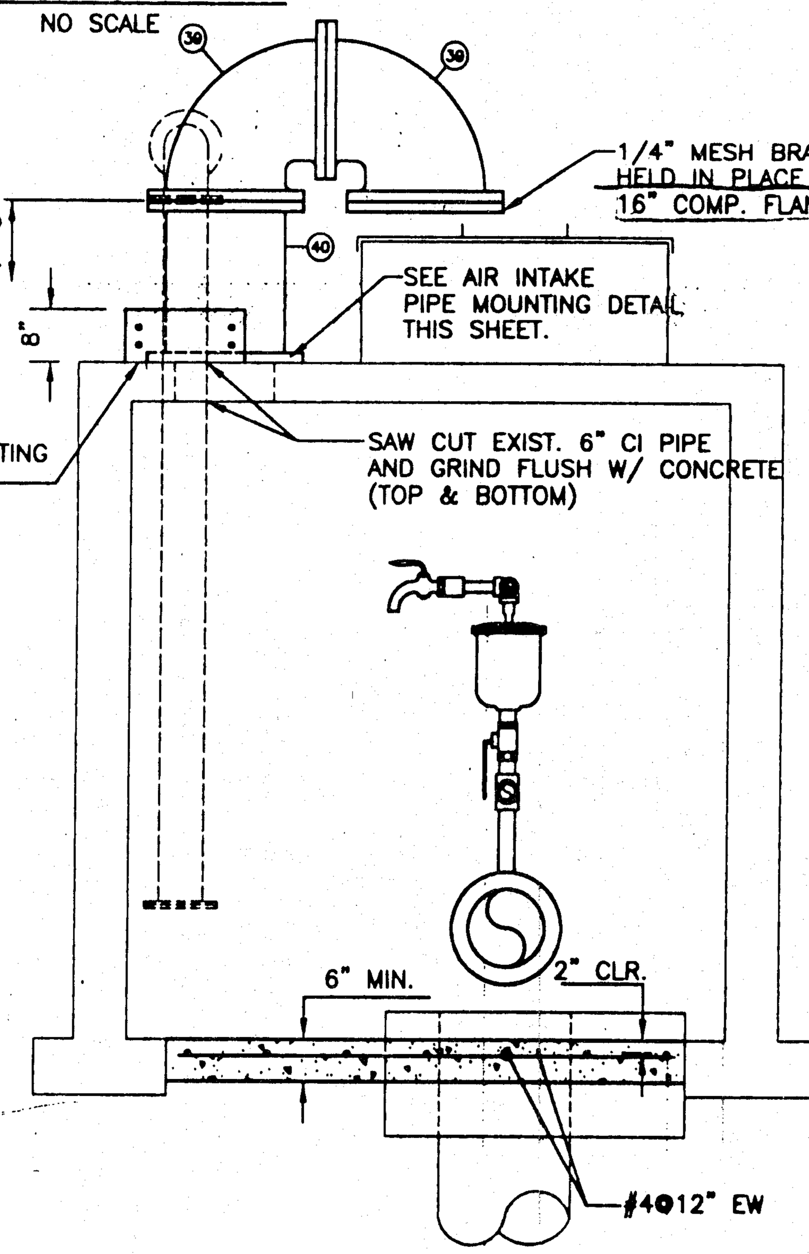
NO SCALE



SECTION A - NEW

SCALE: 1/2"=1'-0"

NOTE: EW = EACH WAY



SECTION B

SCALE: 1/2"=1'-0"

GENERAL NOTES

1. EXISTING WELLHOUSES S-1, S-2, S-3, S-4, S-5, AND S-7 SHALL BE MODIFIED IN ACCORDANCE WITH THIS SHEET.
2. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND LOCATION OF EQUIPMENT.
3. COORDINATE EXACT LOCATION OF NEW SUPPORTS, PIPING, AND VALVES WITH EXISTING EQUIPMENT, PIPING, CONDUIT, AND STRUCTURES.
4. ALL CONCRETE SHALL BE CLASS 1 (SEE SPECIFICATIONS). ALL CONCRETE SHALL HAVE A SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF f'c = 4000 PSI

   ALL GROUT SHALL BE SAND MIX. CHAMFER ALL EXPOSED EDGES WITH 3/4 INCH MOLDING.
5. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. MIN. LAP LENGTHS ARE AS FOLLOWS: #4 - 1'-4", #5 - 1'-8".
6. ALL FLANGED PIPE AND FITTINGS SHALL BE CLASS 53 DUCTILE IRON.
7. ALL NPT PIPE AND FITTINGS SHALL BE GALVANIZED STEEL.
8. ALL VALVES SHALL BE AS SPECIFIED.
9. SANDBLAST AND CLEAN ALL EXISTING CONCRETE SURFACES TO BE IN CONTACT W/ NEW CONCRETE.
10. ALL PIPE PENETRATIONS THROUGH ROOF SHALL BE SEALED WITH EMBECO GROUT. SEE DETAIL ON SHT. 26.
11. FLOOR SLAB REINFORCEMENT SHALL BE PLACED W/BAR CHAIRS AT A MAXIMUM SPACING OF 3'-0" ON CENTERS. FLOOR SLAB BARS MAY BE MOVED SLIGHTLY TO CLEAR WELL CASING COLLAR AND LEDGE.
12. SHAPE FLOOR TOWARD SUMP AT 1/16 INCH PER FOOT.
13. ANY DEPRESSIONS OR VOIDS PRESENT AFTER THE REMOVAL OF CONCRETE AND GRAVEL SHALL BE FILLED WITH CONCRETE ~~AT THE TIME THE FLOOR SLAB IS CONSTRUCTED.~~
14. PAINT PUMP, MOTOR, BASE PLATE, PIPING, PIPE SUPPORTS, AND EXISTING PUMP REMOVAL HATCH PER THE SPECIFICATIONS.

PLAN NOTES

1. REFER TO PRESSURE GAUGE DETAIL ON THIS SHEET.
2. REFER TO RELIEF FAUCET DETAIL ON THIS SHEET.
3. VALVES SHOWN PARALLEL WITH PIPING ASSEMBLY FOR CLARITY. PLACE VALVE HANDLES PERPENDICULAR TO PIPING ASSEMBLY DURING CONSTRUCTION.
4. EXISTING PUMP SHALL BE DISASSEMBLED, CLEANED, AND REBUILT WITH NEW TYPE 316 S.S. BOLTS. REINSTALL PUMP AFTER APPROVAL BY THE ENGINEER.
5. EXISTING METERHEAD SHALL BE REMOVED FROM FLOW METER TUBE AND SALVAGED TO THE CITY. EXISTING FLOW METER TUBE SHALL BE CLEANED AND A NEW METERHEAD SHALL BE INSTALLED IN THE FLOW METER TUBE.
6. EXISTING CHECK VALVE SHALL BE CLEANED AND SERVICED PRIOR TO REINSTALLATION.
7. THE CONTRACTOR SHALL REMOVE THE EXISTING STEEL ACCESS HATCH AND HARDWARE AND SHALL INSTALL A NEW ALUMINUM ACCESS HATCH. SEE ACCESS HATCH DETAIL ON SHEET 26.

DANIEL LYNN MOORE
LICENSED
9055
KANSAS
PROFESSIONAL ENGINEER

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

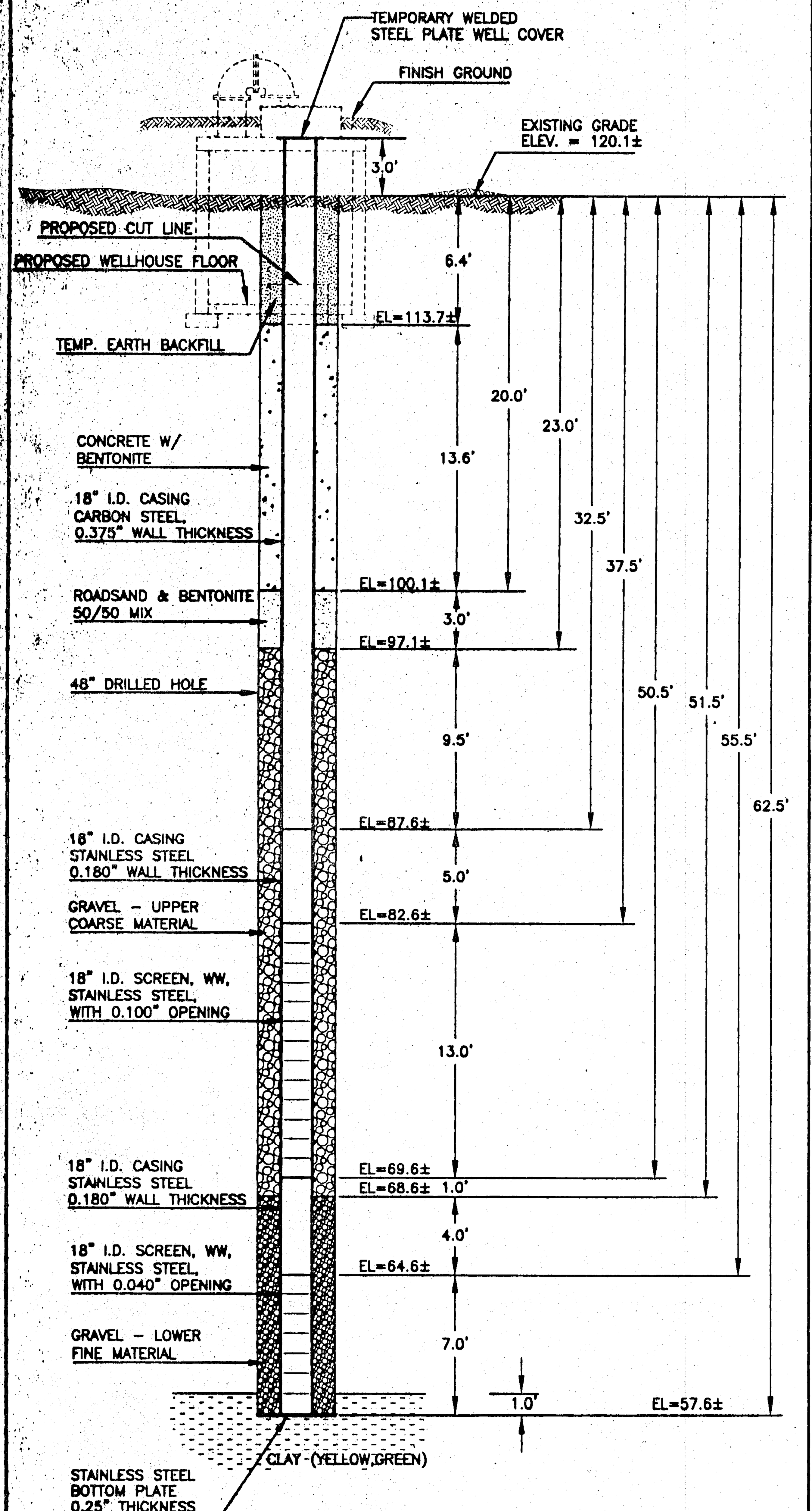
CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

WELLHOUSE REHABILITATION
SHEET TITLE

DAC/MDK	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST, 1995	93001	23 / 4
DATE	JOB NO.	SHEET/OF

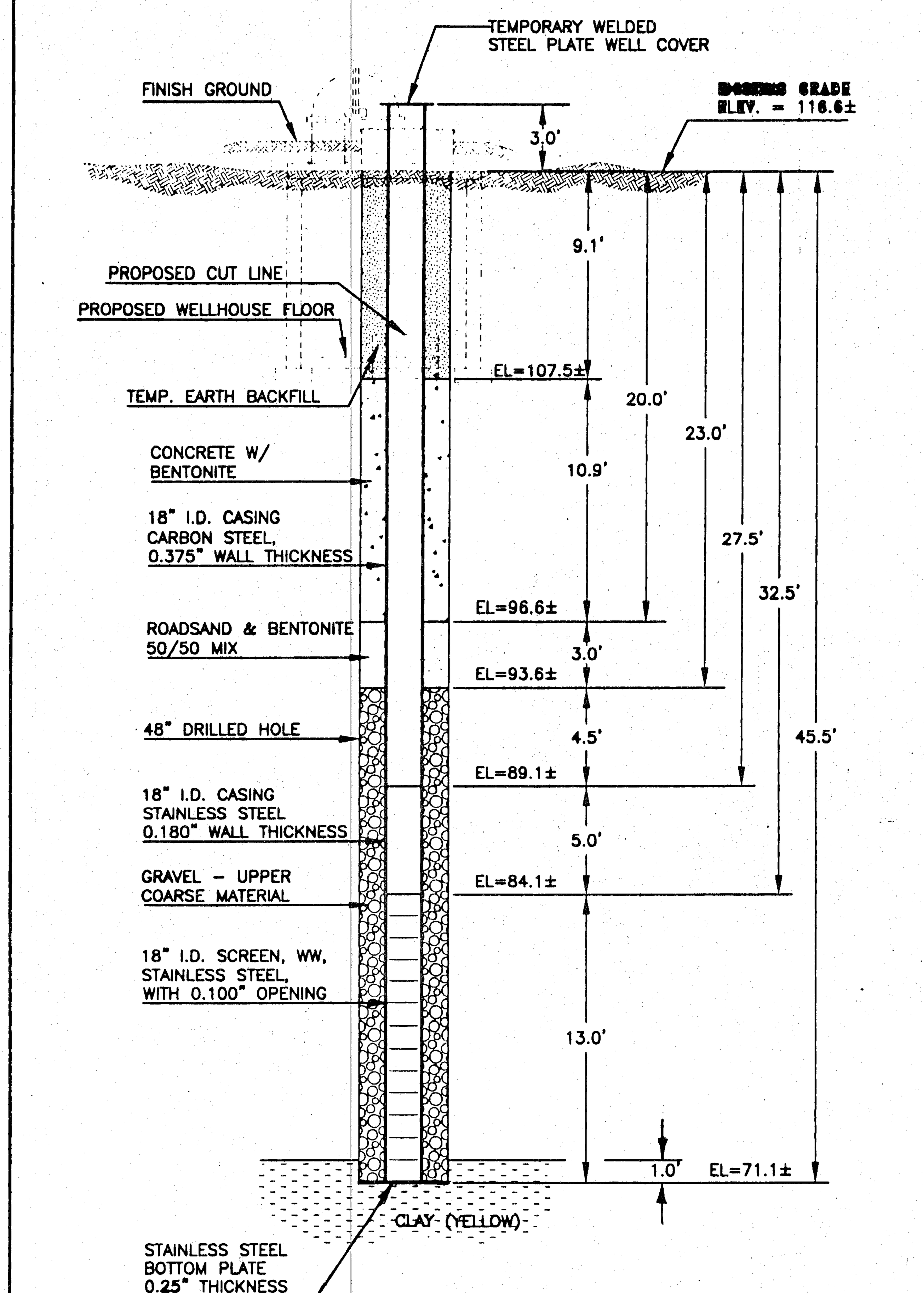
WELL S-6 (AT TH 1-95)

SCALE: 1"=5'-0"



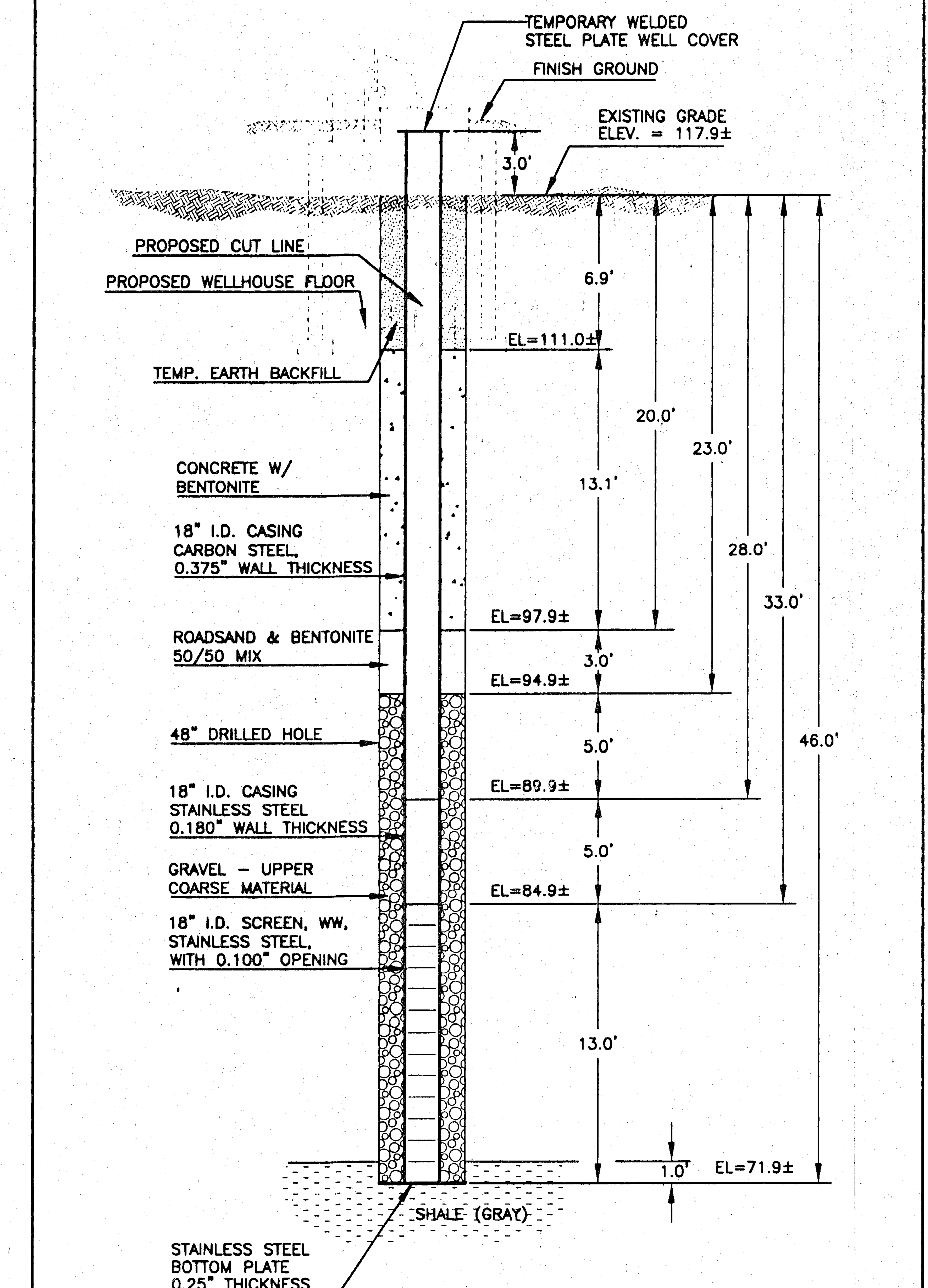
WELL S-9 (AT TH 2-95)

SCALE: 1"=5'-0"



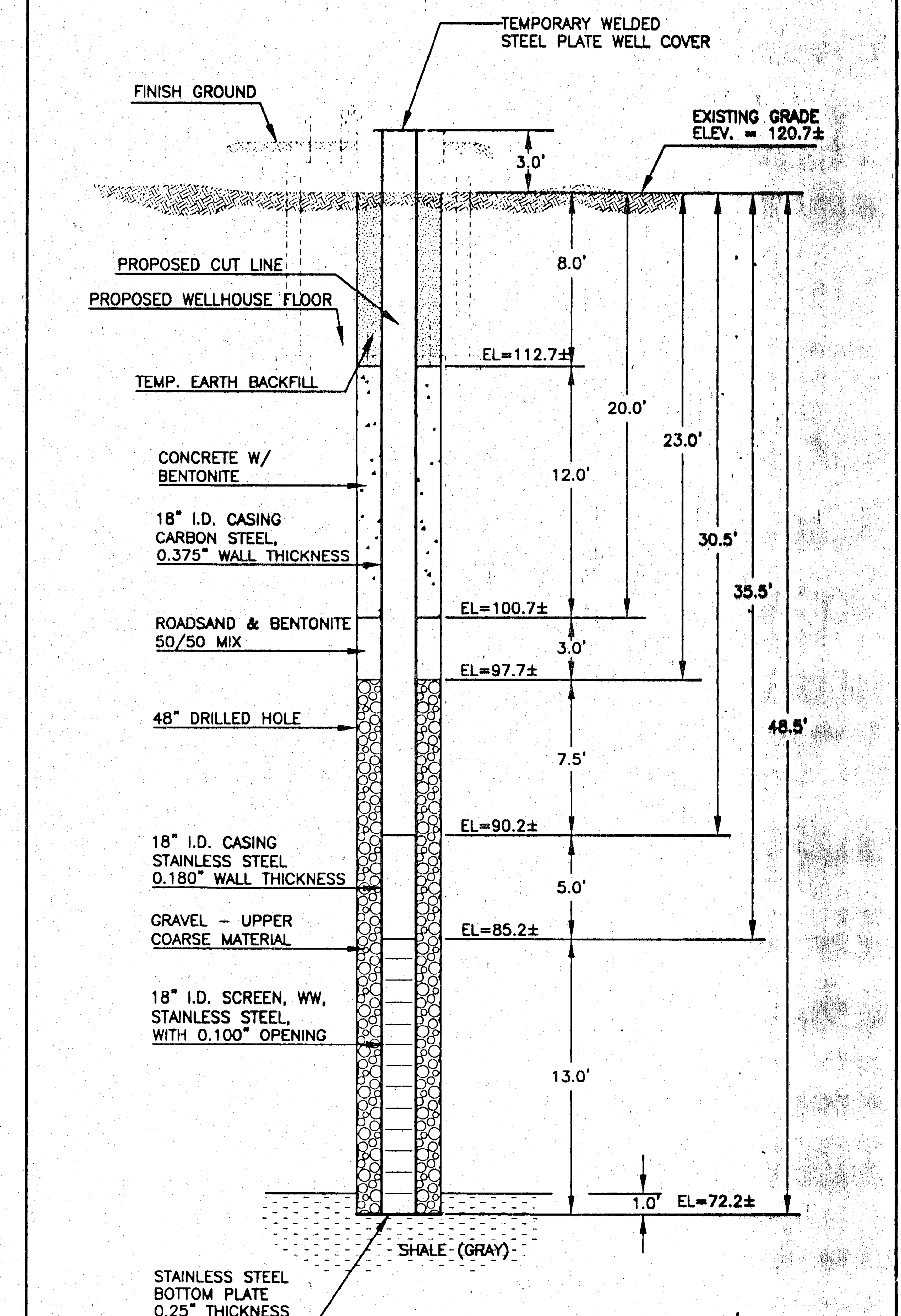
WELL S-10 (AT TH 3-95)

SCALE: 1"=5'-0"



WELL S-11 (AT TH 4-95)

SCALE: 1"=5'-0"



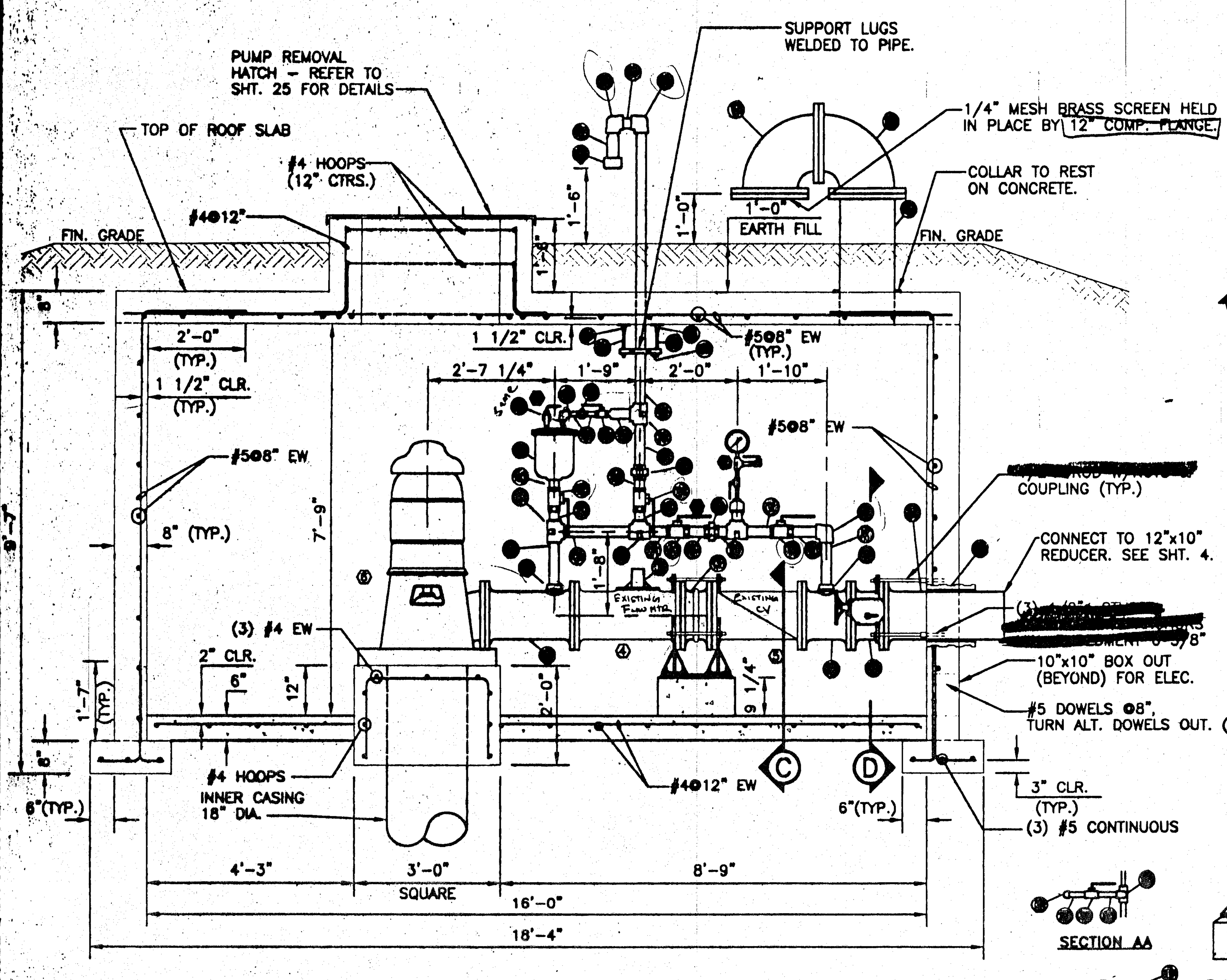
DARREL LYNN MOORE
LICENSED
9055
KANSAS
PROFESSIONAL ENGINEER
6-11-96

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

NEW WELL CONSTRUCTION
SHEET TITLE

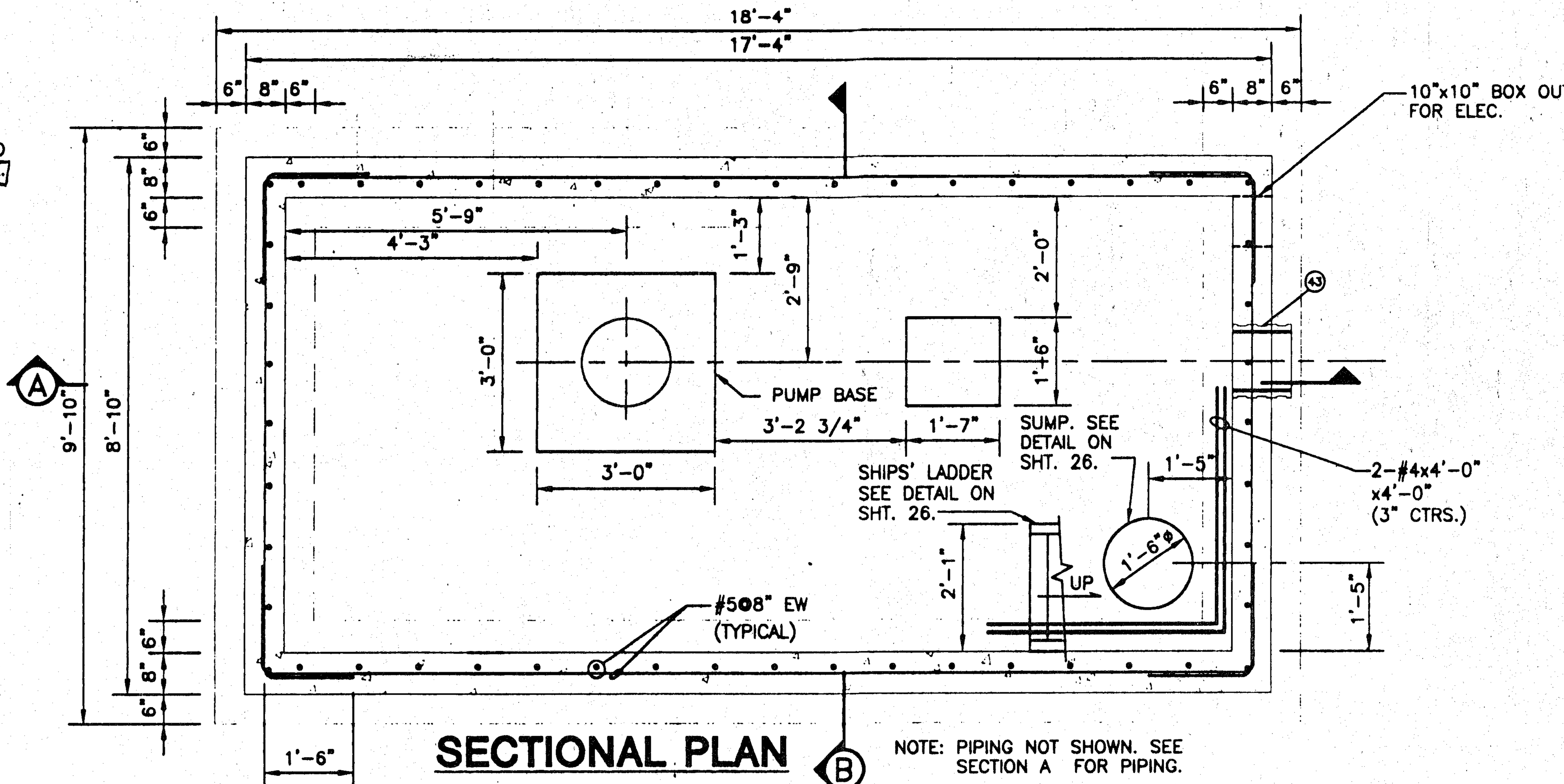
GWA/DAC	RSB	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST, 1995	93001	24 / 41
DATE	JOB NO.	SHEET/OF



