



**PERMIT APPLICATION REVIEW FORM FOR
CABLE, CONDUIT, AND POLE LINE ACTIVITY
IN FORT BEND COUNTY**

**Fort Bend County
Engineering Department**
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytx.gov

☐

Right of Way Permit

☒

Commercial Driveway Permit

Permit No: 2018-20459

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.

(1) COMPLETE APPLICATION FORM:

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- a. Name of road, street, and/or drainage ditch affected.
b. Vicinity map showing course of directions
c. Plans and specifications

(2) BOND:

☐

County Attorney, approval when applicable.

☐

Perpetual bond currently posted.

Bond No: _____

Amount: _____

☒

Performance bond submitted.

Bond No: XXXXXXXXXX

Amount: \$5,000.00

☐

Cashier's Check

Check No: _____

Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

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

Permit Administrator

6/25/2018

Date

By: _____
Deputy

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

AUTHORIZED

BOND NO [REDACTED]

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND §

THAT WE, W. W. Payton Corporation whose
address is P.O. Box 1056, Katy, Texas 77492-1056 Texas, hereinafter called the Principal,
And Hartford Casualty Insurance Company, a Corporation existing under and by virtue of
the laws of the state of Indiana and authorized to do an indemnifying business in the state of Texas, and whose
principal office is located at Hartford, Connecticut, whose officer residing
in the State of Texas, authorized to accept service in all suits and actions brought whining said state is Michael Heidrick and
Whose address is 3000 Internet Blvd., #600, Frisco, Texas 75034, 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 18th day of May, 20 18.

W. W. Payton Corporation
PRINCIPAL

W. W. Payton
BY Wesley W. Payton, President

Hartford Casualty Insurance Company
SURETY

Francine Hay
BY Francine Hay, Attorney-in-Fact

POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD

BOND, T-12

One Hartford Plaza

Hartford, Connecticut 06155

Bond.Claims@thehartford.com

call: 866-266-3488 or fax: 860-767-6635

Agency Name: MARSH & MCLENNAN AGENCY LLC

Agency Code: 46-505987

KNOW ALL PERSONS BY THESE PRESENTS THAT:

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut |
| <input checked="" type="checkbox"/> | Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana |
| <input checked="" type="checkbox"/> | Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut |
| <input type="checkbox"/> | Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut |
| <input type="checkbox"/> | Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana |
| <input type="checkbox"/> | Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois |
| <input type="checkbox"/> | Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana |
| <input type="checkbox"/> | 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 :**

Roxanne G. Brune, Sharen Groppe, Francine Hay, Beverly A. Ireland, Edward L. Moore, Kurt A. Risk, James W. Tomforde, Gloria Villa of Houston TX, C.W. Adams, Sharon Cavanaugh of HOUSTON, Texas

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 May 6, 2015 the Companies have caused these presents to be signed by its Senior 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.



John Gray

John Gray, Assistant Secretary

M. Ross Fisher

M. Ross Fisher, Senior Vice President

STATE OF CONNECTICUT

ss. Hartford

COUNTY OF HARTFORD

On this 11th day of January, 2016, before me personally came M. Ross Fisher, to me known, who being by me duly sworn, did depose and say: that he resides in the County of Hartford, State of Connecticut; that he is the Senior 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

Nora M. Stranica

Nora M. Stranica
Notary Public

My Commission Expires March 31, 2018

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
Signed and sealed at the City of Hartford.

May 18, 2018



Kevin Heckman

Kevin Heckman, Assistant Vice President

IMPORTANT NOTICE

To obtain information or make a complaint:
You may contact your Agent.

You may call The Hartford's Consumer Affairs toll-free telephone number for information or to make a complaint at:
1-800-451-6944

You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights, or complaints at:
1-800-252-3439

You may write the Texas Department of Insurance:
P.O. Box 149104
Austin, TX 78714-9104
Fax: (512) 490-1007
Web: www.tdi.texas.gov
E-mail: ConsumerProtection@tdi.texas.gov

PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim, you should contact the (agent) (company) (agent or the company) first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

ATTACH THIS NOTICE TO YOUR POLICY:

This notice is for information only and does not become a part or condition of the attached document.

Inquiries Regarding Claims

**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 Southeast**

**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 : claims@1stepsurety.com**

**Mailing Address : The Hartford
The Hartford Fidelity & Bonding (BOND)
Hartford Plaza
690 Asylum Avenue
Hartford, CT 06115**

FORT BEND COUNTY MUNICIPAL UTILITY DISTRICT NO. 30 WATER SUPPLY PLANT NO. 3 PHASE 1

NO.	GENERAL DRAWINGS
1	G001 COVER
2	G002 NOTES, LEGEND, & ABBREVIATIONS (1 OF 2)
3	G003 NOTES, LEGEND, & ABBREVIATIONS (2 OF 2)
4	G004 WATER PLANT PROCESS FLOW DIAGRAM

NO.	CIVIL DRAWINGS
5	C001 EXISTING OVERALL SITE PLAN
6	C002 PROPOSED OVERALL SITE PLAN
7	C003 WATER SUPPLY PLANT SITE PLAN
8	C004 PROPOSED YARD PIPING PLAN
9	C005 PROPOSED PAVING & GRADING PLAN
10	C006 PROPOSED DRAINAGE & STORM SEWER PLAN
11	C007 PROPOSED DRAINAGE AREA MAP
12	C008 PROPOSED CULVERT DRAINAGE AREA PLAN
13	C009 STORM WATER POLLUTION PLAN
14	C010 TRAFFIC CONTROL PLAN
15	C011 STORM WATER POLLUTION PREVENTION DETAILS
16	C012 CIVIL DETAILS (1 OF 3)
17	C013 CIVIL DETAILS (2 OF 3)
18	C014 CIVIL DETAILS (3 OF 3)
19	C015 TXDOT PED-12A (1 OF 4)
20	C016 TXDOT PED-12A (2 OF 4)
21	C017 TXDOT PED-12A (3 OF 4)
22	C018 TXDOT PED-12A (4 OF 4)

NO.	MECHANICAL DRAWINGS
23	M001 GROUND STORAGE TANK PLAN, ELEVATION & DETAILS
24	M002 DISTRIBUTION PUMP PLAN & SECTION
25	M003 HYDROPNEUMATIC TANK PLAN AND SECTIONS
26	M004 OFFICE & MCC BUILDING PLAN, ELEVATIONS & SECTIONS
27	M005 DISINFECTION STORAGE & FEED BUILDINGS, PLAN & SECTIONS
28	M006 GROUND STORAGE TANK DETAILS
29	M007 MECHANICAL DETAILS

NO.	STRUCTURAL DRAWINGS
30	S1 GROUND STORAGE TANK PLAN AND SECTION
31	S2 OFFICE PLANS
32	S3 OFFICE SECTIONS
33	S4 HYDROPNEUMATIC TANK, GENERATOR, FIBERGLASS BLDGS. PLANS AND SEC.
34	S5 DISTRIBUTION PUMP FOUNDATION PLAN AND DETAILS

NO.	STRUCTURAL DRAWINGS
35	E1 OVERALL ELECTRICAL SITE PLAN
36	E2 ELECTRICAL SCOPE OF WORK-ONE LINE DIAGRAM
37	E3 OFFICE & MCC BUILDING ELECTRICAL POWER AND LIGHTING PLAN
38	E4 DISINFECTION STORAGE AND FEED BUILDING POWER AND LIGHTING PLANS
39	E5 GENERATOR ELEVATION, DETAILS AND TANK DIMENSIONS
40	E6 ELECTRICAL DETAILS

FORT BEND MUNICIPAL UTILITY DISTRICT NO. 30 BOARD MEMBERS

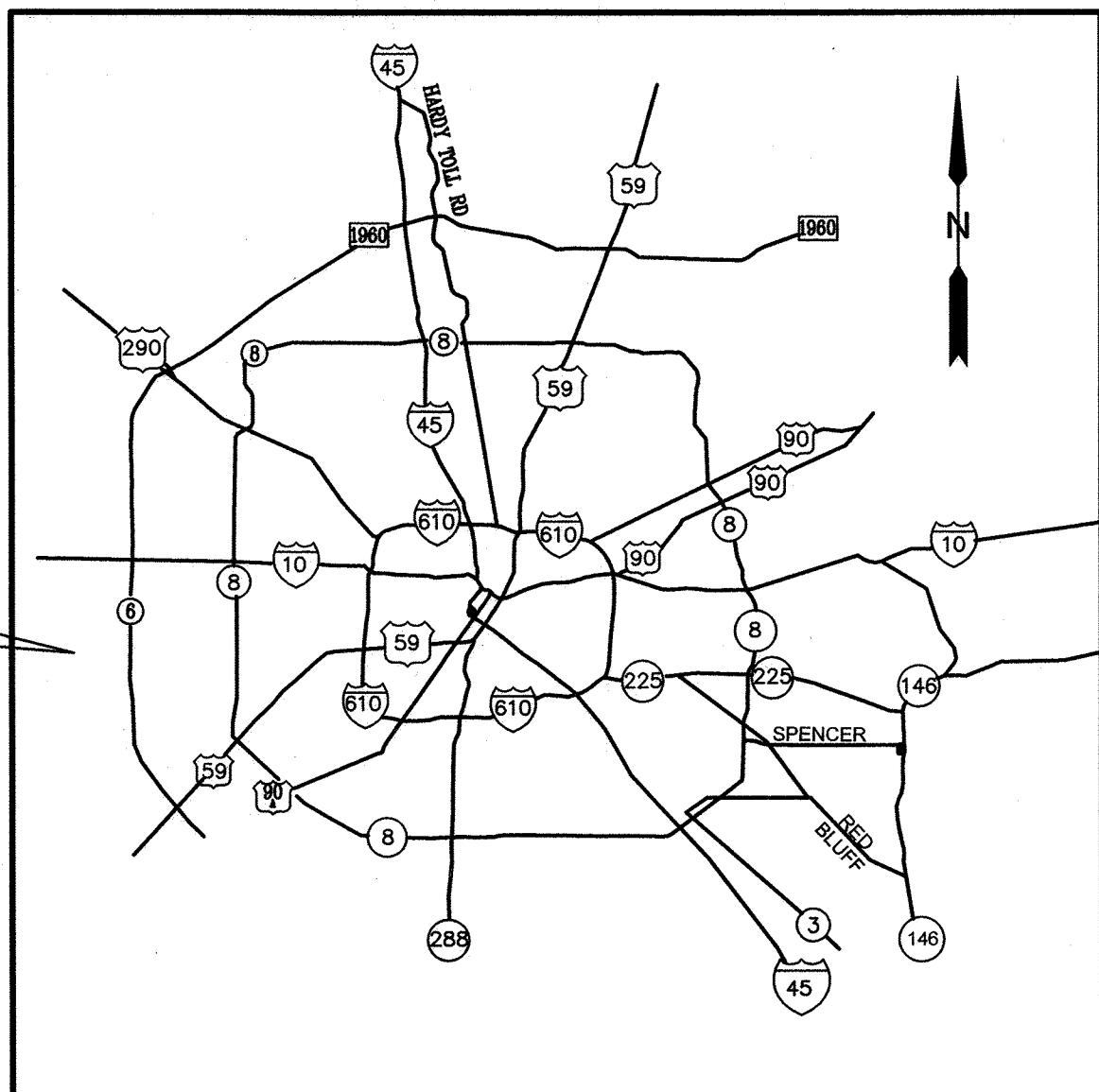
LINDA S. YORLANO
PRESIDENT

PAUL L. YOUNT, JR.
VICE PRESIDENT

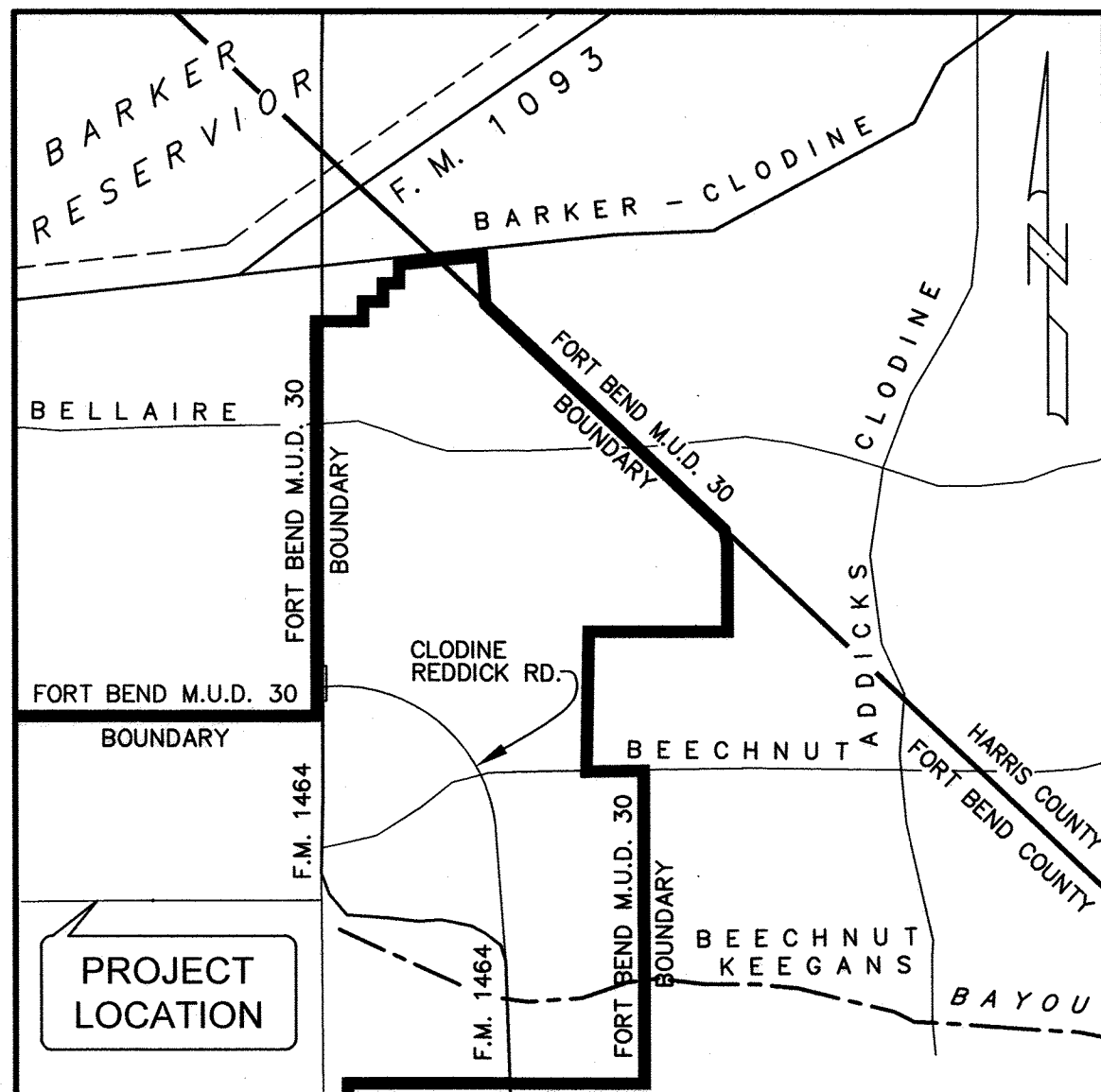
MICHAEL SMITH
ASSISTANT VICE PRESIDENT

CHRISTOPHER BELL
SECRETARY

PAULINE ROWE
ASSISTANT SECRETARY



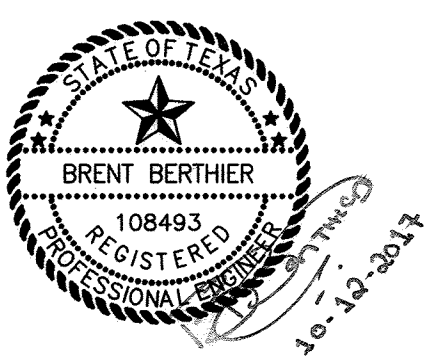
LOCATION MAP
N.T.S.
HOUSTON, TEXAS



VICINITY MAP
N.T.S.
KEY MAP 526-R
GIMS MAP 4654-C
ZIP CODE 77407

DATE: JUNE 2017
PLANS PREPARED BY:

J. COSTANZA & ASSOCIATES
ENGINEERING, INC.
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339



THIS SITE IS IN ZONE "X"
FIRM:
FLOOD INSURANCE RATE MAP: FORT BEND COUNTY, TEXAS
AND INCORPORATED AREAS
PANEL 140 OF 575
MAP #48157C0140L
BFE ELEVATION 91.50

CONTRACTOR SHALL NOTIFY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING, OFFICE OF THE CITY ENGINEER, 48 HOURS BEFORE STARTING WORK ON THIS PROJECT. TELEPHONE NO. 832-394-9098.

TEXAS ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG
713-223-4567 (LOCAL HOUSTON NUMBER)
1-800-545-6005

NOTE:
CALL 1-800-DIG-TESS BEFORE THE COMMENCEMENT OF ANY EXCAVATION.

ETJ DETENTION PLANS INFORMATION

STORM WATER DETENTION PLANS IS PROVIDED IN: GRAND VISTA MASS GRADING IMPROVEMENTS FOR PHASE III DETENTION.
ENGINEERING FIRM: COSTELLO INC.
DATE SIGNED AND APPROVED BY: _____
STORM WATER DRAINAGE DESIGN REPORT:
REPORT TITLE: DRAINAGE ANALYSIS FOR PHASE I AND PHASE II
DEVELOPMENT OF GRAND VISTA TRACKS SOUTH OF BEECHNUT ROAD
WITHIN LONG POINT SLOUGH WATERSHED IN FORT BEND COUNTY, TEXAS.
DATE: MAY 2013 ENGINEERING FIRM: COSTELLO, INC.
DATE OF ACKNOWLEDGEMENT BY: 05/24/2013

FORT BEND COUNTY ENGINEER

ENGINEER: Paul J. Stangor, P.E., PTOE
for RICHARD W. STOLLEIS, P.E.

DATE: 11/17/17

THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL.

APPROVED: [Signature]
DEVELOPMENT COORDINATOR

DATE: 11/17/17

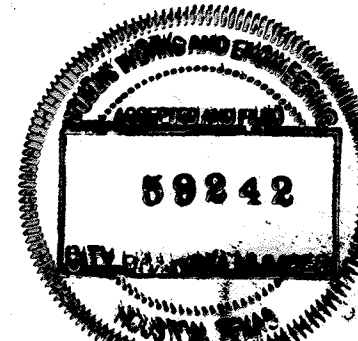
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

APP	REVISIONS	DATE

WATER <u>10-12-17</u>	STORM WATER QUALITY
WASTEWATER <u>10-12-17</u>	TRAFFIC AND TRANSPORTATION
STORM WATER <u>10-12-17</u>	FACILITIES <u>10-12-17</u>
STREET & BRIDGE	

CITY ENGINEER

[Signature]
DIRECTOR OF PUBLIC WORKS
AND ENGINEERING



ILMS NO. 17088135
COH LOG NO. 13-1452

ABBREVIATIONS

A/C	-	AIR CONDITIONING
AE	-	AERIAL EASEMENT
ANSI	-	AMERICAN NATIONAL STANDARDS INSTITUTE
BC	-	BACK OF CURB
BL	-	BUILDING LINE
BLDG	-	BUILDING
BOB	-	BOTTOM OF PIPE
C.C	-	CENTER TO CENTER
CCP	-	CONCRETE CYLINDER PIPE
CD	-	CHORD BEARING
CL	-	CENTERLINE
CI	-	CAST IRON
CLF	-	CHAIN LINK FENCE
CLR	-	CLEARANCE
CNTS	-	CENTERS
CO	-	CLEANOUT
CONC	-	CONCRETE
Δ	-	DELTA ANGLE
DE	-	DRAINAGE EASEMENT
DI	-	DUCTILE IRON
DIP	-	DUCTILE IRON PIPE
DIA	-	DIAMETER
EA	-	EACH
ECC	-	ECCENTRIC
EL	-	ELEVATION
ELL	-	ELBOW (PIPE)
EXIST	-	EXISTING
FE	-	FLANGED END
FF	-	FINISHED FOUNDATION
FG	-	FINISHED GRADE
FIRM	-	FLOOD INSURANCE RATE MAP
FL	-	FLOW LINE
FLG	-	FLANGE
FND	-	FOUND
FNC	-	FENCE
G	-	GUTTER
GALV	-	GALVANIZED
GS	-	GALVANIZED STEEL
H	-	HIGH POINT
HDPE	-	HIGH DENSITY POLYETHYLENE PIPE
HP	-	HORSE POWER
IPB	-	INLET PROTECTION BARRIER
IR	-	IRON ROD
JB	-	JUNCTION BOX
LB	-	POUND
LC	-	LENGTH OF CORD
LF	-	LINEAR FEET
LX	-	MAXIMUM
MH	-	MANHOLE
MJ	-	MINIMUM
MIN	-	MECHANICAL JOINT
NEO	-	NEOPRENE
NG	-	NATURAL GRADE
No.	-	NUMBER
NTS	-	NOT TO SCALE
OC	-	ON CENTER
OCW	-	ON CENTER EACH WAY
OPNG	-	OPENING
PAE	-	PRIVATE ACCESS EASEMENT
PE	-	PLAIN END
PG	-	PAGE
PL	-	PLATE
PO	-	PUSH-ON
PROP	-	PROPOSED
PUE	-	PRIVATE UTILITY EASEMENT
PVC	-	POLY-VINYL CHLORIDE PIPE
R	-	RADIUS
ROP	-	REINFORCED CONCRETE PIPE
RED	-	REDUCER
ROW	-	RIGHT OF WAY
SAN	-	SANITARY
SCH	-	SCHEDULE
SAN SWR	-	SANITARY SEWER
SS	-	STAINLESS STEEL
STD	-	STANDARD
STL	-	STEEL
STM	-	STORM
S/W	-	SIDEWALK
TB	-	TOP BANK
TBM	-	TEMPORARY BENCH MARK
T/C	-	THRUST COLLAR
TOC	-	TOP OF CURB
TC	-	TOP OF CONCRETE
TG	-	TOP OF GRATE
TR	-	TOP OF RIM
TS	-	TOP OF STEEL
TP	-	TOP OF PAVEMENT
TW	-	TOP OF WALL
TXDOT	-	TEXAS DEPARTMENT OF TRANSPORTATION
TYP	-	TYPICAL
UE	-	UTILITY EASEMENT
VOL	-	VOLUME
W	-	WIDE
WD	-	WOOD
WSP	-	WATER SUPPLY PLANT

CIVIL SYMBOLS

	AIR RELEASE VALVE
	BENCHMARK
	BLOW OFF VALVE
	BOLLARD
	CABLE PEDESTAL/BOX
	CHAIN LINK FENCE
	UNLESS NOTED OTHERWISE
	DRAINAGE SWALE
	ELECTRIC BOX
	ELECTRIC PEDESTAL
	ELECTRIC TRANSFORMER
	ELECTRICAL JUNCTION BOX
	FIRE HYDRANT
	MAIL BOX
	METER POLE
	OVERHEAD ELECTRIC
	PIPELINE MARKER
	PIPELINE VENT
	POWER POLE
	SAN. SEWER CLEAN OUT
	SAN. SEWER MANHOLE
	SHEET FLOW DIRECTION
	SPRINKLER HEAD
	WATER WELL
	LIGHT STANDARD
	ELECTRICAL JUNCTION BOX
	OVERHEAD POWER LINE
	DRAINAGE SWALE
	BACKFLOW PREVENTER
	DEMOLITION
	PROPOSED
	EXISTING
	PROPOSED PAVEMENT
	SWALE FLOW DIRECTION
	MANHOLE
	TELEPHONE MANHOLE
	TELEPHONE PEDESTAL
	UNDERGROUND CABLE MARKER
	UNDERGROUND ELECTRIC
	WATER METER
	WATER VALVE
	GAS METER
	GAS VALVE
	GUY WIRE
	HOSE BIBB
	LIGHT STANDARD
	FILTER FABRIC FENCE
	6" INSIDE PROPERTY LINE
	INLET PROTECTION BARRIER

GENERAL NOTES -- OUTSIDE CITY LIMITS

- UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567 / 800-245-4545 AND LONE STAR ONE CALL AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER AND STORM WATER LINES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S "STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" REFERENCED ABOVE, AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING IN WRITING PRIOR TO COMMENCING CONSTRUCTION.
- CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
- CONTRACTOR SHALL NOTIFY CITY OF HOUSTON, (281) 478-7278, 48 HOURS BEFORE EXCAVATING IN ROAD R.O.W., DRAINAGE R.O.W., OR EASEMENT.
- CONTRACTOR, SHALL BE RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS REQUIRED BY CITY OF HOUSTON, INCLUDING STATE OR FEDERAL PERMITS, BEFORE COMMENCING CONSTRUCTION AT THE CONTRACTOR'S EXPENSE.
- ALL CONTRACT ITEMS WITHIN THE PUBLIC R.O.W. SHALL COMPLY WITH THE STANDARD "SPECIFICATIONS FOR CONSTRUCTION IN THE CITY OF HOUSTON" WITH LATEST REVISIONS.
- ALL WORK WITH THE PROPERTY LINES OF THE SITE SHALL BE PERFORMED ACCORDING TO THE NOTES AND SPECIFICATIONS DETAILED ON THESE PLANS AND THE CONTRACT WITH THE OWNER. CONTRACTOR RESPONSIBLE FOR OBTAINING SPECIFICATIONS FROM THE OWNER OR HIS REPRESENTATIVE FOR ANY WORK NOT DETAILED HEREIN.
- THE CONTRACTOR MUST SUBMIT CHANGES TO THE TRAFFIC CONTROL PLANS AND RECEIVE APPROVAL FROM THE CITY PERMIT DEPARTMENT 14 DAYS PRIOR TO IMPLEMENTATION.
- ACCESS TO ADJACENT PROPERTIES MUST BE MAINTAINED AT ALL TIMES.
- THE CONTRACTOR SHALL NOT WORK IN THE VICINITY OF PIPELINES WITHOUT NOTIFICATION TO PIPELINE REPRESENTATIVES.
- CONTRACTOR SHALL REMOVE ALL NON-SALVAGEABLE MATERIAL FROM PROJECT AREA AND DISPOSE OF ACCORDING TO SPECIFICATIONS.

GENERAL CONSTRUCTION NOTES

- CONTRACTOR SHALL OBTAIN ALL DEVELOPMENT, RIGHT-OF-WAY AND CONSTRUCTION PERMITS REQUIRED BY THE REGULATIONS OF FORT BEND COUNTY, TEXAS AT HIS EXPENSE PRIOR TO COMMENCEMENT OF WORK. THE ENGINEER WILL ASSIST THE CONTRACTOR IN COMPLETING THE PERMIT APPLICATION.
- CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES OR RAILROADS AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK. REQUIRED PERMITS THAT CAN BE ISSUED TO CONTRACTOR WILL BE OBTAINED AT HIS EXPENSE.
- CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT FORTY-EIGHT (48) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION AT construction@fortbendtx.gov.
- ALL TEMPORARY AND PERMANENT SIGNAGE MUST COMPLY WITH THE MOST CURRENT EDITION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AS CURRENTLY AMENDED. GUIDELINES SET FORTH IN THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
- CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK.
- EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO FORT BEND COUNTY DESIGN AND CONSTRUCTION STANDARDS AS CURRENTLY AMENDED AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE MUD AND/OR DIRT DEPOSITED ON EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY ON A DAILY BASIS. NO SEPARATE PAY.
- ALL AREAS AFFECTED BY CONTRACTOR'S OPERATIONS, INCLUDING BUT NOT LIMITED TO ACCESS ROADS, AREAS OF MATERIAL AND EQUIPMENT STORAGE, AND ALL CONSTRUCTION AREAS, SHALL BE STRIPPED OF ALL VEGETATION PRIOR TO COMMENCEMENT OF WORK. STRIPPINGS SHALL BE DISPOSED OF OFFSITE BY THE CONTRACTOR. NO SEPARATE PAY.
- ALL EXISTING SWALES TO BE CLEANED AND MUCKED FREE FROM ANY VEGETATION PRIOR TO PLACEMENT OF FILL MATERIAL.
- ALL TRENCH BACKFILL FOR UTILITIES SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY PER ASTM D-698. MOISTURE CONTENT SHALL BE WITHIN 2% OF OPTIMUM. ALL TRENCH BACKFILL SHALL BE CONSIDERED INCIDENTAL TO UTILITY CONSTRUCTION.
- ALIGNMENT, CENTERLINE CURVE DATA AND STATIONING TO BE VERIFIED FROM APPROVED SUBDIVISION PLAT OR APPROVED PLAT OR RECORDED INSTRUMENT FOR OFFSITE EASEMENTS.
- FINAL PAYMENT SHALL BE CONTINGENT UPON ESTABLISHMENT OF VEGATIVE COVER ON ALL DISTURBED AREAS.
- PROTECT ALL EXISTING ABOVE GROUND AND BELOW GROUND FACILITIES AND UTILITIES ON THE PROJECT SITE AND ADJACENT PROPERTIES EXCEPT ITEMS SPECIFICALLY DESIGNATED FOR DEMOLITION. RESTORE ANY FACILITIES OR UTILITIES DAMAGED BY DEMOLITION OR CONSTRUCTION OPERATIONS TO EQUAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACT DRAWINGS ARE BASED UPON RECORD DRAWINGS AND THE BEST INFORMATION AVAILABLE TO THE ENGINEER. LOCATIONS, ELEVATIONS, AND CONDITION OF EXISTING UTILITIES AND FACILITIES ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY INFORMATION AT NO ADDITIONAL COST TO THE OWNER.
- WATER LINES, WASTEWATER COLLECTION SYSTEMS, AND STORM DRAINAGE SYSTEMS IN THE PUBLIC R.O.W. SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HOUSTON'S, STANDARD CONSTRUCTION SPECIFICATIONS, AND DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING.
- THE CONTRACTOR(S) SHALL NOTIFY THE CITY OF HOUSTON PERMIT DEPARTMENT-FOUR (24) HOURS IN ADVANCE OF COMMENCING UTILITY AND/OR PAVING CONSTRUCTION AT (281) 478-7278 AND WRITTEN NOTIFICATION FORTY-EIGHT (48) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
- PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS AND/OR AMENDMENTS OF THE SAME.
- GUIDELINES SET FORTH IN THE "STATE OF TEXAS TXDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
- OWNER OR OWNER'S AGENT TO OBTAIN ALL PERMITS REQUIRED BY THE CITY OF HOUSTON FLOOD PLAIN MANAGEMENT PRIOR TO STARTING CONSTRUCTION.
- OWNER OR OWNER'S AGENT TO OBTAIN ALL NOTIFICATIONS REQUIRED BY CITY OF HOUSTON, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN CITY OF HOUSTON AND FORT BEND COUNTY FLOOD CONTROL DISTRICT RIGHTS-OF-WAY.
- PERMITS ISSUED BY CITY OF HOUSTON - REQUIRED PRIOR TO CONSTRUCTION OF UTILITIES OR LEFT TURN LANES WITHIN CITY OF HOUSTON RIGHTS-OF-WAY.

SITE WORK NOTES

- ALL INFORMATION OBTAINED FROM GEOTECHNICAL CONSULTANT, INCLUDING SUBSURFACE DATA, LOSS OF SOIL BORINGS AND RECOMMENDATIONS WAS OBTAINED SOLELY FOR USE BY THE ENGINEER IN THE DESIGN OF THE PROJECT.
- THE BIDDER IS RESPONSIBLE FOR VERIFYING SUBSURFACE CONDITIONS AT THE PROJECT SITE, AND IT IS EXPRESSLY UNDERSTOOD THAT NEITHER THE OWNER OR THE CITY NOR ANY OF HIS AUTHORIZED REPRESENTATIVES WILL BE RESPONSIBLE FOR ANY INTERPRETATION OR CONCLUSIONS DRAWN FROM ANY GEO-TECHNICAL INFORMATION PROVIDED BY THE OWNER.
- CONTRACTOR SHALL HAVE TRENCH BRACING AND SUPPORTS DESIGNED BY A TEXAS REGISTERED PROFESSIONAL ENGINEER AND IT SHALL CONFORM TO ALL OSHA REQUIREMENTS AND FORT BEND COUNTY SPECIFICATIONS.
- BACKFILL TO BE COMPACTED IN ACCORDANCE WITH SPECIFICATIONS.

GRADING PLAN NOTES

- CLEARING AND REMOVAL OF TOP SOIL SHALL NOT BEGIN UNTIL THE IMPLEMENTATION OF THE SWPPP IS COMPLETED.
- THE SITE SHALL BE CLEARED AND STRIPPED OF ALL TOP SOIL CONTAINING ORGANIC MATERIAL BEFORE THE START OF ANY FILLING OPERATIONS.
- SILT FENCING SHALL BE INSTALLED AS SHOWN ON THE SWPPP.
- ALL TOP SOIL SHALL BE STOCKPILED ON-SITE IN ACCORDANCE WITH THE SWPPP.
- ALL SUB-GRADE SOILS SHALL BE PROOF ROLLED. SOFT AREAS UNDERGOING DISPLACEMENT SHALL BE EXCAVATED AND REPAIRED WITH SELECT FILL COMPACTED TO 95% OF OPTIMUM DENSITY ACCORDING TO ASTM D698, LATEST EDITION, -0% AND +2 % OF OPTIMUM DENSITY.

FORT BEND COUNTY GENERAL NOTES

- FORT BEND COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.
- CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOUR NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAVING AT construction@fortbendcountytx.gov.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BEND COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT OF WAYS.
- ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS" RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED.
- ALL ROAD WIDTHS, CURB RADII AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.
- A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS.
- ALL CONCRETE PAVEMENT SHALL BE 5" SACK CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 60 FEET.
- ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
- 4"x12" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.
- AT ALL INTERSECTION LOCATIONS, TYPE 7 RAMPS SHALL BE PLACE IN ACCORDANCE WITH TXDOT PED-126 STANDARD DETAIL SHEET. A.D.A. - HANDICAP RAMPS SHALL BE INSTALLED WITH STREET PAVING AT ALL INTERSECTIONS AND COMPLY WITH CURRENT A.D.A. REGULATIONS.
- CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5' OF RAMPS.
- ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A.D.A. WHEEL CHAIR RAMPS INSTALLED.
- GUIDELINES ARE SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED. SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION - BOTH DAY AND NIGHT.
- ALL R1-11 STOP SIGNS SHALL BE 30"x30" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- STREET NAME SIGNAGE SHALL BE ON 9" HIGH SIGN FLAT BLADE W/REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.
- A BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF OF THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE HYDRANT.
- THE PROJECT AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY INSPECTORS DESIGNATED BY FORT BEND COUNTY. NO SUCH INSPECTIONS SHALL RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR REJECT ANY OF THE WORK AS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, REQUIREMENTS AND SPECIFICATIONS OF FORT BEND COUNTY OR ANY PROVISION OF THIS PROJECT SHALL BE CONSTRUED TO IMPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER.

NOTE: FORT BEND COUNTY NOTES SUPERCEDE ANY CONFLICTING NOTES.

SWPPP CONSTRUCTION NOTES

- CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPPP) PLANS TO KEEP SLIT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
- DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE UNEXCAVATED MATERIAL WHICH FALLS ON PAVEMENT OR DRIVEWAYS SHALL BE SWEEP BACK INTO THE EXCAVATED AREAS.
- CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTION AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT, OR ROCK TRACKED FROM THE EXCAVATED AREA.
- CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THIS PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
- CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.
 - DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
 - AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
 - STRUCTURAL CONTROL MEASURES
 - LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
- CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

STORM WATER QUALITY PRE-CONSTRUCTION INSPECTION REQUIREMENTS

THE PROPERTY OWNER OR THE CONTRACTOR SHALL CONTACT THE FORT BEND COUNTY STORM WATER QUALITY PERMITTING SECTION AT 713-956-3000 FOR A PRE-CONSTRUCTION INSPECTION PRIOR TO COMMENCING ANY CLEARING OR CONSTRUCTION ACTIVITIES ON THE SITE.

WATER LINE CONSTRUCTION NOTES

- ALL WATER MAINS FOUR (4) INCHES THRU 12 INCHES IN DIAMETER , IF NOT SPECIFIED OTHERWISE, SHALL BE AWWA C-900 PVC PIPE, CLASS 150, DR18, WITH RUBBER GASKETED BELL AND SPIGOT PUSH ON JOINTS.
- ALL VALVES SHALL BE RESILIENT SEAT GATE VALVES UNLESS OTHERWISE NOTED AND SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-509.
- ALL WATER LINES SHALL BE ENCASED IN BANK SAND, AND BEDDED AND BACKFILLED IN ACCORDANCE WITH CITY OF HOUSTON STANDARD CONSTRUCTION DETAIL NO. 02317-04. COST OF BANK SAND TO BE INCLUDED IN UNIT COST FOR WATERLINE AND SHALL NOT BE PAID FOR DIRECTLY.
- WHEN WATER LINES AND SANITARY SEWER LINES ARE INSTALLED, THEY SHALL BE INSTALLED NO CLOSER TO EACH OTHER THAN NINE FEET (9') IN ALL DIRECTIONS AND PARALLEL LINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE FOOT (9') SEPARATION DISTANCE CANNOT BE ACHIEVED, THE GUIDELINES SET FORTH IN THE CITY OF HOUSTON "INFRASTRUCTURE DESIGN MANUAL" (OCTOBER 2002) CHAPTER 7.03J AS CURRENTLY AMENDED SHALL GOVERN.
- ALL WATER LINE TRENCHES LOCATED UNDER OR WITHIN ONE FOOT (1') OF PROPOSED OR FUTURE PAVEMENT SHALL BE BACKFILLED WITH BANK SAND TO WITHIN ONE FOOT (1') OF SUBGRADE. NO SEPARATE PAY. (LAB DENSITY TEST REPORTS ARE REQUIRED PRIOR TO PLACEMENT OF PAVEMENT.)
- WATER LINE SHALL BE CONSTRUCTED SUCH THAT ALL CROSSES AND TEES WILL NOT BE LOCATED UNDER PROPOSED OR FUTURE PAVING.
- WHERE A WATER LINE OR LEAD CROSSES OR COMES WITHIN 9 FEET OF AN EXISTING SANITARY SEWER OR SANITARY SEWER LEAD AND THAT SANITARY SEWER IS FOUND TO BE LEAKING, REPLACE A 20 FOOT SECTION OF THE SEWER WITH C900 DR 18 PVC OR DUCTILE IRON PIPE CENTERED ON THE CLOSEST POINT.
- PROPOSED WATER LINES CROSSING OVER EXISTING SANITARY SEWER LINES MUST HAVE A FULL LENGTH JOINT (20' NOMINAL) CENTERED AT THE CROSSING WITH A MINIMUM SEPARATION DISTANCE OF ONE FOOT (1'). PROPOSED WATER LINES CROSSING UNDER EXISTING SANITARY SEWER LINES MUST HAVE A FULL LENGTH JOINT (20' NOMINAL) CENTERED AT THE CROSSING WITH A MINIMUM SEPARATION DISTANCE OF TWO FEET (2') AND RESTRAINED JOINTS AT EACH END OF PIPE SECTION.
- ALL FIRE HYDRANTS SHALL BE LOCATED AS SHOWN ON THE PLANS AND SET THREE FEET (3') BEHIND BACK OF CURB (EXCEPT WITHIN ESPLANADES: WHERE FIRE HYDRANTS SHALL BE SEVEN FEET (7') BEHIND BACK OF CURB) AND WITH STREAMER NOZZLE 22 INCHES ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON PLANS.
- UTILITY CONTRACTOR TO TURN FIRE HYDRANTS AND MAKE ALL FINAL ADJUSTMENTS AFTER COMPLETION OF PAVING. NO SEPARATE PAY.
- SANITARY PRECAUTIONS MUST BE TAKEN DURING WATERLINE CONSTRUCTION, AS CALLED FOR BY AWWA STANDARDS AND CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION NO.02514.
- NEW MAINS SHALL BE THOROUGHLY DISINFECTED IN ACCORDANCE WITH AWWA SPECIFICATIONS C-651 AND THEN FLUSHED AND SAMPLED BEFORE BEING PLACED IN SERVICE. SAMPLES SHALL BE COLLECTED FOR BACTERIOLOGICAL ANALYSIS TO CHECK THE EFFICIENCY OF THE DISINFECTING PROCEDURE, WHICH SHALL BE REPEATED IF

UTILITY NOTES:

CENTERPOINT ENERGY
CAUTION: OVERHEAD ELECTRICAL FACILITIES

- OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE. BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH AND SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
 - ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
 - OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.
- PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713)207-2222.

CENTERPOINT ENERGY
CAUTION: UNDERGROUND GAS FACILITIES

- LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE, LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE NOT USUALLY SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (713)223-4567 OR 1-800-669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713)945-8036 OR (713)945-80378 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
 - WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
 - WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
 - FOR EMERGENCIES REGARDING GAS LINES CALL (713)659-3552 OR (713)207-4200
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

AT&T TEXAS/SOUTHWESTERN BELL NOTES:

- THE LOCATIONS OF AT&T TEXAS/SWB T FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWB FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWB FACILITIES.
- WHEN AT&T TEXAS/SWB FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
- THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWB UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
- PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT (713)567-4552 OR E-MAIL HIM AT RL7259@att.com, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWB FACILITIES.

BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WESR OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

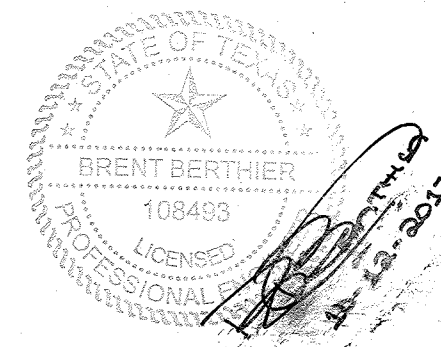
NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: DEVELOPMENT COORDINATOR

DATE: 9/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

NOTES, LEGEND, & ABBREVIATIONS
(1 OF 2)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER		TRAFFIC & TRANSPORTATION
WASTEWATER		STORM WATER QUALITY
STORM		FACILITIES
STREET & BRIDGE		102617

JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY
DRAWN BY: JCR	
DRAWING SCALE: N.T.S.	
DRAWING NO. G002	
SHEET NO. 2 OF 40	

THE CONTRACTOR SHALL OBTAIN A COPY OF THE LATEST EDITION OF THE CITY INFRASTRUCTURE DESIGN MANUAL, STANDARD SPECIFICATIONS AND STANDARD DETAILS AT THE CITY FILE ROOM. SAME SHALL BE PART OF THIS JOB'S SPECIFICATIONS.

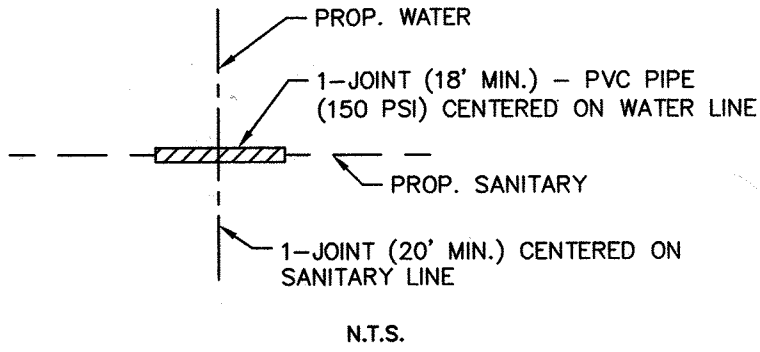
P:\Active\F003\1445\Design Phase\CAD\Sheet_Files\GENERAL NOTES.dwg ~ 10/23/2017 4:31:21 PM ~ Jose Sanchez

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER DISTRIBUTION SYSTEM

GENERAL CONSTRUCTION NOTES

1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS, AT A MINIMUM, MEET TCEQ'S RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS.
2. AN APPOINTED ENGINEER SHALL NOTIFY IN WRITING THE LOCAL TCEQ'S REGIONAL OFFICE WHEN CONSTRUCTION WILL START. PLEASE KEEP IN MIND THAT UPON COMPLETION OF THE WATER WORKS PROJECT, THE ENGINEER OR OWNER SHALL NOTIFY THE COMMISSION'S WATER SUPPLY DIVISION, IN WRITING, AS TO ITS COMPLETION AND ATTEST TO THE FACT THAT THE WORK HAS BEEN COMPLETED ESSENTIALLY ACCORDING TO THE PLANS AND CHANGE ORDERS ON FILE WITH THE COMMISSION AS REQUIRED IN 30 TAC §290.39(H)(3).
3. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI, AS REQUIRED BY 30 TAC §290.44(A)(1).
4. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS, AS REQUIRED BY 30 TAC §290.44(A)(2).
5. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY, AS REQUIRED BY 30 TAC §290.44(A)(3).
6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE, AS REQUIRED BY 30 TAC §290.44(A)(4).
7. PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS.
 - THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;
 - $Q = LD \sqrt{P/148,000}$WHERE:
 - Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
 - L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
 - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
 - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
8. AFTER JANUARY 4, 2014 ALL CONSTRUCTION PROJECTS MUST COMPLY WITH CHANGES TO THE SAFE DRINKING WATER ACT THAT REDUCE THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES TO 0.25 PERCENT.
9. THE SYSTEM MUST BE DESIGNED TO MAINTAIN A MINIMUM PRESSURE OF 35 PSI AT ALL POINTS WITHIN THE DISTRIBUTION NETWORK AT FLOW RATES OF AT LEAST 1.5 GALLONS PER MINUTE PER CONNECTION. WHEN THE SYSTEM IS INTENDED TO PROVIDE FIREFIGHTING CAPABILITY, IT MUST ALSO BE DESIGNED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI UNDER COMBINED FIRE AND DRINKING WATER FLOW CONDITIONS AS REQUIRED BY 30 TAC §290.44(D).
10. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES IN THE DISTRIBUTION SYSTEM AT ALL POINTS WHERE TOPOGRAPHY OR OTHER FACTORS MAY CREATE AIR LOCKS IN THE LINES. ALL VENT OPENINGS TO THE ATMOSPHERE SHALL BE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT AS REQUIRED BY 30 TAC §290.44(D)(1).
11. PURSUANT TO 30 TAC §290.44(D)(4), ACCURATE WATER METERS SHALL BE PROVIDED. SERVICE CONNECTIONS AND METER LOCATIONS SHOULD BE SHOWN ON THE PLANS.
12. PURSUANT TO 30 TAC §290.44(D)(5), SUFFICIENT VALVES AND BLOWOFFS TO MAKE REPAIRS. THE ENGINEERING REPORT SHALL ESTABLISH CRITERIA FOR THIS DESIGN.
13. PURSUANT TO 30 TAC §290.44(D)(6), THE SYSTEM SHALL BE DESIGNED TO AFFORD EFFECTIVE CIRCULATION OF WATER WITH A MINIMUM OF DEAD ENDS. ALL DEAD-END MAINS SHALL BE PROVIDED WITH ACCEPTABLE FLUSH VALVES AND DISCHARGE PIPING. ALL DEAD-END LINES LESS THAN TWO INCHES IN DIAMETER WILL NOT REQUIRE FLUSH VALVES IF THEY END AT A CUSTOMER SERVICE. WHERE DEAD ENDS ARE NECESSARY AS A STAGE IN THE GROWTH OF THE SYSTEM, THEY SHALL BE LOCATED AND ARRANGED TO ULTIMATELY CONNECT THE ENDS TO PROVIDE CIRCULATION.
14. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES AND SEPTIC TANK DRAINFIELDS. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET 30 TAC §290.44(E)(1-4) OF THE CURRENT RULES.
15. PURSUANT TO 30 TAC §290.44(E)(5), THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.
16. PURSUANT TO 30 TAC §290.44(E)(6), FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
17. PURSUANT TO 30 TAC §290.44(E)(7), SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE.
18. PURSUANT TO 30 TAC §290.44(E)(8), WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS.
19. PURSUANT TO 30 TAC §290.44(F)(1), THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION.
20. PURSUANT TO 30 TAC §290.44(F)(2), WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED.
21. THE CONTRACTOR SHALL DISINFECT THE NEW WATER MAINS IN ACCORDANCE WITH AWWA STANDARD C-651 AND THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE. WHEN SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATER LINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER, IN ACCORDANCE WITH 30 TAC §290.44(F)(3).

SANITARY SEWER / WATER LINE CROSSING



BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR PRESSURE RATED WATER MAINS, DURING FUTURE CONSTRUCTION WHERE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND.

STORM SEWER CONSTRUCTION NOTES

1. STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD DETAILS DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 (OCT. 2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. ALL STORM SEWER CONSTRUCTED IN SIDELOT EASEMENT SHALL BE R.C.P. (C-76, CLASSIII) AND SHALL BE EMBEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 AS APPLICABLE.
3. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
4. ALL TRENCH BACKFILL SHALL BE IN 8' LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D-698/AASHTO T99).
5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.
6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASSIII).
7. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL PROVIDE 12" MINIMUM VERTICLE CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
9. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF HIS WORK.
11. ALL DITCHES SHALL BE REGRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.
12. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WESR OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

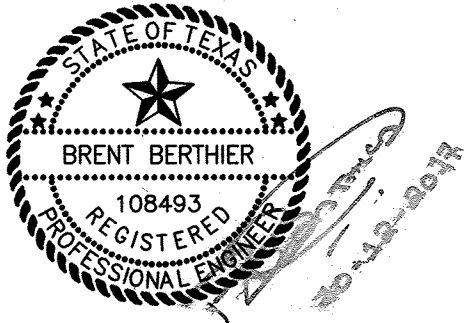
NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED:  DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.


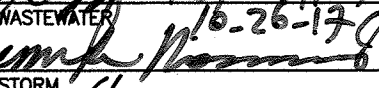
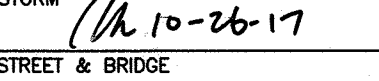
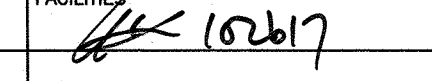
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

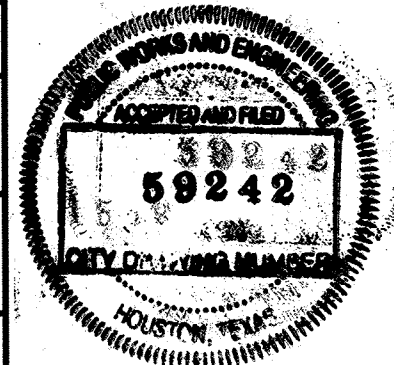
FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

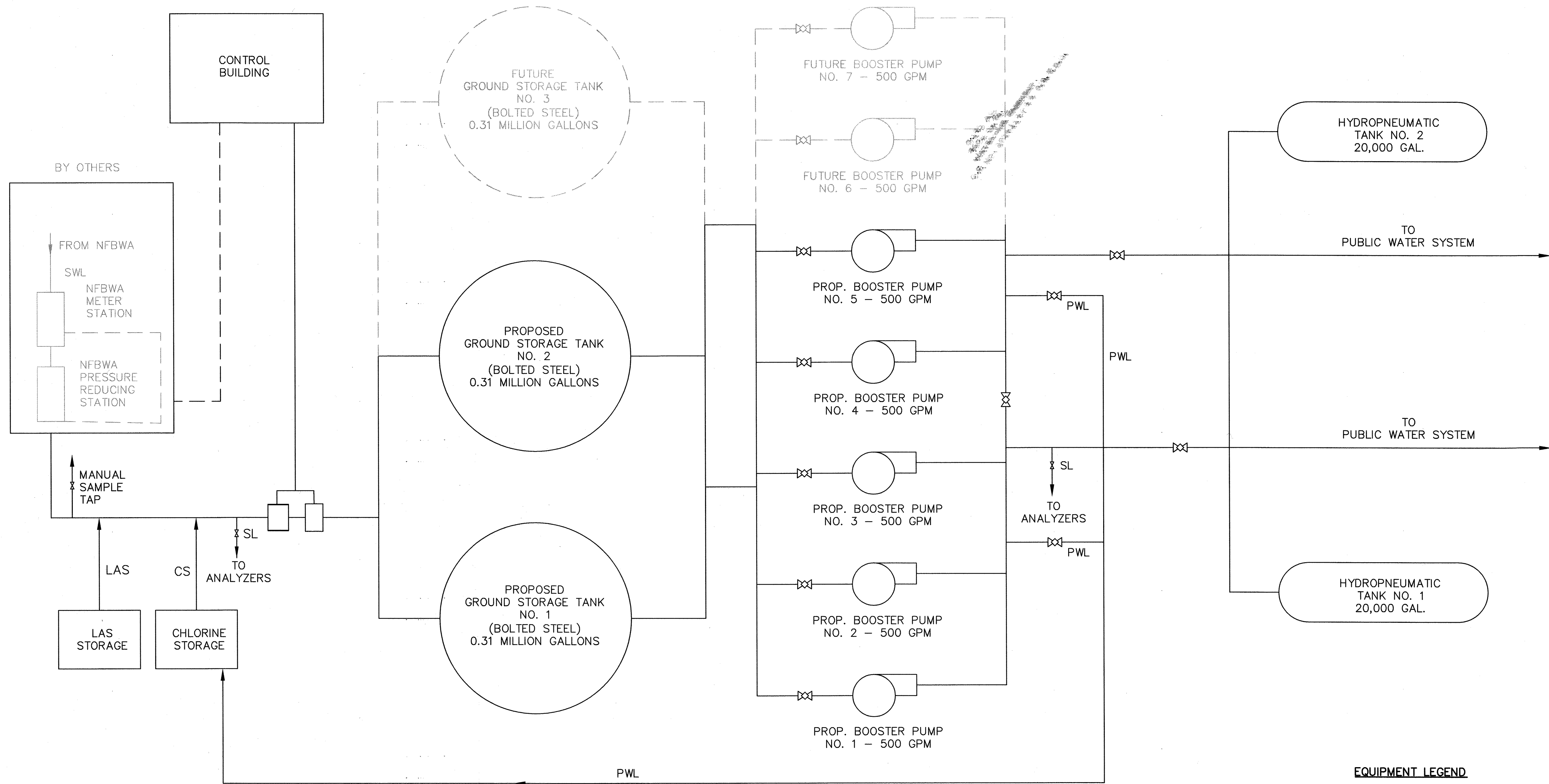
NOTES, LEGEND, & ABBREVIATIONS
(1 OF 2)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER 	TRAFFIC & TRANSPORTATION
WASTEWATER 	STORM WATER QUALITY
STORM 	FACILITIES
STREET & BRIDGE	

JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY 
DRAWN BY: JCR	
DRAWING SCALE: N.T.S.	
DRAWING NO. G003	
SHEET NO. 3 OF 40	



EQUIPMENT LEGEND

BP BOOSTER PUMP
FM FLOW METER
GST GROUND STORAGE TANK
HT HYDRO-PNEUMATIC TANK
WW WATER WELL WITH PUMP AND MOTOR
EMER STAND-BY EMERGENCY GENERATOR
MCC MOTOR CONTROL CENTER
CONT PROCESS CONTROLLER
UPS BATTERY BACKUP POWER SUPPLY
FR FLOW RECORDER
PR PRESSURE RECORDER

PIPE LEGEND

CS CHLORINE SOLUTION LINE
LAS LIQUID AMMONIA SULFATE LINE
SL CONTINUOUS SAMPLE LINE
SWL SURFACE WATER LINE
PWL POTABLE WATER LINE

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

LAS SCHEMATIC

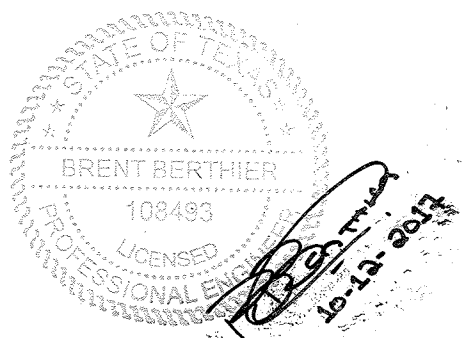
1. CALIBRATION CYLINDER NOT SHOWN FOR CLARITY.
2. SEE SPECIFICATIONS FOR ALL TANK ACCESSORIES.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

**WATER PLANT PROCESS
FLOW DIAGRAM**

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

DRAWN BY:
JCR

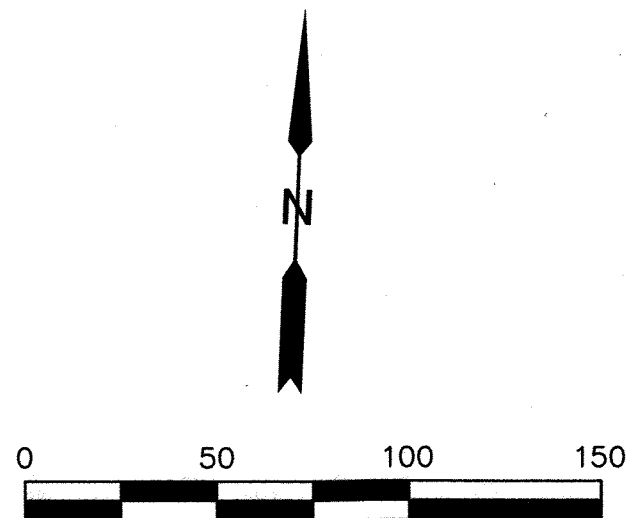
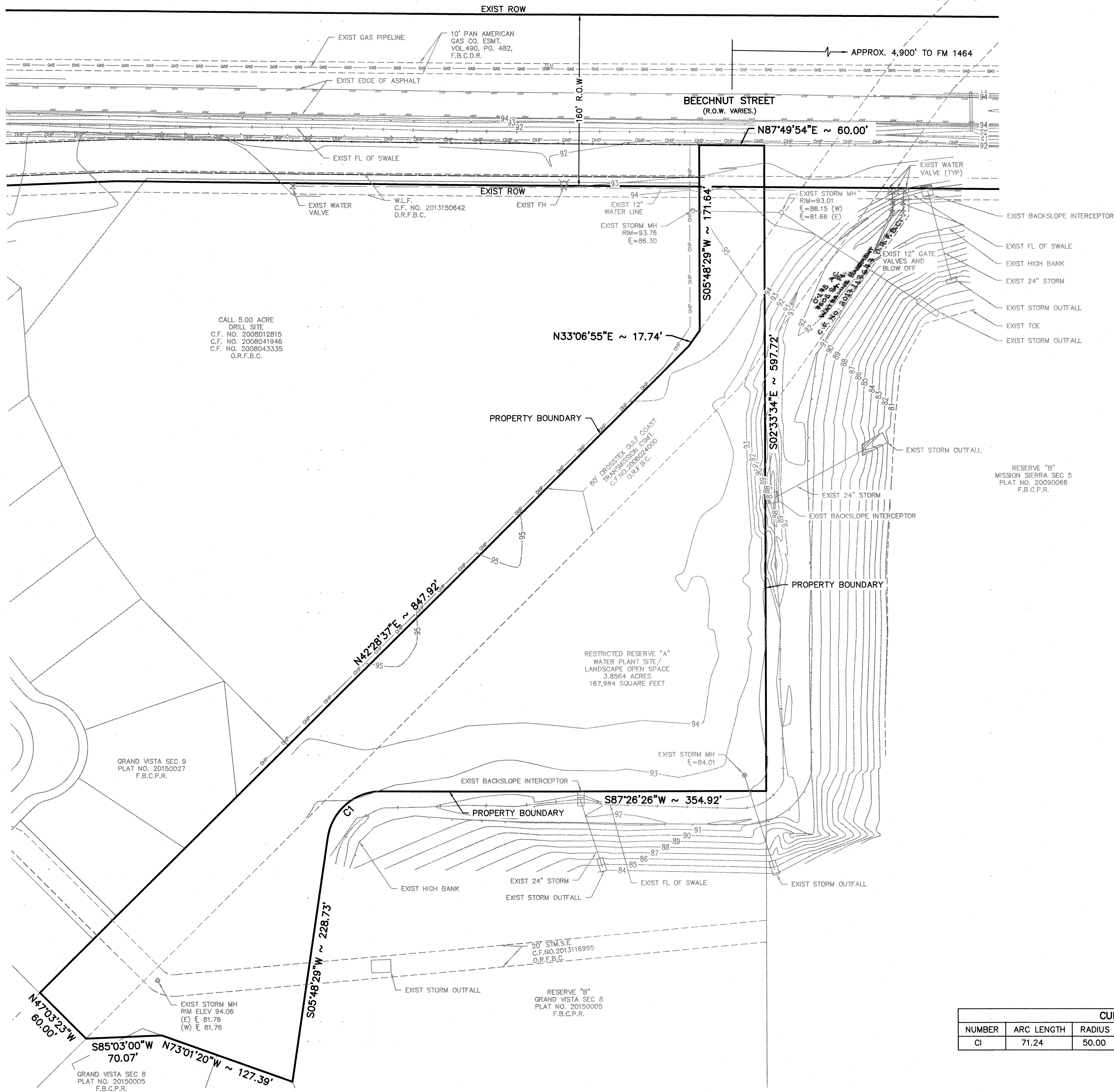
DRAWING SCALE:
N.T.S.

DRAWING NO.
G004

SHEET NO.
4 OF 40

FOR CITY OF HOUSTON USE ONLY



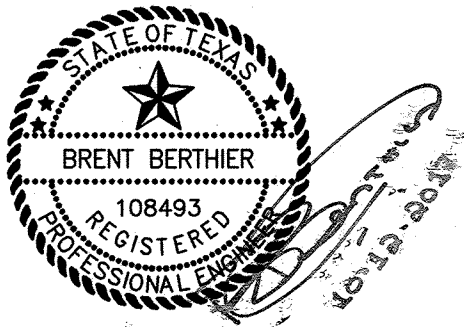


BENCHMARK DATA:
CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES
1. LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING AND COMMENCING CONSTRUCTION

REVISIONS			
NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Mary D. [Signature]*
DEVELOPMENT COORDINATOR
DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

EXISTING OVERALL SITE PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

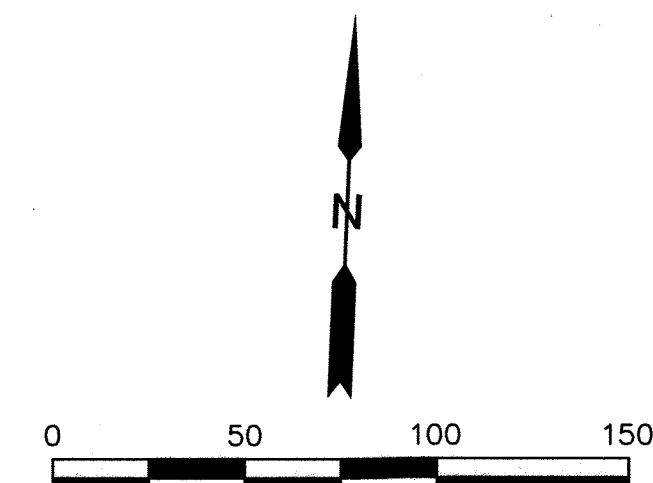
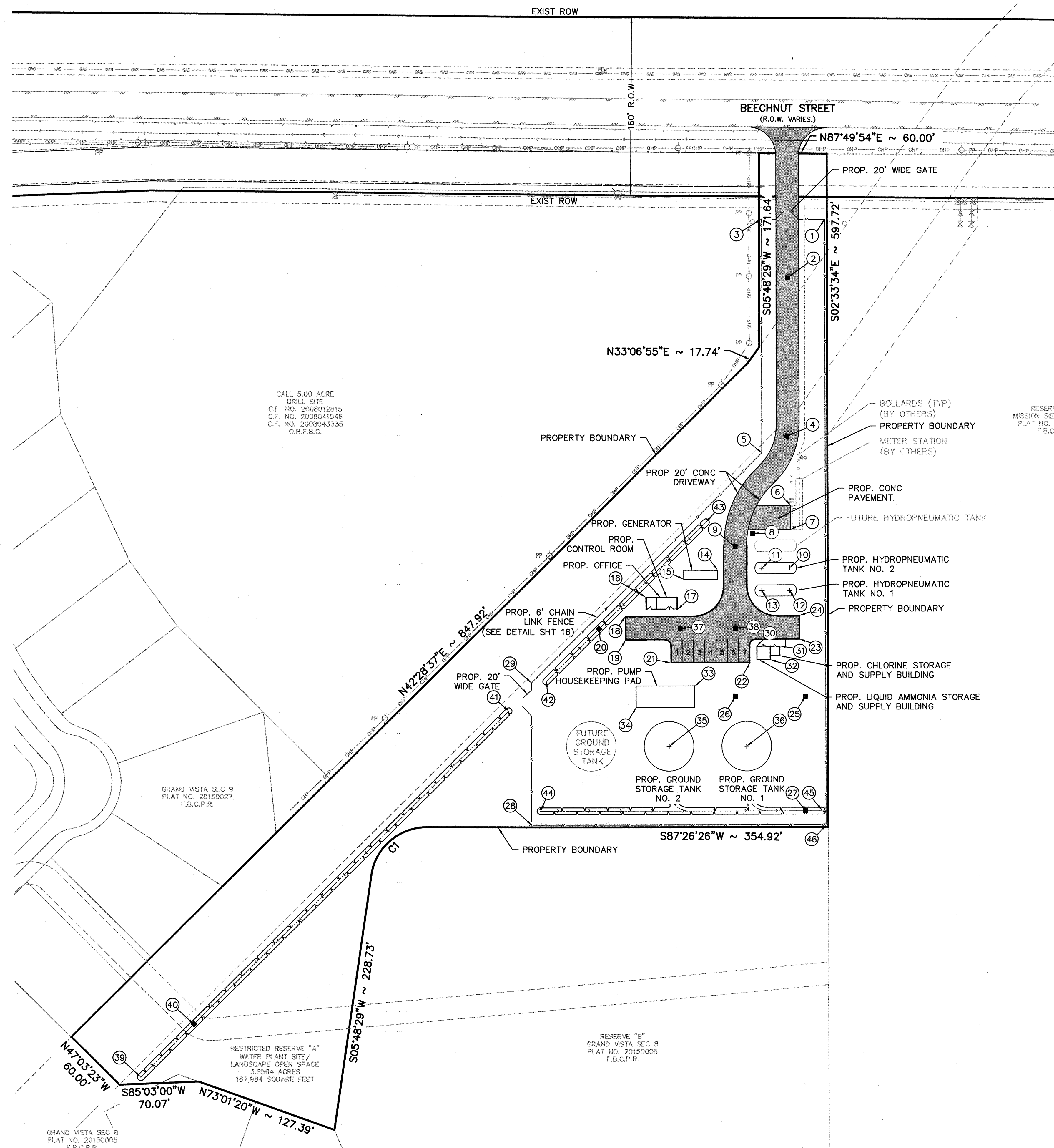
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

Signatures and dates for each category are present.

JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY
DRAWN BY: JCR	
DRAWING SCALE: 1"=50'	
DRAWING NO. C001	
SHEET NO. 5 OF 40	

CURVE DATA TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
CI	71.24	50.00	81° 37'57"	S 46°37'27" W	61.36



NO.	NORTHING	EASTING
1	13812508.81	3015515.02
2	13812455.72	3015484.45
3	13812506.82	3015459.15
4	13812315.25	3015489.86
5	13812299.76	3015468.24
6	13812253.92	3015495.45
7	1381232.94	3015496.38
8	13812228.01	3015463.34
9	13812215.45	3015448.25
10	13812198.72	3015497.09
11	13812197.54	3015472.62
12	13812178.74	3015497.98
13	13812177.30	3015473.51
14	13812153.93	3015473.56
15	13812184.49	3015404.94
16	1381216.15	3015371.15
17	13812157.50	3015399.63
18	13812149.30	3015352.82
19	13812128.32	3015354.83
20	13812137.19	3015330.86
21	13812109.76	3015395.76
22	13812113.12	3015465.68
23	13812135.70	3015508.65
24	13812156.68	3015507.65
25	13812085.21	3015515.87
26	13812082.45	3015454.13
27	13811983.69	3015520.41
28	13811960.42	3015278.77
29	13812086.65	3015273.12
30	13812127.89	3015470.98
31	13812128.86	3015491.46
32	13812116.48	3015483.54
33	13812090.35	3015417.55
34	13812068.79	3015366.83
35	13812035.73	3015397.28
36	13812038.80	3015466.03
37	13812140.63	3015402.61
38	13812142.97	3015451.42
39	13811720.65	3014842.91
40	13811769.75	3015278.87
41	13812006.68	3015278.46
42	13812088.16	3015284.28
43	13812236.14	3015421.46
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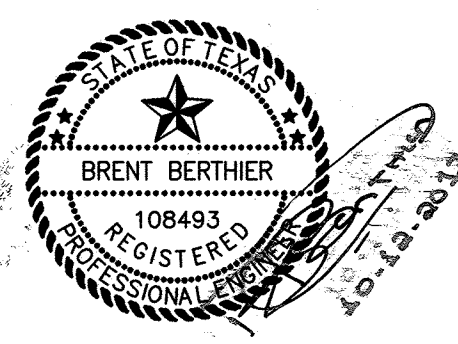
CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WESR OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBGSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES.
ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

[illegible]

APPROVED: Maggie
DEVELOPMENT COORDINATOR

DATE: 11/17/17



J A COSTANZA
& ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77556 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

PROPOSED OVERALL SITE PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTE WATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.: F003-1445
DRAWN BY:

JCR

DRAWING SCALE:

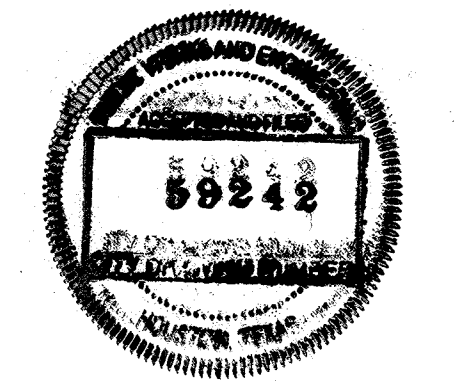
$$1'' = 50'$$

DRAWING NO. 0000

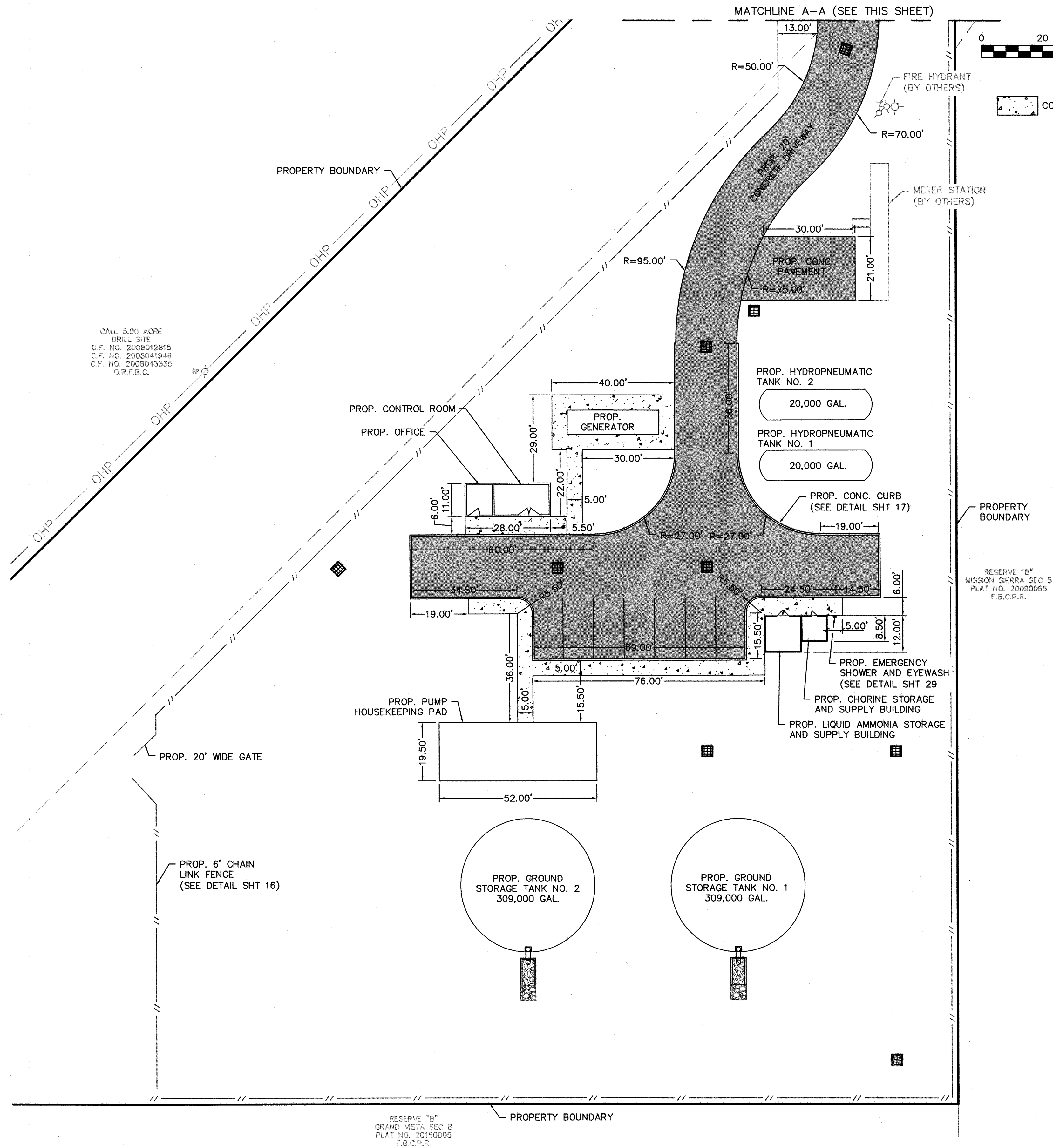
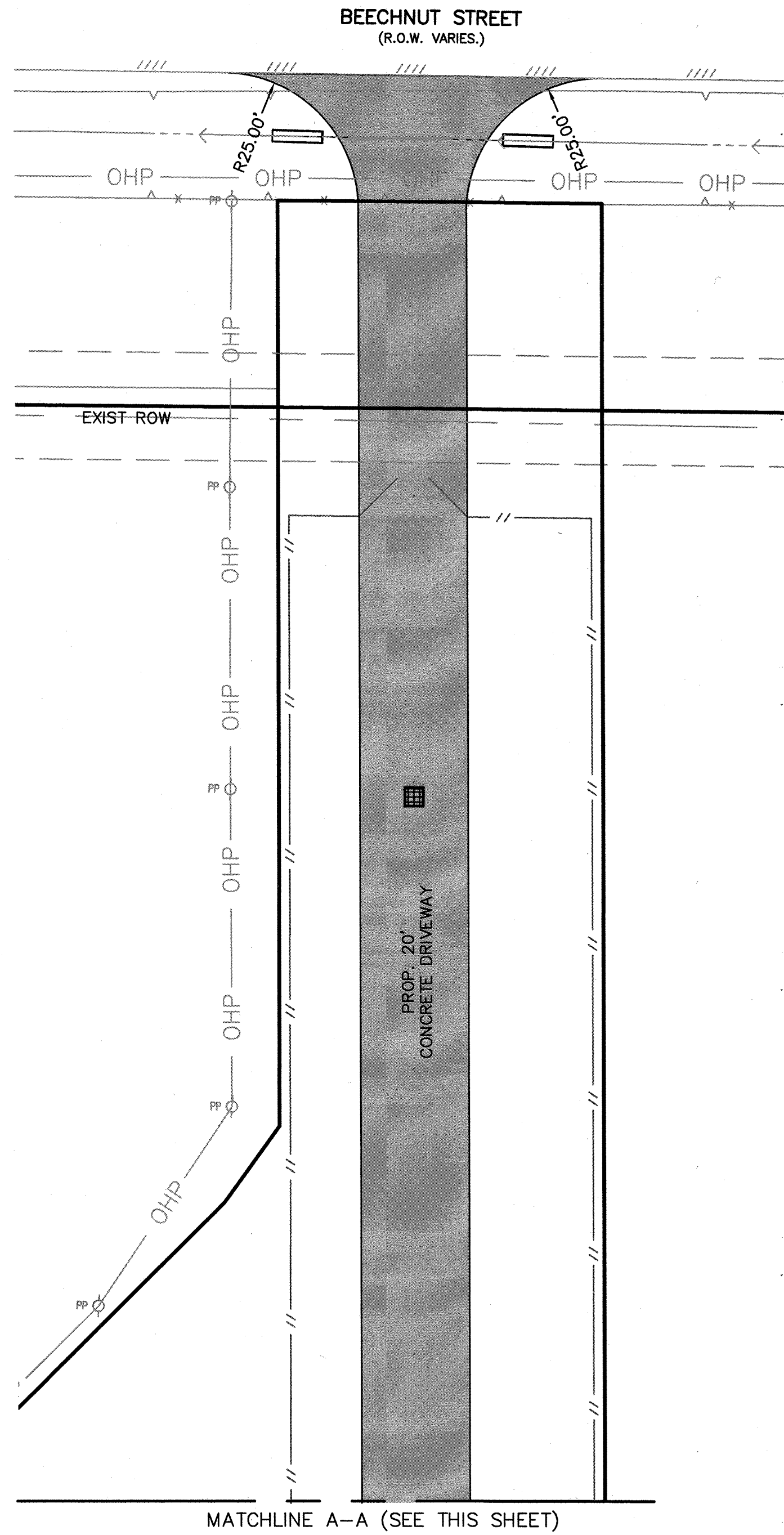
C002

SHEET NO.

FOR CITY OF HOUSTON USE ONLY



CURVE DATA TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
CI	71.24	50.00	81° 37'57"	S 46°37'27" W	61.36



BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

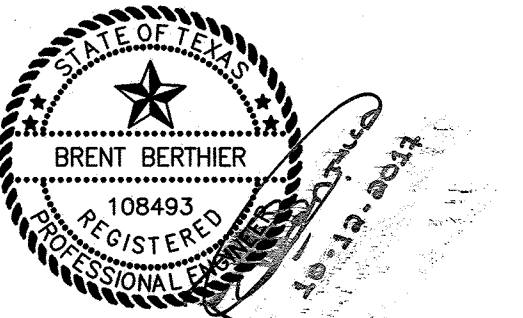
- ALL DIMENSIONS TO BACK OF CURB UNLESS OTHERWISE NOTICED.
- COORDINATE CONSTRUCTION OF DRIVEWAY WITH THE FORT BEND COUNTY ROAD AND BRIDGE DEPARTMENT AT 281-342-4513.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Mari D.*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-330-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

WATER SUPPLY PLANT SITE PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	10/26/17	TRAFFIC & TRANSPORTATION
WASTEWATER	10/26/17	STORM WATER QUALITY
STORM	10/26/17	FACILITIES
STREET & BRIDGE	10/26/17	

JAC JOB No.:
F003-1445

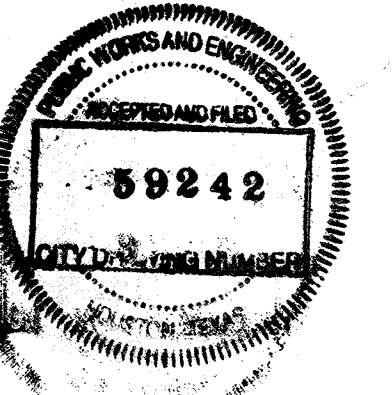
DRAWN BY:
JCR


DRAWING SCALE:
1"=20'

DRAWING NO.
C003

SHEET NO.
7 OF 40

FOR CITY OF HOUSTON USE ONLY



JAC JOB NO.: F003-1445	<p>FOR CITY OF HOUSTON USE ONLY</p> 
DRAWN BY: JCR	
DRAWING SCALE: 1"=40'	
DRAWING NO. C004	
SHEET NO. 8 OF 40	

FL - FLOW LINE
TP - TOP OF PAVEMENT
FF - FINISHED FLOOR
TW - TOP OF WALK
TG - TOP OF GRATE



CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH SIDEWALL, APPROX. 0.45 MILE WESR OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBUSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)


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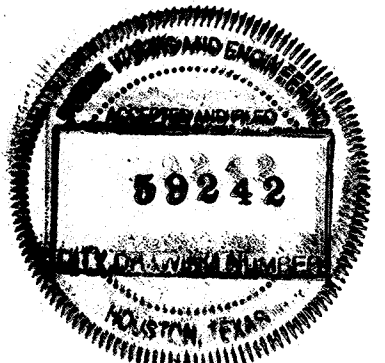
DATE: 11/17/17

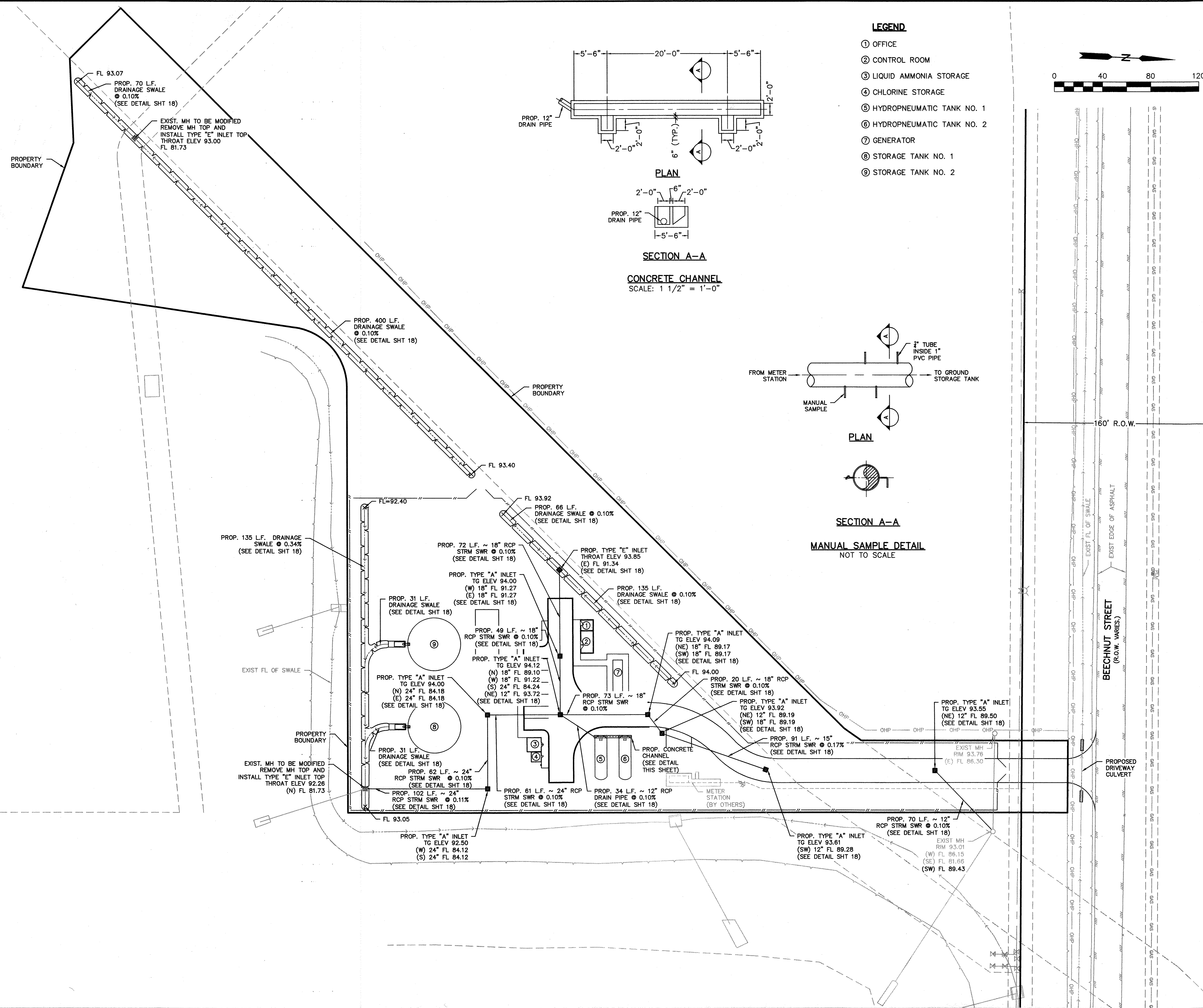


PROPOSED PAVING &
GRADING PLAN

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

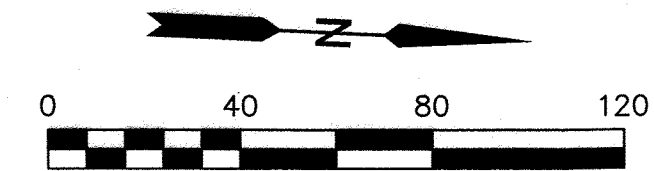
JAC JOB No.: F003-1445	
DRAWN BY: JCR	
DRAWING SCALE: 1"=40'	
DRAWING NO. C005	
SHEET NO. 9 OF 40	





LEGEND

- ① OFFICE
- ② CONTROL ROOM
- ③ LIQUID AMMONIA STORAGE
- ④ CHLORINE STORAGE
- ⑤ HYDROPNEUMATIC TANK NO. 1
- ⑥ HYDROPNEUMATIC TANK NO. 2
- ⑦ GENERATOR
- ⑧ STORAGE TANK NO. 1
- ⑨ STORAGE TANK NO. 2



BENCHMARK DATA:

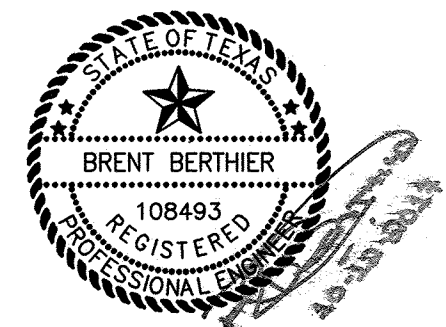
CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17" SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

[illegible]

APPROVED: [Signature]
DEVELOPMENT COORDINATOR

DATE: 11/17/17



J A COSTANZA
& ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

PROPOSED DRAINAGE & STORM SEWER PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:

F003-1445

DRAWN BY:
JCR

DRAWING SCALE:

 $1'' = 40'$

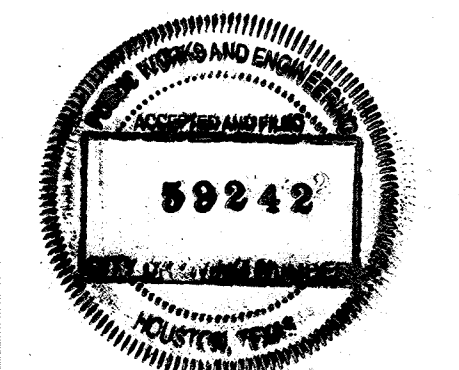
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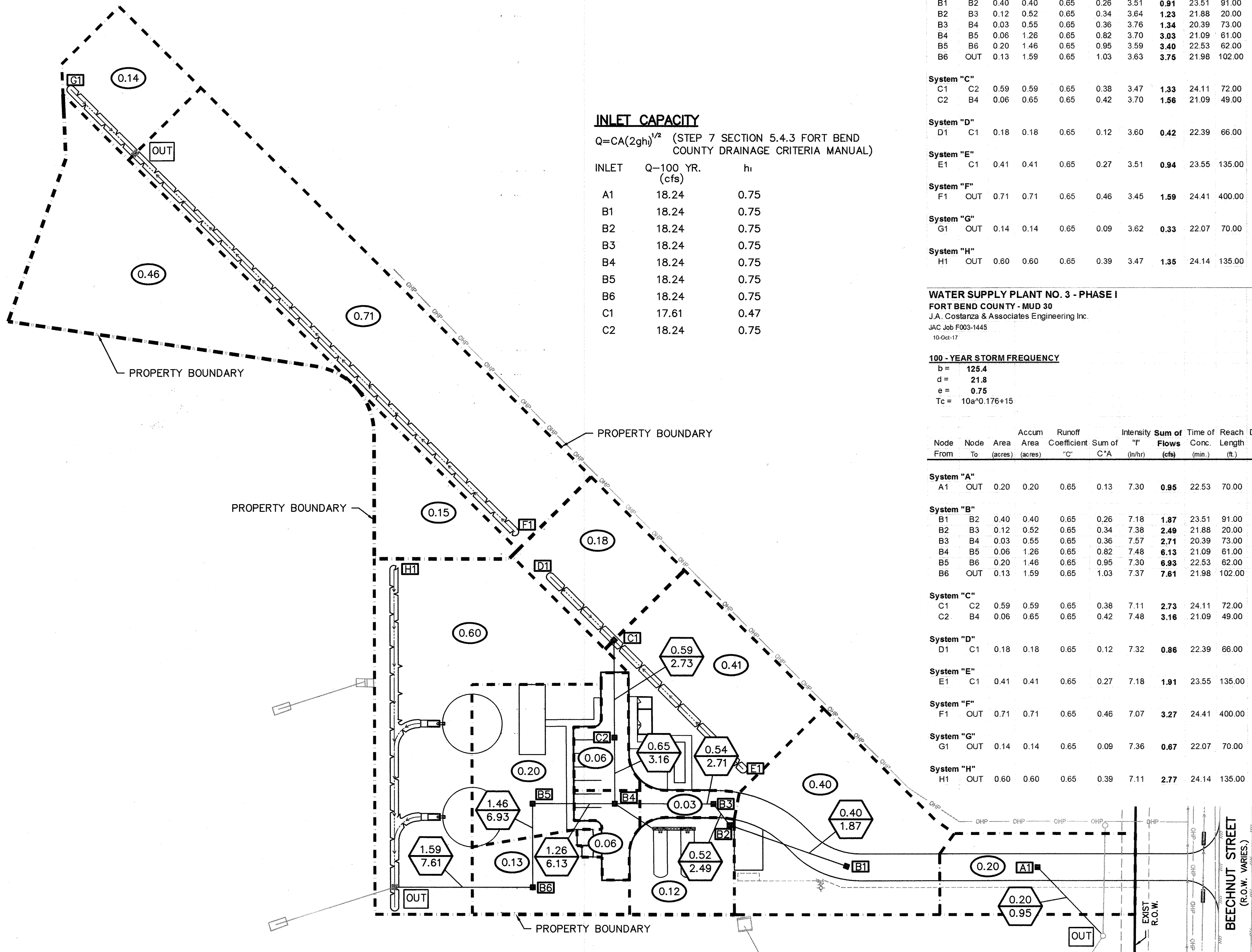
C006

QUEST. NO.

SHEET NO. 10 25 1

FOR CITY OF HOUSTON USE ONLY





INLET CAPACITY

$Q = CA(2gh)^{1/2}$ (STEP 7 SECTION 5.4.3 FORT BEND COUNTY DRAINAGE CRITERIA MANUAL)

INLET	Q-100 YR. (cfs)	h _i
A1	18.24	0.75
B1	18.24	0.75
B2	18.24	0.75
B3	18.24	0.75
B4	18.24	0.75
B5	18.24	0.75
B6	18.24	0.75
C1	17.61	0.47
C2	18.24	0.75

WATER SUPPLY PLANT NO. 3 - PHASE I FORT BEND COUNTY - MUD 30

J.A. Costanza & Associates Engineering Inc.
JAC Job F003-1445
10-Oct-17

2-YEAR STORM FREQUENCY

b = 75.01
d = 16.2
e = 0.83
Tc = 10a*0.176+15

Node From	Node To	Area (acres)	Accum. Area (acres)	Runoff Coefficient "C"	Sum of C*A	Intensity "I" (in/hr)	Sum of Flows (cfs)	Time of Conc. (min.)	Reach Length (ft.)	Diameter or Rise (in.)	Span (ft.)	Slope (%)	Manning's "n"	Design Capacity (cfs)	Design Velocity (ft/s)	Fall (ft.)	Upstream Drop (ft.)	Flowline Elevation Upstream (ft.)	Flowline Elevation Downstream (ft.)	Actual Velocity (ft/s)	Hydraulic Gradient (%)	Change in Head (ft.)	Elevation of Hyd. Grad. Upstream (ft.)	Elevation of Hyd. Grad. Downstream (ft.)
System "A"																								
A1	OUT	0.20	0.20	0.65	0.13	3.59	0.47	22.53	70.00	12	0	0.10%	0.013	1.13	3.00	0.07	0.00	89.50	89.43	0.59	0.02%	0.01	0.01	0.00
System "B"																								
B1	B2	0.40	0.40	0.65	0.26	3.51	0.91	23.51	91.00	15	0	0.10%	0.013	2.04	3.00	0.09	0.00	89.28	89.19	0.74	0.02%	0.02	4.95	4.93
B2	B3	0.12	0.52	0.65	0.34	3.64	1.23	21.88	20.00	18	0	0.10%	0.013	3.32	3.00	0.02	0.00	89.19	89.17	0.70	0.01%	0.00	4.93	4.92
B3	B4	0.03	0.55	0.65	0.36	3.76	1.34	20.39	73.00	18	0	0.10%	0.013	3.32	3.00	0.07	0.00	89.17	89.10	0.76	0.02%	0.01	4.92	4.91
B4	B5	0.06	1.26	0.65	0.82	3.70	3.03	21.09	61.00	24	0	0.10%	0.013	7.15	3.00	0.06	4.86	84.24	84.18	0.96	0.02%	4.87	4.91	0.04
B5	B6	0.20	1.46	0.65	0.95	3.59	3.40	22.53	62.00	24	0	0.10%	0.013	7.15	3.00	0.06	0.00	84.18	84.12	1.08	0.02%	0.01	0.04	0.03
B6	OUT	0.13	1.59	0.65	1.03	3.63	3.75	21.98	102.00	24	0	0.11%	0.013	7.50	3.00	0.11	0.00	84.12	84.01	1.19	0.03%	0.03	0.03	0.00
System "C"																								
C1	C2	0.59	0.59	0.65	0.38	3.47	1.33	24.11	72.00	18	0	0.10%	0.013	3.32	3.00	0.07	0.00	91.34	91.27	0.75	0.02%	0.06	7.10	7.04
C2	B4	0.06	0.65	0.65	0.42	3.70	1.56	21.09	49.00	18	0	0.10%	0.013	3.32	3.00	0.05	6.98	91.27	91.22	0.88	0.02%	0.06	7.04	6.98
System "D"																								
D1	C1	0.18	0.18	0.65	0.12	3.60	0.42	22.39	66.00	DITCH	0	0.10%	0.040	4.40	3.00	0.07	0.00	93.92	93.85	2.00	0.38%	0.25	0.25	0.00
System "E"																								
E1	C1	0.41	0.41	0.65	0.27	3.51	0.94	23.55	135.00	DITCH	0	0.10%	0.040	4.40	3.00	0.14	0.00	93.99	93.85	2.00	0.38%	0.52	0.52	0.00
System "F"																								
F1	OUT	0.71	0.71	0.65	0.46	3.45	1.59	24.41	400.00	DITCH	0	0.10%	0.040	4.40	3.00	0.40	0.00	93.40	93.00	2.00	0.38%	1.54	1.54	0.00
System "G"																								
G1	OUT	0.14	0.14	0.65	0.09	3.62	0.33	22.07	70.00	DITCH	0	0.10%	0.040	4.40	3.00	0.07	0.00	93.07	93.00	2.00	0.38%	0.27	0.27	0.00
System "H"																								
H1	OUT	0.60	0.60	0.65	0.39	3.47	1.35	24.14	135.00	DITCH	0	0.10%	0.04	4.40	3.00	0.14	0.00	92.40	92.26	2.00	0.38%	0.52	0.52	0.00

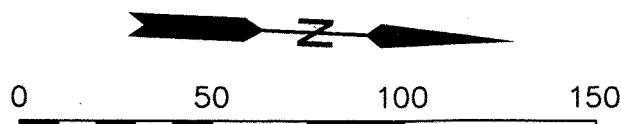
WATER SUPPLY PLANT NO. 3 - PHASE I FORT BEND COUNTY - MUD 30

J.A. Costanza & Associates Engineering Inc.
JAC Job F003-1445
10-Oct-17

100-YEAR STORM FREQUENCY

b = 125.4
d = 21.8
e = 0.75
Tc = 10a*0.176+15

Node From	Node To	Area (acres)	Accum. Area (acres)	Runoff Coefficient "C"	Sum of C*A	Intensity "I" (in/hr)	Sum of Flows (cfs)	Time of Conc. (min.)	Reach Length (ft.)	Diameter or Rise (in.)	Span (ft.)	Slope (%)	Manning's "n"	Design Capacity (cfs)	Design Velocity (ft/s)	Fall (ft.)	Upstream Drop (ft.)	Flowline Elevation Upstream (ft.)	Flowline Elevation Downstream (ft.)	Actual Velocity (ft/s)	Hydraulic Gradient (%)	Change in Head (ft.)	Elevation of Hyd. Grad. Upstream (ft.)	Elevation of Hyd. Grad. Downstream (ft.)
System "A"																								
A1	OUT	0.20	0.20	0.65	0.13	7.30	0.95	22.53	70.00	12	0	0.10%	0.013	1.13	3.00	0.07	0.00	89.50	89.43	1.21	0.07%	0.05	0.05	0.00
System "B"																								
B1	B2	0.40	0.40	0.65	0.26	7.18	1.87	23.51	91.00	15	0	0.10%	0.013	2.04	3.00	0.09	0.00	89.28	89.19	1.52	0.08%	0.06	5.21	5.14
B2	B3	0.12	0.52	0.65	0.34	7.38	2.49	21.88	20.00	18	0	0.10%	0.013	3.32	3.00	0.02	0.00	89.19	89.17	1.41	0.06%	0.01	5.14	5.13
B3	B4	0.03	0.55	0.65	0.36	7.57	2.71	20.39	73.00	18	0	0.10%	0.013	3.32	3.00	0.07	0.00	89.17	89.10	1.53	0.07%	0.05	5.13	5.08
B4	B5	0.06	1.26	0.65	0.82	7.48	6.13	21.09	61.00	24	0	0.10%	0.013	7.15	3.00	0.06	4.86	84.24	84.18	1.95	0.07%	4.90	5.08	0.17
B5	B6	0.20	1.46	0.65	0.95	7.30	6.93	22.53	62.00	24	0	0.10%	0.013	7.15	3.00	0.06	0.00	84.18	84.12	2.20	0.09%	0.06	0.17	0.11
B6	OUT	0.13	1.59	0.65	1.03	7.37	7.61	21.98	102.00	24	0	0.11%	0.013	7.50	3.00	0.11	0.00	84.12	84.01	2.42	0.11%	0.11	0.11	0.00
System "C"																								
C1	C2	0.59	0.59	0.65	0.38	7.11	2.73	24.11	72.00	18	0	0.10%	0.013	3.32	3.00	0.07	0.00	91.34	91.27	1.54	0.07%	0.05	7.07	7.02
C2	B4	0.06	0.65	0.65	0.42	7.48	3.16	21.09	49.00	18	0	0.10%	0.013	3.32	3.00	0.05	6.98	91.27	91.22	1.79	0.09%	0.04	7.02	6.98
System "D"																								
D1	C1	0.18	0.18	0.65	0.12	7.32	0.86	22.39	66.00	DITCH	0	0.10%	0.040	4.40	3.00	0.07	0.00	93.92	93.85	2.00	0.38%	0.25	0.25	0.00
System "E"																								
E1	C1	0.41	0.41	0.65	0.27	7.18	1.91	23.55	135.00	DITCH	0	0.10%	0.040	4.40	3.00	0.14	0.00	93.99	93.85	2.00	0.38%	0.52	0.52	0.00
System "F"																								
F1	OUT	0.71	0.71	0.65	0.46	7.07	3.27	24.41	400.00	DITCH	0	0.10%	0.040	4.40	3.00	0.40	0.00	93.40	93.00	2.00	0.38%	1.54	1.54	0.00
System "G"																								
G1	OUT	0.14	0.14	0.65	0.09	7.36	0.67	22.07	70.00	DITCH	0	0.10%	0.040	4.40	3.00	0.07	0.00	93.07	93.00	2.00	0.38%	0.27	0.27	0.00
System "H"																								
H1	OUT	0.60	0.60	0.65	0.39	7.11	2.77	24.14	135.00	DITCH	0	0.10%	0.04	4.40	3.00	0.14	0.00	92.40	92.26	2.00	0.38%	0.52	0.52	0.00



LEGEND

XX DRAINAGE AREA I.D.

XX DRAINAGE AREA (ACRES)

X.XX ACCUM. DRAINAGE AREA (ACRES)
XX.XX DRAINAGE FLOW (C.F.S.)

--- DRAINAGE AREA DIVIDE

BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1928, 1987 ADJ.)

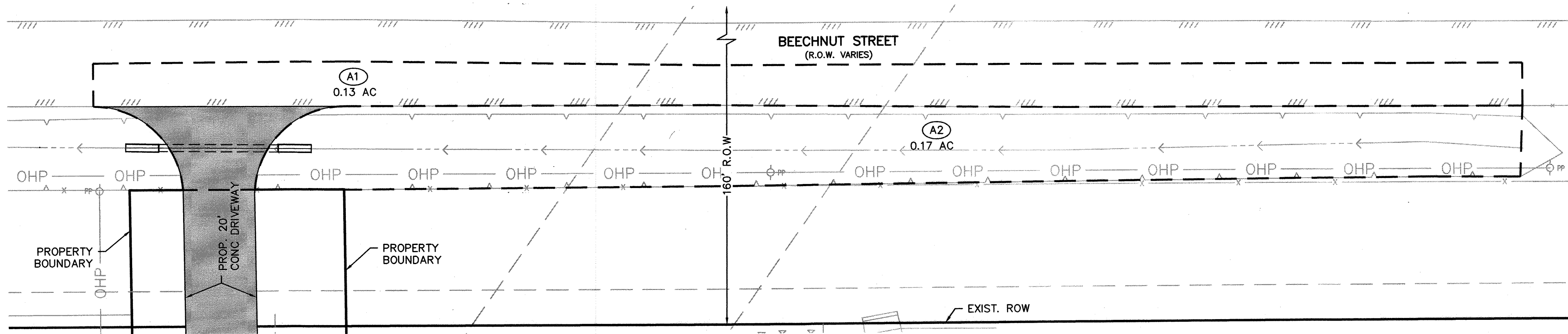
NOTES

REVISIONS

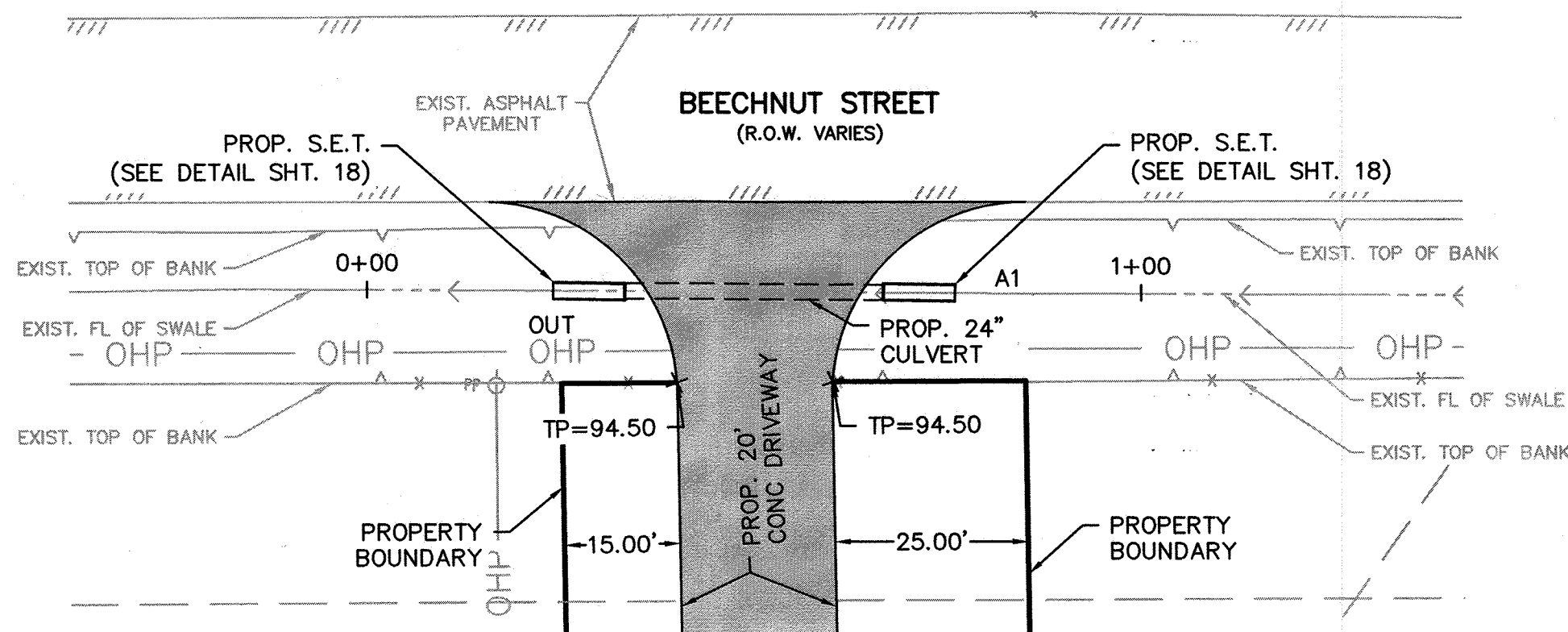
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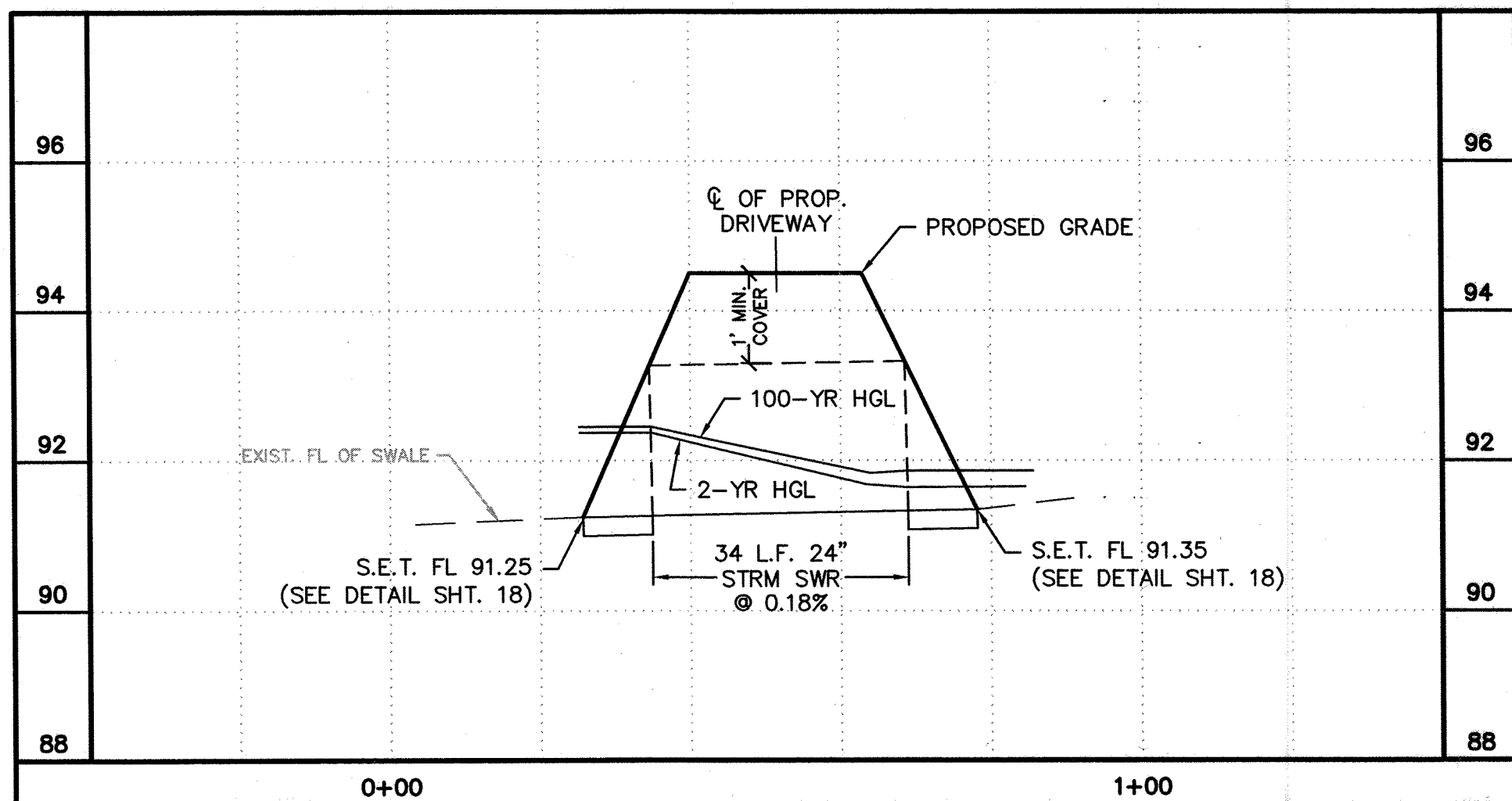
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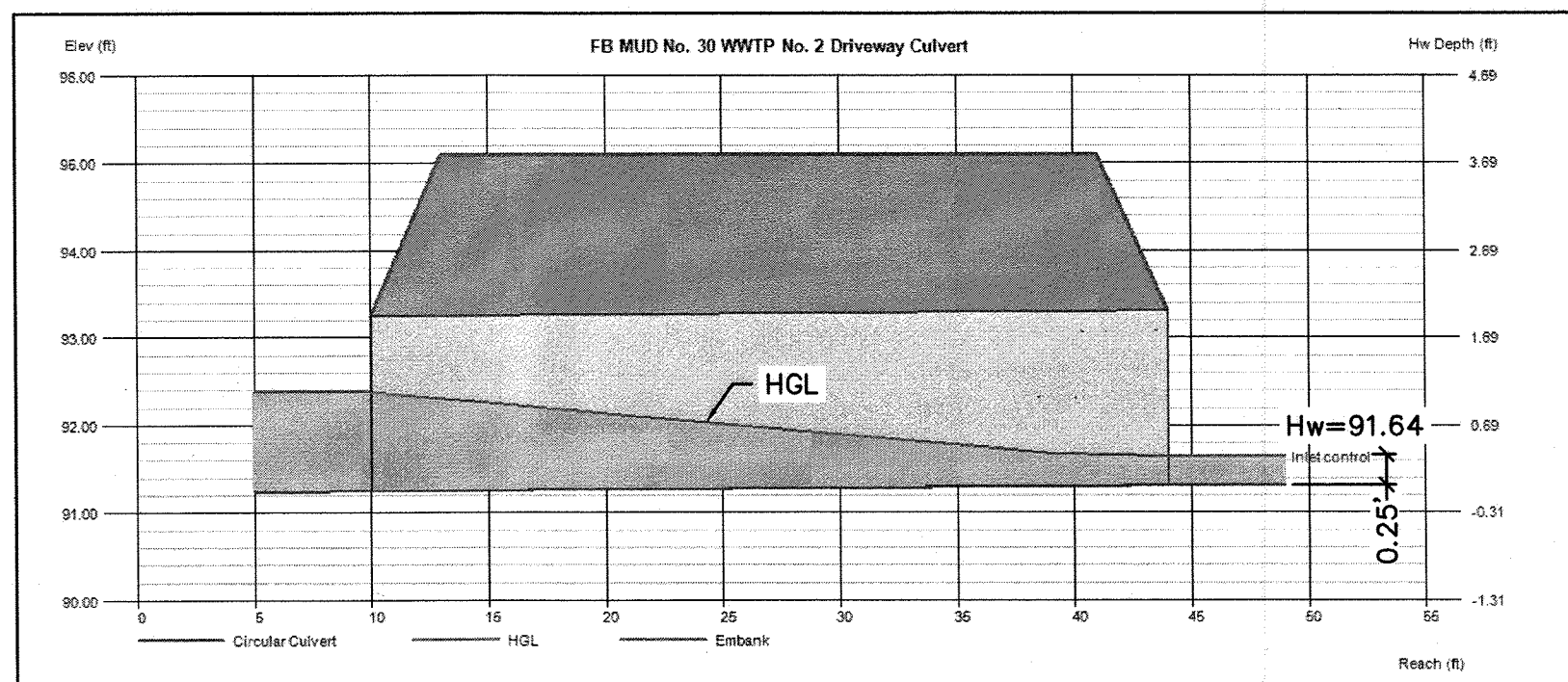
PROPOSED DRIVEWAY DRAINAGE AREA MAP
1" = 20'



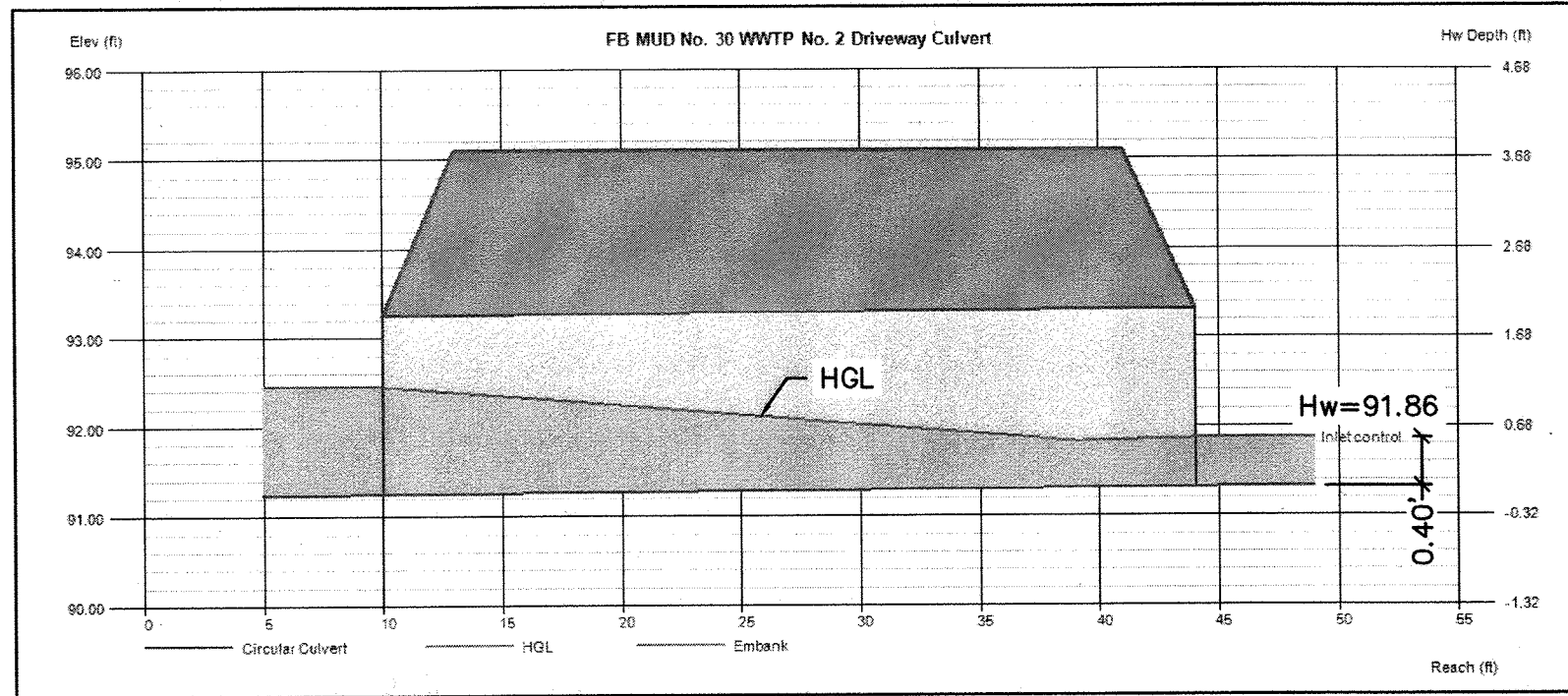
PROPOSED DRIVEWAY CULVERT PLAN VIEW
1" = 20'



PROPOSED DRIVEWAY CULVERT PROFILE VIEW
HORZ: 1" = 20'
VERT: 1" = 2'



2-YEAR
N.T.S.



100-YEAR
N.T.S.

WWTP NO. 2 - ACCESS DRIVEWAY, DETENTION & GRADING FORT BEND COUNTY - MUD 30

J.A. Costanza & Associates Engineering Inc.
JAC Job F003-1445
26-Oct-17

2-YEAR STORM FREQUENCY

b = 75.01
d = 16.2
e = 0.8315
Tc = 10a^0.176+15

100-YEAR STORM FREQUENCY

b = 125.4
d = 21.8
e = 0.75
Tc = 10a^0.176+15

Node From	Node To	Area (acres)	Accum Area (acres)	Runoff Coefficient "C"	Sum of C*A	Intensity "I" (in/hr)	Sum of Flows (cfs)	Time of Conc. (min.)	Reach Length (ft.)	Diameter or Rise (in.)	Span (in.)	Slope (%)	Manning's "n"	Design Capacity (cfs)	Design Velocity (ft/s)	Fall (ft.)	Upstream Drop (ft.)	Flowline Elevation Upstream (ft.)	Flowline Elevation Downstream (ft.)	Actual Velocity (ft/s)	Elevation of Hyd. Grad. Upstream (ft.)	Elevation of Hyd. Grad. Downstream (ft.)
2-Year																						
A1	OUT	0.30	0.30	0.50	0.15	3.54	0.53	23.09	34.00	24	0	0.18%	0.013	9.60	3.00	0.06	0.00	91.33	91.27	3.06	92.45	92.38
100-Year																						
A1	OUT	0.30	0.30	0.63	0.19	7.23	1.37	23.09	34.00	24	0	0.18%	0.013	9.60	3.00	0.06	0.00	91.33	91.27	3.06	92.33	92.45

BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

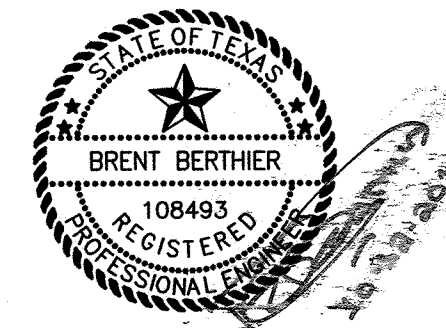
- CONTRACTOR TO COORDINATE ALL WORK WITHIN THE BEECHNUT ROAD R.O.W. WITH THE FORT BEND COUNTY ROAD AND BRIDGE DEPARTMENT AT 281-342-4513.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 11/1/17



J.A. COSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

PROPOSED CULVERT DRAINAGE AREA PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

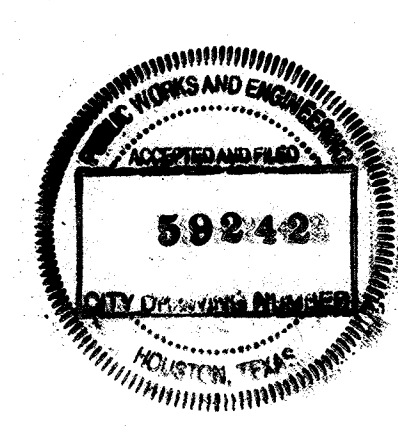
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JCR

DRAWING SCALE:
1" = 20'
1" = 2'

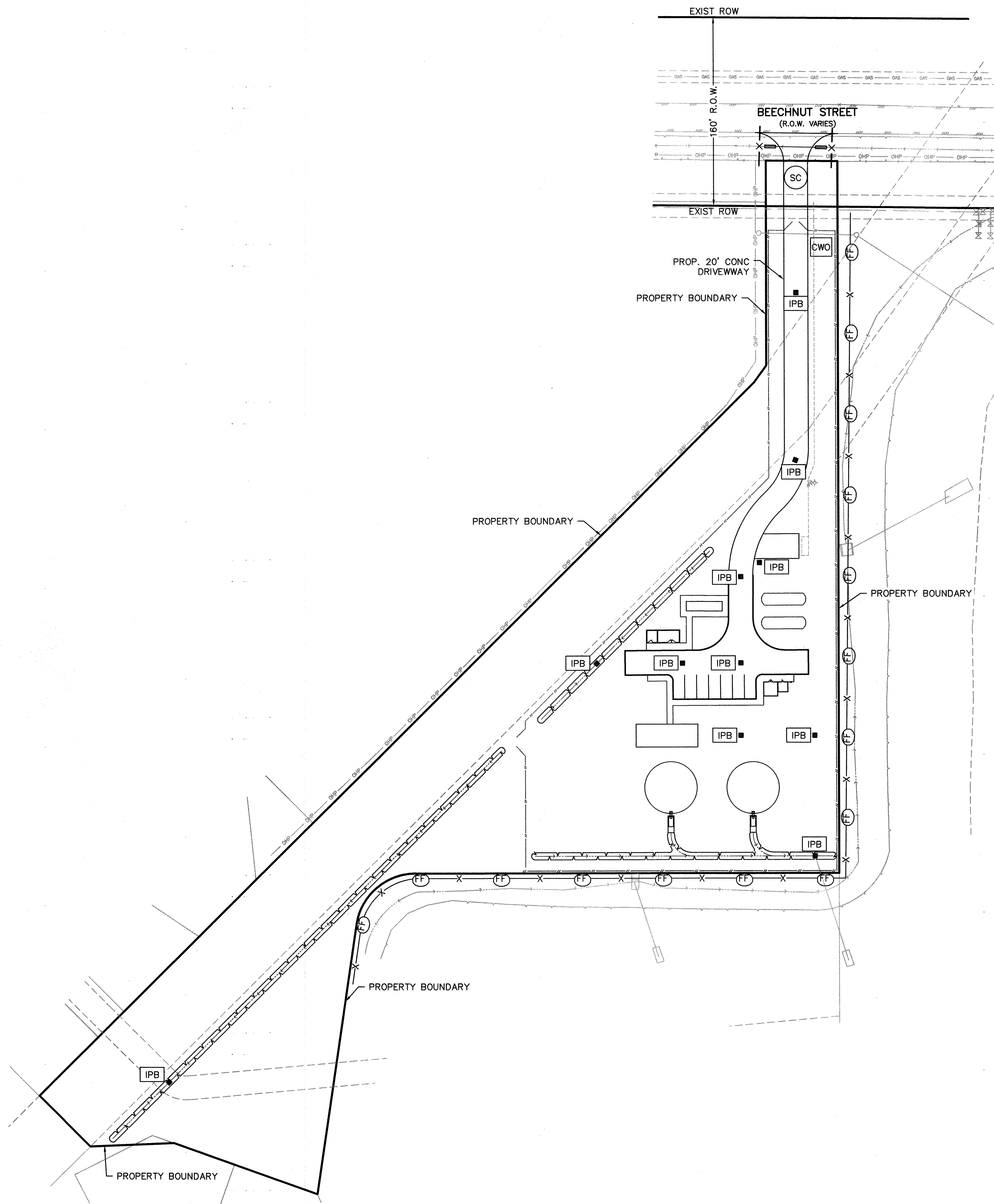
DRAWING NO.
C008


SHEET NO.
12 OF 40

FOR CITY OF HOUSTON USE ONLY



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0 50 100 150

LEGEND

- IPB INLET PROTECTION BARRIER
- X— SILT FENCE (IN SWALE)
- CWO CONCRETE WASH OUT
- SC STABILIZED CONSTRUCTION EXIT
- X—(FF)— SILT FENCE


BENCHMARK DATA:

CONTROL BENCH — RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

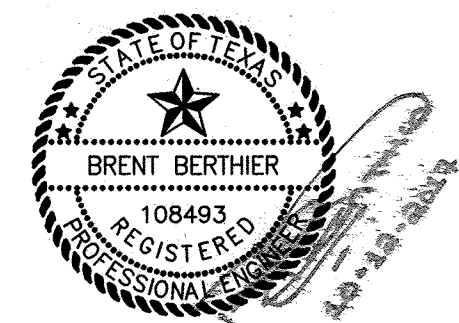
NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: 
DEVELOPMENT COORDINATOR

DATE: 11/13/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

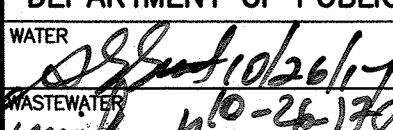
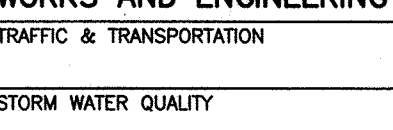
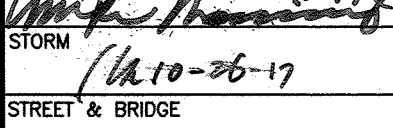
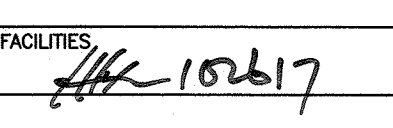
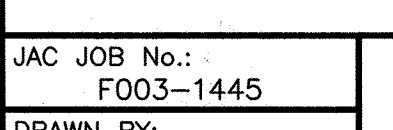
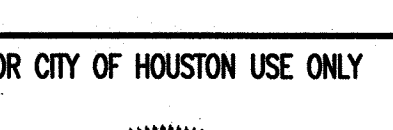
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

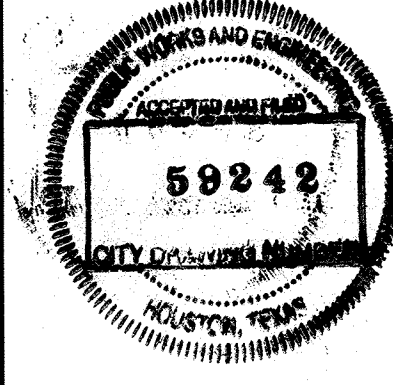
FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

STORM WATER POLLUTION PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
 10-26-17	 10-26-17
 10-26-17	 10-26-17
 10-26-17	 10-26-17

JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY 
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DRAWING SCALE: 1"=50'	
DRAWING NO. C009	
SHEET NO. 13 OF 40	

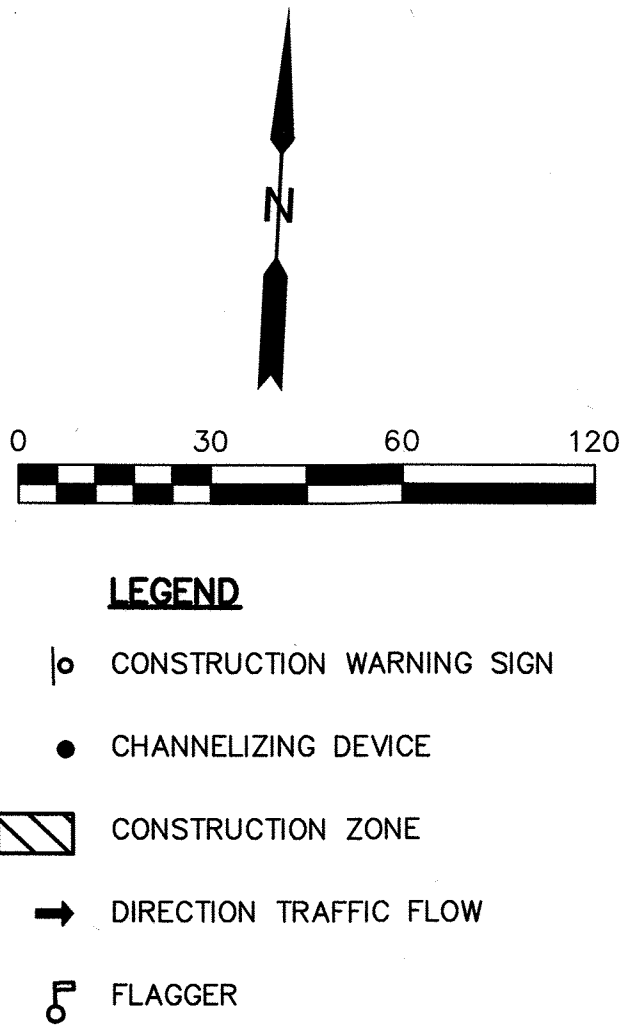
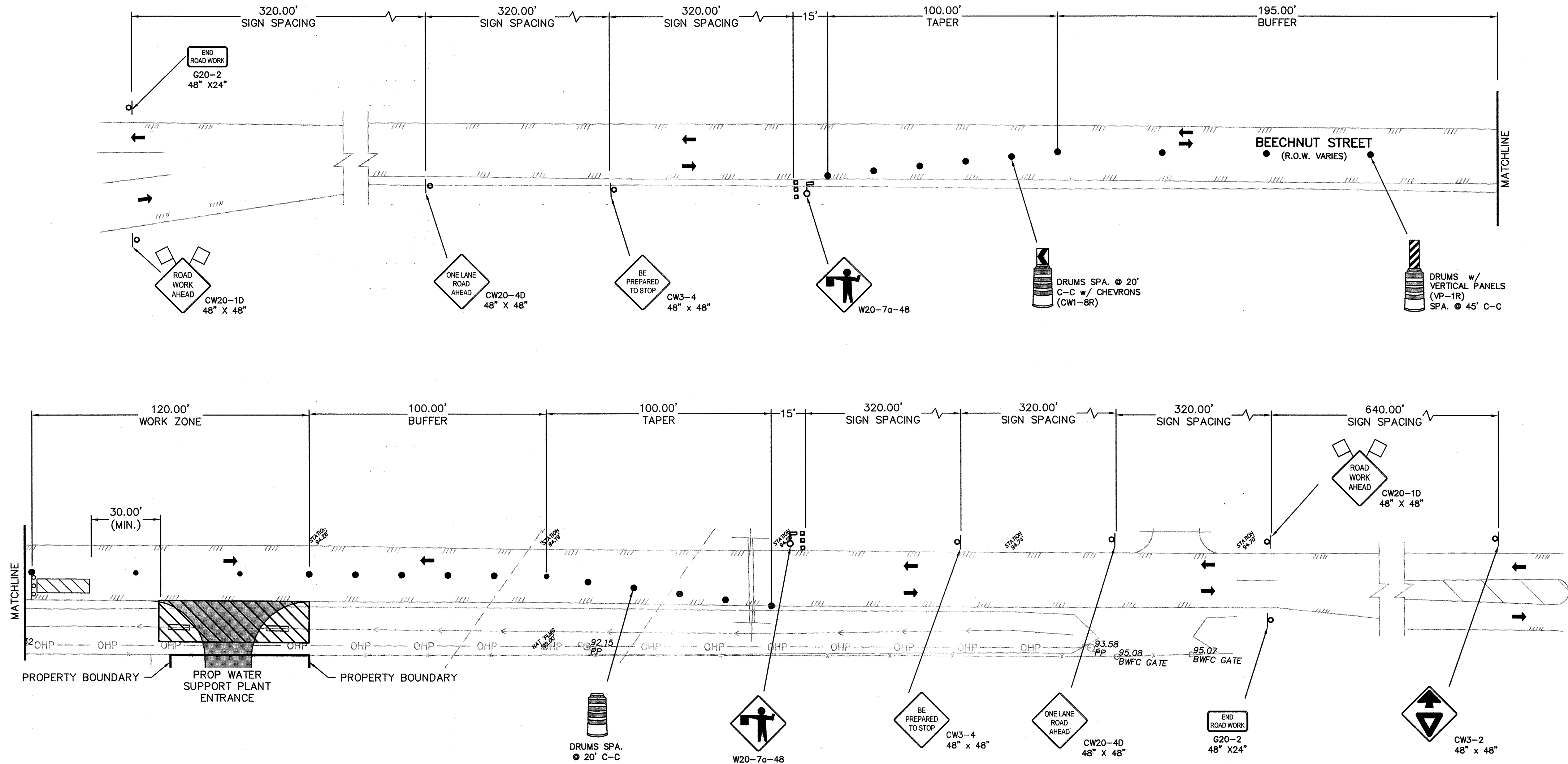
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TRAFFIC CONTROL NOTES

- CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD--LATEST EDITION WITH REVISIONS) DURING CONSTRUCTION.
- NO LANES SHALL BE BLOCKED FROM 7 A.M. TO 9 A.M. AND 4 P.M. TO 6:30 P.M. MONDAY THRU FRIDAY.
- OFF DUTY POLICE OFFICERS/FLAGGERS ARE REQUIRED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED.
- CONTRACTOR SHALL COVER THE EXCAVATION WITH STEEL PLATES ANCHORED PROPERLY DURING NON-WORKING HOURS AND ALLOW NORMAL TRAFFIC FLOW. IF COVERING IS NOT FEASIBLE, USE TRANTEX FR 336 EFX 36" DELINEATOR OR APPROVED EQUAL WITH SHEETING AND BASE EPOXIED TO PAVEMENT NEXT TO EXCAVATION DURING NON-WORKING HOURS.
- APPROVED COPIES OF "TRAFFIC CONTROL PLANS" SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF TRAFFIC CONTROL PLAN DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, (S)HE SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT ALTERNATE PLANS* TO TRAFFIC SECTION OF HCPID FOR APPROVAL TEN (10) WORKING DAYS PRIOR TO IMPLEMENTATION.
*THESE PLANS SHALL BE DROWN TO SCALE ON REPRODUCIBLE MYLARS AND SEATED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. PLANS WILL BE BECOME A PART OF THE CONTRACT DRAWINGS.
- IF THE PROJECT IS WITHIN 400 FEET FROM A SIGNALIZED INTERSECTION, THE CONTRACTOR SHALL CONTACT HARRIS COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT, SIGNAL DIVISION, AT 713-881-3210 FIVE (5) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

MISCELLANEOUS TRAFFIC CONTROL NOTES

- ALL ADVANCED WARNING SIGNS TO BE SET PRIOR TO START OF CONSTRUCTION ACTIVITIES AND TO REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITIES ARE COMPLETE AND ACCEPTED BY HARRIS COUNTY. THE CONTRACTOR WILL COORDINATE WITH THE HARRIS COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT ENGINEERING DIVISION IN ESTABLISHING TRAFFIC ROUTES AND LOCATION OF SIGNS.
- ALL FLAGGERS SHALL BE IN RADIO CONTACT WITH EACH OTHER AT ALL TIMES, AS REQUIRED.
- ALL PAVEMENT MARKINGS COVERED BY OVERLAY SHALL BE REPLACED BEFORE OPENING TO TRAFFIC.
- ADVANCE SIGNING SHALL BE PLACED A MINIMUM OF TWO WEEKS IN ADVANCE TO INFORM OF POSSIBLE DELAY. CONTRACTOR SHALL NOTIFY THE HARRIS COUNTY ENGINEERING DEPARTMENT AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION.
- ALL PORTABLE SIGNING DRUMS AND CONES SHALL BE REMOVED AT THE END OF EACH DAY.
- IF WORK ZONE IS NEEDED OVERNIGHT ALL CONES OR TUBULAR MARKERS SHALL BE REPLACED WITH DRUMS W/ VP'S AND-- TEMPORARY PAVEMENT MARKINGS SHALL BE IN PLACE FOR NIGHTTIME OPERATION AS DIRECTED BY THE ENGINEER.
- ACCESS TO EXISTING BUSINESSES OR RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.
- TRAFFIC CONTROL SIGNS MAY BE ADJUSTED TO FIT FIELD CONDITIONS, WITH APPROVAL OF THE ENGINEER.
- CONTRACTOR SHALL TREAT OVERNIGHT DROP-OFF CONDITIONS WITH A 3:1 OR FLATTER SLOPE WEDGE CAPABLE OF SUPPORTING VEHICLE LOADS.



BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBOSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

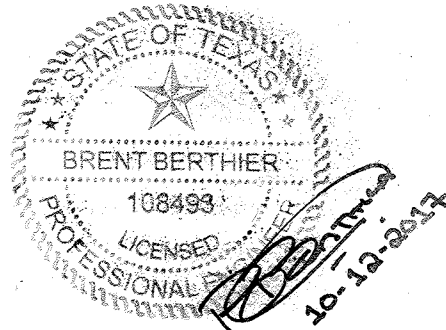
- COORDINATE CONSTRUCTION OF DRIVEWAY WITH THE FORT BEND COUNTY ROAD AND BRIDGE DEPARTMENT AT 281-342-4513.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Maxi D.*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

TRAFFIC CONTROL PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

DRAWN BY:
JCR

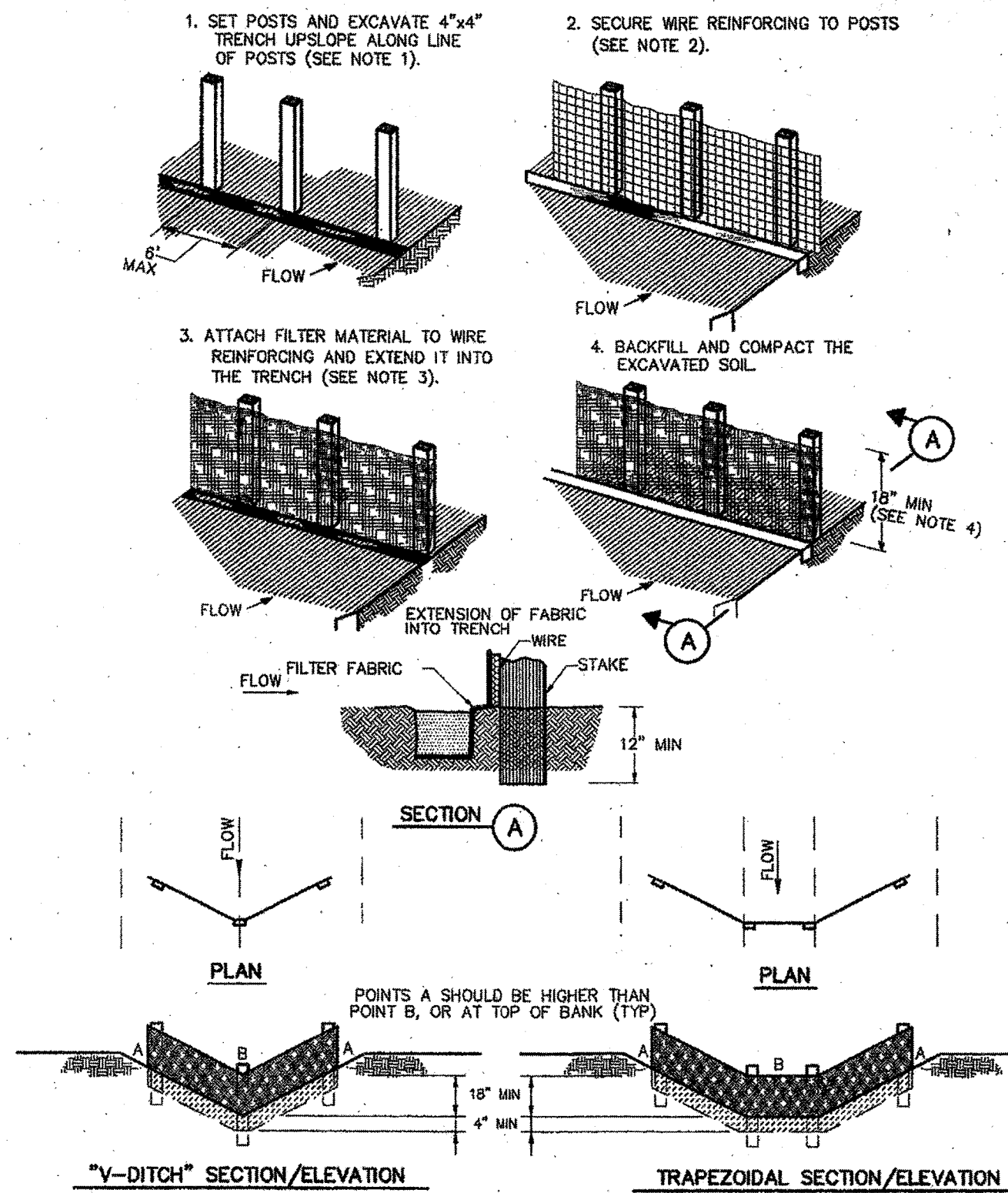
DRAWING SCALE:
1"=30'

DRAWING NO.
C010

SHEET NO.
14 OF 40

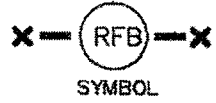
FOR CITY OF HOUSTON USE ONLY



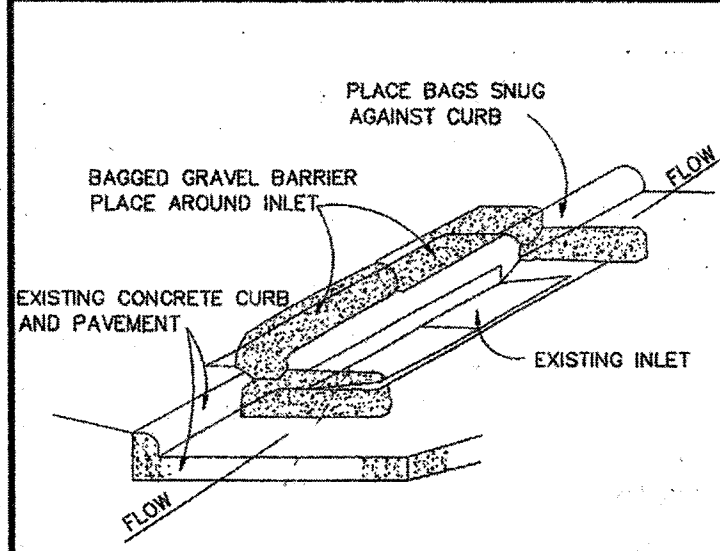


CONSTRUCTION NOTES:

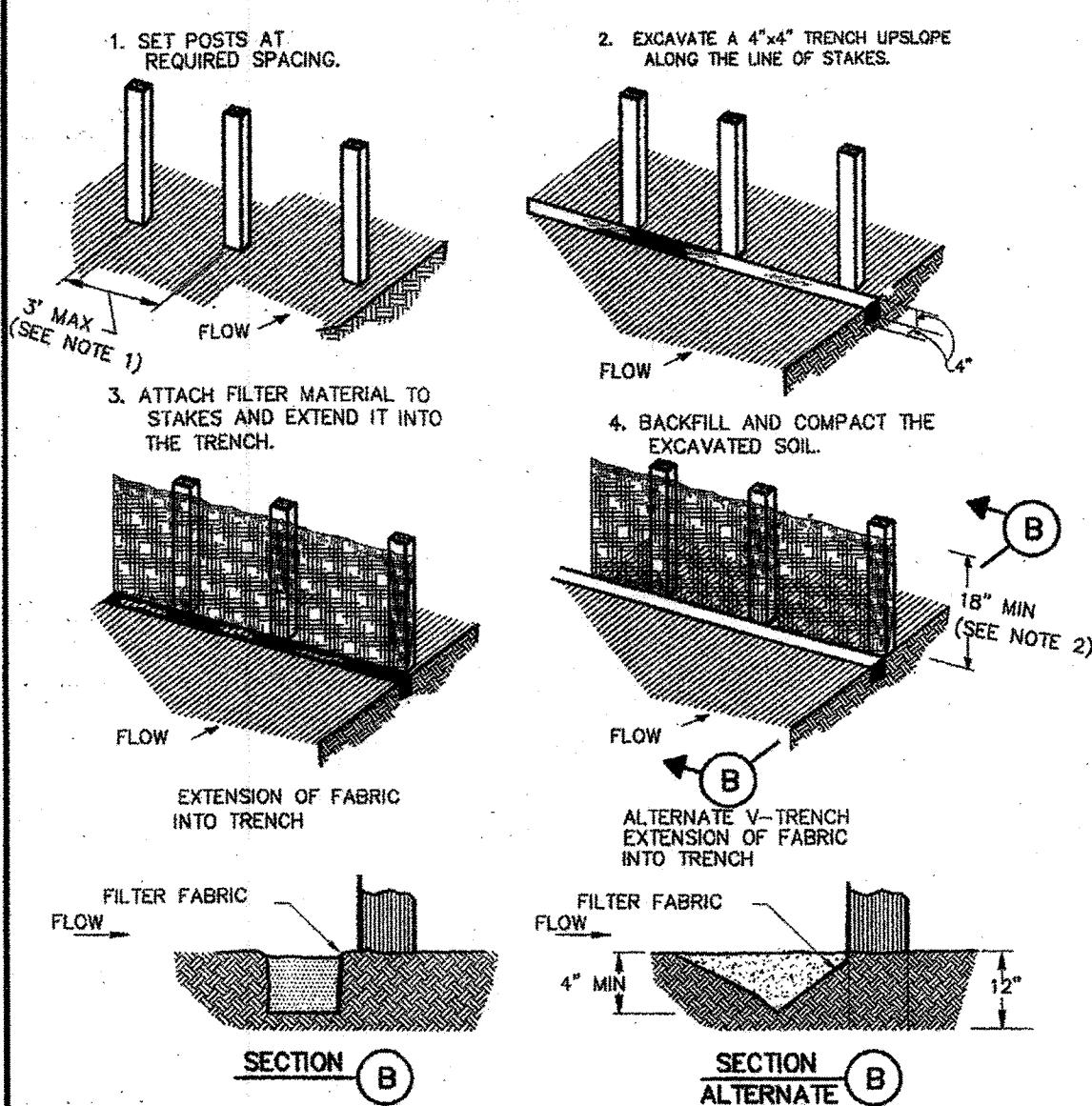
1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.



REINFORCED FILTER FABRIC BARRIER



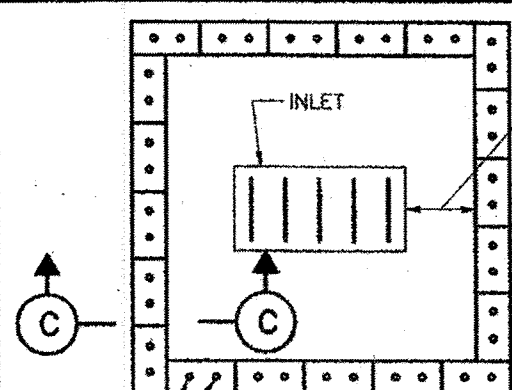
INLET PROTECTION BARRIER
(FOR STAGE II INLETS)
BAGGED GRAVEL BARRIER



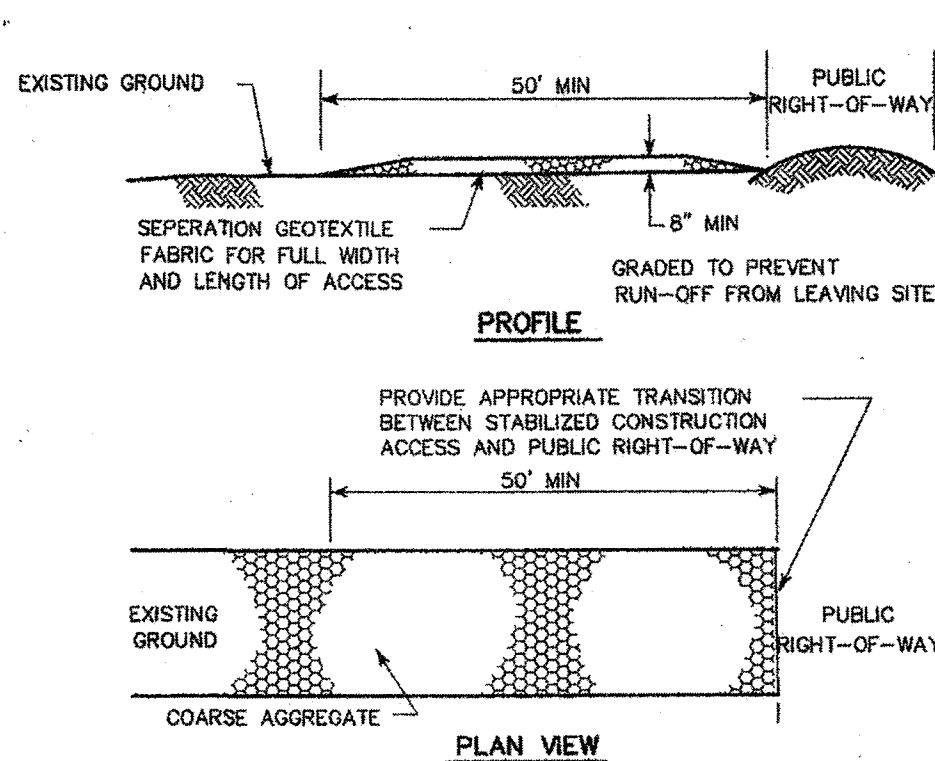
CONSTRUCTION NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MAX OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

FILTER FABRIC BARRIER

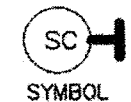


HAY BALE INLET PROTECTION BARRIER

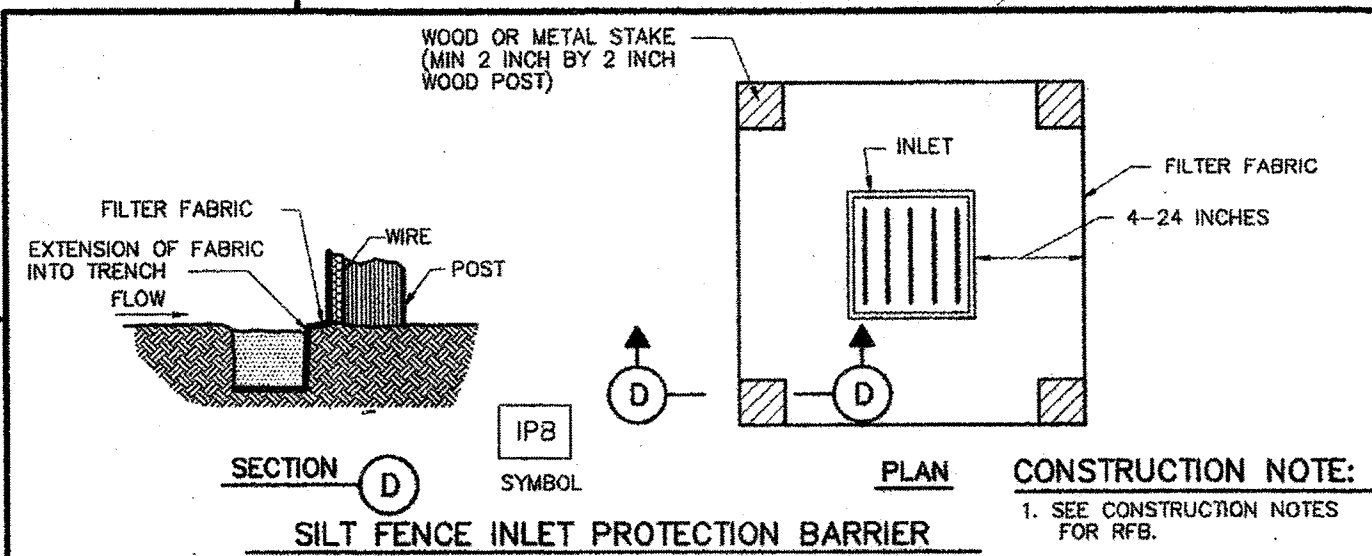


CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.



STABILIZED CONSTRUCTION ACCESS



SILT FENCE INLET PROTECTION BARRIER

CONSTRUCTION NOTE:

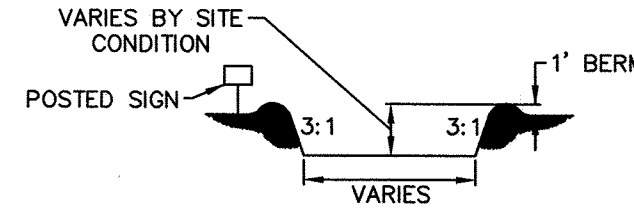
1. SEE CONSTRUCTION NOTES FOR RFB.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

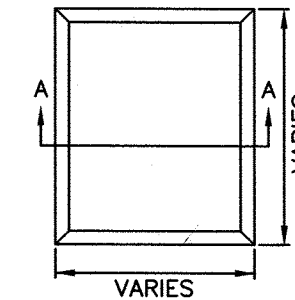
STORM WATER POLLUTION
PREVENTION PLAN DETAILS

(NOT TO SCALE)

APPROVED: [Signature] DATE: JULY-01-2010
CITY ENGINEER DIRECTOR OF PUBLIC WORKS AND ENGINEERING
DWG NO: 01571-01



SECTION A-A

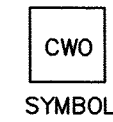


PLAN VIEW
N.T.S.

GENERAL NOTES:

1. POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASH OUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASH OUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.

CONCRETE TRUCK WASHOUT AREA



CONCRETE TRUCK WASHOUT AREA DETAIL

BENCHMARK DATA:

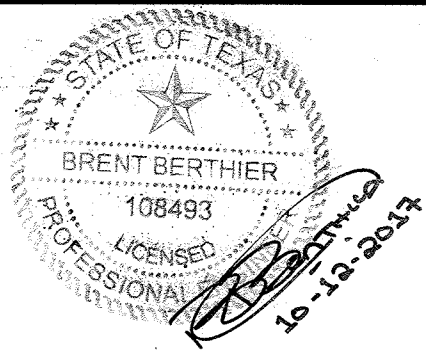
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NOTES

REVISIONS			
NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: [Signature]
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

STORM WATER POLLUTION
PREVENTION DETAILS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

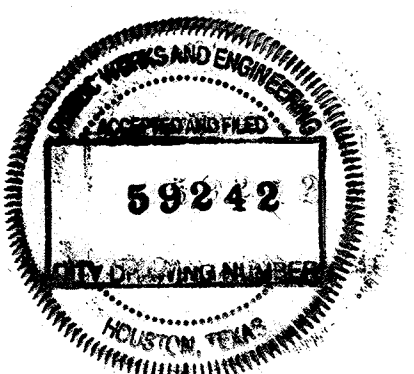
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WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

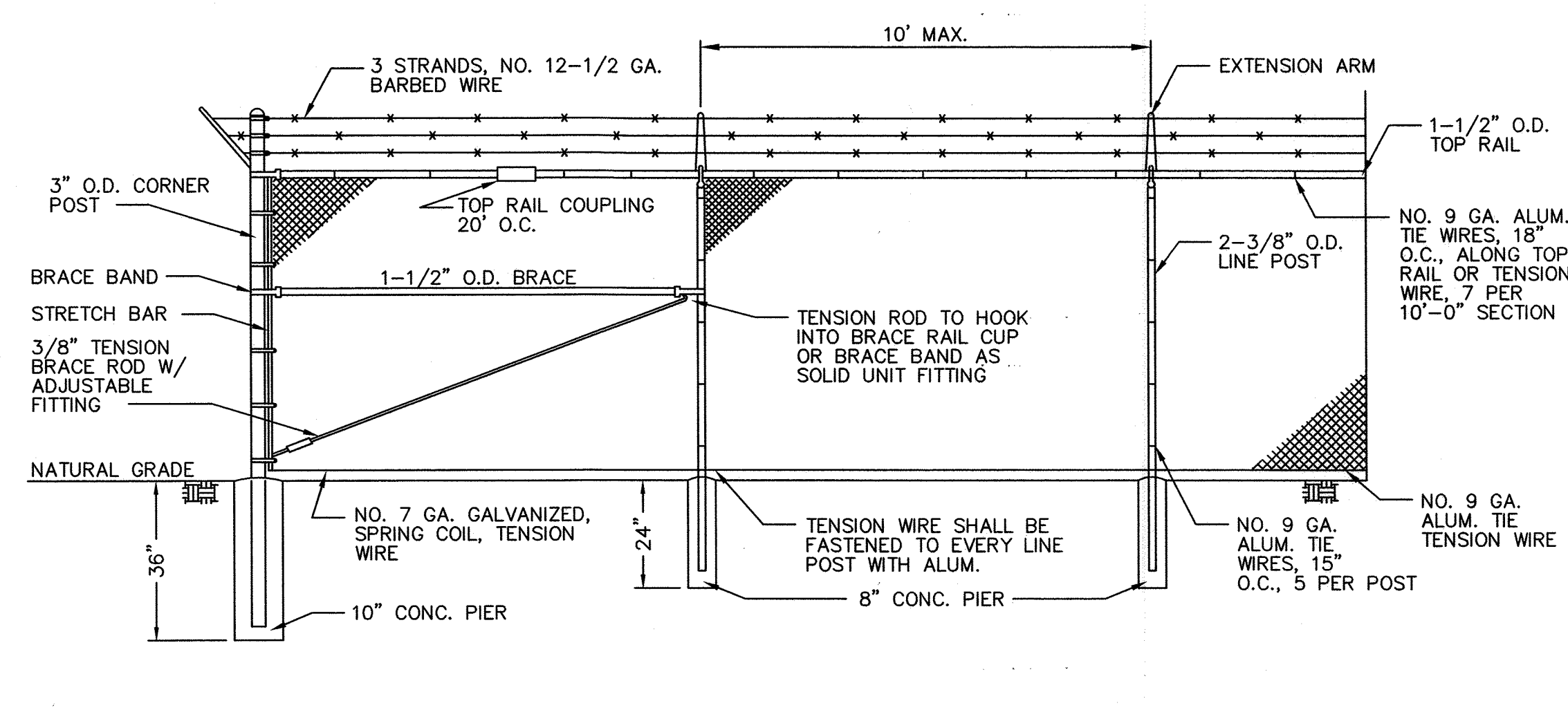
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F003-1445
DRAWN BY:
JCR
DRAWING SCALE:

DRAWING NO.
C011

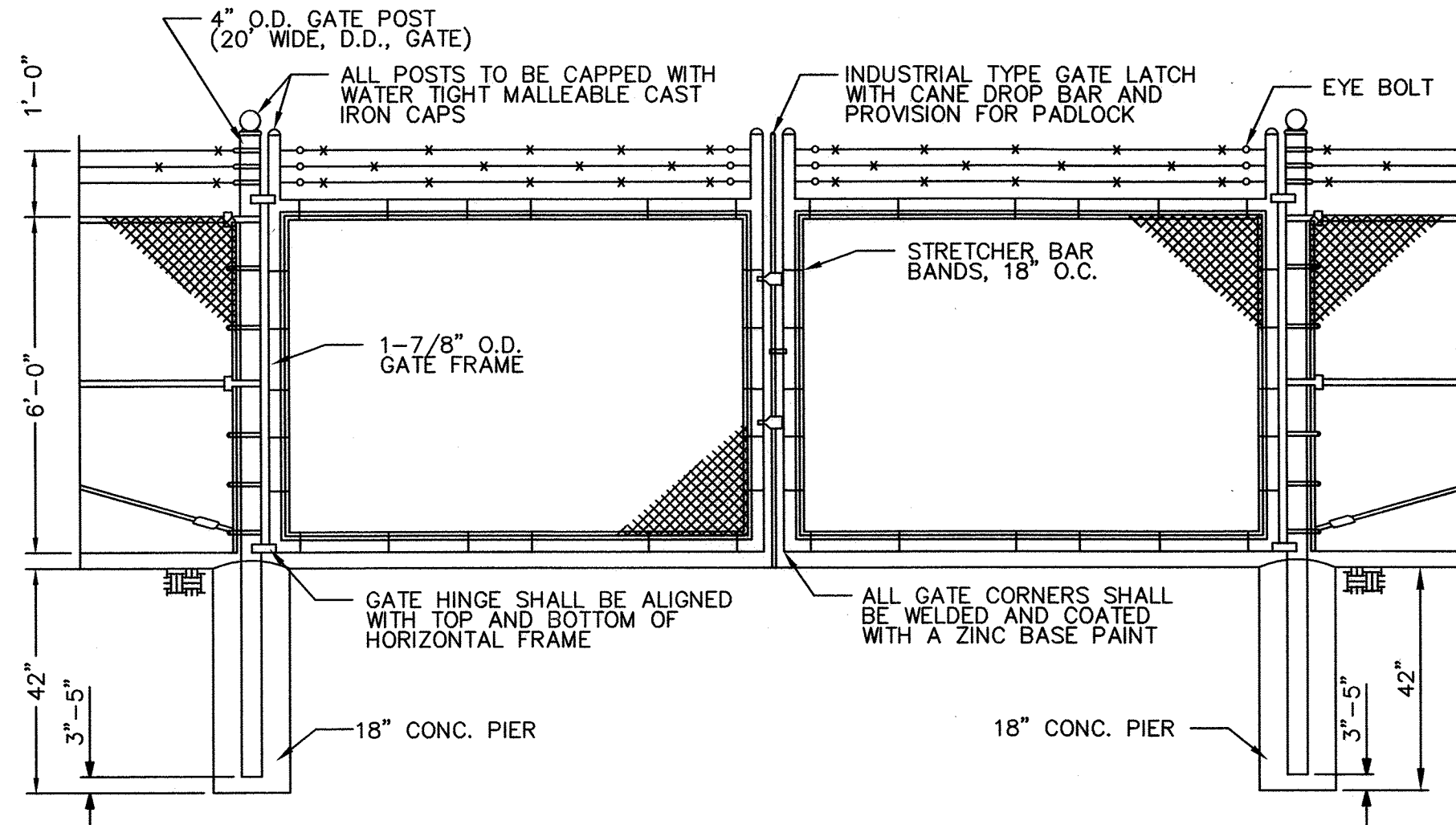
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15 OF 40

FOR CITY OF HOUSTON USE ONLY

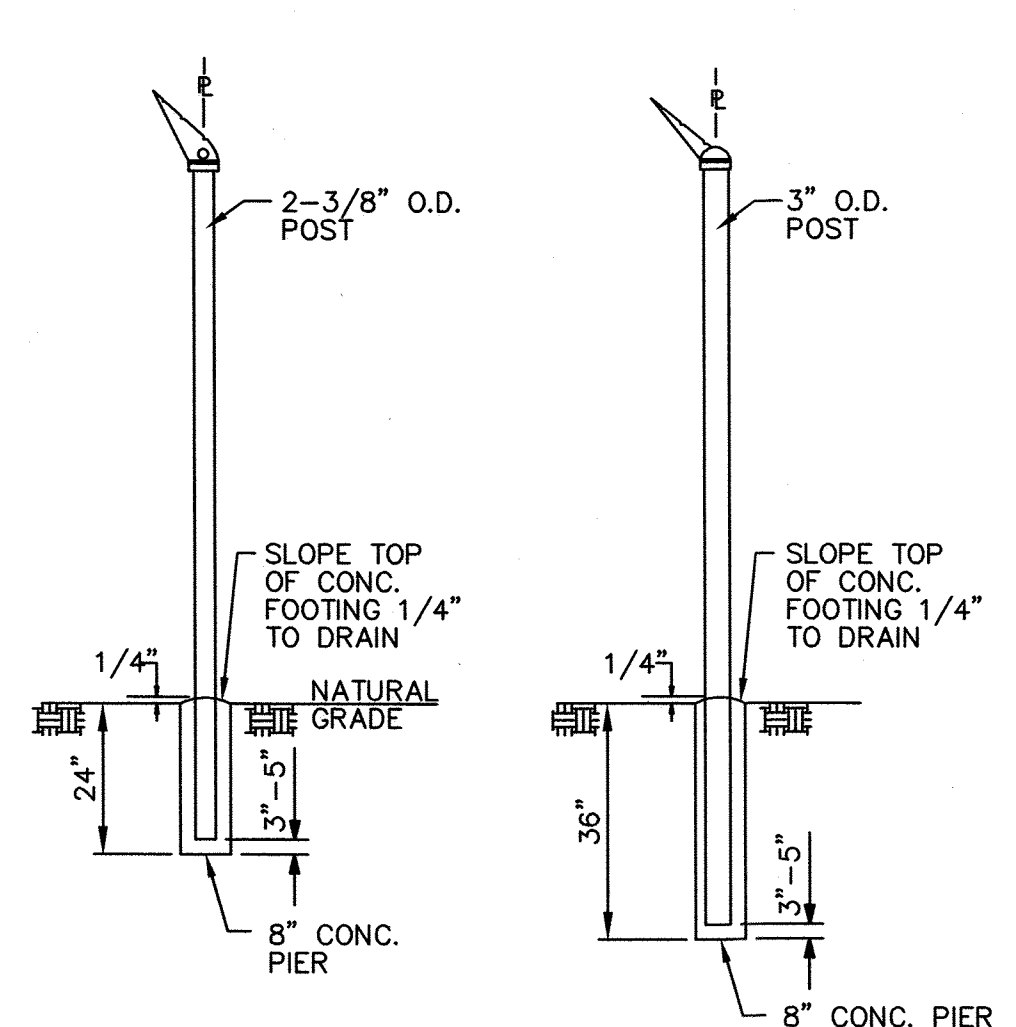




FENCE POST AND LINE POST
N.T.S.



CHAIN LINK FENCE AND GATE
N.T.S.



LINE POST N.T.S. CORNER AND PULL POST N.T.S.

BENCHMARK DATA:
CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES.
ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

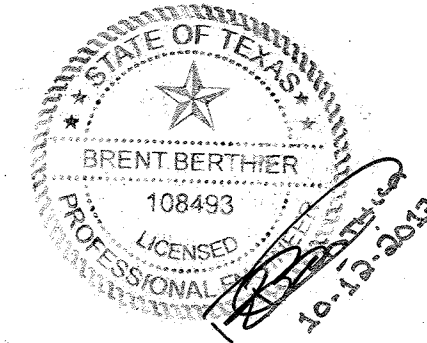
NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: 
DEVELOPMENT COORDINATOR

DATE: 11/17/17



J. A. COSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

CIVIL DETAILS (1 OF 3)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.: F003-1445

DRAWN BY: JCR

DRAWING SCALE: N.T.S.

DRAWING NO. C012

SHEET NO. 16 OF 40

FOR CITY OF HOUSTON USE ONLY

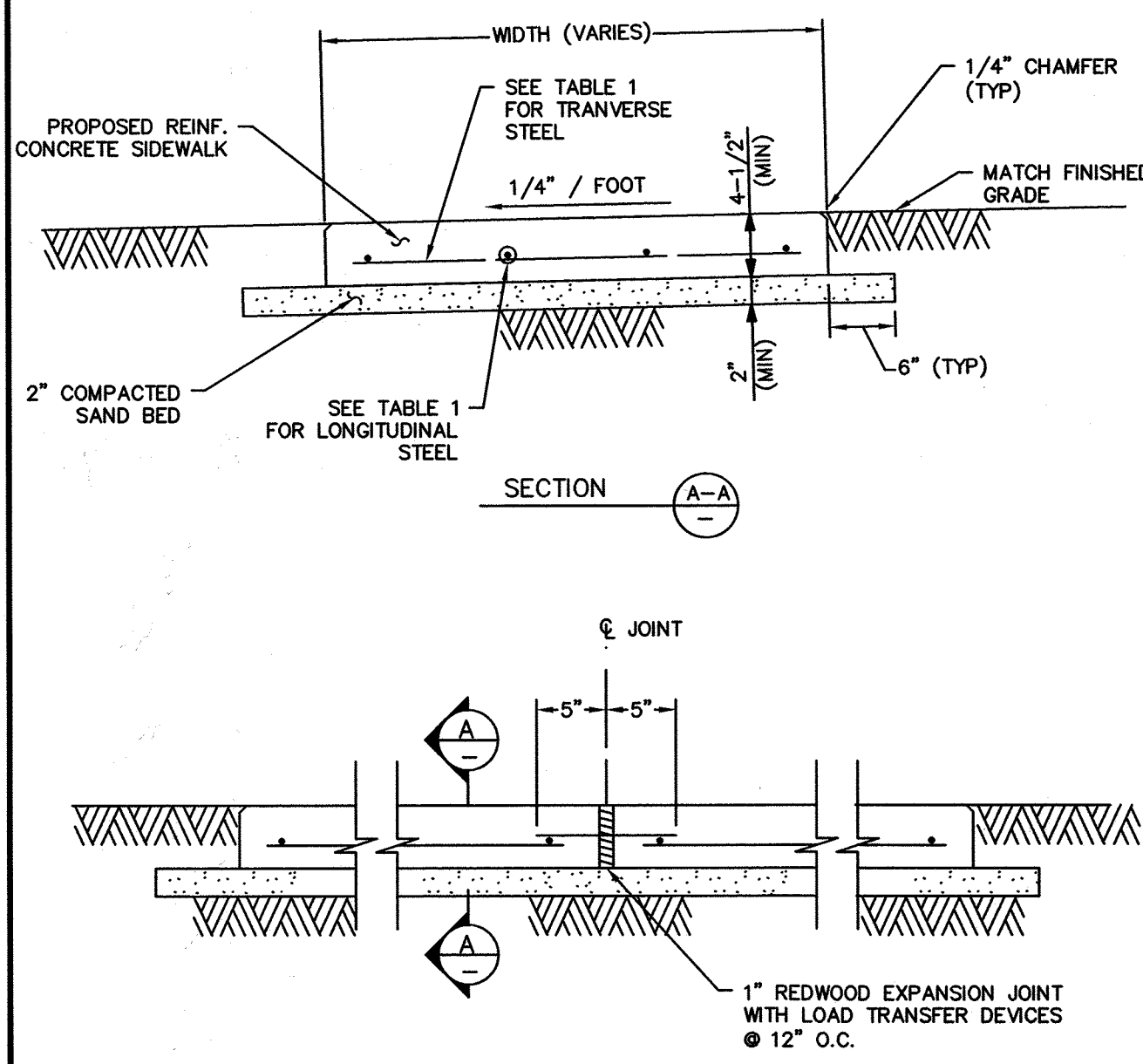
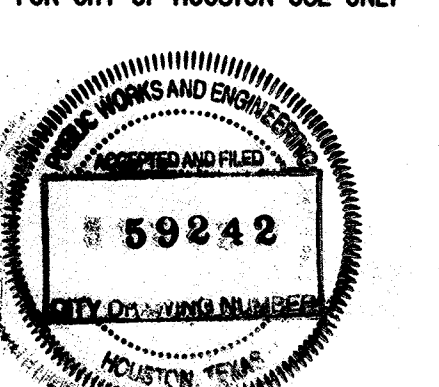
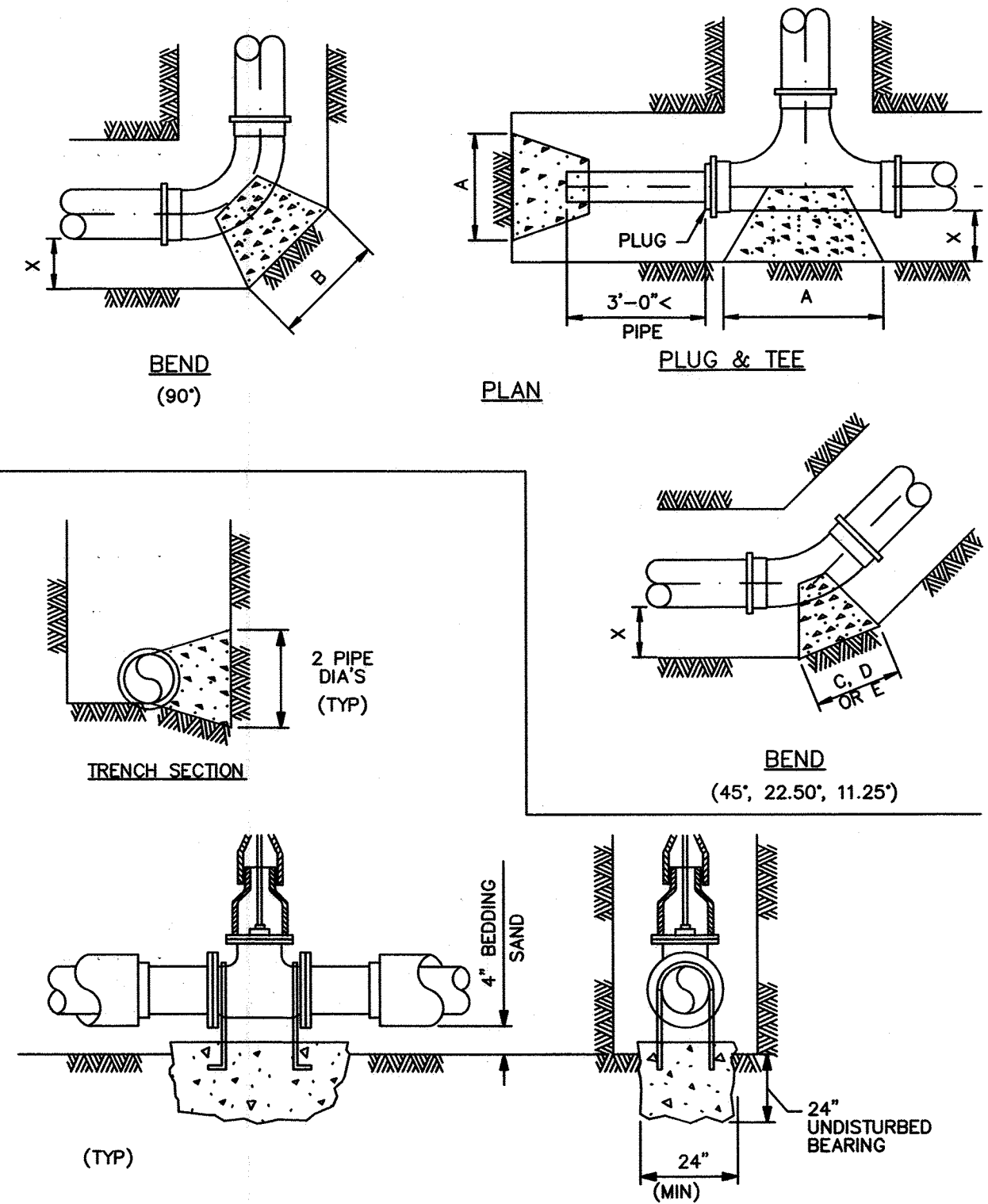


TABLE 1

- NOTES:**
- CONTRACTOR SHALL CONSTRUCT 3'-0" SIDEWALK UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
 - SLOPE SIDEWALKS AWAY FROM PADS OR STRUCTURES WHEN ADJACENT TO EACH OTHER. OTHERWISE, SLOPE SIDEWALK 1/4" PER FOOT IN DIRECTION OF GENERAL SITE AREA DRAINAGE.
 - INSTALL 1" EXPANSION BOARD W/ SEALANT BETWEEN PADS, STRUCTURES, OR SIDEWALKS WHEN ADJACENT TO EACH OTHER.
 - INSTALL EXPANSION JOINTS AT 15'-0" O.C. MAX. USE REDWOOD BOARD EXPANSION JOINT W/ #4 SMOOTH BAR W/ LOAD KEY (10" LONG).
 - CONTROL JOINT SPACING NOT TO EXCEED 4'-0". SCORED, TOOLED OR SAWN JOINTS SHALL BE 1/4" THE PAVEMENT THICKNESS BUT NOT LESS THAN 1".
 - 6x6 - W2.9x2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL IN TABLE 1.

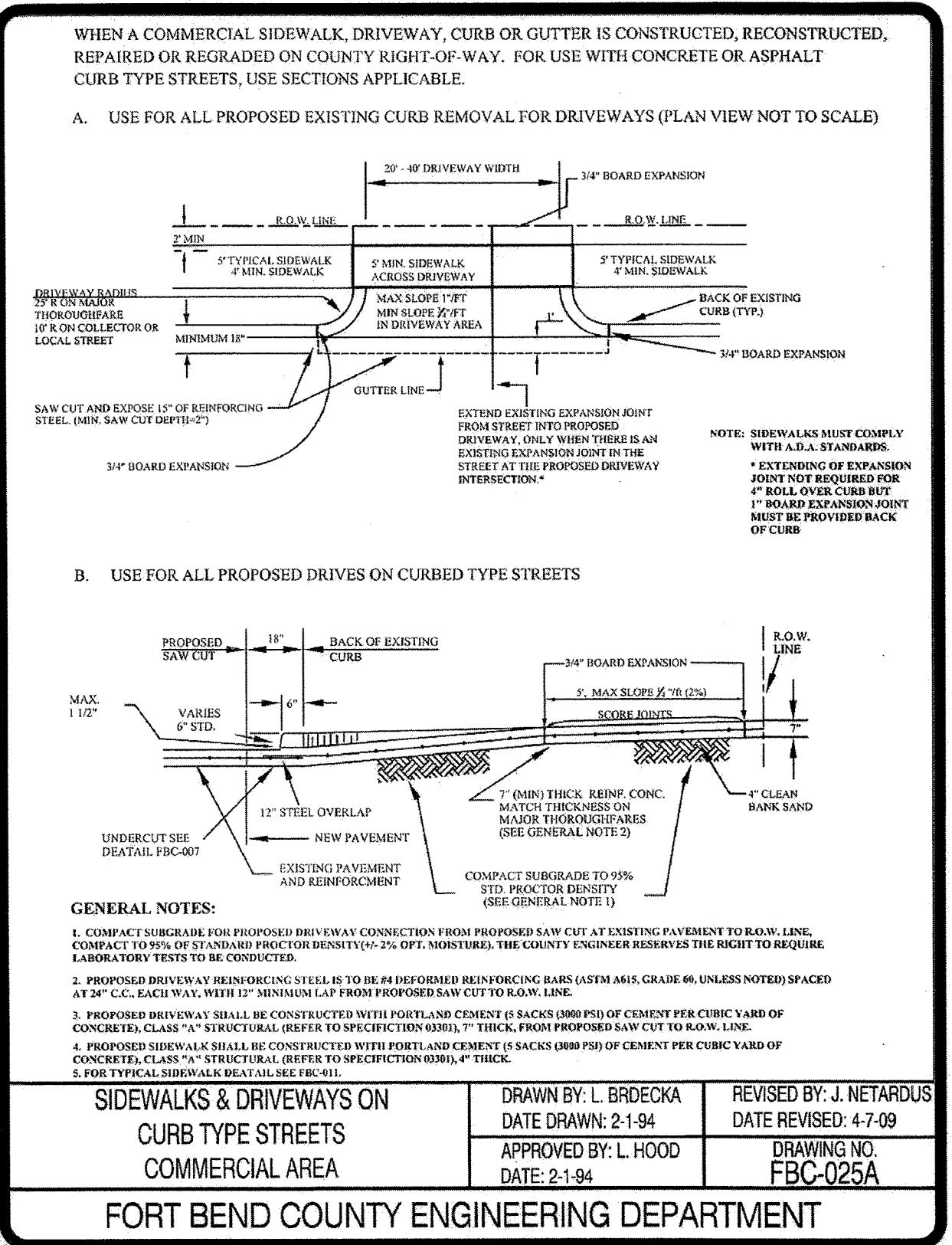
CONCRETE SIDEWALK C10A
SCALE: N.T.S.



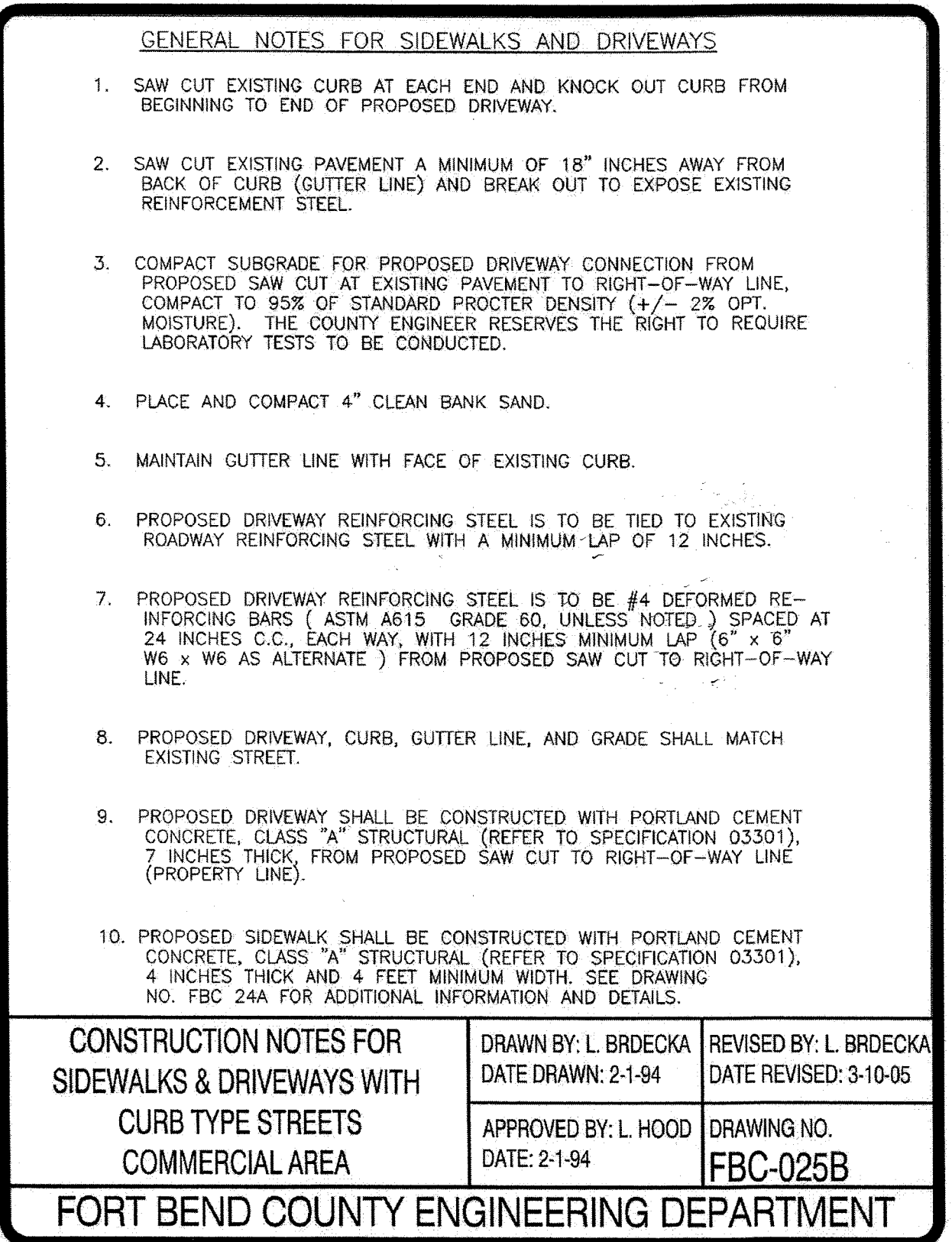
PIPE SIZE	"X" DIM.	"A" PLUG & TEE	"B" 90° BEND	"C" 45° BEND	"D" 22.5° BEND	"E" 11.25° BEND
4"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
6"	1'-6"	1'-0"	1'-2"	1'-0"	1'-0"	1'-0"
8"	1'-6"	1'-3"	1'-6"	1'-3"	1'-0"	1'-0"
10"	1'-6"	1'-3"	2'-0"	1'-6"	1'-3"	1'-0"
12"	1'-6"	2'-0"	2'-3"	1'-9"	1'-3"	1'-0"
14"	2'-0"	2'-4"	3'-0"	2'-0"	1'-6"	1'-2"
16"	2'-0"	2'-7"	3'-0"	2'-3"	1'-8"	1'-2"
18"	2'-0"	2'-11"	3'-5"	2'-6"	1'-10"	1'-5"
20"	2'-0"	3'-3"	3'-9"	2'-9"	2'-0"	1'-7"
24"	2'-6"	3'-8"	4'-3"	3'-2"	2'-6"	1'-10"

- NOTES:**
- HEIGHTS OF ALL BLOCKS SHALL BE EQUAL TO "A", "B", "C", "D", OR "E" DIMENSION CALLED FOR.
 - ALL CONCRETE TO BE POURED AGAINST FIRM UNDISTURBED SOIL.

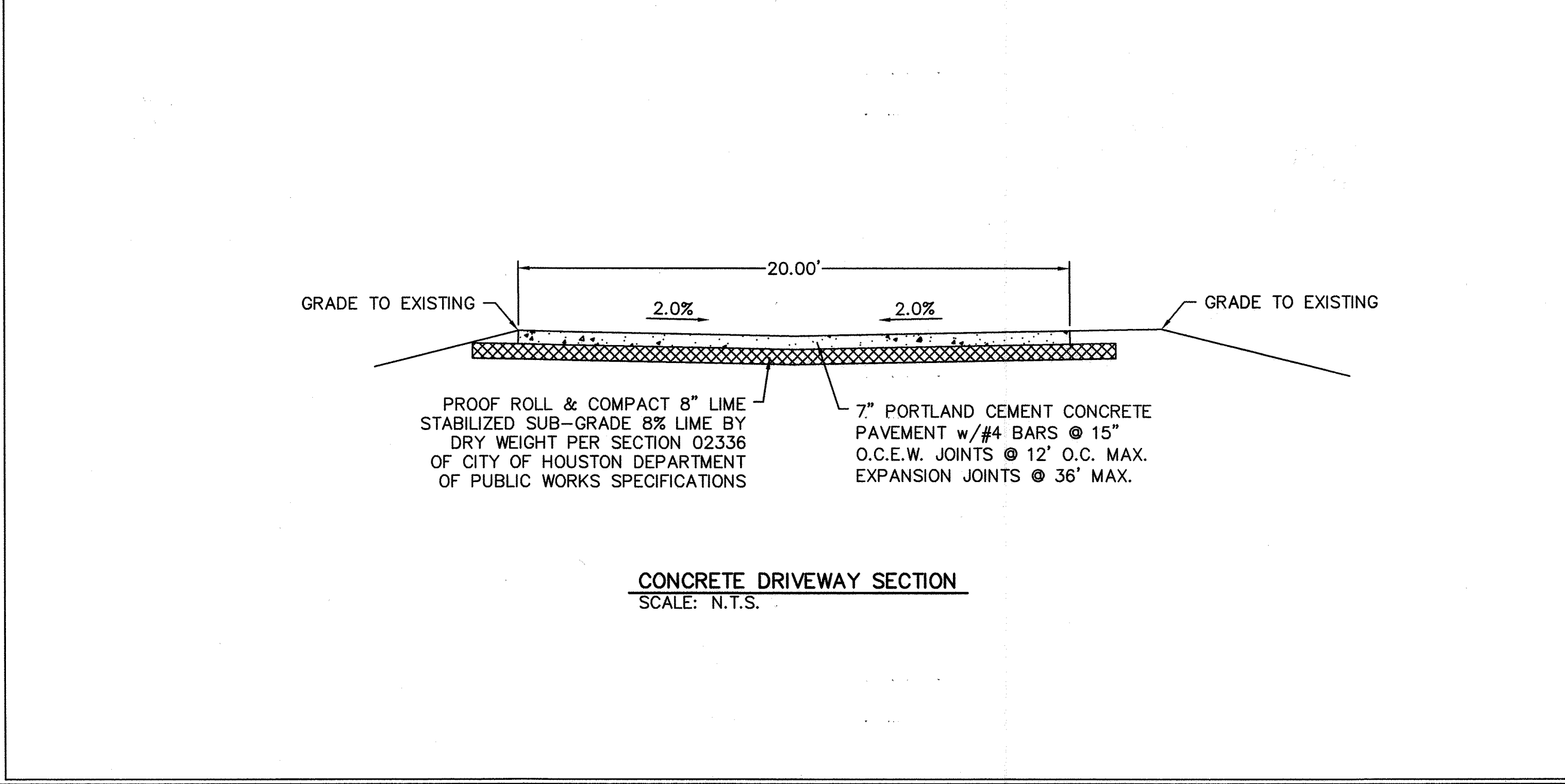
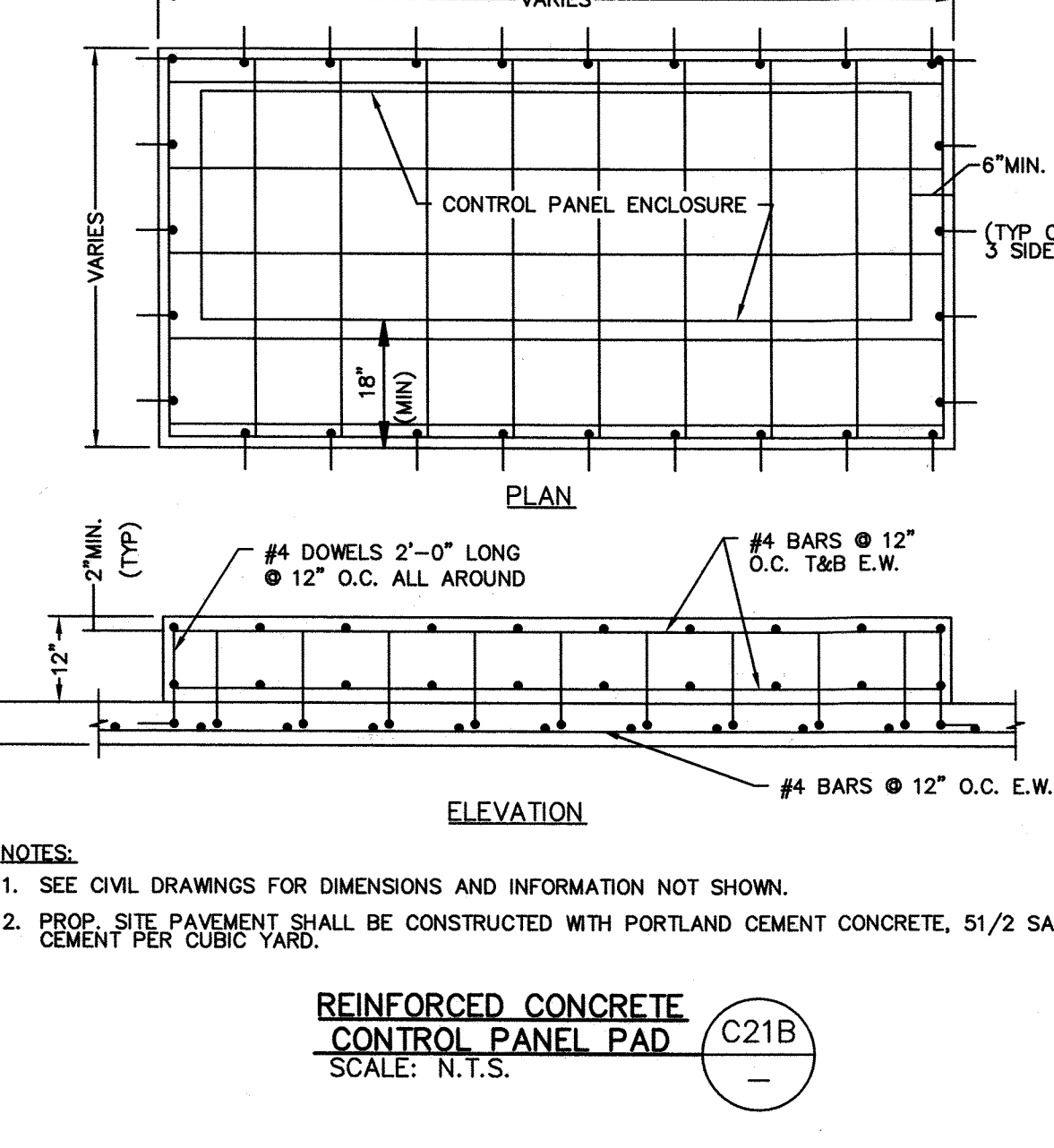
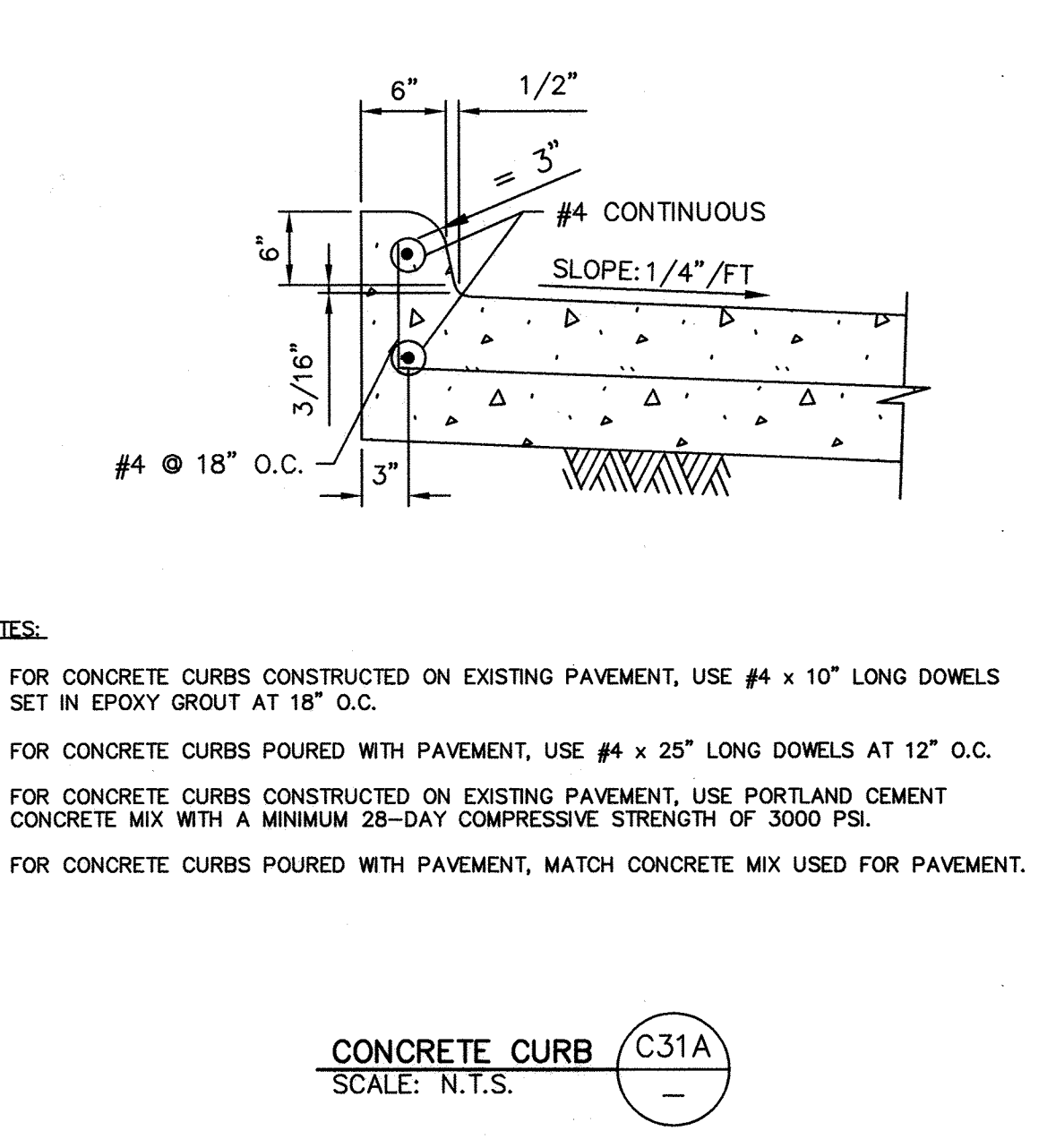
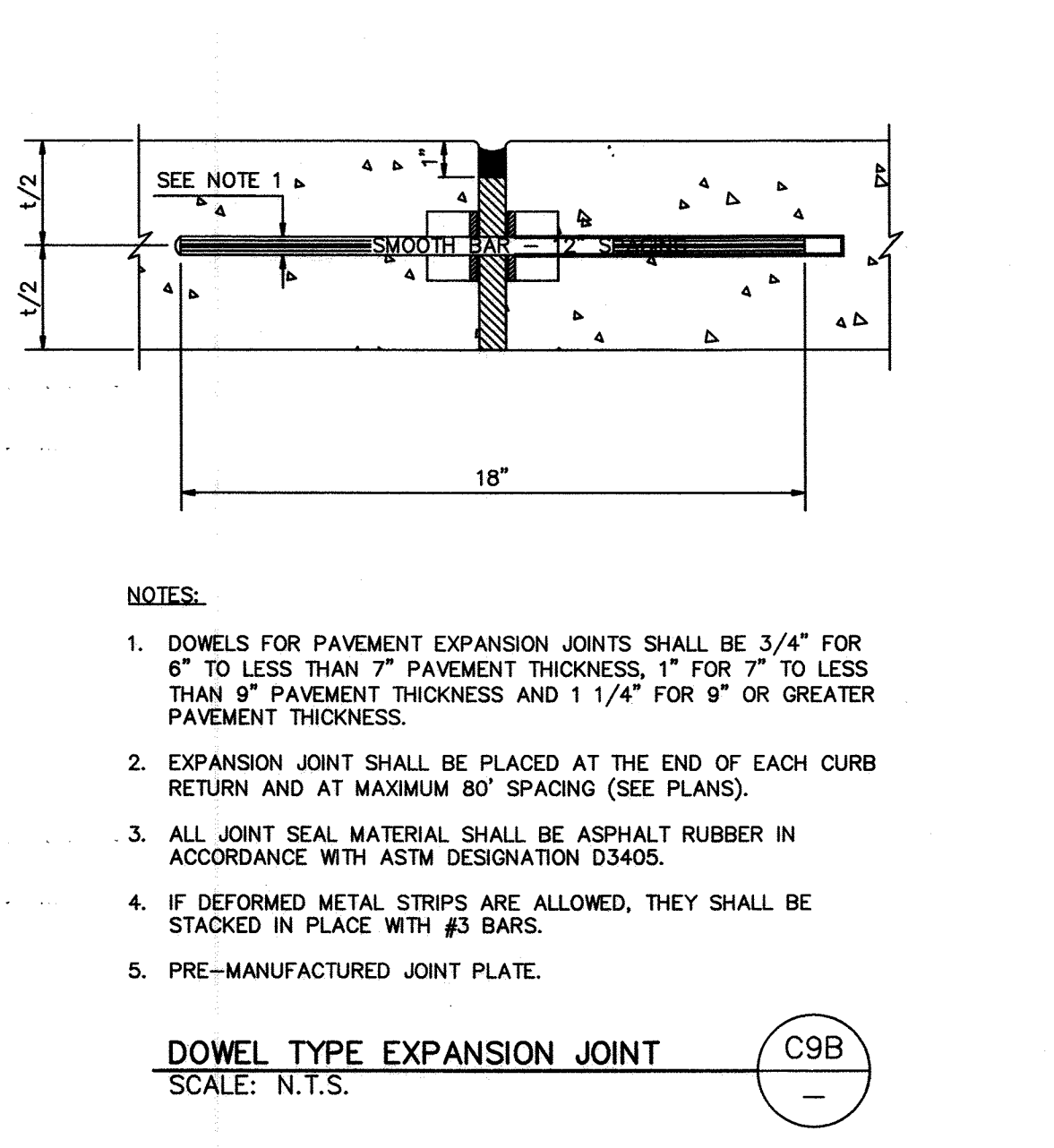
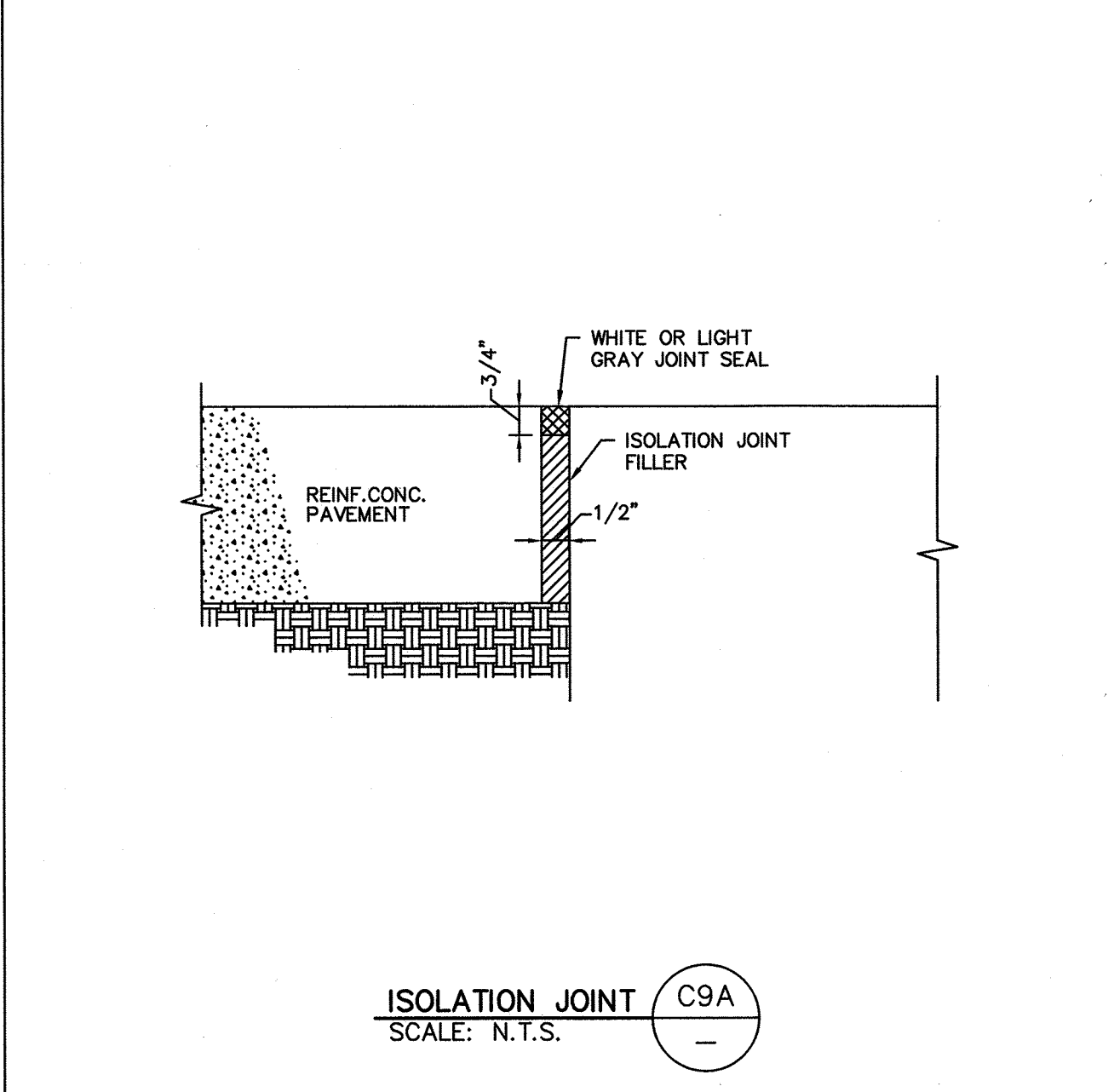
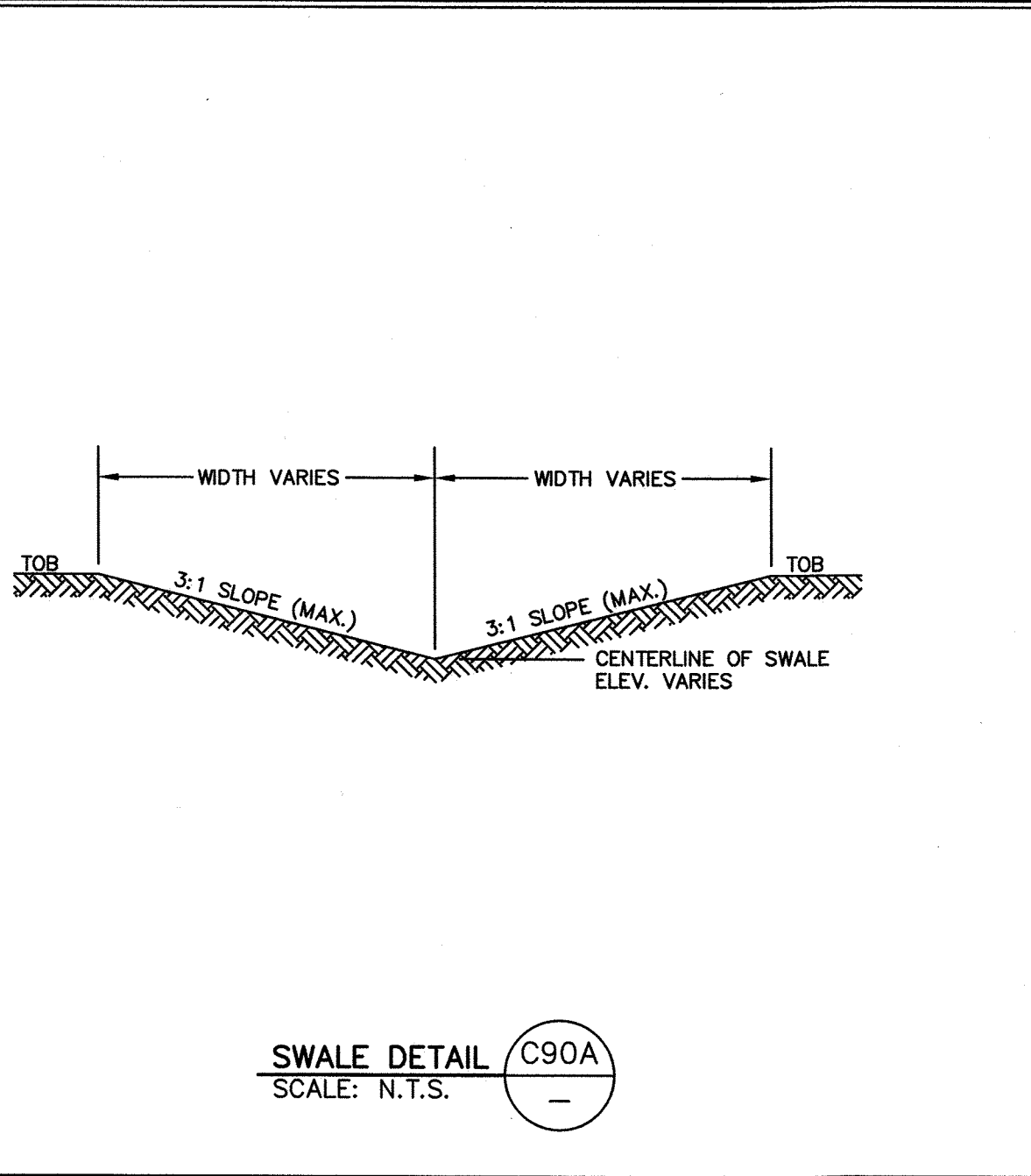
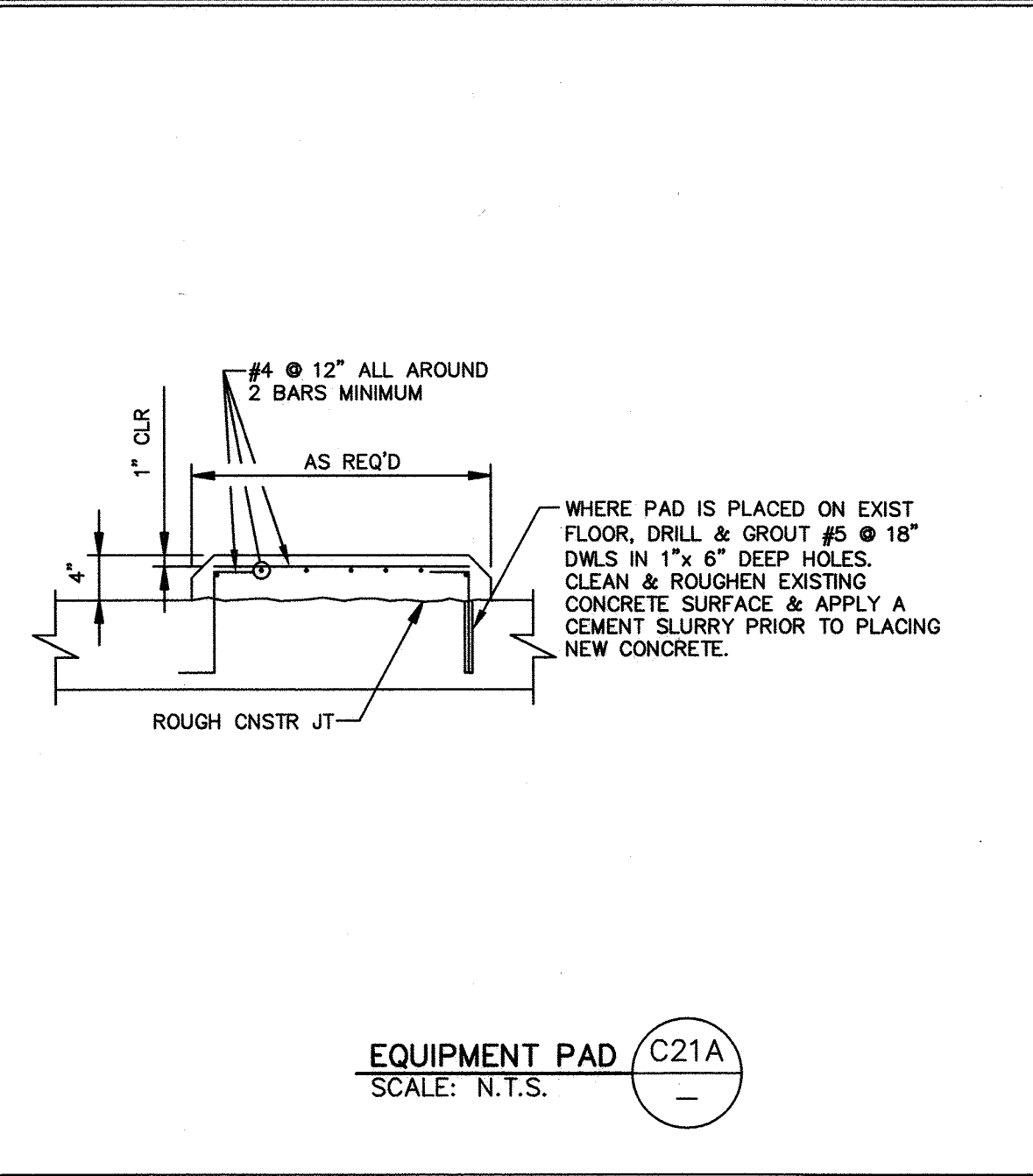
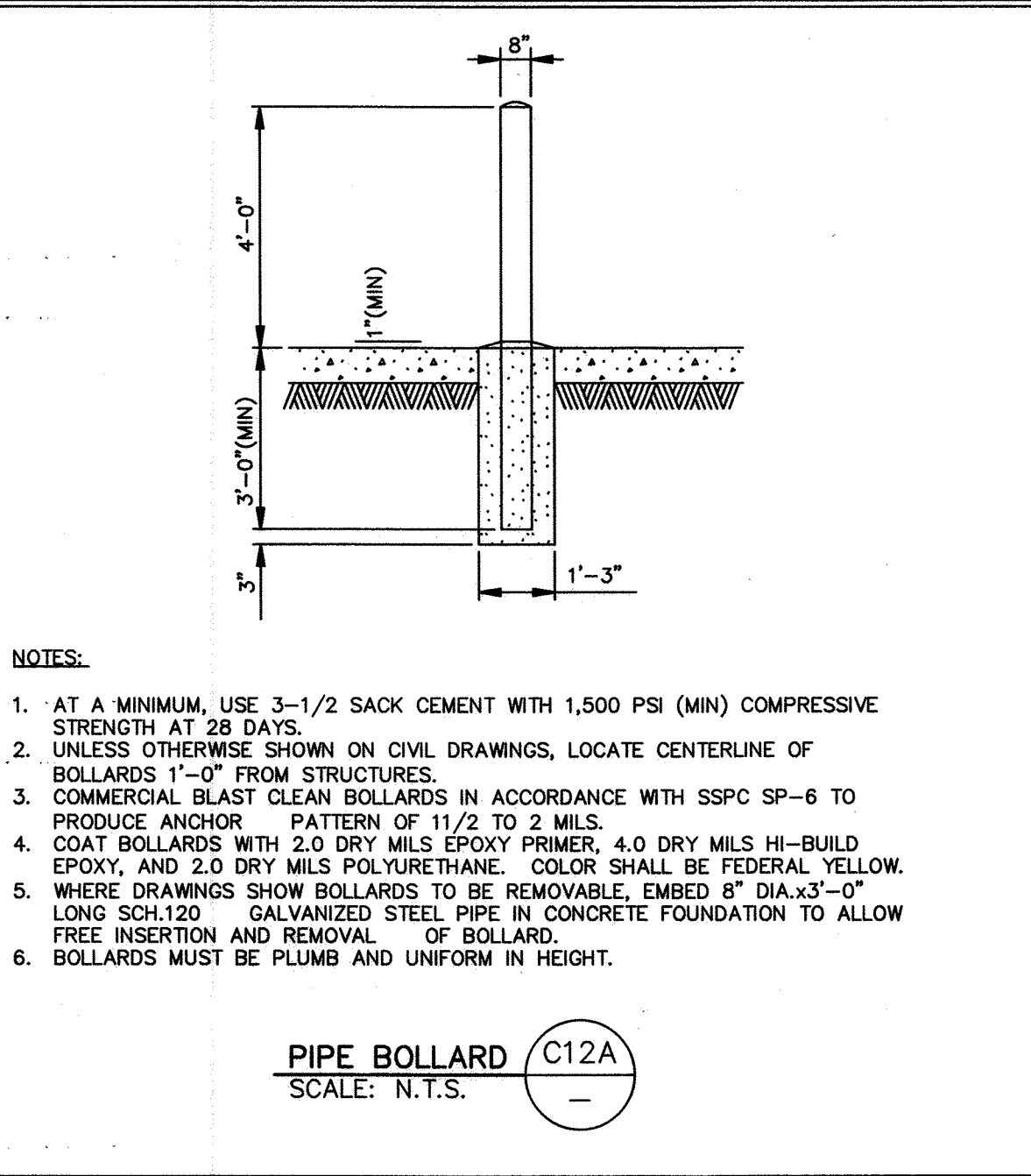
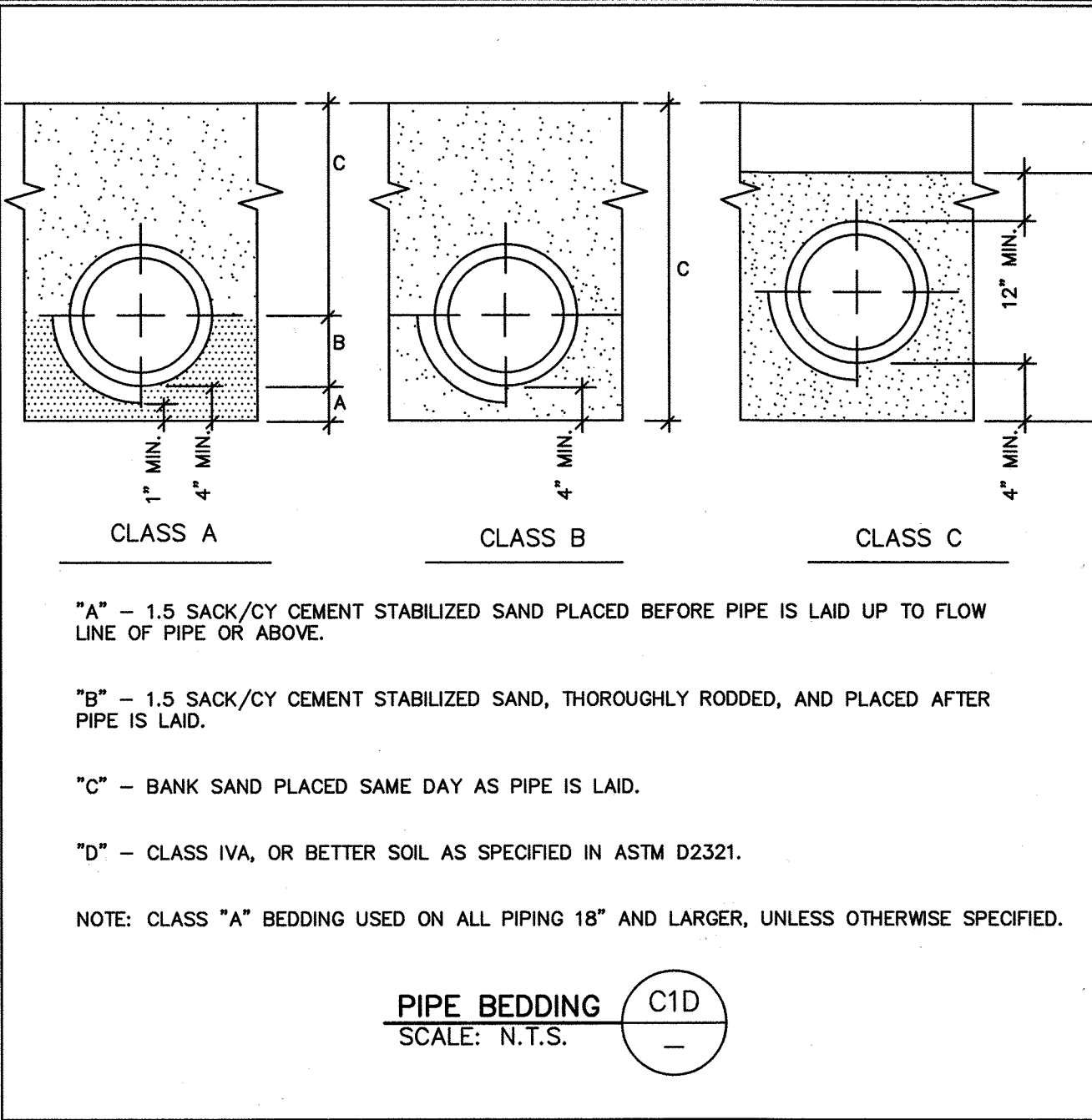
BURIED THRUST BLOCKS C20A
SCALE: N.T.S.



