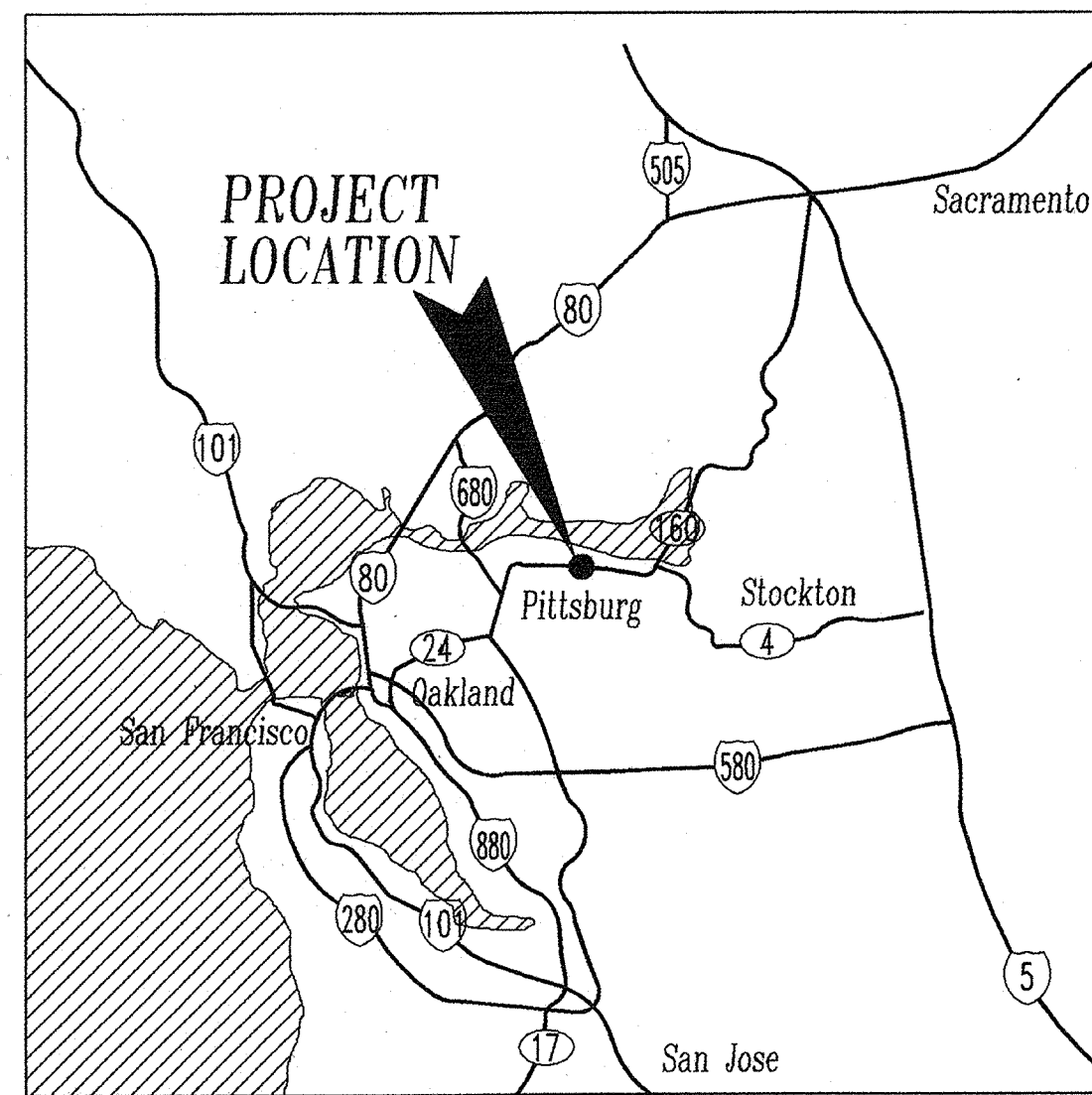


# CITY OF PITTSBURG

## ENGINEERING DEPARTMENT

### HIGH LEVEL PUMP STATION NO. 2

FEBRUARY, 2007



VICINITY MAP  
NTS

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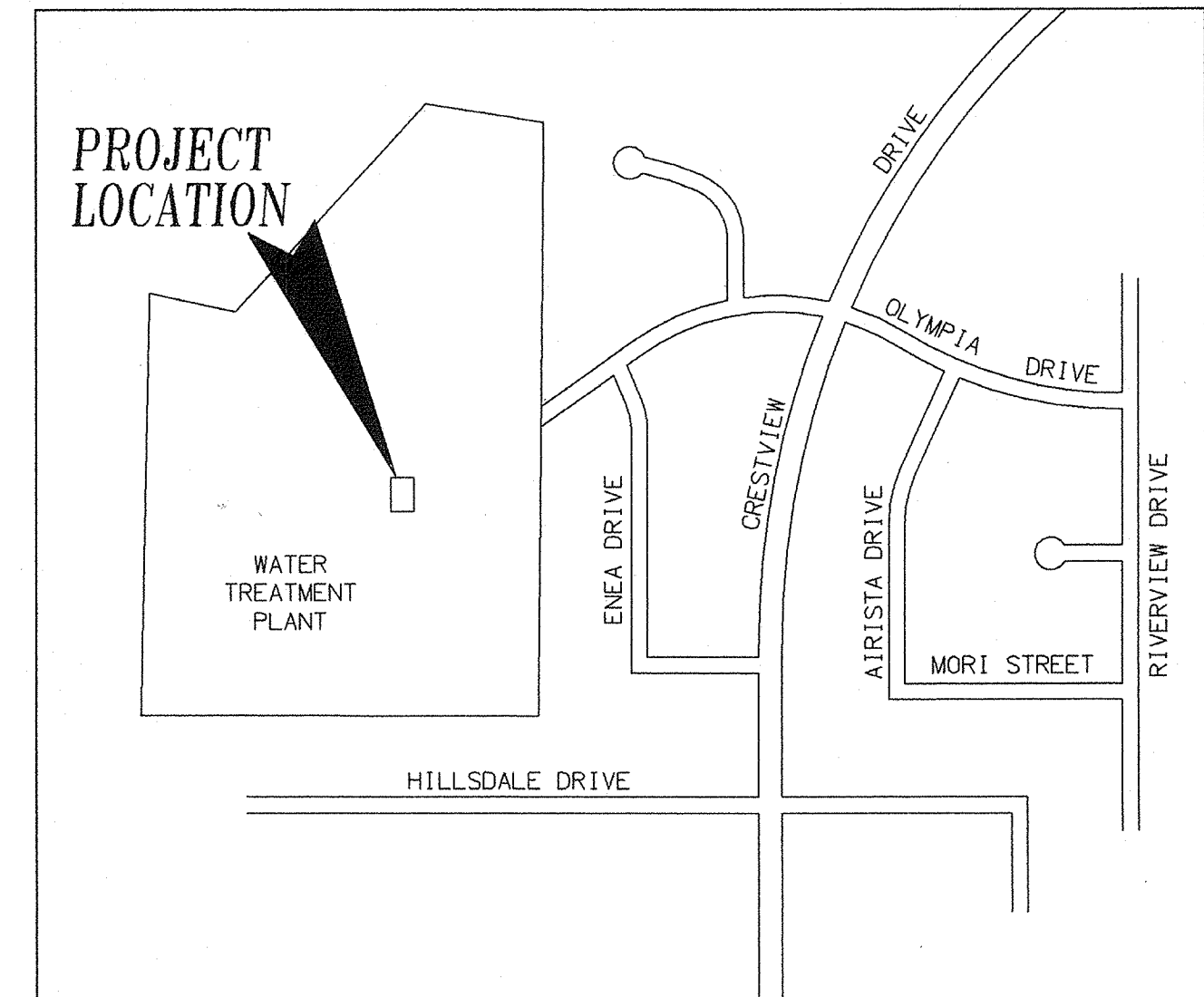
ACCEPTED BY: *[Signature]*  
DATE: 7/24/07  
JOSEPH SERRANO, CITY ENGINEER, BCE 4410

ACCEPTANCE OF THESE IMPROVEMENT PLANS BY THE CITY ENGINEER SHALL NOT RELIEVE THE DEVELOPER OR THE ENGINEERS FROM RESPONSIBILITY FOR THE DESIGN OF THE IMPROVEMENTS NOR FROM ANY DEFICIENCIES RESULTING FROM THE DESIGN THEREOF. THE CITY ENGINEER SHALL SIGN ANY REVISION PRIOR TO CONSTRUCTION. THREE COPIES OF THE REVISION SHALL BE SUBMITTED TO THE CITY. A "RECORD DRAWING" ON MYLAR FILM SHALL BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.

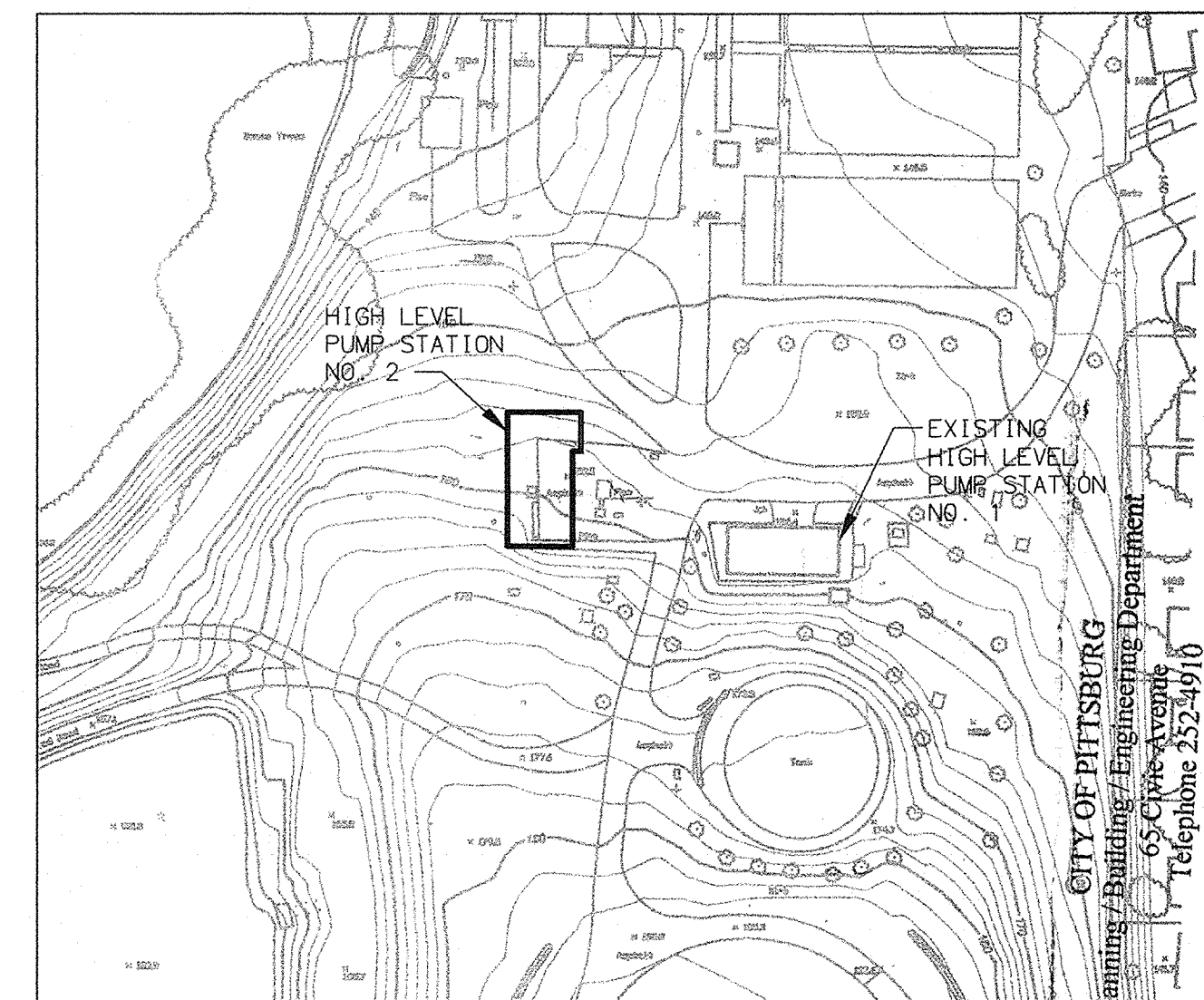
BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

CAUTION  
OVERHEAD ELECTRICAL  
FACILITIES EXIST WITHIN  
PROJECT AREA

ATTENTION IS DIRECTED TO THE PROVISIONS OF CHAPTER 9 OF DIVISION 3 OF THE BUSINESS AND PROFESSIONS CODE CONCERNING THE LICENSING OF CONTRACTORS. THE PRIME CONTRACTOR SHALL POSSESS A CALIFORNIA CLASS A LICENSE AT THE TIME THIS CONTRACT IS AWARDED.



LOCATION MAP  
NTS

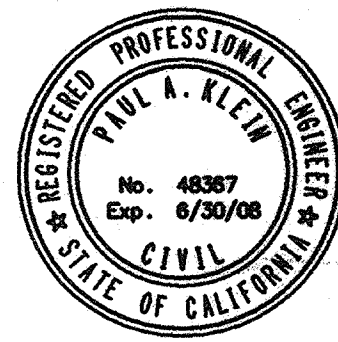


VICINITY MAP AT TREATMENT PLANT  
NTS

INSPECTOR'S COPY

300 Olympia Dr.  
 Pittsburg Water Plant  
 B09-291  
 2/14/07 9:48 am

THESE PLANS ARE APPROVED BY THE City of Pittsburg...  
 Date: 4/21/09  
 Date: 4/21/09  
 Date: 4/21/09

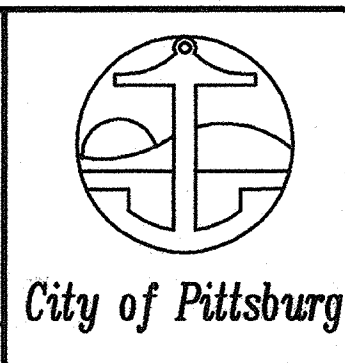


**RBF CONSULTING**  
 PLANNING ■ DESIGN ■ CONSTRUCTION  
 2101 ARENA BOULEVARD, SUITE 250  
 SACRAMENTO, CALIFORNIA 95834-2303  
 916.928.1113 • FAX 916.928.1117 • www.RBF.com  
 48367  
 R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T.  
 APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL PUMP STATION NO. 2**  
**TITLE SHEET**



1  
1 OF 77

**GENERAL NOTES**

- APPROVAL OF THE GRADING PLAN DOES NOT CONSTITUTE APPROVAL OF VERTICAL OR HORIZONTAL ALIGNMENT OF ANY PRIVATE ROAD SHOWN HEREON FOR COUNTY ROAD PURPOSES.
- FINAL APPROVAL OF THE GRADING PLAN IS SUBJECT TO FINAL APPROVAL OF THE ASSOCIATED IMPROVEMENT PLANS WHERE APPLICABLE.
- IMPORT MATERIAL SHALL BE OBTAINED FROM A LEGAL SITE.
- A CONSTRUCTION, EXCAVATION OR ENCROACHMENT PERMIT FROM THE DEPARTMENT OF PUBLIC WORKS WILL BE REQUIRED FOR ANY WORK IN THE COUNTY RIGHT-OF-WAY AS PER SPECIFICATION SECTION 01060.
- THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK. NOTICE OF PROPOSED WORK SHALL BE GIVEN TO THE FOLLOWING AGENCIES:  

PG & E	(800) 743-5000
SBC	(800) 310-2355
COMCAST CABLE	(888) COMCAST
AT & T (LOCAL)	(800) 222-0299
AT & T (LONG DISTANCE)	(800) 222-0300
CITY OF PITTSBURG PUBLIC WORKS	(925) 252-4936
USA DIG ALERT	(800) 227-2600
- ALL OPERATIONS CONDUCTED ON THE PREMISES, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTH MOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED GRADING EQUIPMENT SHALL BE LIMITED TO THE PERIOD AS STIPULATED BY THE CITY OF PITTSBURG, MONDAY THROUGH FRIDAY, AND NO CONSTRUCTION SHALL BE CONDUCTED ON THE PREMISES ON SATURDAYS, SUNDAYS OR HOLIDAYS. REFER TO SPECIFICATIONS.
- ALL MAJOR SLOPES SHALL BE ROUNDED INTO EXISTING TERRAIN TO PRODUCE A CONTOURED TRANSITION FROM CUT OR FILL FACES TO NATURAL GROUND AND ADJUTTING CUT OR FILL SURFACES.
- NOTWITHSTANDING THE MINIMUM STANDARDS SET FORTH IN THE COUNTY GRADING ORDINANCE AND NOTWITHSTANDING THE APPROVAL OF THE GRADING PLAN, THE PERMITTEE IS RESPONSIBLE FOR THE PREVENTION OF DAMAGE TO ADJACENT PROPERTY. NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PUBLIC STREET, SIDEWALK ALLEY, FUNCTION OF ANY SEWAGE DISPOSAL SYSTEM, OR ANY OTHER PUBLIC OR PRIVATE PROPERTY WITHOUT SUPPORTING AND PROTECTING SUCH PROPERTY FROM SETTLING, CRACKING, EROSION, SILTING, SCOUR OR OTHER DAMAGE WHICH MIGHT RESULT FROM THE GRADING DESCRIBED ON THIS PLAN. THE COUNTY WILL HOLD THE PERMITTEE RESPONSIBLE FOR CORRECTION OF NON-DEDICATED IMPROVEMENTS WHICH DAMAGE ADJACENT PROPERTY.
- SLOPE RATIOS:  
 CUT - 2:1 MIN.  
 FILL - 2:1 MIN.  
 EXCAVATION: 700 CY FILL: 300 CY EXPORT: 400 CY  
 (NOTE: 1. A SEPARATE VALID PERMIT MUST EXIST FOR EITHER WASTE OR IMPORT AREAS.  
 2. QUANTITIES PROVIDED ARE FOR EASE OF CONTRACTORS USE. CONTRACTOR SHALL BEAR RESPONSIBILITY FOR DETERMINING ACCURATE QUANTITIES FROM THE CONTRACT DOCUMENTS IN DETERMINING A UNIT PRICE.)
- SPECIAL CONDITION: IF ANY ARCHAEOLOGICAL RESOURCES ARE DISCOVERED ON THE SITE OF THIS GRADING DURING GRADING OPERATIONS, SUCH OPERATIONS WILL CEASE IMMEDIATELY AND THE PERMITTEE WILL NOTIFY THE DIRECTOR OF PUBLIC WORKS OF THE DISCOVERY. GRADING OPERATIONS WILL NOT RECOMMENCE UNTIL THE PERMITTEE HAS RECEIVED WRITTEN AUTHORITY TO DO SO.
- ALL GRADING DETAILS WILL BE IN ACCORDANCE WITH CITY OF PITTSBURG STANDARD DETAILS.
- CONTRACTOR SHALL COMPLY WITH ALL ENVIRONMENTAL PROVISIONS AS SPECIFIED HEREIN OR AS PART OF THE CONTRACT DOCUMENTS.
- ACCEPTANCE OF THESE IMPROVEMENT PLANS BY THE CITY ENGINEER SHALL NOT RELIEVE THE DEVELOPER OR THE ENGINEER FROM RESPONSIBILITY FOR THE DESIGN OF THE IMPROVEMENTS NOR FROM ANY DEFICIENCIES RESULTING FROM THE DESIGN THEREOF. THE CITY ENGINEER SHALL SIGN ANY REVISION PRIOR TO CONSTRUCTION. THREE COPIES OF THE REVISION SHALL BE SUBMITTED TO THE CITY.  
 A "RECORD DRAWING" ON MYLAR FILM SHALL BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.

**UNDERGROUND STRUCTURES**

ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE DEVELOPER BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED; NOT INDICATED ON THE PUBLIC RECORDS EXAMINED; LOCATED AT VARIANCE WITH THAT REPORTED OR SHOWN ON RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

BEFORE EXCAVATING  
 CALL U.S.A.  
 UNDERGROUND SERVICE ALERT  
 (800) 227-2600  
 TWO WORKING DAYS BEFORE ALL  
 PLANNED EXCAVATION WORK

CAUTION  
 OVERHEAD ELECTRICAL  
 FACILITIES EXIST WITHIN  
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Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

California Council  
 of Civil Engineers  
 and Land Surveyors

**WATER NOTES**

- WATER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS AND MATERIALS AS SPECIFIED IN THE CITY OF PITTSBURG STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF WATER MAINS AND FACILITIES. CONTRACTOR SHALL HAVE A CURRENT COPY OF THE STANDARD SPECIFICATIONS ON THE JOB SITE AT ALL TIMES.
- THE SUBMISSION AND REVIEW OF ALL SUBMITTALS (SHOP DRAWINGS, SIX SETS) AS REQUIRED BY THE STANDARD SPECIFICATIONS ARE TO BE ACCOMPLISHED PRIOR TO THE PRECONSTRUCTION MEETING WITH THE CITY'S INSPECTOR.
- NO WORK MAY BEGIN OR PROCEED WITHOUT THE DIRECTION OF THE CITY'S INSPECTOR. INSPECTOR'S SCHEDULING MUST BE 24-48 HOURS IN ADVANCE OF WORK.
- WHERE ELEVATIONS AND GRADES ARE NOT SHOWN ON THE WATER MAIN PROFILE, TOP OF PIPE PROFILE IS 48" BELOW CENTERLINE OF FINISH GRADE OF STREET.
- MANUAL AIR RELEASES SHALL BE INSTALLED AT ALL HIGH POINTS AND BLOW-OFFS AT ALL LOW POINTS IN THE WATER MAIN PROFILE. PLACE MANUAL AIR RELEASES AND BLOW-OFFS WITHIN METER BOX AND LOCATE BEHIND CURB UNLESS OTHERWISE APPROVED BY THE CITY REPRESENTATIVE. FIRE HYDRANTS MAY BE USED IN LIEU OF A MANUAL AIR RELEASE OR BLOW-OFF WHEN LOCATED AT OR NEAR HIGH OR LOW POINTS, AS APPROVED BY THE CITY REPRESENTATIVE.
- UNLESS OTHERWISE NOTED, CONNECTIONS TO EXISTING MAINS SHALL BE MADE DRY. THE TIME AND DURATION OF ANY SHUTDOWNS OF EXISTING MAINS SHALL BE SUBJECT TO APPROVAL BY THE CITY. CITY SHALL BE NOTIFIED TWO WEEKS MINIMUM IN ADVANCE OF ANY SHUTDOWN.
- CONTRACTOR SHALL COORDINATE WITH THE CITY ALL ARRANGEMENTS FOR HIGH-LINING TEMPORARY SERVICES, ETC., PRIOR TO SHUTDOWNS. NO SHUTDOWNS WILL BE SCHEDULED ON A FRIDAY.
- LINE VALVES, WHERE REQUIRED AT STREET INTERSECTIONS SHALL BE LOCATED ON THE PROLONGATION OF THE STREET RIGHT-OF-WAY WHENEVER POSSIBLE.
- FIRE HYDRANTS, AS APPROVED BY THE APPROPRIATE FIRE DISTRICT AND THE MEETING THE CITY'S STANDARD SPECIFICATIONS, ARE TO BE INSTALLED AT LOCATIONS SPECIFIED BY THE FIRE DISTRICT.
- CONTRACTOR SHALL REVIEW ALL PROPOSED TRENCH WORK WITH CAL/OSHA. A COPY OF EXEMPTION LETTER OR TRENCHING PERMIT, IF REQUIRED, SHALL BE SUBMITTED TO THE CITY PRIOR TO CONSTRUCTION.
- ALL EXISTING FACILITIES WHICH MAY EFFECT FINAL DESIGN, I.E., LINE CROSSINGS, LINE PARALLELING, OR PROPOSED CONNECTIONS SHALL BE FIELD VERIFIED. ALL EXISTING OR PROPOSED UTILITY CROSSINGS, OR UTILITIES WITHIN 10-FEET OF PROPOSED WATER MAINS, SHALL BE SHOWN ON IMPROVEMENT PLANS.
- THE WATER SYSTEM SHALL BE PRESSURE TESTED IN ACCORDANCE WITH THE PROCEDURES IN THE CITY OF PITTSBURG STANDARD SPECIFICATIONS. THE CLASS OF PIPE SHALL BE USED AS THE DESIGNATED WORKING PRESSURE FOR TESTING ALL PIPE, VALVES (CLOSED) AND APPURTENANCES.
- CONTRACTOR TO TIE OFF ALL VALVE LOCATIONS AND PROVIDE WRITTEN DIMENSIONS TO INSPECTOR IMMEDIATELY UPON INSTALLATION OF VALVES.
- ALL DEFLECTIONS (HORIZONTAL AND VERTICAL) SHALL BE MADE BY USE OF JOINT COUPLINGS WITH 4" MAXIMUM DEFLECTION PER COUPLING (2" PER JOINT). NO BENDING (CURVING) OF PIPE SHALL BE PERMITTED.
- PIPELINES AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH SECTION 15041 OF THE STANDARD SPECIFICATIONS PRIOR TO TIE-IN OR CONNECTION TO EXISTING SYSTEM FACILITIES. BACTERIOLOGIC QUALITY TEST RESULTS SHALL CONFORM TO THE CRITERIA SPECIFIED IN PARAGRAPH 3.06 OF THAT SPECIFICATION SECTION.

**ABBREVIATION LIST**

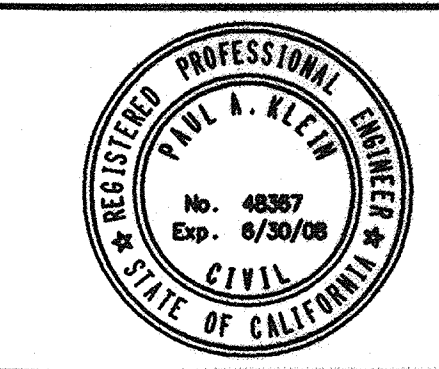
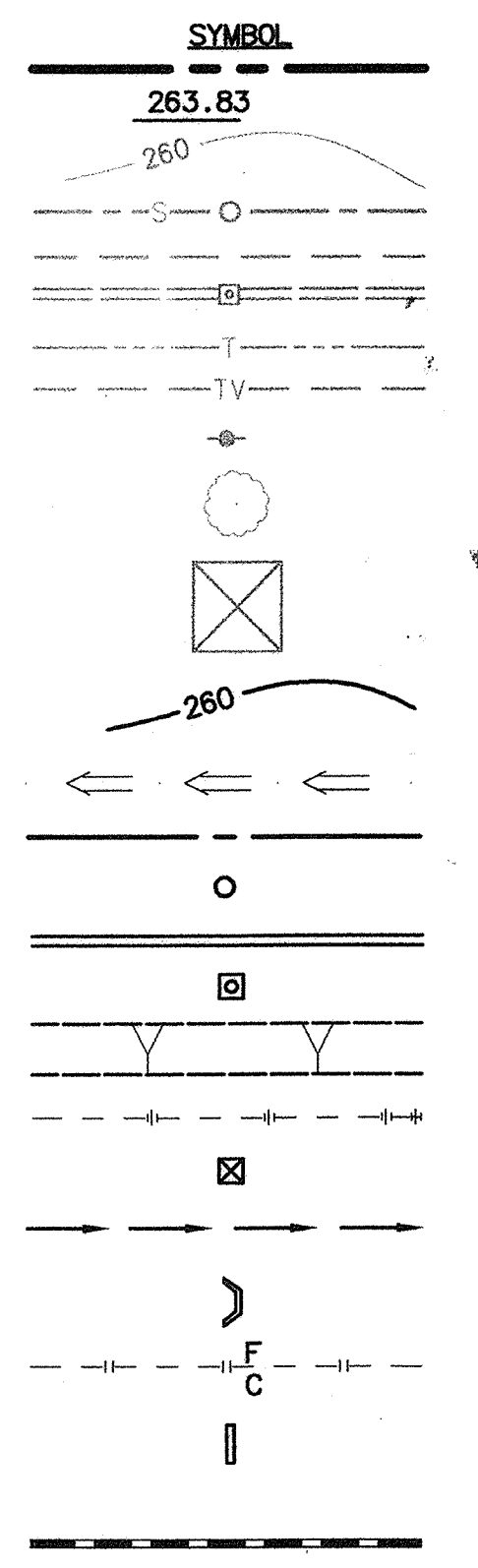
AB	AGGREGATE BASE	NTS	NOT TO SCALE
ADD'L	ADDITIONALLY	O.C.	OFF CENTER
CBC	CALIFORNIA BUILDING CODE	OD	OUTER DIAMETER
CL	CENTER LINE	PSI	POUNDS PER SQUARE INCH
CLR	CLEARANCE	PT	PRESSURE TRANSMITTER
CMC	CALIFORNIA MECHANICAL CODE	PVC	POLYVINYL CHLORIDE
CML	CEMENT MORTAR LINED	REQD	REQUIRED
CML & C	CEMENT MORTAR LINED AND COATED	SCH	SCHEDULE
CORP	CORPORATE	SECT	SECTION
CPC	CALIFORNIA PLUMBING CODE	SPECS	SPECIFICATIONS
CU	COPPER	SQ	SQUARE
DIA	DIAMETER	STD	STANDARD
DR	DRIVEWAY	STL	STEEL
DTLS	DETAILS	SWMD	NEEDS UPDATE
DWG	AUTOCAD DRAWING	T.F.	THREADED FLANGE
EA	EACH	T.O. CURB	TOP OF CURB
EL	ELEVATION	THK	THICK
EX	EXISTING	THR'D	THREADED
F.F.	FINISHED FLOOR	TYP	TYPICAL
FIN	FINAL	UFC	UNIFORM FIRE CODE
FLG	FLANGE	VAC	VACUUM
GALV	GALVANIZED		
GAR	GARAGE		
H.R.	HATCHED ROOF		
IP	INNER PIPE		
LB	POUND		
MAX	MAXIMUM		
MFG	MANUFACTURER		
MIN	MINIMUM		

**DUST ABATEMENT NOTES**

- ALL DISTURBED SOIL AREAS NOT SUBJECT TO REVEGETATION SHALL BE STABILIZED USING APPROVED CHEMICAL SOIL BINDERS, JUTE NETTING OR OTHER METHODS AS APPROPRIATE.
- ALL SITE GRADING, EXCAVATION AND TRAVEL ON UNPAVED SURFACES SHALL BE TERMINATED WHEN HOURLY AVERAGE WIND SPEED EXCEEDS 25 MILES PER HOUR.
- CONSTRUCTION EQUIPMENT SHALL BE PROPERLY MAINTAINED/OPERATED AND DIESEL-FUELED TO THE GREATEST EXTENT FEASIBLE. GASOLINE OPERATED EQUIPMENT SHALL BE LIMITED TO LIGHT DUTY TRUCKS OR OTHER EQUIPMENT WITH EMISSION CONTROL SYSTEMS TO THE GREATEST EXTENT FEASIBLE.
- GRADED SLOPES SHALL BE PLANTED WITH PERMANENT LANDSCAPING FROM MATERIALS LISTED IN THE SPECIFIC PLAN WITHIN 90 DAYS OF CREATION OF THE SLOPES (BY OTHERS).
- APPLY WATER/SOIL STABILIZERS A MINIMUM OF THREE TIMES PER DAY FOR ALL ACTIVE GRADING AREAS AND HALL ROADS TO MAINTAIN A MINIMUM MOISTURE CONTENT OF 4% IN THE UPPER SIX INCH SOIL STRATUM.

**LEGEND**

- ITEM
- PROJECT BOUNDARY
  - EXISTING SPOT ELEVATIONS
  - EXISTING CONTOUR
  - EXISTING SANITARY SEWER & MANHOLE
  - EXISTING WATER MAIN
  - EXISTING STORM DRAIN AND STRUCTURE
  - EXISTING UNDERGROUND TELEPHONE
  - EXISTING UNDERGROUND CABLE TV
  - EXISTING POWER OR TELEPHONE POLE
  - EXISTING TREES
  - EXISTING UTILITY TOWER
  - PROPOSED CONTOUR
  - PROPOSED CONCRETE BROW DITCH (PVT)
  - PROPOSED SEWER (PVT)
  - PROPOSED SEWER MANHOLE (PVT)
  - PROPOSED STORM DRAIN (PVT)
  - PROPOSED MODIFIED 'A-5' CLEANOUT (PVT)
  - SLOPES (2:1 MAX)
  - DAYLIGHT LIMITS
  - PROPOSED TYPE "F" CATCH BASIN
  - PROPOSED CONCRETE SWALE
  - PROPOSED HEADWALL
  - PROPOSED CUT / FILL LINE
  - PROPOSED PIPE COLLAR
  - RETAINING WALL



**RBF** CONSULTING  
 PLANNING ■ DESIGN ■ CONSTRUCTION  
 2101 ARENA BOULEVARD, SUITE 250  
 SACRAMENTO, CALIFORNIA 95834-2303  
 916.928.1119 • FAX 916.928.1117 • www.RBF.com  
 Paul A. Klein, R.C.E. NO. 48367, DATE 08/06/07

NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T.  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

APPROVED BY:

**HIGH LEVEL  
 PUMP STATION NO. 2  
 GENERAL NOTES AND LEGEND**



H:\PDATA\60100165\CA0D\LAND\IMPROVEMENTS\HLP5\165HLG2.DWG H\WILLIAMS 2/14/07 10:31 am

**PIPING**

- 1 30" CML & C STEEL PIPE CLASS 150
- 2 24" CML & C STEEL PIPE CLASS 250
- 3 24" CML STEEL PIPE CLASS 250
- 4 20" CML & C STEEL PIPE CLASS 150
- 5 20" CML STEEL PIPE CLASS 150
- 6 14" CML & C STEEL PIPE CLASS 250
- 7 14" CML STEEL PIPE CLASS 250
- 8 14" CML & C STEEL PIPE CLASS 150
- 9 14" CML STEEL PIPE CLASS 150
- 10 4" PVC SEWER PIPE
- 11 1 1/2" COPPER PIPE
- 12 3/4" COPPER PIPE
- 13 NUMBER NOT USED
- 14 10" DUCTILE IRON PIPE
- 15 14" DUCTILE IRON PIPE
- 16 24" DUCTILE IRON PIPE
- 17 30" DUCTILE IRON PIPE
- 18 16" CML STEEL PIPE CLASS 250
- 19 16" CML & C STEEL PIPE CLASS 250

**VALVES**

- 31 24" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR
- 32 20" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR
- 33 16" FLANGED PRESSURE RELIEF AND SURGE ANTICIPATOR VALVE CLASS 250, PER SPECS
- 34 14" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR
- 35 14" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR
- 36 12" FLANGED PUMP CONTROL VALVE CLASS 250, PER SPECS
- 37 1" COMBINATION AIR VAC PER DETAIL 6 ON SHEET M4
- 38 1 1/2" BRASS BALL VALVE
- 39 14" FLANGED PUMP CONTROL VALVE CLASS 250, PER SPECS
- 40 16" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR

**FITTINGS**

- 51 30" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.
- 52 24" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.
- 53 14" x 12" CML STEEL ECCENTRIC REDUCER T.F.
- 54 30" x 20" CML & C STEEL TEE
- 55 24" x 14" CML & C STEEL TEE
- 56 14" CML & C STEEL SMOOTH 90° ELBOW
- 57 14" CML STEEL SMOOTH 90° ELBOW
- 58 30" CML & C STEEL 4-PIECE 90° ELBOW
- 59 NUMBER NOT USED
- 60 16" x 14" CML STEEL ECCENTRIC REDUCER T.F.
- 61 20" CML & C STEEL SMOOTH 90° ELBOW
- 62 30" CML & C STEEL TEE
- 63 30" x 20" CML & C STEEL ECCENTRIC REDUCER T.F.
- 64 24" x 16" CML & C STEEL TEE
- 65 16" CML STEEL SMOOTH 90° ELBOW

**SPECIALS**

- 71 24" FLANGED METER, PER SPECS
- 72 PUMP, PER SPECS
- 73 MOTOR, PER SPECS
- 74 PIPE SUPPORT PER DETAIL 5 ON SHEET M4
- 75 PIPE SUPPORT PER DETAIL 9 ON SHEET M4
- 76 20" VICTAULIC COUPLING STYLE 77
- 77 24" DISMANTLING JOINT
- 78 14" DISMANTLING JOINT
- 80 CUP DRAIN PER DETAIL 8 ON SHEET M4
- 81 3/4" HOSE BIBB PER DETAIL 1 ON SHEET M5
- 82 12" FLOOR DRAIN W/ ANTI-SIPHON, SMITH OR EQUAL
- 83 LADDER W/ LADDER-UP SAFETY POST
- 84 30" DIA. PUMP CAN
- 85 NUMBER NOT USED
- 86 METAL GRATE PER SPECS WITH VALVE KEYHOLE OPENING
- 87 NUMBER NOT USED
- 88 1 1/2" FLOW METER
- 89 PRESSURE GAGE PER DETAIL 2 ON SHEET M4
- 90 NUMBER NOT USED
- 91 1 1/2" BACKFLOW PREVENTER
- 92 1 1/2" PRESSURE REGULATOR
- 93 INSULATING FLANGE COUPLING
- 94 16" DISMANTLING JOINT

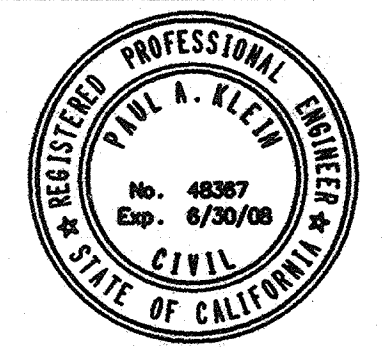
**SITE IMPROVEMENTS**

- 111 NUMBER NOT USED
- 112 POTHOLE
- 113 AC PAVEMENT PER DETAIL 2 ON SHEET C14
- 114 6" CONCRETE CURB AND GUTTER PER CITY OF PITTSBURG STD DTL CC-201 TYPE A
- 115 6" CONCRETE CURB ONLY PER CITY OF PITTSBURG STD DTL CC-205 TYPE A-1
- 116 CONSTRUCT 5' WIDE CONCRETE SIDEWALK PER DETAIL 4 ON SHEET C14

BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

CAUTION  
OVERHEAD ELECTRICAL  
FACILITIES EXIST WITHIN  
PROJECT AREA

ACCEPTANCE OF THESE IMPROVEMENT PLANS BY THE CITY ENGINEER  
SHALL NOT RELIEVE THE DEVELOPER OR THE ENGINEER FROM  
RESPONSIBILITY FOR THE DESIGN OF THE IMPROVEMENTS NOR FROM  
ANY DEFICIENCIES RESULTING FROM THE DESIGN THEREOF.  
THE CITY ENGINEER SHALL SIGN ANY REVISION PRIOR TO  
CONSTRUCTION. THREE COPIES OF THE REVISION SHALL BE  
SUBMITTED TO THE CITY.  
A "RECORD DRAWING" ON MYLAR FILM SHALL BE SUBMITTED TO THE  
CITY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.



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Paul A. Klein 48367 02/06/07  
PAUL A. KLEIN R.C.E. NO. DATE

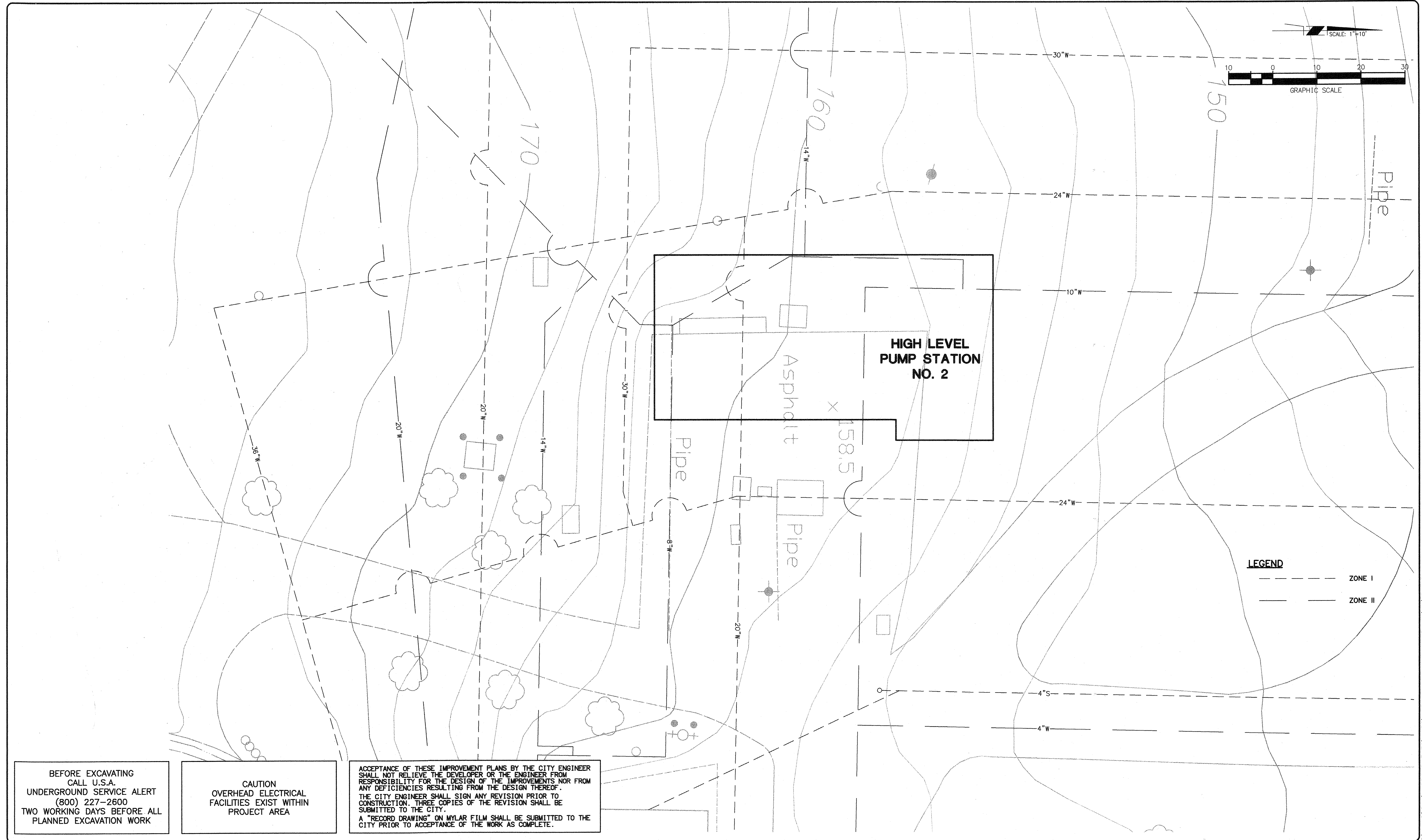
NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T. APPROVED BY:  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

**HIGH LEVEL  
PUMP STATION NO. 2  
MATERIALS LIST**



H:\DATA\60100165\CADD\LAND\DLX\IMPROVEMENTS\HLP5\165HLC3.DWG H\WILLIAMS 8/7/07 3:10 pm



BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

CAUTION  
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FACILITIES EXIST WITHIN  
PROJECT AREA

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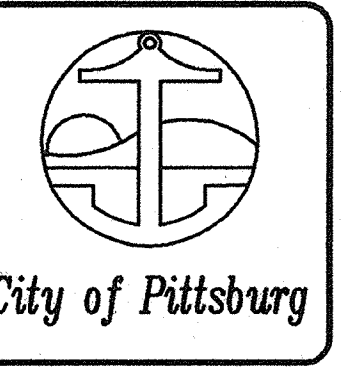
**RBF CONSULTING** PLANNING ■ DESIGN ■ CONSTRUCTION  
201 ARENA BOULEVARD, SUITE 250  
SACRAMENTO, CALIFORNIA 95834-2303  
916.928.1113 • FAX 916.928.1117 • www.RBF.com

*Paul A. Klein*  
PAUL A. KLEIN 48367 02/06/07  
R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T. APPROVED BY:  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

**HIGH LEVEL  
PUMP STATION NO. 2  
EXISTING SITE PLAN**

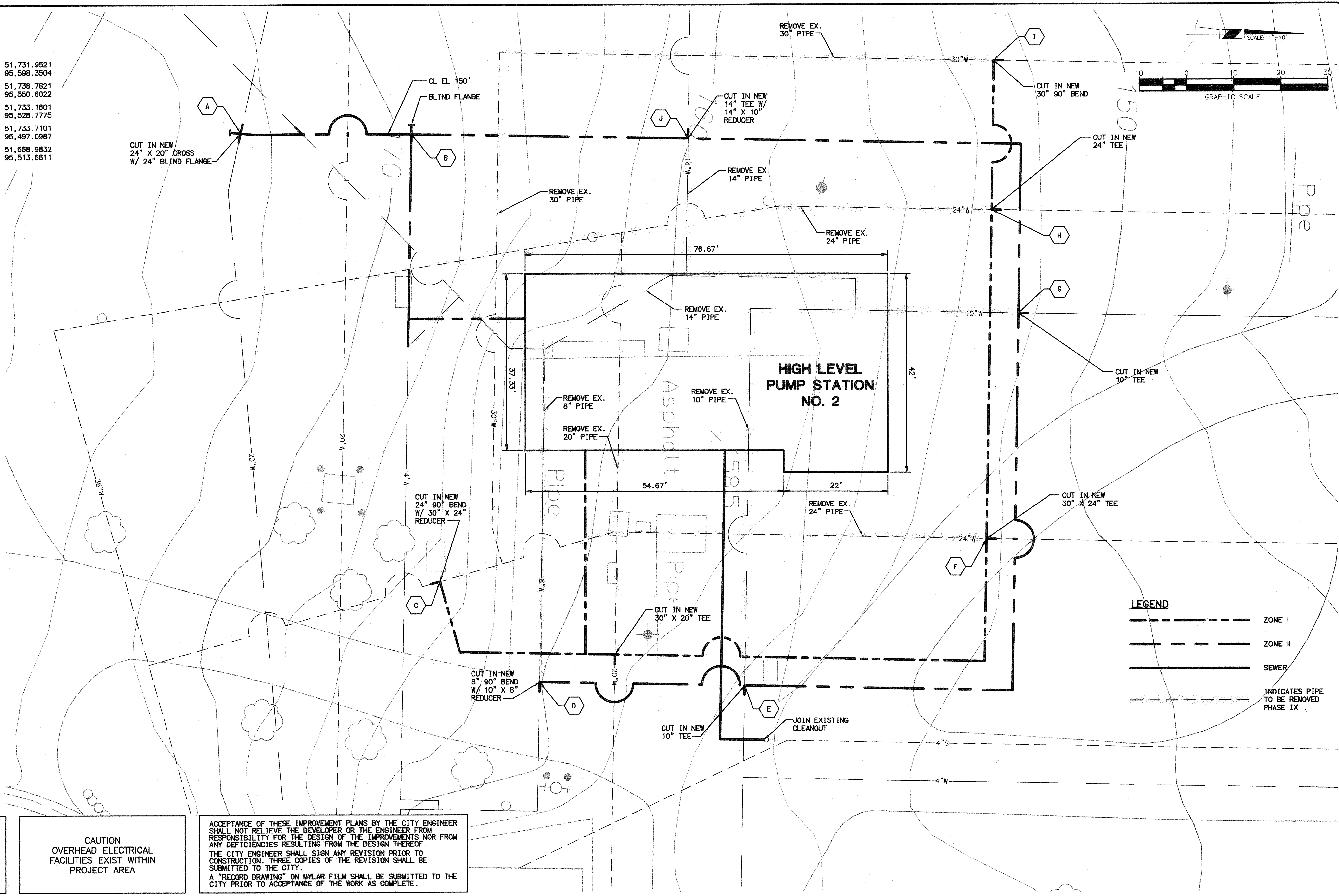
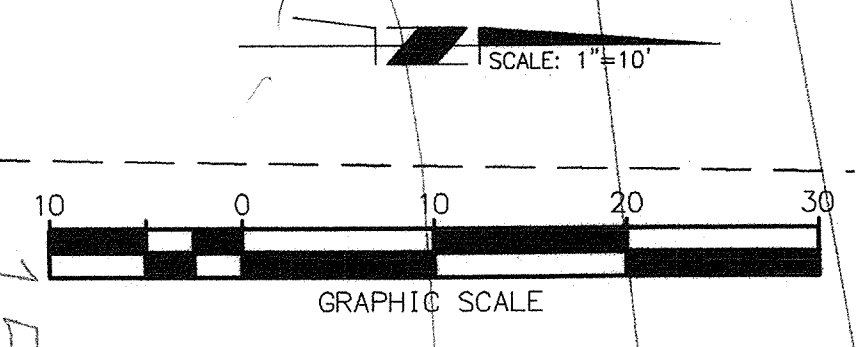


**C1  
4 OF 77**

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**COORDINATES**

A	N 51,574.2000 E 95,512.3706	F	N 51,731.9521 E 95,598.3504
B	N 51,810.3865 E 95,512.6437	G	N 51,738.7821 E 95,550.6022
C	N 51,616.2931 E 95,607.3655	H	N 51,733.1601 E 95,528.7775
D	N 51,637.3827 E 95,628.5163	I	N 51,733.7101 E 95,497.0987
E	N 51,680.7708 E 95,629.2696	J	N 51,668.9832 E 95,513.6611



**LEGEND**

--- (dashed line)	ZONE I
--- (dashed line)	ZONE II
--- (solid line)	SEWER
--- (dashed line)	INDICATES PIPE TO BE REMOVED PHASE IX

**NOTE:**  
CONTRACTOR SHALL REFER TO CONSTRUCTION PHASING DRAWINGS FOR COORDINATION AND SERVICE REQUIREMENTS.

BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

CAUTION  
OVERHEAD ELECTRICAL  
FACILITIES EXIST WITHIN  
PROJECT AREA

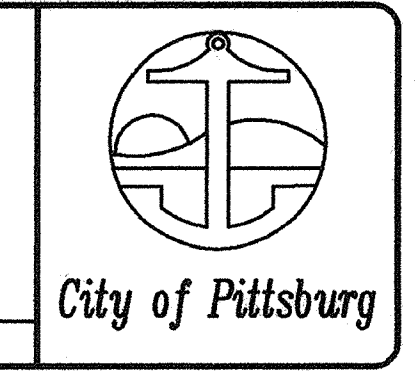
ACCEPTANCE OF THESE IMPROVEMENT PLANS BY THE CITY ENGINEER SHALL NOT RELIEVE THE DEVELOPER OR THE ENGINEER FROM RESPONSIBILITY FOR THE DESIGN OF THE IMPROVEMENTS NOR FROM ANY DEFICIENCIES RESULTING FROM THE DESIGN THEREOF. THE CITY ENGINEER SHALL SIGN ANY REVISION PRIOR TO CONSTRUCTION. THREE COPIES OF THE REVISION SHALL BE SUBMITTED TO THE CITY. A "RECORD DRAWING" ON MYLAR FILM SHALL BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.

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48367  
PAUL A. KLEIN R.C.E. NO. DATE 02/06/07

NO.	DATE	APPROV.	REVISION

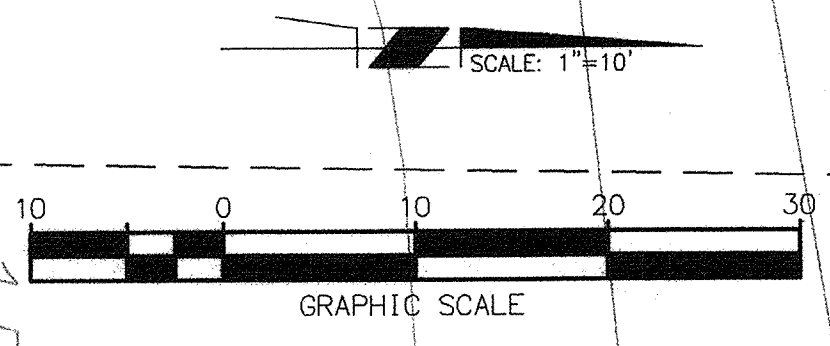
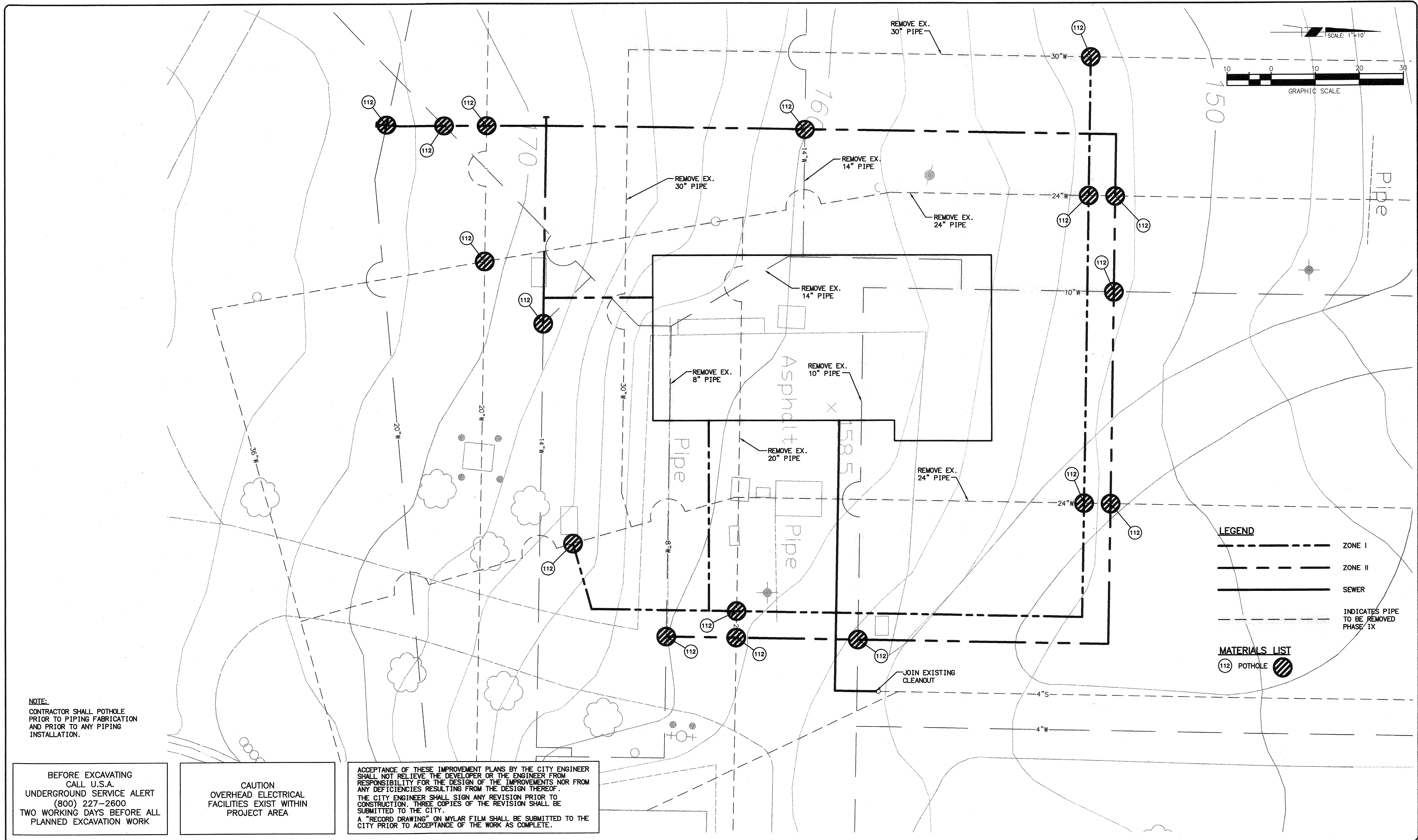
DESIGNED: H.W. & R.T.  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

APPROVED BY:  
**HIGH LEVEL  
PUMP STATION NO. 2  
SITE PIPING PLAN**



**C2**  
**5 OF 77**

H:\PDATA\60100165\CADD\LAND\IMPROVEMENTS\HLP5\16SHLC2.DWG H.WILLIAMS 2/14/07 9:51 am



- LEGEND**
- ZONE I
  - ZONE II
  - SEWER
  - INDICATES PIPE TO BE REMOVED PHASE IX

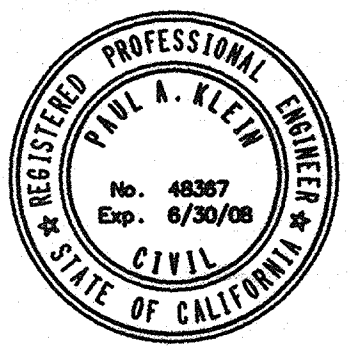
- MATERIALS LIST**
- (112) POTHOLE

**NOTE:**  
 CONTRACTOR SHALL POTHOLE PRIOR TO PIPING FABRICATION AND PRIOR TO ANY PIPING INSTALLATION.

BEFORE EXCAVATING  
 CALL U.S.A.  
 UNDERGROUND SERVICE ALERT  
 (800) 227-2600  
 TWO WORKING DAYS BEFORE ALL  
 PLANNED EXCAVATION WORK

CAUTION  
 OVERHEAD ELECTRICAL  
 FACILITIES EXIST WITHIN  
 PROJECT AREA

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 48367 08/06/07  
 PAUL A. KLEIN R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

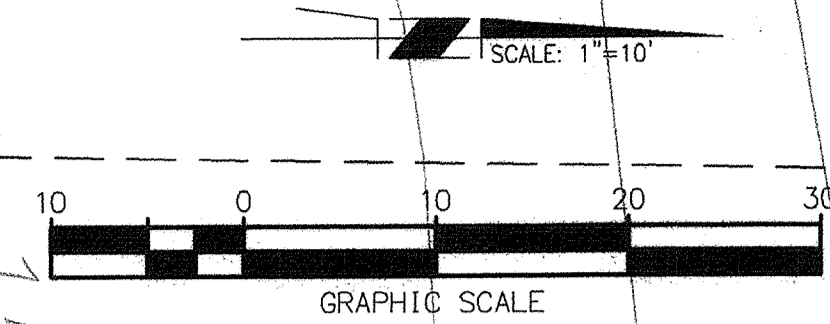
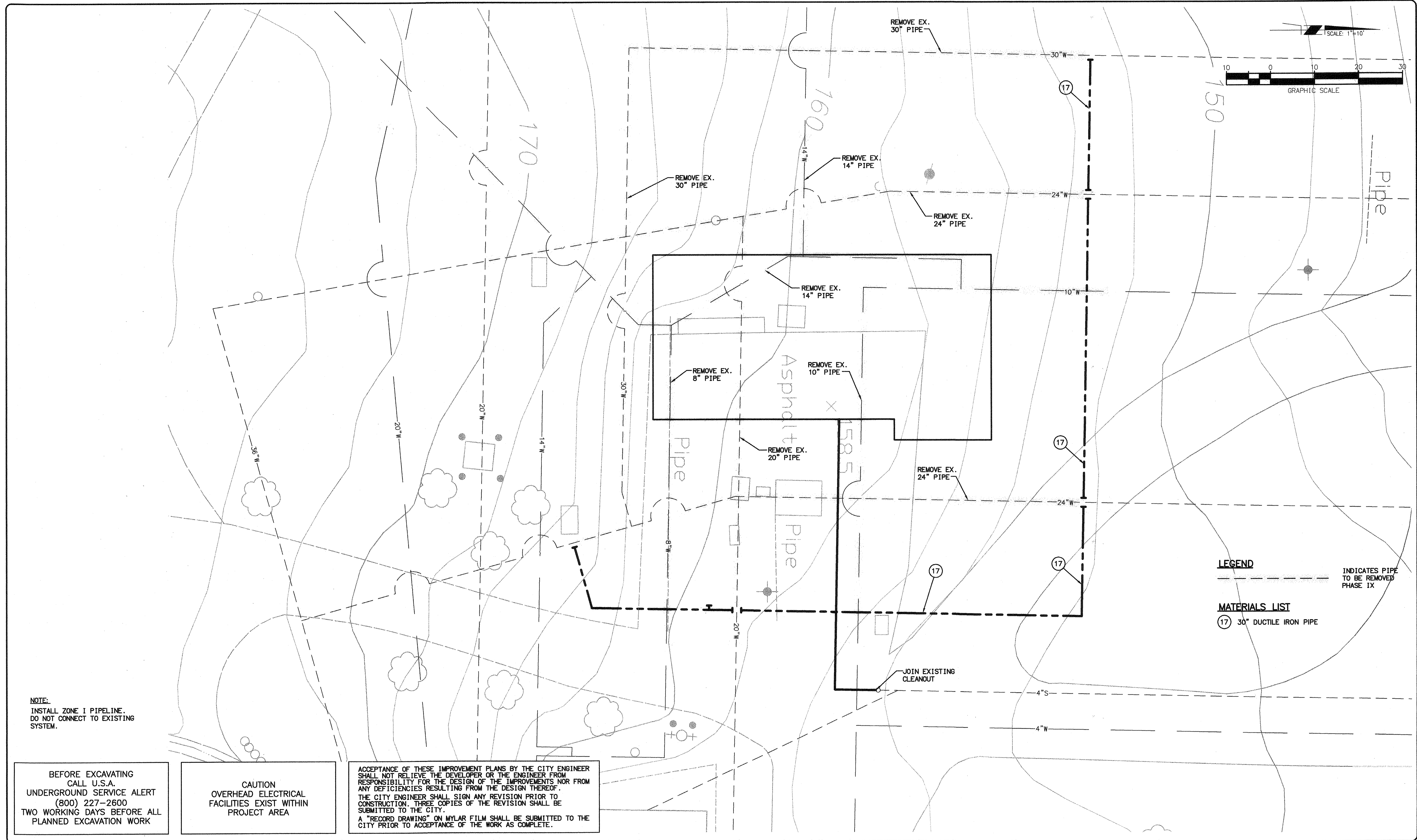
DESIGNED: H.W. & R.T. APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL  
 PUMP STATION NO. 2  
 POTHOLE PLAN**



**C3  
 6 OF 77**

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**NOTE:**  
 INSTALL ZONE I PIPELINE.  
 DO NOT CONNECT TO EXISTING  
 SYSTEM.

BEFORE EXCAVATING  
 CALL U.S.A.  
 UNDERGROUND SERVICE ALERT  
 (800) 227-2600  
 TWO WORKING DAYS BEFORE ALL  
 PLANNED EXCAVATION WORK

**CAUTION**  
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 A "RECORD DRAWING" ON MYLAR FILM SHALL BE SUBMITTED TO THE  
 CITY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.

**LEGEND**  
 ----- INDICATES PIPE  
 TO BE REMOVED  
 PHASE IX

**MATERIALS LIST**  
 (17) 30" DUCTILE IRON PIPE

**RBF**  
 CONSULTING  
 PLANNING ■ DESIGN ■ CONSTRUCTION

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*Paul A. Klein*  
 PAUL A. KLEIN 48367 02/02/07  
 R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

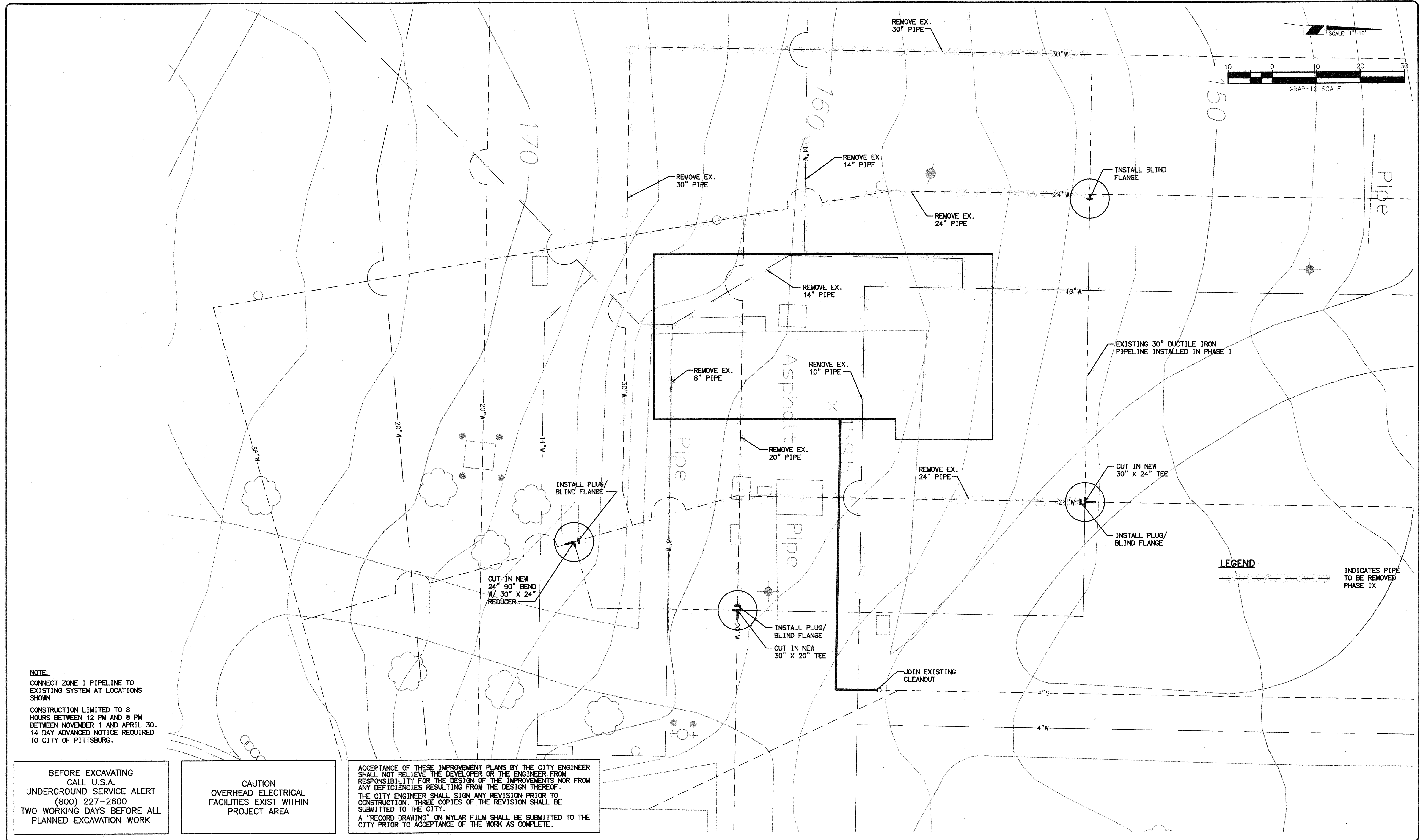
DESIGNED: H.W. & R.T. APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL  
 PUMP STATION NO. 2  
 SITE PIPING PHASE I**



**C4  
 7 OF 77**

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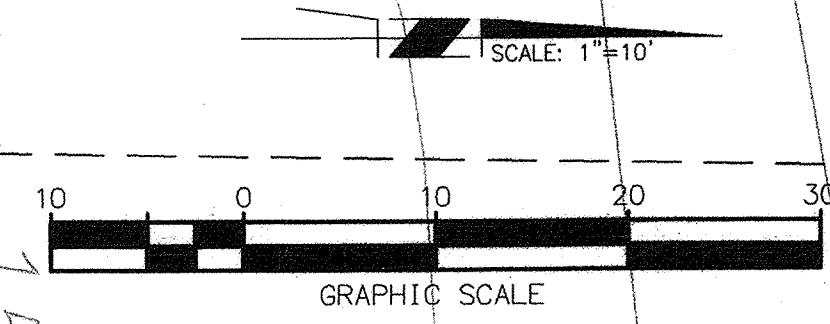


**NOTE:**  
 CONNECT ZONE I PIPELINE TO EXISTING SYSTEM AT LOCATIONS SHOWN.  
 CONSTRUCTION LIMITED TO 8 HOURS BETWEEN 12 PM AND 8 PM BETWEEN NOVEMBER 1 AND APRIL 30. 14 DAY ADVANCED NOTICE REQUIRED TO CITY OF PITTSBURG.

BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800) 227-2600 TWO WORKING DAYS BEFORE ALL PLANNED EXCAVATION WORK

CAUTION OVERHEAD ELECTRICAL FACILITIES EXIST WITHIN PROJECT AREA

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**LEGEND**  
 --- INDICATES PIPE TO BE REMOVED PHASE IX

**RBF CONSULTING**  
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 SACRAMENTO, CALIFORNIA 95834-2303  
 916.928.1113 • FAX 916.928.1117 • www.RBF.com  
 No. 48367 Exp. 6/30/08  
 CIVIL  
 Paul A. Klein  
 48367  
 R.C.E. NO. DATE 06/08/07

NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T.  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

APPROVED BY:

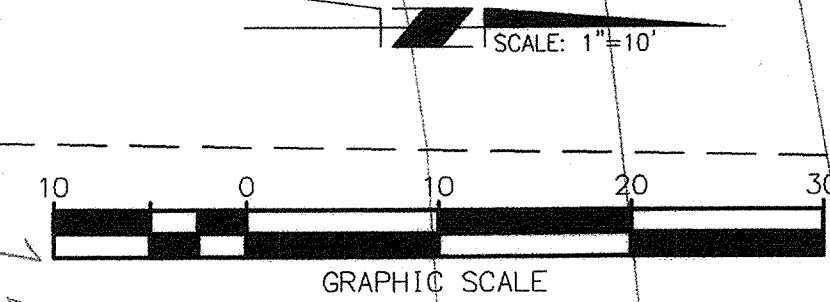
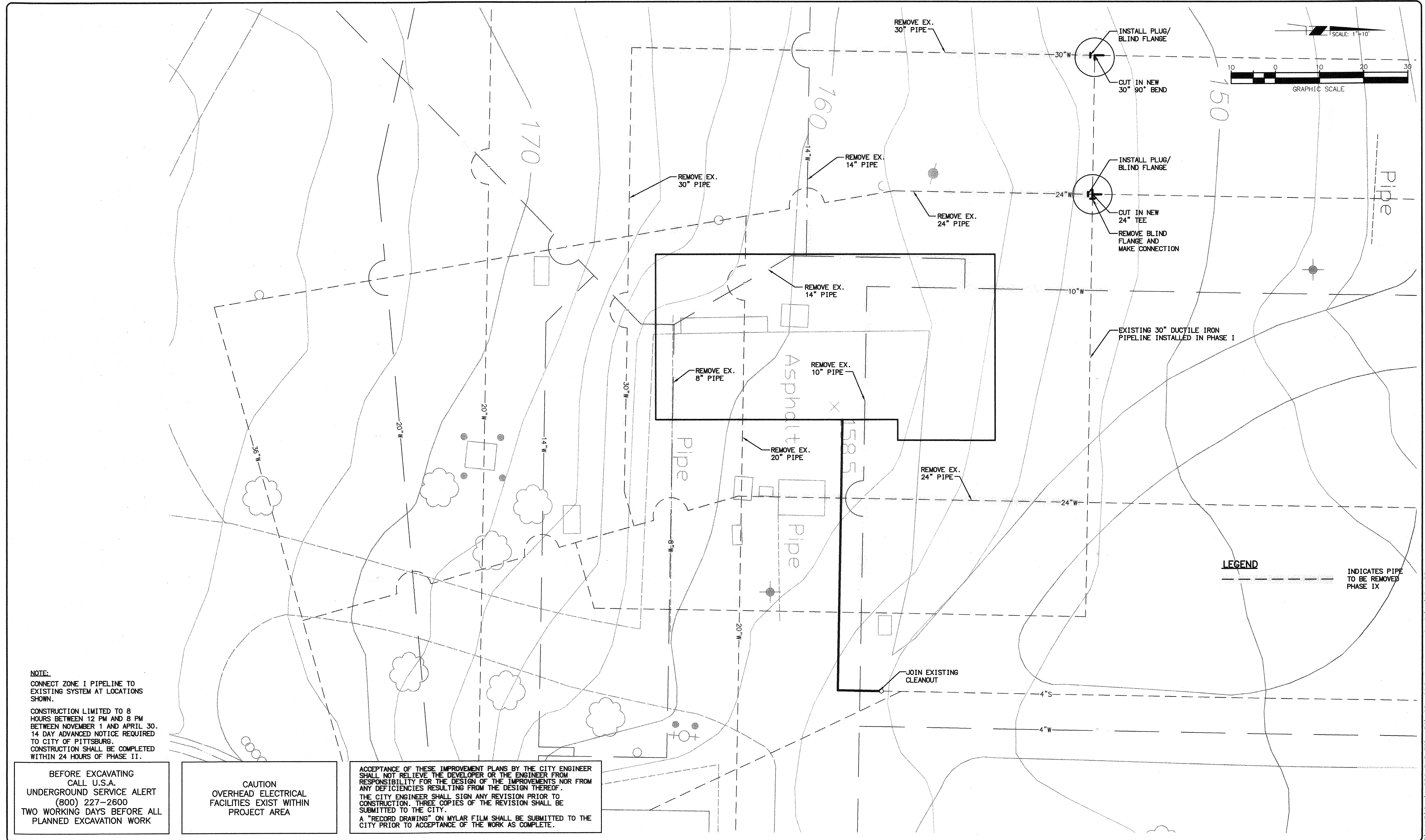
**HIGH LEVEL PUMP STATION NO. 2 SITE PIPING PHASE II**



**C5**  
**8 OF 77**

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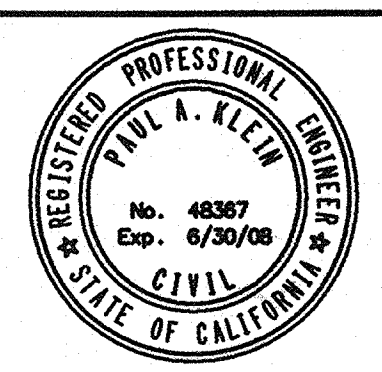
**NOTE:**  
 CONNECT ZONE I PIPELINE TO EXISTING SYSTEM AT LOCATIONS SHOWN.  
 CONSTRUCTION LIMITED TO 8 HOURS BETWEEN 12 PM AND 8 PM BETWEEN NOVEMBER 1 AND APRIL 30. 14 DAY ADVANCED NOTICE REQUIRED TO CITY OF PITTSBURG.  
 CONSTRUCTION SHALL BE COMPLETED WITHIN 24 HOURS OF PHASE II.

BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800) 227-2600 TWO WORKING DAYS BEFORE ALL PLANNED EXCAVATION WORK

CAUTION OVERHEAD ELECTRICAL FACILITIES EXIST WITHIN PROJECT AREA

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**LEGEND**  
 - - - - - INDICATES PIPE TO BE REMOVED PHASE IX



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 Paul A. Klein, 48367, R.C.E. NO., 02/06/07, DATE

NO.	DATE	APPROV.	REVISION

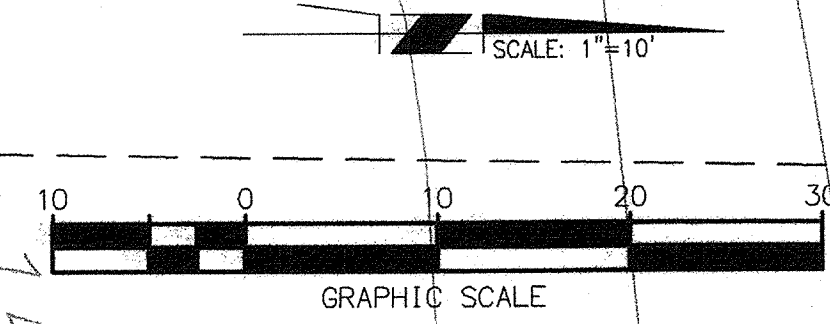
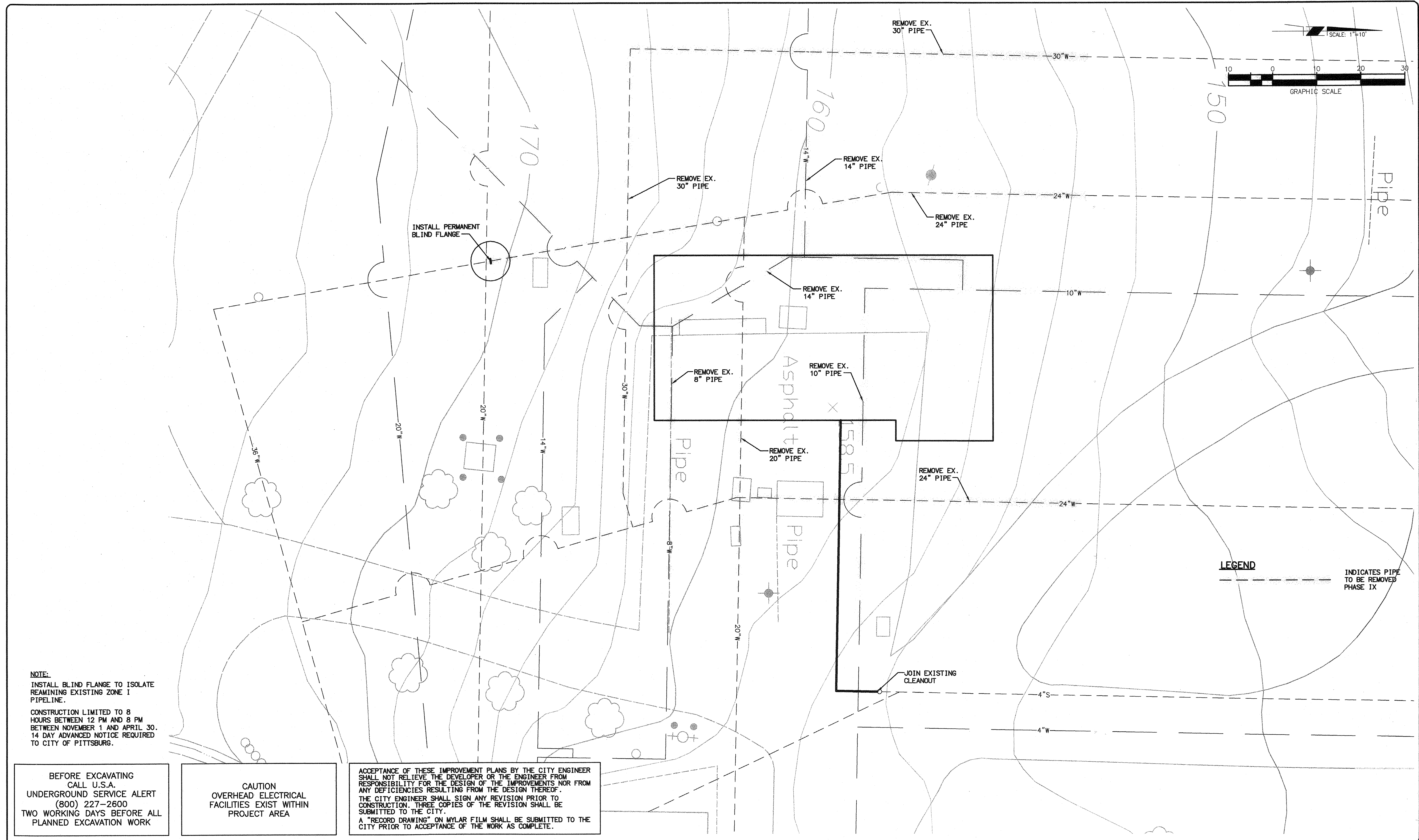
DESIGNED: H.W. & R.T.  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

APPROVED BY:

**HIGH LEVEL PUMP STATION NO. 2  
 SITE PIPING PHASE III**



**C6  
 9 OF 77**



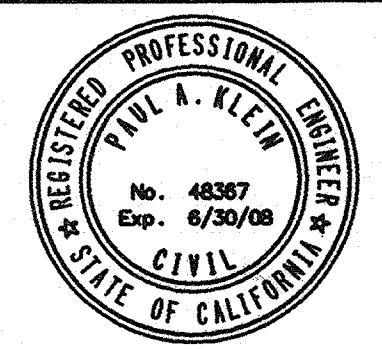
**NOTE:**  
 INSTALL BLIND FLANGE TO ISOLATE REMAINING EXISTING ZONE I PIPELINE.  
 CONSTRUCTION LIMITED TO 8 HOURS BETWEEN 12 PM AND 8 PM BETWEEN NOVEMBER 1 AND APRIL 30. 14 DAY ADVANCED NOTICE REQUIRED TO CITY OF PITTSBURGH.

BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800) 227-2600 TWO WORKING DAYS BEFORE ALL PLANNED EXCAVATION WORK

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**LEGEND**  
 - - - - - INDICATES PIPE TO BE REMOVED PHASE IX



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 Paul A. Klein  
 No. 48367 Exp. 6/30/09  
 48367 R.C.E. NO. 02/02/07 DATE

NO.	DATE	APPROV.	REVISION

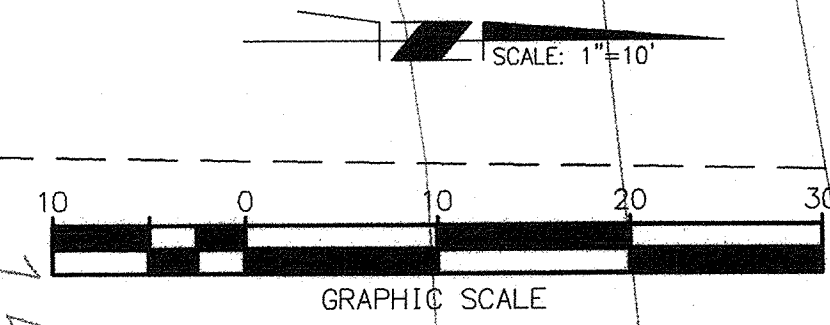
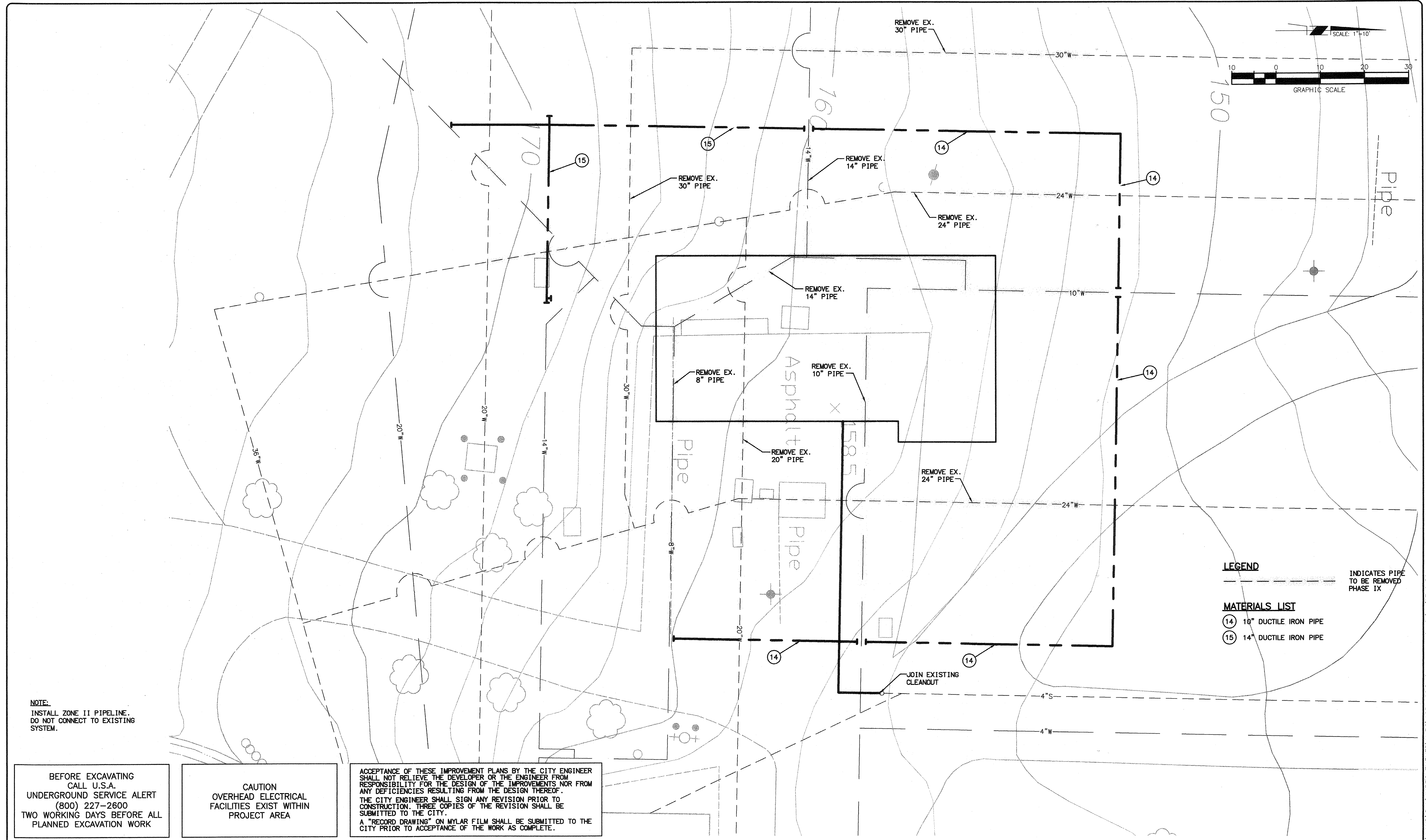
DESIGNED: H.W. & R.T. APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL PUMP STATION NO. 2**  
**SITE PIPING PHASE IV**



**C7**  
**10 OF 77**

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NOTE:  
INSTALL ZONE II PIPELINE.  
DO NOT CONNECT TO EXISTING  
SYSTEM.

BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

CAUTION  
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FACILITIES EXIST WITHIN  
PROJECT AREA

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**LEGEND**  
INDICATES PIPE  
TO BE REMOVED  
PHASE IX

**MATERIALS LIST**  
14 10" DUCTILE IRON PIPE  
15 14" DUCTILE IRON PIPE

**RBF CONSULTING** PLANNING ■ DESIGN ■ CONSTRUCTION  
2101 ARENA BOULEVARD, SUITE 250  
SACRAMENTO, CALIFORNIA 95834-2903  
916.928.1113 • FAX 916.928.1117 • www.RBF.com

*Paul A. Klein*  
PAUL A. KLEIN 48367 08/06/07  
R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T.  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

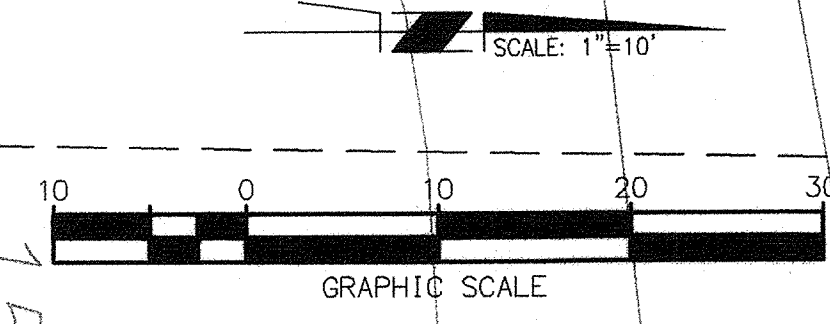
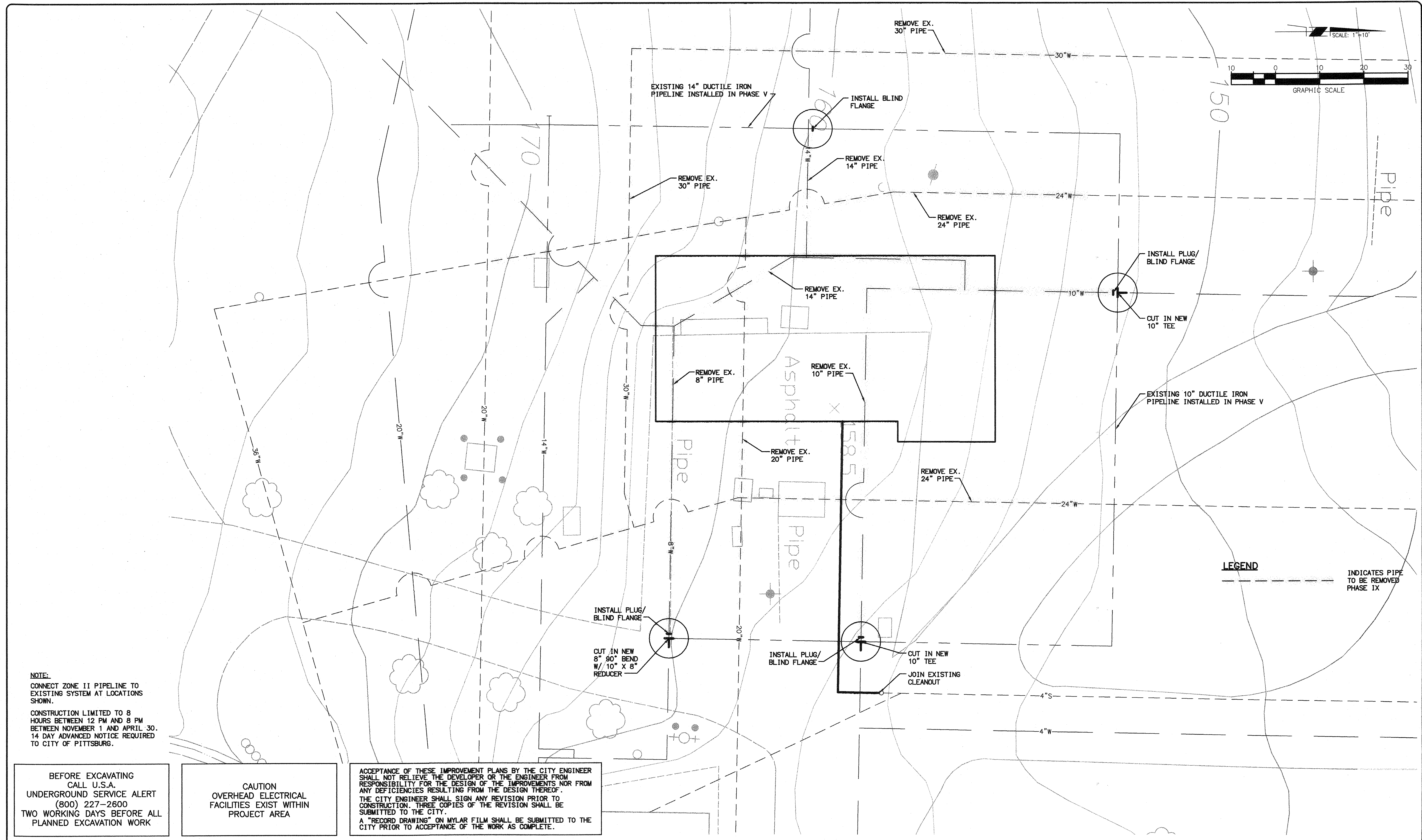
APPROVED BY:

**HIGH LEVEL  
PUMP STATION NO. 2  
SITE PIPING PHASE V**



**C8**  
11 OF 77

H:\PDATA\60100165\CADD\LAND\IMPROVEMENTS\HIPS\16SHLC8.DWG H.WILLIAMS 2/14/07 9:56 am



**NOTE:**  
 CONNECT ZONE II PIPELINE TO EXISTING SYSTEM AT LOCATIONS SHOWN.  
 CONSTRUCTION LIMITED TO 8 HOURS BETWEEN 12 PM AND 8 PM BETWEEN NOVEMBER 1 AND APRIL 30. 14 DAY ADVANCED NOTICE REQUIRED TO CITY OF PITTSBURG.

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**LEGEND**  
 - - - - - INDICATES PIPE TO BE REMOVED PHASE IX

**RBF** PLANNING ■ DESIGN ■ CONSTRUCTION  
 CONSULTING  
 2101 ARENA BOULEVARD, SUITE 250  
 SACRAMENTO, CALIFORNIA 95834-2303  
 916.928.1113 • FAX 916.928.1117 • www.RBF.com  
 No. 48367 Exp. 6/30/08  
 CIVIL  
 Paul A. Klein  
 48367 02/04/07  
 R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

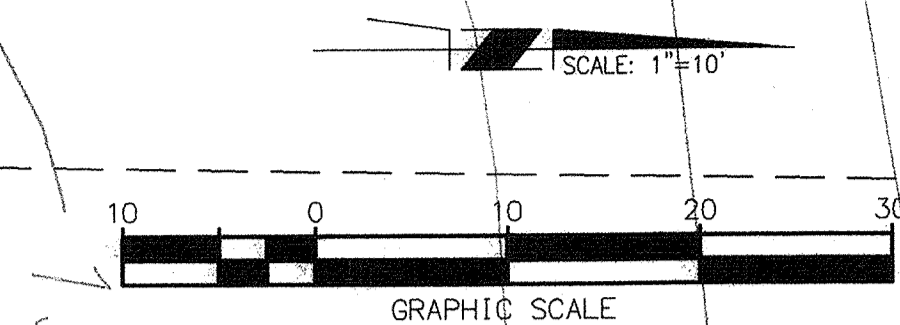
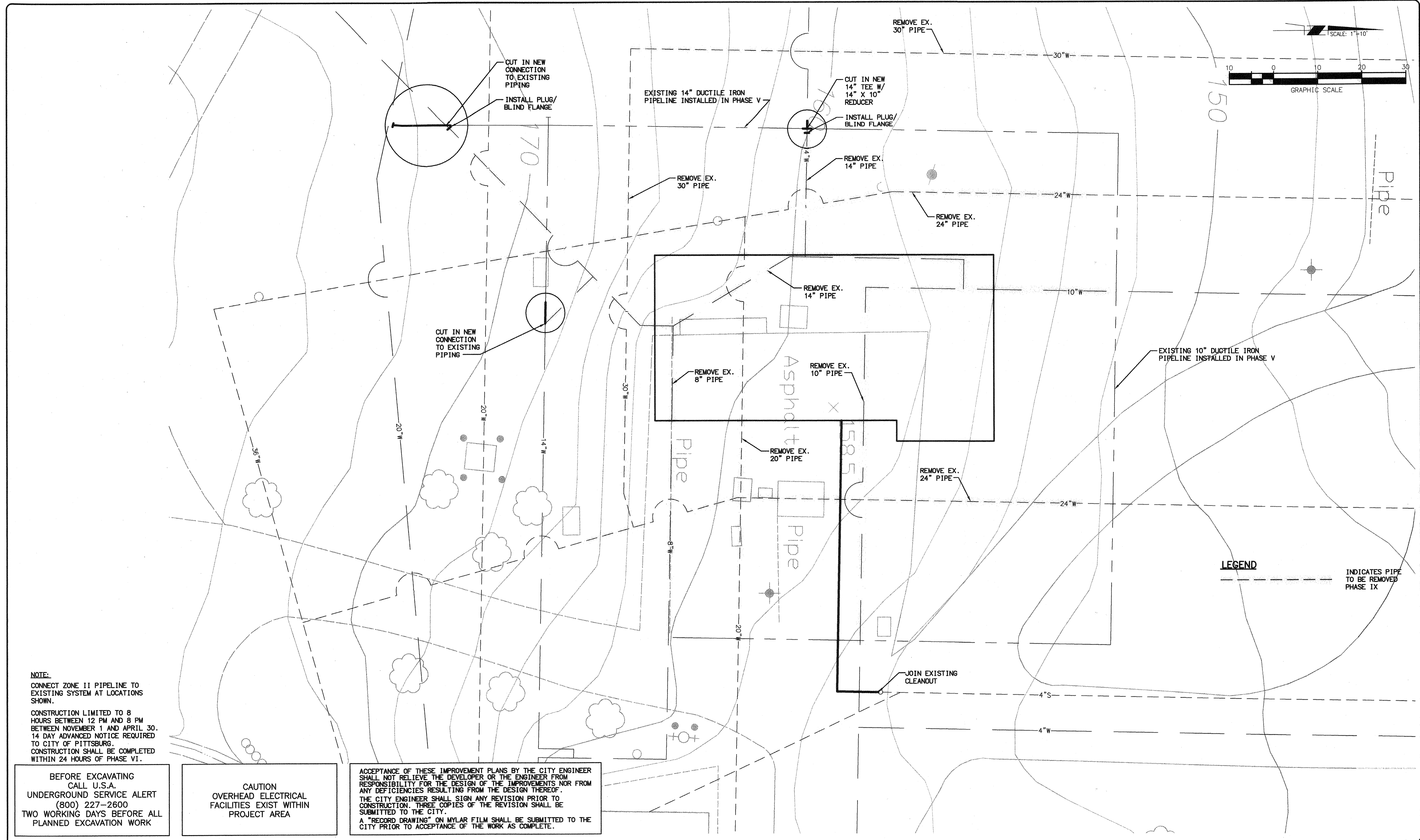
DESIGNED: H.W. & R.T. APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL PUMP STATION NO. 2**  
**SITE PIPING PHASE VI**



**C9**  
**12 OF 77**

H:\PDATA\60100165\CADD\LAND\IMPROVEMENTS\HLP5\165HLC9.DWG H\WILLIAMS 2/14/07 9:57 am



**NOTE:**  
 CONNECT ZONE II PIPELINE TO EXISTING SYSTEM AT LOCATIONS SHOWN.  
 CONSTRUCTION LIMITED TO 8 HOURS BETWEEN 12 PM AND 8 PM BETWEEN NOVEMBER 1 AND APRIL 30. 14 DAY ADVANCED NOTICE REQUIRED TO CITY OF PITTSBURG.  
 CONSTRUCTION SHALL BE COMPLETED WITHIN 24 HOURS OF PHASE VI.

BEFORE EXCAVATING  
 CALL U.S.A.  
 UNDERGROUND SERVICE ALERT  
 (800) 227-2600  
 TWO WORKING DAYS BEFORE ALL  
 PLANNED EXCAVATION WORK

CAUTION  
 OVERHEAD ELECTRICAL  
 FACILITIES EXIST WITHIN  
 PROJECT AREA

ACCEPTANCE OF THESE IMPROVEMENT PLANS BY THE CITY ENGINEER SHALL NOT RELIEVE THE DEVELOPER OR THE ENGINEER FROM RESPONSIBILITY FOR THE DESIGN OF THE IMPROVEMENTS NOR FROM ANY DEFICIENCIES RESULTING FROM THE DESIGN THEREOF.  
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 A "RECORD DRAWING" ON MYLAR FILM SHALL BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.

**LEGEND**  
 - - - - - INDICATES PIPE TO BE REMOVED PHASE IX

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 No. 48367 Exp. 6/30/08  
 CIVIL  
 48367 02/06/07  
 PAUL A. KLEIN R.C.E. NO. DATE

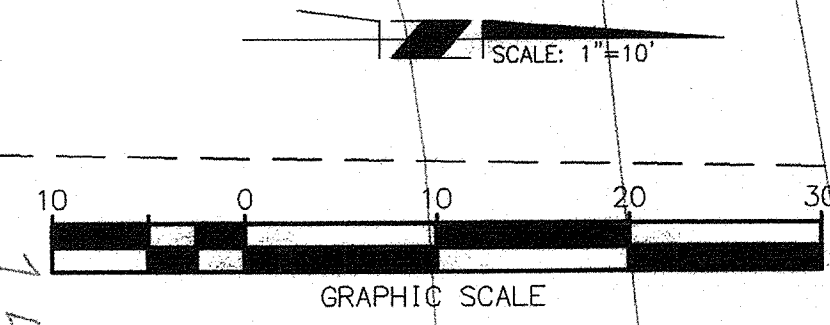
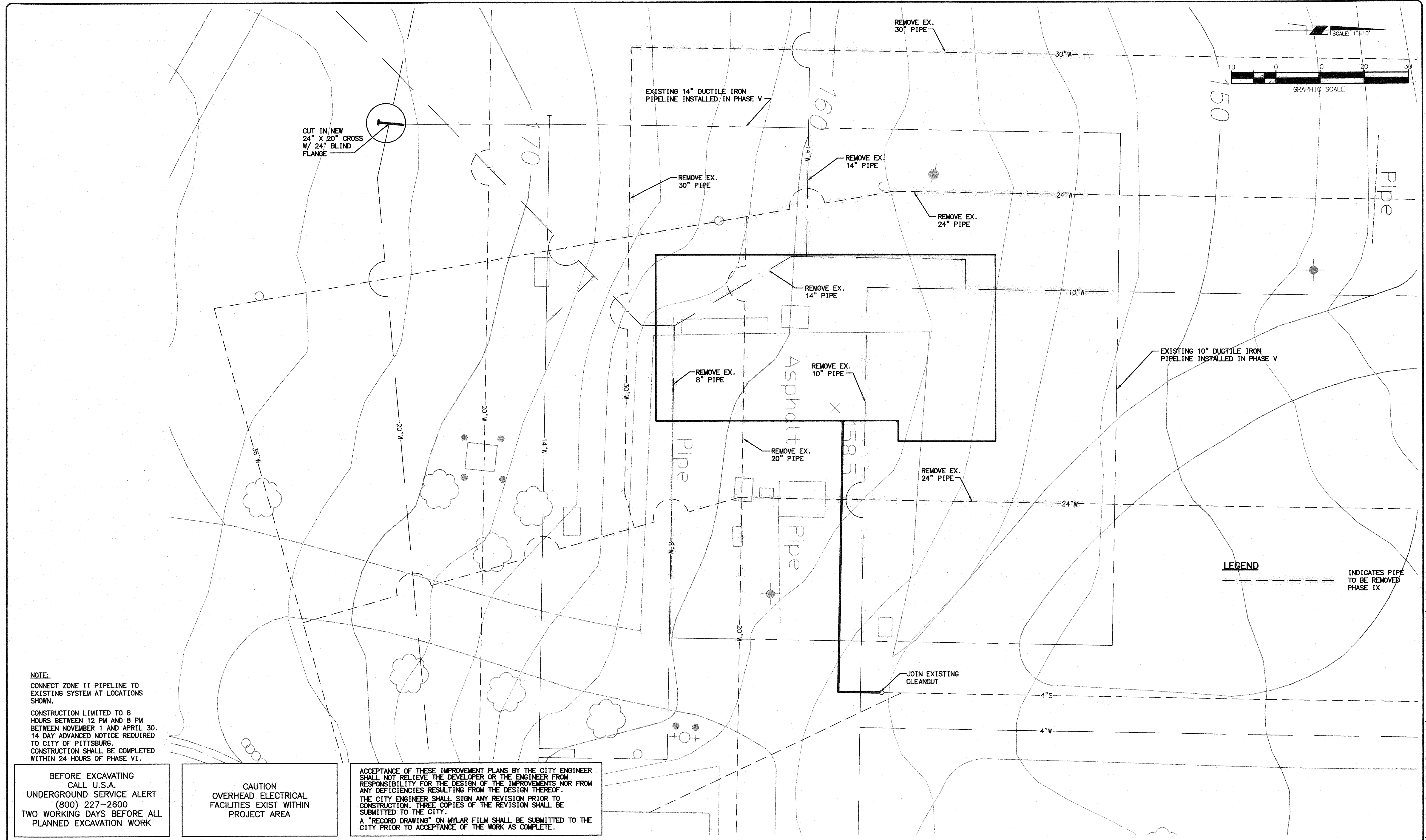
NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T.  
 APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL  
 PUMP STATION NO. 2  
 SITE PIPING PHASE VII**



**C10**  
**13 OF 77**



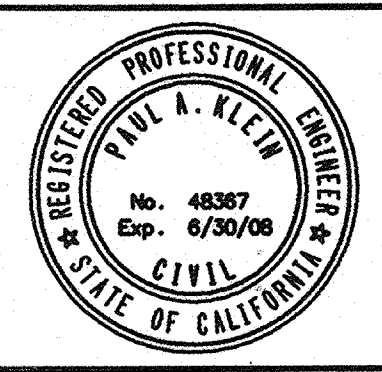
**NOTE:**  
 CONNECT ZONE II PIPELINE TO EXISTING SYSTEM AT LOCATIONS SHOWN.  
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 CONSTRUCTION SHALL BE COMPLETED WITHIN 24 HOURS OF PHASE VI.

BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800) 227-2600 TWO WORKING DAYS BEFORE ALL PLANNED EXCAVATION WORK

CAUTION OVERHEAD ELECTRICAL FACILITIES EXIST WITHIN PROJECT AREA

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**LEGEND**  
 - - - - - INDICATES PIPE TO BE REMOVED PHASE IX

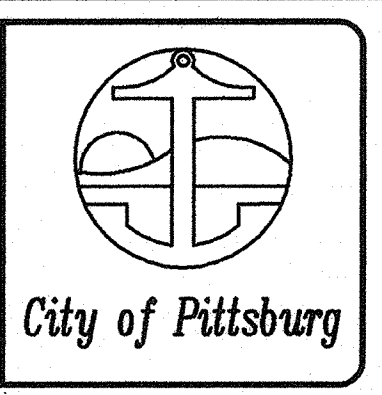


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 create 48367 08/26/07  
 PAUL A. KLEIN R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

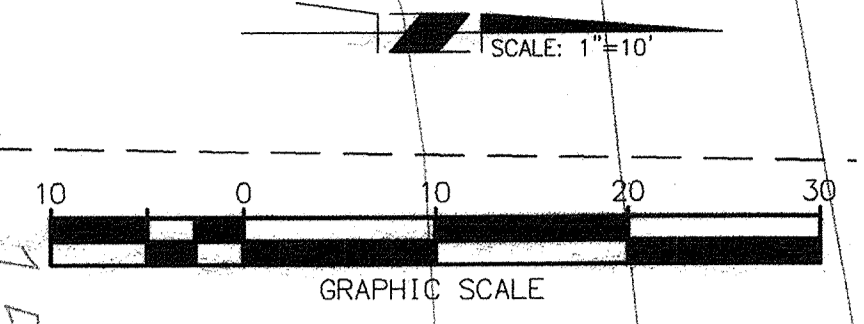
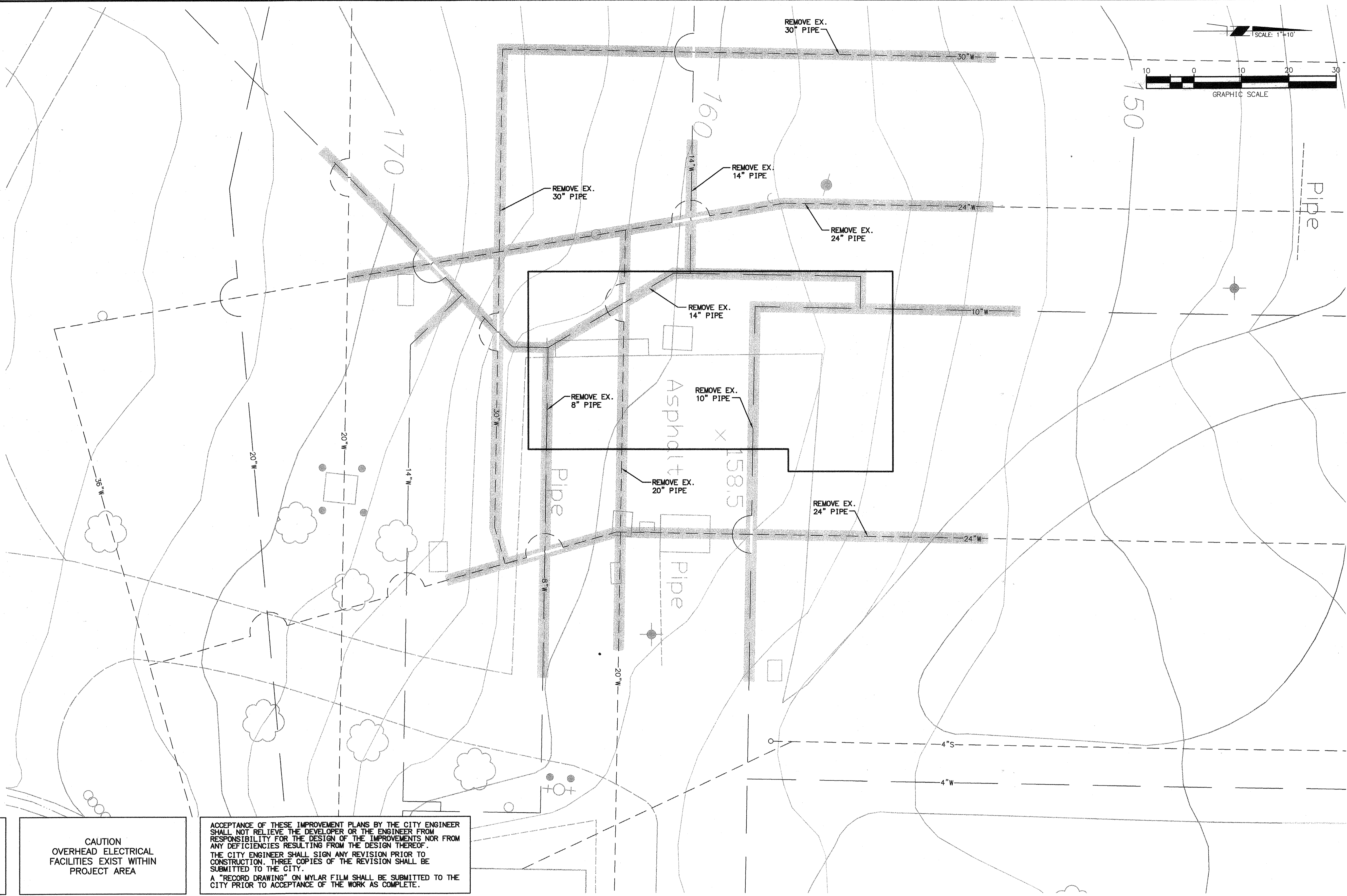
DESIGNED: H.W. & R.T. APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL PUMP STATION NO. 2 SITE PIPING PHASE VIII**



**C11**  
**14 OF 77**

H:\DATA\60100165\CADD\LAND\IMPROVEMENTS\HIPS\169HLC1.DWG H.WILLIAMS 2/14/07 9:58 am

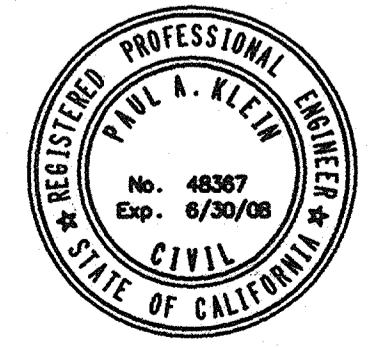


**NOTE:**  
REMOVE ALL ABANDONED  
ZONE I AND ZONE II  
PIPING.

BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

**CAUTION**  
OVERHEAD ELECTRICAL  
FACILITIES EXIST WITHIN  
PROJECT AREA

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CITY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.



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916.928.1113 • FAX 916.928.1117 • www.RBF.com  
*Paul A. Klein*  
PAUL A. KLEIN 48367 R.C.E. NO. 02/02/07 DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T.  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

APPROVED BY:

**HIGH LEVEL  
PUMP STATION NO. 2  
SITE PIPING PHASE IX**



**C12**  
**15 OF 77**

**COORDINATES**

A	N 51,711.1043	Q	N 51,720.7403
B	E 95,542.2454	R	E 95,656.1625
C	N 51,711.1043	S	N 51,661.3697
D	E 95,584.2454	T	E 95,676.2544
E	N 51,634.4377	U	N 51,661.3697
F	E 95,579.5787	V	E 95,665.4130
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K	N 51,711.1043	AA	N 51,621.5081
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M	N 51,719.8285	CC	N 51,686.9998
N	E 95,614.8879	DD	E 95,633.4654
O	N 51,754.4657	EE	N 51,671.9153
P	E 95,576.2240	FF	E 95,619.4949
Q	N 51,787.1146		
R	E 95,554.6729		
S	N 51,802.0650		
T	E 95,549.6040		
U	N 51,805.0027		
V	E 95,567.9911		
W	N 51,767.1278		
X	E 95,587.5673		
Y	N 51,728.0989		
Z	E 95,631.1334		
AA	N 51,731.6805		
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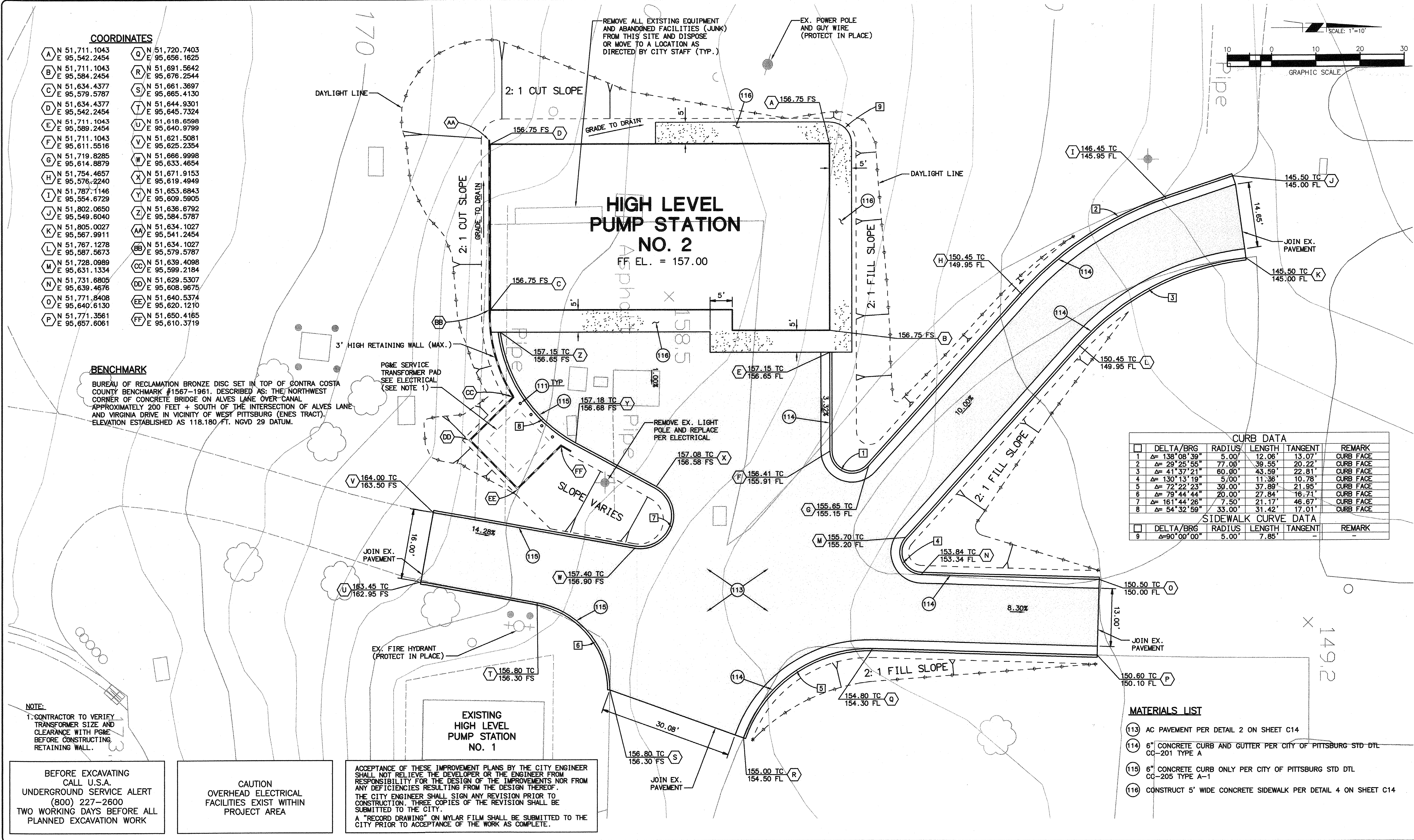
**BENCHMARK**  
 BUREAU OF RECLAMATION BRONZE DISC SET IN TOP OF CONTRA COSTA COUNTY BENCHMARK #1567-1961. DESCRIBED AS: THE NORTHWEST CORNER OF CONCRETE BRIDGE ON ALVES LANE OVER CANAL APPROXIMATELY 200 FEET + SOUTH OF THE INTERSECTION OF ALVES LANE AND VIRGINIA DRIVE IN VICINITY OF WEST PITTSBURG (ENES TRACT). ELEVATION ESTABLISHED AS 118.180 FT. NGVD 29 DATUM.

**NOTE:**  
 1. CONTRACTOR TO VERIFY TRANSFORMER SIZE AND CLEARANCE WITH PG&E BEFORE CONSTRUCTING RETAINING WALL.

BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800) 227-2600 TWO WORKING DAYS BEFORE ALL PLANNED EXCAVATION WORK

CAUTION OVERHEAD ELECTRICAL FACILITIES EXIST WITHIN PROJECT AREA

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**CURB DATA**

DELTA/BRG	RADIUS	LENGTH	TANGENT	REMARK
1 Δ= 136° 08' 39"	5.00'	12.06'	13.07'	CURB FACE
2 Δ= 29° 25' 55"	77.00'	39.55'	20.22'	CURB FACE
3 Δ= 41° 37' 21"	60.00'	43.59'	22.81'	CURB FACE
4 Δ= 130° 13' 19"	5.00'	11.38'	10.78'	CURB FACE
5 Δ= 72° 22' 23"	30.00'	37.89'	21.95'	CURB FACE
6 Δ= 79° 44' 44"	20.00'	27.84'	16.71'	CURB FACE
7 Δ= 161° 44' 26"	7.50'	21.17'	46.67'	CURB FACE
8 Δ= 54° 32' 59"	33.00'	31.42'	17.01'	CURB FACE

**SIDEWALK CURVE DATA**

DELTA/BRG	RADIUS	LENGTH	TANGENT	REMARK
9 Δ= 90° 00' 00"	5.00'	7.85'	-	-

- MATERIALS LIST**
- (113) AC PAVEMENT PER DETAIL 2 ON SHEET C14
  - (114) 6" CONCRETE CURB AND GUTTER PER CITY OF PITTSBURG STD DTL CC-201 TYPE A
  - (115) 6" CONCRETE CURB ONLY PER CITY OF PITTSBURG STD DTL CC-205 TYPE A-1
  - (116) CONSTRUCT 5' WIDE CONCRETE SIDEWALK PER DETAIL 4 ON SHEET C14

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Paul A. Klein  
 48367  
 R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

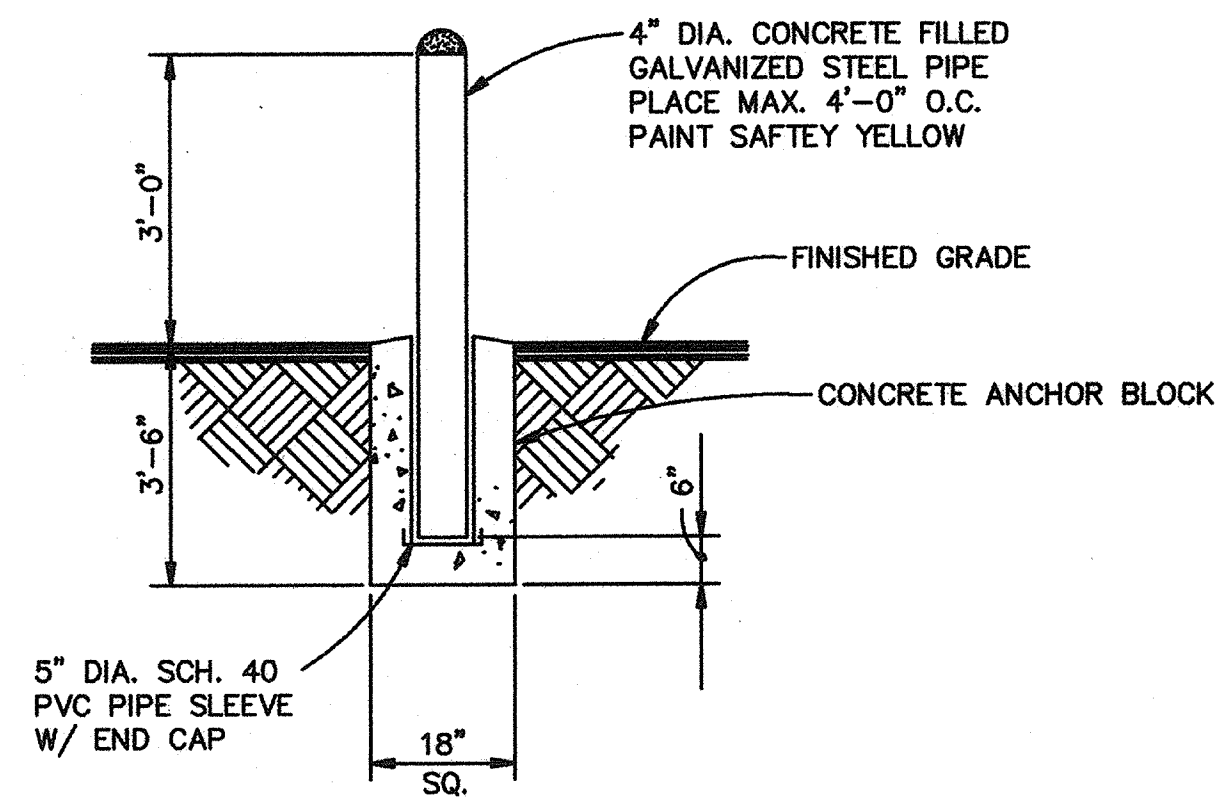
DESIGNED: H.W. & R.T.  
 APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL PUMP STATION NO. 2 SITE IMPROVEMENT PLAN**

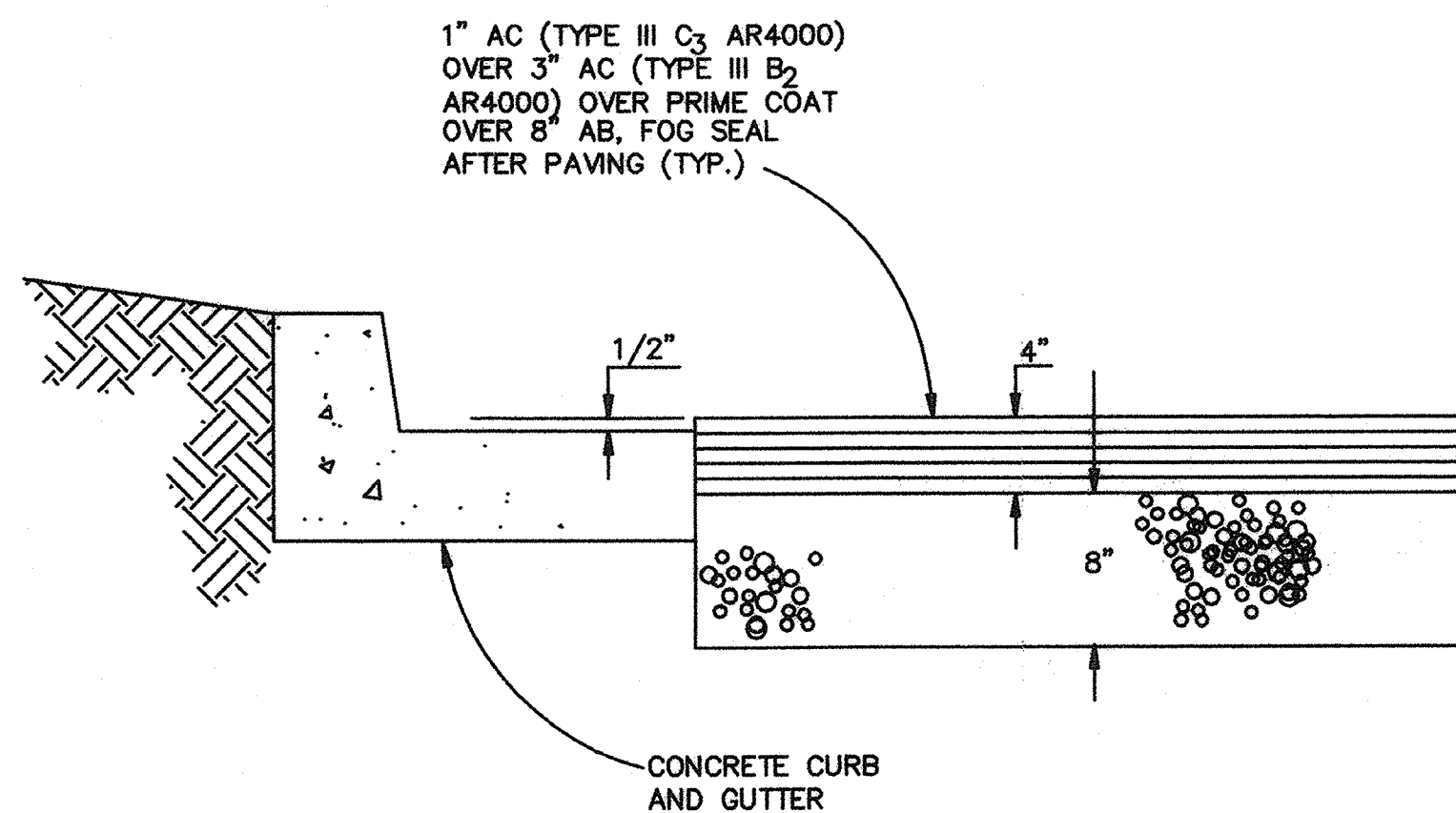


**C13**  
**16 OF 77**



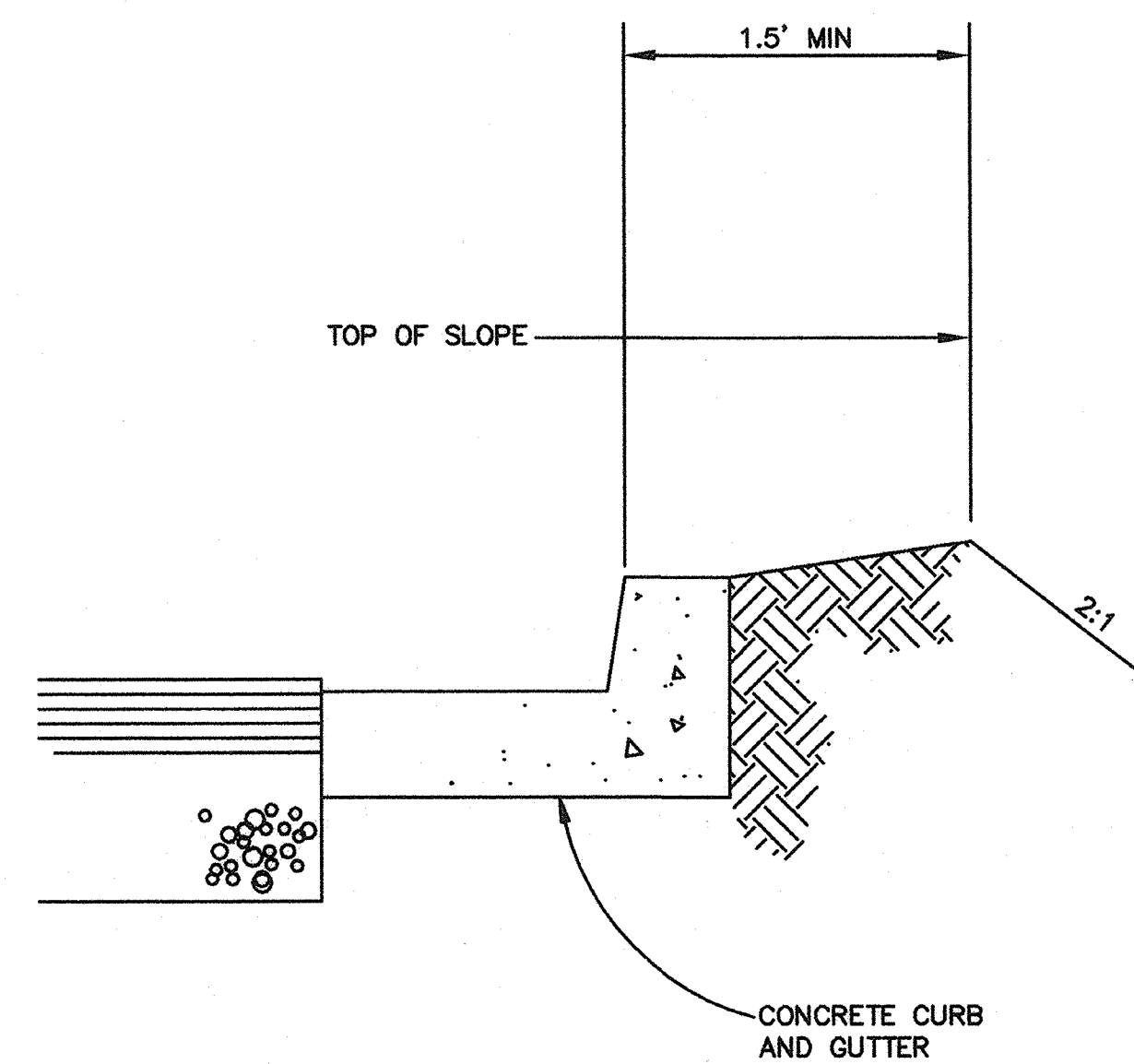


1 REMOVABLE GUARD POST DETAIL  
SCALE: N.T.S.

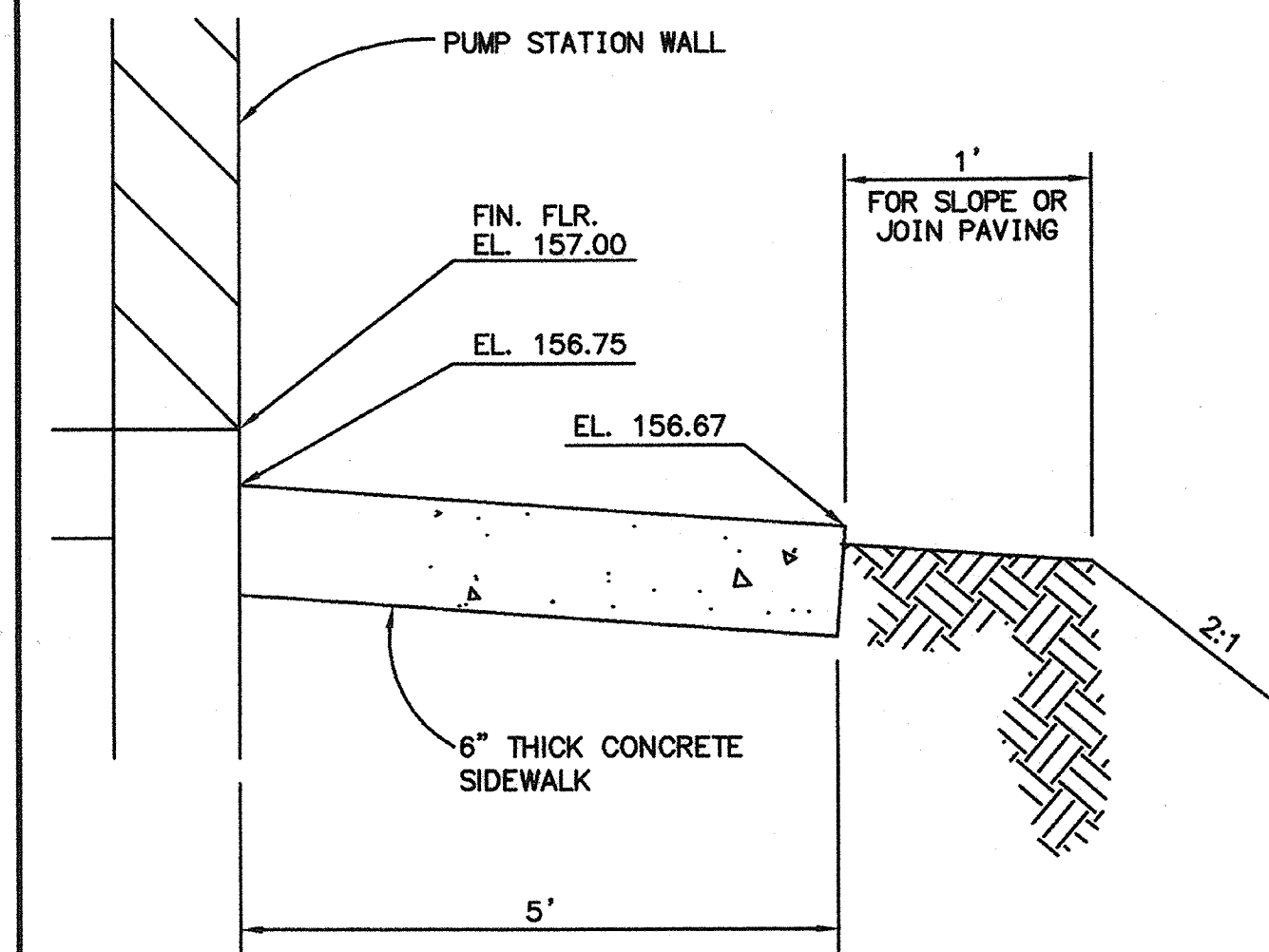


NOTE:  
PAVEMENT SECTION TO BE  
CONFIRMED BY GEOTECHNICAL  
ENGINEER IN FIELD PRIOR TO  
CONSTRUCTION.

2 PAVEMENT DETAIL  
SCALE: N.T.S.



3 CURB AT TOP OF SLOPE  
SCALE: N.T.S.

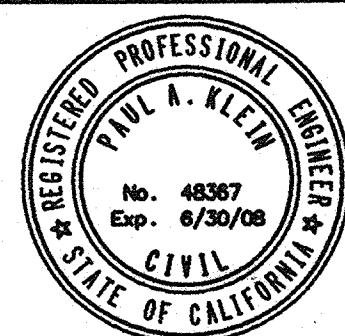


4 SIDEWALK  
SCALE: N.T.S.

BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
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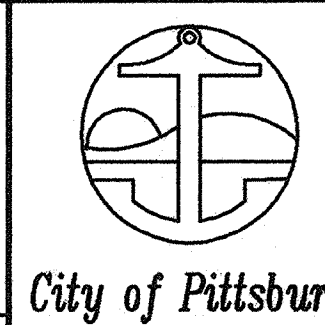


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SACRAMENTO, CALIFORNIA 95834-2903  
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**PAAC**  
PAUL A. KLEIN 48367 R.C.E. NO. DATE 02/16/07

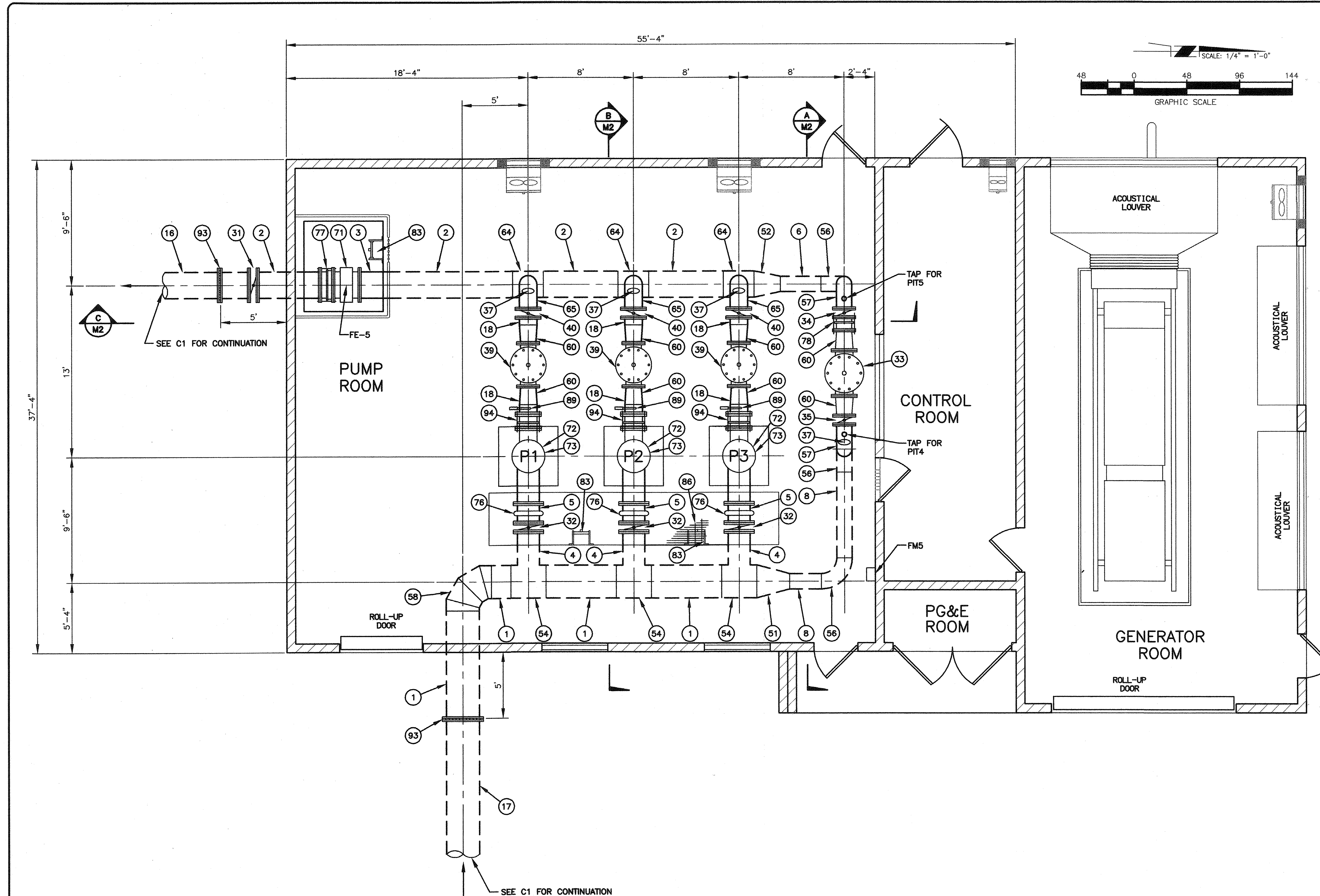
NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T. APPROVED BY:  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

**HIGH LEVEL  
PUMP STATION NO. 2  
CIVIL DETAILS**



**C14  
17 OF 77**



**MATERIALS LIST**

- ① 30" CML & C STEEL PIPE CLASS 150
- ② 24" CML & C STEEL PIPE CLASS 250
- ③ 24" CML STEEL PIPE CLASS 250
- ④ 20" CML & C STEEL PIPE CLASS 150
- ⑤ 20" CML STEEL PIPE CLASS 150
- ⑥ 14" CML & C STEEL PIPE CLASS 250
- ⑧ 14" CML & C STEEL PIPE CLASS 150
- ⑬ 24" DUCTILE IRON PIPE
- ⑰ 30" DUCTILE IRON PIPE
- ⑱ 16" CML STEEL PIPE CLASS 250
- ⑳ 24" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR
- ㉑ 20" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR
- ㉒ 16" FLANGED PRESSURE RELIEF AND SURGE ANTICIPATOR VALVE CLASS 250, PER SPECS
- ㉓ 14" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR
- ㉔ 14" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR
- ㉕ 1" COMBINATION AIR VAC PER DETAIL 6 ON SHEET M4
- ㉖ 14" FLANGED PUMP CONTROL VALVE CLASS 250, PER SPECS
- ㉗ 16" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR
- ㉘ 30" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.
- ㉙ 24" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.
- ㉚ 30" x 20" CML & C STEEL TEE
- ㉛ 14" CML & C STEEL SMOOTH 90° ELBOW
- ㉜ 14" CML STEEL SMOOTH 90° ELBOW
- ㉝ 30" CML & C STEEL 4-PIECE 90° ELBOW
- ㉞ 16" x 14" CML STEEL ECCENTRIC REDUCER T.F.
- ㉟ 24" x 16" CML & C STEEL TEE
- ㊱ 16" CML STEEL SMOOTH 90° ELBOW
- ㊲ 24" FLANGED METER, PER SPECS
- ㊳ PUMP, PER SPECS
- ㊴ MOTOR, PER SPECS
- ㊵ 20" VICTAULIC COUPLING STYLE 77
- ㊶ 24" DISMANTLING JOINT
- ㊷ 14" DISMANTLING JOINT
- ㊸ LADDER W/ LADDER-UP SAFETY POST
- ㊹ METAL GRATE PER SPECS WITH VALVE KEYHOLE OPENING
- ㊺ PRESSURE GAGE PER DETAIL 2 ON SHEET M4
- ㊻ INSULATING FLANGE COUPLING
- ㊼ 16" DISMANTLING JOINT

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(800) 227-2600  
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CONSULTING

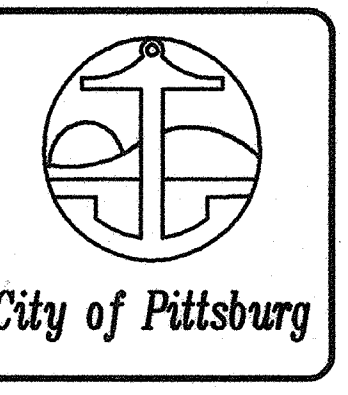
201 ARENA BOULEVARD, SUITE 250  
SACRAMENTO, CALIFORNIA 95834-2303  
916.928.1113 • FAX 916.928.1117 • www.RBF.com

*Paul A. Klein*  
PAUL A. KLEIN 48367 08/10/07  
R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

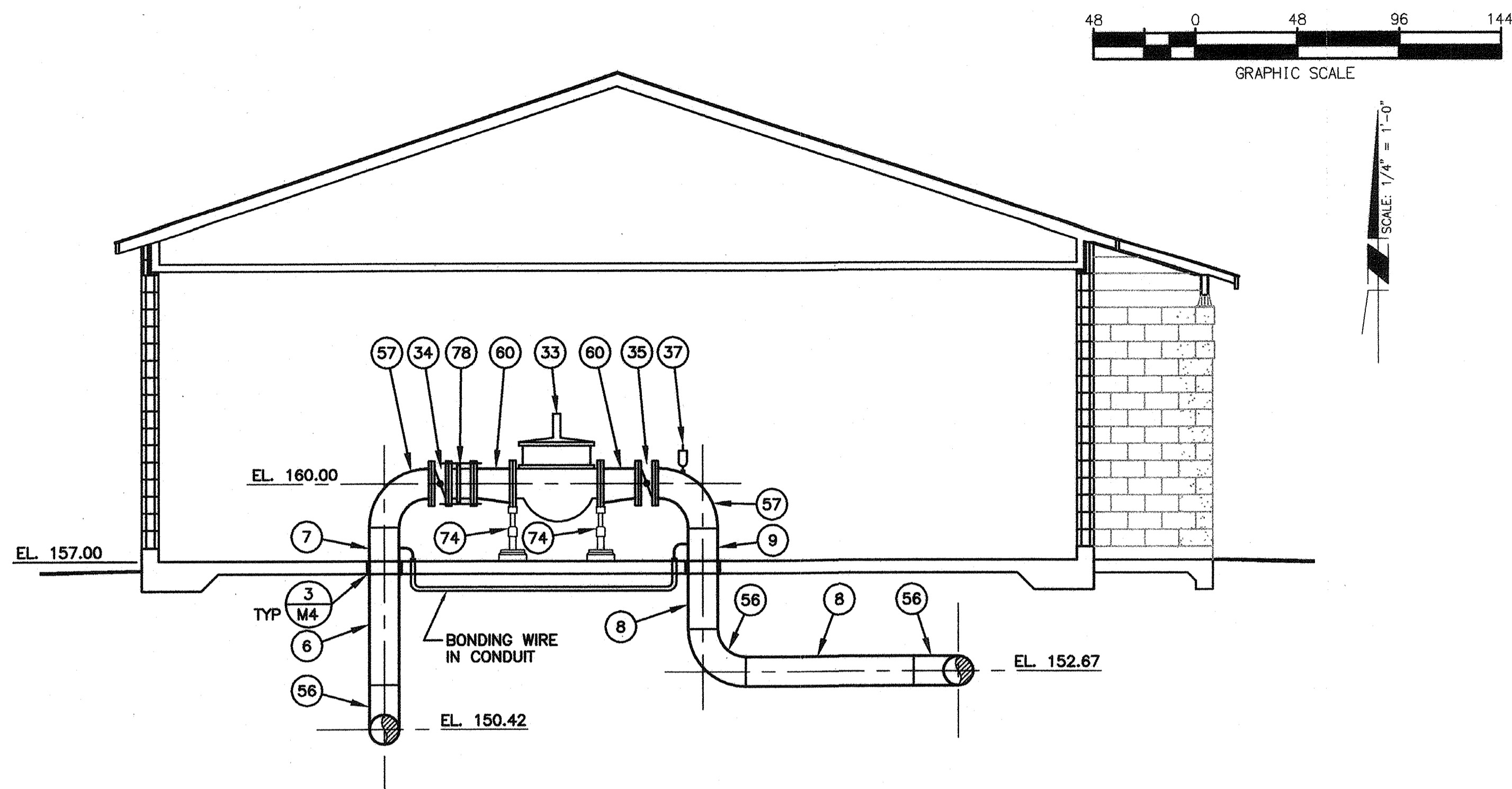
DESIGNED: H.W. & R.T.  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

**HIGH LEVEL  
PUMP STATION NO. 2  
MECHANICAL PLAN**

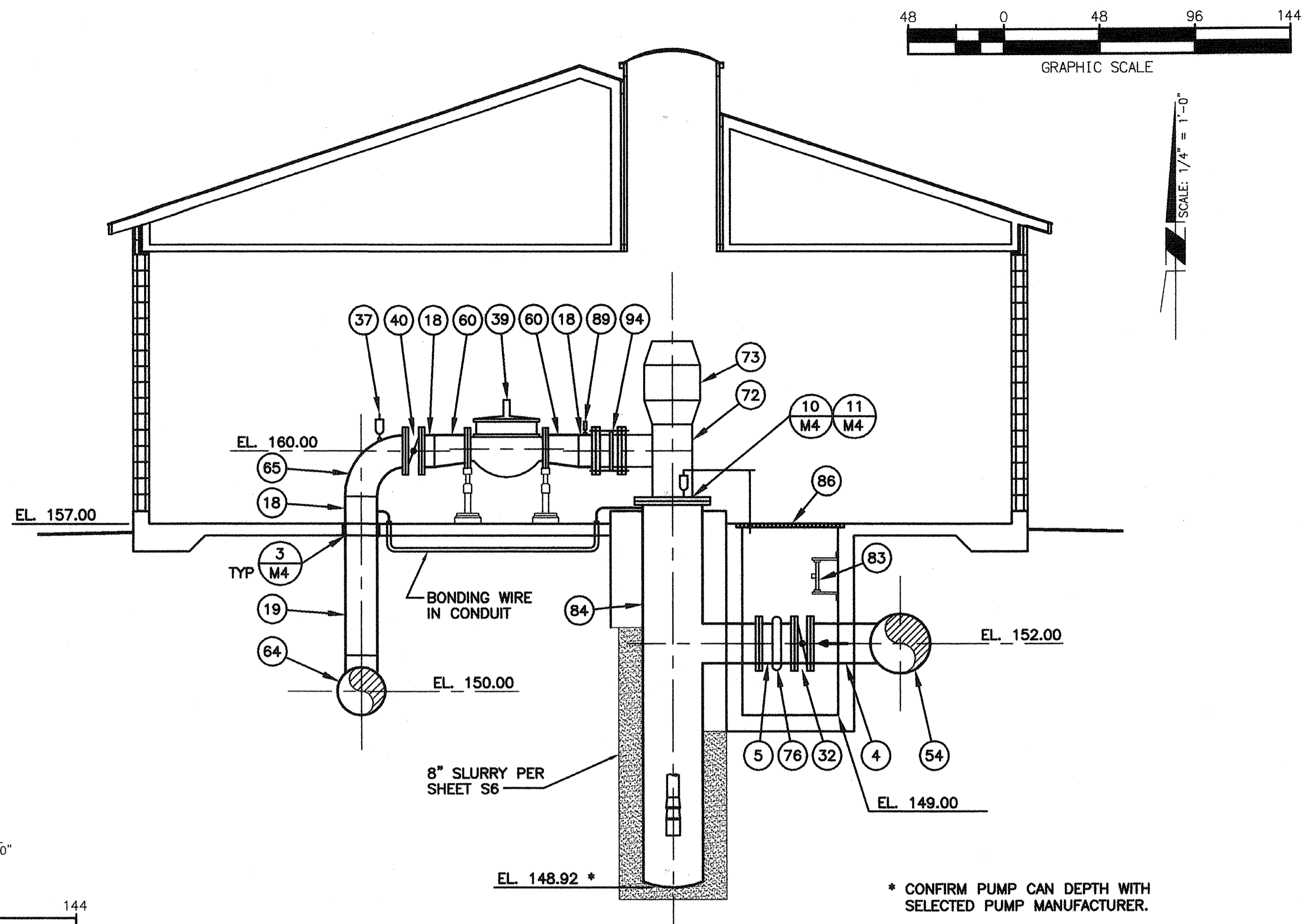


**M1  
18 OF 77**

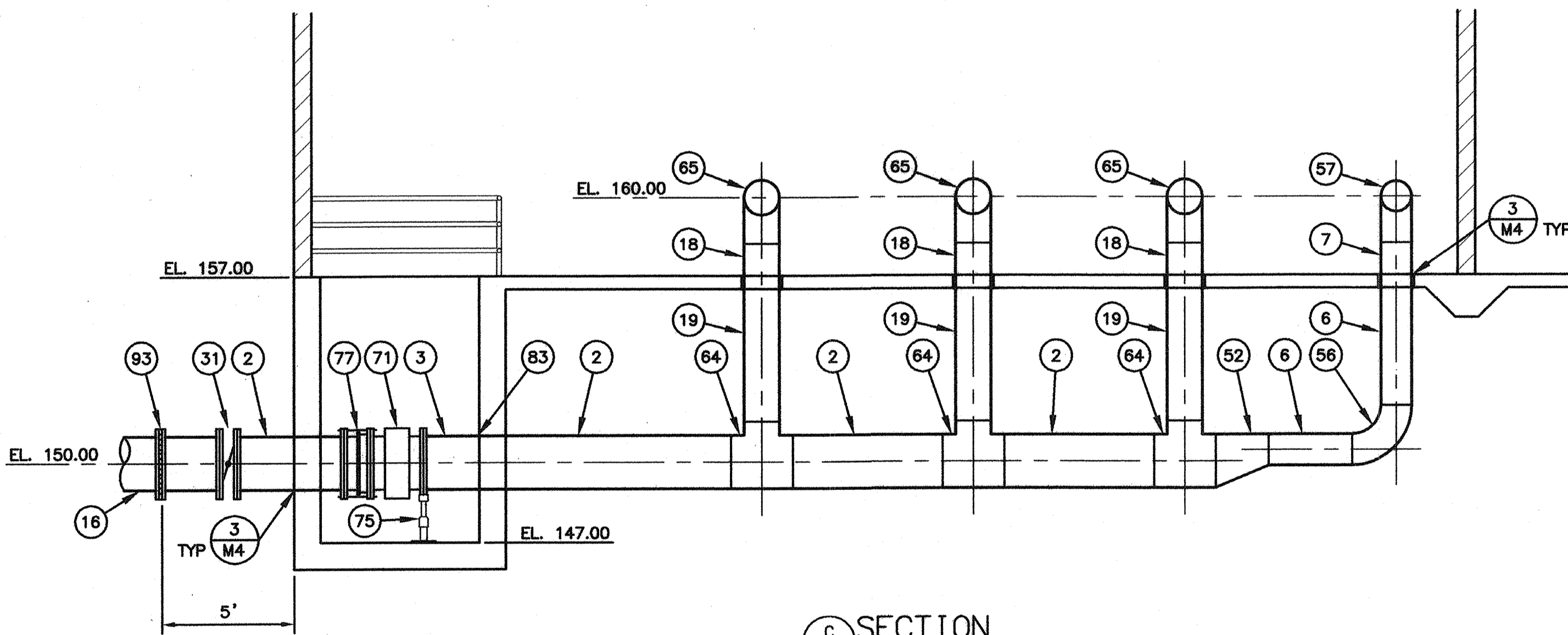
H:\PDATA\60100165\CADD\LAND\IMPROVEMENTS\HUPS\165HLM1.DWG H.WILLIAMS 8/7/07 8:54 am



**A SECTION**  
SCALE: 1/4" = 1'-0"



**B SECTION**  
SCALE: 1/4" = 1'-0"



**C SECTION**  
SCALE: 1/4" = 1'-0"

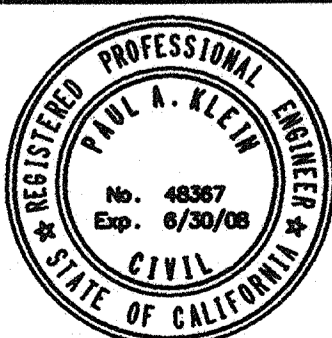
**MATERIALS LIST**

- |   |   |
|---|---|
| (2) 24" CML & C STEEL PIPE CLASS 250  | (52) 24" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.   |
| (3) 24" CML STEEL PIPE CLASS 250  | (54) 30" x 20" CML & C STEEL TEE                      |
| (4) 20" CML & C STEEL PIPE CLASS 150  | (56) 14" CML & C STEEL SMOOTH 90° ELBOW               |
| (5) 20" CML STEEL PIPE CLASS 150  | (57) 14" CML STEEL SMOOTH 90° ELBOW                   |
| (6) 14" CML & C STEEL PIPE CLASS 250  | (60) 16" x 14" CML STEEL ECCENTRIC REDUCER T.F.       |
| (7) 14" CML STEEL PIPE CLASS 250  | (64) 24" x 16" CML & C STEEL TEE                      |
| (8) 14" CML & C STEEL PIPE CLASS 150  | (65) 16" CML STEEL SMOOTH 90° ELBOW                   |
| (9) 14" CML STEEL PIPE CLASS 150  | (71) 24" FLANGED METER, PER SPECS                     |
| (16) 24" DUCTILE IRON PIPE  | (72) PUMP, PER SPECS                                  |
| (18) 16" CML STEEL PIPE CLASS 250   | (73) MOTOR, PER SPECS                                 |
| (19) 16" CML & C STEEL PIPE CLASS 250   | (74) PIPE SUPPORT PER DETAIL 5 ON SHEET M4            |
| (31) 24" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR                  | (75) PIPE SUPPORT PER DETAIL 9 ON SHEET M4            |
| (32) 20" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR                  | (76) 20" VICTAULIC COUPLING STYLE 77                  |
| (33) 16" FLANGED PRESSURE RELIEF AND SURGE ANTICIPATOR VALVE CLASS 250, PER SPECS | (77) 24" DISMANTLING JOINT                            |
| (34) 14" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR                  | (78) 14" DISMANTLING JOINT                            |
| (35) 14" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR                  | (83) LADDER W/ LADDER-UP SAFETY POST                  |
| (37) 1" COMBINATION AIR VAC PER DETAIL 6 ON SHEET M4                              | (84) 30" DIA. PUMP CAN                                |
| (39) 14" FLANGED PUMP CONTROL VALVE CLASS 250, PER SPECS                          | (86) METAL GRATE PER SPECS WITH VALVE KEYHOLE OPENING |
| (40) 16" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR                  | (89) PRESSURE GAGE PER DETAIL 2 ON SHEET M4           |
|   | (93) INSULATING FLANGE COUPLING                       |
|   | (94) 16" DISMANTLING JOINT                            |

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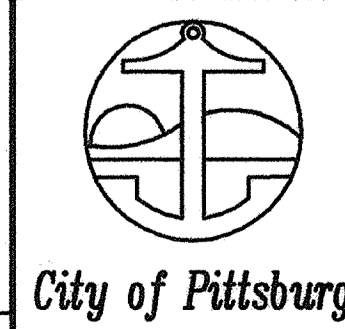


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Paul A. Klein  
R.C.E. NO.  
02/04/07  
DATE

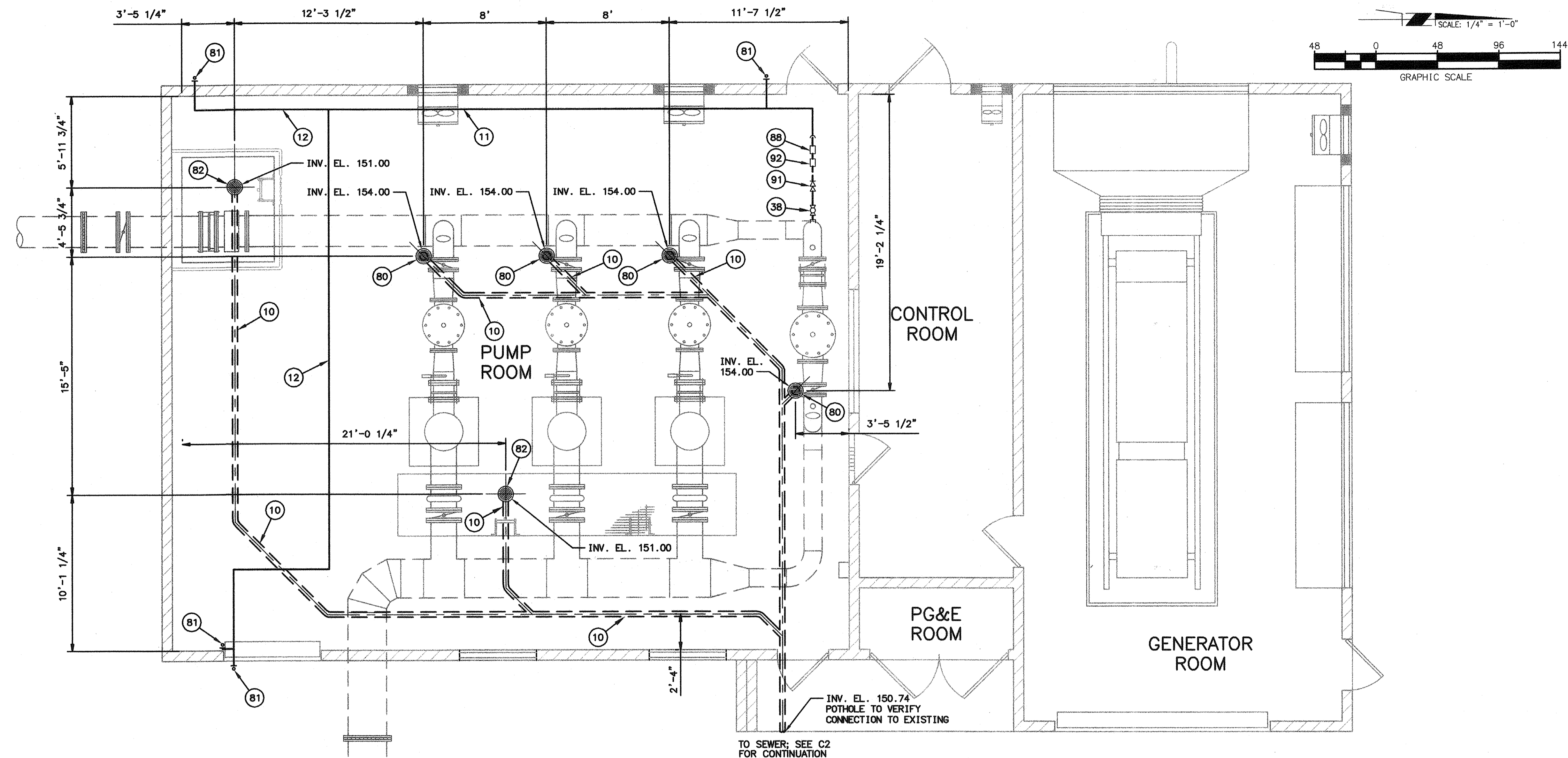
NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T.  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

**HIGH LEVEL  
PUMP STATION NO. 2  
MECHANICAL SECTIONS**



**M2**  
**19 OF 77**



- MATERIALS LIST**
- (10) 4" PVC SEWER PIPE
  - (11) 1 1/2" COPPER PIPE
  - (12) 3/4" COPPER PIPE
  - (38) 1 1/2" BRASS BALL VALVE
  - (80) CUP DRAIN PER DETAIL 8 ON SHEET M4
  - (81) 3/4" HOSE BIBB PER DETAIL 1 ON SHEET M5
  - (82) 12" FLOOR DRAIN W/ ANTI-SIPHON, SMITH OR EQUAL
  - (88) 1 1/2" FLOW METER
  - (91) 1 1/2" BACKFLOW PREVENTER
  - (92) 1 1/2" PRESSURE REGULATOR

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PAUL A. KLEIN 48367 02/06/07  
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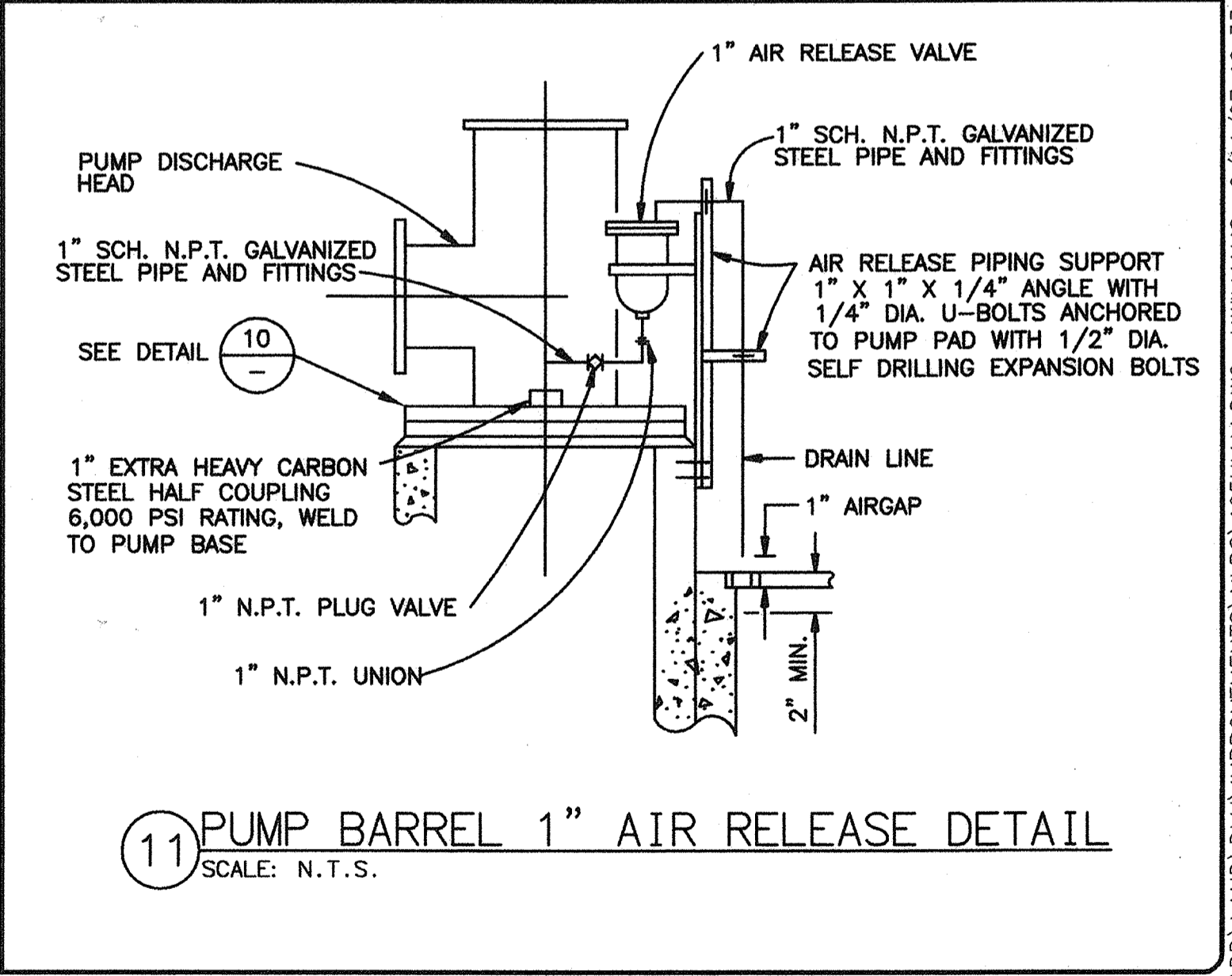
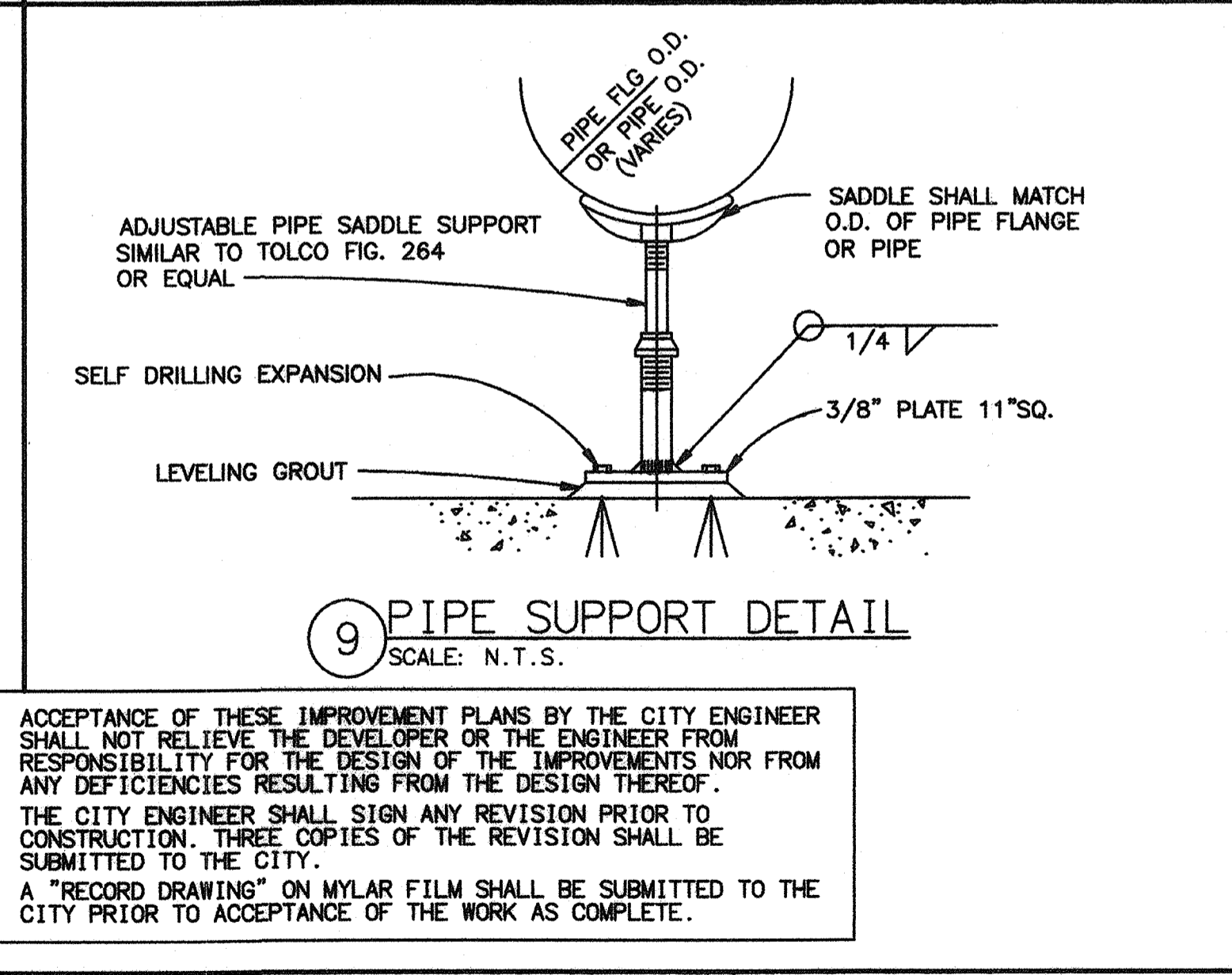
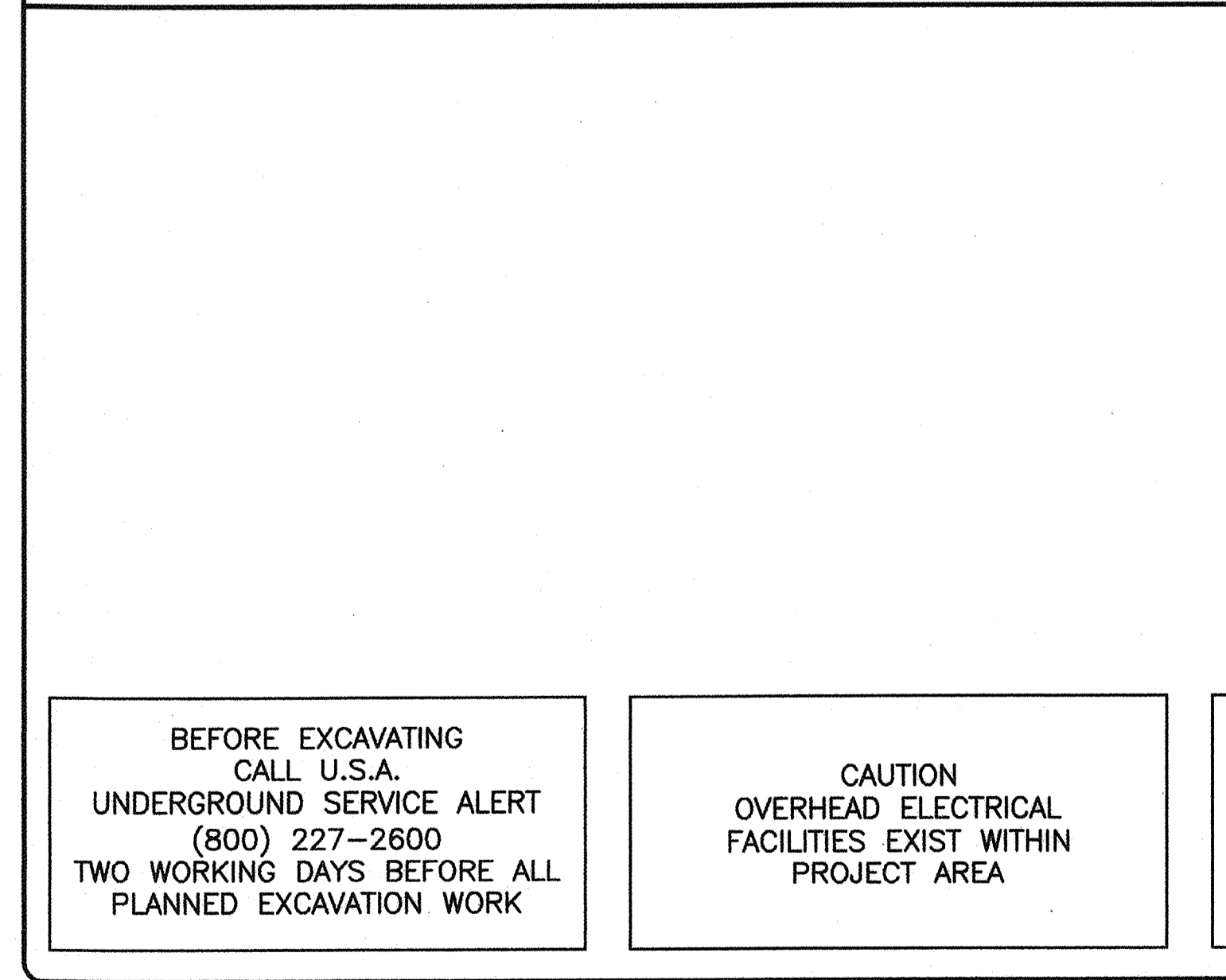
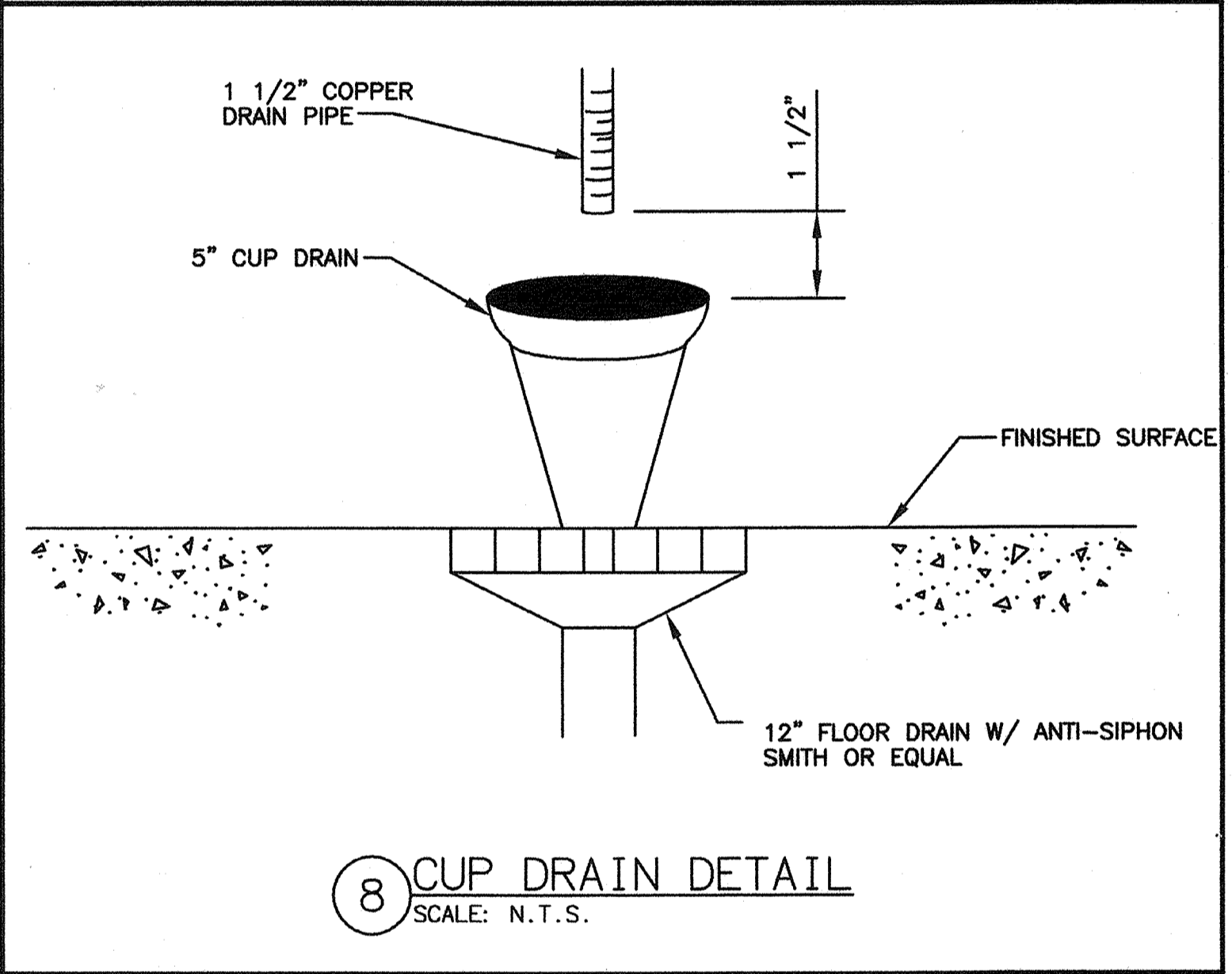
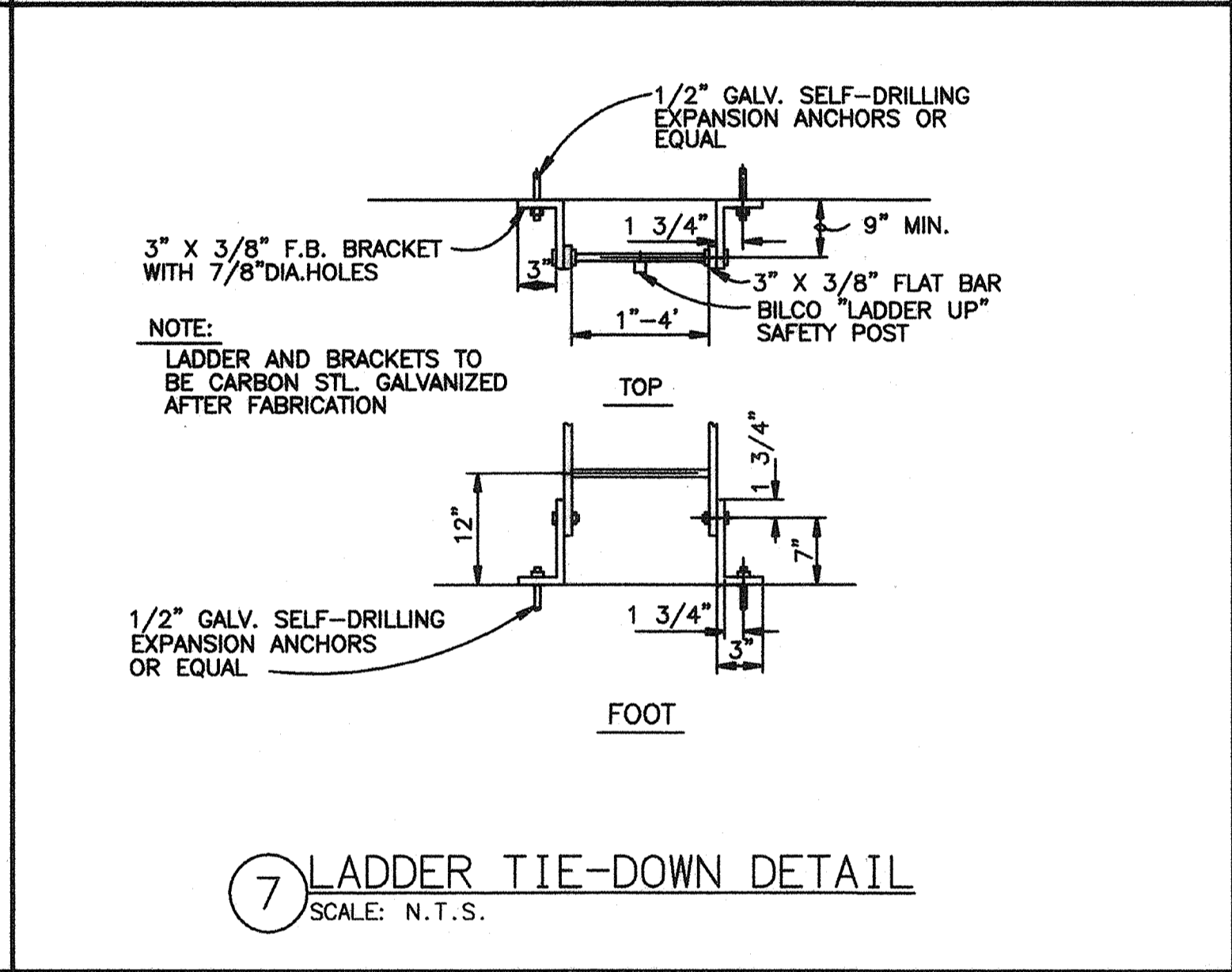
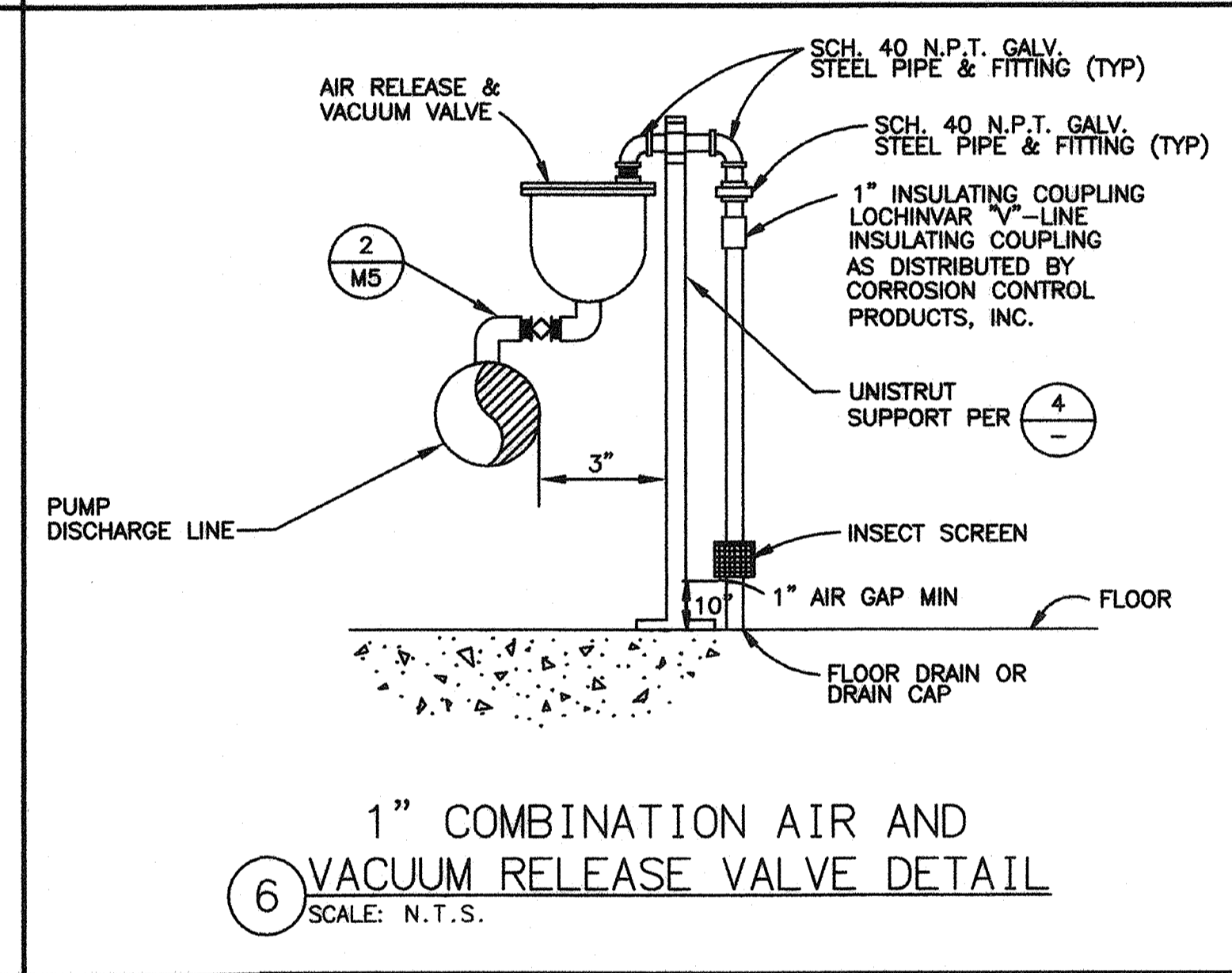
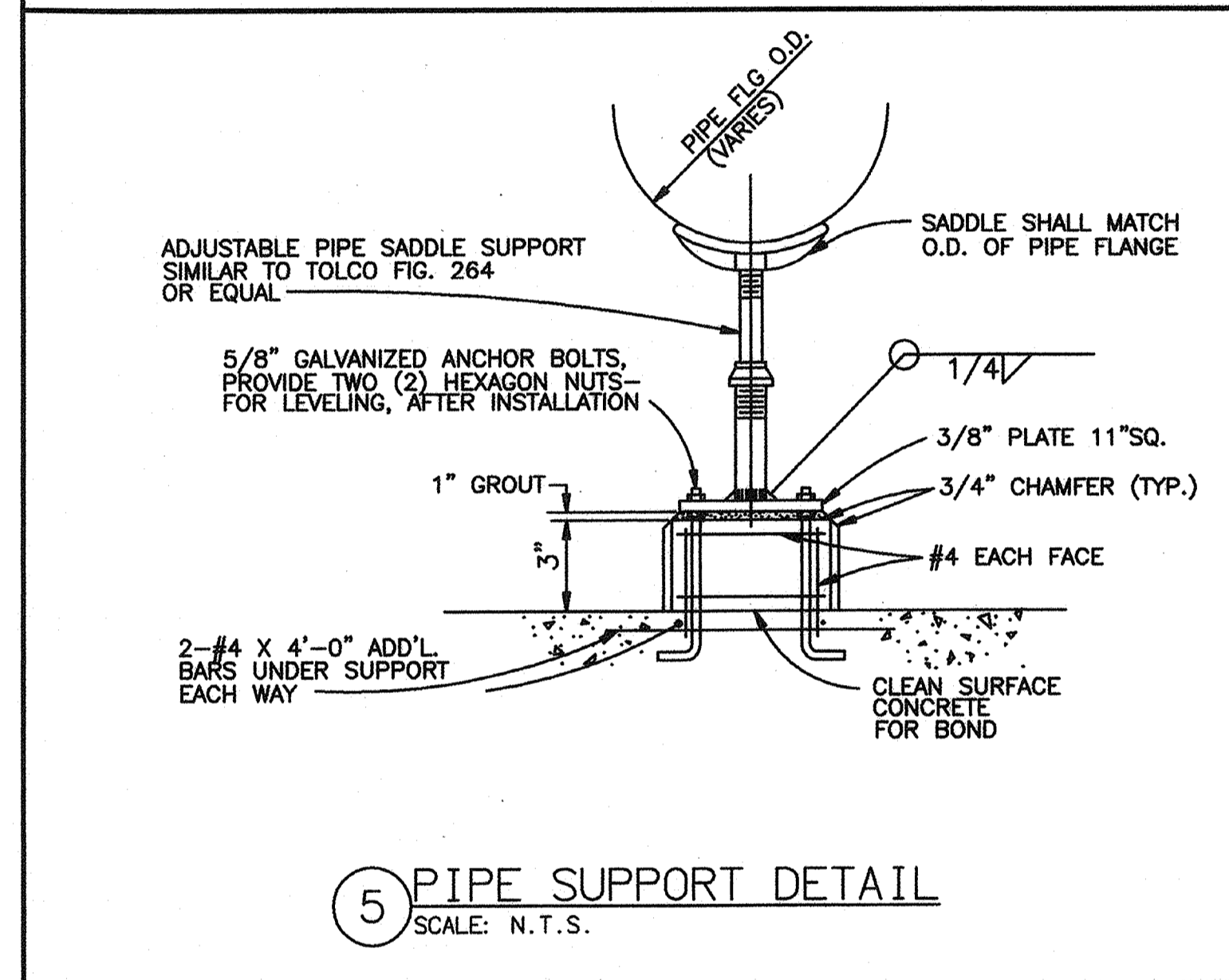
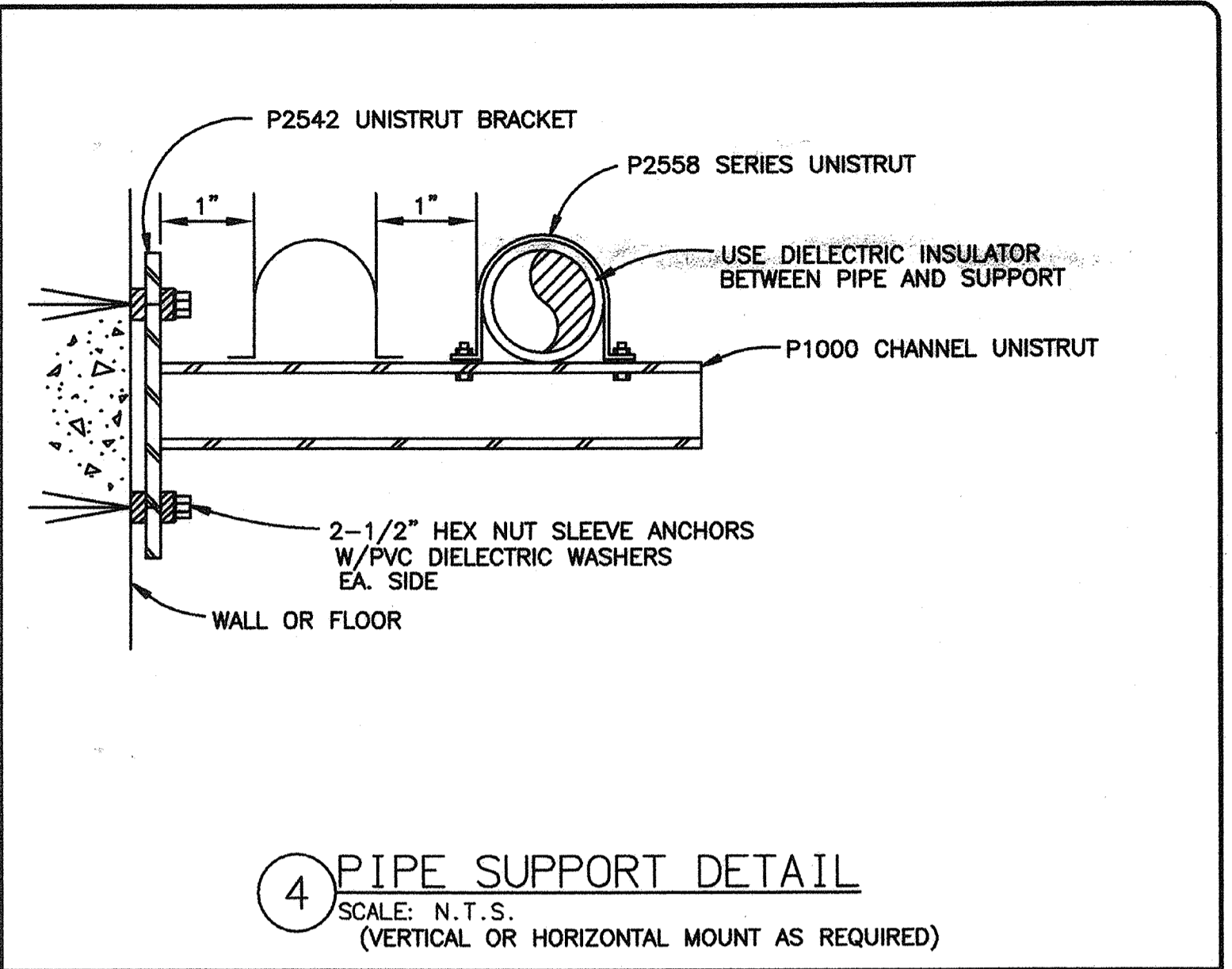
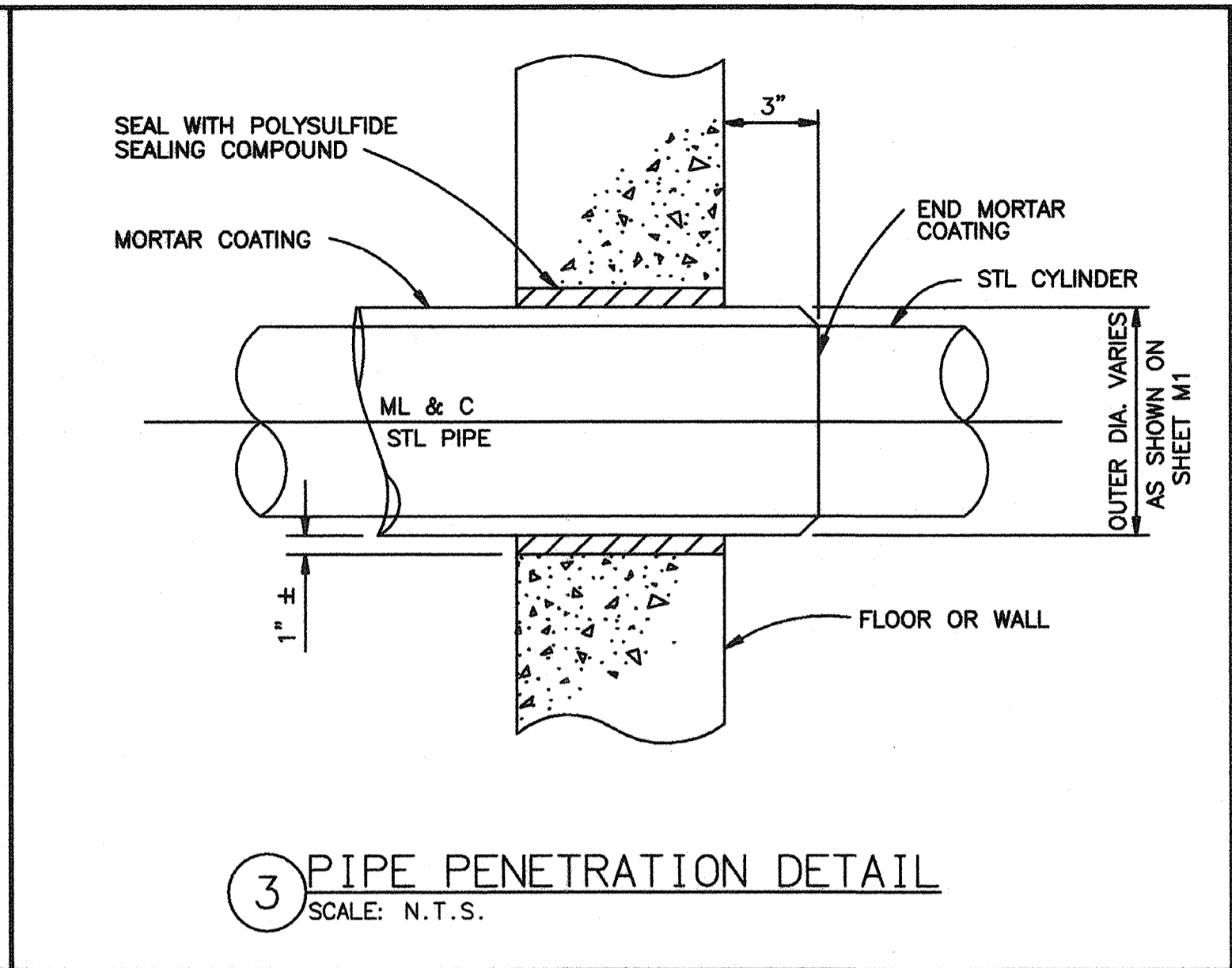
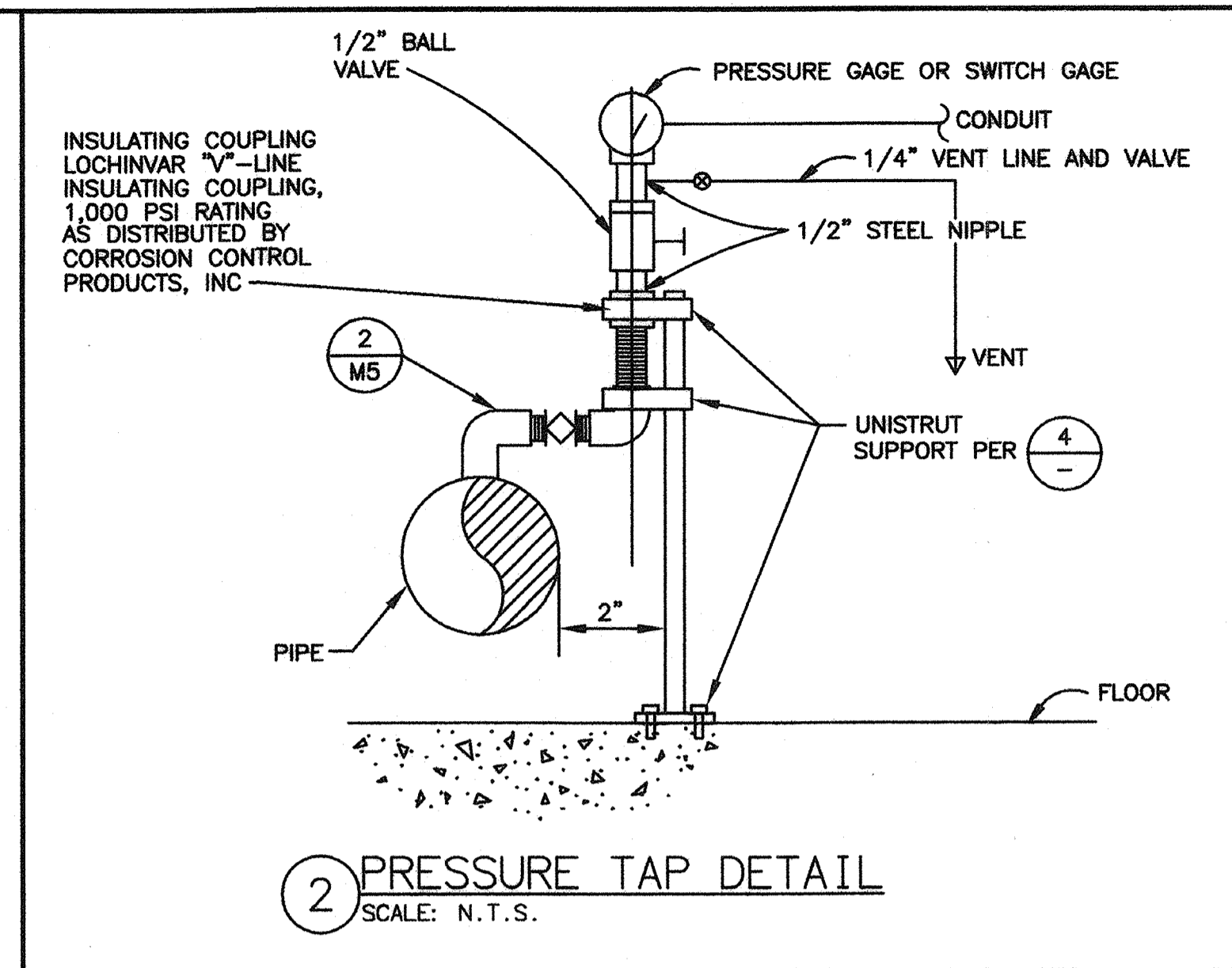
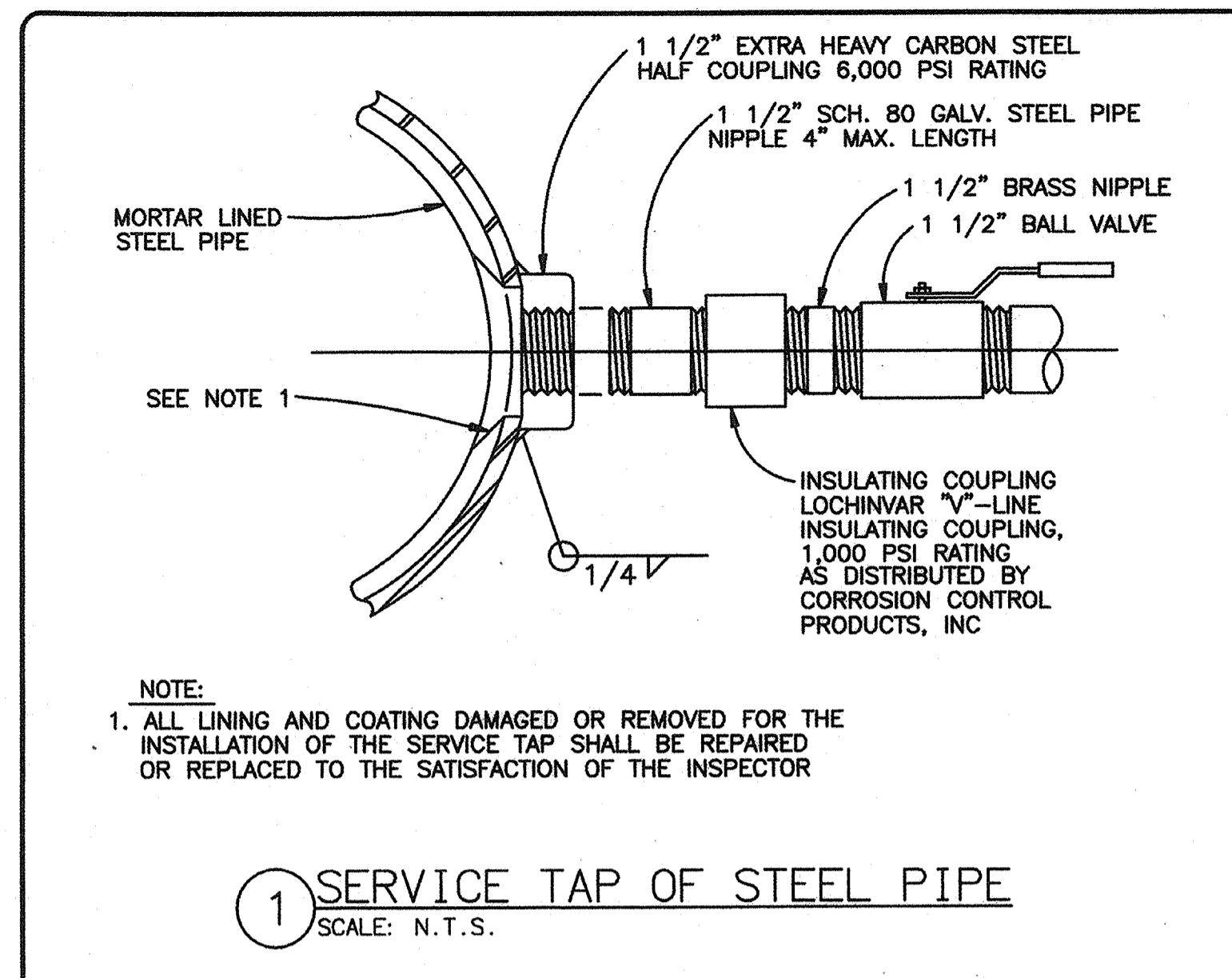
DESIGNED: H.W. & R.T. APPROVED BY:  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

**HIGH LEVEL  
PUMP STATION NO. 2  
WATER AND SEWER SERVICE PLAN**



**M3  
20 OF 77**

H:\DATA\60100165\CADD\LAND\IMPROVEMENTS\HLP5\165HLM3.DWG H.WILLIAMS 8/7/07 8:56 am



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 No. 48387 Exp. 6/30/08  
 CIVIL  
 PAUL A. KLEIN 48367 R.C.E. NO. 08/06/07 DATE

NO.	DATE	APPROV.	REVISION

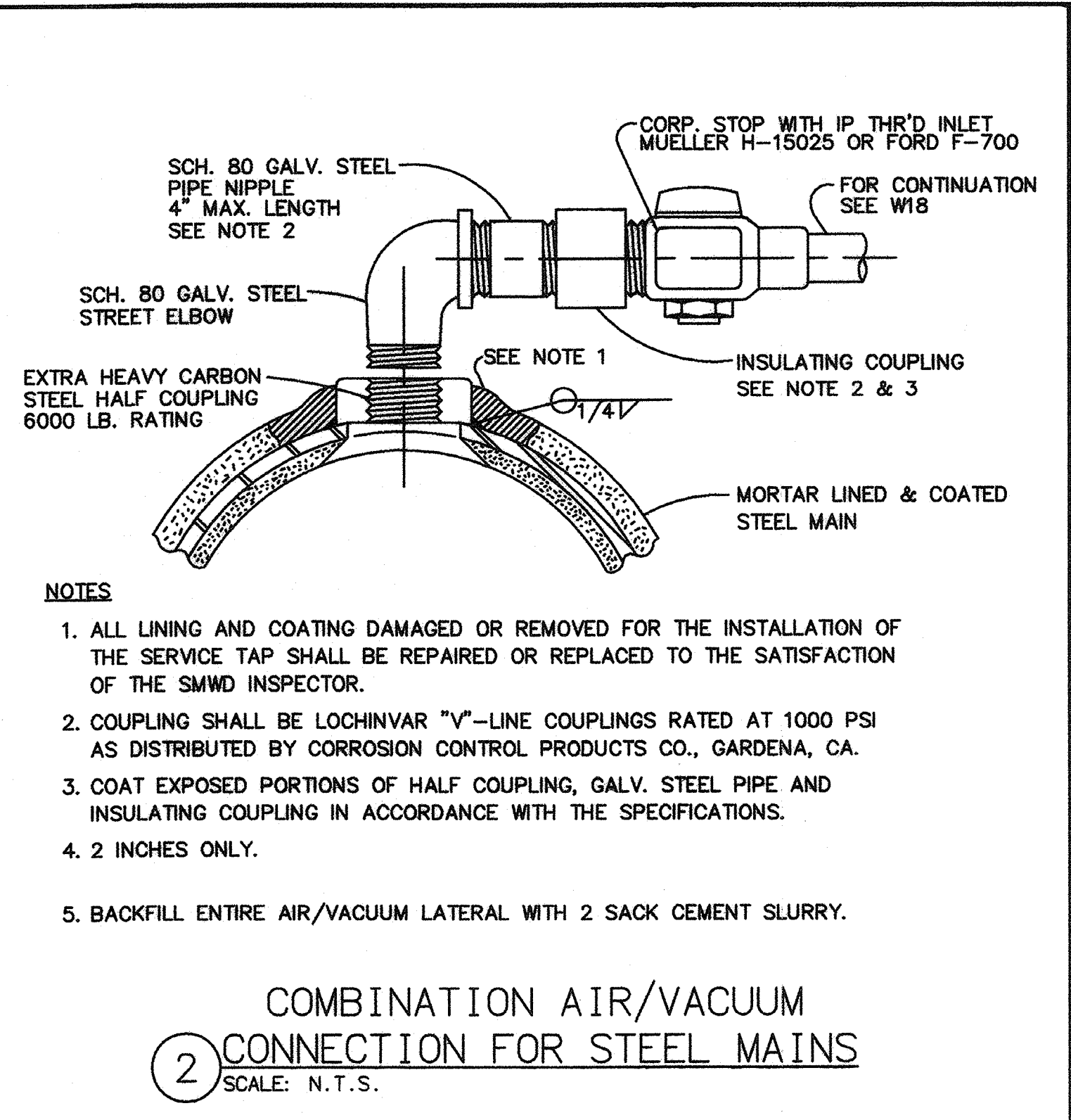
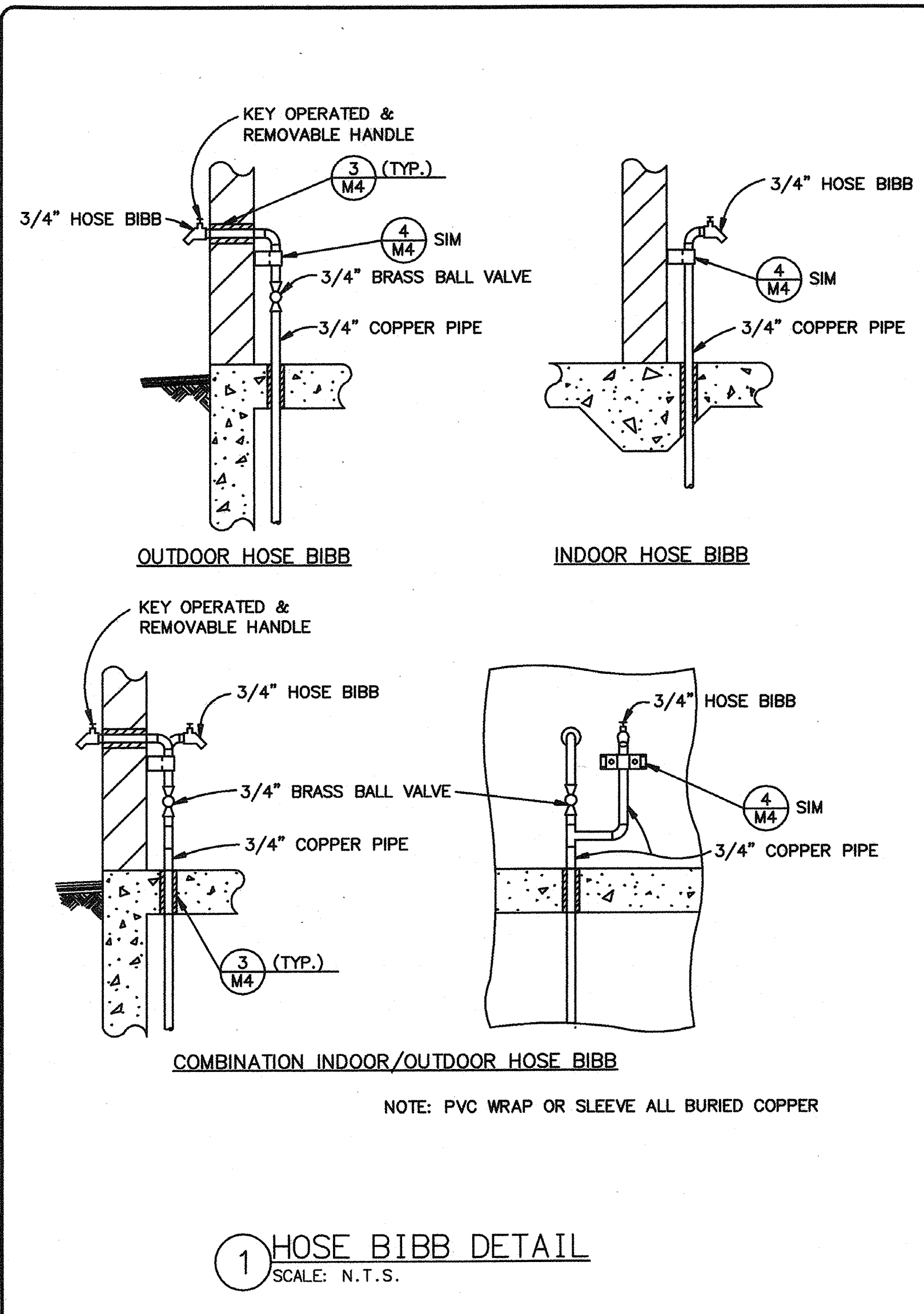
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 APPROVED BY:  
 DRAWN: H. WILLIAMS  
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**HIGH LEVEL PUMP STATION NO. 2 MISCELLANEOUS DETAILS**



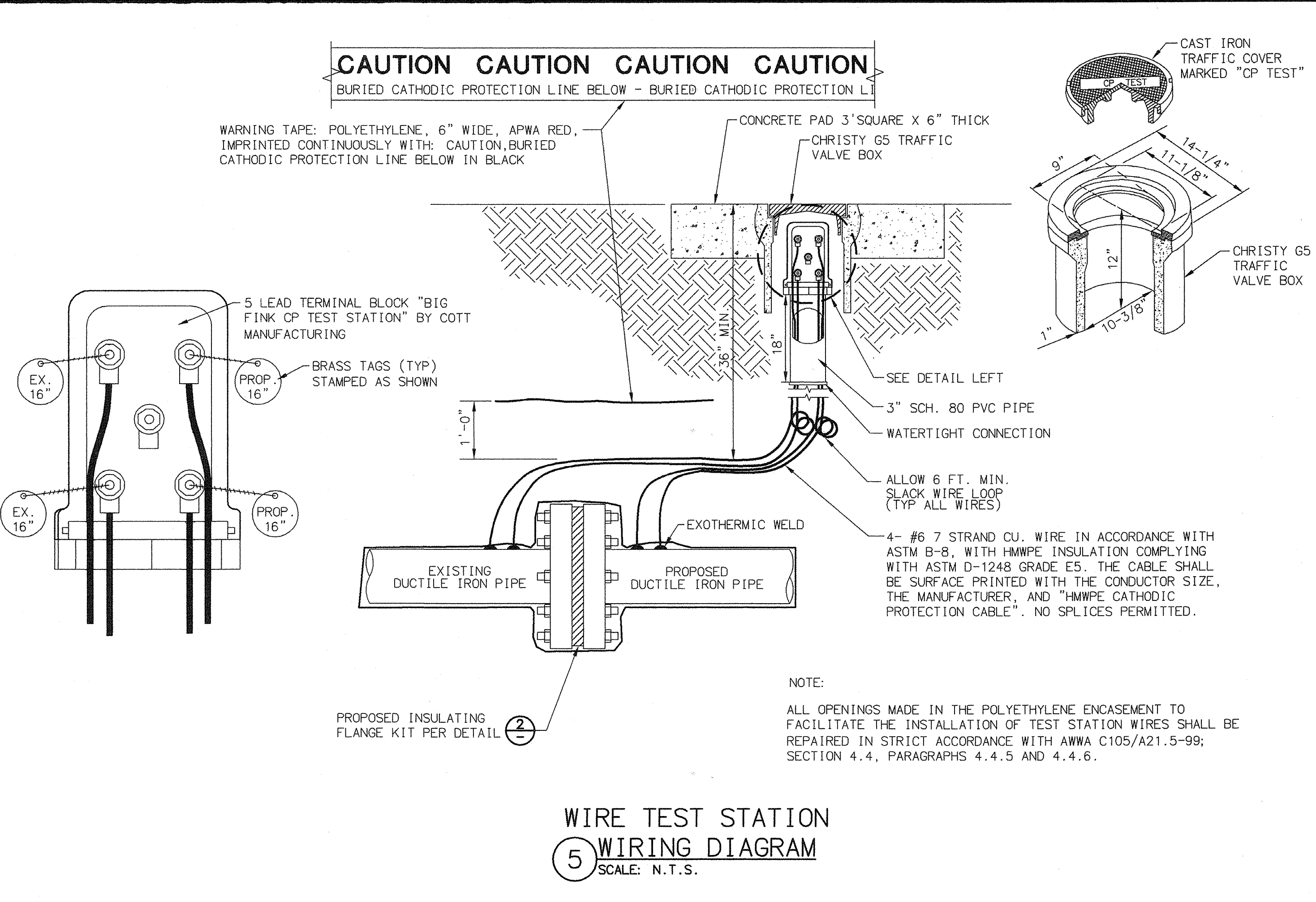
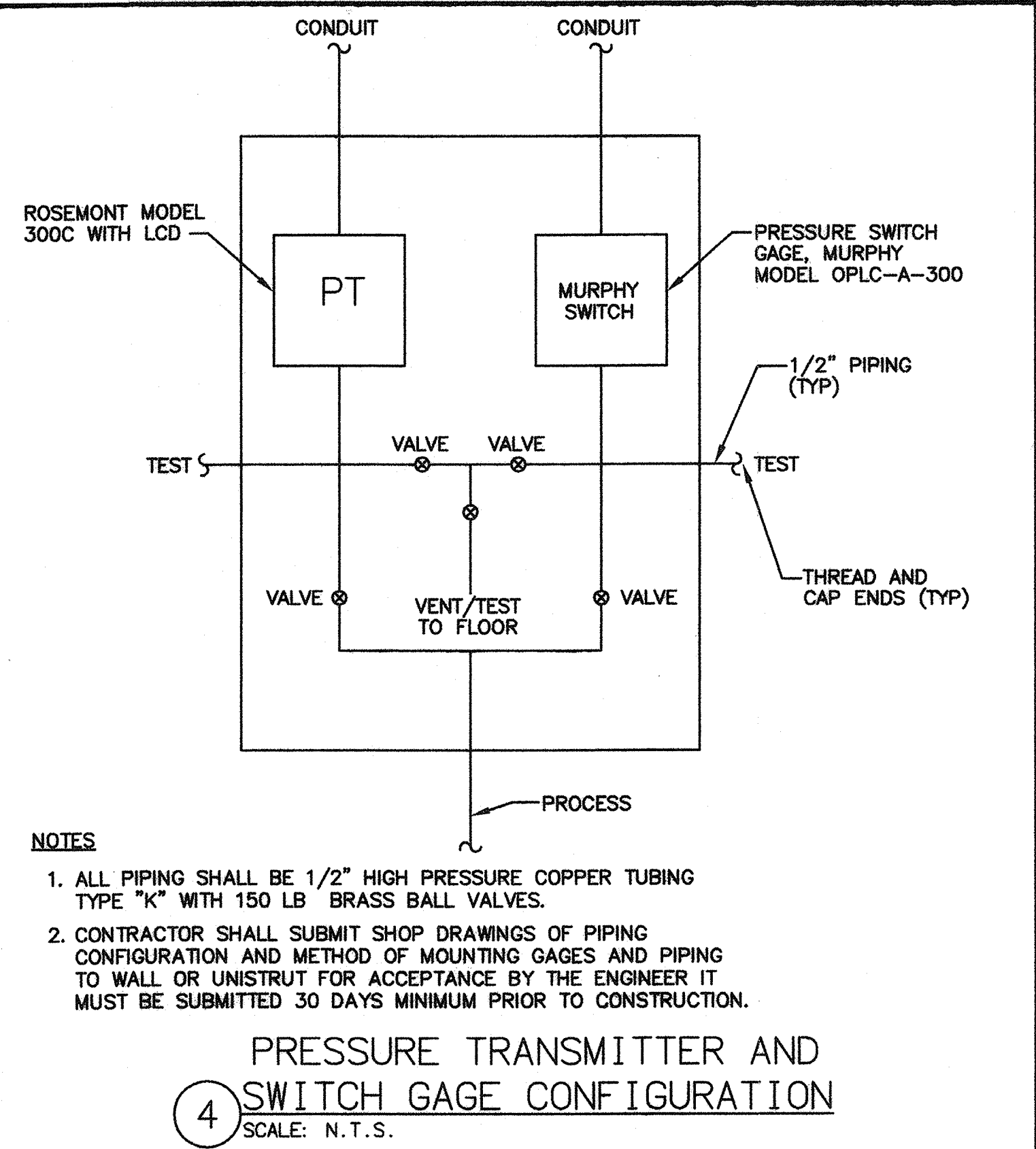
M4  
 21 OF 77

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**FIRE DEPARTMENT NOTES**

- FIRE DEPARTMENT FINAL INSPECTION REQUIRED. SCHEDULE AT LEAST 2 DAYS IN ADVANCE.
- LOCATIONS AND CLASSIFICATIONS OF FIRE EXTINGUISHERS SHALL BE IN ACCORDANCE WITH THE UNIFORM FIRE CODE STANDARD 10-1 AND PLACEMENT IS SUBJECT TO APPROVAL BY THE FIRE INSPECTOR.
- A UFC PERMIT IS REQUIRED FOR EXTERIOR STORAGE OF CLASS II COMBUSTIBLE LIQUIDS EXCEEDING 25 GALLONS. THIS PERMIT WILL BE ISSUED BY AN INSPECTOR.
- A UFC PERMIT IS REQUIRED ABOVE GROUND TANKS USED FOR STORAGE OF FLAMMABLE AND COMBUSTIBLE LIQUIDS. THIS PERMIT WILL BE ISSUED BY AN INSPECTOR.



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CIVIL  
STATE OF CALIFORNIA

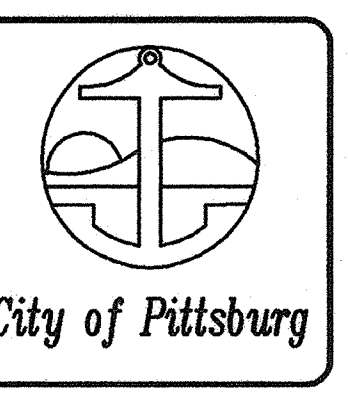
48367  
R.C.E. NO.  
DATE: 02/16/07

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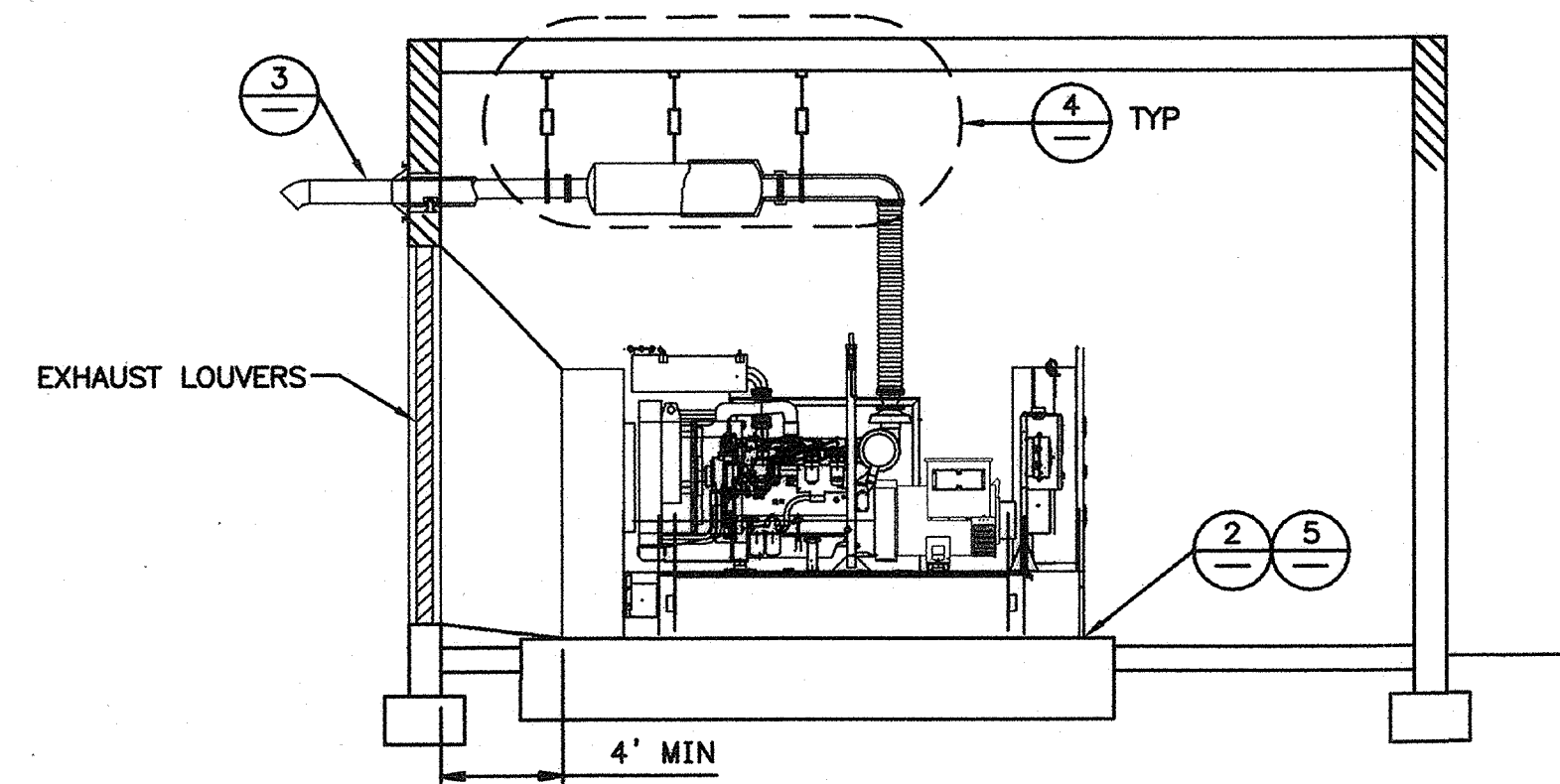
APPROVED BY:

**HIGH LEVEL PUMP STATION NO. 2 MISCELLANEOUS DETAILS**

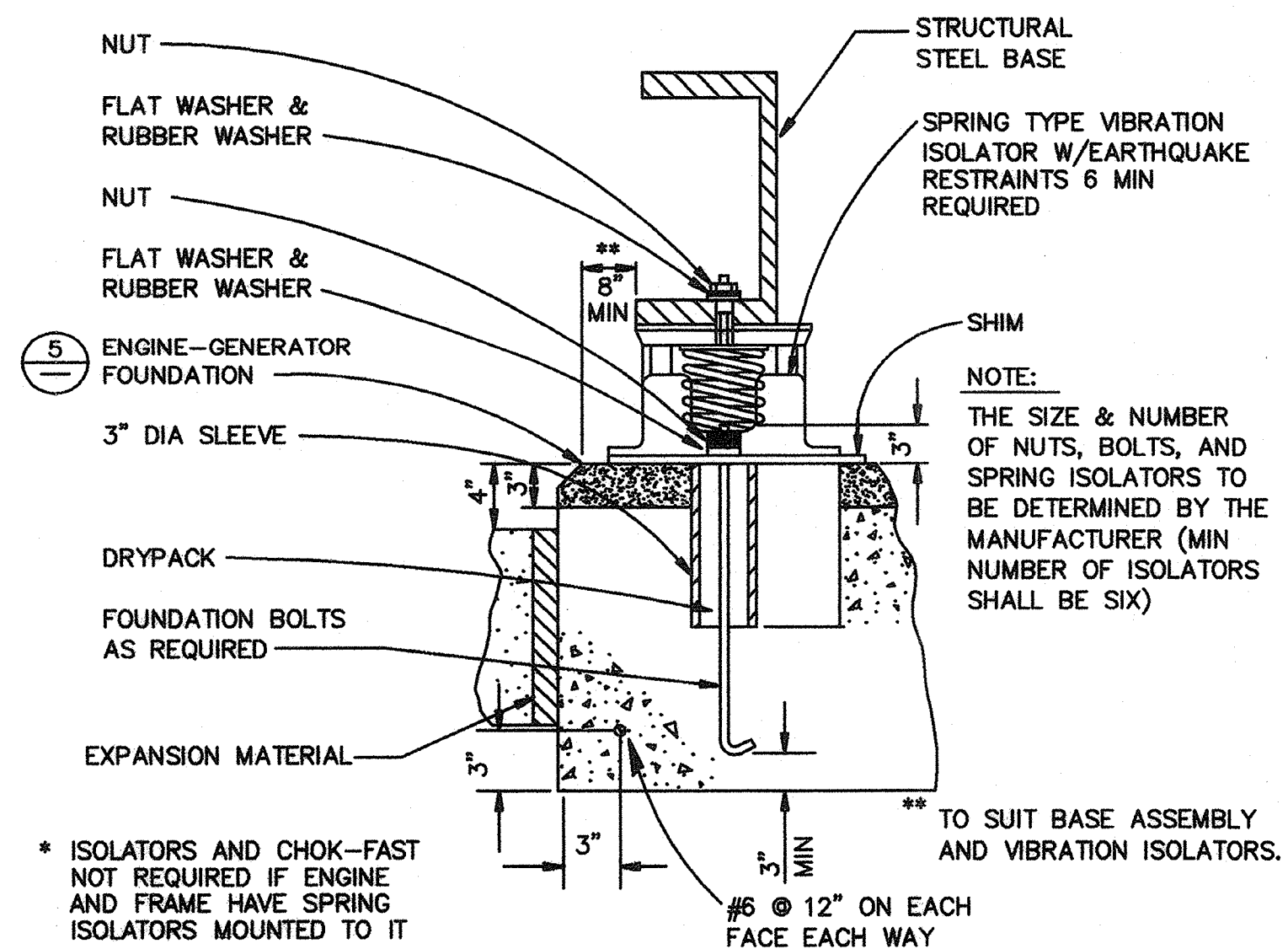


**M5**  
**22 OF 77**

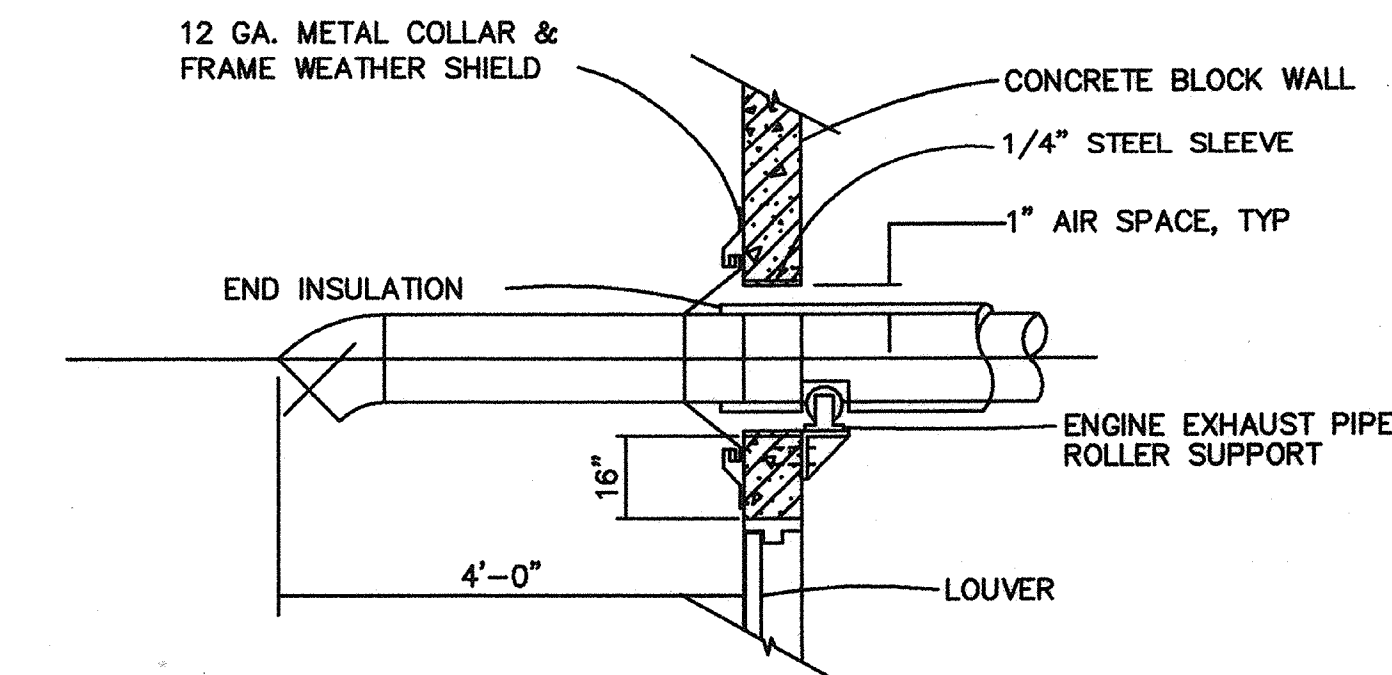
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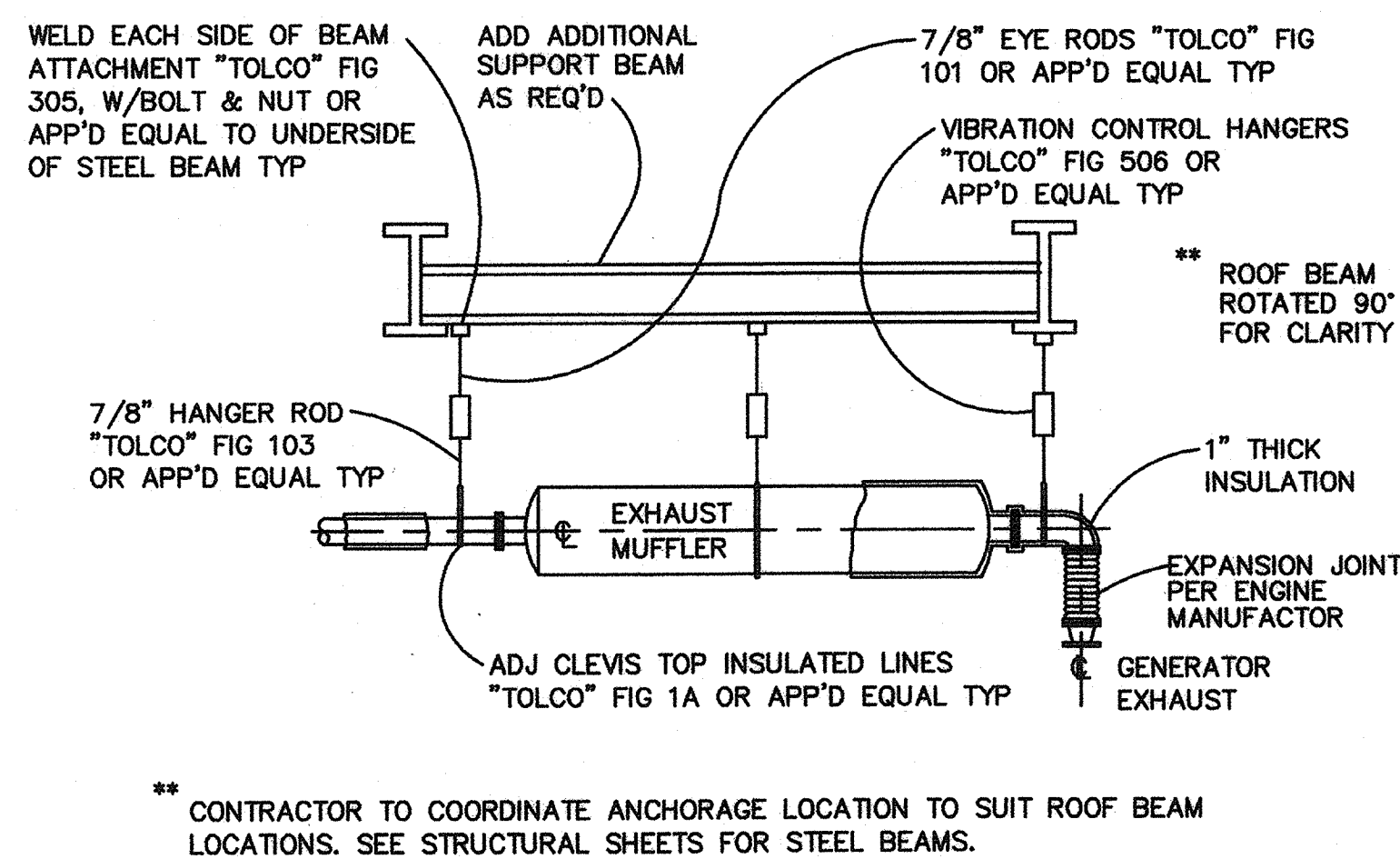
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SCALE: N.T.S.



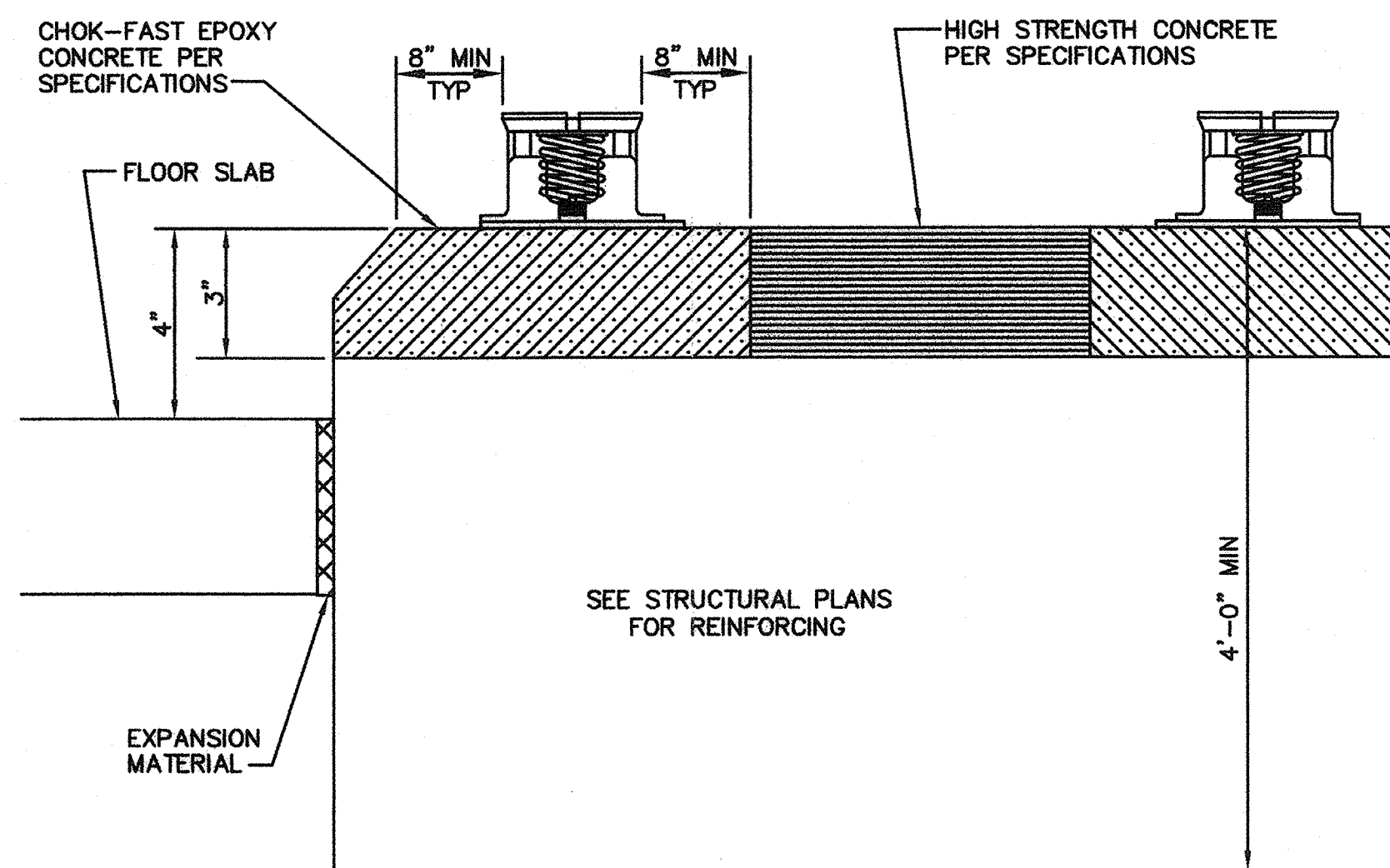
2 ENGINE-GENERATOR MOUNTING SYSTEM  
SCALE: N.T.S.



3 ENGINE EXHAUST PIPE DETAIL  
SCALE: N.T.S.



4 ENGINE MUFFLER INSTALLATION  
SCALE: N.T.S.



5 GENERATOR PAD DETAIL  
SCALE: N.T.S.

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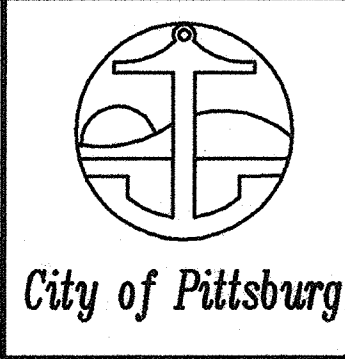


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Paul A. Klein  
48367  
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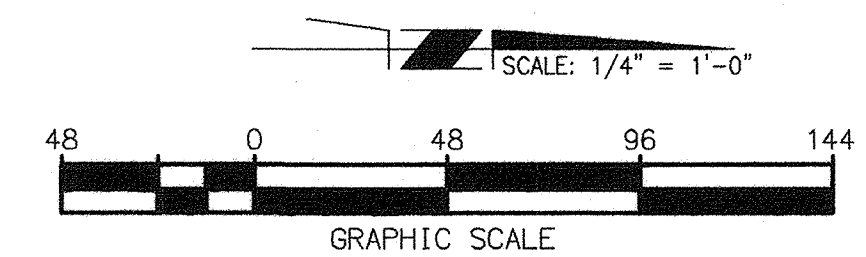
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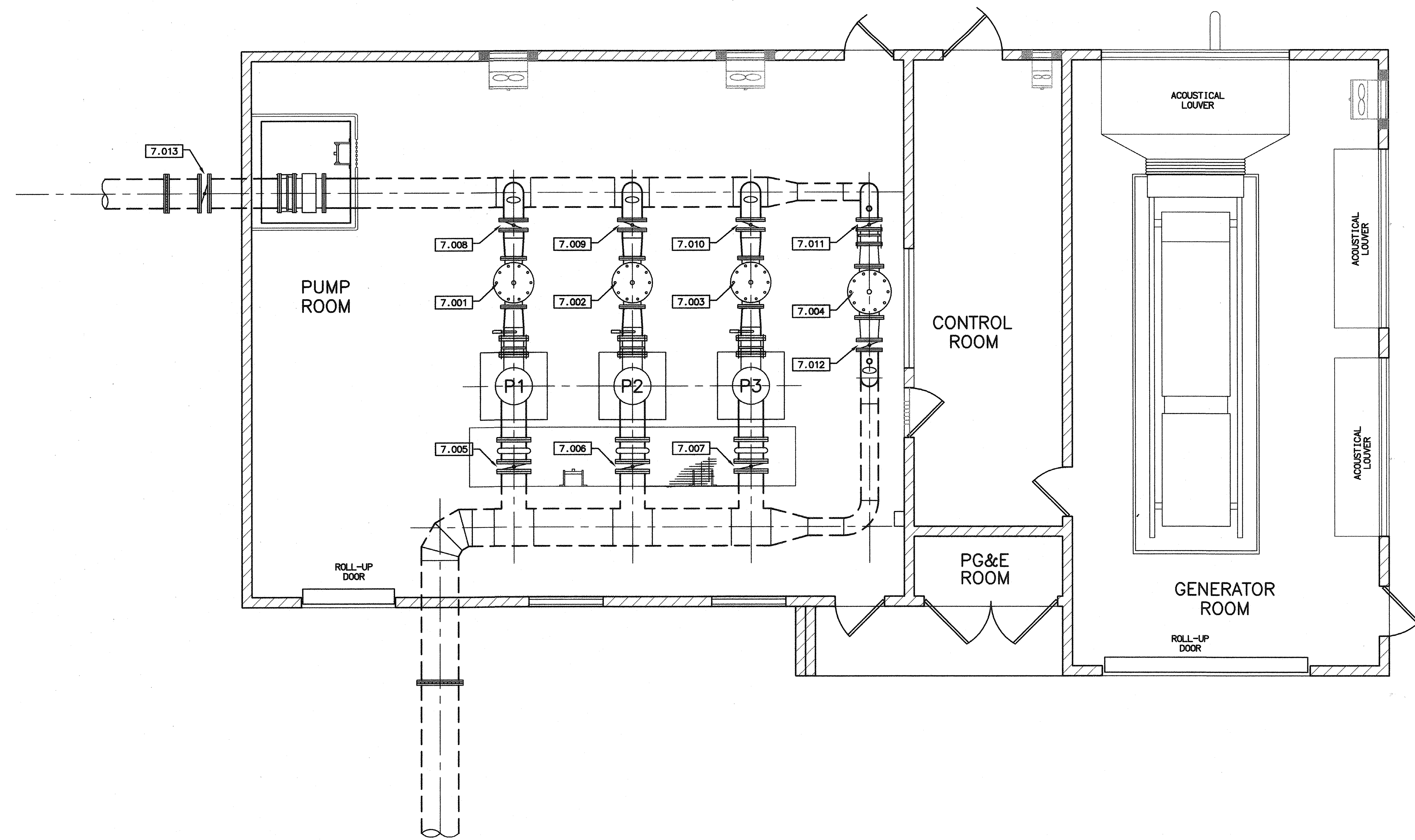
APPROVED BY:  
**HIGH LEVEL  
PUMP STATION NO. 2  
MISCELLANEOUS DETAILS**



**M6**  
**23 OF 77**



**VALVE NUMBERING IDENTIFICATION**  
 BUILDING 7: HIGH LEVEL PUMP STATION BUILDING 2  
 VALVE NUMBER: -.00X  
 DESIGNATION: 7.00X



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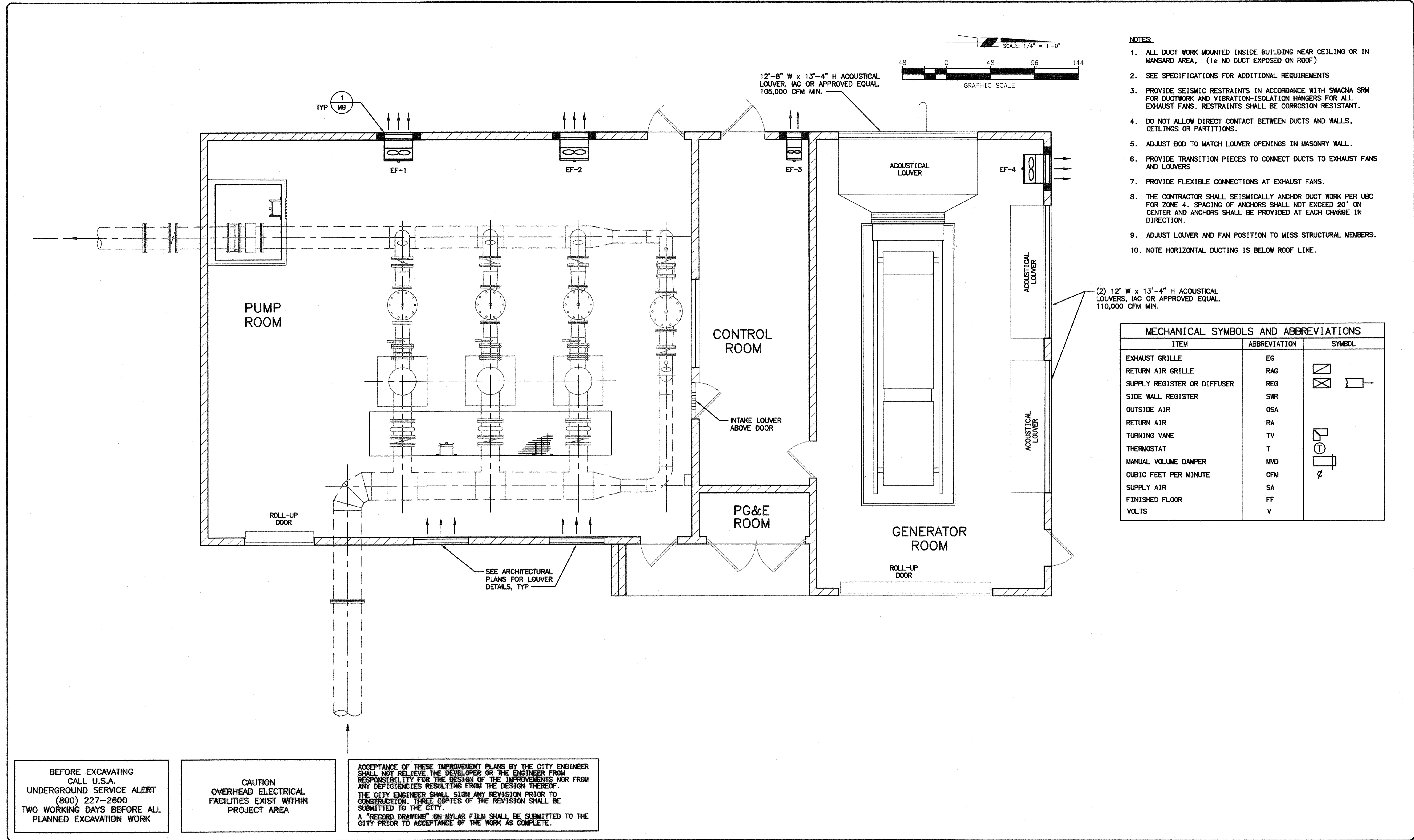
**HIGH LEVEL  
 PUMP STATION NO. 2  
 VALVE NUMBERING**



**M7**  
**24 OF 77**

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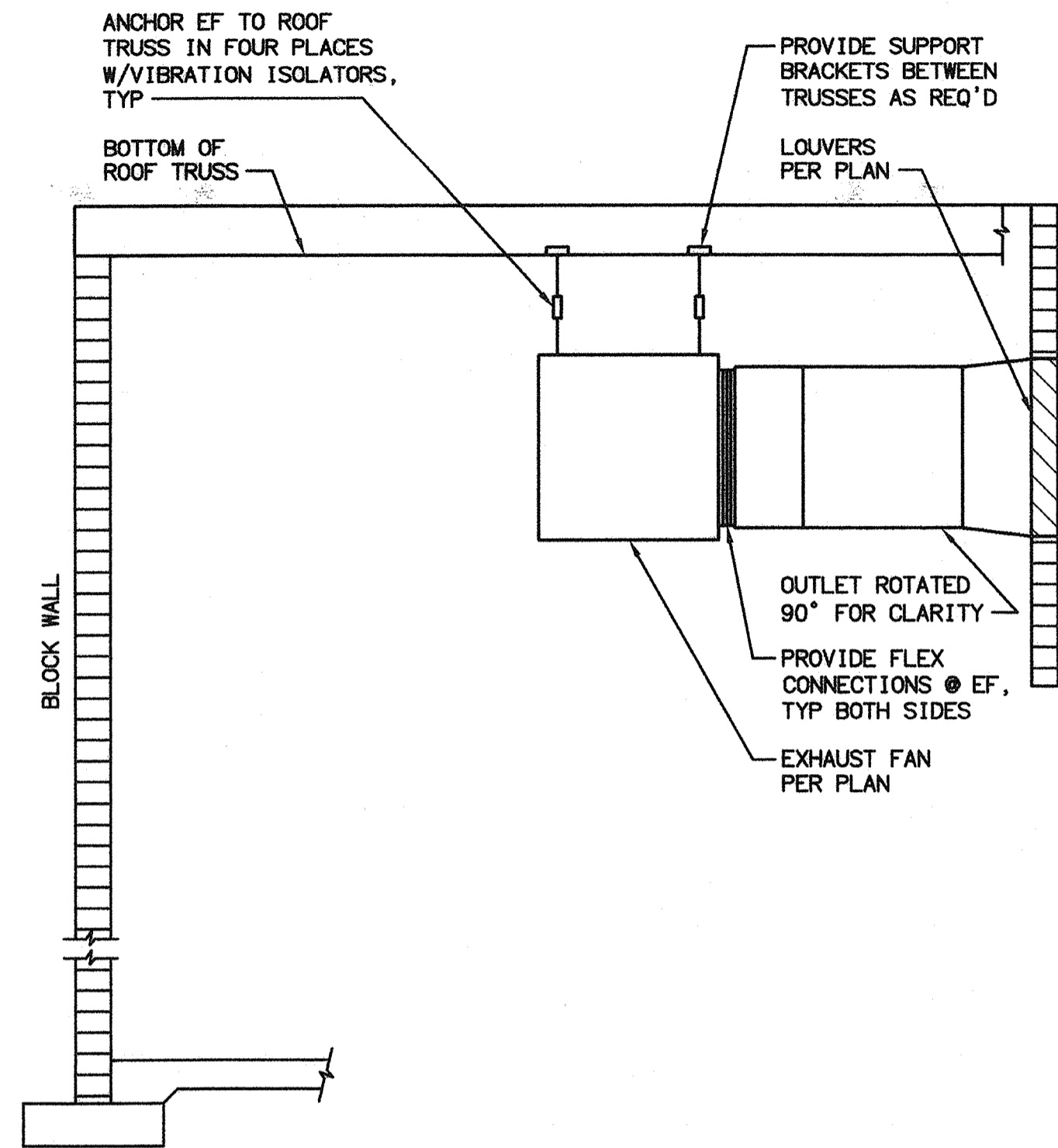
APPROVED BY:  
**HIGH LEVEL  
PUMP STATION NO. 2  
VENTILATION PLAN**



**M8**  
**25 OF 77**

EXHAUST FAN SCHEDULE [5]			
NO.	EF-1/EF-2	EF-3	EF-4
MFR.	COOK	COOK	COOK
MODEL	195-SQN-B	150-SQN-HP	195-SQN-HP
TYPE [4]	INLINE	INLINE	INLINE
FAN CFM	3100	615	1645
SP IN WG	1 MAX	1 MAX	1 MAX
HP	1	0.21	0.51
VOLTS	480	480	480
PHASE	3	3	3
HERTZ	60	60	60
DISCONNECT	MFR	MFR	MFR
CONTROL	THERMOSTAT	THERMOSTAT	THERMOSTAT
NOTE			

[1] APPROXIMATE  
 [2] PROVIDE EXPLOSION PROOF FAN TYPE A, SPARKPROOF RESISTANT CONSTRUCTION, CORROSION RESISTANT CONSTRUCTION.  
 [3] WITH OSHA WIRE GUARD ON MOTOR AND WALL INSERT.  
 [4] INTERIOR WALL MOUNT FANS MAY BE UTILIZED.  
 [5] CONTRACTOR SHALL PROVIDE COMPLETE SUBMITTAL OF VENTILATION SYSTEM VERIFYING PROPOSED FAN CFM, LOUVER SIZES AND AIR CHANGES PER HOUR.

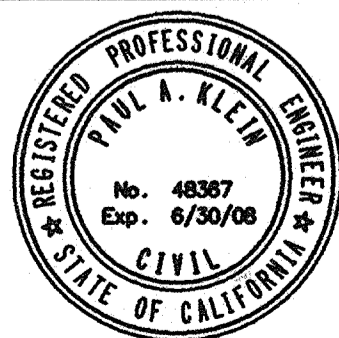


1 TYPICAL VENTILATION DETAIL  
 SCALE: N.T.S.

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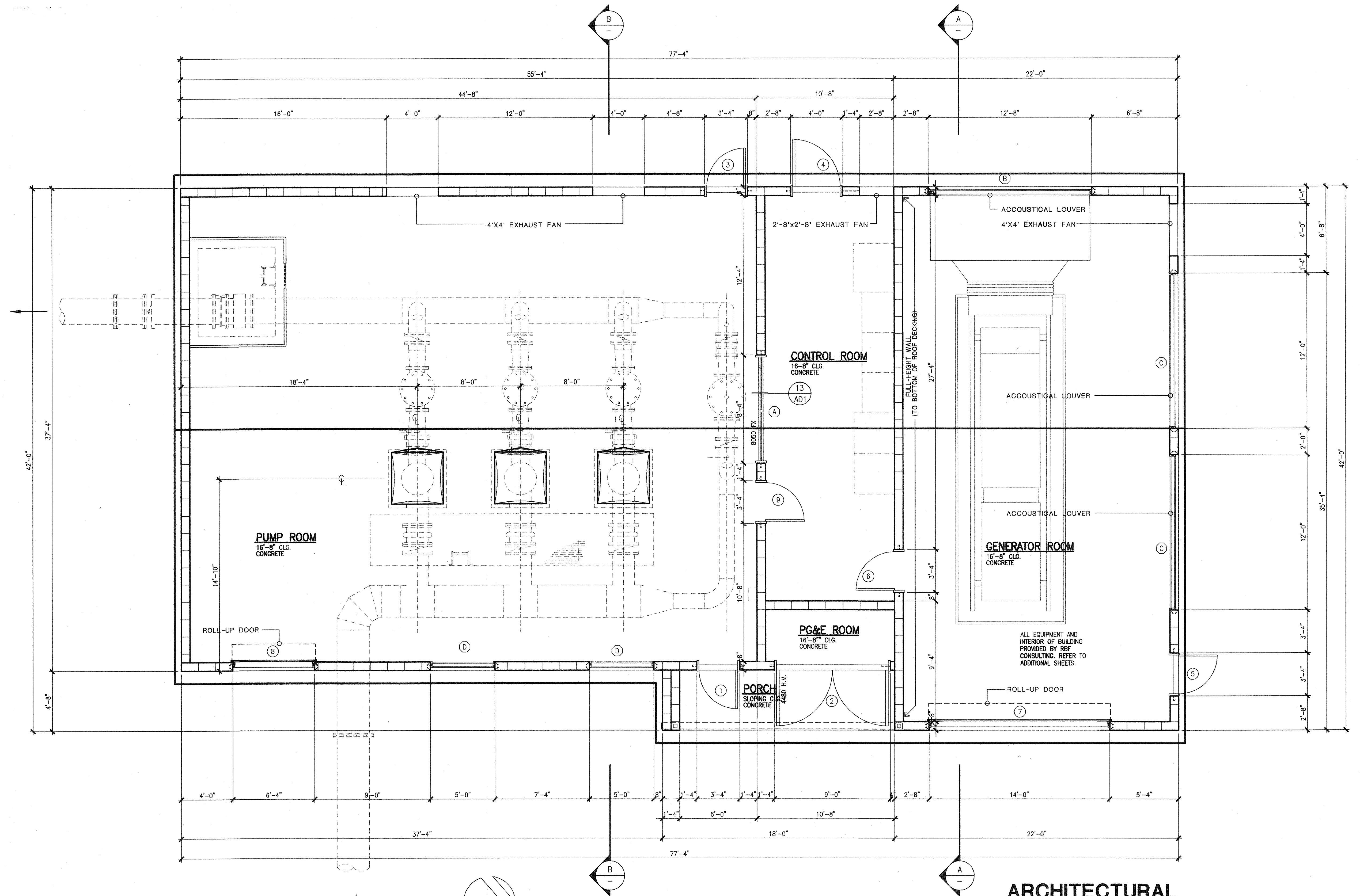
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 DATE: FEBRUARY, 2007

APPROVED BY:

**HIGH LEVEL  
 PUMP STATION NO. 2  
 VENTILATION DETAILS**



**M9**  
**26 OF 77**



**ARCHITECTURAL FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

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*clack* 48367 08/04/07  
PAUL A. KLEIN R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: WHA  
DRAWN:  
CHECKED:  
REVIEWED:  
DATE: February, 2007

APPROVED BY:  
**HIGH LEVEL PUMP STATION**



**A.1**  
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FINISH SCHEDULE						COMMENTS
ROOM	FLOOR	WALLS	CEILING			
101	PORCH	F1	W1	C1		
102	PG&E ROOM	F1	W1	C1		
103	PUMP ROOM	F1	W1	C1		
104	CONTROL ROOM	F1	W1	C1		
105	GENERATOR ROOM	F1	W1	C1		

FINISH LEGEND:  
 F1 CONCRETE SLAB WITH SEALER AND HARDENER  
 W1 CONCRETE BLOCK WITH CLEAR SEALER  
 C1 EXPOSED STRUCTURE

WINDOW/ LOUVER SCHEDULE					REMARKS
WINDOW/ LOUVER	SIZE	FRAME	GLAZING/ TYPE		
A	8'-0" x 5'-0"	HOLLOW METAL	DUAL GLAZED, TEMPERED		
B	12'-8" x 13'-4"	GALVANIZED STEEL	ACOUSTICAL LOUVERS	REMOVABLE. SEE SPEC. SEC. 10200	
C	12'-0" x 13'-4"	GALVANIZED STEEL	ACOUSTICAL LOUVERS	REMOVABLE. SEE SPEC. SEC. 10200	
D	5'-0" x 13'-4"	GALVANIZED STEEL	ACOUSTICAL LOUVERS	REMOVABLE. SEE SPEC. SEC. 10200	

DOOR SCHEDULE											REMARKS
DOOR NUMBER	LOCATION	PAIR	DOOR SIZE (PER LEAF)	THICKNESS	FRAME TYPE	DOOR TYPE	FIRE RATING	DOOR MATERIAL			
1	PUMP ROOM	-	3'-0" x 7'-10"	1 3/4"	H.M.	I		H.M.			
2	PG&E ROOM	PR	4'-4" x 7'-10"	1 3/4"	H.M.	II		H.M.			
3	PUMP ROOM	-	3'-0" x 7'-10"	1 3/4"	H.M.	I		H.M.			
4	CONTROL ROOM	-	3'-8" x 7'-10"	1 3/4"	H.M.	I		H.M.			
5	GENERATOR ROOM	-	3'-0" x 7'-10"	1 3/4"	H.M.	I		H.M.			
6	PUMP ROOM/ GENERATOR RM.	-	3'-0" x 7'-10"	1 3/4"	H.M.	II		H.M.			
7	GENERATOR ROOM	-	14'-0" x 13'-4"		STEEL	III		STEEL		METAL ROLL-UP DOOR	
8	PUMP ROOM	-	6'-4" x 13'-4"		STEEL	III		STEEL		METAL ROLL-UP DOOR	
9	CONTROL/ PUMP ROOM	-	3'-0" x 7'-10"	1 3/4"	H.M.	I		H.M.			

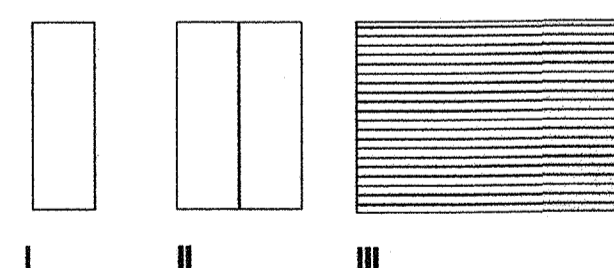
MAXIMUM DOOR OPENING EFFORTS: 8.5 lbs. AT EXTERIOR, 5 lbs AT INTERIOR, AND 15 lbs. AT FIRE DOORS.  
 ALL DOORS SHALL BE EQUIPPED WITH SINGLE EFFORT, NON-GRASP HARDWARE (I.E. LEVER) CENTERED BETWEEN 30" AND 44" A.F.F.  
 NOTE 1: EXIT DOOR TO BE OPENABLE FROM INSIDE WITHOUT KEY, SPECIAL KNOWLEDGE, OR EFFORT.

NOTES:

1. HAND ACTIVATED DOOR HARDWARE SHALL BE CENTERED BETWEEN 33" AND 44" ABOVE THE FLOOR. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE, PER UBC SECTION 1004.4. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 8 1/2 POUNDS FOR EXTERIOR DOORS, 5 POUNDS FOR INTERIOR DOORS, AND 15 POUNDS FOR FIRE RATED DOORS, PER UBC SECTION 1004.

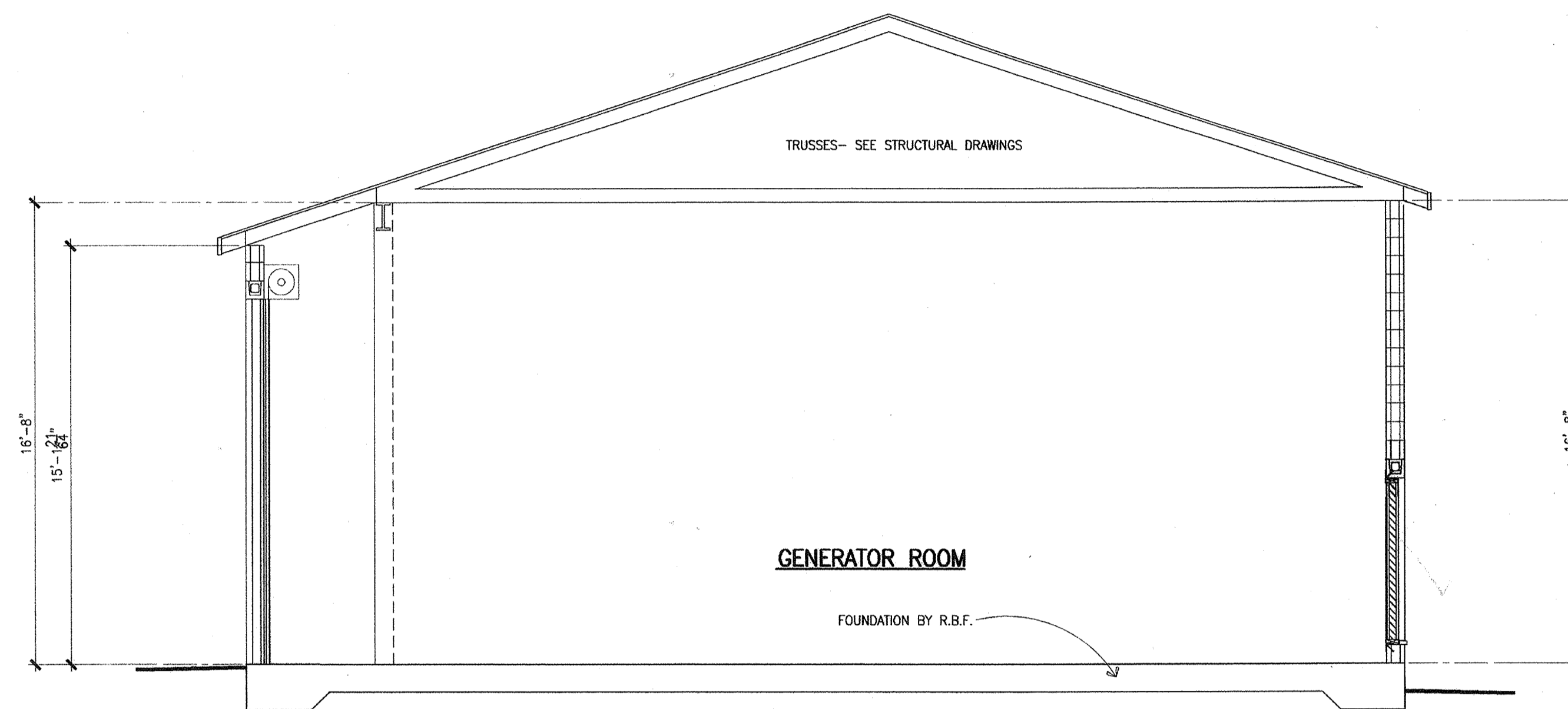
2. ALL DOORS TO BE 1 3/4" THICK.  
 3. SEE SPECIFICATIONS FOR HARDWARE SCHEDULE

DOOR TYPES:

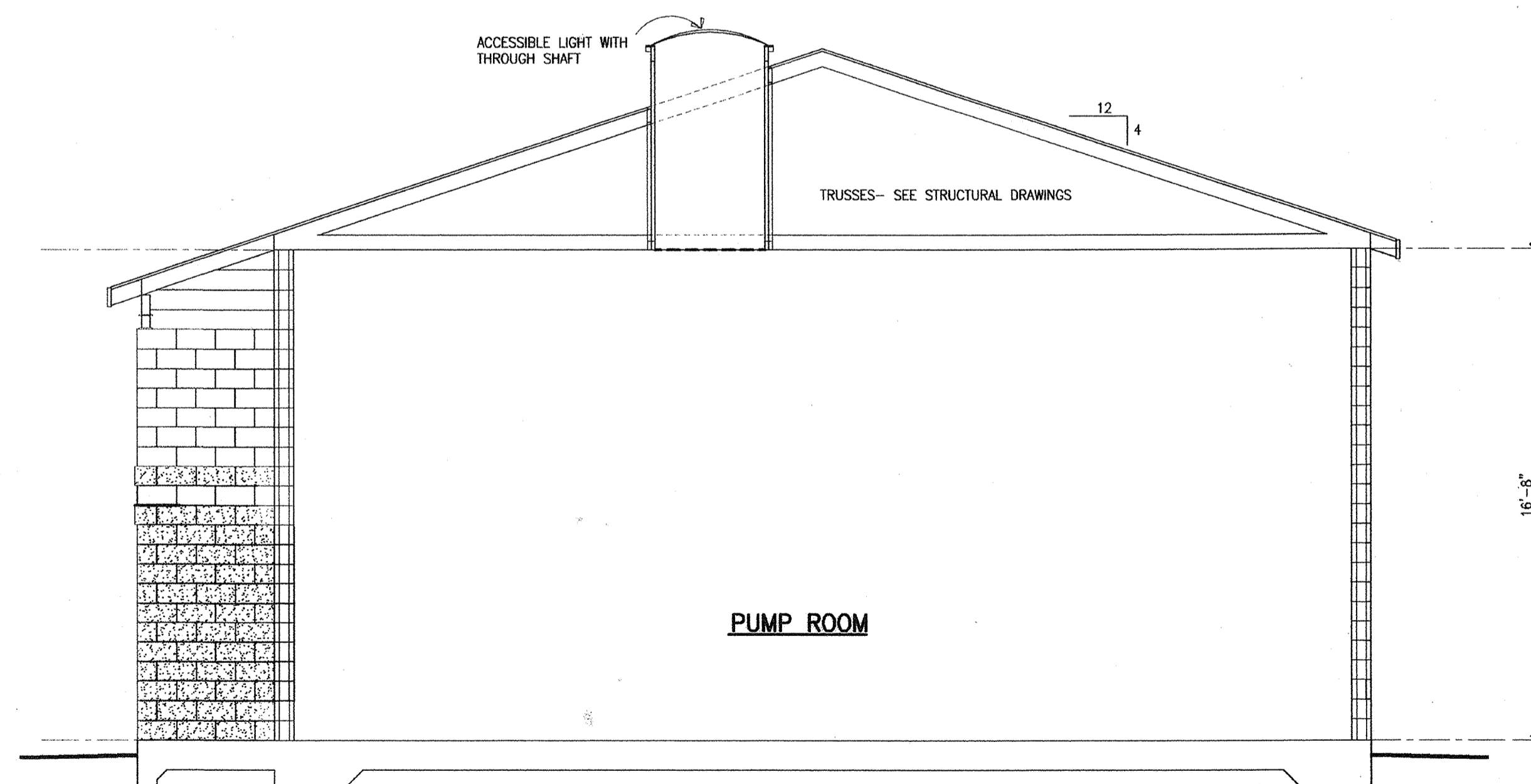


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CAUTION  
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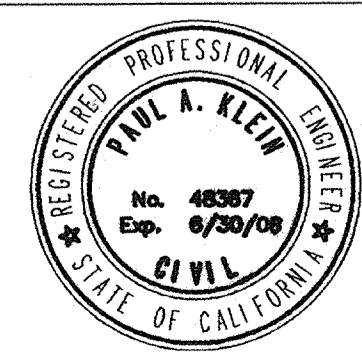
SECTION 'A'



SECTION 'B'

2003226- High Level Pump Station Hardware Schedule					
Doors	Quantity (Each)	Product	#	Finish	Manufacturer
1,3,4,5,6,9	4 Ea	Hinges	5BB1 4 1/2x4 1/2 NRP	630	Ives
	1Ea	Lockset	ND80PD RHO *	626	Schlage
	1Ea	Closer	4041	689	LCN
	1Ea	Kick Plate	8400 10"x2" ldw	630	Ives
	1Ea	Stop	FS441	626	Ives
	1Ea	Seal	2525B	Bik	NGP
	1Ea	Threshold	per details	Al	NGP
Door	Quantity (Each)	Product	#	Finish	Manufacturer
2	8 Ea	Hinges	5BB1 4 1/2x4 1/2 NRP	630	Ives
	1 Ea	Lockset	ND80PD RHO	626	Schlage
	2 Ea	Kick Plate	8400 10"x2" LDW	630	Ives
	1 Ea	Manual Flush Bolt	FB457	626	Ives
	2 Ea	Closers	4041	689	LCN
	2 Ea	Stops	FS441	626	Ives
	1 Ea	Seal	2525B	Bik	NGP
	1Ea	Threshold	Per details	Al	NGP

\* NOTE: ND80 function always locked. If want to be able to unlock, use ND70 function.



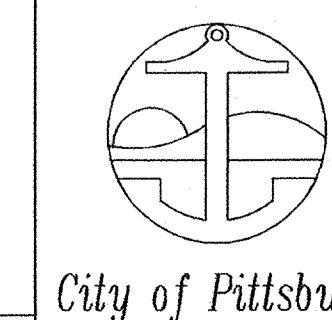
**RBF** CONSULTING  
 2101 ARENA BOULEVARD, SUITE 250  
 SACRAMENTO, CALIFORNIA 95834-2303  
 916.928.1143 FAX 916.928.1117 www.RBF.com  
 Paul A. Klein 48367 R.C.E. NO. 08/08/07 DATE

NO.	DATE	APPROV.	REVISION

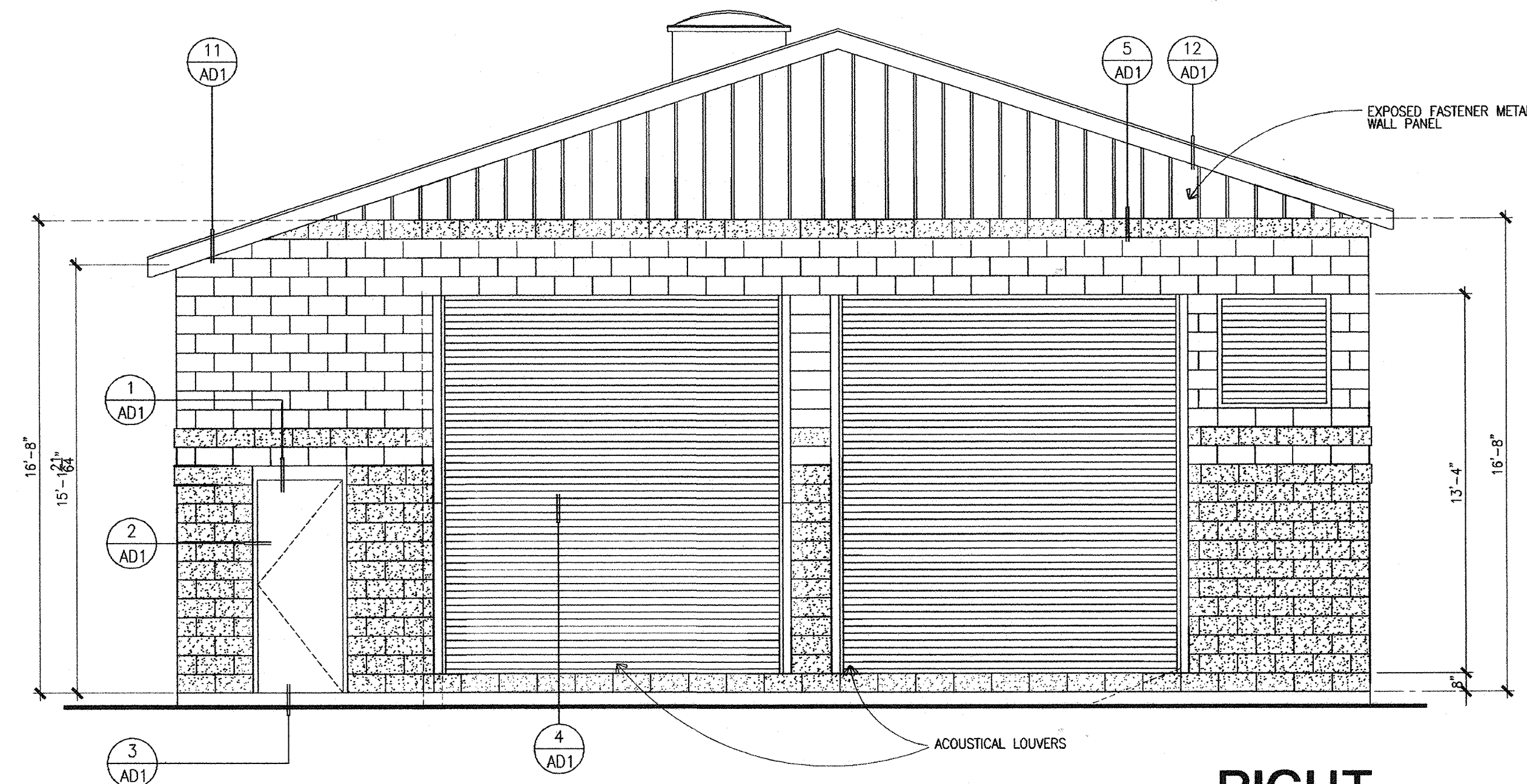
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 CHECKED:  
 REVIEWED:  
 DATE: February, 2007

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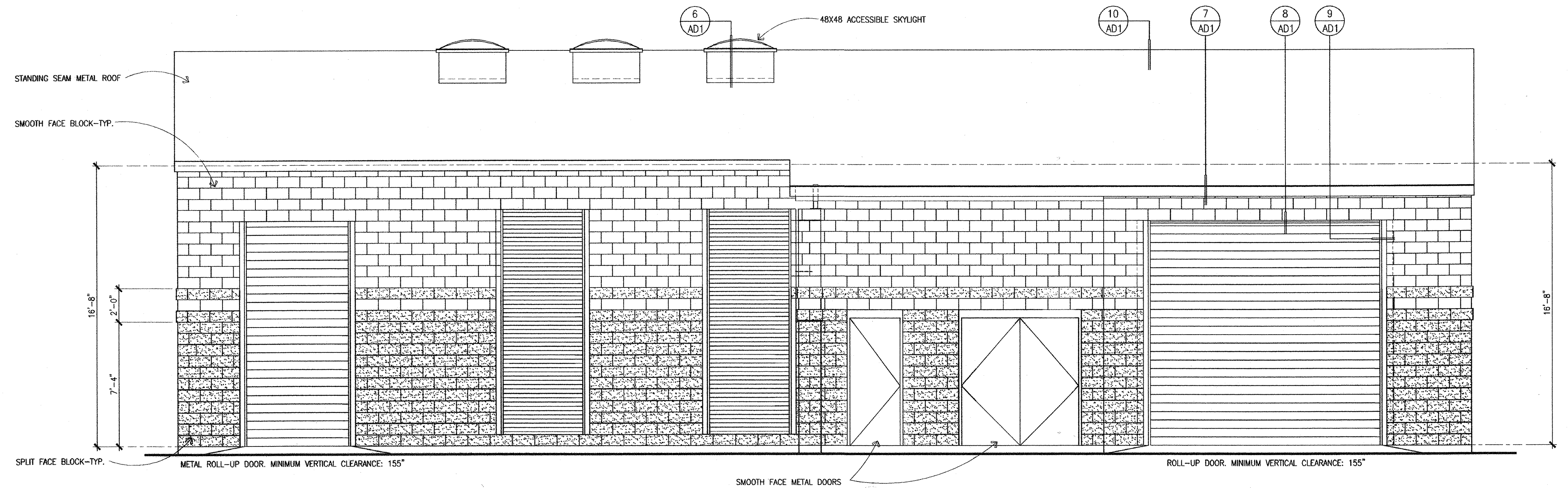
**HIGH LEVEL PUMP STATION**



A.2  
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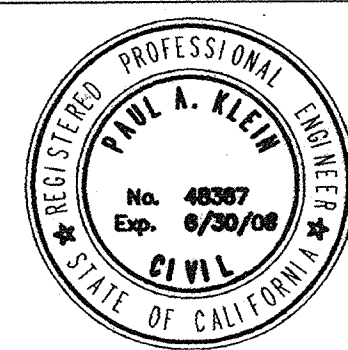
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**FRONT**

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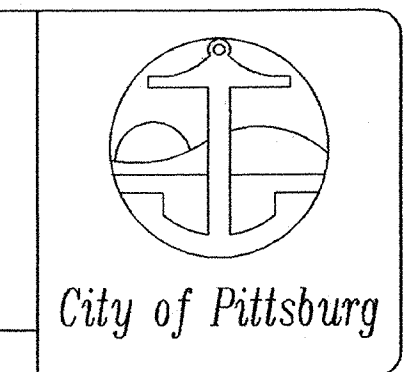
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R.C.E. NO. DATE

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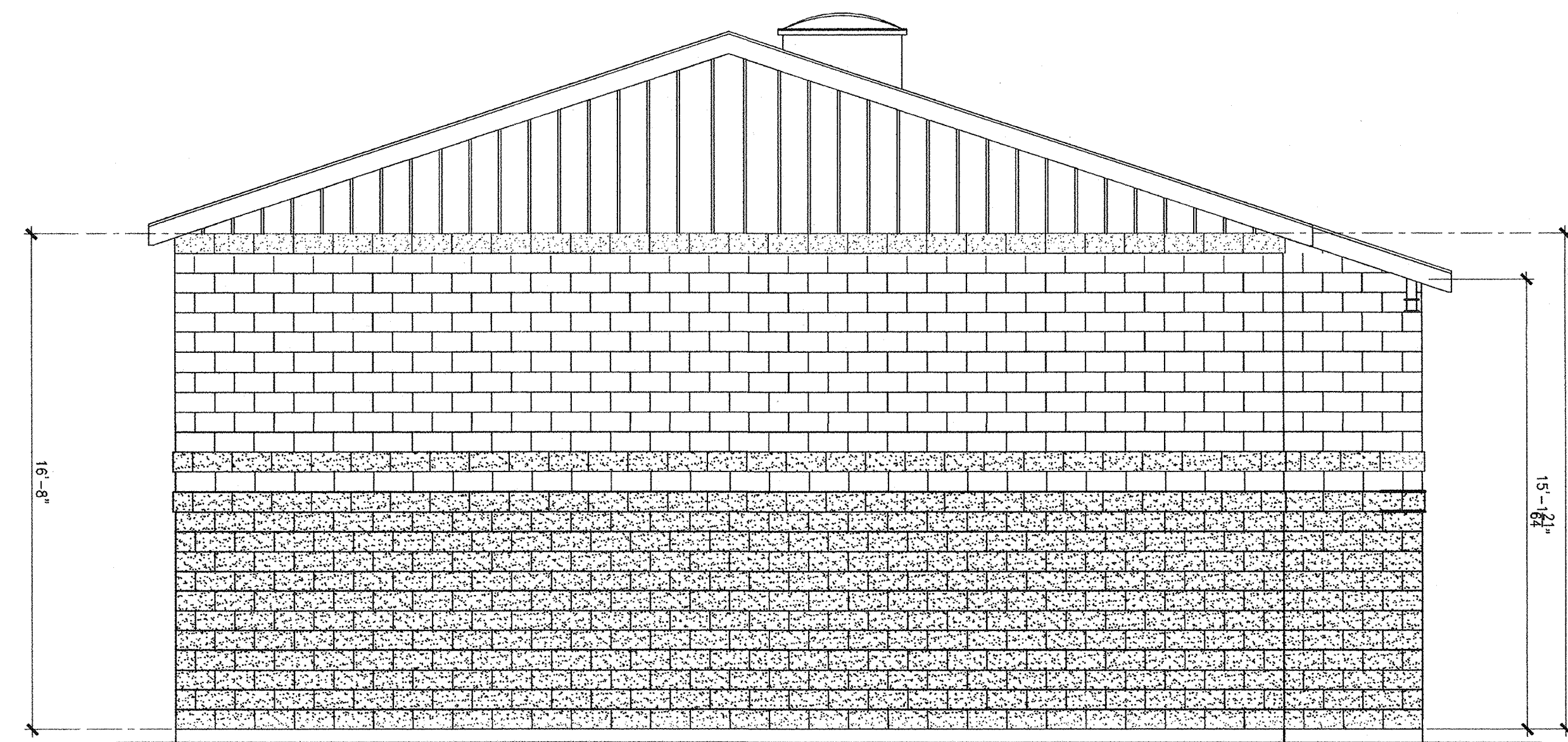
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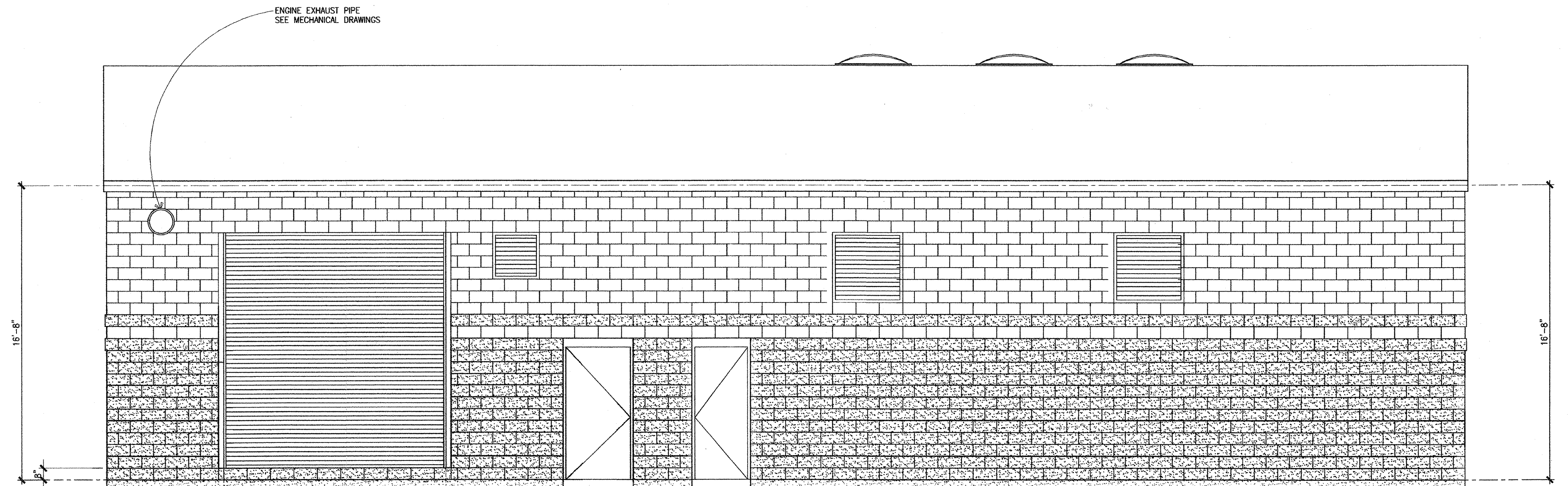
**HIGH LEVEL PUMP  
STATION**



**A.3**  
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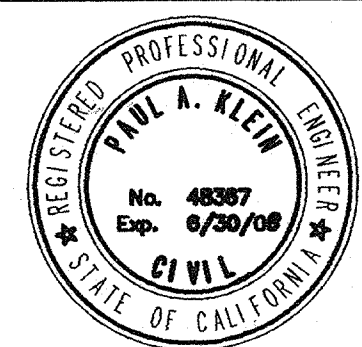
LEFT



REAR

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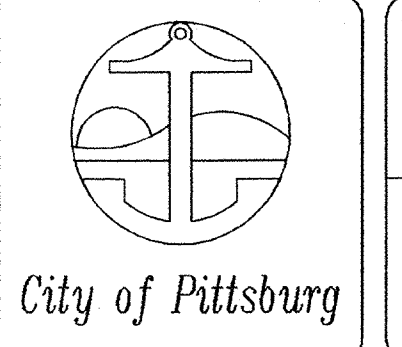
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PAUL A. KLEIN 48367 08/06/07  
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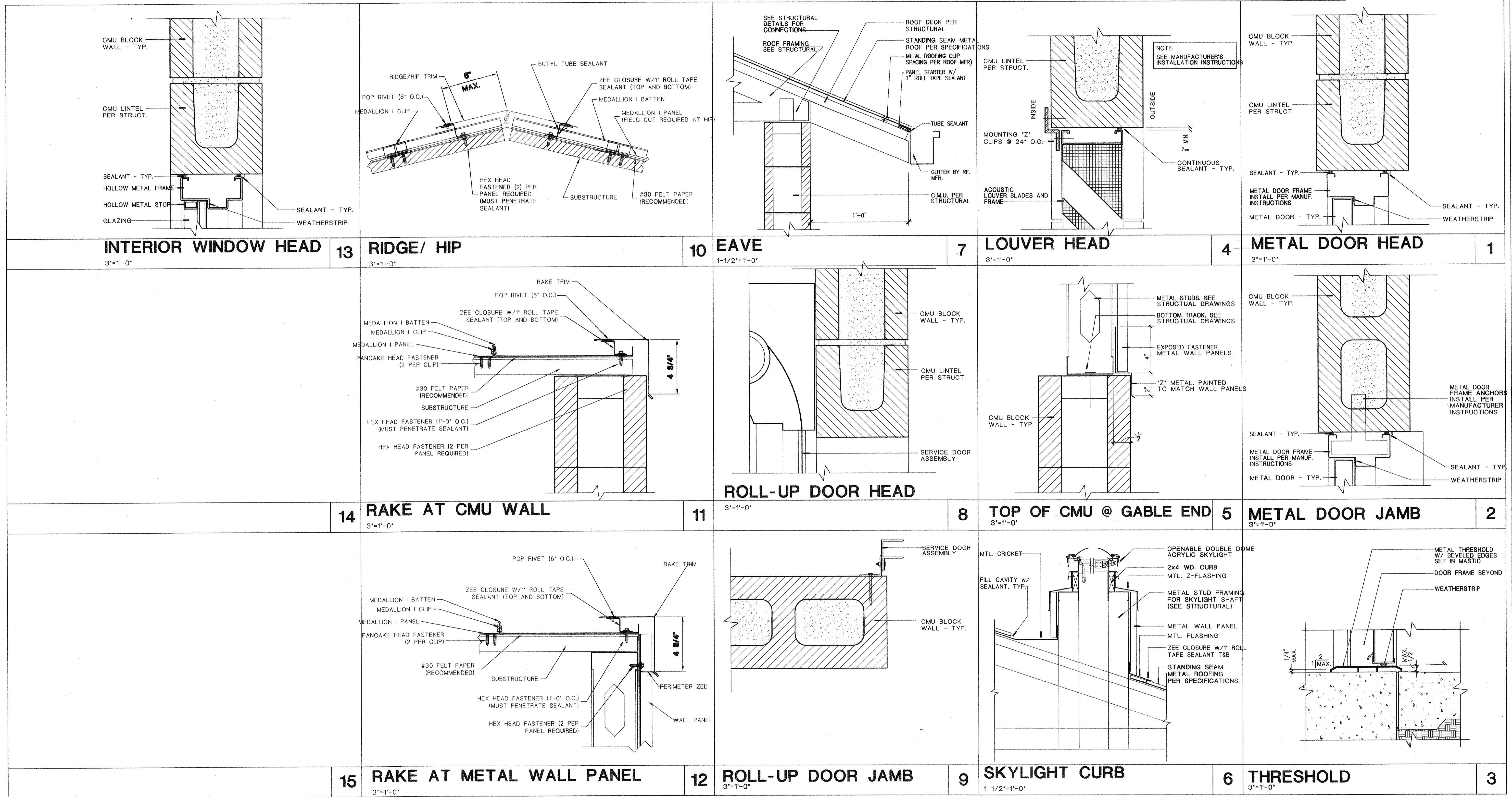
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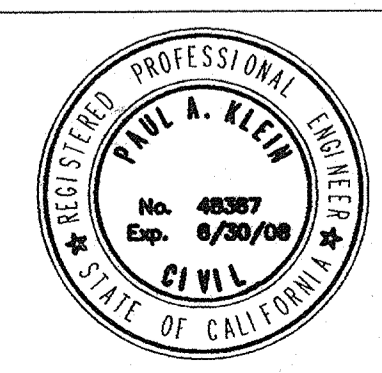
# HIGH LEVEL PUMP STATION





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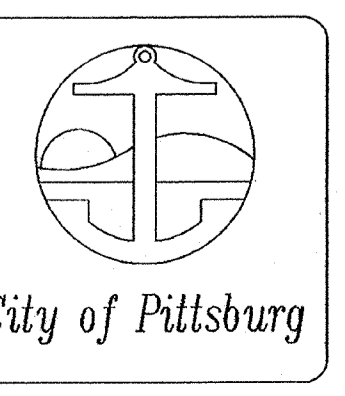
NO.	DATE	APPROV.	REVISION

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REVIEWED:  
DATE: February, 2007

APPROVED BY:

**HIGH LEVEL PUMP  
STATION**

City of Pittsburg



**AD.1**  
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# GENERAL STRUCTURAL NOTES

### LOADS:

1. CODE: THE CALIFORNIA BUILDING CODE, 2001 EDITION (C.B.C.) AS AMENDED BY THE STATE OF CALIFORNIA AND LOCAL AGENCIES.
2. LOADS: ROOF LOAD = 20 PSF MINIMUM  
FLOOR LOAD=100 PSF MINIMUM  
UBC WIND PRESSURE = 80 MPH WIND SPEED  
EXPOSURE C, I=1.0  
UBC SEISMIC ZONE = 4, S=SD, N<sub>a</sub>=0.44, N<sub>v</sub>=0.58, I=1.0
3. REFER TO INDIVIDUAL STRUCTURE DRAWINGS FOR ADDITIONAL LOADS, NOTES, AND REQUIREMENTS.
4. UNIT WEIGHTS: SOIL = 120 PCF  
FLUID = 70 PCF

### GENERAL:

1. CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS AND SITE CONDITIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.
2. STRUCTURAL DIMENSIONS RELATED TO MECHANICAL OR STRUCTURAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
3. STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND SHOP DRAWINGS PROVIDED BY EQUIPMENT MANUFACTURER.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE AND PROTECT ADJACENT STRUCTURES. SHEETING AND SHORING SHALL BE INSTALLED AS REQUIRED TO RETAIN EARTH BANKS AND PROTECTING EXISTING STRUCTURES.
5. SPECIAL INSPECTION (OWNER FURNISHED) IS REQUIRED IN ACCORDANCE WITH CBC SECTIONS 108 AND 1701 ON THE FOLLOWING PORTIONS OF THE WORK:  
CONCRETE PLACEMENT  
REINFORCING STEEL PLACEMENT  
STRUCTURAL WELDING  
ANCHORS, EMBEDS AND BOLTS INSTALLED IN CONCRETE  
CONCRETE ANCHORS  
GRADING, EXCAVATION, AND BACKFILLING

### FOUNDATIONS:

1. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL INVESTIGATION REPORT FOR THE PROPOSED HIGH LEVEL PUMP STATION, PREPARED BY BERLOGAR GEOTECHNICAL CONSULTANTS, JOB NO. 2385.105, DATED OCTOBER 11, 2005.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIARIZED WITH THE GEOTECHNICAL REPORT REGARDING THE NATURE OF THE SOILS THAT MAY BE ENCOUNTERED DURING THE COURSE OF THE FOUNDATION AND SITE WORK.
3. ALL EARTHWORK INCLUDING EXCAVATION, OVEREXCAVATION AND BACKFILL, ETC., SHALL BE PERFORMED IN ACCORDANCE WITH THE SAID GEOTECHNICAL REPORT.
4. FOUNDATION EXCAVATION SHALL BE INSPECTED BY THE PROJECT GEOTECHNICAL ENGINEER DURING EXCAVATION AND PRIOR TO PLACEMENT OF REINFORCING STEEL OR CONCRETE.
5. THE PROJECT GEOTECHNICAL ENGINEER, DURING CONSTRUCTION, SHALL EVALUATE THE DEPTH AND LATERAL EXTENT OF EXCAVATIONS FOR FOOTINGS AND SLABS.
6. NO BACKFILL SHALL BE PLACED BEHIND WALLS UNTIL THE CONCRETE HAS ATTAINED THE SPECIFIED COMPRESSIVE STRENGTH.
7. EXCAVATIONS SHALL BE SHORED AS REQUIRED TO PREVENT SUBSIDENCE OR DAMAGE TO ADJACENT EXISTING STRUCTURES, STREETS, UTILITIES, ETC.

### FORMWORK, SHORING AND BRACING:

1. CONSTRUCTION SHORING AND BRACING OF FORMWORK SHALL BE IN ACCORDANCE WITH CHAPTER 4 OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" AND ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK".
2. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. CONTRACTOR IS RESPONSIBLE FOR ALL WORK RELATING TO CONSTRUCTION ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS, SCAFFOLDING, FORMWORK, AND OTHER WORK REQUIRED TO SAFELY PERFORM THE WORK.

### CONCRETE:

1. ALL CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI, EXCEPT 2500 PSI FOR SECONDARY CONCRETE ELEMENTS SUCH AS CURBS, SIDEWALKS, AND PIPE/CONDUIT ENCASEMENTS. TYP II CEMENT. W/C RATIO NO GREATER THAN 0.55.
2. CONSTRUCTION JOINTS INDICATED ARE SUGGESTED LOCATIONS. CONTRACTOR MAY REVISE LOCATION OF JOINTS, SUBJECT TO SPECIFIED REQUIREMENTS, AND SHALL SUBMIT ALL JOINT LOCATIONS FOR REVIEW BY THE ENGINEER. ADDITIONAL CONSTRUCTION JOINT LOCATIONS, AS REQUIRED FOR CONSTRUCTION, SHALL BE SUBMITTED FOR REVIEW.
3. CONTINUOUS WATERSTOPS, AS SPECIFIED, SHALL BE INSTALLED IN ALL CONSTRUCTION JOINTS IN WALLS OF WATER HOLDING STRUCTURES, CHANNELS, AND BELOW GRADE STRUCTURES, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
4. ROUGHEN AND CLEAN ALL CONSTRUCTION JOINTS IN WALLS AND SLABS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE. SANDBLASTING OR OTHER PREPARATION OF HORIZONTAL AND VERTICAL JOINTS IS REQUIRED.
5. THE CONTRACTOR SHALL COORDINATE PLACEMENT OF ALL OPENINGS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.
6. MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES, AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED FOR PRIOR TO PLACING CONCRETE.
7. FOR PIPE PENETRATIONS NOT SHOWN SEE MECHANICAL DRAWINGS.
8. NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO THE CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.

### MASONRY:

1. MORTAR SHALL CONFORM TO ASTM C270 AND SHALL BE TYPE S FOR REGULAR STRENGTH MASONRY WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 1,800 PSI.
2. GROUT SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI FOR REGULAR STRENGTH MASONRY.
3. CONCRETE BLOCKS SHALL BE GRADE N-1 MEDIUM WEIGHT UNITS CONFORMING TO ASTM C90, WITH A MINIMUM COMPRESSIVE STRENGTH *f*<sub>m</sub> OF 1,500 PSI FOR REGULAR STRENGTH MASONRY.
4. PLACE COURSES IN RUNNING BOND PATTERN, UNLESS SPECIFICALLY INDICATED OTHERWISE, AND SHALL BE SOLID GROUTED.
5. PROVIDE MATCHING DOWELS FOR ALL VERTICAL BARS. PROVIDE REINFORCED LINTELS ABOVE AND REINFORCED BOND BEAMS BELOW ALL OPENINGS. PROVIDE HORIZONTAL CORNER BARS WITH MINIMUM 2'-0" LEGS AT ALL CORNERS. SEE DETAILS ON PLANS.
6. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT POUR 1-1/2" BELOW TOP OF THE UPPERMOST UNIT.
7. CLEAN-OUT OPENINGS SHALL BE PROVIDED AT BOTTOM OF ALL VERTICALLY GROUTED CELLS IF GROUT LIFT EXCEEDS 4'-0". MAXIMUM GROUT LIFT SHALL BE 8'-0".
8. ALL MASONRY AND WALLS SHALL BE BRACED AS REQUIRED TO WITHSTAND A WIND LOAD OF 10 PSF APPLIED PERPENDICULAR TO WALL IN EITHER DIRECTION. BRACING SHALL REMAIN IN PLACE UNTIL THE STRUCTURE IS COMPLETE ENOUGH TO SUPPORT THE WALL.
9. PROVIDE NO OPENINGS IN MASONRY BEAMS OR HEADERS UNLESS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS OR APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

### METAL DECK:

1. METAL ROOF DECK SHALL BE GALVANIZED DECK 1 1/2" X 22 GA. TYPE HSB-36 AS MANUFACTURED BY VERO MANUFACTURING COMPANY OR APPROVED EQUAL FOR VERTICAL AND LATERAL LOAD.
2. WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL". WELDING FILLER MATERIAL SHALL BE AWS A5.1 OR A5.5 E70XX ELECTRODES. WELDERS SHALL BE AWS CERTIFIED.
3. ROOF DECK SHEETS SHALL BE FASTENED TO THE SUPPORTING ROOF STEEL BY 1/2" DIAMETER PUDDLE WELDS AS FOLLOWS: WELD PER SHEET TO SUPPORT: 7  
TOP SEAM WELD: 12" ON CENTERS  
PARALLEL EDGE: 12" ON CENTERS
4. DECKING SHALL HAVE A MINIMUM 2" BEARING ON ALL SUPPORTS.
5. DECKING SHALL BE CONTINUOUS OVER 2 SPANS MINIMUM, EXCEPTS WHERE SHOWN OTHERWISE.
6. THE DECK SHALL BE REINFORCED AT OPENINGS PER MANUFACTURER'S REQUIREMENTS.

### CONCRETE REINFORCING:

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60. FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1 "MANUAL OF STANDARD PRACTICE" AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING".
2. CLEARANCE FOR REINFORCEMENT BARS, UNLESS SHOWN OTHERWISE, SHALL BE:  
A. WHEN PLACED ON GROUND: ---3"  
B. ALL OTHER CONCRETE SURFACES:  
#5 BAR OR SMALLER -----1 1/2"  
#6 BAR OR LARGER -----2"
3. REFER TO WALL CORNER AND WALL INTERSECTION REINFORCING DETAILS.
4. ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE A 90 DEGREE STANDARD HOOK AS DEFINED IN LATEST EDITION OF ACI 318.
5. ALL WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS.

### METAL FABRICATIONS:

1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36 UNLESS SHOWN OTHERWISE. SQUARE OR RECTANGULAR STEEL TUBING SHALL CONFORM TO ASTM A-500, GRADE B. STEEL PIPE SHALL BE A501 OR ASTM A53, GRADE B.
2. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, CURRENT EDITION.
3. ALL BOLTS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A325-N (OR A325-SC WHERE INDICATED) UNLESS OTHERWISE SHOWN. BOLTS INDICATED AS MACHINE BOLTS (MB) OR ANCHOR BOLTS (AB) SHALL CONFORM TO ASTM A307 FOR CARBON STEEL, A193 FOR STAINLESS STEEL, AND A153 FOR GALVANIZED STEEL EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE. ALL JOINT CONTACT SURFACES SHALL BE CLEAN AND FREE FROM OIL, DIRT AND PAINT.
4. ALL WELDS SHALL BE DONE BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO AWS D 1.1. LATEST EDITION. ALL BUTT WELDS ARE FULL PENETRATION UNLESS INDICATED OTHERWISE. WELD FILLER METAL SHALL BE AWS A5.1 OR A5.5 E70XX ELECTRODES.
5. ALL WELDS FOUND DEFECTIVE SHALL BE REPAIRED AND/OR REPLACED AND RETESTED FOR ADEQUACY AT THE CONTRACTOR'S EXPENSE.
6. AT ALL FIELD WELDS, AT EMBED PLATES, AND ANGLES, LOW HEAT AND INTERMITTENT WELDS SHALL BE UTILIZED TO AVOID SPALLING OR CRACKING THE EXISTING CONCRETE.
7. ALL STRUCTURAL STEEL TO BE EMBEDDED IN CONCRETE SHALL BE CLEAN AND FREE OF PAINT, OIL OR DIRT.
8. NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS. NO CUTTING OR BURNING OF STRUCTURAL STEEL WILL BE PERMITTED WITHOUT APPROVAL OF THE ENGINEER.

### LIGHT GAGE STEEL FRAMING:

1. ALL STUD FRAMING MEMBERS SHALL BE OF THE TYPE SIZE AND GAGE SHOWN ON THE PLANS AND SHALL BE MANUFACTURED BY ANGELES METAL SYSTEMS, LOS ANGELES, CA., OR APPROVED EQUAL.
2. ALL GALVANIZED STUDS AND JOISTS 14, 16 AND 18 GAGE SHALL BE FORMED FROM STEEL THAT CORRESPONDS TO THE REQUIREMENTS OF ASTM A446, GRADE D OR ASTM 570, GRADE 50, WITH A MINIMUM YIELD OF 50 KSI.
3. ALL GALVANIZED 20 GAGE STUDS AND ACCESSORIES SHALL BE ASTM A446 STEEL, GRADE A, OR ASTM A570, GRADE 33, WITH MINIMUM YIELD OF 33 KSI.
4. THE PHYSICAL AND STRUCTURAL PROPERTIES LISTED BY "ANGELES METAL SYSTEMS", CATALOG AND I.C.B.O. REPORTS NO. 2392-P AND NO. 1715, SHALL BE CONSIDERED THE MINIMUM PERMITTED FOR ALL FRAMING MEMBERS.
5. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS, OR AS REQUIRED FOR AN ANGULAR FIT AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE HELD POSITIVELY IN PLACE UNTIL PROPERLY FASTENED.
6. TRACKS SHALL BE SECURELY ANCHORED TO THE SUPPORTING STRUCTURE AS SHOWN ON THE PLANS.
7. COMPLETE UNIFORM AND LEVEL BEARING SUPPORT SHALL BE PROVIDED FOR THE BOTTOM TRACK.
8. AT TRACK BUTT JOINTS, ABUTTING PIECES OF TRACK SHALL BE SECURELY ANCHORED TO A COMMON STRUCTURAL ELEMENT, OR THEY SHALL BE BUTT WELDED OR SPLICED TOGETHER.
9. STUDS SHALL BE PLUMBED, ALIGNED AND SECURELY ATTACHED TO THE FLANGES OR WEBS OF BOTH UPPER AND LOWER TRACKS.
10. FRAMED WALL OPENINGS SHALL INCLUDE HEADERS AND SUPPORTING STUDS AS SHOWN ON THE PLANS.
11. JACK STUDS SHALL BE INSTALLED BELOW WINDOW SILLS, ABOVE WINDOW AND DOOR HEADS, AT FREE STANDING STAIR RAILS, AND ELSEWHERE TO FURNISH SUPPORT, AND SHALL BE SECURELY ATTACHED TO SUPPORTING MEMBERS.
12. TEMPORARY BRACING SHALL BE PROVIDED UNTIL ERECTION IS COMPLETED.
13. WALL STUD BRIDGING SHALL BE INSTALLED IN A MANNER TO PROVIDE RESISTANCE TO BOTH MINOR AXIS BENDING AND ROTATION. BRIDGING ROWS SHALL BE EQUALLY SPACED NOT TO EXCEED 4'-0" ON CENTER.
14. SCREW FASTENERS, FOR LIGHT GAGE FRAMING, SHALL CONFORM TO ASTM C954. "DARTS" BRAND SELF TAPPING STEEL SCREWS CONFORMING TO ICBO No. ER5202 OR APPROVED EQUAL SHALL BE USED.
15. AS A CONVENIENCE TO THE CONTRACTOR, SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW OF GENERAL CONFORMANCE TO DESIGN CONCEPT. THE CONTRACTOR SHALL BE RESPONSIBLE NONETHELESS FOR COMPLIANCE AND DIMENSIONS. SHOP DRAWINGS ARE REQUIRED FOR THE FOLLOWING:  
PREFABRICATED STEEL ROOF TRUSS.

### PLYWOOD DIAPHRAGMS:

1. ALL STRUCTURAL PLYWOOD SHALL BE CD GRADE WITH EXTERIOR GLUE P.S. 1-74 AND A 32/16 SPAN RATING, UNLESS OTHERWISE NOTED.
2. PLYWOOD NAILING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON PLANS:  
PLYWOOD BOUNDARY AND FIELD NAILING  
THICKNESS EDGE NAILING  
5/8" #8 SMS @ 6" O.C. #8 SMS @ 10" O.C.  
ALL PLYWOOD SHALL BE INSPECTED PRIOR TO COVERING.
3. THE SCREW EDGE DISTANCE FOR 3" NOMINAL (2-1/2" NET) WIDE MEMBERS ON WHICH SHEETS ARE SPLICED SHALL BE 3/4" MINIMUM.
4. THE SCREW EDGE DISTANCE FOR 2" NOMINAL (1-1/2" NET) WIDE MEMBERS ON WHICH SHEETS ARE SPLICED SHALL BE 3/8" MINIMUM.
5. THE SCREW EDGE DISTANCE FOR PLYWOOD SHEETS SHALL BE NOT LESS THAN 3/8".
6. #8 SMS (SHEET METAL SCREWS) = HILTI S-WD 8-18 x 1 1/6 PFH #3, OR APPROVED EQUAL.

BEFORE EXCAVATING  
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TWO WORKING DAYS BEFORE ALL  
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CAUTION  
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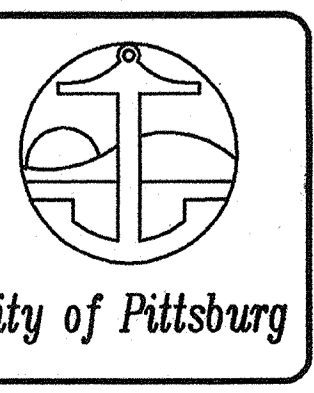
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KEVIN P. BURKE 57152 8-7-07  
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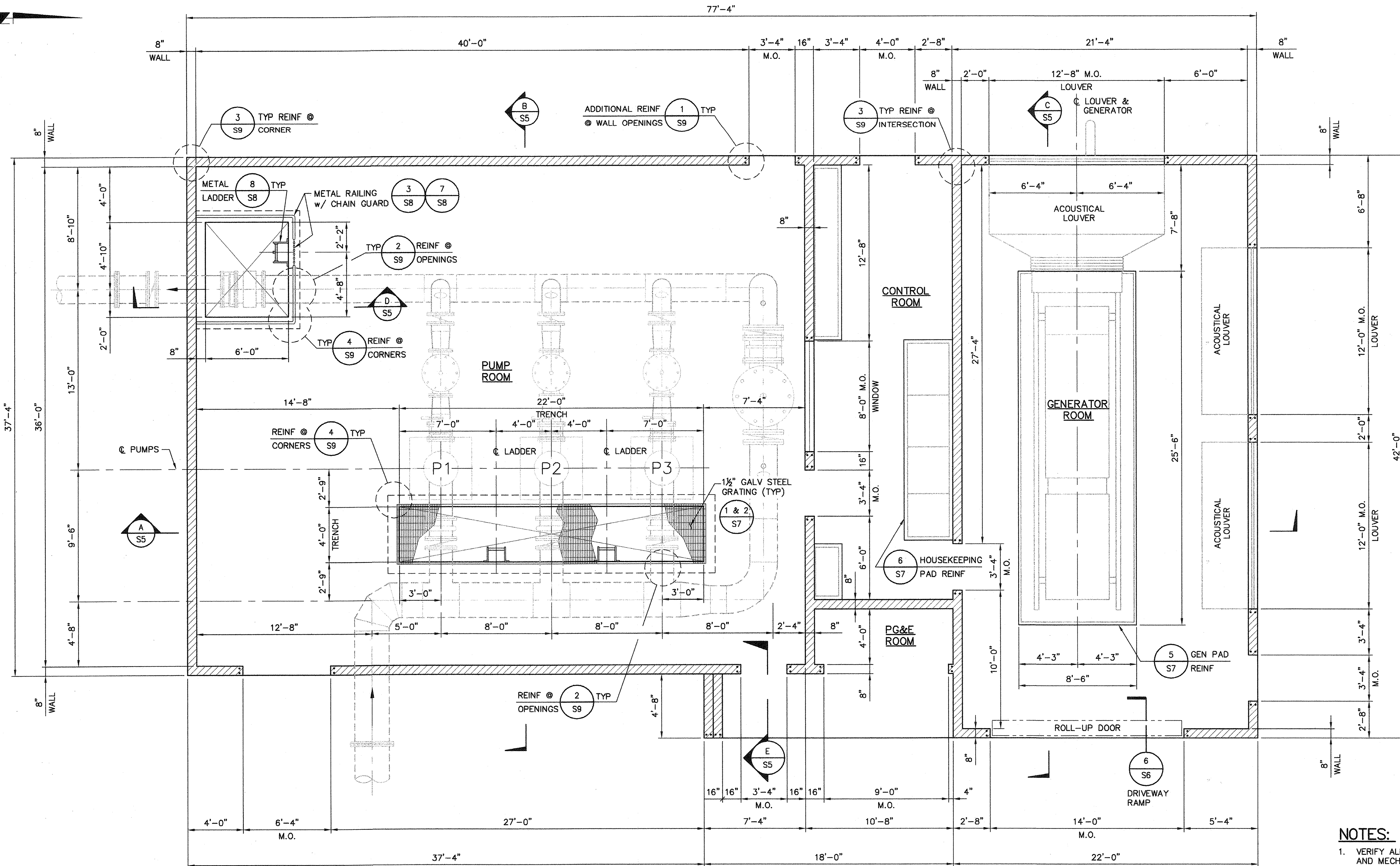
NO.	DATE	APPROV.	REVISION

DESIGNED: C. SHENOY APPROVED BY:  
DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

**HIGH LEVEL  
PUMP STATION  
GENERAL STRUCTURAL NOTES**







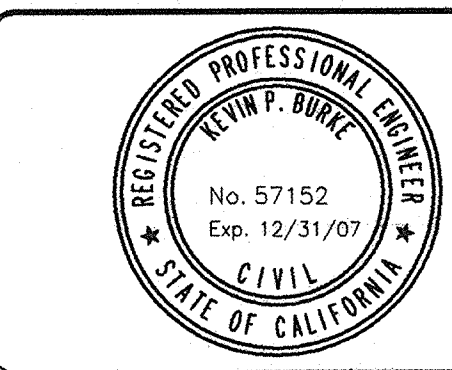
**NOTES:**  
 1. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

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**FLOOR PLAN**  
 SCALE: 1/4" = 1'-0"



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 57152 R.C.E. NO. 8-7-07 DATE

NO.	DATE	APPROV.	REVISION

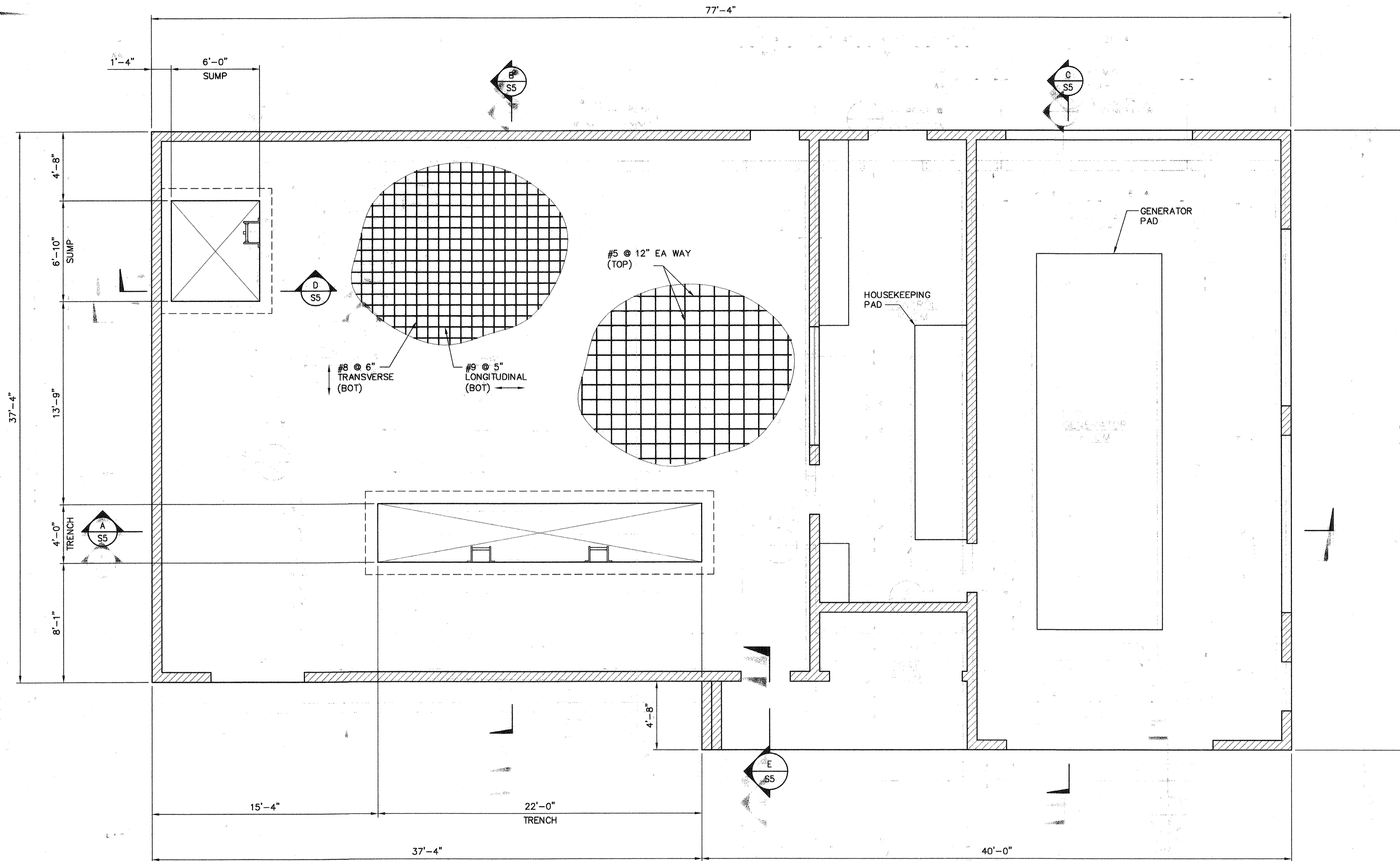
DESIGNED: C. SHENOY  
 DRAWN: G. FETTERS  
 CHECKED: P. KLEIN  
 REVIEWED: K. BURKE  
 DATE: FEBRUARY 2007

APPROVED BY:

**HIGH LEVEL  
 PUMP STATION  
 FLOOR PLAN**



**S2**  
**33 of 77**



**MAT FOUNDATION REINFORCING PLAN**

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

**NOTES:**

1. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
2. REFER TO SHEET S6 FOR CONCRETE RAMP, CONC STOOP, CONSTRUCTION JOINT, AND MAT FOUNDATION DETAILS, TRENCH AND SUMP DETAILS.
3. REFER TO SHEET S7 FOR GENERATOR/HOUSEKEEPING PAD AND PUMP CAN DETAILS.
4. REFER TO SHEET S9 FOR REQUIRED REINFORCING LAP SCHEDULE, REINF. ABOVE OPENINGS AND WATERSTOP DETAILS.

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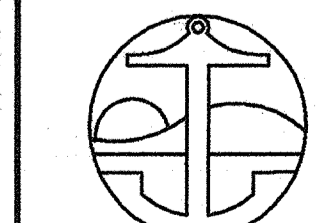
Kevin P. Burke  
57152 R.C.E. NO. 8-7-07 DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: C. SHENY  
DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

APPROVED BY:

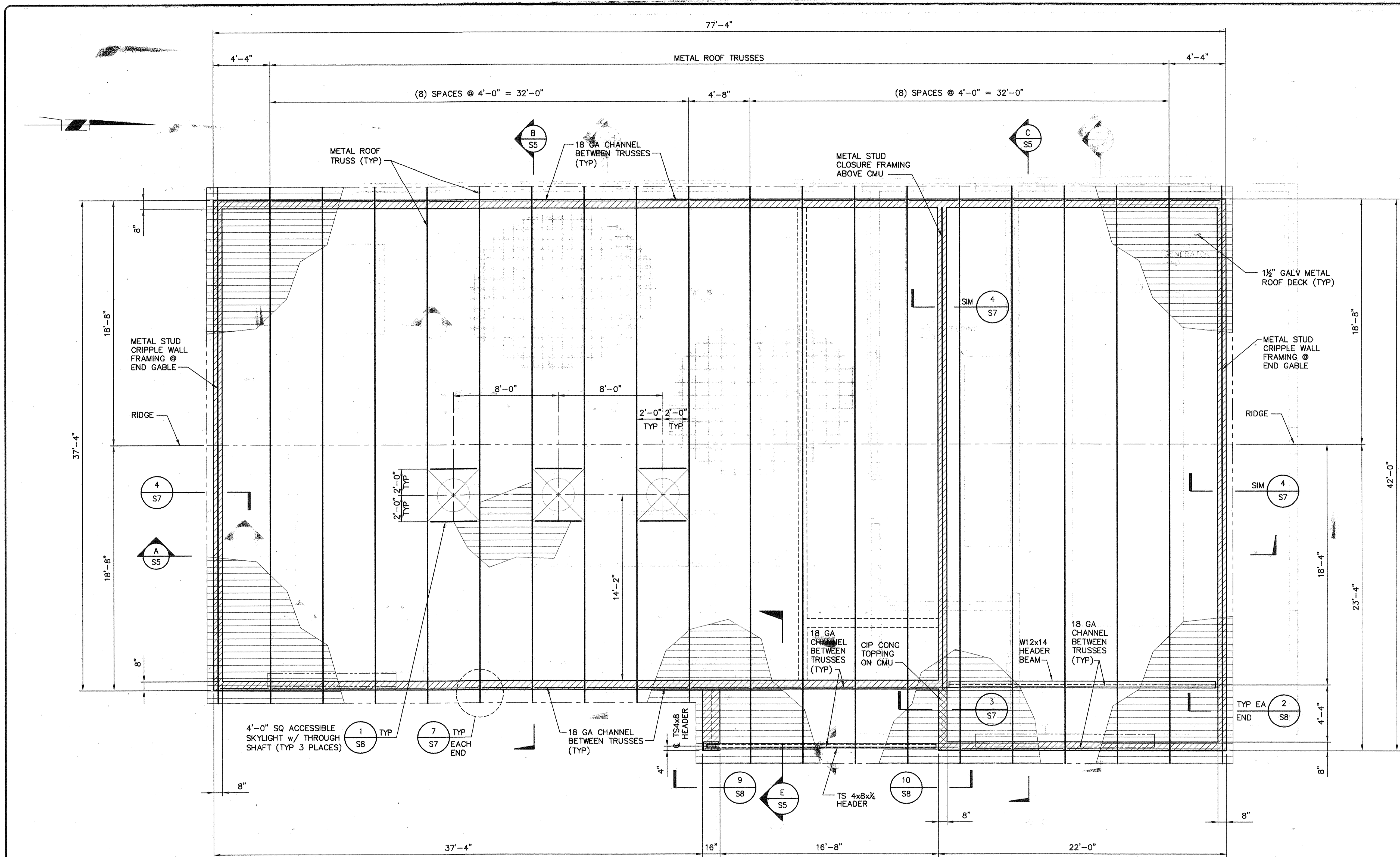
**HIGH LEVEL  
PUMP STATION  
MAT FOUNDATION REINF PLAN**



City of Pittsburg

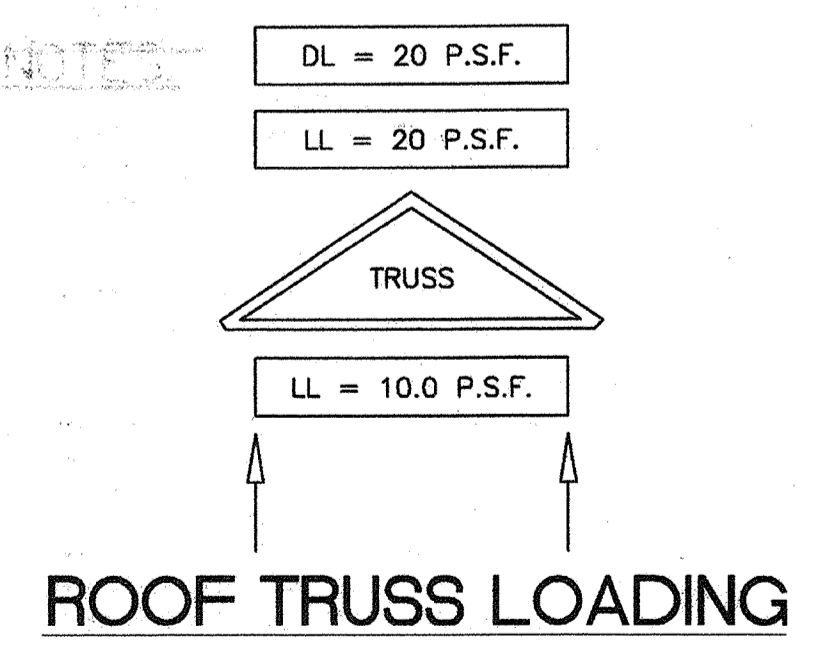
S3

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**ROOF TRUSS FRAMING PLAN**  
SCALE: 1/4" = 1'-0"

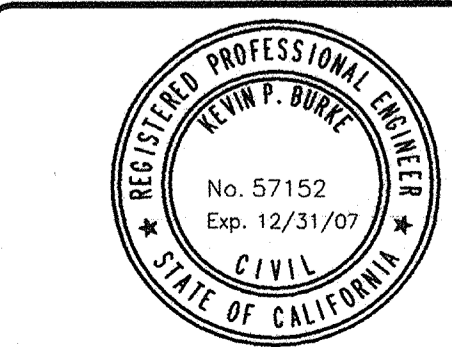
- NOTES:**
1. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
  2. REFER TO SHEET S8 FOR DETAILS RELATING TO INSTALLATION OF METAL ROOF DECK.
  3. STEEL ROOF TRUSSES ARE BY OTHERS AND SHALL BE DESIGNED USING THE LOADS AS SHOWN ON THE ROOF TRUSS LOADING DIAGRAM THIS SHEET. MFR SHALL SUBMIT SHOP DRAWINGS SHOWING LOADS, ALL TRUSS ELEVATIONS, CONNECTIONS, LAYOUT PLAN, ETC., TO THE ENGINEER OF RECORD FOR REVIEW.



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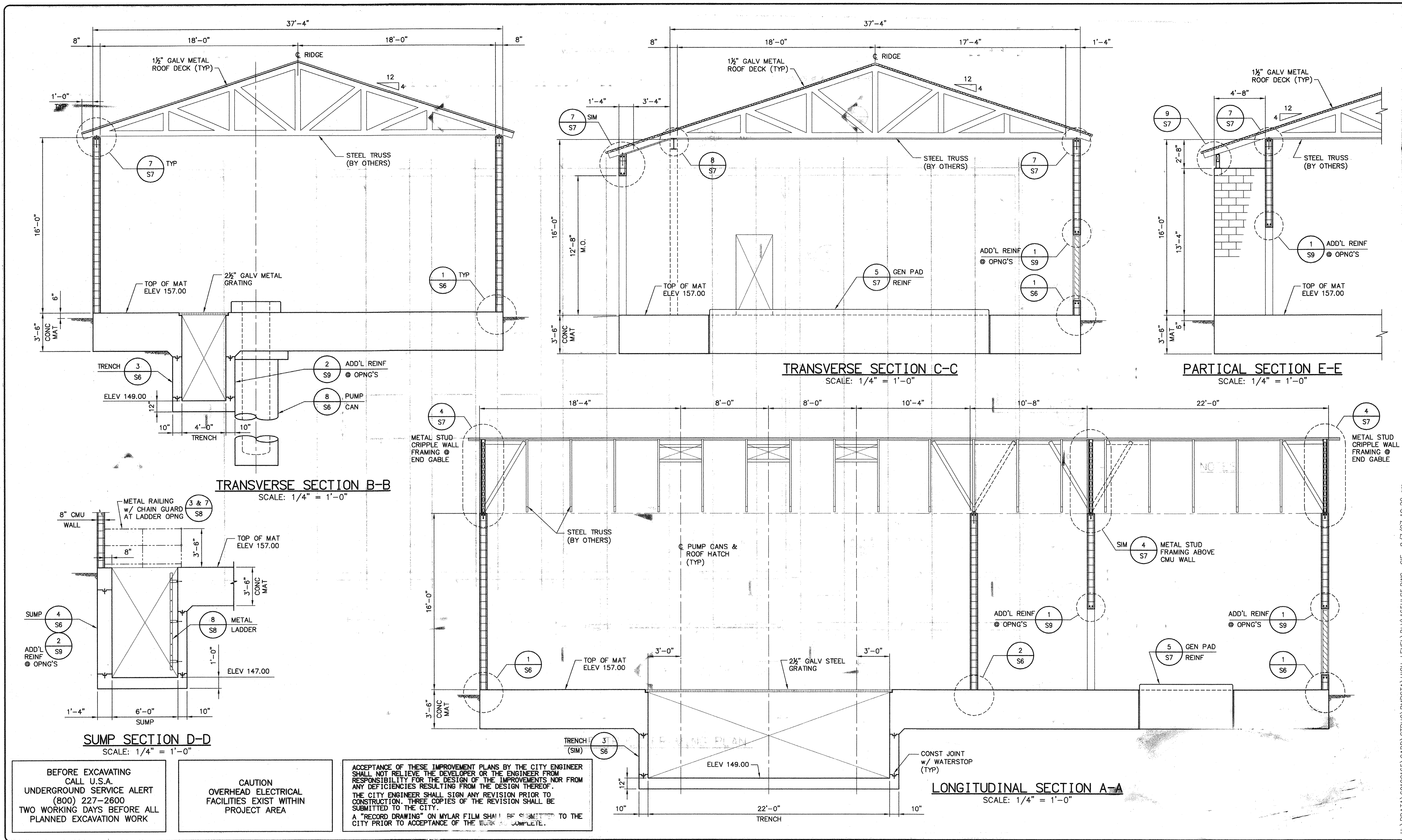
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DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

APPROVED BY:  
**HIGH LEVEL  
PUMP STATION  
ROOF TRUSS FRAMING PLAN**



**S4**  
**35 of 77**

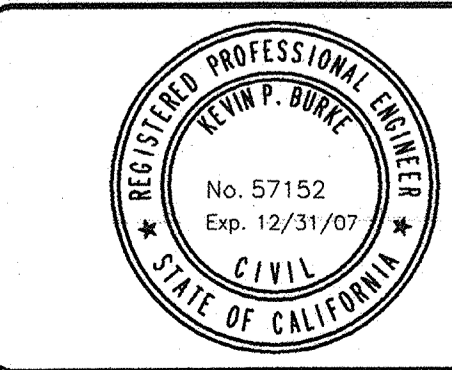
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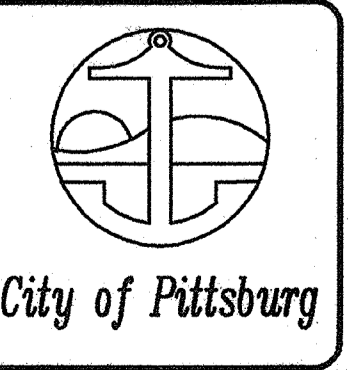
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DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

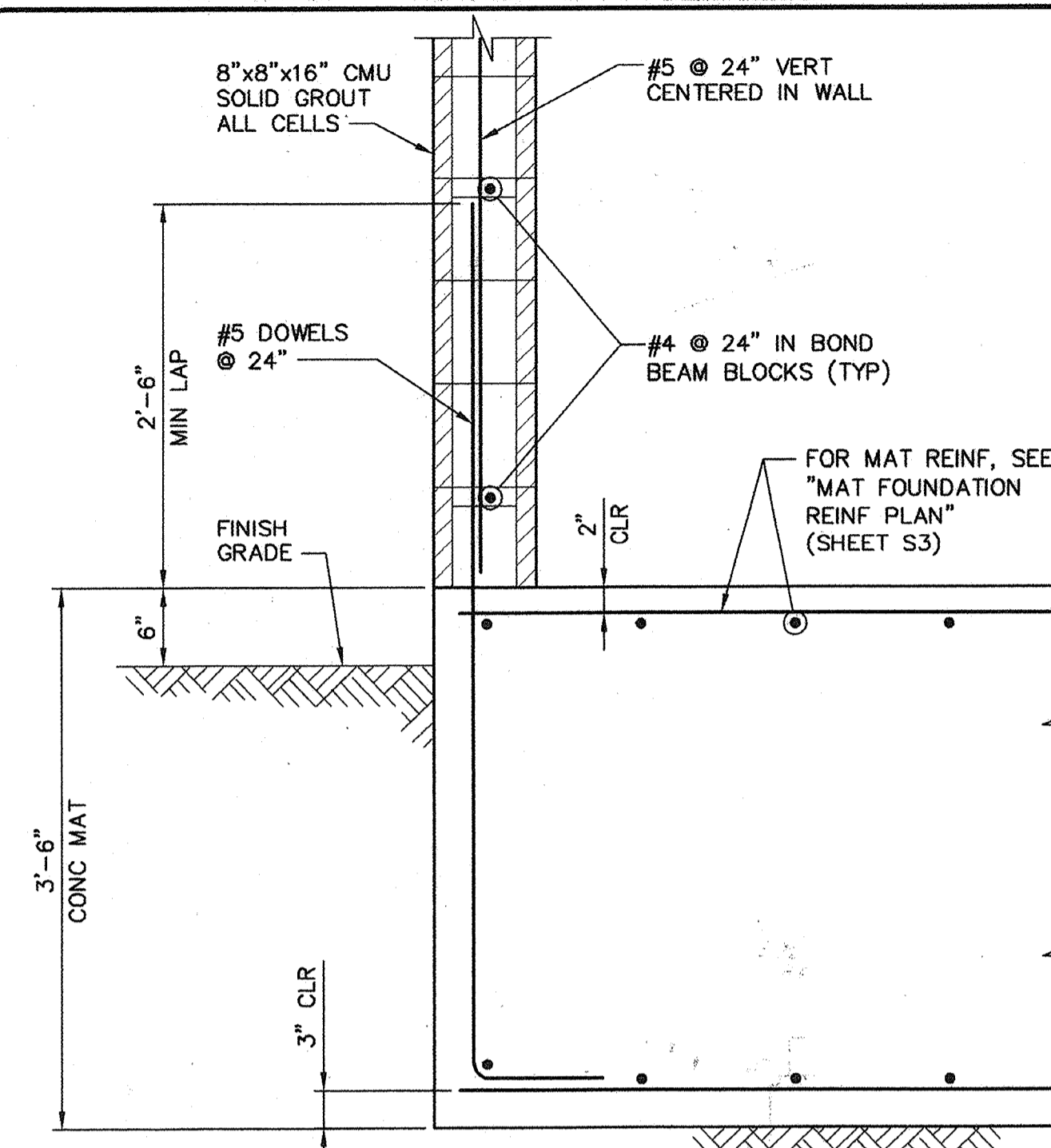
APPROVED BY:

**HIGH LEVEL  
PUMP STATION  
ROOF BUILDING SECTIONS PLAN**

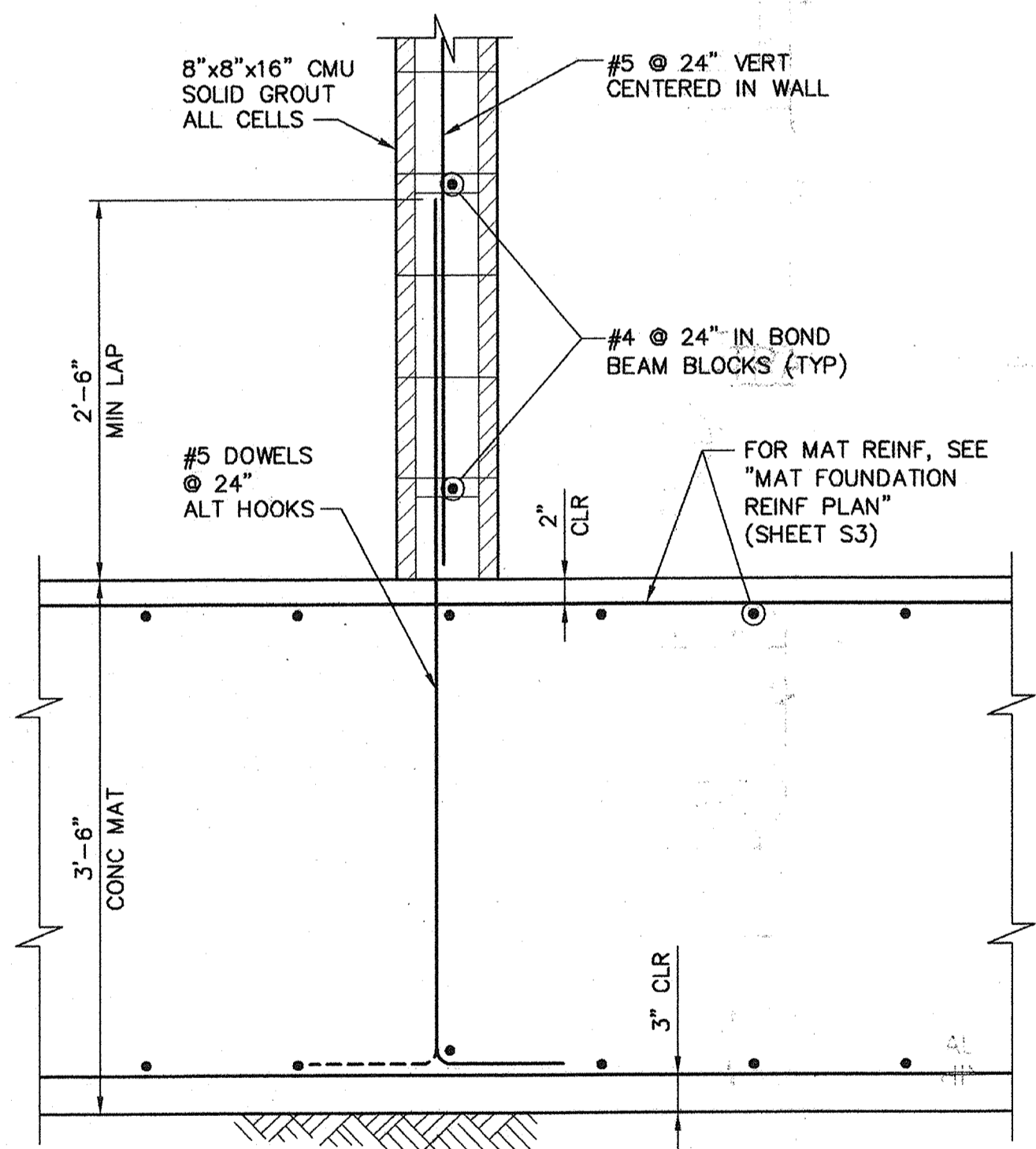


**S5**  
**36 of 77**

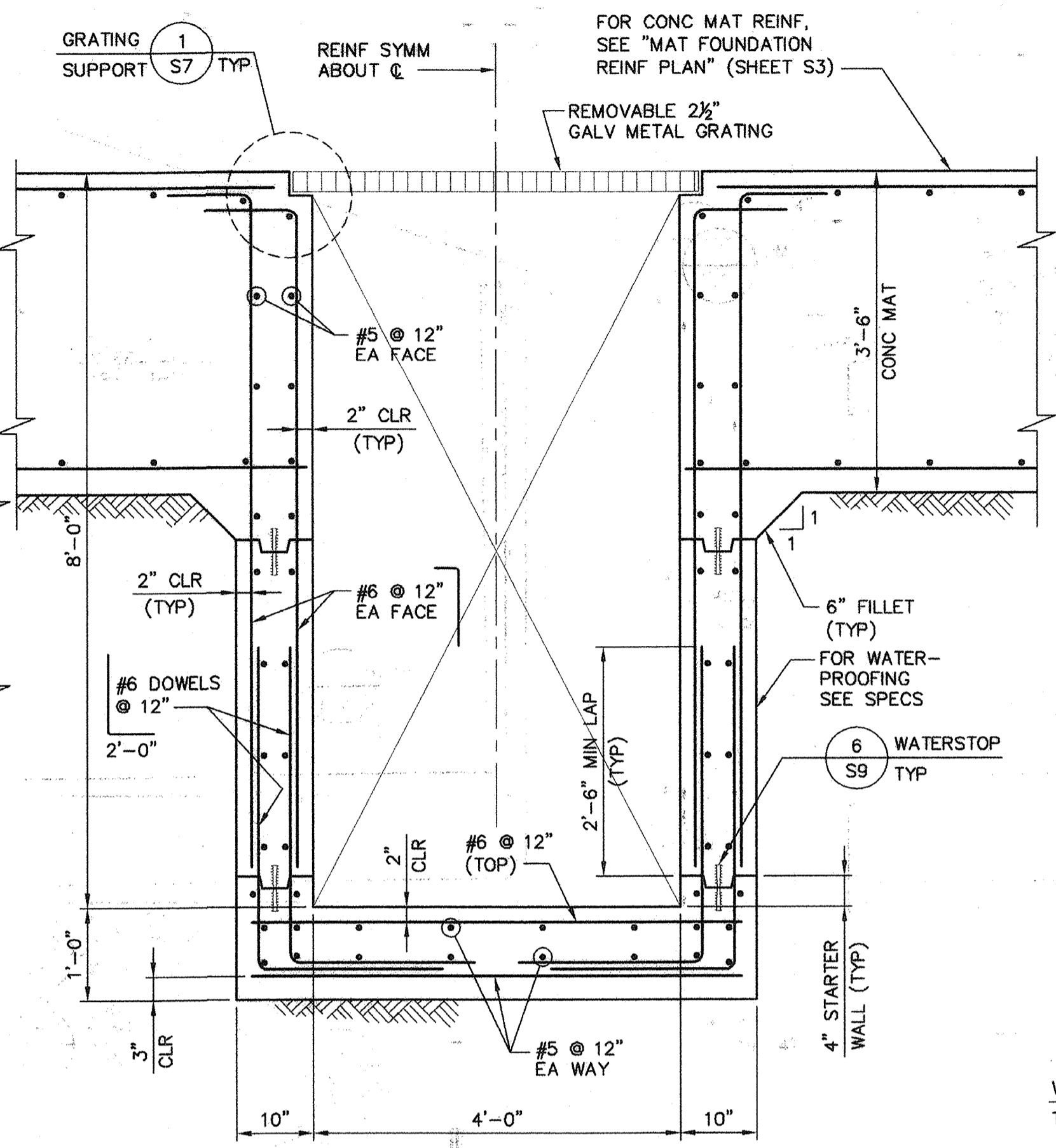
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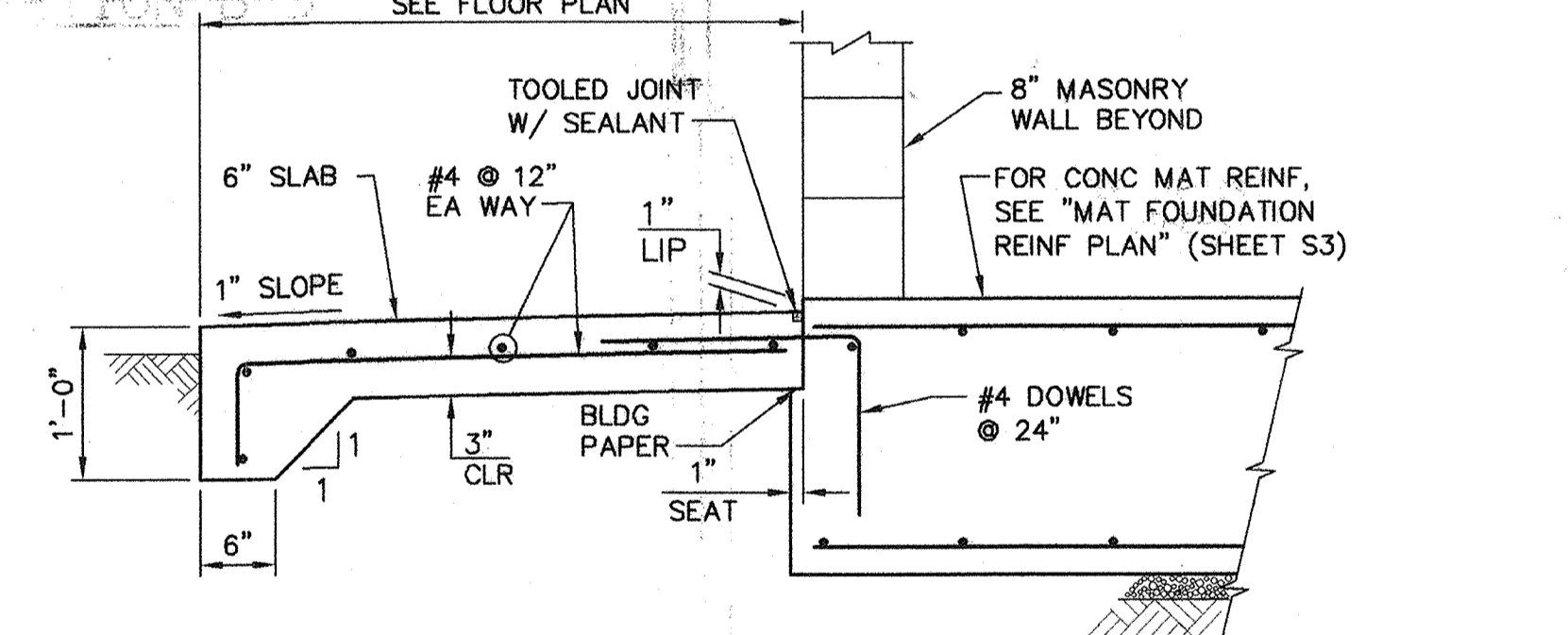
**EXTERIOR WALL TO FDN MAT DETAIL**  
SCALE: 1" = 1'-0"



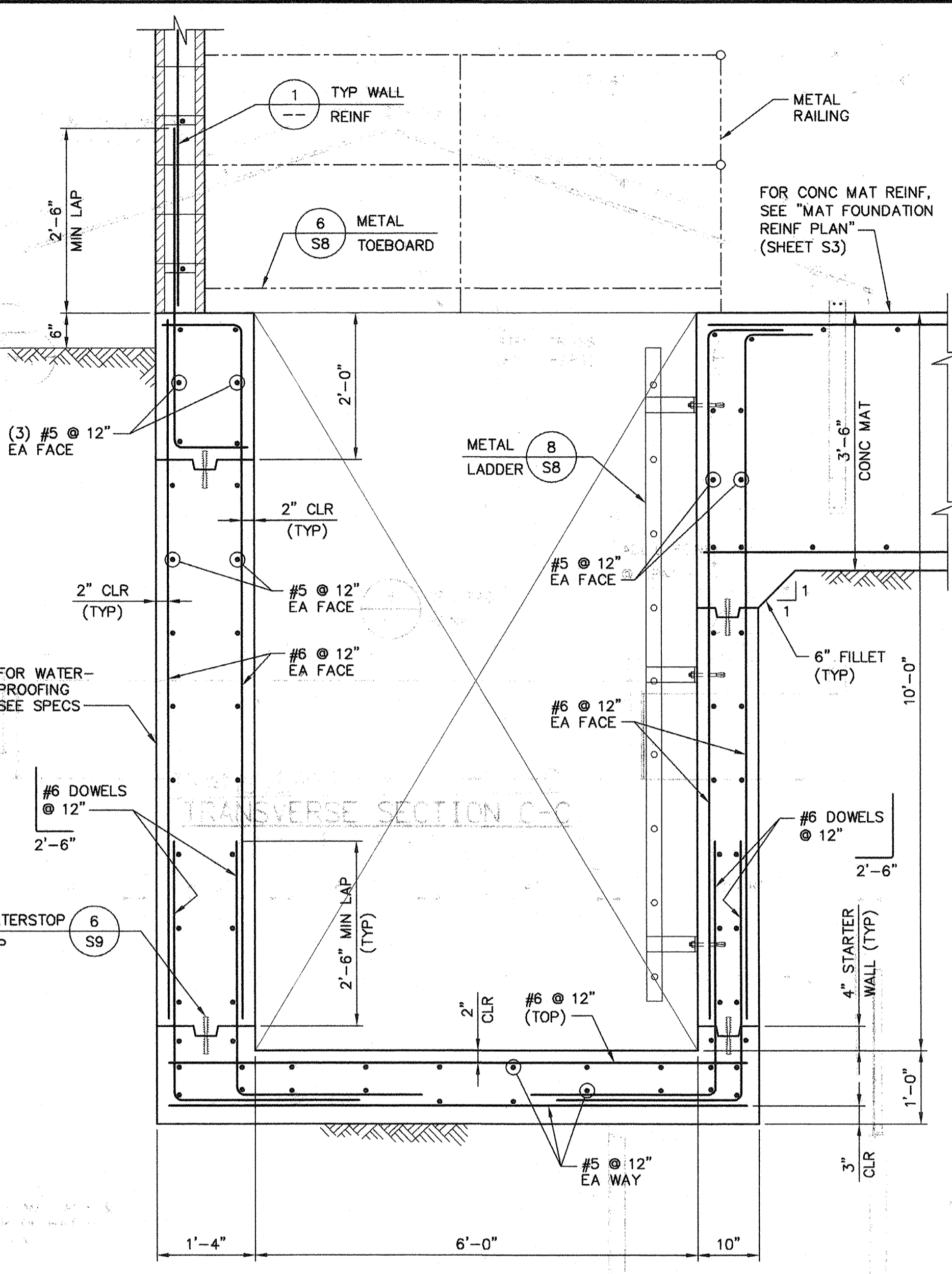
**INTERIOR WALL TO FDN MAT DETAIL**  
SCALE: 1" = 1'-0"



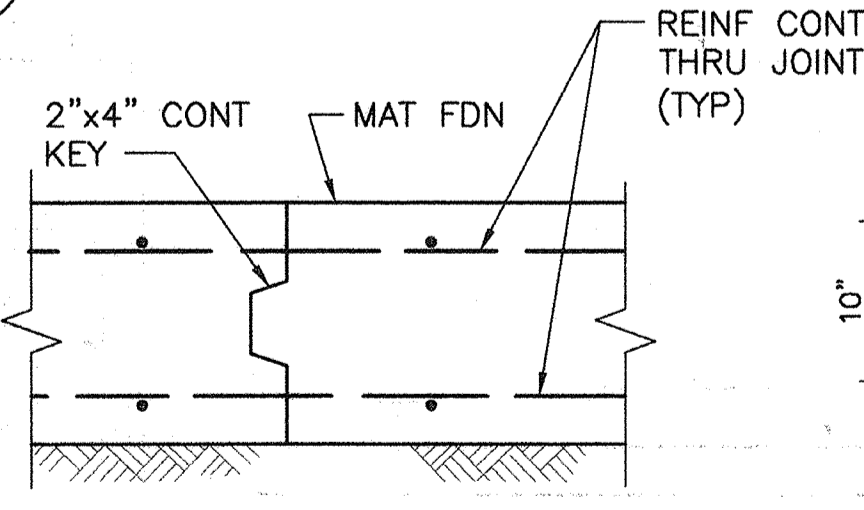
**TRENCH REINF DETAIL**  
SCALE: 3/4" = 1'-0"



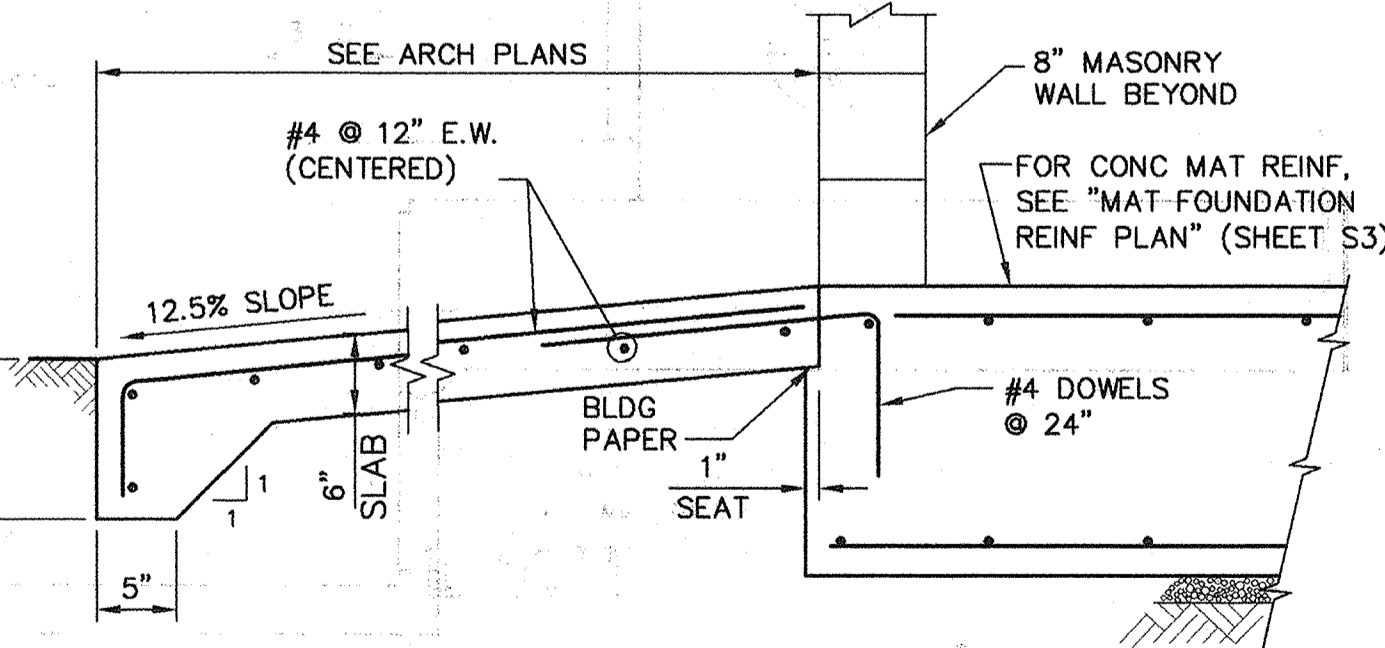
**CONCRETE SLAB AT DOORWAY DETAIL**  
NO SCALE



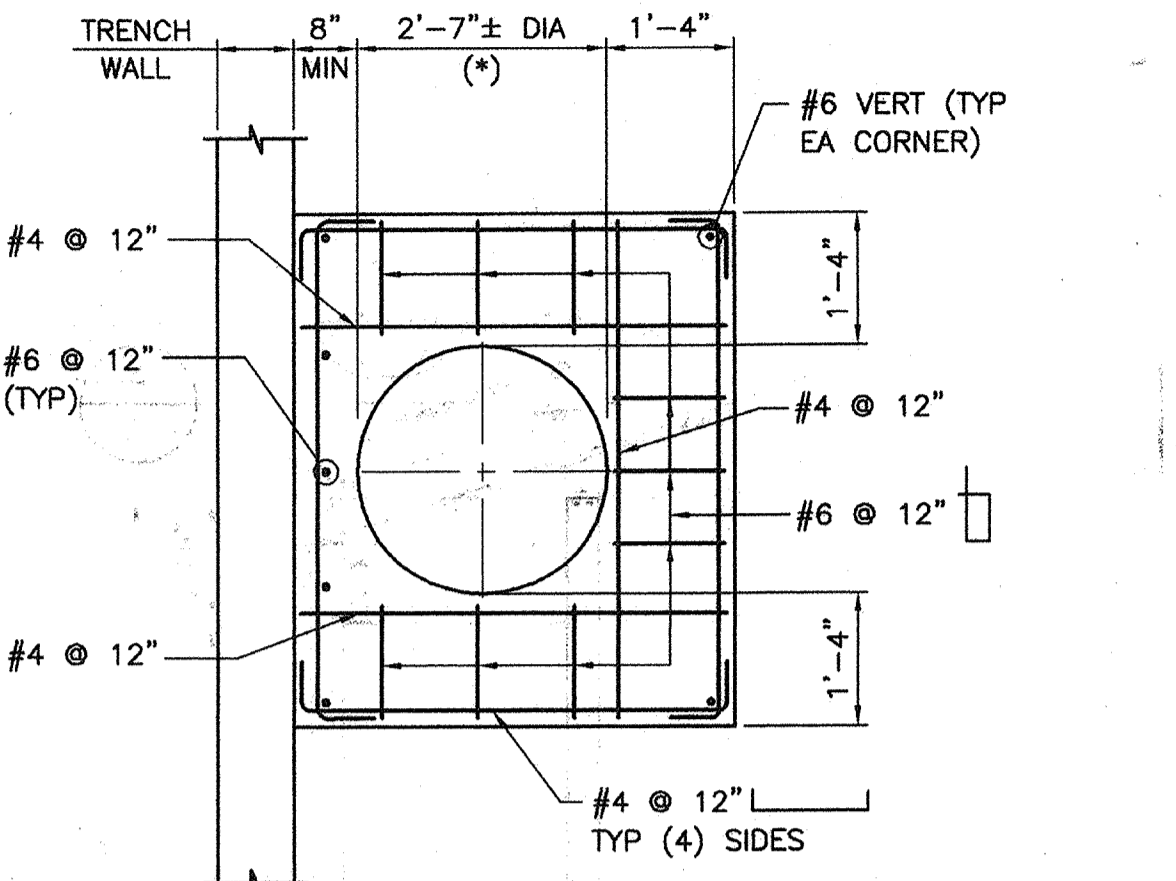
**SUMP REINF DETAIL**  
SCALE: 3/4" = 1'-0"



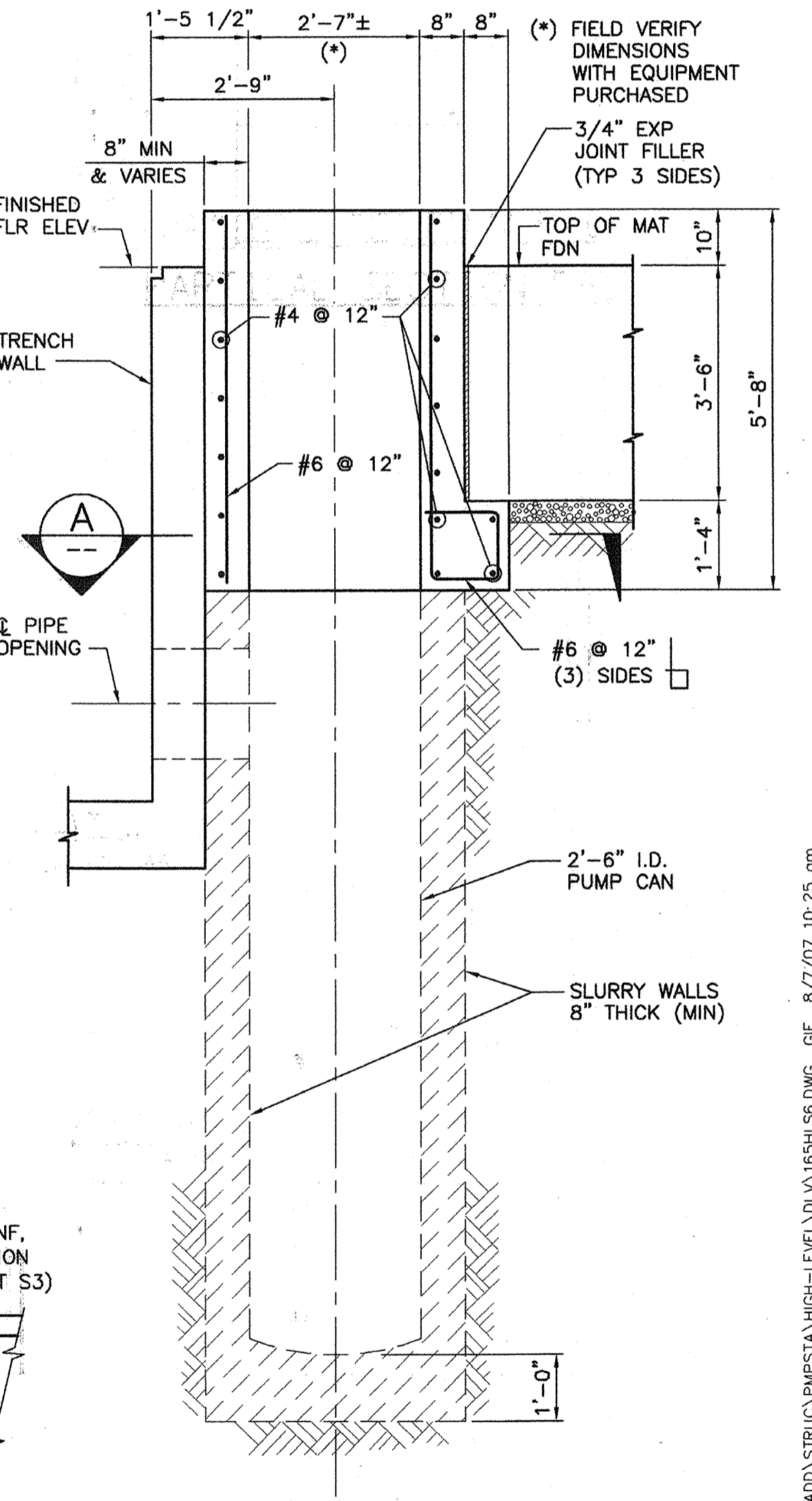
**CONSTRUCTION JOINT DETAIL**  
NO SCALE



**CONCRETE RAMP DETAIL**  
NO SCALE



**SECTION A**  
1/2" = 1'-0"

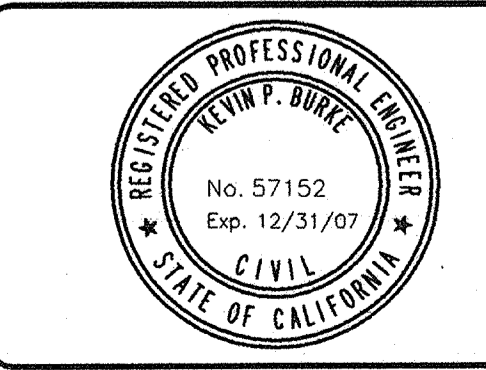


**PUMP CAN DETAIL**  
SCALE: 1/2" = 1'-0"

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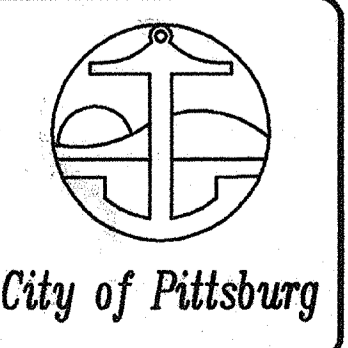


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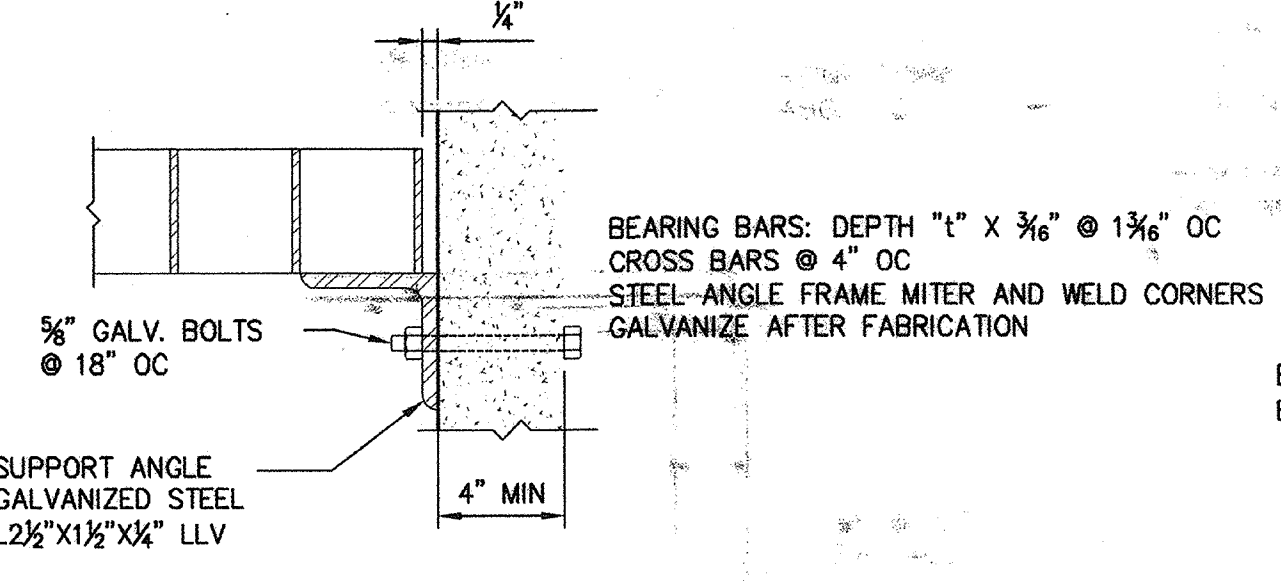
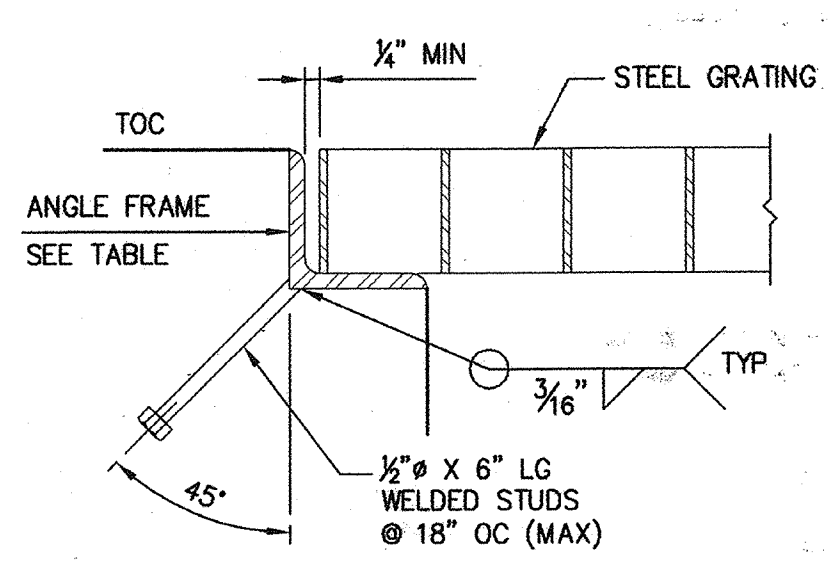
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DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

APPROVED BY:  
**HIGH LEVEL PUMP STATION**  
**MISCELLANEOUS DETAILS NO. 1**



**S6**  
**37 of 77**

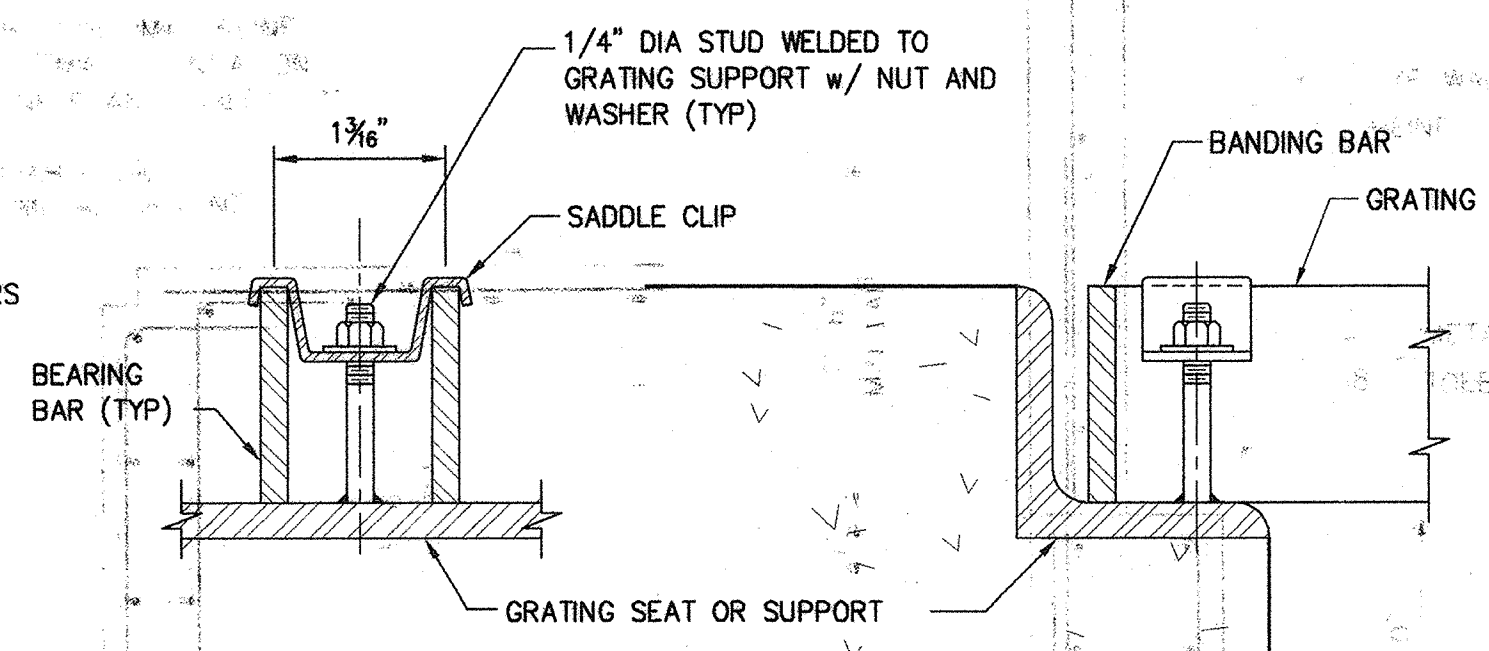
H:\DATA\60100165\CADD\STRUCT\PMPSSTA HIGH-LEVEL\LDV\165HLS6.DWG GF 8/7/07 10:25 am



GRATING FRAME TABLE					
TYPE	GRATING DEPTH "t"	FRAME ANGLE	TYPE	GRATING DEPTH "t"	FRAME ANGLE
1	1"	1 3/4" x 1 1/2" x 1/4"	5	2"	2 1/2" x 2 1/2" x 1/2"
2	1 1/4"	2" x 1 1/2" x 1/4"	6	2 1/4"	2 1/2" x 2 1/2" x 1/4"
3	1 1/2"	1 3/4" x 1 1/2" x 1/4"	7	2 1/2"	3" x 2 1/2" x 1/2"
4	1 3/4"	2" x 2" x 1/4"			

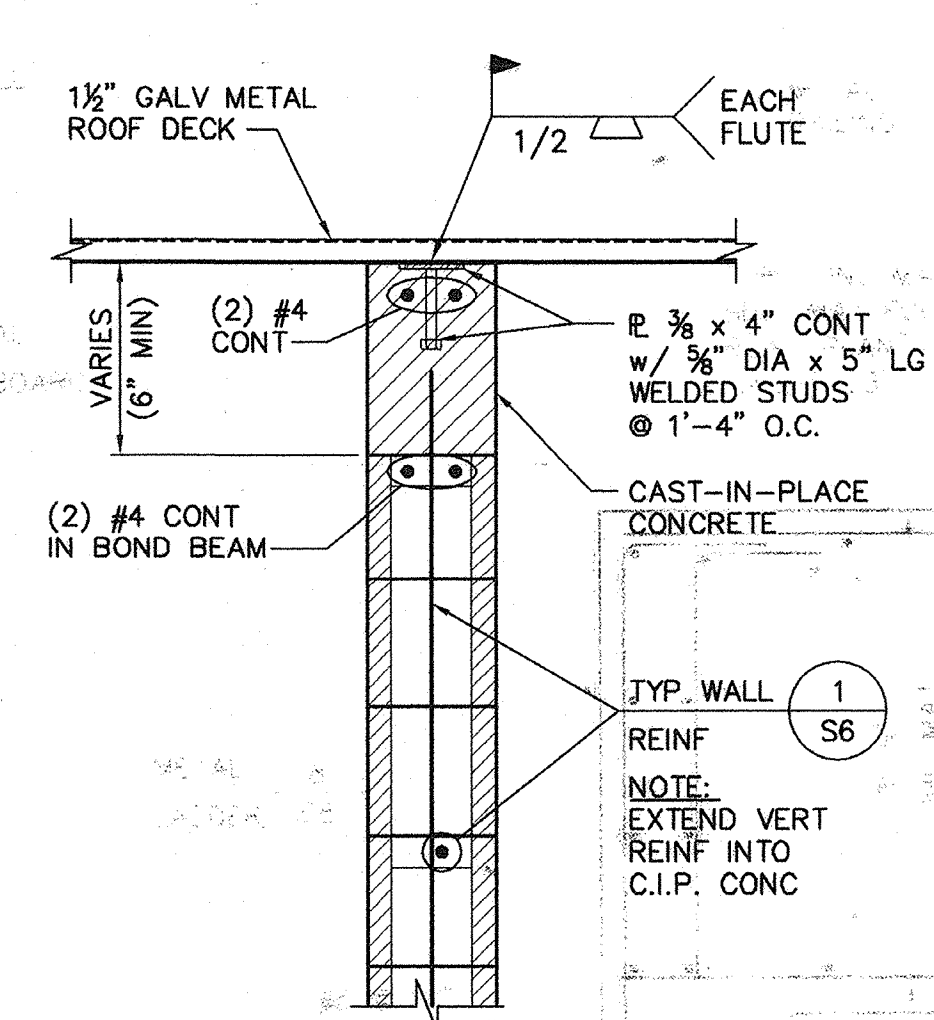
- NOTES:**
- GRATING SHALL BE GALVANIZED STEEL UNLESS OTHERWISE NOTED.
  - GRATING DEPTH "t" AS NOTED ON PLANS SHALL BE AS SPECIFIED HEREIN.
  - ALL ENDS AND OPENINGS SHALL BE Banded.
  - ALL GRATING SHALL BE SECURED IN PLACE WITH REMOVABLE FASTENERS.
  - WEIGHT OF GRATING SECTION SHALL NOT EXCEED 80 LBS.

**GRATING SUPPORT DETAIL 1**  
NO SCALE

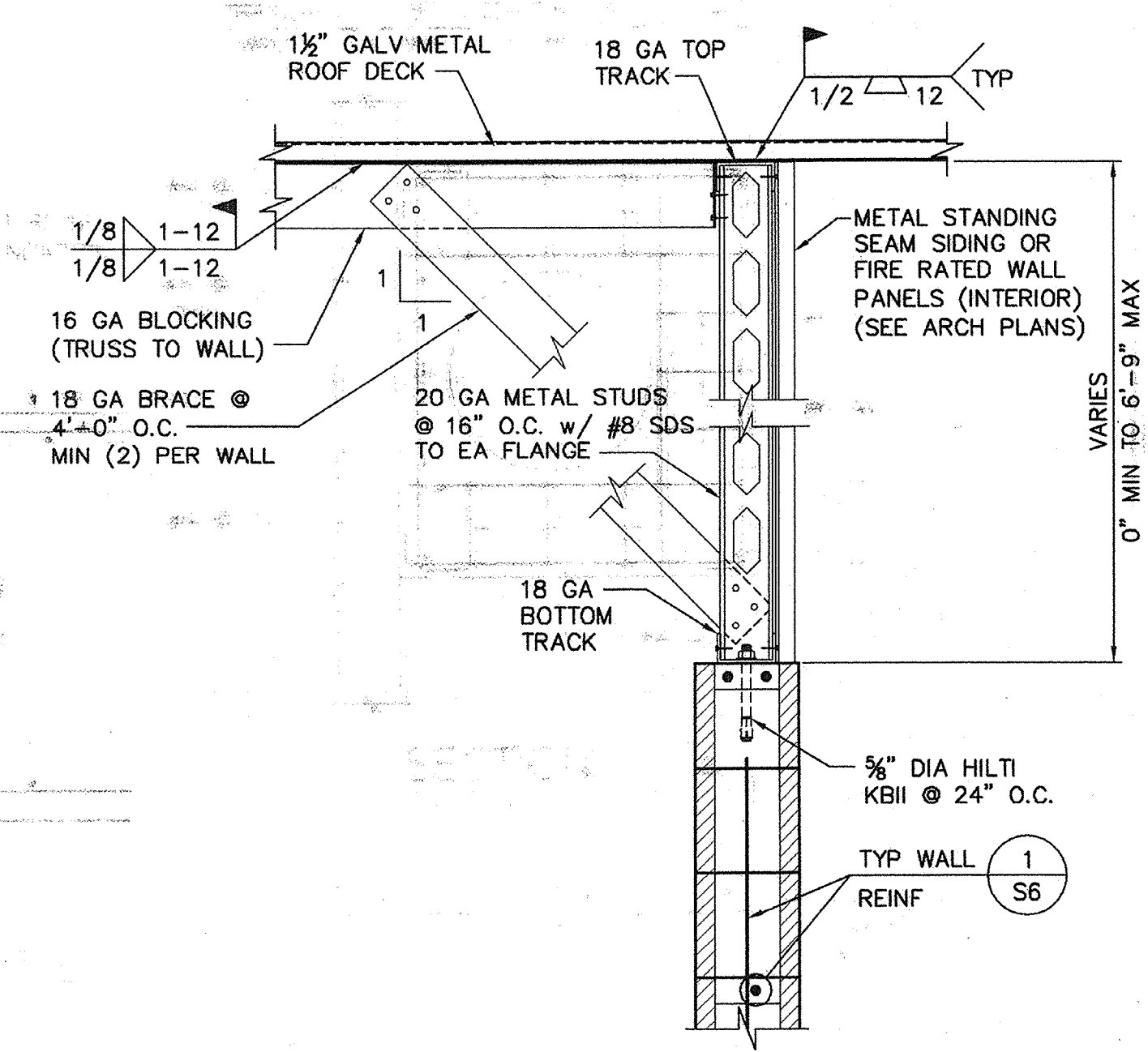


- NOTE:**
- PROVIDE 4 CLIPS PER GRATING PANEL, APPROXIMATELY 4 INCHES FROM PANEL CORNERS. MAXIMUM CLIP SPACING AT 36 INCHES O.C.
  - STUD, NUT, WASHER AND CLIP TO BE THE SAME MATERIAL AS THE GRATING.

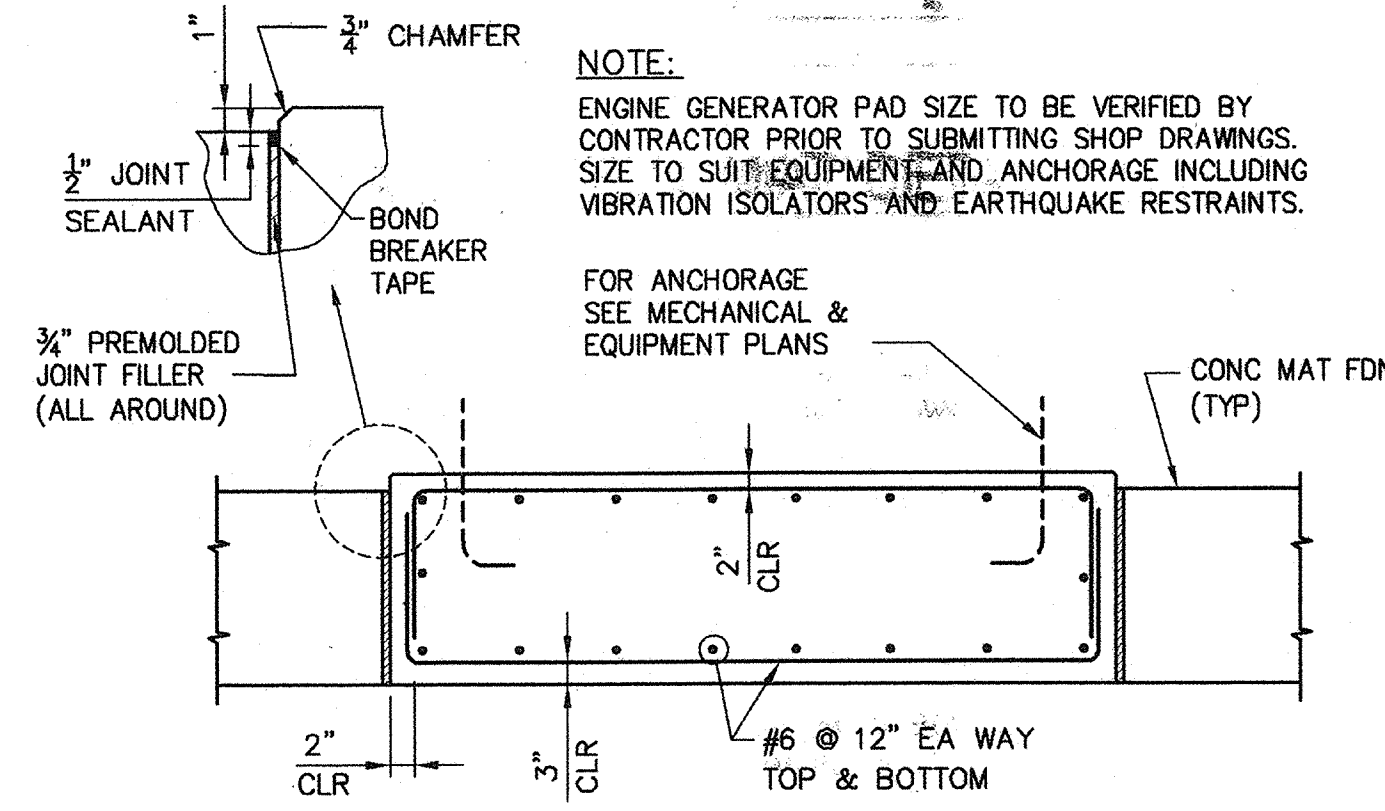
**GRATING ANCHOR DETAIL 2**  
NO SCALE



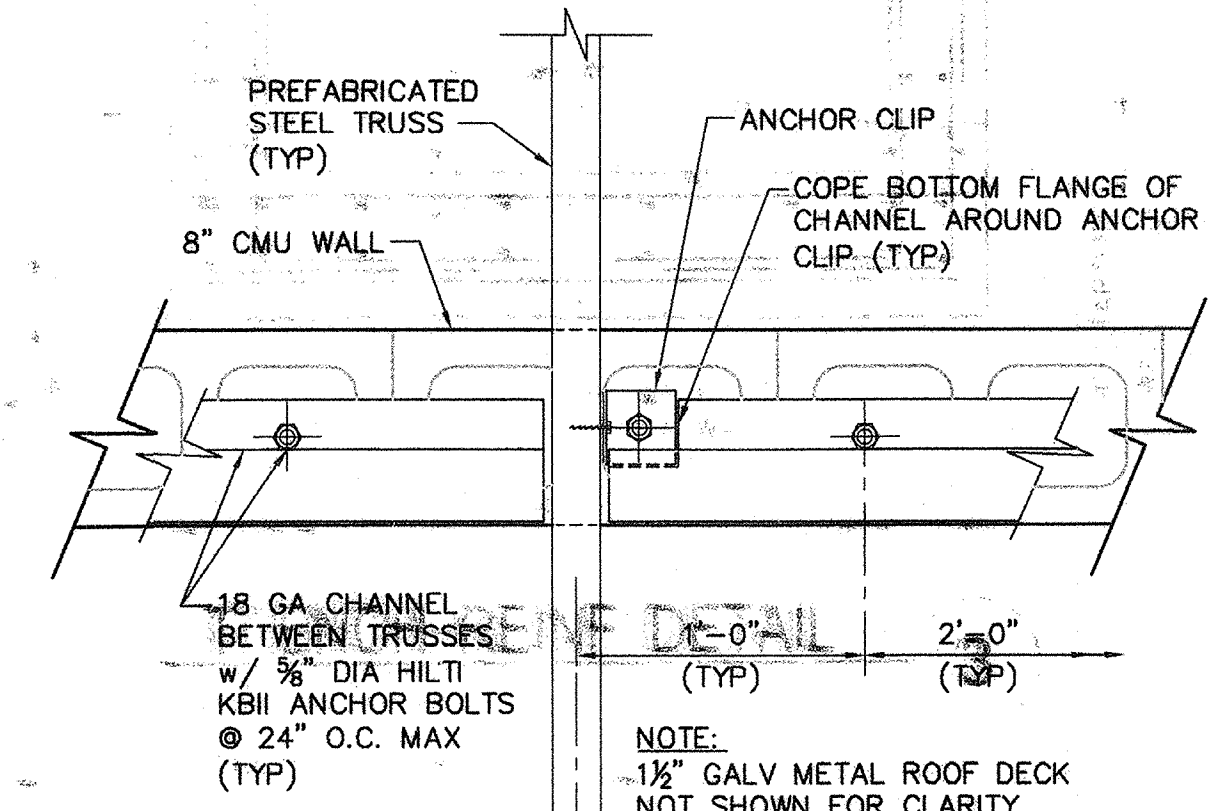
**C.I.P. CONCRETE ON CMU WALL DETAIL 3**  
SCALE: 1" = 1'-0"



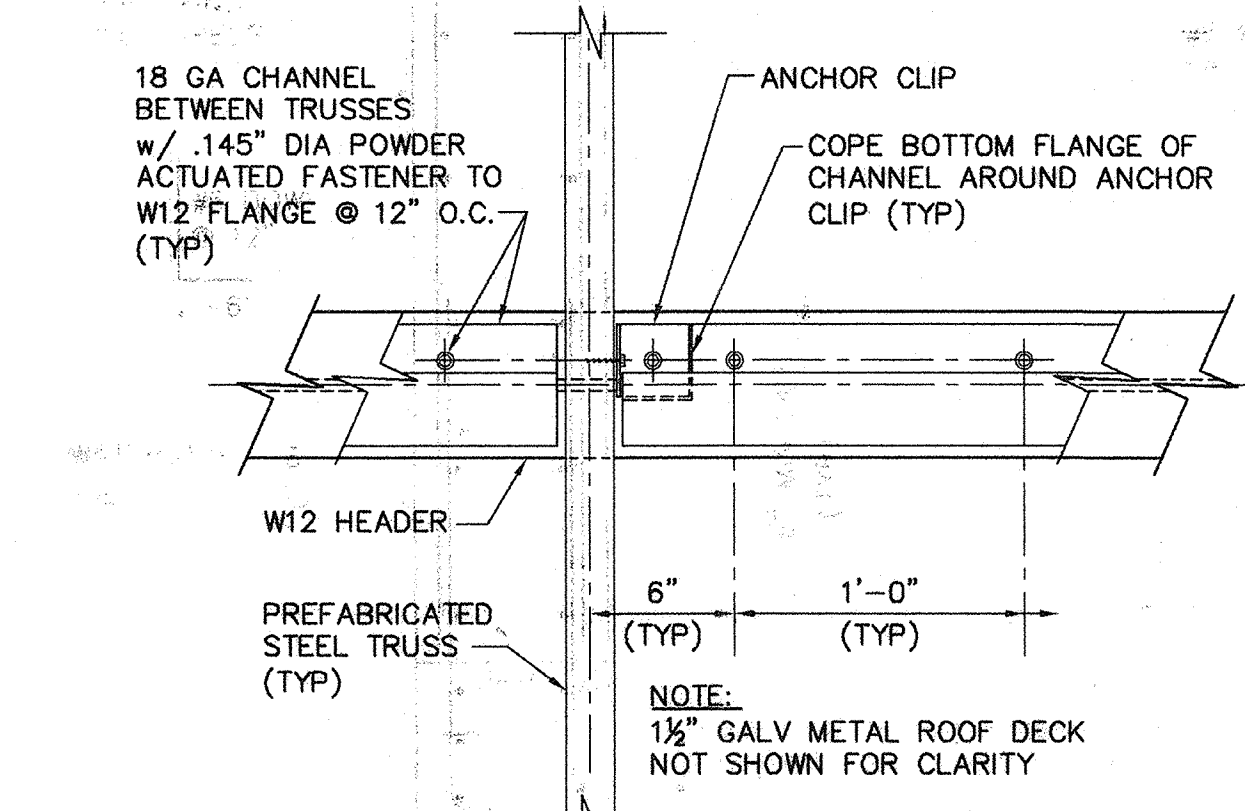
**METAL STUD DETAIL 4**  
SCALE: 1" = 1'-0"



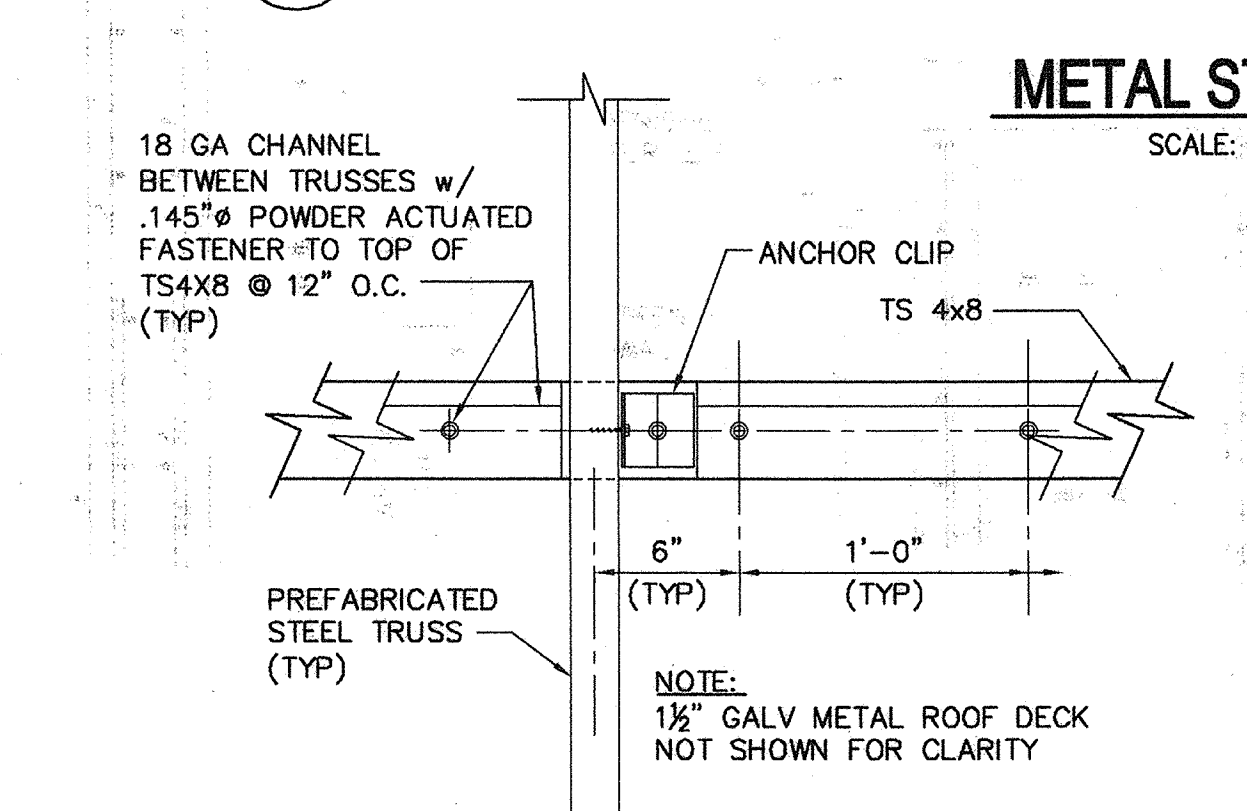
**GENERATOR PAD DETAIL 5**  
NO SCALE



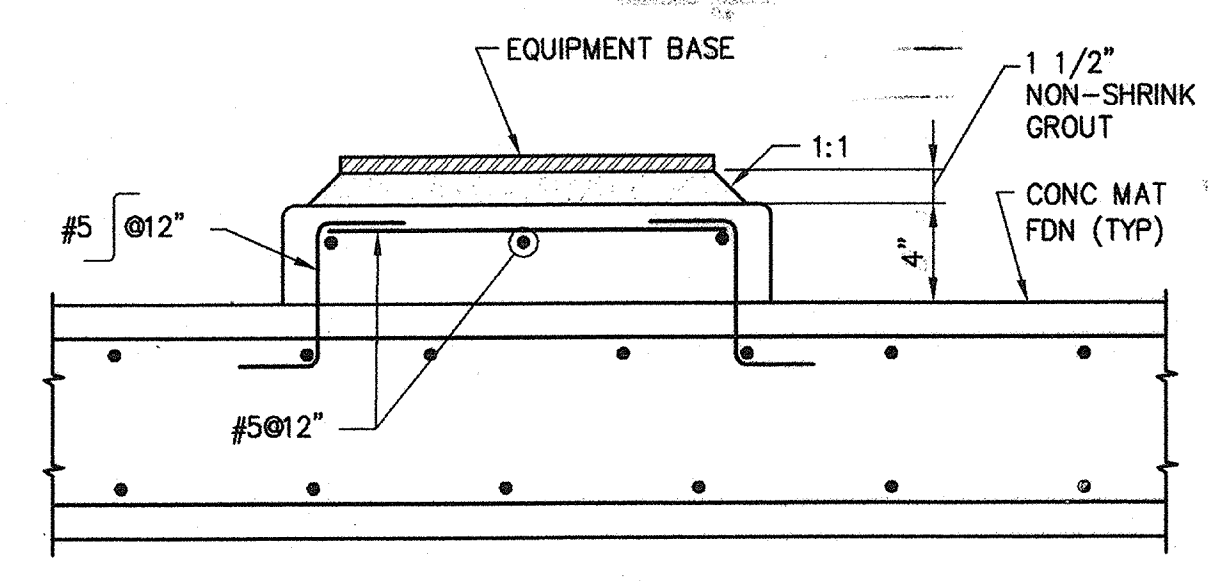
**PLAN SECTION F-F**  
SCALE: 1 1/2" = 1'-0"



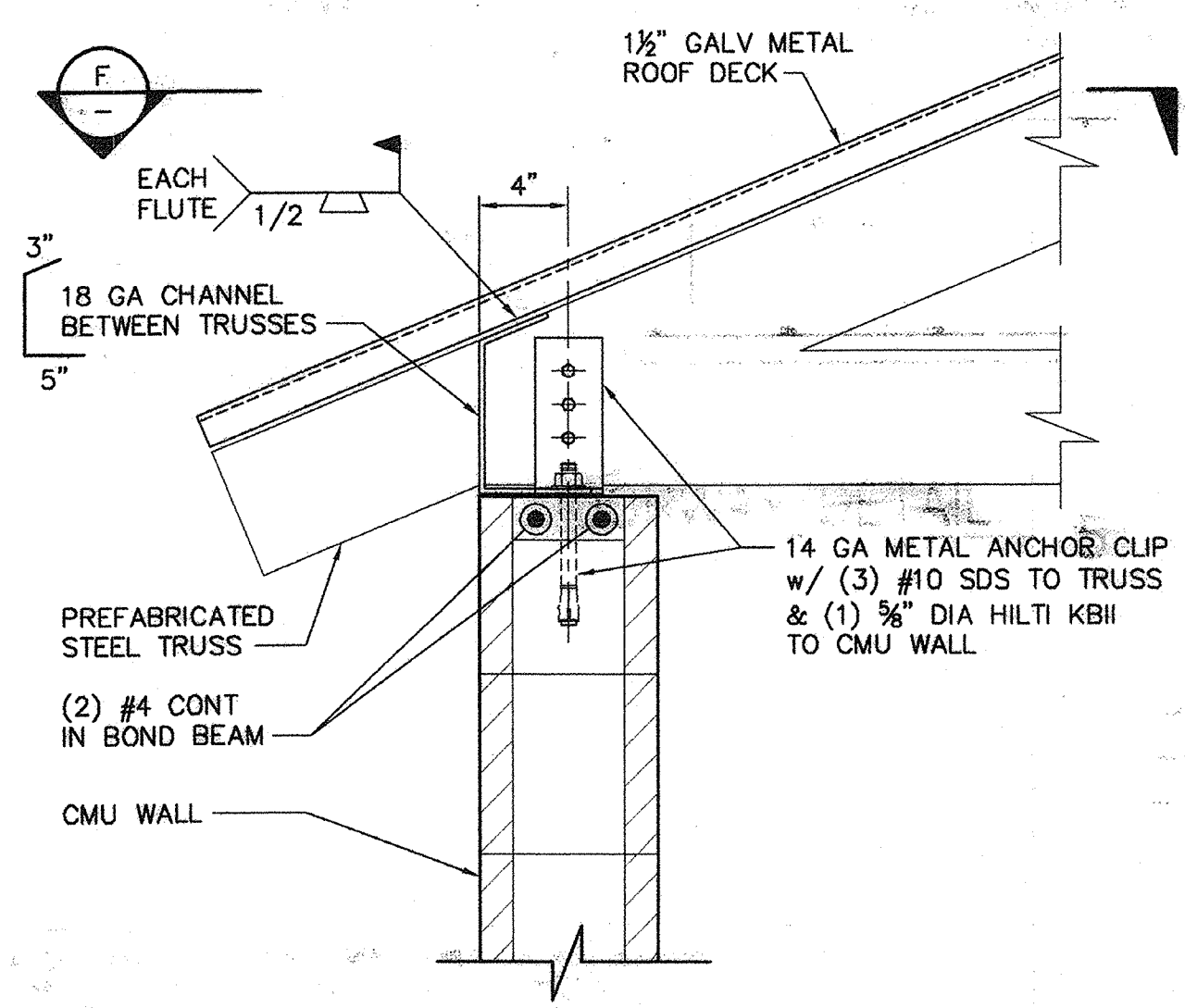
**PLAN SECTION G-G**  
SCALE: 1 1/2" = 1'-0"



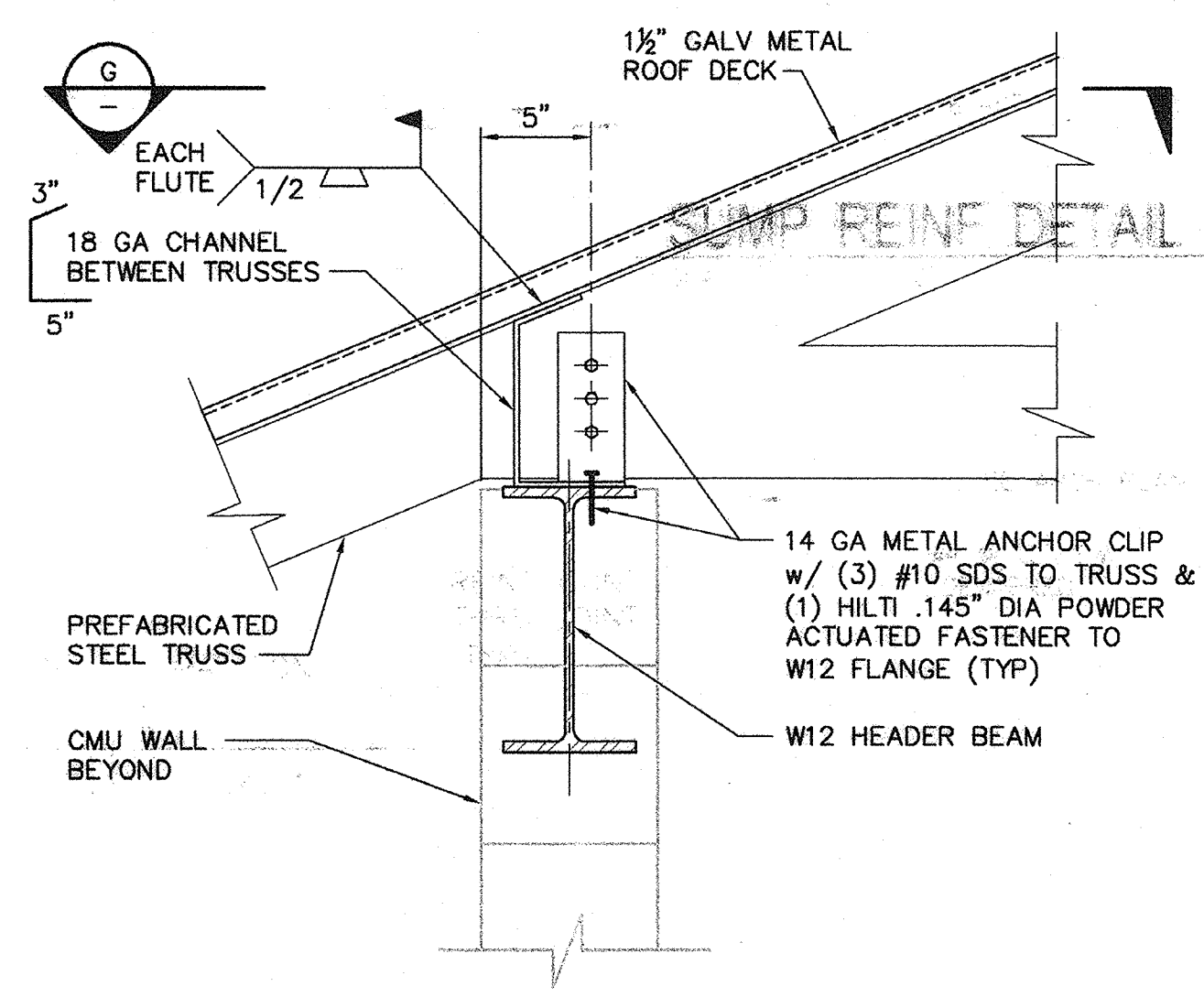
**PLAN SECTION H-H**  
SCALE: 1 1/2" = 1'-0"



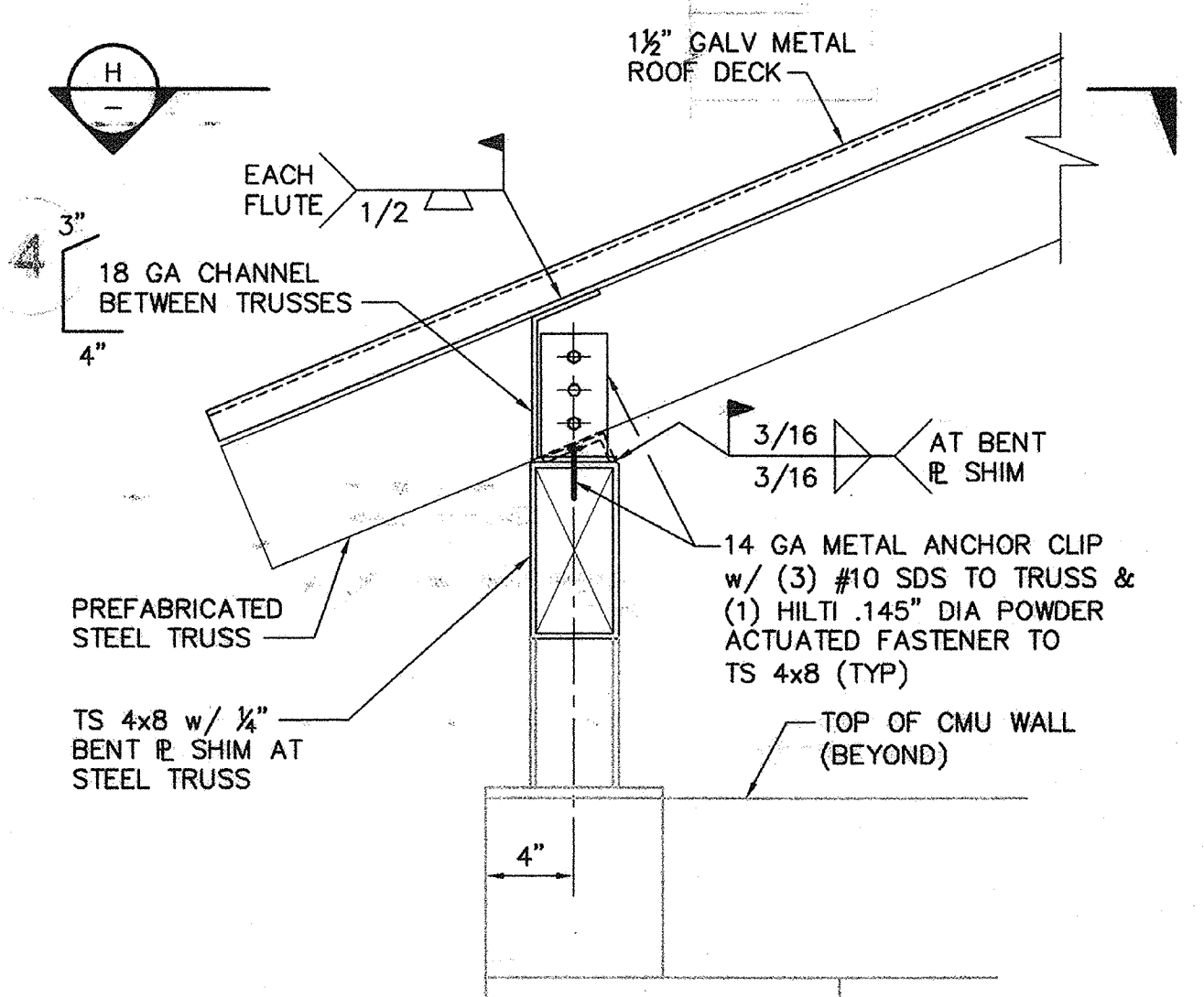
**HOUSEKEEPING PAD DETAIL 6**  
NO SCALE



**TRUSS TO CMU WALL CONN DETAIL 7**  
SCALE: 1 1/2" = 1'-0"



**TRUSS TO W12 CONN DETAIL 8**  
SCALE: 1 1/2" = 1'-0"



**TRUSS TO TS4x8 CONN DETAIL 9**  
SCALE: 1 1/2" = 1'-0"

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Kevin P. Burke  
57152 R.C.E. NO. 8-7-07 DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: C. SHENOY  
DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

APPROVED BY:

**HIGH LEVEL PUMP STATION**  
**MISCELLANEOUS DETAILS NO. 2**

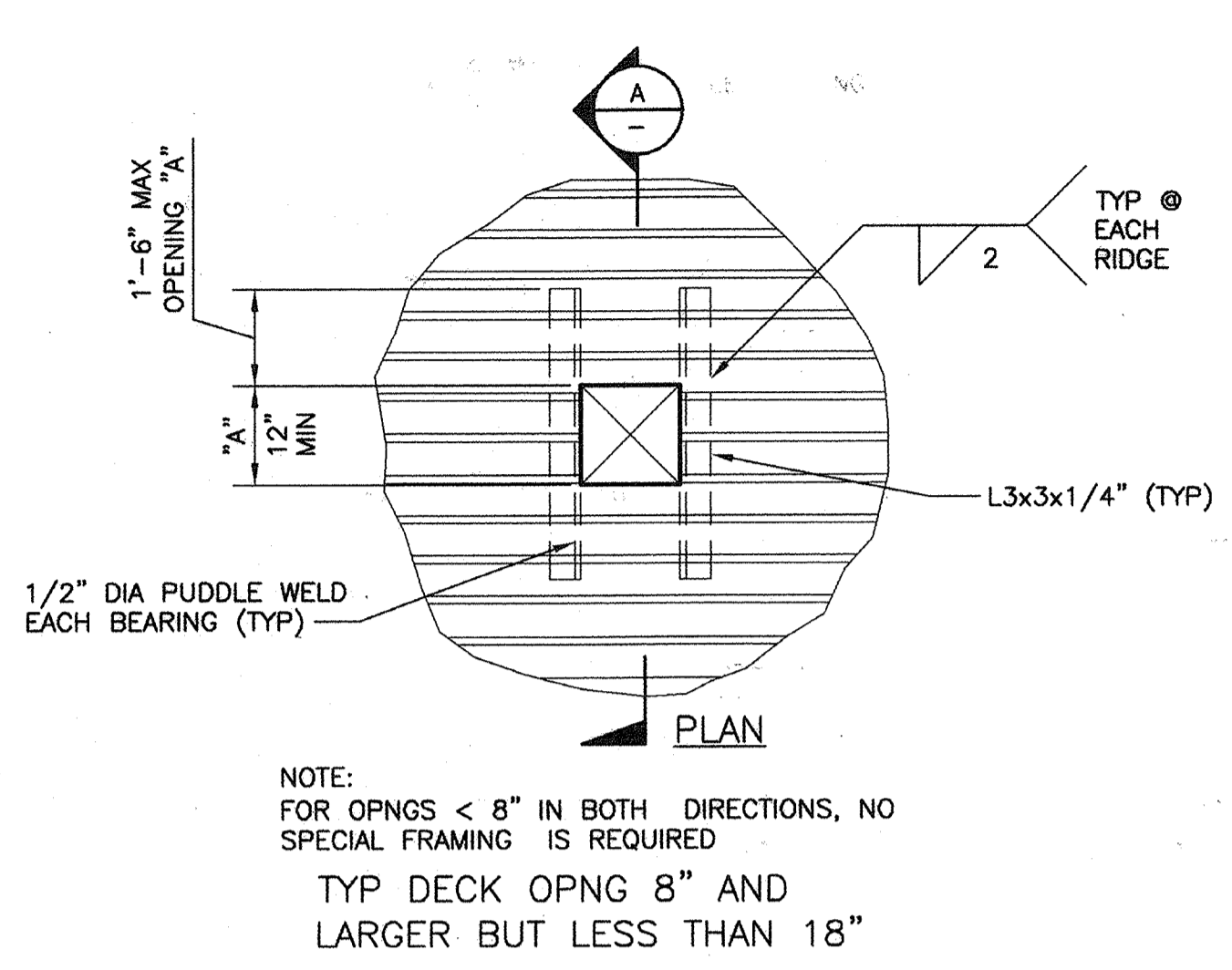
City of Pittsburg

**S7**  
**38 of 77**

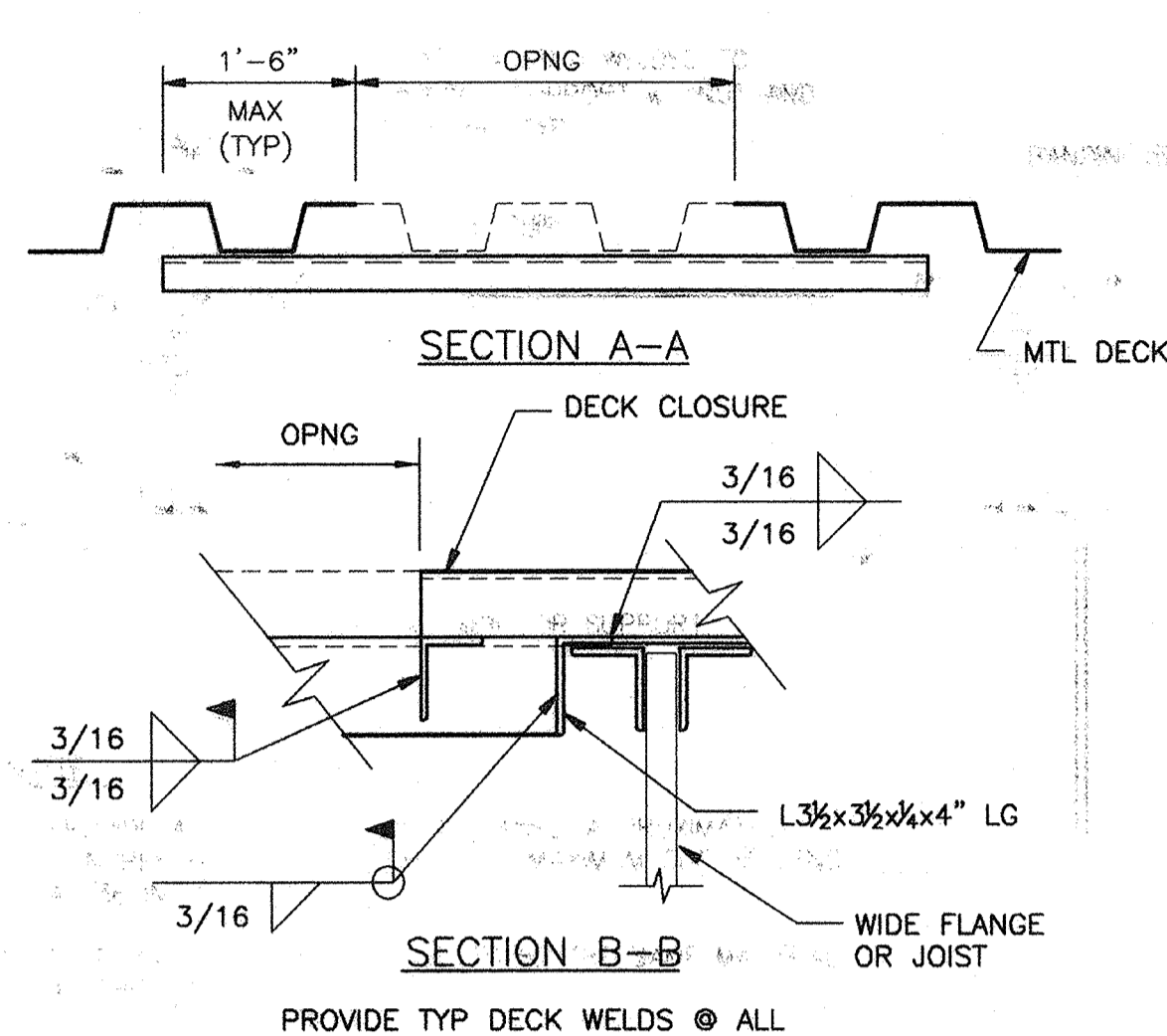
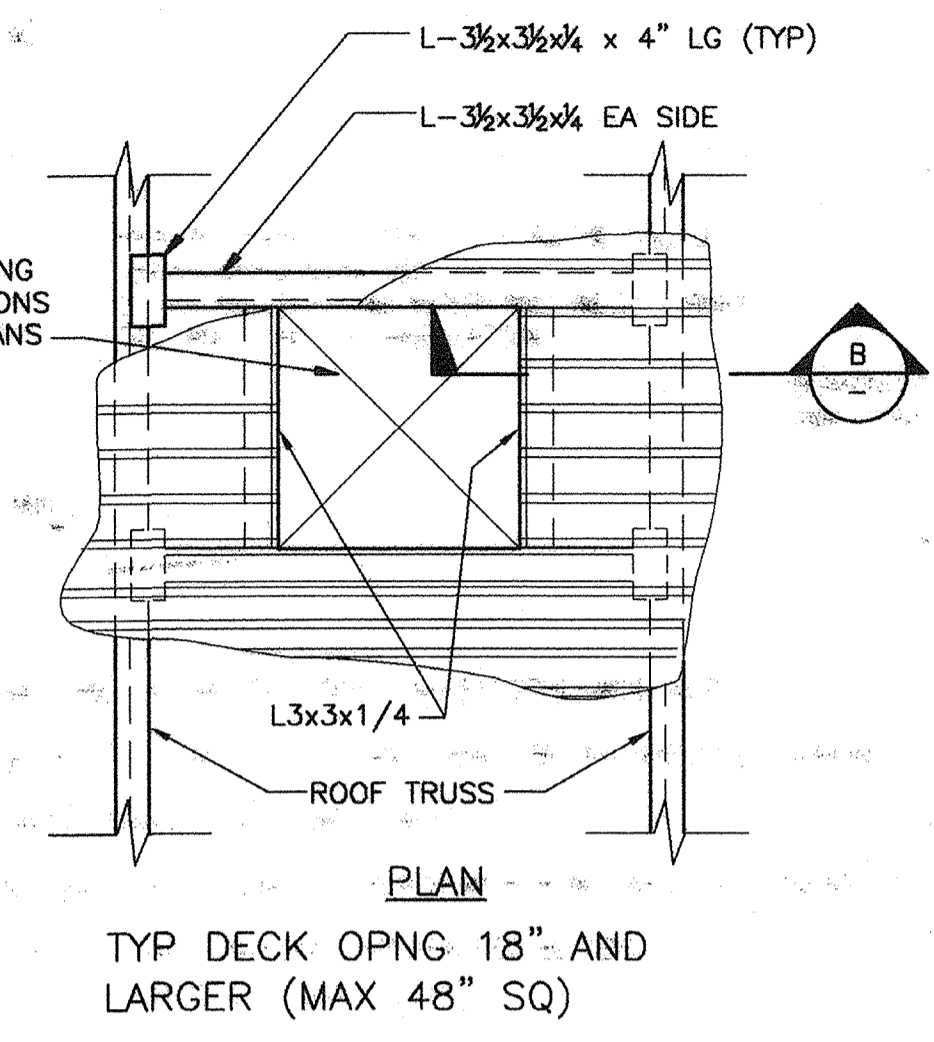
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H:\PDATA\60100165\SCADD\STRUC\PMPSSTA\HIGH-LEVEL\DLV\165HLS7.DWG G1F 8/7/07 10:26 am

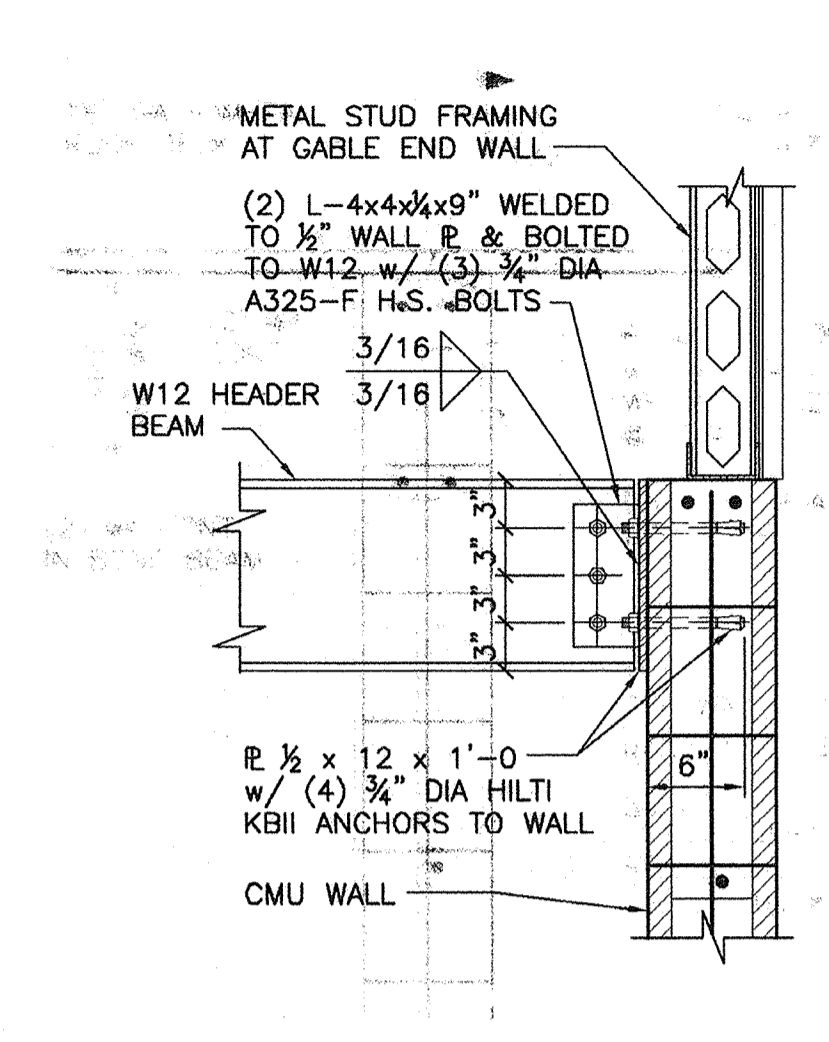
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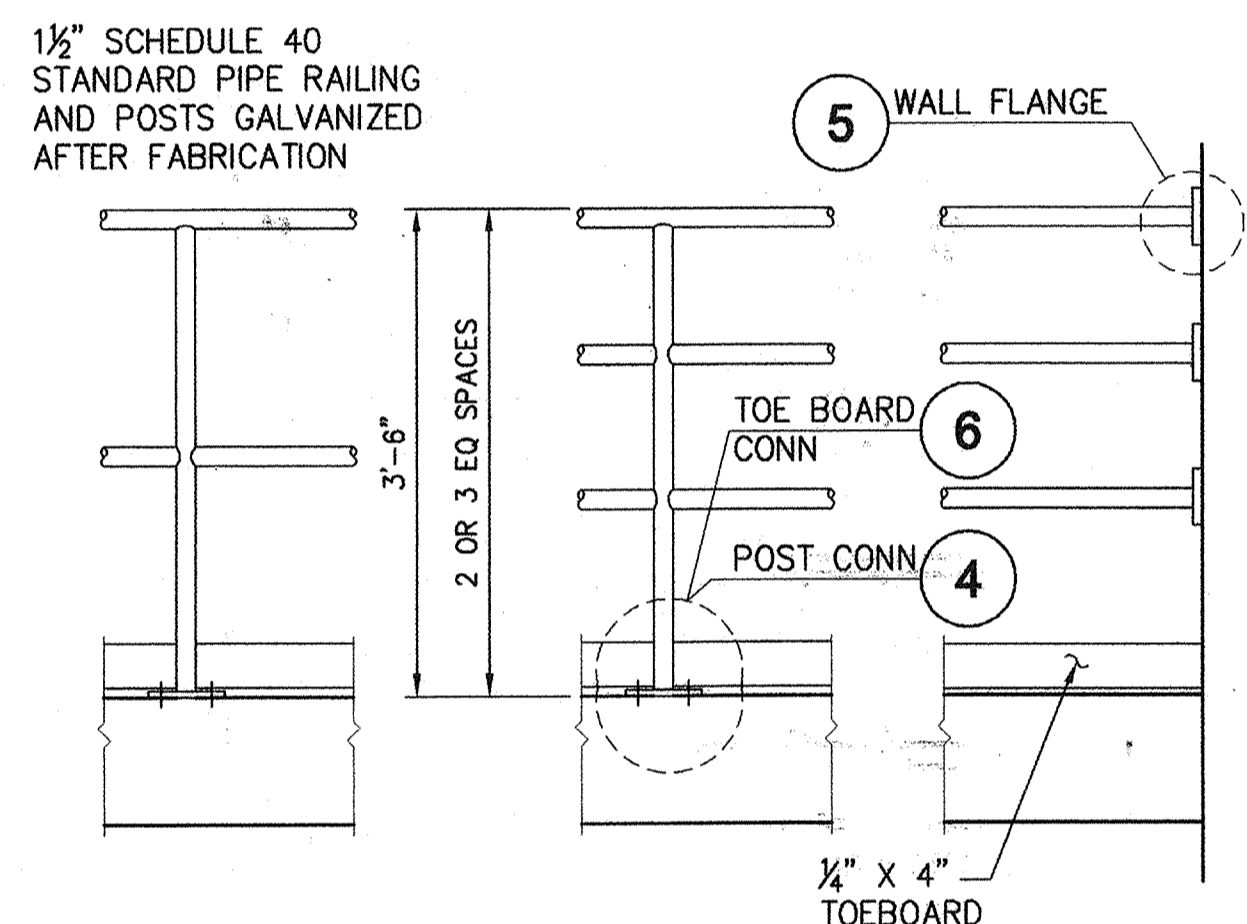
**METAL DECK OPENING FRAMING DETAIL** 1  
NO SCALE



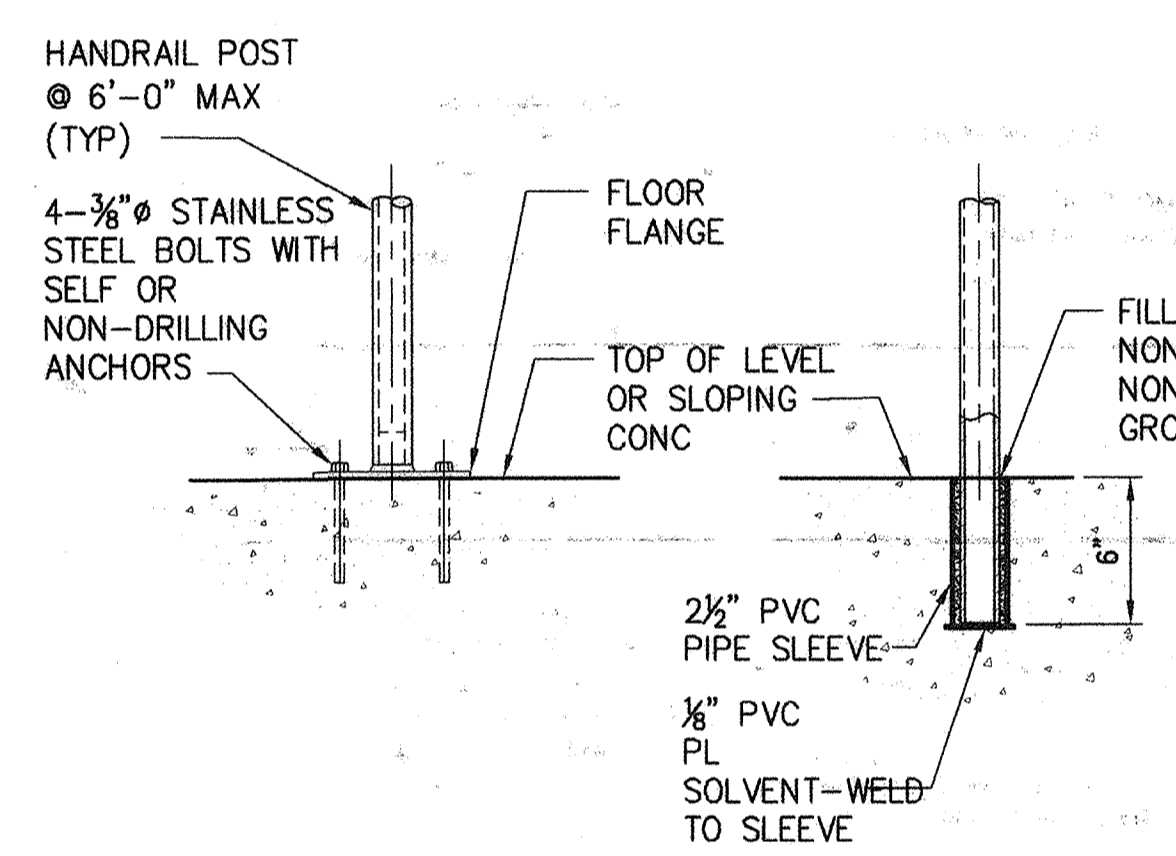
**GRATING ANCHOR DETAIL** 2  
NO SCALE



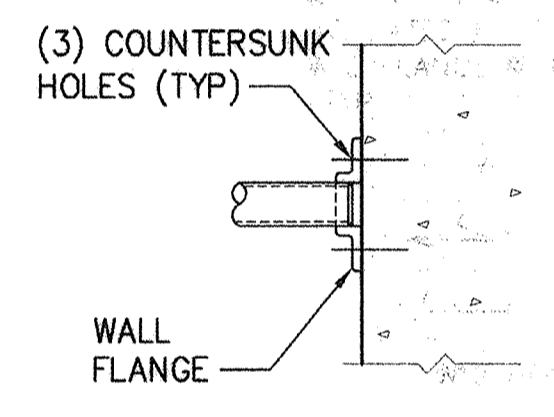
**W12 TO CMU WALL CONN DETAIL** 2  
SCALE: 1" = 1'-0"



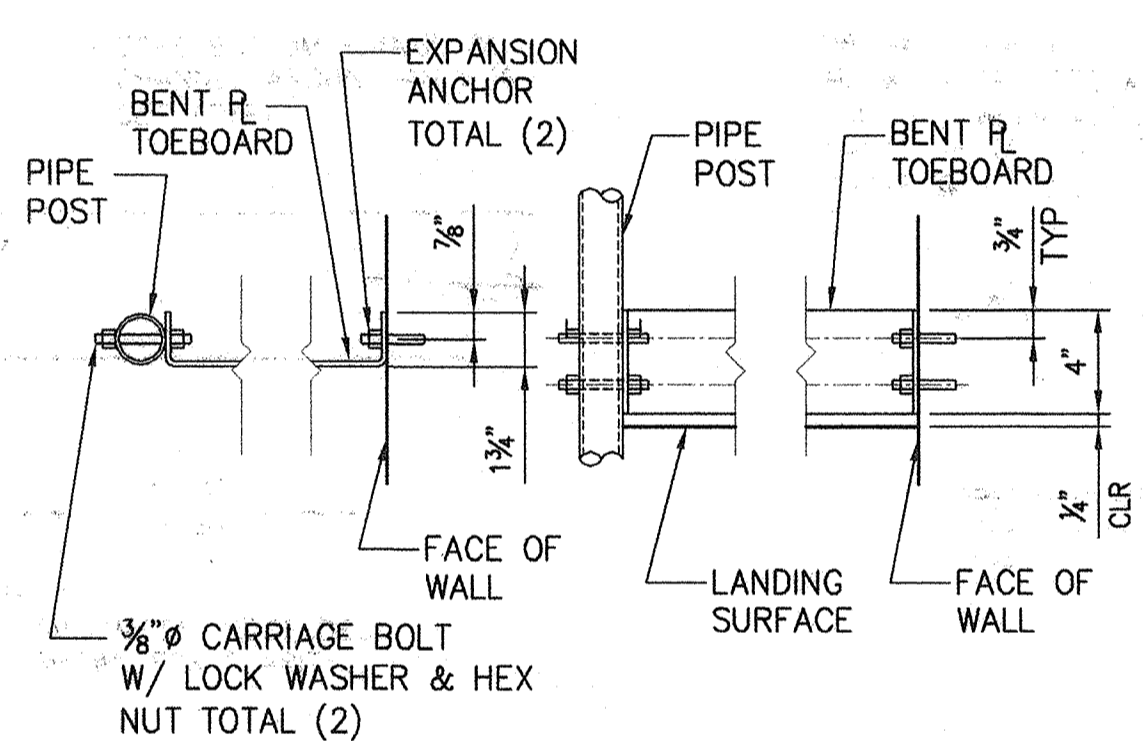
**METAL RAILING DETAIL** 3  
NO SCALE



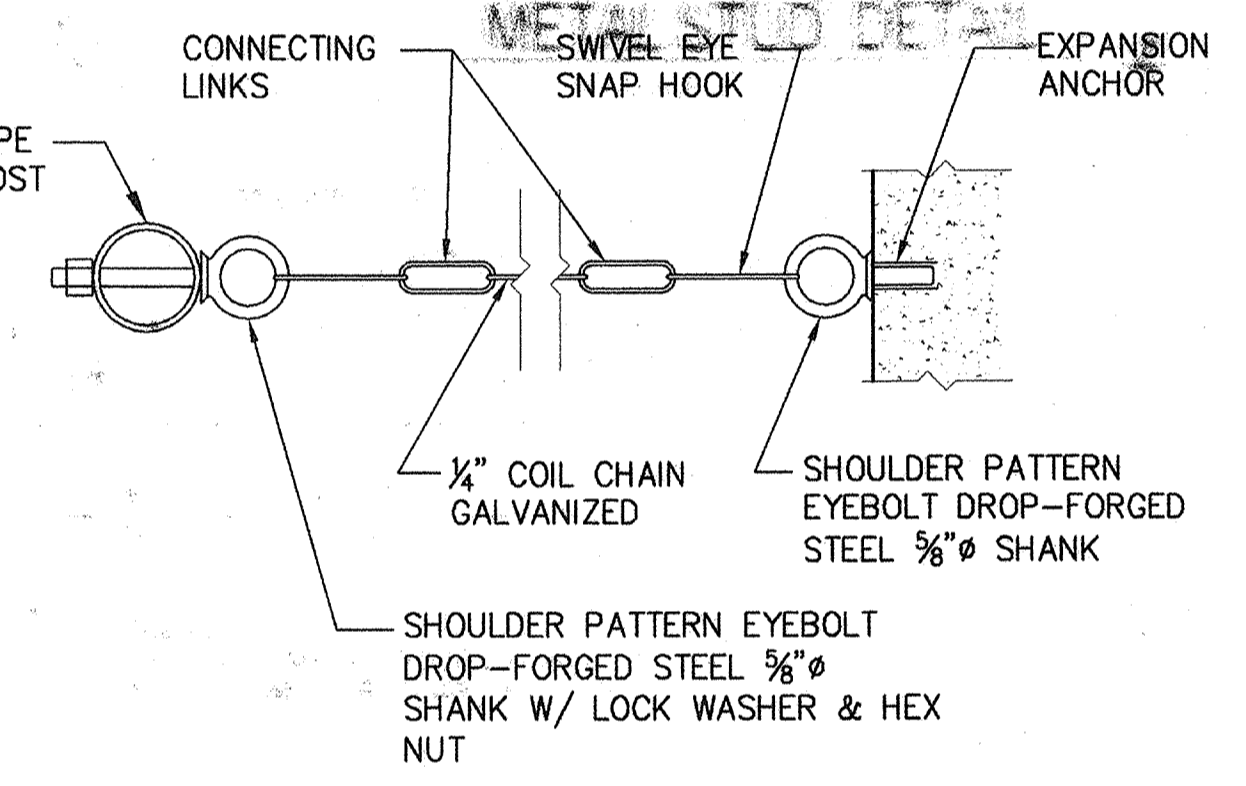
**HANDRAIL POST SUPPORT DETAIL** 4  
NO SCALE



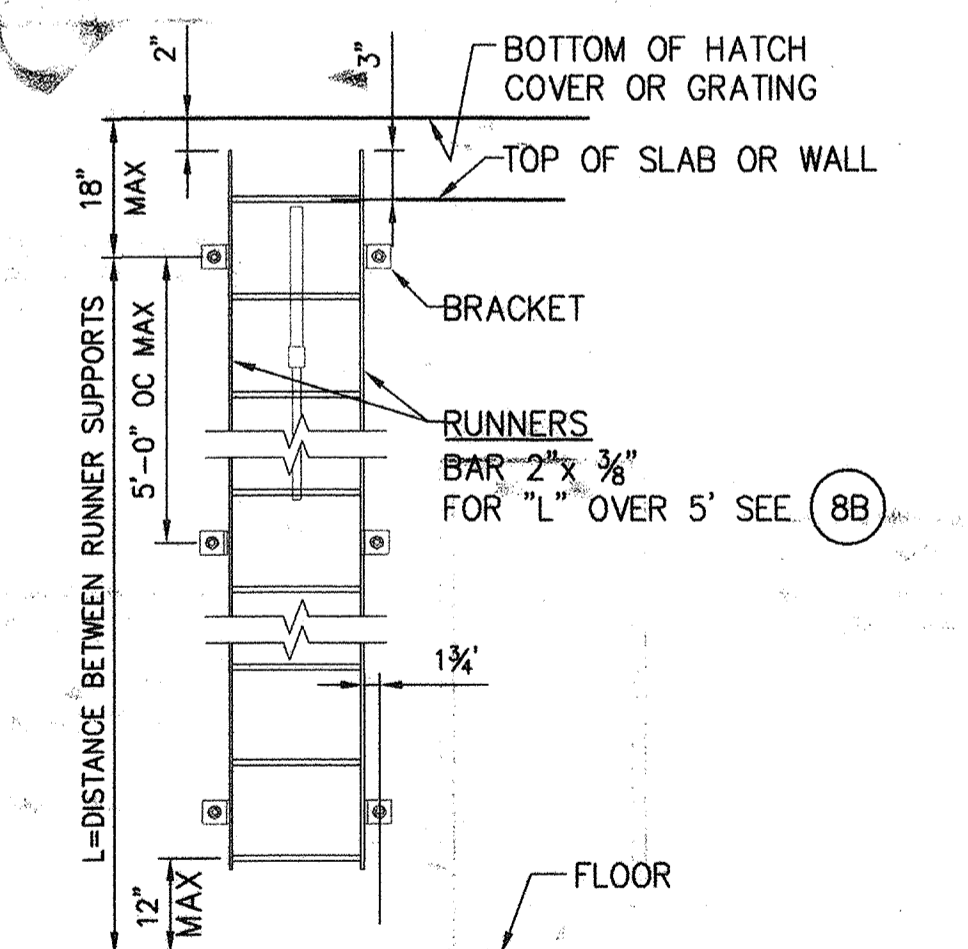
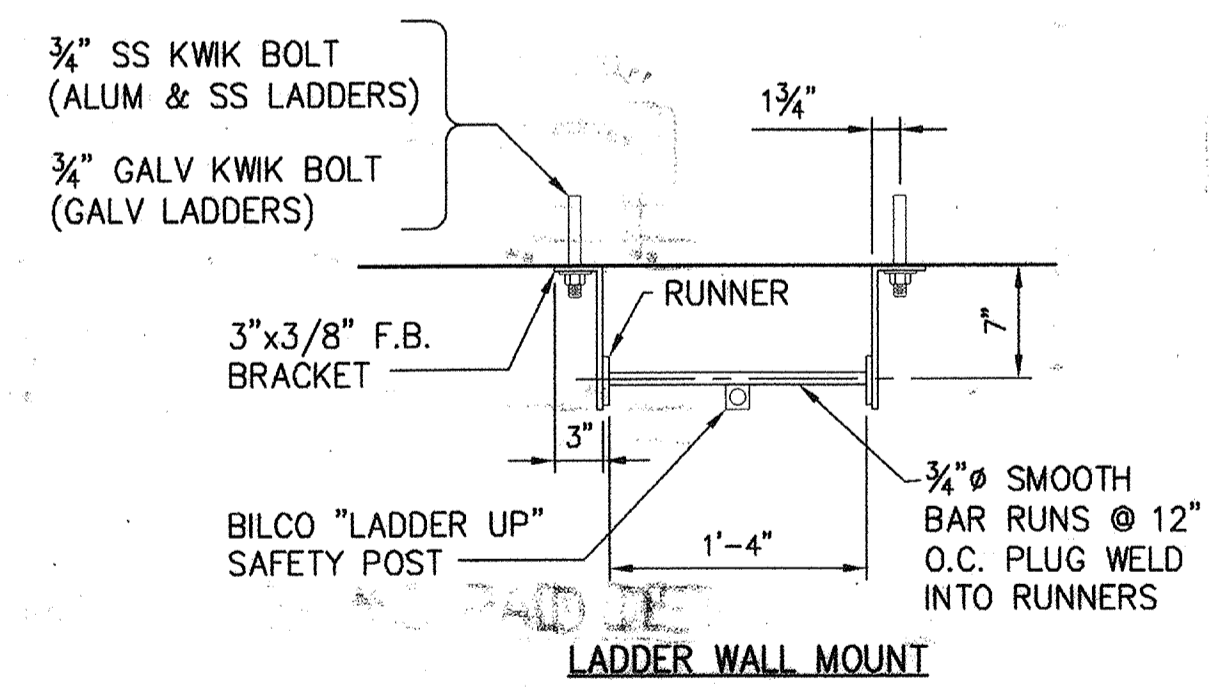
**HANDRAIL SUPPORT DETAIL** 5  
NO SCALE



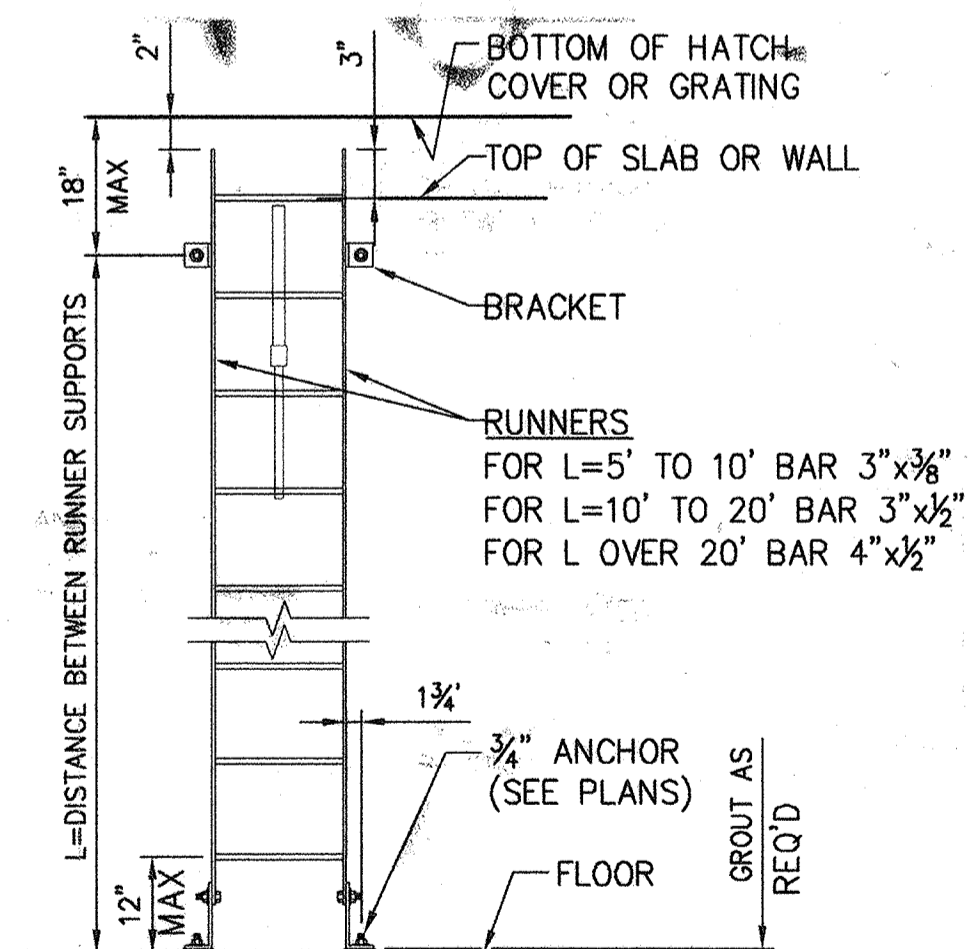
**TOEBOARD DETAIL** 6  
NO SCALE



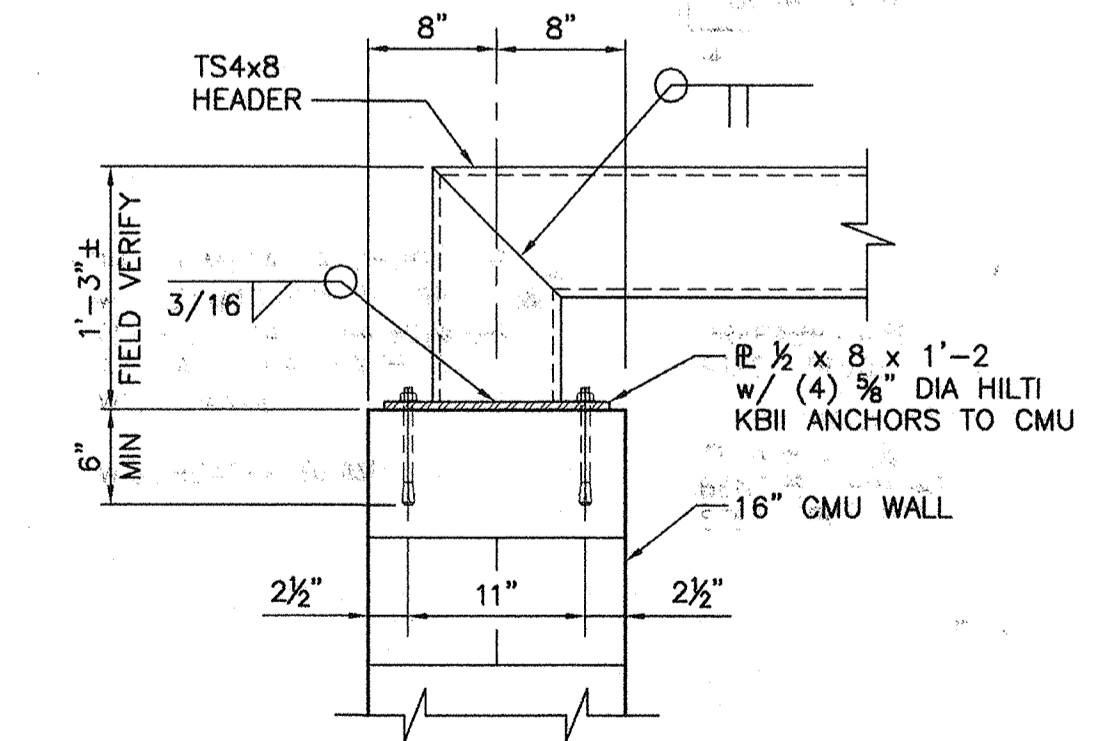
**CHAIN GUARD DETAIL** 7  
NO SCALE



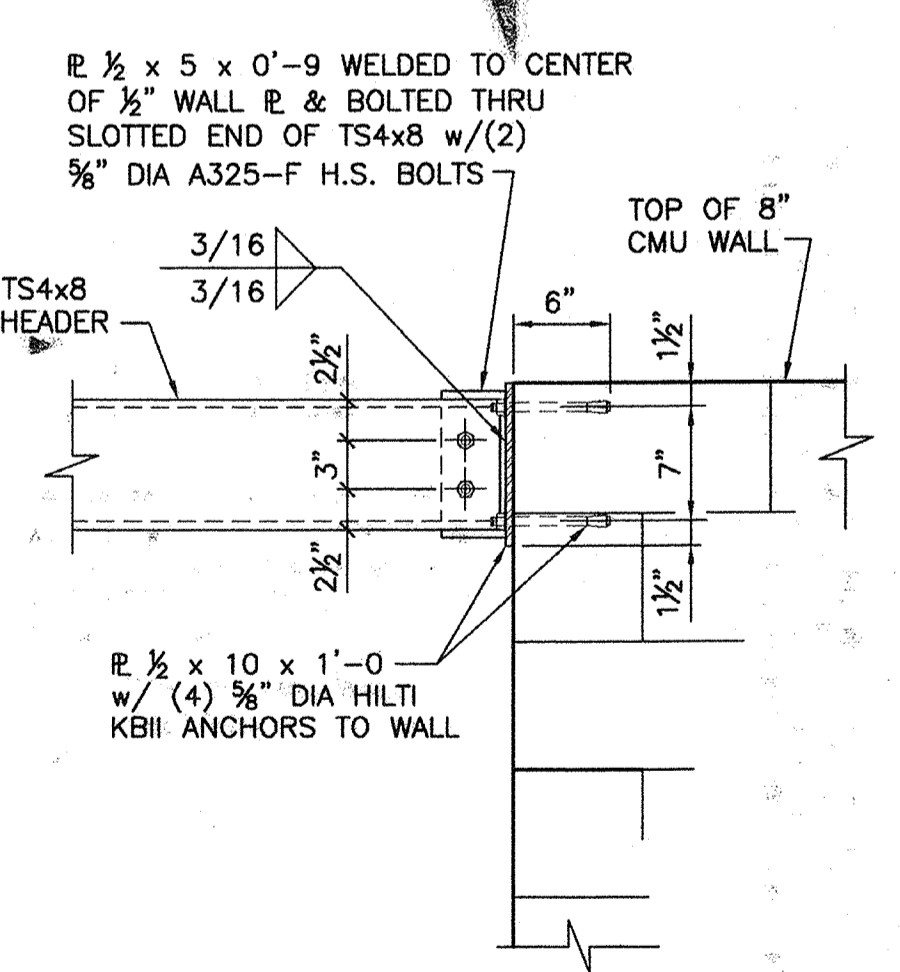
**LADDER WITH RUNNER SUPPORTS AT 5'-0" O.C. MAX** (8A)  
**LADDER DETAILS** 8  
NO SCALE



**LADDER WITH RUNNER SUPPORTS OVER 5'-0" O.C.** (8B)  
**LADDER DETAILS** 8  
NO SCALE



**TS4x8 HORIZONTAL CONN DETAIL** 9  
SCALE: 1" = 1'-0"



**TS4x8 VERTICAL CONN DETAIL** 10  
SCALE: 1" = 1'-0"

BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800) 227-2600 TWO WORKING DAYS BEFORE ALL PLANNED EXCAVATION WORK

CAUTION OVERHEAD ELECTRICAL FACILITIES EXIST WITHIN PROJECT AREA

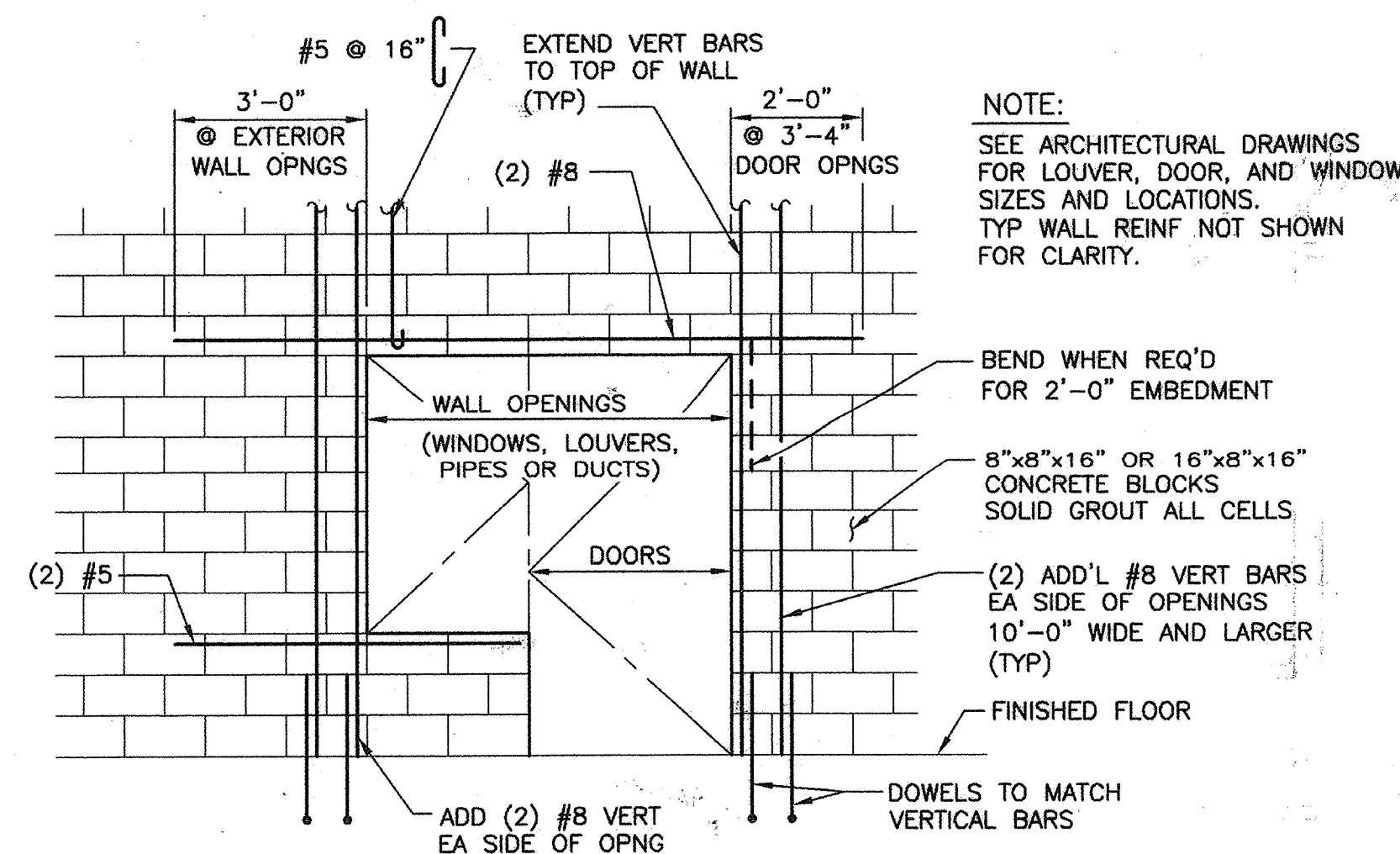
**RBF CONSULTING** PLANNING ■ DESIGN ■ CONSTRUCTION  
201 ARENA BOULEVARD, SUITE 250 SACRAMENTO, CALIFORNIA 95834-2303  
916.928.1113 • FAX 916.928.1117 • WWW.RBF.COM  
KEYVIN P. BURKE 57152 8-7-07 R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

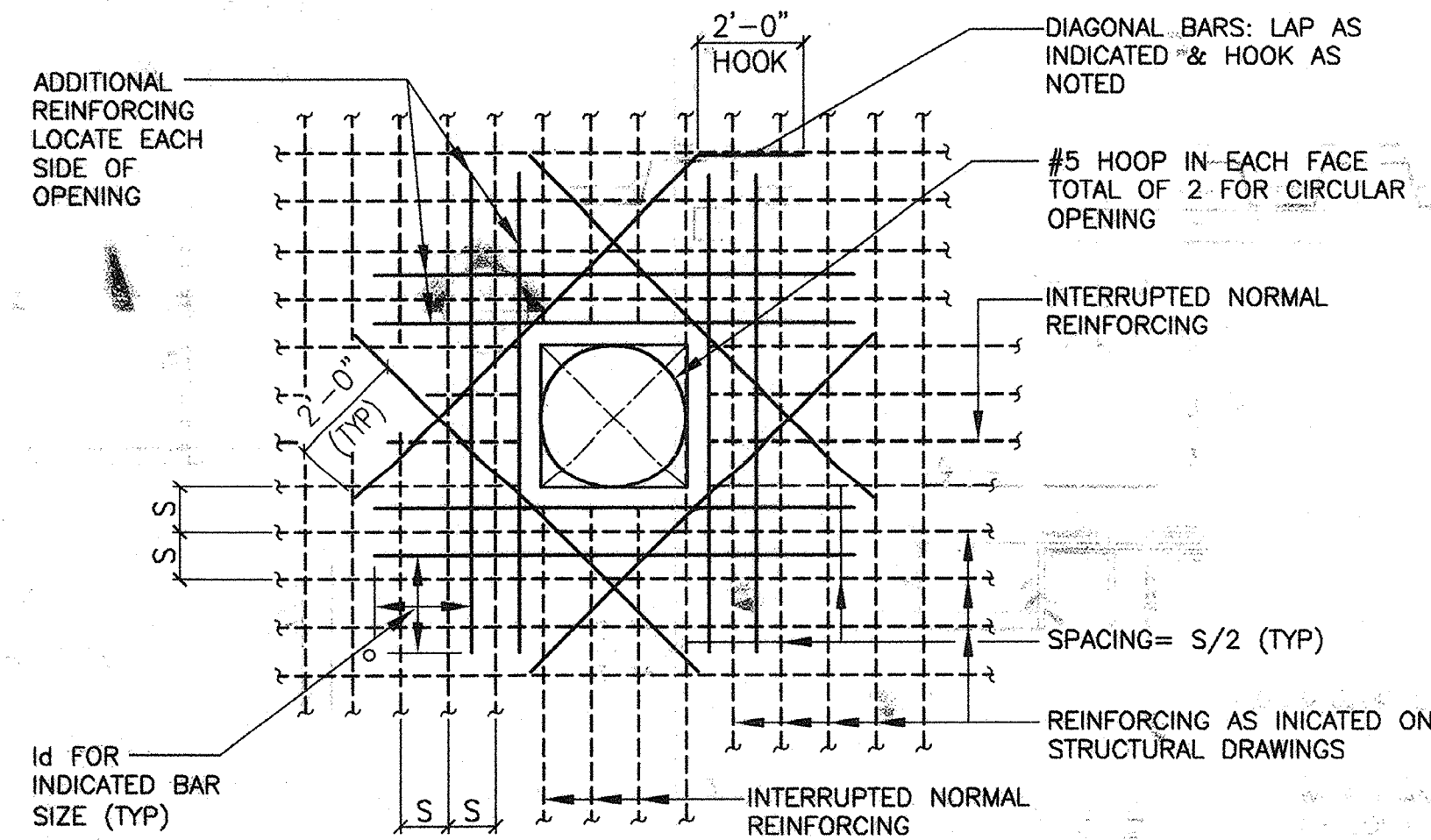
DESIGNED: C. SHENOY APPROVED BY:  
DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

**HIGH LEVEL PUMP STATION MISCELLANEOUS DETAILS NO. 3**



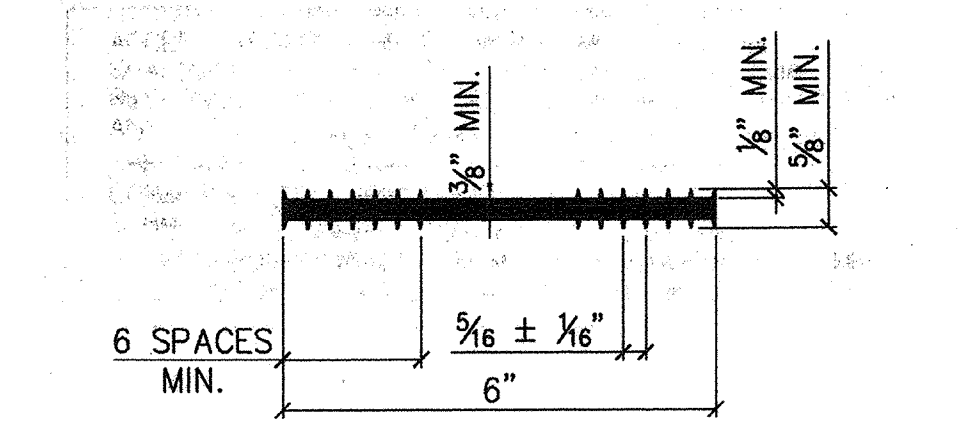


**TYP REINFORCING AT WALL OPENINGS** 1  
NO SCALE

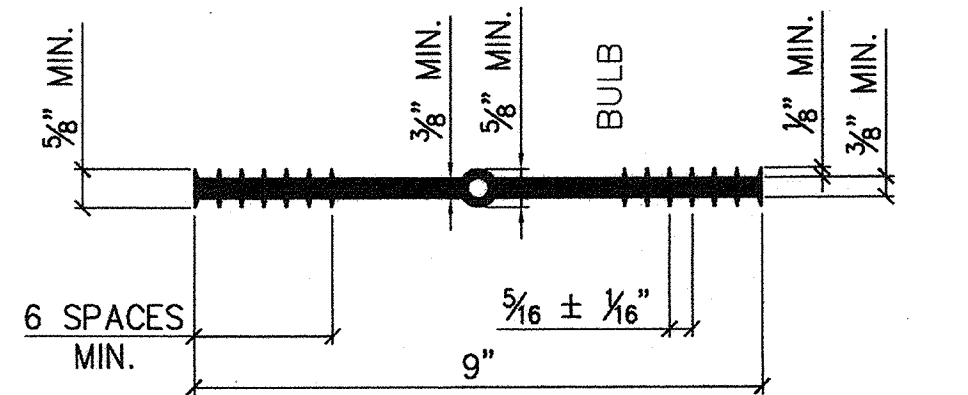


**ADDITIONAL REINFORCEMENT AT OPENINGS TO CON WALL CONN DETAIL** 2  
NO SCALE

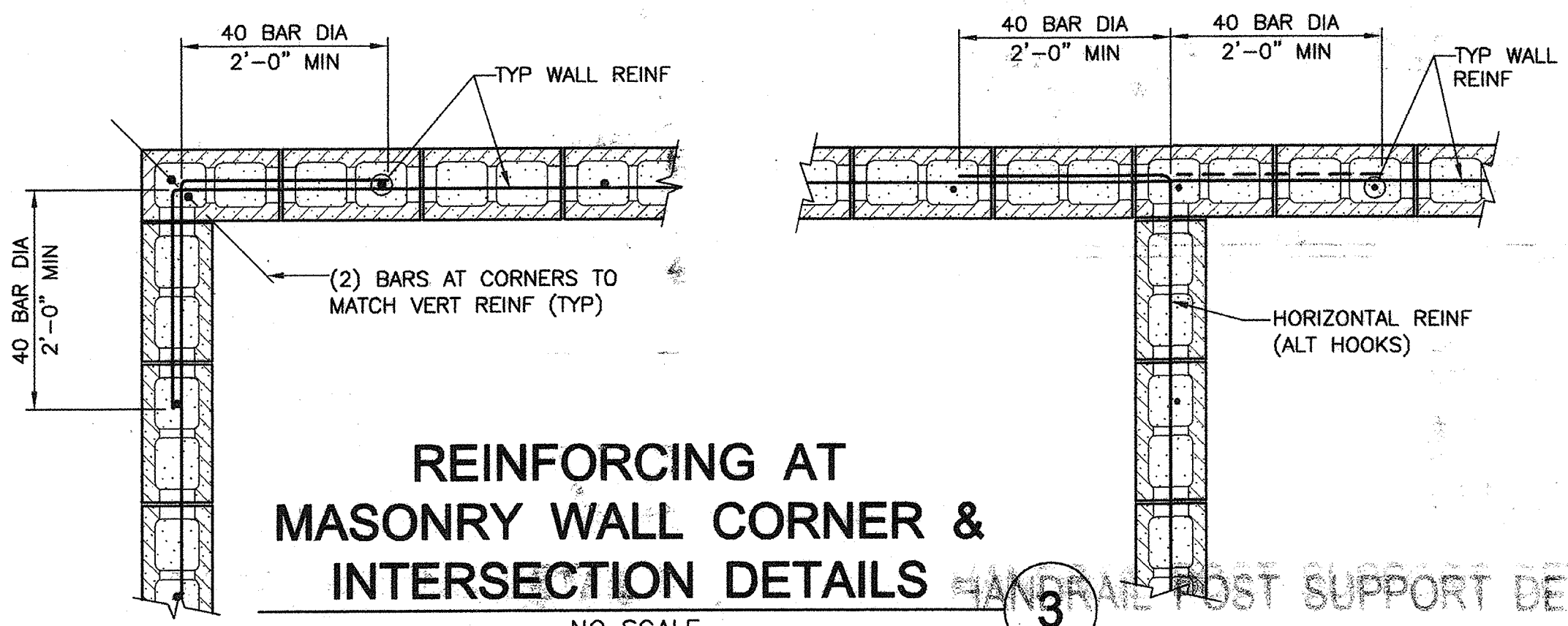
- NOTES:**
- NUMBER OF ADDITIONAL BARS EACH SIDE OF OPENING SHALL EQUAL 1/2 THE NUMBER OF INTERRUPTED BARS IN EACH LAYER OF REINFORCING.
  - SIZE OF ADDITIONAL REINFORCING BARS TO EQUAL SIZE OF INTERRUPTED REINFORCING BARS.
  - PROVIDE STANDARD HOOK ON BARS IF LAP LENGTH EXTENSION CANNOT BE OBTAINED OR AT JOINTS OR OTHER OBSTRUCTIONS. PLACE ADDITIONAL BARS IN SAME PLANES AS INTERRUPTED REINFORCING.
  - UNLESS NOTED OTHERWISE, SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINFORCING BAR CUT. LOCATE DIAGONAL IN EACH LAYER OF REINFORCING.
  - PLACE DIAGONAL BARS INSIDE INDICATED REINFORCING.
  - SPECIAL OPENING CONDITIONS SHALL BE AS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
  - ALL REINFORCING TO CLEAR OPENING OR FLANGE COLLARS BY 2".



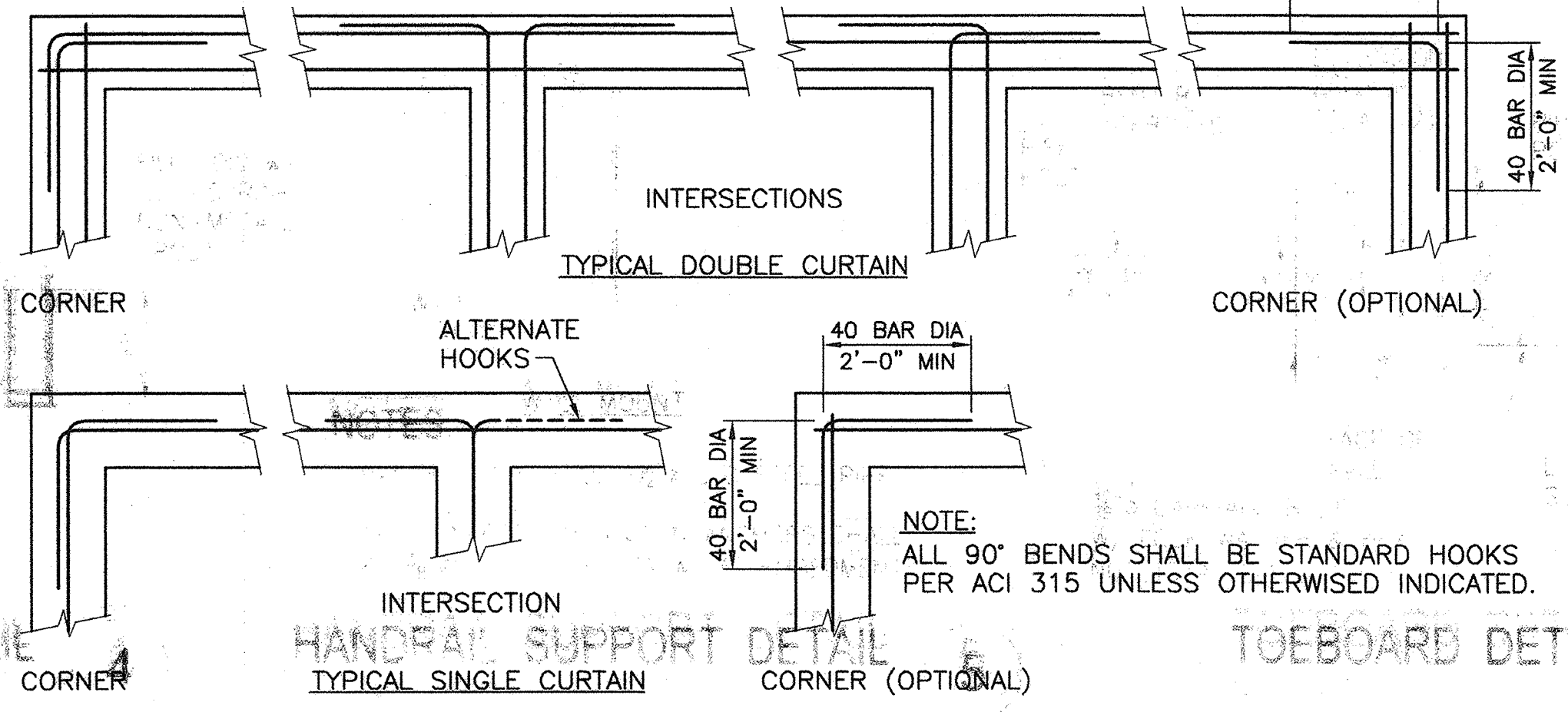
**6\"/>**



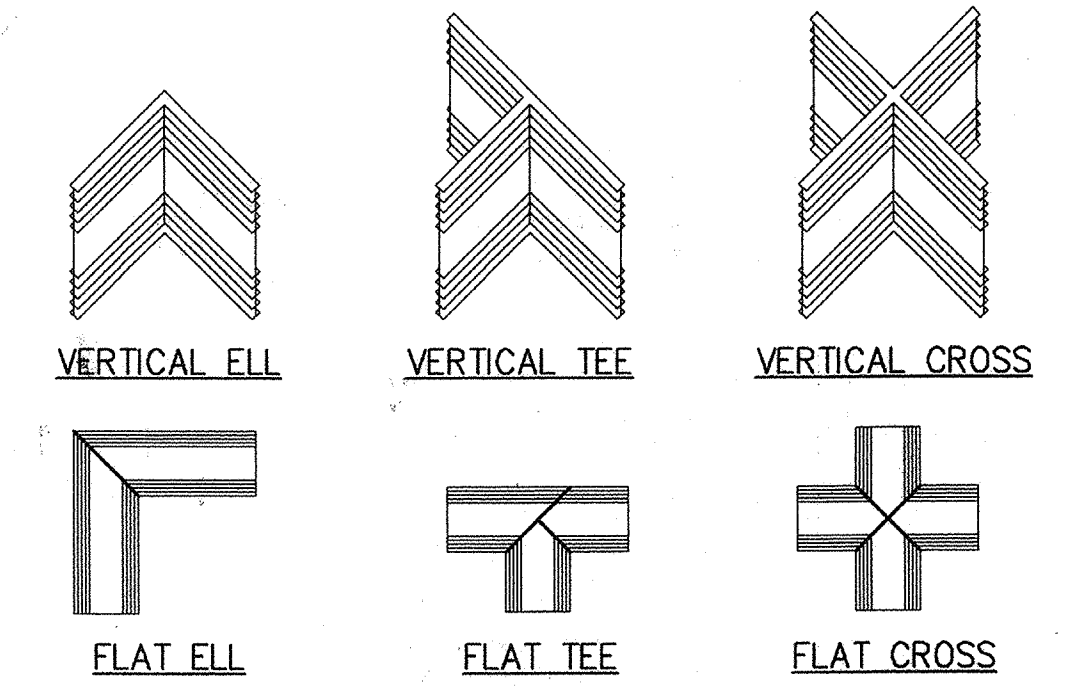
**9\"/>**



**REINFORCING AT MASONRY WALL CORNER & INTERSECTION DETAILS** 3  
NO SCALE



**REINFORCING AT CONCRETE WALL CORNER & INTERSECTION DETAILS** 4  
NO SCALE



**PREFABRICATED WATERSTOP JOINTS** 6C

**WATERSTOP DETAILS** 6  
NO SCALE

SIZE	ld FOR STRAIGHT BARS f'c = 3,000 psi		ld FOR STRAIGHT BARS f'c = 4,500 psi	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
4	37"	29"	24"	18"
5	46"	36"	29"	23"
6	56"	43"	35"	27"
7	81"	63"	51"	39"
8	93"	71"	58"	45"
9	105"	80"	66"	51"
10	118"	91"	74"	57"
11	131"	100"	82"	63"

**REINFORCEMENT MINIMUM LAP SCHEDULE** 5

- NOTES:**
- TOP BAR IS THE BAR WITH MORE THAN 12" CONCRETE CAST IN ONE LIFT BENEATH IT.
  - CLASS B TENSION LAP = 1.3 1d.
  - SPLICES IN HORIZONTAL BARS SHALL BE CLASS B TENSION LAP AND SHALL BE STAGGERED.
  - UNLESS OTHERWISE DETAILED ON THE DRAWINGS, SPLICES IN TWO CURTAINS SHALL NOT OCCUR IN THE SAME LOCATION.
  - BARS NOTED "CONT" AND TYPICAL WALL REINFORCING SHALL HAVE A MINIMUM SPLICE EQUAL TO THE STANDARD LAP SPLICES UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

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TS4x8 HORIZONTAL CONN DETAIL 9

TS4x8 VERTICAL CONN DETAIL 7

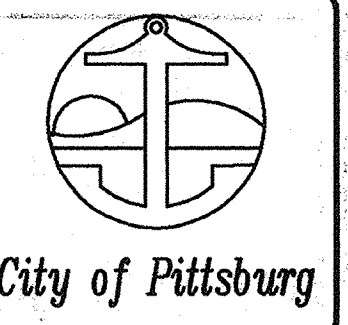


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Kevin P. Burke  
57152 R.C.E. NO. 8-7-07 DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: C. SHENY  
DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

APPROVED BY:  
**HIGH LEVEL PUMP STATION**  
MISCELLANEOUS DETAILS NO. 4



H:\DATA\60100085\CADD\STRUC\PMPSIA\HIGH-LEVEL\DLV\BHSLS9.DWG Gf 8/7/07 10:27 am



ELECTRICAL SYMBOLS		ELECTRICAL SYMBOLS		ELECTRICAL SYMBOLS		ELECTRICAL ABBREVIATIONS	
1	NO. INDICATES STARTER SIZE MAGNETIC MOTOR STARTER, +5'-0" AFF U.O.N.	[F1]	FUSE	1	DETAIL NUMBER	A	AMPERES
1	COMBINATION MOTOR STARTER, +5'-0" AFF U.O.N. NO. INDICATES STARTER SIZE	Δ	TRANSFORMER OR TRANSFORMER BANK.	□	TERMINAL CABINET AS NOTED ON PLAN DRAWING	AF	AMPERE FRAME
	GROUNDING CONDUIT AND CONDUCTOR.		MOTOR STARTER OR CONTACTOR.		TERMINAL CABINET AS NOTED ON PLAN DRAWING	AT	AMPERE TRIP
	CONDUIT, FLEXIBLE		GROUND ROD 3/4"x10'		CONDUIT RUN IN WALL OR CEILING	AIC	AMPS INTERRUPTING CAPACITY
	PHOTO ELECTRIC CELL		12' ELECTROLYTIC XIT GROUND SYSTEM		CONDUIT RUN UNDERGROUND	AFF	ABOVE FINISH FLOOR
	NON-FUSED DISCONNECT SWITCH		ELECTRIC MOTOR, HORSEPOWER INDICATED BY NUMBER		CONDUIT RUN STUBBED AND CAPPED	BC	BARE COPPER
	FUSED DISCONNECT SWITCH		UNDERGROUND ELECTRICAL MANHOLE, NUMBERED AS SHOWN.		CONDUIT RISE	BLDG	BUILDING
	SINGLE STREET LIGHT		THERMOSTAT		CONDUIT DROP	BRKR	BREAKER
	PRESSURE SWITCH		SMOKE DETECTOR		INDICATES WIRE SIZE, HASH MARKS INDICATE NUMBER OF WIRES, OTHERWISE 2-#12 & 1-#12 GND IN 3/4" CONDUIT	CB	CIRCUIT BREAKER
	CONTROL RELAY		MOTOR RATED SWITCH 120V 20A SQ "D" TYPE "F" OR EQUAL		HOMERUN TO PANEL "A" W/3 #12 WIRES CONNECTED TO CIRCUIT #1 & #3.	CKT	CIRCUIT
	SWITCH, SINGLE POLE, 3 POSITION		MOLDED CASE CIRCUIT BREAKER WITH THERMAL MAGNETIC TRIPS, 3-POLE, UNLESS OTHERWISE NOTED.		JUNCTION BOX OUTLET, BLANK COVER PLATE, WALL MOUNTED	COND	CONDUCTOR
	THERMAL OVERLOAD		SOFT STARTER		1-POLE TOGGLE SWITCH MOUNTED +4'-0", SUBSCRIPTS INDICATE NO. OF SWITCHES & OUTLETS CONTROLLED.	CS	CURRENT SENSOR
			CONTACT, NORMALLY OPEN		MULTIPLE WAY SWITCH, SWITCHES 2, 3, OR 4 INDICATES NUMBER OF WAYS, MOUNTED +4'-0"	C	CONDUIT, CENTIGRADE
			CONTACT, NORMALLY CLOSED		FLUORESCENT LIGHTING FIXTURE	CO	CONDUIT ONLY
			CONTACT, NORMALLY CLOSED, TIME DELAY CLOSING ON DE-ENERGIZING		FLUORESCENT LIGHTING FIXTURE WITH SINGLE LAMP EMERGENCY BATTERY UNIT.	CU	COPPER
			CONTACT, NORMALLY OPEN, TIME DELAY OPENING ON DE-ENERGIZING		STRIP FLUORESCENT LIGHTING FIXTURE.	DET	DETAIL
			CONTACT, NORMALLY OPEN, TIME DELAY CLOSING ON ENERGIZING		STRIP FLUORESCENT LIGHTING FIXTURE WITH SINGLE LAMP EMERGENCY BATTERY UNIT.	DISC	DISCONNECT
			OPERATING COIL		LIGHTING FIXTURE, CEILING MOUNTED.	DWG	DRAWING
			LIQUID LEVEL ACTUATED SWITCH NORMALLY CLOSED		LIGHTING FIXTURE, WALL MOUNTED.	ELEV	ELEVATION
			LIQUID LEVEL ACTUATED SWITCH NORMALLY OPEN		TYPICAL CONSTRUCTION DETAIL	EMERG	EMERGENCY
			PRESSURE ACTUATED SWITCH NORMALLY CLOSED		FIXTURE TYPE	FA	FIRE ALARM
			PRESSURE ACTUATED SWITCH NORMALLY OPEN		FIXTURE VOLT-AMPS	FLA	FULL LOAD AMPERES
			FLOW ACTUATED SWITCH, NORMALLY CLOSED		INTRUSION DOOR SWITCH	FLEX	FLEXIBLE
			FLOW ACTUATED SWITCH, NORMALLY OPEN		MOTION (OPTICAL) SENSOR	FLUOR	FLUORESCENT
			TEMPERATURE ACTUATED SWITCH NORMALLY CLOSED		ELECTRICAL PANEL SURFACE MOUNTED	GEN	GENERATOR
			TEMPERATURE ACTUATED SWITCH NORMALLY OPEN		SWITCHBOARD OR POWER PANELBOARD	GND	GROUND
			LIMIT SWITCH, NORMALLY CLOSED		ELAPSED TIME METER	GFI	GROUND FAULT INTERRUPTER
			LIMIT SWITCH, NORMALLY OPEN		DUPLEX RECEPTACLE-WALL MOUNTED +12" U.O.N.	HZ	HERTZ
			PUSHBUTTON SWITCH, NORMALLY CLOSED		OCCUPANCY SENSOR WALL MTD. 7'-6" OR CELING MTD	HP	HORSE POWER
			PUSHBUTTON SWITCH, NORMALLY OPEN		GROUND FAULT INTERRUPTING TYPE RECEPTACLE - WALL MOUNTED +42" U.O.N.	HPS	HIGH PRESS SODIUM
			SWITCH, SINGLE POLE		DUPLEX CONVENIENCE OUTLET SPLIT WIRED, BOTTOM HALF SWITCHED. MOUNTED +12" AFF	IS	CURRENT TRANSDUCER
			SWITCH, SINGLE POLE DOUBLE-THROW		CONDUIT NUMBER	IT	INTRUSION SWITCH
			DUPLEX RECEPTACLE - WALL MOUNTED +12" U.O.N. (SURGE SUPPRESSION TYPE).		120-208V DUPLEX RECEPTACLE, MOUNTED +12"	INCAND	INCANDESCENT
			TWIST LOCK RECEPTACLE (20, 30, 60A) AS INDICATED, 250 VOLT, 3 PHASE, WALL MOUNTED + 12", U.O.N.		TWIST LOCK RECEPTACLE (20, 30, 60A) AS INDICATED, 250 VOLT, 3 PHASE, WALL MOUNTED + 12", U.O.N.	JB	JUNCTION BOX

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### ELECTRICAL NOTES

- REFER TO ELECTRICAL SPECIFICATIONS FOR FURTHER DETAIL AS TO SCOPE, MATERIALS, AND EXECUTION OF ELECTRICAL WORK.
- ALL WIRING DESIGN IS BASED ON 75 DEGREE C CONDITIONS FOR COPPER CONDUCTORS OF TYPE THWN UNLESS OTHERWISE STATED.
- CONTRACTOR TO SIZE ALL WIRING NOT EXPLICITLY SHOWN ON DRAWINGS ACCORDING TO THE REQUIREMENTS OF NATIONAL ELECTRICAL CODE (NEC) FOR THE SPECIFIC APPLICATION AND CONDITIONS.
- ALL CONDUCTORS SHALL BE COPPER (MINIMUM SIZE #12 AWG UNLESS SPECIFICALLY NOTED OTHERWISE).
- ALL INDICATIONS OF NUMBER OF CONDUCTORS EXCLUDE GREEN WIRE GROUND CONDUCTOR WHICH MUST BE PROVIDED.
- CONTRACTOR SHALL SUBMIT SEISMIC ANCHORAGE CALCULATION IN CONFORMANCE W/CODE REQUIREMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONFORM TO ALL LOCAL CODES AND ORDINANCES, THE STATE OF CALIFORNIA ELECTRICAL SAFETY ORDERS, THE NATIONAL ELECTRICAL CODE AND ANY ADDITIONAL JURISDICTION RELATING TO THE WORK.
- THE CONTRACTOR SHALL PROVIDE SEISMIC ANCHORAGE FOR ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH UBC SECTION 1630.2.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, WIRE, TRANSFER SWITCHES, RECEPTACLES, SERVICES, SWITCHBOARDS, MCC, AND PANELBOARDS REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM THAT PROPOSED NEW EQUIPMENT ON THE CONTRACT WILL FIT DIMENSIONALLY WITH EXISTING EQUIPMENT IN LOCATION SHOWN ON DRAWINGS.
- IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS, OR WITH CODE REQUIREMENTS, THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HIGHER STANDARD SHALL PREVAIL.
- ALL ELECTRICAL EQUIPMENT EXPOSED TO THE CLIMATE SHALL BE WEATHERPROOF.
- ALL ELECTRICAL EQUIPMENT IN THIS PROJECT SHALL BE U.L. LISTED.
- ALL UNDERGROUND CONDUIT SHALL BE INSTALLED AT 30" BELOW FINISHED GRADE MINIMUM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UNDERGROUND FACILITIES AND PROTECTING THESE FACILITIES FROM DAMAGE.
- THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED PER FIELD CONDITIONS AND N.E.C.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UNDERGROUND FACILITIES.

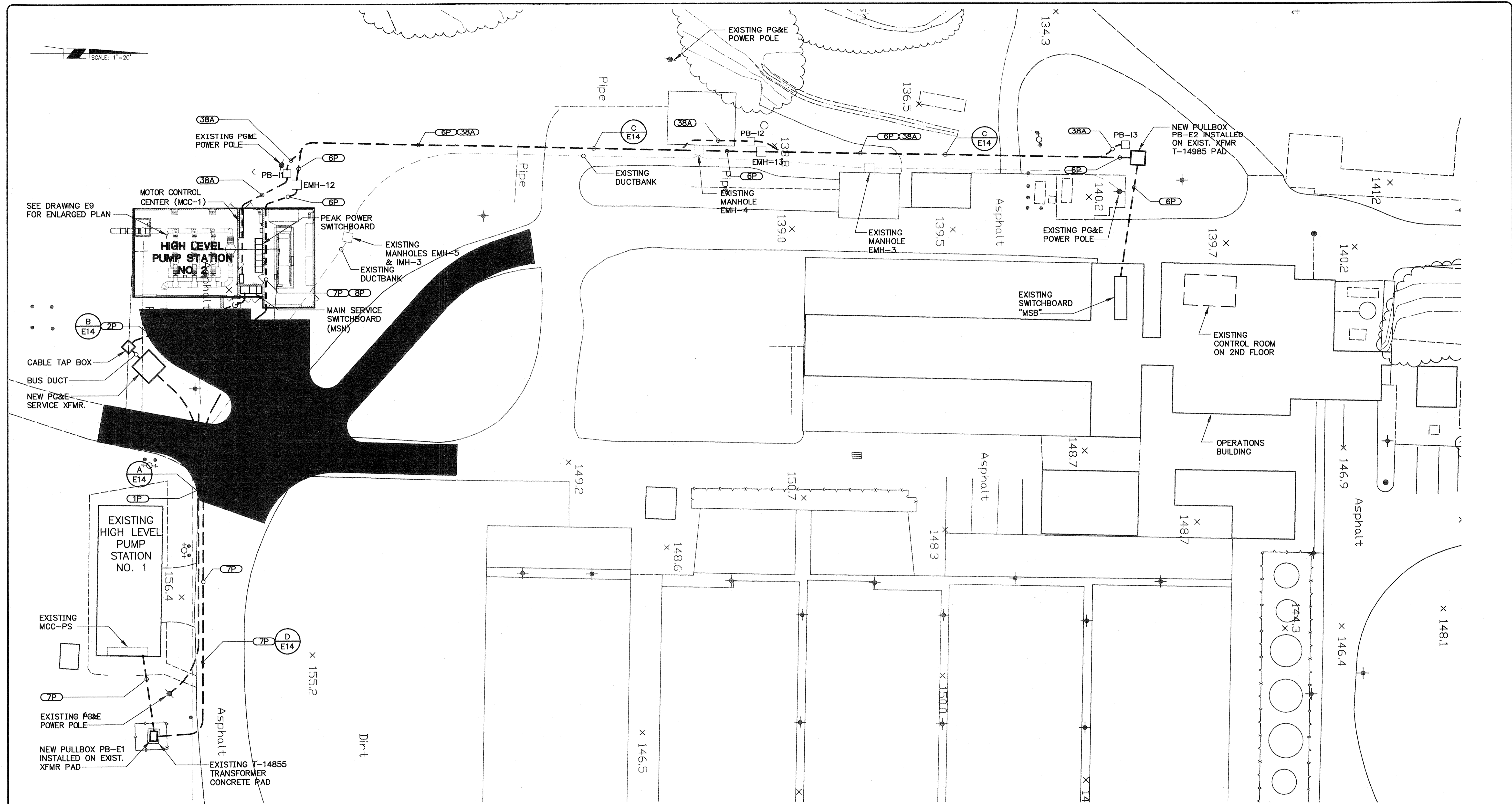
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916.928.1113 • FAX 916.928.1117 • www.RBF.com  
12993 R.E.E. NO. 08/06/02 DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTM, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

**HIGH LEVEL PUMP STATION No. 2**  
ELECTRICAL  
SYMBOLS, NOTES AND ABBREVIATIONS  
City of Pittsburgh

H:\PDATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-1-10-12-2006\203\_E-01.DWG TNGUYEN 2/16/07 9:09 am



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**(A) HIGH LEVEL PUMP STATIONS AND (E) FACILITY**  
SCALE: 1" = 20'

0 1 2  
2" ON FULL SCALE  
(IF NOT 2"-SCALE ACCORDINGLY)

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SACRAMENTO, CALIFORNIA 95834-2303  
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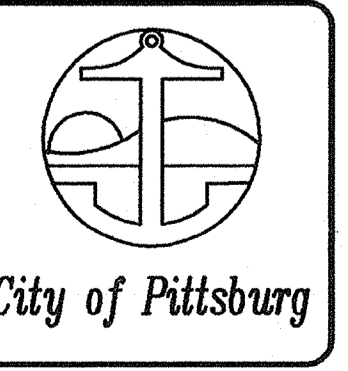
**Bruce D. Cooke** 12993 02/04/07  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:

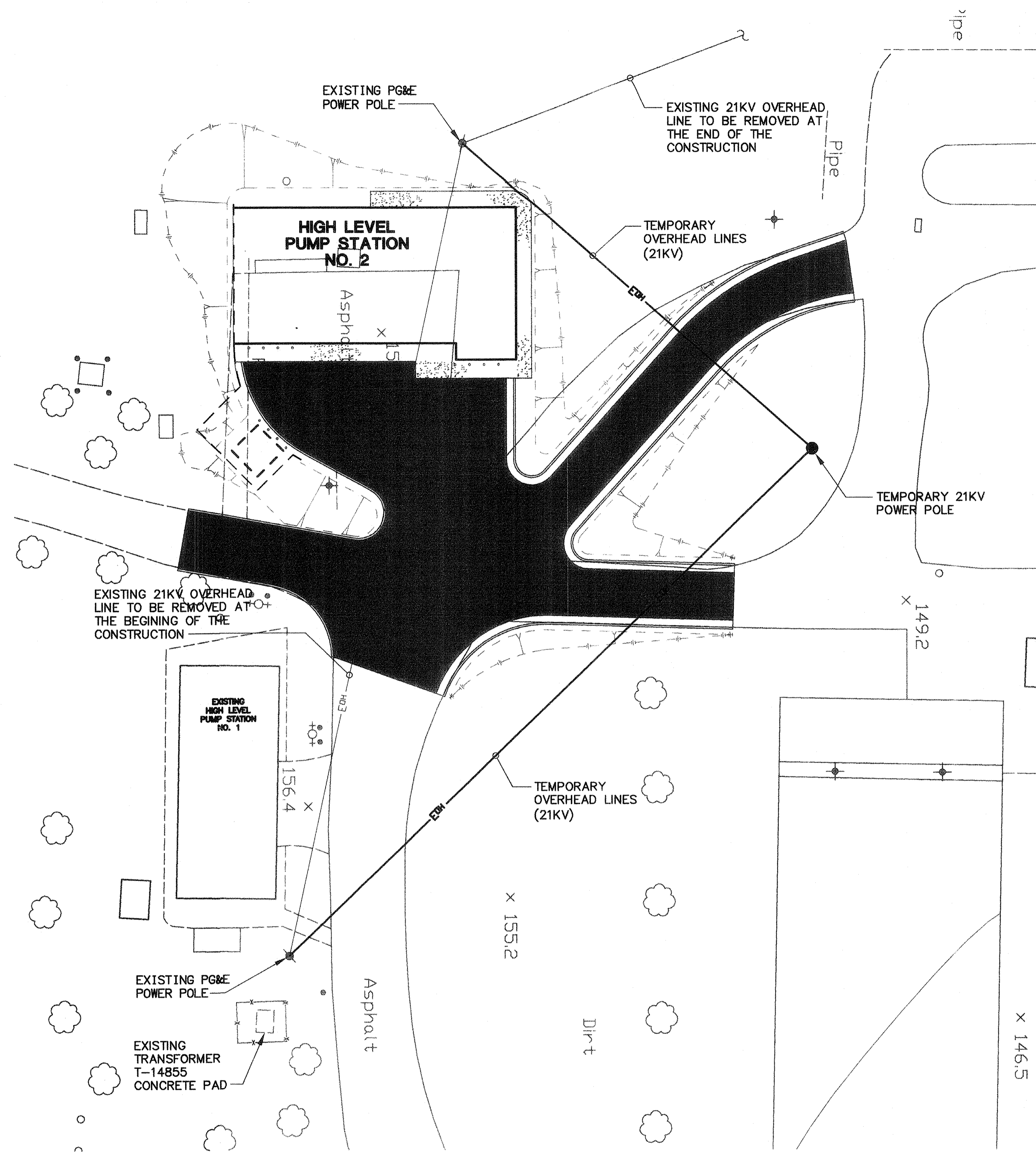
**HIGH LEVEL  
PUMP STATION No. 2  
PARTIAL SITE PLAN**



**E2**  
**42 OF 77**

H:\PDATA\60100100\CADD\CADD\WATER\DLV\ELECT\HIGH LEVEL\9000-3-2002\9000-3-2002-12-10-1-1-3E\PACKAGE\2-PS-2.DWG

SCALE: 1" = 20'



(A) HIGH LEVEL PUMP STATION 1 AND 2  
SCALE: 1" = 20'

**CONSTRUCTION SEQUENCE:**

- I. PG&E TO INSTALL A NEW TEMPORARY 21KV POLE AS SHOWN TO REROUTE THE EXISTING OVERHEAD CIRCUIT TO CLEAR CONSTRUCTION SITE. THIS TEMPORARY POLE AND CIRCUIT SHALL REMAIN DURING THE CONSTRUCTION PERIOD.
- II. CONTRACTOR TO INSTALL UNDERGROUND CONDUIT SYSTEMS INCLUDING MANHOLES AS SHOWN ON DRAWING E2.
  - A. PROVIDE AND INSTALL PRIMARY SERVICE CONDUIT, TRANSFORMER PAD AND SECONDARY CONDUITS FOR HIGH LEVEL PUMP STATION No. 2.
  - B. COMPLETE ALL ELECTRICAL WORK INSIDE HIGH LEVEL PUMP STATION No. 2, INCLUDING COMPLETE TESTING OF ALL EQUIPMENT.
  - C. SWITCH OVER EXISTING SERVICE FOR PUMP STATION No. 1:
 

COMPLETE ALL UNDERGROUND CONDUIT DUCTBANK FROM NEW HIGH LEVEL PUMP STATION (HLPS) No. 2 TO A POINT JUST OUTSIDE THE EXISTING TRANSFORMER PAD AT HLPS No. 1. COORDINATE WITH CITY AND PG&E TO DETERMINE BEST TIME TO DISCONNECT EXISTING TRANSFORMER, AND REMOVE IT AND RISER TO EXISTING OVERHEAD POLE. COMPLETE INSTALLATION OF DUCTBANK TO TRANSFORMER PAD, INSTALL SPLICE BOX, CABLE AND COMPLETE INSTALLATION. UTILIZE EXISTING HLPS EMERGENCY GENERATOR TO PROVIDE POWER DURING CUTOVER.
  - D. SWITCH OVER EXISTING SERVICE FOR EXISTING PLANT:
 

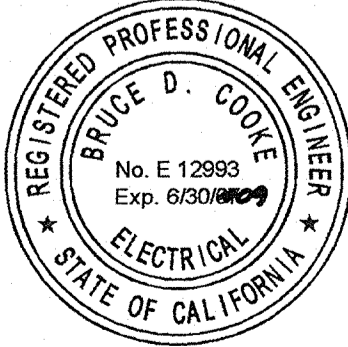
COMPLETE UNDERGROUND DUCT INSTALLATION SIMILAR TO ABOVE TO CLOSEST POINT TO EXISTING TRANSFORMER. DO CUTOVER AS NOTED ABOVE UTILIZING EXISTING EMERGENCY GENERATORS FOR BACKUP POWER. COORDINATE CUTOVER WITH CITY AND MINIMIZE DOWNTIME.
- III. PG&E TO REMOVE:
  - A. EXISTING POWER POLE AND OVERHEAD LINES AT EXISTING PLANT.
  - B. EXISTING POWER POLE AND OVERHEAD LINES AT NEW PUMP STATION No. 2.
  - C. TEMPORARY POLE AND OVERHEAD LINES (TO REROUTE THE EXISTING CIRCUIT TO CLEAR CONSTRUCTION SITE).
  - D. EXISTING REVENUE METER.

BEFORE EXCAVATING  
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FACILITIES EXIST WITHIN  
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0 1 2  
2" ON FULL SCALE  
(IF NOT 2"-SCALE ACCORDINGLY)



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*Bruce Cooke* 12993 08/06/07  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

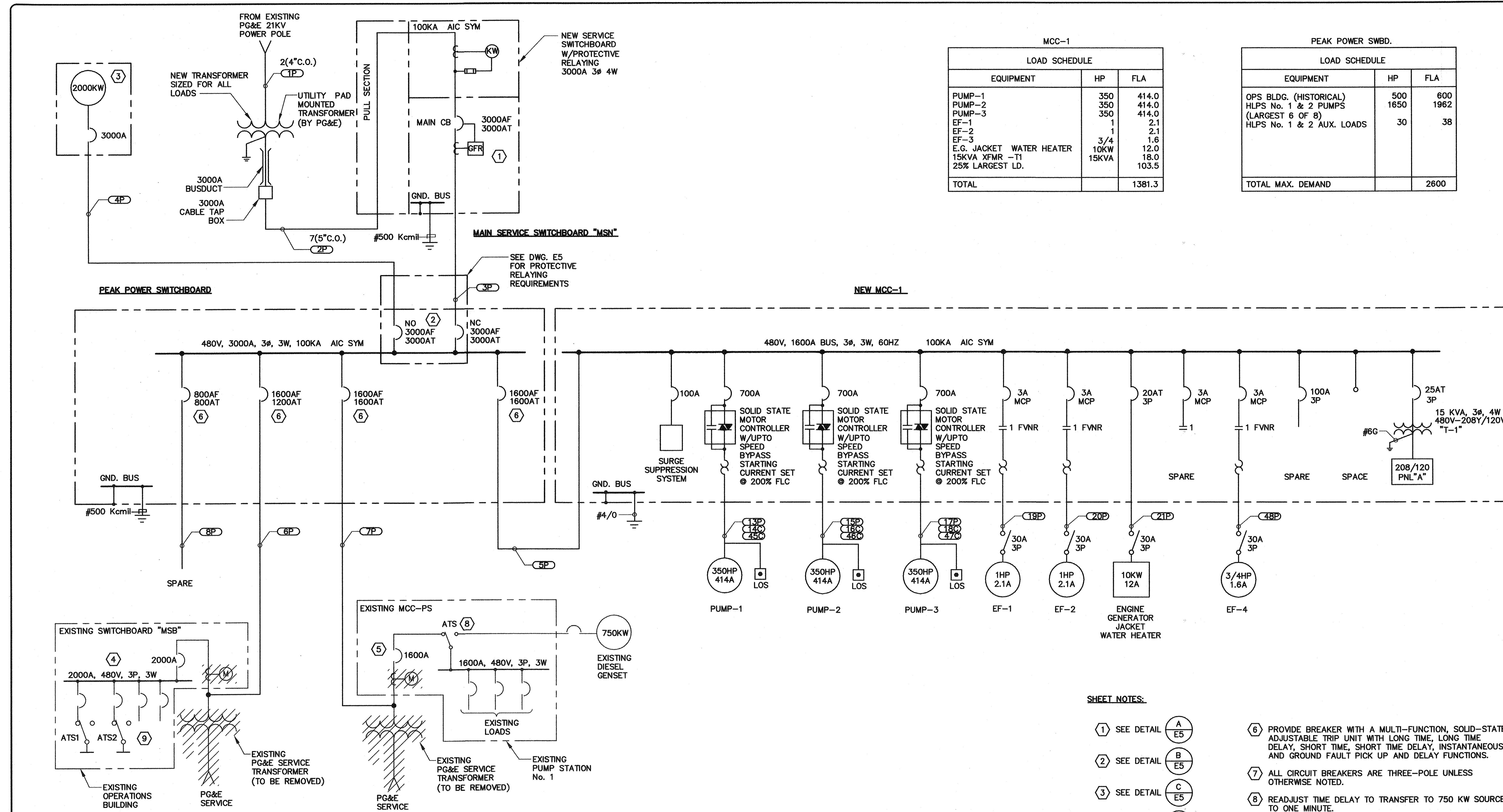
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
CONSTRUCTION SEQUENCE**



**E3**  
**43 OF 77**

H:\PDATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-1-10-12-2006\203\_E-03.DWG INHUYEN 2/16/07 9:16 am



MCC-1

LOAD SCHEDULE		
EQUIPMENT	HP	FLA
PUMP-1	350	414.0
PUMP-2	350	414.0
PUMP-3	350	414.0
EF-1	1	2.1
EF-2	1	2.1
EF-3	3/4	1.6
E.G. JACKET WATER HEATER	10KW	12.0
15KVA XFMR -T1	15KVA	18.0
25% LARGEST LD.		103.5
<b>TOTAL</b>		<b>1381.3</b>

PEAK POWER SWBD.

LOAD SCHEDULE		
EQUIPMENT	HP	FLA
OPS BLDG. (HISTORICAL)	500	600
HLPs No. 1 & 2 PUMPS	1650	1962
(LARGEST 6 OF 8)		
HLPs No. 1 & 2 AUX. LOADS	30	38
<b>TOTAL MAX. DEMAND</b>		<b>2600</b>

SHEET NOTES:

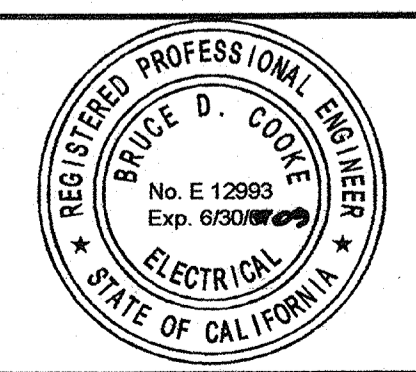
- ① SEE DETAIL (A/E5)
- ② SEE DETAIL (B/E5)
- ③ SEE DETAIL (C/E5)
- ④ SEE DETAIL (A/E6)
- ⑤ SEE DETAIL (B/E6)
- ⑥ PROVIDE BREAKER WITH A MULTI-FUNCTION, SOLID-STATE ADJUSTABLE TRIP UNIT WITH LONG TIME, LONG TIME DELAY, SHORT TIME, SHORT TIME DELAY, INSTANTANEOUS AND GROUND FAULT PICK UP AND DELAY FUNCTIONS.
- ⑦ ALL CIRCUIT BREAKERS ARE THREE-POLE UNLESS OTHERWISE NOTED.
- ⑧ READJUST TIME DELAY TO TRANSFER TO 750 KW SOURCE TO ONE MINUTE.
- ⑨ SEE DRAWING E6 FOR REQUIRED DEMOLITION WORK INCLUDING DEMOLITION OF TWO EXISTING ENGINE GENERATORS.

(A) PLANT POWER SINGLE LINE DIAGRAM (7)  
SCALE: NTS

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CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

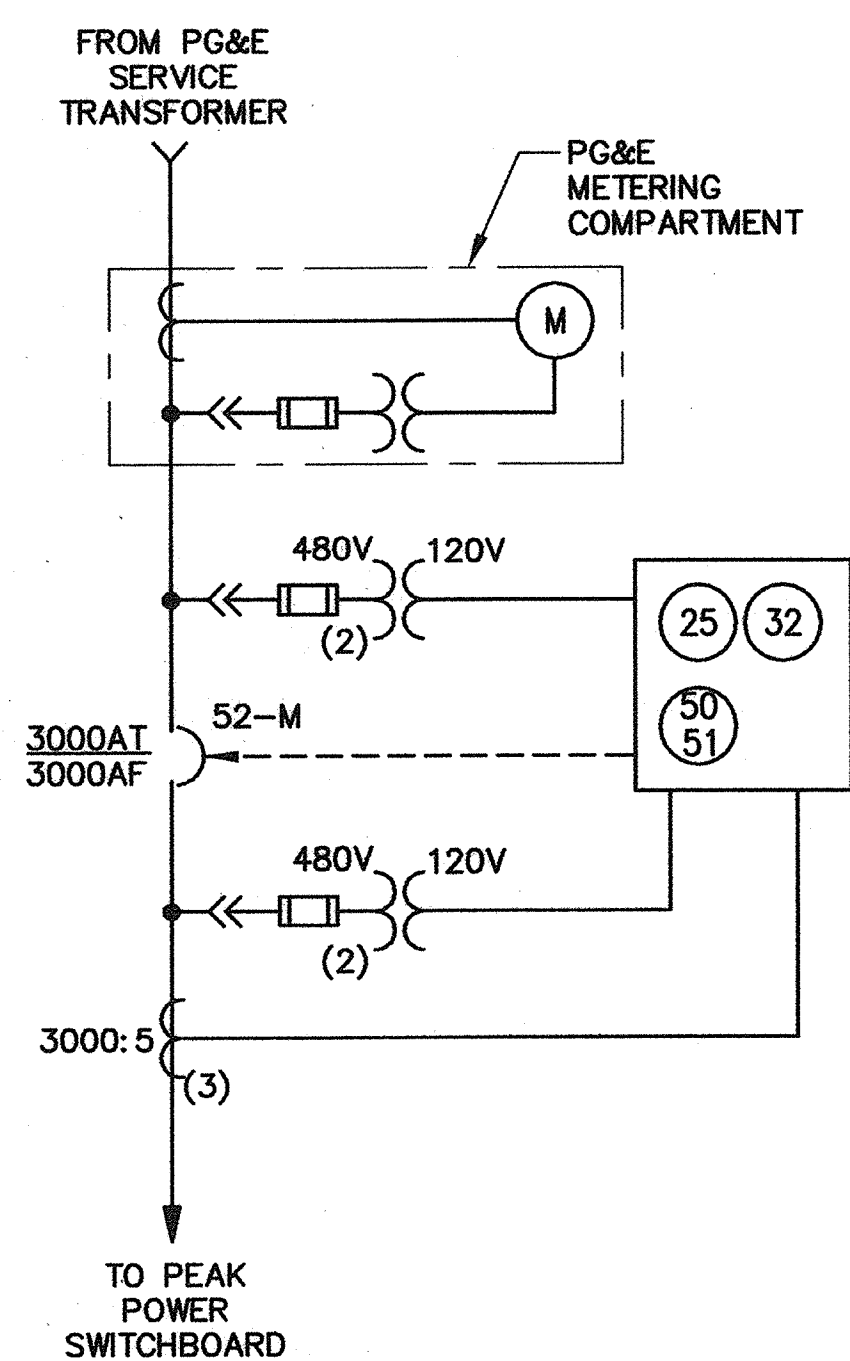
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
PLANT POWER SYSTEM**



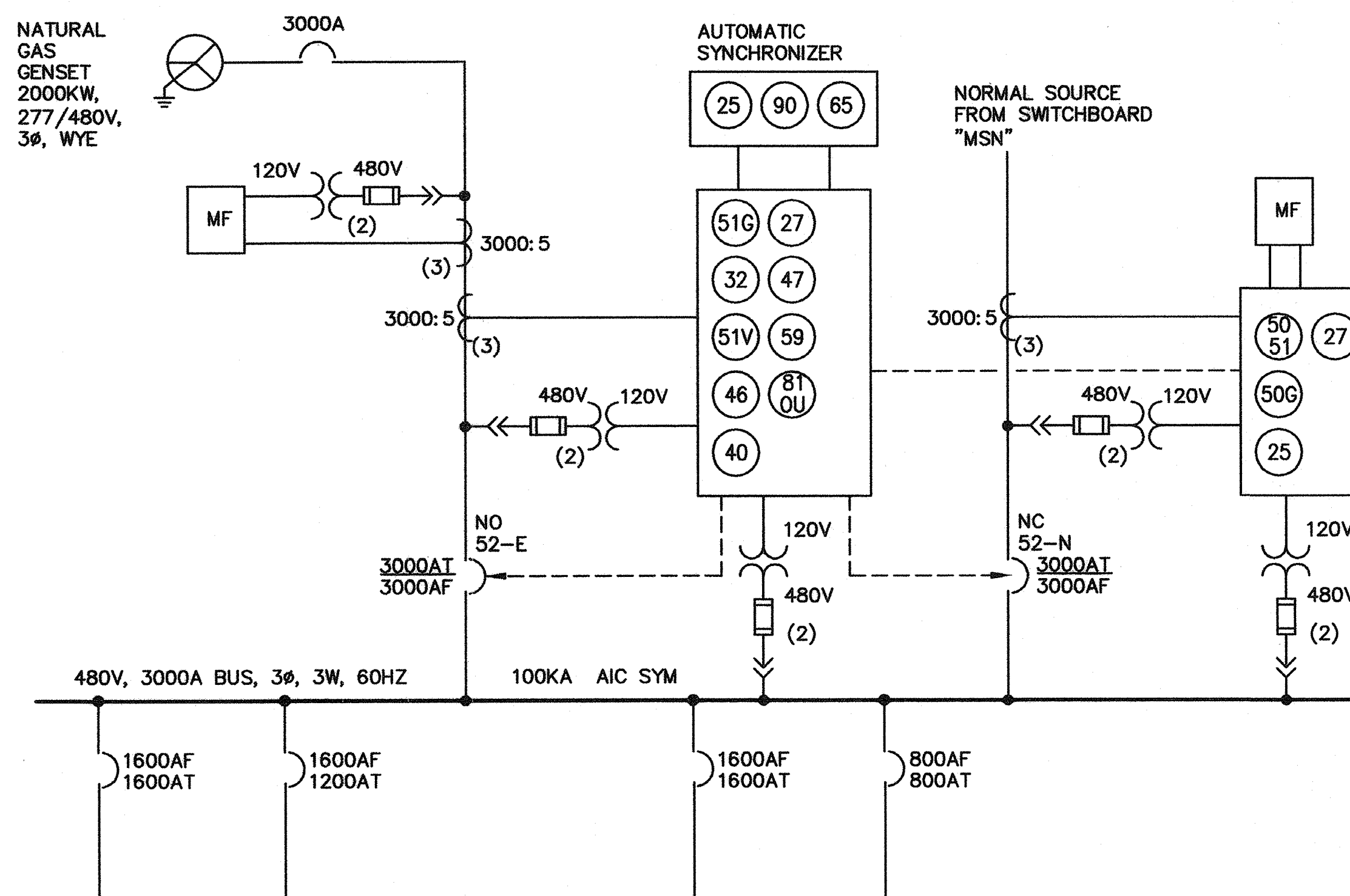
**E4**  
**44 OF 77**

H:\PDATA\60100165\CADD\WATER\ELECT\HIGH LEVEL-PS-2\PACKAGE-1-10-12-2006\203\_E-04.DWG TINGUYEN 2/16/07 9:18 am



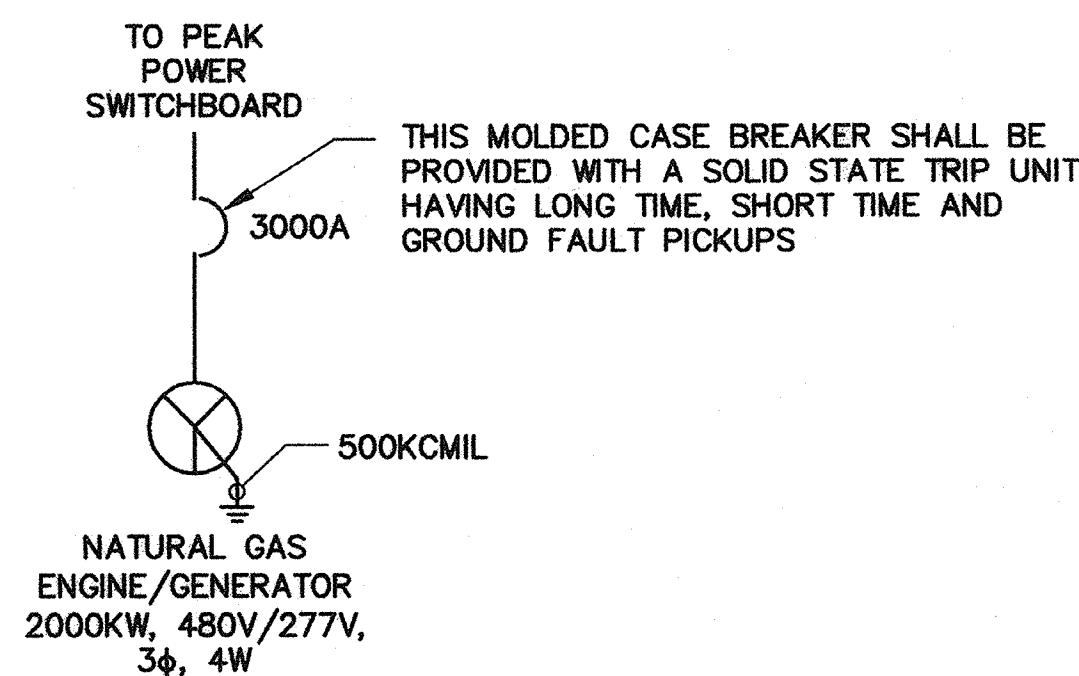
**MAIN SERVICE SWITCHBOARD "MSN" PROTECTIVE RELAYING DETAIL**

A



**PEAK POWER SWITCHBOARD - PROTECTIVE RELAYING DETAIL**

B



**GENSET MAIN BREAKER DETAIL**

C

**RELAYING AND MODIFICATION DETAILS - SINGLE LINE DIAGRAM**

SCALE: NTS

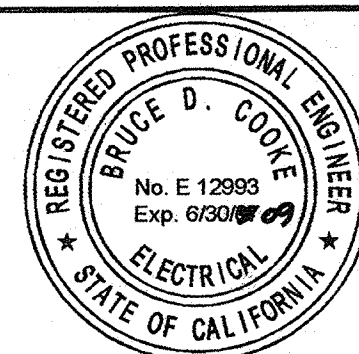
**LEGEND**

- 25 SYNCHRONIZATION CHECK RELAY
- 27 UNDER VOLTAGE RELAY
- 32 REVERSE POWER RELAY
- 40 FIELD RELAY
- 46 PHASE BALANCE (CURRENT) RELAY
- 47 PHASE BALANCE (VOLTAGE) RELAY
- 50 OVERCURRENT RELAY
- 51 GROUND OVERCURRENT RELAY
- 51V OVERCURRENT RELAY WITH VOLTAGE RESTRAINT
- 59 OVERVOLTAGE RELAY
- 81 FREQUENCY RELAY (OVER & RELAY)
- MF MULTI-FUNCTION ELECTRONIC DISPLAYS: KW, KWH, VOLT, FREQUENCY, POWER FACTOR, HARMONICS, CURRENT, ETC...
- 25 90 65 AUTOMATIC SYNCHRONIZER
- 52 AC CIRCUIT BREAKER

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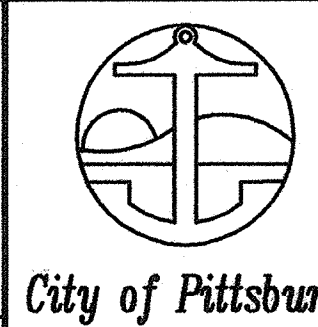
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DATE: FEBRUARY, 2007

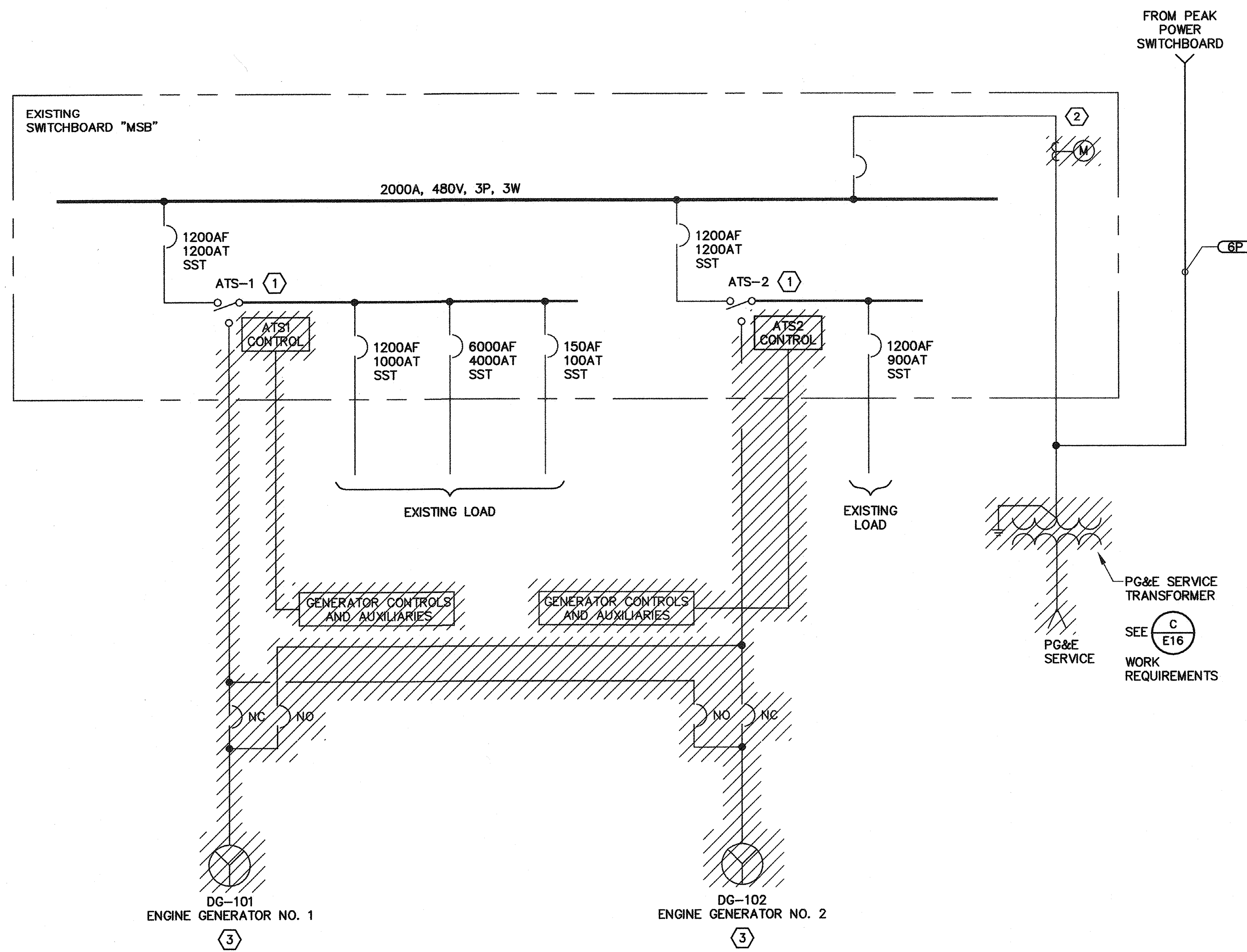
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
RELAYING SYSTEM**



**E5**  
**45 OF 77**

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**NOTES:**

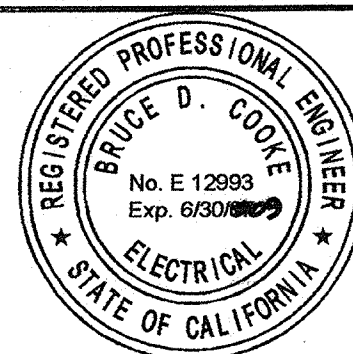
- ① FOLLOWING COMPLETION AND TESTING OF NEW POWER SUPPLY, DISABLE THE AUTOMATIC CONTROL FUNCTIONS OF THE EXISTING ATS AND LEAVE IT CONNECTED TO NORMAL POWER SOURCE AS SHOWN.
- ② SEE DETAIL (A/E16) FOR WORK REQUIREMENTS.
- ③ REMOVE AND DISPOSE OF EXISTING EMERGENCY GENERATORS, CONTROLS AND CABLE.

(A) EXISTING PLANT SINGLE-LINE MODIFICATIONS  
SCALE: NTS

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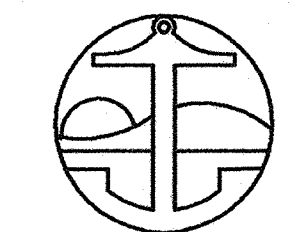
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BRUCE D. COOKE R.E.E. NO. DATE

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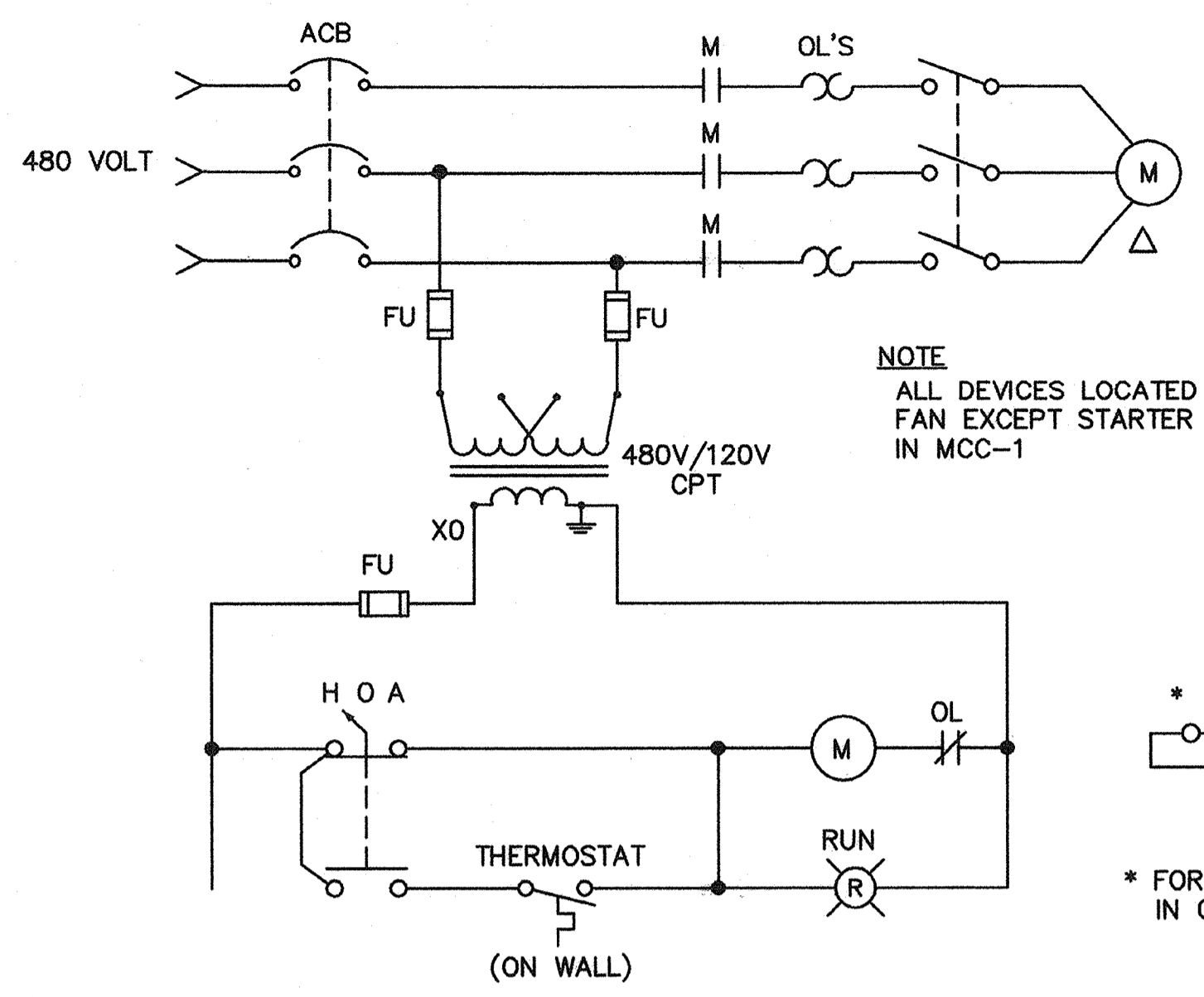
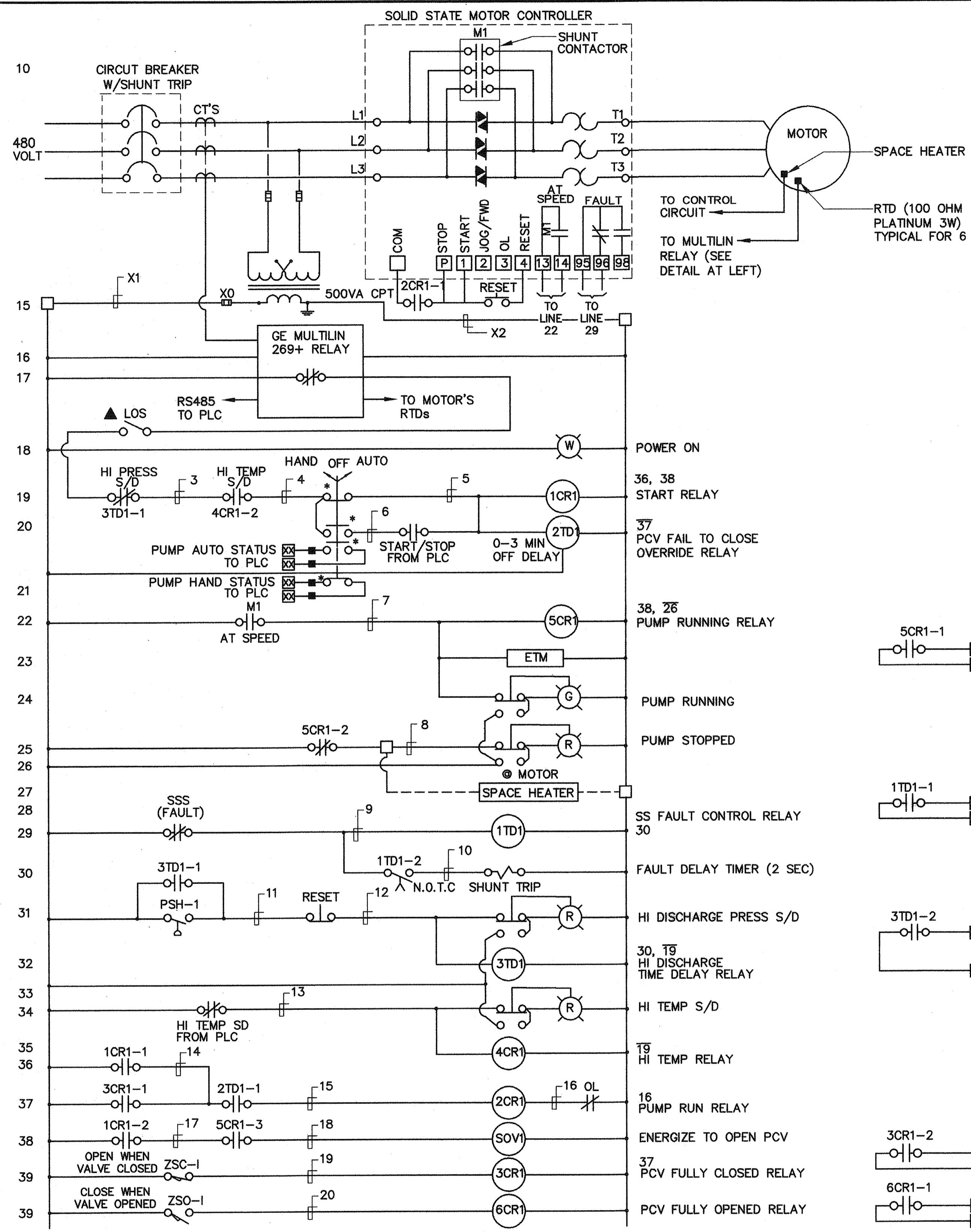
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
(E) PLANT MODIFICATIONS**

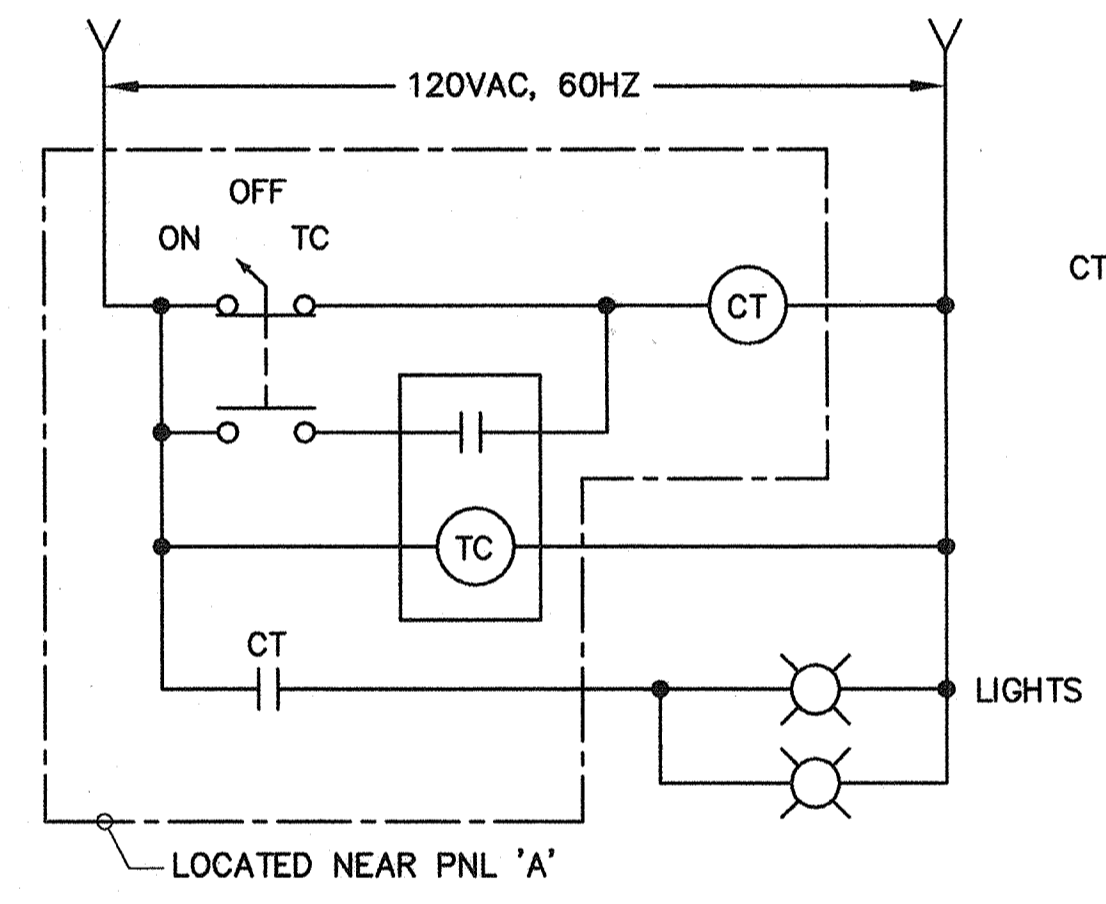


City of Pittsburg

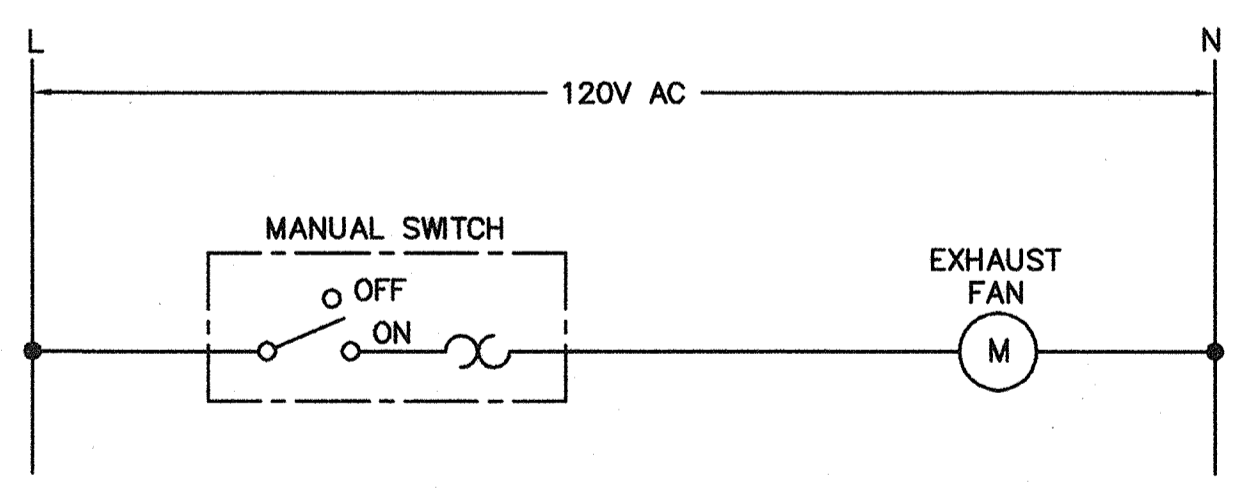
**E6**  
**46 OF 77**



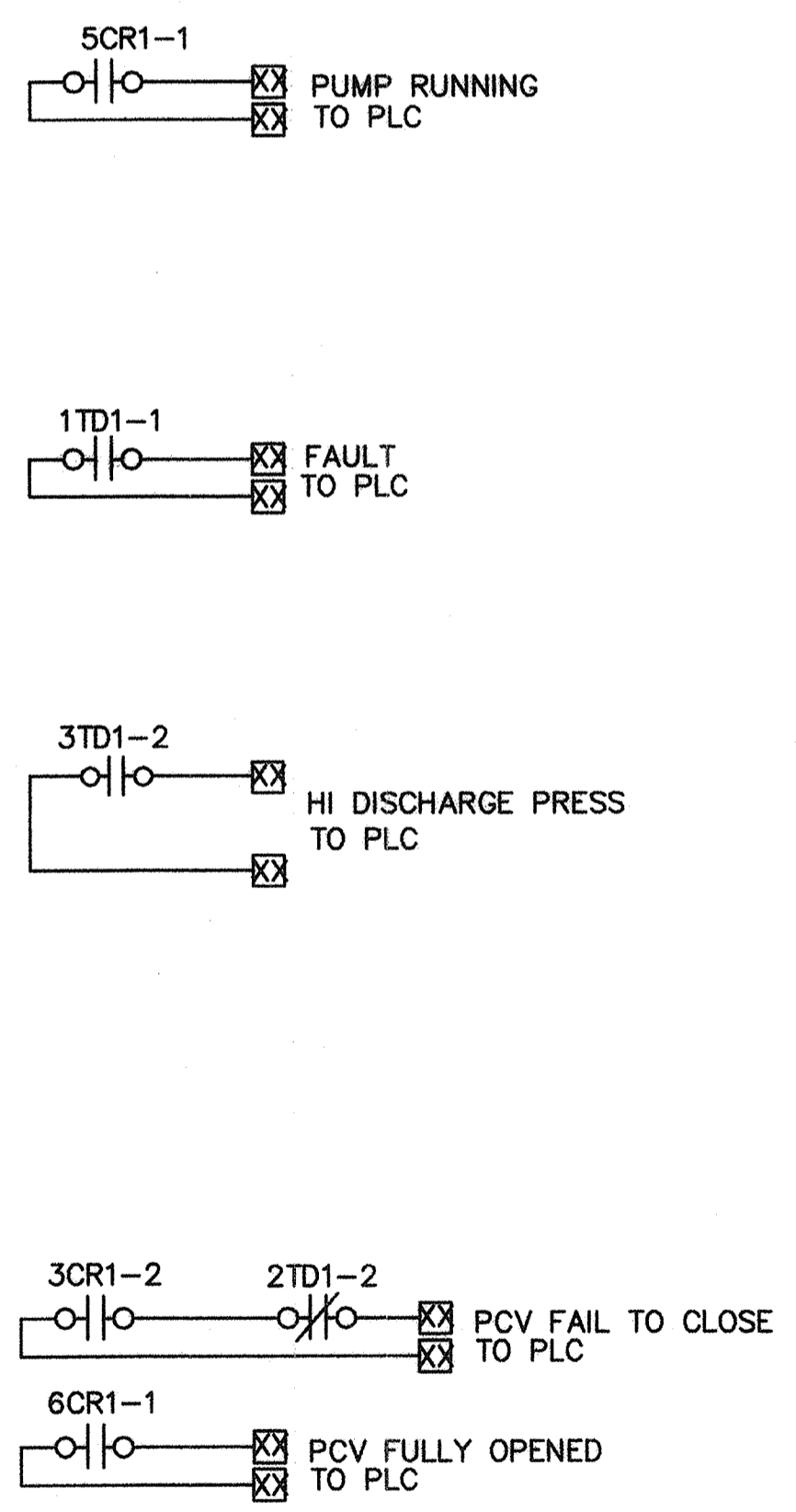
**B EXHAUST FAN SCHEMATIC (480V)**  
SCALE: NTS (TYPICAL FOR THREE FANS: EF-1, EF-2 & EF-4)



**C EXTERIOR LIGHTING CONTROL**  
SCALE: NTS



**D EXHAUST FAN (EF-3) SCHEMATIC**  
SCALE: NTS



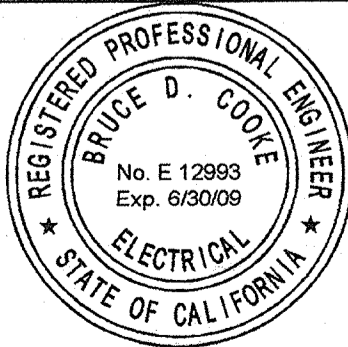
**A PUMP CONTROL**  
SCALE: NTS (TYPICAL FOR PUMP NO. 1, 2 & 3)

▲ NEAR MOTOR

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BRUCE D. COOKE R.E.E. NO. DATE

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DRAWN: EA  
CHECKED: DTN, RBF  
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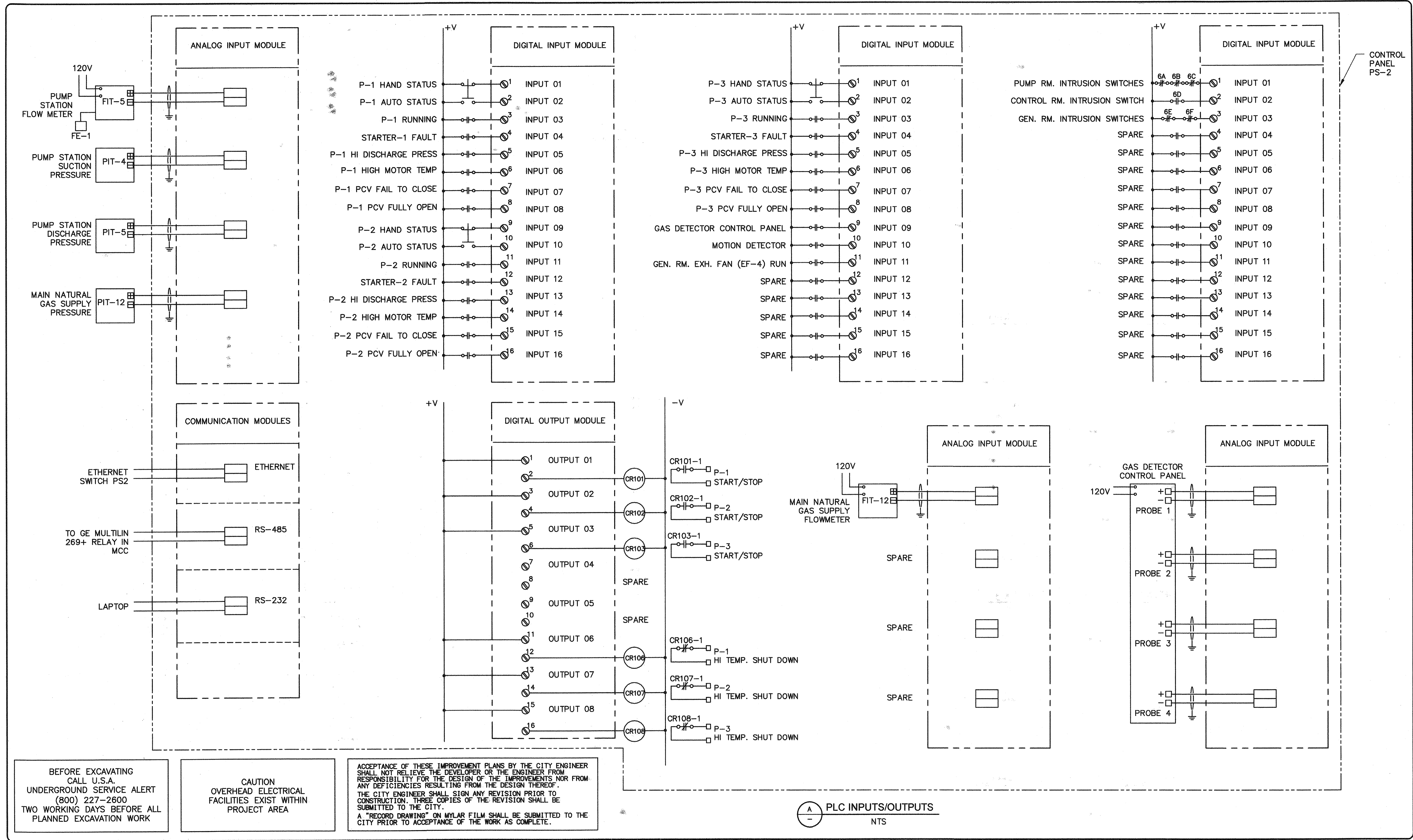
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
ELECTRICAL CONTROL SCHEMATIC**



**E-7  
47 OF 77**

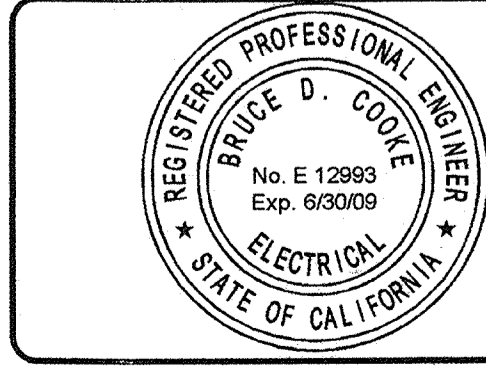
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BRUCE D. COOKE R.E.E. NO. DATE

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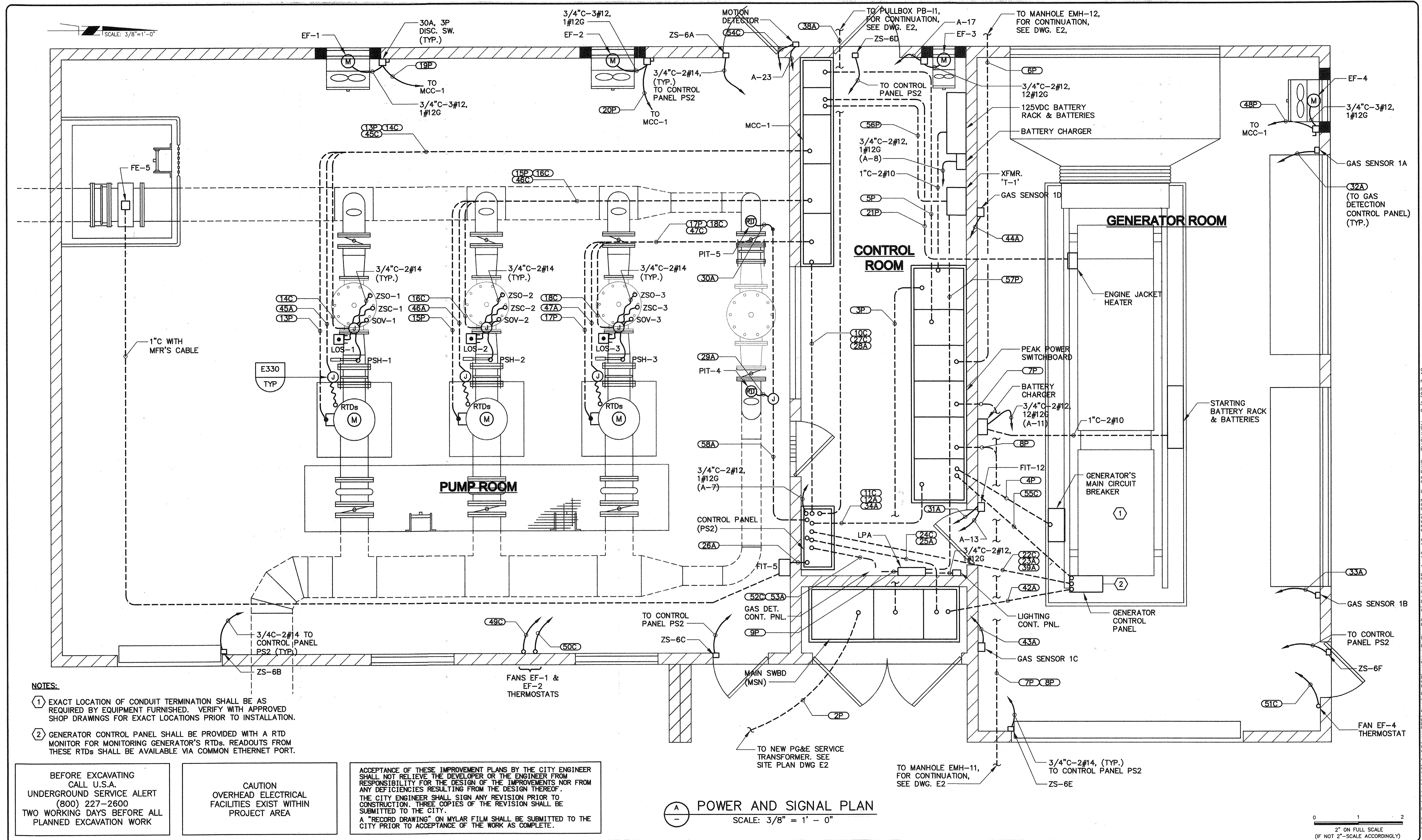
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
PLC CONNECTION DIAGRAM**



**E-8  
48 OF 77**





- NOTES:**
- EXACT LOCATION OF CONDUIT TERMINATION SHALL BE AS REQUIRED BY EQUIPMENT FURNISHED. VERIFY WITH APPROVED SHOP DRAWINGS FOR EXACT LOCATIONS PRIOR TO INSTALLATION.
  - GENERATOR CONTROL PANEL SHALL BE PROVIDED WITH A RTD MONITOR FOR MONITORING GENERATOR'S RTDs. READOUTS FROM THESE RTDs SHALL BE AVAILABLE VIA COMMON ETHERNET PORT.

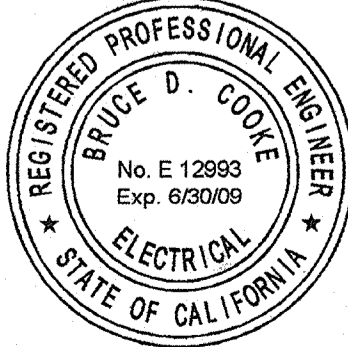
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**A POWER AND SIGNAL PLAN**  
SCALE: 3/8" = 1' - 0"

0 1 2  
2" ON FULL SCALE  
(IF NOT 2"-SCALE ACCORDINGLY)



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*Bruce Cooke* 12993 02/06/07  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

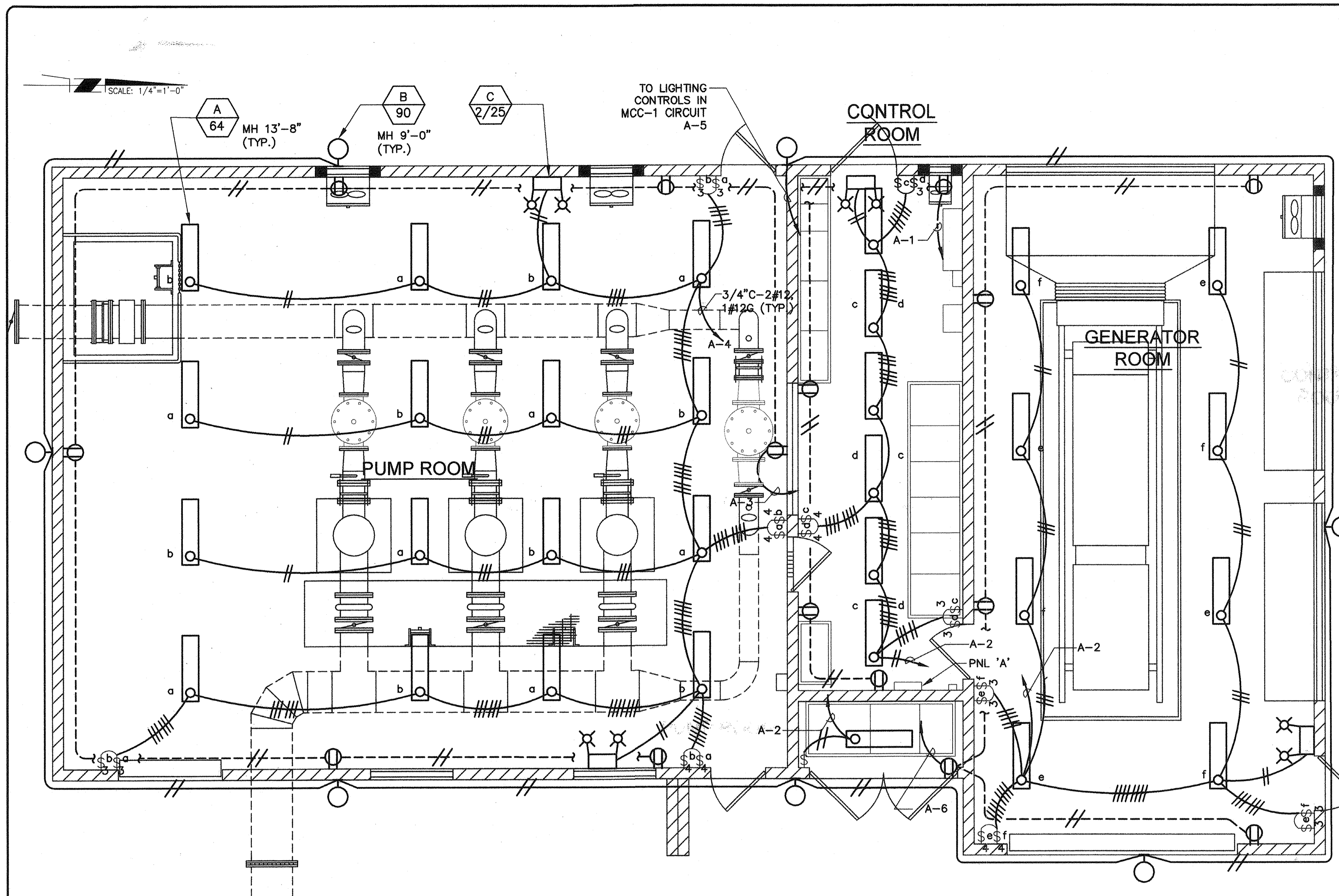
DESIGNED: DN  
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CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:  
**HIGH LEVEL  
PUMP STATION No. 2  
POWER AND SIGNAL PLAN**



**E-9**  
**49 OF 77**

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ELECTRICAL FIXTURE SCHEDULE							
TYPE	DESCRIPTION	VOLT	LAMP			MOUNT	REMARKS
			NO.	WATT	TYPE		
A 64	48" METALUX DIM-232-120-EB81-U 2 LAMP INDUSTRIAL FIXTURE ELECTRONIC BALLAST	120	2	32	T8 4100K	PENDANT	
B 90	HOLOPHANE WALLPACKETTE WP2A070HP12GR-P DIE CAST AL. PRISMATIC GLASS. REFRACTOR	120	1	70	HPS	WALL	
C 2/25	EMERGENCY BATTERY PACK W/12 BATTERY, CHARGER SELF DIAGNOSTIC AND VISUAL INDICATOR. TWO 25 WATT SEALED BEAM LAMPS. HOLOPHANE C1-12N-25-W-WK-2-A1-NA OR EQUAL	120	2	25	INC.	WALL	

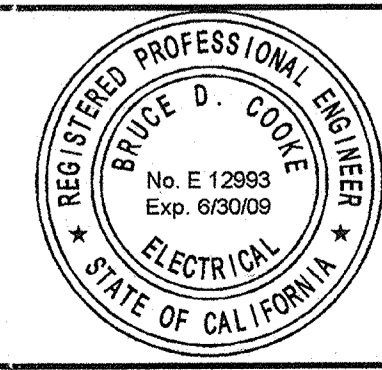
**A LIGHTING PLAN**  
SCALE: 1/4" = 1'-0"

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2" ON FULL SCALE  
(IF NOT 2"=SCALE ACCORDINGLY)



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*Bruce Cooke* 12993 02/02/07  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:

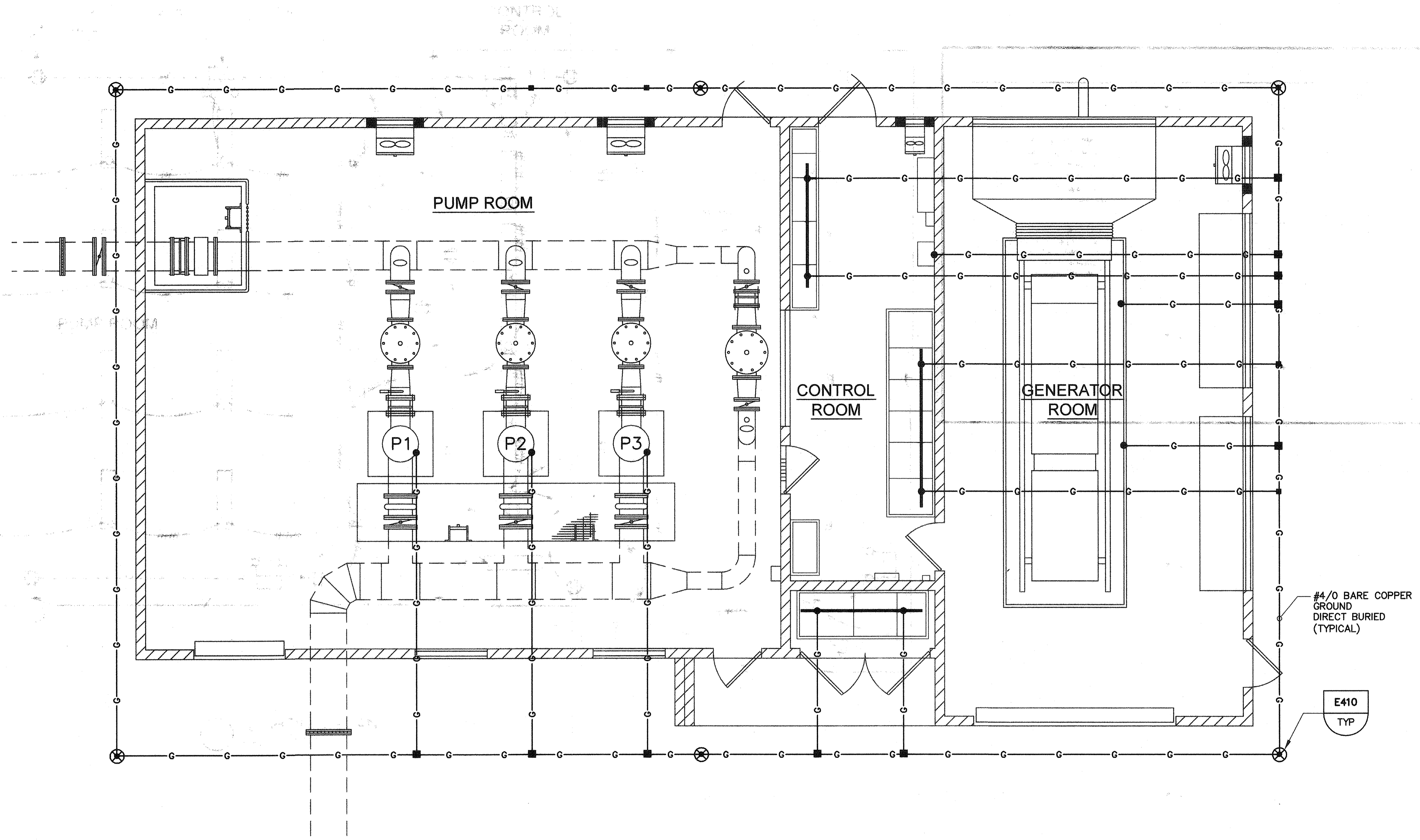
**HIGH LEVEL  
PUMP STATION No. 2  
LIGHTING PLAN**



**E-10**  
**50 OF 77**

H:\DATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-1-10-12-2006\203\_E-10.DWG NGUYEN 8/7/07 3:53 pm

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

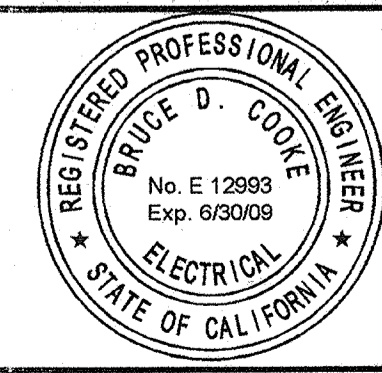


**GROUNDING PLAN**  
SCALE: 1/4" = 1'-0"

BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

CAUTION  
OVERHEAD ELECTRICAL  
FACILITIES EXIST WITHIN  
PROJECT AREA

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*Bruce Cooke*  
BRUCE D. COOKE 12993 02/09/07  
R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

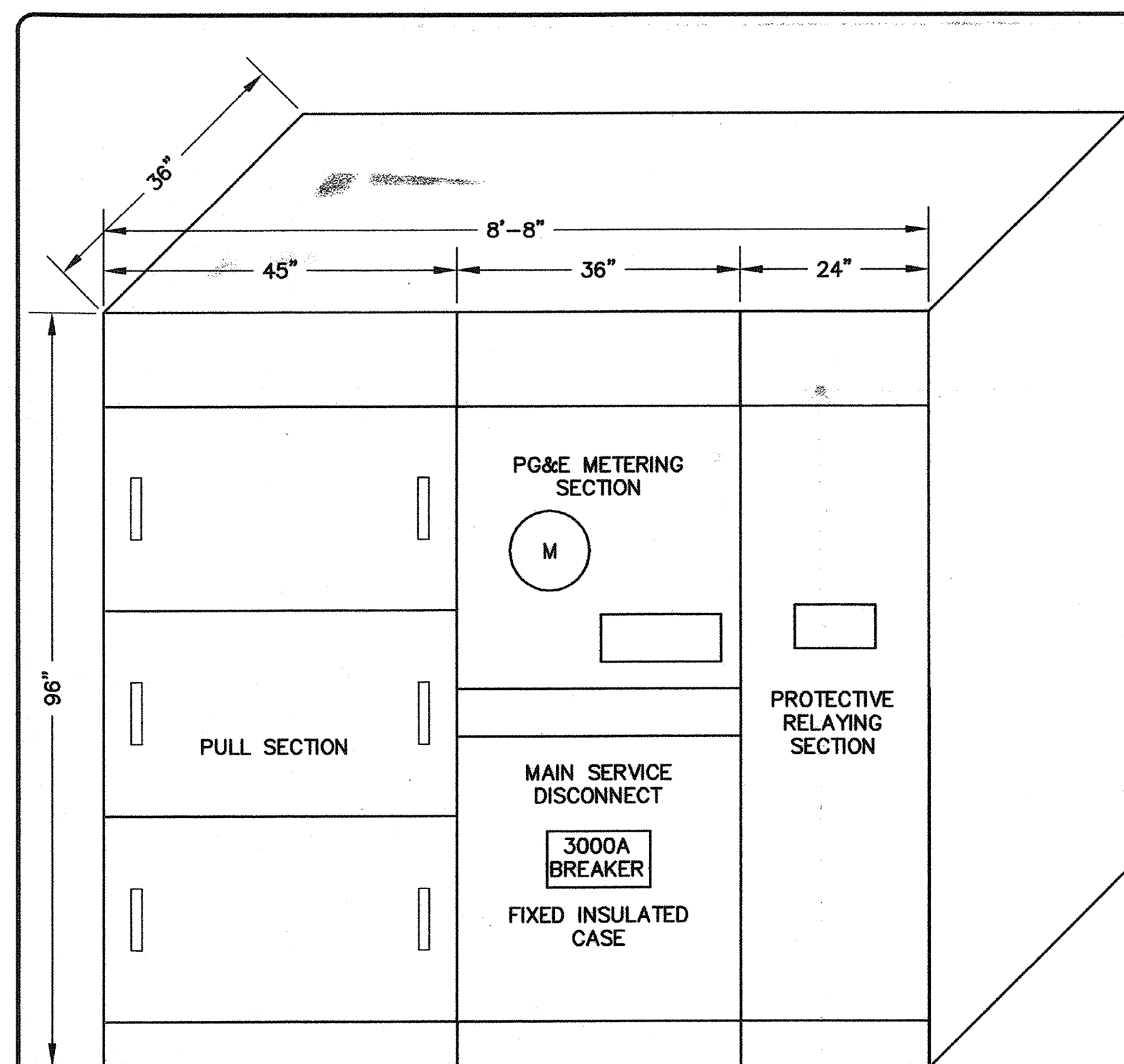
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
GROUNDING PLAN**

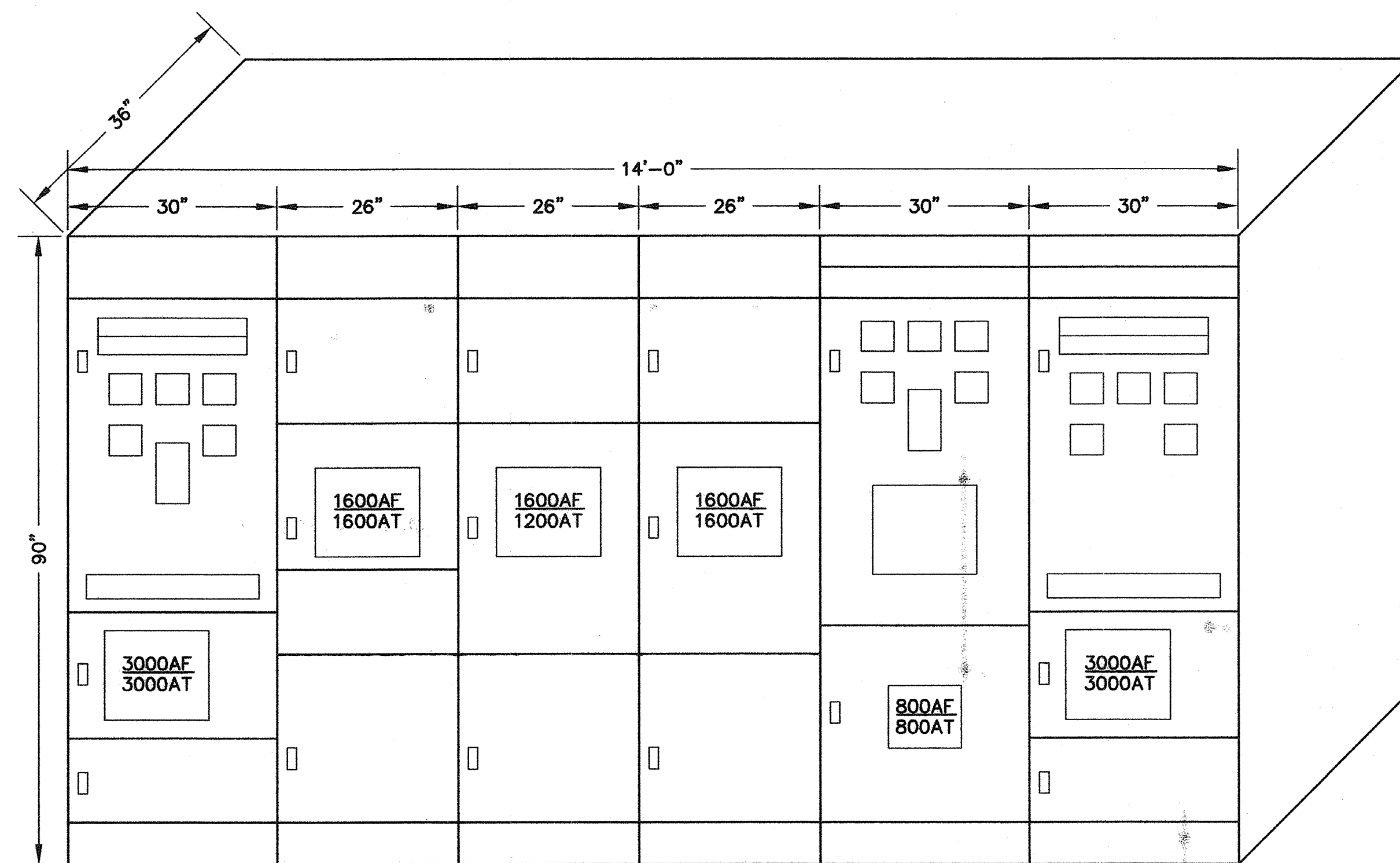


**E-11**  
51 OF 77

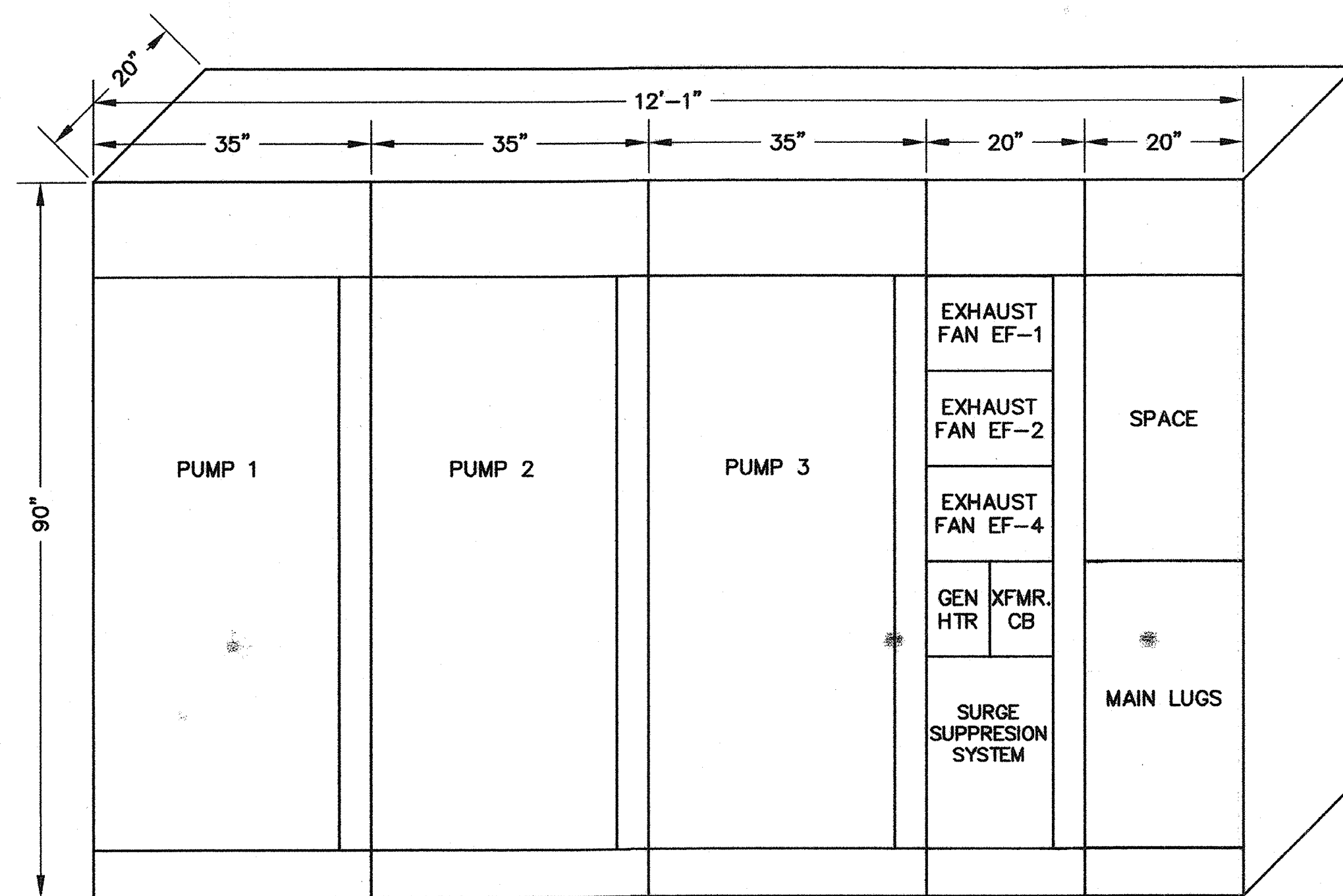
H:\DATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-1-10-12-2006\203\_E-11.DWG TNGUYEN 8/1/07 3:54 pm



**A** MAIN SERVICE SWITCHBOARD "MSN" (1)  
SCALE: NTS



**B** PEAK POWER SWITCHBOARD (1)  
SCALE: NTS



**C** MCC-1  
SCALE: NTS

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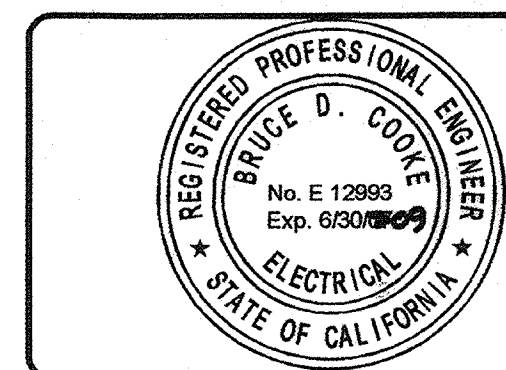
CAUTION  
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NOTES:  
(1) THIS SWITCHBOARD IS A DEAD-FRONT SWITCHBOARD  
WITH GENERAL ARRANGEMENT AS SHOWN. THE  
MANUFACTURER SHALL MAKE SURE THAT CABLE  
TERMINATIONS BE ACCESSIBLE FROM THE FRONT OF  
THE SWITCHBOARD, EXCEPT FOR END UNITS  
WHICH ARE ALSO SIDE ACCESSIBLE.

VOLTS 120/208		PHASE 3		WIRE 4		PANEL A		LOCATION CONTROL ROOM		MAIN BRKR/ MLO 50A		BUS RATING 100A		MOUNTING WALL					
DESCRIPTION	LTG	REC	MIS	VOLT-AMPS			BRKR AMP	P	CIR	CIR	BRKR AMP	P	VOLT-AMPS			LTG	REC	MIS	DESCRIPTION
				A	B	C							A	B	C				
CONTROL RM		5		900			20	1	1		2	20	1	1010			17		GEN RM, CTRL RM, PG&E RM
PUMP ROOM		6			1080		20	1	3		4	20	1		1124		18		PUMP RM
EXTERIOR LTG		7				630	20	1	5		6	20	1			900		5	GEN RM, PG&E RM
CONTROL PNL "PS2"			1	550			20	1	7		8	20	2	1000					
GAS DET. CONT. PNL			1	300			20	1	9		10	20	2	1000					1 SWBD PWR BATT. CHARGER
BATTERY CHARGER			1			500	20	1	11		12	20	1						SPARE
FIT-12			1	100			40	1	13		14	20	1						SPARE
SPARE							20	1	15		16	20	1						SPARE
EF-3			1			700	20	1	17		18	20	1			200		1	EXTERIOR LTG. CONTROLLER
SPARE							20	1	19		20	20	1						SPARE
SPARE							20	1	21		22	20	1						SPARE
MOTION DETECTION			1			250	20	1	23		24	20	1			100		1	FIT-5
SPARE							20	1	25		26	20	1						SPARE
							20	1	27		28	20	1						
							20	1	29		30	20	1						
							20	1	31		32	20	1						
							20	1	33		34	20	1						
							20	1	35		36	20	1						
SPACE							20	1	37		38	20	1						SPACE
							20	1	39		40	20	1						
							20	1	41		42	20	1						
							20	1	42										

	1550	1380	2080	2010	2124	1200	
LOAD	A# 3560	B# 3504	C# 3280				
LCL x .25							
TOTAL	3560	3504	3280				
PANEL TOTAL	10244	VOLT-AMPS		28.5	AMPS		
HIGH LEG	3560	VOLT-AMPS		29.7	AMPS		



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Bruce D. Cooke 12993  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:  
**HIGH LEVEL  
PUMP STATION No. 2  
SCHEDULE AND ELEVATION DETAIL**



**E12**  
**52 OF 77**

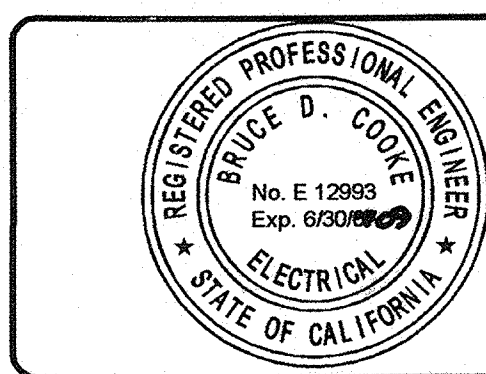
PLAN SYMBOL	CONDUIT	CONDUCTOR		INSULATION RATING	LOCATION		DWG. NOS	REMARKS
		QTY.	SIZE		QTY. & SIZE	FROM		
1P	2 4"	-	-	600V	(E) PG&E POWER POLE	NEW PG&E SERVICE XFMR.	E2	CONDUIT ONLY (CABLE BY PG&E)
2P	9 5"	-	-		NEW PG&E SERVICE XFMR.	MAIN SWITCHBOARD "MSN"	E2	CONDUIT ONLY (CABLE BY PG&E)
3P	9 4"	3#750	KCMIL, 1-500KCMIL G		SWITCHBOARD "MSN"	PEAK POWER SWITCHBOARD	E9	POWER (9 CONDUCTOR PER PHASE)
4P	9 4"	3#750	KCMIL, 1-500KCMIL G		PEAK POWER SWITCHBOARD	NATURAL GAS GENERATOR	E9	POWER (9 CONDUCTOR PER PHASE)
5P	4 5"	3#750	KCMIL, 1#250KCMIL G		PEAK POWER SWITCHBOARD	MCC-1	E9	POWER (4 CONDUCTOR PER PHASE)
6P	3 5"	3#750	KCMIL, 1#4/0 G		PEAK POWER SWITCHBOARD	EXISTING SWITCHBOARD "MSB"	E2	VIA MANHOLES EMH-12, 13 AND PB-E2
7P	4 5"	3#750	KCMIL, 1#250KCMIL G		PEAK POWER SWITCHBOARD	EXISTING HLPS NO. 1 MCC-PS	E2	VIA MANHOLES EMH-11 AND PB-E1
8P	2 4"	-	-		PEAK POWER SWITCHBOARD	MANHOLE EMH-11		CONDUIT ONLY
9P	1 3/4"	2#12, 1#12G			PANEL 'A'	GAS DET. CONTROL PANEL	E9	POWER (A-9)
10C	2 2"	2(37C/#14)			CONTROL PANEL "PS-2"	MCC-1	E9	
11C	1 1"	-	-		CONTROL PANEL "PS-2"	PEAK POWER SWITCHBOARD	E9	CONDUIT ONLY
12A	1 1"	-	-		CONTROL PANEL "PS-2"	PEAK POWER SWITCHBOARD	E9	CONDUIT ONLY
13P	2 3"	3#500	KCMIL, 1#4/0G EACH		PUMP-1	MCC-1	E9	POWER (2 CONDUCTOR PER PHASE)
14C	1 1"	14#14, 4#14	SPARE		PUMP-1	MCC-1	E9	(ZSO/ZSC-1, SOV-1, PSH-1&LOS-1)
15P	2 3"	3#500	KCMIL, 1#4/0G EACH		PUMP-2	MCC-1	E9	POWER (2 CONDUCTOR PER PHASE)
16C	1 1"	14#14, 4#14	SPARE		PUMP-2	MCC-1	E9	(ZSO/ZSC-2, SOV-2, PSH-2&LOS-2)
17P	2 3"	3#500	KCMIL, 1#4/0G EACH		PUMP-3	MCC-1	E9	POWER (2 CONDUCTOR PER PHASE)
18C	1 1"	14#14, 4#14	SPARE		PUMP-3	MCC-1	E9	(ZSO/ZSC-3, SOV-3, PSH-3&LOS-3)
19P	1 1"	3#12, 1#12	G		EF-1	MCC-1	E9	
20P	1 1"	3#12, 1#12	G		EF-2	MCC-1	E9	
21P	1 1"	3#12, 1#12	G		JACKET HEATER	MCC-1 VIA DISC. SWITCH	E9	
22C	1 1"	-	-		GENERATOR CONTROL PANEL	CONTROL PANEL "PS-2"	E9	CONDUIT ONLY
23A	1 1"	-	-		GENERATOR CONTROL PANEL	CONTROL PANEL "PS-2"	E9	CONDUIT ONLY
24C	1 1"	-	-		SWITCHBOARD "MSN"	CONTROL PANEL "PS-2"	E9	CONDUIT ONLY
25A	1 1"	-	-		SWITCHBOARD "MSN"	CONTROL PANEL "PS-2"	E9	CONDUIT ONLY
26A	1 3/4"	2(2C#16)	SHLD, 2#16 SPARE		FIT-5	CONTROL PANEL "PS-2"	E9	
27C	1 1"	-	-		MCC-1	CONTROL PANEL "PS-2"	E9	SPARE
28A	1 1"	-	-		MCC-1	CONTROL PANEL "PS-2"	E9	SPARE
29A	1 3/4"	1(2C#16)	SHLD		PIT-4	CONTROL PANEL "PS-2"	E9	
30A	1 3/4"	1(2C#16)	SHLD		PIT-5	CONTROL PANEL "PS-2"	E9	
31A	1 3/4"	2(2C#16)	SHLD, 2#16 SPARE		FIT-12	CONTROL PANEL "PS-2"	E9	
32A	1 3/4"	1(2C#16)	SH		GAS DETECTION SENSOR 1A	GAS DET. CONTROL PANEL	E9	SIGNAL
33A	1 3/4"	1(2C#16)	SH		GAS DETECTION SENSOR 1B	GAS DET. CONTROL PANEL	E9	SIGNAL
34A	1 1"	CAT 5	ETHERNET CABLE	300V	ETHERNET SWITCH PS2	PEAK POWER SWITCHBOARD	I3	
35A	1 -	CAT 5	ETHERNET CABLE		ETHERNET SWITCH PS2	PLC ETHERNET	I3	INTERNAL WIRING
36A	1 1"	CAT 5	ETHERNET CABLE		ETHERNET SWITCH	EXISTING LAN	I3	
37A	1 -	CAT 5	ETHERNET CABLE		ETHERNET SWITCH PS2	FOM	I3	INTERNAL WIRING
38A	1 2"	FIBER OPTIC	CABLE		FOM (CONTROL PNL PS-2)	FOM (EXIST. CONTROL PANEL)	I3	VIA PULLBOXES PB-11, 12 & 13
39A	1 1"	TWISTED PAIR	RS-485		PLC (CONTROL PNL PS-2)	ENGINE/GEN. CONTROL PANEL	I3	
40A	1 -	CAT 5	ETHERNET CABLE		OIP	ETHERNET SWITCH	I3	INTERNAL WIRING
41A	1 -	CAT 5	ETHERNET CABLE		ETHERNET SWITCH	EXISTING PLC	I3	INTERNAL WIRING
42A	1 1"	CAT 5	ETHERNET CABLE		SWITCHBOARD "MSN"	ENGINE/GEN. CONTROL PANEL	I3	
43A	1 3/4"	1(2C#16)	SHLD		GAS DETECTION SENSOR 1C	GAS DET. CONTROL PANEL	E9	SIGNAL
44A	1 3/4"	1(2C#16)	SHLD		GAS DETECTION SENSOR 1D	GAS DET. CONTROL PANEL	E9	SIGNAL
45A	1 2"	6(3C#18)	SHLD	300V	PUMP-1 MOTOR	MCC-1	E9	RTDs
46A	1 2"	6(3C#18)	SHLD	300V	PUMP-2 MOTOR	MCC-1	E9	RTDs
47A	1 2"	6(3C#18)	SHLD	300V	PUMP-3 MOTOR	MCC-1	E9	RTDs
48P	1 1"	3#12, #12	GND	600V	EF-4	MCC-1	E9	
49C	1 3/4"	2#14		600V	THERMOSTAT (EF-1)	MCC-1	E9	
50C	1 3/4"	2#14		600V	THERMOSTAT (EF-2)	MCC-1	E9	
51C	1 3/4"	2#14		600V	THERMOSTAT (EF-4)	MCC-1	E9	
52C	1 3/4"	2#14		600V	GAS DET. CONTROL PANEL	CONTROL PANEL "PS-2"	E9	CONTROL
53A	1 1 1/2"	4(2C#16)	SHLD	600V	GAS DET. CONTROL PANEL	CONTROL PANEL "PS-2"	E9	SIGNAL
54C	1 3/4"	2#14		600V	MOTION DETECTOR	CONTROL PANEL "PS-2"	E9	
55C	1 1"	CONDUIT ONLY		600V	GENERATOR CONTROL PANEL	PEAK POWER SWITCHBOARD	E9	
56P	1 3/4"	3#10, 1#10G		600V	MCC-1	TRANSFORMER (T-1)	E9	
57P	1 1"	4#6, 1#6G		600V	TRANSFORMER (T-1)	POWER PANEL (PNL 'A')	E9	
58A	1 1"	2(2C#16)	SHLD		CONTROL PANEL "PS-2"	J-BOX AT PIT-4	E9	

A CONDUIT SCHEDULE  
SCALE: NTS

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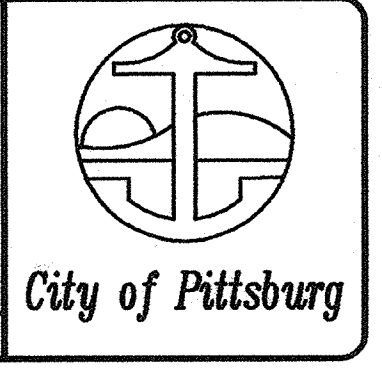


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Bruce D. Cooke 12993 R.E.E. NO. 02/02/09 DATE

NO.	DATE	APPROV.	REVISION

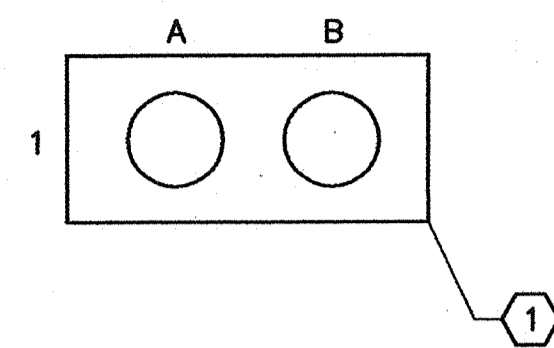
DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:  
**HIGH LEVEL  
PUMP STATION No. 2  
CONDUITS SCHEDULE**



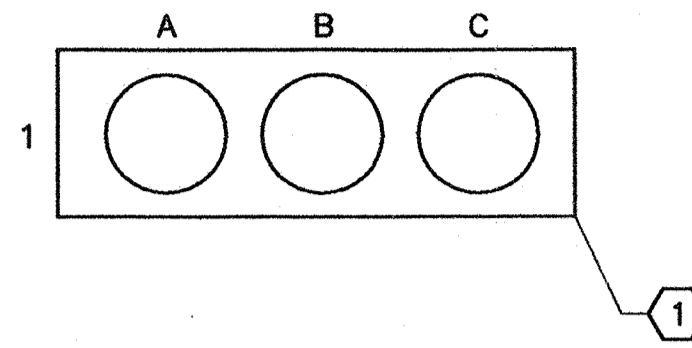
**E13**  
**53 OF 77**

H:\PDATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-1-10-12-2008\203\_E-13.DWG TINGUEN 2/16/07 9:42 am



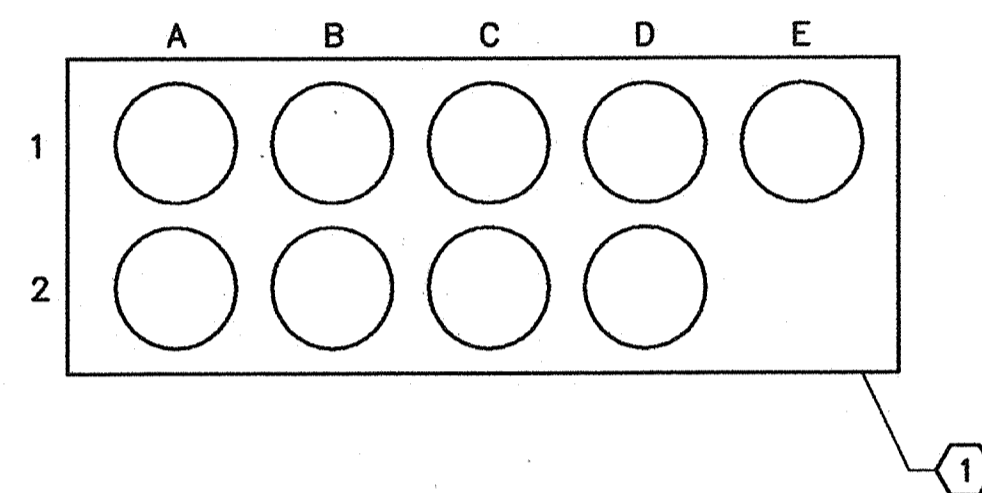
NO.	SIZE	CONDUIT DESIGNATION
A1	4"	CP
B1	4"	

**A**  
SECTION A-A  
SCALE: NTS



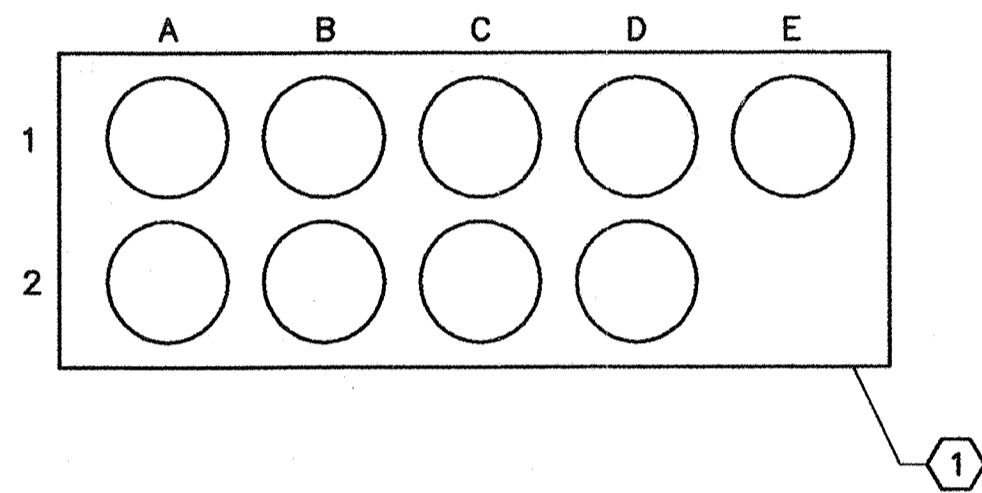
NO.	SIZE	CONDUIT DESIGNATION
A1	5"	CP
B2	5"	
C3	5"	

**D**  
SECTION D-D  
SCALE: NTS



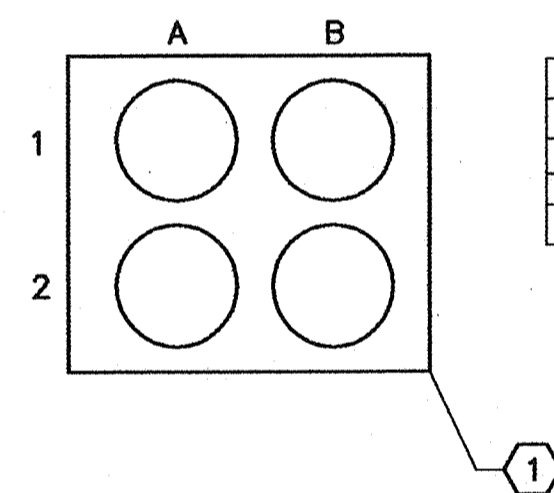
NO.	SIZE	CONDUIT DESIGNATION
A1	5"	2P
A2	5"	
B1	5"	
B2	5"	
C1	5"	
C2	5"	
D1	5"	
D2	5"	
E1	5"	
E2	5"	

**B**  
SECTION B-B  
SCALE: NTS



NO.	SIZE	CONDUIT DESIGNATION
A1	4"	3P
A2	4"	
B1	4"	
B2	4"	
C1	4"	
C2	4"	
D1	4"	
D2	4"	
E1	4"	
E2	4"	

**E**  
SECTION E-E  
SCALE: NTS



NO.	SIZE	CONDUIT DESIGNATION
A1	5"	SP
A2	5"	
B1	5"	
B2	5"	

**C**  
SECTION C-C  
SCALE: NTS

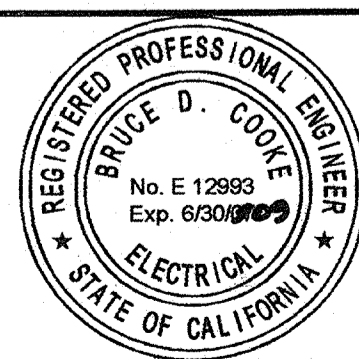
**NOTES:**

1 THIS DUCTBANK SHALL BE CONCRETE ENCASED REINFORCED WITH REBARS. SEE DETAIL E-102 ON DRAWING E15.

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12993 08/00/07  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

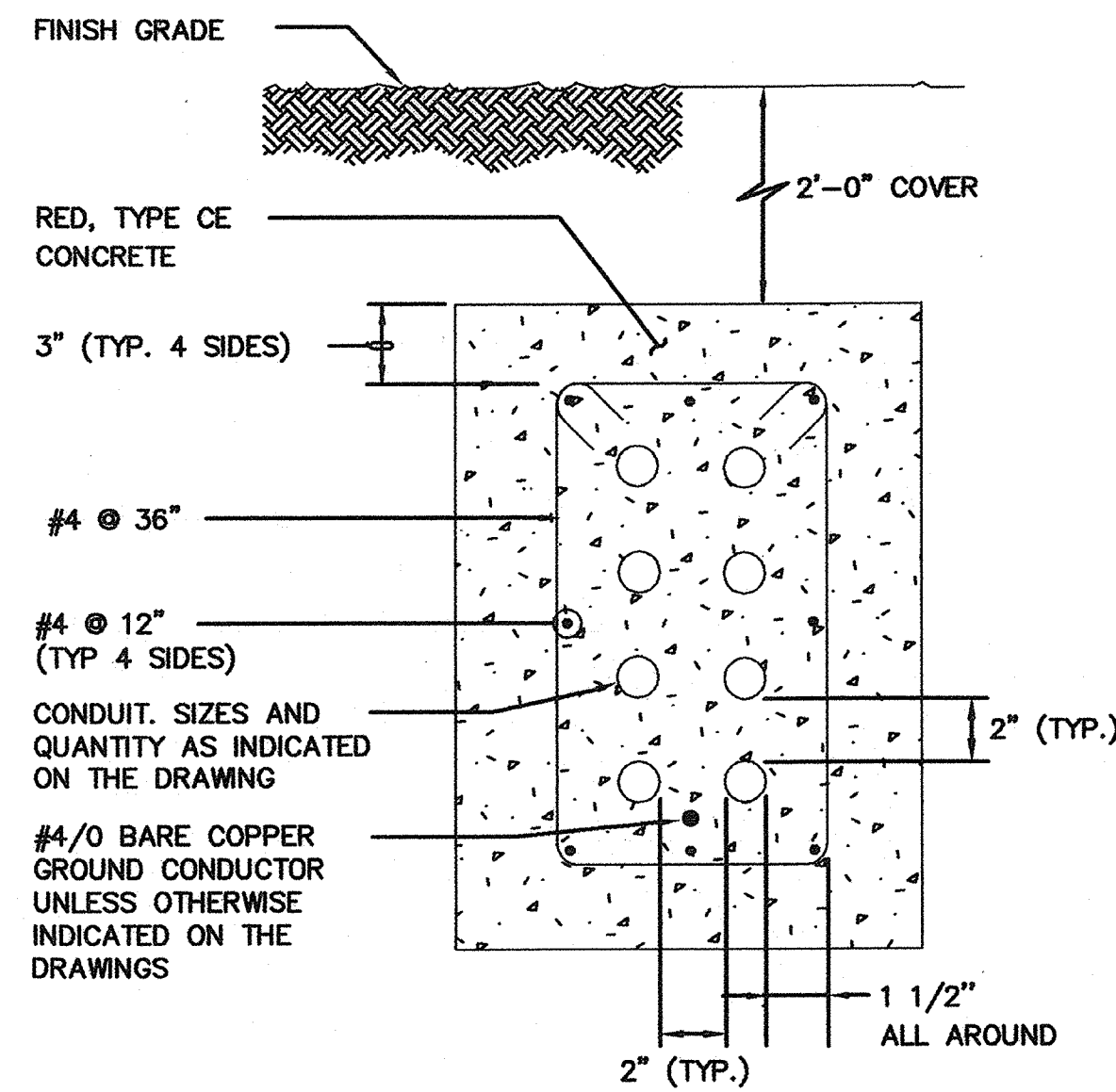
DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
DUCTBANK CROSS SECTION**

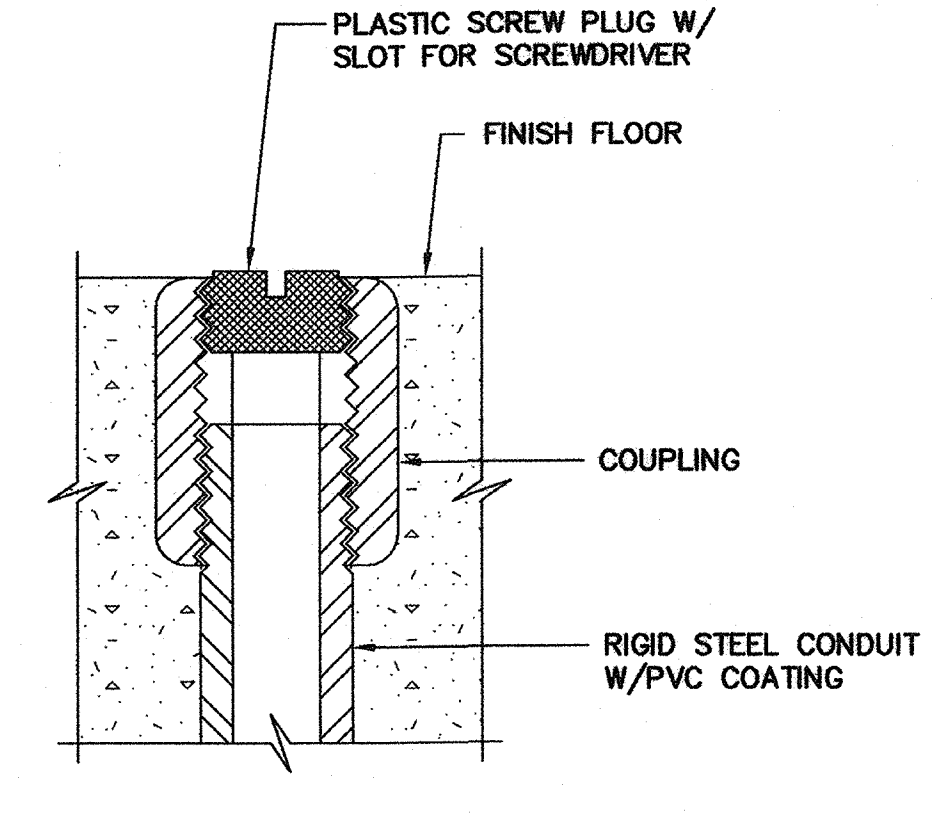


**E14**  
**54 OF 77**

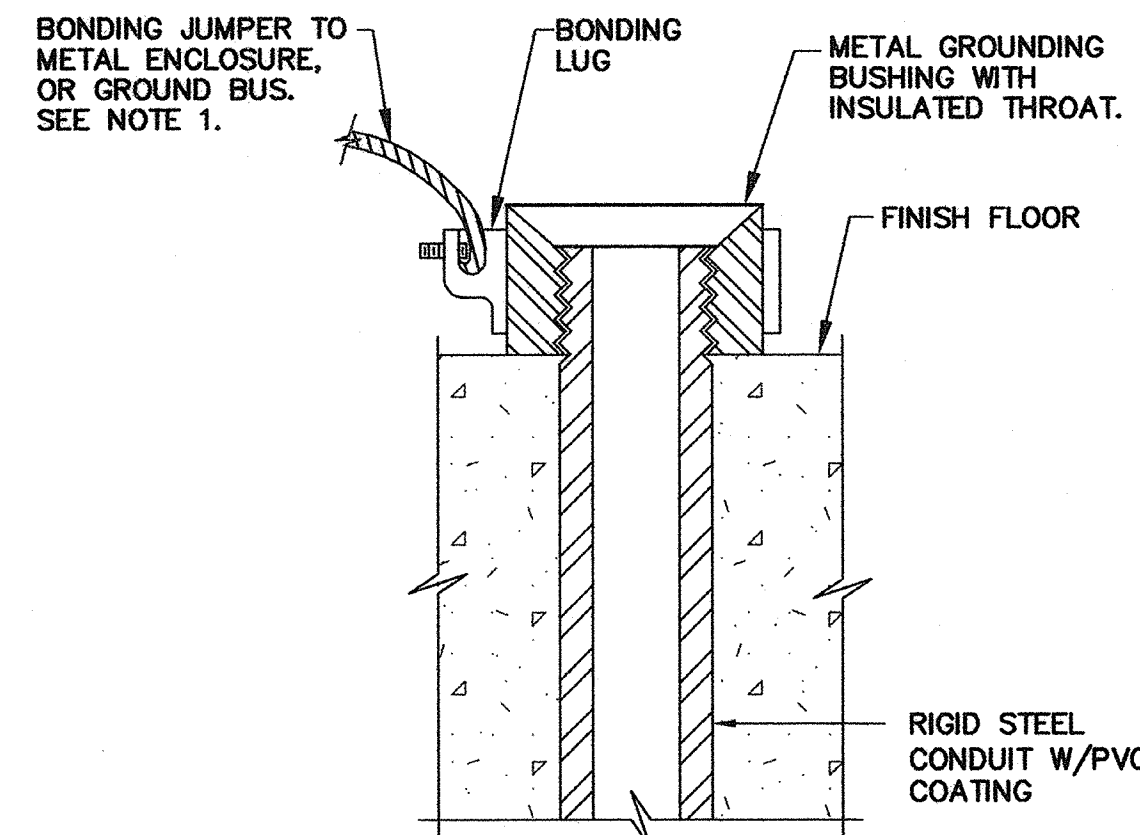


**NOTES:**  
1. DIMENSIONS ARE MINIMUM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

**E102 REINFORCED CONCRETE DUCTBANK**  
TYP SCALE: NTS



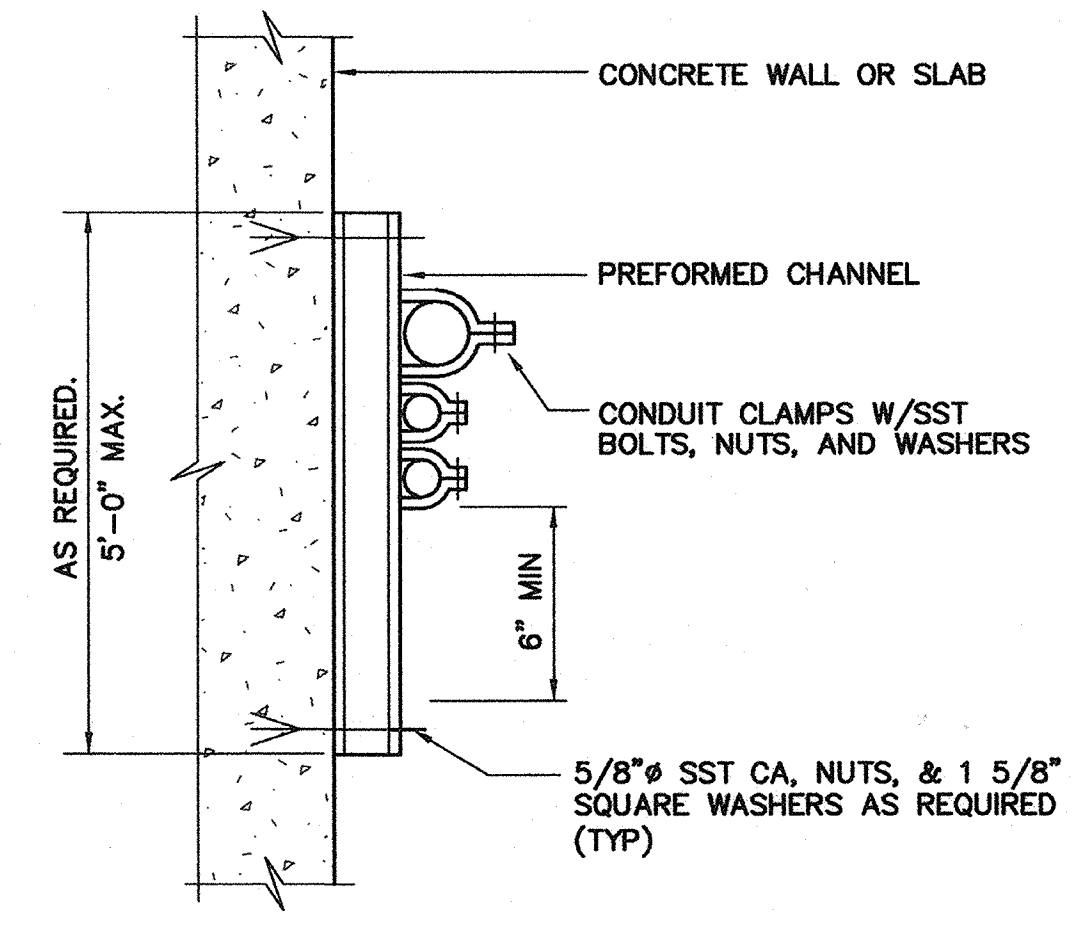
**SPARE RACEWAY FLOOR STUB-UP**



**FLOOR STUB-UP INTO ELECTRICAL ENCLOSURES**

**NOTE:**  
1. SIZE BONDING JUMPER PER NEC, ARTICLE 250.

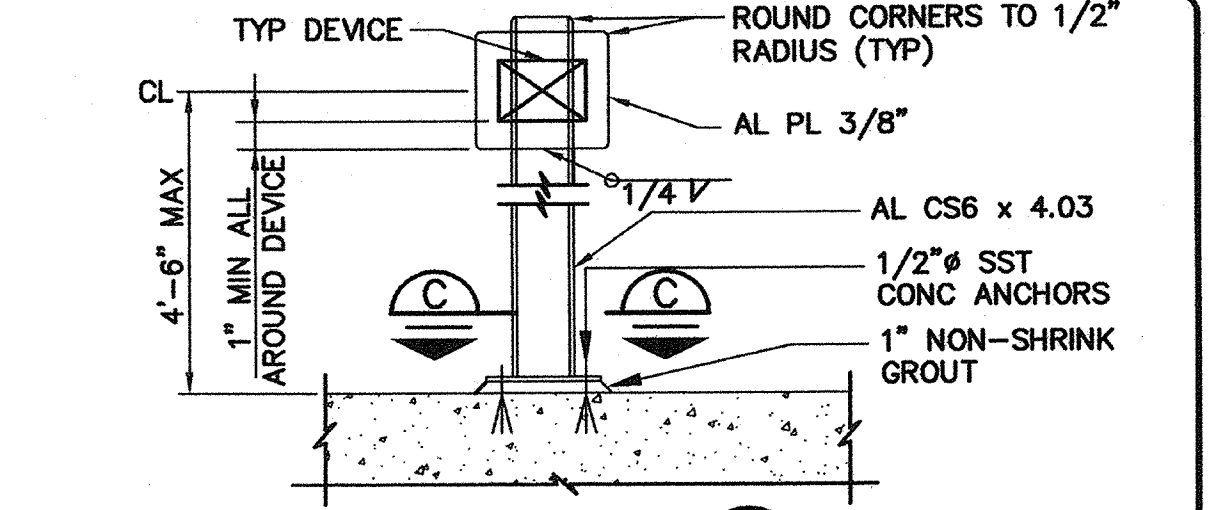
**E150 CONDUIT FLOOR STUB-UP**  
TYP



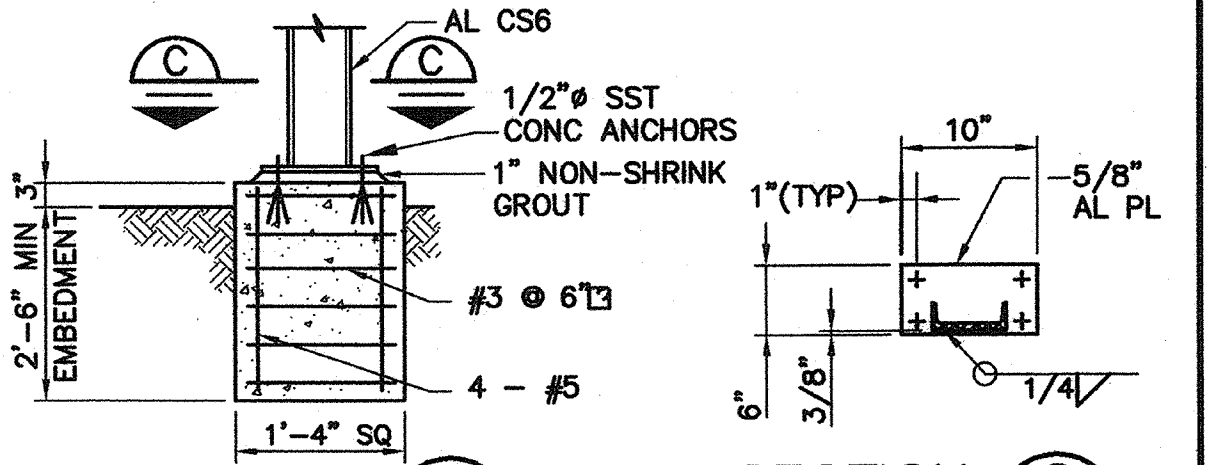
**E340 CONDUIT SUPPORT**

**NOTES:**  
1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.  
2. PREFORMED CHANNEL, FITTINGS, AND CLAMPS SHALL BE HOT-DIP GALVANIZED STEEL. FIELD COAT ALL CUTS PER SPECIFICATIONS.  
3. CHANNELS TO BE SPACED AT 5'-0" OC MAXIMUM.

**E340 CONDUIT SUPPORT**  
TYP



**ELEVATION A**  
SCALE: NTS

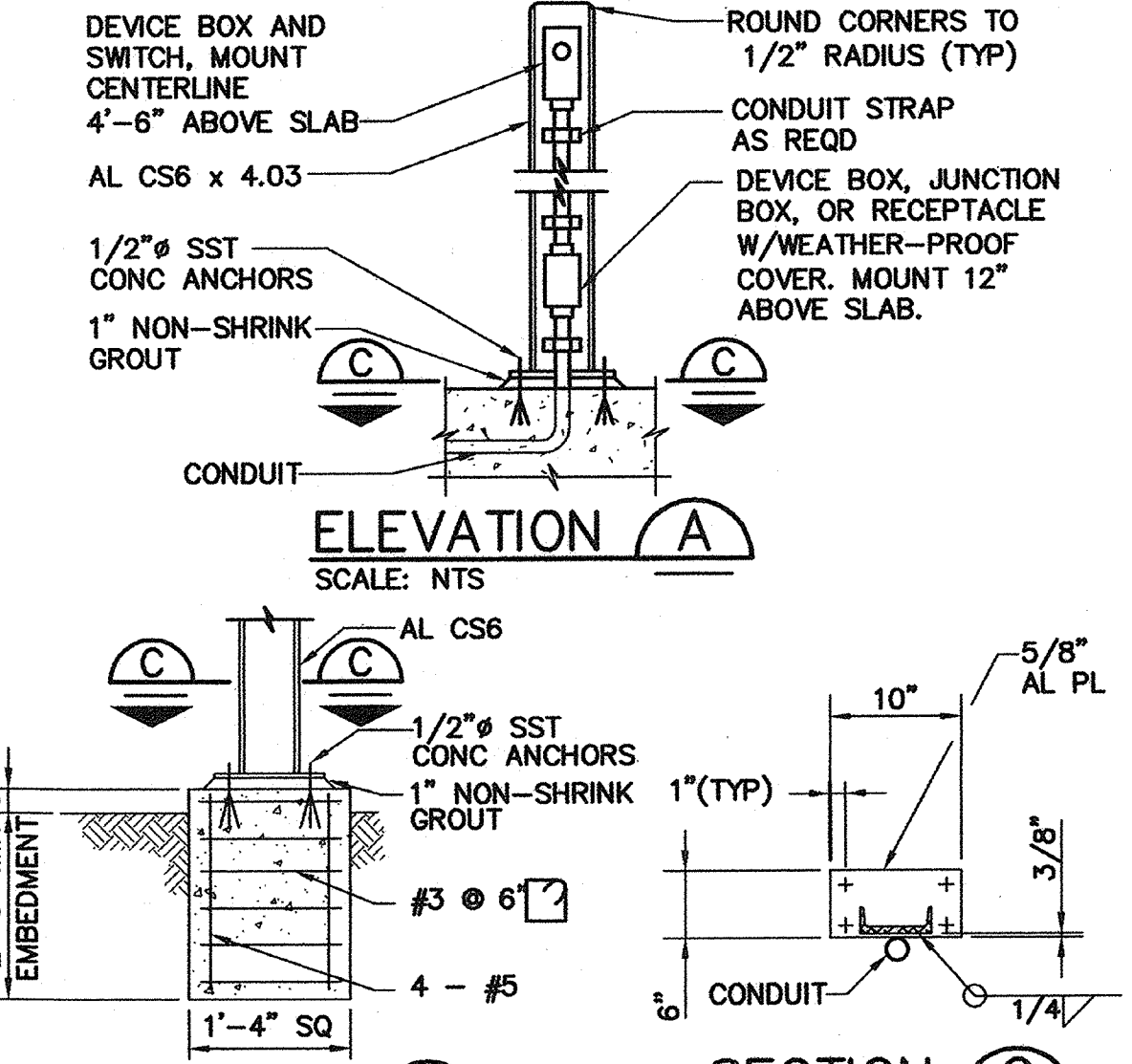


**ELEVATION B**  
SCALE: NTS

**SECTION C**  
SCALE: NTS

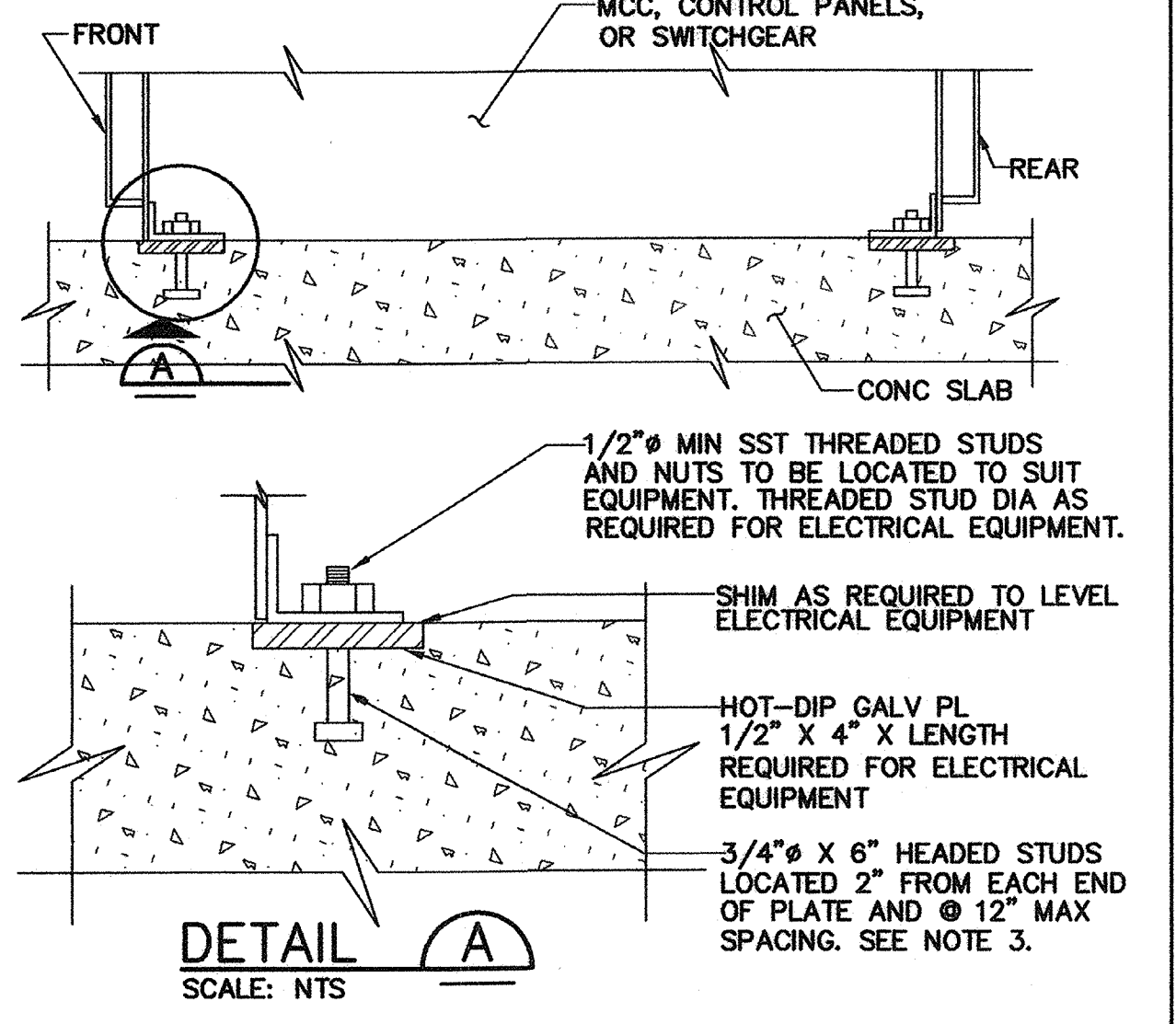
**NOTES:**  
1. WHERE SEPARATE FOUNDATION IS REQ'D, SEE (B).  
2. COAT ALUMINUM SURFACES IN CONTACT W/ CONCRETE PER SPECS.  
3. USE SST FASTENERS FOR MOUNTING DEVICES.  
4. WEIGHT OF DEVICE(S) SHALL NOT EXCEED 100 POUNDS.

**E330 DEVICE SUPPORT AND MOUNTING**  
TYP



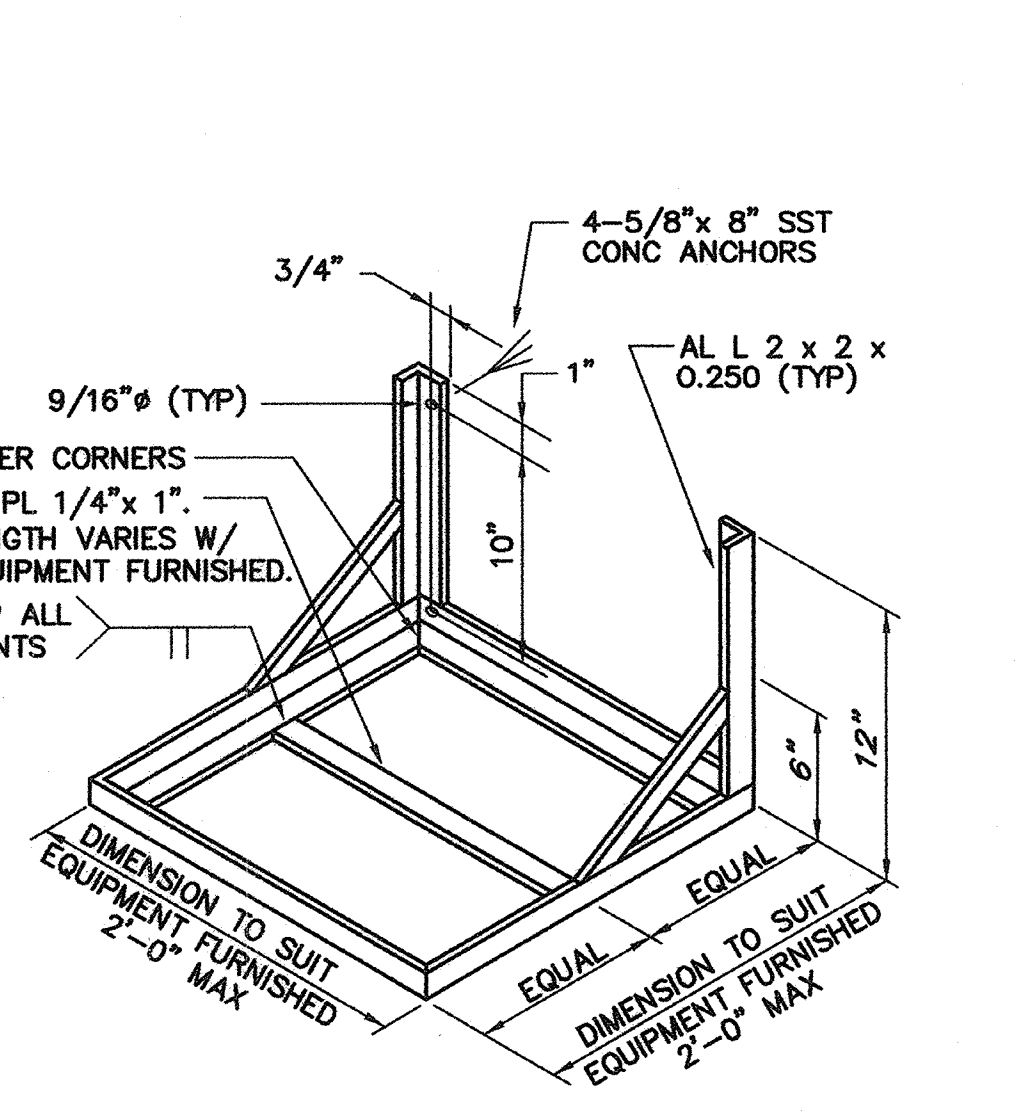
**NOTES:**  
1. WHERE SEPARATE FOUNDATION IS REQ'D, SEE (B).  
2. COAT ALUMINUM SURFACES IN CONTACT W/ CONCRETE PER SPECS.  
3. USE SST FASTENERS FOR MOUNTING DEVICES.

**E334 SWITCH AND RECEPTACLE SUPPORT MOUNTING**  
TYP



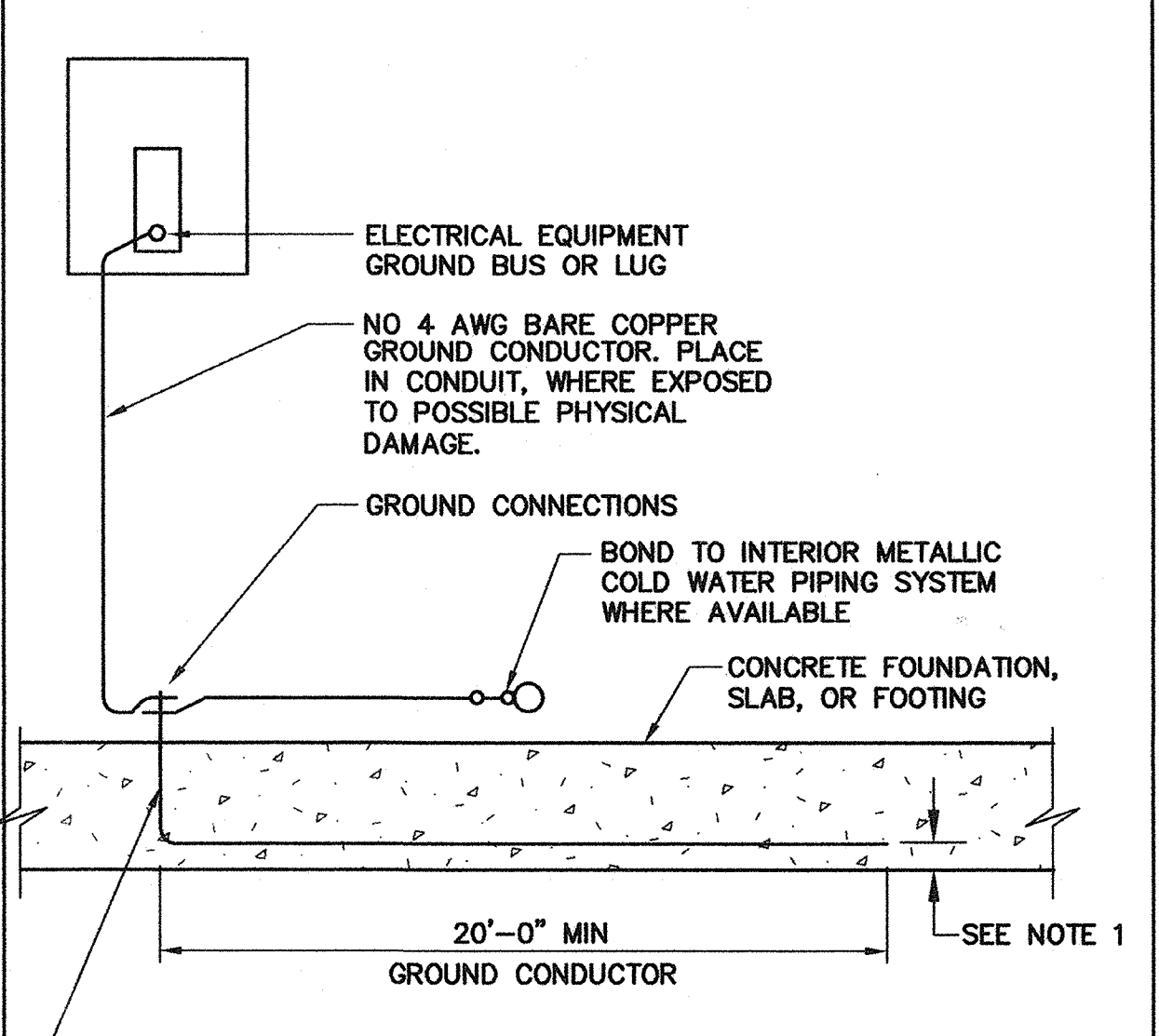
**NOTES:**  
1. LOCATION OF PLATE AND BOLTS SHALL BE PER APPROVED EQUIPMENT SHOP DRAWING.  
2. THE INSTALLED PLATE SHALL NOT DEVIATE FROM A STRAIGHT LINE BY MORE THAN 1/8" IN 10 FEET.  
3. THE SPACING OF HEADED STUDS ON THE PLATE SHALL BE REDUCED AS REQUIRED TO PREVENT OVERSTRESS OF THE PLATE AND HEADED STUDS DUE TO SEISMIC LOAD FROM THE ELECTRICAL EQUIPMENT SUPPLIED.

**E360 ELECTRICAL EQUIPMENT ANCHORAGE**  
TYP



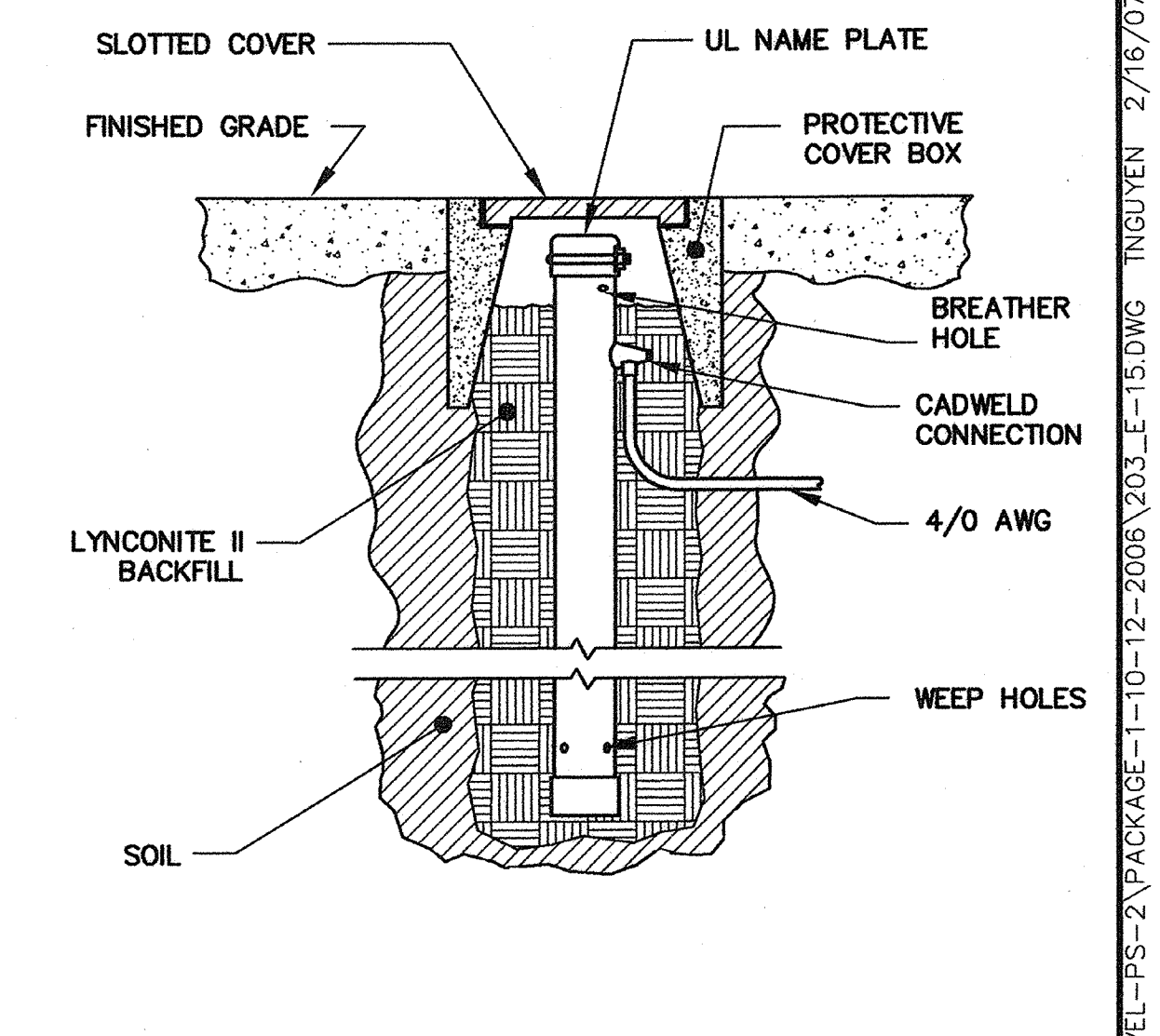
**NOTE:**  
1. MAXIMUM LOAD = 250 POUNDS.

**E380 ELECTRICAL EQUIPMENT MOUNTING BRACKET**  
TYP SCALE: NTS



**NOTE:**  
1. 1" CLEAR FOR ELEVATED SLABS.  
3" CLEAR FOR SLABS ON GRADE OR FOOTING.

**E402 CONCRETE ENCASED GROUND**  
TYP SCALE: NTS



**NOTES:**  
1. MANUFACTURER: LYNCOLE XIT GROUNDING.  
2. SHAFT CONFIGURATION: STRAIGHT. STANDARD LENGTHS: 10'.  
3. UL AND CSA LISTING: 467.  
4. ISO 9000 CERTIFIED.  
5. LYNCOLNITE II BACKFILL MEETS ANSI/NSF ENVIRONMENT STANDARD 60.  
6. MATERIAL: TYPE K COPPER 0.083" NOMINAL WALL THICKNESS.  
7. CONSTRUCTION: HOLLOW TUBE, 2.125" O.D., FILLED WITH NON-HAZARDOUS SALTS (CALSOLYTE).  
8. WEIGHT: 3.5 LBS PER LINEAR FOOT.  
9. STRAIGHT SHAFT MODEL NO: K2-10CS.

**E410 GROUND ROD DETAIL**  
TYP SCALE: NTS

BEFORE EXCAVATING CALL U.S.A. UNDERGROUND SERVICE ALERT (800) 227-2600 TWO WORKING DAYS BEFORE ALL PLANNED EXCAVATION WORK

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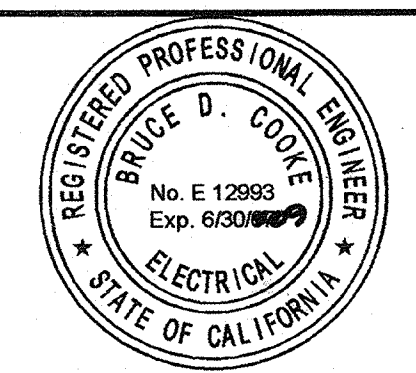
NO.	DATE	APPROV.	REVISION

DESIGNED: DN	APPROVED BY:
DRAWN: EA	
CHECKED: DTN, RBF	
REVIEWED:	
DATE: FEBRUARY, 2007	

**HIGH LEVEL PUMP STATION No. 2**  
**TYPICAL CONSTRUCTION DETAILS**

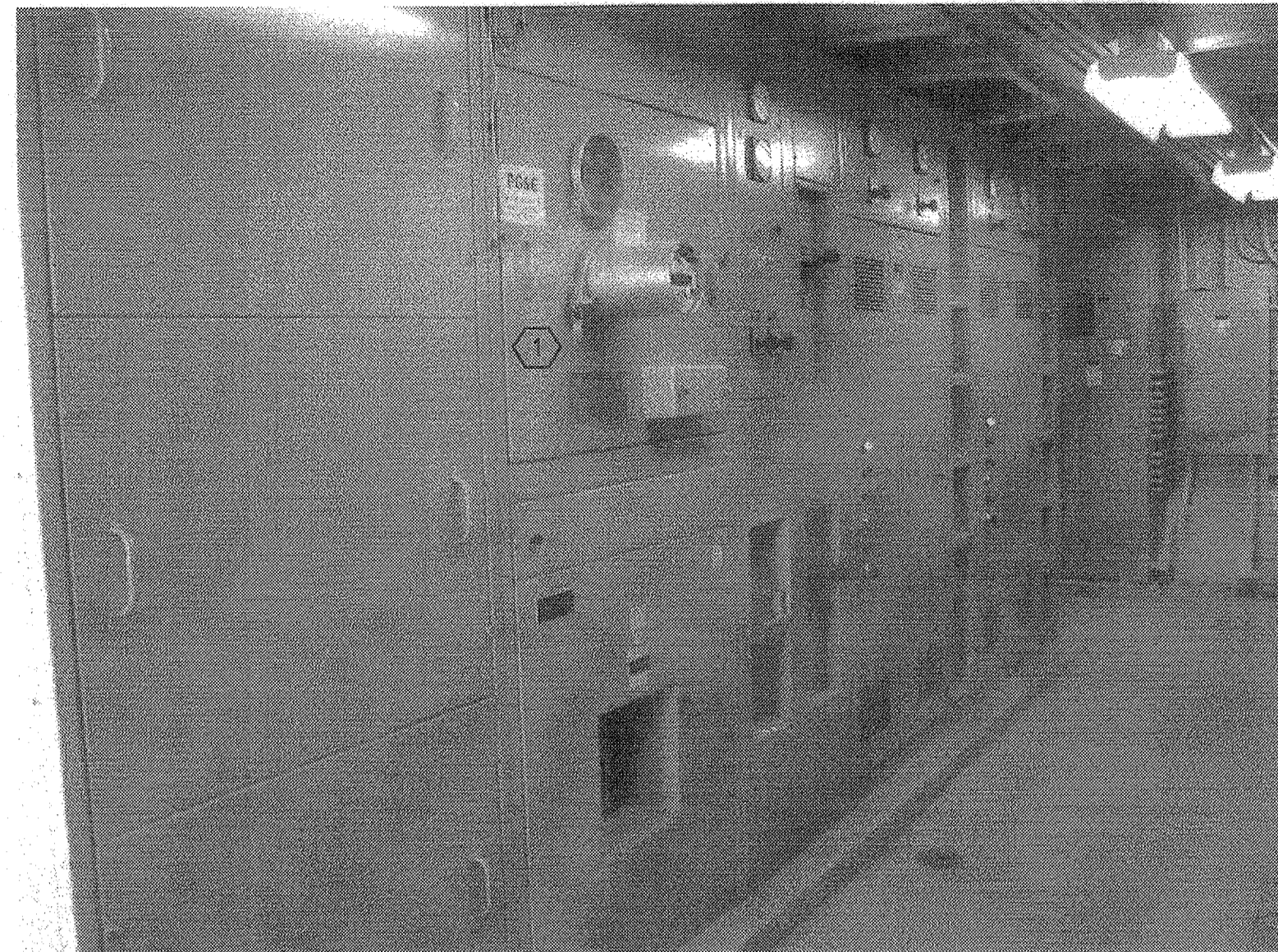


**E15**  
**55 OF 77**

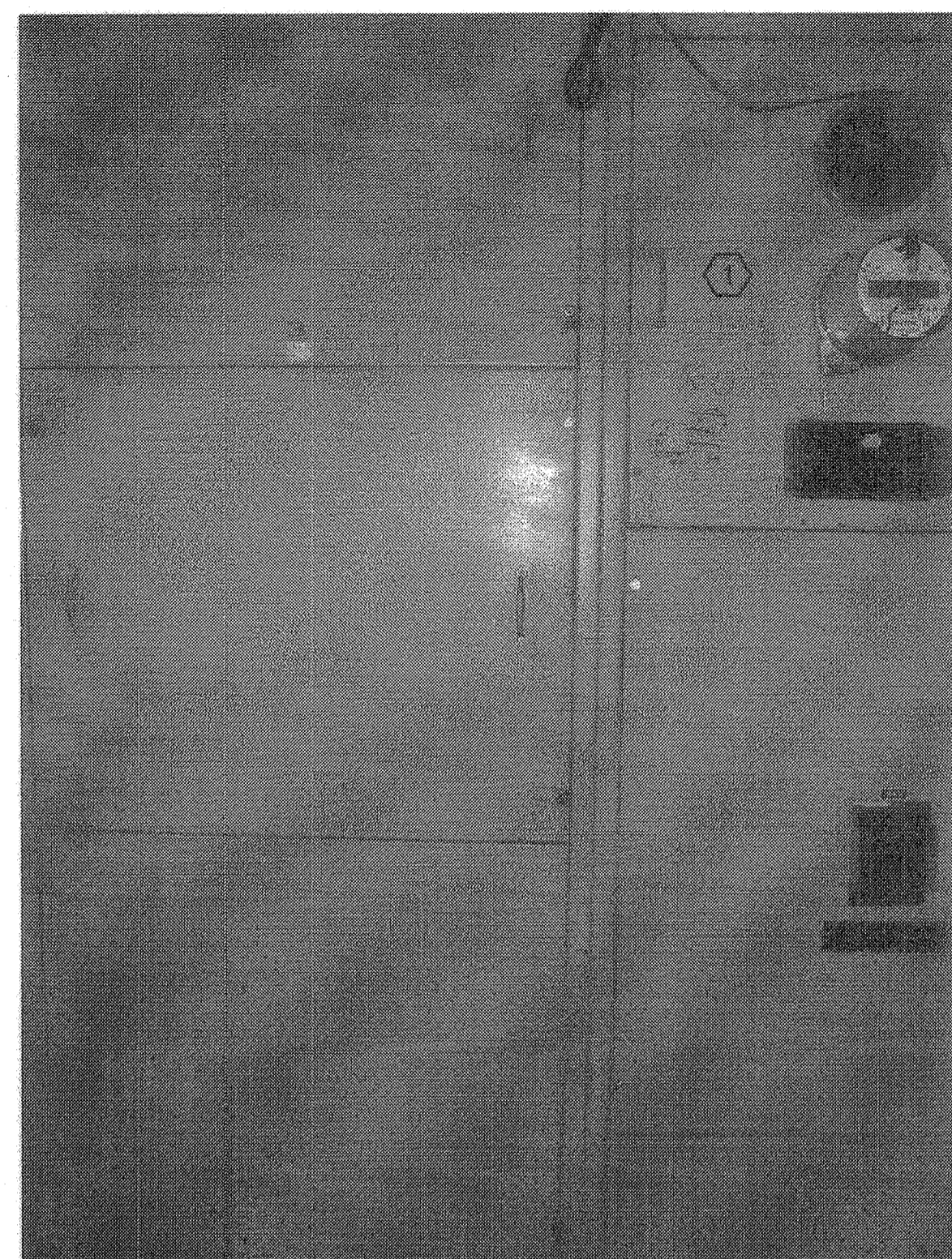


**RBF CONSULTING**  
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SACRAMENTO, CALIFORNIA 95834-2303  
916.928.1113 • FAX 916.928.1117 • www.RBF.com  
Bruce D. Cooke 12993 08/04/07  
BRUCE D. COOKE R.E.E. NO. DATE

H:\PDATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-1-10-12-2006\203\_E-15.DWG INGVNEN 2/16/07 9:45 am



**(E) PLANT MAIN SWITCHBOARD "MSB"**  
SCALE: 1" = 20'

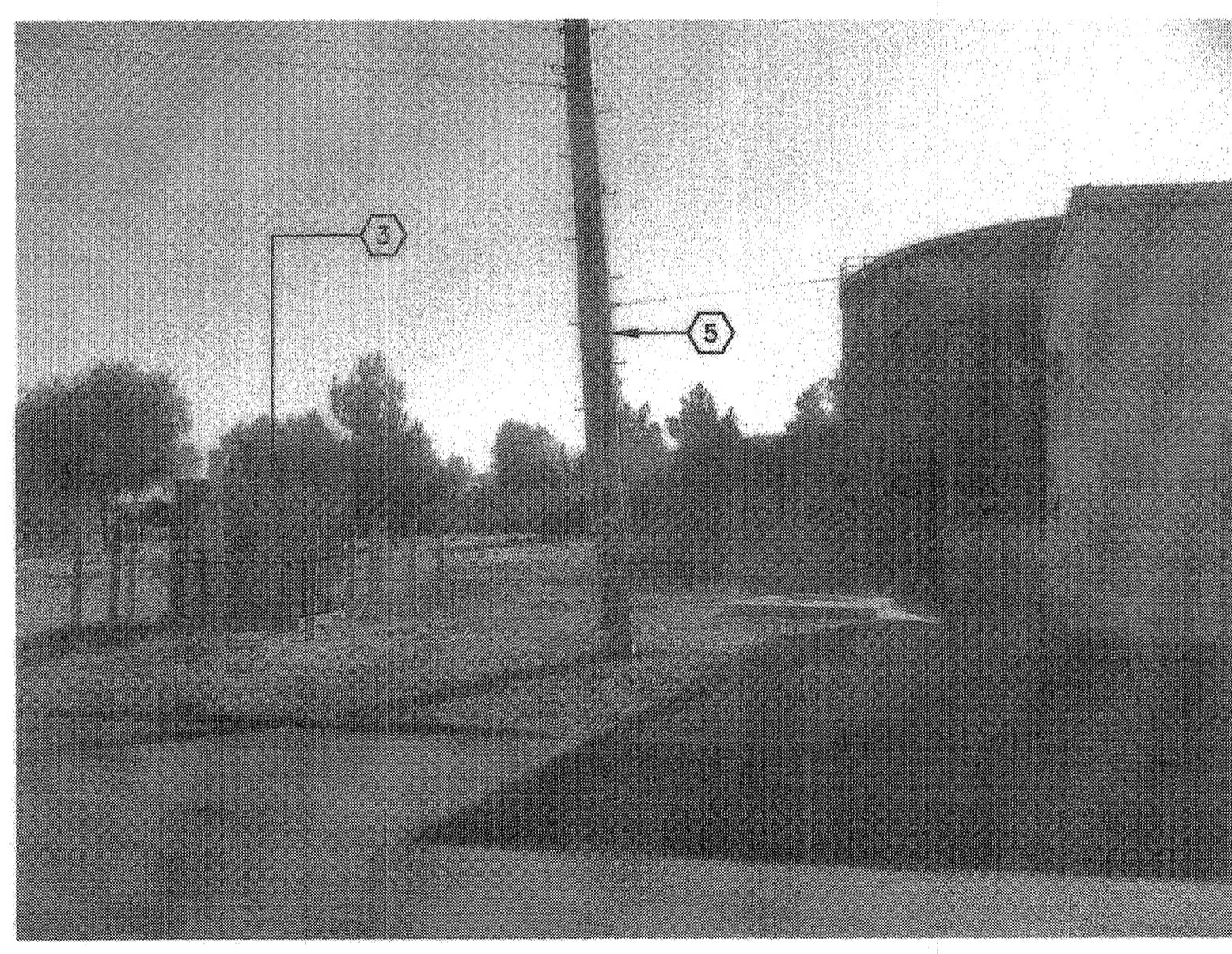


**(E) PUMP STATION METERING**  
SCALE: NTS

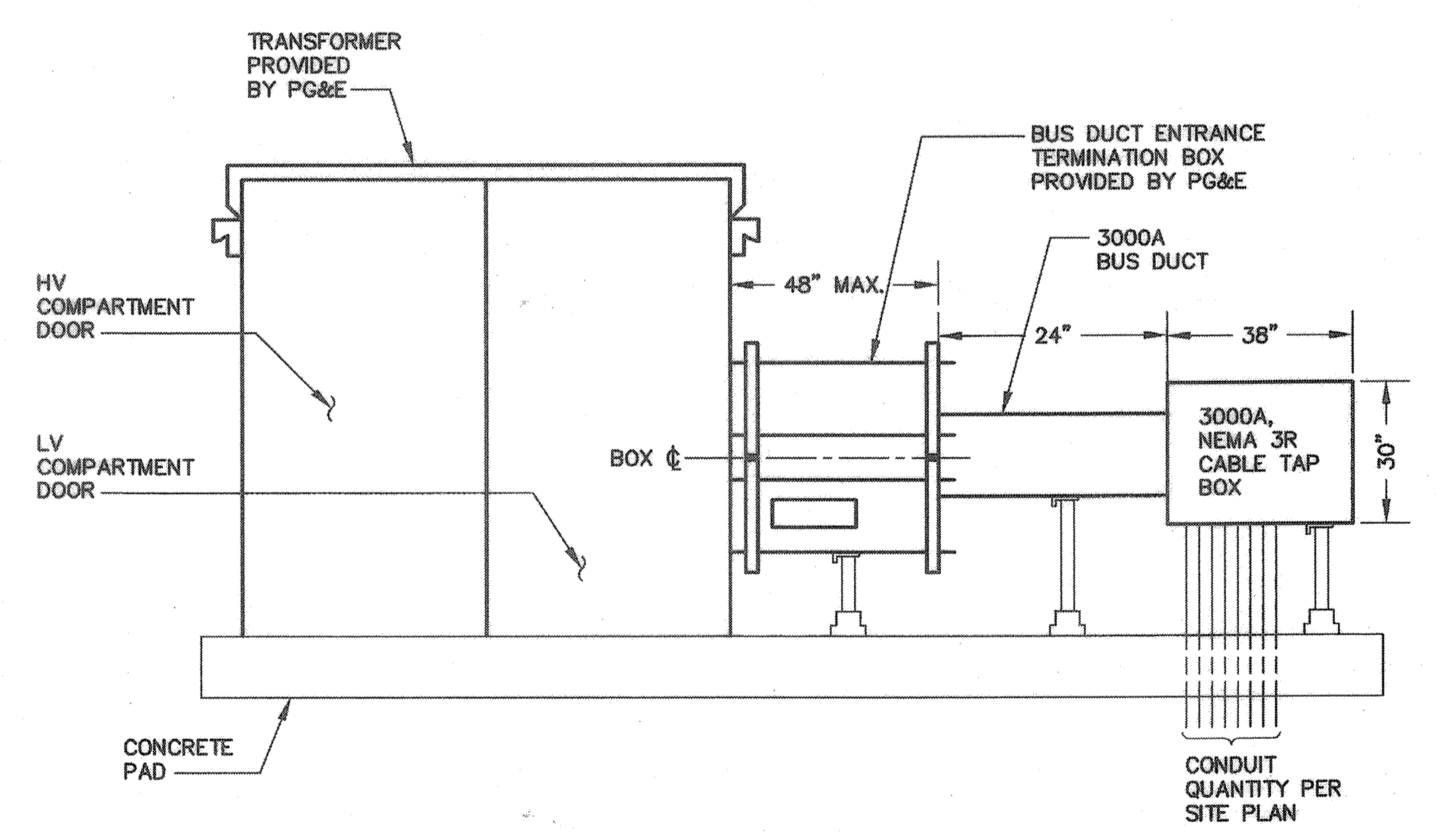
- NOTES:**
- ① DISCONNECT EXISTING PG&E METER AND RETURN IT TO PG&E. PROVIDE BLANK COVER. DISCONNECT AND REMOVE EXISTING CURRENT TRANSFORMERS. PROVIDE NEW BUSSING IF NEED TO RECONNECT.
  - ② EXISTING PG&E SERVICE TRANSFORMER WILL BE DISCONNECTED AND REMOVED BY PG&E. MODIFY (OR COREDRILL) EXISTING CONCRETE SLAB AS REQUIRED FOR INSTALLATION OF A NEW SURFACE MOUNTED JUNCTION BOX WITH SIZE AS REQUIRED TO ACCOMMODATE QUANTITY OF THE NEW CONDUITS FOR NEW FEEDER FROM PEAK POWER SWITCHBOARD. JUNCTION BOX SHALL BE NEMA 4X, 12 GAUGE 316 STAINLESS STEEL WITH REMOVABLE COVERS. PROVIDE PROTECTION POSTS AS PER TYPICAL DETAIL SHOWN ON DRAWING E15.
  - ③ SEE NOTE ② ABOVE FOR SAME REQUIREMENT EXCEPT NO ADDITIONAL PROTECTION POSTS ARE REQUIRED.
  - ④ EXISTING PG&E POWER POLE SHALL BE REMOVED.
  - ⑤ PROVIDE AND INSTALL NEW SERVICE RISER TO FEED NEW PG&E SERVICE TRANSFORMER FROM THIS POLE. SEE DRAWING E2 FOR ADDITIONAL DETAILS.
  - ⑥ CONTRACTOR SHALL FOLLOW PG&E SERVICE TRANSFORMER INSTALLATION AS SHOWN AND AS REQUIRED BY PG&E. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL BY PG&E PRIOR TO SUBMITTING APPROVED SHOP DWGS TO THE ENGINEER FOR FINAL REVIEW AND APPROVAL.
- CONTRACTOR SHALL NOTE THAT PG&E PROVIDES ONLY SERVICE TRANSFORMER AND BUSDUCT ENTRANCE TERMINATION BOX AS SHOWN. ALL OTHER EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.



**(E) PLANT SERVICE TRANSFORMER AND POLE**  
SCALE: NTS



**(E) PG&E SERVICE FOR (E) PUMP STATION**  
SCALE: NTS

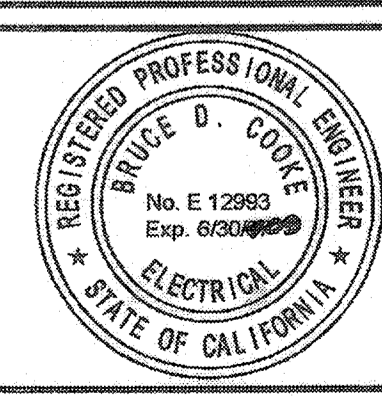


**PG&E SERVICE TRANSFORMER INSTALLATION DETAIL** ⑥  
SCALE: NTS

BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

CAUTION  
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FACILITIES EXIST WITHIN  
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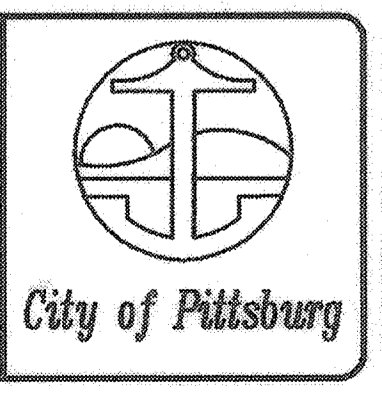
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CONSULTING  
2101 ARENA BOULEVARD, SUITE 250  
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916.928.1113 • FAX 916.928.1117 • www.RBF.com  
12993  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

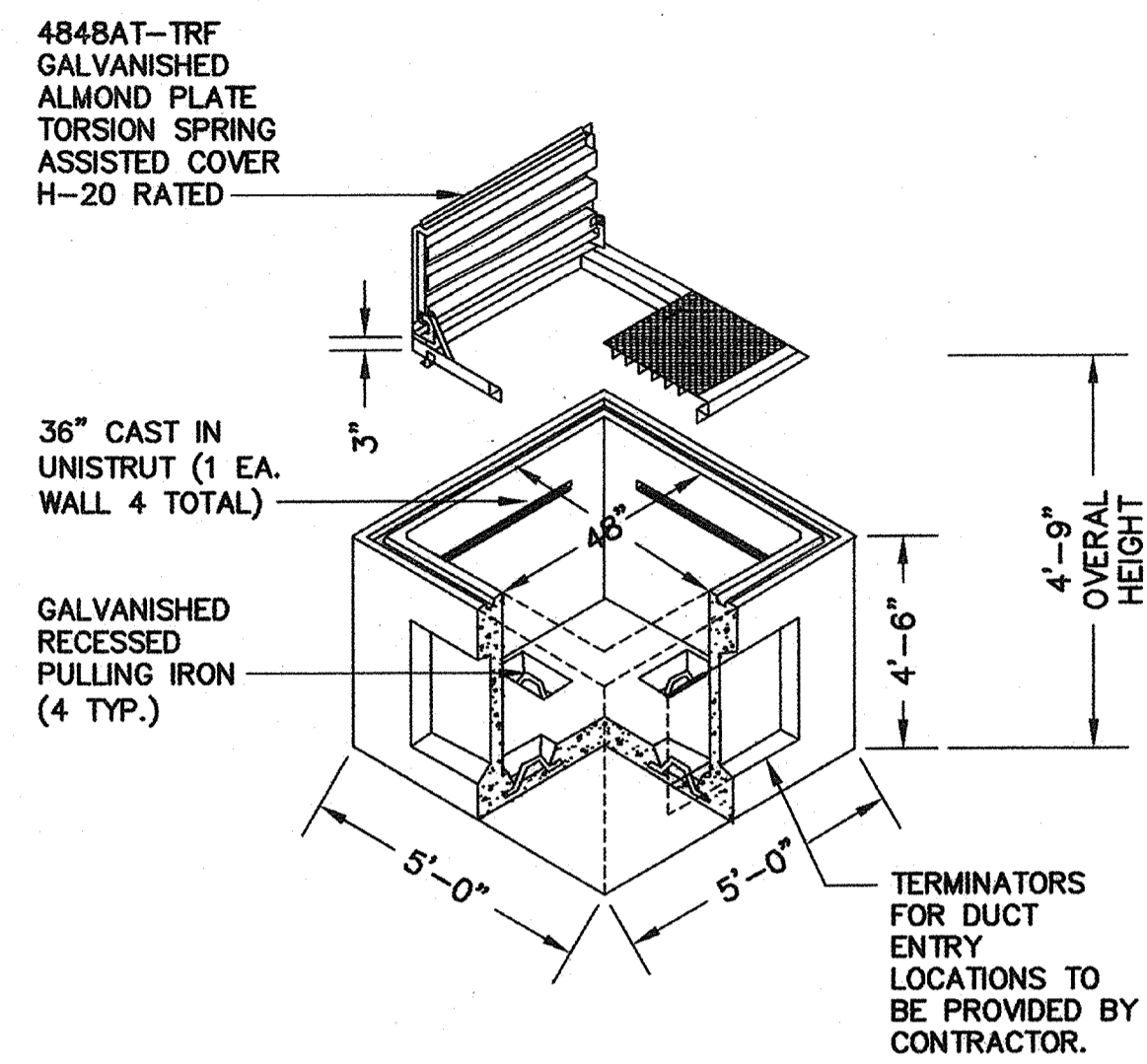
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
CONSTRUCTION DETAILS**

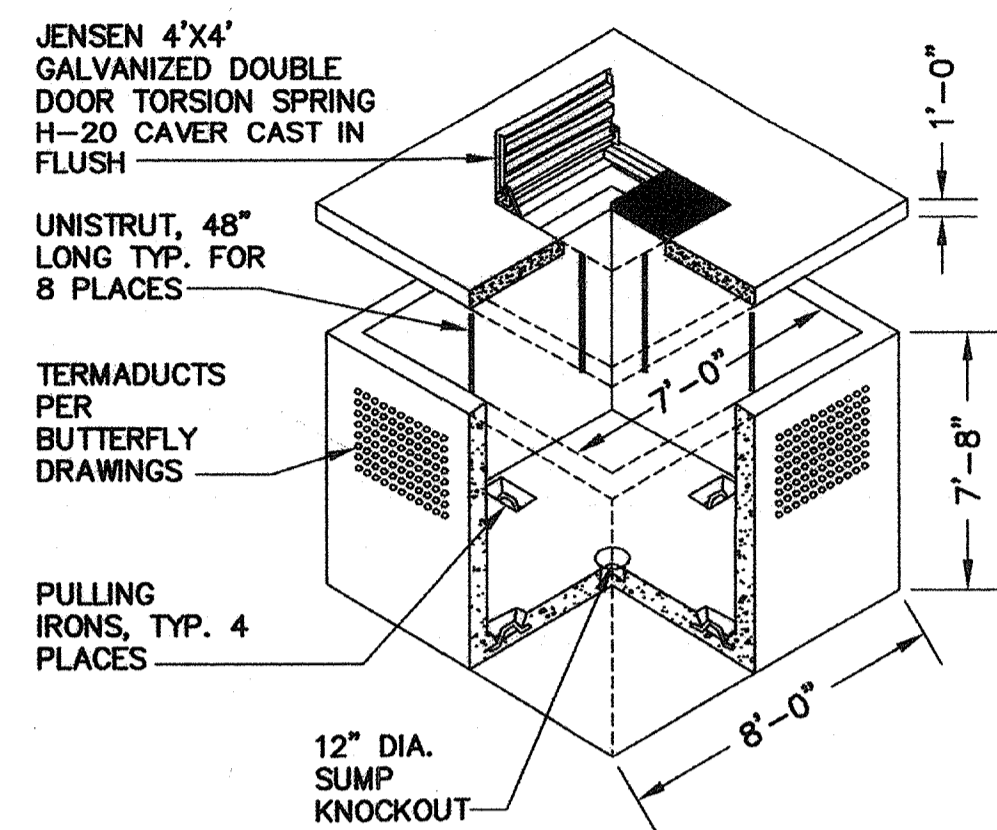


**E16**  
**56 OF 77**





**1 PULL BOX DETAIL**  
TYP 4'-0" X 4'-0" X 4'-0" (INSIDE DIMENSIONS)

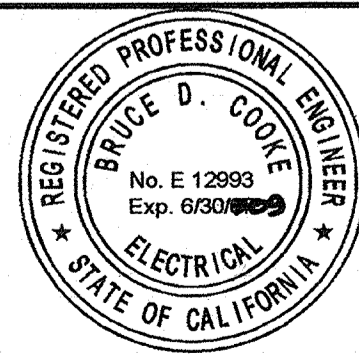


**2 MANHOLE DETAIL**  
TYP 7'-0" X 7'-0" X 8'-0" (INSIDE DIMENSIONS)

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Bruce D. Cooke 12993 02/02/07  
BRUCE D. COOKE R.E.E. NO. DATE

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DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:

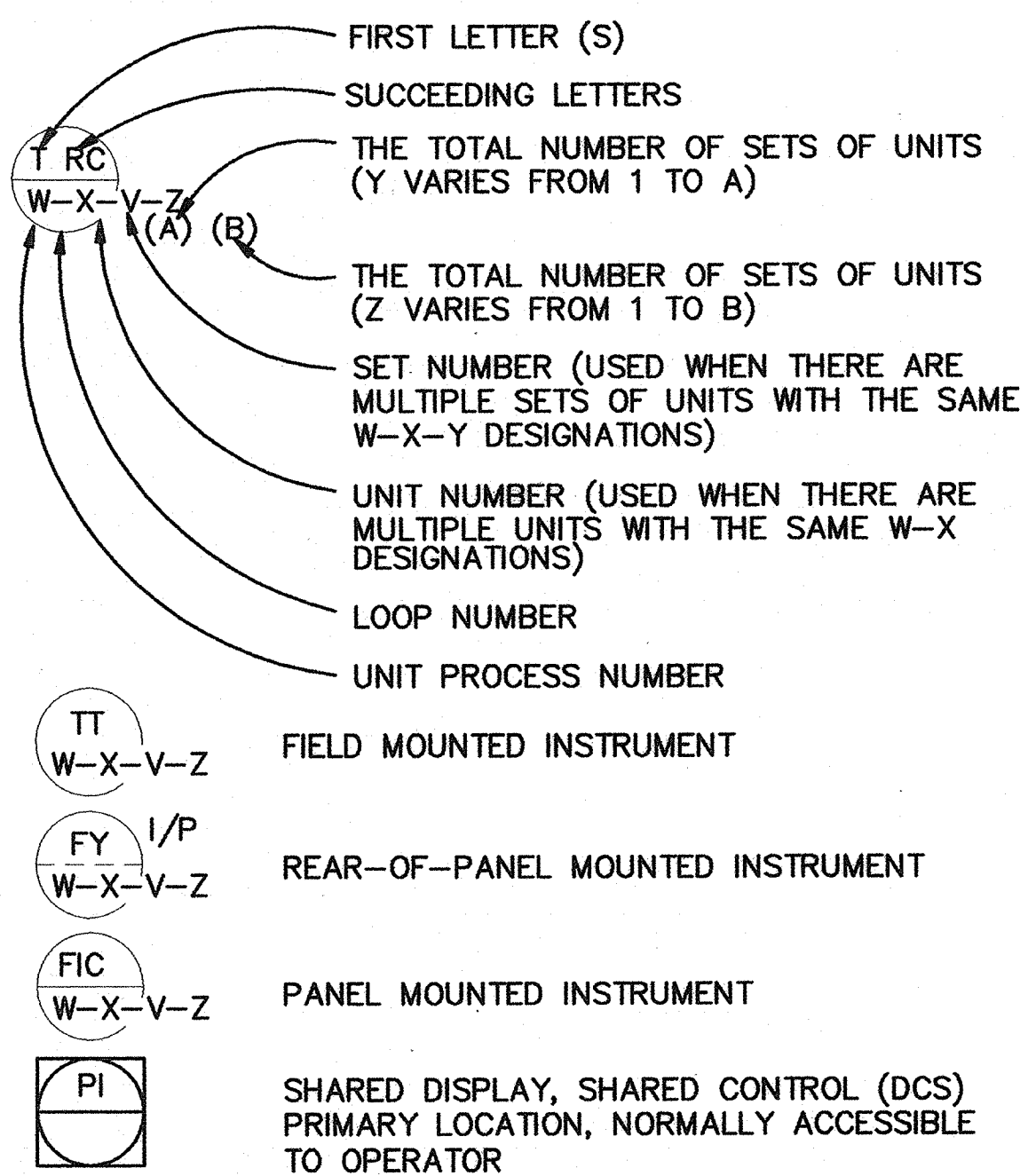
**HIGH LEVEL  
PUMP STATION No. 2  
CONSTR. DETAILS CONTINUED**



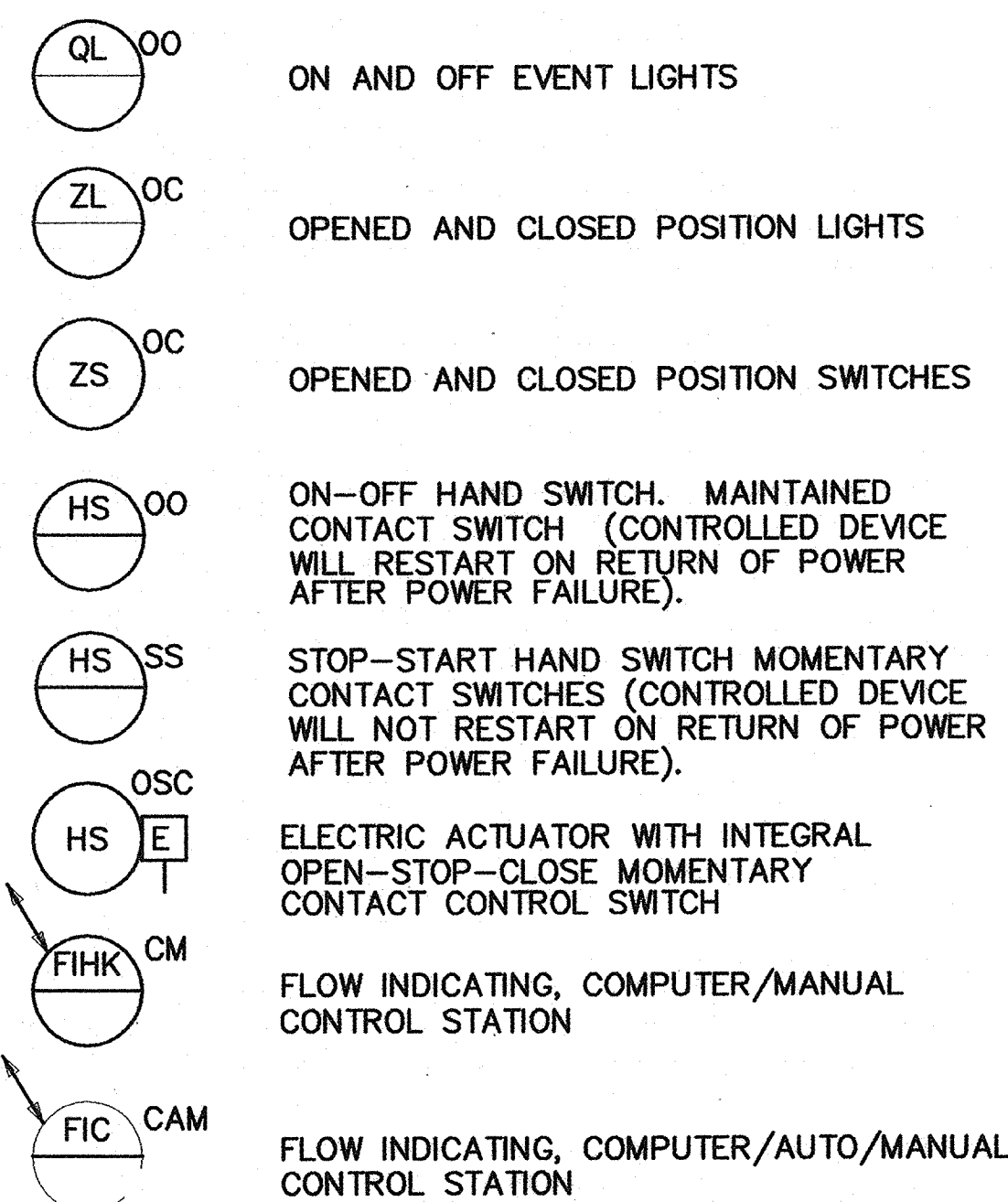
**E17**  
**57 OF 77**

**INSTRUMENT IDENTIFICATION**

**EXAMPLE SYMBOLS**



**SPECIAL CASES**



**INSTRUMENT SOCIETY OF AMERICA TABLE**

LETTER	FIRST LETTER (S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER FLAME		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
C	CONDUCTIVITY			CONTROL	
D	DENSITY (S.G)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION				MIDDLE
N	USERS CHOICE (+)		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
O	USERS CHOICE (+)		ORIFICE		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE	INTEGRATE		
R			RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (+)		MULTIFUNCTION (+)	MULTIFUNCTION (+)	MULTIFUNCTION (+)
V	VISCOSITY			VALVE OR DAMPER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED (+)		UNCLASSIFIED (+)	UNCLASSIFIED (+)	UNCLASSIFIED (+)
Y	USERS CHOICE (+)		RELAY OR COMPUTE (+)		
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(+) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS.

**TRANSDUCERS**

A	ANALOG	I	CURRENT
D	DIGITAL	P	PNEUMATIC
E	VOLTAGE	PF	PULSE FREQUENCY
F	FREQUENCY	PD	PULSE DURATION
H	HYDRAULIC	R	RESISTANCE

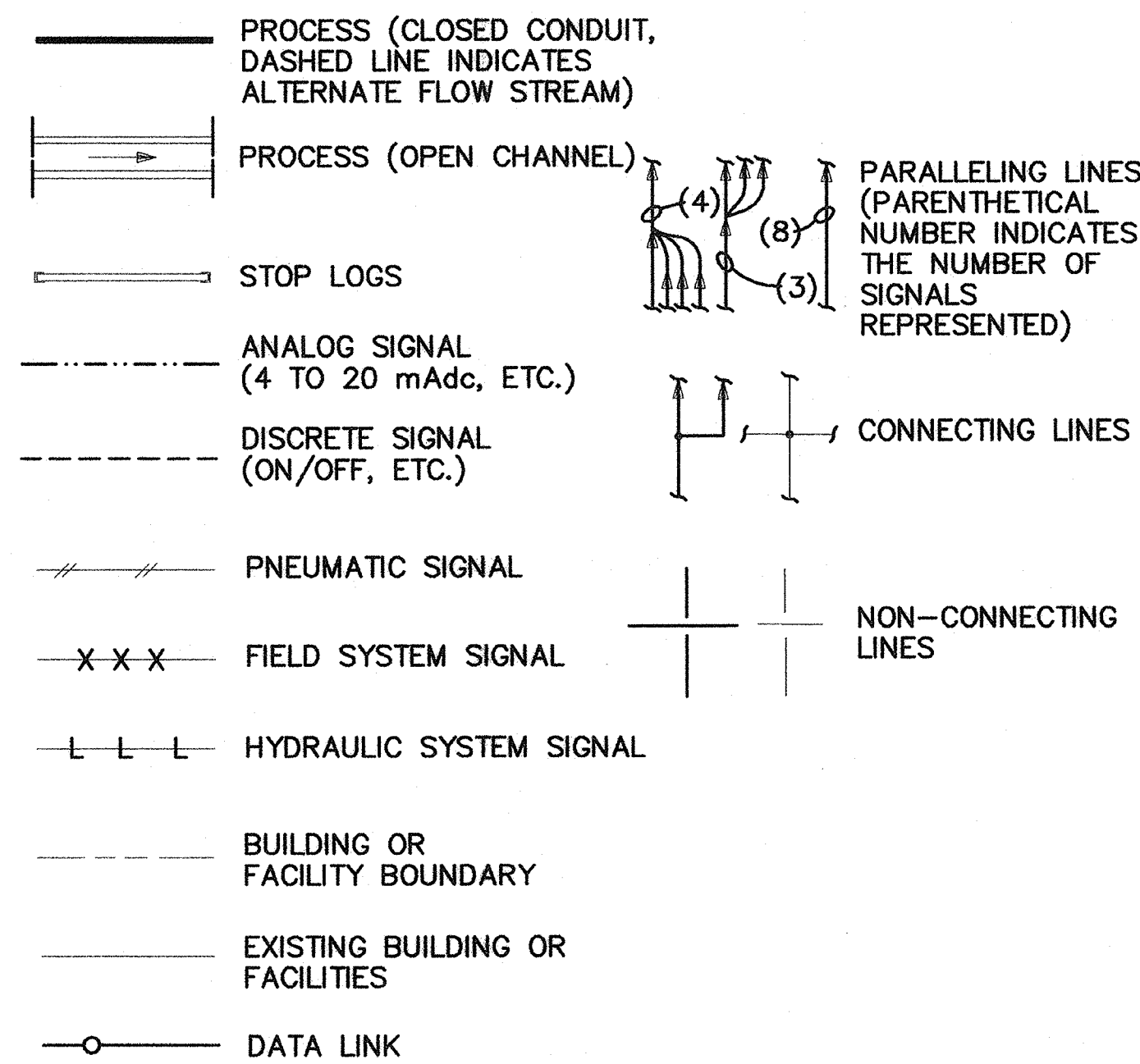
**EXAMPLE:**



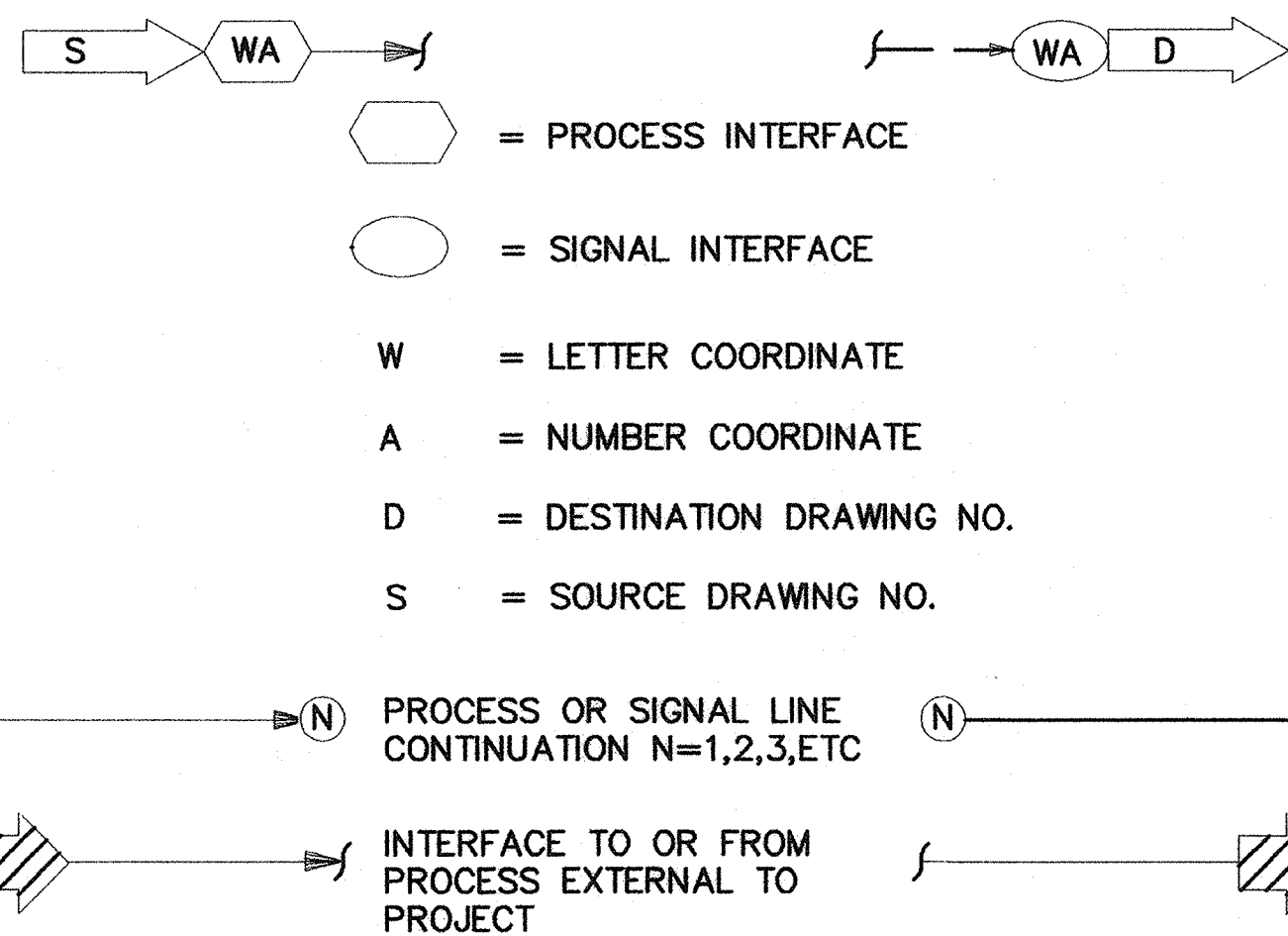
**SELF CONTAINED VALVE & EQUIPMENT TAG NUMBERS**

PA: PLANT ABBREVIATION	PCV = PRESSURE CONTROL VALVE
W: UNIT PROCESS NUMBER	VRV = VACUUM RELIEF VALVE
D: ARV = AIR RELEASE VALVE	PSV = PRESSURE RELIEF VALVE
AVRV = AIR AND VACUUM RELEASE VALVE	T = TANK
E = EJECTOR	TCV = TEMPERATURE CONTROL VALVE
FCV = FLOW CONTROL VALVE	AHU = AIR HANDLING UNIT
G = GATE	X: LOOP NUMBER
LCV = LEVEL CONTROL VALVE	Y: UNIT NUMBER
M = MECHANICAL EQUIPMENT	
P = PUMP	

**LINE LEGEND**



**INTERFACE SYMBOLS**



**GENERAL NOTES**

- P & ID'S ARE FOR INFORMATION ON CONTROL CONCEPTS AND INSTRUMENTATION ONLY. REFER TO PLANS AND SPECIFICATIONS FOR DETAILS: PIPING; VALVING; PACKAGED EQUIPMENT CONTROLS AND MISCELLANEOUS ITEMS.
- THIS IS A STANDARD LEGEND. THEREFORE, NOT ALL OF THE SYMBOLS ARE USED ON THIS PROJECT.
- SEE ELECTRICAL LEGEND SHOWN ON DRAWING E-1. FOR ELECTRICAL SYMBOLS. REFER TO ELECTRICAL CONTROL SCHEMATIC DIAGRAMS FOR SPECIFIC WIRING DEVICES' REQUIREMENTS SUCH AS PUSHBUTTONS, PILOT LIGHTS AT EACH LOCAL CONTROL STATION.

**ABBREVIATIONS & LETTER SYMBOLS**

AI	ANALOG INPUT
AM	AUTO-MANUAL
AO	ANALOG OUTPUT
CAM	COMPUTER-AUTO-MANUAL
CM	COMPUTER-MANUAL
CP-X	CONTROL PANEL NO. X
CG	COMBUSTIBLE GAS
CO	CARBON MONOXIDE
CTEL	CONNECT TO EXISTING LINE
CP/DCS	CONTROL PANEL/DCS
DCS	DISTRIBUTED CONTROL SYSTEM
DCU	DISTRIBUTED CONTROL UNIT
DI	DISCRETE INPUT
DO	DISCRETE OUTPUT
(E)	EXISTING
ES	EMERGENCY STOP
FLP	FAIL IN LAST POSITION
FBM	FIELD BUS MODULE
FM	FORCE MAIN
FOR	FORWARD-OFF-REVERSE
FP-W-X	FIELD PANEL NO. WX WHERE W = UNIT PROCESS NUMBER X = PANEL NUMBER
FR	FORWARD-REVERSE
FS	FAST - SLOW
GBT	GRAVITY BELT THICKENER
H <sub>2</sub> S	HYDROGEN SULFIDE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
LA	LOCAL-AUTO
LP/DCS	LOCAL PANEL-DISTRIBUTED CONTROL SYSTEM
LOC	LOCAL (AT FIELD DEVICE)
LOS	LOCKOUT STOP
LP	LOCAL PANEL
L/S	LEAD-STANDBY
LR	LOCAL-REMOTE
MA	MANUAL-AUTO
MCC-X	MOTOR CONTROL CENTER NO. X
MW	MOTOR WINDINGS
NS	NORTH-SOUTH
O <sub>2</sub>	OXYGEN
OC	OPEN-CLOSE (D)
OCA	OPEN-CLOSE-AUTO
OCR	OPEN-CLOSE-REMOTE
OCU	ODOR CONTROL UNIT
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
ORP	OXIDATION REDUCTION POTENTIAL
OSC	OPEN-STOP-CLOSE
REV	REVERSE
SBD	SODIUM BISULFITE DRAIN
SHD	SODIUM HYPOCHLORITE DRAIN
SLOS	START-LOCKOUT-STOP
S/D	SEDIMENTATION-DEWATERING
S/D/C	SEDIMENTATION-DEWATERING-CLOSED
SS	START-STOP
SSC	SUPERVISORY SET POINT CONTROL
VFD	VARIABLE FREQUENCY DRIVE
VHC	VOLATILE HYDROCARBON
*	PROVIDED AS PACKAGED EQUIPMENT

**PLC TERMINATIONS**

- ▲ DISCRETE INPUT
- ▼ DISCRETE OUTPUT
- ▲ ANALOG INPUT
- ▼ ANALOG OUTPUT

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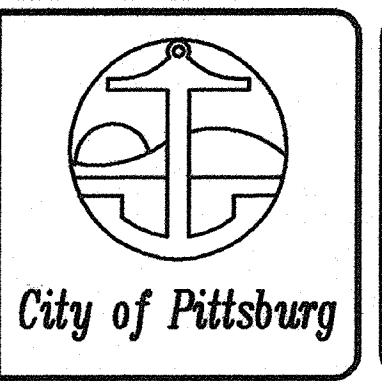
**INSTRUMENTATION LEGEND AND NOTES**

**RBF CONSULTING**  
 2101 ARENA BOULEVARD, SUITE 250  
 SACRAMENTO, CALIFORNIA 95834-2303  
 916.928.1113 • FAX 916.928.1117 • www.RBF.com  
 12993 R.E.E. NO. DATE 02/04/07

NO.	DATE	APPROV.	REVISION

DESIGNED: DN	APPROVED BY:
DRAWN: EA	
CHECKED: DTN, RBF	
REVIEWED:	
DATE: FEBRUARY, 2007	

**HIGH LEVEL PUMP STATION No. 2**  
**LEGEND AND NOTES**



H:\PDATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-1-10-12-2006\203\_1-1.DWG TNGUYEN 2/16/07 9:57 am

**VALVE SYMBOLS**

- GATE
- KNIFE GATE
- BUTTERFLY
- GLOBE
- BALL
- PLUG OR COCK
- DIAPHRAGM
- PINCH
- NEEDLE
- SWING CHECK
- BALL CHECK
- BALL CHECK SPRING LOADED
- SAMPLE
- MUD

- PRESSURE RELIEF
- COMBINATION AIR /VACUUM RELEASE VALVE
- REGULATED SIDE PRESSURE CONTROL
- MULTI-PORT VALVES (BALL VALVE SHOWN. FOR OTHER VALVES TYPES, APPROPRIATE VALVE SYMBOL SHOWN.) ARROWS INDICATE FLOW PATTERN. SEAT PORTS ARE IMPLIED BY INDICATED FLOW PATTERN.
- PRESSURE RELIEF PINCH VALVE
- FOOT VALVE

**GATE SYMBOLS**

- SLUICE
- BUTTERFLY
- FLAP
- FABRICATED SLIDE
- SHEAR

**PRIMARY ELEMENT SYMBOLS**

- PARSHALL FLUME
- WEIR
- ORIFICE PLATE
- FLOW TUBE
- PITOT-STATIC
- VORTEX METER
- ROTAMETER
- ULTRASONIC FLOWMETER (INLINE)
- THERMAL DISPERSION FLOWMETER
- ELECTROMAGNETIC FLOWMETER
- PROPELLER OR TURBINE METER
- DENSITY METER (X: N = NUCLEAR, O = OPTICAL, U = ULTRASONIC)
- ULTRASONIC FLOWMETER (CLAMP-ON)
- LEVEL (ULTRASONIC)
- LEVEL (BUBBLER TUBE)
- LEVEL (FLOAT)
- CONDUCTANCE PROBE

**ACTUATOR SYMBOLS**

- PNEUMATIC W/POSITIONER
  - PNEUMATIC W/SOLENOID
  - ELECTRIC
  - ELECTRIC W/POSITION TRANSMITTER
  - ELECTROHYDRAULIC
  - HYDRAULIC
  - PNEUMATIC WITH VOLUME BOOSTER
  - SOLENOID
  - MANUAL
- NOTE:**  
ON LOSS OF PRIMARY POWER (PNEUMATIC, ELECTRICAL OR HYDRAULIC)  
XX: FO = FAIL OPEN  
FC = FAIL CLOSED  
FLP = FAIL TO LAST POSITION

**MISCELLANEOUS SYMBOLS**

- SIGHT GLASS
- DIAPHRAGM SEAL
- BLIND FLANGE
- VENT TO ATMOSPHERE
- AERATOR
- PLUG
- RECEPTACLE
- SELF CONTAINED AIR SUPPLY
- RADIO ANTENNA
- "ON" TIME DELAY AFTER A "ON" INSTANT "OFF".
- "OFF" TIME DELAY AFTER A "OFF" INSTANT "ON"
- INTERLOCK. SEE CONTROL DIAGRAMS
- MEMORY ELEMENT S = SET, R = RESET
- PURGE SET X: W = WATER, A = AIR
- AIR SET XX = SUPPLY PRESSURE IN PSIG.
- FILTER/REGULATOR/GAUGE SET
- INLET FILTER/SILENCER
- FREQUENCY SHIFT TRANSMITTER
- STRAINER
- INTERFACE TERMINAL JUNCTION BOX
- DRIP TRAP (AUTOMATIC)
- DRIP TRAP (MANUAL)
- 120V 120 VOLT, 60 HZ POWER
- 480V 480 VOLT, 60 HZ POWER
- ANNULAR DIAPHRAGM SEAL
- RUPTURE DISK
- PIG INSERT POINT
- PIG CATCH POINT
- MIXER
- ELECTRIC MOTOR
- PRESSURE GAUGE
- VOICE COMMUNICATION POINT
- ON/OFF RELAY. INPUT IS CONNECTED TO OUTPUT WHEN SWITCHING SIGNAL IS PRESENT.
- SWITCHING RELAY. INPUT WITH DOT IS CONNECTED TO OUTPUT WHEN SWITCHING SIGNAL IS PRESENT.
- OTHER INPUT IS CONNECTED TO OUTPUT WHEN SWITCHING SIGNAL IS NOT PRESENT.
- FLUSHING CONNECTION -SEE MECH DWGS FOR VALVE TAG NUMBER
- SEAL WATER SET
- X: D = SANITARY DRAIN, AR = ACID RESISTANT SANITARY DRAIN
- SEQUENTIAL SAMPLER
- FREQUENCY SHIFT RECEIVER
- PULSATION DAMPENERS
- STATIC MIXER
- CALIBRATION COLUMN
- DRAW SAMPLES

**PUMP AND COMPRESSOR SYMBOLS**

- NOTE:** XX: AS = ADJUSTABLE SPEED  
CS-1 = CONSTANT SPEED (SINGLE SPEED)  
CS-2 = CONSTANT SPEED (TWO SPEED)
- CENTRIFUGAL PUMP (DRY PIT) OR
  - CENTRIFUGAL WET PIT PUMP OR TURBINE PUMP
  - CHEMICAL FEED PUMP
  - DIAPHRAGM PUMP
  - GEAR PUMP OR BLOWER (POSITIVE DISPLACEMENT)
  - PISTON PUMP
  - PROGRESSIVE CAVITY PUMP SUBMERSIBLE SUMP PUMP
  - COMPRESSOR (CENTRIFUGAL) BLOWER OR TURBINE
  - COMPRESSOR (PISTON)
  - EJECTOR

**FLOW STREAM IDENTIFICATION**

- AHP - AIR-HIGH PRESSURE, PROCESS
- ALP - AIR-LOW PRESSURE, PROCESS
- ACW - AUXILIARY COOLING WATER
- AI - AIR, INSTRUMENT QUALITY
- ALP - AIR-LOW PRESSURE
- ARD - ACID RESISTANT DRAIN
- ARV - ACID RESISTANT VENT
- BG - BLENDED GAS (LOW PRESSURE)
- BGHP - BLENDED GAS (HIGH PRESSURE)
- BS - BLENDED SLUDGE
- CD - CONDENSATE DRAIN
- CS - CHLORINATED SOLUTION (NaOCL)
- CWR - COOLING WATER RETURN
- CWS - COOLING WATER SUPPLY
- D - DRAIN
- DCS - DECHLORINATION SOLUTION
- DEW - DEWATERING
- DG - DIGESTER GAS
- DGH - DIGESTER GAS, HIGH PRESSURE
- DPO - DRY POLYMER
- DOP - DIGESTER OVERFLOW
- DS - DIGESTED SLUDGE
- DSM - DIGESTER SLUDGE MIXING
- DST - DIGESTER SLUDGE TRANSFER
- DW - DOMESTIC WATER (COLD)
- DWH - DOMESTIC WATER (HOT)
- EA - EXHAUST AIR
- EXH - ENGINE EXHAUST
- F - FILTRATE
- FC - FERRIC CHLORIDE
- FM - DIGESTER FOAM
- FS - FIRE SPRINKLER
- FW - FIRE PROTECTION WATER
- GOX - GASEOUS OXYGEN
- GOX1 - GOX PRODUCT
- GOX2 - GOX PRODUCT
- GOX3 - GOX VENT
- GOX6 - GOX WASTE BLOWOFF
- GOX7 - GOX OUTLET
- GR - GRIT SLURRY
- HF - HYDRAULIC FLUID
- HRSD - HEATED RECIRCULATED SLUDGE
- HSM - HEADWORKS SCUM
- HWR - HEATING WATER RETURN
- HWS - HEATING WATER SUPPLY
- IA - INSTRUMENT AIR
- JW - JACKET WATER
- LOX - LIQUID OXYGEN
- LOX2 - LOX PRODUCT
- LOX4 - LOX TRANSFER
- LPO - LIQUID POLYMER (BULK)
- OA - OUTSIDE AIR
- O - OVERFLOW
- OR - HYDRAULIC OIL RETURN
- OS - HYDRAULIC OIL SUPPLY
- PD - PROCESS DRAIN
- PEA - PURIFIED EXHAUST AIR
- PSA - PURIFIED SUPPLY AIR
- PE - PRIMARY EFFLUENT
- PI - PRIMARY INFLUENT
- PLE - PLANT EFFLUENT
- PO - POLYMER SOLUTION (DILUTED)
- PR - PLANT RECYCLE
- PSD - PRIMARY SLUDGE
- PSM - PRIMARY SCUM
- RA - RETURN AIR
- RAS - RETURN ACTIVATED SLUDGE
- RD - ROOF DRAIN
- RHW - RECIRCULATED HOT WATER
- RS - RAW SEWAGE
- RSD - RECIRCULATED SLUDGE
- RW - RECLAIMED WATER
- SA - SAMPLING (PROCESS)
- SA - SUPPLY AIR (HVAC)
- SD - SANITARY DRAIN
- SDF - SANITARY DRAIN (FORCE MAIN)
- SE - SECONDARY EFFLUENT
- SM - DIGESTER SCUM
- SPM - SUMP PUMP DISCHARGE
- SS - STORM SEWER
- SSM - SECONDARY SCUM
- TA - TRANSFER AIR
- TUF - THICKENER UNDERFLOW
- TWAS - THICKENED WASTE ACTIVATED SLUDGE
- TW - TREATED WATER
- UD - UNDERDRAIN
- V - VENT
- VAC - VACUUM
- WAS - WASTE ACTIVATED SLUDGE
- W1 - NO. 1 WATER (POTABLE)
- W2 - NO. 2 WATER (NONPOTABLE)
- W3 - NO. 3 WATER (TREATED PLANT EFFLUENT)

BEFORE EXCAVATING  
CALL U.S.A.  
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TWO WORKING DAYS BEFORE ALL  
PLANNED EXCAVATION WORK

CAUTION  
OVERHEAD ELECTRICAL  
FACILITIES EXIST WITHIN  
PROJECT AREA

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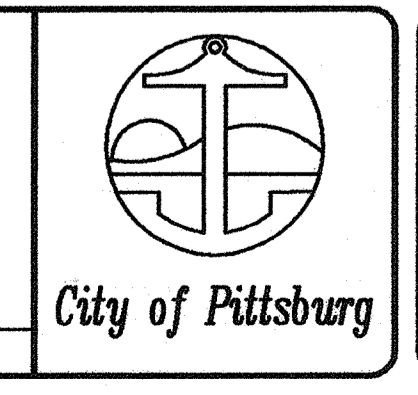
**INSTRUMENTATION LEGEND AND NOTES**

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12993 R.E.E. NO. 08/04/02 DATE

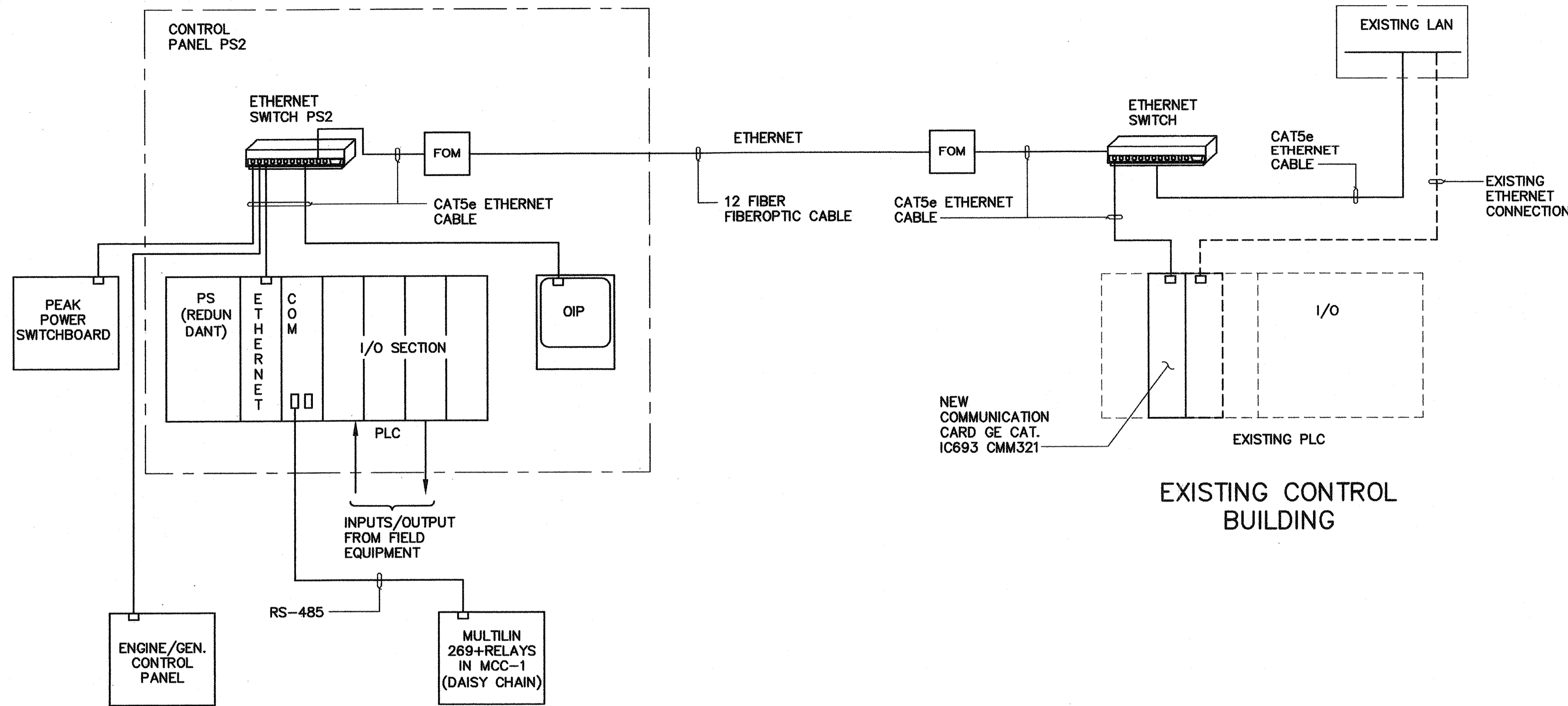
NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:  
**HIGH LEVEL PUMP STATION No. 2**  
**LEGEND AND NOTES**



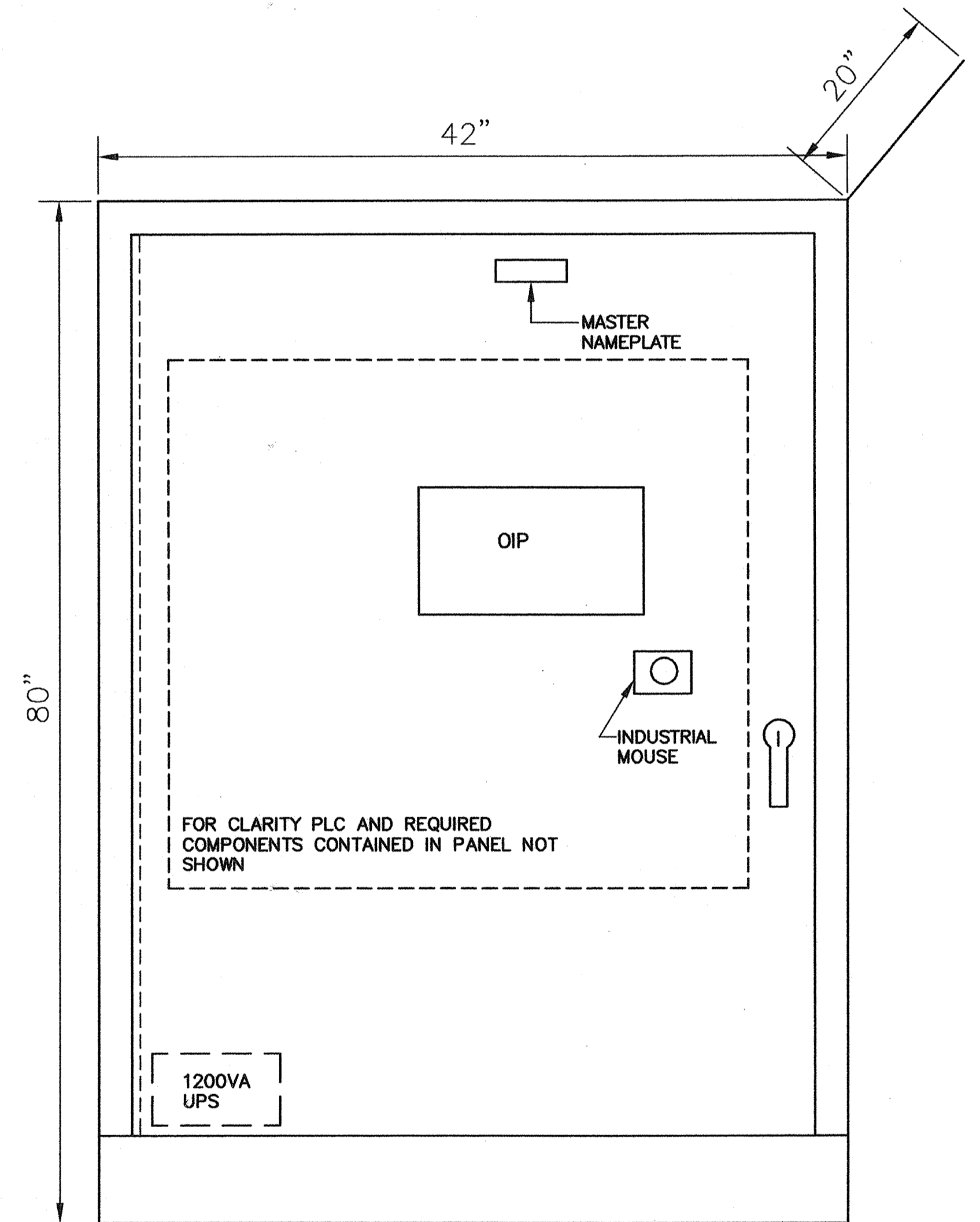
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LEGEND  
 FOM FIBEROPTIC MODEM (ETHERNET)  
 OIP OPERATOR INTERFACE PANEL  
 I/O INPUTS/OUTPUTS  
 PS POWER SUPPLY  
 COM COMMUNICATION MODULE  
 PLC PROGRAMMABLE LOGIC CONTROLLER

HIGH LEVEL PUMP STATION 2

(A) PLC NETWORK DIAGRAM  
 SCALE: NTS

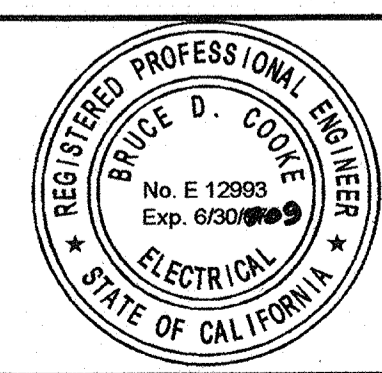


(B) CONTROL PANEL "PS2"  
 SCALE: NTS

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 Bruce D. Cooke 12993 02/16/07  
 BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
 DRAWN: EA  
 CHECKED: DTN, RBF  
 REVIEWED:  
 DATE: FEBRUARY, 2007

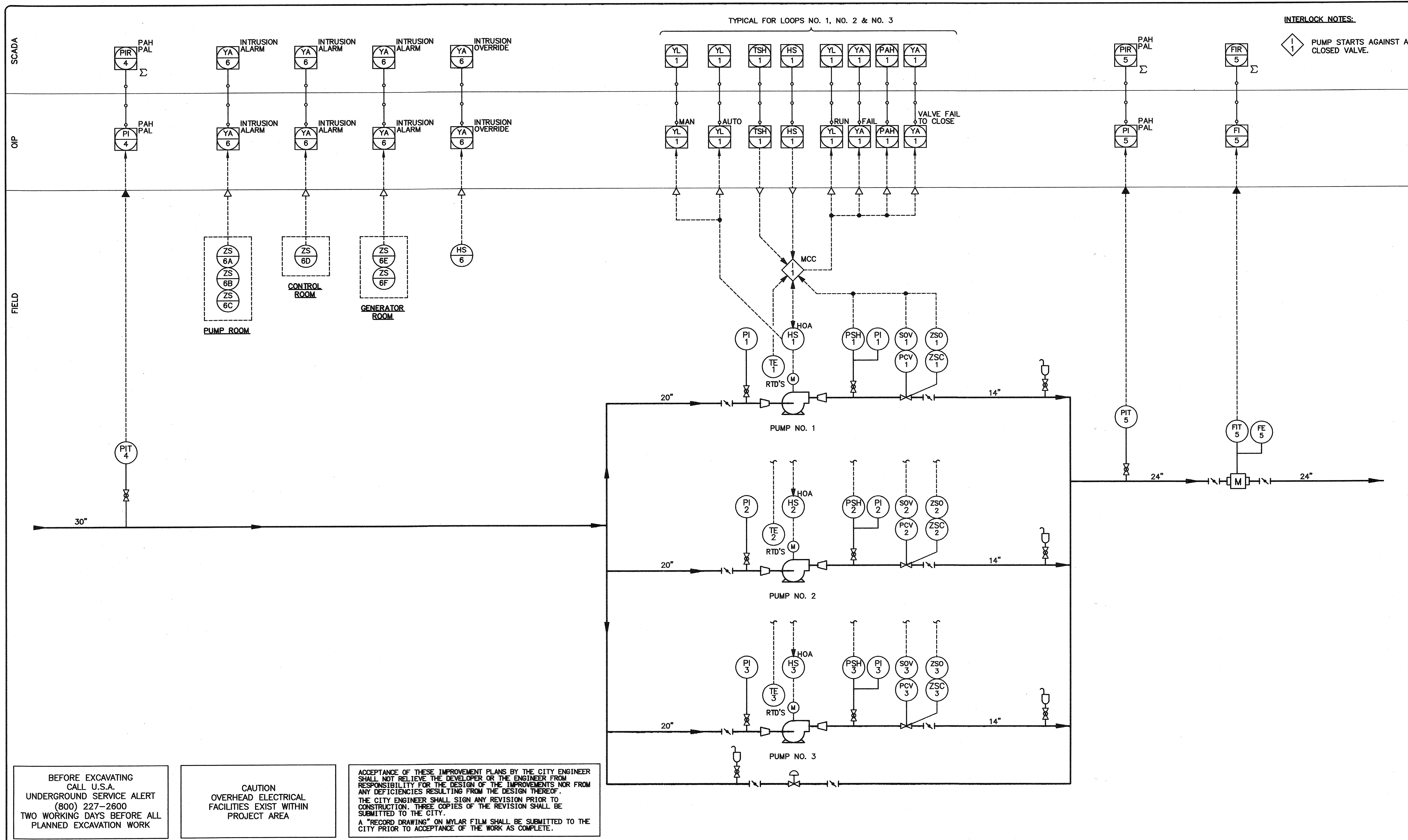
APPROVED BY:

**HIGH LEVEL  
 PUMP STATION No. 2  
 PLC NETWORK DIAGRAM**



I-3  
 60 OF 77

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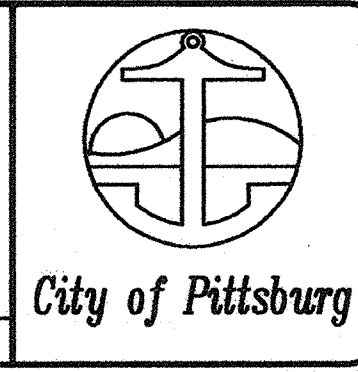
*Bruce D. Cooke* 12993  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

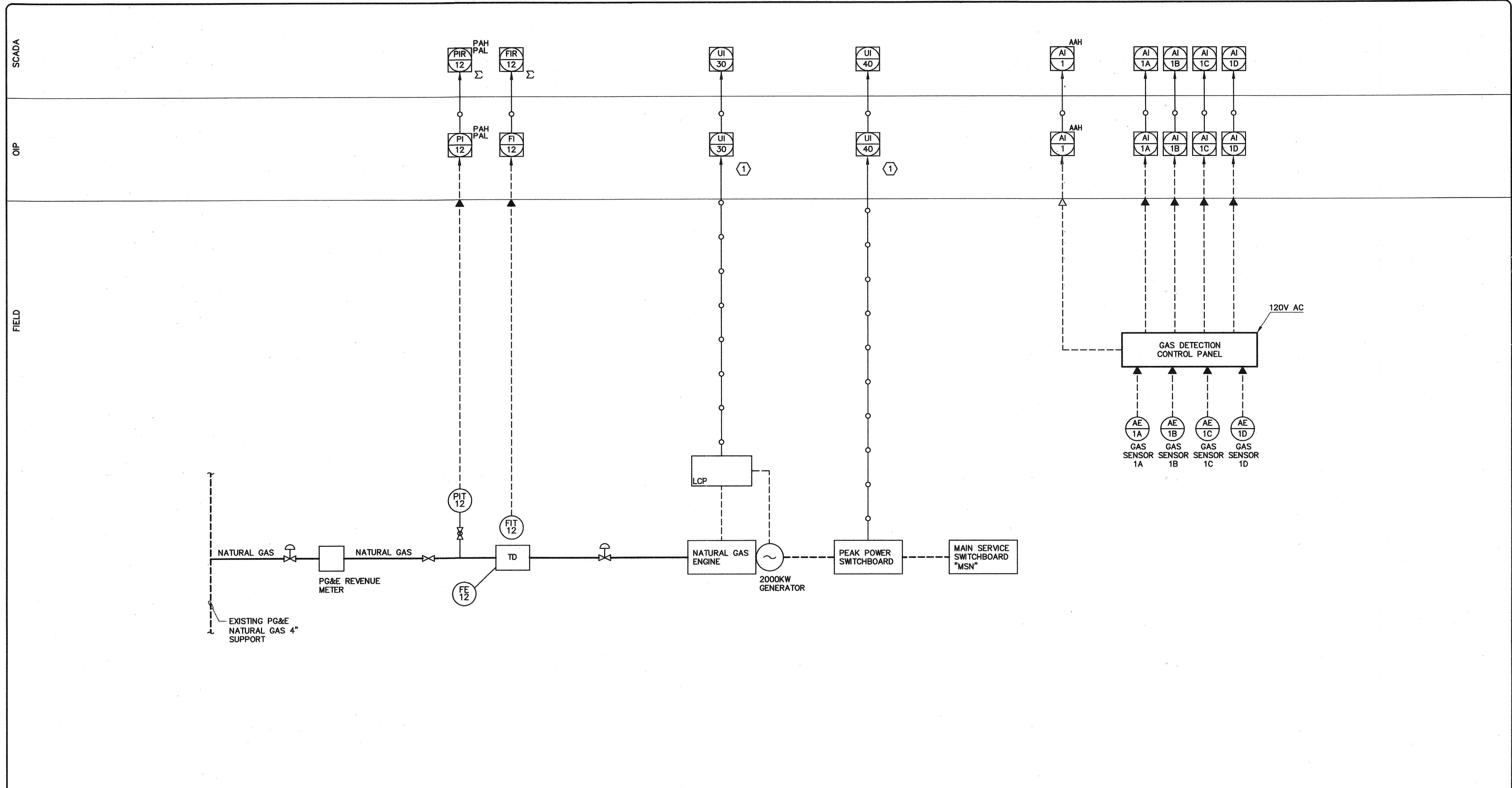
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DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
PUMP STATION - P/ID**



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**NOTES:**  
 ① REFER TO SPECIFICATIONS (DIV. 13) FOR COMPLETE VIRTUAL INPUT/OUTPUT POINTS SPECIFICALLY.

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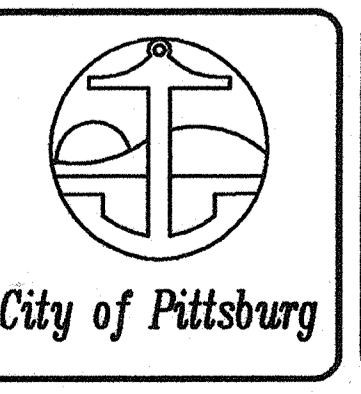
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 Bruce D. Cooke 12993  
 BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
 DRAWN: EA  
 CHECKED: DTN, RBF  
 REVIEWED:  
 DATE: FEBRUARY, 2007

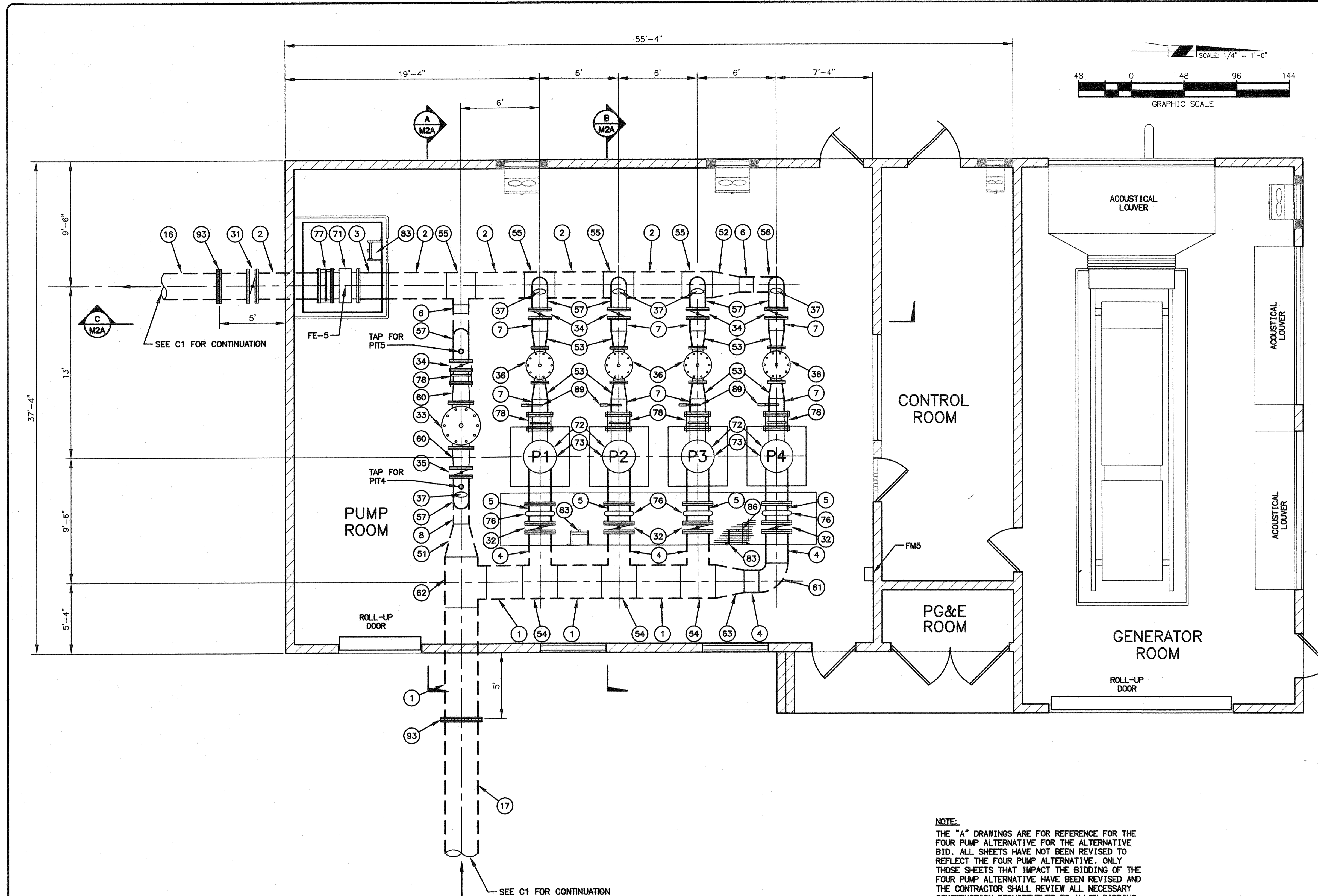
APPROVED BY:

**HIGH LEVEL  
 PUMP STATION No. 2  
 STANDBY POWER P/ID**



I-5  
 62 OF 77

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**MATERIALS LIST**

- 1 30" CML & C STEEL PIPE CLASS 150
- 2 24" CML & C STEEL PIPE CLASS 250
- 3 24" CML STEEL PIPE CLASS 250
- 4 20" CML & C STEEL PIPE CLASS 150
- 5 20" CML STEEL PIPE CLASS 150
- 6 14" CML & C STEEL PIPE CLASS 250
- 7 14" CML STEEL PIPE CLASS 250
- 8 14" CML & C STEEL PIPE CLASS 150
- 16 24" DUCTILE IRON PIPE
- 17 30" DUCTILE IRON PIPE
- 31 24" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR
- 32 20" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR
- 33 16" FLANGED PRESSURE RELIEF AND SURGE ANTICIPATOR VALVE CLASS 250, PER SPECS
- 34 14" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR
- 35 14" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR
- 36 12" FLANGED PUMP CONTROL VALVE CLASS 250, PER SPECS
- 37 1" COMBINATION AIR VAC PER DETAIL 6 ON SHEET M4
- 51 30" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.
- 52 24" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.
- 53 14" x 12" CML STEEL ECCENTRIC REDUCER T.F.
- 54 30" x 20" CML & C STEEL TEE
- 55 24" x 14" CML & C STEEL TEE
- 56 14" CML & C STEEL SMOOTH 90° ELBOW
- 57 14" CML STEEL SMOOTH 90° ELBOW
- 60 16" x 14" CML STEEL ECCENTRIC REDUCER T.F.
- 61 20" CML & C STEEL SMOOTH 90° ELBOW
- 62 30" CML & C STEEL TEE
- 63 30" x 20" CML & C STEEL ECCENTRIC REDUCER T.F.
- 71 24" FLANGED METER, PER SPECS
- 72 PUMP, PER SPECS
- 73 MOTOR, PER SPECS
- 76 20" VICTAULIC COUPLING STYLE 77
- 77 24" DISMANTLING JOINT
- 78 14" DISMANTLING JOINT
- 83 LADDER W/ LADDER-UP SAFETY POST
- 86 METAL GRATE PER SPECS WITH VALVE KEYHOLE OPENING
- 89 PRESSURE GAGE PER DETAIL 2 ON SHEET M4
- 93 INSULATING FLANGE COUPLING

**NOTE:**  
 THE "A" DRAWINGS ARE FOR REFERENCE FOR THE FOUR PUMP ALTERNATIVE FOR THE ALTERNATIVE BID. ALL SHEETS HAVE NOT BEEN REVISED TO REFLECT THE FOUR PUMP ALTERNATIVE. ONLY THOSE SHEETS THAT IMPACT THE BIDDING OF THE FOUR PUMP ALTERNATIVE HAVE BEEN REVISED AND THE CONTRACTOR SHALL REVIEW ALL NECESSARY CONSTRUCTION REQUIREMENTS TO ALLOW BIDDING OF THE PROJECT.

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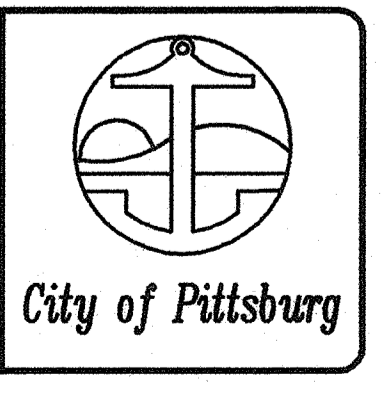
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 CIVIL  
 Paul A. Klein  
 48367 R.C.E. NO. 02/06/07 DATE

NO.	DATE	APPROV.	REVISION

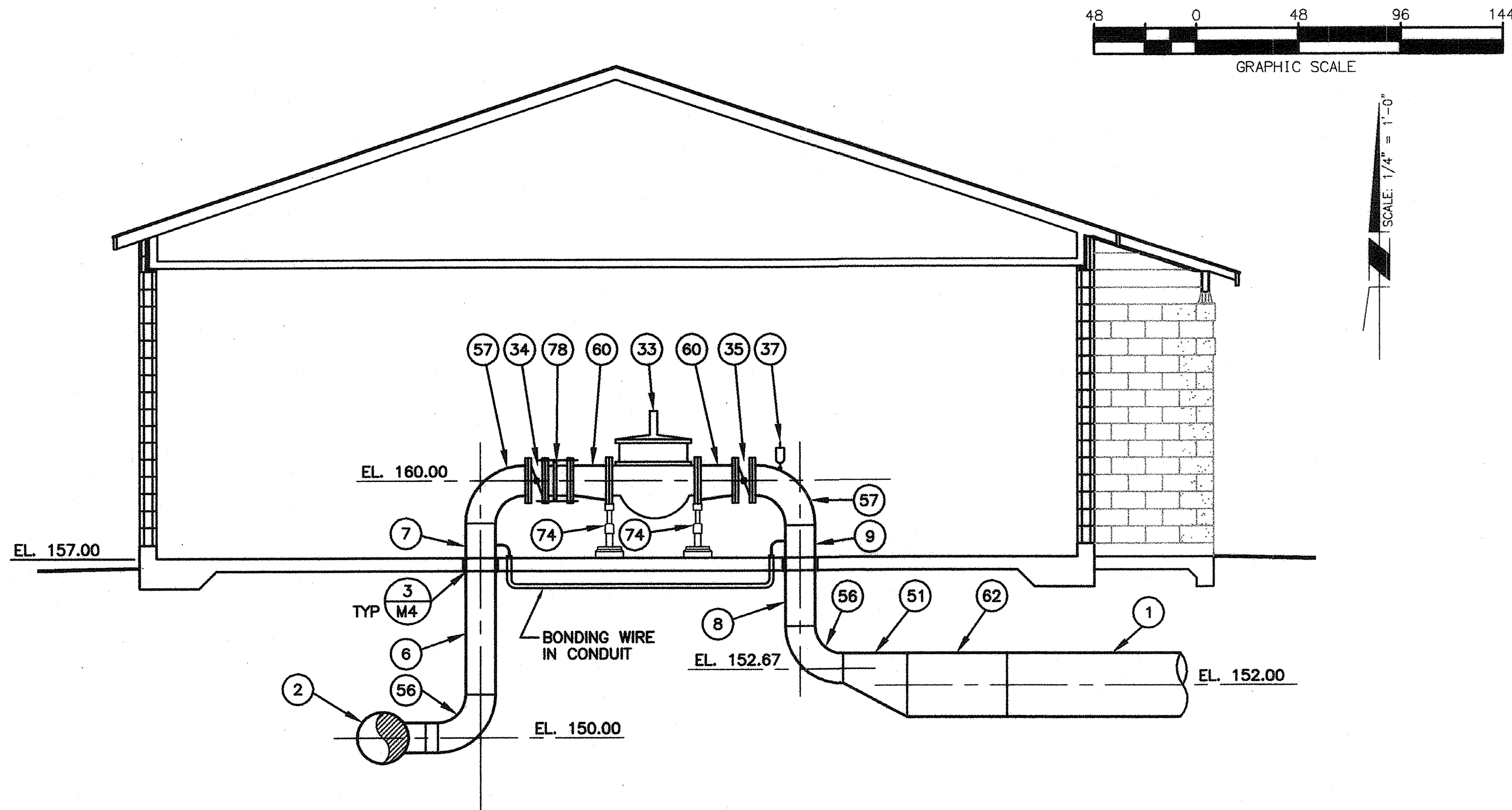
DESIGNED: H.W. & R.T.  
 APPROVED BY:  
 DRAWN: H. WILLIAMS  
 CHECKED: R. THOMAS  
 REVIEWED: P. KLEIN  
 DATE: FEBRUARY, 2007

**HIGH LEVEL  
 PUMP STATION NO. 2  
 MECHANICAL PLAN**

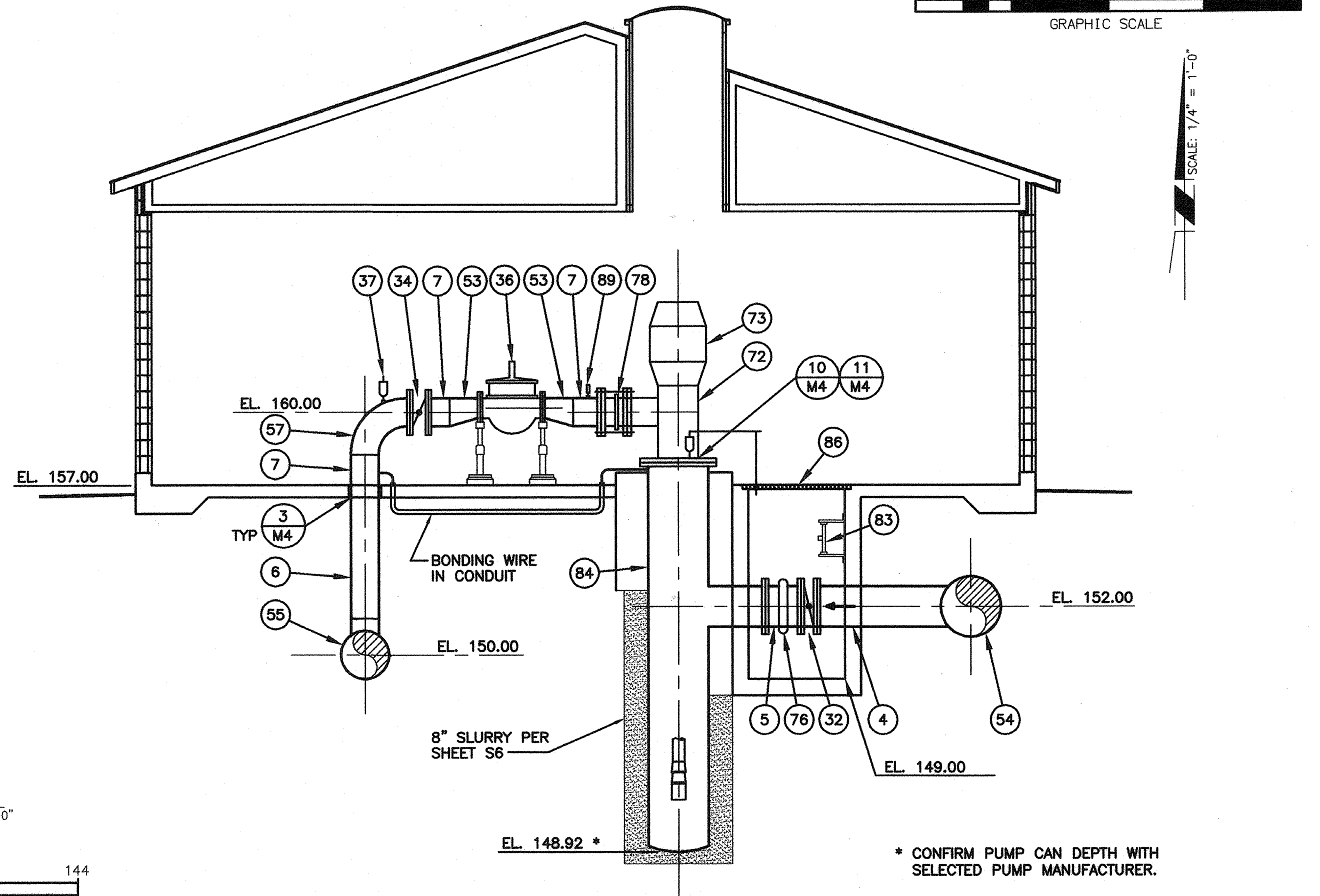


**M1A**  
**63 OF 77**

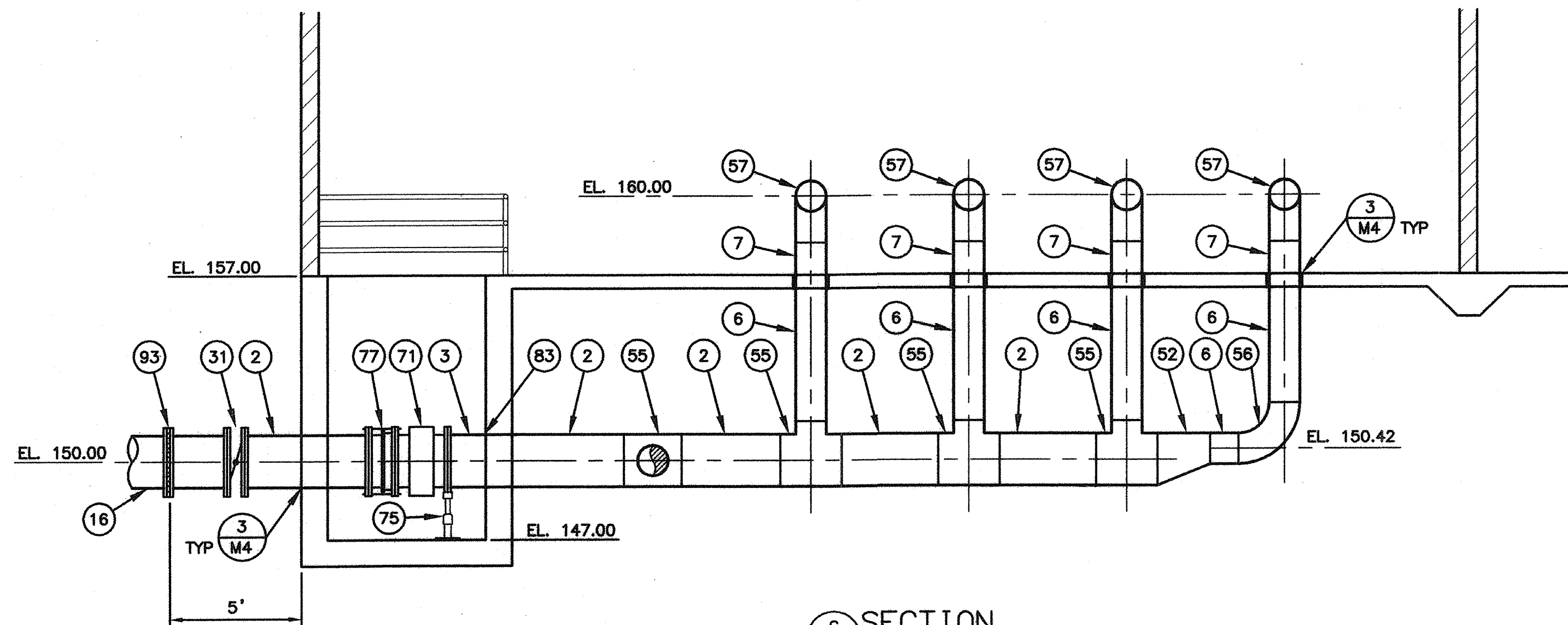
H:\PDATA\60100165\CA00\LAND\DLV\IMPROVEMENTS\HIPS\16SHLM1A.DWG WILLIAMS 8/7/07 8:57 am



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



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



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

**MATERIALS LIST**

- |   |   |
|---|---|
| 1 30" CML & C STEEL PIPE CLASS 150  | 54 30" x 20" CML & C STEEL TEE                      |
| 2 24" CML & C STEEL PIPE CLASS 250  | 55 24" x 14" CML & C STEEL TEE                      |
| 3 24" CML STEEL PIPE CLASS 250  | 56 14" CML & C STEEL SMOOTH 90° ELBOW               |
| 4 20" CML & C STEEL PIPE CLASS 150  | 57 14" CML STEEL SMOOTH 90° ELBOW                   |
| 5 20" CML STEEL PIPE CLASS 150  | 60 16" x 14" CML STEEL ECCENTRIC REDUCER T.F.       |
| 6 14" CML & C STEEL PIPE CLASS 250  | 62 30" CML & C STEEL TEE                            |
| 7 14" CML STEEL PIPE CLASS 250  | 71 24" FLANGED METER, PER SPECS                     |
| 8 14" CML & C STEEL PIPE CLASS 150  | 72 PUMP, PER SPECS                                  |
| 9 14" CML STEEL PIPE CLASS 150  | 73 MOTOR, PER SPECS                                 |
| 16 24" DUCTILE IRON PIPE  | 74 PIPE SUPPORT PER DETAIL 5 ON SHEET M4            |
| 31 24" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR                  | 75 PIPE SUPPORT PER DETAIL 9 ON SHEET M4            |
| 32 20" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR                  | 76 20" VICTAULIC COUPLING STYLE 77                  |
| 33 16" FLANGED PRESSURE RELIEF AND SURGE ANTICIPATOR VALVE CLASS 250, PER SPECS | 77 24" DISMANTLING JOINT                            |
| 34 14" FLANGED BUTTERFLY VALVE CLASS 250 W/ HANDWHEEL OPERATOR                  | 78 14" DISMANTLING JOINT                            |
| 35 14" FLANGED BUTTERFLY VALVE CLASS 150 W/ HANDWHEEL OPERATOR                  | 83 LADDER W/ LADDER-UP SAFETY POST                  |
| 36 12" FLANGED PUMP CONTROL VALVE CLASS 250, PER SPECS                          | 84 30" DIA. PUMP CAN                                |
| 37 1" COMBINATION AIR VAC PER DETAIL 6 ON SHEET M4                              | 86 METAL GRATE PER SPECS WITH VALVE KEYHOLE OPENING |
| 51 30" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.                               | 89 PRESSURE GAGE PER DETAIL 2 ON SHEET M4           |
| 52 24" x 14" CML & C STEEL ECCENTRIC REDUCER T.F.                               | 93 INSULATING FLANGE COUPLING                       |
| 53 14" x 12" CML STEEL ECCENTRIC REDUCER T.F.                                   |   |

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48367 08/06/07  
PAUL A. KLEIN R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: H.W. & R.T.  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

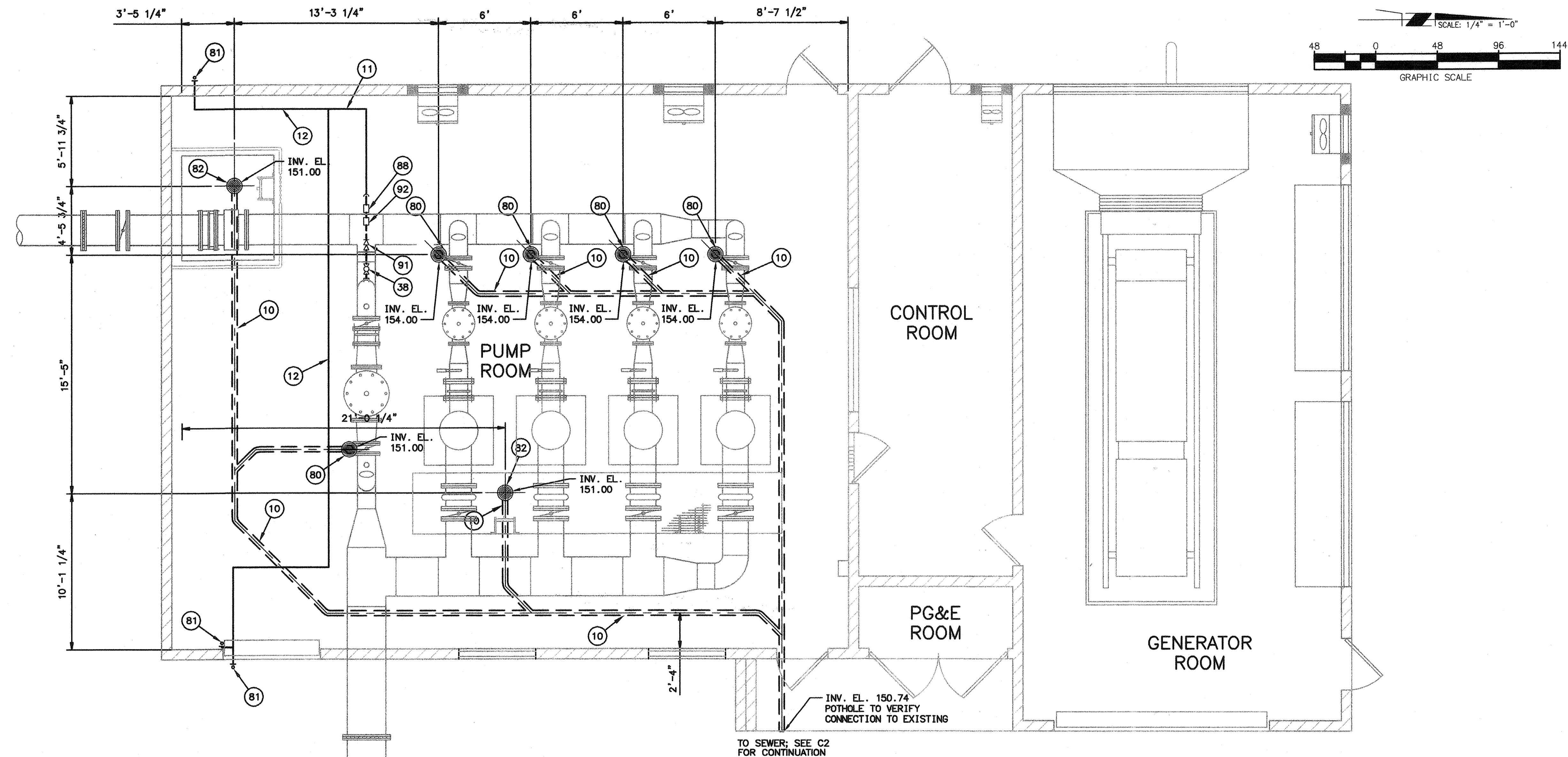
APPROVED BY:  
**HIGH LEVEL  
PUMP STATION NO. 2  
MECHANICAL SECTIONS**



**M2A**  
**64 OF 77**

H:\DATA\60100165\CADD\LAND\DLV\IMPROVEMENTS\HLP5\165HLM2A.DWG H\WILLIAMS 8/7/07 8:58 am





- MATERIALS LIST**
- ⑩ 4" PVC SEWER PIPE
  - ⑪ 1 1/2" COPPER PIPE
  - ⑫ 3/4" COPPER PIPE
  - ⑳ 1 1/2" BRASS BALL VALVE
  - ⑧① CUP DRAIN PER DETAIL 8 ON SHEET M4
  - ⑧② 3/4" HOSE BIBB PER DETAIL 1 ON SHEET M5
  - ⑧③ 12" FLOOR DRAIN W/ ANTI-SIPHON, SMITH OR EQUAL
  - ⑧④ 1 1/2" FLOW METER
  - ⑧⑤ 1 1/2" BACKFLOW PREVENTER
  - ⑧⑥ 1 1/2" PRESSURE REGULATOR

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*Paul A. Klein*  
PAUL A. KLEIN 48367 08/06/02  
R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

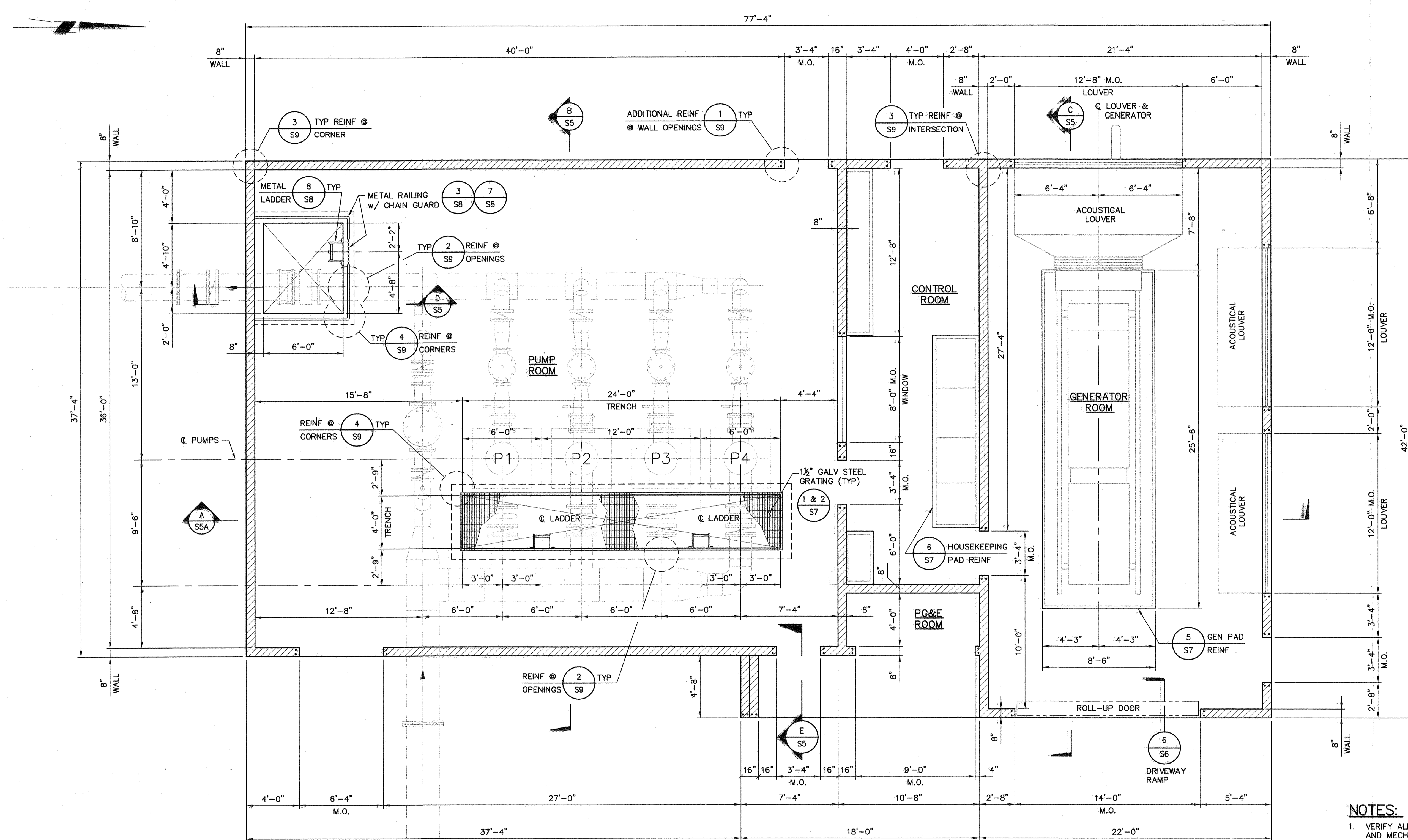
DESIGNED: H.W. & R.T. APPROVED BY:  
DRAWN: H. WILLIAMS  
CHECKED: R. THOMAS  
REVIEWED: P. KLEIN  
DATE: FEBRUARY, 2007

**HIGH LEVEL  
PUMP STATION NO. 2  
WATER AND SEWER SERVICE PLAN**



**M3A**  
**65 OF 77**

H:\PDATA\60100165\CADD\LAND\DLV\IMPROVEMENTS\HPLS\165HLM3A.DWG H.WILLIAMS 8/7/07 8:58 am



**NOTES:**  
 1. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

BEFORE EXCAVATING  
 CALL U.S.A.  
 UNDERGROUND SERVICE ALERT  
 (800) 227-2600  
 TWO WORKING DAYS BEFORE ALL  
 PLANNED EXCAVATION WORK

CAUTION  
 OVERHEAD ELECTRICAL  
 FACILITIES EXIST WITHIN  
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**FLOOR PLAN**  
 SCALE: 1/4" = 1'-0"

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*Kevin P. Burke*  
 KEVIN P. BURKE 57152 8-7-07  
 R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

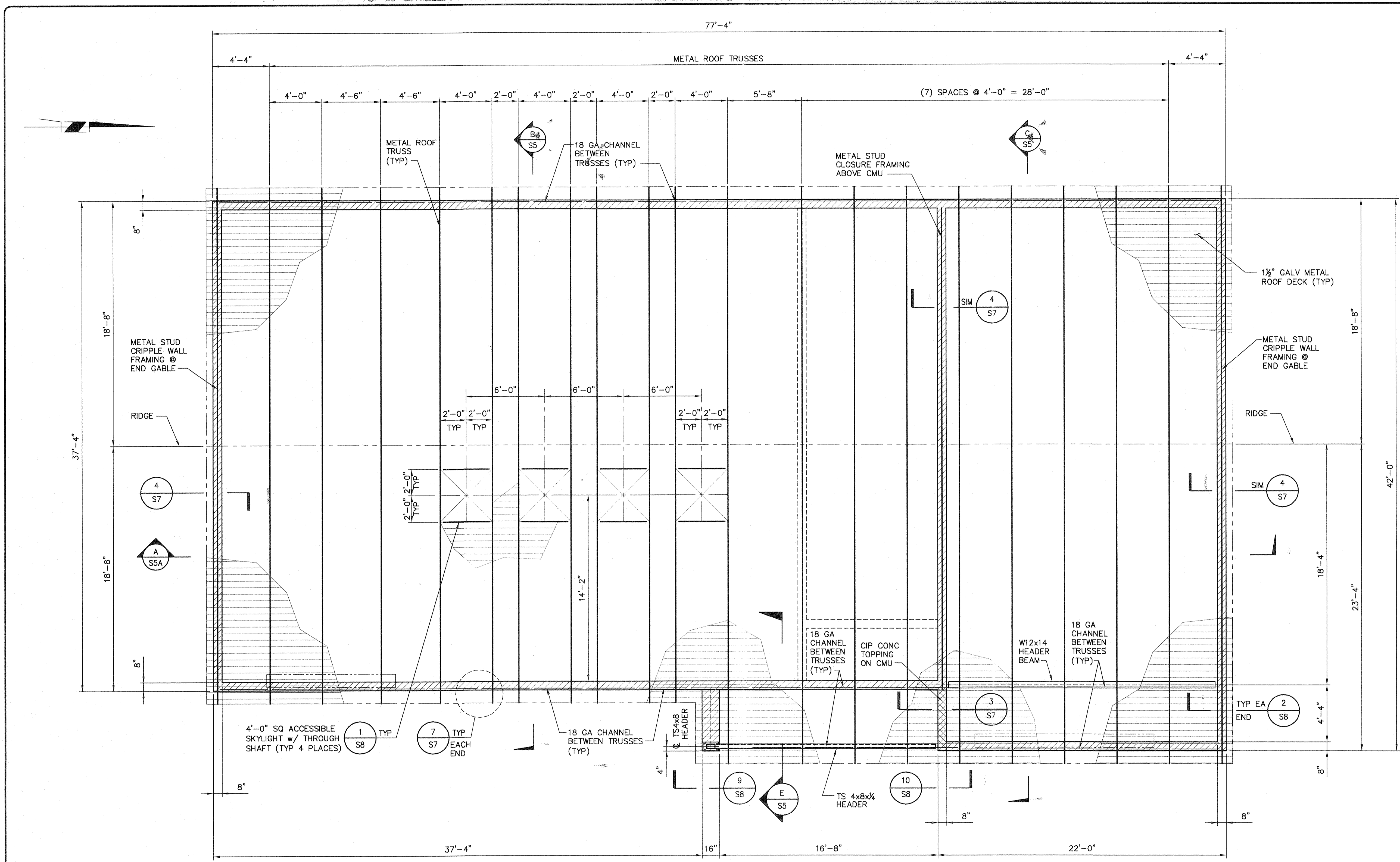
DESIGNED: C. SHENOY  
 DRAWN: G. FETTERS  
 CHECKED: P. KLEIN  
 REVIEWED: K. BURKE  
 DATE: FEBRUARY 2007

APPROVED BY:  
**HIGH LEVEL PUMP STATION FLOOR PLAN**

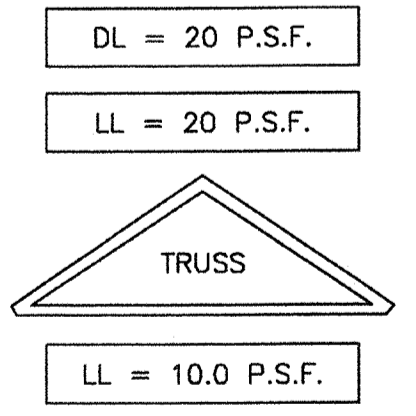


**S2A**  
 66 of 77

H:\PDATA\60100165\CAOD\STRUC\PMPSSTA HIGH-LEVEL\DLV\16SHLS2A.DWG Gf 8/7/07 10:16 am



- NOTES:**
1. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
  2. REFER TO SHEET S8 FOR DETAILS RELATING TO INSTALLATION OF METAL ROOF DECK.
  3. STEEL ROOF TRUSSES ARE BY OTHERS AND SHALL BE DESIGNED USING THE LOADS AS SHOWN ON THE ROOF TRUSS LOADING DIAGRAM THIS SHEET. MFR SHALL SUBMIT SHOP DRAWINGS SHOWING LOADS, ALL TRUSS ELEVATIONS, CONNECTIONS, LAYOUT PLAN, ETC., TO THE ENGINEER OF RECORD FOR REVIEW.



**ROOF TRUSS FRAMING PLAN**  
SCALE: 1/4" = 1'-0"

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CALL U.S.A.  
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57152 8-7-07  
R.C.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: C. SHENY  
DRAWN: G. FETTERS  
CHECKED: P. KLEIN  
REVIEWED: K. BURKE  
DATE: FEBRUARY 2007

APPROVED BY:

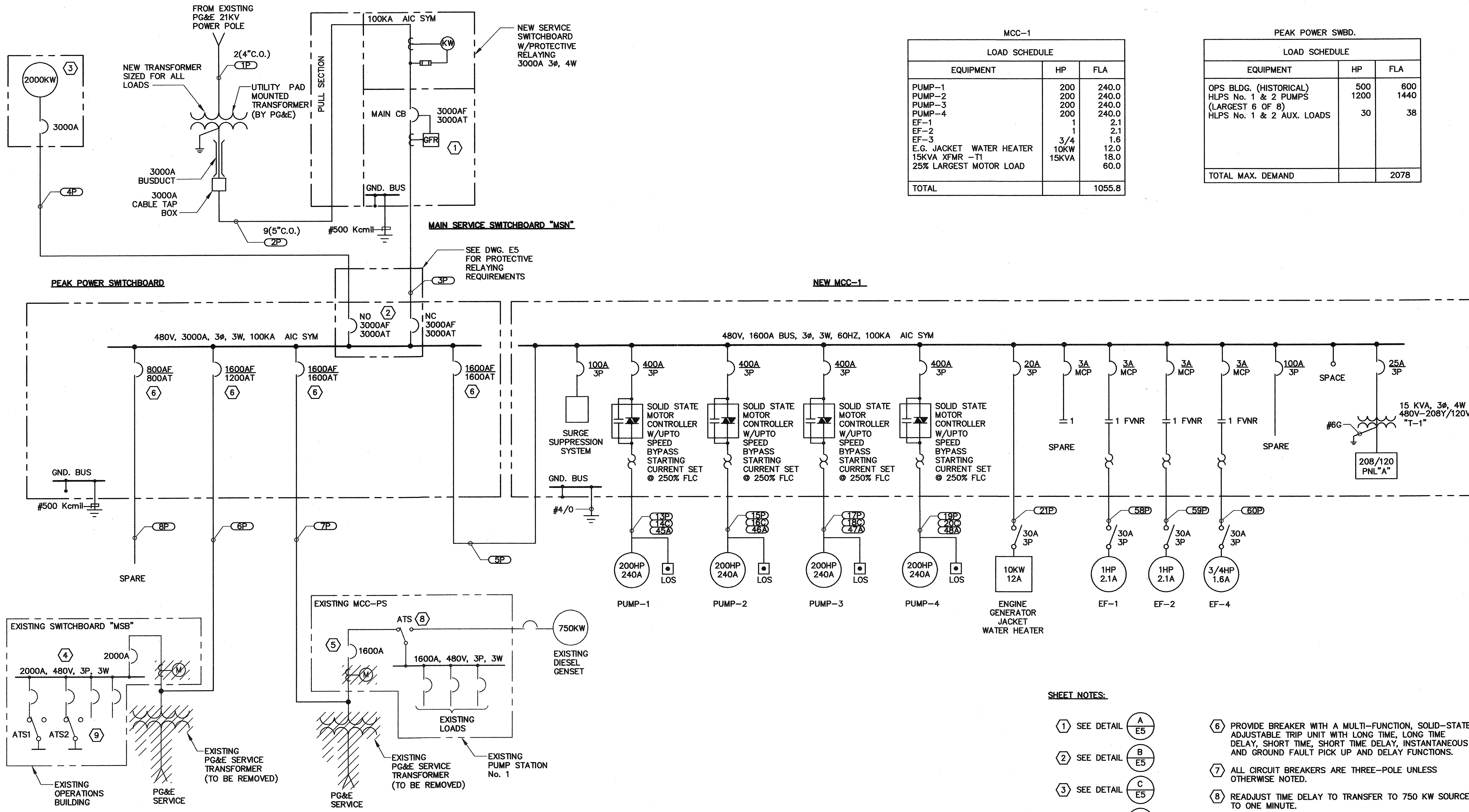
**HIGH LEVEL  
PUMP STATION  
ROOF TRUSS FRAMING PLAN**



**S4A**  
67 of 77

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MCC-1

LOAD SCHEDULE		
EQUIPMENT	HP	FLA
PUMP-1	200	240.0
PUMP-2	200	240.0
PUMP-3	200	240.0
PUMP-4	200	240.0
EF-1	1	2.1
EF-2	1	2.1
EF-3	3/4	1.6
E.G. JACKET WATER HEATER	10KW	12.0
15KVA XFMR -T1	15KVA	18.0
25% LARGEST MOTOR LOAD		60.0
<b>TOTAL</b>		<b>1055.8</b>

PEAK POWER SWBD.

LOAD SCHEDULE		
EQUIPMENT	HP	FLA
OPS BLDG. (HISTORICAL)	500	600
HLPS No. 1 & 2 PUMPS	1200	1440
(LARGEST 6 OF 8)		
HLPS No. 1 & 2 AUX. LOADS	30	38
<b>TOTAL MAX. DEMAND</b>		<b>2078</b>

SHEET NOTES:

- ① SEE DETAIL 

A
E5
- ② SEE DETAIL 

B
E5
- ③ SEE DETAIL 

C
E5
- ④ SEE DETAIL 

A
E6
- ⑤ SEE DETAIL 

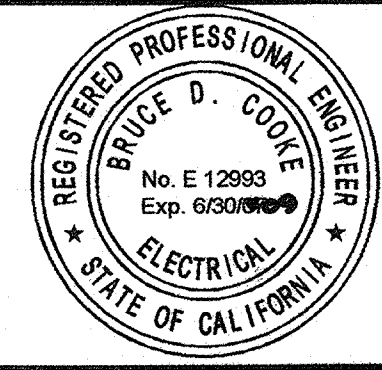
B
E16
- ⑥ PROVIDE BREAKER WITH A MULTI-FUNCTION, SOLID-STATE ADJUSTABLE TRIP UNIT WITH LONG TIME, LONG TIME DELAY, SHORT TIME, SHORT TIME DELAY, INSTANTANEOUS AND GROUND FAULT PICK UP AND DELAY FUNCTIONS.
- ⑦ ALL CIRCUIT BREAKERS ARE THREE-POLE UNLESS OTHERWISE NOTED.
- ⑧ READJUST TIME DELAY TO TRANSFER TO 750 KW SOURCE TO ONE MINUTE.
- ⑨ SEE DRAWING E6 FOR REQUIRED DEMOLITION WORK INCLUDING DEMOLITION OF TWO EXISTING ENGINE GENERATORS.

PLANT POWER SINGLE LINE DIAGRAM ⑦  
SCALE: NTS

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*Bruce D. Cooke* 12993 06/06/07  
BRUCE D. COOKE R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

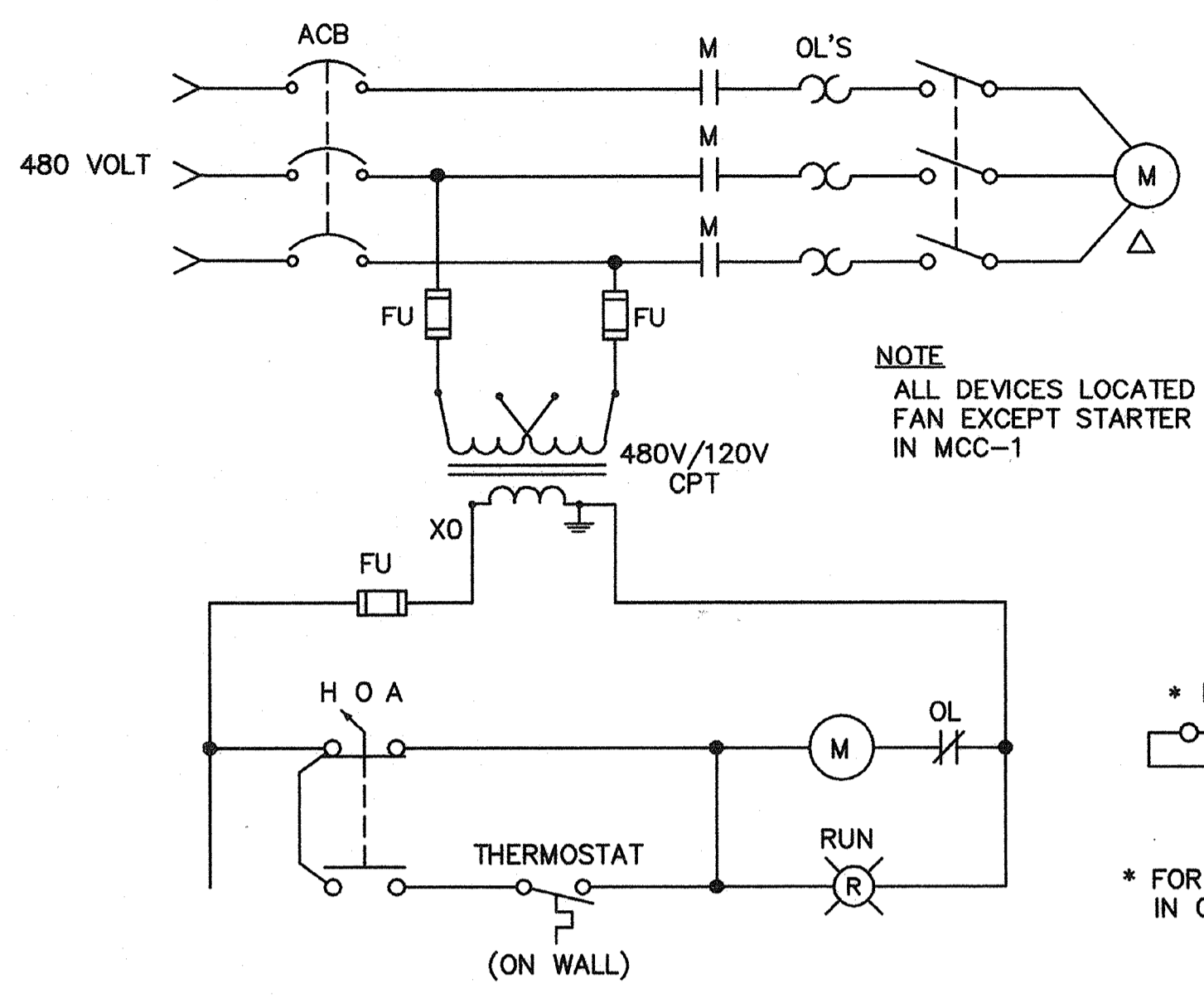
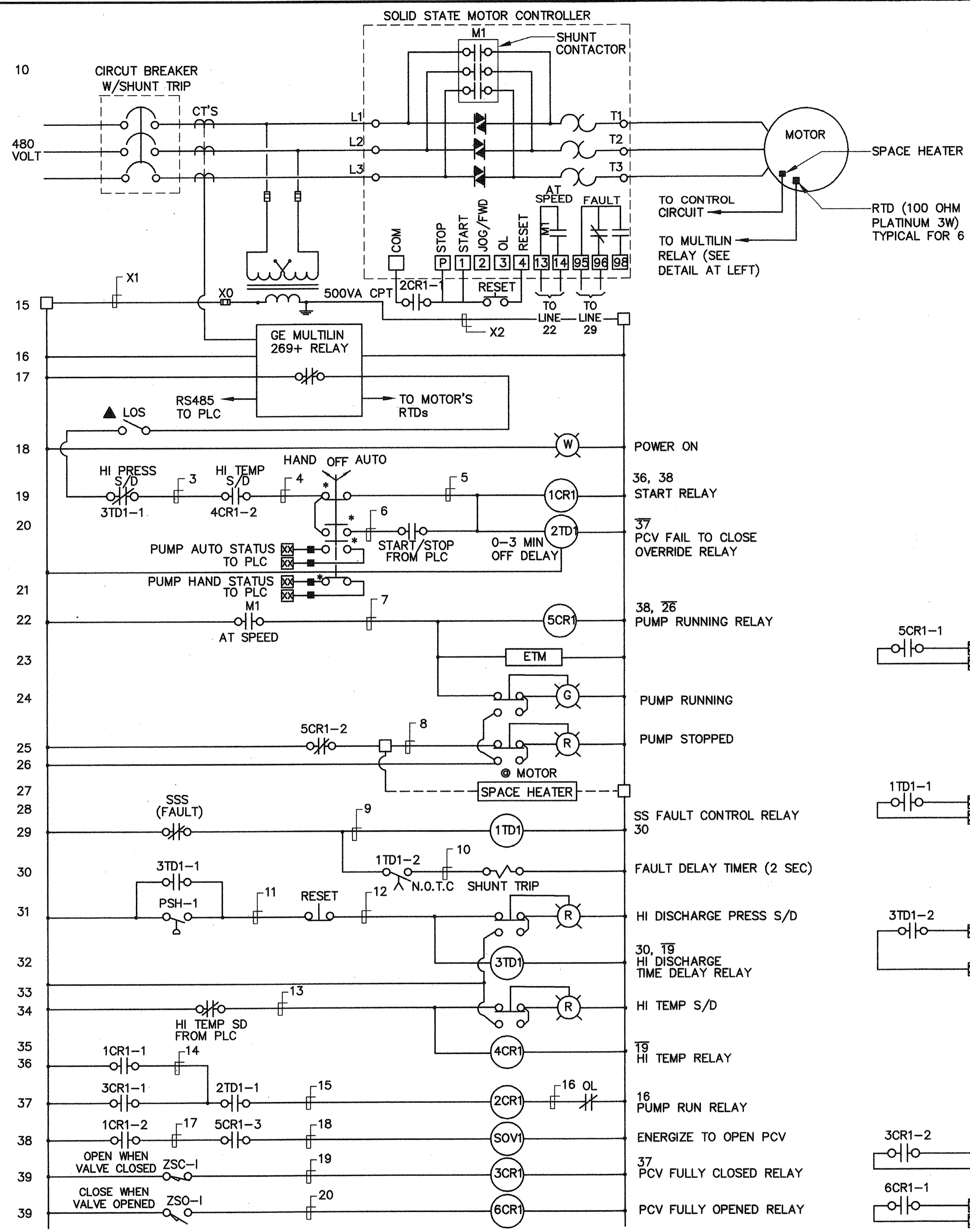
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
PLANT POWER SYSTEM**

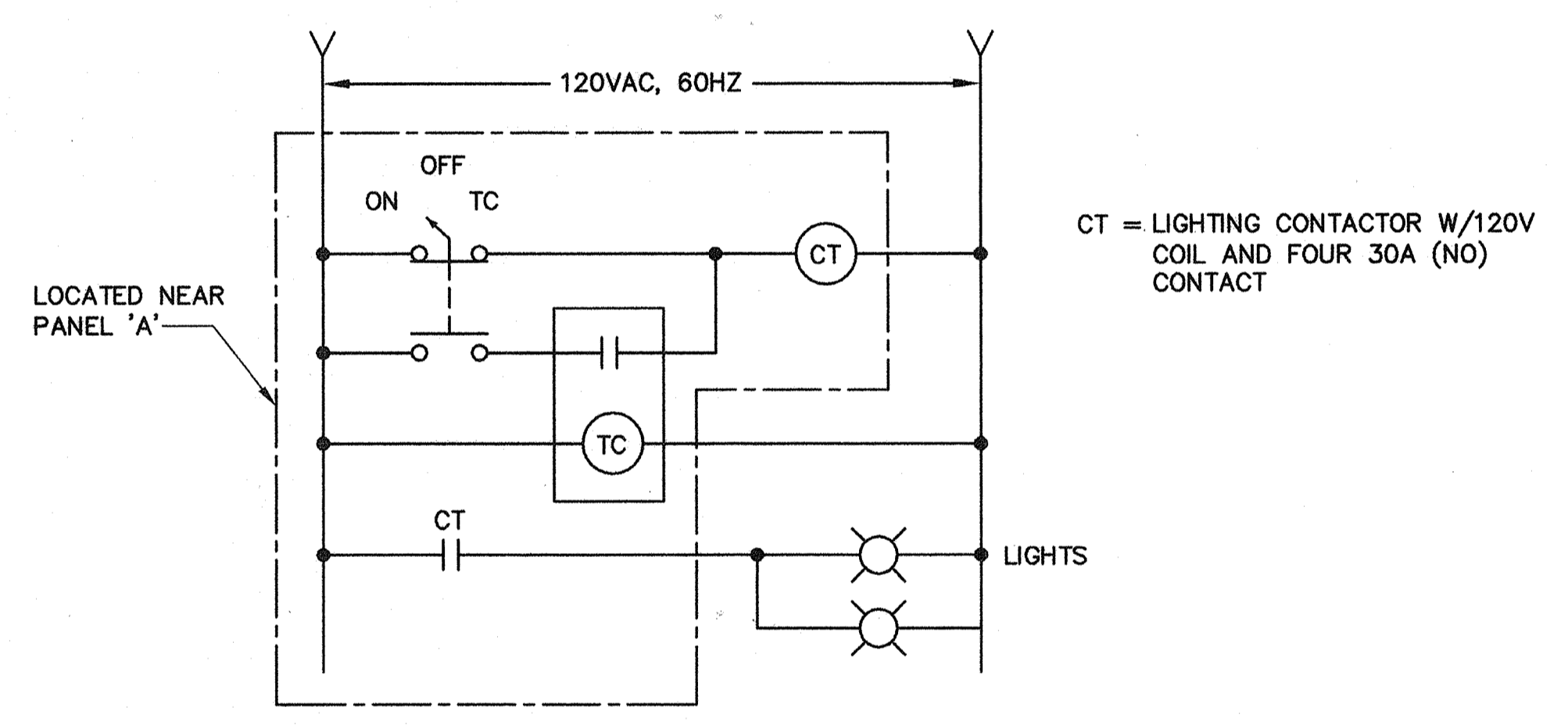


**E4A**  
69 OF 77

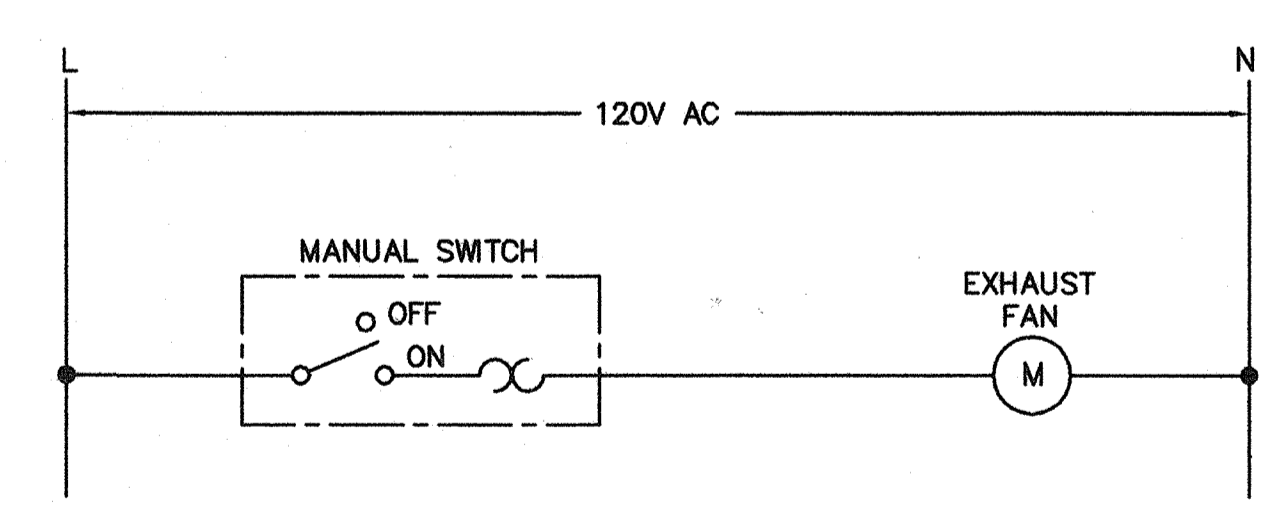
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**(B) EXHAUST FAN SCHEMATIC (480V)**  
SCALE: NTS (TYPICAL FOR THREE FANS: EF-1, EF-2 & EF-4)



**(C) EXTERIOR LIGHTING CONTROL**  
SCALE: NTS



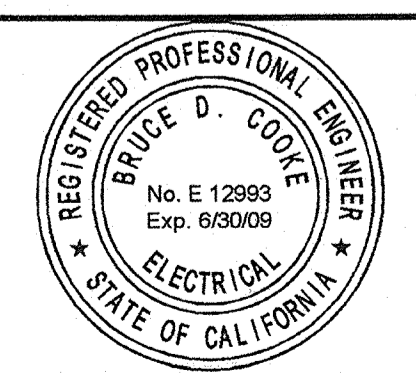
**(D) EXHAUST FAN (EF-3) SCHEMATIC**  
SCALE: NTS

**(A) PUMP CONTROL**  
SCALE: NTS (TYPICAL FOR PUMP NO. 1, 2, 3 & 4)

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Bruce D. Cooke 12993 02/06/07  
R.E.E. NO. DATE

NO.	DATE	APPROV.	REVISION

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DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

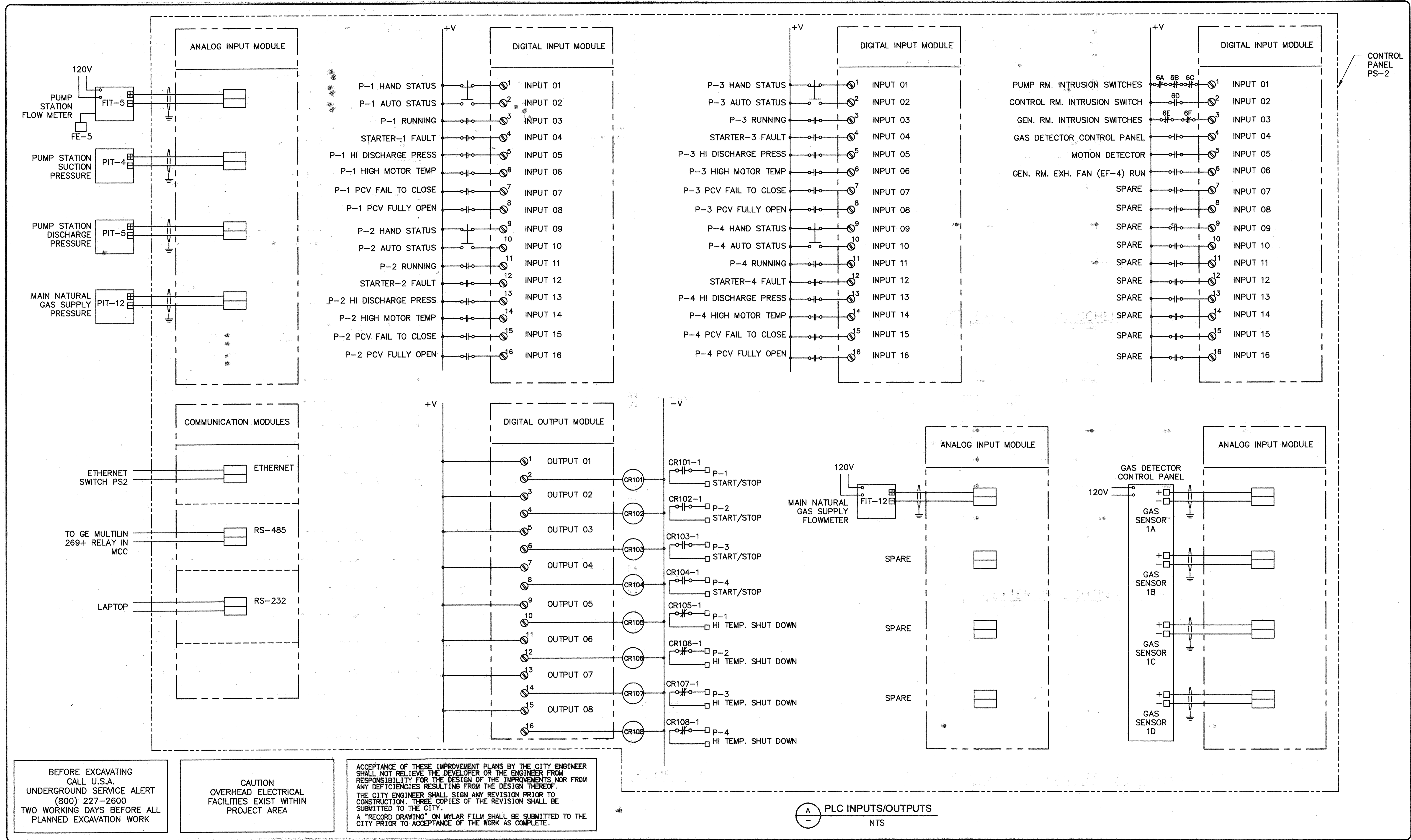
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
ELECTRICAL CONTROL SCHEMATIC**



**E7A**  
70 OF 77

H:\DATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-2-12-08-2008\0165-EL-E07A.DWG TINGUYEN 8/1/07 4:27 PM



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Bruce D. Cooke  
12993 R.E.E. NO. 08/06/07 DATE

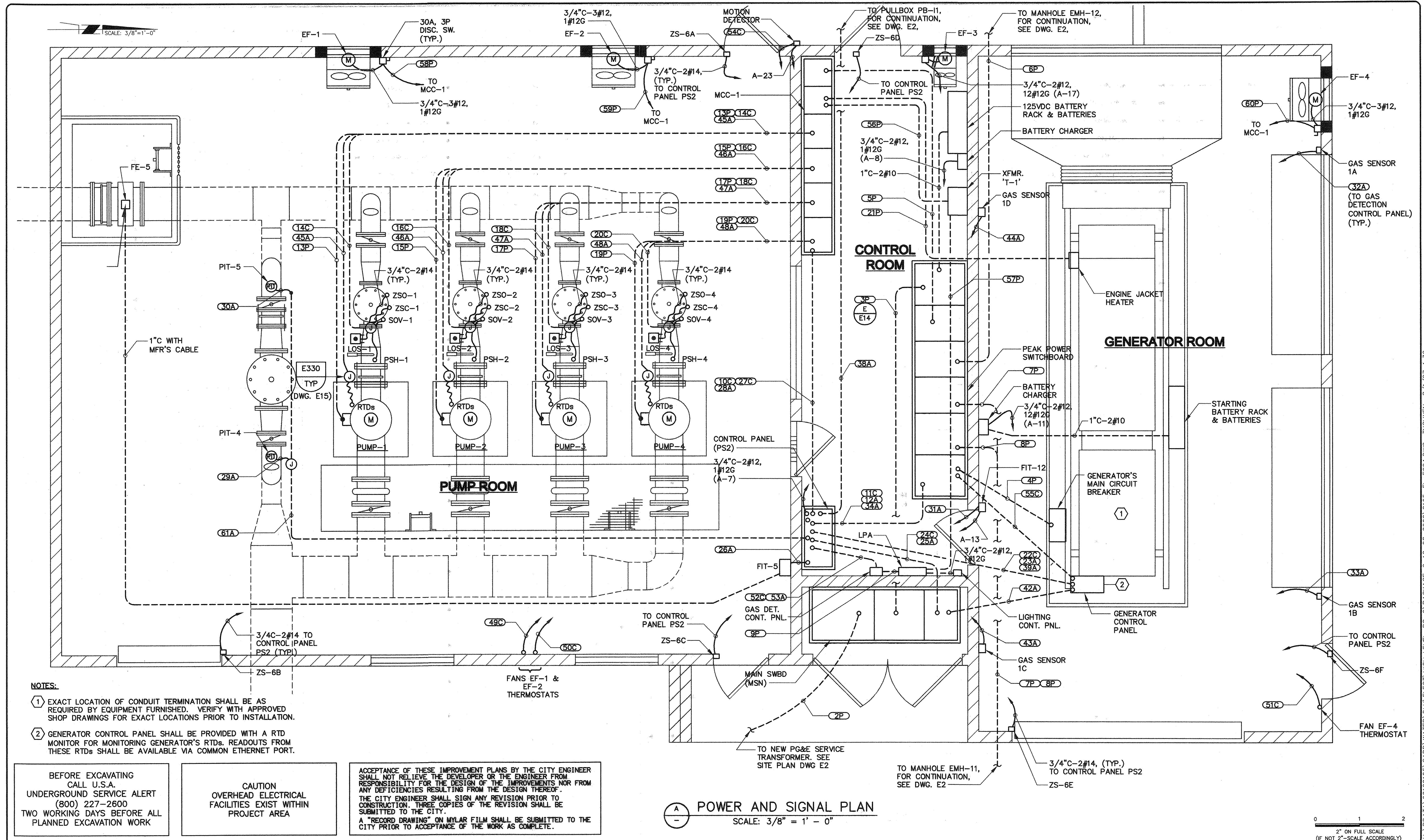
NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:  
**HIGH LEVEL PUMP STATION No. 2**  
**PLC CONNECTION DIAGRAM**



H:\DATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-2-12-08-2006\0165-EL-E05A.DWG NGUYEN-8/7/07 4:29 pm



- NOTES:**
- EXACT LOCATION OF CONDUIT TERMINATION SHALL BE AS REQUIRED BY EQUIPMENT FURNISHED. VERIFY WITH APPROVED SHOP DRAWINGS FOR EXACT LOCATIONS PRIOR TO INSTALLATION.
  - GENERATOR CONTROL PANEL SHALL BE PROVIDED WITH A RTD MONITOR FOR MONITORING GENERATOR'S RTDs. READOUTS FROM THESE RTDs SHALL BE AVAILABLE VIA COMMON ETHERNET PORT.

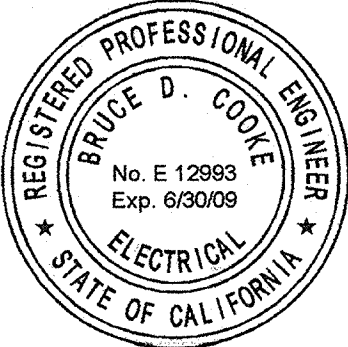
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**POWER AND SIGNAL PLAN**  
SCALE: 3/8" = 1' - 0"

0 1 2  
2" ON FULL SCALE  
(IF NOT 2" - SCALE ACCORDINGLY)

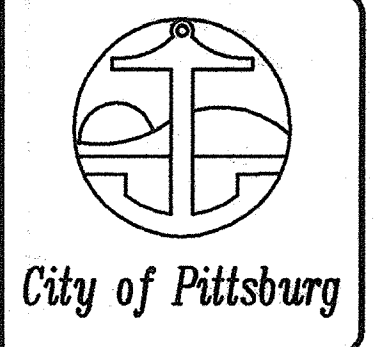


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12993 08/06/07  
BRUCE D. COOKE R.E.E. NO. DATE

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CHECKED: DTN, RBF  
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DATE: FEBRUARY, 2007

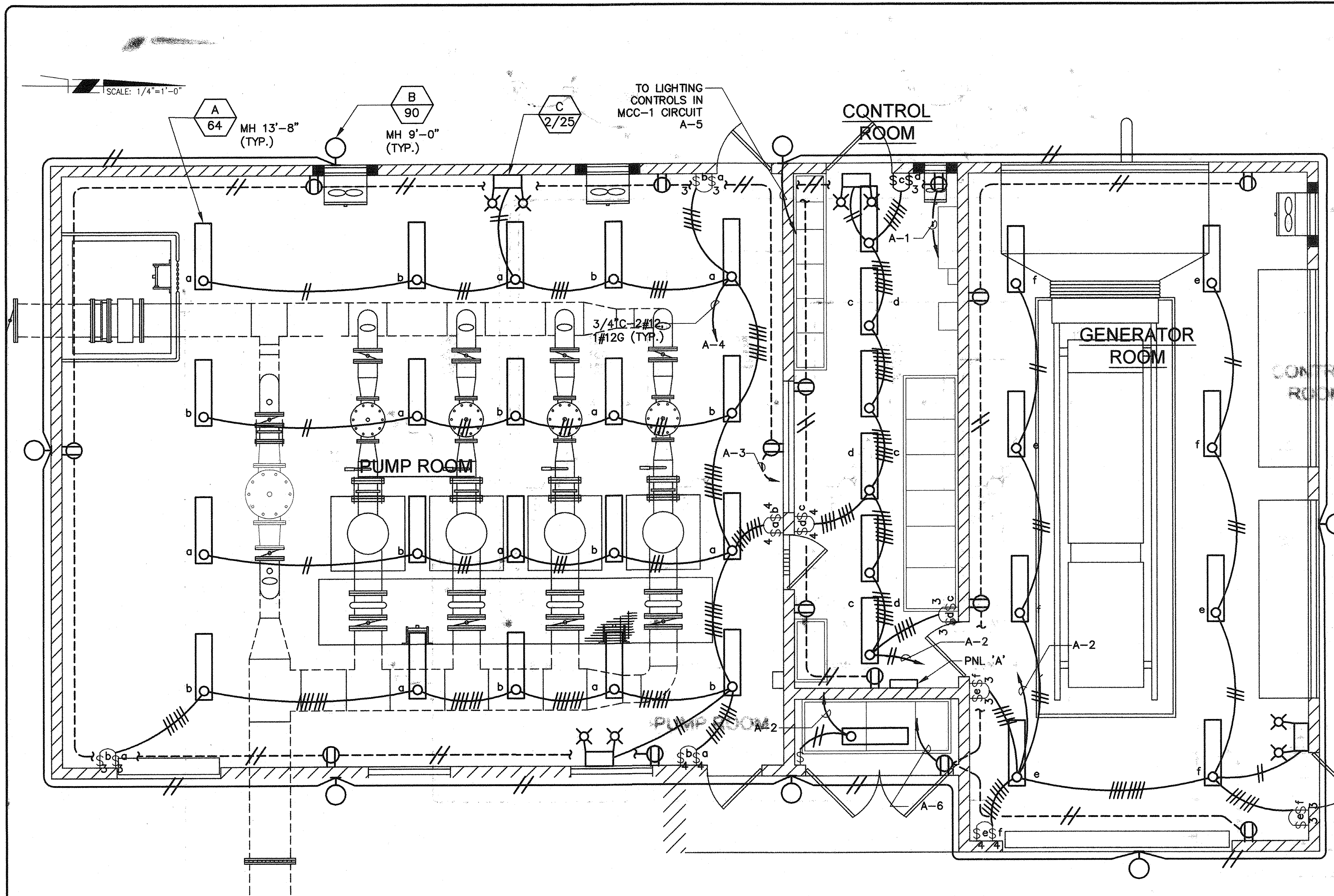
APPROVED BY:  
**HIGH LEVEL  
PUMP STATION No. 2  
POWER AND SIGNAL PLAN**



**E9A**  
72 OF 77

H:\DATA\60100165\CADD\WATER\DLV\ELECT\HIGH LEVEL-PS-2\PACKAGE-2-12-08-2006\0165-EL-E09A.DWG TNGUYEN - 8/1/07 4:30 pm





TYPE	DESCRIPTION	VOLT	LAMP			MOUNT	REMARKS
			NO.	WATT	TYPE		
A 64	48" METALUX DIM-232-120-EB81-U 2 LAMP INDUSTRIAL FIXTURE ELECTRONIC BALLAST	120	2	32	T8 4100K	PENDANT	
B 90	HOLOPHANE WALLPACKETTE WP2A070HP12GR-P DIE CAST AL. PRISMATIC GLASS. REFRACTOR	120	1	70	HPS	WALL	
C 2/25	EMERGENCY BATTERY PACK W/12 BATTERY, CHARGER SELF DIAGNOSTIC AND VISUAL INDICATOR. TWO 25 WATT TUNGSTEN SEALED SEAM LAMPS. HOLOPHANE C1-12N-25-W-WK-2-A1-NA OR EQUAL	120	2	25	TUNGSTEN	WALL	

**A LIGHTING PLAN**  
SCALE: 1/4" = 1'-0"

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CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
(800) 227-2600  
TWO WORKING DAYS BEFORE ALL  
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0 1 2  
2" ON FULL SCALE  
(IF NOT 2"=SCALE ACCORDINGLY)

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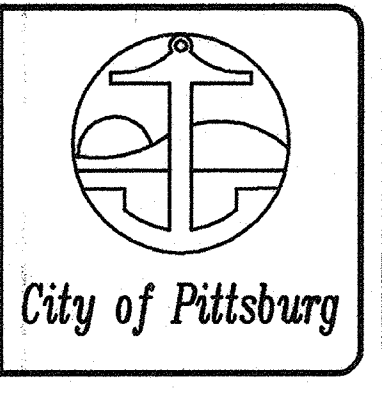
*Bruce D. Cooke* 12993 02/06/07  
BRUCE D. COOKE R.E.E. NO. DATE

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DESIGNED: DN  
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REVIEWED:  
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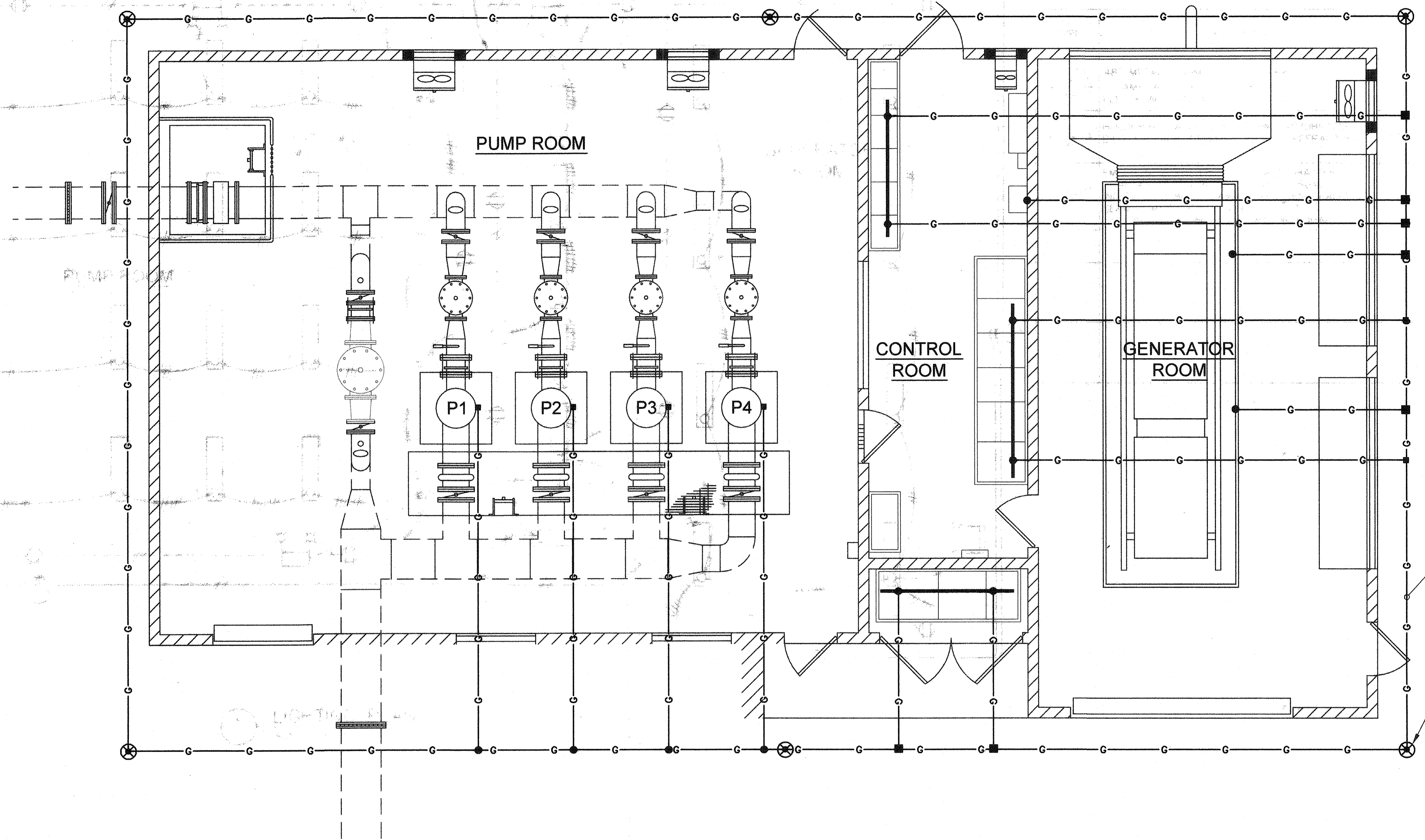
**HIGH LEVEL  
PUMP STATION No. 2**  
POWER LIGHTING PLAN



**E10A**  
73 OF 77

H:\DATA\60100165\CADD\WATER\DLX\VELECT\HIGH LEVEL-PS-2\PACKAGE-2-12-08-2008\0165-EL-E10A.DWG TNGUYEN-8/1/07 4:31 pm

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

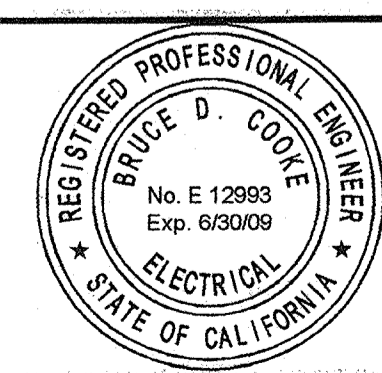


**GROUNDING PLAN**  
SCALE: 1/4" = 1'-0"

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*Bruce Cooke* 12993 08/06/07  
BRUCE D. COOKE R.E.E. NO. DATE

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DESIGNED: DN  
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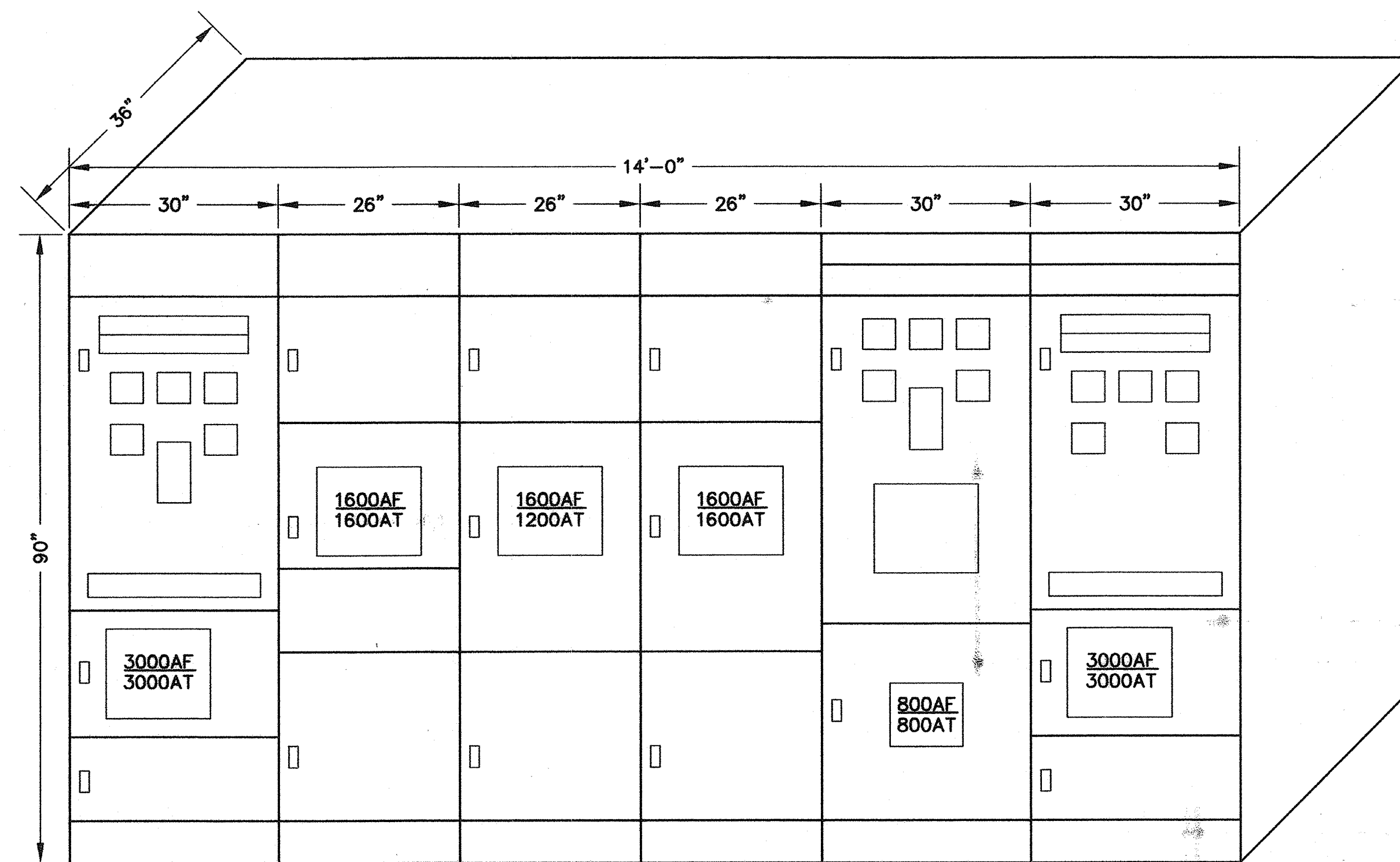
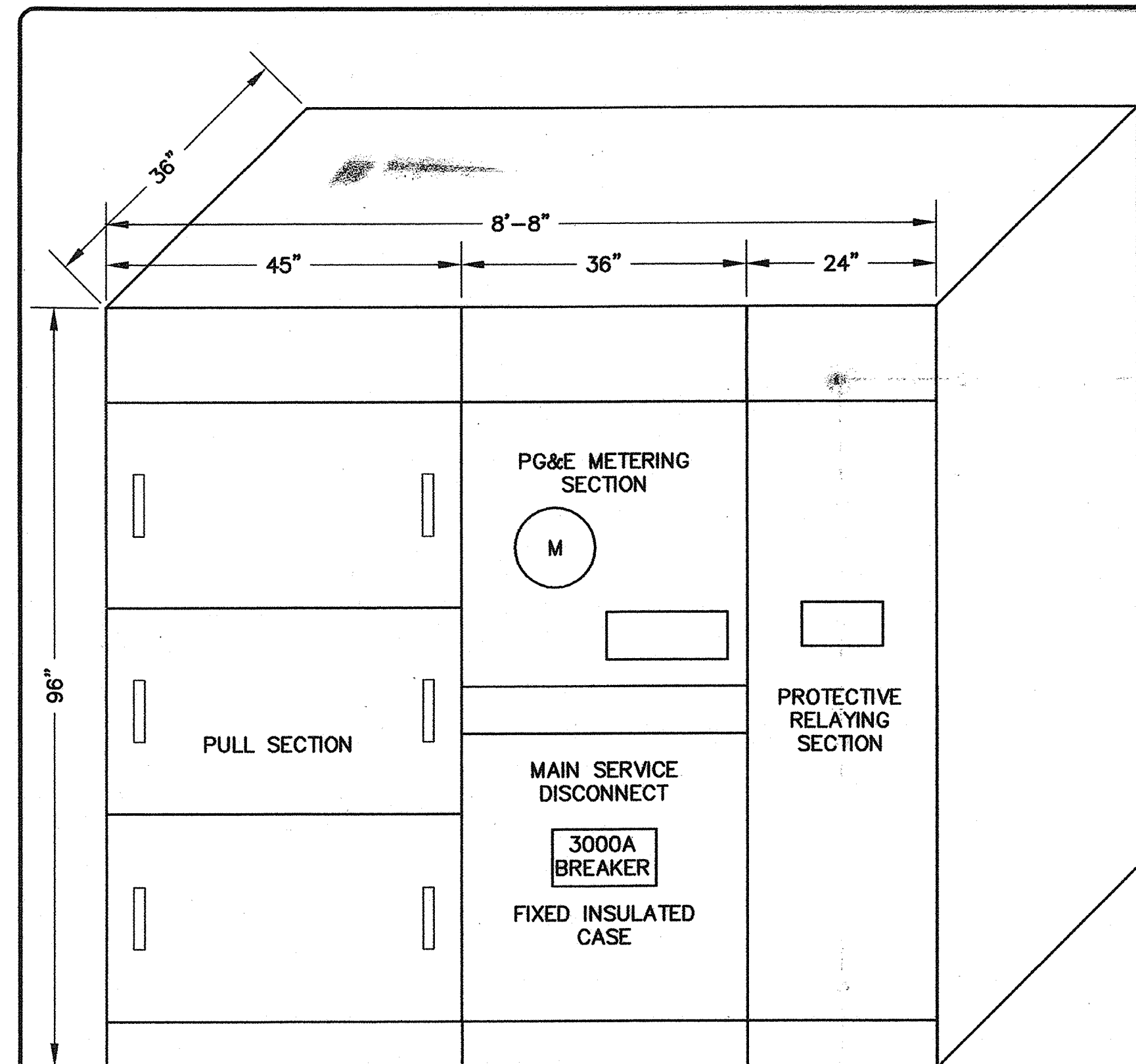
APPROVED BY:

**HIGH LEVEL  
PUMP STATION No. 2  
GROUNDING PLAN**



**E11A**  
74 OF 77

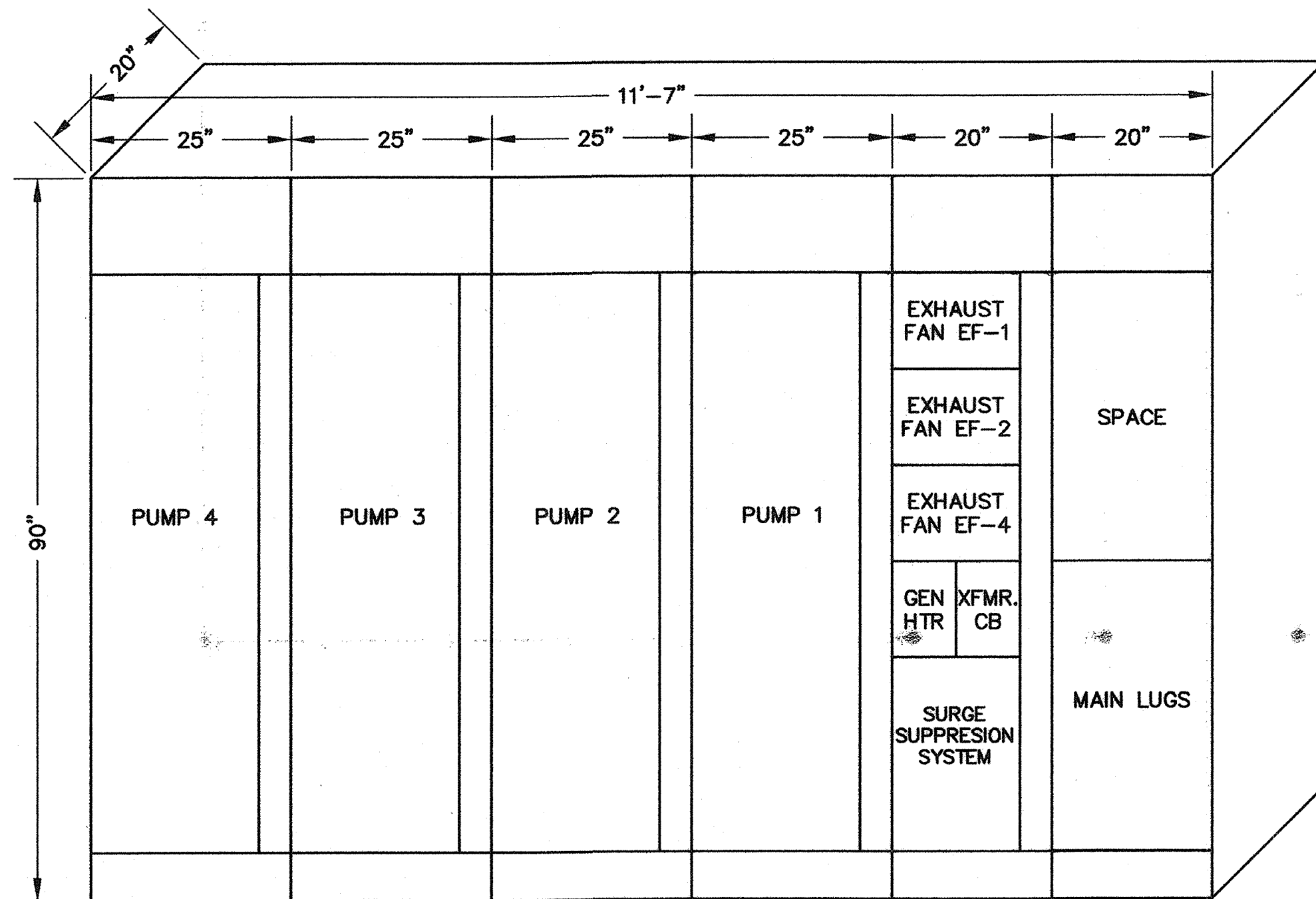
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**NOTES:**  
 ① THIS SWITCHBOARD IS A DEAD-FRONT SWITCHBOARD WITH GENERAL ARRANGEMENT AS SHOWN. THE MANUFACTURER SHALL MAKE SURE THAT CABLE TERMINATIONS BE ACCESSIBLE FROM THE FRONT OF THE SWITCHBOARD, EXCEPT FOR END UNITS WHICH ARE ALSO SIDE ACCESSIBLE.

**A** MAIN SERVICE SWITCHBOARD "MSN" ①  
 SCALE: NTS

**B** PEAK POWER SWITCHBOARD ①  
 SCALE: NTS



**C** MCC-1  
 SCALE: NTS

DESCRIPTION		LTG	REC	MIS	VOLT-AMPS			BRKR	CIR	CIR	BRKR	VOLT-AMPS			LTG	REC	MIS	DESCRIPTION
					A	B	C	AMP	P		AMP	P	A	B	C			
CONTROL RM			5		900			20	1	1	2	20	1	1010		17		GEN RM, CTRL RM, PG&E RM
PUMP ROOM			6			1080		20	1	3	4	20	1	1380		22		PUMP RM
EXTERIOR LTG		7					630	20	1	5	6	20	1			900	5	GEN RM, PG&E RM
CONTROL PNL "PS2"					550			20	1	7	8	20	1	1000				
GAS DET. CONT. PNL			1		300			20	1	9	10	20	2	1000			1	SWBD PWR BATT. CHARGER
BATTERY CHARGER				1			500	20	1	11	12	20	1					SPARE
FIT-12				1	100			40	1	13	14	20	1					SPARE
SPARE								20	1	15	16	20	1					SPARE
EF-3				1			700	20	1	17	18	20	1			200	1	EXTERIOR LTG. CONTROLLER
SPARE								20	1	19	20	20	1					SPARE
SPARE								20	1	21	22	20	1					SPARE
MOTION DETECTION				1			250	20	1	23	24	20	1			100	1	FIT-5
SPARE								20	1	25	26	20	1					SPARE
								20	1	27	28	20	1					
								20	1	29	30	20	1					
								20	1	31	32	20	1					
								20	1	33	34	20	1					
								20	1	35	36	20	1					
SPACE								20	1	37	38	20	1					SPACE
								20	1	39	40	20	1					
								20	1	41	42	20	1					

			1550	1380	2080				2010	2380	1200	
LOAD	AØ	3560	BØ	3760	CØ	3280						
LCL x .25							PANEL TOTAL				10500 VOLT-AMPS	29.1 AMPS
TOTAL		3560		3504		3280	HIGH LEG				3560 VOLT-AMPS	29.7 AMPS

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 TWO WORKING DAYS BEFORE ALL  
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ACCEPTANCE OF THESE IMPROVEMENT PLANS BY THE CITY ENGINEER SHALL NOT RELIEVE THE DEVELOPER OR THE ENGINEER FROM RESPONSIBILITY FOR THE DESIGN OF THE IMPROVEMENTS NOR FROM ANY DEFICIENCIES RESULTING FROM THE DESIGN THEREOF. THE CITY ENGINEER SHALL SIGN ANY REVISION PRIOR TO CONSTRUCTION. THREE COPIES OF THE REVISION SHALL BE SUBMITTED TO THE CITY. A "RECORD DRAWING" ON MYLAR FILM SHALL BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.

**RBF** CONSULTING  
 2101 ARENA BOULEVARD, SUITE 250  
 SACRAMENTO, CALIFORNIA 95834-2903  
 916.928.1113 • FAX 916.928.1117 • www.RBF.com  
 Bruce D. Cooke  
 12993 R.E.E. NO. DATE 02/06/07

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
 DRAWN: EA  
 CHECKED: DTN, RBF  
 REVIEWED:  
 DATE: FEBRUARY, 2007

APPROVED BY:  
**HIGH LEVEL PUMP STATION No. 2**  
**SCHEDULE AND ELEVATION DETAIL**



**E12A**  
**75 OF 77**

H:\PDATA\601005\CADD\WATER\DLV\VELECT\HIGH LEVEL-PS-2\PACKAGE-2-12-08-2008\0165-EL-E12A.DWG INGSUYEN 2/16/07 10:21 am

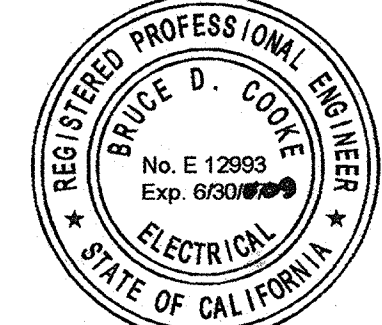
PLAN SYMBOL	CONDUIT		CONDUCTOR		LOCATION			REMARKS	
	#	QTY	SIZE	QTY. & SIZE	INSULATION RATING	FROM	TO		DWG. NOS
1P	2	4"	-		600V	(E) PG&E POWER POLE	NEW PG&E SERVICE XFMR.	E2	CONDUIT ONLY (CABLE BY PG&E)
2P	9	5"	-			NEW PG&E SERVICE XFMR.	MAIN SWITCHBOARD "MSN"	E2	CONDUIT ONLY (CABLE BY PG&E)
3P	9	4"	3#750 KCMIL, 1-500KCMIL G			SWITCHBOARD "MSN"	PEAK POWER SWITCHBOARD	E9	POWER (9 CONDUCTOR PER PHASE)
4P	9	4"	3#750 KCMIL, 1-500KCMIL G			PEAK POWER SWITCHBOARD	NATURAL GAS GENERATOR	E9	POWER (9 CONDUCTOR PER PHASE)
5P	4	5"	3#750 KCMIL, 1#250KCMIL G			PEAK POWER SWITCHBOARD	MCC-1	E9	POWER (4 CONDUCTOR PER PHASE)
6P	3	5"	3#750 KCMIL, 1#4/OG			PEAK POWER SWITCHBOARD	EXISTING SWITCHBOARD "MSB"	E2	VIA MANHOLES EMH-12, 13 AND PB-E2
7P	4	5"	3#750 KCMIL, 1#250KCMIL G			PEAK POWER SWITCHBOARD	EXISTING HLPS NO. 1 MCC-PS	E2	VIA MANHOLES EMH-11 AND PB-E1
8P	2	4"	-			PEAK POWER SWITCHBOARD	MANHOLE EMH-11		CONDUIT ONLY
9P	1	3/4"	2#12, 1#12G			PANEL "A"	GAS DET. CONTROL PANEL	E9	POWER (A-9)
10C	2	2"	42#14 & 8#14 SPARE EACH			CONTROL PANEL "PS-2"	MCC-1	E9	CONTROL & SPARES
11C	1	1"	-			CONTROL PANEL "PS-2"	PEAK POWER SWITCHBOARD	E9	CONDUIT ONLY
12A	1	1"	-			CONTROL PANEL "PS-2"	PEAK POWER SWITCHBOARD	E9	CONDUIT ONLY
13P	1	3"	3#350 KCMIL, 1#1/OG			PUMP-1	MCC-1	E9	POWER
14C	1	1"	14#14, 4#14 SPARE			PUMP-1	MCC-1	E9	(ZSO/ZSC-1, SOV-1, PSH-1, LOS-1)
15P	1	3"	3#350 KCMIL, 1#1/OG			PUMP-2	MCC-1	E9	POWER
16C	1	1"	14#14, 4#14 SPARE			PUMP-2	MCC-1	E9	(ZSO/ZSC-2, SOV-2, PSH-2, LOS-2)
17P	1	3"	3#350 KCMIL, 1#1/OG			PUMP-3	MCC-1	E9	POWER
18C	1	1"	14#14, 4#14 SPARE			PUMP-3	MCC-1	E9	(ZSO/ZSC-3, SOV-3, PSH-3, LOS-3)
19P	1	3"	3#350 KCMIL, 1#1/OG			PUMP-4	MCC-1	E9	POWER
20C	1	1"	14#14, 4#14 SPARE			PUMP-4	MCC-1	E9	(ZSO/ZSC-4, SOV-4, PSH-4, LOS-4)
21P	1	1"	3#12, 1#12G			JACKET HEATER	MCC-1 VIA DISC. SWITCH	E9	
22C	1	1"	-			GENERATOR CONTROL PANEL	CONTROL PANEL "PS-2"	E9	CONDUIT ONLY
23A	1	1"	-			GENERATOR CONTROL PANEL	CONTROL PANEL "PS-2"	E9	CONDUIT ONLY
24C	1	1"	-			SWITCHBOARD "MSN"	CONTROL PANEL "PS-2"	E9	CONDUIT ONLY
25A	1	1"	-			SWITCHBOARD "MSN"	CONTROL PANEL "PS-2"	E9	CONDUIT ONLY
26A	1	3/4"	2(2C#16)SHLD, 2#16 SPARE			FIT-5	CONTROL PANEL "PS-2"	E9	
27C	1	1"	CONDUIT ONLY			MCC-1	CONTROL PANEL "PS-2"	E9	SPARE
28A	1	2"	CONDUIT ONLY			MCC-1	CONTROL PANEL "PS-2"	E9	SPARE
29A	1	3/4"	1(2C#16) SHLD			PIT-4	CONTROL PANEL "PS-2"	E9	
30A	1	3/4"	1(2C#16) SHLD			PIT-5	CONTROL PANEL "PS-2"	E9	
31A	1	3/4"	2(2C#16) SHLD, 2#16 SPARE			FIT-12	CONTROL PANEL "PS-2"	E9	
32A	1	3/4"	1(2C#16)SH			GAS DETECTION SENSOR 1A	GAS DET. CONTROL PANEL	E9	SIGNAL
33A	1	3/4"	1(2C#16)SH			GAS DETECTION SENSOR 1B	GAS DET. CONTROL PANEL	E9	SIGNAL
34A	1	1"	CAT 5 ETHERNET CABLE		300V	ETHERNET SWITCH PS2	PEAK POWER SWITCHBOARD	I3	
35A	1	-	CAT 5 ETHERNET CABLE			ETHERNET SWITCH PS2	PLC ETHERNET	I3	INTERNAL WRING
36A	1	1"	CAT 5 ETHERNET CABLE			ETHERNET SWITCH	EXISTING LAN	I3	
37A	1	-	CAT 5 ETHERNET CABLE			ETHERNET SWITCH PS2	FOM	I3	INTERNAL WRING
38A	1	2"	FIBER OPTIC CABLE			FOM (CONTROL PNL PS-2)	FOM (EXIST. CONTROL PANEL)	I3	VIA PULL BOXES PB-11, 12 & 13
39A	1	1"	TWSTED PAIR RS-485			PLC (CONTROL PNL PS-2)	ENGINE/GEN. CONTROL PANEL	I3	
40A	1	-	CAT 5 ETHERNET CABLE			OIP	ETHERNET SWITCH	I3	INTERNAL WRING
41A	1	-	CAT 5 ETHERNET CABLE			ETHERNET SWITCH	EXISTING PLC	I3	INTERNAL WRING
42A	1	1"	CAT 5 ETHERNET CABLE			SWITCHBOARD "MSN"	ENGINE/GEN. CONTROL PANEL	I3	
43A	1	3/4"	1(2C#16) SHLD			GAS DETECTION SENSOR 1C	GAS DET. CONTROL PANEL	E9	SIGNAL
44A	1	3/4"	1(2C#16) SHLD			GAS DETECTION SENSOR 1D	GAS DET. CONTROL PANEL	E9	SIGNAL
45A	1	2"	6(3C#18) SHLD		300V	PUMP-1 MOTOR	MCC-1	E9	RTDs
46A	1	2"	6(3C#18) SHLD		300V	PUMP-2 MOTOR	MCC-1	E9	RTDs
47A	1	2"	6(3C#18) SHLD		300V	PUMP-3 MOTOR	MCC-1	E9	RTDs
48A	1	2"	6(3C#18) SHLD		300V	PUMP-4 MOTOR	MCC-1	E9	RTDs
49C	1	3/4"	2#14		600V	THERMOSTAT (EF-1)	MCC-1	E9	
50C	1	3/4"	2#14		600V	THERMOSTAT (EF-2)	MCC-1	E9	
51C	1	3/4"	2#14		600V	THERMOSTAT (EF-4)	MCC-1	E9	
52C	1	3/4"	2#14		600V	GAS DET. CONTROL PANEL	CONTROL PANEL "PS-2"	E9	CONTROL
53A	1	1 1/2"	4(2C#16) SHLD		600V	GAS DET. CONTROL PANEL	CONTROL PANEL "PS-2"	E9	SIGNAL
54C	1	3/4"	2#14		600V	MOTION DETECTOR	CONTROL PANEL "PS-2"	E9	
55C	1	1"	CONDUIT ONLY		600V	GENERATOR CONTROL PANEL	PEAK POWER SWITCHBOARD	E9	
56P	1	3/4"	3#10, 1#10G		600V	MCC-1	TRANSFORMER (T-1)	E9	
57P	1	1"	4#6, 1#8G		600V	TRANSFORMER (T-1)	POWER PANEL (PNL 'A')	E9	
58P	1	1"	3#12, 1#12G		600V	EF-1	MCC-1	E9	
59P	1	1"	3#12, 1#12G		600V	EF-2	MCC-1	E9	
60P	1	1"	3#12, 1#12G		600V	EF-4	MCC-1	E9	
61A	1	1"	2(2C#16) SHLD			CONTROL PANEL "PS-2"	J-BOX AT PIT-4	E9	SIGNAL

CONDUIT SCHEDULE  
SCALE: NTS

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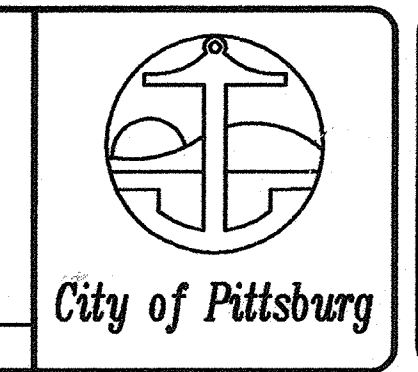


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Bruce D. Cooke 12993 R.E.E. NO. DATE 02/02/07

NO.	DATE	APPROV.	REVISION

DESIGNED: DN  
DRAWN: EA  
CHECKED: DTN, RBF  
REVIEWED:  
DATE: FEBRUARY, 2007

APPROVED BY:  
**HIGH LEVEL  
PUMP STATION No. 2  
CONDUITS SCHEDULE**



**E13A**  
**76 OF 77**

H:\PDATA\60700165\CADD\WATER\VDLY\ELECT\HIGH LEVEL-PS-2\PACKAGE-2-12-08-2006\0165-EL-E13A.DWG TINGUYEN 2/7/07 10:23 am

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