SECTION A (NEW WELL S-6)

SCALE: 1/2"=1'-0"

NOTE: EW = EACH WAY

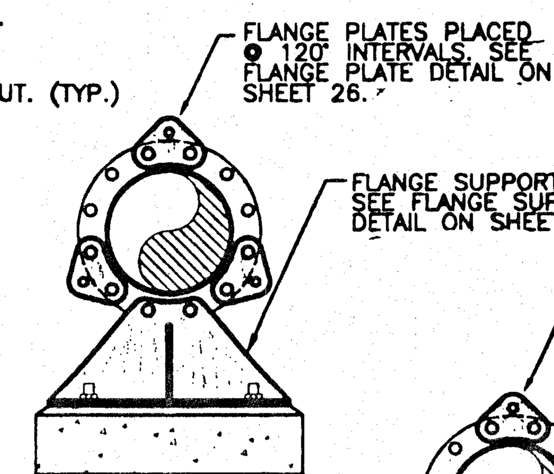


SECTIONAL PLAN

SCALE: 1/2"=1'-0"

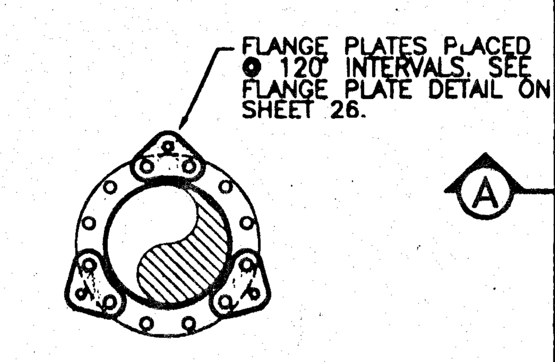
NOTE: PIPING NOT SHOWN. SEE SECTION A FOR PIPING.

SECTION AA



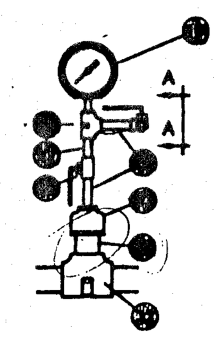
SECTION C

NO SCALE



SECTION D

NO SCALE

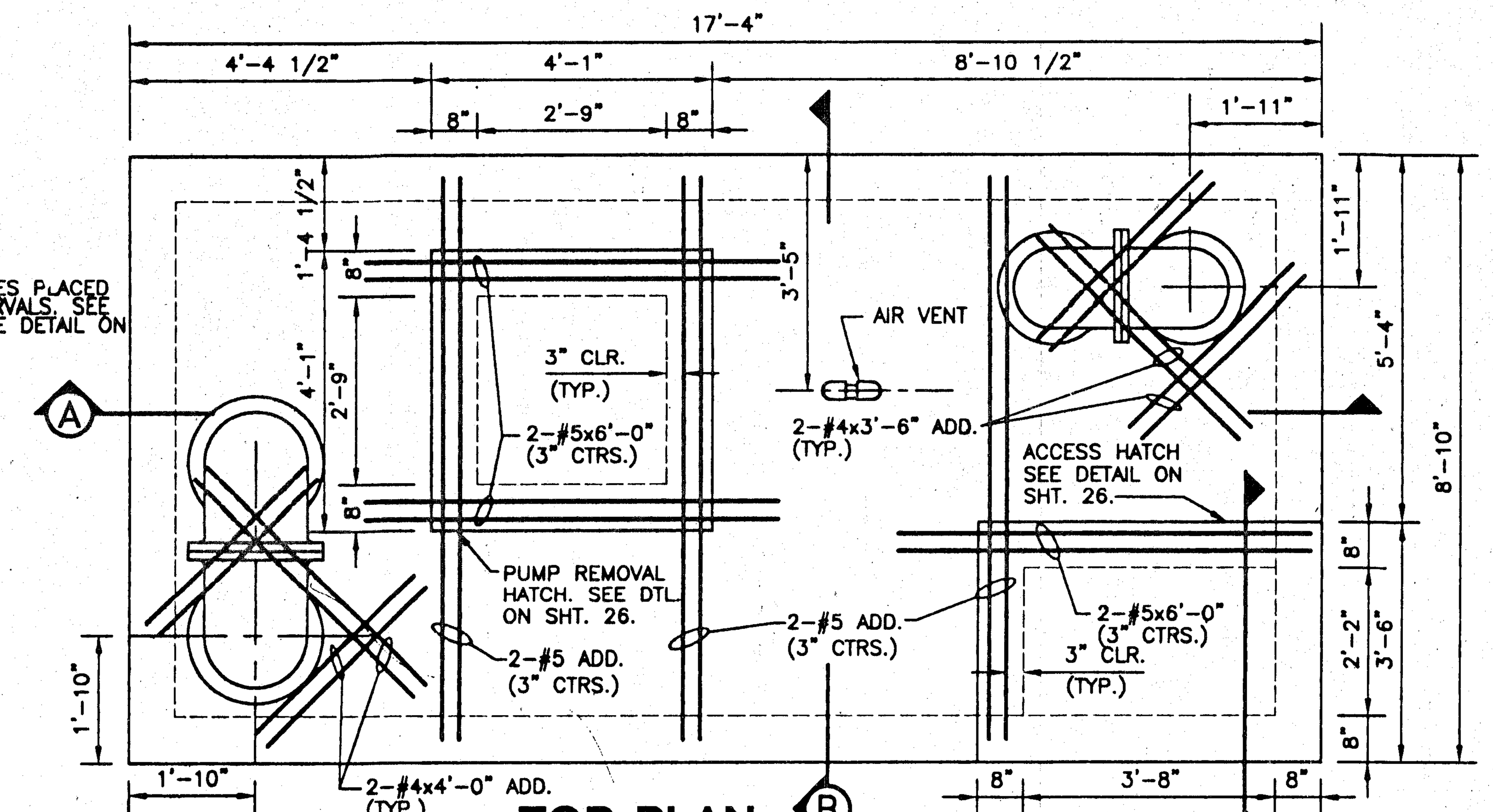


PRESSURE GAUGE DETAIL

NO SCALE

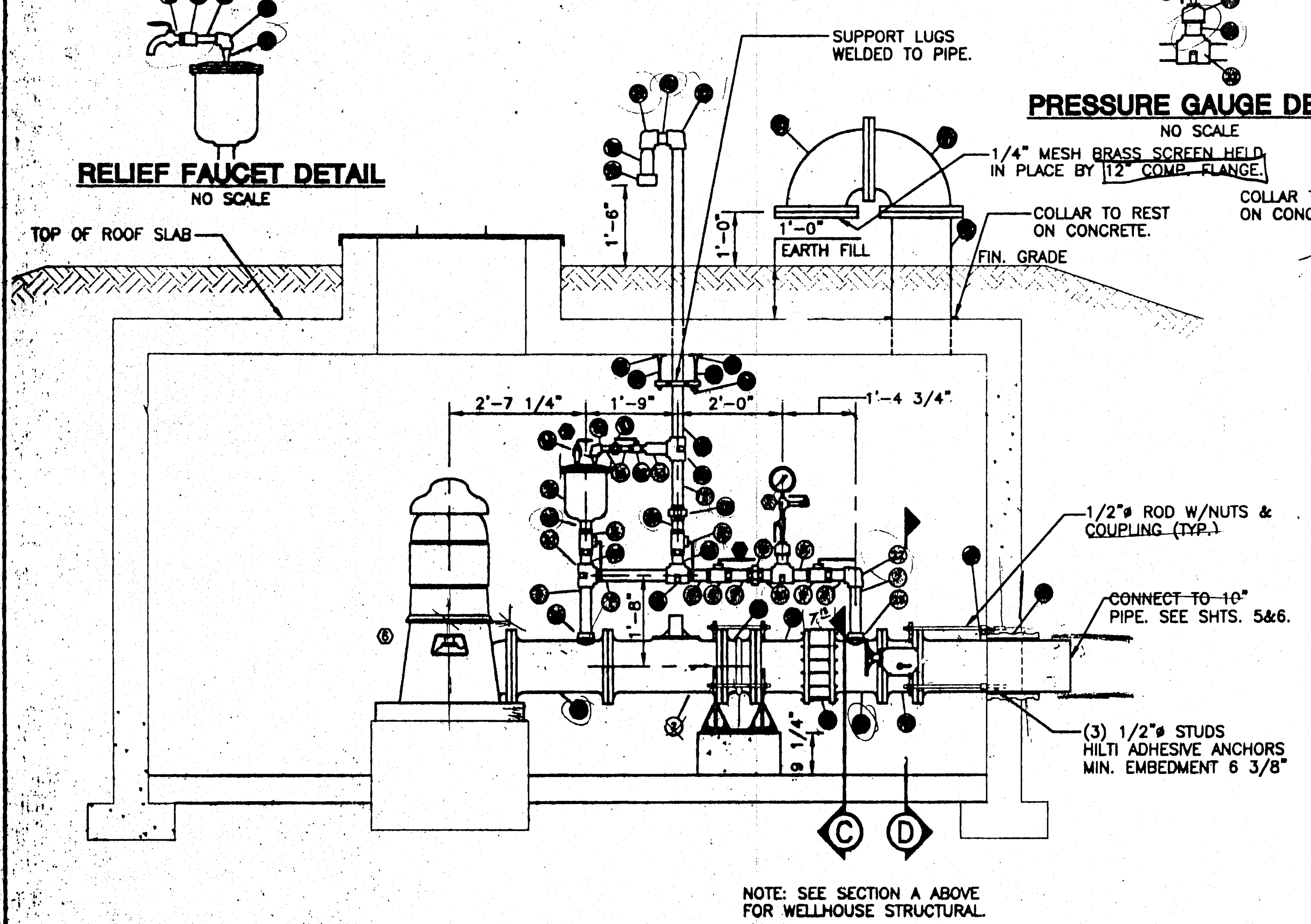
RELIEF FAUCET DETAIL

NO SCALE



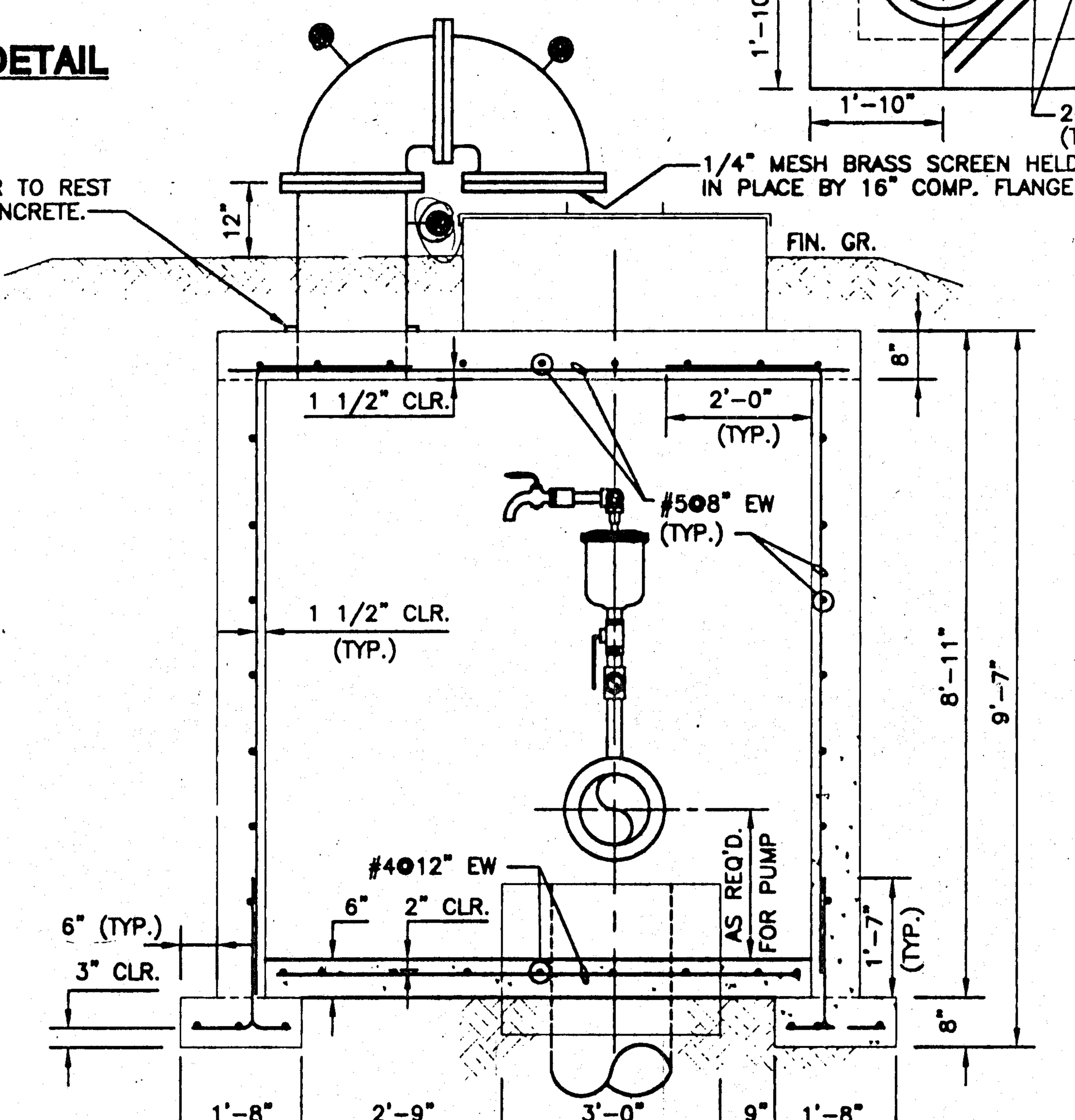
TOP PLAN

SCALE: 1/2"=1'-0"



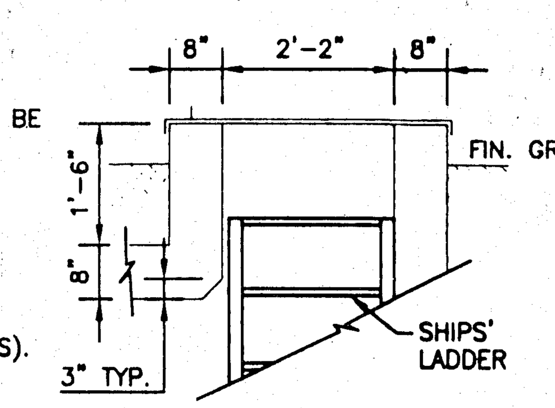
SECTION A (NEW WELLS S-9, S-10, AND S-11)

SCALE: 1/2"=1'-0"



SECTION B

SCALE: 1/2"=1'-0"



SECTION D

SCALE: 1/2"=1'-0"

LIST OF MATERIALS		
ITEM	SIZE	DESCRIPTION
1	-	NUMBER NOT USED
2	10"	FLOW METER, FLANGED (NEW METERHEAD ONLY FOR S-6)
3	10"	EXPANSION JOINT, FLANGED
4	10"	PIPE SPOOL, FLANGED, 10" DIA., CL 53, LENGTH AS REQ'D.
5	10"	CHECK VALVE, WAFER
6	10"	BUTTERFLY VALVE, FLANGED
7	2"	PIPE, SCH 40, GALV., NPT, LENGTH AS REQUIRED
8	2"	BALL VALVE, NPT
9	2" INLET	AIR RELEASE VALVE
10	3/4"	FAUCET
11	3/4"	UNION, CL 150, GALV., NPT
12	3/4"	BALL VALVE, NPT
13	2"x3/4"	SWAGED NIPPLE, SCH. 40, GALV., NPT, TBE
14	3/4"x1/2"	SWAGED NIPPLE, SCH. 40, GALV., NPT, TBE
15	3/4"	PIPE NIPPLE, SCH. 40 GALV., NPT, LENGTH AS REQ'D.
16	0-60 PSI	PRESSURE GAUGE
17	2-1/2"x2"	SWAGED NIPPLE, SCH. 40, GALV., 2-1/2" NST x 2" NPT
		SOUTHPARK CORP., PART NO. HDN-3214AB
*18	2-1/2"	PIPE CAP, NST, SOUTHPARK CORP., PART NO. HC-2708AB
19	2"	UNION, CL 150, GALV., NPT
20	2"x3"	PIPE NIPPLE, SCH. 40, GALV., NPT, 2" DIA. x 3"
21	3/4"	90° ELBOW, CL 150, GALV., NPT
22	2"	90° ELBOW, CL 150, GALV., NPT
23	-	NUMBER NOT USED
24	10"	PIPE SPOOL, FLGDxPE, 10"ø, CL 53, LENGTH AS REQ'D.
25	2"x10"	THREDOLET, 2" ON 10", SCH. 40, GALV.
26	10"x12"	PIPE SPOOL, FLANGED, 10" DIA. x 12", CL 53
27	1/2"x3"	PIPE NIPPLE, SCH. 40, GALV., NPT, 1/2" DIA. x 3"
28	1/2"x4"	PIPE NIPPLE, SCH. 40, GALV., NPT, 1/2" DIA. x 4"
29	1/2"	TEE, CL 150, GALV., NPT
30	1/2"	BALL VALVE, NPT
31	1/2"	CAP, CL 150, GALV., NPT
32	2"	TEE, CL 150, GALV., NPT
33	3/8"	ROD, THREADED ENDS, w/ HEX NUT AND WASHER
34	2"	RISER CLAMP, GRINNELL #261, GALV., OR APPROV. EQUAL
35	3/8"	PIPE HANGER, GRINNELL #153 OR APPROV. EQUAL
36	1/2"	90° ELBOW, CL 150, GALV., NPT
37	2"x1/2"	REDUCER, CONCENTRIC, CL 150, GALV., NPT
38	3/4"	COUPLING, CL 150, GALV., NPT
39	16"	90° ELBOW, FLANGED, CL 53
40	16"x2'-8"	WALL COLLAR, FLGDxPE, 16" DIA. CL 53, LENGTH AS REQ'D.
41	12"	90° ELBOW, FLANGED, CL 53
42	12"x2'-8"	WALL COLLAR, FLGDxPE, 12" DIA. CL 53, LENGTH AS REQ'D.
43	10"	WALL SLEEVE, CAULKED, AMER. A-01770, 12" LONG

* PIPE CAP W/ 1-1/2"ø HOLE DRILLED IN END AND POLYETHYLENE HARDWARE CLOTH (NOM. OPENING 0.18") INSTALLED BETWEEN CAP AND CAP GASKET.

PLAN NOTES

1. REFER TO PRESSURE GAUGE DETAIL ON THIS SHEET.
2. REFER TO RELIEF FAUCET DETAIL ON THIS SHEET.
3. VALVES SHOWN PARALLEL WITH PIPING ASSEMBLY FOR CLARITY. PLACE VALVE HANDLES PERPENDICULAR TO PIPING ASSEMBLY DURING CONSTRUCTION.
4. EXISTING FLOW METER (RELOCATED) SHALL BE MODIFIED AS FOLLOWS. EXISTING METERHEAD SHALL BE REMOVED FROM FLOW METER TUBE AND SALVAGED TO THE CITY. EXISTING FLOW METER TUBE SHALL BE CLEANED AND A NEW METERHEAD SHALL BE INSTALLED IN THE FLOW METER TUBE.
5. EXISTING CHECK VALVE (RELOCATED) SHALL BE CLEANED AND SERVICED PRIOR TO REINSTALLATION.
6. NEW PUMP, MOTOR AND PUMP BASE PLATE SHALL BE FURNISHED AND INSTALLED BY PUMP CONTRACTOR. ANCHOR BOLTS SHALL BE FURNISHED BY PUMP CONTRACTOR AND INSTALLED BY CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH PUMP CONTRACTOR.

GENERAL NOTES

1. NEW WELLHOUSES S-6, S-9, S-10, AND S-11 SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS SHEET.
2. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND LOCATION OF EQUIPMENT.
3. EXISTING FLOW METER BODY AND CHECK VALVE IN EXISTING WELLHOUSE S-6 SHALL BE RELOCATED AND REUSED IN NEW WELLHOUSE S-6.
4. ALL CONCRETE SHALL BE CLASS 1 (SEE SPECIFICATIONS). ALL CONCRETE SHALL HAVE A SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS OF f'c = 4000 PSI

   ALL GROUT SHALL BE SAND MIX. CHAMFER ALL EXPOSED EDGES WITH 3/4 INCH MOLDING.
5. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. MIN. LAP LENGTHS ARE AS FOLLOWS: #4 - 1'-4", #5 - 1'-8".
6. ALL FLANGED PIPE AND FITTINGS SHALL BE CLASS 53 DUCTILE IRON.
7. ALL NPT PIPE AND FITTINGS SHALL BE GALVANIZED STEEL.
8. ALL VALVES SHALL BE AS SPECIFIED.
9. ALL PIPE PENETRATIONS THROUGH ROOF SHALL BE SEALED WITH EMBECO GROUT. SEE DETAIL ON SHT. 26.
10. ALL REINFORCING (INCLUDING FLOOR SLAB) SHALL BE PLACED WITH BAR CHAIRS AT A MAXIMUM SPACING OF 3'-0" ON CENTERS.
11. ~~SLOPE FLOOR TOWARD SUMP AT 1/16 INCH PER FOOT.~~
12. PAINT PUMP, MOTOR, BASE PLATE, PIPING AND PIPE SUPPORTS PER THE SPECIFICATIONS

LEGEND

———	EXISTING PIPING AND STRUCTURE TO BE REUSED
———	NEW PIPING AND STRUCTURE
(4)	SEE LIST OF MATERIALS
(1)	SEE PLAN NOTES

DARREL LYNN MOORE LICENSED PROFESSIONAL ENGINEER KANSAS 6555 6-11-96

KARL LICENSED PROFESSIONAL ENGINEER KANSAS

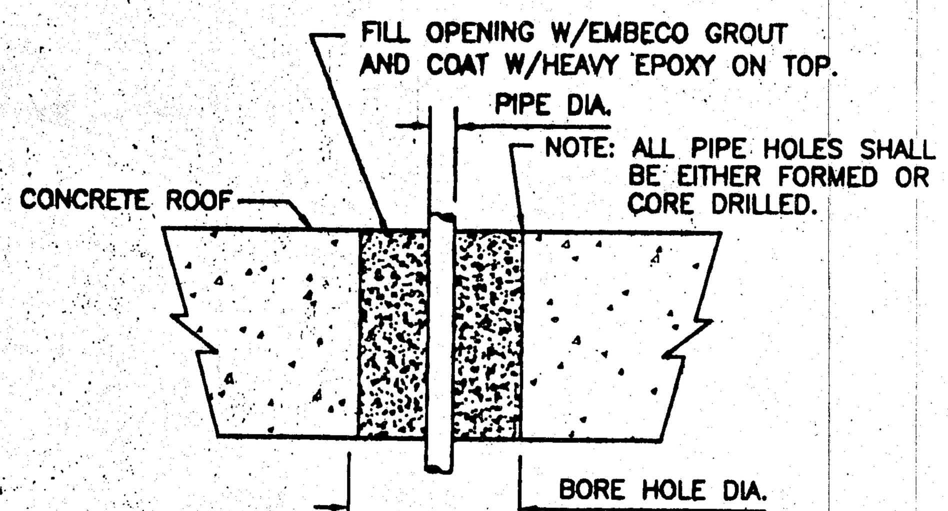
MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

NEW WELLHOUSE CONSTRUCTION
SHEET TITLE

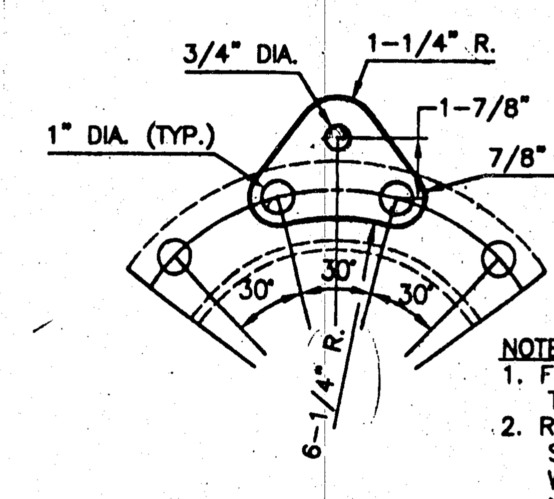
DESIGN BY:	DRAWN BY:	CHECKED BY:
DAC/MDK	RRT	DLM

DATE	JOB NO.	SHEET
AUGUST, 1995	93001	25



ROOF PIPING PENETRATION DETAIL

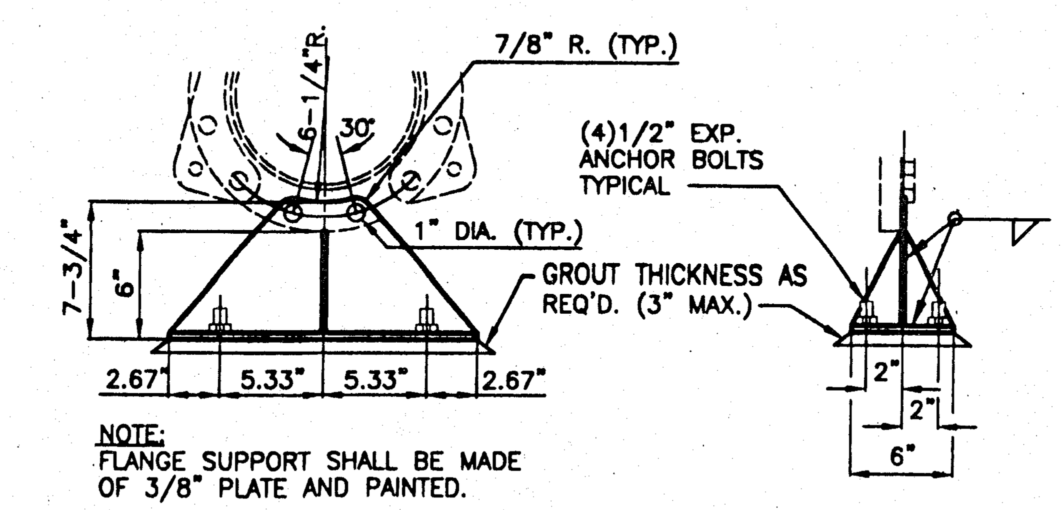
N.T.S.