SIDEWALKS & DRIVEWAYS ON CURBED TYPE STREETS COMMERCIAL AREA
FORT BEND COUNTY ENGINEERING DEPARTMENT



CONSTRUCTION NOTES FOR SIDEWALKS & DRIVEWAYS WITH CURBED TYPE STREETS COMMERCIAL AREA
FORT BEND COUNTY ENGINEERING DEPARTMENT



BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Messid*
DEVELOPMENT COORDINATOR

DATE: 11/17/17

JACOSTANZA & ASSOCIATES ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX. 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

CIVIL DETAILS (2 OF 3)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION

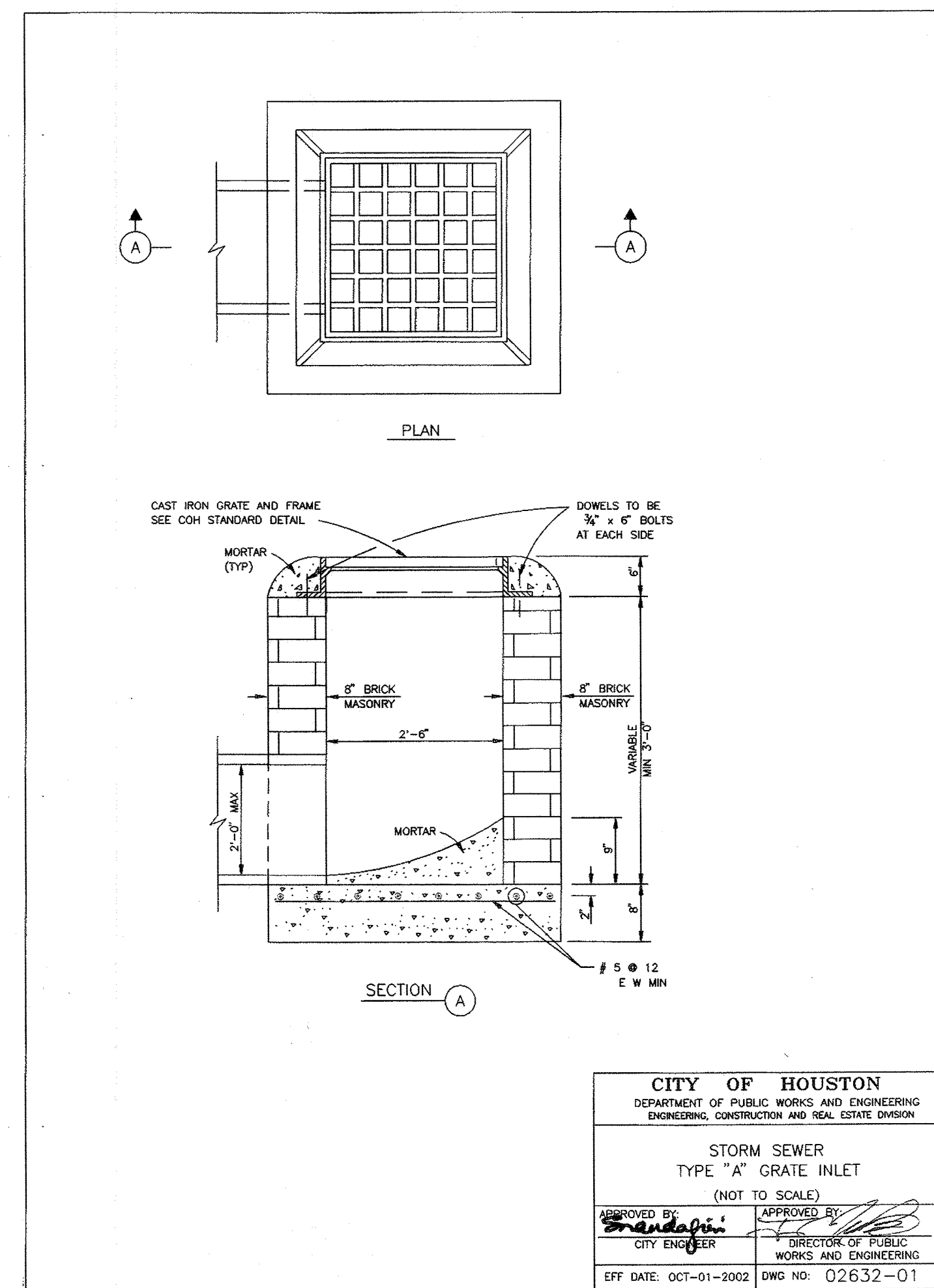
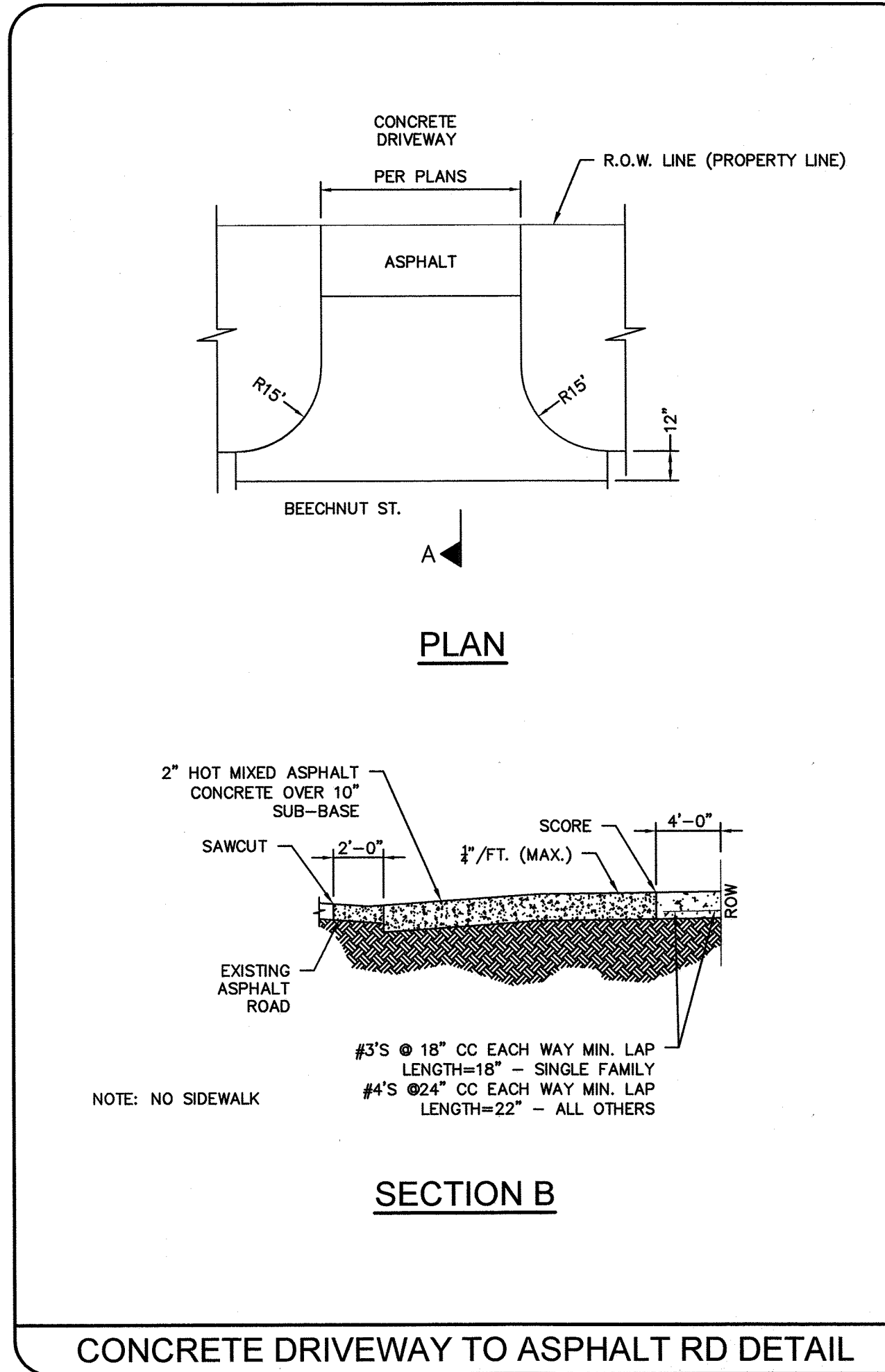
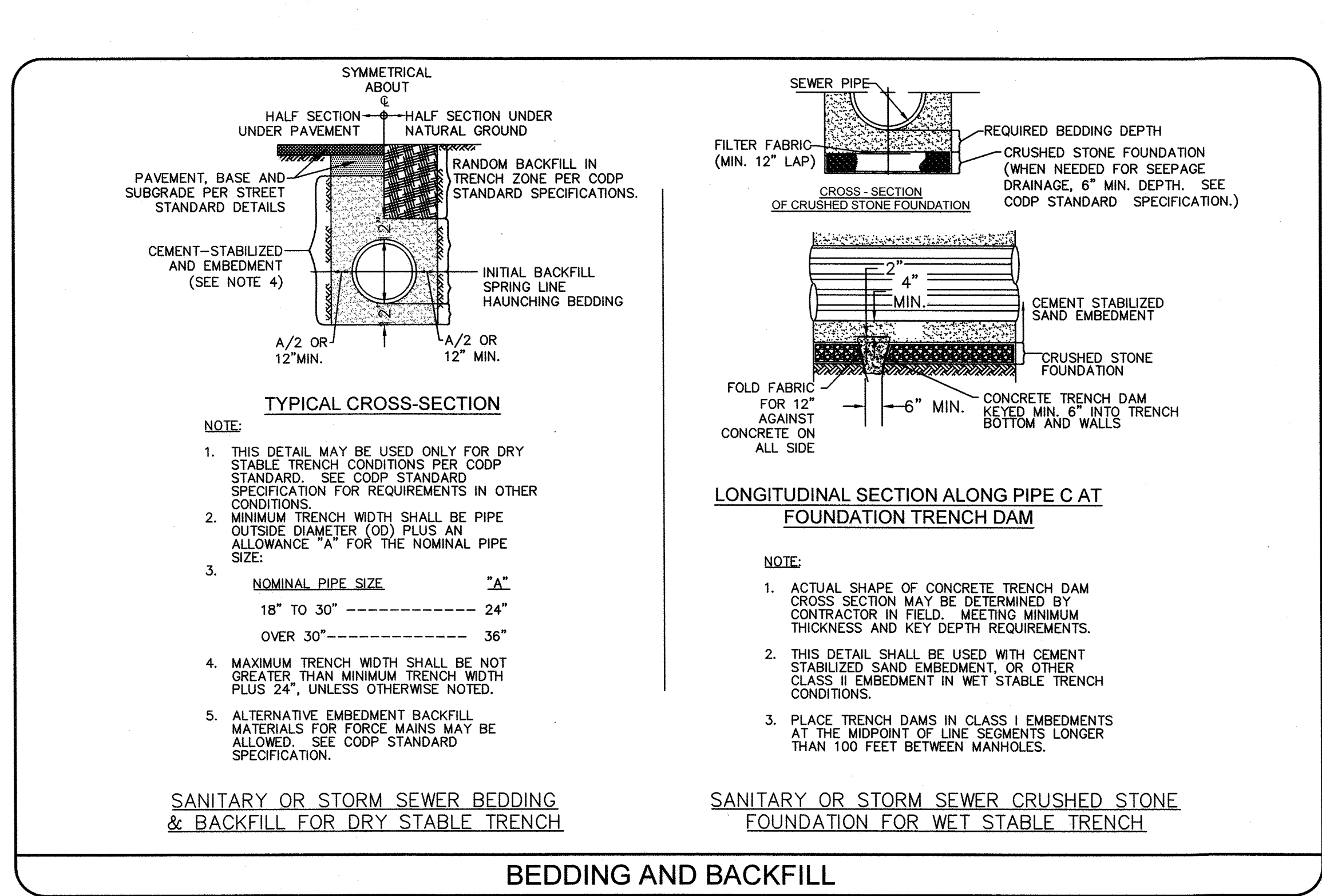
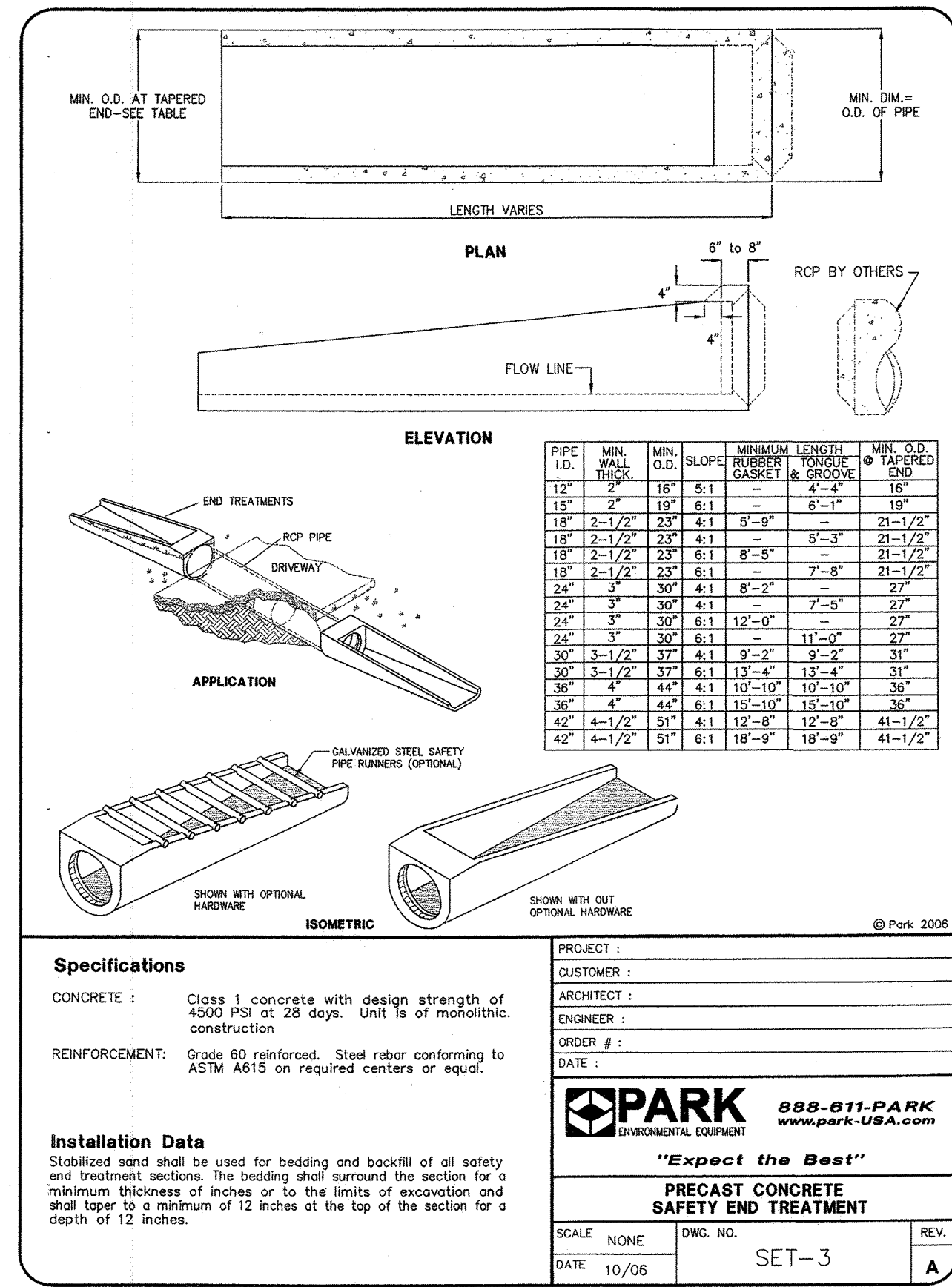
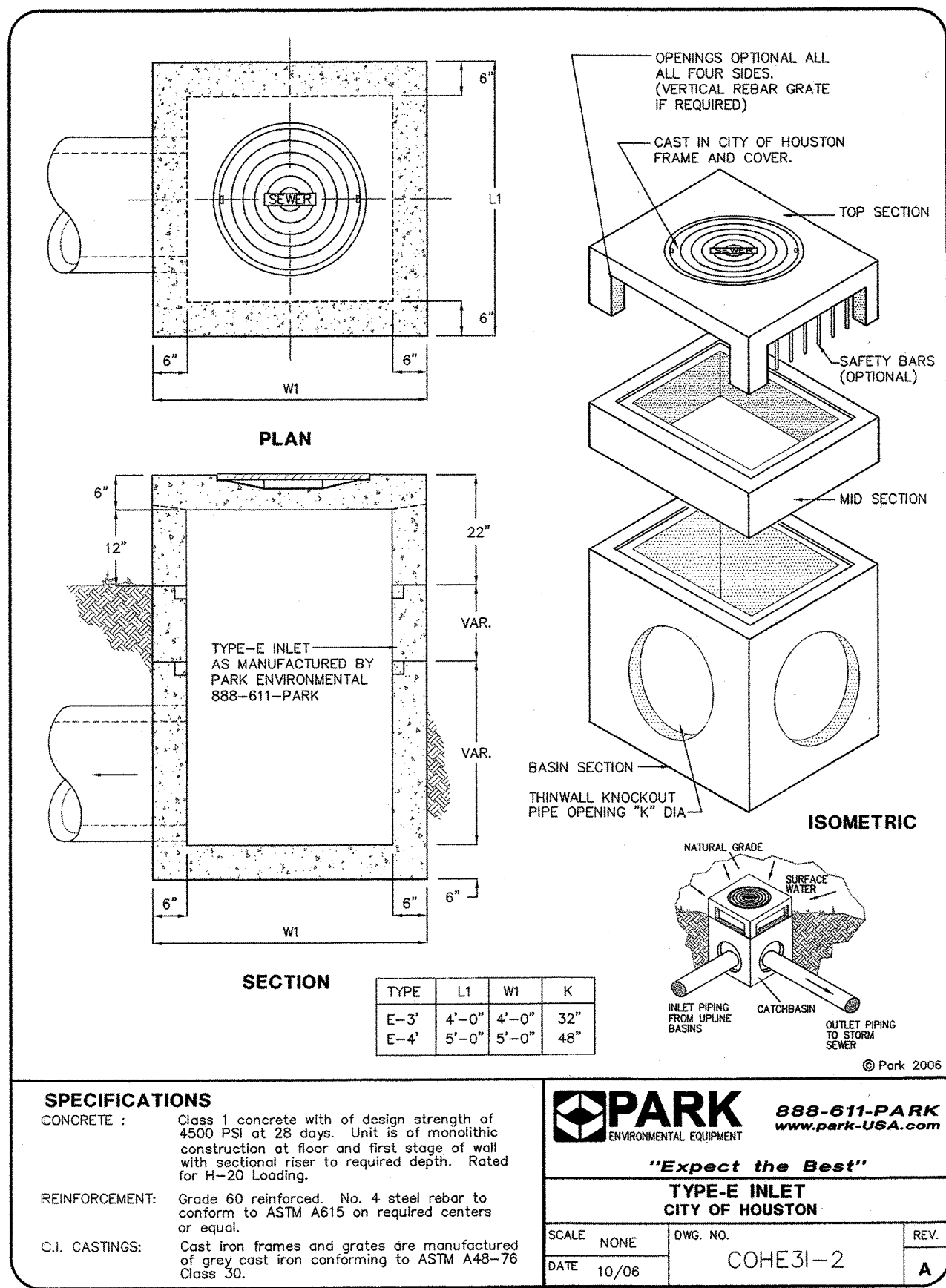
STREET & BRIDGE

JAC JOB No.: F003-1445
DRAWN BY: JCR
DRAWING SCALE: N.T.S.
DRAWING NO.: C013
SHEET NO.: 17 OF 40

FOR CITY OF HOUSTON USE ONLY

59242

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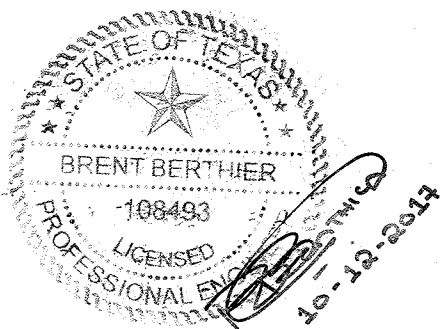
CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WESR OF MILEPOST NO. 25 & APPROX. 17" SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

REVISIONS			
NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: [Signature]
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

CIVIL DETAILS (3 OF 3)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

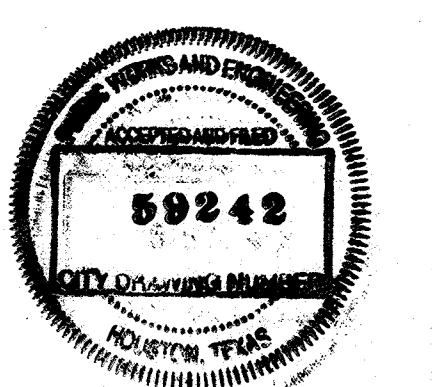
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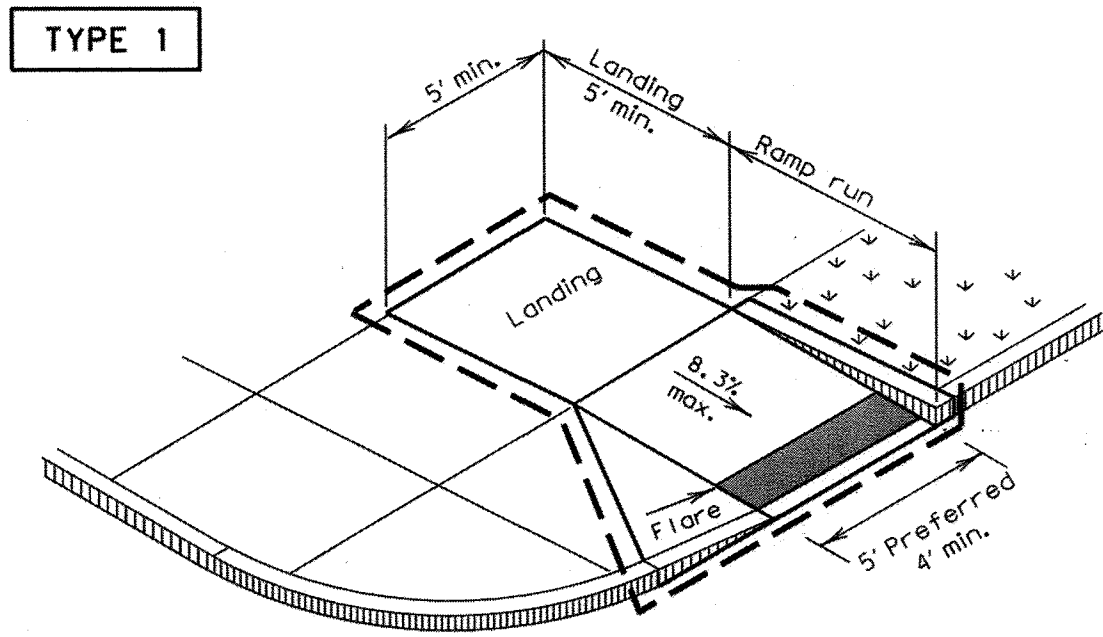
DRAWING NO. C014

SHEET NO. 18 OF 40

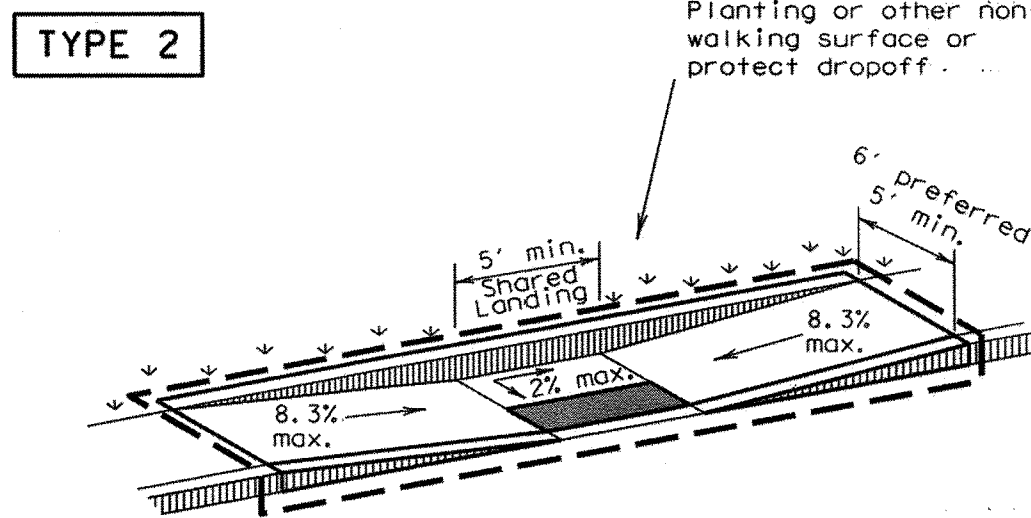


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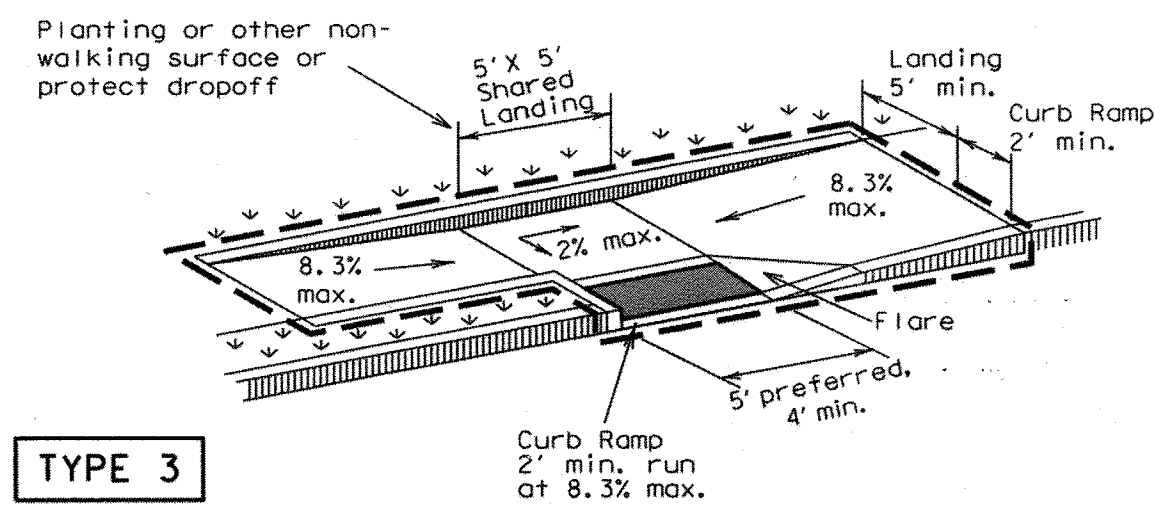
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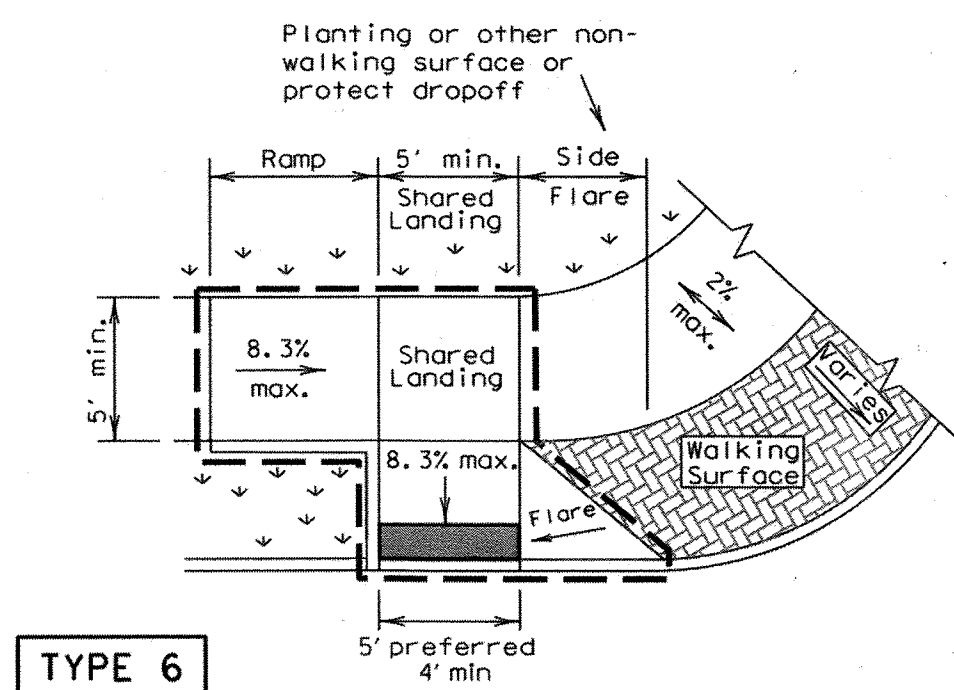
PERPENDICULAR CURB RAMP



PARALLEL CURB RAMP
(Use only where water will not pond in the landing.)

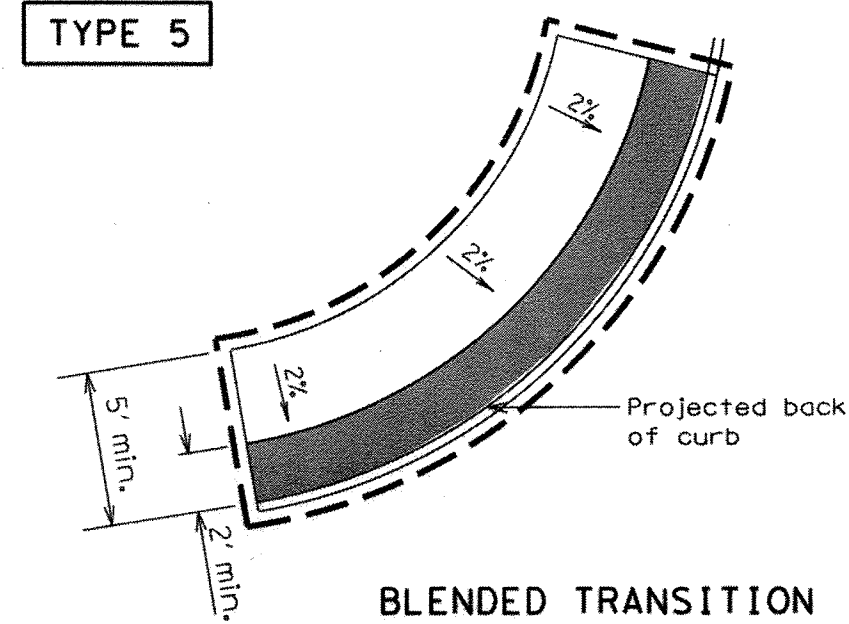


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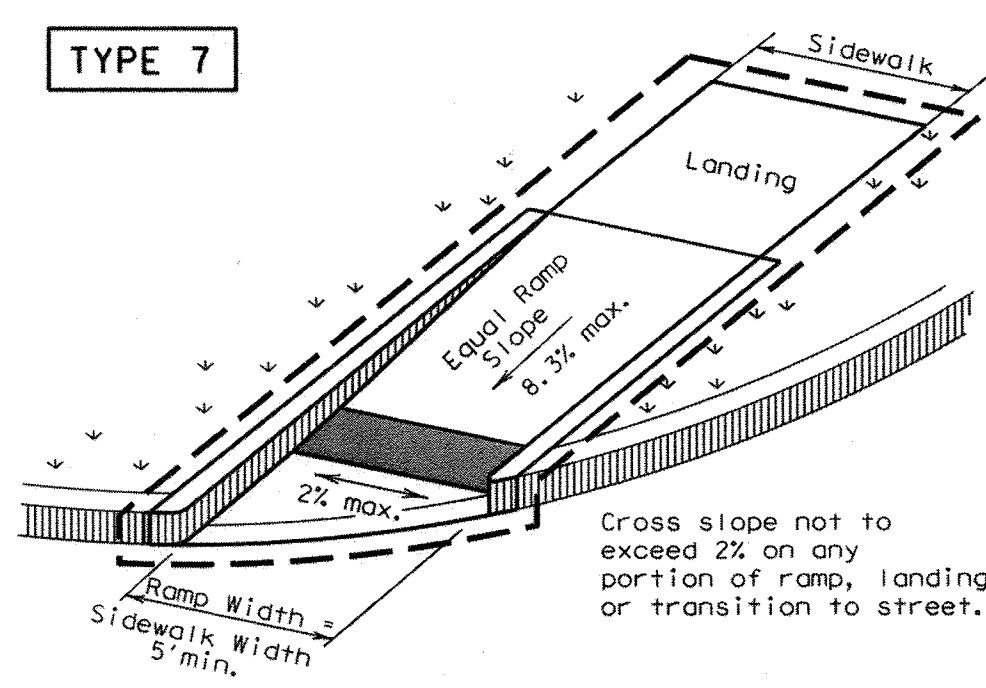


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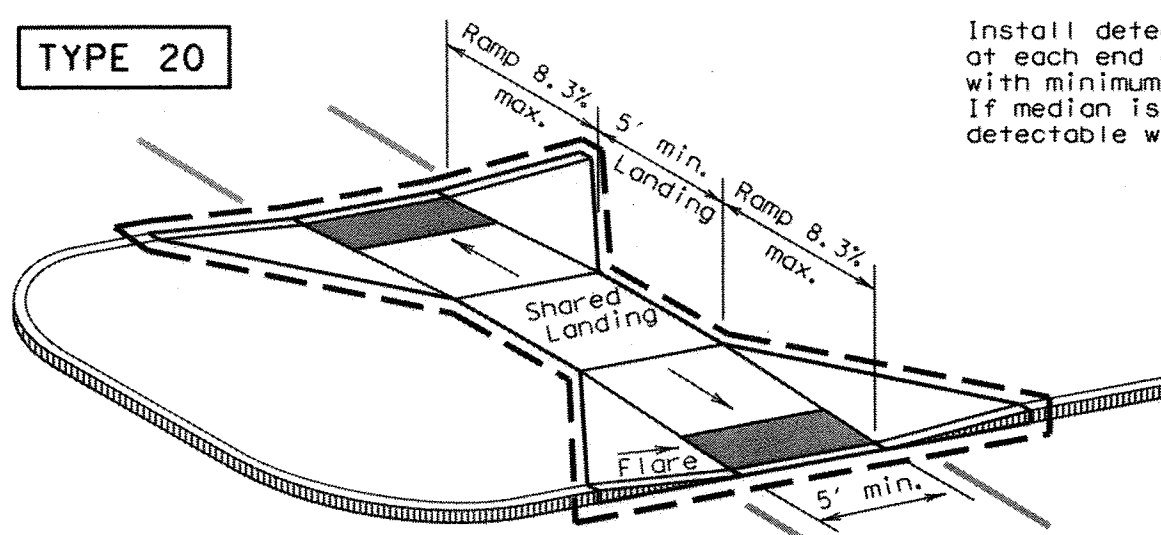
COMBINATION CURB RAMPS



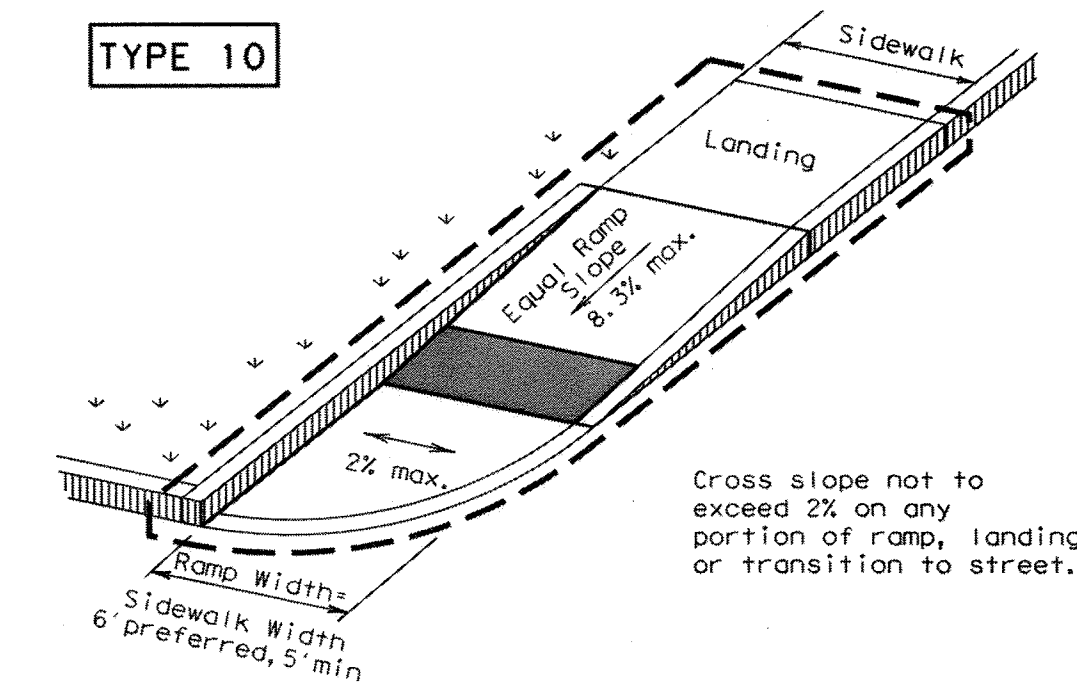
BLENDED TRANSITION



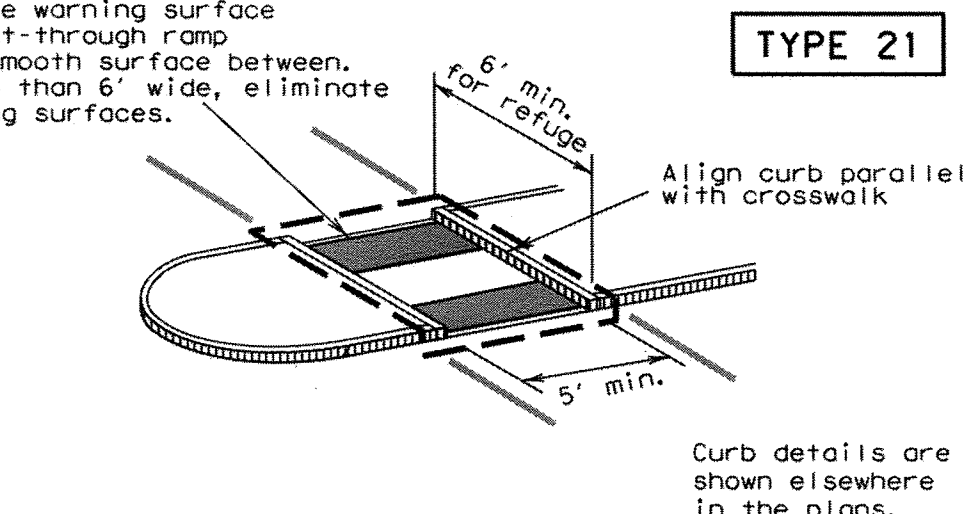
(Sidewalk set back from curb)
DIRECTIONAL RAMPS WITHIN RADIUS



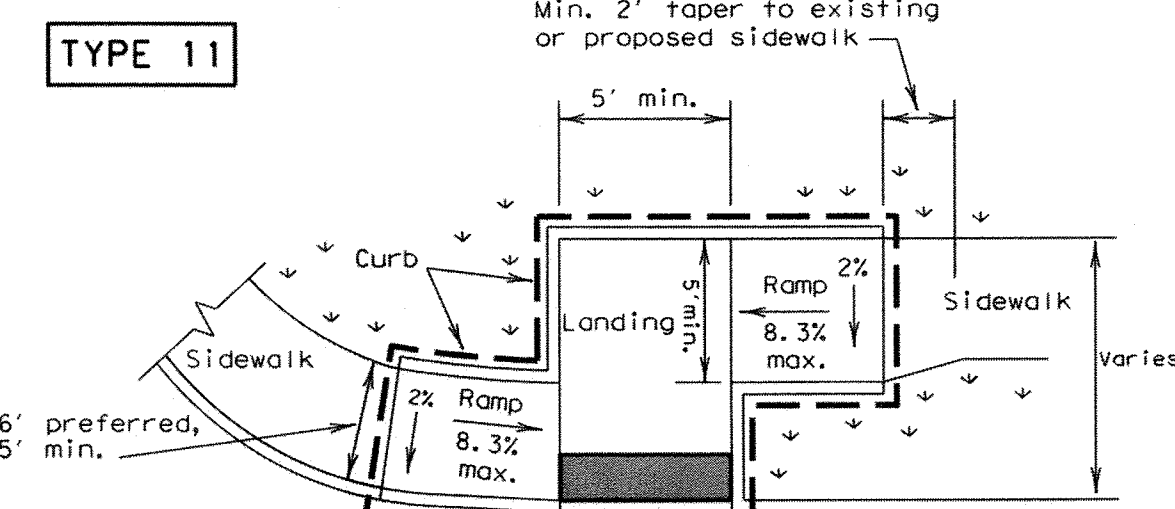
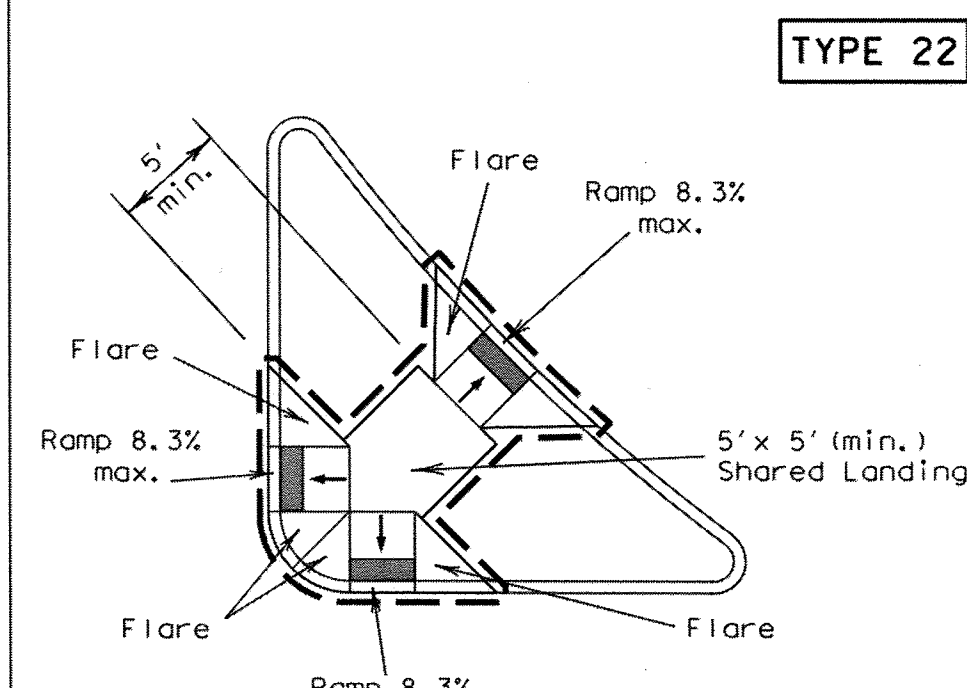
CURB RAMPS AT MEDIAN ISLANDS



(Sidewalk adjacent to curb)



COMBINATION ISLAND RAMPS



OFFSET PARALLEL CURB RAMP

NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

Denotes planting or non-walking surface not part of pedestrian circulation path.

--- Ramp Limits of Payment

Detectable Warning Surface

SHEET 1 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12a.dgn	DWG: TXDOT	CHK: PK	DWG: TXDOT	CHK: HD
© TXDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	
VP June 13, 2012				

BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1928, 1987 ADJ.)

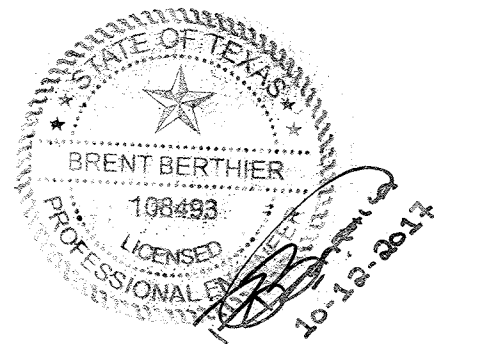
NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Mary*
DEVELOPMENT COORDINATOR

DATE: 11/1/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

TXDOT PED-12A (1 OF 4)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
STORM	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.: F003-1445

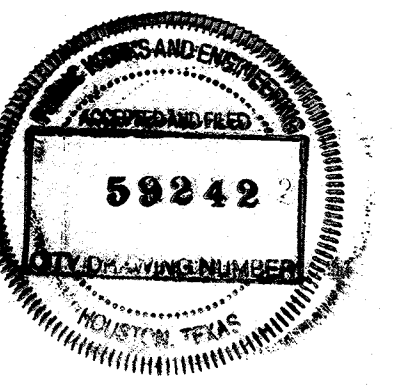
DRAWN BY: JCR

DRAWING SCALE: NTS

DRAWING NO. C015

SHEET NO. 19 OF 40

FOR CITY OF HOUSTON USE ONLY



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DATE:
FILE:

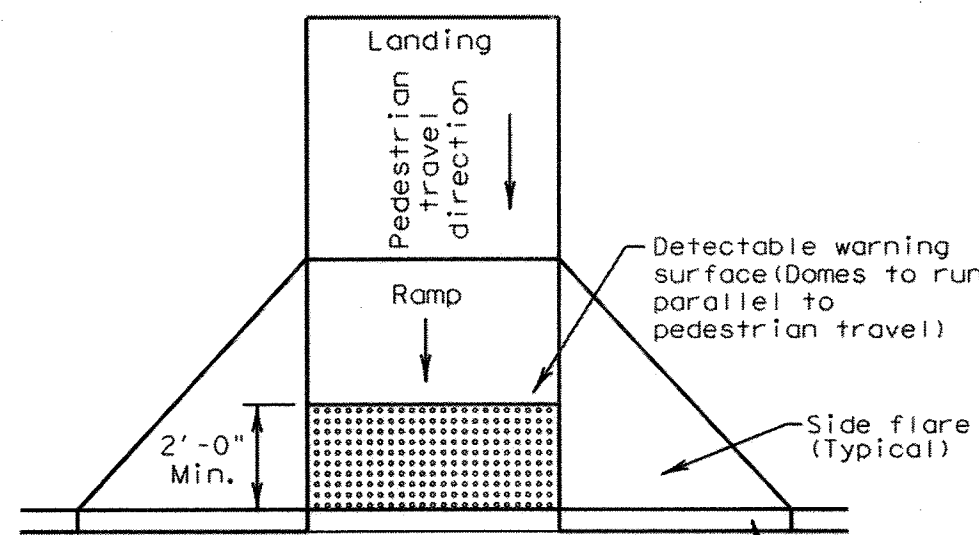
General Notes

Curb Ramps

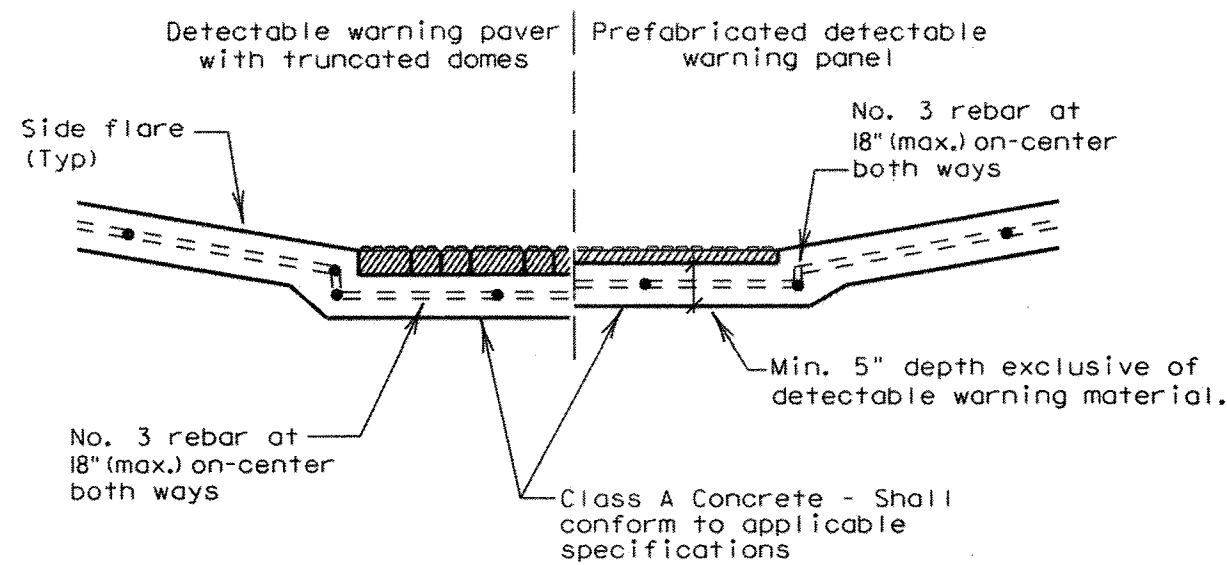
1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever an accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

Detectable Warning Material

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TXDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



PERPENDICULAR CURB RAMP
Typical placement of detectable warning surface on sloping ramp run.



SECTION: CURB RAMP AT DETECTABLE WARNING

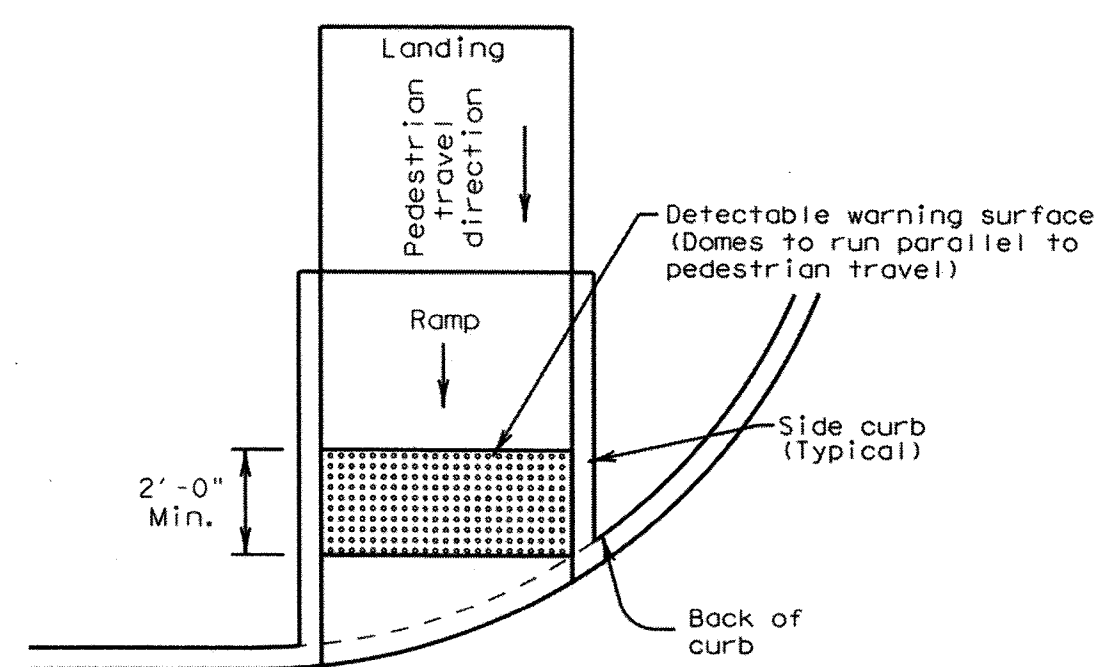
DETECTABLE WARNINGS

Detectable Warning Pavers

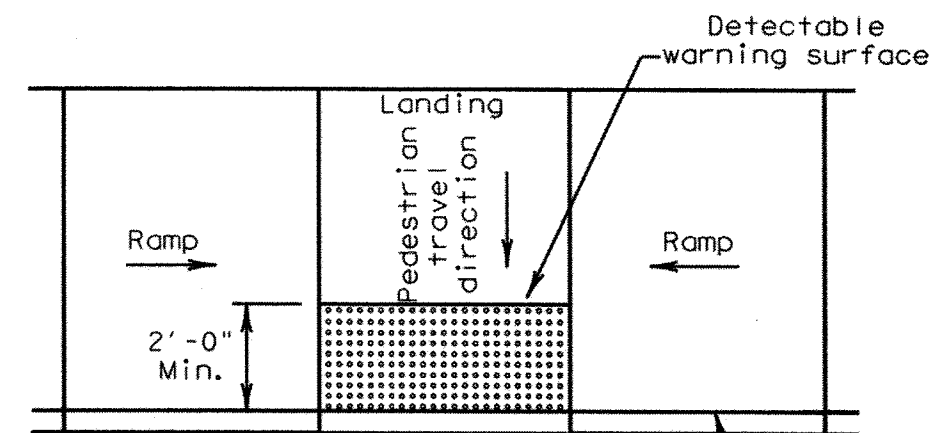
24. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
25. Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

Sidewalks

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
33. Sidewalk details are shown elsewhere in the plans.



DIRECTIONAL CURB RAMP
Typical placement of detectable warning surface on sloping ramp run.



PARALLEL CURB RAMP
Typical placement of detectable warning surface on landing at street edge.

SHEET 2 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

FILE: ped12A.dgn	DN: TXDOT	CK: PK	DN: TXDOT	CK: HD
© TXDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
VP June 13, 2012	DIST	COUNTY		SHEET NO.

BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

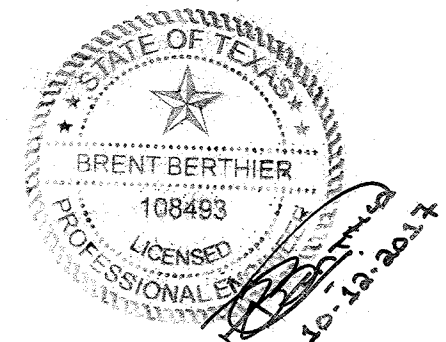
NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *M. J. ...*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

TXDOT PED-12A (2 OF 4)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
SEWERAGE	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.: F003-1445

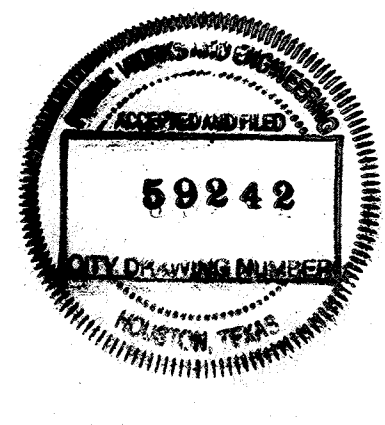
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DRAWING SCALE: NTS

DRAWING NO. C016

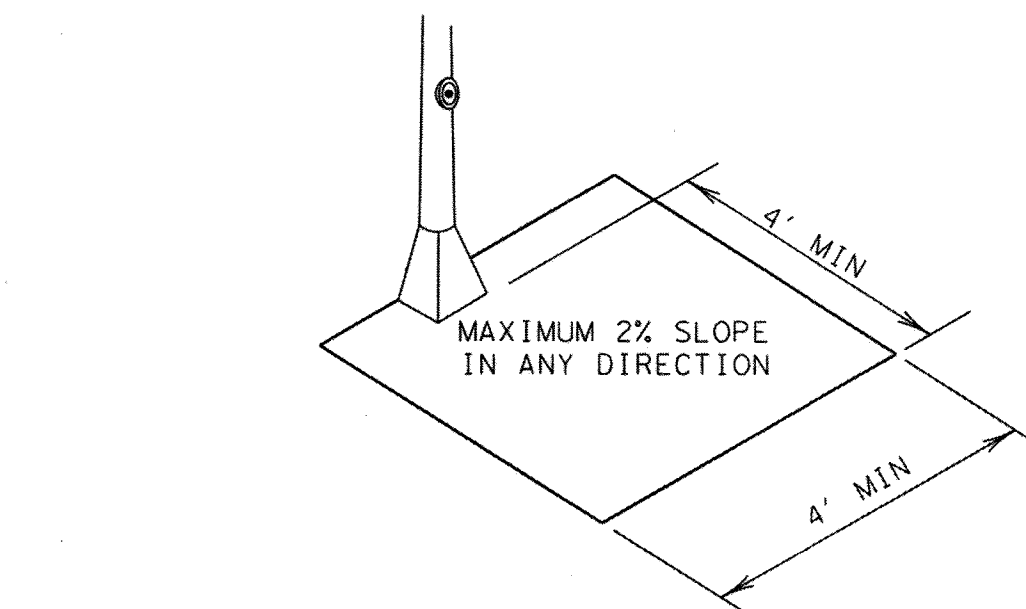
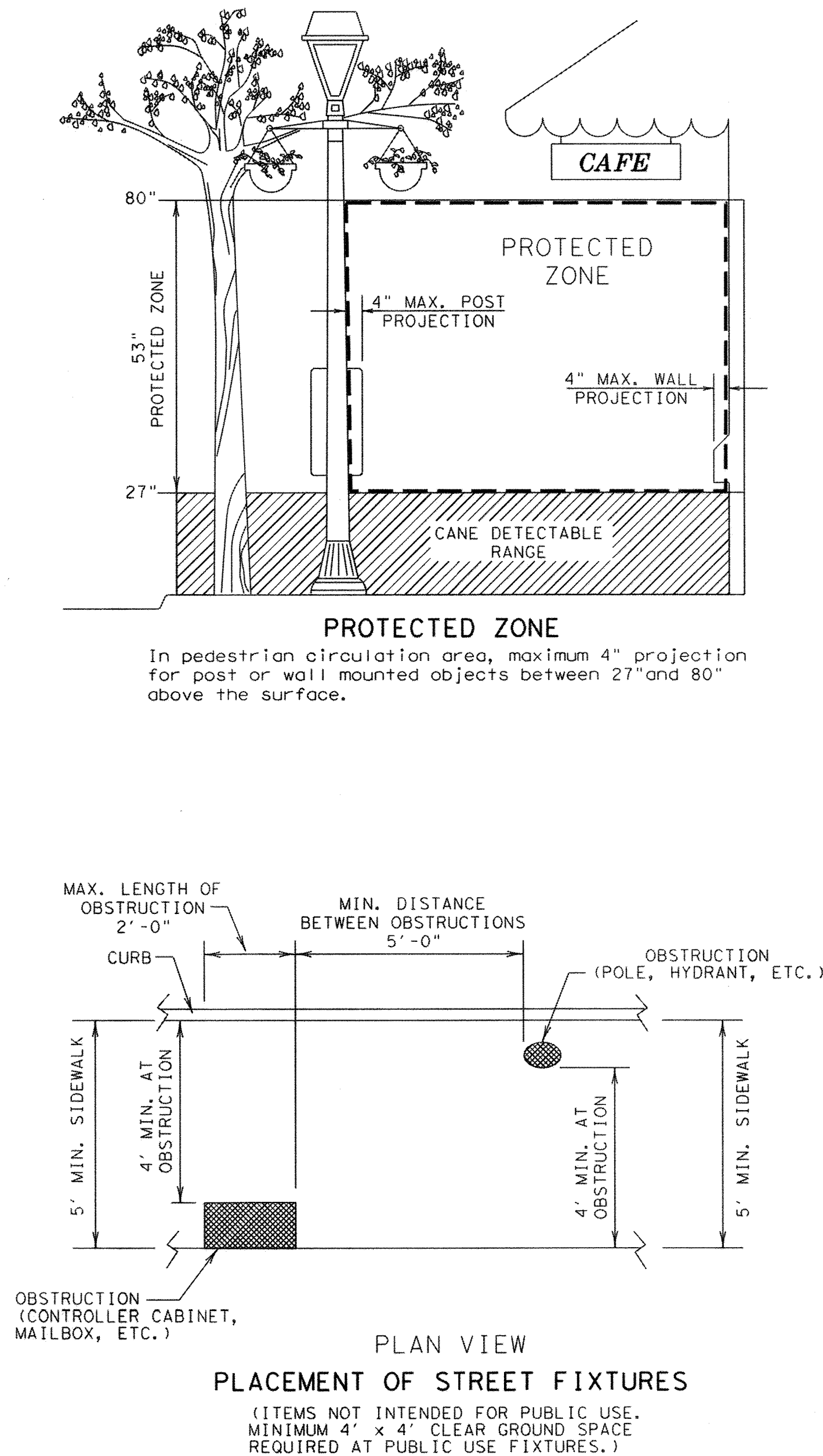
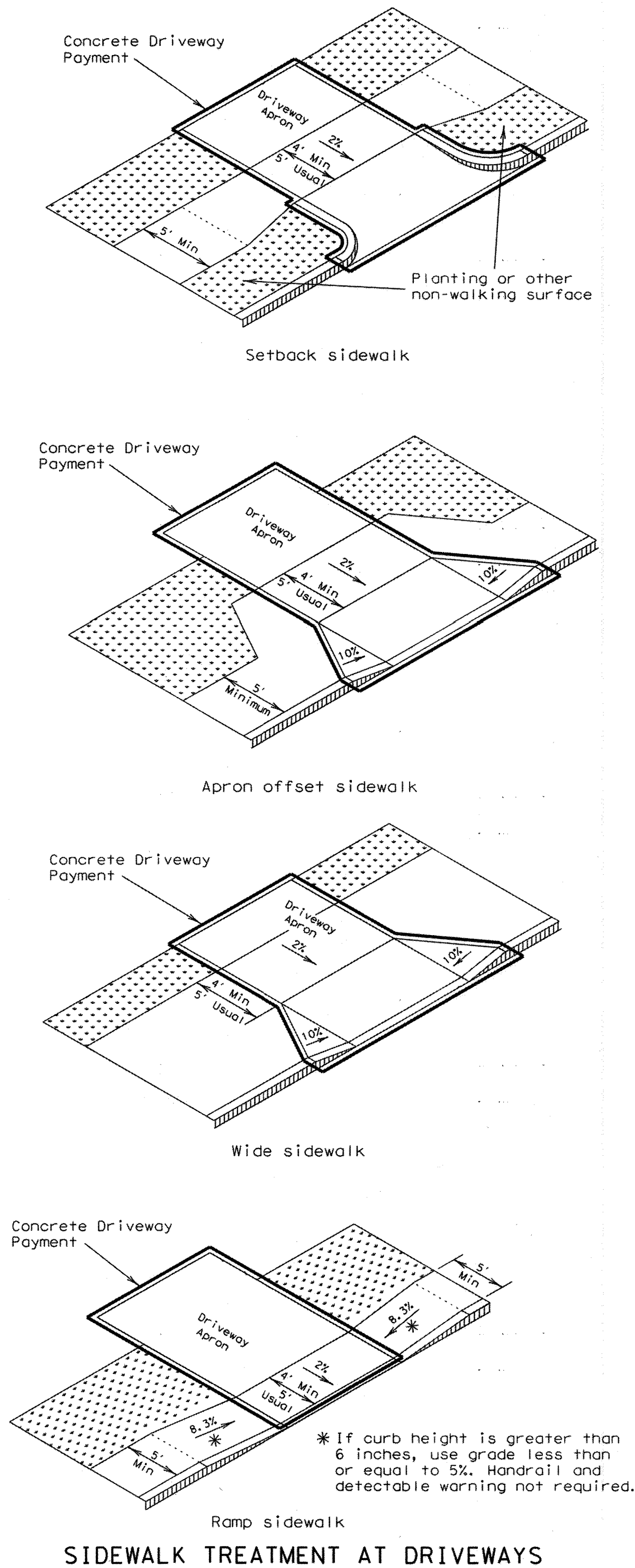
SHEET NO. 20 OF 40

FOR CITY OF HOUSTON USE ONLY

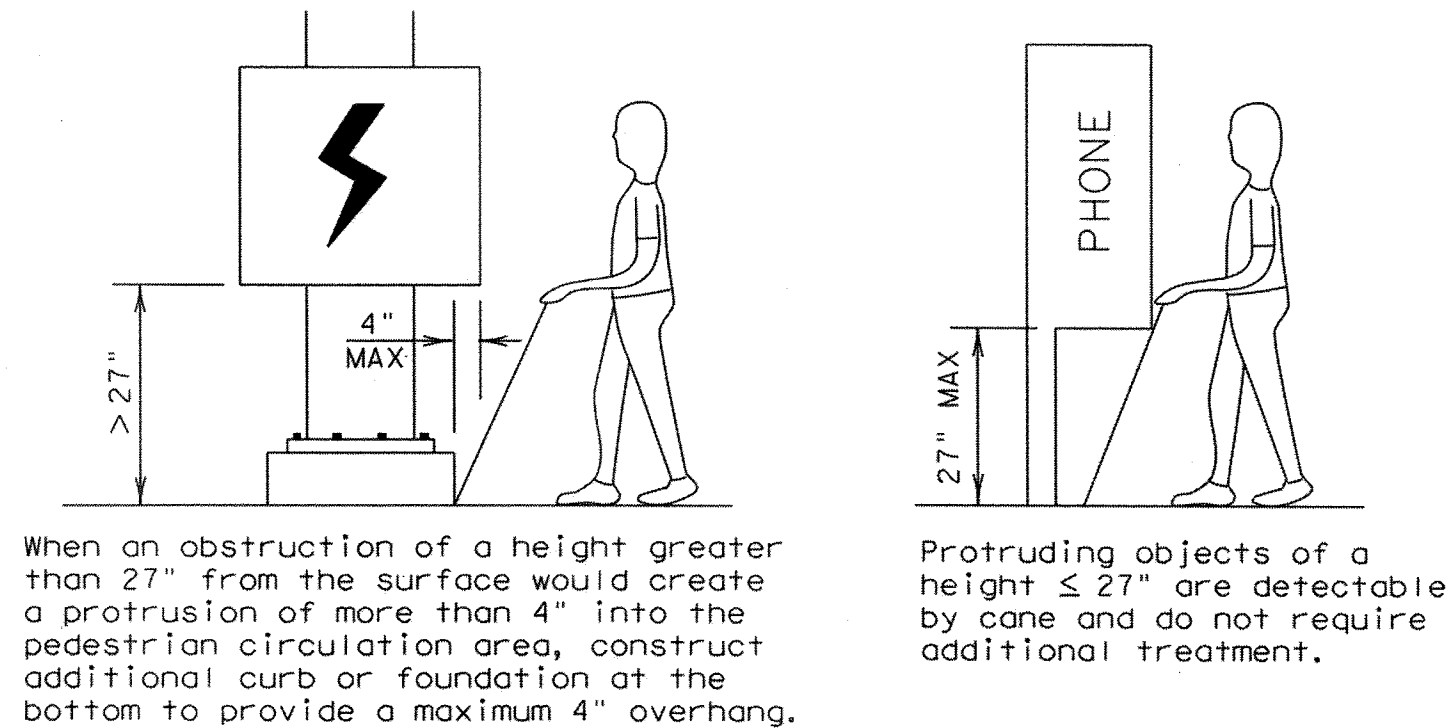


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DATE: FILE:



CLEAR GROUND SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12A.dgn	DR: TXDOT	CK: PK	DR: TXDOT	CK: HD
© TXDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
VP June 13, 2012	DIST	COUNTY	SHEET NO.	

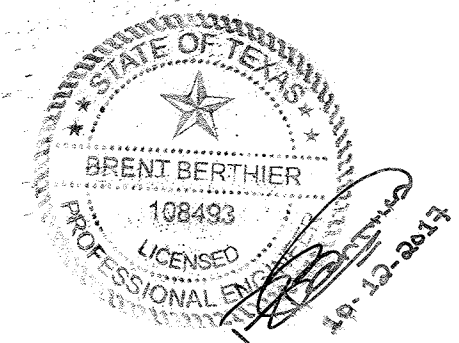
BENCHMARK DATA:
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NOTES

REVISIONS			
NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



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ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

TXDOT PED-12A (3 OF 4)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
STORM	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

10-12-17
10-26-17
10-17-17

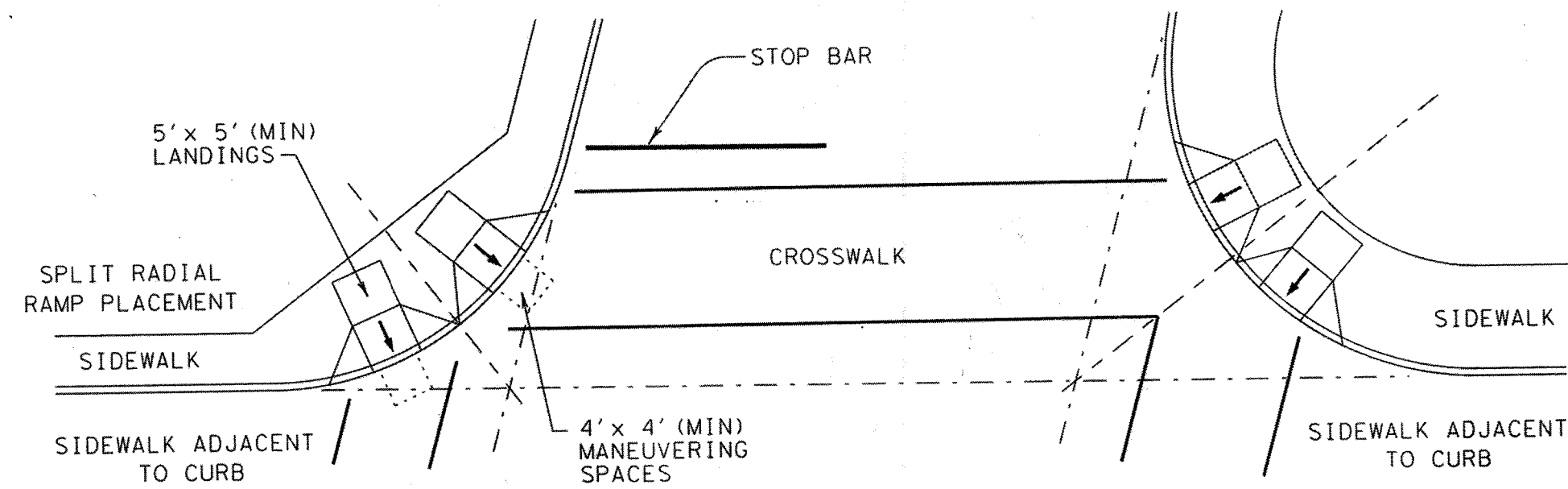
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DRAWN BY: JCR
DRAWING SCALE: NTS
DRAWING NO. C017
SHEET NO. 21 OF 40

FOR CITY OF HOUSTON USE ONLY

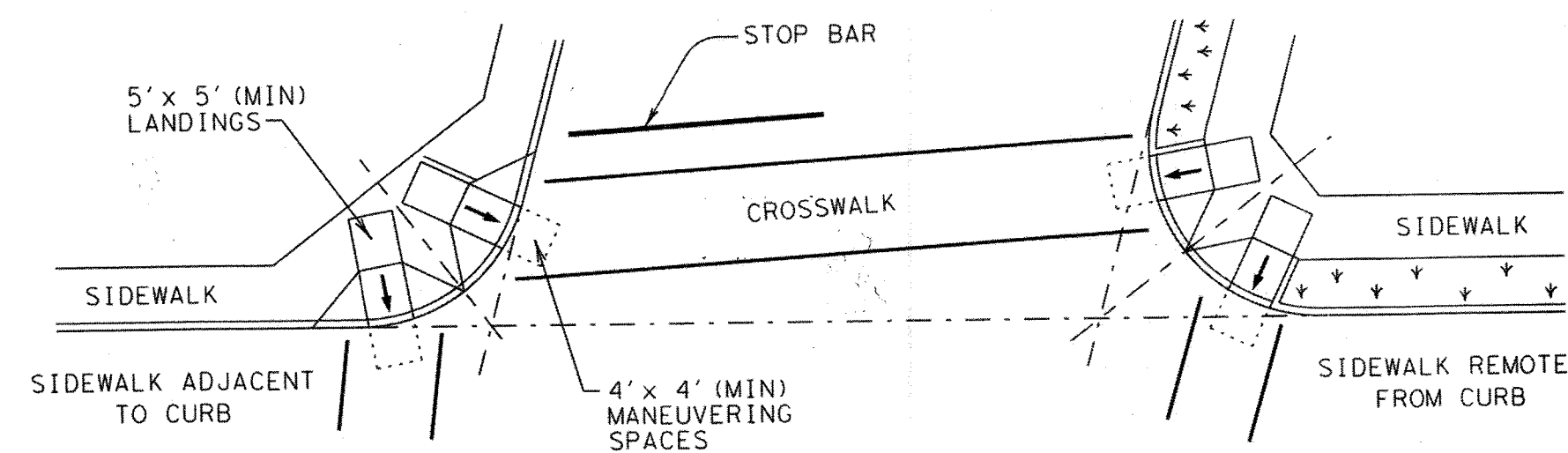
69242

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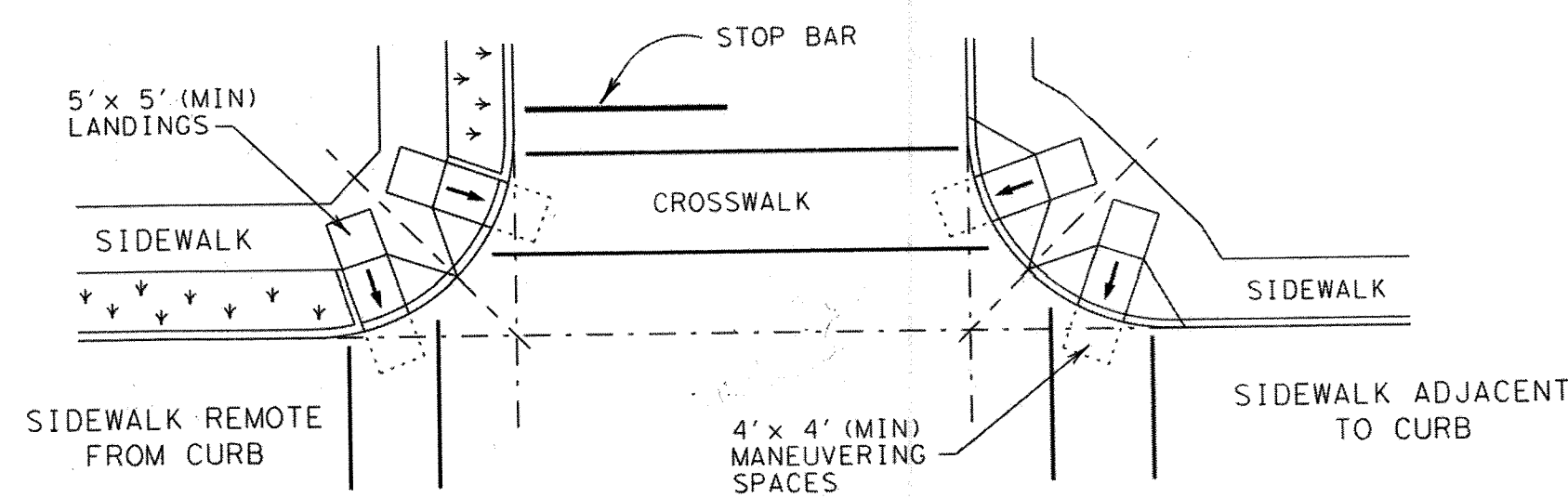
DATE:
FILE:



SKewed INTERSECTION WITH "LARGE" RADIUS

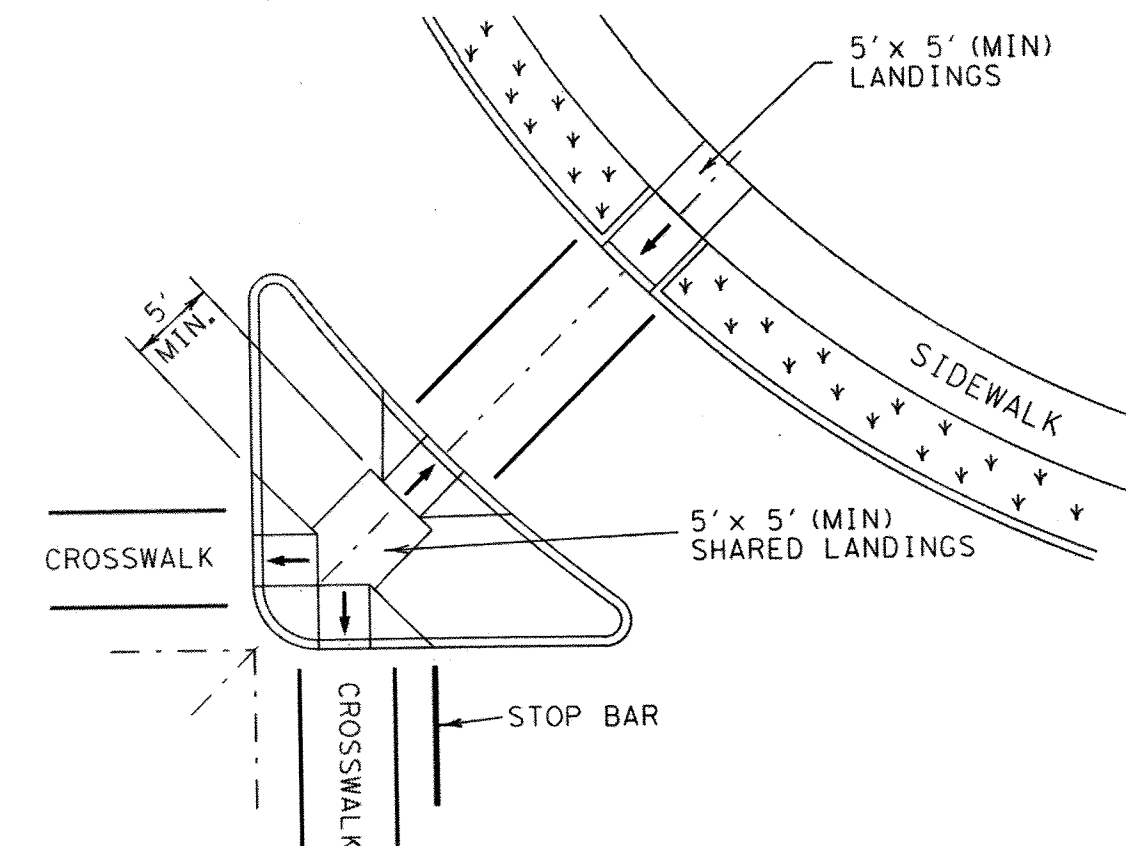


SKewed INTERSECTION WITH "SMALL" RADIUS

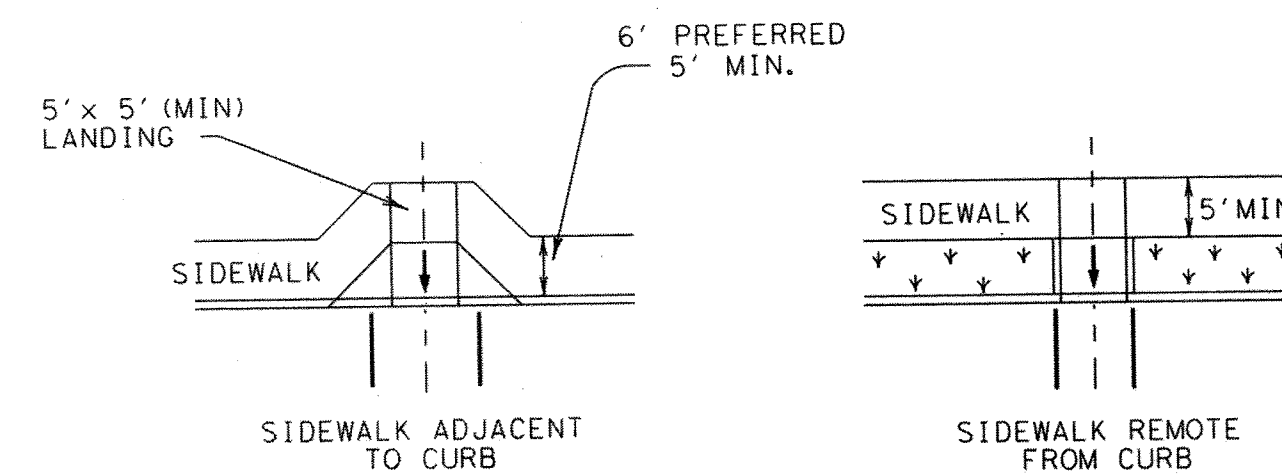


NORMAL INTERSECTION WITH "SMALL" RADIUS

TYPICAL CROSSING LAYOUTS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

SHEET 4 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TXDOT	CK: PK	DN: TXDOT	CK: HD
© TXDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
VP June 13, 2012	DIST	COUNTY		SHEET NO.

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

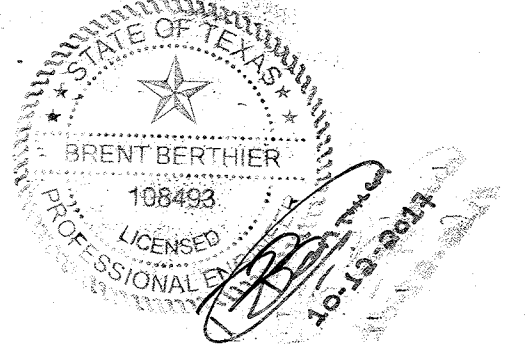
NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Max D.*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



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ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

TXDOT PED-12A (4 OF 4)

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

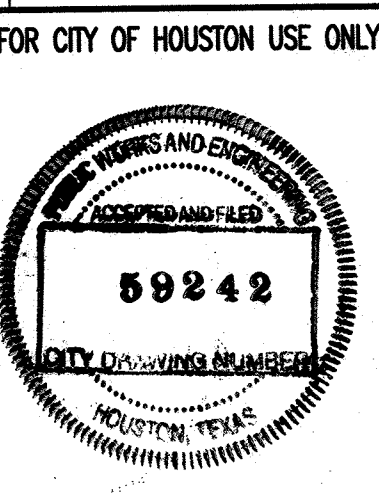
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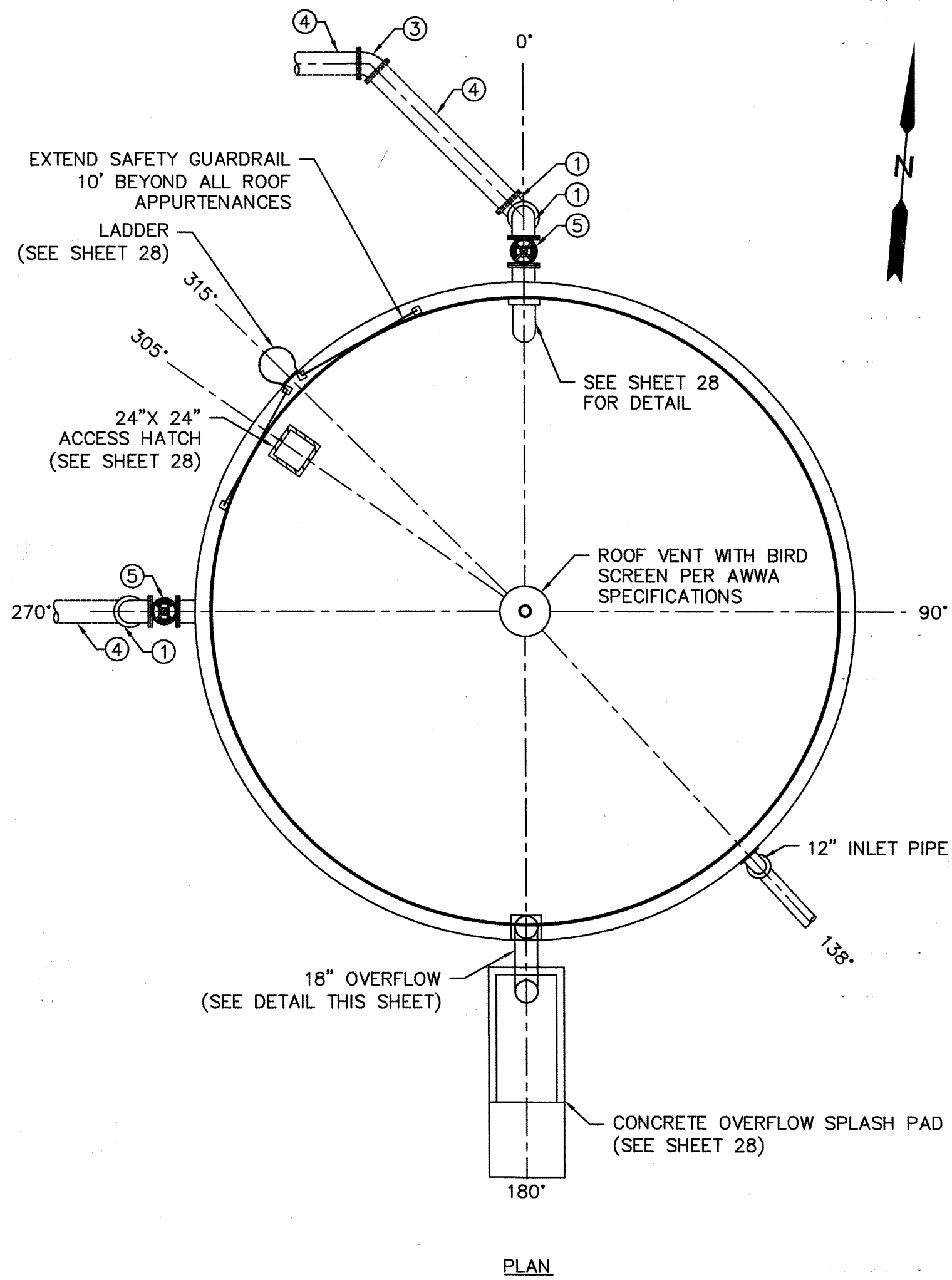
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DRAWING SCALE: NTS

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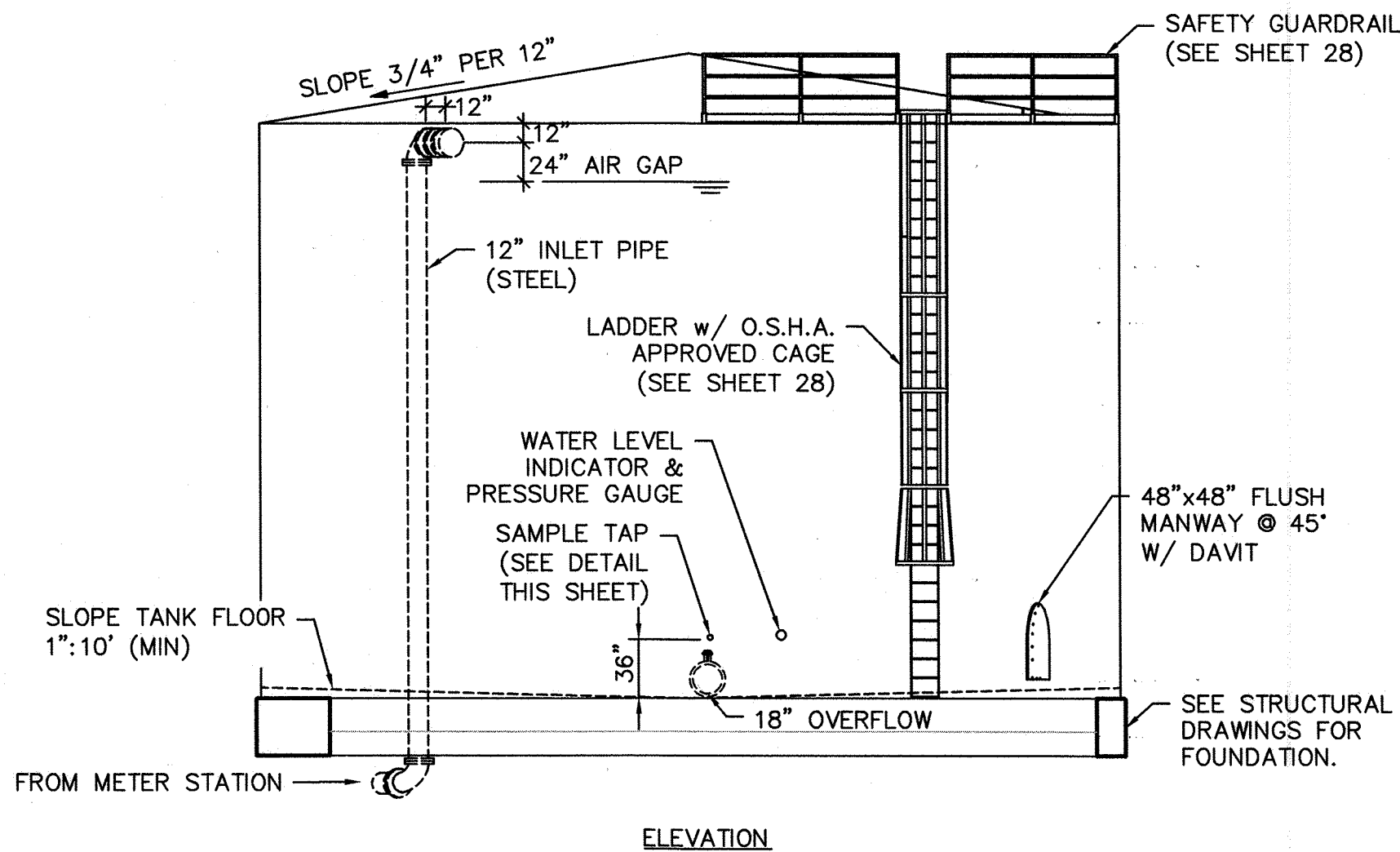
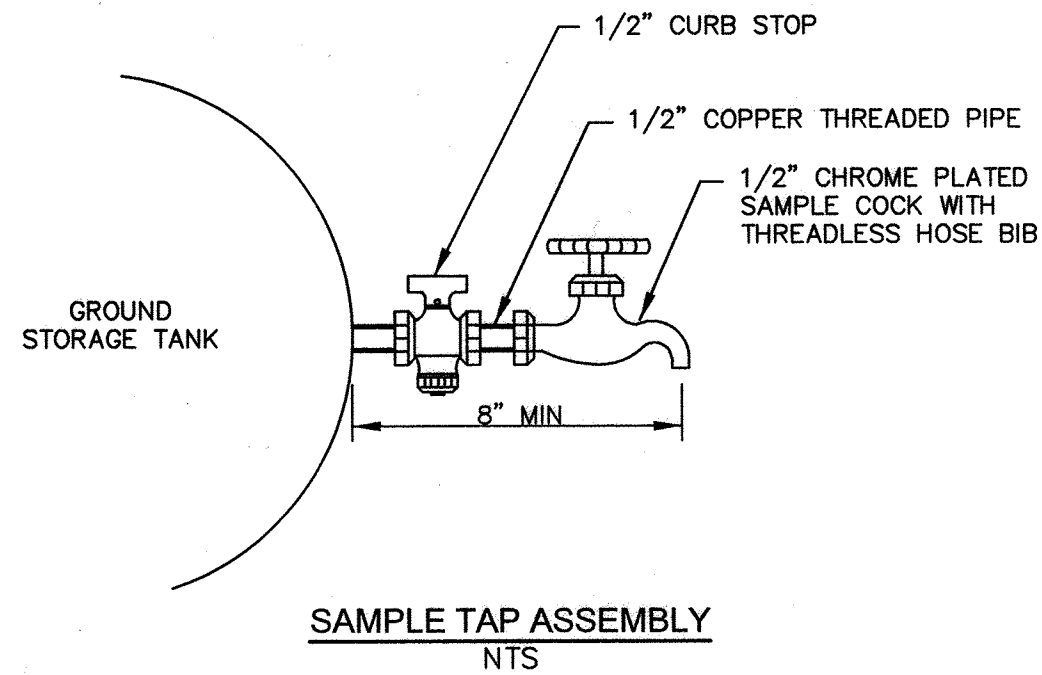
SHEET NO. 22 OF 40



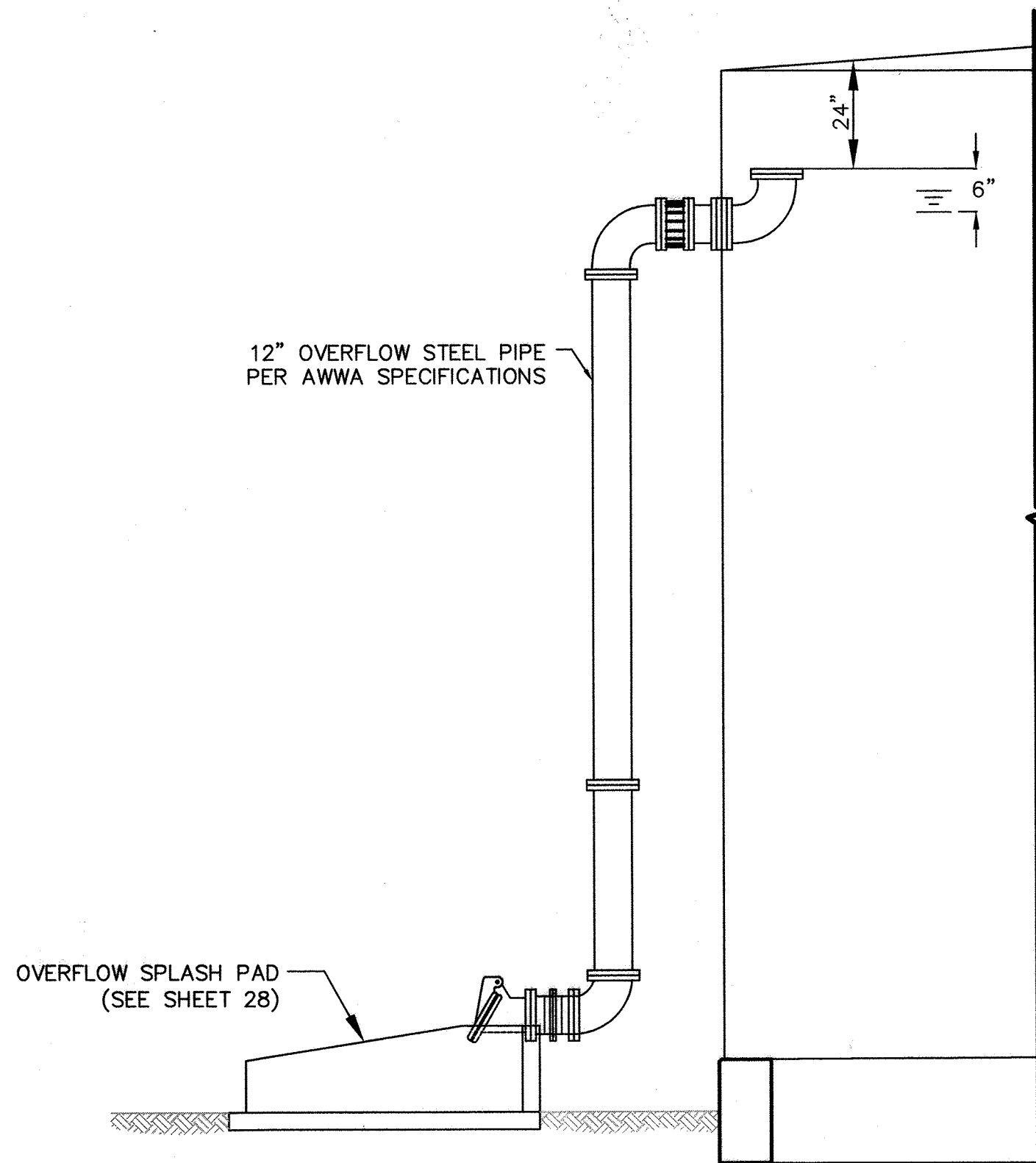


FITTING SCHEDULE				
MARK	SIZE	JOINT	TYPE	DESCRIPTION
1	18"	FE	DIP	90° ELBOW
2	18"	FE	DIP	TEE
3	18"	FE	DIP	45° BEND
4	18"	FEXFE	DIP	SPOOL PIECE
5	18"	FE	DIP	GATE VALVE
6	18"	FE	DIP	PLUG VALVE

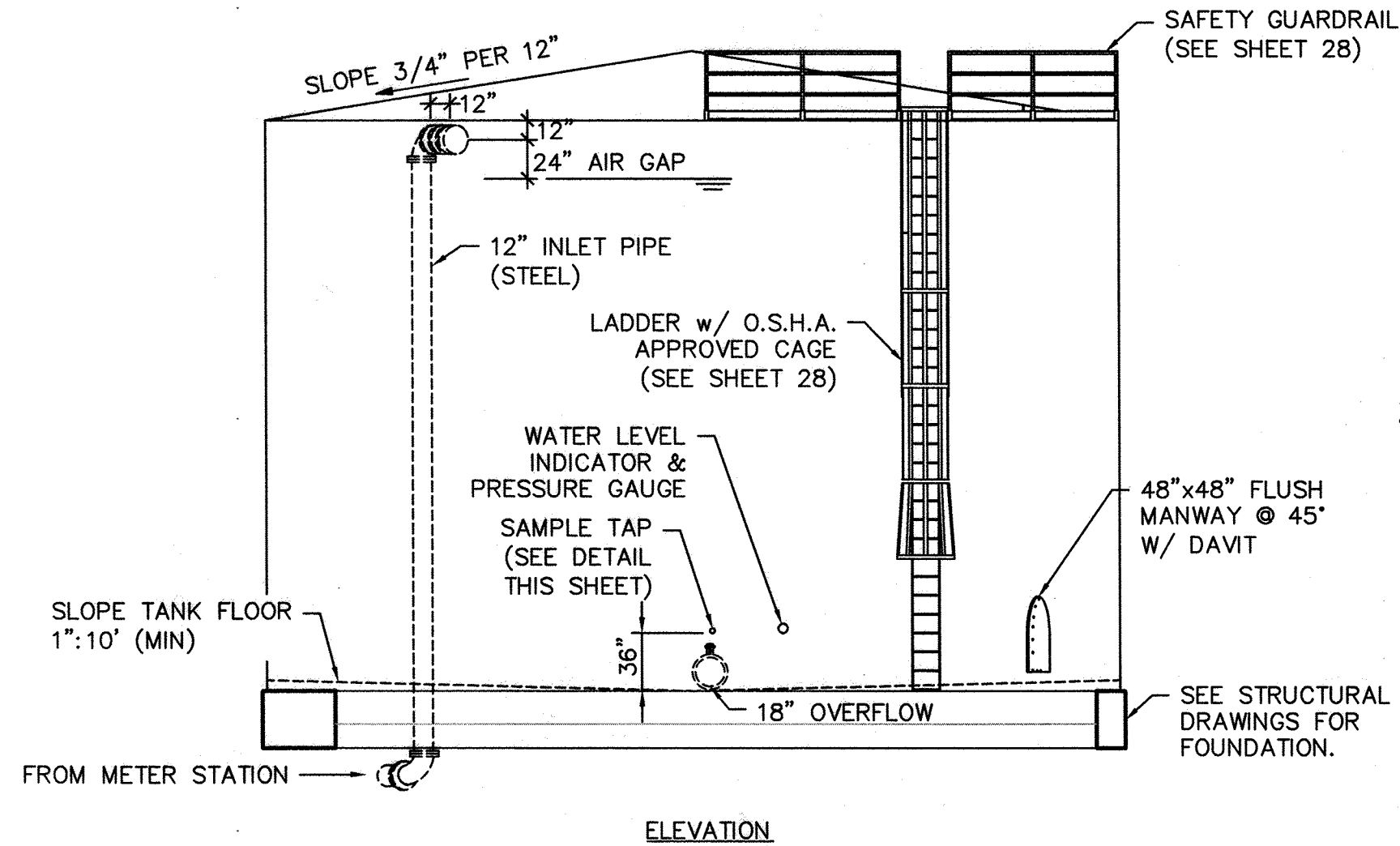
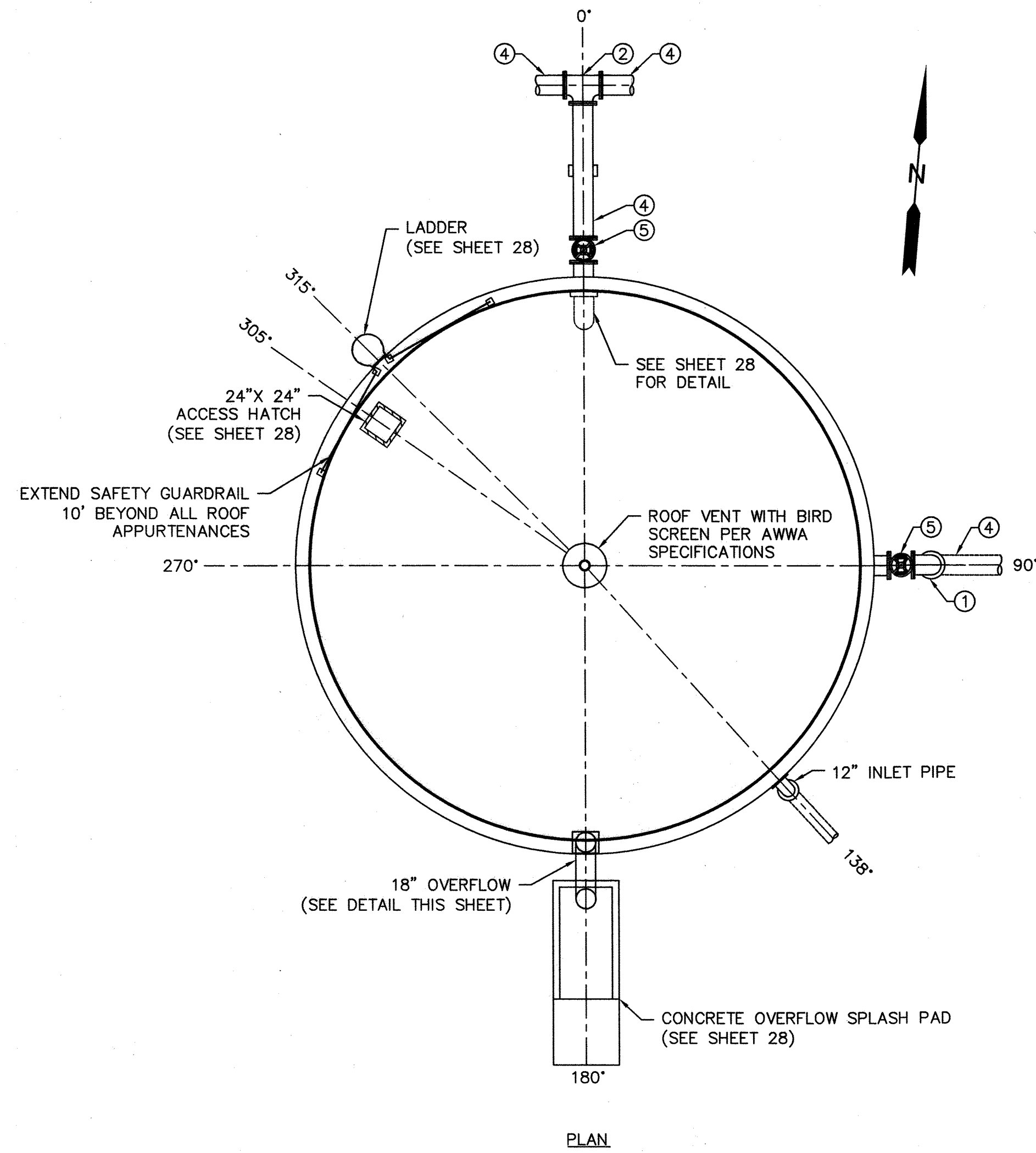
ALL DRAWINGS INCLUDING DETAILS AND DIMENSIONS ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY. LOCATION AND ELEVATIONS MAY VARY BY MANUFACTURER. SHOP DRAWINGS SHALL BE SUBMITTED FOR FINAL ENGINEER'S APPROVAL PRIOR CONSTRUCTION.



WATER STORAGE TANK NO. 1
SCALE: 1/8" = 1'-0"



18" OVERFLOW SECTION
SCALE: 1/4" = 1'-0"



WATER STORAGE TANK NO. 2
SCALE: 1/8" = 1'-0"

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

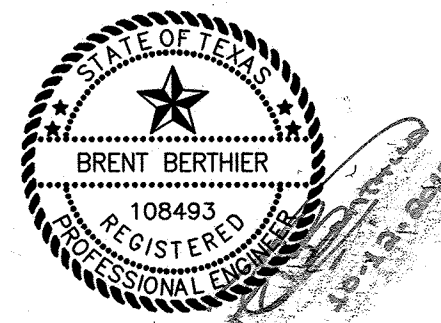
- WALL STIFFENERS TO BE PLACED AT ALL PIPE TIES AND TANK OPENINGS.
- FURNISH AND INSTALL TWO (2) 310,000 GALLON BOLTED STEEL TANKS AS SHOWN ON PLANS PER AWWA SPECIFICATIONS.
- FURNISH AND INSTALL SAMPLE TAP ON OUTLET PIPE.
- PROVIDE WATER LEVEL INDICATOR PER TANK MANUFACTURE.
- FURNISH AND INSTALL PRESSURE GAUGE AS SHOWN.
- PROVIDE INSIDE LADDER LOCATED AT ROOF ACCESS HATCH PER AWWA SPECIFICATIONS.
- CONSTRUCTION OF TANK AND ACCESSORIES SHALL BE ACCORDING TO AWWA SPECIFICATIONS AND REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY.
- TANK SHALL HAVE INSIDE LADDER LOCATED AT ROOF MANWAY PER AWWA SPECIFICATION.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Mariel*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST., DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

GROUND STORAGE TANK PLAN, ELEVATION & DETAILS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

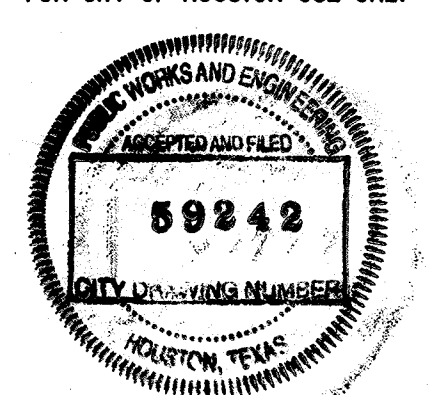
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JCR

DRAWING SCALE:
AS SHOWN

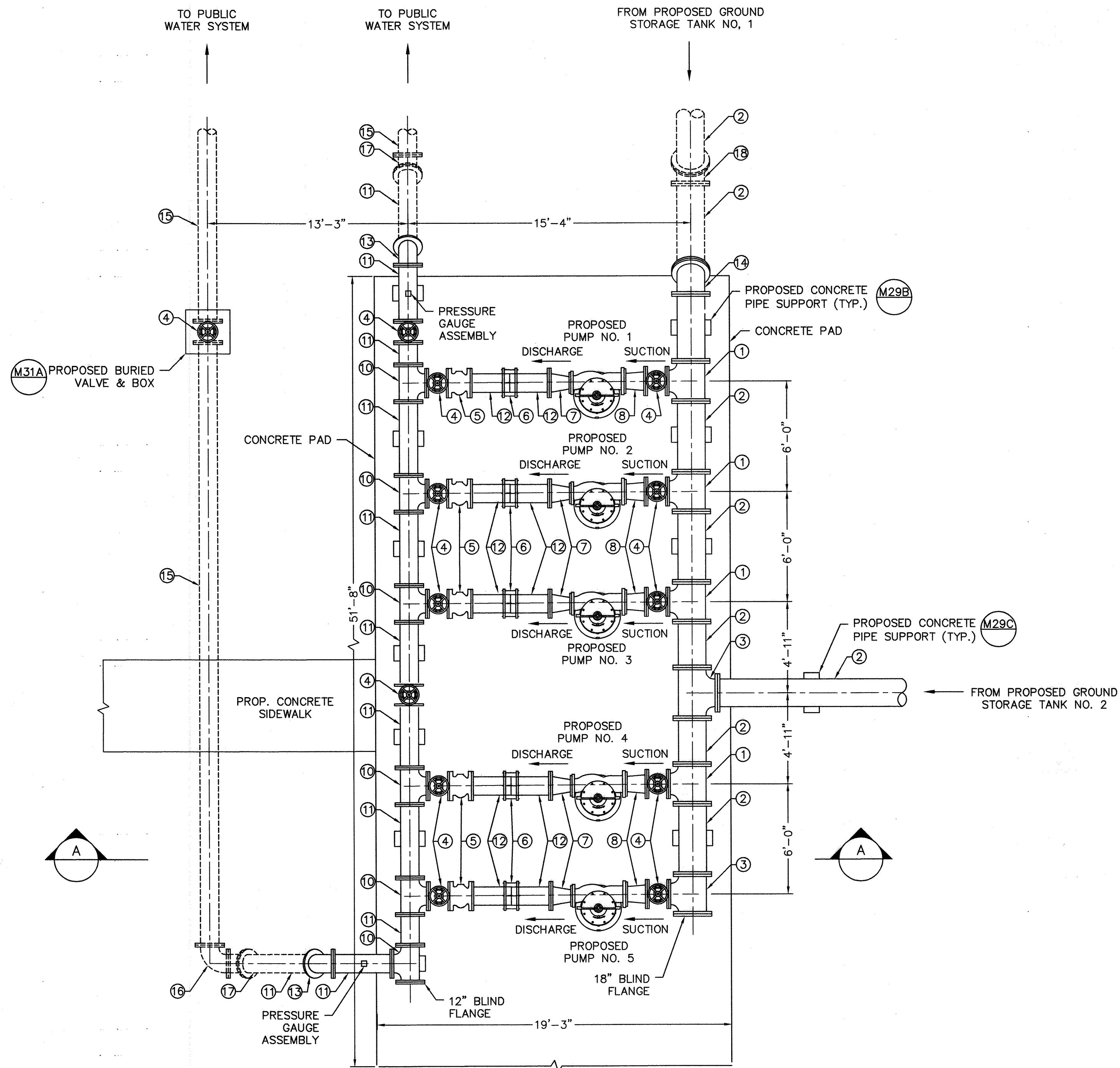
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SHEET NO.:
23 OF 40

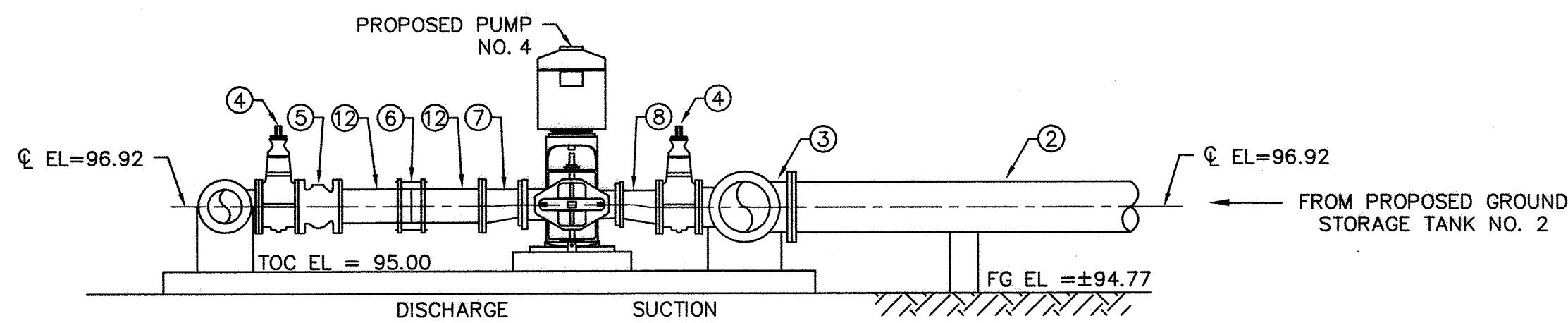
FOR CITY OF HOUSTON USE ONLY



P:\Active\F003\1445\Design Phase\CAD_Sheet_Files\Distribution Pump Plan & Elevations.DWG ~ 10/23/2017 4:47:18 PM ~ Jose Sanchez



DISTRIBUTION PUMP PLAN
SCALE: 1/4" = 1'-0"



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



FITTING SCHEDULE				
MARK	SIZE	JOINT	TYPE	DESCRIPTION
1	18"x12"	FE	DIP	REDUCING TEE, DIP
2	18"	FE	DIP	SPOOL PIECE, DIP
3	18"	FE	DIP	TEE, DIP
4	12"	FE	DIP	GATE VALVE
5	12"	FE	DIP	SILENT CHECK VALVE
6	12"	---	DIP	S.S. EXPANSION COUPLING
7	12"x8"	FE	DIP	REDUCER, DIP
8	12"x10"	FE	DIP	REDUCER, DIP
9	12"	FE	DIP	90° ELBOW
10	12"	FE	DIP	TEE DIP
11	12"	FE	DIP	SPOOL PIECE, DIP
12	12"	FE X PE	DIP	SPOOL PIECE, DIP
13	12"	FE	DIP	45° BEND
14	18"	FE	DIP	45° BEND
15	12"	PO	PVC	SPOOL PIECE
16	12"	FE	DIP	90° ELBOW WITH RESTRAINT
17	12"	FE	DIP	45° BEND WITH RESTRAINT
18	18"	FE	DIP	45° BEND WITH RESTRAINT

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

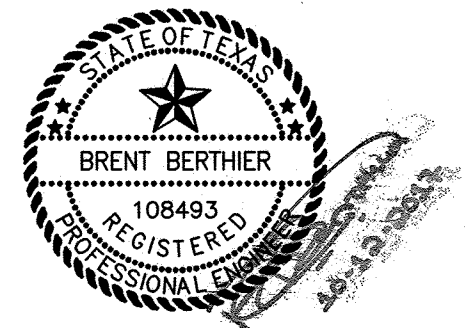
NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-852
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

DISTRIBUTION PUMP
PLAN & SECTION

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
STORMWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

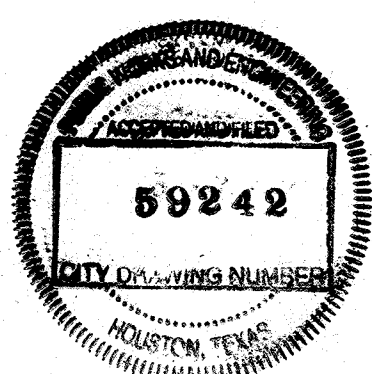
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JCR

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

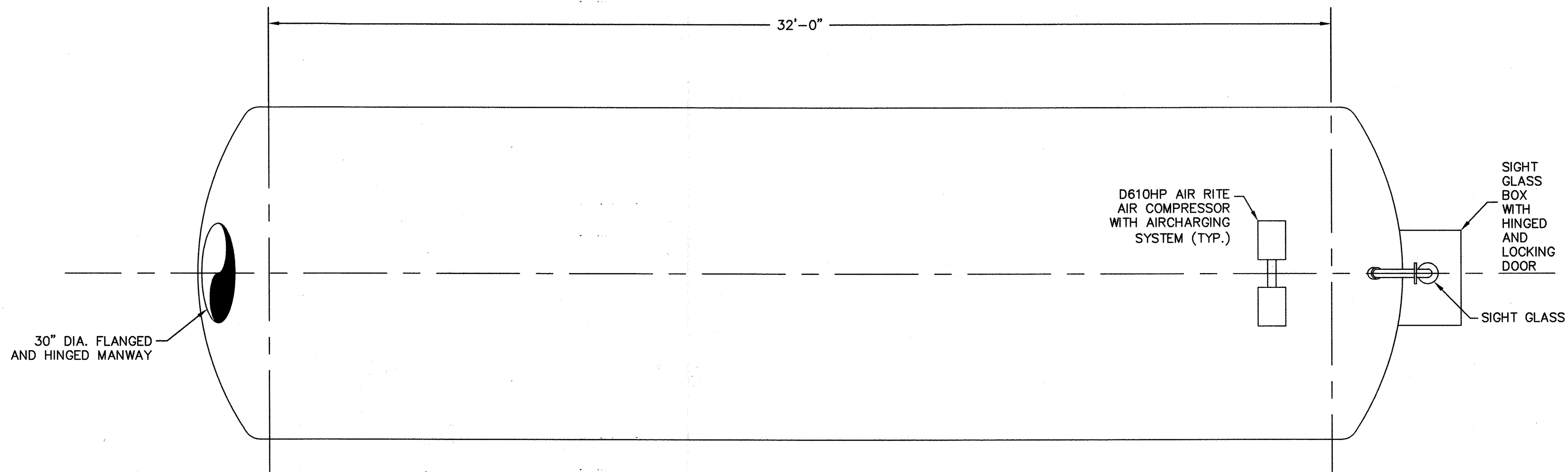
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SHEET NO.
24 OF 40

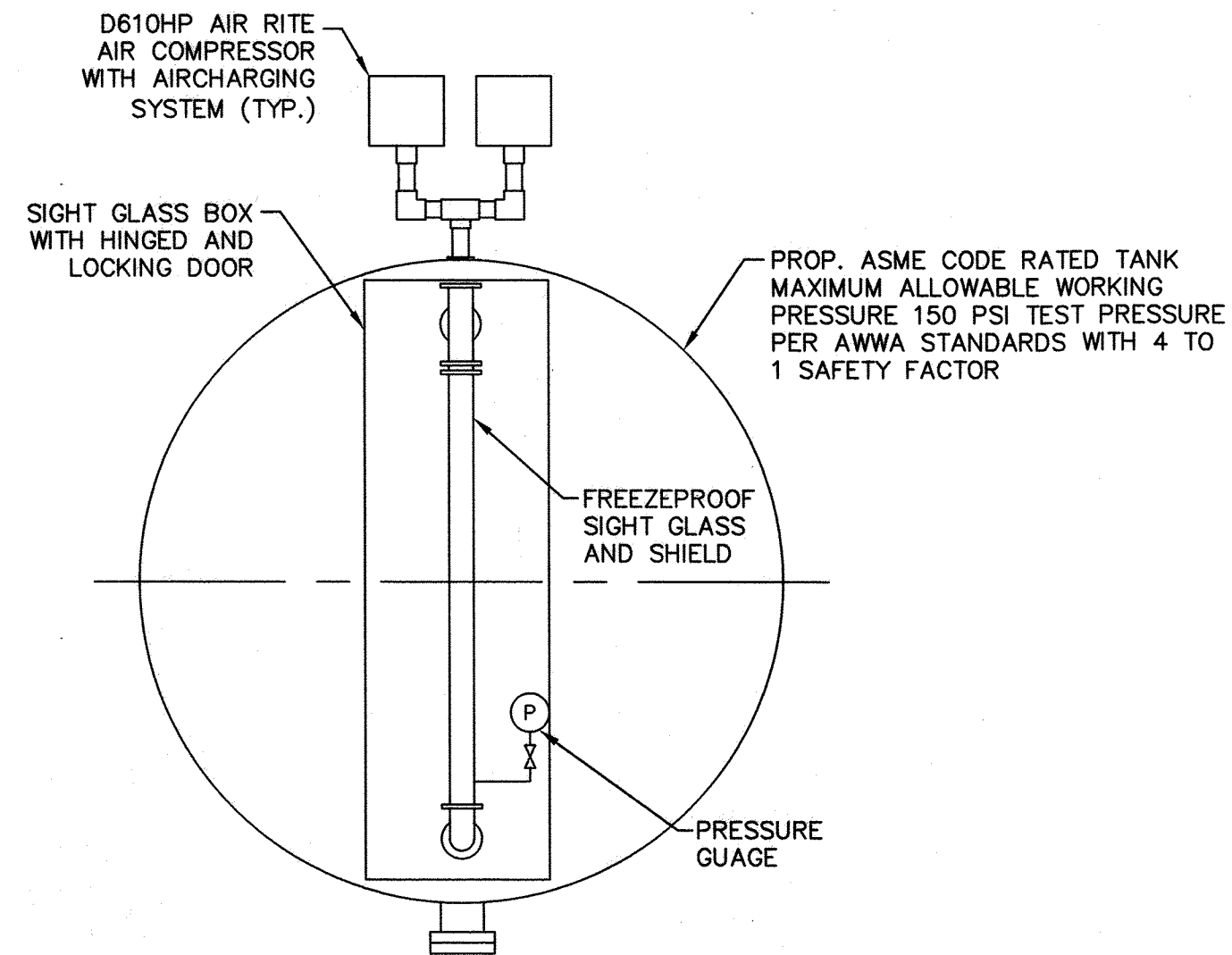
FOR CITY OF HOUSTON USE ONLY



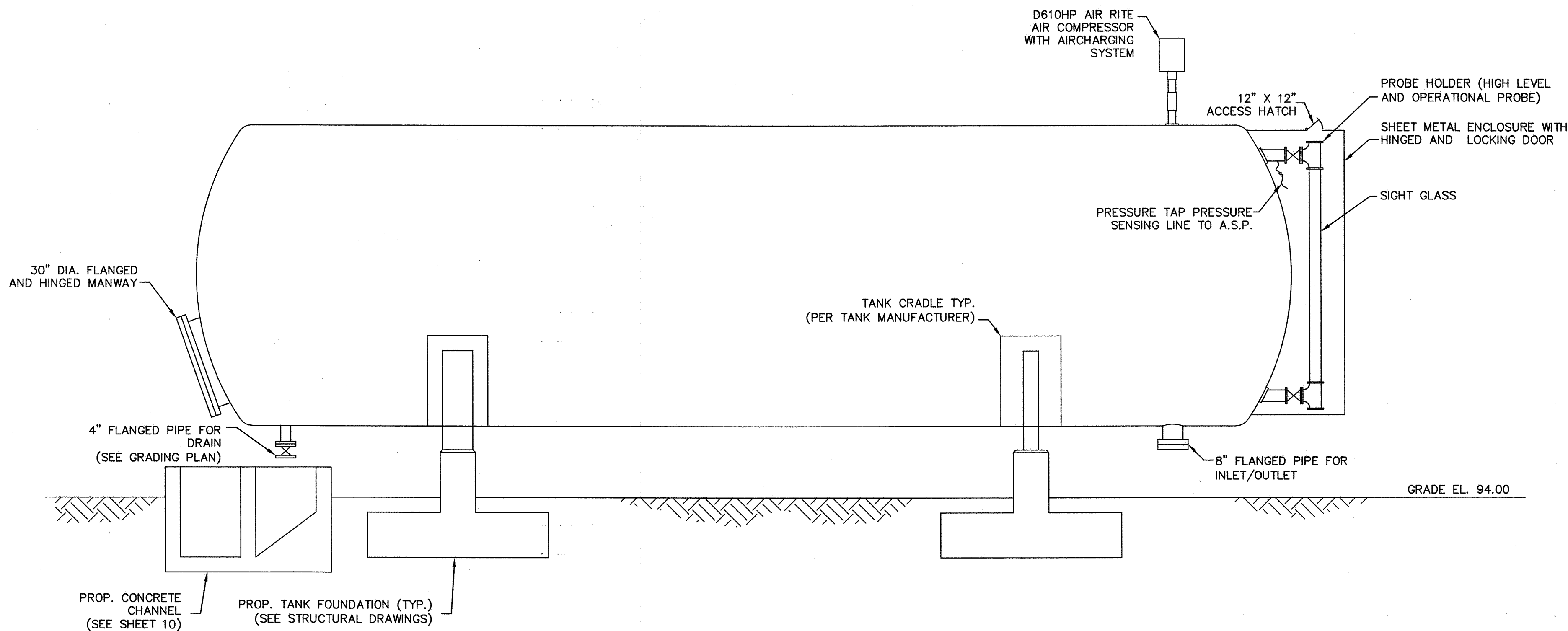
P:\Active\F003\1445\Design Phase\CAD_Sheet_Files\HYDROPNEUMATIC TANK.DWG ~ 10/23/2017 4:29:05 PM ~ Jose Sanchez



HYDROPNEUMATIC TANK NO. 1 & NO. 2 PLAN VIEW
SCALE: 3/8" = 1'-0"



HYDROPNEUMATIC TANK NO. 1 & NO. 2 SIDE VIEW
SCALE: 3/8" = 1'-0"



HYDROPNEUMATIC TANK NO. 1 & NO. 2 ELEVATION
SCALE: 3/8" = 1'-0"

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

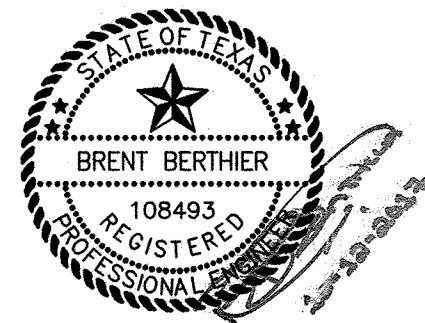
- FURNISH AND INSTALL TWO (2) 20,000 GALLON HYDROPNEUMATIC TANKS BY BULLDOG STEEL PRODUCTS, INC OR APPROVED EQUAL. TANKS SHALL BE ASME STAMPED AND APPROVED.
- FURNISH AND INSTALL FOUR (4) D610HP AIR RITE AIR COMPRESSOR WITH AIRCHARGING SYSTEM FOR HYDROPNEUMATIC TANKS BY WHITEWATER OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS FOR REQUIRED PRESSURE.
- ALL CONSTRUCTION SHALL BE DONE IN STRICT ACCORDANCE WITH THE AWWA SPECIFICATIONS AND SHALL MEET OR EXCEED ALL CRITERIA OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AND ANY OTHER GOVERNMENTAL AGENCY THAT MAY HAVE JURISDICTION OVER THIS PROJECT.
- PAINT TANK IN ACCORDANCE WITH AWWA D102 AND TCEQ REGULATIONS.
- FURNISH AND SUPPLY 2" ASME RATED #75 AIR RELIEF VALVE ON AIR SUPPLY LINE.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Mary D. [Signature]*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

**HYDROPNEUMATIC TANK
PLAN AND SECTIONS**

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

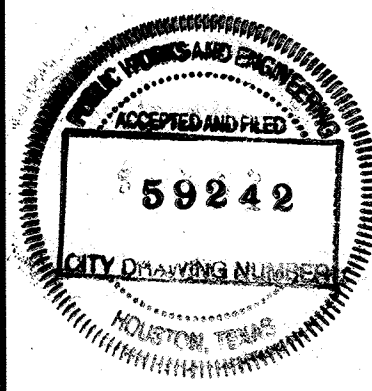
DRAWN BY:
JCR

DRAWING SCALE:
3/8" = 1'-0"

