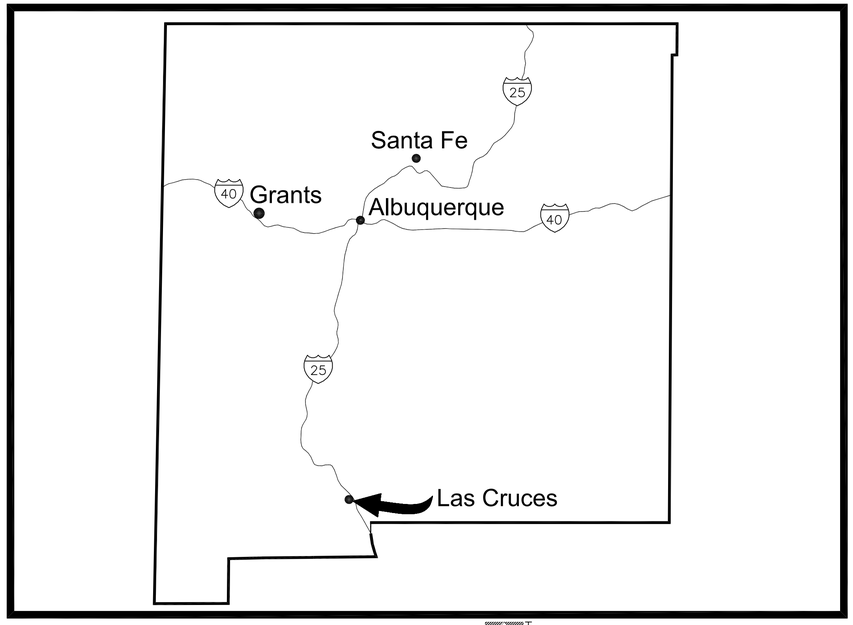

VICINITY MAP
NTS
NORTH

SITE MAP
NTS
NORTH

GRIGGS-WALNUT GROUND WATER PLUME SITE REMEDIAL DESIGN

LAS CRUCES, NEW MEXICO

PREPARED FOR THE CITY OF LAS CRUCES
DONA ANA COUNTY, NEW MEXICO

FUNDING PROVIDED BY: GRANTS SAP 07-4453-GF, SAP 07-3228-GF, SAP 08-3855-GF
LOAN NMFA 1974-DW

INDEX OF DRAWINGS

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\ES09_0036_02CS_Title_sheet.dwg

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DESIGNED BY: GF
DRAWN BY: CS
CHECKED BY: GH
DATE: 5/24/2011

GRIGGS – WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TITLE SHEET

SUNDAR PETERSON
NEW MEXICO
16038
5/24/11
LICENSED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 1 of 58
DWG NO. G-0

XREF:

GENERAL CONSTRUCTION NOTES:

A. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.

B. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED CONSTRUCTION PERMITS AND APPROVALS OF LIKE KIND PRIOR TO START OF CONSTRUCTION.

C. PROJECT DOCUMENTS CONSIST OF THESE DRAWINGS, PROJECT SPECIFICATIONS, PROJECT BIDDING INFORMATION, PROJECT CONTRACTS, AND ANY AND ALL SUBSEQUENT EXECUTED PROJECT DOCUMENTATION ISSUED AS, OR WITH, CHANGE ORDERS, AND RFI'S (REQUEST FOR INFORMATION.) THE CONTRACTOR SHALL REVIEW ALL PROJECT DOCUMENTS AND VERIFY ALL DIMENSIONS, QUANTITIES, AND FIELD CONDITIONS. ANY CONFLICTS OR OMISSIONS WITH THE DOCUMENTS SHALL BE REPORTED TO THE ENGINEER/PROJECT MANAGER FOR CLARIFICATION PRIOR TO PERFORMANCE OF ANY WORK IN QUESTION. IN THE EVENT THE CONTRACTOR DOES NOT NOTIFY THE ENGINEER/PROJECT MANAGER, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY AND ANY AND ALL EXPENSE FOR ANY REVISIONS NECESSARY OR CORRECTIONAL WORK REQUIRED.

D. THE LOCATION OF BURIED UTILITIES ARE BASED UPON INFORMATION PROVIDED TO THE ENGINEER BY OTHERS AND MAY NOT REFLECT ACTUAL FIELD CONDITIONS. EXISTING BURIED UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL USE ANY MEANS APPROVED BY THE ENGINEER/PROJECT MANAGER TO LOCATE UNDERGROUND UTILITIES INCLUDING, BUT NOT LIMITED TO, ELECTRONIC LOCATING EQUIPMENT AND/OR POT HOLING. ANY DAMAGE TO ANY OTHER UTILITIES AND/OR COLLATERAL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.

E. EXISTING FENCING THAT IS NOT DESIGNATED FOR REMOVAL SHALL NOT BE DISTURBED. ANY FENCING THAT IS DISTURBED OR ALTERED BY THE CONTRACTOR SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. IF THE CONTRACTOR DESIRES TO REMOVE FENCING TO ACCOMMODATE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL OBTAIN THE OWNER'S WRITTEN PERMISSION BEFORE FENCE IS REMOVED. CONTRACTOR SHALL RESTORE THE FENCE TO ITS ORIGINAL CONDITION AT THE EARLIEST OPPORTUNITY TO THE SATISFACTION OF THE OWNER. WHILE ANY FENCING IS REMOVED, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SECURITY OF THE SITE UNTIL THE FENCE IS RESTORED.

F. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL CLEAN AND PICK UP THE WORK AREA TO THE SATISFACTION OF THE ENGINEER/PROJECT MANAGER. AT NO TIME SHALL THE WORK BE LEFT IN A MANNER THAT COULD ENDANGER THE WORKERS OR THE PUBLIC.

G. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO PROJECT SPECIFICATIONS AND PLANS, AS AMENDED AND REVISED BY THE ENGINEER. ALL INSTALLATION DETAILS ARE TYPICAL AND MAY BE CHANGED TO BETTER FIT EXISTING LOCAL CONDITIONS UPON APPROVAL BY THE ENGINEER.

H. ONLY THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY OF ALL WORK. ALL WORK, INCLUDING WORK WITHIN TRENCHES, SHALL BE IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).

I. REFERENCES MADE TO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS REFER TO THE CITY OF LAS CRUCES STANDARD SPECIFICATIONS OR THE NEW MEXICO CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA–NM) STANDARDS FOR PUBLIC WORKS CONSTRUCTION.

J. THE CONTRACTOR SHALL NOT INSTALL ITEMS AS SHOWN ON THESE PLANS WHEN IT IS OBVIOUS THAT FIELD CONDITIONS ARE DIFFERENT THAN SHOWN IN THE PLANS. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER. IN THE EVENT THE CONTRACTOR DOES NOT NOTIFY THE ENGINEER IN A TIMELY MANNER, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY AND EXPENSE FOR ANY REVISIONS NECESSARY, INCLUDING ENGINEERING DESIGN FEES.

K. EXISTING SITE IMPROVEMENTS WHICH ARE DAMAGED OR DISPLACED BY THE CONTRACTOR SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION OF THE REPAIRS. REPAIRS SHALL BE ACCEPTED BY THE OWNER PRIOR TO FINAL PAYMENT.

WORK WITHIN ADJACENT RIGHT–OF–WAY

L. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES WITHIN ADJACENT RIGHT–OF–WAYS OR WITHIN PROPERTY NOT OWNED BY THE OWNER OF THE PROJECT SITE, THE CONTRACTOR SHALL ASSURE THAT ALL PERMITS AND PERMISSIONS REQUIRED HAVE BEEN OBTAINED IN WRITING.

SURVEY MONUMENTS, PROPERTY CORNERS, BENCHMARKS

M. THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST SEVEN (7) DAYS BEFORE BEGINNING ANY CONSTRUCTION ACTIVITY THAT COULD DAMAGE OR DISPLACE SURVEY MONUMENTS, PROPERTY CORNERS, OR PROJECT BENCHMARKS SO THESE ITEMS MAY BE RELOCATED.

N. ANY SURVEY MONUMENTS, PROPERTY CORNERS, OR BENCHMARKS THAT ARE NOT IDENTIFIED FOR RELOCATION ARE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE AND PROTECT, RELOCATION OR REPLACEMENT OF THESE ITEMS SHALL BE DONE BY THE OWNER'S SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.

DESIGN SURVEY

O. THIS DESIGN IS BASED ON SURVEY INFORMATION PROVIDED BY OTHERS. THE ENGINEER CANNOT VALIDATE OR WARRANTY THIS INFORMATION. ANY DISCREPANCIES BETWEEN THE DESIGN AND SITE SURFACE CONDITIONS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.

DIMENSIONS

P. ALL STATIONING IS TO THE CENTER OF THE TWO NEWLY INSTALLED WATER LINES.

PAVEMENT

Q. WHEN ABUTTING NEW PAVEMENT TO EXISTING PAVEMENT, CUT EXISTING PAVEMENT EDGE TO A NEAT, STRAIGHT LINE AS NECESSARY TO REMOVE ANY BROKEN OR CRACKED PAVEMENT AND MATCH NEW PAVEMENT ELEVATION TO EXISTING.

R. ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED AND APPROVED PRIOR TO PAVING.

CONSTRUCTION LIMITS

S. THE CONTRACTOR SHALL WORK WITHIN EXISTING RIGHT–OF–WAY, PLANNED RIGHT–OF–WAY, OR CONSTRUCTION LIMITS AS INDICATED ON THE PLANS. EQUIPMENT TRAFFIC OUTSIDE THESE LIMITS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION OF THE OWNER, CONSTRUCTION MANAGER, OR ENGINEER.

UTILITIES

T. UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES SHOWN ON THESE DRAWINGS ARE SHOWN IN AN APPROXIMATE LOCATION ONLY BASED ON THE INFORMATION PROVIDED TO THE ENGINEER BY OTHERS. THIS INFORMATION MAY BE INACCURATE OR INCOMPLETE. ADDITIONALLY, UNDERGROUND LINES MAY EXIST THAT ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ACCORDANCE WITH CHAPTER 62, ARTICLE 14–1, THROUGH 14–8, NMSA 1978.

U. THE CONTRACTOR SHALL CONTACT THE STATEWIDE UTILITY LOCATOR SERVICE AT 1–800–321–2537 AT LEAST FIVE WORKING DAYS BEFORE BEGINNING CONSTRUCTION. AFTER THE UTILITIES ARE SPOTTED, THE CONTRACTOR SHALL EXPOSE ALL PERTINENT UTILITIES TO VERIFY THEIR VERTICAL AND HORIZONTAL LOCATION. IF A CONFLICT EXISTS BETWEEN EXISTING UTILITIES AND PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMAL DELAY.

V. THE CONTRACTOR SHALL EXERCISE DUE CARE TO AVOID DISTURBING ANY EXISTING UTILITIES, ABOVE OR BELOW GROUND. UTILITIES THAT ARE DAMAGED BY CARELESS CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

W. EXISTING WATER VALVES SHALL ONLY BE OPERATED BY THE SYSTEM OPERATOR. CONTRACTOR SHALL NOTIFY THE CITY OF LAS CRUCES, 1–575–642–8312, A MINIMUM OF THREE (3) WORKING DAYS BEFORE ANY VALVE, NEW OR EXISTING, NEEDS TO BE OPERATED.

X. THE CONTRACTOR SHALL COORDINATE ANY REQUIRED UTILITY INTERRUPTIONS WITH THE OWNER AND AFFECTED UTILITY COMPANY A MINIMUM OF FIVE (5) WORKING DAYS BEFORE THE INTERRUPTION.

Y. THE CONTRACTOR SHALL MAINTAIN A RECORD DRAWING SET OF PLANS AND PROMPTLY LOCATE ALL UTILITIES, EXITING OR NEW, IN THEIR CORRECT LOCATION, HORIZONTAL AND VERTICAL. THIS RECORD SET OF DRAWINGS SHALL BE MAINTAINED ON THE PROJECT SITE AND SHALL BE AVAILABLE TO THE OWNER AND ENGINEER AT ANY TIME DURING CONSTRUCTION. RECORD INFORMATION SHALL INCLUDE HORIZONTAL AND VERTICAL COORDINATE CALLOUTS, LINE SIZES, LINE TYPES, BURIAL DEPTHS, AND ALL OTHER PERTINENT INSTALLATION INFORMATION. IN ADDITION ALL ITEMS THAT ARE INSTALLED EXACTLY AS DESIGNED SHALL BE NOTED AS SUCH.

EROSION CONTROL, ENVIRONMENTAL PROTECTION, AND STORM WATER POLLUTION PREVENTION PLAN

Z. THE CONTRACTOR SHALL CONFORM TO ALL DONA ANA COUNTY, STATE OF NEW MEXICO, AND FEDERAL DUST AND EROSION CONTROL REGULATIONS. THE CONTRACTOR SHALL PREPARE AND OBTAIN ANY DUST CONTROL OR EROSION CONTROL PERMITS FROM THE APPROPRIATE REGULATORY AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRODUCTION OF, IMPLEMENTATION OF, AND INSPECTION REPORTS FOR THE STORM WATER POLLUTION PREVENTION PLAN (SWPP). THE CONTRACTOR SHALL SUBMIT THE SWPP WITH THE PROPOSED CONSTRUCTION STAGING AREA AND TEMPORARY SANITARY FACILITIES CLEARLY SHOWN TO THE CITY OF LAS CRUCES ENVIRONMENTAL DEPARTMENT FOR APPROVAL.

AA. THE CONTRACTOR SHALL PROMPTLY REMOVE OR STABILIZE ANY MATERIAL EXCAVATED WITHIN THE RIGHT–OF–WAY OR ADJACENT PROPERTY TO KEEP IT FROM WASHING OFF THE PROJECT SITE.

AB. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY BY CONSTRUCTION OF TEMPORARY EROSION CONTROL BERMS OR INSTALLING SILT FENCES AT THE PROPERTY LINES (OR LIMITS OF CONSTRUCTION WHERE DESIGNATED) AND WETTING SOIL TO PREVENT IT FROM BLOWING.

AC. WATERING, AS REQUIRED FOR CONSTRUCTION DUST CONTROL, SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO MEASUREMENT OR PAYMENT SHALL BE MADE. CONSTRUCTION AREAS SHALL BE WATERED FOR DUST CONTROL IN COMPLIANCE WITH CITY, COUNTY AND STATE ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE SYSTEM OPERATOR, 1–575 528–3506, FOR AVAILABILITY AND USE OF WATER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL EQUIPMENT AND MATERIALS NECESSARY FOR OBTAINING, METERING, AND PAYING FOR WATER.

AD. THE CONTRACTOR SHALL PROPERLY HANDLE AND DISPOSE OF ALL ASPHALT AND CONCRETE REMOVED ON THE PROJECT BY HAULING TO AN APPROVED DISPOSAL SITE IN ACCORDANCE WITH THE REQUIREMENTS OF DONA ANA COUNTY.

AE. ALL WASTE PRODUCTS FROM THE CONSTRUCTION SITE, INCLUDING ITEMS DESIGNED FOR REMOVAL, CONSTRUCTION WASTE, CONSTRUCTION EQUIPMENT WASTE PRODUCTS (OIL, GAS, TIRES, ETC.), DRILLING MUD AND WATER, GARBAGE, GRUBBING, EXCESS CUT MATERIAL, VEGETATIVE DEBRIS, ETC. SHALL BE APPROPRIATELY DISPOSED OF OFFSITE AT NO ADDITIONAL COST TO THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY PERMITS REQUIRED FOR HAUL OR DISPOSAL OF WASTE PRODUCTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE WASTE DISPOSAL SITE COMPLIES WITH APPROPRIATE REGULATIONS REGARDING THE ENVIRONMENT, ENDANGERED SPECIES, AND ARCHAEOLOGICAL RESOURCES.

AF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANUP AND REPORTING OF SPILLS OF HAZARDOUS MATERIALS ASSOCIATED WITH THE CONSTRUCTION SITE. HAZARDOUS MATERIALS INCLUDES GASOLINE, DIESEL FUEL, MOTOR OIL, SOLVENTS, CHEMICALS, PAINT, ETC. WHICH MAY BE A THREAT TO THE ENVIRONMENT. THE CONTRACTOR SHALL REPORT THE DISCOVERY OF PAST OR PRESENT SPILLS TO THE NEW MEXICO HAZARDOUS WASTE BUREAU AT 1–505–476–6000 AND THE ENGINEER.

AG. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS CONCERNING SURFACE AND UNDERGROUND WATER. CONTACT WITH SURFACE WATER BY CONSTRUCTION EQUIPMENT AND PERSONNEL SHALL BE MINIMIZED. EQUIPMENT MAINTENANCE AND REFUELING OPERATIONS SHALL BE PERFORMED IN AN ENVIRONMENTALLY SAFE MANNER IN COMPLIANCE WITH COUNTY, STATE, AND EPA REGULATIONS.

AH. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS CONCERNING CONSTRUCTION NOISE AND HOURS OF OPERATION AS STATED IN THE SPECIFICATIONS OR IMPOSED BY THE OWNER OR COUNTY AUTHORITIES.

TRAFFIC CONTROL

AI. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TRAFFIC CONTROL PLANS AND TRAFFIC CONTROL EQUIPMENT. ALL SIGNS, BARRICADES, CHANNELIZATION DEVICES, SIGN FRAMES AND ERECTION OF SUCH DEVICES SHALL CONFORM TO THE REQUIREMENTS OF "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" LATEST EDITION. TRAFFIC CONTROL PLANS SHALL BE APPROVED BY THE COUNTY AND NMDOT PRIOR TO CONSTRUCTION.

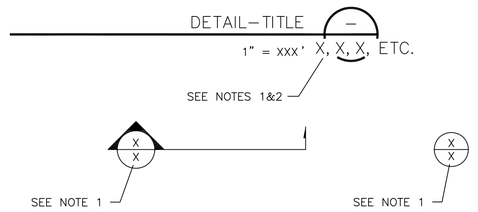
MISCELLANEOUS SYMBOLS:

NOTE: SYMBOLS ARE NOT SHOWN TO SCALE ON PLAN OR PROFILE DRAWINGS, AND INDICATE APPROXIMATE LOCATION ONLY.

	UNVERIFIED LIMITS OF STATE HIGHWAY RIGHT–OF–WAY
	CENTERLINE
X X	EXIST WIRE FENCE
	EXIST CHAIN LINK FENCE
P	PROPERTY LINE (℄)
T	EXIST TELEPHONE LINE
P	EXIST OVERHEAD UTILITY LINE
G	EXIST GAS LINE
S	EXIST SEWER LINE
	CONTROL POINT (THIS PROJECT)
	SURVEY MONUMENT (PREVIOUS PROJECT)
	RIGHT–OF–WAY MARKER
	LARGE TREE
	UNIMPROVED DIRT ROAD OR GRAVELED ROADWAY
	BOX CULVERT
	BURIED PIPE
5084	DEPRESSION CONTOUR
6070	EXISTING CONTOUR LINE AND ELEVATION DESIGNATION
× 6070.7	SPOT ELEVATION (FT MSL)
	FIBER OPTIC RISER
	UTILITY PEDESTAL
	GUY WIRE
	SIGN
	GUARD RAIL
S	SEWER MANHOLE
GV	GAS VALVE
T	TELEPHONE MANHOLE

EXISTING	PROPOSED	
		FLUSH HYDRANT
W	W	WATER METER
WV		WATER VALVE
		REDUCER
– W –		WATER LINE
		UTILITY POLE (TO BE INSTALLED BY OTHERS)
P	P	OVERHEAD UTILITY LINE (TO BE INSTALLED BY OTHERS)

LEGEND:



NOTES:

1. IF SECTION, DETAIL, SCHEMATIC, OR DIAGRAM IS DRAWN ON THE SAME SHEET THAT IT IS TAKEN FROM, THE SHEET NUMBER SHALL BE REPLACED WITH A HYPHEN.
2. IF THE SECTION, DETAIL, SCHEMATIC, OR DIAGRAM IS REFERENCED ON MULTIPLE SHEETS, ALL SHEETS SHOULD BE LISTED TO THE OUTSIDE RIGHT OF THE DETAIL–TITLE BUBBLE, AND SEPARATED WITH A COMMA.

ABBREVIATIONS:

ASV	ANTI–SIPHON VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BFP	BACK FLOW PREVENTER
BMP	BEST MANAGEMENT PRACTICE
C–C	CENTER TO CENTER
CMP	CORRUGATED METAL PIPE
DI	DUCTILE IRON
DIA	DIAMETER
DW	DRIVEWAY
EL	ELBOW
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
FH	FLUSH HYDRANT
FT	FEET
FT MSL	FEET ABOVE MEAN SEA LEVEL
GV	GATE VALVE
H	HEIGHT
HOR	HORIZONTAL
INV	INVERT ELEVATION
LF	LINEAR FEET
MIN	MINIMUM
MJ	MECHANICAL JOINT
MSL	MEAN SEA LEVEL
N/A	NOT APPLICABLE
NMDOT	NEW MEXICO DEPARTMENT OF TRANSPORTATION
NTS	NOT TO SCALE
OC	ON CENTER
P/L	PROPERTY LINE
POT	POTABLE WATER
PSI	POUNDS PER SQUARE INCH
PVC	POLY VINYL CHLORIDE
RED	REDUCER
ROW	RIGHT OF WAY
STA	STATION
STD	STANDARD
VERT	VERTICAL
W	WIDTH
W/	WITH
WL	WATER LINE

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\ES09.0306_Griggs–Walnut\VR_Drawings\ES09_0306_G01S_Title_details.dwg

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CHECKED BY: GH
DATE: 5/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

GENERAL NOTES & LEGEND

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 2 of 58
DWG NO. G-1

XREF:

SITE LAYOUT (-)
1" = 50'-0"

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

XREF:

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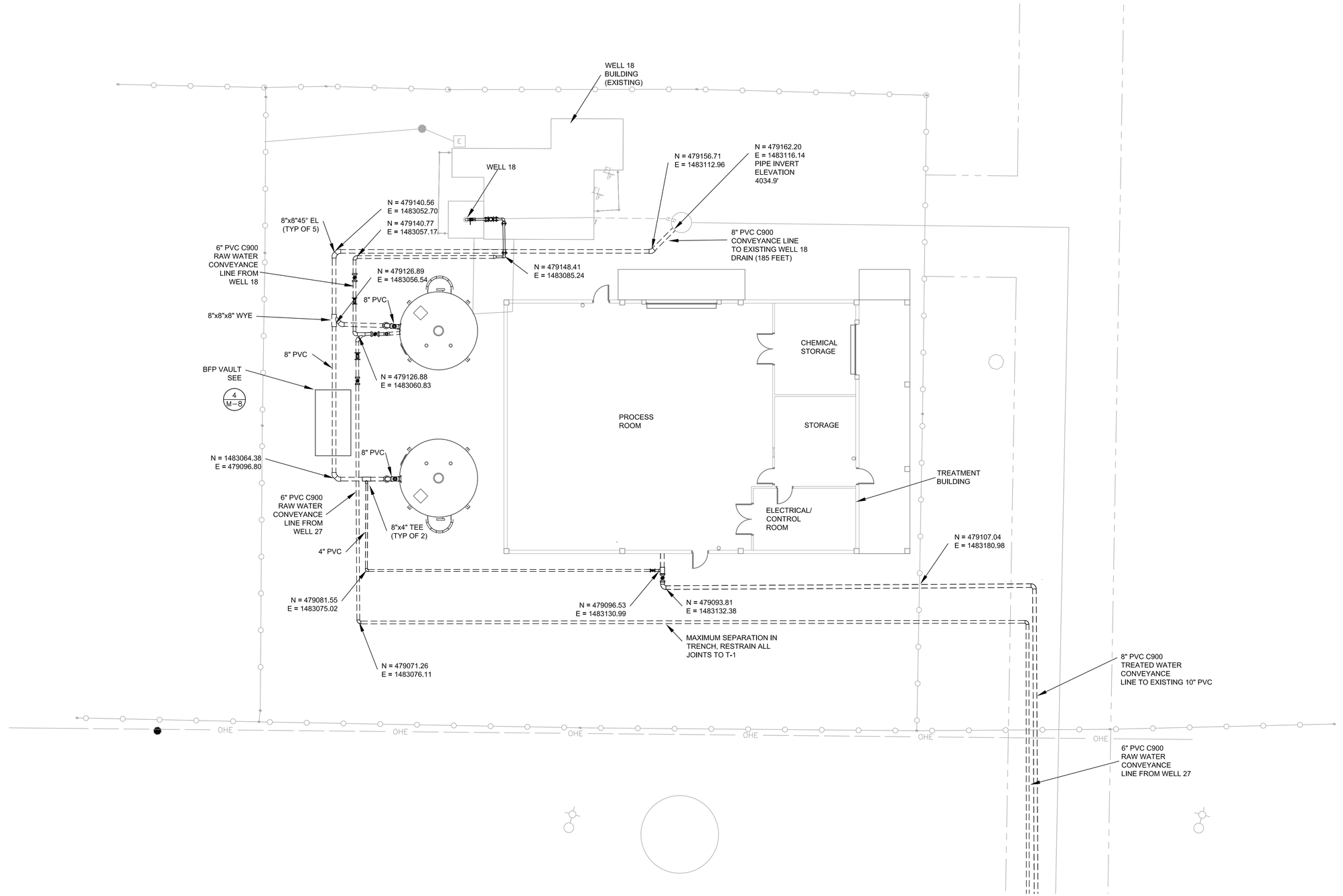
GRIGGS– WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

SITE LAYOUT

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 3 of 58
DWG NO. G-2



TREATMENT COMPOUND LAYOUT AND YARD PIPING (- / -)

1" = 10'–0"

NOTICE OF EXTENDED PAYMENT PROVISION:
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XREF:

NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\ES09_0036_G3CS_site_layout.dwg

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GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT COMPOUND LAYOUT AND YARD PIPING

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 4 of 58
DWG NO. G-3

ARCHITECTURAL PLAN SYMBOLS

Symbol	Description
X (circle)	COLUMN GRID / EDGE OF MASONRY LINE (EXISTING)
X (circle)	COLUMN GRID / EDGE OF MASONRY LINE (NEW)
——— - ———	CENTER LINE
1'-0"	DIMENSION LINE
ROOM NAME XX-XX	ROOM NUMBER
100A, 18", 12", 4"	DOOR NUMBER SYMBOL AND MINIMUM CLEARANCES
X / XXX	DETAIL NUMBER / ARCHITECTURAL DETAIL / SHEET DETAIL IS DRAWN ON
X / XXX	ARCHITECTURAL SECTION
X / XXX	ARCHITECTURAL ELEVATION – EXTERIOR
X / XXX	ARCHITECTURAL ELEVATION – INTERIOR
X / XXX	ARCHITECTURAL CASEWORK ELEVATION
X, EXX, L00	FRAME TYPE – INTERIOR, EXTERIOR AND LOUVER
100'-0" 100'-0"	ELEVATION FROM FINISH FLOOR
X	WALL TYPE

MATERIAL SYMBOLS

- EARTH
- CAST-IN-PLACE CONCRETE
- GROUT
- CONCRETE UNIT MASONRY
- STEEL
- WOOD BLOCKING
- PLYWOOD (LARGE SCALE)
- FIBROUS INSULATION
- GYPSUM BOARD

ARCHITECTURAL ABBREVIATIONS

AB	ANCHOR BOLT, AUGER BORING
AD	AREA DRAIN, ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BL	BASELINE
BD	BOARD
BLDG	BUILDING
BM	BEAM
B	BOTTOM
CC	CENTER TO CENTER
CEM	CEMENT
CJ	CONTROL JOINT
℄	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CND,C	CONDUIT
CNDS	CONDENSATE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CS	CONCRETE SEALER/SURFACE
CW	COLD WATER
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DW	DOMESTIC WATER
DWG	DRAWING
E	EAST
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
EQ	EQUAL
EXH	EXHAUST
EXP	EXPANSION, EXPOSED
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
FD	FLOOR DRAIN, FIRE DAMPER
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FFE	FINISHED FLOOR ELEVATION
FIN	FINISH
FL	FLOOR, FLASHING
FL	FLOW LINE
FR	FRAME
FTG	FOOTING
FJ	FELT JOINT
FXTR	FIXTURE
G	GROUND, GAS LINE, GRAM
GA	GAGE
GAL	GALVANIZED
GR	GRADE
GRD	GROUND
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HARD DRAWN
HDW	HARDWARE
HORIZ	HORIZONTAL
HW	HOT WATER, HEADWALL
ID	INSIDE DIAMETER, INSIDE DIMENSION
INT	INTERIOR
INSUL	INSULATION, INSULATED
JB	JUNCTION BOX
JST	JOIST
L	LOUVER, LENGTH, LENGTH OF CURVE
LAV	LAVATORY VERTICAL
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MTD	MOUNTED
MTG	MOUNTING
N	NORTH
NA	NOT APPLICABLE

NC	NON CORROSIVE
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NW	NORTHWEST
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OVHD, OH	OVERHEAD
PJF	PREFORMED JOINT FILLER
PL	PLATE
PLYWD	PLYWOOD
PNL	PANEL
PNT	PAINT
PRELIM	PRELIMINARY
PT	POINT, POINT OF TANGENT
PTN	PARTITION
PVMT	PAVEMENT
R	RADIUS, RISER, RUBBER SHEATH
RA	RETURN AIR
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN, ROAD
RECP	RECEPTACLE
REINF	REINFORCEMENT
REG	REGULATOR, REGISTER
REQD	REQUIRED
REV	REVISION
RF	ROOF, RETURN FAN
RI	RUBBER INSULATED
RM	ROOM
S	SECOND, SOUTH, SANITARY, SEWER
SAN	SANITARY
SCH	SCHEDULE
SD	SPLITTER DAMPER, STORM DRAIN
SE	SOUTHEAST
SECT	SECTION
SERV	SERVICE
SF	SQUARE FEET
SG	SUPPLY GRILLE
SH	SHEET
SIM	SIMILAR
SL	SLOPE
SPEC	SPECIFICATION
SQ	SQUARE
SR	SUPPLY REGISTER
SS	SANITARY SEWER
STD	STANDARD
STL	STEEL
SUP	SUPPORT
SUSP	SUSPENDED
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
T	TILE, TOP, TANGENT
T&B	TOP AND BOTTOM
THRSLD	THRESHOLD
TO	TOP OF
TRANS	TRANSITION
TS	TOP OF STEEL, TOP OF STONE, TOP OF SLAB
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
VENT	VENTILATING
VERT	VERTICAL
VTR	VENT THRU ROOF
W	WIDTH, WASTE, WATER, WATT, WEST, WIRE, WATER LINE
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
XFMR	TRANSFORMER
2:1 SL	2 HORIZONTAL 1 VERTICAL SLOPE
1 ON 2	1 VERTICAL ON 2 HORIZONTAL SLOPE
Δ	DEFLECTION ANGLE
ø	DIAMETER, PHASE

ARCHITECTURAL GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CODES LISTED ON THIS SHEET.
2. THE CONTRACTOR SHALL CHECK ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, AND DIMENSIONS AS SHOWN BEFORE PROCEEDING WITH THE CONSTRUCTION. IF THERE ARE ANY DISCREPANCIES, THE CONTRACTOR SHALL OBTAIN A CLARIFICATION FROM THE ARCHITECT BEFORE PROCEEDING WITH THE WORK IN QUESTION OR RELATED WORK.
3. DRAWINGS SHALL NOT BE SCALED. WRITTEN DIMENSIONS SHALL ALWAYS GOVERN. CONTRACTOR REQUIRING DIMENSIONS NOT NOTED, SHALL CONTACT THE ARCHITECT AFTER COMPLETING FIELD MEASUREMENTS FOR SUCH INFORMATION PRIOR TO PROCEEDING WITH WORK RELATED TO THOSE DIMENSIONS.
4. WHEN DISCREPANCIES OCCUR BETWEEN LARGE SCALE DRAWINGS AND SMALL SCALE DETAILS, THE CONTRACTOR SHALL NOTIFY ARCHITECT OF CONFLICTS IN WRITING, AND OBTAIN A CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
5. DETAILS ARE USUALLY KEYED ONLY ONCE (ON THE PLANS OR ELEVATIONS WHEN THEY FIRST OCCUR) AND ARE TYPICAL FOR SIMILAR CONDITIONS THROUGHOUT UNLESS OTHERWISE NOTED (U.O.N.).
6. "TYPICAL" OR "TYP." MEANS THAT THE CONDITION IS REPRESENTATIVE FOR ALL SIMILAR CONDITIONS, UNLESS OTHERWISE NOTED (U.O.N.).
   "SIMILAR" OR "SIM." MEANS COMPARABLE CHARACTERISTICS FOR THE CONDITIONS NOTED. VERIFY DIMENSIONS AND ORIENTATION ON PLANS AND ELEVATIONS.
   "ALIGN" AS USED IN THESE DOCUMENTS MEANS TO ACCURATELY LOCATE FINISHES IN THE SAME PLANE.
   "AS REQUIRED" MEANS AS REQUIRED BY REGULATORY REQUIREMENTS, BY REFERENCED STANDARDS, BY EXISTING CONDITIONS, BY GENERALLY ACCEPTED CONSTRUCTION PRACTICE OR BY THE CONTRACT DOCUMENTS.
7. ALL DIMENSIONS GIVEN AS 'CLEAR' ARE NOT ADJUSTABLE WITHOUT ARCHITECT/ENGINEER'S APPROVAL.
8. DIMENSIONS ARE FROM/TO FACE OF FINISHED WALL AND TO COLUMN GRID LINES UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING HANGERS OR OTHER SUPPORTS FOR ALL FIXTURES, EQUIPMENT, CABINETRY, FURNISHINGS AND ALL OTHER ITEMS REQUIRING SAME.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR PROPER INSTALLATION OF MATERIAL AND EQUIPMENT. PROVIDE DEMOLITION AND PATCH/REPAIR IN ALL AREAS (WHETHER SPECIFICALLY SHOWN OR NOT) TO ACCOMMODATE ALL WORK INCLUDING MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION.
11. ALL PIPE CONDUIT AND DUCT PENETRATIONS THROUGH FLOORS AND FIRE-RATED WALLS AND CEILINGS SHALL BE SEALED WITH A UL LISTED ASSEMBLY SUCH THAT FIRE RATINGS ARE MAINTAINED.
12. ALL PIPE CONDUIT AND DUCT PENETRATIONS THROUGH NON RATED FLOOR, WALLS AND CEILINGS SHALL BE SEALED TO PREVENT THE PASSAGE OF NOXIOUS GASES.
13. MAINTENANCE OF FIRE RATINGS FOR STRUCTURAL AND NON LOAD-BEARING MEMBERS AND PENETRATIONS MUST BE MAINTAINED.

BUILDING CODE DATA

FACILITY NAME: GRIGGS-WALNUT GROUND WATER PLUME BUILDING			
PROJECT DESCRIPTION: METAL PRE-ENGINEERED BUILDING. HOUSING A WATER TREATMENT STATION.			
OCCUPANCY GROUP [IBC CHAPTER 3]	OCCUPANCY		
	WATER TREATMENT BUILDING		F-1
			MODERATE HAZARD OCCUPANCY
HAZARDOUS MATERIALS			
NONE			
INCIDENTAL USE SEPARATIONS [IBC TABLE 508.2]			
NONE			
OCCUPANCY SEPARATION / FIRE RATING [IBC TABLE 508.3.3]			
NONE			
CONSTRUCTION TYPE [IBC CHAPTER 6]		TYPE III-B	
GENERAL BUILDING LIMITATIONS [IBC TABLE 503]			
MAXIMUM STORIES/HEIGHT ALLOWED			
	F-1	2 STORIES	
ACTUAL NUMBER OF STORIES/HEIGHT			
	F-1	1 STORY	
MAXIMUM AREA ALLOWED PER FLOOR			
	F-1		
ACTUAL AREA PER FLOOR			
	F-1	3,500 SF	
ACTUAL TOTAL AREA		3,500 SF	
RATIO OF ACTUAL TO ALLOWABLE [IBC 508.3.3.2]		NA	

FIRE RESISTANCE OF BUILDING ELEMENTS [IBC TABLE 601]			
REQUIRED RATINGS		UNRATED FOR CONSTRUCTION TYPE III-B	
EXTERIOR WALL FIRE RESISTANCE [IBC TABLE 602]			
ACTUAL FIRE SEPARATION DISTANCE		NA	
REQUIRED WALL RATING		NONE	
ACTUAL WALL RATING		NONE	
EXTERIOR OPENING PROTECTION [IBC TABLE 704.8]			
ACTUAL FIRE SEPARATION DISTANCE		NA	
REQUIRED OPENING PROTECTION		NONE	
ACTUAL OPENING PROTECTION		NA	
FIRE PROTECTION SYSTEMS [IBC CHAPTER 9]			
AUTOMATIC SPRINKLER SYSTEMS [IBC 903]		NONE	
FIRE EXTINGUISHERS [IBC 906.1]		3	
FIRE ALARM SYSTEM [IBC 907.2.4]		NONE	
MEANS OF EGRESS [IBC CHAPTER 10]			
OCCUPANT LOAD FACTOR [IBC TABLE 1004.1.1]			
	WATER TREATMENT BUILDING	3,500 SF (GROSS)	
ALLOWABLE TRAVEL DISTANCE [IBC TABLE 1016.1]			
	F-1		
MAXIMUM TRAVEL DISTANCE TO AN EXIT = 250 FT			
ACTUAL TRAVEL DISTANCE TO AN EXIT = 50 FT			
		EXITS REQUIRED	EXITS PROVIDED
WATER TREATMENT BUILDING		TWO	THREE (DIRECT TO EXTERIOR)

HDR

HDR Engineering, Inc.

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE
0	02/10/11	BJS	PRELIMINARY SUBMITTAL
1	02/23/11	BJS	PREFINAL SUBMITTAL
2	03/01/11	BJS	100% REVIEW SUBMITTAL

FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\A-01.dwg

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DESIGNED BY: A. THOMAS
DRAWN BY: B. SMAKA
CHECKED BY: B. FLORES
DATE: **05/24/2011**

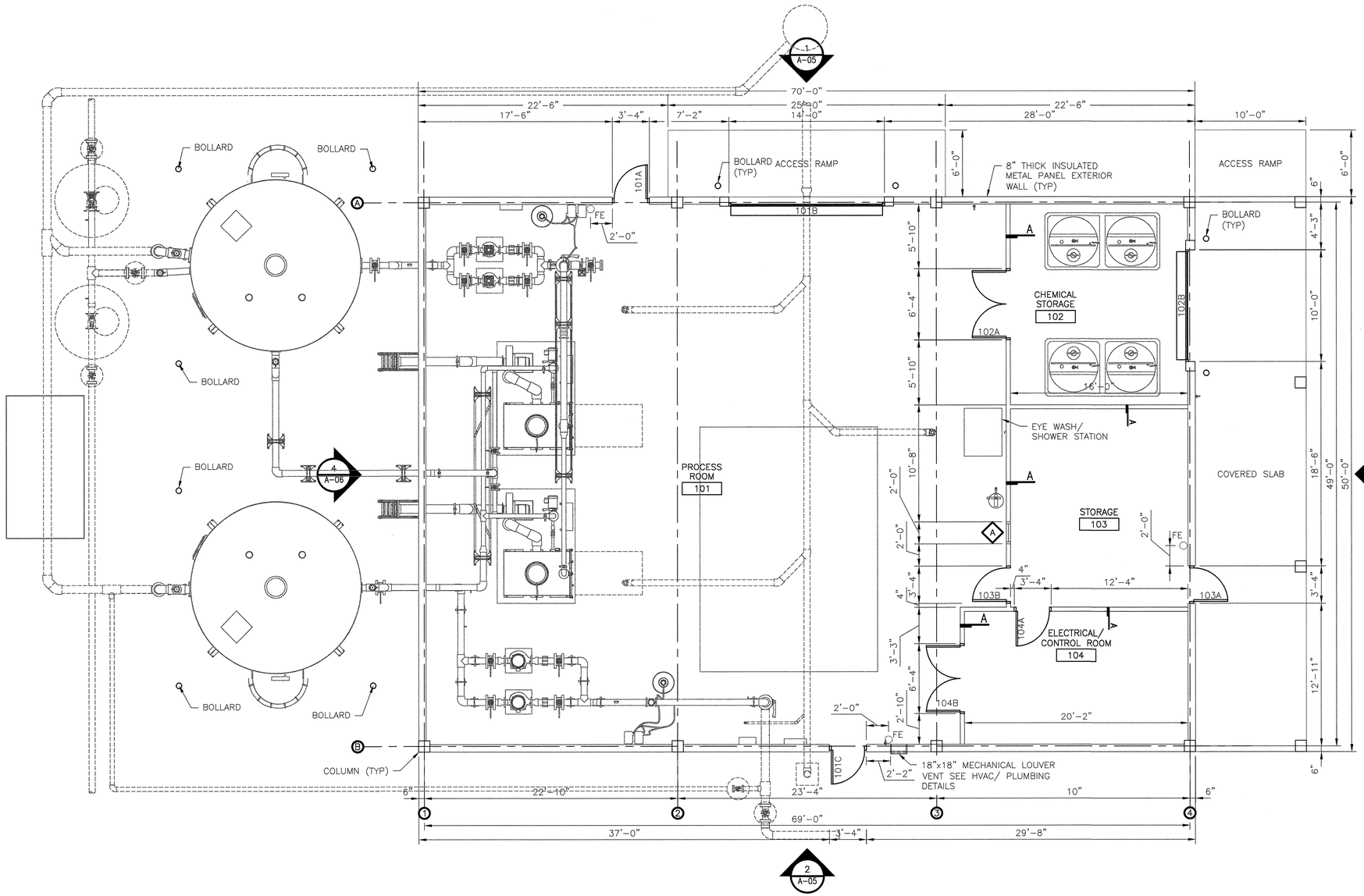
GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ARCHITECTURAL GENERAL NOTES AND BUILDING CODE DATA

STATE OF NEW MEXICO — REGISTERED ARCHITECT

JOB NO. ES09.0306

XREF:



ARCHITECTURAL FLOOR PLAN (1 / -)

3/16"=1'-0"

GENERAL NOTES:

1. UNLESS NOTED OTHERWISE, ALL ANGLES ARE 45°, 90° OR 135°.
2. LOCATION OF SLAB OPENINGS ON THIS SHEET IS FOR INFORMATION ONLY. REFER TO STRUCTURAL DRAWINGS FOR EDGE-OF-SLAB OPENING LOCATIONS AND DIMENSIONS.
3. SEE DWG. A-07 FOR DOOR AND FRAME TYPES, DOOR SCHEDULE, WINDOW FRAME TYPE AND DETAILS.

NO	DATE	BY	REVISION MADE
0	02/10/11	BJS	PRELIMINARY SUBMITTAL
1	02/23/11	BJS	PREFINAL SUBMITTAL
2	03/01/11	BJS	100% REVIEW SUBMITTAL

FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\A6_Drawings\A-02.dwg

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GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ARCHITECTURAL FLOOR PLAN

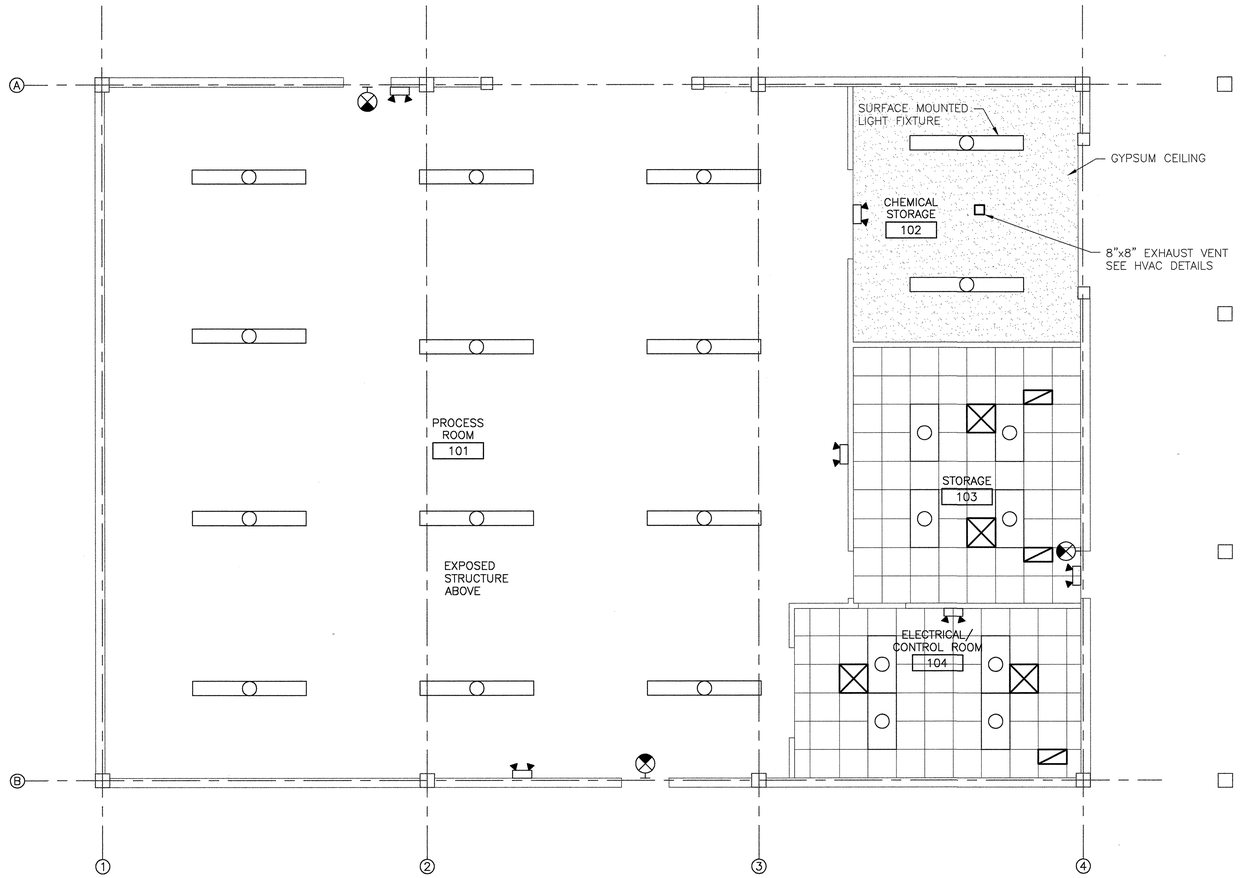
HDR Engineering, Inc.

JOB NO. ES09.0306

SHEET 6 of 58
DWG NO. A-2

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

XREF:



ARCHITECTURAL REFLECTED CEILING PLAN (1/-)

3/16"=1'-0"

NORTH

GENERAL REFLECTED CEILING NOTES:

1. REFER TO ROOM FINISH SCHEDULE FOR CEILING HEIGHTS AND MATERIAL LOCATIONS.
2. REFER TO PLUMBING/HVAC DRAWINGS (PH SERIES) FOR QUANTITY AND TYPE OF DIFFUSERS, RETURN AIR GRILLES, AND EXHAUST GRILLES. SCRIBE CEILING MATERIALS CAREFULLY FOR A TIGHT FIT.
3. REFER TO ELECTRICAL DRAWINGS (E SERIES) FOR QUANTITY AND TYPE OF LIGHTS, SPEAKERS, DETECTORS, POWER OUTLETS, ETC. SCRIBE CEILING MATERIALS CAREFULLY.
4. ACOUSTICAL TILE CEILING HEIGHTS ARE 10'-0" AFF UNLESS NOTED OTHERWISE.
5. EXPOSED STRUCTURE ABOVE ROOM 101.

REFLECTED CEILING SYMBOLS

- ACOUSTICAL TILE CEILING
- FLUORESCENT LIGHT FIXTURE 2'-0"x4'-0"
- FLUORESCENT LIGHT FIXTURE 1'-0"X8'-0"
- EXIT LIGHT
- HVAC SUPPLY DIFFUSER
- HVAC RETURN GRILLE
- EMERGENCY LIGHT
- GYPSUM BOARD CEILING

NO	DATE	BY	REVISION MADE
0	02/10/11	BJS	PRELIMINARY SUBMITTAL
1	02/23/11	BJS	PREFINAL SUBMITTAL
2	03/01/11	BJS	100% REVIEW SUBMITTAL

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GRIGGS – WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ARCHITECTURAL REFLECTED CEILING PLAN

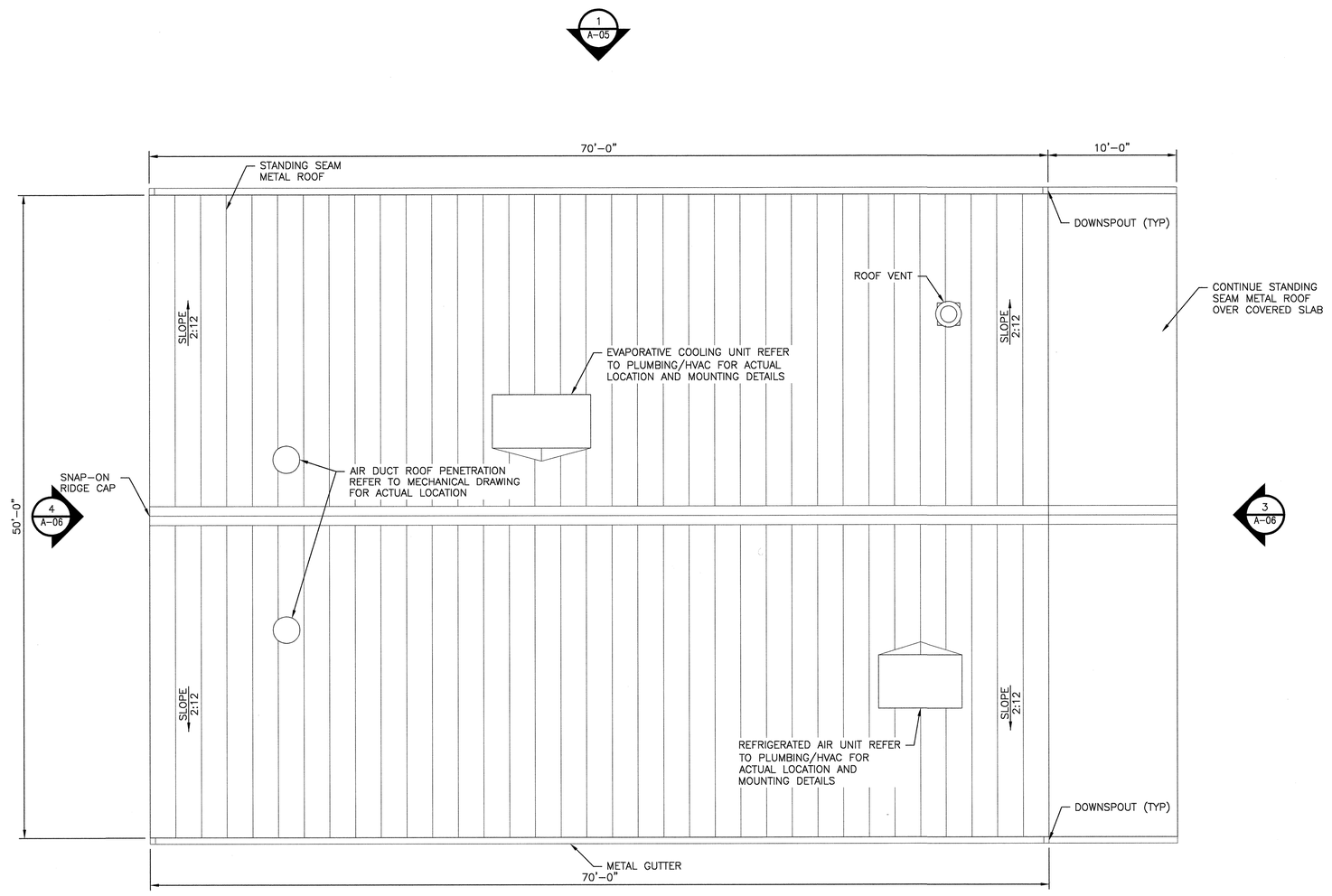
HDR Engineering, Inc.

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

JOB NO. ES09.0306

SHEET 7 of 58
DWG NO. A-3

XREF:



ROOF PLAN 1

GENERAL NOTES:

1. UNLESS NOTED OTHERWISE, ALL ANGLES ARE 45°, 90° OR 135°.
2. REFER TO STRUCTRUAL SPECIFICATIONS FOR ROOF FRAMING INFORMATION.
3. REFER TO PLUMBING/HVAC AND MECHANICAL DRAWINGS FOR LOCATIONS OF ROOF PENETRATIONS NOT SHOWN ON THIS SHEET.
4. INSTALL EXPANSION SEAMS WITHIN METAL ROOF SYSTEM PER REQUIREMENTS OF MANUFACTURER.

NO	DATE	BY	REVISION MADE
0	02/10/14	BJS	PRELIMINARY SUBMITTAL
1	02/23/14	BJS	PREFINAL SUBMITTAL
2	03/01/14	BJS	100% REVIEW SUBMITTAL

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DATE: **05/24/2011**

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ARCHITECTURAL ROOF PLAN

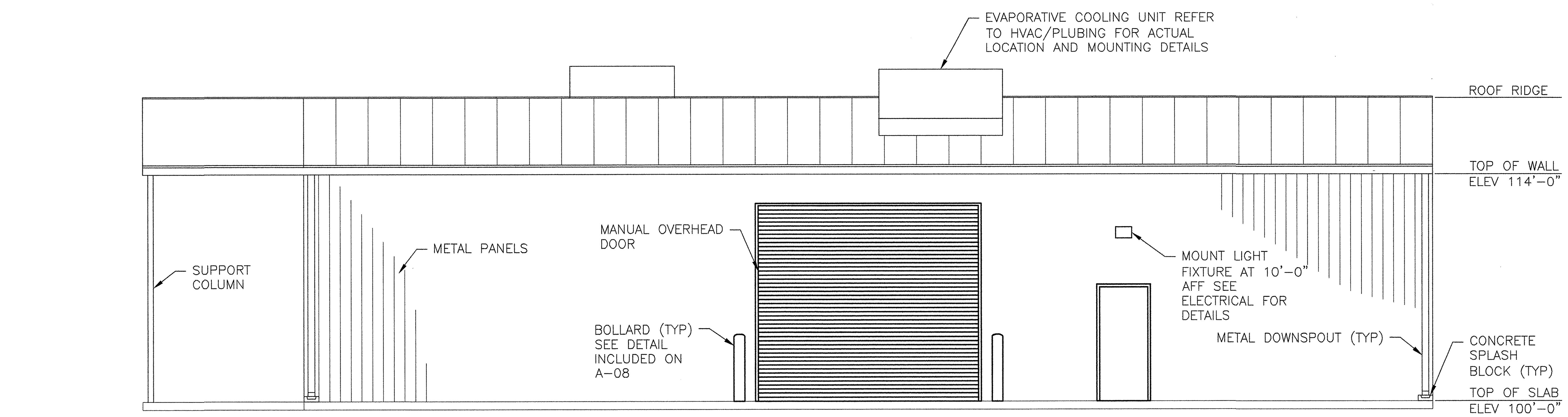
HDR Engineering, Inc.

JOB NO. ES09.0306

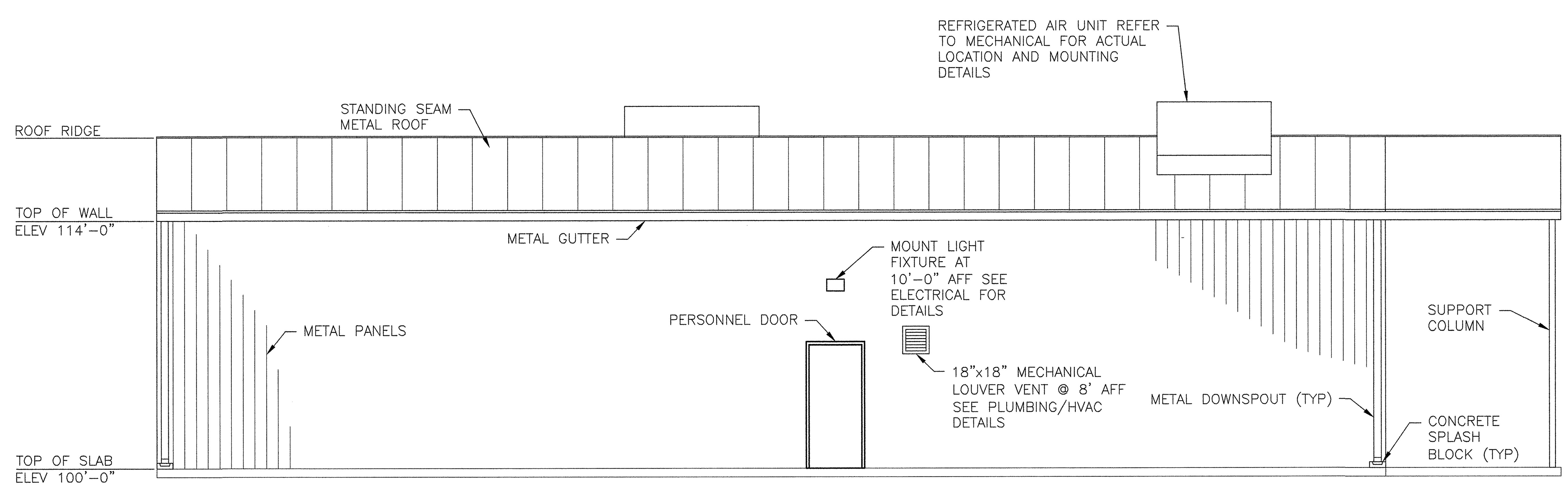
SHEET 8 of 58
DWG NO. A-4

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

XREF:



NORTH ELEVATION 1 A-02
3/16"=1'-0"



SOUTH ELEVATION 2 A-02
3/16"=1'-0"

NO	DATE	BY	REVISION MADE
0	02/10/11	BJS	PRELIMINARY SUBMITTAL
1	02/23/11	BJS	PREFINAL SUBMITTAL
2	03/01/11	BJS	100% REVIEW SUBMITTAL

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GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ARCHITECTURAL ELEVATIONS NORTH AND SOUTH

STATE OF NEW MEXICO REGISTERED ARCHITECT

HDR
HDR Engineering, Inc.