NOTES:
1. FLANGE PLATE SHALL BE 3/4" THICK TYPE 316 STAINLESS STEEL.
2. RESTRAINING RODS FOR EXPANSION JOINTS SHALL BE 5/8" DIA. TYPE 316 SS W/THREADED ENDS AND TYPE 316 SS NUTS AND WASHERS.
3. RESTRAINING RODS FOR BUTTERFLY VALVES (~~EXISTING WELLHOUSES~~) SHALL BE 1/2" DIA. TYPE 316 SS W/THREADED ENDS AND TYPE 316 SS NUTS, WASHERS AND COUPLER.

FLANGE PLATE DETAIL

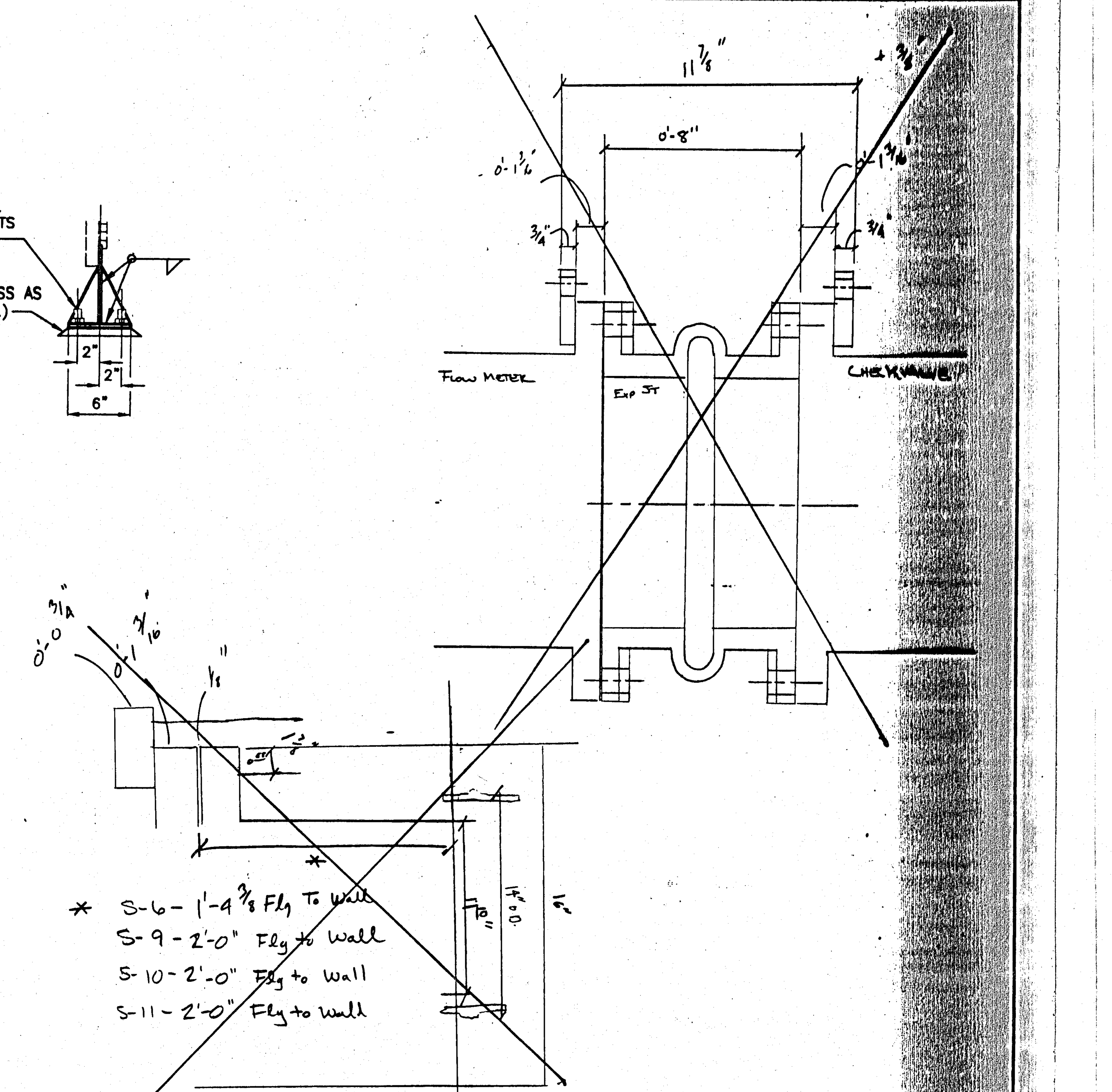
SCALE: NONE

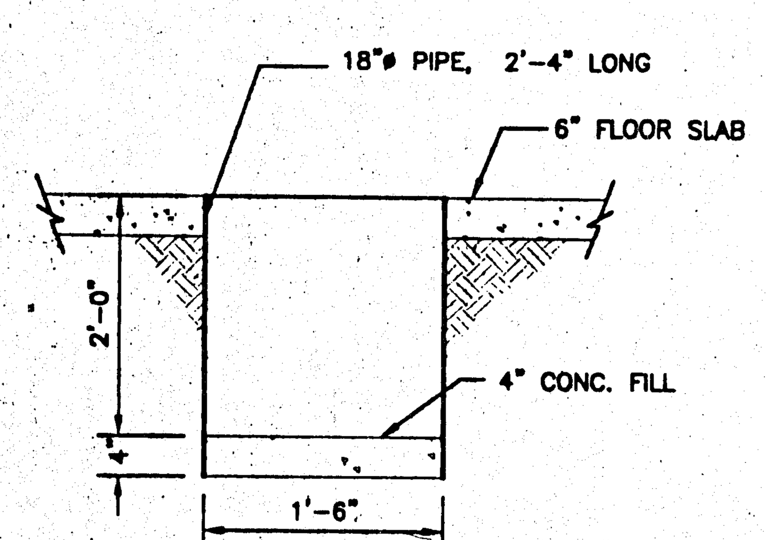


NOTE:
FLANGE SUPPORT SHALL BE MADE OF 3/8" PLATE AND PAINTED.

FLANGE SUPPORT DETAIL

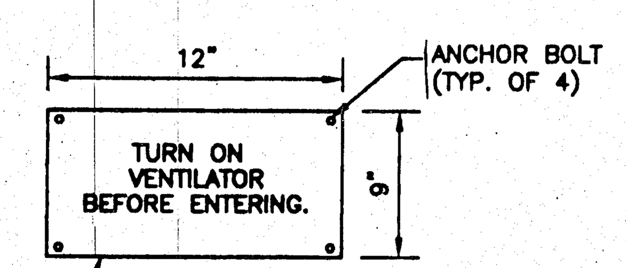
SCALE: NONE





SUMP DETAIL

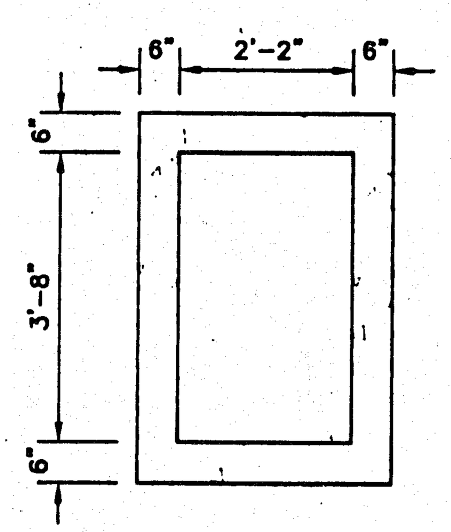
N.T.S.



SIGN SHALL BE LAMINATED PHENOLIC PLASTIC, RED FRONT AND BACK WITH WHITE CORE LETTERS. LETTERING SHALL BE ENGRAVED THROUGH FRONT LAYER TO FORM 1" WHITE CHARACTERS.

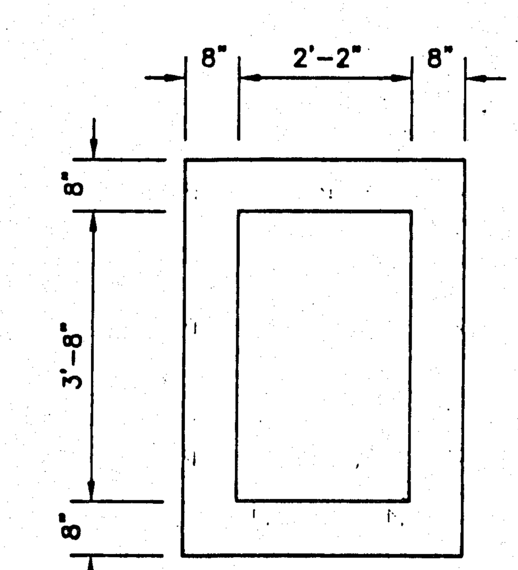
SIGN DETAIL

N.T.S.



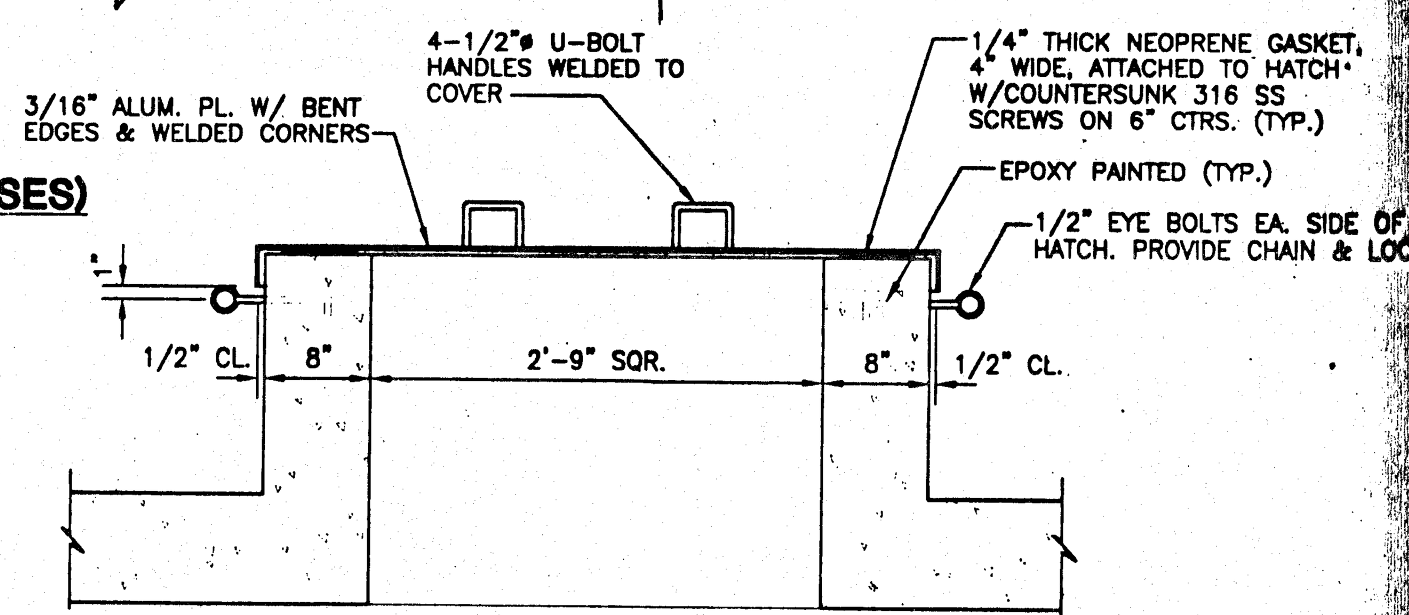
TYPE 1 ACCESS HATCH PLAN
CONCRETE DIMENSIONS (EXIST. WELLHOUSES)

SCALE: 1/2"=1'-0"



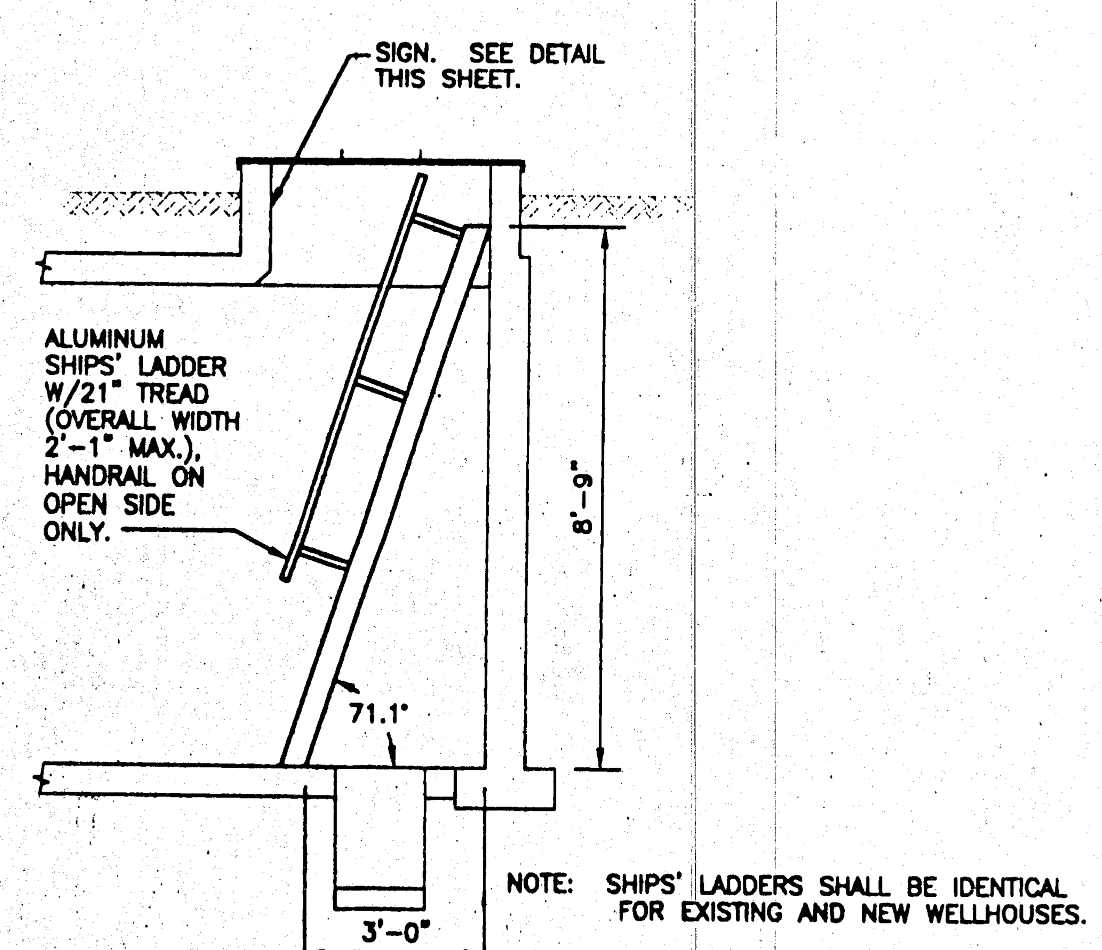
TYPE 2 ACCESS HATCH PLAN
CONCRETE DIMENSIONS (NEW WELLHOUSES)

SCALE: 1/2"=1'-0"



PUMP REMOVAL HATCH DETAIL

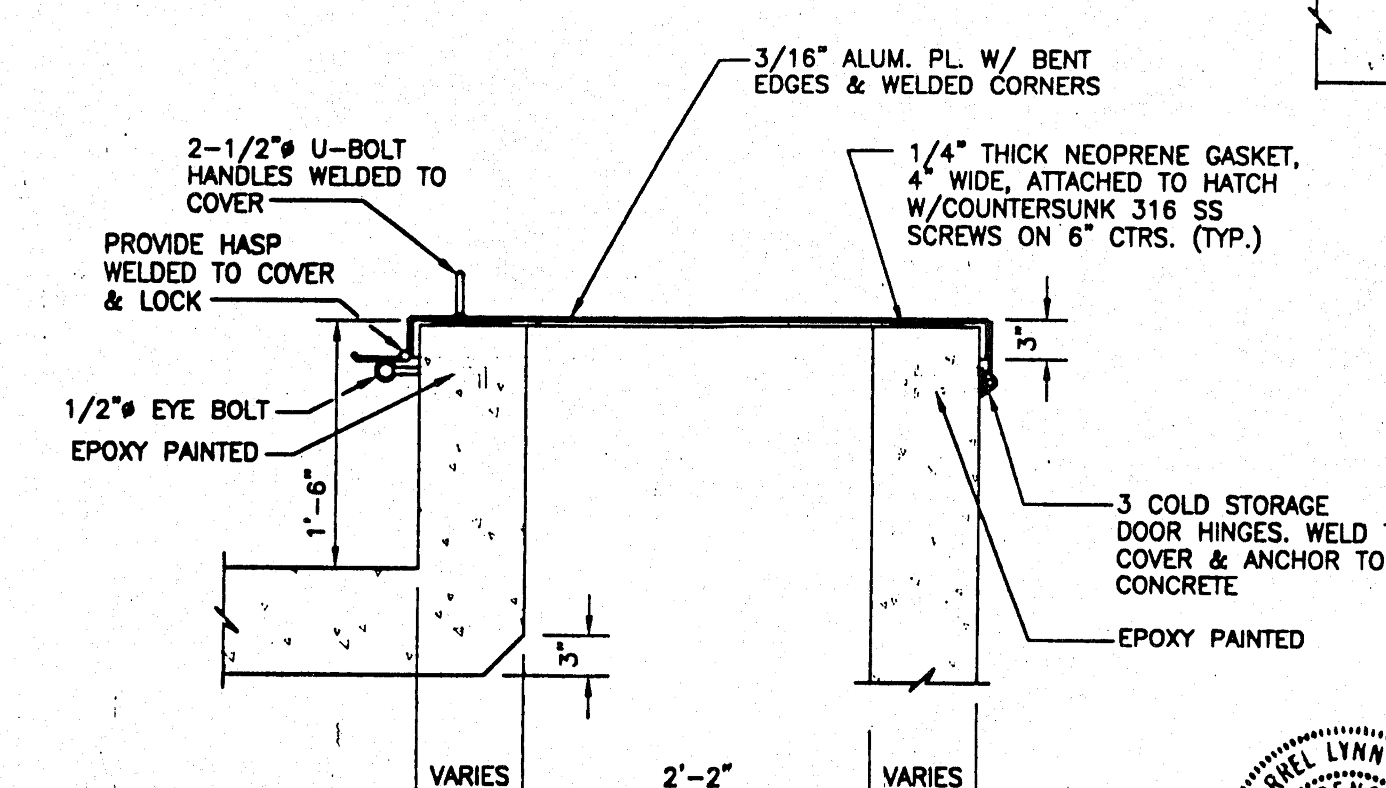
SCALE: 1"=1'-0"



NOTE: SHIPS' LADDERS SHALL BE IDENTICAL FOR EXISTING AND NEW WELLHOUSES.

SHIPS' LADDER DETAIL

SCALE: 3/8"=1'-0"

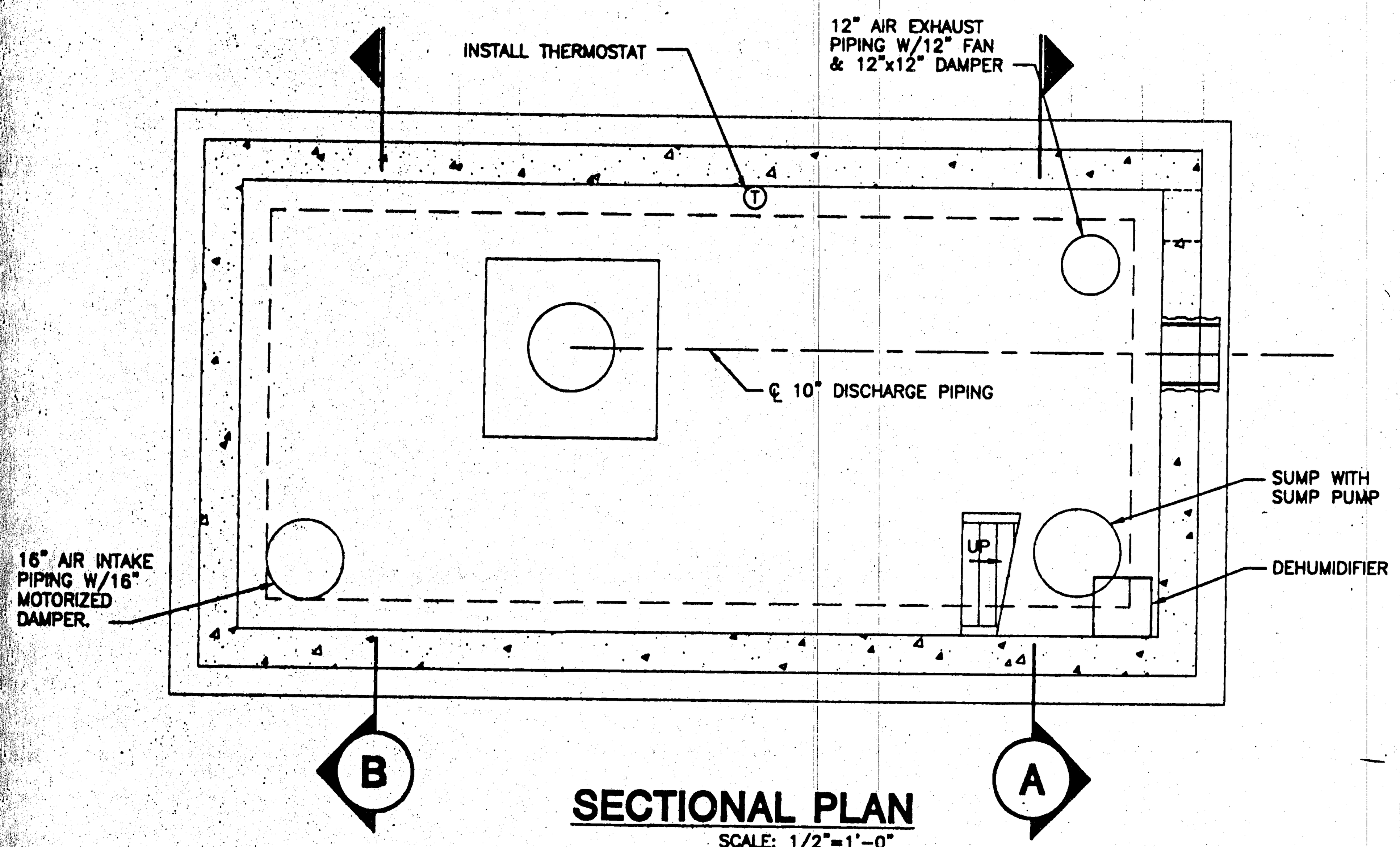


ACCESS HATCH DETAIL

SCALE: 1"=1'-0"

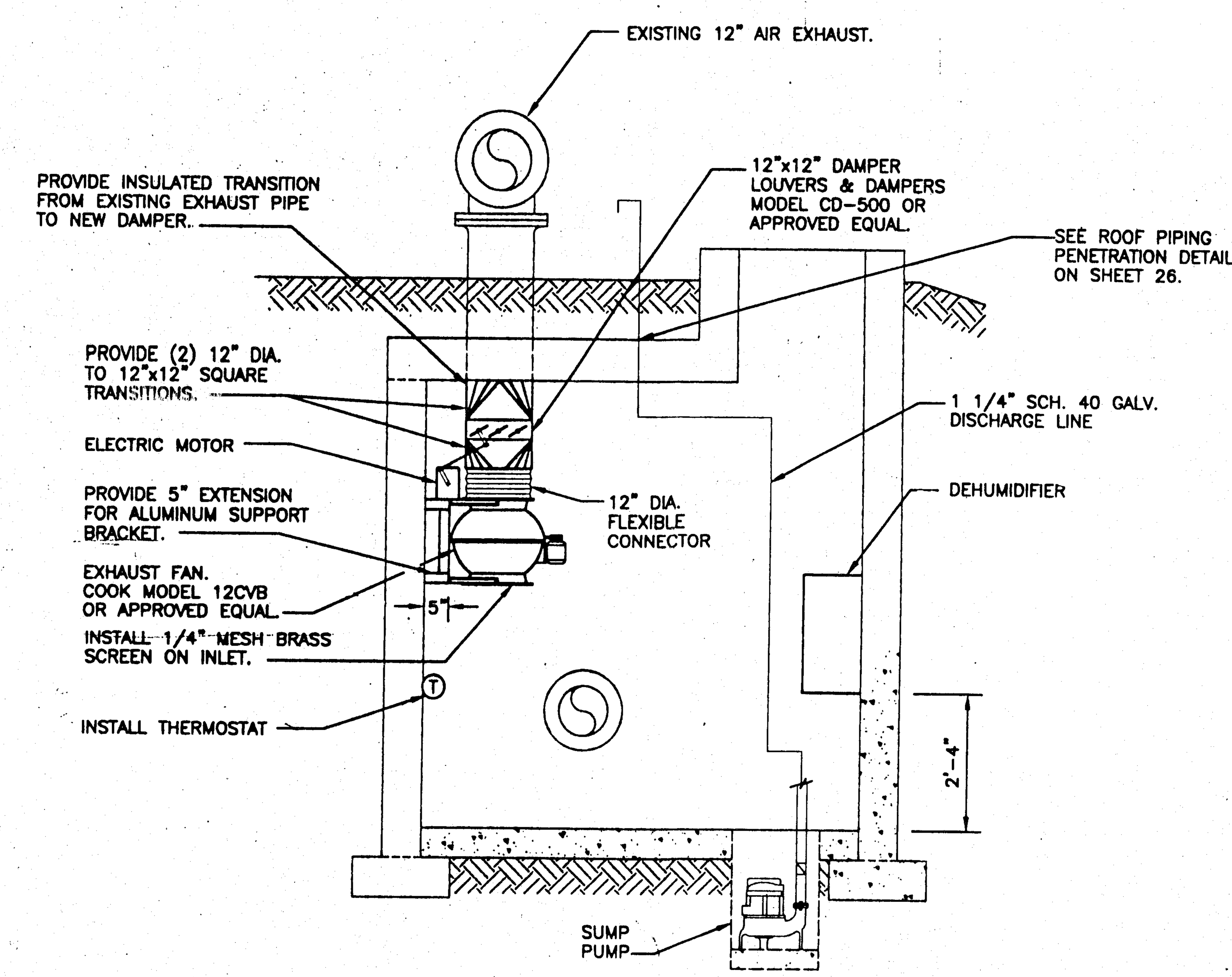
DARREL LYNN MOORE LICENSED 9066 6-11-96 KANSAS PROFESSIONAL ENGINEER

MID-KANSAS ENGINEERING CONSULTANTS, INC. 411 N. WEBB ROAD WICHITA, KS. 67206 316-684-9600	CITY OF WICHITA, KS IMPROVEMENTS TO THE S-WELL SYSTEM (PROJECT NAME)	
	WELLHOUSE DETAILS (SHEET TITLE)	
DAC (DESIGN BY:)	RRT (DRAWN BY:)	DLM (CHECKED BY:)
AUGUST, 1995 (DATE)	93001 (JOB NO.)	26 (SHEET NO.)



