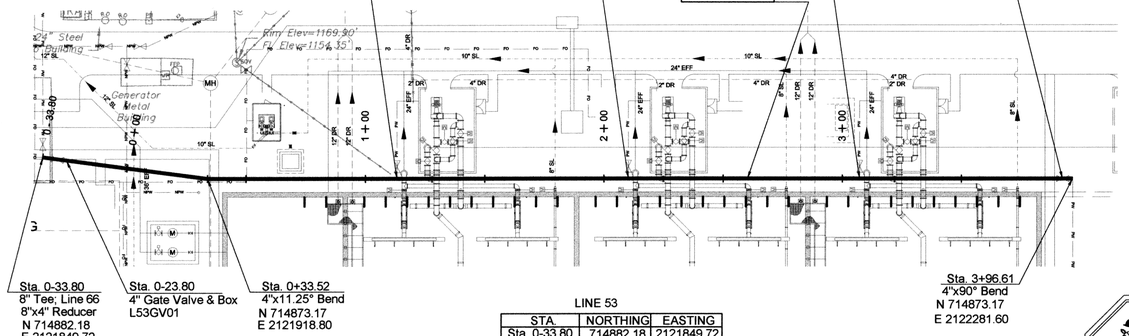
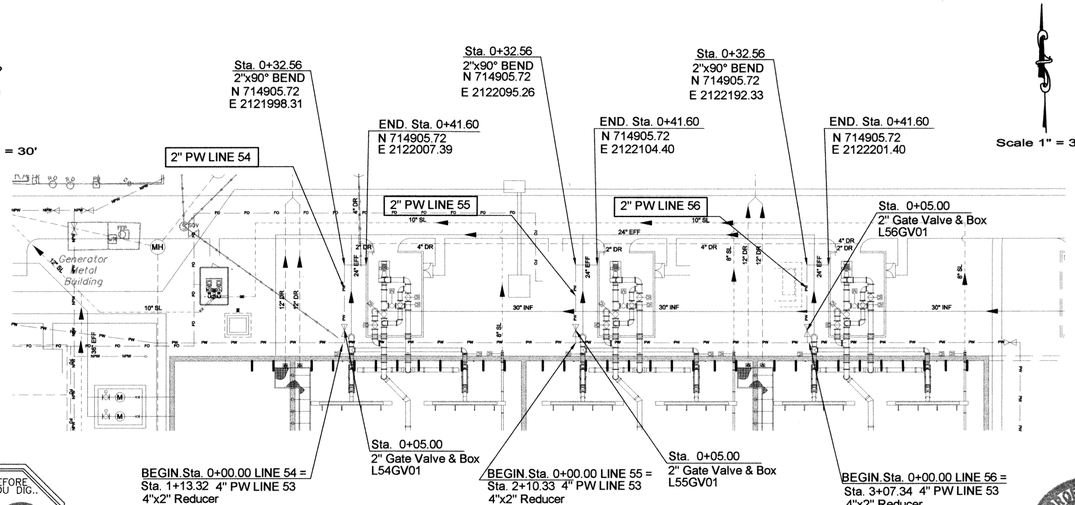


Scale 1" = 30'

LINE 53		
STA.	NORTHING	EASTING
Sta. 0-33.80	714882.18	2121849.72
Sta. 0+33.52	714873.17	2121918.80
Sta. 1+13.32	714873.17	2121998.31
Sta. 2+10.33	714873.17	2122095.26
Sta. 3+07.34	714873.17	2122192.33
Sta. 3+96.61	714873.17	2122281.60



Scale 1" = 30'

BEGIN Sta. 0+00.00 LINE 54 =
Sta. 1+13.32 4" PW LINE 53
4"x2" Reducer
N 714873.17
E 2121998.31

Sta. 0+05.00
2" Gate Valve & Box
L54GV01

LINE 54		
STA.	NORTHING	EASTING
Sta. 0+00.00	714873.17	2121998.31
Sta. 0+32.56	714905.72	2121998.31
Sta. 0+41.60	714905.72	2122007.39

BEGIN Sta. 0+00.00 LINE 55 =
Sta. 2+10.33 4" PW LINE 53
4"x2" Reducer
N 714873.17
E 2122095.26

Sta. 0+05.00
2" Gate Valve & Box
L55GV01

LINE 55		
STA.	NORTHING	EASTING
Sta. 0+00.00	714873.17	2122095.26
Sta. 0+32.56	714905.72	2122095.26
Sta. 0+41.60	714905.72	2122104.40

BEGIN Sta. 0+00.00 LINE 56 =
Sta. 3+07.34 4" PW LINE 53
4"x2" Reducer
N 714873.17
E 2122192.33

LINE 56		
STA.	NORTHING	EASTING
Sta. 0+00.00	714873.17	2122192.33
Sta. 0+32.56	714905.72	2122192.33
Sta. 0+41.60	714905.72	2122201.40

BEFORE YOU DIG.. CALL OKIE 1-800-522-8543

SATISH DASHARATHY 11456 5-19 REGISTERED PROFESSIONAL ENGINEER STATE OF OKLAHOMA

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"

LINE 53 – 4" POTABLE WATER LINE
PLAN VIEW

LINE 53 – 4" POTABLE WATER LINE
PROFILE

LINE 54, 55 & 56 – 2" POTABLE WATER LINES
PROFILE

RECORD DRAWINGS

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4-23-2009	AS NOTED	41 OF 63

LINE 53 – 4" &
LINES 54,55,56 – 2"

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2803 SOUTH BRYANT
EDMOND, OK. 73013
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FAX. (405) 844-3600

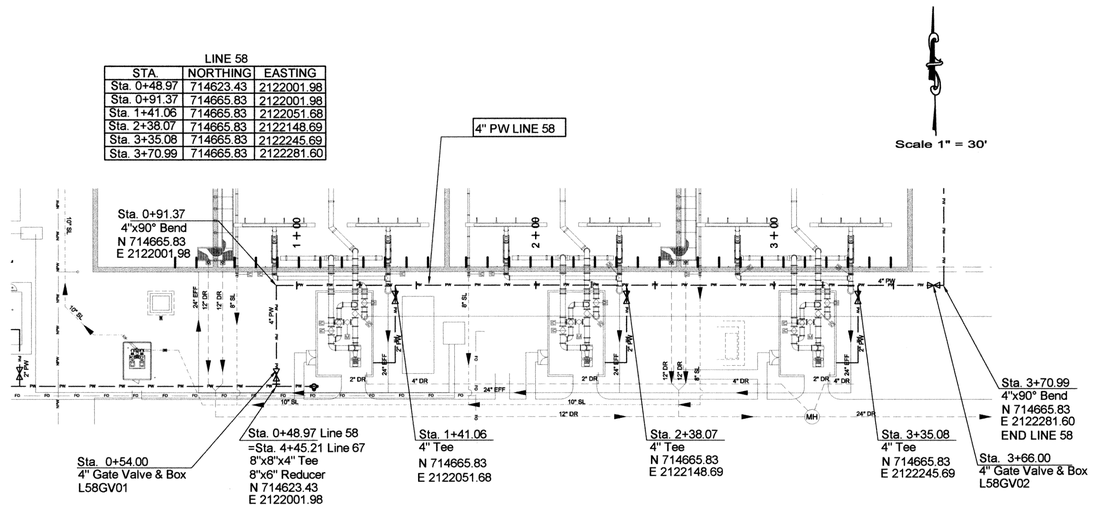
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

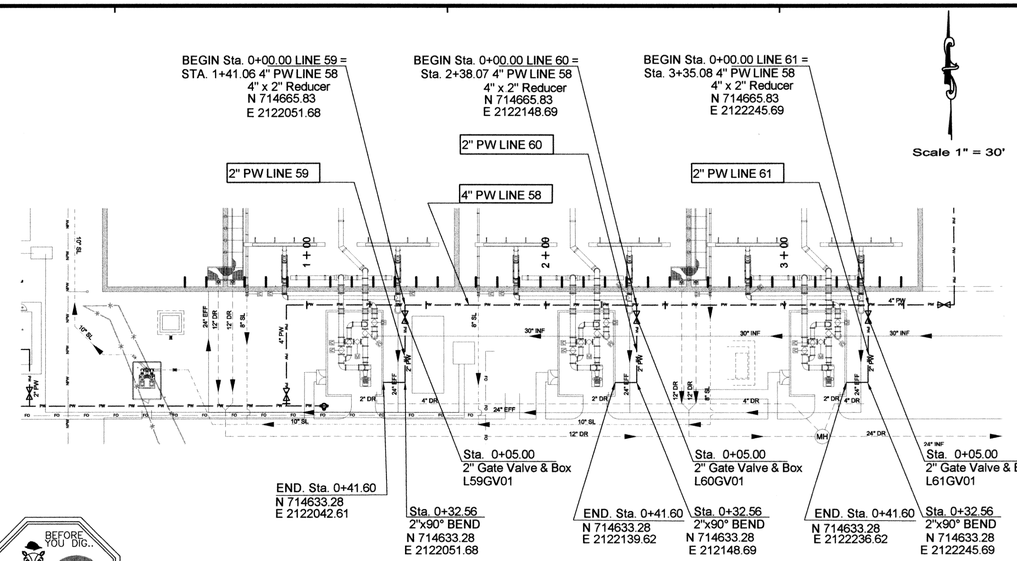
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LINE 58

STA.	NORTHING	EASTING
Sta. 0+48.97	714623.43	2122001.98
Sta. 0+91.37	714665.83	2122001.98
Sta. 1+41.06	714665.83	2122051.68
Sta. 2+38.07	714665.83	2122148.69
Sta. 3+35.08	714665.83	2122245.69
Sta. 3+70.99	714665.83	2122281.60



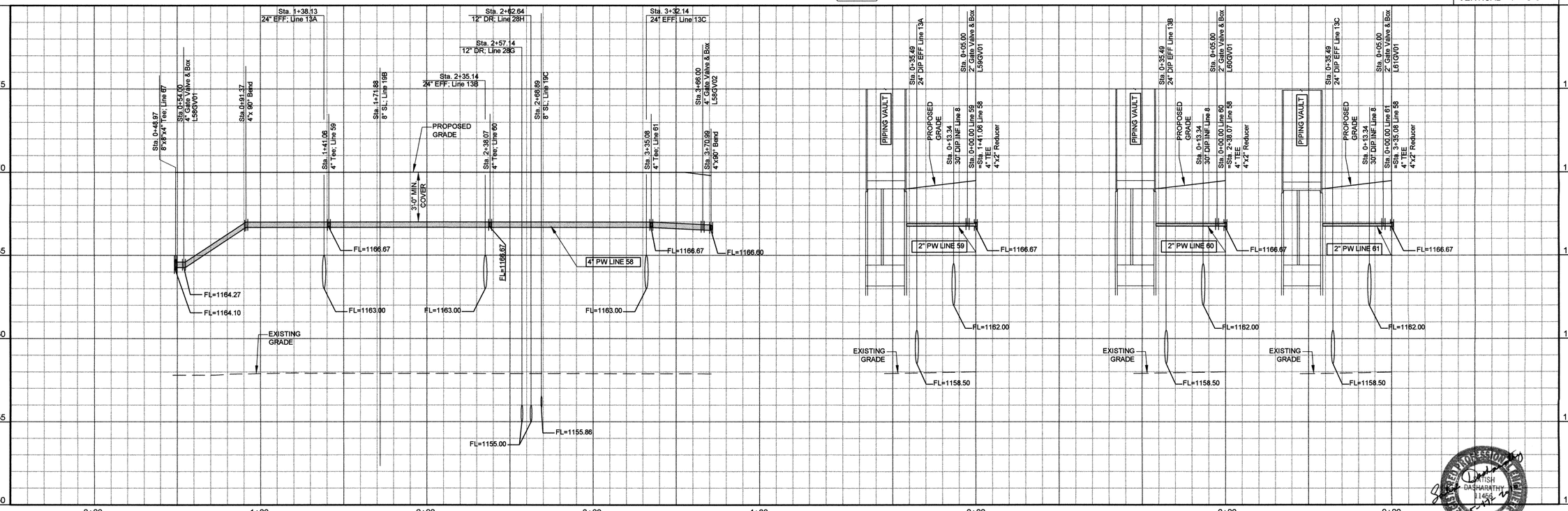
LINE 58 – 4" POTABLE WATER LINE
PLAN VIEW



LINE 59, 60, 61 – 2" POTABLE WATER LINES
PLAN VIEW

BEFORE YOU DIG.. CALL OKIE 1-800-522-6543

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 58 – 4" POTABLE WATER LINE
PROFILE

LINE 59, 60, 61 – 2" POTABLE WATER LINE
PROFILE

RECORD DRAWINGS

REVISIONS:	DATE:

LINE 58, 59, 60 & 61

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EAGLE CONSULTANTS, INC.
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CERTIFICATE OF AUTHORIZATION NO. CA2088

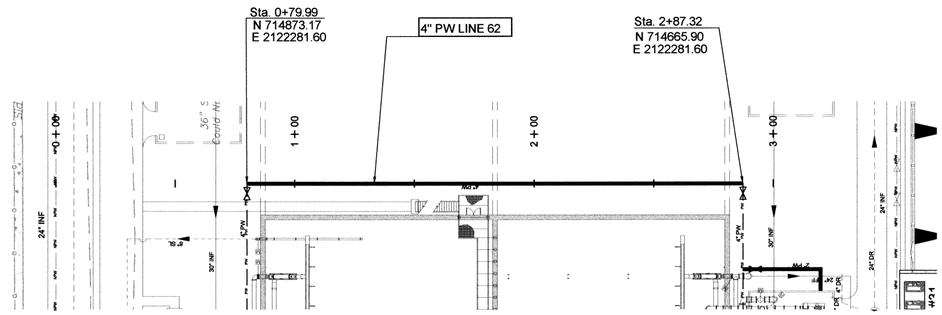
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S.D.		S.D.	S.D.	4/30/10	AS NOTED	42 OF 63

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

LINE 62		
STA.	NORTHING	EASTING
Sta. 0+79.99	714873.17	2122281.60
Sta. 2+87.32	714665.90	2122281.60

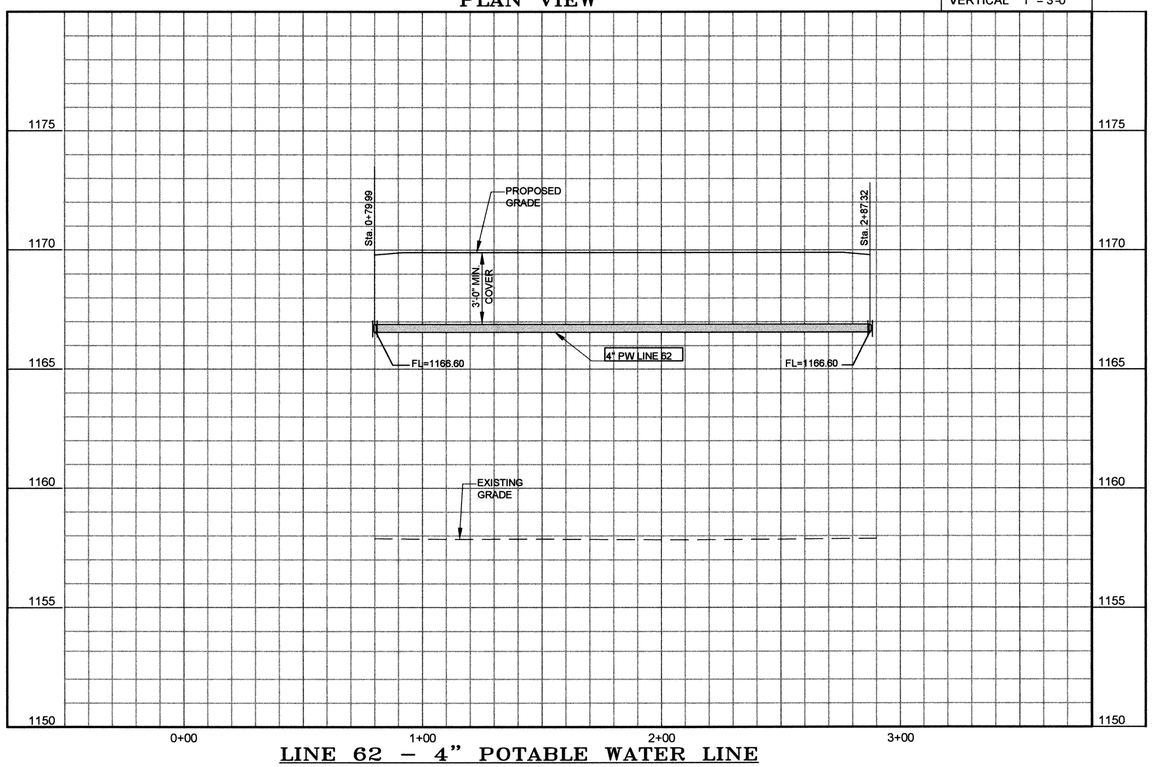
Scale 1" = 30'



BEFORE YOU DIG..
CALL OKIE
1-800-522-6543

LINE 62 – 4" POTABLE WATER LINE
PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 62 – 4" POTABLE WATER LINE
PROFILE

RECORD DRAWINGS

REGISTERED PROFESSIONAL ENGINEER
SATISH DASHARATHY
11466
5-17-10
OKLAHOMA

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/19/10	AS NOTED	43 OF 63

REVISIONS:	DATE:

LINE 62

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FAX. (405) 844-3600

EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

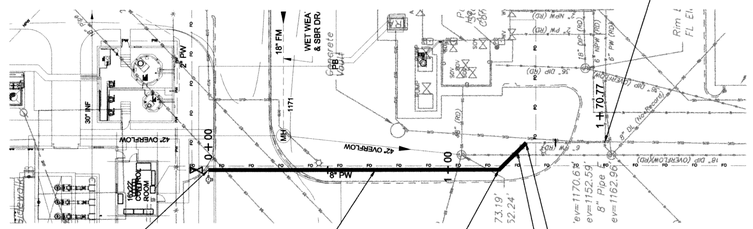
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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LINE 65

STA.	NORTHING	EASTING
Sta. 0+00.00	715847.43	2121916.87
Sta. 1+21.72	715725.77	2121916.87
Sta. 1+37.70	715714.47	2121928.18
Sta. 1+70.76	715681.40	2121928.23

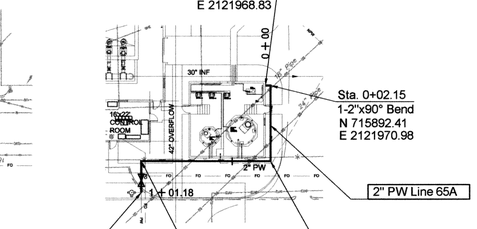
Scale 1" = 30'



LINE 65A

STA.	NORTHING	EASTING
Sta. 0+00.00	715892.41	2121968.83
Sta. 0+02.15	715892.41	2121970.98
Sta. 0+33.93	715860.63	2121970.98
Sta. 0+88.04	715860.63	2121916.93
Sta. 1+01.18	715847.49	2121916.93

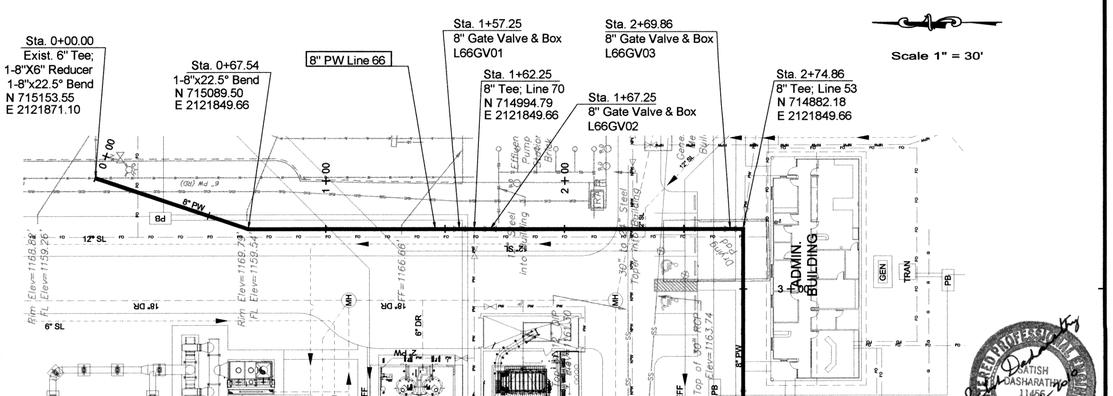
Scale 1" = 30'



LINE 66

STA.	NORTHING	EASTING
Sta. 0+00.00	715153.55	2121871.10
Sta. 0+67.54	715089.50	2121849.66
Sta. 1+62.25	714994.79	2121849.66
Sta. 2+74.86	714882.18	2121849.66
Sta. 3+49.31	714882.18	2121775.21

Scale 1" = 30'

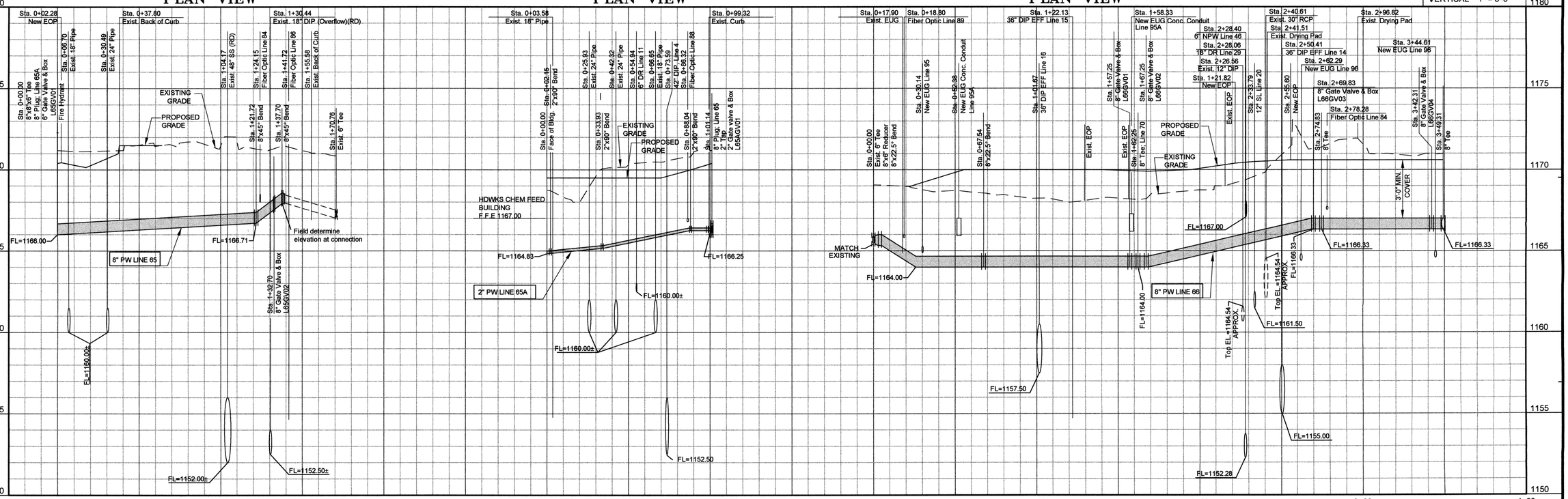


LINE 65 – 8" POTABLE WATER LINE PLAN VIEW

LINE 65A 2" POTABLE WATER LINE PLAN VIEW

LINE 66 – 8" POTABLE WATER LINE PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 65 – 8" POTABLE WATER LINE PROFILE

LINE 65A – 2" POTABLE WATER LINE PROFILE

LINE 66 – 8" POTABLE WATER LINE PROFILE

RECORD DRAWINGS

REVISIONS:	DATE:

LINES 65, 65A & 66
0+00 to 3+50

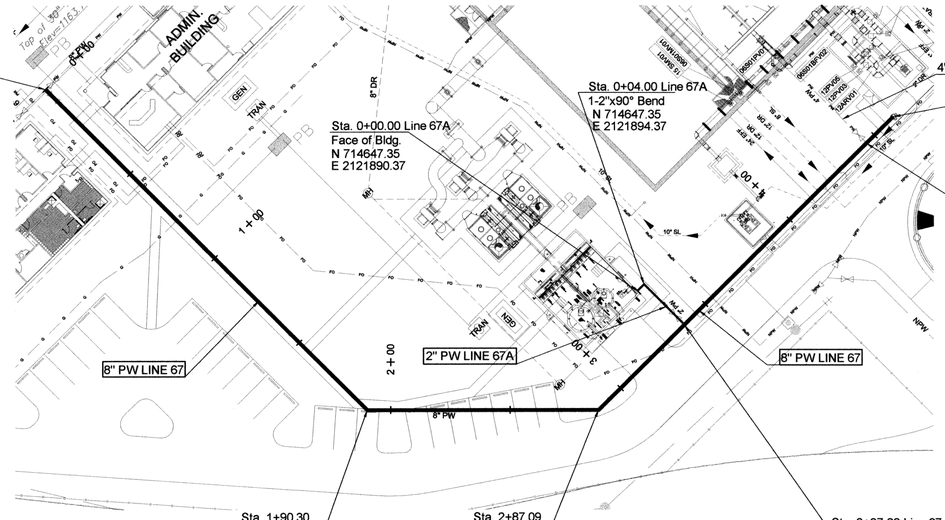
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EDMOND, OK. 73013
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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

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S.D.		S.D.	S.D.	5/5/2010	AS NOTED	44 OF 63

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK



LINE 67

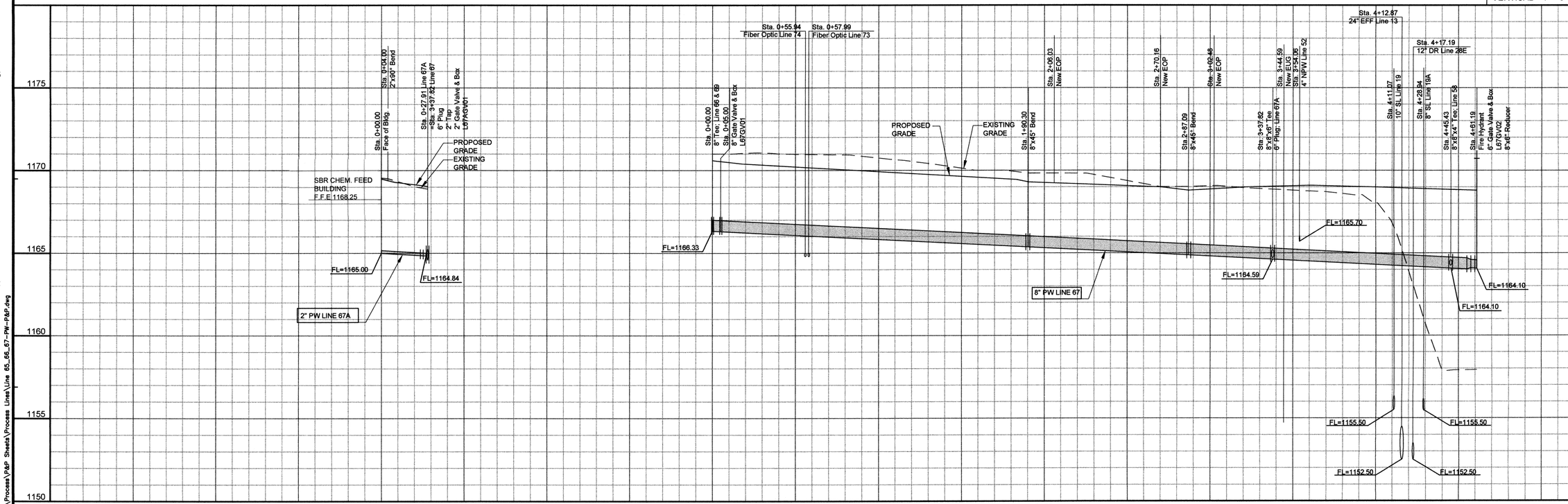
STA.	NORTHING	EASTING
Sta. 0+00.00	714882.18	2121775.21
Sta. 1+90.30	714691.88	2121775.21
Sta. 2+87.09	714623.44	2121843.65
Sta. 3+37.82	714623.44	2121894.37
Sta. 4+45.43	714623.44	2122001.98
Sta. 4+61.19	714623.44	2122017.75

LINE 67A

STA.	NORTHING	EASTING
Sta. 0+00.00	714647.35	2121890.37
Sta. 0+04.00	714647.35	2121894.37
Sta. 0+27.91	714623.44	2121894.37

LINE 67 & 67A – POTABLE WATER LINES
PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 67A – 2" POTABLE WATER LINE
PROFILE

LINE 67 – 8" POTABLE WATER LINE
PROFILE

RECORD DRAWINGS

BEFORE YOU DIG.. CALL OKIE 1-800-522-6543

JOSEPH DENTISH SHARATHY 11456 5-17-10 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

REVISIONS:	DATE:

LINE 67 & 67A
0+00 to 5+00

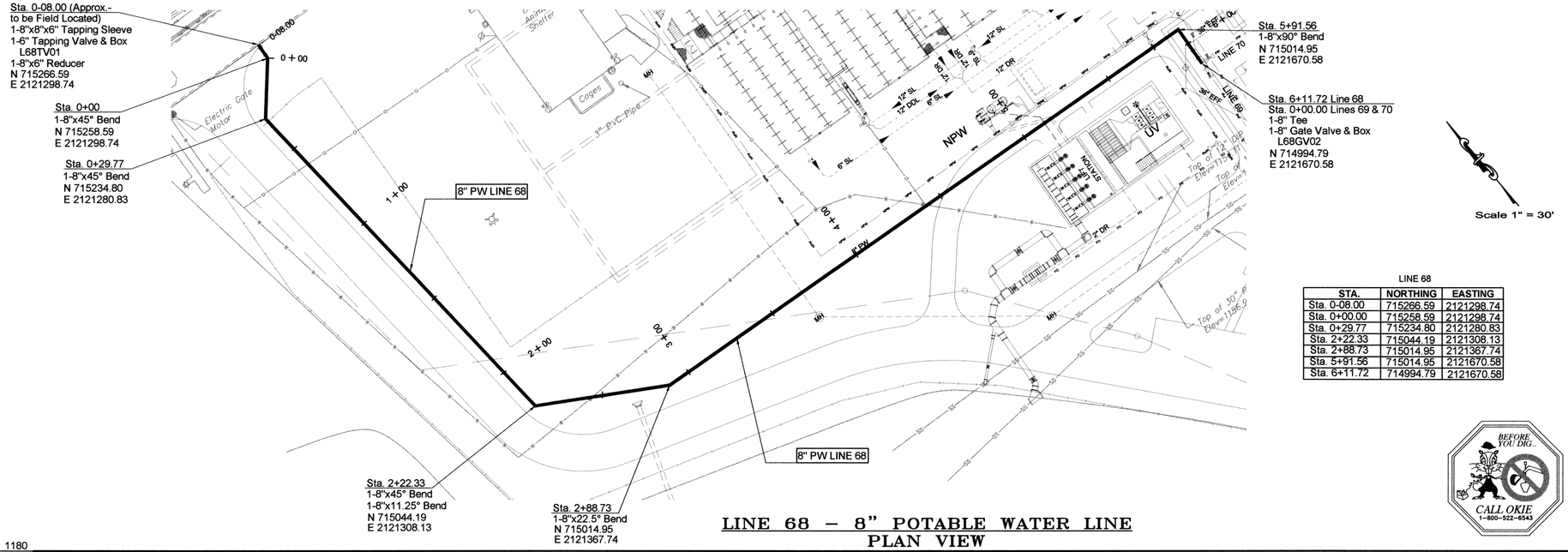
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S.D.		S.D.	S.D.	5/3/2010	AS NOTED	45 OF 63

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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LINE 68

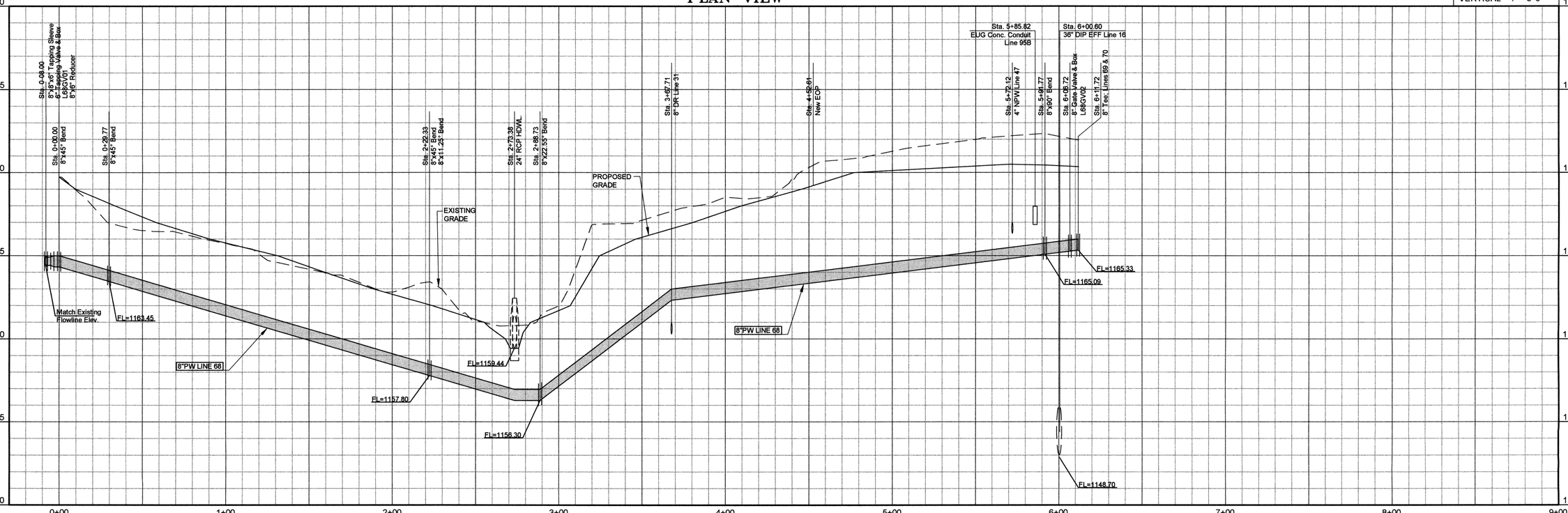
STA.	NORTHING	EASTING
Sta. 0-08.00	715266.59	2121298.74
Sta. 0+00.00	715258.59	2121298.74
Sta. 0+29.77	715234.80	2121280.83
Sta. 2+22.33	715044.19	2121308.13
Sta. 2+88.73	715014.95	2121367.74
Sta. 5+91.56	715014.95	2121670.58
Sta. 6+11.72	714994.79	2121670.58

LINE 68 – 8" POTABLE WATER LINE
PLAN VIEW

BEFORE YOU DIG.. CALL OKIE 1-800-522-6543

SATISH DASHARATHY 11465

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 68 – 8" POTABLE WATER LINE
PROFILE

RECORD DRAWINGS

REVISIONS:	DATE:

LINE 68
0+00 to 6+50

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CERTIFICATE OF AUTHORIZATION NO. CA2088

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S.D.		S.D.	S.D.	5/3/2010	AS NOTED	46 OF 63

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

LINE 71

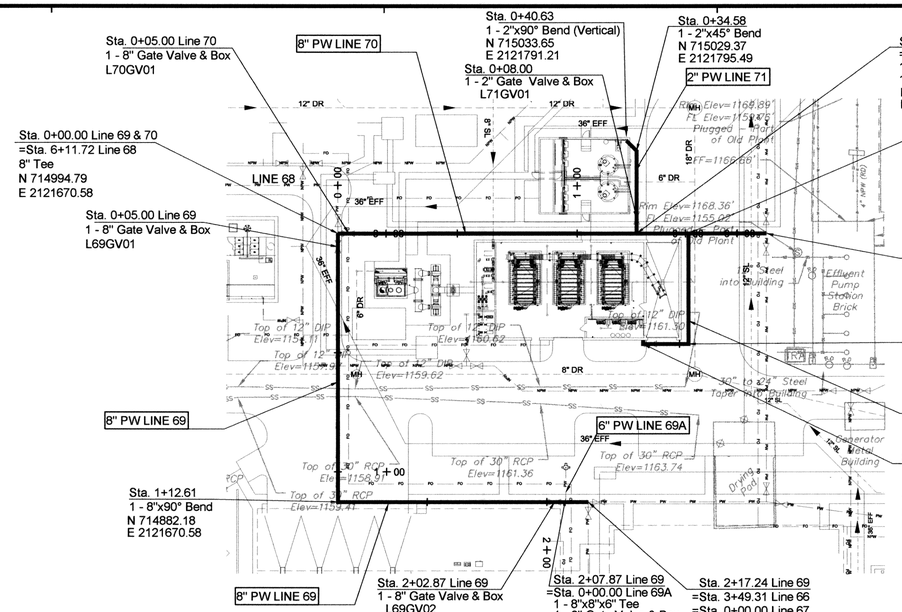
STA.	NORTHING	EASTING
Sta. 0+00.00	714994.73	2121795.43
Sta. 0+34.58	715029.37	2121795.49
Sta. 0+40.63	715033.65	2121791.21

LINE 70

STA.	NORTHING	EASTING
Sta. 0+00.00	714994.73	2121670.58
Sta. 1+24.91	714994.79	2121795.43
Sta. 1+79.08	714994.79	2121849.66

LINE 69

STA.	NORTHING	EASTING
Sta. 0+00.00	714994.73	2121670.58
Sta. 1+12.61	714882.18	2121670.58
Sta. 2+17.24	714882.18	2121775.21



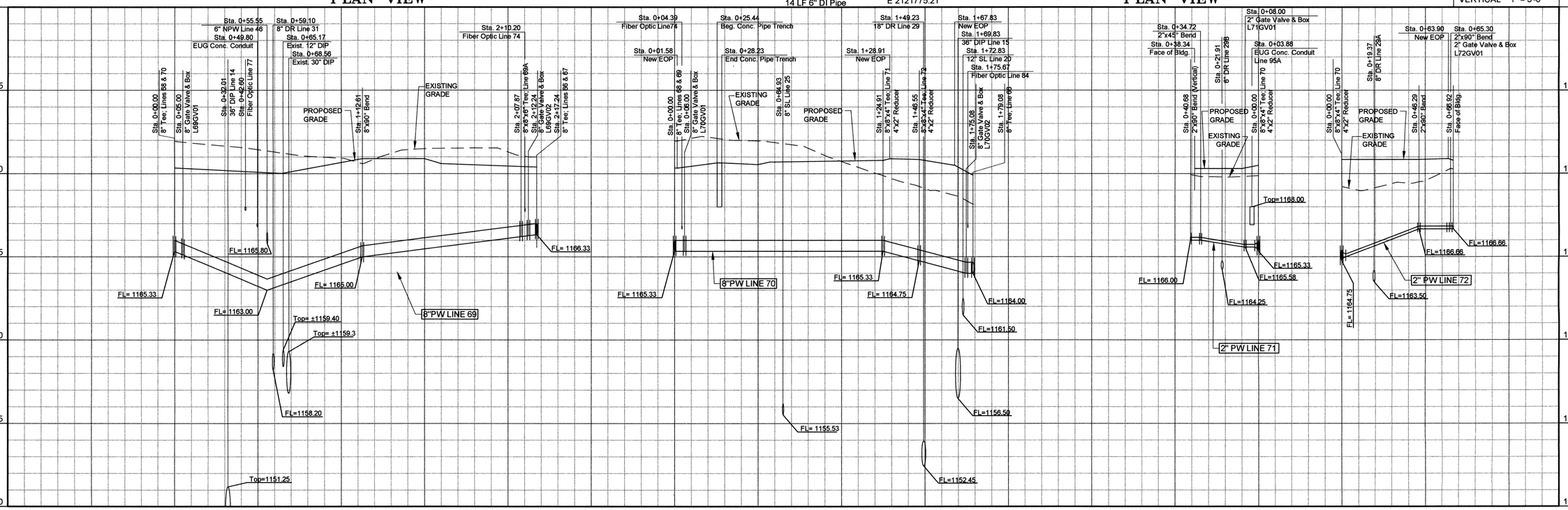
LINE 72

STA.	NORTHING	EASTING
Sta. 0+00.00	714994.73	2121817.13
Sta. 0+46.29	714948.50	2121817.13
Sta. 0+65.30	714948.50	2121798.06

LINES 69 & 70 – 8" POTABLE WATER LINES
PLAN VIEW

LINES 71 & 72 – 2" POTABLE WATER LINES
PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 69 – 8" POTABLE WATER LINE
PROFILE

LINE 70 – 8" POTABLE WATER LINE
PROFILE

LINES 71 & 72 – 2" POTABLE WATER LINES
PROFILE

REVISIONS:	DATE:

LINES 69 THRU 72
0+00 to 2+50

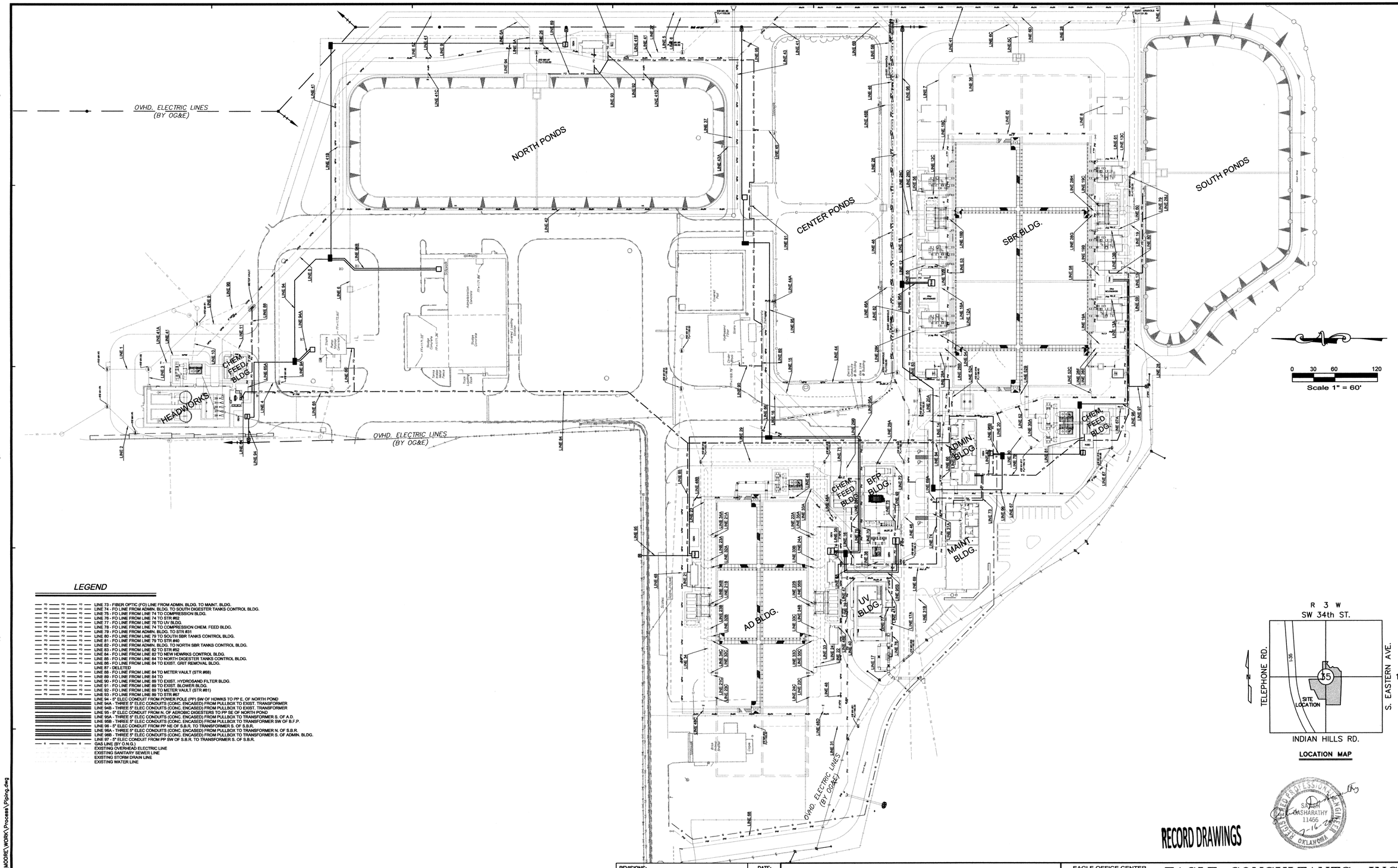
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EDMOND, OK. 73013
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FAX. (405) 844-3600

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S.D.		S.D.	S.D.	5/5/2010	AS NOTED	47 OF 63

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK



LEGEND

- LINE 73 - FIBER OPTIC (FO) LINE FROM ADMIN. BLDG. TO MAINT. BLDG.
- LINE 74 - FO LINE FROM ADMIN. BLDG. TO SOUTH DIGESTER TANKS CONTROL BLDG.
- LINE 75 - FO LINE FROM LINE 74 TO COMPRESSION BLDG.
- LINE 76 - FO LINE FROM LINE 74 TO STR #62
- LINE 77 - FO LINE FROM LINE 76 TO UV BLDG.
- LINE 78 - FO LINE FROM LINE 74 TO COMPRESSION CHEM. FEED BLDG.
- LINE 79 - FO LINE FROM ADMIN. BLDG. TO STR #31
- LINE 80 - FO LINE FROM LINE 79 TO SOUTH SBR TANKS CONTROL BLDG.
- LINE 81 - FO LINE FROM LINE 79 TO STR #40
- LINE 82 - FO LINE FROM ADMIN. BLDG. TO NORTH SBR TANKS CONTROL BLDG.
- LINE 83 - FO LINE FROM LINE 82 TO STR #52
- LINE 84 - FO LINE FROM LINE 82 TO NEW HDWRKS CONTROL BLDG.
- LINE 85 - FO LINE FROM LINE 84 TO NORTH DIGESTER TANKS CONTROL BLDG.
- LINE 86 - FO LINE FROM LINE 84 TO EXIST. GRIT REMOVAL BLDG.
- LINE 87 - DELETED
- LINE 88 - FO LINE FROM LINE 84 TO METER VAULT (STR #68)
- LINE 89 - FO LINE FROM LINE 84 TO
- LINE 90 - FO LINE FROM LINE 89 TO EXIST. HYDROSAND FILTER BLDG.
- LINE 91 - FO LINE FROM LINE 89 TO EXIST. BLOWER BLDG.
- LINE 92 - FO LINE FROM LINE 89 TO METER VAULT (STR #81)
- LINE 93 - FO LINE FROM LINE 89 TO STR #67
- LINE 94 - 5" ELEC CONDUIT FROM POWER POLE (PP) SW OF HDWKS TO PP E. OF NORTH POND
- LINE 94A - THREE 5" ELEC CONDUITS (CONC. ENCASED) FROM PULLBOX TO EXIST. TRANSFORMER
- LINE 94B - THREE 5" ELEC CONDUITS (CONC. ENCASED) FROM PULLBOX TO EXIST. TRANSFORMER
- LINE 95 - 5" ELEC CONDUIT FROM N. OF AEROBIC DIGESTERS TO PP SE OF NORTH POND
- LINE 95A - THREE 5" ELEC CONDUITS (CONC. ENCASED) FROM PULLBOX TO TRANSFORMER S. OF A.D.
- LINE 95B - THREE 5" ELEC CONDUITS (CONC. ENCASED) FROM PULLBOX TO TRANSFORMER SW OF B.F.P.
- LINE 96 - 5" ELEC CONDUIT FROM PP NE OF S.B.R. TO TRANSFORMER S. OF S.B.R.
- LINE 96A - THREE 5" ELEC CONDUITS (CONC. ENCASED) FROM PULLBOX TO TRANSFORMER N. OF S.B.R.
- LINE 96B - THREE 5" ELEC CONDUITS (CONC. ENCASED) FROM PULLBOX TO TRANSFORMER S. OF ADMIN. BLDG.
- LINE 97 - 5" ELEC CONDUIT FROM PP SW OF S.B.R. TO TRANSFORMER S. OF S.B.R.
- GAS LINE (BY O.N.G.)
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER LINE

R 3 W
SW 34th ST.
T 10 N
TELEPHONE RD.
S. EASTERN AVE.
I-35
35
SITE LOCATION
INDIAN HILLS RD.

LOCATION MAP

REGISTERED PROFESSIONAL ENGINEER
SAMUEL SASHARATHY
11466
7-16-2010
OKLAHOMA

RECORD DRAWINGS

REVISIONS:	DATE:
ADDENDUM 1	7/14/2010

LINES 73 TO 97 FIBER OPTIC AND OG&E LINES

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FAX. (405) 844-3600

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CERTIFICATE OF AUTHORIZATION NO. CA2088

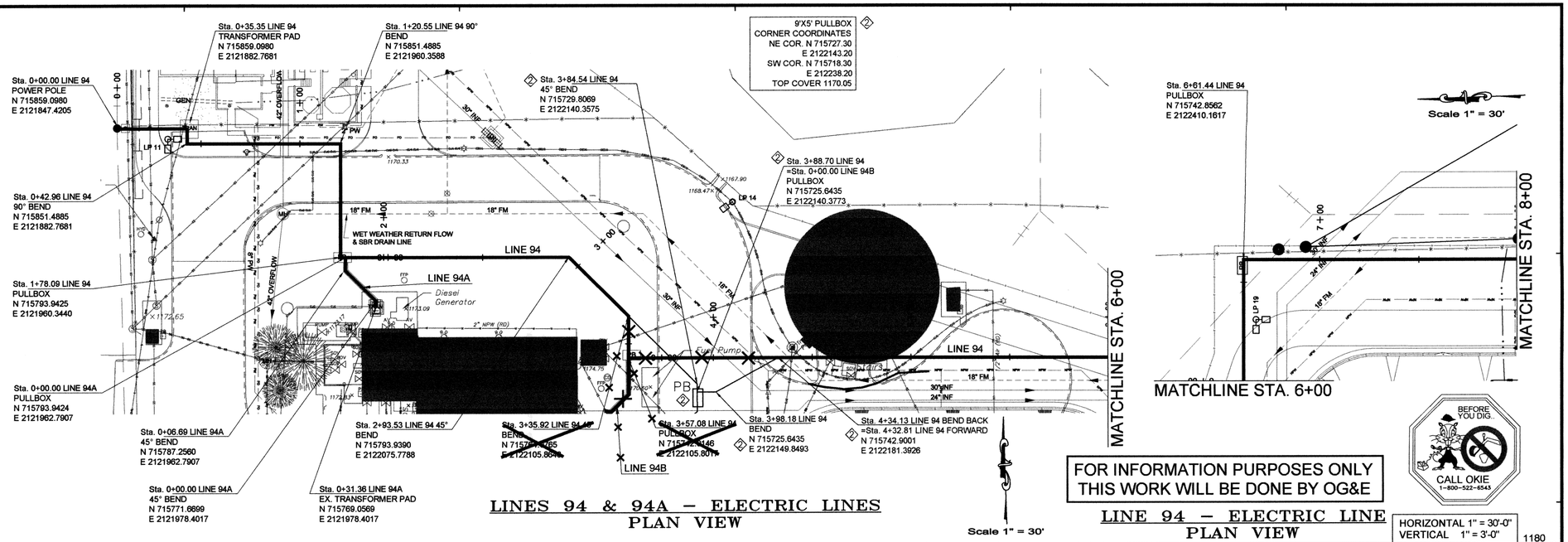
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S.D.	D.O.	S.D.	S.D.	7/13/10	AS SHOWN	48 OF 63

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

General Notes

1. Construction staking for horizontal and vertical control for OG&E work shall be provided by the City of Moore.
2. OG&E and their authorized representatives shall coordinate all construction with the City of Moore, Project Engineer, and the General Contractor.
3. OG&E shall submit a construction sequence and a timetable to the City of Moore, Engineer, and General Contractor prior to starting any construction.
4. OG&E Project Manager shall attend construction progress site meetings to coordinate with General Contractor and his electrical subcontractor so that tie-ins can be made efficiently.
5. The existing wastewater treatment plant has to be in operation while essential portions of the new treatment plant are being constructed without any disruptions. It will be necessary to run the old plant as well at the new plant for brief periods prior to bringing the new plant online. OG&E shall make this possible without disruptions so that the City of Moore does not violate any enforceable requirements of the Clean Water Act.
6. General Contractor is responsible for making sure that all OG&E work areas are made available and accessible to OG&E work crews to install electrical work.
7. OG&E shall take every precaution to prevent any damage to existing plant and new work installed by Contractor. OG&E Project Manager shall notify Engineer, WWTP plant manager and General Contractor immediately upon any damage to WWTP facilities. OG&E will repair damages caused by their work crew expeditiously.



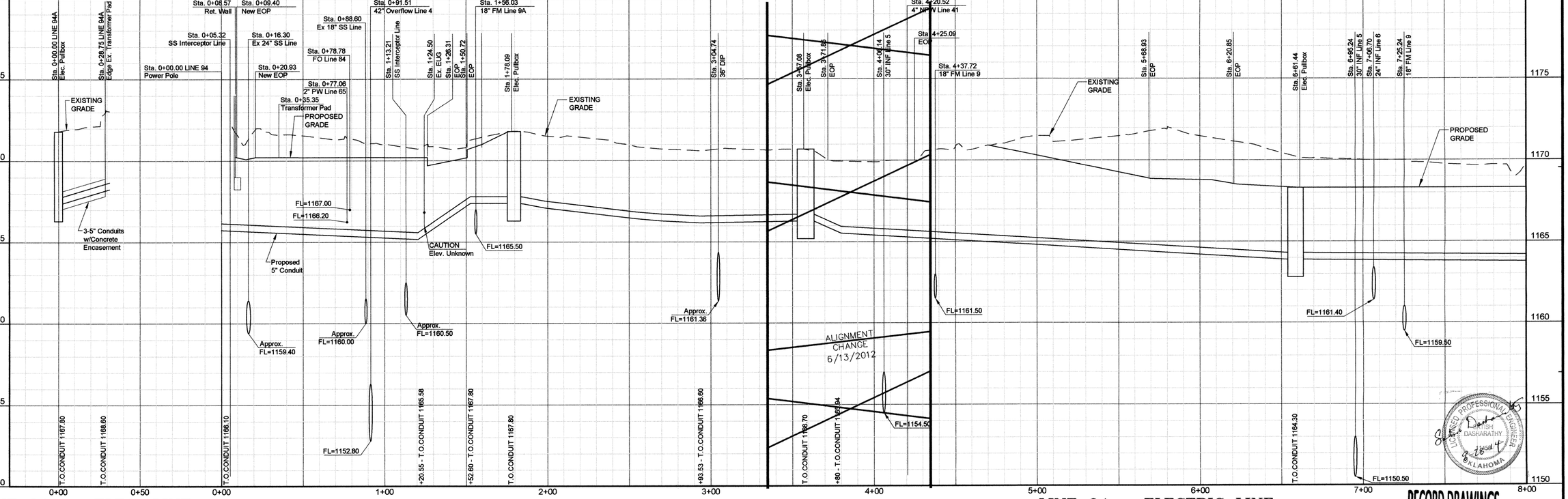
LINES 94 & 94A – ELECTRIC LINES
PLAN VIEW

Scale 1" = 30'

FOR INFORMATION PURPOSES ONLY
THIS WORK WILL BE DONE BY OG&E

LINE 94 – ELECTRIC LINE
PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 94A – ELEC. LINE
PROFILE

LINE 94 – ELECTRIC LINE
PROFILE

RECORD DRAWINGS

REVISIONS:	DATE:
FIELD CHANGE NO. 2	6/13/2012

LINES 94 & 94A
0+00 to 8+00

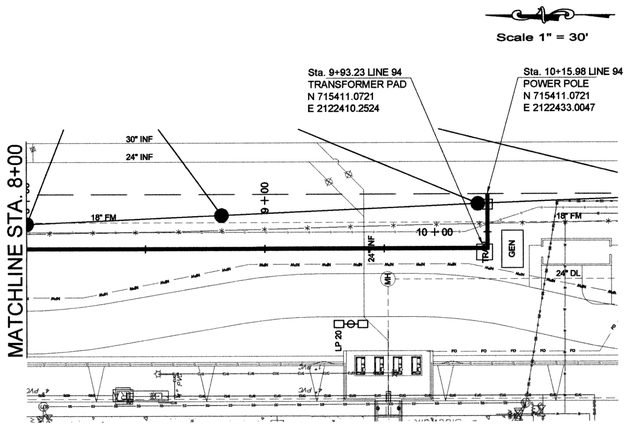
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S.D.		S.D.	S.D.	3/17/10	AS NOTED	49 OF 63

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2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
FAX. (405) 844-3600

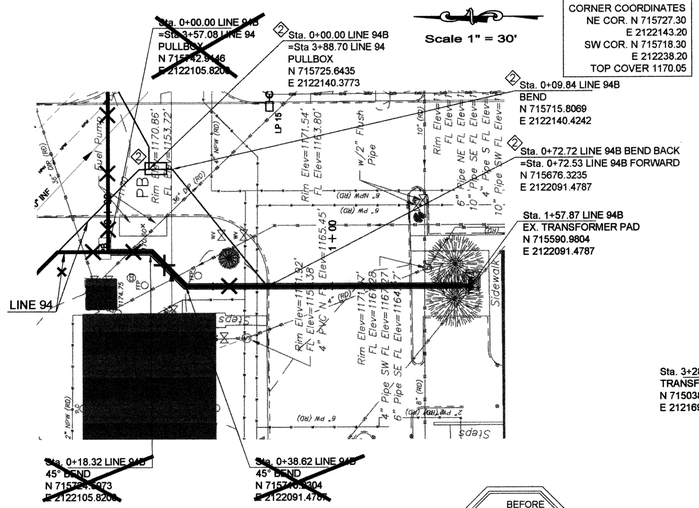
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

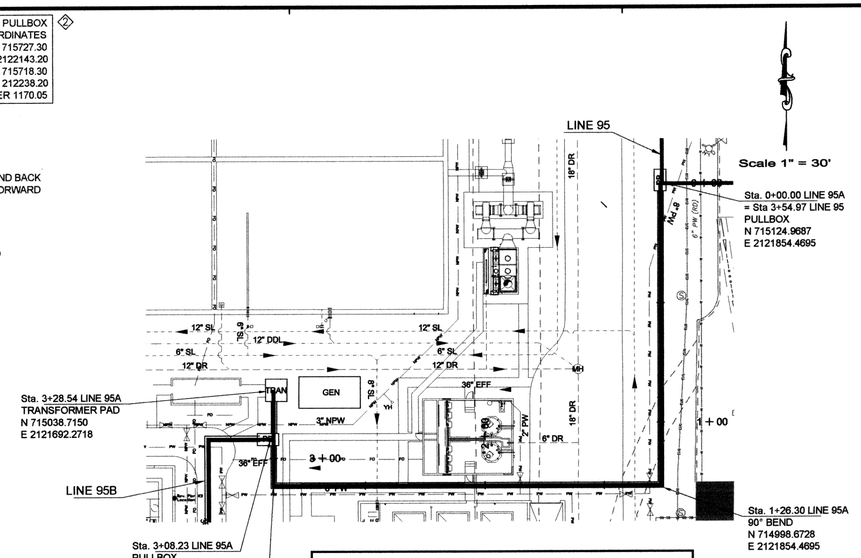
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LINE 94 – ELECTRIC LINE
PLAN VIEW



LINE 94B – ELECTRIC LINE
PLAN VIEW

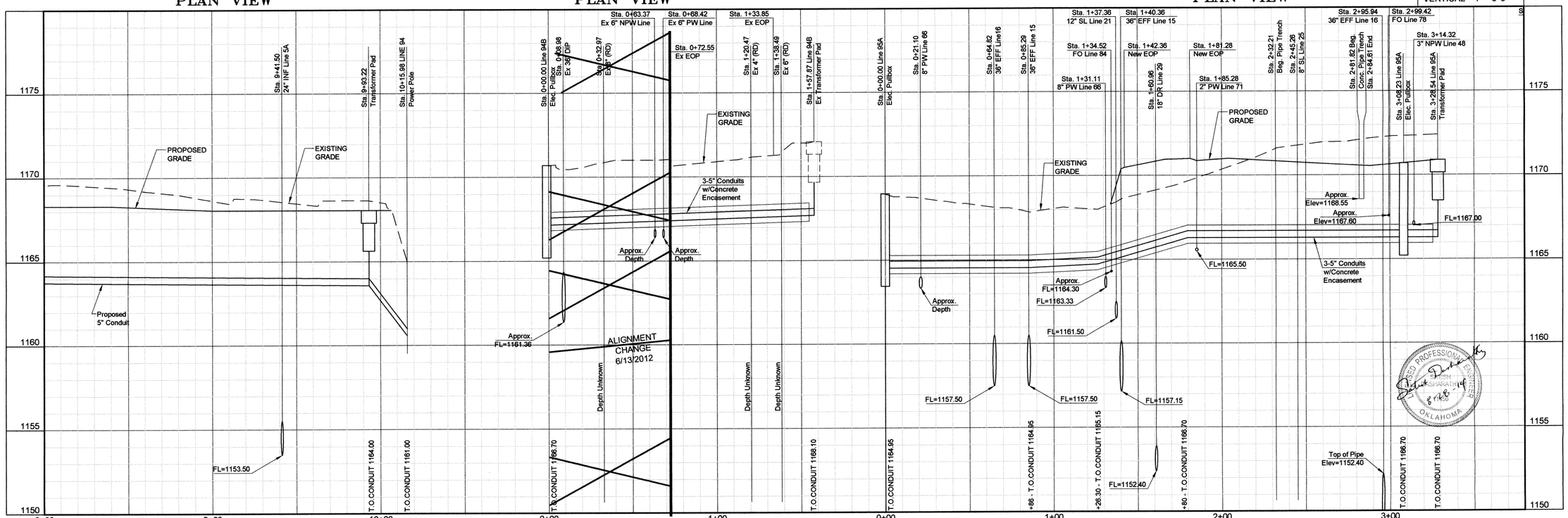


FOR INFORMATION PURPOSES ONLY
THIS WORK WILL BE DONE BY OG&E

RECORD DRAWINGS

LINE 95A – ELECTRIC LINE
PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 94 – ELECTRIC LINE
PROFILE

LINE 94B – ELECTRIC LINE
PROFILE

LINE 95A – ELECTRIC LINE
PROFILE

REVISIONS:	DATE:
FIELD CHANGE NO. 2	6/13/2012

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/17/10	AS NOTED	50 OF 63

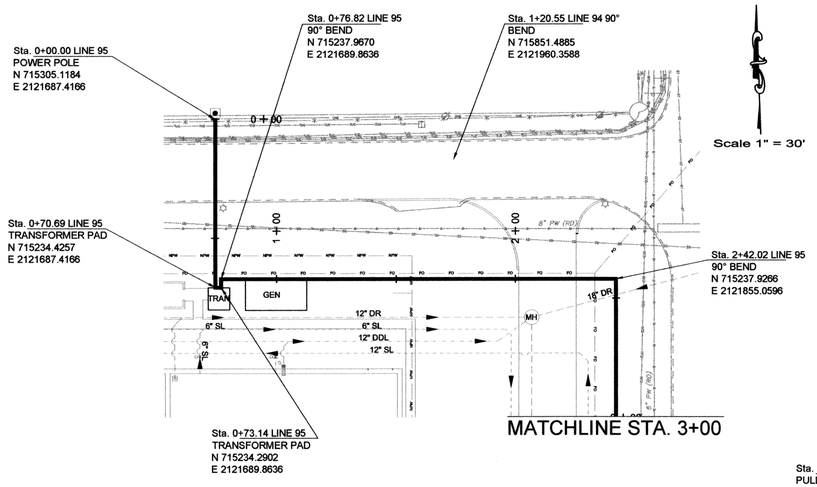
LINES 94, 94B & 95A
0+00 to 10+20

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

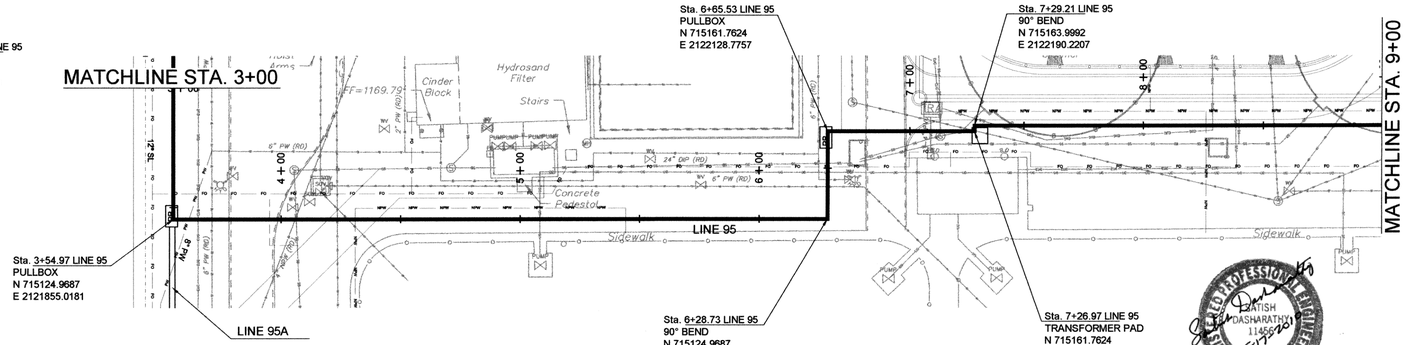
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Scale 1" = 30'

FOR INFORMATION PURPOSES ONLY
THIS WORK WILL BE DONE BY OG&E

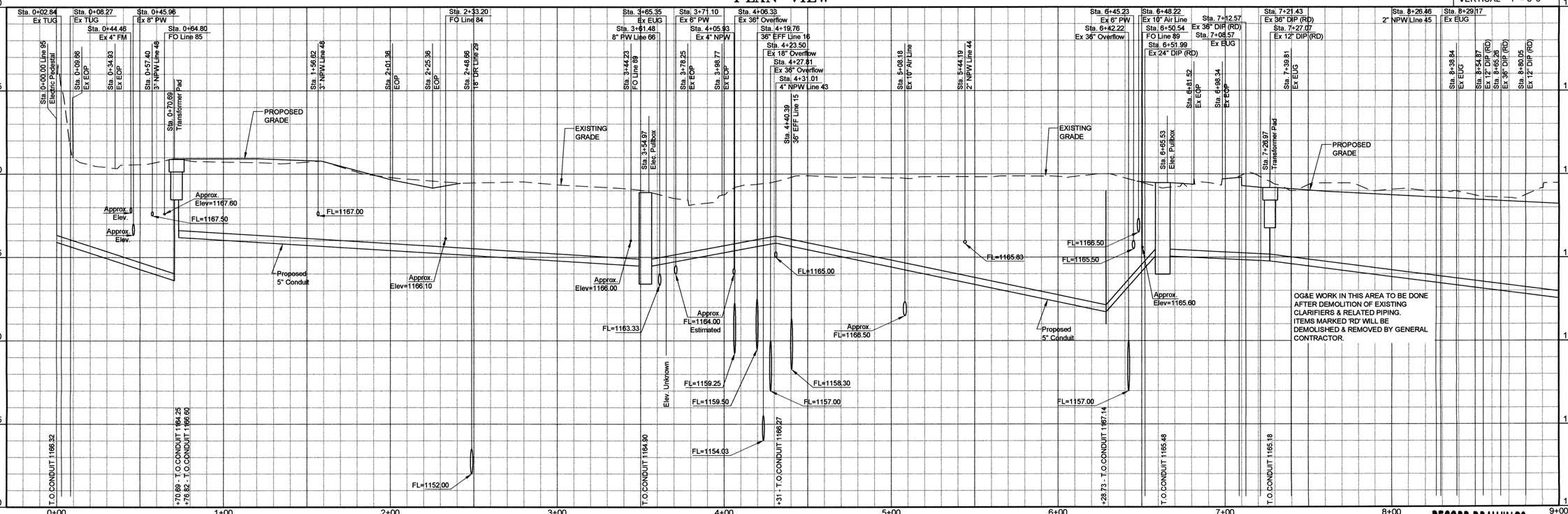
Scale 1" = 30'



BEFORE YOU DIG..
CALL OKIE
1-800-522-8543

LINES 95 – ELECTRIC LINES
PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



OG&E WORK IN THIS AREA TO BE DONE AFTER DEMOLITION OF EXISTING CLARIFIERS & RELATED PIPING. ITEMS MARKED 'RD' WILL BE DEMOLISHED & REMOVED BY GENERAL CONTRACTOR.

LINE 95 – ELECTRIC LINE
PROFILE

RECORD DRAWINGS

REVISIONS:	DATE:

LINE 95
0+00 to 9+00

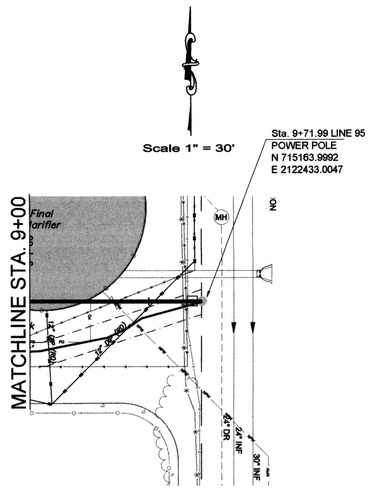
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S.D.		S.D.	S.D.	3/17/10	AS NOTED	51 OF 63

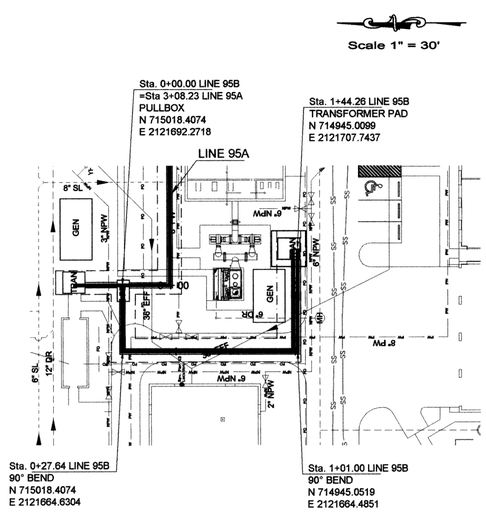
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CERTIFICATE OF AUTHORIZATION NO. CA2088

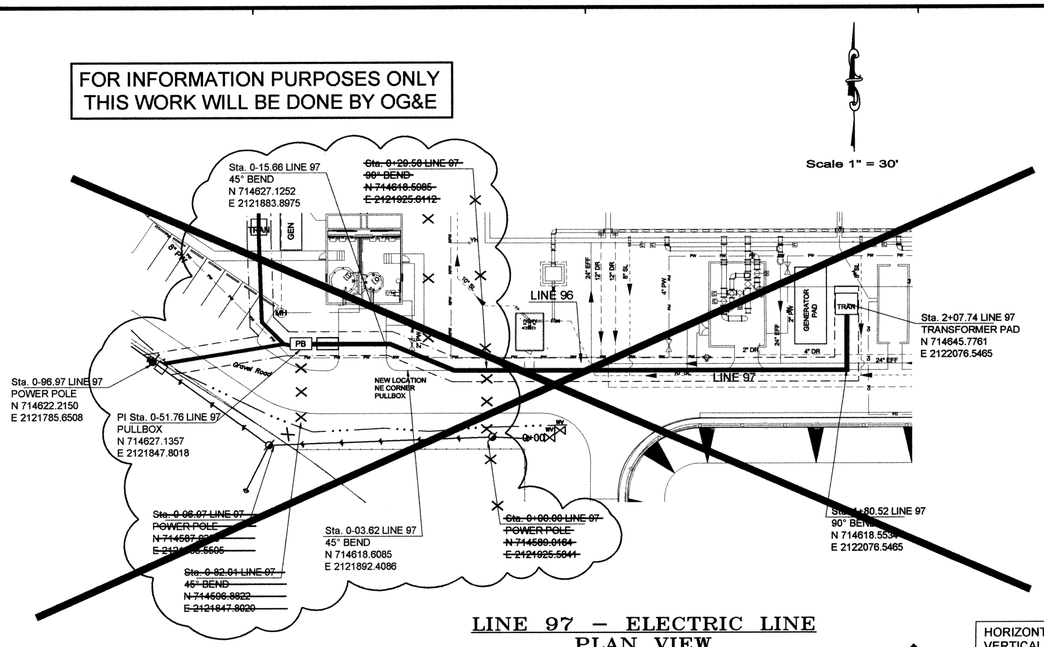
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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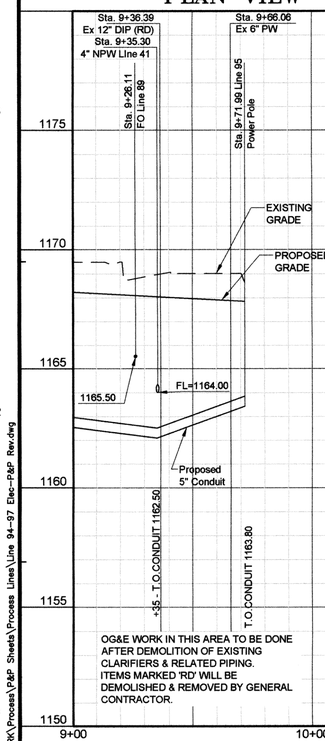
FOR INFORMATION PURPOSES ONLY
THIS WORK WILL BE DONE BY OG&E



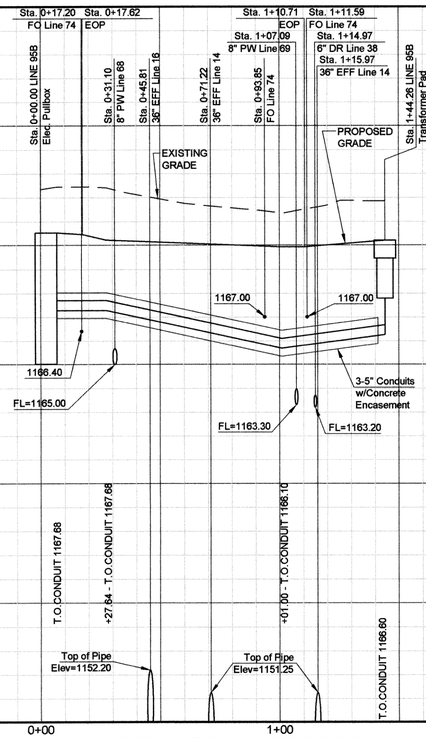
CALL OKIE 1-800-522-6543

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"

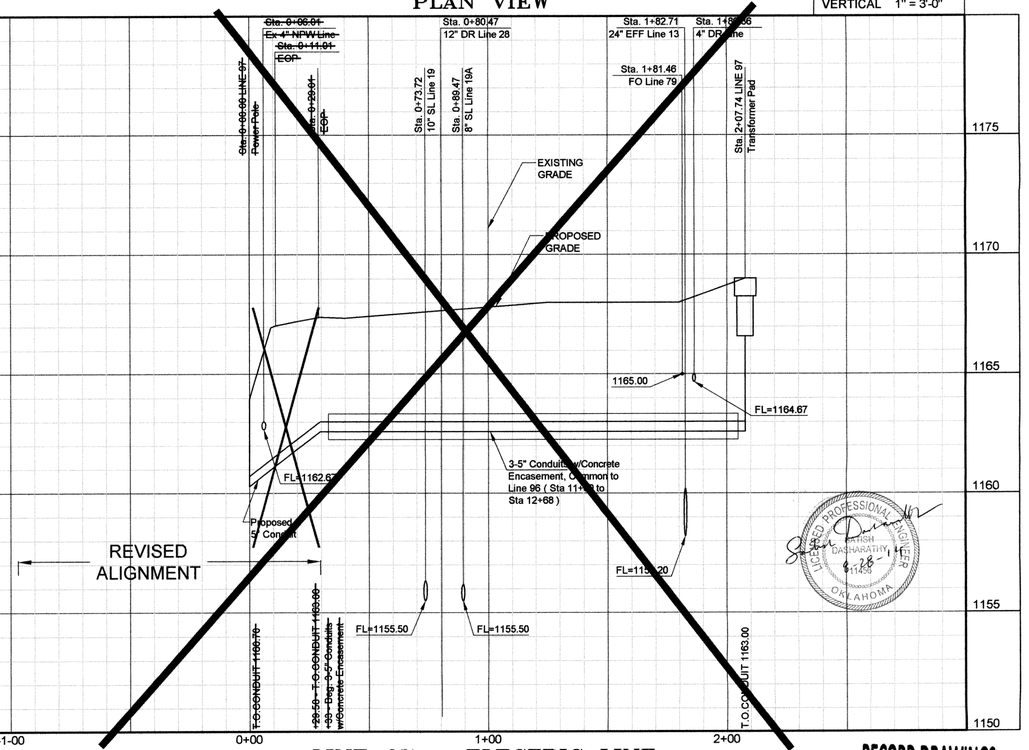
LINE 95 – ELECTRIC LINE PLAN VIEW



LINE 95B – ELECTRIC LINE PLAN VIEW



LINE 97 – ELECTRIC LINE PLAN VIEW



LINE 95 – ELECTRIC LINE PROFILE

LINE 95B – ELECTRIC LINE PROFILE

LINE 97 – ELECTRIC LINE PROFILE

RECORD DRAWINGS

REVISIONS:	DATE:
REVISED ALIGNMENT LINE 97	7/27/2011
REVISED ALIGNMENT LINE 97	2/20/2012
LINE 97 VOID – SEE LINE 96	3/12/2012

LINES 95, 95B & 97
0+00 to 9+72

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/17/10	AS NOTED	52 OF 63

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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

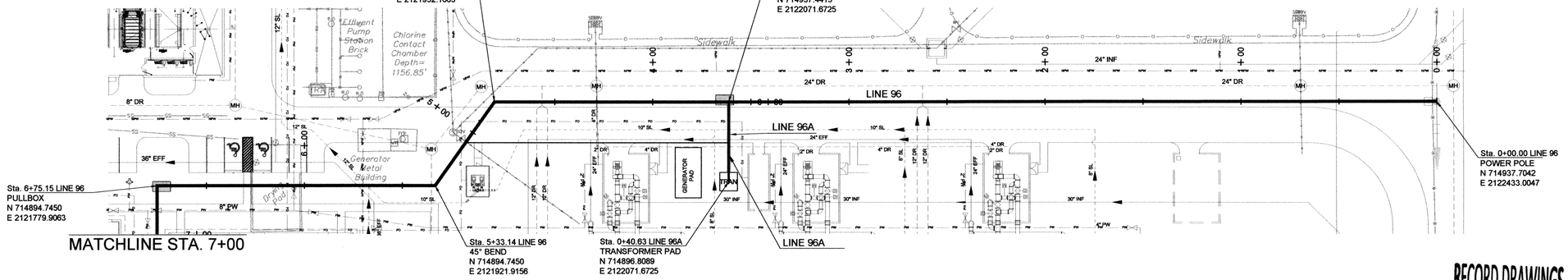
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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FOR INFORMATION PURPOSES ONLY
THIS WORK WILL BE DONE BY OG&E

BEFORE YOU DIG..
CALL OKIE
1-800-522-8543

Scale 1" = 30'

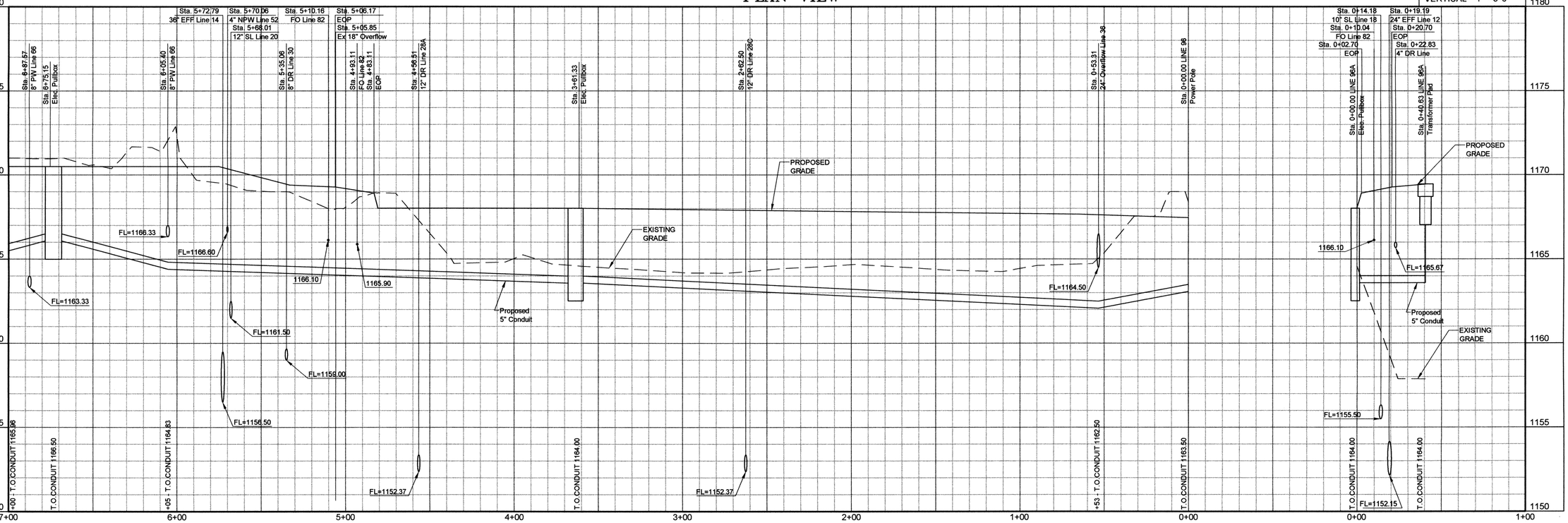


RECORD DRAWINGS

REGISTERED PROFESSIONAL ENGINEER
SATISH DASHARATHY
11452
5-17
ORLAN OKLA

LINES 96 & 96A – ELECTRIC LINES
PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 96 – ELECTRIC LINE PROFILE

LINE 96A – ELECTRIC LINE PROFILE

REVISIONS:	DATE:

LINES 96 & 96A
0+00 to 7+00

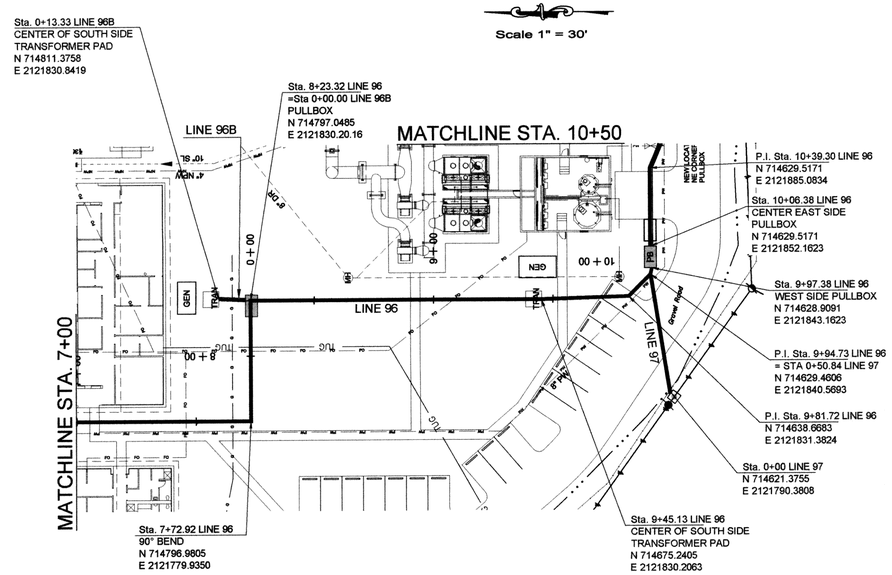
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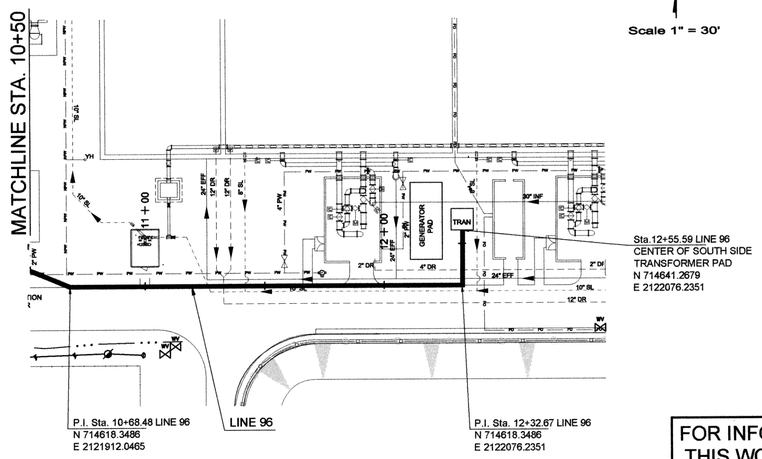
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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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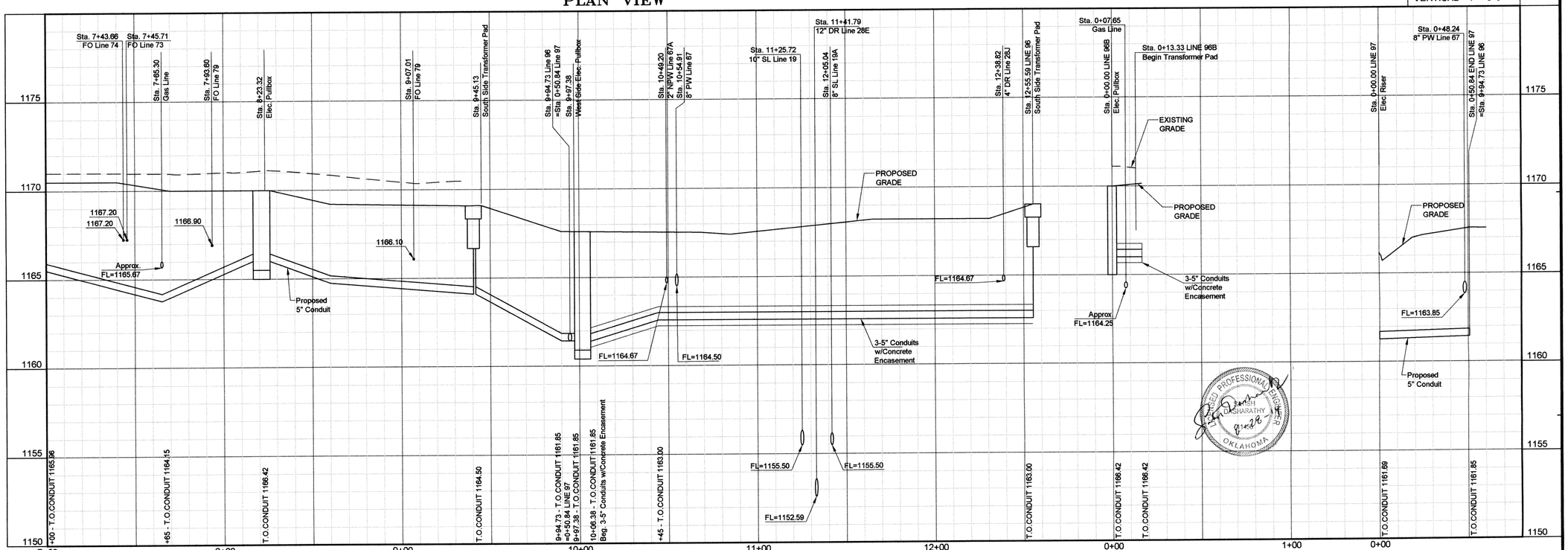
BEFORE YOU DIG.
CALL OKIE
1-800-522-6543

RECORD DRAWINGS

FOR INFORMATION PURPOSES ONLY
THIS WORK WILL BE DONE BY OG&E

LINES 96 & 96B – ELECTRIC LINE
PLAN VIEW

HORIZONTAL 1" = 30'-0"
VERTICAL 1" = 3'-0"



LINE 96 – ELECTRIC LINE
PROFILE

LINE 96B
PROFILE

LINE 97
PROFILE

REVISIONS:	DATE:
RE-ISSUE	3/12/2012

LINES 96, 96B & 97
0+00 to 12+71

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S.D.		S.D.	S.D.	3/17/10	AS NOTED	54 OF 63

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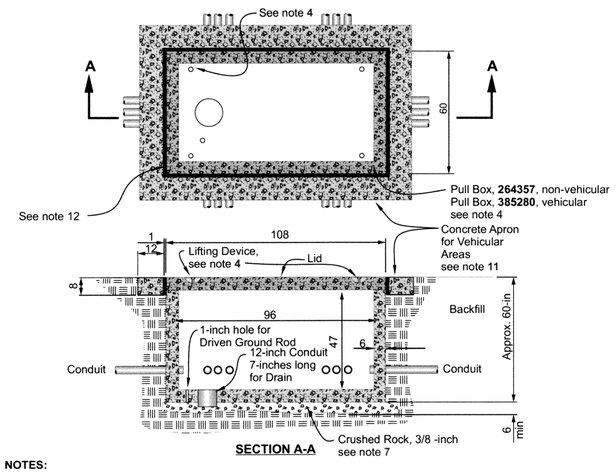
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

FOR INFORMATION PURPOSES ONLY
THIS WORK WILL BE DONE BY OG&E

OG&E Electric Services©

UNDERGROUND STANDARD
JAN 2005

U127



SECTION A-A

NOTES:

1. Standard Box comes with 6-inch terminators in the Standard Configuration as shown above. To make a special order for different size and layout than shown above see note 2.
2. **To special order pull box refer to U127.1 for instructions on how to order. Duct terminator sizes and locations will be determined by the Project Engineer prior to purchase and sent with Purchase Order. Cable access openings will locate pulling eyes. If Project Engineer fails to provide the form on U127.1 then the box will be supplied with three 6-inch terminators at six locations around box.**
3. **District Construction Coordinator to coordinate delivery. Manufacturer requires minimum notice of 24-hours to schedule delivery to job site. It is essential that Crew be at job site to aid installation.**
4. **Lifting devices are to be industry standard and installed by the manufacturer per S885.**
5. **Pull box, 385280, is designed for heavy vehicular traffic (H20).**
6. **Gravel base to be compacted and level before delivery.**
7. **If lid is to be covered over, use cable marking device, 303204, at each end of box for locating.**
8. **Duct terminators to be grouted in by Crew.**
9. **When applicable grade all conduit from this pull box toward manhole. Refer to U51 for Duct Bank series and U66 for Conduit Installation.**
10. **Construction Foreman or Construction Coordinator may need to order terminator reducers for proper size of conduit. The following is a list of Stock Account numbers for the different sizes of reducers:**
    1015470 6-inch to 5-inch reducer
    1015472 6-inch to 4-inch reducer
    1015473 6-inch to 3-inch reducer
11. **Concrete Apron to be 12-inches wide and 8-inches thick with a 1-inch gap between apron and box. Approximate amount of concrete is 0.80 cubic yards. Engineering should encourage developer or contractor to pour concrete apron when box is placed within a parking area.**
12. **Alternative to note 6. OG&E crews to install concrete expansion joint material around outside of lid if box is to be placed in concrete or asphalt parking area. This will provide sufficient spacing to remove lid after concrete or asphalt is placed. Remove lid and then remove expansion joint material to leave adequate space for lid removal.**

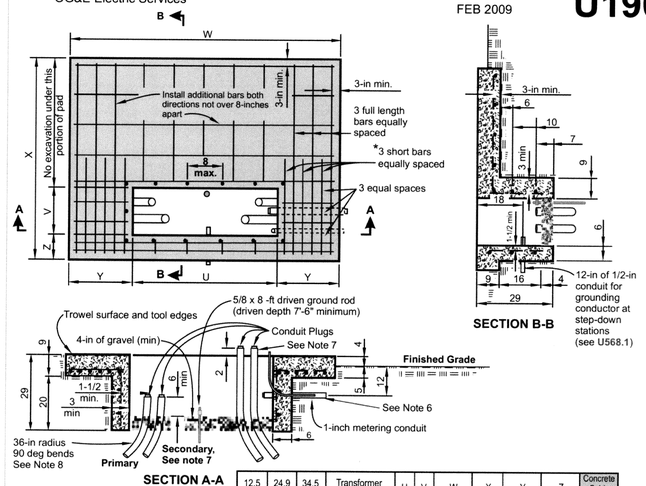
APPROVED Signatures on File
SUPERSEDES JAN 2001 ISSUE

PRECAST CONCRETE PULL BOX
INSIDE DIMENSION 48" X 96" X 47"

OG&E Electric Services©

UNDERGROUND STANDARD
FEB 2009

U190



SECTION A-A

SECTION B-B

12.5 kV	24.9 kV	34.5 kV	Transformer Size (kVA)	U	V	W	X	Y	Z	Concrete Cubic Yards
X			UP to 750	58	16	80	80	*11	12	2.0
X			1000 to 2500	70	20	108	112	19	16	3.0
	X	X	150 to 2500	70	20	108	112	19	16	3.0
Step Down Transf.			1000 to 5000	70	20	108	112	19	16	3.0
Step Down Transf.			7500	88	20	136	126	24	16	4.5

* Leave 3 short bars out between trough and side of pads

APPROVED Signatures on File
SUPERSEDES JUL 2008 ISSUE

NOTES:

1 Concrete shall be 3000-PSI. with 3/4 aggregate and dust fines with just enough water to make a workable mix.
2 All reinforcing steel shall be No.4 round deformed bars.
3 Contact OG&E Electric Services to inspect forms and conduit installations prior to pouring concrete.
4 If pad is not poured on undisturbed earth, piers or footings shall be provided.
5 Minimum concrete cover over reinforcing steel shall be 3-inches when against the earth and 1-1/2-inch when formed.
6 Install 2-inch PVC conduit plugged at both ends for temporary service. This conduit can come from bottom like the secondary conduit rather than through the concrete wall.
7 When applicable run secondary conduit 2-inches above pad to prevent fluid from funneling into customers building. If conduit conflicts with cable training then it is recommended that the conduit be cut off at a depth that will allow cable training. The conduit should still be left at a distance to prevent fluids from draining into the customers service entrance and no less than 6 inches above gravel in bottom of trough.
8 Primary conduit shall extend a minimum of 6-inches above the gravel in bottom of trough. If conduit extends higher than the minimum of 6-inches and interferes with cable training then cut the conduit to a height that will allow the necessary cable training, but no lower than the 6-inch minimum.