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

JOB NO. ES09.0306

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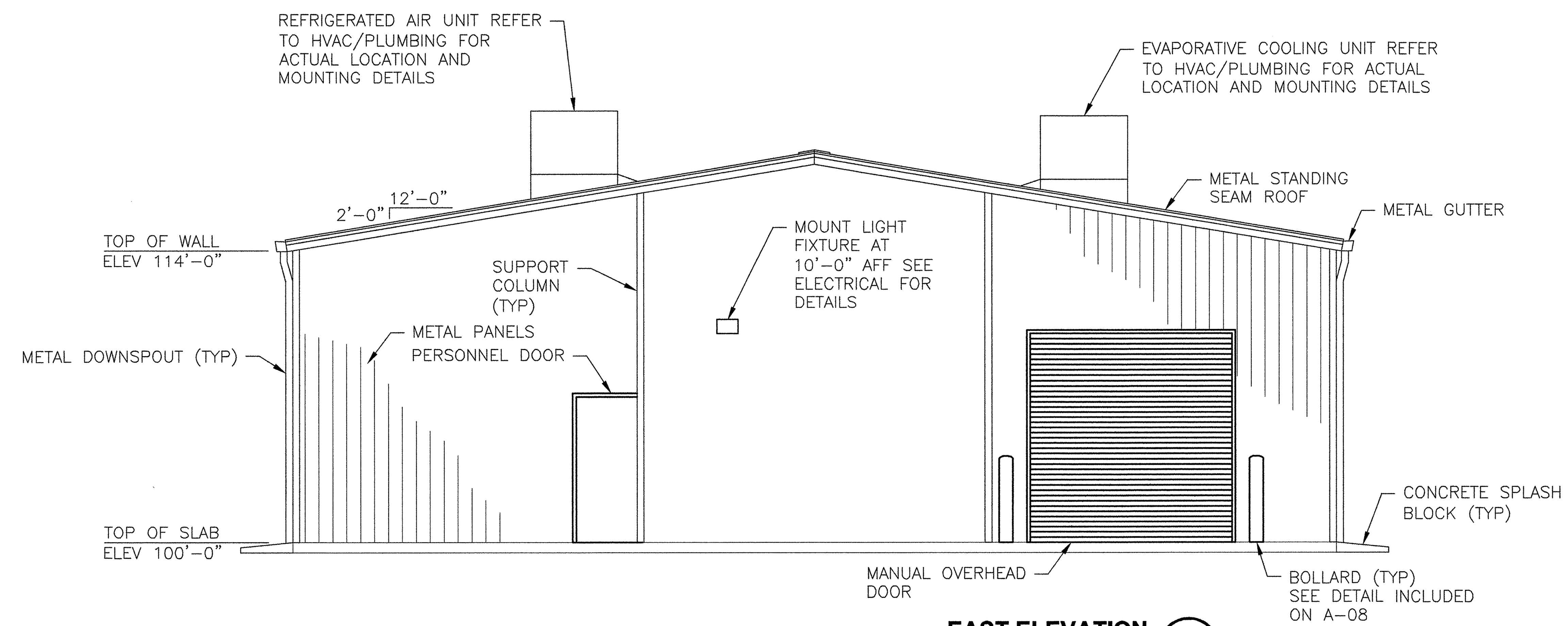
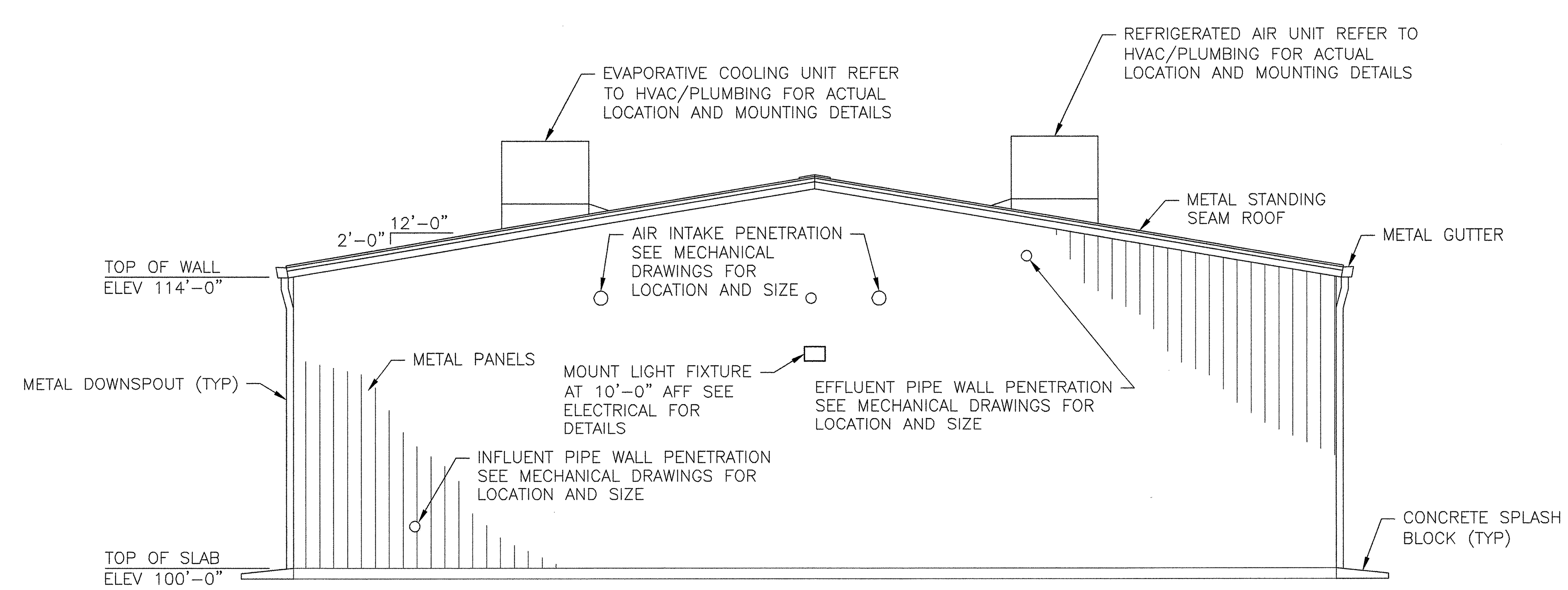


EAST ELEVATION (3 / A-02)
3/16"=1'-0"



WEST ELEVATION (4 / A-02)
3/16"=1'-0"

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NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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1	02/23/11	BJS	PREFINAL SUBMITTAL
2	03/01/11	BJS	100% REVIEW SUBMITTAL

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DATE: **05/24/2011**

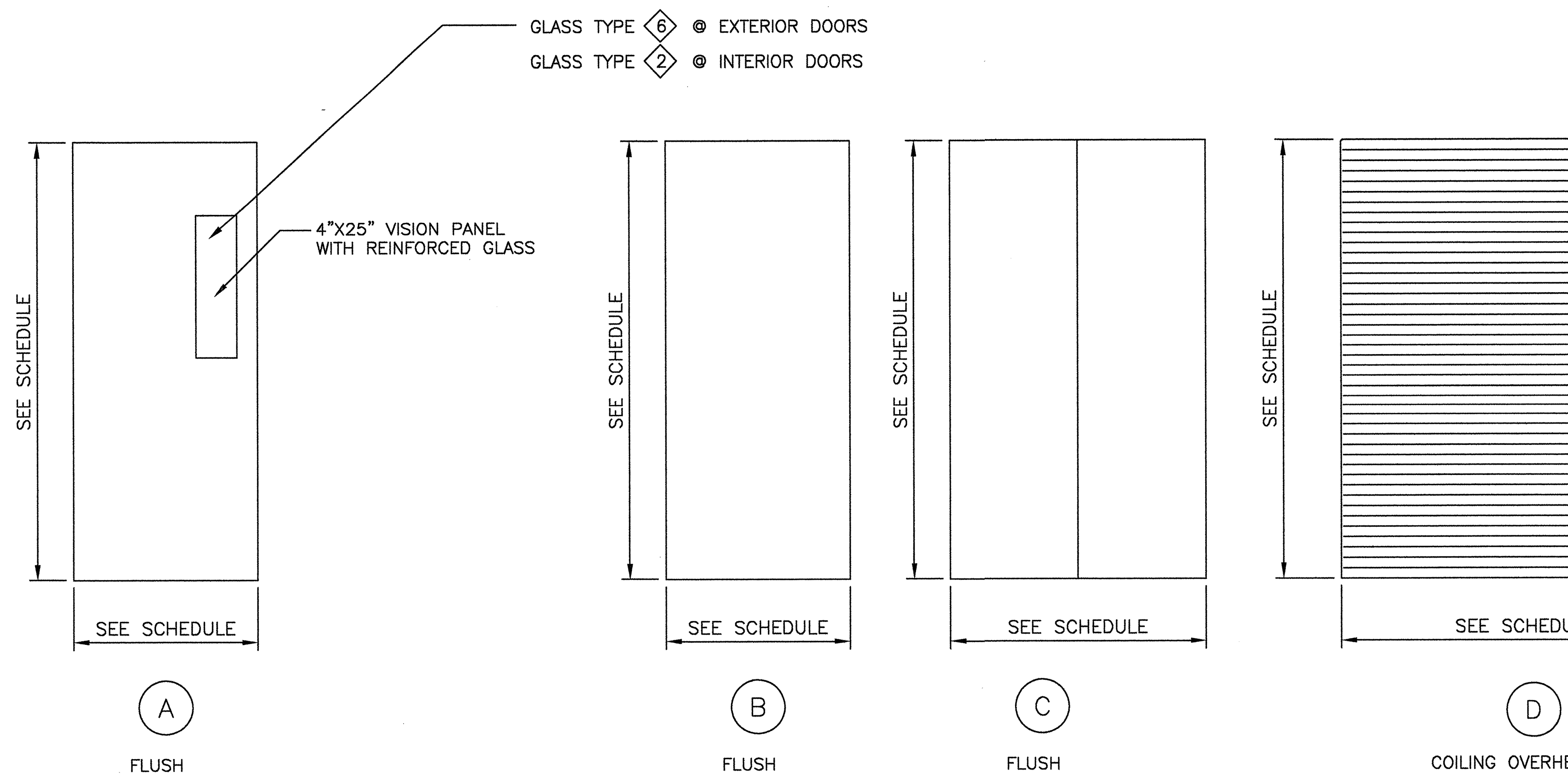
GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ARCHITECTURAL ELEVATIONS EAST AND WEST

STATE OF NEW MEXICO — REGISTERED ARCHITECT — JUDITH THOMAS

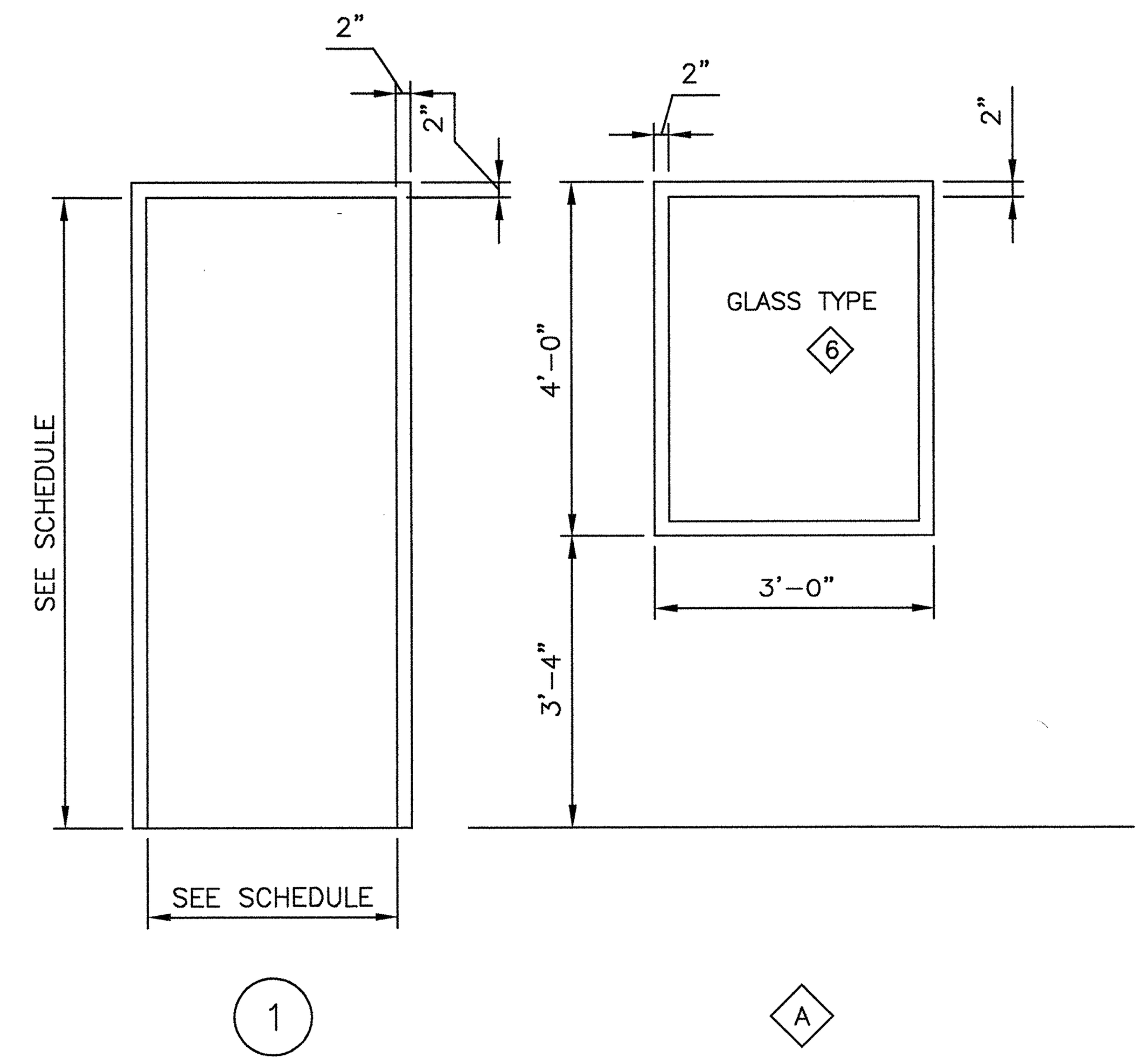
JOB NO. ES09.0306

XREF:



DOOR TYPES

NTS



DOOR AND WINDOW FRAME TYPES

NTS

DOOR & WINDOW SCHEDULE

NUMBER	ROOM NAME	HARDWARE SET	SIZE (WxH)	DOOR/ WINDOW TYPE	DOOR/ WINDOW MATERIAL	DOOR/ WINDOW FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	REMARKS
101A	PROCESS ROOM	HW-29	3'-0" X 7'-0"	A	ALUM	PAINT	1	HM	PAINT	EXTERIOR DOOR
101B	PROCESS ROOM	NA	14'-0" X 12'-0"	D	ALUM	PAINT	NA	STL	PAINT	COILING DOOR W/ INSULATING SLATS (CD-IS), HAND CHAIN (HC) OPERATION
101C	PROCESS ROOM	HW-29	3'-0" X 7'-0"	A	ALUM	PAINT	1	HM	PAINT	EXTERIOR DOOR
102A	CHEMICAL STORAGE	HW-40	6'-0" X 7'-0"	C	ALUM	PAINT	1	HM	PAINT	DOUBLE DOOR
102B	CHEMICAL STORAGE	NA	10'-0" X 10'-0"	D	ALUM	PAINT	NA	STL	PAINT	COILING DOOR W/ INSULATING SLATS (CD-IS), HAND CHAIN (HC) OPERATION
103A	STORAGE	HW-29	3'-0" X 7'-0"	A	ALUM	PAINT	1	HM	PAINT	EXTERIOR DOOR
103B	STORAGE	HW-04	3'-0" X 7'-0"	A	ALUM	PAINT	1	HM	PAINT	
104A	ELECTRICAL/ CONTROL ROOM	HW-04	3'-0" X 7'-0"	B	ALUM	PAINT	1	HM	PAINT	
104B	ELECTRICAL/ CONTROL ROOM	HW-40	6'-0" X 7'-0"	C	ALUM	PAINT	1	HM	PAINT	DOUBLE DOOR

MATERIAL AND FINISH LEGEND

HM	HOLLOW METAL
ALUM	ALUMINUM
STL	STEEL

REMARKS:

1. PROVIDE TWO COATS OF PAINT FOR EXTERIOR DOORS.

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	TYPICAL WALLS	CEILING MATERIAL	HEIGHT	FINISH
101	PROCESS ROOM	CONCRETE/SEALED	PREFABRICATED WALL PANELS	EXPOSED STRUCTURAL		
102	CHEMICAL STORAGE	CONCRETE/SEALED	METAL STUD DRYWALL	GYPSUM BOARD	10'-0"	PNTL
103	STORAGE	CONCRETE/SEALED	METAL STUD DRYWALL	SUSPENDED ACOUSTICAL (CG-1)	10'-0"	PNTL
104	ELECTRICAL/ CONTROL ROOM	CONCRETE/SEALED	METAL STUD DRYWALL	SUSPENDED ACOUSTICAL (CG-1)	10'-0"	PNTL

NOTES: PNTL – LATEX PAINT, GLOSS LEVEL 3 EGGSHELL. COLOR TO BE SELECTED BY OWNER.

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GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

WALL SECTION, DOOR/WINDOW SCHEDULE, ROOM FINISHES AND ENLARGED DETAILS

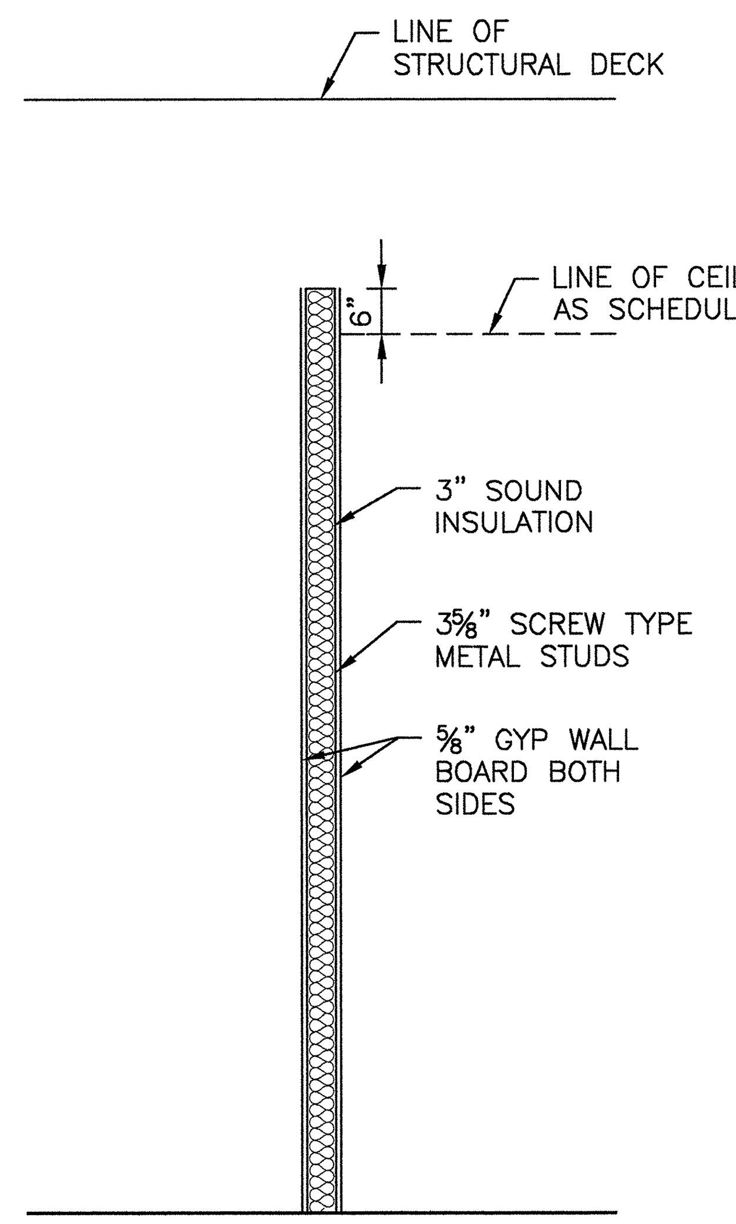
HDR
HDR Engineering, Inc.

STATE OF NEW MEXICO REGISTERED ARCHITECT JUDITH THOMAS

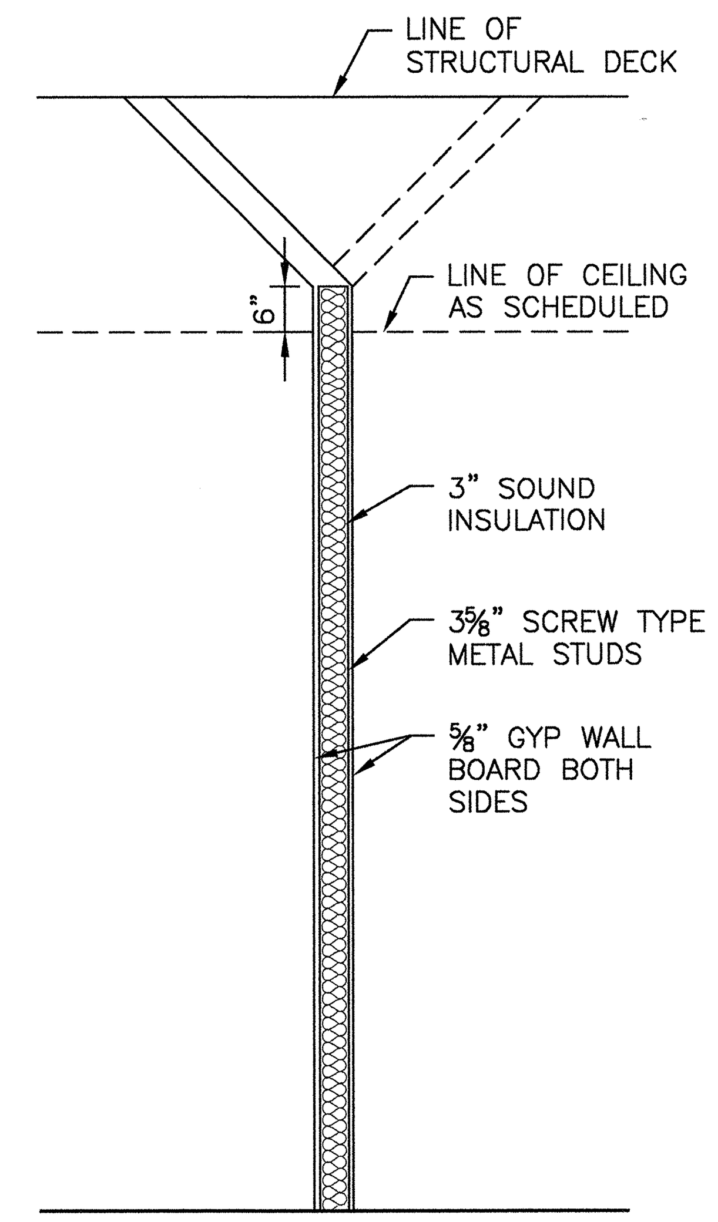
NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

JOB NO. ES09.0306

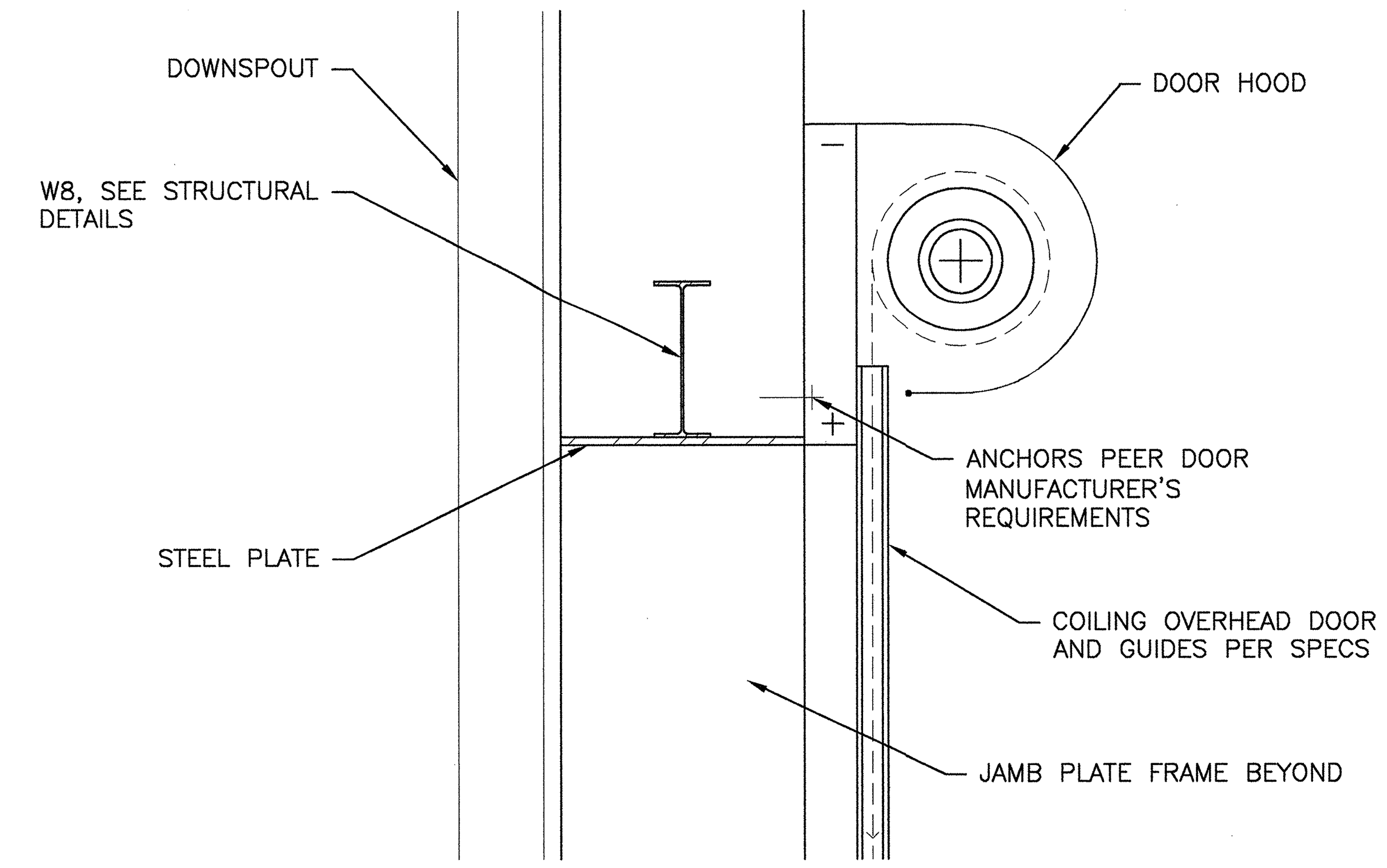
XREF:



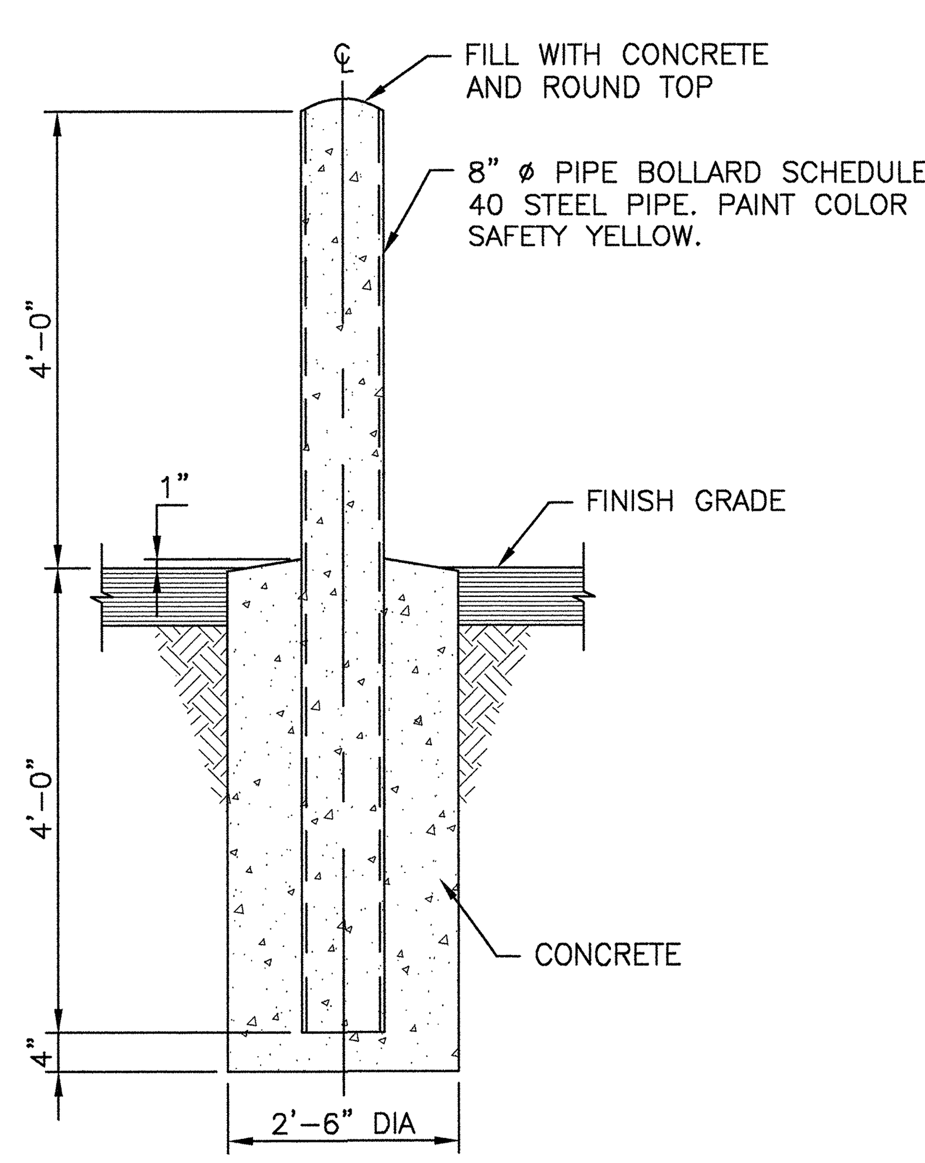
WALL TYPE A
NTS



WALL TYPE B
NTS



OVERHEAD DOOR SECTION DETAIL 1 / -
NTS



BOLLARD DETAIL 2 / A-02
NTS

HDR
HDR Engineering, Inc.

NOTICE OF EXTENDED PAYMENT PROVISION:
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1	02/23/11	BJS	PREFINAL SUBMITTAL
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DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TYPICAL DETAILS

STATE OF NEW MEXICO REGISTERED ARCHITECT — JUDITH THOMAS NO. 003455

JOB NO. ES09.0306

XREF:

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT CONSTRUCTION PLANS, SPECIFICATIONS, IN THAT ORDER OF PRECEDENCE AT THE TIME OF CONSTRUCTION BID.
2. THE CONTRACTOR SHALL ASSUME THE SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
3. NO MODIFICATIONS TO THESE PLANS SHALL BE MADE WITHOUT THE WRITTEN CONSENT OF THE OWNER, ENGINEER AND ALL APPROVAL SIGNATORIES. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION METHODS OR TECHNIQUES OR FOR THE PROSECUTION OF THE WORK AS SHOWN ON THESE PLANS. THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS OR OTHER PERSONS PERFORMING ANY WORK, AS SHOWN IN THE PROJECT CONTRACT DOCUMENTS.
4. THE ENGINEER HAS UNDERTAKEN FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES OR PIPELINES. PRIOR TO CONSTRUCTION, EXISTING UTILITY LINE LOCATIONS SHALL BE VERIFIED BY THE APPROPRIATE UTILITY COMPANY. THE CONTRACTOR SHALL REQUEST "NEW MEXICO ONE CALL" SERVICE (5) FIVE WORKING DAYS PRIOR TO COMMENCEMENT OF THE WORK WITHIN PUBLIC ROW IN ACCORDANCE WITH STATE LAW. THE NEW MEXICO ONE CALL NUMBER IS 1-800-321-2537. THE CONTRACTOR SHALL EMPLOY STAFF TO PERFORM ALL UTILITY LOCATE TASKS DURING CONSTRUCTION WITHIN THE OWNER SITE PROPERTY. ALL COSTS AND COORDINATION EFFORTS ASSOCIATED WITH REPAIRS FOR ANY DAMAGE OCCURRING TO EXISTING UTILITIES AS A RESULT OF ACTIVITIES BEING PERFORMED BY THE CONTRACTOR, SHALL BE PROVIDED BY THE CONTRACTOR, WITH NO ADDITIONAL PAYMENT TO BE MADE BY OWNER.
5. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.
6. IF ANY ARCHAEOLOGICAL REMAINS OR ARTIFACTS ARE FOUND DURING CONSTRUCTION WORK IN THE VICINITY OF THE FINDING SHALL CEASE AND THE OFFICE OF CULTURAL AFFAIRS HISTORIC PRESERVATION DIVISION SHALL BE NOTIFIED IMMEDIATELY. (505.827.6320)
7. IF ANY UNMARKED HUMAN REMAINS ARE FOUND DURING CONSTRUCTION WORK IN THE VICINITY OF THE FINDING SHALL CEASE AND THE OFFICE OF THE MEDICAL INVESTIGATOR AND THE STATE POLICE SHALL BE NOTIFIED IMMEDIATELY.
8. UNLESS OTHERWISE PROVIDED AS PART OF THE CONSTRUCTION PLANS, A COMPLETE TRAFFIC CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR WHEN ANY PORTION OF THE WORK IS IN THE PUBLIC RIGHT-OF-WAY. ALL CONSTRUCTION SIGNING, BARRICADING AND CHANNELIZATION SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (MUTCD), LATEST EDITION. THE PLAN SHALL BE SUBMITTED TO THE OWNER DEPARTMENT OF PUBLIC WORKS CONSTRUCTION MANAGER FOR APPROVAL AT LEAST 7 DAYS PRIOR TO THE DESIRED START OF CONSTRUCTION. THE CONTRACTOR SHALL NOT IMPLEMENT THE TRAFFIC CONTROL PLAN UNTIL APPROVAL OF THE PLAN HAS BEEN RECEIVED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONSTRUCTION SIGNS, BARRICADES, ETC. UNTIL COMPLETION OF CONTRACT AND, SHALL HAVE PERSONAL AVAILABLE AT ALL TIMES, UNTIL THE PROJECT IS COMPLETE, TO REPAIR, REPLACE SIGNS, BARRICADES, ETC. NO ADDITIONAL PAYMENT WILL BY MADE BY OWNER.
10. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), U.S. DEPARTMENT OF TRANSPORTATION, LATEST EDITION. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.
11. THE CONTRACTOR SHALL DESIGNATE AT LEAST ONE EMERGENCY CONTACT PERSON, AND SHALL PROVIDE TELEPHONE NUMBERS WHERE THIS PERSON CAN BE CONTACTED AT ANY TIME. THIS INFORMATION SHALL BE PROVIDED TO THE OWNER AND THE ENGINEER.
12. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL JURISDICTIONAL AUTHORITIES PRIOR TO START OF CONSTRUCTION, AND SHALL BE AVAILABLE FOR REVIEW UPON REQUEST BY OWNER.
13. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY, HEALTH, AND ENVIRONMENTAL PROTECTION.
14. CONTRACTOR WILL NOTIFY THE CITY'S PROJECT MANAGER AT (575) 528-3548 A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF WORK.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ACTIVITIES ASSOCIATED WITH THE PROTECTION, PRESERVATION, AND MAINTENANCE OF EXISTING FACILITIES NOT TO BE DEMOLISHED, UTILITIES, FENCES, AND ADJACENT STRUCTURES DURING THE CONSTRUCTION PHASE OF THIS PROJECT.
16. ANY WORK PERFORMED IN A DRAINAGE CHANNEL, OR FLOODPLAIN MUST BE PROTECTED BY MEANS OF TEMPORARY PONDING OR DIVERSION OF STORM FLOWS UNTIL SUCH WORK HAS BEEN ACCEPTED BY THE CITY.
17. EXISTING SITE IMPROVEMENTS WHICH ARE DAMAGED OR DISPLACED BY THE CONTRACTOR SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE. THE WORK SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION OF THE REPAIRS. REPAIRS MUST BE ACCEPTED BY THE OWNER PRIOR TO FINAL PAYMENT.
18. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING GEOMETRIC CONDITIONS WITHIN THE LIMITS OF THE PROPOSED CONSTRUCTION PRIOR TO SUBMITTAL OF REQUIRED SHOP DRAWINGS. ANY DEVIATIONS FROM THE INFORMATION PROVIDED HEREIN, SHOULD BE REPORTED TO THE ENGINEER AS SOON AS POSSIBLE.
19. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE LOCAL DUST ORDINANCE DURING ALL ACTIVITIES ASSOCIATED WITH THIS CONSTRUCTION.
20. THE CONTRACTOR SHALL ONLY UTILIZE THE DESIGNATED STAGING AREAS FOR STORAGE OF ALL EQUIPMENT AND MATERIALS. THE OWNER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR CONTRACTOR'S EQUIPMENT AND MATERIAL IN THE STAGING AREA. SECURITY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IF NO STAGING AREA IS DESIGNATED ON THESE PLANS, AN OFF-SITE STAGING AREA SHALL BE PROVIDED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, OR THE CONTRACTOR MAY NEGOTIATE WITH THE OWNER TO USE AN ON-SITE AREA.
21. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT-OF-WAY.

GENERAL CONSTRUCTION NOTES - (CONT.)

22. FACILITIES WHICH ARE NOT SPECIFICALLY LOCATED WITH ACTUAL VERTICAL AND HORIZONTAL CONTROLS ON THE CONSTRUCTION DOCUMENTS, ARE SHOWN APPROXIMATE AND IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION PROVIDED BY VARIOUS OWNERS OF THE FACILITIES, AND SUPPLEMENTED BY VISUAL SURFACE INFORMATION WHERE APPROPRIATE. ACCURACY, LOCATION, AND COMPLETENESS OF THIS INFORMATION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHOULD BE VERIFIED, BY ANY MEANS NECESSARY, PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IMMEDIATELY.
23. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AT HIS EXPENSE ANY AND ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.
24. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SURVEY MARKERS/BENCHMARKS, AND ALL COSTS ASSOCIATED WITH REESTABLISHING ANY SUCH MONUMENTS. ALL MONUMENTS SHALL BE REESTABLISHED BY A LICENSED SURVEYOR.
25. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS FOR CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING PUBLIC STREETS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS AND TAKE WHATEVER MEASURES ARE NECESSARY TO ENSURE THAT ALL ROADS ARE MAINTAINED IN A CLEAN, MUD AND DUST-FREE CONDITION AT ALL TIMES.
26. THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE CONSTRUCTION LIMITS AND/OR PUBLIC RIGHTS-OF-WAY TO PRESERVE EXISTING VEGETATION, LANDSCAPING, AND PRIVATE PROPERTY. APPROVAL OF THESE PLANS DOES NOT GIVE OR IMPLY ANY PERMISSION TO TRESPASS OR WORK ON PRIVATE PROPERTY. PERMISSION MUST BE GRANTED IN WRITING BY THE OWNER OF THAT PROPERTY.
27. ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE CITY AND/OR ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THE SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
28. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO KEEP THE JOB SITE FREE FROM TRASH ON A DAILY BASIS, AND ALL MATERIALS WILL BE NEATLY ORGANIZED. TRASH AND/OR NON-USED MATERIALS SHALL NOT BE BURIED ON-SITE.
29. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES SO AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
30. CONTRACTOR/DEVELOPER SHALL PROVIDE CONSTRUCTION STAKING UTILIZING APPROVED CONSTRUCTION PLANS, THE APPROPRIATE RIGHT-OF-WAY MAPS, RECORDED PLATS, AND OWNER STANDARD DETAILS. EACH REVISION TO THE PLANS SHALL BE RECORDED IN THE PLAN REVISION BLOCK.
31. THE CONTRACTOR SHALL MAINTAIN AN UP TO DATE SET OF AS-BUILT PLANS FOR THE PROJECT. THE FINAL AS-BUILT PLANS, REFLECTING ANY AND ALL CHANGES TO THE ORIGINAL PLAN, SHALL BE SUBMITTED TO THE OWNER DEPARTMENT OF PUBLIC WORKS PRIOR TO FINAL PAYMENT.
32. THE CONTRACTOR IS RESPONSIBLE FOR THE TESTING OF THE SYSTEM PRIOR TO ACCEPTANCE BY THE CITY OF LAS CRUCES. TESTING SHALL BE PERFORMED TO DEMONSTRATE THE FUNCTIONALITY OF THE SYSTEM. THE COST OF THE TESTING SHALL BE INCIDENTAL TO THE CONTRACT.
33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING, IN ADVANCE OF HIS/HER CONSTRUCTION OPERATIONS, IF OVERHEAD UTILITY LINES, SUPPORT STRUCTURES, POLES, GUYS, ETC., ARE AN OBSTRUCTION TO CONSTRUCTION OPERATIONS. IF ANY OBSTRUCTION IS EVIDENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE APPROPRIATE UTILITY OWNER TO REMOVE OR SUPPORT THE UTILITY OBSTRUCTION. ANY COSTS ASSOCIATED WITH THIS EFFORT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
34. CONTRACTOR SHALL MAINTAIN EXISTING UTILITIES INCLUDING TRACER TAPE DURING CONSTRUCTION. REMOVE AND REPLACE ANY DAMAGED PORTIONS. COSTS TO BE INCIDENTAL CONSTRUCTION.
35. CAPPING AND ABANDONING OF EXISTING WATER LINES TO BE INCIDENTAL TO THE INSTALLATION OF NEW WATER LINES.
36. ALL FITTINGS PROVIDED AS PART OF WATER LINE INSTALLATION SHALL INCLUDE MECHANICAL JOINT RESTRAINTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
37. WATER FOR CONSTRUCTION IS AVAILABLE FROM THE CITY OF LAS CRUCES AT STANDARD INDUSTRIAL RATES TO THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL PIPING, CONNECTIONS, AND METER NECESSARY TO GET WATER FROM A CONNECTION. CONTRACTOR TO COORDINATE WITH ENGINEER AND OWNER TO DETERMINE LOCATIONS OF TAP.
38. PIPE DEFLECTION TO BE NO MORE THAN MANUFACTURERS RECOMMENDED SPECIFICATIONS.
39. WATER OUTAGES ARE NOT ANTICIPATED FOR THIS PROJECT. ANY OUTAGES MUST BE PRE APPROVED AND SCHEDULED WITH THE CITY OF LAS CRUCES AND THE PROJECT MANAGER.
40. CONTRACTOR TO PROVIDE FITTINGS AS NECESSARY TO MAINTAIN ALIGNMENT TO THE BEST EXTENT POSSIBLE.
41. RAISING AND LOWERING OF VALVE BOXES AND MANHOLE RIMS WITHIN PAVEMENT REPLACEMENT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
42. ALL PERMANENT PAVEMENT MARKING AND TRAFFIC SIGNING SHALL BE FURNISHED BY THE CONTRACTOR PER PLAN, OR AS DIRECTED BY CITY STANDARDS.
43. ALL SAWCUT PAVEMENT SHALL HAVE A UNIFORM EDGE AND BE SPRAYED WITH A TACK COAT.
44. WHEN ABUTTING NEW CURB AND GUTTER TO EXISTING PAVEMENT, A 1' WIDE SECTION OF EXISTING PAVEMENT ADJACENT TO THE CURB AND GUTTER SHALL BE SAWCUT, REMOVED, AND REPLACED AS PER THE STANDARD SPECIFICATIONS.
45. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO EXISTING PAVEMENTS, PAVEMENT MARKINGS, CURB & GUTTER, DRIVE PADS, WHEELCHAIR RAMPS, AND SIDEWALK DURING CONSTRUCTION, APART FROM THOSE SECTIONS INDICATED FOR REMOVAL ON THE PLANS AND SHALL REPAIR OR REPLACE PER CITY OF LAS CRUCES STANDARDS, AT HIS OWN EXPENSE.
46. THE CONTRACTOR SHALL PROVIDE FOR THE SAFE DISPOSAL OF ALL WASTE MATERIALS GENERATED DURING THE CONSTRUCTION OF THE PROJECT IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE CONSTRUCTION OBSERVER. THE WASTE SITE SHALL BE A PERMITTED SOLID WASTE DISPOSAL SITE AND ALL COSTS INCURRED IN OBTAINING ACCESS TO THE SITE AND HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
47. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPORTING AND CLEANUP OF SPILLS WHICH ARE ASSOCIATED WITH THIS PROJECT'S CONSTRUCTION AND SHALL REPORT AND RESPOND TO SPILLS OF HAZARDOUS MATERIALS SUCH AS GASOLINE, DIESEL, MOTOR OILS, SOLVENTS, CHEMICALS, SANITARY SEWER WASTE, TOXIC AND CORROSIVE SUBSTANCES, AND ANY OTHER MATERIALS WHICH MAY BE CONSIDERED A THREAT TO THE PUBLIC HEALTH OR THE ENVIRONMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPORTING OF ANY PAST SPILLS WHICH WERE ENCOUNTERED DURING THIS PROJECT'S CONSTRUCTION AND OF ANY CURRENT SPILLS NOT ASSOCIATED WITH THIS PROJECT'S CONSTRUCTION. ALL REPORTS SHALL BE MADE IMMEDIATELY TO THE NEW MEXICO ENVIRONMENTAL DEPARTMENTS EMERGENCY RESPONSE TEAM AT (505) 827-9329.

SOILS

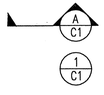
1. UNLESS OTHERWISE SPECIFIED SUBGRADE SOILS AND STRUCTURAL FILL MATERIALS SHALL BE COMPACTED TO THE FOLLOWING PERCENTAGES OF THE ASTM D-1557 MAXIMUM DENSITY.

MATERIALS	PERCENT (%) COMPACTION
STRUCTURAL FILL IN THE BUILDING AREA	95
SUB BASE FOR SLAB SUPPORT	95
MISCELLANEOUS BACKFILL BELOW STRUCTURAL FILL OR ROAD PAVEMENT	95
MISCELLANEOUS BACKFILL BELOW UNPAVED, NON-BUILDING AREAS	90
ROAD PAVEMENT SUB GRADE	95
SIDEWALK SUB GRADE	95
CURB AND GUTTER SUBGRADE	95

EROSION CONTROL/ENVIRONMENTAL PROTECTION/STORM WATER POLLUTION PREVENTION PLAN

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULFILLING ALL NECESSARY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS INCLUDING, BUT NOT LIMITED TO, OBTAINING AN NPDES PERMIT PRIOR TO CONSTRUCTION, FILLING OUT THE NOTICE OF INTENT (NOI) APPLICATION, AND FILLING OUT THE NOTICE OF TERMINATION (NOT) APPLICATION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE IMPLEMENTATION OF AND INSPECTION REPORTS FOR THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL SUBMIT THE SWPPP WITH THE PROPOSED CONSTRUCTION STAGING AREA AND TEMPORARY SANITARY FACILITIES CLEARLY SHOWN TO THE CITY OF LAS CRUCES ENVIRONMENTAL DEPARTMENT FOR APPROVAL AND REINFORCEMENT. ANY CHECK DAMS, SILT FENCES, OR OTHER BEST MANAGEMENT PRACTICES (BMPS) THAT ARE REQUIRED IN THE APPROVED SWPPP SHALL BE INCLUDED IN AND ARE INCIDENTAL TO THE SWPPP BID AMOUNT.
2. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE APPROVED SWPPP ON-SITE AT ALL TIMES, AND SHALL COMPLY WITH THE REQUIREMENTS INDICATED ON THAT PLAN.
3. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST AND EROSION CONTROL REGULATIONS. THE CONTRACTOR SHALL PREPARE AND OBTAIN ANY NECESSARY DUST OR EROSION CONTROL PERMITS FROM THE REGULATORY AGENCIES.
4. THE CONTRACTOR SHALL EITHER PROMPTLY REMOVE ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY OR INSTALL BMPS IDENTIFIED IN THE APPROVED SWPPP TO PREVENT DISCHARGE OF EXCAVATED MATERIAL WITHIN THE PUBLIC RIGHT-OF-WAY DURING A RAIN OR WIND EVENT.
5. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO OTHER PROPERTY BY INSTALLING BMPS IDENTIFIED IN THE APPROVED SWPPP AT THE PROPERTY LINES.
6. THE CONTRACTOR SHALL MITIGATE EROSION OF TEMPORARY OR PERMANENT DIRT SWALES BY INSTALLING BMPS IDENTIFIED IN THE APPROVED SWPPP IN THE SWALES PERPENDICULAR TO THE DIRECTION OF FLOW, AND AT INTERVALS AS SPECIFIED IN THE SWPPP.
7. CONSTRUCTION AREAS SHALL BE WATERED FOR DUST CONTROL IN COMPLIANCE WITH GOVERNMENT ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND SUPPLYING WATER AS REQUIRED. WATERING, AS REQUIRED FOR CONSTRUCTION AND DUST CONTROL, SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO MEASUREMENT OR PAYMENT SHALL BE MADE THEREFOR.
8. ANY AREAS DISTURBED BY CONSTRUCTION AND NOT COVERED BY LANDSCAPING OR AN IMPERVIOUS SURFACE SHALL BE REVEGETATED WITH NATIVE GRASS SEEDING. WHEN CONSTRUCTION ACTIVITIES CEASE AND EARTH DISTURBING ACTIVITIES WILL NOT RESUME WITHIN 21 DAYS, STABILIZATION MEASURES MUST BE INITIATED. UNLESS INDICATED OTHERWISE ON THESE PLANS OR ON THE LANDSCAPING PLAN, NATIVE GRASS SEEDING SHALL BE CLASS A SEEDING PER THE CITY OF LAS CRUCES STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
9. ALL WASTE PRODUCTS FROM THE CONSTRUCTION SITE, INCLUDING ITEMS DESIGNATED FOR REMOVAL, CONSTRUCTION WASTE, CONSTRUCTION EQUIPMENT WASTE PRODUCTS (OIL, GAS, TIRES, ETC.) GARBAGE, GRUBBING, EXCESS CUT MATERIAL, VEGETATIVE DEBRIS, ETC. SHALL BE APPROPRIATELY DISPOSED OF OFF-SITE AT NO ADDITIONAL COST TO THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN PERMITS REQUIRED TO HAUL OR DISPOSE OF WASTE PRODUCTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE WASTE DISPOSAL SITE COMPLIES WITH GOVERNMENT REGULATIONS REGARDING THE ENVIRONMENT, ENDANGERED SPECIES, AND ARCHAEOLOGICAL RESOURCES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANUP AND REPORTING OF SPILLS OF HAZARDOUS MATERIALS ASSOCIATED WITH THE CONSTRUCTION SITE. HAZARDOUS MATERIALS INCLUDE GASOLINE, DIESEL FUEL, MOTOR OIL, SOLVENTS, CHEMICALS, PAINTS, ETC. WHICH MAY BE A THREAT TO THE ENVIRONMENT. THE CONTRACTOR SHALL REPORT THE DISCOVERY OF PAST OR PRESENT SPILLS TO THE NEW MEXICO ENVIRONMENT DEPARTMENT EMERGENCY RESPONSE TEAM AT 505-827-9329.
11. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS CONCERNING SURFACE AND UNDERGROUND WATER. CONTACT WITH SURFACE WATER BY CONSTRUCTION EQUIPMENT AND PERSONNEL SHALL BE MINIMIZED. EQUIPMENT MAINTENANCE AND REFUELING OPERATIONS SHALL BE PERFORMED IN AN ENVIRONMENTALLY SAFE MANNER IN COMPLIANCE WITH GOVERNMENT REGULATIONS.
12. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS CONCERNING CONSTRUCTION NOISE AND HOURS OF OPERATION.
13. WHERE STORM INLETS ARE SUSCEPTIBLE TO INFLOW OF SILT OR DEBRIS FROM CONSTRUCTION ACTIVITIES, PROTECTION SHALL BE PROVIDED ON THEIR UPSTREAM SIDE UTILIZING BMPS IDENTIFIED IN THE APPROVED SWPPP.
14. THE CONTRACTOR SHALL IMPLEMENT THE APPROVED SWPPP AND ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.

GENERAL DRAWING SYMBOLS



* IF SECTION, OR DETAIL IS DRAWN ON THE SAME SHEET THAT IT IS TAKEN FROM, THE SHEET NUMBER IS REPLACED WITH A HYPHEN.

-IF THE SECTION IS REFERENCED ON MULTIPLE SHEETS, THE SHEET NUMBER SHOWN INDICATES THE FIRST SHEET THE SECTION IS TAKEN FROM.

