

REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

On this 1st day of November, 2016, Commissioners Court came on to be heard and reviewed the accompanying notice of Quadvest Construction L.P. Job Location 6019 1/2 Nowlands Run Lane, Sugarland, TX 77479 Date 10/12/2016 Bond No. 61BSBHB0006, Permit No. 2016-9832 to make use of certain Fort Bend County property subject to, "A Revised Order Regulating the Laying, Construction, Maintenance, and Repair of Buried Cables, Conduits, and Pole Lines, In, Under, Across or Along Roads, Streets, Highways, and Drainage Ditches in Fort Bend County, Texas, Under the Jurisdiction of the Commissioners Court of Fort Bend County, Texas," as passed by the Commissioners Court of Fort Bend County, Texas the 3rd day of August, 1987, recorded in Volume _____ of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistent with Article 1436a, Vernon's Texas Civil Statutes. Upon Motion of Commissioner _____, seconded by Commissioner _____, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Notes:

1. Evidence of review by the Commissioners Court must be kept on the job site and failure to do so constitutes grounds for job shutdown.
2. Written notices are required:
 - a. 48 hours in advance of construction start up, and
 - b. when construction is completed and ready for final inspection
 Mail notices to: Permit Administrator
 Fort Bend County Engineering
 301 Jackson Street
 Richmond, Texas 77469
 281-633-7500
3. This permit expires one (1) year from date of permit if construction has not commenced.

By: Charles O. Ad
for County Engineer

Presented to Commissioners Court and approved.
Recorded in Volume _____
Minutes of Commissioners Court

By: N/A
Drainage District Engineer/Manager

Clerk of Commissioners Court

By: _____
Deputy

County of Fort Bend
Engineering Department

301 Jackson Street
Richmond, Texas 77469

Phone: (281) 633-7500

**Permit Application Review Form For
Cable, Conduit, and Pole Line Activity
In Fort Bend County**

Permit No. 2016-9832

The following "Notice of Proposed Cable, Conduit, and/or Pole Line activity in Fort Bend County" and accompanying attachments have been reviewed and the notice conforms to appropriate regulations set by Commissioner's Court of Fort Bend County, Texas.

 X (1) Complete Application Form:

 X a. Name of road, street, and/or drainage ditch affected.

 X b. Vicinity map showing course of directions

 X c. Plans and specifications

 X (2) Bond:

 District Attorney, approval when applicable.

 Perpetual bond currently posted.

 No: _____

 Amount: _____

 X Performance bond submitted.

 No: 61BSBHB0006

 Amount: \$5,000.00

 Cashier's Check

 No: _____

 Amount: _____

 (3) Verbal permission given for emergencies, to start construction before approved in Commissioner's Court.

 Precinct Engineer Acknowledgment Date

 Precinct Commissioner Acknowledgment Date

 (4)

 Drainage District Approval when applicable

We have reviewed this project and agree it meets minimum requirements.

 Charles O. Day
Assistant County Engineer

 10/25/16
Date

**PERFORMANCE BOND COVERING ALL CABLE, CONDUIT AND/OR POLE LINE
ACTIVITY IN, UNDER, ACROSS OR ALONG FORT BEND COUNTY ROAD**

AUTHORIZED

BOND NO 61BSBHB0006

THE STATE OF TEXAS

§

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND

§

THAT WE, Quadvest Construction L.P. whose address is 26926 FM 2978, Magnolia, Texas 77354 Texas, hereinafter called the Principal, And Hartford Casualty Insurance Company, a Corporation existing under and by virtue of the laws of the state of Connecticut and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at 690 Asylum Ave., Hartford, CT 06115, whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is Aaron Hawley and Whose address is 19450 State HWY 249, Ste. 400, Houston, TX 77070, hereinafter called the Surety, and held and firmly bound unto, Robert e. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, in the full sum of Five Thousand and No/100 Dollars (\$ 5,000.00) current, lawful money of the United States of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, to which payment well and truly to be made and done, we, the undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors, assigns, and legal representatives, jointly and severally, by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, the above bounden principal contemplates laying, constructing, maintaining and/or repairing one or more cables, conduits, and/or pole lines in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend, and the State of Texas, under the jurisdiction of the Commissioners' Court of Fort Bend County, Texas, pursuant to the Commissioners' Court order adopted on the 1st day of December, A.D. 1980, recorded in Volume 13, of the Commissioners' Court Minutes of Fort Bend County, Texas, regulating same, which Commissioners' Court order is hereby referred to and made a part hereof for all purposes as though fully set out herein;

AND WHEREAS, the principal desires to provide Fort Bend County with a performance bond covering all such cable, conduit and/or pole line activity, commercial driveway and median openings or modifications;

NOW, THEREFORE, if the above bounden principal shall faithfully perform all its cable, conduit and/or pole line activity (including, but not limited to the laying, construction, maintenance and/or repair of cables, conduits and/or pole lines) in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend and State of Texas, under the jurisdiction of the Commissioners Court of Fort Bend County, Texas, pursuant to and in accordance with minimum requirements and conditions of the above mentioned Commissioners' Court order set forth and specified to be by said principal done and performed, at the time and in the manner therein specified, and shall pay over and make good and reimburse Fort Bend County, all loss and damages which Fort Bend County may sustain by reason of any failure or default on the part of said principal, then this obligation shall be null and void, otherwise to remain in full force and effect.

This bond is payable at the County Courthouse in the County of Fort Bend and State of Texas.

It is understood that at any time Fort Bend County deems itself insecure under this bond, it may require further and/or additional bonds of the principal.

EXECUTED this 12th day of October, 20 16.

Quadvest Construction L.P.

PRINCIPAL

BY

Hartford Casualty Insurance Company

SURETY

BY Kenneth L. Meyer, Attorney in Fact

POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD
 BOND, T-4
 P.O. BOX 2103, 690 ASYLUM AVENUE
 HARTFORD, CONNECTICUT 06115
 call: 888-266-3488 or fax: 860-757-5835
 Agency Code: 61-614981

KNOW ALL PERSONS BY THESE PRESENTS THAT:

- Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois
- Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of the Southeast, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, up to the amount of unlimited:

Charles A. McClure, Kenneth L. Meyer, Kelly J. Brooks
 of
 Houston, TX

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by , and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on July 21, 2003 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



Paul A. Bergenholtz

Paul A. Bergenholtz, Assistant Secretary

David T. Akers

David T. Akers, Assistant Vice President

STATE OF CONNECTICUT }
 COUNTY OF HARTFORD } ss. Hartford

On this 4th day of August, 2004, before me personally came David T. Akers, to me known, who being by me duly sworn, did depose and say: that he resides in the County of Hampden, Commonwealth of Massachusetts; that he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that he signed his name thereto by like authority.



CERTIFICATE

Scott E. Paseka

Scott E. Paseka
 Notary Public
 My Commission Expires October 31, 2007

I, the undersigned, Assistant Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of **October 12, 2016**

Signed and sealed at the City of Hartford.



Gary W. Stumper

Gary W. Stumper, Assistant Vice President



Claims Inquiries Notice

Hartford Fire Insurance Company
Hartford Casualty Insurance Company
Hartford Accident and Indemnity Company
Hartford Underwriters Insurance Company

Twin City Insurance Company
Hartford Insurance Company of Illinois
Hartford Insurance Company of the Midwest
Hartford Insurance Company of the Southwest

Please address inquiries regarding **Claims** for all surety and fidelity products issued by The Hartford's underwriting companies to the following:

Phone Number: : 888-266-3488
Fax – Claims : 860-757-5835 or 860-547-8265
E-mail : bond.claims@thehartford.com

Mailing Address : The Hartford
BOND, T-4
690 Asylum Avenue
Hartford, CT 06115

CONSTRUCTION PLANS FOR ALCORN BAYOU PUMP STATION

WITHIN

RIVERSTONE

FORT BEND COUNTY LID No. 15 FORT BEND COUNTY, TEXAS



VICINITY MAP
N.T.S.



APPROVAL BY THE CITY OF SUGAR LAND WILL BE DEEMED VOID IF
CONSTRUCTION HAS NOT BEGUN WITHIN ONE YEAR OF APPROVAL
DATE: 11/19/15
CONTRACTOR SHALL NOTIFY THE CITY OF SUGAR LAND AT
LEAST 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
NO CONSTRUCTION SHALL BEGIN UNTIL COVER SHEET IS SIGNED.
CITY OF SUGAR LAND
APPROVED: *[Signature]*
DATE: 11/19/15

FORT BEND COUNTY ENGINEER
ENGINEER: *[Signature]*
DATE: 12/31/15
I HEREBY CERTIFY THAT THE
PLANS SUBMITTED TO ME BY THE
OWNER ARE IN ACCORDANCE
WITH THE CITY OF SUGAR LAND
ORDINANCES AND THE
STATE ENGINEERING ACT.
APPROVED: *[Signature]*
DATE: 12/31/15



Engineering and Surveying
9900 Richmond Avenue, Suite 450 N
Houston, Texas 77042
(713) 783-7788 (713) 783-5560, Fax
COSTELLO ENGINEERING, INC.
TEBPLS-FRM-15EN-NOV-100488

JOB NO. 004486-02

DATE: OCTOBER 2015

CONTACT NUMBERS:
CITY OF SUGAR LAND - ENGINEERING DEPT. 281-275-2780
F.A.C. PLAN NO. 15 - OPERATION LID 281-248-8494
F.A.C. PLAN NO. 15 - ENVIRONMENTAL 832-08-1980
F.A.C. PLAN NO. 15 - ENGINEER - COSTELLO, INC. 713-783-7788
FORT BEND COUNTY DRAINAGE DISTRICT 281-342-2003



REVISIONS

01	COVER SHEET
02	CONSTRUCTION NOTES
03	GENERAL NOTES
04	PUMP STATION DIAGRAM LAYOUT
05	DUAL P&ID PLAN AND PROFILE
06	FOUNDATION PLAN AND DETAILS
07	FOUNDATION PREVENTION PLAN AND PROFILE
08	POLLUTION PREVENTION DETAILS
09	UNDERLAID DETAILS
10	STANDARD TIGHT FIBERGLASS FACILITIES - 750-184

STRUCTURAL DETAILS

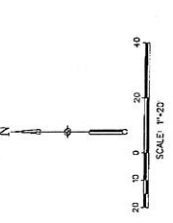
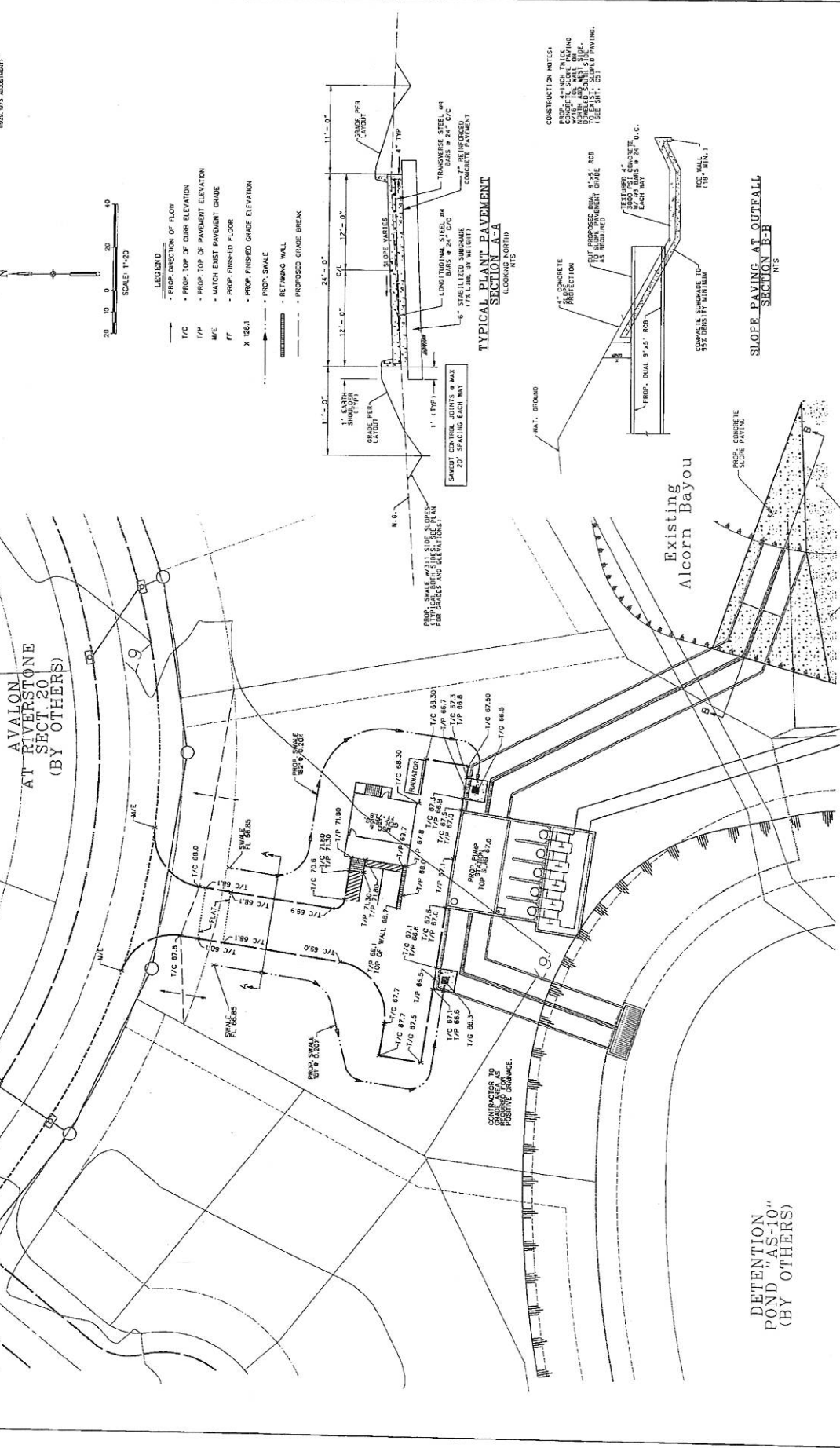
SI	FOUNDATION PLAN
S2	FOUNDATION PREVENTION PLAN
S3	FOUNDATION PREVENTION PLAN AND DETAILS
S4	FALL & PIPE SUPPORT DETAIL
S5	WALKWAY DETAIL
S6	LADDER AND STAIR DETAILS AND NOTES
S7	GENERATOR / MCC BUILDING FLOOR PLAN NOTES AND SCHEDULES
S8	GENERATOR / MCC BUILDING ELEVATION
S9	MCC BUILDING ROOF PLAN AND DETAILS
S10	COLUMN AND PERCH STRUCTURE DETAILS
S11	DATE DETAILS

ELECTRICAL DETAILS

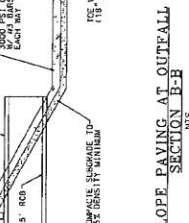
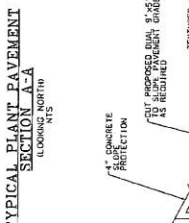
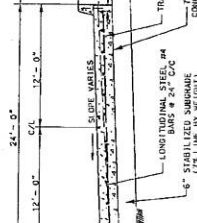
E-000	ABBREVIATIONS, LEGENDS AND NOTES
E-100	SITE PLAN
E-110	RELAYED PUMP STATION ELEVATION
E-111	RELAYED PUMP STATION SECTION
E-112	RELAYED BUILDING POWER PLAN
E-113	RELAYED BUILDING ELEVATION
E-114	GENERATOR ELEVATION - NATURAL GAS
E-200	ONE-LINE DIAGRAM
E-300	SCHEMATIC DIAGRAM
E-400	NOTION CONTROL CENTER
E-500	CONTROL DIAGRAM SHEET 1
E-501	CONTROL DIAGRAM SHEET 2
E-502	CONTROL DIAGRAM SHEET 3
E-503	CONTROL DIAGRAM SHEET 4
E-504	SOLID STATE CONTROLLER DIAGRAM
E-600	DETAILS SHEET 1
E-601	DETAILS SHEET 2
E-602	DETAILS SHEET 3
E-603	DETAILS SHEET 4
E-604	DETAILS SHEET 5
E-605	DETAILS SHEET 6