POURED THREE PHASE TRANSFORMER PAD
FOR PADMOUNTED DISTRIBUTION TRANSFORMERS

RECORD DRAWINGS



DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/17/10	AS SHOWN	55 OF 63

REVISIONS:	DATE:

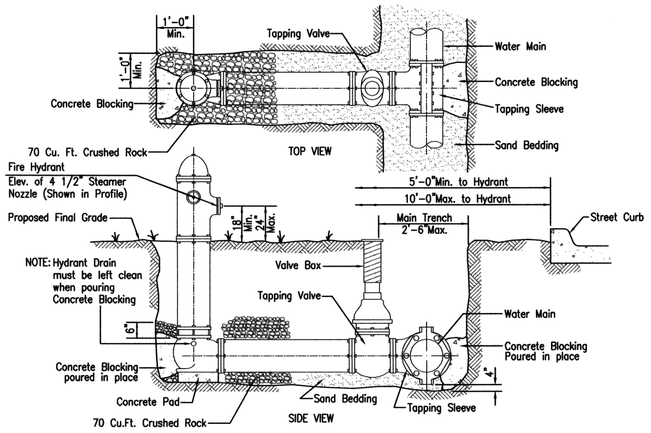
OG&E DETAILS

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FAX. (405) 844-3600

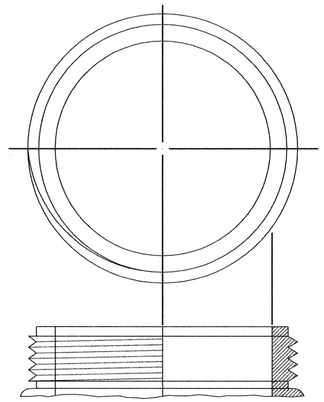
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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

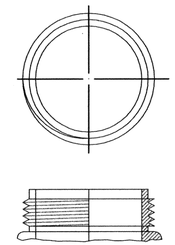
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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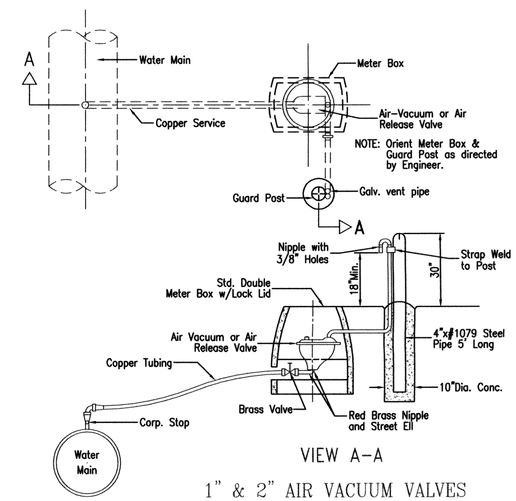
INSTALLATION OF FIRE HYDRANT ON EXISTING MAIN





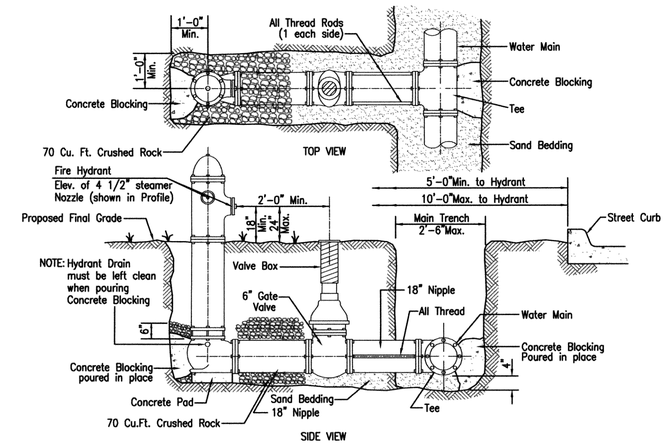
Threads Shall be National Standard Threads

FIRE HYDRANT NOZZLE THREADS

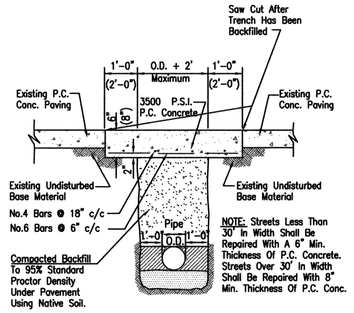


VIEW A–A

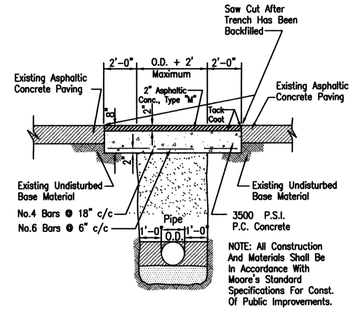
1" & 2" AIR VACUUM VALVES
3/4" AIR RELEASE VALVES



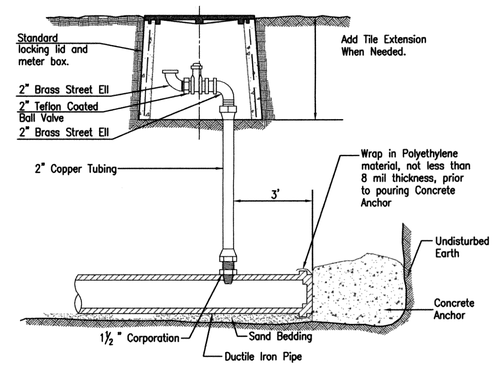
INSTALLATION OF FIRE HYDRANT ON NEW MAIN



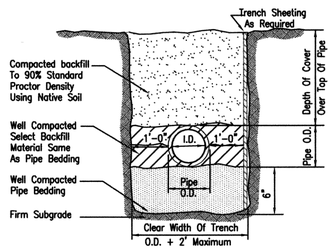
TYPICAL PERMANENT REPAIR
FOR P.C. CONCRETE PAVING



TYPICAL PERMANENT REPAIR
FOR ASPHALTIC CONCRETE PAVING



2" BLOW OFF



1) Pipe Bedding And Select Backfill Shall Be Well Graded Crushed Stone Or Crushed Gravel 1/4" To 1/2".

2) The Pipe Bedding And Select Backfill Shall Be Compacted To 90% Standard Proctor Density. Compaction Shall Be Done By Power Tamping.

TYPICAL BEDDING & TRENCH DETAILS

Standard Notes Water

Note 1 All Fire Hydrants & Valve Boxes to be set to proposed final grade with 4 1/2" steamer nozzle a minimum at 18" & a Maximum of 24" above ground level. All fire hydrants to have ductile iron leads.

Note 2 All existing water mains being abandoned by this project are to remain the property of the City of Moore and shall be salvaged by the Water/Wastewater Department at their discretion. However, items in the way of construction may be removed and delivered to the Water Department Warehouse.

Note 3 A permit for Paving Cuts will be required, however, the repair deposit by the Contractors will be waived. The cost of machine cutting the paving, prior to removal, and replacement of paving shall be included in bid item "Paving Cut and Permanent Repair".

Note 4 Concrete encase Sanitary Sewer or install Cast Iron Pipe 10 feet either side of water main, to be measured at right angles, in accordance with Oklahoma Department of Environmental Quality Standards.

Note 5 When crossing streets, driveways subject to heavy traffic, alleys and structures, etc., pipe shall be installed with special backfill, see detail this sheet. All other pipe to be installed in accordance with manufacturers recommendations or City specification.

Note 6 Set end of main stubs in Cul-de-sacs at a point 5.0' off property line. This point being in line with side property line.

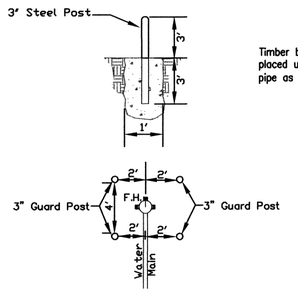
Note 7 In instances where flow lines are not indicated on the drawings, main shall be constructed with a minimum of 4' cover or as directed by the Field Engineer.

Note 8 All staking for alignment and grade will be done under the supervision of a Registered Professional Engineer or a Registered Land Surveyor. Grade stakes will be marked and cut sheets will be furnished to the City Inspector on the project prior to construction.

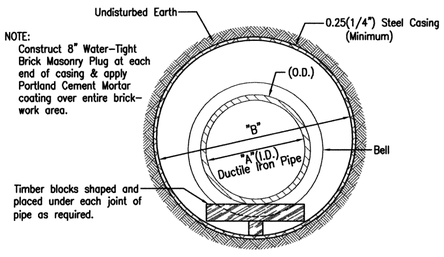
Note 9 Unless specifically authorized, all Gate Valves are to be located at P.C. or P.T. of street curb. When Fire Hydrants are required they shall be located within 5' of Gate Valves.

General Note

All construction to be in accordance with current City Standards and Specifications



GUARD POST DETAIL
TYPICAL ALL HYDRANTS
LOCATED IN TRAFFIC AREAS



TYPICAL SECTION FOR BORING
PUBLIC STREETS
Water Main Installations

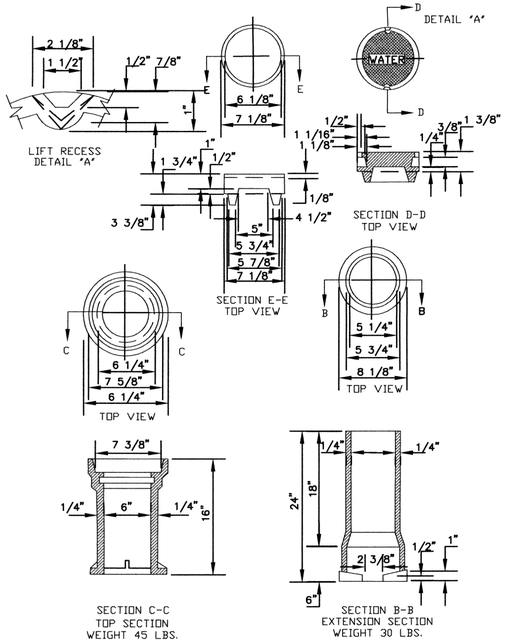
PIPE & STEEL CASING SCHEDULE	
PIPE DIAMETER "A"	CASING DIAMETER "B"
4	10"
6	12"
8	14"or16"
10	18"
12	20"
16	24"
18	26"
20	30"
24	33"

RECORD DRAWINGS

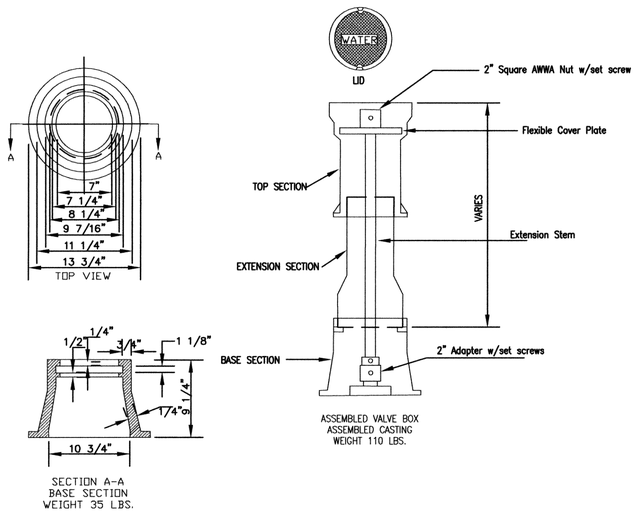
The City of MOORE Oklahoma

Water
Standard Details
No. 101

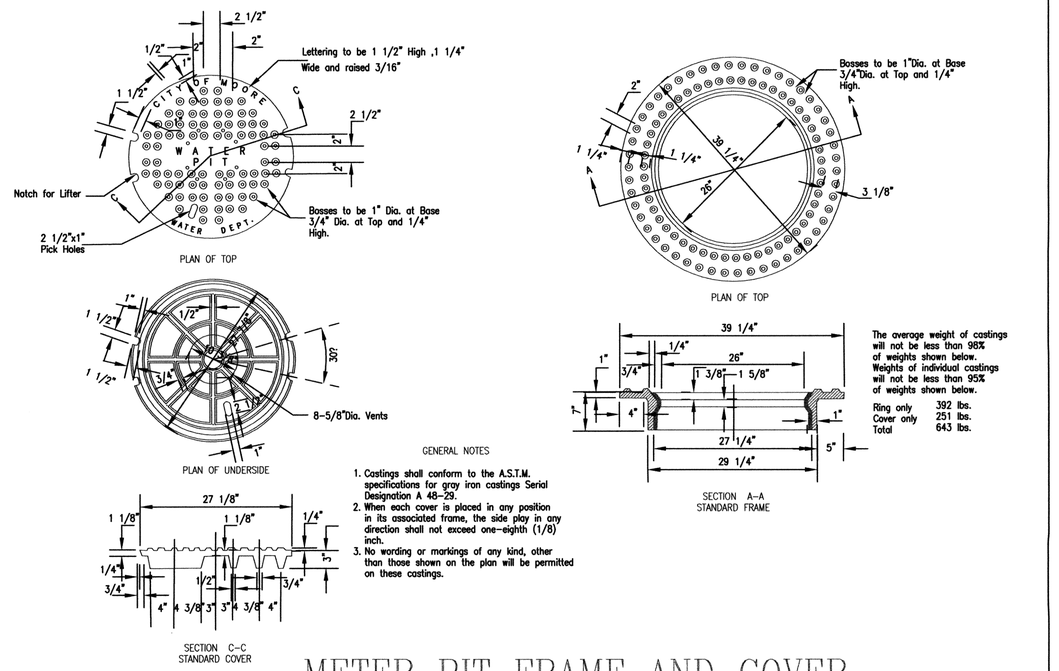
Adopted: _____ Date: _____



APPROVED ALTERNATES FOR VALVE BOX ASSEMBLIES
TYLER PIPE 562-S 80LBS.
BASS & HAYS 2436-S 80LBS.



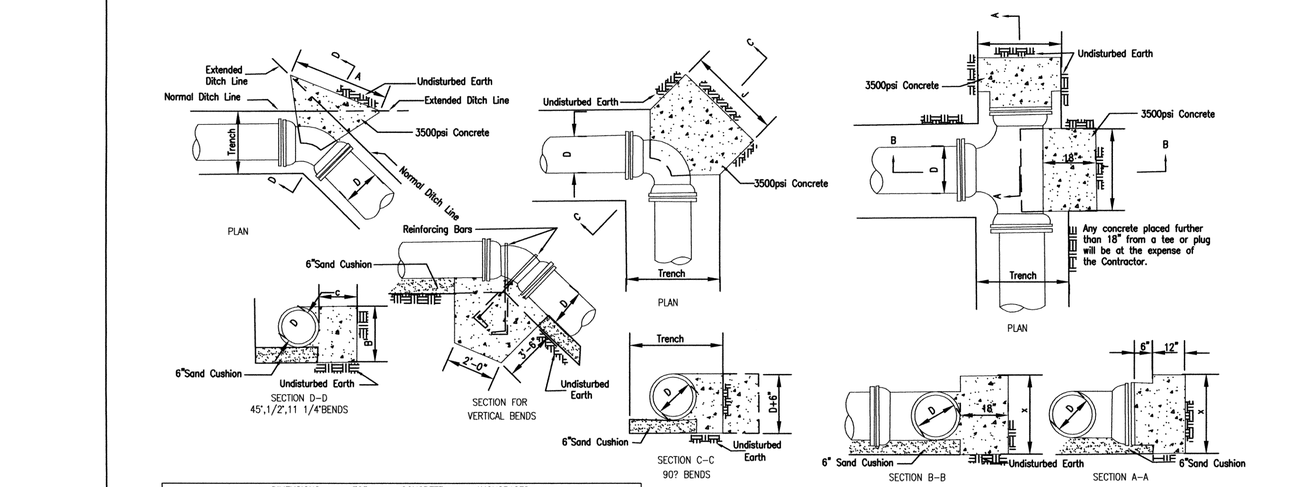
CAST IRON VALVE BOX AND LID



GENERAL NOTES

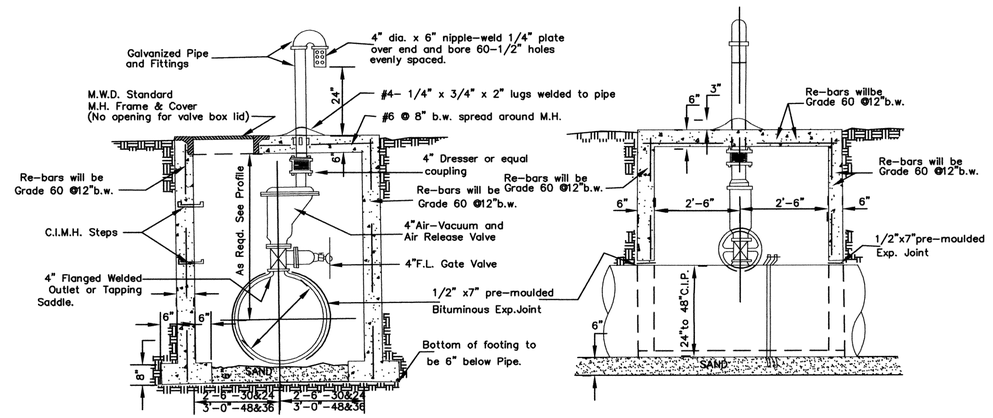
1. Castings shall conform to the A.S.T.M. specifications for gray iron castings Serial Designation A 48-29.
2. When each cover is placed in any position in its associated frame, the side play in any direction shall not exceed one-eighth (1/8) inch.
3. No wording or markings of any kind, other than those shown on the plan will be permitted on these castings.

METER PIT FRAME AND COVER



PIPE DIA.	TRENCH WIDTH	DIMENSIONS FOR CONCRETE ANCHORAGES											
		45° BEND			22 1/2° BEND			11 1/4° BEND			TEE OR PLUG		
		A	B	C	A	B	C	A	B	C	X	Y	J
36	60	7'-0"	3'-0"	2'-6"	6'-0"	3'-0"	2'-6"	6'-0"	3'-0"	2'-6"	4'-0"	3'-4"	6'-5"
30	54	5'-6"	2'-6"	2'-0"	4'-6"	2'-6"	2'-0"	4'-6"	2'-6"	2'-0"	3'-6"	3'-0"	5'-8"
24	44	3'-9"	2'-6"	1'-10"	2'-6"	2'-6"	1'-1"	2'-0"	2'-6"	1'-0"	3'-3"	3'-0"	4'-9"
20	39	2'-9"	2'-2"	1'-8"	2'-0"	2'-2"	1'-1"	2'-0"	2'-2"	11"	3'-0"	2'-0"	4'-1"
18	37	2'-3"	2'-0"	1'-6"	2'-0"	2'-0"	1'-1"	2'-0"	2'-0"	11"	2'-3"	2'-0"	3'-9"
16	35	2'-0"	1'-10"	1'-5"	2'-0"	1'-10"	1'-1"	2'-0"	1'-10"	11"	1'-6"	2'-0"	3'-6"
12	30	2'-0"	1'-6"	1'-4"	2'-0"	1'-6"	1'-0"	2'-0"	1'-6"	11"	1'-0"	2'-0"	3'-0"
10	28	2'-0"	1'-4"	1'-4"	2'-0"	1'-4"	1'-0"	1'-10"	1'-4"	11"	1'-0"	1'-0"	2'-8"
8	26	2'-0"	1'-2"	1'-4"	1'-10"	1'-2"	1'-0"	1'-8"	1'-2"	11"	10"	1'-6"	2'-4"
6	24	2'-0"	1'-1"	1'-4"	1'-8"	1'-1"	1'-0"	1'-6"	1'-1"	11"	8"	1'-4"	2'-1"

HORIZONTAL - CONCRETE ANCHORAGES



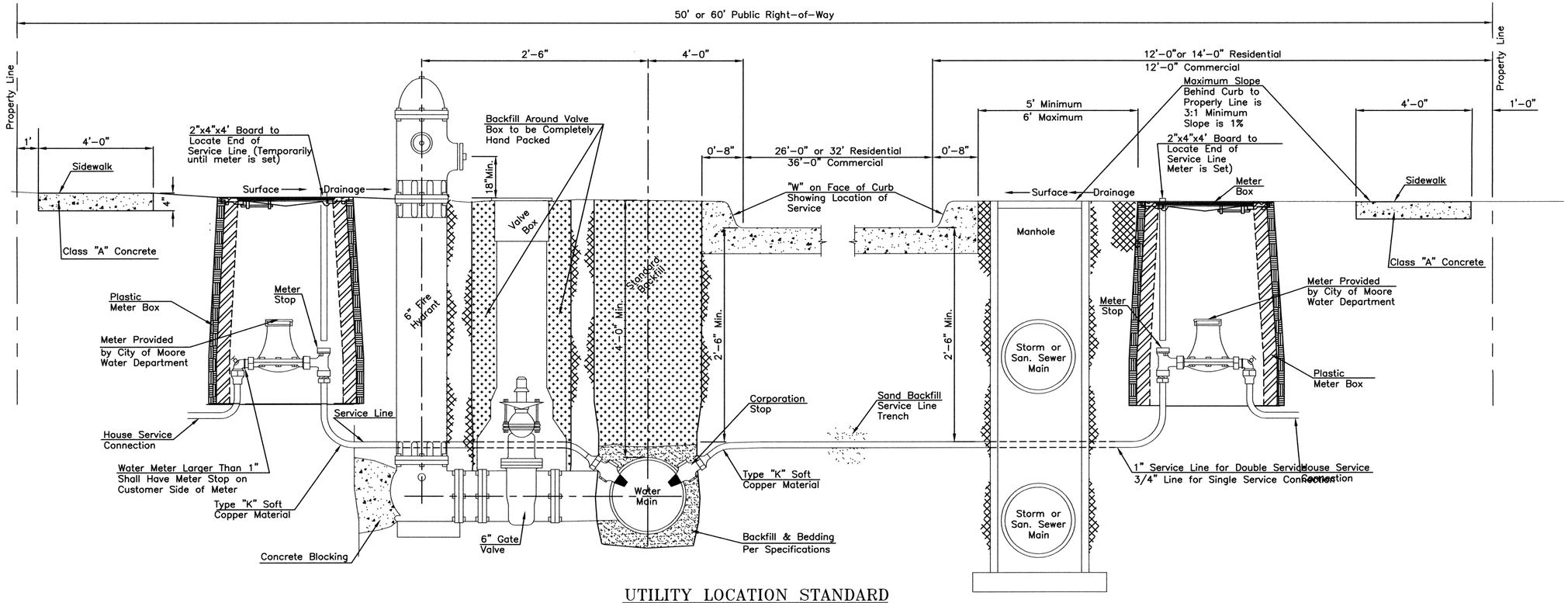
DETAIL OF 4" AIR VACUUM AND AIR RELEASE VALVE

RECORD DRAWINGS

The City of MOORE Oklahoma

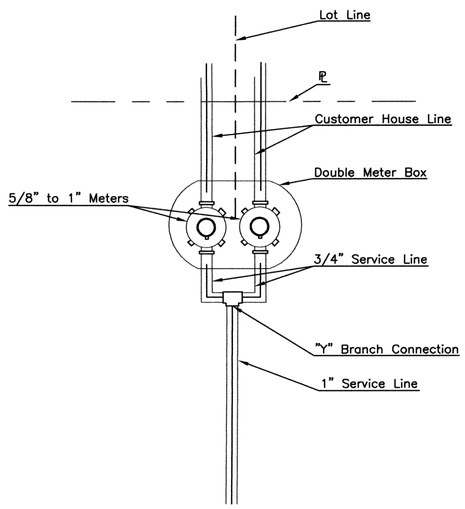
Water
Standard Details
No. 102

Adopted: _____ Date: _____



UTILITY LOCATION STANDARD

N.T.S.



TYPICAL METER SETTING

N.T.S.

Notes:

1. Taps for Corporation Stops are to be made horizontally or at an angle of 45° with the horizontal (never vertically). Multiple Taps (two or more) are to be staggered around the Pipe Circumference and be at least 12" inches apart. All Taps are to be made in those Sections of Mains not under pavement. Particular attention will be given to their location around Cul-de-sacs, Eyebrows, Etc.

2. Water meters and boxes shall not be installed until all the earthwork between the curb and right-of-way line has been completed and approved by the City Inspector.

3. All PVC waterline shall have A #10 copper tracer wire installed with the pipe.

4. All PVC waterline shall be class 200 for 12" diameter and greater, class 150 for 6" and 8" diameter pipes.

5. Fire hydrants shall not exceed 500' in separation based on hose laying distance.

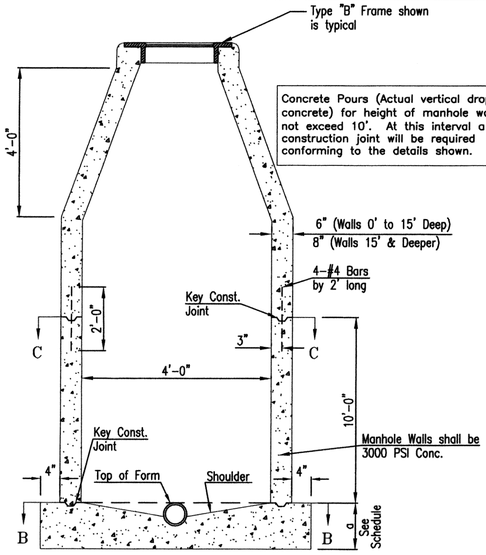
6. The distance from the fire department connection of a sprinkler system to a fire hydrant shall not exceed 100'.

RECORD DRAWINGS

The City of MOORE Oklahoma

Water
Standard Details
No. 103

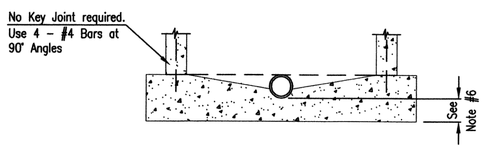
Adopted: _____ Date: _____



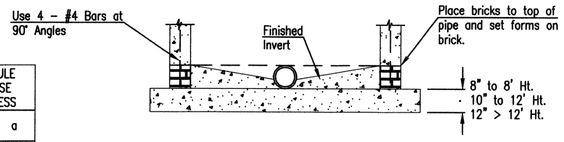
SECTION A-A

SCHEDULE OF BASE THICKNESS	
Pipe Diameter	a
8"	1'-6"
10"	1'-8"
12"	1'-11"
15"	2'-2"
18"	2'-6"
21"	2'-10"
24"	3'-1"

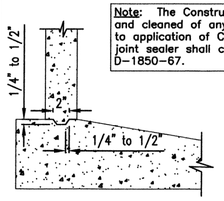
Forms shall rest on firm bedding as directed by Field Engineer.



ALTERNATE NO. 1



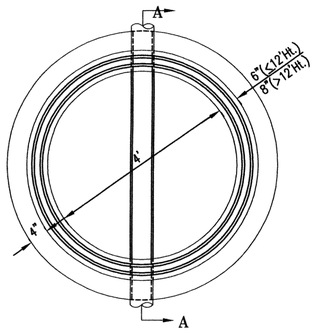
ALTERNATE NO. 2



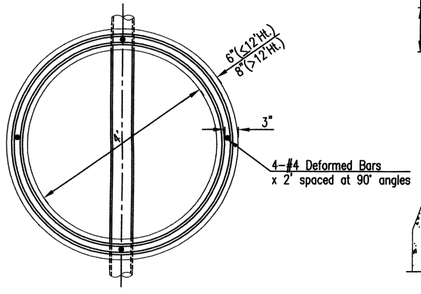
Note: The Construction Joint shall be inspected and cleaned of any excess foreign matter prior to application of Concrete joint sealer. Concrete joint sealer shall comply with ASTM Designation D-1850-67.

KEY CONSTRUCTION JOINT FOR BOTTOM & WALLS DETAIL

N.T.S.



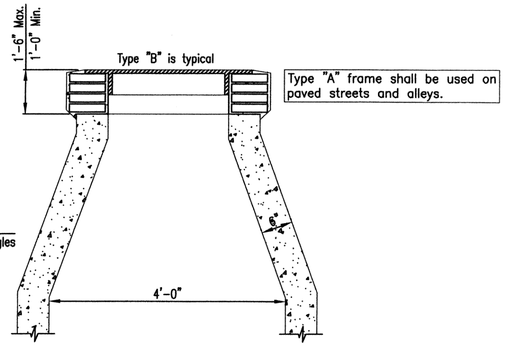
SECTION B-B



SECTION C-C

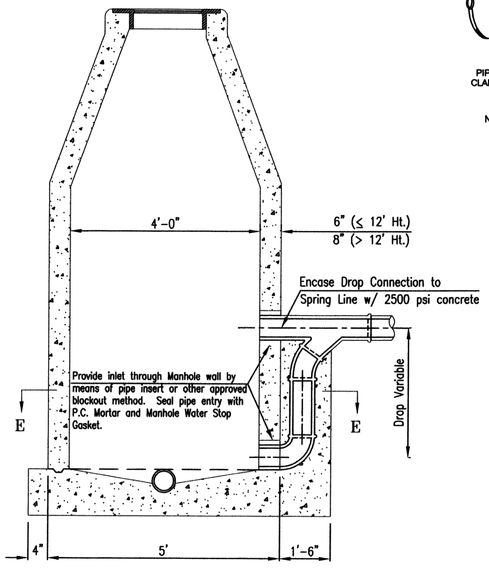
POURED-IN-PLACE STANDARD MANHOLE

N.T.S.



TYPICAL SECTION TO BE USED WITHIN STREET RIGHT-OF-WAY

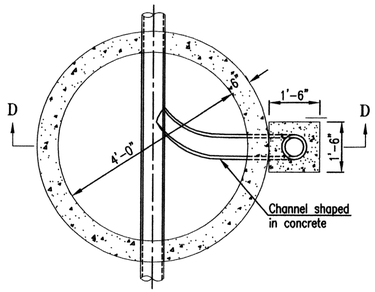
N.T.S.



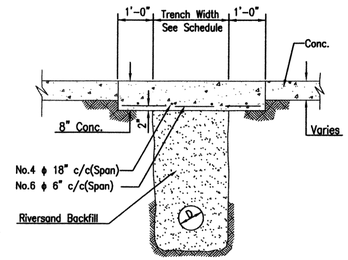
SECTION D-D

POURED-IN-PLACE DROP MANHOLE

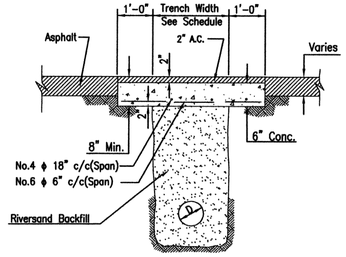
N.T.S.



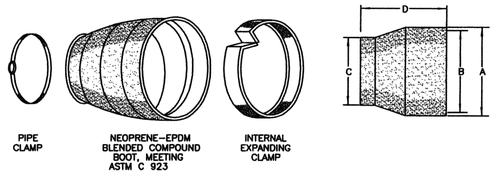
SECTION E-E



TYPICAL PERMANENT REPAIR FOR P.C. CONCRETE PAVING

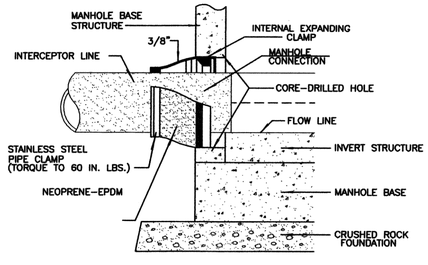


TYPICAL PERMANENT REPAIR FOR ASPHALTIC CONCRETE PAVING



NOTE: ALL CLAMPS SHALL BE STAINLESS STEEL

SUGGESTED PIPE O.D. RANGE	HOLE & BOOT DIAMETER DIMENSIONS A	B	C	D
3 1/2" - 4 1/2"	7"	6 1/8"	4 1/4"	6"
5 3/8" - 7"	12"	10 7/8"	6 1/2"	8"
7" - 8 1/2"	12"	10 7/8"	8"	8"
8 3/16" - 9 3/4"	12"	10 7/8"	9 1/4"	8"
9 1/4" - 11"	16"	14 7/8"	10 1/2"	8"
10 3/4" - 12 1/2"	16"	14 7/8"	12"	8"
12" - 13 3/4"	16"	14 7/8"	13 1/4"	8"
14 1/2" - 16 1/4"	20"	18 7/8"	15 3/4"	8"
15 3/4" - 17 1/2"	20"	18 7/8"	17"	8"
19 1/2" - 21 1/4"	24"	22 7/8"	20 3/4"	8"



STANDARD DETAIL FOR MANHOLE-PIPE CONNECTION

GENERAL NOTES FOR POURED-IN-PLACE MANHOLES

1. Materials for concrete shall conform, as a minimum to the following current specifications:

Portland Cement.	ASTM C 150
Aggregate for Mortar	ASTM C 144
Fine & Coarse Aggregate.	ASTM C 33

   Water: Clean and free from deleterious substances. Total water content of concrete shall not exceed 6.5 gallons (54.2 liters) of water per 100 pounds (100 kg) of cement in the mix.

2. The base shall be constructed of concrete having a minimum 3500 PSI compressive strength at 28 days (20,684 kn/sm) and with a maximum slump of 4 inches (10 cm), vibrated or tamped. The base shall have a minimum diameter of 8 inches (20 cm) greater than the outside diameter of the manhole.

3. The invert flow channel shall be formed during or immediately after the pouring of the manhole base and brush finished as soon as the concrete has sufficiently set. The flow channel through manholes shall be made to conform in shape and in slope to that of the sewers. Sewer pipe, with the top half removed, shall be laid through the manhole whenever possible.

   The inside bottom of the manhole shall rise a minimum of 1 inch per foot (8.3 cm/m) from the side of the pipe or the flow channel to the wall of the manhole. Dips or projections capable of holding water or solid materials will not be permitted. The concrete shall set for 24 hours before any pipe inside the manhole is trimmed.

4. All sewers constructed of rigid or semi-rigid pipe extending from all manholes shall be encased with concrete with a distance of 3 feet (0.9 m) from the outside wall of the manhole. This support may be deleted if a flexible watertight gasket is used to connect the sewer to the manhole. No support is required for sewers constructed of flexible pipe.

5. Wall thickness uniformity shall be obtained through the use of spacers located at the top and bottom of the manhole. For deep manholes, spacers located at a depth of one-half the manhole depth shall also be utilized. Wall thickness shall be 6" for manholes 0' to 12' deep and wall thickness shall be 8" for manholes greater than 12' deep.

6. The base may be poured monolithically with the rest of the manhole. The base shall have a minimum thickness under the pipe as follows:

0 ft. to 8 ft. (0 - 2.4 m) manhole heights	8 inches
8 ft. to 12 ft. (2.4 - 3.7 m) manhole heights	10 inches
12 ft. (3.7 m) and above manhole heights	12 inches

7. The construction joint shall be inspected and cleaned of any excess foreign matter prior to application of concrete joint sealer. Concrete joint sealer shall comply with ASTM Designation D 1850-67.

8. Forms shall be provided for the shaping and finishing of the manhole bottoms. A minimum interval of 24 hours shall elapse prior to pouring of manhole walls. Construction of manhole bottoms shall comply with the standard specifications for the construction of sanitary sewers and appurtenances.

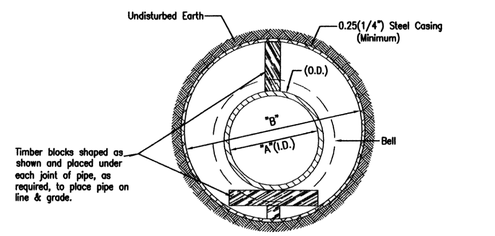
9. Mortar for finishing and sealing shall be Class "C". Any honeycombing of concrete less than 2" deep in 6" manhole walls may be repaired using Class "D" Mortar.

10. This manhole is standard only for sewers 36" in diameter or less provided that at junction points, special manholes may be required for sewers smaller than 36" in diameter.

11. Interior surfaces of all manhole walls shall receive two (2) coats of an approved sealer. A minimum interval of 24 hours shall elapse between applications of coating.

12. Manholes shall conform to the requirements of Oklahoma State Department of Environmental Quality. The more restrictive requirement between The City of Moore and The ODEQ shall govern in cases where there are discrepancies.

RECORD DRAWINGS

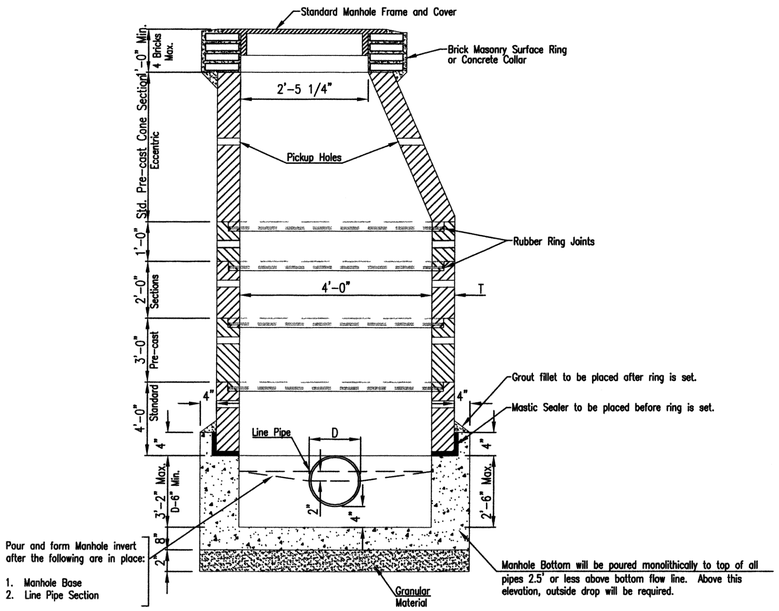


TYPICAL SECTION FOR BORING PUBLIC STREETS

The City of MOORE Oklahoma

Poured-in-Place Manhole
Sanitary Sewer
Standard Details
No. 301

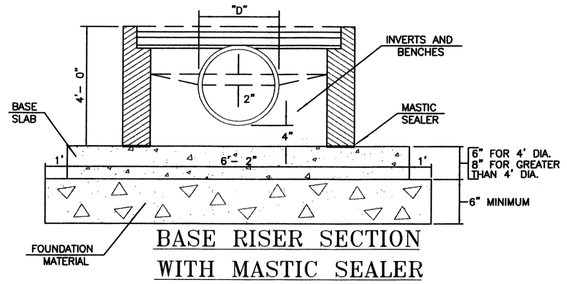
Adopted: _____ Date: _____



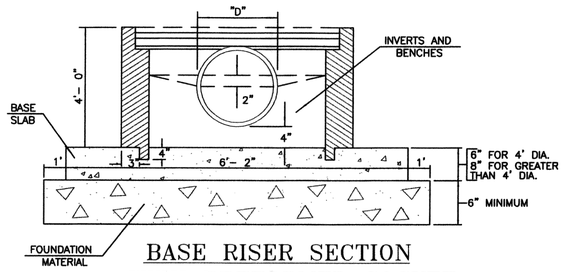
TYPICAL BASE DETAILS
4'–0" DIAMETER MANHOLE
(Eccentric Cone)

N.T.S.

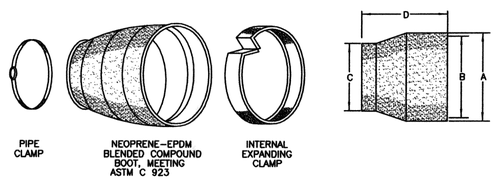
STANDARD DETAIL FOR BASE SECTIONS



BASE RISER SECTION WITH MASTIC SEALER
OPTION "A"



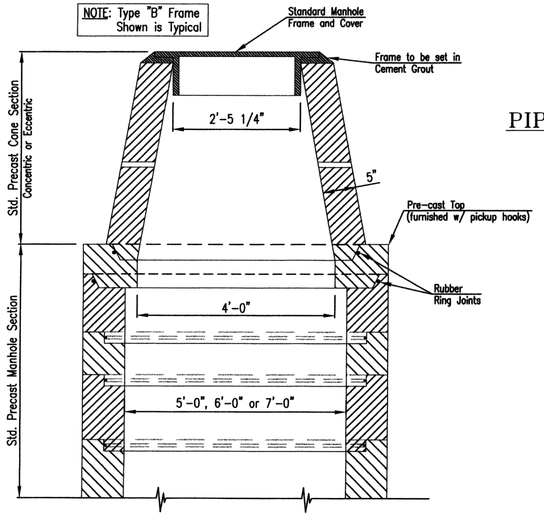
BASE RISER SECTION WITH PREFORMED SOCKET
OPTION "B"



Shop shall score concrete walls to dimensions shown. Reinforcing to be cut on job site.

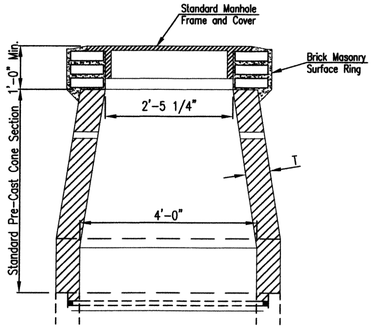
PIPE CONNECTION DETAILS

SUGGESTED PIPE O.D. RANGE	HOLE & BOOT DIAMETER DIMENSIONS A	B	C	D
3 1/2" – 4 1/2"	7"	6 1/8"	4 1/4"	8"
5 3/8" – 7"	12"	10 7/8"	6 1/2"	8"
7" – 8 1/2"	12"	10 7/8"	8"	8"
8 3/16" – 9 3/4"	12"	10 7/8"	9 1/4"	8"
9 1/4" – 11"	16"	14 7/8"	10 1/2"	8"
10 3/4" – 12 1/2"	16"	14 7/8"	12"	8"
12" – 13 3/4"	16"	14 7/8"	13 1/4"	8"
14 1/2" – 16 1/4"	20"	18 7/8"	15 3/4"	8"
15 3/4" – 17 1/2"	20"	18 7/8"	17"	8"
19 1/2" – 21 1/4"	24"	22 7/8"	20 3/4"	8"



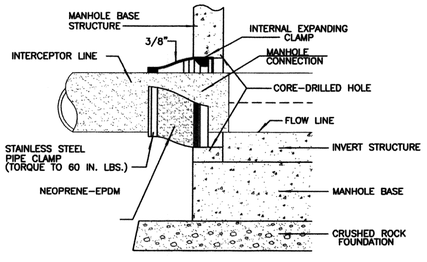
5'–0", 6'–0" & 7'–0" DIAMETER MANHOLE

N.T.S.



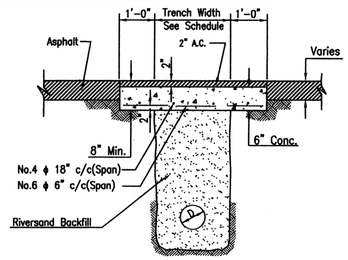
4'–0" DIAMETER MANHOLE
(Concentric Cone)

N.T.S.

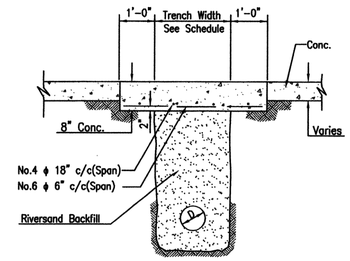


STANDARD DETAIL FOR MANHOLE–PIPE CONNECTION

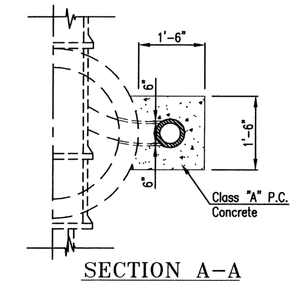
N.T.S.



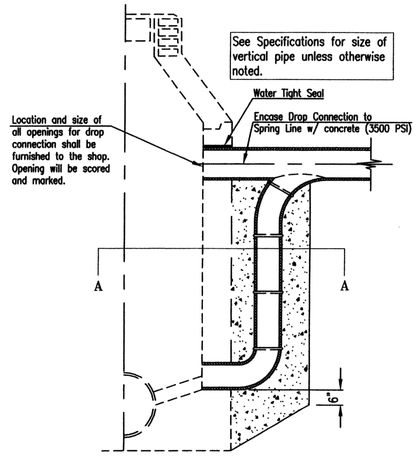
TYPICAL PERMANENT REPAIR FOR ASPHALTIC CONCRETE PAVING



TYPICAL PERMANENT REPAIR FOR P.C. CONCRETE PAVING



SECTION A–A



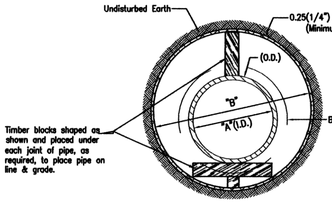
DROP MANHOLE CONNECTION

N.T.S.

GENERAL NOTES FOR PRECAST MANHOLES

1. All pre–cast components shall be reinforced per their respective ASTM specifications.
2. All joints shall have approved rubber rings.
3. All lifting holes shall be repaired with a mixture of cement and sand grout firmly packed.
4. The interior surfaces of manhole and cone sections shall be coated with two (2)coats of approved sealer.
5. The minimum compressive strength of the concrete in manhole and cone sections shall be 4000 PSI.
6. Cement used in the construction of pre–cast reinforced concrete manholes shall conform to the requirements of the standard specifications for portland cement (ASTM designation: C 150).
7. The minimum shell thickness for pre–cast concrete reinforced manholes shall be:
   At a depth of 0 to 16 feet (0 to 4.9m) — One–twelfth internal shell diameter or 4 inches (10cm), whichever is greater.
   At a depth greater than 16 feet (4.9m) — One–twelfth internal shell diameter or 5 inches (13cm), whichever is greater.
8. Any pre–cast reinforced concrete section which has been damaged in transit or on site such that the water tightness of the section has been affected adversely shall not be utilized in the construction of the manholes.
9. Materials for concrete used for manhole bases shall conform, as a minimum, to the following current specifications:
   Portland Cement — ASTM C 150
   Aggregate for Mortar — ASTM C 144
   Fine & Coarse Aggregate — ASTM C 33
   Water: Clean and free from deleterious substances. Total water content of concrete shall not exceed 6.5 gallons (54.2l) of water per 100 pounds (100kg) of cement in the mix.
10. The base shall be poured of a minimum 3500 PSI (20,684kn/sm) concrete with a maximum slump of 4 inches (10cm), vibrated or tamped. The base shall have a minimum diameter of 8 inches (20cm) greater than the outside diameter of the manhole. The base shall have a minimum of 8 inch (20cm) thickness beneath the manhole wall.
11. The invert flow channel shall be formed during or immediately after the pouring of the manhole base and brush finished as soon as the concrete has sufficiently set. The flow channel through manholes shall be made to conform to shape and in slope to that of the sewers. Sewer pipe, with the top half removed, shall be laid through the manhole whenever possible.
    The inside bottom of the manhole shall rise a minimum of 1 inch per foot (8.3 cm/m) from the side of the pipe or the flow channel to the wall of the manhole. Dips or projections capable of holding water or solid materials will not be permitted. The concrete shall set for 24 hours before any pipe inside the manhole is trimmed.
12. All sewer constructed of rigid or semi–rigid pipe extending from all manholes shall be encased with concrete for a distance of 3 feet (0.9m) from the outside wall of the manhole. This support may be deleted if a flexible, watertight gasket is used to connect the sewer to the manhole. No support is required for sewers constructed of flexible pipe.
13. The interior surface of all manhole walls shall receive two (2) coats of an approved sealer. A minimum 24 hours shall elapse between coats.
14. Manholes shall conform to the requirements of Oklahoma Department of Environmental Quality. The more restrictive requirement between The City of Moore and The ODEQ shall govern in cases where there are discrepancies.

RECORD DRAWINGS

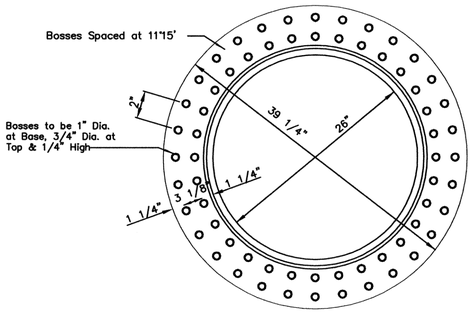


TYPICAL SECTION FOR BORING PUBLIC STREETS

The City of MOORE Oklahoma

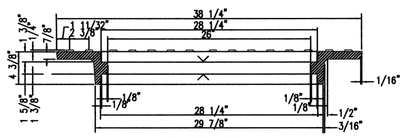
Precast Manhole
Sanitary Sewer
Standard Details
No. 302

Adopted: _____ Date: _____



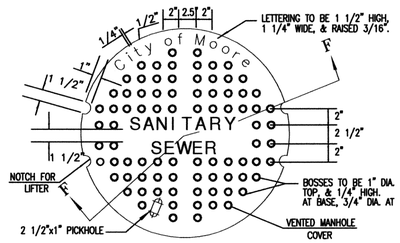
REVERSIBLE FRAME FOR TYPE "A" OR TYPE "B" INSTALLATION

N.T.S.

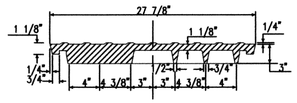


SECTION

As Shown for "Out of Paving" Installation Type "B"
Reversed for "In Paving" Installation Type "A"



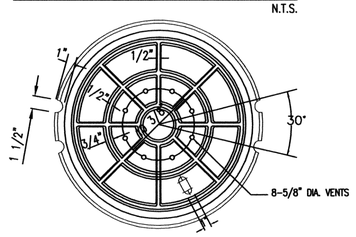
PLAN OF TOP



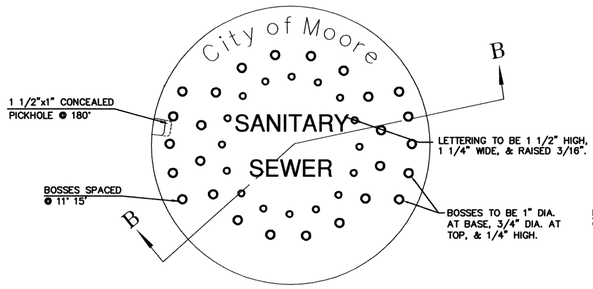
SECTION F–F

STANDARD COVER FOR TYPE "B" INSTALLATION

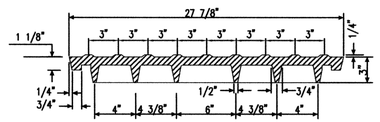
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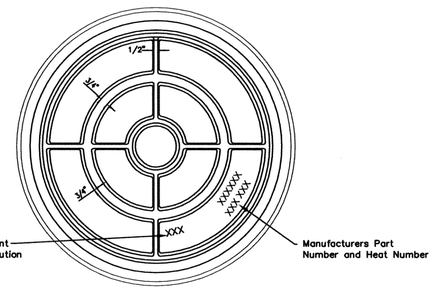
PLAN OF UNDERSIDE



PLAN OF TOP



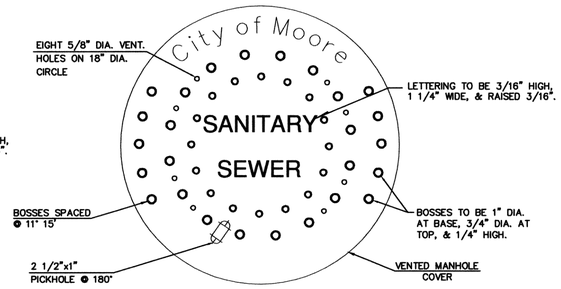
SECTION B–B



PLAN OF UNDERSIDE

STANDARD COVER FOR TYPE "A" INSTALLATION

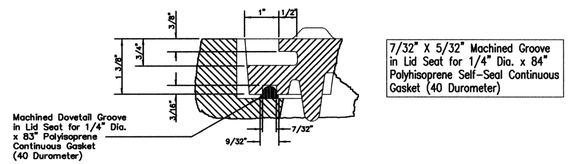
N.T.S.



PLAN OF TOP

OPTIONAL COVER FOR TYPE "B" INSTALLATION

N.T.S.



SELF–SEAL DETAIL FOR TYPE "A" INSTALLATION

N.T.S.

GENERAL NOTES

1. All construction and materials shall be in accordance with the current specifications.
2. Sharp edges resulting from fabrication shall be dulled by any acceptable method for safety in handling.
3. Covers shall be gray iron conforming to the requirements of AASHTO M–105, class 45B or ASTM A–48–76, Class 35B. Frame shall be gray iron conforming to the requirements of AASHTO M–105, Class 30B or ASTM 4–48–76, Class 30B Ferrous Castings shall be of uniform quality, free of blowholes, porosity, hard spots, shrinkage, distortion or other defects. They shall be smooth and well cleaned by shot blasting or other approved cleaning method.
4. All castings shall be manufactured true to pattern, component parts shall fit together in a satisfactory manner. Where indicated, machined surfaces shall be furnished.
5. Weights are approximate and average deviation from the weights shown shall not exceed 5% plus or minus.
6. Castings shall be unpainted.
7. No wording or markings of any kind, other than those shown on the plan will be permitted on these castings.
8. All Type "A" Installations shall have self–sealing feature as shown.

CASTING WEIGHTS

Reversible Frame ____ 235 lb. Standard
Type "B" Frame ____ 300 lb.
Covers for Reversible Frame ____ 195 lb.
Standard Type "B" Cover ____ 251 lb.

RECORD DRAWINGS

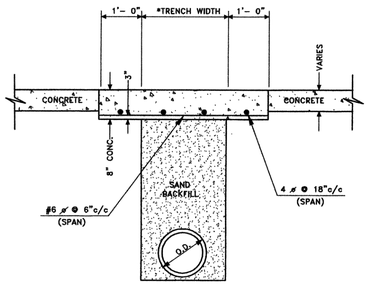
The City of MOORE Oklahoma

Manhole Ring and Cover
Sanitary Sewer
Standard Details
No. 303

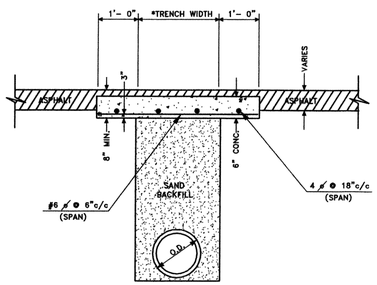
Adopted: _____ Date: _____

PAVING CUT AND PERMANENT REPAIR

(RIGID PAVEMENT)



(FLEXIBLE PAVEMENT)

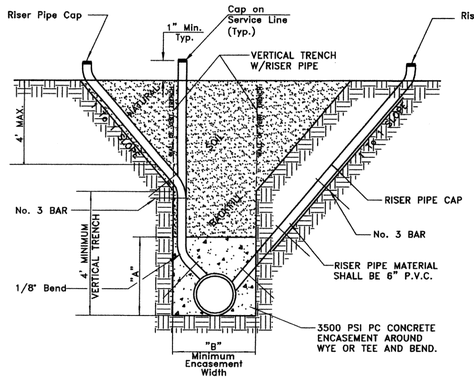


* FOR THE TRENCH WIDTH SEE THE MINIMUM/MAXIMUM TRENCH WIDTH TABLE

TYPICAL SECTION

NOTE: Crushed rock backfill may be required in lieu of the sand backfill.

SERVICE CONNECTION INSTALLATION



CONCRETE ENCASEMENT FOR RISER PIPE

PIPE SIZE (inches)	"A" (feet)	"B" (feet)	LENGTH OF ENCASEMENT (feet)
8	1.5	2.2	2.0
10	2.0	2.2	2.0
12	2.0	2.2	2.0
15	2.5	2.6	2.0
18	3.0	3.0	2.5

ADD 1.0' TO "B" WHEN USING BRACING OR SHORING

CONNECTION TYPES

1. EXTERNAL CONNECTIONS FOR NEW CONSTRUCTION

WYE BRANCHES – For new construction there shall be installed wye branches of size and type shown on the plans with six (6") inch openings at locations shown on the plans or as designated by the Engineer.

2. EXTERNAL CONNECTION TO EXISTING MAIN – Connections to existing main may be accomplished as follows:

a. SADDLES – Connections may be made by excavating to the existing main and cutting a hole using approved equipment and installing a saddle. Sewer service connections constructed with saddles shall include straps, a one–eighth (1/8") degree bend, and a closure piece. When existing main has been rehabilitated by trenchless method of construction, the saddle connection shall be made to the trenchless pipe and/or liner.

b. TEES – Connections may be made by removing a section of the existing pipe and installing a tee. Sewer service connections constructed with tees shall include a one–eighth (1/8") bend, and when required, an elbow and a closure piece.

c. WYE BRANCHES – Connections may be made by removing a section of existing pipe and installing a wye branch. Fittings, riser and closure assembly shall be used to make the connection and shall be supplied in a nominal diameter of six (6") inches. The external connections shall be considered complete when backfilling and subsequent surface restoration is complete. Service connections constructed with wye branches shall include a one–eighth (1/8") degree bend, elbow, and when required, a closure piece.

3. RISER

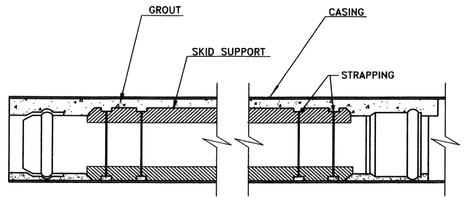
a. INSTALLATION – The riser pipe may be installed in one of the three ways shown above.

b. SIZE and MATERIAL – Riser pipe shall be six inch (6") or four inch (4") schedule 40 PVC as shown on the plans.

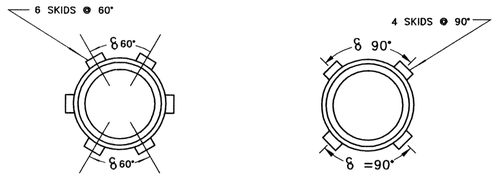
c. CONCRETE ENCASEMENT – Concrete encasement around riser shall meet the requirement established above.

4. LOCATOR TAPE – A locator tape, green in color and stating "CAUTION – SANITARY SEWER RISER PIPE BURIED BELOW" shall be attached to the sanitary sewer riser and extend to a minimum of two (2') feet above ground. The tape shall be three (3") inch width DuraTec as manufactured by THOR Enterprises, Inc. of Sun Prarie, Wisconsin or approved equal. This shall aid in locating any services that may be lost due to accidental removal of the riser pipe.

STANDARD DETAIL FOR BORING



PROFILE



SKID POSITION FOR PIPES GREATER THAN 12"

SKID POSITION FOR PIPES 12" AND SMALLER

SECTION

NOTES:

1. WOOD SKID SUPPORTS – Wood skid supports, from bell to spigot, shall be used and fastened securely to pipe with steel strapping, cables or clamps. Use of petroleum products shall not be allowed as a lubricant to ease installation. When wood skids are used, they shall be pressure treated with creosote pentachlorophenol, or salt type preservative in accordance with APWA C–2. Cut surfaces shall be given two (2) heavy brush coats of the same preservative.

2. PLUGGED PIPE ENDS – Both ends of the casing pipe shall be plugged with a grout or concrete having a minimum compressive strength of twenty five hundred (2500 psi) pounds per square inch or grouted masonry. Each plug shall be a minimum length of eighteen (18) inches. The grouting pressure shall be in accordance with the pipe manufacturers recommendations.

3. FILLING ANNULAR SPACE – The annular space between the sanitary sewer pipe and the steel casing shall be filled with a flowable fill consisting of a portland cement grout having a minimum twenty eight (28) day compressive strength of one–thousand (1,000psi) pounds per square inch. The Contractor shall install a vent pipe higher than the upper end of the pipe to ensure that the annulus is completely filled with grout.

4. CASING PIPE SIZE – Steel casing pipe shall have the following suggested minimum diameters:

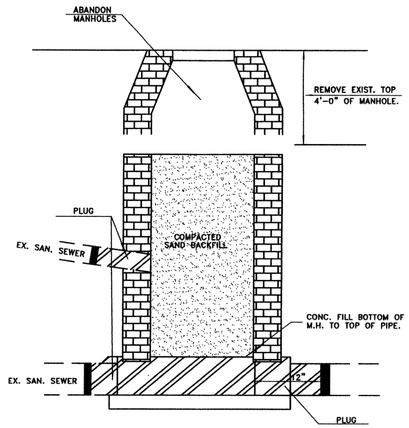
Pipe Nominal Size (inches)	Suggested Casing Pipe Inside Diameter (inches)
4	8 to 10
6	10 to 12
8	14 to 16
10	16 to 18
12	18 to 20
15	20 to 22
18	24 to 26
24	31 to 33
27	33 to 36
30	36 to 42
36	42 to 48
42	54 to 60
48	60 to 66

5. CASING PIPE THICKNESS – Steel casing pipe shall have the following minimum thickness(es), in inches, for the indicated maximum depth of cover(s), in feet:

OUTSIDE DIAMETER (inches)	UNDER HIGHWAY		UNDER RAILROAD	
	WALL THICKNESS (inches)	MAXIMUM COVER (feet)	WALL THICKNESS (inches)	MAXIMUM COVER (feet)
≤12 3/4	0.188	30	0.250	30
16	0.250	30	0.281	30
18	0.250	30	0.322	30
20	0.250	30	0.344	30
24	0.250	30	0.406	30
30	0.322	30	0.469	30
36	0.375	30	0.531	30
42	0.375	25	0.531	30
48	0.438	25	0.531	25
54	0.438	25	0.531	20
60	0.438	25	0.531	20
66	0.438	20	0.531	20

6. CASING MATERIAL – Steel casing pipe shall conform with ASTM A–139, Standard specification for Electric–Fusion (ARC)–Welded Steel Pipe (NPS4 and Over). The steel material shall be new, smooth wall, carbon steel, Grade B, with a minimum sixty sixty thousand (60,000 psi) pounds per square inch tensile strength, and minimum thirty five thousand (35,000 psi) pounds per square inch yield strength.

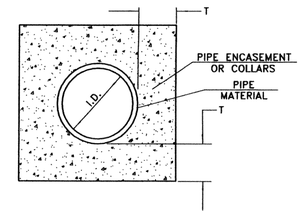
STANDARD DETAIL FOR ABANDONING MANHOLES



NOTE:
Salvaged materials, including ring and cover shall be delivered to the City.

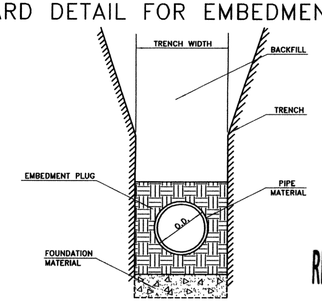
STANDARD DETAIL FOR PIPE ENCASEMENT AND COLLARS

Nominal Diameter (inches)	T (inches)
≤18"	6"
>18" & ≤30"	8"
>30" & ≤42"	10"
>42"	12"



NOTE: For collars, the concrete encasement shall be placed to a minimum of twelve (12") inches on either side of the joint.

STANDARD DETAIL FOR EMBEDMENT PLUGS



RECORD DRAWINGS

NOTES:

Two types of embedment plugs may be used, at the Contractors option, as follows:

1. CLAY PLUGS – The embedment and backfill material shall be select clay separated from excavated material and shall be approved by the Engineer prior to placement. This material shall be free of clods, clumps, debris, organic material and stones. All clay plug material shall be compacted to a minimum of ninety (90%) percent of Standard Proctor Density (ASTM D–698) at plus or minus (€) three (3%) percent of Optimum Moisture Content.

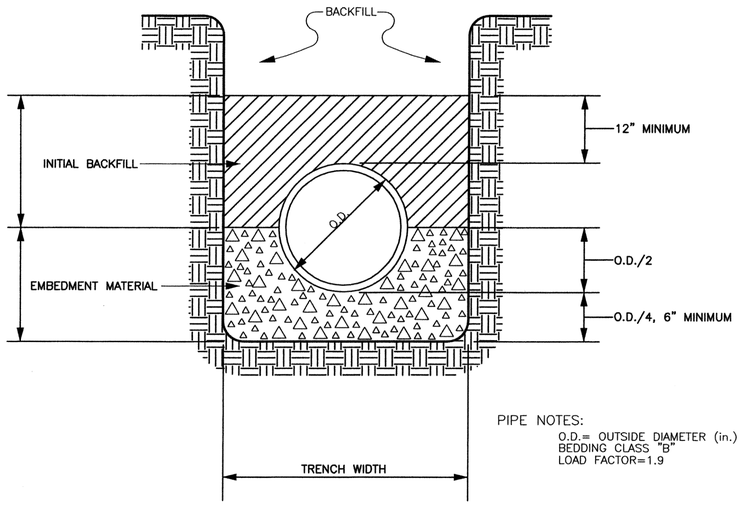
2. FLOWABLE FILL PLUGS – Flowable fill plugs shall consist of a Portland Cement grout having a minimum twenty–eight (28) day compressive strength of five hundred (500 psi) pounds per square inch.

The City of MOORE Oklahoma

Sanitary Sewer Standard Details No. 304

Adopted: _____ Date: _____

RIGID PIPE INSTALLATION
(DIP)



PIPE NOTES:
O.D.= OUTSIDE DIAMETER (in.)
BEDDING CLASS "B"
LOAD FACTOR=1.9

REINFORCED CONCRETE PIPE (RCP)
MINIMUM PIPE DESIGN

1. HIGHWAYS – Minimum pipe classes for diameter twenty four (24") inches to one hundred and two (102") inches meeting the requirements of ASTM C-76 shall be as follows:

Maximum Depth of Cover (feet)	Minimum Class
10	III
15	IV
25	V

For maximum depth of cover of thirty (30') feet, pipes ranging from twenty-four (24") inches to fifty four (54") inches in diameter shall be designed and manufactured in accordance with ASTM C-655 and shall have the following minimum three-edge bearing strength for 0.01 inch crack (D0.01) in pounds per lineal foot per foot of inside diameter.

Pipe Nominal Size (inches)	$D_{0.01}$ (lb/lineal foot per foot of inside diameter)
24	3200
27	3050
30	3050
33	3475
36	3475
42	3450
48	3300
54	3125

Pipes ranging in diameter from sixty (60") inches to one hundred and two (102") inches shall be Class V for a maximum depth of cover of thirty (30') feet when manufactured in accordance with ASTM C-76.

2. RAILROADS – Minimum pipe classes for E-80 Railroad live load for pipe size twenty four (24") to one hundred and two (102") inches in diameter meeting the requirements of ASTM C-76, or ASTM C-655 shall be as follows:

a. MAXIMUM DEPTH OF COVER FIFTEEN (10') FEET – Diameters twenty four (24") inches to one hundred and two (102") inches shall be Class IV.

b. MAXIMUM DEPTH OF COVER FIFTEEN (15') FEET – Diameters twenty four (24") inches to forty two (42") inches shall be Class V and diameters forty eight (48") inches to one hundred and two (102") inches shall be Class IV.

c. MAXIMUM DEPTH OF COVER TWENTY (20') FEET – Diameters twenty four (24") inches to one hundred and two (102") inches shall be Class V.

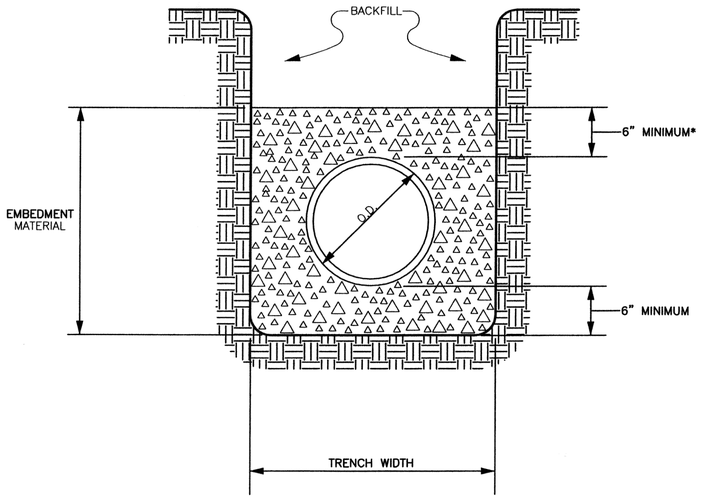
d. MAXIMUM DEPTH OF COVER TWENTY FIVE (25') FEET– Diameters twenty four (24") inches shall have D0.01 of thirty one hundred (3,100 lb/l.f.) pound/lineal foot per foot of inside diameter. Diameters twenty seven (27") inches to one hundred two (102") inches shall be Class V.

e. MAXIMUM DEPTH OF COVER THIRTY (30') FEET– Diameters twenty four (24") inches to sixty (60") inches shall have the following D0.01.

Pipe Nominal Size (inches)	$D_{0.01}$ (lb/lineal foot per foot of inside diameter)
24	3300
27	3125
30	3150
33	3575
36	3575
42	3550
48	3400
54	3225
60	3100

Diameters sixty six (66") inches to one hundred and two (102") inches shall be Class V.

FLEXIBLE PIPE INSTALLATION
(HDPE, PVC, RFP)



EMBEDMENT MATERIAL

Embedment is that material to be placed from a minimum of six (6") inches below bottom of the pipe to the springline (half pipe diameter) or to a minimum of six (6") inches above top of pipe for rigid and flexible pipes, respectively. The remaining material to be placed over the embedment is considered backfill.

MATERIAL MINIMUM REQUIREMENTS

1. GENERAL – Embedment material for all rigid and flexible pipes shall be crushed rock meeting the requirements either of ASTM D-2321, Class 1A, or ASTM C-33, No. 57 or 67 and gradations shown below:

Nominal Sieve Size	Percent Passing		
	ASTM D-2321	ASTM C-33	
	Class 1A	No. 57	No. 67
1 1/2 inch	100%	100%	·····
1 inch	·····	95 to 100%	100%
3/4 inch	·····	·····	90 to 100%
1/2 inch	·····	25 to 60%	·····
3/8 inch	·····	·····	20 to 55%
No. 4	≤ 10%	0 to 10%	0 to 10%
No. 8	·····	0 to 5%	0 to 5%
No. 200	< 5%	·····	·····

2. COMPACTION REQUIREMENTS – All embedment material shall be placed and compacted in six (6") inch lifts to the following minimum percent of Standard Proctor Density as determined by ASTM D-698, "Tests for Moisture-Density Relations of Soil-Aggregate Mixtures", and ASTM D-2049, "Test for Related Density of Cohesionless Soils", respectively.

Compaction Test	Compaction Requirement
Standard Proctor Density	95%
Relative Density	75%

3. COMPACTION METHODS – All embedment material shall be compacted in accordance with the methods described in Part "3" of "Backfilling".

TRENCH WIDTH TABLE

Pipe Nominal Size (inches)	Minimum Trench Width (feet)	Maximum Trench Width (feet)
≤12	3.00	5.00
15	3.25	5.00
18	3.50	5.00
21	3.75	5.25
24	4.00	6.00
27	4.25	6.25
30	4.50	6.75
33	4.75	8.25
36	5.25	9.00
42	6.25	9.50
48	7.00	11.00
54	8.00	11.50
60	9.00	12.00
66	9.75	13.00
72	10.50	13.00
78	10.50	13.50
84	11.00	14.00
90	11.50	14.50
96	12.00	15.00
102	12.50	15.50

BACKFILLING

1. DESCRIPTION – Backfill is that portion of the total trench backfill down to but not including the pipe embedment material. The backfill shall be only material approved by the Engineer consisting of loose earth, free of clods, stones, organic matter, debris or other objectionable materials.

All backfilling shall be done in such a manner as not to disturb or injure the pipe or structures over or against which it is being placed. Any pipe or structure injured, damaged or moved from its proper proper line or grade during backfilling operations shall be opened up and repaired and then rebackfilled as herein specified.

The placing of backfill material shall not begin until approval for so doing has been given by the Engineer, but backfilling about structures or portions of structures shall be done immediately when so ordered by the Engineer. The top surface or slopes of all backfill shall be neatly graded off where select top soil, sod or other material is removed and piled separately. Such material shall be carefully placed in a manner satisfactory to the Engineer. The top twelve (12") inches of backfill material shall be of as good quality as the original top soil which was removed.

2. COMPACTION REQUIREMENTS – All backfill shall be placed and compacted in six (6") inch lifts for hand-tamped equipment and thirty (30") inch lifts of self-propelled or power driven equipment to the following minimum percent of Standard Proctor Density or Related Density as determined by ASTM D-698, "Tests for Moisture-Density Relations of Soils and Soil Aggregate Mixtures", and ASTM D-2049, "Test for Relative Density of Cohesionless Soils", respectively. ASTM Test D-2049 shall be preformed on cohesionless (Granular) soils.

Cohesive backfill material shall reach the indicated compaction levels at plus or minus (+) or (-) three (3%) percent of optimum moisture content. The lift thickness shall be reduced, if necessary, to meet the compaction requirements specified herein.

General Location	Percent Compaction (%)	
	Standard Proctor Density (ASTM D-698)	Relative Density Test (ASTM D-2049)
Under Traffic Area or Improved Existing Surfaces	95	75
Urban & Residential Areas	90	70
Undeveloped & other Areas	85	70

RECORD DRAWINGS

3. COMPACTION METHODS – Compaction methods may vary depending on the material or as approved by the Engineer.

a. COHESIVE MATERIALS – Compaction of cohesive materials may be obtained by use of impact type equipment. In confined areas, pneumatic tampers and engine driven rammers may also be used. In relatively narrow trenches, self-propelled rammers may be used. In wide trenches, sheepsfoot rollers may be used.

b. COHESIONLESS MATERIALS – Cohesionless materials are granular materials classified as non-plastic. In general, vibratory equipment may be used for proper compaction. In confined areas, vibratory plates may be used. For wider trenches, vibratory rollers may be used.

c. FLOODING (JETTING) – When approved by the Engineer, materials may also be compacted or settled by flooding where adequate quantities of water are available from th City's water system, privately owned ponds, creeks or other sources located within three hundred (300') feet of the trench. Water shall be used to produce a semi-fluid mass along and out of the trench at stream crossings or other places of abrupt changes in ground profile. The Contractor shall make necessary arrangements with the City for purchase of water from the City mains, and with owners of water procured from privately owned sources. No additional compensation shall be allowed the Contractor for settling the backfill by flooding. The cost of such work shall be absorbed in the unit bid price for trench excavation and backfill or other pay units the Contractor may elect.

4. TESTING OF BACKFILL – All backfill shall be tested by an approved laboratory for compliance of the compaction requirements.

5. SURFACE RESTORATION – Upon completion of backfill, the Contractor shall replace all surface materials and shall restore paving, curbing, sidewalks, gutters, shrubbery, fences, sod and other surfaces disturbed to a condition equal to that before the work begon.

The City of MOORE Oklahoma

Sanitary Sewer Standard Details No. 305

Adopted: _____ Date: _____

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SHEET INDEX

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RECORD DRAWINGS

OKLAHOMA PROFESSIONAL ENGINEER — DASHVSATHY — 6-28-14

REVISIONS:	DATE:
C#10 – CLARIFICATION NO.10	3/22/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	5/10/10	NO SCALE	1 OF 89

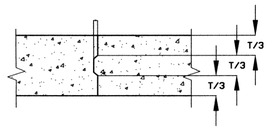
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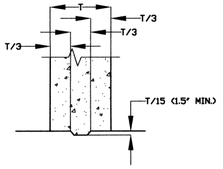
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

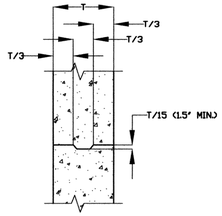
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SLABS

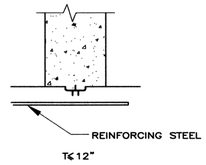


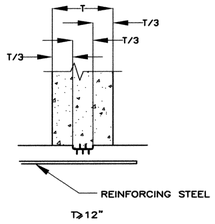
BASE OF WALLS



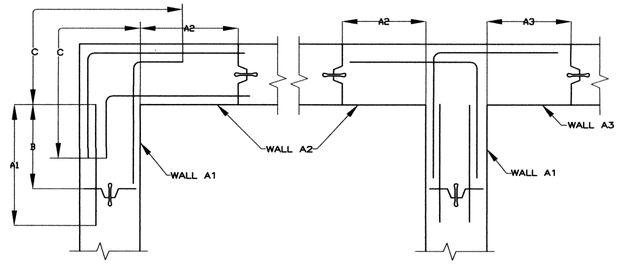
WALLS

JOINTS WITHOUTS WATERSTOPS





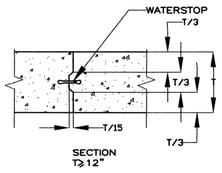
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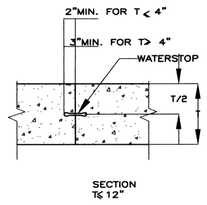


ADDITIONAL REINFORCEMENT FOR LIQUID CONTAINMENT STRUCTURES

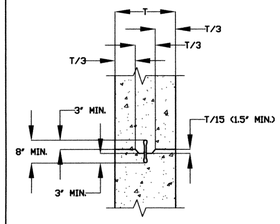
ADDTIONAL REINFORCEMENT SHALL BE SAME SIZE AND SPACING AND SPACED ALTERNATELY WITH MAIN REINFORCEMENT.

ADDITIONAL REINFORCEMENT REQUIRED ONLY IN LIQUID BEARING INCLUDING GROUND WATER FACE OR FACES.

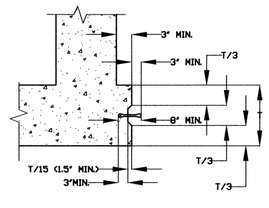




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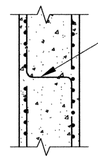


WALLS



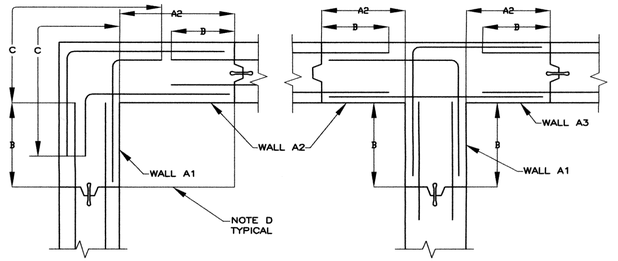
CORNERS

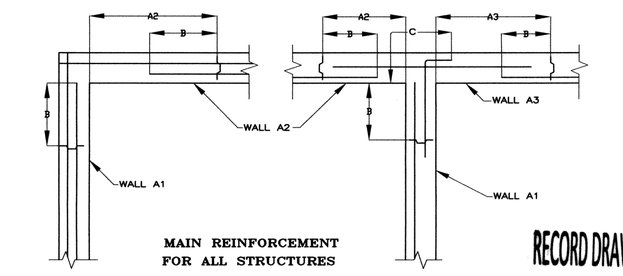
JOINTS WITH WATERSTOPS



Z-BAR SPACERS AT 8" CENTERS EACH DIRECTION. MINIMUM ONE ROW. FABRICATED FROM #2 OR HEAVIER BARS. TIE TO OUTSIDE LAYER OF REINFORCING.

SPACERS FOR WALL REINFORCEMENTS

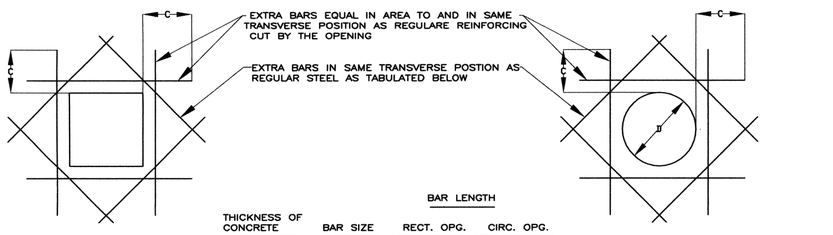




MAIN REINFORCEMENT FOR ALL STRUCTURES

RECORD DRAWINGS

NOTE: EXPOSED EDGES OF CONCRETE SHALL HAVE 3/4" CHAMFER



THICKNESS OF CONCRETE	BAR SIZE	BAR LENGTH RECT. OPG.	BAR LENGTH CIRC. OPG.
< 12"	4	3'	D+6"
12" TO 18"	5	3'	D+6"
> 18"	6	3'-8"	D+6"

FOR RECTANGULAR OPENINGS LARGER THAN 21" DIAGONAL

FOR CIRCULAR OPENINGS LARGER THAN 21" DIAGONAL

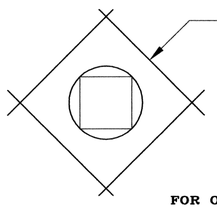
TYPICAL EXTRA REINFORCEMENT AT OPEININGS

TOLERANCES FOR CONCRETE COVER AND THE PLACING OF REINFORCEMENT SHALL CONFORM TO SECTION 7.5 OF ACI 318. TOLERANCES FOR THE FABRICATION OF REINFORCEMENT SHALL CONFORM TO SECTION 43 OF AC 315.

TOP BARS AND HORIZONTAL BARS ARE SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. HORIZONTAL BARS IN WALLS ARE TO BE PROVIDED WITH LAPS AS REQUIRED FOR TOP BARS.

STRAIGHT BARS SPACED LESS THAN 6 INCHES ON CENTERS SHALL HAVE A DEVELOPMENT LENGTH OF 125 TIMES THE LENGTH SHOWN. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS, DEVELOPMENT LENGTHS FOR END ANCHORAGE AND LAPPED SPLICES SHALL BE NOT LESS THAN (NO MINUS TOLERANCE) SHOWN IN THE TABLE.

LAPPED SPLICES SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS ARE STAGGERED SO THAT NO MORE THAN 1/2 ARE SPLICED IN A LAP SPLICE LENGTH. THE SPLICE LENGTH CAN BE REDUCED TO 75% OF THE LENGTHS TABULATED IN THE TABLES SHOWN ALONGSIDE.



FOR OPENINGS 21" AND SMALLER IN DIAMETER OR DIAGONAL

ADDITIONAL REINFORCEMENT REQUIRED ONLY IN LIQUID BEARING INCLUDING GROUND WATER FACE OR FACES.

ADDITIONAL REINFORCEMENT SHALL BE SAME SIZE AND SPACING AND SPACED ALTERNATIVELY WITH THE MAIN REINFORCEMENT.

AX = 0.20 THE CLEAR SPAN DISTANCE MEASURED HORIZONTALLY OR 0.40 THE CLEAR SPAN OR CANTILEVER DISTANCE MEASURED VERTICALLY WHICHEVER IS SMALLER BUT NOT LESS THAN 2B

AX BAR LENGHTH IS TO BE DETERMINED FROM WALL HAVING THE SAME SUFFIX

B = NOT LESS THAN THE LENGTH REQUIRED FOR LAPPED SPLICES FOR TOP BARS AS SHOWN ON THIS SHEET

C = LENGTH REQUIRED FOR DEVELOPMENT OF TOP BARS AS SHOWN ON THIS SHEET BUT TERMINATING IN NOT LESS THAN A STANDARD HOOK.

D = CONSTRUCTION JOINTS SHALL NOT BE LOCATED CLOSER TO CORNERS THAN THE DIMENSIONS INDICATED.

SPLICE AND DEVELOPMENT LENGTHS

BAR SIZE	LENGTH OF LAPPED SPLICES FOR REINF. (INCHES)		LENGTH OF DEVELOPMENT FOR END ANCHORAGE OF REINFORCEMENT (INCHES)		
	TOP BARS	OTHERS	TOP BARS	OTHERS	HOOKED BARS
3	20	20	12	12	6
4	22	20	14	12	8
5	29	20	17	12	10
6	37	26	22	15	12
7	50	36	29	21	14
8	66	47	39	28	16
9	83	60	49	35	18
10	106	76	62	45	20
11	130	93	77	55	22
14	---	---	104	74	38
18	---	---	135	96	50

CONCRETE COVER FOR REINFORCEMENT

LOCATION	MINIMUM COVER
UNIFORM SURFACES ADJACENT TO EXCAVATION	3"
FORMED OR TOP SURFACES EXPOSED TO WEATHER OR SATURATED AIR, SUBMERGED OR IN CONTACT WITH EARTH	
#6 OR LARGER BARS	2"
#5 OR LARGER BARS	1.5"
OTHER LOCATIONS	
BARS IN BEAMS OR GIRDERS INCLUDING STIRRUPS AND COLUMN SPIRALS OR TIES	1.5"
SLABS, WALL AND JOISTS	
#14 AND #18	1.5"
#11 AND SMALLER	0.75"



4/20/10

S-961

REVISIONS:	DATE:

STRUCTURAL STANDARDS

EAGLE OFFICE CENTER
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EDMOND, OK. 73013
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EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	1/22/10	NO SCALE	2 OF 89

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GENERAL STRUCTURAL NOTES:

GENERAL

1. ALL STEEL FRAMING IS NON—SELF SUPPORTING AND REQUIRES INTERACTION WITH OTHER ELEMENTS NOT CLASSIFIED AS STRUCTURAL STEEL TO PROVIDE THE FREQUIRED STABILITY AND RESISTANCE TO LATERAL FORCES.
2. THE SIZE AND LOCATION OF ALL EQUIPMENT PADS AND PENETRATIONS THROUGH THE STRUCTURE SHALL BE VERIFIED BY THE MECHANICAL ELECTRICAL AND PLUMBING CONTRACTORS. ALL PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
3. GRADE BEAMS SHALL BE 2'—0" MINIMUM BELOW FINISH GRADE. CONTRACTOR SHALL ADJUST THE DEPTH OF GRADE BEAM WITH THE APPROVAL OF THE ENGINEER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BRACING TO WITHSTAND ALL LOADS TO WHICH STRUCTURES MAY BE SUBJECTED INCLUDING LATERAL LOADS AND STOCKPILES OF MATERIAL AND EQUIPMENT.
5. CONTRACTOR SHALL FURNISH FABRICATION AND INSTALLATION DETAILS FOR GRATING, HANDRAIL, STEEL STAIRS AND INSTALLATION DETAILS FOR OTHER MISCELLANEOUS METALS.

1. DESIGN CRITERIA

A. BUILDING CODE: INTERNATIONAL BUILDING CODE, 2006 EDITION, INCLUDING LOCAL SUPPLEMENTS.

B. GRAVITY CRITERIA

LOCATION	UNIFORM LIVE LOAD	CONCENTRATED LIVE LOAD	UNIFORM DEAD LOAD
STAIRS	100 PSF	300 LB.	15 PSF
FLOOR SLAB	150 PSF	2000 LB.	----------
ROOF	20 PSF	----------	20 PSF

LIVE LOAD REDUCTION ON SUPPORTING ELEMENTS SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2006 EDITION. NO LIVE LOAD REDUCTION OF ROOF LOADING IS PERMITTED. UNIFORM LIVE LOAD IS ADDITIVE TO ACTUAL STRUCTURAL WEIGHTS.

C. LATERAL LOADS:

1. BASIC WIND SPEED SHALL BE 90 MPH, EXPOSURE C.
2. SEISMIC LOAD SHALL BE BASED ON:
   A=0.15 R=3.6
   CS =0.071 S=1.0 T=0.224

2. SOIL PREPARATION AND FOUNDATIONS

A. REMOVE 8" OF TOP SOILS CONTAINING ORGANIC MATERIAL FROM THE BUILDING PAD.

B. SOIL SUPPORTED FOUNDATIONS:

DESIGN BEARING PRESSURE (NET) IS 2500 PSF FOR FOUNDATIONS BEARING ON UNDISTURBED SOIL OR APPROVED ENGINEERED FILL MATERIAL. BEARING MATERIALS SHALL BE VERIFIED BY A LICENSED SOILS ENGINEER.

C. DO NOT BACKFILL FOUNDATION WALLS UNTIL THE RESTRAINING SLABS OR ADEQUATE BRACING ARE IN PLACE. ALL BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS.

D. EXTERIOR SLABS SHALL SLOPE AWAY FROM THE STRUCTURE A MINIMUM OF 1/4" PER FOOT UNLESS OTHERWISE NOTED.

E. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GEOTECHICAL REPORT PREPARED FOR THIS PROJECT BY TERRACON. A COPY OF THE REPORT IS AVAILABLE FOR INSPECTION.