ABBREVIATIONS

PROCESS FLOW STREAM

AW	AIR WASH
BW	BACKWASH WATER
CW	COLD POTABLE WATER
D	DRAIN
EFF	EFFLUENT
FC	FERRIC CHLORIDE
FM	FORCE MAIN
FP	FIRE PROTECTION
FW	FINISHED WATER
G	NATURAL GAS
HC	HOSE CONNECTION
PC	POLYMER COAGULANT
PP	POTASSIUM PERMANGANATE
RW	RAW WATER
SAS	SANITARY SEWER
SH	SODIUM HYPOCHLORITE

PIPE MATERIALS

ACP	ASBESTOS CEMENT PIPE
BSP	BLACK STEEL PIPE
CI	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CMP	CORRUGATED METAL PIPE
CPP	CONCRETE PRESSURE PIPE
CS	CARBON STEEL
CU	COPPER WIRE
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
FRP	FIBERGLASS REINFORCED PLASTIC
GALV	GALVANIZED STEEL PIPE
MNL	MONEL PIPE
PIP	POLYETHYLENE PIPE
PVC	POLYVINYL CHORIDE PIPE
RCCP	REINFORCED CONCRETE CYLINDER PIPE
RCP	REINFORCED CONCRETE PIPE
SST	STAINLESS STEEL PIPE
TPRP	THERMOPLASTIC REINFORCED PIPE
TYG	TYGON TUBING
VCP	VITRIFIED CLAY PIPE

CIVIL DESCRIPTIONS

EOP	EDGE OF PAVEMENT
RP	RADIUS POINT
MH	MANHOLE
TOC	TOP OF CONCRETE
CON PAD	CONCRETE PAD
CEN. COL	CENTER OF COLUMN
BC	BUILDING CORNER

SECTION MATERIALS

SYMBOL	DESCRIPTION
	DEMOLITION WORK
	CONCRETE CAST IN PLACE
	CONCRETE BLOCK
	GROUT
	BASE COURSE
	GRAVEL
	CHECKERED PLATE
	BAR GRATING
	CENTERLINE
	STEEL UNLESS NOTED OTHERWISE
	EARTH FILL
	UNDISTURBED EARTH
	ROCK OR SHALE

MISCELANEOUS SYMBOLS

SYMBOL	DESCRIPTION
	SURFACE ELEVATION
	WOOD FENCE
BH-1	CONTROL POINT
B-7	BORING
	BUILDING OR STRUCTURE FOOTPRINT
4" OAK, 10" PINE	TREE, SIZE & TYPE
	TREE TO BE REMOVED
	EXISTING EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)
	PROPOSED EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)

SITEWORK SYMBOLS LEGEND

CHAINLINK FENCE	NEW BASE COURSE AREA
EXISTING WIRE FENCE	NEW PAVEMENT SURFACE AREA
EXISTING PROPERTY BOUNDARY	EXISTING EDGE OF PAVEMENT
EXISTING EASEMENT	FINISHED GRADE ELEVATION
NEW EASEMENT	FINISHED GRADE AT FLOWLINE
NEW INDEX CONTOUR	FINISHED GRADE TOP OF WALL
NEW INTERMEDIATE CONTOUR	FINISHED GRADE OF COLUMN PAD
EXISTING INDEX CONTOUR	FINISHED GRADE TOP OF SIDEWALK
EXISTING INTERMEDIATE CONTOUR	NEW DRAINAGE FLOW PATH
EXISTING POINT	

UTILITY SYMBOLS LEGEND

EXISTING WATERLINE	EXISTING GASLINE
EXISTING WATER METER	EXISTING GAS METER
EXISTING WATER VALVE	UNDERGROUND TELEPHONE
WATER LINE	OVERHEAD TELEPHONE
FIRE HYDRANT	UNDERGROUND CABLE TV
OVERHEAD ELEC.	OVERHEAD CABLE TV
UNDERGROUND ELEC.	EXISTING SEWER LINE
POWER POLE W/ GUY	
NEW SANITARY SEWER LINE	
NEW SANITARY SEWER MANHOLE	
EXISTING SANITARY SEWER MANHOLE	

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\2009-0306_Griggs-Walnut\VK_Drawings\C-01-20100231-Civil_Legend.dwg

Bohannan ▲ Huston
▲ ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES ▲
425 S. Telshor Blvd. Suite C-103 (575) 532-8670
Las Cruces, NM 88011-8237

DESIGNED BY: MRT
DRAWN BY: LLM
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

CIVIL LEGEND AND GENERAL NOTES

ROBERT P. RICHARDSON — NEW MEXICO — 10745 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 13 of 58
DWG NO. C-1

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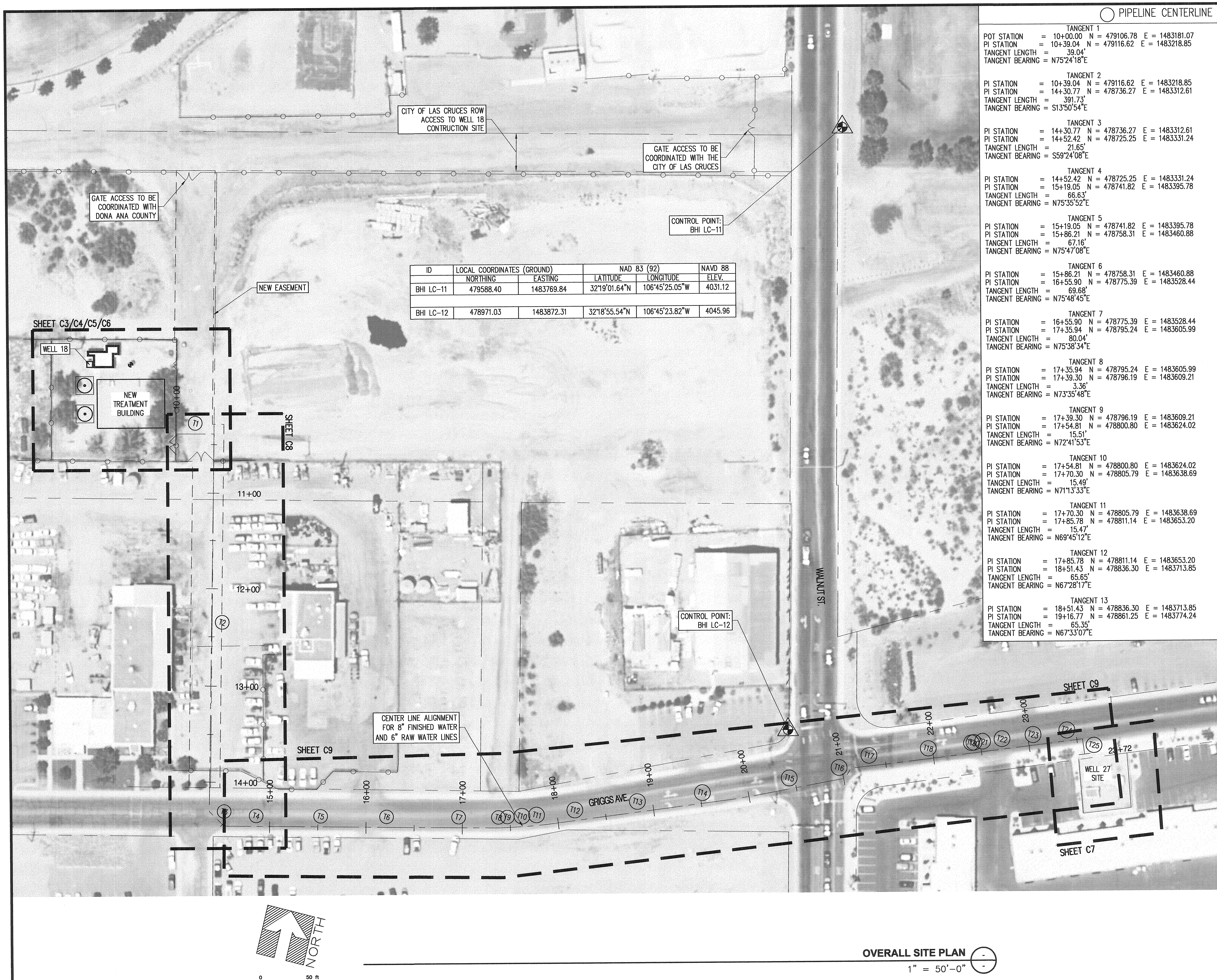

ID	LOCAL COORDINATES (GROUND)		NAD 83 (92)		NAVD 88
	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEV.
BHI LC-11	479588.40	1483769.84	32°19'01.64"N	106°45'25.05"W	4031.12
BHI LC-12	478971.03	1483872.31	32°18'55.54"N	106°45'23.82"W	4045.96

PIPELINE CENTERLINE HORIZONTAL CONTROL TABLE

TANGENT 1
POT STATION = 10+00.00 N = 479106.78 E = 1483181.07
PI STATION = 10+39.04 N = 479116.62 E = 1483218.85
TANGENT LENGTH = 39.04'
TANGENT BEARING = N75°24'18"E

TANGENT 2
PI STATION = 10+39.04 N = 479116.62 E = 1483218.85
PI STATION = 14+30.77 N = 478736.27 E = 1483312.61
TANGENT LENGTH = 391.73'
TANGENT BEARING = S13°50'54"E

TANGENT 3
PI STATION = 14+30.77 N = 478736.27 E = 1483312.61
PI STATION = 14+52.42 N = 478725.25 E = 1483331.24
TANGENT LENGTH = 21.65'
TANGENT BEARING = S59°24'08"E

TANGENT 4
PI STATION = 14+52.42 N = 478725.25 E = 1483331.24
PI STATION = 15+19.05 N = 478741.82 E = 1483395.78
TANGENT LENGTH = 66.63'
TANGENT BEARING = N75°35'52"E

TANGENT 5
PI STATION = 15+19.05 N = 478741.82 E = 1483395.78
PI STATION = 15+86.21 N = 478758.31 E = 1483460.88
TANGENT LENGTH = 67.16'
TANGENT BEARING = N75°47'08"E

TANGENT 6
PI STATION = 15+86.21 N = 478758.31 E = 1483460.88
PI STATION = 16+55.90 N = 478775.39 E = 1483528.44
TANGENT LENGTH = 69.68'
TANGENT BEARING = N75°48'45"E

TANGENT 7
PI STATION = 16+55.90 N = 478775.39 E = 1483528.44
PI STATION = 17+35.94 N = 478795.24 E = 1483605.99
TANGENT LENGTH = 80.04'
TANGENT BEARING = N75°38'34"E

TANGENT 8
PI STATION = 17+35.94 N = 478795.24 E = 1483605.99
PI STATION = 17+39.30 N = 478796.19 E = 1483609.21
TANGENT LENGTH = 3.36'
TANGENT BEARING = N73°35'48"E

TANGENT 9
PI STATION = 17+39.30 N = 478796.19 E = 1483609.21
PI STATION = 17+54.81 N = 478800.80 E = 1483624.02
TANGENT LENGTH = 15.51'
TANGENT BEARING = N72°41'53"E

TANGENT 10
PI STATION = 17+54.81 N = 478800.80 E = 1483624.02
PI STATION = 17+70.30 N = 478805.79 E = 1483638.69
TANGENT LENGTH = 15.49'
TANGENT BEARING = N71°13'33"E

TANGENT 11
PI STATION = 17+70.30 N = 478805.79 E = 1483638.69
PI STATION = 17+85.78 N = 478811.14 E = 1483653.20
TANGENT LENGTH = 15.47'
TANGENT BEARING = N69°45'12"E

TANGENT 12
PI STATION = 17+85.78 N = 478811.14 E = 1483653.20
PI STATION = 18+51.43 N = 478836.30 E = 1483713.85
TANGENT LENGTH = 65.65'
TANGENT BEARING = N67°28'17"E

TANGENT 13
PI STATION = 18+51.43 N = 478836.30 E = 1483713.85
PI STATION = 19+16.77 N = 478861.25 E = 1483774.24
TANGENT LENGTH = 65.35'
TANGENT BEARING = N67°33'07"E

TANGENT 14
PI STATION = 19+16.77 N = 478861.25 E = 1483774.24
PI STATION = 19+87.73 N = 478888.35 E = 1483839.82
TANGENT LENGTH = 70.96'
TANGENT BEARING = N67°32'40"E

TANGENT 15
PI STATION = 19+87.73 N = 478888.35 E = 1483839.82
PI STATION = 21+00.80 N = 478936.68 E = 1483942.04
TANGENT LENGTH = 113.07'
TANGENT BEARING = N64°42'01"E

TANGENT 16
PI STATION = 21+00.80 N = 478936.68 E = 1483942.04
PI STATION = 21+13.46 N = 478948.75 E = 1483945.86
TANGENT LENGTH = 12.66'
TANGENT BEARING = N17°31'59"E

TANGENT 17
PI STATION = 21+13.46 N = 478948.75 E = 1483945.86
PI STATION = 21+52.89 N = 478962.90 E = 1483982.66
TANGENT LENGTH = 39.43'
TANGENT BEARING = N68°57'45"E

TANGENT 18
PI STATION = 21+52.89 N = 478962.90 E = 1483982.66
PI STATION = 22+37.84 N = 478994.57 E = 1484061.48
TANGENT LENGTH = 84.94'
TANGENT BEARING = N68°06'29"E

TANGENT 19
PI STATION = 22+37.84 N = 478994.57 E = 1484061.48
PI STATION = 22+43.43 N = 478996.69 E = 1484066.65
TANGENT LENGTH = 5.59'
TANGENT BEARING = N67°47'27"E

TANGENT 20
PI STATION = 22+43.43 N = 478996.69 E = 1484066.65
PI STATION = 22+43.63 N = 478996.77 E = 1484066.84
TANGENT LENGTH = 0.20'
TANGENT BEARING = N66°19'21"E

TANGENT 21
PI STATION = 22+43.63 N = 478996.77 E = 1484066.84
PI STATION = 22+60.91 N = 479003.34 E = 1484082.82
TANGENT LENGTH = 17.28'
TANGENT BEARING = N67°39'41"E

TANGENT 22
PI STATION = 22+60.91 N = 479003.34 E = 1484082.82
PI STATION = 22+84.64 N = 479012.41 E = 1484104.75
TANGENT LENGTH = 23.73'
TANGENT BEARING = N67°30'51"E

TANGENT 23
PI STATION = 22+84.64 N = 479012.41 E = 1484104.75
PI STATION = 23+25.91 N = 479028.21 E = 1484142.88
TANGENT LENGTH = 41.27'
TANGENT BEARING = N67°29'41"E

TANGENT 24
PI STATION = 23+25.91 N = 479028.21 E = 1484142.88
PI STATION = 23+55.46 N = 479039.48 E = 1484170.20
TANGENT LENGTH = 29.55'
TANGENT BEARING = N67°34'52"E

TANGENT 25
PI STATION = 23+55.46 N = 479039.48 E = 1484170.20
POT STATION = 23+72.25 N = 479023.96 E = 1484176.60
TANGENT LENGTH = 16.79'

OVERALL SITE PLAN
1" = 50'-0"

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\C-02-20100231_Overall_plan.dwg

Bohannan ▲ Huston Inc
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES
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DESIGNED BY: MRT
DRAWN BY: LLM
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

OVERALL SITE PLAN

ROBERT P. RICHARDSON, NEW MEXICO, REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

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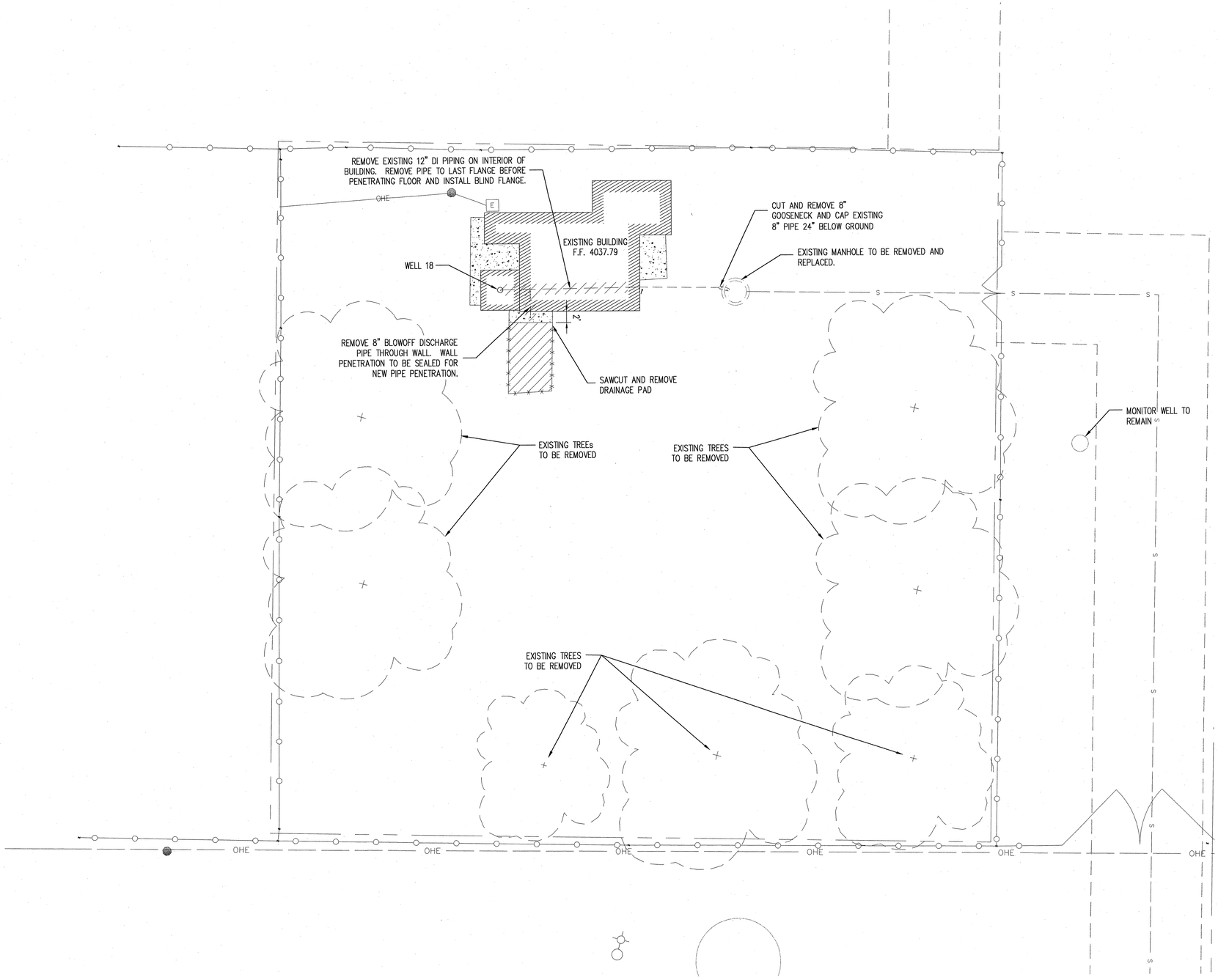

WELL 18 SITE DEMOLITION PLAN (1/-)

1" = 10'-0"

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: P:\Projects\ES09.0306_Griggs-Walnut\WL_Drawings\C-03-20100231_Well 18_demolition plan.dwg

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DESIGNED BY:	MRT
DRAWN BY:	LMA
CHECKED BY:	MRT
DATE:	05/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO
WELL 18
SITE DEMOLITION PLAN

ROBERT P. RICHARDSON
NEW MEXICO
10245
REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 15 of 58
DWG NO. C-3

P:\20100231\LC\Drawings\Plans\C-03-20100231_Well 18_demolition plan.dwg
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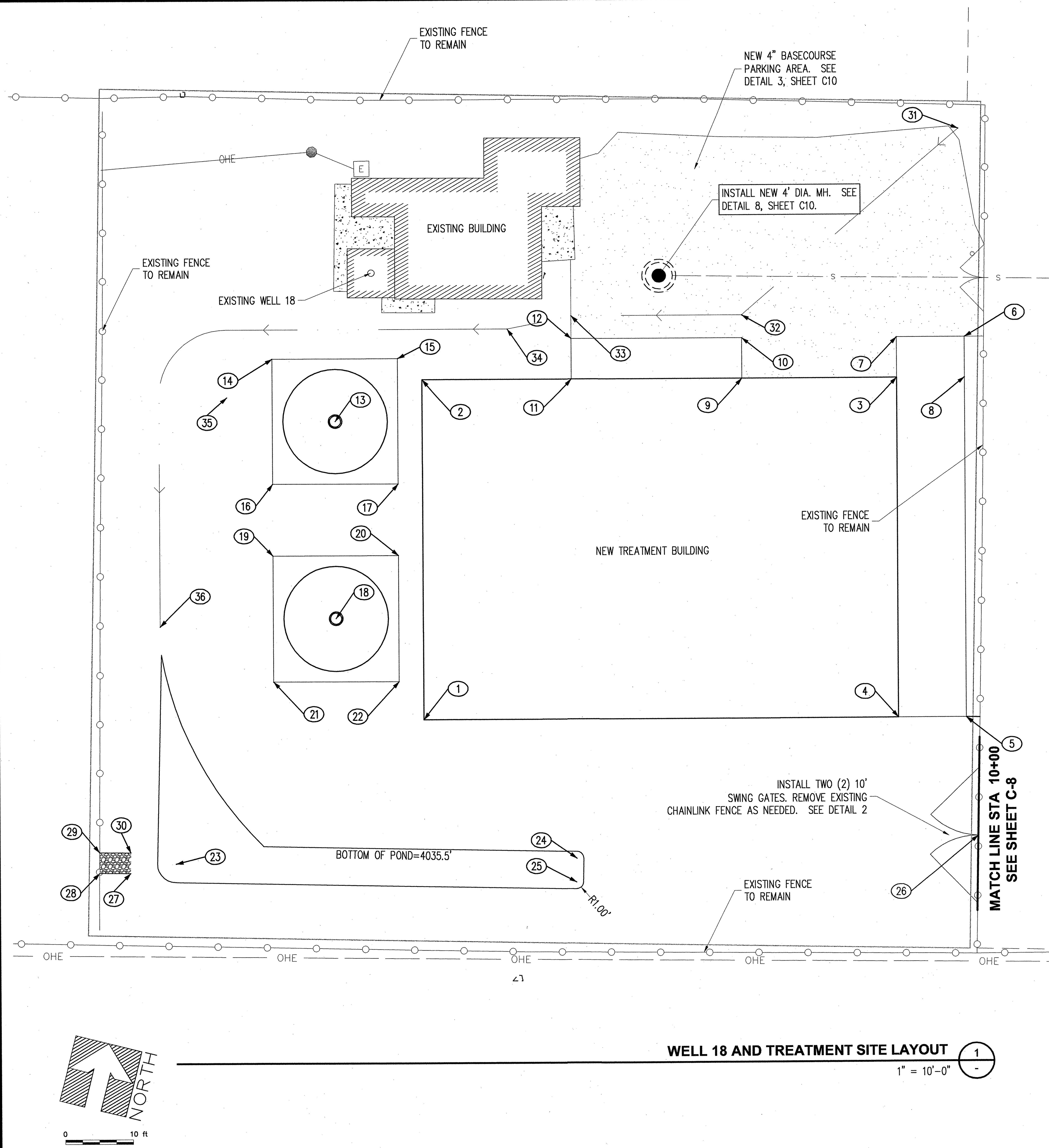
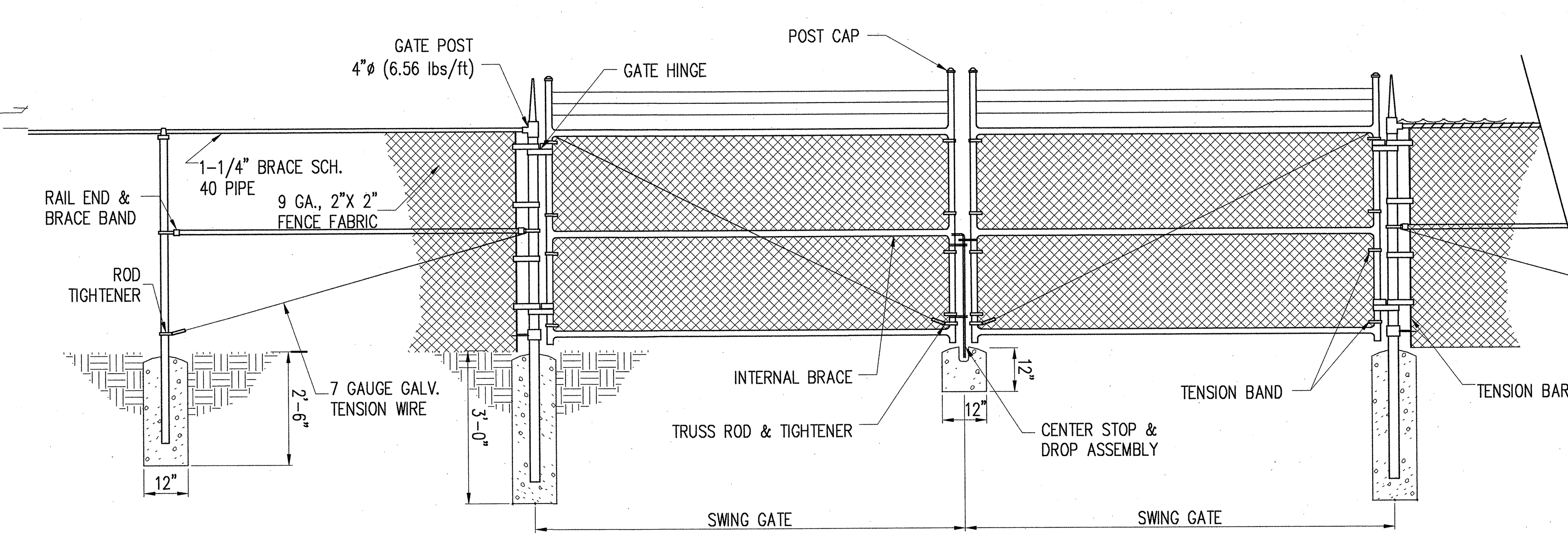


WELL 18 AND TREATMENT SITE LAYOUT (1/-)

1" = 10'-0"

Point Table			
	NORTHING	EASTING	DESCRIPTION
1	479091.74	1483100.33	BUILDING
2	479140.07	1483087.36	BUILDING
3	479158.20	1483154.98	BUILDING
4	479109.86	1483167.94	BUILDING
5	479112.45	1483177.60	BUILDING
6	479166.58	1483163.09	RAMP
7	479163.99	1483153.43	RAMP
8	479160.79	1483164.64	RAMP
9	479152.29	1483132.93	BUILDING
10	479158.08	1483131.38	RAMP
11	479145.77	1483108.64	BUILDING
12	479151.57	1483107.08	RAMP
13	479130.81	1483076.53	WATER TANK
14	479137.35	1483065.20	SLAB
15	479142.15	1483083.07	SLAB
16	479119.48	1483069.99	SLAB
17	479124.28	1483087.86	SLAB
18	479102.78	1483084.04	WATER TANK
19	479109.32	1483072.71	SLAB
20	479114.11	1483090.58	SLAB
21	479091.45	1483077.51	SLAB
22	479096.24	1483095.37	SLAB
23	479061.75	1483070.40	POND RP
24	479077.69	1483127.34	POND RP
25	479074.29	1483128.18	POND RP
26	479096.01	1483183.74	GATE
27	479058.70	1483064.27	OVERFLOW
28	479057.55	1483059.86	OVERFLOW
29	479060.46	1483059.11	OVERFLOW
30	479061.61	1483063.55	POND OVERFLOW
31	479196.16	1483154.40	FL
32	479161.32	1483130.51	FL
33	479154.81	1483106.21	FL
34	479150.56	1483097.57	FL
35	479130.17	1483060.17	FL RP
36	479094.95	1483059.27	FL



SWING GATE DETAIL (2/-)

NTS

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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DESIGNED BY: MRT
DRAWN BY: LLM
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

WELL 18 AND TREATMENT SITE LAYOUT

ROBERT P. RICHARDSON REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 16 of 58
DWG NO. C-4

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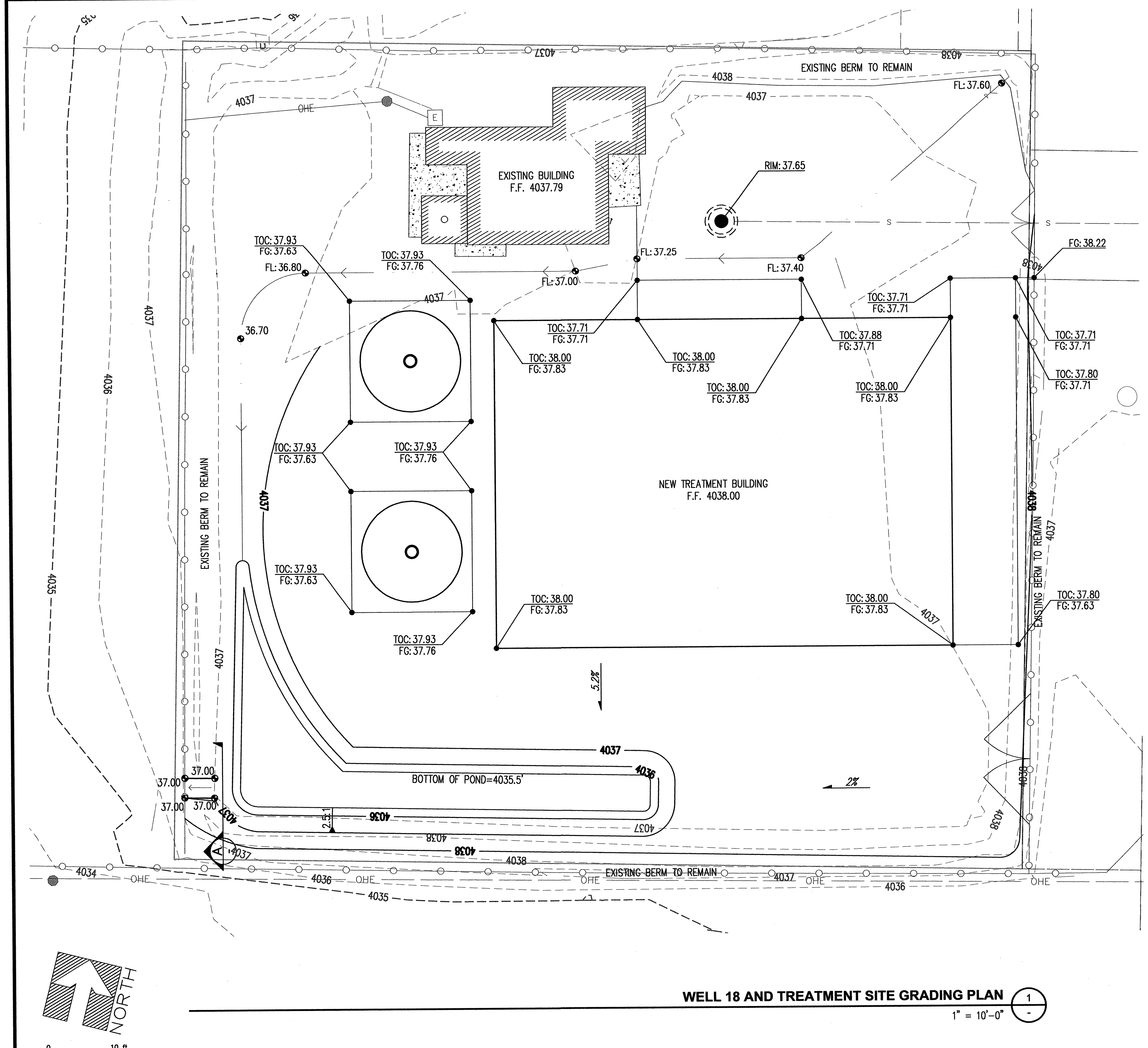
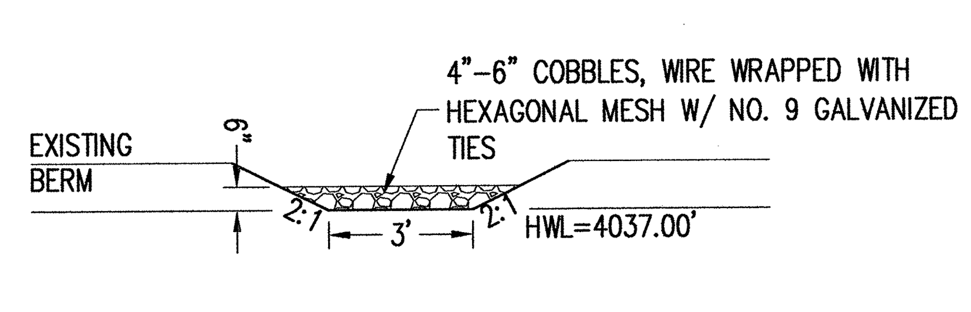


WELL 18 AND TREATMENT SITE GRADING PLAN

1" = 10'-0"



OVERFLOW SECTION

NTS

ON-SITE DRAINAGE AND STORAGE CALCULATIONS

TOTAL AREA =0.38 ACRES
AREA CLASSIFICATION: MESA
RUNOFF COEFFICIENT = 2.0 INCHES
IMPERVIOUS AREA = 5,424 FT^2

REQUIRED STORAGE VOLUME(SV) = 5,424 FT^2 X 2.0 IN X 1 FT/12 IN
*SV = 904 FT^3

POND VOLUME = 905 FT^3

*PER SECTION 32-103 OF THE *CITY OF LAS CRUCES DESIGN STANDARDS.*

EARTHWORK QUANTITIES

CUT: 42± CY
FILL: 305± CY
NET: 263± CY (FILL)

GRADING GENERAL NOTES

1. ANY OPERATING PERMITS REQUIRED FOR THE CONSTRUCTION OF THIS WORK FROM FEDERAL, STATE, COUNTY REGULATING AUTHORITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR. ACCESS PERMITS FOR CONSTRUCTION AS SHOWN ON THE DRAWINGS HAVE BEEN ACQUIRED BY THE OWNER. THE CONTRACTOR SHALL LIMIT ACTIVITIES TO THOSE AREAS SHOWN UNLESS WRITTEN AUTHORIZATION FROM PROPERTY OWNERS IS OBTAINED PRIOR TO START OF CONSTRUCTION.

2. ANY DEVIATIONS ON THE INFORMATION PROVIDED HEREIN AND THE CONDITIONS EXISTING IN THE FIELD AT THE TIME OF CONSTRUCTION SHOULD BE REPORTED TO THE ENGINEER AS SOON AS POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES FOUND SHALL ALSO BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY, OTHERWISE THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THEIR ACCURACY.

3. FIELD SURVEY AND ELEVATION CONTROL PROVIDED BY BOHANNAN HUSTON, INC.

4. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. PRIOR TO CONSTRUCTION, EXISTING UTILITY LOCATIONS SHALL BE VERIFIED BY THE APPROPRIATE UTILITY COMPANY. UTILITY LOCATIONS SHOULD BE REQUESTED FROM "NEW MEXICO ONE CALL". ANY DAMAGE TO EXISTING UTILITIES DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED AT NO ADDITIONAL EXPENSE TO THE CITY OF LAS CRUCES.

5. SITE PREPARATION SHALL CONSIST OF REMOVAL OF ALL RUBBLE, DEBRIS, ASHPALT, CONCRETE AND VEGETATION, NOT SCHEDULED TO BE MAINTAINED, AND OTHER DELETERIOUS MATERIAL PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS.

6. CONTRACTOR SHALL PROTECT ALL EXISTING SITE FEATURES, INCLUDING BUT NOT LIMITED TO VEGETATION, APSHALT, AND CONCRETE THAT ARE TO REMAIN, FROM DAMAGE DURING ALL PROJECT WORK.

7. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SURVEY MARKERS/BENCHMARKS, AND ALL COSTS ASSOCIATED WITH REESTABLISHING ANY SUCH MONUMENTS. ALL MONUMENTS SHALL BE REESTABLISHED BY A LICENSED SURVEYOR.

8. PROVISIONS FOR ADEQUATE TRAFFIC CONTROL DURING CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR.

9. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE & VERIFY THE HORIZONTAL & VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS. ALL ELECTRIC, TELEPHONE, CABLES, & APPURTENANCES, ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE DONE BY THE RESPONSIBLE UTILITY COMPANY. THE CONTRACTOR SHALL COORDINATE ALL NECESSARY UTILITY ADJUSTMENTS. CONTRACTOR IS RESPONSIBLE FOR PURCHASING WATER FOR CONSTRUCTION PURPOSES PER CITY OF LAS CRUCES GENERAL CONDITIONS.

10. DISPOSAL OF ALL REMOVAL ITEMS SHALL BE DONE BY THE CONTRACTOR IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND ORDINANCES. DISPOSAL ITEMS SHALL BE DISPOSED OF IN A PERMITTED "SOLID WASTE DISPOSAL FACILITY" OR OTHER PRIVATE LOCATION APPROVED BY THE ENGINEER. PRIVATE DISPOSAL LOCATIONS SHALL NOT BE USED UNTIL A WRITTEN CONSENT FROM THE PROPERTY OWNER IS PROVIDED TO THE CITY OF LAS CRUCES ALL COST INCURRED IN OBTAINING A DISPOSAL SITE AND HAULING ALL REMOVAL ITEMS TO THE SITE SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO SEPARATE PAYMENT WILL BE MADE.

11. CONTRACTOR SHALL RESTRICT ALL ACTIVITIES TO THE AREA OF CONSTRUCTION. NO RANDOM VEHICULAR ACCESS SHALL BE ALLOWED OUTSIDE OF THE AREA OF CONSTRUCTION. ANY DAMAGE TO AREAS OUTSIDE OF THE AREA OF CONSTRUCTION SHALL BE REPAIRED BY GRADING, SEEDING AND MULCHING, OR OTHER MEANS, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

12. RIM ELEVATIONS SHOWN ARE APPROXIMATE, IT IS THE INTENT OF THESE DRAWINGS THAT ALL EXISTING GROUND ELEVATIONS SHALL BE FIELD VERIFIED AND ALL RIM ELEVATIONS SHALL BE PER DETAILS OR AS NOTED ON PLANS. RIM ELEVATIONS SHALL MATCH FINISHED GRADE OF ROADWAY IMPROVEMENTS.

13. CONTRACTOR SHALL MAINTAIN EXISTING UTILITY COMPONENTS DURING CONSTRUCTION. REMOVE AND REPLACE ANY DAMAGED PORTIONS. COSTS TO BE INCIDENTAL TO SEWER LINE CONSTRUCTION.

14. CONTRACTOR IS RESPONSIBLE FOR DRAINAGE MANAGEMENT AND EROSION CONTROL AT ALL TIMES DURING THE CONSTRUCTION PERIOD. ALL ACTIVITIES PERFORMED BY THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE NPDES STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS.

15. NOTIFICATION FILING AND COMPLIANCE WITH NPDES STORMWATER POLLUTION PREVENTION REQUIREMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. NOTICE OF INTENT MAY BE FILED ELECTRONICALLY @ http://cdx.epa.gov/ssl/cdx/epa-home.asp

16. ALL TESTING FOR THE PURPOSE OF ACCEPTANCE SHALL BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS BY AN INDEPENDENT CERTIFIED TESTING LABORATORY UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW MEXICO.

17. CRUSHED AGGREGATE BASE COURSE, BITUMINOUS PRIME COAT, AND PLANT MIXED BITUMINOUS PAVING, SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD SPECIFICATION. PLANT MIXED BITUMINOUS PAVING SHALL BE TYPE B, CRUSHED AGGREGATE BASE COURSE SHALL BE TYPE I-B. CURB AND GUTTER SHALL BE PLACED IN ACCORDANCE w/ SECTION 2550, AND SHALL HAVE A BROOM FINISH. ALL OTHER CONCRETE WORK SHALL BE PLACED IN ACCORDANCE w/ SECTION 03300, AND PER CITY OF LAS CRUCES STANDARD SPECIFICATIONS FOR ROAD CONSTRUCTION.

18. NATIVE SUBGRADE MATERIALS TO RECEIVE FILLS ACROSS THE SITE SHALL BE SCARIFIED TO A DEPTH OF 12 INCHES, BROUGHT TO WITHIN 2% ABOVE AND 1% BELOW OPTIMUM MOISTURE CONTENT, AND COMPACTED TO 95% OF MODIFIED PROCTOR (ASTM D-1557).

19. FILLS SHALL BE PLACED IN APPROXIMATELY HORIZONTAL LOOSE LIFTS NOT TO EXCEED 8 INCHES IN DEPTH.

20. FINISH SUBGRADE, BASE COURSE, AND HEADER CURB ELEVATIONS SHALL BE CONSTRUCTED TO WITHIN PLUS OR MINUS 0.05 FEET OF DESIGN ELEVATIONS.

21. FILL MATERIALS SHALL COMPLY WITH THE FOLLOWING:

SIEVE	% PASSING
4"	100
3/4"	70 - 95
#4	40 - 75
#200	5 - 25

PORTION PASSING #40 SIEVE SHALL HAVE A PLASTICITY LIMIT NOT EXCEEDING 12.

22. CONTRACTOR TO PROVIDE FILL/WASTE MATERIAL IN ORDER TO COMPLY WITH GRADING.

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

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DESIGNED BY: MRT
DRAWN BY: TRH
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

WELL 18 AND TREATMENT SITE GRADING PLAN

ROBERT P. RICHARDSON
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

JOB NO.
ES09.0306

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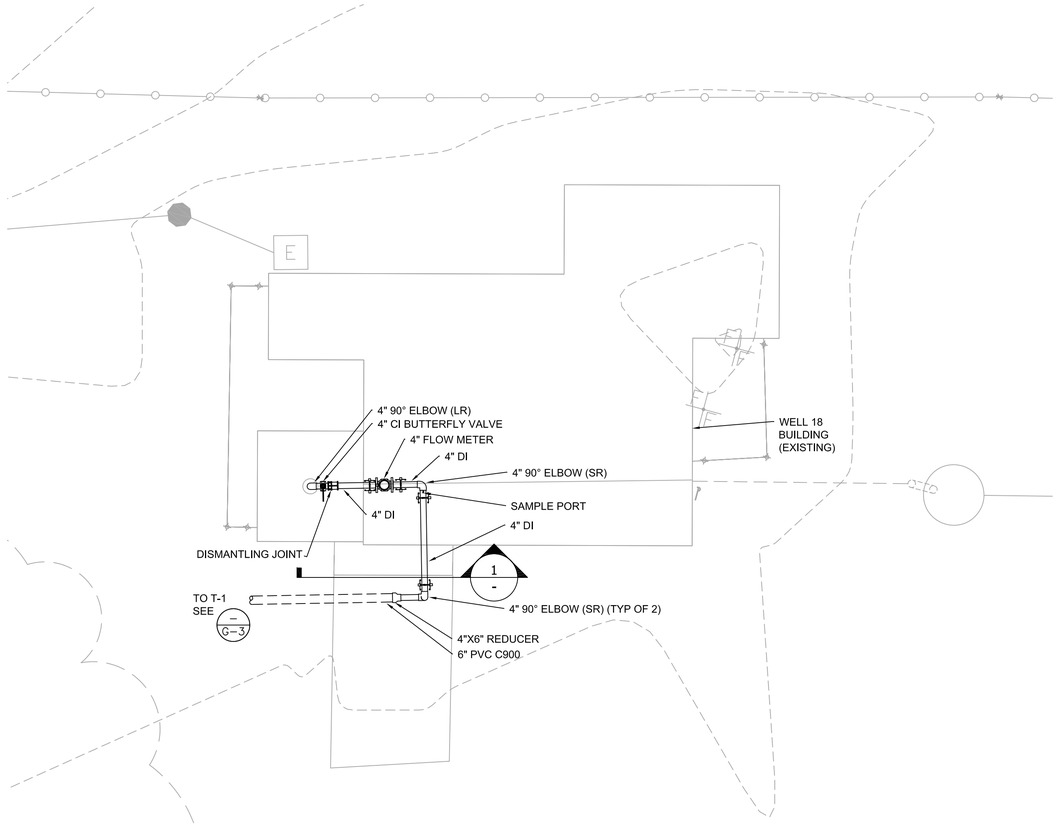
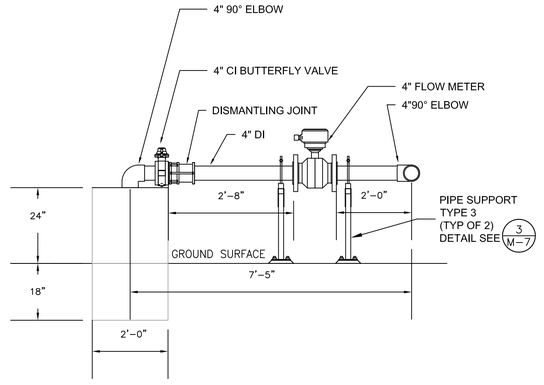


WELL 18 WELLHEAD COMPLETION (-)

1" = 5'-0"

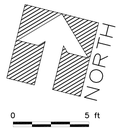


WELL 18 ELEVATION (1 / -)

NTS

NOTES:

1. EXISTING SHOWN IN GRAY.



NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

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(505) 822-9400

DESIGNED BY: GP
DRAWN BY: CG
CHECKED BY: GH
DATE: 5/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

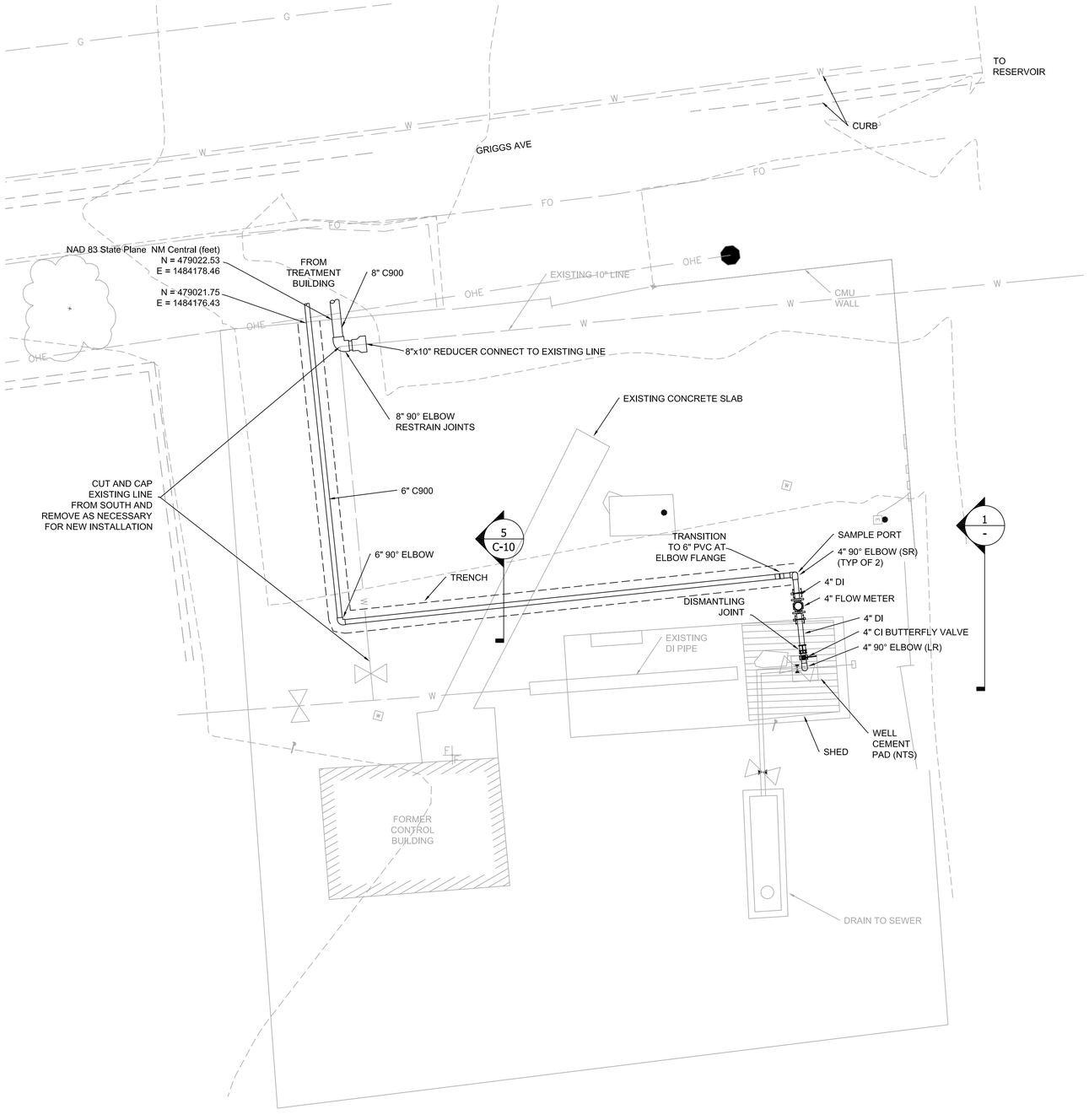
WELL 18 WELLHEAD COMPLETION

GUNDAR PETERSON
NEW MEXICO
16038
5/24/11
LICENSED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

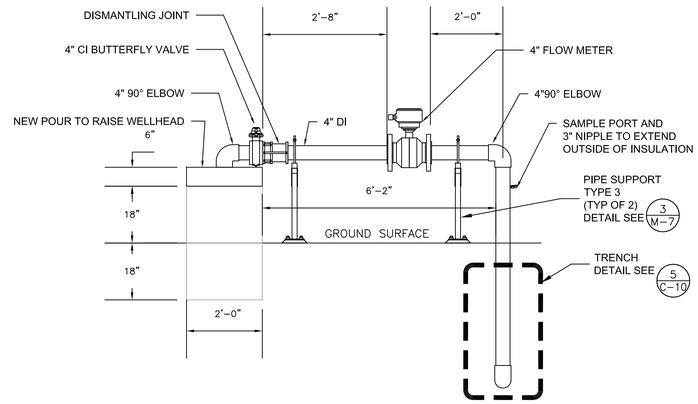
SHEET 18 of 58
DWG NO. C-6

XREF:



WELL 27 WELLHEAD COMPLETION (-/-)

1" = 5'-0"



WELL 27 COMPLETION DETAIL (1/-)

NTS

NOTES:

1. EXISTING SHOWN IN GRAY.
2. EXPOSED PIPING TO BE INSULATED AND JACKETING IN ACCORDANCE WITH SPECIFICATION 220700.

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

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DRAWN BY: CG
CHECKED BY: GH
DATE: 5/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

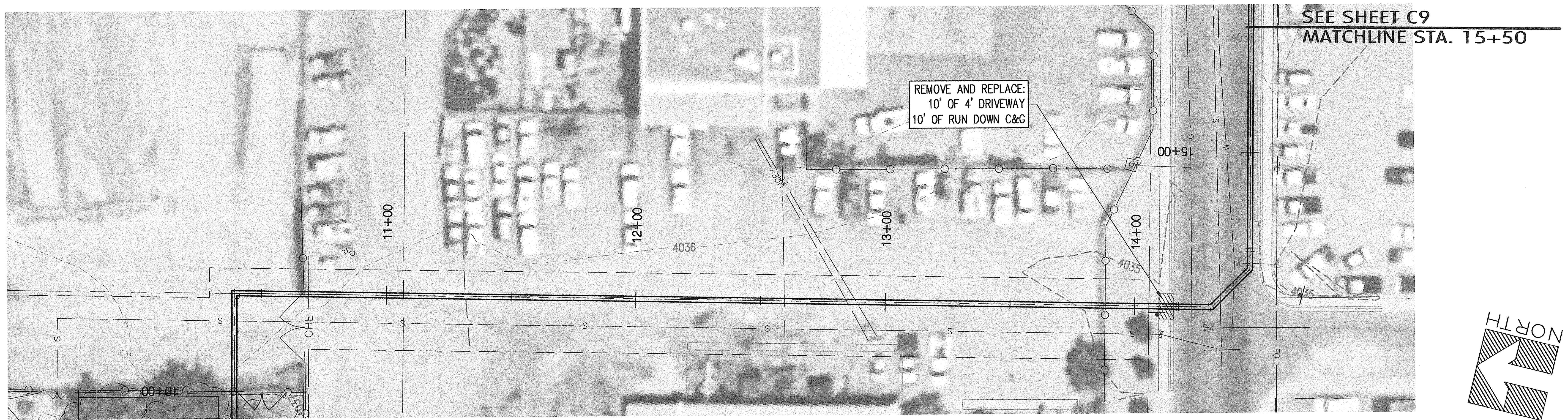
WELL 27 WELLHEAD COMPLETION

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

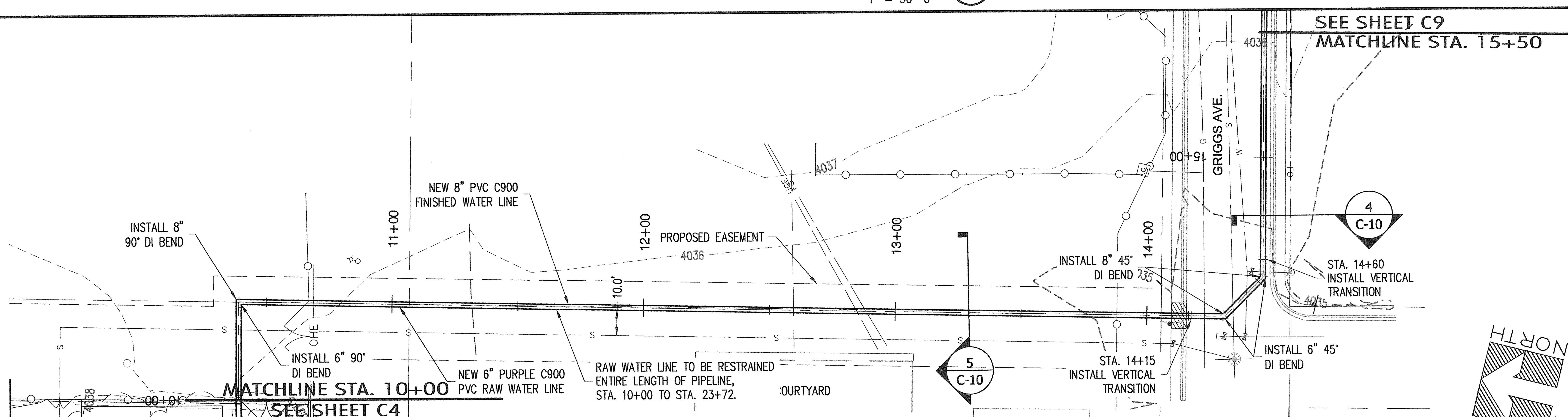
JOB NO. ES09.0306

SHEET 19 of 58
DWG NO. C-7

XREFs:



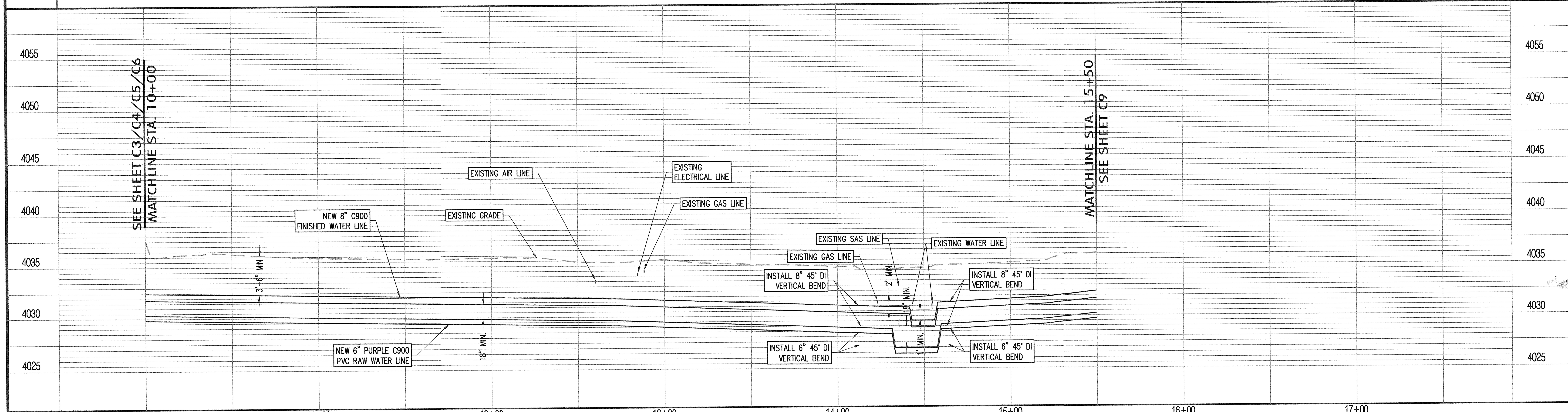
WATERLINE ALIGNMENT AERIAL STA. 10+00 TO 15+50 (1/-)
1" = 30'-0"



WATERLINE ALIGNMENT PLANIMETRIC STA. 10+00 TO 15+50 (2/-)
1" = 30'-0"

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

SCALE:
HORIZ. 1" = 30'
VERT. 1" = 5'



NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\WL_Drawings\C-08-09-20100231_PNP layout.dwg

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DESIGNED BY: MRT
DRAWN BY: LLM
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

WATER LINE PLAN AND PROFILE
STA. 10+00 TO STA. 15+50

ROBERT P. RICHARDSON
NEW MEXICO
10746
REGISTERED PROFESSIONAL ENGINEER

JOB NO.
ES09.0306

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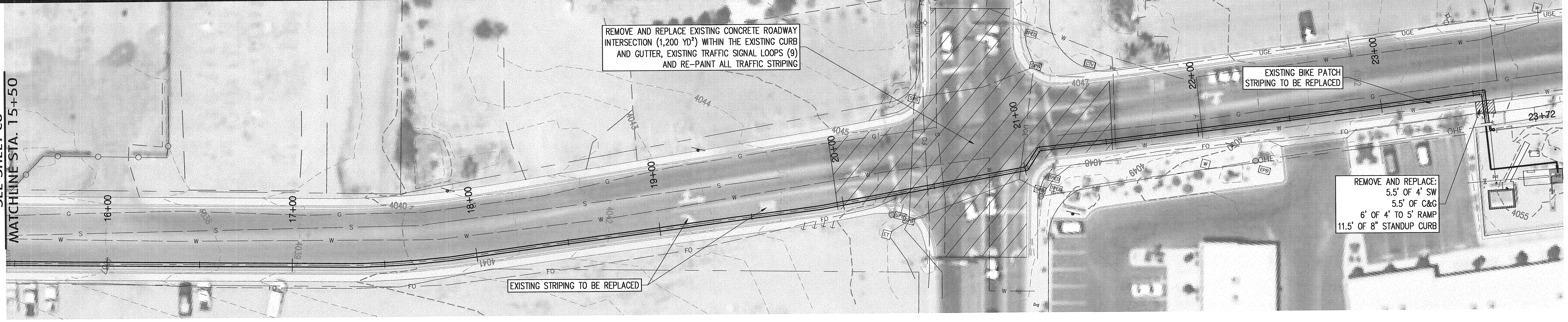
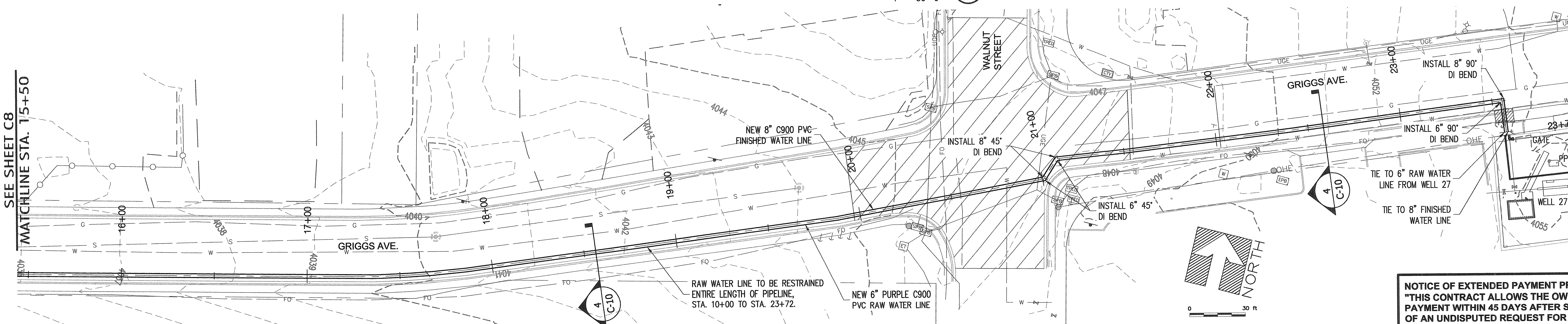
Thu, 19-May-2011 - 4:33pm, Plotted by: LMILLER



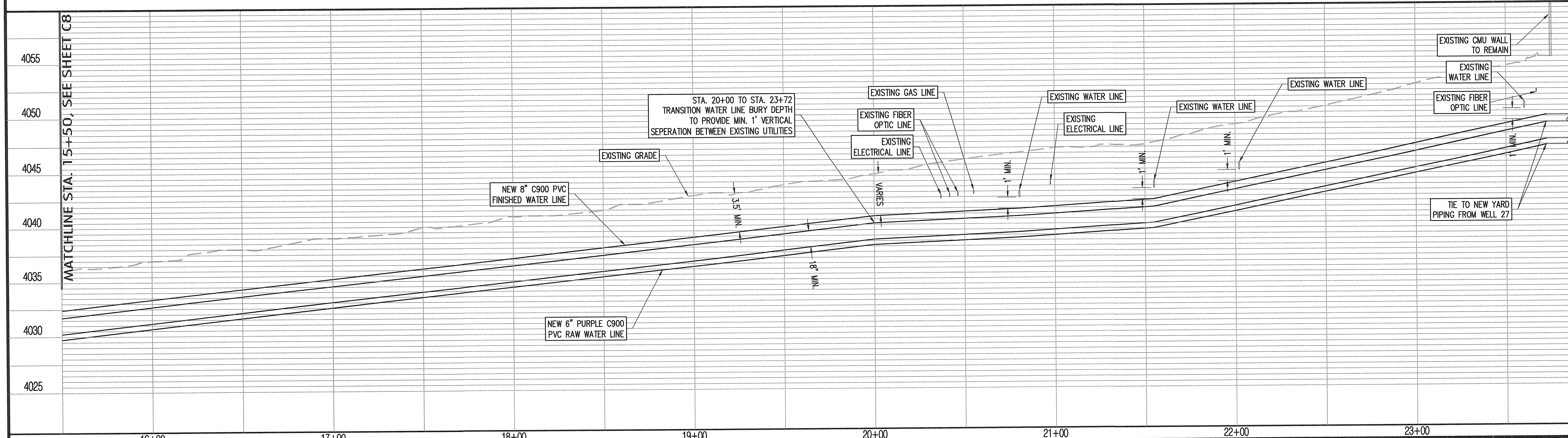
WATERLINE ALIGNMENT AERIAL STA. 15+50 TO 23+72 (1)
1" = 30'-0"



NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

WATERLINE ALIGNMENT PLANIMETRIC STA. 15+50 TO 23+72 (2)
1" = 30'-0"

SCALE: HORIZ. 1" = 30' VERT. 1" = 5'



NO	DATE	BY	REVISION MADE

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DESIGNED BY: MRT
DRAWN BY: TRH
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

WATER LINE PLAN AND PROFILE STA. 15+50 TO STA. 23+72

ROBERT P. RICHARDSON — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

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Thu, 19-May-2011 - 4:33pm, Plotted by: LMILLER

TABLE A

		LENGTH RESTRAINED (L)					
		LARGE					
		3"	4"	6"	8"	10"	12"
SMALL	3"	X	20'	40'	50'	70'	80'
	4"	X	X	30'	50'	60'	80'
	6"	X	X	X	30'	50'	70'
	8"	X	X	X	X	30'	50'
	10"	X	X	X	X	X	50'

TABLE A NOTES:

1) FLOW FROM LARGE SIZE TO SMALL SIZE PIPE.

TABLE C

		LENGTH RESTRAINED (L)					
		BRANCH (RESTRAINED)					
		3"	4"	6"	8"	10"	12"
RUN	3"	5'	10'	30'	50'	70'	80'
	4"	5'	10'	30'	50'	70'	80'
	6"	5'	10'	20'	40'	60'	70'
	8"	5'	10'	10'	30'	50'	70'
	10"	5'	10'	10'	30'	50'	60'
	12"	5'	5'	5'	20'	40'	60'

TABLE C NOTES:

1) SHORTEST DISTANCE ALLOWABLE BETWEEN TEE END AND FIRST PIPE JOINT ON MAIN RUN IS 5 FEET.