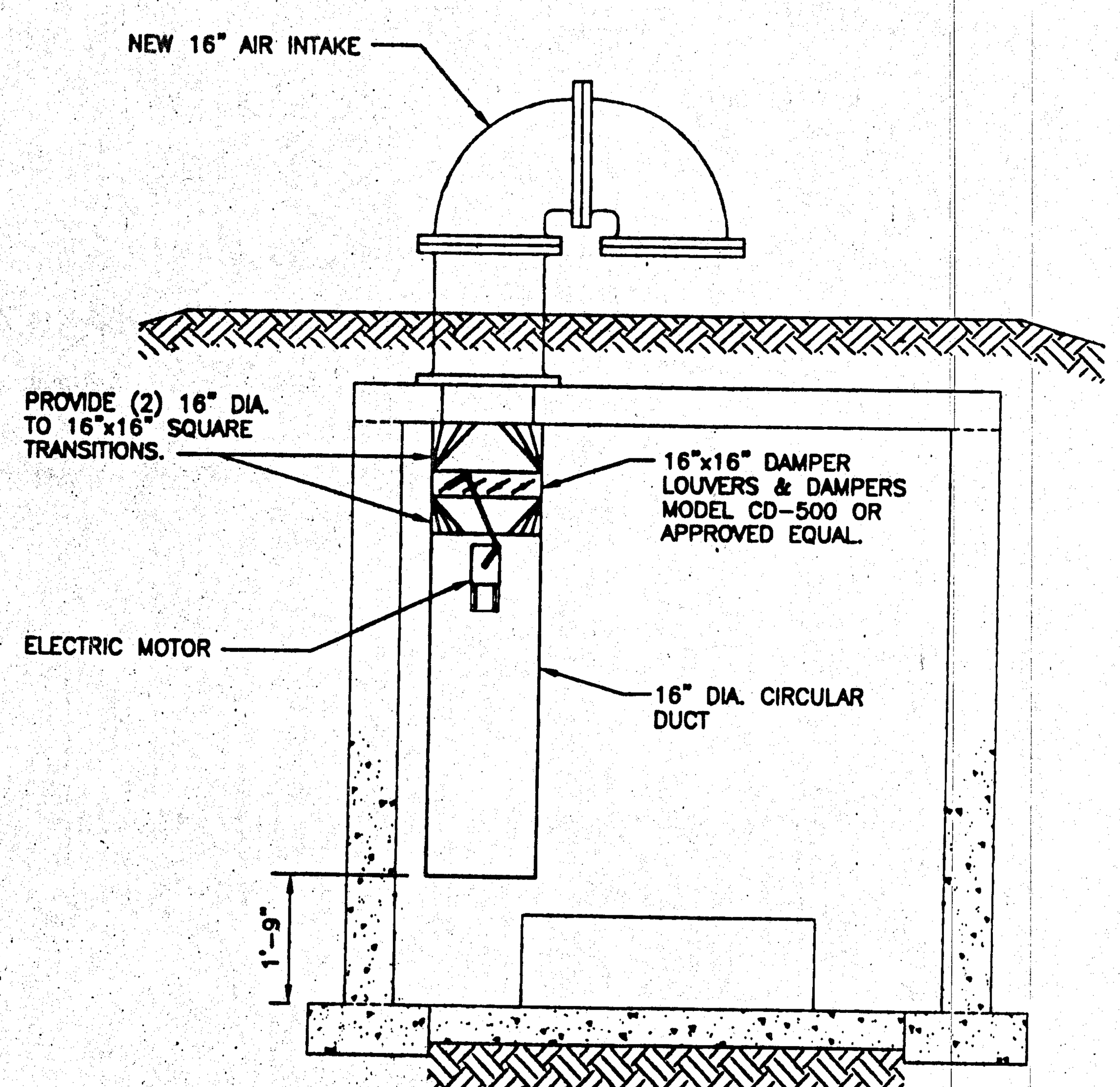
SECTIONAL PLAN

SCALE: 1/2"=1'-0"



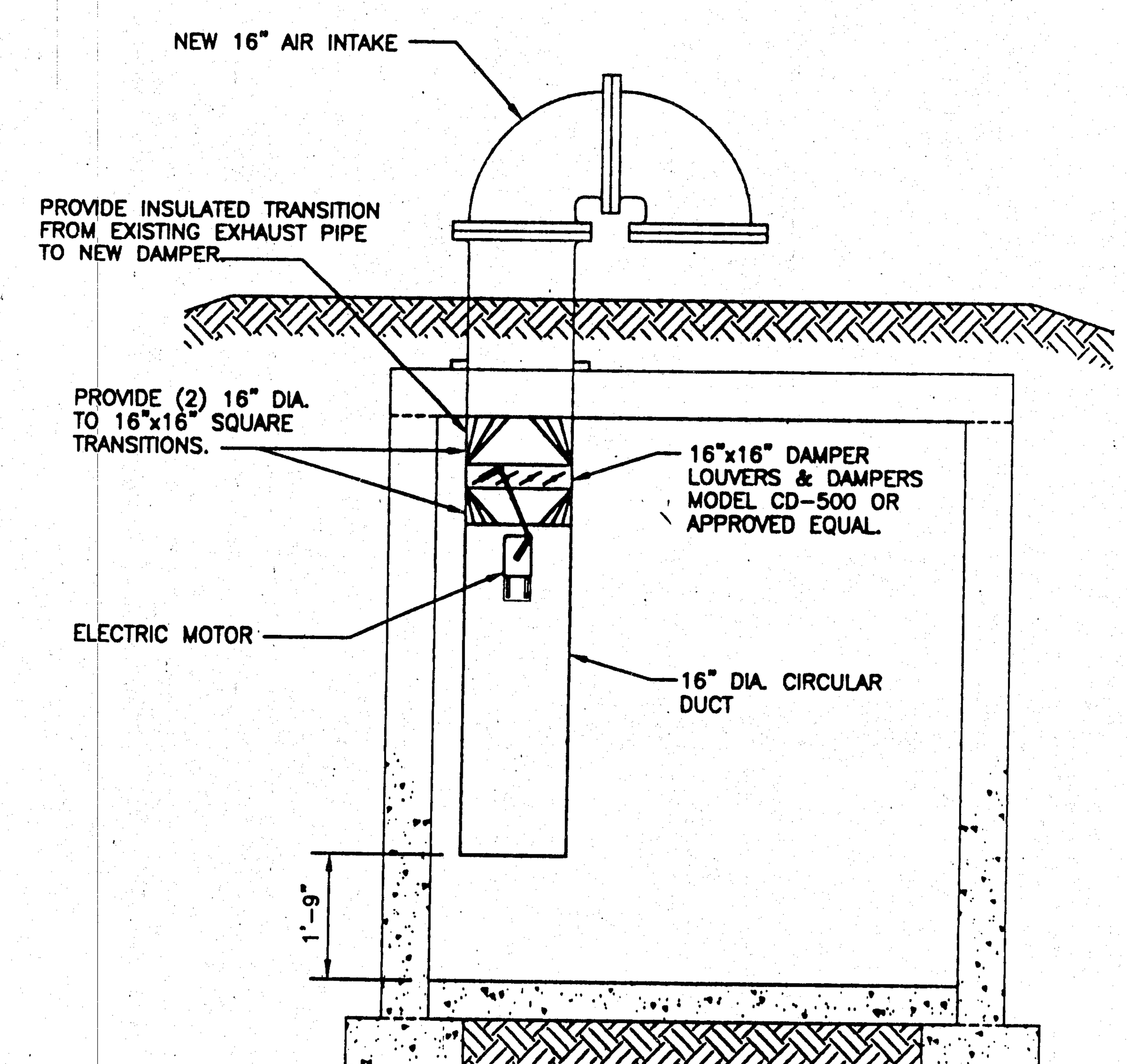
SECTION A

SCALE: 1/2"=1'-0"



SECTION B (EXISTING WELLHOUSES)

SCALE: 1/2"=1'-0"



SECTION B (NEW WELLHOUSES)

SCALE: 1/2"=1'-0"

WELLHOUSE EQUIPMENT LIST

SUMP PUMP –	WEIL SERIES 1400 SUBMERSIBLE, 35 GPM AT 20 FT. ELECTRICAL – 120/60/1 – 1/3 HP MOTOR, MICRO PRESSURE SWITCH CONTROL.
DEHUMIDIFIER –	WHITE WESTINGHOUSE MODEL WED40P, 40 PINTS PER DAY CAPACITY – 244 CFM ELECTRICAL – 120/60/1 – 7.5 AMPS PROVIDE 3/4" HOSE TO DRAIN TO SUMP BASIN.
THERMOSTAT –	TWO STAGE COOLING THERMOSTAT: FIRST STAGE SET AT 80°F. OPENS DAMPERS SECOND STAGE SET AT 90°F. ENERGIZES FAN.
EXHAUST FAN –	COOK MODEL 12CVB BELT DRIVE INLINE CENTRIFUGAL FAN. 12" DIA. W/FANGUARD 0.75 HP, 1300 CFM

ALL DUCTWORK TO CONFORM TO S.M.A.C.N.A. STANDARDS

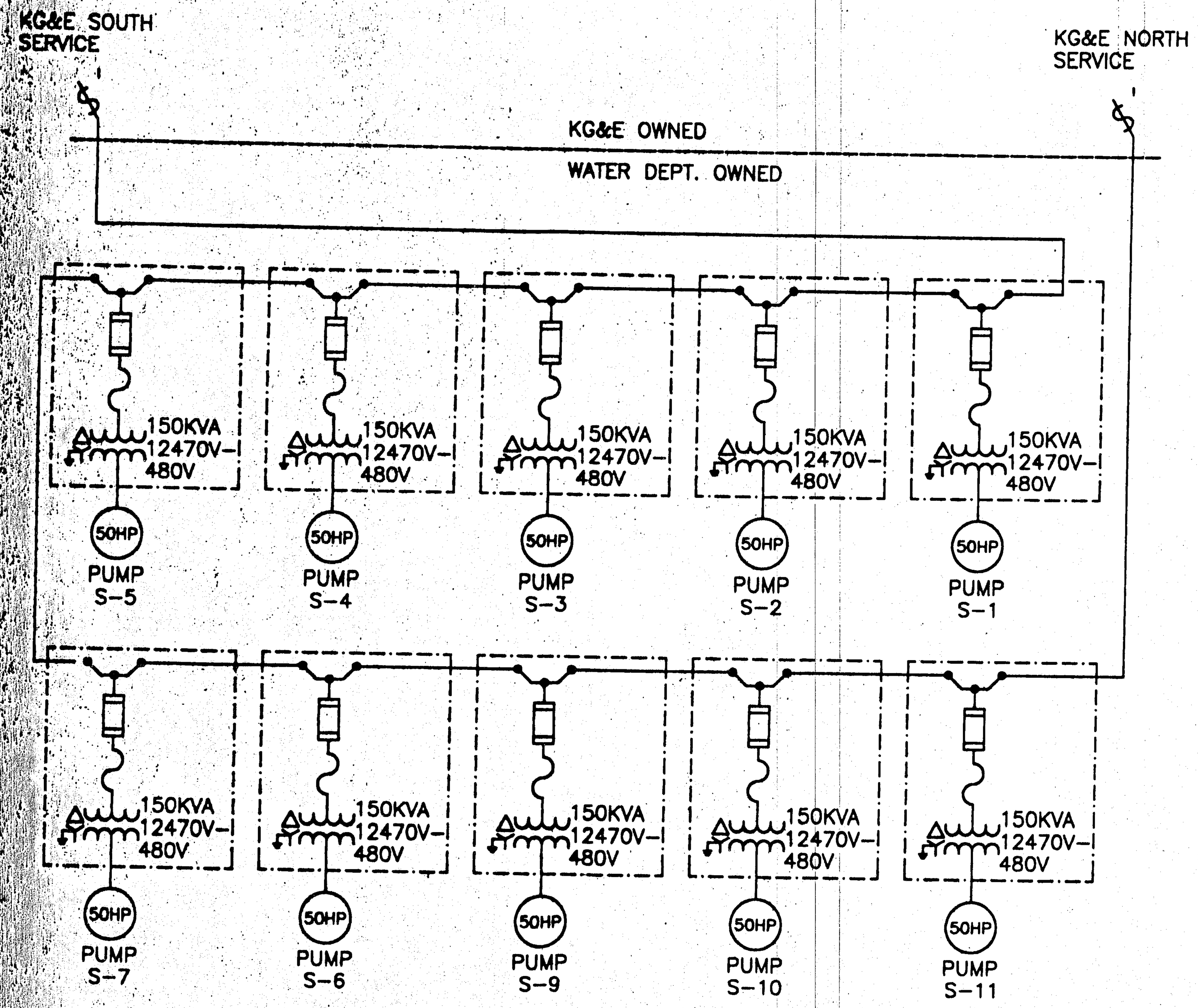
DARREL LYNN MOORE LICENSED 9056 KANSAS PROFESSIONAL ENGINEER 4-11-96

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

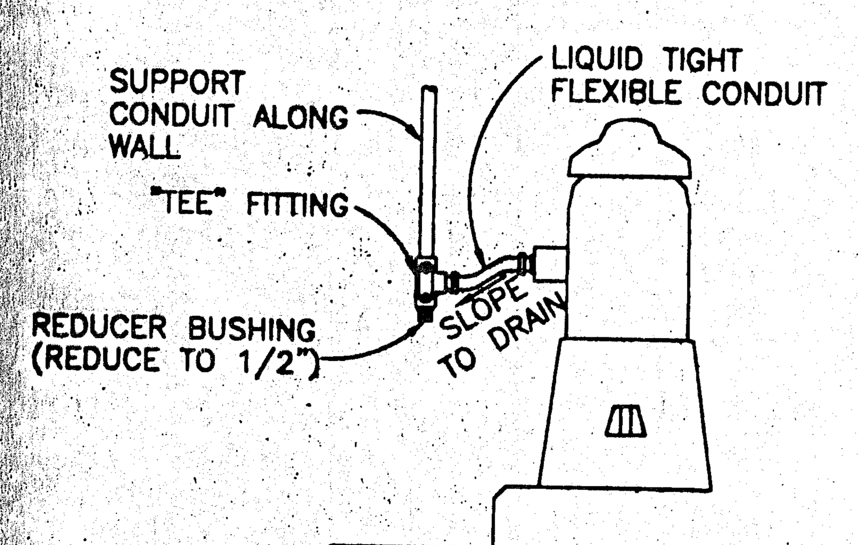
CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYST
PROJECT NAME

WELLHOUSE MECHANICAL
SHEET TITLE

RLB/DAC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED
AUGUST, 1995	93001	27
DATE	JOB NO.	SHEET



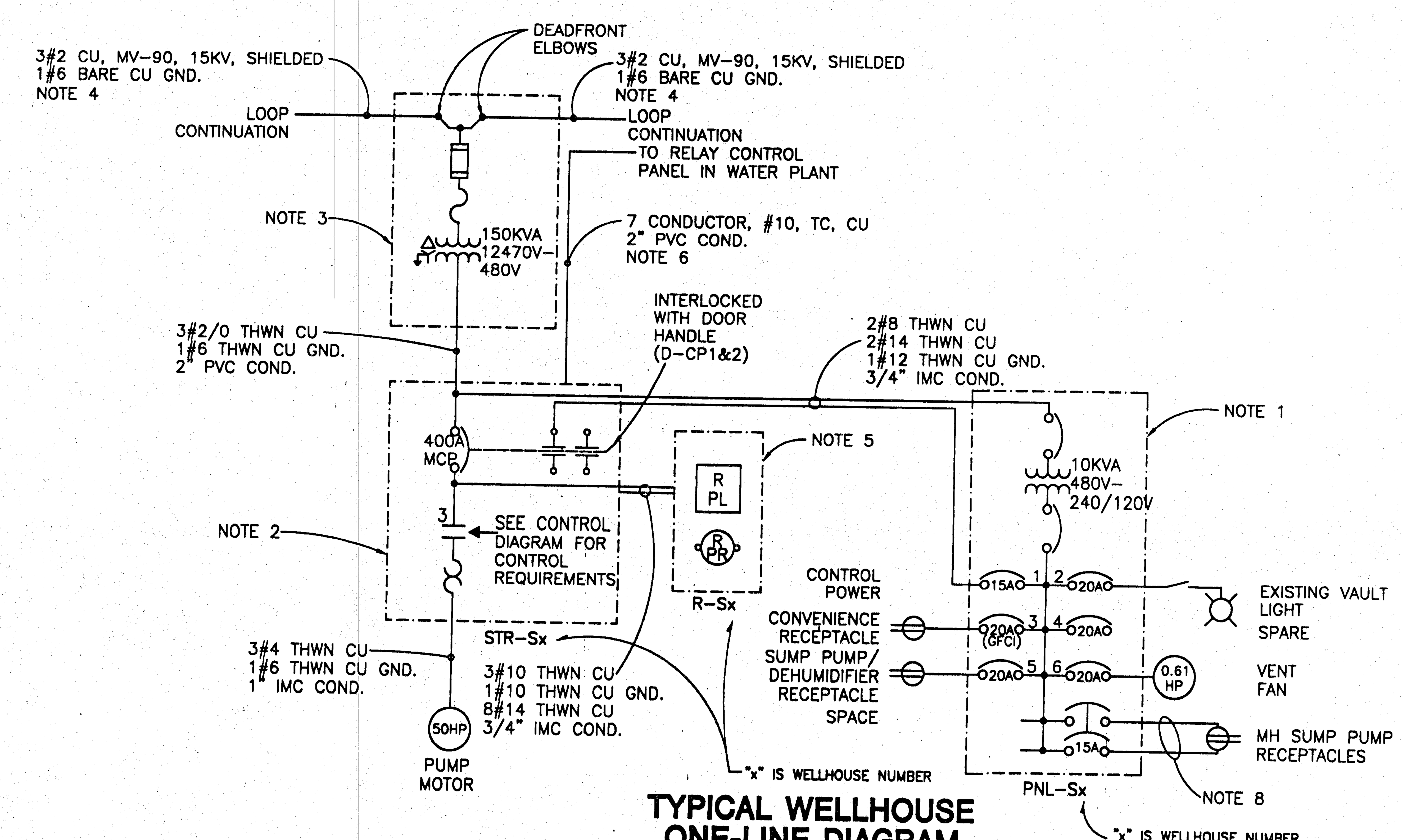
SIMPLIFIED, OVERALL ONE-LINE DIAGRAM
(EXCLUDING WELLHOUSE S-8)



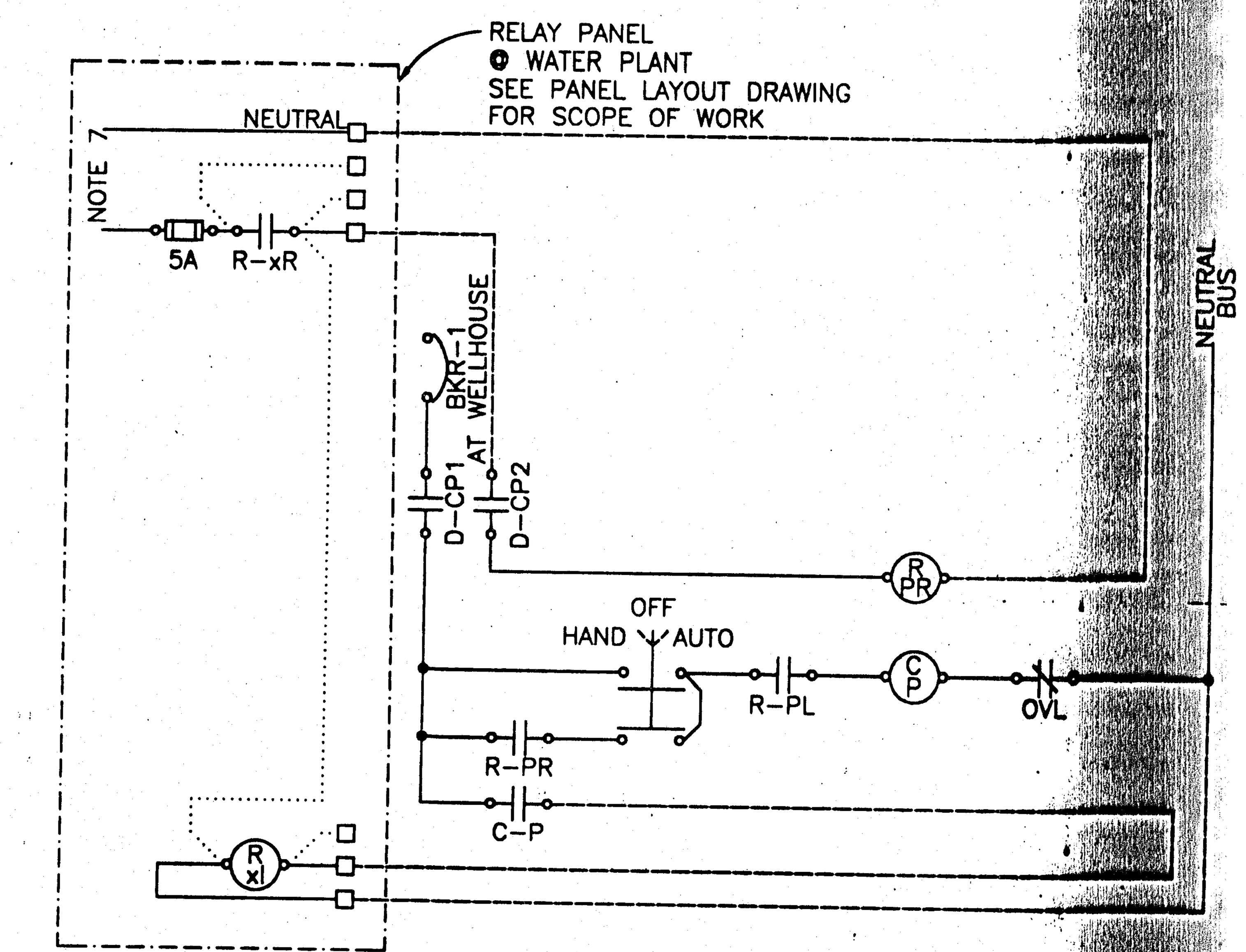
TYPICAL MOTOR CONNECTION DETAIL

NOTES

1) GENERAL ELECTRIC SERVICE CENTER CAT. NO. 9T21S1100 (OR APPROVED EQUAL) IN NEMA 3R ENCLOSURE WITH BREAKERS AS INDICATED ON THIS SHEET. GROUND NEUTRAL BUS WITH #10 COPPER GROUNDING ELECTRODE CONDUCTOR TO 3/4"x10' DRIVEN, COPPER CLAD GROUND ROD.
2) NEMA SIZE 3 COMBINATION STARTER WITH CIRCUIT BREAKER, EUTECTIC ALLOY OVERLOAD RELAY, HEATER ELEMENTS (SIZED BASED ON MANUFACTURER'S RECOMMENDATIONS USING MOTOR NAMEPLATE FULL LOAD CURRENT), SEPARATE 120V CONTROL (WITH 2 AUXILIARY CONTACTS INSTALLED ON BREAKER TO DISCONNECT CONTROL POWER WHEN DOOR IS OPENED), AND HAND-OFF-AUTO SWITCH WITH NAMEPLATE, IN A NEMA 4X ENCLOSURE. GROUND NEUTRAL CONDUCTOR WITH PROPER SIZE GROUNDING ELECTRODE CONDUCTOR TO 3/4"x10" DRIVEN, COPPER CLAD GROUND ROD.
3) SEE SPECIFICATIONS FOR TRANSFORMER REQUIREMENTS.
4) SEE ELECTRICAL CONDUIT PLAN FOR CONDUIT SIZE.
5) MOUNT SOLID STATE LINE VOLTAGE MONITOR RELAY, 480V, 60 HZ, 3-PHASE LINE VOLTAGE AND NORMALLY OPEN OUTPUT CONTACTS (ALLEN BRADLEY 813S-VOB), AND ALLEN BRADLEY BULLETIN 700, INDUSTRIAL RELAY WITH 2-N.O. SEALED CONTACTS, (TYPE R CAT. NO. 700-R200A1), IN 12"X12"X8" NEMA 4X ENCLOSURE WITH HINGED DOOR.
6) CAREFULLY LABEL WIRES AT EACH END AND MAINTAIN UNIQUE LABELS FOR EACH WELLHOUSE THROUGHOUT THE RUN. GROUND BARE GROUND WIRE TO GROUND SYSTEM AT EACH END.
7) NEW 15A BREAKER IN EXISTING 120V PANEL. SEE PLANS AND PANEL DRAWINGS FOR SCOPE OF WORK.
8) SUPPLY AND INSTALL 2 #8, 1 #12G THWN COPPER USING SPARE CONTROL CONDUITS FROM EACH PANEL IN EACH WELLHOUSE TO THE MANHOLES. WELLHOUSE S1 SHALL SUPPLY SUMP PUMP POWER FOR MH-S1 AND MH-P1. WELLHOUSE S6 SHALL SUPPLY SUMP PUMP POWER FOR MH-P2. WELLHOUSE S9 SHALL SUPPLY SUMP PUMP POWER TO MH-S9 AND MH-P3. WELLHOUSE S11 SHALL SUPPLY SUMP PUMP POWER TO MH-P4. ALL OTHER WELLHOUSES SHALL SUPPLY SUMP PUMP POWER TO THEIR CORRESPONDING MANHOLES.



