

SEWER IMPROVEMENTS

at

Mountain Grove Maintenance Facility

For

Missouri Department of Transportation District Eight

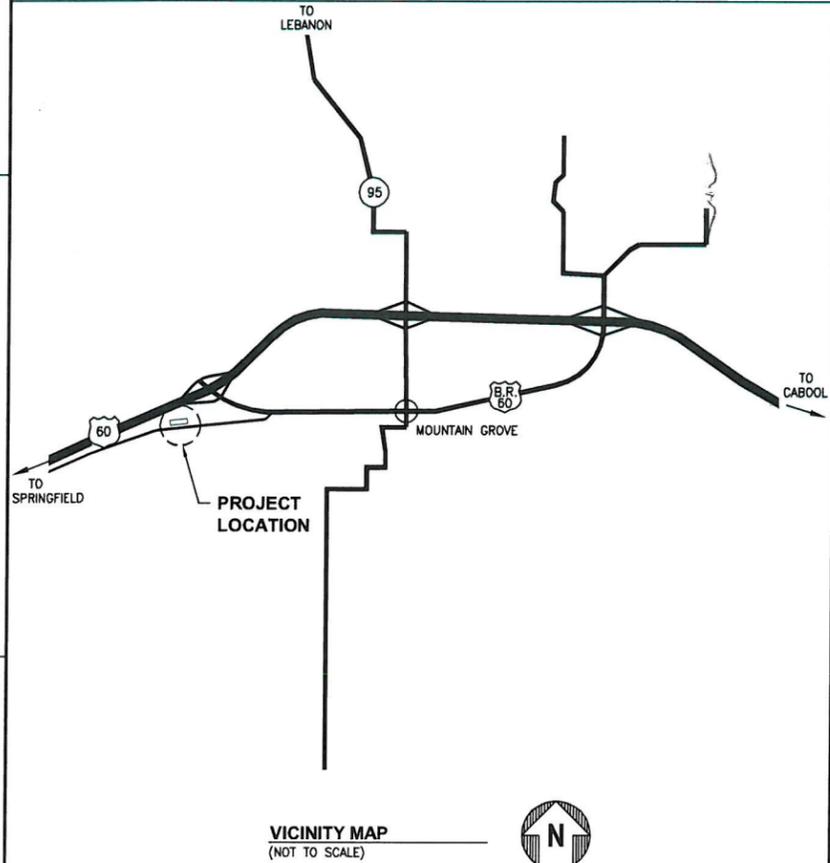


CDG Engineers Architects Planners, Inc.

CDG ENGINEERS
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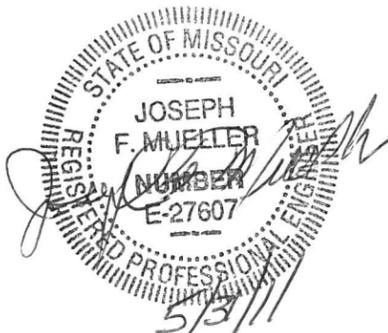


SITE MAP



GENERAL CONDITIONS

1. THESE DRAWINGS ARE PROVIDED FOR PRICING AND GENERAL CONSTRUCTION. CONTRACTORS SHALL VERIFY EXISTING CONDITIONS AT TIME OF BIDDING AND NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY WHEN DISCREPANCIES ARE DISCOVERED.
2. ALL CONSTRUCTION DEBRIS MUST BE DISPOSED OF BY THIS CONTRACTOR.
3. ANY PERMITS REQUIRED TO START AND COMPLETE THIS PROJECT SHALL BE OBTAINED AND PAID FOR BY THIS CONTRACTOR.
4. ALL EXISTING SURFACES INDICATED TO REMAIN AS EXISTING FINISHED SURFACES OR SUBSTRATES OF NEW FINISHES ARE TO BE REPAIRED TO ORIGINAL CONDITIONS IF DAMAGED BY WORK PERFORMED UNDER THIS CONTRACT, AT NO EXTRA COST TO OWNER.
5. MINIMAL LAY DOWN AREA IS AVAILABLE ADJACENT TO THE BUILDING; COORDINATE SPACE REQUIREMENTS AND LOCATION FOR CONSTRUCTION STAGING/PARKING WITH MoDOT.
6. THIS CONTRACTOR SHALL MAINTAIN A SCHEDULE AS AGREED TO WITH THE CLIENT. CONTRACTOR TO PROVIDE DETAILED CONSTRUCTION SCHEDULE AT THE TIME OF BIDDING.
7. ALL DISTURBED GRASS AREA'S OR PLANTER BEDS AND VEGETATION AROUND THE BUILDING SHALL BE RETURNED TO THEIR ORIGINAL CONDITION BY THIS CONTRACTOR. DEPRESSIONS CAUSED BY WORK UNDER THIS CONTRACT SHALL BE FILLED WITH TOP SOIL AND HAVE NEW BLUEGRASS SOD INSTALLED.
8. ALL PIPE DISTANCES SHOWN ARE IN HORIZONTAL FEET WITHOUT ALLOWANCES FOR ADDITIONAL PIPE THAT MAY BE REQUIRED DUE TO VERTICAL ALIGNMENT. PIPE DISTANCES SHOWN ARE FROM CENTERLINE OF MANHOLES. MEASUREMENT FOR PAVEMENT FOR PIPE AND TRENCHING IS TO THE INSIDE FACE OF MANHOLES.
9. SEED AND MULCH ALL AREAS DISTRIBUTED BY CONSTRUCTION, PER MoDOT SPECS.
10. ALL EXISTING FENCES REMOVED DURING CONSTRUCTION SHALL BE REPLACED AT THE ORIGINAL LOCATION. MATERIALS AND CONSTRUCTION OF NEW FENCES SHALL MATCH THE EXISTING FENCES.
11. ALL EXISTING UTILITIES INDICATED ON THE DRAWINGS ARE ACCORDING TO THE BEST INFORMATION AVAILABLE TO THE ENGINEER; HOWEVER, ALL UTILITIES ACTUALLY EXISTING MAY NOT BE SHOWN. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR TO OBTAIN THE LOCATION OF SAME SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
12. RELOCATION OF ANY WATER LINE, SEWER LINE OR SERVICE LINE THEREOF REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE AT HIS EXPENSE. CONTRACTOR SHALL ADJUST GRADE OF FORCEMAIN PIPE TO AVOID UTILITY CONFLICTS.