2) FLOW DIRECTION THROUGH TEE DOES NOT AFFECT LENGTH OR JOINT TO BE RESTRAINED.

TABLE B

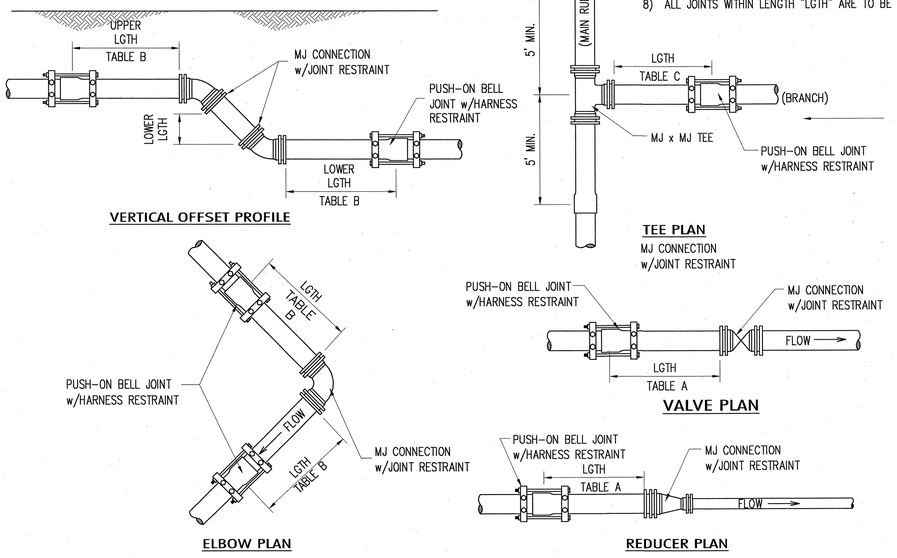
	LENGTH TO BE RESTRAINED (L)							
	90° HORIZ. ELBOW	45° HORIZ. ELBOW	22 1/2° HORIZ. ELBOW	11 1/4° HORIZ. ELBOW	45° VERT. OFFSET 3.5' TO 5.0'	22½° VERT. OFFSET 3.5' TO 5.0'	11¼° VERT. OFFSET 3.5' TO 5.0'	DEAD END/ IN-LINE VALVE
3"	10'	5'	5'	5'	UPPER – 20' LOWER – 10'	UPPER – 10' LOWER – 5'	UPPER – 10' LOWER – 5'	30'
4"	20'	10'	5'	5'	UPPER – 20' LOWER – 10'	UPPER – 10' LOWER – 5'	UPPER – 10' LOWER – 5'	40'
6"	20'	10'	5'	5'	UPPER – 30' LOWER – 10'	UPPER – 20' LOWER – 10'	UPPER – 10' LOWER – 5'	50'
8"	30'	10'	10'	5'	UPPER – 40' LOWER – 10'	UPPER – 20' LOWER – 10'	UPPER – 10' LOWER – 5'	70'
10"	30'	20'	10'	5'	UPPER – 50' LOWER – 20'	UPPER – 30' LOWER – 10'	UPPER – 10' LOWER – 5'	80'
12"	30'	20'	10'	5'	UPPER – 50' LOWER – 25'	UPPER – 30' LOWER – 15'	UPPER – 15' LOWER – 10'	90'

TABLE B NOTES:

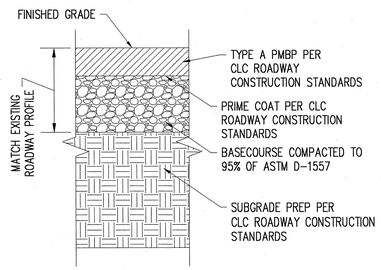
1) CONTACT ENGINEER FOR RESTRAINT LENGTHS ASSOCIATED WITH OTHER VERTICAL OFFSET DEPTHS.

GENERAL DESIGN RESTRAINT NOTES:

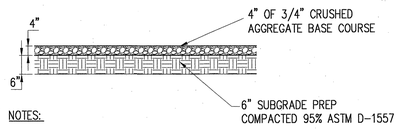
1) BASIS OF DESIGN–EBAA IRON
2) PIPE MATERIAL: PVC Class 150
3) SOIL TYPE: SC, CLAYEY SAND, SANDY CLAY
4) TRENCH TYPE: 4
5) TEST PRESSURE: 150 psi
6) FACTOR OF SAFETY: 1.5 TO 1
7) DEPTH OF BURY: 3 FEET UNLESS OTHERWISE STATED.
8) ALL JOINTS WITHIN LENGTH "LGTH" ARE TO BE RESTRAINED.



1 C10 **MECHANICAL JOINT RESTRAINT DETAIL**
NOT TO SCALE



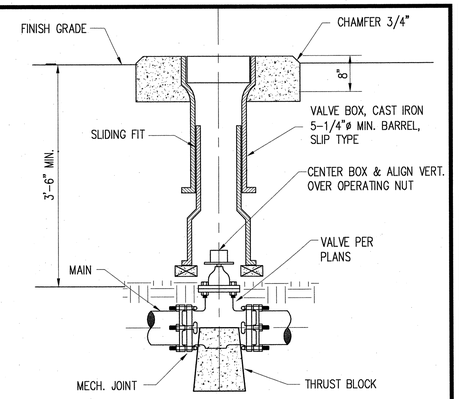
2 C10 **ASPHALT PAVEMENT SECTION**
NOT TO SCALE



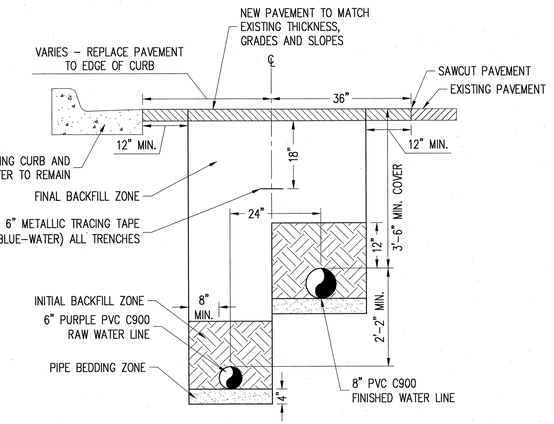
NOTES:

1. CONTRACTOR SHALL ESTABLISH & MAINTAIN EXISTING ELEVATION CONTROL WITH NEW SURFACE.

3 C10 **BASE COURSE SURFACING DETAIL**
NOT TO SCALE



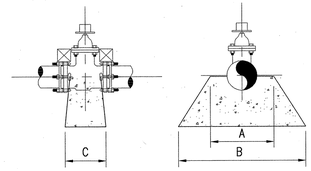
6 C10 **VALVE AND BOX DETAIL**
NOT TO SCALE



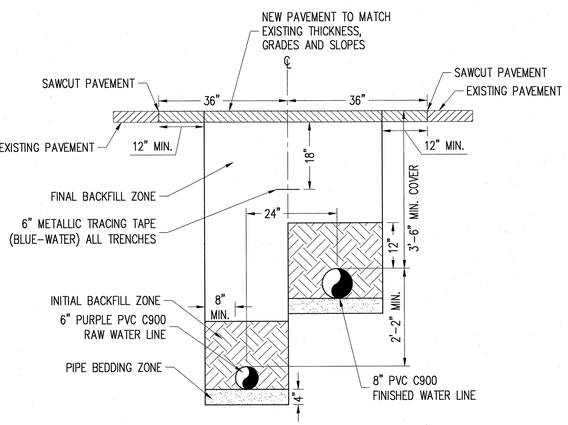
NOTE: EXISTING GRADE FOR TOP OF TRENCH IS GROUNDLINE AT TRENCH OR THE ADJACENT ROADWAY, WHICHEVER IS LOWER.

4 C8 **WATER TRENCH SECTION (PAVED AREAS)**
NOT TO SCALE

VALVE SUPPORT TABLE			
VALVE SIZE	A	B	C
4"	10"	20"	6"
8"	12"	22"	8"
10"	14"	24"	8"
12"	16"	24"	8"
16"	24"	36"	12"

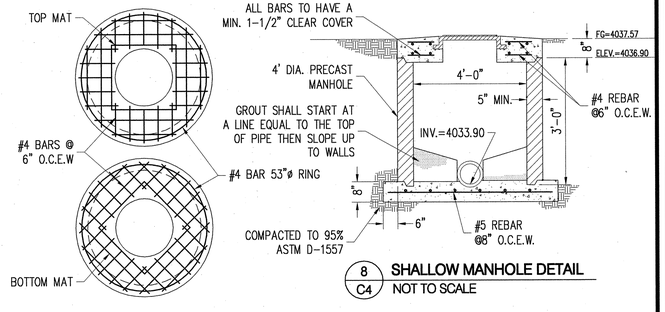


7 C10 **CONCRETE VALVE SUPPORT DETAIL**
NOT TO SCALE

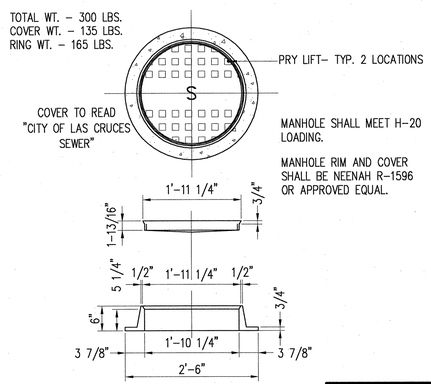


NOTE: EXISTING GRADE FOR TOP OF TRENCH IS GROUNDLINE AT TRENCH OR THE ADJACENT ROADWAY, WHICHEVER IS LOWER.

5 C9 **WATER TRENCH SECTION (DAC ROW)**
NOT TO SCALE



8 C4 **SHALLOW MANHOLE DETAIL**
NOT TO SCALE



9 C4 **MANHOLE RING AND COVER**
NOT TO SCALE

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

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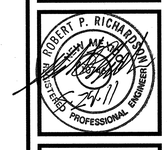
DESIGNED BY: MRT	DRAWN BY: LLM	CHECKED BY: MRT	DATE: 05/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

CIVIL CONSTRUCTION DETAILS



JOB NO. ES09.0306

SHEET 22 of 58
DWG NO. C-10

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GENERAL NOTES

CODES AND MANUALS

- INTERNATIONAL BUILDING CODE, 2006 EDITION
- BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-05
- MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-05
- AISC MANUAL OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, THIRD EDITION

DESIGN CRITERIA

GRAVITY LOADS:

METAL BUILDING DEAD LOAD ALLOWANCE	= 8.0 PSF
COLLATERAL LOAD ALLOWANCE	= 10.0 PSF

SEISMIC: ASCE 7-05 AND IBC 2006

DESIGN SPECTRAL RESPONSE ACCELERATION (ASCE 7 EQUIVALENT LATERAL FORCE PROCEDURE)	
SHORT PERIOD S_{DS}	= 0.334 g (PER SPEC)
ONE SECOND PERIOD S_{D1}	= 0.165 g (PER SPEC)
RESPONSE MODIFICATION COEFFICIENT, R	
ORDINARY STEEL MOMENT FRAMES	= 3.5
ORDINARY STEEL CONCENTRICALLY BRACED FRAMES	= 3.25
OVER STRENGTH FACTOR, Ω_0	
ORDINARY STEEL MOMENT FRAMES	= 3
ORDINARY STEEL CONCENTRICALLY BRACED FRAMES	= 2
SEISMIC DESIGN CATEGORY	= C
IMPORTANCE FACTOR	= 1.5
SEISMIC RESPONSE COEFFICIENT Cs	= 0.063
SEISMIC BASE SHEAR V	= 0.063 W
SOIL SITE CLASS	= D

WIND: PER ASCE 7-05 AND IBC 2006

BASIC WIND SPEED	= 90 MPH
EXPOSURE	= C
IMPORTANCE FACTOR	= 1.15

SNOW: PER ASCE 7-05 AND IBC 2006

GROUND SNOW LOAD	= 5 PSF
IMPORTANCE FACTOR	= 1.2

ROOF LIVE LOAD: PER ASCE 7-05 AND IBC 2006 = 20 PSF

DESIGN SOIL PROPERTIES:

MAXIMUM ALLOWABLE SOIL BEARING PRESSURE	
METAL BUILDING	= 2000 PSF
WATER TANKS	= 1500 PSF
EQUIVALENT FLUID PRESSURE - ACTIVE	= 30 PSF/FT
EQUIVALENT FLUID PRESSURE - AT REST	= 48 PSF/FT
EQUIVALENT FLUID PRESSURE - PASSIVE	= 430 PSF/FT
COEFFICIENT OF FRICTION (CONC/SOIL)	= 0.70
COEFFICIENT OF FRICTION W/ PASSIVE PRESSURE	= 0.47

GENERAL STRUCTURAL NOTES

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.

DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON DRAWINGS.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

SEE BUILDING DRAWINGS FOR THE FOLLOWING:
- FLOOR AND ROOF FINISHES.
- BUILDING DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.

SEE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
- PIPE RUNS, SLEEVES, HANGER, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN OR NOTED.
- ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
- CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
- SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOUNTS.

THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION, AS WELL AS WORKER SAFETY AND COMPLIANCE WITH OSHA OR OTHER AGENCY SAFETY GUIDELINES. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH. NOTCHING OR CUTTING OF ANY STRUCTURAL MEMBER IN THE FIELD IS PROHIBITED.

GENERAL STRUCTURAL NOTES CONT.

REMOVAL OF FORMS AND SHORING SHALL BE IN ACCORDANCE WITH ACI 347. SHOP DRAWINGS SHALL BE REVIEWED PRIOR TO FABRICATION OR ERECTION. THE CONTRACTOR SHALL REVIEW AND APPROVE SHOP DRAWINGS PRIOR TO SUBMITTAL TO THE ARCHITECT FOR REVIEW. POORLY EXECUTED SHOP DRAWINGS WILL BE REJECTED AND SHALL BE RESUBMITTED.

CAST-IN-PLACE CONCRETE

ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 3/4" CHAMFER UNLESS NOTED OTHERWISE.

NORMAL WEIGHT CONCRETE: 4000 PSI MINIMUM COMPRESSIVE STRENGTH @ 28 DAYS, 3-6% AIR-ENTRAINED.

THE CONTRACTOR SHALL NOT CAST FOUNDATIONS, STEM WALLS OR RETAINING WALLS AGAINST EXCAVATED VERTICAL SIDE SURFACES WITHOUT PRIOR APPROVAL.

DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI CODES AND REPORTS 301, 318, AND 530.

SEE DRAWINGS FOR SIZES AND LOCATIONS OF HOLES, SLEEVES, REGLETS, WASHERS, BOLTS, NOTCHES, DRIPS, EMBEDDED ANCHORS, ETC.

EMBEDDED PIPES AND CONDUITS: NO PIPES, CONDUITS OR ANY OTHER ITEMS USED BY OTHER TRADES EXCEPT THOSE SHOWN ON THE DRAWINGS SHALL BE EMBEDDED IN CONCRETE OR PASS THROUGH CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

REINFORCING STEEL

ALL REINFORCING STEEL SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE 2003 REQUIREMENTS AND THE DETAILING OF CONCRETE REINFORCEMENT MANUAL (ACI 315-99).

ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60; EXCEPT STIRRUPS, TIES AND FIELD-BENT BARS MAY CONFORM TO ASTM A615 GRADE 40.

WHERE LAP SPLICES IN REINFORCING OCCUR, THE MINIMUM LAP SHALL BE MADE AS FOLLOWS UNLESS NOTED OTHERWISE ON DRAWINGS:
A. TENSION SPLICES SHALL BE CLASS B.
B. COMPRESSION SPLICES SHALL BE 30 BAR DIA. OR 18" MINIMUM.

ALL HORIZONTAL REINFORCING IN FOOTINGS, WALLS, AND BEAMS SHALL BE CONTINUOUS AROUND CORNERS OR HAVE CORNER BARS OF THE SAME SIZE AND SPACING AS THE HORIZONTAL BARS AND LAP A MINIMUM OF 30 BAR DIAMETERS OR 18 INCHES.

CONCRETE COVER FOR REINFORCING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

PLAIN CONCRETE POURED AGAINST EARTH	3 INCHES
CONCRETE SLABS POURED IN FORMS BUT EXPOSED TO WEATHER, EARTH OR WATER:	
IF BARS ARE LARGER THAN #5	2 INCHES
IF BARS ARE #4 OR SMALLER	1 1/2 INCHES
COLUMNS, GIRDERS AND BEAMS	2 1/2 INCHES
WALLS	2 INCHES
CONCRETE NOT EXPOSED TO WEATHER, EARTH OR WATER:	
IF BARS ARE LARGER THAN #5	2 INCHES
IF BARS ARE #4 OR SMALLER	1 1/2 INCHES
WALLS	2 INCHES

FORM TIES SHALL BE EITHER OF THE THREADED OR SNAP-OFF TYPE SO THAT NO METAL WILL BE LEFT WITHIN 1 INCH OF THE SURFACE OF THE WALL. FOLLOWING REMOVAL OF FORM TIES, RECESSES ARE TO BE CAREFULLY FILLED AND POINTED WITH MORTAR.

BAR SUPPORTS AND SPACERS FOR REINFORCING SHALL BE PROVIDED IN ACCORDANCE WITH ACI 315-92. CHAIRS WITH 22 GA. SAND PLATES OR PRECAST BLOCKS SHALL BE PROVIDED FOR ALL REINFORCING OF CONCRETE IN CONTACT WITH GRADE. REINFORCING SHALL BE SECURELY TIED TO SUPPORTS.

REINFORCING SHALL NOT BE TACK WELDED OR WELDED IN ANY MANNER UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL PLANS.

REINFORCING SHALL BE STORED IN SUCH A MANNER AS TO INHIBIT RUSTING OR THE DEPOSIT OF OILS OR OTHER BOND INHIBITING DEPOSITS.

GRADE 60 DOWELS SHALL NOT BE BENT IN THE FIELD AFTER PLACING.

REINFORCING STEEL CONT.

THE CONTRACTOR SHALL BE RESPONSIBLE THAT ALL REBAR IS PROPERLY ALIGNED AND TIED IN PLACE BEFORE PLACING CONCRETE. ALL COLUMNS, WALL DOWELS, AND VERTICAL STEEL SHALL BE ACCURATELY LOCATED AND SECURED IN PLACE SO THAT IT REMAINS IN THE POSITION SHOWN DURING THE CONCRETE PLACING OPERATION. ANY REBAR FOUND IMPROPERLY INSTALLED SHALL BE REMOVED AND REPLACED.

COMPACTION REQUIREMENTS

SUBGRADE SOILS AND STRUCTURAL FILL MATERIALS SHALL BE COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THE PROJECT SPECIFICATIONS, THE GEOTECHNICAL REPORT, AND AS LISTED ON DRAWING C-1.

STRUCTURAL STEEL

STRUCTURAL STEEL SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC "MANUAL OF STEEL CONSTRUCTION", LOAD AND RESISTANCE FACTOR DESIGN, THIRD EDITION AND THE AISC "SPECIFICATION FOR THE DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS."

STRUCTURAL AND MISCELLANEOUS STEEL:
- WIDE FLANGES:
  - ASTM A992
  - Fy = 50,000 PSI
- CHANNELS, ANGLES AND STRUCTURAL PLATES:
  - ASTM A36
  - Fy = 36,000 PSI
- STRUCTURAL TUBE:
  - ASTM A500
  - GRADE B
  - Fy = 46,000 PSI
- STRUCTURAL PIPE
  - ASTM A53
  - GRADE B

UNLESS NOTED OTHERWISE

NEW AND UNSPLICED MATERIAL SHALL BE USED THROUGHOUT.

BOLTS SHALL CONFORM TO ASTM A325 TENSION CONTROL BOLTS UNLESS NOTED OTHERWISE, WITH A MINIMUM DIAMETER OF 3/4" UNLESS NOTED OTHERWISE ON THE DRAWINGS. WHERE CLEARANCE DOES NOT PERMIT THE USE OF TENSION CONTROL BOLTS, STANDARD A325 BOLTS SHALL BE USED AND INSPECTED IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS." ALL BOLTED CONNECTIONS NOT DETAILED SHALL BE DESIGNATED AS BEARING-TYPE CONNECTIONS, WASHERS SHALL BE INSTALLED UNDER NUTS OF FASTENERS.

ALL BOLTS SHALL BE INSTALLED IN A SNUG TIGHT CONDITION EXCEPT AT MOMENT CONNECTIONS, BRACED FRAME CONNECTIONS, AND AT CONNECTIONS DETAILED WITH A325SC BOLTS. AT THESE LOCATIONS, THE BOLTS SHALL BE TIGHTENED SO AS TO SHEAR THE SPLINE OFF THE BOLT.

SHOP CONNECTIONS MAY BE WELDED OR BOLTED UNLESS SPECIFICALLY DETAILED OTHERWISE. FIELD CONNECTIONS SHALL BE BOLTED UNLESS OTHERWISE NOTED.

ALL BOLTS HOLES THAT ARE REQUIRED TO BE FIELD DRILLED SHALL BE DRILLED WITH A MAG DRILL. FLAME CUTTING OF HOLES OR ENLARGING OF UNFAIR HOLES WILL NOT BE ALLOWED.

HEADED CONCRETE ANCHORS AND SHEAR CONNECTORS SHALL BE TYPE B, IN CONFORMANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE-STEEL". STRUCTURAL STEEL TO RECEIVE SHEAR CONNECTIONS SHALL BE FREE OF PAINT. WELDING PRE QUALIFICATION REQUIRED.

ALL WELDING OR GAS CUTTING SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS OF THE AMERICAN WELDING SOCIETY D1.1-2000. ALL WELDING SHALL USE E70XX ELECTRODES AND BE PERFORMED BY CERTIFIED WELDERS QUALIFIED BY THE AMERICAN WELDING SOCIETY, CODE D1.1, LATEST REVISION.

NO FIELD WELDING SHALL BE DONE IF THE TEMPERATURE IS BELOW 10 DEGREES FAHRENHEIT, OR IF THE WIND SPEED IS OVER 20 MPH WITHOUT WIND BREAKS.

GROUT: NON-SHRINK GROUT BENEATH BASE PLATES SHALL BE PLACED BY THE DRY-PACK METHOD.

FIELD WELDING OF ANCHOR BOLTS, REINFORCING STEEL AND EMBEDMENTS IS NOT PERMITTED.

ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED. MISCELLANEOUS EMBEDDED STEEL SHALL BE COATED PER PROJECT SPECIFICATIONS.

THREADS SHALL BE COARSE THREAD SERIES (UNC) FOR ALL ANCHOR BOLTS. THREADS SHALL CONFORM TO ANSI B1.1 HAVING A CLASS 2A TOLERANCE FOR BOLTS AND A CLASS 2B TOLERANCE FOR NUTS.

STRUCTURAL STEEL, CONT.

ALL ANCHOR BOLTS EMBEDDED IN CONCRETE SHALL BE ASTM F1554 BOLTS OR ASTM A36 THREADED AND NUTTED ROD OR EQUIVALENT POST-INSTALLED ENGINEER APPROVED FASTENER FROM APPROVED SUPPLIER. PROVIDE FLAT WASHERS BETWEEN ALL NUTS AND BASEPLATES. FASTEN BOTTOM NUT TO FULL ENGAGEMENT.

POST INSTALLED CONCRETE ANCHORS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS.

FOUNDATIONS

A SUBSURFACE SOIL INVESTIGATION HAS BEEN PERFORMED BY TERRACON CONSULTANTS, INC. PROJECT NO. 68105042 DATED JULY 12, 2010. THE CONTRACTOR SHALL OBTAIN, REVIEW AND COMPLY WITH THE REPORT.

SPECIAL INSPECTION

THE WORK INCLUDED IN THESE PLANS SHALL BE SPECIALLY INSPECTED IN ACCORDANCE WITH CHAPTER 17 OF THE 2006 IBC.

PRE-ENGINEERED METAL BUILDING

BUILDING SHALL BE A PREMANUFACTURED METAL BUILDING. THE BUILDING MANUFACTURER SHALL FABRICATE THE BUILDING IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND PROVIDE THE FOLLOWING:

- ONE BUILDING, INCLUDING INTERIOR AND EXTERIOR WALLS, DOORS, HATCHES, GUTTERS AND DOWNSPOUTS, ROOF, INTERNAL AND EXTERNAL LIGHTING INCLUDING AREA, EXIT EMERGENCY AND EGRESS SIGNAGE LIGHTING, ASSOCIATED INTERNAL ELECTRICAL WIRING (INCLUDING PANELS AND RECEPTACLES).
- PIPING, CABLING, AND CONDUIT PENETRATION SEALS FOR ALL PENETRATIONS THROUGH BUILDING WALLS.
- ALL BUILDING RELATED WIRING INSIDE THE BUILDING AND ASSOCIATED WITH EXTERNAL FEATURES SUCH AS ACCESS LIGHTING.
- DETAILED BUILDING DRAWINGS INCLUDING LOADS (ELECTRICAL, STRUCTURAL FORCES) FOR ITEMS FURNISHED BY THE MANUFACTURER (LIGHTING, HEATING, VENTILATION, FIRE PROTECTION).
- MANUFACTURER SHALL APPLY FOR AND RECEIVE ALL BUILDING PERMITS. MANUFACTURER SHALL PREPARE AND SUBMIT ALL TECHNICAL INFORMATION INCLUDING DRAWINGS, SPECIFICATIONS, ETC. AS MAY BE REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- START-UP CONSUMABLES AND SPARES.
- DOCUMENTATION AS SPECIFIED HEREIN.
- FIELD SERVICE REPRESENTATION, AS REQUIRED.
- RECOMMENDED LIST OF SPARE PARTS.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE FOLLOWING:

- HEATING AND VENTILATION SYSTEM.
- ANCHOR BOLTS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIED QUANTITY, LOCATIONS AND OTHER TECHNICAL DATA SUCH AS MATERIAL SIZES AND INSTALLATION REQUIREMENTS.
- UNLOADING, HANDLING, AND OUTDOOR STORAGE OF THE MANUFACTURER'S EQUIPMENT AND COMPONENTS AT SITE PRIOR TO INSTALLATION.
- DESIGN OF ANCHORAGE TO THE SPECIFIED BUILDING FOUNDATION.

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:
EAG	VAL		05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SUPERFUND SITE
LAS CRUCES, NEW MEXICO

STRUCTURAL GENERAL NOTES

GARY E. LANDON — NEW MEXICO — No. 17751 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

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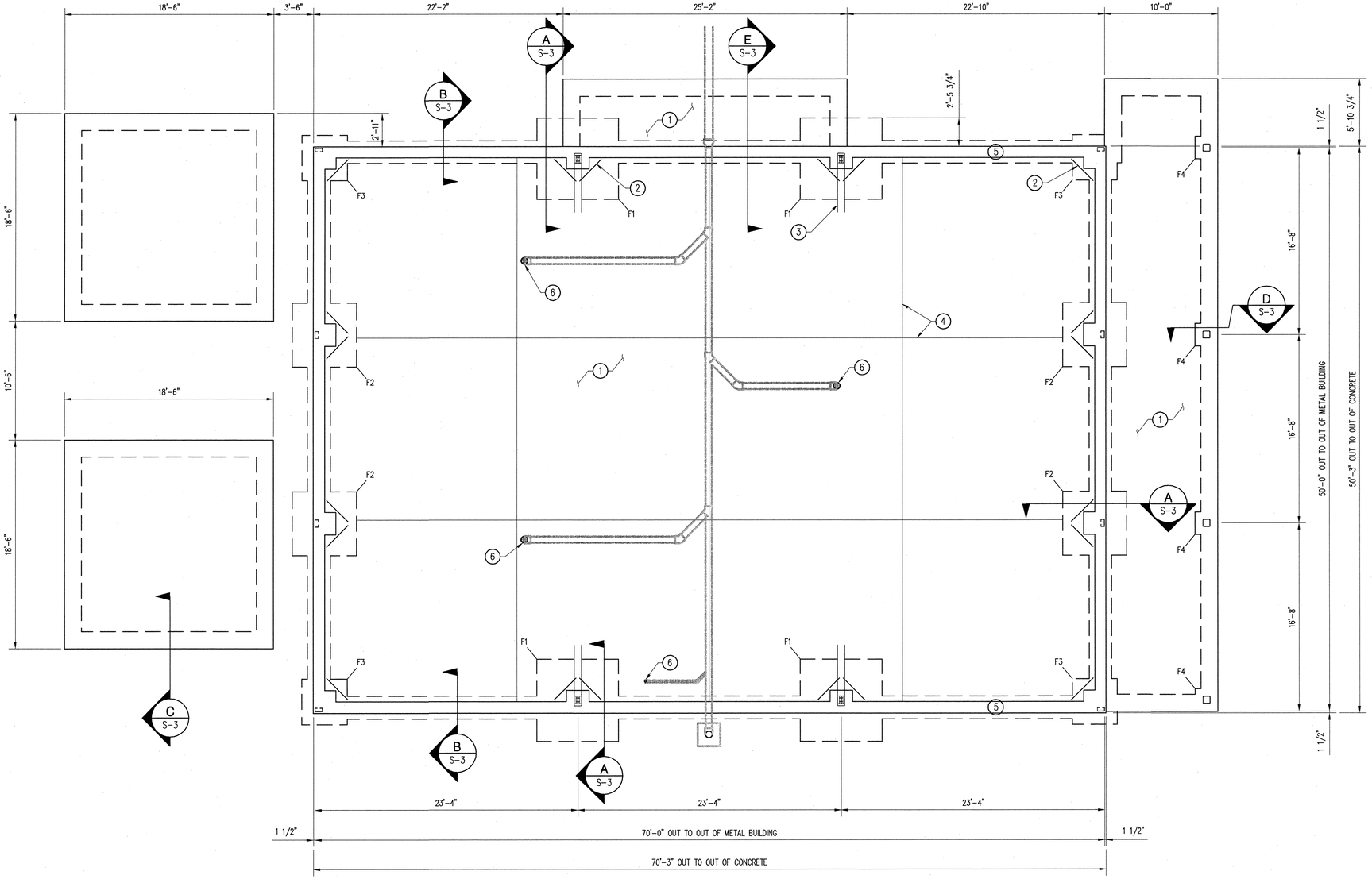

KEYED NOTES

1. 6" THICK CONCRETE SLAB W/ #5 @ 8" O.C.E.W. AND 2" CLEAR COVER TOP.
2. #4x3'-0", TYP. EACH INSIDE CORNER AND AT ALL COLUMN FOOTINGS.
3. #4 HAIR PIN BAR AROUND RIGID FRAME COLUMN ANCHOR BOLTS, LAP WITH SLAB REINFORCING W/ 2'-6" MIN. LAP, TYP OF 4.
4. CONSTRUCTION JOINTS TO CREATE 15' TO 20' NEARLY SQUARE PANELS. SEE DETAIL H, SHEET S-3.
5. LATERAL LOAD BRACING BY METAL BUILDING MANUFACTURER.
6. 2" AND 4" FLOOR DRAIN PENETRATIONS THROUGH FLOOR SLAB. SEE PLUMBING PLANS FOR LOCATIONS. SLOPE TOP OF SLAB TO DRAINS. MAINTAIN 6" SLAB THICKNESS AND 2" CLEAR COVER (TOP) ON REBAR.

1 / S-2 GRIGGS WALNUT GROUND WATER PLUME - FOUNDATION PLAN

3/16"=1'-0"

NOTE: ANCHOR BOLTS SHALL BE DESIGNED, PROVIDED, AND INSTALLED BY THE CONTRACTOR. ANCHOR BOLTS SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF NEW MEXICO. ANCHOR BOLT DESIGN LOADS SHALL BE PROVIDED BY THE METAL BUILDING MANUFACTURER.

FOOTING SCHEDULE

F1	7'-3" X 7'-3" X 1'-0" SPREAD FOOTING W/ (6) #5 BARS EACH WAY
F2	5'-8" X 5'-8" X 1'-0" SPREAD FOOTING W/ (5) #5 BARS EACH WAY
F3	4'-0" X 4'-0" X 1'-0" SPREAD FOOTING W/ (4) #5 BARS EACH WAY
F4	3'-0" X 3'-0" X 2'-0" TURNDOWN FOOTING W/ (3) #5 BARS EACH WAY

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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DESIGNED BY: EAC
DRAWN BY: VKL
CHECKED BY:
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SUPERFUND SITE
LAS CRUCES, NEW MEXICO

FOUNDATION PLAN

GARY E. LANDON — NEW MEXICO — No. 17751 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

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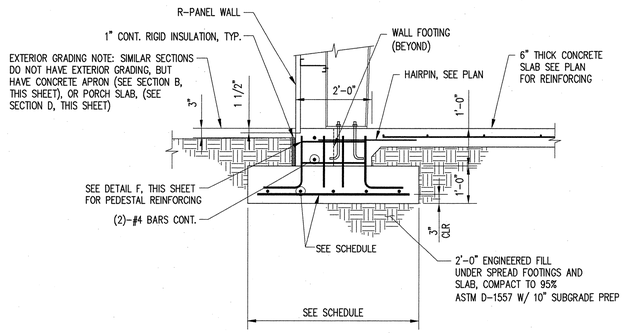

A S-3 COLUMN FOOTING DETAIL

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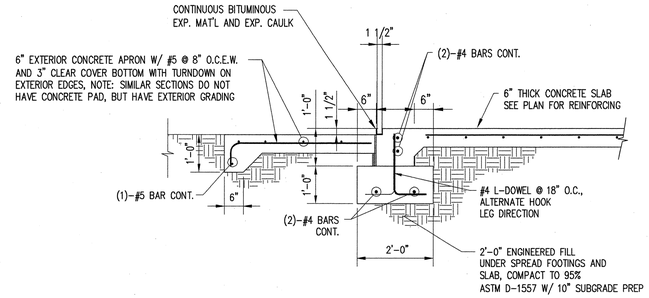

B S-3 WALL FOOTING DETAIL

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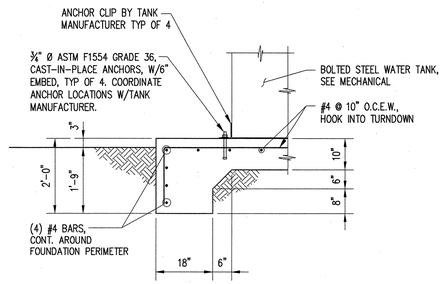

NOTE:
AT CONTRATOR'S OPTION, POST INSTALLED SS. ¾" Ø HILTI TZ EXPANSION ANCHORS W/ 4 3/4" MIN EMBED MAY BE USED INSTEAD OF CAST-IN-PLACE ANCHORS.

C S-3 TANK FOUNDATION DETAIL

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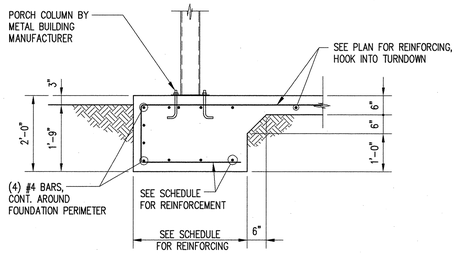

D S-3 FOOTING DETAIL

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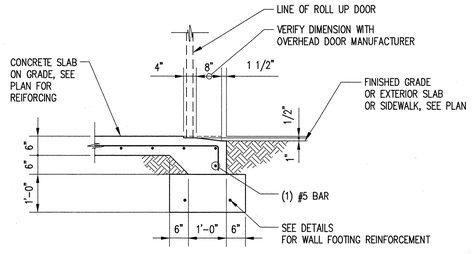

E S-3 WALL FOOTING AT OVERHEAD DOOR

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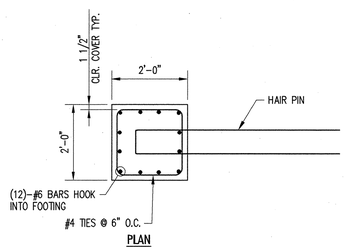

PLAN

F S-3 PEDESTAL DETAIL

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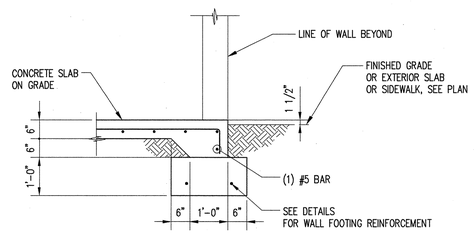

G S-3 WALL FOOTING AT WALK DOORS

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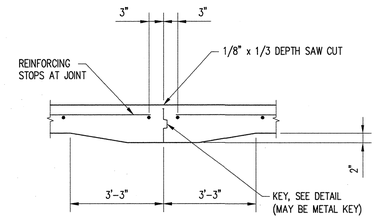
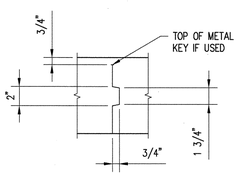
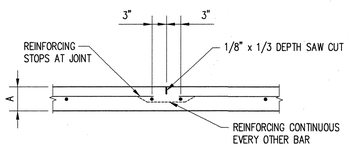


SLAB CONSTRUCTION JOINT



DETAIL OF KEY



SLAB CONTROL JOINT

H S-3 CONSTRUCTION JOINT DETAIL

NTS

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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GRIGGS- WALNUT GROUND WATER PLUME SUPERFUND SITE
LAS CRUCES, NEW MEXICO

STRUCTURAL DETAILS

JOB NO. ES09.0306

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GENERAL PLUMBING NOTES

1. ADEQUATE INSURANCE SHALL BE PROVIDED BY CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF WORK.
2. THE CONTRACTOR SHALL REVIEW THE PLANS AND SPECIFICATIONS OF ALL TRADES PRIOR TO BID IN ORDER TO ASSURE AN ACCURATE UNDERSTANDING OF THE EXACT SCOPE. ANY ITEMS REQUIRING CLARIFICATION SHALL BE BOUGHT TO THE ATTENTION OF THE MANAGING OFFICE PRIOR TO SUBMITTING BIDS. THIS INCLUDES, BUT IS NOT LIMITED TO: SCALED DRAWINGS, SPECIFICATIONS, CORRESPONDENCE, CONTRACT PROPOSALS, UTILITY CONNECTION ARRAIGNMENTS, ADDENDUMS, AND OTHER INFORMATION THAT COULD AFFECT MATERIAL SELECTION, INSTALLATION REQUIREMENTS, AND/OR FINAL APPROVALS. VERIFY WITH THE OWNER, ARCHITECT, AND THIS ENGINEERING OFFICE THAT THESE DOCUMENTS HAVE BEEN RECEIVED AND ARE A PART OF THIS CONTRACTOR'S FEE PROPOSAL.
3. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INDICATE ALL NECESSARY PIPING OFFSETS OR FITTINGS. THE CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT IN A MANNER AS TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. ALL INSTALLATIONS SHALL BE CONSISTENT WITH NORMALLY ACCEPTABLE INDUSTRY STANDARDS. THE CONTRACTOR SHALL NOTIFY THE MANAGING OFFICE IN WRITING OF ANY DISCREPANCIES OR CONFLICTS THAT WOULD EFFECT THE SYSTEMS PERFORMANCE OR WHICH WOULD INCUR ADDITIONAL COST. THIS NOTIFICATION SHALL BE MADE PRIOR TO THE INSTALLATION OF THE ITEMS CONCERNED.
4. REFER TO ARCHITECTURAL DOCUMENTS FOR MOUNTING LOCATIONS OF ALL FIXTURES, ESPECIALLY FOR "ADA" COMPLIANCE. WHERE ARCHITECT DOES NOT NOTE SPECIFIC MOUNTING INSTRUCTIONS, REFER TO MANUFACTURE'S GUIDELINES TO ASSURE COMPLIANCE. THIS INCLUDES RIM HEIGHTS, CLEARANCE TO VALVE ACTUATORS, WHEEL CHAIR ACCESS, ETC.
5. NEW AND/OR EXISTING EQUIPMENT INDICATED ON THIS DRAWING IS SHOWN IN APPROXIMATE POSITION(S). CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS INCLUDING EQUIPMENT LOCATIONS, P.O.C.'S AND STRUCTURAL MEMBERS PRIOR TO INSTALLATION. IN ALL CASES, ADEQUATE ACCESS (PER MANUFACTURES RECOMMENDATIONS AND CODE COMPLIANCE) FOR MAINTENANCE AND REPLACEMENT OF EQUIPMENT SHALL BE PROVIDED.
6. CONTRACTOR SHALL VERIFY ALL EQUIPMENT MODEL NUMBERS, CAPACITIES, SIZES, VOLTAGES AND OTHER SCHEDULED INFORMATION OF ALL TRADES WITH THE MANUFACTURE PRIOR TO ORDERING AND INSTALLATION.
7. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH ALL TRADES AND THE BUILDING OWNER AND /OR TENANTS, FOR THE PHASING OF ANY WORK THAT HAS THE POTENTIAL TO HINDER PLUMBING SERVICE TO ALL AREAS WITHIN OR OUTSIDE OF THIS PROJECT'S SCOPE. ALL PLUMBING SHUTDOWNS AND TIE-INS SHALL BE COORDINATED WITH THOSE LISTED ABOVE WITH NOT LESS THAN 24 HOURS NOTICE. IT SHALL BE THE CONTRACTOR'S RESPONSIBLY TO COORDINATE ALL TRADES AROUND THESE SCHEDULES SERVICE INTERRUPTIONS.
8. IT SHALL BE THE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL ISSUES DESCRIBED IN THESE PLUMBING DESIGN DOCUMENTS. ACTUAL PAYMENT OF PERMITTING FEES, METER INSTALLATIONS, YARDLINES, TIE-INS, STARTUPS, LICENSING, INSURANCE, INSPECTIONS, TEST, ETC., SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFIED OTHERWISE. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH ALL TRADES AND PERSONAL IN ORDER TO PROVIDE A COMPLETE AND ACCEPTABLE PLUMBING SYSTEM APPROVED BY ALL APPLICABLE AUTHORITIES HAVING JURISDICTIONS OVER THE PROJECT.
9. WHERE STRUCTURE IS ALTERED OR DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPAIR THE AREA TO MATCH SURROUNDING AREA PER ARCHITECTURAL SPECIFICATIONS. THIS WORK SHALL BE CONSIDERED PART OF THE CONTRACTOR'S BASE BID AND NO ADDITIONAL FUNDS SHALL BE PROVIDED TO THE CONTRACTOR.
10. CUTTING, TRENCHING, EXCAVATION, BACKFILLING, PENETRATIONS THROUGH FIRE WALLS, CONCRETE AND OTHER MATERIALS, ETC., ARE A PART OF THIS PROJECT SCOPE AND SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID.
11. THESE DESIGN CONTRACTS HAVE BEEN PREPARED BASED ON DATA FROM SEVERAL ENTITIES. VISUAL INSPECTION MAY NOT HAVE BEEN POSSIBLE AT THE TIME OF DESIGN. THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXISTING CONDITIONS AND PROVIDE A WRITTEN REPORT TO THE OWNER AND THIS ENGINEERING OFFICE OF ANY CONDITIONS THAT MAY INTERFERE WITH THE PROPOSED WORK PRIOR TO THE CONTRACTOR'S BID. THIS FIELD SURVEY SHALL ALSO INCLUDE VERIFICATION OF SIZES, LOCATIONS, AND CONDITION OF EXISTING UTILITIES. FAILURE TO VERITY FIELD CONDITIONS AND UTILITIES PRIOR TO BID SHALL PROHIBIT ANY CHANGE ORDERS RELATING TO UTILITY TIE-INS, ROUTING ALTERATIONS FOR STRUCTURAL CONDITIONS, OR OTHER WORK THAT OTHERWISE COULD HAVE BEEN AVOIDED HAD A THOROUGH FIELD INSPECTION BEEN CONDUCTED.
12. PLUMBING FIXTURES ARE FURNISHED BY CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ROUGH-INS OF INTERCONNECTING PIPING, TRAPS, INDIRECT WASTE LINES AND OTHER CONNECTIONS FOR THE EQUIPMENT IN ORDER TO MAKE ALL EQUIPMENT AND FIXTURES OPERATIONAL AND IN COMPLIANCE WITH APPLICABLE CODES AND REGULATING AUTHORITIES.
13. ALL PLUMBING WORK SHALL CONFORM WITH FEDERAL, STATE AND LOCAL CODES, RULES AND REGULATIONS. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEMS SHALL BE FULLY OPERATIONAL.
14. IF THE CONTRACTOR'S USE OF SUBSTITUTE MATERIAL, EQUIPMENT OR METHODS OF INSTALLATION REQUIRED ANY CHANGE IN OTHER TRADES' WORK FROM THAT SHOWN ON THE DRAWINGS, THE EXTRA COST OF THE OTHER TRADES WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INITIATING THE SUBSTITUTION. SUBSTITUTIONS SHALL ONLY BE ALLOWED AS DESCRIBED IN THE SPECIFICATIONS AND/OR OTHER CONTRACT DOCUMENTS.
15. PROVIDE AND INSTALL SLEEVES AND FIRE SEAL FOR ALL PIPE PENETRATIONS THROUGH FLOORS, FIRE AND SMOKE WALLS. SEE SPECIFICATIONS.
16. APPROVAL OF SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM OBLIGATIONS TO FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTATION.
17. TEST AND ADJUST PLUMBING SYSTEMS PER SPECIFICATIONS.
18. ALL PIPING SHALL BE SUPPORTED APPROPRIATELY IN WALLS CEILING, AND BELOW FLOORS. SEE SPECIFICATIONS AND/OR SCHEMATIC FOR DETAILS.
19. ALL PIPING BRANCHES TO EQUIPMENT SHALL BE VALVED AND ALL VALVES SHALL HAVE UNIONS ADJACENT. ALL FIXTURE CONNECTIONS SHALL BE OF NEW FITTINGS. THE CONTRACTOR SHALL MAKE PROPER WASTE, VENT, HOT AND COLD WATER PIPING CONNECTIONS WITH REQUIRED FITTINGS TO ALL FIXTURES AND EQUIPMENT. NOT ALL BRANCH PIPING MAY BE SHOWN AND SUPPLIED FOR EACH PLUMBING FIXTURE EITHER AS AIR CHAMBERS OR APPROVED MANUFACTURED DEVICES OR IN COMBINATION. REFER TO PLANS FOR ADDITIONAL ITEMS AND LOCATIONS.
20. REDUCTIONS IN PIPE SIZE (LESS THAN THAT SHOWN ON PLANS) SHALL BE PERMITTED ONLY WHEN LOCATED IMMEDIATELY AT EQUIPMENT IN ORDER TO MATCH EQUIPMENT CONNECTIONS.
21. GAS FIRED EQUIPMENT SHALL BE PROVIDED WITH GAS COCK, PRESSURE REGULATOR (IF REQUIRED BY MANUFACTURE), MINIMUM 6" DIRT LEG WITH REMOVABLE CAP, AND UNION. ALL PIPING SHALL BE RIGID METALLIC TYPE UNLESS SPECIFIED OTHERWISE. COORDINATE WITH EQUIPMENT MANUFACTURE BEFORE PIPING ROUGH-IN.
22. ALL PIPING EXPOSED TO WEATHER SHALL BE PAINTED AND COATED WITH AN APPROVED PROTECTIVE COATING FOR CORROSION CONTROL. SEE SPECIFICATIONS.
23. ALL EXTERIOR GAS PIPING SHALL BE PRIMED AND PAINTED OSHA YELLOW ON ROOF AND PAINTED TO MATCH BUILDING'S EXTERIOR WALLS WHERE VISIBLE FROM GROUND. LABEL NO LESS THAN 20'-0" INCREMENTS ON CENTER WITH CLEAR BLOCK LETTERING "NATURAL GAS" OR "PROPANE" AS IS APPROPRIATE FOR THE FUEL TYPE FOR ENTIRE LENGTH OF PIPING ABOVE GRADE.
24. DRAIN PIPING FOR WATER HEATERS AND CONDENSATE TO BE RUN TO APPROVED RECEPTACLES OR GREEN SPACE AS ALLOWED BY LOCAL CODES.
25. CONTRACTOR IS TO VERIFY THAT FALL OF THE SEWER LINE WILL MEET INVERT AT POINT OF CONNECTION BEFORE INSTALLING PIPE.
26. EXPOSED HOT WATER AND DRAIN PIPING LOCATED BENEATH HANDICAPPED ACCESSIBLE LAVATORIES SHALL BE INSULATED OR OTHERWISE SHIELDED FROM HUMAN CONTACT PER ADA REQUIREMENTS. SIMILAR SHIELDING SHALL BE INSTALLED AT ALL SURGICAL SCRUB SINKS, KITCHEN HAND SINKS, AND ALL SIMILAR FIXTURES AS DICTATED BY LOCAL HEALTH AUTHORITIES AND CODE OFFICIALS.
27. ALL UNDERGROUND WATER LINES TO BE BURIED BELOW FROST LINE, MIN. 18" OR GREATER, AS DICTATED BY LOCAL CODES.
28. ALL INDIRECT WASTE LINES SHALL BE DISCHARGED TO FLOOR SINKS, FLOOR DRAINS OR OTHER FIXTURES WITH CODE APPROVED AIR GAP. WHERE ALLOWED BY CODE AND/OR LOCAL AUTHORITIES, CONDENSATE DRAINS AND EVAPORATIVE COOLER DRAINS MAY BE ROUTED TO GREEN SPACE WHERE CONVENIENT AND WHERE DRAIN WATER AND PIPING DOES NOT CROSS WALKING PATH. DRAINS FROM ROOFTOP EQUIPMENT SHALL NOT BE ROUTED TO ROOF DRAINS UNLESS SPECIFICALLY ALLOWED BY LOCAL AUTHORITIES.
29. ALL DISSIMILAR METALLIC PIPING AND ACCESSORIES SHALL BE SEPARATED WITH DIELECTRIC FITTINGS AND 10 MIL. POLY TAPE.
30. CONTRACTOR SHALL PROVIDE ACCESS DOORS (MIN, 18"x18") FOR ALL CONTROLS, MAINTENANCE ITEMS, AND VALVES BEHIND RIGID WALL OR CEILING MATERIAL.
31. CONTRACTOR SHALL VERIFY WATER PRESSURE CONDITIONS AT THE PROJECT SITE. CONTRACTOR SHALL PROVIDE PRESSURE REDUCER VALVE WHERE SUPPLY PRESSURE EXCEEDS 80 PSI. CONTRACTOR SHALL NOTIFY THIS ENGINEERING OFFICE IN WRITING WHERE EXISTING PRESSURES ARE LESS THAN 35 PSI.
32. THE BUILDING'S DOMESTIC AND FIRE PROTECTION WATER SYSTEMS SHALL HAVE INDEPENDENT APPROVED BACKFLOW PREVENTION DEVICES OF REDUCED PRESSURE TYPE (E.P.A. AND COUNTY APPROVED).
33. WHEN BACKFLOW PREVENTERS, ISOLATION VALVES, PIPING, AND OTHER FITTINGS FOR WATER SERVICE ARE ABOVE GRADE EXPOSED TO WEATHER; THESE DEVICES SHALL BE PROTECTED WITH AN INSULATED "HOT BOX" ENCLOSURE. ALUMINUM JACKETS SHALL ONLY BE ALLOWED WITH PRIOR APPROVALS PER SPECIFICATIONS.
34. ALL PIPE PENETRATIONS THRU CONCRETE SHALL BE SLEEVE WRAPPED OR OTHERWISE INSULATED TO PREVENT CORROSION. COPPER PIPING WITH THE POTENTIAL OF CONTACTING CONCRETE SHALL BE SIMILARLY PROTECTED ITS ENTIRE LENGTH; INCLUDING, BUT NOT LIMITED TO, ANY WATER PIPING BELOW SLAB OR PIPING PASSING THRU CONCRETE SLABS, BLOCKS, OR WALLS.
35. NO SEAMS SHALL BE ALLOWED IN COPPER PIPING BELOW SLAB.
36. ALL WATER HEATERS SHALL COMPLY WITH ASHRAE 90 STANDARDS AND APPLICABLE ENERGY CODES.

GENERAL HVAC NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL CODES, LAWS AND REGULATIONS.
2. ALL WORK TO BE COMPLETED PER THE INTERNATIONAL MECHANICAL CODE (LATEST EDITION) REQUIREMENTS.
3. ALL DUCTWORK TO BE IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
4. ALL MECHANICAL MUST BE COORDINATED WITH ARCHITECT AND ELECTRICIAN BEFORE INSTALLATION.
5. ALL DUCT SIZES SHOWN ARE INSIDE FREE AREA DIMENSIONS.
6. ALL FLEXIBLE DUCT SHALL BE FULLY EXTENDED. FREE OF KINKS, NO LONGER THAN 5'-0" AND SAME SIZE AS TERMINAL NECK.
7. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL MOTOR UNIT HOUSINGS.
8. ALL EXHAUST FANS AND PLUMBING VENTS SHALL BE LOCATED AT LEAST 10'-0" AWAY OR 2'-0" ABOVE FROM ANY OUTSIDE AIR INTAKES AND ALL VERTICAL PORTIONS OF BUILDING.
9. ALL LOW VOLTAGE CONTROL WIRING SHALL BE BY THE MECHANICAL CONTRACTOR.
10. LOCATION OF THERMOSTATS TO BE VERIFIED WITH OWNER BEFORE INSTALLATION. ALL TEMPERATURE SENSORS TO BE MOUNTED 44" AFF AND PROVIDED WITH OWNER APPROVED VENTILATED LOCKING COVERS.
11. INTERNALLY LINE ALL SUPPLY, RETURN, EXHAUST, AND TRANSFER DUCTS AS SHOWN ON PLANS. ALL OTHER DUCTWORK SHALL BE WRAPPED WITH INSULATION PER SPECIFICATIONS.
12. PROVIDE AND INSTALL ALL RETURN GRILLES WITH SOUND BOOT FOR DUCT WITHIN A MINIMUM OF 12" OF GRILLE.
13. PROVIDE BALANCING DAMPERS AND EXTRACTOR WHERE APPLICABLE.
14. SEAL ALL DUCT JOINTS WITH HIGH PRESSURE DUCT SEALER OR HAND CAST.
15. EXACT PLACEMENT OF DIFFUSERS AND GRILLES TO BE COORDINATED WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS PRIOR TO INSTALLATION.
16. CONTRACTOR TO VERIFY LOCATION OF ALL AIR EQUIPMENT SO THAT NO INTERFERENCES ARE ENCOUNTERED WITH OTHER EQUIPMENT OR WITH STRUCTURAL ELEMENTS.
17. MECHANICAL CONTRACTOR TO VERIFY THAT ALL DUCTWORK WILL FIT WHERE INDICATED WITHOUT INTERFERENCES.
18. CONTRACTOR TO LEVEL ALL AIR EQUIPMENT.
19. MECHANICAL CONTRACTOR TO INSTALL NEW FILTERS IN ALL AIR CONDITIONING UNITS AT SUBSTANTIAL COMPLETION PLUS ONE SET OF SPARE FILTERS.
20. ALL METAL FLUES AND/OR CHIMNEYS FROM FOSSIL FUELS FIRED EQUIPMENT MOUNTED INSIDE BUILDING SHALL BE DOUBLE WALL CONSTRUCTION.
21. SIZE NATURAL GAS ORIFICES FOR PROJECT SITE ELEVATION.
22. INSULATED ALL EXPOSED WATER PIPING.
23. ALL AIR CONDITIONING UNITS SHALL BE INSTALLED WITH VIBRATION ISOLATORS AND DUCT FLEX CONNECTORS.
24. PROVIDE BACK DRAFT DAMPERS AND BIRD SCREENS IN ALL EXHAUST SYSTEMS.
25. FABRICATION OF DUCTWORK SHALL BE BASED ON FIELD MEASUREMENTS. ADJUSTMENTS TO DUCT SIZES SHALL BE COORDINATED WITH THE ENGINEER.
26. MECHANICAL CONTRACTOR SHALL PROVIDE FIRE DAMPERS WHERE REQUIRED BY CODE AND AT DUCTS PENETRATING RATED ASSEMBLIES. MECHANICAL CONTRACTOR SHALL INSTALL DAMPERS IN ACCORDANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS.
27. ALL DEVIATIONS FROM SPECIFIED EQUIPMENT AND MATERIALS MUST BE COORDINATED WITH THE ENGINEER.
28. ILLUSTRATIONS SHOWN GENERALLY PROVIDED TO CONVEY CONCEPT AND ARE NOT INTENDED FOR AND DO NOT INCLUDE ALL DETAILS FOR ANY SPECIFIC INSTALLATION. ALL INSTALLATIONS MUST COMPLY WITH ALL APPLICABLE CODES.
29. TEST AND BALANCE SYSTEM PER NEBB STANDARDS AND SUBMIT REPORT TO ENGINEER. THERMOSTATS SHALL BE CALIBRATED DURING TEST AND BALANCE AND DOCUMENTED IN THE REPORT.