OTHER APPLICABLE CODES

BUILDING CODE:	INTERNATIONAL	2006 EDITION
MECHANICAL CODE:	INTERNATIONAL	2006 EDITION
PLUMBING CODE:	INTERNATIONAL	2006 EDITION
ELECTRICAL CODE:	NATIONAL	2005 EDITION

3. CAST-IN-PLACE CONCRETE

A. ALL SRUCTURAL CONCRETE HAS BEEN DESIGNED IN ACCORDANACE WITH ACI 318-95 AND THE BUILDING CODE.

B. THE CONCRETE REQUIREMENTS ARE:

1. CEMENT SHALL BE TYPE 1
2. AGGREGATES AN SAND SHALL CONFORM TO ASTM C33.
3. CONCRETE CLEAR COVER OVER REINFORCING SHALL BE IN ACCORDANCE WITH ACI 318-95, LISTED BELOW, UNLESS OTHERWISE NOTED. NO WELDING OR TACK WELDING OF REIFORCING BARS WILL BE PERMITTED.

LOCATION	CLEAR COVER INCHES
CAST AGAINST EARTH	3
EXPOSED TO EARTH, WATER OR WEATHER #6 AND LARGER	2
EXPOSED TO EARTH, WATER OR WEATHER #5 AND SMALLER	1-1/2
BEAMS AND COLUMNS NOT EXPOSED TO WATER OR WEATHER	1-1/2

4. PROVIDE #3 BARS @ 12" OC EACH WAY FOR ALL EXTERIOR CONCRETE SLABS ON GRADE UNLESS NOTED OTHERWISE. PLACE FABRIC 1-1/2 INCHES BELOW TOP OF SLAB. LAP SPLICE OVERLAP LENGTH TO BE 8 INCHES AND SHALL BE MEASURED BETWEEN THE OUTERMOST CROSS WIRES OF EACH FABRIC SHEET.
5. CONTROL/CONTRACTION JOINTS SHALL BE LOCATED AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER. IN ANY CASE JOINTS SHALL NOT BE PLACED MORE THAN 30 FT APART.
6. MINIMUM COMPRESSIVE STRENGTH (F'c) AT THE END OF 28 DAYS SHALL BE 4000 PSI.
7. REINFORCING STEEL SHALL MEET ASTM STANDARD SPECIFICATION A-165, LATEST REVISION. ALL BARS SHALL BE GRADE 60. WELDED WIRE FABRIC SHALL MEET ASTM SPECIFICTION A-185.
8. REINFORCING BARS SHALL BE SPLICED A MINIMUM OF 48 DIAMETERS UNLESS OTHERWISE NOTED.
9. PROVIDE CORNER BARS IN ALL GRADE BEAM, STEM WALLS, RETAINING WALLS OF EQUAL BAR SIZE AND SPACING AS HORIZONAL BARS IN GRADE BEAMS AND WALLS.
10. SHOP DRAWINGS SHALL BE SUBMITTED WITH REINFORCING STEEL DETAILED IN ACCORDANCE WITH ACI 315-88.

C. FORMING AND EMBEDMENTS SHALL MEET THE FOLLOWING:

1. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾" INSIDE FORMS OR TOOLED TO ¾" RAD. ON SLABS UNLESS OTHERWISE NOTED.
2. ALL JOINTS SHALL BE THOROUGHLY CLEANED AND PURPOSELY ROUGHENED TO ¼" PRIOR TO PLACING ADJACENT CONCRETE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL FORMING, TEMPORARY BRACING AND SHORING. (SEE SPECIFICATIONS)
4. NO ALUMINUM SHALL BE EMBEDDED IN CONCRETE. CONDUITS AND PIPING EMBEDDED IN CONCRETE SHALL BE SPACED A MINIMUM OF FOUR DIAMETERS AND THE OUTSIDE DIAMETER SHALL BE LESS THAN 30% OF THE MEMBER THICKNESS PLACED BETWEEN LAYERS OF REINFORCING. NO CONDUITS OR PIPING MAY BE EMBEDDED IN SLAB, WALLS, OR BEAMS IN FLUID RETAINING STRUCTURES.

4. STRUCTURAL STEEL

A. STRUCTURAL STEE SHALL MEET THE FOLLOWING MINIMUM YIELD STRNGTHS AND SPECIFICATIONS.

1.	STEEL SHAPES, BARS AND PLATES	36KSI	A-36 OR A-992
2.	STRUCTURAL STEEL TUBING	46 KSI	A-500, GRADE B
3.	STRUCTURAL STEEL PIPE	46KSI	A-501
4.	ANCHOR BOLTS	36 KSI	A-36
5.	HEADED STUD ANCHORS	50 KSI	A-100

GRADE DESIGNATIONS 1010 TO 1020 INCLUSIVE.

B. ALL BOLTED STEEL BEAM AND COLUMN CONNECTIONS SHALL BE ERECTED WITH ASTM. A325 HIGH STRENGTH BOLTS.

C. ALL WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE, LATEST REVISIONS. ELECTRODES SHALL BE E70 SERIES.

D. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ADEQUACY OF ALL CONNECTIONS THAT ARE NOT DESIGNED OR FULLY DETAILED ON THE PLANS. BEAM CONNECTIONS SHALL BE DESIGNED TO SUPPORT A REACTION "R" EQUAL TO ONE HALF THE TOTAL ALLOWABLE UNIFORM LOAD CAPACITY FOR A GIVEN SHAPE.

E. PROVIDE DOUBLE NUTS AND WASHER FOR ALL STEEL COLUMN ANCHOR BOLTS TO ALLOW FOR ADJUSTMENT IN BASE PLATE ELEVATION. PROVIDE MIN. 1 1/2" NON SHRINK GROUT UNDER PLATE AFTER ERECTION. NON SHRINK GROUT WHERE INDICATED ON PLANS SHALL BE NON-METALLIC WITH MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS.

F. FOR 18 GA. AND LIGHTER FRAMING, CONNECTIONS SHALL BE MADE USING SELF-DRILLING, SELF-TAPPING SCREWS. FOR 16 GA. AND HEAVIER FRAMING, CONNECTIONS SHALL BE MADE BY WELDING BY BOLTING OR BY SELF-DRILLING, SELF-TAPPING SCREWS AS CALLED FOR ON PLANS OR AS APPROPRIATE. ALL CONNECTIONS NOT DETAILED OR OTHERWISE NOTED SHALL BE DESIGNED BY THE FABRICATOR. SHOP DRAWINGS AND CONNECTION CALCULATIONS SHALL BE SUBMITTED BEARING THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF OKLAHOMA.

5. CONCRETE PADS

A. CONCRETE PADS FOR MECHANICAL AND ELECTRICAL EQUIPMENT ON FLOORS SHALL BE 3 1/2" HIGH UNLESS OTHERWISE NOTED AND REINFORCED WITH #3 BARS ON 12" CENTERS EACH WAY, 1-1/2" FROM TOP OF SLAB. PADS OF GREATER' THICKNESS ARE DETAILED ELSEWHERE. CONCRETE PADS FOR MECHANICAL/ELECTRICAL EQUIPMENT SHALL BE CAST MONOLITHICALLY WITH THE FLOOR OR FOUNDATION SLAB UPON WHICH THEY REST.

B. CONTRACTOR SHALL SUPPLY ALL ITEMS FOR ATTACHING MECHANICAL AND ELECTRICAL EQUIPMENT TO THE BUILDING STRUCTURE TO RESIST ALL LOADS INCLUDING SEISMIC FORCES. ATTACHMENT SHALL BE MADE SO AS NOT TO OVER STRESS STRUCTURAL MEMBERS. COORDINATE THE ATTACHMENTS AND LOCATIONS OF THE EQUIPMENT WITH THE STRUCTURAL SHOP DRAWINGS. REFER TO THE MECHANICAL AND ELECTRICAL DRAWINGS FOR MECHANICAL REQUIREMENTS.

THE CONTRACTOR SHALL PROVIDE:

1. VERIFICATION AND COORDINATION OF ALL DIMENSIONS, ELEVATION, OPENING SIZES, AND MECHANICAL EQUIPMENT WEIGHTS PRIOR TO . FABRICATING OR INSTALLING ANY STRUCTURAL WORK. ALERT THE ENGINEER OF ANY CONFLICTS PRIOR TO MODIFYING ANY STRUCTURAL ELEMENT. SUBMIT DETAILED LAYOUT DRAWINGS, BOTH PLAN AND SECTIONS TO CLEARLY SHOW PLACEMENT OF ALL ITEMS.
2. REVIEW AND APPROVE ALL SHOP DRAWINGS PRIOR TO SUBMITTALNOTING CHANGES MADE WHICH DO NOT COMPLY WITH DESIGN DRAWINGS. NOTE ON ALL SHOP DRAWINGS CONFLICTS BETWEEN PIPING, CONDUITS AND OTHER EQUIPMENT WITH STRUCTURAL ITEMS.
3. PROVIDE TEMPORARY BRACING AND SHORING TO PREVENT EXCESSIVE DEFLECTIONS AND DAMAGE DURING CONSTRUCTION

6. CONCRETE MASONRY UNIT (CMU) WALLS

A. CMU SHALL BE HOLLOW LOAD-BEARING MASONRY UNIT MEETING ASTM C90, GRADE N, TYPE I MOISTURE CONTROLLED UNITS. COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS SHALL BE 2000 PSI MINIMUM (SPECIAL INSPECTION REQUIRED).

B. MOTAR SHALL BE TYPE S AND COMPRESSIVE STRENGTH OF MASONRY f'm SHALL BE 2000 PSI.

C. CELLS WHICH CONTAIN REINFORCING, AND CELL BELOW GRADE SHALL BE FILLED SOLIDLY WITH 2500 PSI CONCRETE OR GROUT, INCLUDING BOND BEAMS AND LINTELS.

D. VERTICAL CELLS TO BE FILLED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR UNOBSTRUCTED CONTINUOUS VERTICAL CELL NOT LESS THAN 2" X 3" IN PLAN DIMENSION.

E. HORIZONTAL AND VERTICAL REINFORCMENT SHALL BE PROVIDED AS SHOWN ON THE PLANS.

F. PROVIDE TWO (2) #5 BARS IN FILLED CELLS WITH MATCHING FOUNDATION DOWELS:

1. ON EAACH SIDE OF CONTROL JOINTS
2. AT INTERSECTION OF INTERIOR AND EXTERIOR WALLS.
3. AT ALL WALL ENDS
4. ON EITHER SIDE OF DOORS AND EACH HORIZONTAL AND VERTICAL SIDE OF ALL OPENINGS.

G. BOND BEAM REINFORCING STEEL FOR INTERIOR AND EXTERIOR WALLS SHALL BE CONTINOUS TROUGHOUT EXCEPT AT CONTROL JOINT. REINFORCEMENT IN BOND BEAMS AT FLOOR AND ROOF LEVELS SHALL BE CONTINUOUS.

H. BARS SHALL BE PROVIDED AROUND PERIMETER OF ALL OPENINGS.

RECORD DRAWINGS

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUNJAL OKLAHOMA

4/30/10

S-962

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/21/10	AS SHOWN	3 OF 89

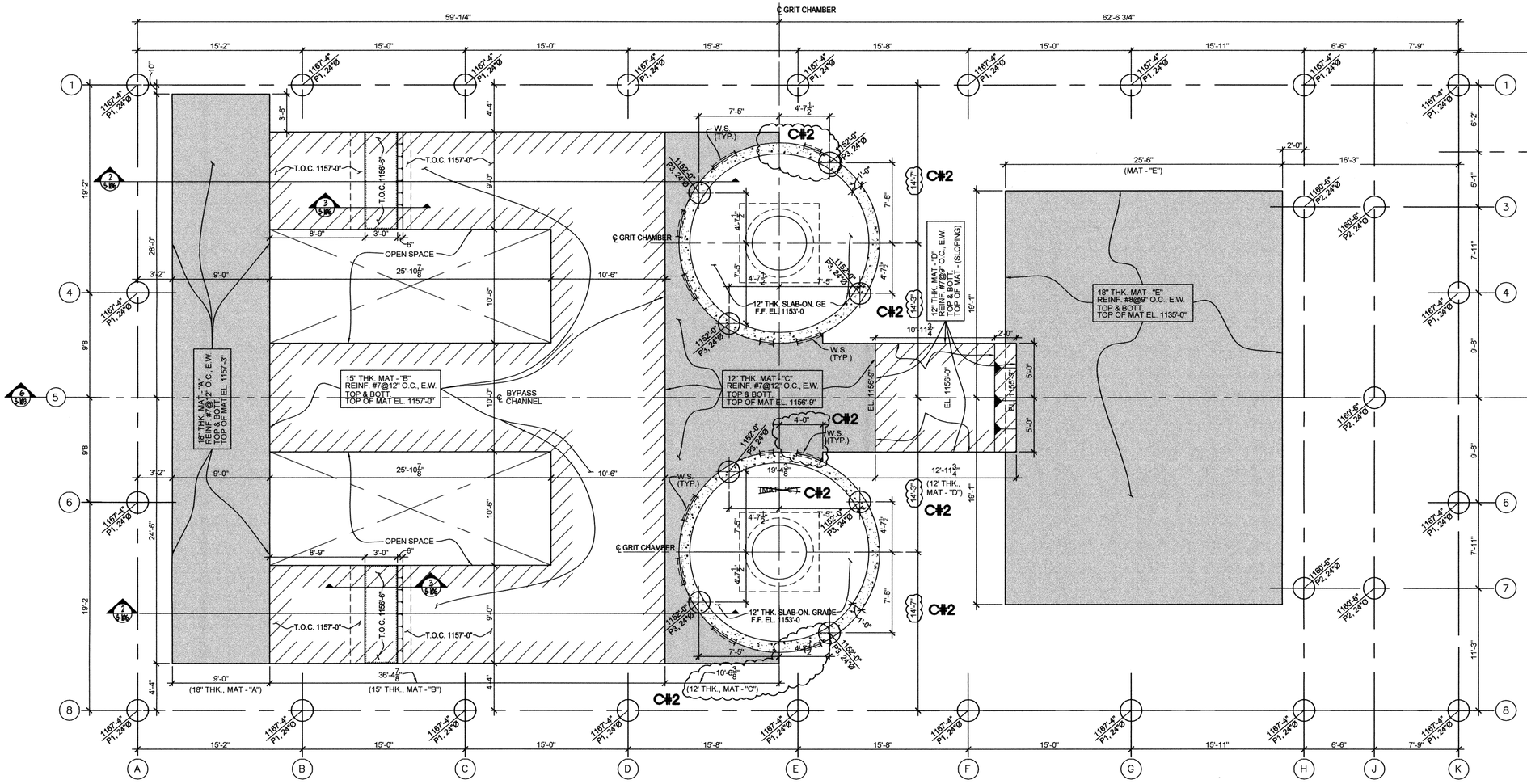
STANDARD STRUCTURAL NOTES

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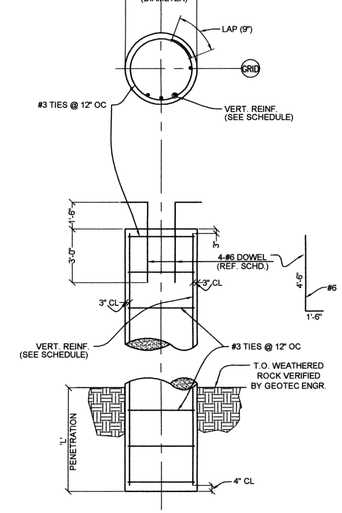
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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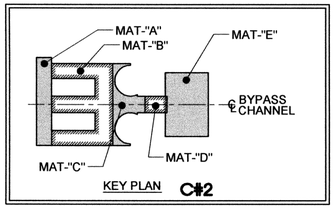


(SCALE: 3/16" = 1'-0")

FOUNDATION PLAN - (DRILLED PIERS & FOUND. MATS)



1 S-100 — DETAIL (DRILLED PIER) (NO SCALE)

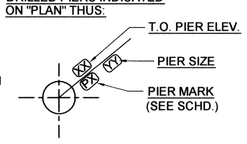


NOTES:

1. 6" LAYER OF CRUSHED ROCK TO BE PROVIDED WHERE BOTTOM OF EXCAVATION NOT FOUNDED ON BED ROCK.
2. MAT REINF. AND DOWEL RODS ARE NOT SHOWN IN THIS DWG. FOR CLARITY ONLY.
3. REFER DET. 1, DWG. S-8 FOR "TYPICAL PIER DETAIL."

LEGEND:

DRILLED PIERS INDICATED ON "PLAN" THUS:



REFERENCE:
TYPICAL DRILLED PIER - DET. 1/S-100

DRILLED PIER SCHEDULE

MARK	SIZE (DIA.)	PENETRATION	REINFORCEMENT		T.O. PIER	NO. REQ'D
			VERT.	DOWEL		
P-1	24"Ø	2'-0"	6-#6	4-#6	EL. 1167-4"	24
P-2	24"Ø	2'-0"	6-#6	4-#6	EL. 1160-6"	5
P-3	24"Ø	2'-0"	6-#6	4-#6	EL. 1152-0"	8

REGISTERED PROFESSIONAL ENGINEER — SATISH DASHARATHY — 11456 — 10-13-10 — OKLAHOMA

RECORD DRAWINGS

S-100

REVISIONS:	DATE:
GRIT CHAMBERS SHIFTED	09/07/10
C#2 – CLARIFICATION #2	10/11/10

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	9/8/2010	AS SHOWN	4 OF 89

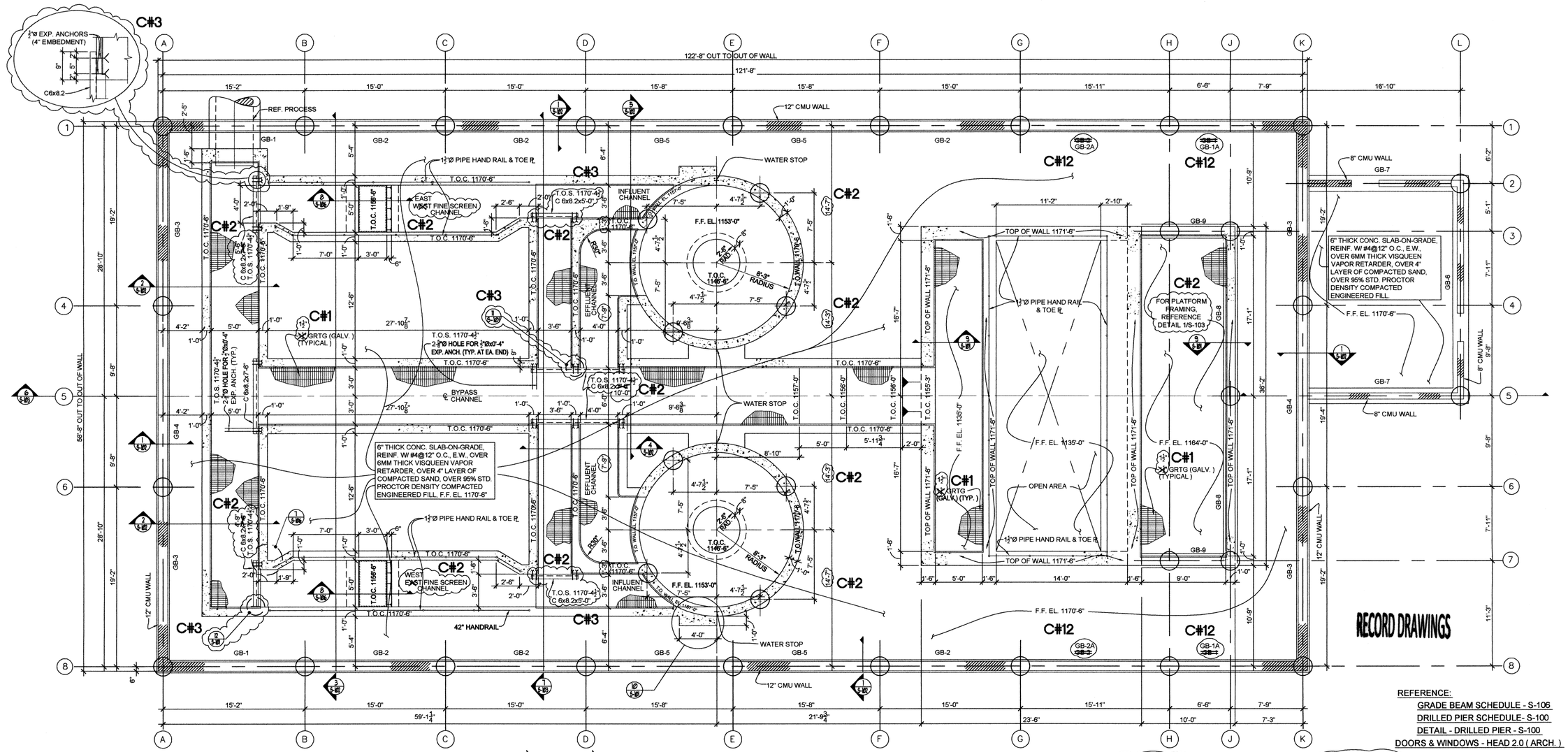
HEADWORKS
DRILLED PIER PLAN

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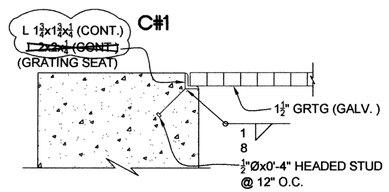
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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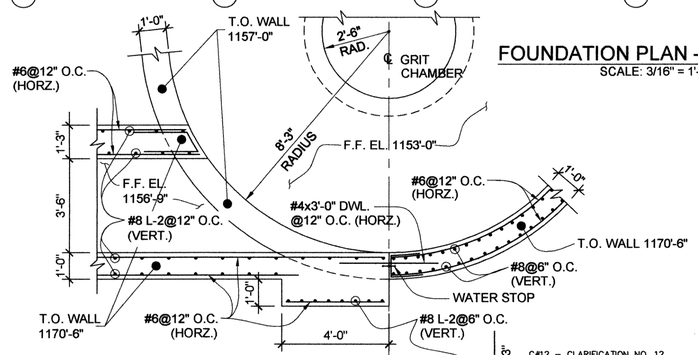


REFERENCE:
GRADE BEAM SCHEDULE - S-106
DRILLED PIER SCHEDULE- S-100
DETAIL - DRILLED PIER - S-100
DOORS & WINDOWS - HEAD 2.0 (ARCH.)

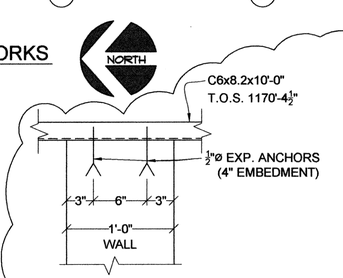
FOUNDATION PLAN - HEADWORKS
SCALE: 3/16" = 1'-0"



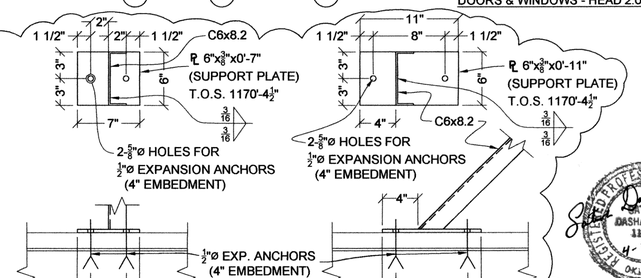
9 / S-101 SECTION - GRTG. SEAT (TYP.)
(NO SCALE)



10 / S-101 DETAIL
SCALE: 3/8" = 1'-0"



C#3 11 / S-101 DETAIL
SCALE: 1 1/2" = 1'-0"



12 / S-101 DETAIL
CASE 1 - SUPPORT PL PERPENDICULAR TO C6x8.2
SCALE: 1 1/2" = 1'-0"

13 / S-101 DETAIL
CASE 2 - SUPPORT PL @ 45° TO C6x8.2
SCALE: 1 1/2" = 1'-0"

MATTHEW DASHARATHY 11456 OKLAHOMA 4-25-20

S-101

C#12 – CLARIFICATION NO. 12	4/22/2011
REVISIONS:	DATE:
GRIT CHAMBERS SHIFTED	09/07/10
DETAIL 10 ADDED INFO	09/27/10
C#1 – CLARIFICATION NO. 1	09/30/10
C#2 – CLARIFICATION NO. 2	10/11/10
C#3 – CLARIFICATION NO. 3	10/27/10

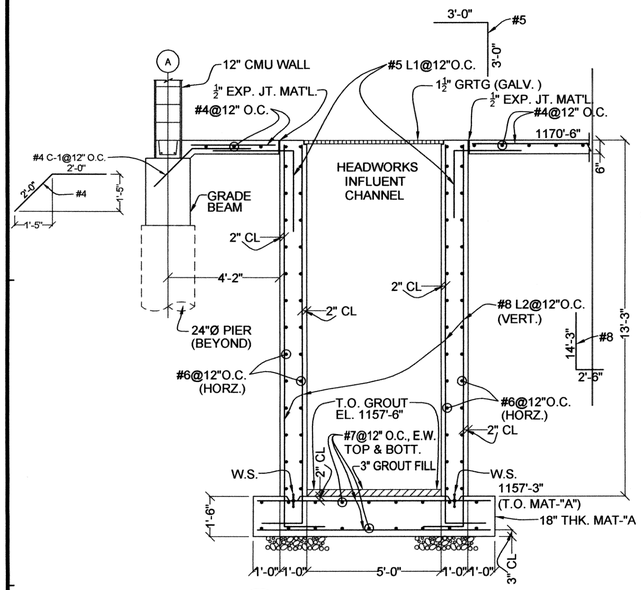
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S.D.		S.D.	S.D.	9/8/2010	AS SHOWN	5 OF 89

HEADWORKS FOUNDATION PLAN

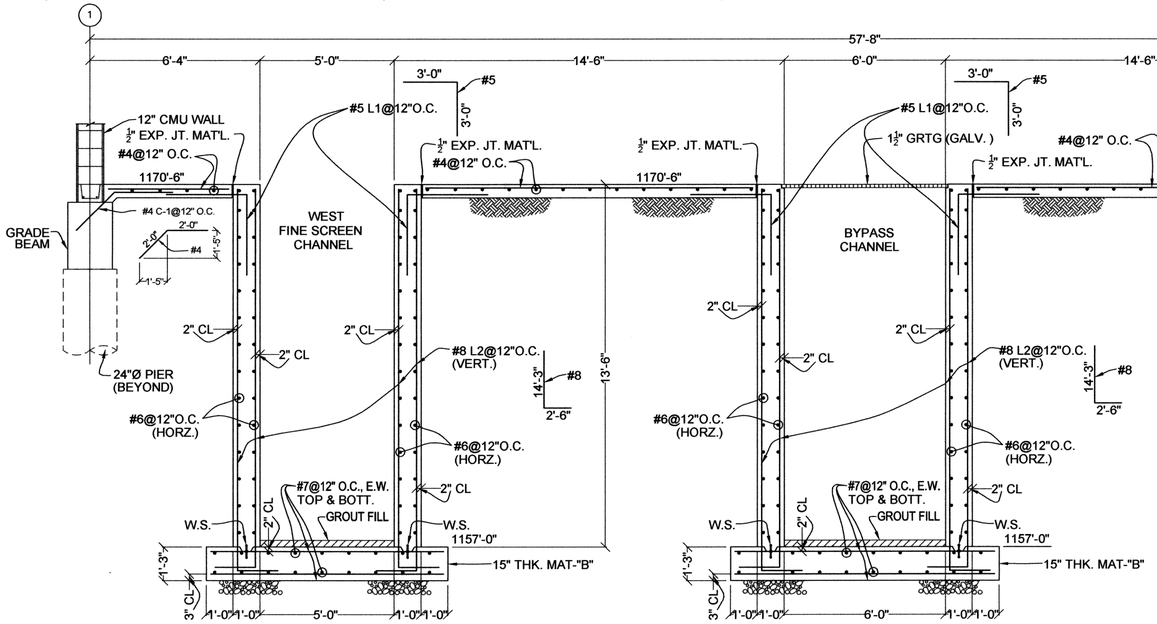
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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

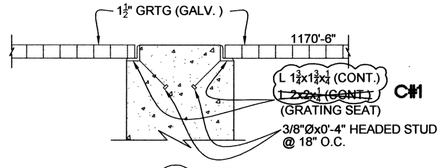
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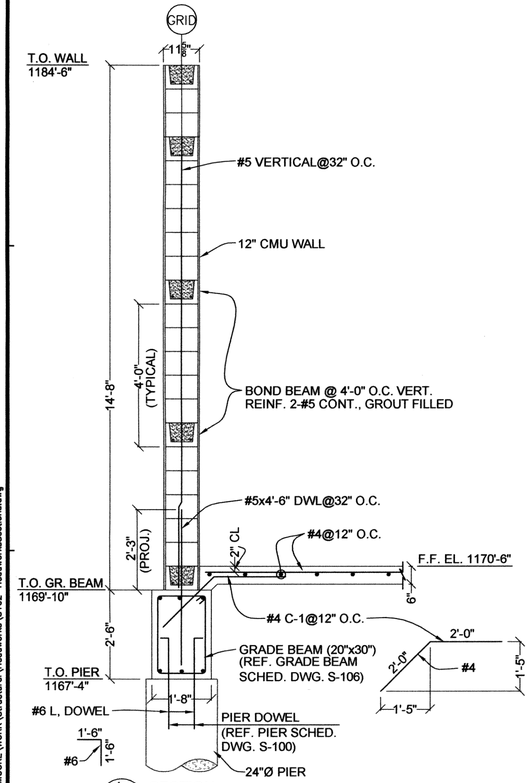
2 / 5-101 SECTION - INFLUENT CHANNEL
SCALE: 3/8" = 1'-0



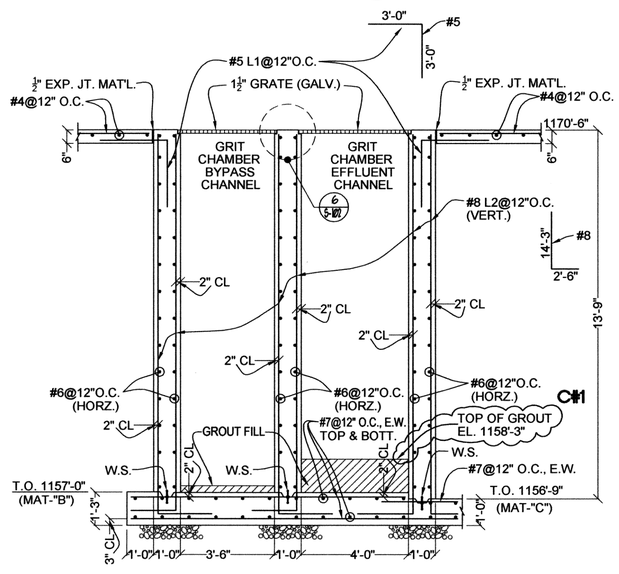
3 / 5-101 SECTION - FINE SCREEN & BYPASS CHANNEL
SCALE: 3/8" = 1'-0



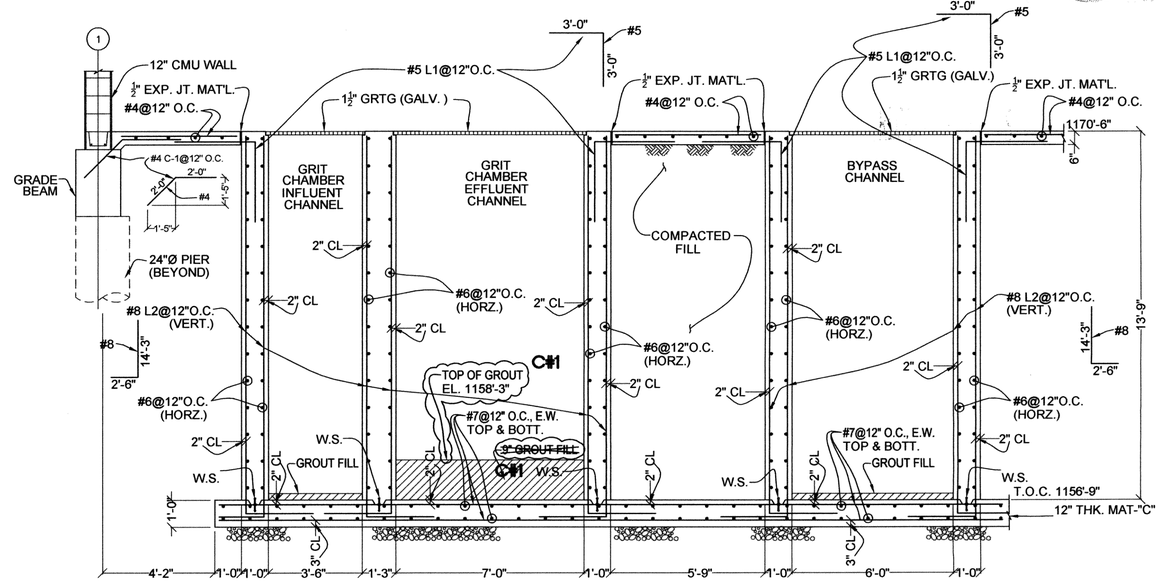
6 / 5-102 DETAIL (TYP.)
1 1/2" = 1'-0



1 / 5-101 SECTION
SCALE: 1/2" = 1'-0



4 / 5-101 SECTION - GRIT CHAMBER & EFFLUENT CHANNEL
SCALE: 3/8" = 1'-0



5 / 5-101 SECTION - GRIT CHAMBER, INFLUENT & EFFLUENT CHANNEL
SCALE: 3/8" = 1'-0

RECORD DRAWINGS

S-102

REVISIONS:	DATE:
GRIT CHAMBER SHIFTED	09/07/10
C#1 – CLARIFICATION NO. 1	09/30/10

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	9/08/2010	AS SHOWN	6 OF 89

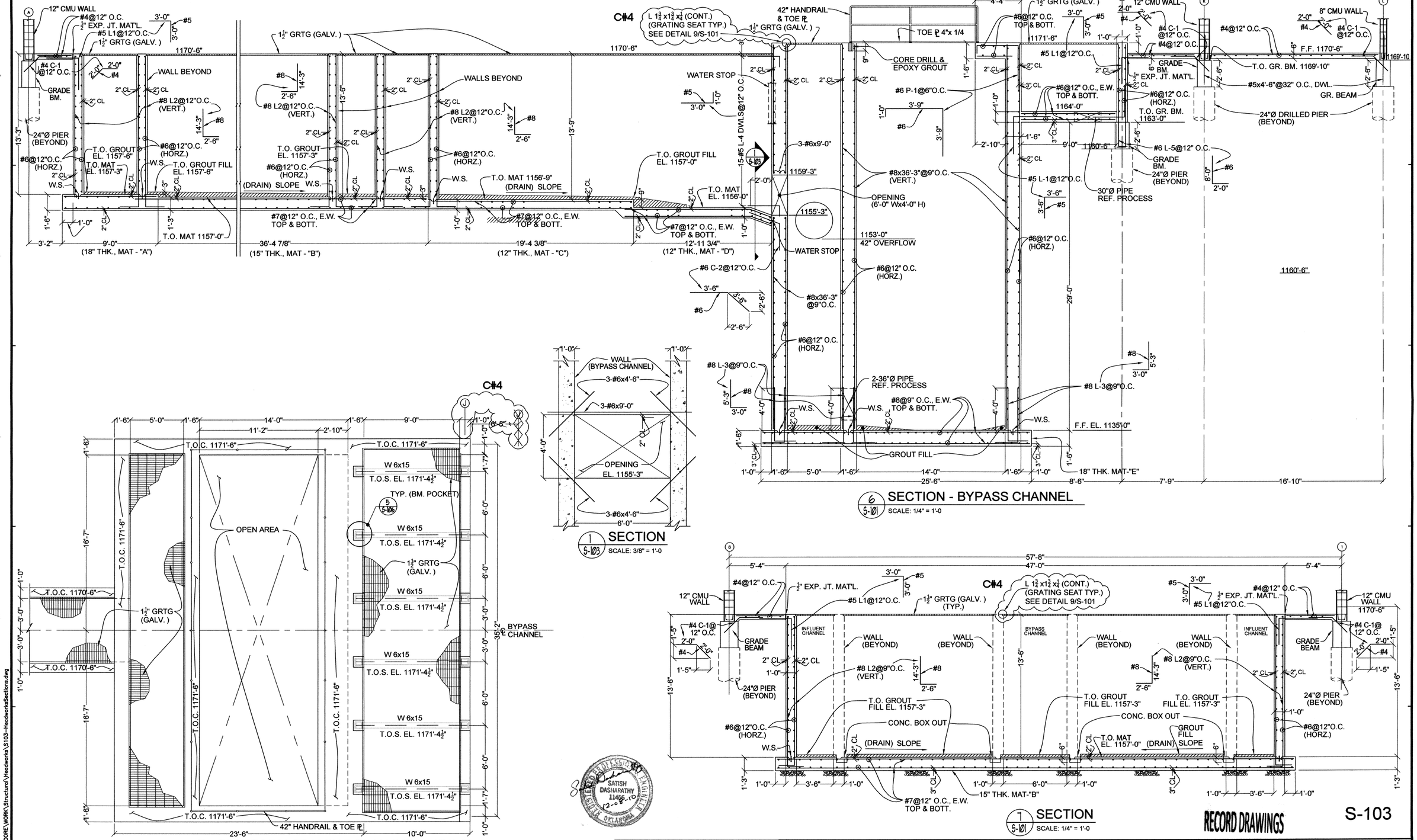
SECTIONS
FINE SCREEN & GRIT REMOVAL

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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SATISH DASHARATHY 11466 12-08-10 REGISTERED PROFESSIONAL ENGINEER STATE OF OKLAHOMA

RECORD DRAWINGS

S-103

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/10

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	1/11/2010	AS SHOWN	7 OF 89

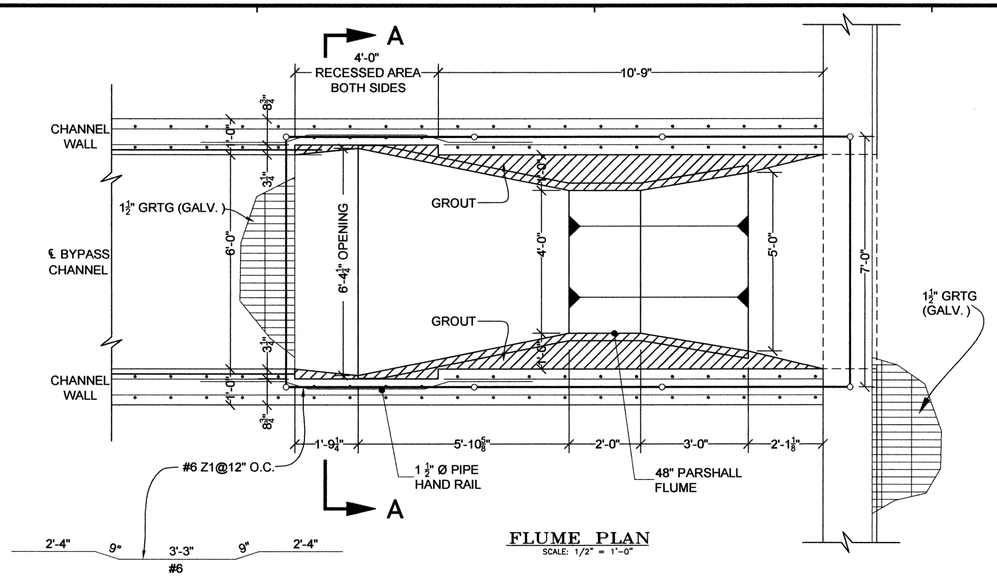
SECTIONS
FINE SCREEN & GRIT REMOVAL

EAGLE OFFICE CENTER
2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
FAX. (405) 844-3600

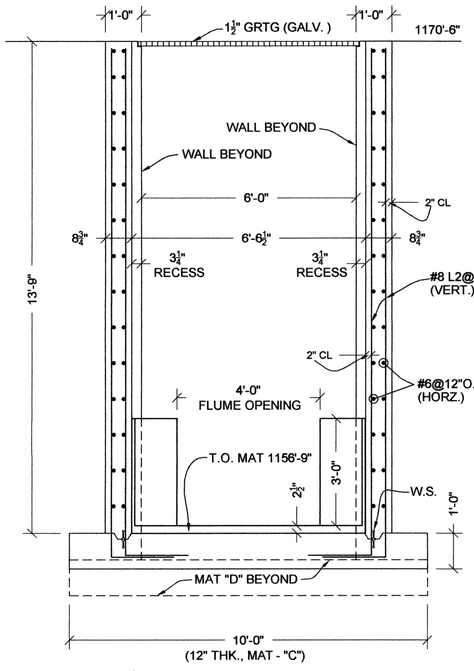
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

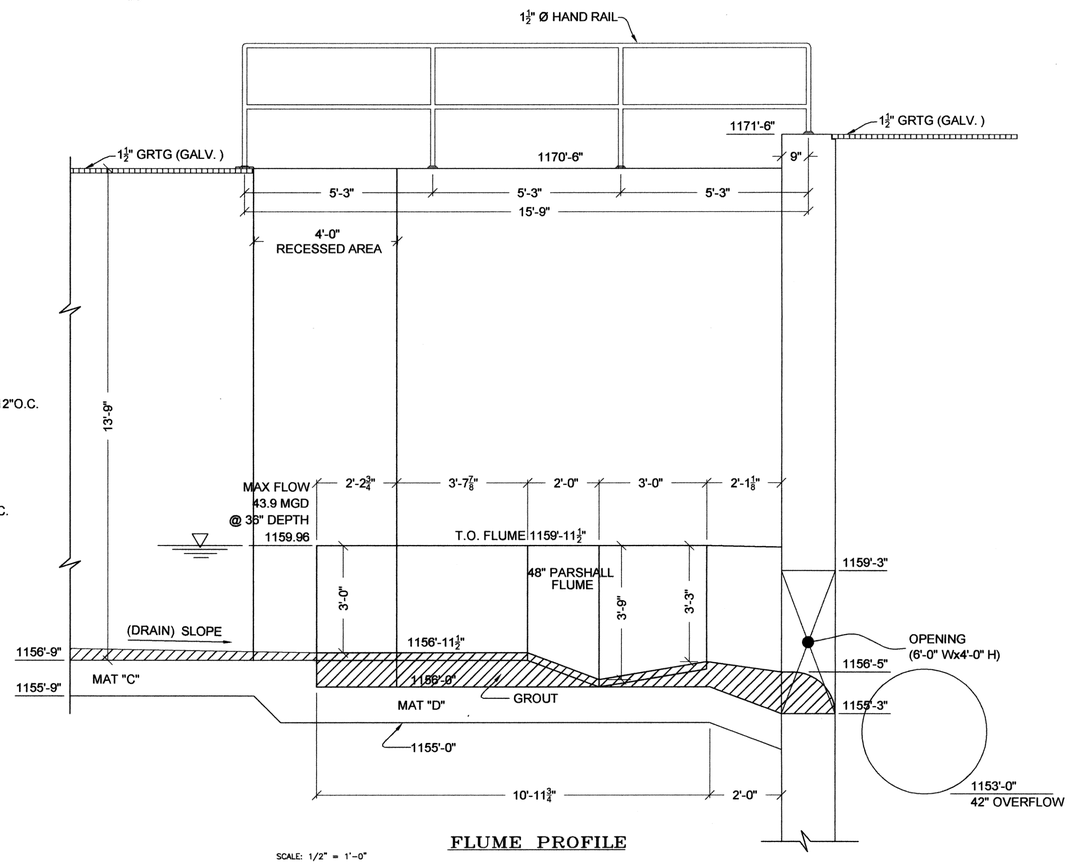
G:\DRAWINGS\MOORE\WORK\Structural\Headworks\S103-HeadworksSections.dwg



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



SECTION A–A
SCALE: 1/2" = 1'-0"



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

NOTE:
THIS DRAWING CLARIFIES AND SUPERCEDES THE GRATE EXTENTS, HANDRAIL EXTENTS, FLUME LOCATION AND/OR THE GROUT DESIGN FOR THIS AREA OF THE HEADWORKS SHOWN ON THE FOLLOWING SHEETS:

VOLUME 2, SHEET 12 & 13
VOLUME 4, SHEET 5, 7 & 10
VOLUME 6, SHEET 18



RECORD DRAWINGS

REVISIONS:	DATE:
C#10 – CLARIFICATION NO. 10	3/22/2011

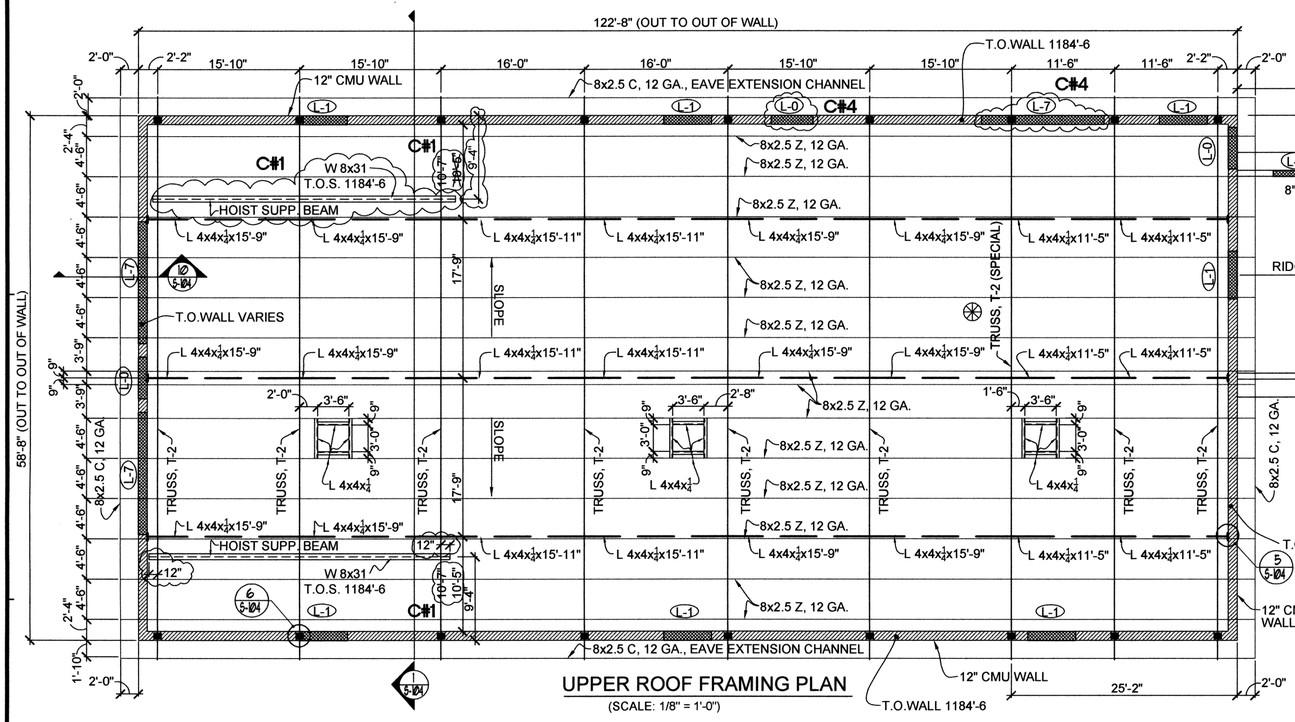
PARSHALL FLUME DETAILS AT HEADWORKS

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/17/2011	AS SHOWN	7A OF 89

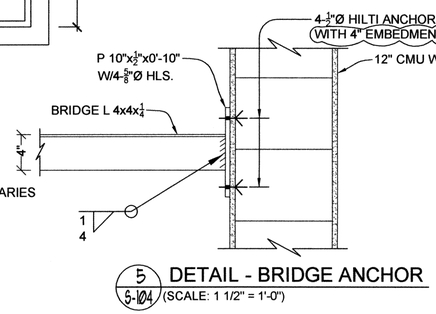
EAGLE OFFICE CENTER
2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
FAX. (405) 844-3600

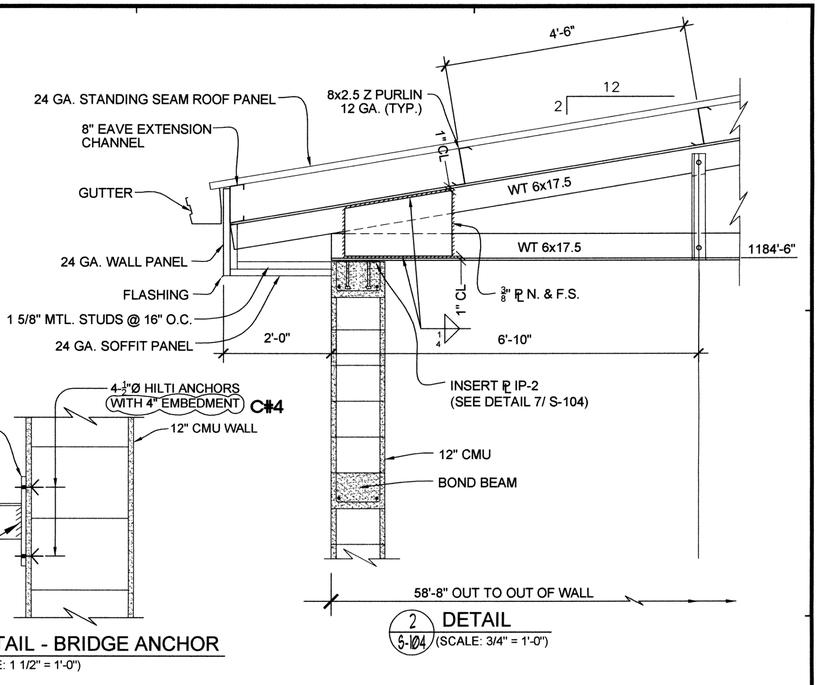
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

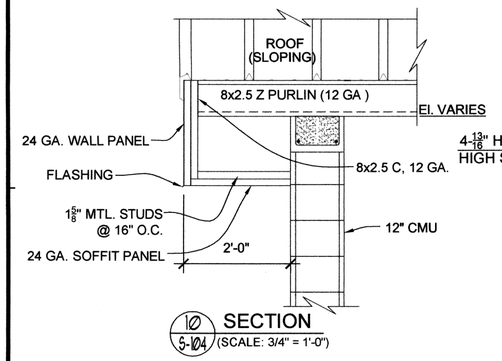
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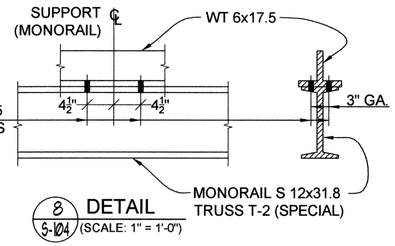


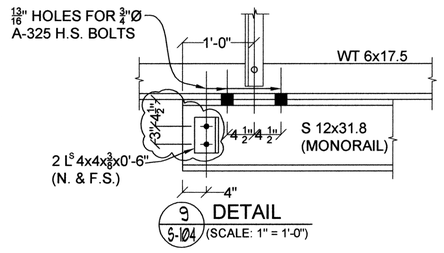


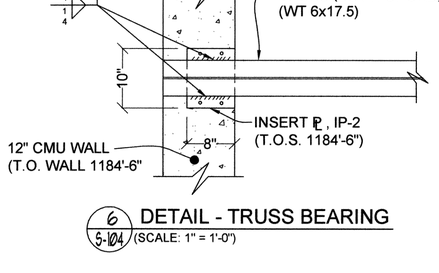






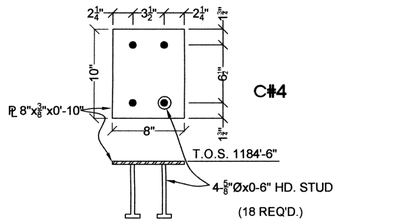


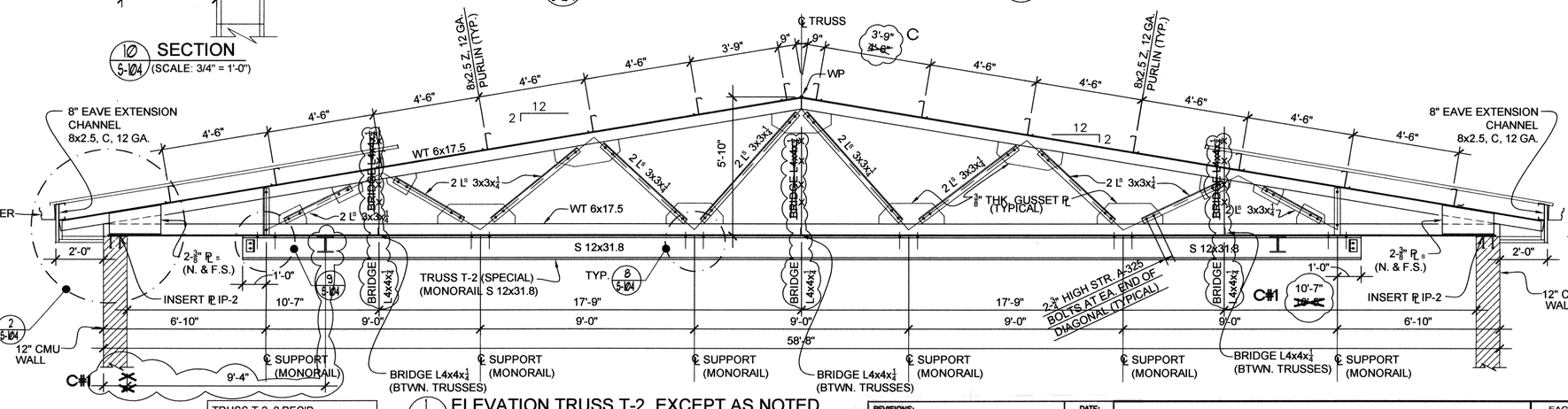




LEGEND

LINTEL	
L - X	REF. LINTEL SHEDULE DRG S-960





TRUSS T-2, 8 REQ'D.
TRUSS T-2 (SPECIAL), 1 REQ'D.

REVISIONS:	DATE:
C#1 – CLARIFICATION NO. 1	9/28/2010
C#4 – CLARIFICATION NO. 4	12/8/10

HEADWORKS
ROOF FRAMING PLAN

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EDMOND, OK. 73013
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FAX. (405) 844-3600

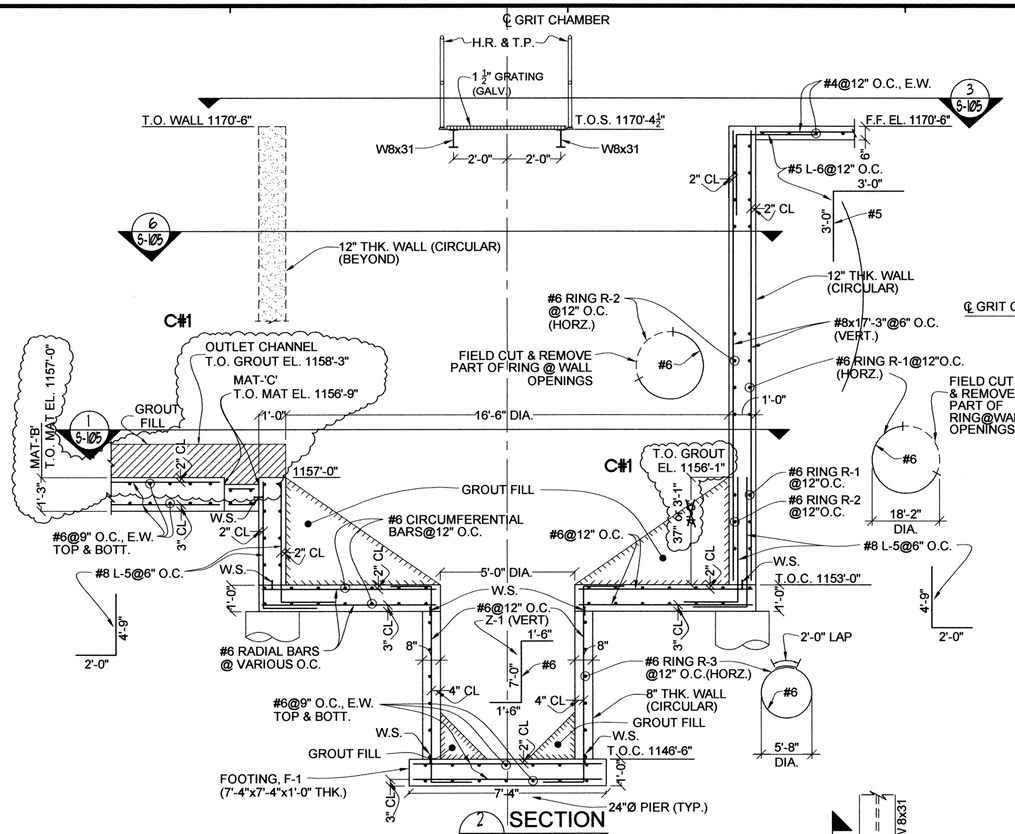
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

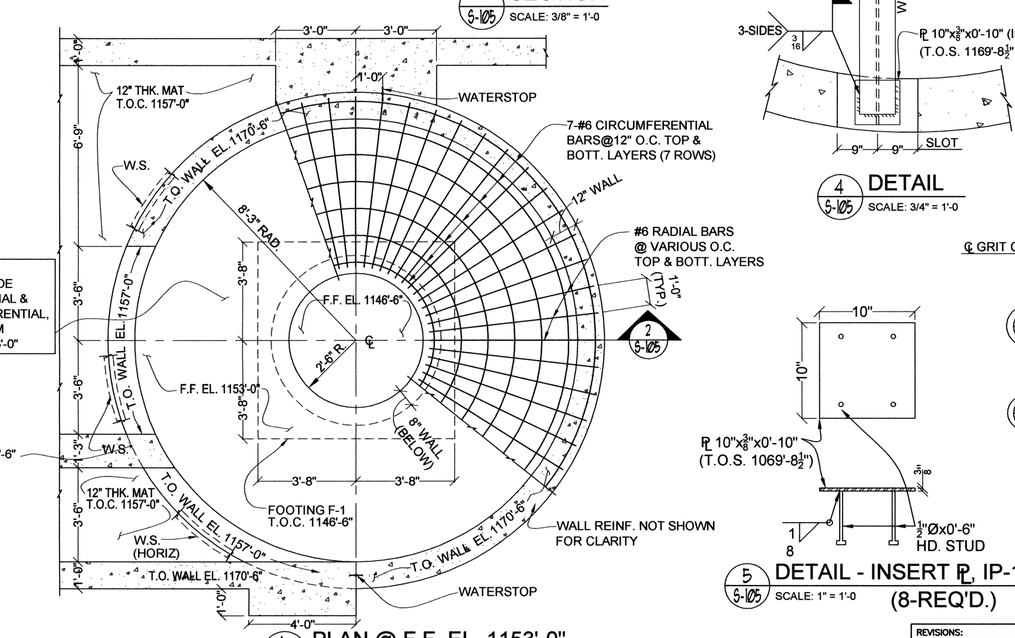
DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	2/25/2010	AS SHOWN	8 OF 89

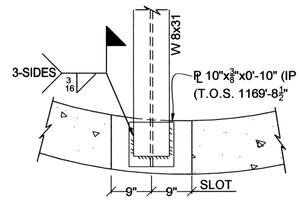
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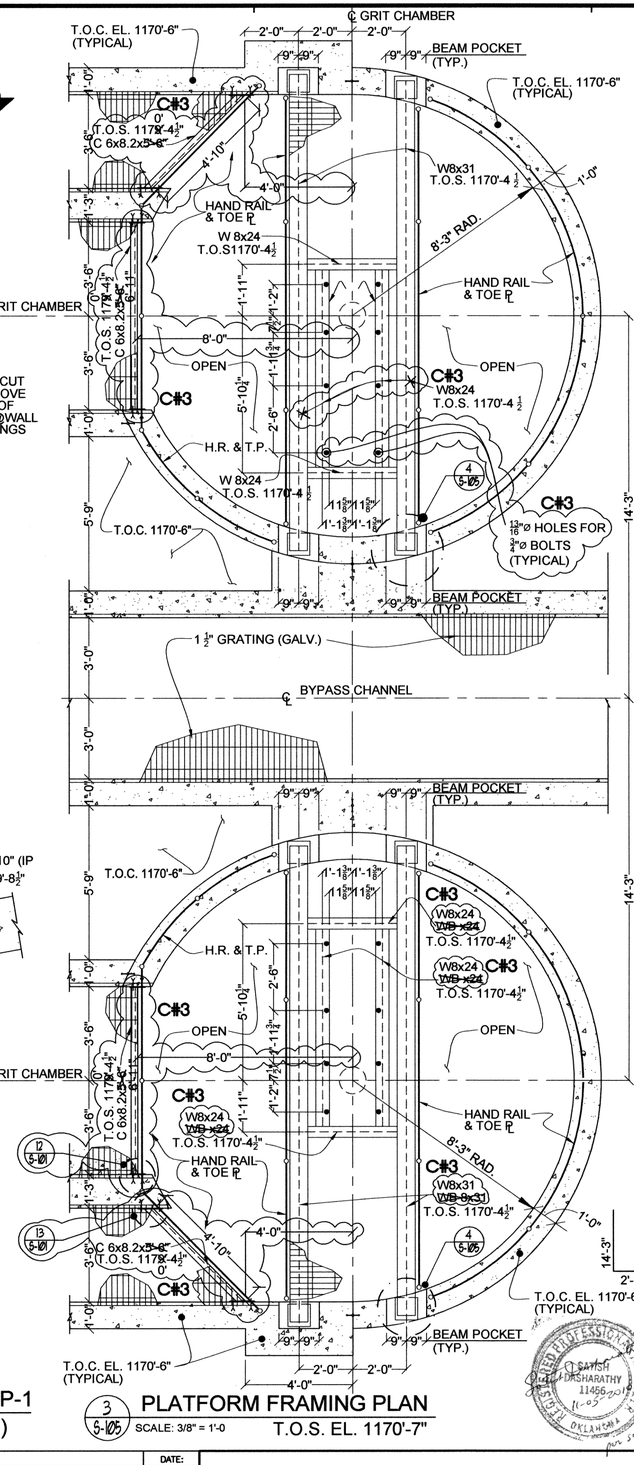
RECORD DRAWINGS

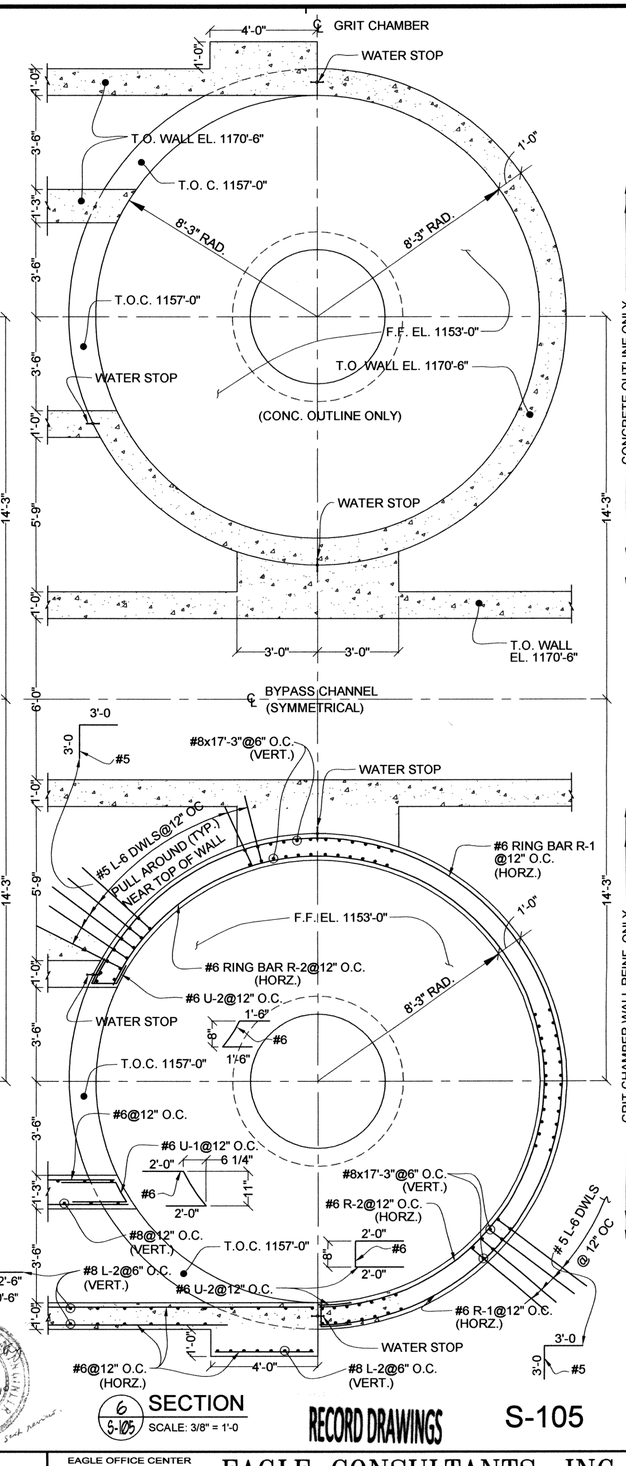
S-104











REGISTERED PROFESSIONAL ENGINEER
SAMUEL D. DARSHARATHY
11456
OKLAHOMA
11-05
pen and seal required

RECORD DRAWINGS

S-105

REVISIONS:	DATE:
GRIT CHAMBERS SHIFTED	09/07/10
C#1 – CLARIFICATION NO. 1	09/30/10
C#3 – CLARIFICATION NO. 3	10/27/10

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	9/8/2010	AS SHOWN	9 OF 89

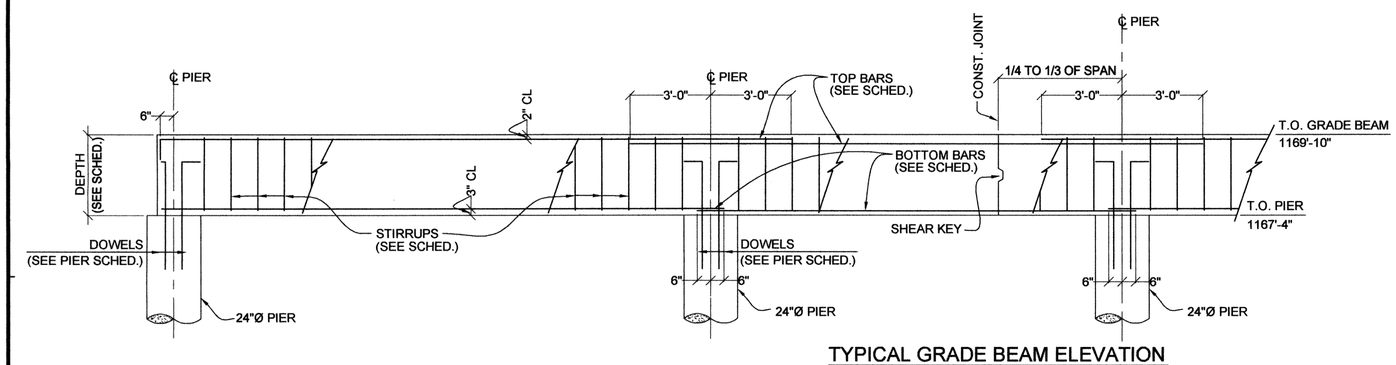
O:\DRAWINGS\ MOORE\ WORK\ Structural\ Headworks\ S105--GritSections.dwg

GRIT REMOVAL
STRUCTURAL DETAILS

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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK



TYPICAL GRADE BEAM ELEVATION
(NO SCALE)

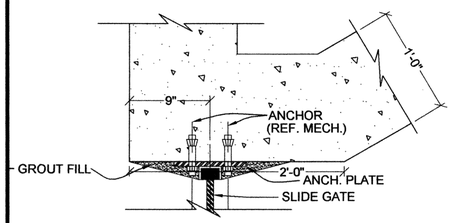
GRADE BEAM SCHEDULE

BEAM		MAIN REINFORCING					STIRRUPS			
MARK	SIZE	NO	SIZE	LENGTH	BAR	SKETCH	NO	SIZE	TYPE	PLACING
GB-1	20W 30D	3 3	#8 #8	18'-6" 16'-0"	TOP BTM		19	#3	S1	20 @ 9" O.C.
GB-2	20W 30D	3 3	#8 #8	21'-0" 16'-0"	TOP BTM		19	#3	S1	20 @ 9" O.C.
GB-3	20W 30D	3 3	#8 #8	22'-6" 20'-0"	TOP BTM		24	#3	S1	25 @ 9" O.C.
GB-4	20W 30D	3 3	#8 #8	25'-4" 20'-4"	TOP BTM		24	#3	S1	25 @ 9" O.C.
GB-5	20W 30D	3 3	#8 #8	21'-8" 16'-8"	TOP BTM		20	#3	S1	21 @ 9" O.C.
GB-6	20W 30D	2 3	#8 #8	23'-8" 23'-8"	TOP BTM		29	#3	S1	30 @ 9" O.C.
GB-7	20W 30D	2 3	#8 #8	17'-10" 17'-10"	TOP BTM		21	#3	S1	22 @ 9" O.C.
GB-8	20W 30D	3 3	#8 #8	20'-1" 18'-7"	TOP BTM		22	#3	S1	23 @ 9" O.C.
GB-9	20W 30D	3 3	#8 #8	9'-9" 9'-9"	TOP BTM		11	#3	S1	12 @ 9" O.C.
GB-1A	20W 30D	3 3	#8 #8	17'-9" 15'-3"	TOP BTM		18	#3	S1	19 @ 9" O.C.
GB-2A	20W 30D	3 3	#8 #8	21'-11" 16'-11"	TOP BTM		20	#3	S1	21 @ 9" O.C.

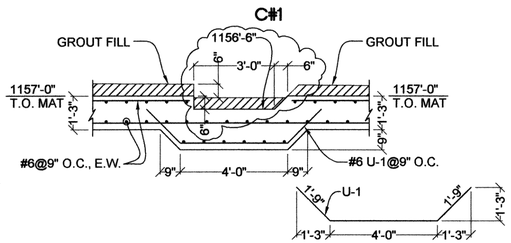
C#12 (GB-6 STIRRUPS)

C#12 (GB-1A)

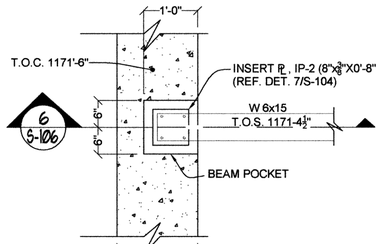
NOTE:
1. BEAM SIZE IS IN INCHES.
2. REINFORCING LENGTH DOES NOT INCLUDE HOOK LENGTHS.



7 DETAIL
7 / S-101
1 1/2" = 1'-0



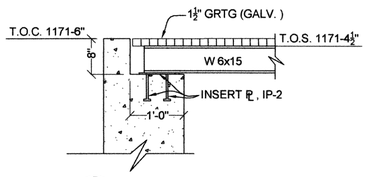
3 SECTION
3 / S-100
3/8" = 1'-0



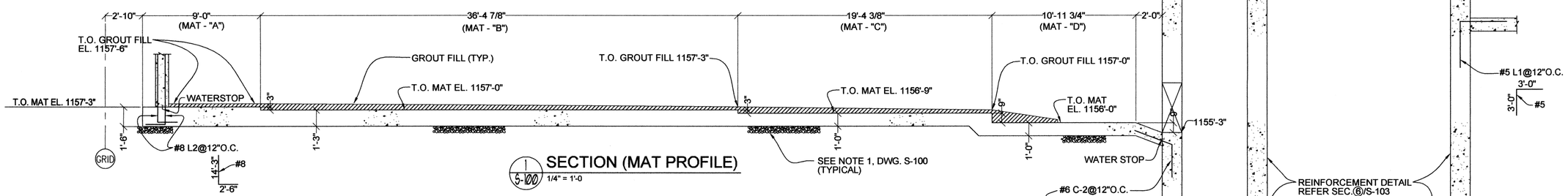
8 SECTION
8 / S-101
3/8" = 1'-0

(12-REQ'D.)

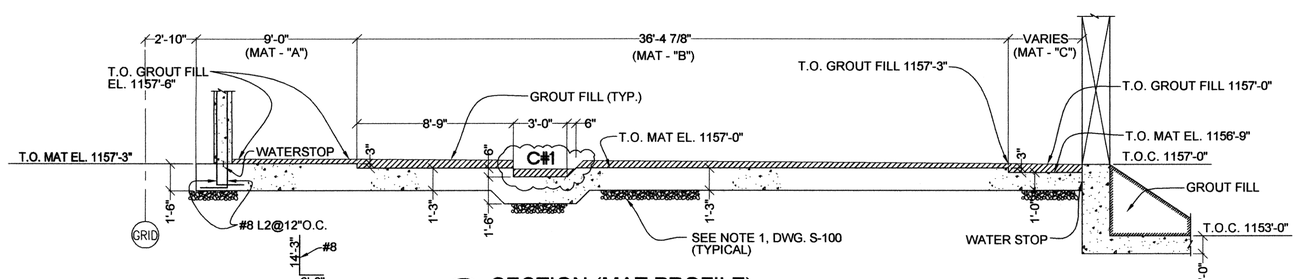
5 DETAIL (BEAM POCKET)
5 / S-103
3/4" = 1'-0



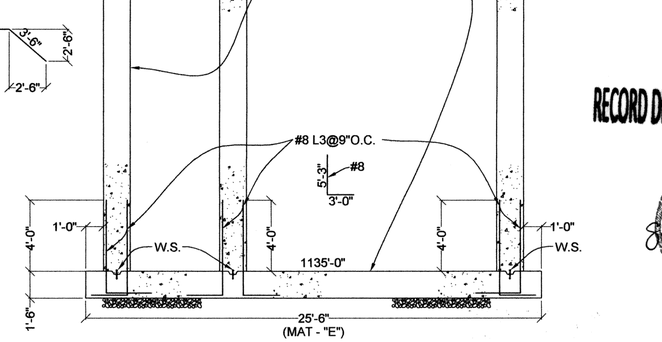
6 SECTION
6 / S-106
3/4" = 1'-0



1 SECTION (MAT PROFILE)
1 / S-100
1/4" = 1'-0



2 SECTION (MAT PROFILE)
2 / S-100
1/4" = 1'-0



RECORD DRAWINGS



S-106

REVISIONS:	DATE:
C#1 – CLARIFICATION NO. 1	9/30/2010
C#12 – CLARIFICATION NO. 12	4/22/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	1/12/2010	AS SHOWN	10 OF 89

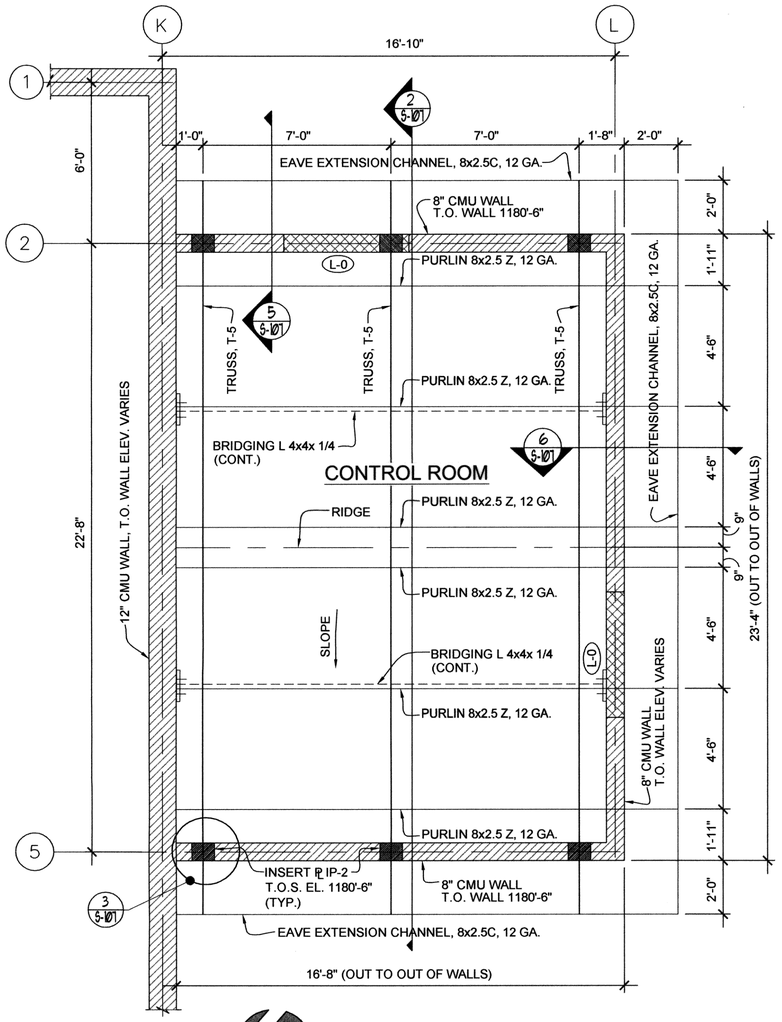
HEADWORKS
STRUCTURAL DETAILS

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2803 SOUTH BRYANT
EDMOND, OK. 73013
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CERTIFICATE OF AUTHORIZATION NO. CA2088

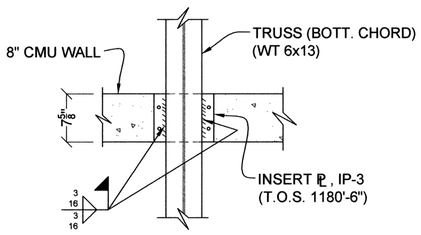
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\Headworks\S106-HeadworksDetails.dwg

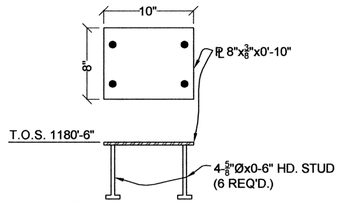


NORTH

1 S-101 LOWER ROOF FRAMING PLAN
(SCALE: 3/8" = 1'-0")



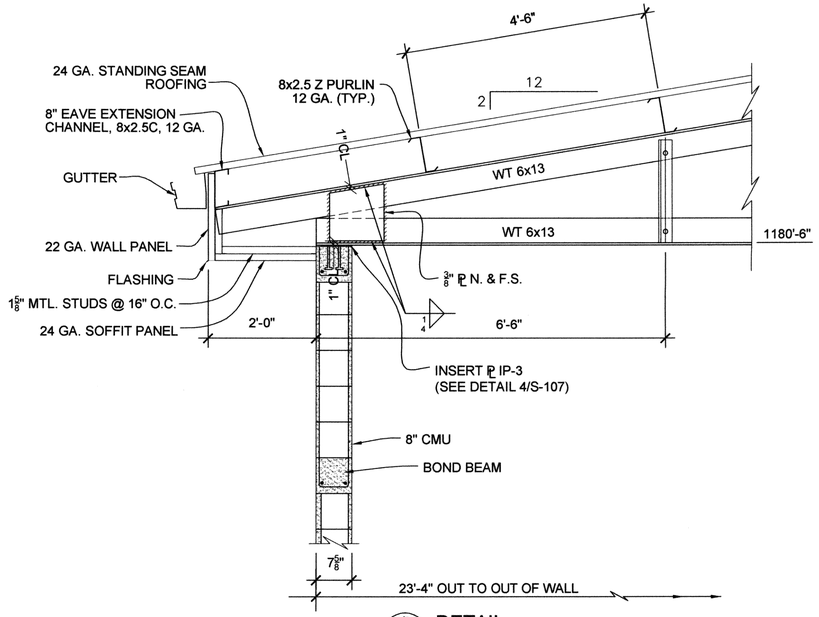
3 S-101 DETAIL (TRUSS SEAT)
(SCALE: 1" = 1'-0")



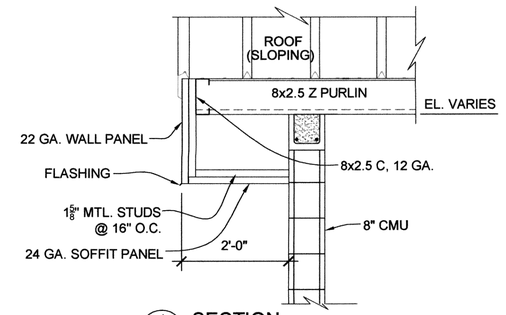
4 S-101 DETAIL - INSERT PL IP-2
(SCALE: 1 1/2" = 1'-0")

LEGEND

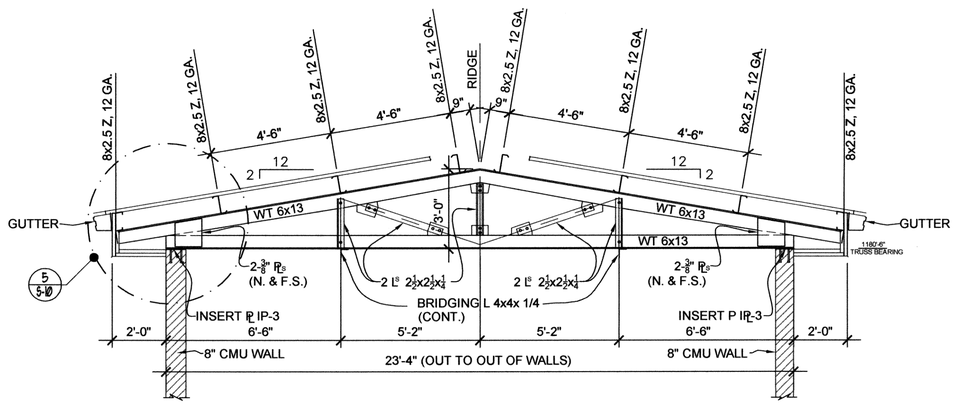
LINTEL
L - X — REF. LINTEL SCHEDULE
DRG S-960



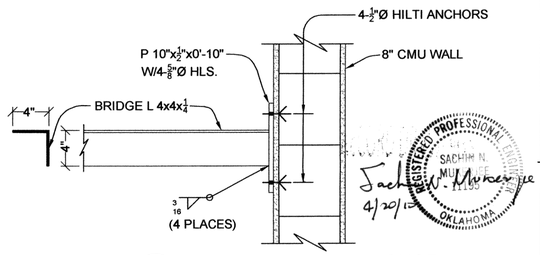
5 S-101 DETAIL
(SCALE: 3/4" = 1'-0")



6 S-101 SECTION
(SCALE: 3/4" = 1'-0")



2 S-101 ELEVATION TRUSS T-5 (3 REQ'D.)
(SCALE: 3/8" = 1'-0")



7 S-101 DETAIL - BRIDGE ANCHOR
(SCALE: 1 1/2" = 1'-0")

RECORD DRAWINGS

S-107

REVISIONS:	DATE:

HEADWORKS CONTROL ROOM
ROOF FRAMING

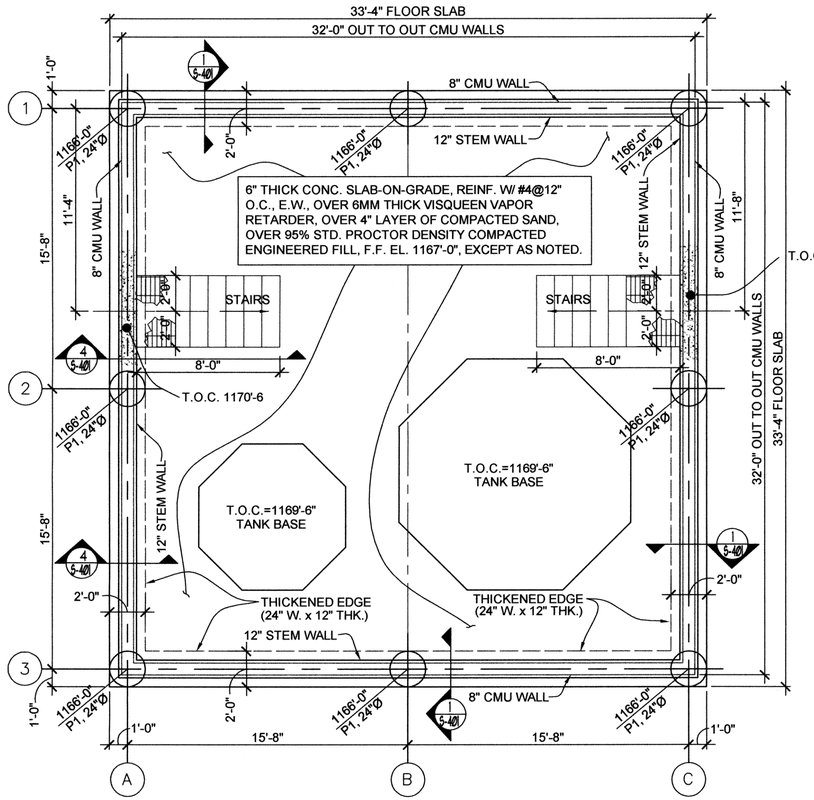
EAGLE OFFICE CENTER
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EDMOND, OK. 73013
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FAX. (405) 844-3600

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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

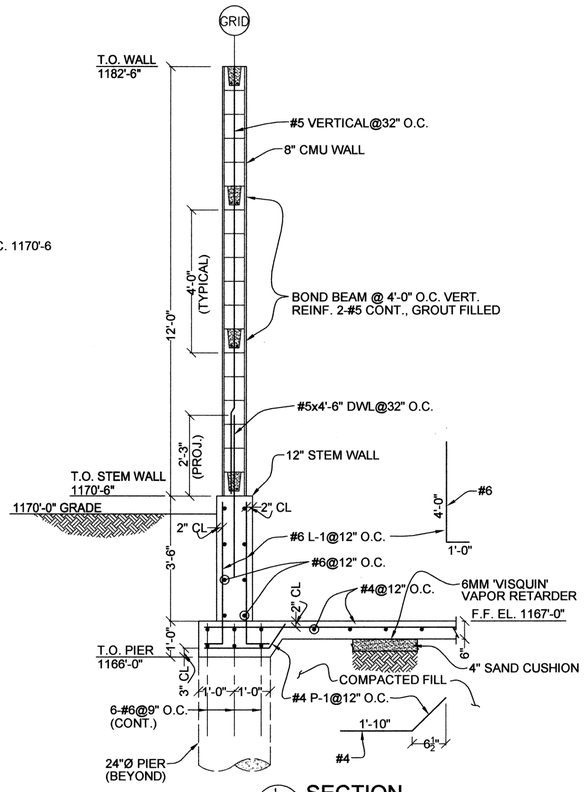
DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	2/25/2010	AS SHOWN	11 OF 89

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

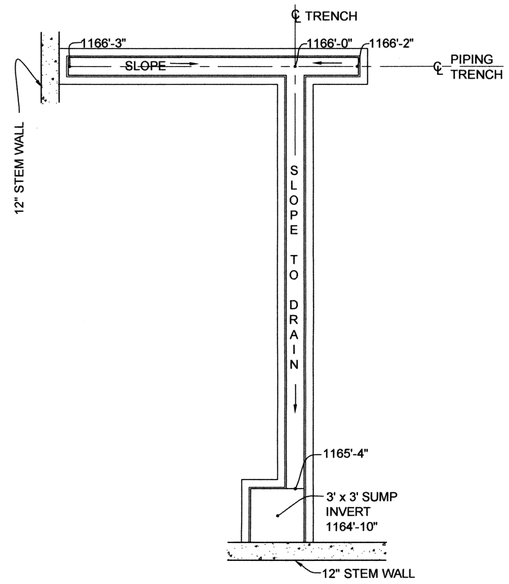
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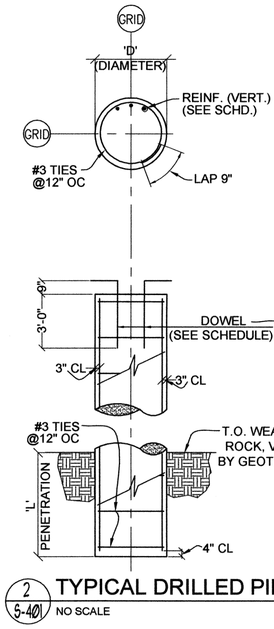
FOUNDATION PLAN - (DRILLED PIERS & FLR. EL. 1167-0")
(SCALE: 1/4" = 1'-0")



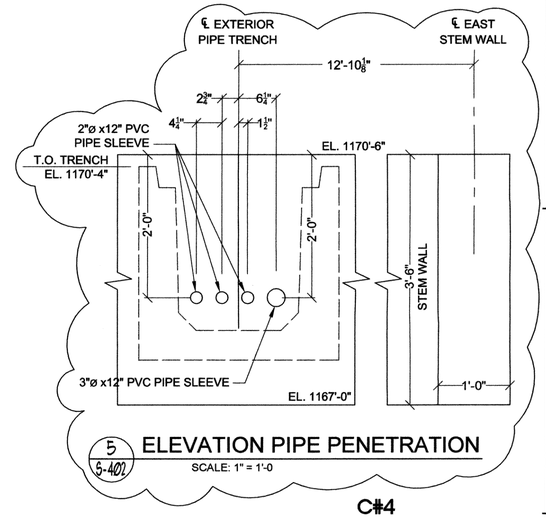
1 / 5-401 SECTION
SCALE: 1/2" = 1'-0



TRENCH AND SUMP ELEVATIONS
(SCALE: 1/4" = 1'-0")

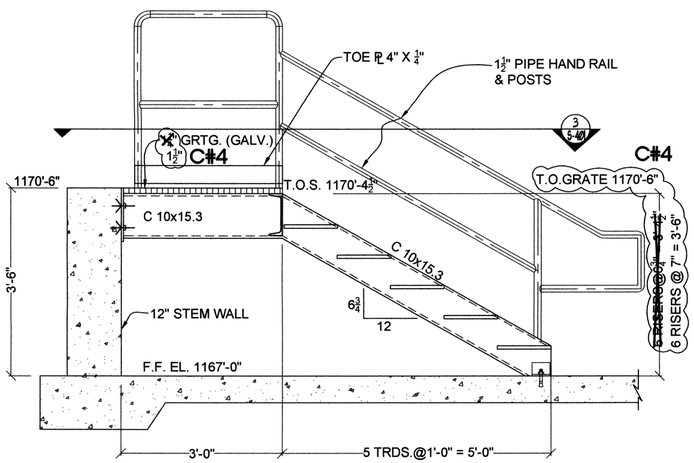


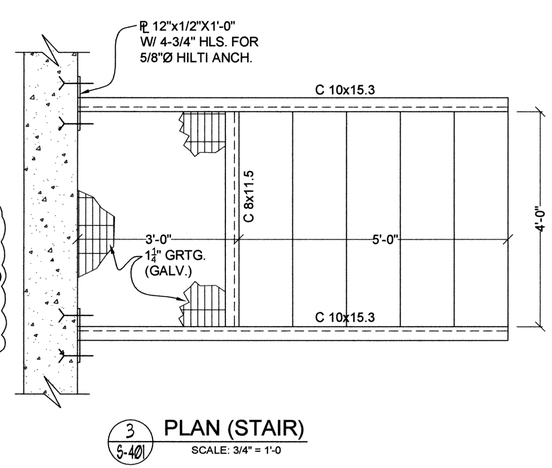
2 / 5-401 TYPICAL DRILLED PIER
NO SCALE



5 / 5-401 ELEVATION PIPE PENETRATION
SCALE: 1" = 1'-0

C#4





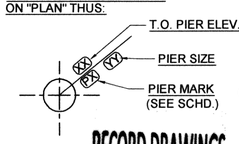
3 / 5-401 PLAN (STAIR)
SCALE: 3/4" = 1'-0