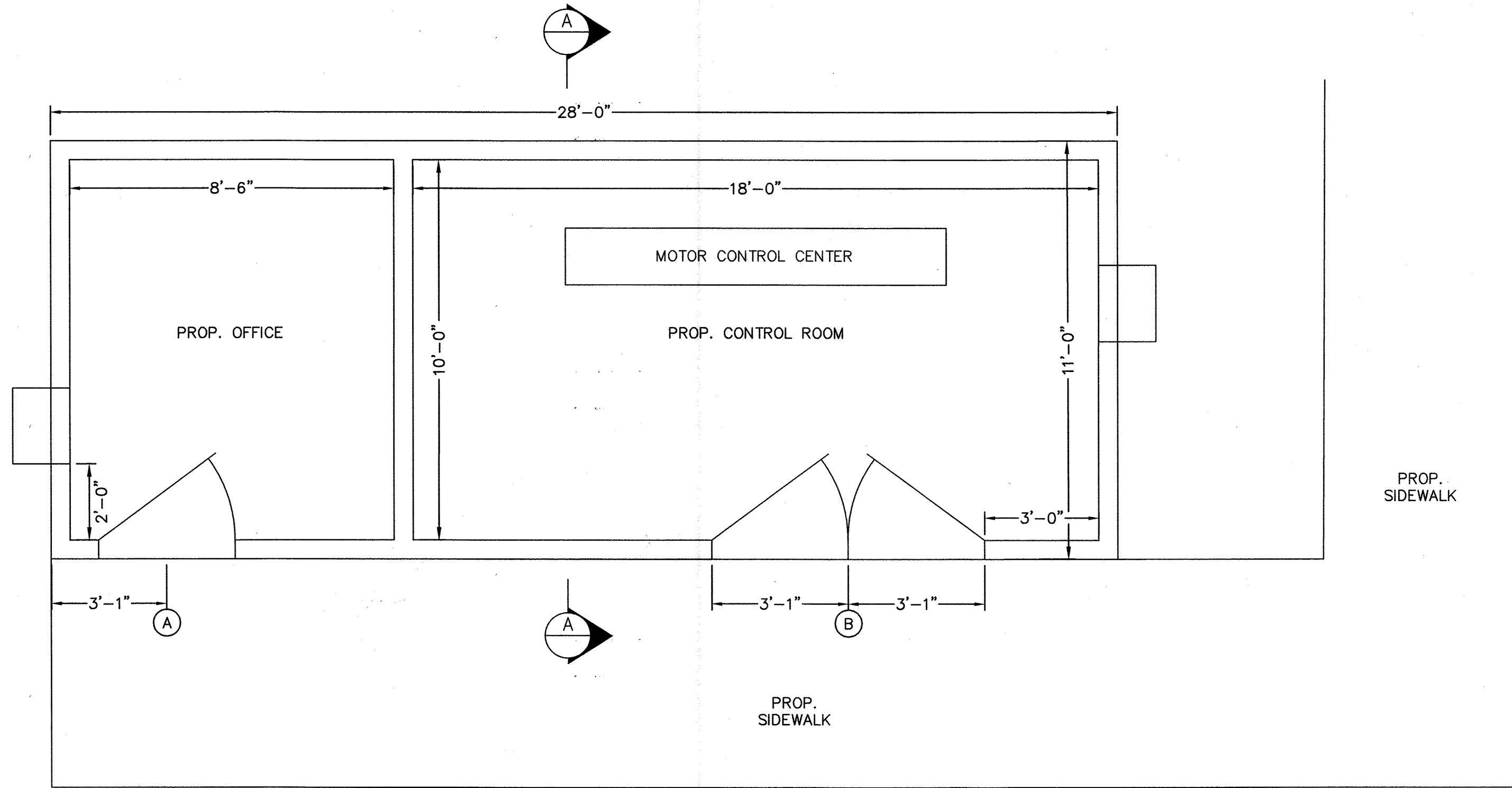
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SHEET NO.:
25 OF 40

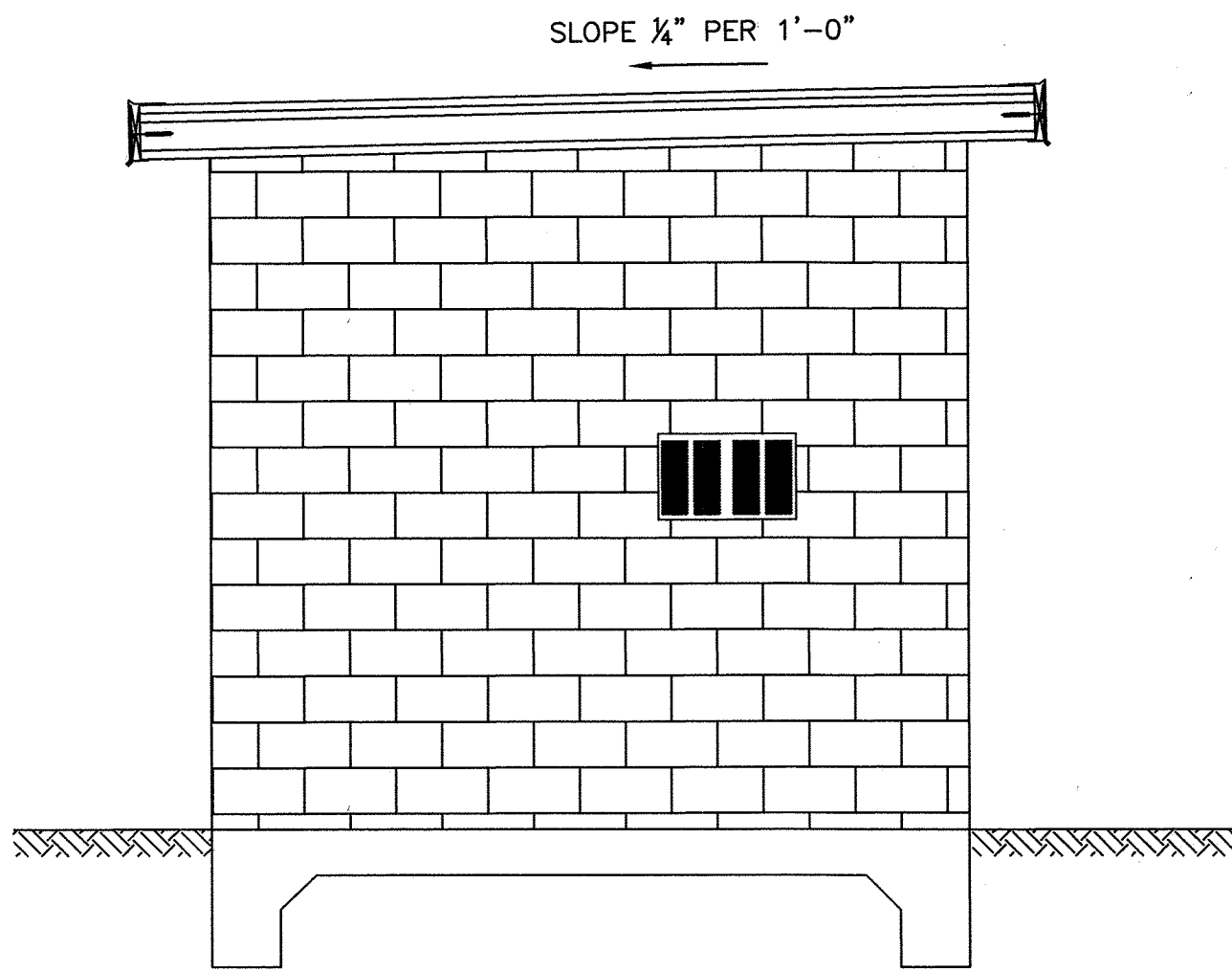
FOR CITY OF HOUSTON USE ONLY



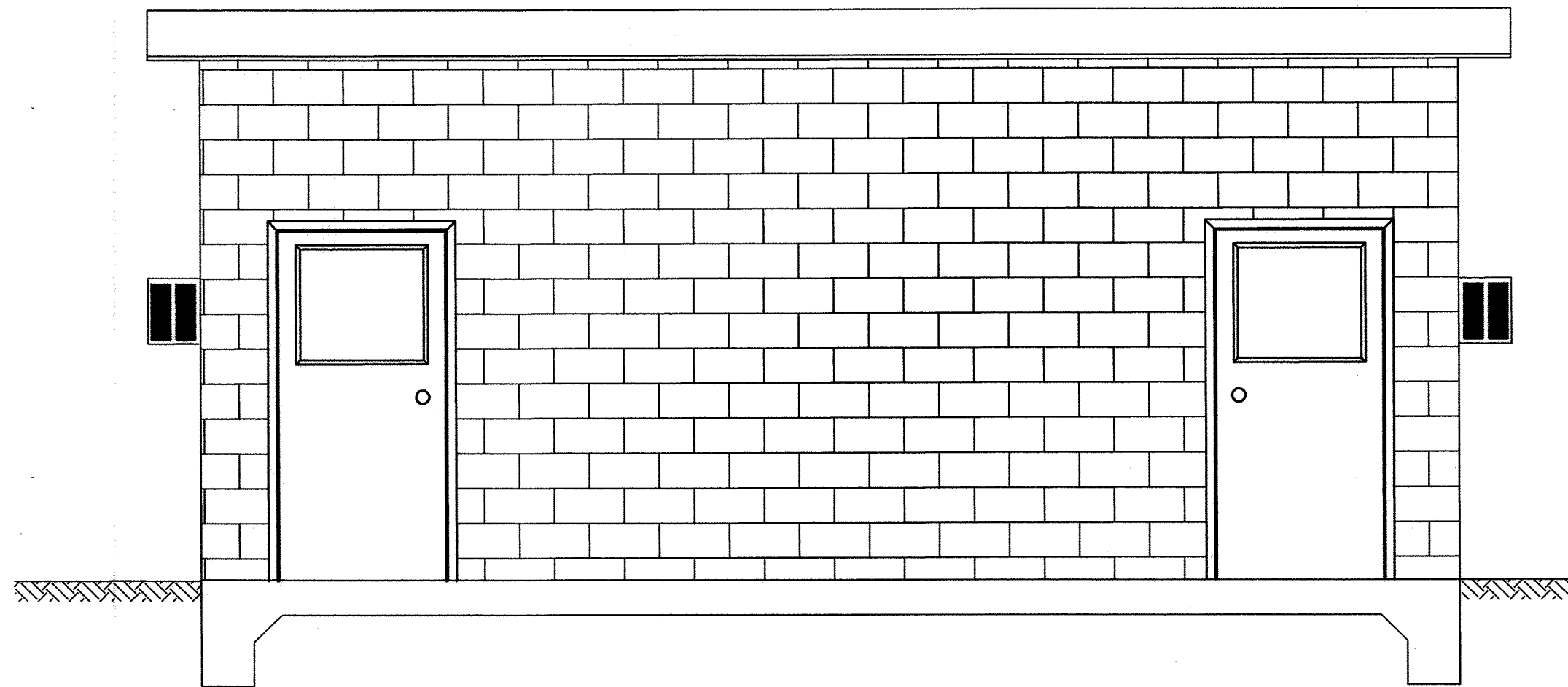
P: \\Active\\F003\\1445\\Design Phase\\CAD_Sheet_Files\\OFFICE MCC BUILDING PLAN & SECTION.dwg ~ 9/11/2017 3:48:13 PM ~ Cesar Resendez



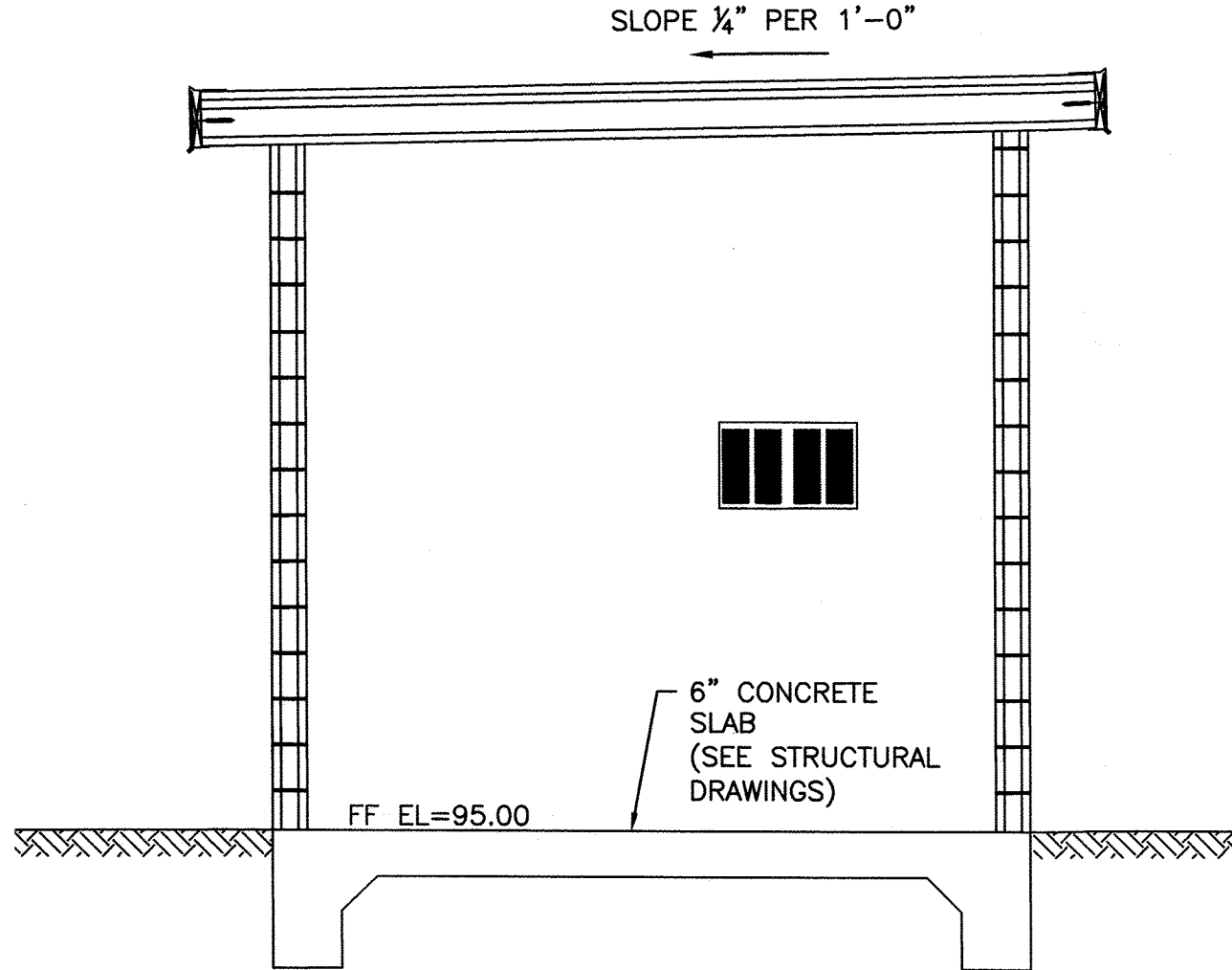
OFFICE/MCC BUILDING PLAN
SCALE: 3/8" = 1'



OFFICE/MCC BUILDING SIDE ELEVATION
SCALE: 3/8" = 1'



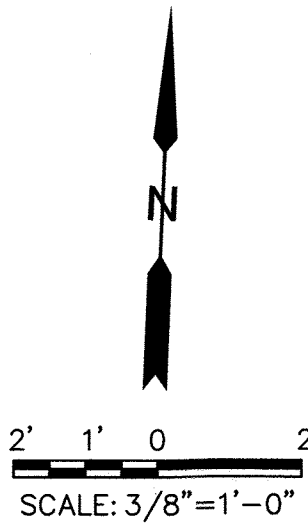
OFFICE/MCC BUILDING FRONT ELEVATION
SCALE: 3/8" = 1'



OFFICE/MCC BUILDING SECTION A-A
SCALE: 3/8" = 1'

DOOR SCHEDULE		
MARK	SIZE	DESCRIPTION
A	3'x7'x1-3/4"	H.D. 16 GA. STEEL DOOR; 5 3/4" FRAME; THRESHOLD WITH WEATHER STRIPPING; GALVANEALD AND PAINTED; CLOSURE HARDWARE W/ STOP; H.D. MOUNTING HARDWARE; KEYED TO DISTRICT STANDARDS.
B	3'x6'x8-3/4"	DOUBLE H.D. DOOR AND STANDARD H.M. FRAME, THRESHOLD AND WEATHER STRIP; PAINTED; CLOSURE HARDWARE W/ STOP; H.D. MOUNTING HARDWARE; RIGHT DOOR HAVE TO LOCKING HARDWARE T&B; KEYED TO DISTRICT STANDARDS

A/C-H: WHITE-WESTINGHOUSE THROUGH-THE-WALL AIR CONDITIONER / HEATER (10,600 BTU) <WAHIEP2T>
W/ T-T-W SLEEVE; WALL MOUNT SUPPORT BRACKETS



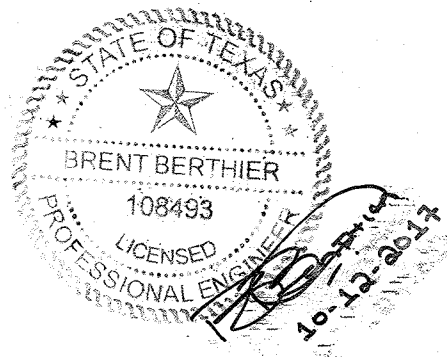
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CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES
1. SEE STRUCTURAL DRAWINGS FOR OTHER DETAILS NOT SHOWN.

REVISIONS			
NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED:
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

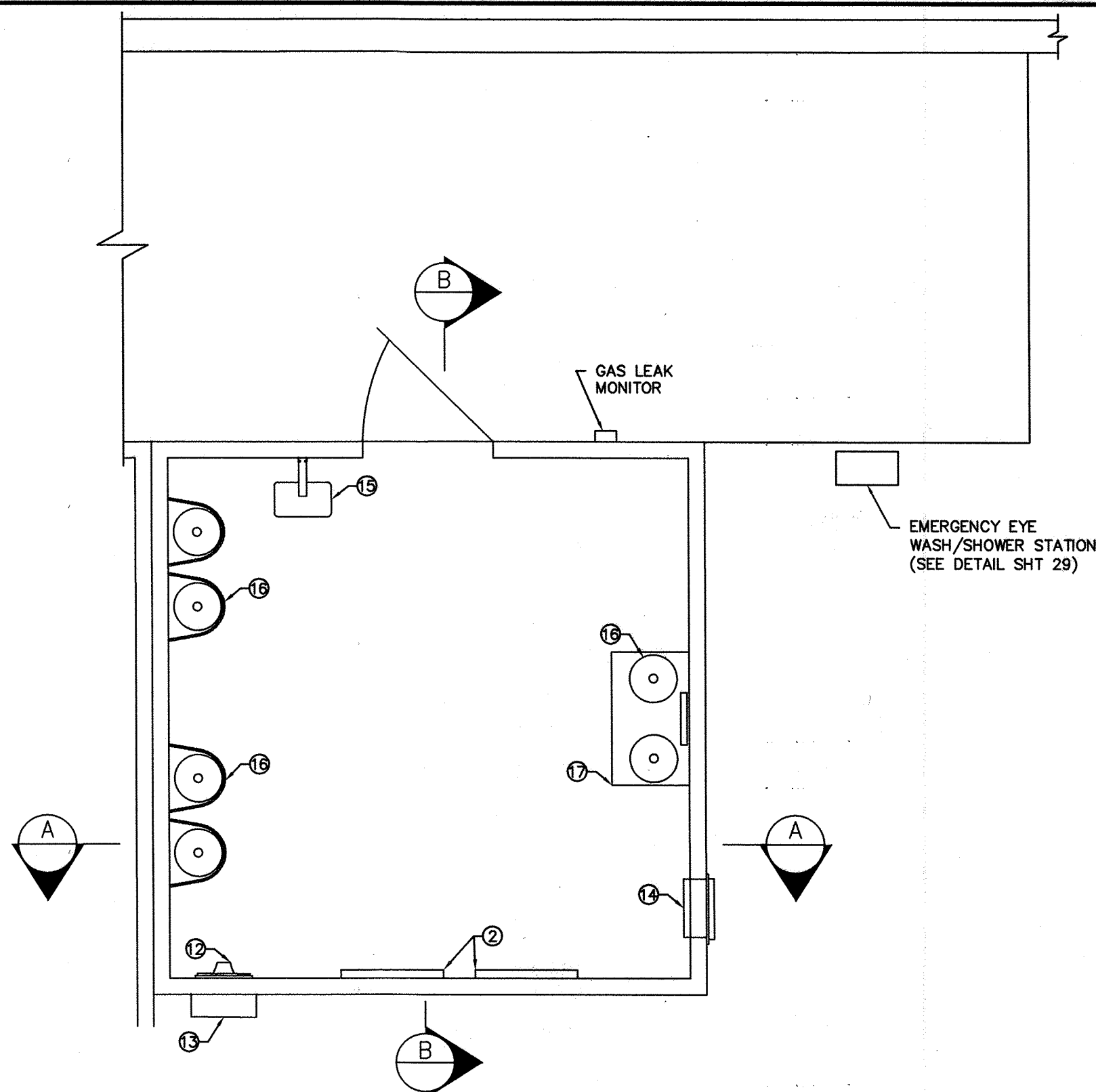
FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

OFFICE & MCC BUILDING
PLAN, ELEVATIONS &
SECTIONS

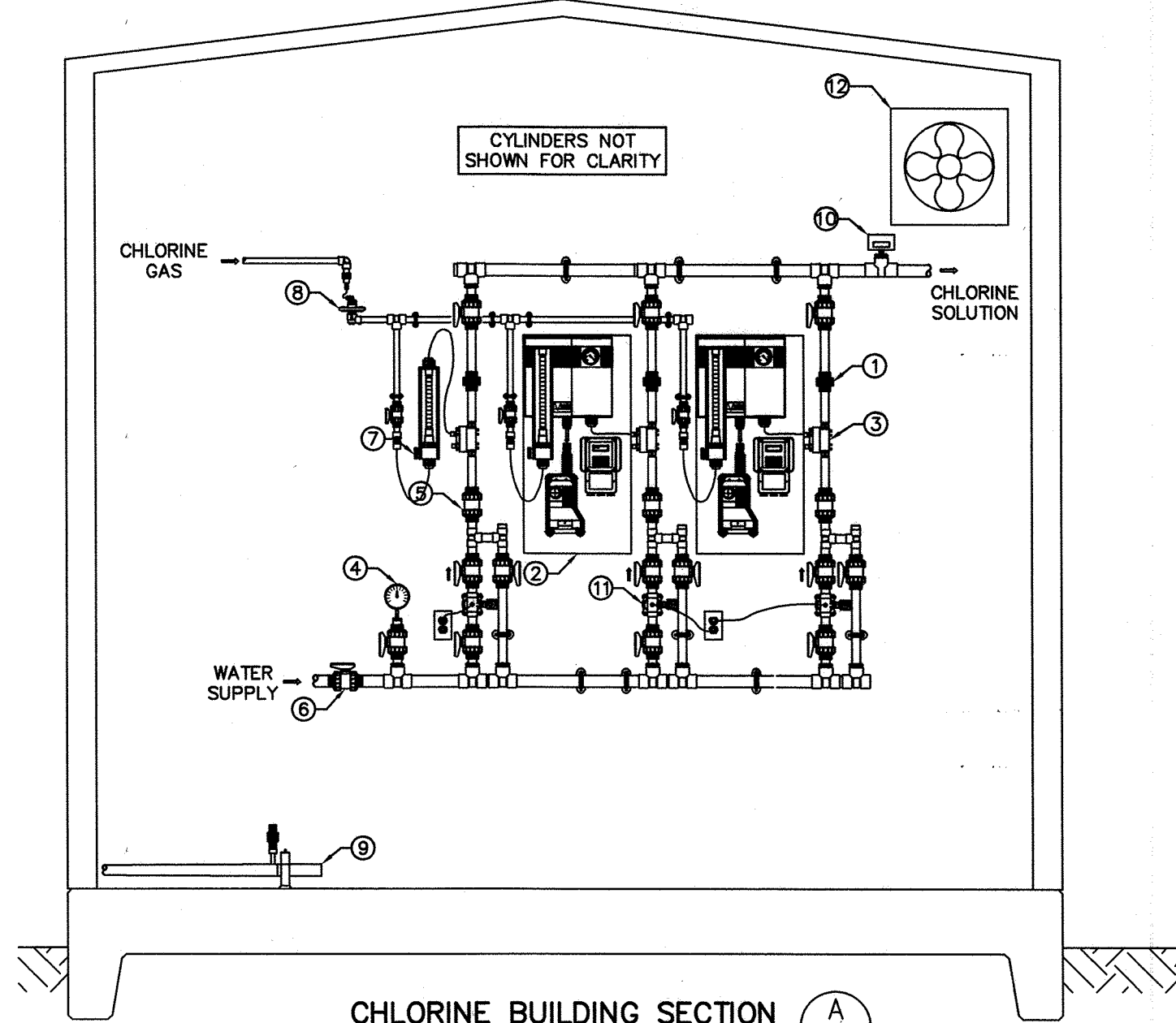
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

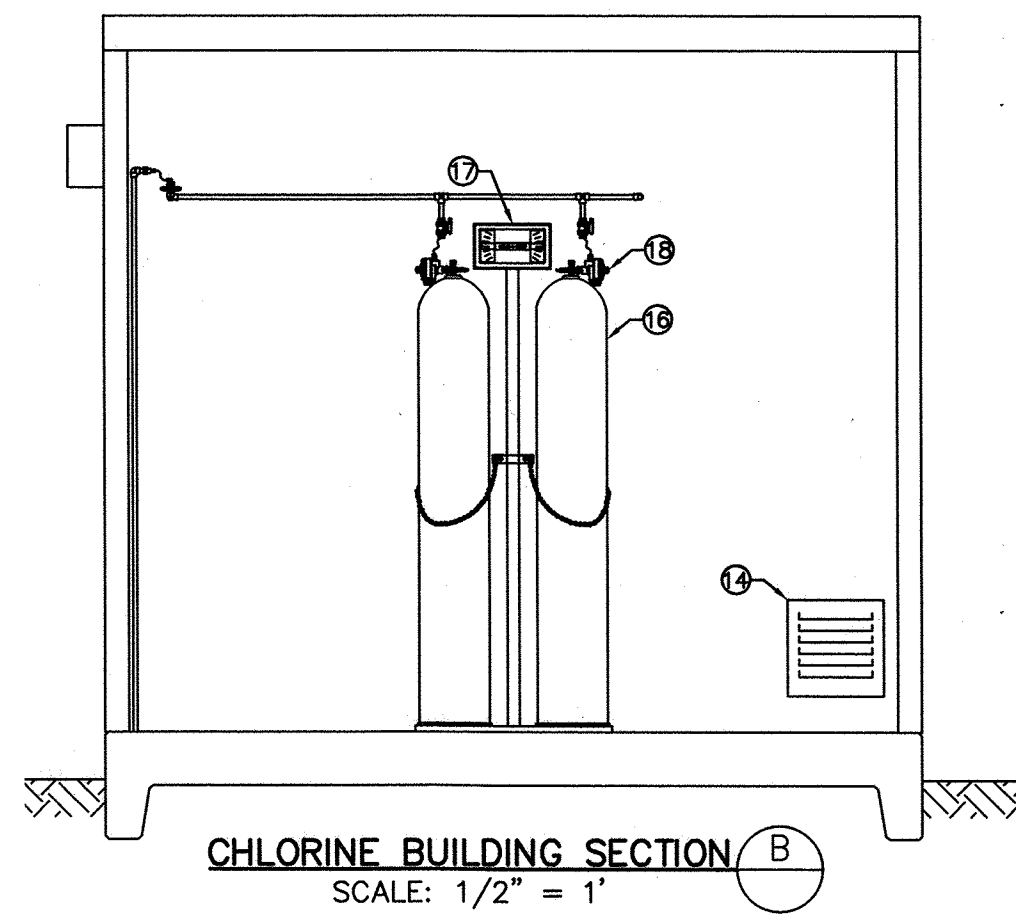
JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY 59242
DRAWN BY: JCR	
DRAWING SCALE: 3/8" = 1'-0"	
DRAWING NO. M004	
SHEET NO. 26 OF 40	



CHLORINE BUILDING PLAN
SCALE: 1/2" = 1'



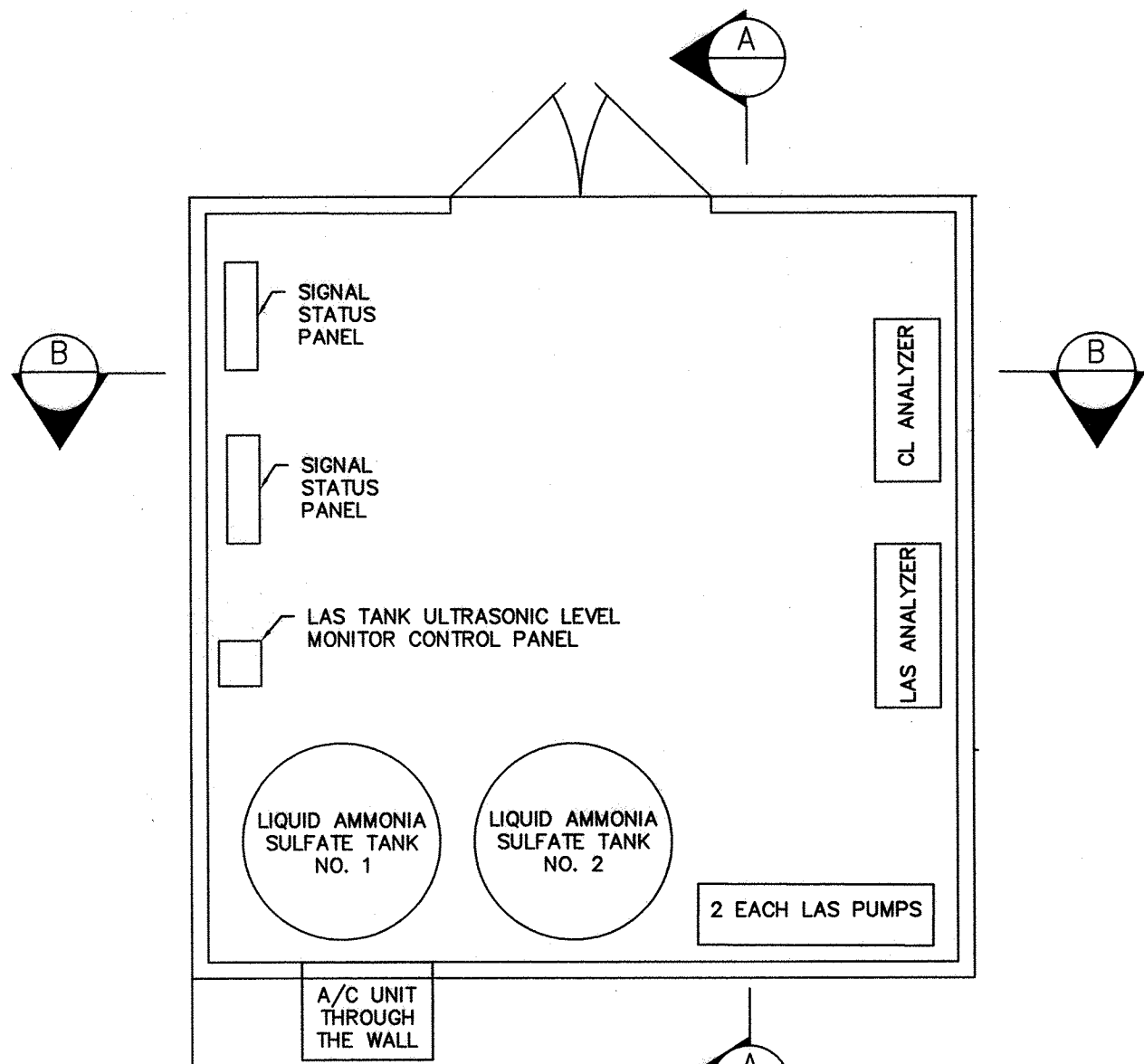
CHLORINE BUILDING SECTION
SCALE: 3/4" = 1'



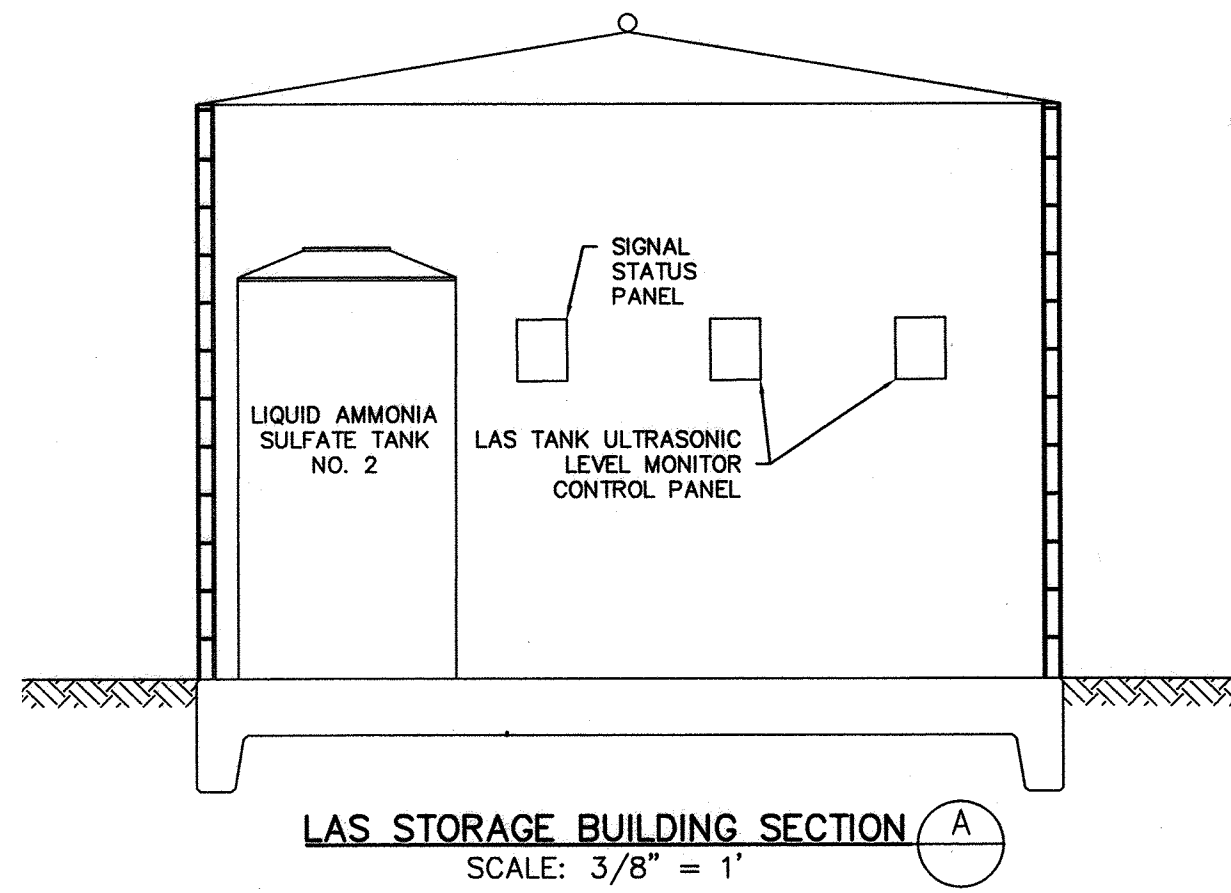
CHLORINE BUILDING SECTION
SCALE: 1/2" = 1'

PAINING SCHEDULE

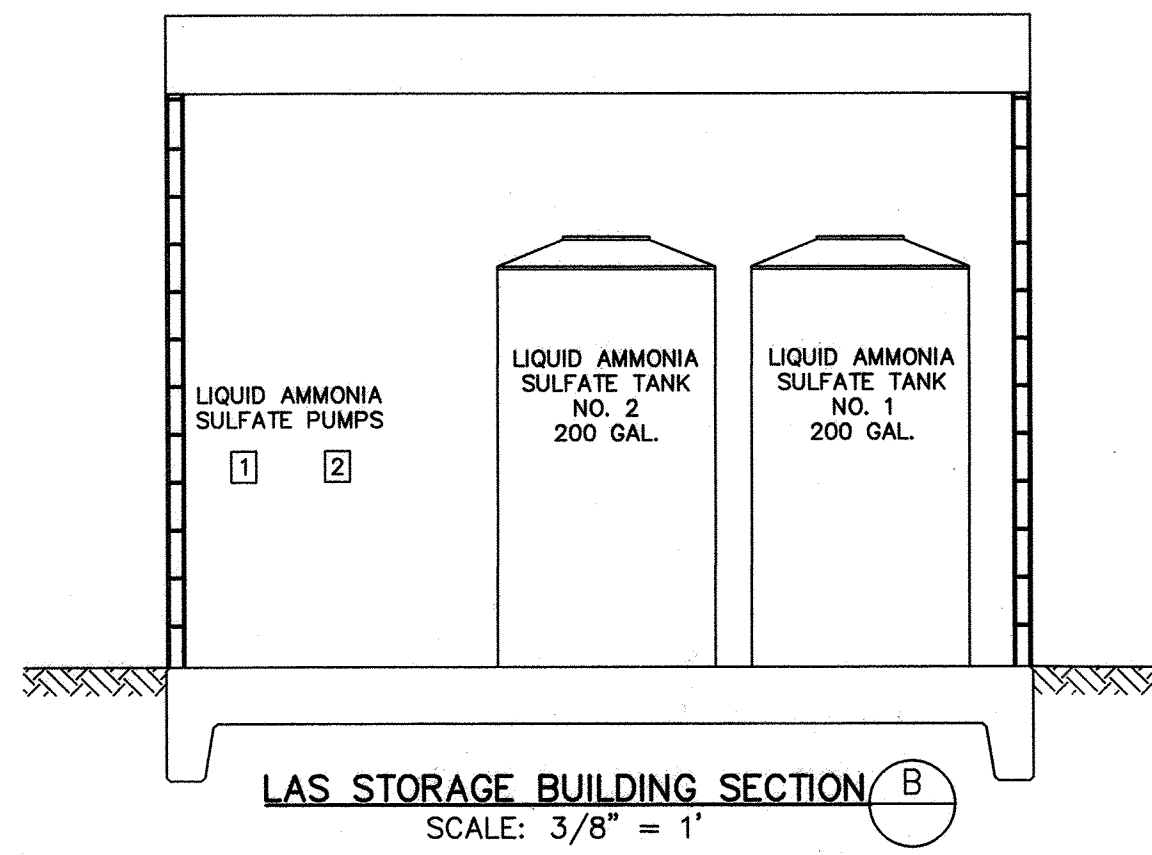
INTERIOR - PRIME BLOCK/CONCRETE WITH 2 COATS
WHITE INDUSTRIAL ENAMEL
EXTERIOR - PRIME WITH 2 COATS INDUSTRIAL
POLYURETHANE
COLOR TO MATCH EXISTING



LAS STORAGE BUILDING PLAN
SCALE: 3/8" = 1'



LAS STORAGE BUILDING SECTION
SCALE: 3/8" = 1'



LAS STORAGE BUILDING SECTION
SCALE: 3/8" = 1'

NOTES CONT'D

- THE CONSTRUCTION MATERIAL FOR ALL CHEMICAL TANKS MUST BE SUITABLE FOR THE INTENDED CHEMICAL TO BE STORED AND RESISTANT TO ULTRAVIOLET AND OTHER EXTERNAL ENVIRONMENTAL CONDITIONS.
- THE TANK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARD.
- FURNISH AND INSTALL AN INNER AND OUTER TANK LEVEL INDICATOR. THE TANK WALL PENETRATIONS FOR THIS INDICATOR SHALL BE LOCATED AT THE TOP OF THE TANK ONLY.
- ALL ACCESS OPENINGS INTO THE INNER TANK SHALL BE THROUGH A DOMED ROOF.
- ACCESS CONNECTIONS FOR THE INSTALLATION OF ADEQUATE AND PROPER VENTING MUST BE CONSTRUCTED IN THE DOMED TOP OF THE INNER TANK. THE OPENING OF THE VENT SHALL BE COMPLETED SEAL AND COVERED WITH CORROSIVE RESISTANT SCREENING.
- THE CHEMICAL TRANSFER PUMPS MUST BE DESIGNED FOR THE CHEMICAL TO BE STORED AND TAKE SUCTION THROUGH A HOLE IN THE DOMED TOP OF THE INNER TANK. PROVIDE AN ANTI-SIPHON DEVICE ON THE PUMP SUCTION TO PREVENT SIPHONING WHEN THE PUMP IS NOT OPERATING. TANK ASSMAN IMT 165 2 EACH AT EACH PLANT OR EQUAL.
- THE OUTER CONTAINMENT TANK SHALL HAVE ONLY ONE APPURTENANCE FOR THE INSTALLATION OF A CHEMICAL RESISTANT DRAIN VALVE. THE APPURTENANCE SHALL BE LOCATED AS CLOSE TO THE (BOTTOM OF THE VERTICAL WALLS) AS FEASIBLE WITHOUT COMPROMISING THE INTEGRITY OF THE OUTER CONTAINMENT TANK.
- CONTRACTOR TO COMPLETE THE INSTALLATION AND TESTING OF ALL EQUIPMENT
- CONTRACTOR TO PROVIDE ALL LABOR AND EQUIPMENT TO FLUSH AND DISINFECT ALL NEW PIPING ON THE PLANT SITE INCLUDING THE NFBWA PIPING AS REQUIRED.
- SUBMITTAL DATA APPROVAL REQUIRED FOR ALL EQUIPMENT AND MATERIAL INCORPORATED INTO THE PROJECT.
- CONTRACTOR TO COORDINATE WITH PROJECT ENGINEER AND FB MUD 30 ENGINEER FOR ALL INTERFACE AND COORDINATION ISSUES.
- NO REAGENTS TO BE USED IN THE OPERATION OF THE CHLORINE OR AMMONIA ANALYZER.
- ANALYZER WATER DISCHARGE TO BE CONNECTED TO THE EXISTING ON-SITE STORM SEWER.

FITTING AND VALVE SCHEDULE (CHLORINE BLDG.)	
No.	DESCRIPTION
1	SCH 80 PVC QUICK DISCONNECT UNION (TYP.)
2	500 PPD CHLORINATOR (TYP.)
3	1" PVC VACUUM INJECTOR WITH DOUBLE CHECK VALVE (TYP.)
4	PRESSURE GAUGE (TYP.)
5	DOUBLE UNION PVC BLL CHECK VALVE WITH VITON O-RINGS
6	DOUBLE UNION PVC BALL VALVE WITH PTFE SEATS & VITON O-RINGS (TYP)
7	100 PPD 6" CHLORINE GAS ROTAMETER
8	PRESSURE RELIEF VALVE
9	BOOSTER PUMP (BERKELEY MODEL mgp20E3, USA BLUEBOOK ITEM NO. 45861 OR APPROVED EQUAL)
10	5-50 GPM PADDLE WHEEL FLOWMETER (McMASTER-CARR MODEL NO. 3562K14)
11	POSITIVE ZERO SOLENOID VALVE (TYP.)
12	EXHAUST FAN - 10" 585 CFM - DAYTON #1HLA1 W/GRAVITY SHUTTER
13	EXHAUST FAN CANOPY - PVC W/INSECT SCREEN
14	LOUVRE - 12" x 12" PVC FIXED OPEN W/SCREEN & FRP GRAVITY SHUTTER
15	HEATER - DAYTON #3VU33 - 1300/1500 WATTS W/THERMOSTAT
16	150LB CHLORINE CYLINDER (TYP.)
17	CYLINDER SCALE
18	VACUUM REGULATORS

A/C-H: WHITE-WESTINGHOUSE; THROUGH-THE-WALL AIR
CONDITIONER / HEATER (10,600 BTU) <WAHIEP2T>
W/ T-T-W SLEEVE; WALL MOUNT SUPPORT BRACKETS

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END
OF SOUTH HEADWALL, APPROX. 0.45 MILE WESR OF MILEPOST
NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093
(FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF
HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES.
ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

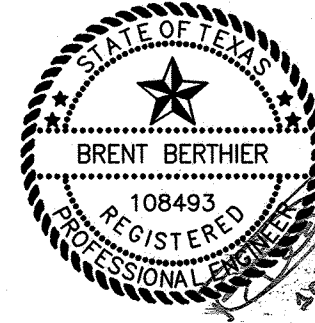
- SEE STRUCTURAL DRAWINGS FOR OTHER DETAILS NOT SHOWN.
- ALL PIPING PENETRATIONS THROUGH WALLS OF CHEMICAL
FEED ROOMS SHALL BE GAS-TIGHT.
- FURNISH AND INSTALL BAILEY FISHER PORTER MICRO-MITE
SINGLE LOOP CONTROLLER (MICRO-DCI 53SL6000) OR
APPROVED EQUAL. PROVIDE 120-VOLT POWER AND DEVICES
TO LOOP FLOW SIGNAL TO CONTROLLER.
- PROVIDE STAINLESS STEEL UNISTRUT PIPE CLAMP SUPPORTS
FOR PIPING
- DISINFECT ALL POTABLE WATER LINES PER COH STANDARD
SPECIFICATION 02514.
- FURNISH AND INSTALL THREE (3) LIQUID AMMONIA SULFATE
(LAS) FEED PUMPS, MAXIMUM CAPACITY 25 GALLONS PER
DAY.
- FURNISH CALIBRATION CYLINDERS FOR THE CALIBRATION OF
THE ANALYZER AND LAS FEED PUMPS
- FURNISH AND INSTALL 1/4 INCH DIA. POTABLE WATER SUPPLY
WITH RPZ BACKFLOW PREVENTER AND AIR GAP TO LAS
CHEMICAL STORAGE TANK
- FURNISH AND INSTALL TWO (2) 200 GALLON CHEMICAL
STORAGE TANK, DOUBLE WALL SECONDARY CONTAINMENT,
VENTED TO EXTERIOR OR APPROVED TANK CAPABLE OF
15-DAY CHEMICAL STORAGE CAPACITY.
- ALL LAS HANDLING EQUIPMENT AND PIPING TO BE ANSI/NSF
60 CERTIFIED.
- ALL LAS USED AT THE PLANT TO BE ANSI/NSF 60 CERTIFIED.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Maggie D.*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



**JACOSTANZA
& ASSOCIATES**
ENGINEERING, INC.

T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST., DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

DISINFECTION STORAGE &
FEED BUILDINGS, PLAN &
SECTIONS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	10/26/17	TRAFFIC & TRANSPORTATION
WASTEWATER	10/26/17	STORM WATER QUALITY
STORM	10/26/17	FACILITIES
STREET & BRIDGE	10/26/17	

JAC JOB No.:
F003-1445

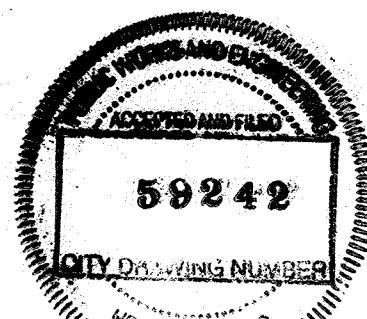
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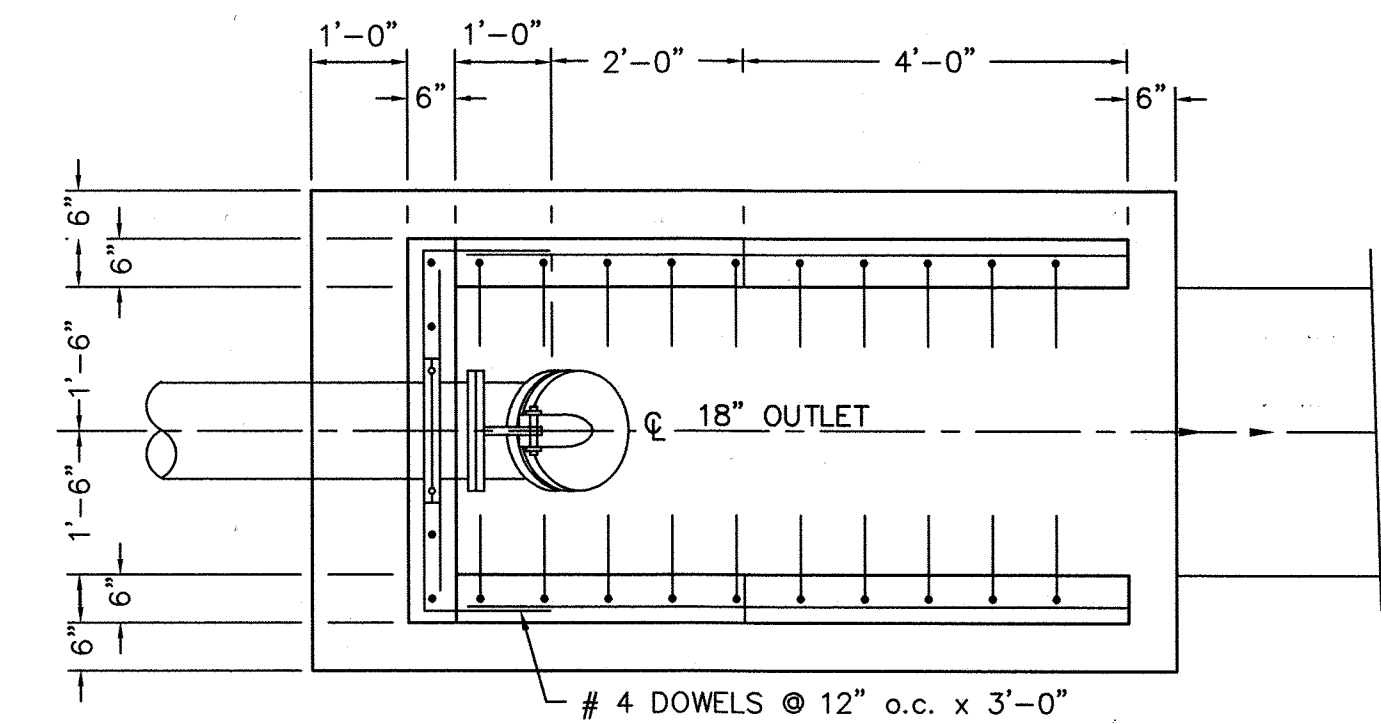
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AS SHOWN

DRAWING NO.
M005

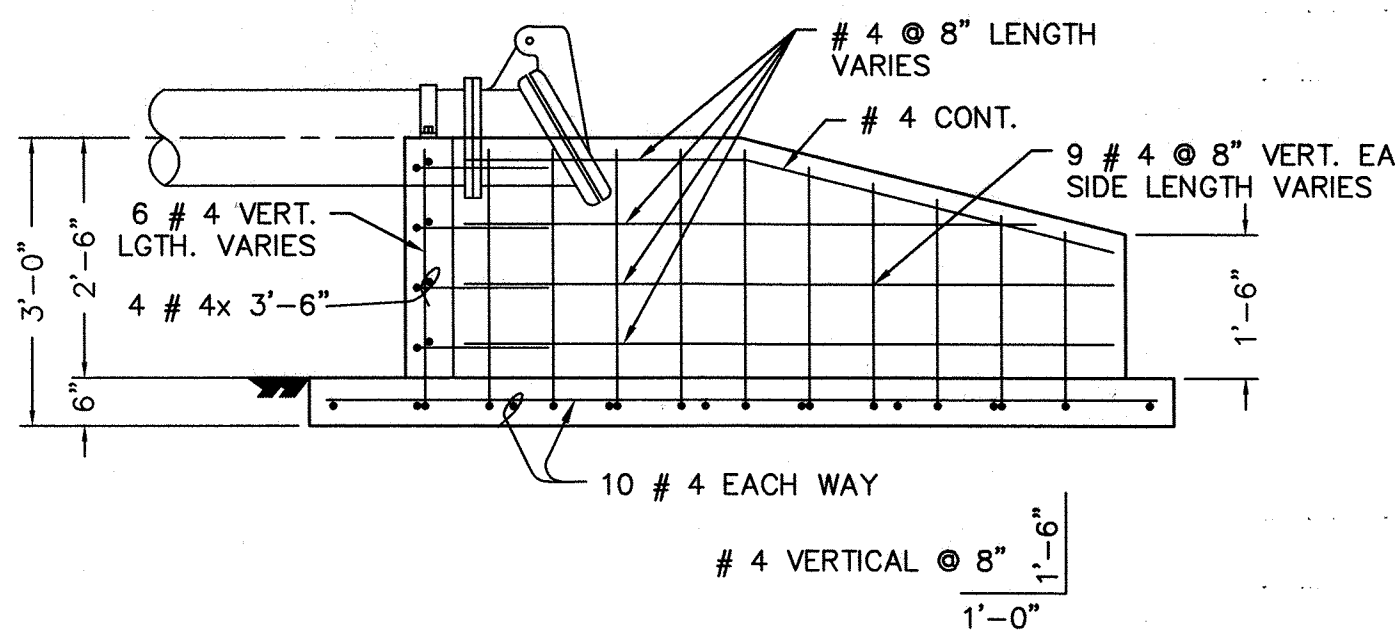
SHEET NO.
27 OF 40

FOR CITY OF HOUSTON USE ONLY



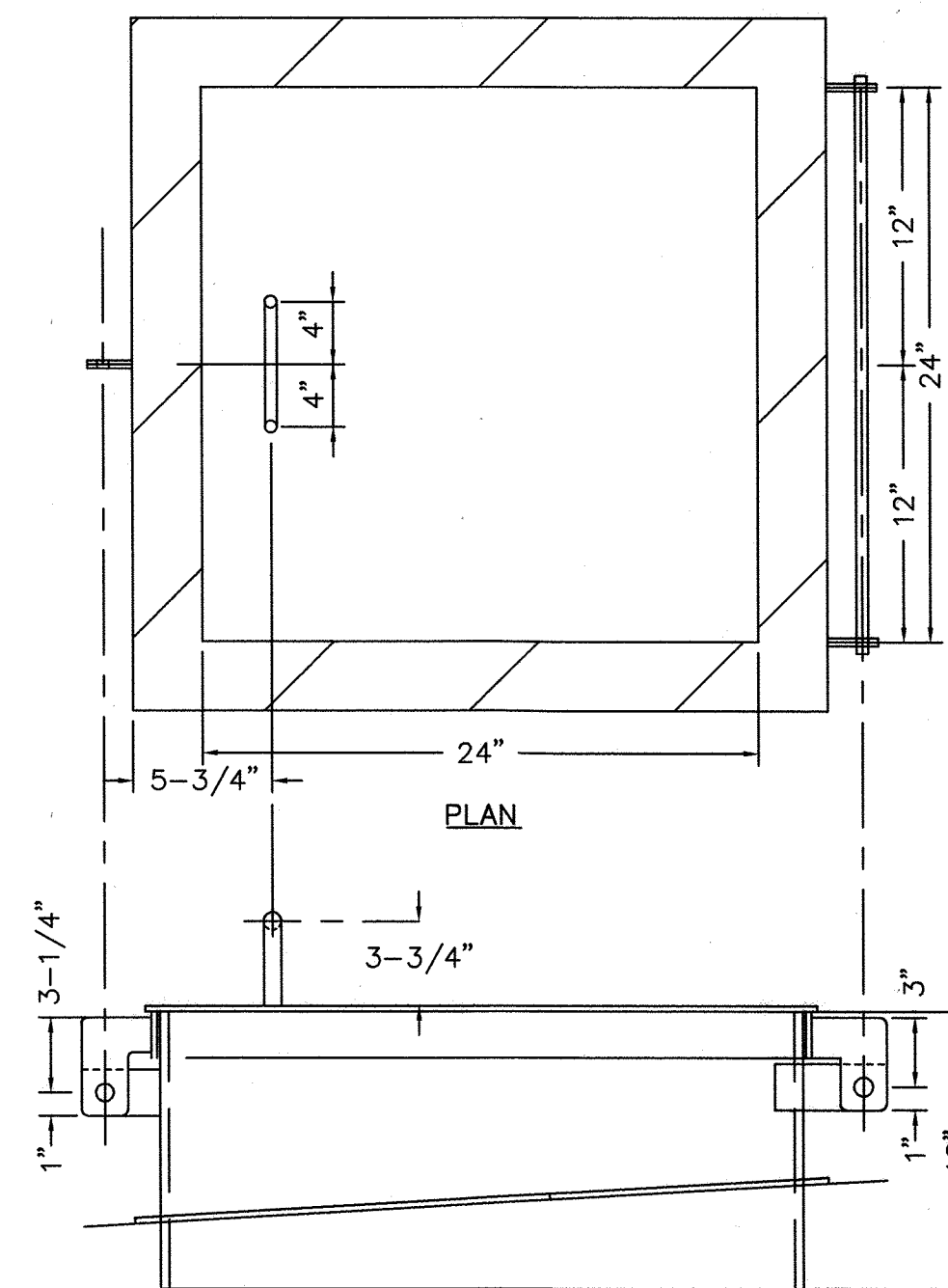


PLAN

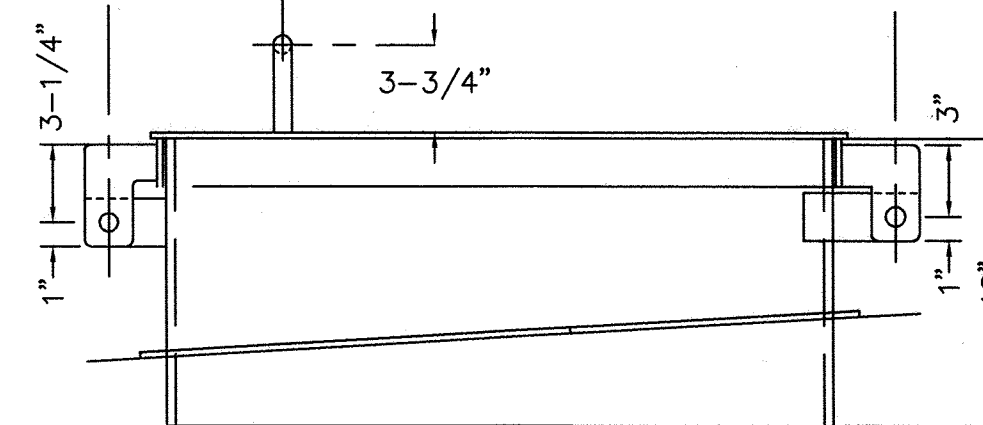


ELEVATION

CONCRETE SPLASH PAD
SCALE: 1/2" = 1'-0"

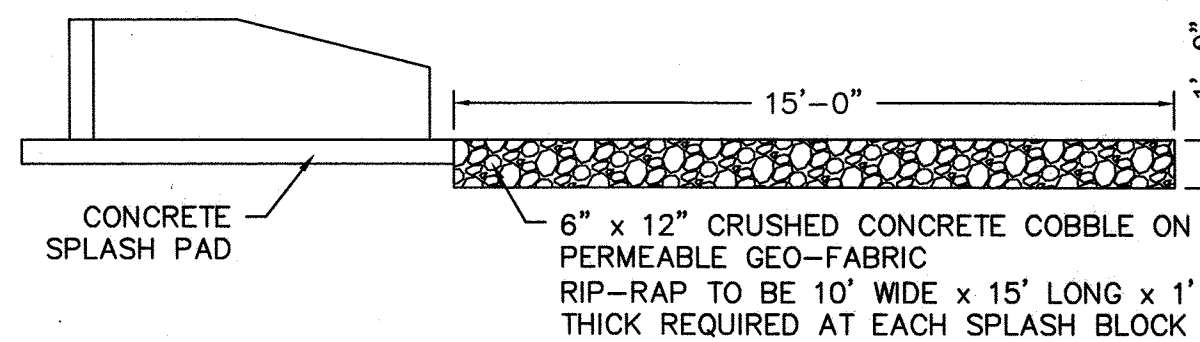


PLAN

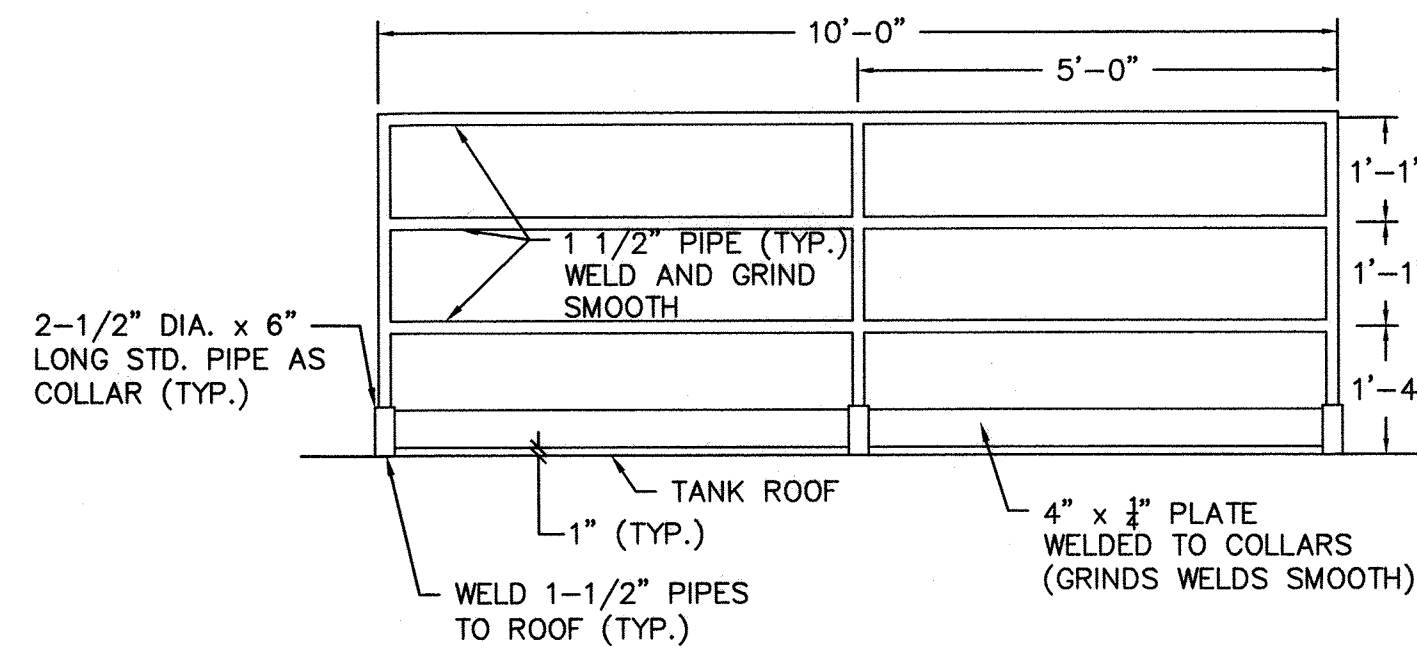


ELEVATION

ROOF ACCESS HATCH
SCALE: 1-1/2" = 1'-0"



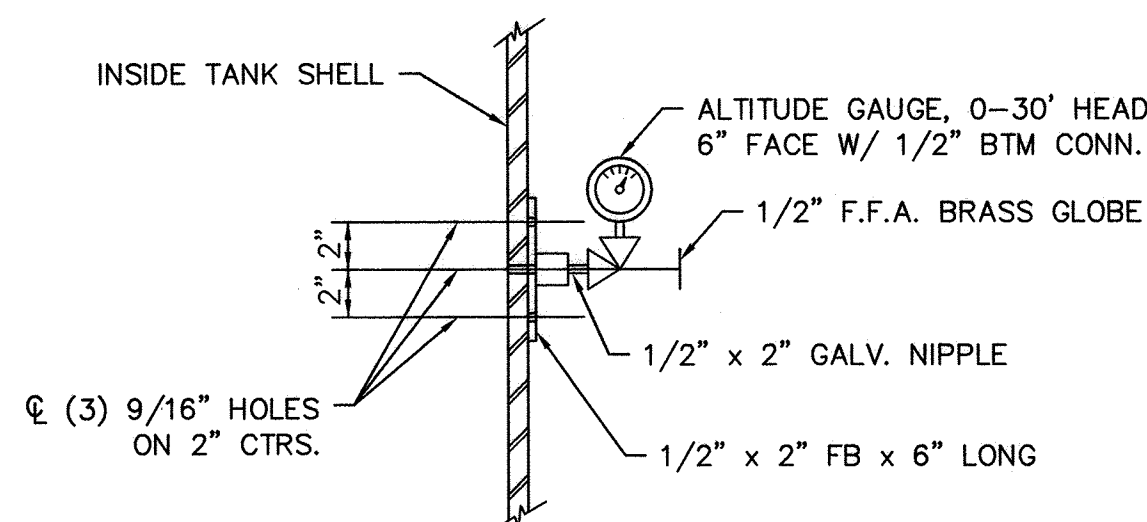
SPLASH PAD RIP-RAP
SCALE: 1/4" = 1'-0"



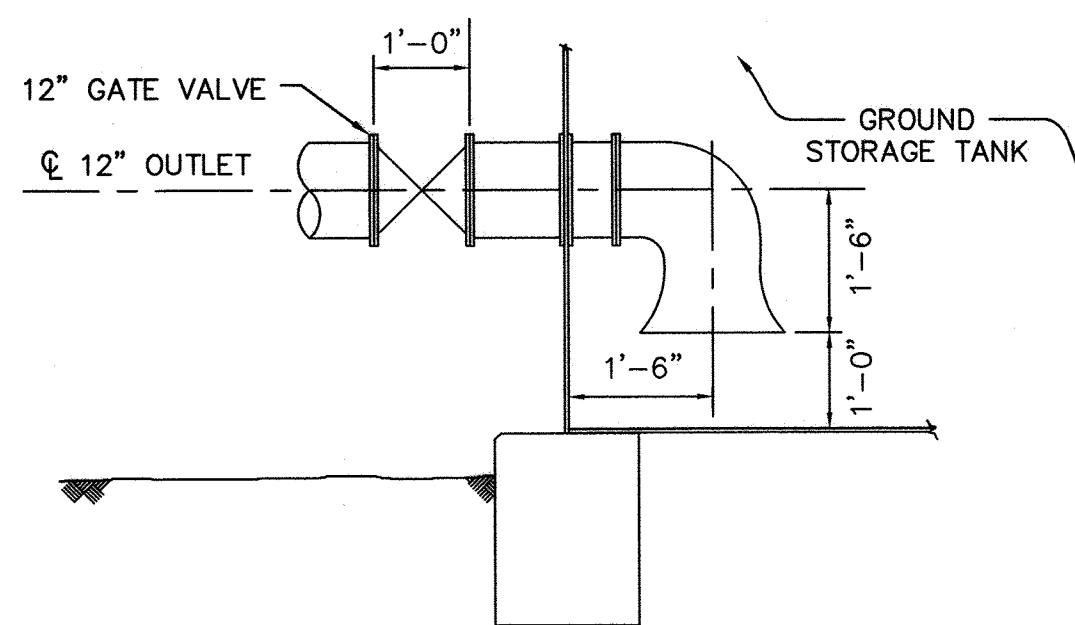
NOTES:

1. PROVIDE 6"x6"x1/4" GUSSET PLATE INSIDE TANK TO STIFFEN ROOF PLATES WHERE POSTS ARE WELDED TO ROOF.
2. HANDRAIL TO BE ROLLED TO CURVATURE OF TANK AND SET 1-3/4" BACK FROM EDGE.