MECHANICAL SYMBOL LEGEND

ABBR.	SYMBOL	DESCRIPTION	ABBR.	SYMBOL	DESCRIPTION
NC		NORMALLY CLOSED		20/12	RIGID DUCTWORK – WIDTH/HEIGHT
NO		NORMALLY OPEN		20ø	RIGID ROUND DUCTWORK – DIAMETER SHOWN
FTR		FLUE THRU ROOF		20ø	ACOUSTICAL LINED DUCTWORK
VTR		VENT THRU ROOF			FLEXIBLE DUCTWORK – DIAMETER SHOWN
GV		GATE VALVE			DUCT TRANSITION
BV		BALL VALVE			SUPPLY AIR DUCT UP
GL		GLOBE VALVE			RETURN AIR DUCT UP
CV		CHECK VALVE			EXHAUST DUCT UP
FCO		FLOOR CLEANOUT			SUPPLY DUCT DOWN
PV		PLUG VALVE			RETURN AIR DUCT DOWN
TCV-2		CONTROL VALVE (TWO-WAY)			EXHAUST DUCT DOWN
P & TR		RELIEF VALVE			CEILING SUPPLY AIR DIFFUSER
PRV		PRESSURE REDUCING VALVE			CEILING RETURN AIR GRILLE
BFV		BUTTERFLY VALVE			IN-LINE CEILING SUPPLY AIR OUTLET
FCV		CIRCUIT SETTER VALVE	RA/EH		IN-LINE CEILING RETURN OR EXHAUST AIR INLET
STR		STRAINER	SA		SIDEWALL SUPPLY AIR OUTLET
UN		UNION	RA/EH		SIDEWALL RETURN OR EXHAUST AIR INLET
		VALVE IN RISER	TV		TURNING VANES
THERM		THERMOMETER			45° WYE TAKEOFF
PG		PRESSURE GAUGE			EQUIPMENT OUTLINE
FD		FLOOR DRAIN	SA		CEILING SUPPLY AIR OUTLET
FS		FLOOR SINK	RA/EH		CEILING RETURN OR EXHAUST AIR INLET
CAP		CAP ON END OF PIPE	FC		FLEXIBLE CONNECTION
CO, WCO		CLEANOUT, WALL CLEANOUT	MVD		MANUAL VOLUME DAMPER
WHYD		WALL HYDRANT	OBD		OPPOSED BLADE DAMPER
		RISER DOWN	PBD		PARALLEL BLADE DAMPER
		RISER UP	BDD		BACKDRAFT DAMPER
		DROP OR RISE	FD		FIRE DAMPER-VERTICAL ROLLING W/ SERVICE ACCESS DOOR
HB		HOSE BIBB			EQUIPMENT DESIGNATION
WH		WATER HEATER			KEYED NOTES
W	W	WATER LINE	DIA	ø	DIAMETER
CW	CW	COLD WATER LINE	T'STAT	T #	THERMOSTAT (# FOR UNIT)
HW	HW	HOT WATER LINE			
HWR	HWR	HOT WATER RETURN LINE			
V	V	VENT PIPING			
D	D	SOIL OR DRAIN LINE			
G	G	GAS – LOW PRESSURE			
C	C	CONDENSATE DRAIN			
CDV	CDV	COMBINATION DRAIN AND VENT			
HB		HOSE BIB			
		ROOF JACK			
		PIPE SLEEVE			

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

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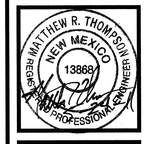
DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:
MRT	LLM	MRT	05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

DOMESTIC PLUMBING / HVAC LEGEND



JOB NO. ES09.0306

SHEET 26 of 58
DWG NO. PH-1

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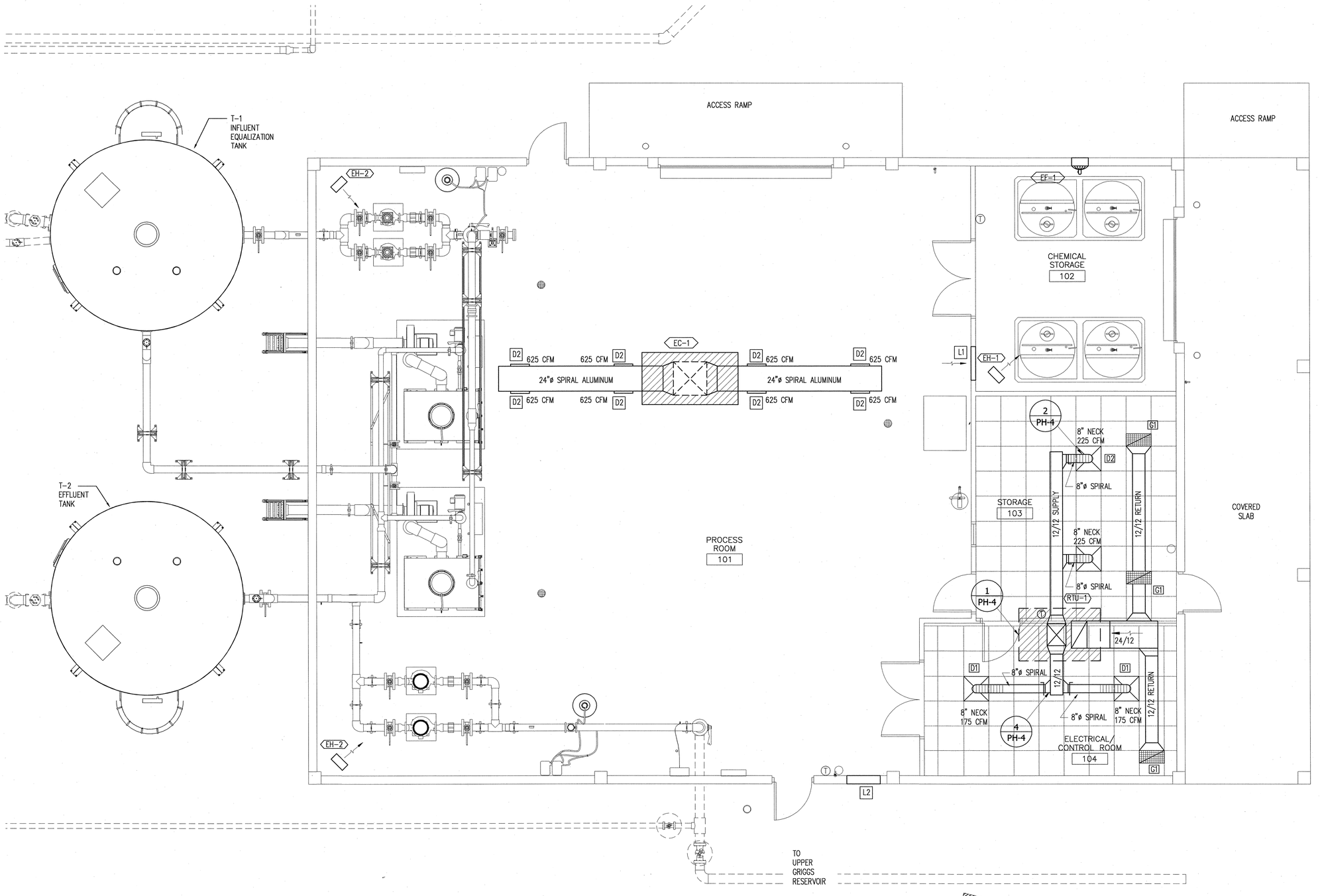

TREATMENT BUILDING HVAC PLAN (1/-)

1/4" = 1'-0"

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING HVAC PLAN

MATTHEW R. THOMPSON
NEW MEXICO
13868
REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 27 of 58
DWG NO. PH-2

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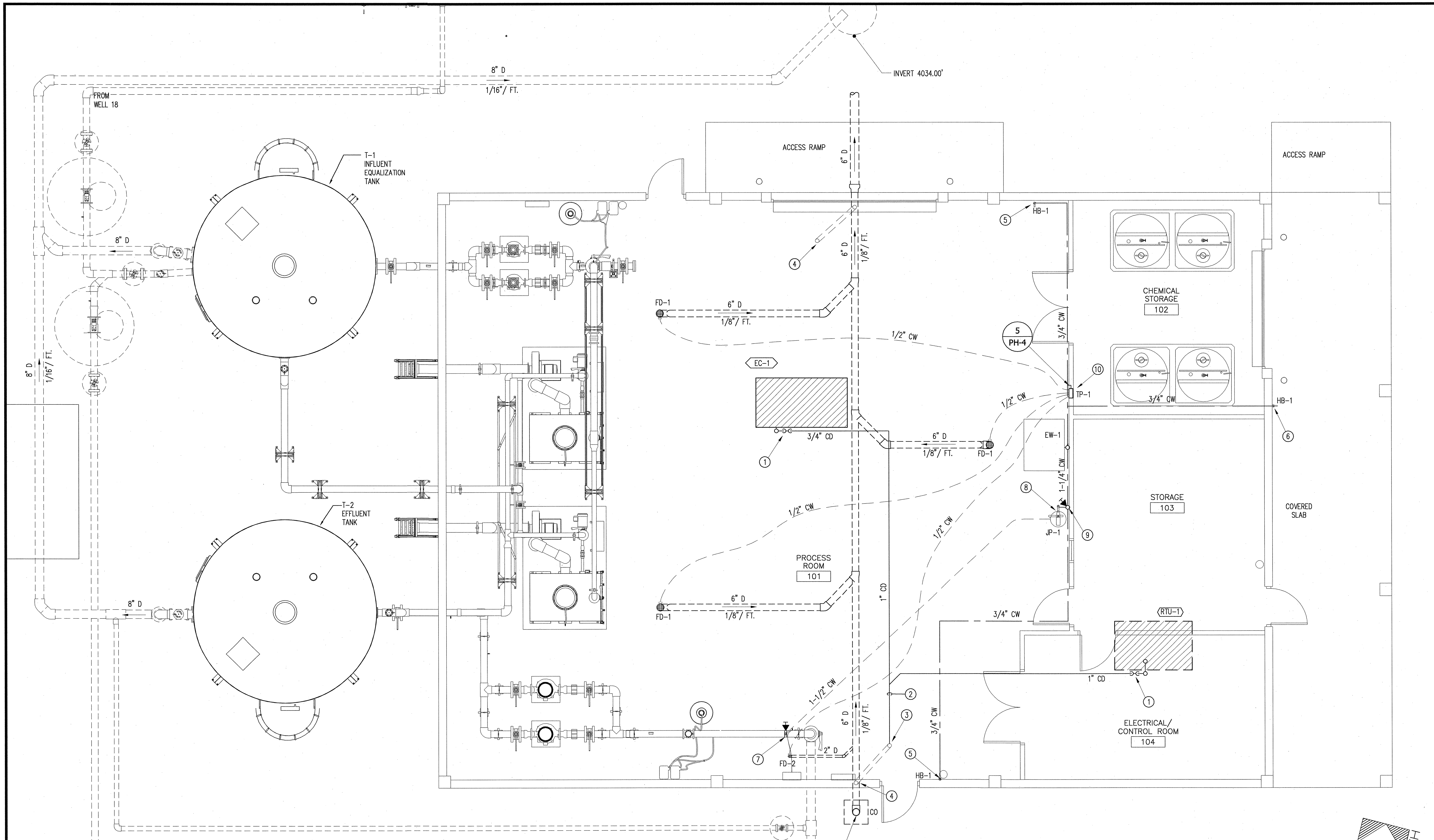

TREATMENT BUILDING PLUMBING PLAN (1)

1/4" = 1'-0"

KEYED NOTES:

1. INSTALL CONDENSATE AND EVAPORATIVE BLOWOFF P-TRAP BELOW UNIT BASE ENTRANCE W/ VENT.
2. INSTALL COPPER CONDENSATE DRAIN PIPE W/ PIPE HANGERS.
3. INSTALL COPPER ADAPTER AND CONNECT TO VENT STACK.
4. INSTALL 4" VENT THROUGH ROOF. PROVIDE VENT PIPE METAL PANEL PIPE JACK AND COAT PIPE WITH UV PROTECTION COATING.
5. INSTALL ALUMINUM UNISTRUT FROM EAVE HEIGHT GIRT TO FLOOR ANCHORED TO GIRT AND FLOOR. ROUTE COPPER WATERLINE AT MIDDLE OF UNISTRUT AND CLAMP TO UNISTRUT.
6. INSTALL GIRT TO FLOOR UNISTRUT REVERSE TO FACE R-PANEL TO ALLOW COPPER PIPE TO BE CLAMPED FOR STRUCTURAL SUPPORT.
7. INSTALL 6"x 1-1/2" SADDLE TAP FACING TOWARD SLAB. INSTALL 1-1/2" BALL VALVE IN RISER. SLEEVE THROUGH SLAB AND EXTEND FULL UNSPLICED PIECE OF POLYETHYLENE WATER DISTRIBUTION PIPE TO JOCKEY PUMP LOCATION UNDER SLAB.
8. INSTALL POLY TO COPPER TRANSITION AND CONNECT TO JOCKEY PUMP INLET. PROVIDE UNION CONNECTION ON EITHER SIDE OF PUMP FOR SERVICE REMOVAL.
9. RISE VERTICALLY TO CEILING TRUSS LINE. ALL HORIZONTAL DISTRIBUTION TO BE AT THE TRUSS LINE.
10. INSTALL 4-PORT TRAP PRIMER IN WALL SPACE AT 2'-0" AFF WITH FLUSH ACCESS DOOR. EXTEND UNSPLICED 1/2" COPPER TUBING TO TRAP CONNECTIONS ON 6" AND 2" FLOOR DRAINS.

NOTICE OF EXTENDED PAYMENT PROVISION:
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DESIGNED BY: MRT
DRAWN BY: LLM
CHECKED BY: MRT
DATE: 05/24/2011

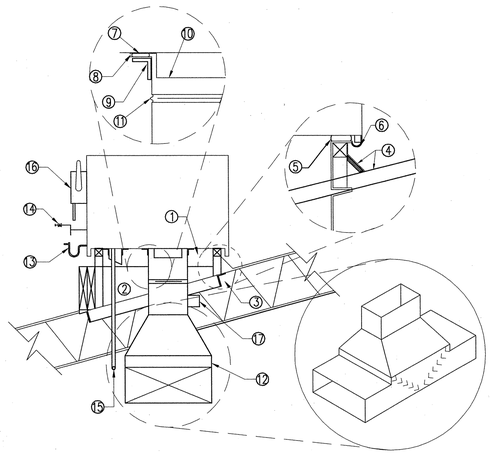
GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING PLUMBING PLAN

MATTHEW R. THOMPSON NEW MEXICO 13868 REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

DWG NO. PH-3

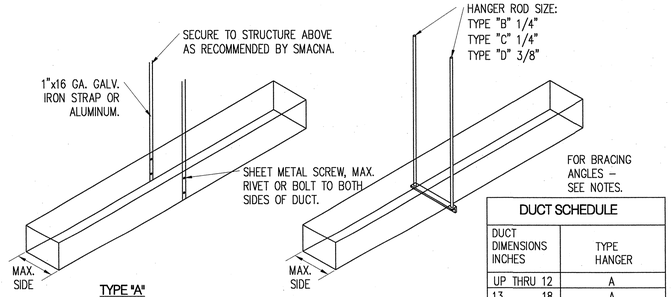


ROOFTOP UNIT MOUNTING DETAIL (1 / PH-2)

NO SCALE

KEYED NOTES

1. STANDING SEAM OR R-PANEL ROOF SYSTEM
2. INSTALL PRE-FABRICATED ROOF CURB. COORDINATE WITH CHOSEN ROOF PANEL SYSTEM. ROOF CURB TO MATCH BUILDING SLOPE AND RTU SUPPLY AND RETURN DUCT OPENINGS. SECURE TO ROOF TRUSSES SECURELY PER MANUFACTURER RECOMMENDATIONS.
3. COORDINATE WITH PRE-ENGINEERED METAL BUILDING MANUFACTURE FOR FRAMING REQUIREMENTS.
4. FLASHING WATERTIGHT ALL AROUND CURB TO ROOF PANELS.
5. INSTALL SEALING GASKET CONTINUOUS AROUND BASE OF CURB.
6. ATTACH RTU TO CURB PER MANUFACTURER'S INSTRUCTIONS.
7. INSTALL SEALING GASKET CONTINUOUS AROUND DUCT FLANGE TO ACHIEVE AN AIRTIGHT SEAL BETWEEN UNIT CONNECTION AND DUCTWORK.
8. DUCT FLANGE TO TURN OUT OVER DUCT CONNECTION FRAME.
9. DUCT CONNECTION FRAME INTEGRAL TO ROOF CURB.
10. RTU SUPPLY OR RETURN AIR OPENING.
11. DUCT FLEX CONNECTOR.
12. TRANSITION FROM FULL SIZE OF UNIT CONNECTION TO FULL DUCT WIDTH.
13. SEE CONDENSATE DRAIN TRAP SCHEMATIC.
14. SEE GAS PIPING CONNECTION SCHEMATIC.
15. PROVIDE THERMOSTAT AND CONTROL WIRING TO UNIT AS REQUIRED. USE CONDUIT OR PLENUM RATED WIRE WHERE REQUIRED. COORDINATE WITH ELECTRICAL. PROVIDE LABELING ON THIS CONNECTION @ 10 FOOT INTERVALS.
16. UNIT DISCONNECT. COORDINATE WITH ELECTRICAL.
17. PROVIDE AND WIRE SMOKE DETECTOR WHERE REQUIRED. COORDINATE WITH ELECTRICAL.
18. PROVIDE EQUIPMENT LABEL ON NORTH SIDE OF UNIT.



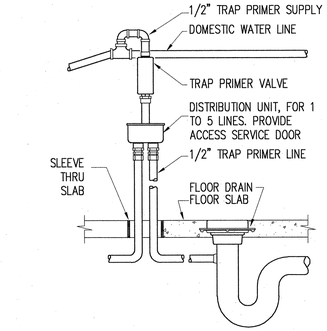
NOTES:

1. FOR SEVERAL DUCTS ON ONE HANGER TYPE "B" – "C" OR "D" MAY BE USED. SIZE OF HANGER WILL BE SELECTED ON THE SUM OF DUCT WIDTHS EQUAL TO MAX. WIDTH OF DUCT SCHEDULE.
2. SCHEDULE FOR ANGLES FOR BRACING: TYPE "B" 1-1/2"x 1-1/2"x 1/8" ANGLE MAX. SPACING 8'-0" CENTERS; TYPE "C" 1-1/2"x 1-1/2"x 3/16" ANGLE MAX. SPACING 8'-0" 2"x 2"x 1/4" MAX. SPACING 4'-0" CENTERS.

DUCT SCHEDULE	
DUCT DIMENSIONS INCHES	TYPE HANGER
UP THRU 12	A
13 18	A
19 30	A/B
31 42	B
43 54	B
55 60	B
61 84	C
85 96	C
OVER 96	D

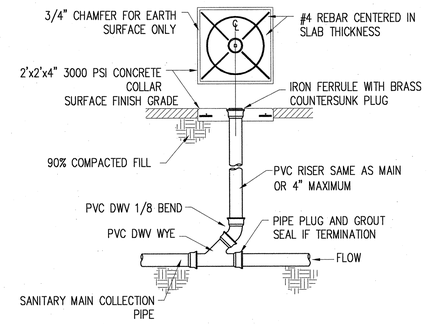
DUCT HANGER DETAIL (3 / PH-2)

NO SCALE



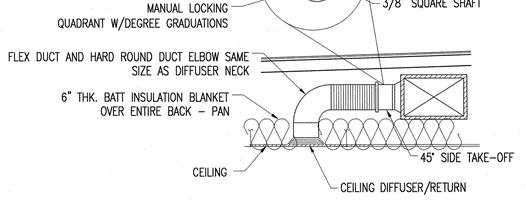
TRAP PRIMER DETAIL (5 / PH-3)

NO SCALE



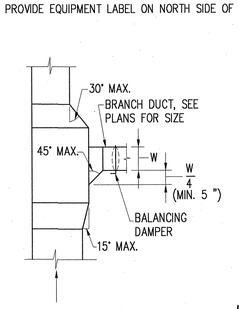
SINGLE GROUND CLEANOUT DETAIL (6 / PH-3)

NO SCALE

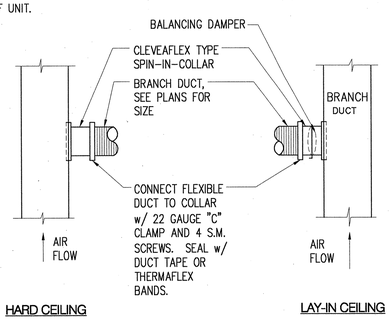


CEILING DIFFUSER/RETURN DETAIL (2 / PH-2)

NO SCALE



BRANCH - TAKE OFF



HARD CEILING

LAY-IN CEILING

DUCT CONNECTION DETAIL (4 / PH-2)

NO SCALE

EXHAUST FAN SCHEDULE

SYMBOL	SERVICE LOCATION	CFM	EXT. S.P.	RPM	H.P. (WATTS)	VOLTS/ PHASE	FLA	DRIVE	WEIGHT (LBS)	MANUFACTURER AND MODEL #	OPTIONS
EF-1	CHEMICAL	799	0.125"	1625	1/8	120/1	1.9	DIRECT	6.6	DAYTON 1BLH8	INTEGRAL BACKDRAFT SHUTTER MOUNT, 18" PROPELLER W/ WIRE GUARD, CORROSION RESISTANT FRP CONSTRUCTION. PROVIDE COOLING NEMA 4X T'STAT FOR FAN OPERATION ON RISING TEMP; PROVIDE NEMA 4X J-BOX W/ 24/7 TIMER WIRED IN PARALLEL W/ T-STAT. PROVIDE INTERLOCK TO DOOR SWITCH FOR OPERATION ON DOOR OPENING. MOUNT 8'-0" AFF.

ROOF TOP UNIT SCHEDULE

SYMBOL	CFM	EVAPORATOR DATA EXT. S.P.	ENT. DB/WB	TOTAL MBH	SENS. MBH	OUTSIDE AIR CFM	OUTDOOR AMBIENT TEMP °F	SEER	ELECTRIC HEATER (KW)	VOLTS/ PHASE	MCA	MOCP	EST. WGHT. (LBS.)	MANUFACT./ MODEL #	NOTES
RTU-1	800	0.5"	80/67	21.4	15.5	0	105	13	3.75	208/1	23	30	600	TRANE 4TCC30024A1000A	ROOF CURB, CU. TUBE/ALUM. FIN, FILTER AND RACK, ISOLATION DAMPERS, ECONOMIZER PACKAGE, HAIL GUARD, PROGRAMMABLE T'STAT W/ LOCKING COVER, SOLID STATE KIT, HIGH ALTITUDE KIT, TIME GUARD DEVICE

EVAPORATIVE COOLER UNIT SCHEDULE

SYMBOL	EVAPORATOR DATA CFM	FAN H.P.	EXT. S.P.	LAT °F	EFF.	VOLTS/ PHASE	SPEEDS	EST. WGHT. (LBS.)	MANUFACTURER AND MODEL #	OPTIONS
EC-1	4734	1	0.5"	73	85%	208/3ø	1	546	CHAMPION SAD 100	PROVIDE COOLING THERMOSTAT; PROVIDE INTEGRAL TRANSFORMER FOR PUMP CONTROL; PROVIDE 8" RIGID MEDIA. PROVIDE ROOF CURB FOR METAL ROOF INSTALLATION. PROVIDE SLIDE OUTLET DAMPER FOR WINTERIZATION.

ELECTRIC HEATER SCHEDULE

SYMBOL	SERVICE LOCATION	CFM	OUTPUT BTUH	KW	VOLTS/ PHASE	MAX. AMP RATING	MIN. OCPD SIZE	EST. WGHT. (LBS)	MANUFACTURER AND MODEL #	OPTIONS
EH-1	CHEMICAL	400	11,200	3.3	277/1	12	20	45	TRANE UHRA031CAT	UNIT HEATER; WALL OR CEILING MOUNT BRACKET; REMOTE WALL MOUNTED T-STAT; MOUNT 9' AFF TO BOTTOM.
EH-2	PROCESS	700	34,130	10	277/1	36.2	45	55	TRANE UHRA101CAT	UNIT HEATER; WALL OR CEILING MOUNT BRACKET; REMOTE WALL MOUNTED T-STAT; MOUNT 9' AFF TO BOTTOM.

AIR DISTRIBUTION DEVICE SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING/ HEIGHT	MATERIAL	FINISH	MANUFACTURER AND MODEL #	NOTES
D1	CEILING SUPPLY DIFFUSER	8'-0" AFF	ALUMINUM	ANODIZED CLEAR	TITUS 122RS	24" W x 24" H, PROVIDE DUCT NECK TRANSITION
D2	SPIRAL DRUM LOUVER	12'-0" AFF	ALUMINUM	ANODIZED CLEAR	TITUS DL	20" W x 10" H, ROTATABLE BLADES AND DRUM
L1	INTAKE LOUVER CHEMICAL ROOM	8'-0" AFF	ALUMINUM	ANODIZED CLEAR	GREENHECK GCI-402	18" W x 18" H, WITH INTEGRAL BACKDRAFT DAMPER
L2	EXHAUST LOUVER	8'-0" AFF	STEEL	KYNAR 50% MATCH BUILDING TRIM	GREENHECK GCI-402	32" W x 32" H, WITH INTEGRAL 120V MOTORIZED CONTROL DAMPER
G1	RETURN GRILLE	8'-0" AFF	ALUMINUM	ANODIZED CLEAR	TITUS 50F	24" W x 12" H, 1/2"x1/2"x1/2" GRID CORE

PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER/ MODEL	ROUGH-IN REQUIREMENTS DRAIN	VENT	COLD	HOT	ACCESSORIES
EW-1	EMERGENCY EYE WASH	BRADLEY S19-314	–	–	1 1/4"	–	STANDARD YELLOW COATING, PULL HANDLE FOR SHOWER AND PADDLE FOR EYEWASH.
FD-1	FLOOR DRAIN	ZURN ZB-415N-P-Y	6"	2"	1/2"	–	ADJUSTABLE BRONZE STRAINER 6" DIA., TRAP PRIMER CONNECTION, P-TRAP.
FD-2	FLOOR DRAIN	ZURN ZB-415N-P-Y	2"	2"	1/2"	–	ADJUSTABLE BRONZE STRAINER 2" DIA., TRAP PRIMER CONNECTION, P-TRAP.
HB-1	HOSE BIBB	WOODFORD 25	–	–	3/4"	–	3/4" INLET, VACUUM BREAKER, FREEZELESS
TP-1	TRAP PRIMER	PRECISION PLUMBING PRODUCTS INC. PR-500	–	–	1/2"	–	BRASS; PROVIDE ACCESS PANEL; PROVIDE MULTIPLE DRAIN DISTRIBUTION UNIT AS APPLICABLE

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

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MATTHEW R. THOMPSON NEW MEXICO 13868 REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 29 of 58
DWG NO. PH-4

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

DOMESTIC PLUMBING/ HVAC DETAILS

B-1 AND B-2
AIR STRIPPER BLOWER
1,300 CFM
15 HP

C-1 AND C-2
QED 24.4SS AIR STRIPPER
4 TRAY
250 GPM

CFP-1
DUPLEX
CHEMICAL FEED PUMP
PULSATRON LD03

CFP-2
DUPLEX CHEMICAL FEED PUMP
PULSATRON LD04

M-1
STATIC MIXER

P-1 DUPLEX
RAW WATER TRANSFER PUMP
TO AIR STRIPERS
500 GPM @ 23' TDH
4 HP 208/230/460V/3PH/60
4" CONNECTION

P-2 AND P-3
TRANSFER PUMP FROM AIR STRIPPER
250GPM @ 20FT TDH
2 HP 208/230/460V/3PH/TEFC

P-4 DUPLEX
EFFLUENT TRANSFER PUMP
TO UPPER GRIGGS RESERVOIR
600 GPM @ 104' TDH
22 HP 208/230/460V/3PH/60
6" CONNECTION

P-5
WASH WATER PUMP
20 GPM @ 18' TDH
DAVEY BT20-30

SP-1
SUBMERSIBLE PUMP
250 GPM @ 290' TDH
208/230/460V/3PH/60HZ

SP-2
SUBMERSIBLE PUMP
150 GPM @ 275' TDH
208/230/460V/3PH/60HZ

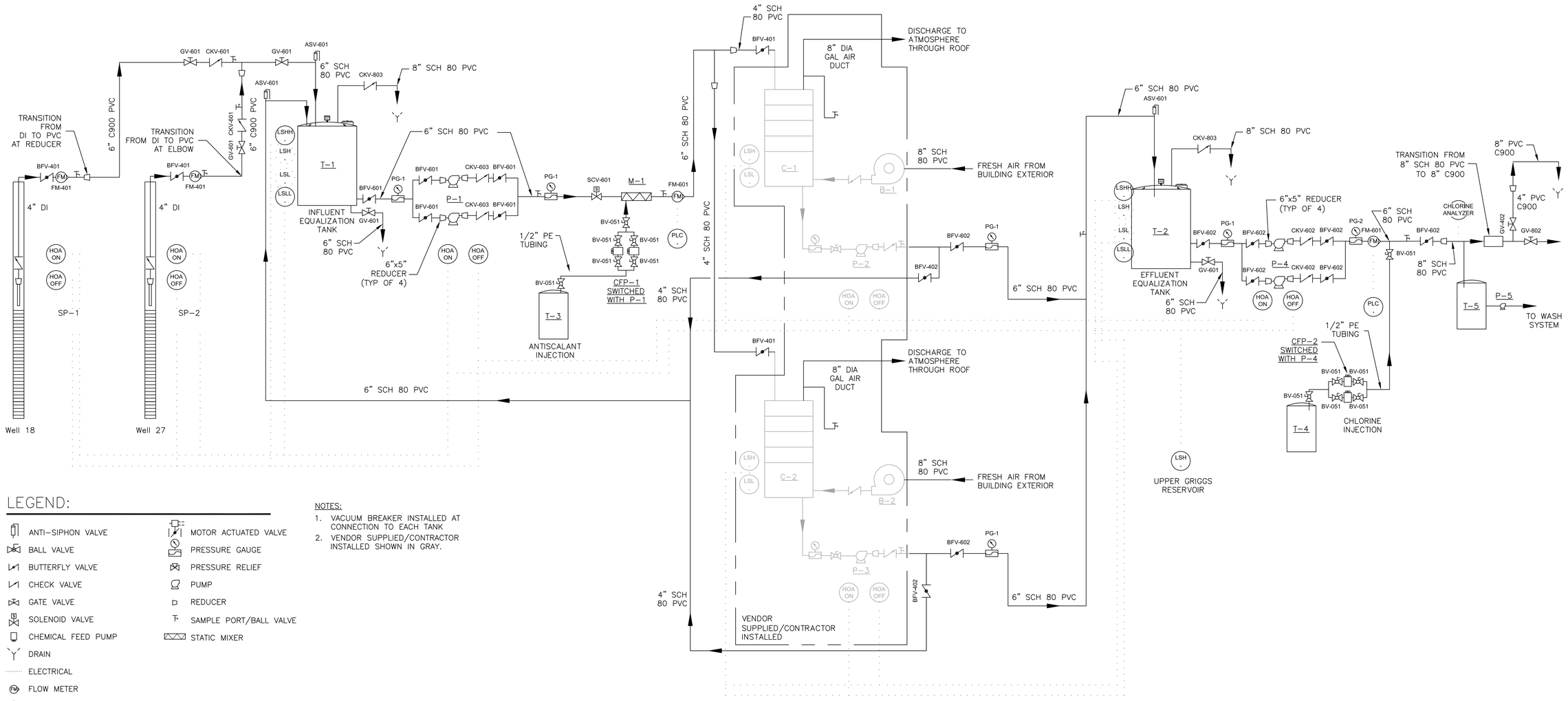
T-1
INFLUENT EQUALIZATION TANK
FROM EXTRACTION WELLS 18 & 27
28,000 GALLON BOLTED STEEL

T-2
EFFLUENT EQUALIZATION TANK
TO UPPER GRIGGS RESERVOIR
28,000 GALLON BOLTED STEEL

T-3
CHEMICAL STORAGE
ANTISCALANT
55 GALLON
POLY DRUM

T-4
CHEMICAL STORAGE
SODIUM HYPOCHLORITE
120 GALLON
DOUBLE WALLED HDPE TANK

T-5
HYDRO-PNEUMATIC
STORAGE TANK
45 GALLON



LEGEND:

- ANTI-SIPHON VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GATE VALVE
- SOLENOID VALVE
- CHEMICAL FEED PUMP
- DRAIN
- ELECTRICAL
- FLOW METER
- INDICATOR PANEL MOUNTED
- MOTOR ACTUATED VALVE
- PRESSURE GAUGE
- PRESSURE RELIEF
- PUMP
- REDUCER
- SAMPLE PORT/BALL VALVE
- STATIC MIXER

NOTES:
1. VACUUM BREAKER INSTALLED AT CONNECTION TO EACH TANK
2. VENDOR SUPPLIED/CONTRACTOR INSTALLED SHOWN IN GRAY.

MECHANICAL PIPING AND INSTRUMENTATION DIAGRAM 1 / NTS -

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\ES09_0306_05CS_MechPID.dwg

Daniel B. Stephens & Associates, Inc.
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DESIGNED BY: GP
DRAWN BY: CS
CHECKED BY: GH
DATE: 5/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

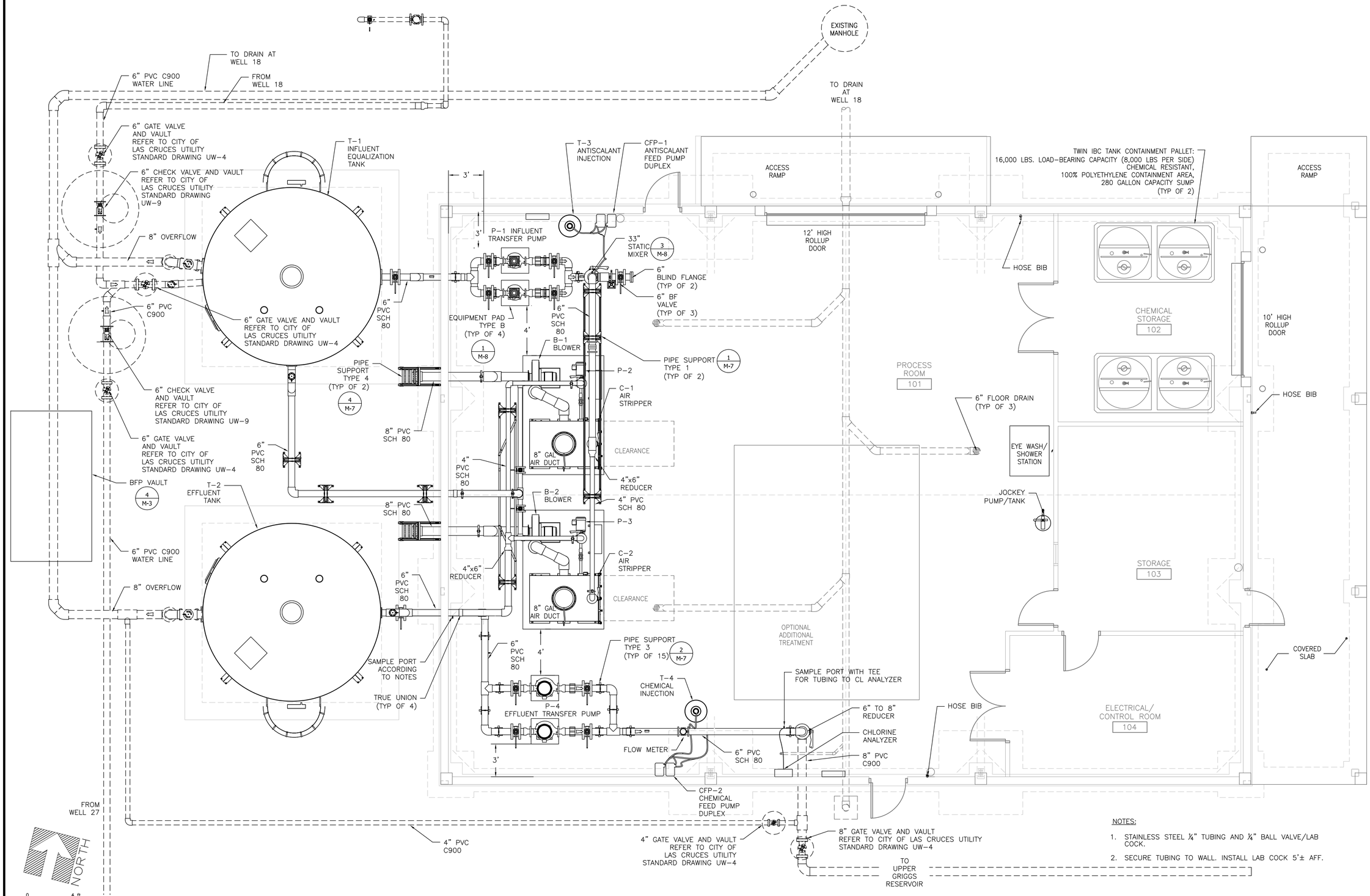
MECHANICAL PIPING AND INSTRUMENTATION DIAGRAM

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — LICENSED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 30 of 58
DWG NO. M-1

XREF:



NOTES:

1. STAINLESS STEEL ¼" TUBING AND ¼" BALL VALVE/LAB COCK.
2. SECURE TUBING TO WALL. INSTALL LAB COCK 5'± AFF.

TREATMENT BUILDING EQUIPMENT LAYOUT (1 / -)

1" = 4'-0"

NOTICE OF EXTENDED PAYMENT PROVISION:
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DATE: 5/24/2011

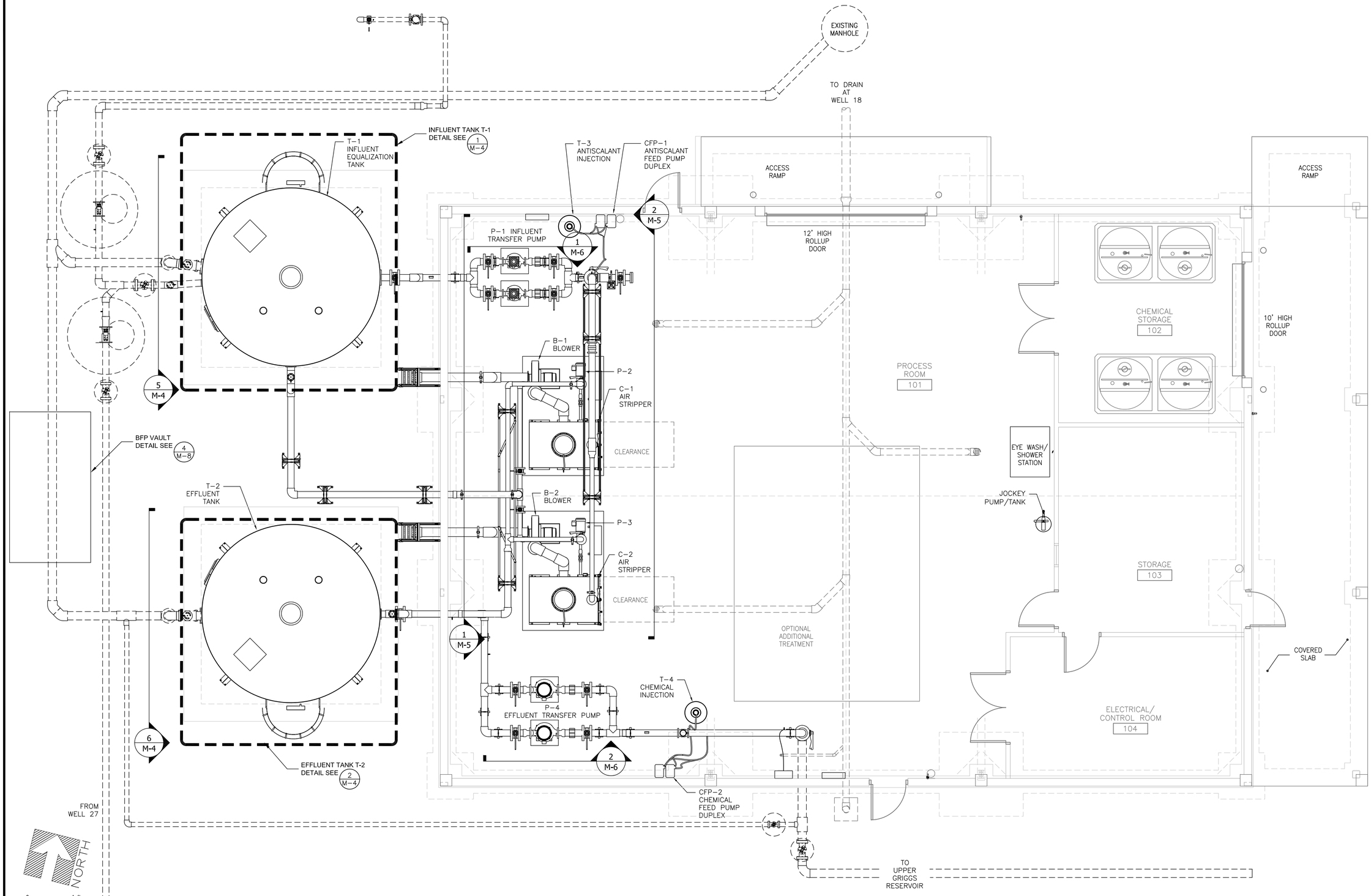
GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING EQUIPMENT LAYOUT

SUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 31 of 58
DWG NO. M-2



TREATMENT BUILDING ELEVATION LOCATIONS 1/-

1" = 4'-0"

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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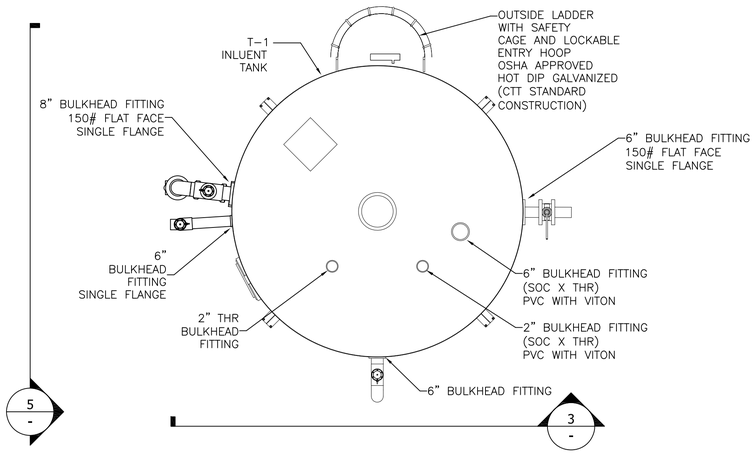
GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING ELEVATION LOCATIONS

GUNDAR PETERSON NEW MEXICO 16038 REGISTERED PROFESSIONAL ENGINEER 5/24/11

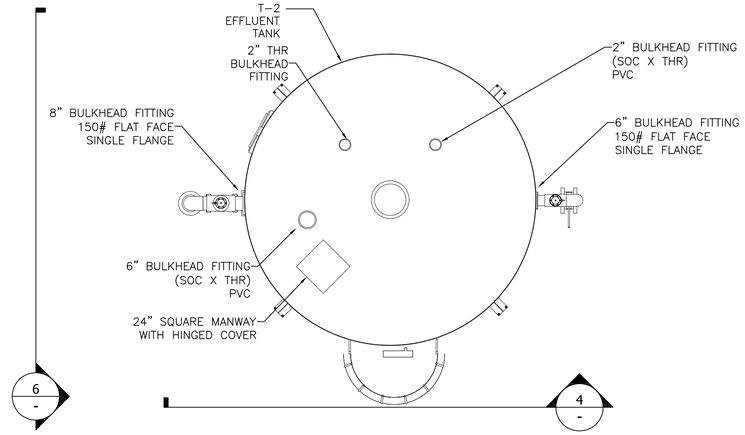
JOB NO. ES09.0306

SHEET 32 of 58
DWG NO. M-3



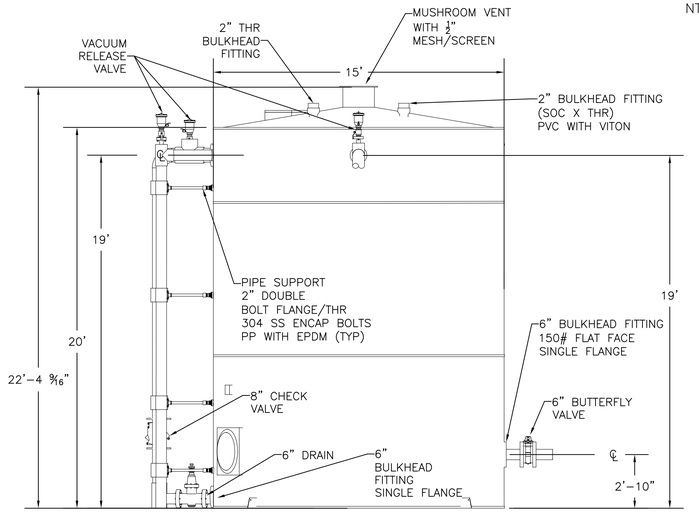
INFLUENT TANK T-1 1 M-3

NTS



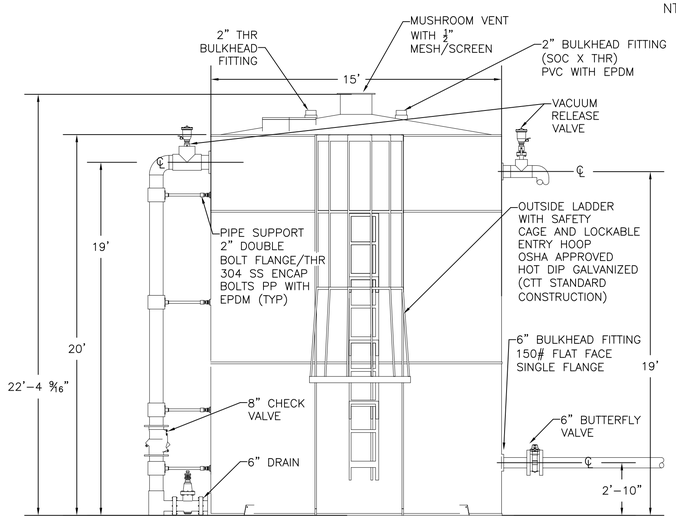
EFFLUENT TANK T-2 2 M-3

NTS



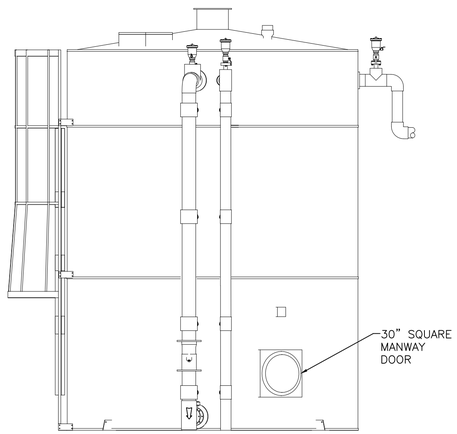
INFLUENT TANK T-1 NORTH ELEVATION 3 -

NTS



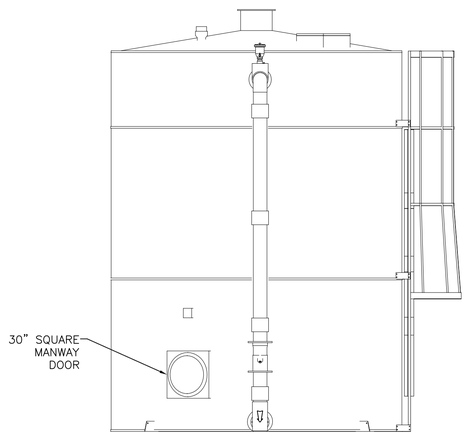
EFFLUENT TANK T-2 NORTH ELEVATION 4 -

NTS



INFLUENT TANK T-1 WEST ELEVATION 5 -

NTS



EFFLUENT TANK T-2 WEST ELEVATION 6 -

NTS

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GP	CS	GH	5/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

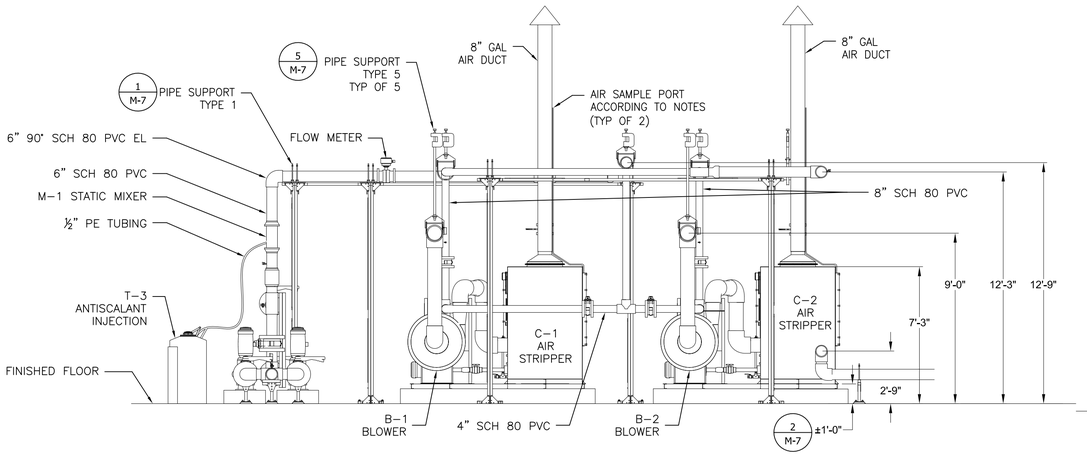
TREATMENT BUILDING TANK ELEVATIONS

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

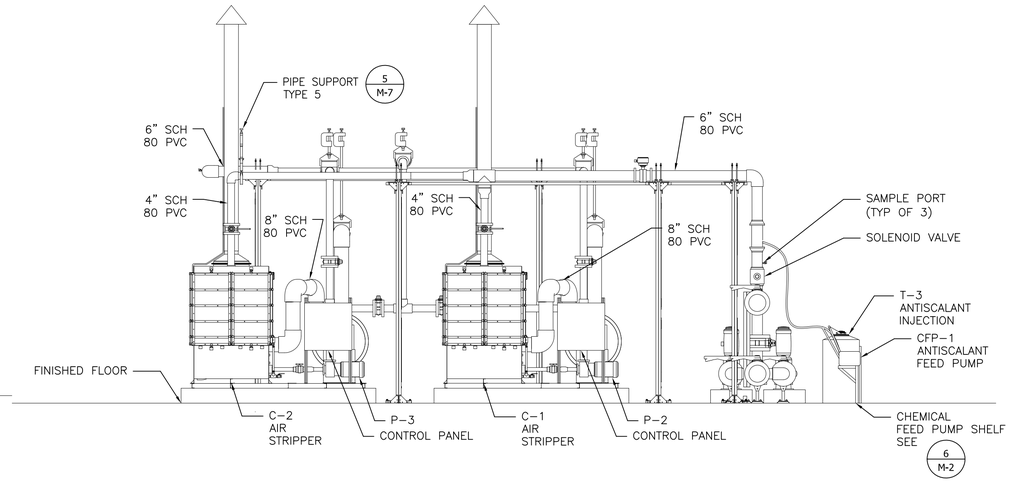
SHEET 33 of 58
DWG NO. M-4

XREF:



AIR STRIPPER - WEST (1 / M-3)

NTS



AIR STRIPPER - EAST (2 / M-3)

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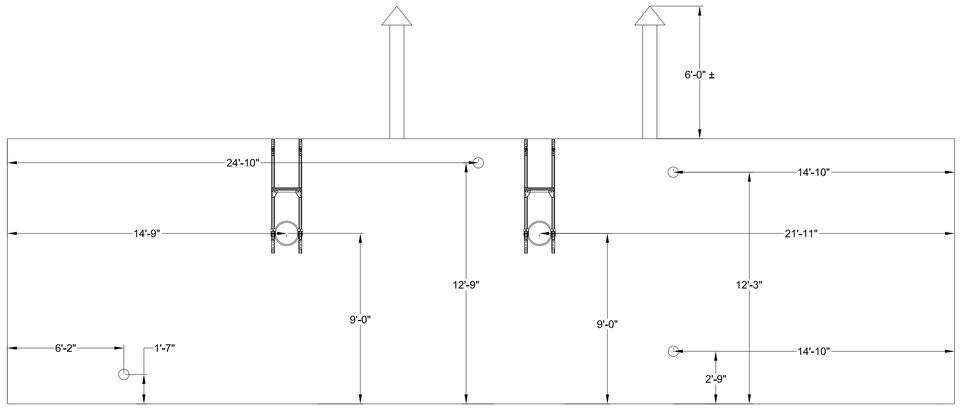

AIR STRIPPER - WEST WALL PENETRATIONS (1 / M-3)

NTS

NOTES:

1. STAINLESS STEEL ¼" TUBING AND ¼" BALL VALVE/LAB COCK.

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\ES09_0306_08CS_mech_elevations.dwg

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GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING EQUIPMENT ELEVATIONS

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — LICENSED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 34 of 58
DWG NO. M-5

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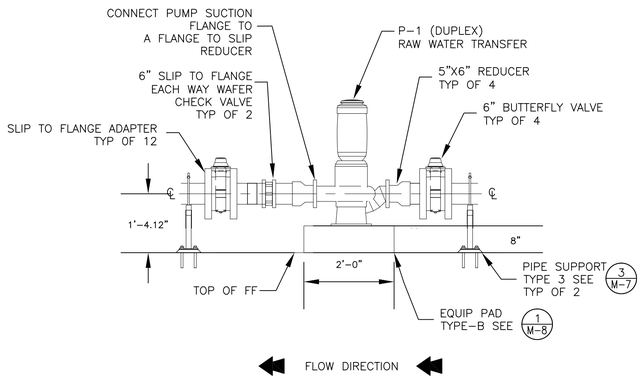
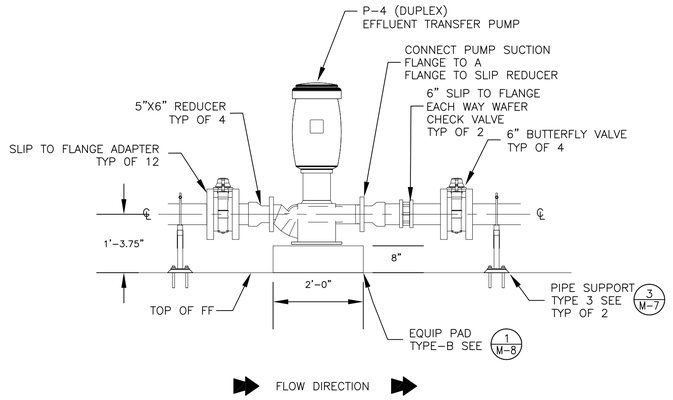


PUMP P-1 1 M-3

NTS



PUMP P-4 2 M-3

NTS

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GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING PUMP ELEVATIONS

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 35 of 58
DWG NO. M-6

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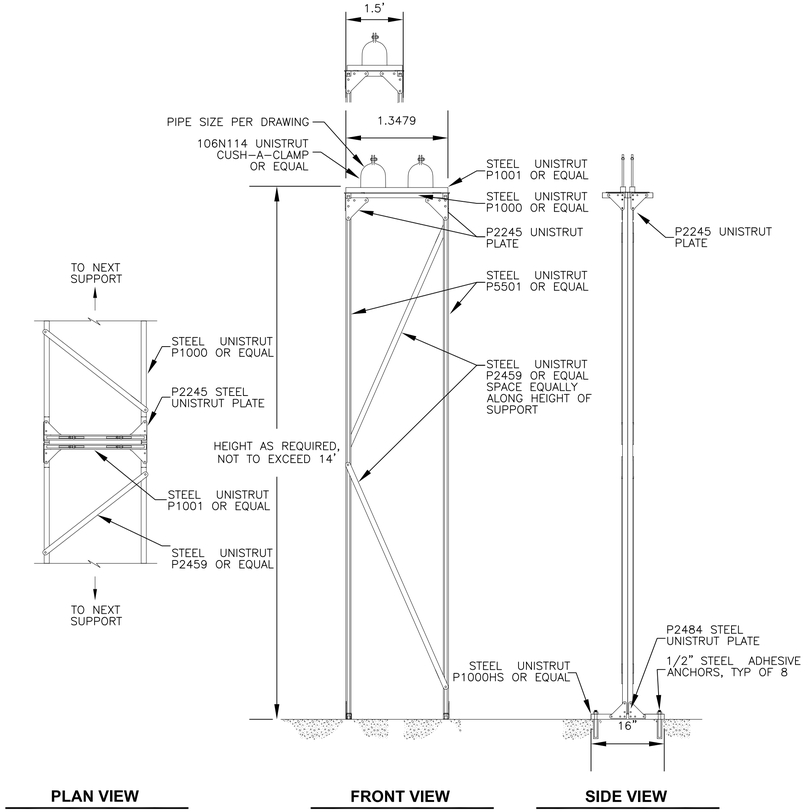
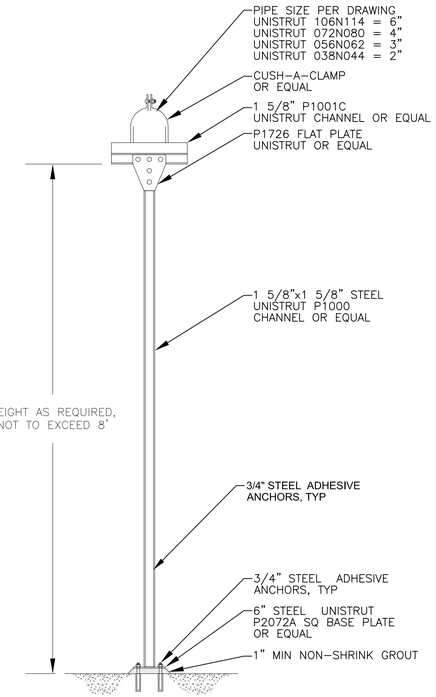


PIPE SUPPORT DETAIL TYPE 1 (1 / M-2)

NTS



PIPE SUPPORT DETAIL TYPE 2 (2 / M-2)

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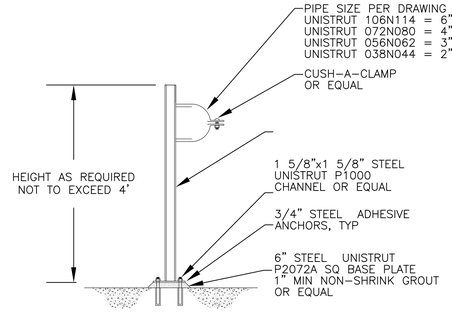
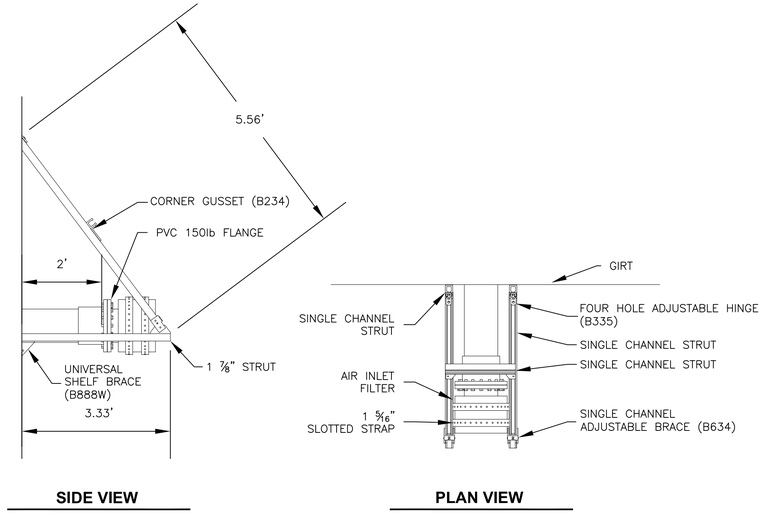


NOTES:

1. 1 5/8" P1001C UNISTRUT CHANNEL OR EQUAL SHALL BE USED IN PLACE OF P1000 OR EQUAL TO SUPPORT PIPES LESS THAN 3" FROM FINISHED FLOOR.
2. NON-SHRINK GROUT SHALL BE OMMITTED WHEN SUPPORTING PIPES LESS THAN 2" FROM FINISHED FLOOR.

