5812 Arbor Road
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August 5, 2025

ADDENDUM NO. 1
TO THE CONTRACT DOCUMENTS

City of Lakewood
Lakewood, California
PW 2025-04
Drilling, Construction, Development, and Testing of Well 22B and Demolition of Well 22A

TO ALL PLAN HOLDERS

The following amendment is hereby made as part of the Contract Documents of the subject project as fully and completely as if the same were set forth therein. Addendum No. 1 consists of page AD1-1 through AD1-7 and its attachments.

SPECIFICATIONS:

1. General Provisions – Time of Completion (GP-2)

   DELETE the following:

   > The Contractor shall complete all work in every detail within 150 Calendar Days after the date of Notice to Proceed.

   REPLACE with:

   > The Contractor shall complete all work in every detail within 195 Calendar Days after the date of Notice to Proceed.

2. Special Provisions – 6-3

   DELETE the following:

   > The Contractor shall also pay to the City $500.00 for each occurrence of work in the through or turning lanes in violation of these specifications as solely determined by City.

3. Section 17 – Isolated Aquifer Zone Testing

   ADD the following to 17.03 Material and Equipment:

M. Variable Frequency Drive
(1) The variable frequency drive shall be connected to the submersible pump during isolated aquifer zone testing while pumping.

4. Section 17 – Isolated Aquifer Zone Testing

DELETE the following:

E. Zone Pump and Sampling
(2) Once approved by the HYDROGELOGIST, the CONTRACTOR shall install a submersible pump to the appropriate depth for zone pumping. The proposed depth of the pump will be discussed with the HYDROGEOLOGIST prior to installation.

REPLACE with:

E. Zone Pump and Sampling
(2) Once approved by the HYDROGELOGIST, the CONTRACTOR shall install a submersible pump to the appropriate depth for zone pumping. The proposed depth of the pump will be discussed with the HYDROGEOLOGIST prior to installation. The CONTRACTOR shall operate flows with a variable frequency drive during zone pumping; the flow shall be determined by the HYDROGEOLOGIST after one hour of continuous pumping and shall remain constant for the remainder of pumping of that zone.

CONTRACTOR QUESTIONS/COMMENTS:

1. **Question:** Will the City allow a prime contractor holding an "A" license, who lists a drilling subcontractor holding a "C57" license to bid this project?

   Answer: The Contract Documents only requires a C-57 license for Well Drilling and Class A for the demolition and civil work as necessary to perform the work.

2. **Question:** Is there a minimum self-performance percentage for prime contractors?

   Answer: No, the Contract Documents only requires a C-57 license for Well Drilling and Class A for the demolition and civil work as necessary to perform the work.

3. **Question:** At the job walk, it was discussed that asphalt repair will not be necessary. Please confirm as the Special Provisions reference a lot of asphalt work and repair. Please specify if asphalt work could take place on this contract within the project site.

   Answer: Any asphalt debris generated by the Contractor during this project shall be stockpiled, hauled, and legally disposed of. Damaged asphalt will not be required to be replaced; however, the site shall be level.

4. **Question:** Please provide column tube and shaft dimensions for pump in existing well.

   Answer: See attached pump details.

5. **Question:** Please provide depth of pump.

   Answer: See attached pump details.

6. **Question:** At the job walk a 4-inch water service was on site, will that be available for use?

   Answer: Yes.

7. **Question:** If the onsite water service is not available, and the contractor is to use the location in the Plans located; would the City waive permit fees if an encroachment permit is required.

   Answer: There will be no permit fees from the City of Lakewood.

8. **Question:** The existing well has an annular seal from ground surface to 385 feet below ground surface (bgs), can shot perforations only in the liner sections at 390 feet and below. Shot perforating subcontractor recommends no shot perforating shallower than 75 feet to prevent potential issues with charges affecting the nearby storage tank.

   Answer: Agree on not performing shot perforations within the annular seal; however, it is dependent on Los Angeles County Department of Public Health Environmental Health Services issuing the well destruction permit.

9. **Question:** P.W. Gillibrand Company, Inc., states that RFS 5 (6x14) is only available in a glass bead blend, which is a significant price difference and lead time from regular gravel pack. Would TACNA or SRI be acceptable equals.

   Answer: Confirmed with P.W. Gillibrand Company, Inc., RFS 5 is available without glass bead blend and shall be used for bidding purposes.

10. **Question:** Liquidated damages 6-3, states “the Contractor shall also pay to the City $500.00 for each occurrence of work in the through or turning lanes in violation of these specifications as solely determined by the City. Please provide an example of when this would take place.

    Answer: As noted on page AD1-2, this portion of section 6-3 of the Special Provisions, shall be deleted.

11. **Question:** The spec states a noise permit may be required, what is involved with a noise permit and would it cost anything to procure?

    Answer: A noise permit is not required to be obtained.

12. **Question:** Will a subcontractor that has an A license and will be performing the demo work other than the well demo meet the requirements of the contractor's license?

    Answer: No.

13. **Question:** Will owner coordinate with the electrical provider to disconnect power to facility prior to mobilizations?

    Answer: A City representative can coordinate the power cut-off prior to construction.

14. **Question:** Spec states the Hydrogeologist will provide a list of analytes to be tested. Please provide a list to provide an accurate quote.

    Answer: Contractor shall assume Title 22 Water Quality Analysis for each zone.

15. **Question:** What is the estimated depth of all the utility lines and drains to be removed?

    Answer: The Contractor shall be responsible for potholing to confirm depths and locations, prior to construction. This requirement is listed in the design drawings.

16. **Question:** Lead time on lab results can take 14-21 day for PFAS (could be faster), pending labs TAT at time of receipt. Hydrogeologist is allowed 14 days from receipt of lab results and procurement of material can take up to 10 days or more. Total Down time is around 45 days, about 30% of current project time. Asbestos removal, Facility demo, well demo and construction of manhole can take 30 days. 50% of the allotted calendar days are not related to well drilling work which will be 80-90% of the overall project budget. We would request that 150 calendar days is extended to 210 calendar days or more.

    Answer: Time of Completion has been increased to 195 days.

17. **Question:** The spec references lead removal but there is no testing to support if lead removal should be quoted. Is a lead paint report missing?

    Answer: City had lead testing completed, which only low levels were detected on the generator. See attached report.

18. **Question:** Per Special Provisions, is Contractor required to survey and stake the proposed well location?

    Answer: Correct.

19. **Question:** 4.07 C.: the storm drain inlet is not shown on drawings W-2 and W-3. Please confirm the location. Is Contractor required to discharge to the storm drain inlet or is the existing pump to waste location a viable option to protect in place until all of the discharge scope is completed?

    Answer: Contractor shall utilize existing pump to waste location.

20. **Question:** The spec references lead removal but there is no testing to support if lead removal should be quoted. Is a lead paint report missing?

    Answer: See the response to Question #17.

21. **Question:** 17.04 D.: Are the airlifting hours to verify seal integrity compensable at the hourly rate of Bid Item #17?

    Answer: Correct; however, Contractor is only paid for airlifting seals that meet the seal verification requirements.

22. **Question:** Can borehole reaming begin immediately upon receipt of the final well design?

    Answer: The Contractor shall not have an extended open borehole time of more than 8 hours following the completion of caliper survey prior to commencing well construction.

23. **Question:** Is there a State Well Completion Report for the liner installation in well 22?

    Answer: No there is not a State Well Completion Report for Well 22A; however, a diagram has been included as an attachment.

24. **Question:** Did any of the paint on the doors or piping get checked for Lead content, or is that up to the contractor?

    Answer: See the response to Question #17.

25. **Question:** If the contractor must do the lead analysis testing, we would have to put a large amount to cover possibilities that lead exists and must be treated – Can you put an allowance for this on a bid line item?

Answer: City had lead testing completed and is attached for bidding purposes.

26. **Question:** Will any of the equipment in the building be removed prior to contractor starting the work?

    Answer: No.

27. **Question:** What is the size and depth of the pump in the well?

    Answer: See attached pump details.

28. **Question:** Does the City want to keep any of the appurtenances?

    Answer: Appurtenances to be salvaged are called out on the design drawings.

29. **Question:** What is the finish surface repair required after removing the below-ground pipe and back filling the trench?

    Answer: Surface repair shall consist of placing native soil compacted to 95% up to 6-inches below ground surface and top 6-inches shall consist of crushed rock.

30. **Question:** Section 13.03 A (2) – Good Faith Effort – does this mean minimum of 8 hrs.? Please define intent so we are all bidding the same.

    Answer: Contractor shall remove all oil and debris from the well. Sediment within the well sump measured to be greater than 1 foot shall be removed.

31. **Question:** Is the owner providing all survey and compaction testing?

    Answer: Yes.

32. **Question:** To have zone testing equal to all for bidding – How many airlifting hours should we include for each zone? Anything beyond what is specified would be additional time to be compensated.

    Answer: Refer to the Technical Specifications Section 17.04 D.

33. **Question:** 28.04 Disinfection: Is the following, correct? Dose the well with enough Sodium Hypochlorite to obtain a residual of 100ppm after 24 hrs., then install 500 gallons of water into the Well, then secure the well with lockable cover.

    Answer: Correct, as described in the Contract Documents.

34. **Question:** Do you have drawings of the building we are to demolish?

    Answer: Available drawings of the well house have been included.

35. **Question:** Can the new well location be moved up to 10 feet north so that a drill rig can fit? Can't raise the derrick into the powerlines or through the sound walls.

    Answer: Location of the well can be moved 10 feet to the north and shall maintain 50 foot offset from the nearby property lines.

36. **Question:** Is the clean water going to be pumped into the existing pump to waste line, or does it have to go to the storm drain to the west?

    Answer: Discharge water that meets the General Statewide NPDES permit shall be pumped to the existing pump to waste line.

37. **Question:** Is the City paying for the construction water from the hydrant?

    Answer: Refer to Technical Specifications Section 2.12 F (2).

Sincerely,

Anthony R. Manzano

Anthony Manzano
Assistant Director of Water Resources

Att.

cc: Derek Nguyen, Director of Water Resources
Kevin Gustorf, Principal Engineer
Josh Sobolew, Senior Hydrogeologist

Water Well Supply, Inc.
Well & Pump Data

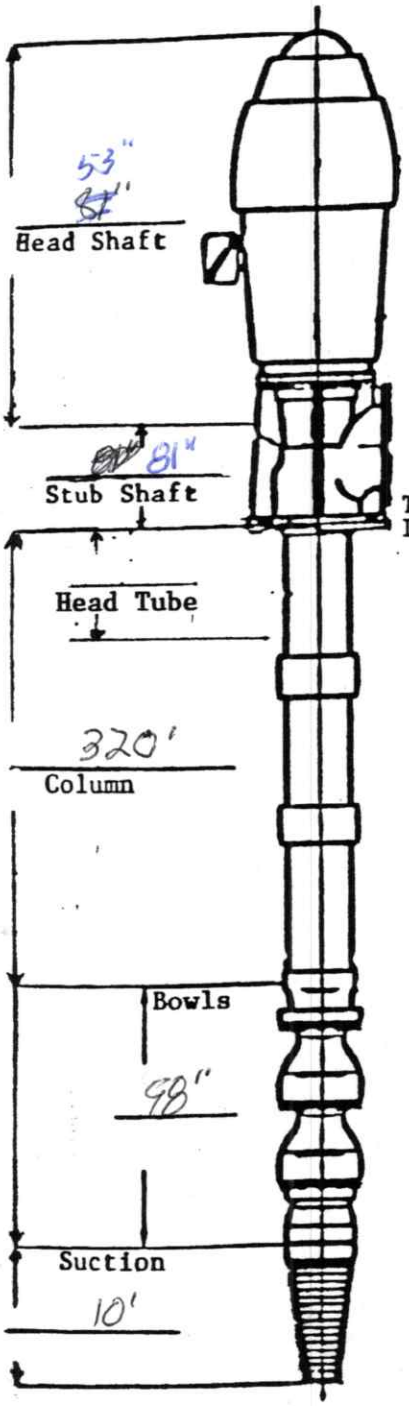
Customer: LAKEWOOD

Job No. 22951

Pump No. 22

Motor:
Serial No.# H0200V2SL6X-C Frame H445TP
Mfg US ID W06-608683-0001-6T-01
Voltage 460 Phase 3 HP 200 RPM 1780 Type R4Si
Coupling Bore 1 11/16 Drive Nut Thread _____ Key 3/8 X 3/8
Amps 222 S.F. 1.15 Length of Motor 45" Ratchet: (Yes) or NO

Head:
Mfg FAB Serial # _____
Size _____ Col.Size 10" Discharge Size 10"
Tension Type _____ Thread _____



Column:
Dia. 10"
Quantity 31 Length 10' X 10" Thread ____ Taper ____ Butt X
Quantity ____ Length ____ X ____ Thread ____ Taper ____ Butt ____
Quantity 1 Length 5' X 10" Thread ____ Taper ____ Butt X
Head 1 Length 5' X 10" Thread ____
Total 320'

Tube:
Inside Dia. _____ Type of Thread _____
Thread _____ Left _____ Right _____

Shaft:
Outside Dia. 1 11/16 Type of Thread 4/4 Thread 10

Bowls:
Mfg Goulds Type 12CMC No.Stages 7
Serial NO.# 4133610 Lateral 1" Stick up 8"
Suction Dia. 10" Strainer Size S/S

Airline Type 1/4" S/S Length 323'
Well Dia. 17 3/4 Total Depth 1080 Sounding Depth 1067'
S.W.L. 100' Foot Valve _____

Remarks parts for start up in yard
320' 1/2" pvc sch 80

Date Pulled _____ Date Installed 7-15-15
Pulled By _____ Installed By _____
Forman Logan Location _____
Assistant Romses Assistant Victor Assistant John

xylem
Let's Solve Water

Xylem - Goulds Water Technology
Performance Test Data

GOULDS WATER TECHNOLOGY
a xylem brand

CUSTOMER:	WATER WELL SUPPLY	**STANDARD:**	ANSI/HI 14.6-1B	**CO NUMBER:**	4133610
PO NUMBER:	20900	**PROJECT:**	CITY OF LAKEWOOD	**DATE:**	6/16/2015

CONDITIONS

PUMP NUMBER:	1	**SP. GR:**	1.00	**BOWL TDH:**	382.0
PUMP TYPE:	VIT	**VISC. SSU:**	32	**PUMP TDH:**	
PUMP MODEL:	12CMC	**WATER TEMP (F):**	71	**REQ GPM:**	1200
STAGES:	7	**WITNESSED:**	No	**MAX GPM:**	1500
IMP. MATL:	1117	**MOTOR S/N:**	J01-BF82A-M	**EFFICIENCY%:**	82.4
1ST IMP. DIA:	8.50	**1ST IMP. QTY:**	7	**TEST RPM:**	1775
2ND IMP. DIA:		**2ND IMP. QTY:**		**TEST MOTOR:**	200 HP
CUST RPM:	1770	**TRQ METER:**	6 K in·lb (Q3024)	**TEST LINE:**	8
CUST HP:	200.0	**TESTED BY:**	Alex Davila	**CURVE RPM:**	1770

READINGS DURING TEST

POINTS	**1**	**2**	**3**	**4**	**5**	**6**	**7**
PSI	266.7	255.3	246.1	223.5	173.5	144.9	109.5
DISCH. FT.	616.08	589.74	568.49	516.29	400.79	334.72	252.95
ELEV. FT.	5.00	5.00	5.00	5.00	5.00	5.00	5.00
VEL. FT.	0.00	0.06	0.23	0.53	0.93	1.18	1.46
PIPE FRIC.	0.00	0.01	0.05	0.10	0.16	0.20	0.25
PUMP HP	70.52	84.48	111.22	134.82	145.40	146.72	146.74
INPUT KW *	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AMPERES *	99.00	113.00	143.00	170.00	184.00	186.00	185.00

*** electrical power readings are for reference only.**

TEST DATA RECORDED AT TEST RPM

RPM	1792	1790	1787	1784	1783	1783	1783
GPM	0	303	606	907	1209	1360	1511
TDH-FEET	621.1	594.8	573.8	521.9	406.9	341.1	259.6
PUMP HP	70.5	84.5	111.2	134.8	145.4	146.7	146.7
PUMP EFF	0.0	53.9	78.9	88.7	85.4	79.8	67.5

TEST DATA CONVERTED TO CUSTOMER RPM

RPM	1770	1770	1770	1770	1770	1770	1770
GPM	0	300	600	900	1200	1350	1500
TDH-FEET	605.9	581.6	562.9	513.7	401.0	336.1	255.9
PUMP HP	68.0	81.7	108.1	131.7	142.2	143.5	143.6
PUMP EFF	0.0	53.9	78.9	88.7	85.4	79.8	67.5

Certified Test Results

By: Chris Mauger
Title: ENGINEER
Date: June 16, 2015

PUMP DATA SHEET Turbine 60 Hz

Company: Water Well Supply, Inc. Customer:City of Lakewood
Name:
Date: 02/25/15 Order No:Well #22

Pump:

Size: 12CMC (7 stages)
Type: Lineshaft Speed: 1780 rpm
Synch speed: 1800 rpm Dia: 8.375 in
Curve: E6412CGPCO
Specific Speeds: Ns: 2240
Pump Notes for Standard Sizes:
Suction Size-8",10" Discharge Sizes-6",8",10"
Vertical Turbine: Bowl size: 11.75 in
Max lateral: 1 in
Thrust K factor: 7.5 lb/ft

Search Criteria:

Flow: 1200 US gpm Head: 380 ft

Fluid:

Water Temperature: 60 °F
Density: 62.37 lb/ft³ Vapor pressure: 0.2563 psi a
Viscosity: 1.105 cP Atm pressure: 14.7 psi a
NPSHa: --- ft

Motor:

Standard: NEMA Size: 150 hp
Speed: 1800

Pump Limits for Standard Construction:

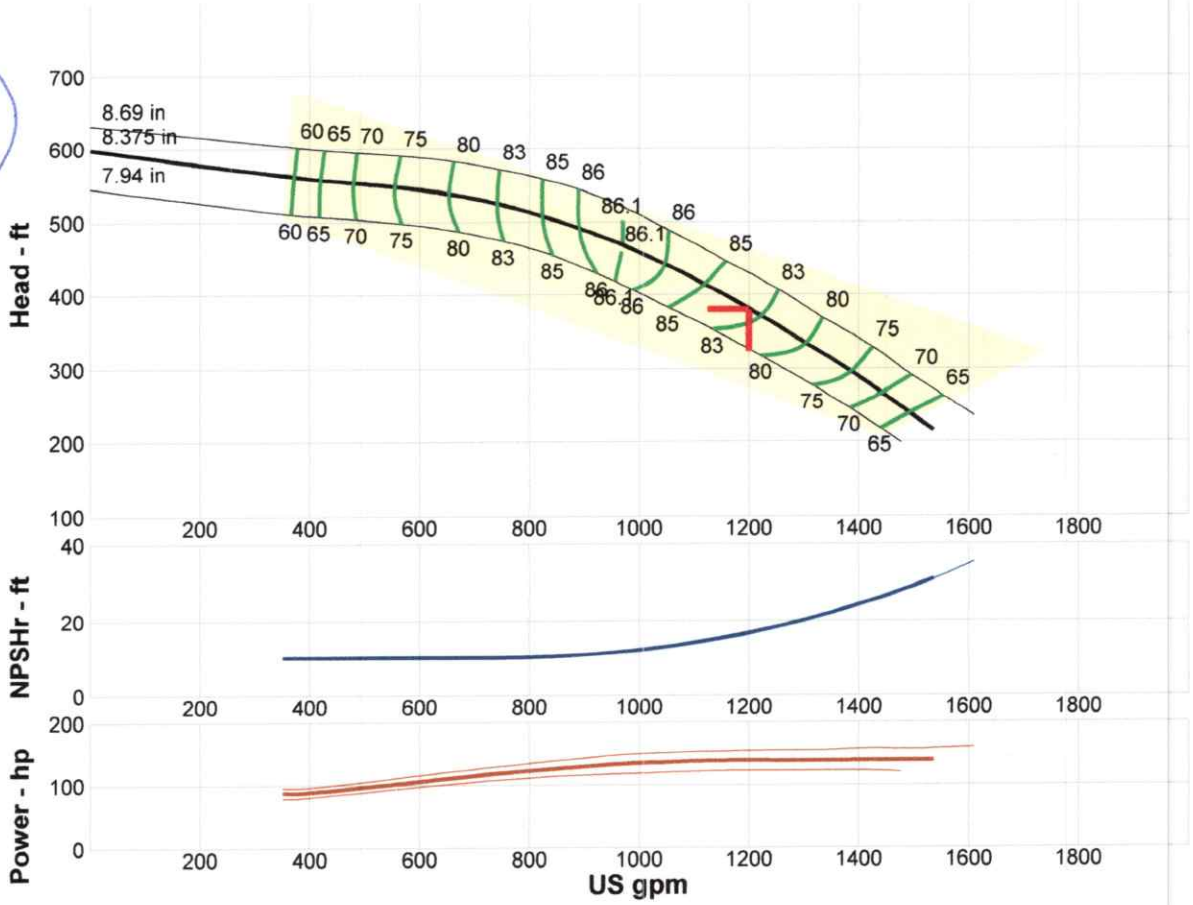
Temperature: 120 °F Pressure: 340 psi g
Sphere size: 0.73 in

Sizing criteria: Max Power on Design Curve

---- Data Point ----
Flow: 1202 US gpm
Head: 380 ft
Eff: 83.4%
Power: 138 hp
NPSHr: 16.9 ft

-- Design Curve --
Shutoff Head: 599 ft
Shutoff dP: 259 psi
Min Flow: --- US gpm
BEP: 86.1% eff
@ 970 US gpm
NOL Pwr: 139 hp
@ 1536 US gpm

-- Max Curve --
Max Pwr: 160 hp
@ 1609 US gpm



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1440	1780	267	70.1	139	26.2
1200	1780	381	83.4	138	16.9
960	1780	471	86.1	133	11.7
720	1780	528	82.3	117	10.1
480	1780	553	70.1	95.8	10.1

Selected from catalog: Goulds Lineshaft 60HZ Vers: 3.11

PUMP DATA SHEET Turbine 60 Hz

Company: Water Well Supply, Inc. Customer:City of Lakewood
Name:
Date: 02/25/15 Order No:Well #22

Pump:

Size: 12CMC (7 stages)
Type: Lineshaft Speed: 1620 rpm
Synch speed: 1800 rpm Dia: 8.375 in
Curve: E6412CGPCO
Specific Speeds: Ns: 2240
Pump Notes for Standard Sizes:
Suction Size-8",10" Discharge Sizes-6",8",10"
Vertical Turbine: Bowl size: 11.75 in
Max lateral: 1 in
Thrust K factor: 7.5 lb/ft

Search Criteria:

Flow: 1200 US gpm Head: 380 ft

Fluid:

Water Temperature: 60 °F
Density: 62.37 lb/ft³ Vapor pressure: 0.2563 psi a
Viscosity: 1.105 cP Atm pressure: 14.7 psi a
NPSHa: --- ft

Motor:

Standard: NEMA Size: 125 hp
Speed: 1800

Pump Limits for Standard Construction:

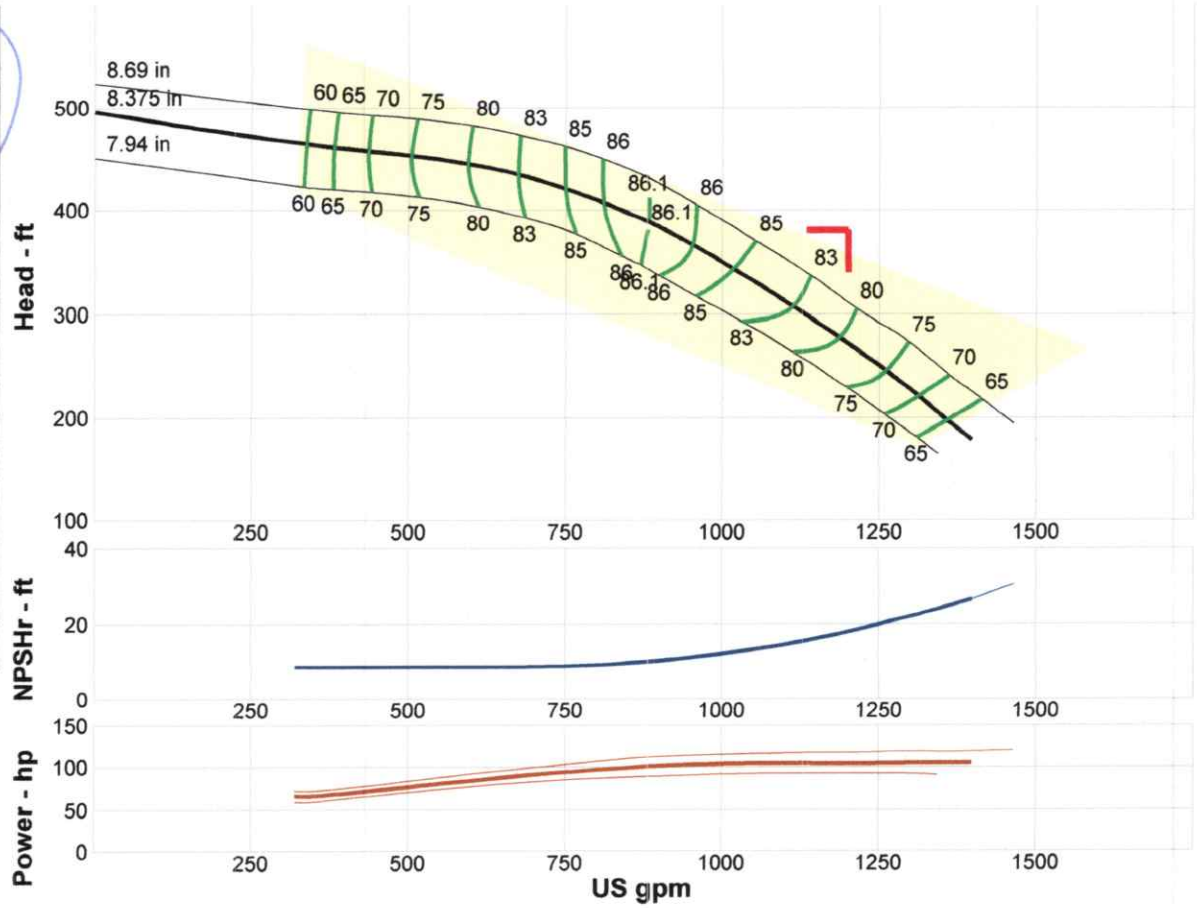
Temperature: 120 °F Pressure: 340 psi g
Sphere size: 0.73 in

Sizing criteria: Max Power on Design Curve

---- Data Point ----
Flow: 909 US gpm
Head: 380 ft
Eff: 86.1%
Power: 101 hp
NPSHr: 10.6 ft