DRILLED PIER SCHEDULE

MARK	SIZE (DIA.)	PENETRATION	REINFORCEMENT		T.O. PIER	NO. REQ'D
			VERT.	DOWEL		
P-1	24"Ø	2'-0"	6-#6	4-#6	EL. 1166-0"	8

LEGEND:

DRILLED PIERS INDICATED ON "PLAN" THUS:



RECORD DRAWINGS

S-401

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/10

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	2/22/2010	AS SHOWN	12 OF 89

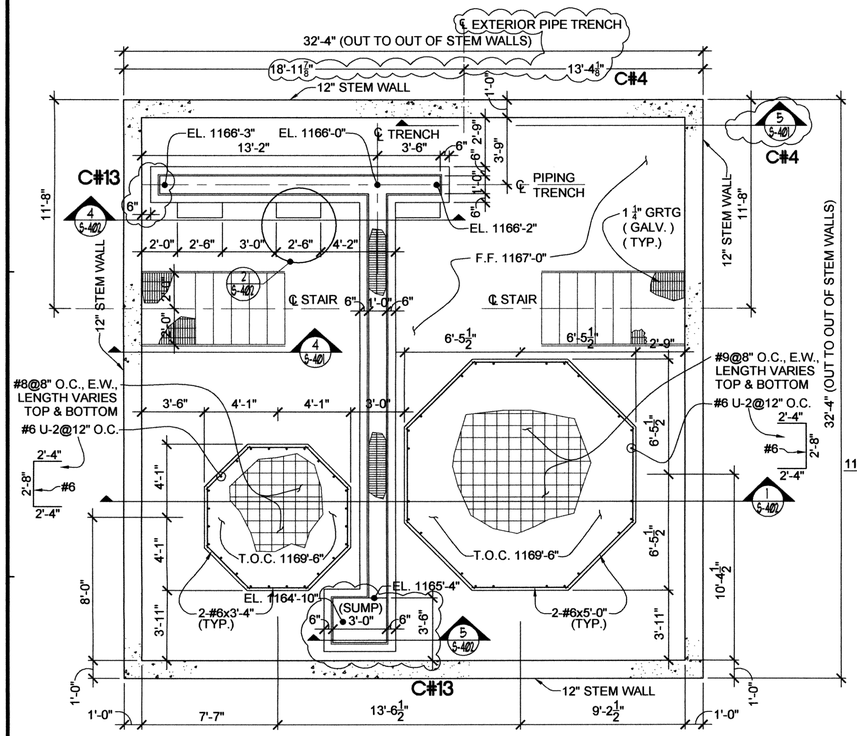
HEADWORKS ODOR CONTROL
CHEMICAL FEED BUILDING
DRILLED PIER PLAN

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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

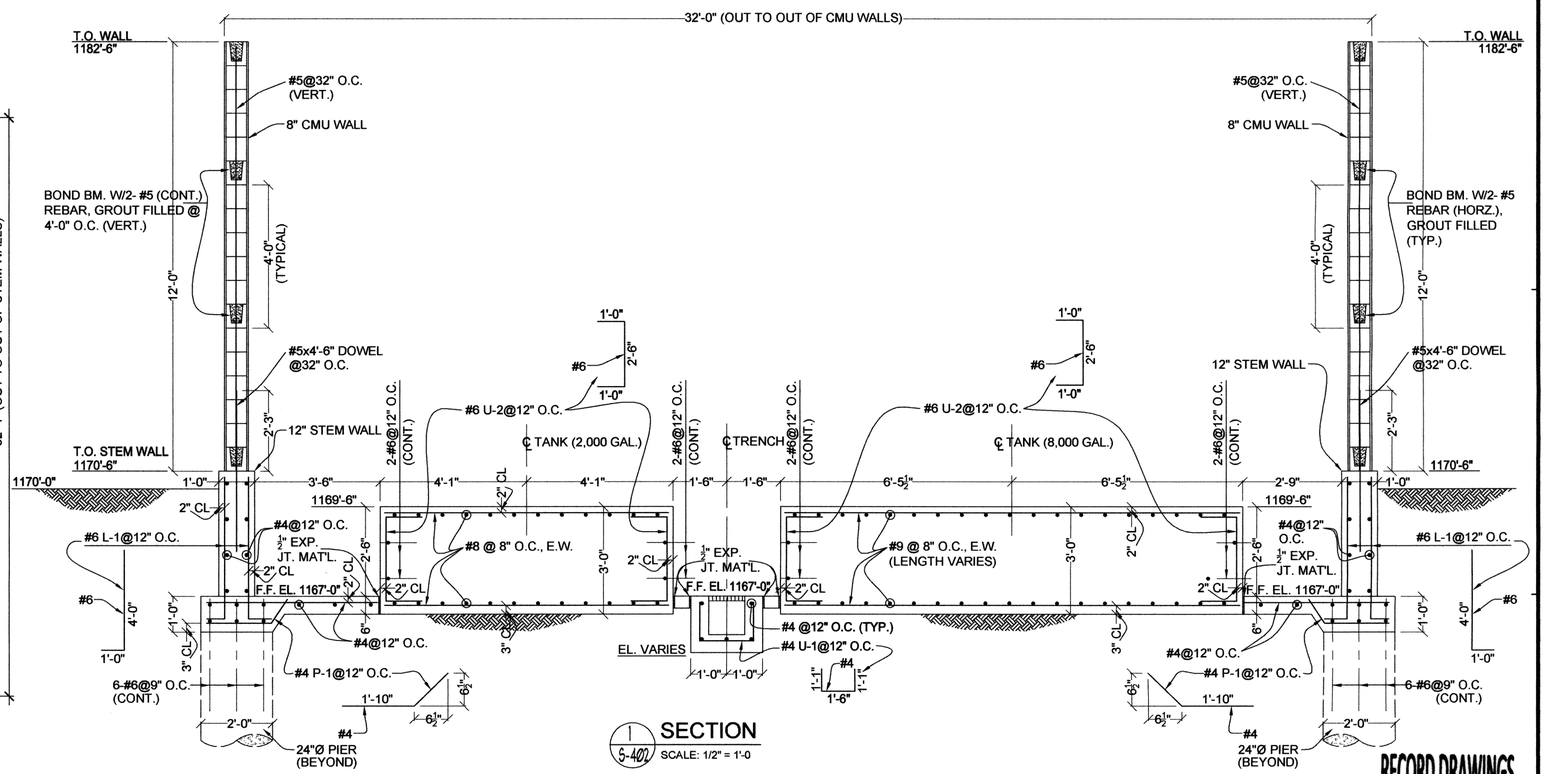
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NORTH

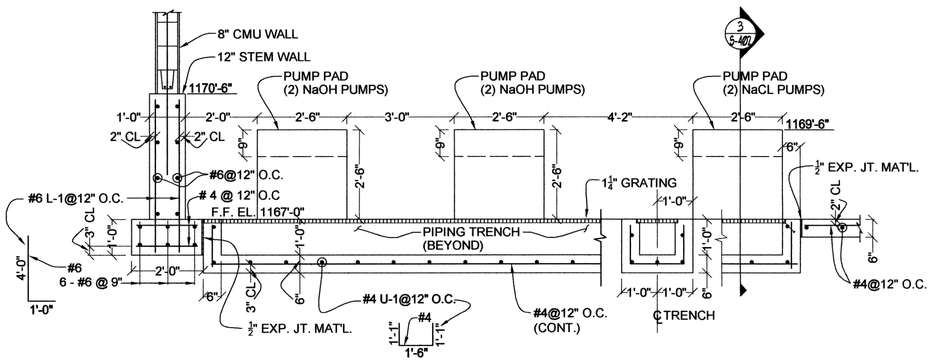
CHEMICAL FEED BUILDING - PLAN VIEW
(SCALE: 1/4" = 1'-0")

NOTE:
SLOPE TRENCH TO DRAIN TO SUMP.
SEE S- 401 FOR TRENCH & SUMP ELEVATIONS

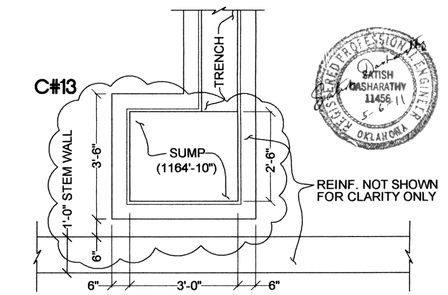


SECTION
5-402 SCALE: 1/2" = 1'-0

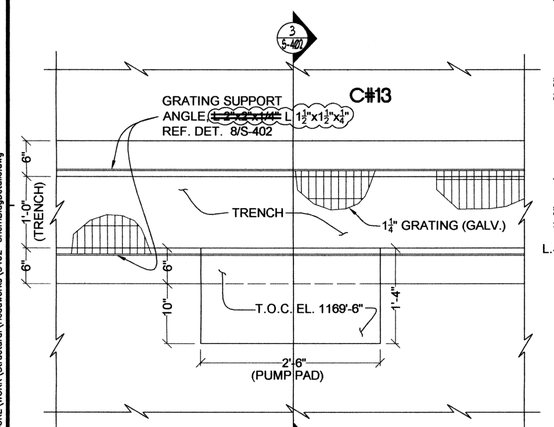
RECORD DRAWINGS



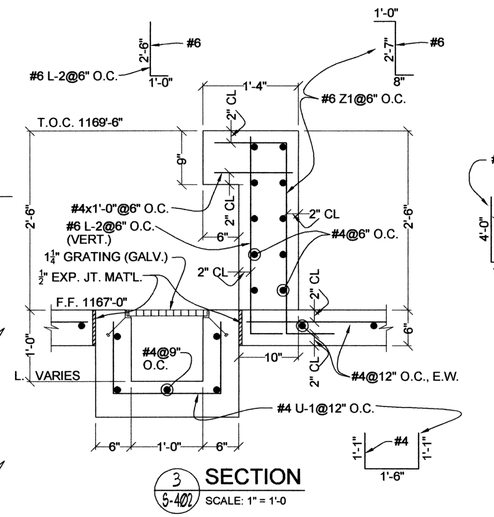
SECTION - PIPING TRENCH
4 / 5-402 SCALE: 1/2" = 1'-0



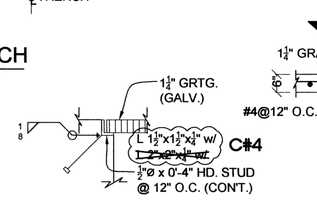
PLAN - SUMP
6 / 5-402 SCALE: 1/2" = 1'-0



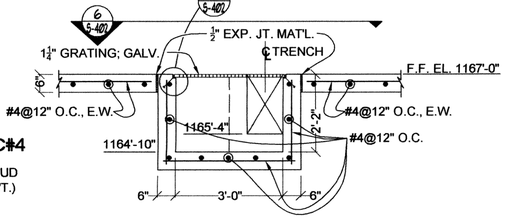
DETAIL - PUMP PAD
2 / 5-402 SCALE: 1" = 1'-0



SECTION
3 / 5-402 SCALE: 1" = 1'-0



DETAIL - GRTG. SUPPT. ANGLE
8 / 5-402 (NO SCALE)



SECTION - SUMP
5 / 5-402 SCALE: 1/2" = 1'-0

S-402

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/10
C#13 – CLARIFICATION NO. 13	5/2/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/22/2010	AS SHOWN	13 OF 89

HEADWORKS ODOR CONTROL
CHEMICAL FEED BUILDING
STRUCTURAL DETAILS

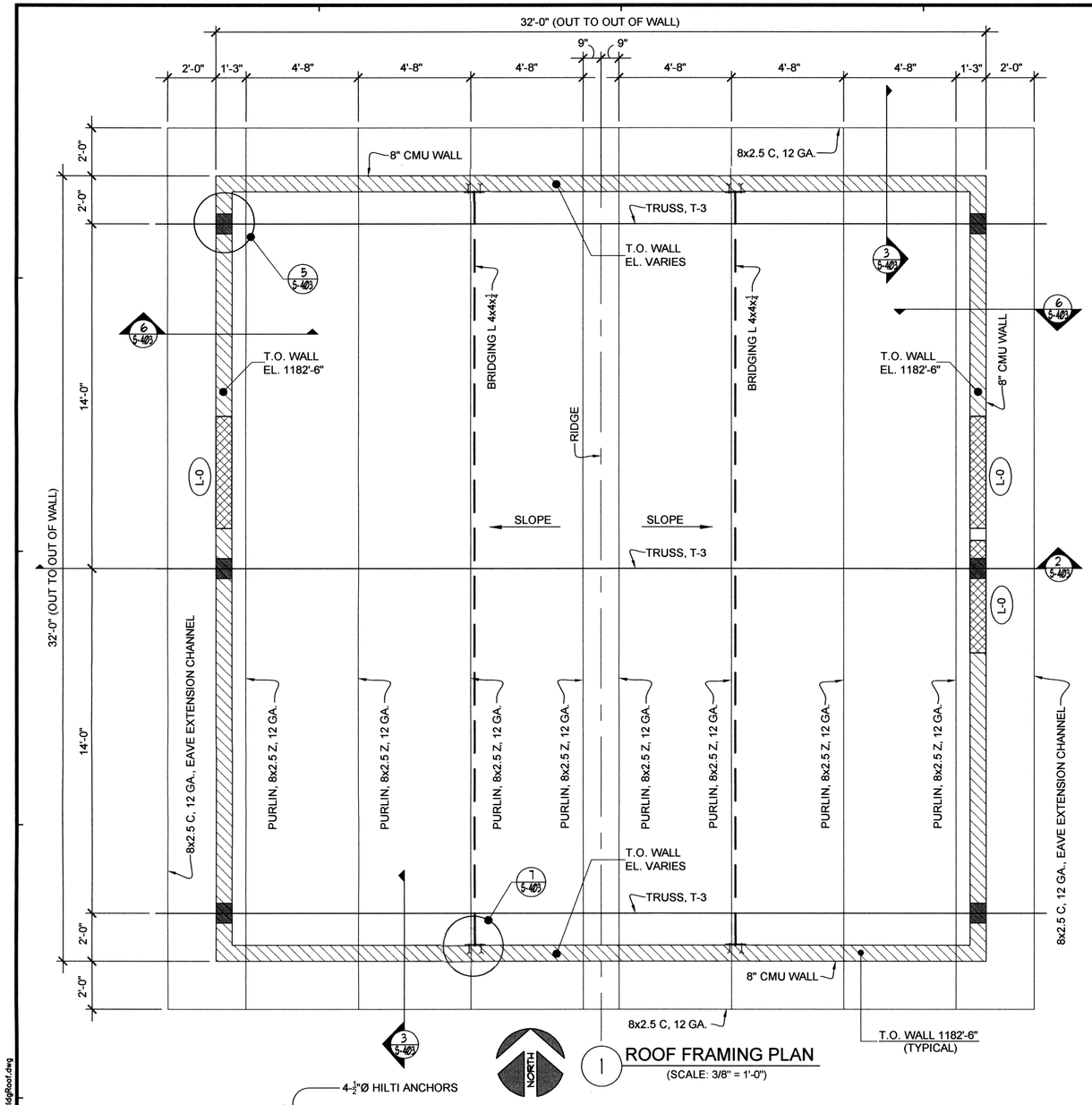
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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

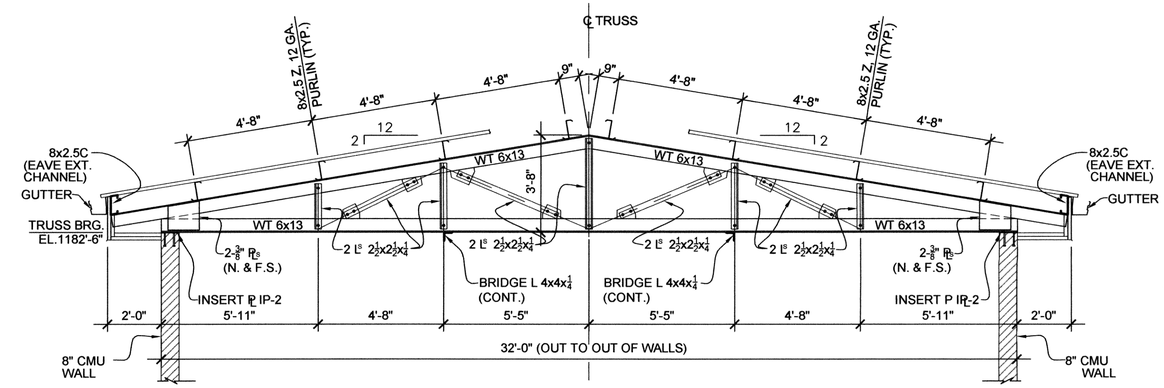
REGISTERED PROFESSIONAL ENGINEER
SATISH CHAKRABARTHY
11456
OKLAHOMA

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

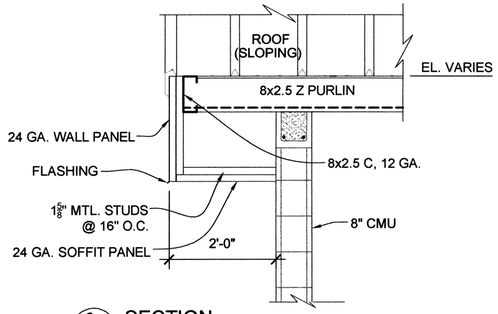
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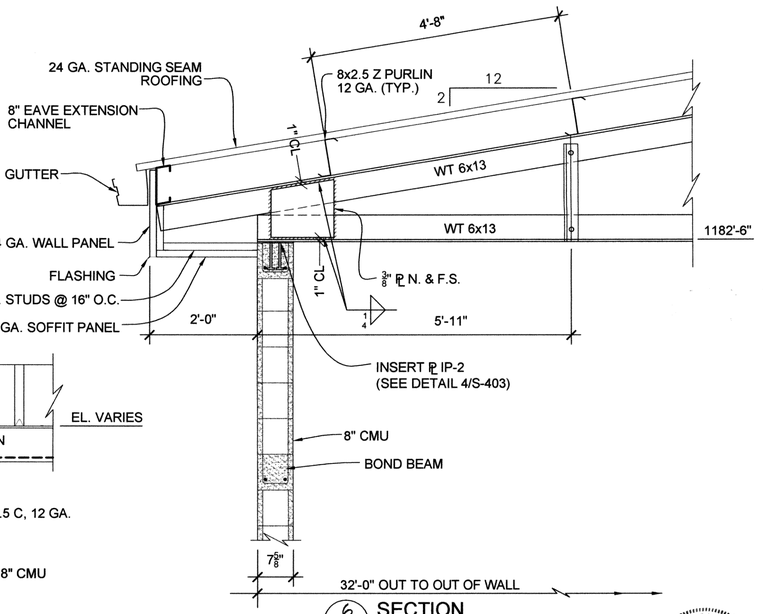
1 ROOF FRAMING PLAN
(SCALE: 3/8" = 1'-0")



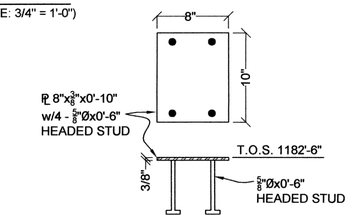
2 5-403 ELEVATION TRUSS T-3 (3 REQ'D.)
(SCALE: 3/8" = 1'-0")



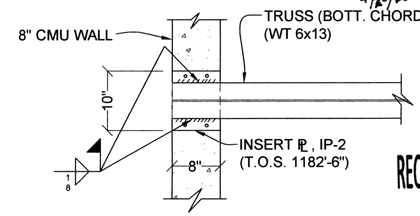
3 5-403 SECTION
(SCALE: 3/4" = 1'-0")



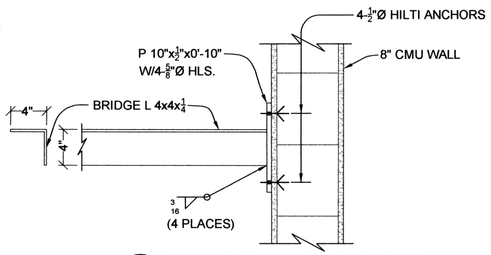
6 5-403 SECTION
(SCALE: 3/4" = 1'-0")



4 5-403 DETAIL - INSERT PL IP-2 (6 REQ'D.)
NO SCALE



5 5-403 DETAIL (TRUSS SEAT)
(SCALE: 1" = 1'-0")



7 5-403 DETAIL - BRIDGE ANCHOR
(SCALE: 1 1/2" = 1'-0")

LEGEND

LINTEL	
L - X	REF. LINTEL SCHEDULE DRG S-960

RECORD DRAWINGS

S-403

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	2/25/2010	AS SHOWN	14 OF 89

HEADWORKS ODOR CONTROL
CHEMICAL FEED BUILDING
STL. TRUSS & SECTIONS

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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12" CMU WALL

C#4

HEADWORKS BUILDING

SIDEWALK

SIDEWALK

SIDEWALK

℄ WALL

CHEM BLDG.

℄ T.O.S. EL. 1170'-4"

18'-5 7/8"

ASHPHALT
12' DRIVEWAY

C#4

NOTE: TOP OF PRECAST CONC. PIPE TRENCH TO MATCH PROPOSED GRADE AS SHOWN ON "HEADWORKS GRADING PLAN", VOLUME 1, SHEET 14 OF 52.

7'-0 1/4"

℄ T.O.S. EL. 1170'-3 3/4"

PRECAST CONC. TRENCH

2'-9 1/2"

135°

135°

℄

12'-10 1/8"

8" CMU WALL

℄ WALL

26'-4 1/4"

23'-3"

16'-6"

6'-7"

10'-9 1/2"

20'-0"

4'-0"

5'-0"

7'-4"

4'-0"

1'-0"

17'-3"

1'-0"

5'-3"

6'-2"

29'-8"

4'-0"

20'-6"

2'-7"

2'-7"

4'-0"

3'-0"

11'-2 1/2"

4'-0"

2'-4"

2'-4"

35'-1"

4'-0"

16'-5"

15'-5"

10'-0"

1'-0"

T.O.C. EL. 1170'-6"

T.O.C. EL. 1170'-6"

T.O.C. EL. 1170'-6"

42" THK. MAT
REINF. #9 @12" O.C., E.W.
TOP & BOTT., T.O.C. EL. 1171'-0"

4" FLR. DRAIN

4" FLR. DRAIN

6" THK. SLAB-ON-GRADE,
REINF. #4@12" O.C., E.W.,
OVER 4" SAND CUSHION, OVER
COMPACTED ENGINEERED FILL.
F.F. EL. 1170'-6"

#4, U-5@12" O.C.

#8@8" O.C. E.W.,
TOP & BOTT.

BLOWER PAD
T.O.C. EL. 1171'-0"

#4, U-5@12" O.C.

℄ PIPE
SUPPORT 'C'

℄ PIPE
SUPPORT 'A'

℄ PIPE
SUPPORT 'B'

℄ BLOWER PAD

℄ PIPE
SUPPORT 'B'

℄ PIPE
SUPPORT 'A'

BLOWER PAD
T.O.C. EL. 1171'-0"

#4, U-5@12" O.C.

#8@8" O.C. E.W.,
TOP & BOTT.

#4, U-5@12" O.C.

2'-8 1/2"

2'-8 1/2"

6"

1'-4"

3'-9"

2'-8 1/2"

2'-8 1/2"

6"

3'-9"

2'-3"

6"

3'-6"

T.O.C. EL. 1170'-6"

3'-6"

6"

1'-8"

1168'-6"

1 1/4" GRTG. (GALV.)

6"

2'-9 1/2"

4"Ø PVC, SCH. 40
DRAIN PIPE

6"

PRECAST CONC. TRENCH
(20" WIDE x 24" DEEP HS20
WITH STEEL LIDS)

1 S-405

3 S-405

5 S-405

7 S-405

8 S-405

6 S-405

9 S-406

NORTH

HEADWORKS ODOR CONTROL UNIT - PLAN VIEW

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

RECORD DRAWINGS

S-404

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/10

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	1/22/2010	AS SHOWN	15 OF 89

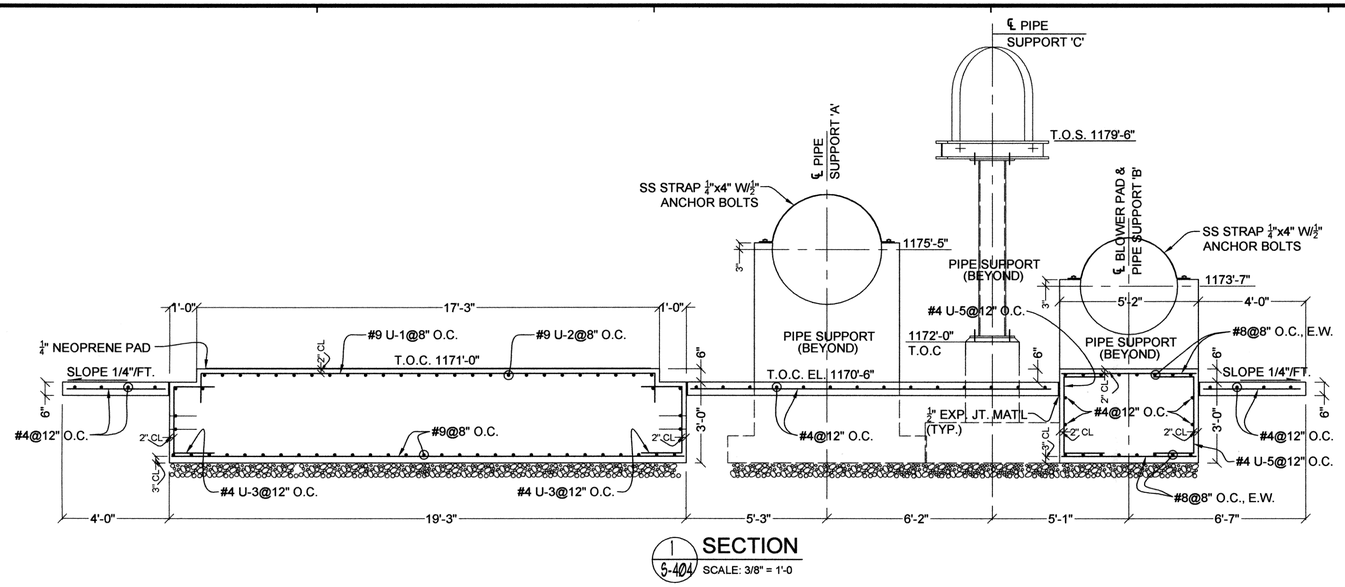
HEADWORKS ODOR CONTROL
STRUCTURAL DETAILS
1 OF 3

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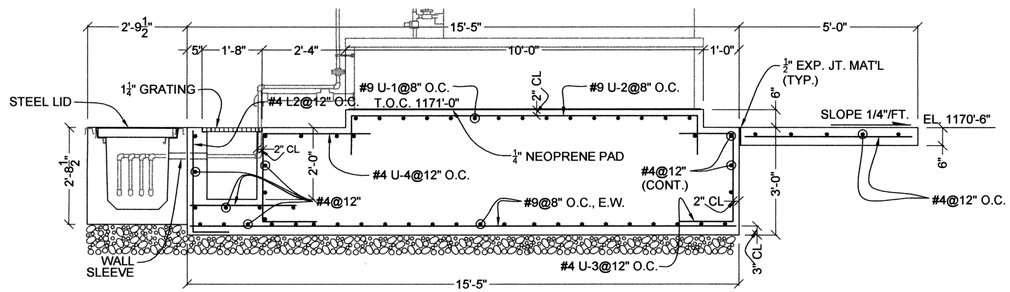
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

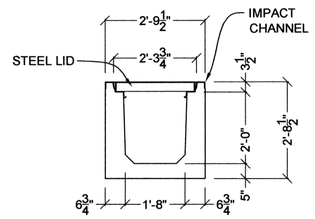
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1 S-404 **SECTION**
SCALE: 3/8" = 1'-0

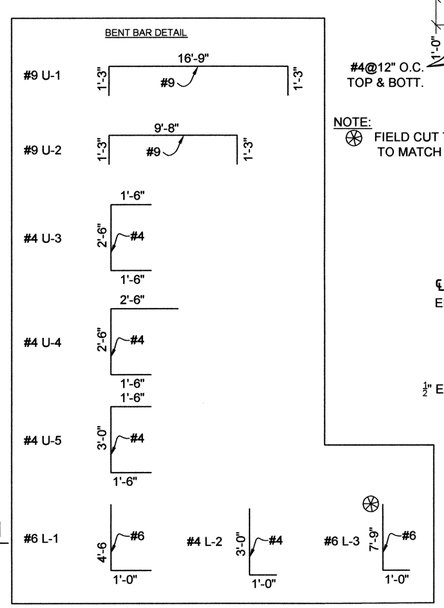


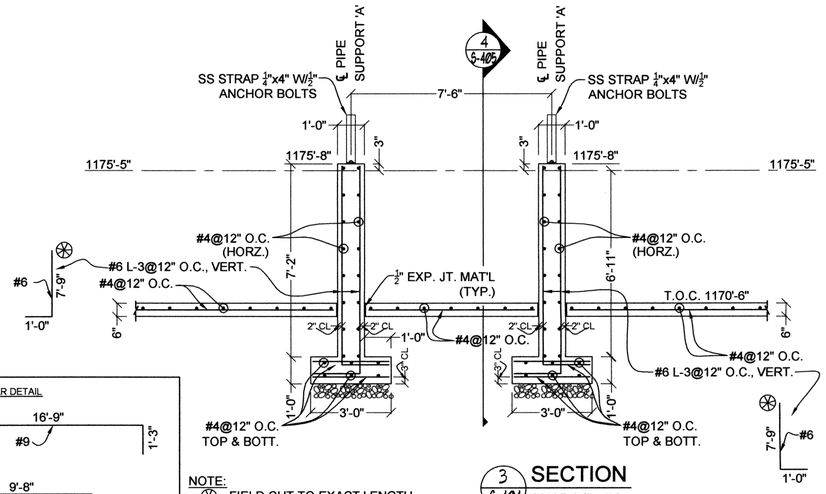
2 S-404 **SECTION**
SCALE: 1/2" = 1'-0



5 S-404 **PRECAST TRENCH SECTION**
SCALE: 3/8" = 1'-0

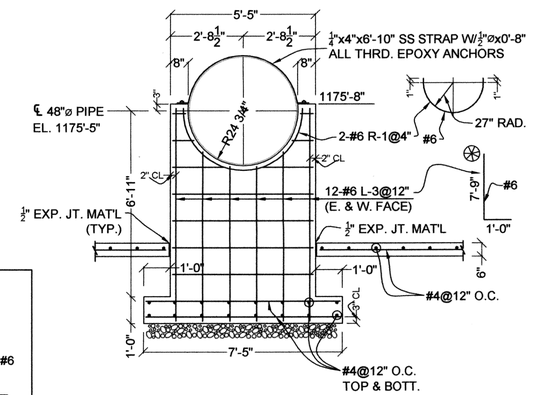
BENT BAR DETAIL



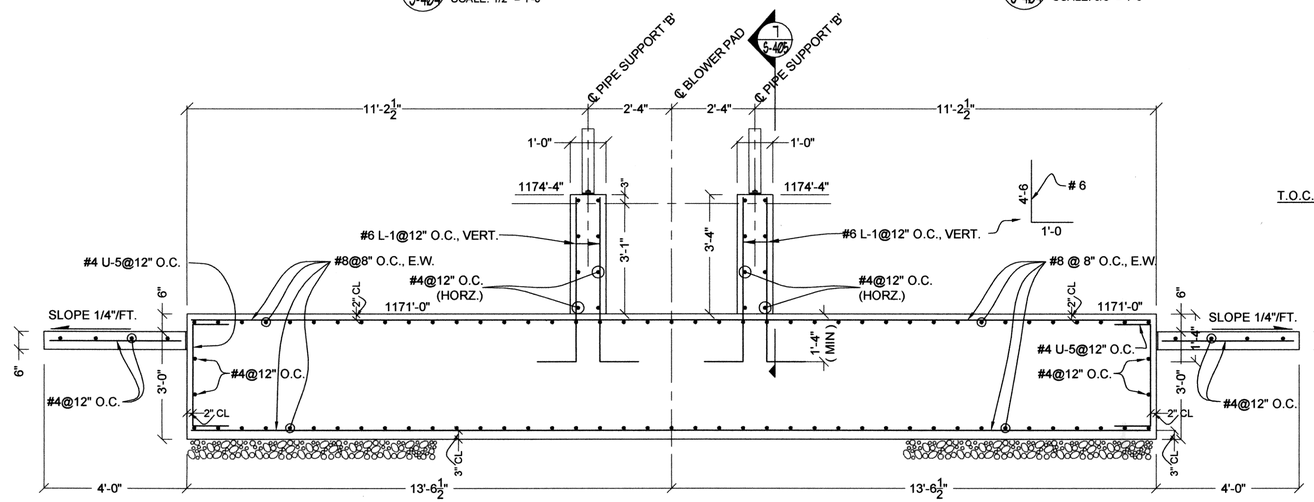


NOTE:
⊛ FIELD CUT TO EXACT LENGTH TO MATCH PROFILE

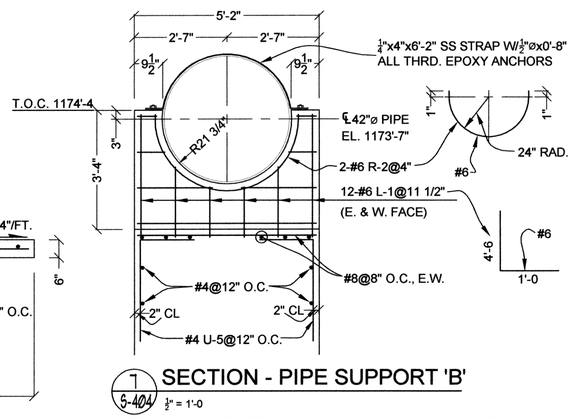
3 S-404 **SECTION**
SCALE: 3/8" = 1'-0



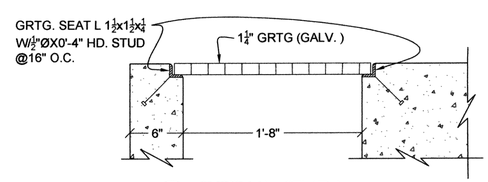
4 S-405 **SECTION - PIPE SUPPORT 'A'**
SCALE: 3/8" = 1'-0



6 S-404 **SECTION**
SCALE: 1/2" = 1'-0



7 S-404 **SECTION - PIPE SUPPORT 'B'**
½" = 1'-0



8 S-404 **DETAIL (TYP.)**
1 1/2" = 1'-0



FOUNDATION NOTE:
IF FOUNDATION IS NOT RESTING ON ROCK PROVIDE AT LEAST 6" OF CRUSHED AGGREGATE ROCK.

RECORD DRAWINGS

S-405

REVISIONS:	DATE:

HEADWORKS ODOR CONTROL STRUCTURAL DETAILS 2 OF 3

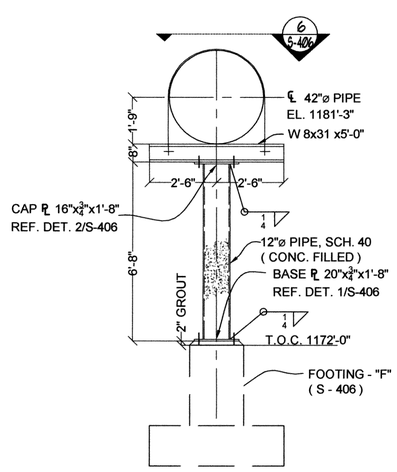
DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	4/23/2010	AS SHOWN	16 OF 89

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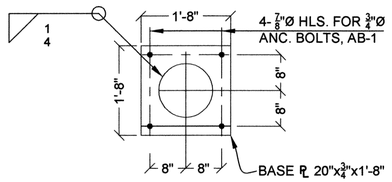
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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

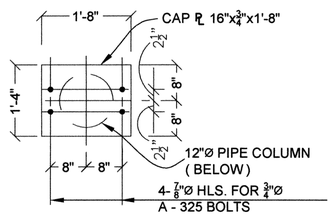
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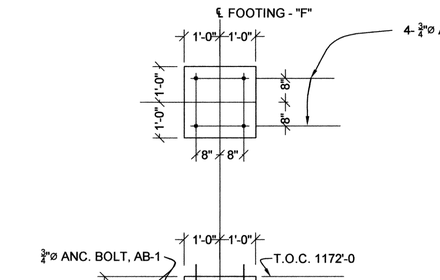
9 S-404 **DETAIL - PIPE SUPPORT 'C'**
SCALE: 3/8" = 1'-0



1 S-406 **DETAIL - BASE ℙ**
SCALE: 3/4" = 1'-0

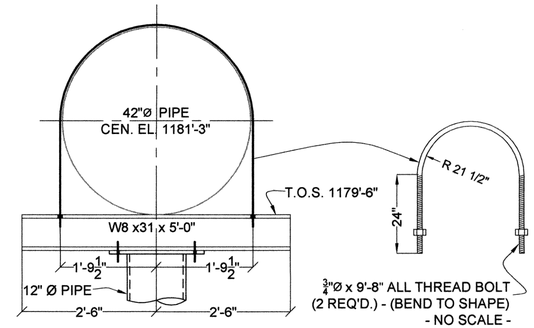


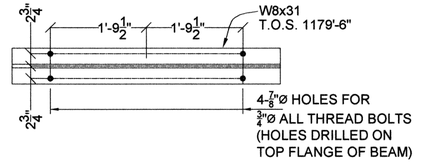
2 S-406 **DETAIL - CAP ℙ**
SCALE: 3/4" = 1'-0



3 S-406 **DETAIL - FOOTING 'F'**
SCALE: 1/2" = 1'-0

4 S-406 **DETAIL - 3/4" ANCHOR BOLT AB-1**
NO SCALE





(1 PLACE)

5 S-406 **DETAIL**
SCALE: 3/4" = 1'-0

6 S-406 **PLAN**
SCALE: 3/4" = 1'-0

SACHIN N. MUKHERJEE
11195
OKLAHOMA
REGISTERED PROFESSIONAL ENGINEER
5/17/10

RECORD DRAWINGS

FOUNDATION NOTE:
IF FOUNDATION IS NOT RESTING ON ROCK PROVIDE AT LEAST 6" OF CRUSHED AGGREGATE ROCK.

BENT BAR NOTE:
SEE BENT BAR DETAILS ON S-405.

S-406

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	4/23/2010	AS SHOWN	17 OF 89

REVISIONS:	DATE:

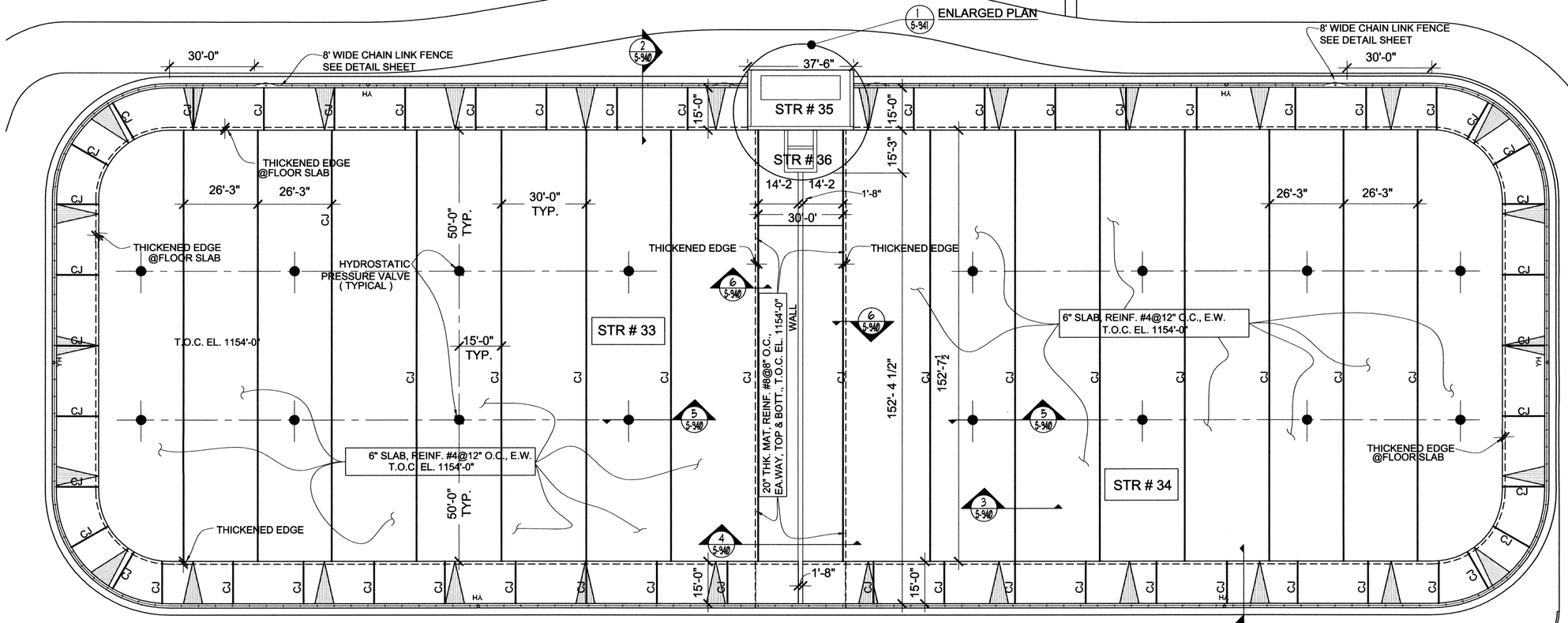
HEADWORKS ODOR CONTROL STRUCTURAL DETAILS 3 OF 3

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2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
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EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

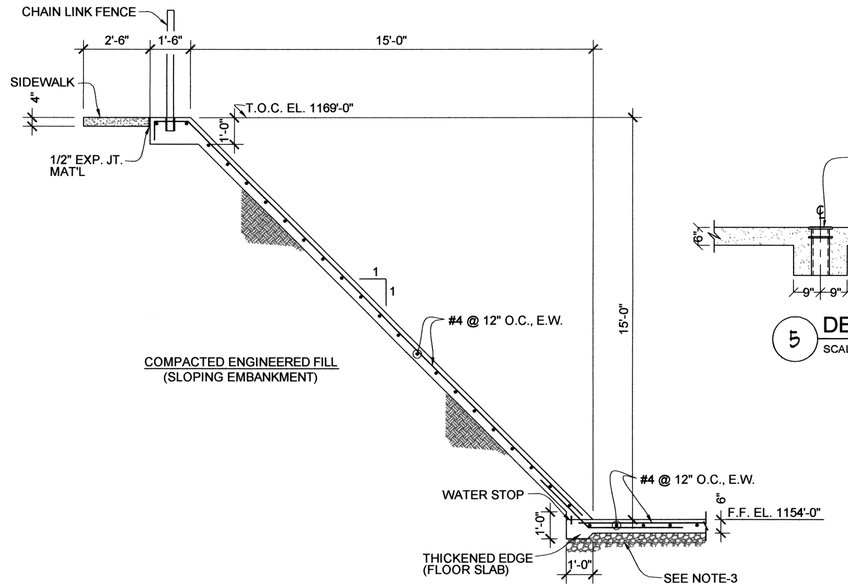
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\Headworks\S404-OdorControlDetails.dwg

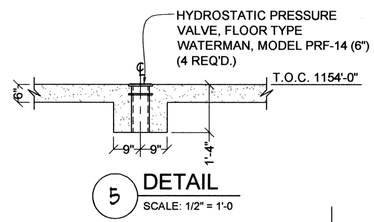


NOTES:

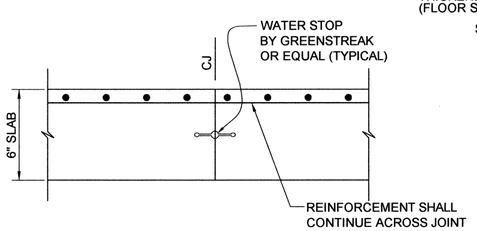
1. FOR GENERAL STRUCTURAL NOTES SEE STRUCTURAL STANDARDS.
2. COORDINATE ALL INSERTS, ANCHOR BOLT SIZE AND LOCATION WITH MECHANICAL PROCESS DRAWINGS.
3. 6" LAYER OF CRUSHED ROCK TO BE PROVIDED WHERE BOTTOM EXCAVATION NOT FOUNDED IN BED ROCK.
4. ALL CONSTRUCTION JOINTS NOT SHOWN ON THIS DRAWING SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.



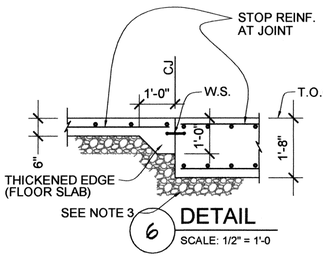
2 SECTION (TYP. LINER)
SCALE: 3/8" = 1'-0



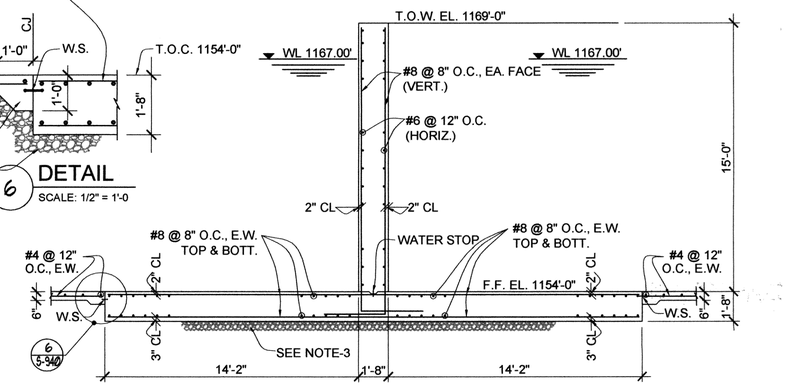
5 DETAIL
SCALE: 1/2" = 1'-0



3 DETAIL - TYPICAL CONST. JT. (CJ)
(NO SCALE)



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



4 SECTION (RETAINING WALL)
SCALE: 1/4" = 1'-0

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUNJEE 11195 OKLAHOMA
5/17/10

RECORD DRAWINGS

S-940

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/23/10	AS SHOWN	18 OF 89

STRUCTURES NO. 35 & 36
STRUCTURAL DETAILS

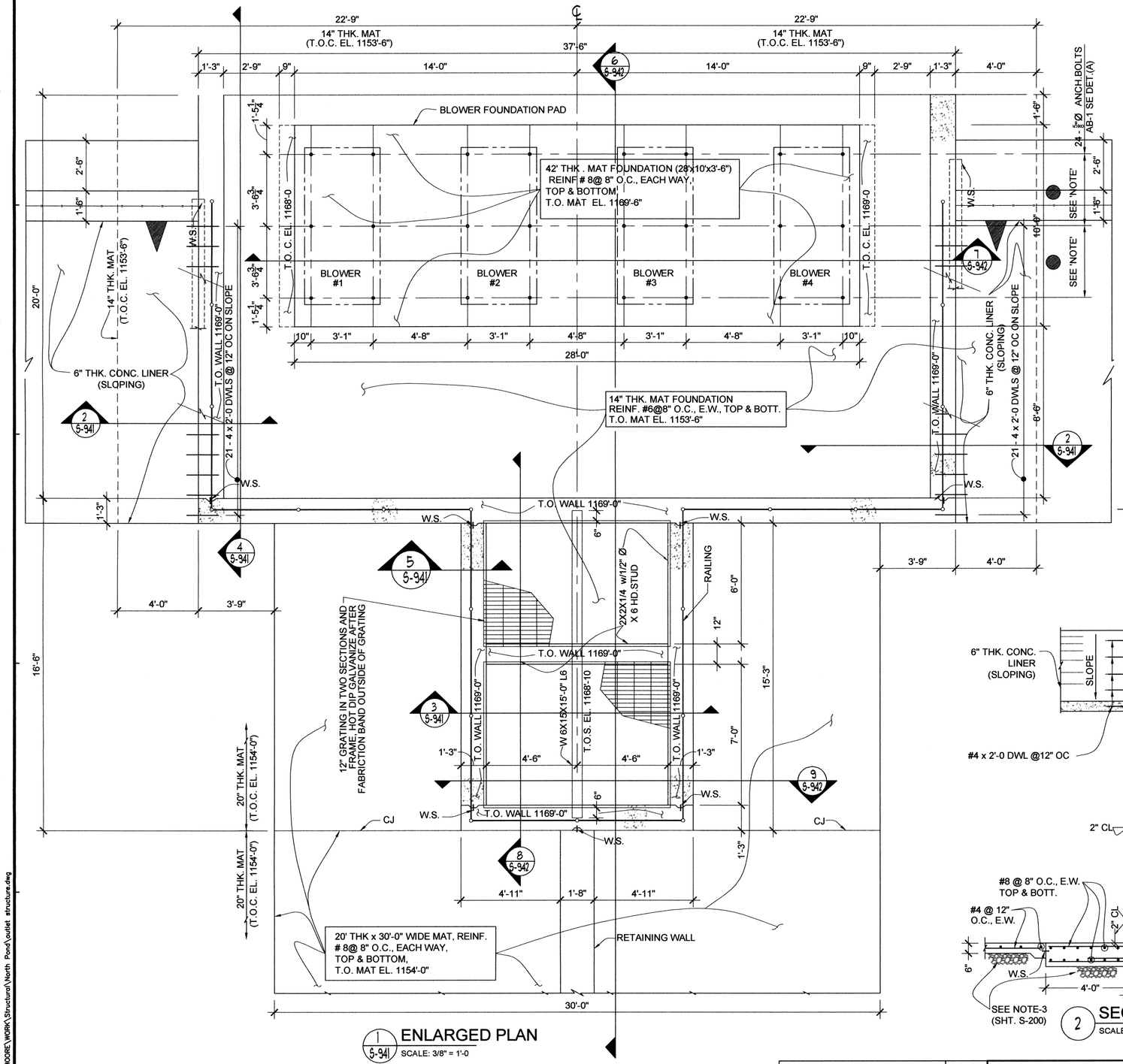
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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

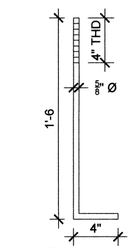
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

G:_DRAWINGS\MOORE_WORK\Structural\North Pond\outlet structure.dwg

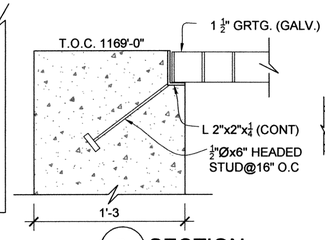
NOTE:
COORDINATE ALL ANCHOR BOLT LOCATIONS AND SIZE WITH MECHANICAL PROCESS DRAWINGS.



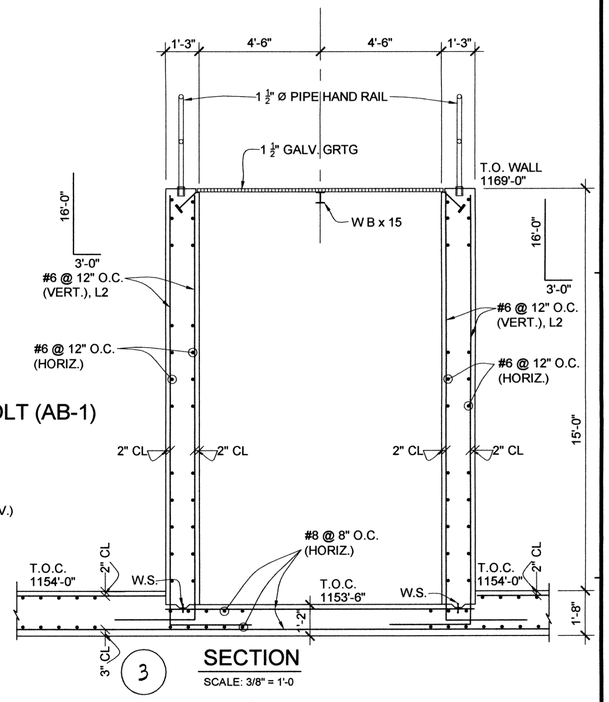
1 ENLARGED PLAN
S-941 SCALE: 3/8" = 1'-0



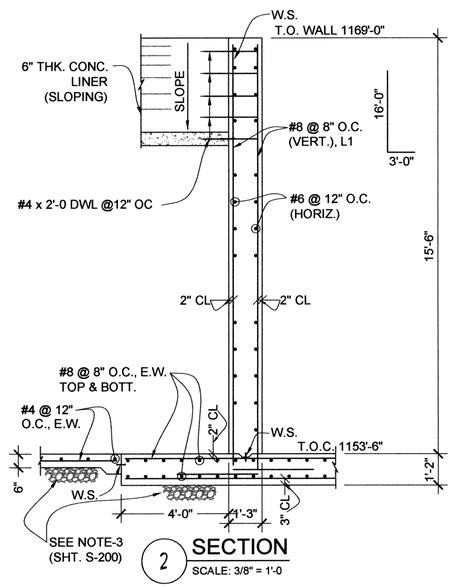
A DET. ANC. BOLT (AB-1)
NO SCALE



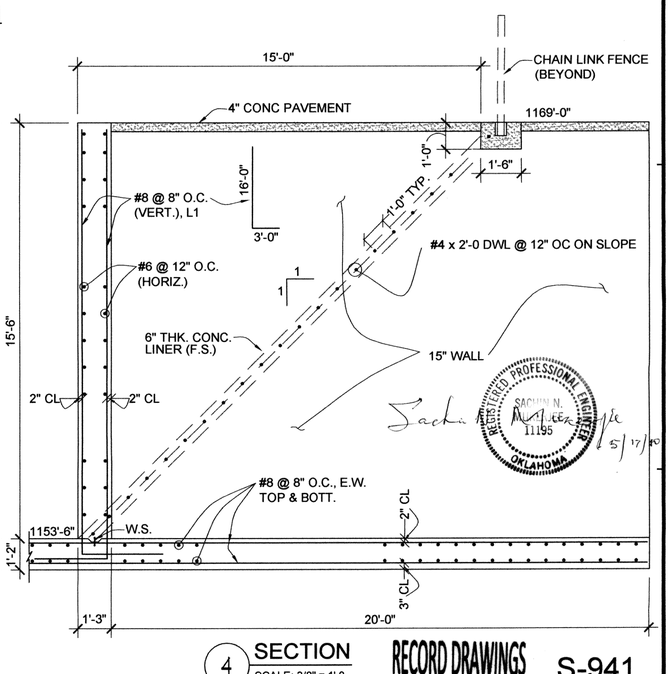
5 SECTION
NO SCALE



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



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



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

RECORD DRAWINGS

S-941

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/24/10	AS SHOWN	19 OF 89

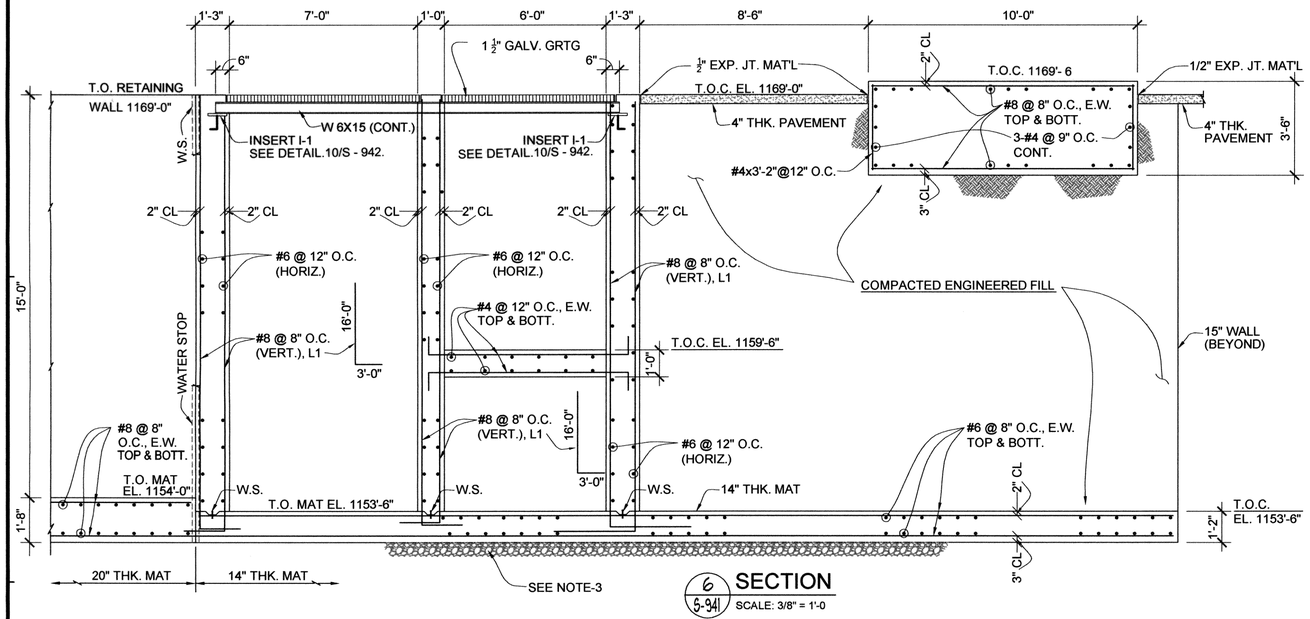
STRUCTURES NO. 35 & 36
STRUCTURAL DETAILS

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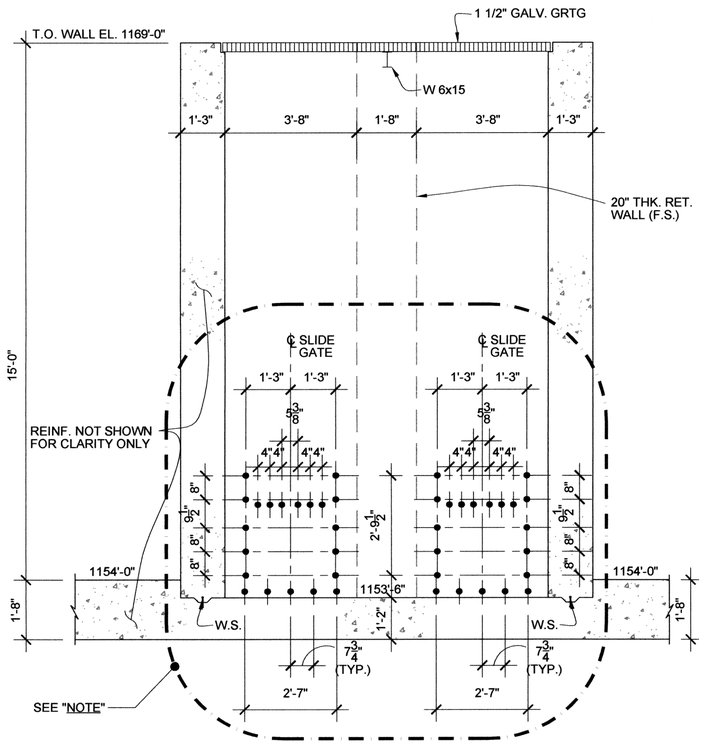
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\North Pond\outlet structure.dwg

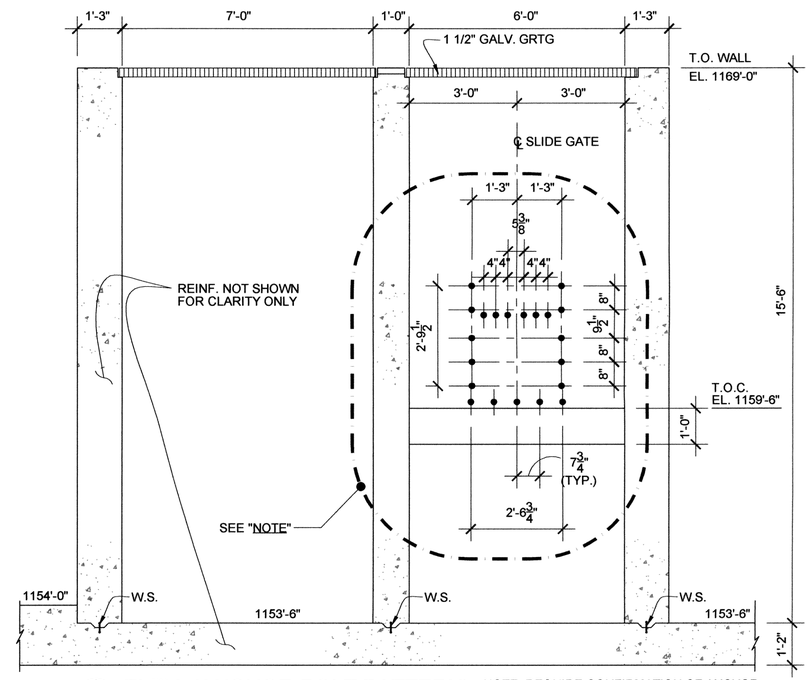


6 SECTION
5-941 SCALE: 3/8" = 1'-0

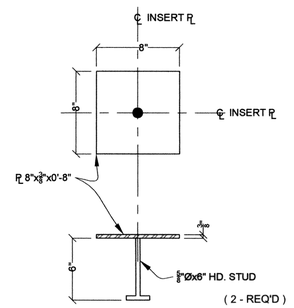


NOTE: REQUIRE CONFIRMATION OF ANCHOR BOLT PATTERN BY GATE MANUFACTURER

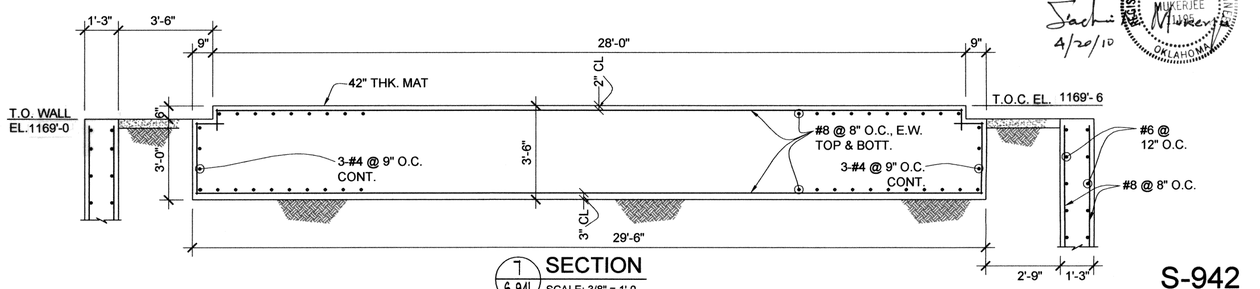
9 ELEV. (ANCHOR BOLT PATTERN)
5-941 SCALE: 1/2" = 1'-0



8 ELEV. (ANCHOR BOLT PATTERN) NOTE: REQUIRE CONFIRMATION OF ANCHOR BOLT PATTERN BY GATE MANUFACTURER
5-941 SCALE: 1/2" = 1'-0



10 DETAIL - INSERT PL I-1
NO SCALE



7 SECTION
5-941 SCALE: 3/8" = 1'-0

RECORD DRAWINGS

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUKERJEE 13981 OKLAHOMA
4/20/10

S-942

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	1/10/10	AS SHOWN	20 OF 89

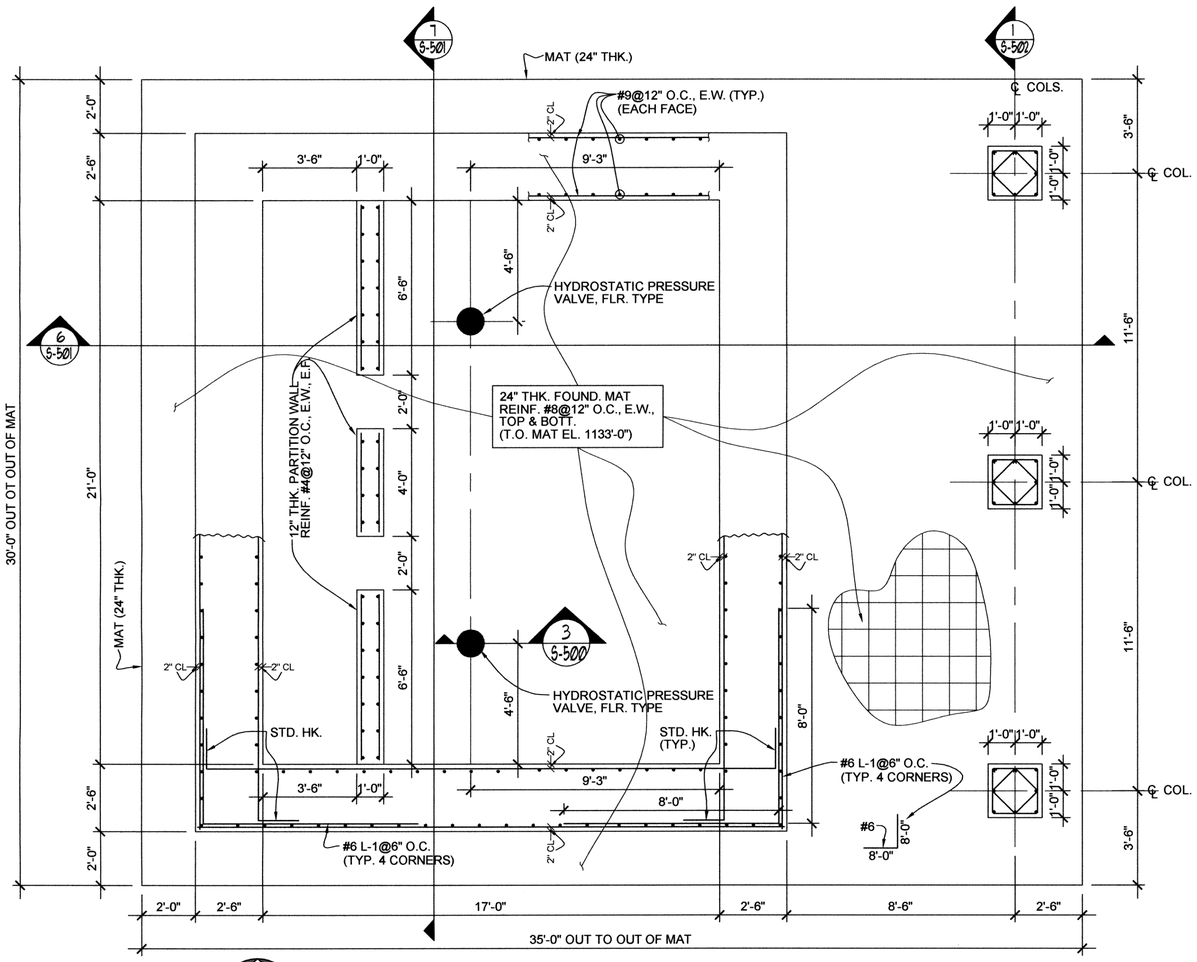
STRUCTURES NO. 35 & 36
STRUCTURAL DETAILS

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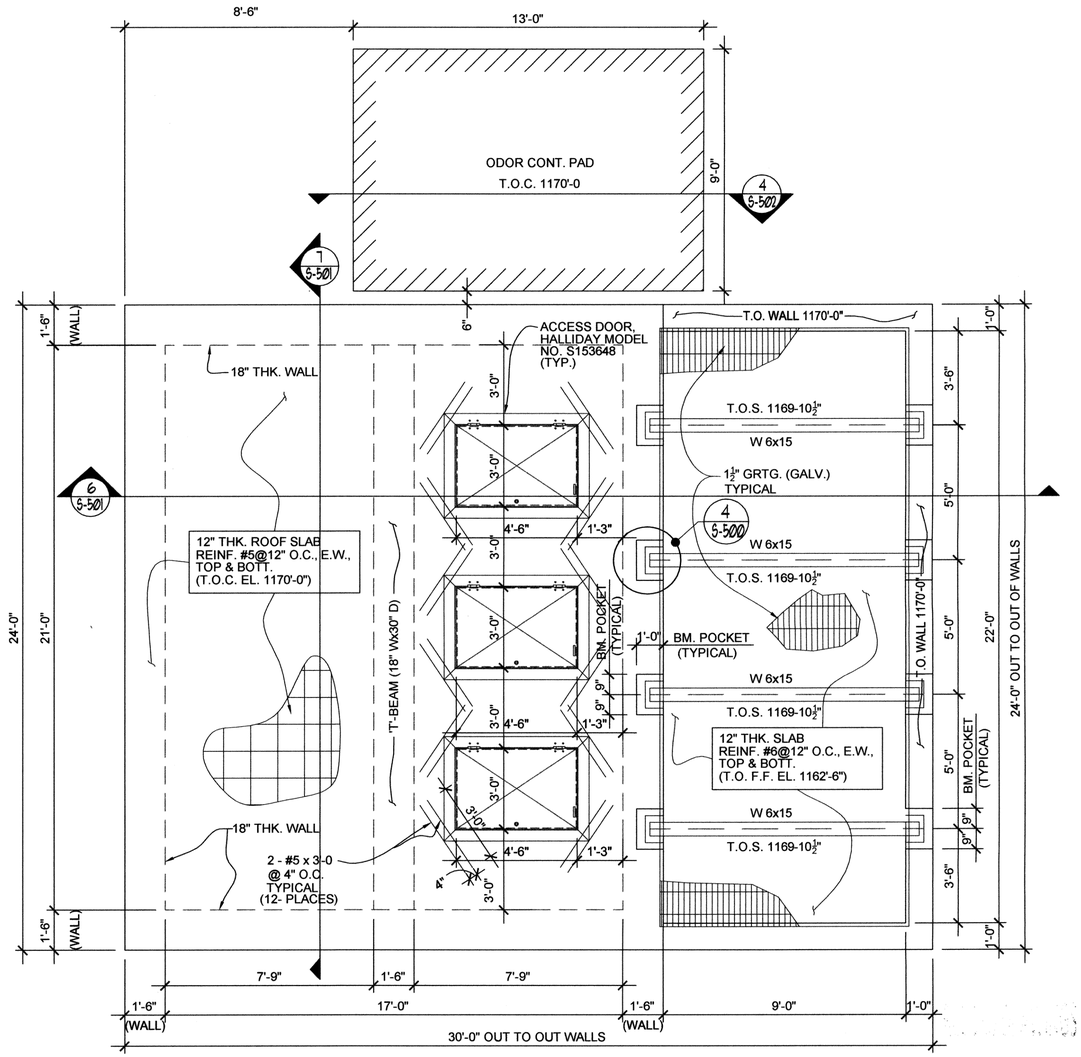
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structure\North Pond\outlet structure.dwg



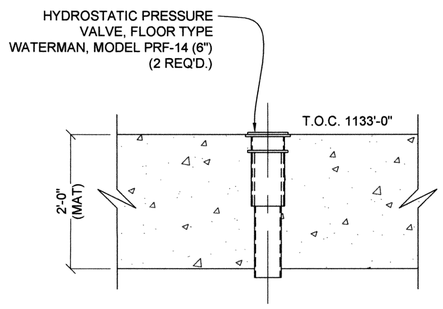
1 S-500 FOUNDATION PLAN - T.O. MAT EL. 1133'-0"

SCALE: 3/8" = 1'-0



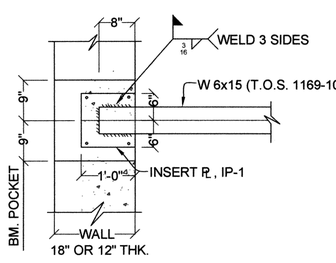
2 S-500 ROOF FRAMING PLAN & ODOR CONTROL PAD - T.O.C. EL. 1170'-0"

SCALE: 3/8" = 1'-0



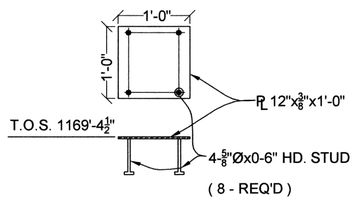
3 S-500 SECTION

SCALE: 3/4" = 1'-0



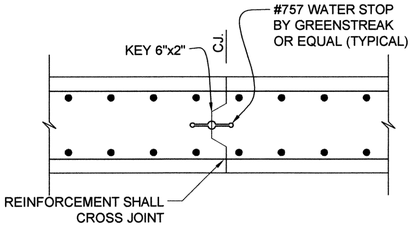
4 S-500 DETAIL - BM. POCKET

SCALE: 3/4" = 1'-0



5 S-500 DETAIL - INSERT PL IP-1

SCALE: 1" = 1'-0



6 S-500 DETAIL - CONSTRUCTION JT.@WALL OR FLOOR

NO SCALE

REGISTERED PROFESSIONAL ENGINEER — SACHIN N. MUKHERJEE — 11795 — OKLAHOMA — 5/17/10

RECORD DRAWINGS

S-500

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	5/3/2010	AS SHOWN	21 OF 89

REVISIONS:	DATE:

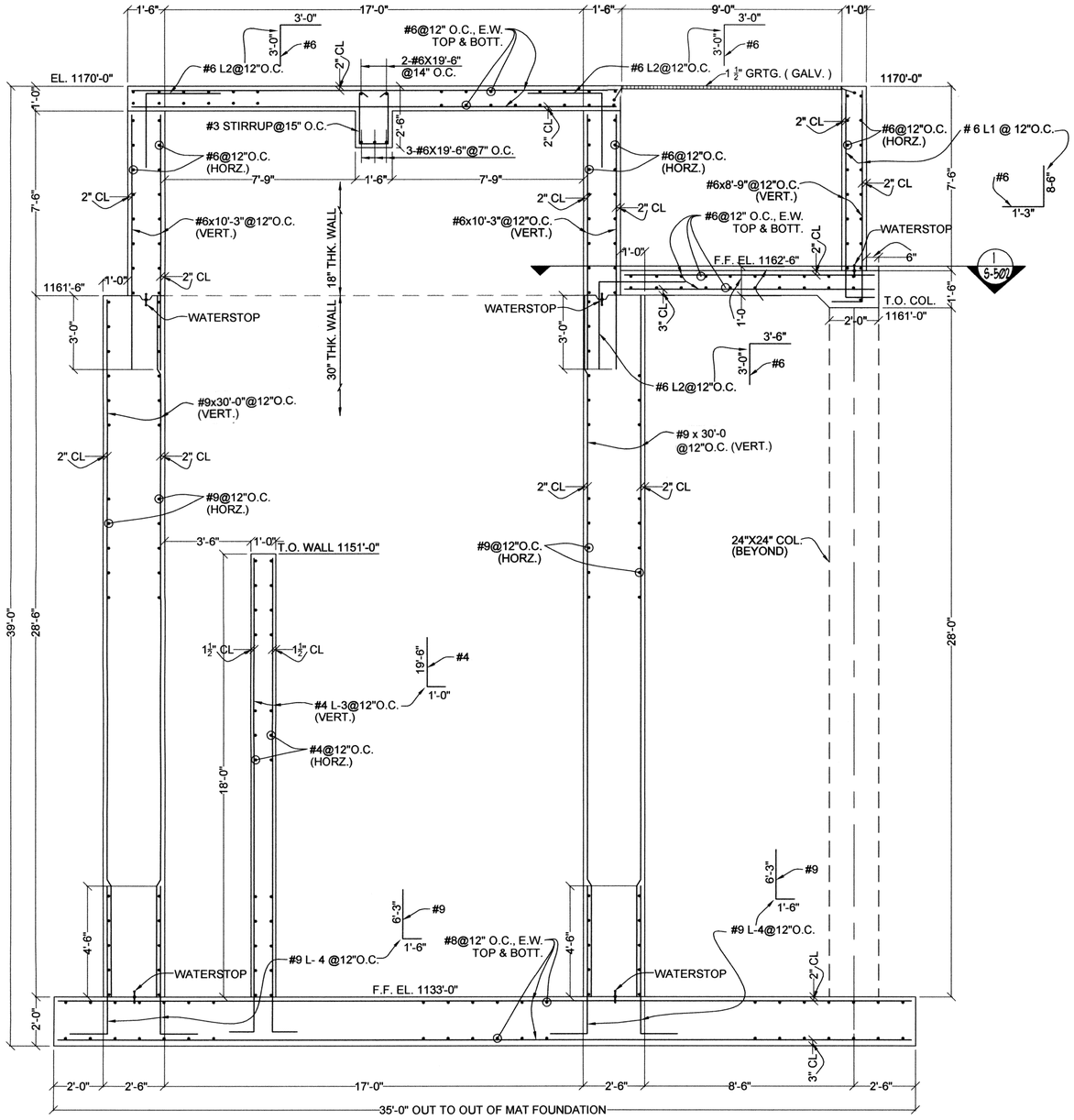
STRUCTURAL DETAILS
STRUCTURE No. 37
RETURN LIFT STATION

EAGLE OFFICE CENTER
2803 SOUTH BRYANT
EDMOND, OK. 73013
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FAX. (405) 844-3600

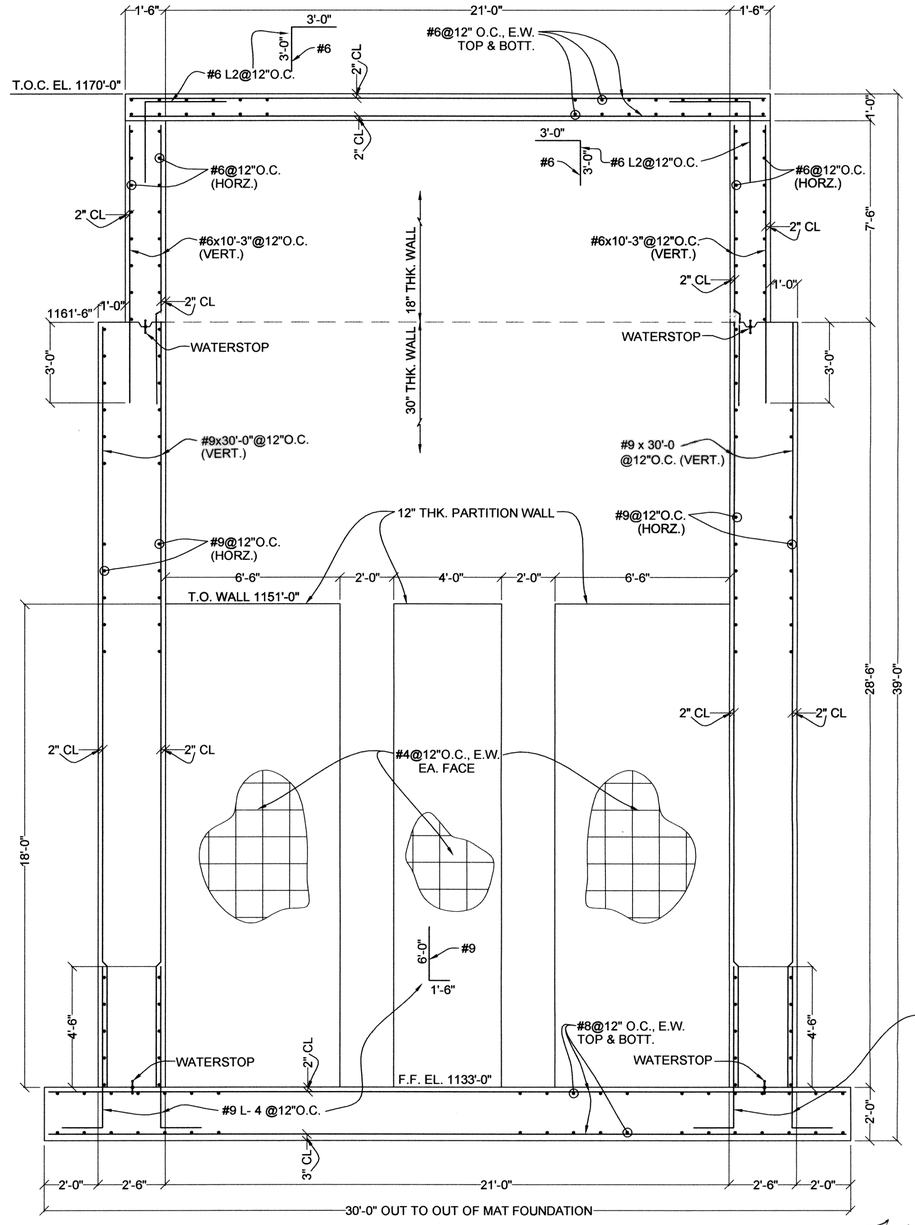
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

Q:\DRAWINGS\MOORE\WORK\Structural\S500-ReturnLiftStation.dwg



6 S-500 SECTION
SCALE: 3/8" = 1'-0



7 S-500 SECTION
SCALE: 3/8" = 1'-0

Sachin N. Muker 4/20/10

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUKER 11195 OKLAHOMA

RECORD DRAWINGS

S-501

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S.D.		S.D.	S.D.	1/13/2010	AS SHOWN	22 OF 89

REVISIONS:	DATE:

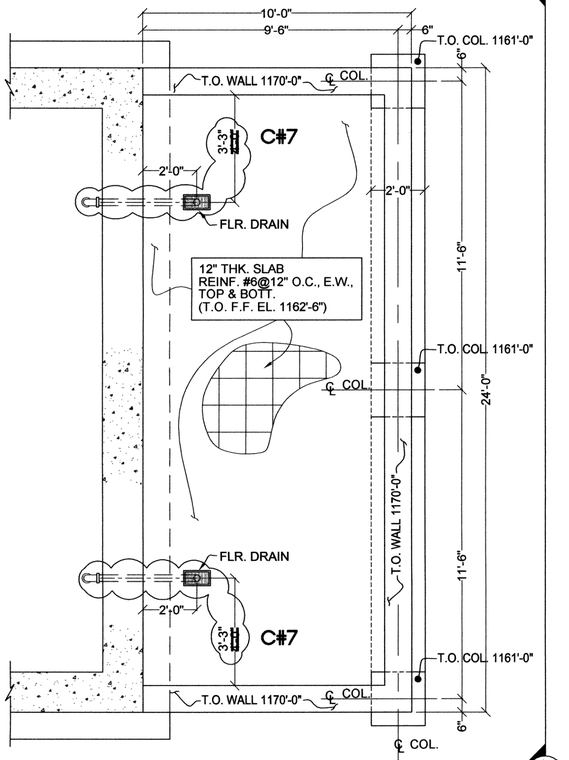
STRUCTURAL DETAILS
STRUCTURE No. 37
RETURN LIFT STATION

EAGLE OFFICE CENTER
2803 SOUTH BRYANT
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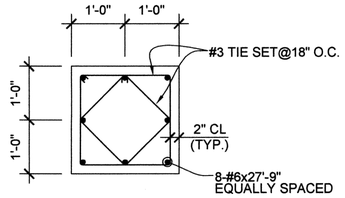
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

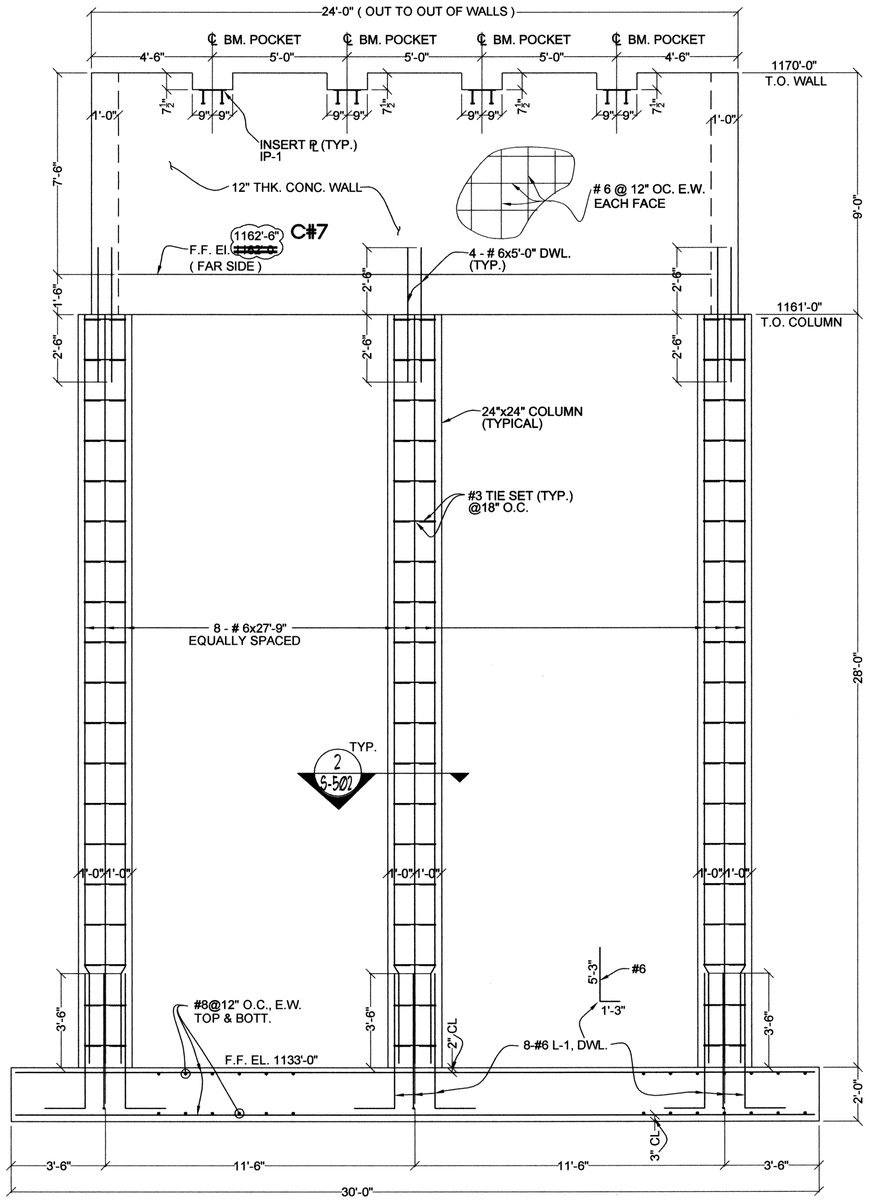
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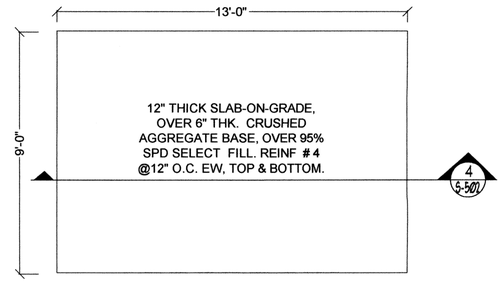
1 / S-501 PLAN - FLR. EL. 1162'-0"
SCALE: 3/8" = 1'-0



2 / S-502 SECTION
SCALE: 3/4" = 1'-0

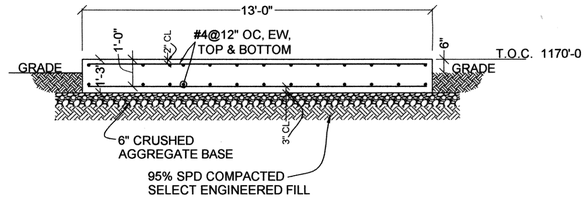


1 / S-502 SECTION
SCALE: 3/8" = 1'-0





3 / S-500 ODOR CONTROL PAD PLAN
SCALE: 3/8" = 1'-0



4 / S-500 SECTION
SCALE: 3/8" = 1'-0

SATISH DASHARATHY 11456 2-17-12

RECORD DRAWINGS

S-502

REVISIONS:	DATE:
C#7 – CLARIFICATION NO. 7	2/14/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	5/3/2010	AS SHOWN	23 OF 89

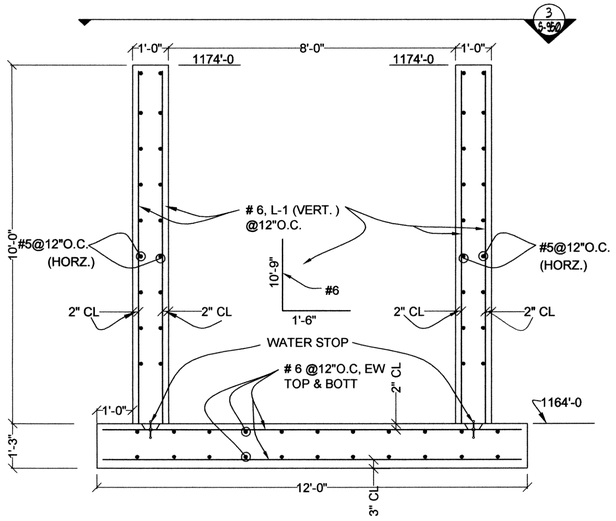
STRUCTURAL DETAILS
STRUCTURE No. 37
RETURN LIFT STATION

EAGLE OFFICE CENTER
2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
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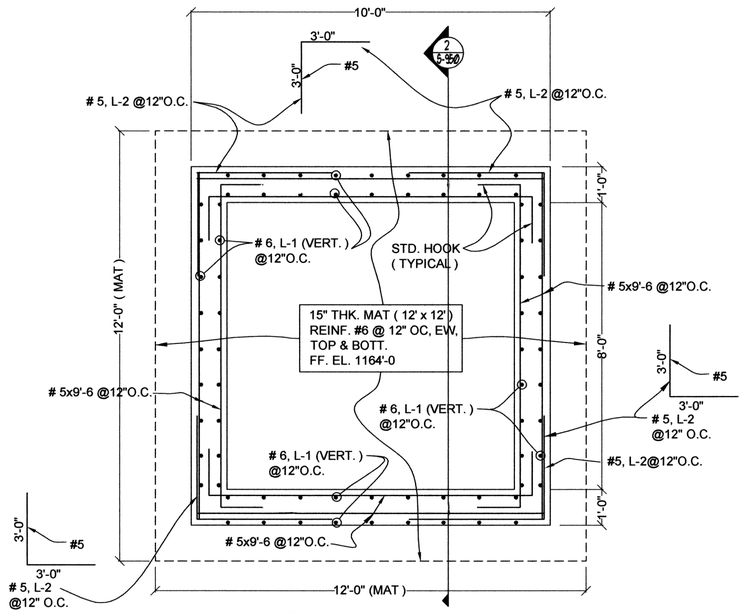
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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

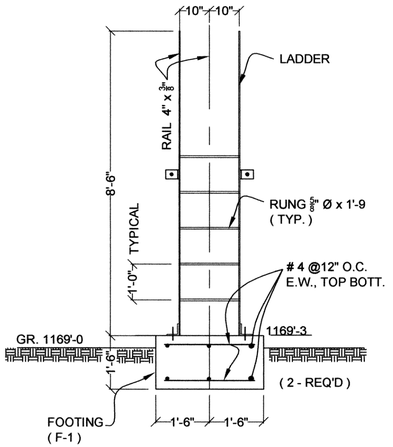
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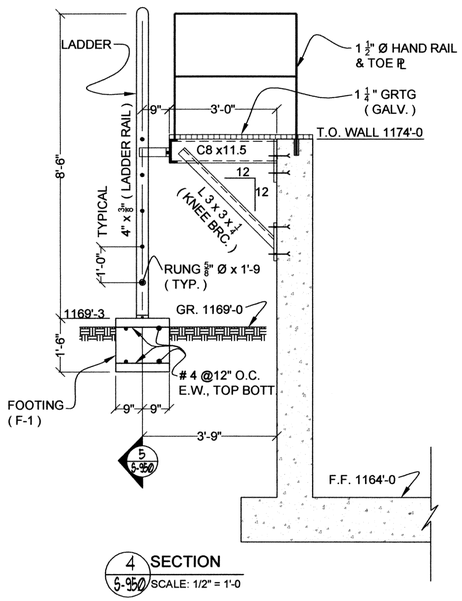
2 SECTION
2 / S-950 SCALE: 1/2" = 1'-0