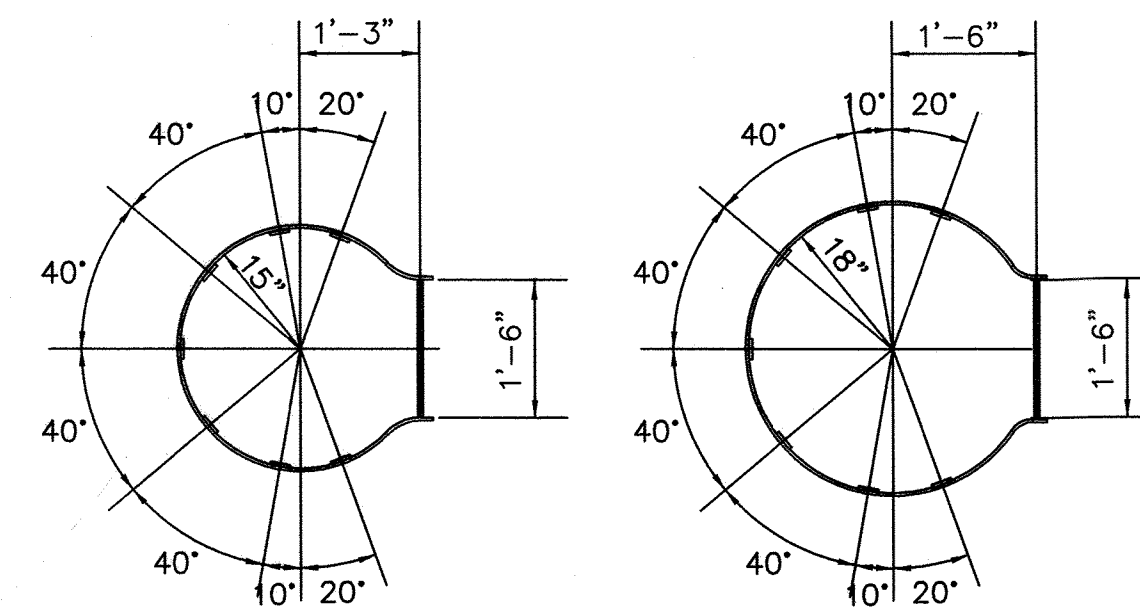
SAFETY GUARDRAIL DETAIL
SCALE: 1/2" = 1'-0"



ALTITUDE GAUGE ASSEMBLY
SCALE: 1 1/2" = 1'-0"

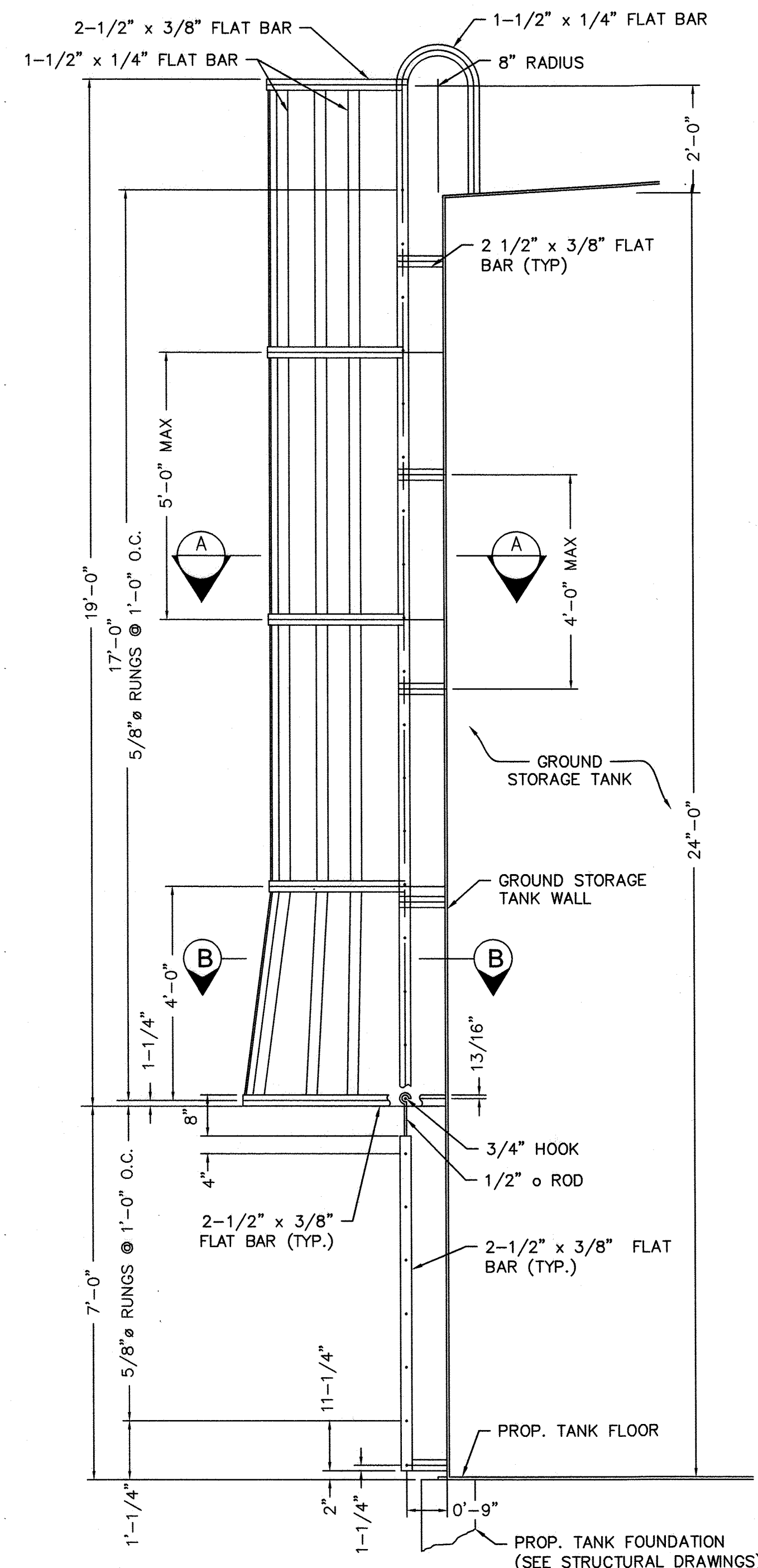


OUTLET CONNECTION
SCALE: 1/2" = 1'-0"



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

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



GROUND STORAGE TANK LADDER
SCALE: 1/2" = 1'-0"

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

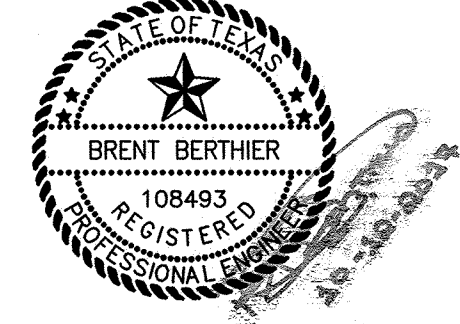
1. ALL DRAWINGS INCLUDING DETAILS AND DIMENSIONS ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY. LOCATION AND ELEVATIONS MAY VARY BY MANUFACTURER. SHOP DRAWINGS SHALL BE SUBMITTED FOR FINAL ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.
2. MANWAY SHOWN IS FOR INFORMATION PURPOSES ONLY. SHOP DRAWINGS SHALL BE SUBMITTED FOR ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Mari D.*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

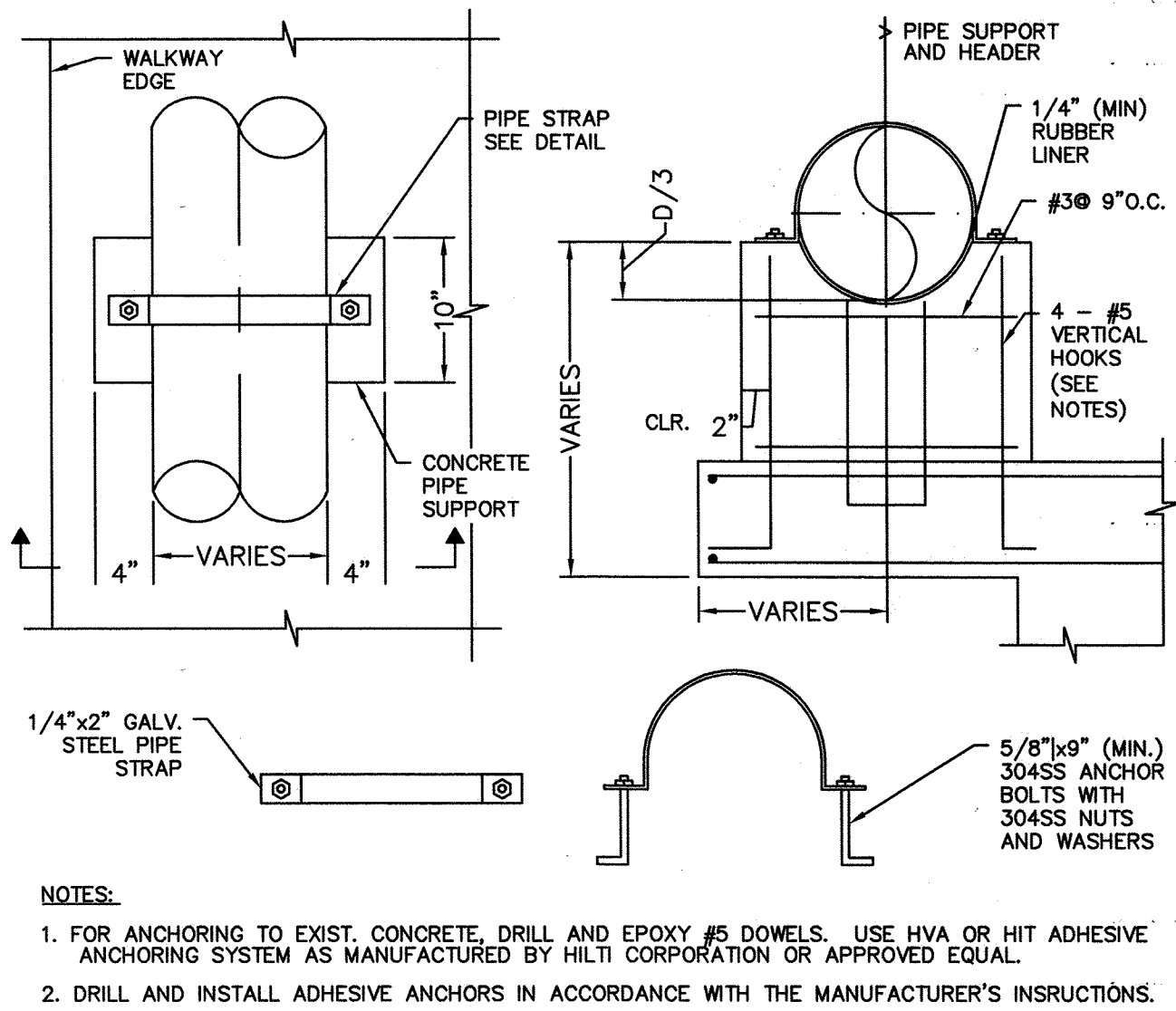
GROUND STORAGE TANK
DETAILS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

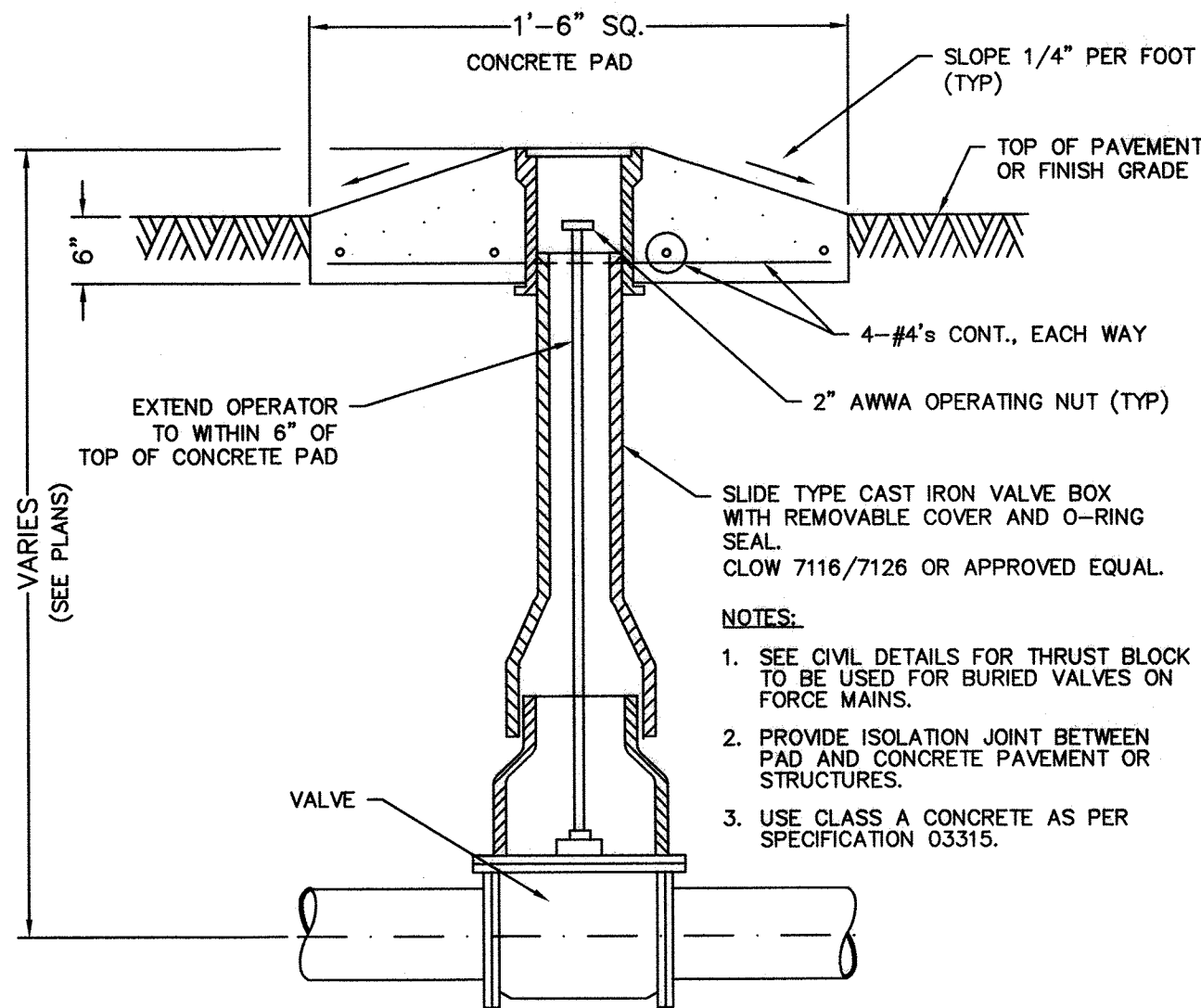
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY
DRAWN BY: JCR	
DRAWING SCALE: AS SHOWN	
DRAWING NO.: M006	
SHEET NO.: 28 OF 40	

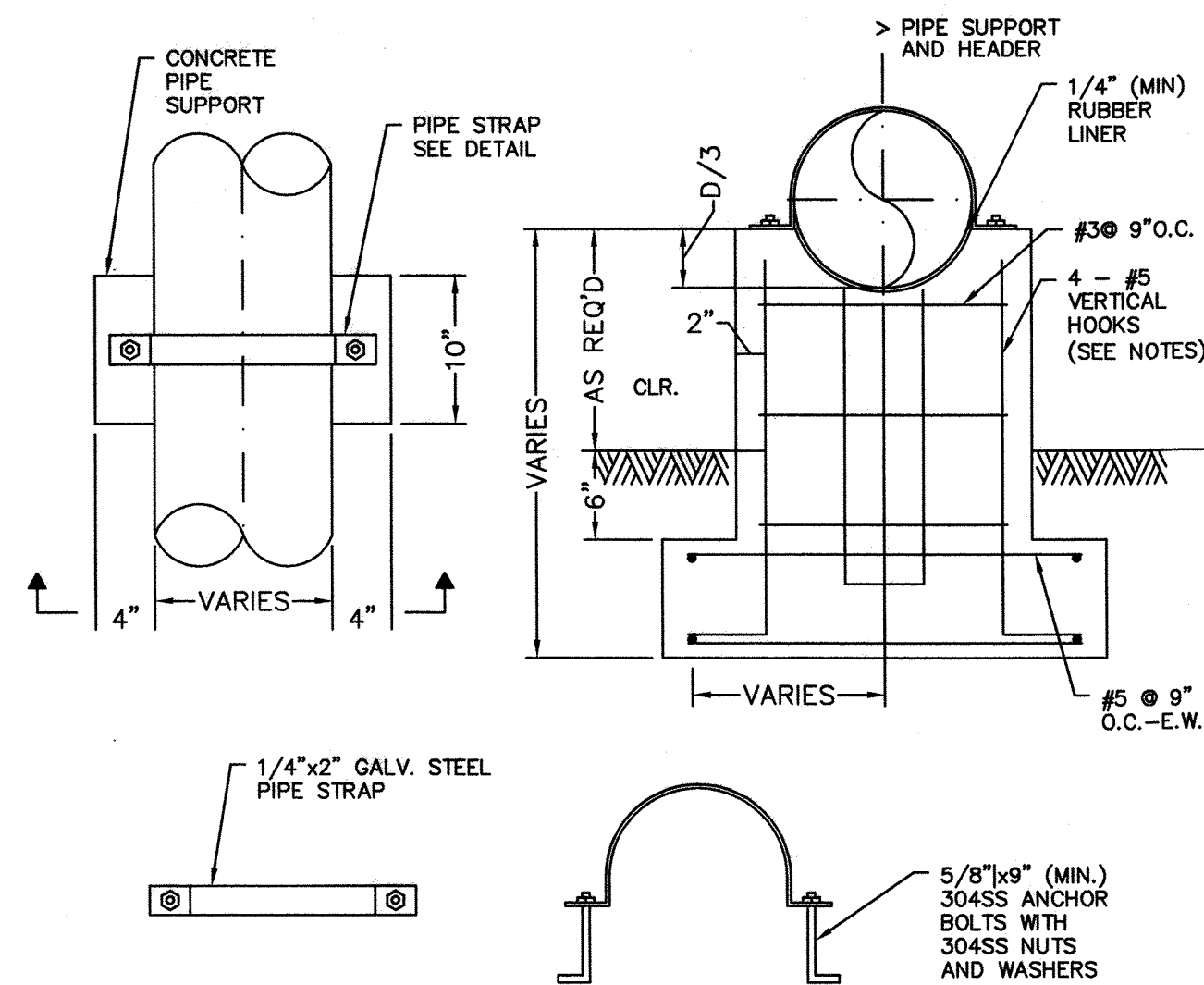
P: \\Active\\F003\\1445\\Design Phase\\CAD\\Sheet_Files\\MECHANICAL DETAILS.dwg ~ 10/23/2017 3:26:41 PM ~ Jose Sanchez



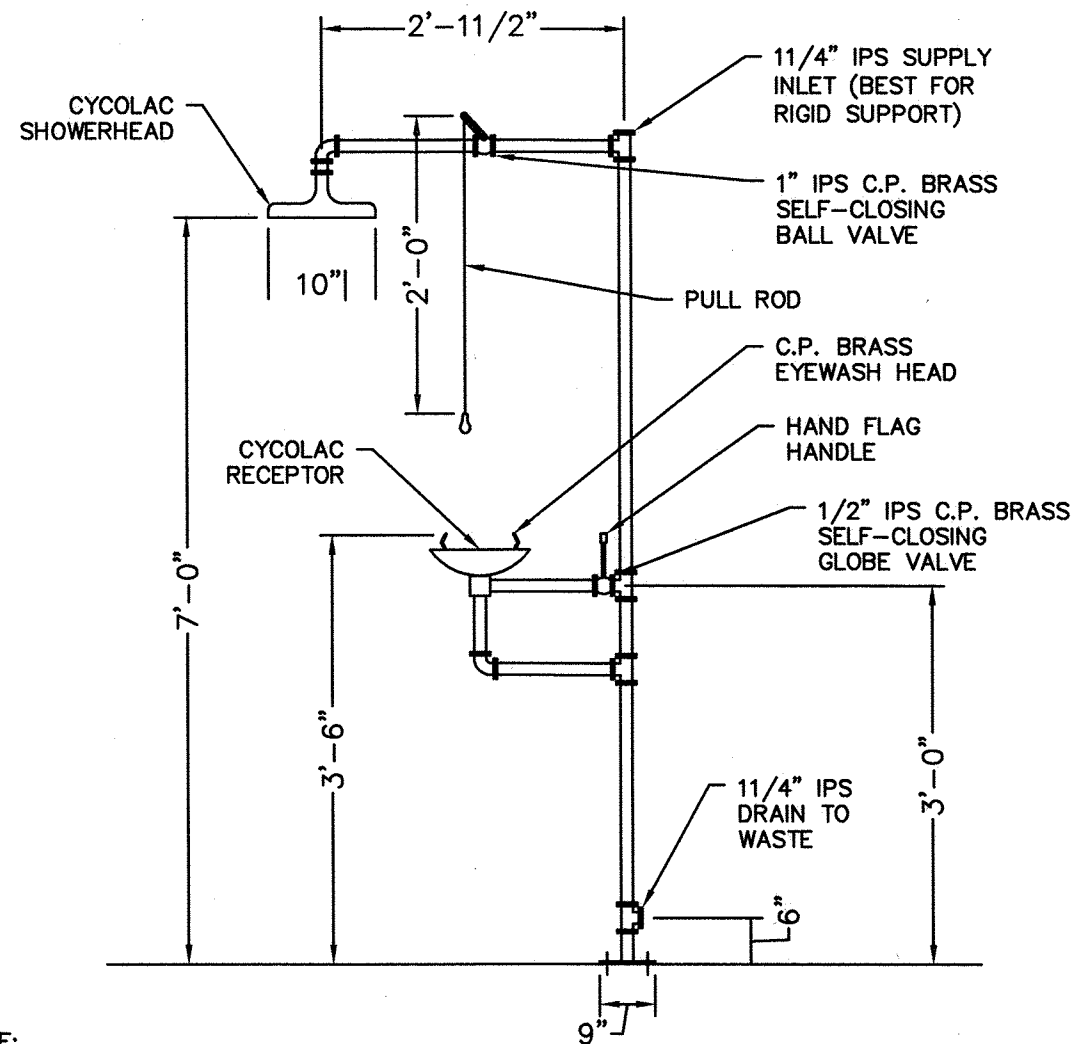
TYPE I CONCRETE PIPE SUPPORT (M29A)
SCALE: N.T.S.



BURIED VALVE AND BOX (M31A)
SCALE: N.T.S.



TYPE III CONCRETE PIPE SUPPORT (M29C)
SCALE: N.T.S.



EMERGENCY SHOWER AND EYEWASH (M38A)
SCALE: N.T.S.

BENCHMARK DATA:

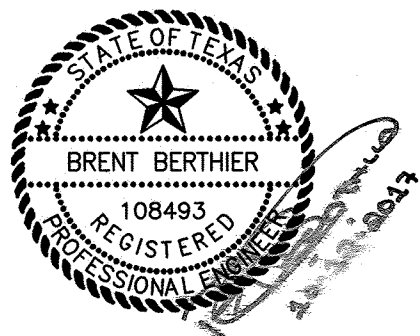
CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBSSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: Marijia
DEVELOPMENT COORDINATOR
DATE: 11/17/17



JACOSTANZA & ASSOCIATES
ENGINEERING, INC.
T.B.P.E. FIRM REGISTRATION No. F-652
4301 CENTER ST. DEER PARK, TX 77536 281-930-9339

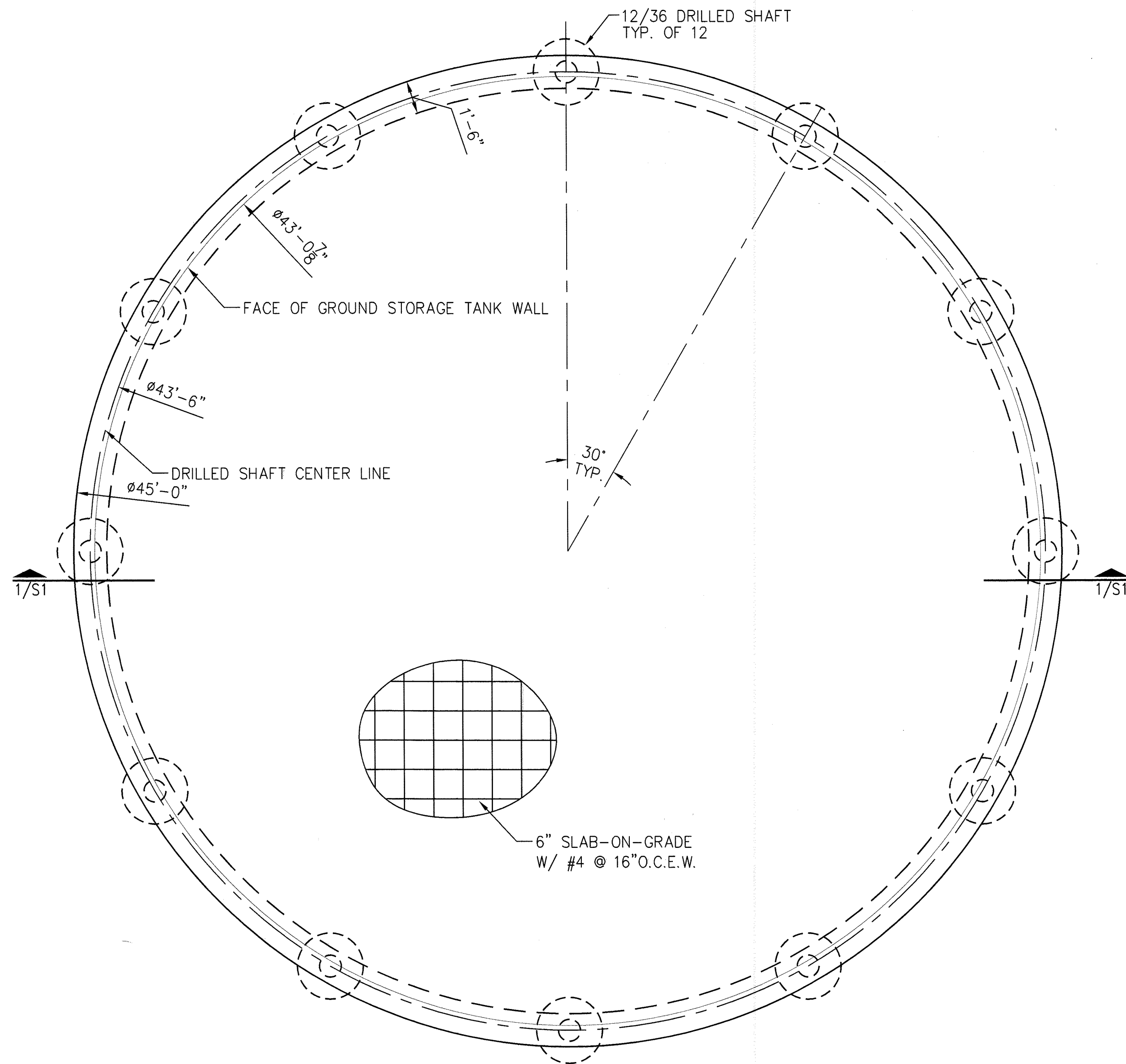
FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

MECHANICAL DETAILS

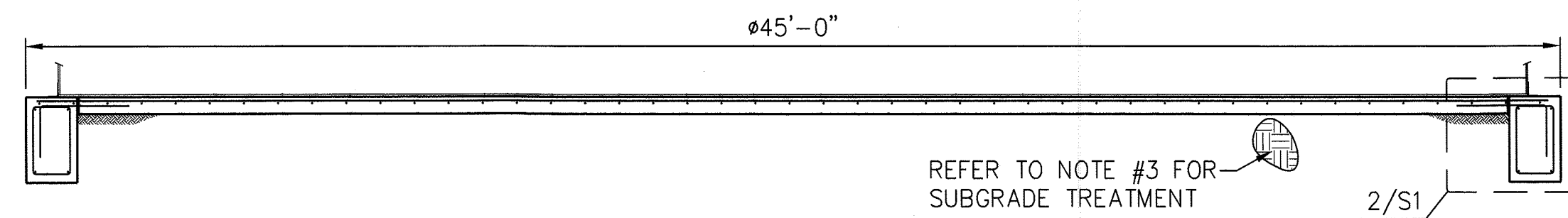
NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING			
WATER	TRAFFIC & TRANSPORTATION	STORM WATER QUALITY	FACILITIES
WASTEWATER			
STORM			
STREET & BRIDGE			

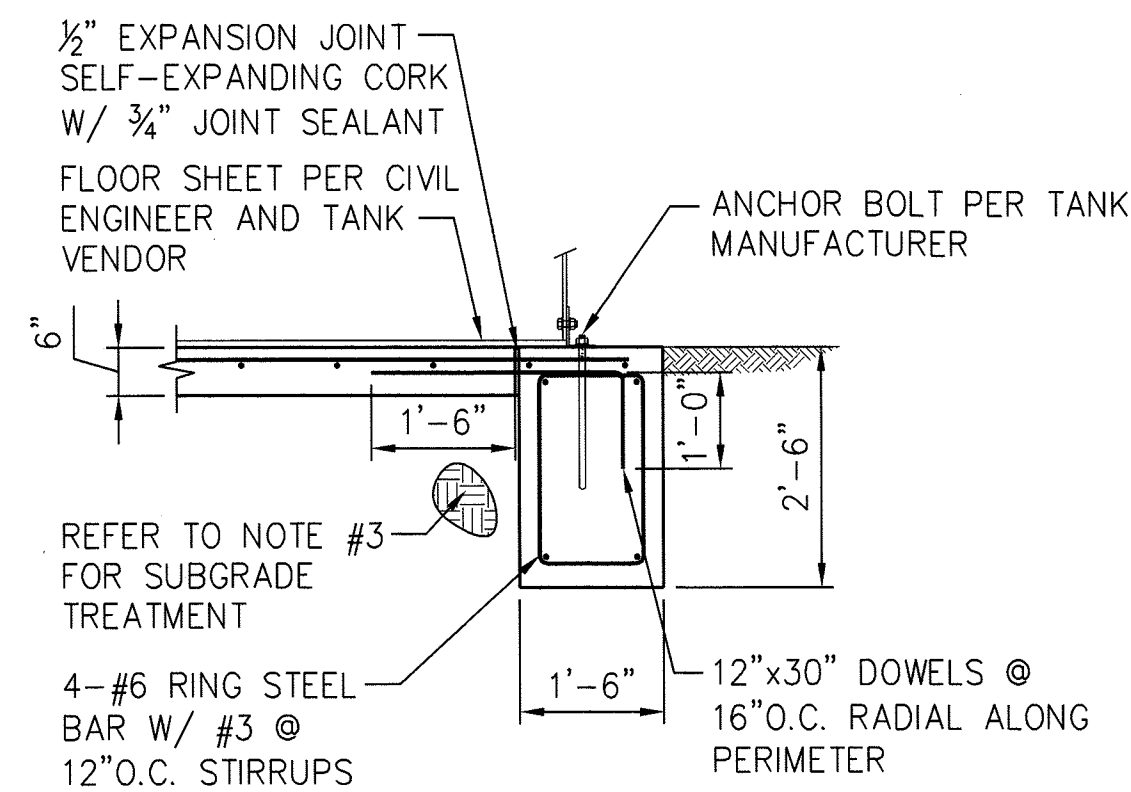
JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY
DRAWN BY: JCR	
DRAWING SCALE: AS SHOWN	
DRAWING NO. M007	
SHEET NO. 29 OF 40	



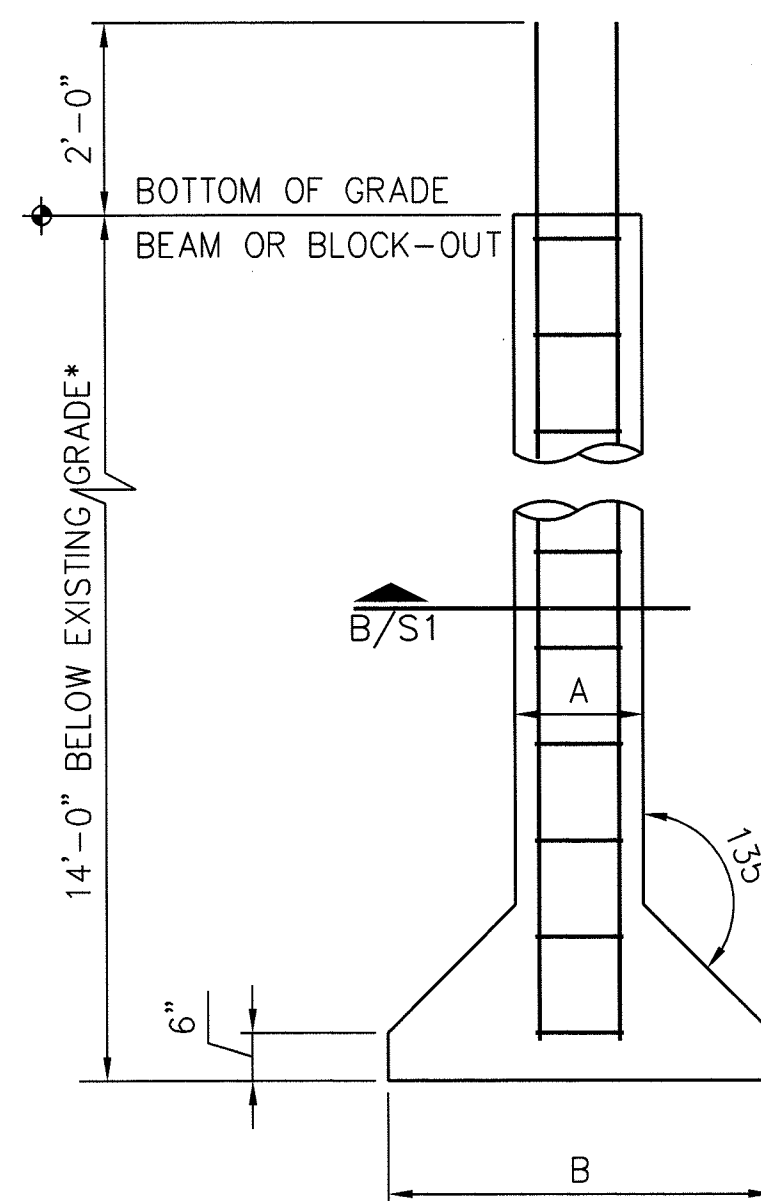
GROUND STORAGE TANK FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



GROUND STORAGE TANK FOUNDATION SECTION
SCALE: 1/4" = 1'-0"



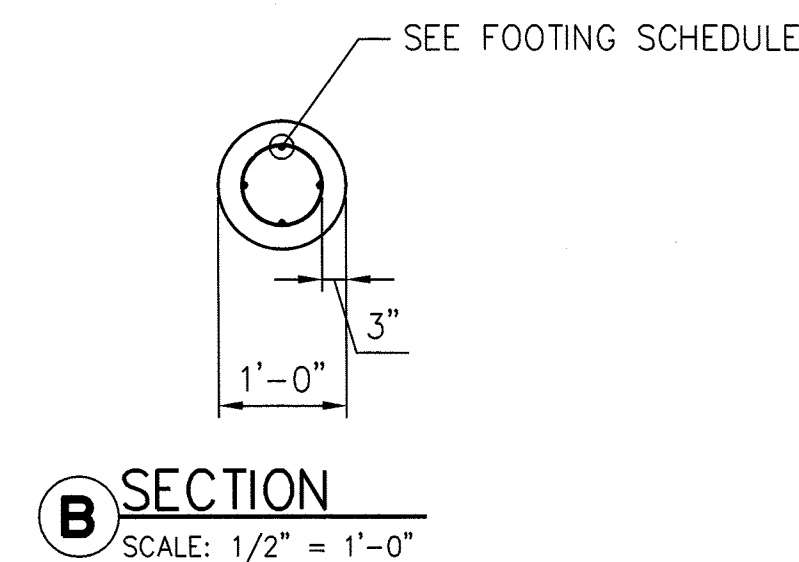
SECTION 2
SCALE: 1/2" = 1'-0"



*CONTRACTOR SHALL ADJUST THE DRILLED SHAFT LENGTH BASED ON EXISTING GRADE AND PROPOSED BUILDING FLOOR ELEVATIONS.

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

FOOTING SCHEDULE				
MARK	SHAFT DIAMETER (A)	BELL DIAMETER (B)	VERTICAL REINF.	REINF. TIES
12"/36" D.S.	1'-0"	3'-0"	4-#5	#3@12"



BENCHMARK DATA:
CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

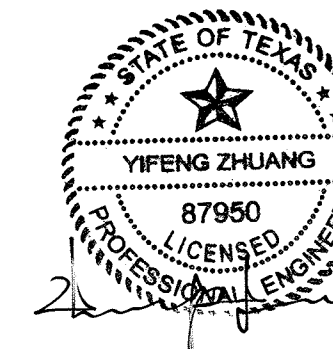
1. CONCRETE SHALL HAVE 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
3. REMOVE 48 INCHES OF EXISTING SOIL AT BUILDING PAD AND REPLACE WITH SELECT FILL AND COMPACT. USE SELECT FILL IF REQUIRED FOR RAISE OF BUILDING PAD. REFER TO PROJECT SOIL REPORT FOR PROCEDURE.
4. CONTRACTOR MUST SUBMIT GROUND STORAGE TANK SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FOUNDATION INSTALLATION.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



10/11/2017

MISSION ENGINEERING INC.
10370 RICHMOND AVE, #560
HOUSTON, TEXAS 77042
[T] 713-981-0018
[E] dzhuang@missioneng.com
TPEF Registration No. F-11771

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

GROUND STORAGE TANK PLAN
AND SECTION

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

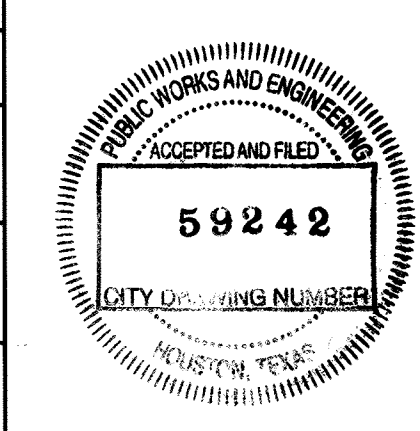
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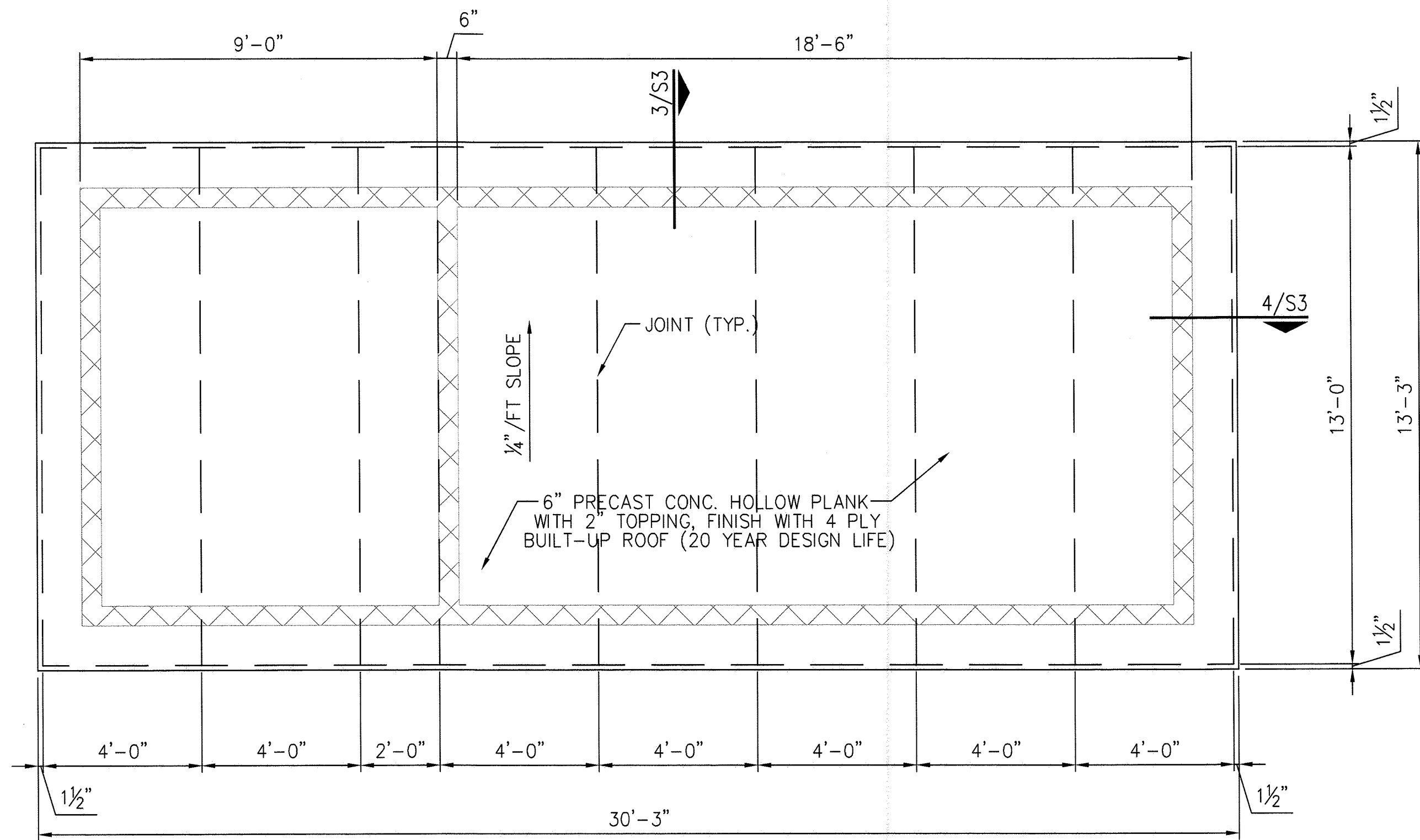
DRAWING SCALE:
AS NOTED

DRAWING NO.:
S1

SHEET NO.:
30 OF 40

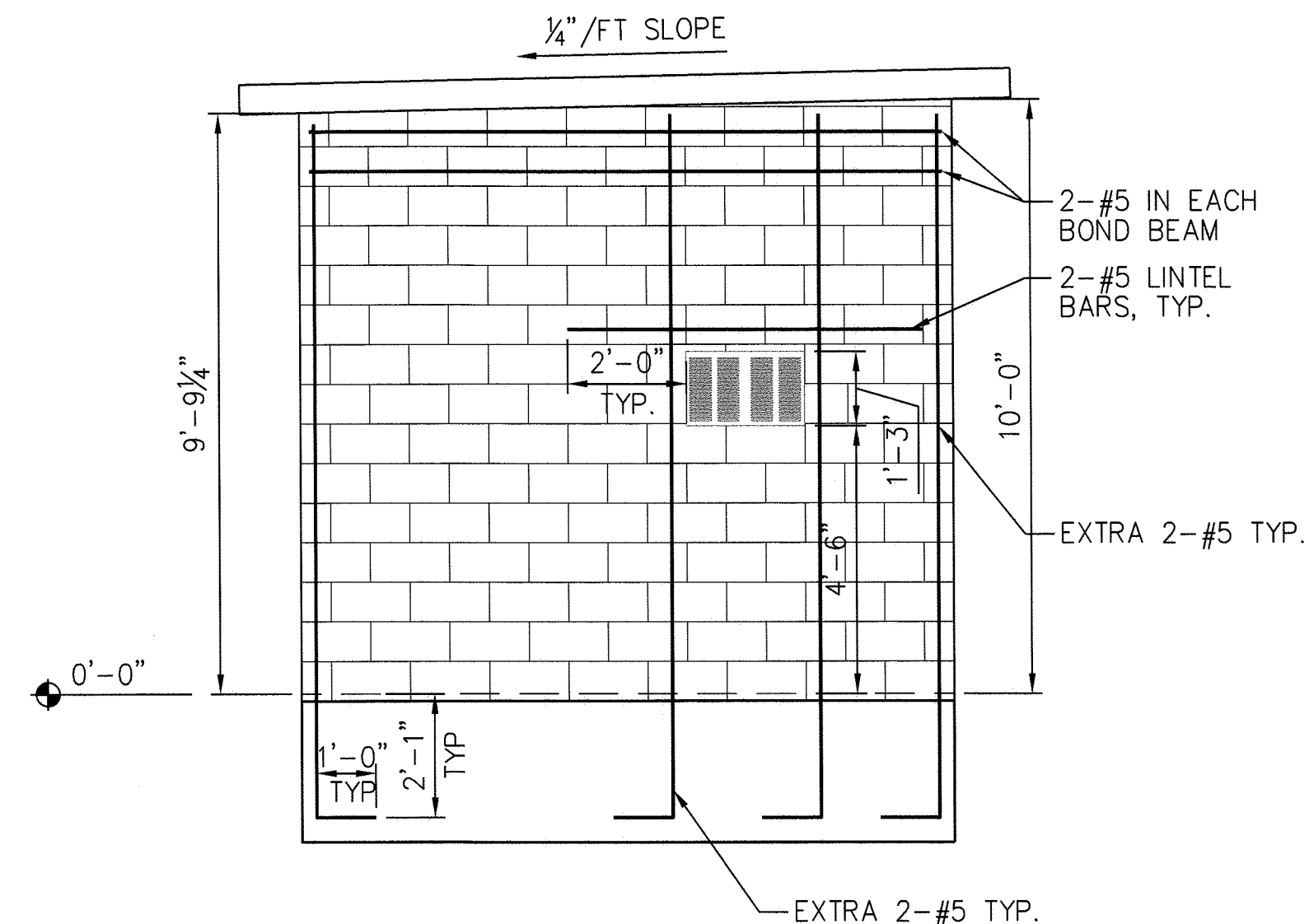
FOR CITY OF HOUSTON USE ONLY





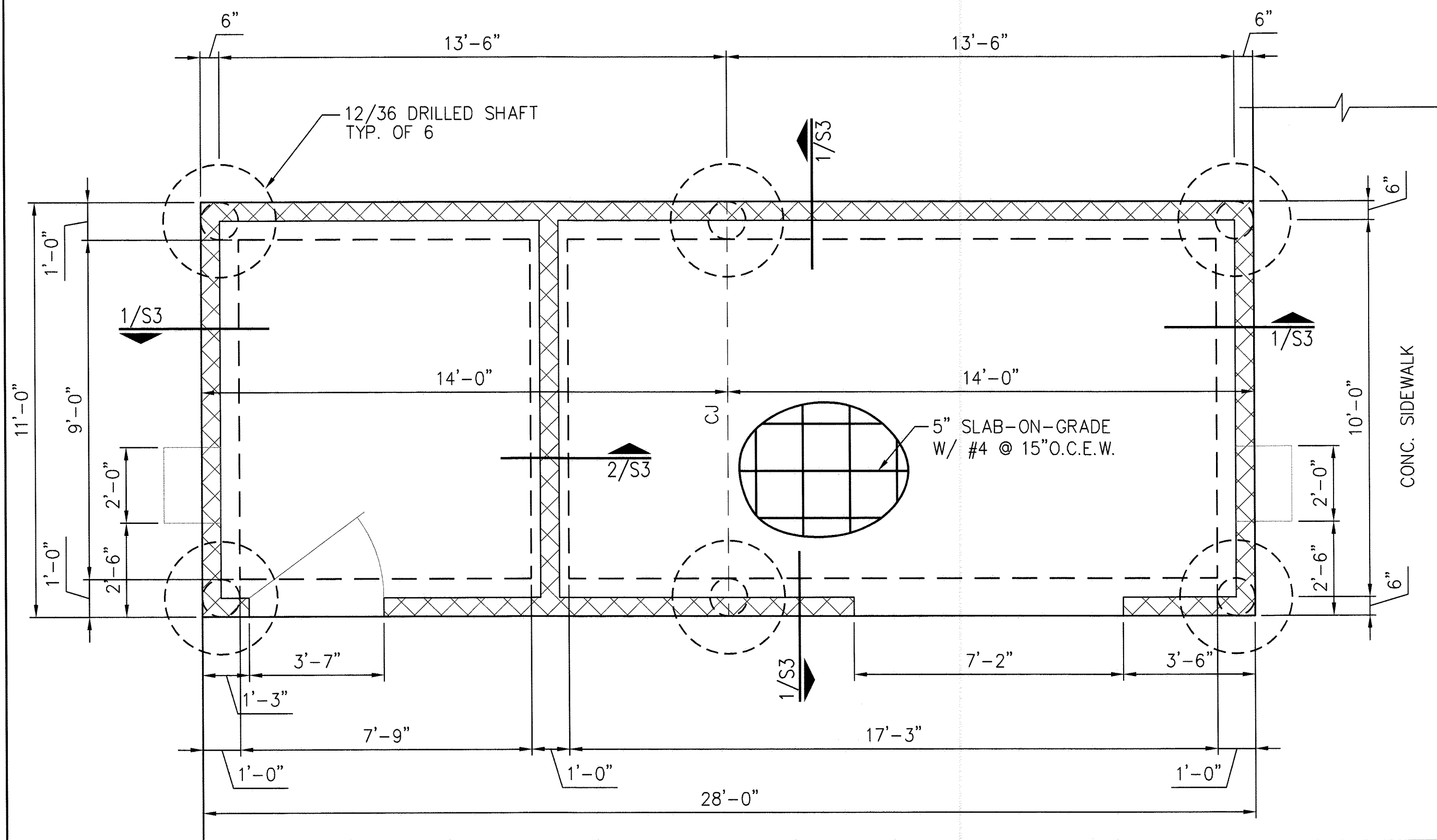
OFFICE ROOF PLAN

SCALE: 3/8"=1'-0"



SIDE ELEVATION

SCALE: 3/8"=1'-0"

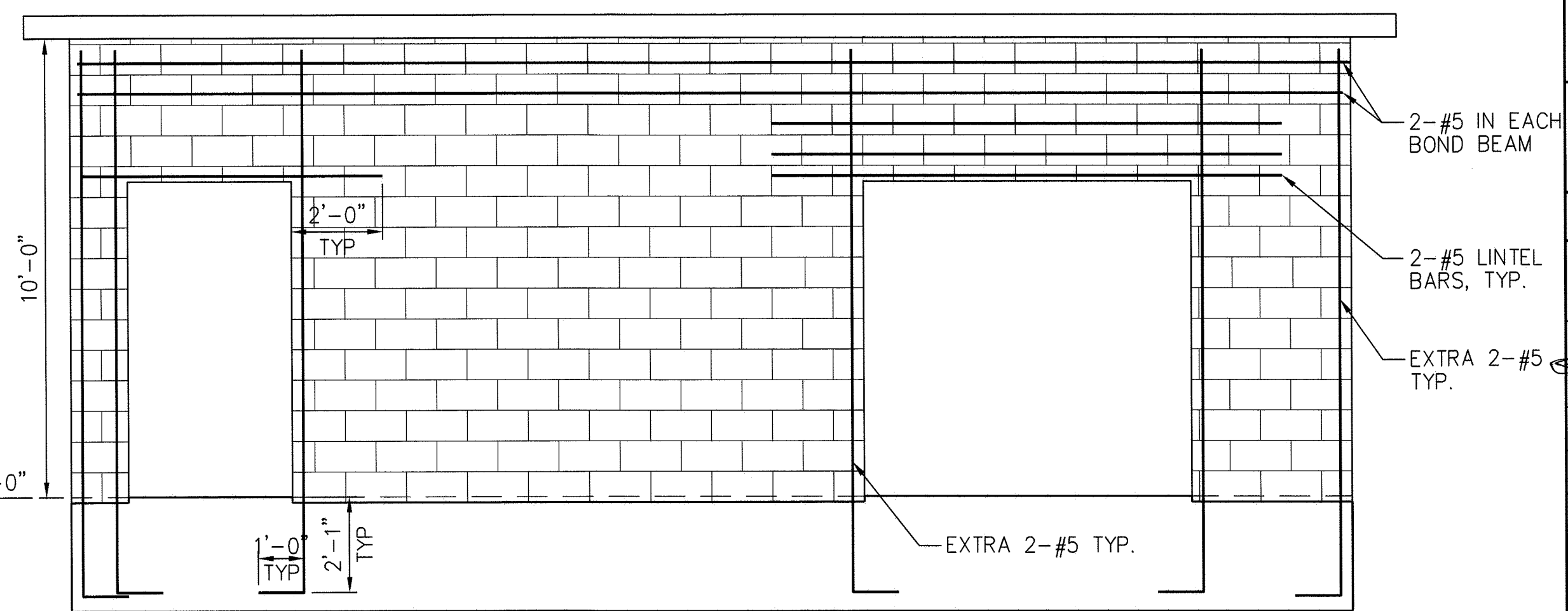


OFFICE FOUNDATION PLAN

SCALE: 3/8"=1'-0"

LEGEND

CMU WALL
CJ CONTROL/CONSTRUCTION JOINT



FRONT ELEVATION

SCALE: 3/8"=1'-0"

BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

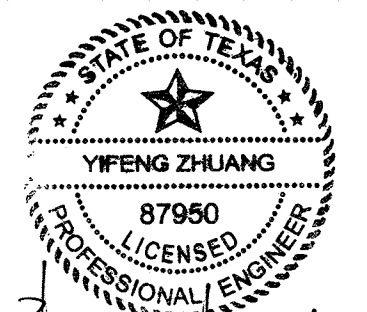
- CONCRETE SHALL HAVE 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
- DESIGN IS BASED ON "GEOTECHNICAL INVESTIGATION PROPOSED WATER TREATMENT PLANT, FORT BEND MUD NO. 30, FORT BEND COUNTY, TEXAS", AS PREPARED BY A&R ENGINEERING AND TESTING, INC., PROJECT No.: 15S5385, DATED JULY, 2015.
- PLACE 6 MIL VAPOR BARRIER BELOW SLAB-ON-GRADE WITHIN BUILDING PAD.
- REMOVE 48 INCHES OF EXISTING SOIL AT BUILDING PAD AND REPLACE WITH SELECT FILL AND COMPACT. USE SELECT FILL IF REQUIRED FOR RAISE OF BUILDING PAD.
- SELECT FILL AT BUILDING PAD SHALL BE PREPARED AND COMPACTED PER PROJECT GEOTECHNICAL REPORT PAGE 7, "STRUCTURAL FILL AND SUBGRADE PREPARATION" SECTION.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Maxi Del*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



Yifeng Zhuang 10/11/2017

MISSION ENGINEERING INC.
10370 RICHMOND AVE, #560
HOUSTON, TEXAS 77042
[T] 713-981-0018
[E] dzhuang@missioneng.com
TPEF Registration No. F-11771

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

OFFICE PLANS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.: F003-1445

DRAWN BY: HW

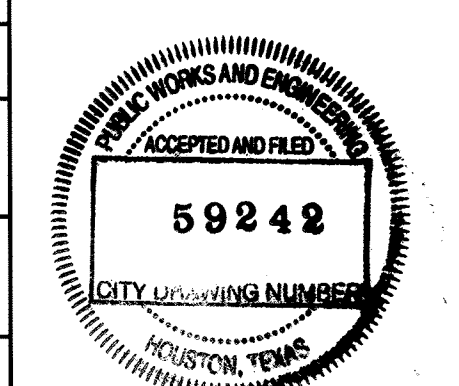
DRAWING SCALE: 3/8" = 1'-0"

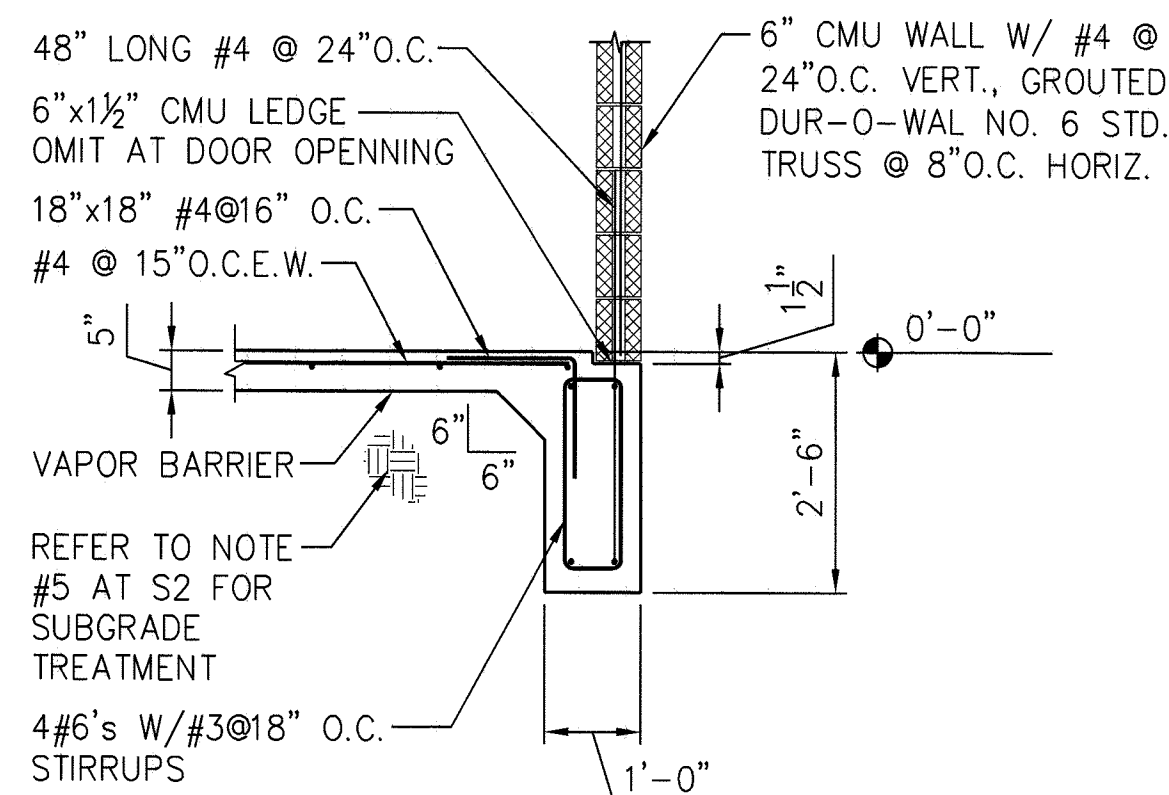
DRAWING NO. S2

SHEET NO.

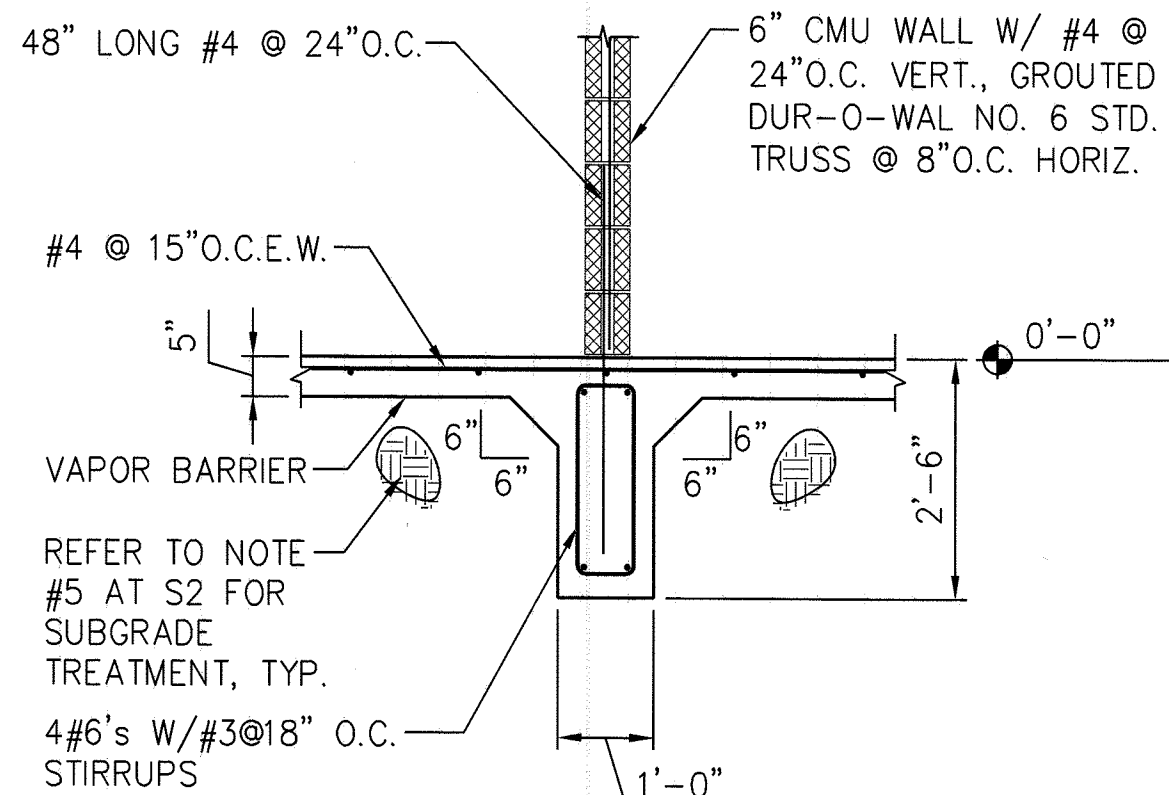
31 OF 40

FOR CITY OF HOUSTON USE ONLY

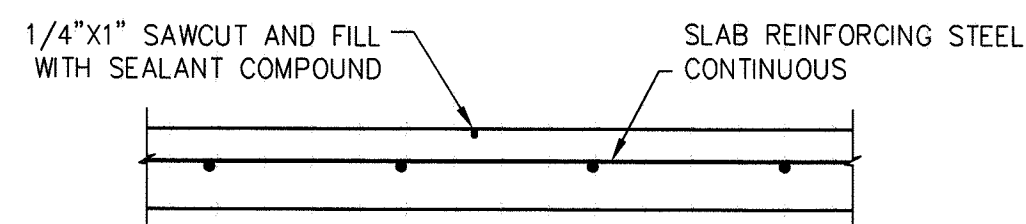




1 GRADE BEAM SECTION
SCALE: 1/2" = 1'-0"

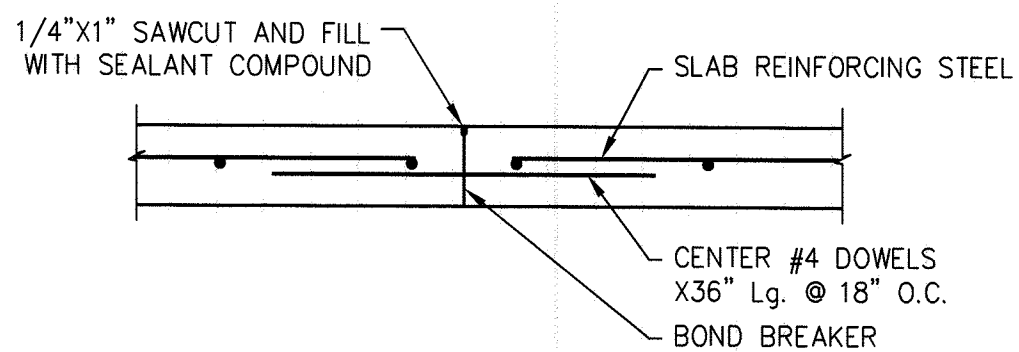


2 GRADE BEAM SECTION
SCALE: 1/2" = 1'-0"



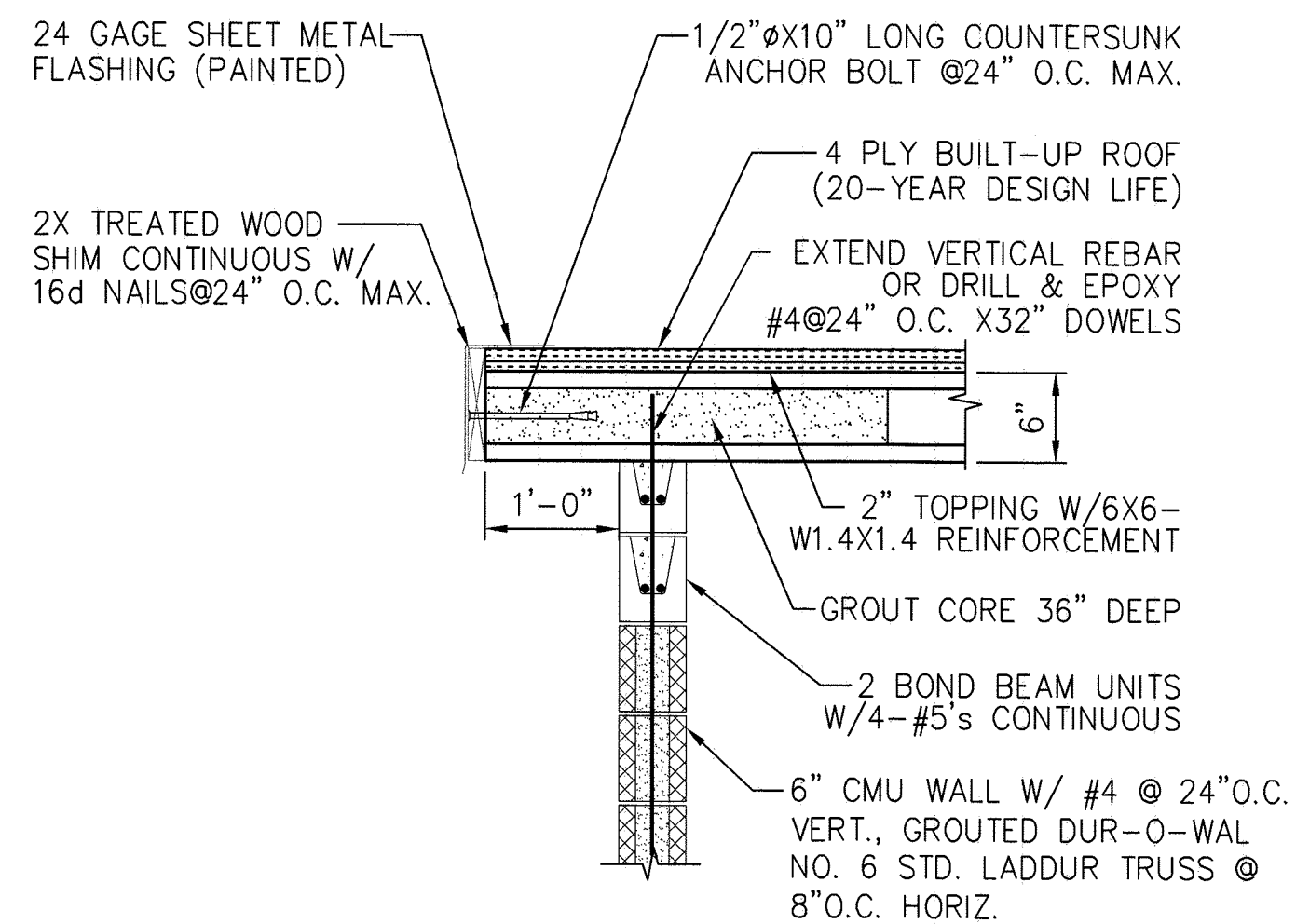
BUILDING SLAB PLACING NOTE: PLACE CONTROL JOINTS AT A MAXIMUM SPACING OF 15 FEET.
NOTE: MAKE SAWCUT AS SOON AS SLAB IS ABLE TO SUPPORT WORK LOAD AND EQUIPMENT LOAD WITHOUT DAMAGING THE FINISHED SLAB SURFACE.

C CONTROL JOINT DETAIL
SCALE: 1" = 1'-0"



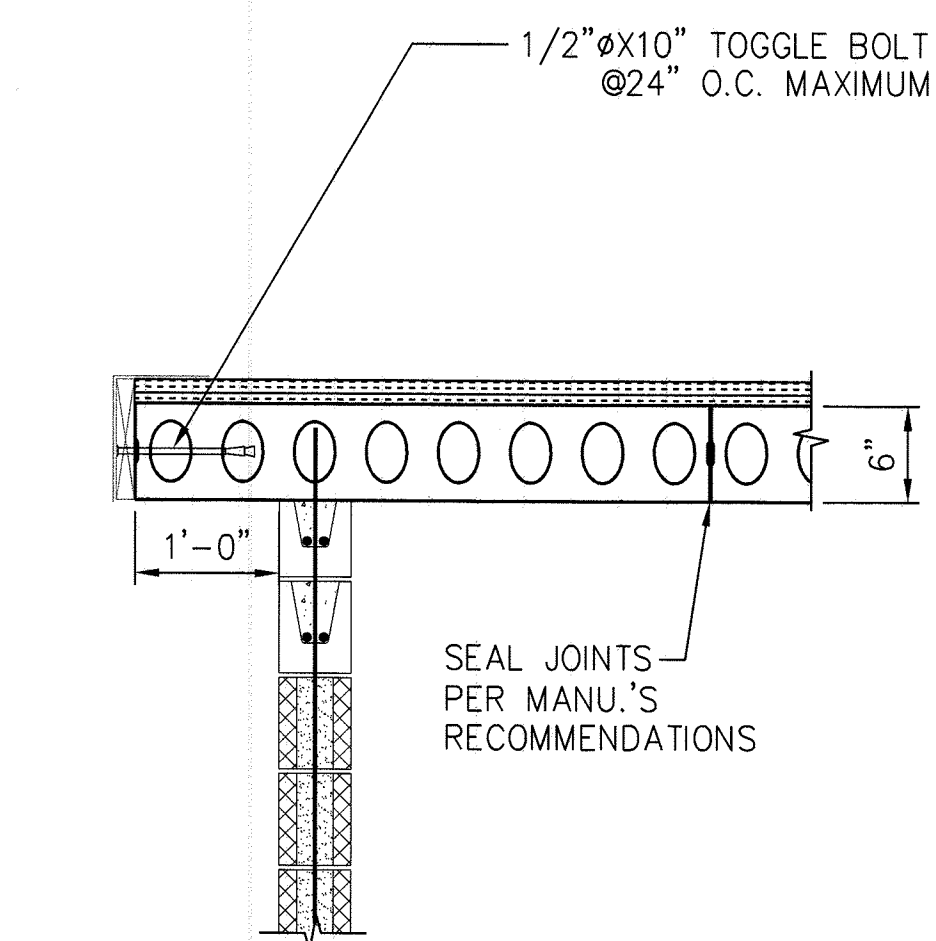
CONSTRUCTION JOINTS CAN BE USED IN LIEU OF CONTROL JOINT.
NOTE: MAKE SAWCUT AS SOON AS SLAB IS ABLE TO SUPPORT WORK LOAD AND EQUIPMENT LOAD WITHOUT DAMAGING THE FINISHED SLAB SURFACE.