-- Design Curve --
Shutoff Head: 496 ft
Shutoff dP: 215 psi
Min Flow: --- US gpm
BEP: 86.1% eff
@ 883 US gpm
NOL Pwr: 105 hp
@ 1398 US gpm

-- Max Curve --
Max Pwr: 121 hp
@ 1464 US gpm



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1440	1620	---	---	---	---
1200	1620	271	79.1	104	18
960	1620	363	85.9	103	11.4
720	1620	426	84.2	92.1	8.84
480	1620	455	73.2	75.4	8.68

Selected from catalog: Goulds Lineshaft 60HZ Vers: 3.11

PUMP DATA SHEET Turbine 60 Hz

Company: Water Well Supply, Inc. Customer:City of Lakewood
Name:
Date: 02/25/15 Order No:Well #22

Pump:

Size: 12CMC (7 stages)
Type: Lineshaft Speed: 1500 rpm
Synch speed: 1800 rpm Dia: 8.375 in
Curve: E6412CGPCO
Specific Speeds: Ns: 2240
Pump Notes for Standard Sizes:
Suction Size-8",10" Discharge Sizes-6",8",10"
Vertical Turbine: Bowl size: 11.75 in
Max lateral: 1 in
Thrust K factor: 7.5 lb/ft

Pump Limits for Standard Construction:

Temperature: 120 °F Pressure: 340 psi g
Sphere size: 0.73 in

Search Criteria:

Flow: 1200 US gpm Head: 380 ft

Fluid:

Water Temperature: 60 °F
Density: 62.37 lb/ft³ Vapor pressure: 0.2563 psi a
Viscosity: 1.105 cP Atm pressure: 14.7 psi a
NPSHa: --- ft

Motor:

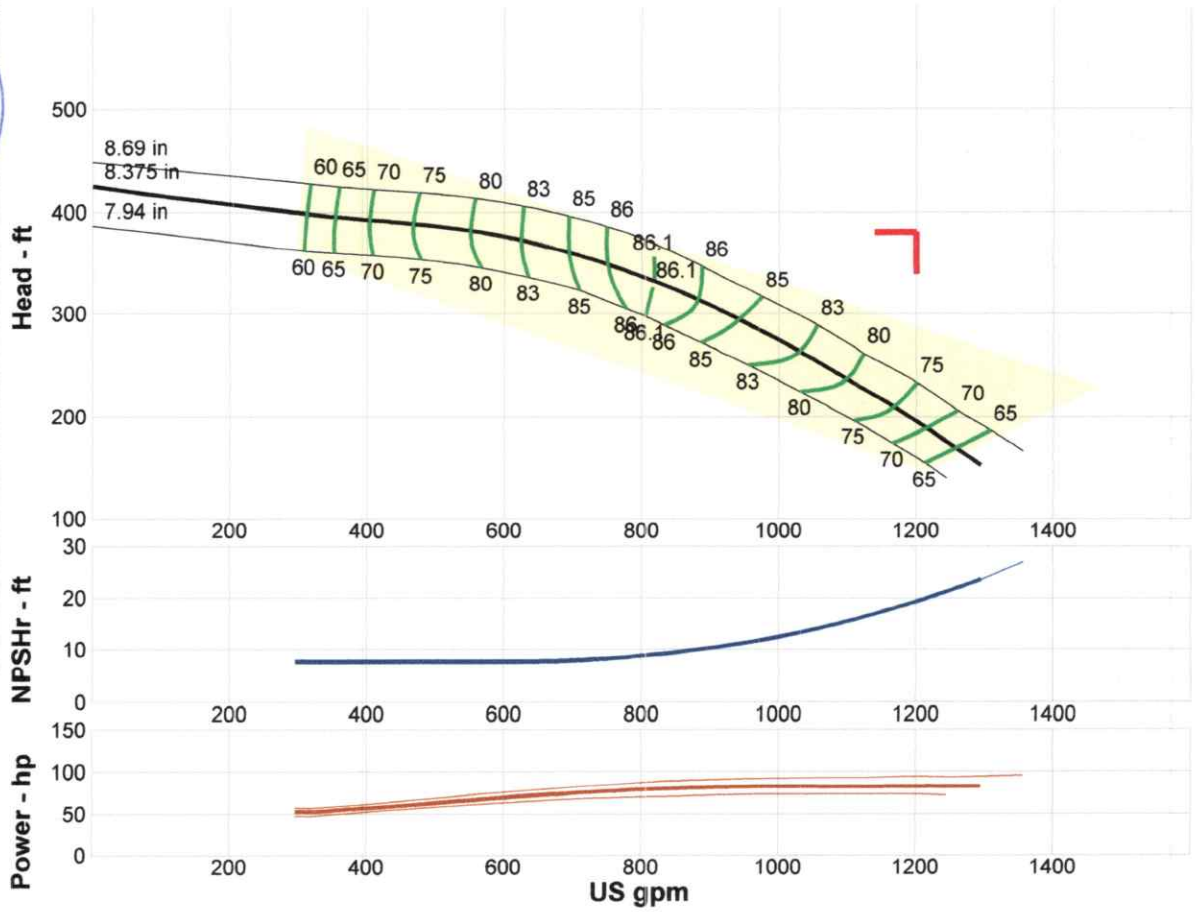
Standard: NEMA Size: 100 hp
Speed: 1800

Sizing criteria: Max Power on Design Curve

---- Data Point ----
Flow: 566 US gpm
Head: 380 ft
Eff: 80.6%
Power: 67.4 hp
NPSHr: 7.67 ft

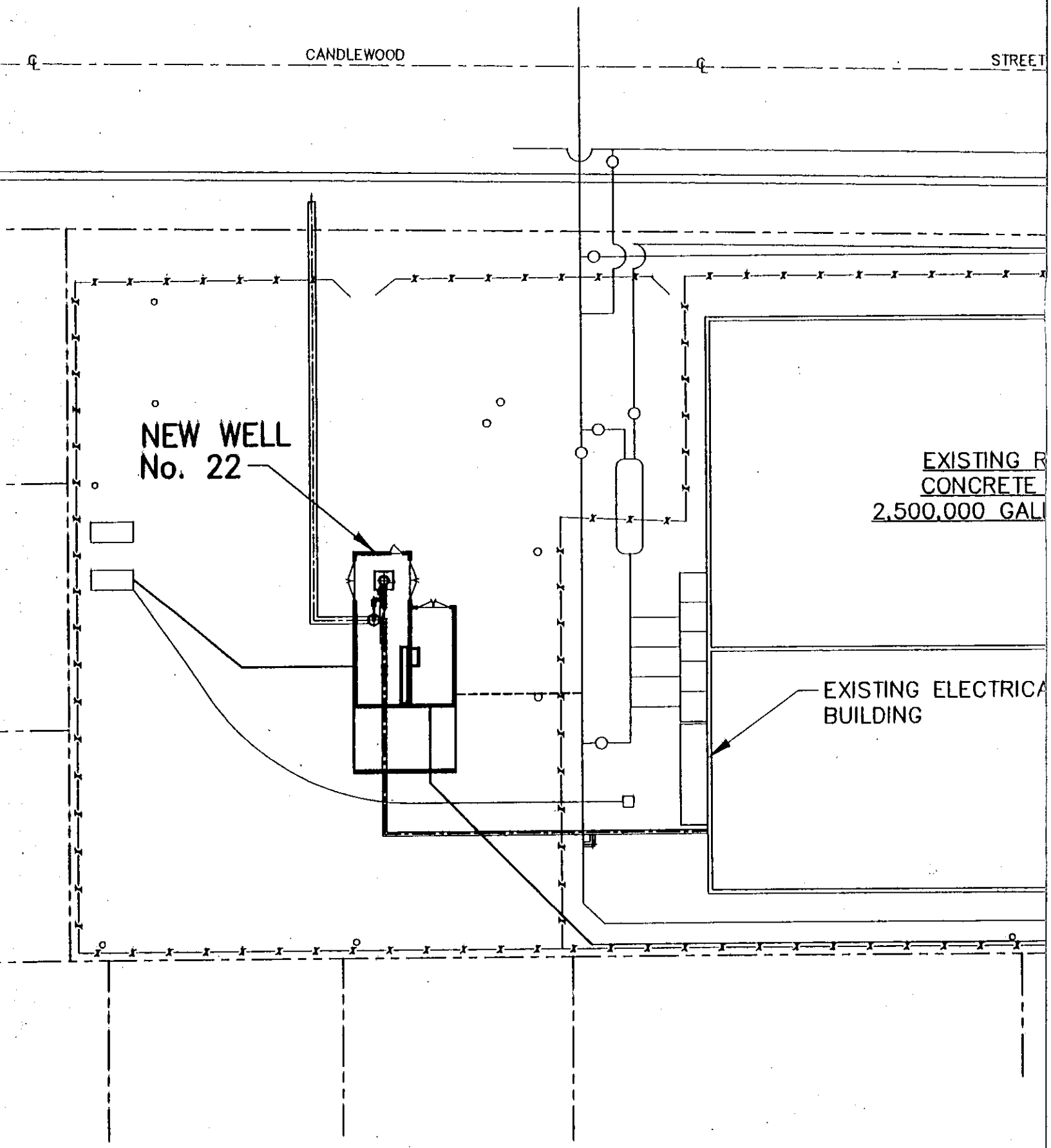
-- Design Curve --
Shutoff Head: 425 ft
Shutoff dP: 184 psi
Min Flow: --- US gpm
BEP: 86.1% eff
@ 818 US gpm
NOL Pwr: 83.1 hp
@ 1294 US gpm

-- Max Curve --
Max Pwr: 96 hp
@ 1356 US gpm



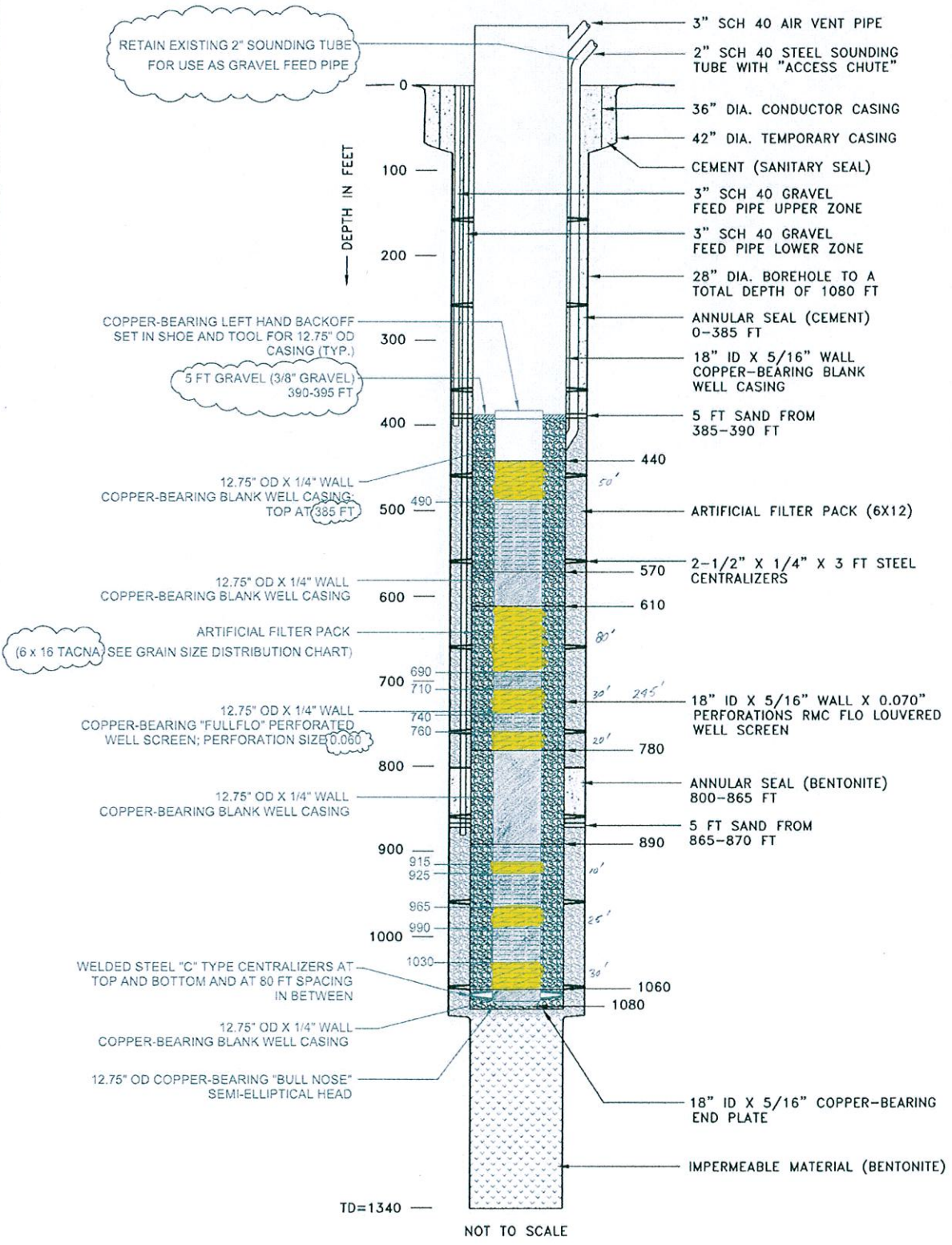
Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1440	1500	---	---	---	---
1200	1500	196	71.6	82.9	19.4
960	1500	288	84.6	82.6	11.6
720	1500	355	85.5	75.7	8.07
480	1500	388	75.8	62	7.67



PROJECT SITE

1"=30'



NOT TO SCALE

NOTE:

- PERFORATED 12" CASING
- PERFORATED 18" CASING
- BLANK CASING

SOURCES:

ORIGINAL WELL AS-BUILT BY GEOSCIENCE; WELL LINER BY TETRA TECH GEO.

TITLE:	WELL 22 WELL LINER DESIGN
LOCATION:	City of Lakewood, California

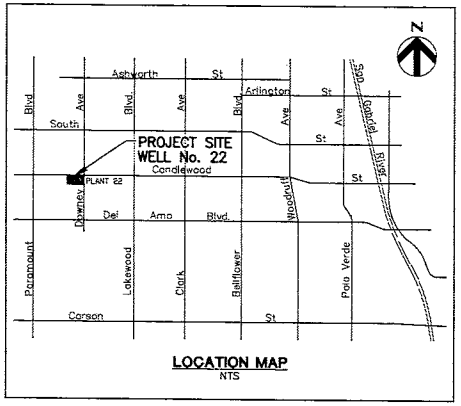
TETRA TECH GEO

APPROVED	DL
DRAFTED	CP
PROJECT#	117-0531001
DATE	5-31-2012

FIGURE 1

CITY OF LAKEWOOD

PLANS FOR THE CONSTRUCTION OF SITE IMPROVEMENTS FOR WATER WELL NO. 22 3310 CANDLEWOOD ST. PW PROJECT NO. 97-02



LOCATION MAP
NTS

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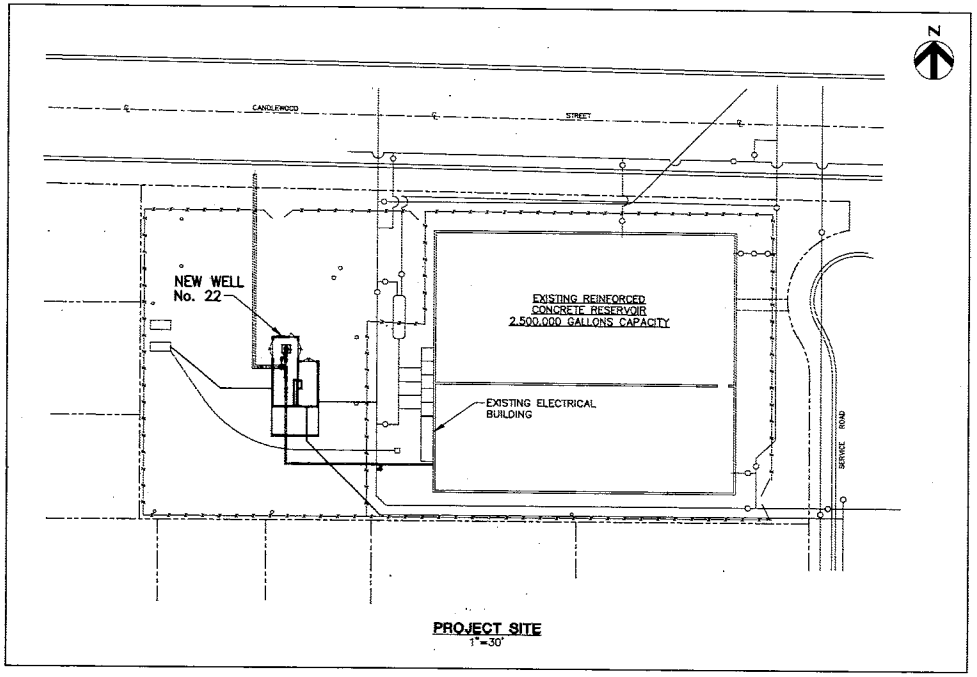


PROJECT SITE
1"=30'

GENERAL NOTES

1. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (800-422-4133) AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE EXACT LOCATION, SIZE AND TYPE OF EXISTING FACILITIES. NEITHER HDR NOR THE CITY WILL BE RESPONSIBLE FOR THE ACCURACY OF ANY EXISTING RECORDS PERTAINING TO THE EXISTING FACILITIES. CONTRACTOR SHALL REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST PUBLICATION ENTITLED "WORK AREA TRAFFIC CONTROL HANDBOOK" (W.A.T.C.H. MANUAL).
4. CONTRACTOR SHALL, AT HIS EXPENSE AND COST, CONSTRUCT ALL IMPROVEMENTS IN SUCH A MANNER AS WILL PROTECT ALL EXISTING UNDERGROUND UTILITIES.
5. STREET PAVING MATERIALS AND PORTLAND CEMENT OF CONCRETE CURB AND GUTTER AND SIDEWALK SHALL BE CONSTRUCTED TO MATCH EXISTING TYPE AND THICKNESS, UNLESS OTHERWISE INDICATED ON PLANS OR IN SPECIFICATIONS.
6. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY MATERIALS REQUIRED FOR PRESSURE TESTING AND DISINFECTING OF NEW WATER LINES.
7. INSTALL METALLIC TRACER WIRE WITH ALL PVC PIPE
8. CONSTRUCT CONCRETE ANCHOR BLOCKS AT ALL BELOW GRADE BENDS AND FITTINGS.
9. ALL WATER SYSTEM VALVES, FITTINGS AND APPURTENANCES SHALL BE DUCTILE OR CAST IRON, UNLESS OTHERWISE INDICATED ON PLANS OR IN SPECIFICATIONS.
10. PIPE ELEVATIONS SHOWN ARE PIPE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
11. UNLESS OTHERWISE SPECIFIED ON PLANS, ALL PIPE AND FITTINGS TO UTILIZE PUSH ON JOINTS. STANDARD DUCTILE IRON PIPE JOINTS MAY BE DEFLECTED UP TO 5°
12. CONTRACTOR SHALL PROTECT EXISTING UTILITY POLES, GUY WIRES, AND SUPPORTS IN PLACE DURING CONSTRUCTION, AND PROVIDE SUPPORT DURING EXCAVATON.

BENCH MARK
L.A. CO. RD. BM DY 8802 ELEV. = 48.070
RD. TAG @S.W. CORNER OF CANDLEWOOD AND PARAMOUNT.

REVISIONS					APPROVALS	DATE
NO.	INITIAL	DESCRIPTION	APPROVED	DATE	Lisa A. Rapp – DIRECTOR OF PUBLIC WORKS	
					Lisa Ann Rapp	6/5/97
					James B. Glancy – DIRECTOR OF WATER RESOURCES	
					James B. Glancy	6/5/97

HDR Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER — BRUCE E. BURRIS — No. 28993 — CIVIL — STATE OF CALIFORNIA

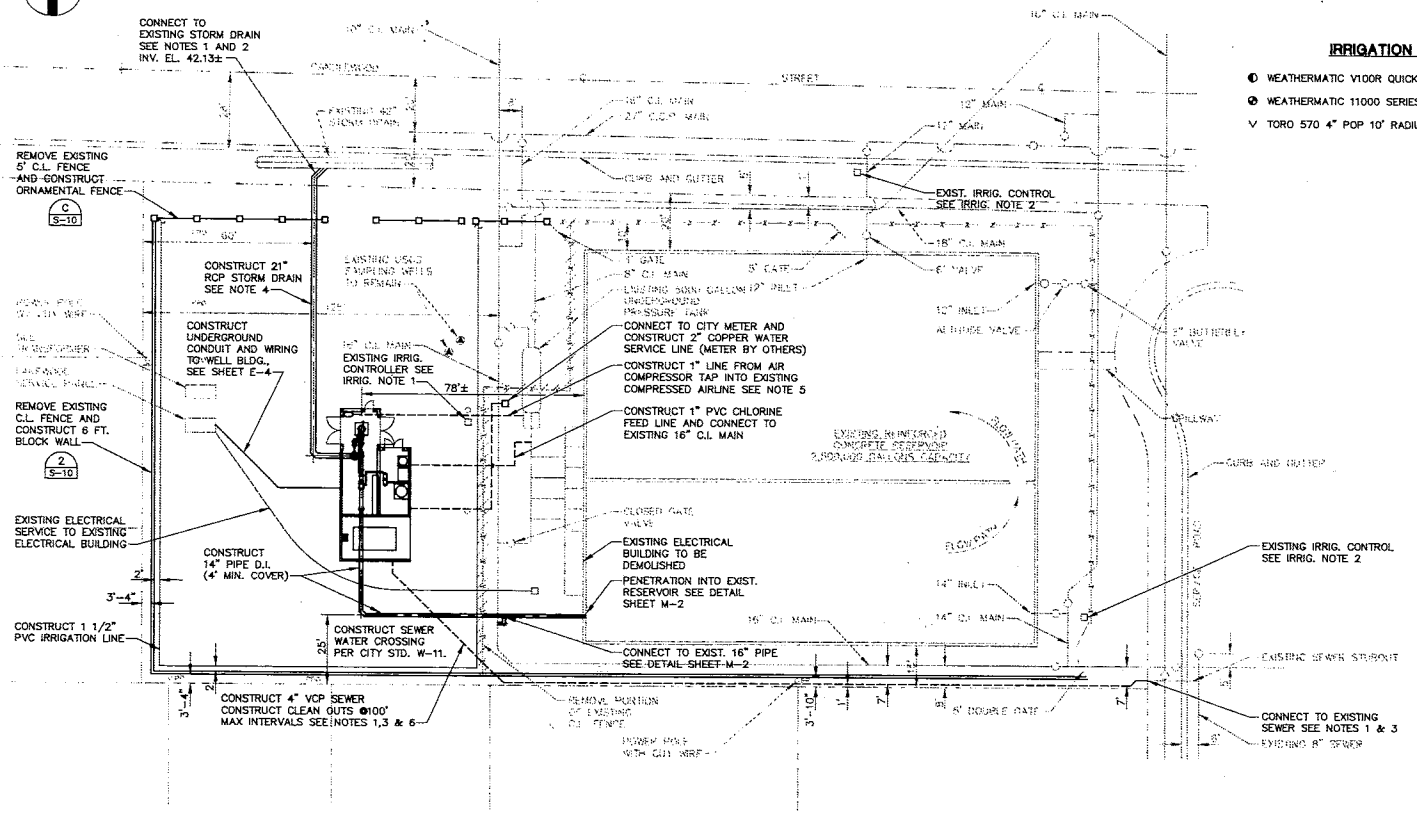
SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	WF, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Victoria Francis	3-28-97
APPROVED	Bruce E. Burris	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
TITLE SHEET

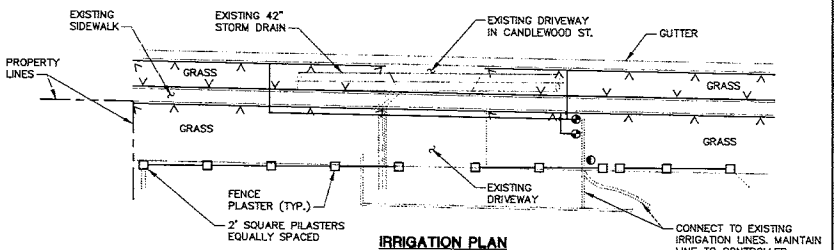
CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
G-1
SHEET
1 OF 24

P:\0834\pw\st340-1.DWG 3-27-97



SITE PIPING PLAN
1"=20'



IRRIGATION PLAN
NTS

IRRIGATION LEGEND

- ◐ WEATHERMATIC V100R QUICK COUPLER VALVE
- ⊘ WEATHERMATIC 11000 SERIES VALVE
- V TORO 570 4" POP 10' RADIUS NOZZLE (15' MAX SPACING)

IRRIGATION NOTES:

1. EXISTING HYDRAULIC CLOCK TO BE REPLACED BY ELECTRIC RAINMASTER CONTROLLER AND RELOCATED FROM EXISTING LOCATION TO WELL BUILDING.
2. REPLACE EXISTING HYDRAULIC VALVES WITH WEATHERMATIC ELECTRIC VALVES 11000 SERIES, SIZE PER EXISTING VALVE. PROVIDE WIRING (14 GAUGE) FROM CONTROL BUILDING TO REMOTE CONTROL VALVES.
3. EXISTING IRRIGATION LINE FROM CONTROLLER TO PARKWAY TO REMAIN. MAINTAIN IRRIGATION LINES SERVING GRASS AREAS.
4. EXISTING IRRIGATION LINES IN PAVING AREA TO BE ABANDONED AND/OR REMOVED AS REQUIRED.
5. IRRIGATION PIPING TO BE 3/4" PVC SCH. 40. MIN. 2' COVER.

GENERAL NOTES:

1. CONTRACTOR TO LOCATE EXISTING FACILITIES, PRIOR TO CONSTRUCTING NEW STORM DRAIN AND SEWER. VERIFY DEPTHS AND REPORT DISCREPANCIES TO ENGINEER. LOCATIONS SHOWN ON PLANS ARE APPROXIMATE.
2. CONNECT TO EXISTING STORM DRAIN PER LOS ANGELES COUNTY FLOOD CONTROL DISTRICTS STANDARD DRAWING NO. 2-D190.
3. CONTRACTOR TO CONSTRUCT SEWER TO SLOPE 0.005 FT/FT FROM WELL BUILDING TO 15' FROM EXISTING STUBOUT. INCREASE SLOPE AS REQUIRED IN 15' REACH PRIOR TO CONNECTION TO EXISTING STUB OUT TO MATCH INVERTS.
4. CONTRACTOR TO CONSTRUCT STORM DRAIN TO SLOPE 0.012 FT/FT FROM WELL BUILDING TO EXISTING STORM DRAIN.
5. CONTRACTOR TO MAINTAIN SYSTEM PRESSURE IN COMPRESSED AIR SYSTEM DURING CONSTRUCTION AND REMOVE UNNECESSARY PORTION OF EXISTING AIR LINE AND SEAL AIR TIGHT.
6. CONTRACTOR TO INCLUDE BID ALTERNATE OF SEWER PIPE MATERIAL PVC C-900.