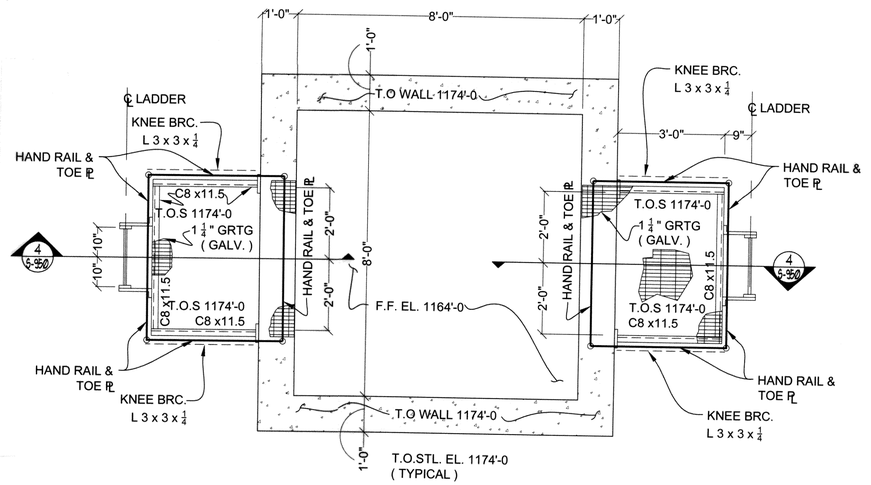
1 FOUNDATION PLAN
1 / S-950 SCALE: 1/2" = 1'-0



5 SECTION - LADDER DET.
5 / S-950 SCALE: 1/2" = 1'-0



4 SECTION
4 / S-950 SCALE: 1/2" = 1'-0



3 PLAN - PLATFORM, EL. 1174'-0
3 / S-950 SCALE: 1/2" = 1'-0

Sachin N. Mukerji 4/20/10
REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUKERJI 19439 OKLAHOMA

RECORD DRAWINGS

S-950

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S.D.		S.D.	S.D.	2/12/10	AS SHOWN	24 OF 89

REVISIONS:	DATE:

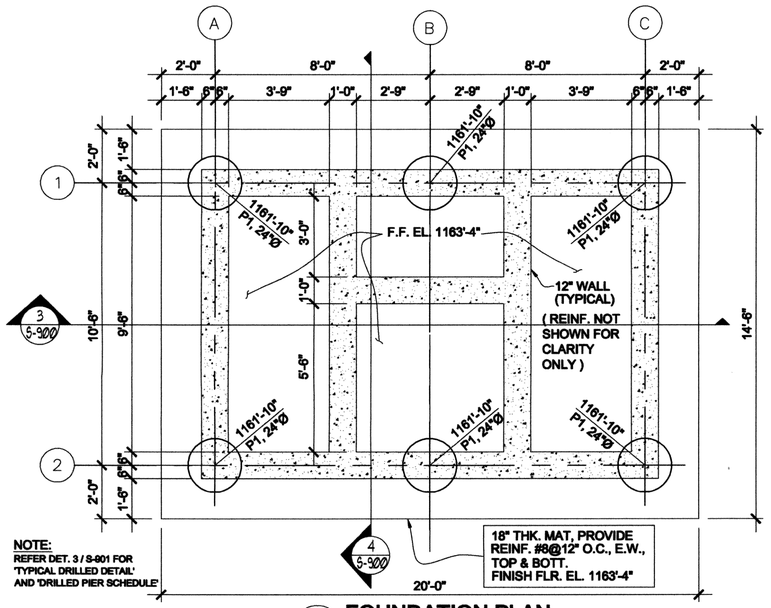
STRUCTURAL DETAILS
STRUCTURE # 19
CENTER POND SPLITTER BOX

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2803 SOUTH BRYANT
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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

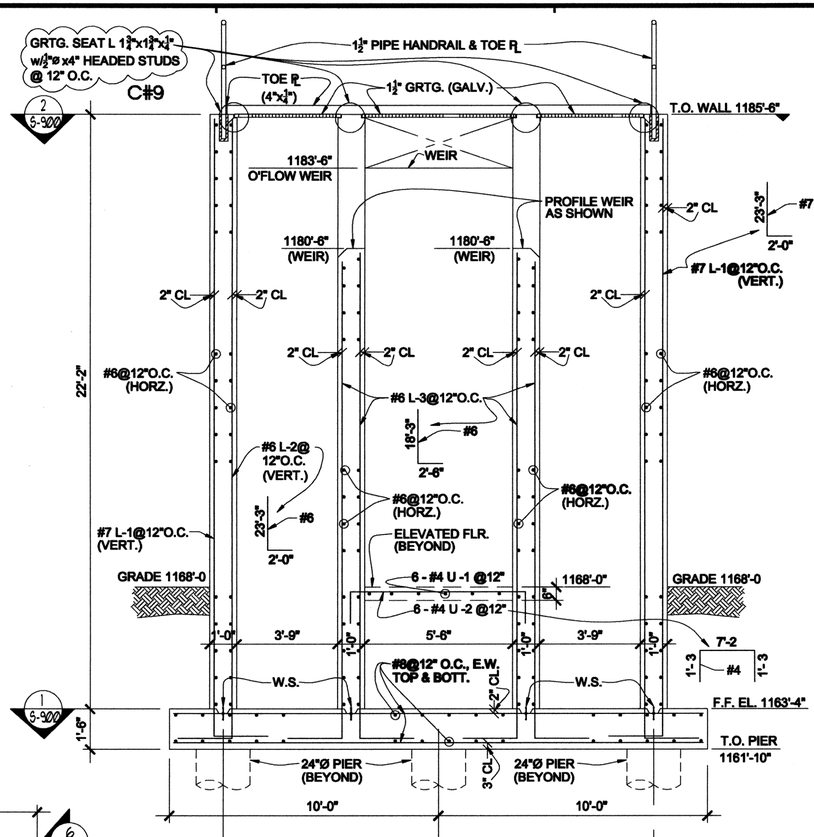
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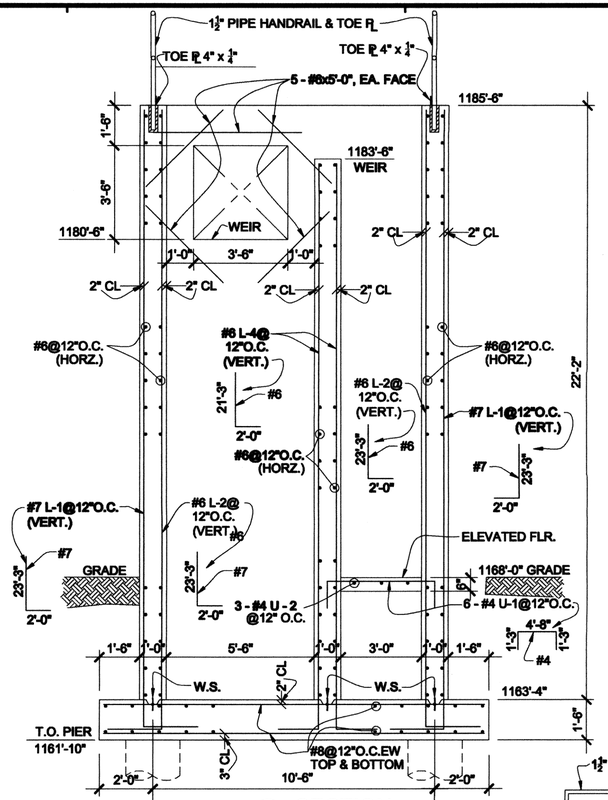


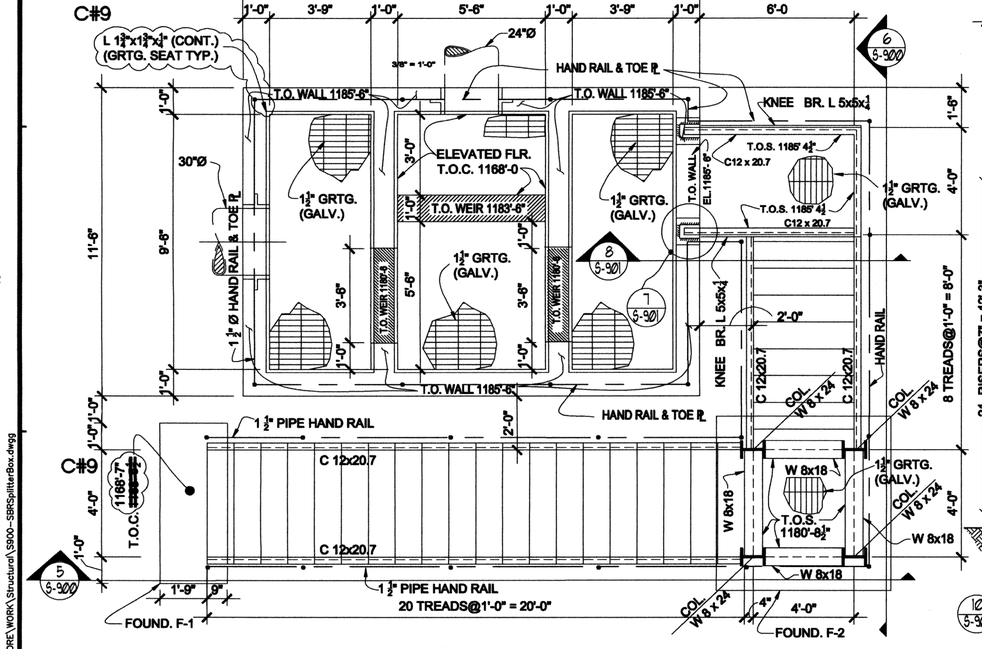
NOTE:
REFER DET. 3 / S-901 FOR 'TYPICAL DRILLED DETAIL' AND 'DRILLED PIER SCHEDULE'

1 S-900 FOUNDATION PLAN

SCALE: 3/8" = 1'-0

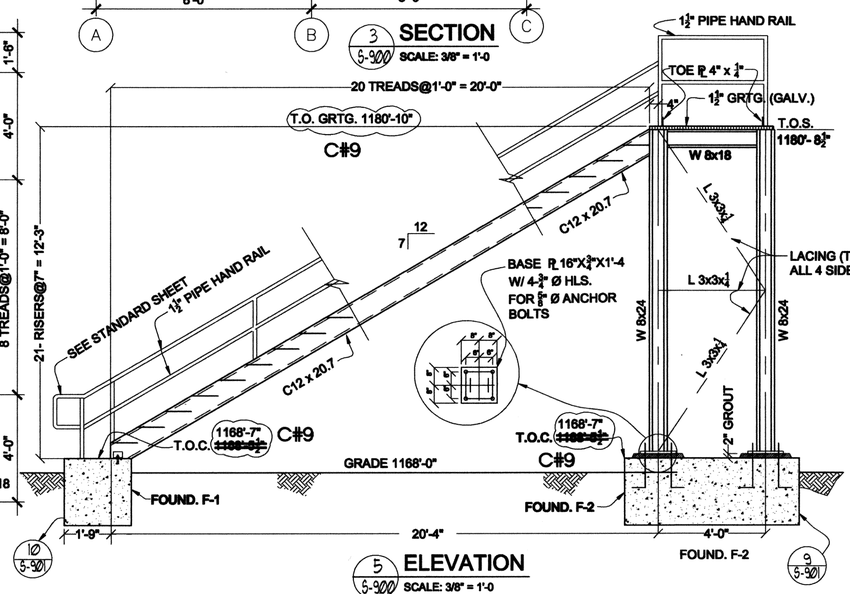


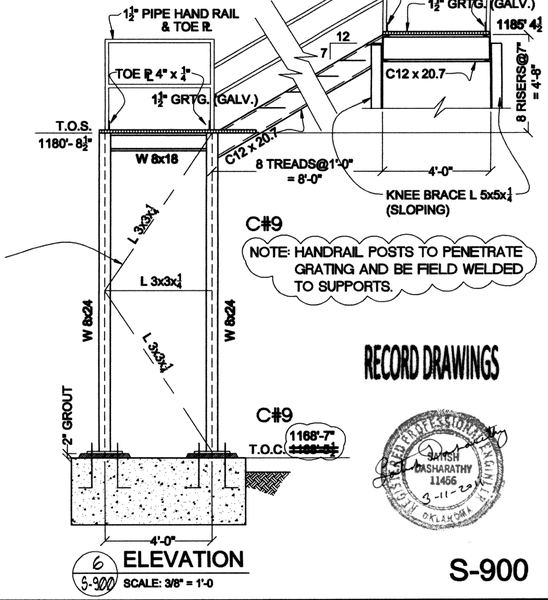




2 S-500 PLAN - T.O. WALL EL. 1185'-6"

SCALE: 3/8" = 1'-0





RECORD DRAWINGS

S-900

REVISIONS:	DATE:
C#9 – CLARIFICATION NO. 9	3/11/2011

STRUCTURAL DETAILS
STRUCTURE # 63
SBR INFLUENT SPLITTER BOX

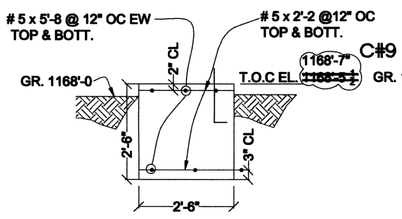
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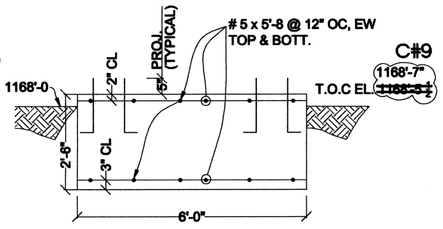
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S.D.	S.D.	S.D.	S.D.	4/27/2010	AS SHOWN	25 OF 89

C:\DRAWINGS\MOORE\WORK\Structural\S900--SBRSplitterBox.dwg

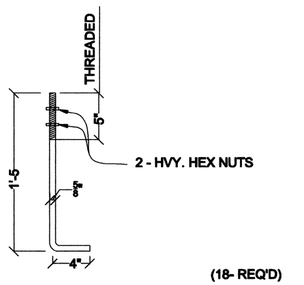
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK



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

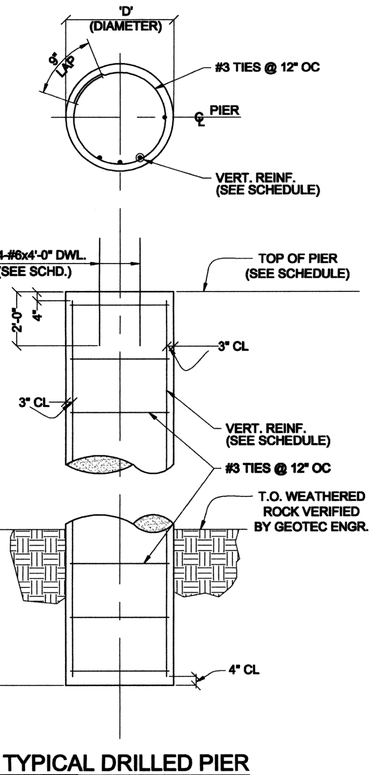


ELEVATION
SCALE: 1/2" = 1'-0



(18- REQ'D)

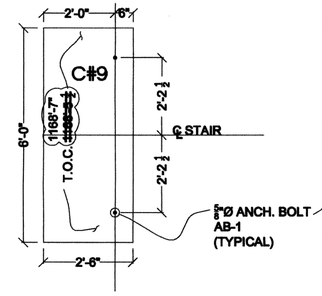
1 / S-901 DETAIL - ANCH. BOLT AB-1
SCALE: 1 ½" = 1'-0



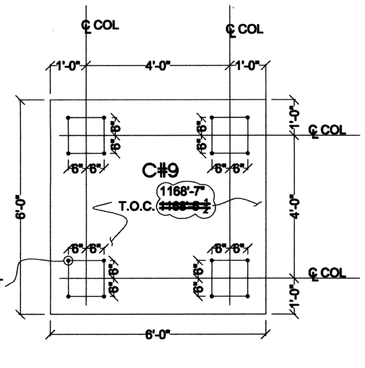
3 / S-901 TYPICAL DRILLED PIER
(NO SCALE)

DRILLED PIER SCHEDULE

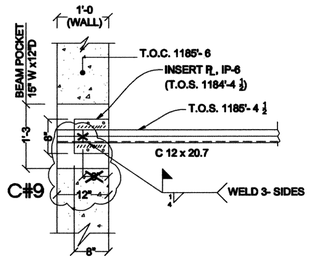
MARK	SIZE (DIA.)	PENETRATION	REINFORCEMENT		T.O. PIER	NO. REQ'D
			VERT.	DOWEL		
P-1	24"Ø	2'-0"	6-#6	4-#6	EL. 1161'-10	6



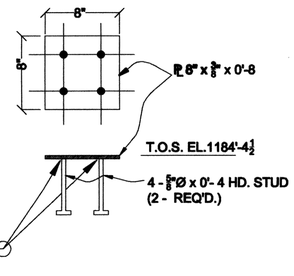
10 / S-900 PLAN FOUNDATION F-1
SCALE: 1/2" = 1'-0



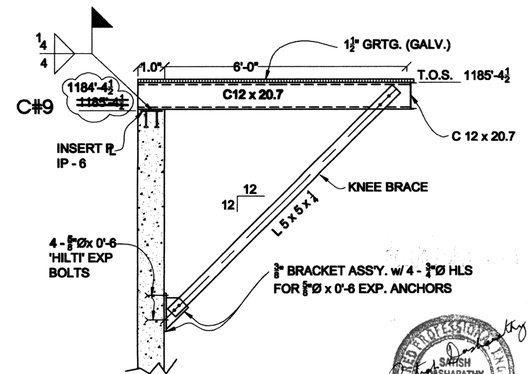
9 / S-900 PLAN FOUNDATION F-2
SCALE: 1/2" = 1'-0



7 / S-900 DETAIL - BM.POCKET
SCALE: 3/4" = 1'-0



2 / S-901 DETAIL - INSERT PL - IP- 6
SCALE: 1 ½" = 1'-0



8 / S-900 ELEVATION
SCALE: 3/8" = 1'-0

RECORD DRAWINGS S-901

REVISIONS:	DATE:
C#9 – CLARIFICATION NO. 9	3/11/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	8-5-2009	AS SHOWN	26 OF 89

STRUCTURAL DETAILS
STRUCTURE # 63
SBR INFLUENT SPLITTER BOX

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\S900-SBRSplitterBox.dwg

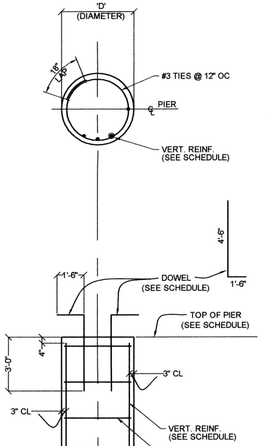
DRILLED PIER SCHEDULE

MARK	DIAMETER "D"	PENETRATION "L"	REINFORCEMENT VERT.	REINFORCEMENT DOWEL	T.O. PIER	NO. REQ'D.
P-1	48"	5'-0"	7-#10	4-#8	1152'-9"	61
P-2	42"	5'-0"	7-#9	4-#7	1152'-9"	~~221~~ 225
P-3 *	24"	2'-0"	6-#6	4-#6	1163'-2"	30
P-4 *	24"	2'-0"	6-#6	4-#6	1166'-4"	12
P-5 *	24"	2'-0"	6-#6	4-#6	1165'-6" ~~1166'-4"~~	18
P-6	42"	5'-0"	7-#9	4-#7	1152'-3"	4

C#2

C#2

* NOTES:
1. DRILLED PIERS P-3, P-4 & P-5 ARE TO BE DRILLED TO A DEPTH OF 40 FEET BELOW TOP OF PIERS.
2. END BEARING PRESSURE AT THE BOTTOM OF THE HOLE TO BE 4000 PSF MINIMUM.
3. FOR PIERS P-3, P-4 & P-5, ANY PENETRATION INTO ROCK BED NOT REQUIRED.



6 S-102 TYPICAL DRILLED PIER (NO SCALE)

NOTE: CONTRACTOR TO PROVIDE INDUSTRY STANDARD SPACERS FOR CLEARANCE OF PIER TIES FROM SHAFT WALLS.

C#2

C#2 TWS = TOP WEATHERED SHALE

FUTURE

REFER LEGEND #2 (SHT. S-8) INDICATES 48"Ø DRILLED PIER (TYP.)

STR #11 · STR #9 · STR #7 · STR #6-5 · STR #6-3 · STR #6-1 · STR #15 · STR #6-6 · STR #6-4 · STR #6-2 · STR #12 · STR #10 · STR #8

LEGEND:

1. DRILLED PIERS INDICATED ON "PLAN" THUS:
   - T.O. PIER ELEV.
   - PIER MARK (SEE SCHD.)
2. ALL 48"Ø DRILLED PIERS ARE SHOWN ON "PLAN" AS:

FOUNDATION:

A. DRILLED PIERS HAVE BEEN DESIGNED FOR BEARING PRESSURE AS FOLLOWS:
   -- END BEARING PRESSURE - 50,000 PSF
   -- SIDE FRICTION - 2,500 PSF FOR THAT PORTION OF DRILLED SHAFT THAT PENETRATES THE WEATHERED SHALE. FOR PORTION OF SHAFT PENTRATING MORE THAN 2'-0" INTO ROCK.

B. REFER TERRACON GEOTECH REPORT AND DRILLED PIER RECOMMENDATION FOR SBR, FEBRUARY 2, 2009.

REGISTERED PROFESSIONAL ENGINEER — SATISH DASHARATHY — 11456 — 10-13 — OKLAHOMA

RECORD DRAWINGS

S-8

PLAN - SBR PIER LAYOUT

(SCALE: 1/16" = 1'-0")

NORTH

REVISIONS:	DATE:
C#2 – CLARIFICATION #2	10/11/10

SBR PIER LAYOUT

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/27/2010	AS SHOWN	27 OF 89

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

343'-6" (OUT TO OUT OF "UPPER WALL")
344'-0 (OUT TO OUT OF "LOWER WALL")

STR #11 | STR #9 | STR #7

STR #15 | STR #6-6 | STR #6-4 | STR #6-2

STR #6-5 | STR #6-3 | STR #6-1

STR #12 | STR #10 | STR #8

PRESSURE RELIEF VALVES WATERMAN FLOOR TYPE MODEL PRF-14 (6")

CONSTRUCTION JT. (CJ) REF. DETAIL 8/SHT. S-4)

SUMP & DRAIN

PRESSURE RELIEF VALVE (TYPICAL) (66 REQ'D.)

27" THK. SLAB REINF. #10 @ 12" O.C. EW TOP & BOTTOM

MUD VALVE WATERMAN MODEL MV - H - SIZE - 12. TYPICAL (8-REQ'D)

6 PLACES ENLARGED PLAN (TYPICAL)

FUTURE

204'-0" (OUT TO OUT OF FOOTING)

351'-6" (OUT TO OUT OF FOOTING)

NOTE:

1. TYPICAL CONSTRUCTION JOINT, CJ, REF. DET. 8/DWG. S - 4.
2. TYPICAL PIPE PENETRATION REF. DET. 6/DWG. S - 6.

REGISTERED PROFESSIONAL ENGINEER SACHIN N. DESHMUKH 11159 OKLAHOMA

4/20/10

RECORD DRAWINGS S-5

FOUNDATION PLAN - SBR TANKS
(SCALE: 1/16" = 1'-0")

NORTH

REVISIONS:	DATE:

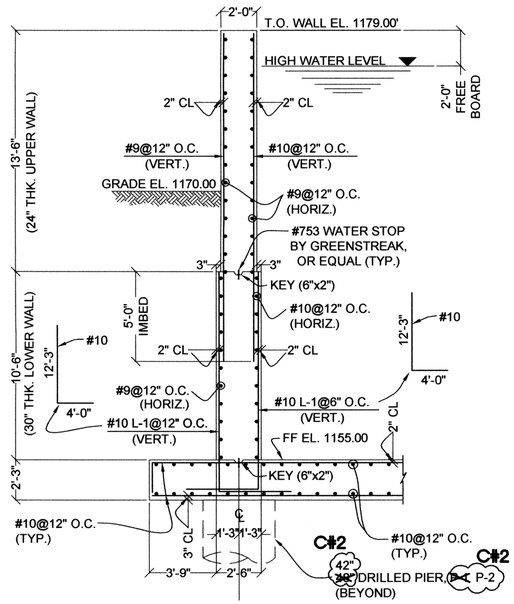
SBR FOUNDATION PLAN

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	1/11/2010	AS SHOWN	28 OF 89

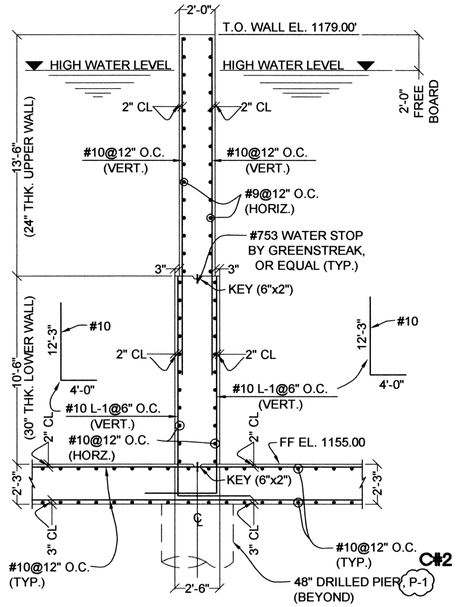
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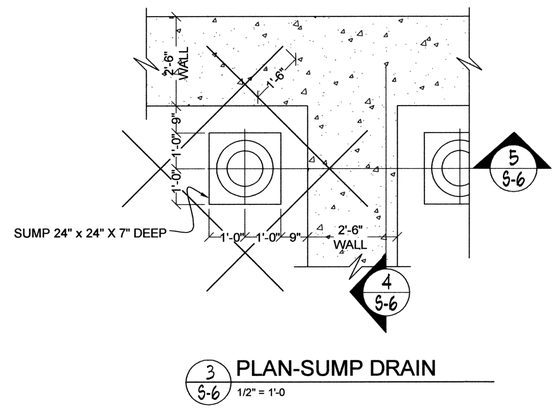
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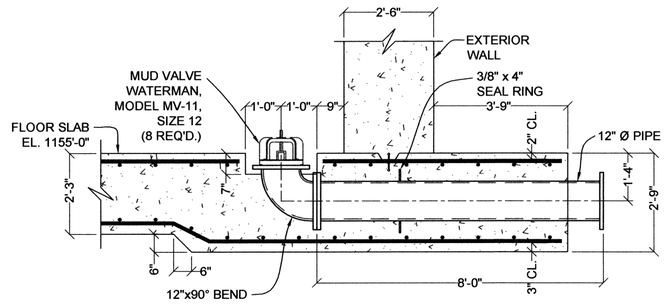
1/S-5 SECTION - EXTERIOR WALL
1/4" = 1'-0



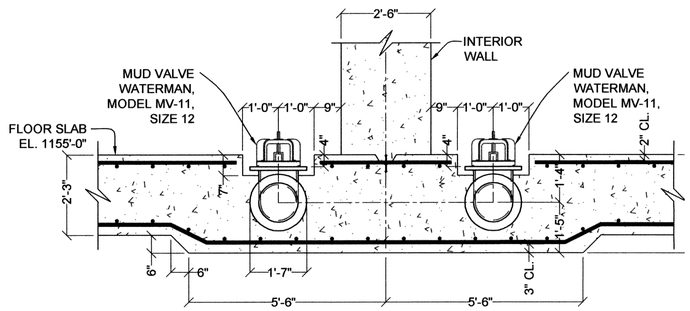
2/S-5 SECTION - INTERIOR WALL
1/4" = 1'-0



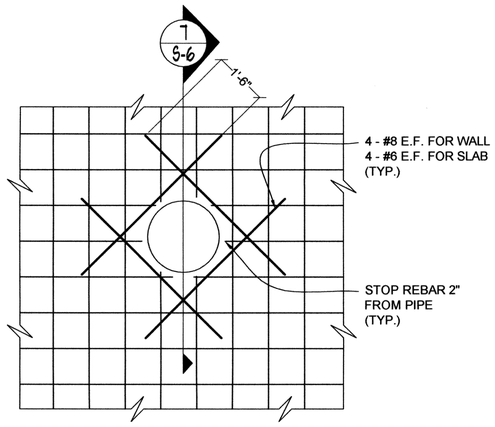
3/S-6 PLAN-SUMP DRAIN
1/2" = 1'-0



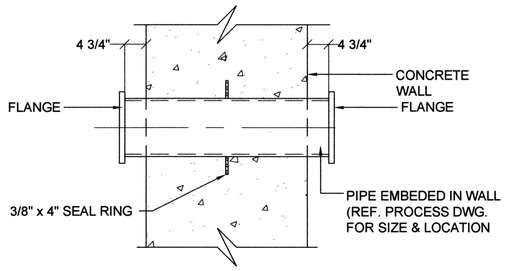
4/S-6 PROFILE @ MUD VALVE
1/2" = 1'-0



5/S-6 SECTION - MUD VALVES
1/2" = 1'-0



6/S-6 DETAIL
NO SCALE



7/S-6 DETAIL-PIPE PENETRATION@WALL
NO SCALE

RECORD DRAWINGS



S-6

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	2/15/2010	AS SHOWN	29 OF 89

REVISIONS:	DATE:
C#2 – CLARIFICATION NO. 2	10/11/10

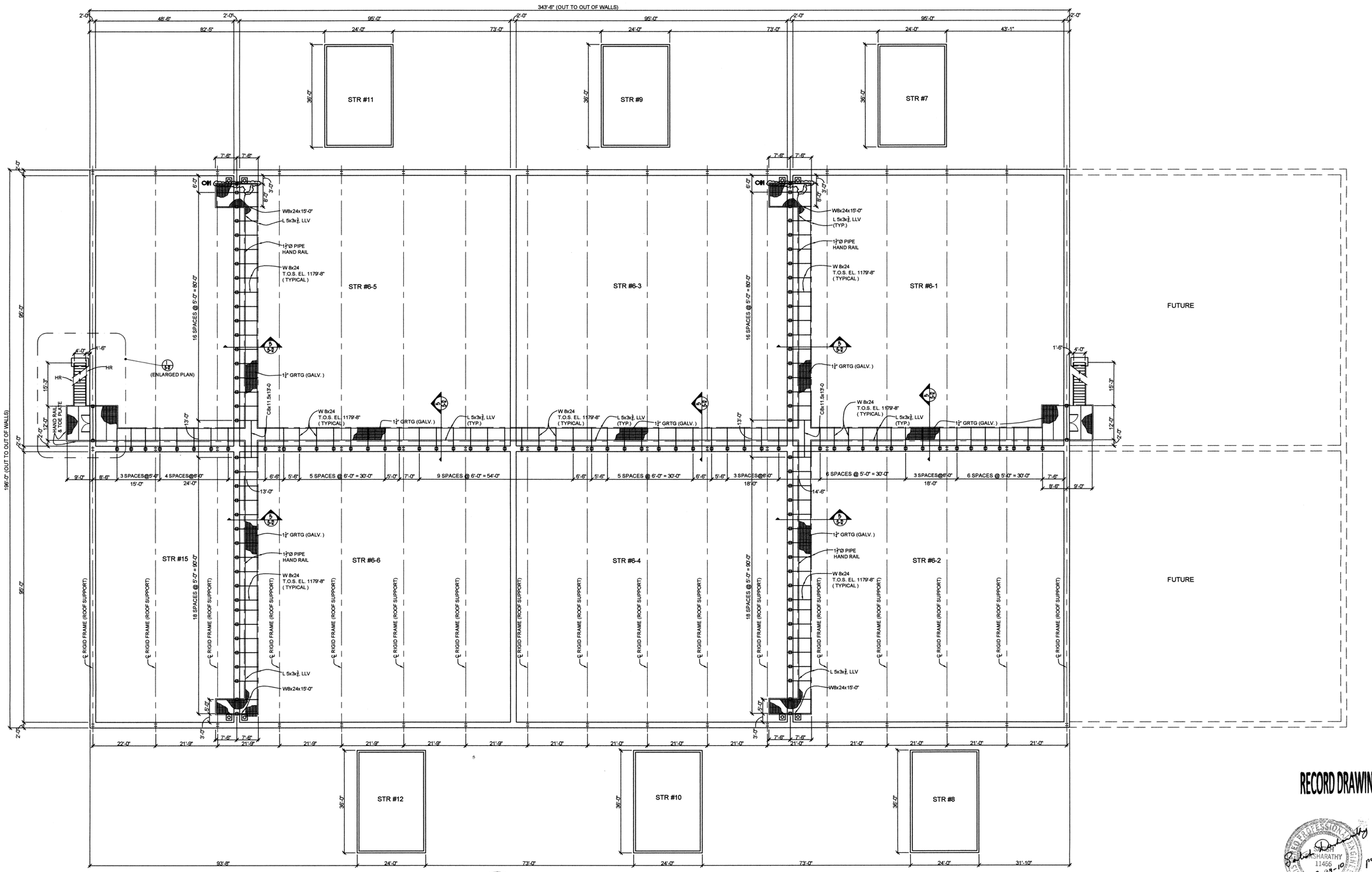
SBR SECTIONS

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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STRUCTURAL FRAMING PLAN - SBR TANKS

(STAIRS, PLATFORM & CATWALK) SCALE: 1/16" = 1'-0"

NORTH

RECORD DRAWINGS

PROFESSIONAL ENGINEER — STATE OF OKLAHOMA — SUDARSHAN SHARATHY 11466 — 9-27-10 — pw sm

S-9

REVISIONS:	DATE:
C#1 – CLARIFICATION NO. 1	9/29/2010

SEQUENTIAL BATCH REACTORS
STEPS & WALKWAY
STRUCTURAL PLANS

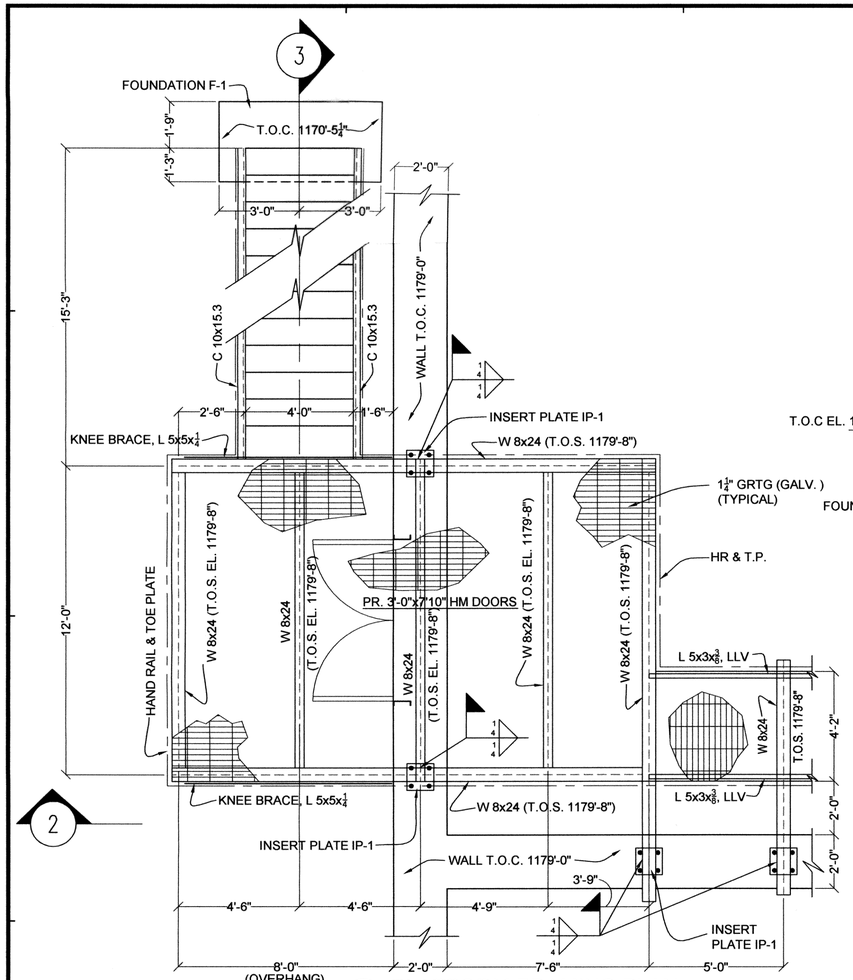
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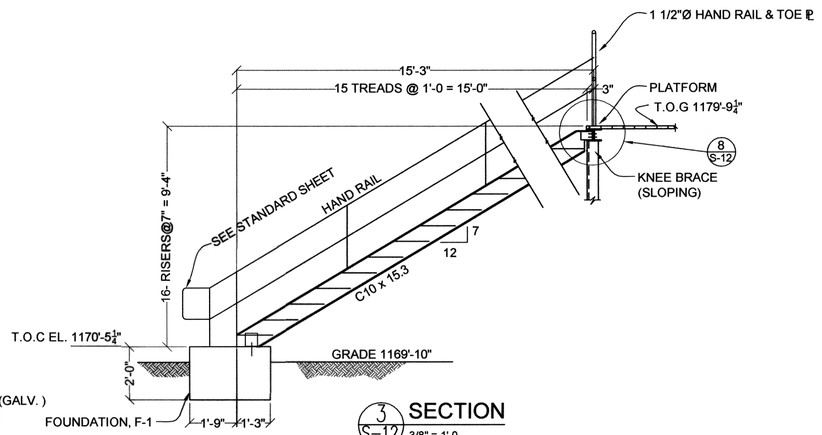
DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	2/12/2010	AS SHOWN	30 OF 89

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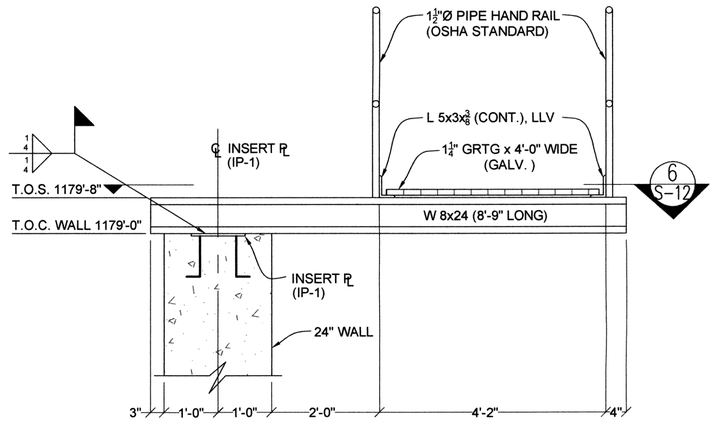
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK



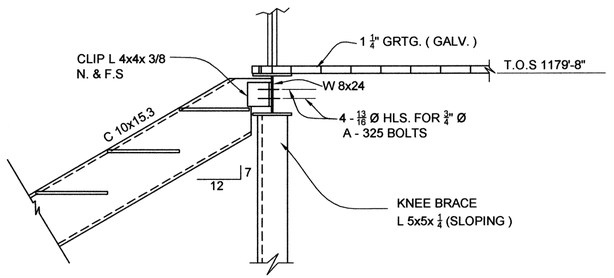
1 S-9 **PLATFORM FRAMING PLAN**
3/8" = 1'-0 (T.O.S. EL. 1179'-8")



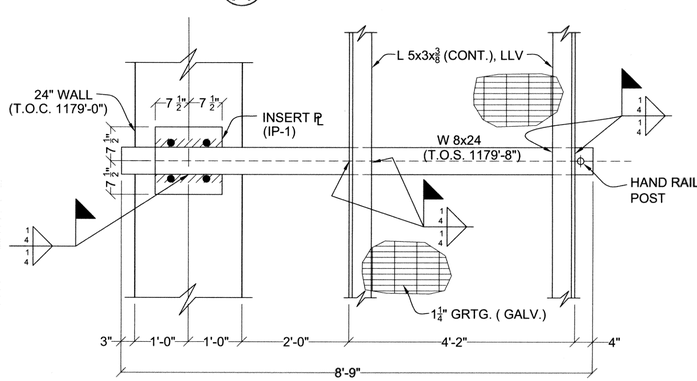
3 S-12 **SECTION**
3/8" = 1'-0



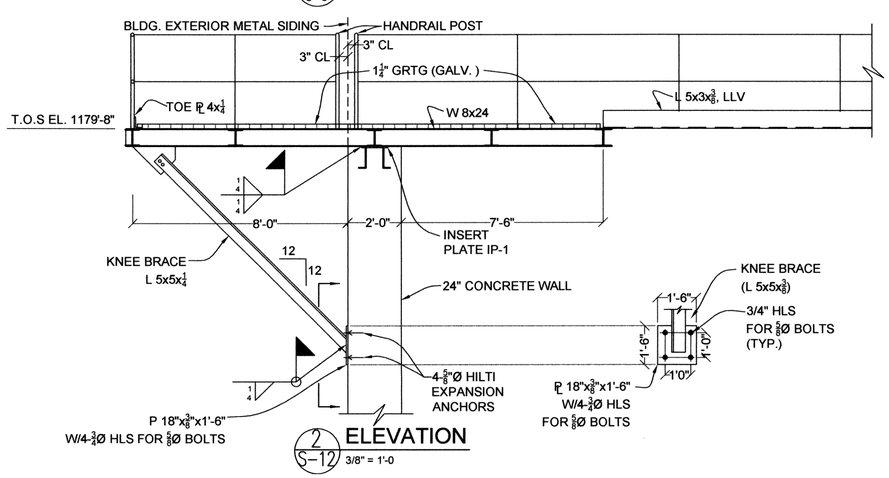
5 S-9 **SECTION**
3/4" = 1'-0



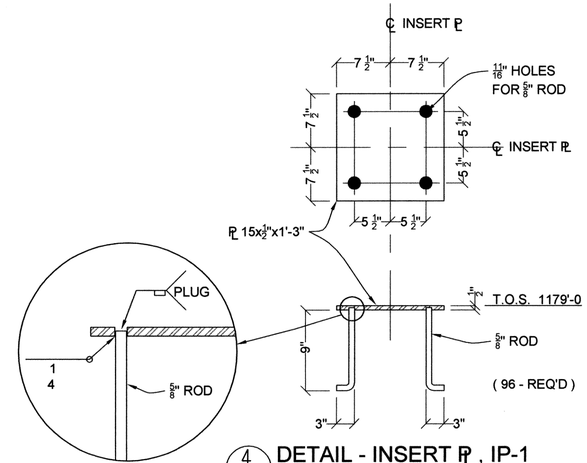
8 S-12 **DETAIL**
1" = 1'-0



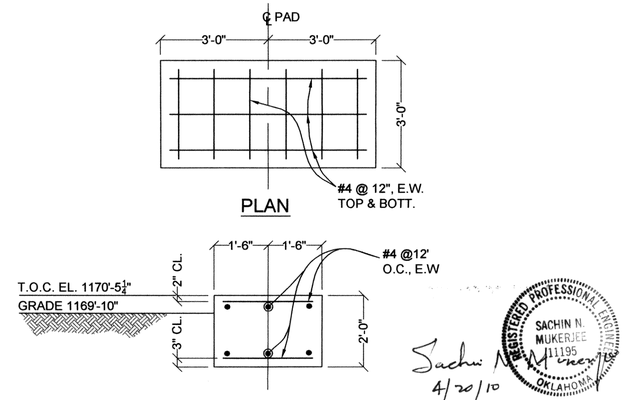
6 S-12 **PLAN**
3/4" = 1'-0



2 S-12 **ELEVATION**
3/8" = 1'-0



4 S-12 **DETAIL - INSERT PL , IP-1**
(NO SCALE)



7 S-12 **FOUNDATION F-1**
1/2" = 1'-0

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUKERJEE 11195 OKLAHOMA
4/20/10

RECORD DRAWINGS S-12

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	2/12/2010	AS SHOWN	31 OF 89

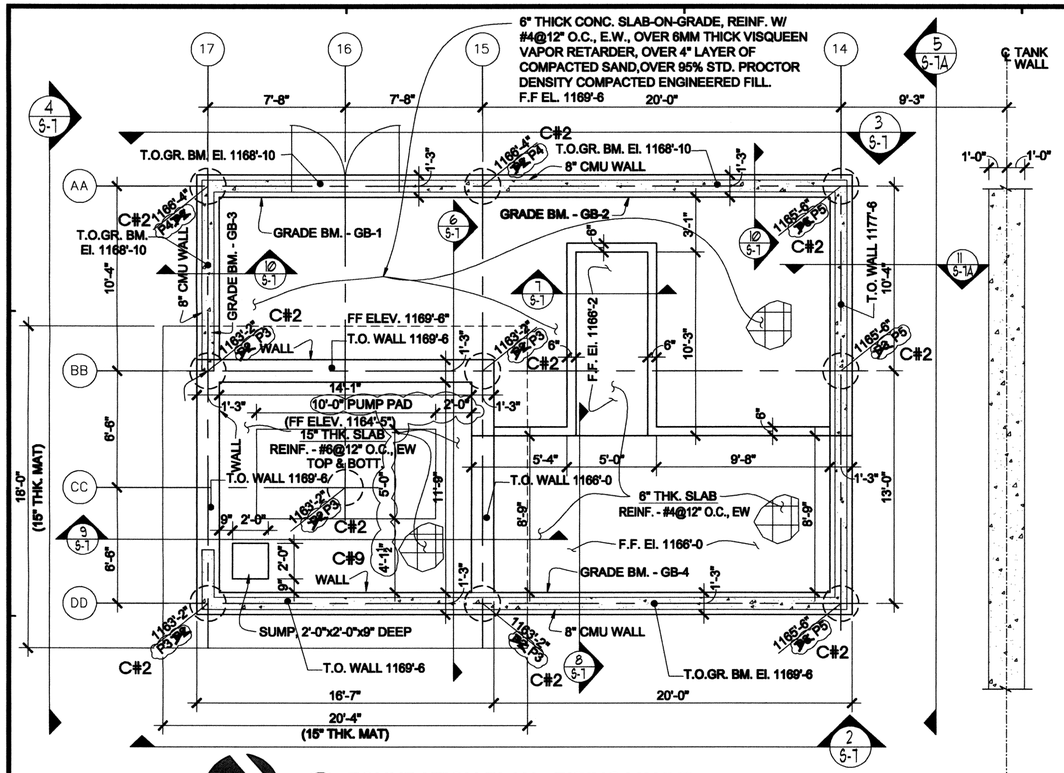
SEQUENTIAL BATCH REACTORS
STEPS & WALKWAY
STRUCTURAL DETAILS

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EDMOND, OK. 73013
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EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

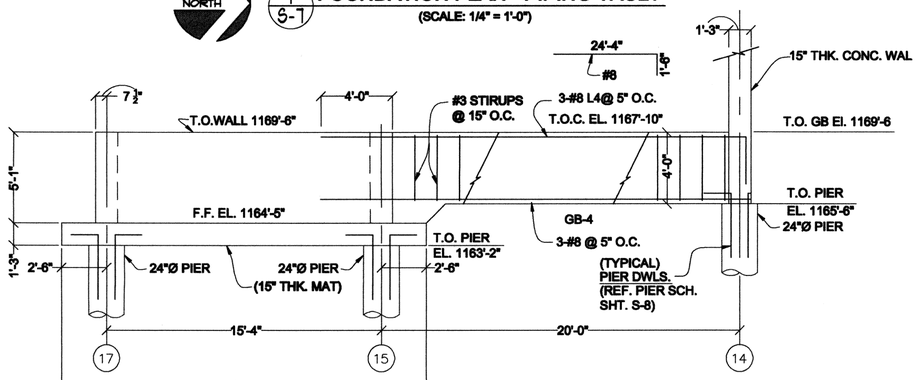
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\SBRs\S12-SBR-Walkway Details.dwg



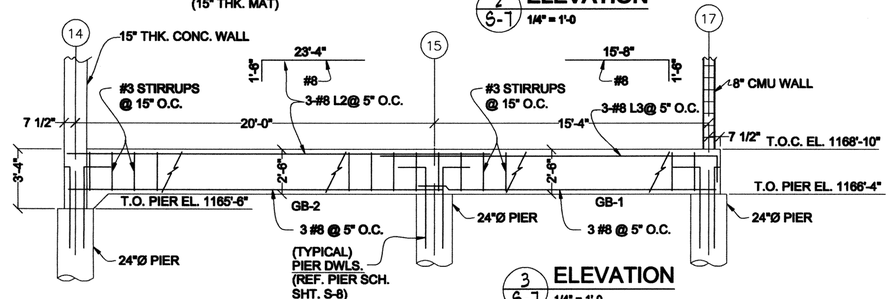
1 S-7 FOUNDATION PLAN - PIPING VAULT

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



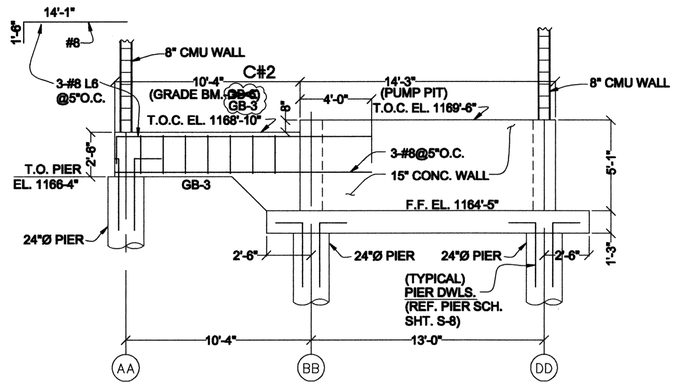
2 S-7 ELEVATION

1/4" = 1'-0



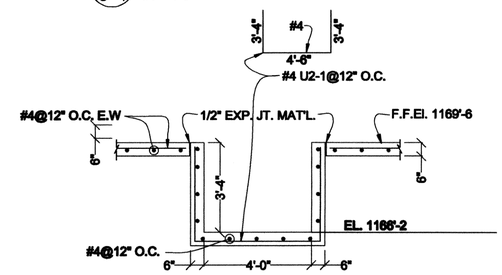
3 S-7 ELEVATION

1/4" = 1'-0



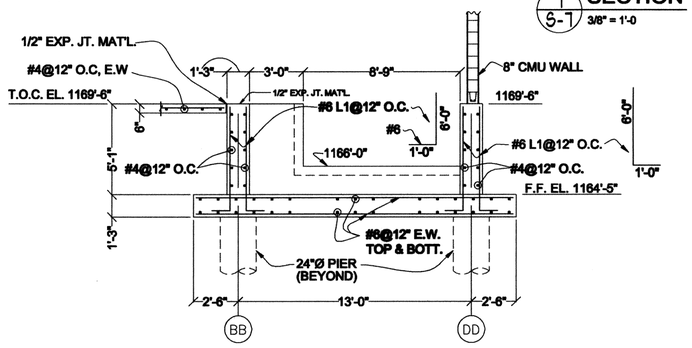
4 S-7 ELEVATION

1/4" = 1'-0



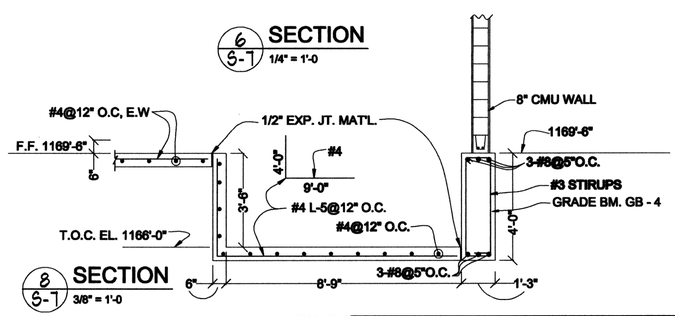
7 S-7 SECTION

3/8" = 1'-0



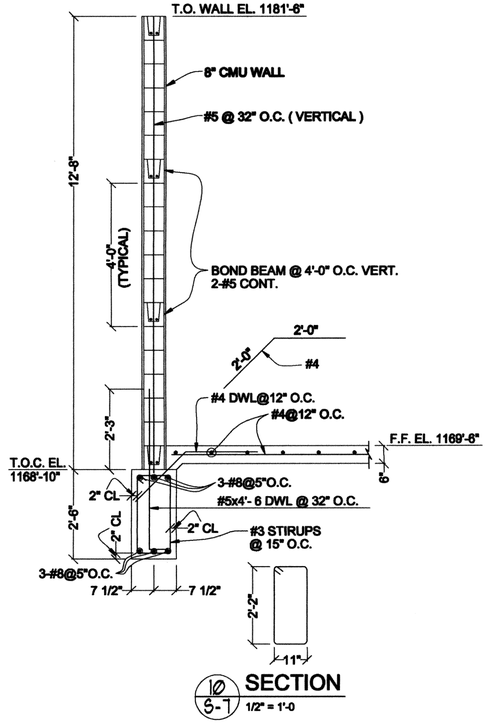
6 S-7 SECTION

1/4" = 1'-0



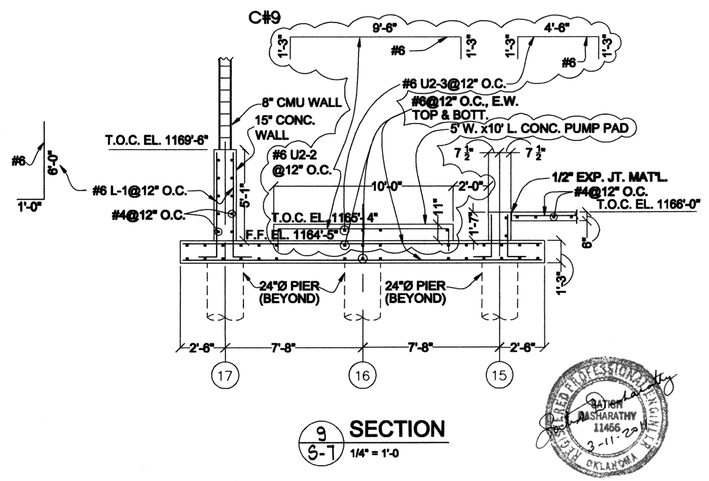
8 S-7 SECTION

3/8" = 1'-0



10 S-7 SECTION

1/2" = 1'-0



9 S-7 SECTION

1/4" = 1'-0

REGISTERED PROFESSIONAL ENGINEER — STATE OF OKLAHOMA — SATISH K. SHARATHY 11456

RECORD DRAWINGS S-7

REVISIONS:	DATE:
C#2 – CLARIFICATION NO. 2	10/11/10
C#9 – CLARIFICATION NO. 9	3/11/2011

PIPING VAULT

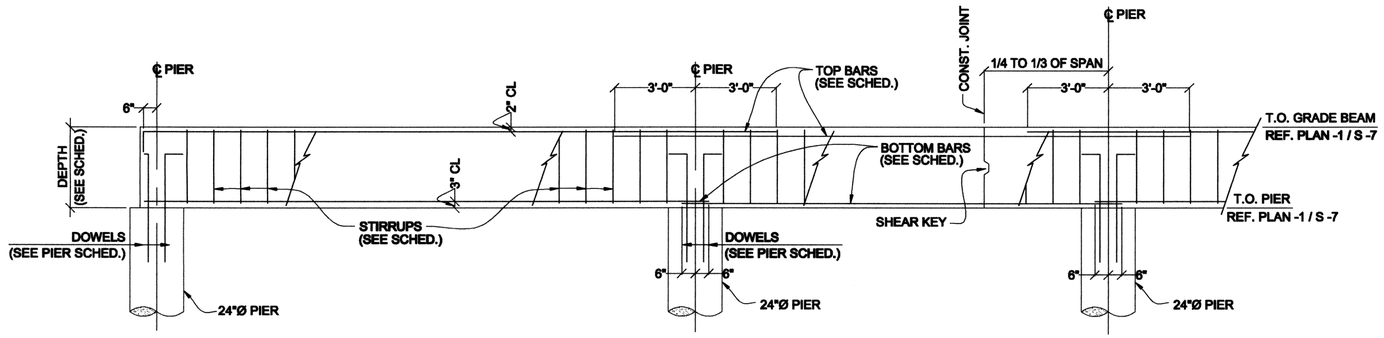
DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/28/2010	AS SHOWN	32 OF 89

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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\SBRs\S7--SBR--PipingVault.dwg



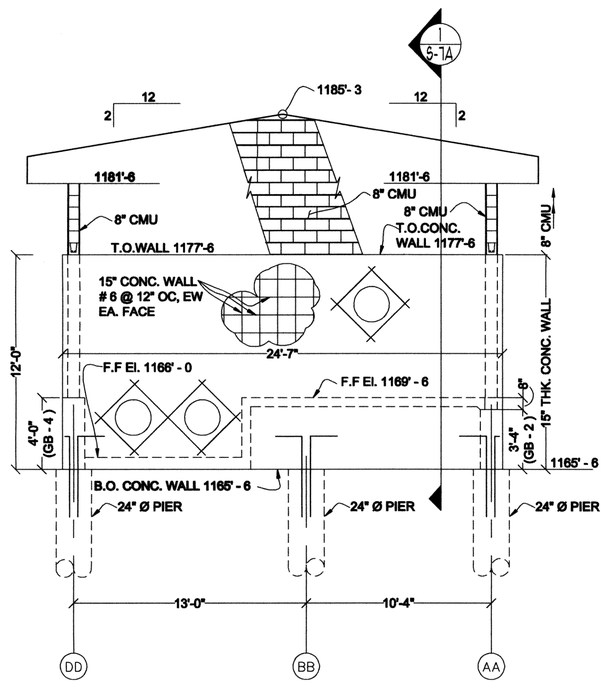
TYPICAL GRADE BEAM ELEVATION

(NO SCALE)

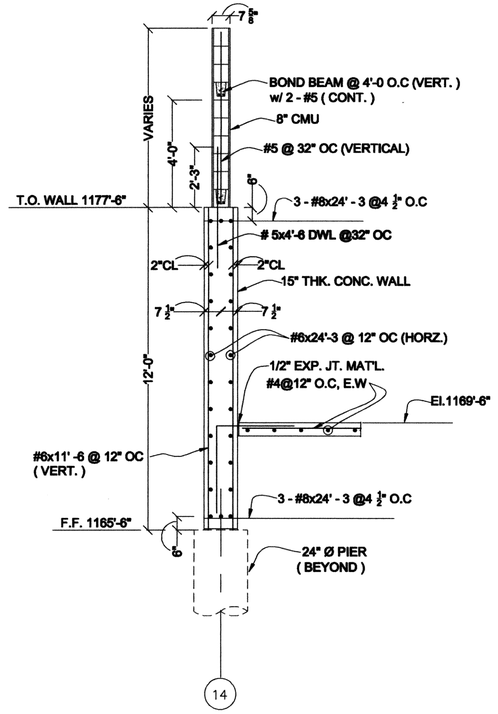
GRADE BEAM SCHEDULE

BEAM		MAIN REINFORCING					STIRRUPS			
MARK	SIZE	NO	SIZE	LENGTH	BAR	SKETCH	NO	SIZE	TYPE	PLACING
GB-1	15"W 30"D	3	#8	18'-10" 16'-4"	TOP BTM		13	#3	S - 1	15" O.C.
GB-2	15"W 30"D	3	#8	23'-6" 21'-0"	TOP BTM		16	#3	S - 1	15" O.C.
GB-3 C#9	15"W 30"D	3	#8	13'-10" 13'-4"	TOP BTM		8	#3	S - 1 C#9	15" O.C.
GB-4	15"W 48"D	3	#8	24'-6" 21'-0"	TOP BTM		16	#3	S - 2	15" O.C.

NOTE:
1. BEAM SIZE IS IN INCHES.
2. REINFORCING LENGTH DOES NOT INCLUDE HOOK LENGTHS.



1 S-7 **ELEVATION**
1/4" = 1'-0



1 S-7A **SECTION**
3/8" = 1'-0

REGISTERED PROFESSIONAL ENGINEER
DAVID S. BASHARATHY
11456
3-11-2011
OKLAHOMA

RECORD DRAWINGS **S-7A**

REVISIONS:	DATE:
C#9 – CLARIFICATION NO. 9	3/11/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	1/17/2010	AS SHOWN	33 OF 89

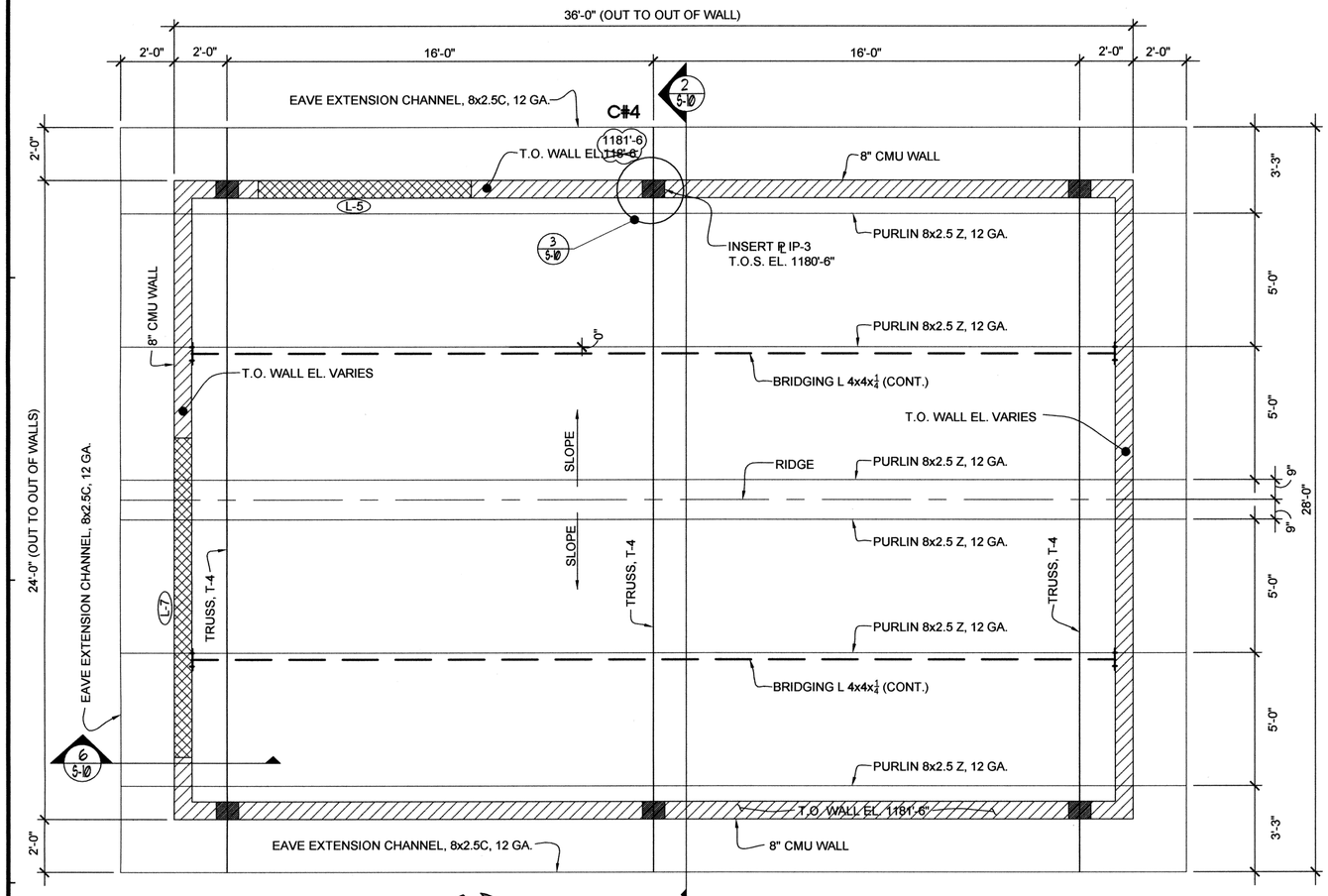
PIPING VAULT

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2803 SOUTH BRYANT
EDMOND, OK. 73013
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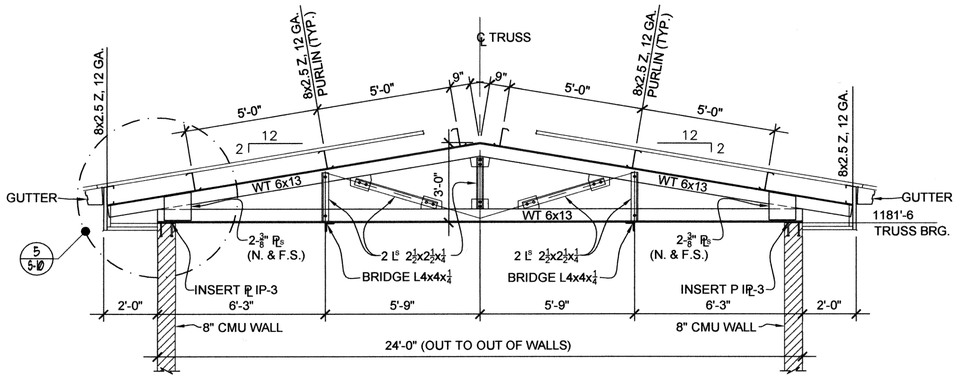
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

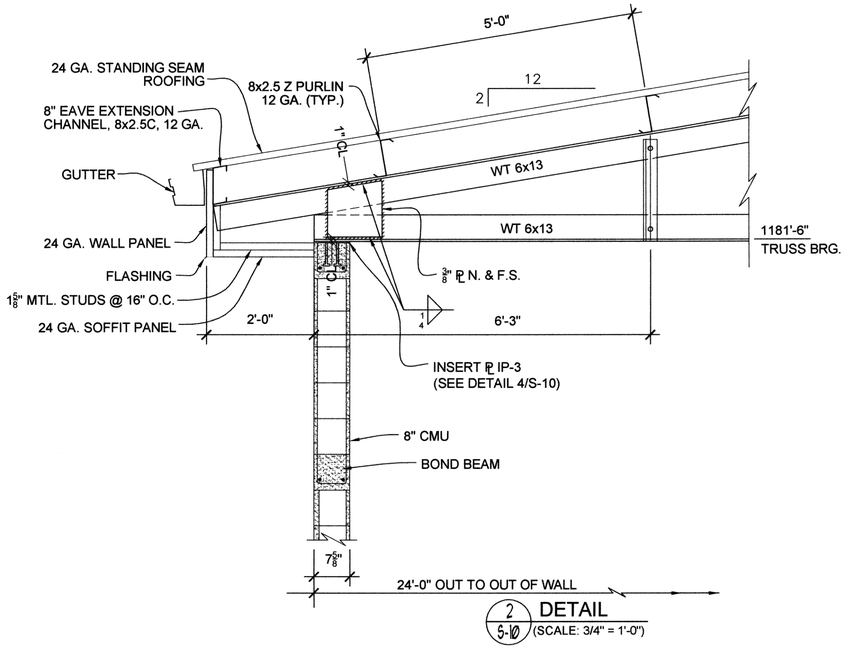
O:\DRAWINGS\MOORE\WORK\Structural\SBRs\S7--SBR--Piping\vault.dwg



1 ROOF FRAMING PLAN
(SCALE: 3/8" = 1'-0")



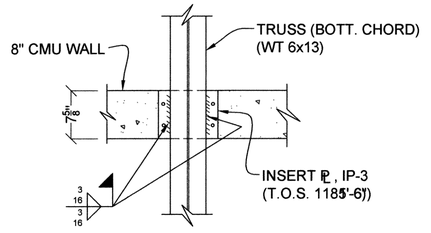
2 ELEVATION TRUSS T-4 (3 REQ'D.)
5-10 (SCALE: 3/8" = 1'-0")



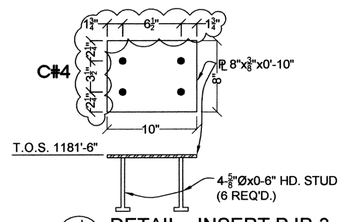
2 5-10 DETAIL
(SCALE: 3/4" = 1'-0")

LEGEND

LINTEL — L - X — REF. LINTEL SHEDULE DRG S-960

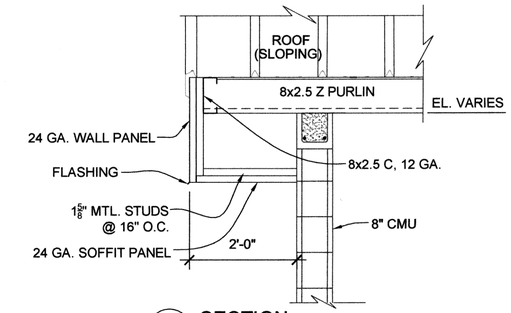


6 5-10 DETAIL (TRUSS SEAT)
(SCALE: 1" = 1'-0")

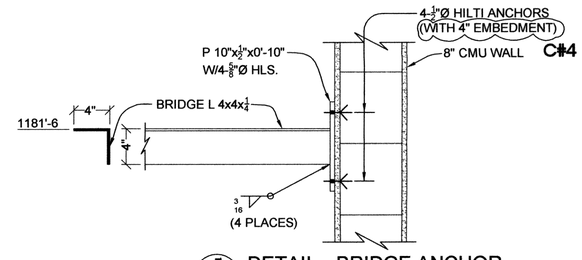


4 5-10 DETAIL - INSERT ℄ IP-3
(SCALE: 1 1/2" = 1'-0")





6 5-10 SECTION
(SCALE: 3/4" = 1'-0")



7 5-10 DETAIL - BRIDGE ANCHOR
(SCALE: 1 1/2" = 1'-0")

RECORD DRAWINGS

S-10

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/10

SBR PIPING VAULT
ROOF FRAMING

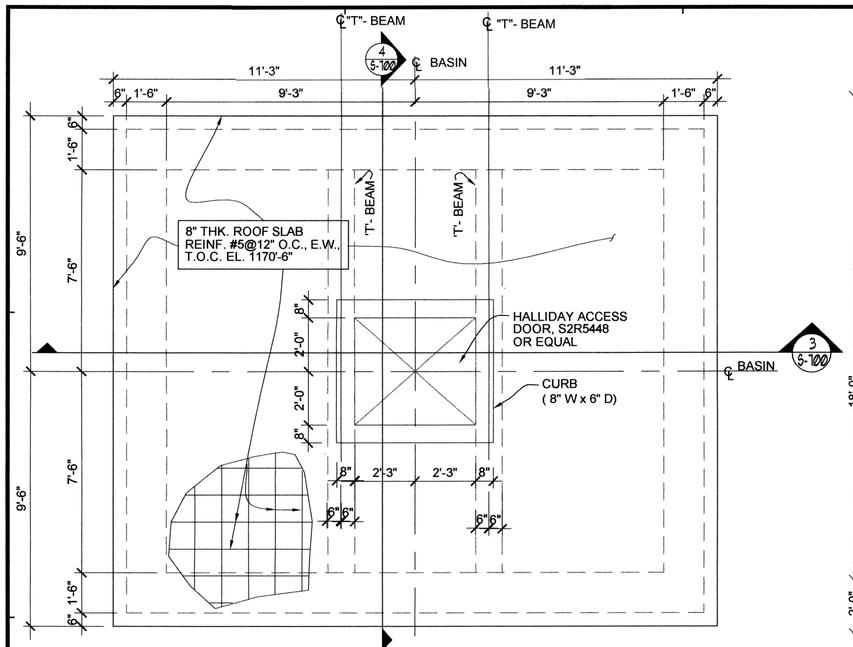
EAGLE OFFICE CENTER
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EAGLE CONSULTANTS, INC.
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CERTIFICATE OF AUTHORIZATION NO. CA2088

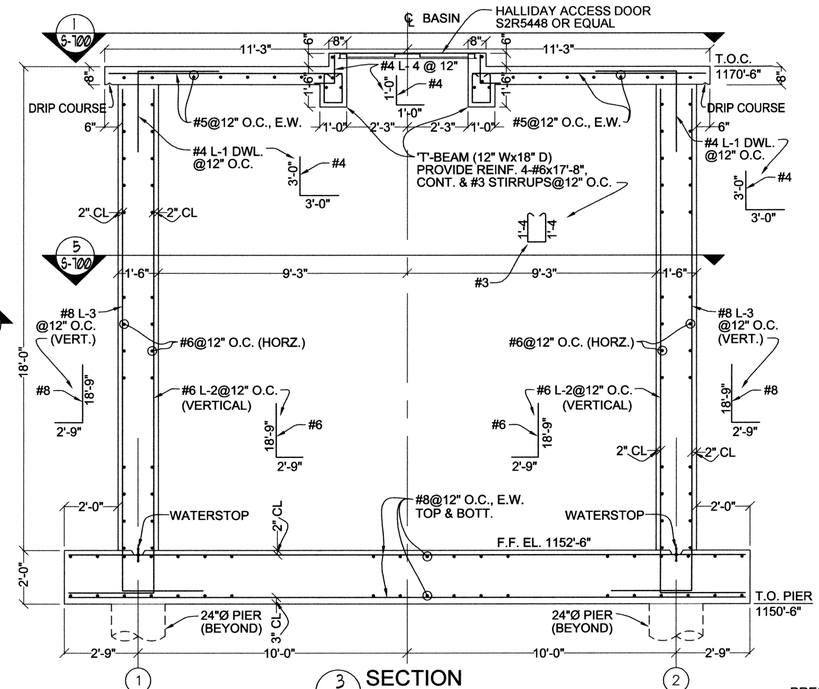
DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	2/25/2010	AS SHOWN	34 OF 89

O:_DRAWINGS_MOORE_WORK_Structural_SBR\a_S10-SBR-PV-Roof.dwg

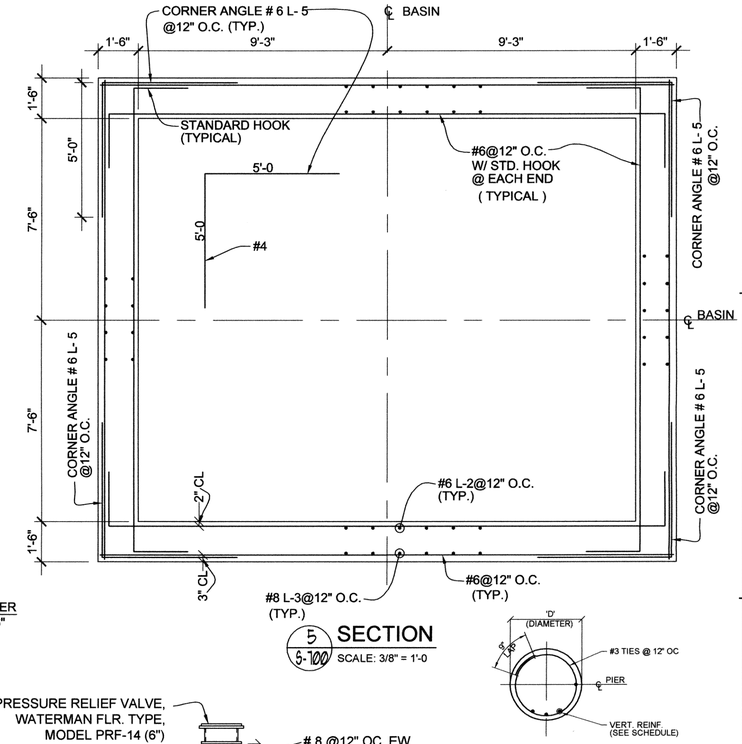
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK



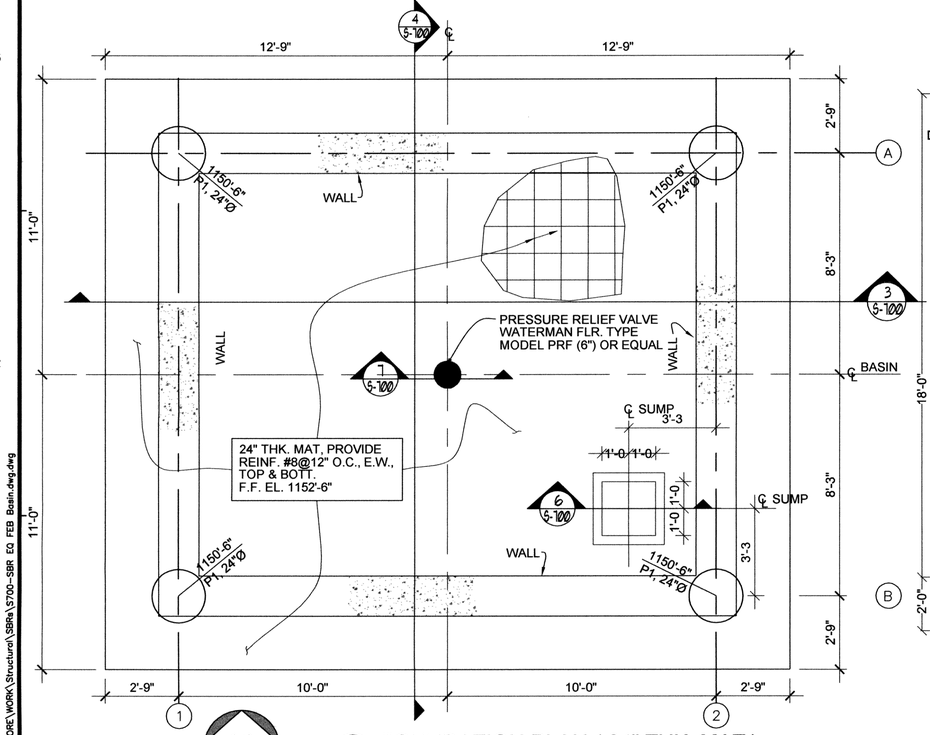
1 S-100 **ROOF PLAN (8" THK. CONC. ROOF SLAB)**
SCALE: 3/8" = 1'-0



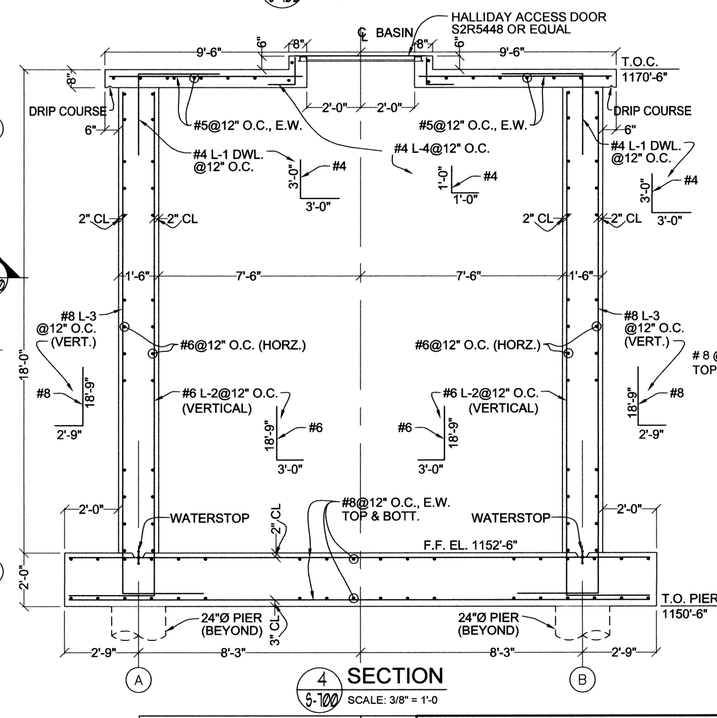
3 S-100 **SECTION**
SCALE: 3/8" = 1'-0



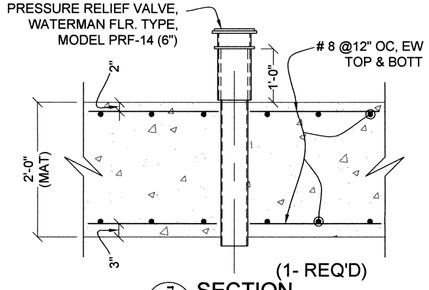
5 S-100 **SECTION**
SCALE: 3/8" = 1'-0



2 S-700 **FOUNDATION PLAN (24" THK. MAT)**
SCALE: 3/8" = 1'-0

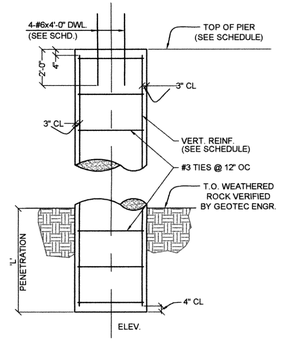


4 S-100 **SECTION**
SCALE: 3/8" = 1'-0

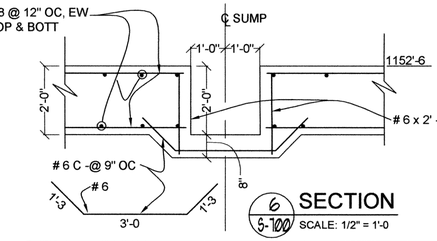


(1- REQ'D)

7 S-100 **SECTION**
SCALE: 3/4" = 1'-0



8 S-100 **TYPICAL DRILLED PIER**
(NO SCALE)



6 S-100 **SECTION**
SCALE: 1/2" = 1'-0

RECORD DRAWINGS

DRILLED PIER SCHEDULE

MARK	SIZE (DIA.)	PENETRATION	REINFORCEMENT		T.O. PIER	NO. REQ'D
			VERT.	DOWEL		
P-1	24"Ø	2'-0"	6-#6	4-#6	EL. 1150-6"	4

SACHIN N. DUBEY
REGISTERED PROFESSIONAL ENGINEER
OKLAHOMA
4/20/10

S-700

REVISIONS:	DATE:

SBR EFFLUENT FLOW EQUALIZATION BASIN METER VAULT STR. # 60 STRUCTURAL DETAILS

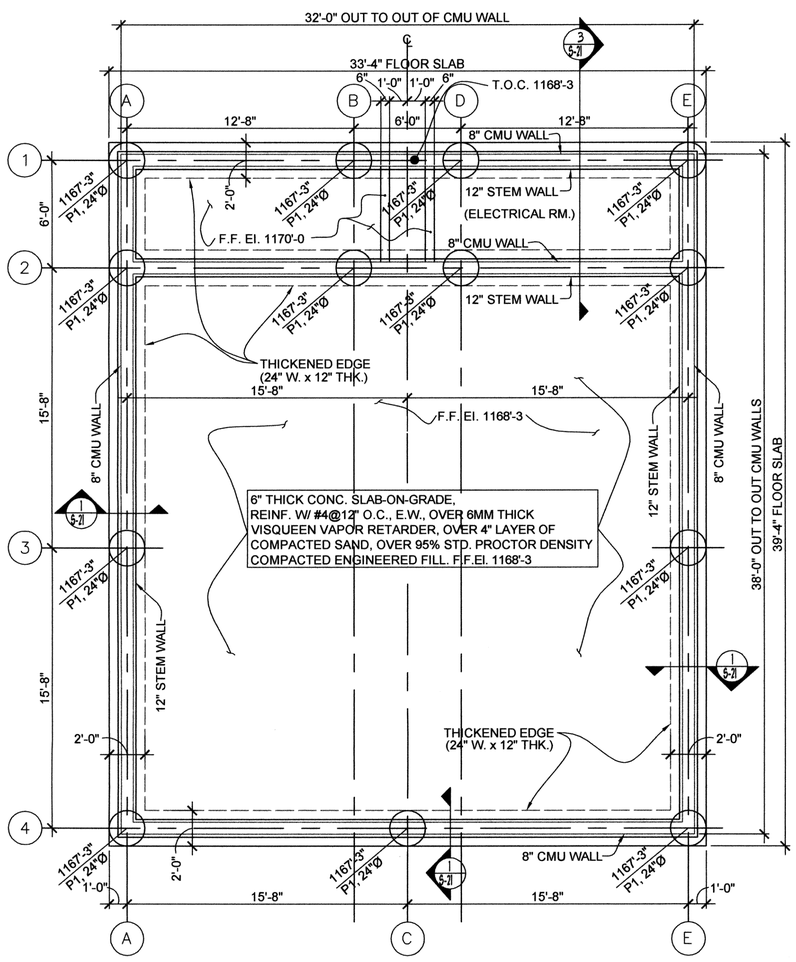
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DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	1/12/2010	AS SHOWN	35 OF 89

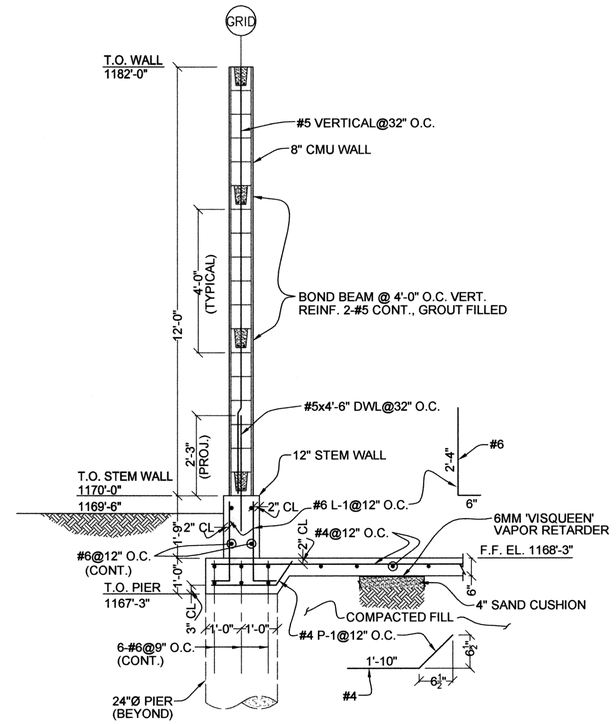
O:\DRAWINGS\MOORE\WORK\Structural\SBRs\S700-SBR EQ FEB Basin.dwg.dwg

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK



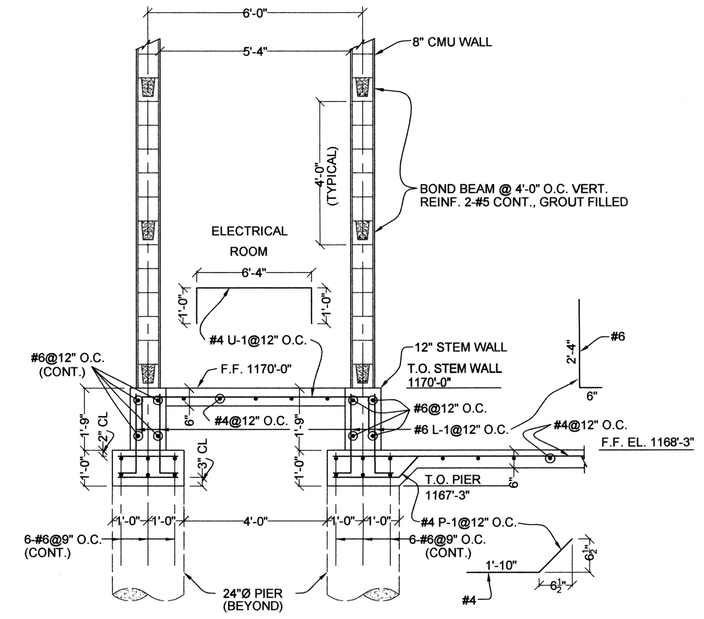
FOUNDATION PLAN - (DRILLED PIERS & FLR. EL. 1168'-3")

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



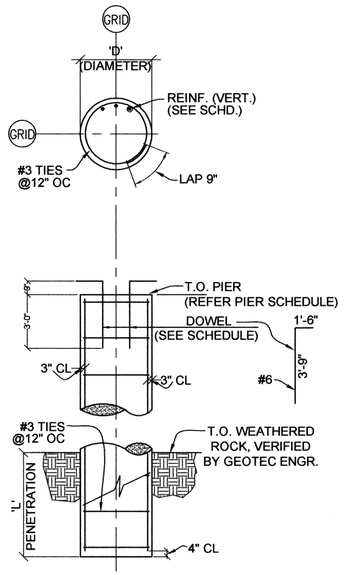
1 / S-21 SECTION

SCALE: 1/2" = 1'-0



3 / S-21 SECTION

SCALE: 1/2" = 1'-0

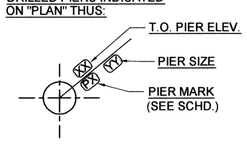


2 / S-21 TYPICAL DRILLED PIER

NO SCALE

LEGEND:

DRILLED PIERS INDICATED ON "PLAN" THUS:

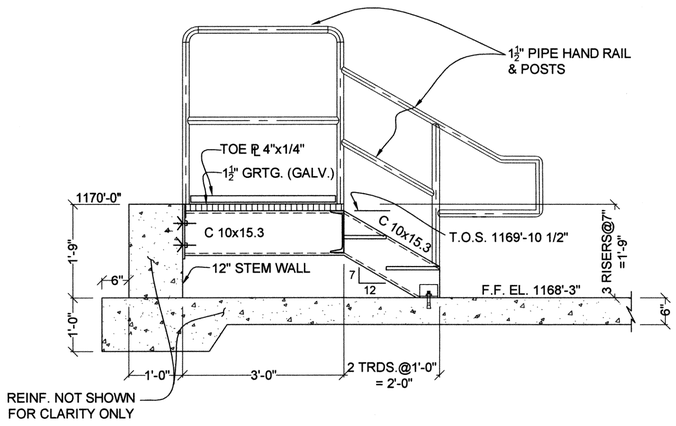


REFERENCE:

DETAIL - DRILLED PIER, DET. 2/S-21

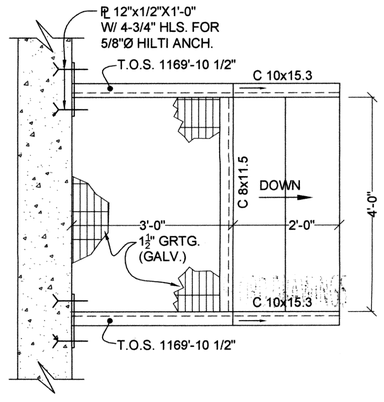
DRILLED PIER SCHEDULE

MARK	SIZE (DIA.)	PENETRATION	REINFORCEMENT		T.O. PIER	NO. REQ'D
			VERT.	DOWEL		
P-1	24"Ø	2'-0"	6-#6	4-#6	EL. 1167-3"	13



ELEVATION - STAIRS (2-REQ'D.)