CITY OF SUGAR LAND, TEXAS
CAN BE FOUND AT
WWW.CITYOFSGARLAND.COM/DOCUMENTS/ENGINEERING

COSTELLO ENGINEERING
 9880 RICHMOND AVENUE, SUITE 450 N
 RICHMOND, VIRGINIA 23232
 TEL: 703-785-7285 FAX: 703-785-5659



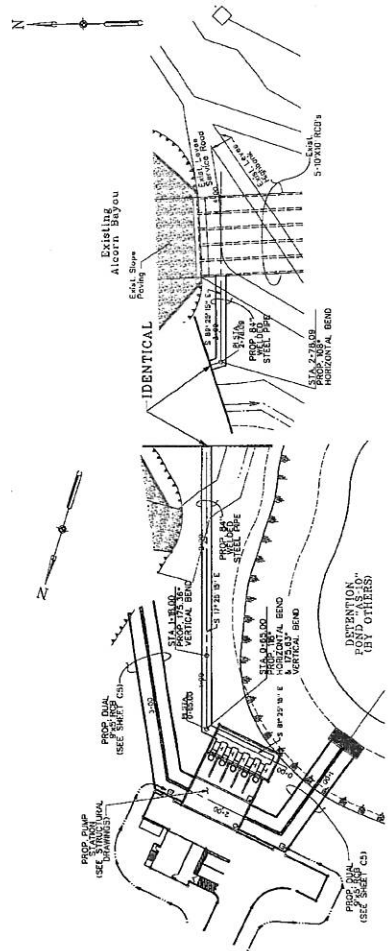
- LEGEND**
- PROP. DIRECTION OF FLOW
 - PROP. TOP OF CURB ELEVATION
 - PROP. TOP OF PAVEMENT ELEVATION
 - M/E MATCH EXIST PAVEMENT GRADE
 - FF PROP. FINISHED FLOOR
 - X 120.1 PROP. FINISHED GRADE ELEVATION
 - PROP. SWALE
 - RETAINING WALL
 - PROPOSED GRADE BREAK



CONSTRUCTION NOTES:
 1. PROP. 4\"/>

	RIVERSTONE ALCORN BAYOU PUMP STATION PUMP STATION GRADING LAYOUT	Engineering and Surveying 9880 Richmond Avenue, Suite 450 N (713) 785-7285 (713) 785-5659, Fax TEMPL FIRM REG. No. 896,886 TEMPL FIRM REG. No. 600,886
ISSUED BY: _____ DESIGN CHECKED BY: _____ DRAWN BY: _____ SURVEY CHECKED BY: _____ QUOTE BY: _____ DATE: _____	REVISION: _____ DATE: _____ BY: _____	PROJECT NO. 201400-01 SHEET C4 OF 11 SHEETS

CONTROL BENCHMARK
 JESCA 85.56 MCM 1000
 1000, 1017, 1000 MCM 1000



84" WELDED STEEL PIPE

CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

STATION	ELEVATION	CI CURVE DATA
76	76	
72	72	
68	68	
64	64	
60	60	
56	56	
52	52	
48	48	
44	44	
40	40	

- NOTES:**
1. THE PIPE SHALL BE 0.75" THICK WALL.
 2. THE PIPE SHALL BE CONTROLLED BY ACCORDANCE WITH THE SPECIFICATIONS REFERENCED HEREIN.
 3. THE PIPE SHALL BE WELDED TO THE EXISTING CONCRETE STRUCTURE.
 4. THE PIPE SHALL BE WELDED TO THE EXISTING CONCRETE STRUCTURE.
 5. THE PIPE SHALL BE WELDED TO THE EXISTING CONCRETE STRUCTURE.

Engineering and Surveying
 5950 Richmond Avenue, Suite 160 N
 (713) 753-7785 (713) 753-3550, Fax
 TBEPLS FIRM REG. No. 280
 TBEPLS FIRM REG. No. 100588

RIVERSTONE
 ALCORN BAYOU PUMP STATION
 PLAN AND PROFILE
 84" WELDED STEEL PIPE

DISIGNED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 SURVEY CHECKED BY: _____
 QUOTE BY: _____ DATE: _____
 QUOTE REVISIONS BY: _____

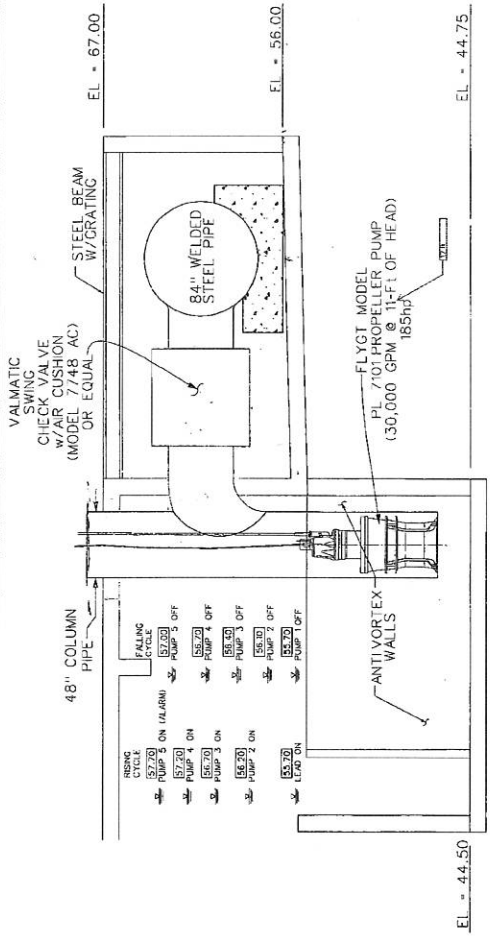
DATE: _____ BY: _____

SCALE: 1" = 40' HORIZ.
 1" = 4' VERT.

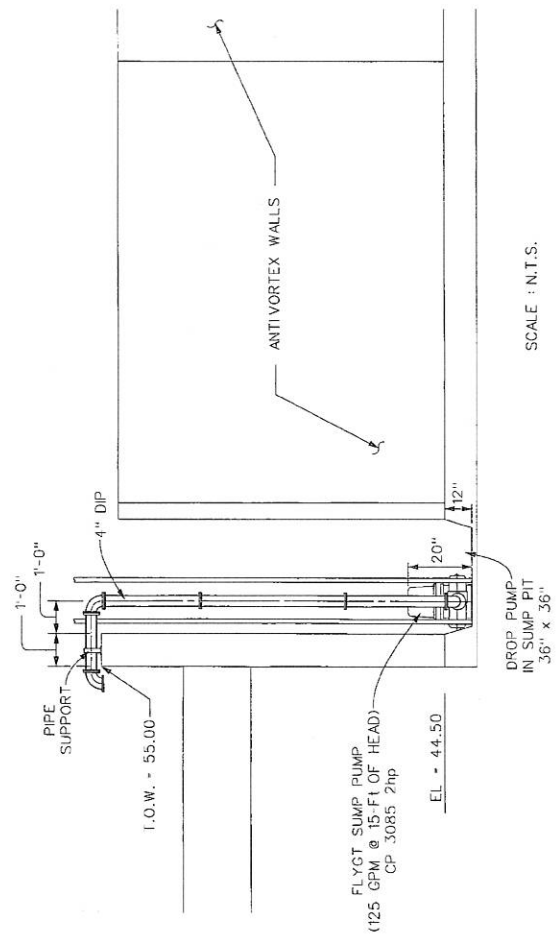
CI CURVE DATA

SHEET: **C6**

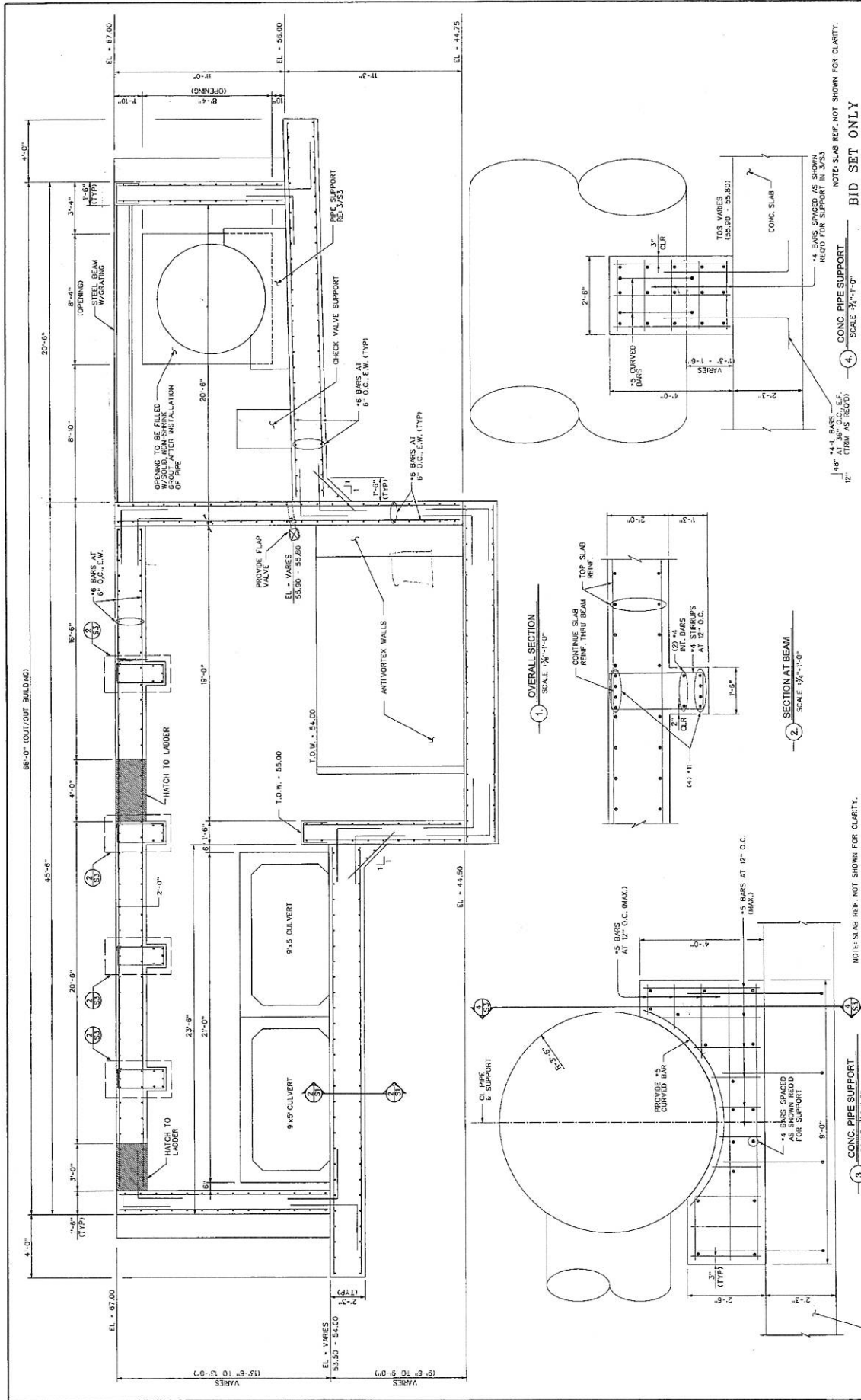




SCALE : N.T.S.



		Engineering and Surveying 9880 Houston, Texas 77042 (713) 785-7788 (713) 785-3880; Fax (713) 785-7788 TBPE FIRM REG. No. 2880 TBPLS FIRM REG. No. 100489		RIVERSTONE ALCORN BAYOU PUMP STATION MISCELLANEOUS DETAILS <i>2001/12/15</i>	SHEET C10 PARTS 20/09/04
DESIGNED BY: _____ DRAWN/CHECKED BY: _____ DATE: _____	CHECKED BY: _____ DATE: _____	APPROVED BY: _____ DATE: _____	REVISIONS: _____ DATE: _____ BY: _____	NO. _____	



SHEET S3
 OF 07
 JOB NO. 2004300
 SHEETS

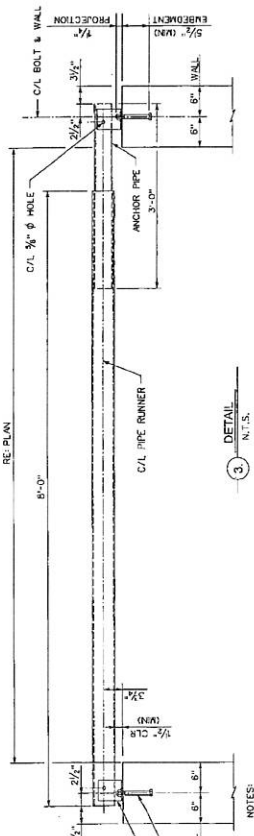


RIVERSTONE
ALCORN BAYOU PUMP STATION
STORMWATER PUMP STATION
SECTION & DETAILS

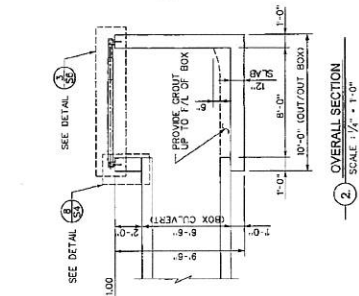
Costello
 Engineering and Surveying
 6900 Richmond, Suite 400 N
 Houston, Texas 77042
 (713) 783-7785 (713) 783-3560, Fax
 TBPES FIRM REG. NO. 280
 TBPES FIRM REG. NO. 100486

DESIGNED BY:
 DESIGN CHECKED BY:
 DRAWN BY:
 CADD CHECKED BY:
 SURVEY CHECKED BY:
 DATE: _____
 REVISIONS BY: _____
 DATE: _____

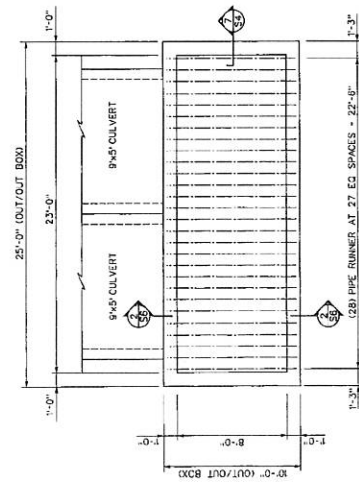
NO.	REVISION	DATE	BY



3. DETAIL N.T.S.

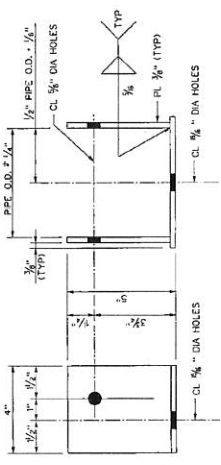


2. OVERALL SECTION SCALE 1/4" = 1'-0"

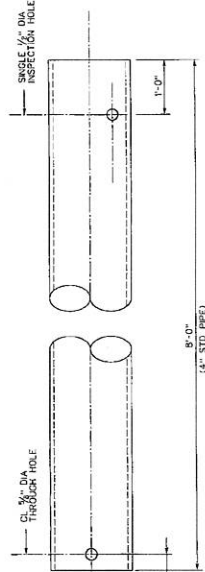


1. PIPE RUNNER PLAN SCALE 1/4" = 1'-0"

- NOTES:
- AFTER INSTALLATION OF PIPE RUNNER, THE ANCHOR PIPE MUST BE SET IN PLACE AND THE ANCHOR PIPE WITH THE PIPE RUNNER IS ADEQUATE.
 - AT CONTRACTOR'S OPTION, AN EPOXY ANCHORAGE SYSTEM MAY BE USED TO PROVIDE AN ULTIMATE TENSILE RESISTANCE OF 20 KIPS. ANCHOR DIAMETER SHALL BE 3/4" IF THE CONTRACTOR MUST ACHIEVE EVIDENCE OF ADEQUATE TENSILE RESISTANCE. CONTRACTOR SHALL PROVIDE EVIDENCE OF ADEQUATE TENSILE RESISTANCE TO THE ENGINEER. THE ANCHORING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

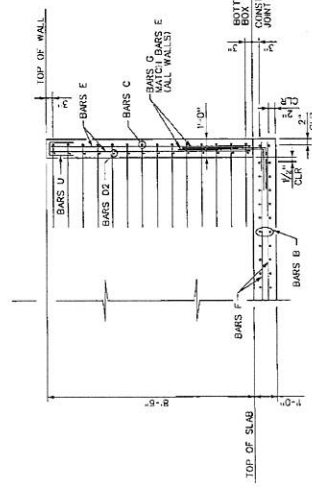


4. ANCHOR PIPE DETAILS N.T.S.

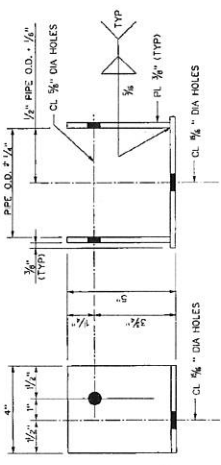


5. PIPE RUNNER DETAILS N.T.S.

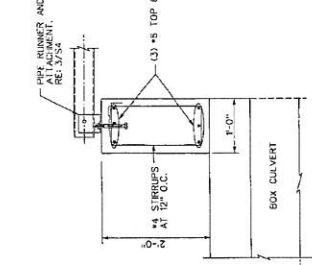
BAR	SIZE	SPACING
B	#5	6"
C	#5	6"
D	#5	6"
E	#5	6"
F	#5	6"
U	#5	6"