REVISIONS				APPROVALS
NO.	INITIAL	DESCRIPTION	APPROVED / DATE	

HDR Engineering, Inc.
2600 Michelson Dr. Suite 1600
Irvine, CA 92612-1627

REGISTERED PROFESSIONAL ENGINEER — BRUCE E. BURRIS — No. 28993 — EXP. 3/31/99 — CIVIL — STATE OF CALIFORNIA

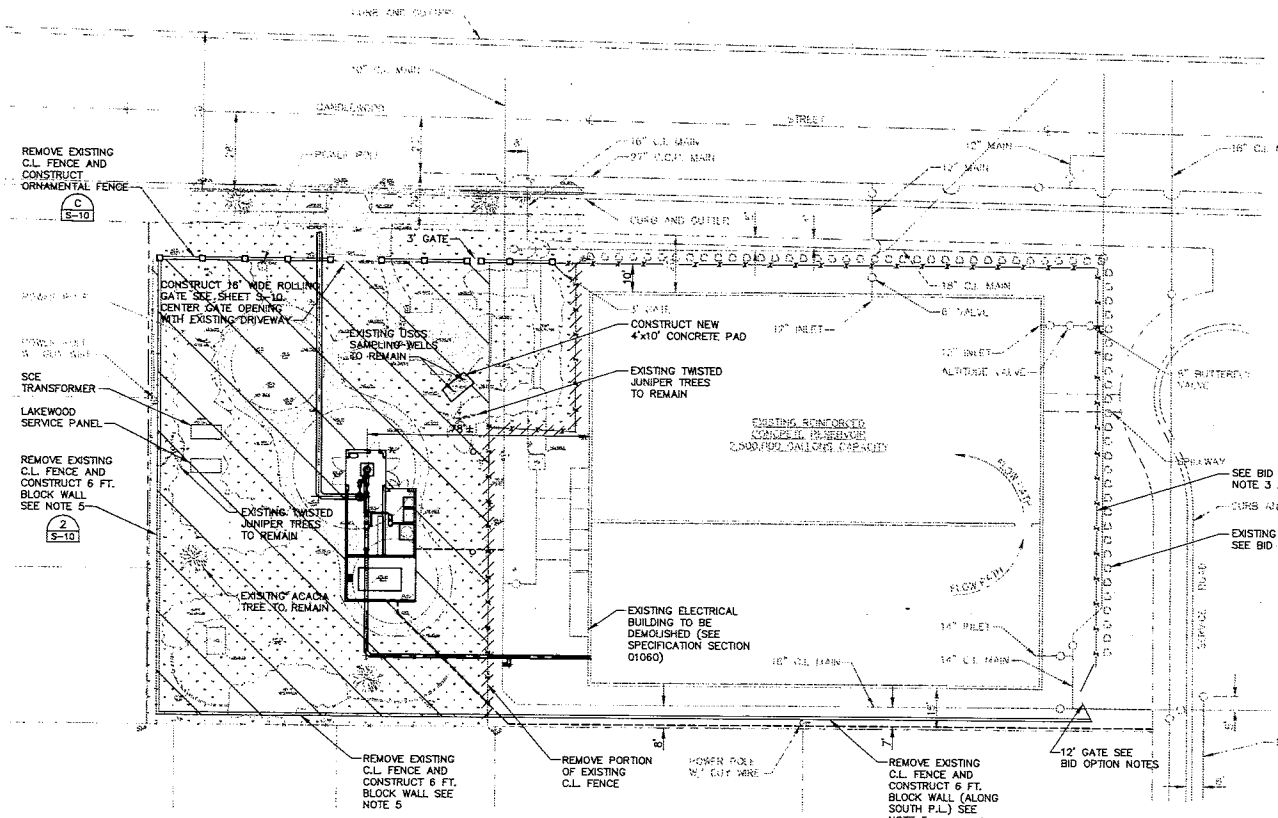
			DATE
SCALE : AS SHOWN			
DRWN. BY	MLE		3-27-97
CHKD. BY	VF, BEB		3-27-97
RECOMMENDED FOR APPROVAL	Victoria Frances		3-28-97
APPROVED	Bruce E. Burris		3-26-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
SITE PIPING PLAN

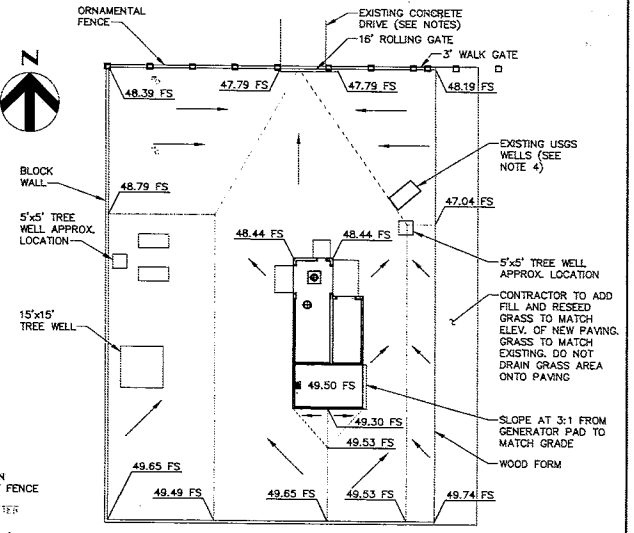
CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
G-2
SHEET
2 OF 24

P:\68134\201\B134G-2.DWG 3-27-97



DEMOLITION PAVING AND BLOCK WALL PLAN
1"=20'



PAVING PLAN
1"=20'

PAVING NOTES:

1. PAVE ALL AREAS NOTED. SEE SPEC. SECTION 02513
2. FRAME 5'x5' TREE WELLS AT ALL REMAINING TWISTED JUNIPERS.
3. FRAME 15'x15' TREE WELL FOR REMAINING ACACIA.

cont.–

4. PLACE 4'x10' CONCRETE SLAB AT EXISTING USGS WELLS, DOWEL INTO EXISTING CONCRETE. REMOVE EXISTING CONCRETE OUTSIDE SLAB AREA TO A DEPTH OF 46.38 FT. SEE DETAIL THIS SHEET.
5. CONTRACTOR TO VERIFY SLOPE OF EXISTING DRIVE. IF SLOPE IS LESS THAN 1%, CONSTRUCT NEW DRIVE IN PLACE.

LEGEND

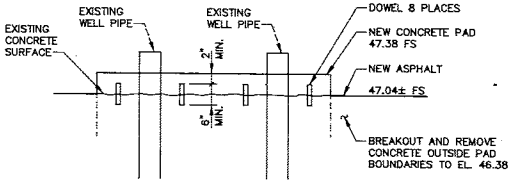
- PAVING AREA
- EXISTING CHAINLINK FENCE TO BE REMOVED
- EXISTING CHAINLINK FENCE TO REMAIN. SEE BID OPTION NOTES
- DIRECTION OF DRAINAGE FLOW SLOPE MIN. 1%

GENERAL NOTES:

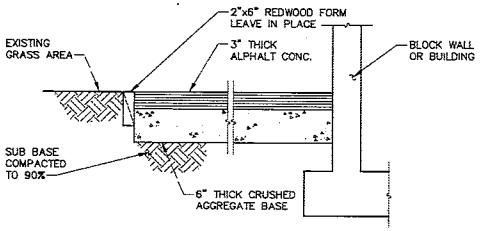
1. CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY FENCE THROUGHOUT CONSTRUCTION PERIOD.
2. REMOVE ALL EXISTING SHRUBS, VEGETATION IN PAVING AREAS AND IN LOCATIONS OF NEW BLOCK WALLS.
3. REMOVE ALL EXISTING CONCRETE, ASPHALT, SAND, ETC. IN PAVING AREAS, EXCEPT AT EXISTING USGS WELLS (SEE PAVING NOTE 4).
4. REMOVE SHRUBS, CONCRETE BETWEEN PAVING AREA AND EXISTING RESERVOIR. GRASS TO REMAIN.
5. CONTRACTOR TO VERIFY EXISTING POWER POLES WILL NOT INTERFERE WITH ALIGNMENT OF BLOCK WALL.

BID OPTION NOTES:

1. REMOVE REMAINING CHAIN LINK FENCE ON NORTH AND EAST SIDES OF PROPERTY.
2. REMOVE EXISTING TREES AND SHRUBS ON NORTH AND EAST SIDES OF PROPERTY.
3. CONSTRUCT 6' HIGH ORNAMENTAL IRON PICKET FENCE WITH PILASTERS ON REMAINING NORTH AND ENTIRE EAST SIDES OF PROPERTY (SEE SHEET S-10).
4. CONSTRUCT 12' WIDE ROLLING GATE ON EAST SIDE OF PROPERTY (SEE SHEET S-10).



USGS WELL PAD DETAIL
NTS



NOTE:
1. APPLY TACK COAT TO CONCRETE EDGES ADJACENT TO PAVING.

PAVING DETAIL
NTS

REVISIONS				APPROVALS
NO.	INITIAL	DESCRIPTION	APPROVED / DATE	

HDR Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER — BRUCE E. BORRIS — No. 28993 — CIVIL — STATE OF CALIFORNIA

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	VF, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Victoria Franco	3-28-97
APPROVED	Bruce E. Borris	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
DEMOLITION, PAVING AND BLOCK WALL PLAN

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
G-3
SHEET
3 OF 24

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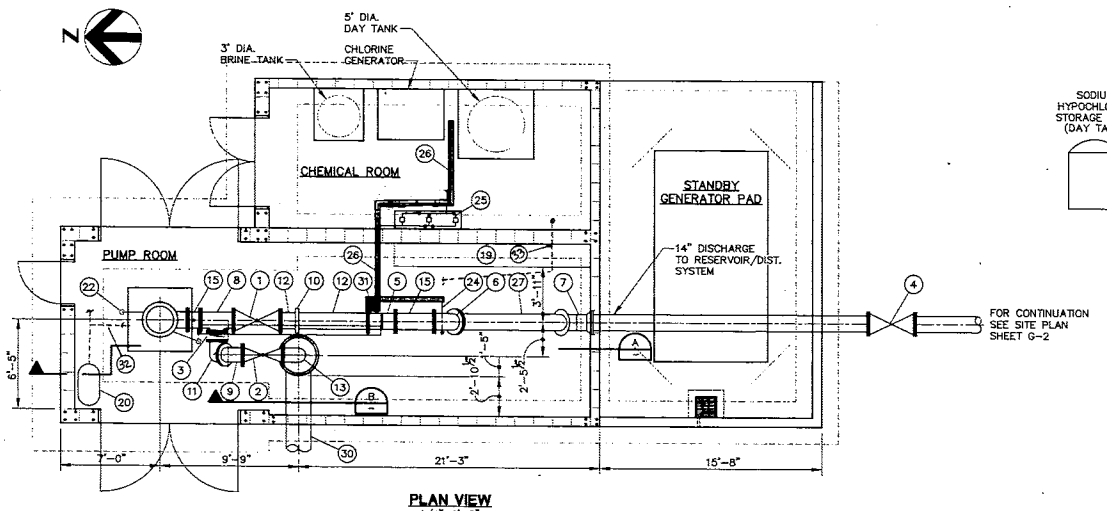
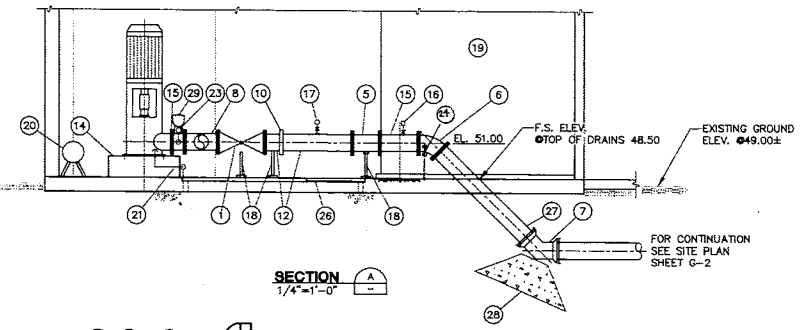
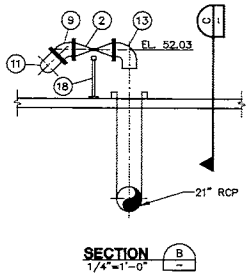


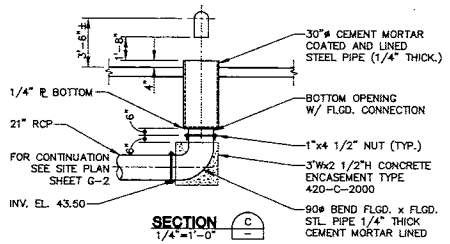
PLAN VIEW
1/4"=1'-0"



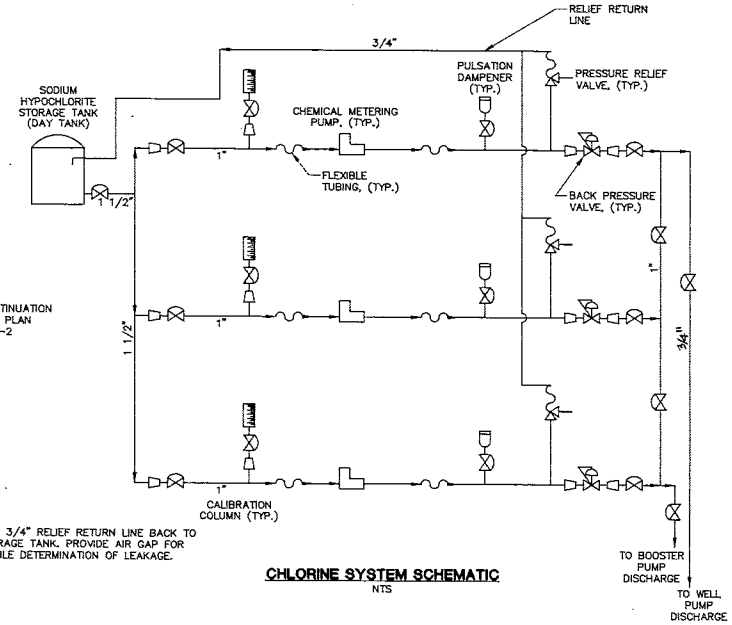
SECTION A
1/4"=1'-0"



SECTION B
1/4"=1'-0"



SECTION C
1/4"=1'-0"

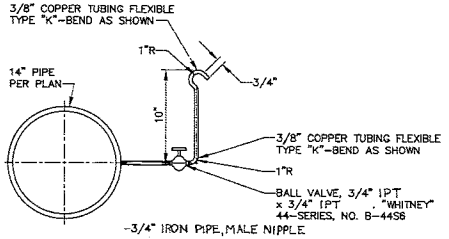


NOTE:
1. PIPE 3/4" RELIEF RETURN LINE BACK TO STORAGE TANK. PROVIDE AIR GAP FOR VISIBLE DETERMINATION OF LEAKAGE.

CHLORINE SYSTEM SCHEMATIC
NTS

LEGEND

1. 14" FLGD. PUMP CONTROL VALVE
2. 10" BYPASS VALVE
3. 10" WAFER VALVE W/ LEVER
4. 14" FLGD. GATE VALVE PER CITY STD. W-5
5. 14" FLGD. PROPELLER FLOW METER
6. 14"x45° FLGD. BEND
7. 14"x45° M.J. BEND
8. 14"x14"x10" FLGD. TEE
9. 10"x45° FLGD. BEND
10. 14" VICTAULIC COUPLING
11. 10"x90° FLGD. BEND
12. 14"ø PIPE, FLGD. x GROOVED END
13. 10"x90° FLGD. x PE.
14. PUMP FOUNDATION
15. 14" PIPE FLGD.
16. 1" AIR RELEASE ASSEMBLY
17. PRESSURE GAUGE (0-100 PSI) WITH ISOLATION VALVE (ORIENT GAUGE IN VERTICAL PLANE)(1" BALL VALVE)
18. ADJUSTABLE PIPE SUPPORT
19. ELECTRICAL SERVICE PANEL AND CONC. PAD
20. AIR COMPRESSOR
21. 1" COPPER IRON PRELUBRICATION LINE W/ 2 EA. BALL ISOLATING VALVES AND 1 EA. CHECK VALVE, STRAINER AND NEEDLE VALVE
22. 1/2" BLACK STEEL SEAL WATER DRAIN PIPE-END 1" ABOVE FLOOR DRAIN
23. WATER SAMPLING STATION (DETAIL THIS SHEET)
24. 3/4" SCHD 80 PVC WITH BALL VALVE, THREADED TAP INTO DIP FOR CHEMICAL ADDITION
25. CHEMICAL FEED PUMP (3 REQ'S.) SEE SCHEMATIC THIS SHEET
26. UTILITY TRENCH PER SHEET M-3
27. 14" PIPE FLGD. x PE.
28. THRUST BLOCK, 16 SQ. FT. BEARING AREA (MIN.)
29. 2" NPT AIR/VACUUM VALVE W/2" BALCORP
30. 21" RCP TO STORM DRAIN
31. UTILITY TRENCH SUMP PER SHEET M-3
32. 3/8" COPPER AIR LINE
33. 3/4" COPPER LINE INJECTION DOWN CASING



WATER SAMPLING STATION
NTS

GENERAL NOTES:
1. ALL METAL PIPE SURFACES NOT COATED WITH CEMENT SHALL BE COATED AND LINED WITH EPOXY PER AWWA 213.
2. ALL PIPE AND FITTINGS TO BE CLASS 150 D.I. UNLESS NOTED OTHERWISE.

REVISIONS				APPROVALS
NO.	INITIAL	DESCRIPTION	APPROVED / DATE	

HDR Engineering, Inc.
2600 Kettner Blvd., Suite 1600
San Diego, CA 92101-1030

REGISTERED PROFESSIONAL ENGINEER — BRUCE E. BURRIS — No. 28993 — CIVIL — EXP. 3/31/99 — STATE OF CALIFORNIA

		DATE
SCALE : AS SHOWN		
DRWN. BY	MLE SES	3-27-97
CHKD. BY	VF, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Victoria Francey	3/28/97
APPROVED	Bruce E Burris	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22

PUMP PIPING PLAN AND SECTIONS

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
M-1
SHEET
4 OF 24

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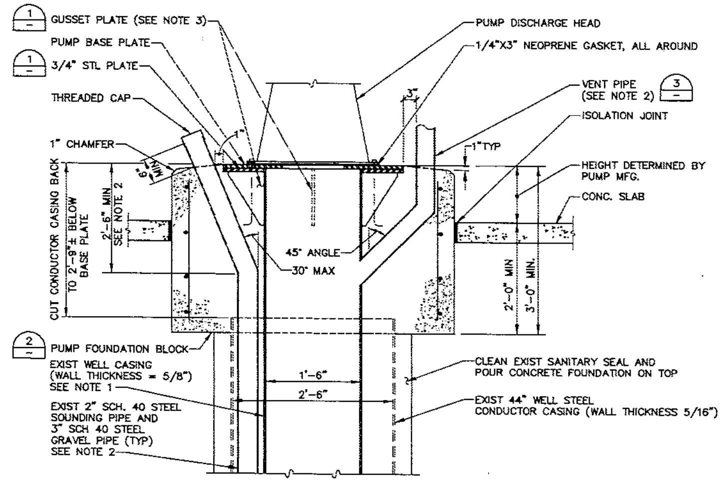
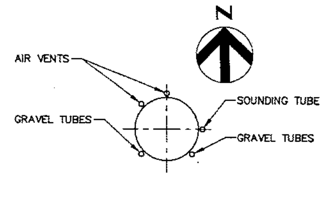


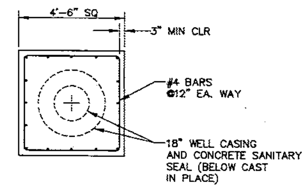
WELL HEAD DETAIL
NTS

NOTES:

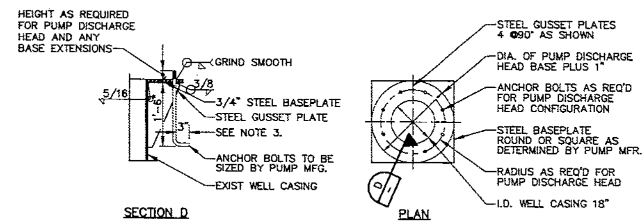
1. CUT WELL CASING BACK TO HEIGHT INDICATED. GRIND CUT END TO PROVIDE FLAT AND LEVEL SURFACE FOR STEEL PUMP BASE PLATE.
2. CUT SOUNDING PIPE, GRAVEL PIPE AND VENT PIPE AS REQUIRED TO ALLOW FOR INSTALLATION OF PUMP BASE. FABRICATE EXTENSIONS AND WELD TO EXISTING PIPES. LOCATE AWAY FROM PUMP DISCHARGE OUTLET PIPE.
3. STEEL GUSSET PLATES ARE TO BE THE SAME THICKNESS AS EXISTING WELL STEEL CASING. PROVIDE MIN. 5/16" CONTINUOUS WELDS EACH SIDE OF GUSSET PLATE HORIZONTALLY UNDER PUMP STEEL PLATE AND ALONG THE LENGTH OF CONTACT WITH WELL STEEL CASING.
4. SEAL WELL HEAD WITH BASE PLATE GROUTED TO WELL CASING BASE PLATE.



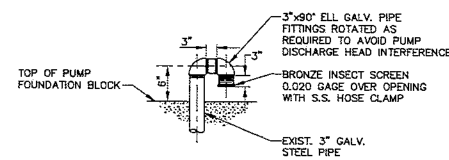
TUBING ORIENTATION
NTS



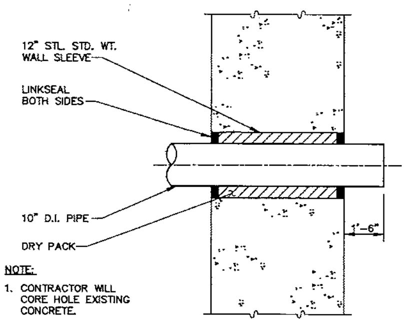
PUMP FOUNDATION PLAN 2
NTS



FOUNDATION BASE PLATE DETAIL 1
NTS



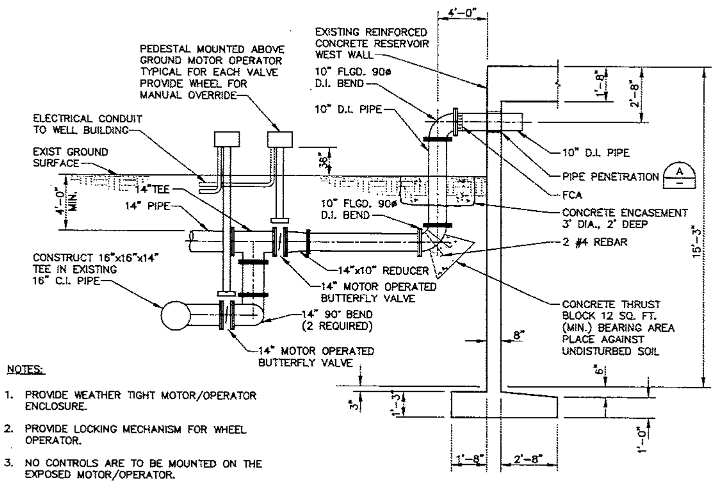
VENT DETAIL 3
NTS



NOTE:

1. CONTRACTOR WILL CORE HOLE EXISTING CONCRETE.

DETAIL A
NTS



NOTES:

1. PROVIDE WEATHER TIGHT MOTOR/OPERATOR ENCLOSURE.
2. PROVIDE LOCKING MECHANISM FOR WHEEL OPERATOR.
3. NO CONTROLS ARE TO BE MOUNTED ON THE EXPOSED MOTOR/OPERATOR.
4. CONSTRUCT PEDESTAL SUPPORT PER MANUFACTURERS RECOMMENDATIONS.
5. PROVIDE BURIED CONDUIT FROM WELL BUILDING TO EACH VALVE AS NECESSARY.
6. DEPTH OF EXISTING PIPE UNKNOWN. CONTRACTOR TO FIELD VERIFY CONFIGURATION PRIOR TO ORDERING FITTINGS.