SCALE: 3/4" = 1'-0



PLAN - STAIRS

SCALE: 3/4" = 1'-0

REGISTERED PROFESSIONAL ENGINEER
SACHIN N. MUKERJEE
21199
OKLAHOMA
5/17/10

RECORD DRAWINGS

S-21

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/28/2010	AS SHOWN	36 OF 89

REVISIONS:	DATE:

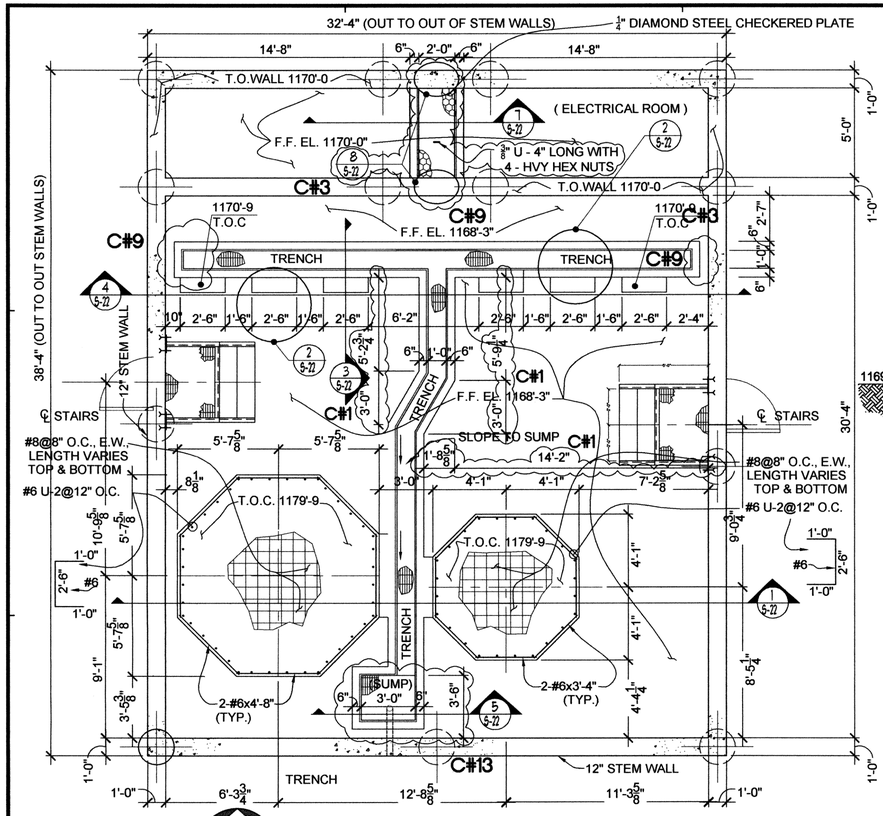
SBR
CHEMICAL FEED BUILDING
DRILLED PIER PLAN

EAGLE OFFICE CENTER
2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
FAX. (405) 844-3600

EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

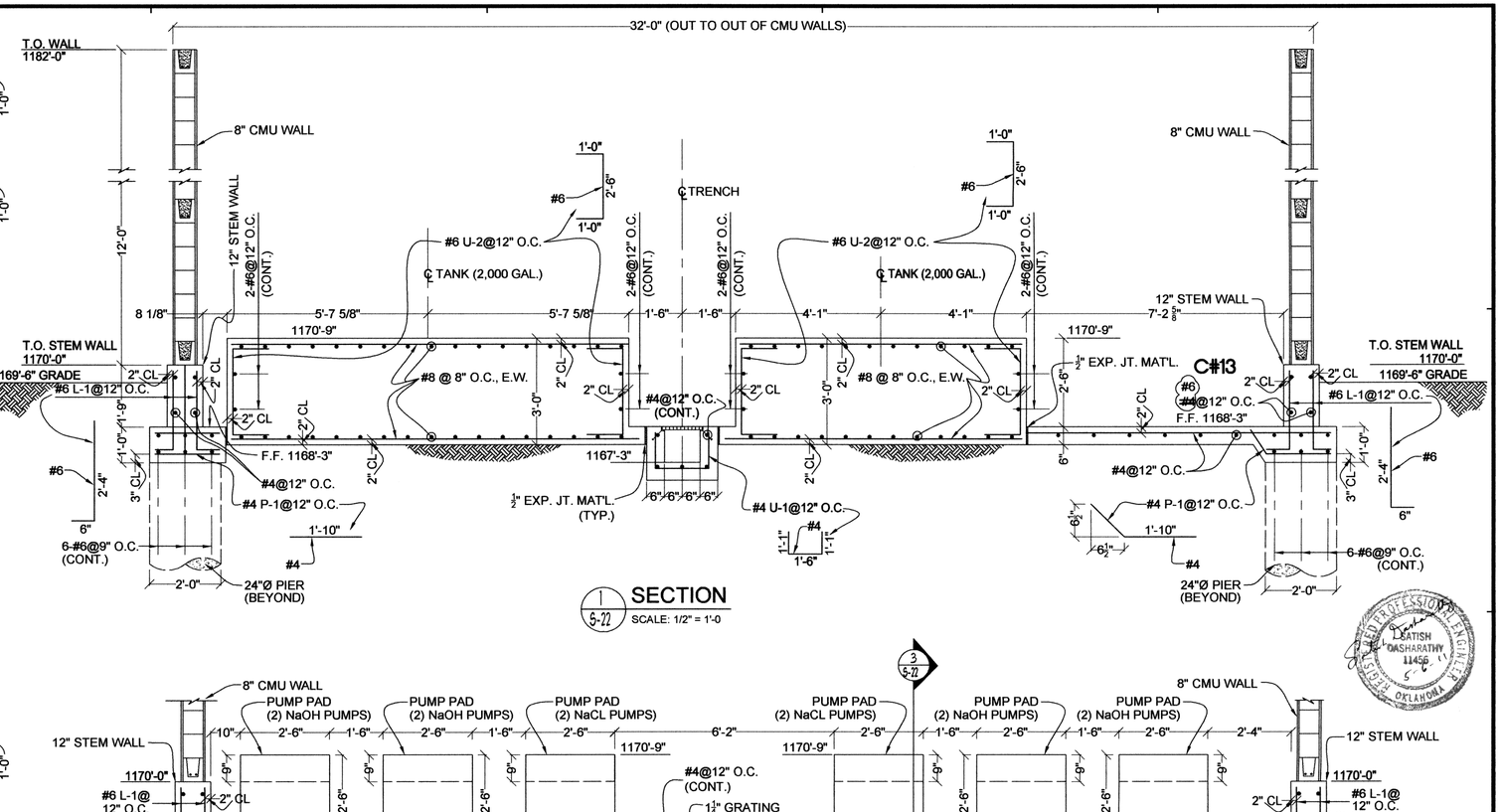
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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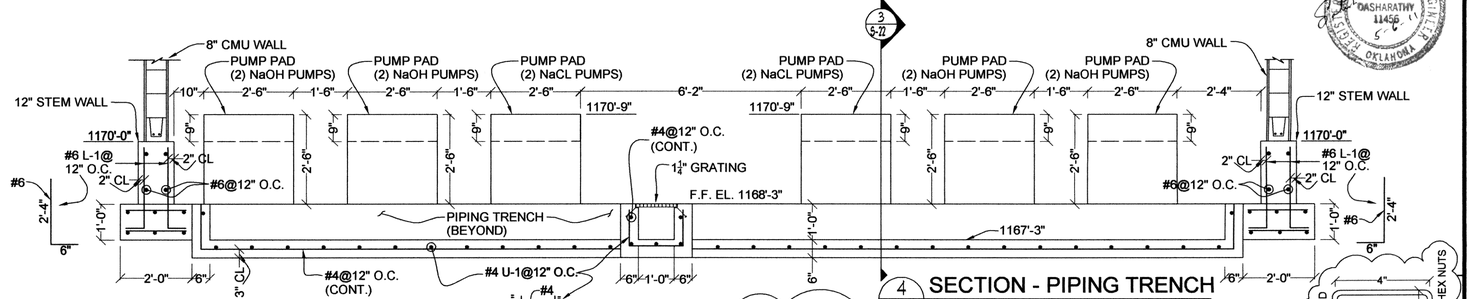
CHEMICAL FEED BUILDING - PLAN VIEW

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



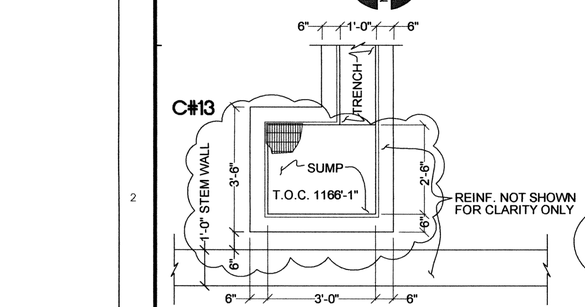
SECTION

1/5-22 SCALE: 1/2" = 1'-0



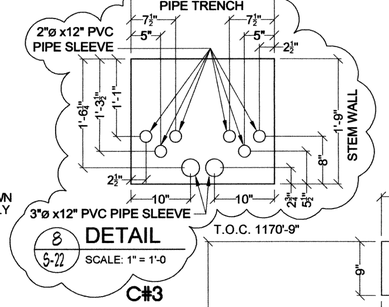
SECTION - PIPING TRENCH

4/5-22 SCALE: 1/2" = 1'-0



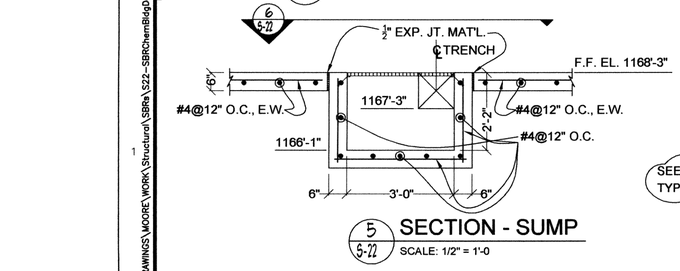
PLAN - SUMP

6/5-22 SCALE: 1/2" = 1'-0



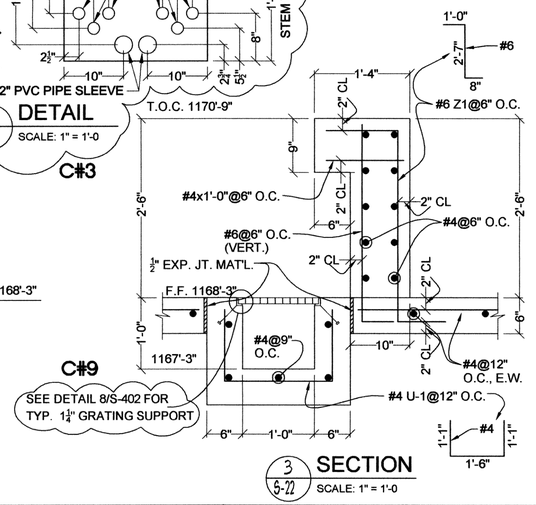
DETAIL

8/5-22 SCALE: 1" = 1'-0



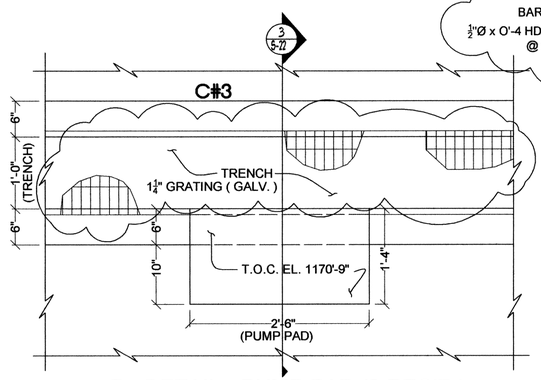
SECTION - SUMP

5/5-22 SCALE: 1/2" = 1'-0



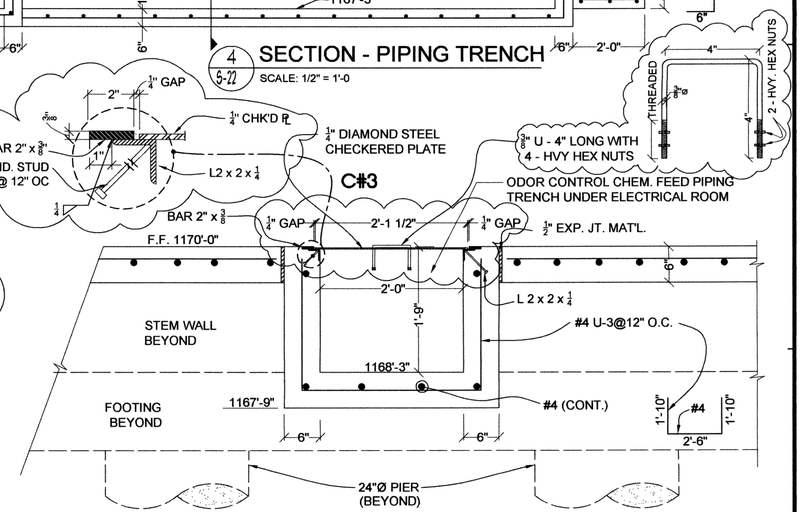
SECTION

3/5-22 SCALE: 1" = 1'-0



DETAIL - PUMP PAD (6-REQ'D.)

2/5-22 SCALE: 1" = 1'-0



SECTION

7/5-22 SCALE: 1" = 1'-0

RECORD DRAWINGS

S-22

REVISIONS:	DATE:
C#1 – CLARIFICATION NO. 1	9/29/2010
C#3 – CLARIFICATION NO. 3	10/27/10
C#9 – CLARIFICATION NO. 9	3/11/2011
C#13 – CLARIFICATION NO. 13	5/2/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	5/3/2010	AS SHOWN	37 OF 89

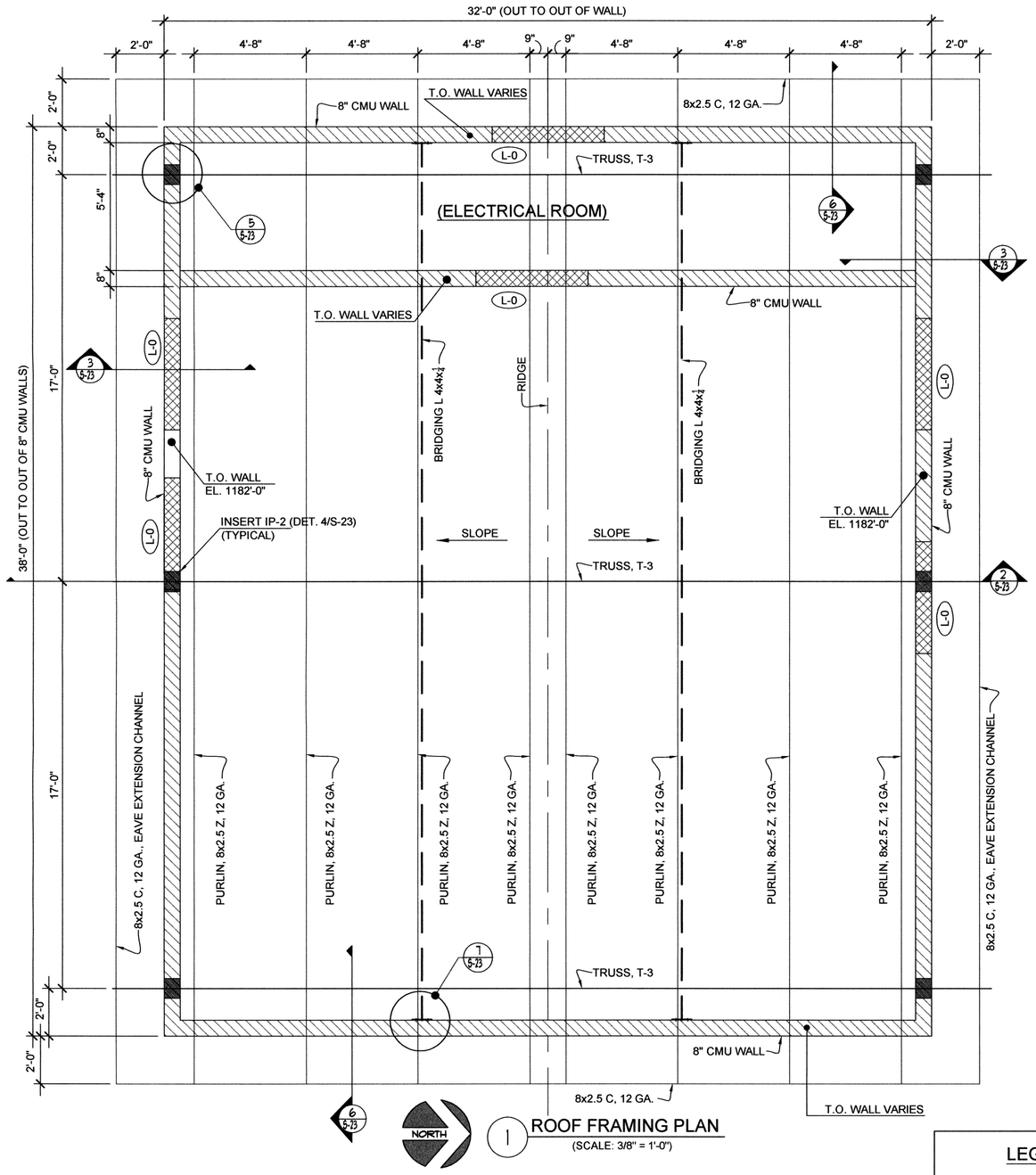
SBR
CHEMICAL FEED BUILDING
STRUCTURAL DETAILS

EAGLE OFFICE CENTER
2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
FAX. (405) 844-3600

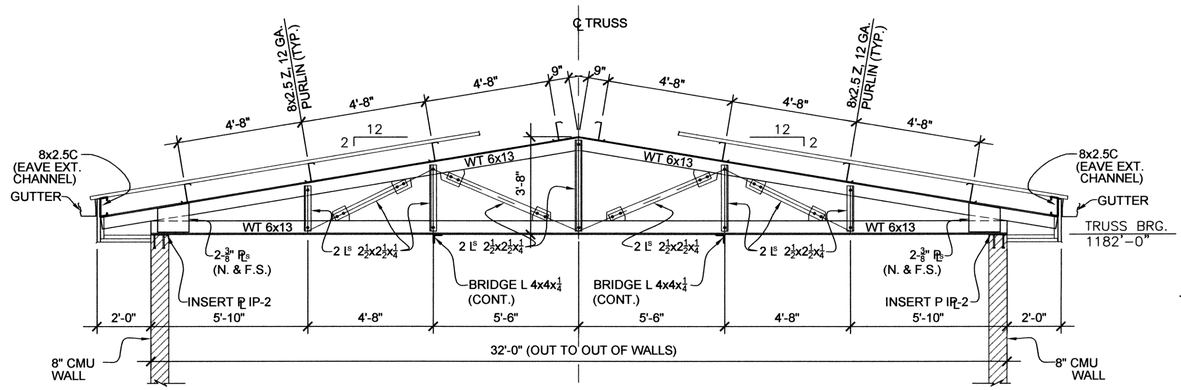
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

REGISTERED PROFESSIONAL ENGINEER
SATISH DASHARATHY
11456
OKLAHOMA

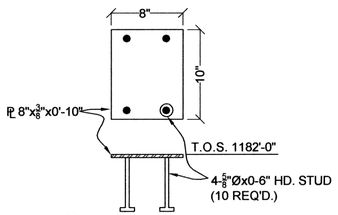
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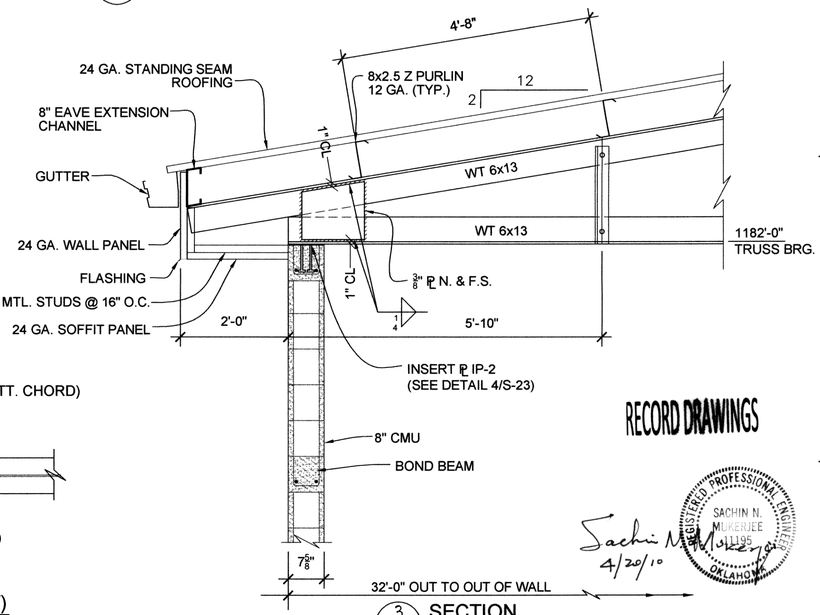
1 ROOF FRAMING PLAN
(SCALE: 3/8" = 1'-0")



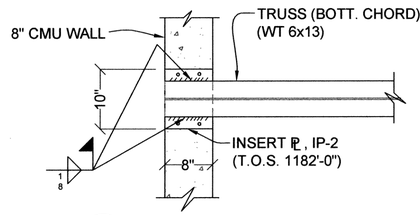
2 ELEVATION TRUSS T-3 (3 REQ'D.)
(SCALE: 3/8" = 1'-0")



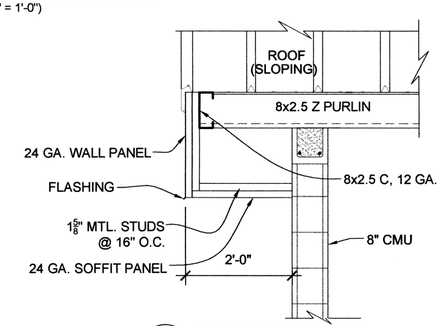
4 DETAIL - INSERT P.L IP-2
(SCALE: 1 1/2" = 1'-0")



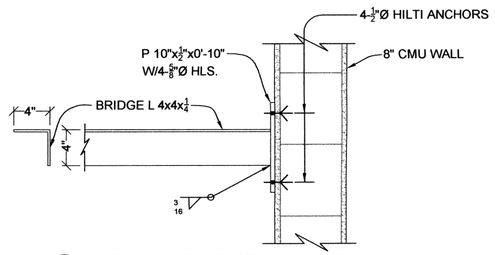
3 SECTION
(SCALE: 3/4" = 1'-0")



5 DETAIL (TRUSS SEAT)
(SCALE: 1" = 1'-0")



6 SECTION
(SCALE: 3/4" = 1'-0")



7 DETAIL - BRIDGE ANCHOR (4-PLACES)
(SCALE: 1 1/2" = 1'-0")

LEGEND

LINTEL	
L - X	REF. LINTEL SHEDULE DRG S-960

RECORD DRAWINGS

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUKERJEE 21195 OKLAHOMA

Sachin Mukerjee 4/20/10

S-23

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	2/25/2010	AS SHOWN	38 OF 89

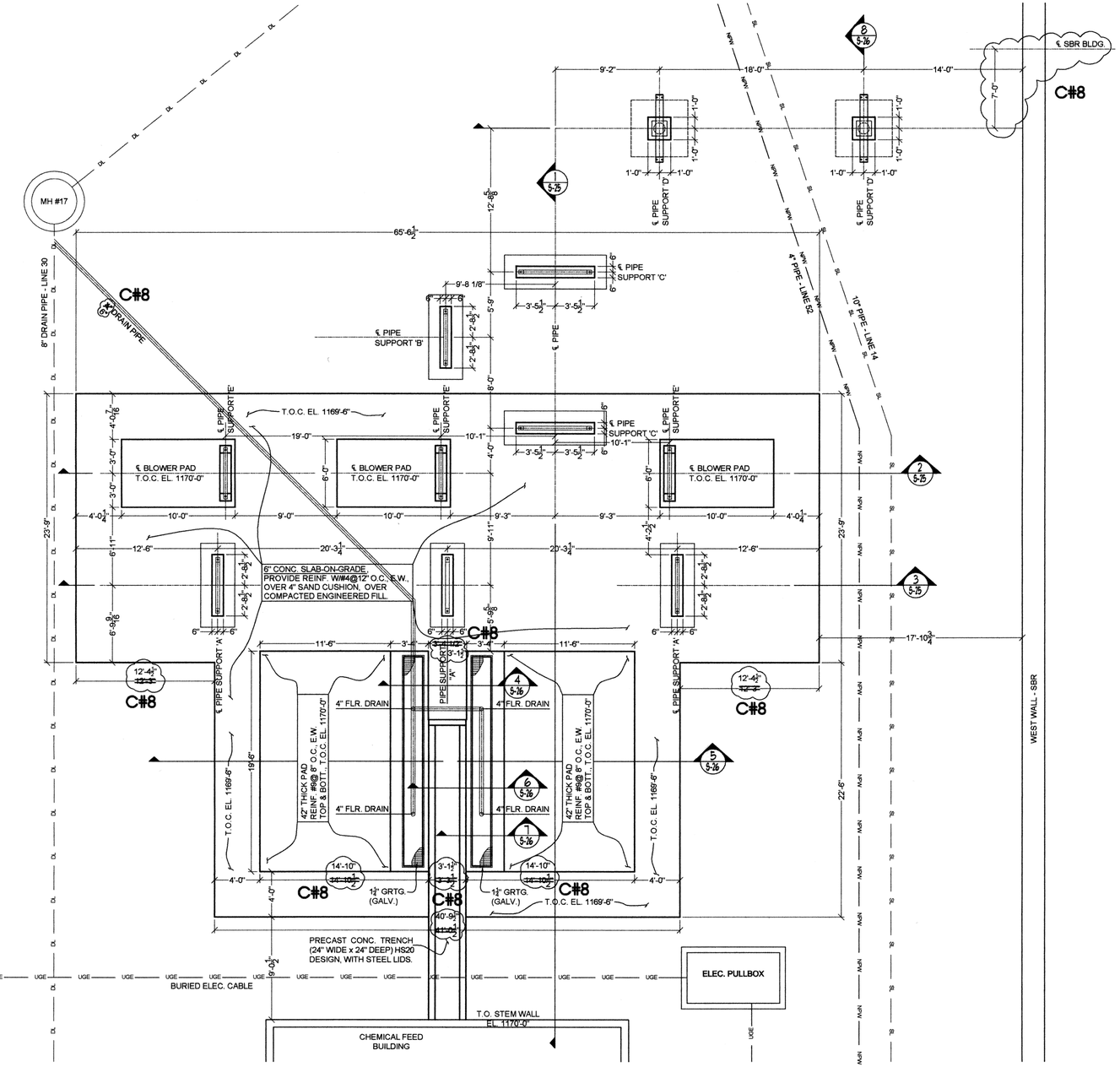
SBR
CHEMICAL FEED BUILDING
STL. TRUSS & SECTIONS

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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structure\SBR\S23-SBRChemBldgRoof.dwg



SBR ODOR CONTROL UNIT – PLAN VIEW

SCALE: 3/16" = 1'-0"

SARATH DASHARATHY 11466 2-22-11 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

RECORD DRAWINGS

S-24

REVISIONS:	DATE:
C#8 – CLARIFICATION NO. 8	2/25/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	1/27/2010	AS SHOWN	39 OF 89

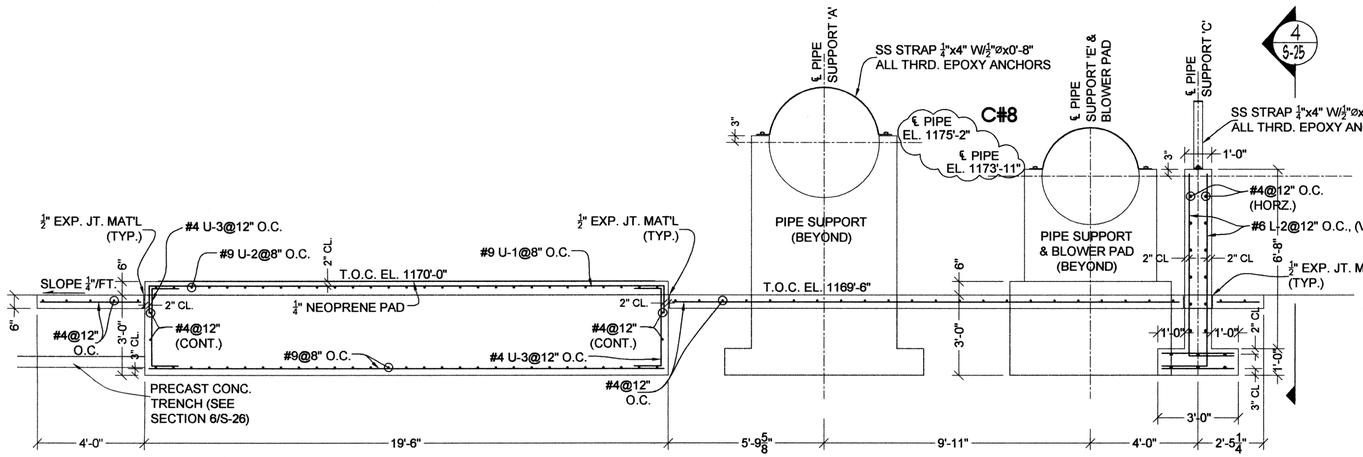
SBR ODOR CONTROL
STRUCTURAL DETAILS
1 OF 3

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CERTIFICATE OF AUTHORIZATION NO. CA2088

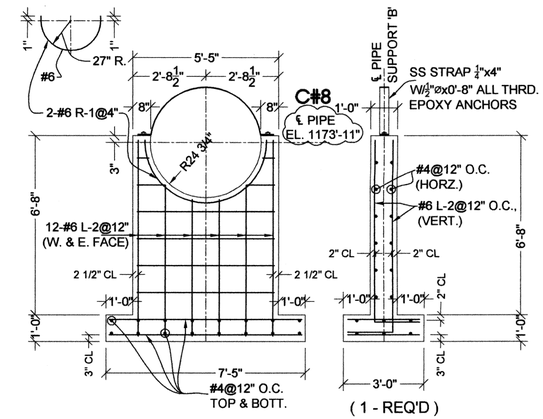
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\SBRa\S24-S26 SBR OdorControl.dwg

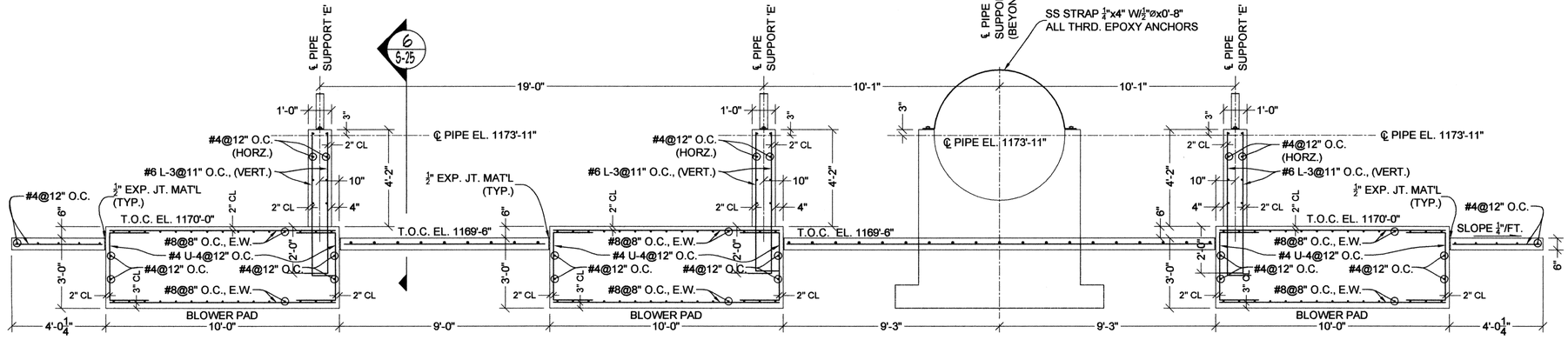


1 S-24 **SECTION**
SCALE: 3/8" = 1'-0

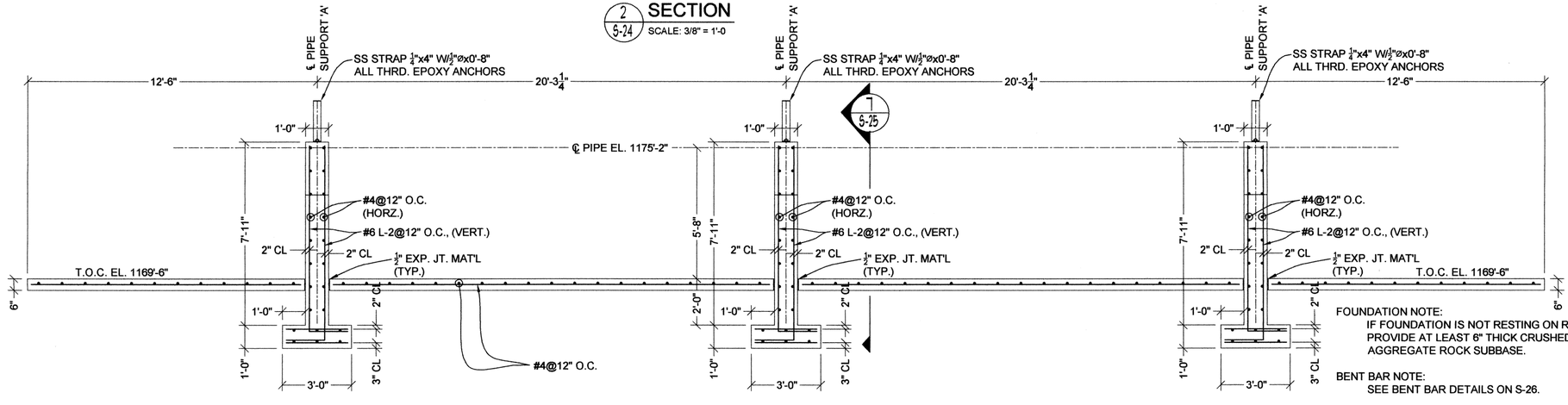
4 S-25 **SECTION - PIPE SUPPORT 'C'**
SCALE: 3/8" = 1'-0



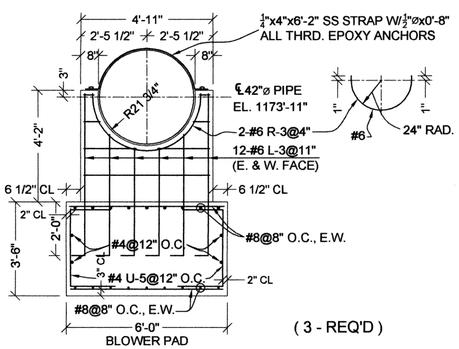
5 S-25 **SECTIONS - PIPE SUPPORT 'B'**
SCALE: 3/8" = 1'-0



2 S-24 **SECTION**
SCALE: 3/8" = 1'-0

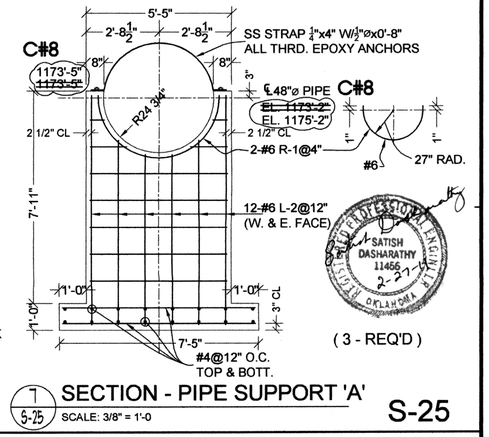


3 S-24 **SECTION**
SCALE: 3/8" = 1'-0



6 S-25 **SECTION - PIPE SUPPORT 'E'**
SCALE: 3/8" = 1'-0

RECORD DRAWINGS



FOUNDATION NOTE:
IF FOUNDATION IS NOT RESTING ON ROCK PROVIDE AT LEAST 6" THICK CRUSHED AGGREGATE ROCK SUBBASE.

BENT BAR NOTE:
SEE BENT BAR DETAILS ON S-26.

7 S-25 **SECTION - PIPE SUPPORT 'A'**
SCALE: 3/8" = 1'-0

S-25

REVISIONS:	DATE:
C#8 – CLARIFICATION NO. 8	2/25/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	4/28/2010	AS SHOWN	40 OF 89

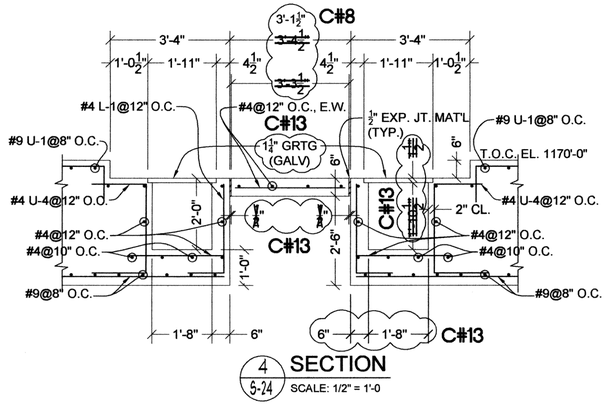
SBR ODOR CONTROL STRUCTURAL DETAILS 2 OF 3

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EDMOND, OK. 73013
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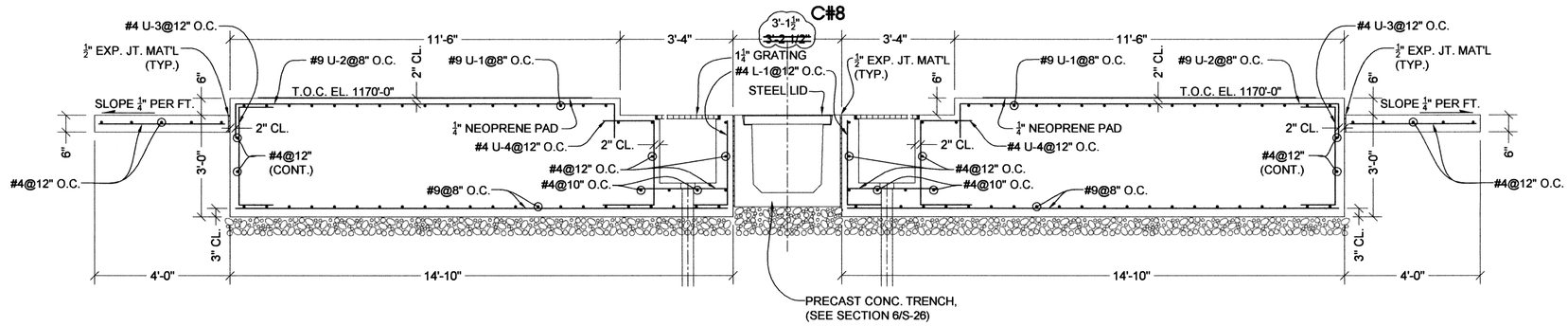
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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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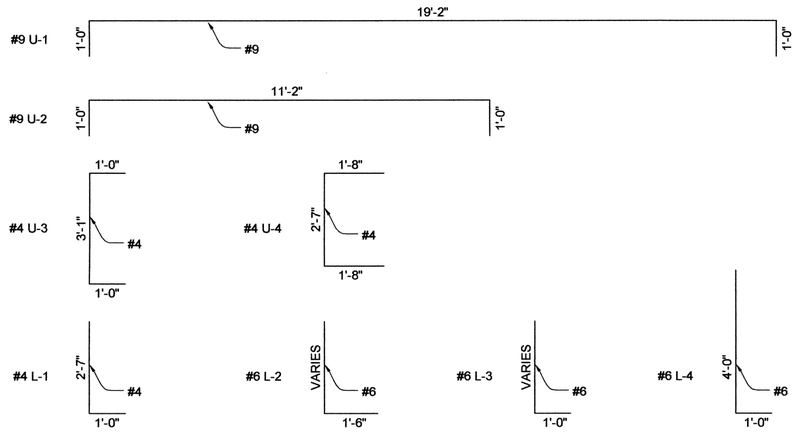


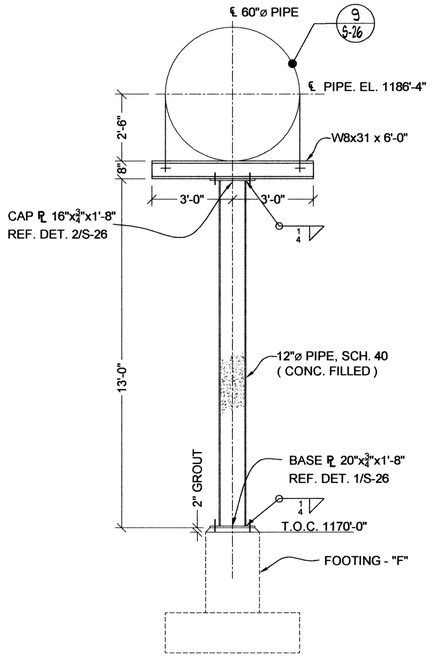
4 SECTION
5-24 SCALE: 1/2" = 1'-0



5 SECTION
5-24 SCALE: 1/2" = 1'-0

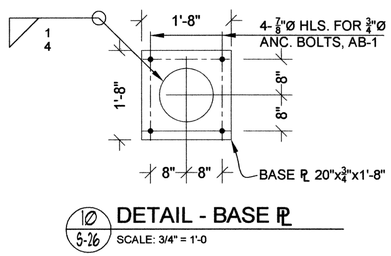
BENT BAR DETAILS



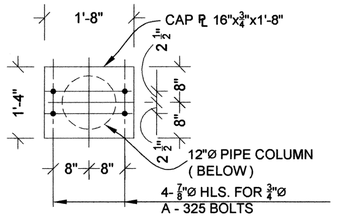


(2 - REQD)

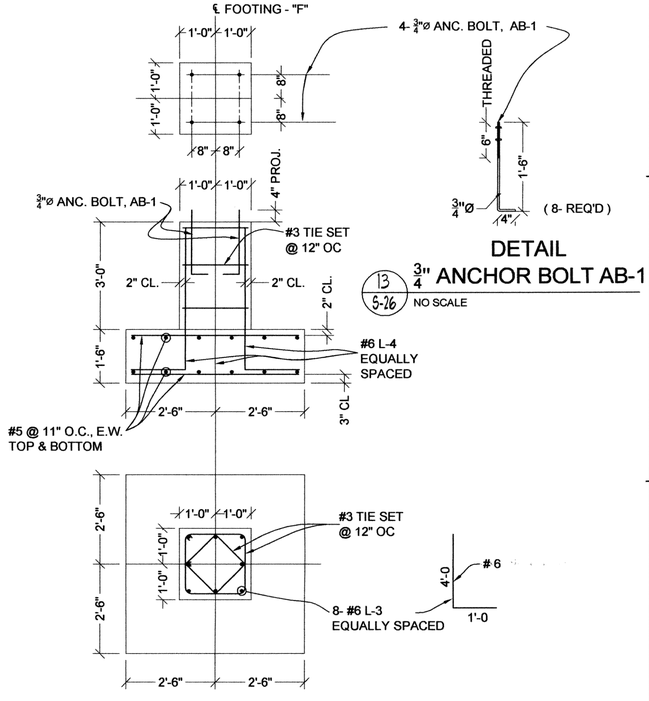
8 DETAIL - PIPE SUPPORT 'D'
5-24 SCALE: 3/8" = 1'-0



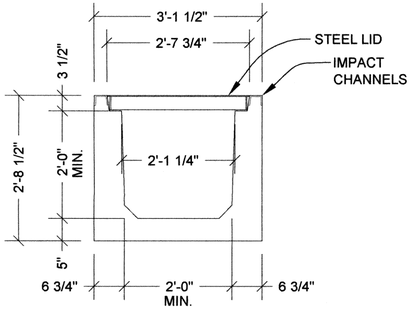
10 DETAIL - BASE ℙ
5-26 SCALE: 3/4" = 1'-0



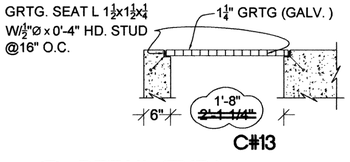
11 DETAIL - CAP ℙ
5-26 SCALE: 3/4" = 1'-0



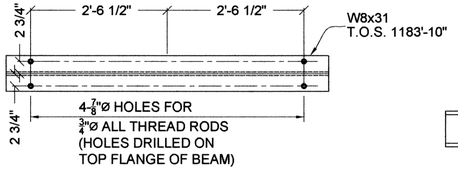
12 DETAIL - FOOTING 'F'
5-26 SCALE: 3/8" = 1'-0

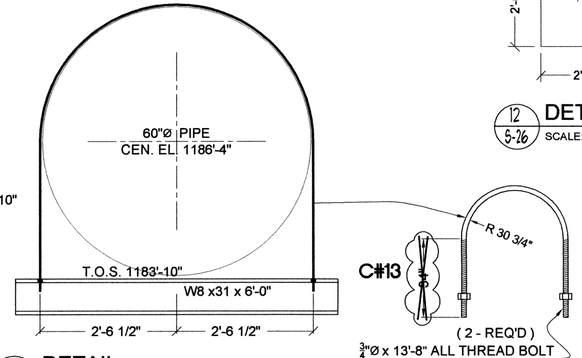


6 PRECAST TRENCH SECTION
5-24 SCALE: 3/4" = 1'-0



7 DETAIL (TYP.)
5-24 SCALE: 3/4" = 1'-0





9 DETAIL (2 PLACES)
5-26 SCALE: 3/4" = 1'-0

RECORD DRAWINGS

SATISH OMSHARATHY 11456 OKLAHOMA REGISTERED PROFESSIONAL ENGINEER

FOUNDATION NOTE:
IF FOUNDATION IS NOT RESTING ON ROCK PROVIDE AT LEAST 6" THICK CRUSHED AGGREGATE ROCK SUBBASE.

S-26

REVISIONS:	DATE:
C#8 – CLARIFICATION NO. 8	2/25/2011
C#13 – CLARIFICATION NO. 13	5/2/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	1/27/2010	AS SHOWN	41 OF 89

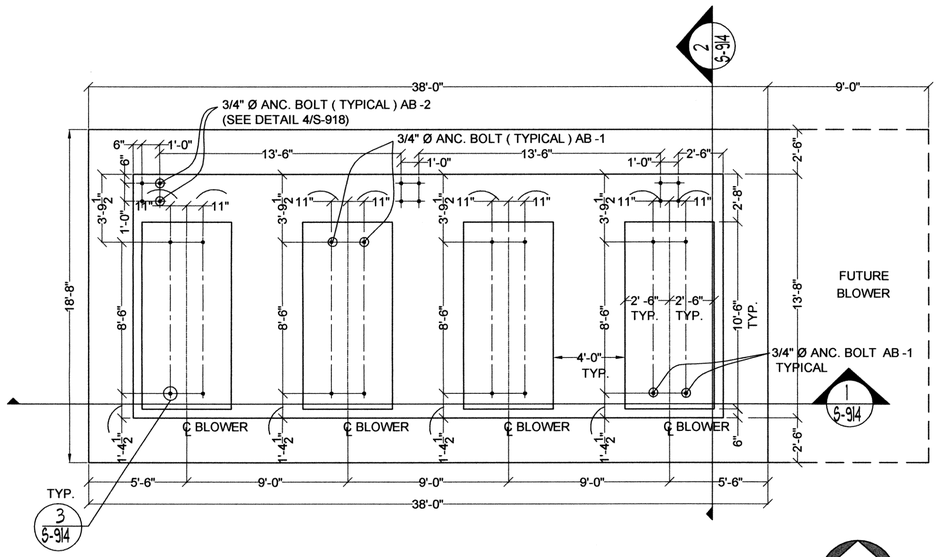
SBR ODOR CONTROL
STRUCTURAL DETAILS
3 OF 3

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CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

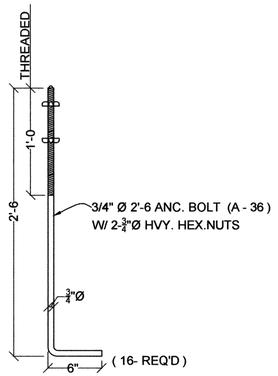
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SOUTH SBR BLOWERS FOUNDATION PLAN

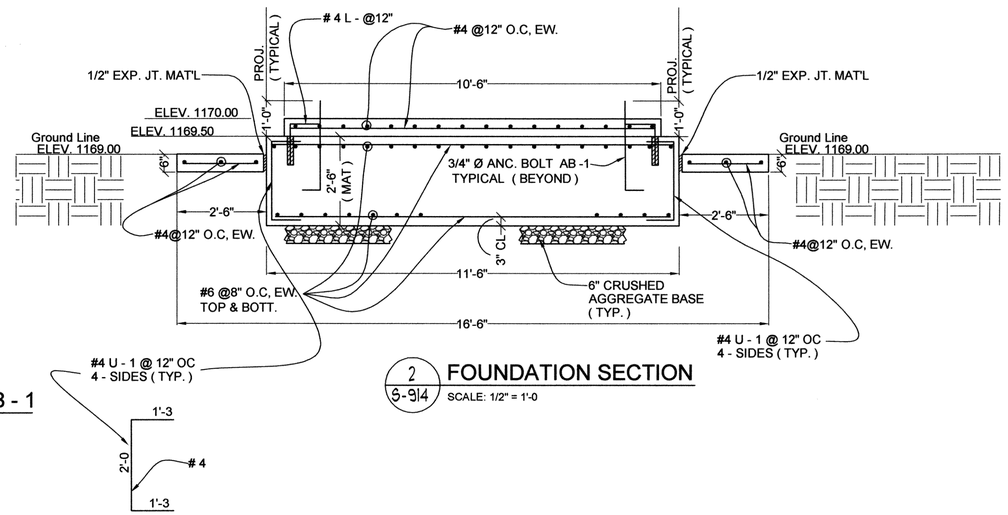
(SCALE: 1/4" = 1'-0")

NOTE: ANCHOR BOLT PATTERNS & LOCATIONS SHALL BE FIELD VERIFIED WITH EQUIPMENT BEING SUPPLIED ON THE PROJECT.



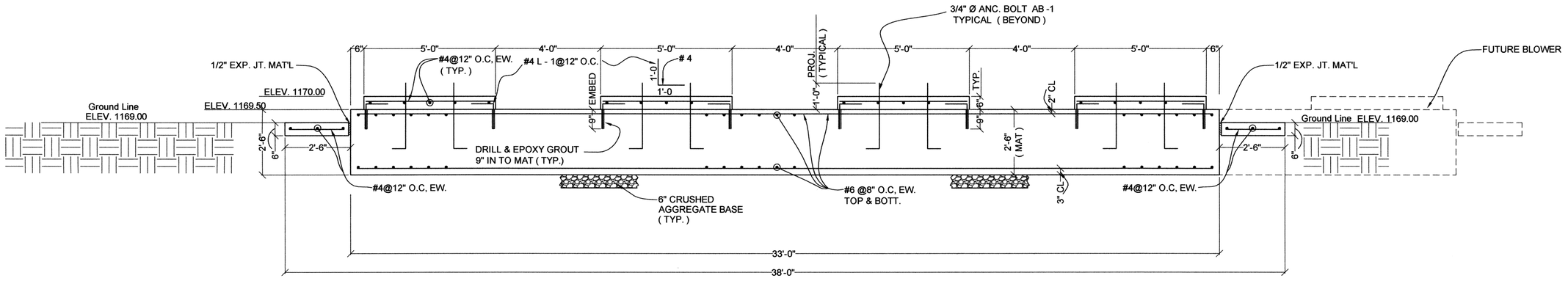
TYP. 3 S-914 **DETAIL - ANCH. BOLT AB - 1**

(NO SCALE)



2 S-914 **FOUNDATION SECTION**

SCALE: 1/2" = 1'-0



1 S-914 **FOUNDATION SECTION**

SCALE: 1/2" = 1'-0

Sachin N. Mukerjee 5/17/10

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUKERJEE 21195 OKLAHOMA

RECORD DRAWINGS

S-914

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	5/3/2010	AS SHOWN	42 OF 89

REVISIONS:	DATE:

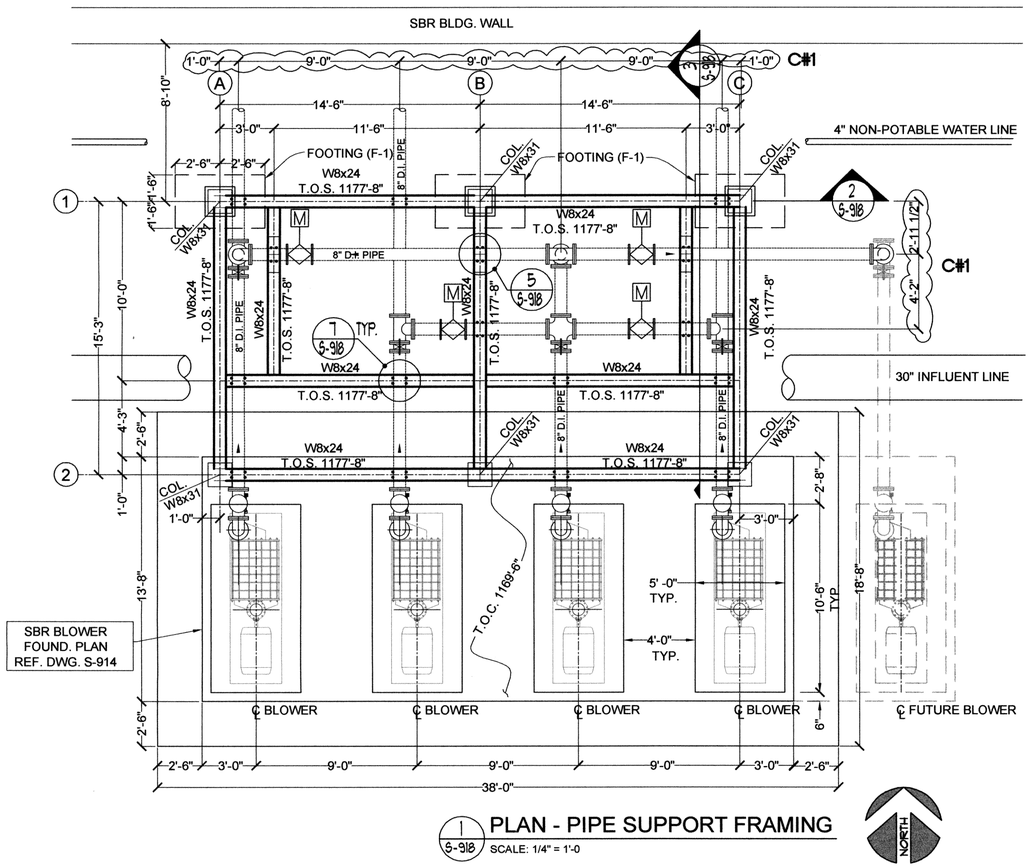
SOUTH SBR BLOWER FOUNDATION DETAILS

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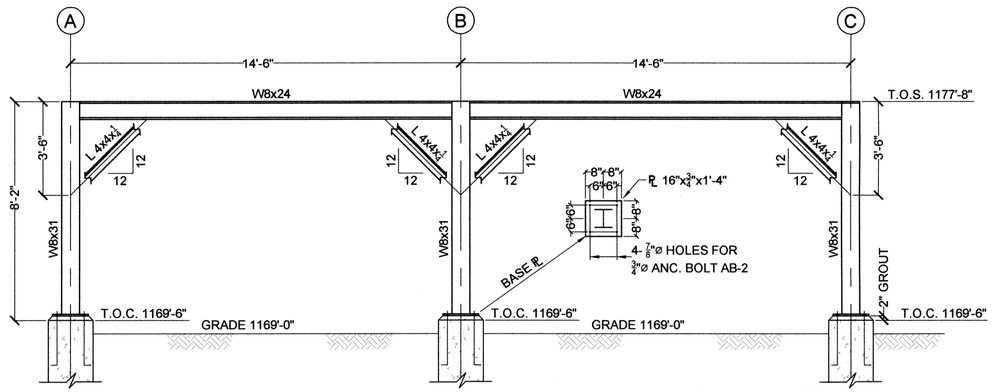
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

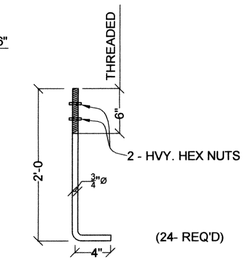
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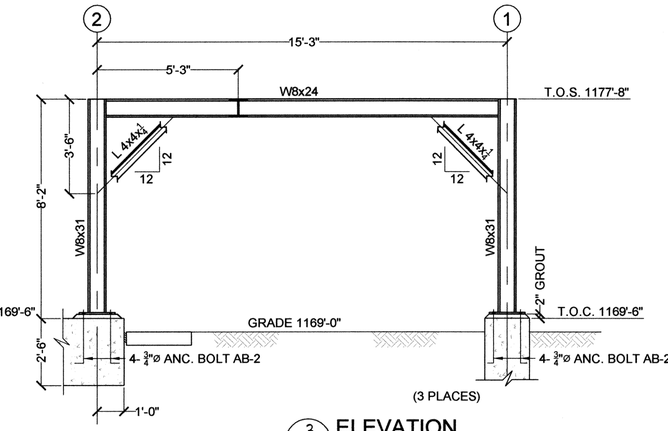
1 5-918 **PLAN - PIPE SUPPORT FRAMING**
SCALE: 1/4" = 1'-0



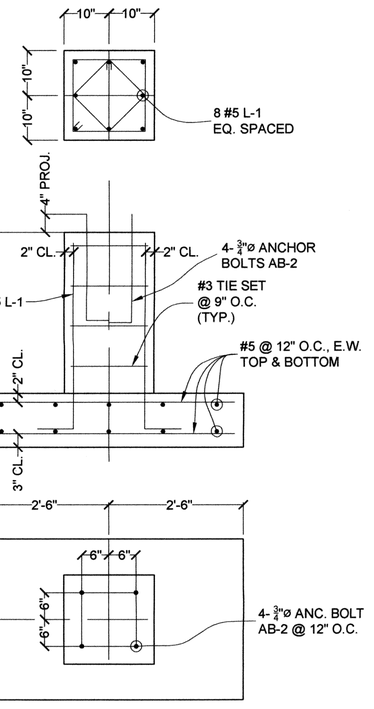
2 5-918 **ELEVATION**
SCALE: 3/8" = 1'-0



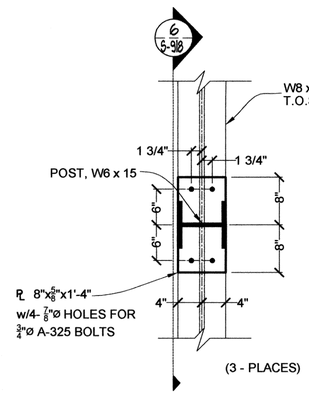
4 **DETAIL - ANCHOR BOLT AB-2**
(NO SCALE)



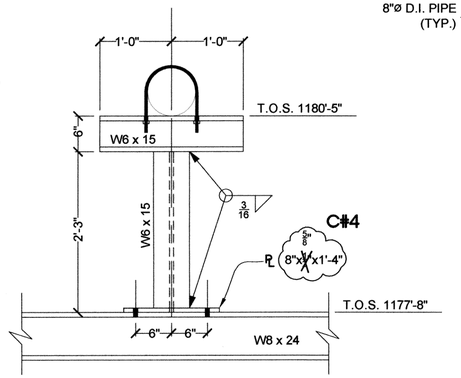
3 5-918 **ELEVATION**
SCALE: 3/8" = 1'-0



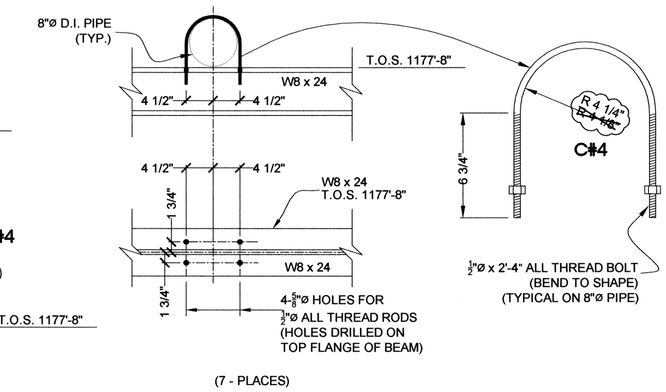
8 5-918 **DETAIL - FOOTING F-1**
SCALE: 3/4" = 1'-0



5 5-918 **DETAIL**
SCALE: 1" = 1'-0"



6 5-918 **VIEW**
SCALE: 1" = 1'-0"



7 5-918 **DETAIL**
SCALE: 1" = 1'-0"

RECORD DRAWINGS

SATISH DASHARATHY 11466 12-03-10 REGISTERED PROFESSIONAL ENGINEER STATE OF OKLAHOMA

S-918

REVISIONS:	DATE:
C#1 – CLARIFICATION NO. 1	9/29/2010
C#4 – CLARIFICATION NO. 4	12/8/10

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/17/2010	AS SHOWN	43 OF 89

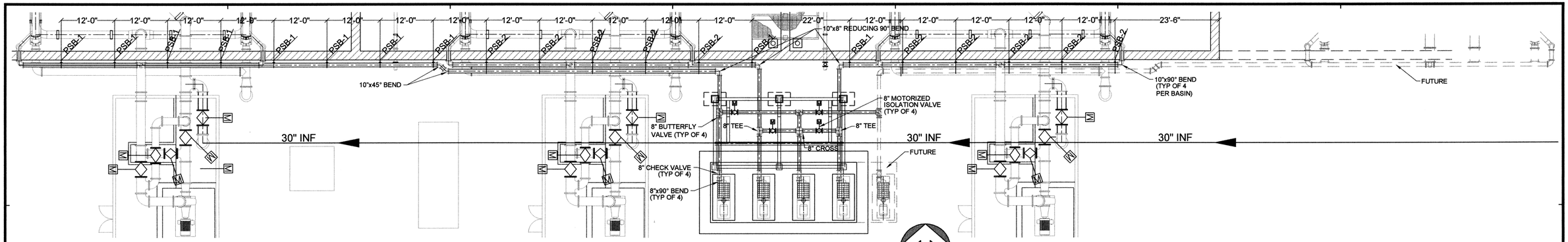
SOUTH SBR BLOWER AIR PIPING SUPPORT DETAILS 1 OF 2

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2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
FAX. (405) 844-3600

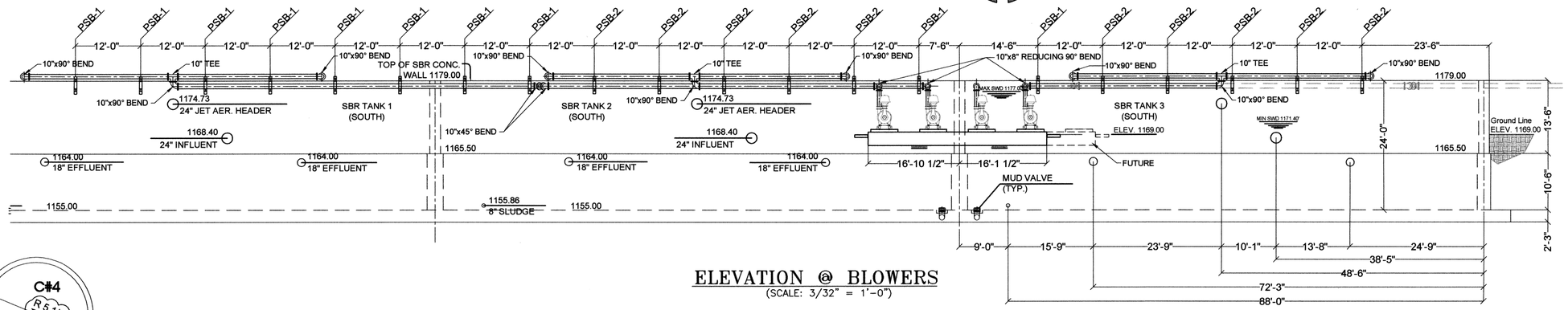
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

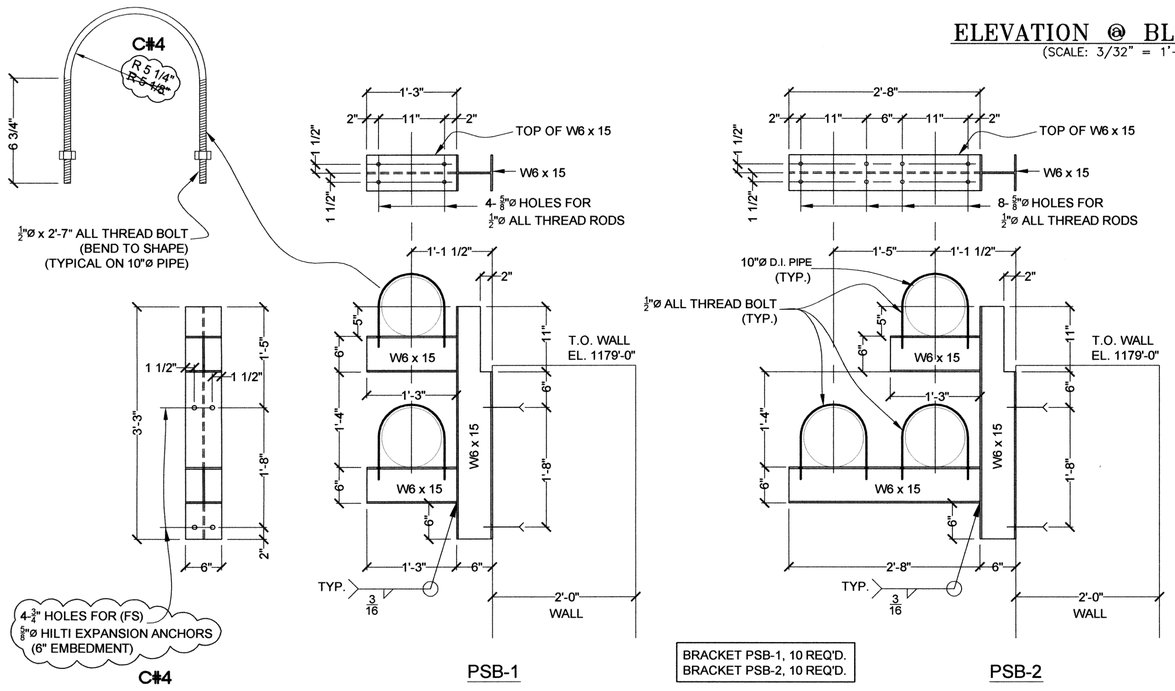
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SOUTH SBR BLOWER AIR PIPING
(SCALE: 3/32" = 1'-0")



ELEVATION @ BLOWERS
(SCALE: 3/32" = 1'-0")



PSB-1

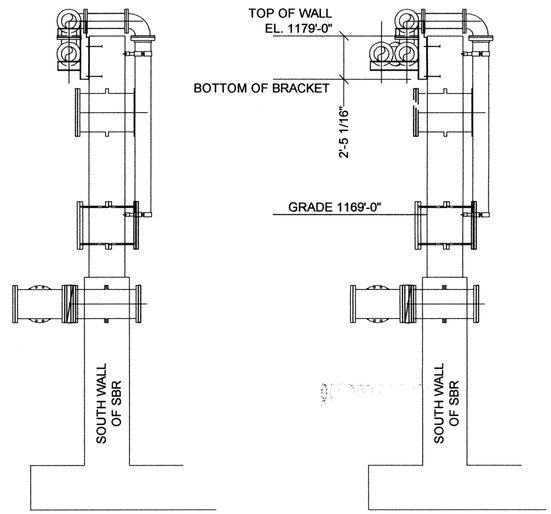
PSB-2

BRACKET PSB-1, 10 REQ'D.
BRACKET PSB-2, 10 REQ'D.

DETAIL - AIR PIPING SUPPORT "BRACKET"
BRACKETS PSB-1 & PSB-2
(SCALE: 1" = 1'-0")

SBR #1 (SOUTH)
SBR #1 (NORTH) SIM.

SBR #2 (SOUTH)
SBR #2 (NORTH) SIM.



SBR AIR PIPING SUPPORT BRACKET @ BASIN WALL
(SCALE: 1/4" = 1'-0")

RECORD DRAWINGS

SATISH DASHARATHY 11456 12-08 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

S-919

REVISIONS:	DATE:
C#4- CLARIFICATION NO. 4	12/8/2010

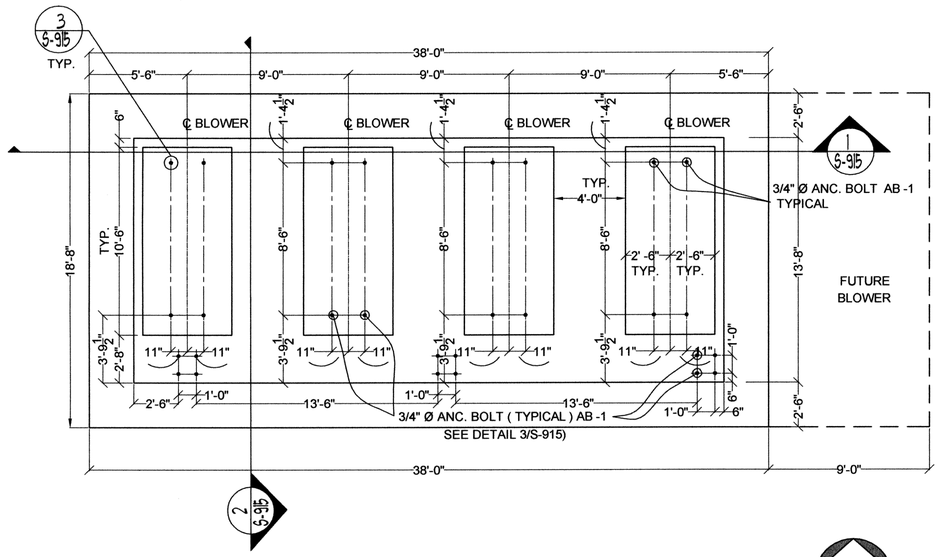
SOUTH SBR BLOWER AIR PIPING SUPPORT DETAILS 2 OF 2

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/17/2010	AS SHOWN	44 OF 89

EAGLE CONSULTANTS, INC.
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2803 SOUTH BRYANT
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FAX. (405) 844-3600
CERTIFICATE OF AUTHORIZATION NO. CA2088

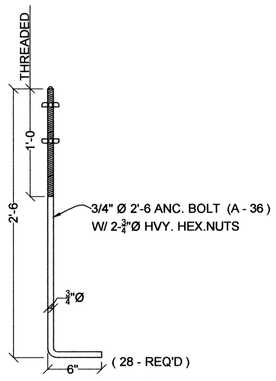
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\SBRs\S-918-921 SBR Piping Supports.dwg



NORTH SBR BLOWERS FOUNDATION PLAN

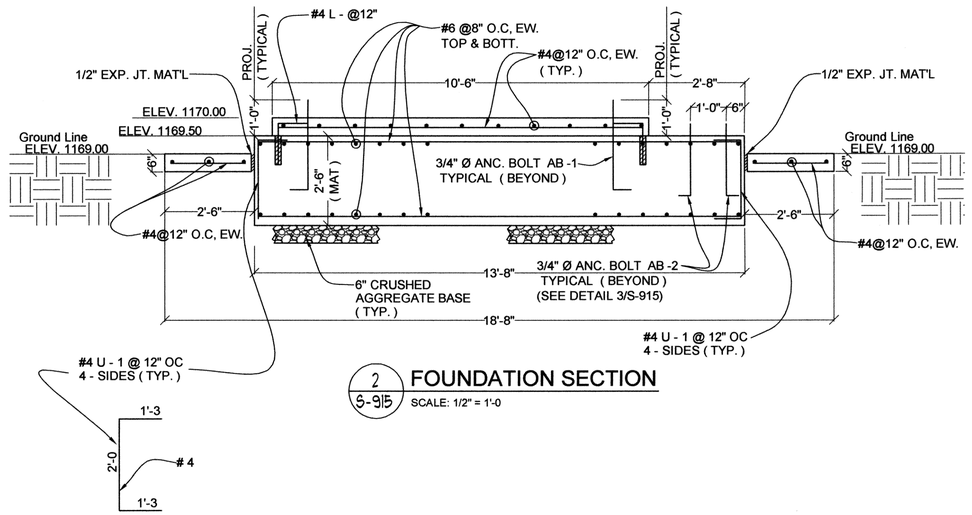
(SCALE: 1/4" = 1'-0")



TYP.
3
S-915

DETAIL - ANCH. BOLT AB - 1

(NO SCALE)

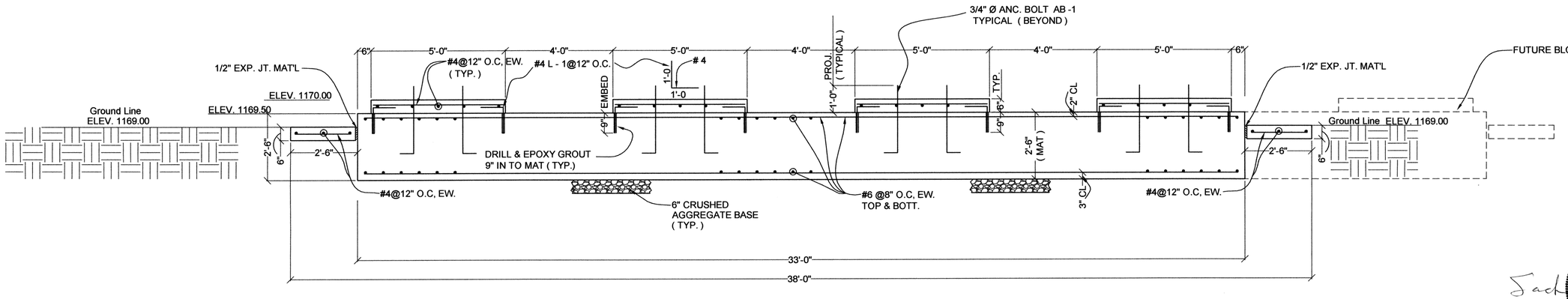


2
S-915

FOUNDATION SECTION

SCALE: 1/2" = 1'-0

NOTE: ANCHOR BOLT PATTERNS & LOCATIONS SHALL
BE FIELD VERIFIED WITH EQUIPMENT
BEING SUPPLIED ON THE PROJECT.



1
S-915

FOUNDATION SECTION

SCALE: 1/2" = 1'-0

REGISTERED PROFESSIONAL ENGINEER
SACHIN N. MUKERJI
11195
OKLAHOMA
5/17/10

RECORD DRAWINGS

S-915

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	5/3/2010	AS SHOWN	45 OF 89

REVISIONS:	DATE:

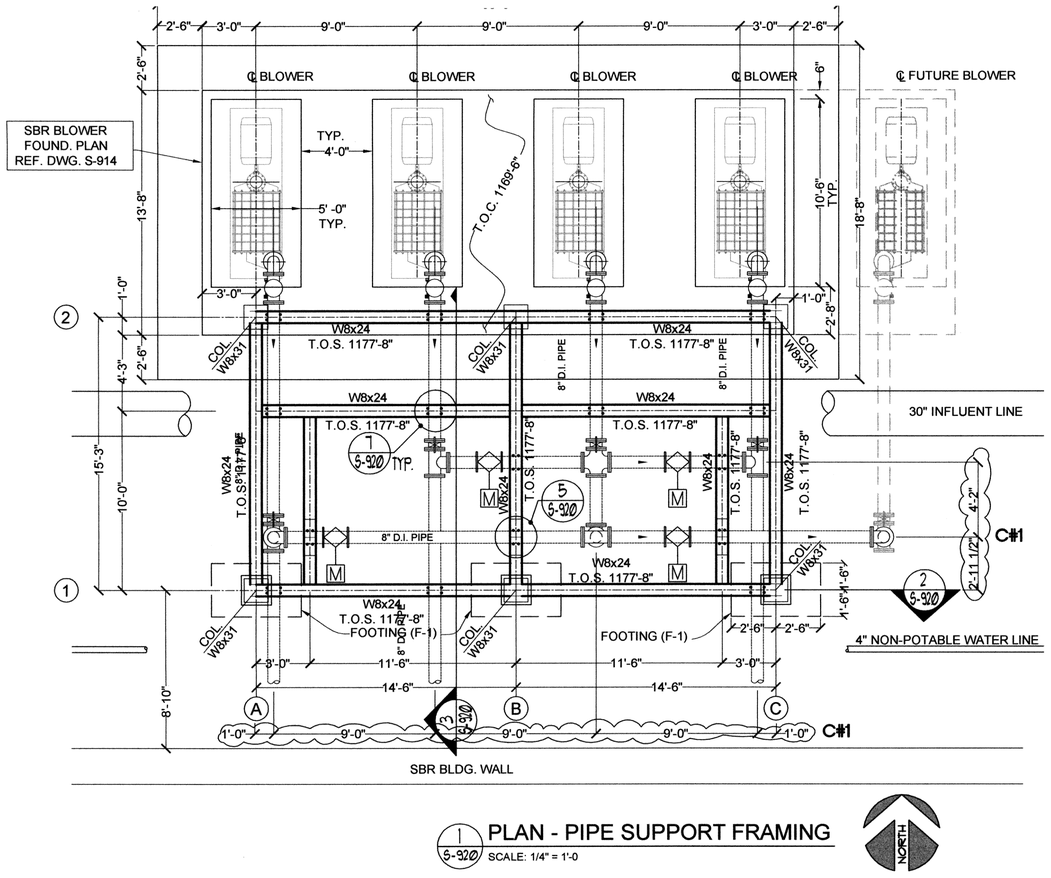
NORTH SBR BLOWER
FOUNDATION DETAILS

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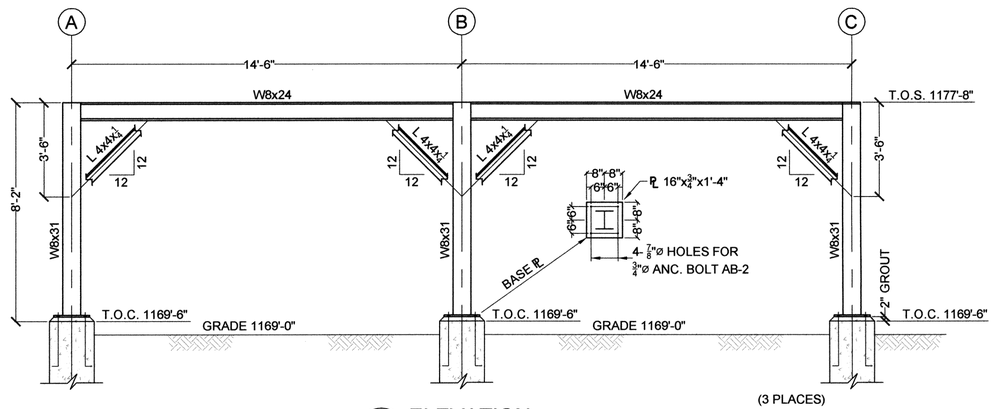
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

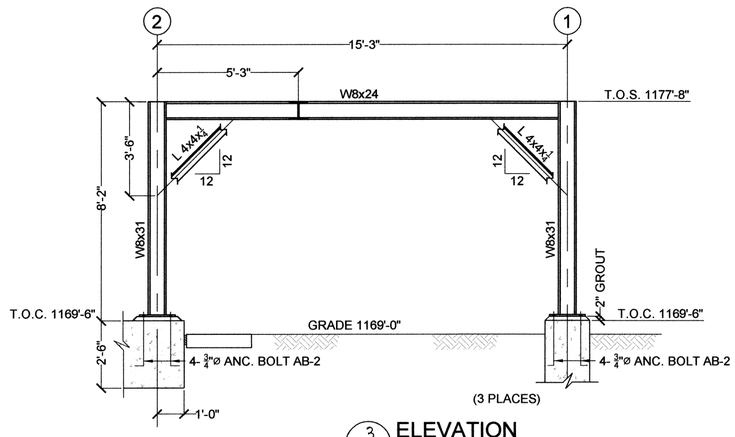
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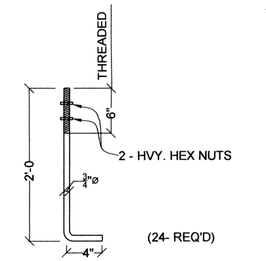
1 S-920 PLAN - PIPE SUPPORT FRAMING
SCALE: 1/4" = 1'-0



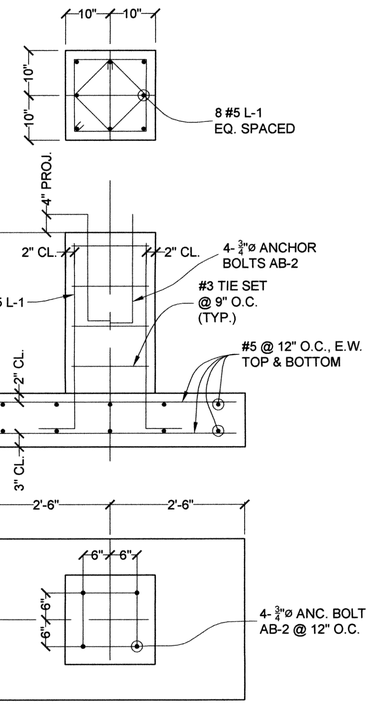
2 S-920 ELEVATION
SCALE: 3/8" = 1'-0



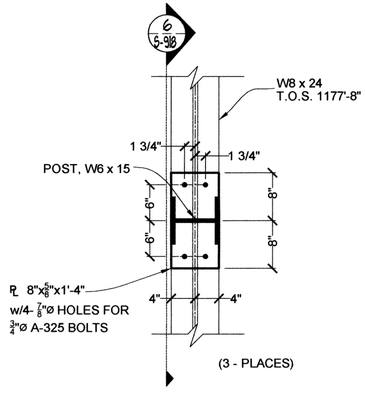
3 S-920 ELEVATION
SCALE: 3/8" = 1'-0



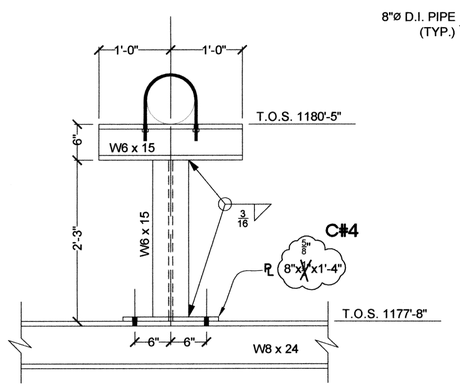
4 DETAIL - ANCHOR BOLT AB-2
(NO SCALE)



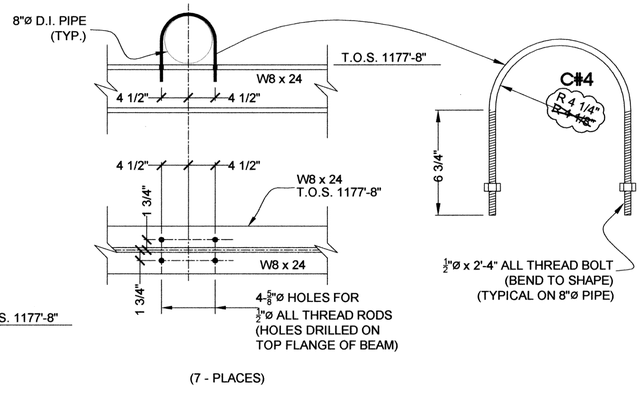
8 S-920 DETAIL - FOOTING F-1
SCALE: 3/4" = 1'-0



5 S-920 DETAIL
SCALE: 1" = 1'-0"



6 S-920 VIEW
SCALE: 1" = 1'-0"



7 S-920 DETAIL
SCALE: 1" = 1'-0"

RECORD DRAWINGS

REVISIONS:	DATE:
C#1 – CLARIFICATION NO. 1	9/29/2010
C#4 – CLARIFICATION NO. 4	12/8/10

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	3/17/2010	AS SHOWN	46 OF 89

NORTH SBR BLOWER
AIR PIPING SUPPORT DETAILS
1 OF 2

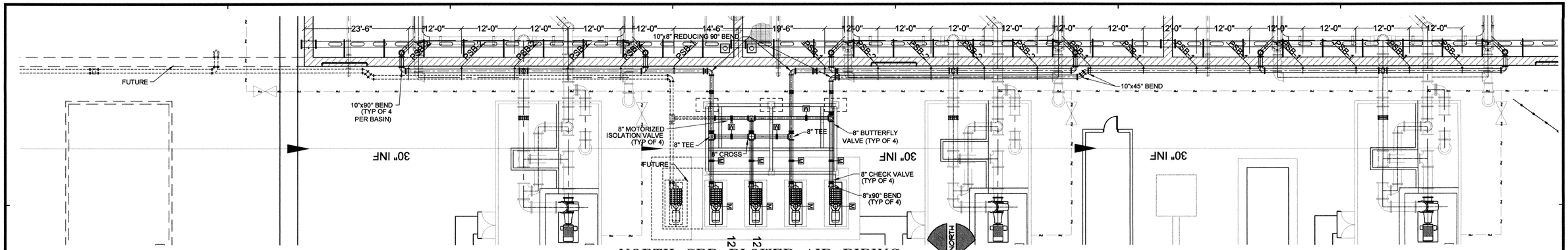
S-920

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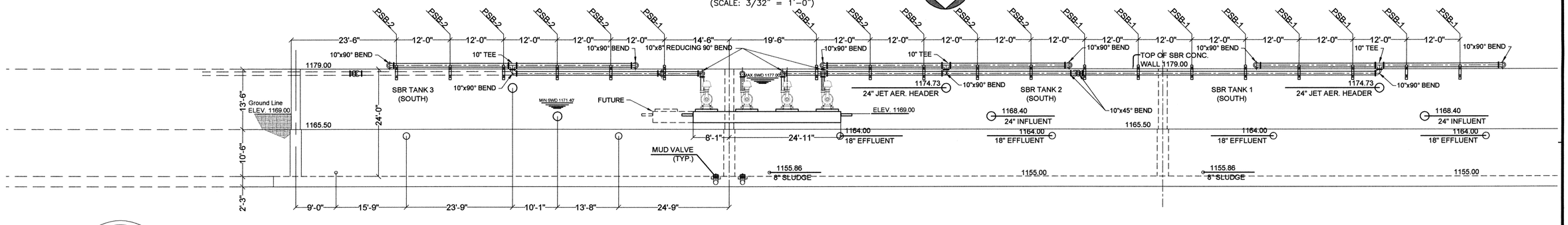
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

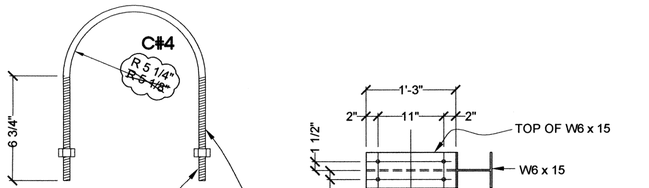
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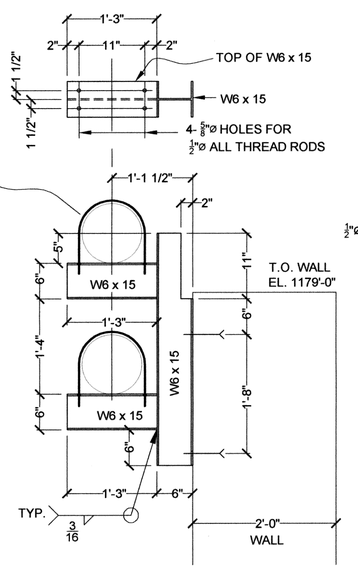


NORTH SBR BLOWER AIR PIPING
(SCALE: 3/32" = 1'-0")

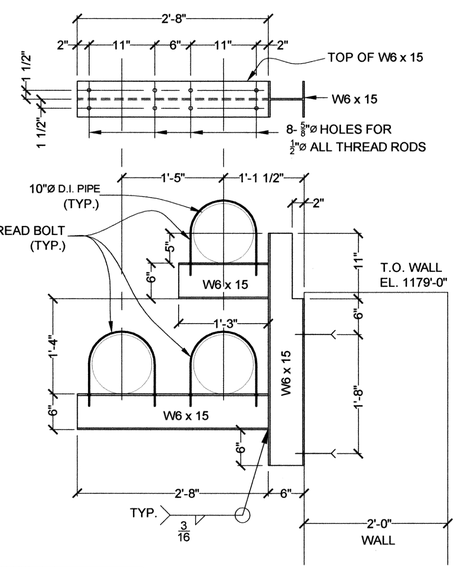


ELEVATION @ BLOWERS
(SCALE: 3/32" = 1'-0")





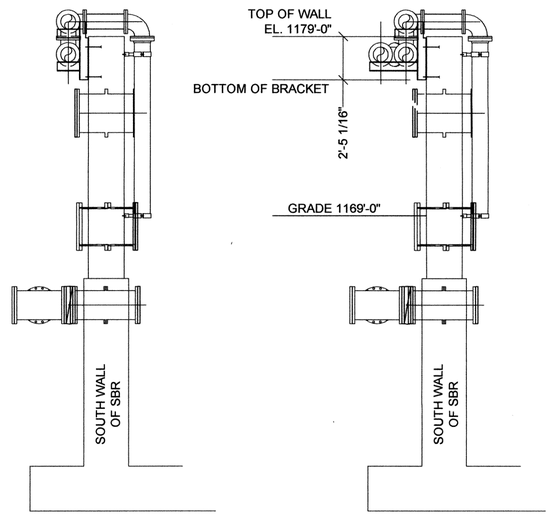
PSB-1



PSB-2

BRACKET PSB-1, 10 REQ'D.
BRACKET PSB-2, 10 REQ'D.
(9) C#4

DETAIL – AIR PIPING SUPPORT "BRACKET"
BRACKETS PSB-1 & PSB-2
(SCALE: 1" = 1'-0")



SBR AIR PIPING SUPPORT BRACKET @ BASIN WALL
(SCALE: 1/4" = 1'-0")

RECORD DRAWINGS

S-921

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/2010

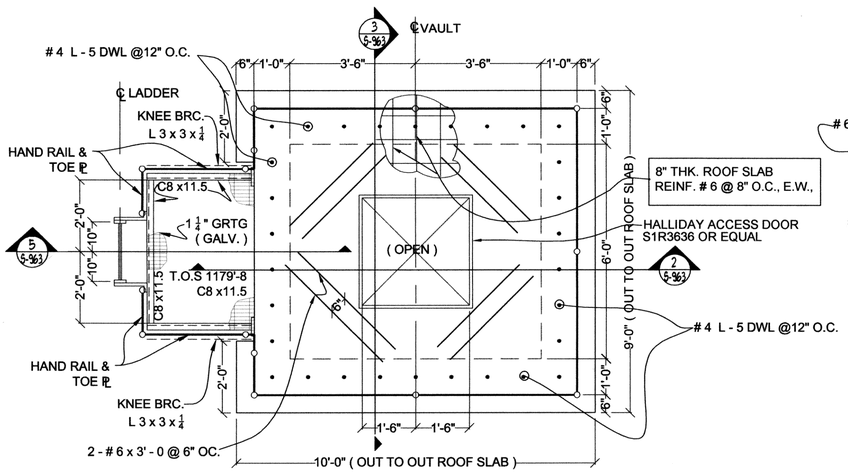
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S.D.		S.D.	S.D.	3/17/2010	AS SHOWN	47 OF 89

NORTH SBR BLOWER AIR PIPING SUPPORT DETAILS 2 OF 2

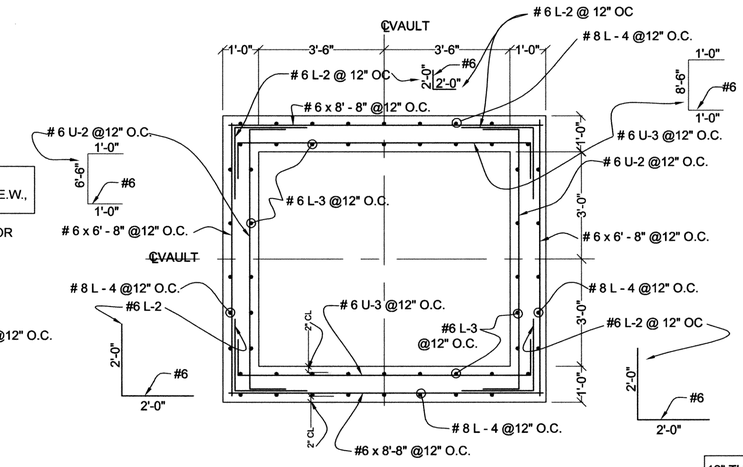
EAGLE CONSULTANTS, INC.
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EDMOND, OK. 73013
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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

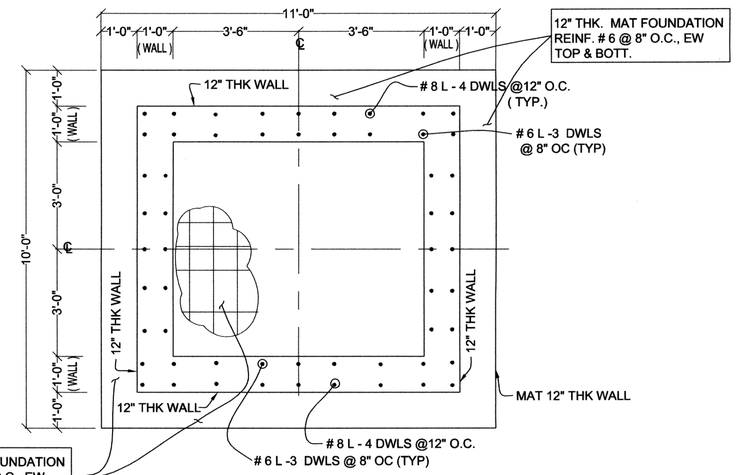
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1 S-963 **ROOF PLAN (8" THK. CONC. ROOF SLAB)**
SCALE: 1/2" = 1'-0



4 S-963 **SECTION**
SCALE: 1/2" = 1'-0



7 S-963 **SECTION**
SCALE: 1/2" = 1'-0

2 S-963 **SECTION**
SCALE: 1/2" = 1'-0

3 S-963 **SECTION**
SCALE: 1/2" = 1'-0

5 S-963 **SECTION**
SCALE: 1/2" = 1'-0

6 S-963 **SECTION**
SCALE: 1/2" = 1'-0

RECORD DRAWINGS

Sachin N. Mukerjee 5/17/10

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MUKERJEE 11195 OKLAHOMA

S-963

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/21/2010	AS SHOWN	48 OF 89

REVISIONS:	DATE:

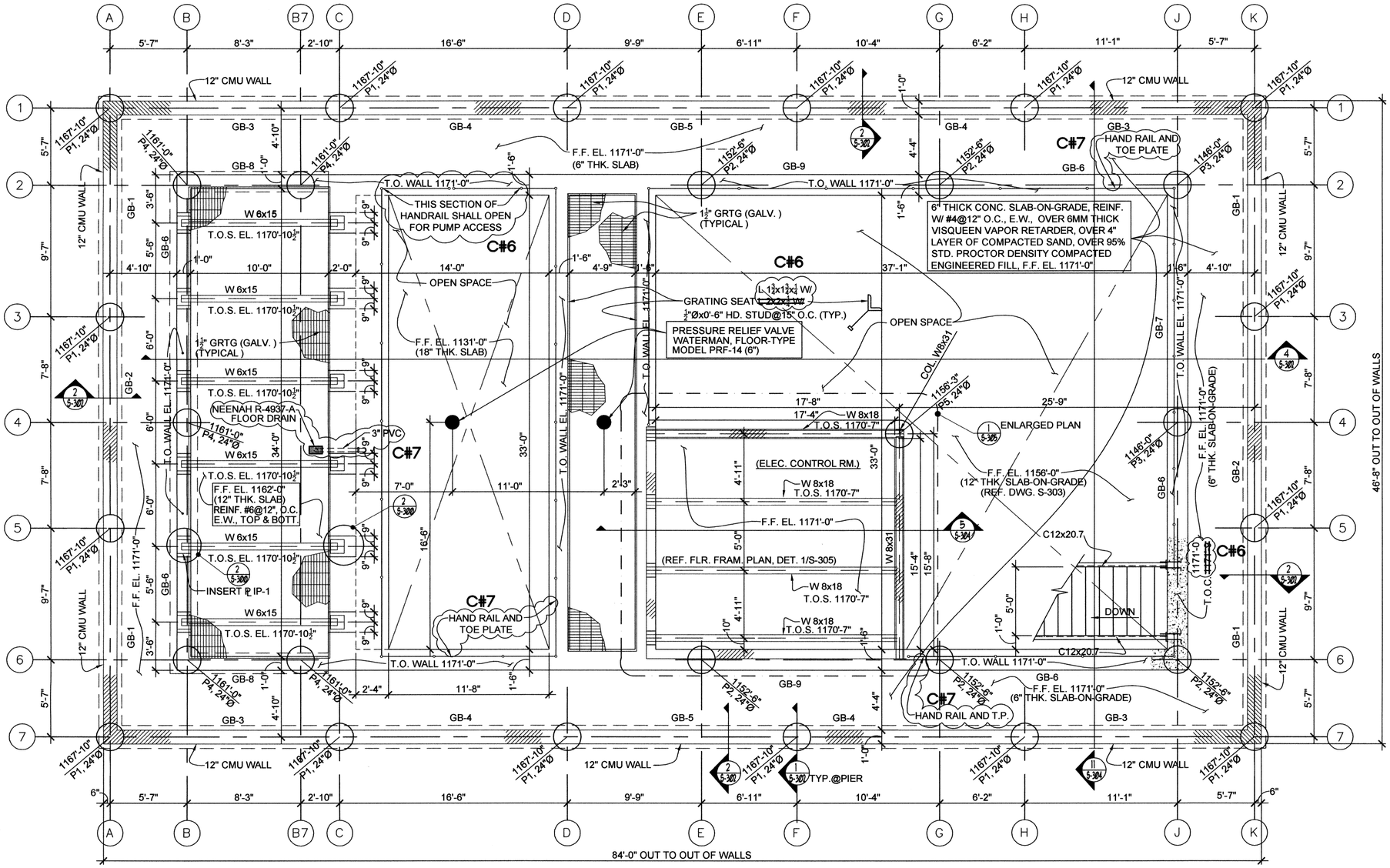
SBR SCUM WELL STR # 69, 70
STRUCTURAL DETAILS

EAGLE OFFICE CENTER
2803 SOUTH BRYANT
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PH. (405) 844-3900
FAX. (405) 844-3600

EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

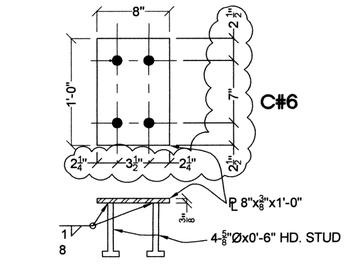
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NORTH

FOUNDATION PLAN - (DRILLED PIERS & FLOOR - EL. 1171'-0")

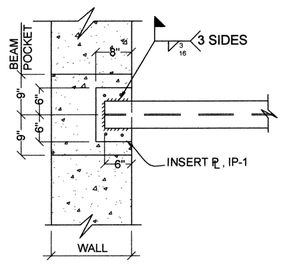
(SCALE: 1/4" = 1'-0")



(21 REQ'D.)