PIPE SUPPORT DETAIL TYPE 3 (3 / M-2)

NTS



PIPE SUPPORT DETAIL TYPE 4 (4 / M-2)

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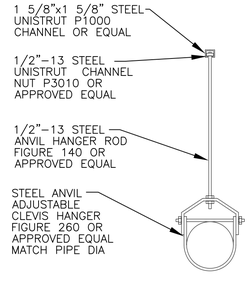

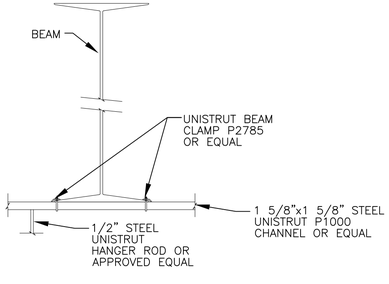

PIPE SUPPORT DETAIL TYPE 5 (5 / M-2)

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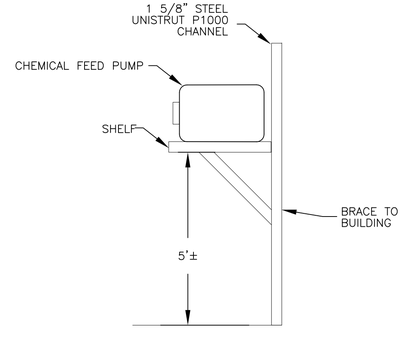

CHEMICAL FEED PUMP SHELF (6 / M-2)

NTS

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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DRAWN BY: CS
CHECKED BY: GH
DATE: 5/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

PROCESS PIPE SUPPORT DETAILS

GUNDAR PETERSON — NEW MEXICO — 16038 — REGISTERED PROFESSIONAL ENGINEER — 5/24/11

JOB NO. ES09.0306

SHEET 36 of 58
DWG NO. M-7

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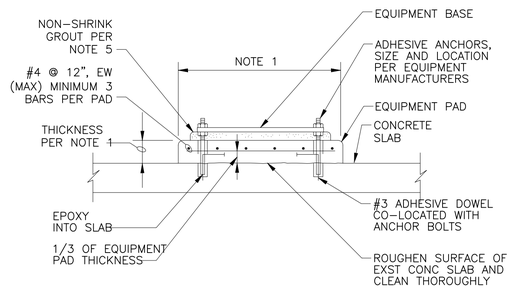
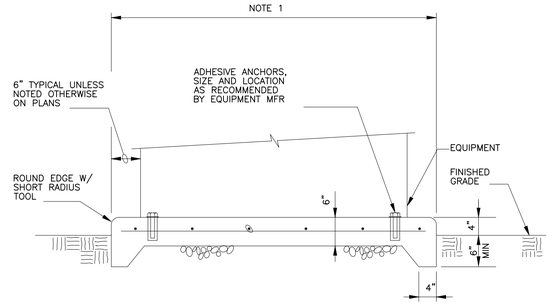


EQUIPMENT PAD TYPE B 1 / M-2

NTS



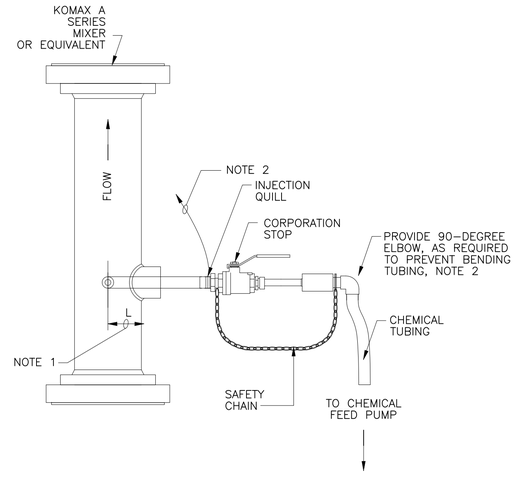
EQUIPMENT PAD TYPE D 2 / M-2

NTS

EQUIPMENT PAD NOTES:

1. EQUIPMENT PAD SIZE PER DRAWINGS. WHERE PAD SIZE IS NOT SHOWN, SIZE TO FIT EQUIPMENT.
2. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
3. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.
4. TYPE "D" DETAIL SHALL BE USED ONLY FOR SLABS ON GRADE AND AT GRADE. THE SURROUNDING FLOOR SLAB SHALL NOT BE PLACED UNTIL THE EXACT SIZE AND LOCATION OF THE PAD IS KNOWN.
5. WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN, THE WEDGES OR SHIMS SHALL NOT BE EXPOSED TO VIEW.
6. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE TO KEEP ANCHOR BOLT OUT OF SLAB (SEE TABLE BELOW). WHERE EQUIPMENT OR PIPING ELEVATION REQUIRE A PAD HEIGHT LESS THAN THE MINIMUM SHOWN, USE TYPE B WITH BLOCKOUT.
7. PLACE CHAIRS FOR SUPPORTING REBAR MINIMUM 2 FOOT SPACING EW.

AB DIA (IN.)	1/2	5/8	3/4	7/8	1	1 1/4	1 3/8	1 1/2	1 3/4	2
MIN PAD HT (IN.)	7	8 1/2	10	11	12 1/2	15	16 1/2	18	21	24

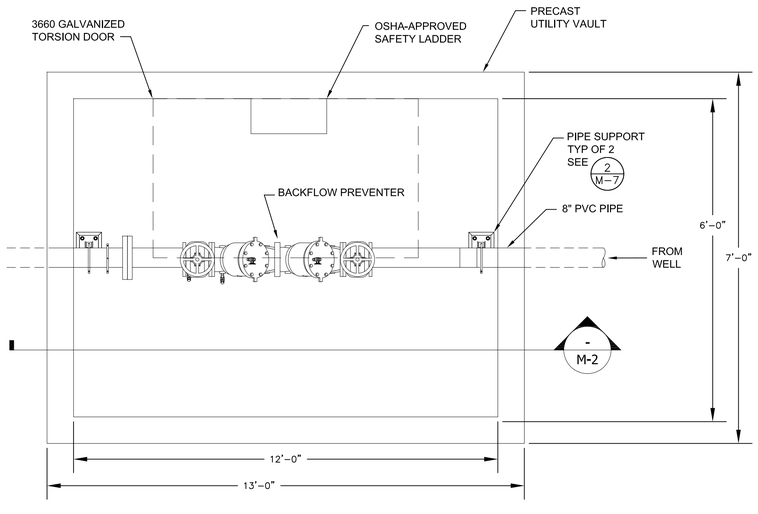


CHEMICAL INJECTION POINT 3 / M-2

NTS

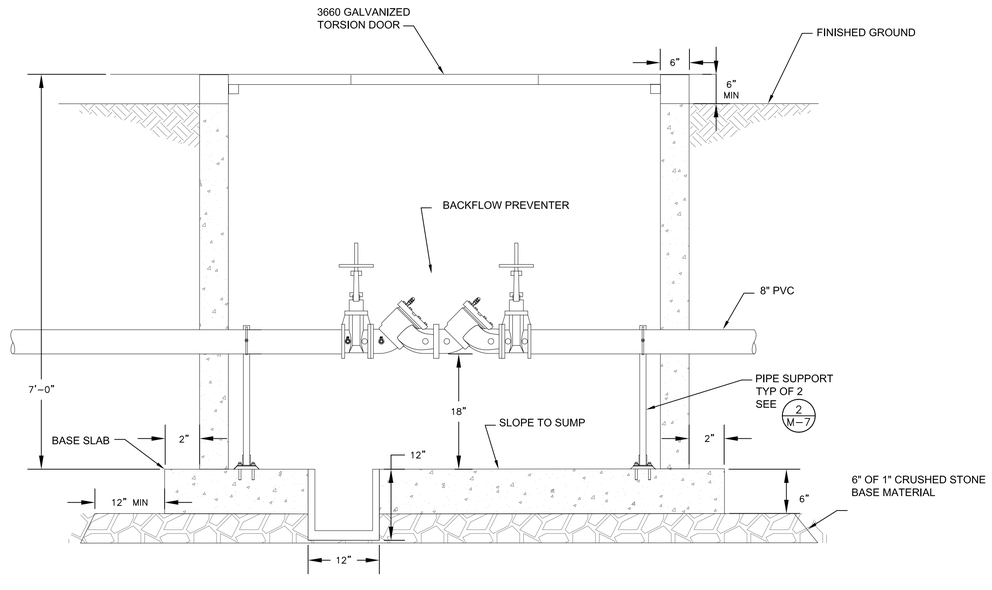
NOTES:

1. INJECTION QUILL SHALL EXTEND INTO PROCESS PIPE SUCH THAT "L" DIMENSION IS BETWEEN ONE-THIRD AND ONE-HALF OF PIPE DIAMETER.
2. LOCATE PIPE TAP ABOVE THE HORIZONTAL PLANE. ORIENT PIPE TAP/INJECTION QUILL AND PROVIDE FITTINGS AS REQUIRED TO ALLOW FOR ACCESS TO INJECTION POINT AND A STRAIGHT RUN OF CHEMICAL TUBING TO PUMP.



BFP PLAN 4 / M-2

NTS



BFP SECTION 5 / M-2

NTS

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

PROCESS MECHANICAL DETAILS

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — LICENSED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 37 of 58
DWG NO. M-8

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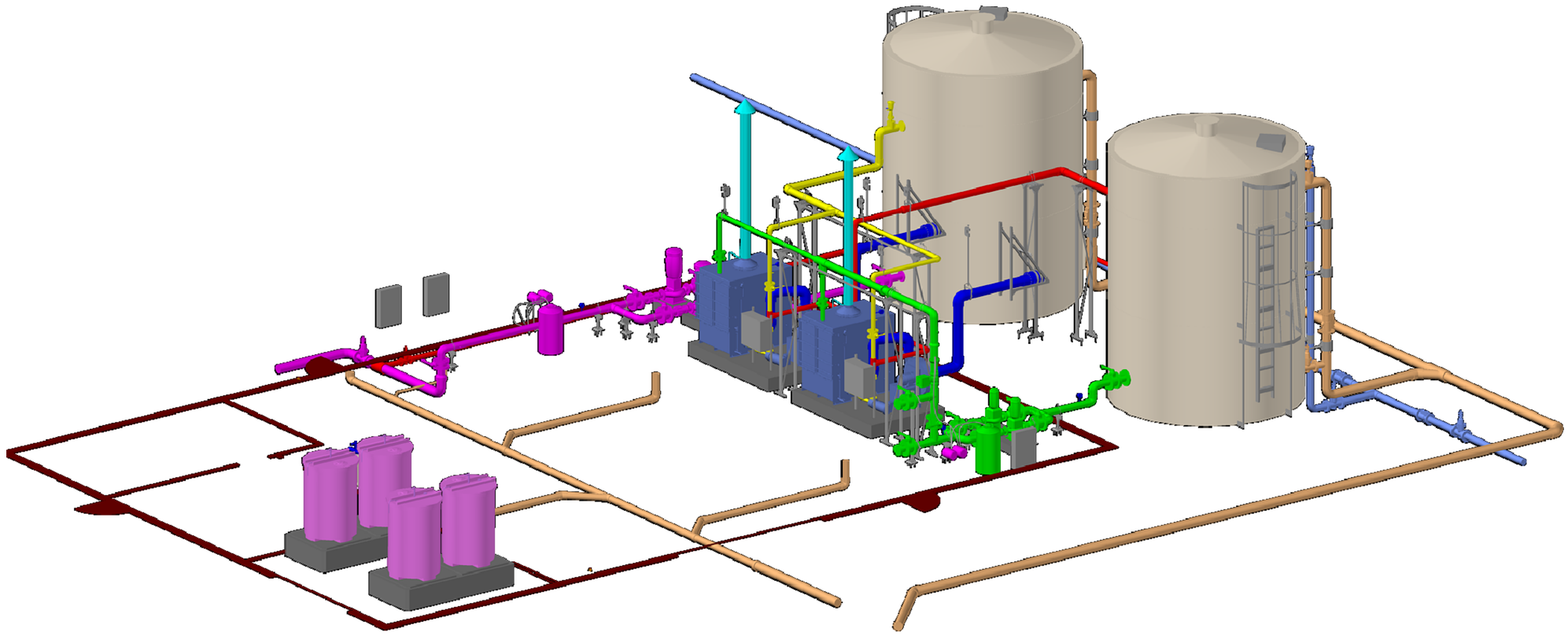

TREATMENT BUILDING SOUTHEAST ISOMETRIC (1)
NTS

NOTICE OF EXTENDED PAYMENT PROVISION:
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GRIGGS – WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

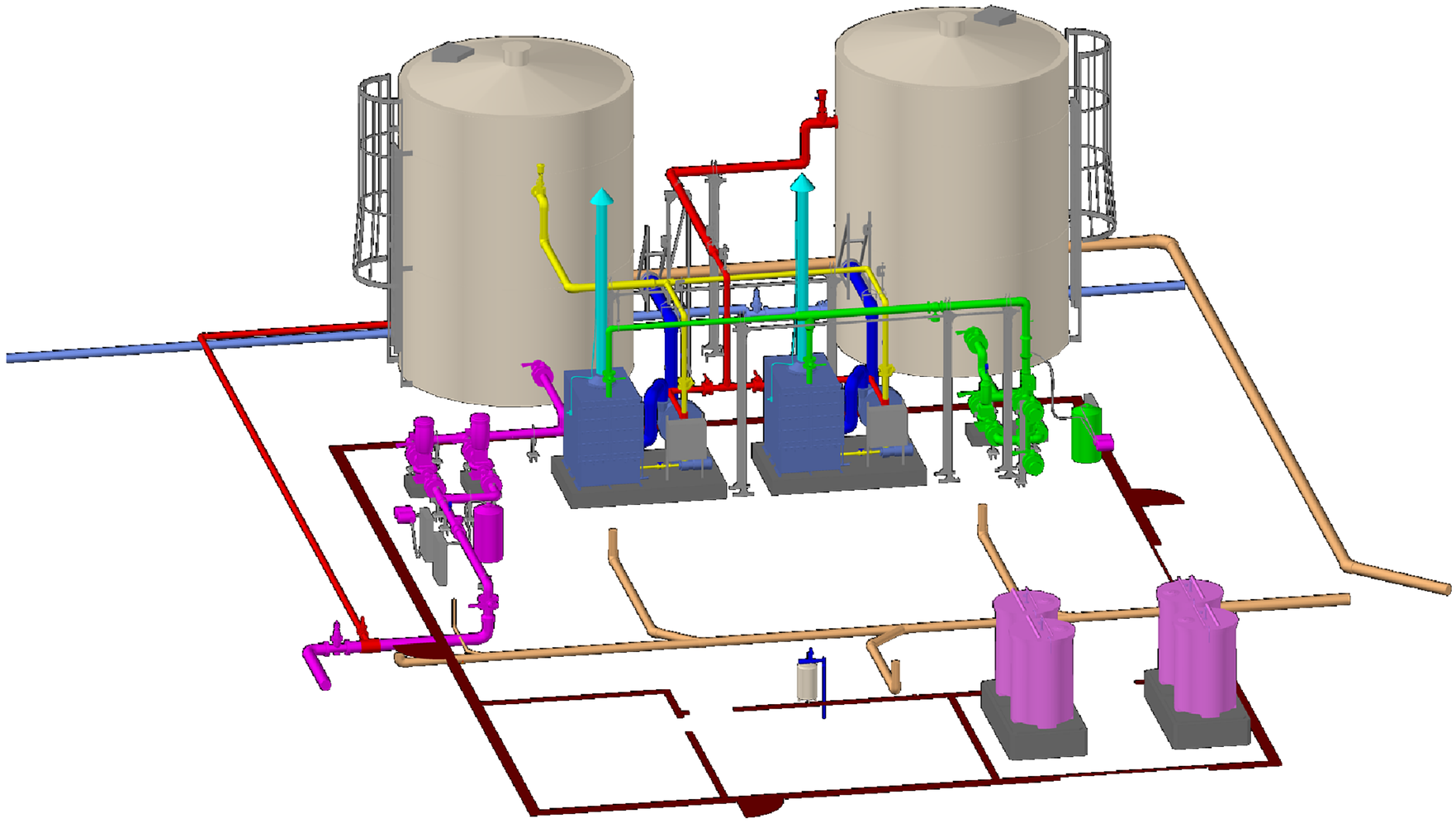
TREATMENT BUILDING SOUTHEAST ISOMETRIC

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 38 of 58
DWG NO. M-9

XREF:



TREATMENT BUILDING EAST ISOMETRIC
NTS

1
-

NOTICE OF EXTENDED PAYMENT PROVISION:
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GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

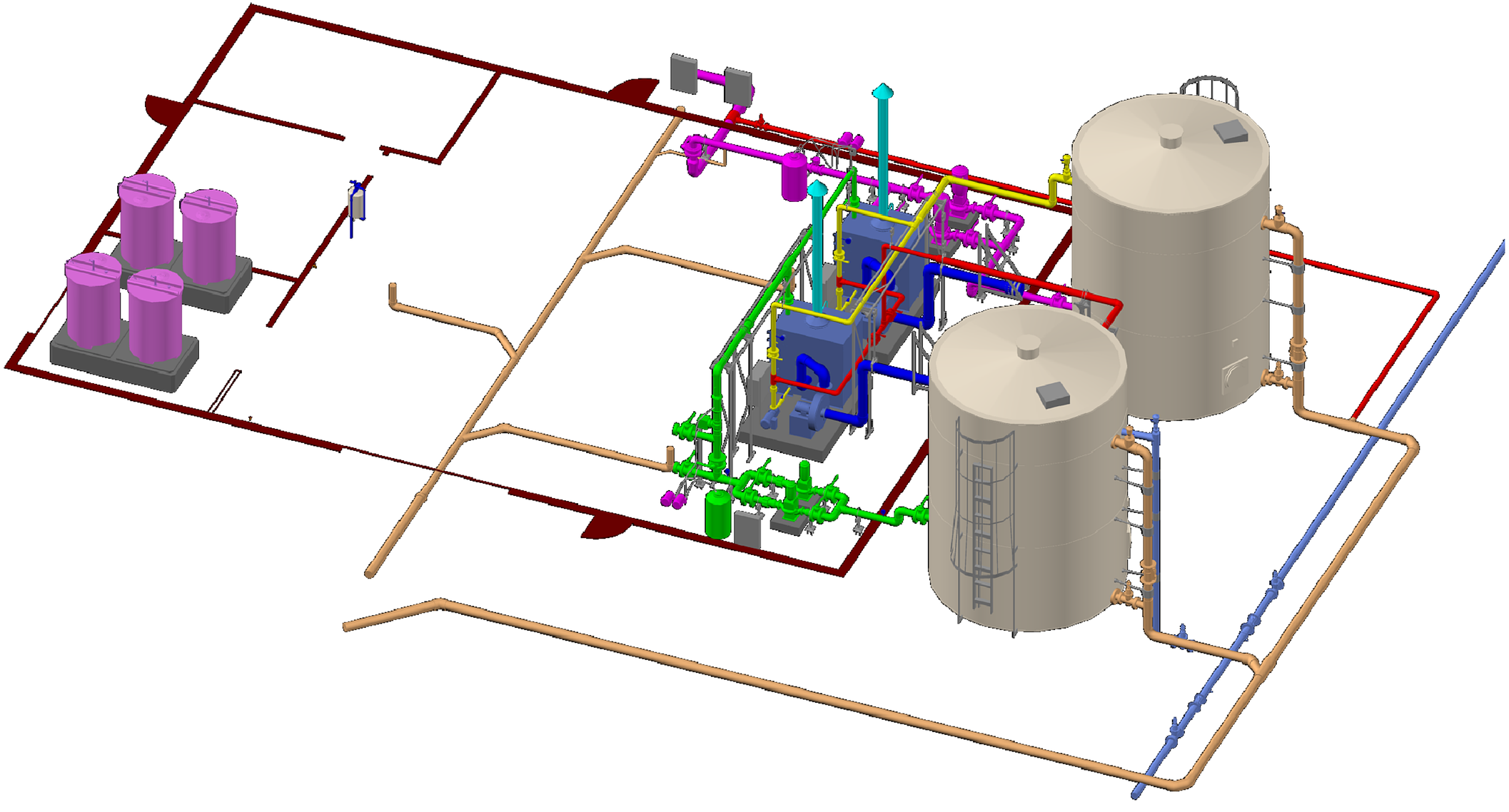
TREATMENT BUILDING EAST ISOMETRIC

GUNDAR PETERSON
NEW MEXICO
16038
5/24/11
REGISTERED PROFESSIONAL ENGINEER

JOB NO.
ES09.0306

SHEET 39 of 58
DWG NO. M-10

XREF:



TREATMENT BUILDING SOUTHWEST ISOMETRIC (1)
NTS

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\ES09_0036_GRCS_iso.dwg

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DATE: 5/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING SOUTHWEST ISOMETRIC

GUNDAR PETERSON — NEW MEXICO — 16038 — 5/24/11 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 40 of 58
DWG NO. M-11

XREFs:

GENERAL ELECTRICAL NOTES:

1. IF ANY UTILITY LINES, PIPELINES OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH LINES ARE SHOWN, THE LOCATION IS BASED ON INFORMATION PROVIDED BY THE UTILITY OR PIPELINE COMPANY, THE OWNER OR OTHERS, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES.

2. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY AND CONFIRM THAT EQUIPMENT SUBMITTED SHALL FIT WITHIN THE ALLOTTED SPACE REQUIREMENTS SHOWN ON THE PLANS. IF ANY SPACE OR SIZE DISCREPANCIES ARE ANTICIPATED IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER PRIOR TO SUBMITTAL. ONCE THE SUBMITTALS HAVE BEEN APPROVED IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO INSTALL THE EQUIPMENT WITHIN THE ALLOTTED SPACE AT NO ADDITIONAL COST TO THE OWNER.

3. CONDUIT INSTALLATIONS SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BEAMS AND WALLS.

4. CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO ENCLOSURES AND OTHER EQUIPMENT.

5. NO CONDUIT SMALLER THAN 3/4" PIPE NOR WIRE SMALLER THAN NO. 12 A.W.G. SHALL BE USED UNLESS OTHERWISE NOTED.

6. THE WIRING DIAGRAMS, BLOCK DIAGRAMS, QUANTITY, SIZE OF WIRES, AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFIED.

7. LIGHTING FIXTURES SHALL BE MOUNTED ACCORDING TO THE MOUNTING HEIGHT GIVEN ON THE DRAWINGS. THE MOUNTING HEIGHT SHALL BE MEASURED FROM THE BOTTOM OF THE LIGHTING TO FINISHED GRADE.

8. ALL CONDUIT INSTALLATIONS TO HAVE 24" MIN. BURY. CONDUIT ROAD CROSSINGS TO HAVE CONCRETE ENCASEMENT WHERE SHOWN ON THE PLAN LAYOUTS. ALL CONDUITS TO HAVE 6" METALLIC ELECTRIC WARNING TAPE INSTALLED 12" BELOW FINISHED GRADE.

9. ALL CONDUCTORS AND DEVICES TO HAVE A PROPER GROUNDING SYSTEM INSTALLED PER NEC 250. ALL FEEDER AND BRANCH CONDUITS ARE TO BE CONSTRUCTED WITH A PROPERLY COORDINATED GROUND CONDUCTOR SIZE FOR EACH BRANCH CIRCUIT.

10. CONDUCTORS IN DIRECT SOLAR EXPOSURE MUST BE DERATED USING A 140 DEGREE AMBIENT TEMPERATURE. THE CONTRACTOR IS RESPONSIBLE FOR REVISING CONDUCTOR SIZE BASED ON ACTUAL CONDUIT ROUTING.

11. EXTERIOR LIGHTING SHALL COMPLY WITH THE NEW MEXICO NIGHT SKY PROTECTION ACT OUTDOOR LIGHTING ORDINANCE IN THAT ALL FIXTURES WILL BE FULL CUT-OFF AND HAVE LESS THAN SEVENTY (70) LUMENS PER SQUARE FOOT AT GROUND LEVEL.

12. ALL 90 DEGREE ELBOWS IN DIRECT BURIED OR CONCRETE ENCASED UNDERGROUND CONDUIT DUCTBANK SYSTEM SHALL BE PVC COATED GALVANIZED RIGID STEEL. ALL PVC SCH. 80 CONDUIT SHALL END APPROXIMATELY 10'-0" FROM ALL PULLBOXES, EQUIPMENT OR HANDHOLES AND BE COMPLETED WITH PVC COATED GALVANIZED RIGID STEEL CONDUIT TO THE RESPECTIVE PIECE OF EQUIPMENT.

13. ALL CONDUIT AND FITTINGS IN NEMA 4X HAZARDOUS AREAS INDICATED ON THE DRAWINGS SHALL BE PVC JACKETED RIGID METALLIC TYPE.

14. ALL SHIELDED CABLES SHALL BE INSTALLED IN RIGID STEEL CONDUIT OR PVC COATED RIGID STEEL CONDUIT BASED ON THE NEMA RATING OF THE AREA.

15. ALL CONDUITS ENTERING NEMA 4X BOXES, CONTROL STATIONS OR OTHER EQUIPMENT RATED NEMA 4X SHALL BE TERMINATED AT THE BOX WITH A MEYERS HUB OR EQUAL.

16. PRIOR TO SUBMITTING A BID FOR ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED CONSTRUCTION AND SHALL THOROUGHLY ACQUAINT HIMSELF WITH EXISTING UTILITIES AND WORKING CONDITIONS TO BE ENCOUNTERED, ETC. ALLOWANCE WILL NOT BE MADE FOR NON-COMPLIANCE WITH THIS CONDITION AFTER BIDDING.

17. ELECTRICAL DRAWINGS IDENTIFY UTILITY SERVICE REQUIREMENTS FOR POWER WITHIN AND UP TO FIVE FEET OUTSIDE THE STRUCTURE. UTILITY CONDUIT SYSTEMS PULL BOXES, AND OTHER STRUCTURES, WHERE SHOWN ON THE SITE PLAN INDICATE THE PREFERRED ROUTING. THE ELECTRICAL CONTRACTOR SHALL REFER TO UTILITY SERVICE DRAWINGS FOR ACTUAL UTILITY SERVICE REQUIREMENTS FOR THIS PROJECT. UTILITY SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED UTILITY SERVICE DRAWINGS.

18. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE ELECTRICAL WORK. INFORMATION PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC., TO SUIT FIELD CONDITIONS IS REQUIRED. REVIEW ALL ARCHITECTURAL AND STRUCTURAL DRAWINGS AND ADJUST ALL WORK TO MEET THE REQUIREMENTS OF CONDITIONS SHOWN. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWNGS AND SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. WHERE DISCREPANCIES OR CONFLICTS OCCUR, THE BID SHALL REFLECT THE MOST STRINGENT REQUIREMENTS. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL EQUIPMENT. DO NOT SCALE DISTANCES OFF THE ELECTRICAL DRAWINGS. USE ACTUAL DIMENSIONS.

19. UPON COMPLETION OF THE WORK UNDER THESE DRAWINGS AND SPECIFICATIONS, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE OWNER WITH A COMPLETE SET OF MARKED-UP ELECTRICAL DRAWINGS SHOWING THE "AS-BUILT" CONDITION OF THE WORK. BOND PRINTS OF THE DRAWINGS REQUIRED WILL BE FURNISHED BY THE OWNER, FOR THIS PURPOSE.

20. PERFORM THE EXCAVATION, CUTTING, FITTING, REPAIRING AND FINISHING OF THE WORK NECESSARY FOR THE INSTALLATION OF ELECTRICAL EQUIPMENT HOWEVER, NO CUTTING OF THE WORK OF OTHER TRADES OR OF ANY STRUCTURAL MEMBER SHALL BE DONE WITHOUT THE CONSENT OF THE ENGINEER.

21. PERFORM ALL EXCAVATION AND BACKFILLING REQUIRED FOR WORK PERFORMED UNDER THIS DIVISION OF THE SPECIFICATIONS. TRENCH BOTTOMS SHALL BE GRADED TRUE AND FREE FROM STONES OR SOFT SPOTS. USE EXCAVATED MATERIALS FOR BACKFILL UNLESS OFF SITE MATERIALS ARE DEEMED NECESSARY BY THE ENGINEER. TRENCHING AND BACKFILLING FOR ELECTRICAL AND TELEPHONE UTILITY SERVICES TO BUILDING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS. PROVIDE MINIMUM 95% COMPACTION FOR BACKFILL.

22. COVER METALLIC CONDUIT IN CONTACT WITH EARTH OR FILL, WITH POLYETHYLENE TAPE SPIRAL WRAPPED, 1/2" LAPPED TO PROVIDE DOUBLE THICKNESS. TAPE SHALL BE SCOTCH NO. 50 TAPE. CONDUIT AND DUCTS NOT UNDER BUILDINGS AND FEEDER DUCTS SHALL BE INSTALLED PER NEC 300.5, EXCEPT THAT THE BENDS IN CONDUIT LARGER THAN 1" IN DIAMETER SHALL BE MADE WITH GALVANIZED STEEL CONDUIT TREATED AS NOTED ABOVE. MAKE JOINTS WITH COMPOUND TO BE WATERTIGHT.

23. ALL EMPTY CONDUIT SYSTEMS SHALL HAVE A 210 POUND TEST PULL CORD INSTALLED TO FACILITATE INSTALLATION OF FUTURE WIRE.

24. PENETRATION THROUGH FLOOR SLABS WHERE SUBJECT TO DAMAGE SHALL BE IN WRAPPED RIGID STEEL. SCHEDULE 40 PVC ELBOWS AND PENETRATIONS MAY BE USED IN SLAB ON GRADE WHERE PENETRATIONS OCCUR IN PROTECTED AREAS (WALLS, ELECTRICAL ROOMS, ETC.).

25. FLEXIBLE METALLIC AND NON-METALLIC CONDUIT SYSTEMS SHALL HAVE A CODE SIZED COPPER GROUND CONDUCTOR. INCREASE CONDUIT SIZE AS REQUIRED.

26. ALL RECEPTACLE AND LIGHTING CONDUITS SHALL BE INSTALLED WITHIN BUILDING CMU WALLS. ALL RECEPTACLE AND LIGHT SWITCH BOXES SHALL BE RECESSED INTO WALL SPACE AND FLUSH MOUNTED WITH WALL PLATES.

27. ALL CONDUIT INFRASTRUCTURE AND FOUNDATIONS TO BE INSTALLED FOR EPEC EQUIPMENT SHALL BE INSPECTED AND APPROVED BY EPEC CONSTRUCTION PERSONNEL PRIOR TO BACKFILL OF ANY MATERIALS.

GENERAL GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ARTICLE 250. ALL EXPOSED NON-CURRENT-CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, METALLIC CABLE ARMOR, GROUNDING CONDUCTOR OF NONMETALLIC SHEATHED CABLES, GROUNDING CONDUCTOR IN NONMETALLIC RACEWAYS, AND GROUNDED CONDUCTORS OF THE WIRING SYSTEM SHALL BE GROUNDED.

2. THE GROUNDED CONDUCTOR (NEUTRAL) OF THE WIRING SYSTEM SHALL BE CONNECTED TO THE SYSTEM GROUNDING CONDUCTOR AT A SINGLE PLACE IN EACH SYSTEM BY REMOVABLE BONDING JUMPERS, SIZED ACCORDING TO THE APPLICABLE PROVISIONS OF THE NEC. THE GROUNDED CONDUCTOR (NEUTRAL) TO THE GROUNDING CONDUCTOR CONNECTION SHALL BE LOCATED IN THE ENCLOSURE FOR THE SYSTEM'S OVERCURRENT PROTECTION OR WHERE OTHERWISE INDICATED ON THE PLANS OR SPECIFICATIONS.

3. GROUND BUS SEPARATE FROM THE NEUTRAL BUS SHALL BE PROVIDED IN ALL PANELBOARDS. GROUND BUS SHALL BE RE-TORQUED (CHECKED) PRIOR TO ENERGIZING EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

4. GROUND BUSES AND NEUTRAL BUSES IN ALL PANELBOARDS AND THOSE PROVIDED IN ANY EQUIPMENT SHALL BE ISOLATED EXCEPT WHERE REQUIRED TO BE CONNECTED AS SPECIFIED ABOVE FOR THE SERVICE ENTRANCE AND IN TRANSFORMER TERMINAL COMPARTMENTS.

5. WHEN INDICATED ON THE DRAWINGS, EQUIPMENT GROUNDING CONDUCTORS SHALL BE EXTENDED FROM THE GROUND BUS IN THE DISTRIBUTION EQUIPMENT TO THE RECEPTACLE, FIXTURE OR DEVICE LUGS WHERE THEY ARE PROVIDED. WHEN NOT PROVIDED, THEY SHALL BE CONNECTED TO EQUIPMENT ENCLOSURES. THE CONNECTIONS SHALL BE ARRANGED SUCH THAT REMOVAL OF THE RECEPTACLE, THE EQUIPMENT GROUND CONDUCTORS, OR THE GROUND JUMPERS FROM GROUND BUSING SHALL NOT AFFECT THE GROUND SYSTEM.

6. RACEWAYS MAY NOT BE USED AS A GROUNDING CONDUCTOR FOR POWER AND LIGHTING CIRCUITS. EVERY CONDUIT SUPPLYING POWER AND LIGHTING CIRCUITS SHALL HAVE A SEPARATE CODE SIZED GREEN GROUND WIRE INSTALLED IN THE CONDUIT TO ENSURE A CONTINUOUS GROUNDING PATH.

7. IN INACCESSIBLE LOCATIONS MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS.

8. IN ACCESSIBLE LOCATIONS, CONNECTIONS SHALL BE MADE WITH APPROVED BOLTED BRONZE GROUNDING DEVICES.

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NO	DATE	BY	REVISION MADE

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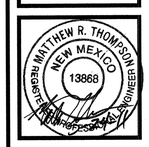
MRT	LLM	MRT	05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ELECTRICAL GENERAL NOTES



JOB NO. ES09.0306

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SYMBOLS LEGEND

NOTE: SOME SYMBOLS/ ABBREVIATIONS MAY NOT BE USED.

ABBREVIATIONS

A	AMPS, AMPERES
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CURRENT
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CCTV	CLOSED CIRCUIT TV
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CO	CONDUIT ONLY
CU	COPPER
DC	DIRECT CURRENT
DIA	DIAMETER
DMM	DIGITAL MULTIMETER
EPEC	EL PASO ELECTRIC COMPANY
FA	FIRE ALARM
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HOA	HANDS-OFF-AUTOMATIC
HP	HORSEPOWER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPS
KW	KILOWATT
KWH	KILOWATT HOUR
LFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MIN	MINIMUM
MVA	MEGAVOLT AMPS
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NEU	NEUTRAL
NIC	NOT IN CONTRACT
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NORMALLY OPEN
PA	PUBLIC ADDRESS
PC	PHOTOCELL
PH	PHASE
RSC	RIGID STEEL CONDUIT
RMC	RIGID METALLIC CONDUIT
TWSH	TWISTED SHIELDED (SINGLE PAIR UNLESS INDICATED MULTIPAIR)
TTB	TELEPHONE TERMINAL BOARD
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP	TYPICAL
UL	UNDERWRITER'S LABORATORIES
V	VOLTS, VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER
XFER	TRANSFER
XP	EXPLOSION PROOF

DEVICES

- LPA-5 — DUPLEX RECEPTACLE – GFI; LPA-5 – INDICATES CKT. (TYP)
- EP — DUPLEX RECEPTACLE; EP – EXPLOSION PROOF; GFI – GRD FAULT INTERRUPTER; WP – WEATHERPROOF
- DOUBLE DUPLEX RECEPTACLE
- SPECIAL RECEPTACLE
- WALL MOUNTED SINGLE RECEPTACLE
- FLOOR MOUNTED DUPLEX RECEPTACLE
- CEILING MOUNTED DUPLEX RECEPTACLE
- MULTI-OUTLET ASSEMBLY, TYPE AS NOTED
- CODE SIZE J-BOX
- WALL MOUNTED CODE SIZE J-BOX
- CODE SIZED PULL BOX
- FUSIBLE DISCONNECT SWITCH
- ENCLOSED CIRCUIT BREAKER
- TIMECLOCK
- PHOTOCELL
- PUSH BUTTON
- CLOCK OUTLET
- NON-FUSIBLE DISCONNECT SWITCH
- MOTOR STARTER
- COMBINATION MOTOR STARTER/DISCONNECT SWITCH
- MOTOR CONNECTION – "5" DENOTES HORSEPOWER
- MOTOR CONNECTION – "F" DENOTES HORSEPOWER IS FRACTIONAL. SEE MECH. SCHEDULE FOR H.P. SIZE
- S_a — SINGLE POLE SWITCH, "a" INDICATES CONTROL CIRCUIT DESTINATION
- S_a^3 — THREE-WAY SWITCH, "a" INDICATES CONTROL CIRCUIT DESTINATION
- S_3 — THREE-WAY SINGLE POLE SWITCH
- S_4 — FOUR-WAY SINGLE POLE SWITCH
- S_P — SINGLE POLE SWITCH W/INTEGRAL PILOT LIGHT
- S_K — KEY OPERATED SINGLE POLE SWITCH
- S_T — MANUAL MOTOR STARTER SWITCH W/THERMAL OVERLOAD PROTECTION
- $S_D^\#$ — DIMMER SWITCH-# DENOTES WATTAGE RATING
- S_{WP} — WEATHER PROOF SINGLE POLE SWITCH

LIGHTING

- A a — 2x4 FLUORESCENT CEILING FIXTURE TYPE: A FIXTURE TYPE; a SWITCH DESIGNATION
- 1x4 FLUORESCENT CEILING FIXTURE
- UNSWITCHED EMERGENCY LIGHTING FIXTURE
- PENDANT MOUNTED FLUORESCENT CEILING FIXTURE
- STRIP SURFACE FLUORESCENT CEILING FIXTURE
- INCANDESCENT OR H.I.D. CEILING FIXTURE
- WALL MOUNTED FIXTURE
- CEILING MOUNTED EXIT LIGHT ARROW INDICATES DIRECTION
- WALL MOUNTED EXIT LIGHT ARROW INDICATES DIRECTION
- COMBINATION EMERGENCY BATTERY PACK/EXIT LIGHT FIXTURE
- EMERGENCY BATTERY PACK LIGHT FIXTURE
- POLE MOUNTED AREA LIGHT FIXTURE
- DOUBLE HEAD POLE MOUNTED AREA LIGHT FIXTURE
- PHOTOELECTRIC CELL

DISTRIBUTION

- 100 / 3/P — CIRCUIT BREAKER; 100A – TRIP RATING; 3P – NUMBER OF POLES
- E 1200AF / 800AT — LOW VOLTAGE AIR CIRCUIT BREAKER; E – INDICATES ELECTRICAL; M – INDICATES MECHANICAL; 1200AF – FRAME RATING; 800AT – TRIP RATING
- DRAWOUT CIRCUIT BREAKER
- 240V / 50KVA / 120V — TRANSFORMER; 240V – PRIMARY VOLTAGE; 50KVA – RATING; 120V – SECONDARY VOLTAGE
- K13 — SHIELDED TRANSFORMER; K13 DENOTES K-RATING
- 300:5 (2) — CURRENT TRANSFORMER; 300:5 – INDICATES CT RATIO; (2) – INDICATES QUANTITY
- 2 — POTENTIAL TRANSFORMER; NUMBER "2" DENOTES QUANTITY
- 60A — SINGLE THROW DISCONNECT; 60A – AMPERAGE RATING; 3P – NUMBER OF POLES
- FUSE
- GROUND CONNECTION
- M — TRANSFER SWITCH; "M" DENOTES MANUAL
- SURGE ARRESTOR
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR

CONDUIT AND CONDUCTORS

- A-1,3 — HOMERUN TO INDICATED PANEL "A". HASH MARKS INDICATE NUMBER OF WIRES. WIRES ARE #12 AWG UNLESS OTHERWISE NOTED. ANY CIRCUIT WITHOUT HASH MARKS INDICATED 2-WIRE CIRCUIT. NUMBERS "1,3" INDICATED BRANCH CIRCUIT NUMBER. ALL RUNS TO INCLUDE GROUND WIRE.
- LINE
- NEUTRAL
- GROUND
- CONTROL
- SHIELDED CONDUCTOR
- SWITCHED CONDUCTOR
- EXISTING CONDUIT ROUTED UNDERGROUND OR CONSEALED
- NEW CONDUIT ROUTED CONCEALED IN WALL OR CEILING
- NEW CONDUIT EMBEDDED OR UNDER BUILDING SLAB
- FLEXIBLE CONDUIT
- CONDUIT TURNED DOWN
- CONDUIT TURNED UP
- CONDUIT CAPPED
- B — BUSWAY
- G — GROUNDING CONDUCTOR
- CABLE TRAY
- T — TELEPHONE CONDUIT
- D — DATA CONDUIT
- FA — FIRE ALARM CONDUIT
- CATV — CABLE TV CONDUIT
- OHE — OVERHEAD PRIMARY ELECTRIC
- S — OVERHEAD SECONDARY ELECTRIC
- UPE — UNDERGROUND PRIMARY ELECTRIC
- USE — UNDERGROUND SECONDARY SERVICE ELECTRIC
- UGE — UNDERGROUND GENERAL ELECTRIC
- AERIAL TERMINAL
- GROUND ROD

CONTROLS

- DEVICE LOCATED IN FIELD.
- DEVICE LOCATED IN PANEL NOTED
- OFF ON — ON – OFF SELECTOR SWITCH
- MOMENTARY TYPE PUSHBUTTON CONTROL (FUNCTION AS LABELED)
- ES — STOP PUSHBUTTON CONTROL STATION MOMENTARY TYPE W/LOCK-OUT DEVICE
- HAND-OFF-AUTOMATIC SELECTOR SWITCH
- LOCAL-REMOTE SELECTOR SWITCH
- *CR # — CONTROL RELAY; # DESIGNATES CONTROL CIRCUIT; * SEQUENTIAL PREFIX FOR CIRCUIT IN WHICH DEVICE USED MORE THAN ONCE
- X# — NORMALLY OPEN; NORMALLY CLOSED; RELAY CONTACT COIL
- PUSH TO TEST PILOT LIGHT; A = AMBER, G = GREEN, R = RED, ETC.
- R — PILOT LIGHT, NON-PUSH TO TEST. COLORS SAME AS ABOVE
- FS-# — FLOW SWITCH # (NO CLOSES ON INCREASING FLOW)
- FS-# — FLOW SWITCH # (NC OPENS ON INCREASING FLOW)
- PS-# — PRESSURE SWITCH # (NO CLOSES ON RISING PRESSURE)
- PS-# — PRESSURE SWITCH # (NC OPENS ON RISING PRESSURE)
- ZS-# — POSITION SWITCH # (LIMIT SWITCH). CLOSES IN HIGH POSITION, IE VALVE FULL OPEN, UNLESS NOTED OTHERWISE ON THE CONTROL SCHEMATIC
- ZS-# — POSITION SWITCH # (LIMIT SWITCH). CLOSES IN LOW POSITION, IE VALVE FULL CLOSE, UNLESS NOTED OTHERWISE ON THE CONTROL SCHEMATIC
- LS-# — LEVEL SWITCH # (NO CLOSES ON RISING LEVEL)
- LS-# — LEVEL SWITCH # (NC OPENS ON RISING LEVEL)
- TEMP SWITCH # (NO CLOSES ON RISING LEVEL)
- TEMP SWITCH # (NC OPENS ON RISING LEVEL)

SPECIAL SYSTEMS

- TELEPHONE OUTLET-EXTEND 3/4" CONDUIT TO BACKBOARD. MOUNT AT 18" AFF UNLESS NOTED OTHERWISE
- W — WALL TELEPHONE OUTLET-MOUNT AT 48" AFF UNLESS NOTED
- FLOOR MOUNTED TELEPHONE OUTLET
- DATA OUTLET-EXTEND 3/4" CONDUIT TO BACKBOARD. MOUNT AT 18" AFF UNLESS NOTED OTHERWISE
- VOICE/DATA OUTLET-MOUNT AT 18" AFF UNLESS NOTED
- FLOOR MOUNTED VOICE/DATA OUTLET
- SPEAKER, CEILING MOUNTED
- WP — SPEAKER, WALL MOUNTED
- SPEAKER, WALL MOUNTED, WEATHERPROOF
- TV — TELEVISION OUTLET, MOUNT AT 84" AFF UNLESS NOTED OTHERWISE
- M — MICROPHONE
- B — BELL
- HORN
- CAMERA
- CR — CARD READER
- DS — DOOR STRIKE
- DC — DOOR CONTACTS
- KP — KEY PAD
- SK — KEYED SWITCH FOR ARMING/DISARMING SECURITY SYSTEM
- MD — MOTION DETECTOR-360° CEILING MOUNTED
- MD — MOTION DETECTOR-180° WALL MOUNTED
- S — SIREN FOR SECURITY SYSTEM

EQUIPMENT

- SWITCHBOARD OR MCC
- FLUSH MOUNTED PANELBOARD
- SURFACE MOUNTED PANELBOARD
- NEMA 4X — ALL PANELS, STARTERS, DISCONNECTS, WIRING DEVICES ETC. WITHIN THE ROOM/ SPACE NOTED TO HAVE ENCLOSURES WITH NEMA TYPE # ENCLOSURES (EXCEPT AS SPECIFICALLY NOTED)

SITE DISTRIBUTION EQUIPMENT

- EXISTING OVERHEAD POWER POLE
- NEW OVERHEAD POWER POLE
- PULL BOX
- DUCTBANK ACESS MANHOLE
- PADMOUNT PRIMARY TRANSFORMER

CONDUIT TAGS AND DESCRIPTIONS

- P/I-### — CONDUIT NUMBER; POWER AND CONTROL WIRES; P-POWER WIRES ONLY; I-INSTRUMENTATION OR CONTROL WIRES ONLY.
- XX-### — DESIGNATES INSTRUMENT (REFER TO P&ID LEGEND SHEET FOR ADDITIONAL DETAILS)

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MRT	LLM	MRT	05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ELECTRICAL LEGEND

MATTHEW R. THOMPSON — NEW MEXICO — 13868 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

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DWG NO. E-2

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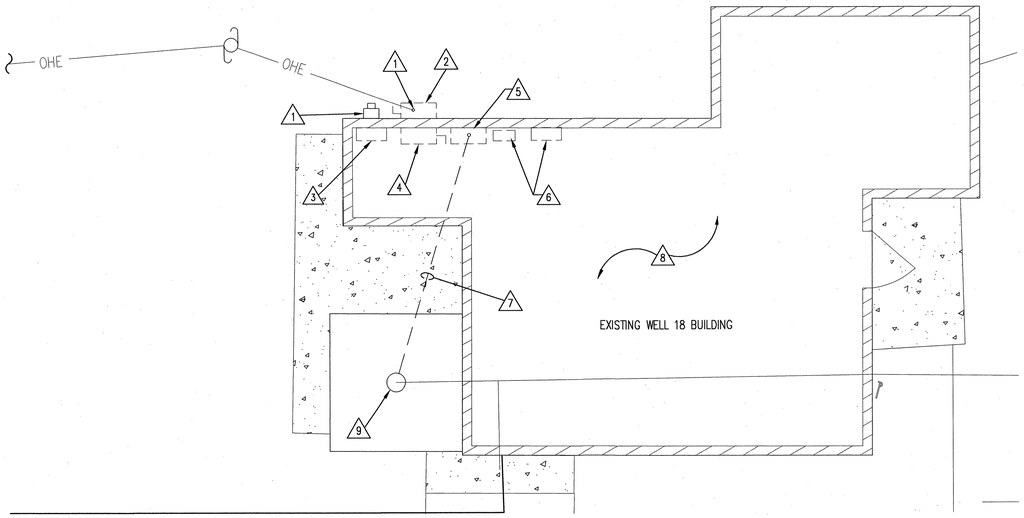
Thu, 19-May-2011 – 4:35:pm, Plotted by: LMILLER

KEYED DEMOLITION NOTES (#)

1. EXISTING EL PASO ELECTRIC OVERHEAD SERVICE TO REMAIN. EXISTING SERVICE RISER WEATHERHEAD AND CT INSTRUMENTS WITH CT METER SOCKET TO REMAIN AS-IS. REMOVE SERVICE CONDUCTORS IN SERVICE RISER.
2. EXISTING 400 AMP SERVICE DISCONNECT TO BE REMOVED.
3. EXISTING 480/ 277 PANEL "A" TO BE REMOVED.
4. EXISTING 400A, 480V, 3-PHASE DISCONNECT TO BE REMOVED.
5. EXISTING 350 HP MOTOR STARTER TO BE REMOVED.
6. EXISTING 208/120 PANEL "B" AND STEP-DOWN TRANSFORMER TO BE REMOVED.
7. EXISTING WELL PUMP CONDUCTORS IN 2" CONDUIT TO BE REMOVED. CONDUIT TO BE REUSED.
8. EXISTING LIGHTS AND RECEPTACLES TO BE REMOVED. EXISTING CONDUIT AND CONDUCTORS TO BE REMOVED OR SALVAGED WHERE POSSIBLE.
9. EXISTING WELL MOTOR TO BE REMOVED AND SALVAGED TO OWNER.

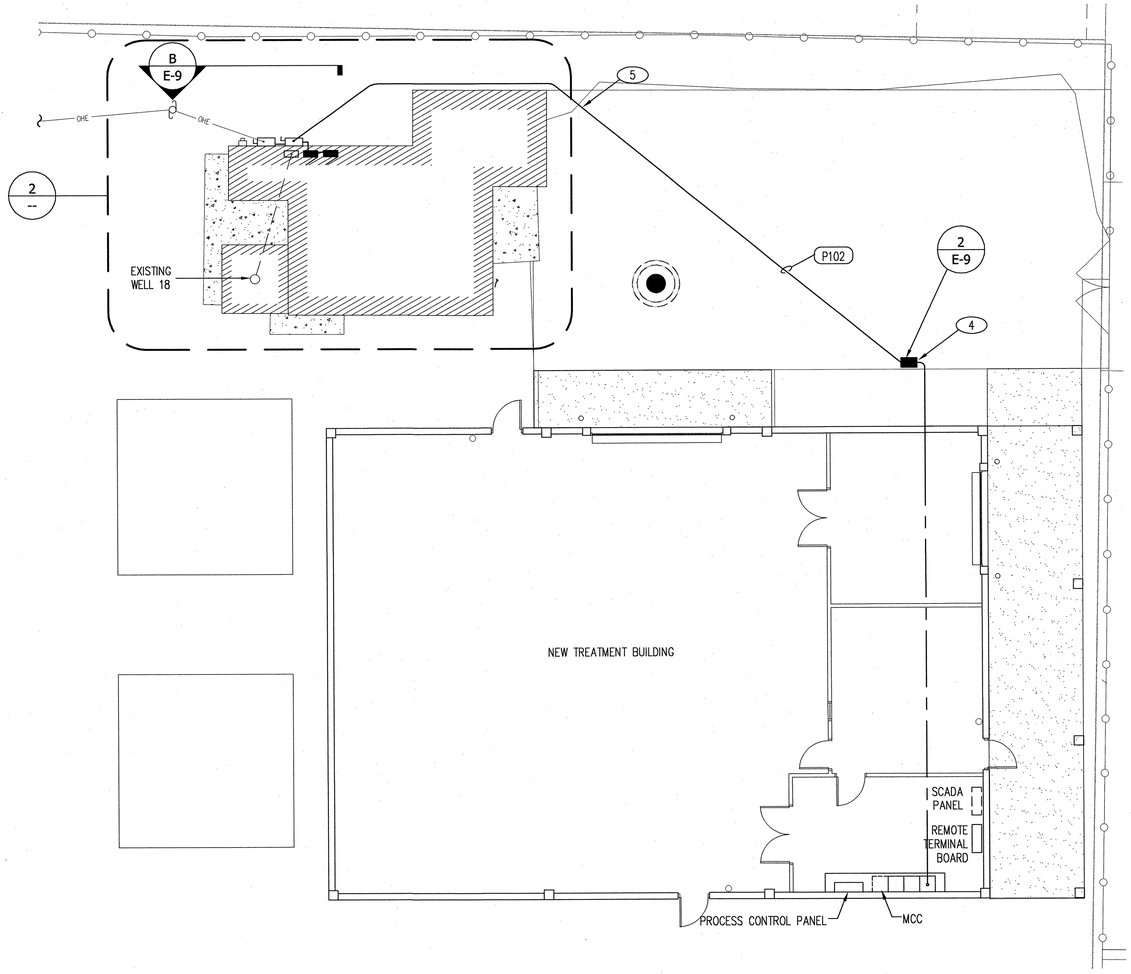
KEYED ELECTRICAL NOTES (#)

1. INSTALL NEW 200 AMP SERVICE ENTRANCE DISCONNECTS, NEMA 3R WITH 200 AMP FUSES.
2. INSTALL INTERIOR 480/277, THREE-PHASE POWER PANEL "H-2", SEE SCHEDULE.
3. INSTALL INTERIOR 120/208, THREE-PHASE POWER PANEL "L-2", SEE SCHEDULE.
4. INSTALL STANDARD SIZE PULLBOX, H-20 RATED.
5. INSTALL FEEDER CIRCUIT FOR SUBPANEL IN TREATMENT BUILDING. BURY 24" BFG WITH 6" METALLIC WARNING TAPE AT 12" BFG.
6. INSTALL NEW 30-HP SUBMERSIBLE PUMP MOTOR STARTER WITH ELECTRONIC MOTOR PROTECTION RELAY.
7. PROVIDE WEATHERPROOF TERMINATION OF SUBMERSIBLE PUMP CORD AT JUNCTION BOX AT WELL CASING HEAD.



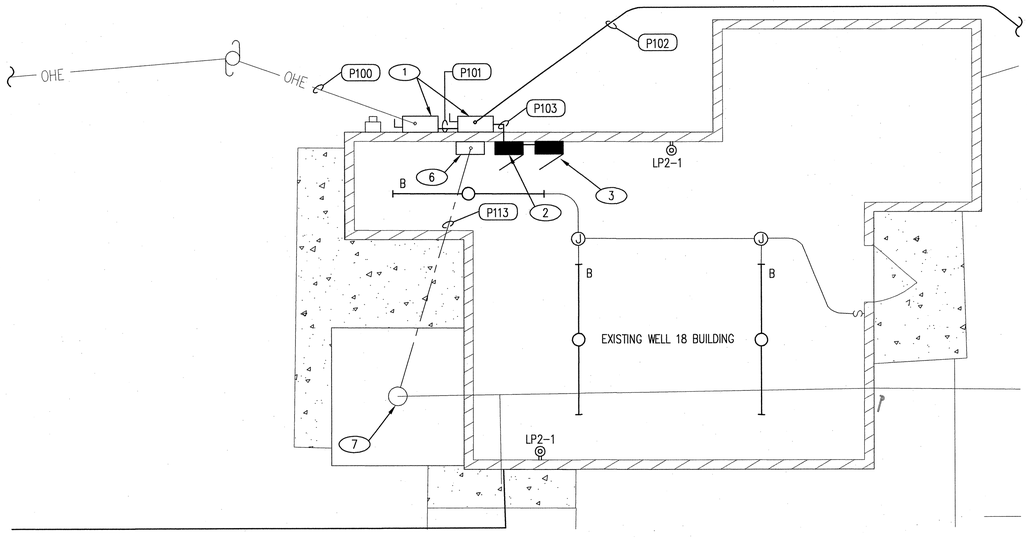
NORTH
0 4 ft

WELL 18 BUILDING DEMOLITION PLAN (1/-)
1/4" = 1'-0"



NORTH
0 8 ft

WELL 18 ELECTRICAL SITE PLAN (3/-)
1/8" = 1'-0"



NORTH
0 4 ft

WELL 18 BUILDING POWER AND LIGHTING PLAN (2/-)
1/4" = 1'-0"

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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FILE NAME: P:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\E-3_20100231_ELEC-site_plan.dwg

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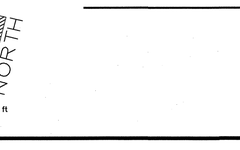
CHECKED BY:	MRT
DATE:	05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

WELL 18 SITE ELECTRICAL DEMOLITION PLAN AND SITE PLAN



JOB NO. ES09.0306

SHEET 43 of 58
DWG NO. E-3

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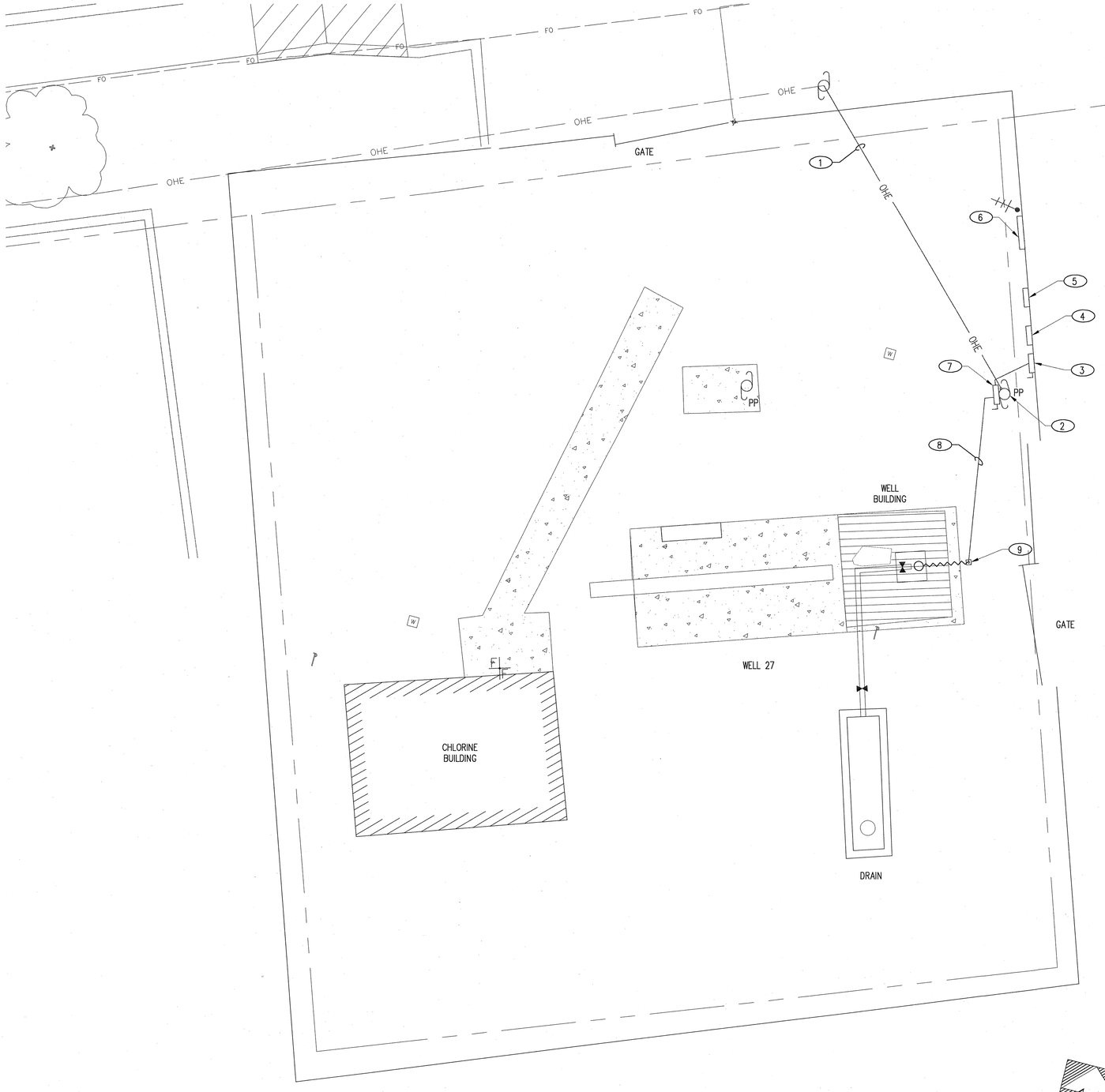

WELL 27 ELECTRICAL SITE PLAN (1)

1/4" = 1'-0"

NORTH

0 50 ft

KEYED ELECTRICAL NOTES (#)

1. EXISTING OHE POWER TO REMAIN.
2. EXISTING CLASS 5 SECONDARY POLE WITH 1-1/2" RISER TO REMAIN.
3. EXISTING 30A DISCONNECT TO REMAIN.
4. EXISTING 7.5 KVA 480-120/240 TRANSFORMER TO REMAIN.
5. EXISTING 100A, 120/240 PANEL "A" TO REMAIN.
6. EXISTING SCADA CABINET TO REMAIN.
7. EXISTING SQUARE D CLASS 8940 WELL CONTROL SERVICE DISCONNECT. REMOVE EXISTING STARTER AND REPLACE WITH NEMA SIZE 2 WELL PUMP STARTER FOR NEW 20-HP SUBMERSIBLE PUMP WITH ELECTRONIC MOTOR PROTECTION RELAY.
8. EXISTING 3/4" CONDUIT TO REMAIN. REPLACE CONDUCTORS WITH THREE 10 AWG AND ONE 10 AWG GROUND.
9. EXISTING 4"x 4"x 4" JUNCTION BOX TO BE REMOVED AND REPLACED WITH 6"x 6"x 6" N3R JUNCTION BOX. EXTEND APPROPRIATELY SIZED LFMC FOR SUBMERSIBLE CORD PROTECTION FROM JUNCTION BOX TO WELL HEAD CAP. INSTALL LFMC TO CONDUIT CONNECTION FITTING IN WELL HEAD CAP.