7. SECTION OF TYP. REINFORCING N.T.S.



6. MOUNTING BRACKET DETAILS N.T.S.



8. BEAM DETAIL N.T.S.

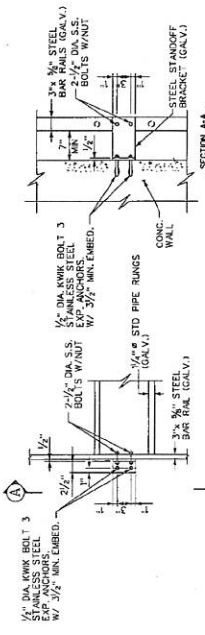


Engineering and Surveying
 6890 Richmond Avenue, Suite 460 N
 Houston, Texas 77057
 (713) 783-7783 (713) 783-3580, Fax
 (713) 783-7783 (713) 783-3580, Fax
 TYPE FIRM REG. NO. 280
 TBRLS FIRM REG. NO. 100248

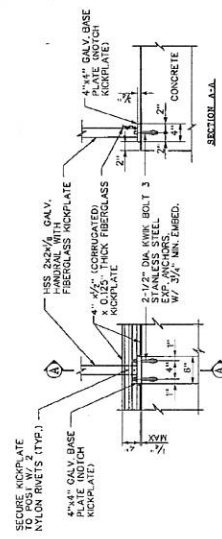
RIVERSTONE
 ALCORN BAYOU PUMP STATION
 PIPE RUNNER PLAN & DETAILS
 8/21/14

SHEET S5
 JOB NO. 2014260

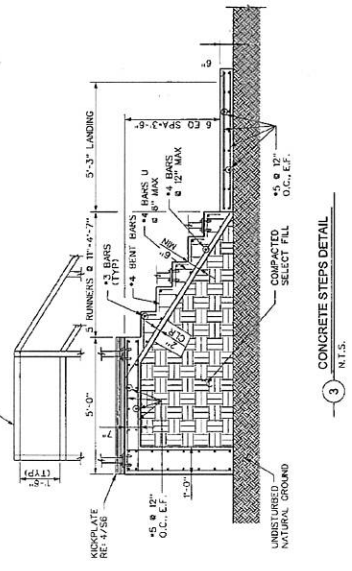
DESIGNED BY:	CHECKED BY:
DRAWN BY:	CHECKED BY:
SURVEY CHECKED BY:	DATE:
DATE:	BY:



2 ACCESS LADDER ATTACHMENT TO WALL
SCALE: 1/2"=1'-0"

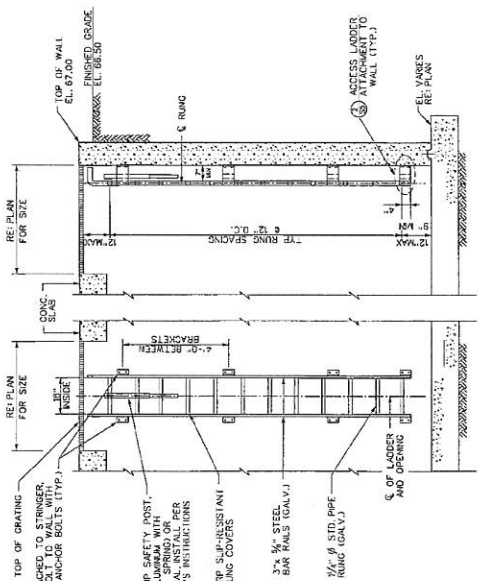


4 HANDRAIL POST FASTENING TO CONCRETE
SCALE: 1/2"=1'-0"



3 CONCRETE STEPS DETAIL
SCALE: 1/2"=1'-0"

- STRUCTURAL STEEL NOTES:**
1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
 2. ALL STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED AND CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:
A. ALL OTHER SHAPES A36
 3. ALL BOLTED CONNECTIONS SHALL BE MADE WITH 3/4-INCH DIAMETER ASTM A-325 U.S. BOLTS EXCEPT AS OTHERWISE SHOWN OR NOTED.
 4. FIELD CONNECTIONS SHALL BE BOLTED EXCEPT AS OTHERWISE SHOWN OR NOTED.
 5. ALL WELDS SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL WELDING SOCIETY. ALL WELDED CONNECTIONS SHALL BE MADE WITH AWS A5.1 OR A5.5 EX 18 ELECTRODE.
 6. ALL WELDING IS TO BE PERFORMED BY WELDERS CERTIFIED BY THE AMERICAN WELDING SOCIETY.
 7. ALL WELDED BOLTS & WSC EMBEDDED STEEL SHALL BE STAINLESS STEEL A553B.



1 ENTRY ACCESS LADDER
SCALE: 1/2"=1'-0"

- FOUNDATION NOTES:**
1. ALL EXCAVATIONS SHALL BE CONDUCTED IN THE DRY, AND PROVISIONS MADE TO PREVENT THE BOTTOM OF ALL EXCAVATIONS FROM FREEZING OR FLOODING.
 2. SOIL PREPARATION AT THE BOTTOM OF THE WET WELL SHALL BE AS FOLLOWS: (1) AFTER EXCAVATION THE SUBGRADE SHALL BE COMPACTED TO PROVIDE A UNIFORM, STABLE AND DRAINAGE SURFACE. (2) THE SUBGRADE SHALL BE PROTECTED FROM DISTURBANCE AND SHALL BE PLACED IMMEDIATELY TO PREVENT THE DISTURBANCE OF THE SURROUNDING SOIL CAUSED BY CONSTRUCTION.
 3. GROUNDWATER CONTROL MAY BE REQUIRED FOR INSTALLATION OF THE LIFT STATION. CONTRACTOR SHALL PROVIDE POSITIVE METHODS OF GROUNDWATER MANAGEMENT PRIOR TO EXCAVATION. GROUNDWATER CONTROL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AT LEAST 3 FEET BELOW THE BOTTOM OF THE EXCAVATION TO PROVIDE A FIRM WORKING SURFACE. F. REQUIRED DRAINAGE SHALL CONTINUE WITH THE UTILITY INSTALLATION TO ALLOW GROUNDWATER TO RECOVER TO ITS ORIGINAL LEVEL GRADUALLY, OVER A PERIOD OF ABOUT 3 TO 5 DAYS.
 4. BENEATH THE VAULT FLOOR OR PIPE SLAB FOUNDATION, CEMENT STABILIZED SAND, HAVING A MINIMUM FINENESS OF 200, SHALL BE PLACED UNDER THE VAULT FLOOR AND OUTSIDE THE INFLUENT LINES FROM LIMITS OF LIFT STATION EXCAVATION ANY OVER CEMENT STABILIZED SAND 8 INCH DEPTH FOR FOUNDATION SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND.
 5. IF OPEN CUT IS USED, SELECT ELL BE-HIND WALLS SHALL CONSIST OF A SANDY CLAY, SOL WITH A PLASTICITY INDEX BETWEEN 7 AND 15, AND COMPACTED IN 8-INCH LIFTS TO 95% OF THE MAXIMUM DRY DENSITY. ALL WALLS SHALL BE PLACED WITHIN 5 FEET OF THE WALLS SHALL BE PLACED COMPACTED.
 6. IF CASBON CONSTRUCTION IS USED, COUPLERS OF JOINT SPACES BETWEEN JOINTS, STRUCTURE AND GROUND EXCAVATION SHALL BE PER SPECIFICATION SECTION ENTITLED, "GROUNDING FOR CASBON CONSTRUCTION".
 7. THE AREA AROUND THE ENTIRE STRUCTURE SHALL BE WELL GRADED TO DRAIN AWAY FROM THE STRUCTURE WITHOUT DRAINING TO ADJACENT PROPERTIES.

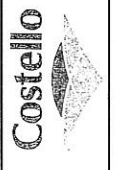
CONCRETE NOTES:

1. DETAILS OF REINFORCING STEEL, INCLUDING BAR SUPPORTS AND SPACERS, SHALL BE IN ACCORDANCE WITH THE LATEST AISC DETAILING MANUAL, UNLESS OTHERWISE NOTED.
2. CONCRETE CONSTRUCTION SHALL CONFORM TO THE PROJECT SPECIFICATIONS AND THE AISC BUILDING SPECIFICATIONS FOR REINFORCED CONCRETE. THE STRONGER SPECIFICATION SHALL GOVERN.
3. CONCRETE PLACEMENT IN HOT OR COLD WEATHER SHALL CONFORM TO THE PROVISIONS OF ACI 308R OR ACI 309R, RESPECTIVELY.
4. ALL REINFORCING STEEL SHALL BE GRADE 60 STEEL AS PER ASTM A615. ALL REINFORCING STEEL SHALL BE PLACED WITH A MINIMUM COVER OF 30 BAR DIAMETERS UNLESS OTHERWISE SPECIFIED. ALL REINFORCING SHALL BE HOT DIP GALVANIZED WITH STANDARD HOOKS AS PER ACI 308.
5. VAPOR BARRIER MEMBRANE FOR FOUNDATION CONSTRUCTION SHALL BE 6 MIL POLYETHYLENE OR EQUIVALENT WITH A MINIMUM TENSILE STRENGTH OF 1.5 PSI. IT SHALL BE ADHESIVE TO PROVIDE A CONTINUOUS MOISTURE BARRIER UNDERNEATH THE ENTIRE SLAB. CARE SHALL BE TAKEN NOT TO PUNCTURE THE MEMBRANE.
6. ALL SLAB AND BEAM REINFORCEMENT SHALL HAVE A MINIMUM EXTENSION INTO THE SUPPORT IN ACCORDANCE WITH THE LATEST ACI CODE. IF SUCH EXTENSION IS NOT POSSIBLE, BARS SHALL TERMINATE IN STANDARD HOOKS.
7. JOINTS IN WALLS, SLABS AND BEAMS SHALL BE REINFORCED WITH LAP OR MINIMUM 12 INCH OVERLAP. WALLS AND BEAMS SHALL HAVE EXTENSIONS AND ALL SLICES SPACERS SHALL LAP A MINIMUM OF 1.7 L, UNLESS OTHERWISE NOTED.
8. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION PLANS, ALL CAST-IN-PLACE STRUCTURAL CONCRETE SHALL BE CLASS A CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI @ 28 DAYS.
9. UNLESS OTHERWISE SHOWN, CONCRETE COVER FOR REINFORCEMENT SHALL CONFORM TO THE SPECIFICATIONS SECTION ENTITLED, "CONCRETE REINFORCEMENT". ON THE REINFORCEMENT PLANS, THE COVER SHALL BE SHOWN. APPROVAL OF THE ENGINEER IS REQUIRED FOR ANY DEVIATION FROM THOSE SHOWN.
10. ALL STEEL IN FORMED CONCRETE WORK MUST BE MADE IN THE CENTER OF THE SPAN AND UNLESS OTHERWISE NOTED, AN APPROVED KEYWAY REINFORCEMENT SHALL EXTEND THROUGH THESE JOINTS IF REQUIRED FOR CONTINUITY.
11. ALL EXPOSED EDGES OF BEAMS, COLUMNS, SLABS AND WALLS SHALL BE CHAMFERED 1/4".
12. UNLESS MASONRY OR OTHER MEMBERS ARE ERECTED FLUSH WITH THEM.
13. REFER TO PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL SLEEVES, PEECS, JOINTS AND MISCELLANEOUS WORKING DEVICES TO BE INCORPORATED IN THE CONSTRUCTION.



ALCOBN RIVERSTONE PUMP STATION
LADDER AND STAIR DETAILS
AND NOTES

Engineering and Surveying
6660 Richmond Avenue, Suite 460 N
(713) 783-7788 (713) 783-9580, Fax
TYPE FIRM REG. NO. 280
TBSLTPRM REG. NO. 1001866



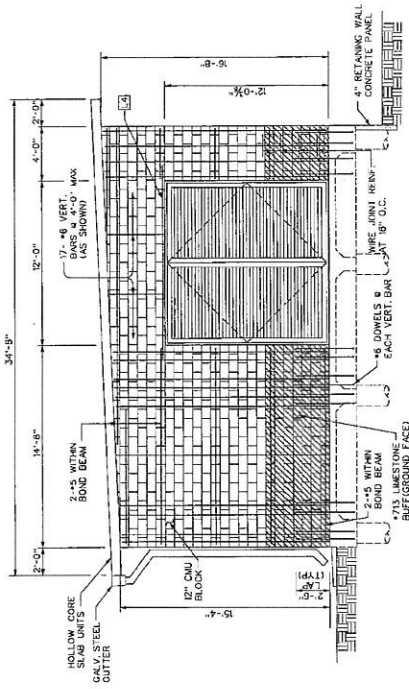
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SURVEY CHECKED BY:
QA/QC BY:
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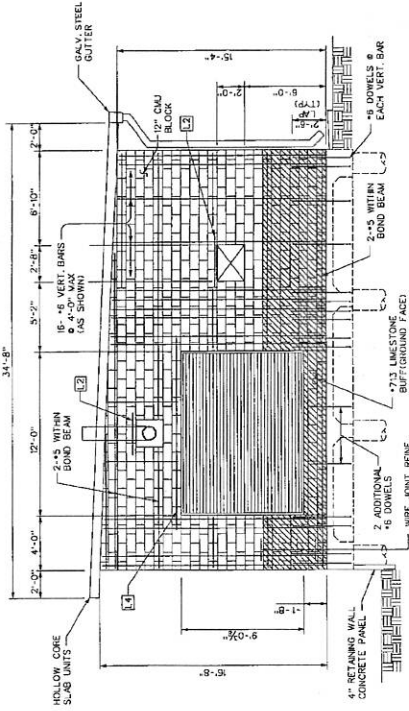
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S6

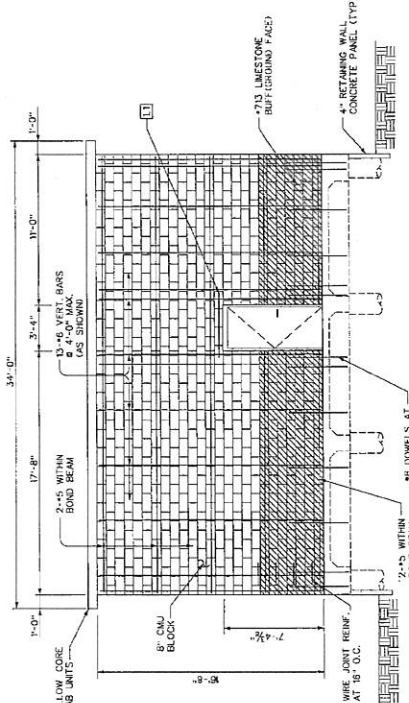
JOB NO. 2014-080



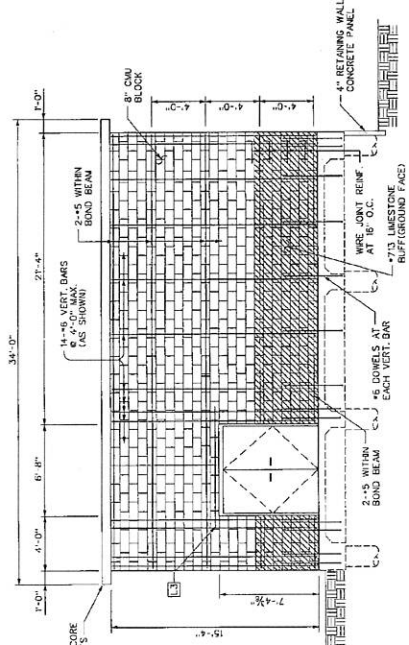
1 SOUTH BUILDING ELEVATION
SCALE 1/4" = 1'-0"



2 NORTH BUILDING ELEVATION
SCALE 1/4" = 1'-0"



3 EAST BUILDING ELEVATION
SCALE 1/4" = 1'-0"



4 WEST BUILDING ELEVATION
SCALE 1/4" = 1'-0"

NOTE: SEE SHEET S13 FOR Lintel SCHEDULE



Engineering and Surveying
9650 Richmond Avenue, Suite 400 N
Houston, Texas 77032
(713) 753-7788 (713) 783-3590 Fax
TBB# FIRM REG. NO. 280
TBB# FIRM REG. NO. 100489

ALCORN BAYOU PUMP STATION
GENERATOR/ MCC BUILDING
ELEVATIONS

SHEET S9



DATE BY REVISION

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DRAWN BY: _____
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DATE: _____