DETAIL - INSERT ℄ IP-1

NO SCALE



2 5-300 DETAIL - BEAM POCKET

NO SCALE

REFERENCE:

GRADE BEAM SCHEDULE - S-302

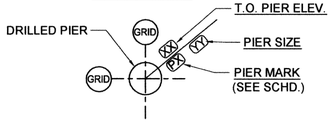
DETAIL - DRILLED PIER - S-304

DRILLED PIER SCHEDULE

MARK	SIZE (DIA.)	PENETRATION	REINFORCEMENT		T.O. PIER	NO. REQ'D
			VERT.	DOWEL		
P-1	24"Ø	2'-0"	6-#6	4-#6	EL. 1167'-10"	16
P-2	24"Ø	2'-0"	6-#6	4-#6	EL. 1152'-6"	5
P-3	24"Ø	2'-0"	6-#6	4-#6	EL. 1146'-0"	2
P-4	24"Ø	2'-0"	6-#6	4-#6	EL. 1161'-0"	5
P-5	24"Ø	2'-0"	6-#6	4-#6	EL. 1156-3"	1

LEGEND:

DRILLED PIERS INDICATED ON "PLAN" THUS:



RECORD DRAWINGS

NOTES:

1. 6" LAYER OF CRUSHED ROCK TO BE PROVIDED WHERE BOTTOM OF EXCAVATION NOT FOUNDED ON BED ROCK.
2. FLOOR SLAB: 6" THICK CONC. SLAB-ON-GRADE, REINF. W/ #4@12" O.C., E.W., OVER 6 MM THICK VISQUEEN VAPOR RETARDER, OVER 4" LAYER OF COMPACTED SAND, OVER 95% STD. PROCTOR DENSITY COMPACTED ENGINEERED FILL, UNLESS SHOWN OTHERWISE.
3. TYPICAL DRILLED PIER DETAIL, REFER DETAIL 1/S-304 DWG. S-302.

S-300

REVISIONS:	DATE:
C#6 – ULTRATECH CLARIFICATION	1/28/2011
C#7 – CLARIFICATION NO. 7	2/14/2011

UV BUILDING PIERS & FOUNDATION PLAN

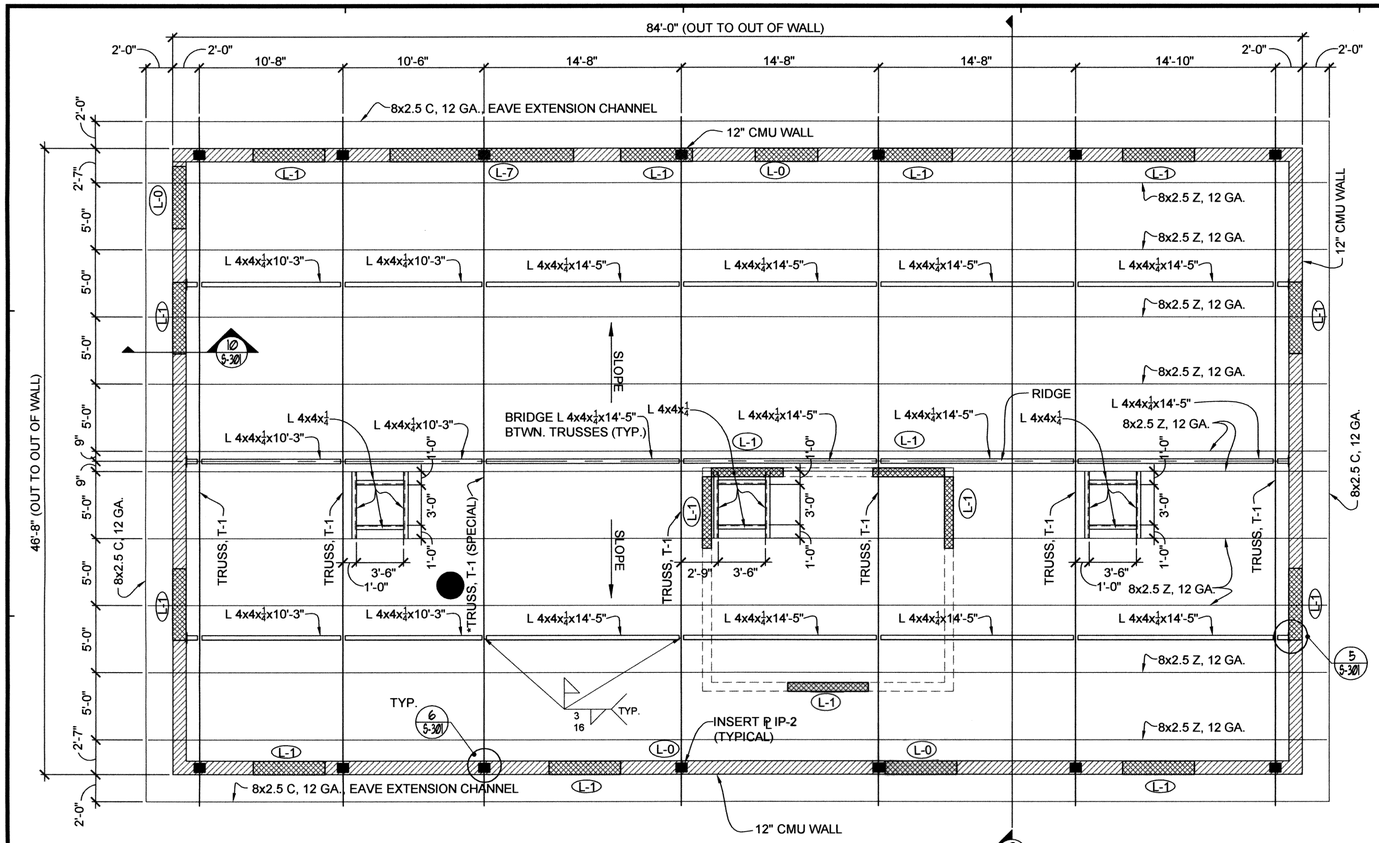
DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	4/28/2010	AS SHOWN	49 OF 89

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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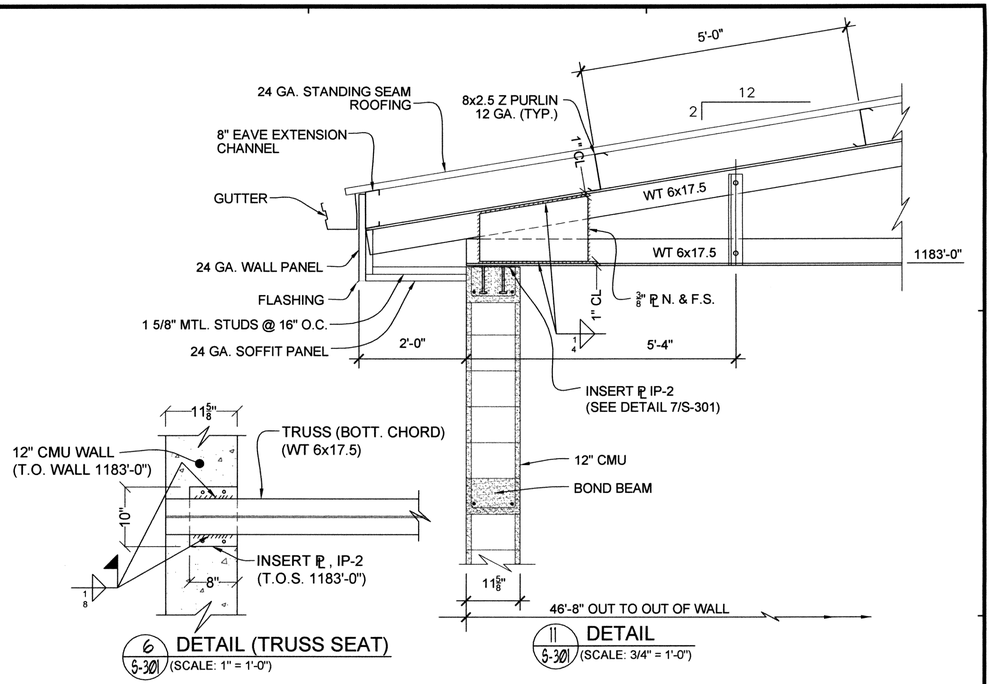


1 ROOF FRAMING PLAN & LINTELS
(SCALE: 3/16" = 1'-0")

NOTE:
DESIGN OF LINTELS REFER LINTEL SCHEDULE, DWG. S-601

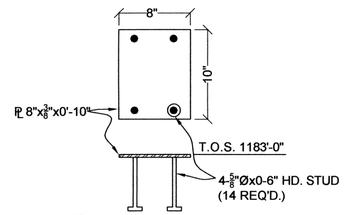
LEGEND

LINTEL — L - X — REF. LINTEL SHEDULE DRG S-960

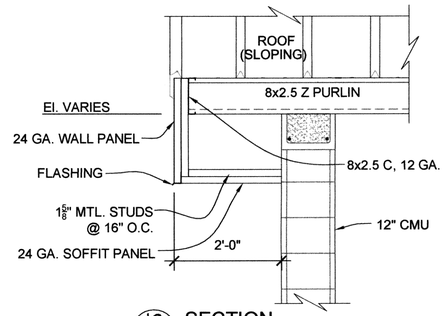


6/5-301 DETAIL (TRUSS SEAT)
(SCALE: 1" = 1'-0")

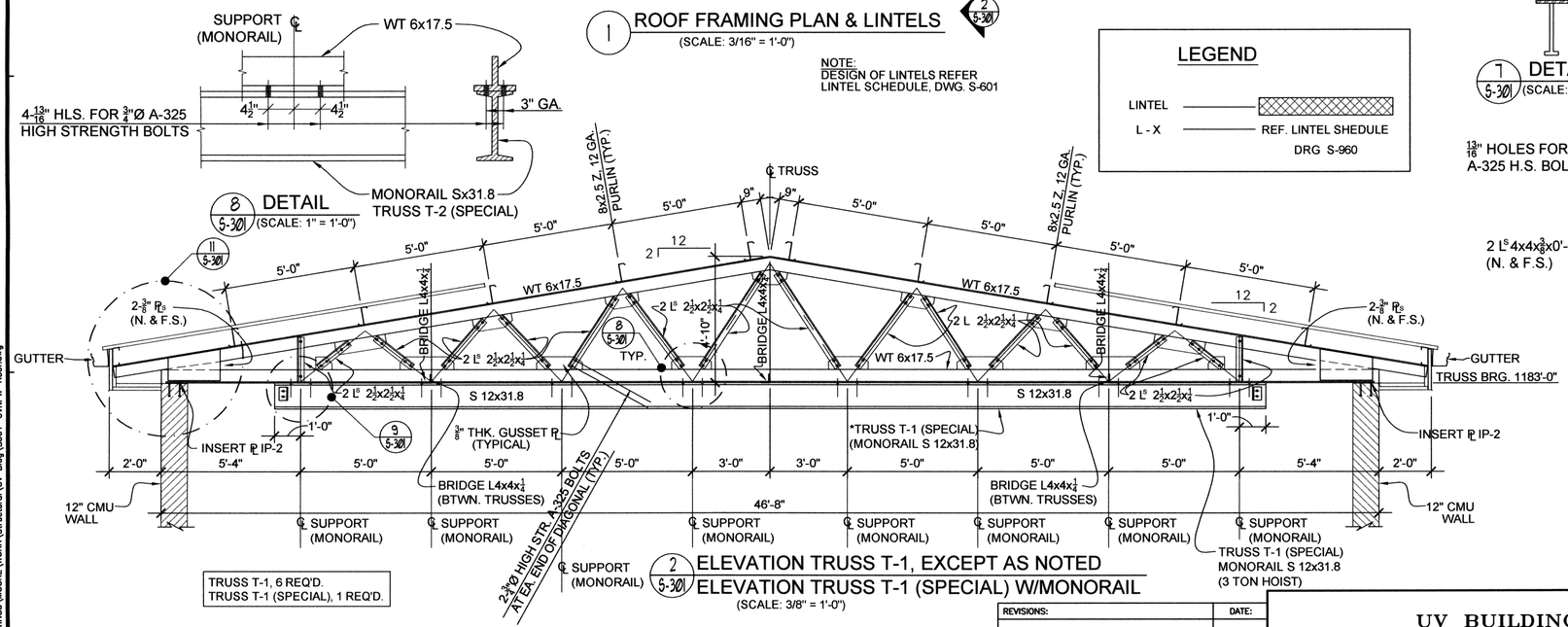
11/5-301 DETAIL
(SCALE: 3/4" = 1'-0")



7/5-301 DETAIL - INSERT P IP-2
(SCALE: 1 1/2" = 1'-0")



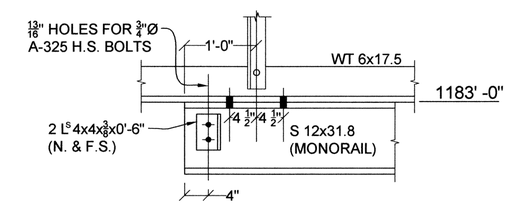
10/5-301 SECTION
(SCALE: 3/4" = 1'-0")



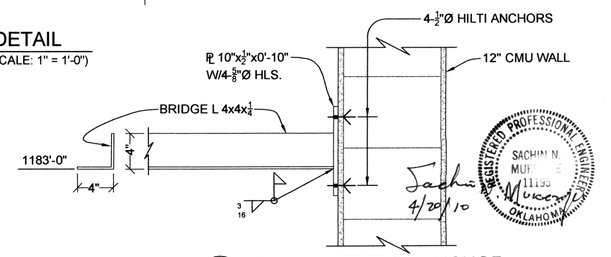
8/5-301 DETAIL
(SCALE: 1" = 1'-0")

2/5-301 ELEVATION TRUSS T-1, EXCEPT AS NOTED
ELEVATION TRUSS T-1 (SPECIAL) W/MONORAIL
(SCALE: 3/8" = 1'-0")

TRUSS T-1 (SPECIAL) MONORAIL S 12x31.8 (3 TON HOIST)



9/5-301 DETAIL
(SCALE: 1" = 1'-0")



5/5-301 DETAIL - BRIDGE ANCHOR
(SCALE: 1 1/2" = 1'-0")

RECORD DRAWINGS

S-301

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	2/25/10	AS SHOWN	50 OF 89

REVISIONS:	DATE:

UV BUILDING
ROOF FRAMING PLAN

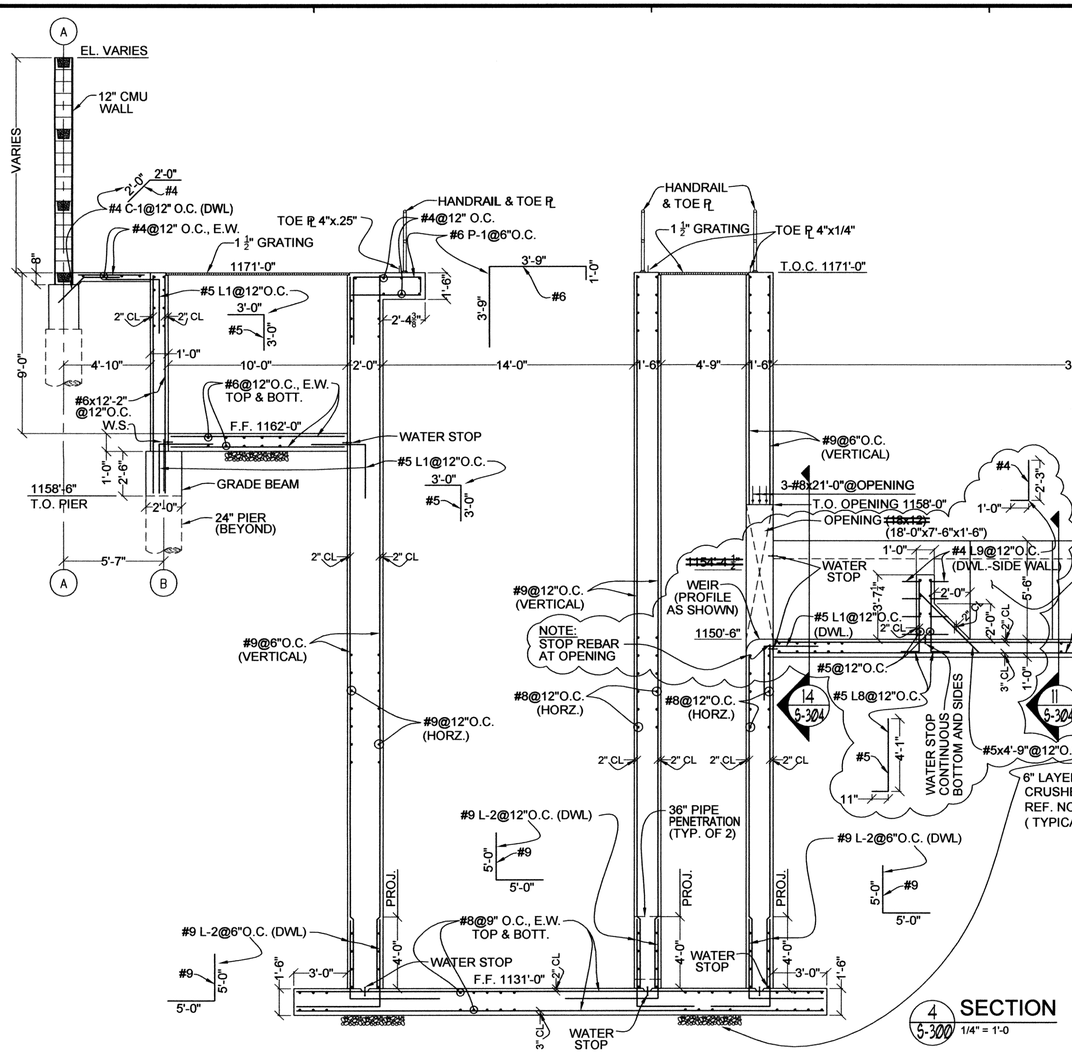
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SACHIN N. MURUGAVEL 11133 OKLAHOMA — 4/20/10

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

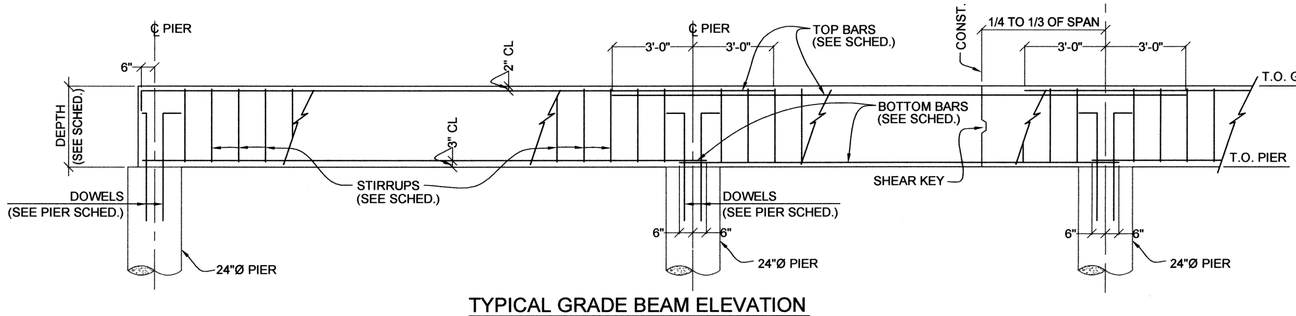
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GRADE BEAM SCHEDULE

BEAM		MAIN REINFORCING					STIRRUPS			
MARK	SIZE	NO	SIZE	LENGTH	BAR	SKETCH	NO	SIZE	TYPE	PLACING
GB-1	20W 30D	3 3	#8 #8	18'-6" 16'-0"	TOP BTM		19	#3	S1	@ 9" O.C.
GB-2	20W 30D	3 3	#8 #8	21'-4" 16'-4"	TOP BTM		19	#3	S1	@ 9" O.C.
GB-3	20W 30D	3 3	#8 #8	20'-2" 17'-8"	TOP BTM		21	#3	S1	@ 9" O.C.
GB-4	20W 30D	3 3	#8 #8	22'-6" 17'-6"	TOP BTM		21	#3	S1	@ 9" O.C.
GB-5	20W 30D	3 3	#8 #8	22'-8" 17'-8"	TOP BTM		22	#3	S1	@ 9" O.C.
GB-6	24W 30D	3 3	#8 #8	20'-9" 18'-3"	TOP BTM		22	#3	S1	@ 9" O.C.
GB-7	24W 108D	3 3	#8 #8	19'-0" 19'-0"	TOP BTM		38 (8'-6") 18 (19'-0")	#6	(STRAIGHT)	@12" O.C. E.W. EA. FACE
GB-8	20W 30D	3 3	#8 #8	14'-3" 12'-0"	TOP BTM		15	#3	S1	@ 9" O.C.
GB-9	24W 30D	3 3	#8 #8	23'-5" 20'-11"	TOP BTM		27	#3	S1	@ 9" O.C.

NOTE:
1. BEAM SIZE IS IN INCHES.
2. REINFORCING LENGTH DOES NOT INCLUDE HOOK LENGTHS.



TYPICAL GRADE BEAM ELEVATION
(NO SCALE)

RECORD DRAWINGS

S-302

REVISIONS:	DATE:
C#6 – ULTRATECH CLARIFICATION	1/28/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	3/17/2010	AS SHOWN	51 OF 89

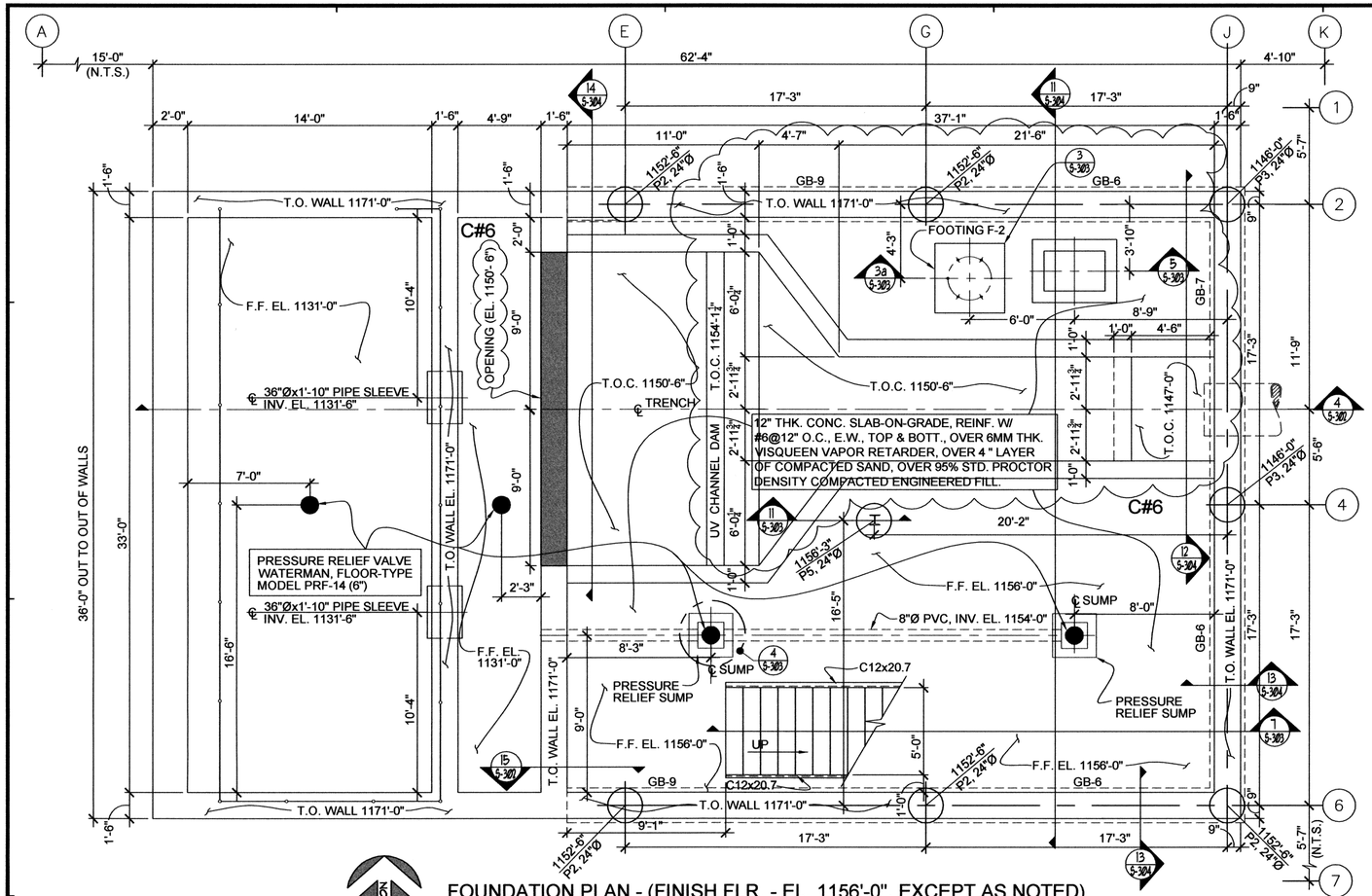
UV BUILDING
STRUCTURAL DETAILS

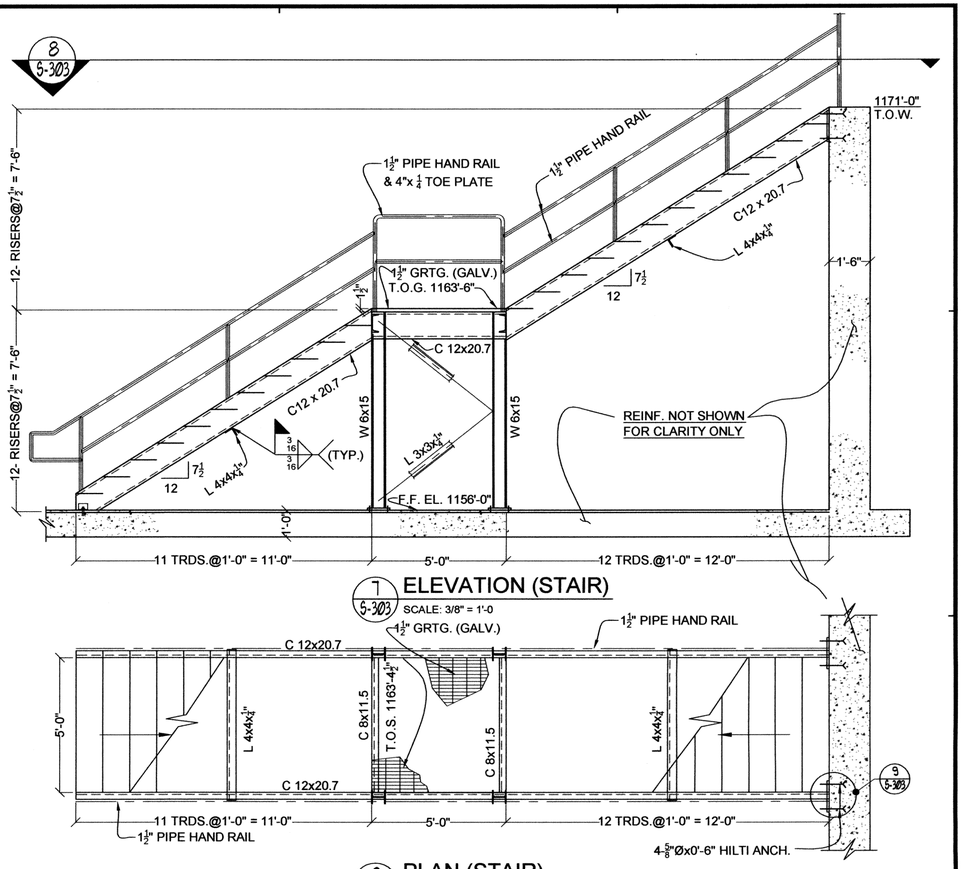
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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

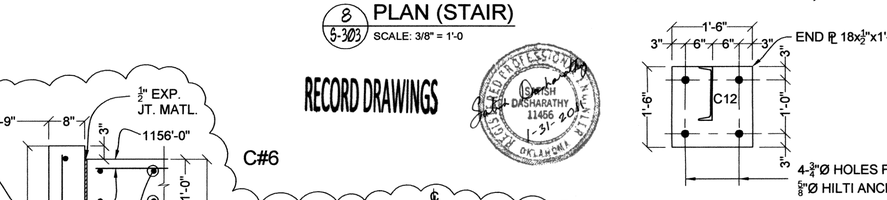
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8 5-303 ELEVATION (STAIR)

SCALE: 3/8" = 1'-0



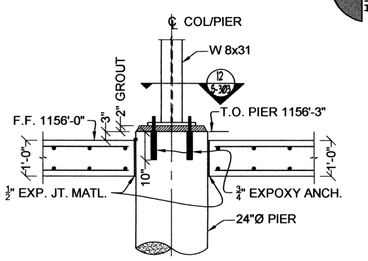
8 5-303 PLAN (STAIR)

SCALE: 3/8" = 1'-0

FOUNDATION PLAN - (FINISH FLR. - EL. 1156'-0", EXCEPT AS NOTED)

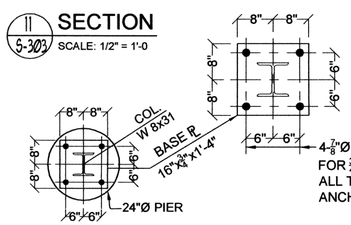
(SCALE: 1/4" = 1'-0")

NORTH



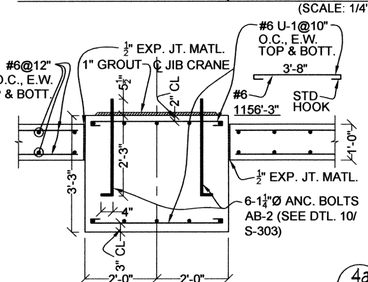
11 5-303 SECTION

SCALE: 1/2" = 1'-0



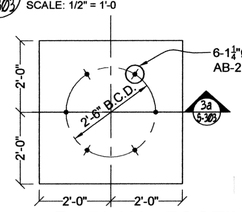
12 5-303 PLAN

SCALE: 1/2" = 1'-0



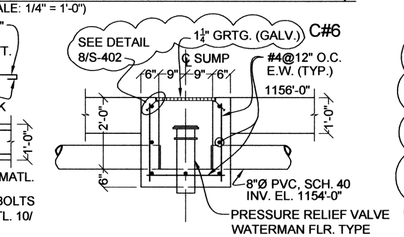
3a 5-303 SECTION - FOOTING F-2

SCALE: 1/2" = 1'-0



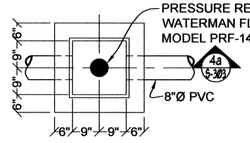
3 5-303 PLAN - FOOTING F-2

SCALE: 1/2" = 1'-0



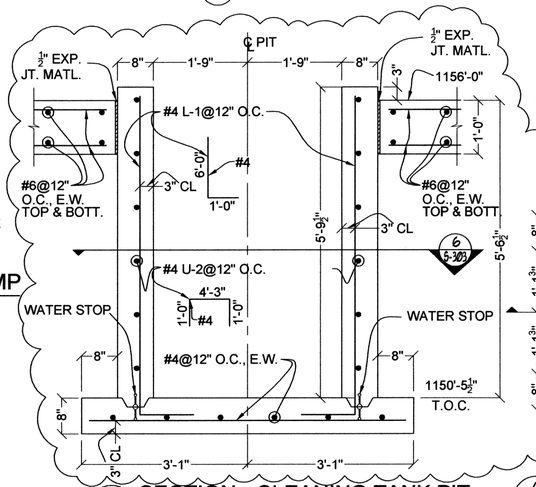
4a 5-303 SECTION - PRESS. RELIEF SUMP

SCALE: 1/2" = 1'-0



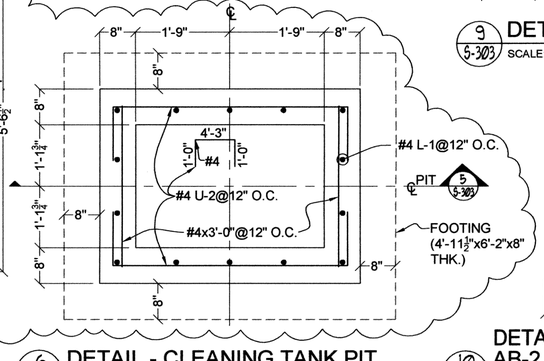
4 5-303 DET. - PRESS. RELIEF SUMP

SCALE: 1/2" = 1'-0



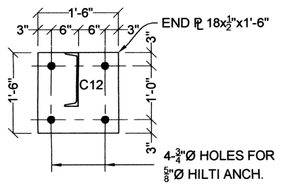
5 5-303 SECTION - CLEANING TANK PIT

SCALE: 3/4" = 1'-0



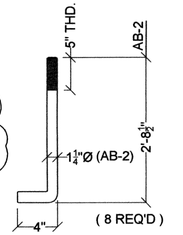
6 5-303 DETAIL - CLEANING TANK PIT

SCALE: 3/4" = 1'-0



9 5-303 DETAIL - END ℙ

SCALE: 3/4" = 1'-0



10 5-303 DETAIL - ANC. BOLTS, AB-2

(NO SCALE)

RECORD DRAWINGS

REVISIONS:	DATE:
C#6 – ULTRATECH CLARIFICATION	1/28/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	4/28/2010	AS SHOWN	52 OF 89

UV BUILDING
STRUCTURAL DETAILS

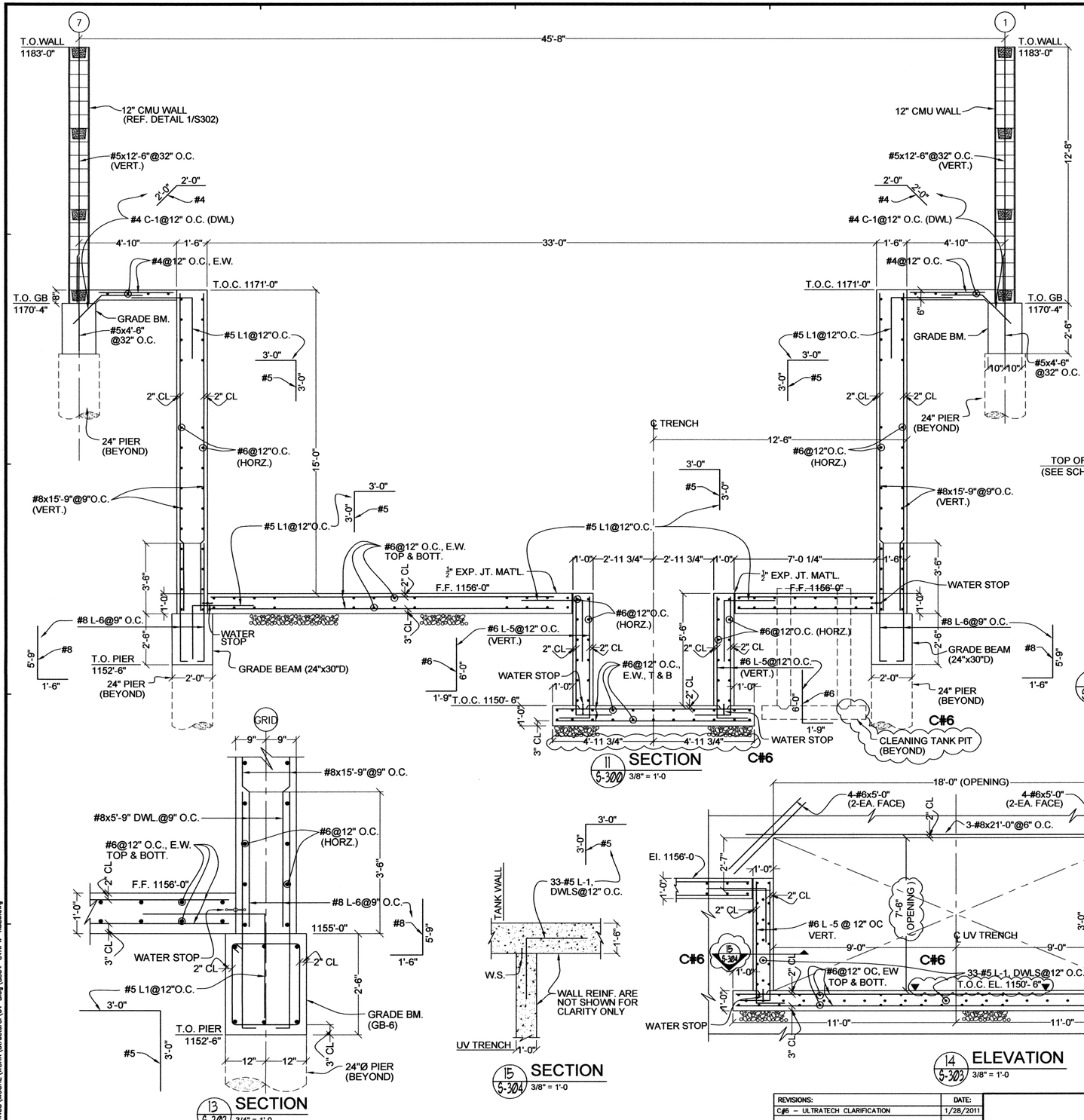
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S-303

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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C#6 – ULTRATECH CLARIFICATION	1/28/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	4/29/2010	AS SHOWN	53 OF 89

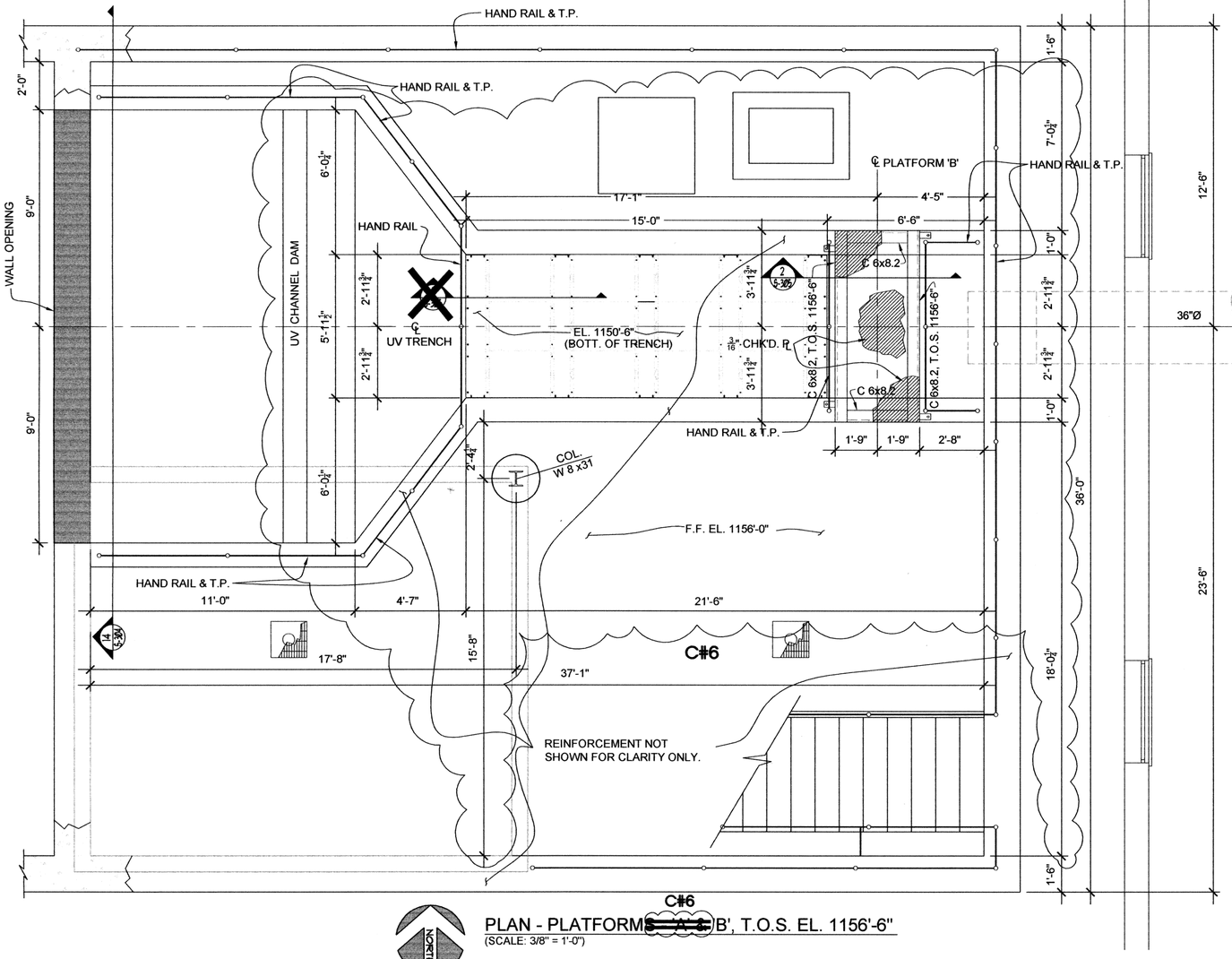
UV BUILDING STRUCTURAL DETAILS

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

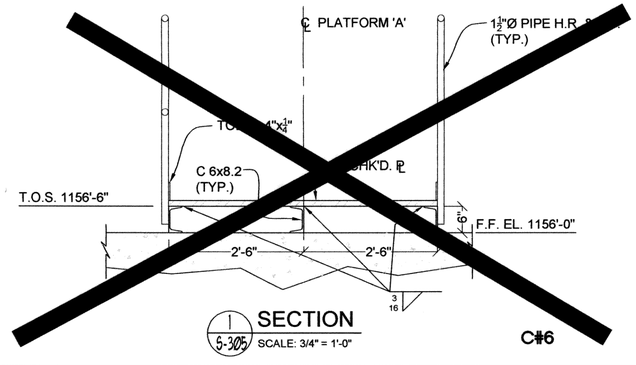
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C#6

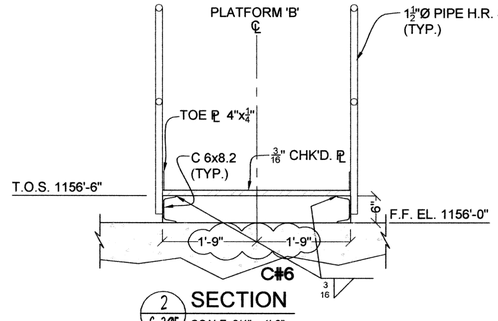
PLAN - PLATFORMS ~~'A' &~~ 'B', T.O.S. EL. 1156'-6"

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



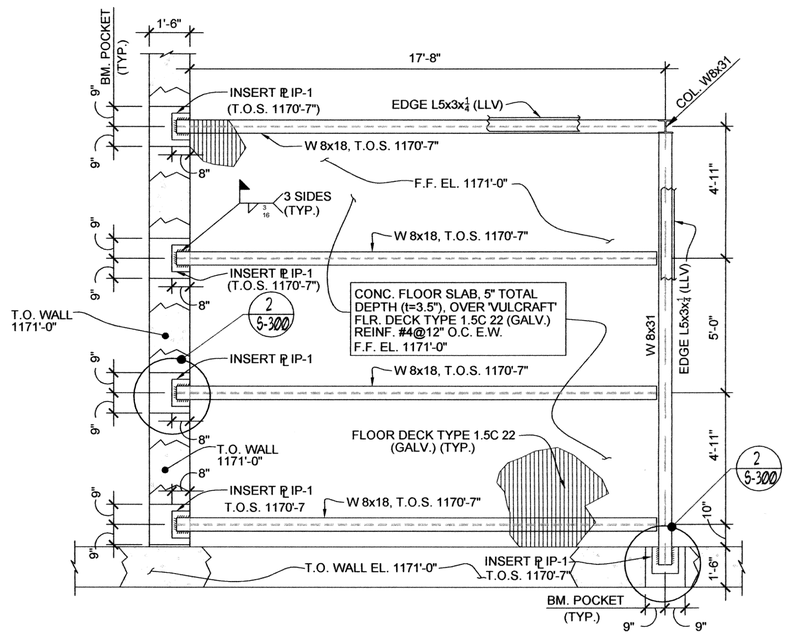
1 S-305 SECTION

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



2 S-305 SECTION

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

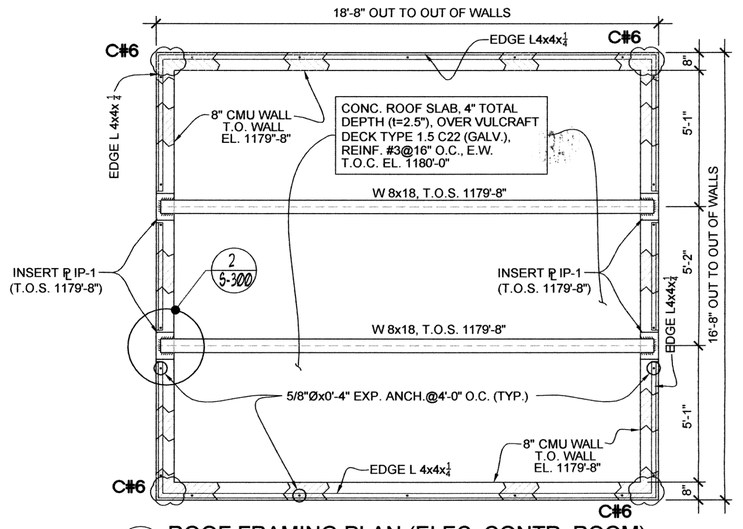


1 S-300 ENLARGED FLOOR FRAMING PLAN (ELEC. CONT. ROOM)

SCALE: 3/8" = 1'-0

(T.O.S. EL. 1170'-7")

(F.F. EL. 1171'-0")



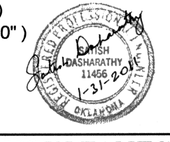
4 S-304 ROOF FRAMING PLAN (ELEC. CONTR. ROOM)

SCALE: 3/8" = 1'-0

(T.O.S. EL. 1179'-8")

(T.O.ROOF El 1180'-0")

RECORD DRAWINGS



S-305

REVISIONS:	DATE:
C#6 – ULTRATECH CLARIFICATION	1/28/2011

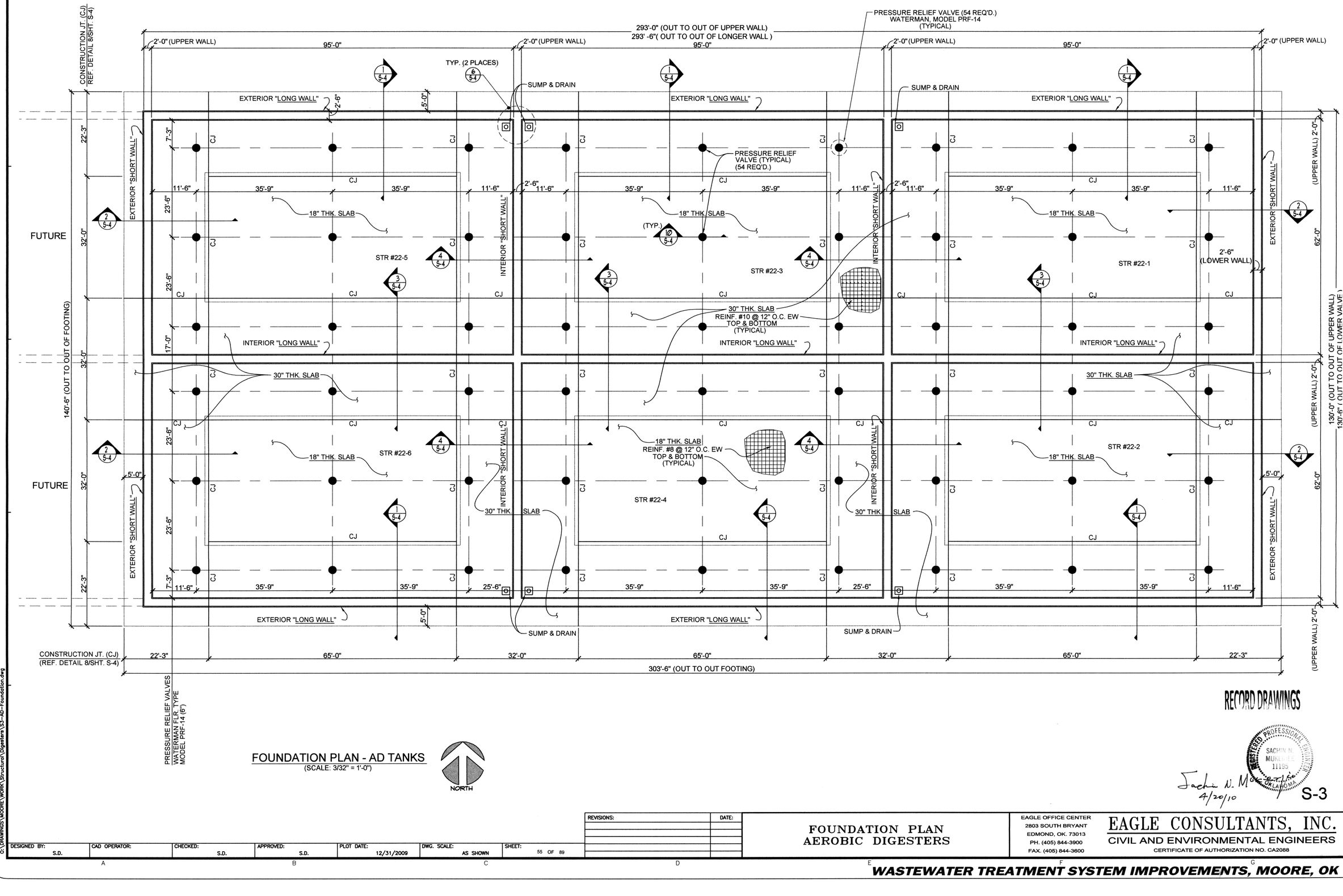
UV BUILDING
STRUCTURAL DETAILS

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	4/29/2010	AS SHOWN	54 OF 89

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FOUNDATION PLAN - AD TANKS

(SCALE: 3/32" = 1'-0")

NORTH

RECORD DRAWINGS

REGISTERED PROFESSIONAL ENGINEER
SACHIN N. MUKERJEE
11195
OKLAHOMA

Sachin N. Mukerjee
4/20/10

S-3

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	12/31/2009	AS SHOWN	55 OF 89

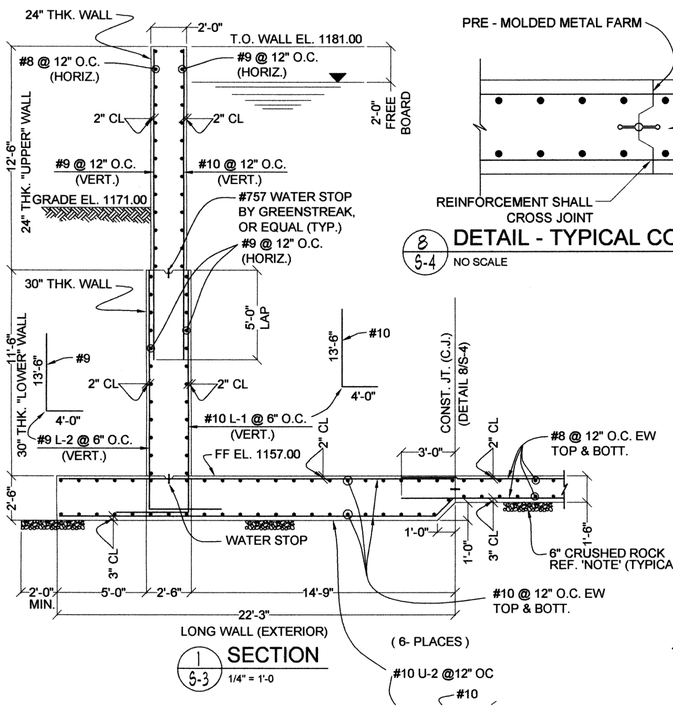
FOUNDATION PLAN
AEROBIC DIGESTERS

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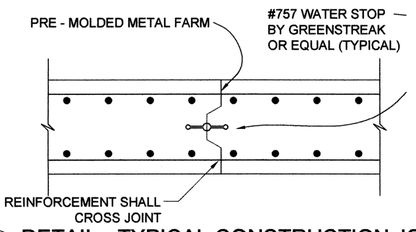
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

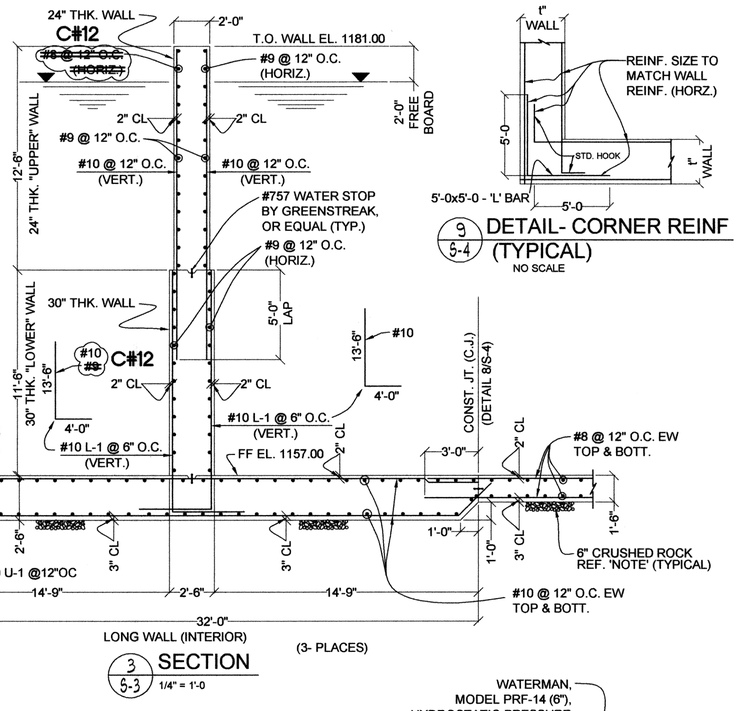
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1 S-3 SECTION
1/4" = 1'-0

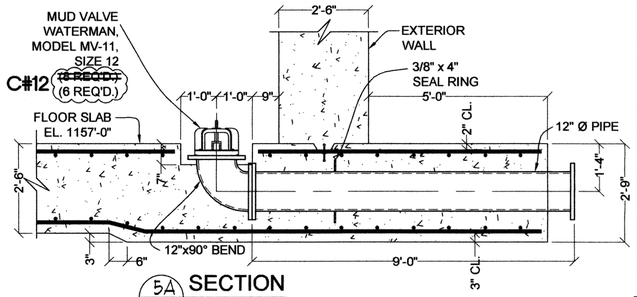


8 S-4 DETAIL - TYPICAL CONSTRUCTION JOINT (CJ)
NO SCALE

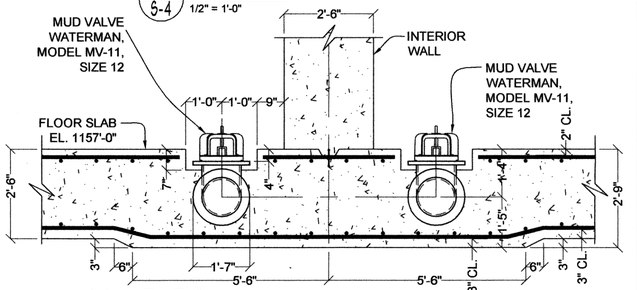


3 S-3 SECTION
1/4" = 1'-0

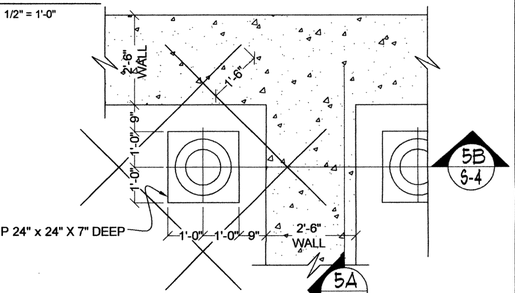
9 S-4 DETAIL- CORNER REINF (TYPICAL)
NO SCALE



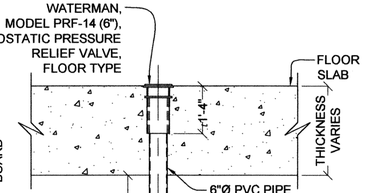
5A S-4 SECTION
1/2" = 1'-0"



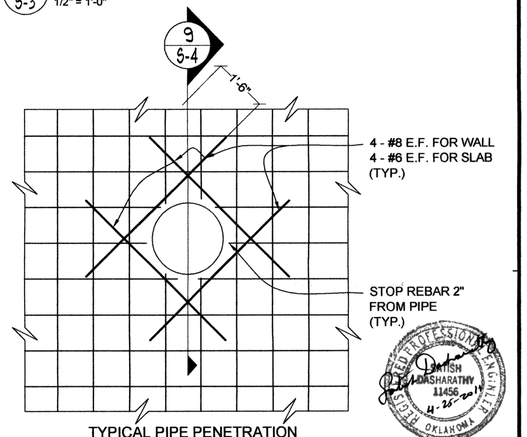
5B S-4 SECTION
1/2" = 1'-0"



6 S-3 PLAN-SUMP & DRAIN
1/2" = 1'-0"



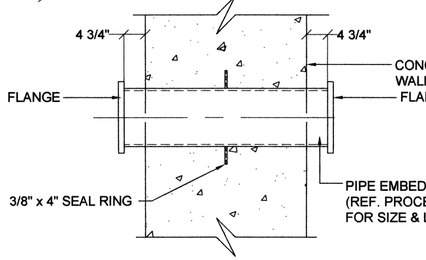
(54 - REQ'S)
10 S-3 SECTION
1/2" = 1'-0"



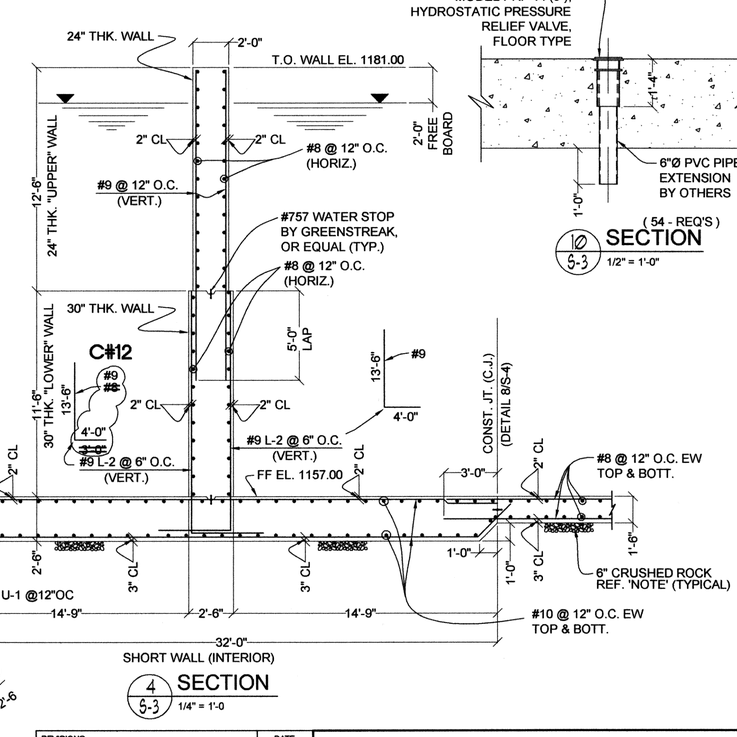
TYPICAL PIPE PENETRATION
7 S-4 DETAIL
NO SCALE

2 S-3 SECTION
1/4" = 1'-0"

NOTE:
PROVIDE 6" LAYER OF CRUSHED ROCK WHERE BOTTOM OF EXCAVATION IS NOT FOUNDED ON BED ROCK



DECANTER PIPE PENETRATION@WALL
9 S-4 DETAIL
NO SCALE



4 S-3 SECTION
1/4" = 1'-0"

RECORD DRAWINGS

S-4

REVISIONS:	DATE:
C#12 – CLARIFICATION NO. 12	4/22/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	1/12/2010	AS SHOWN	56 OF 89

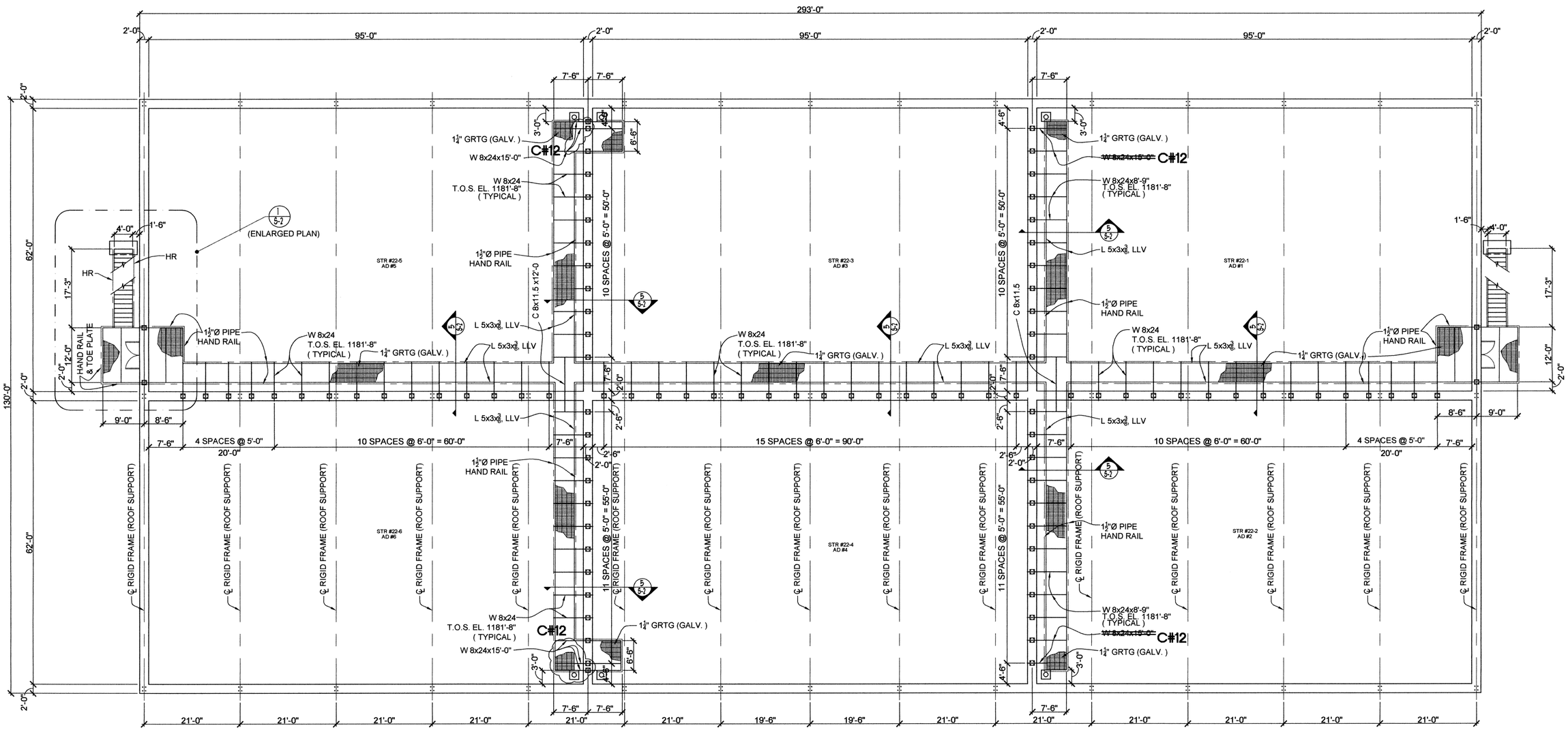
AD SECTIONS

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\Digesters\S4-AD-Sections.dwg



T.O. WALL EL. 1181'-0"
(TYPICAL)

T.O.S. EL. 1181'-8"
(TYPICAL)

NORTH

STRUCTURAL FRAMING PLAN - AD TANKS

(STAIRS, PLATFORM & CATWALK)
(SCALE: 3/32" = 1'-0")

SATISH SHASHARTHY 11456 OKLAHOMA REGISTERED PROFESSIONAL ENGINEER

RECORD DRAWINGS

S-1

REVISIONS:	DATE:
C#12 – CLARIFICATION NO. 12	4/22/2011

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	2/12/2010	AS SHOWN	57 OF 89

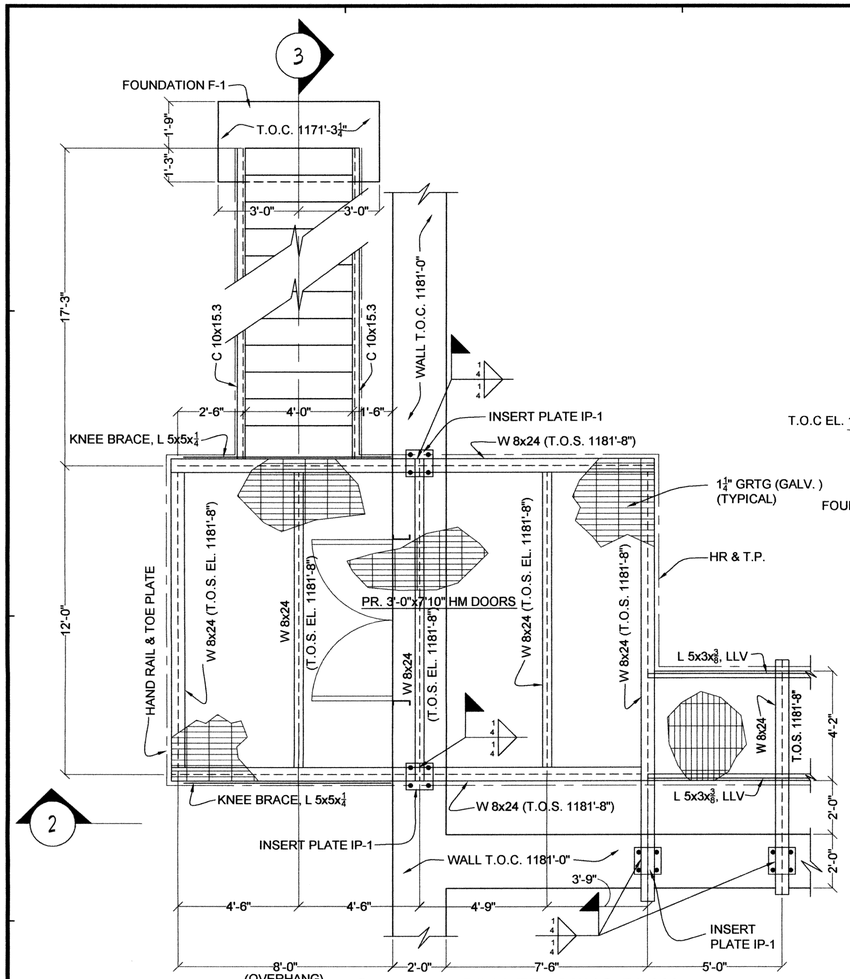
AEROBIC DIGESTERS
STEPS & WALKWAY
STRUCTURAL PLANS

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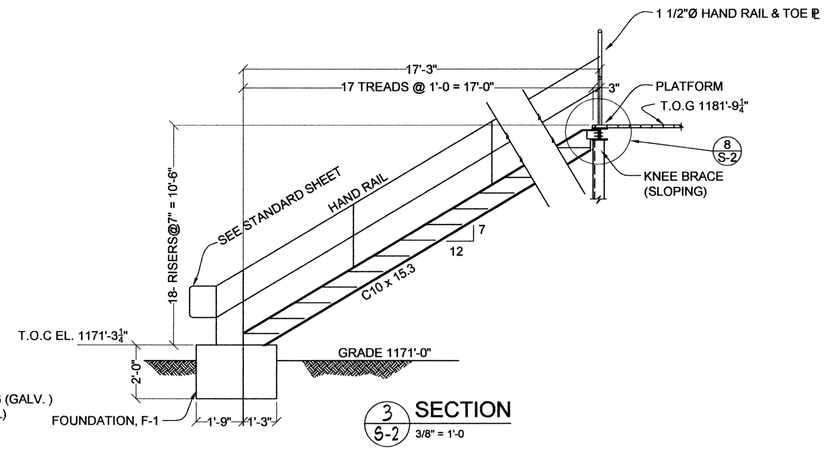
EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

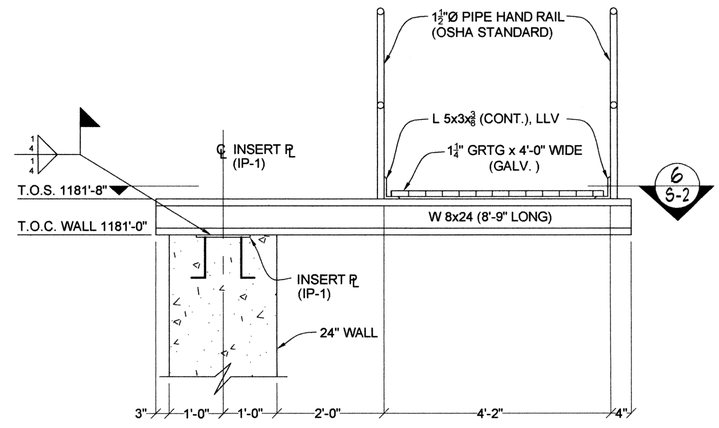
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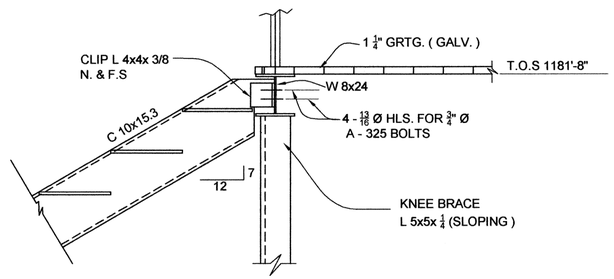
1 S-1 **PLATFORM FRAMING PLAN** 3/8" = 1'-0 (T.O.S. EL. 1181'-8")



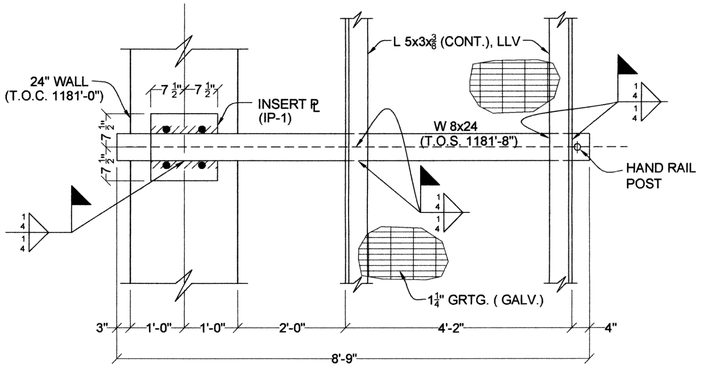
3 S-2 **SECTION** 3/8" = 1'-0



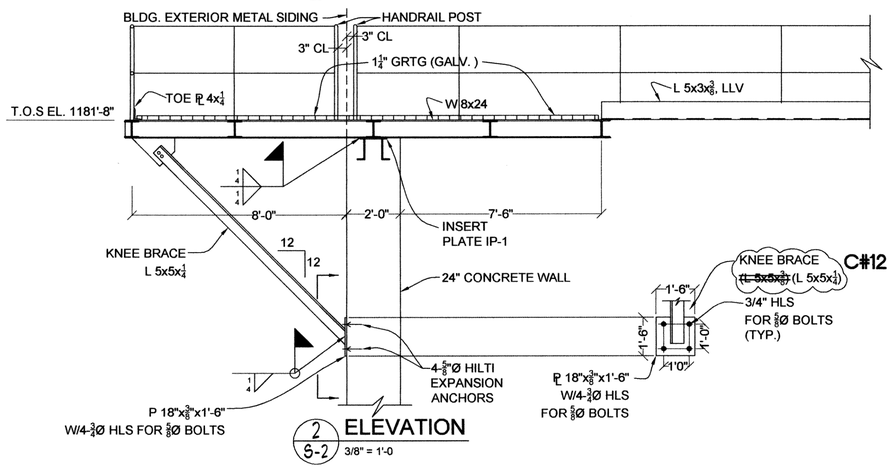
5 S-1 **SECTION** 3/4" = 1'-0



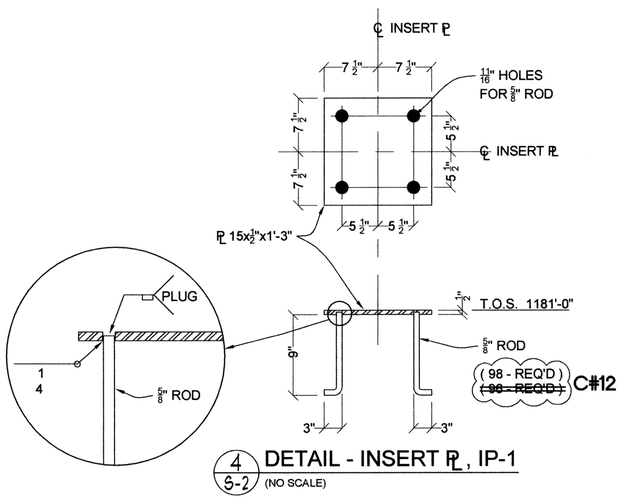
8 S-2 **DETAIL** 1" = 1'-0



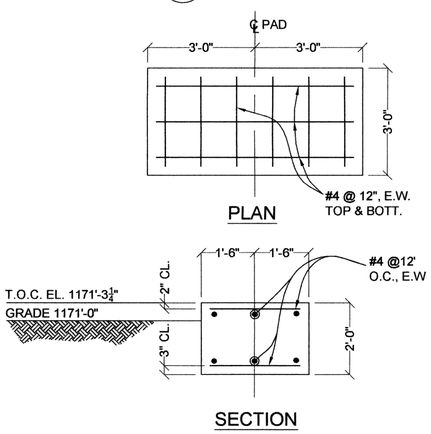
6 S-2 **PLAN** 3/4" = 1'-0



2 S-2 **ELEVATION** 3/8" = 1'-0



4 S-2 **DETAIL - INSERT PL, IP-1** (NO SCALE)



7 S-2 **FOUNDATION F-1** 1/2" = 1'-0

RECORD DRAWINGS S-2

REVISIONS:	DATE:
C#12 – CLARIFICATION NO. 12	4/22/2011

AEROBIC DIGESTERS
STEPS & WALKWAY
STRUCTURAL DETAILS

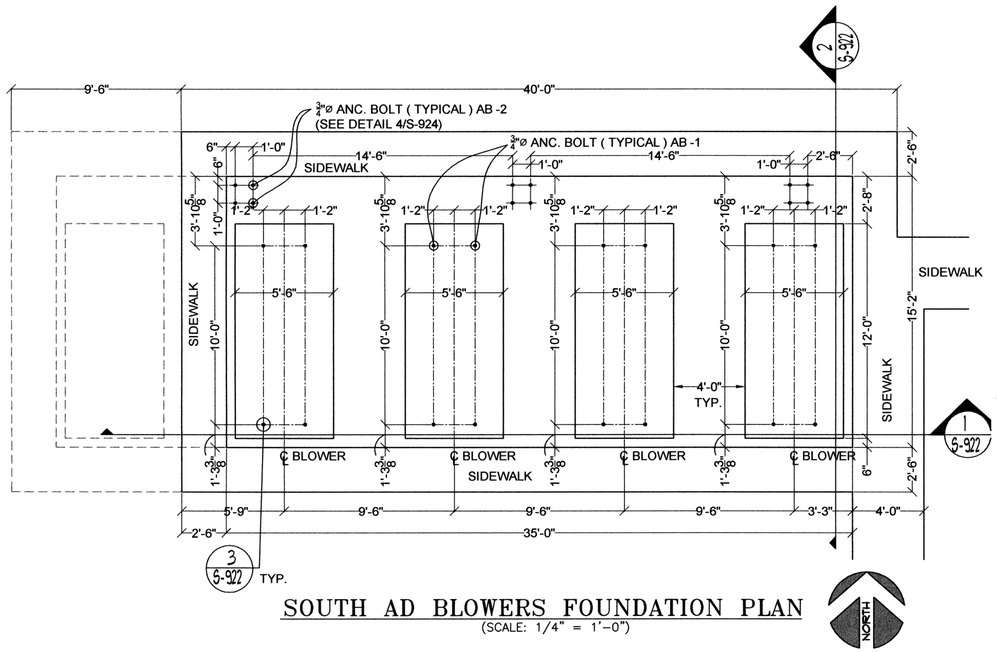
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CERTIFICATE OF AUTHORIZATION NO. CA2088

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S.D.	D.O.	S.D.	S.D.	2/12/2010	AS SHOWN	58 OF 89

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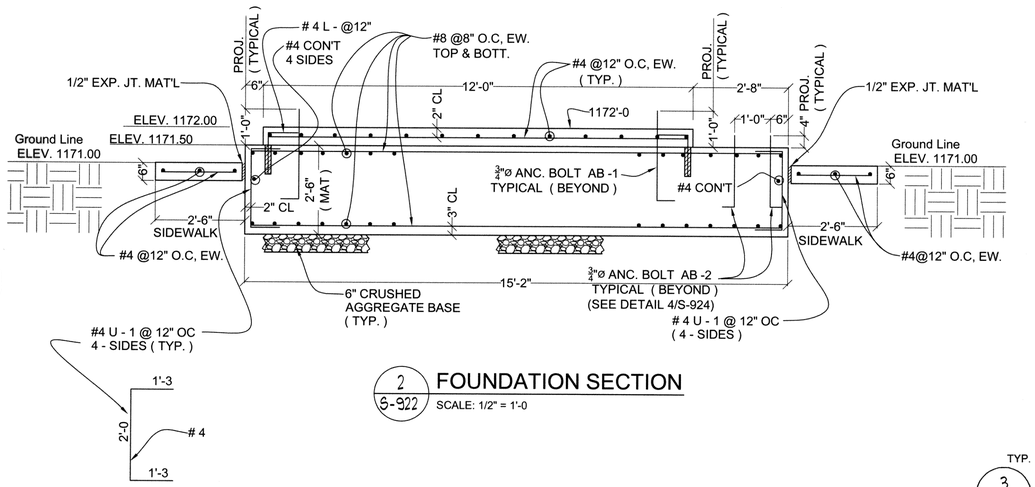
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK



SOUTH AD BLOWERS FOUNDATION PLAN

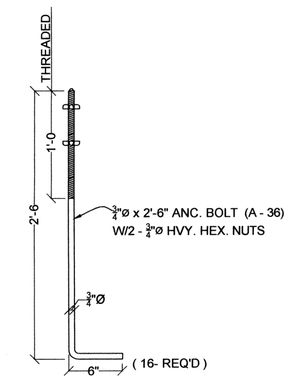
(SCALE: 1/4" = 1'-0")

NOTE: ANCHOR BOLT PATTERNS & LOCATIONS SHALL BE FIELD VERIFIED WITH EQUIPMENT BEING SUPPLIED ON THE PROJECT.



2 / S-922 FOUNDATION SECTION

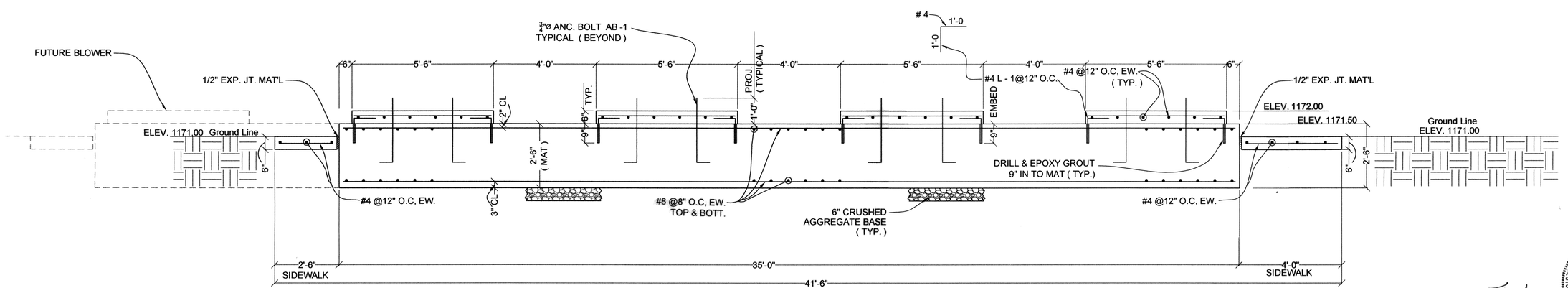
SCALE: 1/2" = 1'-0



TYP.