PIPE/WALL PENETRATION
NTS

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

HDR Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER BRUCE E. BURRIS No. 28993 CIVIL 3/31/97 STATE OF CALIFORNIA

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	VF, BEB	3-27-97
RECOMMENDED FOR APPROVAL	[signature]	3-25-97
APPROVED	Bruce E. Burris	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
MISCELLANEOUS WELL DETAILS
CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
M-2
SHEET 5 OF 24

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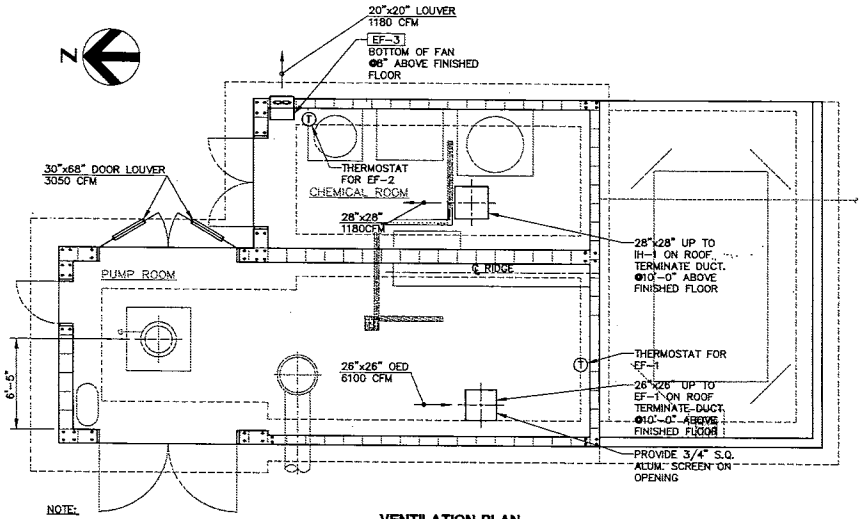
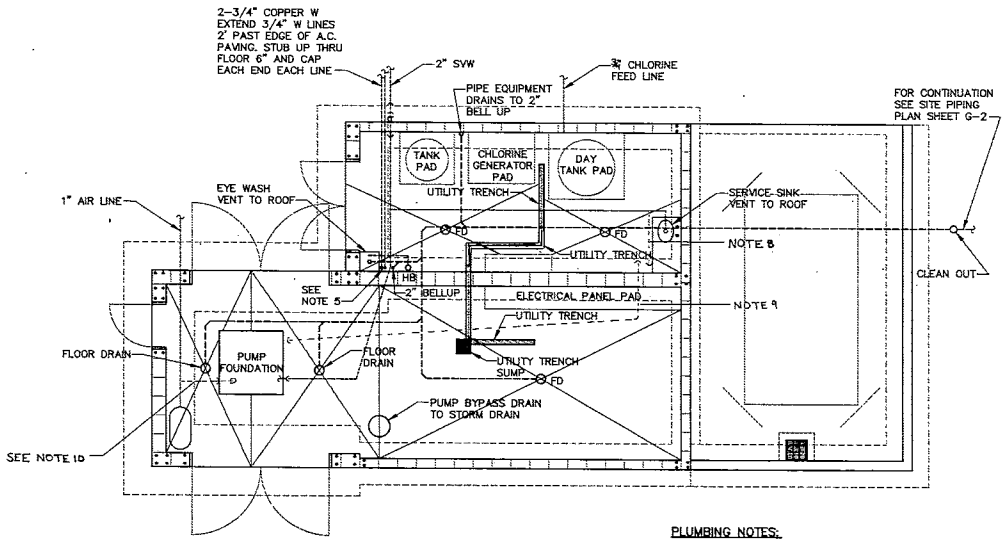


NOTE:

1. SEE STRUCTURAL ROOF PLAN FOR EXACT LOCATION OF ROOF OPENINGS.

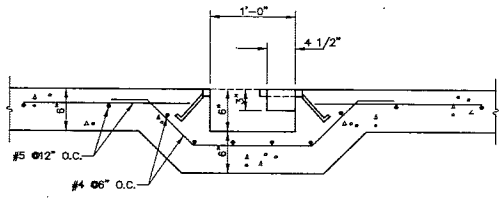
VENTILATION PLAN
1/4"=1'-0"



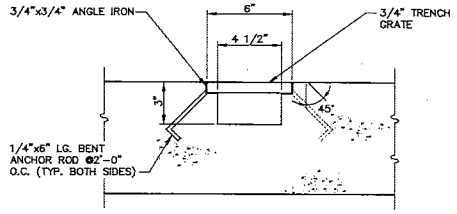
PLUMBING PLAN
1/4"=1'-0"

PLUMBING NOTES:

1. ALL PLUMBING TO ADHERE TO UPC, LATEST EDITION.
2. ALL FACILITIES TO MEET ADA REQUIREMENTS.
3. ALL SEWER PIPE TO BE EXTRA STRENGTH VCP.
4. PROVIDE 3/4" W STUBS CAPPED FOR FUTURE CHLORINE RESIDUAL ANALYZERS.
5. MOUNT HOSE BIB 4' UP FROM FLOOR. MOUNT HOSE RACK BELOW BIB.
6. CONSTRUCT 1'x1'x6" SUMP. COVER W/ 12"x12"x3/4" GRATE. FRAME PER UTILITY TRENCH DETAIL.
7. PROVIDE EXTERIOR SHUT OFF VALVE FOR SVW (2" BALL VALVE).
8. 3/4" COPPER W, IPT GATEVALVE, STUB UP 6" WITH PLUG
9. 3/4" COPPER, STUB UP 6", PLUG BOTH ENDS IPT.
10. 3/8" AIRLINE, STUB UP TO TOP PUMP BASE GALV STL, 3/8" GV. WITH HANDWHEEL, TEE W/ SCHRADER VALVE, TEE W/ HUNTER LEVEL GAGE, TRANS. TO 3/8" POLY TUBING DOWNHOLE 220 FT.



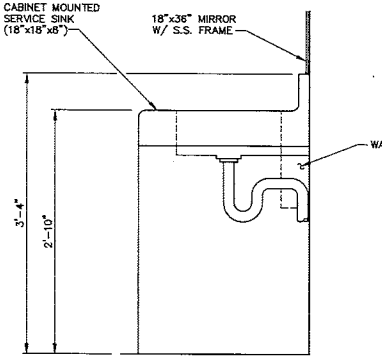
UTILITY TRENCH SUMP DETAIL
NTS



NOTES:

1. SLOPE TRENCH TO SOUTH AND/OR EAST AT 1%
2. CUT HOLES IN GRATE AS REQUIRED FOR PIPE ACCESS.
3. SECURE PIPE IN TRENCH AT MIN. 6' INTERVALS USING GALV. STEEL "U" STRAPS AND 3/16"x2" CONCRETE ANCHORS.

UTILITY TRENCH DETAIL
NTS



NOTE:

1. INSTALL ELECTRIC WATER HEATER UNDER SINK

SERVICE SINK
NTS

REVISIONS				APPROVALS			
NO.	INITIAL	DESCRIPTION	APPROVED	DATE			

HDR Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER — BRUCE E. BERNIE — No. 28993 — CIVIL — 3/31/97 — STATE OF CALIFORNIA

			DATE
SCALE : AS SHOWN			
DRWN. BY	MLE GES		3-27-97
CHKD. BY	WF, BEB		3-27-97
RECOMMENDED FOR APPROVAL	Victoria Chavez		3-28-97
APPROVED	Bruce E. Bernie		3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
PLUMBING AND VENTILATION PLAN

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
M-3
SHEET
6 OF 24

P:\98134\001\81344-LDWG 3-27-97

GENERAL NOTES

A. GENERAL NOTES:

1. GENERAL NOTES APPLY TO ALL STRUCTURAL WORK EXCEPT WHERE DETAILS OR NOTES SPECIFICALLY SHOW OTHERWISE.
2. EXISTING CONDITIONS: CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PERTINENT TO HIS WORK PRIOR TO MATERIAL FABRICATION AND/OR CONSTRUCTION. FIELD CONDITIONS DIFFERENT FROM THOSE NOTED ON THE DRAWINGS SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF THE ENGINEER. ITEMS TO BE FIELD VERIFIED INCLUDE BUT NOT LIMITED TO:
   A. LOCATION, DIMENSIONS AND ELEVATION OF THE STRUCTURE ON THE SITE.
   B. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
3. TYPICAL DETAILS APPLY TO ALL STRUCTURAL WORK, WHETHER SPECIFICALLY CALLED OUT OR NOT. DETAILS CALLED OUT AT SPECIFIC LOCATIONS ARE TO BE APPLIED TO OTHER SIMILAR CONDITIONS.

B. SOIL AND FOUNDATION:

1. ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF.
2. UNLESS NOTED OTHERWISE, ALL FOUNDATIONS SHALL BE CAST ON SOIL COMPACTED TO 90 PERCENT OF MAXIMUM DRY DENSITY. THE EXISTING SOIL BELOW THE BOTTOM OF THE FOOTING SHALL BE EXCAVATED TO A MINIMUM OF 18 INCHES AND SHALL BE RECOMPACTED IN 6 INCH LAYERS. THE PLAN LIMITS OF EXCAVATION SHALL EXTEND 1.5 FEET BEYOND PERIMETER OF THE FOUNDATION.

C. CONCRETE:

1. REINFORCED CONCRETE SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301.
2. ALL CONCRETE SHALL BE 4,000 PSI MINIMUM AT 28 DAYS, UNLESS NOTED OTHERWISE. CONCRETE FILL SHALL BE 3,000 PSI MINIMUM AT 28 DAYS UNLESS NOTED OTHERWISE.
3. CEMENT SHALL CONFORM TO ASTM C150, TYPE II. AGGREGATES SHALL CONFORM TO ASTM C-33. COARSE AGGREGATE SHALL BE MAXIMUM 1 INCH CRUSHED ROCK. PEA GRAVEL SHALL NOT BE USED.
4. AGGREGATE SHALL NOT ORIGINATE FROM SAN FERNANDO VALLEY AREA OF SOUTHERN CALIFORNIA OR ANY OTHER SOURCE WHERE REACTIVE OR DEGENERATIVE ROCK PRODUCTS HAVE BEEN ENCOUNTERED.
5. CONSTRUCTION JOINTS SHALL BE ROUGH AND CLEAN. REMOVE LOOSE AGGREGATE AND DAMAGED CONCRETE.
6. PROVIDE 3/4" CHAMFER AT ALL EXPOSED EDGES.
7. ALL CONCRETE SHALL BE VIBRATED IN PLACE DURING PLACING OF CONCRETE.
8. ANCHOR BOLTS, DOWELS, REINFORCING STEEL, PIPE SLEEVES, INSERTS, ETC., SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE. CONCRETE BLOCKS SHALL BE USED TO SUPPORT REINFORCING STEEL ON GRADE.
9. A CURING COMPOUND SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES AS SOON AFTER SETTING AS POSSIBLE. CURING COMPOUND SHALL BE COMPATIBLE WITH CONCRETE ADDITIVES, SEALANTS OR SURFACE TREATMENTS USED.

D. REINFORCING STEEL:

1. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM SPECIFICATION A615 GRADE 60.
2. MINIMUM COVER REINFORCING STEEL SHALL BE:
   A. CONCRETE CAST AND PERMANENTLY EXPOSED TO EARTH 3 IN.
   B. FORMED CONCRETE EXPOSED TO WEATHER OR EARTH 1 1/2 IN.
   C. FORMED CONCRETE EXPOSED TO WATER 2 IN.

E. CONCRETE MASONRY UNIT:

1. CONCRETE MASONRY UNITS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C90, GRADE N-1 WITH MINIMUM COMPRESSIVE STRENGTH OF 1,900 PSI. AND SHALL BE NORMAL WEIGHT.
2. CONCRETE MASONRY SHALL BE ANGELUS SPECIAL ORDER ORANGE PLANT #201 MEDIUM WEIGHT OR EQUAL. EQUAL PRODUCTS SHALL BE PRODUCED BY A FIRM CURRENTLY CERTIFIED IN THE QUALITY CONTROL PROGRAM OF THE CALIFORNIA CONCRETE MASONRY TECHNICAL COMMITTEE.
3. CORNER BOND BEAM, PILASTER, U-BLOCKS, AND ACCESSORY UNITS OF THE SAME COLOR AND TEXTURE SHALL BE PROVIDED.
4. REINFORCEMENT FOR MASONRY SHALL BE SECURED IN PLACE IN CONFORMANCE WITH THE DRAWINGS AND APPLICABLE REQUIREMENTS OF THE UBC 94.
5. GROUTING: ALL CELLS SHALL BE GROUTED SOLID, UNLESS NOTED OTHERWISE
6. MINIMUM LAP SPLICE FOR ALL REINFORCING BARS SHALL BE 48 BAR DIAMETERS. ALL JAMB BAR SPLICES SHALL BE 62 BAR DIAMETERS.
7. PROVIDE CONTINUOUS INSPECTION FOR ALL CONCRETE MASONRY WORK, PER 94 UBC REQUIREMENTS, WHERE CALLED OUT ON THE DRAWINGS.

F. STRUCTURAL STEEL:

1. ALL MATERIAL AND WORK SHALL CONFORM TO THE AISC SPECIFICATION, LATEST EDITION, FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.
3. STRUCTURAL PIPE MEMBERS SHALL CONFORM TO ASTM A53, GRADE B
4. STRUCTURAL TUBE MEMBERS SHALL CONFORM TO ASTM A500, GRADE B
5. STEEL ANCHOR BOLTS SHALL CONFORM TO ASTM A307, GRADE A

G. WELDING STEEL:

1. WELDING SHALL CONFORM TO AWS D1.1 AND SHALL BE PERFORMED BY ICBO CERTIFIED WELDERS. ALL FIELD WELDING, EXCEPT MINOR OR TACK WELDING, SHALL BE INSPECTED BY AN APPROVED WELDING INSPECTOR.

H. STAINLESS STEEL:

1. STRUCTURAL STAINLESS STEEL SHALL CONFORM TO ASTM A276 FOR BARS AND SHAPES, INCLUDING CONNECTORS AND SHALL BE TYPE 316L.

I. HOT-DIP-GALVANIZING:

1. HOT-DIP GALVANIZING SHALL CONFORM TO THE REQUIREMENTS OF ASTM STANDARD A 125-78 WITH AN AVERAGE WEIGHT PER SQUARE FOOT OF 2 OUNCES AND NOT LESS THAN 1.8 OUNCES PER SQUARE FOOT.
2. AREAS OF GALVANIZING DAMAGED BY WELDING OR BURNING, OR OTHERWISE DAMAGED, SHALL BE REPAIRED AND RE-COATED.

J. WOOD

1. PLYWOOD ROOF SHEATHING SHALL BE APA/DFPA GRADED CDX, PANEL INDEX 32/16 WITH EXTERIOR GLUE. MINIMUM NAILING: EDGES @ 6 IN. O.C., AT INTERMEDIATE SUPPORTS @ 12 IN. O.C. UNLESS NOTED OTHERWISE.
2. NAILING (COMMON GALVANIZED) AS SHOWN ON PLANS, AND PER UBC TABLE 23-I-Q (MINIMUM).
3. TIMBER SHALL BE DOUGLAS FIR, NFP GRADE NO. 2, EXCEPT FOR NONBEARING PARTITIONS, WHICH SHALL BE STUD GRADE.
4. SILLS RESTING ON CONCRETE OR MASONRY SHALL BE OF FOUNDATION GRADE REDWOOD OR PRESSURE TREATED DOUGLAS FIR.
5. HARDWARE SHALL BE OF SIMPSON CO. OR APPROVED EQUAL. ALL FRAMING ANCHORS SHALL HAVE NAILS IN ALL NAIL HOLES AND ALL PRONGS SHALL BE SET.
6. SUB DRILL FOR LAG BOLTS THREAD ROOT DIAMETER, COUNTER BORE FULL SIZE FOR UNTHREADED SHANK.
7. FRAMING DETAILS SHALL CONFORM TO SECTION 2326 UBC 1994, UNLESS NOTED OTHERWISE.
8. EXPOSED WOOD SHALL BE PAINTED OR TREATED WITH PRESERVATIVE.
9. BOLTS SHALL CONFORM TO ASTM A307, WASHERS TO ASTM A36, BOLT HOLES SHALL BE DRILLED SAME DIAMETER AS BOLT. USE WASHERS UNDER NUT AND HEAD WHERE IN DIRECT CONTACT WITH WOOD. TIGHTEN NUTS TO INITIAL CRUSHING OF FIBERS UNDER WASHER. RETIGHTEN AFTER 60 DAYS OR JUST PRIOR TO CLOSING IN WHERE CONCEALED.
10. BEAMS OVER 15 FEET LONG SHALL BE CAMBERED UPWARD PARABOLICALLY BY A FACTOR OF L/200, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

K. CONCRETE ANCHORS:

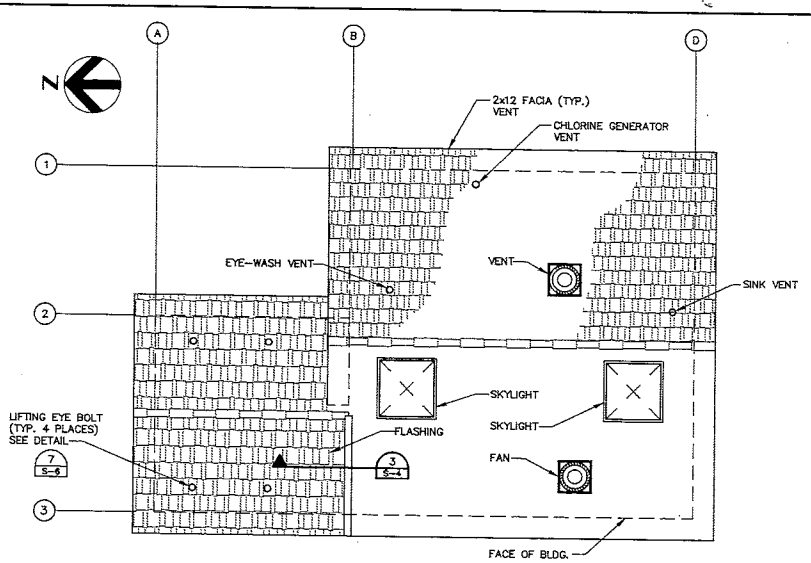
1. CONCRETE ANCHORS SHALL BE HILTI HVA ADHESIVE ANCHOR SYSTEM. OTHER CHEMICAL ANCHOR PRODUCTS WITH ICBO REPORTS SHOWING SHEAR AND TENSION CAPACITIES EQUAL OR BETTER THAN THOSE SHOWN ON THE ICBO REPORT NO. 4016 MAY BE USED. EXPANSION ANCHORS MAY BE USED, WHEN BOLTS ARE NOT IN TENSION OR SUBJECT TO VIBRATIONS.
2. PROVIDE A STANDARD WASHER AND HEX NUT WITH EACH CONCRETE ANCHOR BOLT.

L. SHOP DRAWINGS

1. SHOP DRAWINGS SHALL BE COORDINATED WITH ALL PLANS INCLUDING WOOD DRAWINGS.
2. SHOP DRAWINGS SHALL BE REVIEWED BY HDR.

NOTE:

CONTRACTOR TO REMOVE AND REPLACE THE REMOVABLE ROOF SECTION IN THE PRESENCE OF THE CITY ENGINEERING STAFF BEFORE TERMINATION OF BUILDING CONSTRUCTION. SEE SPECIFICATION SECTION 01060.



ARCHITECTURAL ROOF FRAMING PLAN
1/4"=1'-0"

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS		

RMS ENGINEERING & DESIGN

REGISTERED PROFESSIONAL ENGINEER — BRUCE E. BURRIS — No. 5005586 — Exp. 6/30/98 — STRUCTURAL — STATE OF CALIFORNIA

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burris	3-28-97
APPROVED	Ronald M. Hoyt	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22

GENERAL NOTES AND ROOF FRAMING PLAN

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02

S-1

SHEET 7 OF 24

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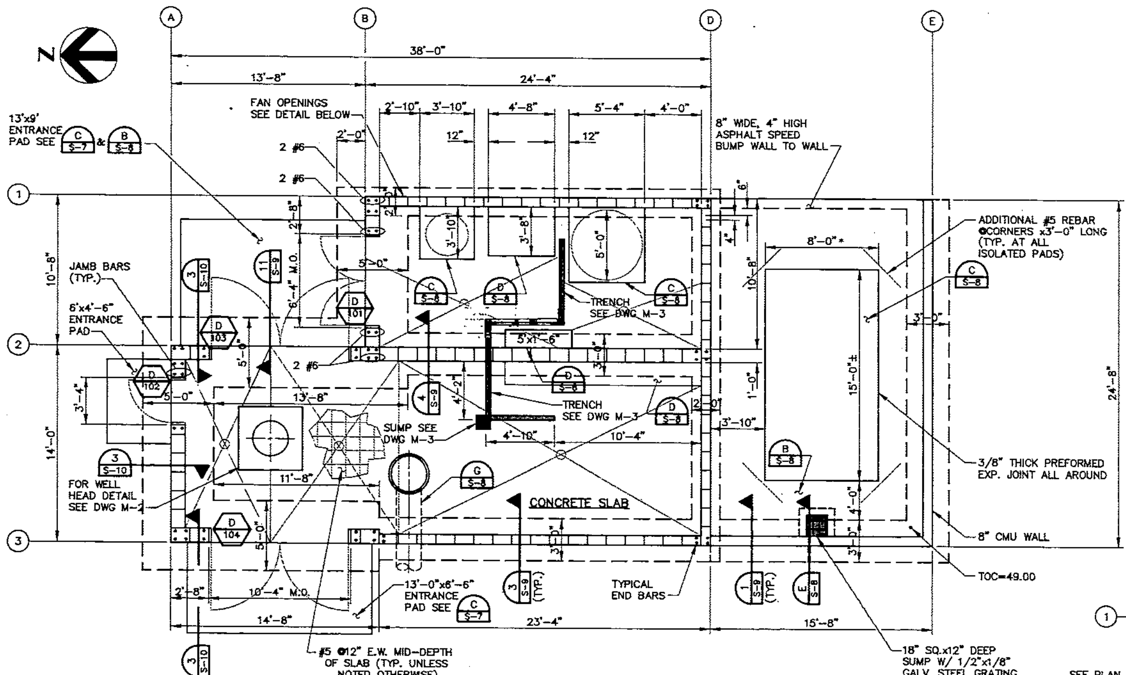


FOUNDATION PLAN

1/4"=1'-0"

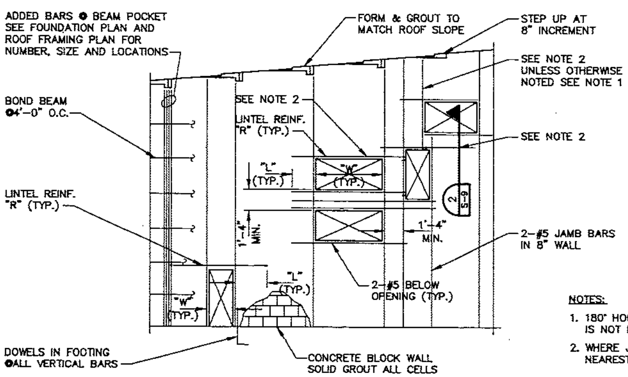
GENERAL NOTES:

1. * = VERIFY EQUIPMENT PAD DIMENSIONS WITH VENDOR DRAWINGS.
2. TOC = TOP OF CONCRETE. TOC EL.=48.5, TYPICAL UNLESS SHOWN OTHERWISE. SLOPE TO F.D. AS SHOWN.
3. F.D. = FLOOR DRAIN. TOC EL. @F.D.=48.4
4. SLOPE BOTTOM OF 4" TRENCH @1% DOWN TO THE SUMP.
5. FOR DOOR AND WINDOW SCHEDULE SEE SHEET S-4.
6. VERIFY RAFTERS OF REMOVABLE SECTION DO NOT INTERFERE WITH PUMP MOTOR.
7. FOR FLOOR DRAIN LOCATIONS SEE SHEET M-1.
8. CEN. = CENTER OF WALL.
9. FOR MASONRY DETAILS SEE S-9.
10. CMU = CONCRETE MASONRY UNIT.
11. (D/-) FOR DOOR SCHEDULE SEE SHEET S-4.
12. SOLID GROUT ALL CELLS OF CONCRETE BLOCK WALLS, UNLESS NOTED OTHERWISE.
13. M.O. = MASONRY OPENING.
14. BOTTOM OF TRENCH DRAIN SLOPE @1% TO F.D. SEE MECHANICAL DRAWINGS.
15. FOR PIPES CROSSING FOOTING SEE F/S-8, A/S-8

BLOCK WALL SCHEDULE

WALL ON COLUMN LINE	THICKNESS	HORIZ. REINF.	VERT. REINF.	END BARS	REMARKS
D	8"	#5 @ 24" @ CTR.	#5 @ 24" @ CEN.	2 #5	
1	8"	#5 @ 24" @ CTR.	#5 @ 24" @ CEN.	2 #5	
3 B TO D	8"	#5 @ 24" @ CTR.	#5 @ 24" @ CEN.	2 #5	
2	12"	#5 @ 24" @ CTR.	#5 @ 24" @ CEN.	2 #5	
B	12"	#5 @ 24" @ CTR.	#5 @ 24" EACH FACE	2 #6	HOOK EACH END OF HORIZ. REINF.
A	12"	#5 @ 24" @ CTR.	#5 @ 24" EACH FACE	2 #6	
3 A TO B	12"	#5 @ 24" @ CTR.	#5 @ 24" EACH FACE	2 #6	

NOTE: COLUMN LINE C NOT USED.



LINTEL REINFORCEMENT SCHEDULE

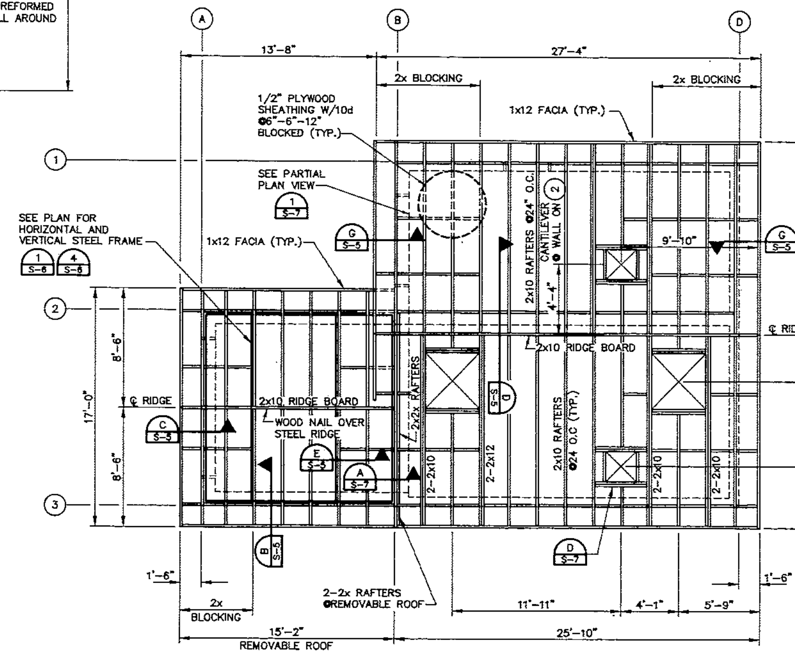
"W"	"R"	"L" MIN
LESS THAN 5'-0"	2-#5	2'-2"
5'-0" TO LESS THAN 7'-0"	2-#6	2'-6"
7'-0" TO 20'-0"	2-#8	3'-4"

NOTES:

1. 180° HOOK TYP. @BARS WHERE MIN. EMBEDMENT "L" IS NOT POSSIBLE.
2. WHERE JAMB BARS CANNOT BE FULL HEIGHT, EXTEND TO NEAREST BOND BEAM ABOVE OR BELOW OPENING.