TYPICAL WELLHOUSE ONE-LINE DIAGRAM
(EXCEPT FOR WELLHOUSE S-8)



TYPICAL WELL PUMP CONTROL DIAGRAM
(EXCEPT FOR WELLHOUSE S-8)

LEGEND

? (terminal symbol)	DEVICE TERMINAL AND TERMINAL NUMBER
(line)	WIRING TO RELAY PANEL @ WATER PLANT
(line)	NEW WIRING TO BE INSTALLED BY CONTRACTOR
(dotted line)	WIRING TO BE REMOVED BY CONTRACTOR
C-P	PUMP MOTOR CONTACTOR
D-CP1	CONTROL POWER DISCONNECT #1
D-CP2	CONTROL POWER DISCONNECT #2
OVL	OVERLOAD RELAY
R-PR	PUMP START AUXILIARY RELAY (IN NEW PANEL @ EACH WELLHOUSE)
R-PL	PHASE LOSS RELAY (IN NEW PANEL @ EACH WELLHOUSE)
R-xR	RUN RELAY (IN RELAY PANEL @ WATER PLANT)
R-xI	RUN INDICATION RELAY (IN RELAY PANEL @ WATER PLANT)

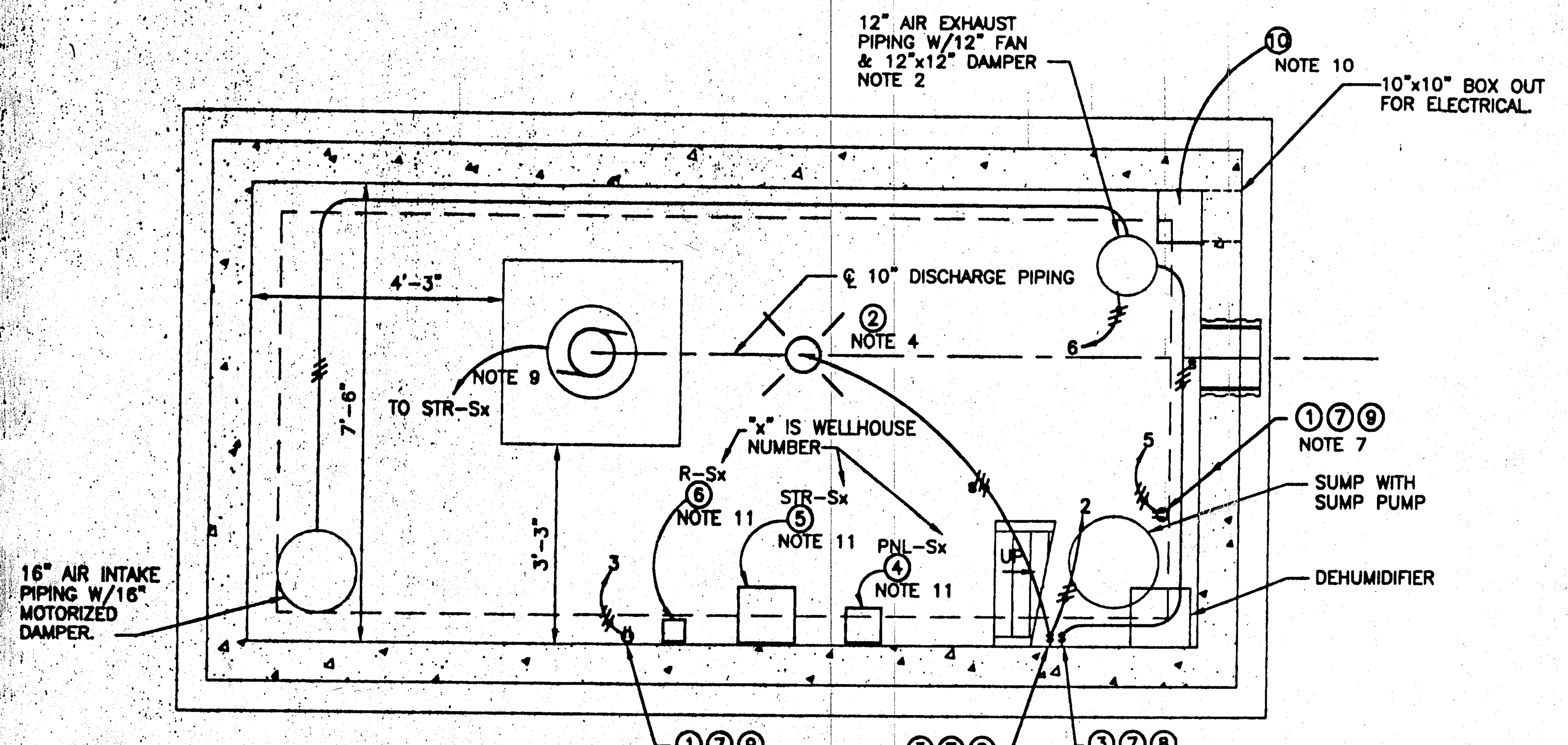
JAMES W. MOR... 7612 KANSAS PROFESSIONAL ENGINEER 6-...-96

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYST...
PROJECT NAME

WELLHOUSE POWER AND CONTROL DETAIL
SHEET TITLE

JWM/PBC	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
JUNE, 1996	93001	28
DATE	JOB NO.	SHEET/OF



SECTIONAL PLAN

SCALE: 1/2"=1'-0"

NOTE 12

NOTES:

1.) SEE TRANSFORMER PAD DETAIL FOR PAD REQUIREMENTS.

2.) SEE MECHANICAL DRAWINGS FOR THERMOSTAT LOCATION AND CONTROL WIRING REQUIREMENTS.

3.) MOUNT SWITCHES 1' BELOW THE TOP OF THE ACCESS HATCH.

4.) REUSE EXISTING LIGHT SWITCH AND LIGHT FIXTURE IN EXISTING WELLS. SUPPLY AND INSTALL NEW SWITCH AND LIGHT FIXTURE IN NEW WELLS.

5.) ALL ABOVE GROUND CONDUITS SHALL BE THREADED TYPE IMC OR RGS.

6.) CONDUCTORS ON THIS DRAWING NOT SIZED ELSEWHERE SHALL BE #12, THWN, CU.

7.) MOUNT RECEPTACLES 3'-0" ABOVE THE FINISHED FLOOR. MOUNT SWITCHES 1' BELOW HATCH.

8.) SEE DETAIL SHEET 28 FOR MOTOR CONNECTION.

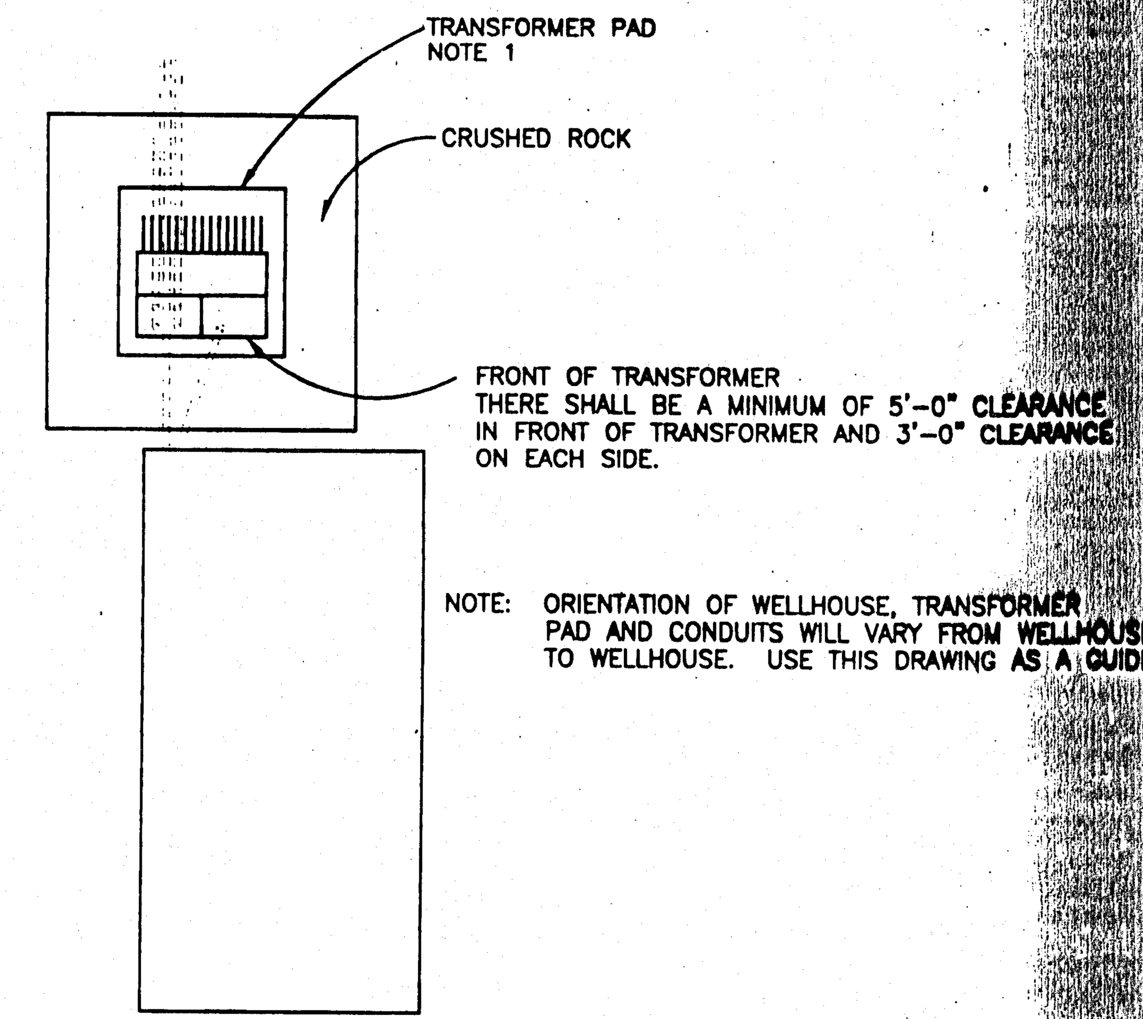
9.) SEE TYPICAL WELLHOUSE ONE LINE DIAGRAM ON SHEET 28 FOR DETAILS.

10.) MOUNT BOX AT A SLIGHT ANGLE TO GIVE A LOW POINT. DRILL 1/4" WEEP HOLE AT LOW POINT. RUN CONDUIT AND WIRE FROM BOX TO STARTER.

11.) MOUNT SO THAT TOP OF ENCLOSURE IS 5'-0" ABOVE THE FINISHED FLOOR.

12.) CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING OF EXISTING: COMBINATION STARTER, OIL FUSED CUTOUTS, CONDUIT AND WIRE, LIGHTING TRANSFORMER, 2400V/480V DRY TRANSFORMER AND RECEPTACLES. REUSE LIGHT FIXTURES AND SWITCHES WHERE POSSIBLE.

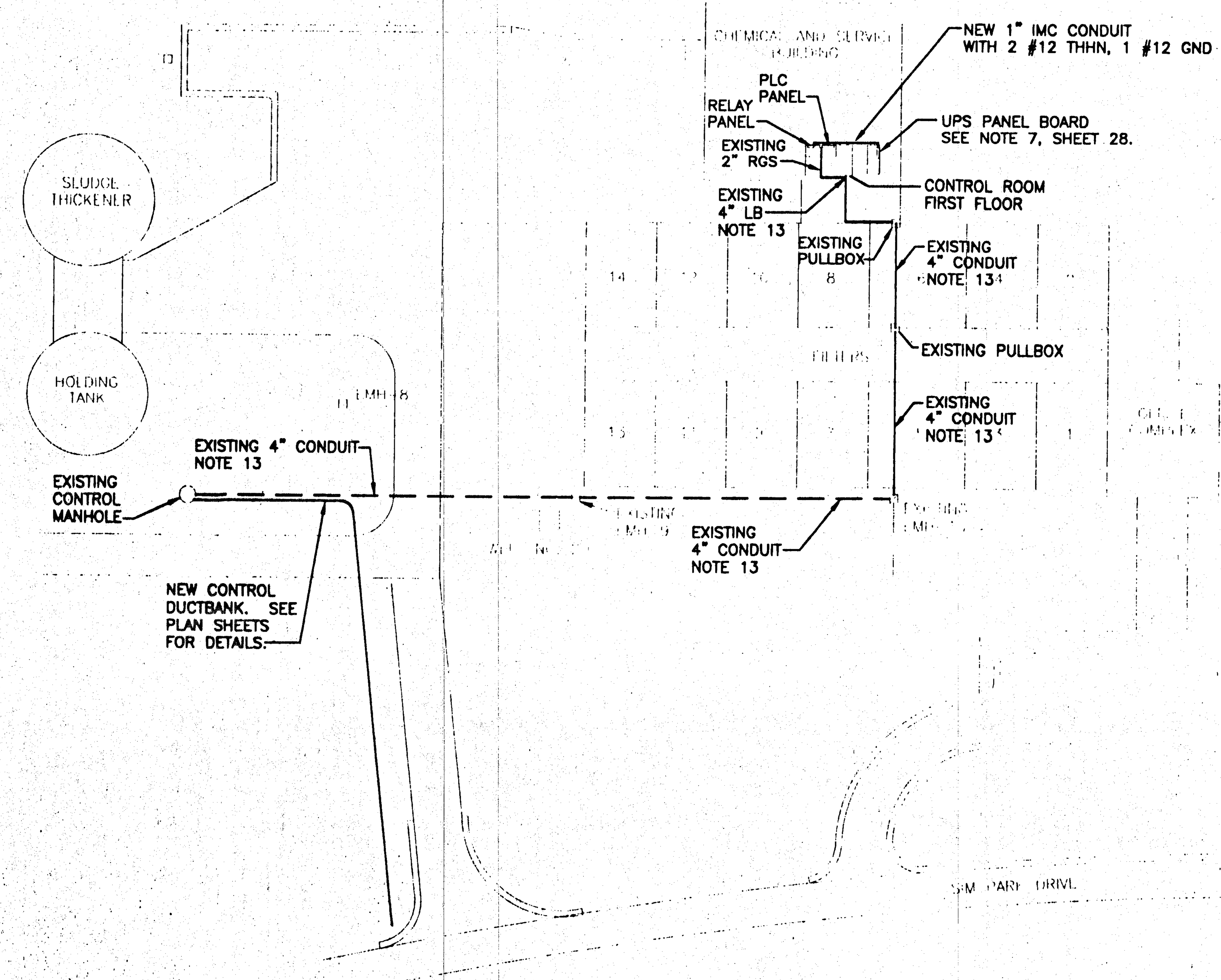
13.) REMOVE EXISTING CONTROL WIRE IN EXISTING 4" CONTROL CONDUIT. PULL NEW CONTROL WIRE FROM THE WELLHOUSES, THROUGH THE MANHOLES, THROUGH THE EXISTING CONTROL MANHOLE AND TO THE EXISTING RELAY PANEL. PROPERLY SUPPORT CABLES IN EMH-9 AND EMH-10.



NOTE: ORIENTATION OF WELLHOUSE, TRANSFORMER PAD AND CONDUITS WILL VARY FROM WELLHOUSE TO WELLHOUSE. USE THIS DRAWING AS A GUIDE.

TYPICAL ELECTRICAL WELLHOUSE SITE PLAN

SCALE: 1"=5'



SIM WELLS CONTROL CABLE ROUTING PLAN

SCALE: 1"=50'

NOTE 13

EQUIPMENT SCHEDULE

NO.	DESCRIPTION	CAT. NO.
1	DUPLEX RECEPTACLE	HUBBELL 8300
2	NONMETALLIC VAPOR TIGHT INCANDESCENT CEILING MOUNT LIGHT FIXTURE	HUBBELL NVX15GG
3	120 VAC, 20A AC SNAP SWITCH	HUBBELL 1221
4	NOTE 9	
5	NOTE 9	
6	NOTE 9	
7	SINGLE GANG CAST DEVICE BOX	CROUSE HINDS FD2
8	RAINTIGHT COVER – ON/OFF SWITCH W/LOCKING ARRANGEMENT	CROUSE HINDS DS185
9	WET LOCATION RECEPTACLE COVER	CROUSE HINDS WLRD-1
10	12"x12"x8" WIREWAY	

LEGEND

	LIGHT FIXTURE
	PUMP MOTOR
$	SNAP SWITCH
	DUPLEX RECEPTACLE
	BRANCH CIRCUIT DESIGNATION PHASE WIRE SWITCHED PHASE WIRE NEUTRAL WIRE GROUND WIRE
X	HOME RUN, WHERE "X" EQUALS CIRCUIT NO.

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6-11-96

MID-KANSAS ENGINEERING CONSULTANTS, INC.
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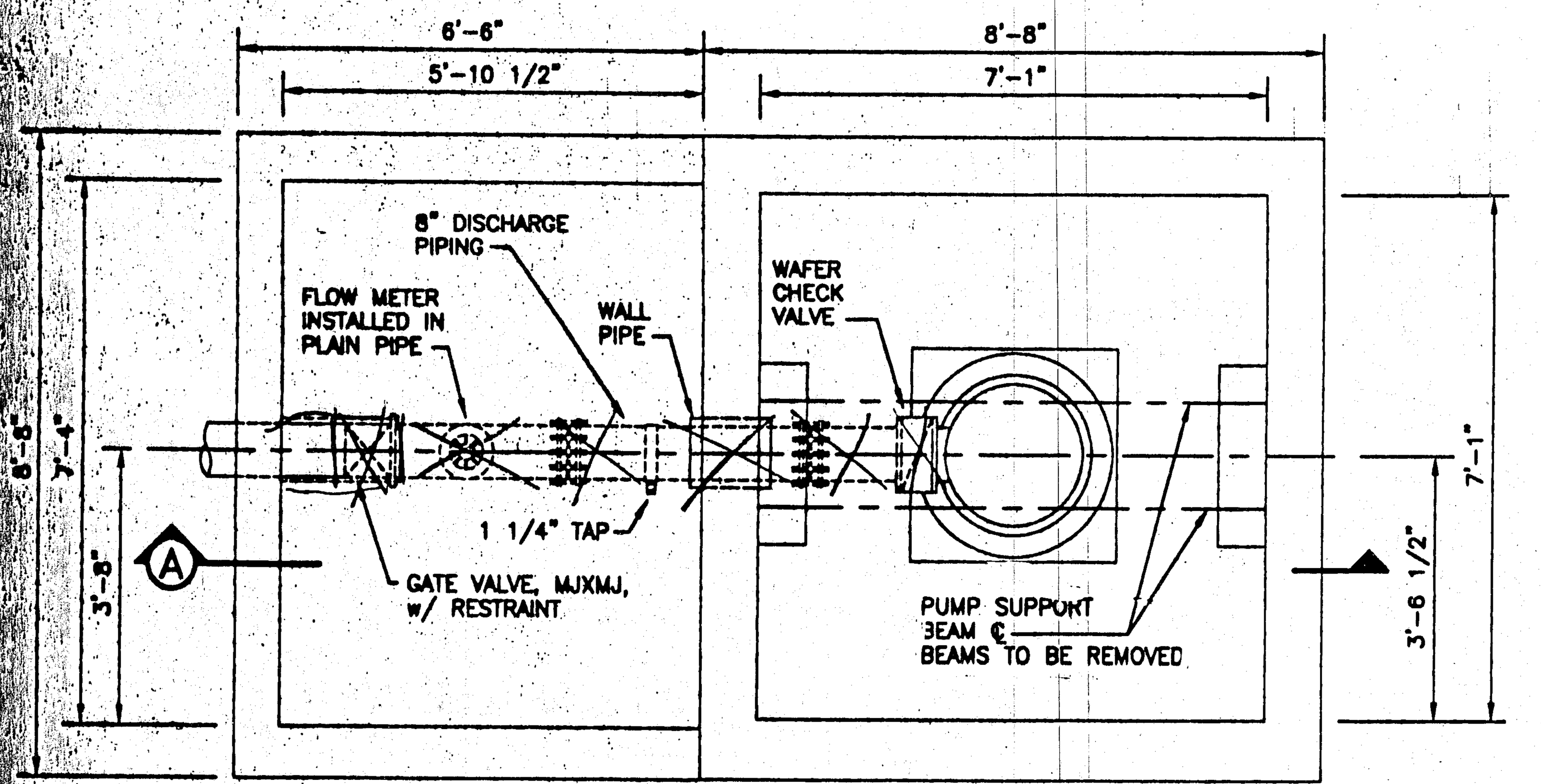
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

WELLHOUSE ELECTRICAL & CONTROL
SHEET TITLE

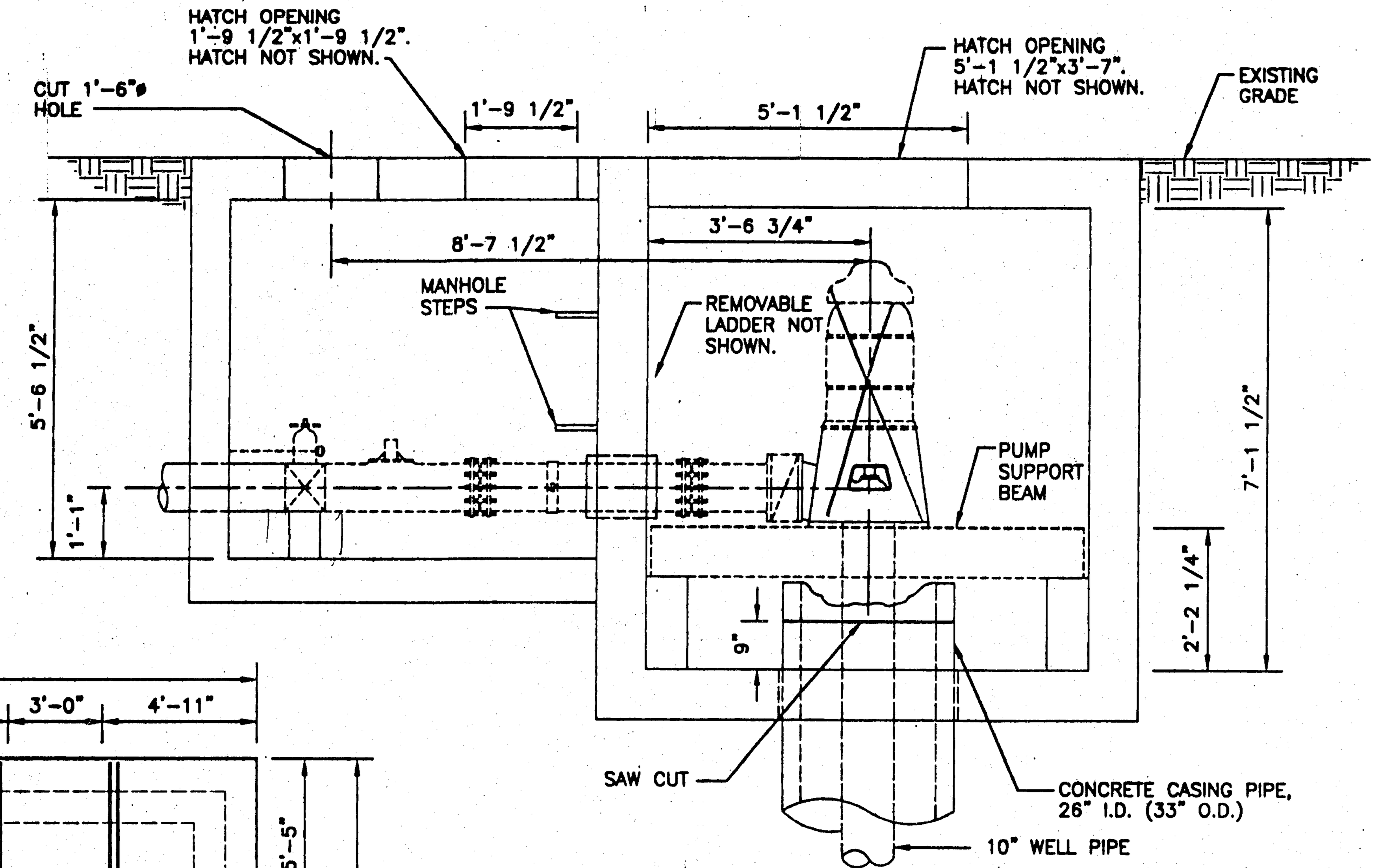
DESIGN BY:	DRAWN BY:	CHECKED BY:
JWM/PBC	RRT	DLM

DATE	JOB NO.	SHEET / OF
AUGUST, 1995	93001	29 / 41



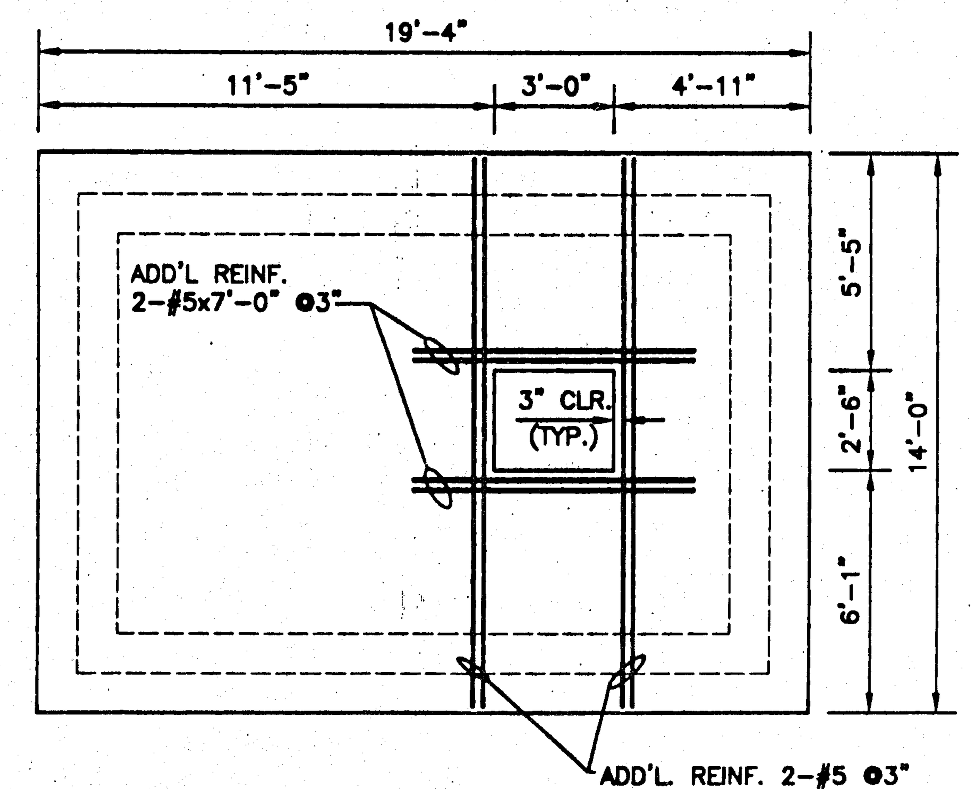
SECTIONAL PLAN - EXISTING

SCALE: 1/2"=1'-0"



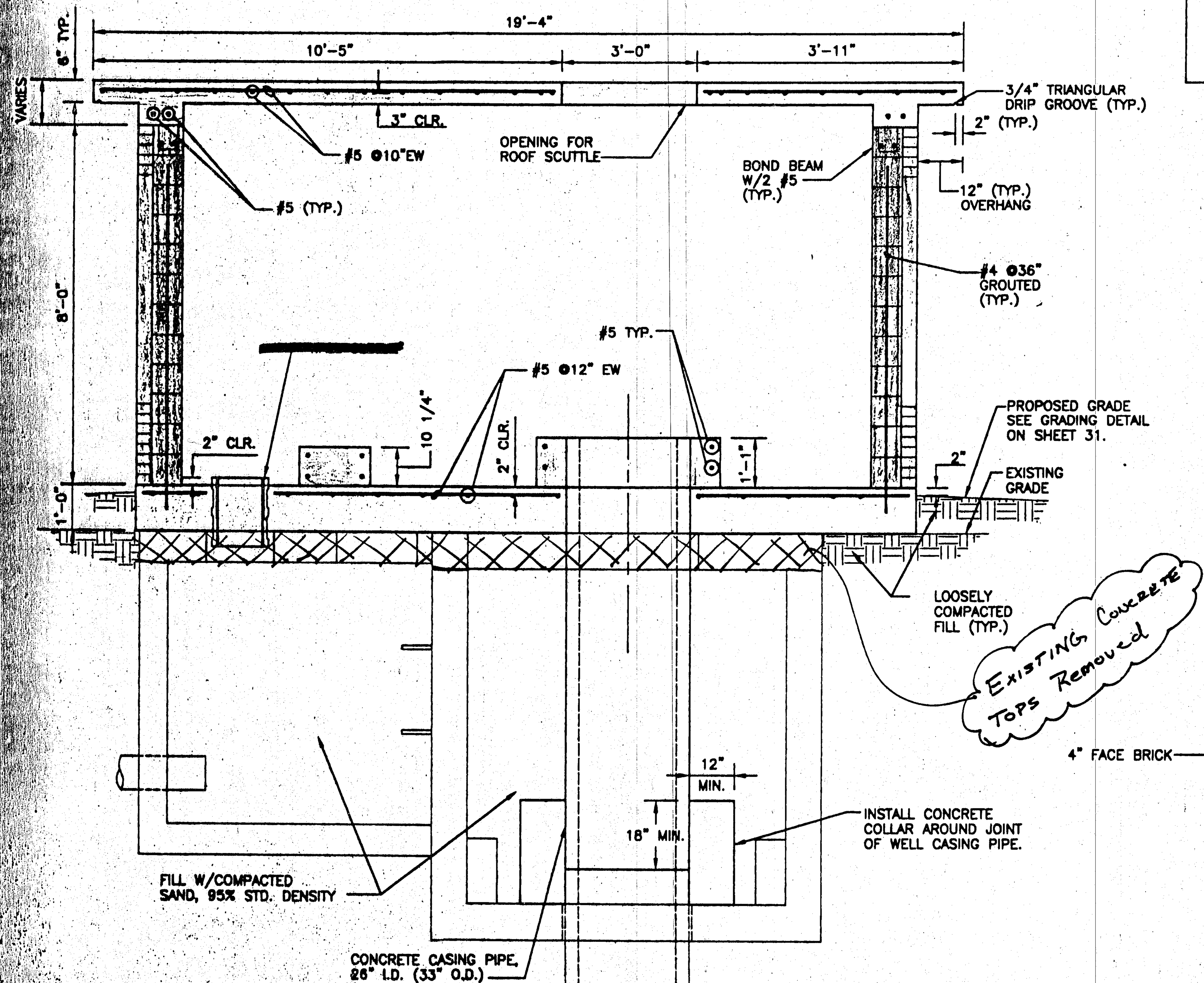
SECTION A - EXISTING

SCALE: 1/2"=1'-0"