NOTICE OF EXTENDED PAYMENT PROVISION:
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FILE NAME: P:\20100231\LC\Drawings\Plans\E-4-20100231_ELEC Well 27.dwg

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GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

WELL 27 ELECTRICAL SITE PLAN

MATTHEW R. THOMPSON NEW MEXICO 13868 REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 44 of 58
DWG NO. E-4

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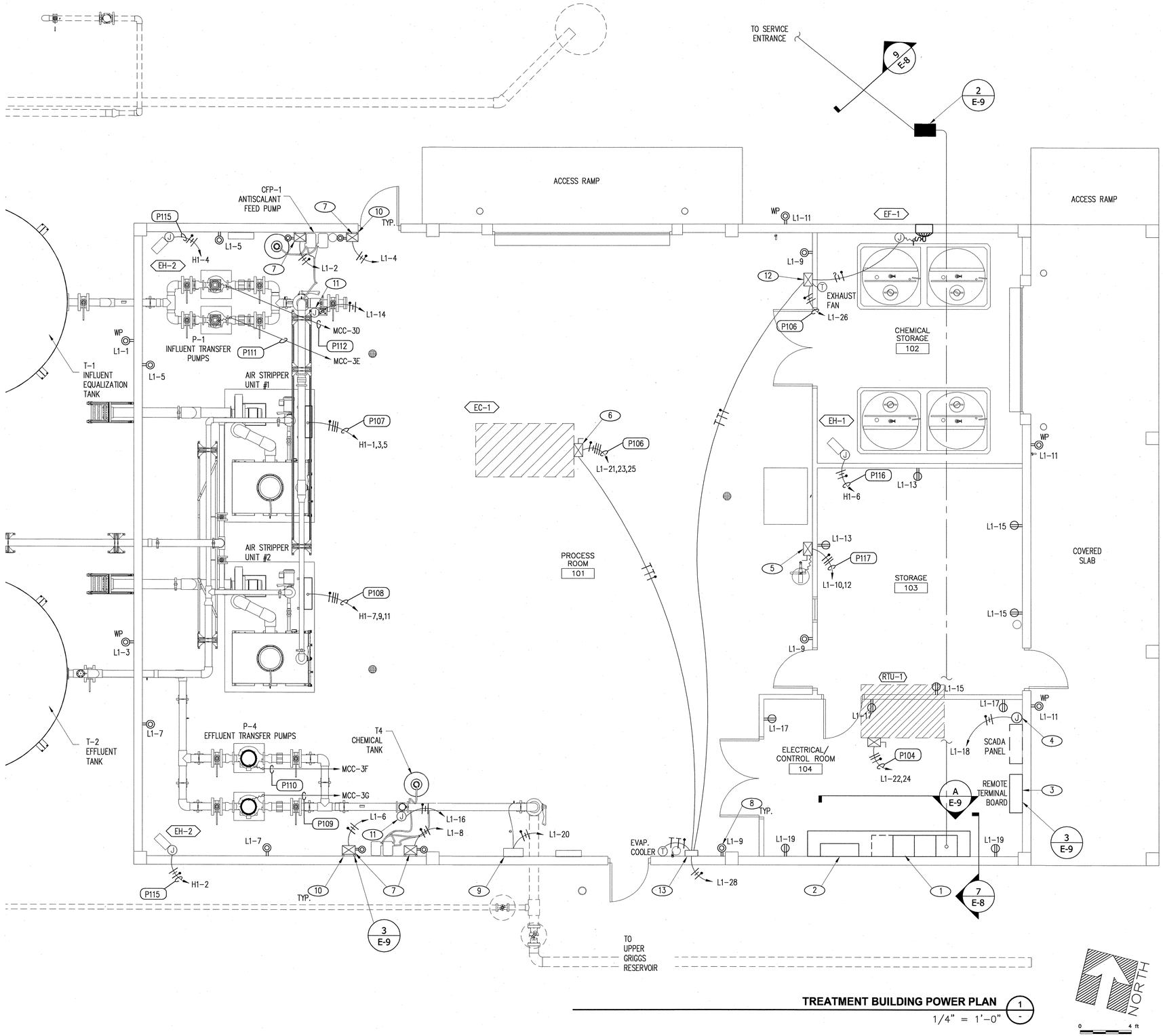

TREATMENT BUILDING POWER PLAN (1/-)

1/4" = 1'-0"

KEYED POWER SYSTEM NOTES (#)

1. INSTALL MOTOR CONTROL CENTER, N1, MOUNTED ON 4" HOUSEKEEPING PAD. SEE ONE-LINE DIAGRAM. BOND TO GROUND ELECTRODE SYSTEM AND BUILDING STEEL PER GROUNDING DIAGRAM
2. INSTALL PROCESS CONTROL PANEL AND MOUNT TO FLOOR AND WALL.
3. INSTALL REMOTE TERMINAL BOARD IN NEMA 1 ENCLOSURE FOR ALL SCADA INPUT/ OUTPUT CIRCUITS FOR EXTENSION BY OWNER PERSONNEL TO SCADA EQUIPMENT. PROVIDE ANALOG AND DIGITAL I/O DIN-RAIL MOUNTED TERMINALS FOR ALL FACILITY INDICATED I/O. EXTEND ALL I/O FROM PCP TO REMOTE TERMINAL BOARD.
4. INSTALL FLUSH MOUNTED JUNCTION BOX FOR USE BY OWNER STAFF IN EXTENDING 120VAC POWER FOR SCADA SYSTEM RTU TO BE PROVIDED AND INSTALLED BY OWNER PERSONNEL. OWNER PERSONNEL WILL PROGRAM RTU FOR REMOTE WELL 27 START/ STOP FUNCTION AND WILL EXTEND I/O FROM REMOTE TERMINAL BOARD TO SCADA PANEL ONLY.
5. INSTALL UNFUSED DISCONNECT, 30A, N4X ENCLOSURE FOR DOMESTIC WATER BOOSTER PUMP. EXTEND LFMC FROM DISCONNECT TO MOTOR ENTRANCE.
6. INSTALL COMBINATION MOTOR STARTER/ DISCONNECT, N3R, 30 AMP, MOUNTED ON EVAPORATIVE COOLER.
7. INSTALL 20-AMP NEMA CONTACTOR, N4X ENCLOSURE, MOUNTED ON INTERIOR WALL AT 48" AFF FOR CHEMICAL INJECTION PUMP ACTIVATION. MOUNT ADJACENT CAST ALUMINUM RECEPTACLE BOX AND WEATHERPROOF IN-USE COVER PLATE WITH INTERNAL CORROSION-RESISTANT GFCI NEMA 5-20R RECEPTACLE. MATCH POWER CORD CONNECTION TO PUMP UNIT. POWER CORD TO BE SUPPLIED BY PUMP SUPPLIER. PROVIDE APPROPRIATE PUMP LAMINATED LABEL.
8. INSTALL POWER AND CONTROL CONDUITS IN WALL SPACES, BELOW SLAB AND TRUSS BOTTOMS. CONDUITS AND DEVICES ARE NOT TO BE WALL SURFACE MOUNTED.
9. INSTALL CHLORINE RESIDUAL TRANSMITTERS AT 5'-0" TO TOP OF ENCLOSURE. INSTALL DIRECT POWER CONNECTION FOR 120VAC.
10. ALL INTERIOR ELECTRICAL EQUIPMENT TO BE MOUNTED TO UNISTRUT MOUNTING SYSTEM ANCHORED TO MID-GIRT AND FLOOR.
11. INSTALL NEMA 4X JUNCTION BOX AND LFMC CONNECTION FOR 120V POWER TO FLOW METER TRANSMITTER.
12. INSTALL MOTOR STARTER MOUNTED ON WALL 5' AFF, N4X ENCLOSURE, NEMA 00 STARTER, FOR EXHAUST FAN CONTROL. INSTALL CONTROLS PER EXHAUST FAN CONTROL DIAGRAM. PROVIDE "EXHAUST FAN CONTROL" LAMINATED LABEL.
13. INSTALL MOTOR STARTER MOUNTED ON WALL 5' AFF, NEMA 4X ENCLOSURE, FOR DAMPER MOTOR CONTROL. INSTALL CONTROLS PER DAMPER CONTROL DIAGRAM. PROVIDE "DAMPER MOTOR CONTROL" LAMINATED LABEL.

NOTICE OF EXTENDED PAYMENT PROVISION:
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DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:
MRT	LLM	MRT	05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING POWER PLAN

MATTHEW R. THOMPSON — NEW MEXICO — 13868 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 45 of 58
DWG NO. E-5

P:\20100231\LC\Drawings\Plans\E-5-20100231-ELEC_Power plan.dwg
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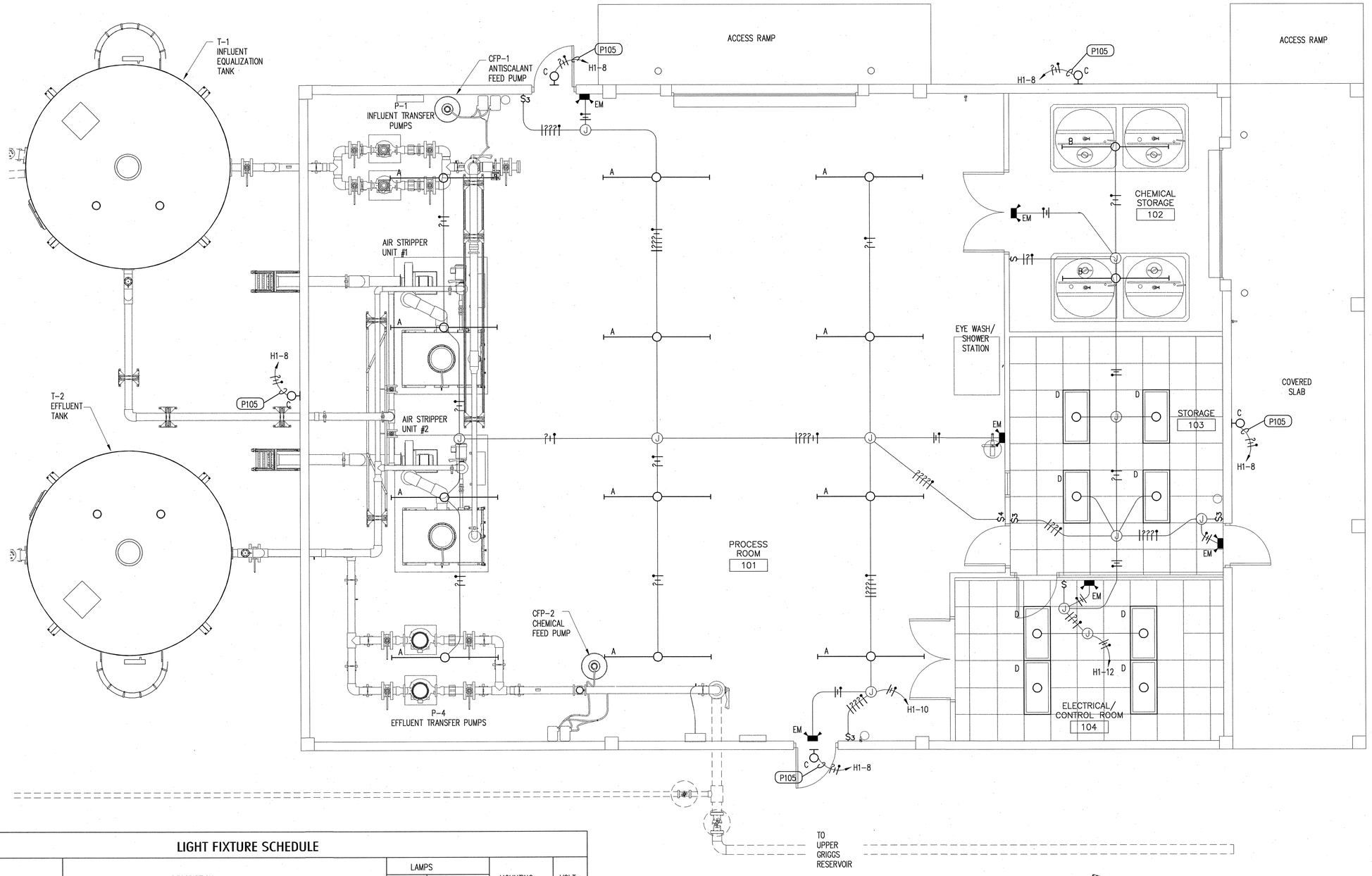

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER/MODEL NO.	DESCRIPTION	LAMPS		MOUNTING	VOLT
			WATTS	TYPE		
A	COLUMBIA LUN-8-2-59-LE-277	8', 2-LAMP FLUORESCENT FIXTURE FULLY GASKETED WITH SOLID TOP REFLECTOR AND ELECTRONIC BALLAST.	96	(2) 59W T8	CEILING CHAIN SUSPENSION 10' A.F.F.	277
B	COLUMBIA LUN-8-2-59-LE-277	8', 2-LAMP FLUORESCENT FIXTURE FULLY GASKETED WITH SOLID TOP REFLECTOR AND ELECTRONIC BALLAST.	96	(2) 59W T8	CEILING MOUNTED	277
C	GE W10C-25-M-1-A-G-MGL-DBF W/ PEK-277	100W METAL HALIDE WALL PACK WITH DIE CAST ALUMINUM HOUSING, SEALED OPTICAL ASSEMBLY, CORROSION RESISTANT HARDWARE, DARK BRONZE ELECTROCOAT PAINT FINISH, FORMED REFLECTOR AND HIGH POWER FACTOR BALLAST. PROVIDE PE CELL KIT.	100	MH	WALL SURFACE 10' A.F.F.	277
D	COLUMBIA OR EQUAL ST824-332G-FSA12.125-EB8LH-120	2'x4' FLUORESCENT TROFFER; ACRYLIC LENS.	32	(3) 32W T8	RECESSED GRID TEE	277
EM	DUAL-LITE CVEC50-12V	NEMA 4X, DUAL HEAD, 12V EMERGENCY LIGHT, WITH INJECTION MOLDED, HIGH IMPACT VALOX HOUSING. OIL RESISTANT GASKET AND MAINTENANCE FREE LEAD CALCIUM BATTERY PACK.	7.2	(2) T-5 INCANDESCENT	WALL SURFACE 10' A.F.F.	277

TREATMENT BUILDING LIGHTING PLAN (1/-)

1/4" = 1'-0"

NOTICE OF EXTENDED PAYMENT PROVISION:
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FILE NAME: E:\Projects\ES09.0306_Griggs-Walnut\VR_Drawings\E-2-20110531-ELEC_Lighting plan.dwg

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GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING LIGHTING PLAN

JOB NO. ES09.0306

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DWG NO. E-6

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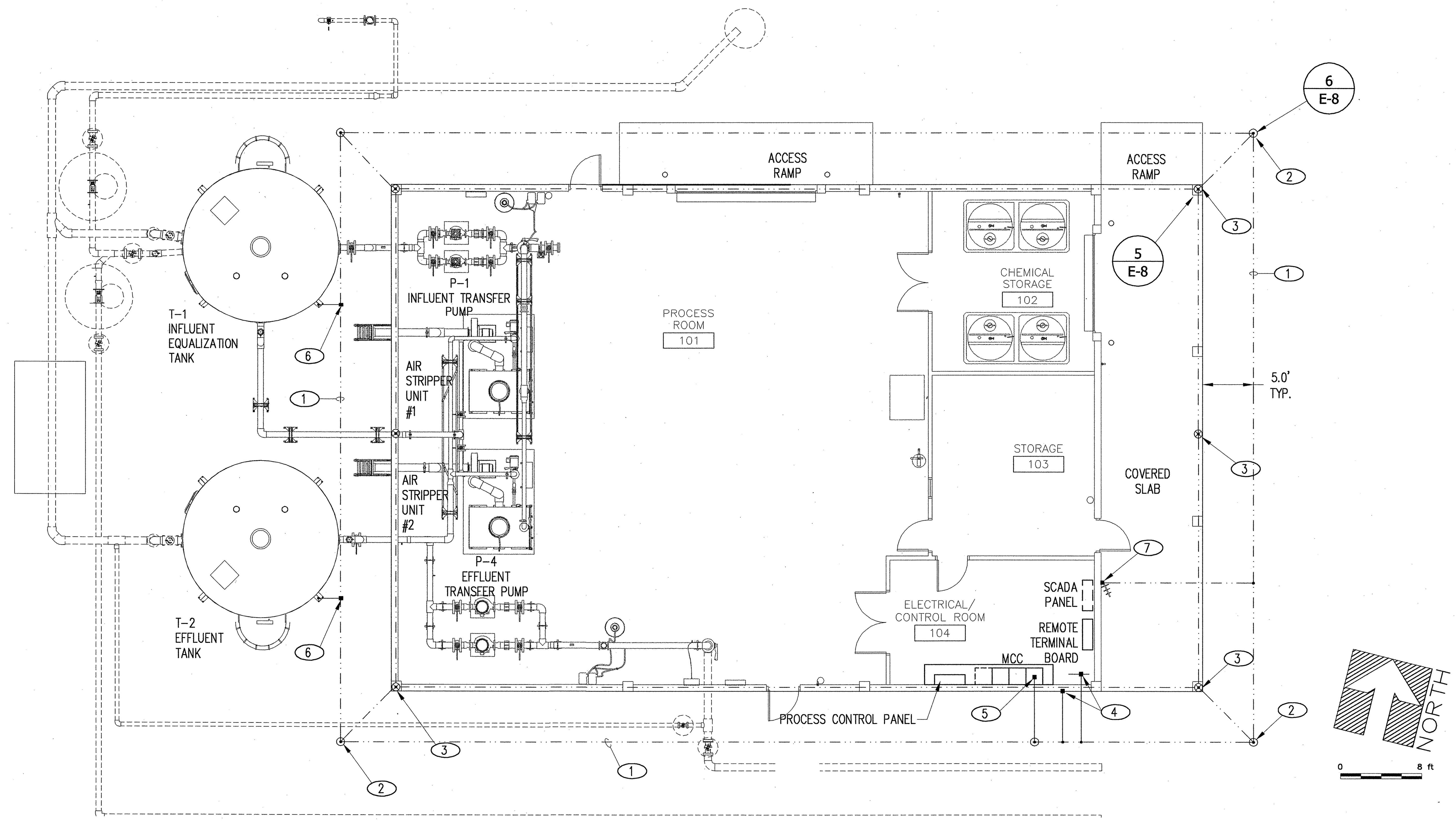
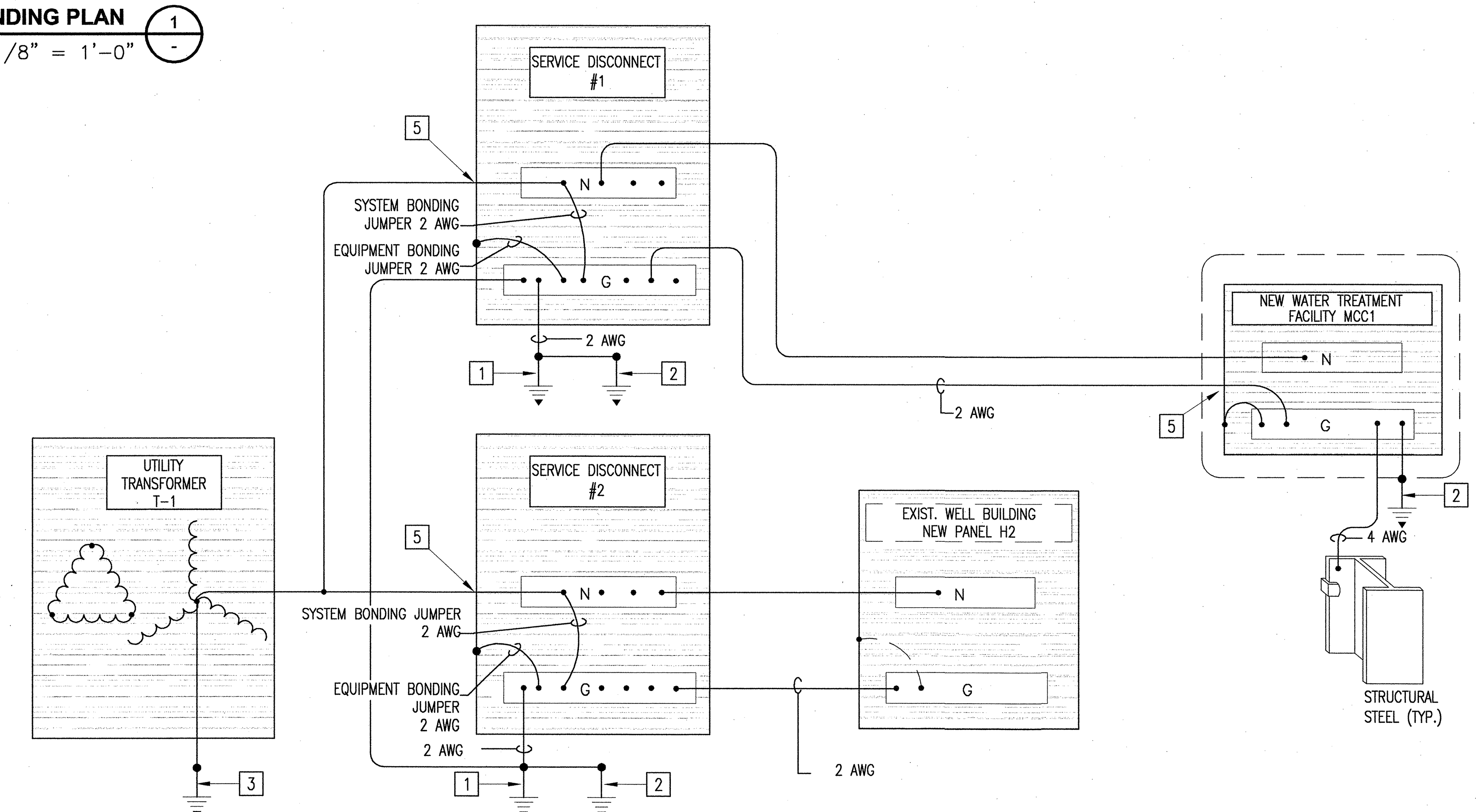


TREATMENT BUILDING GROUNDING PLAN

1/8" = 1'-0"

KEYED GROUNDING SYSTEM NOTES

1. INSTALL 1/0 BARE STRANDED COPPER CONDUCTOR FOR BUILDING COUNTERPOISE. CONNECT CONDUCTOR TO GROUND RODS WITH APPROVED GROUND CLAMPS. BURY CONDUCTOR 24" BELOW FINISHED GRADE, AND 5' FROM FOUNDATION.
2. INSTALL 5/8"x8' COPPER CLAD STEEL GROUND RODS (TYPICAL OF 4). REFER TO GROUNDING DIAGRAM.
3. UL LISTED LIGHTNING PROTECTION SYSTEM FOR METALLIC ROOF PANELS. EXTEND ALL VERTICAL 2 AWG CONDUCTORS RISERS OR HORIZONTAL RUNS TO BE CONCEALED IN 1" SCH. 40 PVC CONDUIT IN WALL SPACE.
4. BOND TO REBAR/ STRUCTURAL STEEL USING APPROVED BI-METAL CONDUCTOR AND CLAMP.
5. BOND BUILDING DISTRIBUTION PANEL TO BUILDING COUNTERPOISE PER GROUNDING SCHEDULE THIS SHEET.
6. BOND STEEL STORAGE TANK WITH LISTED GROUND CLAMP TO BUILDING COUNTERPOISE WITH 2 AWG CONDUCTORS.
7. BOND STEEL ANTENNA MAST WITH LISTED CONDUIT GROUND BUSHING.



KEYED DIAGRAM NOTES

1. EXISTING SERVICE GROUND SYSTEM CONNECTION. BOND TO NEW SERVICE DISCONNECT BUS.
2. DRIVE TWO 3/4"X 10' COPPER CLAD GROUND RODS MINIMUM 6' APART AT SERVICE ENTRANCE.
3. EXISTING GROUND
4. BURIED GROUND RINGS AND ELECTRODES WITH 1/0 AWG BARE COPPER AT 30" BURIAL DEPTH WITH 3/4" x 8' GROUND RODS.
5. INSTALL GROUNDING BUSHINGS ON ALL METAL CONDUIT ENTRANCES.

GROUNDING SYSTEM DIAGRAM

NO SCALE

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DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING GROUNDING PLAN

MATTHEW R. THOMPSON, NEW MEXICO, 13868, REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

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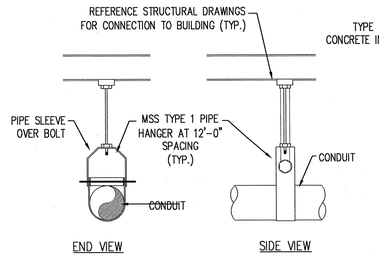
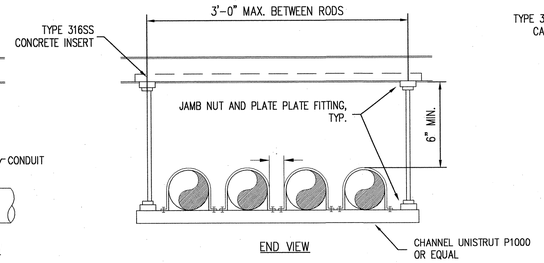


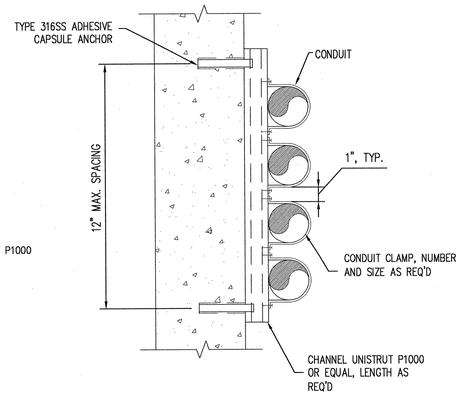
INDIVIDUAL CONDUIT SUPPORT



MULTIPLE TRAPEZE CONDUIT SUPPORT

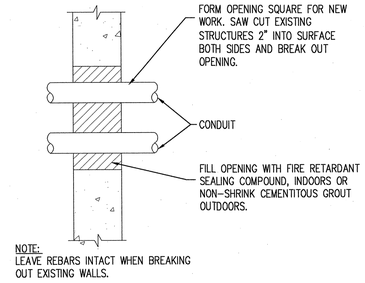
CEILING MOUNTED CONDUIT RACK (1 / -)

NO SCALE



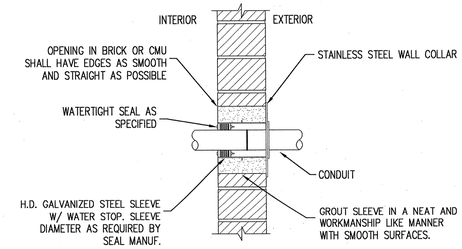
WALL MOUNTED CONDUIT RACK (2 / -)

NO SCALE



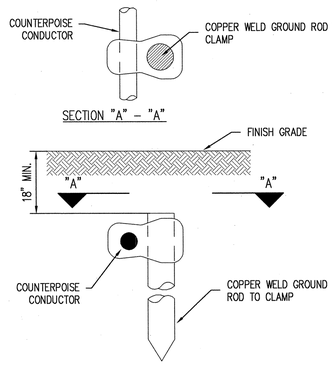
CONDUIT PENETRATION DETAIL (3 / -)

NO SCALE

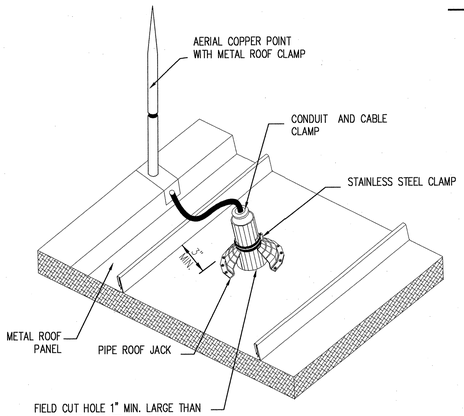


CONCEALED CONDUIT INSTALLATION (4 / -)

EXTERIOR BLOCK OR BRICK WALL NO SCALE



GROUND BUS CONNECTION TO GROUND ROD DETAIL (5 / E-7)



LIGHTNING ROD AND ROOF PENETRATION DETAIL (6 / E-7)

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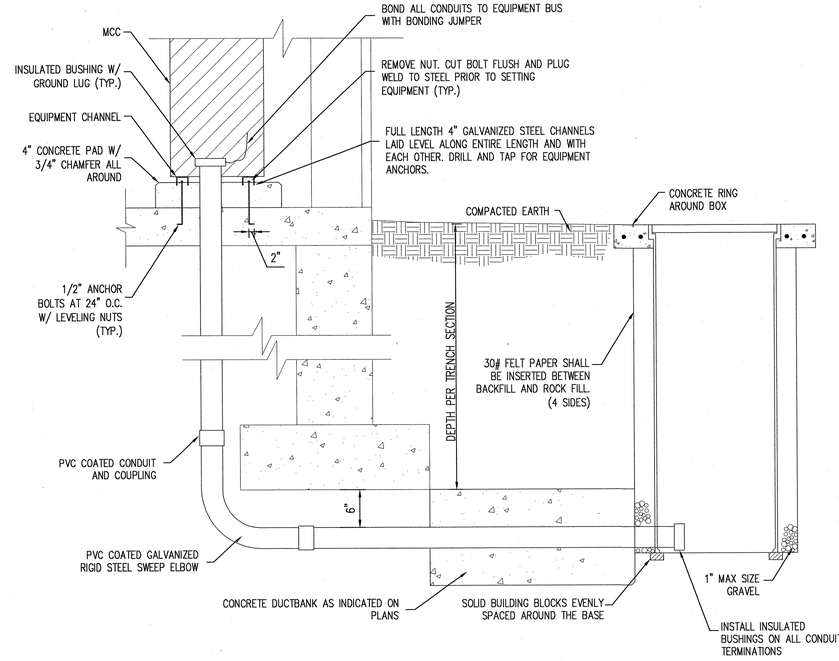
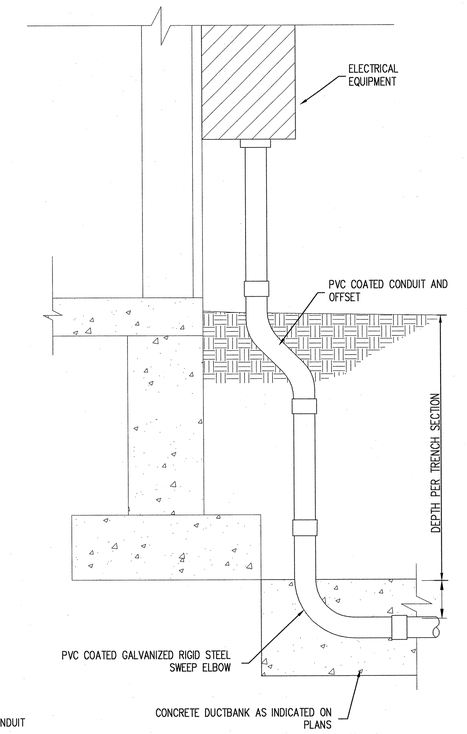


BUILDING CONDUIT ENTRANCE TO EQUIPMENT PAD (7 / E-5)

NO SCALE



BUILDING CONDUIT ENTRANCE TO WALL MOUNTED EQUIPMENT (8 / -)

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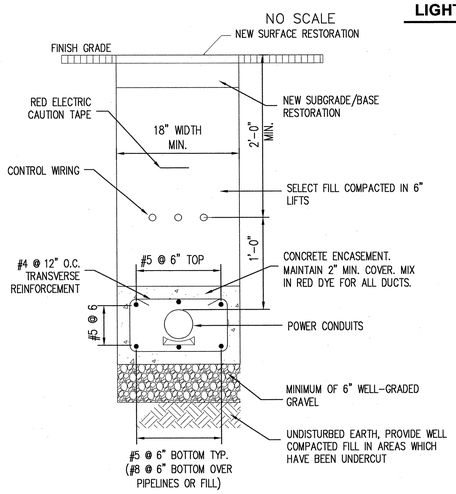

CONDUIT TRENCHING DETAIL (9 / E-5)

NO SCALE

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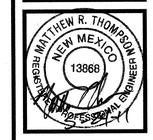
DRAWN BY: LLM
CHECKED BY: MRT
DATE: 02/24/2011

GRIGGS– WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ELECTRICAL DETAILS 1



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SHEET 48 of 58
DWG NO. E-8

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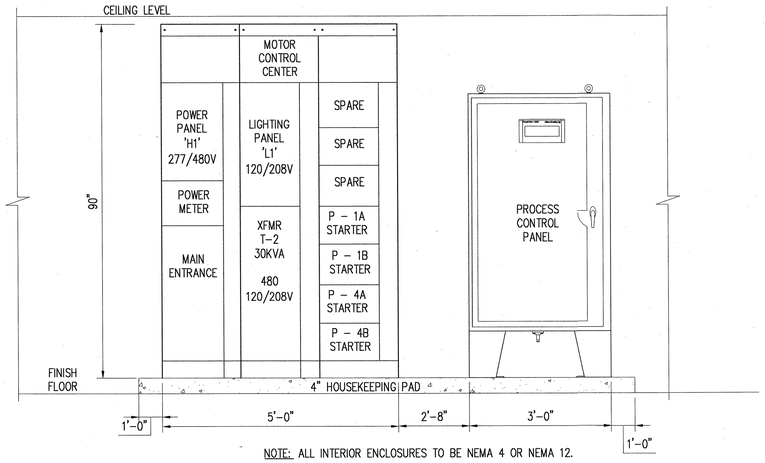
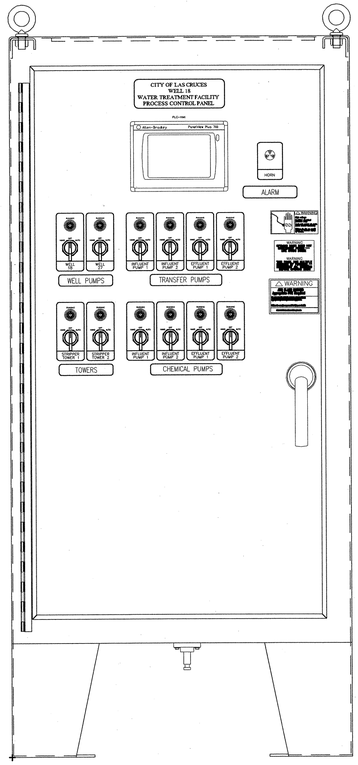


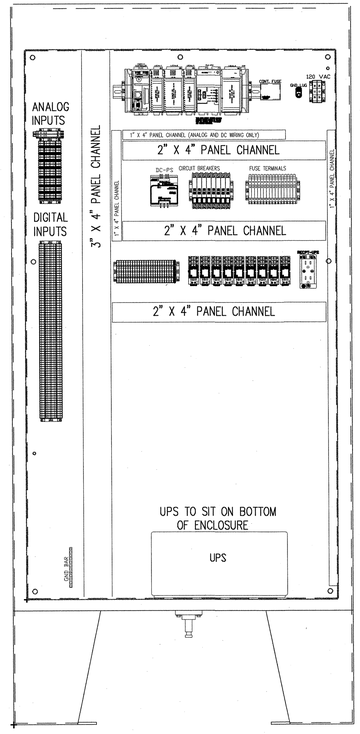
NOTE: ALL INTERIOR ENCLOSURES TO BE NEMA 4 OR NEMA 12.

PCP/MCC WALL ELEVATION (A / E-5)

NO SCALE



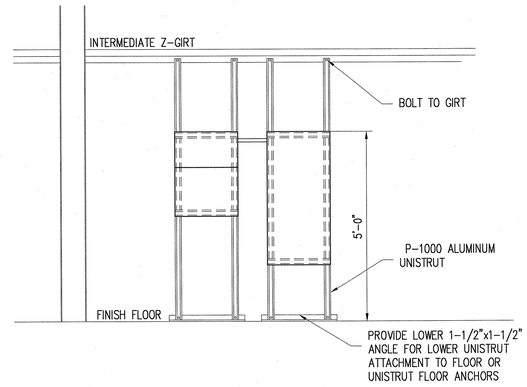
FRONT DOOR VIEW



BACK PLANE VIEW

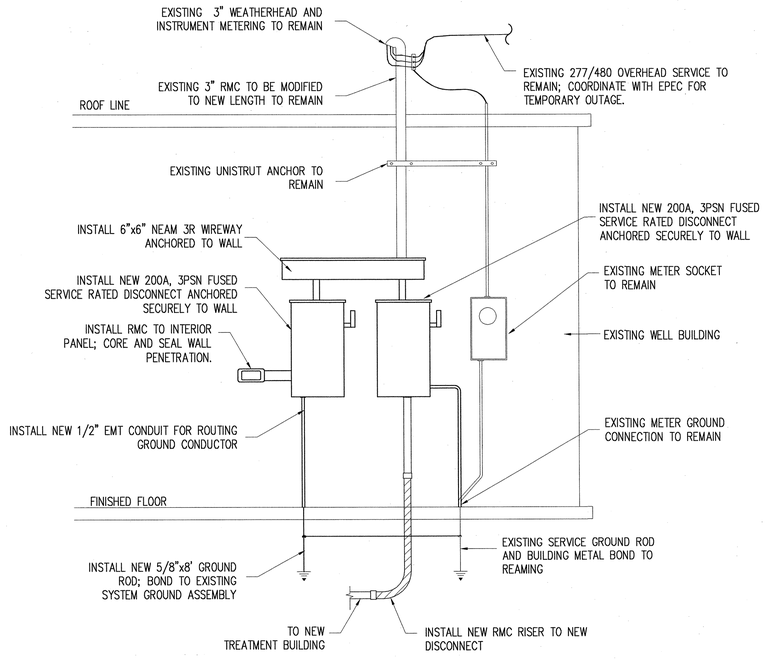
PROCESS CONTROL PANEL DETAIL (1 / E-9)

NO SCALE



TYPICAL ELECTRICAL EQUIPMENT MOUNTING DETAIL FOR UNFINISHED INTERIOR WALLS (3 / E-5)

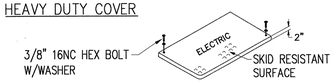
NO SCALE



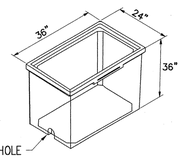
SERVICE ENTRANCE ELEVATION (B / E-3)

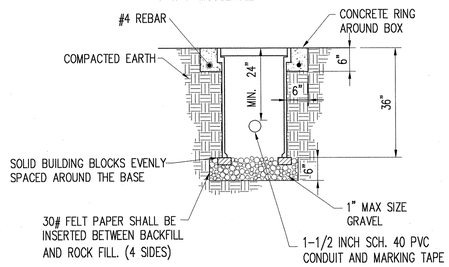
1/2" = 1'-0"

HEAVY DUTY COVER



BOX





TYPICAL INSTALLATION IN COMPACTED EARTH

NOTES FOR HEAVY DUTY REINFORCED POLYMER MORTAR PULL BOX AND COVERS

1. MATERIAL TO BE AN AGGREGATE CONSISTING OF SAND AND GRAVEL BOUND TOGETHER WITH A POLYMER AND REINFORCED WITH CONTINUOUS WOVEN GLASS STRANDS. THE MATERIAL MUST HAVE THE FOLLOWING MECHANICAL PROPERTIES: COMPRESSIVE STRENGTH – 11,000 PSI, TENSILE STRENGTH – 1,700 PSI, FLEXURAL STRENGTH – 7,500 PSI.
2. ALL PULL BOX COVERS SHALL BE HEAVY DUTY REINFORCED POLYMER MORTAR, HAVING A SERVICE LOAD OF 22,568 LBS. OVER 10" SQUARE (225 PSI).
3. PULL BOX LOGO SHALL BE "ELECTRIC".
4. THE DIMENSIONS OF THE PULL BOXES SHOWN ARE NOMINAL DIMENSIONS AND MAY VARY AS TO THE MANUFACTURER'S RECOMMENDATIONS.
5. ELECTRICAL PULL BOX (STANDARD) SHALL BE A HEAVY DUTY REINFORCED POLYMER MORTAR PULL BOX AND COVER.
6. CONDUIT SHALL BE BURIED AT A MINIMUM DEPTH OF 24".
7. PULLBOX TOP SHALL BE SLOPED TO MATCH PROPOSED GRADE.
8. ALL CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC.

PULLBOX DETAIL (2 / E-3)

NO SCALE

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: E:\Projects\20100231\LC\Design_Plans\CVR_Drawings\P:\20100231\LC\Drawings\Plans\E-9-20100231-ELEC_Details 2.dwg

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DESIGNED BY: MRT	DRAWN BY: LLM	CHECKED BY: MRT	DATE: 05/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ELECTRICAL DETAILS 2

MATTHEW R. THOMPSON NEW MEXICO 13868 REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 49 of 58
DWG NO. E-9

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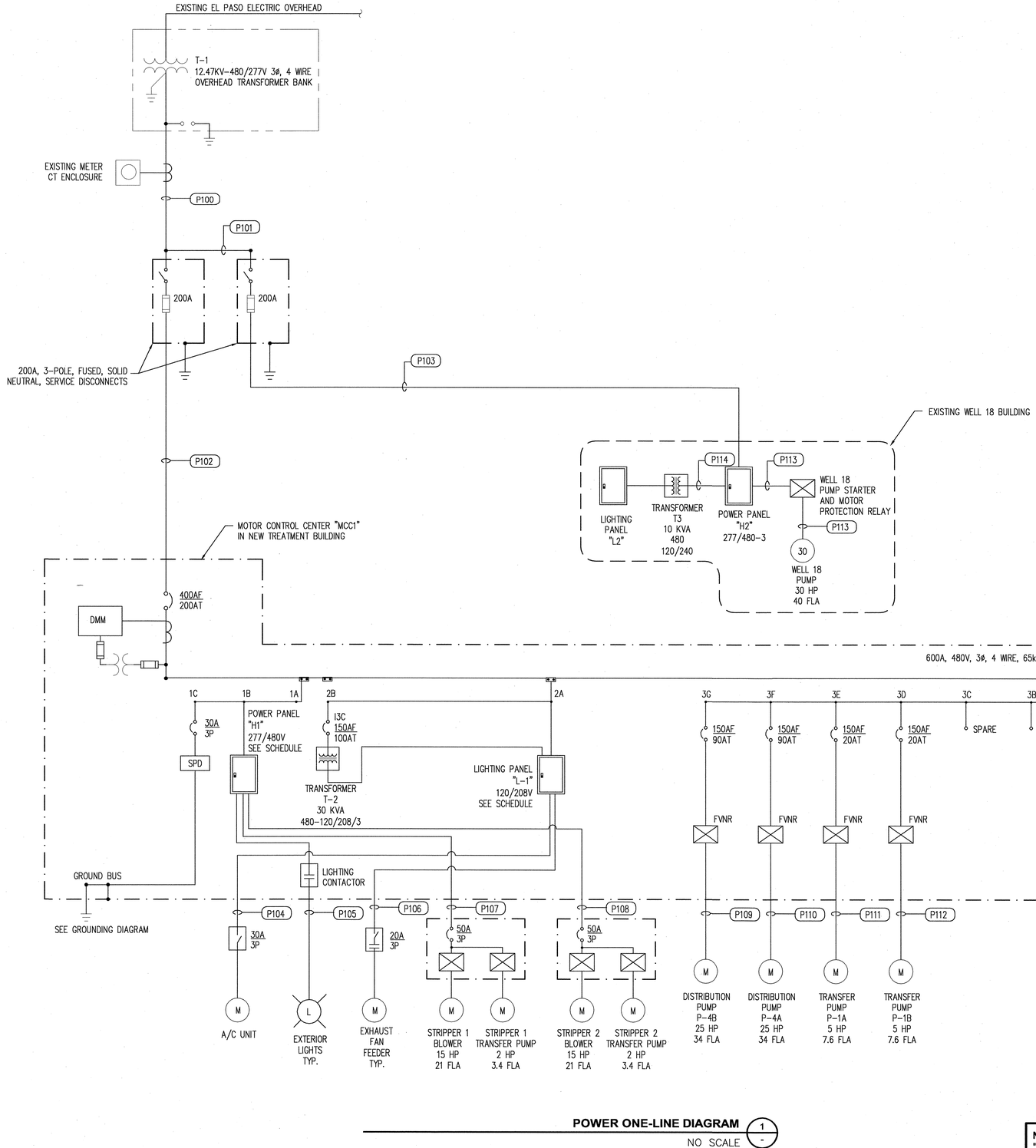
Thu, 19-May-2011 – 4:38:pm, Plotted by: LMILLER



POWER ONE-LINE DIAGRAM (1)
NO SCALE

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: P:\Projects\ES09.0306_Griggs-Walnut\VA_Drawings\E-10-20110531-ELEC_One Line.dwg

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:
MRT	LLM	MRT	05/24/2011

GRIGGS- WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

POWER ONE-LINE DIAGRAM

MATTHEW R. THOMPSON — NEW MEXICO — 13868 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 50 of 58
DWG NO. E-10

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Thu, 19-May-2011 - 4:39:pm, Plotted by: LMILLER

ELECTRICAL SERVICE LOAD SUMMARY CITY OF LAS CRUCES WELL 18 TREATMENT SYSTEM			
277/480 VOLT, 3 PHASE SERVICE CONNECTED LOAD	**HP**	**FLA**	**KVA**
Existing Well 18 Building			
Electric Unit Heater		6.0	5.0
Well Pump	30	40.0	33.3
New Water Treatment System Building			
Air Stripper Tower Blower #1	15	21.0	17.5
Air Stripper Tower Blower #2	15	21.0	17.5
Air Stripper Transfer Pump #1	2	3.4	2.8
Air Stripper Transfer Pump #2	2	3.4	2.8
Influent Transfer Pump #1	5	7.6	6.3
Influent Transfer Pump #2	5	7.6	6.3
Distribution Pump #1	25	34.0	28.3
Distribution Pump #2	25	34.0	28.3
Exhaust Fan #1	1	1.6	1.3
Electric Unit Heaters		28.0	23.3
Evaporative Cooler	1	2.1	1.7
RTU #1		18.0	15.0
277VAC Lighting Continuous		5.0	4.2
Largest Motor Adder (25%)	30	10.0	8.3
TOTAL CONNECTED 277/480V-3 PHASE LOAD	**156**	**243.0**	**202.0**
120/208 VOLT, 3 PHASE CONNECTED LOAD	**VOLTS**	**AMPS**	**KVA**
Interior Lighting	208	12.0	2.5
General Receptacles	208	15.0	3.1
TOTAL CONNECTED 120/208VAC-3 PHASE LOAD			**5.6**
SERVICE DEMAND LOAD SUMMARY:		**DEMAND (KVA)**	**DEMAND LOAD(%)**
Existing Well 18 Building Feeder			
Electric Unit Heater		5.0	100%
Well Pump		33.3	100%
120/208VAC Transformer Load		3.9	125%
TOTAL 277/480VAC-3 PHASE FEEDER DEMAND LOAD		**42.1**	
	AMPS =	**50.7**	
New Water Treatment System Building			
Air Stripper Tower Blower #1		17.5	100%
Air Stripper Tower Blower #2		17.5	100%
Air Stripper Transfer Pump #1		2.8	100%
Air Stripper Transfer Pump #2		2.8	100%
Influent Transfer Pump #1		6.3	100%
Influent Transfer Pump #2		0.0	0%
Distribution Pump #1		28.3	100%
Distribution Pump #2		0.0	0%
Exhaust Fan #1		0.0	0%
Electric Unit Heaters		23.3	100%
Evaporative Cooler		0.0	0%
RTU #1		0.0	0%
277VAC Lighting Continuous		5.2	125%
Largest Motor Adder (25%)		8.3	100%
120/208VAC Transformer Load		2.5	100%
TOTAL 277/480VAC-3 PHASE FEEDER DEMAND LOAD		**114.4**	
	AMPS =	**137.7**	
SERVICE RATING:	**PEAK HOUR KVA =**	**156.6**	
	PEAK HOUR KW =	**125.3**	
	AMPS =	**188.3**	
	VOLTS =	**277/480Y**	
VOLTAGE = 277/480Y Vac ASSUMED PEAK HOUR MAXIMUM KVA DEMAND = 157 Transformer Load Factor (ANSI/IEEE C57.91) = 1.38 MINIMUM TRANSFORMER KVA RATING = 113			

ELECTRICAL SERVICE LOAD SUMMARY (1) NO SCALE

FAULT CURRENT SUMMARY CALCULATIONS		
Project ID :	**Date - 02/28/11**	
Las Cruces Well 18 Treatment Facility	**Three Phase System**	
(Assumes infinite primary fault current available)		
Power Co. Transformer (T1) =		
Transformer KVA >>	225	3-Phase Transformer
Transformer Impedance (%Z) ==>	1.300	
Voltage (line to line) >>	480	
Transformer full load amps =	271	
Calculated Available Fault current from system =	20,818	
Motor Contribution >>	500	*Assumed 125 FLA
Known Available Fault Current at transformer lugs>>		Miscellaneous units
Available Fault Current =	**21,318**	
	Point 1 >>	Main Disconnect
Fault Point 1	Description >>	
Distance from Transformer T1 to Point No. 1 >>	15	
Conductor size >>	500	
No. of conductors per phase >>	1	
(C)u.or (A)l.wire + (M)agnetic or (N)on-magnetic conduit >>	CM	Copper Conductors, Magnetic Conduit
Available Fault Current at Point No. 1 =	**20,312**	MINIMUM EQUIPMENT RATING 22 KAIC

FAULT CURRENT SUMMARY (2) NO SCALE

Panel L1 - Power Panel				Location: Treatment Building - MCC1						
Ratings: 120/208 VAC, 3 phase, 4 Wire, 200A, 150A MCB, Copper Neutral and Ground Busses, 65K AIC Rated										
CCT No.	DESCRIPTION	BKR SIZE	VA	Phase A	Phase B	Phase C	VA	BKR SIZE	DESCRIPTION	CCT No.
1	Exterior Receptacles - Heat Trace	20A/1P	1500	1650			150	20A/1P	Antiscalant Feed Pump #1	2
3	Exterior Receptacles - Heat Trace	20A/1P	1500		1650		150	20A/1P	Antiscalant Feed Pump #2	4
5	General Receptacles - Process Room	20A/1P	360			510	150	20A/1P	Sodium Hypochlorite Pump #1	6
7	General Receptacles - Process Room	20A/1P	360	510			150	20A/1P	Sodium Hypochlorite Pump #2	8
9	General Receptacles - Process Room	20A/1P	540		2130		1590	30A/2P	Jockey Pump	10
11	General Receptacles - Exterior	20A/1P	540			2130	1590	***	***	12
13	General Receptacles - Storage Room	20A/1P	360	610			250	20A/1P	Influent Flow Meter Transmitter	14
15	General Receptacles - Storage Room	20A/1P	360		610		250	20A/1P	Effluent Flow Meter Transmitter	16
17	General Receptacles - Electrical Room	20A/1P	540			940	400	20A/1P	SCADA System	18
19	General Receptacles - Electrical Room	20A/1P	360	610			250	20A/1P	Residual Chlorine Transmitter	20
21	Evaporative Cooler	20A/3P	550		3310		2760	30A/2P	RTU-1	22
23	***	***	550			3310	2760	***	***	24
25	***	***	550	775			225	20A/1P	EF-1	26
27	Evaporative Cooler Pump	20A/1P	150		300		150	20A/1P	Control Damper Motor	28
29	Damper Motor	20A/1P	150			150	0	20A/1P	Spare	30
31	Spare	20A/1P	0	0			0	20A/1P	Spare	32
33	Spare	20A/1P	0		0		0	20A/1P	Spare	34
35	Spare	20A/1P	0			0	0	20A/1P	Spare	36
37	Spare	20A/1P	0	0			0	20A/1P	Spare	38
39	Spare	20A/1P	0		0		0	20A/1P	Spare	40
41	Spare	20A/1P	0			0	0	20A/1P	Spare	42
	Total Connected Load			4155	8000	7040				
	Total Demand Load				19195					
	Feeder Voltage				208					
	Feeder Amps				53					

PANEL SCHEDULE "L1" (3) NO SCALE

Panel L2				Location: Well 18 Building					
Ratings: 120/240 VAC, 1 phase, 3 Wire, 60A Rated, 50A MCB, NEMA 1, Surface Mount SquareD Mini Power-Zone Integral 10kVA									
CCT No.	DESCRIPTION	BKR SIZE	VA	Phase A	Phase B	VA	BKR SIZE	DESCRIPTION	CCT No.
1	Receptacles	20A/1P	360	360		0	20A/1P	Spare	2
3	Spare	20A/1P	0		0	0	20A/1P	Spare	4
5	Spare	20A/1P	0	0		0	20A/1P	Spare	6
7	Spare	20A/1P	0		0	0	20A/1P	Spare	8
9	Spare	20A/1P	0	0		0	20A/1P	Spare	10
11	Spare	20A/1P	0		0	0	20A/1P	Spare	12
	Total Connected Load			360	0				
	Phase Demand Load			360	0				
	Total Demand Load				360				
	Feeder Voltage				240				
	Feeder Amps				2				

PANEL SCHEDULE "L2" (4) NO SCALE

Panel H1 - Power Panel				Location: Treatment Building - MCC1						
Ratings: 277/480 VAC, 3 phase, 4 Wire, 200A, 150A MCB, Copper Neutral and Ground Busses, 65K AIC Rated										
CCT No.	DESCRIPTION	BKR SIZE	VA	Phase A	Phase B	Phase C	VA	BKR SIZE	DESCRIPTION	CCT No.
1	Stripper Tower #1	50A/3P	5800	15800			10000	45A/1P	Electric Unit Heater #1	2
3	***	—	5800		15800		10000	45A/1P	Electric Unit Heater #2	4
5	***	—	5800			9100	3300	20A/1P	Electric Unit Heater #3	6
7	Stripper Tower #2	50A/3P	5800	6425			625	20A/1P	Exterior Lighting	8
9	***	—	5800		7600		1800	20A/1P	Interior Lighting - Process Room	10
11	***	—	5800			7000	1200	20A/1P	Interior Lighting - Storage/Electrical/Chem	12
13	Spare	30A/3P	0	0			0	20A/1P	Spare	14
15	***	—	0		0		0	20A/1P	Spare	16
17	***	—	0			0	0	20A/1P	Spare	18
19	Spare	20A/3P	0	0			0	20A/1P	Spare	20
21	***	—	0		0		0	20A/1P	Spare	22
23	***	—	0			0	0	20A/1P	Spare	24
25	Spare	20A/3P	0	0			0	20A/1P	Spare	26
27	***	—	0		0		0	20A/1P	Spare	28
29	***	—	0			0	0	20A/1P	Spare	30
	Total Connected Load			22225	23400	16100				
	Total Demand Load				61725					
	Feeder Voltage				480					
	Feeder Amps				74					

PANEL SCHEDULE "H1" (5) NO SCALE

Panel H2 - Power Panel				Location: Well 18 Building						
Ratings: 277/480 VAC, 3 phase, 4 Wire, 200A, MLO, Copper Neutral and Ground Busses, 22K AIC Rated										
CCT No.	DESCRIPTION	BKR SIZE	VA	Phase A	Phase B	Phase C	VA	BKR SIZE	DESCRIPTION	CCT No.
1	Well Pump Starter	100A/3P	11080	11255			175	20A/1P	Exterior Perimeter Lights	2
3	***	—	11080		11680		600	20A/1P	Interior Lights	4
5	***	—	11080			16080	5000	20A/2P	Transformer T3	6
7	Electric Unit Heater	20A/3P	1667	6667			5000	***	***	8
9	***	—	1667		1667		0	20A/1P	Spare	10
11	***	—	1667			1667	0	20A/1P	Spare	12
13	Spare	20A/3P	0	0			0	20A/1P	Spare	14
15	***	—	0		0		0	20A/1P	Spare	16
17	***	—	0			0	0	20A/1P	Spare	18
19	Spare	20A/3P	0	0			0	20A/1P	Spare	20
21	***	—	0		0		0	20A/1P	Spare	22
23	***	—	0			0	0	20A/1P	Spare	24
25	Space	—	0	0			0	—	Space	26
27	Space	—	0		0		0	—	Space	28
29	Space	—	0			0	0	—	Space	30
	Total Connected Load			17922	13347	17747				
	Total Demand Load				49016					
	Feeder Voltage				480					
	Feeder Amps				59					

PANEL SCHEDULE "H2" (6) NO SCALE

NOTICE OF EXTENDED PAYMENT PROVISION:
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DESIGNED BY: MRT
DRAWN BY: LLM
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS- WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ELECTRICAL SCHEDULES

MATTHEW R. THOMPSON NEW MEXICO 13868 PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 51 of 58
DWG NO. E-11

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POWER CONDUIT AND CONDUCTOR SCHEDULE

CONDUIT	SIZE	CIRCUIT	LINE	NEUTRAL	GROUND	SOURCE	DESTINATION
P100	3" (EXISTING)	1	3 - 500 AWG	1 - 500 AWG		T-1	Wireway
P101	6"x6" Wireway	1	3 - 500 AWG	1 - 500 AWG		Wireway	Main Service Disconnects
P102	2.5"	1	3 - 4/0 AWG	1 - 4/0 AWG	1 - 6 AWG	Main Service Disconnect #1	MCC1
P103	2.5"	1	3 - 4/0 AWG	1 - 4/0 AWG	1 - 6 AWG	Main Service Disconnect #2	Panelboard "H2"
P104	3/4"	1	2 - 10 AWG		1 - 10 AWG	Panelboard "L1"	RTU 1
P105	3/4"	1	1- 12 AWG	1- 12 AWG	1 - 12 AWG	MCC 1 Lighting Contactor	Exterior Lights
P106	3/4"	1	3 - 12 AWG		1 - 12 AWG	Panelboard "L1"	Evaporative Cooler Fan
		2	1- 12 AWG	1- 12 AWG		Panelboard "L1"	Evaporative Cooler Pump
P107	1"	1	3 - 8 AWG		1 - 10 AWG	Panelboard "H1"	Stripper Tower 1
P108	1"	1	3 - 8 AWG		1 - 10 AWG	Panelboard "H1"	Stripper Tower 2
P109	1"	1	3 - 6 AWG		1 - 8 AWG	MCC1	Pump P-4A
P110	1"	1	3 - 6 AWG		1 - 8 AWG	MCC1	Pump P-4B
P111	3/4"	1	3 - 12 AWG		1 - 12 AWG	MCC1	Pump P-1A
P112	3/4"	1	3 - 12 AWG		1 - 12 AWG	MCC1	Pump P-1B
P113	1"	1	3 - 6 AWG		1 - 8 AWG	Panelboard "H2"	Well 18 Submersible Pump
P114	3/4"	1	2 - 12 AWG		1 - 12 AWG	Panelboard "H2"	Transformer T3
P115	3/4"	1	2- 8 AWG		1 - 10 AWG	Panelboard "H1"	10 KW Unit Heater
P116	3/4"	1	2- 12 AWG		1 - 12 AWG	Panelboard "H1"	3.3 KW Unit Heater
P117	3/4"	1	2- 10 AWG		1 - 10 AWG	Panelboard "L1"	Jockey Pump

NOTE: All non-defined circuit homeruns are to be be 3/4" conduit minimum and minimum 12 AWG conductors.