TYPICAL REINFORCED CONCRETE BLOCK WALL OPENINGS

NTS



ROOF FRAMING PLAN

1/4"=1'-0"

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

RMS ENGINEERING & DESIGN

SCALE : AS SHOWN		DATE
DRWN. BY	GMN, MLE	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burns	3-28-97
APPROVED	[signature]	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22

FLOOR AND ROOF FRAMING PLAN

CITY OF LAKEWOOD

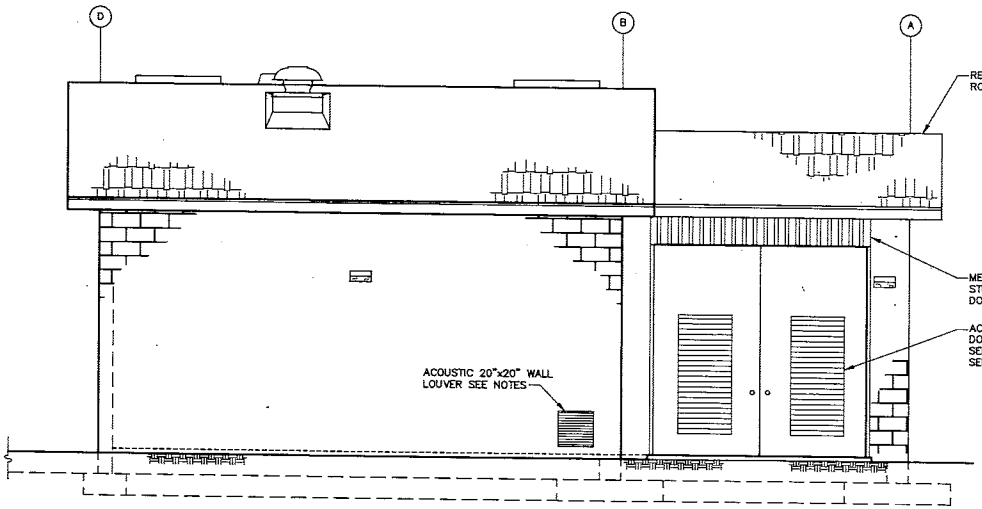
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02

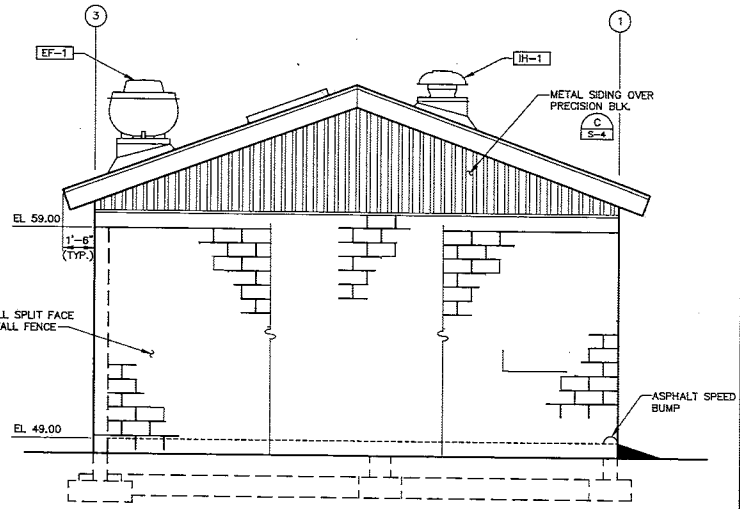
S-2

SHEET

8 OF 24



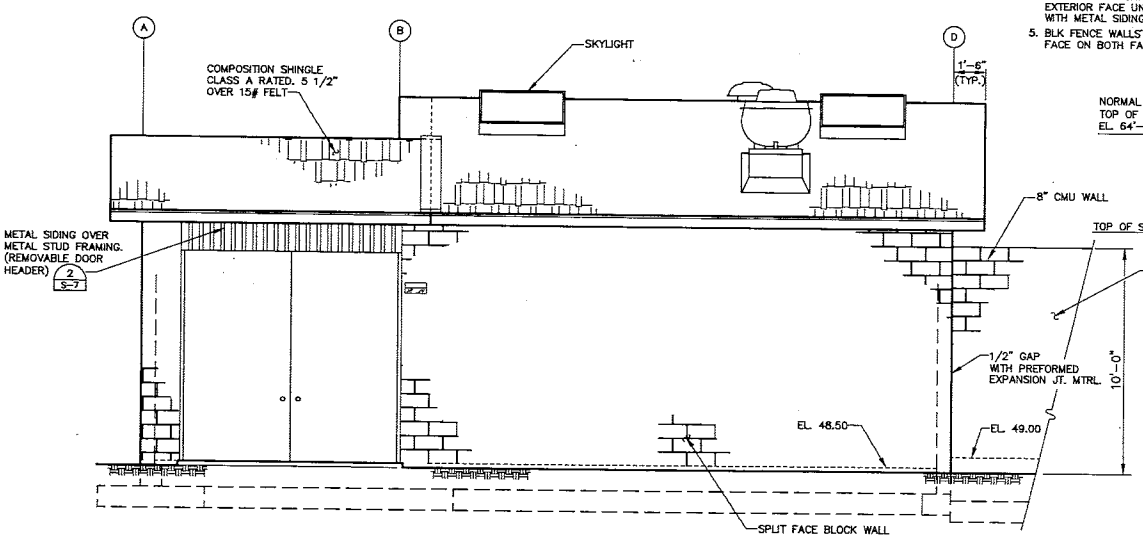
EAST ELEVATION
3/8"=1'-0"



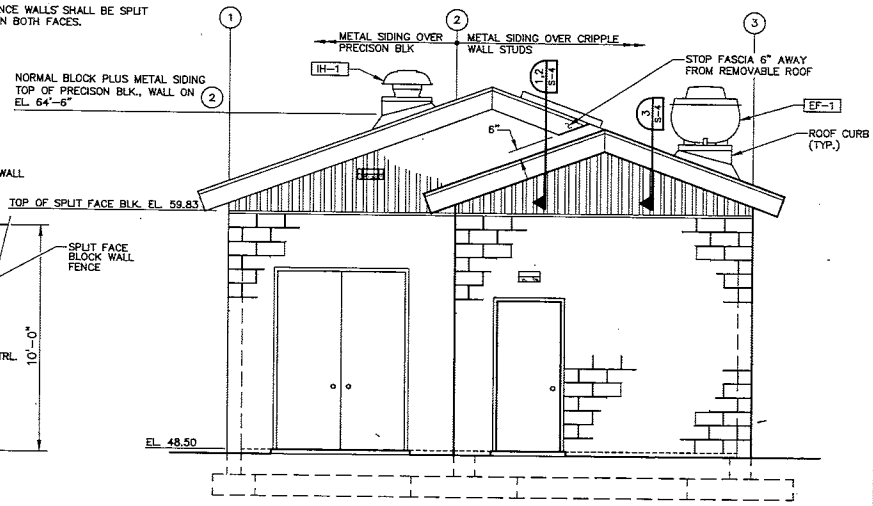
SOUTH ELEVATION
3/8"=1'-0"

GENERAL NOTES:

1. EL. = ELEVATION.
2. BLK = CMU BLOCK.
3. VERIFY DIMENSIONS WITH MECH. DWGS., SPECIFICATIONS AND EQUIPMENT FURNISHED.
4. BUILDING CMU SHALL BE SPLIT FACE BLK ON EXTERIOR FACE UNLESS COVERED WITH METAL SIDING.
5. BLK FENCE WALLS SHALL BE SPLIT FACE ON BOTH FACES.



WEST ELEVATION
3/8"=1'-0"



NORTH ELEVATION
3/8"=1'-0"

REVISIONS					APPROVALS
NO.	INITIAL	DESCRIPTION	APPROVED	DATE	

SCALE : AS SHOWN			DATE
DRWN. BY		MLE	3-27-97
CHKD. BY		RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burns		3-28-97
APPROVED			3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
BUILDING ELEVATIONS

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER	
97-02	
S-3	
SHEET	
9 OF 24	

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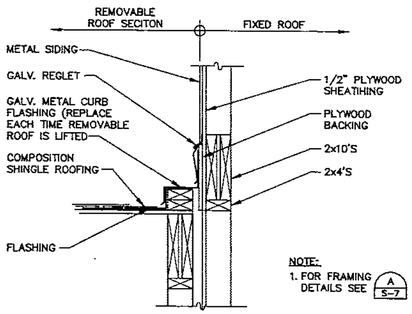
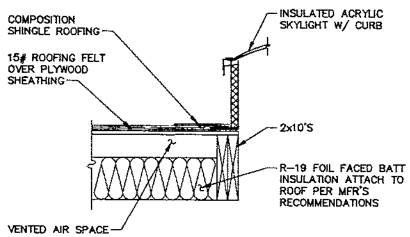
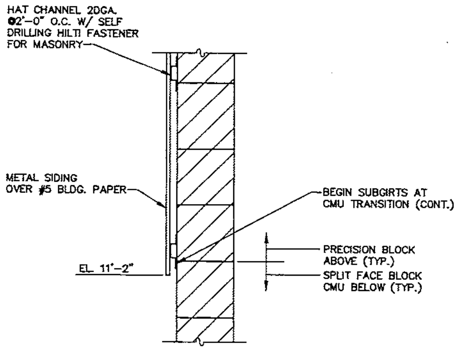


NOTE:
1. FOR FRAMING DETAILS SEE A/S-7

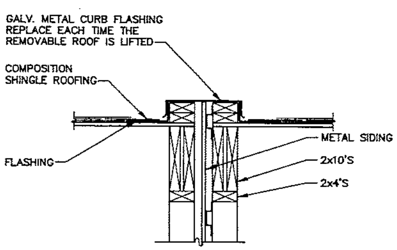
DETAIL 1/S-3
3/4"=1'-0"



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

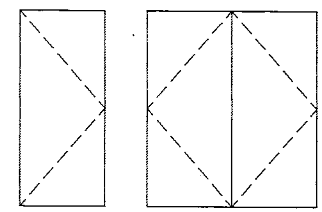


DETAIL C/S-3
NTS



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

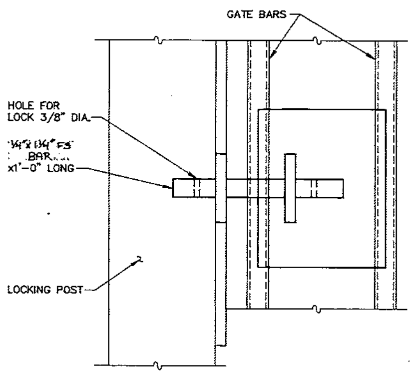
DOOR SCHEDULE													
MARK	SIZE	TYPE	DOOR			FRAME			DETAILS			HDWR.	REMARKS
			MAT'L	FINISH	SYS. #	MAT'L	FINISH	SYS. #	MAT'L	FINISH	SYS. #		
D-101	5'-8"x8'-6"	B	HM	PAINT	5	HM	PAINT	5				HW-23	3'-0" ACTIVE PANEL ON LEFT SIDE
D-102	3'-0"x7'-2"	A	HM	PAINT	5	HM	PAINT	5				HW-19	
D-103	9'-8"x9'-10"	B	HM	PAINT	5	HM	PAINT	5				HW-23	SEE NOTES 2 AND 3
D-104	9'-8"x9'-10"	B	HM	PAINT	5	HM	PAINT	5				HW-22	SEE NOTE 3



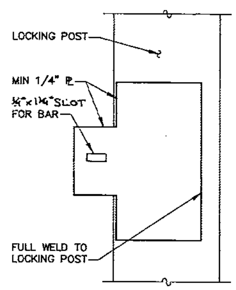
A HOLLOW METAL

B PAIR HOLLOW METAL

DOOR SCHEDULE D/-
NTS



PLAN



SECTION A-A

GATE LATCH DETAIL 4/S-10
NTS

GENERAL NOTES:
1. HM = HOLLOW METAL DOOR
2. SEE DWG S-3 FOR LOUVERS INSTALLED IN DOORS
3. ACTIVE PANEL FOR ALL PAIR DOORS SHALL BE ON THE RIGHT UNLESS NOTED OTHERWISE.

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

RMS ENGINEERING & DESIGN

SCALE : AS SHOWN		DATE
DRWN. BY	MJE GES	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burris	3-28-97
APPROVED	[signature]	3-27-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
WOOD FRAMING DETAILS

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
S-4
SHEET
10 OF 24

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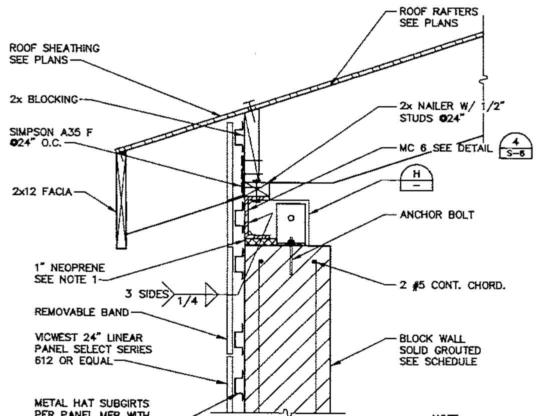
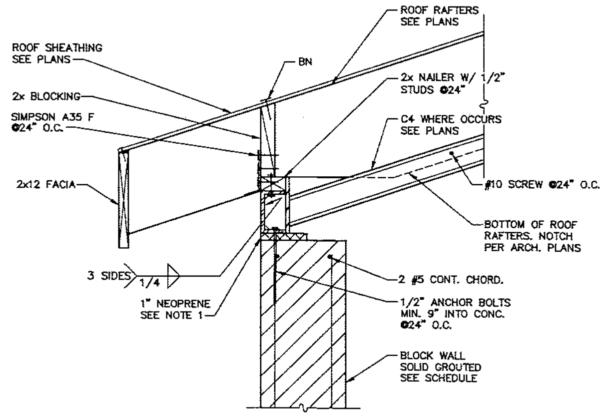
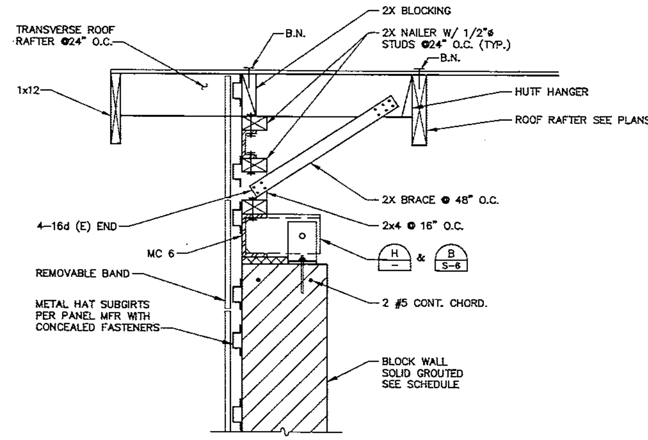


NOTE:
1. EPOXY GLUE NEOPRENE TO TOP OF WALL.

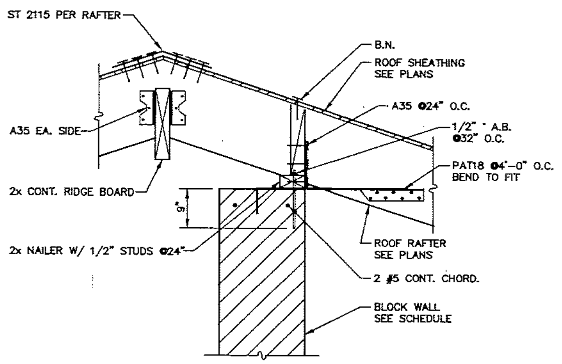
SECTION A/S-2
NTS



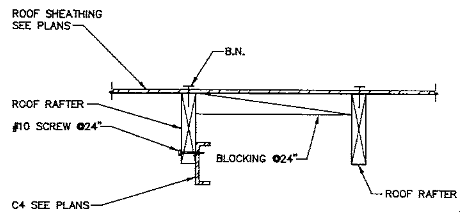
SECTION B/S-2, S-8
NTS



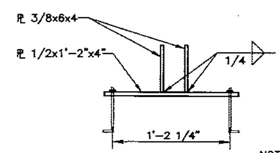
SECTION C/S-2, S-6
NTS



SECTION D/S-2
NTS

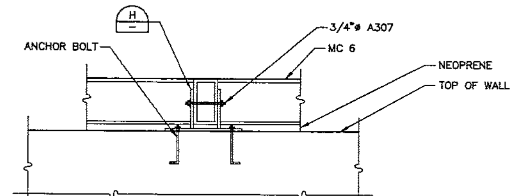


SECTION E/S-2
NTS

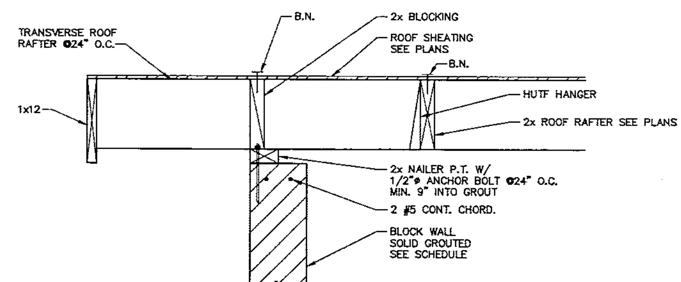


DETAIL H/S-6
NTS

NOTE:
1. FOR LOCATIONS SEE SHEET 4/S-6



SECTION F/S-6
NTS



SECTION G/S-2
NTS

GENERAL NOTES:
1. B.N. = BOUNDARY NAILING
2. (E) = EACH
3. CONT. = CONTINUOUS

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

RMS ENGINEERING & DESIGN

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burris	3-28-97
APPROVED	[signature]	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
WOOD FRAMING DETAILS

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
S-5
SHEET
11 OF 24

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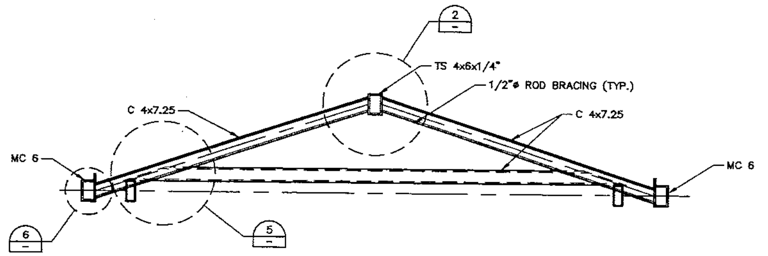
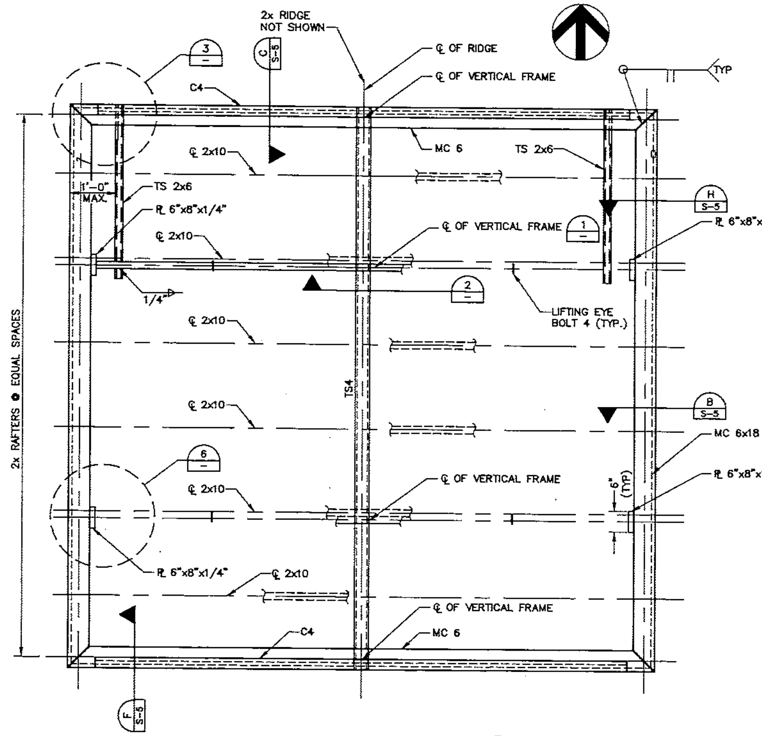
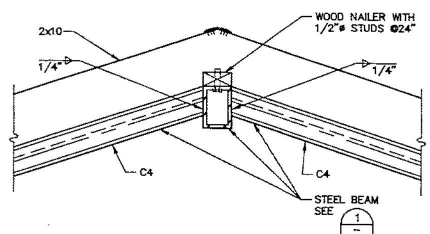


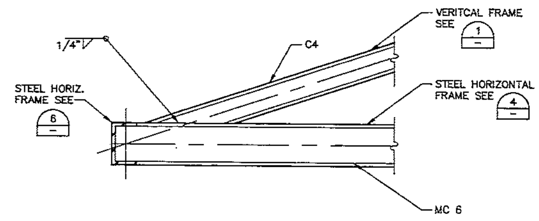
VERTICAL FRAME (1/S-2)
NTS



REMOVABLE ROOF FRAMING PLAN (4/S-2, S-5)
NTS



DETAIL (2/–)
NTS



DETAIL (3/–)
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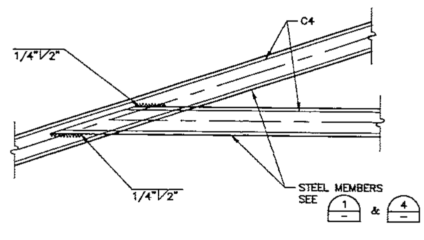
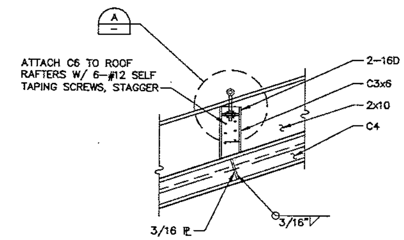
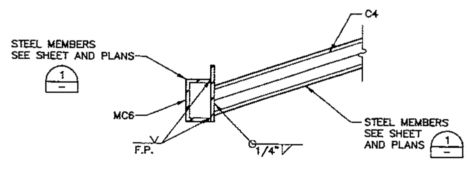


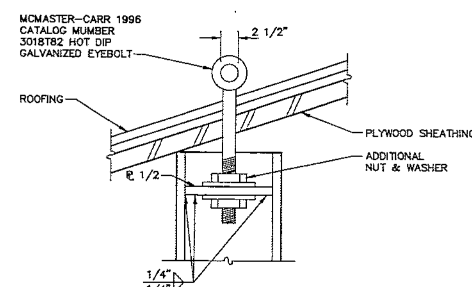
DETAIL (5/–)
NTS



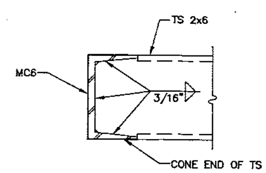
DETAIL (7/S-1)
NTS



DETAIL (6/–)
NTS



DETAIL (A/–)
NTS



DETAIL (B/S-5)
NTS

GENERAL NOTE:

1. F.P. = FULL PENETRATION

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

RMS ENGINEERING & DESIGN

REGISTERED PROFESSIONAL ENGINEER ROGER M. [illegible] No. S003596 Exp. 6/30/98 STRUCTURAL STATE OF CALIFORNIA

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burns	3-28-97
APPROVED	[signature]	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22

STEEL SECTIONS AND DETAILS

CITY OF LAKEWOOD

DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02

S-6

SHEET

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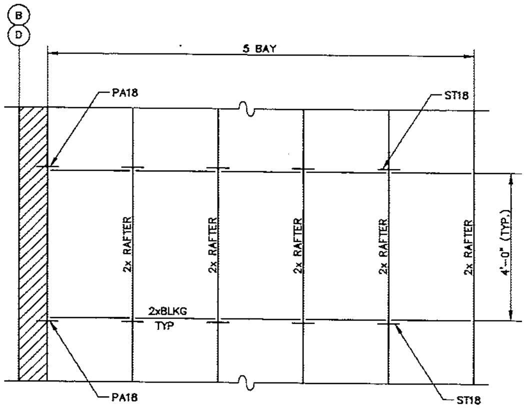
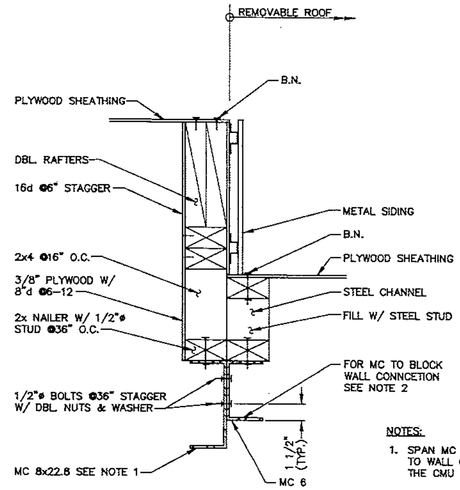
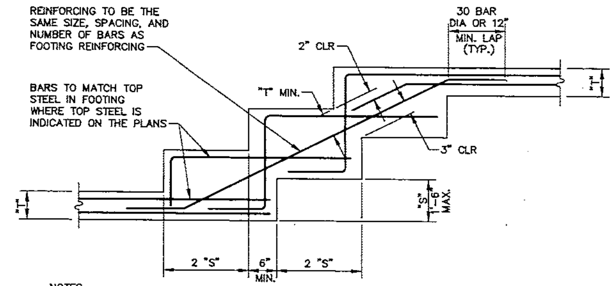


PARTIAL PLAN VIEW (1 / S-2)
NTS



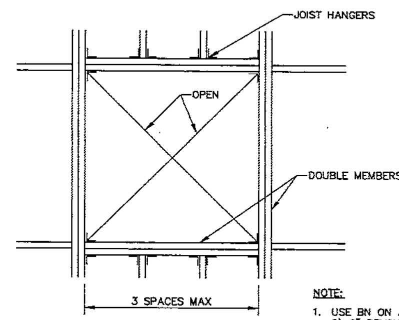
SECTION (A / S-2)
NTS

NOTES:
1. SPAN MC 8x22.8 FROM WALL ON (2) TO WALL ON (1). CONNECT MC 8 TO THE CMU WALL PER DETAIL (G / S-10)
2. FOR FLASHING DETAILS SEE (1 / S-4) SIMILAR



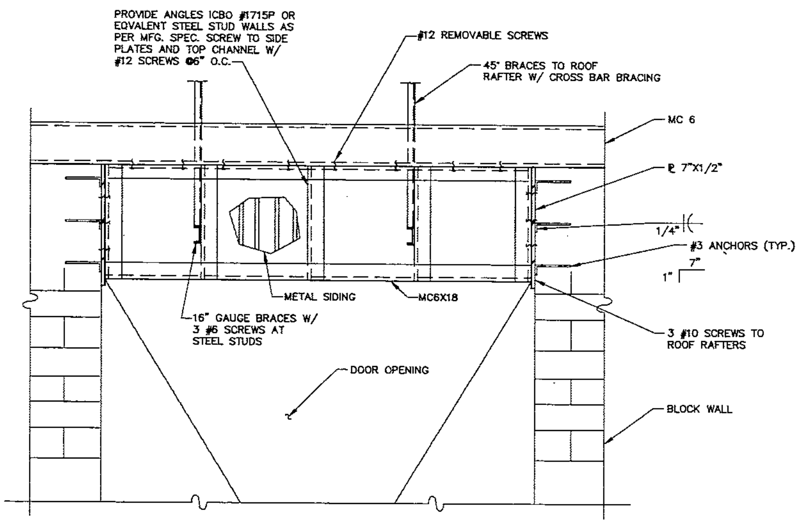
NOTES:
1. "T" = FOOTING THICKNESS.
2. SEE FOUNDATION PLANS FOR SECTIONS AND DETAILS.