DATE BY REVISION

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DATE BY REVISION

BID SET ONLY

JOB NO. 0014580

DATE: 11/14/11

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

DATE: 11/14/11

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

DATE: 11/14/11

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

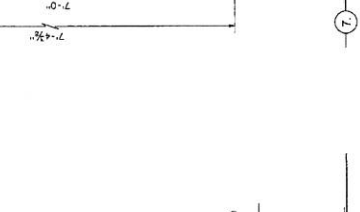
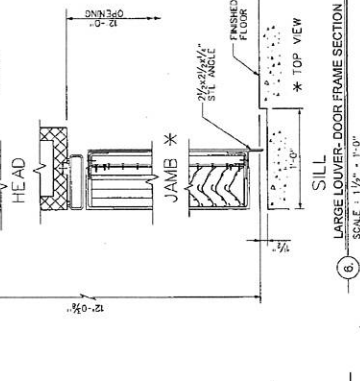
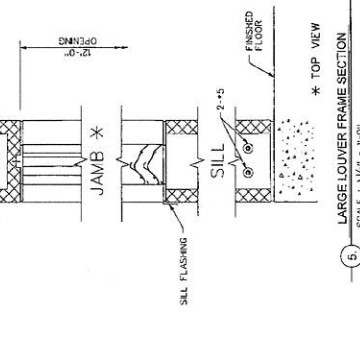
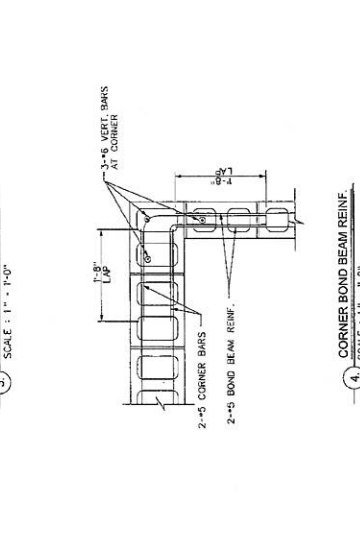
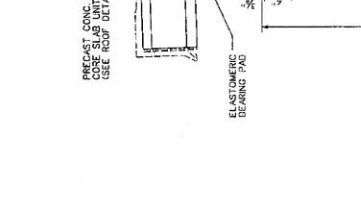
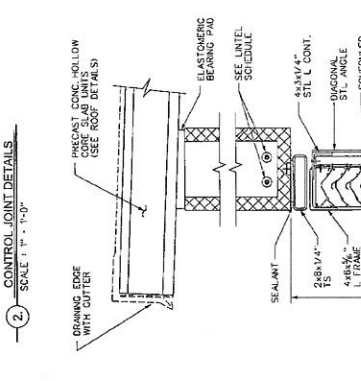
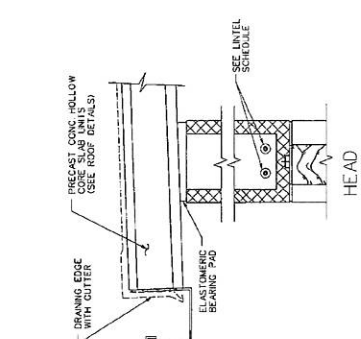
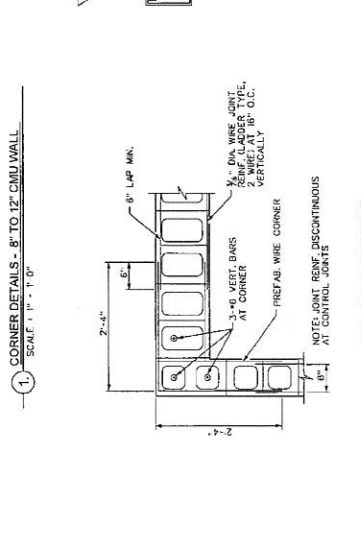
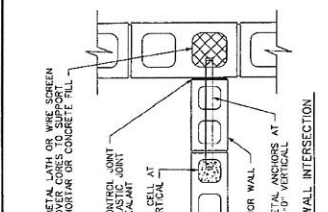
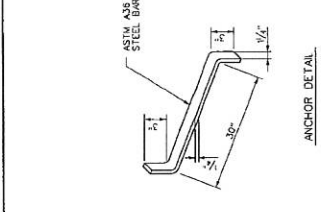
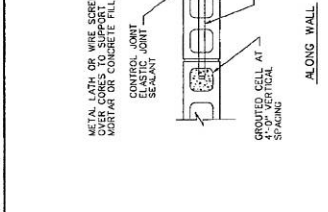
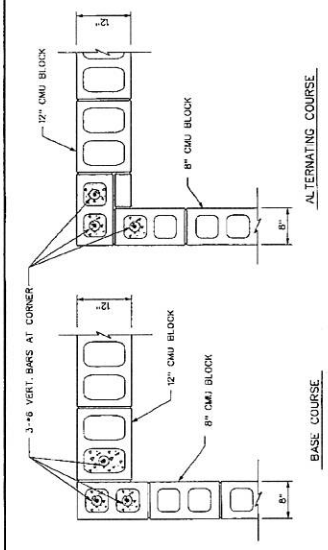
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DATE: 11/14/11

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

DATE: 11/14/11



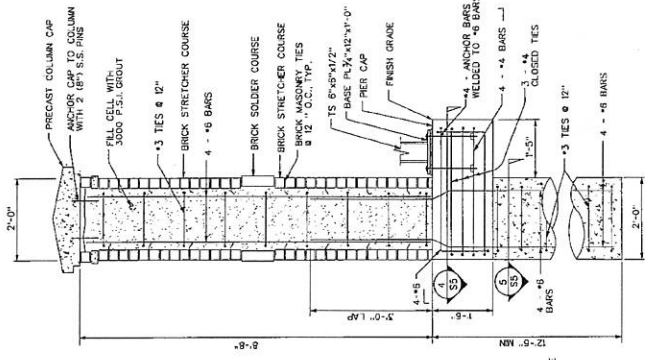
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QA/QC REVISIONS BY:	DATE:
NO.	REVISION



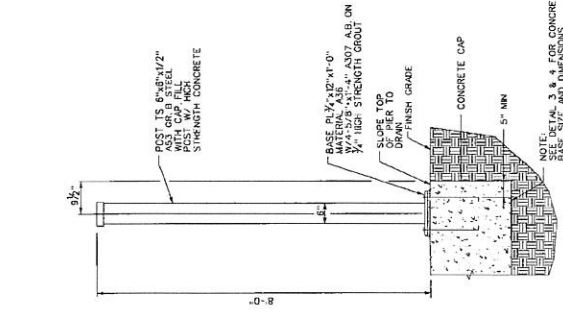
Engineering and Surveying
8690 Richmond Avenue, Suite 450 N
(713) 782-7168 (713) 783-3500, Fax
TERRA FIRM REG. NO. 280
TERRA FIRM REG. NO. 100186

MISCELLANEOUS DETAILS
ALCORN BAYOU PUMP STATION
RIVERSTONE

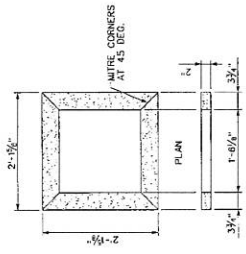
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SHEET S11
DATE: 08/14/08
JOB NO. 001450



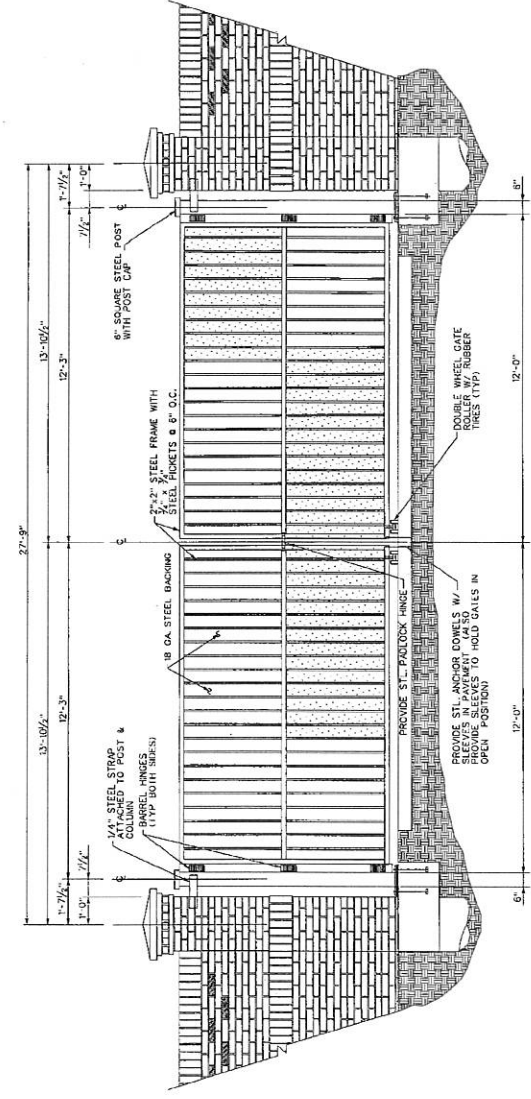
3 TYPICAL FENCE COLUMN @ GATE
SCALE: 1/4" = 1'-0"



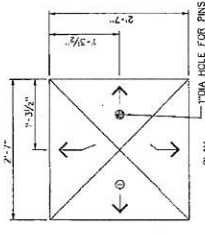
2 GATE POST DETAIL
SCALE: 1/4" = 1'-0"



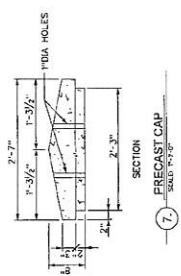
8 PRECAST BAND
SCALE: 1/4" = 1'-0"



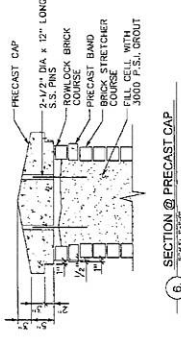
1 GATE ELEVATION
SCALE: 1/4" = 1'-0"



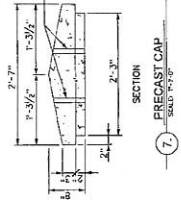
4 PLAN VIEW OF PIER CAP @ GATE
SCALE: 1/4" = 1'-0"



5 SECTION @ PIER
SCALE: 1/4" = 1'-0"



6 SECTION @ PRECAST CAP
SCALE: 1/4" = 1'-0"



7 PRECAST CAP
SCALE: 1/4" = 1'-0"

NOTES:

1. STRUCTURAL MEMBERS AND CONNECTIONS SHOWN ARE THE MINIMUM SIZES SHOWN AND SHALL BE APPROVED BY AN ENGINEER LICENSED IN THE STATE OF TEXAS FOR ALL VEHICULAR GATE DETAILS.
2. ALL STEEL USED IN THE CONSTRUCTION OF THE GATE AND ACCESSORIES SHALL BE GALVANNEAL COATED AND FINISHED IN ACCORDANCE WITH THE SPECIFICATIONS. SHALL BE PAINTED IN THE ACCORDANCE WITH THE SPECIFICATIONS.

BID SET ONLY

SHEET S13

ALCORN BAYOU PUMP STATION

GATE DETAILS

REVISED

Engineering and Surveying
9650 Richmond Avenue, Suite 400 N
(713) 782-7758 (713) 783-5550, Fax
TYPE FIRM REG. NO. 280
TBSLS FIRM REG. NO. 100495

Costello

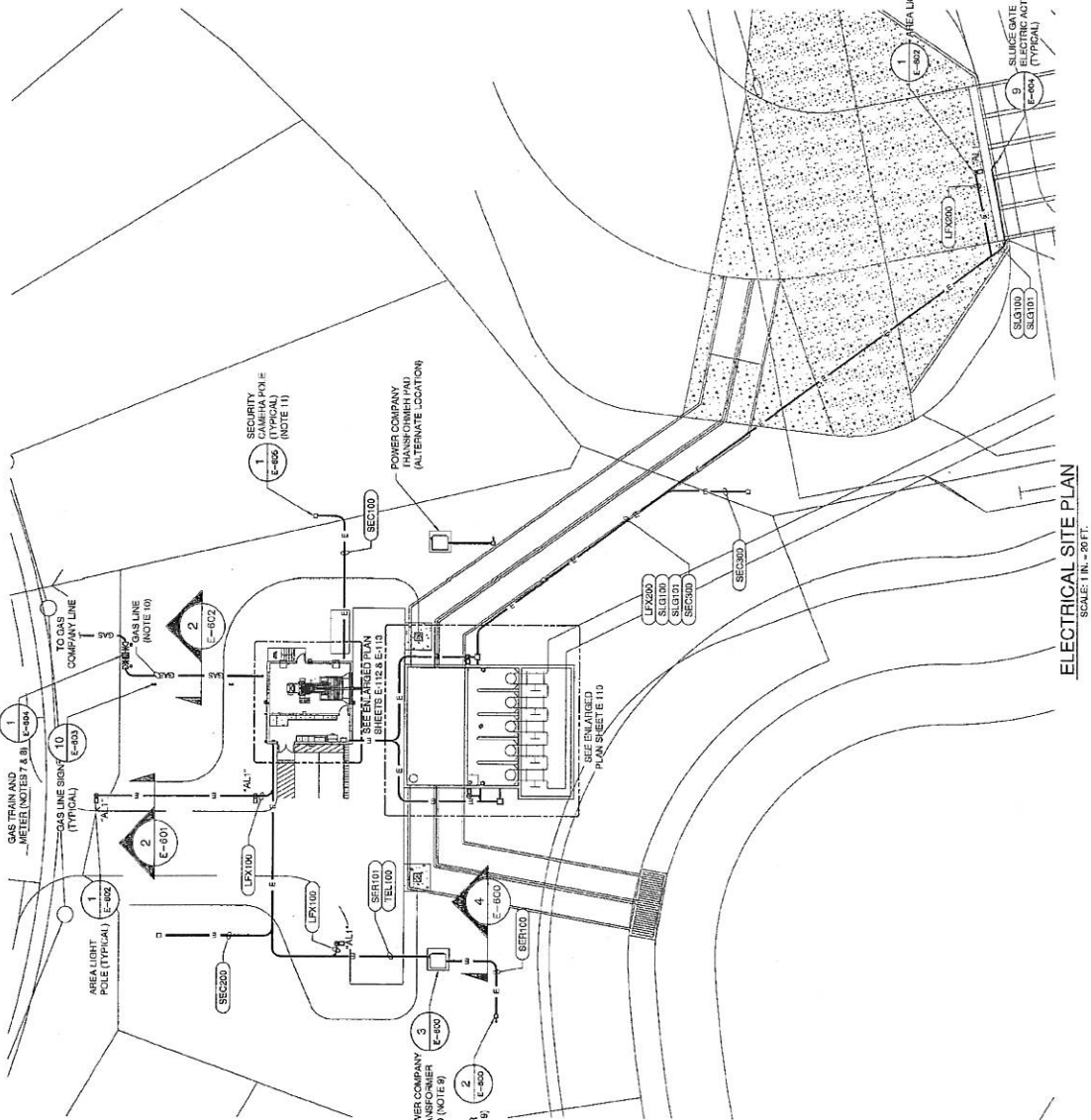
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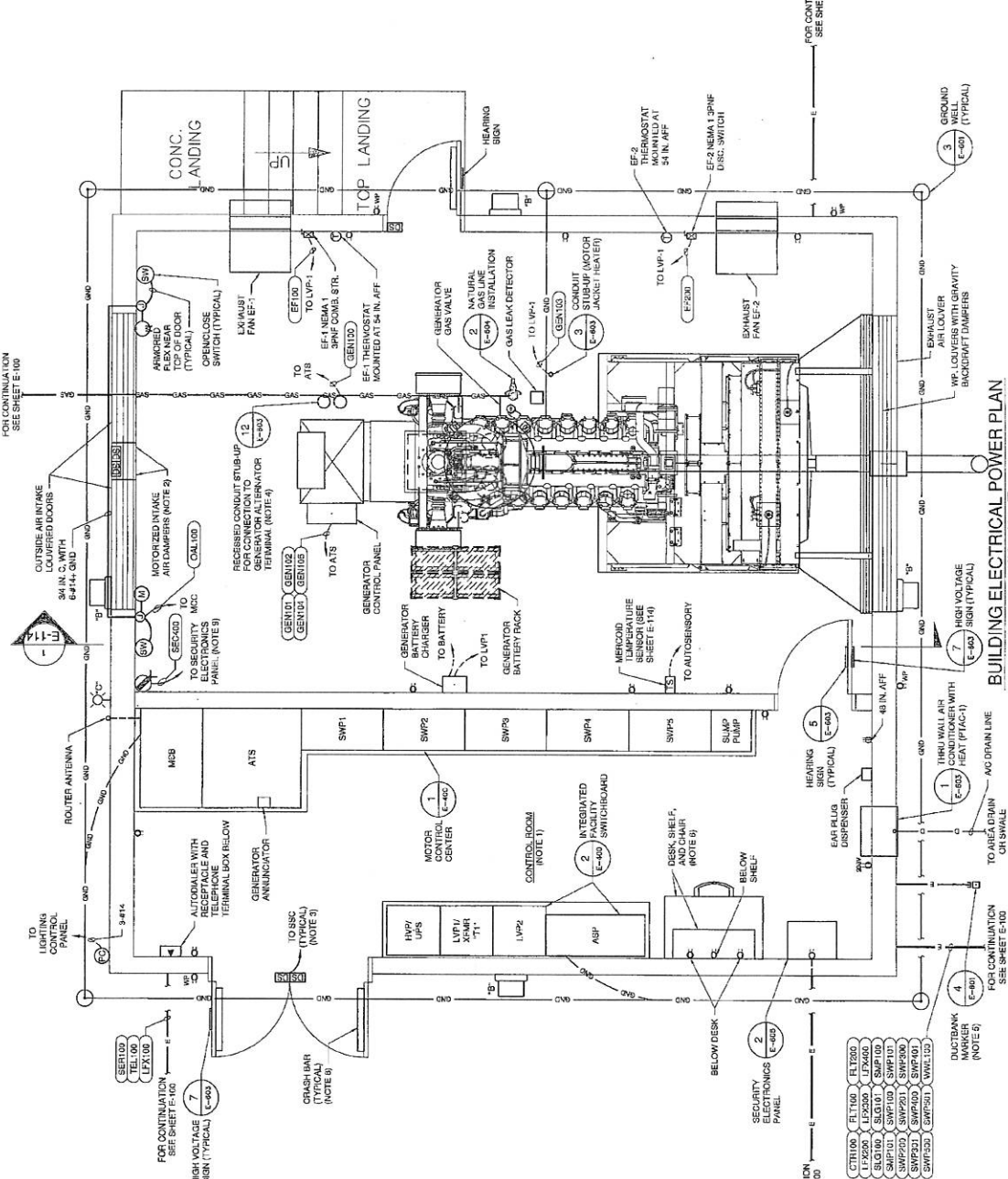
NOTES:

1. SERVICE EQUIPMENT DETAILS ARE SHOWN DIAGNOSTICALLY. ALL CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH THE POWER COMPANY STANDARDS IN EVERY RESPECT. CONSULT LOCAL POWER COMPANY FOR REQUIREMENTS FOR THIS TYPE OF CONSTRUCTION. COORDINATE LOCATION OF SERVICE EQUIPMENT WITH ALTERNATE LOCATION IN BID, VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND PROVIDE EQUIPMENT TO WITHSTAND AVAILABLE FAULT CURRENT. PROVIDE MINIMUM CLEARANCE OF 8 FT. FROM EDGE OF DRIVEWAYS AND OTHER EQUIPMENT.
2. CONDUITS SHALL NOT BE ROUTED ACROSS WALKWAYS PATHS OF ACCESS, TRAVEL OR EGRESS. ROUTE IN CONCRETE STRUCTURES OR UNDERGROUND UTILITY LINES EXIST. CONTACT POWER COMPANY BEFORE ANY CONDUITS ON TOP OF EXISTING UTILITIES.
3. DO NOT COVER WATER LINES WITH CONCRETE FOUNDATIONS FIELD LOCATE AND MARK ALL LINES NEAR CONSTRUCTION.
4. DO NOT SCALE ELECTRICAL EQUIPMENT, DEVICES AND FOUNDATIONS DIMENSIONS. PROVIDE ELECTRICAL PLAN SHEETS AND ELECTRICAL SITE PLAN. SEE ELECTRICAL PLAN SHEETS AND DETAIL SHEETS FOR EXACT INFORMATION. SEE CIVIL PLANS FOR EXISTING UTILITIES. SUBMIT DIMENSIONED LAYOUT PLANS FOR ALL WORK PER SUBMITTAL REQUIREMENTS OF SPECIFICATION. PROVIDE ALL DIMENSIONS AND INSTALLATION UNTIL SUBMITTALS ARE REVIEWED BY ENGINEER.
5. GAS TRAIN AND METER BY GAS COMPANY TO PROVIDE 10.86 CUBIC FEET PER HOUR GAS PRESSURE, 126 FT. TOTAL EQUIVALENT LENGTH GAS LINE.
6. CONTRACTOR TO COORDINATE GAS LINE CONNECTION AND LOCATION WITH GAS COMPANY AND INSTALL PER THEIR STANDARDS AND PER LOCAL CODES. INSTALL PROTECTIVE CASING AND MARK WITH REFLECTOR PINS. PROVIDE VEHICULAR TRAFFIC ALLOW FOR VARIATION OF METER LOCATION UP TO ONE HUNDRED FEET FROM WHERE SHOWN. PROPERLY SIZED METER PER GAS COMPANY STANDARDS.
7. ADJUST TRANSFORMER AND RISE CONDUIT LOCATIONS UP TO 10 FEET FROM SHOWN. CONDUIT LOCATION STATEMENT REMAIN CLEAR OF DRIVEWAY.
8. 1/4" N. SCHEDULE 40 T&E COATED BLACK STEEL GAS LINE BURIED 24 IN BELOW GRADE.
9. SECURITY CONDUIT AND PULL STRINGS INFRASTRUCTURE TO BE INSTALLED BY ELECTRICAL CONTRACTOR.



NOTES:

1. ALL CONDITIONS IN CONTROL ROOM AND GENERATOR ROOM TO BE MAINTAINED AS SHOWN. NO CHANGES TO BE ALLOWED EXCEPT ON CEILING FOR LIGHT FIXTURES. NO SURFACE MOUNT UNLESS ALLOWED IN CONTROL ROOMS OR GENERATOR ROOM UNLESS PRE-APPROVED.
2. PROVIDE INTERLOCK CIRCUIT FOR BPH, BPH, AND MOTORIZED DAMPERS.
3. INSTALL HIGH QUALITY NON-MAGNETIC, DPDT INTRUSION SWITCHES ON ALL BUILDING DOORS AND ROUTE 4 WIRE TO MCC VIA CONDUIT WITH STEEL FLEX CONNECTION AT SWITCH.
4. COORDINATE STUB-UP LOCATION WITH GENERATOR MANUFACTURER TO ALLOW GENERATOR REMOVAL.
5. STUB-OUT 8 EMPTY CONDUITS FROM MOD. 24 INCH AND 41 INCH.
6. PROVIDE GOOD QUALITY STEEL DESK WITH THREE SIDE WITH CASTERS WITH MINIMUM 30 INCH WHEELS. PROVIDE CHAIR WHEEL DRAWING FILE FOR STORING ROLLED DRAWINGS VERTICALLY. PROVIDE 14 IN. DEEP X 40 IN. LONG, PAINTED, MOUNT 24 INCHES ABOVE DESK TOP.
7. PROVIDE ONE COMPLETE SET OF ASSEMBLY PLANS, POLES, AND PLACE IN PLAN HOLDER PROVIDE ONE COMPLETE SET OF O&M MANUALS AND PLACE ON SHELF. COORDINATE WITH OTHER TRADES.
8. GENERAL CONTRACTOR TO PROVIDE EMERGENCY EGRESS PUSH BAR TO OPEN DOORS TO MCC ROOM. DOORS TO SWING OUTWARD FROM ROOM.
9. CAMERA SHALL BE CAPABLE OF VIEWING GENERATOR CONTROL PANEL AND EXIT DOOR.
11. ALL EQUIPMENT MUST FIT SPACE SHOWN.



SE SHRAIDER ENGINEERING
 12000 W. 10TH AVENUE, SUITE 100
 DENVER, COLORADO 80202
 PHONE: (303) 751-1111
 FAX: (303) 751-1112
 WWW.SHRAIDERENGINEERING.COM



PORT BEND COUNTY LID NO. 15
 STORMWATER PUMP STATION
 ENLARGED BUILDING
 POWER PLAN

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

ENGINEERING AND SURVEYING
 6820 RICHMOND AVENUE, SUITE 400 N
 HOUSTON, TEXAS 77062
 (713) 985-7768 (713) 763-3300 FAX
 LICENSE NUMBER: 10000
 TEXAS PROFESSIONAL ENGINEER NO. 28916

DESIGNED BY: _____
 DESIGN CHECKED BY: _____
 DRAWN BY: _____
 SURVEY CHECKED BY: _____
 Q/A/C BY: _____
 DATE: _____

REVISIONS:

NO.	REVISION	DATE	BY

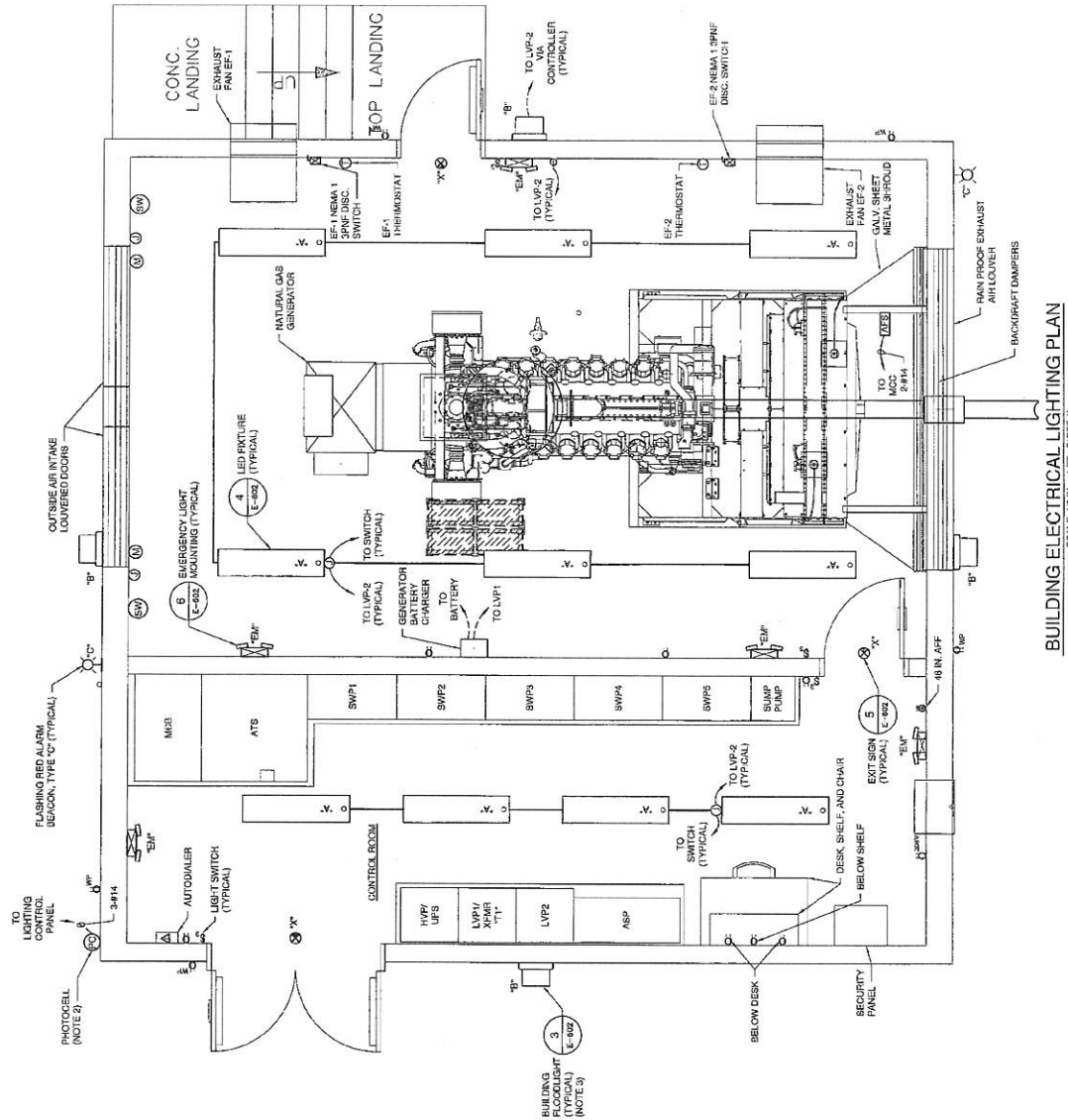
FOR CONTINUATION SEE SHEET E-100

FOR CONTINUATION SEE SHEET E-100

FOR CONTINUATION SEE SHEET E-100

FOR CONTINUATION SEE SHEET E-100

- NOTES:**
- COORDINATE FIXTURE LOCATIONS WITH COOLANT LINES AND EXHAUST EQUIPMENT. SEE MECHANICAL SHEETS FOR ADDITIONAL INFORMATION.
 - INSTALL PHOTOELECTRIC SWITCH AT EDGE OF BUILDING ROOF AND FACE DUE NORTH, 1/2" N. CONDUIT WITH 3-#14 TO LIGHTING CONTROLS.
 - MOUNT BUILDING FLOODLIGHT 3 FEET ABOVE GRADE.



SHRADER ENGINEERING
 ELECTRICAL | COMMUNICATIONS | TECHNOLOGY
 10000 Katy Freeway, Suite 1000, Houston, TX 77058
 (713) 466-0200 | www.shrader-engineering.com

PROJECT: FORT BEND COUNTY LID NO. 15 STORMWATER PUMP STATION ENLARGED BUILDING LIGHTING PLAN
 SHEET: E-113
 JOB NO. 201110-048

**FORT BEND COUNTY LID NO. 15
 STORMWATER PUMP STATION
 ENLARGED BUILDING
 LIGHTING PLAN**

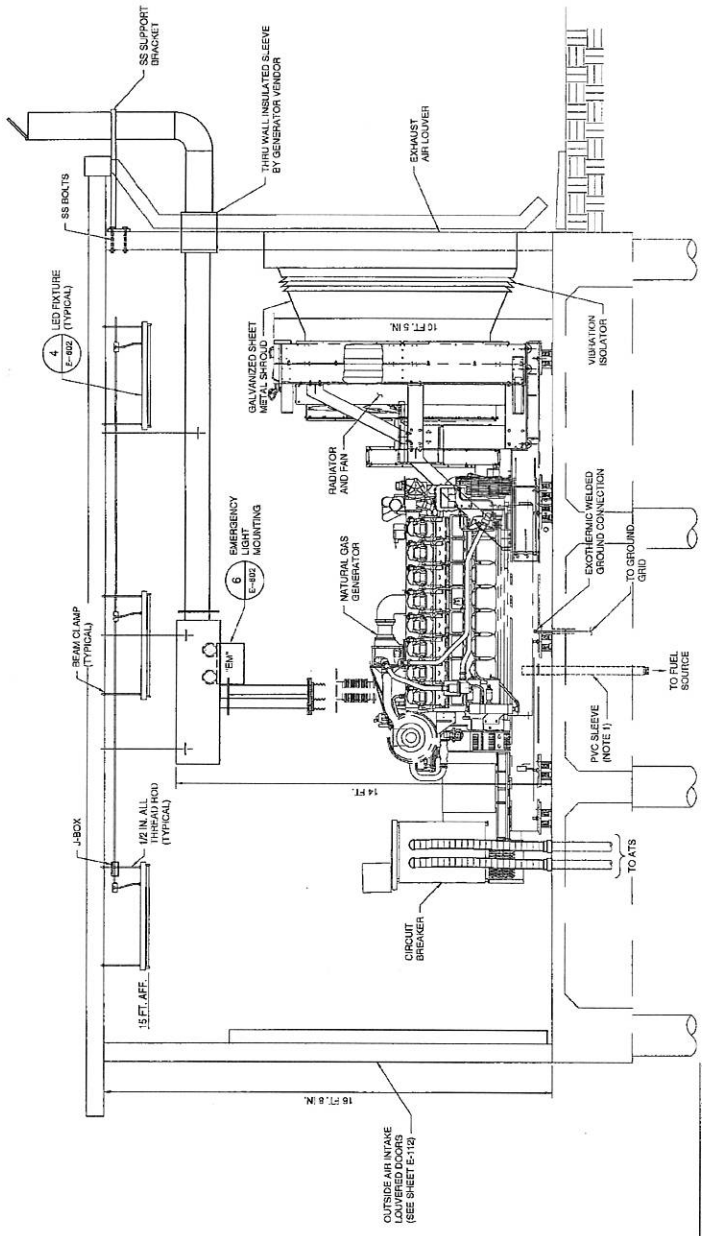
BUILDING ELECTRICAL LIGHTING PLAN
 SCALE: 1/8" = 1'-0" (NOTE 1)

Costello
 Engineering and Surveying
 460 N. Houston, Texas 77002
 (713) 763-7700 | (713) 763-3500 | Fax
 (713) 763-3500
 TOLSON FIRM REG. NO. 280
 TOLSON FIRM REG. NO. 70086

NO.	REVISION	DATE	BY

DESIGNED BY: _____
 DESIGN CHECKED BY: _____
 DRAWN BY: _____
 CADD CHECKED BY: _____
 SURVEY CHECKED BY: _____
 DATE: _____

- NOTES:**
1. COORDINATE ALTERNATOR TERMINAL BOX ENCLOSURE WITH THE GENERATOR TERMINAL BOX ENCLOSURE FOR TRANSITIONS. BOX SIZES MAY VARY FROM CATALOG. PER GENERATOR MANUFACTURER PROVIDE AS REQUIRED.
 2. CHARGER MAY BE WALL MOUNTED OR MAY BE LOCATED ON GENERATOR BY GENERATOR MANUFACTURER.
 3. GENERATOR MUFFLER, PIPING AND ALL OTHER APPURTENANCES FURNISHED BY GENERATOR MANUFACTURER AND INSTALLED BY CONTRACTOR.