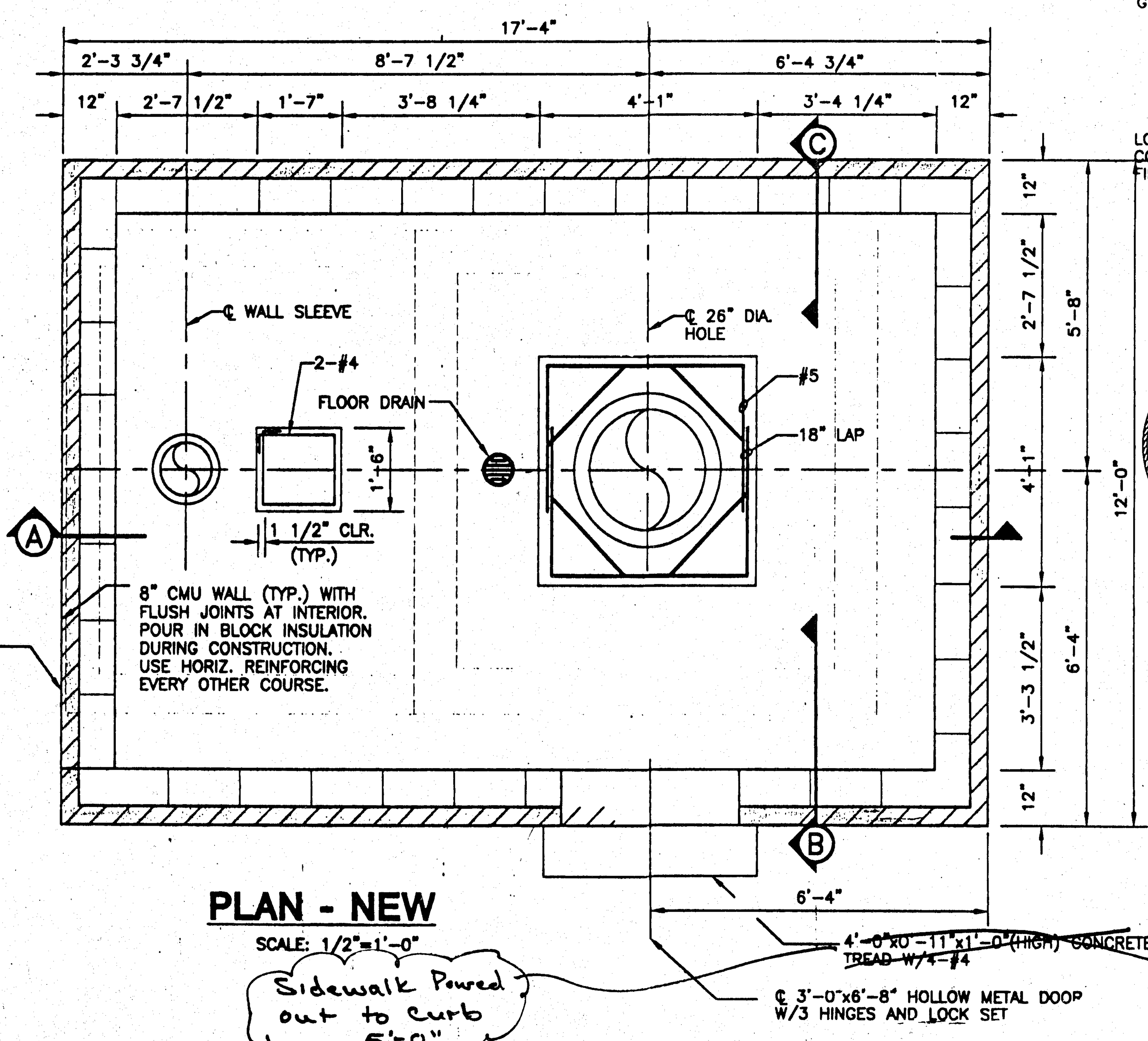
ROOF PLAN

SCALE: 1/4"=1'-0"



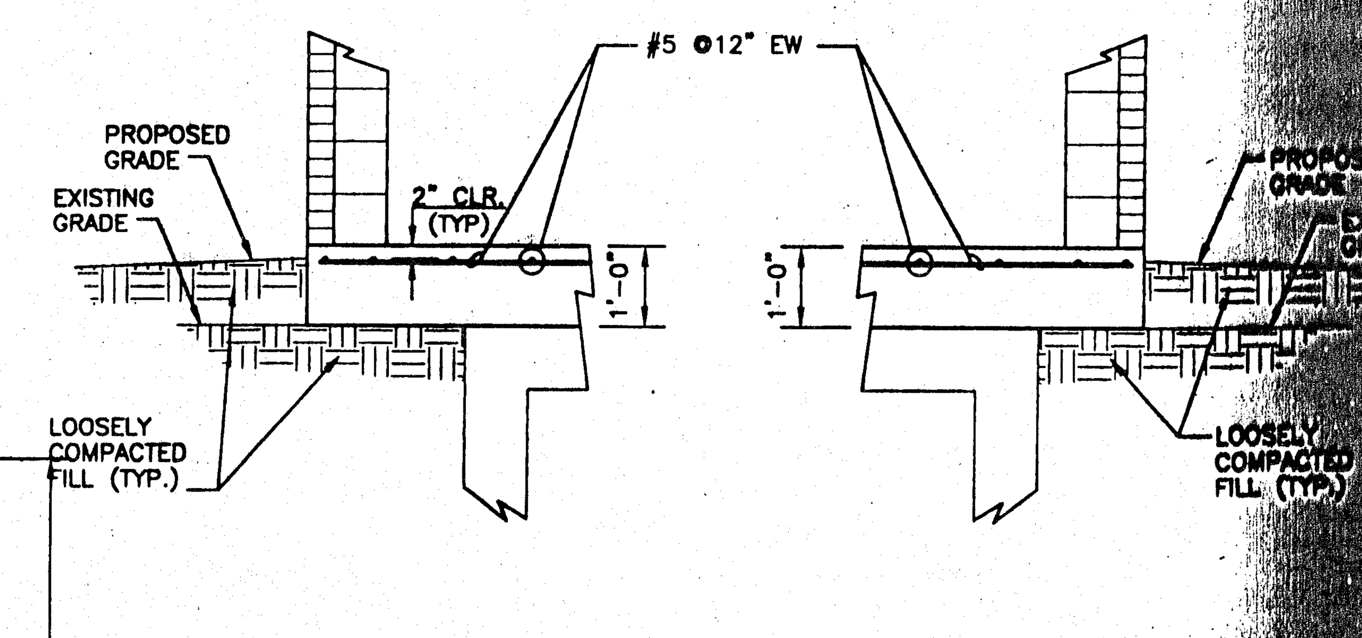
SECTION A - NEW

SCALE: 1/2"=1'-0"
NOTE: EW = EACH WAY



PLAN - NEW

SCALE: 1/2"=1'-0"



SECTION B - NEW

SCALE: 1/2"=1'-0"

SECTION C - NEW

SCALE: 1/2"=1'-0"

GENERAL NOTES

1. ALL CONCRETE SHALL DEVELOP A MINIMUM STRENGTH OF 4,000 PSI IN 28 DAYS.
2. ALL DEFORMED REINFORCING STEEL SHALL BE ASTM A615, GRADE 60.
3. ALL HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 GRADE N.
4. ALL MORTAR SHALL CONFORM TO THE ASTM C270, TYPE S.
5. ALL MASONRY JOINTS SHALL BE CONCAVE, EXCEPT AS NOTED.
6. THE CORNERS OF THE BUILDING SHALL HAVE THREE CELLS GROUTED WITH A CONTINUOUS #4 BAR IN EACH CELL.
7. THE MASONRY WALL SHALL HAVE HORIZONTAL REINFORCEMENT SPACED AT 1'-4" ON CENTERS VERTICALLY AND SHALL BE EITHER THE LADDER OR TRUSS TYPE FABRICATED FROM 9 GA. STEEL WIRES AND GALVANIZED. THE EXTERIOR WYTHE SHALL BE ATTACHED TO THE HOLLOW MASONRY UNITS HORIZONTALLY AT A MAXIMUM OF 2'-0" SPACING AND VERTICALLY 1'-4" BY A MINIMUM OF 9 GA. GALVANIZED STEEL WIRE REINFORCEMENT, LADDER OR TRUSS TYPE.
8. ALL OPENINGS IN THE WALLS SHALL HAVE A BOND BEAM IMMEDIATELY ABOVE THEM CONSISTING OF A SINGLE COURSE OF HOLLOW MASONRY UNITS WITH 2-#4 BARS EXTENDING A MINIMUM OF 0'-4" BEYOND THE OPENING. PROVIDE A STEEL LINTEL OF AN L 3x3x1/4 FOR THE EXTERIOR WYTHE AT ALL OPENINGS WITH A MINIMUM OF 8 INCH BEARING AT THE ENDS. LINTELS AND ALL EXPOSED STEEL SHALL RECEIVE TWO COATS OF ZINC DUST PAINT.
9. PROVIDE 1-#4 BAR GROUTED IN THE HOLLOW MASONRY UNIT CELLS ON EACH SIDE OF DOOR JAMBS AND EXTEND THE BAR THE FULL HEIGHT OF THE WALL.
10. SEE PIPING, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EMBEDDED ITEMS AND OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
11. SHAPE FLOOR TOWARD FLOOR DRAIN AT 1/16 INCH PER FOOT.
12. THE COLOR OF THE FACE BRICK SHALL MATCH THE COLOR OF THE FACE BRICK ON THE HYDROELECTRIC PLANT. SUBMIT COLOR SAMPLE TO ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS.
13. THE CONTRACTOR SHALL PROVIDE A METHOD TO PREVENT FOREIGN MATERIALS FROM FALLING INTO THE WELL DURING THE IMPROVEMENTS. CONTRACTOR SHALL SUBMIT PROPOSED METHOD TO ENGINEER FOR APPROVAL PRIOR TO BEGINNING WORK AT THE WELLHOUSE.

DARREL J. SVATY · LICENSED · KANSAS · PROFESSIONAL ENGINEER

DARREL LYNN MOORE · LICENSED · 6-11-96 · KANSAS · PROFESSIONAL ENGINEER

LEGEND

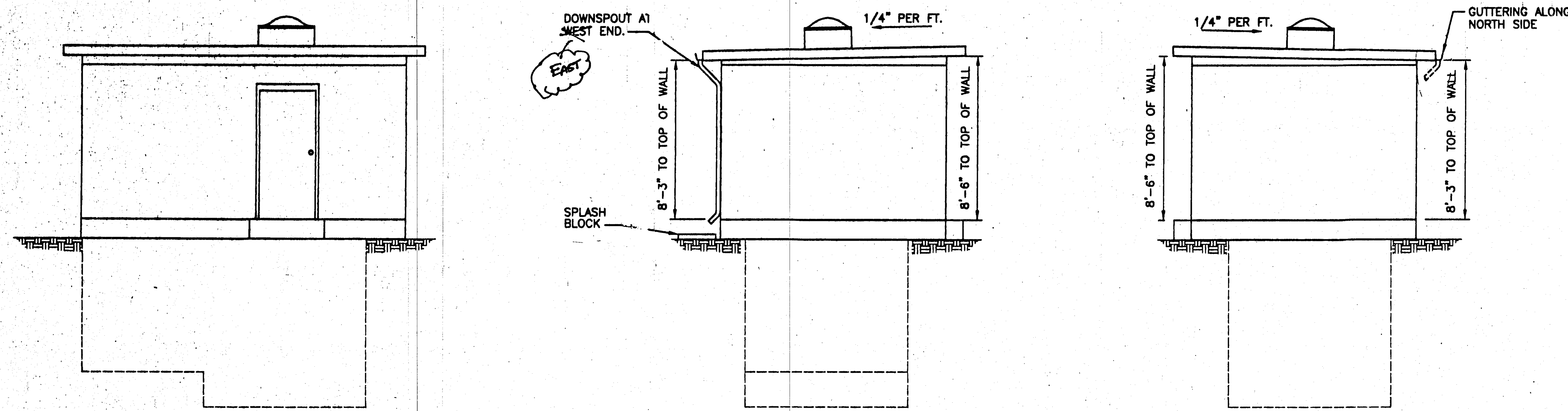
———	EXISTING PIPING AND STRUCTURE TO BE REUSED
— — —	EXISTING PIPING TO BE REMOVED AND SALVAGED TO CITY
———	NEW PIPING AND STRUCTURE
▨▨▨	EXISTING STRUCTURE TO BE DEMOLISHED

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

WELLHOUSE S-8 STRUCTURAL
SHEET TITLE

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

DAC/MDK	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
JUNE, 1996	93001	30 / 41
DATE	JOB NO.	SHEET/OF



SOUTH

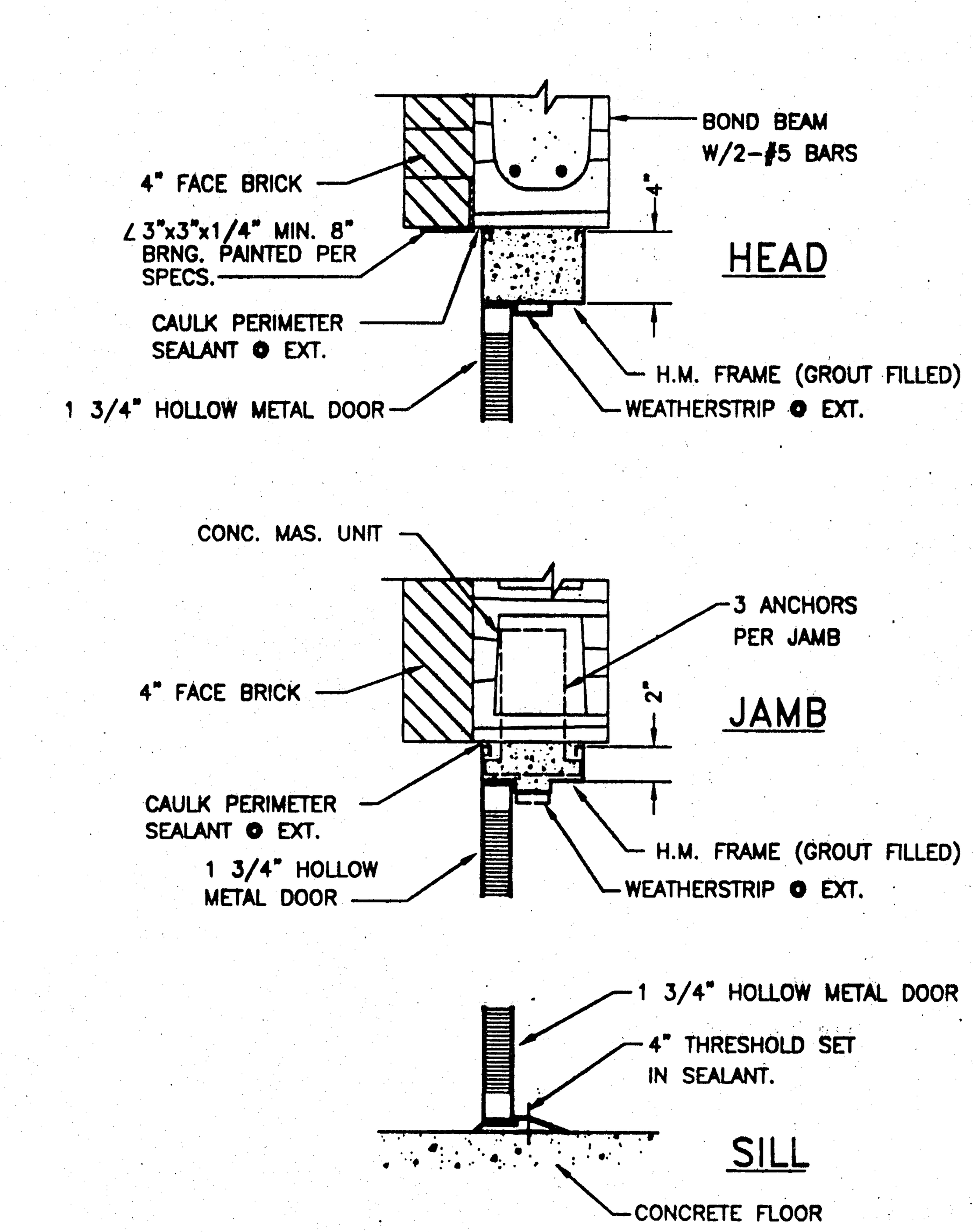
WEST

EAST

NOTE: GUTTERING SHALL BE PROVIDED AS SHOWN ON THE WELLHOUSE. GUTTERING SHALL HAVE A MINIMUM THICKNESS OF 0.027 INCH.

ELEVATION VIEWS

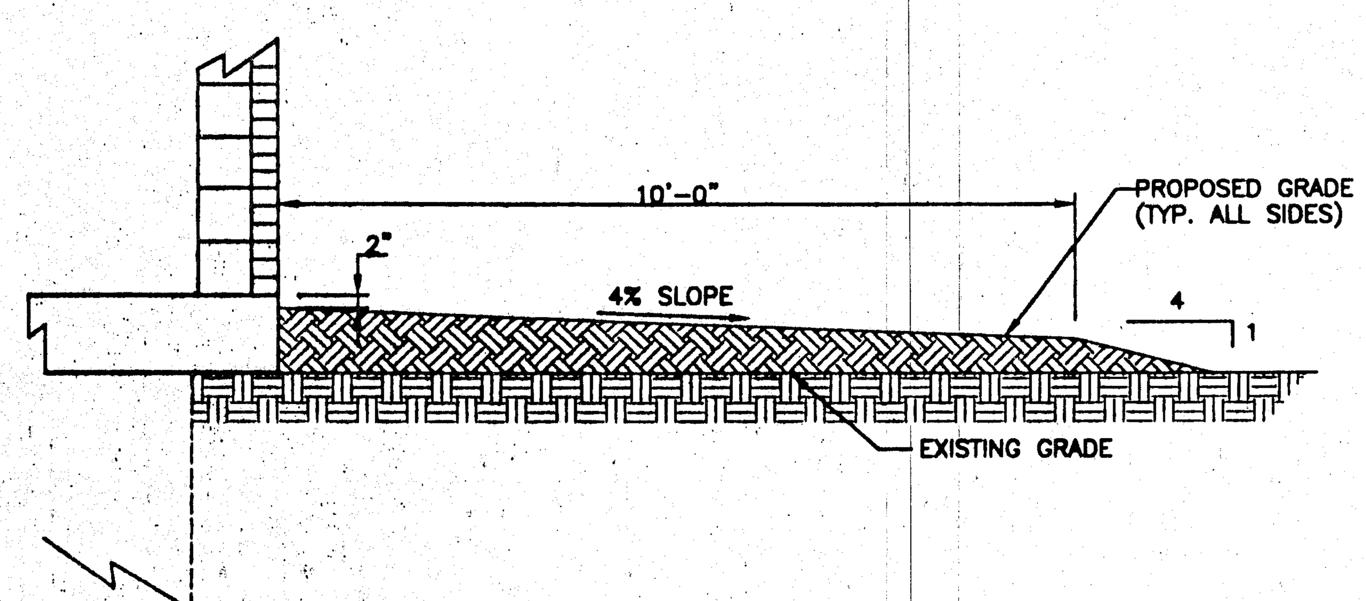
SCALE: 1/4" = 1'-0"



DOOR DETAIL

NO SCALE

Gutter & Door were Painted Brown.



GRADING DETAIL

SCALE: 1/2" = 1'-0"

KARL J. EVANS JR. LICENSED KANSAS PROFESSIONAL ENGINEER

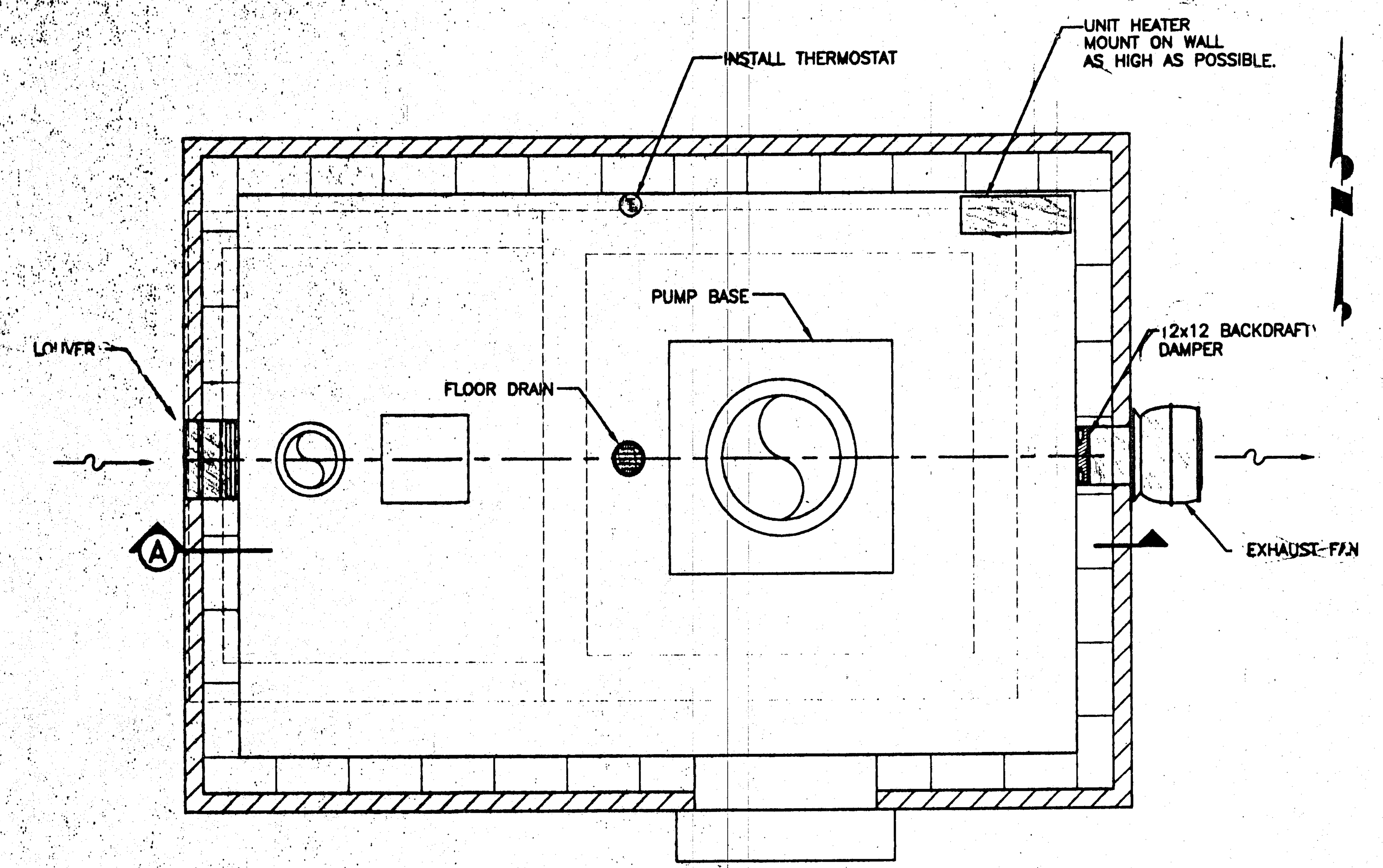
DARREL LYNN MOORE LICENSED 9066 6-11-96 KANSAS PROFESSIONAL ENGINEER

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

WELLHOUSE S-8 ELEVATIONS & STRUCTURAL DETAILS
SHEET TITLE

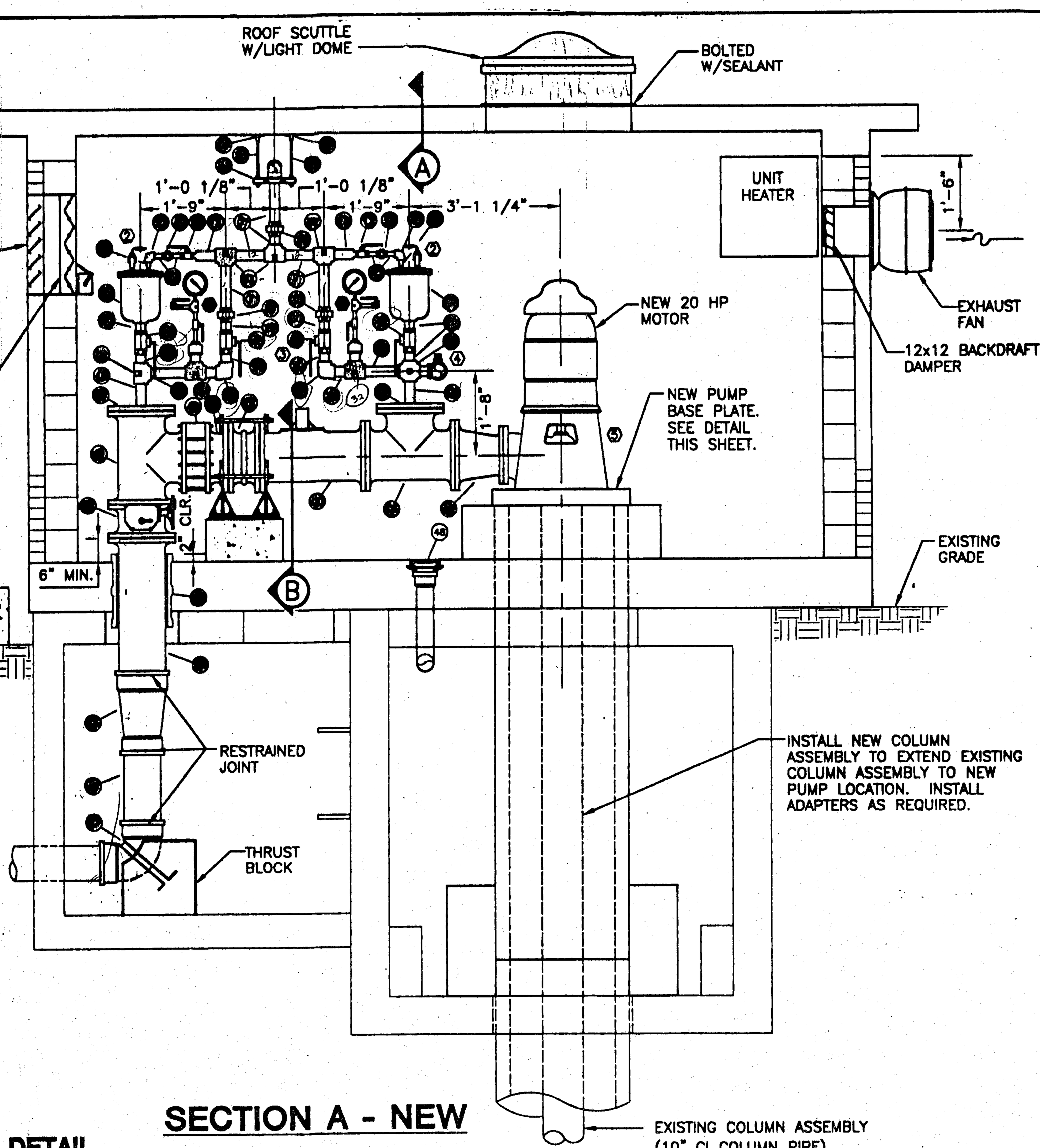
DAC/MDK	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
JUNE, 1996	93001	31 [illegible] 41
DATE	JOB NO.	SHEET OF



PLAN - NEW

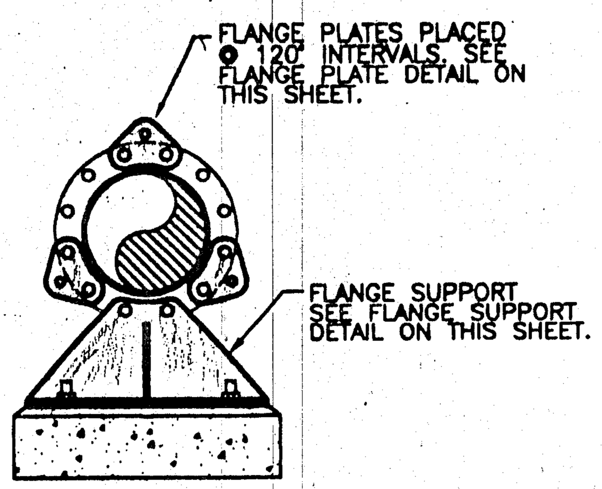
SCALE: 1/2"=1'-0"

NOTE: PIPING NOT SHOWN. SEE SECTION A FOR PIPING.