DRAWING LIST

GENERAL		REV
T-01	TITLE SHEET	C
CIVIL		
C-01	PLAN	C
C-02	TYPICAL SECTION OF LAGOON	C
D-01	DETAILS	C
D-02	SPRAY FIELD LIFT STATION DETAILS	C
D-03	LAGOON LIFT STATION DETAILS	C
ELECTRICAL		
E-01	ELECTRICAL INSTALLATION PLAN	C

UTILITY CONTACTS

OWNER MISSOURI DEPARTMENT OF TRANSPORTATION
DARRELL SLATTEN 417-895-1371

LEGEND & ABBREVIATIONS

EXISTING SIGN	X	ELEVATION SPOT
EXISTING MANHOLE	555.55	EXISTING ELEVATION
EXISTING GAS SERVICE VALVE	TBR	TO BE REMOVED
EXISTING WATER SHUTOFF VALVE	TBR&R	TO BE REMOVED AND REPLACED
EXISTING WATER SERVICE VALVE	MH	MANHOLE
EXISTING WATER METER	ATG	ADJUST TO GRADE
EXISTING FIRE HYDRANT	UIP	USE IN PLACE
EXISTING FLAG POLE	STA	STATION
EXISTING FLOOD LIGHT	ACC	ASPHALTIC CEMENT CONCRETE
EXISTING POWER POLE	SV	SEWER VENT
EXISTING GUY WIRE	FH	FIRE HYDRANT
EXISTING POST	CL	CENTER LINE
EXISTING FENCE	Q	FLOW (CFS)
EXISTING TREE	HGL	HYDRAULIC GRADE LINE
EXIST. CLEANOUT	CONC.	PORTLAND CEMENT CONCRETE
MH NEW MANHOLE	AT	AT
ASPHALT TO BE REMOVED & REPLACED	△	ANGLE
CONCRETE TO BE REMOVED & REPLACED	PG	PROFILE GRADE
STONE TO BE REMOVED & REPLACED	RCP	REINFORCED CONCRETE PIPE
	PVC	POLYVINYL CHLORIDE PIPE
	EL	ELEVATION
	U.N.O.	UNLESS NOTED OTHERWISE
	VERT.	VERTICAL
	HOR.	HORIZONTAL
	PT	POINT OF CURVATURE
		POINT OF TANGENCY
PROFILE CENTER LINE EXISTING	SHT.	SHEET
EXIST. WATER LINE	RAD./R	RADIUS
EXIST. GAS LINE	DIA./φ	DIAMETER
EXIST. SANITARY SEWER	OIP	OLD IRON PIPE
NEW FORCEMAIN		
NEW SANITARY SEWER		
EXIST. TELEPHONE LINES	O.C.	ON CENTERS
EXIST. UNDERGROUND ELECTRIC	R/W	RIGHT-OF-WAY
EXIST. STRUCTURE	PCC	PORTLAND CEMENT CONCRETE
NEW STRUCTURES	EXIST.	EXISTING
EXIST. CENTER LINE OF ROAD	W/	WITH
EXIST. EDGE OF PAVEMENT		
PROPERTY LINE		
EXIST. CONTOUR		