GENERATOR DATA	
ITEMS	DATA
GENERATOR	1,000KW (MIN), 1,250KVA, 1,550VA FUEL CONSUMPTION 100 HP RATE GENERATOR WT = 24,000 LBS.
* VERIFY EQUIPMENT PARAMETERS WITH THE SPECIFIC MANUFACTURER	

1 NATURAL GAS GENERATOR ELEVATION
SCALE: 1/8" = 1' FT. (NOTE 1)

SE SHRADER ENGINEERING
INCORPORATED
1515 W. 10TH STREET
MCKINNEY, TEXAS 75069
TEL: 972-562-1111
WWW.SHRADERENGINEERING.COM



PORT BEND COUNTY LID NO. 15
STORMWATER PUMP STATION
GENERATOR ELEVATION
- NATURAL GAS

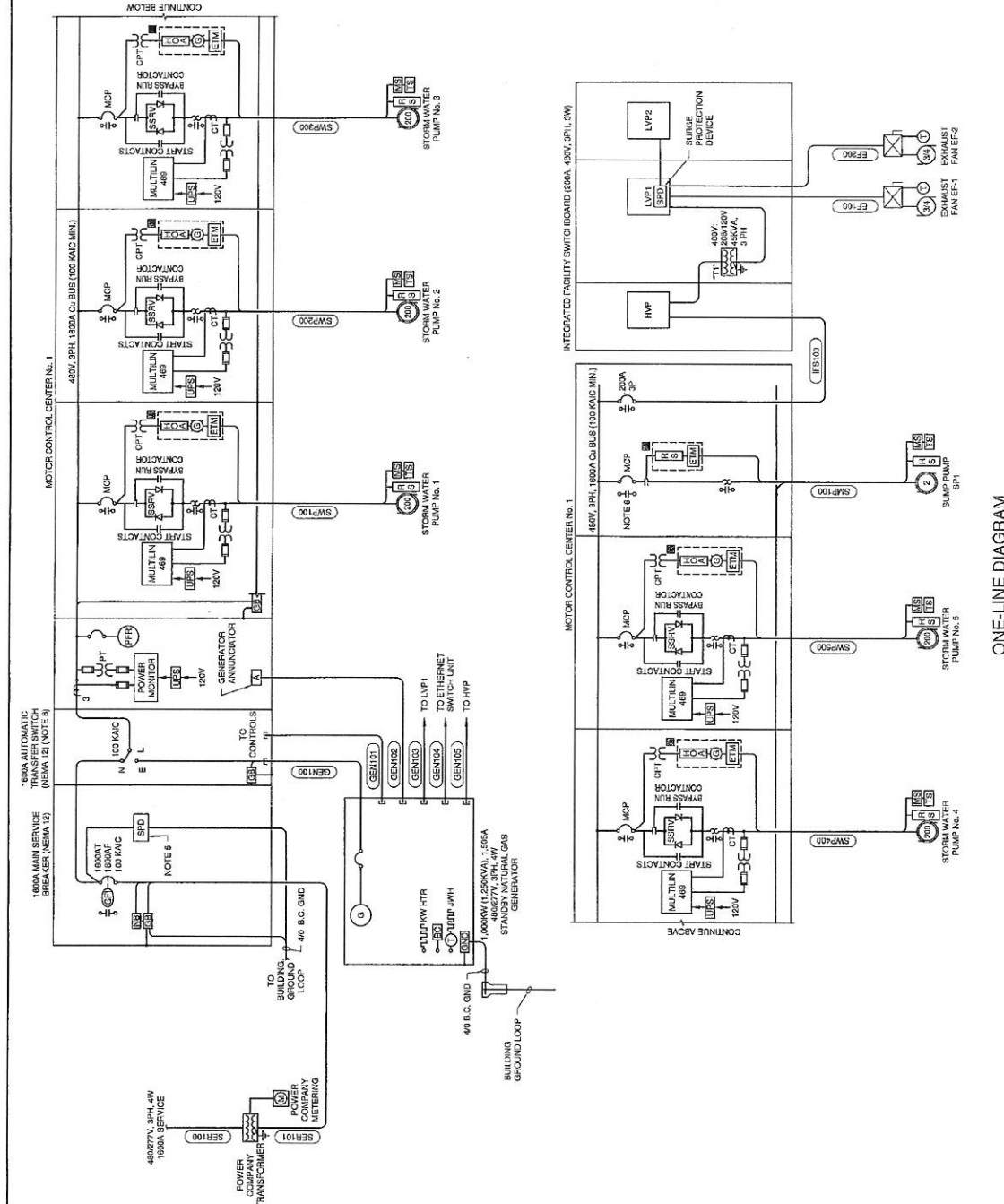
Engineering and Surveying
8650 National Avenue, Suite 450 N
Houston, Texas 77032
(713) 783-7788 (713) 783-5360 Fax
TYPE PERM REG. NO. 282
TOP-23 PUBLIC REG. NO. 102898



DESIGNED BY:	DATE:
DESIGN CHECKED BY:	DATE:
DRAWN BY:	DATE:
SURVEY CHECKED BY:	DATE:
QA/QC BY:	DATE:
QA/QC REVISIONS BY:	DATE:

NO.	REVISION	DATE	BY

- NOTES:**
1. ALL CONDUITS, CONDUCTORS AND DEVICES MAY NOT BE SHOWN ON THIS SHEET.
 2. VERIFY PUMP MOTOR CURRENT WITH MOTOR MANUFACTURER AND WHERE GREATER THAN NEC VALUE, INCREASE CONDUCTORS AND CONDUIT SIZES ACCORDINGLY.
 3. ALL HOVS, ETMS AND RUN LIGHTS TO BE MOUNTED ON FACE OF MCC.
 4. SEE CONDUIT SCHEDULES ON SCHEDULE SHEET FOR CONDUIT AND CONDUCTOR REQUIREMENTS.
 5. INSTALL SURGE PROTECTOR ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND CONDUIT SIZES CONFORM TO SPECIFICATION 1820A ROUTE FAIL ALARM TO SSS.
 6. PROVIDE AUXILIARY CONTACT FOR MONITORING CIRCUIT BREAKER AND OVERLOAD STATUS, ROUTE TO SSS.
 7. ALL STARTER BREAKERS TO HAVE LOCKOUT FEATURE.
 8. PROVIDE TRANSFER SWITCH DATA TO POWER COMPANY.



ELECTRICAL LOAD ANALYSIS

LOAD	PH-A	PH-B	PH-C	AMPS
STORM WATER PUMP NO. 1	200HP	240	240	240
STORM WATER PUMP NO. 2	200HP	240	240	240
STORM WATER PUMP NO. 3	200HP	240	240	240
STORM WATER PUMP NO. 4	200HP	240	240	240
STORM WATER PUMP NO. 5	200HP	240	240	240
SLURGE PUMP	1HP	2	2	2
SLURGE GATE	1HP	2	2	2
T1 TRANSFORMER	48KVA	60	60	60
100% OF LARGEST MOTOR	1200	1200	1200	1200
TOTAL LOAD	1000	1000	1000	1000
SERVICE AMPACITY @ 480/277, 3PH, 4W	301	301	301	301
SPARE AMPACITY	1200	1200	1200	1200
GENERATOR LOAD	1500	1500	1500	1500
GENERATOR AMPACITY	1500	1500	1500	1500

CALCULATED MAXIMUM AVAILABLE FAULT CURRENT - 48,018 AMPS.
USE 100 KVIC RATED DEVICES AND BRACING.

SHRADER ENGINEERING
ELECTRICAL COMMUNICATIONS TECHNOLOGY
1000 N. 10th Street, Suite 100, Fort Bend, TX 77450
Tel: 281-291-1111
Fax: 281-291-1112
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STARBUCKS
1000 N. 10th Street, Suite 100, Fort Bend, TX 77450
Tel: 281-291-1111
Fax: 281-291-1112
www.starbucks.com

PROJECT: **E-200**

**PORT BEND COUNTY LID NO. 16
STORMWATER PUMP STATION**

ONE-LINE DIAGRAM

DESIGNED BY: _____ DATE: _____
 DESIGN CHECKED BY: _____
 DRAWN BY: _____
 GOOD CHECKED BY: _____ DATE: _____
 QA/CHECKED BY: _____ DATE: _____
 QA/CORRECTIONS BY: _____

Costello
Engineering and Construction
9880 Dabney Road, Suite 400 N
Houston, Texas 77052
(713) 783-7768 (713) 783-9060, Fax
TBPCE FORM REG. NO. 280
TBPCE FORM REG. NO. 101646

NO.	REVISION	DATE	BY

NOTES:
 1. ALL SERVICE AND MOTOR FEEDER CONDUCTORS TO BE APPROX. LOW VOLTAGE CONDUCTORS IN PREFER CONDUIT TO BE USED PATED.

EXHAUST FAN SCHEDULE

UNIT NO.	SERVING	CPH	DRIVE TYPE	PD (MVA)	FAN MOTOR		MANUFACTURER MODEL NO.	ACCESSORIES
					HP	VOLTRHZ		
EF-1	GENERATOR ROOM	1900	DRIVE/1	0.26	34	1160	JEMCO DFE 16-3/4	MAKE POWER CONNECTIONS TO LOW SPEED WINDINGS
EF-2	GENERATOR ROOM	1900	DIRECT	0.26	34	1160	JEMCO DFE 16-3/4	MAKE POWER CONNECTIONS TO LOW SPEED WINDINGS

CONDUIT SCHEDULE

CONDUIT TAG	CONDUIT QUANTITY	CONDUIT SIZE	FROM	TO	CONDUCTOR	NOTES
AT100	1	3/4 IN.	MCC	AUTOCALER	20#14-GND	ALARMS
CT100	1	1 IN.	ASP	LEVEL SENSOR NO. 1	RE-602 CABLE-GND	RAJAH TRANSMITTER
EF100	1	1 1/2 IN.	LVP1	EXHAUST FAN EF-1	2#10-GND	
EP200	1	1 IN.	ASP	EXHAUST FAN EF-2	2#10-GND	
FT100	1	1 IN.	ASP	FLOATS	14#14-GND	
FT200	1	1 IN.	ASP	FLOATS	14#14-GND	
GEN200	2	6 IN.	GENERATOR	GENERATOR BREAKER	19#14-GND	GENERATOR FEEDERS
GEN101	1	1 IN.	MCC	GENERATOR CONTROLS	ANNUNCIATOR CABLE	ANNUNCIATOR
GEN102	1	1 IN.	MCC	GENERATOR CONTROLS	ANNUNCIATOR CABLE	ANNUNCIATOR
GEN103	1	1 1/2 IN.	LVP1	GENERATOR CONTROL PANEL	ETHERNET CABLE	ETHERNET CONTROL PANEL POWER
GEN104	1	1 IN.	GENERATOR	ETHERNET SWITCH	ETHERNET CABLE	ETHERNET CONNECTION TO SWITCH
GEN105	1	1 IN.	GENERATOR	ETHERNET SWITCH	ETHERNET CABLE	ETHERNET CONNECTION TO SWITCH
GEN106	1	1 IN.	MCC	ETHERNET SWITCH	ETHERNET CABLE	ETHERNET CONNECTION TO SWITCH
LEF100	1	2 1/2 IN.	ASP	AREA LIGHTS	3#14-GND	ROAD AREA LIGHT
LEF200	1	1 IN.	ASP	AREA LIGHTS	2#10-GND	SLUICE GATE AREA LIGHT
LEF300	1	1 IN.	ASP	AREA LIGHTS	2#10-GND	PUMP AREA LIGHT
LEF400	1	1 IN.	ASP	AREA LIGHTS	2#10-GND	PUMP AREA LIGHT
LVP100	1	1 1/2 IN.	LVP1	LVP-2	3#14-GND	OUTSIDE AIR INTAKE COLLIER
LVP200	1	3/4 IN.	LVP1	LVP-2	12#14-GND	CAMERA POWER AND DATA
SEC100	1	1 1/2 IN.	SECURITY PANEL	SECURITY CAMERAS	2-CAT 6 ETHERNET CABLES W/POE	CAMERA POWER AND DATA
SEC200	1	1 1/2 IN.	SECURITY PANEL	SECURITY CAMERAS	2-CAT 6 ETHERNET CABLES W/POE	CAMERA POWER AND DATA
SEC300	1	1 1/2 IN.	SECURITY PANEL	SECURITY CAMERAS	2-CAT 6 ETHERNET CABLES W/POE	CAMERA POWER AND DATA
SEC400	1	1 1/2 IN.	SECURITY PANEL	SECURITY CAMERAS	2-CAT 6 ETHERNET CABLES W/POE	CAMERA POWER AND DATA
SR1000	2	6 IN.	SERVICE POE RISER	PAD MOUNTED TRANSFORMER	2-POWER COMPANY APPROVED PULL STRINGS	
SR101	1	1 1/2 IN.	SR1000	SR1000	3#6-EFH-GND	REFER TO CONDUCTOR TABLE
SR102	1	1 IN.	SR1000	SR1000	1#8-GND	SLUICE GATE
SR103	1	1 IN.	SR1000	SR1000	1#8-GND	SLUICE GATE
SR104	1	1 IN.	SR1000	SR1000	1#8-GND	SLUICE GATE
SR105	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR106	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR107	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR108	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR109	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR110	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR111	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR112	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR113	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR114	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR115	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR116	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR117	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR118	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR119	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR120	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR121	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR122	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR123	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR124	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR125	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR126	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR127	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR128	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR129	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR130	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR131	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR132	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR133	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR134	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR135	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR136	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR137	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR138	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR139	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR140	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR141	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR142	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR143	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR144	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR145	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR146	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR147	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR148	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR149	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE
SR150	1	2 IN.	SR1000	SR1000	2#10-GND	SLUICE GATE

3 PHASE SERVICE FEEDER CONDUCTOR AND DEVICE TABLE

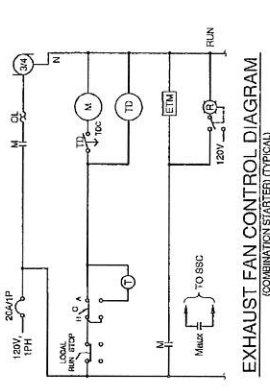
CIRCUIT RATING	CONDUIT		PHASE CONDUCTOR		NEUTRAL CONDUCTOR		GROUND CONDUCTOR		EQUIP. GND SERVICE		MAXIMUM CONDUCTOR LOAD SIZE MOTOR STARTING AT 2% VOLTAGE DROP AT 60% P.F.
	QTY	SIZE	QTY	SIZE	QTY	SIZE	QTY	SIZE	QTY	SIZE	
100	1	2 IN.	3	#1	1	#2	1	#2	1	#2	328 FT.
150	1	2 1/2 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
200	1	2 1/2 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
250	1	3 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
300	1	3 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
400	1	4 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
600	2	4 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
800	2	4 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
1000	3	3 1/2 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
1200	3	4 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
1600	4	4 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
2000	5	4 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.
2500	6	4 IN.	3	#2	1	#2	1	#2	1	#2	328 FT.