TYPICAL STEPPED FOOTING SECTION (B / -)
NTS

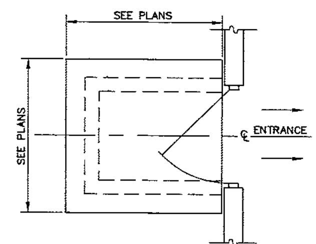


NOTE:
1. USE BN ON ALL MEMBERS FOR 2'-0" BEYOND OPENINGS.

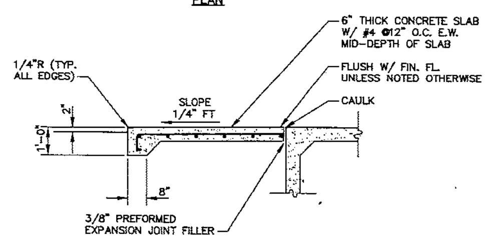
FRAMING AT OPENING (D / S-2)
NTS



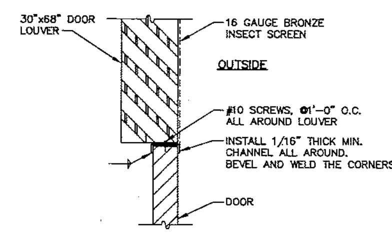
REMOVABLE DOOR HEADER DETAIL (2 / S-3)
NTS



PLAN



TYPICAL ENTRANCE PAD DETAILS (C / S-2)
NTS



DETAIL DOOR LOUVER (E / S-3)
NTS

REVISIONS				APPROVALS
NO. / INITIAL	DESCRIPTION	APPROVED	DATE	

RMS ENGINEERING & DESIGN

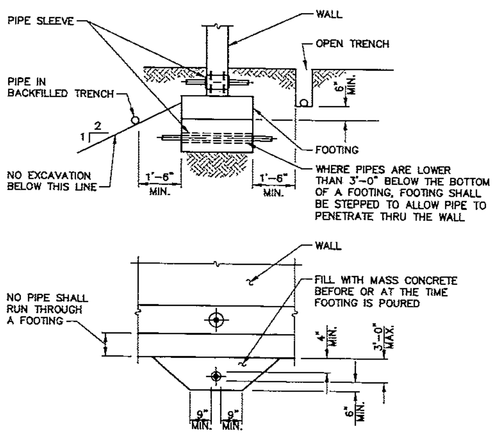
SCALE : AS SHOWN		DATE
DRWN. BY	MLE, WL	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burns	3-28-97
APPROVED	[signature]	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
MISCELLANEOUS SECTIONS AND DETAILS

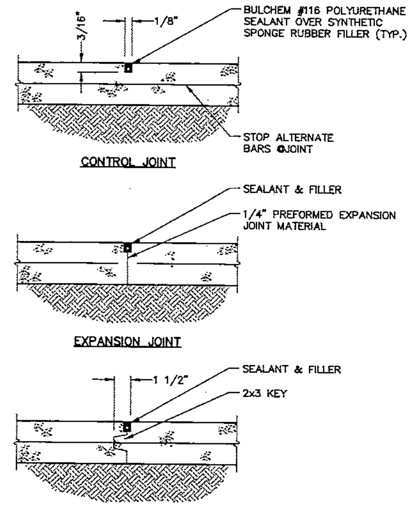
CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
S-7
SHEET
13 OF 24

P:\98134\001\81345-7.DWG 3-27-97



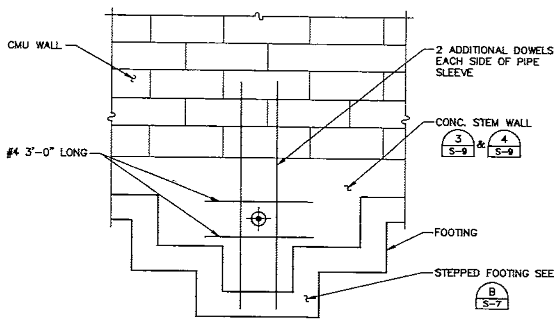
PIPE THRU OR ADJACENT TO FTG (A / S-2)
NTS



NOTES:

1. PROVIDE EXPANSION JOINT @45' O.C. MAX. EW
2. PROVIDE CONSTRUCTION OR CONTROL JOINT @15' O.C. MAX. EW
3. DETAIL APPLIES TO OUTDOOR SLABS.

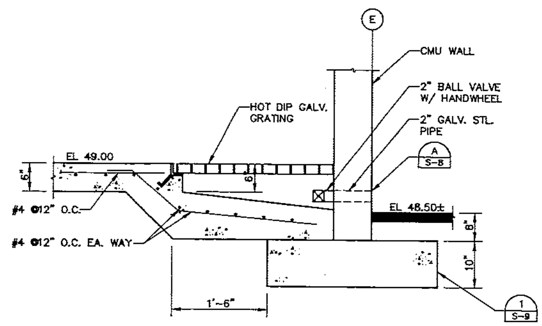
JOINTS IN REINFORCED CONCRETE PAVEMENT (B / S-2)
NTS



NOTE:

1. PENETRATION PIPE EITHER PER DETAIL (A) OR PENETRATION THRU STEM WALL PER DETAIL (F) LOWER FOOTING TO ALLOW FOR PIPE PENETRATION.

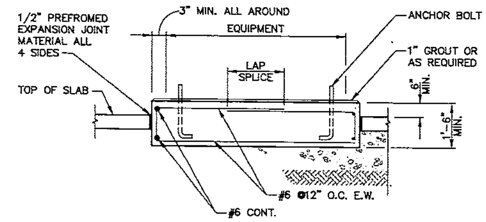
TYP DETAIL FOR PIPE PENETRATION (F / S-2)
NTS



NOTE:

1. SET PIPE TO DRAIN 2" ABOVE ASPHALT SURFACE.

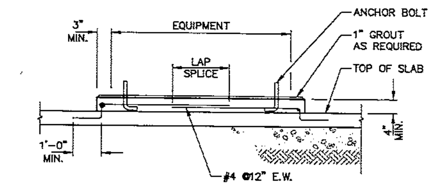
SUMP DETAIL (E / S-2)
NTS



NOTES:

1. PAD THICKNESS AS REQUIRED BY EQUIPMENT MANUFACTURE. PAD DIMENSIONS, ANCHOR BOLT SIZE AND LOCATION AND OTHER EMBEDDED STEEL SHALL CONFORM TO EQUIPMENT MANUFACTURES'S REQUIREMENTS.
2. ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE ANCHORED TO THE EQUIPMENT PAD, AND ANCHORAGES SHALL MEET THE REQUIREMENTS OF SEISMIC ZONE 4, AND SHALL WITHSTAND WIND UPLIFT DUE TO 90 MPH WIND, EXPOSURE C, PER 94 UBC.

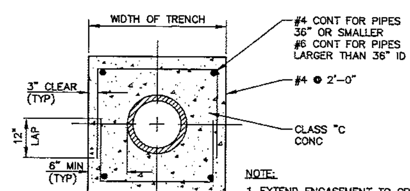
ISOLATED EQUIPMENT PAD (C / S-2)
NTS



NOTES:

1. PAD DIMENSIONS, ANCHOR BOLT SIZE AND LOCATION AND OTHER EMBEDDED STEEL SHALL CONFORM TO EQUIPMENT MANUFACTURES'S REQUIREMENTS.
2. ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE ANCHORED TO THE EQUIPMENT PAD, AND ANCHORAGES SHALL MEET THE REQUIREMENTS OF SEISMIC ZONE 4, AND SHALL WITHSTAND WIND UPLIFT DUE TO 90 MPH WIND, EXPOSURE C, PER 94 UBC.

CONCRETE EQUIPMENT PAD (D / S-2)
NTS



NOTE:

1. EXTEND ENCASEMENT TO CROSS A 45° PLANE FROM BOTTOM EDGE OF FOOTING EACH DIRECTION

CONCRETE ENCASEMENT OF PIPE (G / S-2)
NTS

REVISIONS

NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burns	3-28-97
APPROVED	[signature]	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
CONCRETE SECTIONS AND DETAILS

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
S-8
SHEET
14 OF 24

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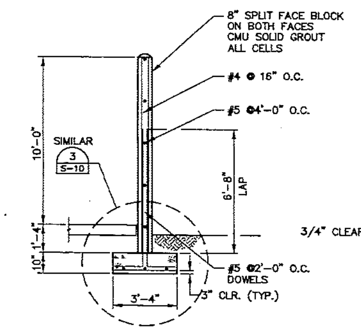
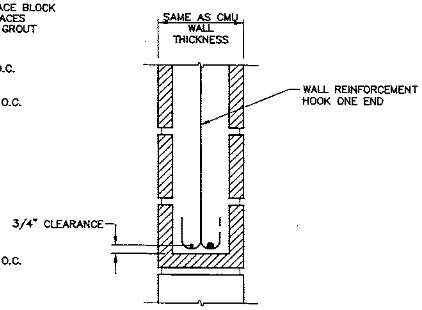
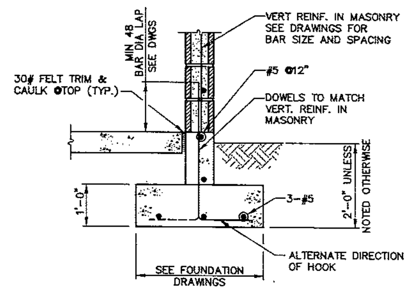


10' HIGH CMU CANTILEVER WALL (1 / S-2)
NTS

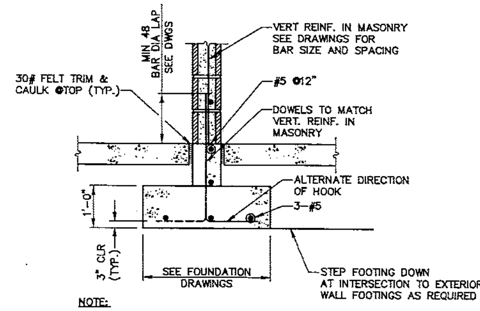


CMU LINTEL AT WALL OPENINGS (2 / S-2)
NTS



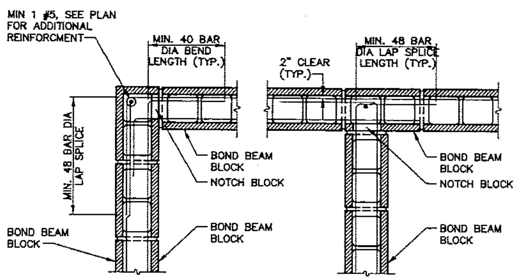
NOTE:
1. ℄ WALL & FOOTINGS ARE THE SAME, UNLESS NOTES OTHERWISE.

EXTERIOR FOUNDATION (3 / S-2)
NTS

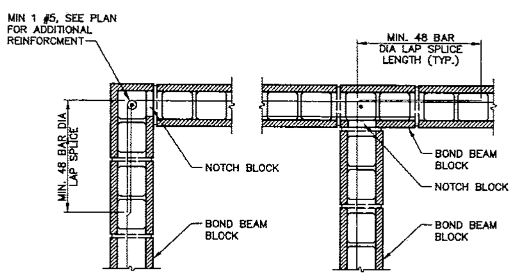


NOTE:
1. ℄ WALL & FOOTINGS ARE THE SAME, UNLESS NOTES OTHERWISE.

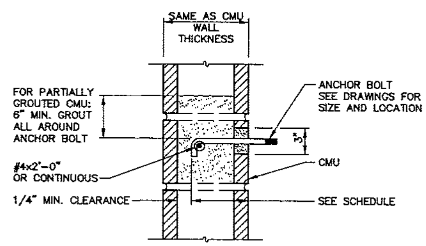
INTERIOR FOUNDATION (4 / S-2)
NTS



MASONRY WALL - REINFORCING AT BOND BEAM (6 / S-2)
NTS



MASONRY WALL - REINFORCING AT BOND BEAM (7 / S-2)
NTS



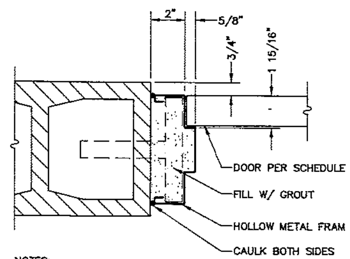
NOTES:

1. SET ANCHOR BOLTS WITH TEMPLATE.
2. CUT BLOCK WEB AS REQUIRED TO ALLOW PLACEMENT OF ANCHOR BOLT WITH 1/2" MINIMUN OF GROUT BETWEEN ANCHOR BOLT AND BLOCK.
3. ADD 2" OF EMBEDMENT FOR AB LOCATED IN THE TOP OF COLUMS.

MINIMUM EMBEDMENT FOR ALL ANCHOR BOLTS IN MASONRY

BLOCK SIZE	BOLT SIZE	EMBEDMENT UNO
8"	1/2" DIA.	5"
8"	5/8" DIA.	5"
12"	3/4" DIA.	6"
12"	7/8" DIA.	7"

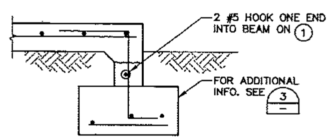
ANCHOR BOLT EMBEDMENT (8 / S-2)
NTS



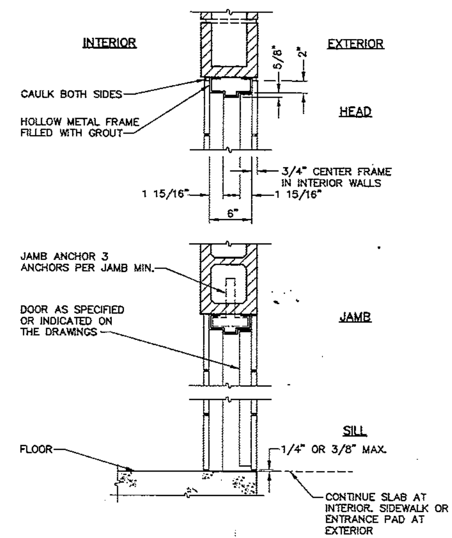
NOTES:

1. FRAME DEPTH SHALL BE 9"± UNLESS OTHERWISE SCHEDULED.
2. PROVIDE MIN. 3 ANCHORS PER JAMB AT MASONRY AND 4 ANCHORS PER JAMB AT STUD OR CONCRETE CONSTRUCTION.
3. PROVIDE BACKBEND DIM. AS REQUIRED (1/2"±).

INTERIOR DOOR JAMB DETAIL (9 / S-2)
NTS



SECTION (11 / S-2)
NTS



DOOR IN MASONRY WALL (10 / S-2)
NTS

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

RMS ENGINEERING & DESIGN

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E Bouvia	3-28-97
APPROVED	[signature]	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
MASONRY AND MISCELLANEOUS CONCRETE DETAILS

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
S-9
SHEET
15 OF 24

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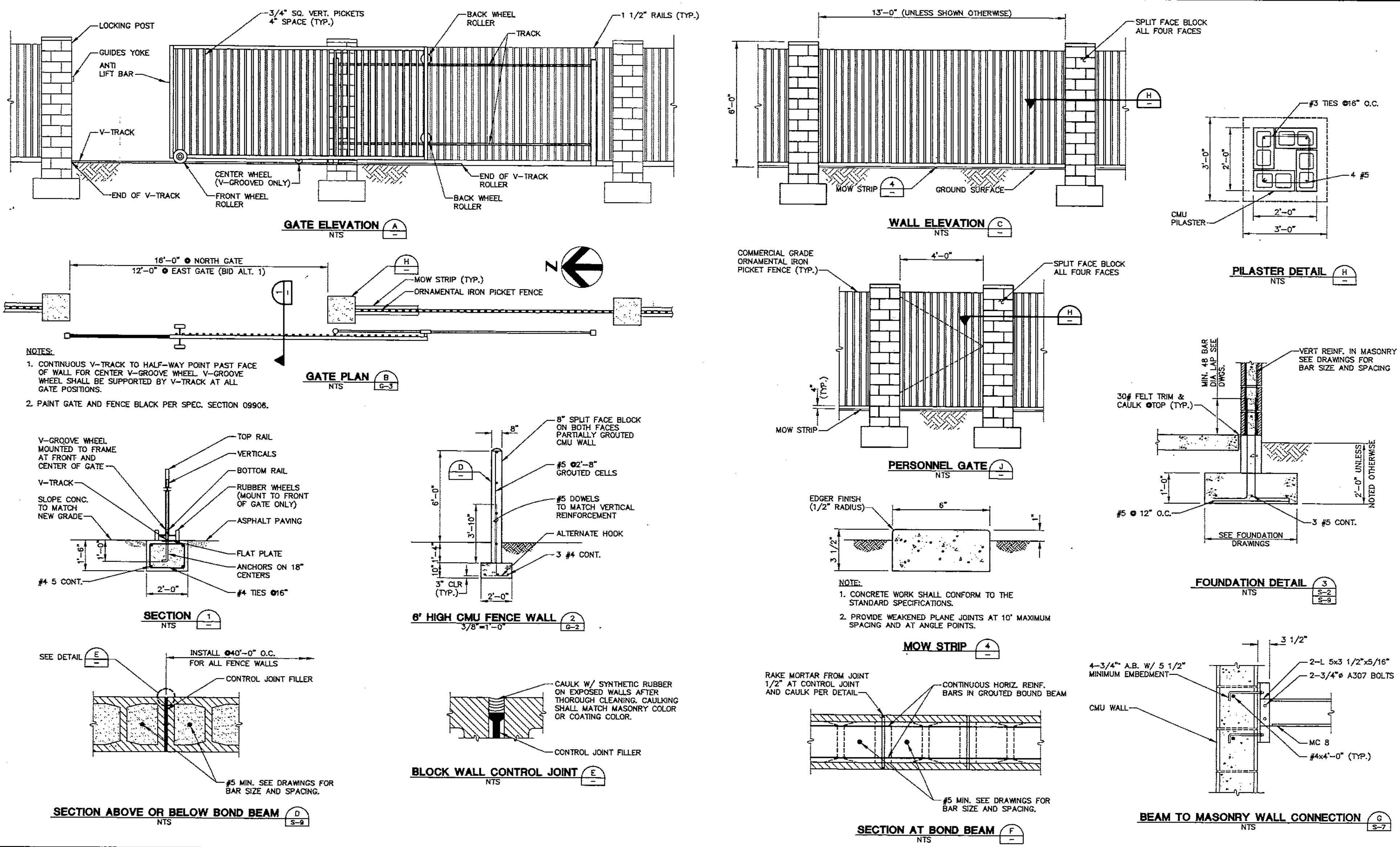

NOTES:

1. CONTINUOUS V-TRACK TO HALF-WAY POINT PAST FACE OF WALL FOR CENTER V-GROOVE WHEEL. V-GROOVE WHEEL SHALL BE SUPPORTED BY V-TRACK AT ALL GATE POSITIONS.
2. PAINT GATE AND FENCE BLACK PER SPEC. SECTION 09906.

NOTE:

1. CONCRETE WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS.
2. PROVIDE WEAKENED PLANE JOINTS AT 10' MAXIMUM SPACING AND AT ANGLE POINTS.

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

RMS ENGINEERING & DESIGN

REGISTERED PROFESSIONAL ENGINEER · No. S005566 · Exp. 6/30/98 · STRUCTURAL · STATE OF CALIFORNIA

SCALE : AS SHOWN		DATE
DRWN. BY	MLE, GMN	3-27-97
CHKD. BY	RMS, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Bruce E. Burris	3-28-97
APPROVED	[signature]	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22

FENCE, GATE, AND MISCELLANEOUS DETAILS

CITY OF LAKEWOOD

DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02

S-10

SHEET 16 OF 24

P:\08134\001\81345-5.DWG 3-27-97

CONTROL DEVICE SYMBOLS

- LS — FLOAT SWITCH, CLOSE ON RISING LEVEL
- LS — FLOAT SWITCH, CLOSE ON FALLING LEVEL
- PS — PRESSURE SWITCH, CLOSE ON INCREASING PRESSURE
- PS — PRESSURE SWITCH, CLOSE ON DECREASING PRESSURE
- TS — TEMPERATURE SWITCH, CLOSE ON RISING TEMPERATURE
- TS — TEMPERATURE SWITCH, OPEN ON RISING TEMPERATURE
- CR1 — CONTROL RELAY COIL, "CR1"
- CR1–ACR1–B — AUXILIARY CONTACTS A + B ON CR1, NORMALLY OPEN & NORMALLY CLOSED
- M1 — MOTOR STARTER M1 CONTACTOR COIL
- M1–A — AUXILIARY CONTACT A ON M1
- OL — THERMAL OVERLOAD AUXILIARY CONTACT
- R — INDICATING LIGHT, PUSH TO TEST COLOR AS INDICATED. G = GREEN R = RED A = AMBER Y = YELLOW
- PUSHBUTTONS, NORMALLY OPEN & NORMALLY CLOSED
- FUSE W/BLOWN FUSE INDICATING LIGHT
- 3–WAY SELECTOR SWITCH
- H O A — 3–WAY SELECTOR SWITCH
- OPEN CLOSE — 3–WAY SELECTOR SWITCH, SPRING RETURN TO CENTER
- CIRCUIT BREAKER
- THERMAL OVERLOAD
- TRX TDE 0–60 SEC — TIME DELAY RELAY, TRX, TIMING RANGE AS NOTED
  - INT = INTERVAL DELAY
  - TDE = TIME DELAY ON ENERGIZATION
  - TDD = TIME DELAY ON DEENERGIZATION
- TRX–A — AUXILIARY CONTACT ON TRX, NORMALLY OPEN, CLOSE AFTER TIME DELAY ON ENERGIZING TRX
- TRX–A — AUXILIARY CONTACT ON TRX, NORMALLY CLOSED, OPEN AFTER TIME DELAY ON ENERGIZING TRX
- RHEOSTAT
- TRX–A — AUXILIARY CONTACT ON TRX, NORMALLY OPEN, OPEN AFTER TIME DELAY ON DE–ENERGIZING TRX
- TRX–A — AUXILIARY CONTACT ON TRX, NORMALLY CLOSED, CLOSE AFTER TIME DELAY ON DE–ENERGIZING TRX
- HORN
- ETM — ELAPSED TIME METER
- BATTERY
- 10 — 3 PHASE MOTOR, HORSEPOWER AS SHOWN
- RTU INPUT AUTO — PROGRAMMABLE CONTROLLER INPUT, "AUTO" STATUS
- RTU OUTPUT RUN — PROGRAMMABLE CONTROLLER OUTPUT, "RUN" COMMAND
- 480–120/240V CPT — CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGES AS NOTED, SIZE AS REQUIRED UNLESS NOTED
- GROUND
- ELECTRICAL CONNECTION
- GROUND ROD
- I — INTERLOCK AS DEFINED IN THE CONTROL DIAGRAMS
- CD XX — CONTROL DIAGRAM XX
- SV — SOLENOID VALVE

SINGLE-LINE DIAGRAM SYMBOLS

- SURGE/LIGHTNING ARRESTOR
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- DRAW–OUT CONNECTION
- REV CD XX — COMBINATION MAGNETIC STARTER W/THERMAL OVERLOADS, NUMBER INDICATES NEMA SIZE
  - SUBSCRIPT:
  - NONE = NONREVERSING
  - REV = REVERSING
  - 2S = TWO SPEED
  - RV = REDUCED VOLTAGE START
  - ATRV = AUTOTRANSFORMER REDUCED VOLTAGE START
  - SSRV = SOLID STATE REDUCED VOLTAGE
  - CD XX = CONTROL DIAGRAM
- 20 — CIRCUIT BREAKER, NUMBER OF POLES AND TRIP AMPERAGE INDICATED
- FUSIBLE SWITCH
- FUSE
- 5 — MOTOR WITH ASSUMED HORSEPOWER, ACTUAL HORSEPOWER MAY DIFFER
- GENERATOR
- 7.5 — NON–MOTOR LOAD WITH ASSUMED KW, ACTUAL KW MAY DIFFER
- CS — AUXILIARY OR CONTROL DEVICE (CONTROL STATION SHOWN). SOME AUXILIARY DEVICES MAY NOT BE SHOWN
- VFD — VARIABLE FREQUENCY DRIVE
- THERMAL OVERLOAD
- CONTACTS, NORMALLY OPEN AND NORMALLY CLOSED
- CRANE — SPECIAL CONNECTION, USE SHOWN
- TRANSFER SWITCH
  - ATS = AUTOMATIC
  - MTS = MANUAL
- 50A — 480V, 3ø, RECEPTACLES, RATING SHOWN
- 120/240V 480V 7.5KVA — TRANSFORMER WITH PRIMARY VOLTAGE, SECONDARY VOLTAGE, AND KVA RATING SHOWN
- AS — INSTRUMENT SWITCH
  - SUBSCRIPT:
  - AS = AMMETER SWITCH
  - VS = VOLTMETER SWITCH
  - WS = WATTMETER SWITCH
  - PM = PHASE MONITOR
- M — METERING, PER UTILITY REQUIREMENTS
- VM — SWITCHBOARD INSTRUMENT, SEE ABBREVIATIONS FOR TYPE
- XX — MCC SPACE XX
- K — KEY INTERLOCK, KIRK OR EQUAL
- INDICATES SWITCHGEAR OR EQUIPMENT GROUP BOUNDARIES
- SEPARABLE INSULATED TERMINATOR (DEADBREAK ELBOW)

SINGLE-LINE DIAGRAM SYMBOLS

- CEILING MOUNTED LUMINAIRE (HID OR INCAN)
- WALL MOUNTED LUMINAIRE (HID OR INCAN)
- CEILING MOUNTED FLUORESCENT LIGHT FIXTURE
- WALL MOUNTED FLUORESCENT LIGHT FIXTURE
- EMERGENCY LIGHT SEE SPECIFICATIONS
- EMERGENCY LIGHT, REMOTE MOUNTED HEAD
- EXIT LIGHT
- POLE MOUNTED LUMINAIRE (SINGLE)
- POLE MOUNTED LUMINAIRE (DOUBLE)

X = FIXTURE TYPE, SEE FIXTURE SCHEDULE
Y = CIRCUIT NUMBER FROM PANELBOARD
Z = CONTROLLING SWITCH

- DOUBLE DUPLEX RECEPTACLE
- 125V, 15A DUPLEX RECEPTACLE, NEMA 5–15R
  - SUBSCRIPTS:
  - A = 125V, 20A DUPLEX RECEPTACLE, NEMA 5–20R
  - B = 250V, 30A SINGLE RECEPTACLE, NEMA 6–30R
  - GFI = GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
- SWITCH
  - Z = CONTROLLED FIXTURE
  - SUBSCRIPTS(W):
  - NONE = SINGLE–POLE SWITCH
  - 2 = DOUBLE–POLE SWITCH (DPST)
  - 3 = THREE–WAY SWITCH (SPCT)
  - 4 = FOUR–WAY SWITCH (DPDT)
  - M = THERMAL ELEMENT SWITCH FOR FRACTIONAL HORSEPOWER MOTOR
  - P = FLUSH SWITCH WITH PILOT LIGHT IN HANDLE
  - K = KEY–OPERATED SWITCH
  - D = DIMMER SWITCH
  - EP = EXPLOSION PROOF
  - WP = WEATHERPROOF
- DS — DOOR SWITCH
- PC — PHOTO–ELECTRIC SWITCH FOR EXTERIOR LIGHTING
- SPECIAL PURPOSE RECEPTACLE
  - SUBSCRIPTS:
  - A = 20A, 250V, 3ø, SINGLE RECEPTACLE, NEMA 15–20R
  - B = 30A, 250V, 3ø, SINGLE RECEPTACLE, NEMA 15–30R
  - C = 30A, 250V, 1ø, SINGLE RECEPTACLE, TWIST–LOCK TYPE, NEMA L6–30R
  - D = 50A, 250V, 1ø, SINGLE RECEPTACLE, NEMA 14–50R
  - E = 50A, 250V, 1ø, SINGLE RECEPTACLE, NEMA 6–50R
  - F = 30A, 480V, SINGLE RECEPTACLE, TWIST LOCK, TYPE L16–30R
- C — CLOCK HANGER RECEPTACLE, 15A, 125V, MOUNT AT 8'–0"
- TELEPHONE OR COMPUTER (C) JACK
- TELEPHONE JACK IN PEDESTAL FLOOR FITTING
- LIGHTING OR POWER PANEL

POWER PLAN DEVICES

- WIRING TURNED DOWN
- WIRING TURNED UP
- WIRING HOME RUN
- WIRING RUN, 3/4"C, 2#12 AND 1#12 GND UNLESS OTHERWISE INDICATED
- WIRING RUN, 3/4" CONDUIT WITH NUMBER OF #12 WIRES SHOWN, IF OVER 3 (GROUND WIRE IS NOT INDICATED BUT REQUIRED)
- STUBBED AND CAPPED CONDUIT
- JB OR J — JUNCTION BOX
- J — LARGE JUNCTION BOX
- DS NF — DISCONNECT SWITCH, NF = NONFUSED
- MANUAL PULLSTATION
- MINIHORN
- CS — PEDESTAL MOUNTED DEVICE (SEE CONTROL DIAGRAMS FOR REQUIREMENTS)
- GROUND ROD CONNECTION TO GROUND GRID
- #2/0 BARE COPPER TAIL FROM GROUND GRID, TO EQUIPMENT
- WT001 — CABLE NUMBER. REFER TO CABLE TABULATION FOR CABLE DATA.
- ELECTRICAL MANHOLE
- ELECTRICAL PULLBOX. SIZE AS INDICATED
- FIT — INSTRUMENTATION, SEE ABBREVIATIONS FOR TYPE
- COMBINATION MAGNETIC MOTOR STARTER
- PAD MOUNTED TRANSFORMER
- T — THERMOSTAT – SEE SPECS OR CONTROL DESCRIPTION
- X — CONDUIT NUMBER X, SEE SCHEDULE
- SA — SMOKE DETECTOR WITH AUXILIARY CONTACT
- MOTOR
- CONTROL PANEL SUPPLIED WITH EQUIPMENT
- H — HEATER
- UNDERGROUND ELECTRICAL CONDUIT/DUCT BANK
- GROUND GRID
- —E— EXISTING UNDERGROUND ELECTRICAL DUCT BANK/CONDUIT
- —OE— OVERHEAD ELECTRICAL
- CONDUIT SEAL, HAZARDOUS AREAS
- EXPOSED GROUND GRID CONDUCTOR
- EMBEDDED OR DIRECT BURIED GROUND GRID CONDUCTOR
- SPLICE IN GROUND GRID CONDUCTOR

NOTES

1. DO NOT SCALE EQUIPMENT LOCATIONS FROM SITE ELECTRICAL DRAWINGS. USE INDICATED DIMENSIONS ONLY. REFER TO CIVIL AND MECHANICAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF PIPING AND STRUCTURES.
2. MANHOLE AND DUCTBANK LOCATIONS ARE APPROXIMATE UNLESS INDICATED OTHERWISE. ADJUST LOCATIONS AND ROUTING AS REQUIRED TO AVOID INTERFERENCE WITH OTHER WORK.
3. MAINTAIN 4 FT. 0 IN. MINIMUM SPACING BETWEEN EDGES OF CONCRETE ENVELOPES OF ADJACENT DUCTBANKS. SPACING MAY BE REDUCED AS REQUIRED AT ENTRY TO MANHOLE OR EQUIPMENT.
4. INSTALL DUCTBANKS WITH UNIFORM SLOPE BETWEEN MANHOLES UNLESS INDICATED OTHERWISE. INSTALL ALL CONDUITS AND DUCTBANKS INTO STRUCTURES OR EQUIPMENT WITH SLOPE BACK TO MANHOLE.
5. REFER TO DRAWING G–4 FOR ABBREVIATIONS.
6. THIS SHEET IS A STANDARD ELECTRICAL SYMBOLS SHEET. ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT.

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

HDR Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER WILLIAM F. EYTLICH NO. 7625 EXP. 7/30/98 STATE OF CALIFORNIA

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3–27–97
CHKD. BY	VF, BEB	3–27–97
RECOMMENDED FOR APPROVAL	Victoria [signature]	3-28-97
APPROVED	Bruce E. [signature]	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
ELECTRICAL SYMBOLS AND LEGEND

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97–02

E-1

SHEET 17 OF 24

P:\08134\001\8134E-1.DWG 3-27-97

@	AT
A	AMBER INDICATING LIGHT OR AUTOMATIC
A OR AMP	AMPERE
AC	ALTERNATING CURRENT
AE	ANALYSIS ELEMENT
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	ANALYSIS INDICATING CONTROLLER
AICS	AMPERES INTERRUPTING SYMMETRICAL
AM	AMMETER
AMB	AMBIENT
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AS	AMMETER SWITCH
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
B OR BATT	BATTERY
BKR	BREAKER
BLR	BLOWER
C	CONDUIT
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CD	CONTROL DIAGRAM
CIRC	CIRCULAR
CKT	CIRCUIT
CMP	COMPRESSOR
CO	CONDUIT ONLY WITH PULL WIRE
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL STATION OR CONTROL SWITCH
CT	CURRENT TRANSFORMER
CU	COPPER
CUH	CABINET UNIT HEATER
DC	DIRECT CURRENT
DIAG	DIAGRAM
DIM	DIMENSION
DISC	DISCONNECT
DISTRB	DISTRIBUTION
DM	DAMPER MOTOR
D	DAMPER
DN	DOWN
DPP	DISTRIBUTION POWER PANEL
DPDT	DOUBLE-POLE DOUBLE THROW
DPST	DOUBLE-POLE SINGLE THROW
DRS	DOOR SWITCH, MAGNETIC
DS	DISCONNECT SWITCH
DT	DUSTTIGHT
DWG	DRAWING
E OR HE	HEAT EXCHANGER
EF	EXHAUST FAN
EHH	ELECTRICAL HAND HOLE
ELEC	ELECTRIC(AL)
EMER	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENG	ENGINE
ENGRZ	ENERGIZE
EOD	ELECTRIC OPERATED DAMPER
EP	EMERGENCY PANEL
EP OR XP	EXPLOSION PROOF
EQPT	EQUIPMENT
ERV	EXHAUST ROOF VENT
ES	EMERGENCY STOP
ETM	ELAPSE TIME METER
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EXP	EXPOSED

FA	FIRE ALARM PULL STATION
FACP	FIRE ALARM CONTROL PANEL
FDR	FEEDER
FE	FLOW ELEMENT
FI	FLOW INDICATOR
FIG	FIGURE
FIT	FLOW INDICATING TRANSMITTER
FIP	FILTER INFLUENT PUMP
FLD	FIELD
FQ	FLOW INTEGRATOR
FR	FLOW RECORDER
FS	FLOW SWITCH
FT	FOOT OR FLOW TRANSMITTER
FU	FUSE
FUT	FUTURE
FV-2 SPEED	FULL VOLTAGE, 2 SPEED STARTER
FVNR	FULL VOLTAGE, NON-REVERSING
FVR	FULL VOLTAGE, REVERSING
GA	GAUGE
GF	GROUND FAULT
GFI	GROUND FAULT INTERRUPTER
G	GROUND
GND	GROUND
GOV	GOVERNOR
GPM	GALLONS PER MINUTE
GRN	GREEN INDICATING LIGHT
G ROD	GROUND ROD
GUH	GAS UNIT HEATER
H OR HGT	HEIGHT OR HAND
HI	HIGH
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO SWITCH
HP	HIGH PRESSURE OR HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HRLP	HEAT RESERVOIR LOOP PUMP
HTR	HEATER
HTRC	HEAT TRACING
HZ	HERTZ
I & C	INSTRUMENTATION & CONTROL
IA	INSTRUMENT AIR
IC	INSTANTANEOUS CLOSING
IL	INDICATING LIGHT
IN	INCH
INCAND	INCANDESCENT
INSTR	INSTRUMENT(ATION)
INSUL	INSULATION
I/O	INPUT/OUTPUT
IPP	INSTRUMENTATION POWER PANEL
IRP	IRRIGATION PUMP
J OR JCT	JUNCTION OR JOG
JB	JUNCTION BOX
K	KEY OPERATED
KC	TIME CONTROL
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KVAR	KILOVAR
KW	KILOWATT
KWH	KILOWATT HOUR
L	LOW
LAH	LEVEL ALARM HIGH
LAL	LEVEL ALARM LOW
LC	LIGHTING CONTACTOR OR LOAD CENTER
LCL	LOCAL
LCTN	LOCATION
LD	LOUVER DAMPER
LE	LEVEL SENSING ELEMENT
LF	LINEAR FOOT
LH	LEFT HAND
LI	LEVEL INDICATOR
LIC	LEVEL INDICATING CONTROLLER
LIM	LIMIT

LIM SW	LIMIT SWITCH
LIT	LEVEL INDICATING TRANSMITTER
LL	LOW LEVEL OR LOW LOW
LOC	LOCATION
LOS	LOCKOUT SWITCH
LP OR LPNL	LIGHTING PANEL
LS	LEVEL SWITCH
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
LT	LEVEL TRANSMITTER OR LIGHT
LTNG	LIGHTNING
LTD	LIMITED
LTG	LIGHTING
LV	LOW VOLTAGE
M OR MOT	MOTOR
M/A	MANUAL/AUTO
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MG	MOTOR GENERATOR
MIX	MIXER
MH	MANHOLE
MH	METAL HALIDE
MOD	MOTOR OPERATED DAMPER
MOT	MOTOR
MOV	MOTOR OPERATED VALVE
MS	MANUAL MOTOR STARTER
MSP	MOTOR STARTER PANEL
MT	MOUNT
MTD	MOUNTED
MTG	MOUNTING
MTR	METER
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE / MERCURY VAPOR
MW	MEGA WATT
MX-A	MOTOR STARTER AUXILIARY RELAY
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEG (-)	NEGATIVE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSN
NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSN
NGT	NEUTRAL GROUNDING TRANSFORMER
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NORM	NORMAL
NPP	NON POTABLE PUMP
NTS	NOT TO SCALE
O	OPEN OR OFF
OL	OVERLOAD
OUT	OUTLET
2P	2 POLE
PB	PUSH BUTTON OR PULLBOX
PC	PERSONAL COMPUTER, PHOTOELECTRIC CELL
PCV	POSITION CONTROL VALVE
PF	POWER FACTOR
PFM	POWER FACTOR METER
PH OR Ø	PHASE
PL	PILOT LIGHT
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNEU	PNEUMATIC
PNL	PANEL
POS	POSITIVE
PP	POWER POLE
PR	PAIR
PROT	PROTECTIVE
PS	PRESSURE SWITCH OR PULL SWITCH
PSH	PRESSURE SWITCH HIGH
PSHA	PSH ALARM
PSHL	PS HIGH/LOW
PSLA	PSL ALARM
PSL	PRESSURE SWITCH LOW
PT	PRESSURE TRANSMITTER/POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE CONDUIT
PVC-RGS	PVC COATED RIGID GALV STEEL CONDUIT
PW	PULL WIRE
PWR	POWER

Q	QUANTITY
R	RED INDICATING LIGHT, RED, REVERSE
RCPT/RECEPT	RECEPTACLE
RCV	RETURN CONTROL VALVE
RGS	RIGID GALVANIZED STEEL CONDUIT
RM	ROOM
RMT	REMOTE
RPM	REVOLUTIONS PER MINUTE
RTAC	ROOF TOP AIR CONDITIONER
RTD	RESISTANCE TEMPERATURE DETECTOR
RTM	RUNNING TIME METER
RTN	RETURN
RTU	REMOTE TERMINAL UNIT
RV	REDUCED VOLTAGE
RVNR	REDUCED VOLTAGE NONREVERSING
S	START CONTACTOR, SMOKE DETECTOR
SCHED	SCHEDULE
SCR	SILICON CONTROLLED RECTIFIER
SEC	SECONDARY
SP	SINGLE POLE
SPEC	SPECIFICATION
SPKR	SPEAKER
SPST	SINGLE-POLE SINGLE THROW
SRP	SURGE BASIN DISCHARGE PUMP
SQ FT	SQUARE FEET
S/S	START/STOP
SS	SELECTOR SWITCH
STD	STANDARD
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SYM	SYMBOL / SYMMETRICAL
T	TRANSFORMER OR THERMOSTAT
TACH	TACHOMETER
TB	TERMINAL BOX
TC	THERMOCOUPLE OR TIMED CLOSING
TCV	TEMPERATURE CONTROL VALVE
TDE	TIME DELAY ON ENERGIZATION
TDD	TIME DELAY ON DEENERGIZATION
TDR	TIME DELAY RELAY
TEL	TELEPHONE
TEMP	TEMPERATURE
TERM	TERMINAL
TR	TIME DELAY RELAY
T'STAT	THERMOSTAT
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UG OR UGND	UNDERGROUND
UH	UNIT HEATER
UPS	UNINTERRUPTABLE POWER SUPPLY
UTIL	UTILITY
V	VOLT
VA	VOLT-AMPERE
VAC	VOLT-ALTERNATING CURRENT
VAR	VARMETER / VARIABLE
VDC	VOLT-DIRECT CURRENT
VM	VOLTMETER
VS	VARIABLE SPEED
VS	VOLTMETER SWITCH
VT	VAPORTIGHT / VOLTAGE TRANSFORMER

W	WATT
WE	WEIGHT ELEMENT
WHD	WATT HOUR METER WITH DEMAND REGISTER
WH OR WHM	WATT HOUR METER
WHXDCR	WATT HOUR TRANSDUCER
WM	WATTMETER
WP	WEATHERPROOF
WT	WATERTIGHT
WH	WATER HEATER
WF	WALL FAN
XFMR	TRANSFORMER
XMTR	TRANSMITTER
XP	EXPLOSION PROOF
XSECT	CROSS SECTION
ZC	POSITION CONTROLLER
ZI	POSITION INDICATOR
ZS	POSITION SWITCH
ZSC	POSITION SWITCH CLOSED
ZSO	POSITION SWITCH OPEN

GENERAL NOTES

1. IN GENERAL, CONDUIT ROUTING ARE NOT SHOWN ON FLOOR PLANS. ROUTE CONDUIT AS REQUIRED BY EQUIPMENT FURNISHED AND THE FOLLOWING.
   A. ITEMS NOT ADJACENT TO WALLS IN BUILDINGS: CONCEALED IN FLOOR.
   B. ALL OTHER AREAS: EXPOSED ALONG WALLS, CEILINGS, EQUIPMENT AND PIPING.
2. CIRCUIT SIZES ARE MINIMAL AND SHALL BE INCREASED AS REQUIRED FOR EQUIPMENT FURNISHED.
3. ALL WORK SHALL BE ASSUMED TO BE UNDER THIS CONTRACT UNLESS MARKED EXISTING.
4. DRAWINGS ARE ACCURATE FOR ELECTRICAL ONLY. REFER TO MECHANICAL, CIVIL, ARCHITECTURAL AND PROCESS DRAWINGS FOR EXACT PROCESS EQUIPMENT LOCATIONS.
5. CONDUIT STUB OUTS SHALL BE CAPPED AND SEALED.

THIS IS A STANDARD ABBREVIATIONS SHEET. ALL ABBREVIATIONS MAY NOT BE USED ON THIS PROJECT

REVISIONS

NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

HDR Engineering, Inc.
2365 Iron Point Rd. Suite 1900
Folsom, CA 95630-8857

REGISTERED PROFESSIONAL ENGINEER
WILLIAM F. ETTER
NO. 7625
EXP. 9/30/98
STATE OF CALIFORNIA

SCALE : AS SHOWN		DATE
DRWN. BY	MLE	3-27-97
CHKD. BY	WF, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Victoria Francis	3-28-97
APPROVED	Bruce E. Burns	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
ELECTRICAL ABBREVIATIONS

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER	97-02
	E-2
SHEET	18 OF 24

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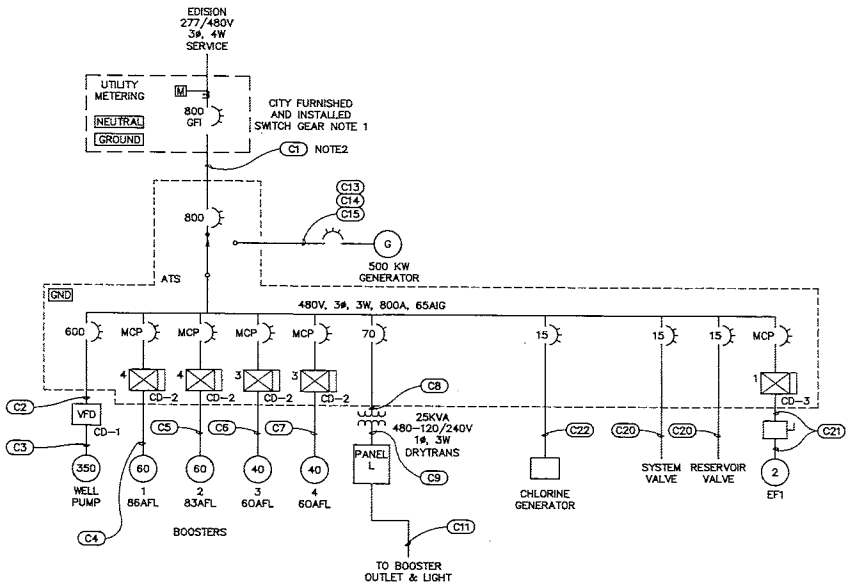
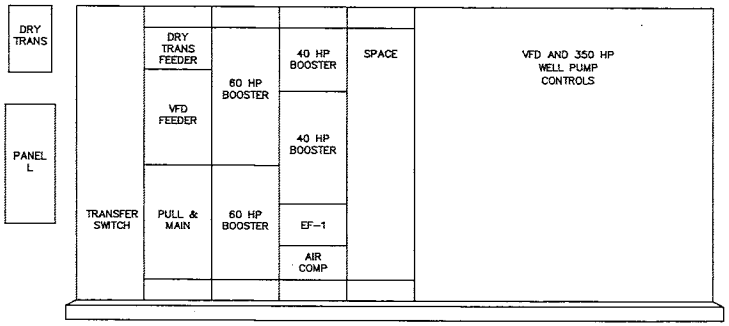


ELECTRICAL ONE LINE
NTS



MOTOR CONTROL CENTER - FRONT ELEVATION
1/2"=1'-0"

LIGHT FIXTURE SCHEDULE

MARK	TYPE	MFR/EQUAL	LAMP	MOUNTING	NOTES
1.	NOT USED				
2.	FLUOR VAPORTIGHT, CORROSION RESISTANT	LITHONIA VRI	2-32W & ELECTRONIC BALLAST	CEILING 9'-0" UP	UNLESS OTHER MOUNTINGS NOTED.
3.	BRONZE WALL PACK W/ POLYCARBONATE LENS	LITHONIA SERIES 300 WITH VISOR	150W INC	8'-0" UP	CONTROL TO BE COMBINATION PHOTO CELL-MOTION DETECTION WITH WALL SWITCH BYPASS.
4.	QUARTZ FLOODLIGHT	HUBBELL	1000W QUARTZ	12'-0" UP	
5.	BATTERY OPERATED EMERGENCY	LITHONIA ELT-LA 250	2-12W	WALL 8'-0" UP	

PANEL L

120/240V, 1φ, 3W, 125A WITH 125A MAIN BREAKER

1	LIGHTS	20/1	800/500		20/1	LIGHTS	2
3	LIGHTS	20/1		1000/500	20/1	OUTLETS	4
5	OUTLETS	20/1	500/500		20/1	BOOSTER OUTLET	6
7	BOOSTER LIGHT	20/1		200/300	20/1	SPRINKLER	8
9	CONTROL PANEL	20/1	300/1000		20/1	HOT WATER HEATER	10
11	CONTROL PANEL	20/1		300/	SPACE		12
13	FLOW METER	20/1	200/200		20/1	TELEMETRY	14
15	GENERATOR BLOCK HEATER	30/2		2000/	20/1	AUX RTU PANEL	16
17			2000/500		20/2	OUTSIDE LIGHT	18
19	FACP	20/1		100/500			20
21	EF-2	20/1	200/100			CHEMICAL FEED CP	22
23	GENERATOR BATTERY CHARGER	20/1		200/500		CHEMICAL FEED CP	24
25	AIR COMPRESSOR	20/1	500/			CHEMICAL FEED CP	26
27	SPACE			500/		CHEMICAL FEED CP	28
29,31,33,35		SPACE	/		SPACE		30,32,34
			7800	6100			
				13900			

GENERAL NOTES:

1. CITY HAS FURNISHED, INSTALLED AND PLACED INTO SERVICE THE SWITCHGEAR SERVICE PANEL. CONTRACTOR TO CONNECT TO 800 AMP BREAKER IN THIS EXISTING PANEL.
2. THERE ARE 2-4" EXISTING UNDERGROUND STUBOUTS FROM THE EXISTING SERVICE PANEL FOR THE FEEDER TO THE WELL BUILDING MOTOR CONTROL CENTER.

REVISIONS					APPROVALS		
NO.	INITIAL	DESCRIPTION	APPROVED	DATE			

HDR Engineering, Inc.
2600 Northwest Dr. Suite 1800
Irvine, CA 92612-1007

REGISTERED PROFESSIONAL ENGINEER
WILLIAM F. ETTLER
NO. 7625
EXP. 7/31/98
STATE OF CALIFORNIA

			DATE
SCALE : AS SHOWN			
DRWN. BY	WFE, MLE		3-27-97
CHKD. BY	WF, BEB		3-27-97
RECOMMENDED FOR APPROVAL	Victoria Francis		3-28-97
APPROVED	Bruce E. Burns		3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
SINGLE LINE DIAGRAM AND PANEL ELEVATION

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
E-3
SHEET
19 OF 24

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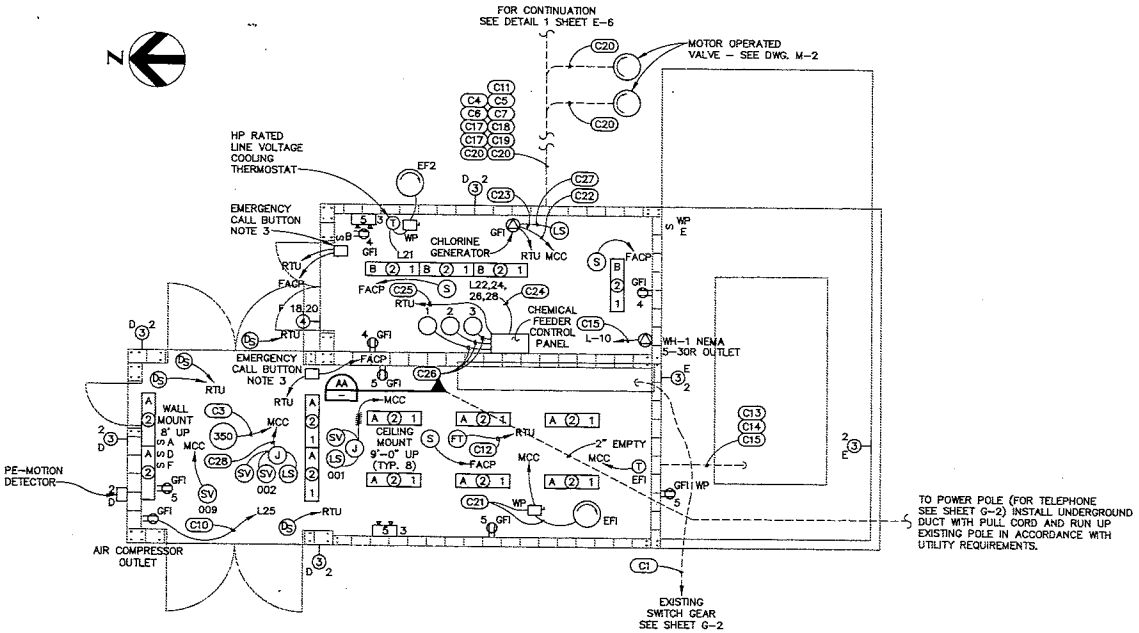
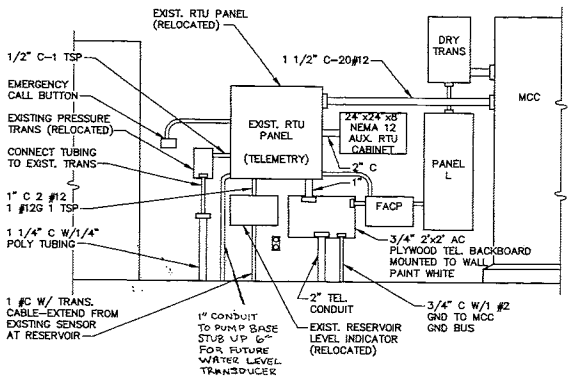


ELECTRICAL LAYOUT
NTS



DETAIL AA
NTS

GENERAL NOTES:

1. CONDUIT RUNS NOT CALLED OUT OTHERWISE TO BE 3/4" C-2 #12, 1 #12G
2. CONTRACTOR TO DISCONNECT, REMOVE, PROTECT AND REINSTALL THE FOLLOWING EXISTING EQUIPMENT INTO WELL BUILDING:
   - RTU PANEL
   - PRESSURE TRANSMITTER
   - RESERVOIR LEVEL TRANSMITTER
   - EMERGENCY CALL BUTTON
3. EMERGENCY CALL BUTTON IS RED MUSHROOM HEAD PUSH - PULL MAINTAINED CONTACT SWITCH IN WALL MOUNTED BOX. PROVIDE TWO CONTACT BLOCKS; ONE FOR RTU INPUT AND ONE FOR FACP.