DRAWN BY
TWJ

CHECKED BY
JFM

SCALE
NONE

DATE
09/29/09

MISSOURI DEPARTMENT OF TRANSPORTATION
MOUNTAIN GROVE MAINTENANCE FACILITY
SANITARY SEWER IMPROVEMENTS
COVER SHEET

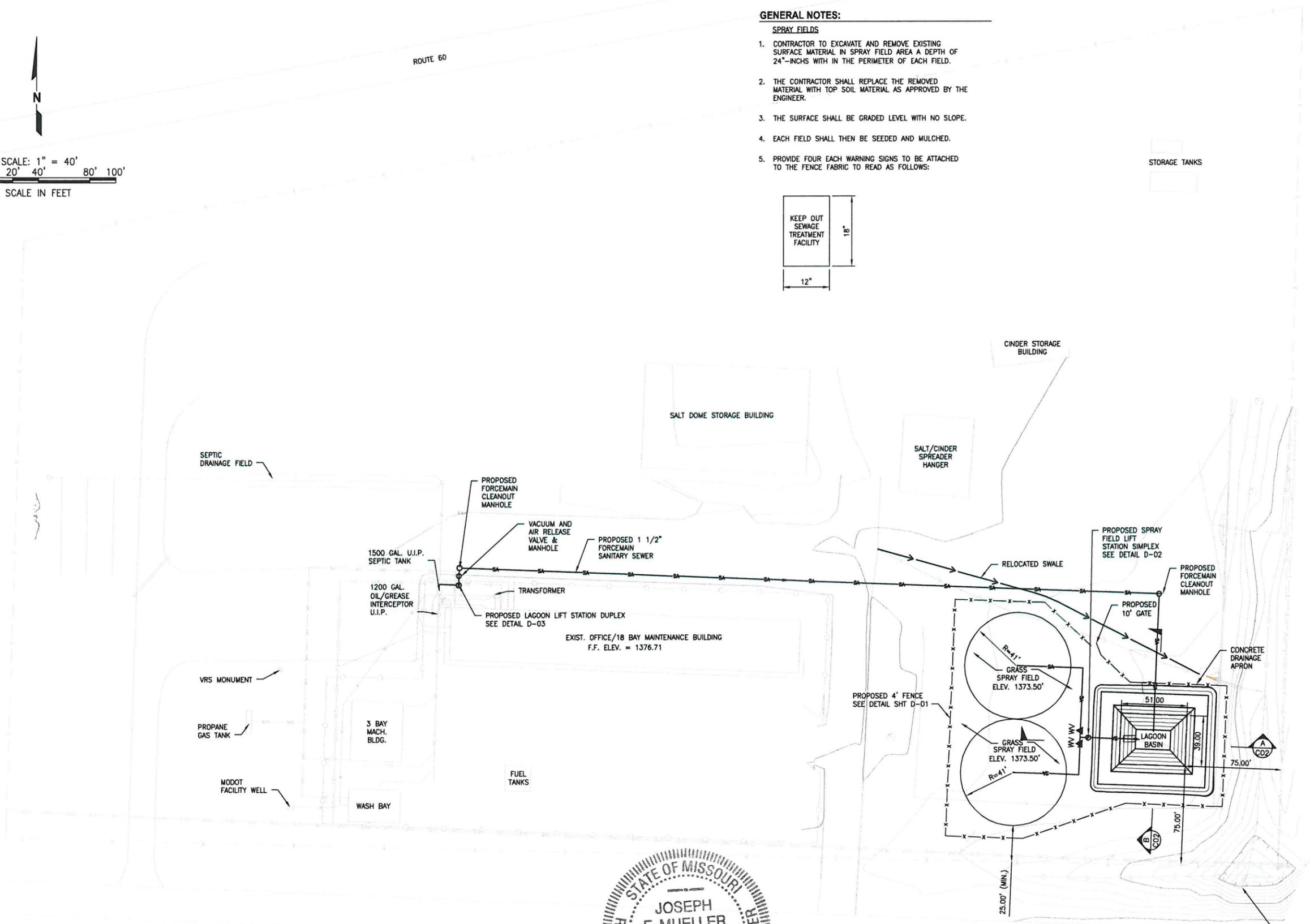
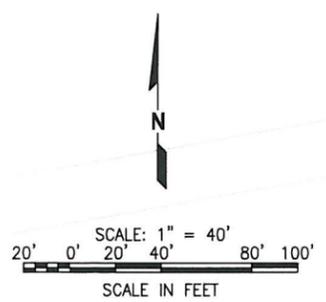
PROJECT NO.
07045

DRAWING NO.
T-01

REV.	DATE	DESCRIPTION	APPROVED
0	05/31/11	ISSUED FOR BID & CONSTRUCTION	JFM

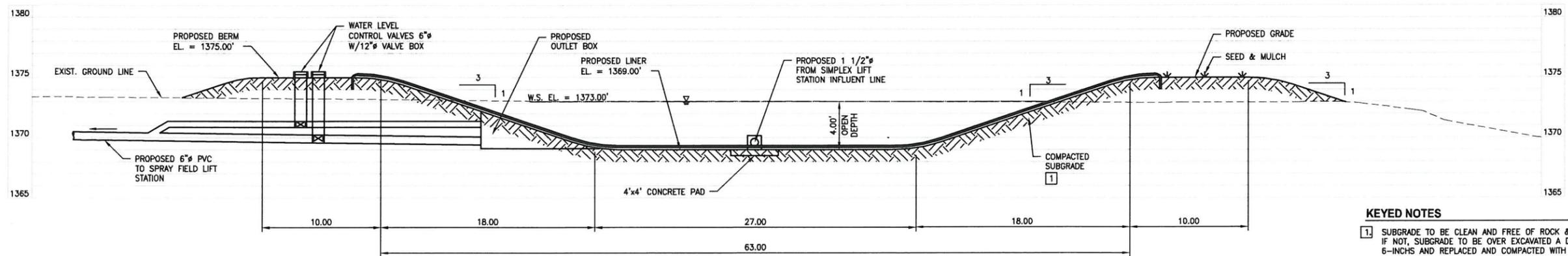
GENERAL NOTES:

- SPRAY FIELDS**
1. CONTRACTOR TO EXCAVATE AND REMOVE EXISTING SURFACE MATERIAL IN SPRAY FIELD AREA A DEPTH OF 24"-INCHS WITH IN THE PERIMETER OF EACH FIELD.
 2. THE CONTRACTOR SHALL REPLACE THE REMOVED MATERIAL WITH TOP SOIL MATERIAL AS APPROVED BY THE ENGINEER.
 3. THE SURFACE SHALL BE GRADED LEVEL WITH NO SLOPE.
 4. EACH FIELD SHALL THEN BE SEEDED AND MULCHED.
 5. PROVIDE FOUR EACH WARNING SIGNS TO BE ATTACHED TO THE FENCE FABRIC TO READ AS FOLLOWS:

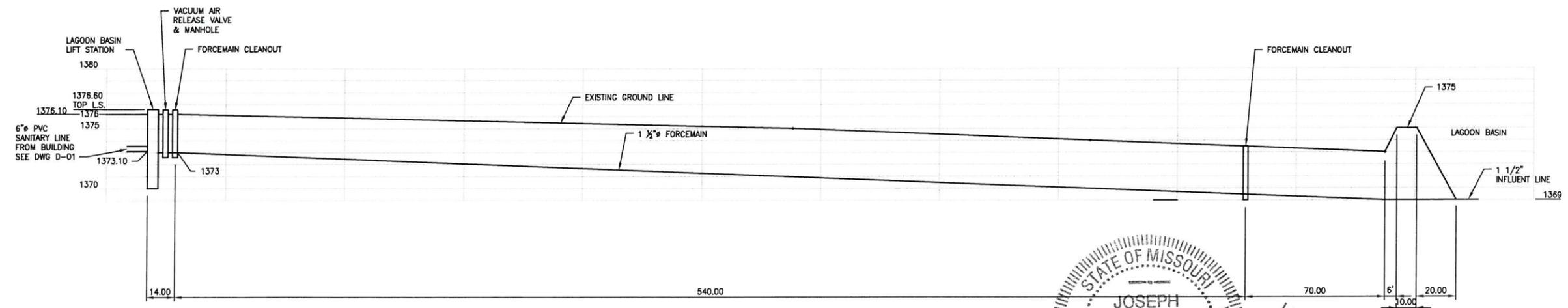
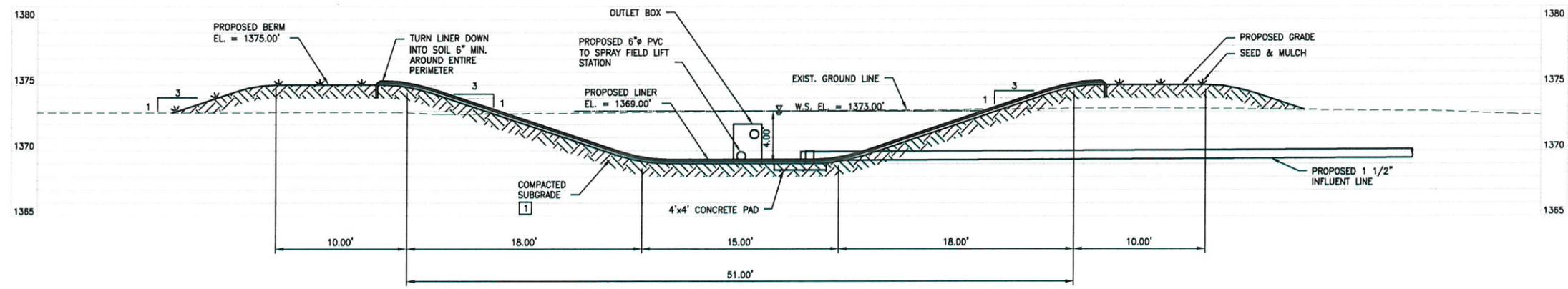


STATE OF MISSOURI
 REGISTERED PROFESSIONAL ENGINEER
 JOSEPH F. MUELLER
 NUMBER E-21607
 5/31/11

REV.	DATE	DESCRIPTION	APPROVED
0	05/31/11	ISSUED FOR BID & CONSTRUCTION	JFM



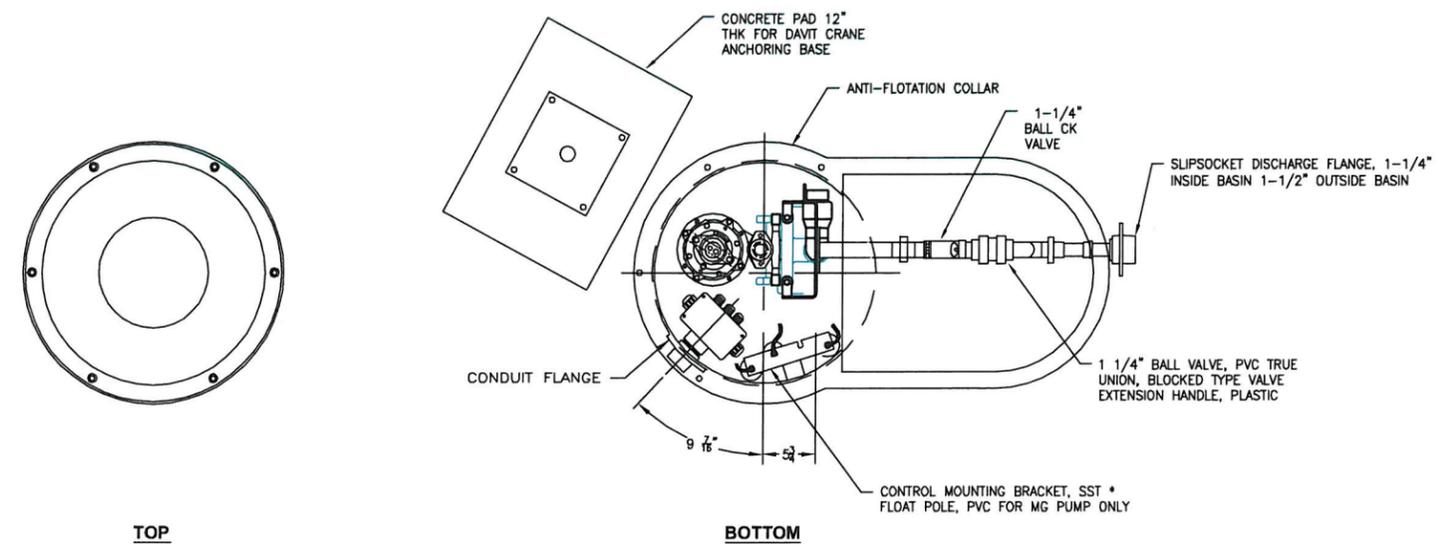
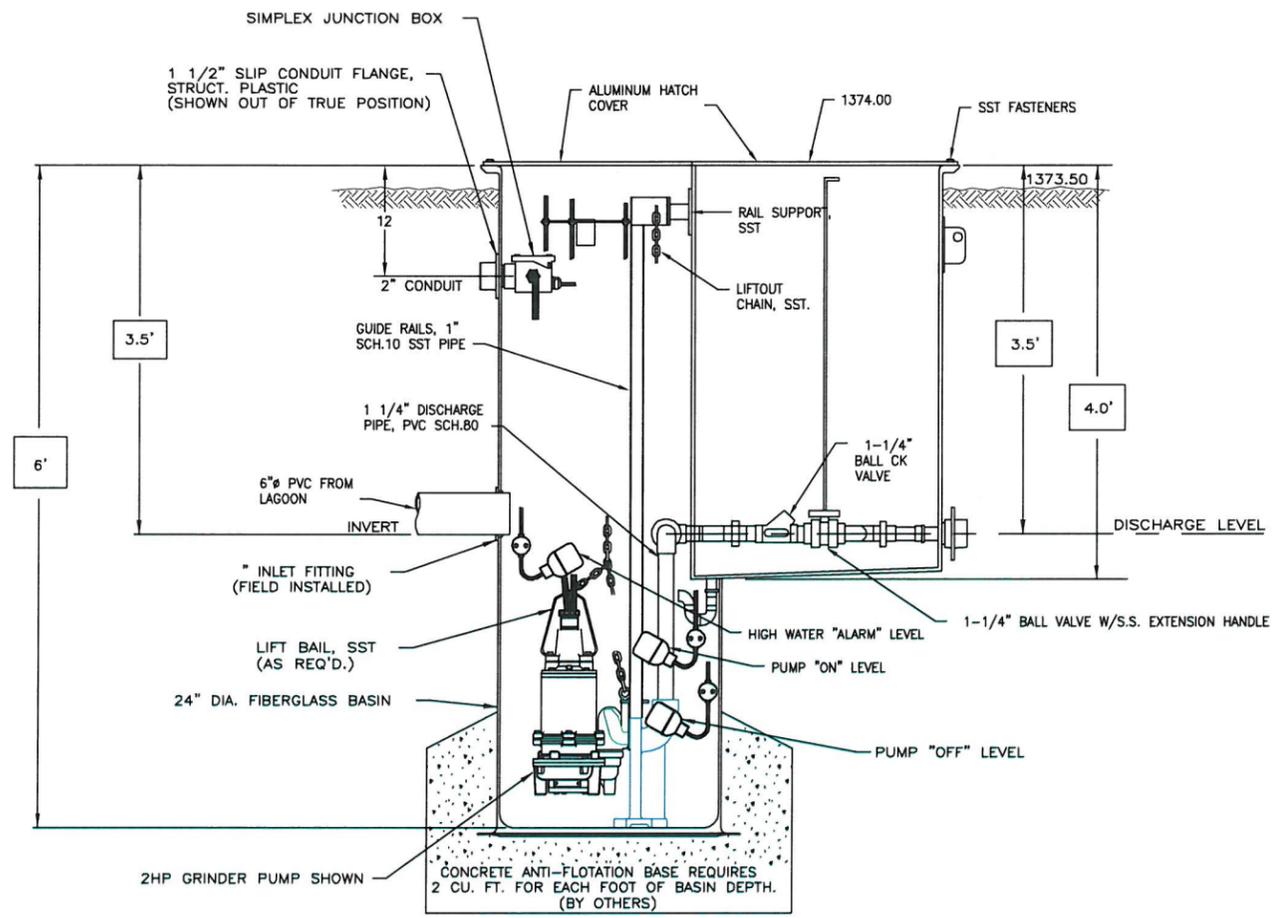
KEYED NOTES
 1] SUBGRADE TO BE CLEAN AND FREE OF ROCK & DEBRIS. IF NOT, SUBGRADE TO BE OVER EXCAVATED A DEPTH OF 6-INCHS AND REPLACED AND COMPACTED WITH CLEAN FILL MATERIAL AS DIRECTED BY THE MODOT ENGINEER.



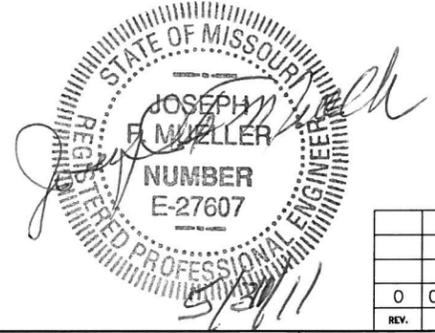
STATE OF MISSOURI
 REGISTERED PROFESSIONAL ENGINEER
JOSEPH F. MUELLER
 NUMBER
5-27607
 5/31/11

REV.	DATE	DESCRIPTION	APPROVED
0	05/31/11	ISSUED FOR BID & CONSTRUCTION	JFM

A
B
C
D



SPRAY FIELD LIFT STATION-SIMPLEX



REV.	DATE	DESCRIPTION	APPROVED
0	05/31/11	ISSUED FOR BID & CONSTRUCTION	JFM

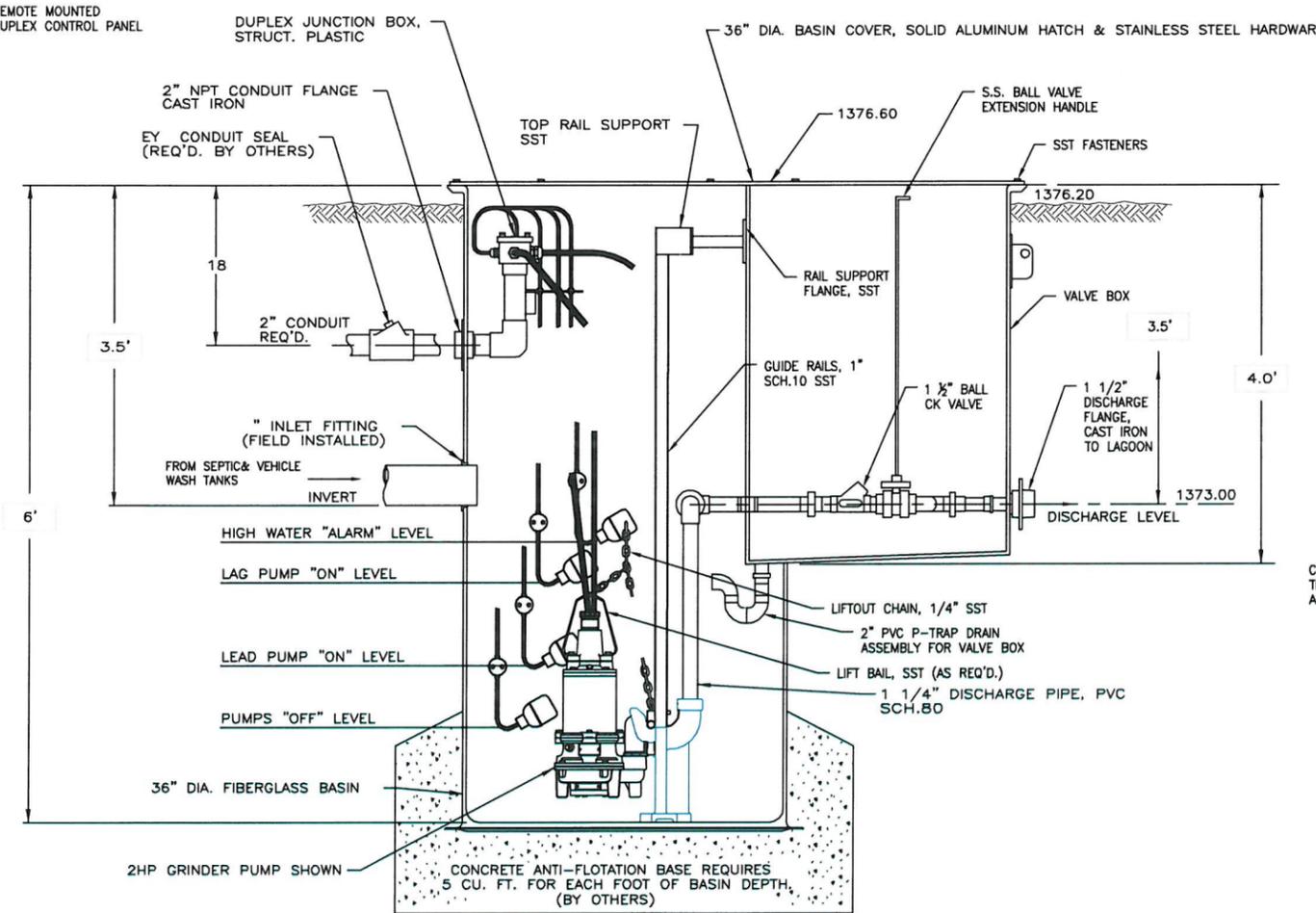


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CHECKED BY	JFM
SCALE	-
DATE	11/19/09

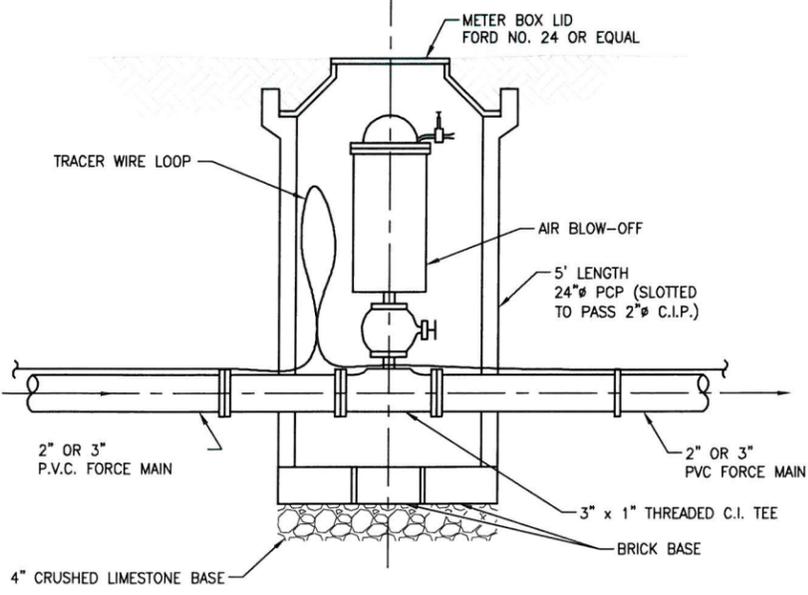
MISSOURI DEPARTMENT OF TRANSPORTATION
 MOUNTAIN GROVE MAINTENANCE FACILITY
 SANITARY SEWER IMPROVEMENTS
 SPRAY FIELD LIFT STATION DETAILS

PROJECT NO.	07045
DRAWING NO.	D-02

A
B
C
D

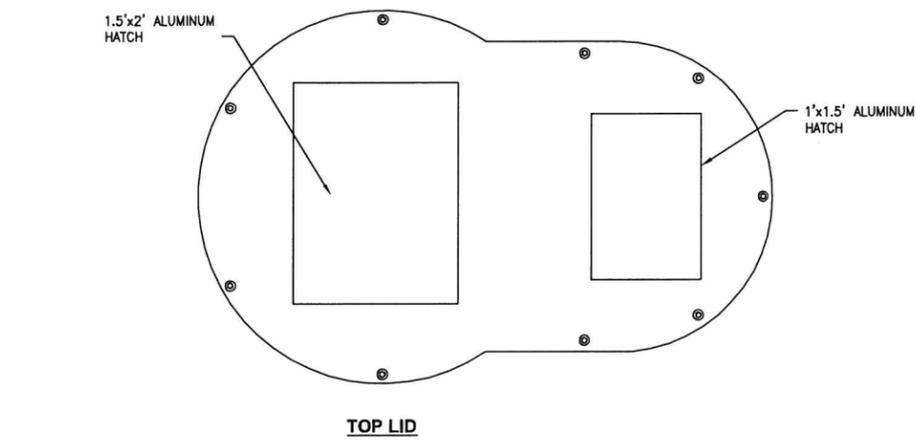


LAGOON LIFT STATION-DUPLEX

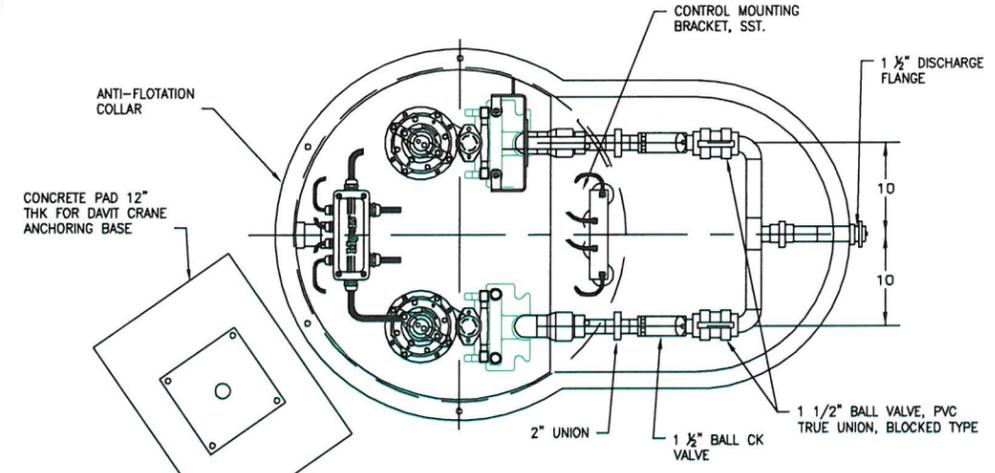


VACUUM AIR RELEASE VALVE & MANHOLE
N.T.S.

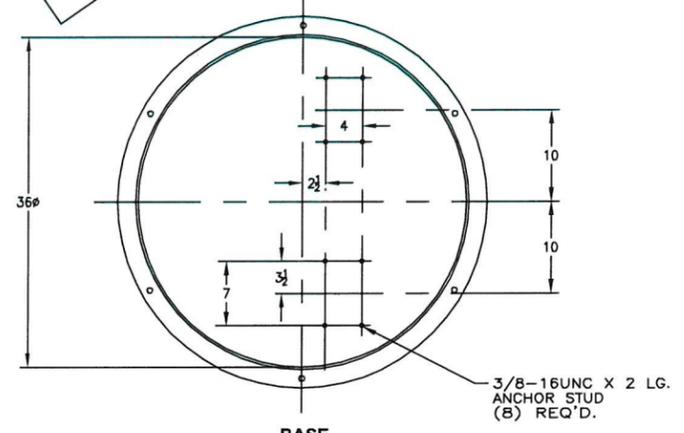
- AIR RELEASE VALVE & VAULT NOTES:**
- SEWAGE AIR RELEASE VALVES SHALL BE VALMATIC "VM-48BW", GA. INDUSTRIES "FIGURE 925" OR ENGINEER APPROVED EQUAL. INLET SHALL BE 2" NPT UNLESS OTHERWISE NOTED ON THE PLANS OR PROFILES. OUTLET SIZE SHALL BE 1/2" NPT AND AIR RELEASE ORIFICE SHALL BE 3/16".
 - IF HEIGHT OF VAULT CAUSES FRAME AND COVER TO BE ABOVE GRADE, PERFORM GRADING TO PROVIDE A SMOOTH TRANSITION. DO NOT LOCATE VAULT TO OBSTRUCT DITCH. IF NECESSARY, OFFSET ALIGNMENT AT VAULT TO AVOID PLACING STRUCTURE IN DITCH FLOWLINE. ROTATE TOP RING AND COVER TO AVOID DITCH FLOW LINE.
 - ALL VALVE VAULTS SHALL HAVE A MARKER POST LOCATED AT THE RIGHT OF WAY. MARKER POSTS SHALL BE USA BLUE BOOK "RHINO 3 RAIL STOCK NO. 70457" WITH DECAL INDICATING SEWER FORCEMAIN "STOCK NO. 70474".



TOP LID



BASE



REV.	DATE	DESCRIPTION	APPROVED
0	05/31/11	ISSUED FOR BID & CONSTRUCTION	JFM



DRAWN BY	
CHECKED BY	
SCALE	
DATE	11/19/09

MISSOURI DEPARTMENT OF TRANSPORTATION
MOUNTAIN GROVE MAINTENANCE FACILITY
SANITARY SEWER IMPROVEMENTS
LAGOON LIFT STATION DETAILS

PROJECT NO.	07045
DRAWING NO.	D-03

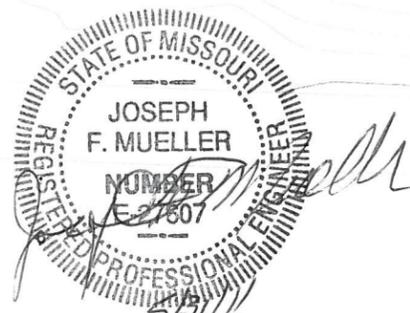
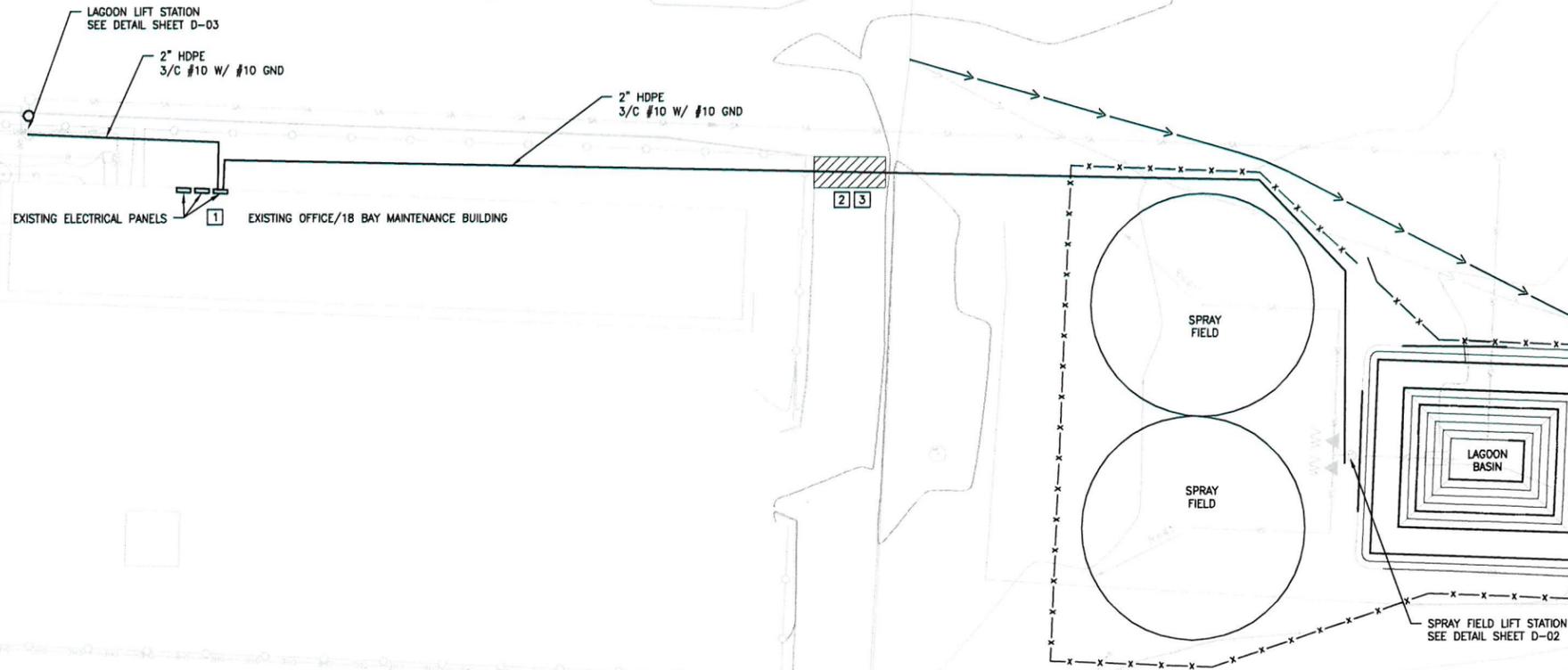
GENERAL NOTES:

- CABLE SPECIFICATION** - CABLE SHALL HAVE A 600V RATING, EPR INSULATION, CPE JACKET, AND A TEMPERATURE RATING OF 90°C.
- CONDUIT** - CONDUIT RUNS SHALL BE HDPE AND BURIED AT A MINIMUM DEPTH OF 18" BELOW GRADE AND 24" BELOW ROADWAYS. ALL EXPOSED CONDUIT SHALL BE RIGID GALVANIZED STEEL (RGS). SEAL AREAS WHERE CONDUITS RUNS THROUGH WALL OF BUILDING. INSTALL BUSHINGS WHERE RGS MEETS HDPE.
- INTERFERENCES** - ELECTRICAL CONDUIT IS BEING ROUTED 24" BELOW GRADE. AVOID INTERFERING WITH ANY EXISTING SERVICE THAT MADE ALREADY BE INSTALLED IN GROUND.

KEYED NOTES:

- FURNISH AND INSTALL NEW 2 POLE, 20A, 120/240V CIRCUIT BREAKER IN ELECTRICAL PANEL FURTHEST EAST (CONTAINS POWER FEEDS FOR WELDERS 2 THROUGH 11). SQUARE D CATALOG #Q0240. MOVE CHOP SAW BREAKER #18 TO EMPTY SPACE AT #38. INSTALL BREAKERS IN EMPTY SPACES. PULL CABLE FROM BREAKERS IN NEW 2" RGS ROUTED DOWN WALL TO HDPE.
- CONDUIT UNDER ROADWAY MUST BE BURIED AT A DEPTH OF 24" BELOW GRADE.
- CONTRACTOR TO REPAIR DISTURBED GRASS OR PAVEMENT SURFACES. ASPHALT SURFACES SHALL BE SAWCUT WHEN PAVEMENT IS TO BE REMOVED AND REPLACED.

A
B
C
D



REV.	DATE	DESCRIPTION	APPROVED
0	05/31/11	ISSUED FOR BID & CONSTRUCTION	JFM

PLOT SCALE FACTOR 0.5



ENCSEAL1
ENCSEAL2

DRAWN BY
PDM

CHECKED BY
JLE

SCALE
1"=30'

DATE
11/19/09

**MISSOURI DEPARTMENT OF TRANSPORTATION
MOUNTAIN GROVE MAINTENANCE FACILITY
SANITARY SEWER IMPROVEMENTS
ELECTRICAL LAYOUT**

PROJECT NO.
07045

DRAWING NO.
E-01