3 / S-922 DETAIL - ANCH. BOLT AB - 1

(NO SCALE)



1 / S-922 FOUNDATION SECTION

SCALE: 1/2" = 1'-0

REGISTERED PROFESSIONAL ENGINEER SACHIN N. MORE 11... OKLAHOMA

Sachin N. Moore 4/20/10

RECORD DRAWINGS S-922

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	2/1/2010	AS SHOWN	59 OF 89

REVISIONS:	DATE:

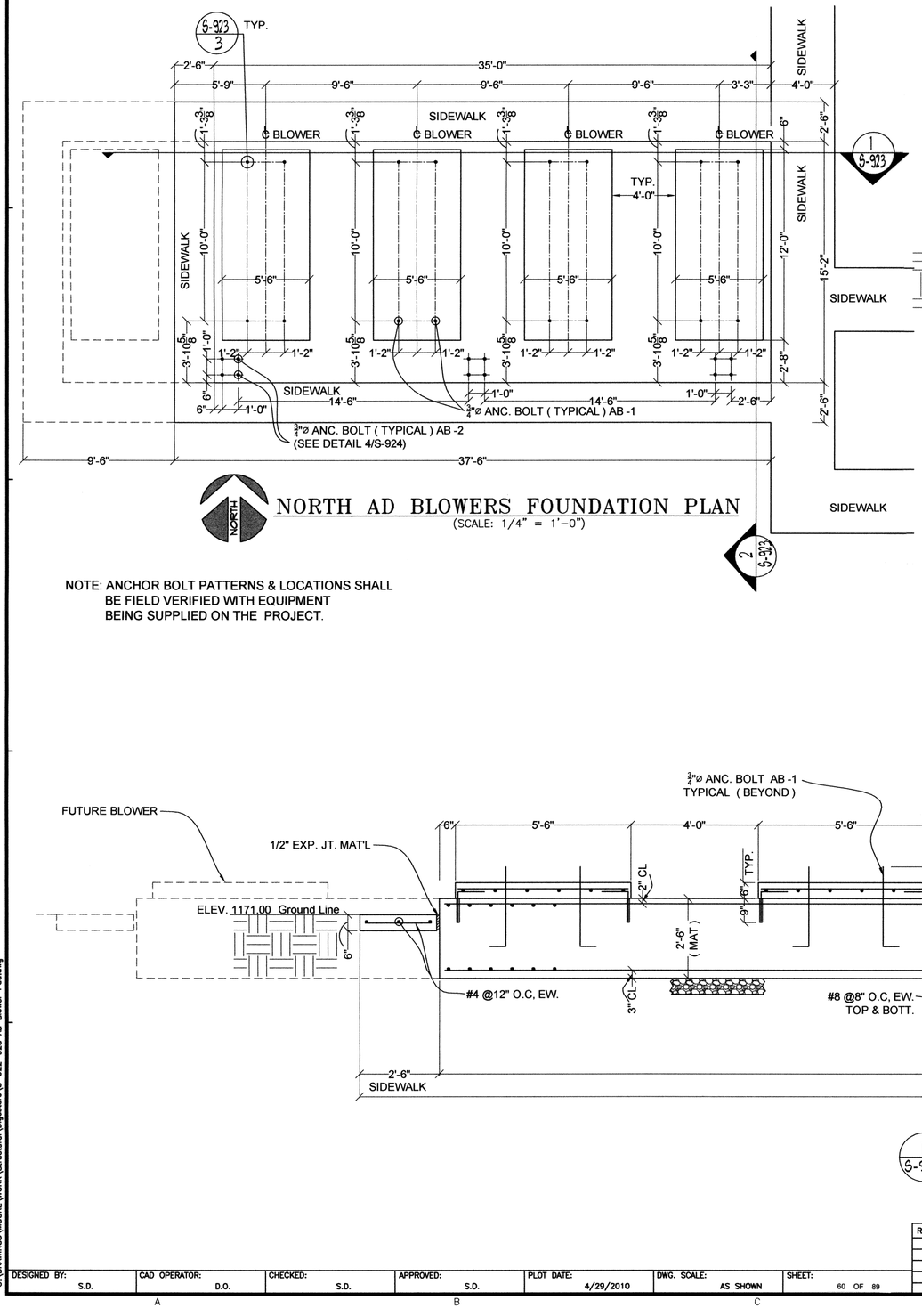
SOUTH AEROBIC DIGESTER BLOWER FOUNDATION DETAILS

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

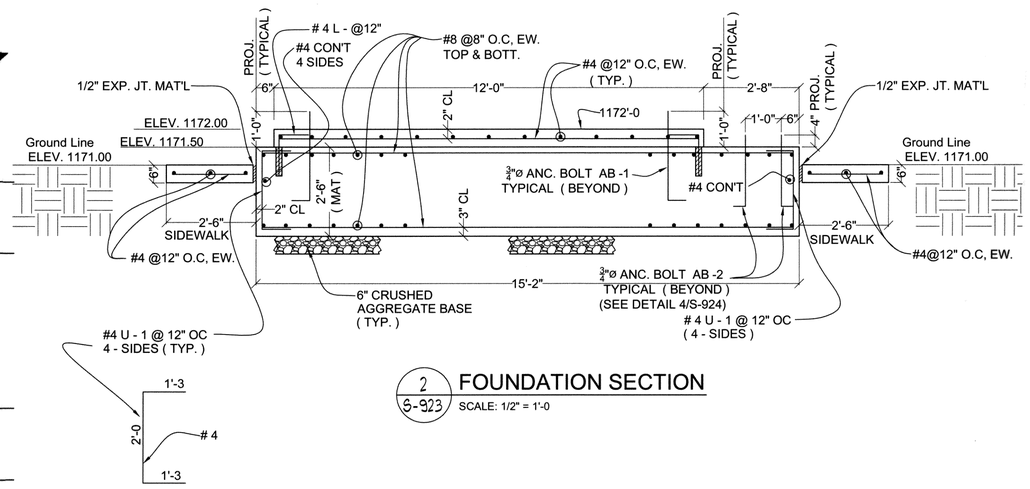
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NORTH AD BLOWERS FOUNDATION PLAN

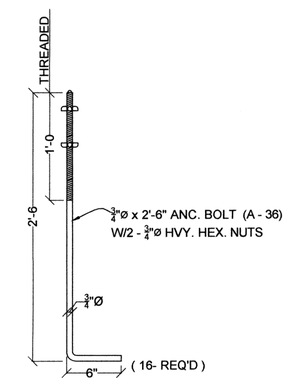
(SCALE: 1/4" = 1'-0")

NOTE: ANCHOR BOLT PATTERNS & LOCATIONS SHALL BE FIELD VERIFIED WITH EQUIPMENT BEING SUPPLIED ON THE PROJECT.



2 S-923 FOUNDATION SECTION

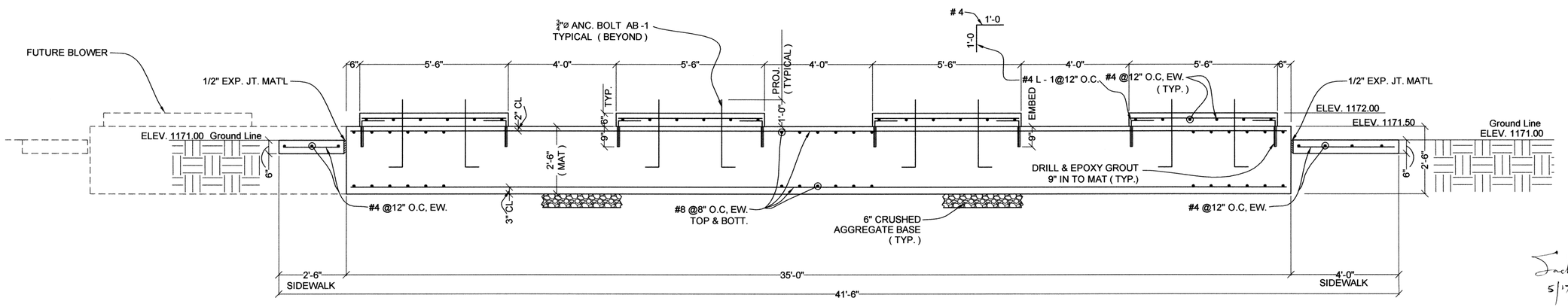
SCALE: 1/2" = 1'-0



TYP.

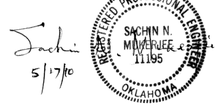
3 S-923 DETAIL - ANCH. BOLT AB - 1

(NO SCALE)



1 S-923 FOUNDATION SECTION

SCALE: 1/2" = 1'-0



RECORD DRAWINGS S-923

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	4/29/2010	AS SHOWN	60 OF 89

REVISIONS:	DATE:

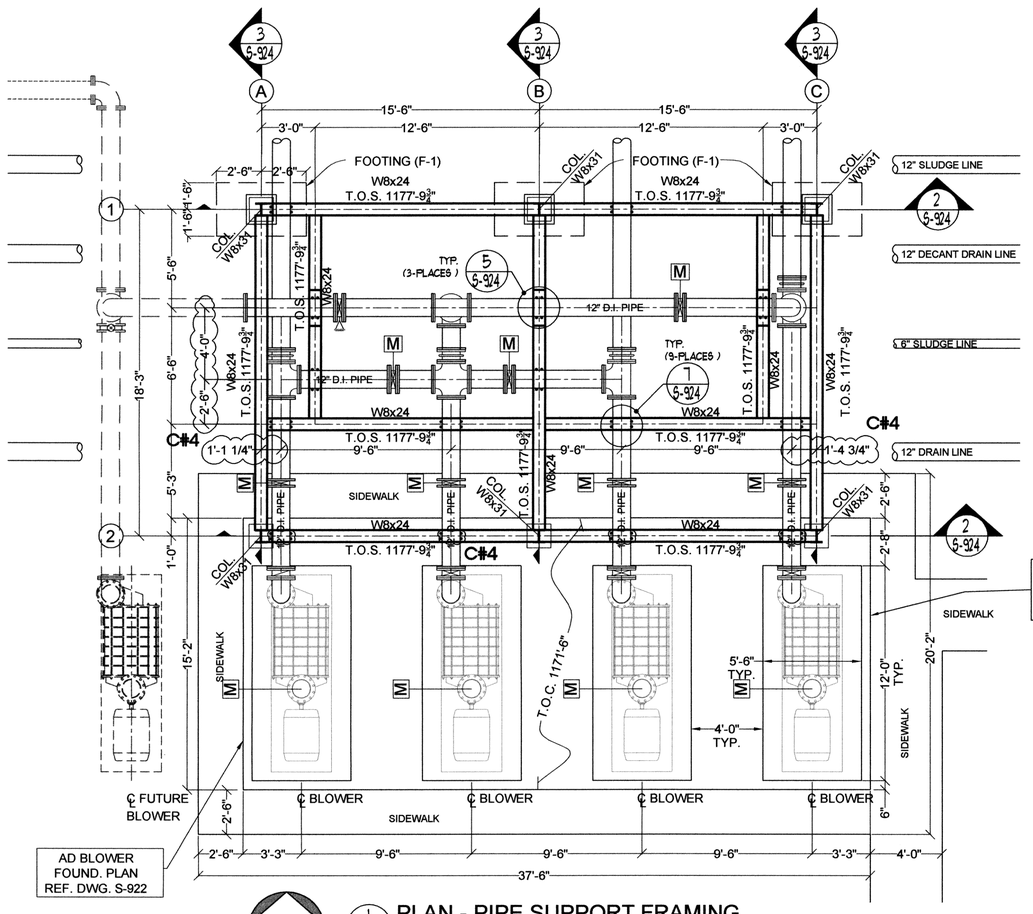
NORTH AEROBIC DIGESTER BLOWER FOUNDATION DETAILS

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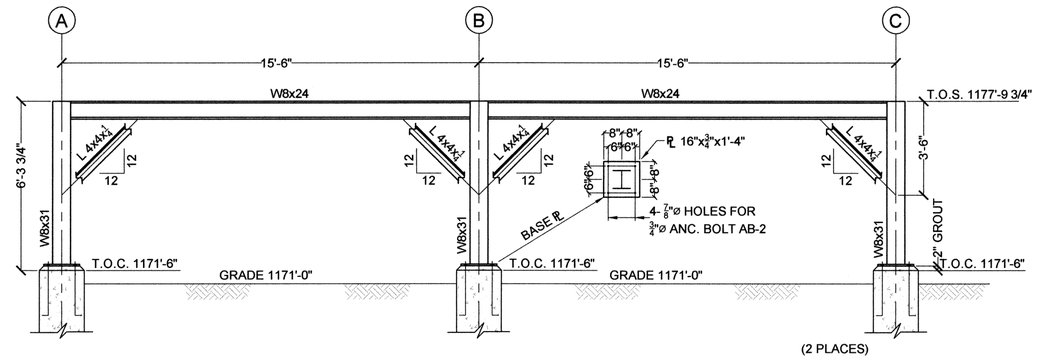
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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

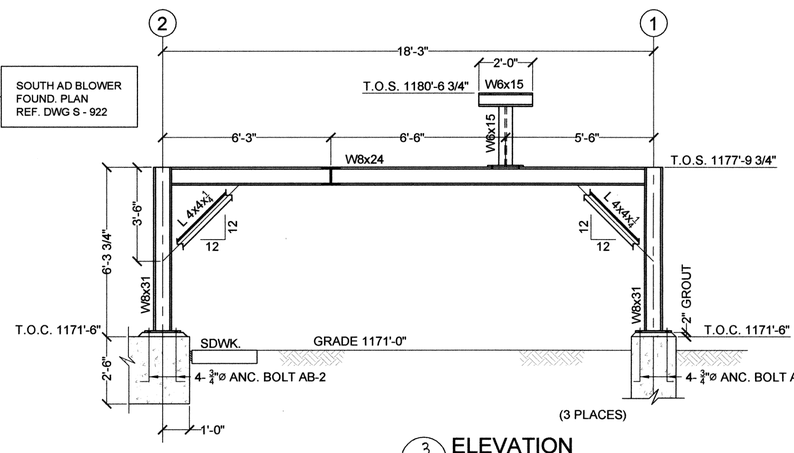
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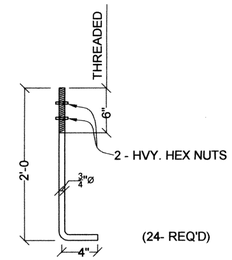
1 S-924 PLAN - PIPE SUPPORT FRAMING
SCALE: 1/4" = 1'-0



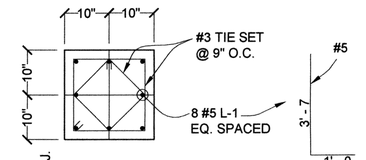
2 S-924 ELEVATION
SCALE: 3/8" = 1'-0

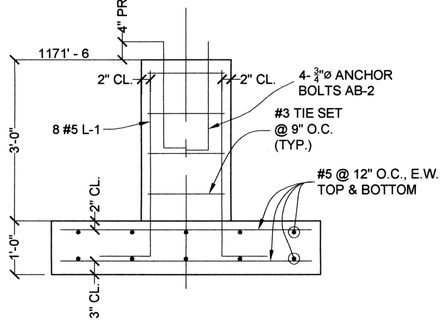


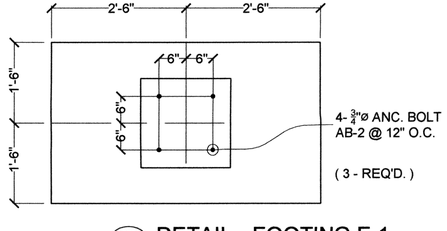
3 S-924 ELEVATION
SCALE: 3/8" = 1'-0



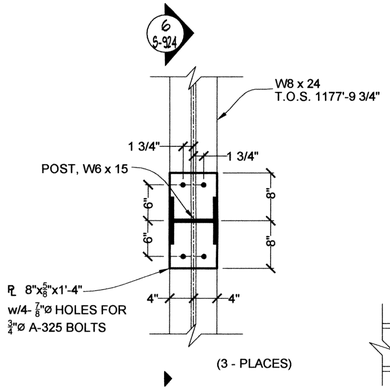
4 DETAIL - ANCHOR BOLT AB-2
(NO SCALE)



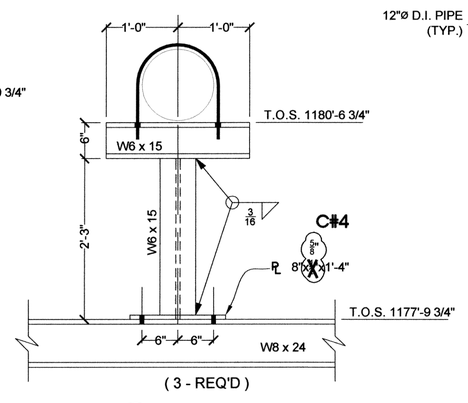




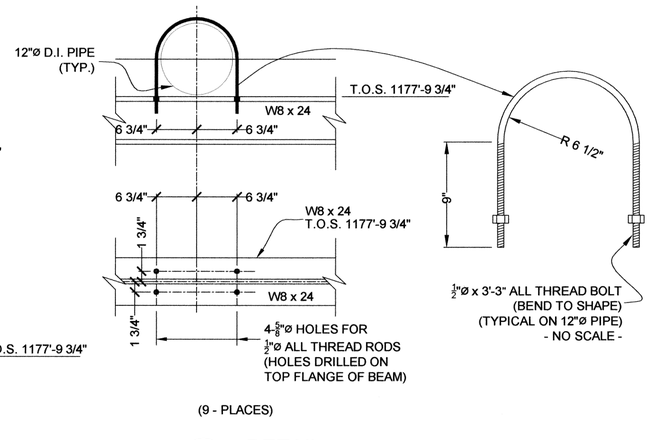
8 S-924 DETAIL - FOOTING F-1
SCALE: 3/4" = 1'-0



5 S-924 DETAIL
SCALE: 1" = 1'-0"



6 S-924 VIEW
SCALE: 1" = 1'-0"



7 S-924 DETAIL
SCALE: 1" = 1'-0"

RECORD DRAWINGS



S-924

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/2010

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.	D.O.	S.D.	S.D.	2/20/2010	AS SHOWN	61 OF 89

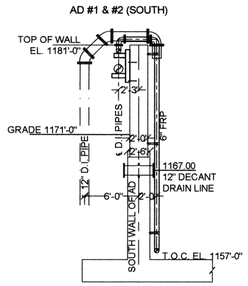
SOUTH AEROBIC DIGESTER BLOWER AIR PIPING SUPPORT DETAILS 1 OF 2

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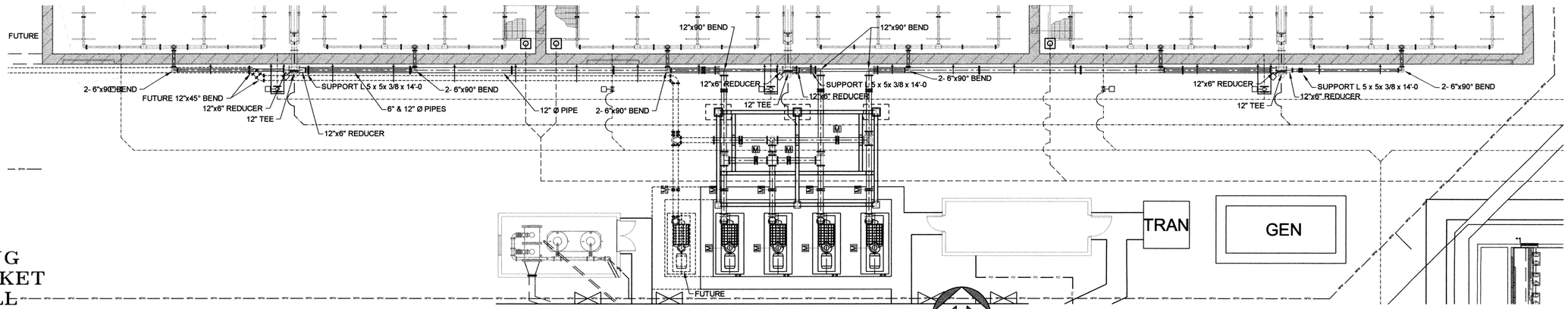
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\Digesters\S-924-927 AD Air Piping Supports.dwg



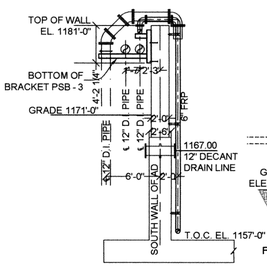
AD AIR PIPING SUPPORT BRACKET @ BASIN WALL

(SCALE: 1/8" = 1'-0")



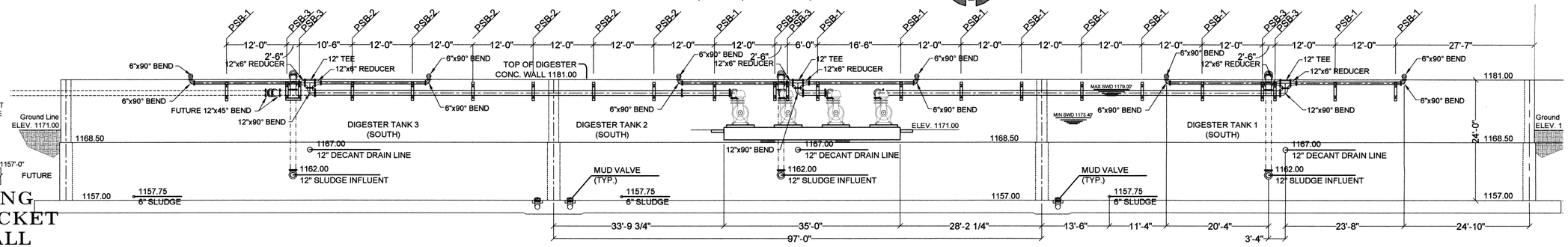
PLAN–SOUTH AD BLOWER AIR PIPING

(SCALE: 3/32" = 1'-0")



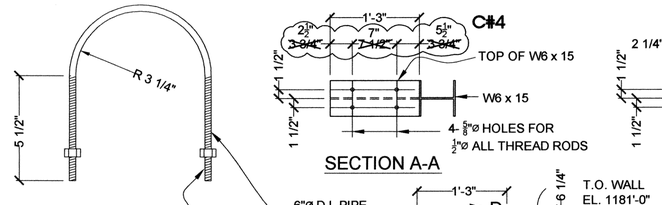
AD AIR PIPING SUPPORT BRACKET @ BASIN WALL

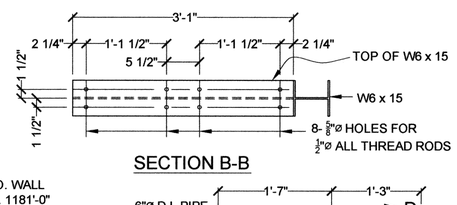
(SCALE: 1/8" = 1'-0")

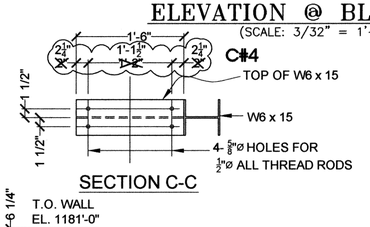


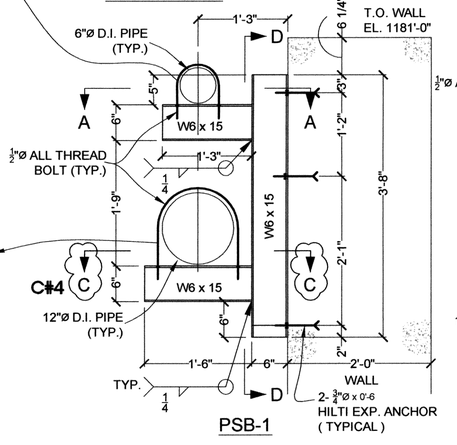
ELEVATION @ BLOWERS

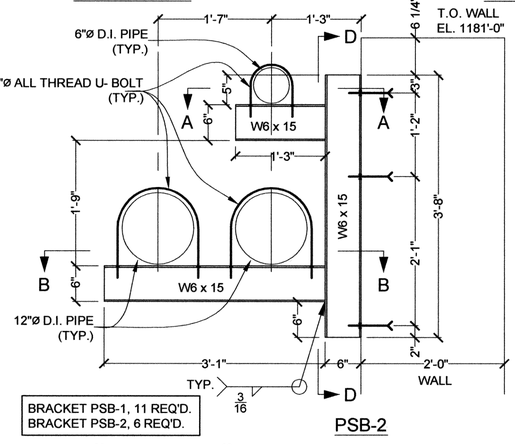
(SCALE: 3/32" = 1'-0")



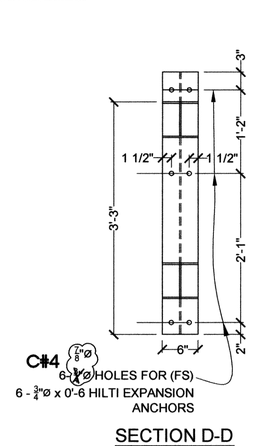


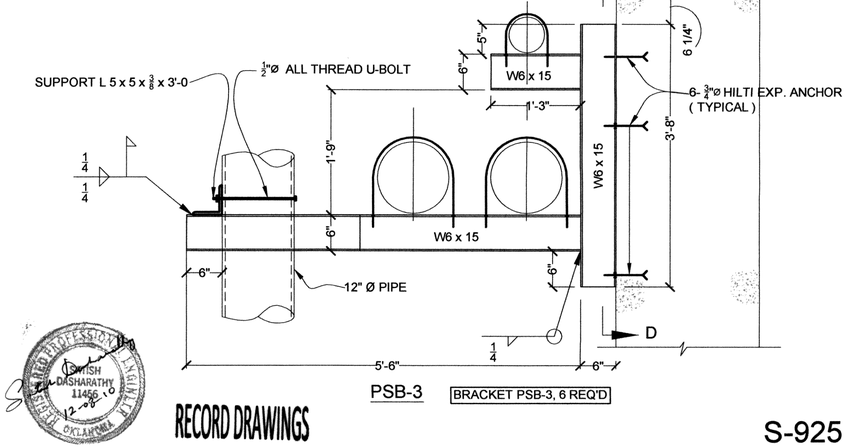






BRACKET PSB-1, 11 REQ'D.
BRACKET PSB-2, 6 REQ'D.





BRACKET PSB-3, 6 REQ'D

DETAIL – AIR PIPING SUPPORT "BRACKET" BRACKETS PSB–1 & PSB–2

(SCALE: 1" = 1'-0")

RECORD DRAWINGS

S-925

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/2010

SOUTH AEROBIC DIGESTER BLOWER AIR PIPING SUPPORT DETAILS 2 OF 2

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/29/2010	AS SHOWN	62 OF 89

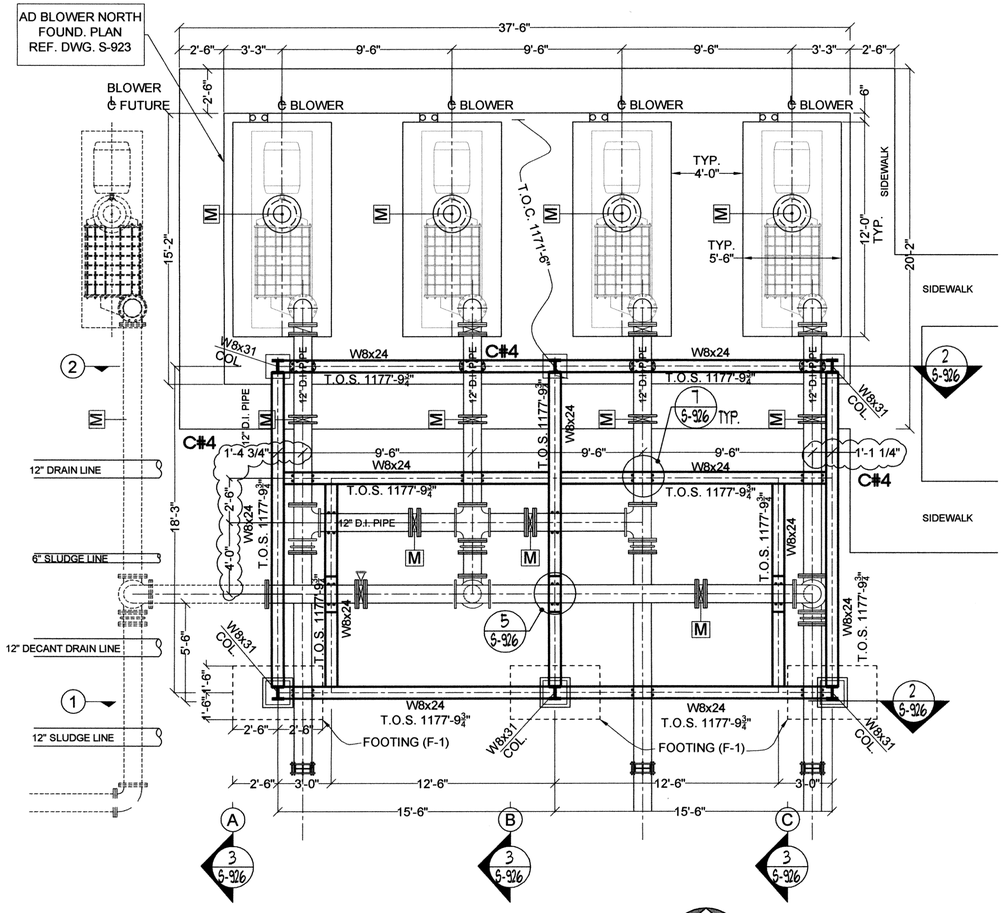
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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

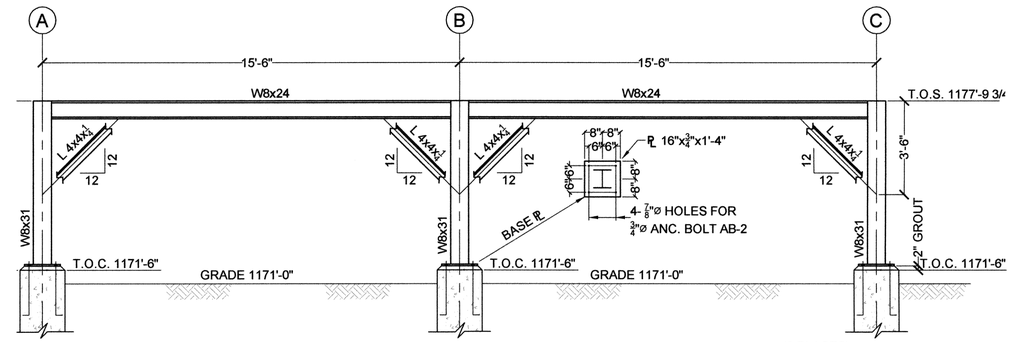
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AD BLOWER NORTH FOUND. PLAN REF. DWG. S-923



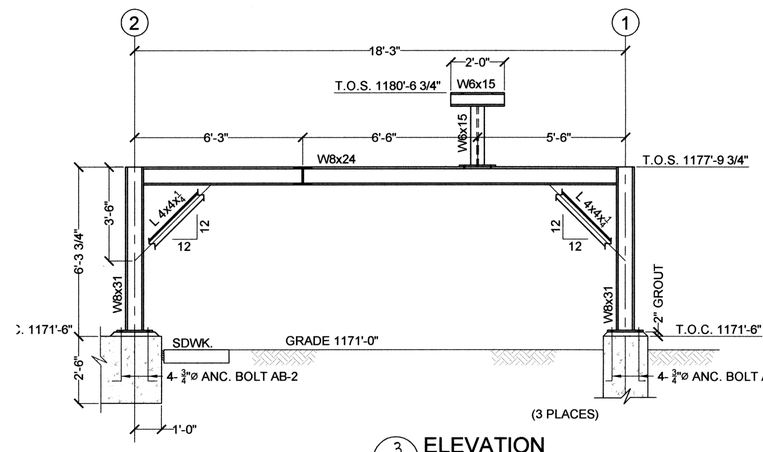
1 S-926 PLAN - PIPE SUPPORT FRAMING

SCALE: 1/4" = 1'-0



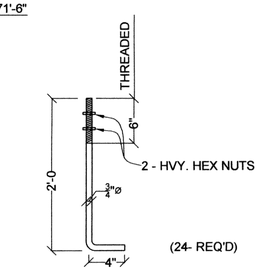
2 S-926 ELEVATION

SCALE: 3/8" = 1'-0



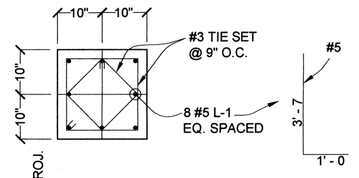
3 S-926 ELEVATION

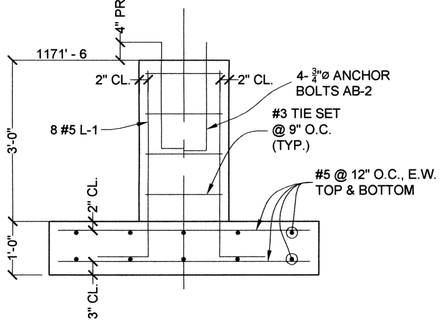
SCALE: 3/8" = 1'-0

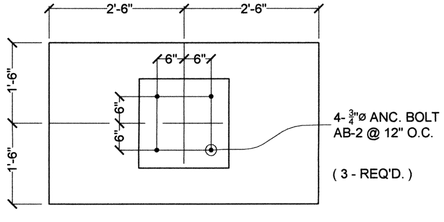


4 DETAIL - ANCHOR BOLT AB-2

(NO SCALE)

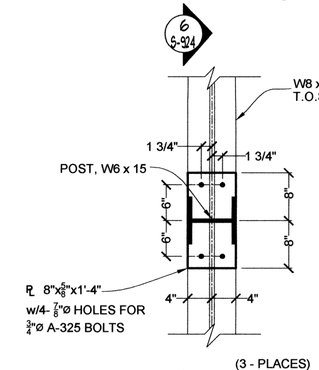






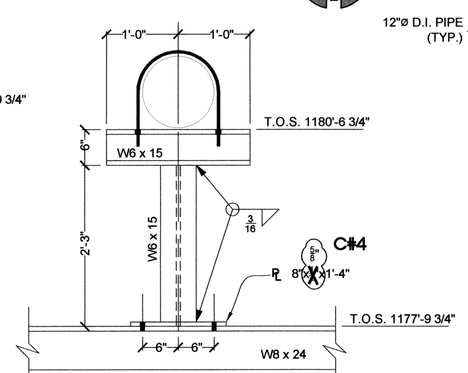
8 S-926 DETAIL - FOOTING F-1

SCALE: 3/4" = 1'-0



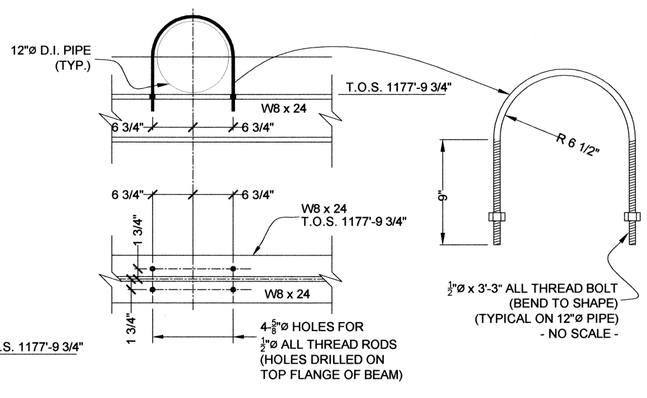
5 S-926 DETAIL

SCALE: 1" = 1'-0"



6 S-926 VIEW

SCALE: 1" = 1'-0"



7 S-926 DETAIL

SCALE: 1" = 1'-0"

RECORD DRAWINGS

SATISH DASHARATHY 14560 12-31-10 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

S-926

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/2010

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/29/2010	AS SHOWN	63 OF 89

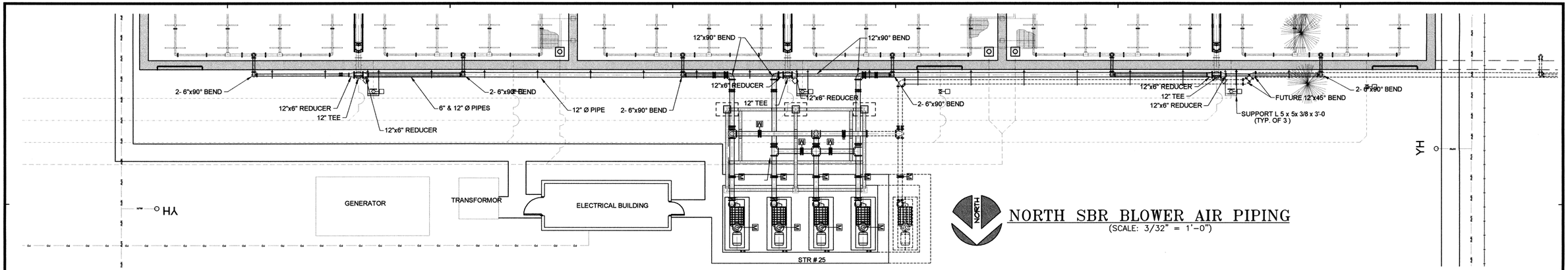
NORTH AEROBIC DIGESTER BLOWER AIR PIPING SUPPORT DETAILS 1 OF 2

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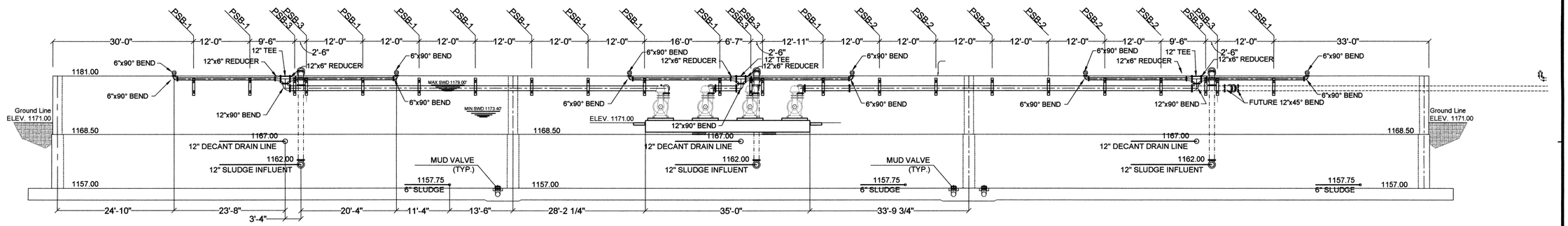
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CERTIFICATE OF AUTHORIZATION NO. CA2088

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

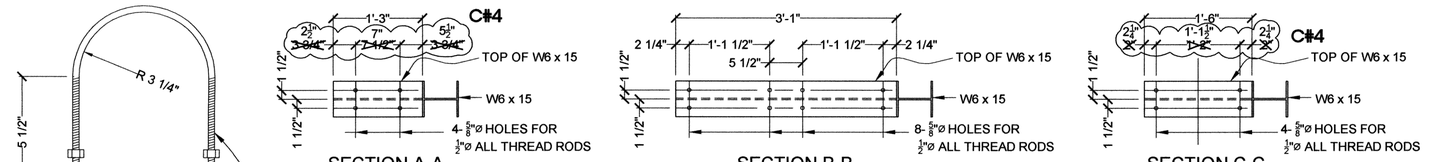
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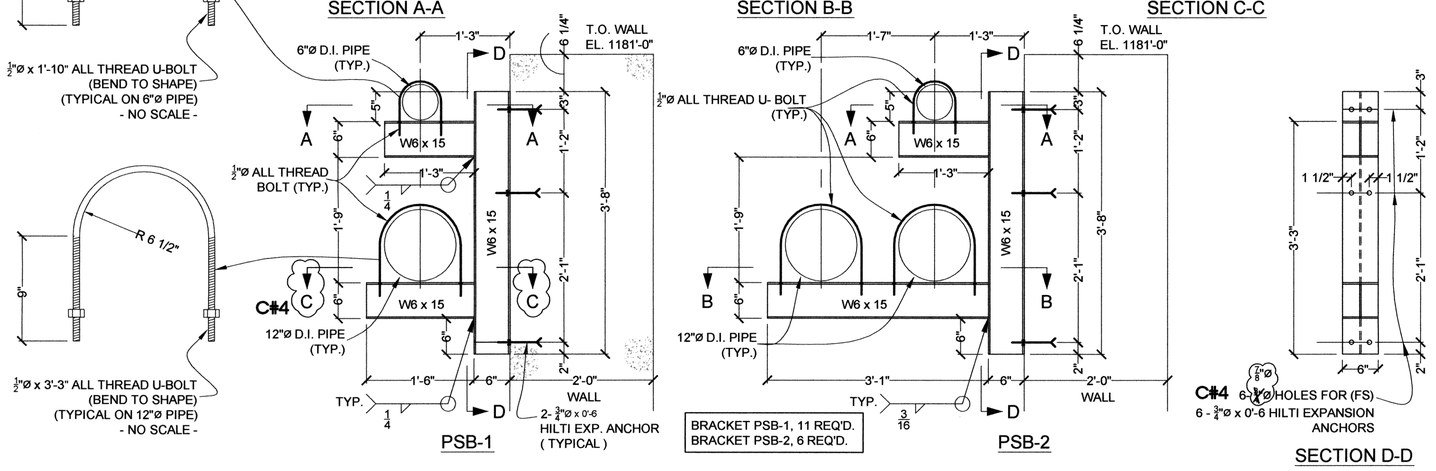


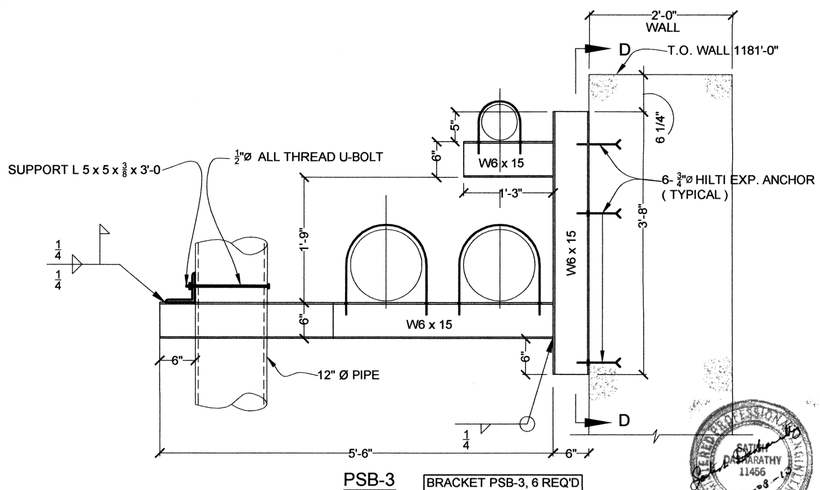
NORTH SBR BLOWER AIR PIPING
(SCALE: 3/32" = 1'-0")



ELEVATION @ BLOWERS
(SCALE: 3/32" = 1'-0")







DETAIL – AIR PIPING SUPPORT "BRACKET"
BRACKETS PSB-1 & PSB-2
(SCALE: 1" = 1'-0")

RECORD DRAWINGS S-927

REVISIONS:	DATE:
C#4 – CLARIFICATION NO. 4	12/8/2010

NORTH AEROBIC DIGESTER BLOWER AIR PIPING SUPPORT DETAILS 2 OF 2

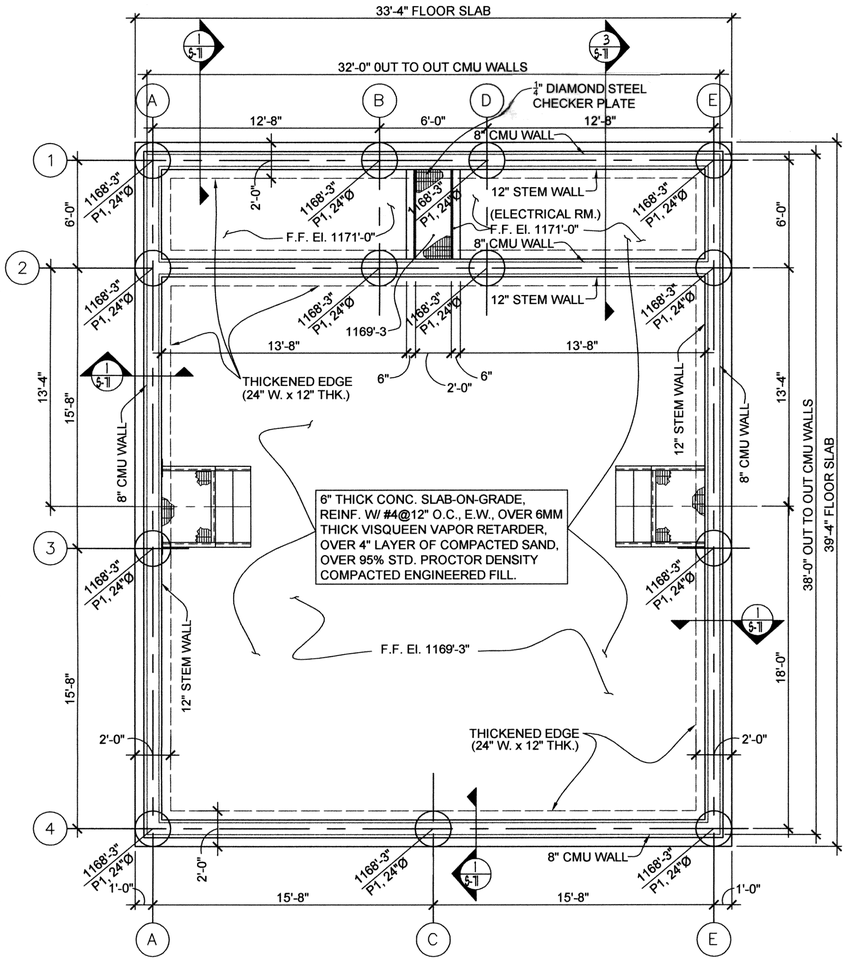
DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	4/29/2010	AS SHOWN	64 OF 89

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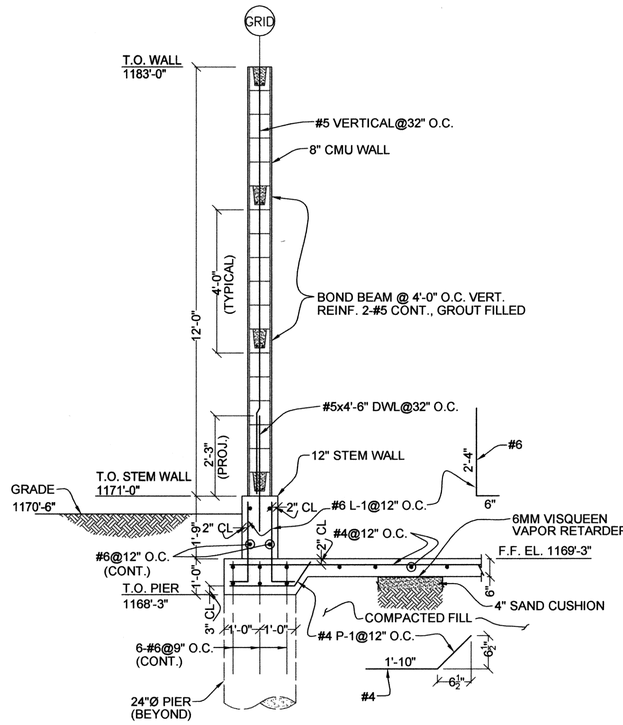
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

O:\DRAWINGS\MOORE\WORK\Structural\Digesters\S-924-927 AD Air Piping Supports.dwg



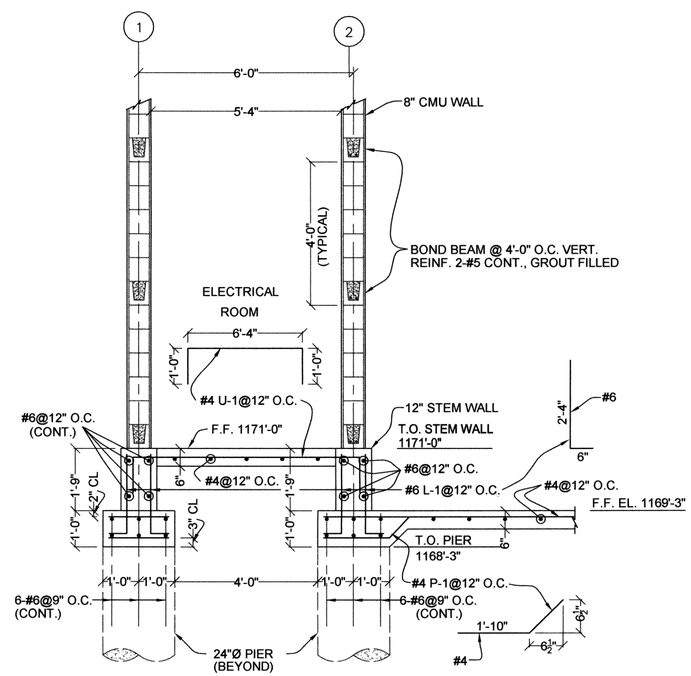
FOUNDATION PLAN - (DRILLED PIERS & FLR. EL. 1169'-3")

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



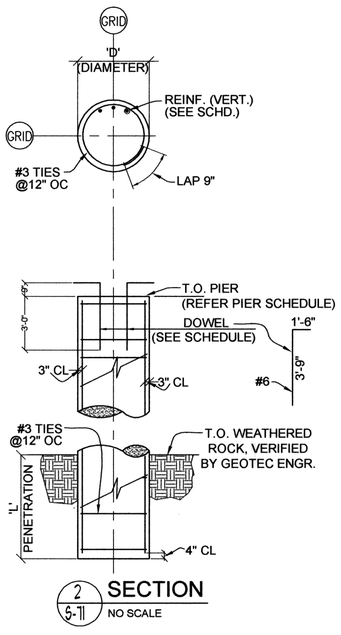
1/S-7 SECTION

SCALE: 1/2" = 1'-0



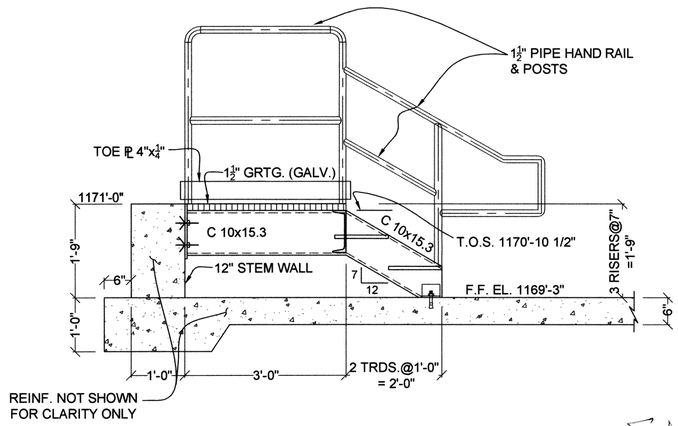
3/S-7 SECTION

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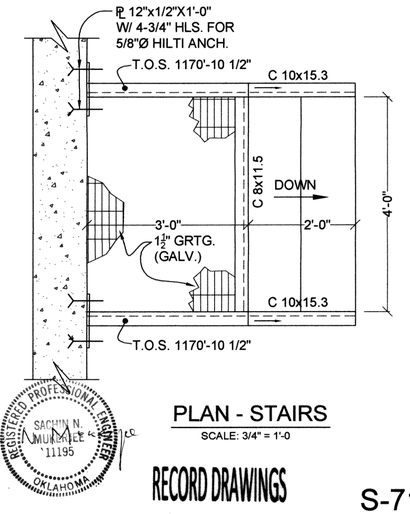
2/S-7 SECTION

NO SCALE



ELEVATION - STAIRS (2-REQ'D.)

SCALE: 3/4" = 1'-0



PLAN - STAIRS

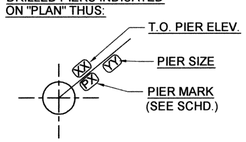
SCALE: 3/4" = 1'-0

DRILLED PIER SCHEDULE

MARK	SIZE (DIA.)	PENETRATION	REINFORCEMENT		T.O. PIER	NO. REQ'D
			VERT.	DOWEL		
P-1	24"Ø	2'-0"	6-#6	4-#6	EL. 1168-3"	13

LEGEND:

DRILLED PIERS INDICATED ON "PLAN" THUS:



REFERENCE:

DETAIL - DRILLED PIER, DET. 2/S-71

SACHIN N. MUNJAL 11195 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

5/17/10

RECORD DRAWINGS

S-71

REVISIONS:	DATE:

AEROBIC DIGESTER AND BELT FILTER PRESS CHEMICAL FEED BUILDING DRILLED PIER PLAN

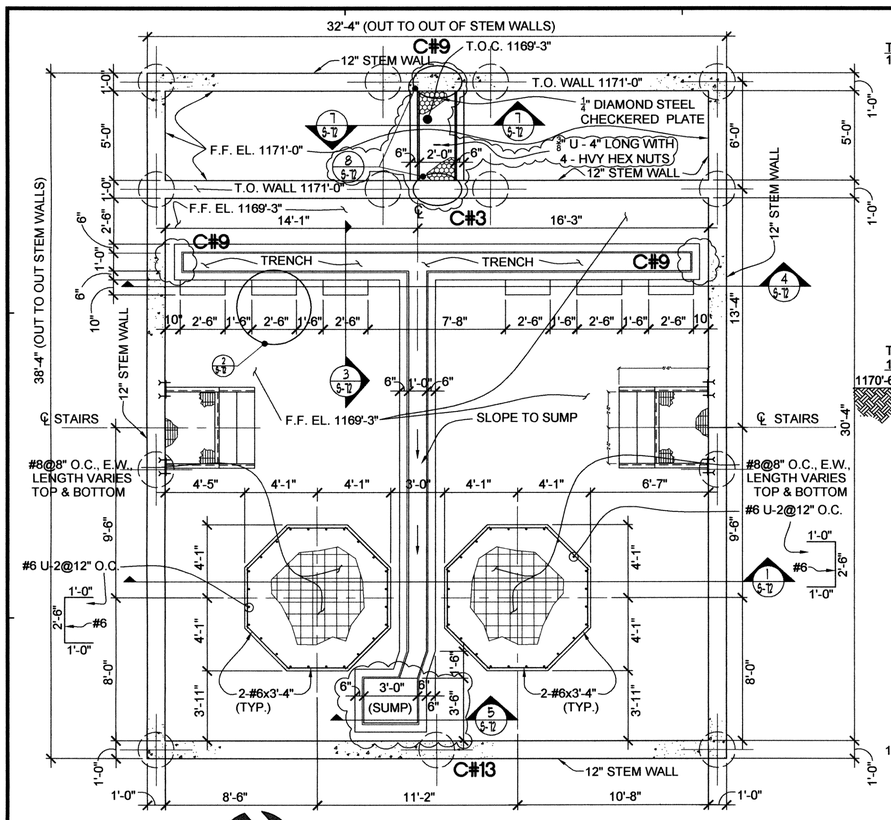
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S.D.		S.D.	S.D.	4/29/2010	AS SHOWN	65 OF 89

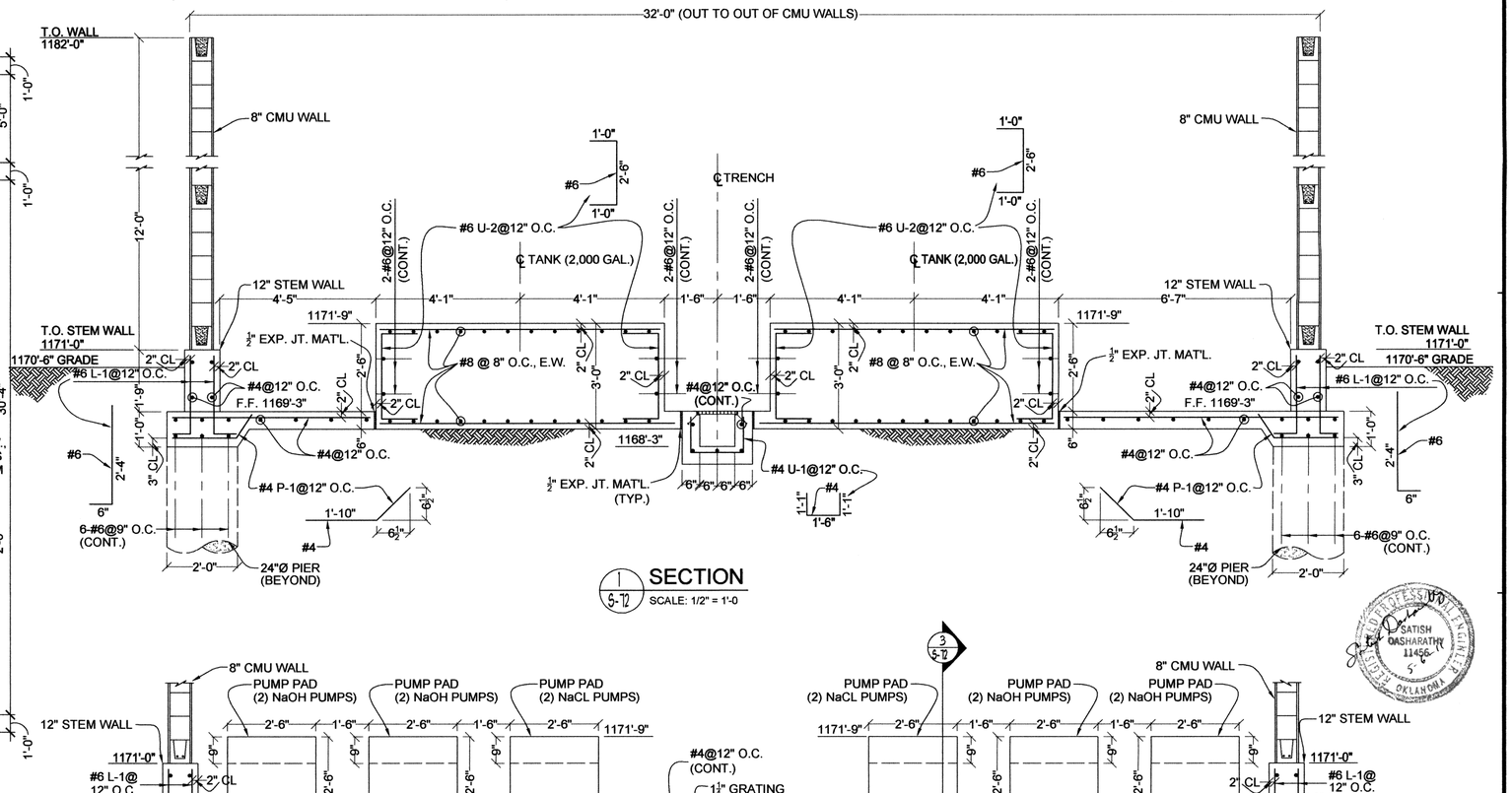
WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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CHEMICAL FEED BUILDING - PLAN VIEW

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

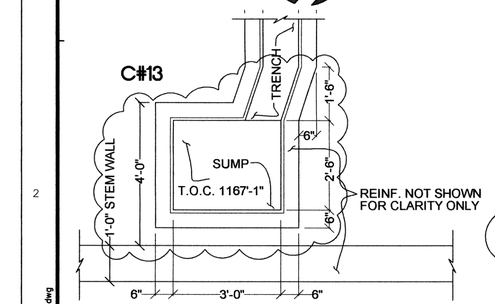


SECTION

(1/S-72) SCALE: 1/2" = 1'-0

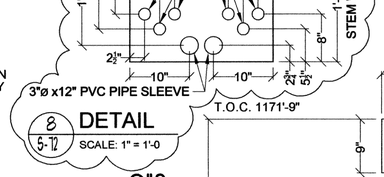
SECTION - PIPING TRENCH

(4/S-72) SCALE: 1/2" = 1'-0



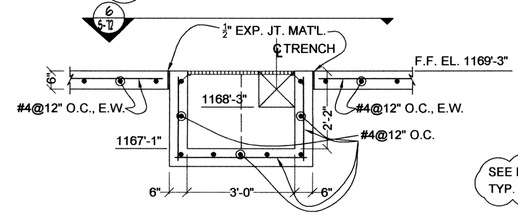
PLAN - SUMP

(6/S-72) SCALE: 1/2" = 1'-0



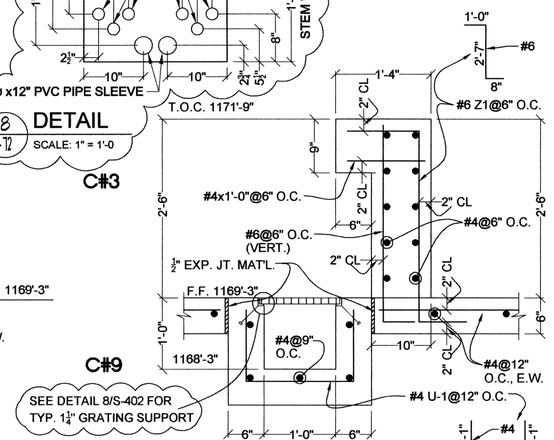
DETAIL

(8/S-72) SCALE: 1" = 1'-0



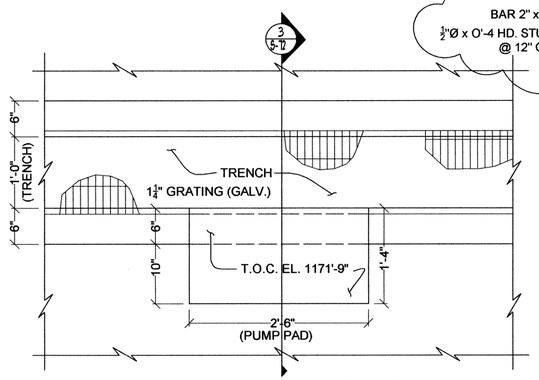
SECTION - SUMP

(5/S-72) SCALE: 1/2" = 1'-0



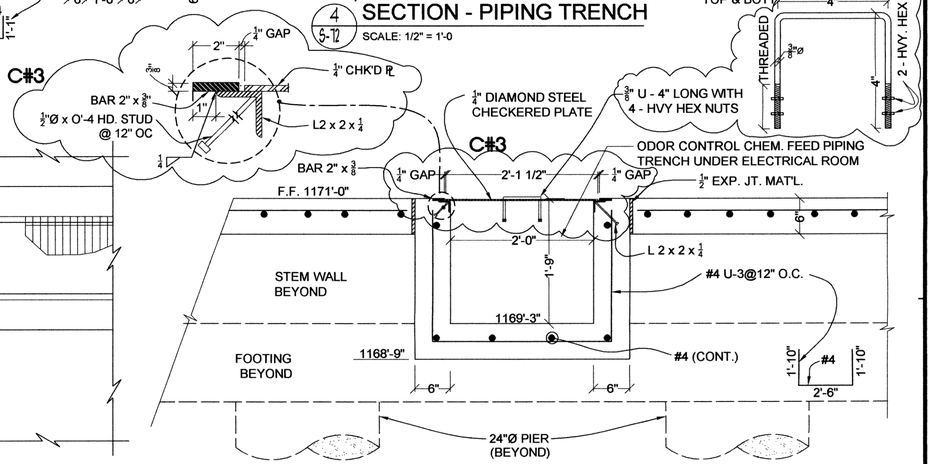
SECTION

(3/S-72) SCALE: 1" = 1'-0



DETAIL - PUMP PAD (6-REQ'D.)

(2/S-72) SCALE: 1" = 1'-0



SECTION

(7/S-72) SCALE: 1" = 1'-0

RECORD DRAWINGS

S-72

REVISIONS:	DATE:
C#3 – CLARIFICATION NO. 3	10/27/10
C#9 – CLARIFICATION NO. 9	3/11/2011
C#13 – CLARIFICATION NO. 13	5/2/2011

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S.D.		S.D.	S.D.	4/29/2010	AS SHOWN	66 OF 89

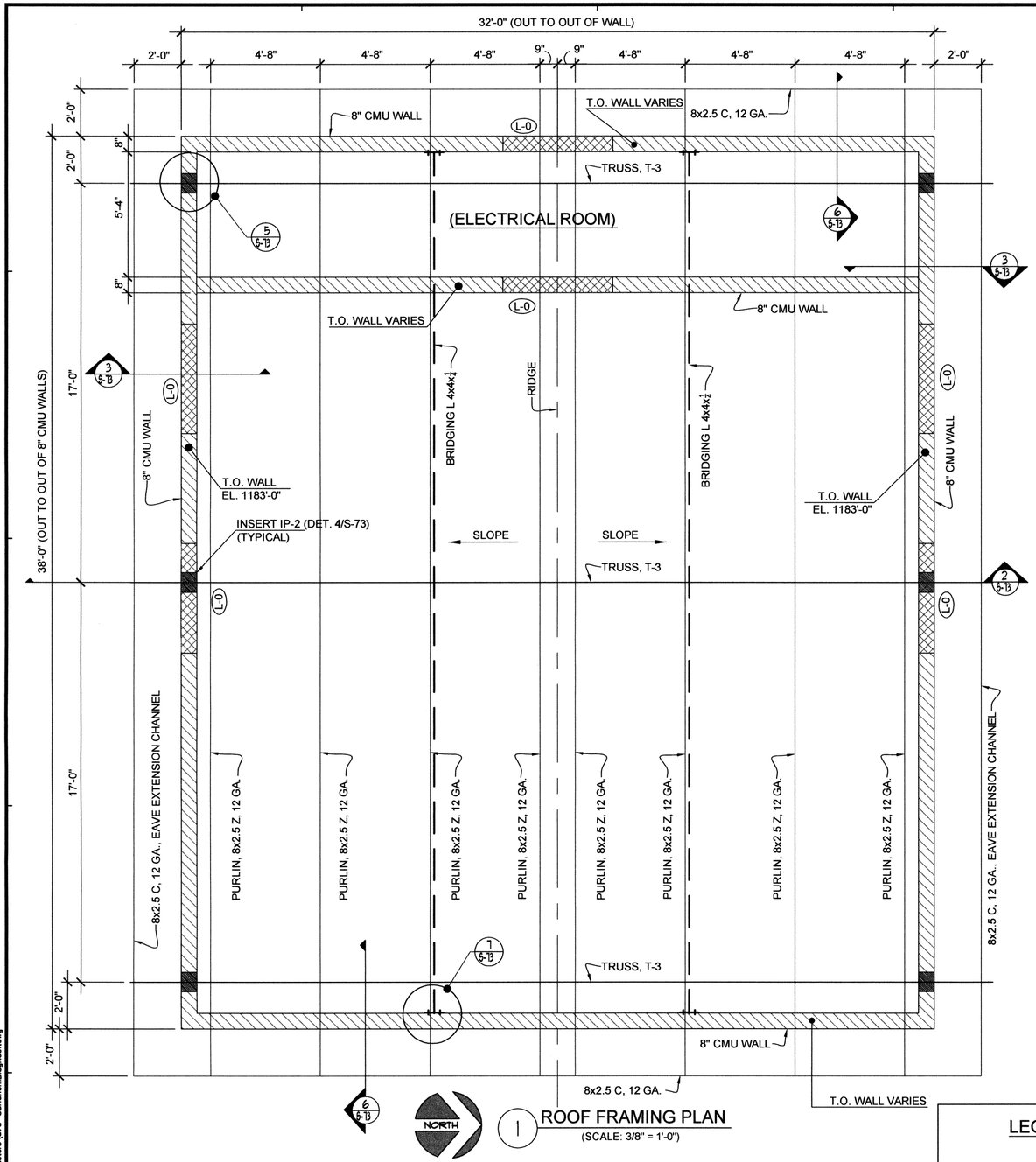
AEROBIC DIGESTER AND BELT FILTER PRESS CHEMICAL FEED BUILDING STRUCTURAL DETAILS

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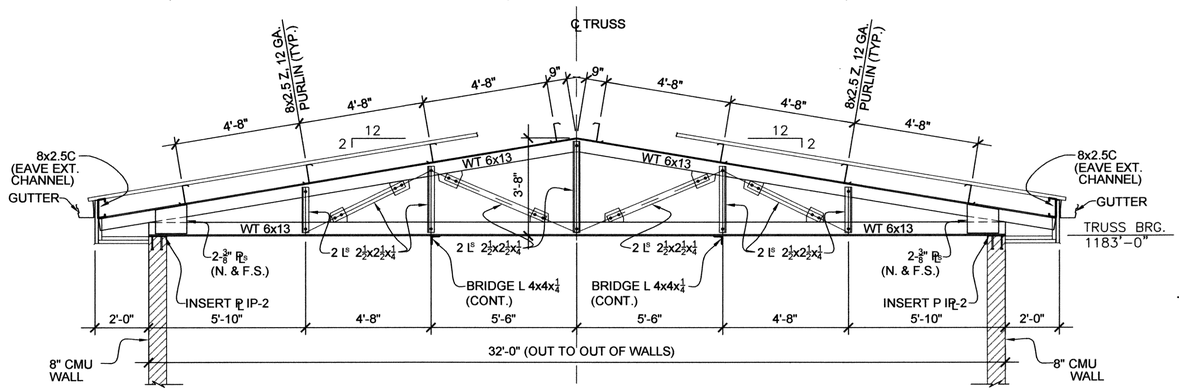
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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

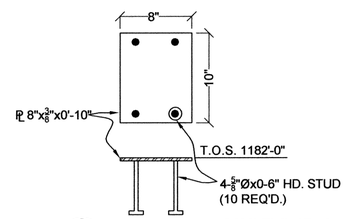
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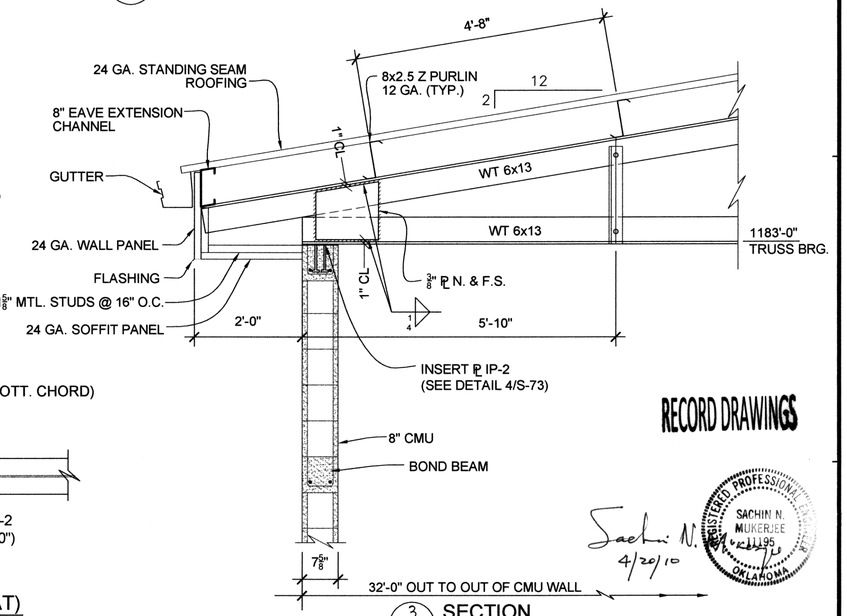
1 ROOF FRAMING PLAN
(SCALE: 3/8" = 1'-0")



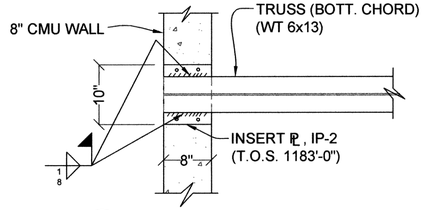
2/S-73 ELEVATION TRUSS T-3 (3 REQ'D.)
(SCALE: 3/8" = 1'-0")



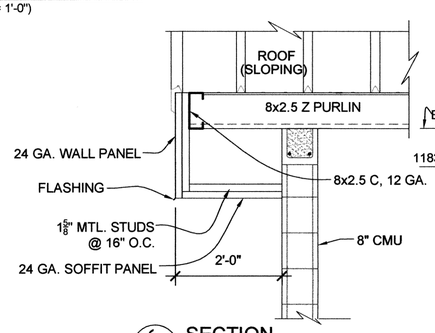
4/S-73 DETAIL - INSERT PL IP-2
(SCALE: 1 1/2" = 1'-0")



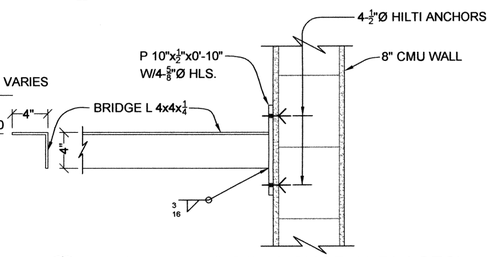
3/S-73 SECTION
(SCALE: 3/4" = 1'-0")



5/S-73 DETAIL (TRUSS SEAT)
(SCALE: 1" = 1'-0")



6/S-73 SECTION
(SCALE: 3/4" = 1'-0")



7/S-73 DETAIL - BRIDGE ANCHOR (4-PLACES)
(SCALE: 1 1/2" = 1'-0")

LEGEND

LINTEL	
L - X	REF. LINTEL SHEDULE DRG S-960

RECORD DRAWINGS

SACHIN N. MUKERJEE 21195 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

Sachin N. Mukerjee 4/20/10

S-73

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
S.D.		S.D.	S.D.	2/25/2010	AS SHOWN	67 OF 89

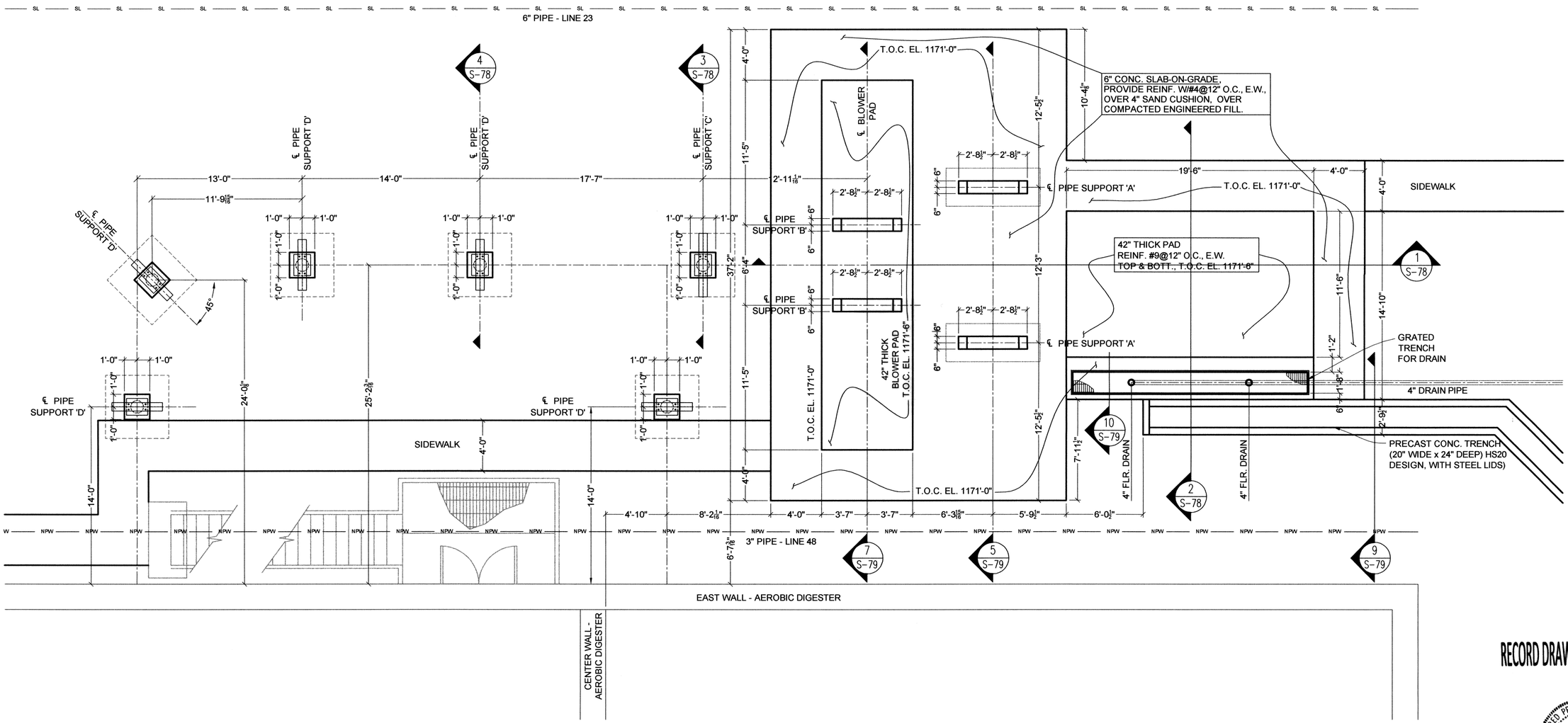
AEROBIC DIGESTER AND BELT FILTER PRESS CHEMICAL FEED BUILDING STL. TRUSS & SECTIONS

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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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AEROBIC DIGESTER ODOR CONTROL UNIT – PLAN VIEW

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

RECORD DRAWINGS

SACHIN N. MUKERJEE 11186 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

4/20/10

S-77

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
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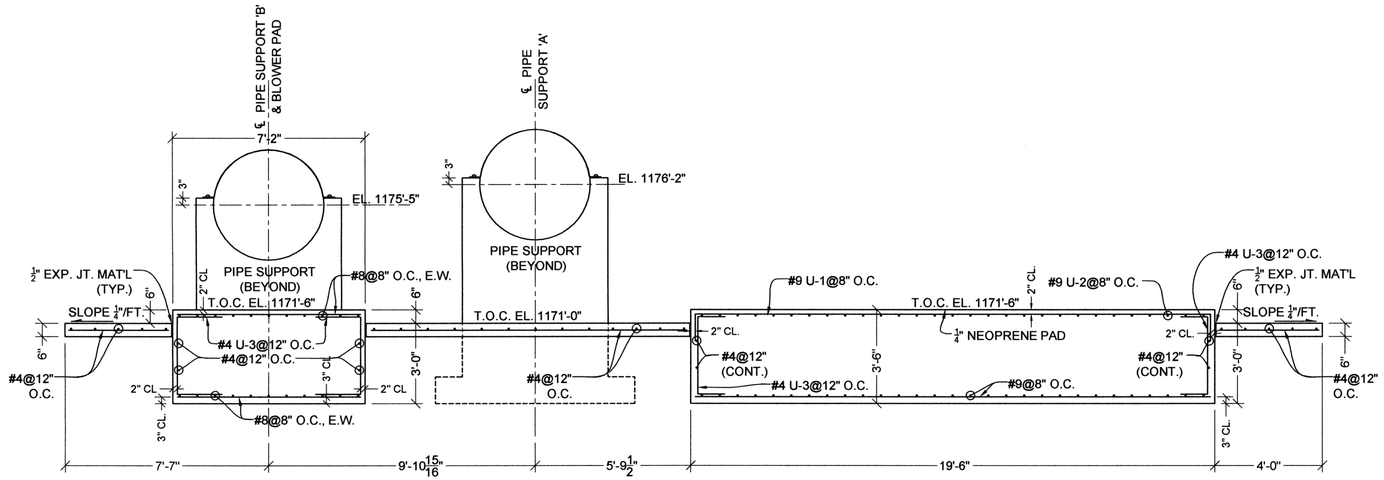
AD ODOR CONTROL
STRUCTURAL DETAILS
1 OF 3

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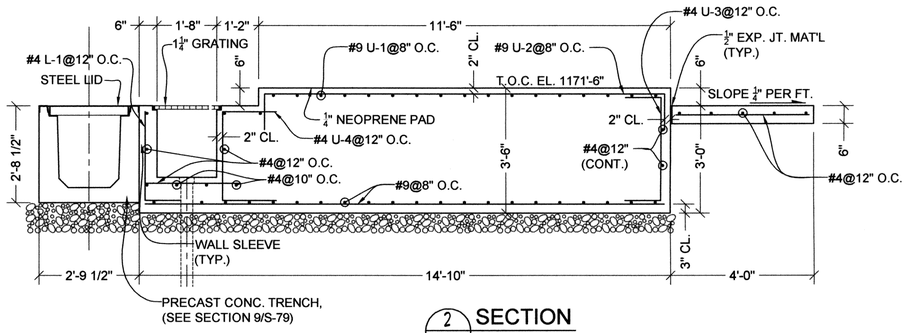
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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

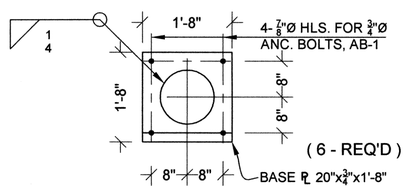
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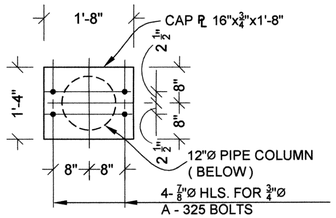
1 S-77 SECTION
SCALE: 3/8" = 1'-0



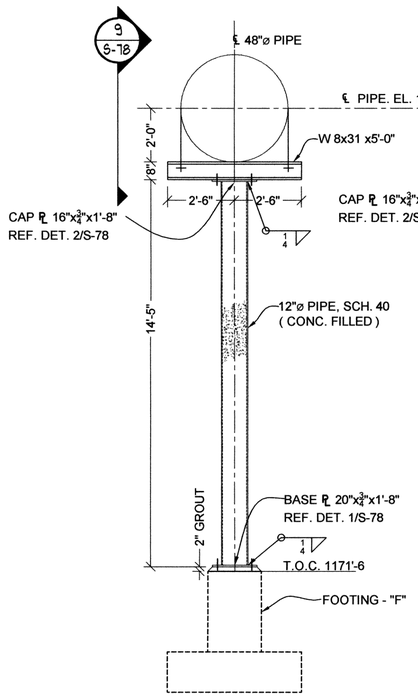
2 S-77 SECTION
SCALE: 1/2" = 1'-0

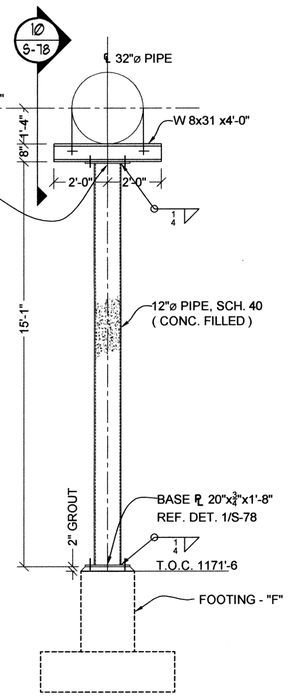


7 S-78 DETAIL - BASE ℄
SCALE: 3/4" = 1'-0



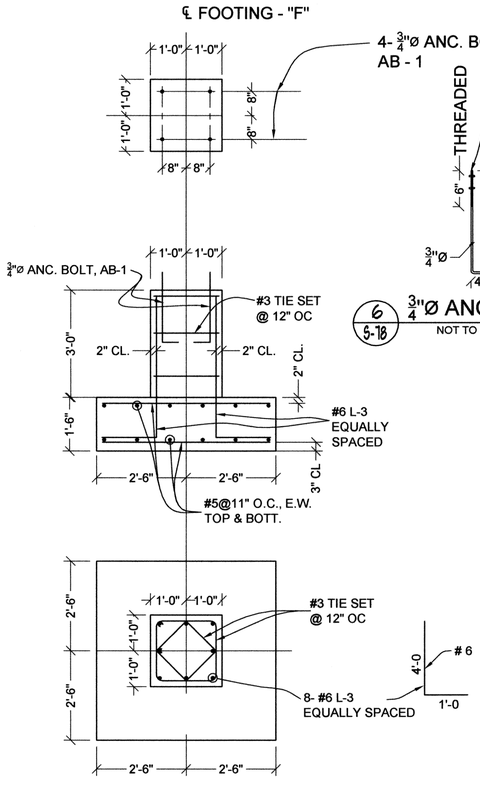
8 S-78 DETAIL - CAP ℄ (6 - REQ'D)
SCALE: 3/4" = 1'-0





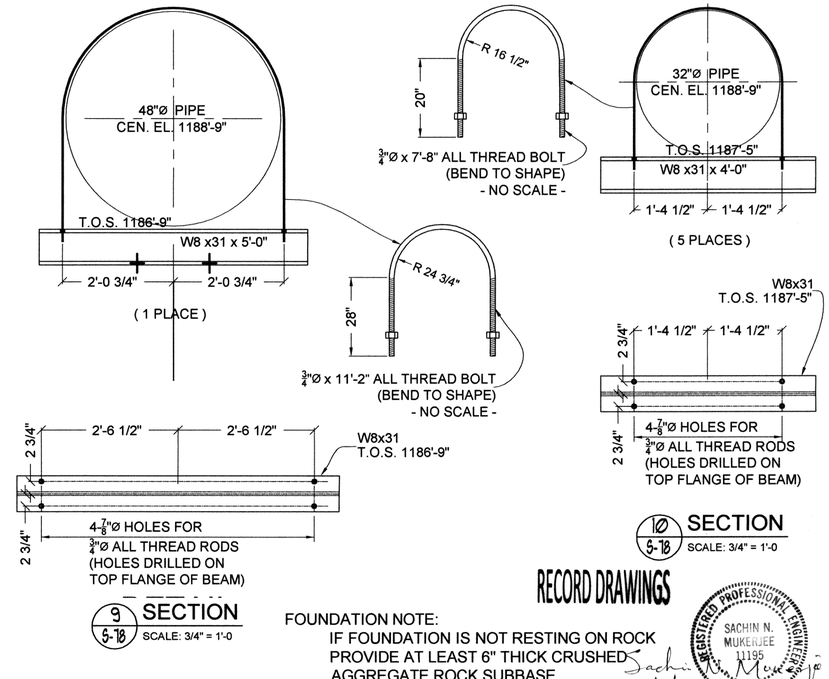
3 S-77 DETAIL - PIPE SUPPORT - "C"
SCALE: 3/8" = 1'-0

4 S-77 DETAIL - PIPE SUPPORT - "D"
SCALE: 3/8" = 1'-0



6 S-78 ¾"Ø ANCHOR BOLT AB-1
NOT TO SCALE

5 S-78 FOOTING - 'F'
SCALE: 1/2" = 1'-0



9 S-78 SECTION
SCALE: 3/4" = 1'-0

10 S-78 SECTION
SCALE: 3/4" = 1'-0

RECORD DRAWINGS

FOUNDATION NOTE:
IF FOUNDATION IS NOT RESTING ON ROCK PROVIDE AT LEAST 6" THICK CRUSHED AGGREGATE ROCK SUBBASE.

BENT BAR NOTE:
SEE BENT BAR DETAILS ON S-79.

REGISTERED PROFESSIONAL ENGINEER — SACHIN N. MUKERJEE — 11195 — OKLAHOMA
5/17/10

S-78

REVISIONS:	DATE:

AD ODOR CONTROL
STRUCTURAL DETAILS
2 OF 3

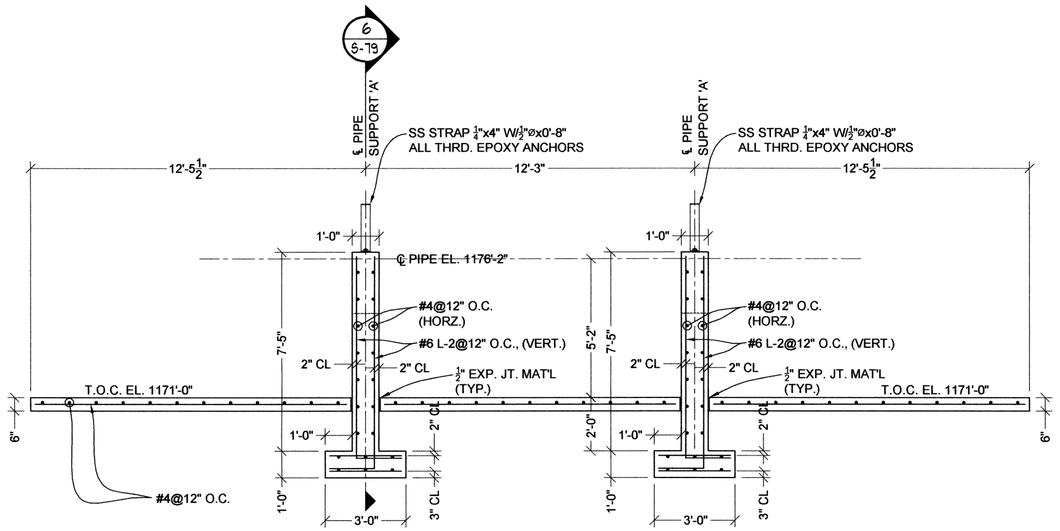
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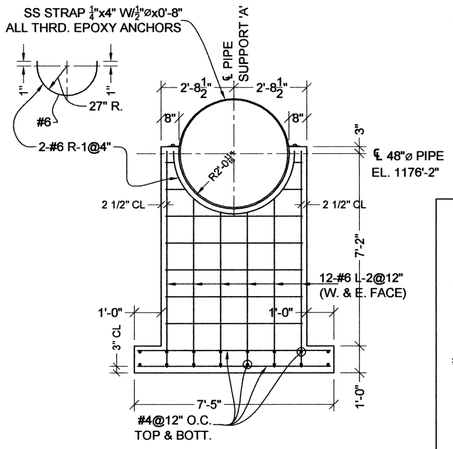
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WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, MOORE, OK

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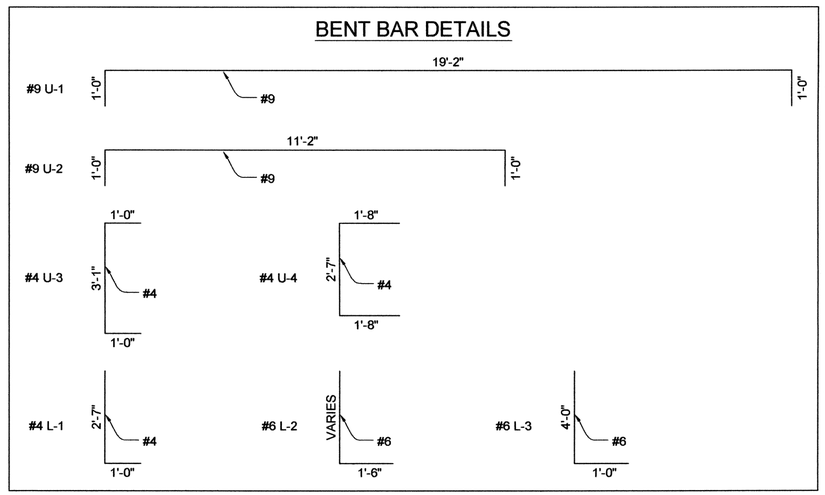


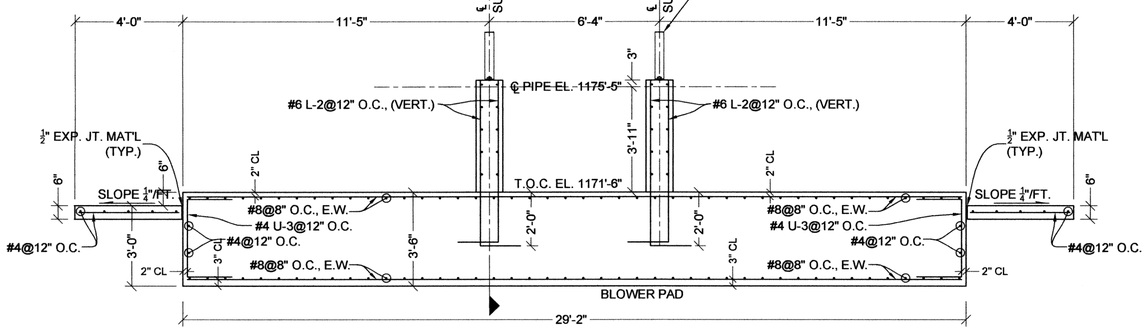
5 SECTION
5-T1 SCALE: 3/8" = 1'-0



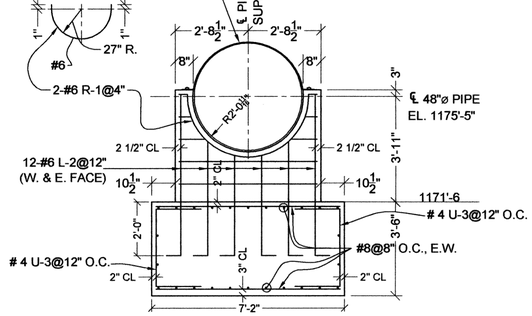
6 SECTION
5-T1 SCALE: 3/8" = 1'-0

BENT BAR DETAILS

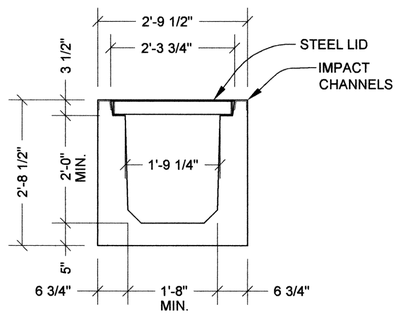




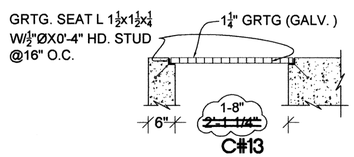
7 SECTION
5-T1 SCALE: 3/8" = 1'-0



8 SECTION
5-T1 SCALE: 3/8" = 1'-0



9 PRECAST TRENCH SECTION
5-T1 SCALE: 3/4" = 1'-0



10 DETAIL (TYP.)
5-T1 SCALE: 3/4" = 1'-0

RECORD DRAWINGS

FOUNDATION NOTE:
IF FOUNDATION IS NOT RESTING ON ROCK PROVIDE AT LEAST 6" THICK CRUSHED AGGREGATE ROCK SUBBASE.

S-79

REVISIONS:	DATE:
C#13 – CLARIFICATION NO. 13	5/2/2011

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AD ODOR CONTROL
STRUCTURAL DETAILS
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