SERVICE FEEDER NOTES:
 1. DROPPED NEUTRAL AFTER FIRST OVER CURRENT PROTECTION DEVICE UNLESS A STANDBY GENERATOR IS PROVIDED.
 2. 100 MINIMUM FOR PARALLEL PHASE NEUTRAL OR GROUNDING CONDUCTORS PER NEC.
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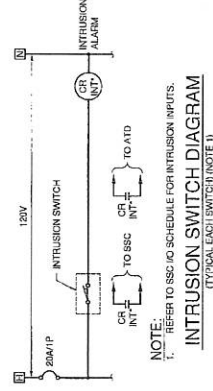
460V MOTOR DEVICE TABLE

HP	LOAD AMPS	MTR %2% TRIP	START RATIO	CHD RATIO	CONDUCTORS			MAXIMUM CONDUCTOR DISTANCE BASED ON 100% VOLTAGE DROP AT 60% P.F.	
					PHASE	GROUND	EQUIP.		
1/2-5	1.6	2.10	10	PWR1	1	1 IN.	3	#12	300 FT.
7-1/2	11	14	30	PWR1	1	1 IN.	3	#10	275 FT.
10	14	18	36	PWR1	1	1 IN.	3	#10	275 FT.
15	21	27	40	PWR2	1	1 IN.	3	#8	275 FT.
20-25	27-34	34-43	50	PWR2	1	1 IN.	3	#6	180 FT.
30	40	50	70	PWR3	1	1 1/2 IN.	3	#6	225 FT.
40	62	65	100	PWR3	1	1 1/2 IN.	3	#4	275 FT.
50	65	82	150	PWR3	1	1 1/2 IN.	3	#3	250 FT.
60	77	97	200	PWR4	1	1 1/2 IN.	3	#2	275 FT.
75	96	124	250	PWR4	1	2 IN.	3	#1	300 FT.
100	124	155	300	TRAT4	1	2 IN.	3	#0	300 FT.
125									

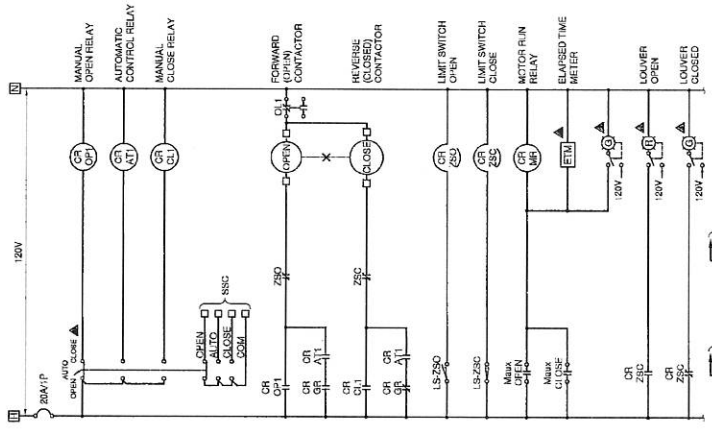
GENERAL NOTES:
 1. ALL CONTROL RELAYS TO HAVE CONTACTS ROUTED TO SSC.



EXHAUST FAN CONTROL DIAGRAM
 (COMBINATION STARTER) (TYPICAL)



INTRUSION SWITCH DIAGRAM
 (TYPICAL EACH SWITCH (NOTE 1))



AIR LOUVER MOTOR CONTROL DIAGRAM

SHRADER ENGINEERING
 10000 W. 10th Street, Suite 100
 Overland Park, KS 66204
 Phone: (913) 666-1100
 Fax: (913) 666-1101
 Website: www.shradereng.com

PROJECT NO. 15-001
 SHEET NO. 3 OF 3

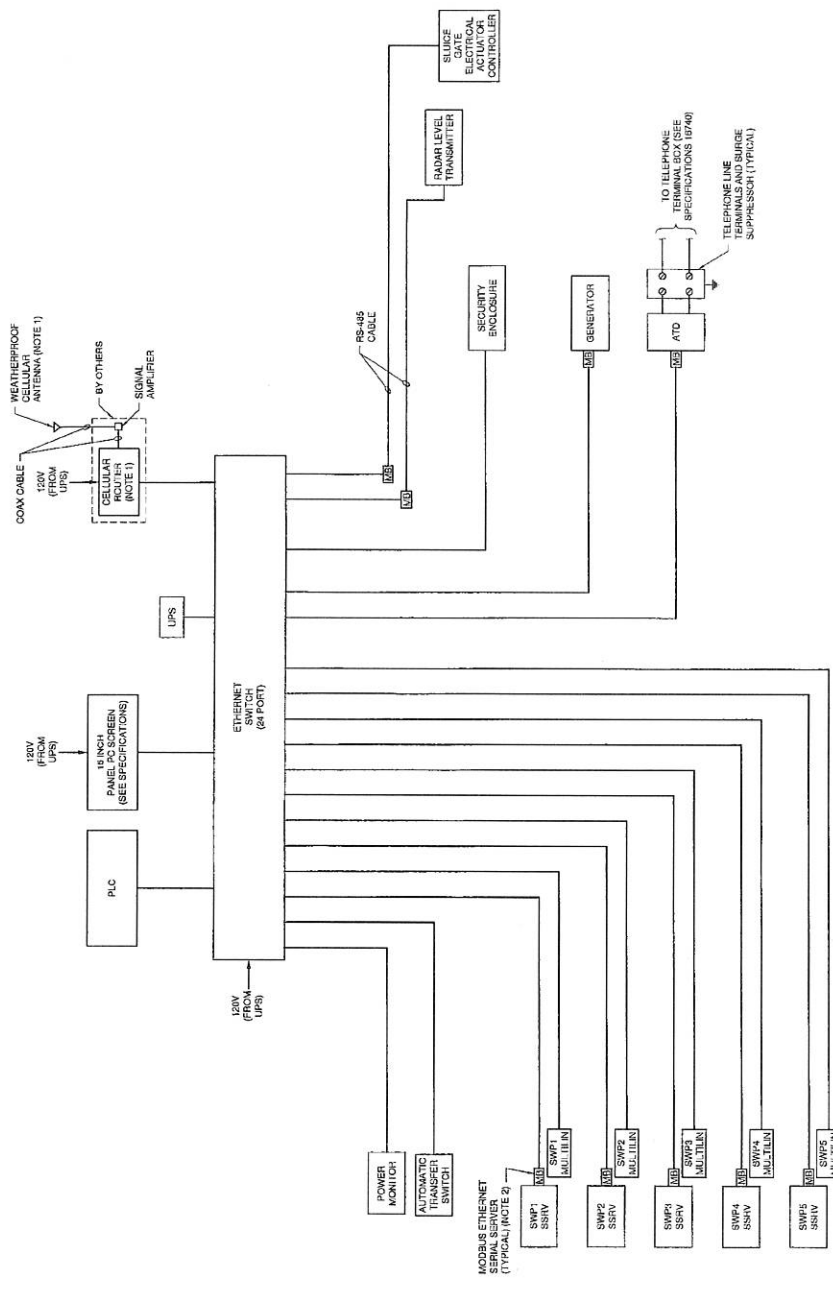
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 SURVEY CHECKED BY: _____ DATE: _____
 QA/QC BY: _____ DATE: _____
 QA/QC REVISION BY: _____

FOR FORT BEND COUNTY LID NO. 15
 STORMWATER PUMP STATION
 CONTROL DIAGRAMS
 SHEET 3

Costello
 Engineering and Surveying
 6900 Richmond Avenue, Suite 400 N
 Houston, Texas 77022
 (713) 782-7700 (713) 762-3500 Fax
 LICENSED PROFESSIONAL ENGINEER REG. NO. 260
 TARRANT COUNTY, TEXAS

NO.	REVISION	DATE	BY

- NOTES:**
1. CELLULAR ROUTER AND AMPLIFIER WILL BE PROVIDED BY OTHERS. PROVIDE SPACE INSIDE CONTROL PANEL FOR THE CELLULAR ROUTER AND AMPLIFIER TO INSTALL OUTDOOR ANTENNA AS SHOWN ON SHEETS.
 2. PROVIDE MANUFACTURER'S SERIAL TO ETHERNET CONNECTER, SERIAL OR GATEWAY ADDRESS TO COMMUNICATE WITH PLC AND HMI VIA MODBUS TCP/IP. WHERE MANUFACTURER DOES NOT PROVIDE THIS INFORMATION, PROVIDE MODBUS ETHERNET SERIAL SERVER AS LISTED IN SPECIFICATION HERE.
 3. ALL NETWORK CONNECTIONS SHOWN ARE ETHERNET UNLESS INDICATED OTHERWISE.
 4. CONTROL POWER NOT SHOWN FOR ALL DEVICES. REFER TO SPECIFICATIONS AND PROVIDE ACCORDINGLY.



SEE SPECIFICATIONS FOR INDIVIDUAL DEVICE REQUIREMENTS

NETWORK COMMUNICATIONS BLOCK DIAGRAM (NOTE 4)



SHEET
E-510
JOB NO. 201109-02



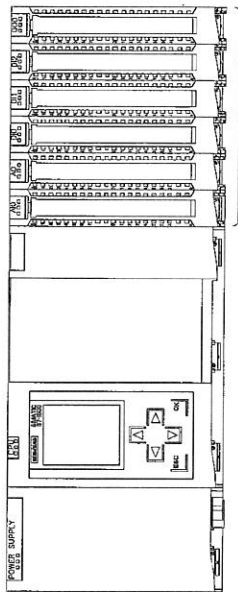
FORT BEND COUNTY LID NO. 16
STORMWATER PUMP STATION
NETWORK DIAGRAM
Rev 12/01/15

Costello
Engineering and Surveying
8820 West Loop South, Suite 400 N
Houston, Texas 77032
(713) 783-7788 (713) 783-3500, Fax
TBPES FIRM REG. No. 280
TBPES FIRM REG. No. 100846

NO.	REVISION	DATE	BY

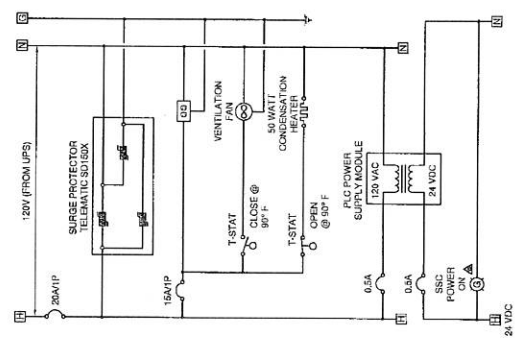
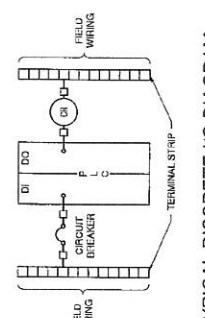
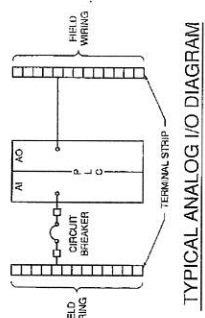
DESIGNED BY: _____
 DESIGN CHECKED BY: _____
 DRAWN BY: _____
 30000 CHECKED BY: _____
 SUBMIT CHECKED BY: _____ DATE: _____
 QA/QC REVISIONS BY: _____

- GENERAL NOTES:** CONTACTS FOR RELAYS AS REQUIRED BY ADDING ADDITIONAL RELAYS WITH THE POINTS WIRING IN PARALLEL.
- ALL I/O RELAYS, CONTACTS AND PLC TO BE POWERED BY 24 HOUR UPS.
 - SEE CONTROL DIAGRAMS FOR ADDITIONAL I/O REQUIREMENTS.



- NOTES:**
- PLC'S SIEMENS SEE SPECIFICATION 1604. NO SUBSTITUTION.
 - PROVIDE ADDITIONAL SPARE LOGS OF EACH TYPE FOR UNDEFINED OPERATIONS PER SPECIFICATION 1604. COORDINATE WITH ENGINEER.
 - ALL I/O RELAYS, CONTACTS AND PLC TO BE POWERED BY 24 HOUR UPS.

SOLID STATE CONTROLLER
(NOTE 2)



SHRADER ENGINEERING
ELECTRICAL & COMMUNICATIONS TECHNOLOGY
10000 WOODBURN AVENUE, SUITE 400 N
MARTIN, INDIANA 46757
PHONE: (765) 251-1111 FAX: (765) 251-1112
WWW.SHRADE.COM

PROJECT: **E-511**

DATE: **08/11/08**

JOB NO. **041008-02**

FORT BRAD COUNTY I/D NO. 15
STORMWATER PUMP STATION
SOLID STATE
CONTROLLER
DIAGRAM

See sheets

Engineering and Surveying
9900 Richmond Avenue, Suite 400 N
Carmel, IN 46032
(719) 783-7760 (719) 783-5500, Fax
TRPS & PUMP REG. NO. 280
TRPS & PUMP REG. NO. 102048



NO.	REVISION	DATE	BY

DESIGNED BY: _____
 DESIGN CHECKED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 QUANTITY CHECKED BY: _____
 Q/A/C REVISIONS BY: _____

GENERAL NOTES:
 1. ALL ELECTRICAL SERVICE SHALL BE PROVIDED BY THE POWER COMPANY AND SHALL BE MOUNTED TO THE SERVICE POLE. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACKETING AND SUPPORTS FOR THE SERVICE POLE.
 2. CONTRACTOR TO PROVIDE PRIMARY CONDUITS AND SERVICE POLES. THE POWER COMPANY WILL PROVIDE ALL PRIMARY CONDUCTORS.

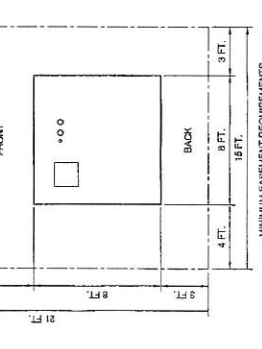
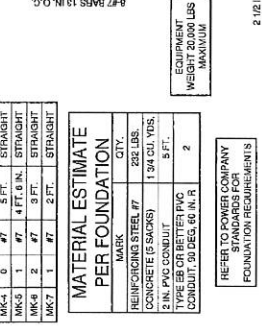
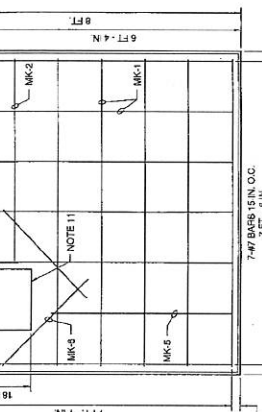
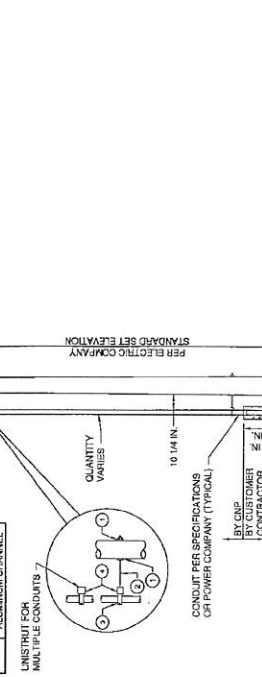
MATERIAL LIST

ITEM	DESCRIPTION	QUANTITY
1	SQUARE WASHER	2
2	1/2" DIA. X 24 IN. HEX. HEAD BOLT	2
3	1/2" DIA. X 24 IN. HEX. HEAD BOLT	2
4	ALUMINUM CHANNEL	1



REINFORCING SCHEDULE PER FOUNDATION

MARK	QTY.	SIZE	LENGTH	REMARKS
MK-1	2	#7	7 FT. 7 IN.	STRAIGHT
MK-2	2	#7	9 FT.	STRAIGHT
MK-3	0	#7	3 FT. 4 IN.	STRAIGHT
MK-4	1	#7	3 FT. 4 IN.	STRAIGHT
MK-5	2	#7	4 FT.	STRAIGHT
MK-6	2	#7	2 FT.	STRAIGHT
MK-7	1	#7	2 FT.	STRAIGHT

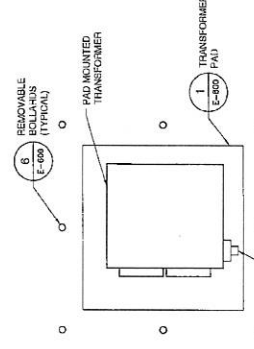
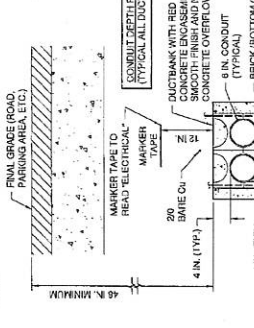
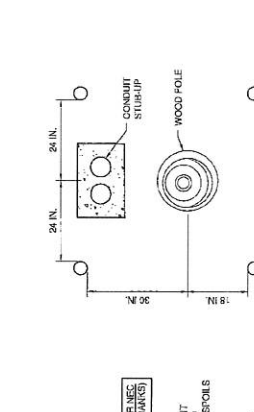
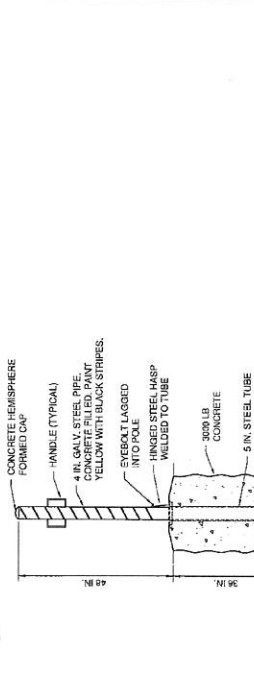


NOTES:
 1. CONCRETE SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF THE POWER COMPANY AND SHALL BE COMPRESSED IN 28 DAYS, 3000 PSI.
 2. REINFORCING STEEL SHALL BE INTERMEDIATE GRADE DEFORMED BARS BACKFILL AND THOROUGHLY COMPACT TO A MINIMUM OF 4 IN. BELOW THE CONCRETE IS TO BE POURED ONLY WHEN THE TEMPERATURE IS TO BE WITHIN 4 IN. OF THE TOP OF THE PAD.
 3. ALL SPICES IN REINFORCING SHALL LAP A LENGTH EQUAL TO 24 BARS DIAMETERS.
 4. ALL DIMENSIONS ON REINFORCING ARE TO THE CENTER OF BARS.
 5. CONCRETE SHALL BE THOROUGHLY WETTED BEFORE POURING AND ANY WASHED WOUNDS SHALL BE REPAIRED AND INTO ALL CORNERS OF FORMS.

NOTES:
 1. 1 IN. SPACE BETWEEN MULTIPLE CONDUITS.
 2. 4 IN. MAX. CONDUIT SIZE.
 3. MAX. QUANTITY:
 3.A. 3-4 IN. CONDUITS
 3.B. 2-4 IN. CONDUITS
 3.C. WHERE PRIMARY RISERS ARE ATTACHED TO POLE, NO OTHER CONDUITS ALLOWED.

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SE SHRADER ENGINEERING
 ELECTRICAL, COMMUNICATIONS & TECHNOLOGY
 1000 W. 10TH AVENUE, SUITE 400 N
 DENVER, CO 80202
 (303) 733-7788

PROJECT NO. 15-0011
 SHEET NO. E-600
 JOB NO. 201110-02

PORT BEND COUNTY LID NO. 15 STORMWATER PUMP STATION

DETAILS SHEET 1

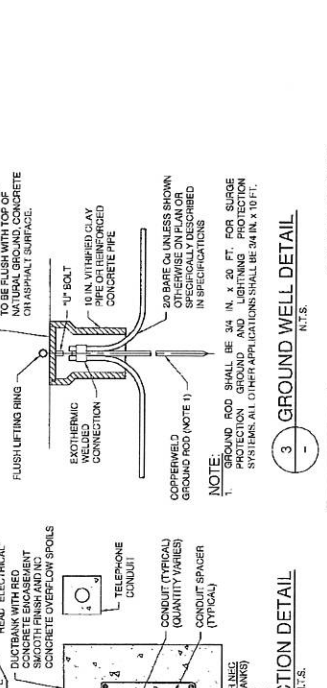
Engineering and Surveying
 9840 Richmond Avenue, Suite 400 N
 (713) 783-7788 (713) 783-3560 Fax
 TYPE FIRM REG. NO. 290
 TBL-57 FIRM REG. NO. 100489

Costello

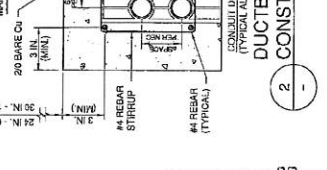
DESIGNED BY: _____ DATE: _____
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 DRAWN BY: _____
 CHECKED BY: _____
 SURVEY CHECKED BY: _____
 QUANTITY CHECKED BY: _____
 SCALE: _____

REVISION

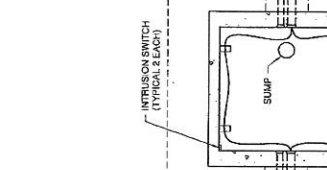
NO.	DESCRIPTION	DATE	BY



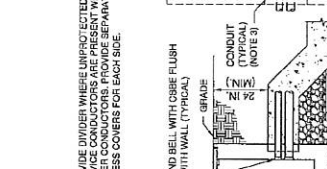
1 ELECTRICAL GRADE PULL BOX INSTALLATION
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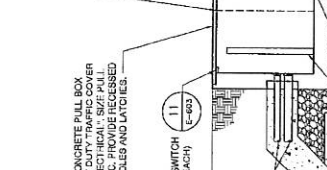
2 COLLAR DETAIL
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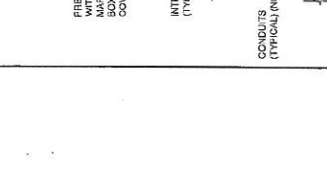
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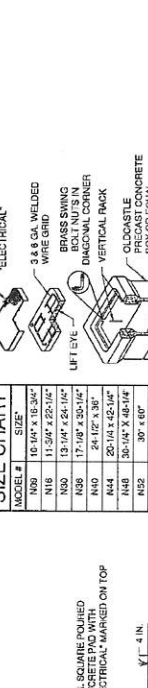
4 DUCTBANK MARKER DETAIL
 N.T.S.



5 UNISTRUT SUPPORT DETAIL
 N.T.S.



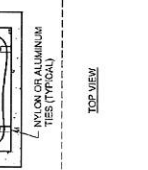
6 C-CHANNEL SUPPORT DETAIL
 N.T.S.



7 CONSTRUCTION DETAIL
 N.T.S.



8 GROUND WELL DETAIL
 N.T.S.

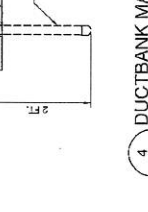


9 BASE PLATE MOUNTING DETAIL
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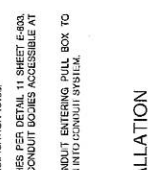
SIZE CHART

MODEL #	SIZE
N09	10' 0" x 18' 0"
N18	11' 0" x 22' 0"
N30	13' 0" x 24' 0"
N36	17' 0" x 30' 0"
N40	24' 0" x 36' 0"
N44	20' 0" x 42' 0"
N48	30' 0" x 48' 0"
N52	30' 0" x 60' 0"

* INTERIOR DIMENSIONS



10 GROUND WELL DETAIL
 N.T.S.



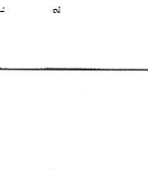
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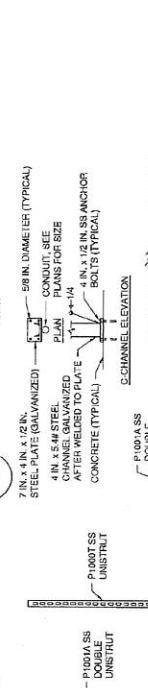
12 DUCTBANK MARKER DETAIL
 N.T.S.



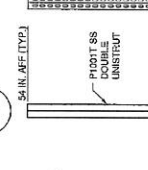
13 UNISTRUT SUPPORT DETAIL
 N.T.S.



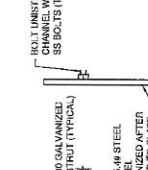
14 C-CHANNEL SUPPORT DETAIL
 N.T.S.



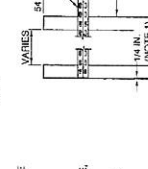
15 CONSTRUCTION DETAIL
 N.T.S.



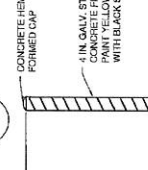
16 GROUND WELL DETAIL
 N.T.S.



17 ELECTRICAL PULL BOX DETAIL
 N.T.S.



18 DUCTBANK MARKER DETAIL
 N.T.S.



19 UNISTRUT SUPPORT DETAIL
 N.T.S.



20 C-CHANNEL SUPPORT DETAIL
 N.T.S.

NOTES:
 1. RECALL TOP OF PULL BOX FLUSH WITH FINISH GRADE IN PAVED AREAS AND UNPAVED AREAS WHERE NO FUTURE PAVING IS PLANNED. SEE CIVIL PLANS FOR FINISHED ELEVATIONS, WHERE APPLICABLE.
 2. ROUTE CONDUCTORS AROUND PERIMETER OF PULL BOX AND RACK ON ALUMINUM TIES.
 3. TAG ALL CONDUITS PER SPECIFICATION 11.99.5.
 4. INSTALL INTRUSION SWITCHES PER DETAIL 11.99.6 AND 11.99.7. ALL CONDUIT BODIES ACCESSIBLE AT SERVICE STRUCTURE.
 5. INSTALL CSSE ON ALL CONDUIT ENTERING PULL BOX TO PREVENT WATER INTRUSION INTO CONDUIT SYSTEM.

PROVIDE DIVIDER WHERE UNPROTECTED HEAVY DUTY TRAFFIC COVER BOX PER NEC. PROVIDE RECESSED COVER W/REINFORCED CONCRETE PIPE.
 END BELL WITH CSSE FLUSH WITH TIE (TYPICAL).
 CONDUITS (TYPICAL) (NOTE 3).
 DUCTBANK.
 NON-METALLIC CABLE SUPPORTS (NOTE 2).
 12 IN. OF GRANULAR.
 12 IN. OF GRAVEL.
 SUMP HOLE (PUNCH THROUGH).
 INTRUSION SWITCH (TYPICAL) (NOTE 4).
 NYLON OR ALUMINUM TIES (TYPICAL).
 SUMP.

MARKER TAPE TO READ "ELECTRICAL".
 DUCTBANK WITH REINFORCED CONCRETE OVERFLOW SPOOLS.
 TELEPHONE CONDUIT.
 CONDUIT (TYPICAL) (QUANTITY VARIES).
 CONDUIT SPACER (TYPICAL).
 20 BARE CU. (TYPICAL) (NOTE 1).
 EXOTHERMIC WELDED CONNECTION.
 10 IN. VITRIFIED CLAY PIPE OR REINFORCED CONCRETE PIPE.
 1" BOLT.
 FLUSH LIFTING RING.
 FINISH GRADE TO BE FLUSH WITH TOP OF NATURAL GROUND. CONCRETE ON ASPHALT SURFACE.

COVER SHALL BE MARKED "ELECTRICAL".
 3/8 & GA. WELDED WIRE GRID.
 BRASS SWING BOLT NUT'S IN DIAGONAL CORNER VERTICAL RACK.
 PRECAST CONCRETE PULL BOX.
 6 GA. WELDED WIRE MESH.
 7 IN. x 4 IN. x 1/2 IN. STEEL PLATE (GALVANIZED).
 CONDUIT SEE PLANS FOR SIZE.
 4 IN. x 5/8 IN. GALVANIZED WELDED TO PLATE.
 4 IN. x 1/2 IN. SS ANCHOR BOLTS (TYPICAL).
 C-CHANNEL ELEVATION.
 3/4 DIA. SS UNISTRUT ON DOUBLE UNISTRUT PLAN.
 3/4 DIA. SS UNISTRUT POST BASE PN #P2072A.
 SS UNISTRUT POST BASE PN #P2072A.
 SS UNISTRUT POST BASE PN #P2072A.
 DOUBLE UNISTRUT ELEVATION.
 SINGLE UNISTRUT ELEVATION.

NOTE:
 REFER TO PLANS FOR APPROPRIATE APPLICATION.

NOTE:
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 REFER TO PLANS FOR APPROPRIATE APPLICATION.

DESIGNED BY: **SE SHRADER ENGINEERING**
 CHECKED BY: **SE SHRADER ENGINEERING**
 DRAWN BY: **SE SHRADER ENGINEERING**
 DATE: **06/10/2011**
 DIVISION: **STORMWATER**

PROJECT NO. **2011-02-001**
 SHEET NO. **E-601**

Fort Bend County Lid No. 15 Stormwater Pump Station

DETAILS SHEET 2

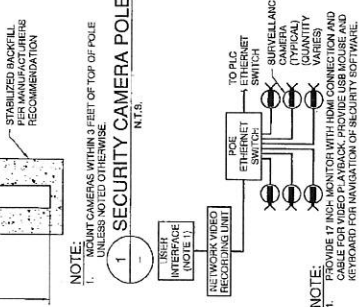
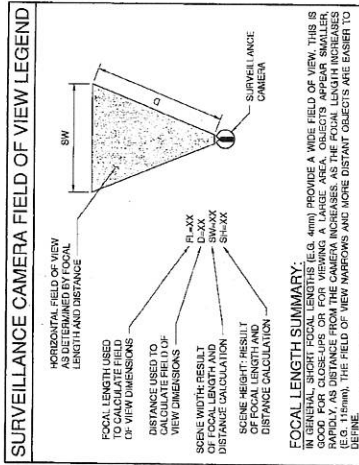
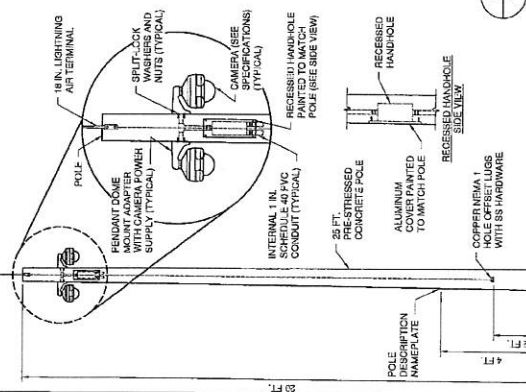
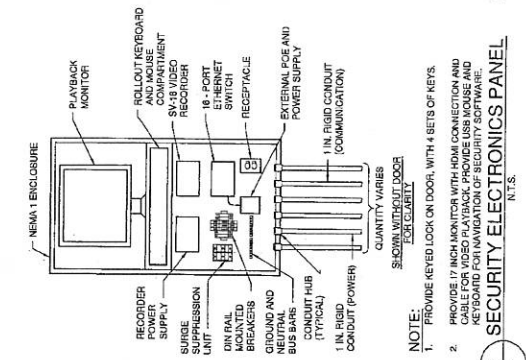
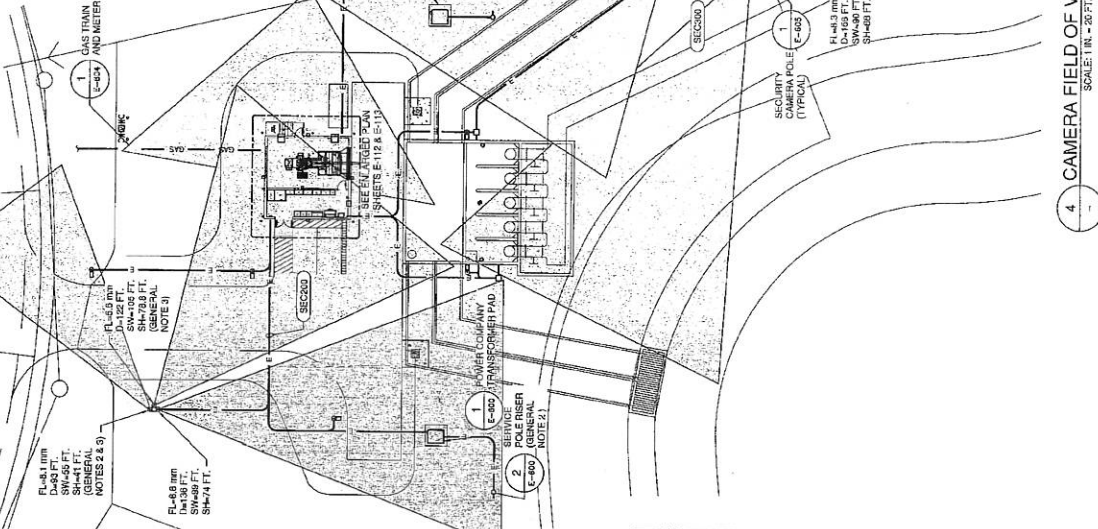
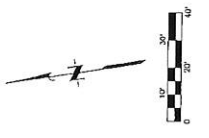
15th Building and Surveying
 1680 Foothill Drive, Suite 100
 Houston, Texas 77062
 (713) 783-7769 (713) 783-9500, Fax
 TYPED FROM BEO, No. 280
 TABLE FROM REC. NO. 103960

SE SHRADER ENGINEERING
 ELECTRICAL ENGINEERING
 15000 SHILOH ROAD, SUITE 100
 HOUSTON, TEXAS 77058
 (713) 783-7769
 WWW.SHRADEENGINEERING.COM

DATE: 06/10/2011 12:25:10 PM BY: SJS/PLD

GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE ALL ASSOCIATED APPURTENANCES REQUIRED FOR A FULL OPERATING SYSTEM SHOWN ON PLANS.
2. CAMERA SHALL BE CAPABLE OF RECORDING DRIVERS, LICENSE PLATES OF ALL VEHICLES ENTERING PROPERTY.
3. CAMERA FOVY SHALL PROVIDE COVERAGE OF ALL FACILITY ASSETS INCLUDING: SECURITY EQUIPMENT, TRANSPORTERS, GAS METER, STRUCTURES, MAIN ENTRY GATE, DOORS, HATCHES, AND ALL OTHER ELEMENTS CONTAINING SENSITIVE FACILITY EQUIPMENT.



SHRADER ENGINEERING
ELECTRONICAL COMMUNICATIONS TECHNOLOGY

PROJECT NO. 151100408
JOB NO. 151100408

STORM WATER PUMP STATION
FORT BRND COUNTY LID NO. 15

DETAILS SHEET 6

SCALE: 1/8" = 20'-0"

DESIGNED BY: _____
CHECKED BY: _____
SURVEY CHECKED BY: _____
DATE: _____

Engineering and Surveying
9850 Richmond Avenue, Suite 468 N
Houston, Texas 77042
(713) 789-7788 (713) 789-3960, Fax
TRIPLEX VIDEO No. 200
TOPICS FROM REC. No. 105886

REVISIONS BY: _____
DATE: _____

Costello

NO.	DATE	BY