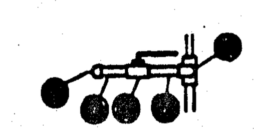
SECTION A - NEW

SCALE: 1/2"=1'-0"

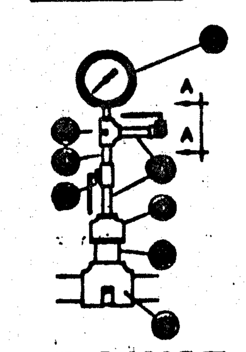


B SECTION

NO SCALE

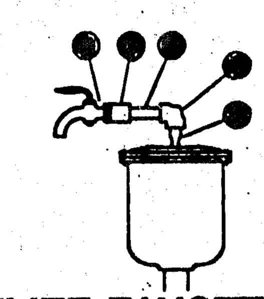


SECTION AA



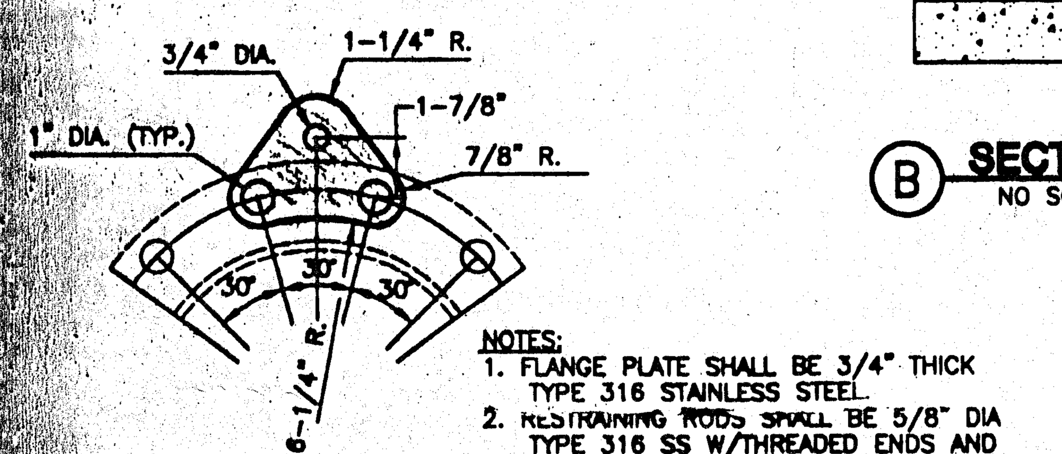
PRESSURE GAUGE DETAIL

NO SCALE



RELIEF FAUCET DETAIL

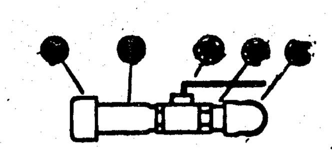
NO SCALE



NOTES:
1. FLANGE PLATE SHALL BE 3/4" THICK TYPE 316 STAINLESS STEEL.
2. RESTRAINING RODS SHALL BE 5/8" DIA TYPE 316 SS W/THREADED ENDS AND TYPE 316 SS NUTS AND WASHERS.

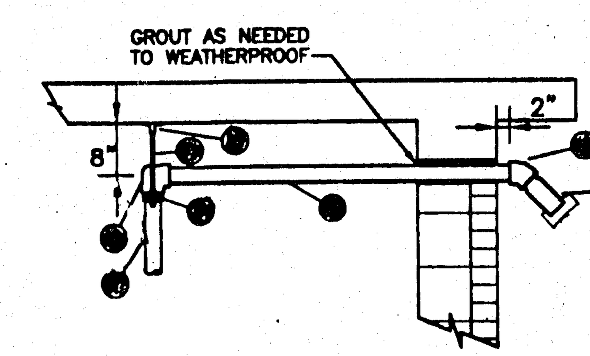
FLANGE PLATE DETAIL

SCALE: NONE



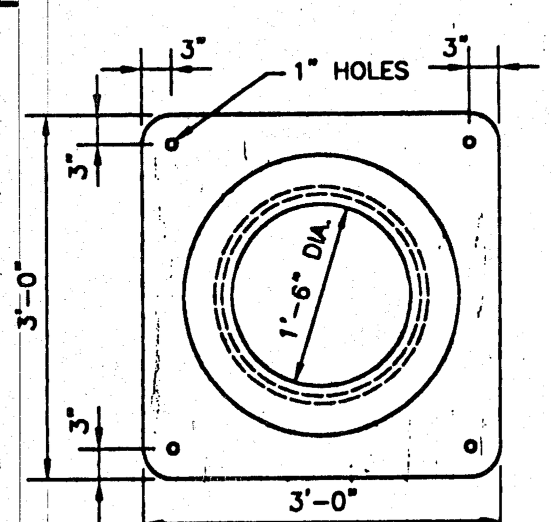
FIRE HOSE CONNECTION DETAIL

NO SCALE

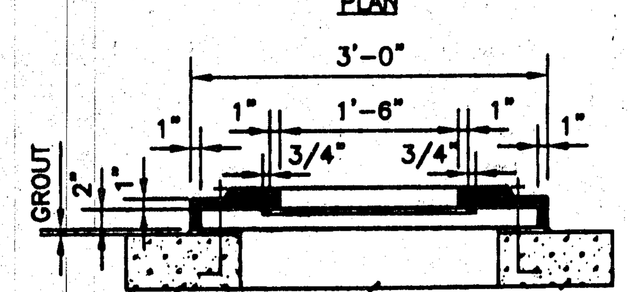


A SECTION

NO SCALE



PLAN

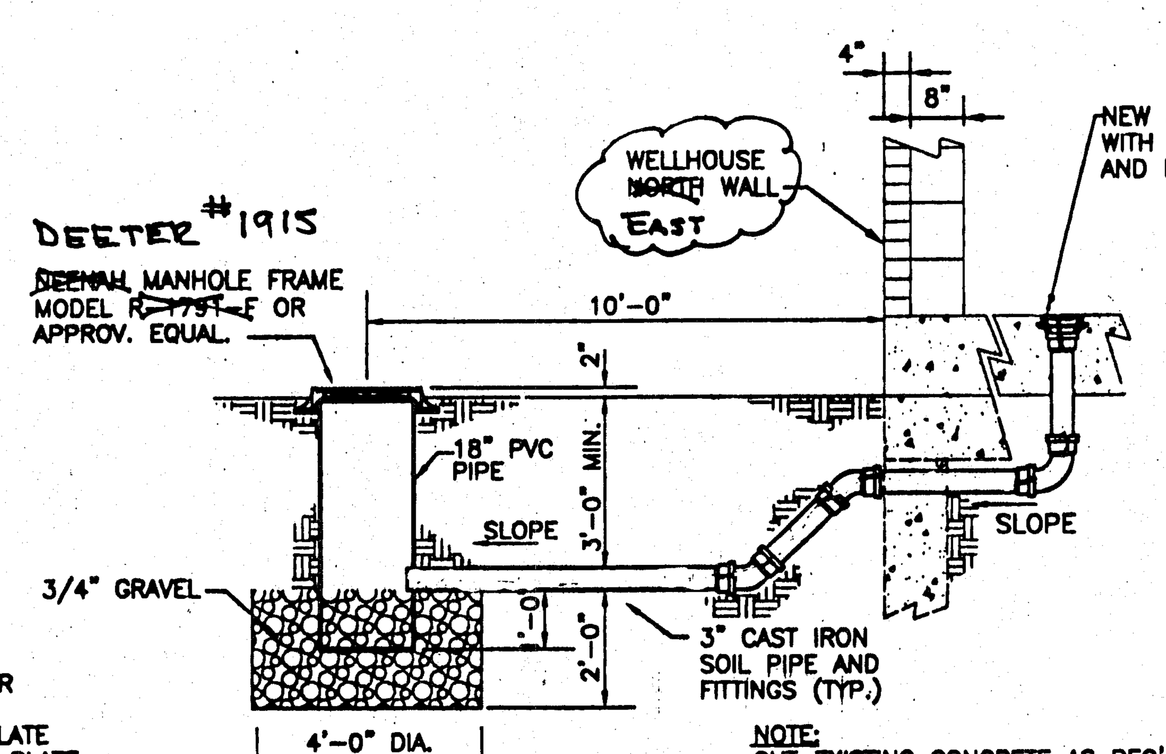


SECTION

NOTES:
1. CONTRACTOR SHALL VERIFY THAT BASE PLATE WILL MATCH EXISTING PUMP PRIOR TO ORDERING OR FABRICATING.
2. PROVIDE OPENING IN BASE PLATE FOR WATER LEVEL MEASUREMENT.
3. PROVIDE ANCHOR BOLTS FOR PUMP BASE PLATE AND BOLTS FOR MOUNTING PUMP ON BASE PLATE. PROVIDE HOLES IN BASE PLATE TO MATCH PUMP BOLT HOLE PATTERN.

CAST IRON PUMP BASE PLATE

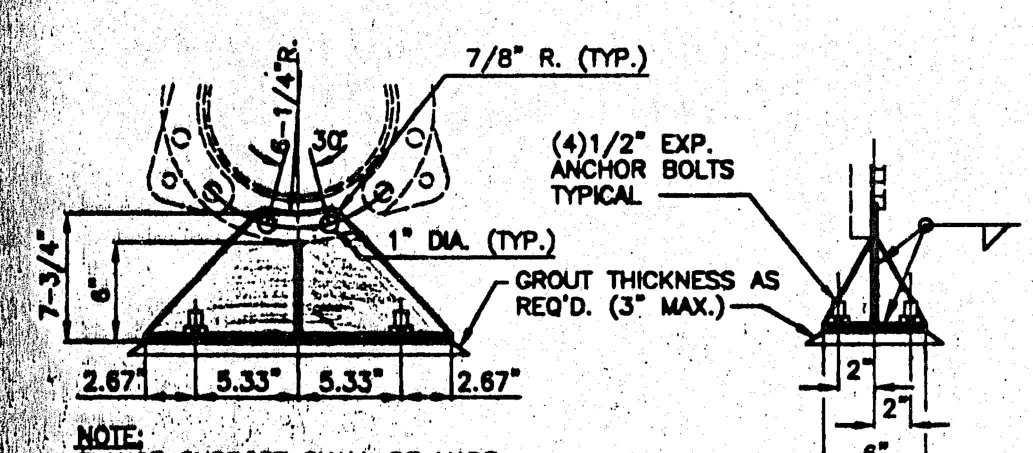
SCALE: 3/4"=1'-0"



NOTE:
CUT EXISTING CONCRETE AS REQ'D. FOR PIPING INSTALLATION. PATCH ALL PENETRATIONS AS REQ'D. FOR WEATHERPROOFING.

WELLHOUSE FRENCH DRAIN DETAIL

NO SCALE



NOTE:
FLANGE SUPPORT SHALL BE MADE OF 3/8" PLATE AND PAINTED.

FLANGE SUPPORT DETAIL

SCALE: NONE

EXHAUST FAN

COOK ACW-D MODEL 100W15DH. DIRECT DRIVE CENTRIFUGAL VENTILATOR. 600 CFM @1/2" S.P., 1/8 HP MOTOR. BACK DRAFT DAMPER

LOUVER

24"x24" TSD-400-UD MOTORIZED DAMPER WITH 24"x24" IEL-4 LOUVER, BOTH BY LOUVERS & DAMPERS, INC.

ROOF SCUTTLE

BILCO TYPE GS-50 ROOF SCUTTLE - 2'-6"x3'-0" OR APPROVED EQUAL.

UNIT HEATER

TITAN MODEL T771 2-HEAT MILKHOUSE HEATER W/THERMOSTAT, 120 VOLT, WITH TIP OVER SWITCH

THERMOSTAT

SINGLE STAGE SET AT 90° - ENERGIZE FAN & OPEN DAMPERS.

DARREL LYNN MOORE LICENSED 9055 6-11-96 KANSAS PROFESSIONAL ENGINEER

PLAN NOTES

1. REFER TO PRESSURE GAUGE DETAIL ON THIS SHEET.
2. REFER TO RELIEF FAUCET DETAIL ON THIS SHEET.
3. VALVES SHOWN PARALLEL WITH PIPING ASSEMBLY FOR CLARITY. PLACE VALVE HANDLES PERPENDICULAR TO PIPING ASSEMBLY DURING CONSTRUCTION.
4. REFER TO FIRE HOSE CONNECTION DETAIL ON THIS SHEET.
5. EXISTING PUMP SHALL BE DISASSEMBLED, CLEANED, AND REBUILT WITH NEW TYPE 316 SS BOLTS. REINSTALL PUMP AFTER APPROVAL BY THE ENGINEER.

LIST OF MATERIALS		
ITEM	SIZE	DESCRIPTION
1	10"X10"	TEE, FLANGED, CL 53
2	10"	FLOW METER, FLANGED
3	10"	EXPANSION JOINT, FLANGED
4	10"	PIPE SPOOL, FLGD, 10" DIA., CL 53, LENGTH [illegible]
5	10"	CHECK VALVE, WAFER
6	10"	BUTTERFLY VALVE, FLANGED
7	2"	PIPE, SCH 40, GALV., NPT, LENGTH [illegible]
8	2"	BALL VALVE, NPT
9	2" INLET	AIR RELEASE VALVE
10	3/4"	FAUCET
11	3/4"	UNION, CL 150, GALV., NPT
12	3/4"	BALL VALVE, NPT
13	2"x3/4"	SWAGED NIPPLE, SCH. 40, GALV., NPT, [illegible]
14	3/4"x1/2"	SWAGED NIPPLE, SCH. 40, GALV., NPT, [illegible]
15	3/4"	PIPE NIPPLE, SCH. 40 GALV., NPT, LENGTH [illegible]
16	0-60 PSI	PRESSURE GAUGE
17	2-1/2"x2"	SWAGED NIPPLE, SCH. 40, GALV., [illegible]
		SOUTHPARK CORP., PART NO. HDN-[illegible]
18	2-1/2"	PIPE CAP, NST, SOUTHPARK CORP., [illegible]
19	2"	UNION, CL 150, GALV., NPT
20	2"x3"	PIPE NIPPLE, SCH. 40, GALV., NPT, [illegible]
21	3/4"	90° ELBOW, CL 150, GALV., NPT
22	2"	90° ELBOW, CL 150, GALV., NPT
23	10"	FLANGE, BLIND, CL 53
24	10"	PIPE SPOOL, FLGDxPE, 10"Ø, CL 53, LENGTH [illegible]
25	-	NUMBER NOT USED
26	-	NUMBER NOT USED
27	1/2"x3"	PIPE NIPPLE, SCH. 40, GALV., NPT, [illegible]
28	1/2"x4"	PIPE NIPPLE, SCH. 40, GALV., NPT, [illegible]
29	1/2"	TEE, CL 150, GALV., NPT
30	1/2"	BALL VALVE, NPT
31	1/2"	CAP, CL 150, GALV., NPT
32	2"	TEE, CL 150, GALV., NPT
33	3/8"	ROD, THREADED ENDS, w/ HEX NUT AND WASHER
34	2"	RISER CLAMP, GRINNELL #261, GALV., OR APPROV. EQUAL
35	3/8"	PIPE HANGER, GRINNELL #153 OR APPROV. EQUAL
36	1/2"	90° ELBOW, CL 150, GALV., NPT
37	2"x1/2"	REDUCER, CONCENTRIC, CL 150, GALV., NPT
38	3/4"	COUPLING, CL 150, GALV., NPT
39	-	NUMBER NOT USED
40	-	NUMBER NOT USED
41	-	NUMBER NOT USED
42	10"x8"	REDUCER, FLANGED, CL 53
43	10"	WALL SLEEVE, CAULKED, AMER. A-01770, [illegible]
44	-	NUMBER NOT USED
45	10"x8"	REDUCER, RESTRAINED JOINT, CL 53
46	8"	PIPE SPOOL, PExPE, CL 53, LENGTH AS [illegible]
47	8"	90° ELBOW, MJ x RESTRAINED JOINT, CL 53
48	7"	FLOOR DRAIN, ZURN Z-507 OR APPROV. EQUAL
49	2"	CROSS, CL 150, GALV., NPT
50	2"	45° ELBOW, CL 150, GALV., NPT

GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND LOCATION OF EQUIPMENT.
2. ALL FLANGED PIPE AND FITTINGS SHALL BE CLASS 53 DUCTILE IRON.
3. ALL NPT PIPE AND FITTINGS SHALL BE GALVANIZED STEEL.
4. ALL VALVES SHALL BE AS SPECIFIED.
5. ALL PIPE PENETRATIONS THROUGH ROOF SHALL BE SEALED WITH EMBECO GROUT
6. PAINT PUMP, MOTOR, BASE PLATE, PIPING, AND PIPE SUPPORTS PER THE SPECIFICATIONS.

LEGEND	
	EXISTING PIPING AND STRUCTURE TO BE REUSED
	NEW PIPING AND STRUCTURE
(48)	SEE LIST OF MATERIALS
(4)	SEE PLAN NOTES

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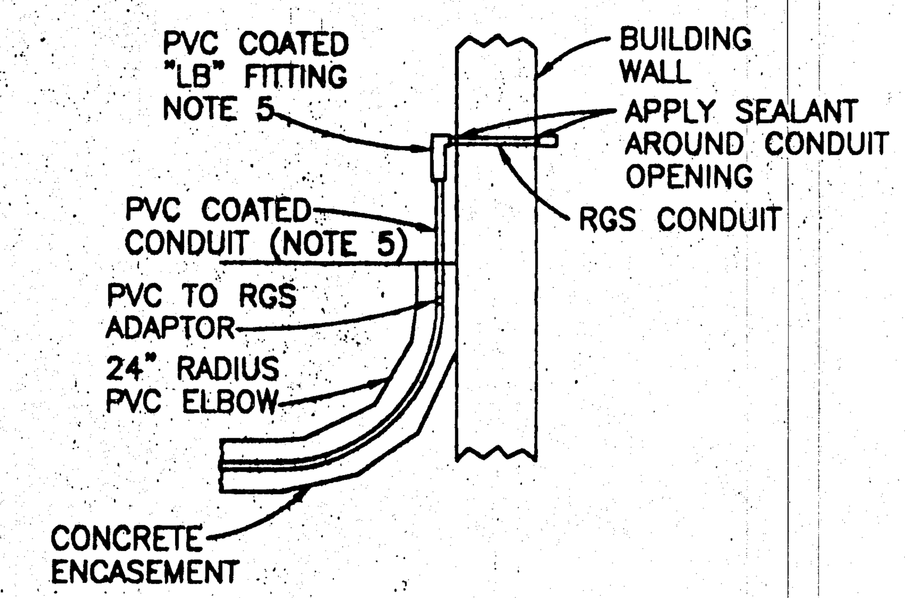
CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

WELLHOUSE S-8 PIPING & MECHANICAL
SHEET TITLE

DAC/RLB	RRT	DLM
DESIGN BY:	DRAWN BY:	CHECKED BY:
AUGUST, 1995	93001	32 / 41
DATE	JOB NO.	SHEET OF



WALL PENETRATION DETAIL

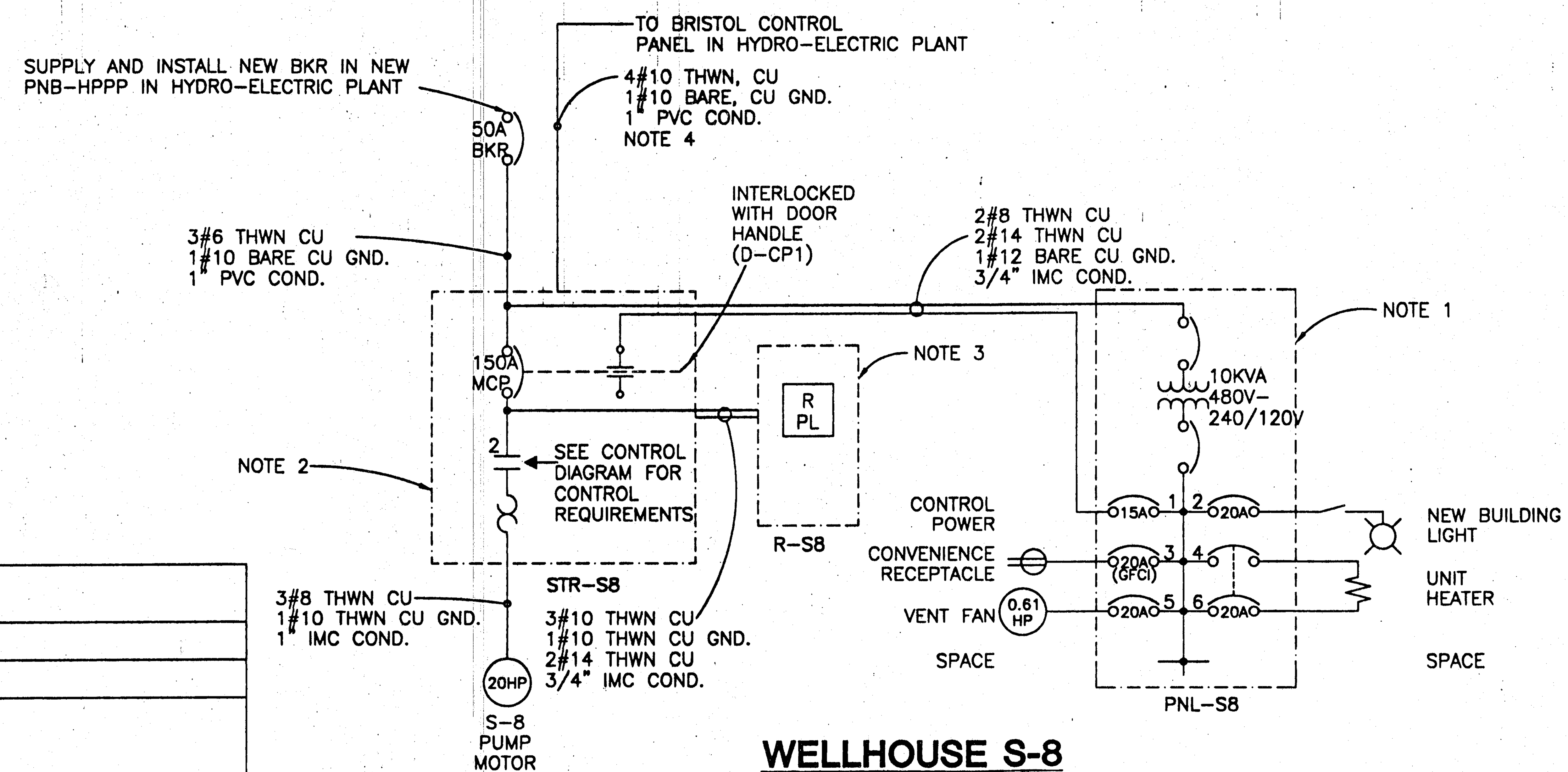
(TYPICAL AT HYDRO-ELECTRIC PLANT AND AT WELLHOUSE S-8)