POWER CONDUIT SCHEDULE (1/-)

NO SCALE

INSTRUMENTATION AND CONTROL CONDUIT AND CONDUCTOR SCHEDULE

CONDUIT TAG	CONDUIT SIZE	LINE	SHIELDED PAIRS	GROUND	SOURCE	DESTINATION
I-100	1.5"		CAT-5e		PCP	Remote Terminal Board
I-101	1"		1-TWSH 16 AWG		PCP	Remote Terminal Board
I-102	3/4"	2-14 AWG		1-14 AWG	PCP	Remote Terminal Board
I-103	1-1/2"	40-14 AWG		1-14 AWG	MCC1	PCP
I-104	3/4"	8-14 AWG		1-14 AWG	PCP	Well 18 Starter
I-105	3/4"	2-14 AWG		1-14 AWG	Flood Level Switch LS-140	PCP
I-106	1"		1-TWSH 16 AWG		Chlorine Residual Transmitter AIT-245	PCP
I-107	3/4"	2-14 AWG		1-14 AWG	Instrusion Switches	PCP
I-108	3/4"	10-14 AWG		1-14 AWG	Sodium Hypochlorite Pump 1 Contactor	PCP
	3/4"	10-14 AWG		1-14 AWG	Sodium Hypochlorite Pump 2 Contactor	PCP
I-109	3/4"	10-14 AWG		1-14 AWG	Antiscalant Pump 1 Contactor	PCP
	3/4"	10-14 AWG		1-14 AWG	Antiscalant Pump 2 Contactor	PCP
I-110	1"		1-TWSH 16 AWG		Finish Water Flow Transmitter FIT-240	PCP
I-111	1"		1-TWSH 16 AWG		Raw Water Flow Transmitter FIT-135	PCP
I-112	1"	12-14 AWG		1-14 AWG	Stripper Tower #1	PCP
I-113	1"	12-14 AWG		1-14 AWG	Stripper Tower #2	PCP
I-114	3/4"		1-TWSH 16 AWG		Effluent Tank LE-215A	PCP
I-115	3/4"		1-TWSH 16 AWG		Influent Tank LE-110A	PCP
I-116	3/4"	2-14 AWG		1-14 AWG	Solenoid Valve YC-200	PCP
I-117	3/4"	2-14 AWG		1-14 AWG	Effluent Tank LSHH-215B	PCP
I-118	3/4"	2-14 AWG		1-14 AWG	Influent Tank LSHH-110B	PCP

CONTROL CONDUIT SCHEDULE (2/-)

NO SCALE

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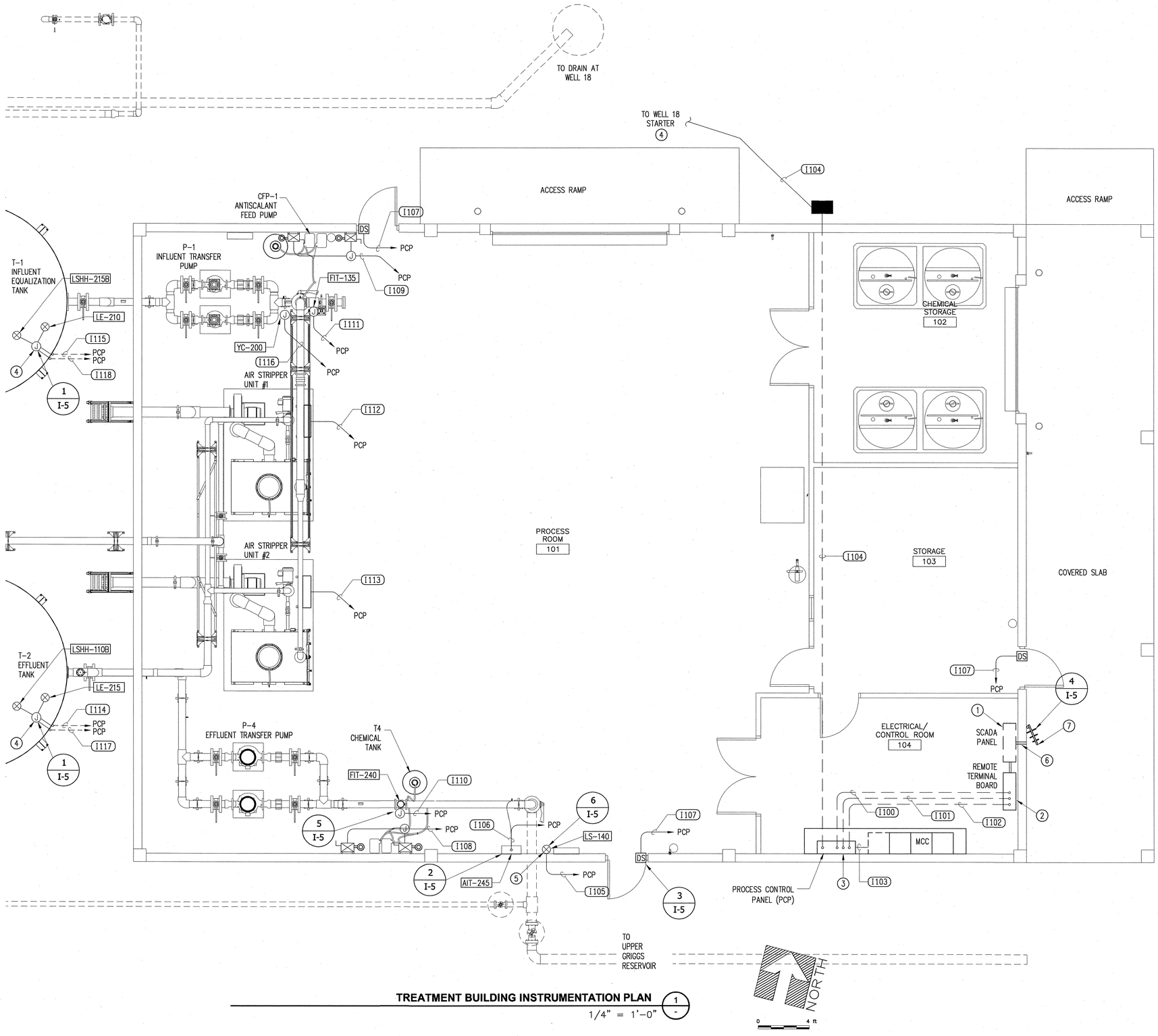
GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

ELECTRICAL SCHEDULES

MATTHEW R. THOMPSON — NEW MEXICO — 13868 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 52 of 58
DWG NO. E-12



TREATMENT BUILDING INSTRUMENTATION PLAN 1/-

1/4" = 1'-0"

INSTRUMENTATION KEYED NOTES (#)

1. OWNER TO PROVIDE AND INSTALL SCADA SYSTEM PANEL. OWNER STAFF TO EXTEND I/O FROM REMOTE TERMINAL BOARD TO SCADA PANEL. OWNER PERSONNEL TO PROGRAM SCADA PANEL FOR CONTROL OUTPUTS REQUIRED FOR WELL 27 OPERATION AND START/ STOP SIGNAL FROM GRIGGS RESERVOIR AND ALARM INPUTS.
2. CONTRACTOR TO PROVIDE AND INSTALL REMOTE TERMINAL BOARD PER DETAIL AND MOUNT SECURELY TO WALL. FINISH ALL I/O WIRING CONNECTIONS FROM PROCESS CONTROL PANEL.
3. CONTRACTOR TO PROVIDE AND INSTALL PROCESS PANEL MOUNTED SECURELY TO HOUSEKEEPING PAD AND WALL. ALL CONDUIT EXTENDING THROUGH CEILING TO HAVE PROPER GRID PANEL TRIM.
4. CONTRACTOR TO MOUNT UNISTRUT TO TANK WALL AND ROOF PRIOR TO COATING FOR FINAL CONDUIT MOUNTING. MOUNT NEMA 4X JUNCTION BOX AT ROOF ADJACENT TO TRANSDUCER ROOF PENETRATION FITTING. EXTEND LFMC FROM JUNCTION BOX TO ROOF FITTING FOR TRANSDUCER CABLE. PROVIDE INTERIOR TANK SUSPENSION FOR TRANSDUCER MOUNTING.
5. CONTRACTOR TO MOUNT FLOOD PROBE AT WALL ANCHORED TO FLOOR. WATER DETECTOR KELE MODEL #WD-1B.
6. CONTRACTOR TO INSTALL 1" RMC CONDUIT THROUGH WALL AT 48" AFF FOR USE BY OWNER STAFF TO ROUTE FUTURE COAXIAL ANTENNA CABLE.
7. CONTRACTOR TO INSTALL 2" GALVANIZED RIGID STEEL CONDUIT FOR SCADA ANTENNA MAST. MOUNT SECURELY TO BUILDING STRUCTURE AND PROVIDE ROOF JACK FOR PENETRATION. OWNER TO INSTALL SCADA ANTENNA AND ANTENNA CABLE.

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FILE NAME: S:\Projects\ES09.0306_Griggs-Walnut\WR_Drawings\I-01-20100231- Instrumentation Plan.dwg

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GRIGGS- WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

TREATMENT BUILDING INSTRUMENTATION PLAN

MATTHEW R. THOMPSON — NEW MEXICO — 13868 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 53 of 58
DWG NO. I-1

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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MEANINGS OF IDENTIFICATION LETTERS

THIS TABLE APPLIES ONLY TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

FIRST LETTER			SUCCEEDING LETTERS		
	MEASURING OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	MODIFIER	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		EMERGENCY	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH OR OPEN
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW OR CLOSED
M	MOTOR	MOMENTARY			MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		POINT TEST CONNECTION		
Q	QUANTITY	INTEGRATE OR TOTALIZE			
R	RUN/RADIATION		RECORD		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTI-VARIABLE		MULTI-FUNCTION	MULTI-FUNCTION	MULTI-FUNCTION
V	VISCOSITY, VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATE OR UNCLASSIFIED CONTROL ELEMENT	

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR | FIELD MOUNTED | PRIMARY LOCATION NORMALLY NOT ACCESSIBLE TO OPERATOR

DISCRETE INSTRUMENTS

SECONDARY LOCATION OR CONTROL PANEL

SCADA/HMI LOCATION OR PROGRAMMABLE LOGIC CONTROLLER (ISA LOOP)

LINE SYMBOLS

- MAJOR PROCESS PIPING. FLOW CHANNEL OR DATA HIGHWAY W/ FLOW OR SIGNAL DIRECTION AS SHOWN.
- MINOR PROCESS PIPING. WITH FLOW DIRECTION AS SHOWN.
- MISCELLANEOUS PIPING. WITH FLOW DIRECTION AS SHOWN.
- EXISTING PIPING OR EXISTING EQUIPMENT
- BUILDING OR ENCLOSURE
- FUTURE PIPING OR FUTURE EQUIPMENT
- ELECTRIC OR ELECTRICAL SIGNAL WITH DIRECTION AS SHOWN.
- EXISTING ELECTRIC OR ELECTRICAL SIGNAL W/ DIRECTION AS SHOWN.
- SOFTWARE SIGNAL LINK
- RADIO/TELEPHONE LINK
- HYDRAULIC SIGNAL
- PNEUMATIC SIGNAL
- PROCESS OR SIGNAL LINE CONTINUED AT/ FROM ANOTHER LOCATION (MATCH LETTERS)

INSTRUMENT TAGGING

FUNCTIONAL IDENTIFICATION PER ISA STANDARDS AS MODIFIED FOR USE IN CONTRACT (SEE TABLE THIS SHEET)

XXX-Y-YYY-N

- SUFFIX TO DIFFERENTIATE MULTIPLE FUNCTIONAL CODES (WHEN REQUIRED)
- LOOP NUMBER
- AREA DESIGNATION
- FUNCTIONAL CODE

EXAMPLE

FI 101A

FI = FUNCTIONAL CODE = FLOW INDICATOR
101 = LOOP NUMBER
A = FUNCTIONAL SUFFIX CODE
COMPLETE INSTRUMENTATION TAG NUMBER IS FI-101A

HAND SWITCHES

AO	AUTO/ OFF
AM	AUTO/ MANUAL
CM	COMPUTER/ MANUAL
CL	COMPUTER/ LOCAL
ES	EMERGENCY STOP
FR	FORWARD/ REVERSE
FOR	FORWARD/ OFF/ REVERSE
FS	FAST/ SLOW
FOS	FAST/ OFF/ SLOW
HOA	HAND/ OFF/ AUTO
HOR	HAND/ OFF/ REMOTE
LLS	LEAD/ LAG/ STANDBY
LOR	LOCAL/ OFF/ REMOTE
LOS	LOCAL/ OFF/ STOP
LR	LOCAL/ REMOTE
OC	OPEN/ CLOSE
OCA	OPEN/ CLOSE/ AUTO
OO	ON/ OFF
OCA	OPEN/ CLOSE/ AUTO
OSC	OPEN/ STOP/ CLOSE
SS	START/ STOP
SOR	START/ OFF/ RESET
ES	E-STOP

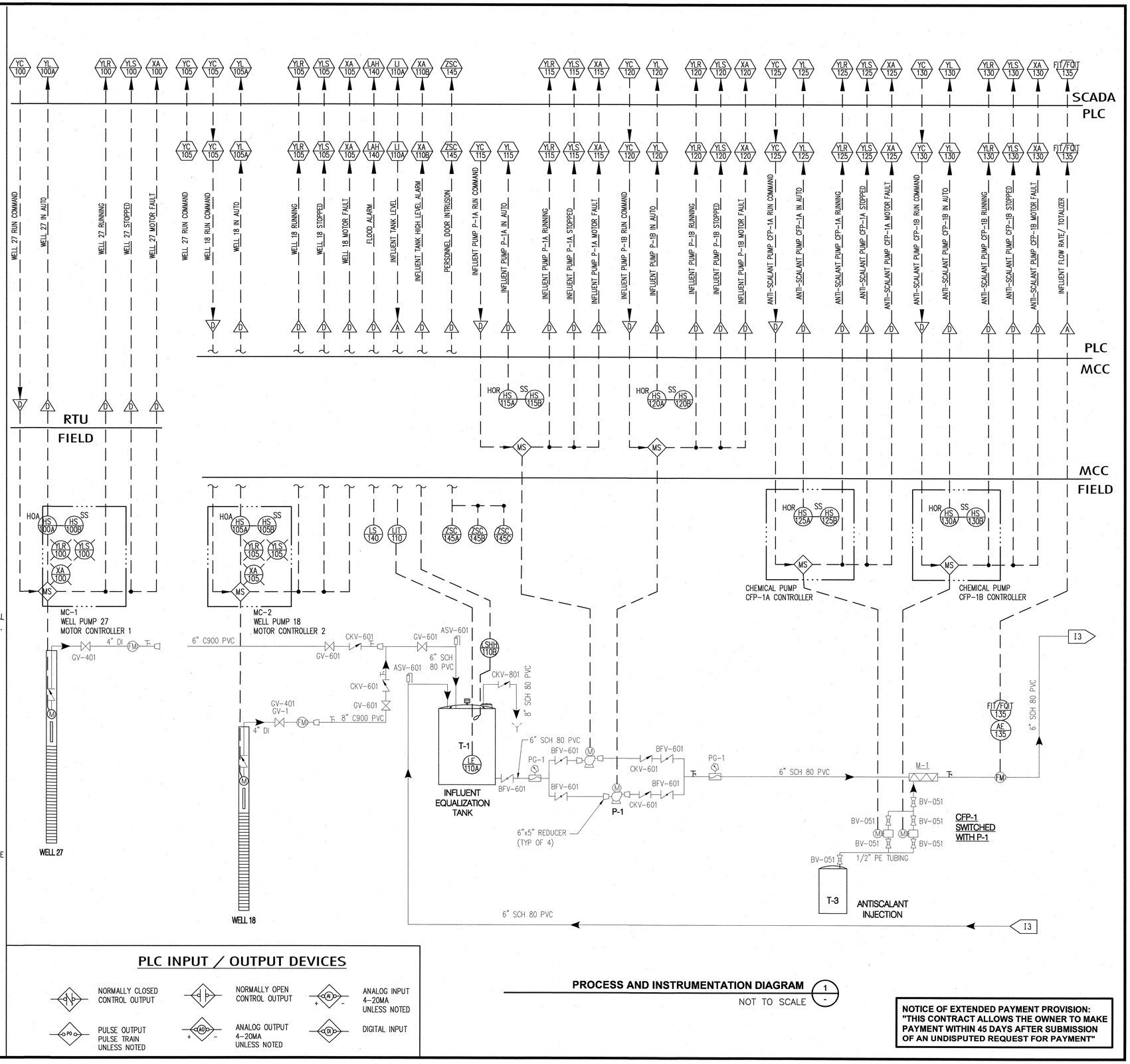
XXX
HS
SELECTOR SWITCH

SPECIFIC SWITCH FUNCTION, (TYP.)

I/O SIGNALS

DIGITAL SYSTEM I/O INTERFACE. DIRECTION OF TRIANGLE DENOTES WHETHER INPUT OR OUTPUT.

LETTER DENOTES SIGNAL TYPE. THE LETTER "A" DENOTES ANALOG SIGNAL TYPE. THE LETTER "D" DENOTES A DISCRETE SIGNAL.



PLC INPUT / OUTPUT DEVICES

- NORMALLY CLOSED CONTROL OUTPUT
- NORMALLY OPEN CONTROL OUTPUT
- ANALOG INPUT 4-20MA UNLESS NOTED
- PULSE OUTPUT PULSE TRAIN UNLESS NOTED
- ANALOG OUTPUT 4-20MA UNLESS NOTED
- DIGITAL INPUT

PROCESS AND INSTRUMENTATION DIAGRAM (1)

NOT TO SCALE

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

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DRAWN BY: LMI
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

PROCESS AND INSTRUMENTATION DIAGRAM 1

MATTHEW R. THOMPSON — NEW MEXICO — 13868 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

SHEET 54 of 58
DWG NO. I-2

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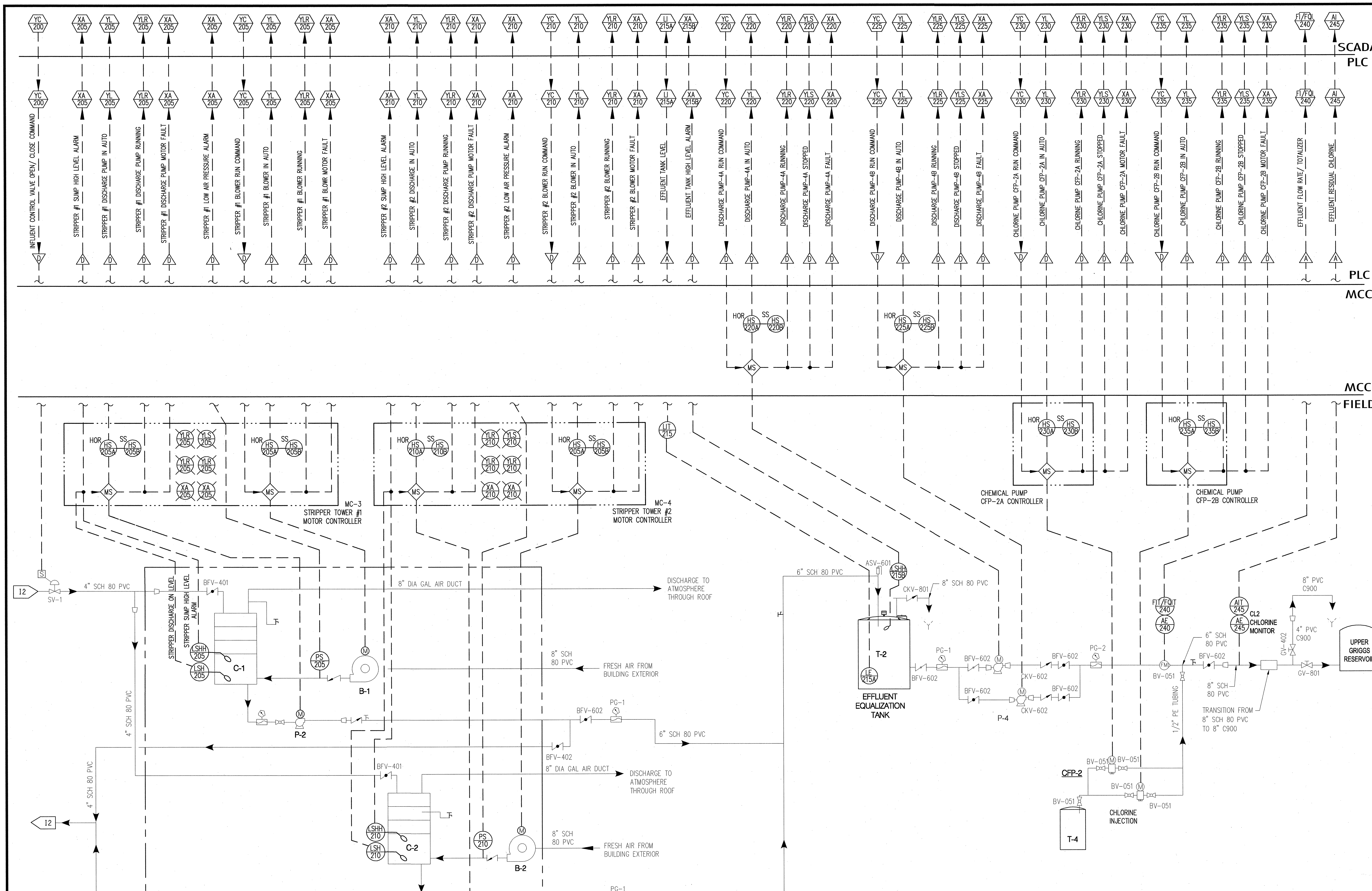
SCADA
PLC
MCC
FIELD
INFLUENT CONTROL VALVE OPEN/ CLOSE COMMAND
STRIPPER #1 SUMP HIGH LEVEL ALARM
STRIPPER #1 DISCHARGE PUMP IN AUTO
STRIPPER #1 DISCHARGE PUMP RUNNING
STRIPPER #1 DISCHARGE PUMP MOTOR FAULT
STRIPPER #1 LOW AIR PRESSURE ALARM
STRIPPER #1 BLOWER RUN COMMAND
STRIPPER #1 BLOWER IN AUTO
STRIPPER #1 BLOWER RUNNING
STRIPPER #1 BLOWR MOTOR FAULT
STRIPPER #2 SUMP HIGH LEVEL ALARM
STRIPPER #2 DISCHARGE IN AUTO
STRIPPER #2 DISCHARGE PUMP RUNNING
STRIPPER #2 DISCHARGE PUMP MOTOR FAULT
STRIPPER #2 LOW AIR PRESSURE ALARM
STRIPPER #2 BLOWER RUN COMMAND
STRIPPER #2 BLOWER IN AUTO
STRIPPER #2 BLOWER RUNNING
STRIPPER #2 BLOWER MOTOR FAULT
EFFLUENT TANK LEVEL
EFFLUENT TANK HIGH LEVEL ALARM
DISCHARGE PUMP-4A RUN COMMAND
DISCHARGE PUMP-4A IN AUTO
DISCHARGE PUMP-4A RUNNING
DISCHARGE PUMP-4A STOPPED
DISCHARGE PUMP-4A FAULT
DISCHARGE PUMP-4B RUN COMMAND
DISCHARGE PUMP-4B IN AUTO
DISCHARGE PUMP-4B RUNNING
DISCHARGE PUMP-4B STOPPED
DISCHARGE PUMP-4B FAULT
CHLORINE PUMP CFP-2A RUN COMMAND
CHLORINE PUMP CFP-2A IN AUTO
CHLORINE PUMP CFP-2A RUNNING
CHLORINE PUMP CFP-2A STOPPED
CHLORINE PUMP CFP-2A MOTOR FAULT
CHLORINE PUMP CFP-2B RUN COMMAND
CHLORINE PUMP CFP-2B IN AUTO
CHLORINE PUMP CFP-2B RUNNING
CHLORINE PUMP CFP-2B STOPPED
CHLORINE PUMP CFP-2B MOTOR FAULT
EFFLUENT FLOW RATE/ TOTALIZER
EFFLUENT RESIDUAL CHLORINE
MC-3
STRIPPER TOWER #1
MOTOR CONTROLLER
MC-4
STRIPPER TOWER #2
MOTOR CONTROLLER
CHEMICAL PUMP
CFP-2A CONTROLLER
CHEMICAL PUMP
CFP-2B CONTROLLER
I2
SV-1
4" SCH 80 PVC
BFV-401
8" DIA GAL AIR DUCT
DISCHARGE TO
ATMOSPHERE
THROUGH ROOF
STRIPPER DISCHARGE ON LEVEL
STRIPPER SUMP HIGH LEVEL ALARM
C-1
B-1
P-2
8" SCH
80 PVC
FRESH AIR FROM
BUILDING EXTERIOR
BFV-602
PG-1
6" SCH 80 PVC
BFV-402
C-2
B-2
P-3
VENDOR
SUPPLIED/CONTRACTOR
INSTALLED
6" SCH 80 PVC
ASV-601
CKV-801
8" SCH 80 PVC
T-2
EFFLUENT
EQUALIZATION
TANK
PG-2
CKV-602
P-4
BV-051
CFP-2
T-4
CHLORINE
INJECTION
1/2" PE TUBING
CL2
CHLORINE
MONITOR
6" SCH
80 PVC
8" SCH
80 PVC
TRANSITION FROM
8" SCH 80 PVC
TO 8" C900
8" PVC
C900
4" PVC
C900
GV-402
GV-801
UPPER
GRIGGS
RESERVOIR

PROCESS AND INSTRUMENTATION DIAGRAM (1)

NOT TO SCALE

NOTICE OF EXTENDED PAYMENT PROVISION:
"THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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DRAWN BY: LLM
CHECKED BY: MRT
DATE: 05/24/2011

GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

PROCESS AND INSTRUMENTATION DIAGRAM 2

MATTHEW R. THOMPSON — NEW MEXICO — 13868 — REGISTERED PROFESSIONAL ENGINEER

JOB NO. ES09.0306

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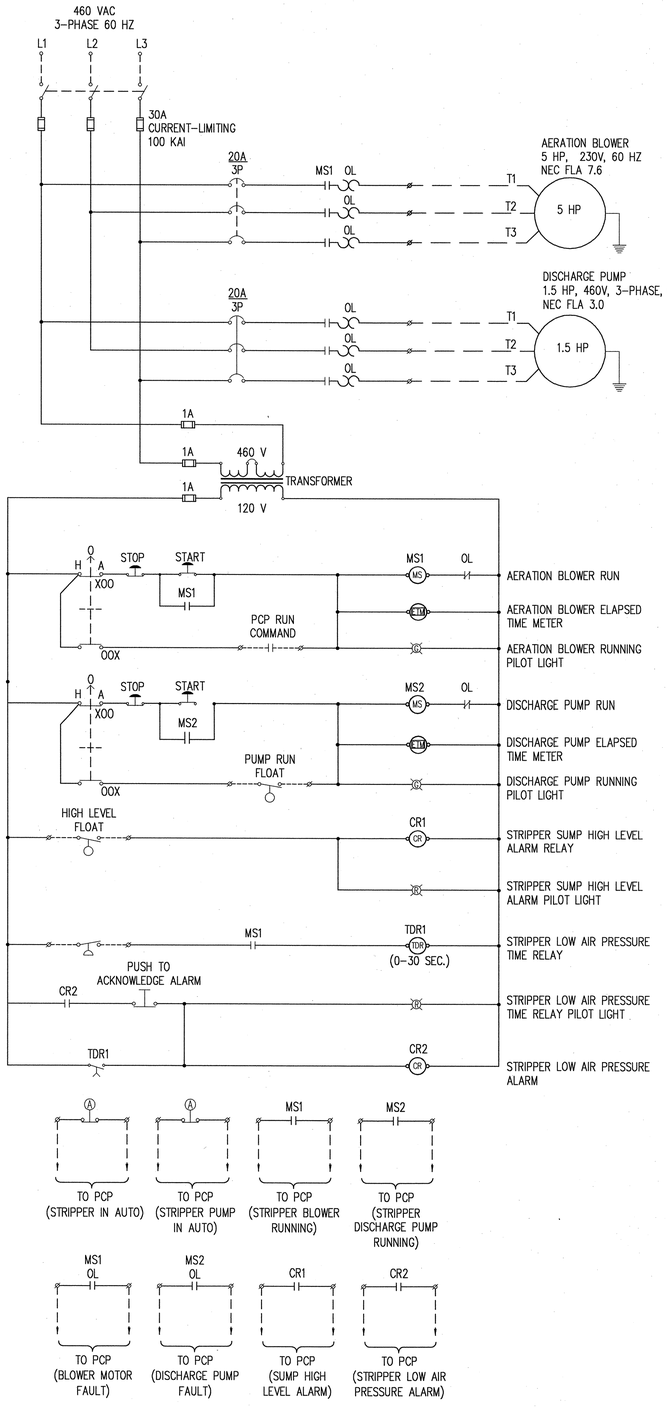
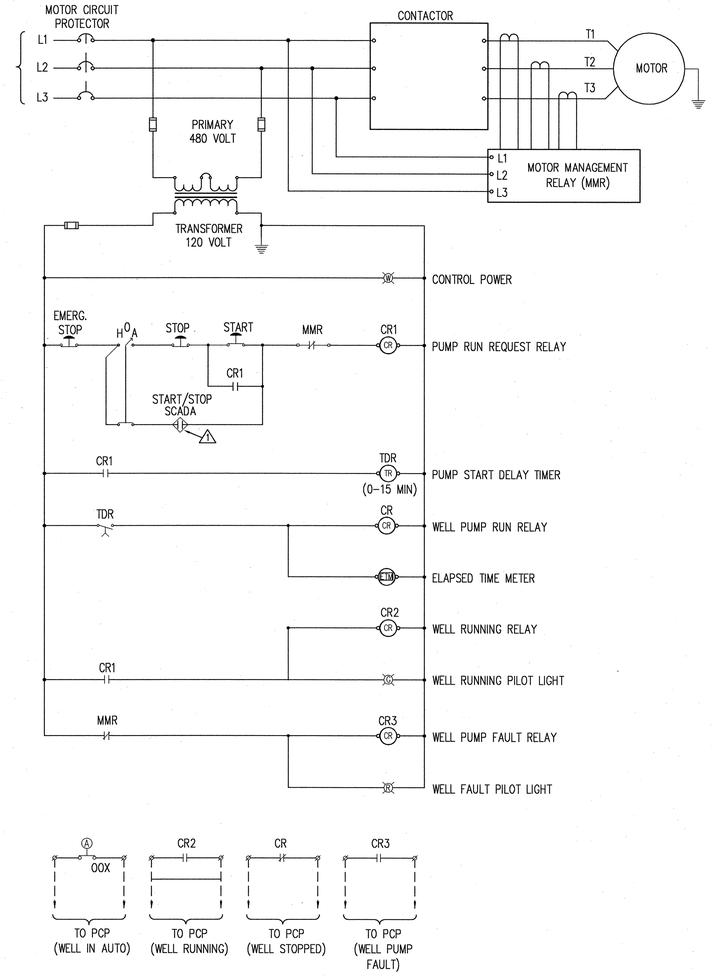


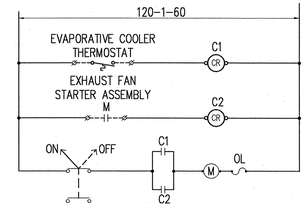
CONTROL DIAGRAM - STRIPPER TOWER MC-1 (1)

(TYPICAL FOR MC-1 AND MC-2)



WELL CONTROL DIAGRAM (2)

(TYPICAL FOR WELL 18 AND 27)



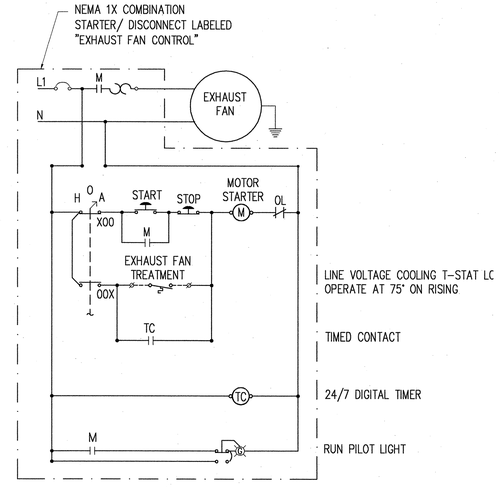
CONTROL DIAGRAM NOTES:

1. INSTALL ALL CONTROLS IN NEMA 1 HINGED DOOR ENCLOSURE. MOUNT ALL CONTROLS AND TERMINALS ON DIN RAILS.
2. MOUNT ON-OFF HAND SWITCH ON DOOR FRONT.
3. MOUNT PLASTIC LAMINATE LABEL "DAMPER CONTROL" ON TOP OF DOOR FRONT.

EVAPORATIVE COOLER CONTROL DIAGRAM (4)

SCHEMATIC LEGEND

- NORMALLY OPEN TIME DELAY ON ENERGIZE (TDR / TDOE)
- NORMALLY CLOSED TIME DELAY ON ENERGIZE (TDR / TDOE)
- SOLENOID
- TEMPERATURE SWITCH. CLOSE ON RISING TEMPERATURE
- PRESSURE SWITCH. OPEN ON RISING PRESSURE
- PRESSURE SWITCH. CLOSE ON FALLING PRESSURE
- N O LIMIT SWITCH
- N C LIMIT SWITCH
- HELD OPEN LIMIT SWITCH
- FIELD DEVICE TERMINAL POINT
- N/O CONTACT
- N/C CONTACT
- N/O PUSH BUTTON
- N/C PUSH BUTTON
- COIL: M= MOTOR
- INDICATOR LIGHT IN CONTROL PANEL
- SELECTOR SWITCH (H O A): H – HAND, O – OFF, A – AUTO



CONTROL DIAGRAM NOTES:

1. INSTALL ALL CONTROLS IN NEMA 1 COMBINATION STARTER/ DISCONNECT. MOUNT ALL CONTROLS AND TERMINALS ON DIN RAILS.
2. MOUNT HAND SWITCHES AND PILOT LIGHTS ON DOOR FRONT WITH CORRESPONDING LABELS.

EXHAUST FAN CONTROL DIAGRAM (3)

NOT TO SCALE

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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GRIGGS-WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

CONTROL DIAGRAMS

MATTHEW R. THOMPSON — NEW MEXICO — 13868 — PROFESSIONAL ENGINEER — SEAL

JOB NO. ES09.0306

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DWG NO. I-4

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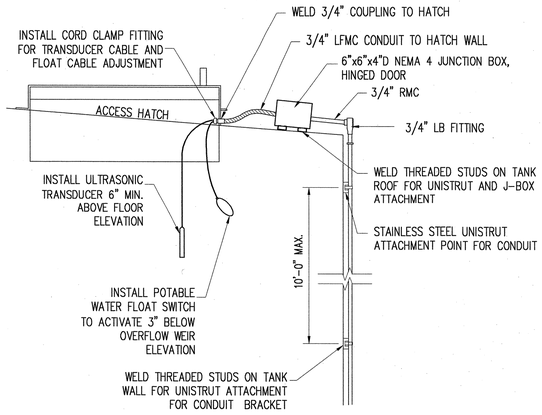
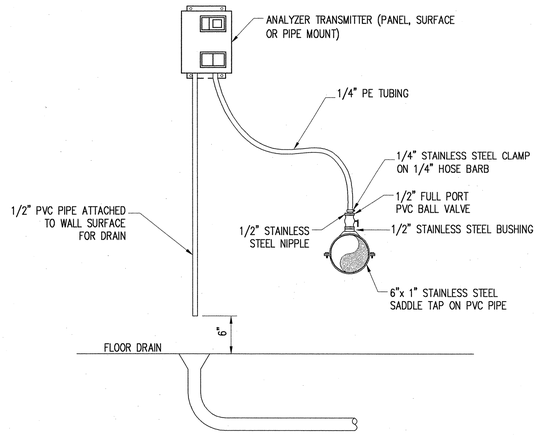


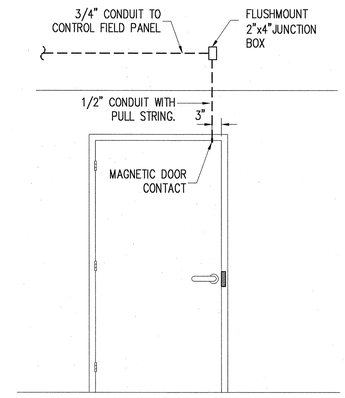
TRANSDUCER MOUNTING DETAIL 1 / I-1

NOT TO SCALE



CHLORINE ANALYZER MOUNTING DETAIL 2 / I-1

NOT TO SCALE



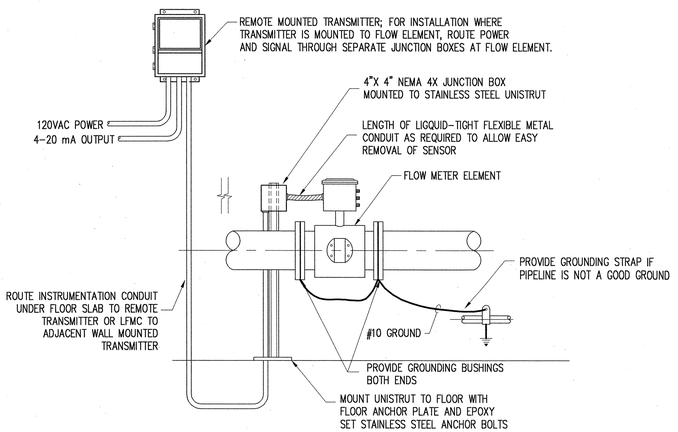
NOTE: ALL CONDUITS TO BE EMBEDDED IN WALL, NO SURFACE MOUNTING WILL BE ALLOWED.

INTRUSION SWITCH DETAIL 3 / I-1

NOT TO SCALE

SCADA ANTENNA MAST MOUNTING DETAIL 4 / I-1

NOT TO SCALE

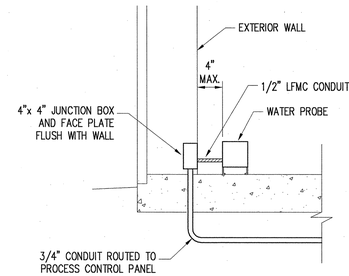


NOTES:

1. FLOW TUBE TO BE A MINIMUM OF 5 STRAIGHT PIPE DIAMETERS UPSTREAM AND TWO PIPE DIAMETERS DOWNSTREAM OR PER MANUFACTURE INSTALLATION REQUIREMENTS.
2. PROVIDE GROUNDING RINGS AS REQUIRED.
3. 120 VAC POWER TO TRANSMITTER AND 4-20mA OUTPUT SIGNAL HALL BE ROUTED THROUGH SEPARATE JUNCTION BOXES.

FLOW METER DETAIL 5 / I-1

NOT TO SCALE



FLOOD PROBE DETAIL 6 / I-1

NOT TO SCALE

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GRIGGS- WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

INSTRUMENTATION DETAILS

JOB NO. ES09.0306

SHEET 57 of 58
DWG NO. I-5

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

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CONSTRUCTION TRAFFIC CONTROL GENERAL NOTES

1. PROJECT IS SUBJECT TO THE REQUIREMENTS OF CITY ORDINANCE NO. **–** AND CITY ORDINANCE NO. **–*. THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL PERMITS NECESSARY. CONTRACTOR SHALL CALL ***–**** FOR MORE INFORMATION.

2. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY TRAFFIC CONTROL ADMINISTRATOR AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF WORK. TRAFFIC CONTROL PLANS SHALL BE PREPARED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION AND BY CERTIFIED PERSONNEL AND MUST BE APPROVED PRIOR TO COMMENCEMENT OF WORK ON THE PROJECT. CALL ***–**** FOR FURTHER INFORMATION.

3. A DAILY TRAFFIC CONTROL LOG SHALL BE MAINTAINED BY THE CONTRACTOR REFLECTING THE TYPES AND LOCATIONS OF ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES, ETC. BEING USED ON THE PROJECT IN COMPLIANCE WITH THE APPROVED TRAFFIC CONTROL PLAN. THIS LOG SHALL BE SUBMITTED TO THE CITY OF LAS CRUCES TRAFFIC CONTROL ADMINISTRATOR UPON COMPLETION OF THE PROJECT CONSTRUCTION OR WHEN SO REQUESTED BY THE PROJECT MANAGER OR THE CITY OF LAS CRUCES TRAFFIC CONTROL ADMINISTRATOR.

4. CONTRACTOR SHALL PROVIDE A WEEKLY CONSTRUCTION ACTIVITY SCHEDULE TO THE CITY OF LAS CRUCES PUBLIC WORKS DIVISION ATTN: PROJECT MANAGER

5. THE CONTRACTOR SHALL FILE A WEEKLY WRITTEN REPORT TO THE TRAFFIC CONTROL ADMINISTRATOR DESCRIBING THE TRAFFIC CONTROL PLAN THAT WILL BE IN EFFECT FOR THE FOLLOWING WEEK.

6. THE CONTRACTOR SHALL PROVIDE A WRITTEN TRAFFIC CONTROL PLAN, AT LEAST ONE LANE SHALL BE OPEN TO TRAFFIC AT ALL TIMES. CONTRACTOR SHALL PROVIDE PROPER SIGNAGE AND FLAGMAN AND SHALL MAINTAIN THE TRAFFIC LANE IN SUCH A MANNER AS TO ASSURE PROPER SAFETY TO THE TRAVELING PUBLIC AT ALL TIMES, EXCEPT WHEN GRADING, EXCAVATION AND BACKFILL OPERATIONS ARE BEING CONDUCTED IMMEDIATELY IN FRONT OF THE PROPERTY, IN WHICH CASE ACCESS WILL NOT BE DENIED FOR MORE THAN 4 HOURS WITHOUT APPROVAL BY THE CITY.

7. TRAFFIC LANES PROVIDED DURING CONSTRUCTION SHALL BE MAINTAINED, IN SUCH A CONDITION UNDER ALL WEATHER CONDITIONS, SO AS TO PERMIT THE REASONABLE PASSAGE OF PASSENGER VEHICLES, AND SHALL BE KEPT GRADED AND SMOOTH, AND WATERED SEVERAL TIMES DAILY TO CONTROL DUST.

8. TYPICAL TRAFFIC CONTROL PLANS DO NOT REFLECT THE EXISTING TOPOGRAPHY SUCH AS DRIVEWAYS, LANE WIDTHS, AND BUSINESS/RESIDENTIAL ACCESSES. EVERY LOCATION THAT REQUIRES CONSTRUCTION TRAFFIC CONTROL SHALL HAVE A DETAILED TRAFFIC CONTROL PLAN SHOWING ALL EXISTING TOPOGRAPHY.

9. CONSTRUCTION SHALL NOT BEGIN UNLESS A TRAFFIC CONTROL PLAN HAS BEEN APPROVED AND VERIFIED BY THE CITY OF LAS CRUCES TRAFFIC ENGINEERING.

10. ALL CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL, SERVICE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES. TRAFFIC CONTROL DEVICES SHALL NOT BE REMOVED OR ALTERED IN ANY WAY WITHOUT THE APPROVAL OF THE CITY TRAFFIC CONTROL ADMINISTRATOR, PER SECTION 6A–4 OF THE MUTCD, LATEST EDITION.

11. THE CONSTRUCTION TRAFFIC CONTROL INITIAL SET–UP FOR EACH PHASE SHALL BE BY AN AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED WORKSITE TRAFFIC SUPERVISOR. THE MAINTENANCE AND SERVICING SHALL ALSO BE DONE BY AN ATSSA CERTIFIED WORKSITE TRAFFIC SUPERVISOR OR EQUIVALENT.

12. CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND SERVICE ALL TRAFFIC CONTROL DEVICES 24 HOURS A DAY, 7 DAYS A WEEK THROUGHOUT LENGTH OF PROJECT. CONTRACTOR IS RESPONSIBLE THAT ALL TRAFFIC CONTROL DEVICES COMPLY WITH THE MUTCD, LATEST EDITION.

13. ALL ADVANCE WARNING SIGNS SHALL BE DOUBLE INDICATED WHENEVER THERE ARE MULTI–LANE TRAFFIC IN ANY ONE GIVEN DIRECTION AND THERE IS SUFFICIENT MEDIAN SPACE.

14. ALL BARRICADES IN ALL TAPERS AND TANGENTS SHALL BE PLACED APART, A DISTANCE MEASURED IN FEET, EQUAL TO THAT OF THE POSTED SPEED LIMIT. NO EXCEPTIONS UNLESS APPROVED BY THE CITY OF LAS CRUCES TRAFFIC ENGINEERING PER MUTCD SECTION 6A–4.

15. ALL WORK IN ARTERIAL ROADWAYS SHALL BE ON A CONTINUOUS 24 HOUR PER DAY BASIS UNTIL COMPLETED.

16. EQUIPMENT OR MATERIALS SHALL NOT BE STORED WITHIN 15 FEET OF A TRAVELED TRAFFIC LANE DURING NON–WORKING HOURS WITHOUT THE APPROVAL OF THE CITY OF LAS CRUCES TRAFFIC ENGINEERING.

17. CONTRACTOR SHALL PROVIDE AND MAINTAIN A SAFE AND ADEQUATE MEANS OF CHANNELIZING PEDESTRIAN TRAFFIC AROUND AND THROUGH THE CONSTRUCTION AREA.

18. CONTRACTOR IS RESPONSIBLE FOR OBLITERATION OF ANY CONFLICTING STRIPING AND RESPONSIBLE FOR ALL TEMPORARY STRIPING.

19. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES, BUSINESSES AND/OR RESIDENTS AT ALL TIMES.

20. CONTRACTOR SHALL PROVIDE ACCESS SIGNS FOR BUSINESSES LOCATED WITHIN THE CONSTRUCTION AREA UNDER THE SUPERVISION OF CITY OF LAS CRUCES TRAFFIC ENGINEERING. EACH ACCESS SIGN SHALL HAVE 5 INCH, WHITE LETTERING ON BLUE BACKGROUND. SHOPPING CENTERS AND MALLS SHALL BE LISTED AS SUCH.

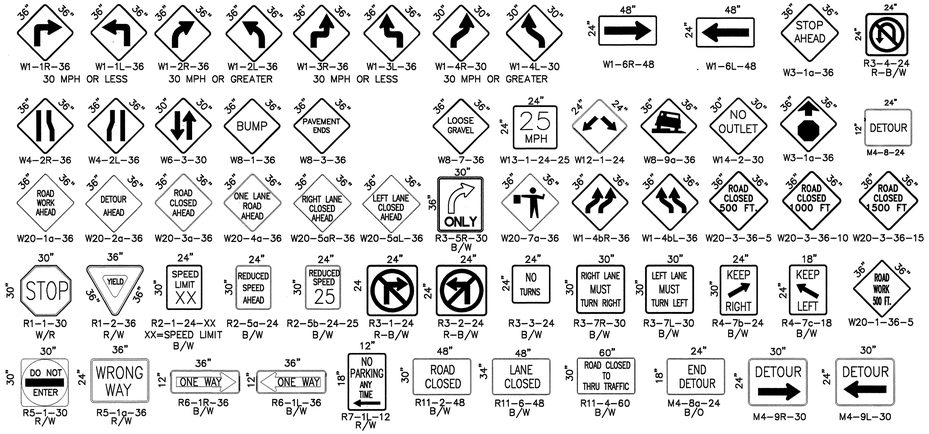
21. 48 HOURS PRIOR TO OCCUPYING OR CLOSING OF A RIGHT–OF–WAY, CONTRACTOR SHALL NOTIFY: POLICE, FIRE DEPARTMENT, SCHOOLS, HOSPITALS, TRANSIT AUTHORITY, BUSINESSES AND/OR RESIDENTS THAT WILL BE AFFECTED BY THE CONSTRUCTION.

22. ANY FIELD ADJUSTMENTS SHALL BE APPROVED BY CITY OF LAS CRUCES TRAFFIC ENGINEERING.

23. EXCAVATIONS SHALL BE PLATED, TEMPORARILY PATCHED OR RESURFACED PRIOR TO OPENING OF TRAFFIC. A MINIMUM OF 11 FEET, SHALL BE PROVIDED FOR TRAFFIC IN ANY GIVEN DIRECTION. CONTRACTOR IS RESPONSIBLE FOR ANY WORK INVOLVED IN SATISFYING THESE REQUIREMENTS.

24. THE CONTRACTOR SHALL CONTACT CITY OF LAS CRUCES TRAFFIC ENGINEER (848–1575) BEFORE REMOVING AND/OR INSTALLING ANY TRAFFIC SIGNS OR PERMANENT STRIPING AND MARKINGS. ALL STRIPING, PAVEMENT MARKINGS INCLUDING CROSSWALKS, LEGENDS AND SYMBOLS ARE TO BE CONSTRUCTED OF INTERSECTION GRADE COLD PLASTIC AND LINE MARKINGS ARE TO BE CONSTRUCTED OF DURABLE PAINT IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION. ANY PAVEMENT MARKINGS AND SIGNS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT EXISTING LOCATIONS. SUCH WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THE PROJECT.

SIGN FACE DETAILS



ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.

TAPER REQUIREMENT

SPEED LIMIT (MPH)	TAPER LENGTH(L) (FEET) 10' LANE	11' LANE	12' LANE	MINIMUM NUMBER OF DEVICES FOR TAPER	MAXIMUM DEVICE SPACING IN FEET ALONG TAPER	AFTER TAPER
20	70	75	80	5	20	20
25	105	115	125	6	25	25
30	150	165	180	7	30	30
35	205	225	245	8	35	35
40	270	295	320	9	40	40
45	450	495	540	13	45	45
50	500	550	600	13	50	50
55	550	605	660	13	55	55

RECOMMENDED SIGN SPACING(D) FOR

ADVANCE WARNING SIGN SERIES

SPEED MILES PER HOUR	MINIMUM DISTANCE IN FEET BETWEEN SIGNS	FROM LAST SIGN TO TAPER
0–20	10 X SPEED LIMIT	10 X SPEED LIMIT
25–30	10 X SPEED LIMIT	10 X SPEED LIMIT
30–35	10 X SPEED LIMIT	10 X SPEED LIMIT
40–45	10 X SPEED LIMIT	10 X SPEED LIMIT
50–60	10 X SPEED LIMIT	10 X SPEED LIMIT

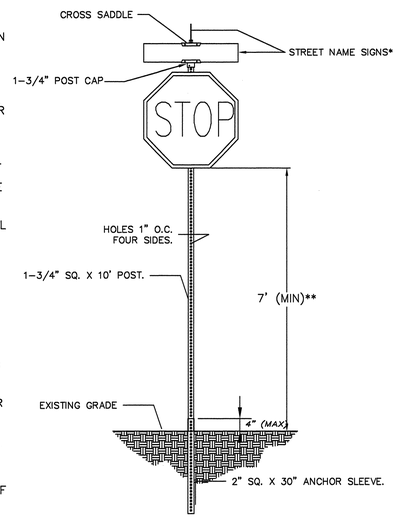
TAPER CRITERIA

TYPE OF TAPER	TAPER LENGTH
UPSTREAM TAPER:	
MERGING TAPER	L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/2 L MINIMUM
TWO–WAY TRAFFIC TAPER	100 FEET MAXIMUM
DOWNSTREAM TAPERS	100 FEET PER LANE

TAPER LENGTH COMPUTATION

SPEED LIMIT	
40 MPH OR LESS	$L = \frac{WS^2}{60}$
40 MPH OR GREATER	L = W x S

L = TAPER LENGTH
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED OR OFF–PEAK 85–PERCENTILE SPEED IN MPH



SIGN POST DETAIL
SCALE: N.T.S

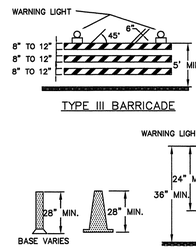
*ALL STREET NAME SIGNS SHALL BE WHITE LETTERS ON GREEN BACKGROUND WITH HI INTENSITY REFLECTIVE SHEETING. ALL LETTERS SHALL BE 4" FOR POSTED SPEEDS OF 25 MPH AND BELOW AND 6" FOR POSTED SPEEDS GREATER THAN 25 MPH.
**SEE MUTCD FOR MINIMUM MOUNTING HEIGHT IN RURAL AREAS

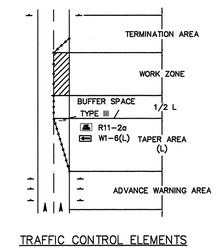
# OF POSTS	MAXIMUM SIGN SQUARE FOOTAGE
1	6
2	12
3	18

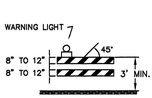
LEGEND

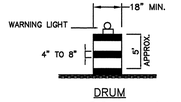
- WORK AREA
- BARRICADE – TYPE I, TYPE II, OR TYPE "H" DRUM W/ REFLECTIVITY III–A SHEETING
- BARRICADE – TYPE III
- X VERTICAL PANEL
- WARNING SIGN
- D DISTANCE BETWEEN SIGNS – A DISTANCE MEASURED IN FEET EQUAL TO A VALUE OF TEN TIMES THE SPEED LIMIT OF THE STREET
- FLAGMAN POSITION
- S SPACING BETWEEN BARRICADES– A DISTANCE MEASURED IN FEET EQUAL TO THE SPEED LIMIT OF THE STREET
- L TAPER LENGTH – SEE CHART BELOW

THE TANGENT LENGTH IS EQUAL TO THE TAPER LENGTH FOR A GIVEN STREET.









GENERAL NOTES:

1. ALL TRAFFIC CONTROL SHALL BE APPROVED BY THE CITY OF LAS CRUCES PRIOR TO INSTALLATION.

NOTICE OF EXTENDED PAYMENT PROVISION: "THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT"

NO	DATE	BY	REVISION MADE

FILE NAME: S:\Projects\ES09.0306_Griggs–Walnut\VRL_Drawings\ES09_0306_04CS_traffic_Control.dwg

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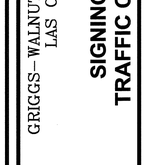
DESIGNED BY: GW/TG
DRAWN BY: CS
CHECKED BY: GW/GP
DATE: 5/24/2011

GRIGGS–WALNUT GROUND WATER PLUME SITE
LAS CRUCES, NEW MEXICO

SIGNING & CONSTRUCTION TRAFFIC CONTROL STANDARDS



JOB NO. ES09.0306

SHEET 58 of 58
DWG NO. T-1

XREF: