GENERAL CONSTRUCTION NOTES

1 THIS PROJECT CONSISTS OF BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING: ELECTRICAL IMPROVEMENTS AND BUILDING, PUMP INSTALLATION, WATERLINE INSTALLATION AND PAVING.

2 THE CITY OF AUSTIN STANDARD SPECIFICATIONS CURRENT OF THE TIME OF ADVERTISEMENT FOR BIDS SHALL GOVERN MATERIALS AND METHODS USED TO PERFORM THIS WORK. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE STATE STATUTES AND U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (O.S.H.A). COPIES OF O.S.H.A. STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE OBTAINED FROM O.S.H.A. OF 611 EAST 6TH STREET ROOM 303, AUSTIN, TEXAS.

3. THE CONTRACTOR MUST BE LICENSED AND MUST OBTAIN A STREET CUT PERMIT FROM THE PUBLIC WORKS DEPARTMENT PRIOR TO THE START OF CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY

4. THE ESTIMATED QUANTITIES PUBLISHED WITH THESE CONSTRUCTION DOCUMENTS ARE FURNISHED AS AN AID IN THE BIDDING PROCESS AND ARE NOT TO BE SUBSTITUTED FOR THE CONTRACTOR'S QUANTITY TAKEOFFS.

5. GEOTECHNICAL INFORMATION (I.E. SOIL BORINGS) WAS PREPARED FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THIS PROJECT. GEOTECHNICAL INFORMATION INCLUDED IN THESE DOCUMENTS IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TO BE CONSTRUED AS BEING AN ACCURATE REPRESENTATION OF SUB SOIL CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL SUBSURFACE CONDITIONS.

6. THE BIDDER (CONTRACTOR AFTER AWARD) SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY OBSTACLES THAT MAY IMPEDE OR PREVENT THE PROPER CONSTRUCTION OF THE PROJECT

7 THE CONTRACTOR SHALL ARRANGE THE OPERATION IN SUCH A MANNER AS TO AVOID UNNECESSARY INCONVENIENCE TO THE PUBLIC IN CONSTRUCTION AREAS.

8. PORTIONS OF THE CONSTRUCTION OF THIS PROJECT AUTHORIZED BY PERMIT OR LICENSE AGREEMENT WILL BE SUBJECT TO SUCH INSPECTION AND TESTS AS MAY BE DEEMED NECESSARY BY THE PERMIT GRANTING AUTHORITIES. CONTRACTOR SHALL FURNISH INFORMATION TO AUTHORITIES AS REQUIRED. CONTRACTOR SHALL ALSO FURNISH INCIDENTAL LABOR AND EQUIPMENT TO ALLOW TESTING PERSONNEL TO ACCESS THE WORK AND COOPERATE FULLY WITH THESE AUTHORITIES IN CONDUCTING THE TESTING AND INSPECTION PROGRAM.

9. THE CONSTRUCTION INSPECTION DIVISION OF THE PUBLIC WORKS DEPARTMENT SHALL ARRANGE A PRE-CONSTRUCTION MEETING NOT LESS THAN FOURTEEN (14) DAYS PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY INSPECTOR FORTY-EIGHT (48) HOURS IN ADVANCE OF BEGINNING ANY CONSTRUCTION IN THE R.O.W. OR IN EASEMENTS. CONTRACTOR SHALL NOTIFY INSPECTOR TWENTY-FOUR (24) HOURS IN ADVANCE OF MAKING ANY SUPPLEMENTARY CONNECTION OR CLOSING OFF ANY WATER OR WASTEWATER SERVICES TO PROPERTY OWNERS.

10. CONTRACTOR SHALL NOTIFY PRINCIPLES OF EACH OF THE FOLLOWING ENTITIES OF THE CONSTRUCTION SCHEDULES AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION OPERATIONS. CONTRACTOR SHALL PROVIDE PERTINENT INFORMATION ABOUT LANE CLOSURES AND DETOURS AND ANY OTHER CONSTRUCTION RELATED ACTIVITY WHICH MAY INTERFERE WITH NORMAL SERVICES.

1. WESTLAKE FIRE DEPARTMENT	327-9405
2. AUSTIN POLICE DEPARTMENT	974-5283
3. EMERGENCY MEDICAL SERVICES (EMS)	469-2046
4. U.S. POSTAL SERVICE	342-1236
5. COA TRANSPORTATION DIVISION	974-7024

11 CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A SAFE, NEAT AND WORKMAN-LIKE MANNER AT ALL TIMES. JOB SITE SAFETY SHALL NOT BE COMPROMISED. ANY UNATTRACTIVE NUISANCE SHALL BE REMOVED OR CAMOUFLAGED BY CONTRACTOR WHEN DIRECTED BY THE OWNER OR ENGINEER. CONTRACTOR SHALL REMOVE OR CAMOUFLAGE ANY CHILD ATTRACTIVE NUISANCE.

12. THE ATTENTION OF ALL PROSPECTIVE BIDDERS IS DIRECTED TO THE CITY OF AUSTIN STANDARD SPECIFICATIONS, THE STATE LAW (VERNON'S ANNOTATED TEXAS STATUTES, ARTICLE 1436 (C)), AND THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES WHEN OPERATING IN THE VICINITY OF ELECTRICAL LINES. IF THE CONTRACTOR CHOOSES TO USE EQUIPMENT WITH THE POTENTIAL OF COMING WITHIN THE DISTANCES PRESCRIBED BY STATUTE, THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE WORK WITH THE APPROPRIATE ELECTRIC/UTILITY COMPANY

13. ALL CONSTRUCTION EQUIPMENT INVOLVED IN ROADWAY WORK SHALL BE EQUIPPED WITH A PERMANENTLY-MOUNTED, 360-DEGREE REVOLVING OR STROBE WARNING LIGHT WITH AMBER LENS IN WORKING ORDER. THIS LIGHT SHALL HAVE A MINIMUM LENS HEIGHT OF 5" AND A DIAMETER OF 5". THIS LIGHT SHALL HAVE A MOUNTING HEIGHT OF NOT LESS THAN 6 FEET ABOVE THE ROADWAY SURFACE AND SHALL BE VISIBLE FROM ALL SIDES. THIS EQUIPMENT SHALL ALSO HAVE ATTACHED AT EACH SIDE OF THE REAR END OF THE VEHICLE AN APPROVED ORANGE WARNING FLAG MOUNTED NOT LESS THAN 6 FEET ABOVE THE ROADWAY SURFACE.

14. ALL DAMAGE CAUSED DIRECTLY OR INDIRECTLY TO THE STREET SURFACE OR SUBSURFACE OUTSIDE OF THE PAVEMENT CUT AREA SHALL BE REGARDED AS A PART OF THE STREET CUT REPAIR. THIS INCLUDES ANY SCRAPES, GOUGES, CUTS, CRACKING, DEPRESSIONS, AND/OR ANY OTHER DAMAGE CAUSED BY THE CONTRACTOR DURING THE EXECUTION OF THE WORK. THESE AREAS WILL BE INCLUDED IN THE TOTAL AREA OF REPAIR. THE AREAS OF REPAIR NEAR UTILITY TRENCHES SHALL BE SAW CUT IN STRAIGHT NEAT LINES PARALLEL TO THE UTILITY TRENCH. ALL REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL MEET ALL CITY TESTING REQUIREMENTS.

15. ALL EXISTING SIDEWALKS, CURB AND GUTTER, DRIVEWAYS, LANDSCAPING, OR DRAINAGE FACILITIES DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE REMOVED AND RESTORED WITH MATERIALS EQUAL TO OR BETTER THAN THE ORIGINAL AND SHALL BE AT THE CONTRACTOR'S EXPENSE.

16. BLASTING WITHIN THE PROJECT AREA WILL NOT BE ALLOWED.

17 CONTRACTOR WILL MINIMIZE USE OF STREET PARKING BY HIS/HER EMPLOYEES IN THE VICINITY OF THE CONSTRUCTION AREA.

18. SAFETY FENCING IS REQUIRED ALONG ANY EXCAVATION AREAS, ANY CONSTRUCTION AREAS SPECIFICALLY IDENTIFIED ON THE PLANS, AND AREAS IDENTIFIED BY THE ENGINEER BASED ON SITE SPECIFIC CONDITIONS.

19 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT ALL LOCATIONS USED FOR STORING CONSTRUCTION EQUIPMENT, MATERIALS, AND STOCKPILES OF ANY TYPE WITHIN THE CONSTRUCTION LIMITS SHALL BE APPROVED, IN ADVANCE, BY THE OWNER'S REPRESENTATIVE. USE OF THE AREA WITHIN THE CONSTRUCTION LIMITS FOR THESE PURPOSES WILL BE RESTRICTED TO THOSE LOCATIONS WHERE DRIVER SIGHT DISTANCE TO BUSINESSES AND SIDE STREET INTERSECTIONS IS NOT OBSTRUCTED AND AT OTHER LOCATIONS WHERE AN UNSIGHTLY APPEARANCE, AS DETERMINED BY THE OWNER'S REPRESENTATIVE, WILL NOT EXIST.

20. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN BARRICADES, WARNING SIGNS, FLASHERS AND OTHER DEVICES OF THE TYPE AND SIZE AS INDICATED IN THE LATEST EDITION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" OR AS DIRECTED BY THE ENGINEER.

21 IF CULTURAL RESOURCES ARE ENCOUNTERED DURING CONSTRUCTION (ARCHEOLOGICAL FINDINGS UNEARTHED) CONTRACTOR SHALL STOP WORK IN THAT AREA AND IMMEDIATELY CONTACT THE TEXAS HISTORICAL COMMISSION AT (512)-463-6100.

22. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF AUSTIN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

23. FOR SLOPES OR TRENCHES MORE THAN FIVE (5) FEET IN DEPTH, A NOTE MUST BE ADDED TO THE GENERAL CONSTRUCTION NOTES STATING THAT ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS ITEM NO. 509 AND APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). COPIES OF OSHA STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 E. 6TH STREET, AUSTIN, TEXAS.

UTILITIES

1 UTILITIES SHOWN REFLECT THE BEST INFORMATION AVAILABLE AT THE TIME THAT PROJECT WAS DESIGNED/SURVEYED. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM AT 1-800-344-8377 (DIG TESS) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS.

2. THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING TYPE AND LOCATION OF UNDERGROUND, SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT TYPE AND LOCATION OF ALL UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES. THE CONTRACTOR SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES, AND THE CONTRACTOR SHALL PAY FOR SUCH REPAIRS. THE CONTRACTOR IS REQUIRED TO PERFORM SPOT POTHOLING AT HIS EXPENSE IN ADVANCE OF THE PROJECT TO VERIFY LOCATION OF UTILITIES.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION BETWEEN HIMSELF AND OTHER CONTRACTORS AND UTILITIES IN THE VICINITY OF THIS PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, GAS, WATER, WASTEWATER, ELECTRICAL, TELEPHONE, COMMUNICATIONS NETWORKS, CABLE TELEVISION, THE UNIVERSITY OF TEXAS SYSTEM FACILITIES, PETROLEUM PIPELINES, AND STREET AND DRAINAGE WORK. ONCE THE CONTRACTOR BECOMES AWARE OF A POSSIBLE CONFLICT IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CONSTRUCTION INSPECTOR WITHIN TWENTY-FOUR (24) HOURS.

4. WHEN AN EXISTING WATERLINE SHUT OUT IS NECESSARY OR POSSIBLE, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR, WHO WILL THEN NOTIFY THE WATER UTILITY. THE UTILITY REQUIRES A MINIMUM OF SEVENTY-TWO (72) HOURS ADVANCE NOTICE FOR ALL SHUTOUTS.

5. CONTRACTOR WILL BE RESPONSIBLE FOR THE COSTS INCURRED AS A RESULT OF UTILITY RELOCATIONS PERFORMED FOR CONTRACTOR'S CONVENIENCE.

6. DEBRIS CAPS SHALL BE PLACED AS REQUIRED. FOR NEW WATER LINE, DEBRIS CAPS SHALL BE PLACED UPON COMPLETION OF WATER LINE. DEBRIS CAPS MUST BE INSTALLED IN EXISTING VALVES PRIOR TO BEGINNING WORK AND IN NEW VALVES IMMEDIATELY FOLLOWING THEIR CONSTRUCTION.

7 CONTRACTOR MUST OBTAIN A STREET CUT PERMIT FROM PUBLIC WORKS DEPARTMENT, CONSTRUCTION INSPECTION DIVISION BEFORE BEGINNING CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY

8. THE CITY SPECIFICATION ITEM 509 WILL BE REQUIRED AS A MINIMUM TRENCH SAFETY MEASURE.

9 ALL MATERIALS TEST, INCLUDING SOIL DENSITY TESTS AND DETAILED SOIL ANALYSIS, SHALL BE CONDUCTED BY AN INDEPENDENT LABORATORY AND FUNDED BY THE OWNER IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS.

10. PRESSURE TAPS SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510. THE CONTRACTOR SHALL DO ALL EXCAVATION ETC., AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. WHEN CONTRACTORS MAKE THE TAP A CITY INSPECTOR MUST BE PRESENT AND 2 WORKING DAYS (MIN.) NOTICE MUST BE GIVEN. ALL TAPS SHALL BE MADE BY USE OF AN APPROVED FULL CIRCLE-GASKETED CAST IRON OR DUCTILE IRON TAPPING SLEEVE. CONCRETE BLOCKING SHALL BE PLACED UNDER ALL TAP SLEEVES PRIOR TO MAKING THE WET TAP AND THE USE OF PRECAST BLOCKS MAY BE USED TO HOLD THE TAP IN ITS CORRECT POSITION PRIOR TO BLOCKING. THE BLOCKING BEHIND AND UNDER THE TAP SHALL HAVE A MINIMUM OF 24 HOURS CURING TIME BEFORE THE VALVE CAN BE RE-OPENED FOR SERVICE FROM THAT TAP.

11 THRUST RESTRAINT SHALL BE IN A ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510.

12 WATER LINE TESTING AND STERILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEMS 510.

13. ALL MATERIAL USED ON THIS PROJECT MUST BE LISTED ON THE STANDARD PRODUCTS LISTING. TESTING AND EVALUATION OF PRODUCTS ARE REQUIRED BEFORE APPROVAL WILL BE GIVEN ANY CONSIDERATION.

WATER CONTROL AND IMPROVEMENT DISTRICT NO. 10 CONSTRUCTION NOTES

1 CONTRACTOR SHALL NOTIFY MR. PAUL S. WAKEFIELD, W.C.I.D. NO. 10 DISTRICT MANAGER, AT (512) 327-2230 AT LEAST 48 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION INCLUDING MOBILIZATION.

2 CONTRACTOR SHALL COORDINATE WITH W.C.I.D. NO. 10 AND ECO RESOURCES TO LOCATE EXISTING WATER LINES AT LEAST 48 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION

3. CONTRACTOR SHALL NOTIFY MR. PAUL S. WAKEFIELD, W.C.I.D. NO. 10 DISTRICT MANAGER, AT (512) 327-2230 AT LEAST 72 HOURS PRIOR TO CLOSING OR OPENING WATER SERVICES VALVES AND/OR DISRUPTION OF WATER SERVICES TO ANY CUSTOMER.

4. CONTRACTOR SHALL NOT BE PERMITTED TO OPERATE ANY DISTRICT WATER VALVES. CONTRACTOR SHALL COORDINATE WITH ECO RESOURCES, DISTRICT OPERATOR, TO OPERATE DISTRICT VALVES.

5. CONTRACTOR SHALL SUPPLY ECO RESOURCES, DISTRICT OPERATOR, WITH ALL WATER LINE TESTING AND STERILIZATION REPORTS.

6. CONTRACTOR SHALL NOTIFY ECO RESOURCES, DISTRICT OPERATOR, 48 HOURS PRIOR TO ANY WET CONNECTIONS OR PRESSURE TAPS TO BE PRESENT AT ANY AND ALL CONNECTIONS AND TAPS.

7 WATERLINE MATERIALS SHALL BE DUCTILE IRON PIPE (CL-350).

8. CONTRACTOR SHALL MAINTAIN THE SECURITY FOR PUMP STATION NO. 1 CONTINUOUSLY

CONSTRUCTION SEQUENCING

1 CALL AUSTIN ONE CALL CENTER (472-2822) FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY WORK. CALL ENVIRONMENTAL INSPECTION AT 72 HOURS PRIOR TO BEGINNING ANY WORK. CALL W.C.I.D. NO. 10 AT (512) 327-2230 48 HOURS PRIOR TO BEGINNING ANY WORK. A PRE-CONSTRUCTION CONFERENCE BETWEEN THE OWNER, ENGINEER, CONTRACTOR, AND CITY OF AUSTIN PERSONNEL WILL BE HELD PRIOR TO STARTING WORK.

2. CONTRACTOR SHALL CALL BILL STAUBER (328-6379) AT THE CITY OF AUSTIN TO COORDINATE TRAFFIC CONTROL FOR THE CONSTRUCTION OF THE DRIVEWAY

3 INSTALL TEMPORARY EROSION/SEDIMENTATION CONTROLS.

4. INSTALL TEMPORARY SECURITY FENCING. SITE MUST REMAIN SECURE AT ALL TIMES. W.C.I.D. NO 10 MUST HAVE ACCESS TO THE SITE AT ALL TIMES.

5. INSTALL UNDERGROUND PIPING.

6. CONSTRUCT BUILDING.

7 INSTALL PERMANENT SECURITY FENCE AROUND ENTIRE SITE.

8. INSTALL MECHANICAL AND ELECTRICAL EQUIPMENT. SEE SHEET NO. 125 FOR ELECTRICAL AND I&C CONSTRUCTION SEQUENCE PLAN.

9. TEST AND STARTUP PUMP STATION.

10. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL MEASURES UPON ACHIEVING AN ACCEPTABLE LEVEL OF PERMANENT EROSION CONTROL.

11 DRESS UP, RESTORE AND REVEGETATE ANY DISTURBED AREAS.

ENVIRONMENTAL

1 NO ENVIRONMENTAL DEVICES SHALL BE REMOVED DURING CONSTRUCTION AT ANY TIME PRIOR TO APPROVAL BY THE WATERSHED PROTECTION DEPARTMENT INSPECTOR.

TRAFFIC CONTROL NOTES

1 DRIVEWAY CONSTRUCTION SHALL BE DONE UNDER DAILY LANE CLOSURES AND FLAGGING OPERATIONS.

2. USE CITY OF AUSTIN STANDARD 804S-2, DETAILS 2 of 8, 3 of 8, 7 of 8 AND 8 of 8 FOR FLAGGING OPERATIONS.

RECORD DRAWING

Emailed L. Wittenwalt 10/24/05

NO.	DATE	REVISIONS	APP

DESIGNED BY:	BDW	
DRAWN BY:	RA	
APPROVED BY:	BDW	
APPROVED BY:	RDW	
PROJECT NO.	7009-21	

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

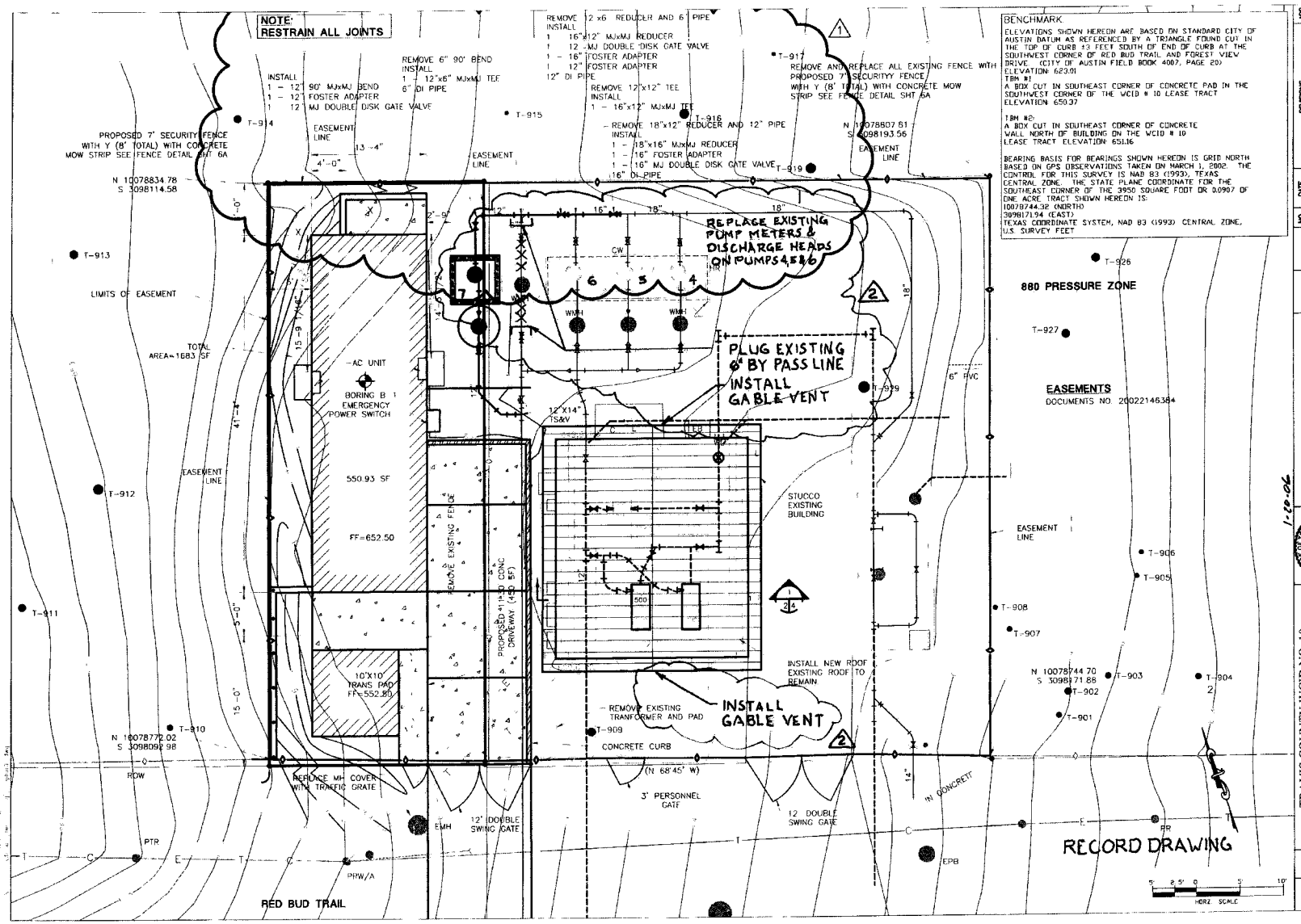
STATE OF TEXAS
RONALD W. WESTOVER
37500
LICENSED PROFESSIONAL ENGINEER

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
GENERAL NOTES

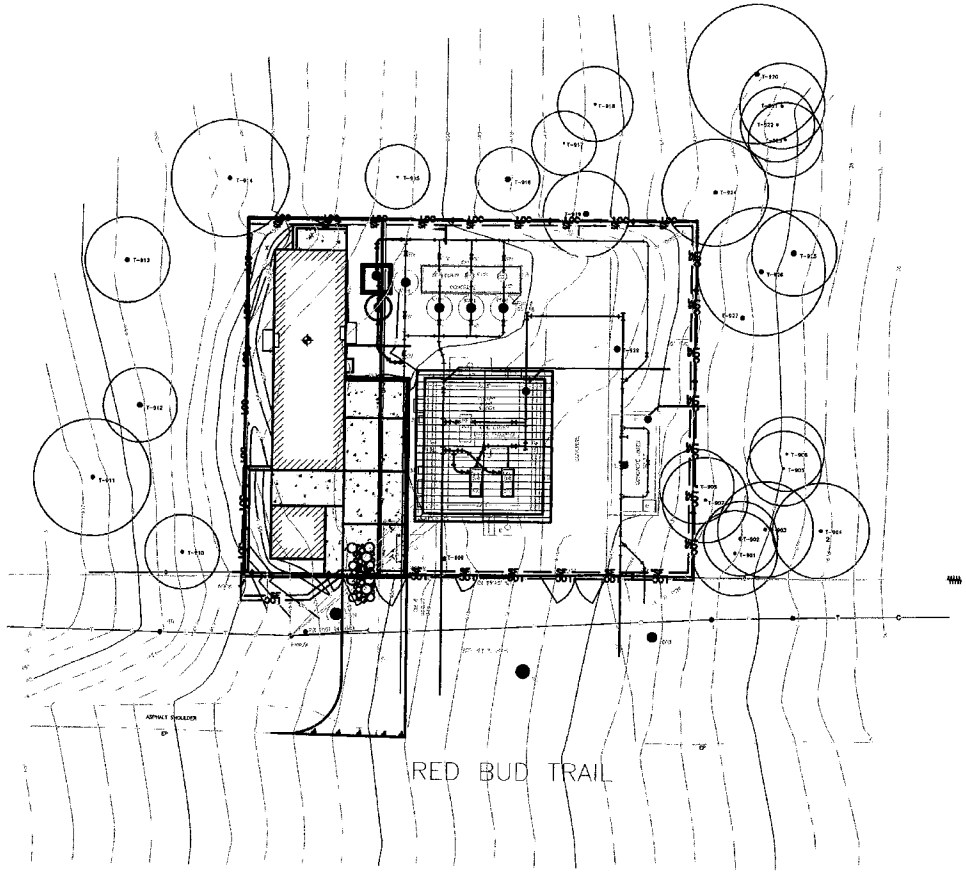
SHEET NO.
3

DEC JOB NUMBER
7009-21

P-TC02012
99



P-TC02013
100



TREE LIST	
T-901	8" LIVE OAK
T-902	7" & 7" DOUBLE LIVE OAK
T-903	9" HACKBERRY
T-904	9" LIVE OAK
T-905	7" LIVE OAK
T-906	7" LIVE OAK
T-907	8" LIVE OAK
T-908	7" LIVE OAK
T-909	4", 5" & 7" TRIPLE HACKBERRY
T-910	4" & 7" DOUBLE MOUNTAIN LAUREL
T-911	11" LIVE OAK
T-912	4" 7" & 7" TRIPLE CEDAR
T-913	8" & 8" DOUBLE CEDAR
T-914	11" CEDAR
T-915	6" LIVE OAK
T-916	3", 3@4" & 6 ELDER GROUP
T-917	6" LIVE OAK
T-918	7" LIVE OAK
T-919	2@4", 5 & 8 CEDAR
T-920	13" LIVE OAK
T-921	8" LIVE OAK
T-922	7 LIVE OAK
T-923	7" LIVE OAK
T-924	10" CEDAR
T-925	3@4" & 8" CEDAR
T-926	12" CEDAR
T-927	7" & 8" DOUBLE CHINABERRY
T-929	4", 8" & 10" TRIPLE CHINABERRY

LEGEND

LIMITS OF CONSTRUCTION	LOC
SILT FENCE	SF
STABILIZED CONSTRUCTION ENTRANCE	
ROCK BERM	
TREE TO REMAIN	
TREE TO BE REMOVED	

Revised D. Westervelt 10/26/05

RECORD DRAWING

10' 5' 0 10' 20'
HORIZONTAL SCALE

TRAFFIC CONTROL NOTE

1. DRIVEWAY CONSTRUCTION SHALL BE DONE UNDER DAILY LANE CLOSURES AND FLAGGING OPERATIONS.
2. USE CITY OF AUSTIN STANDARD 804S-2, DETAILS 2 of 8, 3 of 8, 7 of 8 AND 8 of 8 FOR FLAGGING OPERATIONS.

NO.	DATE	REVISIONS	APP

DESIGNED BY: SBF
DRAWN BY: RA
CHECKED BY: RBW
APPROVED BY: TWM
PROJECT NO.: 7009-21

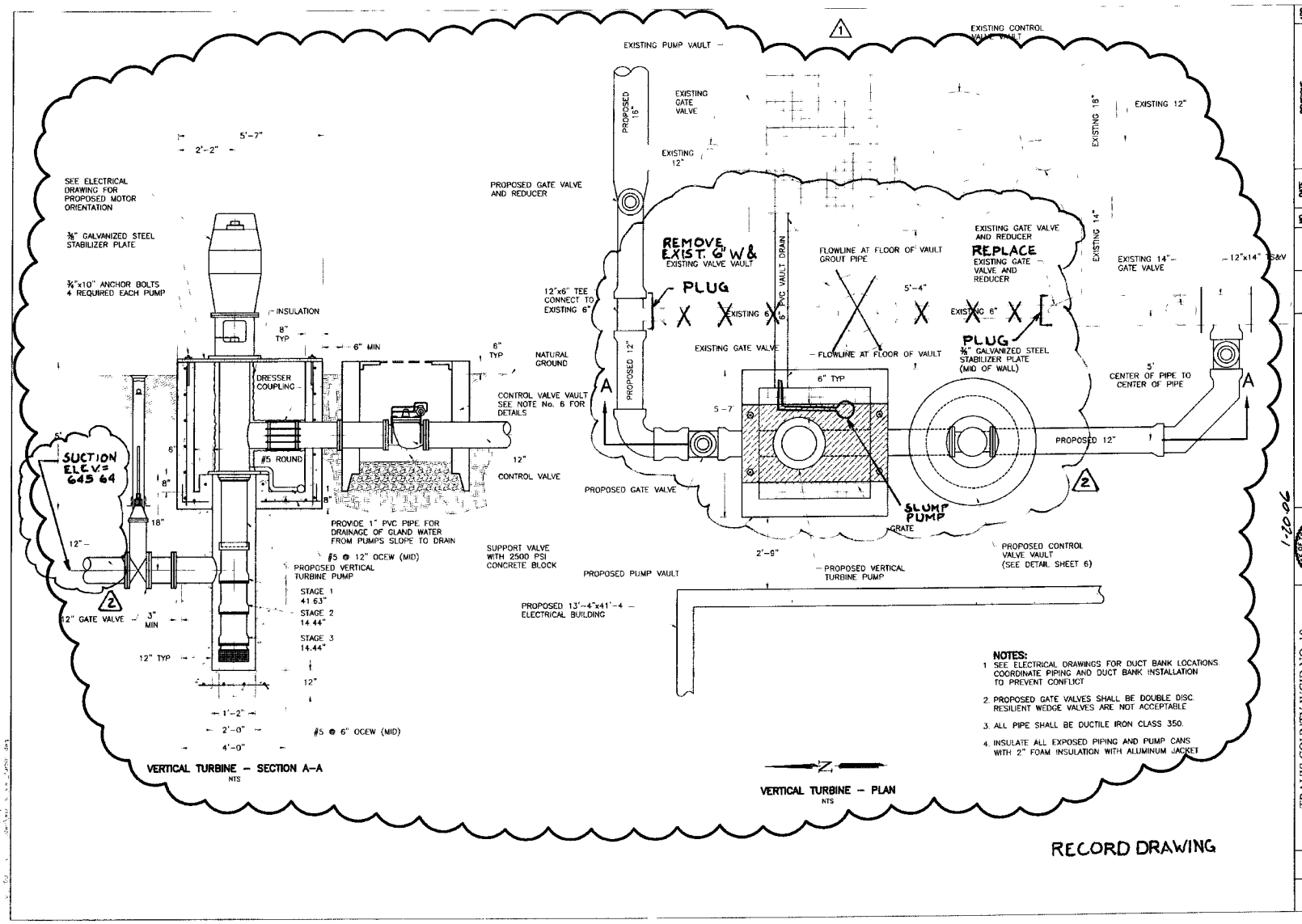
DANNENBAUM
ENGINEERING CORPORATION
9409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

RONALD C. WESTERVELT
31500
REGISTERED PROFESSIONAL ENGINEER

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
EROSION CONTROL

SHEET NO.
4A

DEC JOB NUMBER
7009-21



NOTES:

1. SEE ELECTRICAL DRAWINGS FOR DUCT BANK LOCATIONS. COORDINATE PIPING AND DUCT BANK INSTALLATION TO PREVENT CONFLICT
2. PROPOSED GATE VALVES SHALL BE DOUBLE DISC. RESILIENT WEDGE VALVES ARE NOT ACCEPTABLE
3. ALL PIPE SHALL BE DUCTILE IRON CLASS 350.
4. INSULATE ALL EXPOSED PIPING AND PUMP CANS WITH 2" FOAM INSULATION WITH ALUMINUM JACKET

NO.	DATE	REVISIONS	APP
2	01/12/2006	PROFILE, PUMP SECTION RECORD DRAWING	RCA

DESIGNED BY: RDF
DRAWN BY: RA
CHECKED BY: RDF
APPROVED BY: RDF
PROJECT FILE: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

STATE OF TEXAS
THOMAS CARL HENSLEY
9135
REGISTERED PROFESSIONAL ENGINEER

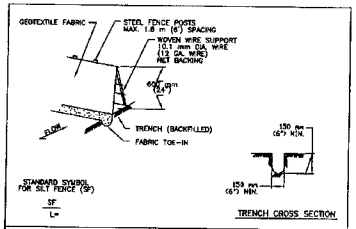
1-20-06

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1

PUMP - PLAN AND SECTION

SHEET NO. 5

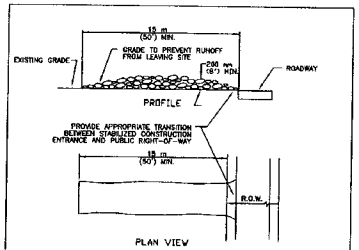
DEC JOB NUMBER 7009-21



NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (1').
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CAN NOT BE TRENCHED INTO THE SURFACE (E.G. PAVEMENT), THE FABRIC FLAP SHALL BE WEIGHTED DOWN WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 3/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1

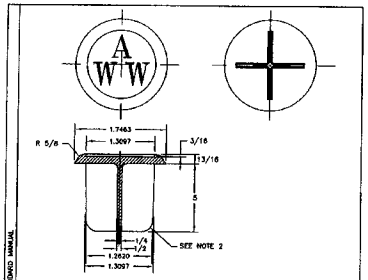


NOTES:

1. STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEANING OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 3/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1

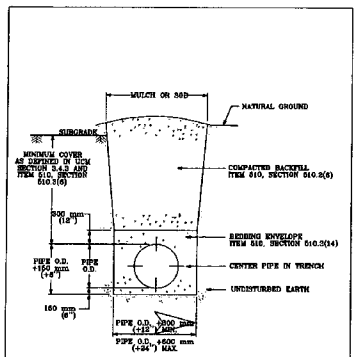
REV. DATE: 2-10-97 DESCRIPTION: STANDARD MANUAL



NOTES:

1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. TYPICAL FILLET IS 3/16" RADIUS
3. LETTERING SHALL BE 1 1/2" HEIGHT AND LOCATED AS SHOWN.
4. THIS LID FITS INSIDE 4" I.D. PIPE.
5. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID.
6. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORD WITH NORMAL FOUNDRY PRACTICE.
7. FINISH BY REMOVING FINS AND FLASHING; PAINT WITH BLACK ASPHALT COATING.
8. WEIGHT: APPROXIMATELY 13 LBS.
9. ALL DIMENSIONS IN INCHES.

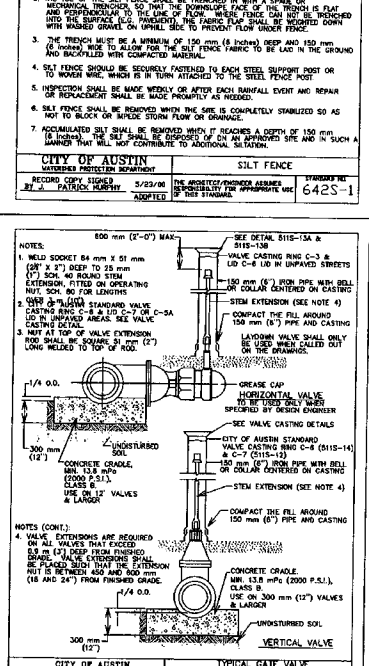
CITY OF AUSTIN WATER AND WASTEWATER UTILITY	VALVE BOX CASTING C-3 LID	
RECORD COPY SIGNED BY C. F. HARTIN 4/22/97 APPROVED DATE	ADOPTED: 6/16/88 SCALE: N.T.S. INITIAL: RAM	STANDARD NO. 511S-11



REFERENCES:

1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(5), "SELECT BACKFILL OR BORROW"; SECTION 510.2(6), "TRENCH DETAIL AND DEPTH OF COVER"; SECTION 510.2(14), "PIPE BEDDING ENVELOPE"

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRENCH DETAIL WITH UNFINISHED SURFACE	
RECORD COPY SIGNED BY LEON BARRA 6/19/02 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5



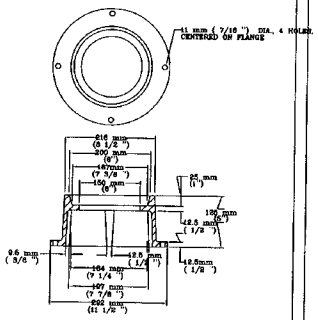
NOTES:

1. WELD SOCKET 64 mm X 51 mm (2 1/2" X 2") DEEP TO 25 mm (1") SCH. 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 3 m (10').
2. USE CITY OF AUSTIN STANDARD VALVE CASTING RING C-6 & LID C-7 OR C-5A LID IN UNPAVED AREAS. SEE VALVE CASTING DETAIL.
3. MUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 51 mm (2") LONG WELDED TO TOP OF ROD.

NOTES (CONT.):

4. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 0.9 m (3') DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 450 AND 600 mm (18 AND 24") FROM FINISHED GRADE.

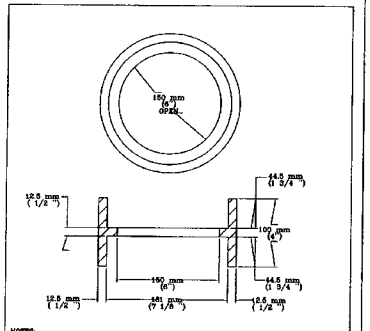
CITY OF AUSTIN AUSTIN WATER UTILITY	TYPICAL GATE VALVE 100 mm-600 mm (4"-24")	
RECORD COPY SIGNED BY KATHI L. FLOWERS 3/9/04 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-7



NOTES:

1. MATERIALS SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THIS COLLAR REQUIRED ONLY WITH BOOTS SUPPLIED PRIOR 1988
3. THE MANUFACTURER'S IDENTIFICATION & CASTING NUMBER & THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH RING.
4. DRAFT & SHRINKAGE ALLOWANCE SHALL BE IN ACCORD WITH NORMAL FOUNDRY PRACTICE.
5. FINISH BY REMOVING FINS & FLASHING; PAINT WITH BLACK ASPHALT COATING.
6. WEIGHT: APPROXIMATELY 10.5 kg (23 lbs).

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	VALVE BOX CASTING C-6 PAVING RING	
RECORD COPY SIGNED BY KATHI F. PAYNE 4/8/98 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-14

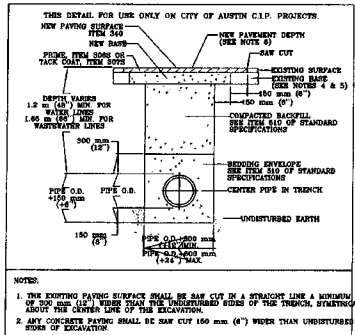


NOTES:

1. MATERIALS SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THIS COLLAR REQUIRED ONLY WITH BOOTS SUPPLIED PRIOR 1988
3. THE MANUFACTURER'S IDENTIFICATION & CASTING NUMBER & THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH COLLAR.
4. DRAFT & SHRINKAGE ALLOWANCE SHALL BE IN ACCORD WITH NORMAL FOUNDRY PRACTICE.
5. FINISH BY REMOVING FINS & FLASHING; PAINT WITH BLACK ASPHALT COATING.
6. WEIGHT: APPROXIMATELY 8 kg (17 lbs).

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	VALVE BOX CASTING C-5A COLLAR	
RECORD COPY SIGNED BY KATHI F. PAYNE 4/8/98 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-16

THIS DETAIL FOR USE ONLY ON CITY OF AUSTIN C.I.P. PROJECTS.



NOTES:

1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 300 mm (12") WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. ANY CONCRETE PAVING SHALL BE SAW CUT 150 mm (6") WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
3. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT MEDIUM SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
4. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND OF EQUAL THICKNESS, OR MINIMUM BASE THICKNESS OF 250 mm (10"), WHICHEVER IS GREATER.
5. ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 200 mm (8") OF BASE OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.
6. SURFACE PAVEMENT SHALL BE OF THE KIND AND THICKNESS AS EXISTING, OR MINIMUM 50 mm (2"), WHICHEVER IS GREATER.

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	TYPICAL TRENCH WITH PAVED SURFACE	
RECORD COPY SIGNED BY KATHI L. FLOWERS 6/19/02 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-3

RECORD DRAWING

NO.	DATE	REVISIONS	APP

DESIGNED BY: RGM
DRAWN BY: RJA
CHECKED BY: RGM
APPROVED BY: RGM
PROJECT NO.: 7009-21

DANNENBAUM
ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR., SUITE 129
AUSTIN TEXAS, 78731

DONALD D. NESTERFELD 31520

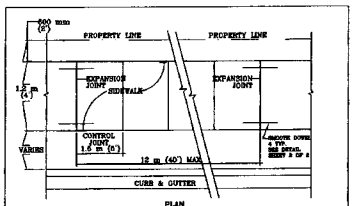
TRAVIS COUNTY, WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
COA STANDARD DETAILS

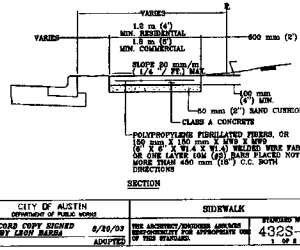
SHEET NO. 5A

DEC JOB NUMBER 7009-21

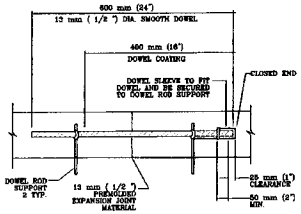
Rec'd 11/18/03 Rec'd 4/18/03

P-TC02016
103

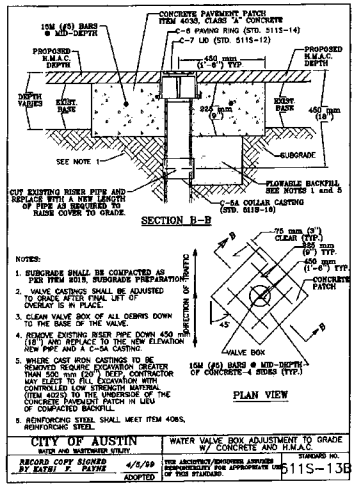




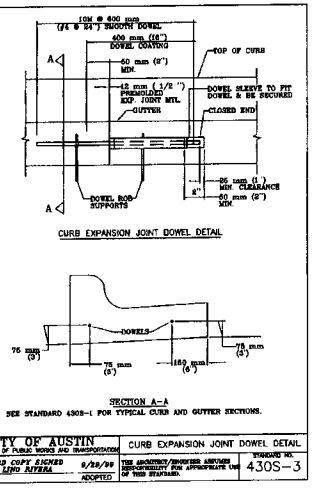
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	SIDEWALK	
RECORD COPY SIGNED BY LEON BARRA 8/20/03 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 1 OF 8



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	SIDEWALK	
RECORD COPY SIGNED BY LEON BARRA 8/20/03 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 2 OF 8



CITY OF AUSTIN WATER AND WASTEWATER UTILITY	WATER VALVE BOX ADJUSTMENT TO GRADE W/ CONCRETE AND H.M.A.C.	
RECORD COPY SIGNED BY RATHI Z. PAYNE 4/2/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-13B



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	CURB EXPANSION JOINT DOWEL DETAIL	
RECORD COPY SIGNED BY LINO RIVERA 9/29/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 430S-3

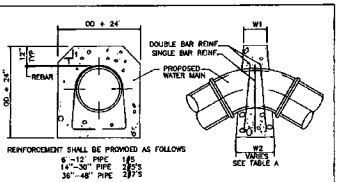


TABLE A
UPWARD THRUST GRAVITY BLOCKS

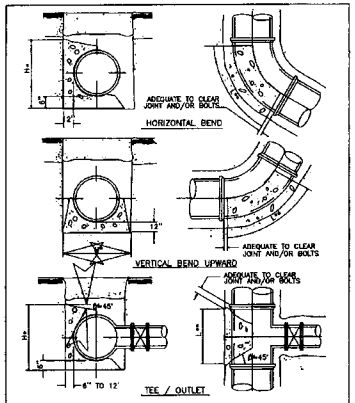
PIPE DIA.	MIN. TOP WIDTH W1	ANGLE (degrees)	BOTTOM WIDTH W2 (b)
6"	6"	0-5	NOTE 2
		5-15	24
		15-25	48
		- 25	NOTE 1
8"	6"	0-5	NOTE 2
		5-9	30
		9-15	36
		-15	NOTE 1
12"	6"	0-5	NOTE 2
		5-15	48
		- 15	NOTE 1
18"	12"	0-5	NOTE 2
		5-10	60
		10-15	96
		- 15	NOTE 1
24" THRU 36" DIA.		- 5.0	NOTE 1
42" THRU 48" DIA.		3.0	NOTE 1

NOTES:
1- FOR ANGLES GREATER THAN THOSE INDICATED RESTRAINED JOINTS SHALL BE INSTALLED
2- FOR JOINT DEFLECTIONS LESS THAN 5 DEGREES, NO HORIZONTAL OR VERTICAL THRUST RESTRAINT IS REQUIRED FOR PIPES LESS THAN 42" IN DIAMETER.

THRUST BLOCK DESIGN AS FOLLOWS
A. PRESSURE OF 150 P.S.I. (ACTUAL IF HIGHER) + 50 % SURGE ALLOWANCE
B. MAXIMUM SOIL BEARING SEE TABLE BELOW

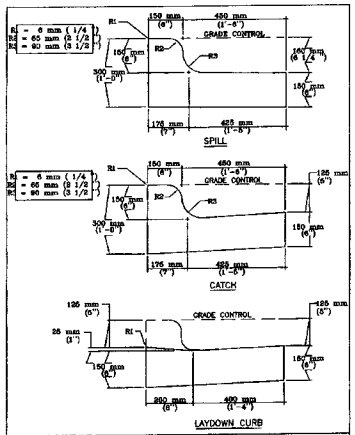
SOIL TYPES	PRESSURE
LOOSE OR SPONGY SOIL	1500 Lb/Sq.Ft.
UNDISTURBED SOIL, CALICHE	2000 Lb/Sq.Ft.
LIMESTONE ROCK	4000 Lb/Sq.Ft.

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	CONCRETE THRUST BLOCKING	
RECORD COPY SIGNED BY JAMES E. THOMPSON 2/11/98 APPROVED DATE	ADOPTED: 2/11/98 SCALE: N.T.S. INITIAL:	STANDARD NO. 510-6 1 OF 2



* THE DIMENSION FOR "H" MUST BE GREATER THAN DIAMETER OF THE PIPE
** LENGTH "L" ALONG THE BEND MUST BE GREATER THAN "H" AND LESS THAN 2 TIMES "H"

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	CONCRETE THRUST BLOCKING	
RECORD COPY SIGNED BY JAMES E. THOMPSON 2/11/98 APPROVED DATE	ADOPTED: 2/11/98 SCALE: N.T.S. INITIAL:	STANDARD NO. 510-6 2 OF 2



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	CURB AND GUTTER SECTION	
RECORD COPY SIGNED BY LINO RIVERA 9/29/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 430S-1

RECORD DRAWING

Kimberly Western 4/15/05

REV.	DATE	DESCRIPTION	STANDARD MANUAL

NO.	DATE	REVISIONS	APP

DESIGNED BY: RJA
DRAWN BY: RJA
CHECKED BY: RJA
APPROVED BY: RDM
PROJECT FILE: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO 1
COA STANDARD DETAILS

SHEET NO. 5B
DEC JOB NUMBER 7009-21

Apr 9, 1999 - 1:01pm
s:\141\7009-2 - 1\dgn\COA\working\COAEE141.S2.dwg

P-TC02017
104

CITY OF AUSTIN – STANDARD NOTES EROSION AND SEDIMENTATION CONTROL

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.
4. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER, PERMIT APPLICANT, AND CITY INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND THE TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 3 DAYS PRIOR TO THE MEETING DATE.
5. ANY SIGNIFICANT VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS MUST BE APPROVED BY THE REVIEWING ENGINEER AND THE ORIGINAL PERMIT REVIEW INSPECTOR.
6. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERMANENT RESPONSIBILITY FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO THE CONTROLS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES TWO (2) INCHES. SILT ACCUMULATION AT TYPE I SILT FENCES SHOULD BE REMOVED WHEN THE DEPTH REACHES TWO (2) INCHES.
7. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND DRIVEWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.
8. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS ONE SQUARE FOOT OR LARGER IN TOTAL AREA, FLOWS AN FROM WITHIN THE SUBSTRATE, AND/OR CONSISTENTLY REDUCES WATER DURING ANY RAIN EVENT. AT THIS TIME, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMMEDIATELY CONTACT THE CITY INSPECTOR FOR FURTHER INSTRUCTION.
9. FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE CITY INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL SHORTCOMINGS. MAJOR REVISIONS MUST BE APPROVED BY THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT.
10. PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW:
    a. A MINIMUM OF FOUR INCHES OF TOPSOIL SHALL BE PLACED IN ALL DRAINAGE CHANNELS (EXCEPT ROCK) AND BETWEEN THE CURB AND RIGHT-OF-WAY LINE.
    b. THE SEEDING FOR PERMANENT EROSION CONTROL SHALL BE APPLIED OVER AREAS DISTURBED BY CONSTRUCTION AS FOLLOWS (OR AS INDICATED IN NOTE 9 BELOW):
       I. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH A COMBINATION OF 1 POUND PER 1,000 SQUARE FEET OF UNHULLED BERMUDA AND 1 POUND PER 1,000 SQUARE FEET OF WINTER RYE WITH A PURITY OF 90% WITH 90% GERMINATION.
       II. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUND PER 1,000 SQUARE FEET WITH A PURITY OF 90% WITH 90% GERMINATION.
    c. FERTILIZER SHALL HAVE AN ANALYSIS OF 15-15-15 AND SHALL BE APPLIED AT THE RATE OF 45 POUNDS PER ACRE.
    d. THE PLANTED AREA SHALL BE WATERED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE SOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF 20 INCHES. THE IRRIGATION SHALL OCCUR AT TEN-DAY INTERVALS DURING THE FIRST TWO MONTHS. HARMFUL OCCURRENCES OF 1/3 INCH OR MORE SHALL POSTPONE THE WATERING SCHEDULE FOR ONE WEEK.
    e. MULCH TYPE USED SHALL BE HAY, STRAW OR MULCH APPLIED AT A RATE OF 45 POUNDS PER 1000 SQUARE FEET.
    f. RESTORATION SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1-1/2 INCHES HIGH WITH 90% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.
    g. NATIVE GRASS IS _X_ OR IS NOT _____ REQUIRED ON THIS PROJECT. NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.
11. DEVELOPER INFORMATION:

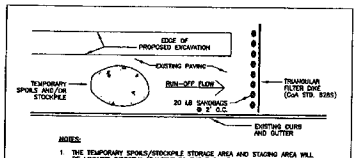
    OWNER: COMPANY: TRAVIS COUNTY WCID NO. 10
    CONTACT: PAUL MASTERS GENERAL MANAGER
    ADDRESS: 5466 RIVE OAKS ROAD, SUITE 24
    AUSTIN TEXAS 78746
    PHONE: (512) 327-2232
    FAX: (512) 327-6218

    OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS:
    COMPANY: DANNENBAUM ENGINEERING CORPORATION
    ADDRESS: 3409 EXECUTIVE CENTER DRIVE, SUITE 129
    AUSTIN TEXAS 78731
    PHONE: (512) 346-8605
    FAX: (512) 346-8634

    PARTY RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE:
    COMPANY: CONTRACTOR

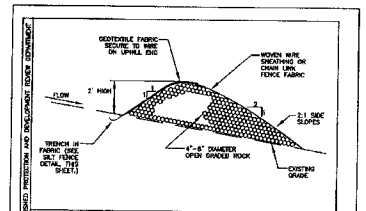
    PARTY RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE:
    COMPANY: CONTRACTOR

12. THE CONTRACTOR SHALL NOT DISPOSE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE WITHOUT NOTIFYING THE CITY AT LEAST 48 HOURS PRIOR TO THE SPOILS REMOVAL. THE NOTIFICATION SHALL INCLUDE THE DISPOSAL LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL.
13. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY PRIOR TO STREET WORK, AND WILL BE REMOVED AS SOON AS THE CITY INSPECTOR AGREES THAT THERE IS NO POTENTIAL FOR SEDIMENTATION.



NOTES:
1. THE TEMPORARY SPOILS/STOCKPILE STORAGE AREA AND STAGING AREA WILL BE LOCATED DIRECTLY ADJACENT TO THE EXCAVATION AND ON THE PAVEMENT.
2. ANY SPOIL NOT INTENDED TO BE REUSED WILL BE HAULED TO AN APPROVED OR PERMITTED DISPOSAL SITE DAILY.
3. INSTALL TRIANGULAR SEDIMENT FILTER DIKE (TYPE I) ACROSS FULL WIDTH OF TRAFFIC CLOSURE AND DOWNSTREAM OF CONSTRUCTION AREA, PERPENDICULAR TO CURB. FILTER DIKE TO FOLLOW ACTIVE CONSTRUCTION. ACTIVE CONSTRUCTION, REMOVING AND RE-SETTING TYPE I DIKE IS CONSIDERED SUBSIDIARY TO BARRICADES AND TRAFFIC HANDLING.

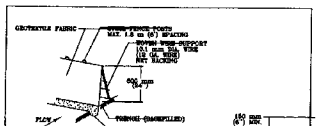
ADDITIONAL EROSION/SEDIMENTATION CONTROL FOR WORK IN PAVED AREAS



NOTES:
1. USE ONLY OPEN GRADED ROCK, 4-8 INCH DIAMETER, FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK, 3-5 INCH DIAMETER, FOR OTHER CONDITIONS.
2. ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN. AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6 INCHES.
6. WHEN SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

FABRIC COVERED (SEVERE SERVICE) ROCK BERM

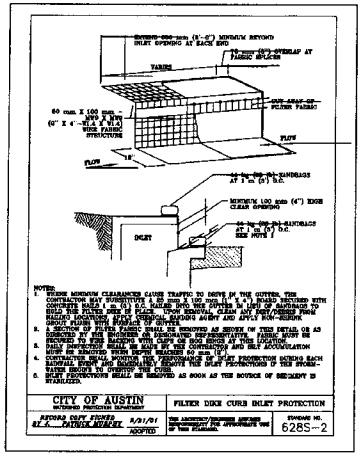
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT
GENERAL PERMIT PROGRAM
APPROVED
ADOPTED: SCALE: N.T.S. INITIAL:
STANDARD NO. N/A



TRENCH CROSS SECTION

NOTES:
1. FENCE POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED AT A MAXIMUM SPACE BETWEEN THE ANTICIPATED SUPPORT FENCE. POST SHAFT BE EMBEDDED 4 MINIMUM 300 mm (12").
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A GRADE ON ANCHORAGE SHALL BE DONE SO THAT FLOW SUPPORTS FACE OF THE FENCE. THE TRENCH IS FLAT AND PERPENDICULAR TO THE DIRECTION OF FLOW. THE FABRIC TO BE TRENCHED 150 mm (6") MIN. DEEP AND BACKFILLED WITH COMPACTED MATERIAL. THE FABRIC SHALL BE STRETCHED SUCH THAT VARIED GRADES ON CURVED LINE TO PERFECT FLAT TOGGLE SECTION.
3. THE TRENCH SHALL BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHALL BE ADEQUATELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, FENCE IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORAGE FLOW ITS DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT
RECORD COPY SIGNED BY P. PATRICK MURPHY 5/21/01
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 642S-1

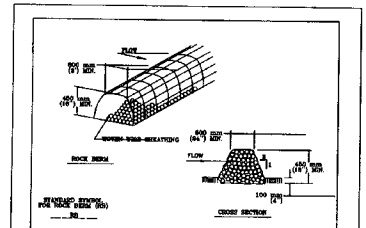


NOTES:
1. FENCE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE ON THE GUTTER. THE CONTRACTOR MAY SUBSTITUTE A 20 mm X 100 mm (1" X 4") BOARD SECURED WITH SHOULDER NAILS TO THE TOP OF THE CURB TO PROTECT THE FILTER FABRIC FROM TRAFFIC. THE BOARD SHALL BE REMOVED AFTER THE CONSTRUCTION IS COMPLETED.
2. THE FILTER FABRIC SHALL BE CLEARLY VISIBLE FROM THE STREET. THE CONTRACTOR SHALL ADJUST FABRIC TO MAXIMUM VISIBILITY AGAINST THE CURB AND APPLY NON-FADING PAINT WITH CONTRASTING COLOR.
3. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO THE BOARD WITH CLIPS OR COAT HANGER AS THIS LOCATION.
4. THE FILTER FABRIC SHALL BE INSPECTED WEEKLY OR AFTER EACH RAINFALL EVENT. SILT MUST BE REMOVED WHEN DEPTH REACHES 50 mm (2").
5. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND BEGINNING IMMEDIATELY REPAIR THE INLET PROTECTION IF THE SURGE-WATER BEGINS TO OVERTOP THE CURB.
6. STORM WATER/SEDIMENT WILL BE DISPOSED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT
RECORD COPY SIGNED BY P. PATRICK MURPHY 5/21/01
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
FILTER DIKE CURB INLET PROTECTION
STANDARD NO. 628S-2

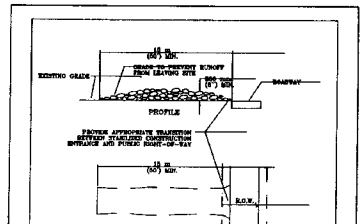
RECORD DRAWING

Ronald D. Westcott PE 5/4/05



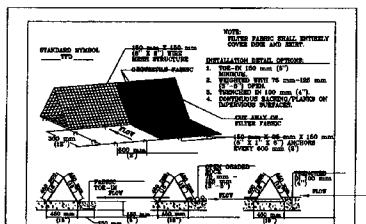
NOTES:
1. USE ONLY OPEN GRADED ROCK 100 to 200 mm (4 to 8") DIAMETER FOR STREAM FLOW CONDITIONS. USE OPEN GRADED ROCK 75 to 150 mm (3 to 6") DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 18.8 mm (20 GAUGE). ROCK SHEATHING SHALL BE ANCHORED FIRMLY AND ANCHORED FIRMLY INTO THE SUBSTRATE A MINIMUM OF 600 mm (24") FOOTS ON THE LEAD ON THE DOWN (AT ON RB) STREAM, WITH MAXIMUM SPACING AT 1.5 m (4.9') ON CENTER.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6") WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE-SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 150 mm (6").
6. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT
RECORD COPY SIGNED BY P. PATRICK MURPHY 5/21/01
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
ROCK BERM
STANDARD NO. 639S-1



NOTES:
1. STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. THIS MANNER IS REQUIRED. IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINED INTO AN APPROVED TRAP OR DEVICE. SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND WILL ALSO REQUIRE ANY AND ALL WORK NECESSARY TO REMOVE MUD OR DIRT FROM THE ROADWAY. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT
RECORD COPY SIGNED BY P. PATRICK MURPHY 5/21/01
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STABILIZED CONSTRUCTION ENTRANCE
STANDARD NO. 641S-1



NOTE:
FILTER FABRIC SHALL ENTIRELY COVER DIKE AND BERM.

INSTALLATION DETAIL OPTIONS:
1. TOE-IN 150 mm (6")
2. TRENCHED WITH 76 mm-152 mm (3"-6") DEPTH
3. TRENCHED IN 100 mm (4")
4. SUPPORTED BY SANDBAGS OR DEPENDING SUBGRADE.

GENERAL NOTES:
1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND BERM SHALL BE A CONTINUOUS WRAPPING OF CONTINUOUS FABRIC. THE BERM SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
3. THE BERM SHALL BE TRENCHED WITH A CONTINUOUS LAYER OF 75-152 MM (3"-6") OPEN GRADED ROCK OR TUBE-IN 150 mm (6") WITH DIAGONALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 100 mm (4").
4. BERM AND FACE SHALL BE SECURELY ANCHORED IN PLACE USING 20 mm (3/4") WIRE STAPLES ON 300 mm (12") CENTERS ON BOTH EDGES AND BERM, OR STEEL USING 19 mm (3/4") DIAMETER 20-GAUGE WIRE TIE RINGS.
5. FILTER MATERIAL SHALL BE LAYED OVER EACH 150 mm (6") TO COVER DIKE TO DECK THE ENTIRE STRUCTURE. USE A SPACING WITH VALIDATION DETAIL 1.
6. THE DIKE STRUCTURE SHALL BE WIRE-150 mm x150 mm (6 GA. 6"X6") WIRE MESH, 1.52 m (5') WIDE.
7. SILT SHALL BE REMOVED AND DISPOSED OF AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. ANY DAMAGED SILT SHALL BE REPLACED AS SOON AS THE DAMAGE IS DISCOVERED.
9. AFTER THE DRAINAGE AREA IS COMPLETELY STABILIZED THE DIKES AND ANY SEDIMENT SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTE 5 ABOVE.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT
RECORD COPY SIGNED BY P. PATRICK MURPHY 5/21/01
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
TRIANGULAR SEDIMENT FILTER DIKE
STANDARD NO. 628S

NO.	DATE	REVISIONS	APP

DESIGNED BY: BOW
DRAWN BY: KA
CHECKED BY: BOW
SCALE: NONE
PROJECT FILE: 7009-21

DANNENBAUM
ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

RONALD D. WESTCOTT 31520 TEXAS

TRAVIS COUNTY WCID NO. 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
COA EROSION CONTROL DETAILS

SHEET NO. 5C

DEC JOB NUMBER 7009-21

May 04, 2005 - 01:51pm Johnnyjohn
J:\0\7009-21\design\sheets\5C-DETAILS.dwg

P-TC02018

STANDARD ENVIRONMENTAL NOTES

ADDITIONAL AREAS NOTES:

1. ANY ADDITIONAL AREAS REQUIRED FOR CONSTRUCTION OF THIS PROJECT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR MUST SECURE CITY OF AUSTIN APPROVAL OF PROPOSED ADDITIONAL AREAS PRIOR TO USE. APPROVAL MUST BE SECURED FROM THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT.
2. ALL ASSOCIATED PERMITS AND FEES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
3. IN ORDER TO SECURE APPROVAL FOR USE OF ADDITIONAL AREAS, CONTRACTOR MUST PROVIDE COMPLETE SUBMITTAL TO THE CITY AND ALLOW A ONE WEEK COMMENT PERIOD FOR EACH REVIEW. CONTRACTOR SHOULD REQUEST MORE INFORMATION ON THE ELEMENTS REQUIRED TO BE INCLUDED IN THE SUBMITTAL FROM THE OWNER'S CONTACT PERSON FOR THIS PROJECT (LISTED ON THE COVER OF THIS PLAN SET).
4. CONTRACTOR MUST INSTALL AND MAINTAIN EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTION FOR ALL SUCH AREAS IN ACCORDANCE WITH THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL AND AS INCLUDED IN THE APPROVED SUBMITTAL OR DIRECTED IN THE FIELD BY THE GENERAL PERMIT OFFICE INSPECTOR.
5. A SIGNED COPY OF THE CITY PLAN EXEMPTION APPROVAL MUST BE KEPT ON SITE AND ACCESSIBLE AT ALL TIMES DURING PROJECT CONSTRUCTION.

DEWATERING NOTE:

CONTRACTOR IS RESPONSIBLE FOR DEWATERING OF WORK AREA. CONTRACTOR MUST SECURE CITY OF AUSTIN APPROVAL OF PROPOSED DEWATERING PROCEDURES PRIOR TO INSTALLATION OR USE. APPROVAL MUST BE SECURED FROM THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT. CONTRACTOR MUST PROVIDE COMPLETE SUBMITTAL AND ALLOW A ONE WEEK (MIN.) COMMENT PERIOD FOR EACH REVIEW. CONTACT THE CITY FOR SUBMITTAL REQUIREMENTS.

FUEL STORAGE NOTE:

FUEL STORAGE IS PROHIBITED ON THIS PROJECT. ADDITIONALLY, THE CONTRACTOR IS REQUIRED TO NOTIFY THE CITY IMMEDIATELY FOLLOWING ANY SPILL OF FUEL OR OTHER TOXIC MATERIAL. CONTRACTOR IS REQUIRED TO FOLLOW-UP WITH WRITTEN DOCUMENTATION, INCLUDING A COMPLETE DESCRIPTION OF THE INCIDENT, MATERIAL SPILLED, AND ACTIONS TAKEN TO CONTAIN AND CLEAN-UP MATERIAL.

FUGITIVE DUST CONTROL NOTE:

ALL PROJECTS MUST COMPLY WITH THE CODE OF THE CITY OF AUSTIN AND THE ENVIRONMENTAL CRITERIA MANUAL REQUIREMENTS TO CONTROL AIRBORNE DUST. COMPLIANCE IS REQUIRED FOR ENTIRE PROJECT SITE AS WELL AS ASSOCIATED OPERATIONS. CONTACT THE CITY FOR RECOMMENDED CONTROL METHODS.

PROJECT SEQUENCE:
(REFER TO COVER FOR PROJECT-SPECIFIC ADDITIONS, IF APPLICABLE.)

PRIOR TO CONSTRUCTION:

1. SECURE APPLICABLE COA PERMITS, INCLUDING UTILITY STREET CUT PERMIT.
2. NOTIFY CITY INSPECTOR PRIOR TO PLACEMENT OF E/S CONTROLS AND TREE PROTECTION FENCING. ALL PROPOSED PHASING OF CONTROLS MUST BE SUBMITTED TO AND APPROVED BY THE INSPECTOR PRIOR TO THE FIELD PRE-CONSTRUCTION CONFERENCE.
3. NOTIFY COA TEMPORARY TRAFFIC CONTROL INSPECTOR PRIOR TO PLACEMENT OF TRAFFIC CONTROLS. ALL PROPOSED PHASING OF CONTROLS MUST BE INDICATED ON APPROVED TRAFFIC CONTROL PLAN AND SEALED BY PROFESSIONAL ENGINEER.
4. PLACE TEMPORARY E/S CONTROLS AND TREE PROTECTION FENCING PRIOR TO BEGINNING ANY EXCAVATION.
5. HOLD ENVIRONMENTAL PRE-CONSTRUCTION CONFERENCE ON SITE WITH THE CONTRACTOR, OWNER'S REPRESENTATIVE, AND CITY INSPECTOR AFTER INSTALLATION OF E/S CONTROLS AND TREE PROTECTION FENCING AND PRIOR TO ANY TRENCHING OPERATIONS.
6. PLACE TEMPORARY TRAFFIC CONTROL DEVICES.

PROJECT CONSTRUCTION:

1. BEGIN CONSTRUCTION. CONTACT THE CITY INSPECTOR FOR ADDITIONAL PRE-CONSTRUCTION CONFERENCES FOR EACH PHASE, IF REQUIRED.
2. CONTACT THE CITY TO SCHEDULE FIELD INSPECTION PRIOR TO BEGINNING INSTALLATION OF PERMANENT E/S CONTROLS.
3. COMPLETE RESTORATION OF ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES FOR THIS PROJECT (MAINTENANCE OF E/S CONTROLS)
4. HOLD ENVIRONMENTAL POST-CONSTRUCTION CONFERENCE ON SITE WITH THE CONTRACTOR, OWNER'S REPRESENTATIVE, AND THE CITY INSPECTOR. ALL PERMANENT E/S CONTROLS MUST BE ACCEPTED BY THE CITY INSPECTOR.
5. FOLLOWING FINAL ACCEPTANCE OF PERMANENT E/S CONTROLS BY THE CITY INSPECTOR, REMOVE TEMPORARY E/S CONTROLS. CLEAN EXISTING STORM DRAINAGE SYSTEM AS NECESSARY DUE TO CONSTRUCTION OPERATIONS.
6. DRESS-UP AND RESTORE ANY AREAS DISTURBED BY REMOVAL OF TEMPORARY E/S CONTROLS DESCRIBED ABOVE.
7. REMOVE TEMPORARY TRAFFIC CONTROL DEVICES.

CITY OF AUSTIN – STANDARD NOTES TREE AND NATURAL AREA PROTECTION

1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION WITH TEMPORARY FENCING.
2. PROTECTIVE FENCES SHALL BE ERECTED ACCORDING TO CITY OF AUSTIN STANDARDS FOR TREE PROTECTION.
3. PROTECTIVE FENCES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING), AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE PROJECT.
4. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIP LINES.
5. PROTECTIVE FENCES SHALL COMPLETELY SURROUND THE TREES OR GROUP OF TREES AND SHALL BE LOCATED AT THE OUTERMOST LIMIT OF BRANCHES (DRIP LINE). FOR NATURAL AREAS, PROTECTIVE FENCES SHALL FOLLOW THE LIMIT OF CONSTRUCTION LINE, IN ORDER TO PREVENT THE FOLLOWING:
   - A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS;
   - B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN 6 INCHES CUT OR FILL) OR TRENCHING NOT DEMONED AND AUTHORIZED BY THE GENERAL PERMIT OFFICE OF THE WATERSHED PROTECTION DEPARTMENT;
   - C. WOUNDS TO EXPOSED ROOTS, TRUNK OR LIMBS BY MECHANICAL EQUIPMENT;
   - D. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING, AND FIRES.
6. EXCEPTIONS TO INSTALLING PROTECTIVE FENCES AT CRITICAL ROOT ZONES MAY BE PERMITTED IN THE FOLLOWING CASES:
   - A. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT, ERECT THE FENCE APPROXIMATELY 2 TO 4 FEET BEYOND THE AREA DISTURBED;
   - B. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
   - C. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN 8 FEET TO THE BUILDING
   - D. WHERE THERE ARE SEVERE SPACE CONSTRAINTS (DUE TO TRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE CITY INSPECTOR TO DISCUSS ALTERNATIVES.

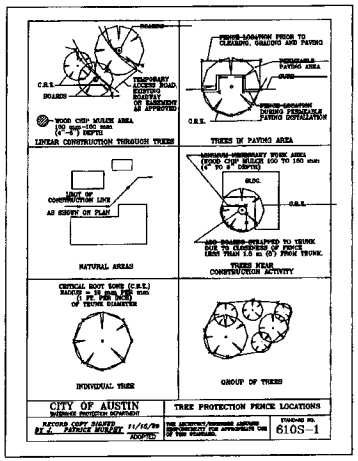
   WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8 FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING.
7. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN AREAS OF UNPROTECTED ROOT ZONES, THESE AREAS SHOULD BE COVERED WITH 4 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION.
8. ALL GRADING WITHIN PROTECTED ROOT ZONE AREAS SHALL BE DONE BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE. PRIOR TO GRADING, RELOCATE PROTECTIVE FENCES TO 2 FEET BEYOND THE GRADED AREA.
9. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SIDE OF THE SHOVEL. ROOT AREAS WITH GOOD QUALITY TREES AS SOON AS POSSIBLE. EXPOSED ROOT AREAS ARE NOT BACK-FILLED WITHIN 2 DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
10. PRIOR TO EXCAVATION OR GRADE CUTTING WITHIN TREE DRIPLINES, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROOK SAW OR SIMILAR EQUIPMENT TO MINIMIZE DAMAGE TO REMAINING ROOTS.
11. TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES SHOULD BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. TREE CANOPIES SHOULD BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
12. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF WATERLINES, SEWER LINES, SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
13. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 4 INCHES SHALL BE PERMITTED WITHIN THE DRIPLINE OF TREES. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
14. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS.
15. ALL FINISHED PRUNING MUST BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY. REFERENCE THE NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES AVAILABLE ON REQUEST FROM THE GENERAL PERMIT OFFICE.
16. DEVIATIONS FROM THE ABOVE NOTES MAY BE CONSIDERED ORDINANCE VIOLATIONS IF THERE IS SUBSTANTIAL NONCOMPLIANCE OR IF A TREE SUSTAINS DAMAGE AS A RESULT.
17. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.

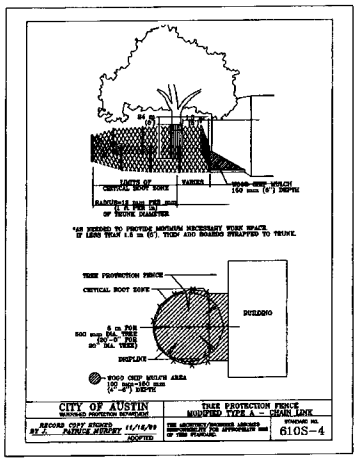
SUPPLEMENTAL TREE PROTECTION NOTES

1. ALL TREES 6" AND LARGER LOCATED WITHIN THE LIMITS OF CONSTRUCTION OR WITH CANOPIES/CRITICAL ROOT ZONES EXTENDING INTO THE LIMITS OF CONSTRUCTION HAVE BEEN SURVEYED AND ARE SHOWN IN THIS PLAN SET. DAMAGE TO, OR REMOVAL OF, TREES SHOWN IN DOCUMENT SET TO BE PRESERVED SHALL CONSTITUTE A VIOLATION OF THE CITY OF AUSTIN (COA) PERMIT.
2. ALL TREE PROTECTION FENCING MUST COMPLY WITH CITY OF AUSTIN REQUIREMENTS AS OUTLINED IN THE ENVIRONMENTAL CRITERIA MANUAL AND AS INDICATED BY STANDARD COA NOTES AND DETAILS INCLUDED WITHIN THIS DOCUMENT SET. CONTRACTOR SHALL INSTALL FENCING PRIOR TO PRE-CONSTRUCTION CONFERENCE, MAKE ADJUSTMENTS TO FENCING AS DIRECTED BY THE COA ENVIRONMENTAL INSPECTOR, AND MAINTAIN FENCING UNTIL PROJECT IS COMPLETE.
3. TYPE AND LOCATION OF ALL TREE PROTECTION FENCING MUST BE APPROVED IN THE FIELD BY THE CITY INSPECTOR PRIOR TO CONSTRUCTION.
4. ALL TRENCHING WITHIN THE CRITICAL ROOT ZONE OF A TREE TO BE PRESERVED WILL BE SAW CUT.
5. CONTACT THE CITY FOR INSPECTION PRIOR TO ANY PRUNING ACTIVITIES ON TREES IN PROJECT AREA.
6. * TREE SURVEY SIZE REQUIREMENTS VARY BY PROJECT AREA AND/OR PROPERTY OWNERSHIP.

OAK WILT PREVENTION NOTES

1. PRUNING OF AN EXISTING TREE THAT IS NECESSARY AS PART OF THIS PROJECT SHALL BE CONDUCTED IN ACCORDANCE WITH ANSI A300-1995 STANDARDS, OR LATEST APPROVED EDITION. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS. TO PREVENT BARK TEARS, THE WEIGHT OF THE BRANCH SHALL BE RELIEVED BEFORE MAKING FINAL PRUNING CUT.
2. ALL PRUNING SHALL PRESERVE THE NATURAL CHARACTER OF THE TREE.
3. ONLY COLLAR CUTS ARE ACCEPTABLE. NO FLUSH CUTS OR STUB CUTS WILL BE ALLOWED.
4. ALL TREE BRANCHES NECESSARY TO BE REMOVED FOR THE SAFE CONSTRUCTION OF THIS PROJECT SHALL BE IDENTIFIED BY THE CONTRACTOR AND APPROVED BY THE CITY INSPECTOR PRIOR TO REMOVAL.
5. ALL BRANCHES THAT ARE BROKEN OR DAMAGED DURING CONSTRUCTION SHALL BE REMOVED.
6. PRUNING CUTS OR DAMAGED AREAS ON AN OAK TREE SHALL BE PAINTED WITHIN FIVE MINUTES WITH A STANDARD TREE WOUND DRESSING. TREE WOUND DRESSING SHALL BE EITHER TREESPOTE AEROSOL OR TANGLEFOOT PRUNING SEALER (OR APPROVED EQUAL).
7. ANY TREE ROOTS THAT ARE EXPOSED, CUT, OR TORN DURING CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SURROUNDING SOIL. (REFER ALSO TO NUMBER 9 OF THE TREE AND NATURAL AREA PROTECTION NOTES INCLUDED IN THIS PLAN SET.)





RECORD DRAWING

Ronald D. Westcott P.E. 5/4/05

NO.	DATE	REVISIONS	APP

DESIGNED BY: MBW
DRAWN BY: KA
CHECKED BY: RDW
APPROVED BY: RDW
PROJECT FILE: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

STATE OF TEXAS
RONALD D. WESTCOTT
37535
LICENSED PROFESSIONAL ENGINEER

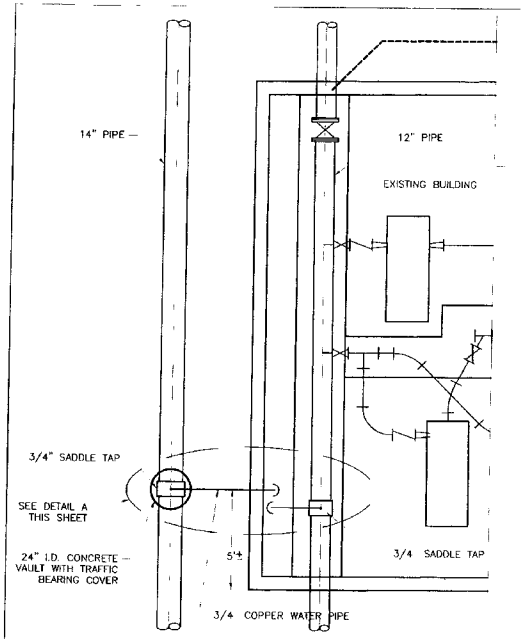
TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
COA EROSION CONTROL DETAILS

SHEET NO.
5D

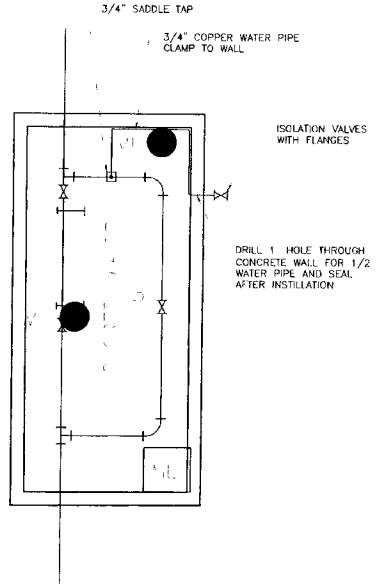
DCC JOB NUMBER
7009-21

May 04 2005 - 0:28am Ann Strror
G:\7410\7009-1\Dsend\Dwg\Work\7009ETP4.L5.dwg

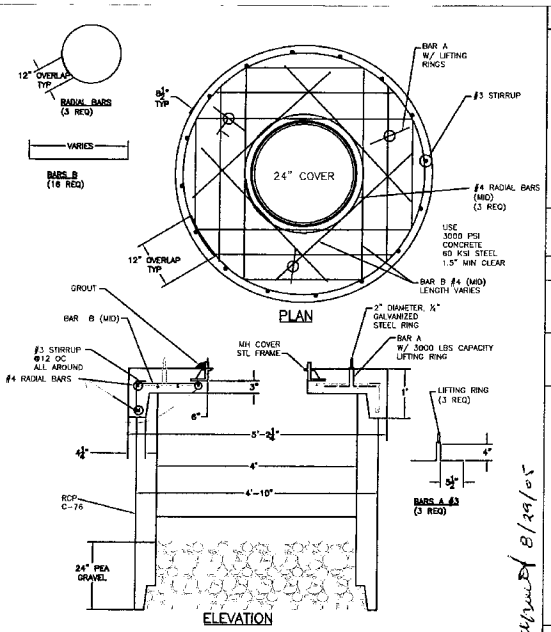
P-TC02019
106



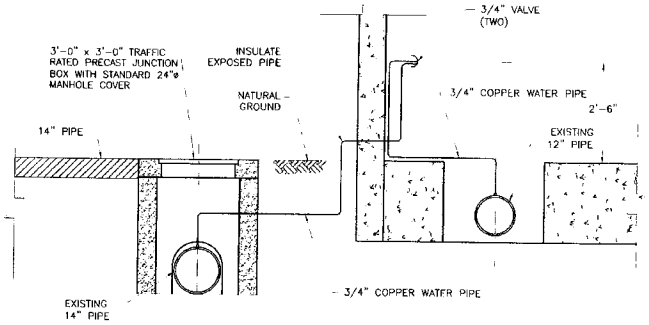
PRESSURE TAP AT DISCHARGE PIPES
3/8" = 1'



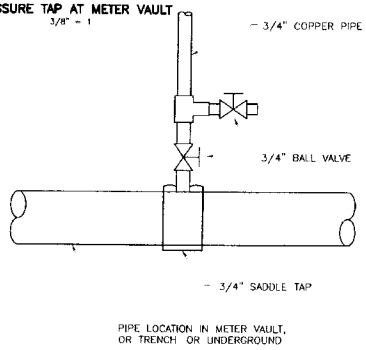
PRESSURE TAP AT METER VAULT
3/8" = 1'



CONTROL VALVE VAULT DETAIL
NTS



DETAIL A
3/4" = 1'



PRESSURE TAP DETAIL
N.T.S.

RECORD DRAWING

Ron Sal G. Westbrook 8/29/05

NO.	DATE	REVISIONS	APP

DESIGNED BY: DGN
DRAWN BY: KA
APPROVED BY: RBW
APPROVED BY: RBW
PROJECT FILE: 7009-21

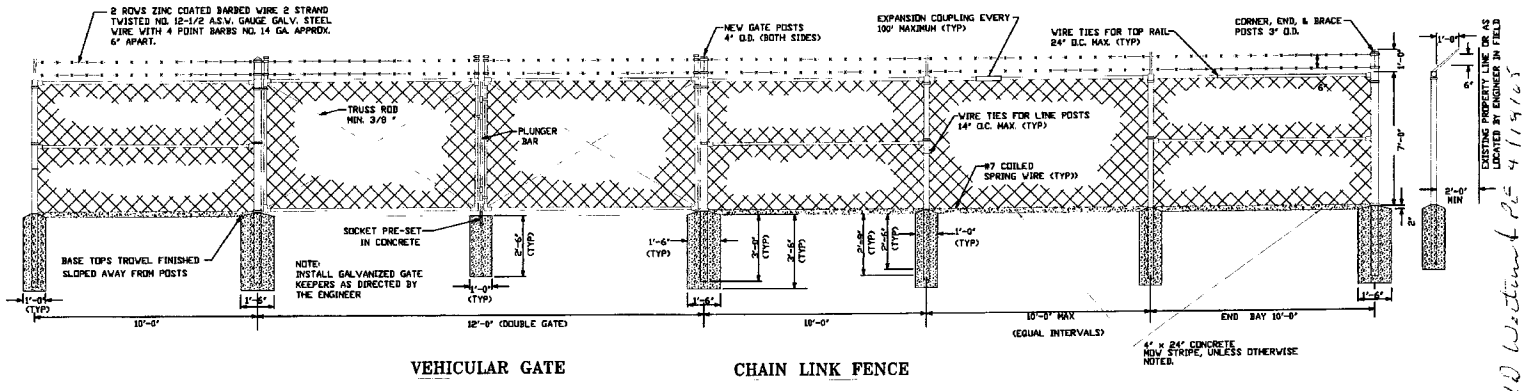
DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

STATE OF TEXAS
RONALD B. WESTBROOK
37520
REGISTERED PROFESSIONAL ENGINEER

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
MECHANICAL DETAILS

SHEET NO.
6

DEC JOB NUMBER
7009-21



7' SECURITY FENCING WITH Y (8' TOTAL)
NTS

RECORD DRAWING

Revised Written 4/19/65

NO.	DATE	REVISIONS	APP

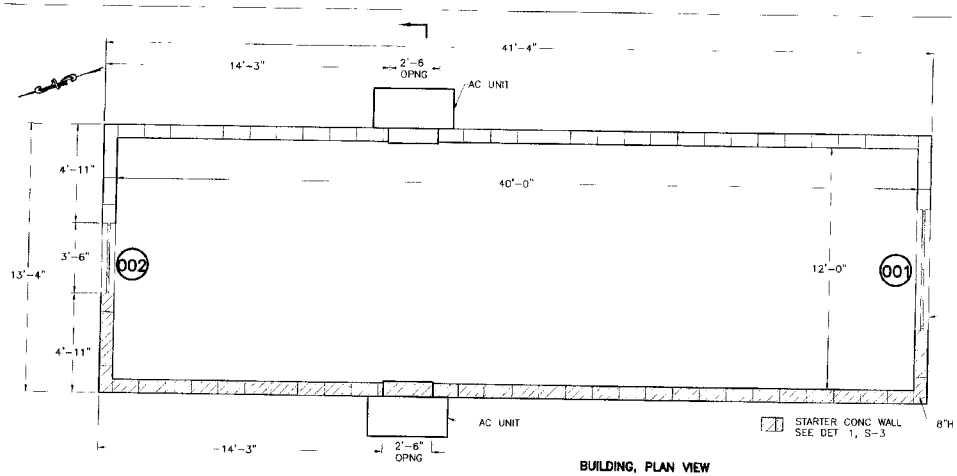
DESIGNED BY: RDW
DRAWN BY: RDW
CHECKED BY: RDW
APPROVED BY: RDW
PROJECT FILE: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

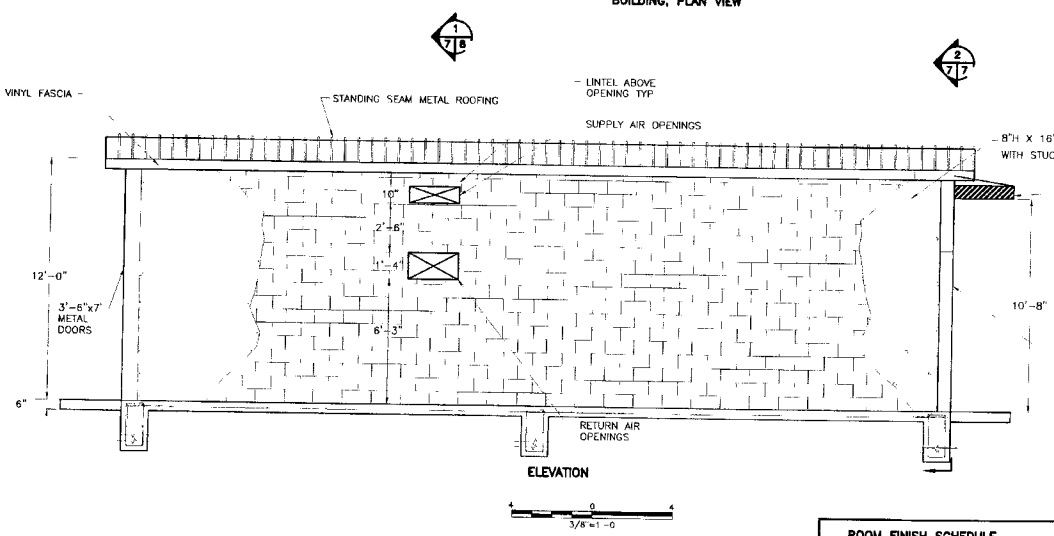
TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
SECURITY FENCE DETAIL

SHEET NO.
6A

DCD JOB NUMBER
7009-21

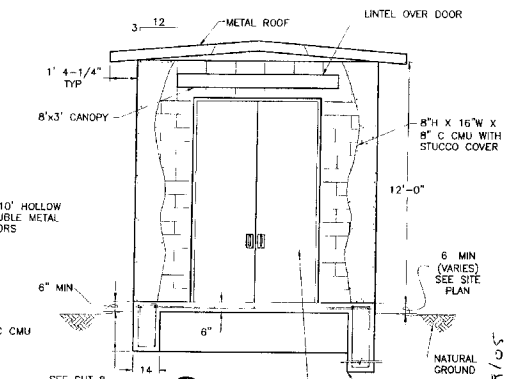


BUILDING, PLAN VIEW



ELEVATION

3/8"=1'-0



XSECTION
SCALE 3/8"=1

ASDFASDFSADF

10'-0"

DOOR SCHEDULE						
MARK	SIZE			DOOR		FRAME
	WD	HGT	THK	MATL		MATL
001	6'-0"	7'-0"	1 3/4"	HOLLOW METAL		METAL
002	3'-6"	7'-0"	1 3/4"	HOLLOW METAL		METAL
DOOR TYPE = FLUSH PANEL W/ PUSH PULL BAR (PANIC TYPE)						
LOCKSET = EXTERIOR DOOR						
OTHER = DOOR STOP, HOLDER, HINGES, CLOSER, THRESHOLD AND KICK PLATE						

ROOM FINISH SCHEDULE	
FLOOR	= NONSLIP FINISH (DUSTPROOF)
WALLS	= PAINTED CONC MASONRY UNITS
CEILING	= PAINTED GYPSUM BOARD

RECORD DRAWING

Ronald D. Westbrook P.E. 4/19/05

NO.	DATE	REVISIONS	APP
2	4/15/05	RECORD DRAWING	TGA

DESIGNED BY: RWF
DRAWN BY: KS
CHECKED BY: RDW
CHECKED BY: RDW
PROJECT ENG: RDW
PROJECT NO.: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

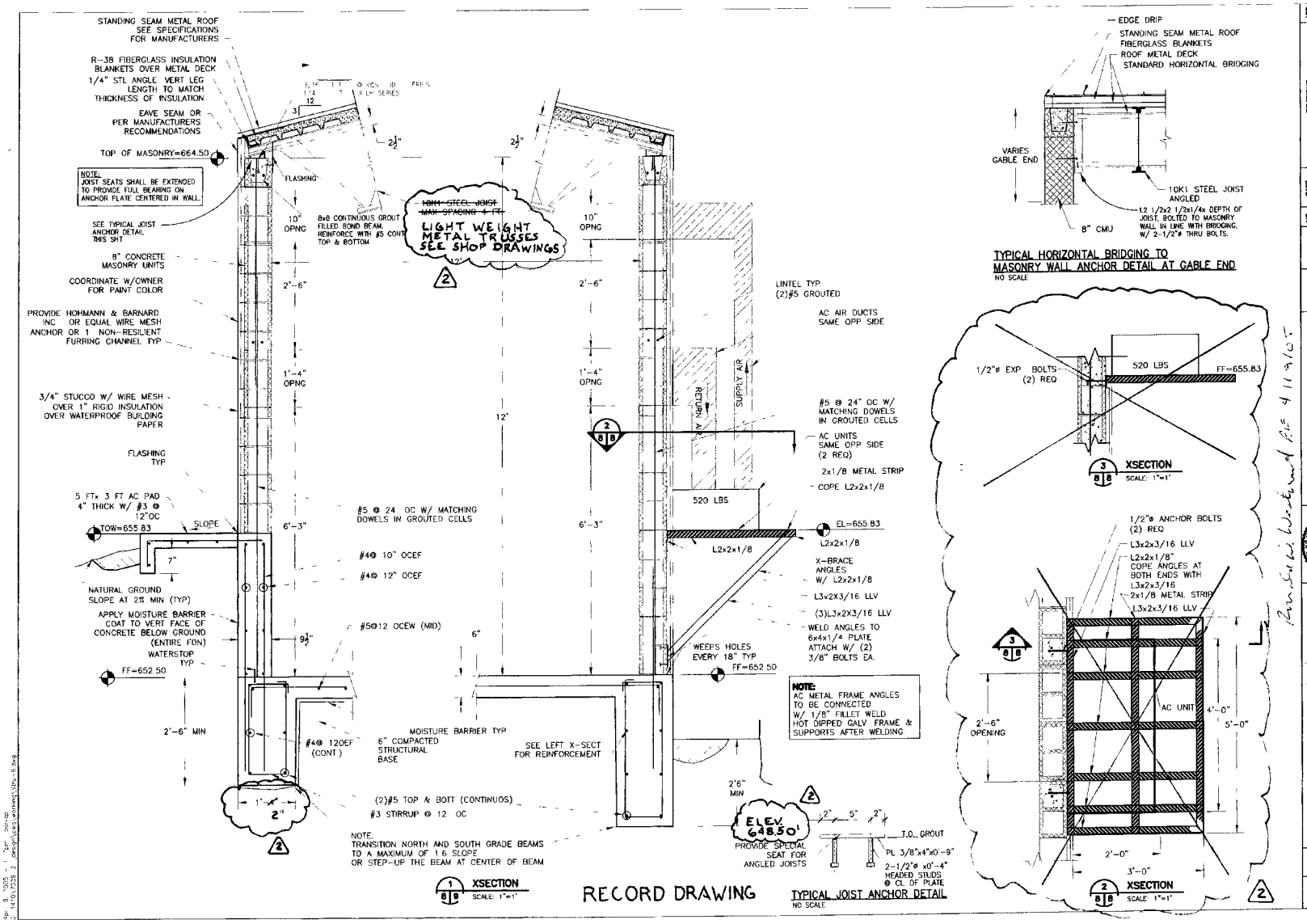
RONALD D. WESTBROOK 31530

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
ELECTRICAL BUILDING

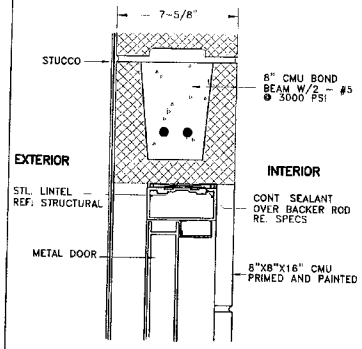
SHEET NO.
7

DCI JOB NUMBER
7009-21

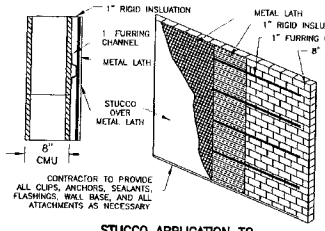
Apr 9 2005 - 8:01am - rdavis
G:\14 (N-T)\7009-21 (design\dwg\electrical\record-2.dwg)


STANDING SEAM METAL ROOF SEE SPECIFICATIONS FOR MANUFACTURERS
R-38 FIBERGLASS INSULATION BLANKETS OVER METAL DECK
1/4" STL ANGLE VERT LEG LENGTH TO MATCH THICKNESS OF INSULATION
EAVE SEAM OR PER MANUFACTURERS RECOMMENDATIONS
TOP OF MASONRY=664.50
NOTE: JOIST SEATS SHALL BE EXTENDED TO PROVIDE FULL BEARING ON ANCHOR PLATE CENTERED IN WALL.
SEE TYPICAL JOIST ANCHOR DETAIL THIS SHT
8" CONCRETE MASONRY UNITS
COORDINATE W/OWNER FOR PAINT COLOR
PROVIDE HOHMANN & BARNARD INC OR EQUAL WIRE MESH ANCHOR OR 1 NON-RESILIENT FURRING CHANNEL TYP
3/4" STUCCO W/ WIRE MESH OVER 1" RIGID INSULATION OVER WATERPROOF BUILDING PAPER
FLASHING TYP
5 FT x 3 FT AC PAD 4" THICK W/ #3 @ 12"OC
TOW=655.83
SLOPE
NATURAL GROUND SLOPE AT 2% MIN (TYP)
APPLY MOISTURE BARRIER COAT TO VERT FACE OF CONCRETE BELOW GROUND (ENTIRE FDN)
WATERSTOP TYP
FF=652.50
2'-6" MIN
FLASHING
10" OPNG
8x8 CONTINUOUS GROUT FILLED BOND BEAM. REINFORCE WITH #5 CONT TOP & BOTTOM
~~10K1 STEEL JOIST MAX SPACING 4 FT~~
LIGHT WEIGHT METAL TRUSSES SEE SHOP DRAWINGS
2'-6"
1'-4" OPNG
6'-3"
#5 @ 24 OC W/ MATCHING DOWELS IN GROUTED CELLS
#4@ 10" OCEF
#4@ 12" OCEF
#5@12 OCEW (MID)
#4@ 120EF (CONT)
MOISTURE BARRIER TYP
6" COMPACTED STRUCTURAL BASE
SEE LEFT X-SECT FOR REINFORCEMENT
(2)#5 TOP & BOTT (CONTINUOS)
#3 STIRRUP @ 12 OC
NOTE: TRANSITION NORTH AND SOUTH GRADE BEAMS TO A MAXIMUM OF 1:6 SLOPE OR STEP-UP THE BEAM AT CENTER OF BEAM
1 XSECTION SCALE: 1"=1'
LINTEL TYP (2)#5 GROUTED
AC AIR DUCTS SAME OPP SIDE
RETURN AIR
SUPPLY AIR
#5 @ 24" OC W/ MATCHING DOWELS IN GROUTED CELLS
AC UNITS SAME OPP SIDE (2 REQ)
2x1/8 METAL STRIP
COPE L2x2x1/8
520 LBS
EL=655.83
L2x2x1/8
X-BRACE ANGLES W/ L2x2x1/8
L3x2X3/16 LLV
(3)L3x2X3/16 LLV
WELD ANGLES TO 6x4x1/4 PLATE ATTACH W/ (2) 3/8" BOLTS EA.
WEEPS HOLES EVERY 18" TYP
FF=652.50
NOTE: AC METAL FRAME ANGLES TO BE CONNECTED W/ 1/8" FILLET WELD. HOT DIPPED GALV FRAME & SUPPORTS AFTER WELDING.
2'6" MIN
ELEV. 648.50'
PROVIDE SPECIAL SEAT FOR ANGLED JOISTS
T.O. GROUT
PL 3/8"x4"x0'-9"
2-1/2"ø x0'-4" HEADED STUDS @ CL OF PLATE
TYPICAL JOIST ANCHOR DETAIL
NO SCALE
EDGE DRIP
STANDING SEAM METAL ROOF
FIBERGLASS BLANKETS
ROOF METAL DECK
STANDARD HORIZONTAL BRIDGING
VARIES GABLE END
10K1 STEEL JOIST ANGLED
L2 1/2x2 1/2x1/4x DEPTH OF JOIST, BOLTED TO MASONRY WALL IN LINE WITH BRIDGING, W/ 2-1/2"ø THRU BOLTS.
8" CMU
TYPICAL HORIZONTAL BRIDGING TO MASONRY WALL ANCHOR DETAIL AT GABLE END
NO SCALE
1/2"ø EXP BOLTS (2) REQ
520 LBS
FF=655.83
3 XSECTION SCALE: 1"=1'
1/2"ø ANCHOR BOLTS (2) REQ
L3x2x3/16 LLV
L2x2x1/8" COPE ANGLES AT BOTH ENDS WITH L3x2x3/16
2x1/8 METAL STRIP
L3x2x3/16 LLV
AC UNIT
2'-6" OPENING
4'-0"
5'-0"
2'-0"
3'-0"
2 XSECTION SCALE: 1"=1'
RECORD DRAWING
Revised Wind Bracing 4/11/07
REVISIONS
NO. DATE
2 4/11/07 RECORD DRAWING
DESIGNED BY: RGW
DRAWN BY: RGW
CHECKED BY: RGW
APPROVED BY: RGW
PROJECT NO.: 7009-21
DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731
TEXAS
EDWIN B. WESTFALL
37553
REGISTERED PROFESSIONAL ENGINEER
TRAVIS COUNTY WCID NO. 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
BUILDING STRUCTURAL SECTIONS
SHEET NO.
8
DCC JOB NUMBER
7009-21

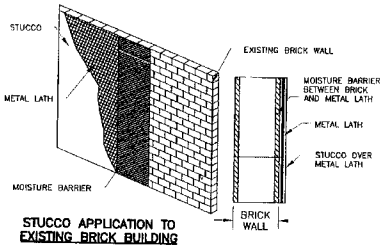
P-TC02023



TYP. EXT. DOOR HEAD DET. @MAIN ENTRANCE SECTION

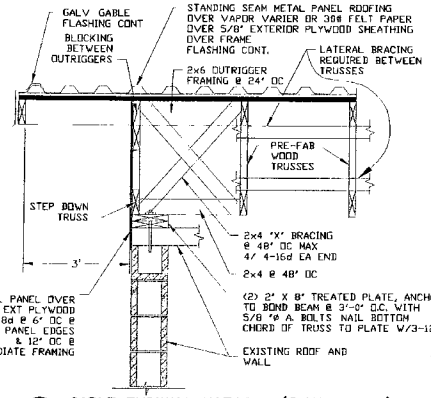


STUCCO APPLICATION TO PROPOSED CMU BUILDING

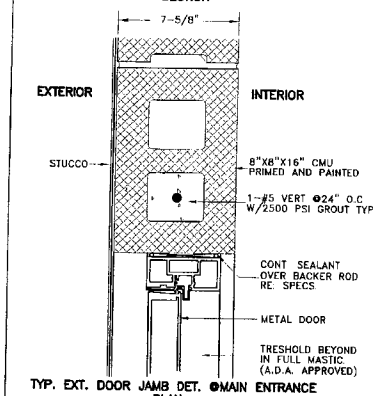


STUCCO APPLICATION TO EXISTING BRICK BUILDING

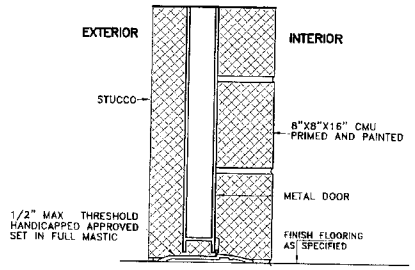
ANCHOR SCHEDULE			
BASE MATERIAL	ANCHOR TYPE	MIN. EMBEDMENT	ANCHOR SIZE
CONCRETE	HIT HY 150	4-1/2"	1/2"
SOLID OR HOLLOW BRICK	HIT HY20 FOR HAS-E OR HIT THREADED ANCHORS	6"	3/8"
HOLLOW CONCRETE BLOCK (CMU)	HIT HY20 FOR HIT-A THREADED ANCHORS	3-3/8" (STD)	1/2"



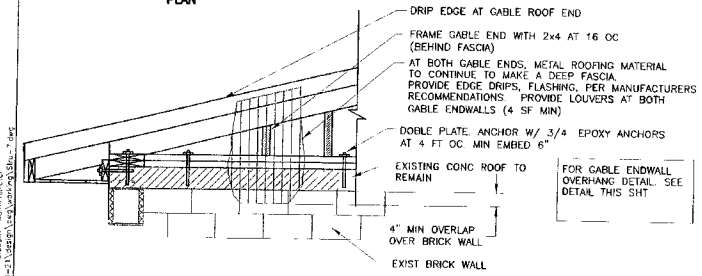
GABLE ENDWALL XSECTION (EXIST. BLDG.)
NTS



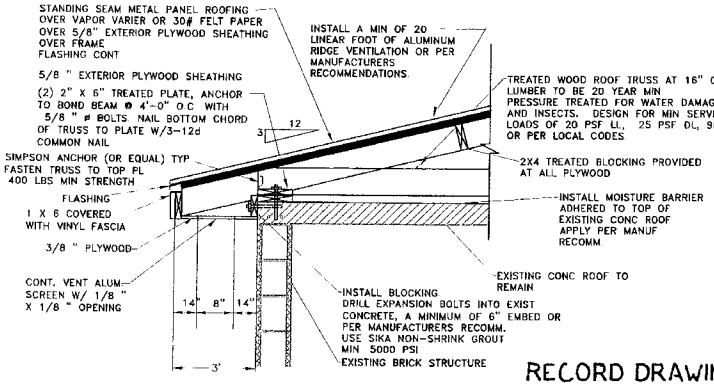
TYP. EXT. DOOR JAMB DET. @MAIN ENTRANCE PLAN



TYP. EXT. DOOR SILL DET. @MAIN ENTRANCE



1 GABLE END VIEW (EXISTING PUMP STATION BUILDING)
3/4 1"=1'



1 XSECTION (EXISTING PUMP STATION BUILDING)
3/4 1"=1'

RECORD DRAWING

Ronald D. Wasterlund PE 5/6/05

NO.	DATE	REVISIONS	APP

DESIGNED BY: DRK
DRAWN BY: LA
CHECKED BY: RDW
APPROVED BY: RDW
PROJECT ENG: TCWCID-21

DANNENBAUM
ENGINEERING & ARCHITECTURE CONSTRUCTION
3406 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

STATE OF TEXAS
RONALD D. WASTERLUND
31500
REGISTERED PROFESSIONAL ENGINEER

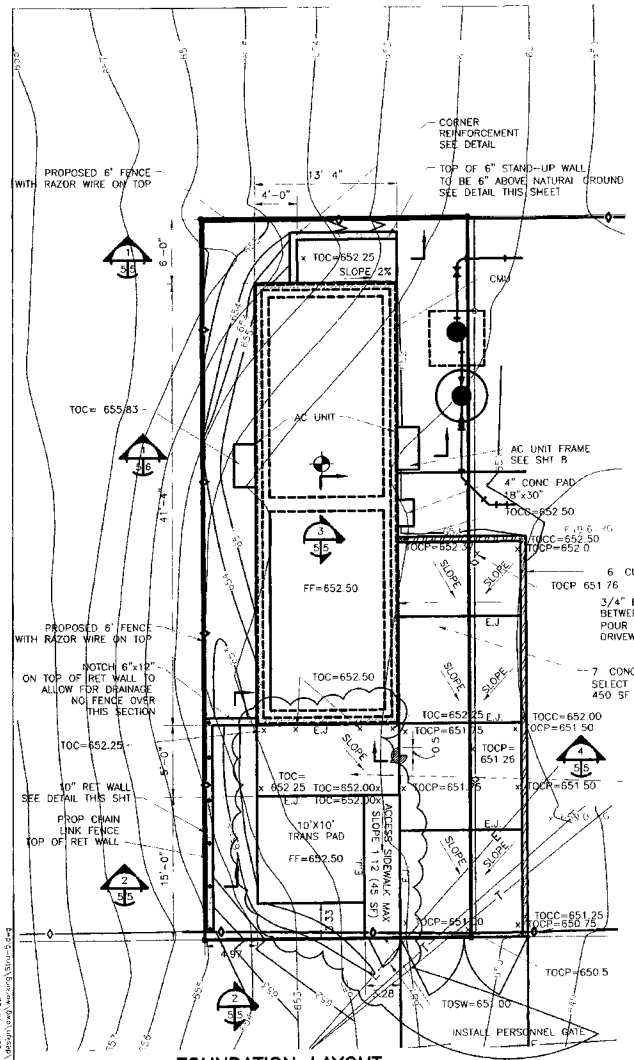
TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO 1
BUILDING STRUCTURAL DETAILS

SHEET NO.
9

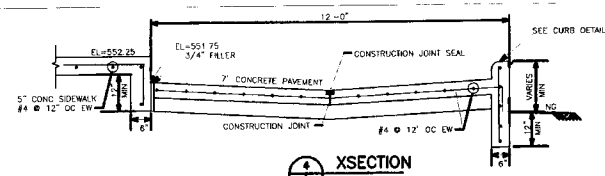
DEC JOB NUMBER
7009-21

C:\14410\7009-21\acad\sheets\Bldg-7.dwg
2005 - 1:20pm Administrator

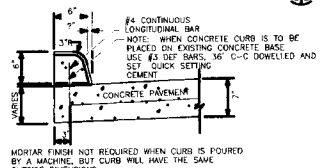
P-TC02024



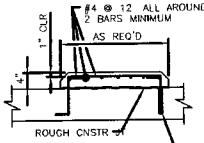
FOUNDATION LAYOUT



4 XSECTION 5/5



CONCRETE CURB



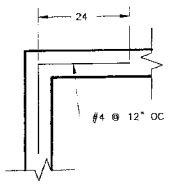
WHERE PAD IS PLACED ON EXIST FLOOR, DRILL & GROUT #5 @ 18" DWLS IN 1' 0 X 6" DP HOLES. CLEAN & ROUGHEN EXIST CONCRETE SURFACE & APPLY A CEMENT SLURRY PRIOR TO PLACING NEW CONCRETE.

EQUIPMENT PAD DETAIL

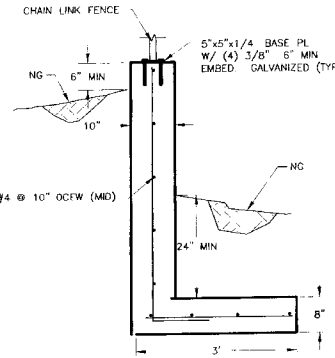
SCALE: NONE

LEGEND

TOCP= TOP OF CONCRETE PAVEMENT
TOC= TOP OF CONCRETE
TOCC= TOP OF CONCRETE CURB
x 652.00 =ELEVATION
x 652.00 NG= NATURAL GROUND ELEVATION
FF= FINISH FLOOR ELEVATION



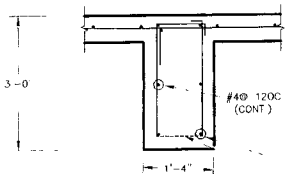
CORNER REINFORCEMENT



2 XSECTION 5/5 1"=1'

NOTES:

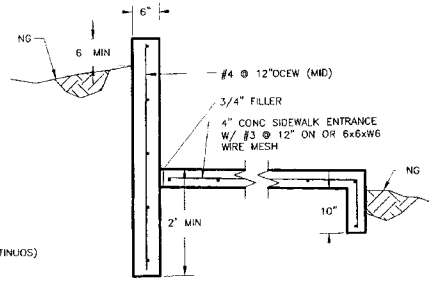
1. ALL ITEMS SHOWN HEREON SHALL CONFORM TO PROJECT SPECIFICATIONS
2. FOR LIGHTING PLAN SEE LIGHTING SCHEDULE ELECTRICAL SHEETS.
3. ELECTRICAL CONDUITS INTO CONTROL BUILDING SHALL BE LOCATED AND POSITIONED PRIOR TO POURING BUILDING FOOTING
4. COORDINATE AC/HEAT PUMP OPENING SIZE WITH SELECTED MANUFACTURER'S RECOMMENDATIONS
5. ALL BOND BEAMS AND CELLS CONTAINING REINFORCEMENT ARE TO BE FULLY GROUTED.
6. APPLY DAMPPROOFING COATING TO EXTERIOR SURFACE OF THE CMU PRIOR TO INSTALLING INSULATION.
7. COORDINATE ROOF NAILING PATTERN WITH SELECTED ROOF COVERING MATERIAL.
8. TOP OF STARTER WALL, TOP OF FINISHED FLOOR, AND TOP OF RETAINING WALL TO BE A MIN OF 6" ABOVE NATURAL GROUND LEVEL
9. COORDINATE WITH ELECTRICAL DRAWINGS LOCATION OF OPENINGS AND DOORS



3 XSECTION 5/5 1"=1

(2)#5 TOP & BOTT (CONTINUOS)
#3 STIRRUP @ 12" OC

RECORD DRAWING



1 STAND-UP WALL 5/5 1"=1'

Revised Westmont 4/19/05

APP	REVISIONS	DATE	NO.

DESIGNED BY: RDW
DRAWN BY: JS
CHECKED BY: RDW
APPROVED BY: RDW
PROJECT FILE: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

STATE OF TEXAS
RONALD B. WESTOVOLT
3550
REGISTERED PROFESSIONAL ENGINEER

TRAVIS COUNTY WCID NO 10
TRANS COUNTY, TEXAS
PUMP STATION NO. 1
PAVING & STRUCTURAL DETAILS

SHEET NO.
10

DBE JOB NUMBER
7009-21

Apr 9 2005 - 8:09 - rdwright
J:\D\7009-21\design\dwg\Struc-S-2.dwg

P-TC02025

CODES

1. BUILDING CODE: UNIFORM BUILDING CODE, 1994 EDITION
2. STRUCTURAL CONCRETE: BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AMERICAN CONCRETE INSTITUTE, ACI 318-95.
3. CONCRETE MASONRY: BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES, AMERICAN CONCRETE INSTITUTE, ACI 530-95.
4. STRUCTURAL STEEL: MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, AMERICAN INSTITUTE OF STEEL CONSTRUCTION, NINTH EDITION
5. ALL CODES AND SPECIFICATIONS LISTED ABOVE SHALL INCLUDE ALL AMENDMENTS AND ADDENDA IN FORCE AT THE DATE OF THE CONTACT DOCUMENTS. WHERE CONFLICT EXISTS BETWEEN THE VARIOUS PUBLICATIONS AS SPECIFIED HEREIN, THE STRICTEST REQUIREMENTS OF THE VARIOUS PUBLICATIONS SHALL GOVERN, UNLESS NOTED OTHERWISE. WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, THE STRUCTURAL NOTES, AND THE SPECIFICATIONS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
6. ANY CHANGES IN CONSTRUCTION MATERIALS FROM THOSE SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS SHALL BE REPORTED BY THE GENERAL CONTRACTOR TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF LOAD CARRYING CAPACITY OF THE STRUCTURE.

DESIGN LOADS

7. LIVE LOADS
   - A. EQUIPMENT — 250 PSF
   - B. ROOF — 20 PSF
   - C. GENERAL PUBLIC AREAS, AND CORRIDORS — 100 PSF
8. WIND LOADS: BASED ON THE UNIFORM BUILDING CODE, 1997 EDITION REQUIREMENTS. BASIC WIND SPEED = 80 MPH. EXPOSURE C, IMPORTANCE FACTOR IW = 1.15.
9. DEAD LOADS INCLUDE THE SELF WEIGHT OF THE STRUCTURAL ELEMENTS, SPECIFIC LOADS SHOWN ON THE DRAWINGS, AND THE FOLLOWING SUPERIMPOSED LOADS:
   - A. PARTITION AT AREAS WITH LESS THAN 100 PSF LIVE LOAD — 20 PSF
   - B. CEILINGS/MECHANICAL EQUIPMENT AT (ENTIRE) ROOF — 10 PSF
   - C. ROOFING AND RIGID INSULATION — 15 PSF

BUILDING PAD/STRUCTURAL FILL

1. EXCAVATIONS EXISTING MATERIALS FOR FOUNDATIONS SHALL BE NEAT AND LEVEL. REMOVE ALL LOOSE SURFICIAL MATERIALS, ANY ORGANIC MATERIALS, AND DEBRIS.
   - A. FOUNDATION ELEMENTS SHALL BEAR ON INTACT LIMESTONE, COMPACTED SELECT FILL, OR CRUSHED STONE.
2. SELECT, STRUCTURAL FILL SHALL BE CRUSHED LIMESTONE MEETING THE REQUIREMENTS OF TEXDOT TX-247, TYPE A OR B.
3. SELECT FILL SHALL BE PLACED IN EIGHT INCH MAXIMUM LOOSE LIFTS, WATERED AS REQUIRED AND COMPACTED TO A MINIMUM OF 97 PERCENT OF THE MAXIMUM DRY DENSITY AS DEFINED IN ASTM D 698 AT A MOISTURE CONTENT WITHIN PLUS OR MINUS TWO PERCENT OF THE OPTIMUM MOISTURE CONTENT.
4. COMPACTION AND MOISTURE CONTENT OF SUBGRADE AND EACH LIFT OF STRUCTURAL FILL SHALL BE INSPECTED AND APPROVED BY A QUALIFIED ENGINEERING TECHNICIAN, SUPERVISED BY A GEOTECHNICAL ENGINEER.
5. CRUSHED STONE FILL SHALL BE 3/8" TO 5/8" CRUSHED LIMESTONE MEETING THE REQUIREMENTS OF ASTM C333. THIS MATERIAL SHALL BE PLACED IN SIX INCH LIFTS, AND LIGHTLY TAMPED WITH A HAND-HELD MECHANICAL COMPACTOR.

CONCRETE FOOTINGS

6. CONCRETE FOOTING DESIGN IS BASED ON A GEOTECHNICAL REPORT PREPARED BY KLIENFELDER.
7. FOOTING EXCAVATIONS SHALL BE TO NEAT LINES AND SHALL BE FREE OF LOOSE OR WET MATERIALS.
8. FOOTING REINFORCING AND CONCRETE SHALL BE PLACED IMMEDIATELY AFTER EXCAVATIONS ARE COMPLETE. IN NO CASE SHALL A FOOTING BE EXCAVATED THAT CANNOT BE PLACED BY THE END OF THE WORKDAY.
9. SEE PLANS AND SCHEDULES FOR FOOTING SIZES, REINFORCING AND DEPTHS.
10. ALL FOOTINGS SHALL BE INSPECTED BY A REPRESENTATIVE OF THE OWNER'S TESTING AGENCY TO ENSURE THAT THE PROPOSED BEARING MATERIAL HAS BEEN REACHED IN ACCORDANCE WITH THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT AND THAT THE FOOTING HAS BEEN CONSTRUCTED TO SPECIFIED SIZE, WITH DETAILED REINFORCING, AND TO SPECIFIED TOLERANCES.

EXCAVATION PROTECTION

1. SAW CUTS MUST BE MADE INTO THE STONE BETWEEN THE EXISTING CONCRETE WALLS AND FOOTINGS AND THE EDGE OF THE EXCAVATION AT THE LOWEST LEVEL TO THE DEPTH OF THE EXCAVATION PRIOR TO REMOVAL OF MATERIAL.
2. SOME EXCAVATIONS BELOW EXISTING, ADJACENT CONSTRUCTION WILL BE REQUIRED FOR THIS PROJECT. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SUCH EXCAVATION WORK DOES NOT UNDERMINE THE EXISTING CONSTRUCTION.

CAST-IN-PLACE CONCRETE

1. CAST-IN-PLACE CONCRETE SHALL MEET THE FOLLOWING REQUIREMENTS:

CLASS	28 DAY STRENGTH	AGGREGATE	SLUMP	USE
A	3,000 PSI	1" NORMAL WEIGHT	3" TO 5"	OTHER STRUCTURAL

* THE NOTED SLUMP APPLIES BEFORE THE ADDITION OF A WATER REDUCING ADMIXTURE.

IN ADDITION, CLASS A CONCRETE SHALL MEET THE FOLLOWING ADDITIONAL REQUIREMENTS:

- A. A MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO OF 0.45.
- B. A HIGH-RANGE WATER REDUCING ADMIXTURE MAY BE ADDED TO INCREASE THE SLUMP TO 5-6" THE NOTED SLUMP APPLIES BEFORE THE ADDITION OF THE ADMIXTURE. CONCRETE
- C. ENTRAINED AIR CONTENT SHALL BE 5 TO 7 PERCENT

2. PROVIDE 5 PERCENT PLUS OR MINUS 1 1/2 PERCENT OF ENTRAINED AIR IN CONCRETE PERMANENTLY EXPOSED TO THE WEATHER AND ELSEWHERE AT THE CONTRACTOR'S OPTION.
3. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE PLACEMENTS SHALL BE PERMITTED ONLY WHERE INDICATED ON THE DRAWINGS. ALL VERTICAL CONSTRUCTION JOINTS SHALL BE MADE IN THE CENTER OF SPANS IN ACCORDANCE WITH THE TYPICAL DETAILS. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR CONSTRUCTION JOINTS NOT SHOWN ON DRAWINGS FOR REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER. ADDITIONAL CONSTRUCTION JOINTS MAY REQUIRE ADDITIONAL REINFORCING AS SPECIFIED BY THE ENGINEER WHICH SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
4. CONCRETE FLOOR SLAB SHALL BE PLACED MONOLITHICALLY WITH BEAMS.
5. EMBEDDED CONDUITS, PIPES, AND SLEEVES SHALL MEET THE REQUIREMENTS OF ACI 318-95, SECTION 6.3, INCLUDING THE FOLLOWING:
   - A. CONDUITS AND PIPES EMBEDDED WITHIN A SLAB, WALL, OR BEAM (OTHER THAN THOSE PASSING THROUGH) SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN 1/3 THE OVERALL THICKNESS OF THE SLAB, WALL OR BEAM IN WHICH THEY ARE EMBEDDED.
   - B. CONDUITS, PIPES AND SLEEVES SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS OR WIDTHS ON CENTER.
   - C. EMBEDDED CONDUITS, PIPES AND SLEEVES SHALL BE OF UNCOATED OR GALVANIZED IRON OR STEEL NOT THINNER THAN STANDARD SCHEDULE 40 STEEL PIPE.
6. CONCRETE MIX DESIGNS MUST BE SUBMITTED A MINIMUM OF 15 DAYS PRIOR TO THE START OF THE WORK FOR ENGINEER AND OWNER(S) TESTING LABORATORY APPROVAL PRIOR TO PLACEMENT OF CONCRETE IN THE PLANT OR FIELD. ANY ADJUSTMENTS IN APPROVED MIX DESIGNS INCLUDING CHANGES IN ADMIXTURES MUST BE SUBMITTED IN WRITING TO THE ENGINEER AND OWNER'S TESTING LABORATORY FOR APPROVAL PRIOR TO USE IN THE FIELD.
7. AS SOON AS POSSIBLE AFTER CONCRETE HAS BEEN DEPOSITED, IT SHALL BE CONSOLIDATED IN AN ACCEPTABLE MANNER TO WORK THE CONCRETE AROUND REINFORCING INSERTS TO PREVENT FORMATION OF VOIDS. EACH HORIZONTAL LAYER SHALL BE CONSOLIDATED. THE VIBRATOR SHALL EXTEND INTO THE UNDERLYING LAYER TO BOND THE TWO TOGETHER. TO AVOID EXCESSIVE PRESSURE ON THE FORMS THE VIBRATOR SHALL PENETRATE NO MORE THAN 2" INTO UNDERLYING LAYER. VIBRATOR SHALL NOT BE USED TO MOVE CONCRETE IN THE FORMS. VIBRATION SHALL BE CONTINUED UNTIL THE ESCAPE OF LARGE BUBBLES AT THE SURFACE STOPS AND BEFORE THE ONSET OF ANY SEGREGATION.
8. SECTIONS OF WALLS SHALL BE PLACED CONTINUOUSLY TO PRODUCE A MONOLITHIC UNIT. ENGINEER RECOMMENDS ALLOWING 72 HOURS BETWEEN CASTING ADJACENT PLACEMENTS.
9. ENGINEER RECOMMENDS THAT ALTERNATE CONCRETE PLACING EQUIPMENT BE AVAILABLE FOR USE IN THE EVENT THE PRIMARY PLACING EQUIPMENT BREAKS DOWN DURING A PLACEMENT. BACKUP EQUIPMENT SHOULD BE ABLE TO COMMENCE OPERATION WITHIN THIRTY MINUTES TO AVOID COLD JOINTS IN THE ELEMENT BEING PLACED.

SLABS-ON-GRADE

1. PROVIDE CONTROL JOINTS OR CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS.
2. CONTROL JOINTS SHALL BE TOOLED, SAW-CUT, OR PREFORMED JOINTS, 1/4 THE DEPTH OF THE SLAB. SAW-CUT JOINTS MUST BE MADE WITHIN 12 HOURS AFTER THE SLAB HAS BEEN PLACED.
3. TOOL EDGES OF CONCRETE AT ALL CONSTRUCTION JOINTS.
4. UNLESS SPECIFIED OTHERWISE, SLAB ON GRADE CONSTRUCTION SHALL FOLLOW THE RECOMMENDATIONS OF GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION ACI 302. IR-89

CONCRETE REINFORCING

1. REINFORCING STEEL SHALL BE DEFORMED NEW BILLET STEEL BARS IN ACCORDANCE WITH A.S.T.M. SPECIFICATION A615 GRADE 60.

CONCRETE REINFORCING

2. DETAILING OF REINFORCING STEEL SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE DETAILING MANUAL.
3. ALL HOOKS AND BENDS IN REINFORCING BARS SHALL CONFORM TO ACI DETAILING STANDARDS UNLESS SHOWN OTHERWISE.
4. LAP VERTICAL BARS IN COLUMNS AND WALLS ONLY AT FLOOR LINES, UNLESS NOTED OTHERWISE.
5. LAP REINFORCING BARS 36 BAR DIAMETERS MINIMUM, UNLESS NOTED OTHERWISE.
6. PROVIDE STANDARD HOOKS IN TOP BARS AT CANTILEVER AND DISCONTINUOUS ENDS OF BEAMS, WALLS AND SLABS.
7. PROVIDE CORNER BARS FOR ALL HORIZONTAL BARS AT THE INSIDE AND OUTSIDE FACES OF INTERSECTING BEAMS OR WALLS. CORNER BARS ARE NOT REQUIRED IF HORIZONTAL BARS ARE HOOKED.
8. THE WELDING OF REINFORCING STEEL WILL NOT BE PERMITTED.
9. HEAT SHALL NOT BE USED IN THE FABRICATION, FIELD BENDING, OR INSTALLATION OF REINFORCEMENT.
10. REINFORCING STEEL CLEAR COVER SHALL BE AS FOLLOWS:
    - A. GRADE BEAMS — 1 1/2" TOP, 3" BOTTOM, 2" SIDE (FORMED), 3" SIDE (PLACED AGAINST EARTH)
    - B. WALLS — 2"
    - C. COLUMNS — 2"
    - D. SLABS ABOVE GRADE — 1 1/2"
    - E. BEAMS ABOVE GRADE — 1 1/2"
11. ADDITIONAL WALL REINFORCEMENT SHALL BE REQUIRED AROUND ALL OPENINGS IN THE WALL. SEE TYPICAL DETAIL ON THE DRAWINGS.
12. ALL CONCRETE SHALL BE REINFORCED WITH STEEL REINFORCEMENT, UNLESS SPECIFICALLY NOTED OTHERWISE. IF THERE ARE CONCRETE MEMBERS SHOWN WITHOUT REINFORCEMENT, THE CONTRACTOR SHALL ASSUME, FOR BIDDING PURPOSES, THOSE MEMBERS TO BE REINFORCED LIKE SIMILAR MEMBERS. IF THE CONTRACTOR IS UNCERTAIN OF THE REINFORCEMENT REQUIRED, REQUEST CLARIFICATION FROM THE ENGINEER.

CONCRETE FORMWORK

1. THE DESIGN, CONSTRUCTION, AND SAFETY OF ALL FORMWORK SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. ALL FORMS, SHORES, BACKSHORES, FALSEWORK, BRACING, AND OTHER TEMPORARY SUPPORTS SHALL BE ENGINEERED TO SUPPORT ALL LOADS IMPOSED INCLUDING THE WET WEIGHT OF CONCRETE, CONSTRUCTION EQUIPMENT, LIVE LOADS, LATERAL LOADS DUE TO WIND AND WET UNBALANCED CONCRETE. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR DETERMINING WHEN TEMPORARY SUPPORTS, SHORES, BACKSHORES, AND OTHER BRACING SHALL BE SAFELY REMOVED.
2. THE DESIGN OF ALL CONCRETE FORMWORK, FORMWORK REMOVAL, SHORING, AND BACKSHORING REQUIREMENTS SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS AND EMPLOYED BY THE CONTRACTOR.

EXPANSION AND ADHESIVE ANCHORS

1. EXPANSION ANCHORS SHALL BE ONE OF THE FOLLOWING:
   - A. HILTI FASTENING SYSTEMS
   - B. TRUBOLT, RAMSET FASTENING SYSTEMS
   - C. RAWL-STUD, THE RAWLPLUG COMPANY
2. ADHESIVE ANCHORS SHALL BE HILTI "HIT" SYSTEM, BY HILTI FASTENING SYSTEMS. ANCHORS USED IN SOLID SUBSTRATES SHALL BE HILTI "HIT" HY-150. ANCHORS USED IN HOLLOW MASONRY SUBSTRATES SHALL BE HILTI "HIT" HY-20. SUBMIT ANY PROPOSED ALTERNATE ADHESIVES FOR APPROVAL PRIOR TO USE. SPECIFICALLY:
   - -ATTACHING EQUIPMENT TO SLAB USE: HILTI HIT HY150 1/2"ø, 4.5" MIN EMBEDMENT
   - -ATTACHING EQUIPMENT TO CMU WALL: SEE ABOVE
   - -ATTACHING EQUIPMENT TO BRICK: USE HILTI HAS RODS (304 SS), 3/8"ø, 3.5" MIN EMBEDMENT
3. ANCHORS OF THE SIZE AND EMBEDMENT SHOWN ON THE DRAWINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, THE MANUFACTURER'S RECOMMENDATIONS, AND THE MANUFACTURER'S CURRENT ICBO REPORT FOR THE ANCHOR. IF CONFLICTS EXIST BETWEEN THESE REFERENCED DOCUMENTS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
4. THE CONTRACTOR SHALL LOCATE ALL EXISTING REINFORCING STEEL AND OTHER EMBEDDED ITEMS CONTAINED IN THE CONCRETE USING NON-DESTRUCTIVE METHODS AND SHALL POSITION ANCHOR LOCATIONS TO AVOID CONFLICTS WITH EXISTING EMBEDDED ITEMS. COORDINATE WITH THE ENGINEER ANY ADJUSTMENTS REQUIRED TO AVOID INSTALLATION CONFLICTS.
5. BASED ON FIELD VERIFIED LOCATIONS OF REINFORCING STEEL AND EMBEDDED ITEMS, THE CONTRACTOR SHALL CREATE TEMPLATES FOR EACH ANCHOR GROUP. SUBMIT TEMPLATE DIMENSIONS FOR REVIEW PRIOR TO FABRICATION OF CONNECTION PLATES.
6. HOLES FOR ANCHORS SHALL BE DRILLED IN A CONTINUOUS OPERATION USING THE BIT TYPE AND SIZE RECOMMENDED BY THE ANCHOR MANUFACTURER. HOLES SHALL BE DRILLED PERPENDICULAR TO THE CONCRETE SURFACE AND SHALL NOT BE ENLARGED OR REDIRECTED AT ANY POINT ALONG ITS LENGTH. ALL DEBRIS SHALL BE BLOWN OUT OF THE HOLES WITH COMPRESSED AIR AFTER DRILLING.
7. ALL ABANDONED HOLES SHALL BE FILLED WITH NONSHRINK GROUT.
8. HOLES IN CONNECTION PLATES SHALL BE NO MORE THAN 1/16" LARGER THAN THE ANCHOR DIAMETER. IF LARGER HOLES ARE REQUIRED FOR ERECTION PURPOSES, CONTRACTOR SHALL PROVIDE 1/4" X 3" X 3" PLATE WASHERS SUFFICIENTLY WELDED TO THE CONNECTION PLATE TO TRANSFER THE SPECIFIED LOAD.
9. NUTS AND WASHERS SHALL BE FURNISHED FROM THE MANUFACTURER AND USED WITH THE BOLTS.
10. UNAUTHORIZED USE OF CONCRETE ANCHORS TO REPLACE OR REPAIR A DETAIL SHOWN ON THE DRAWINGS IS NOT ALLOWED.

RECORD DRAWING

Revised & Reissued PE 4/21/05

NO.	DATE	REVISIONS	APP

DESIGNED BY: RBW
DRAWN BY: KS
CHECKED BY: RBW
APPROVED BY: RBW
PROJECT NO.: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
STRUCTURAL NOTES

SHEET NO. 11A

DDC JOB NUMBER 7009-21

STRUCTURAL MASONRY

1. CONCRETE MASONRY UNITS SHALL BE HOLLOW LOAD BEARING TYPE N-1 UNITS WHICH CONFORM TO ASTM C90, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI
2. MINIMUM COMPRESSIVE PRISM STRENGTH OF THE MASONRY (F'M) SHALL BE 1500 POUNDS PER SQUARE INCH WHEN TESTED AT 28 DAYS. PROVIDE PRISM TESTS FOR EACH 5000 SQUARE FEET OF WALL IN ACCORDANCE WITH ASTM E447 METHOD B.
3. CHASES SHALL BE BUILT IN AND NOT CUT IN. CHASES SHALL BE PLUMB AND SHALL BE MINIMUM ONE-UNIT LENGTH FROM JAMBS OF OPENINGS. ANCHORS, WALL PLUGS, ACCESSORIES AND OTHER ITEMS TO BE BUILT IN SHALL BE INSTALLED AS THE MASONRY WORK PROGRESSES. ALL CUTTING AND FITTING OF MASONRY, INCLUDING THAT REQUIRED TO ACCOMMODATE THE WORK OF OTHER SECTIONS SHALL BE DONE BY MASONS WITH MASONRY SAWS.
4. MORTAR SHALL CONFORM TO ASTM C270, TYPE S, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI WHEN TESTED IN ACCORDANCE WITH ASTM C780. MASONRY CEMENT SHALL NOT BE USED.
5. COARSE GROUT SHALL CONFORM TO ASTM C476, WITH A MAXIMUM AGGREGATE SIZE OF 1/2" AND A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI.
6. REINFORCE CONCRETE MASONRY UNITS WITH LADDER TYPE HOT DIP GALVANIZED COLD-DRAWN STEEL CONFORMING TO ANSI/ASTM A82, NO. 9 GAUGE SIDE RODS WITH NO. 9 GAUGE CROSS RODS. SPACE JOINT REINFORCING AT 16" O.C. UNLESS NOTED OTHERWISE. PROVIDE "TRIROD" JOINT REINFORCING WHERE 6" OR WIDER CONCRETE MASONRY UNITS BACKUP BRICK MASONRY VENEER. LAP JOINT REINFORCING 14" AT SPLICES. JOINT REINFORCING SHALL BE DISCONTINUOUS AT CONTROL AND EXPANSION JOINTS.
7. PROVIDE REINFORCED AND GROUTED VERTICAL CELLS AT 48" ON CENTER UNLESS NOTED OTHERWISE ON THE DRAWINGS. REINFORCING SHALL CONSIST OF #5 BARS. GROUT AND REINFORCE THE FIRST CELL AT THE ENDS OF WALLS AND AT CORNERS.
8. REINFORCE EACH CELL OF CONCRETE MASONRY UNITS EACH SIDE OF FRAMED OPENINGS WITH 1-#5 VERTICAL. GROUT CELL FULL HEIGHT OF WALL.
9. LAP REINFORCING BARS IN GROUTED MASONRY 48 BAR DIAMETERS MINIMUM AT FOUNDATIONS AND 60 BAR DIAMETERS AT ALL OTHER LOCATIONS, UNLESS NOTED OTHERWISE. EXCEPT AT FOUNDATIONS, SPLICES IN REINFORCING SHALL BE STAGGERED SO THAT NOT MORE THAN 1/2 OF ALL BARS ARE SPLICED AT THE SAME LOCATION.
10. PROVIDE 1" CLEAR COVER BETWEEN TIES OR LONGITUDINAL REINFORCING AND THE INSIDE FACE OF MASONRY USED AS FORMS IN GROUTED BEAMS, BOND BEAMS, PILASTERS, AND COLUMNS.
11. PLACEMENT OF REINFORCING STEEL.
    A. VERTICAL BARS SHALL BE HELD IN POSITION AT THE TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 6 -0" WITH A MINIMUM CLEARANCE OF 1/3" FROM THE FACE OF THE MASONRY AND NOT LESS THAN ONE BAR DIAMETER OR 1 (WHICHEVER IS GREATER) BETWEEN ADJACENT BARS.
    B. ALL DOWELS SHALL BE GROUTED INTO A CELL THAT LAPS THE VERTICAL STEEL. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A CORRESPONDING VERTICAL BAR, IT SHALL BE SLOPED NOT MORE THAN ONE HORIZONTAL TO SIX VERTICAL.
    C. ALL HORIZONTAL REINFORCING STEEL SHALL BE PLACED IN CONTINUOUS BOND BEAM OR LINTEL BLOCK UNITS AND SHALL BE SOLIDLY GROUTED IN PLACE. MAINTAIN A MINIMUM OF ONE BAR DIAMETER OR 1" (WHICHEVER IS GREATER) CLEARANCE BETWEEN ADJACENT BARS AND A MINIMUM OF 1/2" CLEARANCE FROM THE FACE OF THE MASONRY. PROVIDE CORNER BARS FOR REINFORCEMENT IN BOND BEAMS.

COORDINATION

1. ONLY LARGER SLEEVE OPENINGS AND FRAMED OPENINGS IN STRUCTURAL FRAMING COMPONENT MEMBERS ARE INDICATED ON THE STRUCTURAL DRAWINGS. HOWEVER, ALL SLEEVES, INSERTS AND OPENINGS, INCLUDING FRAMES AND/OR SLEEVES SHALL BE PROVIDED FOR PASSAGE, PROVISION AND/OR INCORPORATION OF THE WORK OF THE CONTRACT, INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL AND PLUMBING WORK. THIS WORK SHALL INCLUDE THE COORDINATION OF SIZES, ALIGNMENT, DIMENSIONS, POSITION, LOCATIONS, ELEVATIONS AND GRADES AS REQUIRED TO SERVE THE INTENDED PURPOSE. OPENINGS NOT INDICATED ON THE STRUCTURAL DRAWINGS, BUT REQUIRED AS NOTED ABOVE, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
2. COMPATIBILITY OF THE STRUCTURE AND PROVISIONS FOR BUILDING EQUIPMENT SUPPORTED ON, OR FROM, STRUCTURAL COMPONENTS SHALL BE VERIFIED AS TO SIZE, DIMENSIONS, CLEARANCES, ACCESSIBILITY, WEIGHTS AND REACTION WITH THE EQUIPMENT FOR WHICH THE STRUCTURE HAS BEEN DESIGNED PRIOR TO SUBMISSION OF SHOP DRAWINGS AND DATA FOR EACH PIECE OF EQUIPMENT AND FOR STRUCTURAL COMPONENTS. DIFFERENCES SHALL BE NOTED ON THE SUBMITTALS.
3. SHOP DRAWINGS SHALL BE PREPARED FOR ALL STRUCTURAL ITEMS AND SUBMITTED FOR REVIEW BY THE ENGINEER. CONTRACT DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS. ALL ITEMS DEVIATING FROM THE CONTRACT DRAWINGS OR FROM PREVIOUSLY SUBMITTED SHOP DRAWINGS SHALL BE CLOUDED. SHOP DRAWINGS PREPARED USING ALL OR PORTIONS OF THE CONTRACT DRAWINGS WILL BE RETURNED TO THE CONTRACTOR REJECTED, WITHOUT REVIEW.
4. THE DETAILS DESIGNATED AS "TYPICAL DETAILS" APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS. SUCH DETAILS SHALL APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. QUESTIONS REGARDING APPLICABILITY OF TYPICAL DETAILS SHALL BE DETERMINED BY THE ENGINEER.
5. ALL DIMENSIONS AND CONDITIONS OF EXISTING CONSTRUCTION SHALL BE VERIFIED AT THE JOB SITE. DIFFERENCES BETWEEN EXISTING CONSTRUCTION AND THE DRAWINGS SHALL BE REFERRED TO THE ARCHITECT. DIFFERENCES SHALL ALSO BE CLOUDED ON THE SHOP DRAWINGS.
6. THE DESIGN AND PROVISION OF ALL TEMPORARY SUPPORTS SUCH AS GUYS, BRACES, FALSEWORK, SUPPORTS AND ANCHORS FOR SAFETY LINES, CRIBBING, OR ANY OTHER TEMPORARY ELEMENTS REQUIRED FOR THE EXECUTION OF THE CONTRACT ARE NOT INCLUDED IN THESE DRAWINGS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. TEMPORARY SUPPORTS SHALL NOT RESULT IN THE OVERSTRESS OR DAMAGE OF THE ELEMENTS TO BE BRACED NOR ANY ELEMENTS USED AS BRACE SUPPORTS.
7. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND CONSTRUCTION.
8. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE.
9. THE ENGINEER SHALL NOT HAVE CONTROL OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
10. PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF DANNENBAUM ENGINEERING CO., IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION IS NOT INTENDED TO BE A CHECK OF THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO INFORM THE OWNER AGAINST DEFECTS AND DEFICIENCIES IN THE WORK OF THE CONTRACTOR.

STUCCO

1. MATERIALS
    A. LIME SHOULD CONFORM TO ASTM C207, TYPE S, HYDRATED LIME FOR MASONRY PURPOSES.
    B. SAND SHOULD CONFORM TO ASTM C144 TO ASSURE PROPER GRADATION AND FREEDOM FROM IMPURITIES. SAND, OR OTHER TYPE OF AGGREGATE.
    C. CEMENT SHOULD CONFORM TO ASTM C150, TYPE II (WHITE, NONSTAINING), PORTLAND CEMENT.
    D. WATER SHOULD BE FRESH, CLEAN AND POTABLE.
    E. FIBER PURE MANILLA FIBER OF GOOD QUALITY, ½" TO 2" IN LENGTH, CLEAN, AND FREE OF DUST, DIRT, OIL, GREASE OR OTHER IMPURITIES.
    F. WASHERS AND MECHANICAL FASTENERS SHALL BE CORROSION RESISTANT AND SHALL ATTACH TO THE CMU STRUCTURE.
    G. FIBERGLASS REINFORCING MESH SHALL NOT BE LESS THAN 4.4 OZ PER S.Y.
2. DESIGN
    A. DEFLECTION OF SUBSTRATE SYSTEM SHALL NOT EXCEED L/240.
    B. EXPANSION JOINTS AT EVERY 16 FEET WHERE THERE ARE NO OPENINGS.
    C. SYSTEM TERMINATION TO WINDOWS, DOORS, A/C UNITS, ELECTRICAL BOXES SHALL PROVIDE ADEQUATE SPACE FOR PROPER CLOSED CELL BACKER RODS AND SEALANT DETAILS (ABOUT 1/2").
    D. IF PRE-MIX STUCCO IS USED FOLLOW MANUFACTURE'S RECOMMENDATIONS. IF STUCCO IS PREPARED AT THE SITE, THE PLASTER SHALL FOLLOW THE ABOVE DESIGN CRITERIA. COORDINATE WITH OWNER AS TO COLOR.

VENTILLATION

A. USE RIDGE VENTILLATION MADE OF ALUMINUM AND FHA APPROVED.
B. A MINIMUM OF 20 LINEAR FEET PER BUILDING OR FOLLOW MANUFACTURERS RECOMMENDATIONS.

OPEN WEB JOISTS

1. OPEN WEB STEEL JOISTS SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI). CHORDS OF JOISTS SHALL BE ANGLES OR TEES.
2. PROVIDE BRIDGING IN ACCORDANCE WITH SJI SPECIFICATIONS AND OSHA STANDARD 29CFR1926.751(C)2. HOWEVER, THE NUMBER OF ROWS OF BRIDGING SHALL NOT BE LESS THAN THAT SHOWN ON THE DRAWINGS. BRIDGING SHALL BE CONTINUOUS THROUGH STRUCTURAL STEEL MEMBERS, AND SHALL BE ANCHORED TO SPANDREL MEMBERS OR WALLS. PROVIDE ADDITIONAL BRIDGING WHERE REQUIRED FOR UPLIFT.
3. OPEN WEB STEEL JOISTS SHALL BE WELDED TO STEEL SUPPORTS WITH THE EQUIVALENT OF ONE 1/8" FILLET WELD 2" LONG EACH SIDE OF JOIST SEAT. LONGSPAN (LH) SERIES JOISTS SHALL BE WELDED TO STEEL SUPPORTS WITH THE EQUIVALENT OF ONE 1/4" FILLET WELD 1 1/2" LONG EACH SIDE OF JOIST SEAT.
4. PROVIDE FLAT BEARING FOR ALL JOISTS.

(SEE SHOP DRAWINGS)

2

5. JOIST MANUFACTURER SHALL DESIGN BOTTOM CHORDS OF ALL OPEN WEB JOISTS AND JOIST GIRDERS TO SUPPORT A 50 LB LOAD LOCATED ANYWHERE ALONG THE LENGTH OF THE CHORD.
6. HANGERS FOR MECHANICAL EQUIPMENT WITH REACTIONS IN EXCESS OF 50 LBS MUST BE LOCATED AT THE PANEL POINTS OF THE JOISTS. PROVIDE JOIST REINFORCING IN ACCORDANCE WITH THE TYPICAL DETAILS WHERE HANGERS ARE REQUIRED TO BE LOCATED MORE THAN 4" FROM THE JOIST PANEL POINTS.
7. ALL JOISTS SHALL BE SHOP INSPECTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY TO MEET THE WELD REQUIREMENTS AS FOLLOWS:
    A. THE WELD HAS NO CRACKS.
    B. THOROUGH FUSION EXISTS BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND THE BASE METAL AT THE WELDED CONNECTION.
    C. ALL CRATERS ARE FILLED TO THE FULL CROSS SECTION OF THE WELD JOINT.
    D. ALL WELD PROFILES SHALL BE REASONABLY UNIFORM. IT IS RECOGNIZED THAT ALL WEB JOINT WELDS WILL NOT HAVE A PERFECT PROFILE; HOWEVER, THE EFFECTIVE THROAT AND PENETRATION SHALL BE EQUAL TO THE THROAT REQUIRED BY THE DESIGN DRAWINGS. VISUAL INSPECTION OF THE WELDS SHALL BE MADE TO CONFIRM THAT UNEQUAL LEGS, EXCESSIVE CONVEXITY, OR OVERLAP CONDITIONS DO NOT DETRACT FROM THE EFFECTIVE THROAT OF THE WELD.
    E. UNDERCUTTING OF WELDS IS UNDESIRABLE BUT IS ACCEPTABLE IF THE DEPTH OF UNDERCUTTING DOES NOT EXCEED 1/32". WELDS THAT HAVE UNDERCUTTING IN EXCESS OF 1/32" SHALL BE REPAIRED AND REINSPECTED.
    F. ANY CLUSTER OF SURFACE POROSITY IN THE WELD AREA IS TO BE REMOVED AND REPLACED WITH SOUND WELD METAL.
    G. THE SURFACE OF THE SHOP WELDS SHALL BE REASONABLY CLEAN PRIOR TO THE INSPECTION. H. ALL REPAIR PROCEDURES SHALL BE IN ACCORDANCE WITH AWS D1.1. CONTRACTOR SHALL BEAR THE COST FOR ALL REINSPECTION. RESULTS OF THE INSPECTION SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER PRIOR TO SHIPMENT OF JOISTS.

2

METAL ROOF DECK

1. STEEL ROOF DECK SHALL BE 1.5"DEEP, TYPE F, 22 GAUGE. DECK MINIMUM SECTION MODULUS SHALL BE 0.120 INCHES CUBED PER LINEAR FOOT OF DECK.
2. ROOF DECK SHALL BE GALVANIZED WITH A CLASS G60 COATING, EXCEPT OVER THE WASH-BAY, WHERE THE ROOF DECK SHALL BE GALVANIZED WITH A CLASS G90 COATING.
3. ROOF DECK SHALL BE CONTINUOUS OVER FOUR OR MORE SUPPORTS.
4. ROOF DECK CONNECTIONS SHALL BE AS FOLLOWS:
    A. AT INTERIOR SUPPORTS: SELF DRILLING FASTNERS AT EACH SIDE LAP AND AT INTERMEDIATE RIBS AT 12" ON CENTER.
    B. AT PERIMETER SUPPORTS: SELF DRILLING FASTNERS 12" ON CENTER.
    C. AT SIDE LAPS: TWO (2) SCREWS EQUALLY SPACED AT 3 EQUAL SPACES BETWEEN SUPPORTS.
4. SCREWS AT SUPPORT SHALL BE:
    A. STRUCTURAL STEEL: HILTI 12-24 X 1-1/4, HWH, #4 KWIK-COTE OR EQUIVALENT
    B. LIGHT GAGE: HILTI 12-24 X 1-1/4, HWH, #3 KWIK-COTE OR EQUIVALENT
5. SCREWS AT EACH SIDE LAPS SHALL BE HILTI 10-16 X —, HWH STICH, OR TEK #10.
6. MECHANICAL, ELECTRICAL & PLUMBING SYSTEMS SHALL NOT BE SUPPORTED BY THE METAL ROOF DECK.

RECORD DRAWING

Revised w/ Contract AE 4/12/05

NO.	DATE	REVISIONS	APP
2	4/18/05	PER CHECK SET DATED 4/12/05	TCA

DESIGNED BY: RWN
DRAWN BY: BS
APPROVED BY: RWN
PROJECT MGR: RWN
PROJECT ENG: TCA

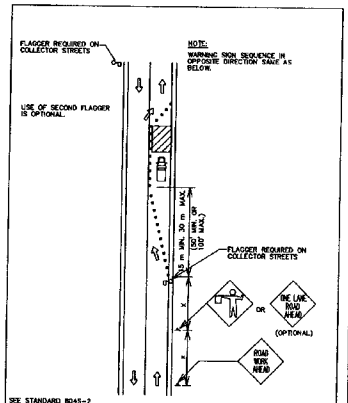
DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

STATE OF TEXAS
RONALD L. WESTEVELT
31530
REGISTERED PROFESSIONAL ENGINEER

TRAVIS COUNTY WCID NO. 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
STRUCTURAL NOTES

SHEET NO. 11B
DCD JOB NUMBER 7009-21

Apr 4, 2005 8:42am pwhite
G:\10\7009-21\design\drawing\S11-3.dwg



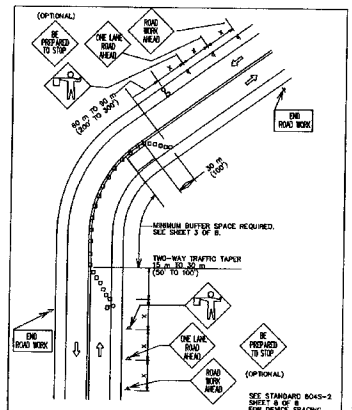
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

COLLECTOR / RESIDENTIAL STREET FLAGGING OPERATIONS

RECORD COPY SIGNED BY LEON BARBA 8/18/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-2 1 OF 8



CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

FLAGGER SETUP FOR 2 LANE ROADWAY

RECORD COPY SIGNED BY LEON BARBA 8/18/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-2 2 OF 8

1. FOR DAYTIME WORK, THE FLAGGER SHALL WEAR AN APPROVED BRIGHTLY COLORED VEST. FOR NIGHTTIME WORK, THE VEST SHALL BE RETROFLECTIVE. THE RETRO-REFLECTIVE MATERIAL SHALL BE ORANGE, YELLOW, WHITE, SILVER, STRONG YELLOW-GREEN OR A FLUORESCENT VERSION OF THESE COLORS AND SHALL BE VISIBLE AT A MINIMUM DISTANCE OF 305 m (1,000').
2. FOR LOW-VOLUME APPLICATIONS, A SINGLE FLAGGER MAY BE ADEQUATE. WHERE ONE FLAGGER CAN BE USED, SUCH AS FOR SHORT WORK AREAS ON STRAIGHT ROADWAYS, THE FLAGGER MUST BE VISIBLE TO APPROACHING TRAFFIC FROM BOTH DIRECTIONS.
3. FLAGGERS SHALL USE ONLY STOP/SLOW PADDLE TO DIRECT TRAFFIC UNLESS WORKING IN A SIGNALIZED INTERSECTION, WHERE DRIVERS MAY BE CONFUSED BY THE SIGN PADDLE. HAND SIGNAL MAY BE USED IN THESE SITUATIONS.
4. FLAGGERS SHALL ENSURE THAT ALL REQUIRED SIGNING IS IN PLACE PRIOR TO BEGINNING FLAGGING OPERATIONS.
5. FLAGGERS SHALL NOT PERFORM WORK THAT IS NOT RELATED TO FLAGGING WHILE ON DUTY.
6. FLAGGERS MAY CARRY AIR HORNS OR WHISTLES TO WARN WORKERS OF AN EMERGENCY CONDITION.
7. FLAGGERS SHALL BE REQUIRED TO USE TWO-WAY RADIOS WHEN OUT OF CLEAR VIEW OF EACH OTHER.
8. FLOODLIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.

SPEED (kmph)	SPEED* (mph)	LENGTH (meters)	LENGTH (feet)
30	20	11	35
40	25	17	55
50	30	26	85
55	35	36	120
65	40	51	170
70	45	66	220
80	50	84	280
90	55	101	335
95	60	125	415
105	65	146	485

*POSTED SPEED

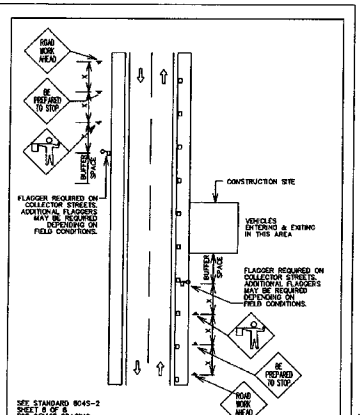
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

FLAGGER SETUP FOR 2 LANE ROADWAY

RECORD COPY SIGNED BY LEON BARBA 8/18/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-2 3 OF 8



CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

FLAGGER SETUP FOR VEHICLES ENTERING AND EXITING WORK SITE

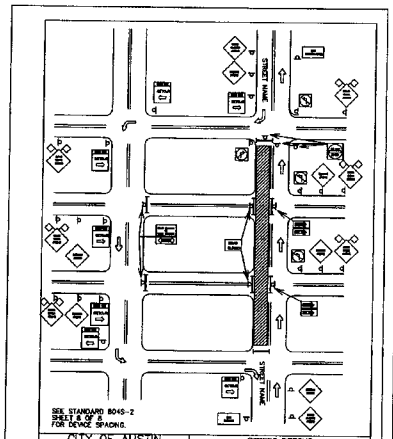
RECORD COPY SIGNED BY LEON BARBA 8/18/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-2 4 OF 8

RECORD DRAWING

Rec'd 4/21/05



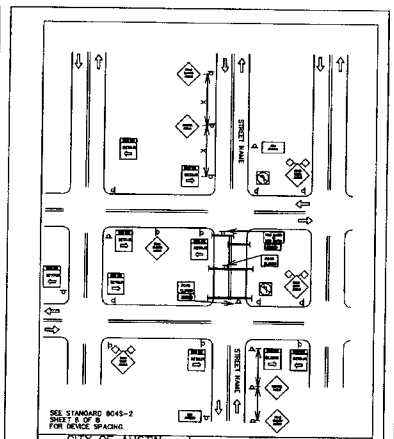
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

STREET DETOUR SINGLE DIRECTION

RECORD COPY SIGNED BY LEON BARBA 8/18/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-2 5 OF 8



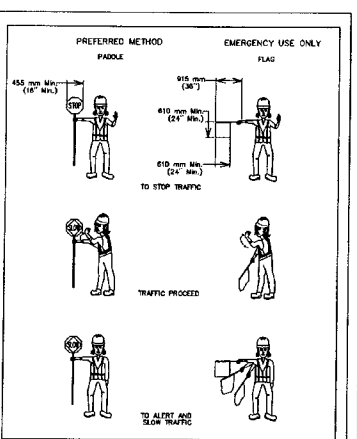
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

STREET DETOUR BOTH DIRECTIONS

RECORD COPY SIGNED BY LEON BARBA 8/18/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-2 6 OF 8



CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

USE OF HAND SIGNALING DEVICES

RECORD COPY SIGNED BY LEON BARBA 8/18/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-2 7 OF 8

Typical Transition Lengths and Suggested Maximum Spacing of Devices

Speed	Posted Speed MPH	Formula	Minimum Desirable Taper Lengths (L) Meters (Feet) 3.0(W) Offset	3.3(W) Offset	3.4(W2) Offset	Suggested Max. Device Spacing On a Taper Meters (Feet)	On a tangent Meters (Feet)	Suggested Sign Spacing Meters (Feet) "X" Dimension
50	30	L=WS² 60	45 (150)	50 (165)	55 (180)	9 (30)	15-20 (50-75)	40 (120)
55	35		65 (205)	75 (225)	75 (245)	10 (35)	25-33 (70-90)	50 (160)
65	40		80 (265)	90 (295)	100 (320)	12 (40)	28-30 (80-100)	75 (240)
70	45		135 (450)	150 (495)	165 (540)	15 (45)	35-30 (90-110)	100 (320)
80	50		150 (500)	165 (550)	180 (600)	15 (50)	40-35 (100-125)	120 (400)
90	55	L=WS	185 (550)	205 (605)	225 (660)	18 (55)	50-40 (110-140)	150 (500)
95	60		180 (600)	200 (660)	220 (720)	18 (60)	60-45 (120-150)	180 (600)
105	65		195 (650)	215 (715)	235 (780)	18 (65)	60-50 (130-165)	210 (700)
115	70		215 (700)	235 (770)	255 (840)	21 (70)	65-55 (140-175)	240 (800)

LEGEND
Channelizing devices
Trailer mounted flashing arrow board
Flagger

TRAFFIC DETOUR NOTES:

1. "STREET CLOSED" AND "STREET CLOSED TO THRU TRAFFIC" MAY BE USED IN PLACE OF "ROAD CLOSED" AND "ROAD CLOSED TO THRU TRAFFIC".
2. THE USE OF A STREET SIGN NAME NAME MOUNTED WITH THE M4-8 DETOUR SIGN IS REQUIRED. THE STREET NAME PLATE SHOULD BE PLACED ABOVE THE DETOUR SIGN. THE PLATE MAY HAVE EITHER A WHITE-ON-GREEN OR A BLACK-ON-ORANGE LEGEND.
3. ADDITIONAL "DO NOT ENTER SIGNS" MAY BE DESIRABLE AT INTERSECTIONS WITH INTERVENING STREETS.
4. A M4-9 DETOUR SIGN WITH AN ADVANCE TURN ARROW MAY BE USED IN ADVANCE OF A TURN. ON MULTI-LANE STREETS, SUCH SIGNS SHOULD BE USED.
5. M4-9 DETOUR SIGNS MAY BE LOCATED ON THE FAR SIDE OF INTERSECTIONS.

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

TYPICAL LENGTHS & SPACING OF DEVICES, LEGEND and GENERAL NOTES

RECORD COPY SIGNED BY LEON BARBA 8/18/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-2 8 OF 8

NO.	DATE	REVISIONS	APP

DRAWN BY: TBM
DESIGN BY: DBM
CHECKED BY: DBM
APPROVED BY: DBM
PROJECT MGR: TBM-21

DANNENBAUM
ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

RONALD B. WISTEMEIER 31300

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO 1

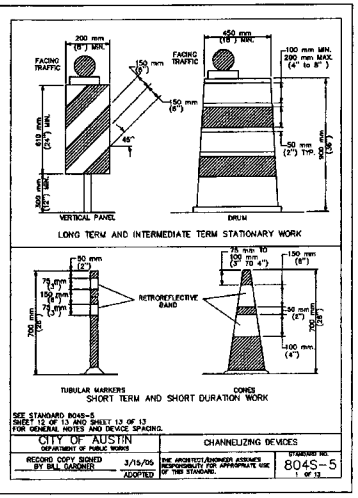
COA TRAFFIC CONTROL DETAILS

SHEET NO. 12A

DED JOB NUMBER 7009-21

Aug 3 2005 8:13am ca1ab
C:\ D:\7009-2 dd(documents\cmnty)\CAT2A1TN (R.dwg)

P-TC02028
115



SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CHANNELIZING DEVICES	
RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 1 OF 13

CHANNELIZING DEVICES

1. ALL CHANNELIZING DEVICES SHALL HAVE WARNING LIGHTS OR LARGE REFLECTORS WHEN USED AT NIGHT. FLASHING WARNING LIGHTS MAY BE PLACED ON CHANNELIZING DEVICES USED SINGULARLY OR IN GROUPS TO MARK A SPOT CONDITION. WARNING LIGHTS ON CHANNELIZING DEVICES USED IN A SERIES SHALL BE STEADY-BURN. CHANNELIZING DEVICES IN RANGES AT NIGHT SHALL HAVE THE LEAD WARNING LIGHTS.
2. THE REFLECTORIZED MATERIAL USED ON CHANNELIZING DEVICES SHALL HAVE A SMOOTH, UNBROKEN SURFACE.
3. THE NAME AND TELEPHONE NUMBER OF THE AGENCY, CONTRACTOR OR SUPPLIER SHALL BE SHOWN ON THE NON-RETROREFLECTIVE SURFACE OF ALL CHANNELIZING DEVICES. THE LETTERS AND NUMBERS SHALL BE A NON-RETROREFLECTIVE COLOR AND NOT OVER 50 mm (2") IN HEIGHT.
4. PARTICULAR ATTENTION SHOULD BE GIVEN TO ASSURING THAT CHANNELIZING DEVICES ARE MAINTAINED AND KEPT CLEAN, VISIBLE AND PROPERLY POSITIONED AT ALL TIMES. DEVICES SHALL BE REPLACED THAT ARE DAMAGED AND HAVE LOST A SIGNIFICANT AMOUNT OF THEIR RETROREFLECTIVITY AND EFFECTIVENESS.

CONES

CONES SHALL PREDOMINANTLY BE ORANGE, FLUORESCENT RED-ORANGE, OR FLUORESCENT YELLOW-ORANGE IN COLOR, NOT LESS THAN 70 mm (28") IN HEIGHT, AND SHALL BE MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES ON IMPACT. FOR NIGHT USE, CONES SHALL BE RETROREFLECTIVE OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY. RETROREFLECTIVE CONES SHALL BE PROVIDED BY A WHITE BAND 150 mm (6") WIDE, NO MORE THAN 75 TO 100 mm (3 TO 4") FROM THE TOP OF THE CONE, AND AN ADDITIONAL 100 mm (4") WHITE BAND A MINIMUM OF 50 mm (2") BELOW THE ONE mm (6") BAND. TRAFFIC CONES ARE NORMALLY USED FOR SHORT-TERM STATIONARY WORK AT NIGHT, IF THE SITE IS CONTINUOUSLY MANNED. CONES MAY BE USED FOR INTERMEDIATE-TERM STATIONARY WORK AT NIGHT, IF THE SITE IS CONTINUOUSLY MANNED.

TUBULAR MARKERS

TUBULAR MARKERS SHALL PREDOMINANTLY BE ORANGE IN COLOR, NOT LESS THAN 700 mm (28") IN HEIGHT. A MINIMUM 50 mm (2") WIDE WHITE FACING, WHITE AND BLACK, OR A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES. FOR NIGHT USE, TUBULAR MARKERS SHALL BE RETROREFLECTIVE, NOT LESS THAN 75 mm (3") WIDE WHITE BANDS, THE TOP BAND A MINIMUM 75 mm (3") BELOW THE TOP OF THE MARKER, AND A MINIMUM 50 mm (2") BELOW THE BOTTOM BAND. TUBULAR MARKERS ARE NORMALLY USED FOR SHORT-TERM STATIONARY AND SHORT DURATION WORK. HOWEVER, TUBULAR MARKERS MAY BE USED FOR INTERMEDIATE-TERM STATIONARY WORK AT NIGHT, IF THE SITE IS CONTINUOUSLY MANNED.

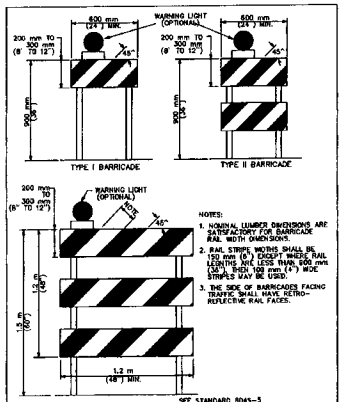
VERTICAL PANELS

VERTICAL PANELS SHALL BE 200 TO 300 mm (8 TO 12") WIDE AND AT LEAST 600 mm (24") IN HEIGHT. THEY SHALL HAVE ORANGE AND WHITE STRIPES, AND BE RETROREFLECTIVE. PANEL STRIPE WIDTHS SHALL BE 150 mm (6") EXCEPT WHERE PANEL HEIGHTS ARE LESS THAN 900 mm (36"), WHEN 100 mm (4") STRIPES MAY BE USED. IF USED FOR TWO-WAY TRAFFIC, BACK-TO-BACK PANELS SHALL BE USED.

DRUMS

1. DRUMS USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE CONSTRUCTED OF LIGHT-WEIGHT MATERIAL, AND SUFFICIENTLY WEIGHTED AND BE A MINIMUM OF 900 mm (36") IN HEIGHT AND HAVE A LEAST 450 mm (18") MINIMUM WIDTH, REGARDLESS OF ORIENTATION. STEEL DRUMS SHALL NOT BE USED. THE WARNING ON DRUMS SHALL BE HORIZONTAL, ORIENTATIONAL, ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES 100 TO 200 mm (4 TO 8") WIDE. EACH DRUM SHALL HAVE A MINIMUM OF TWO (2) ORANGE AND TWO (2) WHITE STRIPES. ANY NON-RETROREFLECTIVE SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, SHALL NOT EXCEED 50 mm (2") WIDE. DRUMS SHALL HAVE CLOSED TOPS THAT WILL NOT ALLOW COLLECTION OF ROADWORK OR OTHER DEBRIS.
2. DRUMS SHOULD NOT BE MOUNTED WITH SAND, WATER OR ANY MATERIAL TO AN EXTENT THAT WOULD MAKE THE HAZARDOUS TO MOTORISTS, PEDESTRIANS OR WORKERS. WHEN THEY ARE USED IN REGIONS SUSCEPTIBLE TO FREEZING, THEY SHOULD HAVE DRAINAGE HOLES IN THE BOTTOM SO WATER WILL NOT ACCUMULATE AND FREEZE CAUSING A HAZARD IF STRUCK BY A MOTORIST. BALLAST SHALL NOT BE PLACED ON TOP OF THE DRUM.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CHANNELIZING DEVICES	
RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 2 OF 13



NOTES:
1. NOMINAL LUMBER DIMENSIONS ARE SATISFACTORY FOR BARRICADE RAIL WIDTH DIMENSIONS.
2. RAIL STRIPE WIDTHS SHALL BE 150 mm (6") EXCEPT WHERE RAIL LENGTHS ARE LESS THAN 900 mm (36"), THEN 100 mm (4") WIDE STRIPES MAY BE USED.
3. THE SIDE OF BARRICADES FACING TRAFFIC SHALL HAVE RETRO-REFLECTIVE RAIL FACES.

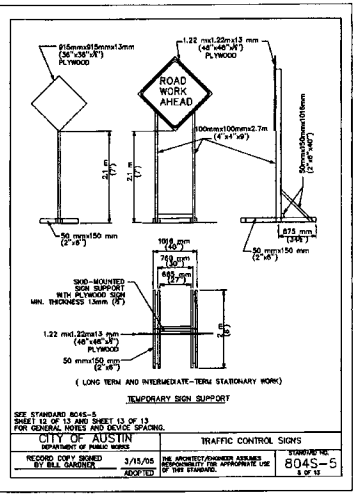
SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	BARRICADES	
RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 3 OF 13

BARRICADES

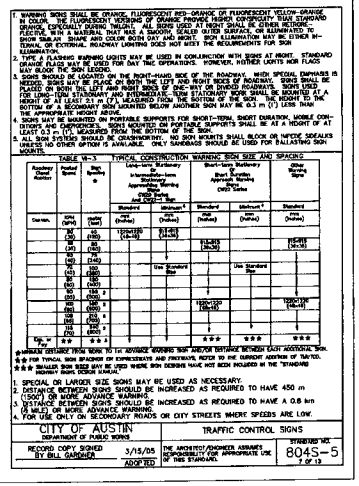
1. BARRICADES SHALL BE OF THREE TYPES: TYPE I, TYPE II OR TYPE III.
2. STRIPES ON BARRICADE RAILS SHALL BE ALTERNATING ORANGE AND WHITE RETRO-REFLECTIVE STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS. THE STRIPES SHALL BE 150 mm (6") WIDE, EXCEPTS WHERE RAIL LENGTHS ARE LESS THAN 900 mm (36"), WHEN 100 mm (4") WIDE STRIPES MAY BE USED.
3. WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, THE SURFACE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST SPIN, WHERE BOTH RIGHT AND LEFT TURNS ARE PROHIBITED, THE STRIPES MAY SLOPE DOWN-WARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE. SURFACE-WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.
4. BARRICADE RAILS SHOULD BE SUPPORTED IN A MANNER THAT WILL ALLOW THEM TO BE SEEN BY THE MOTORIST AND PROVIDE A STABLE SUPPORT NOT EASILY BLOWN OVER BY THE WIND OR TRAFFIC. FOR TYPE I BARRICADES, THE SUPPORT MAY INCLUDE OTHER UNSTRIPED HORIZONTAL PANELS NECESSARY TO PROVIDE STABILITY.
5. BARRICADES ARE LOCATED ADJACENT TO TRAFFIC AND ARE THEREFORE SUBJECT TO IMPACT WITH DRIVERS VEHICLES, BECAUSE OF THEIR VULNERABLE POSITION AND THE HAZARD THEY COULD CREATE, THEY SHOULD BE CONSTRUCTED OF LIGHTWEIGHT MATERIALS AND HAVE NO RIGID STAY BRACING FOR A-FRAME DESIGNS. ALL BARRICADE SYSTEMS SHOULD BE CRASHWORTHY.
6. ON HIGH-SPEED EXPRESSWAYS OR IN OTHER SITUATION WHERE BARRICADES MAY BE SUSCEPTIBLE TO OVERTURNING IN THE WIND, SANDBAGS SHOULD BE USED TO BALLASTING. SANDBAGS MAY BE PLACED ON PARTS OF THE FRAME OR STAYS TO PROVIDE THE REQUIRED BALLAST BUT SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY HEAVY OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	BARRICADES	
RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 4 OF 13



SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TRAFFIC CONTROL SIGNS	
RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 5 OF 13



SEE STANDARD 804S-5
SHEET 12 OF 13 AND
SHEET 13 OF 13 FOR
GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TRAFFIC CONTROL SIGNS	
RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 6 OF 13

1. WARNING SIGNS SHALL BE ORANGE, FLUORESCENT RED-ORANGE OR FLUORESCENT YELLOW-ORANGE IN COLOR. THE FLUORESCENT VERSIONS OF ORANGE PROVIDE HIGHER CONSPICUITY THAN STANDARD ORANGE, ESPECIALLY DURING TWILIGHT. ALL SIGNS USED AT NIGHT SHALL BE EITHER RETRORE-FLECTIVE WITH A MATERIAL THAT HAS A SMOOTH, SEALED OUTER SURFACE, OR ILLUMINATED TO SHOW SIMILAR SHAPE AND COLOR BOTH DAY AND NIGHT. SIGN ILLUMINATION MAY BE EITHER IN-TERNAL OR EXTERNAL. ROADWAY LIGHTING DOES NOT MEET THE REQUIREMENTS FOR SIGN ILLUMINATION.
2. TYPE A FLASHING WARNING LIGHTS MAY BE USED IN CONJUNCTION WITH SIGNS AT NIGHT. STANDARD TYPE C LIGHTS MAY BE USED FOR DAY TIME OPERATIONS. PIONEER, HIGHER LIGHTS NOR FLAGS MAY BLOCK THE SIGN LEGEND.
3. SIGNS SHOULD BE LOCATED ON THE RIGHT-HAND SIDE OF THE ROADWAY, WHEN SPECIAL EMPHASIS IS NEEDED, SIGNS MAY BE PLACED ON BOTH THE LEFT AND RIGHT SIDES OF ROADWAY. SIGNS SHALL BE PLACED ON BOTH THE LEFT AND RIGHT SIDES OF ONE-WAY OR DIVIDED ROADWAYS. SIGNS USED FOR LONG-TERM STATIONARY AND INTERMEDIATE-TERM STATIONARY WORK SHALL BE MOUNTED AT A HEIGHT OF AT LEAST 2.1 m (7') MEASURED FROM THE BOTTOM OF THE SIGN. SIGNS MOUNTED AT A HEIGHT OF AT LEAST 2.1 m (7') MEASURED FROM THE BOTTOM OF THE SIGN. SIGNS MOUNTED BELOW ANOTHER SIGN MAY BE 0.3 m (1') LESS THAN THE APPROVED MOUNTING HEIGHT.
4. SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, MOBILE CON-DITIONS AND EMERGENCIES. SIGNS MOUNTED ON PORTABLE SUPPORTS SHALL BE AT A HEIGHT OF AT LEAST 0.3 m (1') MEASURED FROM THE BOTTOM OF THE SIGN.
5. ALL SIGN SYSTEMS SHOULD BE CRASHWORTHY. NO SIGN MOUNTS SHALL BLOCK OR INTERE SIDEALKS UNLESS NO OTHER OPTION IS AVAILABLE. ONLY SANDBAGS SHOULD BE USED FOR BALLASTING SIGN MOUNTS.

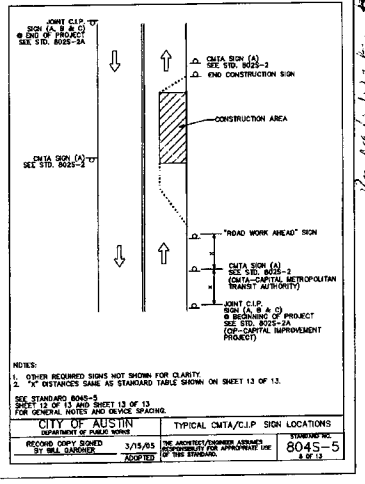
TABLE W-3 TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

Roadway Speed (Posted Speed)	Sign Spacing ●	Long-term Stationary or Intermediate-term Stationary Approaching Warning Signs (W20 Series and W20-1 Series)		Short-term Stationary Approach Signing (W20 Series)		Other Warning Signs
		Standard	Minimum ★	Standard	Minimum ★	Standard
Overview	SPM (SPH)	mm (Inches)	mm (Inches)	mm (Inches)	mm (Inches)	mm (Inches)
	20 (30)	1220x1220 (48x48)	915 (36)			
	25 (40)	1220 (48)				915-610 (36x24)
	30 (50)					
	35 (60)					
	40 (65)			Use Standard Size		
	45 (70)					
	50 (80)					
	55 (90)					
	60 (100)					
	65 (105)					
	70 (110)					
	75 (120)					
	80 (130)					
Dp. ★	★★	★★★		★★★	★★★	★★★

● MINIMUM DISTANCE FROM SIGN TO 1ST ADVANCE WARNING SIGN AND/OR DISTANCE BETWEEN EACH ADDITIONAL SIGN.
★ FOR TYPICAL SIGN SPACINGS OF EXPRESSWAYS AND FREEWAYS, REFER TO THE CURRENT EDITION OF TMUTCD.
★★ MINIMUM SIGN SIZES ARE ALSO WHERE SIGN DESIGNS HAVE NOT BEEN INCLUDED IN THE "STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS".

1. SPECIAL OR LARGER SIZE SIGNS MAY BE USED AS NECESSARY.
2. DISTANCE BETWEEN SIGNS SHOULD BE INCREASED AS REQUIRED TO HAVE 450 m (1500') OR MORE ADVANCE WARNING.
3. DISTANCE BETWEEN SIGNS SHOULD BE INCREASED AS REQUIRED TO HAVE A 0.8 km (½ MILE) OR MORE ADVANCE WARNING.
4. FOR USE ONLY ON SECONDARY ROADS OR CITY STREETS WHERE SPEEDS ARE LOW.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TRAFFIC CONTROL SIGNS	
RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 7 OF 13



NOTES:
1. OTHER REQUIRED SIGNS NOT SHOWN FOR CLARITY.
2. "X" DISTANCES SAME AS STANDARD TABLE SHOWN ON SHEET 13 OF 13.

SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL CMTA/C.I.P. SIGN LOCATIONS	
RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 8 OF 13

RECORD DRAWING

NO.	DATE	REVISIONS	APP

DESIGNED BY: RWB
DRAWN BY: JS
CHECKED BY: RWB
APPROVED BY: RWB
PROJECT FILE: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 129
AUSTIN TEXAS, 78731

STATE OF TEXAS
RONALD D. WISTCHUT
31520
LICENSED PROFESSIONAL ENGINEER

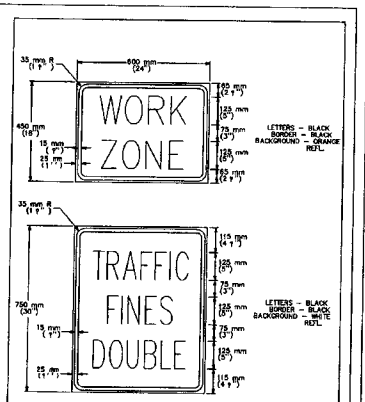
Ronald D. Wistchut PE 4/21/05

TRAVIS COUNTY WCID NO. 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
COA TRAFFIC CONTROL DETAILS

SHEET NO.
12B

DEC JOB NUMBER
7009-21

Apr 21 2005 - 8:40am - 2005SC
C:\14 01-7009-> \Design\Levi\working\Cont8\Pump1.dwg



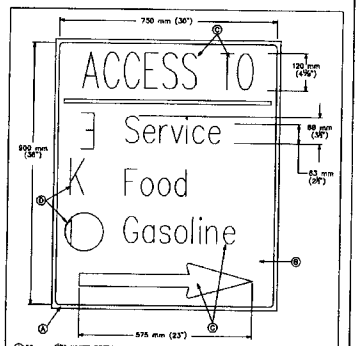
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SPECIAL WORK ZONE SIGNS

RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 9 OF 13



NOTES:
1. CONTRACTORS CAN MAKE BUSINESS NAMES REMOVABLE/CHANGEABLE AS AN OPTION.
2. BUSINESS LOGO ARE OPTIONAL. IF USED LETTERING MUST BE MINIMIZED.

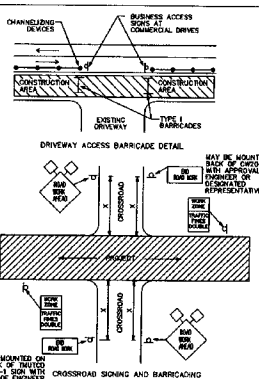
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SPECIAL WORK ZONE SIGNS

RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 10 OF 13



SEE STANDARD 804S-5 SHEET 12 OF 13 AND SHEET 13 OF 13 FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

SIGNING AND BARRICADING CROSSROAD & DRIVEWAY

RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 11 OF 13

1. ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES AND WARNING SIGNS SHALL BE FURNISHED, PLACED, CONSTRUCTED AND MAINTAINED IN THE APPROPRIATE TYPES AND SIZES AND PLACED/OPERATED/MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM CONTROL DEVICES (TMUTCD). THE CITY OF AUSTIN STANDARD GRAPHICAL DETAIL SERIES 804S AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL SHALL BE ENFORCED BY THE CITY OF AUSTIN DESIGNATED REPRESENTATIVE. IN A CONFLICT BETWEEN THE TMUTCD, THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL SHALL CONTROL UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
2. THE CONTRACTOR SHALL NOTIFY THE TRANSPORTATION DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AT 974-7024 NO LATER THAN THE MONDAY OF THE WEEK DURING WHICH THE CONTRACTOR INTENDS TO SET UP BARRICADES TO START CONSTRUCTION.
3. PROPOSED CONSTRUCTION TRAFFIC MOVEMENTS MAY REQUIRE EXISTING SIGNAL HEADS TO BE RELOCATED. THE CITY OF AUSTIN WILL REVIEW SIGNAL HEAD LOCATIONS DURING CONSTRUCTION AND PERFORM THE REQUIRED ADJUSTMENTS. THE CONTRACTOR SHALL CONTACT THE TRANSPORTATION DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AT 974-7024 NO LATER THAN TWO WEEKS PRIOR TO PLACEMENT ANY TRAFFIC CONTROLS WHICH MAY REQUIRE SIGNAL HEAD ADJUSTMENTS/RELOCATION.
4. THE CONTRACTOR SHALL PROVIDE ONE (1) FULL-TIME OFF-DUTY, UNIFORMED CERTIFIED PEACE OFFICER AND ONE (1) VEHICLE OF THE TYPE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE FOR TEMPORARY LANE CLOSURES WHICH UNDERSELAND, CROSS, MOVING, PARKED AND WHEN WORKING IN INTERSECTIONS AS PART OF THE TRAFFIC CONTROL PLAN. THE PEACE OFFICER SHALL BE ABLE TO SHOW PROOF OF CERTIFICATION BY THE TEXAS COMMISSION ON LAW ENFORCEMENT OFFICER STANDARDS.
5. THE CONTRACTOR SHALL NOTIFY ALL OTHER GOVERNMENTAL AGENCIES WHOSE RIGHTS-OF-WAY ARE AFFECTED BY HIS WORK ACTIVITIES. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL TRAFFIC CONTROL DEVICES THAT THEY MAY NEED.
6. THE CONTRACTOR SHALL MAINTAIN ONE (1) DUST-FREE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR APPROVED THE ENGINEER OR DESIGNATED REPRESENTATIVE.
7. THERE SHALL BE A MINIMUM OF THREE (3) METERS (10 FEET) CLEAR WIDTH FOR EACH LANE OF TRAFFIC IN CHANNELIZED AREAS, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
8. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS AT ALL TIMES. IF ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER OR DESIGNATED REPRESENTATIVE SHALL PROVIDE AT LEAST 24 HOUR WRITTEN NOTICE OF LIMITED ACCESS TO AFFECTED PROPERTY OWNERS. THE CONTRACTOR SHALL PROVIDE BUSINESS ACCESS SIGNS AS NEEDED TO INFORM DRIVERS OF THE LOCATIONS OF ALL DRIVEWAYS.
9. "TEMPORARY LANE CLOSURES IN THE CENTRAL BUSINESS DISTRICT (CBD) OR ON ARTERIAL STREETS SHALL NOT BE PERMITTED DURING THE HOURS OF 7 AM TO 9 AM AND 4 PM TO 6PM MONDAY THROUGH FRIDAY UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE TRANSPORTATION DIVISION.
10. TRAFFIC CONTROL SHOWN ON STANDARD DETAILS IS TYPICAL. ADDITIONAL SIGNING AND/OR BARRICADING, AS WELL AS TEMPORARY PAVEMENT MARKINGS AND OBLITERATION/RESTORATION OF EXISTING PAVEMENT MARKINGS, MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS. FIELD ADJUSTMENTS TO TRAFFIC CONTROLS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO ITEM NO. 8035 "BARRICADES, SIGNS AND TRAFFIC HANDLING"
11. THE CONTRACTOR SHALL DESIGNATE A COMPETENT PERSON FOR TRAFFIC CONTROL. THE COMPETENT PERSON SHALL MAKE INSPECTIONS OF THE TRAFFIC CONTROL DEVICES AT LEAST TWO (2) TIMES A DAY (ONCE AT THE BEGINNING OF THE DAY AND ONCE AT THE END OF THE DAY, INCLUDING NON-WORKING DAYS, ENSURING THAT ALL DEVICES ARE IN THEIR PROPER PLACE AND ARE IN WORKING ORDER.
12. ALL DEVICES SHALL BE MADE USING MATERIALS LISTED ON THE TxDOT APPROVED PRODUCTS LIST.

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

GENERAL TRAFFIC CONTROL NOTES

RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 12 OF 13

13. ALL PERSONS WORKING WITHIN THE RIGHT-OF-WAY SHALL WEAR A BRIGHTLY COLORED SAFETY VEST. FOR NIGHTTIME WORK THE VEST SHALL BE RETROREFLECTIVE.
14. WHEN AN INTERSECTION IS CLOSED FOR CONSTRUCTION, THE CONTRACTOR SHALL PROCEED WITH CONSTRUCTION IN SUCH A MANNER THAT THE CLOSURE TIME IS MINIMIZED.
15. THE CONTRACTOR SHALL NOTIFY THE CAPITAL METRO DISPATCHER AT 385-4295 ONE (1) WEEK PRIOR TO LANE CLOSURES ADJACENT TO BUS STOPS.

DURATION OF WORK

WORK DURATION IS A MAJOR FACTOR IN DETERMINING THE NUMBER AND TYPES OF DEVICES USED IN TEMPORARY TRAFFIC ZONES. THE FIVE (5) CATEGORIES OF WORK DURATION AND THEIR TIME AT A LOCATION ARE AS FOLLOWS:

- LONG-TERM STATIONARY-WORK THAT OCCUPIES A LOCATION FOR MORE THAN 3 DAYS.
- INTERMEDIATE-TERM STATIONARY-WORK THAT OCCUPIES A LOCATION FROM OVERNIGHT TO 3 DAYS.
- SHORT-TERM STATIONARY-DAYTIME WORK THAT OCCUPIES A LOCATION FROM 1 TO 12 HOURS.
- SHORT-DURATION WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
- MOBILE-WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

Typical Transition Lengths and Suggested Maximum Spacing of Devices

Posted Speed (Mph)	Formula	Minimum Desirable Taper Lengths (L) Meters (Feet) 3.0(10) Offset Meters (feet)	3.3(11) Offset Meters (feet)	3.6(12) Offset Meters (feet)	Suggested Max. Device Spacing On a taper Meters (feet)	On a tangent Meters (feet)	Suggested Sign Spacing Meters (Feet) "X" Dimension
50 (30)	L=WS²/60	45 (150)	50 (165)	55 (180)	9 (30)	15-30 (60-75)	40 (120)
55 (35)		65 (215)	70 (225)	75 (245)	10 (35)	25-25 (70-80)	50 (160)
65 (40)		80 (265)	90 (295)	100 (330)	12 (40)	25-50 (80-100)	75 (240)
70 (45)		135 (450)	145 (495)	165 (540)	13 (45)	25-50 (90-110)	100 (320)
80 (50)		150 (500)	165 (550)	180 (600)	15 (50)	30-35 (100-125)	120 (400)
90 (55)		165 (550)	185 (605)	200 (660)	16 (55)	35-40 (110-140)	150 (500)
100 (60)	L=WS	180 (600)	200 (660)	220 (720)	18 (60)	40-45 (120-150)	180 (600)
105 (65)		195 (650)	215 (715)	235 (780)	19 (65)	40-50 (130-165)	210 (700)
115 (70)		215 (700)	235 (770)	255 (840)	21 (70)	45-55 (140-175)	240 (800)

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

GENERAL TRAFFIC CONTROL NOTES

RECORD COPY SIGNED BY BILL GARDNER 3/15/05 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 804S-5 13 OF 13

RECORD DRAWING

Provide a written list 4/21/05

NO.	DATE	REVISIONS	APP

DESIGNED BY: BRW
DRAWN BY: KA
CHECKED BY: BRW
APPROVED BY: RDW
PROJECT FILE: 7009-21

DANNENBAUM
DANNENBAUM ENGINEERING CORPORATION
3409 EXECUTIVE CENTER DR.
SUITE 153
AUSTIN TEXAS, 78731

STATE OF TEXAS
RONALD D. WESENHOLT
31520
LICENSED PROFESSIONAL ENGINEER

TRAVIS COUNTY WCID NO 10
TRAVIS COUNTY, TEXAS
PUMP STATION NO. 1
COA TRAFFIC CONTROL DETAILS

SHEET NO.
12C

DCC JOB NUMBER
7009-21

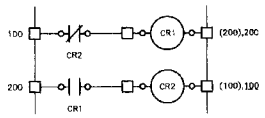
Apr 7, 2005 8:1pm parkap
J:\14 07\7009-21\dencim\dwg\wsewig\COATRAFCNTRL3.dwg

ELECTRICAL WIRING SCHEMATIC SYMBOLS

- MUSHROOM HEAD PUSH TO OPEN, PULL TO CLOSE MAINTAINED ACTION SWITCH
- TEMPERATURE SWITCH (NORMALY CLOSED OPENS ON RISING TEMPERATURE; CLOSES ON FALLING TEMPERATURE)
- TIME DELAY RELAY CONTACTS (NORMALLY OPEN, TIME OUT ENERGIZED)
- TIME DELAY RELAY CONTACTS (NORMALLY CLOSED, TIME OUT ENERGIZED)
- TIME DELAY RELAY CONTACTS (NORMALLY OPEN, TIME OUT DE-ENERGIZED)
- TIME DELAY RELAY CONTACTS (NORMALLY CLOSED, TIME OUT DE-ENERGIZED)
- T.O.E. TDR — TIME DELAY RELAY TIMES OUT AFTER ENERGIZATION
- T.O.D. TDR — TIME DELAY RELAY TIMES OUT AFTER DE-ENERGIZATION
- PC — PHOTOCELL
- CB — THERMAL/MAGNETIC CIRCUIT BREAKER
- MCP — MAGNETIC CIRCUIT PROTECTOR (MOTOR CIRCUIT PROTECTOR)
- MOTOR SPACE HEATER
- TYPICAL CONTROL LOGIC WIRE JUMPER USED FOR JUMPERS LOCATED ENTIRELY INSIDE OF THE MOTOR CONTROL CENTER. USE ONLY IN THE MOTOR CONTROL CENTER WHERE SPECIFICALLY SHOWN ON THE CONTROL SCHEMATIC CONTRACT DRAWINGS. ALL OTHER WIRING SHALL BE TERMINATED TO TERMINAL BLOCKS. ALSO REFER TO THE CONTRACT DRAWINGS/SPECIFICATIONS FOR ADDITIONAL INFORMATION. THIS SYMBOL ONLY APPEARS ON A PORTION OF THE CONTROL SCHEMATIC CONTRACT DRAWINGS, AND ON NO OTHER CONTRACT DRAWING.
- INDICATES WIRE JUMPER

ELECTRICAL WIRING SCHEMATIC SYMBOLS

- OVERLOAD RELAY (3-POLE SHOWN)
- 3-POLE CIRCUIT BREAKER OR MOTOR CIRCUIT PROTECTOR AS APPLICABLE
- 49 BFV1 — OVERLOAD RELAY CONTACTS
- OPEN DO-XX-XX — PLC DISCRETE (RELAY CONTACT) OUTPUT (NORMALLY CLOSED)
- OPEN DO-XX-XX — PLC DISCRETE (RELAY CONTACT) OUTPUT (NORMALLY OPEN)
- ETM — ELAPSED TIME METER
- EEE — PRESSURE SWITCH (NORMALLY CLOSED. OPENS ON RISING PRESSURE; CLOSES ON FALLING PRESSURE)
- EEE — PRESSURE SWITCH (NORMALLY OPEN, CLOSES ON RISING PRESSURE; OPENS ON FALLING PRESSURE)



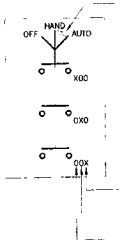
TYPICAL RUNG NUMBERING SCHEME. NUMBERS AT LEFT ARE RUNG NUMBERS. AT RIGHT: "(200)" IS COIL LOCATION OF CR2, "200" INDICATES THAT CR1 HAS A NORMALLY OPEN CONTACT AT RUNG 200; "(100)" IS COIL LOCATION OF CR1; "100" INDICATES THAT CR2 HAS A NORMALLY CLOSED CONTACT AT RUNG 100.

ELECTRICAL WIRING SCHEMATIC SYMBOLS

- FUSE
- DRAW OUT DISCONNECTS
- CONNECTION TO EQUIPMENT GROUND BUS (EARTH GROUND)
- SINGLE POLE DOUBLE THROW (SPDT) OR "3-WAY" SWITCH
- CT-1L02-1A — PHASE CURRENT TRANSFORMER (CT)
- CT-1L00 — GROUND CURRENT TRANSFORMER (CT)
- POTENTIAL TRANSFORMER (PT)
- SM 1L02 — ELECTRIC MOTOR
- OPEN PB-1L02-2 — MOMENTARY PUSH-BUTTON NORMALLY OPEN CONTACTS
- "RWV-CS-BFV1 — MOMENTARY PUSH-BUTTON NORMALLY CLOSED CONTACTS
- 3-WIRE RESISTANCE TEMPERATURE DETECTOR (RTD)
- 2-CONDUCTOR SHIELDED CABLE

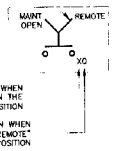
ELECTRICAL WIRING SCHEMATIC SYMBOLS

- MX LSP1 — CONTROL RELAY COIL (COIL MX FOR EQUIPMENT LSP1 SHOWN)
- Y 1L02 (1) — CONTROL RELAY NORMALLY OPEN CONTACTS NUMBER IN PARENTHESIS INDICATES DEVICE CONTACT NUMBER IN ORDER OF APPEARANCE
- 52bx 1R03 (1) — CONTROL RELAY NORMALLY CLOSED CONTACTS NUMBER IN PARENTHESIS INDICATES DEVICE CONTACT NUMBER IN ORDER OF APPEARANCE
- LS-MC 1L02 (1) — POSITION SWITCH NORMALLY CLOSED CONTACTS NUMBER IN PARENTHESIS INDICATES DEVICE CONTACT NUMBER IN ORDER OF APPEARANCE
- LS-SM 1L02 (1) — POSITION SWITCH NORMALLY OPEN CONTACTS NUMBER IN PARENTHESIS INDICATES DEVICE CONTACT NUMBER IN ORDER OF APPEARANCE
- R CLOSED — PILOT LIGHT R=RED, G=GREEN, W=WHITE, A=AMBER, Y=YELLOW, O=ORANGE (RED SHOWN)
- INSTRUMENT RELAY CONTACT SPDT (FORM C) CONTACT
- INDICATES MAKE-BEFORE-BREAK CONTACT OPERATION BETWEEN THE "HAND" AND "AUTO" POSITIONS.



THREE POSITION, MAINTAINED ACTION, "HAND-OFF-AUTO" SELECTOR SWITCH WITH MULTIPLE CONTACTS (THREE SHOWN) MECHANICALLY LINKED TO A SINGLE OPERATOR MECHANISM. AS SHOWN, SWITCH HAS "MAKE-BEFORE-BREAK" TYPE CONTACT OPERATION BETWEEN THE "HAND" AND "AUTO" POSITIONS. A CONTACT DEVELOPMENT LEGEND FOR EACH CONTACT IS SHOWN IMMEDIATELY ADJACENT TO THE CONTACT. EACH CHARACTER IN THE CONTACT DEVELOPMENT LEGEND REPRESENTS THE STATUS OF ITS ASSOCIATED CONTACT FOR THE CORRESPONDING POSITION OF THE SELECTOR SWITCH. IN THE EXAMPLE SHOWN, THE LEFTMOST CHARACTER IN THE CONTACT DEVELOPMENT CORRESPONDS TO THE "OFF" POSITION, THE CENTER CHARACTER CORRESPONDS TO THE "HAND" POSITION, AND THE RIGHTMOST CHARACTER CORRESPONDS TO THE "AUTO" POSITION. AN "X" INDICATES THAT THE CONTACT IS CLOSED AND A "0" INDICATES THAT THE CONTACT IS OPEN WHEN THE SELECTOR SWITCH IS IN THE CORRESPONDING POSITION.

- INDICATES CONTACT IS CLOSED WHEN SELECTOR SWITCH IS IN THE "AUTO" POSITION
- INDICATES CONTACT IS OPEN WHEN SELECTOR SWITCH IS IN THE "HAND" POSITION
- INDICATES CONTACT IS OPEN WHEN SELECTOR SWITCH IS IN THE "OFF" POSITION



- INDICATES CONTACT IS CLOSED WHEN SELECTOR SWITCH IS IN THE "MAINTENANCE OPEN" POSITION
- INDICATES CONTACT IS OPEN WHEN SELECTOR SWITCH IS IN THE "REMOTE" POSITION

TWO POSITION, "MAINTENANCE OPEN-REMOTE" SELECTOR SWITCH WITH SPRING RETURN TO THE "REMOTE" POSITION FROM THE "MAINTENANCE OPEN" POSITION. SELECTOR SWITCH HAS MAINTAINED ACTION CONTACTS FOR THE "REMOTE" POSITION AND MOMENTARY CONTACTS FOR THE "MAINTENANCE OPEN" POSITION. SELECTOR SWITCH HAS MULTIPLE CONTACTS (ONLY ONE SHOWN HERE) MECHANICALLY LINKED TO A SINGLE OPERATOR MECHANISM. A CONTACT DEVELOPMENT LEGEND FOR EACH CONTACT IS SHOWN IMMEDIATELY ADJACENT TO THE CONTACT. EACH CHARACTER IN THE CONTACT DEVELOPMENT LEGEND REPRESENTS THE STATUS OF ITS ASSOCIATED CONTACT FOR THE CORRESPONDING POSITION OF THE SELECTOR SWITCH. IN THE EXAMPLE SHOWN, THE LEFTMOST CHARACTER IN THE CONTACT DEVELOPMENT CORRESPONDS TO THE "MAINTENANCE OPEN" POSITION AND THE RIGHTMOST CHARACTER CORRESPONDS TO THE "REMOTE" POSITION. AN "X" INDICATES THAT THE CONTACT IS CLOSED AND A "0" INDICATES THAT THE CONTACT IS OPEN WHEN THE SELECTOR SWITCH IS IN THE CORRESPONDING POSITION.

BAR 1 INCH IF ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALES ACCORDINGLY

STATE OF TEXAS — K. A. HARUTUNIAN — 2/21/2005 — PROFESSIONAL ENGINEER

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI — HEI — HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO. 1

ELECTRICAL AND INSTRUMENTATION SYMBOLS LEGEND (SHEET 1 OF 3)

PROJECT 2002-210 | SHEET 13 | DWG E-GEN-001

ELECTRICAL DRAWING SYMBOLS

LP-1,3	HOMERUN TO PANEL. CIRCUIT NUMBERS INDICATED. SHORT HASH MARKS INDICATE PHASE WIRES; LONG HASH MARK INDICATES NEUTRAL WIRE; MARK INDICATES EQUIPMENT GROUND WIRE; ø INDICATES ISOLATED GROUND WIRE; S INDICATES SWITCHED WIRE. NUMBER OF ARROWHEADS CORRESPONDS TO NUMBER OF CIRCUITS.
MSP-001-P1	HOMERUN TO PANEL/EQUIPMENT/PULLBOX/MOTOR CONTROL CENTER/ETC., CONDUIT/WIRE TAG AS INDICATED ("MSP-001-P1" SHOWN). REFER TO CONDUIT/WIRE SCHEDULE FOR ADDITIONAL INFORMATION.
3/4"-3#10(P), 1#10(G)	CONDUIT AND WIRE DESIGNATION. E.G. 3/4 CONDUIT 3#10 POWER WIRES, 1#10 GROUND WIRE. (P) POWER (N) NEUTRAL (G) GROUND (SH) SPACE HEATER (C) CONTROL (IG) ISOLATED GROUND (I) INSTRUMENTATION
B 10'-0" 6	WALL OR BRACKET MOUNTED LIGHTING FIXTURE. "B" INDICATES TYPE, "6" INDICATES CIRCUIT NUMBER. MOUNTING HEIGHT AS INDICATED (10'-0" SHOWN)
2 b A	FLUORESCENT LIGHTING FIXTURE. "A" INDICATES TYPE, "b" INDICATES WHICH SWITCH CONTROLS, "2" INDICATES CIRCUIT NUMBER.
A +96"	WALL MOUNTED EMERGENCY LIGHTING FIXTURE. "A" INDICATES TYPE. MOUNTING HEIGHT AS INDICATED (+96" SHOWN).
SYMBOL FOR UNOCCUPIED CONDUIT	TYPICAL DUCT BANK SECTIONAL VIEW. PARTIALLY FILLED CIRCLE REPRESENTS AN OCCUPIED CONDUIT. HOLLOW CIRCLE REPRESENTS AN EMPTY CONDUIT. DO NOT INFER EXACT WIRE COUNT FROM THE SYMBOL SHOWN FOR OCCUPIED CONDUIT. REFER TO APPROPRIATE CONDUIT/WIRE SCHEDULE.
SYMBOL FOR OCCUPIED CONDUIT	
B 6	EMERGENCY EXIT WALL OR BRACKET MOUNTED LIGHTING FIXTURE. "B" INDICATES TYPE, "6" INDICATES CIRCUIT NUMBER. ARROW INDICATES ORIENTATION OF FIXTURE DIRECTIONAL ARROW
$	SINGLE POLE SWITCH
$3	3-WAY SWITCH
3	ELECTRIC MOTOR-HORSEPOWER AS INDICATED (3HP SHOWN)
	LIGHTING/AUXILIARY POWER PANEL-SURFACE MOUNTED
	CONDUIT RUN CONCEALED IN CEILING, UNDERGROUND OR UNDER SLAB.
	CONDUIT RUN EXPOSED
	CONDUIT TURNING DOWN
	CONDUIT TURNING UP
	VERTICAL CONDUIT RUN
	FLEXIBLE CONDUIT
	CONDUIT CAPPED FOR FUTURE USE
	CONDUIT SEAL

ELECTRICAL DRAWING SYMBOLS

+36 7	DUPLEX RECEPTACLE "7" INDICATES CIRCUIT NUMBER. MOUNTING HEIGHT AS INDICATED (36" SHOWN)
+36 7 GFI	GROUND FAULT INTERRUPTER RECEPTACLE "7" INDICATES CIRCUIT NUMBER. MOUNTING HEIGHT AS INDICATED (36" SHOWN)
+36 7 WP	WEATHER PROOF RECEPTACLE "7" INDICATES CIRCUIT NUMBER. MOUNTING HEIGHT AS INDICATED (36" SHOWN)
TW	GROUNDING TESTING WELL
	GROUND WIRE
	GROUND ROD (3/4" DIA. x 10'-0" LG.)
J	JUNCTION BOX
PB OR PB	PULL BOX
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
PE	PRESSURE ELEMENT
PIT	PRESSURE INDICATING TRANSMITTER
LV	MOTOR LOW VOLTAGE TERMINATION BOX
PI	PRESSURE INDICATOR
SOL	SOLENOID VALVE
ZSC	POSITION SWITCH CLOSED
VIT	VIBRATION INDICATING TRANSMITTER
SH	MOTOR SPACE HEATER TERMINATION BOX
RTD	MOTOR RTD TERMINATION BOX
CS	CONTROL STATION
	CONDUIT RUN OR ITEM DEMOLISHED

PROTECTIVE RELAY ABBREVIATIONS

A	CURRENT DISPLAY
PF	POWER FACTOR DISPLAY
VAR	REACTIVE POWER DISPLAY
V	VOLTAGE DISPLAY
W	REAL POWER DISPLAY
WH	WATT-HOUR DISPLAY
26	TEMPERATURE (BEARING OR MOTOR WINDING) SENSING ELEMENT
27	UNDER VOLTAGE UNIT
37	UNDERCURRENT UNIT
46	NEGATIVE SEQUENCE OVER CURRENT UNIT
47	NEGATIVE SEQUENCE OVERVOLTAGE UNIT
48	INCOMPLETE SEQUENCE RELAY
49	MACHINE OR TRANSFORMER THERMAL RELAY
50	INSTANTANEOUS OVERCURRENT
51	TIMED OVERCURRENT
50G	INSTANTANEOUS GROUND OVERCURRENT UNIT
51G	TIMED GROUND OVERCURRENT UNIT
66	NOTCHING OR JOGGING DEVICE

PROTECTIVE RELAY ABBREVIATIONS

59	OVERVOLTAGE UNIT
77	TELEMETERING UNIT
81	FREQUENCY RELAY
86	LOCKOUT UNIT
94	TRIP RELAY OUTPUT
95	SPEED

INSTRUMENT LOOP WIRING DIAGRAM SYMBOLS

	RESISTANCE TEMPERATURE DETECTOR (RTD) (3-WIRE)
	2-CONDUCTOR SHIELDED CABLE
	3-CONDUCTOR SHIELDED CABLE
IN	INSTRUMENT OR PLC ANALOG INPUT
OUT	INSTRUMENT OR PLC ANALOG OUTPUT

GENERAL LEGEND

18 E-9	DETAIL OR PLAN REFERENCE NUMBER. INDICATES: REFER TO PLAN/DETAIL NUMBER 18 SHOWN ON DRAWING NUMBER E-9.
2 E-9821	DETAIL OR PLAN REFERENCE NUMBER. INDICATES: REFER TO PLAN/DETAIL NUMBER 2 SHOWN ON DRAWING NUMBER E-9821
D I-6	REFERENCE TO SECTIONAL DETAIL D ON DRAWING NUMBER I-6.
C I-9 — C I-9	REFERENCE TO SECTIONAL DETAIL C ON DRAWING NUMBER I-9
6 E-78	DETAIL OR PLAN REFERENCE NUMBER INDICATES: REFER TO PLAN/DETAIL NUMBER 6 SHOWN ON DRAWING NUMBER E-78.

GENERAL LEGEND NOTES:

1. IF A SECTION/DETAIL IS PROVIDED ON THE SAME DRAWING THAT IT IS TAKEN FROM, THE DRAWING NUMBER MAY BE SHOWN WITH A HYPHEN (-) IN LIEU OF THE DRAWING NUMBER.
2. DRAWING NUMBER IS IDENTICAL TO SHEET NUMBER.

INSTRUMENTATION PLC SYSTEM DRAWING SYMBOLS

	MODBUS PLUS CABLE
	REMOTE I/O CABLE
	MODBUS CABLE
	MODBUS PLUS RUGGEDIZED TAP WITH TERMINATOR
	MODBUS PLUS RUGGEDIZED TAP
	REMOTE I/O TAP WITH TERMINATOR
	REMOTE I/O TAP
MB+ MODICON BRIDGE MUX MB MB MB MB	MODBUS TO MODBUS PLUS BRIDGE/MUX
	TERMINAL BLOCKS FOR INTERCONNECTION OF RS-485 NETWORK, TWISTED PAIR, SHIELDED CABLE (SHOWN WITH SHIELD GROUNDED).

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO. 1

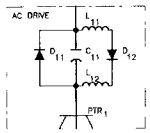
ELECTRICAL AND INSTRUMENTATION SYMBOLS LEGEND
(SHEET 2 OF 3)

2002-210 | SHEET 14 | E-GEN-002

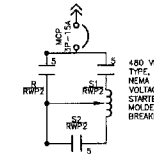
ELECTRICAL ONE-LINE DRAWING SYMBOLS

- CB-1RC1 3P-150A — LOW VOLTAGE THERMAL/MAGNETIC CIRCUIT BREAKER WITH INTEGRAL AUXILIARY CONTACT
- POWER TRANSFORMER (DELTA-WYE CONNECTION SHOWN)
- 2000/5 X1-X5/MR 3 — WINDOW TYPE MULTI-RATIO PHASE CURRENT TRANSFORMER (CT) WITH AVAILABLE TAPS AS INDICATED (2000/5 MAXIMUM) NUMBER AT LOWER RIGHT INDICATES QUANTITY REQUIRED (3 SHOWN)
- LUGS — LUGS FOR CABLE CONNECTION
- 50/5 1 — WINDOW TYPE GROUND CURRENT TRANSFORMER, RATIO AS INDICATED, NUMBER AT LOWER RIGHT INDICATES QUANTITY REQUIRED. (50:5 SHOWN, 1 REQUIRED)
- 3 — CPT (CONTROL POWER TRANSFORMER) OR PT (POTENTIAL TRANSFORMER) NUMBER REQUIRED AS INDICATED (3 SHOWN)
- SHIELDED ISOLATION TRANSFORMER OR SHIELDED ULTRA-ISOLATION TRANSFORMER, AS INDICATED ON DRAWING.
- 3 — FUSE NUMBER AT LOWER RIGHT INDICATES QUANTITY REQUIRED (3 SHOWN)
- << >> — DRAW OUT DISCONNECTS
- WC-4A — ELECTRICAL CONDUIT TAG. REFER TO CONDUIT SCHEMATICS AND CONDUIT/WIRE SCHEDULE
- MICROPROCESSOR BASED PROTECTIVE RELAY FUNCTION SEE PROTECTIVE RELAY ABBREVIATIONS
- CB 3P-100AF 50AT — THERMAL/MAGNETIC MOLDED CASE CIRCUIT BREAKER (3 POLE, 100A FRAME, 50A TRIP)
- MCP 3P-15A — MAGNETIC CIRCUIT PROTECTOR, (MOTOR CIRCUIT PROTECTOR) 3 POLE, 15A
- FUSE (DRAWOUT)
- LOAD BREAK FUSED SWITCH
- S.C. — SURGE CAPACITOR
- L.A. — LIGHTNING ARRESTOR

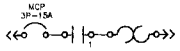
ELECTRICAL ONE-LINE DRAWING SYMBOLS



VARIABLE FREQUENCY DRIVE

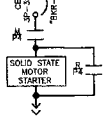


480 VOLT, COMBINATION TYPE, NON-REVERSING NEMA SIZE 5, REDUCED VOLTAGE AUTO-TRANSFORMER STARTER WITH MAGNETIC MOLDED CASE CIRCUIT BREAKER



480V 3-POLE COMBINATION STARTER WITH MAGNETIC CIRCUIT PROTECTOR (3 POLE RATED 15 AMPERES), FULL VOLTAGE NON-REVERSING (FVNR), NEMA SIZE 1 STARTER AND THERMAL OVERLOAD RELAY

OVERLOAD RELAY



480 VOLT SOLID STATE, REDUCED VOLTAGE STARTER WITH THERMAL/MAGNETIC MOLDED CASE CIRCUIT BREAKER.

TYPICAL CONNECTION TO MOTOR CONTROL CENTER BUS "2" DENOTES MOTOR CONTROL CENTER SECTION NUMBER. REFER TO APPLICABLE MOTOR CONTROL CENTER ELEVATION DRAWING.

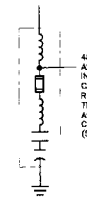
- SH — MOTOR SPACE HEATER TERMINATION BOX
- LV — MOTOR LOW VOLTAGE TERMINATION BOX
- RTD — MOTOR RTD TERMINATION BOX
- VS — VIBRATION SWITCH
- TD — TEMPERATURE DEVICE
- STB — TAP CHANGING/SHORTING TERMINAL BLOCK
- PMU — POWER MONITORING UNIT
- MMR — MOTOR MANAGEMENT RELAY

ELECTRICAL ONE-LINE DRAWING SYMBOLS

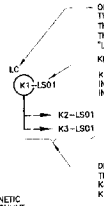
- H — ELAPSED TIME METER
- SELECTOR SWITCH
- PUSH BUTTON
- IL — INDICATING LIGHT
- G "OFF" — PILOT LIGHT R=RED, G=GREEN (SHOWN), O=ORANGE, A=AMBER, W=WHITE, B=BLUE, Y=YELLOW
- VMT — VIBRATION INDICATING TRANSMITTER
- SOL — SOLENOID VALVE
- ZSC — POSITION SWITCH CLOSED
- 3 — NUMERAL BY DEVICE SYMBOL INDICATES NUMBER OF DEVICES REQUIRED (SHOWN: 3 REQUIRED)
- CONNECTION TO EQUIPMENT GROUND BUS (EARTH GROUND)
- "DS-GEN1" 3P-R30A — 480 VOLT DOUBLE THROW DISCONNECT SWITCH (THREE POLE, 800 AMPERE RATED, TAGGED "DS-GEN1 SHOWN)
- N E 27 — AUTOMATIC TRANSFER SWITCH
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR
- REMOVABLE BUS LINK
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH SPDT, "FORM C" (NORMALLY OPEN AND NORMALLY CLOSED) AUXILIARY CONTACTS.
- CB 3P-1350A "BKR-MCC1A" M STD -M — POWER OPERATED THERMAL MAGNETIC CIRCUIT BREAKER WITH 120VAC SHUNT TRIP AND MECHANICALLY INTERLOCKED INTEGRAL NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS (CIRCUIT BREAKER SHOWN IS THREE POLE, 1600 AMPERE). REFER TO SPECIFICATIONS.

GENERAL NOTES FOR ALL ELECTRICAL DRAWINGS:

1. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE DEMOLITION/RENOVATION ACTIVITIES.
2. TAKE CARE TO AVOID DAMAGE TO EXISTING FACILITIES; REPAIR ANY FACILITY DAMAGED IN THE COURSE OF CONSTRUCTION OF ANY PART OF THIS CONTRACT TO ITS ORIGINAL OPERATING CONDITION IMMEDIATELY, WITH REPAIR CREWS WORKING 24 HOURS PER DAY UNTIL THE DAMAGE IS REPAIRED AT NO ADDITIONAL COST TO OWNER.
3. NOT ALL PROPOSED EQUIPMENT IS SHOWN ON THE ELECTRICAL DRAWINGS. REFER TO THE CIVIL/MECHANICAL/STRUCTURAL DRAWINGS FOR MANY OF THE GENERAL LOCATIONS, QUANTITIES, AND TYPES OF PROPOSED EQUIPMENT, INSTRUMENTS, ETC., TO BE INSTALLED. IN ADDITION, REFER TO THE APPLICABLE ELECTRICAL DRAWINGS AND MAKE ALL FINAL CONNECTIONS.
4. CONTRACTOR SHALL SIZE, FURNISH, AND INSTALL ALL CONDUIT, WIRE, PULLBOXES, MOUNTING HARDWARE, ETC., TO INTERCONNECT ALL PROPOSED VENDOR PACKAGED EQUIPMENT TO ITS RESPECTIVE CONTROL PANEL/MOTOR CONTROL CENTER, AS APPLICABLE, AND MAKE ALL FINAL CONNECTIONS PER THE MANUFACTURER'S WIRING DIAGRAMS AND RECOMMENDATIONS. IN ADDITION, ALL COMPONENTS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE TO THE SPECIFICATIONS.
5. CONTRACTOR SHALL SIZE ALL PULLBOXES, JUNCTION BOXES, ETC., PER, AND IN ACCORDANCE WITH, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (N.E.C.).
6. FOR CLARITY, ALL PULLBOXES REQUIRED BY THE N.E.C. ARE NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL SIZE, FURNISH, AND INSTALL ALL PULLBOXES AS REQUIRERD BY THE N.E.C. TO FACILITATE THE PROPOSED CONDUIT/WIRE INSTALLATION. ALSO REFER TO THE APPLICABLE CONDUIT/WIRE SCHEDULE, ONE-LINE DIAGRAMS, FLOOR PLAN DRAWINGS, ETC. TO AID IN THE LOCATION/ROUTING OF THE PROPOSED CONDUIT/WIRE/PULLBOXES/MOUTING HARDWARE/ETC. THE CONTRACTOR SHALL CLOSELY AND CAREFULLY COORDINATE THE INSTALLATION OF THE PROPOSED ELECTRICAL EQUIPMENT WITH THE INSTALLATION OF THE PROPOSED CIVIL/MECHANICAL/STRUCTURAL/ETC. UTILITIES, AND THE EXISTING ELECTRICAL/CIVIL/MECHANICAL/STRUCTURAL/ETC. UTILITIES.



480VAC, THREE PHASE, HARMONIC FILTER ASSEMBLY INCLUDING (AS MINIMUM): THREE PHASE INPUT LINE REACTOR, THREE PHASE FILTER CAPACITOR BANKS (NUMBER OF BANKS AS REQUIRED), THREE PHASE FILTER TUNING REACTOR, THREE PHASE FUSED CAPACITOR BANKS (NUMBER AS REQUIRED), COMMON THREE PHASE ISOLATION CONTACTOR FOR ALL FILTER CAPACITOR BANKS (SIZED AS REQUIRED)



OPTIONAL ADDITIONAL TEXT THAT DESCRIBES THE OPERATION OF THE KEY INTERLOCK. THE DEFAULT INTERLOCK TYPE, DENOTED BY THE ABSENCE OF TEXT IS THE "LOCKED OPEN" TYPE TO LOCK THE ASSOCIATED DEVICE OPEN. "LC" INDICATES INTERLOCK IS THE "LOCKED CLOSED" TYPE TO LOCK THE ASSOCIATED DEVICE CLOSED.

KEY INTERLOCK TAG. TAG IS UNIQUE PER KEY INTERLOCK.

KEY INTERLOCK. KEY REQUIRED TO UNLOCK INTERLOCK. KEY CAN BE REMOVED FROM INTERLOCK ONLY AFTER INTERLOCK IS LOCKED.

DENOTES OTHER KEY INTERLOCKS WHICH ARE INTERLOCKED WITH THIS KEY INTERLOCK. (KEY INTERLOCKS TAGGED K2-LS01 AND K3-LS01 ARE SHOWN INTERLOCKED WITH KEY INTERLOCK TAGGED K1-LS01)

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

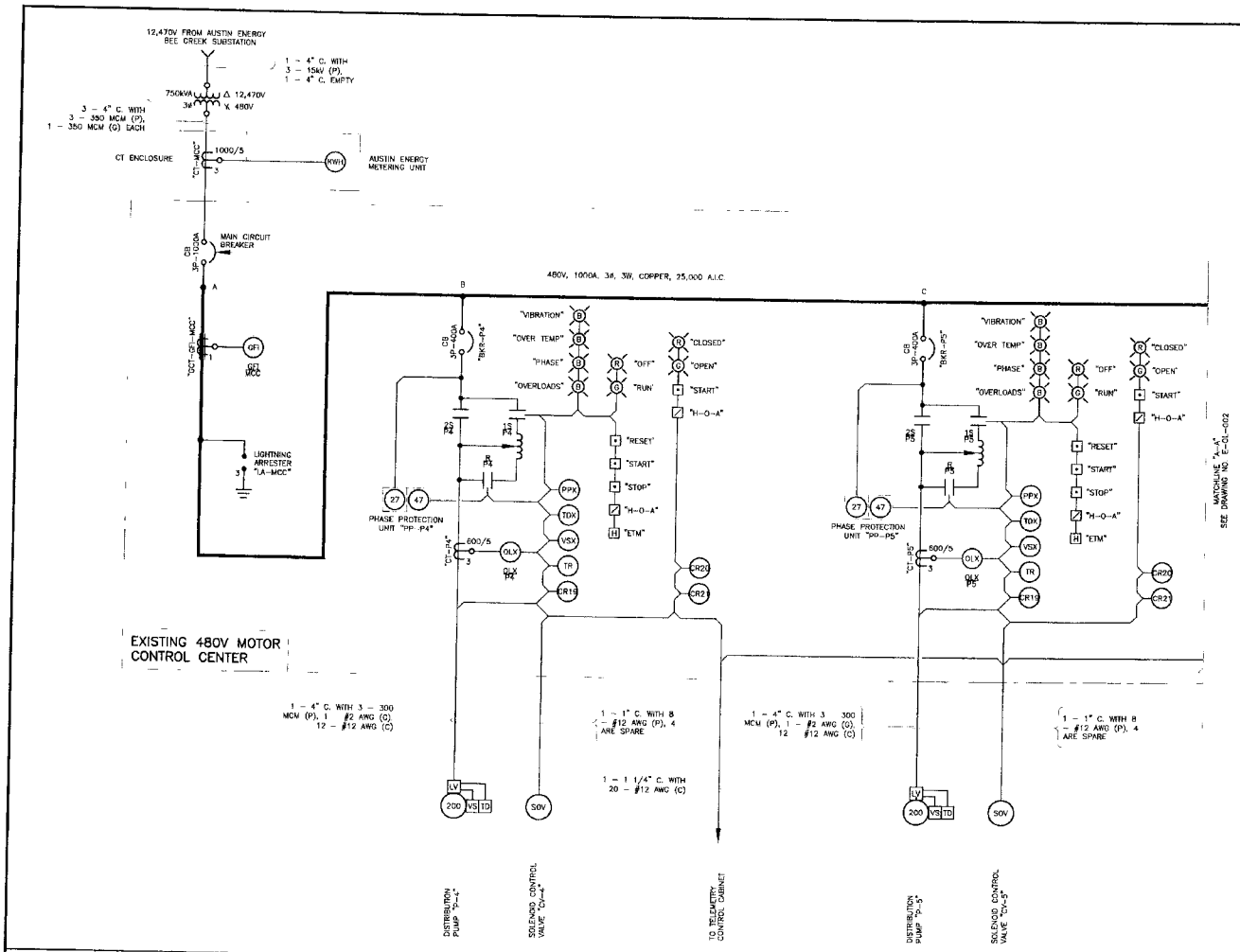
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

ELECTRICAL AND INSTRUMENTATION SYMBOLS LEGEND
(SHEET 3 OF 3)

PROJ. NO. 2002-210 | SHEET 15 | DWG. NO. E-GEN-003



GENERAL NOTES:

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT.
2. AN ATTEMPT IS MADE TO SHOW ALL EXISTING EQUIPMENT ON THIS ELECTRICAL ONE-LINE DIAGRAM, REGARDLESS, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTENCE, LOCATION AND TYPE OF EQUIPMENT ACTUALLY INSTALLED IN THE FIELD, INCLUDING APPLICABLE CONDUIT/WIRING FOR ELECTRICAL SERVICE TO EXISTING EQUIPMENT WHETHER SHOWN HERE OR NOT.
3. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT.

REFERENCE DRAWINGS:

E-OL-002 - ONE-LINE DIAGRAM CONTINUATION

E-FP-001 - PUMP STATION FLOOR PLAN

E-OL-014 - MCC ELEVATION

E-SP-002 - OVERALL SITE PLAN

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 300
AUSTIN, TEXAS 78752

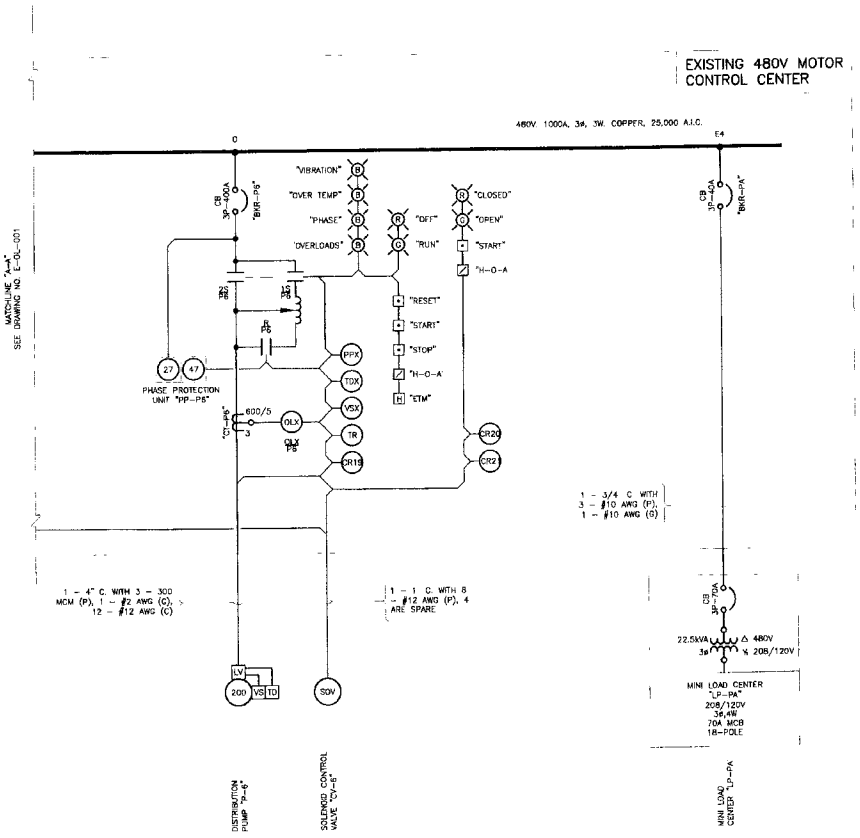
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

DETAILED 480V MOTOR CONTROL CENTER
ONE-LINE DIAGRAM - EXISTING
(SHEET 1 OF 2)

2002-210 | SHEET 16 | E-OL-001



GENERAL NOTES:

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT.
2. AN ATTEMPT IS MADE TO SHOW ALL EXISTING EQUIPMENT ON THIS ELECTRICAL ONE-LINE DIAGRAM. REGARDLESS, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTENCE, LOCATION AND TYPE OF EQUIPMENT ACTUALLY INSTALLED IN THE FIELD, INCLUDING APPLICABLE CONDUIT/WIRING FOR ELECTRICAL SERVICE TO EXISTING EQUIPMENT WHETHER SHOWN HERE OR NOT.
3. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT.

REFERENCE DRAWINGS:

E-OL-001 – ONE-LINE DIAGRAM CONTINUATION
E-FP-001 – PUMP STATION FLOOR PLAN
E-OL-014 – MCC ELEVATION
E-SP-002 – OVERALL SITE PLAN

BAR ENGLISH ORIGINAL DRAWING FOR ALTERATIONS AND IS SCALE ACCORDINGLY

STATE OF TEXAS — A PROFESSIONAL ENGINEER REGISTERED — 2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

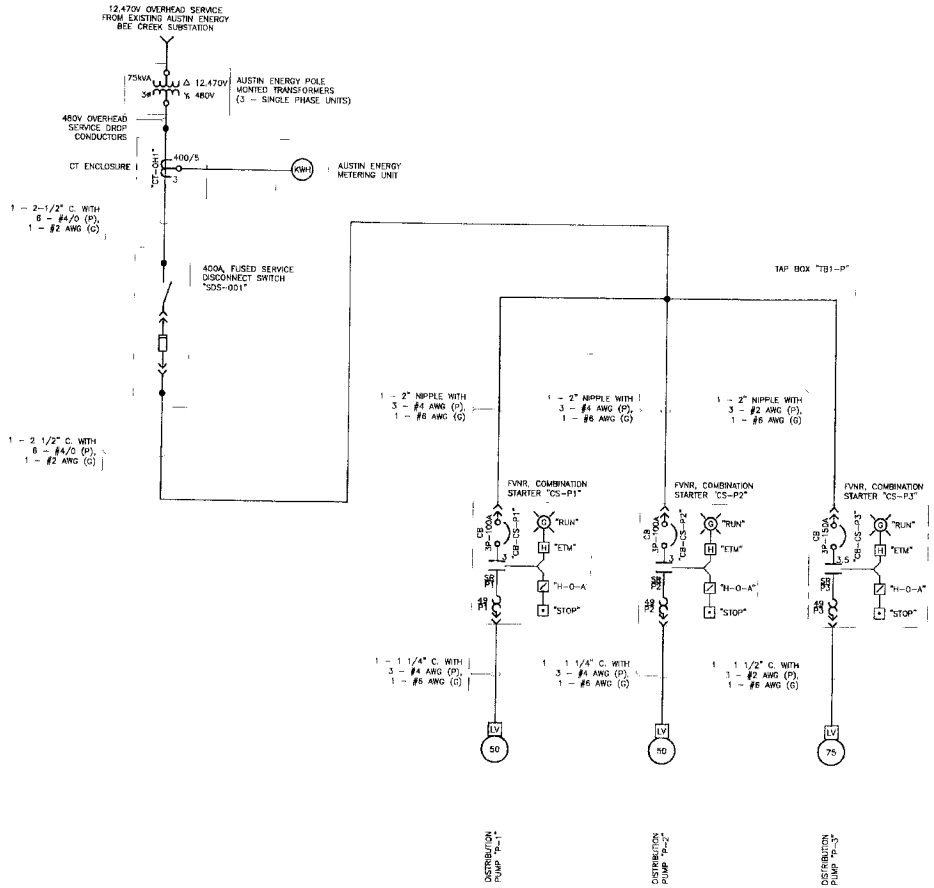
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DRN	HEI
CHKD	HEI
APPD	HEI
DATE	FEBRUARY 2005
SCALE	NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

DETAILED 480V MOTOR CONTROL CENTER
ONE-LINE DIAGRAM – EXISTING
(SHEET 2 OF 2)

PROJECT 2002-210 | SHEET 17 | DWG E-OL-002



GENERAL NOTES:

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT
2. AN ATTEMPT IS MADE TO SHOW ALL EXISTING EQUIPMENT ON THIS ELECTRICAL ONE-LINE DIAGRAM, REGARDLESS, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTENCE, LOCATION AND TYPE OF EQUIPMENT ACTUALLY INSTALLED IN THE FIELD, INCLUDING APPLICABLE CONDUIT/WIRING FOR ELECTRICAL SERVICE TO EXISTING EQUIPMENT WHETHER SHOWN HERE OR NOT
3. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT

REFERENCE DRAWINGS:

E-FP-001 – PUMP STATION FLOOR PLAN

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

REUSE OF DOCUMENTS

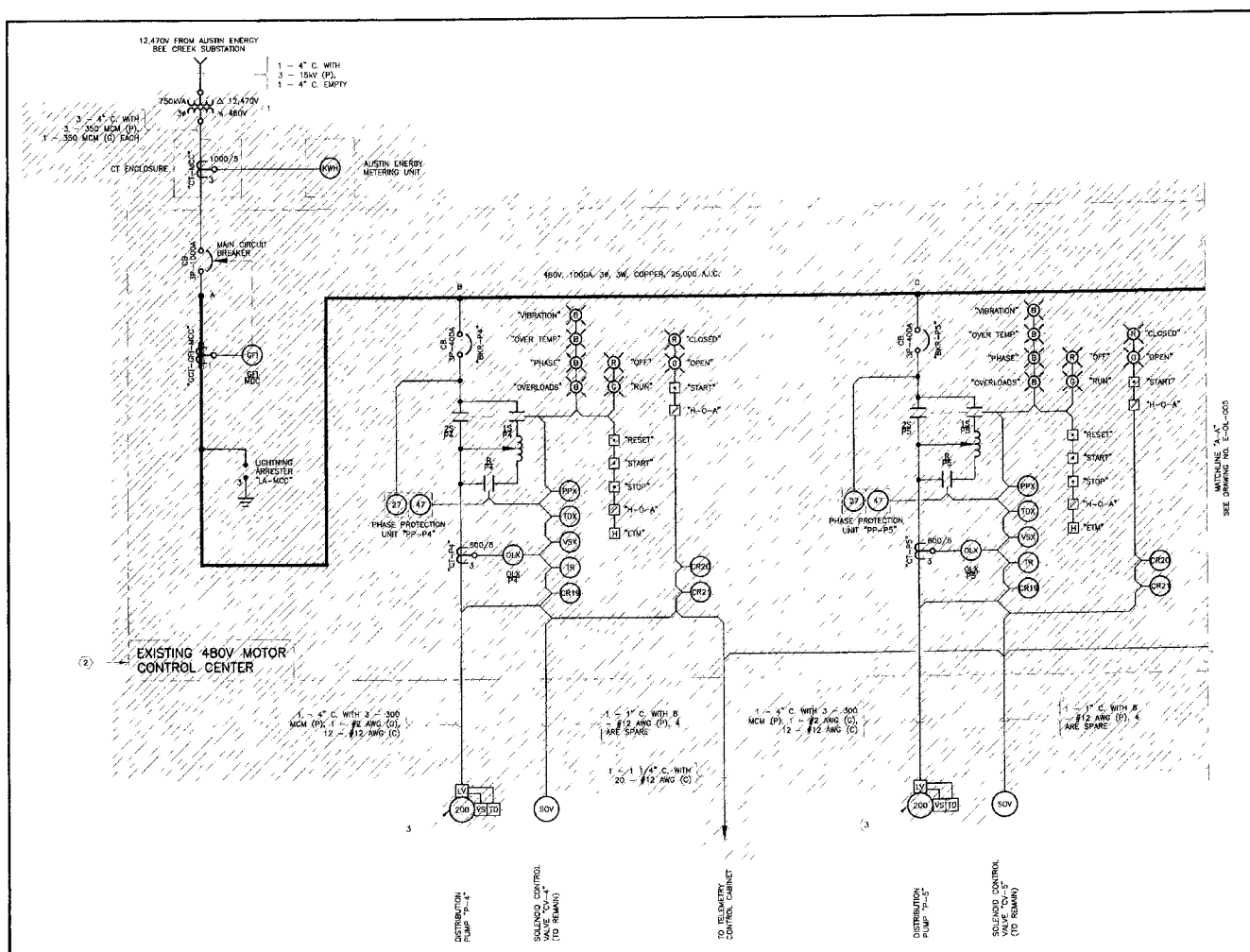
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2003

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

DETAILED 480V DISTRIBUTION SYSTEM
ONE-LINE DIAGRAM – EXISTING

2002-210 | SHEET 18 | E-OL-003



KEY NOTES:

1. EXISTING TRANSFORMER TO BE DISCONNECTED AND REMOVED BY AUSTIN ENERGY. CAREFULLY COORDINATE PROPOSED DEMOLITION ACTIVITIES WITH AUSTIN ENERGY AND WITH RELATIVE DEMOLITION ACTIVITIES OF OTHER TRADES FOR SEQUENCE SCHEDULE. COORDINATE AND SCHEDULE OUTAGE REQUIREMENTS WITH OWNER A MINIMUM OF TWO WEEKS PRIOR TO OUTAGE.
2. DISCONNECT AND REMOVE EXISTING MOTOR CONTROL CENTER IN ITS ENTIRETY. CONDUITS ENTERING BOTTOM OF MCC, IF PRESENT, SHALL BE MODIFIED ACCORDING TO DETAILS ON DRAWING NO. E-DET-012.
3. DISCONNECT AND REMOVE EXISTING MOTOR AND ASSOCIATED TERMINATION BOXES IN ACCORDANCE WITH THE RECOMMENDED CONSTRUCTION SEQUENCE.

GENERAL NOTES:

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT
2. AN ATTEMPT IS MADE TO SHOW ALL EXISTING EQUIPMENT ON THIS ELECTRICAL ONE-LINE DIAGRAM. REGARDLESS, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTENCE, LOCATION AND TYPE OF EQUIPMENT ACTUALLY INSTALLED IN THE FIELD, INCLUDING APPLICABLE CONDUIT/WIRING FOR ELECTRICAL SERVICE TO EXISTING EQUIPMENT WHETHER SHOWN HERE OR NOT.
3. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT
4. THE INFORMATION SHOWN HEREIN IS BASED ON THE INFORMATION PROVIDED DURING DESIGN AND IS BELIEVED TO BE ACCURATE. REGARDLESS, THIS INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONFIRMING OR FINDING THE ASSOCIATED MOTOR CONTROL CENTER/CIRCUIT NUMBER/PANELBOARD/ETC., SERVING THE EXISTING LOAD. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION TO ELIMINATE HAZARDS IN DISCONNECTING ANY DEVICE FROM AN ELECTRICAL CIRCUIT
5. EXERCISE EXTREME CARE AS THERE ARE NO AVAILABLE AS BUILT RECORDS IDENTIFYING THE ROUTING OF ALL CONDUIT/WIRING BETWEEN MOTOR CONTROL CENTER, CONTROL PANEL, LIGHTING PANEL, LOADS, ETC. AND THEIR COORDINATION WITH EXISTING ELECTRICAL SYSTEM. CONTRACTOR SHALL VERIFY ROUTING OF EXISTING CONDUIT/WIRING PRIOR TO COMMENCING FULL SCALE DEMOLITION OR RENOVATION ACTIVITIES. FOLLOWING DISCOVERY/VERIFICATION OF EXISTING FIELD CONDITIONS, SHOULD ADJUSTMENTS TO EXISTING OR PROPOSED SYSTEMS BECOME NECESSARY, EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO ENGINEER'S ATTENTION FOR EXECUTION OF NECESSARY ADJUSTMENTS/MODIFICATIONS.
6. WHEN ANY EXISTING EQUIPMENT IS DISCONNECTED, REMOVED, RELOCATED OR OTHERWISE MODIFIED, THE POSSIBILITY MAY EXIST FOR SUCH ACTION TO LEAD TO INTERRUPTION OF PUMP STATION OPERATION. IF EXTREME CARE, VERIFICATION, AND VALIDATION IS NOT CAREFULLY EXERCISED PRIOR TO COMMENCEMENT OF SUCH ACTIVITY. ANY UNSCHEDULED INTERRUPTION TO CONTINUITY OF PUMP STATION OPERATION AT ITS FULLY RATED CAPACITY IS UNACCEPTABLE DURING CONSTRUCTION OF THIS PROJECT. HOWEVER, SHOULD INTERRUPTION OCCUR FOR ANY UNFORESEEN REASON (WHETHER TOTALLY ACCIDENTAL OR DUE TO IMPROPER FIELD INVESTIGATION AND/OR IMPROPER PLANNING PRIOR TO COMMENCEMENT OF ELECTRICAL/INSTRUMENTATION DEMOLITION EFFORT), RESPONSIBLE CONTRACTOR SHALL DETERMINE PROBLEM, CORRECT IT, AND START UP INTERRUPTED EQUIPMENT WITHIN A CERTAIN TIME PERIOD AS DETERMINED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CONTINUOUS, 24-HOUR: LABOR, EQUIPMENT, MATERIAL AND ACCESSORIES UNTIL SUCH TIME THAT ANY AFFECTED EQUIPMENT OPERATES AS PREVIOUSLY OPERATED, AT NO ADDITIONAL COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
7. CROSSHATCHED LINEWORK DENOTES EQUIPMENT TO BE DEMOLISHED UNLESS OTHERWISE NOTED AND SHALL BE REMOVED ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE ON DRAWING E-SP-001. ALL DEMOLITION ACTIVITIES SHALL ALSO BE FULLY COORDINATED WITH CIVIL/ PROCESS/MECHANICAL/STRUCTURAL/ETC., DEMOLITION ACTIVITIES. ALL DEMOLISHED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER. RELOCATE ALL DEMOLISHED ITEMS TO LOCATION(S) SPECIFIED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
8. REMOVE ALL ASSOCIATED MOUNTING HARDWARE, PULLBOXES, HANGERS, STRAPS, SUPPORT CHANNELS, RODS, ETC. FOR ITEMS TO BE DEMOLISHED, UNLESS OTHERWISE NOTED OR SUCH REMOVAL WOULD COMPROMISE THE SUPPORT OF ITEMS TO REMAIN IN PLACE.

REFERENCE DRAWINGS:

E-OL-005 – ONE-LINE DIAGRAM DEMOLITION CONTINUATION

E-FP-002 – PUMP STATION FLOOR PLAN

E-SP-001 – CONSTRUCTION SEQUENCE

E-SP-004 – OVERALL SITE PLAN

BAR LENGTH OF ORIGINAL DRAWING FOR USE OF THE MEDIUM SCALE ACCURACY

STATE OF TEXAS — HARUTUNIAN — REGISTERED — PROFESSIONAL ENGINEER — 2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

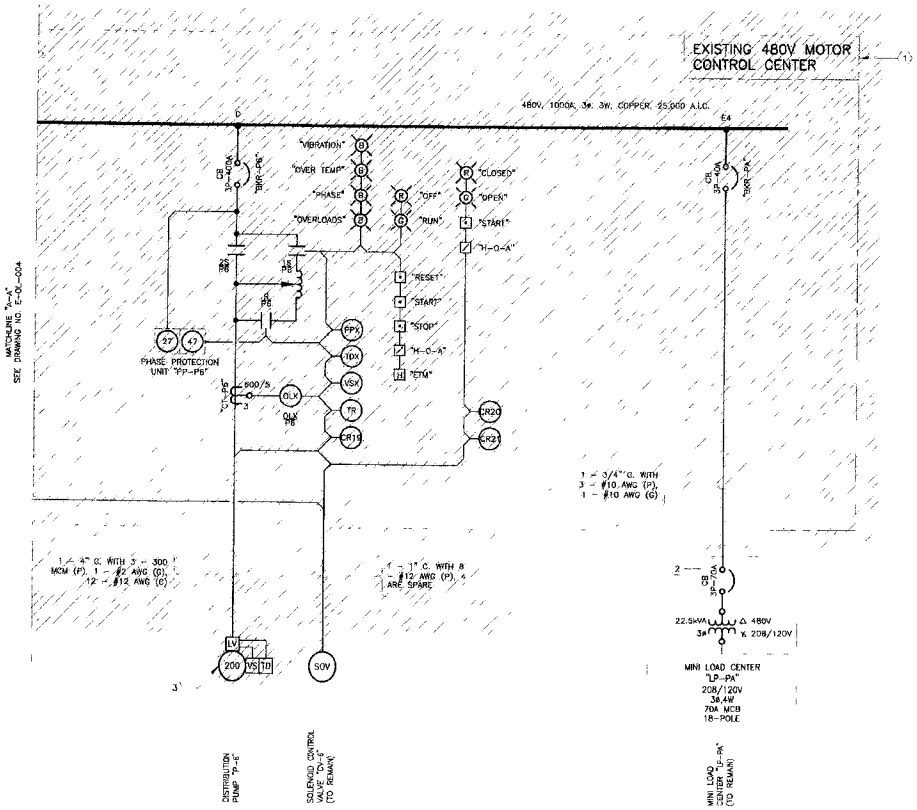
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DESIGNED BY HEI
DRAWN BY HEI
CHECKED BY HEI
DATE FEBRUARY 2005
SCALE NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

DETAILED 480V MOTOR CONTROL CENTER
ONE-LINE DIAGRAM – DEMOLITION
(SHEET 1 OF 2)

JOB NO. 2002-210 | SHEET 19 | DWG. NO. E-OL-004



KEY NOTES:

1. DISCONNECT AND REMOVE EXISTING MOTOR CONTROL CENTER IN ITS ENTIRETY. CONDUITS ENTERING BOTTOM OF MCC, IF PRESENT, SHALL BE MODIFIED ACCORDING TO DETAILS ON DRAWING NO. E-DET-012.
2. DISCONNECT AND REMOVE EXISTING CONDUIT/WIRE FEEDING MINI LOAD CENTER IN ACCORDANCE WITH THE RECOMMENDED CONSTRUCTION SEQUENCE.
3. DISCONNECT AND REMOVE EXISTING MOTOR AND ASSOCIATED TERMINATION BOXES IN ACCORDANCE WITH THE RECOMMENDED CONSTRUCTION SEQUENCE.

GENERAL NOTES:

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT.
2. AN ATTEMPT IS MADE TO SHOW ALL EXISTING EQUIPMENT ON THIS ELECTRICAL ONE-LINE DIAGRAM. REGARDLESS, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTENCE, LOCATION AND TYPE OF EQUIPMENT ACTUALLY INSTALLED IN THE FIELD, INCLUDING APPLICABLE CONDUIT/WIRING FOR ELECTRICAL SERVICE TO EXISTING EQUIPMENT WHETHER SHOWN HERE OR NOT.
3. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT.
4. THE INFORMATION SHOWN HEREIN IS BASED ON THE INFORMATION PROVIDED DURING DESIGN AND IS BELIEVED TO BE ACCURATE. REGARDLESS, THIS INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONFIRMING OR FINDING THE ASSOCIATED MOTOR CONTROL CENTER/CIRCUIT NUMBER/PANELBOARD/ETC., SERVING THE EXISTING LOAD. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION TO ELIMINATE HAZARDS IN DISCONNECTING ANY DEVICE FROM AN ELECTRICAL CIRCUIT.
5. EXERCISE EXTREME CARE AS THERE ARE NO AVAILABLE AS BUILT RECORDS IDENTIFYING THE ROUTING OF ALL CONDUIT/WIRING BETWEEN MOTOR CONTROL CENTER, CONTROL PANEL, LIGHTING PANEL, LOADS, ETC. AND THEIR COORDINATION WITH EXISTING ELECTRICAL SYSTEM. CONTRACTOR SHALL VERIFY ROUTING OF EXISTING CONDUIT/WIRING PRIOR TO COMMENCING FULL SCALE DEMOLITION OR RENOVATION ACTIVITIES. FOLLOWING DISCOVERY/VERIFICATION OF EXISTING FIELD CONDITIONS, SHOULD ADJUSTMENTS TO EXISTING OR PROPOSED SYSTEMS BECOME NECESSARY, EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO ENGINEER'S ATTENTION FOR EXECUTION OF NECESSARY ADJUSTMENTS/MODIFICATIONS.
6. WHEN ANY EXISTING EQUIPMENT IS DISCONNECTED, REMOVED, RELOCATED OR OTHERWISE MODIFIED, THE POSSIBILITY MAY EXIST FOR SUCH ACTION TO LEAD TO INTERRUPTION OF PUMP STATION OPERATION. IF EXTREME CARE, VERIFICATION, AND VALIDATION IS NOT CAREFULLY EXERCISED PRIOR TO COMMENCEMENT OF SUCH ACTIVITY, ANY UNSCHEDULED INTERRUPTION TO CONTINUITY OF PUMP STATION OPERATION AT ITS FULLY RATED CAPACITY IS UNACCEPTABLE DURING CONSTRUCTION OF THIS PROJECT. HOWEVER, SHOULD INTERRUPTION OCCUR FOR ANY UNFORESEEN REASON (WHETHER TOTALLY ACCIDENTAL OR DUE TO IMPROPER FIELD INVESTIGATION AND/OR IMPROPER PLANNING PRIOR TO COMMENCEMENT OF ELECTRICAL/INSTRUMENTATION DEMOLITION EFFORT), RESPONSIBLE CONTRACTOR SHALL DETERMINE PROBLEM, CORRECT IT AND START UP INTERRUPTED EQUIPMENT WITHIN A CERTAIN TIME PERIOD AS DETERMINED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CONTINUOUS, 24-HOUR; LABOR, EQUIPMENT, MATERIAL AND ACCESSORIES UNTIL SUCH TIME THAT ANY AFFECTED EQUIPMENT OPERATES AS PREVIOUSLY OPERATED, AT NO ADDITIONAL COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
7. CROSSHATCHED LINEWORK DENOTES EQUIPMENT TO BE DEMOLISHED UNLESS OTHERWISE NOTED AND SHALL BE REMOVED ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE ON DRAWING E-SP-001. ALL DEMOLITION ACTIVITIES SHALL ALSO BE FULLY COORDINATED WITH CIVIL/ PROCESS/MECHANICAL/STRUCTURAL/ETC., DEMOLITION ACTIVITIES. ALL DEMOLISHED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER. RELOCATE ALL DEMOLISHED ITEMS TO LOCATION(S) SPECIFIED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
8. REMOVE ALL ASSOCIATED MOUNTING HARDWARE, PULLBOXES, HANGERS, STRAPS, SUPPORT CHANNELS, RODS, ETC. FOR ITEMS TO BE DEMOLISHED, UNLESS OTHERWISE NOTED OR SUCH REMOVAL WOULD COMPROMISE THE SUPPORT OF ITEMS TO REMAIN IN PLACE.

REFERENCE DRAWINGS:

E-OL-004 – ONE-LINE DIAGRAM CONTINUATION
E-FP-002 – PUMP STATION FLOOR PLAN
E-SP-001 – CONSTRUCTION SEQUENCE
E-SP-004 – OVERALL SITE PLAN

BAR — INTENDED ORIGINAL DRAWING IS 36" WIDE. IF NOT ADJUST SCALES ACCORDINGLY

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

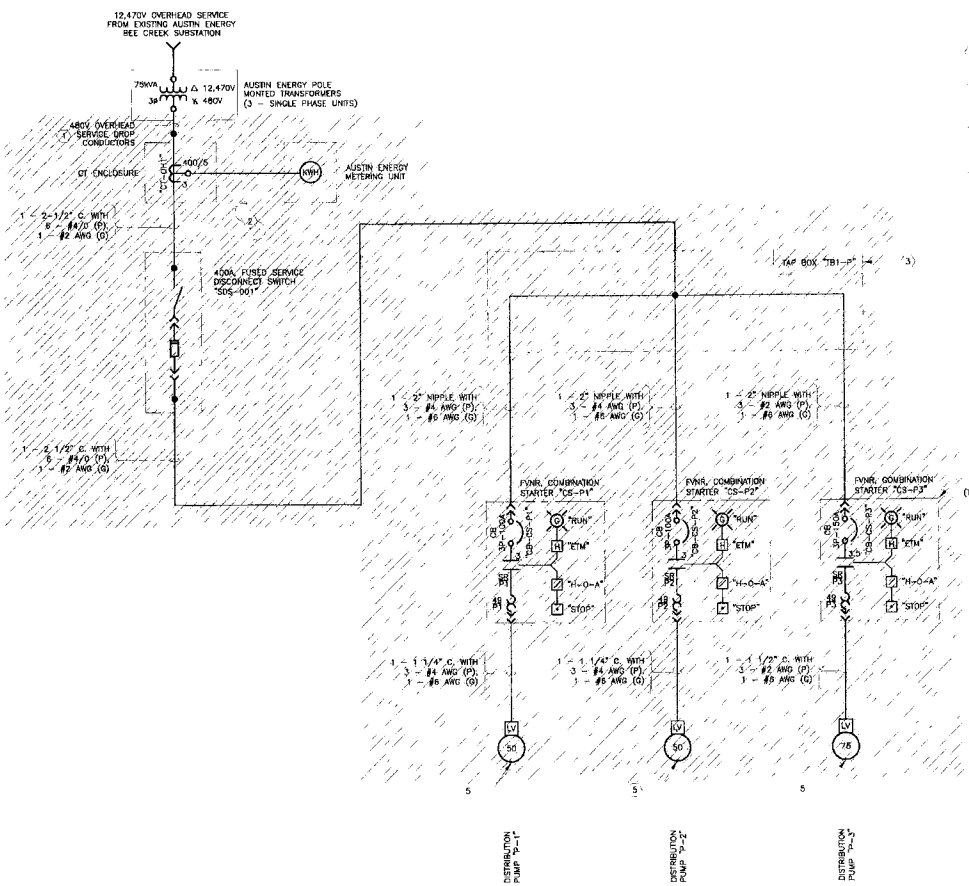
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

DETAILED 480V MOTOR CONTROL CENTER ONE-LINE DIAGRAM – DEMOLITION (SHEET 2 OF 2)

PROJECT NO. 2002-210 | SHEET 20 | DWG. E-OL-005



KEY NOTES:

1. EXISTING OVERHEAD SERVICE DROP TO BE DISCONNECTED AND REMOVED BY AUSTIN ENERGY CAREFULLY COORDINATE PROPOSED DEMOLITION ACTIVITIES WITH AUSTIN ENERGY AND WITH RELATIVE DEMOLITION ACTIVITIES OF OTHER TRADES FOR SEQUENCE SCHEDULE. COORDINATE AND SCHEDULE OUTAGE REQUIREMENTS WITH OWNER A MINIMUM OF TWO WEEKS PRIOR TO OUTAGE.
2. DISCONNECT AND REMOVE ALL SERVICE ENTRANCE EQUIPMENT, CONDUIT/WIRE, DISCONNECT, ENCLOSURES, ETC. IN ACCORDANCE WITH THE RECOMMENDED CONSTRUCTION SEQUENCE.
3. DISCONNECT AND REMOVE EXISTING TAP BOX/WIREWAY LOCATED ABOVE STARTERS. EXERCISE EXTREME CARE IN THE DEMOLITION OF TAP BOX TO AVOID DAMAGE TO EXISTING TELEPHONE LINES TO REMAIN IN PLACE.
4. DISCONNECT AND REMOVE EXISTING COMBINATION STARTER IN ITS ENTIRETY ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE.
5. DISCONNECT AND REMOVE EXISTING MOTOR AND ASSOCIATED TERMINATION BOXES IN ACCORDANCE WITH THE RECOMMENDED CONSTRUCTION SEQUENCE.

GENERAL NOTES:

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT
2. AN ATTEMPT IS MADE TO SHOW ALL EXISTING EQUIPMENT ON THIS ELECTRICAL ONE-LINE DIAGRAM. REGARDLESS, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTENCE, LOCATION AND TYPE OF EQUIPMENT ACTUALLY INSTALLED IN THE FIELD, INCLUDING APPLICABLE CONDUIT/WIRING FOR ELECTRICAL SERVICE TO EXISTING EQUIPMENT WHETHER SHOWN HERE OR NOT
3. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT
4. THE INFORMATION SHOWN HEREIN IS BASED ON THE INFORMATION PROVIDED DURING DESIGN AND IS BELIEVED TO BE ACCURATE. REGARDLESS, THIS INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONFIRMING OR FINDING THE ASSOCIATED MOTOR CONTROL CENTER/CIRCUIT NUMBER/PANELBOARD/ETC., SERVING THE EXISTING LOAD. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION TO ELIMINATE HAZARDS IN DISCONNECTING ANY DEVICE FROM AN ELECTRICAL CIRCUIT
5. EXERCISE EXTREME CARE AS THERE ARE NO AVAILABLE AS BUILT RECORDS IDENTIFYING THE ROUTING OF ALL CONDUIT/WIRING BETWEEN MOTOR CONTROL CENTER, CONTROL PANEL, LIGHTING PANEL, LOADS, ETC. AND THEIR COORDINATION WITH EXISTING ELECTRICAL SYSTEM. CONTRACTOR SHALL VERIFY ROUTING OF EXISTING CONDUIT/WIRING PRIOR TO COMMENCING FULL SCALE DEMOLITION OR RENOVATION ACTIVITIES. FOLLOWING DISCOVERY/VERIFICATION OF EXISTING FIELD CONDITIONS, SHOULD ADJUSTMENTS TO EXISTING OR PROPOSED SYSTEMS BECOME NECESSARY, EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO ENGINEER'S ATTENTION FOR EXECUTION OF NECESSARY ADJUSTMENTS/MODIFICATIONS.
6. WHEN ANY EXISTING EQUIPMENT IS DISCONNECTED, REMOVED, RELOCATED OR OTHERWISE MODIFIED, THE POSSIBILITY MAY EXIST FOR SUCH ACTION TO LEAD TO INTERRUPTION OF PUMP STATION OPERATION, IF EXTREME CARE, VERIFICATION, AND VALIDATION IS NOT CAREFULLY EXERCISED PRIOR TO COMMENCEMENT OF SUCH ACTIVITY. ANY UNSCHEDULED INTERRUPTION TO CONTINUITY OF PUMP STATION OPERATION AT ITS FULLY RATED CAPACITY IS UNACCEPTABLE DURING CONSTRUCTION OF THIS PROJECT HOWEVER, SHOULD INTERRUPTION OCCUR FOR ANY UNFORESEEN REASON (WHETHER TOTALLY ACCIDENTAL OR DUE TO IMPROPER FIELD INVESTIGATION AND/OR IMPROPER PLANNING PRIOR TO COMMENCEMENT OF ELECTRICAL/INSTRUMENTATION DEMOLITION EFFORT), RESPONSIBLE CONTRACTOR SHALL DETERMINE PROBLEM, CORRECT IT, AND START UP INTERRUPTED EQUIPMENT WITHIN A CERTAIN TIME PERIOD AS DETERMINED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CONTINUOUS, 24-HOUR; LABOR, EQUIPMENT, MATERIAL AND ACCESSORIES UNTIL SUCH TIME THAT ANY AFFECTED EQUIPMENT OPERATES AS PREVIOUSLY OPERATED, AT NO ADDITIONAL COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
7. CROSSHATCHED LINEWORK DENOTES EQUIPMENT TO BE DEMOLISHED UNLESS OTHERWISE NOTED AND SHALL BE REMOVED ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE ON DRAWING E-SP-001. ALL DEMOLITION ACTIVITIES SHALL ALSO BE FULLY COORDINATED WITH CIVIL/ PROCESS/MECHANICAL/STRUCTURAL/ETC. DEMOLITION ACTIVITIES. ALL DEMOLISHED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER. RELOCATE ALL DEMOLISHED ITEMS TO LOCATION(S) SPECIFIED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
8. REMOVE ALL ASSOCIATED MOUNTING HARDWARE, PULLBOXES, HANGERS, STRAPS, SUPPORT CHANNELS, RODS, ETC. FOR ITEMS TO BE DEMOLISHED, UNLESS OTHERWISE NOTED ON SUCH REMOVAL WOULD COMPROMISE THE SUPPORT OF ITEMS TO REMAIN IN PLACE.

REFERENCE DRAWINGS:

E-FP-002 – PUMP STATION FLOOR PLAN

E-SP-001 – CONSTRUCTION SEQUENCE

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

STATE OF TEXAS — HARUTUNIAN — REGISTERED PROFESSIONAL ENGINEER — 2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST MUNTLAND DRIVE SUITE 500
AUSTIN TEXAS 78752

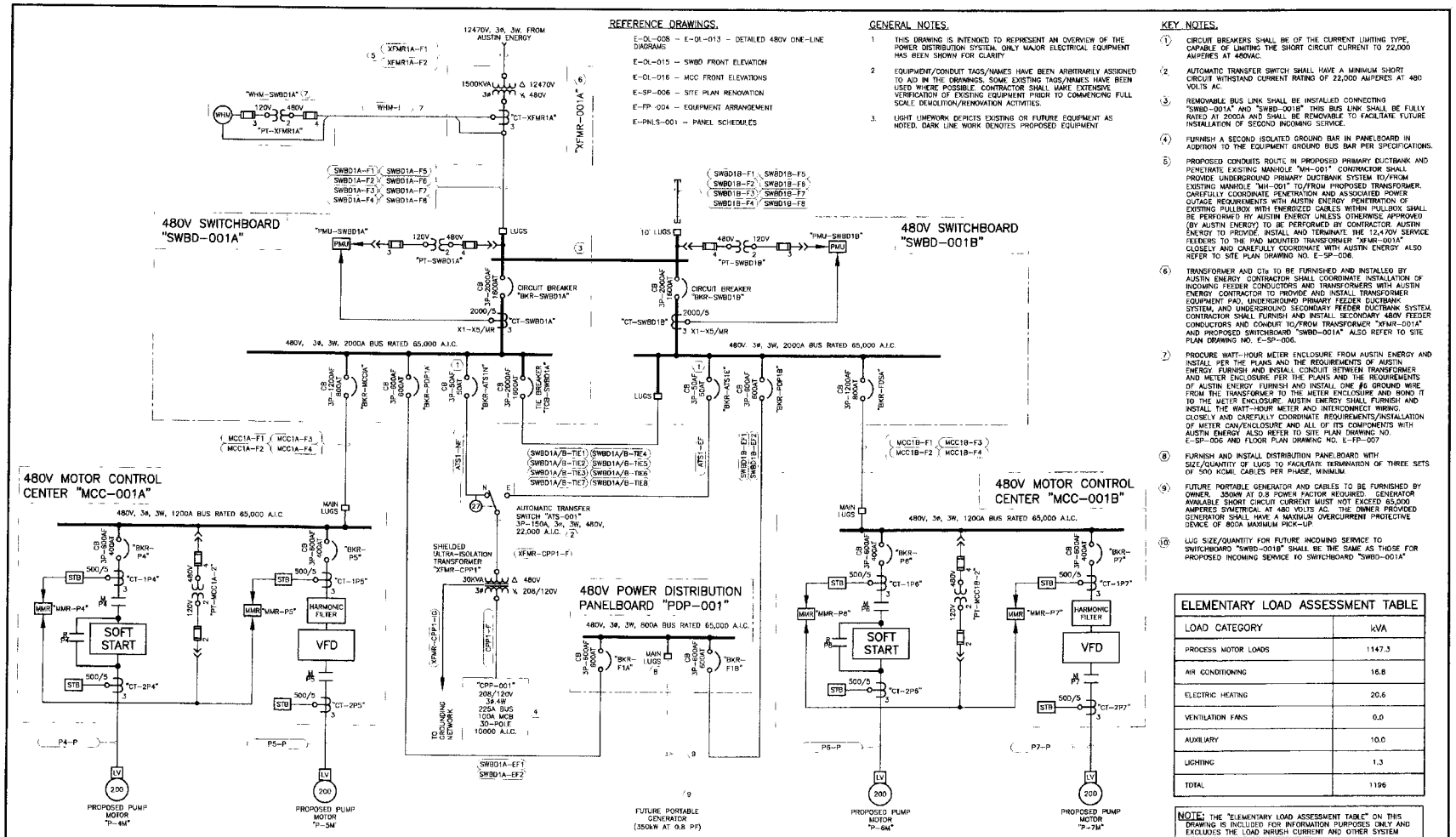
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DESIGNED BY HEI
DRAWN BY HEI
REVIEWED BY HEI
DATE FEBRUARY 2005
SCALE NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

DETAILED 480V DISTRIBUTION SYSTEM
ONE-LINE DIAGRAM – DEMOLITION

PROJECT NO 2002-210 | SHEET 21 | DWG NO E-OL-006



REFERENCE DRAWINGS.

E-OL-008 – E-OL-013 – DETAILED 480V ONE-LINE DIAGRAMS

E-OL-015 – SWBD FRONT ELEVATION

E-OL-016 – MCC FRONT ELEVATIONS

E-SP-006 – SITE PLAN RENOVATION

E-FP-004 – EQUIPMENT ARRANGEMENT

E-PNLS-001 – PANEL SCHEDULES

GENERAL NOTES.

1. THIS DRAWING IS INTENDED TO REPRESENT AN OVERVIEW OF THE POWER DISTRIBUTION SYSTEM. ONLY MAJOR ELECTRICAL EQUIPMENT HAS BEEN SHOWN FOR CLARITY
2. EQUIPMENT/CONDUIT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE DEMOLITION/RENOVATION ACTIVITIES.
3. LIGHT LINEWORK DEPICTS EXISTING OR FUTURE EQUIPMENT AS NOTED. DARK LINE WORK DENOTES PROPOSED EQUIPMENT

KEY NOTES.

1. CIRCUIT BREAKERS SHALL BE OF THE CURRENT LIMITING TYPE, CAPABLE OF LIMITING THE SHORT CIRCUIT CURRENT TO 22,000 AMPERES AT 480VAC.
2. AUTOMATIC TRANSFER SWITCH SHALL HAVE A MINIMUM SHORT CIRCUIT WITHSTAND CURRENT RATING OF 22,000 AMPERES AT 480 VOLTS AC.
3. REMOVABLE BUS LINK SHALL BE INSTALLED CONNECTING "SWBD-001A" AND "SWBD-001B" THIS BUS LINK SHALL BE FULLY RATED AT 2000A AND SHALL BE REMOVABLE TO FACILITATE FUTURE INSTALLATION OF SECOND INCOMING SERVICE.
4. FURNISH A SECOND ISOLATED GROUND BAR IN PANELBOARD IN ADDITION TO THE EQUIPMENT GROUND BUS BAR PER SPECIFICATIONS.
5. PROPOSED CONDUITS ROUTE IN PROPOSED PRIMARY DUCTBANK AND PENETRATE EXISTING MANHOLE "MH-001" CONTRACTOR SHALL PROVIDE UNDERGROUND PRIMARY DUCTBANK SYSTEM TO/FROM EXISTING MANHOLE "MH-001" TO/FROM PROPOSED TRANSFORMER. CAREFULLY COORDINATE PENETRATION AND ASSOCIATED POWER OUTAGE REQUIREMENTS WITH AUSTIN ENERGY. PENETRATION OF EXISTING PULLBOX WITH ENERGIZED CABLES WITHIN PULLBOX SHALL BE PERFORMED BY AUSTIN ENERGY UNLESS OTHERWISE APPROVED (BY AUSTIN ENERGY) TO BE PERFORMED BY CONTRACTOR. AUSTIN ENERGY TO PROVIDE, INSTALL AND TERMINATE THE 12.4/7.0V SERVICE FEEDERS TO THE PAD MOUNTED TRANSFORMER "XFMR-001A" CLOSELY AND CAREFULLY COORDINATE WITH AUSTIN ENERGY. ALSO REFER TO SITE PLAN DRAWING NO. E-SP-006.
6. TRANSFORMER AND CTs TO BE FURNISHED AND INSTALLED BY AUSTIN ENERGY. CONTRACTOR SHALL COORDINATE INSTALLATION OF INCOMING FEEDER CONDUCTORS AND TRANSFORMERS WITH AUSTIN ENERGY. CONTRACTOR TO PROVIDE AND INSTALL TRANSFORMER EQUIPMENT PAD, UNDERGROUND PRIMARY FEEDER DUCTBANK SYSTEM, AND UNDERGROUND SECONDARY FEEDER DUCTBANK SYSTEM. CONTRACTOR SHALL FURNISH AND INSTALL SECONDARY 480V FEEDER CONDUCTORS AND CONDUIT TO/FROM TRANSFORMER "XFMR-001A" AND PROPOSED SWITCHBOARD "SWBD-001A". ALSO REFER TO SITE PLAN DRAWING NO. E-SP-006.
7. PROCURE WATT-HOUR METER ENCLOSURE FROM AUSTIN ENERGY AND INSTALL PER THE PLANS AND THE REQUIREMENTS OF AUSTIN ENERGY. FURNISH AND INSTALL CONDUIT BETWEEN TRANSFORMER AND METER ENCLOSURE PER THE PLANS AND THE REQUIREMENTS OF AUSTIN ENERGY. FURNISH AND INSTALL ONE #6 GROUND WIRE FROM THE TRANSFORMER TO THE METER ENCLOSURE AND BOND IT TO THE METER ENCLOSURE. AUSTIN ENERGY SHALL FURNISH AND INSTALL THE WATT-HOUR METER AND INTERCONNECT WIRING. CLOSELY AND CAREFULLY COORDINATE REQUIREMENTS/INSTALLATION OF METER CAN/ENCLOSURE AND ALL OF ITS COMPONENTS WITH AUSTIN ENERGY. ALSO REFER TO SITE PLAN DRAWING NO. E-SP-006 AND FLOOR PLAN DRAWING NO. E-FP-007
8. FURNISH AND INSTALL DISTRIBUTION PANELBOARD WITH SIZE/QUANTITY OF LUGS TO FACILITATE TERMINATION OF THREE SETS OF 500 KCMIL CABLES PER PHASE, MINIMUM.
9. FUTURE PORTABLE GENERATOR AND CABLES TO BE FURNISHED BY OWNER. 350kW AT 0.8 POWER FACTOR REQUIRED. GENERATOR AVAILABLE SHORT CIRCUIT CURRENT MUST NOT EXCEED 65,000 AMPERES SYMETRICAL AT 480 VOLTS AC. THE OWNER PROVIDED GENERATOR SHALL HAVE A MAXIMUM OVERCURRENT PROTECTIVE DEVICE OF 800A MAXIMUM PICK-UP.
10. LUG SIZE/QUANTITY FOR FUTURE INCOMING SERVICE TO SWITCHBOARD "SWBD-001B" SHALL BE THE SAME AS THOSE FOR PROPOSED INCOMING SERVICE TO SWITCHBOARD "SWBD-001A"

ELEMENTARY LOAD ASSESSMENT TABLE

LOAD CATEGORY	kVA
PROCESS MOTOR LOADS	1147.3
AIR CONDITIONING	16.8
ELECTRIC HEATING	20.6
VENTILATION FANS	0.0
AUXILIARY	10.0
LIGHTING	1.3
TOTAL	1196

NOTE: THE "ELEMENTARY LOAD ASSESSMENT TABLE" ON THIS DRAWING IS INCLUDED FOR INFORMATION PURPOSES ONLY AND EXCLUDES THE LOAD INRUSH CURRENT AND OTHER SYSTEM BEHAVIORAL TYPE OF ASSESSMENTS.

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH TO REF SCALE ACCORDINGLY

STATE OF TEXAS — KARL LEE HARUTUNIAN — 17875 — REGISTERED PROFESSIONAL ENGINEER — 2/24/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

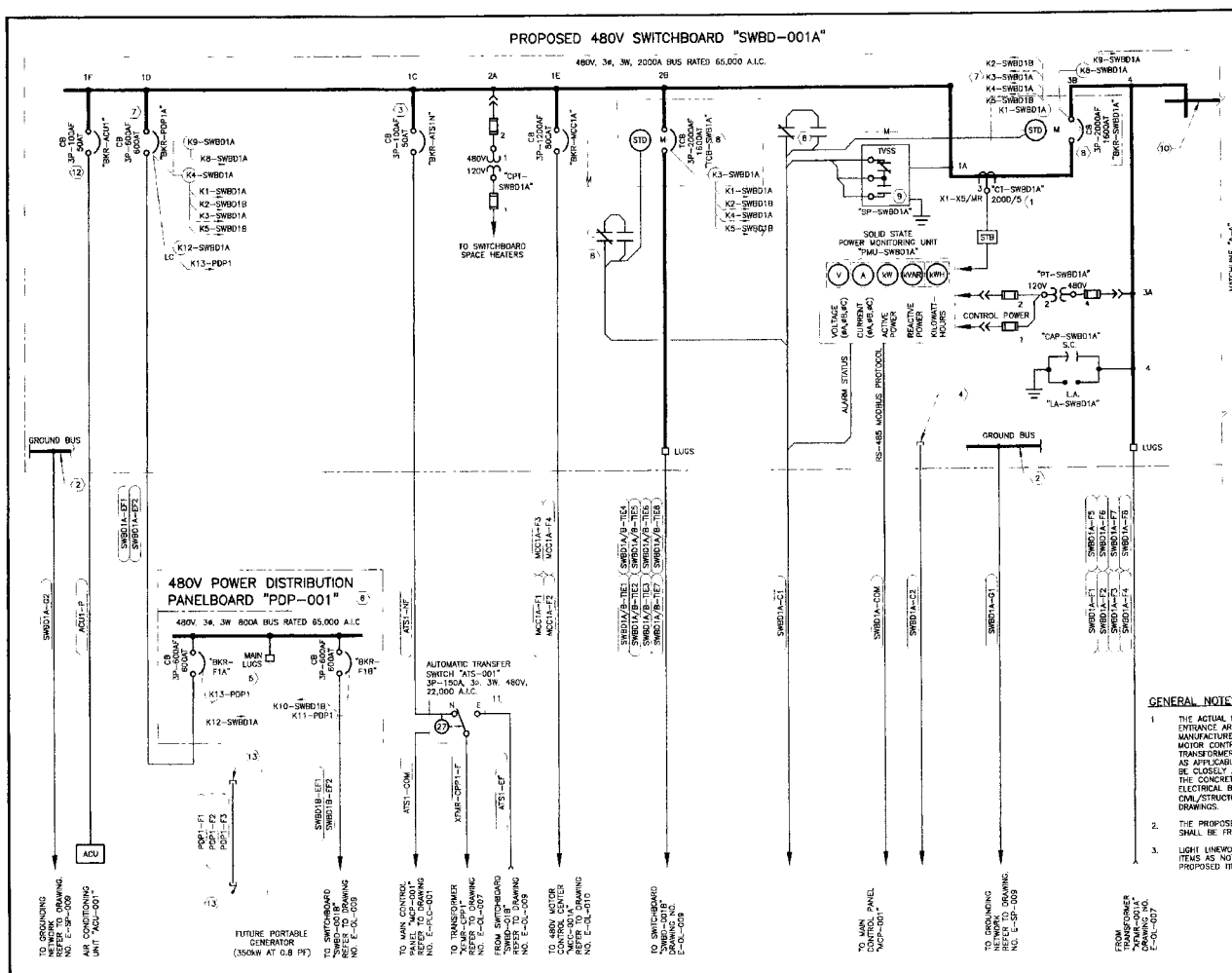
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DES CHKD BY HEI
DRWN BY HEI
APPROVED BY HEI
DATE FEBRUARY 2005
SCALE NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

OVERALL 480V ONE-LINE DIAGRAM

A-E PROJECT 2002-210 | SHEET 22 | DWG NO. E-OL-007



KEY NOTES:

1. 2000/5 MULTI-RATIO, WINDOW TYPE CURRENT TRANSFORMER WITH THE FOLLOWING AVAILABLE RATIOS.

   A. 300/5: X3-X4 F. 1200/5: X1-X3
   B. 400/5: X1-X2 G. 1500/5: X1-X4
   C. 500/5: X4-X5 H. 1600/5: X2-X5
   D. 800/5: X2-X3 I. 2000/5: X1-X5
   E. 1100/5: X2-X4

   CONNECT ALL TERMINALS TO THE CORRESPONDING TAP CHANGING/SHORTING TERMINAL BLOCK (STB). SET TAPS AT CT ACCORDING TO THE "CT RATIO SETTINGS TABLE" SHOWN ON THIS DRAWING. FURNISH AND INSTALL CURRENT TRANSFORMERS ON THE SWITCHBOARD BUSWORK CONNECTING THE CABLE TERMINATION LUGS TO THE MAIN CIRCUIT BREAKER "BKR-SWBD1A" THE CURRENT TRANSFORMERS SHALL NOT BE MOUNTED ON THE INCOMING POWER CABLES.

2. THE FULL SIZE SWITCHBOARD GROUND BUS SHALL EXTEND THE ENTIRE LENGTH OF THE SWITCHBOARD.

3. FURNISH AND INSTALL CURRENT LIMITING CIRCUIT BREAKER. PROPOSED CURRENT LIMITING CIRCUIT BREAKER SHALL HAVE MAXIMUM LET THROUGH SYMMETRICAL RMS SHORT CIRCUIT CURRENT OF 22000 AMPERES AT 480 VOLTS AC.

4. CAP CONDUIT FOR FUTURE USE. REFER TO FUTURE CONDUIT STUB-UP DETAIL ON DRAWING NO. E-DET-004.

5. FURNISH LUGS FOR FUTURE GENERATOR CABLES PER KEYNOTE 8 ON DRAWING E-OL-007

6. POWER DISTRIBUTION PANEL "PDP-001" IS DEDICATED FOR CONNECTION TO FUTURE EMERGENCY POWER CONNECTION FROM AN OWNER PROVIDED GENERATOR. THE OWNER PROVIDED GENERATOR SHALL HAVE A MAXIMUM OVERCURRENT PROTECTIVE DEVICE OF 800A MAXIMUM PICK-UP. IN ADDITION TO THE OTHER NAMEPLATES AS REQUIRED BY THE SPECIFICATIONS, FURNISH AND INSTALL A 3-PLY, (RED/WHITE/RED), PHENOLIC TAG WITH THE INSCRIPTION: "WARNING: MAXIMUM GENERATOR PROTECTIVE DEVICE RATING IS 800 AMPS" IN 1/2" TALL LETTERS. ATTACH TAG TO FRONT OF ENCLOSURE WITH STAINLESS STEEL SCREWS. ALL CIRCUIT BREAKERS INSIDE THIS PANELBOARD SHALL HAVE ELECTRONIC TRIP ATTACHMENT

7. KEY INTERLOCKS SHALL BE PROVIDED SO THAT THE INCOMING LINE MAIN CIRCUIT BREAKER (OF ONE OF THE TWO 480V SWITCHBOARDS) MUST BE OPEN BEFORE THE TIE CIRCUIT BREAKER CAN BE CLOSED TO PREVENT CONNECTING BOTH INCOMING LINES TOGETHER. KEY INTERLOCKS SHALL ALSO BE PROVIDED SO THAT THE INCOMING LINE MAIN CIRCUIT BREAKERS (FROM EACH SWITCHBOARD FOR A TOTAL OF TWO (2)) MUST BE OPEN BEFORE THE EMERGENCY GENERATOR CIRCUIT BREAKER CAN BE CLOSED TO PREVENT CONNECTING DIFFERENT SOURCES TOGETHER.

8. FURNISH AND INSTALL CIRCUIT BREAKER WITH SHUNT TRIP DEVICE. FURNISH AND INSTALL NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS FOR MONITORING THE STATUS OF THE CIRCUIT BREAKER. ALSO REFER TO DRAWING NO. E-CWS-020 AND TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MAKE ALL FINAL CONNECTIONS.

9. FURNISH AND INSTALL TRANSIENT VOLTAGE SURGE SUPPRESSOR SURGE PROTECTOR WITH SURGE TRIP DEVICE. THE SURGE PROTECTOR SHALL BE FURNISHED WITH NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS FOR MONITORING WHEN A SURGE IS DETECTED. ALSO REFER TO DRAWING NO. E-CWS-021 AND TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MAKE ALL FINAL CONNECTIONS.

10. REMOVABLE BUS LINK SHALL BE INSTALLED CONNECTING "SWBD-001A" AND "SWBD-001B". THIS BUS LINK SHALL BE FULLY RATED AT 2000A AND SHALL BE REMOVABLE TO FACILITATE FUTURE INSTALLATION OF SECOND INCOMING SERVICE.

11. AUTOMATIC TRANSFER SWITCH SHALL HAVE A MINIMUM SHORT CIRCUIT WITHSTAND CURRENT RATING OF 22,000 AMPERES AT 480 VOLTS AC. ALSO REFER TO DRAWING E-CWS-021 FOR FIELD CONTROL WIRING INTERCONNECTIONS.

12. CONTRACTOR SHALL VERIFY CIRCUIT BREAKER RATING WITH HVAC MANUFACTURER AND VERIFY THAT CONDUIT AND CABLE ARE ADEQUATELY SIZED PRIOR TO INSTALLATION ACTIVITIES. CONTRACTOR SHALL CHANGE CIRCUIT BREAKER RATING, CABLE SIZE, CONDUIT SIZE AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.

GENERAL NOTES:

1. THE ACTUAL REQUIRED SIZE OF THE CONDUIT ENTRANCE AREAS IS TO BE DETERMINED BY THE MANUFACTURER. THE LOCATION AND SIZE OF THE MOTOR CONTROL CENTER, SWITCHBOARD, TRANSFORMER, VARIABLE FREQUENCY DRIVE, ETC AS APPLICABLE, CONDUIT ENTRANCE AREAS SHALL BE CLOSELY AND CAREFULLY COORDINATED WITH THE CONCRETE FOUNDATION PLANS OF THE ELECTRICAL BUILDING. REFER TO THE APPLICABLE CIVIL/STRUCTURAL/MECHANICAL/ELECTRICAL, ETC. DRAWINGS.
2. THE PROPOSED 480V SWITCHBOARD SHOWN HEREIN SHALL BE FRONT ACCESS ONLY
3. LIGHT LINEWORK DENOTES FUTURE OR EXISTING ITEMS AS NOTED. DARK LINEWORK DENOTES PROPOSED ITEMS.

KEY NOTES (CONTINUED):

13. CONDUIT STUBS UP/OUT AND IS CAPPED OFF FOR FUTURE USE. REFER TO THE FLOOR PLAN DRAWINGS FOR ADDITIONAL INFORMATION.

REFERENCE DRAWINGS:

E-OL-007 - E-OL-013 - DETAILED ONE-LINE DIAGRAMS
E-OL-015 - SWITCHBOARD FRONT ELEVATION
E-FP-004 - EQUIPMENT ARRANGEMENT
E-IWS-001 - POWER MONITORING UNIT WIRING SCHEMATIC
E-CWS-021 - TVSS SURGE PROTECTOR WIRING SCHEMATIC
E-PLC-001 - PLC ARCHITECTURE
E-RWS-001 - E-RWS-003 - CONDUIT SCHEMATICS

CT RATIO SETTINGS TABLE

CT TAG	RATIO SETTING
"CT-SWBD1A"	2000/5
"CT-SWBD1B"	2000/5

BAR MEASURES ONE INCH ORIGINAL DRAWING. EQUAL ONE INCH APPLIES TO THIS ACCORDINGLY

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

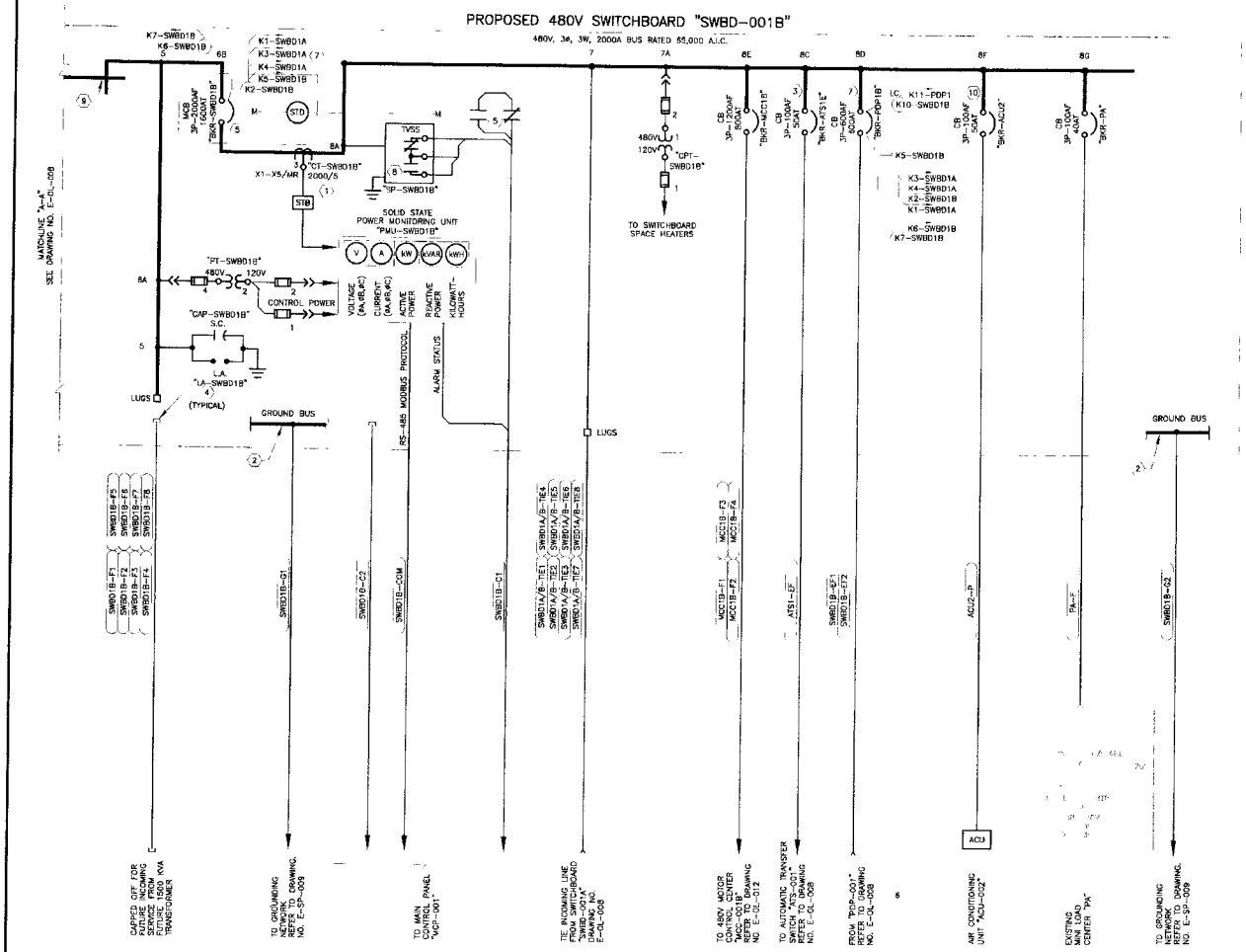
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and it is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

480V SWITCHBOARD "SWBD-001A" AND "SWBD-001B"
DETAILED ONE-LINE DIAGRAM
(SHEET 1 OF 2)

JOB NO. 2002-210 | SHEET 23 | E-OL-008



KEY NOTES:

(1) 2000/5 MULTI-RATIO, WINDOW TYPE CURRENT TRANSFORMER WITH THE FOLLOWING AVAILABLE RATIOS.

A. 300/5: X3-X4	F. 1200/5: X1-X3
B. 400/5: X1-X2	G. 1500/5: X1-X4
C. 500/5: X4-X5	H. 1800/5: X2-X5
D. 800/5: X2-X3	I. 2000/5: X1-X5
E. 1100/5: X2-X4	

CONNECT ALL TERMINALS TO THE CORRESPONDING TAP CHANGING/SHORTING TERMINAL BLOCK (STB). SET TAPS AT CT ACCORDING TO THE "CT RATIO SETTINGS TABLE" SHOWN ON DRAWING NO. E-OL-008. FURNISH AND INSTALL CURRENT TRANSFORMERS ON THE SWITCHBOARD BUSWORK CONNECTING THE CABLE TERMINATION LUGS TO THE MAIN CIRCUIT BREAKER "BKR-SWBD1A". THE CURRENT TRANSFORMERS SHALL NOT BE MOUNTED ON THE INCOMING POWER CABLES.

(2) THE FULL SIZE SWITCHBOARD GROUND BUS SHALL EXTEND THE ENTIRE LENGTH OF THE SWITCHBOARD.

(3) FURNISH AND INSTALL CURRENT LIMITING CIRCUIT BREAKER. PROPOSED CURRENT LIMITING CIRCUIT BREAKER SHALL HAVE MAXIMUM LET THROUGH SYMMETRICAL RMS SHORT CIRCUIT CURRENT OF 22000 AMPERES AT 480 VOLTS AC.

(4) CAP CONDUIT FOR FUTURE USE. REFER TO FUTURE CONDUIT STUB-UP DETAIL ON DRAWING NO. E-DET-004.

(5) FURNISH AND INSTALL CIRCUIT BREAKER WITH SHUNT TRIP DEVICE. FURNISH AND INSTALL NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS FOR MONITORING THE STATUS OF THE CIRCUIT BREAKER. ALSO REFER TO DRAWING NO. E-CWS-020 AND TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MAKE ALL FINAL CONNECTIONS.

(6) REFER TO DRAWING NO. E-OL-008 FOR ADDITIONAL INFORMATION REGARDING THE POWER DISTRIBUTION PANEL.

(7) KEY INTERLOCKS SHALL BE PROVIDED SO THAT THE INCOMING LINE MAIN CIRCUIT BREAKER (OF ONE OF THE TWO 480V SWITCHBOARDS) MUST BE OPEN BEFORE THE TIE CIRCUIT BREAKER CAN BE CLOSED TO PREVENT CONNECTING BOTH INCOMING LINES TOGETHER. KEY INTERLOCKS SHALL ALSO BE PROVIDED SO THAT THE INCOMING LINE MAIN CIRCUIT BREAKERS (FROM EACH SWITCHBOARD) FOR A TOTAL OF TWO (2) MUST BE OPEN BEFORE THE EMERGENCY GENERATOR CIRCUIT BREAKER CAN BE CLOSED TO PREVENT CONNECTING DIFFERENT SOURCES TOGETHER.

(8) FURNISH AND INSTALL TRANSIENT VOLTAGE SURGE SUPPRESSOR SURGE PROTECTOR WITH SURGE TRIP DEVICE. THE SURGE PROTECTOR SHALL BE FURNISHED WITH NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS FOR MONITORING WHEN A SURGE IS DETECTED. ALSO REFER TO DRAWING NO. E-CWS-021 AND TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MAKE ALL FINAL CONNECTIONS.

(9) REMOVABLE BUS LINK SHALL BE INSTALLED CONNECTING "SWBD-001A" AND "SWBD-001B". THIS BUS LINK SHALL BE FULLY RATED AT 2000A AND SHALL BE REMOVABLE TO FACILITATE FUTURE INSTALLATION OF SECOND INCOMING SERVICE.

(10) CONTRACTOR SHALL VERIFY CIRCUIT BREAKER RATING WITH HVAC MANUFACTURER AND VERIFY THAT CONDUIT AND CABLE ARE ADEQUATELY SIZED PRIOR TO INSTALLATION ACTIVITIES. CONTRACTOR SHALL CHANGE CIRCUIT BREAKER RATING, CABLE SIZE, CONDUIT SIZE AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.

GENERAL NOTES:

1. THE ACTUAL REQUIRED SIZE OF THE CONDUIT ENTRANCE AREAS IS TO BE DETERMINED BY THE MANUFACTURER. THE LOCATION AND SIZE OF THE MOTOR CONTROL CENTER, SWITCHBOARD, TRANSFORMER, VARIABLE FREQUENCY DRIVE, ETC., AS APPLICABLE, CONDUIT ENTRANCE AREAS SHALL BE CLOSELY AND CAREFULLY COORDINATED WITH THE CONCRETE FOUNDATION PLANS OF THE ELECTRICAL BUILDING. REFER TO THE APPLICABLE CIVIL/STRUCTURAL/MECHANICAL/ELECTRICAL, ETC. DRAWINGS.
2. THE PROPOSED 480V SWITCHBOARD SHOWN HEREIN SHALL BE FRONT ACCESS ONLY
3. LIGHT LINEWORK DENOTES FUTURE OR EXISTING ITEMS AS NOTED. DARK LINEWORK DENOTES PROPOSED ITEMS.

REFERENCE DRAWINGS:

E-OL-007 – E-OL-013 – DETAILED ONE-LINE DIAGRAMS

E-OL-015 – SWITCHBOARD FRONT ELEVATION

E-FP-004 – EQUIPMENT ARRANGEMENT

E-WS-001 – POWER MONITORING UNIT WIRING SCHEMATIC

E-CWS-021 – TVSS SURGE PROTECTOR WIRING SCHEMATIC

E-PLC-001 – PLC ARCHITECTURE

E-RWS-001 – E-RWS-003 – CONDUIT SCHEMATICS

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE, SUITE 500
AUSTIN, TEXAS 78752

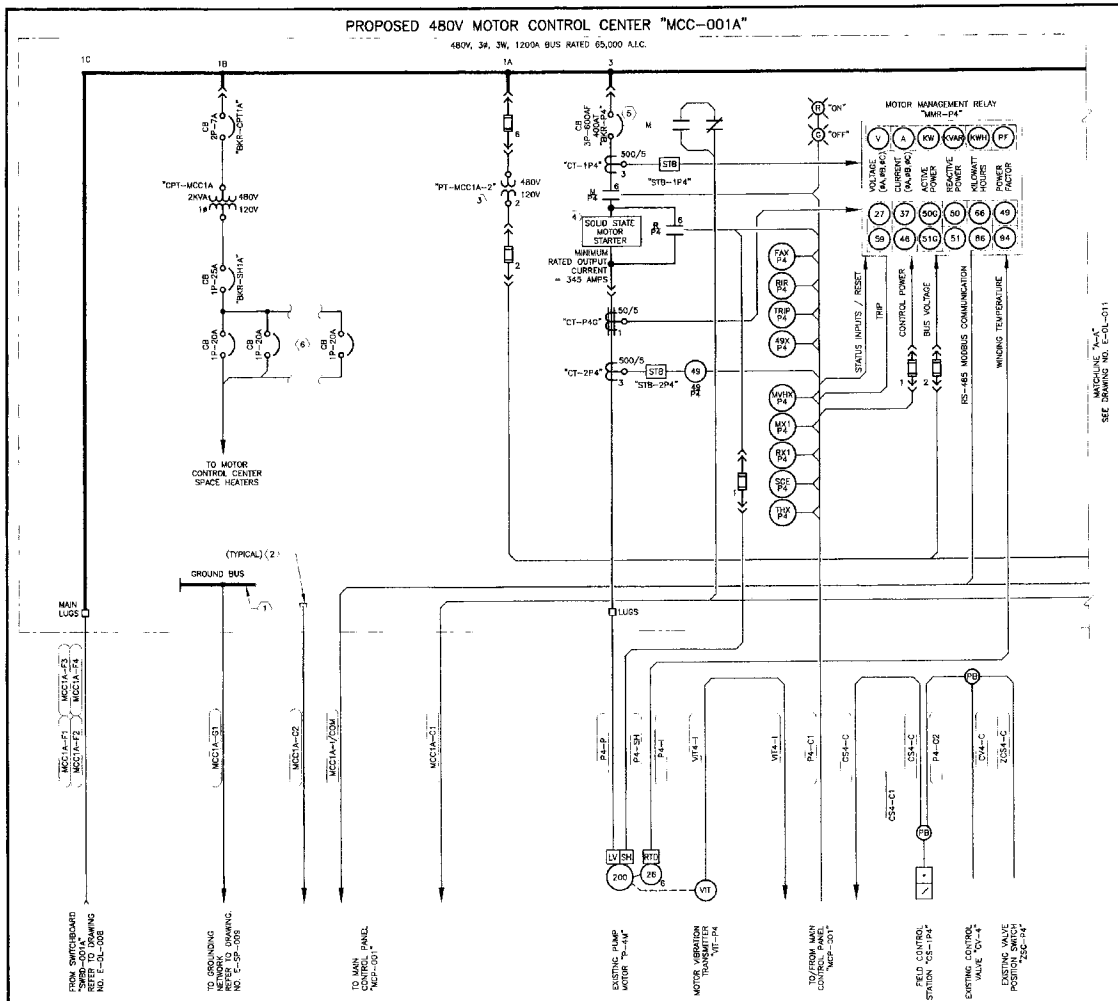
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

480V SWITCHBOARD "SWBD-001A" AND "SWBD-001B"
DETAILED ONE-LINE DIAGRAM
(SHEET 2 OF 2)

2002-210 | SHEET 24 | E-OL-009



KEY NOTES:

1. THE FULL SIZE MOTOR CONTROL CENTER (MCC) GROUND BUS SHALL EXTEND THE ENTIRE LENGTH OF THE MCC.
2. CAP CONDUIT FOR FUTURE USE. REFER TO FUTURE CONDUIT STUB-UP DETAIL ON DRAWING NO. E-DET-004.
3. PROPOSED POTENTIAL TRANSFORMERS SHALL BE SIZED/RATED TO PROVIDE CONTROL POWER TO ALL PROPOSED MOTOR MANAGEMENT RELAYS LOCATED WITHIN MOTOR CONTROL CENTER "MCC-001A"
4. PROPOSED REDUCED VOLTAGE SOLID STATE MOTOR STARTER SHALL HAVE A MINIMUM STEADY STATE OUTPUT CURRENT RATING OF 345 AMPERES AT 480VAC. IN ADDITION, THE CONTRACTOR SHALL INCREASE THE STARTER RATING AS REQUIRED TO FACILITATE THE OPERATION OF THE PROCESS EQUIPMENT UNDER ALL LOADS TO WHICH THE PROCESS EQUIPMENT COULD BE SUBJECTED. REFER TO PUMP NO. 4 CONTROL LOGIC DRAWINGS AND TO CONTRACT SPECIFICATIONS FOR ADDITIONAL INFORMATION RELATED TO THE REDUCED VOLATGE SOLID STATE MOTOR STARTER. CLOSELY AND CAREFULLY COORDINATE ALL RATINGS WITH THE MOTOR CONTROL CENTER MANUFACTURER AND THE PROCESS EQUIPMENT MANUFACTURER AND MAKE ALL FINAL CONNECTIONS.
5. CIRCUIT BREAKER WITH SOLID STATE ELECTRONIC TRIP UNIT. TRIP UNIT SHALL HAVE ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT TRIP FUNCTIONS. FURNISH AND INSTALL NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS FOR MONITORING THE STATUS OF THE CIRCUIT BREAKER. ALSO REFER TO PUMPING UNIT CONTROL SCHEMATICS AND TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MAKE ALL FINAL CONNECTIONS.
6. FURNISH AND INSTALL AN INDIVIDUAL CIRCUIT BREAKER FOR EACH VERTICAL SECTION SPACE HEATER.

GENERAL NOTES:

1. THE ACTUAL REQUIRED SIZE OF THE CONDUIT ENTRANCE AREAS IS TO BE DETERMINED BY THE MANUFACTURER. THE LOCATION AND SIZE OF THE MOTOR CONTROL CENTER, SWITCHBOARD, TRANSFORMER, VARIABLE FREQUENCY DRIVE, ETC., AS APPLICABLE, CONDUIT ENTRANCE AREAS SHALL BE CLOSELY AND CAREFULLY COORDINATED WITH THE CONCRETE FOUNDATION PLANS OF THE ELECTRICAL BUILDING. REFER TO THE APPLICABLE CIVIL/STRUCTURAL/MECHANICAL/ELECTRICAL, ETC. DRAWINGS.
2. THE PROPOSED 480V MOTOR CONTROL CENTER SHOWN HEREIN SHALL BE FRONT ACCESS ONLY
3. LIGHT LINEWORK DENOTES FUTURE OR EXISTING ITEMS AS NOTED. DARK LINEWORK DENOTES PROPOSED ITEMS.
4. NOT ALL EQUIPMENT IS DEPICTED FOR CLARITY

REFERENCE DRAWINGS:

E-OL-007 – E-OL-013 – ONE-LINE DIAGRAMS
E-OL-016 – MCC FRONT ELEVATION
E-FP-004 – EQUIPMENT ARRANGEMENT
E-IWS-002 – POWER MONITORING UNIT WIRING SCHEMATIC
E-CWS-021 – TVSS SURGE PROTECTOR WIRING SCHEMATIC
E-CWS-022 – E-CWS-031 – PUMP MOTOR CONTROL LOGIC
E-PLC-001 – PLC ARCHITECTURE
E-RWS-001 – E-RWS-003 – CONDUIT SCHEMATICS

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

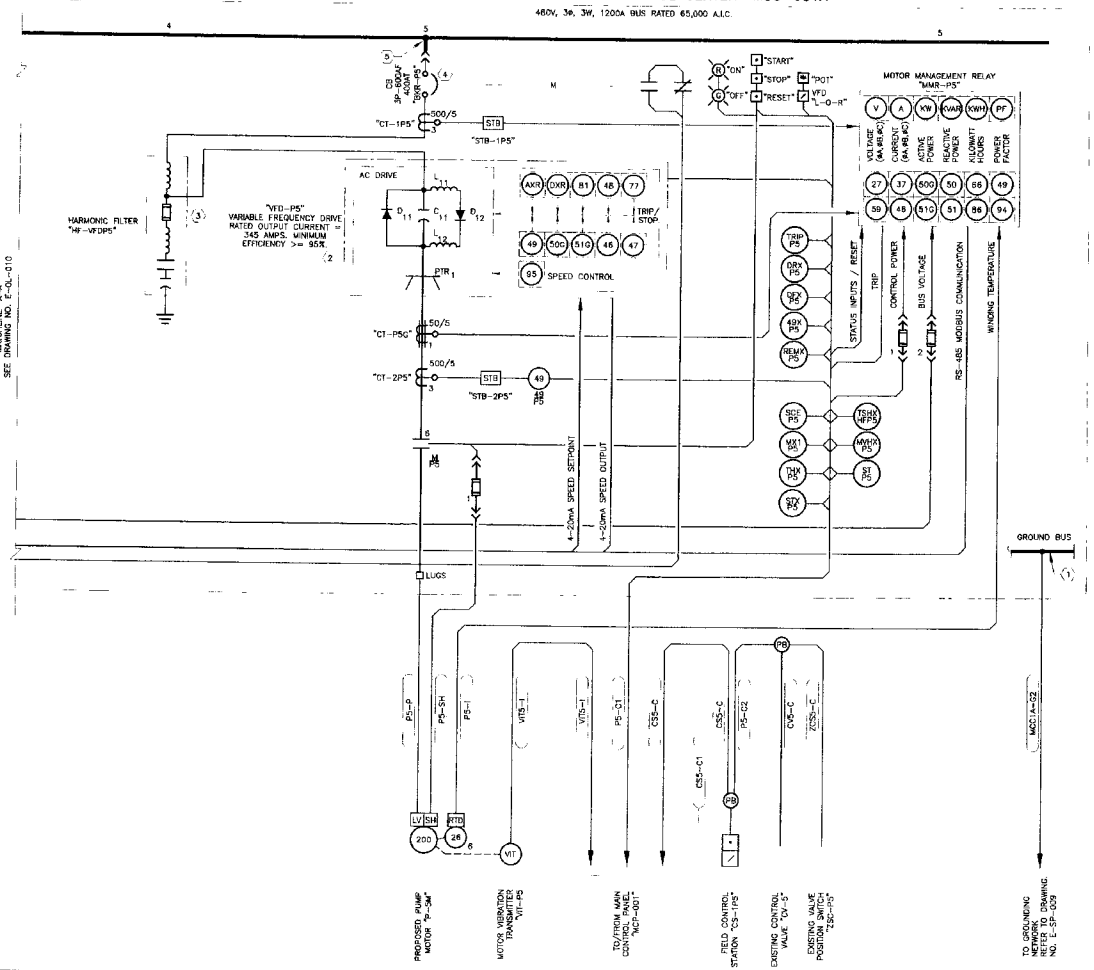
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
FEBRUARY 2005
SEAL NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

480V MOTOR CONTROL CENTER "MCC-001A" DETAILED ONE-LINE DIAGRAM (SHEET 1 OF 2)

PROJ. NO. 2002-210 | SHEET 25 | DWG. E-OL-010



KEY NOTES.

(1) THE FULL SIZE MOTOR CONTROL CENTER (MCC) GROUND BUS SHALL EXTEND THE ENTIRE LENGTH OF THE MCC.

(2) PROPOSED VARIABLE FREQUENCY DRIVE (VFD) SHALL HAVE A MINIMUM OUTPUT CURRENT RATING OF 349 AMPERES AT 480VAC AND SHALL HAVE A MINIMUM EFFICIENCY RATING GREATER THAN OR EQUAL TO 95%. IN ADDITION, THE CONTRACTOR SHALL INCREASE THE VFD RATING AS REQUIRED TO FACILITATE THE OPERATION OF THE PROCESS EQUIPMENT UNDER ALL LOADS TO WHICH THE PROCESS EQUIPMENT COULD BE SUBMITTED. REFER TO PUMP NO. 5 CONTROL LOGIC DRAWINGS FOR ADDITIONAL INFORMATION RELATED TO THE VARIABLE FREQUENCY DRIVE MOTOR STARTER. ALSO REFER TO CONTRACT SPECIFICATIONS FOR ADDITIONAL INFORMATION. CLOSELY AND CAREFULLY COORDINATE ALL RATINGS WITH THE MOTOR CONTROL CENTER MANUFACTURER AND THE PROCESS EQUIPMENT MANUFACTURER AND MAKE ALL FINAL CONNECTIONS.

(3) FURNISH AND INSTALL 480VAC HARMONIC FILTER ASSEMBLY MINIMALLY RATED 480VAC, 363 AMPERE, 80 KVAR. PLEASE NOTE THAT THE MOTOR CONTROL CENTER DIMENSIONS SHALL NOT EXCEED THE DIMENSIONS SHOWN ON THE ELEVATIONS AND FLOOR PLAN DRAWINGS.

(4) CIRCUIT BREAKER WITH SOLID STATE ELECTRONIC TRIP UNIT. TRIP UNIT SHALL HAVE ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT TRIP FUNCTIONS. FURNISH AND INSTALL NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS FOR MONITORING THE STATUS OF THE CIRCUIT BREAKER. ALSO REFER TO PUMPING UNIT CONTROL SCHEMATICS AND TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MAKE ALL FINAL CONNECTIONS.

(5) THE HARMONIC DISTORTION LIMITS AS DESCRIBED IN THE CONTRACT SPECIFICATIONS SHALL BE MEASURED AT THIS POINT. ALSO REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

GENERAL NOTES.

1. THE ACTUAL REQUIRED SIZE OF THE CONDUIT ENTRANCE AREAS IS TO BE DETERMINED BY THE MANUFACTURER. THE LOCATION AND SIZE OF THE MOTOR CONTROL CENTER, SWITCHBOARD, TRANSFORMER, VARIABLE FREQUENCY DRIVE, ETC., AS APPLICABLE, CONDUIT ENTRANCE AREAS SHALL BE CLOSELY AND CAREFULLY COORDINATED WITH THE CONCRETE FOUNDATION PLANS OF THE ELECTRICAL BUILDING. REFER TO THE APPLICABLE CIVIL/STRUCTURAL/MECHANICAL/ELECTRICAL, ETC. DRAWINGS.
2. THE PROPOSED 480V MOTOR CONTROL CENTER SHOWN HEREIN SHALL BE FRONT ACCESS ONLY.
3. LIGHT LINEWORK DENOTES FUTURE OR EXISTING ITEMS AS NOTED. DARK LINEWORK DENOTES PROPOSED ITEMS.
4. NOT ALL EQUIPMENT IS DEPICTED FOR CLARITY.

REFERENCE DRAWINGS.

E-OL-007 – E-OL-013 – ONE-LINE DIAGRAMS

E-OL-016 – MCC FRONT ELEVATION

E-FP-004 – EQUIPMENT ARRANGEMENT

E-CWS-022 – E-CWS-031 – PUMP MOTOR CONTROL LOGIC

E-PLC-001 – PLC ARCHITECTURE

E-RWS-001 – E-RWS-003 – CONDUIT SCHEMATICS

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH FOR SCALE MODIFICATIONS

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED

ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

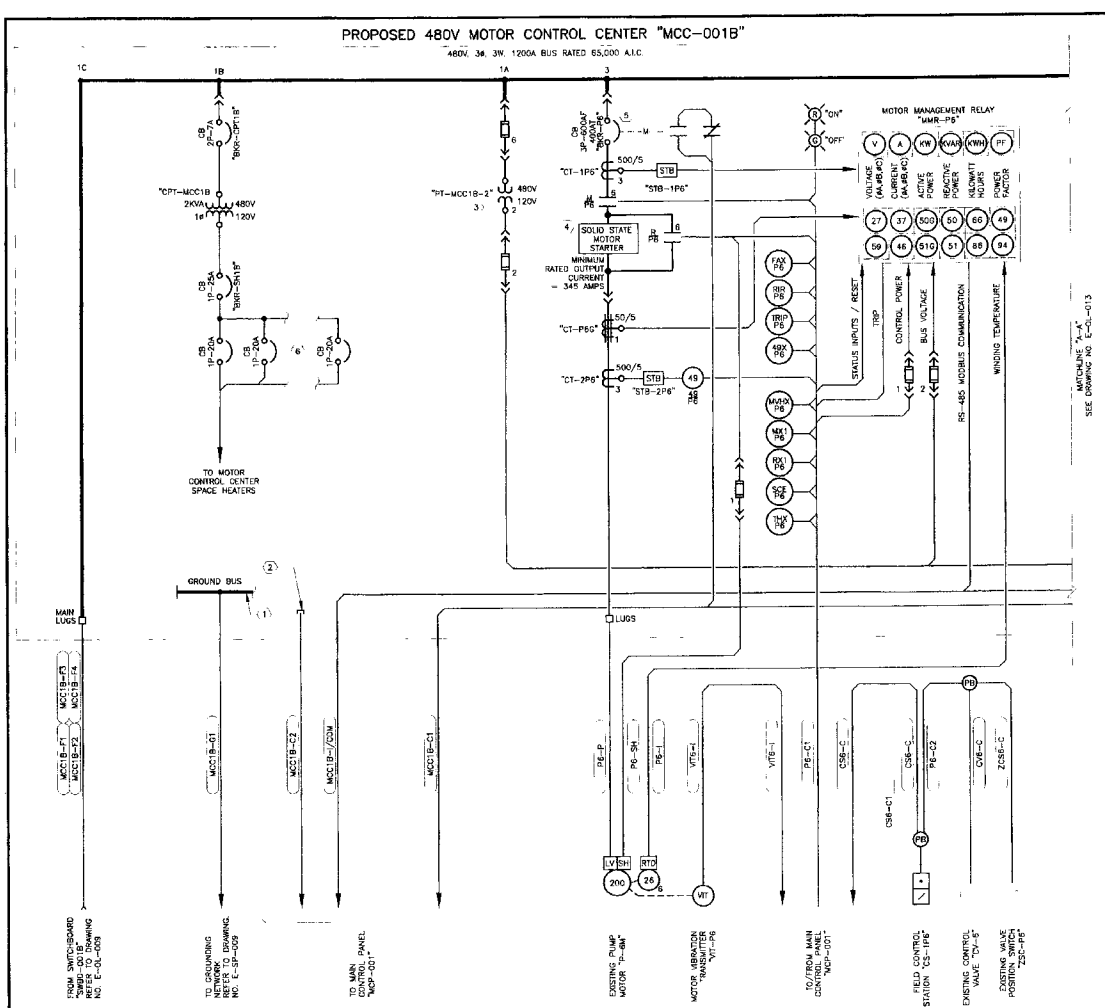
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein, as an instrument of professional service, has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

480V MOTOR CONTROL CENTER "MCC-001A"
DETAILED ONE-LINE DIAGRAM
(SHEET 2 OF 2)

2002-210 | SHEET 26 | E-OL-011



KEY NOTES:

1. THE FULL SIZE MOTOR CONTROL CENTER (MCC) GROUND BUS SHALL EXTEND THE ENTIRE LENGTH OF THE MCC.
2. CAP CONDUIT FOR FUTURE USE. REFER TO FUTURE CONDUIT STUB-UP DETAIL ON DRAWING NO. E-DET-004.
3. PROPOSED POTENTIAL TRANSFORMERS SHALL BE SIZED/RATED TO PROVIDE CONTROL POWER TO ALL PROPOSED MOTOR MANAGEMENT RELAYS LOCATED WITHIN MOTOR CONTROL CENTER "MCC-001A"
4. PROPOSED REDUCED VOLTAGE SOLID STATE MOTOR STARTER SHALL HAVE A MINIMUM STEADY STATE OUTPUT CURRENT RATING OF 345 AMPERES AT 480VAC. IN ADDITION, THE CONTRACTOR SHALL INCREASE THE STARTER RATING AS REQUIRED TO FACILITATE THE OPERATION OF THE PROCESS EQUIPMENT UNDER ALL LOADS TO WHICH THE PROCESS EQUIPMENT COULD BE SUBJECTED. REFER TO PUMP NO. 6 CONTROL LOGIC DRAWINGS AND TO CONTRACT SPECIFICATIONS FOR ADDITIONAL INFORMATION RELATED TO THE REDUCED VOLATGE SOLID STATE MOTOR STARTER. CLOSELY AND CAREFULLY COORDINATE ALL RATINGS WITH THE MOTOR CONTROL CENTER MANUFACTURER AND THE PROCESS EQUIPMENT MANUFACTURER AND MAKE ALL FINAL CONNECTIONS.
5. CIRCUIT BREAKER WITH SOLID STATE ELECTRONIC TRIP UNIT. TRIP UNIT SHALL HAVE ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT TRIP FUNCTIONS. FURNISH AND INSTALL NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS FOR MONITORING THE STATUS OF THE CIRCUIT BREAKER. ALSO REFER TO PUMPING UNIT CONTROL SCHEMATICS AND TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MAKE ALL FINAL CONNECTIONS.
6. FURNISH AND INSTALL AN INDIVIDUAL BRANCH CIRCUIT BREAKER FOR EACH VERTICAL SECTION SPACE HEATER. MOUNT THE BRANCH CIRCUIT BREAKERS IN THE TRANSFORMER SECONDARY CIRCUIT BREAKER COMPARTMENT. USE POWER DISTRIBUTION BLOCKS TO INTERCONNECT THE LINE SIDES OF THE CIRCUIT BREAKERS; DO NOT JUMPER DIRECTLY BETWEEN CIRCUIT BREAKERS.

GENERAL NOTES:

1. THE ACTUAL REQUIRED SIZE OF THE CONDUIT ENTRANCE AREAS IS TO BE DETERMINED BY THE MANUFACTURER. THE LOCATION AND SIZE OF THE MOTOR CONTROL CENTER, SWITCHBOARD, TRANSFORMER, VARIABLE FREQUENCY DRIVE, ETC., AS APPLICABLE, CONDUIT ENTRANCE AREAS SHALL BE CLOSELY AND CAREFULLY COORDINATED WITH THE CONCRETE FOUNDATION PLANS OF THE ELECTRICAL BUILDING. REFER TO THE APPLICABLE CIVIL/STRUCTURAL/MECHANICAL/ELECTRICAL, ETC. DRAWINGS.
2. THE PROPOSED 480V MOTOR CONTROL CENTER SHOWN HEREIN SHALL BE FRONT ACCESS ONLY.
3. LIGHT LINEWORK DENOTES FUTURE OR EXISTING ITEMS AS NOTED. DARK LINEWORK DENOTES PROPOSED ITEMS.
4. NOT ALL EQUIPMENT IS DEPICTED FOR CLARITY.

REFERENCE DRAWINGS:

E-OL-007 – E-OL-013 – ONE-LINE DIAGRAMS
E-OL-018 – MCC FRONT ELEVATION
E-FP-004 – EQUIPMENT ARRANGEMENT
E-IWS-002 – POWER MONITORING UNIT WIRING SCHEMATIC
E-CWS-021 – TVSS SURGE PROTECTOR WIRING SCHEMATIC
E-CWS-032 – E-CWS-041 – PUMP MOTOR CONTROL LOGIC
E-PLC-001 – PLC ARCHITECTURE
E-RWS-001 – E-RWS-003 – CONDUIT SCHEMATICS

K. Harutunian
STATE OF TEXAS
REGISTERED
PROFESSIONAL ENGINEER
2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

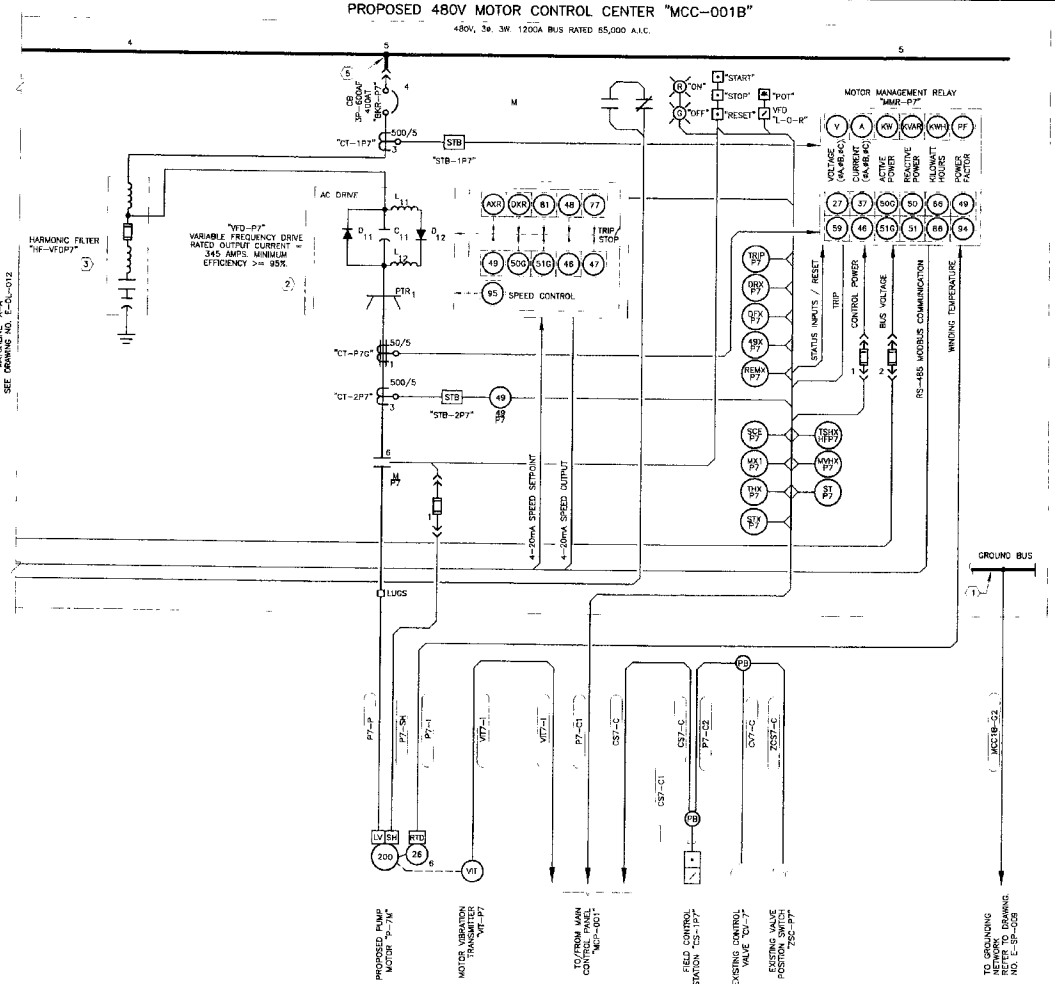
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DESIGNED BY HEI
DRAWN BY HEI
CHECKED BY HEI
DATE FEBRUARY 2005
SCALE NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

480V MOTOR CONTROL CENTER "MCC-001B"
DETAILED ONE-LINE DIAGRAM
(SHEET 1 OF 2)

PROJ. NO. 2002-210 | SHEET 27 | DWG. NO. E-OL-012



KEY NOTES:

1. THE FULL SIZE MOTOR CONTROL CENTER (MCC) GROUND BUS SHALL EXTEND THE ENTIRE LENGTH OF THE MCC.
2. PROPOSED VARIABLE FREQUENCY DRIVE (VFD) SHALL HAVE A MINIMUM OUTPUT CURRENT RATING OF 345 AMPERES AT 480VAC AND SHALL HAVE A MINIMUM EFFICIENCY RATING GREATER THAN OR EQUAL TO 95%. IN ADDITION, THE CONTRACTOR SHALL INCREASE THE VFD RATING AS REQUIRED TO FACILITATE THE OPERATION OF THE PROCESS EQUIPMENT UNDER ALL LOADS TO WHICH THE PROCESS EQUIPMENT COULD BE SUBJECTED. REFER TO PUMP NO. 7 CONTROL LOGIC DRAWINGS FOR ADDITIONAL INFORMATION RELATED TO THE VARIABLE FREQUENCY DRIVE MOTOR STARTER. ALSO REFER TO CONTRACT SPECIFICATIONS FOR ADDITIONAL INFORMATION. CLOSELY AND CAREFULLY COORDINATE ALL RATINGS WITH THE MOTOR CONTROL CENTER MANUFACTURER AND THE PROCESS EQUIPMENT MANUFACTURER AND MAKE ALL FINAL CONNECTIONS.
3. FURNISH AND INSTALL 480VAC HARMONIC FILTER ASSEMBLY MINIMALLY RATED 480VAC, 363 AMPERE, 80 KVAR. PLEASE NOTE THAT THE MOTOR CONTROL CENTER DIMENSIONS SHALL NOT EXCEED THE DIMENSIONS SHOWN ON THE ELEVATIONS AND FLOOR PLAN DRAWINGS.
4. CIRCUIT BREAKER WITH SOLID STATE ELECTRONIC TRIP UNIT. TRIP UNIT SHALL HAVE ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT TRIP FUNCTIONS. FURNISH AND INSTALL NORMALLY OPEN AND NORMALLY CLOSED AUXILIARY CONTACTS FOR MONITORING THE STATUS OF THE CIRCUIT BREAKER. ALSO REFER TO PUMPING UNIT CONTROL SCHEMATICS AND TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND MAKE ALL FINAL CONNECTIONS.
5. THE HARMONIC DISTORTION LIMITS AS DESCRIBED IN THE CONTRACT SPECIFICATIONS SHALL BE MEASURED AT THIS POINT. ALSO REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

GENERAL NOTES:

1. THE ACTUAL REQUIRED SIZE OF THE CONDUIT ENTRANCE AREAS IS TO BE DETERMINED BY THE MANUFACTURER. THE LOCATION AND SIZE OF THE MOTOR CONTROL CENTER, SWITCHBOARD, TRANSFORMER, VARIABLE FREQUENCY DRIVE, ETC., AS APPLICABLE, CONDUIT ENTRANCE AREAS SHALL BE CLOSELY AND CAREFULLY COORDINATED WITH THE CONCRETE FOUNDATION PLANS OF THE ELECTRICAL BUILDING. REFER TO THE APPLICABLE CIVIL/STRUCTURAL/MECHANICAL/ELECTRICAL, ETC. DRAWINGS.
2. THE PROPOSED 480V MOTOR CONTROL CENTER SHOWN HEREIN SHALL BE FRONT ACCESS ONLY.
3. NOT ALL EQUIPMENT IS DEPICTED FOR CLARITY.

REFERENCE DRAWINGS:

E-OL-007 – E-OL-013 – ONE-LINE DIAGRAMS

E-OL-016 – MCC FRONT ELEVATION

E-FP-004 – EQUIPMENT ARRANGEMENT

E-CWS-032 – E-CWS-041 – PUMP MOTOR CONTROL LOGIC

E-PLC-001 – PLC ARCHITECTURE

E-RWS-001 – E-RWS-003 – CONDUIT SCHEMATICS

BAR LENGTH OF MINIMUM DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED

ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

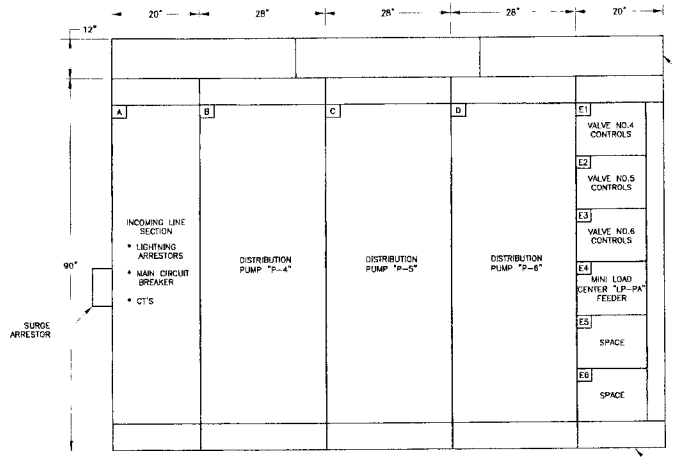
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

480V MOTOR CONTROL CENTER "MCC-001B"
DETAILED ONE-LINE DIAGRAM
(SHEET 2 OF 2)

2002-210 | SHEET 28 | E-OL-013



PULL BOX IS MOUNTED DIRECTLY TO TOP OF MOTOR CONTROL CENTER AND RUNS THE FULL LENGTH.

NO CONCRETE HOUSEKEEPING PAD EXISTS. MCC RESTS DIRECTLY ON FINISHED FLOOR.

EXISTING 480V MOTOR CONTROL CENTER FRONT ELEVATION

SCALE: NTS

GENERAL NOTES.

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT.
2. AN ATTEMPT IS MADE TO SHOW ALL EXISTING EQUIPMENT ON THIS ELECTRICAL EQUIPMENT ELEVATION. REGARDLESS, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTENCE, LOCATION AND TYPE OF EQUIPMENT ACTUALLY INSTALLED IN THE FIELD, INCLUDING APPLICABLE CONDUIT/WIRING FOR ELECTRICAL SERVICE TO EXISTING EQUIPMENT WHETHER SHOWN HERE OR NOT.
3. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT.

REFERENCE DRAWINGS.

E-OL-001 – E-OL-002 – ONE-LINE DIAGRAMS

E-FP-001 – PUMP STATION FLOOR PLAN

HAR. ENGLISH ORIGINAL DRAWING TO ALT. ONE INCH (1) ONLY ACCURATELY

STATE OF TEXAS K. A. HARUTUNIAN 3181 REGISTERED PROFESSIONAL ENGINEER 2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

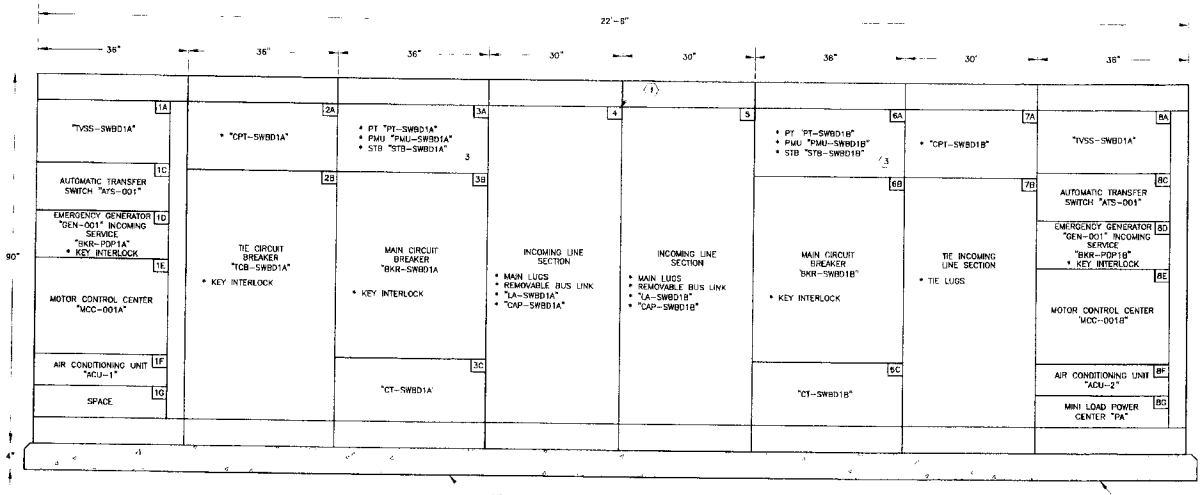
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DESIGNED BY	HEI
DRAWN BY	HEI
CHECKED BY	HEI
DATE	FEBRUARY 2005
SCALE	NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO. 1

480V MOTOR CONTROL CENTER
ELEVATION – EXISTING

PROJECT NO. 2002-210 | SHEET 29 | DWG NO. E-OL-014



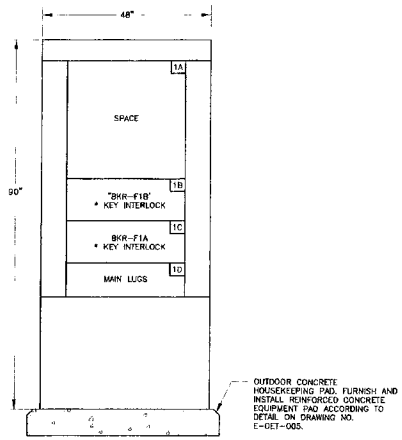
480V SWITCHBOARD "SWBD-001A" FRONT ELEVATION

SCALE: NTS

INDOOR CONCRETE HOUSEKEEPING PAD. FURNISH AND INSTALL REINFORCED CONCRETE EQUIPMENT PAD ACCORDING TO DETAIL ON DRAWING NO. E-DET-005.

480V SWITCHBOARD "SWBD-001B" FRONT ELEVATION

SCALE: NTS



480V POWER DISTRIBUTION PANELBOARD "PDP-001" FRONT ELEVATION

SCALE: NTS

KEY NOTES:

1. SWITCHBOARD "SWBD-001A" AND "SWBD-001B" CONNECT TOGETHER VIA A REMOVABLE BUS LINK BETWEEN SECTIONS FOUR AND FIVE. THIS BUS LINK SHALL BE REMOVABLE TO FACILITATE FUTURE INSTALLATION OF SECOND INCOMING SERVICE.
2. THE CONCRETE HOUSEKEEPING PAD IS CONTINUOUS FOR THE ENTIRE LENGTH OF "SWBD-001A" AND "SWBD-001B"
3. MAXIMUM MOUNTING HEIGHT OF POWER MONITORING UNITS SHALL NOT EXCEED 6'-0" TO TOP OF POWER MONITORING UNIT. IDENTIFY MOUNTING HEIGHT IN SUBMITTALS.

GENERAL NOTES:

1. THE ACTUAL REQUIRED SIZE OF THE CONDUIT ENTRANCE AREAS IS TO BE DETERMINED BY THE MANUFACTURER. THE LOCATION AND SIZE OF THE SWITCHBOARD CONDUIT ENTRANCE AREAS SHALL BE CLOSELY AND CAREFULLY COORDINATED WITH THE CONCRETE FOUNDATION PLANS OF ELECTRICAL BUILDING.
2. ACTUAL SIZE/LAYOUT OF EQUIPMENT TO BE VERIFIED/ COORDINATED WITH MANUFACTURER/STRUCTURAL/ARCHITECTURAL BEFORE ANY CONSTRUCTION COMMENCES.
3. THE PROPOSED 480V SWITCHBOARDS SHOWN HEREIN SHALL BE FRONT ACCESS ONLY
4. LOCATIONS AND SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND ALL POINTS OF CONNECTION PRIOR TO INSTALLATION OF PROPOSED COMPONENTS.

REFERENCE DRAWINGS:

E-OL-007 – OVERALL ONE-LINE DIAGRAM

E-OL-008 – E-OL-009 – SWBD DETAILED ONE-LINE DIAGRAMS

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

6/2/2005

HARUTUNIAN ENGINEERING INCORPORATED

ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO. 1

480V SWITCHBOARDS "SWBD-001A" AND "SWBD-001B" FRONT ELEVATION

2002-210 | SHEET 30 | E-OL-015

KEY NOTES:

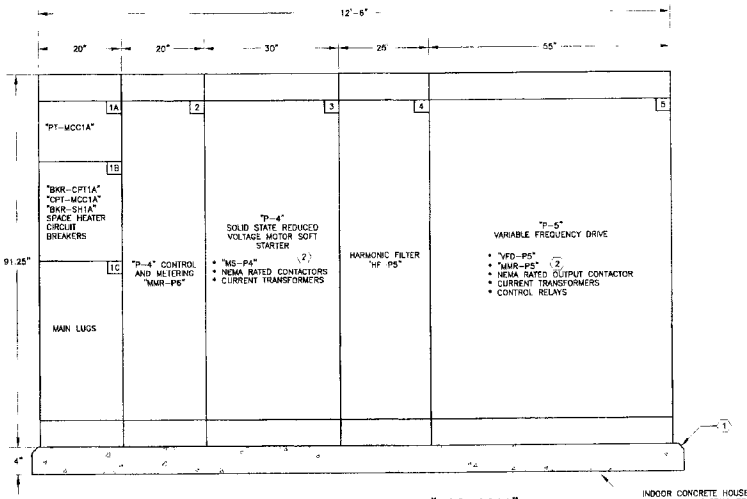
1. THE CONCRETE HOUSEKEEPING PAD IS CONTINUOUS FOR THE ENTIRE LENGTH OF THE MOTOR CONTROL CENTER.
2. MAXIMUM MOUNTING HEIGHT OF MOTOR MANAGEMENT RELAYS SHALL NOT EXCEED 6'-0" TO TOP OF MOTOR MANAGEMENT RELAYS. IDENTIFY MOUNTING HEIGHT IN SUBMITTALS.

GENERAL NOTES:

1. THE ACTUAL REQUIRED SIZE OF THE CONDUIT ENTRANCE AREAS IS TO BE DETERMINED BY THE MANUFACTURER. THE LOCATION AND SIZE OF THE MOTOR CONTROL CENTER CONDUIT ENTRANCE AREAS SHALL BE CLOSELY AND CAREFULLY COORDINATED WITH THE CONCRETE FOUNDATION PLANS OF ELECTRICAL BUILDING.
2. ACTUAL SIZE/LAYOUT OF EQUIPMENT TO BE VERIFIED/ COORDINATED WITH MANUFACTURER/STRUCTURAL/ARCHITECTURAL BEFORE ANY CONSTRUCTION COMMENCES.
3. THE PROPOSED 480V MOTOR CONTROL CENTERS SHOWN HEREIN SHALL BE FRONT ACCESS ONLY
4. LOCATIONS AND SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND ALL POINTS OF CONNECTION PRIOR TO INSTALLATION OF PROPOSED COMPONENTS.

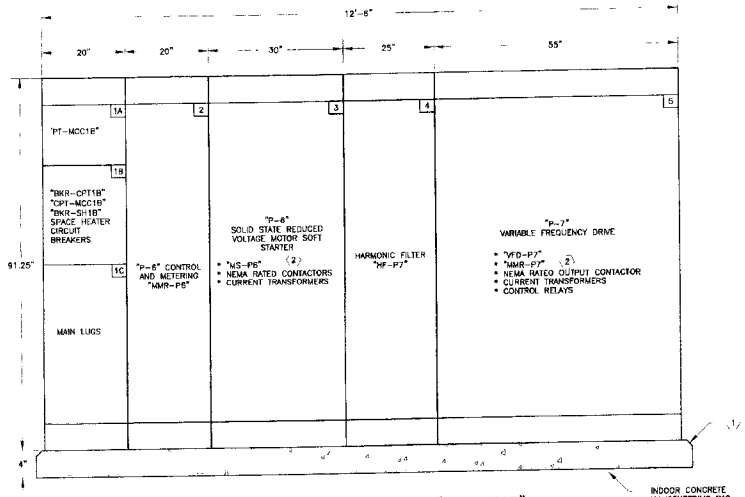
REFERENCE DRAWINGS:

E-OL-010 – E-OL-013 – MCC DETAILED ONE-LINE DIAGRAMS



480V MOTOR CONTROL CENTER "MCC-001A"
FRONT ELEVATION
SCALE: NTS

INDOOR CONCRETE HOUSEKEEPING PAD. FURNISH AND INSTALL REINFORCED CONCRETE EQUIPMENT PAD ACCORDING TO DETAIL ON DRAWING NO. E-DET-005.



480V MOTOR CONTROL CENTER "MCC-001B"
FRONT ELEVATION
SCALE: NTS

INDOOR CONCRETE HOUSEKEEPING PAD. FURNISH AND INSTALL REINFORCED CONCRETE EQUIPMENT PAD ACCORDING TO DETAIL ON DRAWING NO. E-DET-005.

K. A. Harutunian
STATE OF TEXAS
REGISTERED
PROFESSIONAL ENGINEER
2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
NONE

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

480V MOTOR CONTROL CENTERS
"MCC-001A" AND "MCC-001B"
FRONT ELEVATION

PROJECT NO. 2002-210 | SHEET 31 | E-OL-016

PROPOSED CONSTRUCTION SEQUENCE.

1. COORDINATE WITH APPROPRIATE UTILITY AND CIVIL FOR REQUIRED MODIFICATIONS IN THIS AREA TO ALLOW CONSTRUCTION EQUIPMENT ACCESS TO SITE.
2. CAREFULLY PROTECT EXISTING MANHOLE FROM PHYSICAL DAMAGE DUE TO CONSTRUCTION TRAFFIC BY PLACING TEMPORARY STEEL PLATE OVER MANHOLE OR INSTALLING TRAFFIC RATED COVER (COORDINATE WITH AUSTIN ENERGY).
3. INSTALL DUCTBANKS TO EXISTING PUMPS "P-4", "P-5" AND "P-6" AND ASSOCIATED VALVES AND COMPLETE INSTALLATION OF ALL CONDUIT TRANSITIONS TO PUMPS, VALVES, CONTROL STATIONS, ETC. AS COMPLETELY AS POSSIBLE WITHOUT DISCONNECTING EXISTING CONDUIT/WIRE. INCLUDES ALL POWER, CONTROL AND INSTRUMENTATION CONDUIT. PUMPS WILL STILL BE ON EXISTING SYSTEM.
4. INSTALL DUCTBANKS TO PROPOSED PUMP "P-7" AND ASSOCIATED VALVE AND COMPLETE INSTALLATION OF PROPOSED CONDUIT/WIRE TO PUMP "P-7" MOTOR, VALVE OPERATOR AND ALL ASSOCIATED CONTROLS/INSTRUMENTATION. PUMP "P-7" CAN BE COMPLETELY INSTALLED (ELECTRICALLY) AND CONNECTED TO PROPOSED SYSTEM.
5. ALLOW PROCESS/MECHANICAL TO COMPLETE INSTALLATION OF PIPING FROM PUMP "P-7" TO DISCHARGE PIPING AND INSTALLATION OF PROPOSED DISCHARGE PRESSURE INSTRUMENT TAPS.
6. INSTALL PROPOSED UNDERGROUND SYSTEMS IN AND AROUND ELECTRICAL BUILDING, TO INCLUDE PROPOSED GROUNDING NETWORK, DUCTBANKS AND ALL INTERCONNECT UNDERGROUND RACEWAYS. ALSO INCLUDES CONDUIT TO EXISTING PUMP STATION BUILDING FOR SECURITY (FUTURE), TELEMETRY, SUB-FEED TO MINI LOAD CENTER, COMMUNICATIONS, ETC. ALSO INSTALL PROPOSED DUCTBANK ROUTED FROM PROPOSED TRANSFORMER PAD TO PROPOSED SWITCHBOARD LOCATED WITHIN THE ELECTRICAL BUILDING.
7. CONTINUE DUCTBANK ROUTING TO EXISTING METER VAULT AND COMPLETE INSTALLATION OF PROPOSED INSTRUMENTS AT METER VAULT.
8. CONSTRUCT PROPOSED ELECTRICAL BUILDING AND INSTALL ALL ELECTRICAL EQUIPMENT AND SUPPORT/AUXILARY SYSTEMS WITHIN ELECTRICAL BUILDING. INCLUDES LIGHTING, PANELBOARDS, SWITCHBOARDS, MCCS, MAIN CONTROL PANEL, HVAC, ETC. ALSO INCLUDES ANY OVERHEAD RACEWAY SYSTEMS, IF REQUIRED.
9. INSTALL ALL POWER, CONTROL AND INSTRUMENTATION WIRING THAT CAN BE COMPLETELY INSTALLED WITHOUT DISCONNECTING EXISTING EQUIPMENT. ESTABLISH INTERCONNECTION BETWEEN EXISTING TELEMETRY SYSTEM AND PROPOSED ELECTRICAL BUILDING MAIN CONTROL PANEL.
10. SUPPLY TEMPORARY CONTROL POWER FROM EXISTING MINI LOAD CENTER "PA" TO MAIN CONTROL PANEL FOR PERFORMING PRELIMINARY CHECKOUT/TESTING/ SETTING/PROGRAMMING OF CONTROL SYSTEMS AS REQUIRED TO ENSURE RELIABLE OPERATION PRIOR TO CONNECTION OF PROCESS EQUIPMENT.
11. INSTALL PROPOSED DUCTBANK ROUTED FROM EXISTING MANHOLE TO PROPOSED TRANSFORMER PAD LOCATION. COORDINATION WITH AUSTIN ENERGY WILL BE NECESSARY PRIOR TO PENETRATION THE EXISTING MANHOLE WITH PROPOSED DUCTBANK. INSTALL 480V FEEDERS BETWEEN PROPOSED SWITCHBOARD AND PROPOSED SERVICE TRANSFORMER LOCATION.
12. COORDINATE WITH AUSTIN ENERGY FOR DISCONNECTION/REMOVAL OF EXISTING 12.47KV SERVICE CONDUCTORS TO EXISTING TRANSFORMER, PLACEMENT OF PROPOSED TRANSFORMER, TERMINATION OF PROPOSED SECONDARY FEEDERS, AND ENERGIZATION OF SERVICE TO PROPOSED ELECTRICAL BUILDING USING THE EXISTING 12.47KV ELECTRICAL SERVICE RISER POLE. REQUIRES CAREFUL COORDINATION WITH AUSTIN ENERGY AND POSSIBLE MAXIMUM SHUTDOWN DURATION OF TEN HOURS. PUMP STATION CONTINUES TO OPERATE DURING OUTAGE, AND UNTIL SUCH TIME AS PUMP "P-7" IS ENERGIZED, USING EXISTING PUMPS "P-1", "P-2" AND "P-3". MAXIMUM TIME PUMP STATION TO BE OPERATED IN THIS MODE SHALL BE LIMITED TO SEVEN DAYS CONSECUTIVELY. ALSO REFER TO GENERAL NOTE ELEVEN ON THIS DRAWING.
13. PERFORM REQUIRED CHECKOUT/TESTING/SETTING/PROGRAMMING OF SWITCHBOARDS, MOTOR CONTROL CENTERS AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS REQUIRED TO INSURE RELIABLE OPERATION PRIOR TO CONNECTION OF PROCESS EQUIPMENT.
14. INSTALL PROPOSED FEEDERS TO EXISTING PUMP STATION MINI LOAD CENTER "PA". REMOVE TEMPORARY POWER TO/FROM MAIN CONTROL PANEL AND CONNECT EXISTING PUMP STATION MINI LOAD CENTER "PA" TO PROPOSED FEEDERS.
15. PERFORM FINAL CHECKOUT OF PROPOSED PUMP "P-7" AND ITS OPERATION WITH PROPOSED CONTROL SYSTEM TO ENSURE RELIABLE OPERATION THEN PLACE PUMP IN SERVICE.
16. DISCONNECT AND REMOVE EXISTING PUMP "P-4" MOTOR AND ALL ASSOCIATED SUPPLY CONDUIT/WIRE. DISCONNECT AND REMOVE EXISTING CONDUIT/WIRE TO PUMP "P-4" SOLENOID CONTROL VALVE AND POSITION SWITCH. INSTALL PROPOSED PUMP "P-4" MOTOR AND COMPLETE INSTALLATION OF PROPOSED CONDUIT/WIRE TO MOTOR, SOLENOID CONTROL VALVE AND ALL ASSOCIATED CONTROLS/INSTRUMENTATION. PERFORM FINAL CHECKOUT OF PROPOSED PUMP "P-4" AND ITS OPERATION WITH PROPOSED CONTROL SYSTEM TO INSURE RELIABLE OPERATION THEN PLACE PUMP IN SERVICE.
17. DISCONNECT AND REMOVE EXISTING PUMP "P-5" MOTOR AND ALL ASSOCIATED SUPPLY CONDUIT/WIRE. DISCONNECT AND REMOVE EXISTING CONDUIT/WIRE TO PUMP "P-5" SOLENOID CONTROL VALVE AND POSITION SWITCH. INSTALL PROPOSED PUMP "P-5" MOTOR AND COMPLETE INSTALLATION OF PROPOSED CONDUIT/WIRE TO MOTOR, SOLENOID CONTROL VALVE AND ALL ASSOCIATED CONTROLS/INSTRUMENTATION. PERFORM FINAL CHECKOUT OF PROPOSED PUMP "P-5" AND ITS OPERATION WITH PROPOSED CONTROL SYSTEM TO INSURE RELIABLE OPERATION THEN PLACE PUMP IN SERVICE.
18. DISCONNECT AND REMOVE EXISTING PUMP "P-6" MOTOR AND ALL ASSOCIATED SUPPLY CONDUIT/WIRE. DISCONNECT AND REMOVE EXISTING CONDUIT/WIRE TO PUMP "P-6" SOLENOID CONTROL VALVE AND POSITION SWITCH. INSTALL PROPOSED PUMP "P-6" MOTOR AND COMPLETE INSTALLATION OF PROPOSED CONDUIT/WIRE TO MOTOR SOLENOID CONTROL VALVE AND ALL ASSOCIATED CONTROLS/INSTRUMENTATION. PERFORM FINAL CHECKOUT OF PROPOSED PUMP "P-6" AND ITS OPERATION WITH PROPOSED CONTROL SYSTEM TO INSURE RELIABLE OPERATION THEN PLACE PUMP IN SERVICE.

PROPOSED CONSTRUCTION SEQUENCE (CONTINUED).

19. THE MAXIMUM DURATION BETWEEN REMOVING AN EXISTING PUMP FROM SERVICE AND RETURNING THE SAME PUMP TO SERVICE SHALL NOT EXCEED ONE WEEK, AND THE MAXIMUM DURATION BETWEEN ANY TWO PUMPS BEING RETURNED TO SERVICE SHALL NOT EXCEED TWO WEEKS. ALSO REFER TO GENERAL NOTE ELEVATION ON THIS DRAWING.
20. REMOVE EXISTING 480V MOTOR CONTROL CENTER AND ALL ASSOCIATED CONDUIT/WIRE TO/FROM EXISTING MOTOR CONTROL CENTER, INCLUDING PULLBOXES, DISCONNECT SWITCHES, METERING EQUIPMENT, ETC. ALSO COORDINATE WITH AUSTIN ENERGY FOR REMOVAL OF EXISTING 480V TRANSFORMER.
21. COORDINATE WITH AUSTIN ENERGY FOR DISCONNECTING EXISTING OVERHEAD 480V SERVICE. ONCE DISCONNECTED, DISCONNECT AND REMOVE EXISTING ELECTRICAL CONNECTIONS TO EXISTING PUMPS "P-1", "P-2" AND "P-3" AND ALL ASSOCIATED EQUIPMENT, CONDUIT/WIRE, PULLBOXES, FITTINGS, ETC. IN THEIR ENTIRETY.
22. COMPLETE INSTALLATION OF ALL PROCESS INSTRUMENTS AND CONTROL DEVICES/WIRING AND PERFORM COMPLETE FUNCTIONAL TESTING OF ENTIRE SYSTEM ACCORDING TO SPECIFICATIONS.
23. REMOVE EXISTING DUCTBANK BETWEEN EXISTING TRANSFORMER AND EXISTING MANHOLE.

GENERAL NOTES.

1. THIS DRAWING IS INTENDED TO REPRESENT AN OVERVIEW OF EXISTING AND PROPOSED ELECTRICAL AND I/C WORK, RELATIVE TO THE SEQUENCE IN WHICH IT IS TO BE PERFORMED. NOT ALL EFFECTED COMPONENTS ARE SHOWN, AND NOT ALL TASKS REQUIRED TO COMPLETE CONSTRUCTION ARE REPRESENTED. REFER TO DRAWING(S) AND SPECIFICATIONS APPLICABLE TO A SPECIFIC INSTALLATION FOR ADDITIONAL INFORMATION.
2. CLOSELY AND CAREFULLY COORDINATE THE SEQUENCE OF PROPOSED ELECTRICAL AND I/C WORK WITH THE NECESSARY PROCESS/MECHANICAL WORK AND ALL OTHER MECHANICAL/STRUCTURAL/CIVIL WORK REQUIRED TO COMPLETE THE PROPOSED INSTALLATION. ALL WORK SHALL BE PERFORMED WITHIN THE PERIMETER OF THE EXISTING AND PROPOSED FENCELINE. NO TEMPORARY CONSTRUCTION/ ACCESS EASEMENT OUTSIDE OF THE FENCELINE WILL BE AVAILABLE.
3. PROPOSED SEQUENCE OF CONSTRUCTION IS NUMBERED ACCORDING TO STEPS BELIEVED TO BE REQUIRED TO COMPLETE WORK IN AN ORDERLY/LOGICAL MANNER. SOME WORK MAY BE PERFORMED SIMULTANEOUSLY AT CONTRACTOR'S DISCRETION.
4. EXISTING FIELD CONDITIONS AND/OR LIMITATIONS, NATURAL OR MAN-MADE, MAY REQUIRE MODIFICATION/ADDITION/DELETION OF ONE OR MORE STEPS TO THE SEQUENCE OF CONSTRUCTION. THEREFORE, IT IS ESSENTIAL FOR THE CONTRACTOR TO CLOSELY COORDINATE ALL ASPECTS OF PROPOSED WORK WITH ALL OTHER TRADES, ASSOCIATED UTILITIES AND EXISTING FIELD CONDITIONS, TO PROVIDE A COMPLETE AND FUNCTIONAL INSTALLATION AT NO ADDITIONAL COST TO THE OWNER.
5. ALL SHADED LINEWORK IS EXISTING. DARK LINEWORK DENOTES PROPOSED SYSTEMS. DASHED LINEWORK INDICATES APPROXIMATE LOCATION OF UNDERGROUND FEEDERS. REFER TO APPLICABLE DRAWINGS FOR MORE DETAILS ON A SPECIFIC AREA.
6. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING. REFER TO MECHANICAL/STRUCTURAL/CIVIL DRAWINGS FOR EXACT LOCATIONS OF SUCH ITEMS.
7. LOCATIONS/SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
8. EXERCISE EXTREME CARE AS THERE ARE NO AVAILABLE AS BUILT RECORDS IDENTIFYING THE ROUTING OF ALL CONDUIT/WIRING BETWEEN MOTOR CONTROL CENTER, CONTROL PANEL, LIGHTING PANEL, LOADS, ETC. AND THEIR COORDINATION WITH EXISTING ELECTRICAL SYSTEM. CONTRACTOR SHALL VERIFY ROUTING OF EXISTING CONDUIT/WIRING PRIOR TO COMMENCING FULL SCALE DEMOLITION OR RENOVATION ACTIVITIES. FOLLOWING DISCOVERY/VERIFICATION OF EXISTING FIELD CONDITIONS, SHOULD ADJUSTMENTS TO EXISTING OR PROPOSED SYSTEMS BECOME NECESSARY, EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO ENGINEER'S ATTENTION FOR EXECUTION OF NECESSARY ADJUSTMENTS/MODIFICATIONS.
9. WHEN ANY EXISTING EQUIPMENT IS DISCONNECTED, REMOVED, RELOCATED OR OTHERWISE MODIFIED, THE POSSIBILITY MAY EXIST FOR SUCH ACTION TO LEAD TO INTERRUPTION OF PUMP STATION OPERATION. IF EXTREME CARE, VERIFICATION, AND VALIDATION IS NOT CAREFULLY EXERCISED PRIOR TO COMMENCEMENT OF SUCH ACTIVITY. ANY UNSCHEDULED INTERRUPTION TO CONTINUITY OF PUMP STATION OPERATION AT ITS FULLY RATED CAPACITY IS UNACCEPTABLE DURING CONSTRUCTION OF THIS PROJECT. HOWEVER, SHOULD INTERRUPTION OCCUR FOR ANY UNFORESEEN REASON (WHETHER TOTALLY ACCIDENTAL OR DUE TO IMPROPER FIELD INVESTIGATION AND/OR IMPROPER PLANNING PRIOR TO COMMENCEMENT OF ELECTRICAL/INSTRUMENTATION DEMOLITION EFFORT), RESPONSIBLE CONTRACTOR SHALL DETERMINE PROBLEM, CORRECT IT, AND START UP INTERRUPTED EQUIPMENT WITHIN A CERTAIN TIME PERIOD AS DETERMINED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CONTINUOUS, 24-HOUR, LABOR, EQUIPMENT, MATERIAL AND ACCESSORIES UNTIL SUCH TIME THAT ANY AFFECTED EQUIPMENT OPERATES AS PREVIOUSLY OPERATED, AT NO ADDITIONAL COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
10. PERFORM ALL RELATED CALIBRATION, TESTING, MEGGING, LOOP CHECKS, ETC. AS REQUIRED BY MANUFACTURER AND/OR SPECIFICATIONS WHETHER SPECIFICALLY INDICATED HERE OR NOT. SEQUENCE OF CONSTRUCTION ASSUMES CONTRACTOR COMPLETION OF REQUIRED TESTING AT TIME OF INSTALLATION AND/OR AS SPECIFIED.
11. DURATION OF OUTAGES/SHUTDOWNS SHALL BE APPROVED BY OWNER PRIOR TO OUTAGE/SHUTDOWN. DURATION TIMES ARE SUBJECT TO CHANGE DURING CONSTRUCTION. CONTRACTOR SHALL ADHERE TO DURATION TIMES OF OUTAGES/SHUTDOWNS AND PERFORM THE WORK AT NO ADDITIONAL COST TO THE OWNER.

BAR IS 1 INCH ON ORIGINAL DRAWING. IF NOT 1 INCH, ADJUST SCALE ACCORDINGLY

2/9/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 300
AUSTIN, TEXAS 78752

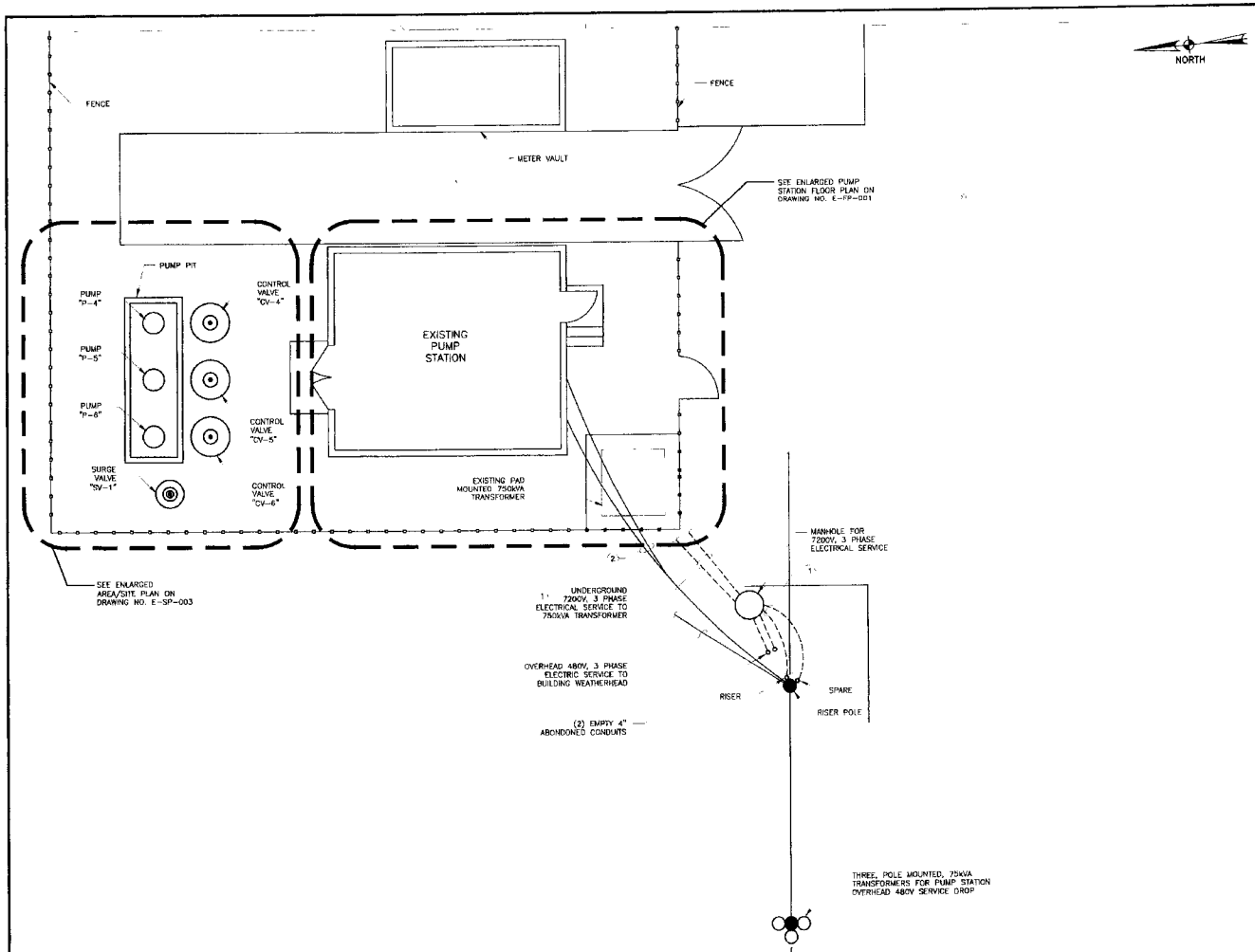
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DESIGNED BY HEI
DRAWN BY HEI
CHECKED BY HEI
REVIEW DATE FEBRUARY 2005
SCALE 3/16" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

GENERAL ELECTRICAL AND I&C
CONSTRUCTION SEQUENCE PLAN

2002-210 | SHEET 32 | E-SP-001



KEY NOTES:

1. (2) TWO PRIMARY SERVICE 4" CONDUITS WITH (1) ONE FOR SERVICE CONDUCTORS AND OTHER CONDUIT AS SPARE.
2. OVERHEAD TELEPHONE SERVICE TO PUMP STATION.

GENERAL NOTES:

1. ALL DARK, DASHED OR SOLID LINE WORK DENOTES EXISTING. DASHED LINE WORK DENOTES APPROXIMATE LOCATION OF UNDERGROUND FEEDERS.
2. NOT ALL ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/ CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING. REFER TO MECHANICAL/STRUCTURAL/ CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
4. LOCATIONS/SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.

REFERENCE DRAWINGS:

E-FP-001 – ENLARGED PUMP STATION FLOOR PLAN
E-SP-001 – CONSTRUCTION SEQUENCE
E-SP-003 – ENLARGED AREA/SITE PLAN
E-OL-001 – E-OL-003 – ONE-LINE DIAGRAMS

STATE OF TEXAS
REGISTERED PROFESSIONAL ENGINEER
2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

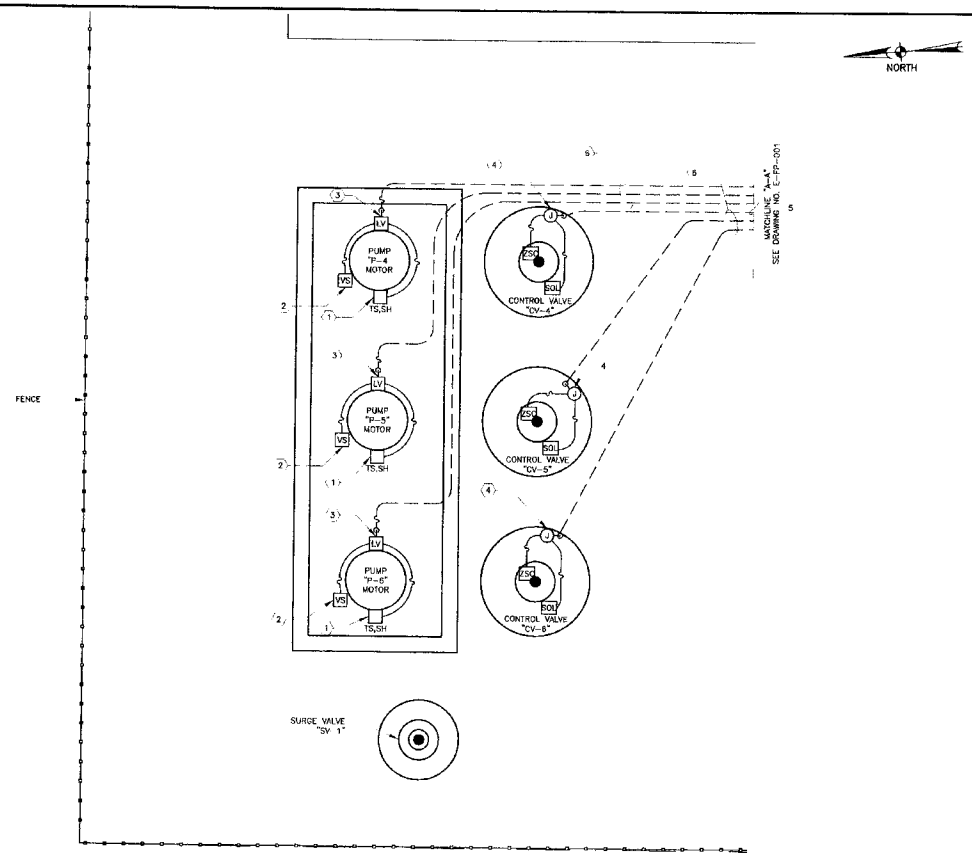
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
3/16" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

OVERALL SITE PLAN – EXISTING

2002-210 | SHEET 33 | E-SP-002



KEY NOTES:

(1) TERMINATION BOX FOR SPACE HEATER AND THERMAL CUT OUTS FOR PUMP MOTOR.

(2) VIBRATION SWITCH TERMINATION BOX. TERMINATION BOX HAS BEEN REMOVED FROM PUMP "P-6" MOTOR.

(3) PUMP MOTOR LOW VOLTAGE TERMINATION BOX. ALSO USED FOR CONTROL WIRING PULLBOX.

(4) VALVE CONTROL WIRING CONNECTION BOX.

(5) CONDUIT/WIRE ROUTES UNDERGROUND TO/FROM MOTOR CONTROL CENTER VIA PULL BOX MOUNTED ON OUTSIDE OF NORTH WALL OF EXISTING PUMP STATION.

(6) EXACT ROUTING/CONFIGURATION FOR UNDERGROUND CONDUIT IS NOT SHOWN. ROUTING IS SHOWN SCHEMATICALLY AND SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO PERFORMING WORK RELATED TO PUMPS/VALVES.

GENERAL NOTES:

1 ALL ITEMS SHOWN ON THIS DRAWING ARE EXISTING. DASHED LINE WORK DENOTES APPROXIMATE LOCATION OF UNDERGROUND FEEDERS.

2 NOT ALL ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.

3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING REFER TO MECHANICAL/STRUCTURAL/ CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.

4. LOCATIONS/SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.

REFERENCE DRAWINGS:

E-OL-001 – E-OL-003 – ONE-LINE DIAGRAMS

E-SP-001 – CONSTRUCTION SEQUENCE

E-SP-002 – OVERALL SITE PLAN

BAR LENGTH ON ORIGINAL DRAWING IS ONE INCH. AT 1/2" SCALE ADJUST ACCORDINGLY

K. A. Harutunian
STATE OF TEXAS
REGISTERED
ENGINEERING PROFESSIONAL
2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

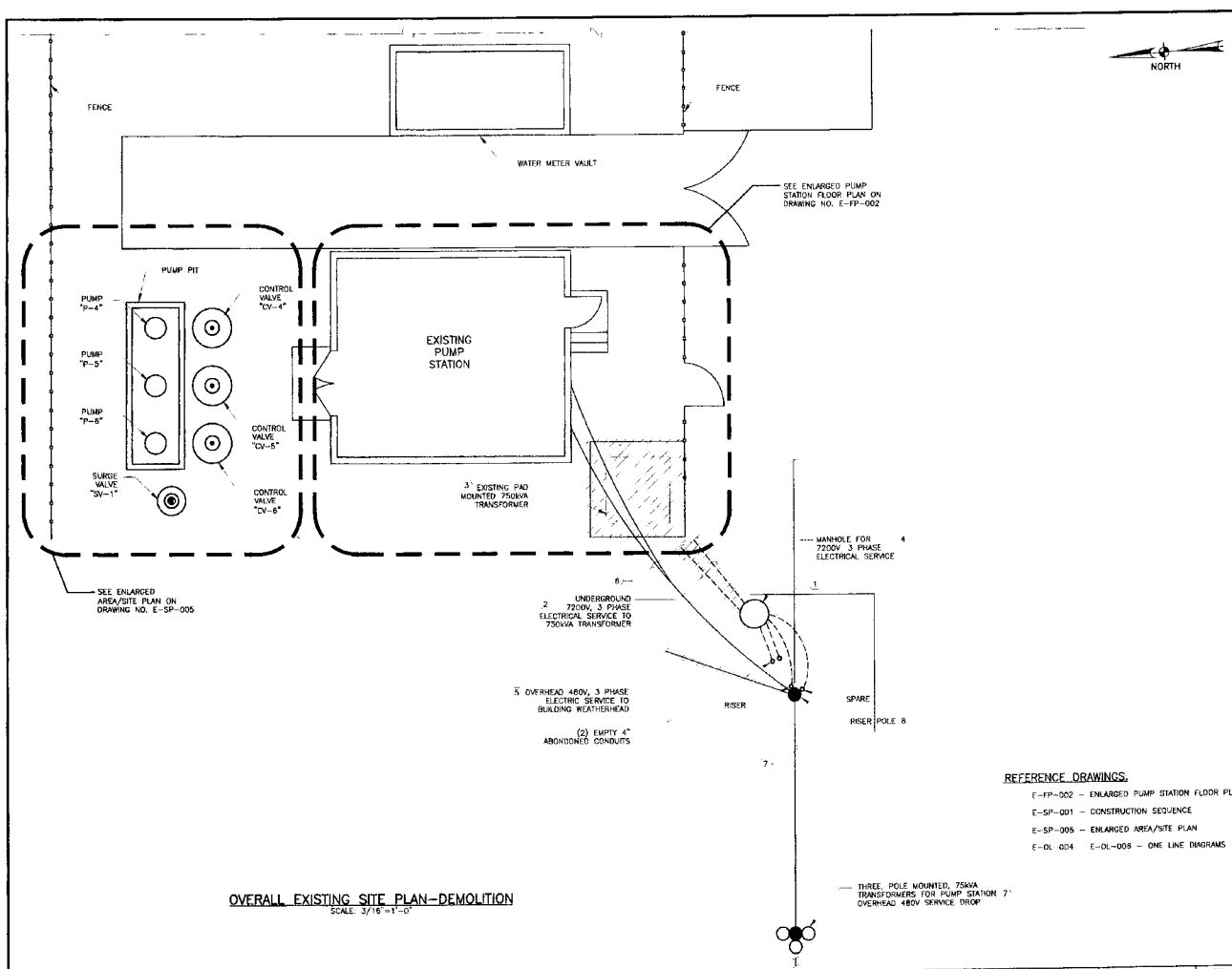
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DR.	HEI
CK.	HEI
APPR.	HEI
SUB.	FEBRUARY 2005
SCALE	1/2" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO. 1

ENLARGED PUMP AREA
SITE PLAN – EXISTING

2002-210	SHEET 34	E-SP-003



OVERALL EXISTING SITE PLAN-DEMOLITION

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

KEY NOTES:

1. (2) TWO PRIMARY SERVICE 4" CONDUITS WITH (1) ONE FOR SERVICE CONDUCTORS AND OTHER CONDUIT AS SPARE. EXISTING CONDUCTORS SHALL BE REMOVED AND REPLACED DURING RENOVATION ACTIVITIES BY UTILITY, TO ENERGIZE PROPOSED TRANSFORMER.
2. EXISTING CONDUITS AND DUCTBANK SHALL BE REMOVED BY CONTRACTOR IN ACCORDANCE WITH CONSTRUCTION SEQUENCE. REFER TO DRAWING NO. E-SP-001 FOR MORE INFORMATION.
3. EXISTING TRANSFORMER REMOVED BY UTILITY AND CONCRETE PAD DEMOLISHED BY CONTRACTOR.
4. EXISTING MANHOLE SHALL REMAIN.
5. TO BE REMOVED BY AUSTIN ENERGY
6. EXISTING OVERHEAD TELEPHONE SERVICE TO REMAIN.
7. REMOVAL OF POLE MOUNTED TRANSFORMERS AND OVERHEAD 480V, 3 PHASE ELECTRIC SERVICE BY AUSTIN ENERGY
8. RISER POLE TO REMAIN.

GENERAL NOTES.

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT.
2. NOT ALL ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/ CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING. REFER TO MECHANICAL/STRUCTURAL/ CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
4. LOCATIONS/SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
5. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT.
6. THE INFORMATION SHOWN HEREIN IS BASED ON THE INFORMATION PROVIDED DURING DESIGN AND IS BELIEVED TO BE ACCURATE, REGARDLESS. THIS INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONFIRMING OR FINDING THE ASSOCIATED MOTOR CONTROL CENTER/ CIRCUIT NUMBER/PANELBOARD/ETC. SERVING THE EXISITING LOAD. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION TO ELIMINATE HAZARDS IN DISCONNECTING ANY DEVICE FROM AN ELECTRICAL CIRCUIT.
7. EXERCISE EXTREME CARE AS THERE ARE NO AVAILABLE AS BUILT RECORDS IDENTIFYING THE ROUTING OF ALL CONDUIT/WIRING BETWEEN MOTOR CONTROL CENTER, CONTROL PANEL, LIGHTING PANEL, LOADS, ETC. AND THEIR COORDINATION WITH EXISTING ELECTRICAL SYSTEM. CONTRACTOR SHALL VERIFY ROUTING OF EXISTING CONDUIT/WIRING PRIOR TO COMMENCING FULL SCALE DEMOLITION OR RENOVATION ACTIVITIES. FOLLOWING DISCOVERY/ VERIFICATION OF EXISTING FIELD CONDITIONS, SHOULD ADJUSTMENTS TO EXISTING OR PROPOSED SYSTEMS BECOME NECESSARY, EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO ENGINEER'S ATTENTION FOR EXECUTION OF NECESSARY ADJUSTMENTS/MODIFICATIONS.
8. WHEN ANY EXISTING EQUIPMENT IS DISCONNECTED, REMOVED, RELOCATED OR OTHERWISE MODIFIED, THE POSSIBILITY MAY EXIST FOR SUCH ACTION TO LEAD TO INTERRUPTION OF PUMP STATION OPERATION, IF EXTREME CARE, VERIFICATION, AND VALIDATION IS NOT CAREFULLY EXERCISED PRIOR TO COMMENCEMENT OF SUCH ACTIVITY. ANY UNSCHEDULED INTERRUPTION TO CONTINUITY OF PUMP STATION OPERATION AT ITS FULLY RATED CAPACITY IS UNACCEPTABLE DURING CONSTRUCTION OF THIS PROJECT. HOWEVER, SHOULD INTERRUPTION OCCUR FOR ANY UNFORESEEN REASON (WHETHER TOTALLY ACCIDENTAL OR DUE TO IMPROPER FIELD INVESTIGATION AND/OR IMPROPER PLANNING PRIOR TO COMMENCEMENT OF ELECTRICAL/INSTRUMENTATION DEMOLITION EFFORT), RESPONSIBLE CONTRACTOR SHALL DETERMINE PROBLEM, CORRECT IT, AND START UP INTERRUPTED EQUIPMENT WITHIN A CERTAIN TIME PERIOD AS DETERMINED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CONTINUOUS, 24-HOUR; LABOR, EQUIPMENT, MATERIAL AND ACCESSORIES UNTIL SUCH TIME THAT ANY AFFECTED EQUIPMENT OPERATES AS PREVIOUSLY OPERATED, AT NO ADDITIONAL COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
9. CROSSHATCHED LINEWORK DENOTES EQUIPMENT TO BE DEMOLISHED UNLESS OTHERWISE NOTED AND SHALL BE REMOVED ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE ON DRAWING (E-SP-001). ALL DEMOLITION ACTIVITIES SHALL ALSO BE FULLY COORDINATED WITH CIVIL/ PROCESS/MECHANICAL/STRUCTURAL/ETC., DEMOLITION ACTIVITIES. ALL DEMOLISHED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER. RELOCATE ALL DEMOLISHED ITEMS TO LOCATION(S) SPECIFIED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
10. REMOVE ALL ASSOCIATED MOUNTING HARDWARE, PULLBOXES, HANGERS, STRAPS, SUPPORT CHANNELS, RODS, ETC. FOR ITEMS TO BE DEMOLISHED, UNLESS OTHERWISE NOTED OR SUCH REMOVAL WOULD COMPROMISE THE SUPPORT OF ITEMS TO REMAIN IN PLACE.

REFERENCE DRAWINGS.

E-FP-002 – ENLARGED PUMP STATION FLOOR PLAN
E-SP-001 – CONSTRUCTION SEQUENCE
E-SP-005 – ENLARGED AREA/SITE PLAN
E-DL-004 E-DL-008 – ONE LINE DIAGRAMS

BAR LENGTH ON ORIGINAL DRAWING IS 1" IF NOT ADJUST SCALE ACCORDINGLY

STATE OF TEXAS REGISTERED PROFESSIONAL ENGINEER 2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

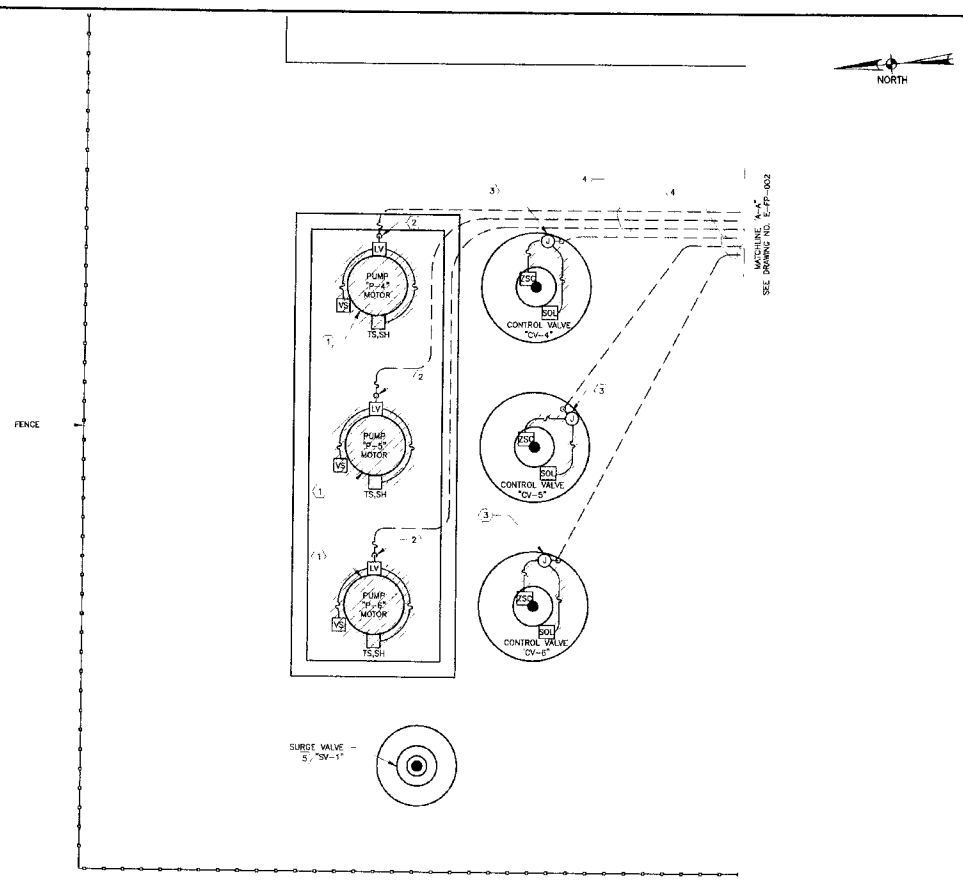
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DR.	HEI
CK.	HEI
DSN.	HEI
DATE	FEBRUARY 2005
SCALE	3/16" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO 1

OVERALL SITE PLAN – DEMOLITION

J.O.	2002-210	SHEET 35	DW. E-SP-004



KEY NOTES:

1. DISCONNECT AND REMOVE EXISTING PUMP MOTOR IN ITS ENTIRETY ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE.
2. DISCONNECT AND REMOVE EXISTING WIRE FROM CONDUIT. CUT CONDUIT AT PIT FLAVOR AND FINISH ACCORDING TO DETAILS ON DRAWING NO. E-DET-012. REMAINING UNDERGROUND CONDUIT TO BE ABANDONED IN PLACE.
3. DISCONNECT AND REMOVE EXISTING VALVE CONTROL WIRING CONNECTION BOX AND ASSOCIATED CONDUIT/WIRE TO SOLENOID AND POSITION SWITCHES. REMOVE EXISTING WIRE FROM INCOMING CONDUIT AND CUT CONDUIT FLUSH WITH VALVE BOX. FINISH/CAP CONDUIT SIMILAR TO DETAILS ON DRAWING NO. E-DET-012.
4. REMAINING UNDERGROUND CONDUIT TO BE ABANDONED IN PLACE.
5. SURGE VALVE TO REMAIN SHOWN FOR REFERENCE ONLY

GENERAL NOTES:

1. ALL EQUIPMENT DEPICTED ON THIS DRAWING IS EXISTING. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT
2. NOT ALL ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/STRUCTURAL/CIVIL/ MECHANICAL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/ CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING REFER TO MECHANICAL/STRUCTURAL/ CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
4. LOCATIONS/SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
5. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT
6. THE INFORMATION SHOWN HEREIN IS BASED ON THE INFORMATION PROVIDED DURING DESIGN AND IS BELIEVED TO BE ACCURATE. REGARDLESS, THIS INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONFIRMING OR FINDING THE ASSOCIATED MOTOR CONTROL CENTER/ CIRCUIT NUMBER/PANELBOARD/ETC., SERVING THE EXISTING LOAD. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION TO ELIMINATE HAZARDS IN DISCONNECTING ANY DEVICE FROM AN ELECTRICAL CIRCUIT
7. EXERCISE EXTREME CARE AS THERE ARE NO AVAILABLE AS BUILT RECORDS IDENTIFYING THE ROUTING OF ALL CONDUIT/WIRING BETWEEN MOTOR CONTROL CENTER, CONTROL PANEL, LIGHTING PANEL, LOADS, ETC. AND THEIR COORDINATION WITH EXISTING ELECTRICAL SYSTEM. CONTRACTOR SHALL VERIFY ROUTING OF EXISTING CONDUIT/WIRING PRIOR TO COMMENCING FULL SCALE DEMOLITION OR RENOVATION ACTIVITIES. FOLLOWING DISCOVERY/ VERIFICATION OF EXISTING FIELD CONDITIONS, SHOULD ADJUSTMENTS TO EXISTING OR PROPOSED SYSTEMS BECOME NECESSARY, EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO ENGINEER'S ATTENTION FOR EXECUTION OF NECESSARY ADJUSTMENTS/MODIFICATIONS.
8. WHEN ANY EXISTING EQUIPMENT IS DISCONNECTED, REMOVED, RELOCATED OR OTHERWISE MODIFIED, THE POSSIBILITY MAY EXIST FOR SUCH ACTION TO LEAD TO INTERRUPTION OF PUMP STATION OPERATION. IF EXTREME CARE, VERIFICATION, AND VALIDATION IS NOT CAREFULLY EXERCISED PRIOR TO COMMENCEMENT OF SUCH ACTIVITY ANY UNSCHEDULED INTERRUPTION TO CONTINUITY OF PUMP STATION OPERATION AT ITS FULLY RATED CAPACITY IS UNACCEPTABLE DURING CONSTRUCTION OF THIS PROJECT. HOWEVER, SHOULD INTERRUPTION OCCUR FOR ANY UNFORESEEN REASON (WHETHER TOTALLY ACCIDENTAL OR DUE TO IMPROPER FIELD INVESTIGATION AND/OR IMPROPER PLANNING PRIOR TO COMMENCEMENT OF ELECTRICAL/INSTRUMENTATION DEMOLITION EFFORT), RESPONSIBLE CONTRACTOR SHALL DETERMINE PROBLEM, CORRECT IT, AND START UP INTERRUPTED EQUIPMENT WITHIN A CERTAIN TIME PERIOD AS DETERMINED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CONTINUOUS, 24-HOUR, LABOR, EQUIPMENT, MATERIAL AND ACCESSORIES UNTIL SUCH TIME THAT ANY AFFECTED EQUIPMENT OPERATES AS PREVIOUSLY OPERATED, AT NO ADDITIONAL COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
9. CROSSHATCHED LINEWORK DENOTES EQUIPMENT TO BE DEMOLISHED UNLESS OTHERWISE NOTED AND SHALL BE REMOVED ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE ON DRAWING (E-SP-001). ALL DEMOLITION ACTIVITIES SHALL ALSO BE FULLY COORDINATED WITH CIVIL/ PROCESS/MECHANICAL/STRUCTURAL/ETC., DEMOLITION ACTIVITIES. ALL DEMOLISHED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER. RELOCATE ALL DEMOLISHED ITEMS TO LOCATION(S) SPECIFIED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
10. REMOVE ALL ASSOCIATED MOUNTING HARDWARE, PULLBOXES, HANGERS, STRAPS, SUPPORT CHANNELS, RODS, ETC. FOR ITEMS TO BE DEMOLISHED, UNLESS OTHERWISE NOTED OR SUCH REMOVAL WOULD COMPROMISE THE SUPPORT OF ITEMS TO REMAIN IN PLACE.

REFERENCE DRAWINGS:

E-OL-004 – E-OL-006 – ONE-LINE DIAGRAMS

E-SP-001 – CONSTRUCTION SEQUENCE

E-SP-004 – OVERALL SITE PLAN

HARUTUNIAN ENGINEERING INCORPORATED

ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

REUSE OF DOCUMENTS

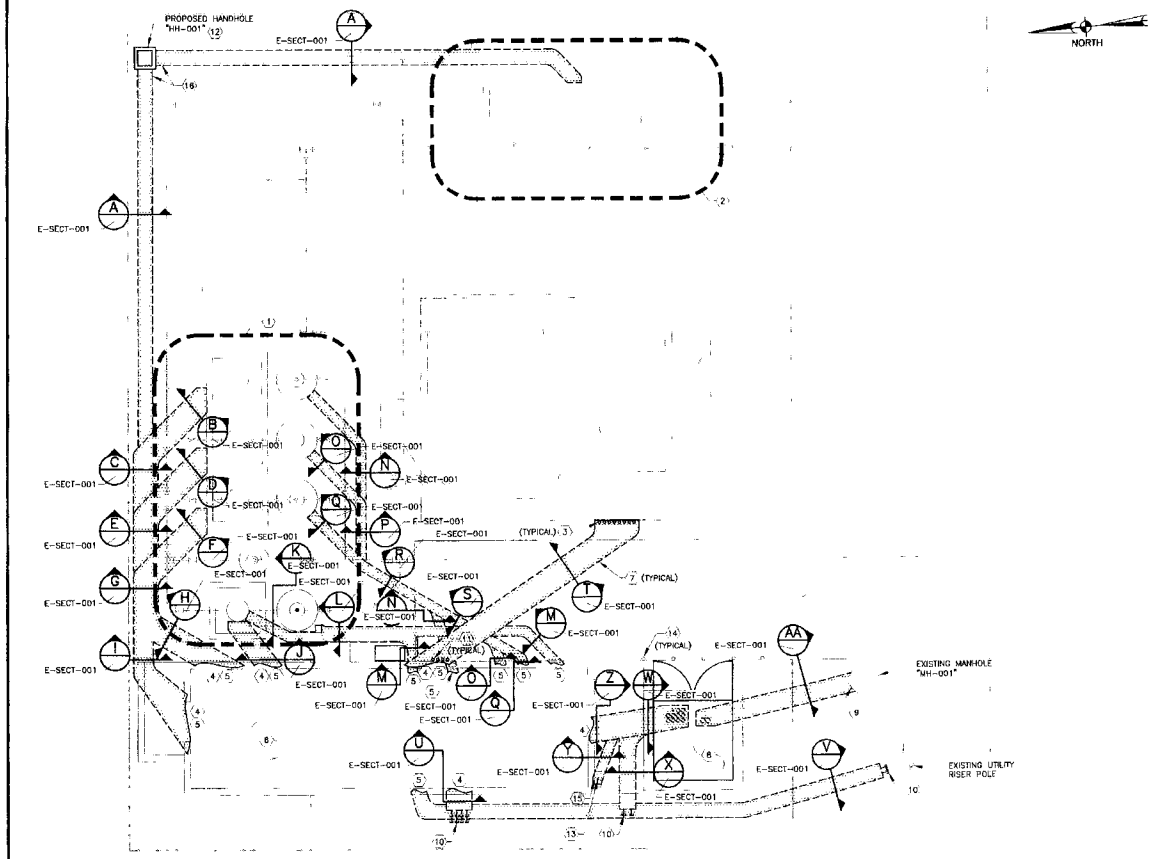
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
FEBRUARY 2005
1/2" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

ENLARGED PUMP AREA
SITE PLAN – DEMOLITION

2002-210 | SHEET 36 | E-SP-005



KEY NOTES:

(1) REFER TO ENLARGED PUMP AREA SITE PLAN ON DRAWING NO. E-SP-007.

(2) REFER TO ENLARGED METER VAULT AREA SITE PLAN ON DRAWING NO. E-SP-008.

(3) REFER TO ENLARGED PUMP STATION FLOOR PLAN ON DRAWING NO. E-FP-003 FOR CONTINUATION OF CONDUITS.

(4) REFER TO ELECTRICAL BUILDING POWER FLOOR PLAN ON DRAWING NO. E-FP-005 FOR CONTINUATION OF DUCT BANK.

(5) REFER TO ELECTRICAL BUILDING INSTRUMENTATION AND CONTROLS FLOOR PLAN ON DRAWING NO. E-FP-007 FOR CONTINUATION OF DUCT BANK.

(6) REFER TO ELECTRICAL BUILDING FLOOR PLANS FOR LOCATION OF ELECTRICAL EQUIPMENT WITHIN THE ELECTRICAL BUILDING AND CONTINUATION OF DUCTBANKS AND INTERCONNECT CONDUIT/WIRE SYSTEMS.

(7) UNDERGROUND ELECTRICAL DUCT BANK PER APPLICABLE SECTIONS ON DRAWING NOs. E-SECT-001 – E-SECT-004 AND PER APPLICABLE DETAILS ON DRAWING NO. E-DET-011. DUCT BANK CONFIGURATION MAY VARY ALONG LENGTH OF DUCT BANK DUE TO COORDINATION WITH EXISTING AND PROPOSED PROCESS/MECHANICAL PIPING AND OTHER EXISTING SYSTEMS/CONDITIONS TO BE DISCOVERED IN THE FIELD.

(8) TRANSFORMER IS FURNISHED AND INSTALLED BY AUSTIN ENERGY. CONTRACTOR SHALL COORDINATE INSTALLATION OF INCOMING FEEDERS AND TRANSFORMERS WITH AUSTIN ENERGY. CONTRACTOR TO PROVIDE AND INSTALL TRANSFORMER EQUIPMENT PAD, UNDERGROUND PRIMARY FEEDER DUCTBANK SYSTEM, AND UNDERGROUND SECONDARY FEEDER DUCTBANK SYSTEM. CONTRACTOR SHALL FURNISH AND INSTALL SECONDARY 480V FEEDERS AND CONDUIT TO/FROM TRANSFORMER "XFMR-001A" AND PROPOSED SWITCHBOARD "SWBD-001A". REFER TO DRAWING NO. E-DET-007 FOR DETAILS ON TRANSFORMER PAD INSTALLATION AND CONDUIT STUB-UP LOCATION/CONFIGURATION. CONTRACTOR SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE AUSTIN ENERGY CRITERIA MANUAL FOR PROPOSED TRANSFORMER/CONDUIT/PAD/METER INSTALLATION.

(9) PROPOSED CONDUITS ROUTE IN PROPOSED PRIMARY DUCTBANK AND PENETRATE EXISTING MANHOLE "MH-001". CONTRACTOR SHALL PROVIDE UNDERGROUND PRIMARY DUCTBANK SYSTEM TO/FROM EXISTING MANHOLE "MH-001" TO/FROM PROPOSED TRANSFORMER. CAREFULLY COORDINATE PENETRATION AND ASSOCIATED POWER OUTAGE REQUIREMENTS WITH AUSTIN ENERGY. PENETRATION OF EXISTING PULLBOX WITH ENERGIZED CABLES WITHIN PULLBOX SHALL BE PERFORMED BY AUSTIN ENERGY UNLESS OTHERWISE APPROVED (BY AUSTIN ENERGY) TO BE PERFORMED BY CONTRACTOR. AUSTIN ENERGY TO PROVIDE, INSTALL AND TERMINATE THE 12,470V SERVICE FEEDERS TO THE PAD MOUNTED TRANSFORMER "XFMR-001A". CLOSELY AND CAREFULLY COORDINATE WITH AUSTIN ENERGY.

(10) PROPOSED EMPTY SPARE CONDUITS STUBBED OUT AND CAPPED PER APPLICABLE DETAILS ON DRAWING NO. E-DET-011.

(11) PROPOSED EMPTY SPARE CONDUITS STUBBED UP AND CAPPED PER APPLICABLE DETAILS ON DRAWING NO. E-DET-004. REFER TO ELECTRICAL BUILDING INSTRUMENTATION AND CONTROLS FLOOR PLAN ON DRAWING NO. E-FP-007 FOR MORE INFORMATION.

(12) FURNISH AND INSTALL HANDHOLE PER SPECIFICATIONS AND APPLICABLE DETAILS ON DRAWING NO. E-DET-010. FURNISH AND INSTALL ADDITIONAL DEPTH OF HANDHOLE CHAMBER AS NECESSARY TO ACCOMODATE FOR DIFFERENCES IN ELEVATION BETWEEN THE HANDHOLE CHAMBER AND THE FINISHED GRADE EXTERIOR TO THE HANDHOLE. CLOSELY AND CAREFULLY COORDINATE ELEVATION OF HANDHOLE WITH THE DUCT BANK ELEVATIONS, CIVIL/SITE UTILITIES, ETC.

(13) PROPOSED CONDUIT PENETRATES CONCRETE WALK PER APPLICABLE DETAILS ON DRAWING NO. E-DET-004. REFER TO ELECTRICAL BUILDING INSTRUMENTATION AND CONTROLS FLOOR PLAN ON DRAWING NO. E-FP-007 FOR CONTINUATION.

(14) FURNISH AND INSTALL BARRIER POSTS PER AUSTIN ENERGY REQUIREMENTS. COORDINATE NUMBER AND LOCATIONS WITH AUSTIN ENERGY AND OWNER PRIOR TO INSTALLING BARRIER POSTS. ALSO REFER TO TRANSFORMER PAD DETAILS ON DRAWING NO. E-DET-007.

(15) FURNISH AND INSTALL WATT-HOUR METER ENCLOSURE PER THE REQUIREMENTS OF AUSTIN ENERGY. FURNISH AND INSTALL CONDUIT BETWEEN TRANSFORMER AND METER ENCLOSURE PER THE REQUIREMENTS OF AUSTIN ENERGY. AUSTIN ENERGY SHALL FURNISH AND INSTALL THE WATT-HOUR METER AND INTERCONNECT WIRING BETWEEN THE PROPOSED SERVICE TRANSFORMER AND WATT-HOUR METER. CLOSELY AND CAREFULLY COORDINATE REQUIREMENTS/INSTALLATION OF METER CAN/ENCLOSURE AND ALL OF ITS COMPONENTS WITH AUSTIN ENERGY. REFER TO FLOOR PLAN DRAWING NO. E-FP-007 FOR ADDITIONAL INFORMATION.

(16) DUCT BANK CONFIGURATION ALTERS IN IMMEDIATE VICINITY OF HANDHOLE TO FACILITATE HANDHOLE WALL PENETRATION.

GENERAL NOTES:

1. EXTREME CARE MUST BE TAKEN FOR THE INSTALLATION OF THE ELECTRICAL DUCT BANKS SINCE THERE ARE NO AVAILABLE AS BUILT RECORDS OF PROFILES IDENTIFYING THE LOCATION AND INVERT ELEVATIONS OF EXISTING UNDERGROUND ELECTRICAL SYSTEM (CONDUITS, DUCT BANK, GROUNDING NETWORK, ETC.) AND UNDERGROUND MECHANICAL PIPING. ROUTING OF NEW DUCT BANK SHOWN IS BASED ON SCHEMATIC KNOWLEDGE OF THE SIZE OF MECHANICAL PIPING AND THEIR APPROXIMATE SIZE AND/OR LOCATION. NO DATA IS AVAILABLE PERTAINING TO EXISTING UNDERGROUND ELECTRICAL DUCT BANK SYSTEM AND ITS COORDINATION WITH THE UNDERGROUND MECHANICAL SYSTEM. THEREFORE THE CONTRACTOR IS TO EXERCISE EXTREME CARE, VERIFY LOCATION/ROUTING/ELEVATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING FULL SCALE INSTALLATION PROCESS OF THE PROPOSED DUCT BANK SYSTEM. FOLLOWING THE DISCOVERY VERIFICATION OF EXISTING UNDERGROUND UTILITIES, SHOULD ADJUSTMENT/MODIFICATIONS BECOME A NECESSITY TO EITHER THE EXISTING OR PROPOSED SYSTEM (AS APPLICABLE), THE EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION FOR EXECUTION OF THE NECESSARY ADJUSTMENTS/MODIFICATIONS.
2. NOT ALL MANHOLES/HANDHOLES/PULLBOXES OR UNDERGROUND UTILITIES ARE SHOWN ON THIS DRAWING.
3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING. REFER TO MECHANICAL/STRUCTURAL/CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
4. NOT ALL ELECTRICAL/MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/MECHANICAL/STRUCTURAL/CIVIL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL CLOSELY AND CAREFULLY COORDINATE ROUTE OF PROPOSED UNDERGROUND ELECTRICAL DUCT BANKS WITH EXISTING AND PROPOSED CIVIL/MECHANICAL/STRUCTURAL/ELECTRICAL SYSTEMS/COMPONENTS/EQUIPMENT/ UTILITIES, ETC.
6. THE LOCATIONS AND SIZES OF EQUIPMENT SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.

REFERENCE DRAWINGS:

E-FP-003 – PUMP STATION FLOOR PLAN

E-FP-004 – E-FP-007 – ELECTRICAL BUILDING FLOOR PLANS

E-OL-007 – E-OL-013 – ONE-LINE DIAGRAMS

E-SECT-001 – E-SECT-004 – DUCTBANK SECTIONS

2/2/2005

HARUTUNIAN ENGINEERING INCORPORATED

ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

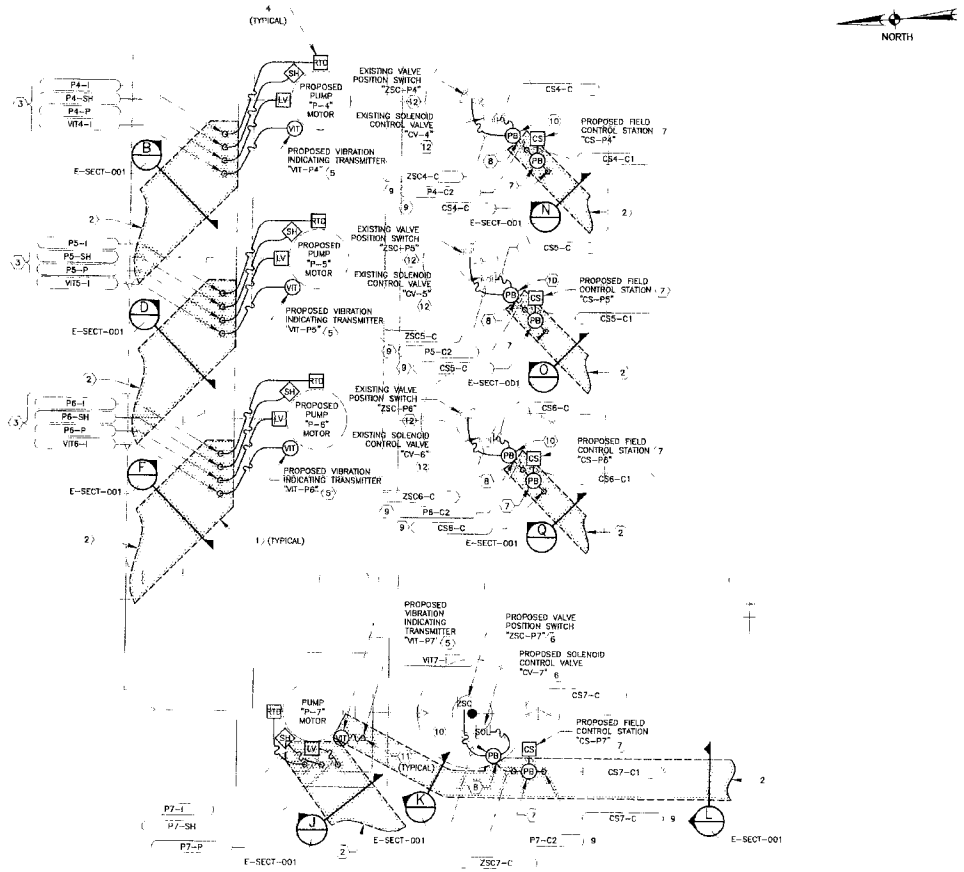
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
3/16" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO. 1

OVERALL SITE PLAN – RENOVATION

JOB 2002-210 SHEET 37 E-SP-006



ENLARGED PUMP AREA PLAN – RENOVATION

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

KEY NOTES:

1. UNDERGROUND ELECTRICAL DUCT BANK PER APPLICABLE SECTIONS ON DRAWING NOs. E-SECT-001 – E-SECT-004 AND PER APPLICABLE DETAILS ON DRAWING NO. E-DET-011. DUCT BANK CONFIGURATION MAY VARY ALONG LENGTH OF DUCT BANK DUE TO COORDINATION WITH EXISTING AND PROPOSED PROCESS/MECHANICAL PIPING AND OTHER EXISTING CONDITIONS TO BE DISCOVERED IN THE FIELD.
2. REFER TO DRAWING NO. E-SP-006 FOR CONTINUATION OF DUCT BANK.
3. REFER TO PUMP MOTOR CONNECTION DETAILS ON DRAWING NO. E-DET-013.
4. COORDINATE ORIENTATION OF PUMP MOTOR AND LOCATION OF PUMP MOTOR ELECTRICAL TERMINATION BOXES WITH MECHANICAL AND MOTOR MANUFACTURER.
5. FURNISH VIBRATION TRANSMITTER, PER SPECIFICATIONS, TO PUMP MOTOR MANUFACTURER FOR INSTALLATION. COORDINATE LOCATION WITH MECHANICAL AND MOTOR MANUFACTURER AND MAKE ALL FINAL CONNECTIONS PER APPLICABLE CONTROL WIRING SCHEMATICS.
6. VALVE CONTROL SOLENOID AND POSITION SWITCHED TO BE FURNISHED WITH THE VALVE. MAKE ALL FINAL CONNECTIONS PER THE APPLICABLE CONTROL WIRING SCHEMATICS.
7. FURNISH AND INSTALL PULL BOX AND CONTROL STATION PER APPLICABLE DETAILS ON DRAWING NO. E-DET-005. MAKE ALL FINAL CONNECTIONS PER APPLICABLE CONTROL WIRING SCHEMATICS.
8. BELOW GRADE CONDUIT PENETRATION PER APPLICABLE DETAILS ON DRAWING NO. E-DET-004.
9. CONDUIT ENCASED IN UNDERGROUND ELECTRICAL DUCT BANK PER APPLICABLE DETAILS ON DRAWING NO. E-DET-011. CONDUIT STUBS UP PER APPLICABLE DETAILS ON DRAWING NO. E-DET-004.
10. FURNISH AND INSTALL PULL BOX ON INSIDE WALL OF VALVE BOX PER APPLICABLE DETAILS ON DRAWING NO. E-DET-005.
11. CONDUIT STUBS UP THROUGH FLOOR OF VALVE BOX PER THE APPLICABLE DETAILS ON DRAWING NO. E-DET-004 AND TRANSITIONS TO LIQUID-TIGHT FLEXIBLE CONDUIT BEFORE TERMINATION AT MOTOR TERMINATION BOXES.
12. MAKE ALL FINAL CONNECTIONS PER THE APPLICABLE CONTROL WIRING SCHEMATICS.

GENERAL NOTES:

1. EXTREME CARE MUST BE TAKEN FOR THE INSTALLATION OF THE ELECTRICAL DUCT BANKS SINCE THERE ARE NO AVAILABLE AS BUILT RECORDS OF PROFILES IDENTIFYING THE LOCATION AND INVERT ELEVATIONS OF EXISTING UNDERGROUND ELECTRICAL SYSTEM (CONDUITS, DUCT BANK, GROUNDING NETWORK, ETC.) AND UNDERGROUND MECHANICAL PIPING. ROUTING OF NEW DUCT BANK SHOWN IS BASED ON SCHEMATIC KNOWLEDGE OF THE SIZE OF MECHANICAL PIPING AND THEIR APPROXIMATE SIZE AND/OR LOCATION. NO DATA IS AVAILABLE PERTAINING TO EXISTING UNDERGROUND ELECTRICAL DUCT BANK SYSTEM AND ITS COORDINATION WITH THE UNDERGROUND MECHANICAL SYSTEM. THEREFORE THE CONTRACTOR IS TO EXERCISE EXTREME CARE, VERIFY LOCATION/ROUTING/ELEVATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING FULL SCALE INSTALLATION PROCESS OF THE PROPOSED DUCT BANK SYSTEM. FOLLOWING THE DISCOVERY VERIFICATION OF EXISTING UNDERGROUND UTILITIES, SHOULD ADJUSTMENT/MODIFICATIONS BECOME A NECESSITY TO EITHER THE EXISTING OR PROPOSED SYSTEM (AS APPLICABLE), THE EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION FOR EXECUTION OF THE NECESSARY ADJUSTMENTS/MODIFICATIONS.
2. NOT ALL MANHOLES/HANDHOLES/PULLBOXES OR UNDERGROUND UTILITIES ARE SHOWN ON THIS DRAWING.
3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING. REFER TO MECHANICAL/STRUCTURAL/CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS
4. NOT ALL ELECTRICAL/MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/MECHANICAL/STRUCTURAL/CIVIL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL CLOSELY AND CAREFULLY COORDINATE ROUTE OF PROPOSED UNDERGROUND ELECTRICAL DUCT BANKS WITH EXISTING AND PROPOSED CIVIL/MECHANICAL/STRUCTURAL/ELECTRICAL SYSTEMS/ COMPONENTS/EQUIPMENT/UTILITIES, ETC.
6. THE LOCATIONS AND SIZES OF EQUIPMENT SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
7. ALL SHADED LINEWORK IS EXISTING. DARK LINEWORK DENOTES PROPOSED SYSTEMS. DASHED LINEWORK INDICATES APPROXIMATE LOCATION OF UNDERGROUND ELECTRICAL DUCT BANKS.

REFERENCE DRAWINGS:

E-CS-001 – E-CS-002 – CONDUIT/WIRE SCHEDULE

E-DET-004 AND E-DET-013 – DETAILS

E-DL-007 – E-DL-013 – ONE LINE DIAGRAMS

E-RWS-001 – E-RWS-003 – CONDUIT SCHEMATICS

E-SP-001 – CONSTRUCTION SEQUENCE

E-SP-006 – OVERALL SITE PLAN

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDING.

STATE OF TEXAS REGISTERED PROFESSIONAL ENGINEER 2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

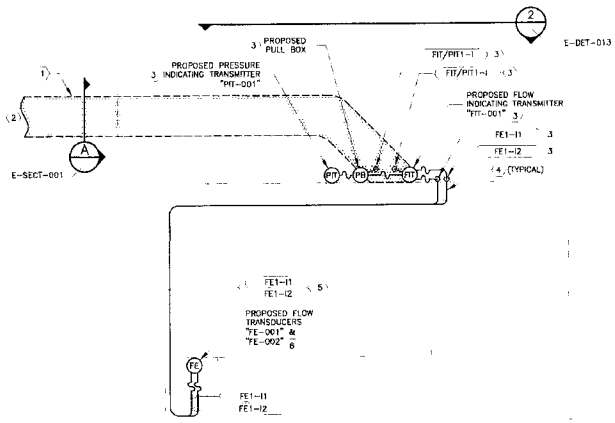
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
1/2" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

ENLARGED PUMP AREA
SITE PLAN – RENOVATION

2002-210 | SHEET 38 | E-SP-007



ENLARGED METER VAULT PLAN – RENOVATION

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

KEY NOTES:

1. UNDERGROUND ELECTRICAL DUCT BANK PER APPLICABLE SECTIONS ON DRAWING NOs. E-SECT-001 – E-SECT-004 AND PER APPLICABLE DETAILS ON DRAWING NO. E-DET-011. DUCT BANK CONFIGURATION MY VARY ALONG LENGTH OF DUCT BANK DUE TO COORDINATION WITH EXISTING AND PROPOSED PROCESS/MECHANICAL PIPING AND OTHER EXISTING SYSTEMS/CONDITIONS TO BE DISCOVERED IN THE FIELD.
2. REFER TO DRAWING NO. E-SP-006 FOR CONTINUATION OF DUCT BANK.
3. REFER TO METER VAULT INSTRUMENT MOUNTING DETAIL ON DRAWING NO. E-DET-013.
4. CONDUIT PENETRATION PER APPLICABLE DETAILS ON DRAWING NO. E-DET-004.
5. FURNISH AND INSTALL CONDUIT PER APPLICABLE DETAILS ON DRAWING NO. E-DET-003.
6. FURNISH AND INSTALL ULTRASONIC FLOW TRANSDUCERS PER THE APPLICABLE DETAILS ON DRAWING NO. E-DET-006, AND PER THE MANUFACTURER'S RECOMMENDATIONS. LOCATION SHOWN IS APPROXIMATE. COORDINATE EXACT LOCATION WITH FLOW TRANSMITTER MANUFACTURER AND WITH MECHANICAL. ALSO COORDINATE WITH LOCATION OF PROPOSED PRESSURE TAP. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.

GENERAL NOTES:

1. EXTREME CARE MUST BE TAKEN FOR THE INSTALLATION OF THE ELECTRICAL DUCT BANKS SINCE THERE ARE NO AVAILABLE AS BUILT RECORDS OF PROFILES IDENTIFYING THE LOCATION AND INVERT ELEVATIONS OF EXISTING UNDERGROUND ELECTRICAL SYSTEM (CONDUITS, DUCT BANK, GROUNDING NETWORK, ETC.) AND UNDERGROUND MECHANICAL PIPING. ROUTING OF NEW DUCT BANK SHOWN IS BASED ON SCHEMATIC KNOWLEDGE OF THE SIZE OF MECHANICAL PIPING AND THEIR APPROXIMATE SIZE AND/OR LOCATION. NO DATA IS AVAILABLE PERTAINING TO EXISTING UNDERGROUND ELECTRICAL DUCT BANK SYSTEM AND ITS COORDINATION WITH THE UNDERGROUND MECHANICAL SYSTEM. THEREFORE THE CONTRACTOR IS TO EXERCISE EXTREME CARE, VERIFY LOCATION/ROUTING/ELEVATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING FULL SCALE INSTALLATION PROCESS OF THE PROPOSED DUCT BANK SYSTEM. FOLLOWING THE DISCOVERY VERIFICATION OF EXISTING UNDERGROUND UTILITIES, SHOULD ADJUSTMENT/MODIFICATIONS BECOME A NECESSITY TO EITHER THE EXISTING OR PROPOSED SYSTEM (AS APPLICABLE), THE EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION FOR EXECUTION OF THE NECESSARY ADJUSTMENTS/MODIFICATIONS.
2. NOT ALL MANHOLES/HANDHOLES/PULLBOXES OR UNDERGROUND UTILITIES ARE SHOWN ON THIS DRAWING.
3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING. REFER TO MECHANICAL/STRUCTURAL/CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
4. NOT ALL ELECTRICAL/MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/MECHANICAL/STRUCTURAL/CIVIL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL CLOSELY AND CAREFULLY COORDINATE ROUTE OF PROPOSED CONDUIT/WIRE WITH EXISTING AND PROPOSED CIVIL/MECHANICAL/STRUCTURAL/ELECTRICAL SYSTEMS/COMPONENTS/EQUIPMENT/UTILITIES, ETC.
6. THE LOCATIONS AND SIZES OF EQUIPMENT SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
7. ALL SHADED LINEWORK IS EXISTING. DARK LINEWORK DENOTES PROPOSED SYSTEMS. DASHED LINEWORK INDICATES APPROXIMATE LOCATION OF UNDERGROUND FEEDERS.

REFERENCE DRAWINGS:

E-CS-001 – E-CS-002 – CONDUIT/WIRE SCHEDULE

E-DET-004, E-DET-006 AND E-DET-013 – DETAILS

E-RWS-001 – E-RWS-003 – CONDUIT SCHEMATICS

E-SP-005 – OVERALL SITE PLAN

STATE OF TEXAS REGISTERED PROFESSIONAL ENGINEER 2/2/2005

HARUTUNIAN ENGINEERING INCORPORATED

ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 300
AUSTIN, TEXAS 78752

REUSE OF DOCUMENTS

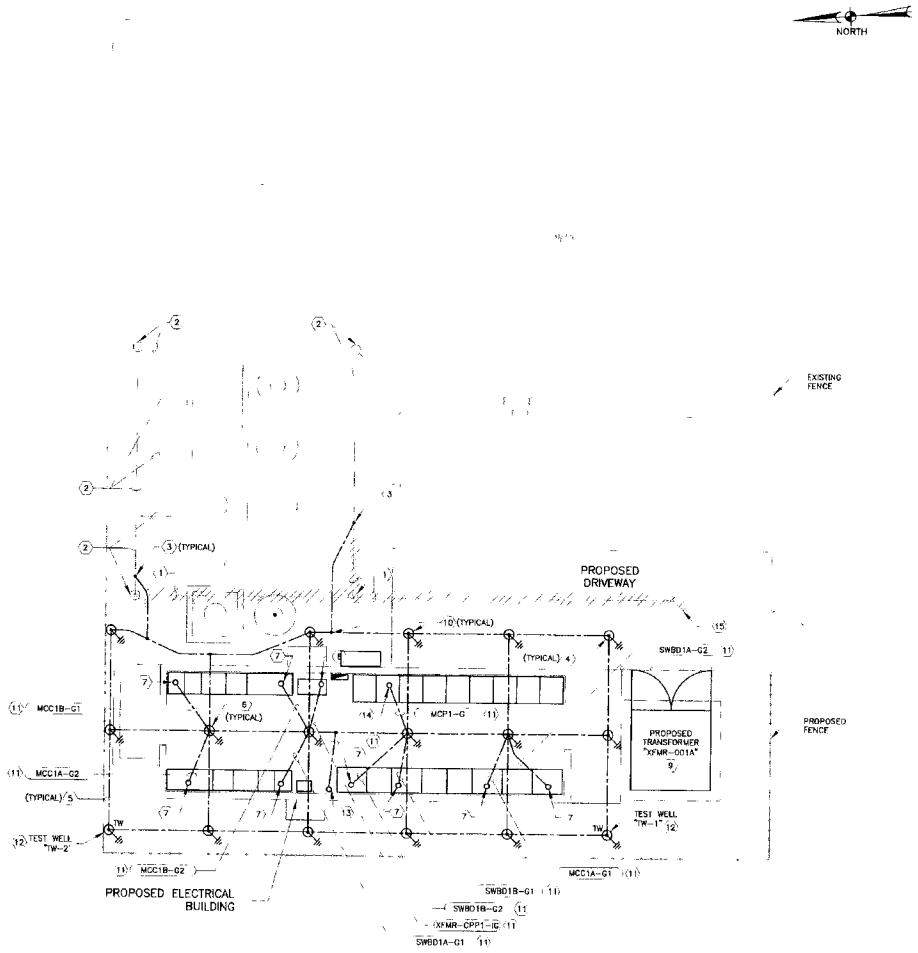
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
FEBRUARY 2005
1/2" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

ENLARGED METER VAULT AREA
SITE PLAN – RENOVATION

2002-210 | SHEET 39 | E-SP-008



KEY NOTES:

1. DEMOLISH EXISTING GROUND ROD AND GROUND CABLING.
2. APPROXIMATE LOCATION OF EXISTING (TO REMAIN) GROUNDING NETWORK.
3. INTERCONNECT PROPOSED GROUNDING NETWORK WITH EXISTING GROUNDING NETWORK.
4. FURNISH AND INSTALL GROUND ROD EXTERIOR TO BUILDING AND MAKE ALL FINAL CONNECTIONS PER DETAIL ON DRAWING NO. E-DET-008.
5. FURNISH AND INSTALL #250 KCMIL BARE STRANDED COPPER CABLE TO INTERCONNECT ALL GROUND RODS. BURY CABLE AT MINIMUM DEPTH OF 30" BELOW FINISHED GRADE. CLOSELY AND CAREFULLY COORDINATE BURIAL DEPTH OF CABLE WITH THAT OF PROPOSED GROUND ROD. SPACE CONDUCTORS A MINIMUM 10'-0" TO A MAXIMUM OF 13'-0" APART. VARY DISTANCE AS NECESSARY TO AVOID CONFLICTS WITH STRUCTURAL/MECHANICAL/ELECTRICAL SYSTEMS.
6. FURNISH AND INSTALL GROUND ROD UNDERNEATH BUILDING STRUCTURE AND MAKE ALL FINAL CONNECTIONS PER THE DETAIL ON DRAWING NO. E-DET-008.
7. PROPOSED CONDUIT/WIRE CONNECTS TO GROUND BUS INSIDE PROPOSED SWITCHBOARD/MOTOR CONTROL CENTER AS APPLICABLE. MAKE FINAL CONNECTIONS PER DETAILS ON DRAWING NO. E-DET-008.
8. PROPOSED CONDUIT/WIRE CONNECTS TO ELECTROSTATIC SHIELD INSIDE PROPOSED SHIELDED ULTRA-ISOLATION TRANSFORMER.
9. REFER TO TRANSFORMER PAD DETAILS ON DRAWING NO. E-DET-007 FOR TRANSFORMER GROUNDING INFORMATION.
10. EXOTHERMIC WELD ALL CONNECTIONS BETWEEN GROUND RODS AND GROUNDING CONDUCTORS THROUGHOUT THE ENTIRE PROPOSED GROUNDING NETWORK, EXCEPT AT TEST WELLS.
11. PROPOSED CONDUIT TERMINATES AT MAXIMUM DISTANCE OF 18" FROM PROPOSED GROUND ROD. PROPOSED WIRE EXTENDS THE REMAINING DISTANCE BETWEEN GROUND ROD AND TERMINATED CONDUIT DIRECT BURIED TO INTERCONNECT WITH PROPOSED GROUND ROD.
12. FURNISH AND INSTALL TEST WELL COMPLETE WITH DEDICATED TEST WELL JUNCTION BOX PER THE DETAILS ON DRAWING NO. E-DET-010.
13. CONDUIT/WIRE CONTINUES TO ROOF GROUNDING SYSTEM. REFER TO DETAIL ON DRAWING NO. E-DET-009.
14. PROPOSED CONDUIT/WIRE CONNECTS TO GROUND BUS INSIDE PROPOSED MAIN CONTROL PANEL "MCP-001". MAKE FINAL CONNECTIONS PER DETAILS ON DRAWING NO. E-DET-008.
15. EXISTING GROUND WIRE BONDED TO EXISTING FENCE TO BE DEMOLISHED.

REFERENCE DRAWINGS:

E-CS-001 – E-CS-002 – CONDUIT/WIRE SCHEDULE

E-SP-001 – CONSTRUCTION SEQUENCE

E-SP-002 – E-SP-005 – OVERALL SITE PLAN

E-FP-004 – ELECTRICAL BUILDING EQUIPMENT ARRANGEMENT

GENERAL NOTES (CONTINUED):

13. CONTRACTOR SHALL CLOSELY AND CAREFULLY COORDINATE THE INSTALLATION OF, AND PROTECTION OF, THE ENTIRE GROUNDING NETWORK (GROUND RODS AND ASSOCIATED GROUND CONDUCTORS IN AND AROUND THE STRUCTURE) WITH CIVIL/STRUCTURAL/MECHANICAL DURING ALL PHASES OF CONSTRUCTION.
14. CLOSELY AND CAREFULLY COORDINATE THE LOCATION/INSTALLATION OF EACH GROUND ROD WITH CIVIL/STRUCTURAL/MECHANICAL/ELECTRICAL TO AVOID CONFLICTS. SLIGHT RELOCATION FROM THAT SHOWN ON GROUNDING PLAN MAY BE NECESSARY TO AVOID CONFLICTS. ARRANGE/INSTALL GROUND RODS IN ORDER TO MAINTAIN A MINIMUM DISTANCE FROM ANY OTHER GROUND ROD OF 10'-0". CONTRACTOR SHALL INSURE THAT A MINIMUM OF 10'-0" OF GROUND ROD IS DRIVEN INTO UNDISTURBED/CLEAR SOIL REGARDLESS OF DEPTH FROM FINISHED SLAB.

GENERAL NOTES:

1. NOT ALL MANHOLES/HANDHOLES/PULLBOXES OR UNDERGROUND UTILITIES ARE SHOWN ON THIS DRAWING.
2. CLOSELY AND CAREFULLY COORDINATE ROUTE OF PROPOSED CONDUIT/WIRE WITH EXISTING AND PROPOSED CIVIL/MECHANICAL/STRUCTURAL/ELECTRICAL SYSTEMS/COMPONENTS/EQUIPMENT/UTILITIES, ETC.
3. ALL SHADED LINEWORK IS EXISTING. DARK LINEWORK DENOTES PROPOSED SYSTEMS.
4. NOT ALL ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
5. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/ CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING REFER TO MECHANICAL/STRUCTURAL/ CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
6. LOCATIONS/SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
7. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT.
8. THE INFORMATION SHOWN HEREIN IS BASED ON THE INFORMATION PROVIDED DURING DESIGN AND IS BELIEVED TO BE ACCURATE. REGARDLESS, THIS INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONFIRMING OR FINDING THE ASSOCIATED MOTOR CONTROL CENTER/CIRCUIT NUMBER/PANELBOARD/ETC., SERVING THE EXISTING LOAD. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION TO ELIMINATE HAZARDS IN DISCONNECTING ANY DEVICE FROM AN ELECTRICAL CIRCUIT.
9. EXERCISE EXTREME CARE AS THERE ARE NO AVAILABLE AS BUILT RECORDS IDENTIFYING THE ROUTING OF ALL CONDUIT/WIRING BETWEEN MOTOR CONTROL CENTER, CONTROL PANEL, LIGHTING PANEL, LOADS, ETC. AND THEIR COORDINATION WITH EXISTING ELECTRICAL SYSTEM. CONTRACTOR SHALL VERIFY ROUTING OF EXISTING CONDUIT/WIRING PRIOR TO COMMENCING FULL SCALE DEMOLITION OR RENOVATION ACTIVITIES. FOLLOWING DISCOVERY/VERIFICATION OF EXISTING FIELD CONDITIONS, SHOULD ADJUSTMENTS TO EXISTING OR PROPOSED SYSTEMS BECOME NECESSARY, EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO ENGINEER'S ATTENTION FOR EXECUTION OF NECESSARY ADJUSTMENTS/MODIFICATIONS.
10. WHEN ANY EXISTING EQUIPMENT IS DISCONNECTED, REMOVED, RELOCATED OR OTHERWISE MODIFIED, THE POSSIBILITY MAY EXIST FOR SUCH ACTION TO LEAD TO INTERRUPTION OF PUMP STATION OPERATION. IF EXTREME CARE, VERIFICATION, AND VALIDATION IS NOT CAREFULLY EXERCISED PRIOR TO COMMENCEMENT OF SUCH ACTIVITY ANY UNSCHEDULED INTERRUPTION TO CONTINUITY OF PUMP STATION OPERATION AT ITS FULLY RATED CAPACITY IS UNACCEPTABLE DURING CONSTRUCTION OF THIS PROJECT. HOWEVER, SHOULD INTERRUPTION OCCUR FOR ANY UNFORESEEN REASON (WHETHER TOTALLY ACCIDENTAL OR DUE TO IMPROPER FIELD INVESTIGATION AND/OR IMPROPER PLANNING PRIOR TO COMMENCEMENT OF ELECTRICAL/INSTRUMENTATION DEMOLITION EFFORT), RESPONSIBLE CONTRACTOR SHALL DETERMINE PROBLEM, CORRECT IT, AND START UP INTERRUPTED EQUIPMENT WITHIN A CERTAIN TIME PERIOD AS DETERMINED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CONTINUOUS, 24-HOUR; LABOR, EQUIPMENT, MATERIAL AND ACCESSORIES UNTIL SUCH TIME THAT ANY AFFECTED EQUIPMENT OPERATES AS PREVIOUSLY OPERATED, AT NO ADDITIONAL COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
11. CROSSHATCHED LINEWORK DENOTES EQUIPMENT TO BE DEMOLISHED UNLESS OTHERWISE NOTED AND SHALL BE REMOVED ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE ON DRAWING E-SP-001. ALL DEMOLITION ACTIVITIES SHALL ALSO BE FULLY COORDINATED WITH CIVIL/ PROCESS/MECHANICAL/STRUCTURAL/ETC., DEMOLITION ACTIVITIES. ALL DEMOLISHED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER. RELOCATE ALL DEMOLISHED ITEMS TO LOCATION(S) SPECIFIED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
12. REMOVE ALL ASSOCIATED MOUNTING HARDWARE, PULLBOXES, HANGERS, STRAPS, SUPPORT CHANNELS, RODS, ETC. FOR ITEMS TO BE DEMOLISHED, UNLESS OTHERWISE NOTED OR SUCH REMOVAL WOULD COMPROMISE THE SUPPORT OF ITEMS TO REMAIN IN PLACE.

BAR ALONG THIS SIDE REPRESENTS ONE INCH ON FULL SIZE DRAWINGS. HALF SIZE DRAWINGS EQUALS ONE INCH. HALF SCALE ACCORDINGLY

STATE OF TEXAS
KEVIN HARUTUNIAN
REGISTERED
PROFESSIONAL ENGINEER
2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

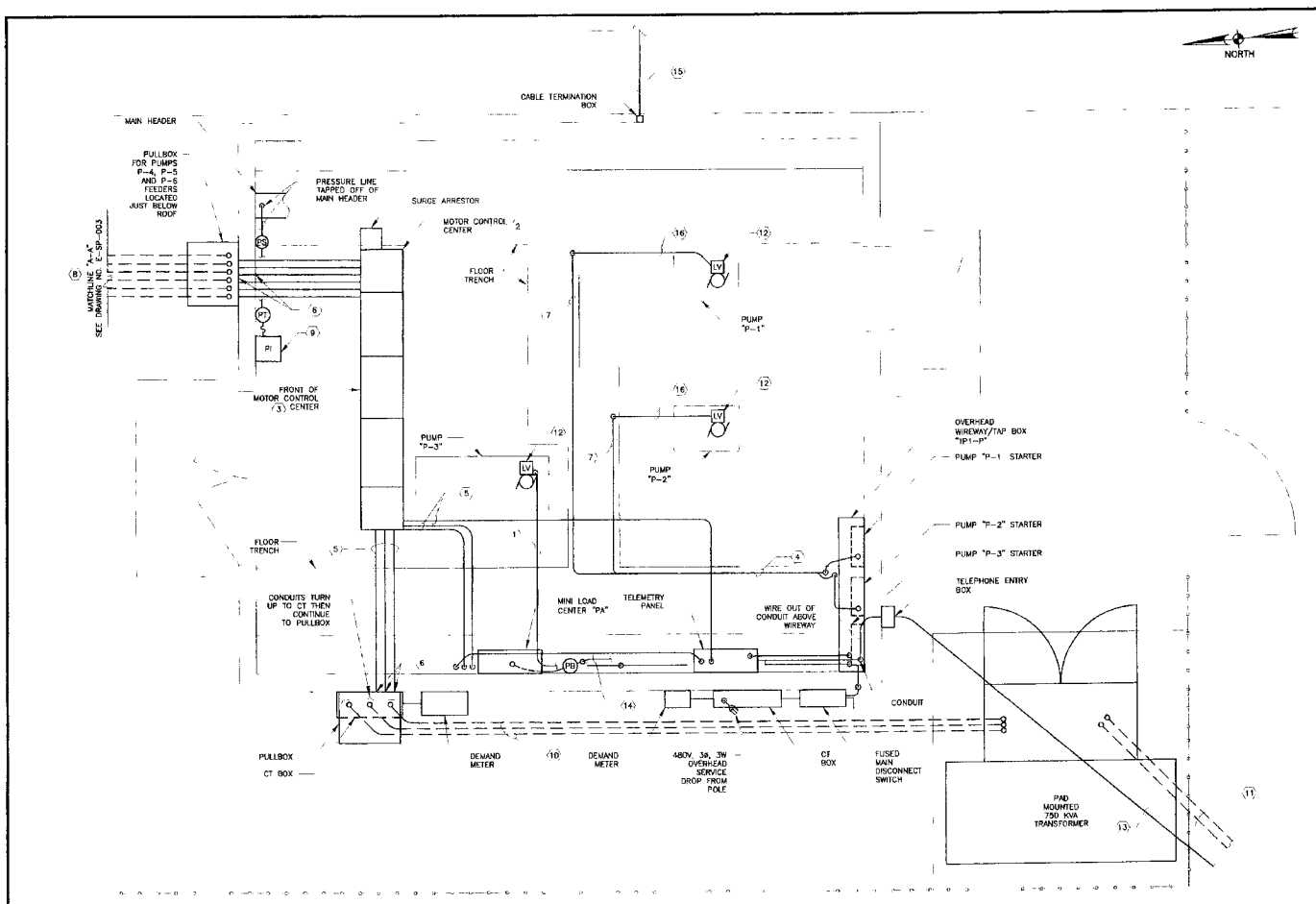
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

DESIGNED BY HEI
DRAWN BY HEI
REVIEWED BY HEI
DATE FEBRUARY 2005
SCALE 3/16" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO. 1

OVERAL SITE PLAN– GROUNDING

2002-210 | SHEET 40 | E-SP-009



KEY NOTES:

1. CONDUIT/WIRE ROUTES OVERHEAD AND DROPS DOWN TO PUMP "P-3" CONNECTION BOX.
2. WIREWAY/PULLBOX MOUNTED DIRECTLY ON TOP OF EXISTING MOTOR CONTROL CENTER. TOP OF WIREWAY IS AT CEILING.
3. REFER TO DRAWING NO. E-OL-014 FOR EXISTING MOTOR CONTROL CENTER ELEVATION.
4. CONDUIT/WIRE ROUTES STACKED IN TRENCH TO PUMP STARTERS AT SOUTH WALL.
5. CONDUIT/WIRE ROUTES OVERHEAD TO WIREWAY ABOVE MOTOR CONTROL CENTER.
6. CONDUIT/WIRE ENTERS BACK OF WIREWAY/PULLBOX FROM WIREWAY ABOVE MOTOR CONTROL CENTER.
7. CONDUIT/WIRE ROUTES IN PIPE TRENCH.
8. CONDUIT/WIRE ROUTES UNDERGROUND TO VALVE BOXES FOR VALVE CONTROLS AND TO PUMP PIT AREA FOR PUMP POWER & CONTROL.
9. BRISTOL BABCOCK PRESSURE INDICATOR FOR SUCTION PRESSURE OF MAIN HEADER.
10. UNDERGROUND SECONDARY FEEDER DUCTBANK FROM PAD MOUNTED SERVICE TRANSFORMER. EXACT ELEVATION/ROUTING IS UNKNOWN. VERIFY EXACT LOCATION IN THE FIELD.
11. TWO (2) 4" CONDUITS FOR PRIMARY SERVICE TO PULLBOX BY POLE RISER.
12. PUMP MOTOR LOW VOLTAGE TERMINATION BOX.
13. OVERHEAD TELEPHONE CABLES TO RISER POLE.
14. CONDUIT/WIRE FOR LIGHTING CIRCUIT
15. EMT CONDUIT WITH CABLE ROUTES ON TOP OF DRIVE FROM METER VAULT. CABLE IS BROKEN AT METER VAULT
16. CONDUIT/WIRE ROUTES NEAR FLOOR TO MOTOR.

GENERAL NOTES:

1. ALL ITEMS SHOWN ON THIS DRAWING ARE EXISTING. DASHED LINE WORK DENOTES APPROXIMATE LOCATION OF UNDERGROUND FEEDERS.
2. NOT ALL ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/ CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING. REFER TO MECHANICAL/STRUCTURAL/ CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
4. LOCATIONS/SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.

REFERENCE DRAWINGS:

E-SP-001 – CONSTRUCTION SEQUENCE

E-SP-002 – OVERALL SITE PLAN

E-OL-001 – E-OL-003 – ONE LINE DIAGRAMS

K. Harutunian
STATE OF TEXAS
REGISTERED PROFESSIONAL ENGINEER
2/2/2005

HARUTUNIAN ENGINEERING INCORPORATED
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

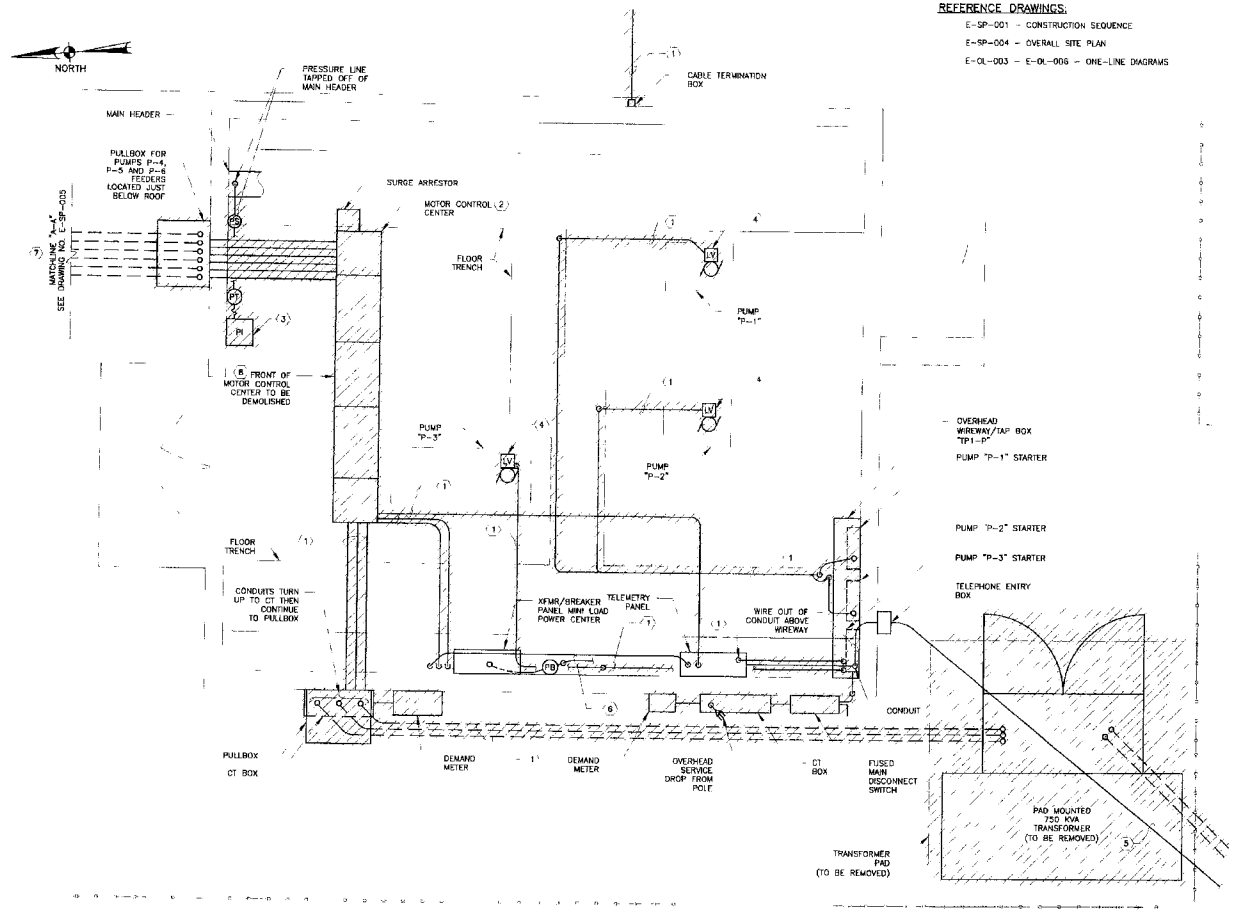
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
1/2" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

ENLARGED PUMP STATION
FLOOR PLAN – EXISTING

2002-210 | SHEET 41 | E-FP-001



REFERENCE DRAWINGS:

E-SP-001 - CONSTRUCTION SEQUENCE

E-SP-004 - OVERALL SITE PLAN

E-OL-003 - E-OL-006 - ONE-LINE DIAGRAMS

KEY NOTES:

1. DISCONNECT AND REMOVE CONDUIT/WIRE IN ITS ENTIRETY
2. DEMOLISH EXISTING MOTOR CONTROL CENTER AND THE WIREWAY MOUNTED ON TOP OF IT
3. DISCONNECT AND REMOVE EXISTING PRESSURE INDICATOR AND ALL ASSOCIATED APPLIANCES ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE.
4. PUMP MOTOR LOW VOLTAGE TERMINATION BOX
5. TELEPHONE CABLES TO RISER POLE TO REMAIN.
6. CONDUIT/WIRE FOR LIGHTING CIRCUIT TO REMAIN.
7. DISCONNECT AND REMOVE CABLE/WIRE FROM CONDUITS AND CAP CONDUITS IN ACCORDANCE WITH DETAILS ON DRAWING NO. E-DET-012.
8. SHOULD ANY EXISTING CONDUITS ENTER THROUGH BOTTOM OF MCC, THEN DISCONNECT AND REMOVE CABLE/WIRE, CUT AND CAP CONDUITS IN ACCORDANCE WITH DETAILS ON DRAWING NO. E-DET-012.

GENERAL NOTES:

1. ALL ITEMS DEPICTED ON THIS DRAWING ARE EXISTING. DASHED LINE WORK DENOTES APPROXIMATE LOCATION OF UNDERGROUND FEEDERS. CLOSELY AND CAREFULLY COORDINATE/VERIFY ALL POINTS OF CONNECTION PRIOR TO COMMENCING ACTIVITIES RELATED TO THIS EQUIPMENT
2. NOT ALL ELECTRICAL/STRUCTURAL/CIVIL/MECHANICAL COMPONENTS ARE SHOWN ON THIS DRAWING. REFER TO ELECTRICAL/STRUCTURAL/CIVIL/ MECHANICAL DRAWINGS, AS APPLICABLE, FOR ADDITIONAL INFORMATION.
3. EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/ CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING REFER TO MECHANICAL/STRUCTURAL/ CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
4. LOCATIONS/SIZES OF ELECTRICAL EQUIPMENT SHOWN ARE APPROXIMATE CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
5. EQUIPMENT TAGS/NAMES HAVE BEEN ARBITRARILY ASSIGNED TO AID IN THE DRAWINGS. SOME EXISTING TAGS/NAMES HAVE BEEN USED WHERE POSSIBLE. CONTRACTOR SHALL MAKE EXTENSIVE VERIFICATION OF EXISTING EQUIPMENT PRIOR TO COMMENCING FULL SCALE ACTIVITIES RELATED TO THIS EQUIPMENT
6. THE INFORMATION SHOWN HEREIN IS BASED ON THE AVAILABLE INFORMATION PROVIDED DURING DESIGN AND IS BELIEVED TO BE ACCURATE. REGARDLESS, THIS INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONFIRMING OR FINDING THE ASSOCIATED MOTOR CONTROL CENTER/ CIRCUIT NUMBER/PANELBOARD/ETC., SERVING THE EXISTING LOAD. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION TO ELIMINATE HAZARDS IN DISCONNECTING ANY DEVICE FROM AN ELECTRICAL CIRCUIT
7. EXERCISE EXTREME CARE AS THERE ARE NO AVAILABLE AS BUILT RECORDS IDENTIFYING THE ROUTING OF ALL CONDUIT/WIRING BETWEEN MOTOR CONTROL CENTER, CONTROL PANEL, LIGHTING PANEL, LOADS, ETC. AND THEIR COORDINATION WITH EXISTING ELECTRICAL SYSTEM. CONTRACTOR SHALL VERIFY ROUTING OF EXISTING CONDUIT/WIRING PRIOR TO COMMENCING FULL SCALE DEMOLITION OR RENOVATION ACTIVITIES. FOLLOWING DISCOVERY/ VERIFICATION OF EXISTING FIELD CONDITIONS, SHOULD ADJUSTMENTS TO EXISTING OR PROPOSED SYSTEMS BECOME NECESSARY EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO ENGINEER'S ATTENTION FOR EXECUTION OF NECESSARY ADJUSTMENTS/MODIFICATIONS.
8. WHEN ANY EXISTING EQUIPMENT IS DISCONNECTED, REMOVED, RELOCATED OR OTHERWISE MODIFIED, THE POSSIBILITY MAY EXIST FOR SUCH ACTION TO LEAD TO INTERRUPTION OF PUMP STATION OPERATION, IF EXTREME CARE, VERIFICATION, AND VALIDATION IS NOT CAREFULLY EXERCISED PRIOR TO COMMENCEMENT OF SUCH ACTIVITY ANY UNSCHEDULED INTERRUPTION TO CONTINUITY OF PUMP STATION OPERATION AT ITS FULLY RATED CAPACITY IS UNACCEPTABLE DURING CONSTRUCTION OF THIS PROJECT HOWEVER, SHOULD INTERRUPTION OCCUR FOR ANY UNFORESEEN REASON (WHETHER TOTALLY ACCIDENTAL OR DUE TO IMPROPER FIELD INVESTIGATION AND/OR IMPROPER PLANNING PRIOR TO COMMENCEMENT OF ELECTRICAL/INSTRUMENTATION DEMOLITION EFFORT), RESPONSIBLE CONTRACTOR SHALL DETERMINE PROBLEM, CORRECT IT, AND START UP INTERRUPTED EQUIPMENT WITHIN A CERTAIN TIME PERIOD AS DETERMINED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CONTINUOUS, 24-HOUR; LABOR, EQUIPMENT, MATERIAL AND ACCESSORIES UNTIL SUCH TIME THAT ANY AFFECTED EQUIPMENT OPERATES AS PREVIOUSLY OPERATED, AT NO ADDITIONAL COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
9. CROSSHATCHED LINEWORK DENOTES EQUIPMENT TO BE DEMOLISHED UNLESS OTHERWISE NOTED AND SHALL BE REMOVED ACCORDING TO THE RECOMMENDED CONSTRUCTION SEQUENCE ON DRAWING NO. E-SP-001. ALL DEMOLITION ACTIVITIES SHALL ALSO BE FULLY COORDINATED WITH CIVIL/ PROCESS/MECHANICAL/STRUCTURAL/ETC., DEMOLITION ACTIVITIES. ALL DEMOLISHED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER. RELOCATE ALL DEMOLISHED ITEMS TO LOCATION(S) SPECIFIED BY THE OWNER AT NO ADDITIONAL COST TO THE OWNER. ALL UNHATCHED ITEMS SHALL REMAIN.
10. REMOVE ALL ASSOCIATED MOUNTING HARDWARE, PULLBOXES, HANGERS, STRAPS, SUPPORT CHANNELS, RODS, ETC. FOR ITEMS TO BE DEMOLISHED, UNLESS OTHERWISE NOTED OR SUCH REMOVAL WOULD COMPROMISE THE SUPPORT OF ITEMS TO REMAIN IN PLACE.

RAS [illegible] ORIGINAL DRAWING FORMAT [illegible] ADJUST SCALE ACCORDINGLY

2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED

ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

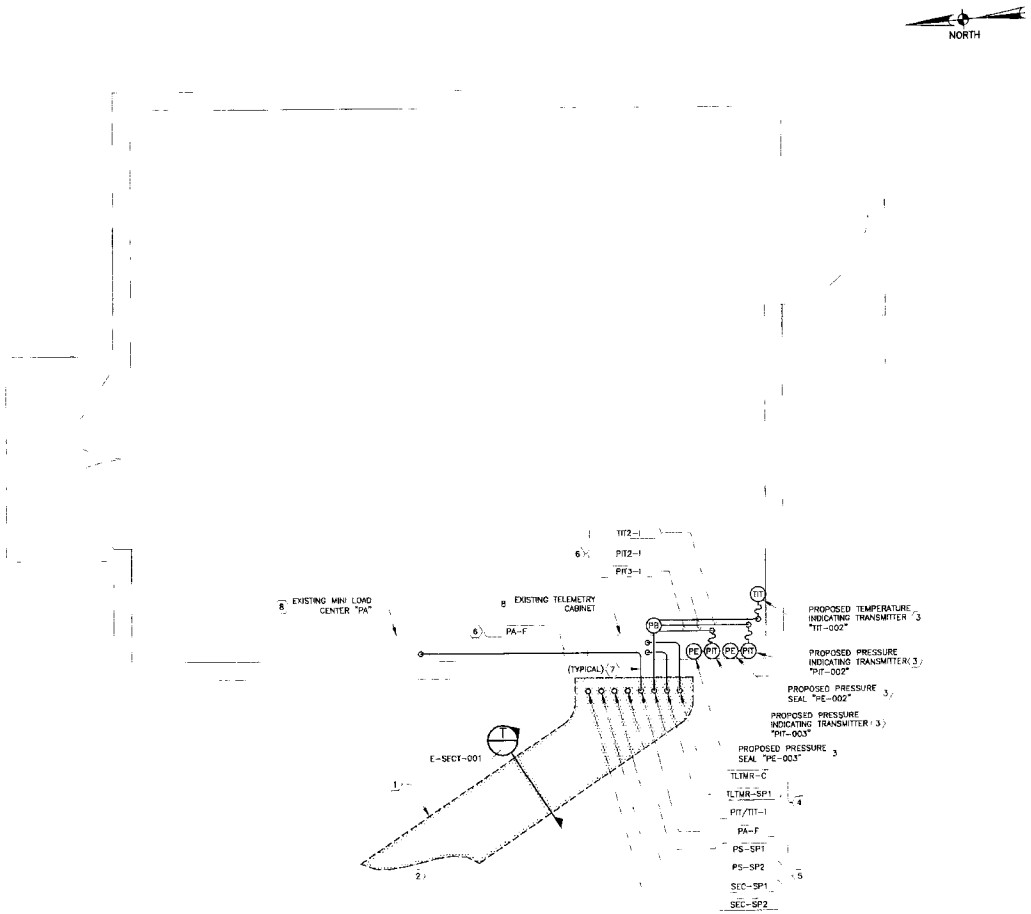
REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein as an instrument of professional service has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
1/2" = 1' 0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO. 10
PUMP STATION NO. 1

ENLARGED PUMP STATION
FLOOR PLAN - DEMOLITION

2002-210 | SHEET 42 | E-FP-002



KEY NOTES.

1. UNDERGROUND ELECTRICAL DUCT BANK PER APPLICABLE SECTIONS ON DRAWING NOs. E-SECT-001 – E-SECT-004 AND PER APPLICABLE DETAILS ON DRAWING NO. E-DET-011. DUCT BANK CONFIGURATION MAY VARY ALONG LENGTH OF DUCT BANK DUE TO COORDINATION WITH EXISTING AND PROPOSED PROCESS/MECHANICAL PIPING AND OTHER EXISTING CONDITIONS TO BE DISCOVERED IN THE FIELD.
2. REFER TO DRAWING NO. E-SP-006 FOR CONTINUATION OF DUCT BANK.
3. FURNISH AND INSTALL INSTRUMENTS PER THE SPECIFICATIONS AND APPLICABLE DETAILS ON DRAWING NO. E-DET-006. MAKE ALL FINAL CONNECTIONS PER THE APPLICABLE CONTROL WIRING SCHEMATICS.
4. CONDUITS STUB UP PER THE APPLICABLE DETAIL ON DRAWING NO. E-DET-004. SECURE CONDUIT TO WALL PER APPLICABLE DETAILS ON DRAWING NO. E-DET-003.
5. EMPTY SPARE CONDUITS STUBBED UP AND CAPPED PER THE APPLICABLE DETAILS ON DRAWING NO. E-DET-004.
6. SECURE CONDUIT TO WALL PER THE APPLICABLE DETAILS ON DRAWING NO. E-DET-003.
7. CONDUIT PENETRATION PER THE APPLICABLE DETAILS ON DRAWING NO. E-DET-004.
8. MAKE ALL FINAL CONNECTIONS PER APPLICABLE SCHEMATICS.

GENERAL NOTES.

1. EXTREME CARE MUST BE TAKEN FOR THE INSTALLATION OF THE ELECTRICAL DUCT BANKS SINCE THERE ARE NO AVAILABLE AS BUILT RECORDS OF PROFILES IDENTIFYING THE LOCATION AND INVERT ELEVATIONS OF EXISTING UNDERGROUND ELECTRICAL SYSTEM (CONDUITS, DUCT BANK, GROUNDING NETWORK, ETC.) AND UNDERGROUND MECHANICAL PIPING. ROUTING OF NEW DUCT BANK SHOWN IS BASED ON SCHEMATIC KNOWLEDGE OF THE SIZE OF MECHANICAL PIPING AND THEIR APPROXIMATE SIZE AND/OR LOCATION. NO DATA IS AVAILABLE PERTAINING TO EXISTING UNDERGROUND ELECTRICAL DUCT BANK SYSTEM AND ITS COORDINATION WITH THE UNDERGROUND MECHANICAL SYSTEM. THEREFORE THE CONTRACTOR IS TO EXERCISE EXTREME CARE, VERIFY LOCATION/ROUTING/ELEVATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING FULL SCALE INSTALLATION PROCESS OF THE PROPOSED DUCT BANK SYSTEM. FOLLOWING THE DISCOVERY VERIFICATION OF EXISTING UNDERGROUND UTILITIES, SHOULD ADJUSTMENT/MODIFICATIONS BECOME A NECESSITY TO EITHER THE EXISTING OR PROPOSED SYSTEM (AS APPLICABLE), THE EXISTING DISCOVERED FIELD CONDITIONS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION FOR EXECUTION OF THE NECESSARY ADJUSTMENTS/MODIFICATIONS.
2. NOT ALL MANHOLES/HANDHOLES/PULLBOXES OR UNDERGROUND UTILITIES ARE SHOWN ON THIS DRAWING.
3. NOT ALL COMPONENTS OR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL COMPONENTS ARE NOT SHOWN ON THIS DRAWING. REFER TO MECHANICAL/STRUCTURAL/CIVIL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL/STRUCTURAL/CIVIL ITEMS.
4. CONTRACTOR SHALL CLOSELY AND CAREFULLY COORDINATE ROUTE OF PROPOSED CONDUIT/WIRE WITH EXISTING AND PROPOSED CIVIL/MECHANICAL/STRUCTURAL/ELECTRICAL SYSTEMS/COMPONENTS/EQUIPMENT/UTILITIES, ETC.
5. THE LOCATIONS AND SIZES OF EQUIPMENT SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO COMMENCING CONSTRUCTION.
6. ALL SHADED LINEWORK IS EXISTING. DARK LINEWORK DENOTES PROPOSED SYSTEMS. DASHED LINEWORK INDICATES APPROXIMATE LOCATION OF UNDERGROUND FEEDERS.

REFERENCE DRAWINGS.

E-SP-001 – CONSTRUCTION SEQUENCE

E-SP-006 – OVERALL SITE PLAN

E-CS-001 – E-CS-002 – CONDUIT/WIRE SCHEDULE

E-RWS-001 – E-RWS-003 – CONDUIT SCHEMATICS

STATE OF TEXAS REGISTERED PROFESSIONAL ENGINEER 2/21/2005

HARUTUNIAN ENGINEERING INCORPORATED

ENGINEERING AND ENVIRONMENTAL CONSULTANTS
305 EAST HUNTLAND DRIVE SUITE 500
AUSTIN, TEXAS 78752

REUSE OF DOCUMENTS
This document and the ideas and designs incorporated herein, as an instrument of professional service, has been developed, designed and prepared by Harutunian Engineering, Inc. and is not to be used, in whole or part, for any other project without the written authorization of Water District No. 10 and Harutunian Engineering, Inc. © 2005

HEI
HEI
HEI
FEBRUARY 2005
1/2" = 1'-0"

TRAVIS COUNTY WATER CONTROL & IMPROVEMENT DISTRICT NO 10
PUMP STATION NO 1

ENLARGED PUMP STATION
FLOOR PLAN – RENOVATION

2002-210 | SHEET 43 | E-FP-003