REVISIONS				APPROVALS
NO.	INITIAL	DESCRIPTION	APPROVED / DATE	

HDR Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER WILLIAM F. ESTES NO. 7625 EXP. 7/31/98 STATE OF CALIFORNIA

			DATE
SCALE : AS SHOWN			
DRWN. BY	MLE	CES	3-27-97
CHKD. BY	WFE, BEB		3-27-97
RECOMMENDED FOR APPROVAL	Victoria Chavez		3-28-97
APPROVED	Bruce E. Burns		3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
ELECTRICAL FLOOR PLAN

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER	SHEET
97-02	E-4
	20 OF 24

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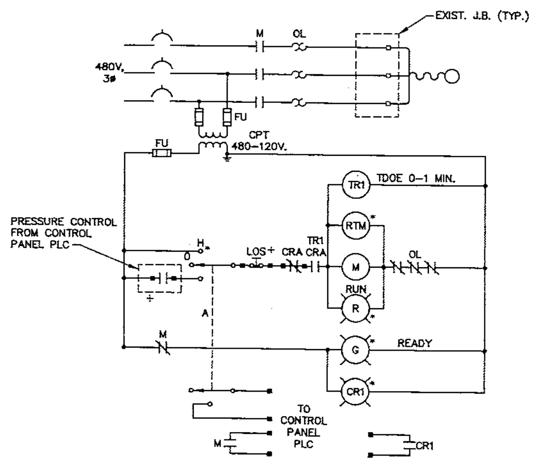
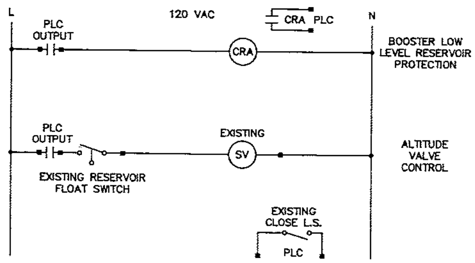
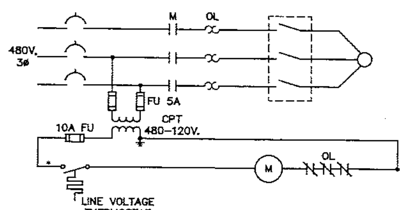


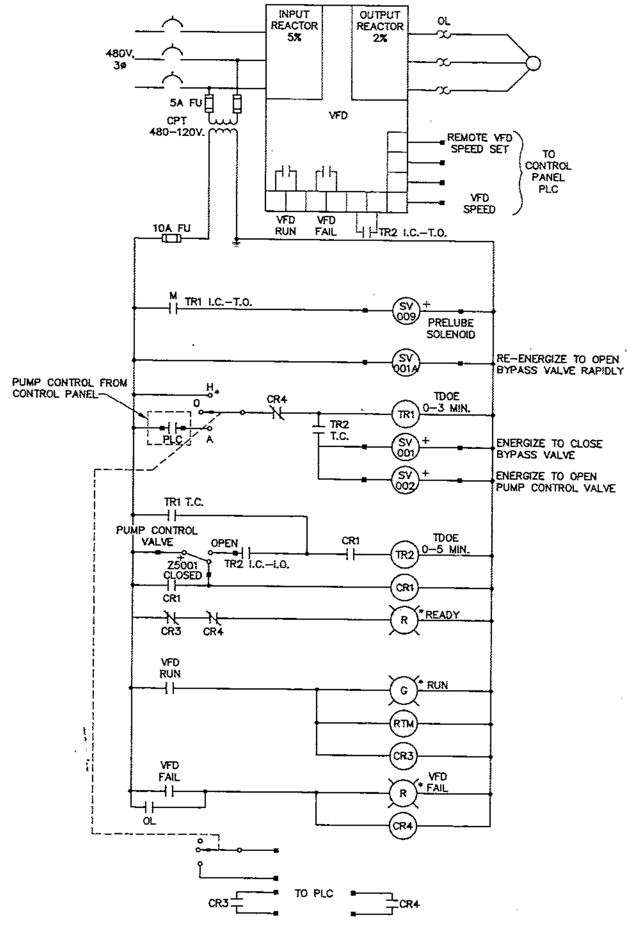
CD2 BOOSTER PUMP TYPICAL OF 4
NTS



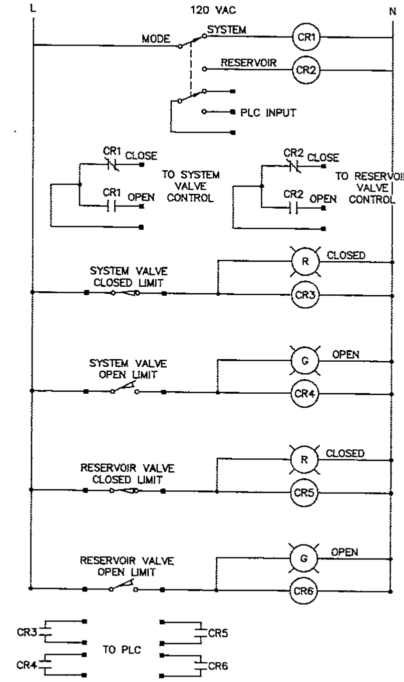
ALTITUDE VALVE
NTS



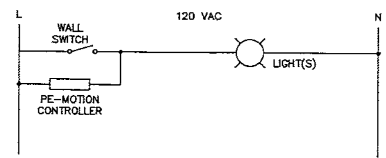
CD3 EF-1
NTS



CD1 WELL PUMP
NTS



MODE AND VALVE CONTROL
MOUNT IN AUX. RTU CABINET
NTS



OUTSIDE LIGHT CONTROL
NTS

DEVICE LEGEND

+ FIELD
* COVER OF STARTER

REVISIONS				
NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

HDR Engineering, Inc.

SCALE : AS SHOWN		DATE
DRWN. BY	WFE, MLE	3-27-97
CHKD. BY	WFE, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Victoria Francis	3-28-97
APPROVED	Bruce E. Burris	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
ELECTRICAL CONTROL DIAGRAMS

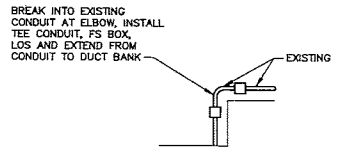
CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02

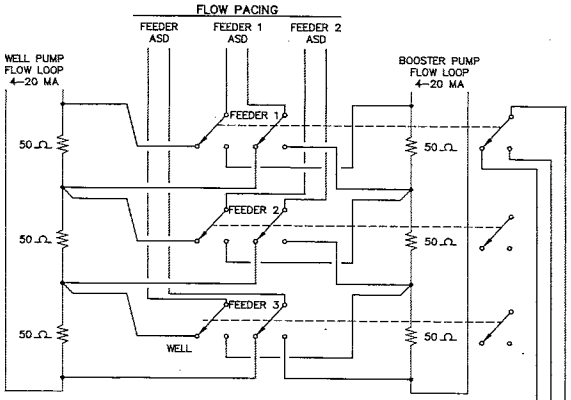
E-5

SHEET 21 OF 24

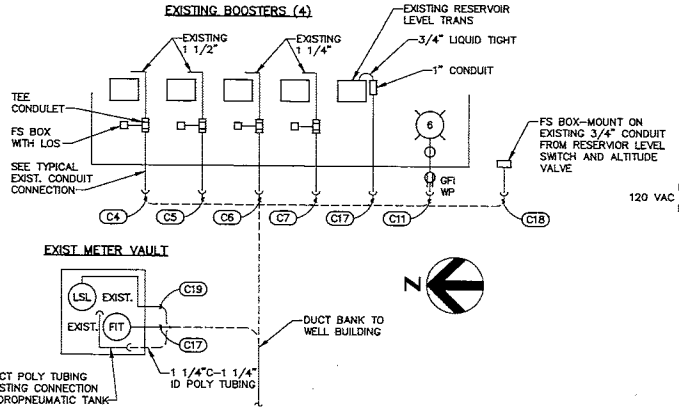
P:\08134\001\8134E-5.DWG 3-27-97



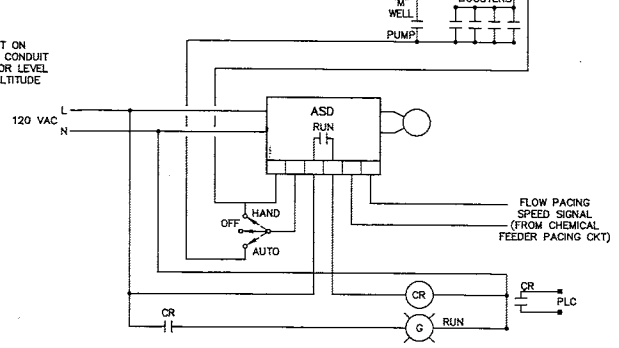
TYPICAL EXISTING CONDUIT CONNECTION AT BOOSTERS
NTS



CHEMICAL FEEDER PACING
NTS



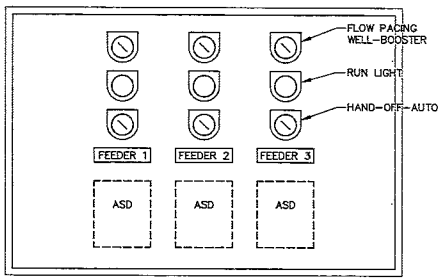
BOOSTER PUMP AREA SITE PLAN
NTS



FEEDER CONTROL (FEEDERS 2 AND 3 SIMILAR)
NTS

CONDUIT SCHEDULE

MARK	CONDUIT	WIRE PER CONDUIT: PHASE	NEUTRAL	GROUND	CONTROL	DESTINATION
C1	2–4"	3–600	1#4/0	1#3/0	–	–
C2	2–2"	3#4/0	–	1#1/0	–	–
C3	2–2"	3#4/0	–	1#1/0	–	–
C4	1 1/2"-	3#2	–	1#6	2#12	MCC
C5	1 1/2"	3#2	–	1#6	2#12	MCC
C6	1 1/4"	3#4	–	1#6	2#12	MCC
C7	1 1/4"	3#4	–	1#6	2#12	MCC
C8	1"	2#4	–	1#8	–	–
C9	1 1/2"	2#1	1#1	1#8	–	–
C10	3/4"	1#12	1#12	1#12	–	PANEL L
C11	1"	2#12	1#12	1#12	–	–
C12	3/4"	–	–	–	1–TSP	–
C13	2–4"	3–600	1#4/0	1#3/0	–	MCC
C14	1"	–	–	–	6#12	RTU PANEL
C15	3/4"	1#12	1#12	1#12	–	PANEL L
C16	3/4"	2#10	–	1#12	–	PANEL L
C17	1"	–	–	–	1–TSP	RTU PANEL
C18	1"	4#12	–	1#12	–	AUX. RTU PANEL
C19	1"	2#12	–	1#12	–	RTU PANEL
C20	1"	3#12	–	1#12	9#12	MCC & RTU
C21	3/4"	3#12	–	1#12	–	MCC
C22	3/4"	3#12	–	1#12	–	MCC
C23	3/4"	–	–	–	6#12	RTU
C24	3/4"	4#12	2#12	1#12	–	PANEL L
C25	3/4"	–	–	–	2–TSP/6#12	RTU
C26	3/4"	5#10	–	1#12	TSP	–
C27	3/4"	–	–	1#12	8#12	RTU
C28	3/4"	–	–	1#12	6#12	–



CHEMICAL FEEDER CONTROL PANEL
WALL MOUNT NEMA 12
NTS
SEE SCHEMATIC DIAGRAM THIS DWG.

REVISIONS					APPROVALS	
NO.	INITIAL	DESCRIPTION	APPROVED	DATE		

HDR Engineering, Inc.
2365 Iron Point Rd. Suite 1600
Folsom, CA 95630-8709

REGISTERED PROFESSIONAL ENGINEER
WILLIAM F. ELLIS
NO. 7625
EXP. 9/30/98
STATE OF CALIFORNIA

		DATE
SCALE : AS SHOWN		
DRWN. BY	WFE, MLE	3-27-97
CHKD. BY	VF, WFE	3-27-97
RECOMMENDED FOR APPROVAL	Victoria Franzi	3-28-97
APPROVED	Bruce E. Burris	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22
DETAILS AND CONDUIT SCHEDULE

CITY OF LAKEWOOD
DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02
E-8
SHEET
22 OF 24

P:\08134\001\8134E-6.DWG 3-27-97

PRIMARY ELEMENT SYMBOLS

- ROTAMETER
- FLOW ELEMENT (MAGNETIC, SONIC, ULTRASONIC)
- PROPELLER OR TURBINE METER
- VENTURI TUBE
- FLOAT SWITCH
- CHEMICAL SEAL
- RUPTURE DISK
- TEMPERATURE ELEMENT W/THERMOWELL
- CHLORINE/AMMONIA INJECTOR

LINE TYPES

- MAIN PROCESS LINE
- AUXILIARY PROCESS LINE
- ELECTRICAL SIGNAL (ANALOG)
- CAPILLARY TUBING
- DIRECTION OF FLOW

CROSS REFERENCE SYMBOLS

- CONTINUATION ON SHEET I-801
- CONTINUATION FROM SHEET 1-800

INSTRUMENT SYMBOLS

- LOCALLY MOUNTED FIELD INSTRUMENT
- PANEL MOUNTED OPERATOR ACCESSIBLE
- PILOT LIGHT
- MULTI FUNCTION INSTRUMENT
- PROGRAMMABLE CONTROLLER I/O
- COMPLEX INTERLOCK AS DEFINED IN CONTROL DIAGRAM "I" OR IN SPECS

FUNCTION DESIGNATIONS FOR RELAYS AND CONTROLLERS

SYMBOL	FUNCTION
X^N or $X^{1/N}$	EXPONENTIAL
1:1	PROPORTIONAL
REV	REVERSE ACTION
E/P, I/P (TYPICAL)	FOR INPUT/OUTPUT CONVERTERS USING THE FOLLOWING SYMBOLS: E – VOLTS H – HYDRAULIC I – CURRENT O – ELECTROMAGNETIC OR SONIC P – PNEUMATIC R – RESISTANCE A – ANALOG B – BINARY D – DIGITAL F – FREQUENCY
% or P	PROPORTIONAL CONTROL ACTION
∫ or I	INTEGRAL CONTROL ACTION
d/dt or D	DERIVATIVE CONTROL ACTION
1:3, 1:2 (TYPICAL)	GAIN OR ATTENUATE
IA	INSTRUMENT AIR

MECHANICAL EQUIPMENT SYMBOLS

- CENTRIFUGAL PUMP
- METERING PUMP
- MIXER
- TANK (T-801)
- EDUCTOR
- MOTOR (M)
- SIGHT GLASS (SG)
- FAN
- MOTOR OPERATOR (M)
- SUBMERSIBLE PUMP (M)
- DEEP WELL TURBINE

VALVE / ACTUATOR SYMBOLS

- GATE VALVE
- CHECK VALVE
- BALL VALVE
- BUTTERFLY VALVE
- SWING & BALL CHECK
- GLOBE VALVE
- PINCH VALVE
- ECCENTRIC ROTATING PLUG VALVE
- NEEDLE VALVE
- DIAPHRAGM VALVE
- COCK
- 3-WAY VALVE
- 4-WAY VALVE
- ANGLE VALVE
- PLUG VALVE
- SOLENOID VALVE
- PRESSURE RELIEF VALVE (SPRING LOADED)
- BACK PRESSURE VALVE (SELF CONTAINED)
- PRESSURE REDUCING VALVE (SELF OPERATED)

- BALANCING VALVE W/ ORIFICE CONNECTION
- CONCENTRIC REDUCER
- PIPE UNION
- WASH OR SPRAY NOZZLE
- CONICAL SCREEN
- FLAT SCREEN
- CALIBRATION POT W/ ISOLATION VALVE
- OPERATOR
- FLEXIBLE HOSE

INSTRUMENT PREFIX DEFINITIONS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B			CONTROL		
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSED
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)	FAIL		
G	FIRE/SMOKE		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	DRIVE	MOMENTARY			MIDDLE
N	STATUS	STATUS	STATUS		
O			ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	GENERAL			RELAY OR COMPUTE	
Y	EVENT, STATE, OR PRESENCE				
Z	POSITION, OR DIMENSION			DRIVE, ACTUATE, OR UNCLASSIFIED FINAL CONTROL ELEMENT	

ABBREVIATIONS

E	EXISTING
ES	EMERGENCY STOP
FS	FAST/SLOW
H/O/A	HAND/OFF/AUTO
LOR	LOCAL/OFF/REMOTE
LOS	LOCK/OUT/STOP
OC	OPEN/CLOSE
OO	ON/OFF
OSC	OPEN/STOP/CLOSE
RY	READY
RNG	RUNNING
SS	START/STOP
SR	SYSTEM RESERVOIR
HOA	HAND/OFF/AUTO
OSC	OPEN/STOP/CLOSE
VFD	VARIABLE FREQUENCY DRIVE

GENERAL NOTE:

1. THESE SCHEMATICS ARE PRESENTED IN DIAGRAMMATIC FORM TO SHOW PROCESS FLOWS, CONTROL CONCEPTS AND OPERATING PARAMETERS, AND AS SUCH ARE NOT INTENDED TO SHOW ALL VALVING, PIPING AND INSTRUMENTATION SYSTEMS.

REVISIONS

NO.	INITIAL	DESCRIPTION	APPROVED	DATE

APPROVALS

HDR Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER WILLIAM F. ETTLICH NO. 7625 EXP. 9/30/98 STATE OF CALIFORNIA

		DATE
SCALE : AS SHOWN		
DRWN. BY	MLE	3-27-97
CHKD. BY	WF, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Victoria Francis	3-28-97
APPROVED	Bruce E. Bevis	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22

INSTRUMENTATION SYMBOLS AND LEGEND

CITY OF LAKEWOOD

DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER	97-02
	I-1
SHEET	23 OF 24

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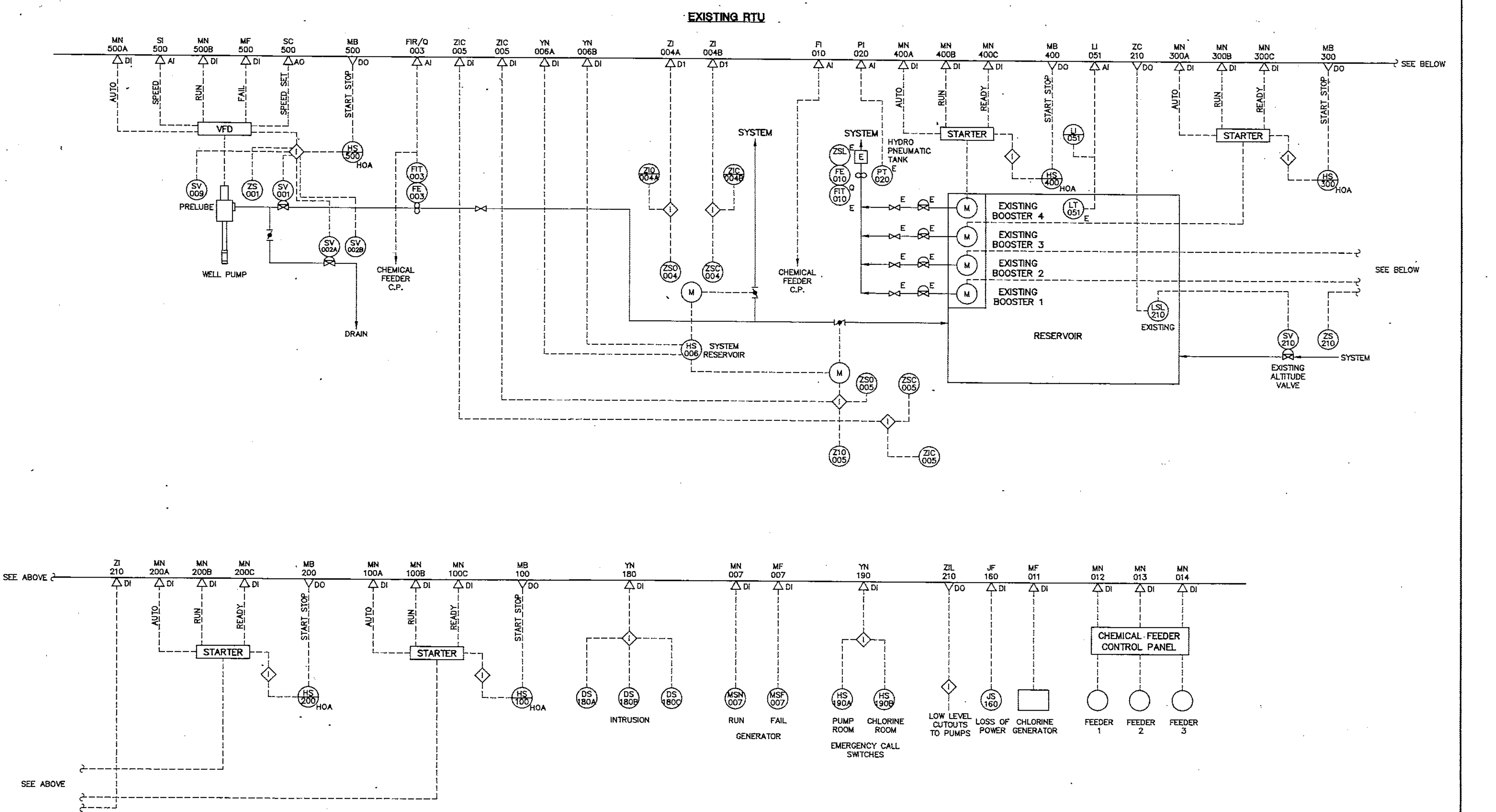

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DRWN. BY	WFE, MLE	3-27-97
CHKD. BY	WFE, BEB	3-27-97
RECOMMENDED FOR APPROVAL	Victoria Leaned	3-28-97
APPROVED	Bruce E. Burns	3-28-97

SITE IMPROVEMENTS FOR WATER WELL NO. 22

PROCESS AND INSTRUMENTATION DIAGRAM

CITY OF LAKEWOOD

DEPARTMENT OF WATER RESOURCES

PROJECT NUMBER 97-02

I-2

SHEET

P:\06134\001\5134-2.DWG 3-27-97

115W W5W- 5.5 115W

CSC Project No. 10001089
Project Name: Well Site 22A
Project Location: 3310 Candlewood Street, Lakewood CA 90712
Client: City of Lakewood

HEALTH & SAFETY • ENGINEERING • ENVIRONMENTAL

XRF LEAD-BASED PAINT AND LEAD-CONTAINING MATERIALS INSPECTION REPORT

								Results			
Reading N	Site	Room	Side	Component	Substrate	Condition	Color	Results	PbC	PbC Error	Units
1	Well 22A		CALIBRATE					Positive	0.7	0.1	mg / cm ^2
2	Well 22A		CALIBRATE					Positive	0.8	0.1	mg / cm ^2
3	Well 22A		CALIBRATE					Positive	0.6	0.1	mg / cm ^2
4	Well 22A	EXTERIOR	A	DOOR	METAL	INTACT	TAN	Negative	0	0.03	mg / cm ^2
5	Well 22A	EXTERIOR	A	DOOR FRAME	METAL	INTACT	TAN	Negative	0	0.03	mg / cm ^2
6	Well 22A	EXTERIOR	B	DOOR	METAL	INTACT	TAN	Negative	0	0.03	mg / cm ^2
7	Well 22A	EXTERIOR	B	DOOR FRAME	METAL	INTACT	TAN	Negative	0	0.03	mg / cm ^2
8	Well 22A	EXTERIOR	A	DOOR	METAL	INTACT	TAN	Negative	0	0.03	mg / cm ^2
9	Well 22A	EXTERIOR	A	DOOR FRAME	METAL	INTACT	TAN	Negative	0	0.03	mg / cm ^2
10	Well 22A	EASTSIDE	A	DOOR	METAL	INTACT	BLACK	Negative	0	0.04	mg / cm ^2
11	Well 22A	EXTERIOR	B	SECURITY GATE	METAL	INTACT	BLACK	Negative	0	0.03	mg / cm ^2
12	Well 22A	EXTERIOR	D	DOOR	METAL	INTACT	TAN	Negative	0	0.04	mg / cm ^2
13	Well 22A	EXTERIOR	D	DOOR FRAME	METAL	INTACT	TAN	Negative	0	0.03	mg / cm ^2
14	Well 22A	EXTERIOR	A	TRIM - UNDER E	METAL	INTACT	TAN	Negative	0	0.03	mg / cm ^2
15	Well 22A	EXTERIOR	A	EAVES	WOOD	INTACT	BROWN	Negative	0	0.04	mg / cm ^2
16	Well 22A	EXTERIOR	C	PLATFORM	METAL	INTACT	BLACK	Negative	0	0.03	mg / cm ^2
17	Well 22A	EXTERIOR	C	GENERATOR	METAL	INTACT	TAN	Negative	0.01	0.07	mg / cm ^2
18	Well 22A	EXTERIOR	C	GENERATOR	METAL	INTACT	TAN	Negative	0	0.04	mg / cm ^2
19	Well 22A	EXTERIOR	C	GENERATOR	METAL	INTACT	TAN	Negative	0.01	0.06	mg / cm ^2
20	Well 22A	EXTERIOR	B	PIPE	METAL	INTACT	BLUE	Negative	0	0.03	mg / cm ^2
21	Well 22A	EXTERIOR	A	DOOR	CMU	INTACT	NONE	Negative	0	0.03	mg / cm ^2
22	Well 22A		CALIBRATE					Positive	0.8	0.1	mg / cm ^2
23	Well 22A		CALIBRATE					Positive	0.8	0.1	mg / cm ^2

Clark Seif Clark, INC.
4010 Watson Plaza, Lakewood California 90712
Office 420-000-0000 Web: csceng.com

CSC Project No. 10001089
Project Name: Well Site 22A
Project Location: 3310 Candlewood Street, Lakewood CA 90712
Client: City of Lakewood

HEALTH & SAFETY • ENGINEERING • ENVIRONMENTAL

XRF LEAD-BASED PAINT AND LEAD-CONTAINING MATERIALS INSPECTION REPORT

								Results			
Reading N	Site	Room	Side	Component	Substrate	Condition	Color	Results	PbC	PbC Error	Units
24	Well 22A		CALIBRATE					Positive	0.7	0.1	mg / cm ^2

Inspection Comments:

This XRF inspection was performed on August 4, 2025 with a Niton XLp300 series lead detector, serial no. 25376

Inspector signature	11790 Inspector/ Assessor	August 5, 2025
	CDPH Certification	**Date**