NEW PANEL HPPP

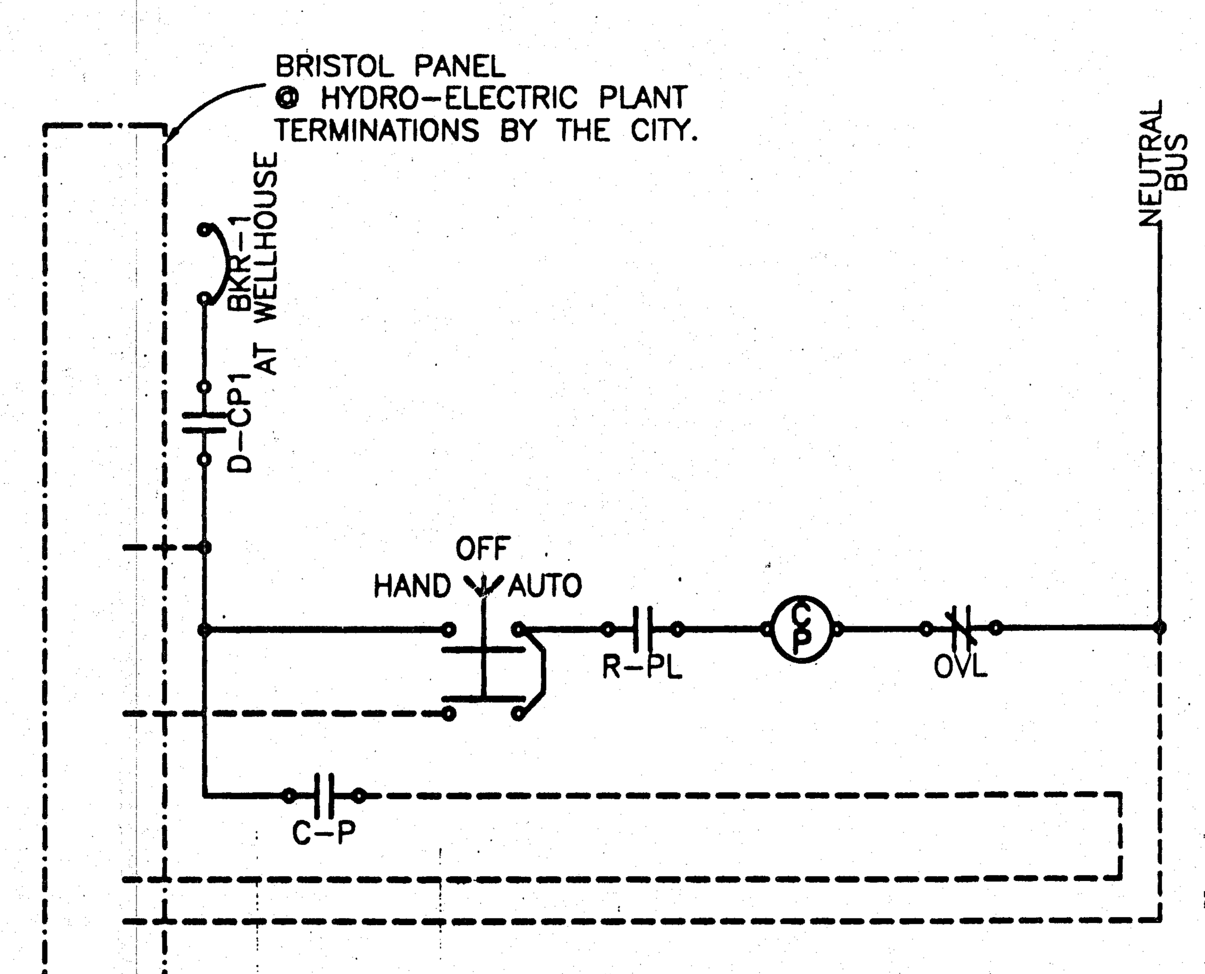
NOTE 6

RATINGS: 600VAC, 3Ø, 3W	AMPACITY: 600A MLO	TYPE: SQ D, HCN4183-6
MOUNTING: SURFACE	SIZE: 81" CKT. SPACE	CLASS: NEMA-1

	VOLT AMPS	CKT. No.	BKR. SIZE	A B C (NOTE 7)	BKR. SIZE	CKT. No.	VOLT AMPS	
REINSTALL EXISTING BREAKER RECONNECT LOAD		1	30A		20A	2		REINSTALL EXISTING BREAKER RECONNECT LOAD
REINSTALL EXISTING BREAKER RECONNECT LOAD		3	20A		20A	4		REINSTALL EXISTING BREAKER RECONNECT LOAD
REINSTALL EXISTING BREAKER RECONNECT LOAD		5	20A		20A	6		REINSTALL EXISTING BREAKER RECONNECT LOAD
REINSTALL EXISTING BREAKER RECONNECT LOAD		7	20A		20A	8		REINSTALL EXISTING BREAKER RECONNECT LOAD
REINSTALL EXISTING BREAKER RECONNECT LOAD		9	20A		20A	10		REINSTALL EXISTING BREAKER RECONNECT LOAD
REINSTALL EXISTING BREAKER RECONNECT LOAD		11	40A		30A	12		REINSTALL EXISTING BREAKER RECONNECT LOAD
REINSTALL EXISTING BREAKER RECONNECT LOAD		13	20A		20A	14		REINSTALL EXISTING BREAKER RECONNECT LOAD
SUPPLY & INSTALL NEW BREAKER RECONNECT COMPRESSOR (WIRES ARE IN EXISTING PANEL)		15	20A		50A	16		SUPPLY & INSTALL NEW BREAKER CONNECT NEW FEED TO S-8
SPACE FOR FUTURE BREAKER (BLANK FILLER)		17				18		SPACE FOR FUTURE BREAKER (BLANK FILLER)
				GROUND BUS				



WELLHOUSE S-8 ONE-LINE DIAGRAM



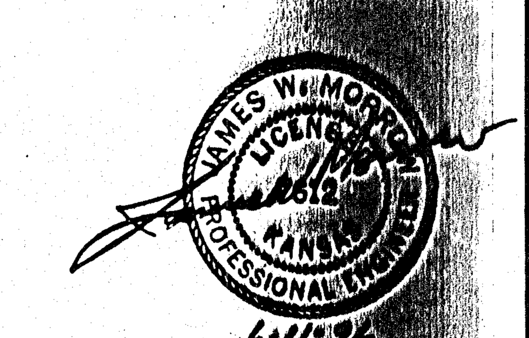
WELL S-8 PUMP CONTROL DIAGRAM

NOTES

1) GENERAL ELECTRIC SERVICENTER CAT. NO. 9T21S1100 (OR APPROVED EQUAL) IN NEMA 3R ENCLOSURE WITH BREAKERS AS INDICATED ON THIS SHEET. GROUND NEUTRAL BUS WITH #10 COPPER GROUNDING ELECTRODE CONDUCTOR TO 3/4"x10' DRIVEN, COPPER CLAD GROUND ROD.
2) NEMA SIZE 2 COMBINATION STARTER WITH CIRCUIT BREAKER, EUTECTIC ALLOY OVERLOAD RELAY, HEATER ELEMENTS (SIZED BASED ON MANUFACTURER'S RECOMMENDATIONS USING MOTOR NAMEPLATE FULL LOAD CURRENT), SEPARATE 120V CONTROL (WITH 1 AUXILIARY CONTACT INSTALLED ON BREAKER TO DISCONNECT CONTROL POWER WHEN DOOR IS OPENED), AND HAND-OFF-AUTO SWITCH WITH NAMEPLATE, IN A NEMA 4X ENCLOSURE. GROUND NEUTRAL CONDUCTOR WITH PROPER SIZE GROUNDING ELECTRODE CONDUCTOR TO METAL
3) MOUNT SOLID STATE LINE VOLTAGE MONITOR RELAY, 480V, 60 HZ, 3-PHASE LINE VOLTAGE AND NORMALLY OPEN OUTPUT CONTACTS (ALLEN BRADLEY 813S-VOB) IN 12"X12"X8" NEMA 4X ENCLOSURE WITH HINGED DOOR.
4) GROUND ONE OF THE CONDUCTORS TO GROUND SYSTEM.
5) PVC COATED CONDUITS SHALL BE MANUFACTURED BY ROBROY OR APPROVED EQUAL.
6) REMOVE EXISTING PANELBOARD PNB-HPPP (CAT NO. SQUARE D HCN3274-6) AND REPLACE WITH NEW PNB-HPPP (SEE PANEL SCHEDULE, THIS SHEET). SUPPLY AND INSTALL EVERYTHING REQUIRED TO MAKE A COMPLETE INSTALLATION (REUSE EXISTING CIRCUIT BREAKERS WHERE POSSIBLE). CAREFULLY LABEL ALL WIRES IN EXISTING PANELBOARD BEFORE DISCONNECTING. INSTALL NEW PNB-HPPP SO THAT TOP IS AT SAME ELEVATION AS EXISTING PNB-HPPP. CUT OR REPLACE THE TWO EXISTING 3" CONDUITS ENTERING THE BOTTOM OF THE PANELBOARD. RECONNECT EXISTING CONDUIT AND WIRE (INCLUDING GROUNDING) TO PANEL. IT IS THE CONTRACTORS RESPONSIBILITY TO MAKE THE SYSTEM WORK AS IT DID PRIOR TO THE PANEL REPLACEMENT (INCLUDING CORRECTING PHASE ROTATION OF EACH LOAD).
7) BUS PHASING MAY NOT BE AS SHOWN. REFER TO MANUFACTURER OF NEW PANEL SUPPLIED FOR ACTUAL BUS PHASING.

LEGEND

?	DEVICE TERMINAL AND TERMINAL NUMBER
----	WIRING TO REMOTE BRISTOL CONTROL PANEL
——	NEW WIRING TO BE INSTALLED BY CONTRACTOR
C-P	PUMP MOTOR CONTACTOR
D-CP1	CONTROL POWER DISCONNECT #1
OVL	OVERLOAD RELAY
R-PL	PHASE LOSS RELAY (IN NEW PANEL @ EACH WELLHOUSE)



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CITY OF WICHITA
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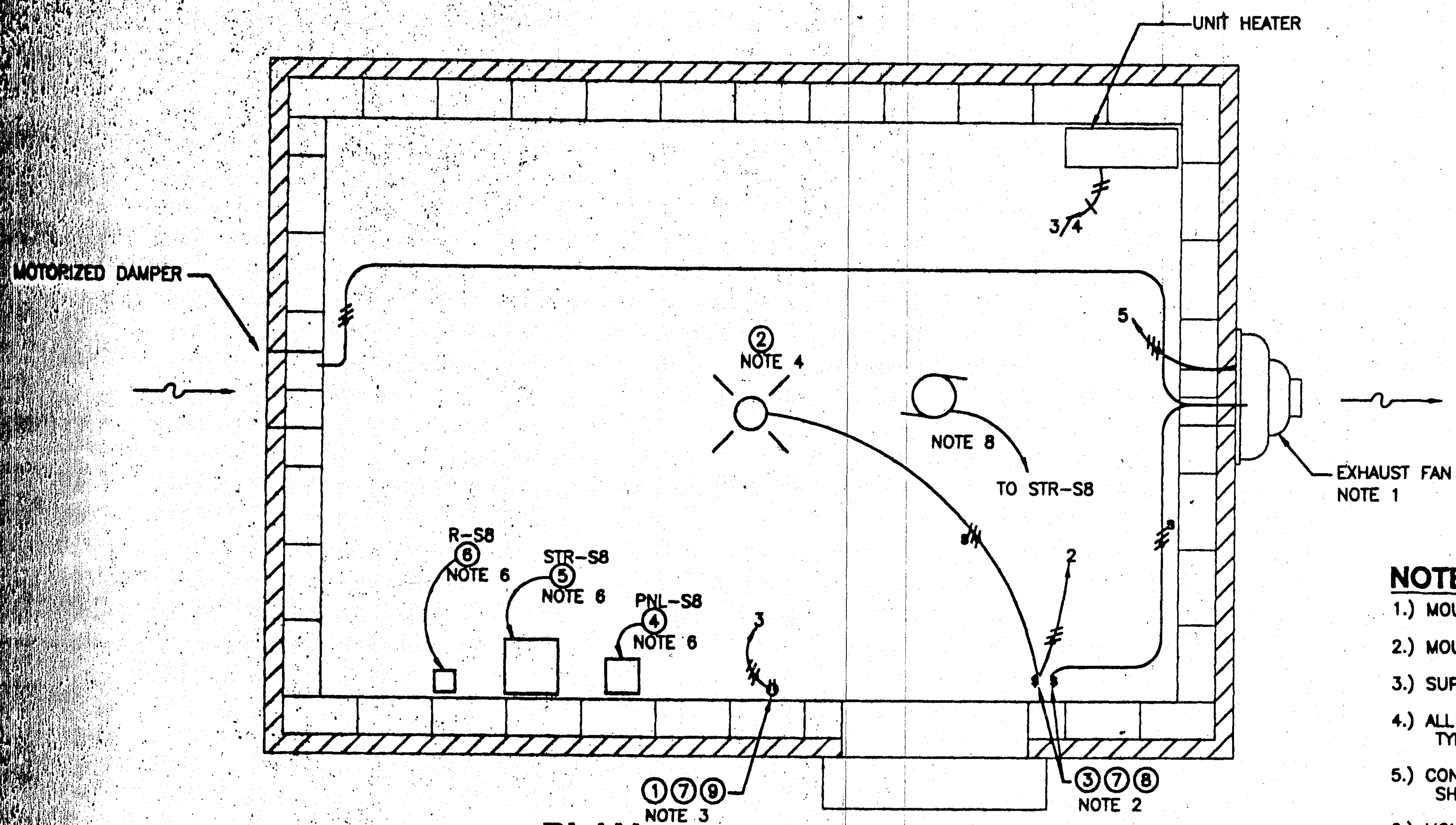
PROJECT NAME

WELLHOUSE S-8
ELECTRICAL ONE-LINE DIAGRAM
SHEET TITLE

JWM/PBC DESIGN BY:	RRT DRAWN BY:	DLM CHECKED BY:
JUNE, 1996 DATE	93001 JOB NO.	33 / 41 SHEET/OF



PLAN

SCALE: 1/2"=1'-0"

NOTES:

1.) MOUNT SWITCHES 4'-6" ABOVE THE FINISHED FLOOR.

2.) MOUNT RECEPTACLE 3'-0" ABOVE THE FINISHED FLOOR.

3.) SUPPLY AND INSTALL NEW SWITCH AND LIGHT FIXTURE.

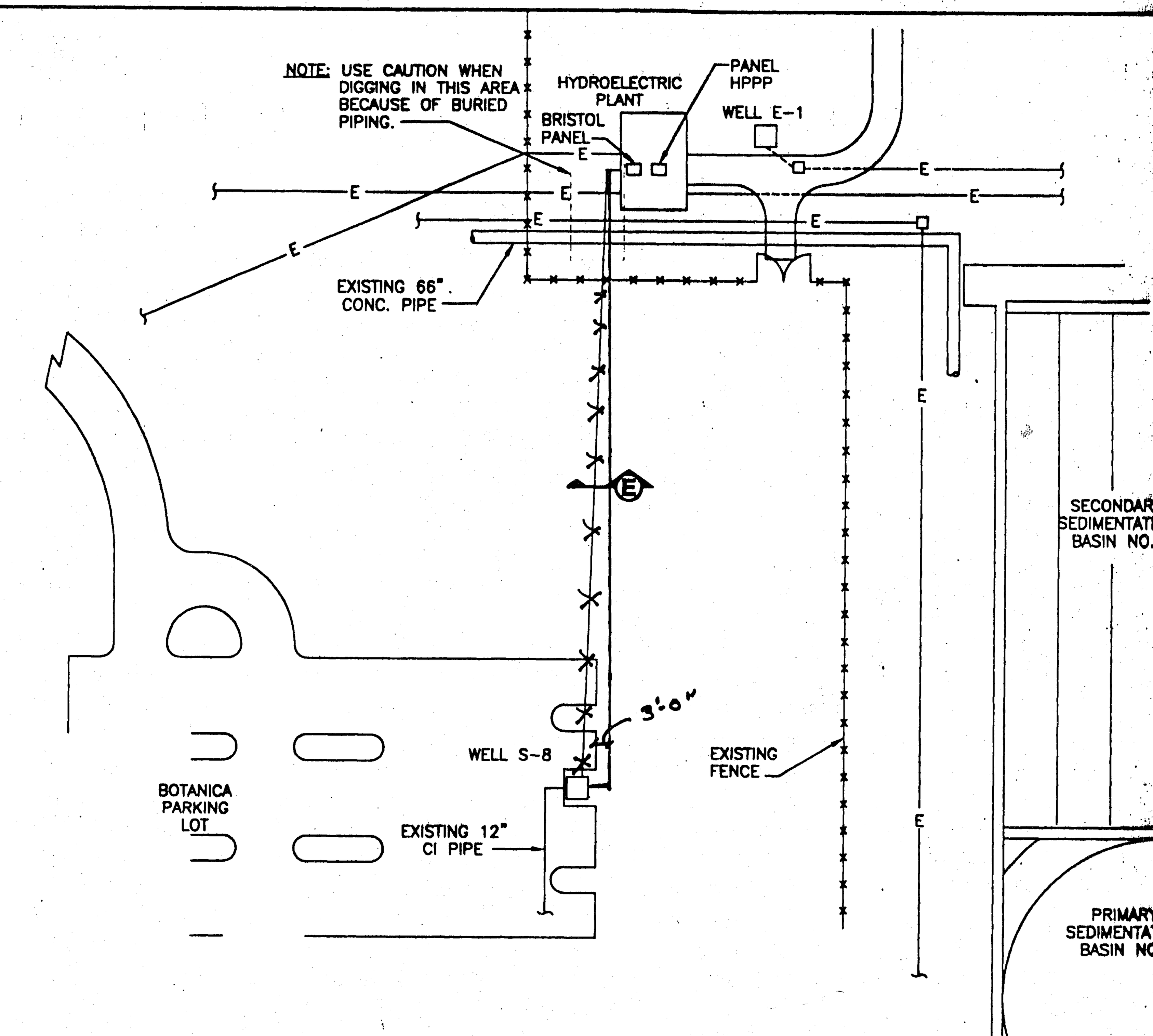
4.) ALL ABOVE GROUND CONDUITS SHALL BE THREADED TYPE IMC OR RGS.

5.) CONDUCTORS ON THIS DRAWING NOT SIZED ELSEWHERE SHALL BE #12, THWN, CU.

6.) MOUNT SO THAT ENCLOSURE IS 5'-0" ABOVE THE FINISHED FLOOR.

7.) SEE "WELL HOUSE S-8 ONE LINE DIAGRAM", SHEET 33 FOR DETAILS.

8.) CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING OF EXISTING: COMBINATION STARTER, OIL FUSED CUTOUTS, CONDUIT AND WIRE, LIGHTING TRANSFORMER, 2400V/480V DRY TRANSFORMER AND RECEPTACLES.



S-8 ELECTRICAL SITE PLAN

SCALE: 1"=50'

EQUIPMENT SCHEDULE

NO.	DESCRIPTION	CAT. NO.
1	DUPLEX RECEPTACLE	HUBBELL 8300
2	NONMETALLIC VAPOR TIGHT INCANDESCENT CEILING MOUNT LIGHT FIXTURE	HUBBELL NVX15GG
3	120 VAC, 20A AC SNAP SWITCH	HUBBELL 1221
4	NOTE 7	
5	NOTE 7	
6	NOTE 7	
7	SINGLE GANG CAST DEVICE BOX	CROUSE HINDS FD2
8	RAINTIGHT COVER – ON/OFF SWITCH W/LOCKING ARRANGEMENT	CROUSE HINDS DS185
9	WET LOCATION RECEPTACLE COVER	CROUSE HINDS WLRD-1

LEGEND

	LIGHT FIXTURE
	PUMP MOTOR
$	SNAP SWITCH
	DUPLEX RECEPTACLE
	BRANCH CIRCUIT DESIGNATION PHASE WIRE SWITCHED PHASE WIRE NEUTRAL WIRE GROUND WIRE
X	HOME RUN, WHERE "X" EQUALS CIRCUIT NO.

JAMES W. MORSE 7612 KANSAS PROFESSIONAL ENGINEER

6-11-96

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CITY OF WICHITA, KS
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

WELLHOUSE S-8 ELECTRICAL
SHEET TITLE

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DESIGN BY:	DRAWN BY:	CHECKED BY:
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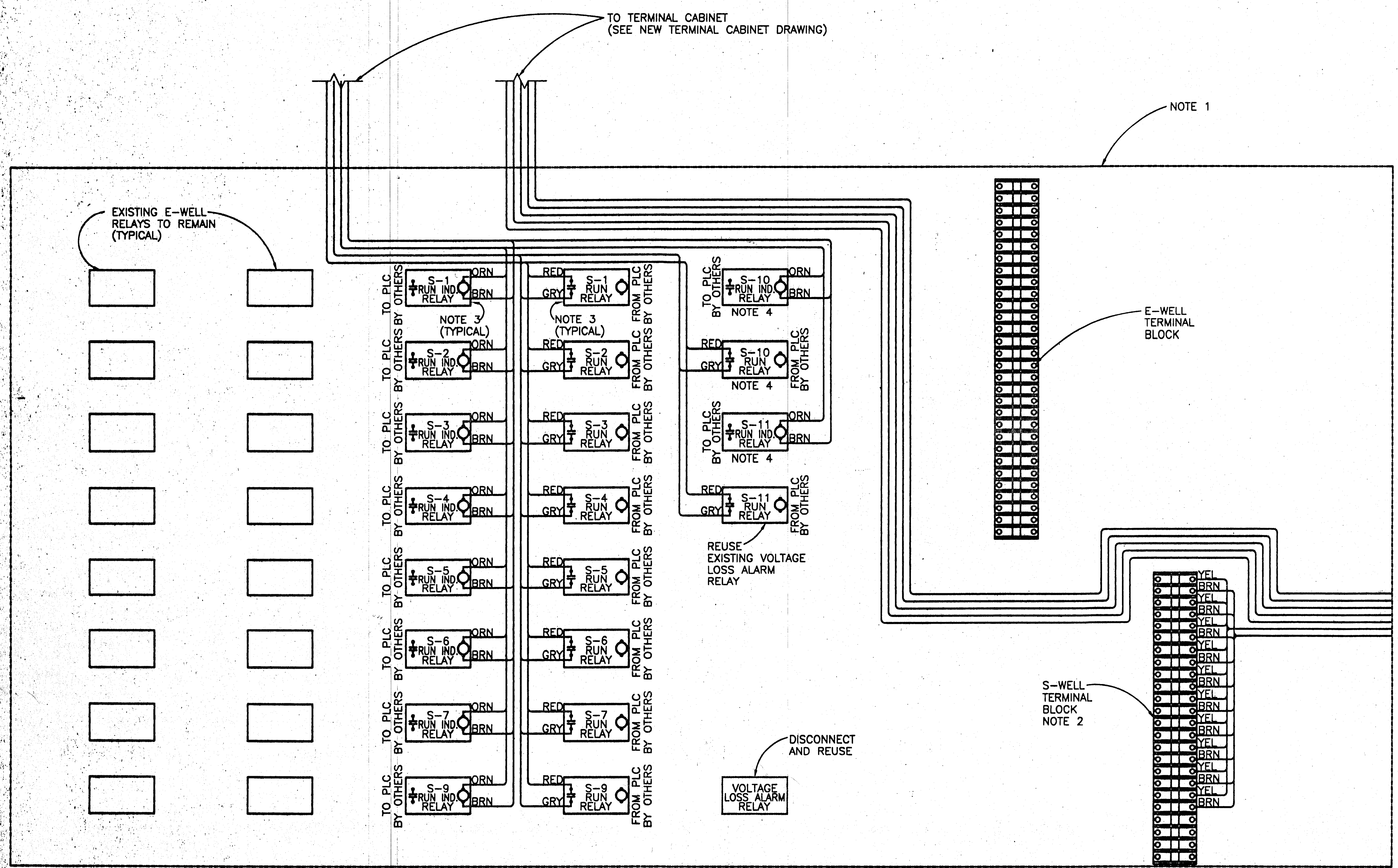

NOTES

1) EXISTING 24" x 48" x 10" (APPROX.) CONTROL PANEL LOCATED IN WATER PLANT. SEE PLAN SHEETS FOR LOCATION. CONTRACTOR SHALL MODIFY PANEL PER THIS DRAWING AND THE "TYPICAL WELL PUMP CONTROL DIAGRAM".
2) REMOVE ALL WIRES FROM S-WELL TERMINAL BLOCK. CONNECT NEW SPARE WIRES FROM WELLHOUSES TO S-WELL TERMINALS 1 THROUGH 20, IN ORDER (S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-9, S-10, S-11)
3) REMOVE WIRES FROM APPROPRIATE RELAYS AND CONNECT NEW WIRING ACCORDING TO THIS DRAWING AND THE "TYPICAL WELL PUMP CONTROL DIAGRAM".
4) SUPPLY AND INSTALL (MOUNT AND WIRE) THREE NEW CONTROL RELAYS. RELAYS SHALL BE CUTLER HAMMER CAT. NO. 9575H2441A. NO EXCEPTIONS WILL BE ALLOWED.

6-11-96

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IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

EXISTING RELAY PANEL MODIFICATIONS
SHEET TITLE

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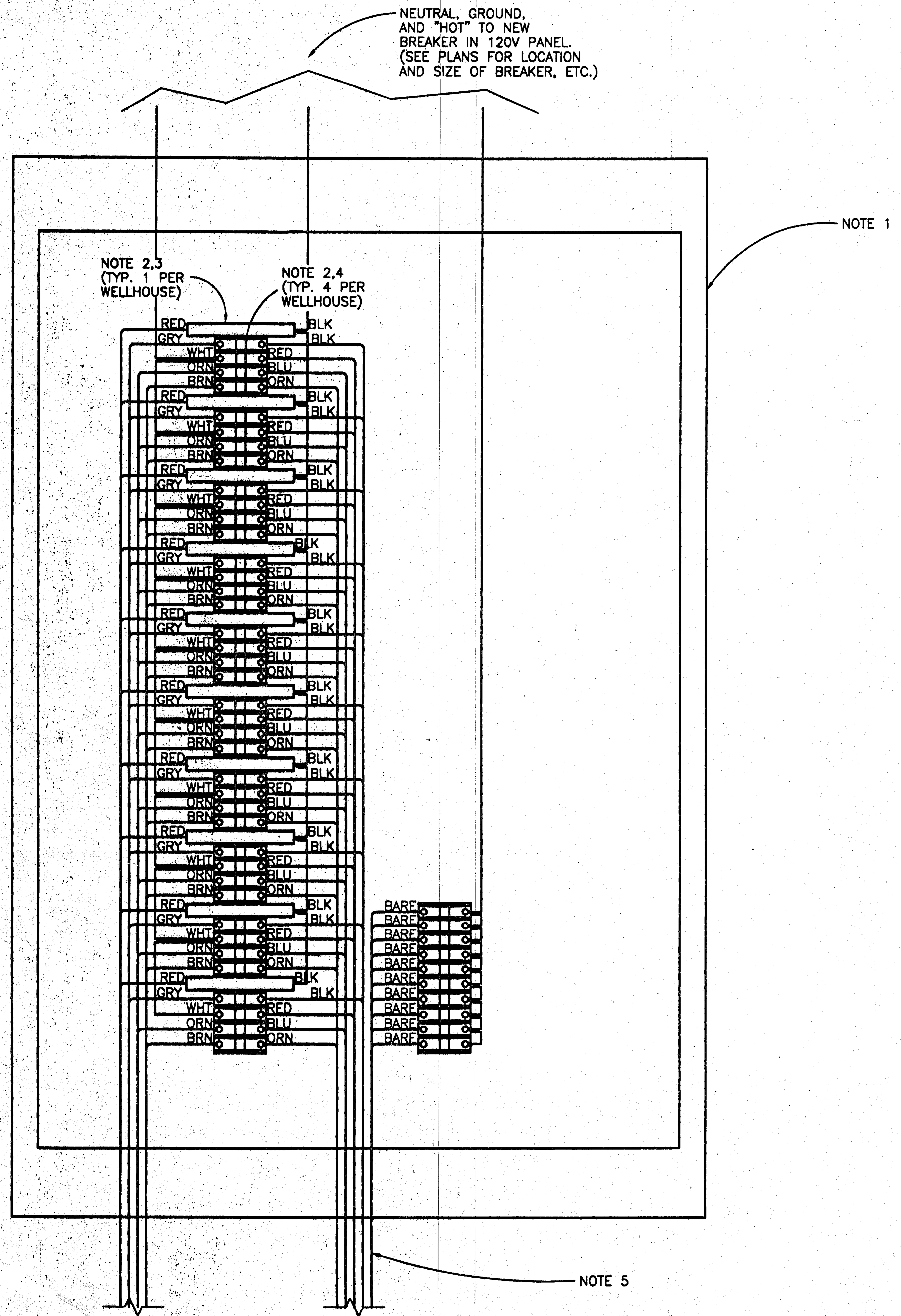

NOTES

1) SUPPLY, MOUNT, INSTALL, AND WIRE, NEW 30"x20"x8" SINGLE DOOR, NEMA 12, CONTROL PANEL (HOFFMAN A-302008LP, WITH A-30P20 BACK PANEL) ABOVE EXISTING 48"x24"x10" PANEL IN WATER PLANT. SEE PLAN SHEETS FOR APPROXIMATE LOCATION.
2) SUPPLY AND INSTALL DIN RAIL, AND DIN RAIL MOUNTED TERMINAL BLOCKS PER THIS DRAWING.
3) FINGER SAFE FUSIBLE TERMINAL BLOCKS WITHOUT A BLOWN FUSE INDICATOR (ALLEN BRADLEY 1492-H6 OR APPROVED EQUAL). INCLUDE APPROPRIATE END PIECE.
4) TERMINAL BLOCK SIZED TO HANDLE #22-#8 AWG WIRE (ALLEN BRADLEY 1492-CA1 OR APPROVED EQUAL). INCLUDE APPROPRIATE END PIECE.
5) SUPPLY AND INSTALL 2" NIPPLE BETWEEN NEW CONTROL PANEL AND EXISTING CONTROL PANEL.

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6-11-96

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CITY OF WICHITA
IMPROVEMENTS TO THE S-WELL SYSTEM
PROJECT NAME

NEW S-WELL TERMINAL CABINET DETAILS
SHEET TITLE

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AUGUST, 1995	93001	36 / 41
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