D CONSTRUCTION JOINT DETAIL
SCALE: 1" = 1'-0"



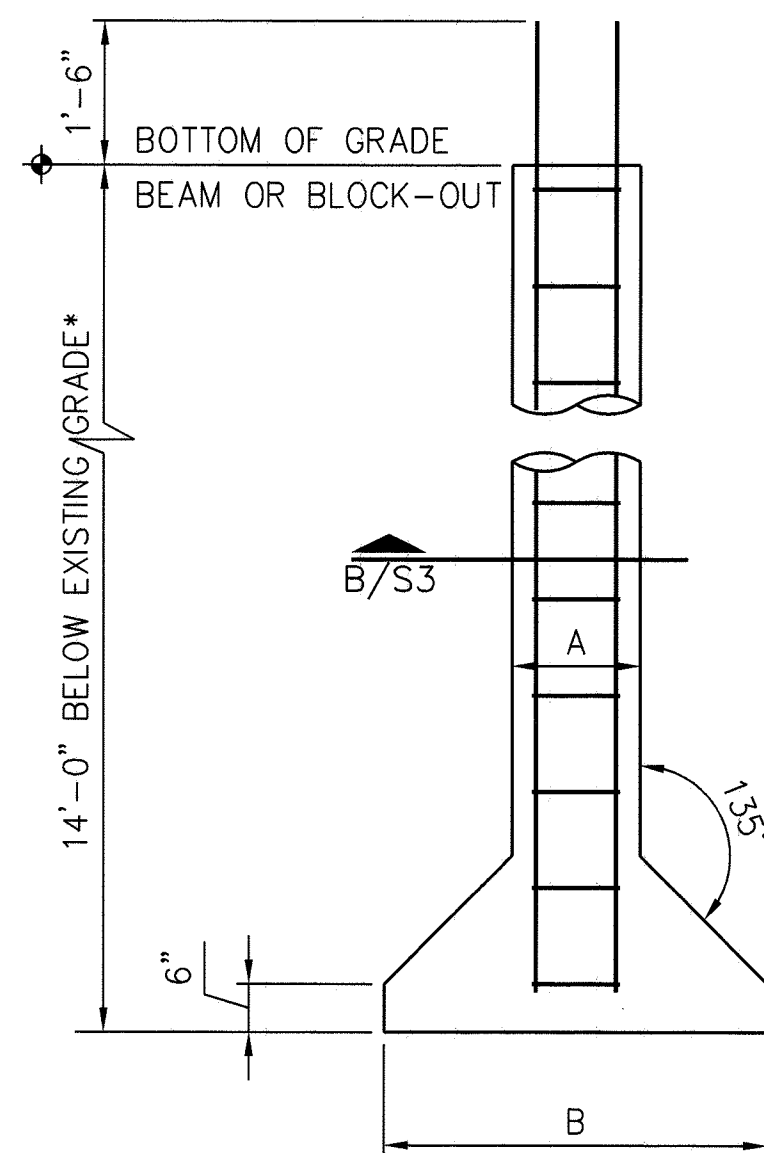
CONTRACTOR MAY SUBMIT ALTERNATE CONNECTING METHOD FOR APPROVAL AT CMU WALL AND PRECAST CONCRETE HOLLOW PLANK CONNECTION.

3 WALL SECTION
SCALE: 3/4" = 1'-0"



SEE SECTION 3 THIS SHEET FOR CALL-OUTS NOT SHOWN.

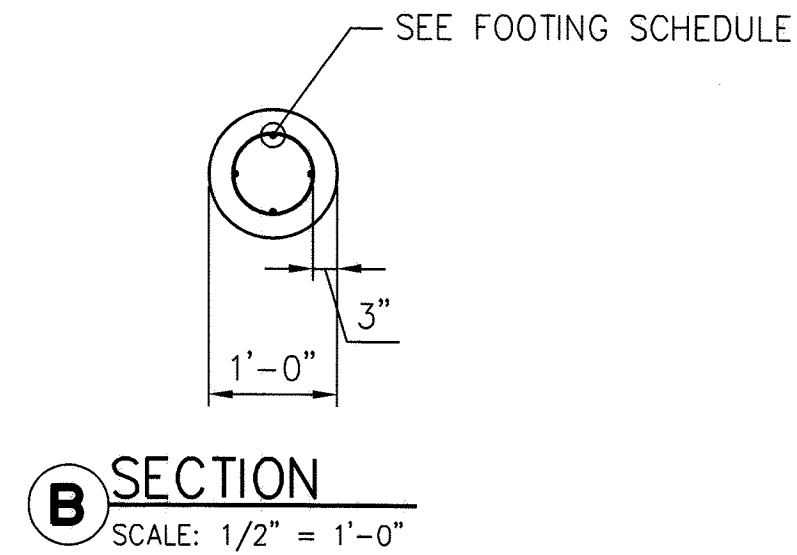
4 WALL SECTION
SCALE: 3/4" = 1'-0"



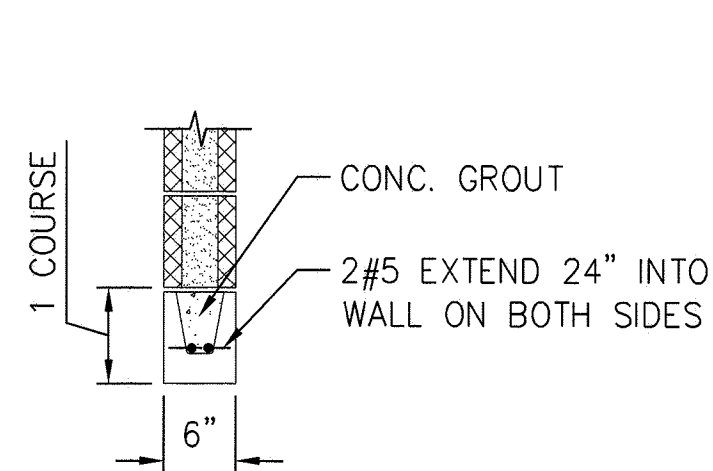
*CONTRACTOR SHALL ADJUST THE DRILLED SHAFT LENGTH BASED ON EXISTING GRADE AND PROPOSED BUILDING FLOOR ELEVATIONS.

A DRILLED SHAFT DETAILS
SCALE: 1/2" = 1'-0"

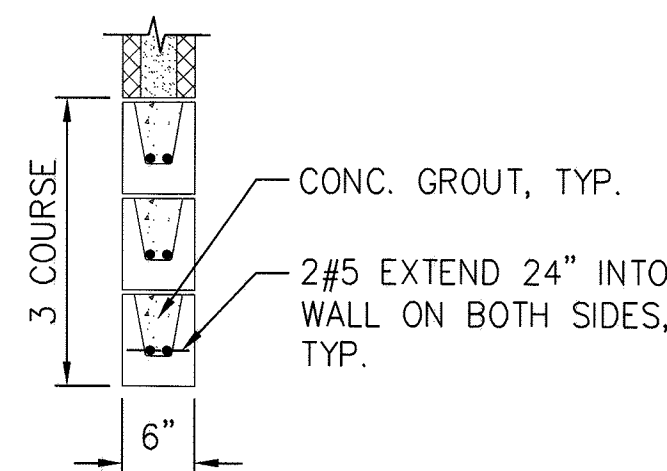
FOOTING SCHEDULE				
MARK	SHAFT DIAMETER (A)	BELL DIAMETER (B)	VERTICAL REINF.	REINF. TIES
12"/36" D.S.	1'-0"	3'-0"	4-#5	#3@12"



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



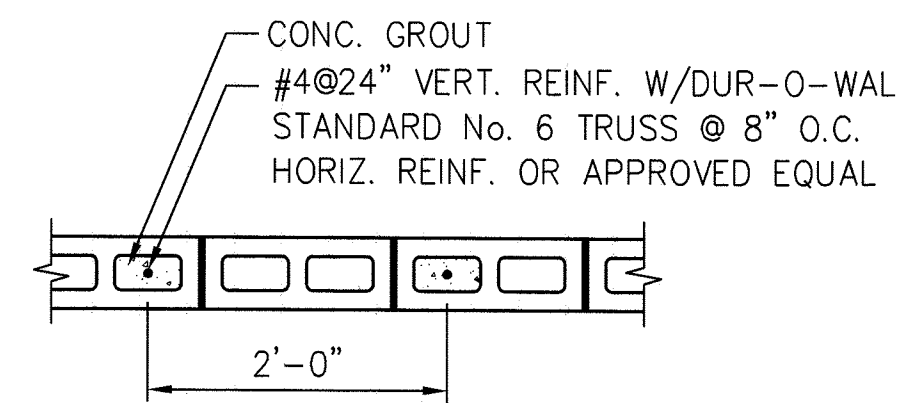
OPENING LESS THAN 5'-0" WIDE



OPENING 5'-0" TO 9'-3" WIDE

LINTEL DETAIL

E 6" CMU WALL DETAILS
SCALE: 3/4" = 1'-0"



TYPICAL WALL REINFORCING

BENCHMARK DATA:

CONTROL BENCH - RM # (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

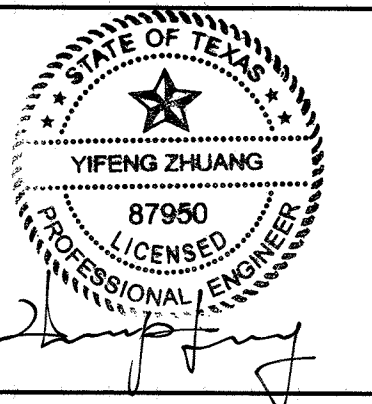
1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
2. PRECAST CONCRETE HOLLOW PLANK DESIGN LIVE LOAD SHALL BE 50 PSF.
3. CONTRACTOR SHALL COORDINATE WITH CIVIL AND MECHANICAL DRAWINGS FOR SIZES AND LOCATIONS OF DOORS AND LOUVERS.
4. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL DRAWINGS FOR LOCATIONS AND SIZES OF WALL MOUNTED AC UNITS AND MASTER CONTROL CABINET PAD.
5. 2" TOPPING SLAB SHALL HAVE 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. THE MAXIMUM COARSE AGGREGATE SHALL BE 1/2".
6. WELD WIRE FABRIC REINFORCEMENT IN TOPPING SLAB SHALL CONFORM TO ASTM A183, USE 6x6-W1.4xW1.4 W.W.F..
7. CEMENT GROUT AT END OF PRECAST HOLLOW CORE PLANK SHALL HAVE 100 PSI COMPRESSIVE STRENGTH AT 7 DAYS.
8. CMU WALL SHALL HAVE A MIN. OF 1500 PSI COMPRESSURE STRENGTH AT 28 DAYS.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



MISSION ENGINEERING INC.
10370 RICHMOND AVE, #560
HOUSTON, TEXAS 77042
[T] 713-981-0018
[E] dzhuang@missioneng.com
TPEF Registration No. F-11771

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT No. 3
PHASE I

OFFICE SECTIONS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
STORM	STORM WATER QUALITY
STREET & BRIDGE	FACILITIES

JAC JOB No.: F003-1445

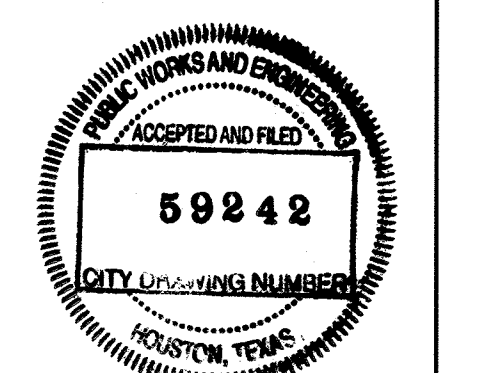
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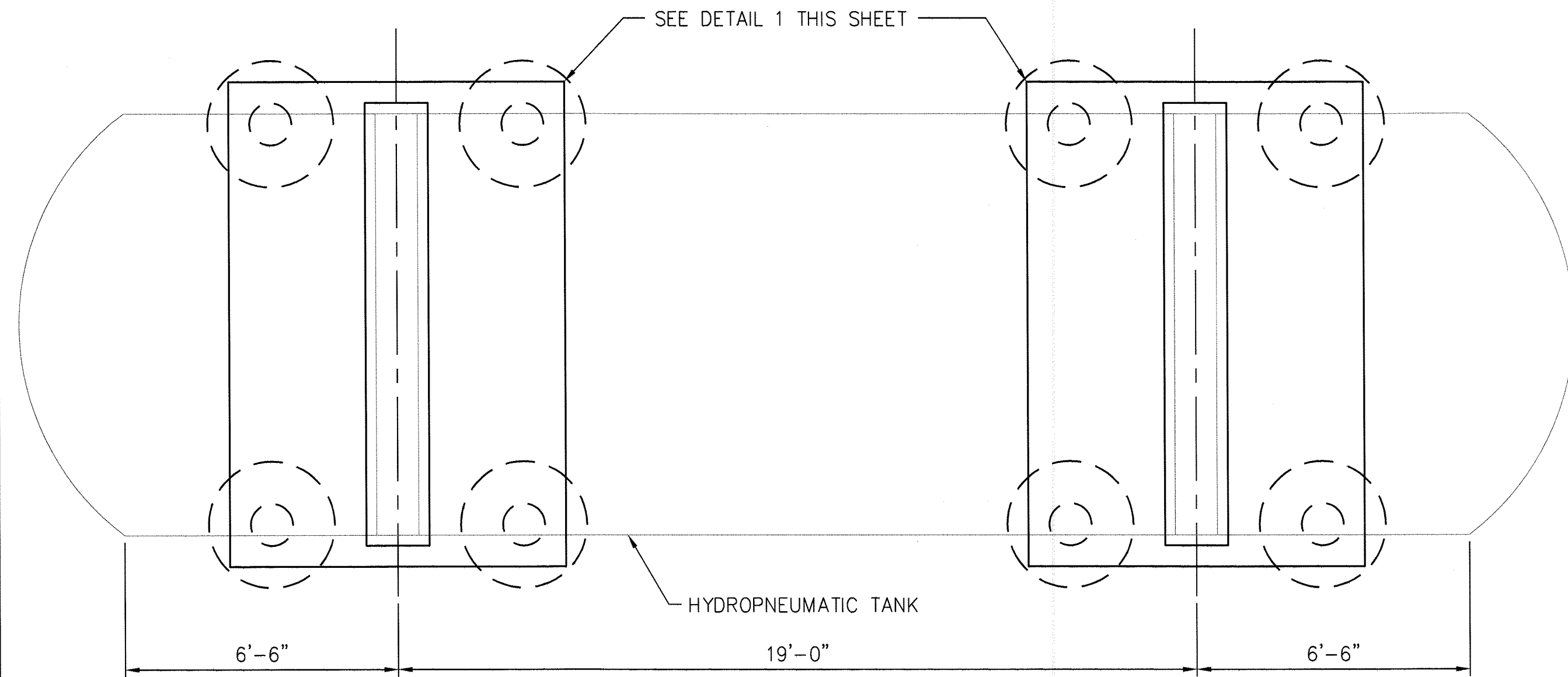
DRAWING SCALE: AS NOTED

DRAWING NO. S3

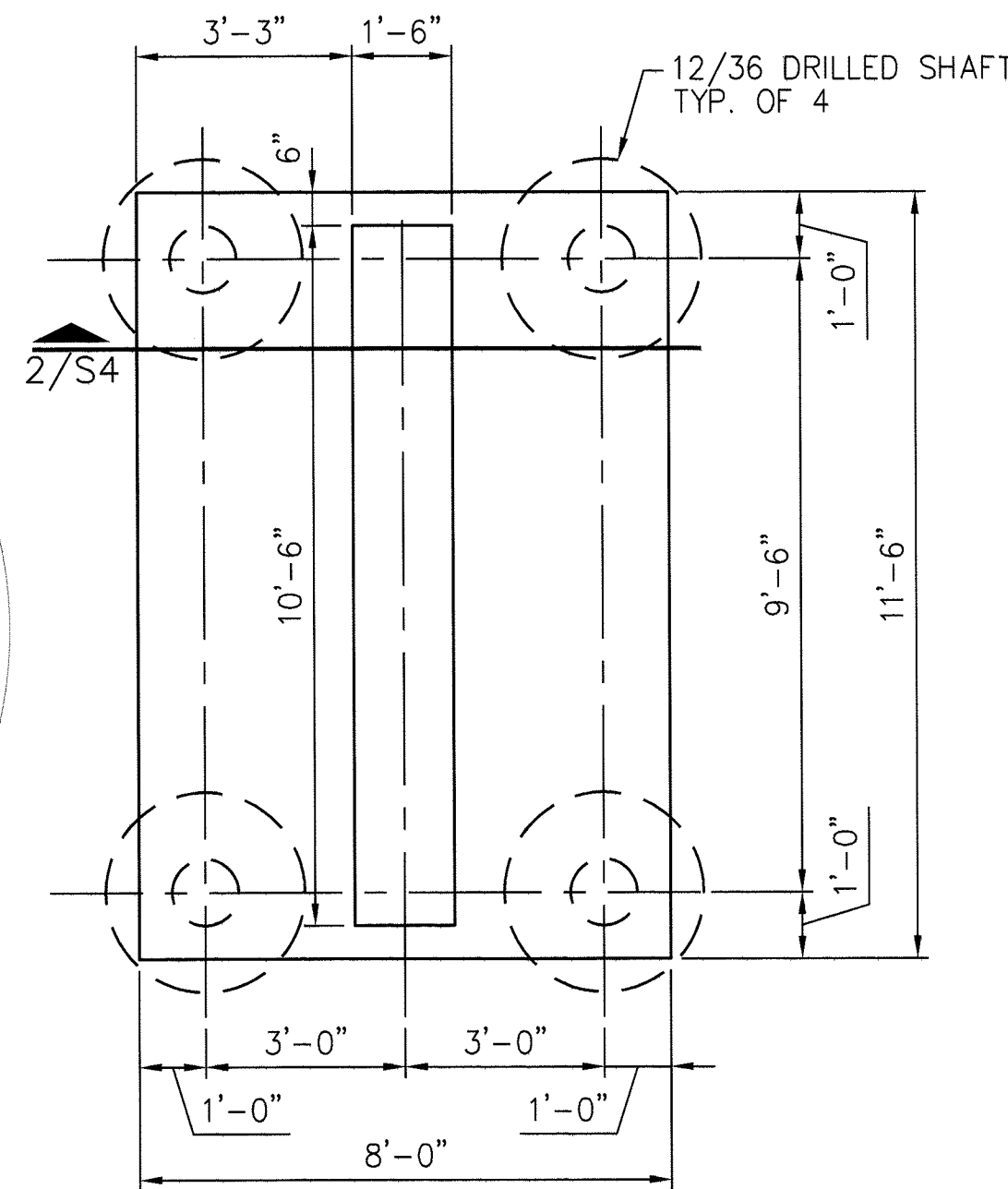
SHEET NO. 32 OF 40

FOR CITY OF HOUSTON USE ONLY

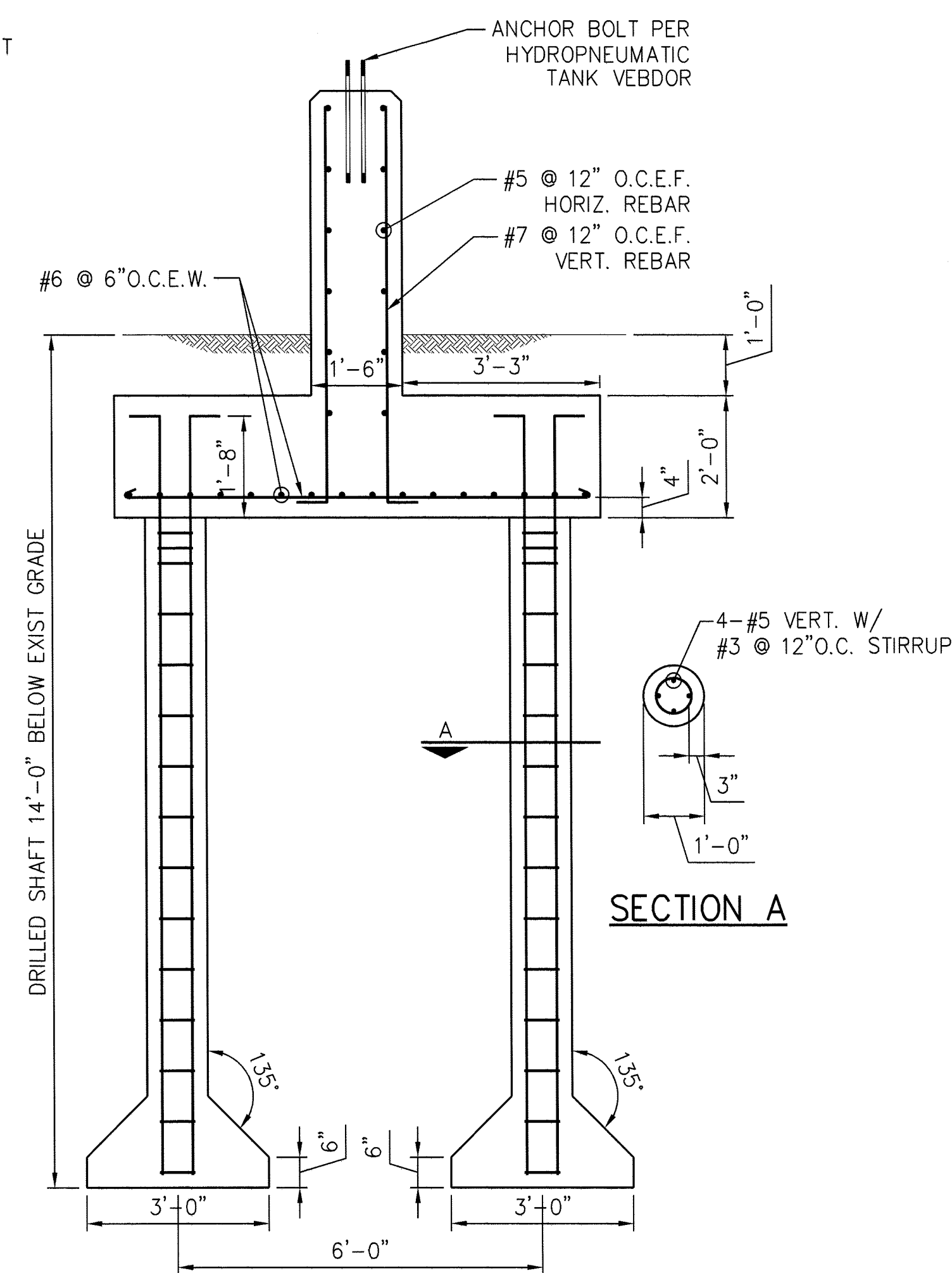




HYDROPNEUMATIC TANK FOUNDATION PLAN
SCALE: $\frac{3}{8}$ " = 1'-0"



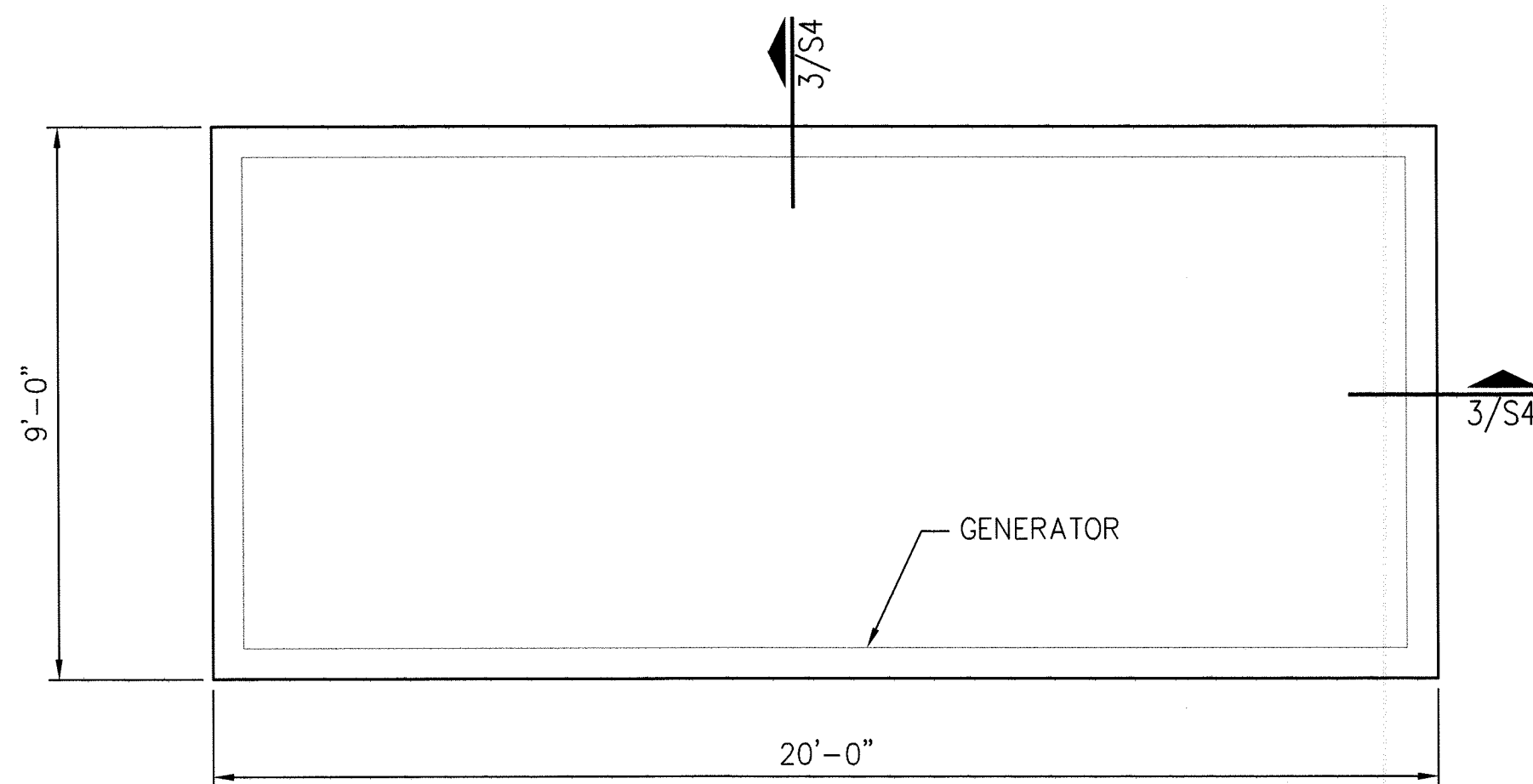
1 PIER CAP PLAN
SCALE: $\frac{3}{8}$ " = 1'-0"



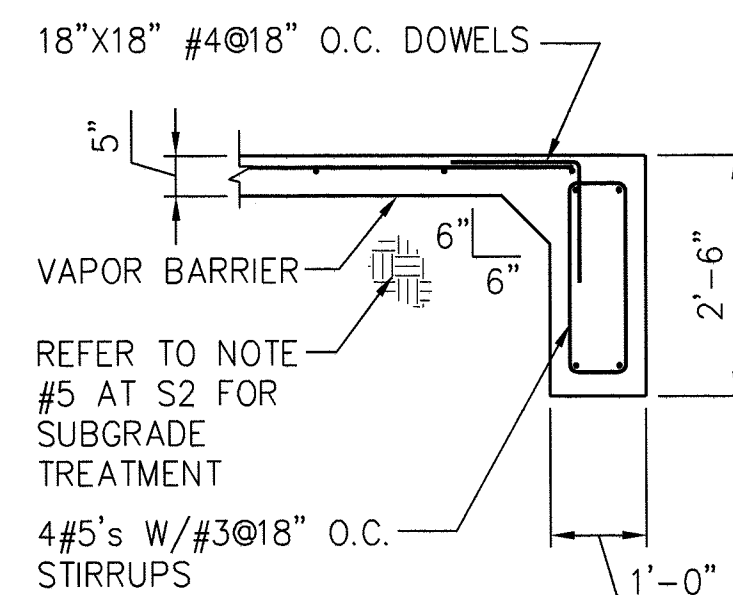
2 PIER CAP SECTION
SCALE: $\frac{1}{2}$ " = 1'-0"

NOTES FOR FIBERGLASS BUILDING FOUNDATION

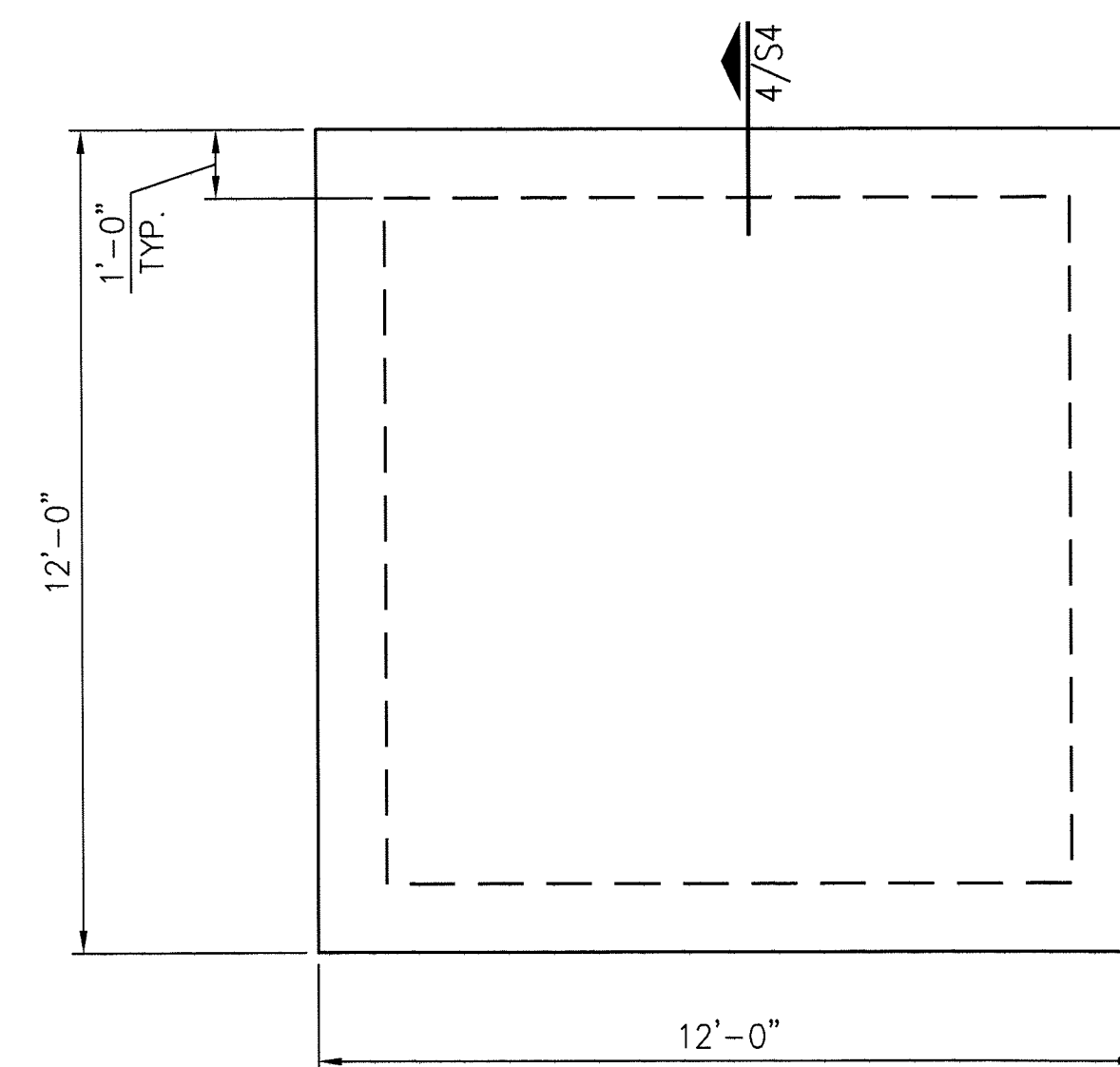
1. CONCRETE SHALL HAVE 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
3. CONTRACTOR SHALL VERIFY DIMENSIONS OF BUILDING. SUBMIT BUILDING SHOP DRAWING TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION OF FOUNDATION.
4. TOP OF BUILDING FOUNDATION SHALL BE LEVEL.
5. REMOVE 48 INCHES OF EXISTING SOIL AT GENERATOR PAD AND REPLACE WITH SELECT FILL AND COMPACT. USE SELECT FILL IF REQUIRED FOR RAISE OF GENERATOR PAD.



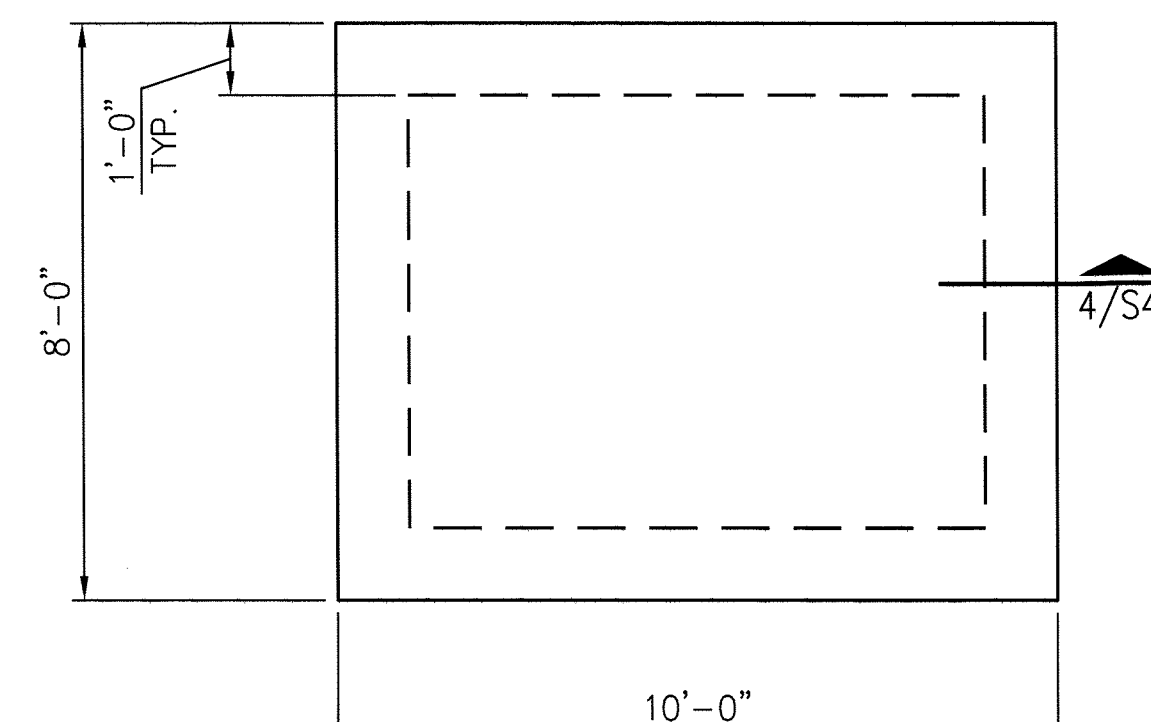
GENERATOR FOUNDATION PLAN
SCALE: $\frac{3}{8}$ " = 1'-0"



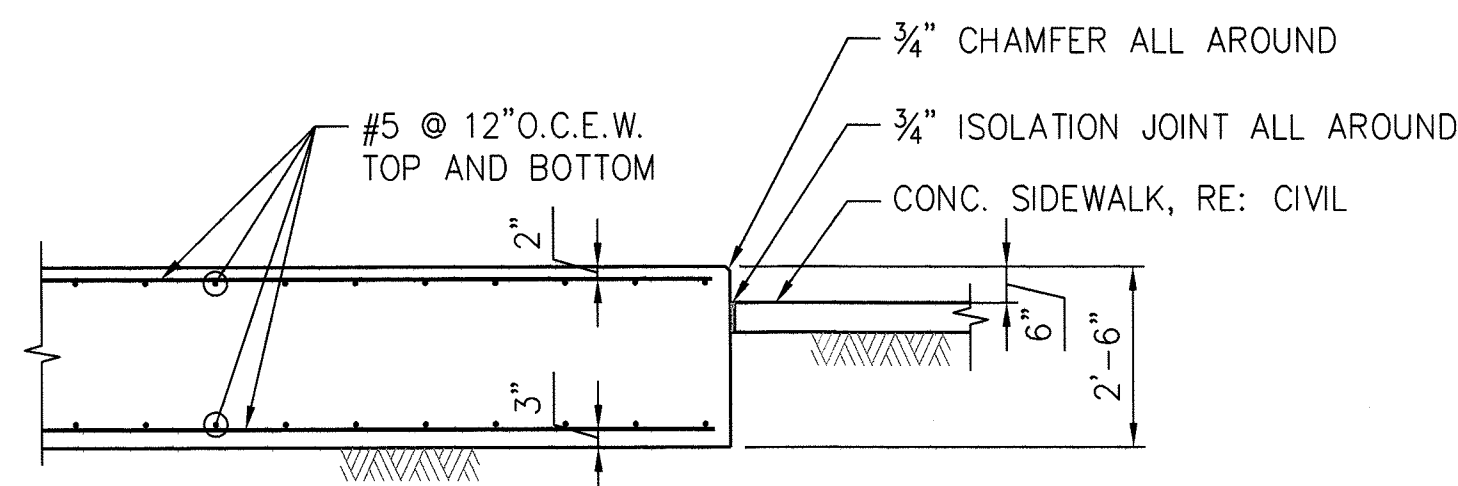
4 GRADE BEAM SECTION
SCALE: $\frac{1}{2}$ " = 1'-0"



B FIREGLASS BUILDING FOUNDATION
SCALE: $\frac{3}{8}$ " = 1'-0"



A FIREGLASS BUILDING FOUNDATION
SCALE: $\frac{3}{8}$ " = 1'-0"



3 SECTION
SCALE: $\frac{3}{8}$ " = 1'-0"

NOTES FOR GENERATOR

1. CONCRETE SHALL HAVE 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
3. CONTRACTOR SHALL VERIFY DIMENSIONS OF GENERATOR. SUBMIT GENERATOR SHOP DRAWING TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION OF GENERATOR FOUNDATIONS.
4. TOP OF GENERATOR FOUNDATIONS SHALL BE LEVEL.
5. REMOVE 48 INCHES OF EXISTING SOIL AT GENERATOR PAD AND REPLACE WITH SELECT FILL AND COMPACT. USE SELECT FILL IF REQUIRED FOR RAISE OF GENERATOR PAD.

BENCHMARK DATA:

CONTROL BENCH - RM # (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

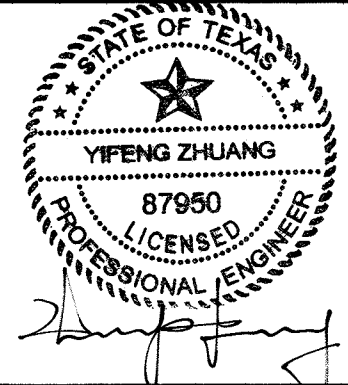
1. CONCRETE SHALL HAVE 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
3. DESIGN IS BASED ON "GEOTECHNICAL INVESTIGATION PROPOSED WATER TREATMENT PLANT, FORT BEND MUD NO. 30, FORT BEND COUNTY, TEXAS", AS PREPARED BY A&R ENGINEERING AND TESTING, INC., PROJECT No.: 15S5385, DATED JULY, 2015.
4. DESIGN IS BASED ON ONE OF VENDOR'S TANK CUT SHEET. DIMENSIONS MAY VARY.
5. CONTRACTOR MUST SUBMIT HYDROPNEUMATIC TANK SHOP DRAWING FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION OF FOUNDATION.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 11/11/17



MISSION ENGINEERING INC.
10370 RICHMOND AVE, #560
HOUSTON, TEXAS 77042
[T] 713-981-0018
[E] dzhuang@missioneng.com
TPEF Registration No. F-11771

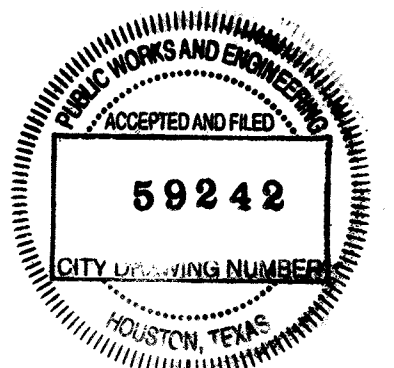
FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

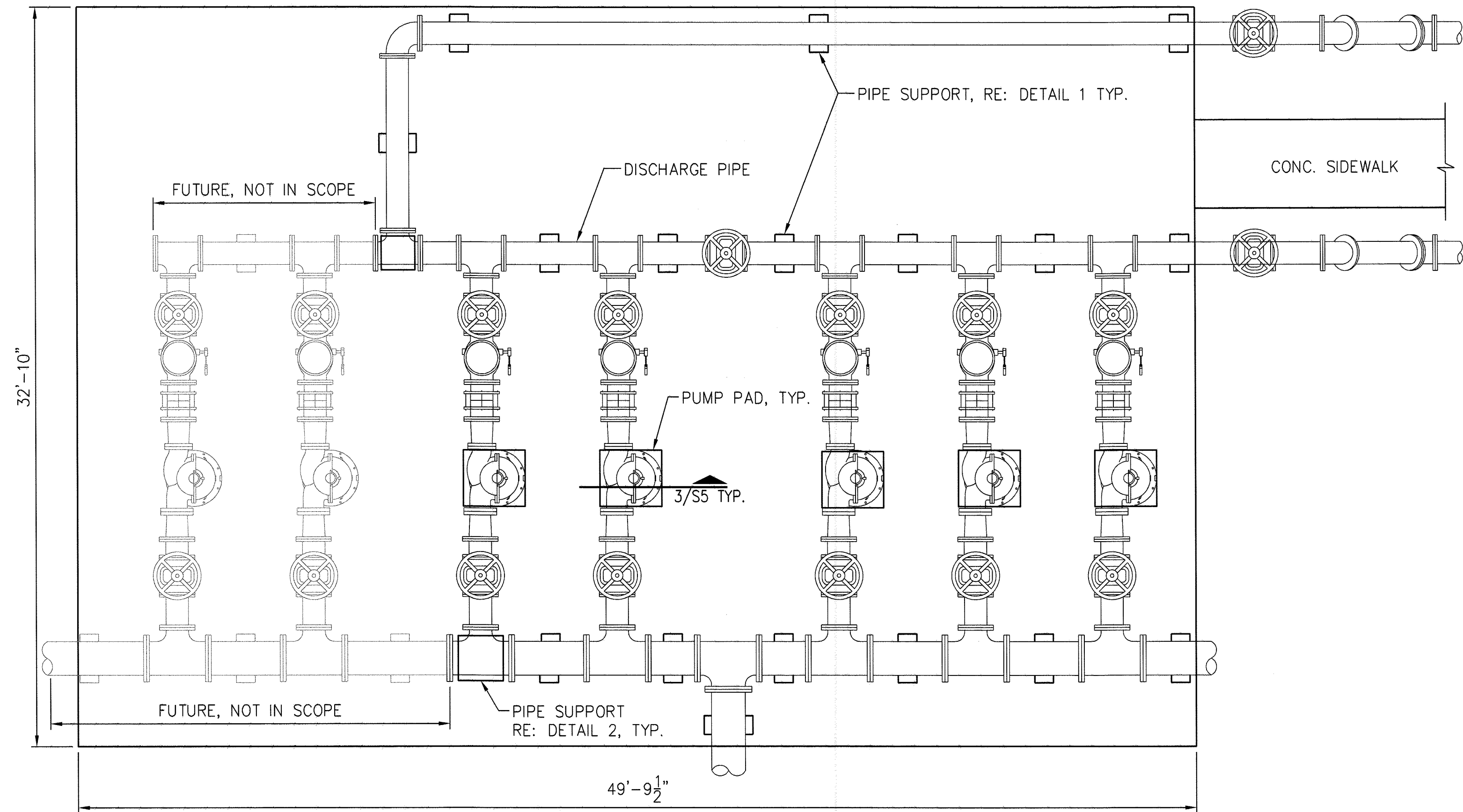
HYDROPNEUMATIC TANK,
GENERATOR, FIBERGLASS
BUILDINGS PLANS AND SECTIONS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER	TRAFFIC & TRANSPORTATION
WASTEWATER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

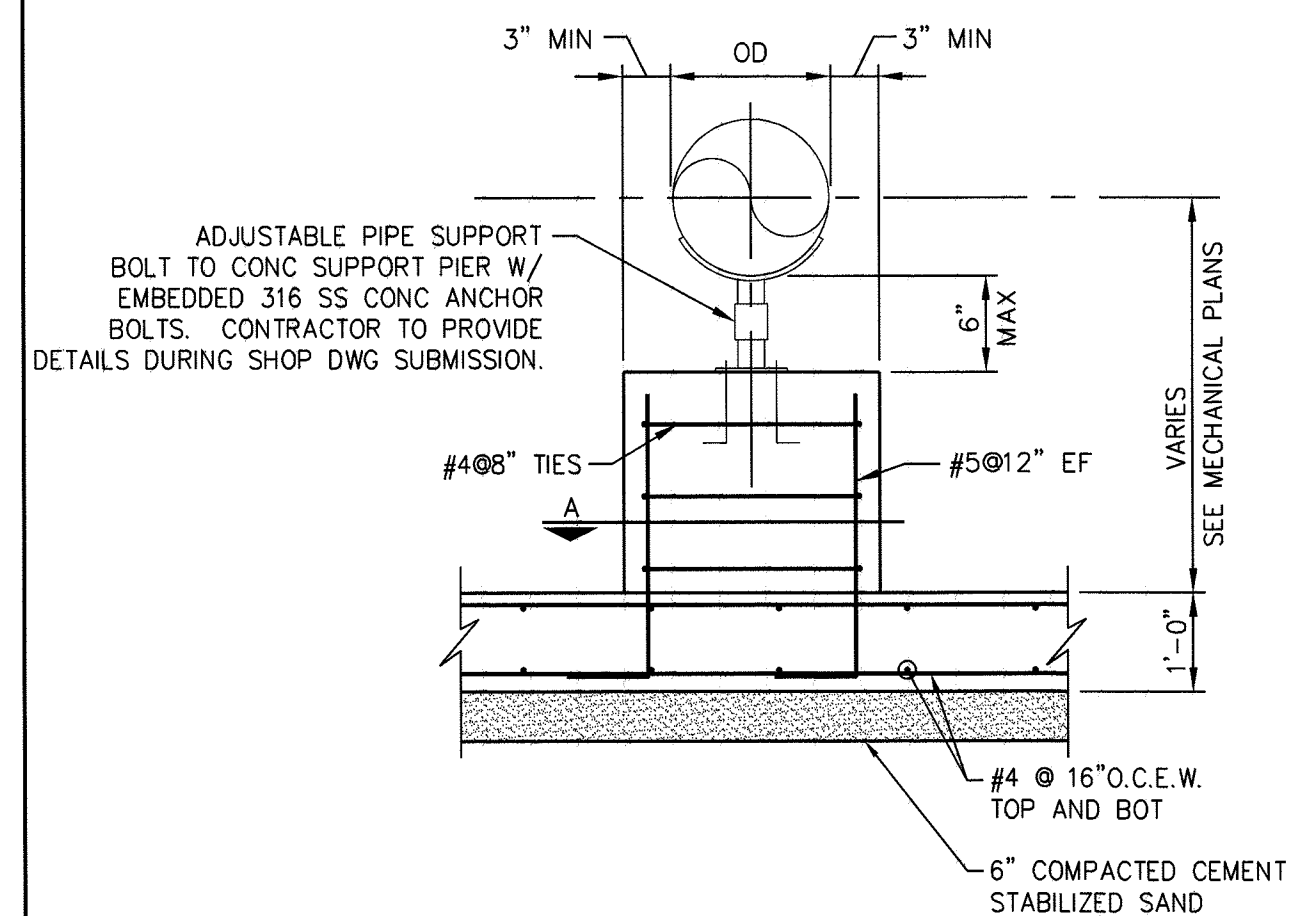
JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY
DRAWN BY: HW	
DRAWING SCALE: AS NOTED	
DRAWING NO. S4	
SHEET NO. 33 OF 40	





DISTRIBUTION PUMP FOUNDATION PLAN

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



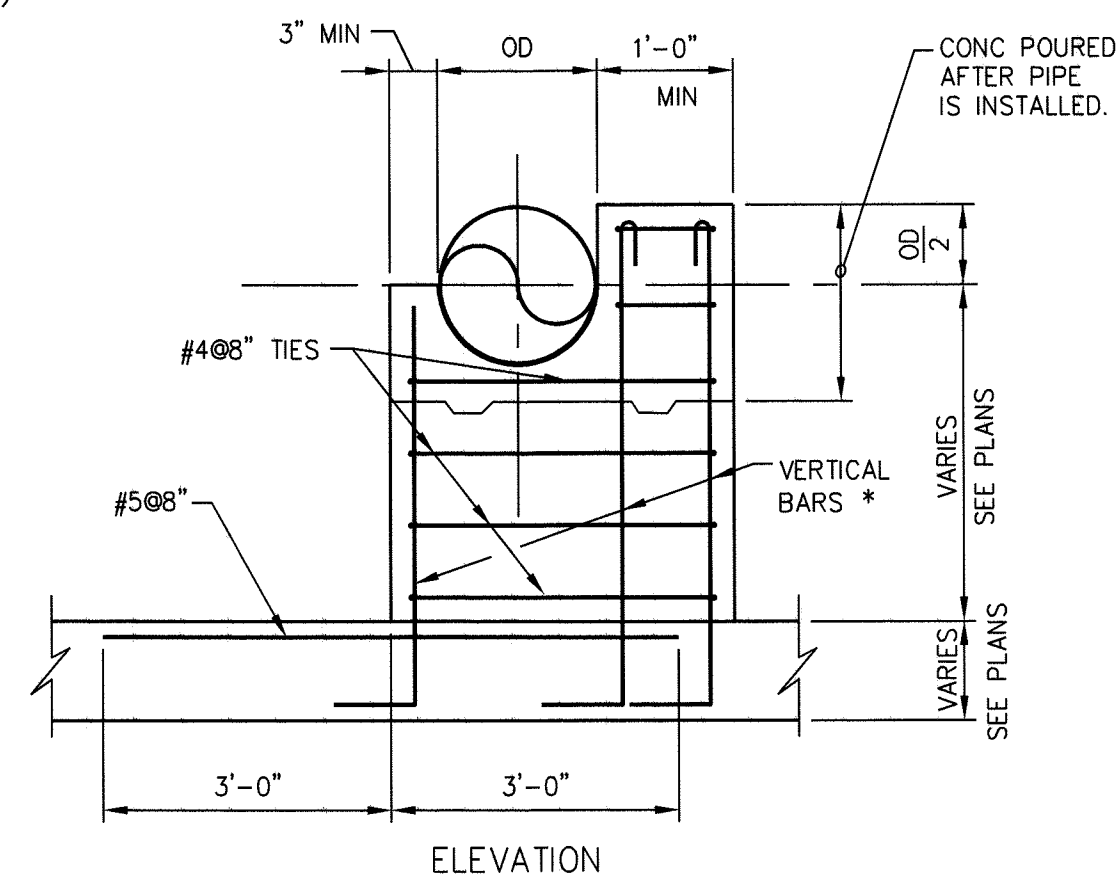
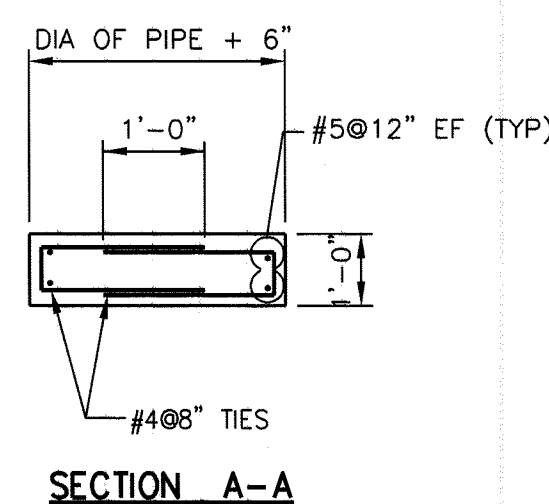
NOTES:

1. CONCRETE SUPPORT PIER IS NOT A THRUST BLOCK AND IS NOT INTENDED TO REPLACE THRUST BLOCK PROVIDED AT OTHER LOCATIONS.
2. PLACE SUPPORT PIER APPROX 9" TO 24" FROM CHECK VALVE, SEE CIVIL DRAWINGS. DO NOT PLACE SUPPORT PIER ON TOP OF EXPANSION JOINT.
3. DESIGN ENGINEER TO PROVIDE CONCRETE PIPE SUPPORT PIER FOR ALL VALVES 14" AND LARGER. REVISE AS NECESSARY; DELETE WHEN NOT REQUIRED.

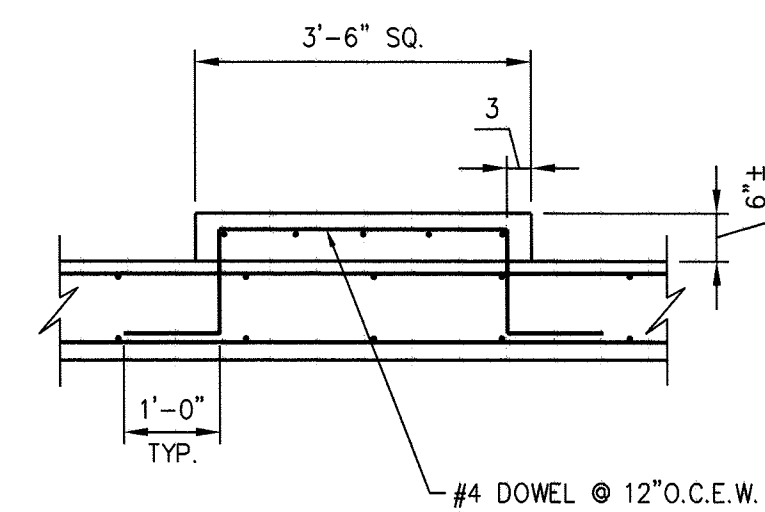
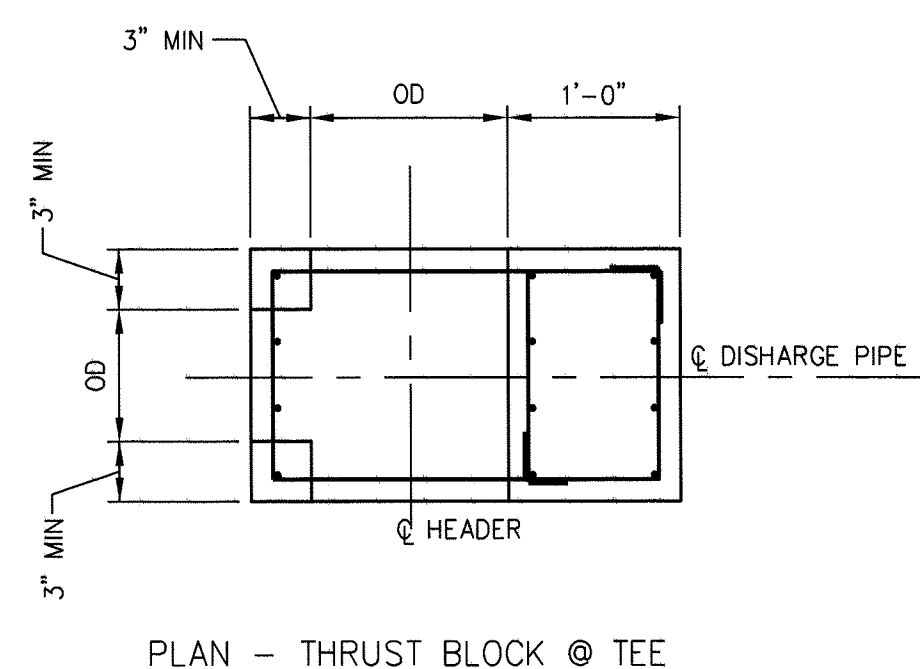
① TYPICAL CONC PIPE SUPPORT PIER DETAIL

*VERTICAL BARS

PIPE DIA	NO. OF VERT BARS
4" - 8"	3 - 2#5
10" - 12"	3 - 3#5
14" - 16"	3 - 4#5
18" - 20"	3 - 4#5



② TYPICAL THRUST BLOCK DETAILS



③ TYPICAL PUMP PAD DETAIL

BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES

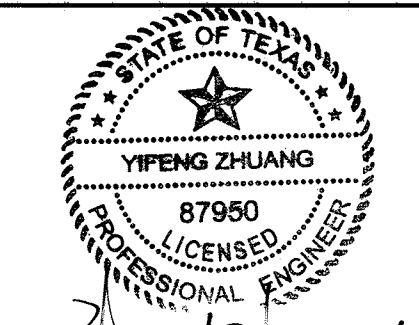
1. CONCRETE SHALL HAVE 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
3. REFER TO CIVIL AND MECHANICAL PLANS FOR PIPE SIZES AND ELEVATIONS.
4. ALL STEEL PIPE SUPPORT ARE HOT DIP GALVANIZED.
5. CEMENT STABILIZED SAND ARE 1.1 SACK CEMENT WITH 100 PSI AT 7 DAYS.

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *May 17*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



Yifeng Zhuang 10/11/2017

MISSION ENGINEERING INC.
10370 RICHMOND AVE, #560
HOUSTON, TEXAS 77042
[T] 713-981-0018
[E] dzhuang@missioneng.com
TPEF Registration No. F-11771

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

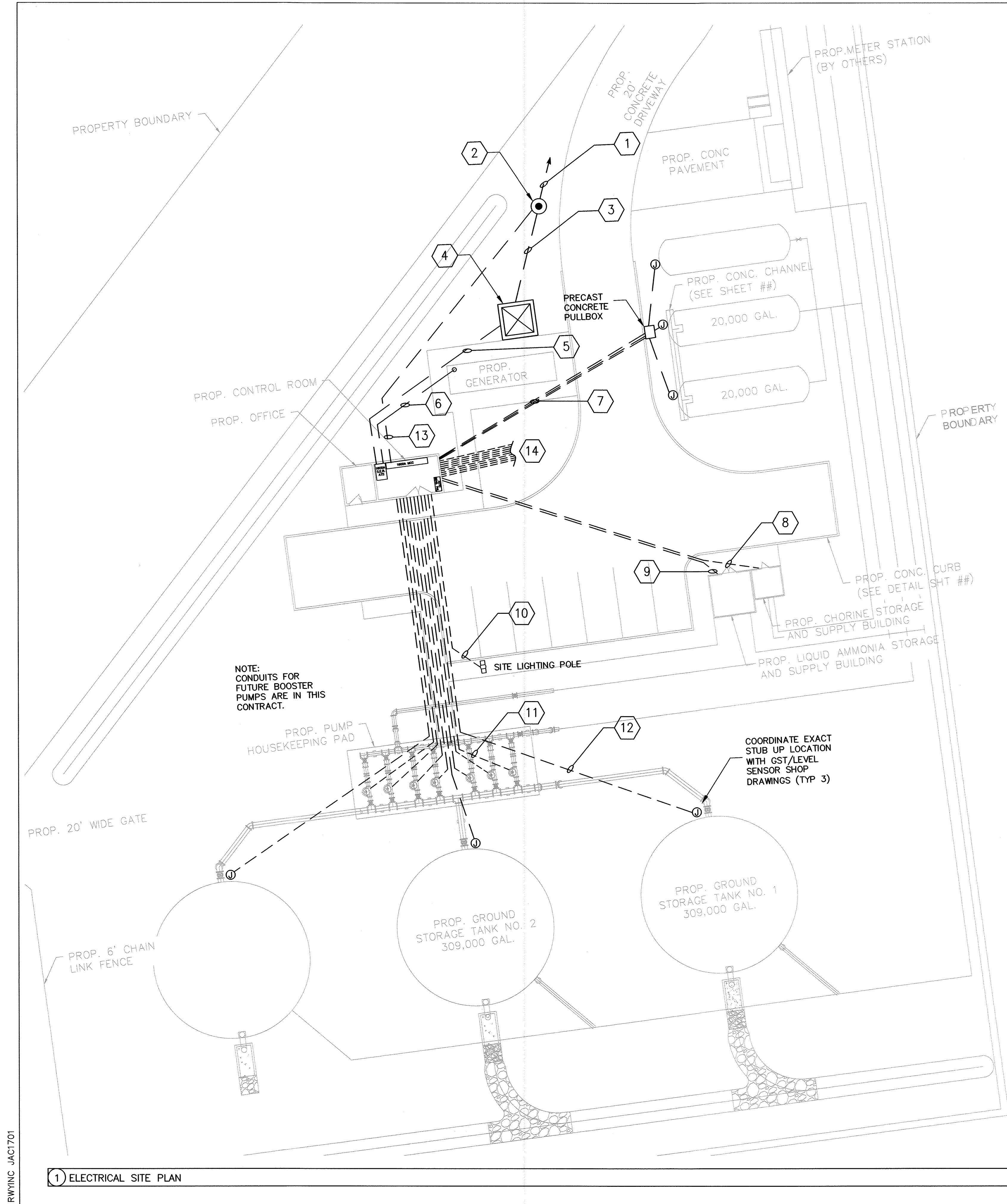
DISTRIBUTION PUMP FOUNDATION
PLAN AND DETAILS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	10-12-17	TRAFFIC & TRANSPORTATION
WASTEWATER	10-12-17	STORM WATER QUALITY
STORM	10-12-17	FACILITIES
STREET & BRIDGE	10-12-17	10-12-17

JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY
DRAWN BY: HW	
DRAWING SCALE: AS NOTED	
DRAWING NO. S5	
SHEET NO. 34 OF 40	



- 1 OVERHEAD PRIMARY BY UTILITY.
- 2 PROPOSED PRIMARY TERMINAL POLE. COORDINATE EXACT LOCATION WITH UTILITY.
- 3 2-6" C PER UTILITY STANDARDS TO PRIMARY TERMINAL POLE. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH UTILITY.
- 4 PROPOSED PAD MOUNT TRANSFORMER COORDINATE EXACT LOCATION AND REQUIREMENTS WITH UTILITY.
- 5 PROPOSED DUCT BANK FROM PAD MOUNT TRANSFORMER TO SERVICE ENTRANCE RATED ATS. 4[3-500MCM, 1#350MCMN, 3-1/2"C].
- 6 PROPOSED DUCT BANK TO GENERATOR 4[3-500 MCM 1#4/0G, 3"C.] + 2[1"C] FOR CONTROLS. COORDINATE EXACT STUB UP LOCATION WITH GENERATOR SHOP DRAWINGS.
- 7 PROPOSED 3[1"C] CONTROL AND 3[1"C] POWER TO HYDROTANK JUNCTION BOXES/AIR COMPRESSOR CIRCUITS.
- 8 PROPOSED 2[1"C] TO CHLORINE BUILDING.
- 9 PROPOSED 2[1"C] TO LAS BUILDING.
- 10 PROPOSED 1"C TO SITE LIGHTING POLE.
- 11 PROPOSED 2-1/2"C + 1"C CONTROL TO BOOSTER PUMP PAD [TYP 7].
- 12 PROPOSED 1"C TO GST J-BOX [TYP 3].
- 13 PROPOSED 1"C TO TELEPHONE SERVICE ENTRANCE FOR AUTODIALER/SCADA.
- 14 PROPOSED DUCT BANK TO METER STATION. CONTRACTOR TO VERIFY EXACT REQUIREMENTS WITH METER STATION VENDOR/WATER DISTRICT.

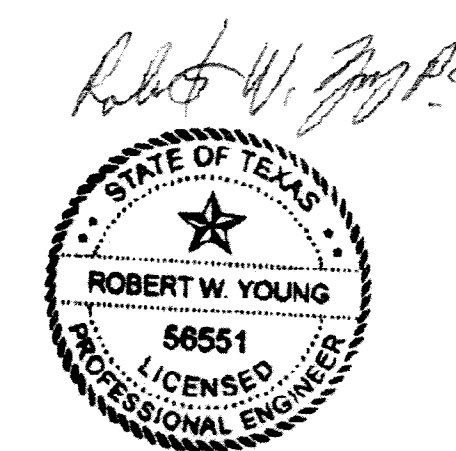
3 SCOPE OF WORK	N.T.S.
-----------------	--------

- 1 CONTRACTOR SHALL FOLLOW STANDARD LOCK-OUT/TAG-OUT PROCEDURES.
- 2 CONTRACTOR SHALL FURNISH AS BUILT DRAWINGS AT THE END OF CONSTRUCTION TO THE ENGINEER.
- 3 CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- 4 CONTRACTOR SHALL NOTIFY OPERATOR 72 HOURS PRIOR TO STARTING WORK THAT WOULD DISRUPT NORMAL ACTIVITY
- 5 ALL WIRING SHALL BE THWN/THHN COPPER
- 6 ALL CONDUIT ABOVE GRADE RIGID STEEL
- 7 ALL CONDUIT BELOW GRADE RED CONCRETE ENCASED PVC

2 ELECTRICAL NOTES	N.T.S.
--------------------	--------

BENCHMARK DATA:
CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES



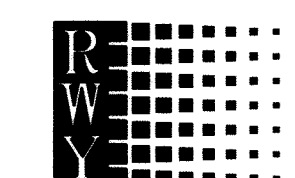
The Seal appearing on this document was authorized by Robert W. Young. 56551 on 10/23, 20 17

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: DEVELOPMENT COORDINATOR

DATE: 11/17/17



ROBERT W. YOUNG & ASSOCIATES, INC.

P.O. BOX 711207
HOUSTON, TX 77271-1207
(713) 961-4746 TEL.
(713) 961-1651 FAX.
TDE# P-007500

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

OVERALL ELECTRICAL SITE PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
STORM	STORM WATER QUALITY
STREET & BRIDGE	FACILITIES

JAC JOB No.:
F003-1445

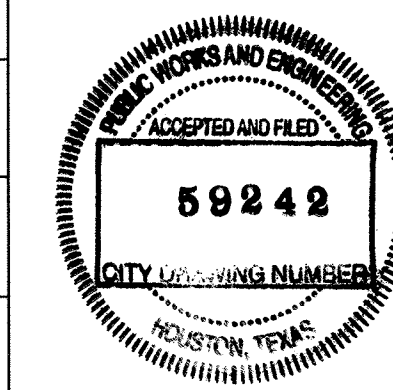
DRAWN BY:
SMM

DRAWING SCALE:
AS SHOWN

DRAWING NO.
E1

SHEET NO.
35 OF 40

FOR CITY OF HOUSTON USE ONLY



WATER SUPPLY PLANT- ULTIMATE LOAD ANALYSIS			
LOAD DESCRIPTION	AMPS PER PHASE		
	Aφ	Bφ	Cφ
BOOSTER PUMP 150 HP	180.00	180.00	180.00
BOOSTER PUMP 150 HP	180.00	180.00	180.00
BOOSTER PUMP 150 HP	180.00	180.00	180.00
BOOSTER PUMP 150 HP	180.00	180.00	180.00
BOOSTER PUMP 150 HP	180.00	180.00	180.00
FUTURE BOOSTER PUMP 150 HP	180.00	180.00	180.00
FUTURE BOOSTER PUMP 150 HP	180.00	180.00	180.00
CHLORINE BOOSTER PUMP 3@1HP	6.30	6.30	6.30
TRANSFORMER LOAD (25KVA RUNNING LOAD)	52.00		52.00
25% OF LARGEST MOTOR	45.00	45.00	45.00
	TOTAL	1366.30	1311.30
		1366.30	

USE 100% RATED 1600A 480v 3 PHASE 4 WIRE SERVICE

2 LOAD ANALYSIS	N.T.S.
-----------------	--------

- SERVICE ENTRANCE: UTILITY TO INSTALL A PAD MOUNT TRANSFORMER IN THE LOCATION INDICATED ON THE SITE PLAN. INSTALL A NEW 1600A 480V 3φ 4W. SERVICE PER THE DRAWINGS, EXTEND NEW SERVICE INTO "NORMAL" SIDE OF ATS AS INDICATED. INSTALL SERVICE ENTRANCE AND METERING IN ACCORDANCE WITH CURRENT UTILITY SERVICE STANDARDS.
 - INSTALL A NEW 1600A NEMA 1 GASKETED MOTOR CONTROL CENTER (SIEMENS, GE, EATON OR SQUARE D) COMPLETE WITH COMBINATION STARTERS, WITH SOLID STATE OVERLOADS, 1-25KVA 480V-120V/240V DRY TYPE TRANSFORMER AND ONE NEMA 1 42 CKT. PANEL BOARD AS INDICATED. PROVIDE MECHANICALLY ATTACHED NAME PLATES FOR ALL COMPONENTS. GROUND USING A #4/0 BARE COPPER GROUNDING CONDUCTOR PER THE ONE LINE.
 - INSTALL 1 1000KW 480V 3φ 4W. KOHLER KD1000 (OR EQUAL CAT, STEWART AND STEVENSON, OR ONAN) DIESEL GENERATOR WITH KHO5520T ALTERNATOR, 1600A UNIT MOUNTED BREAKER AND MATCHING 1600A 3 POLE AUTOMATIC TRANSFER SWITCH IN NEMA 1 ENCLOSURE TO BE MOUNTED IN THE CONTROL ROOM.
- PROVIDE NFPA 110 COMPLIANT GENERATOR WITH THE FOLLOWING OPTIONS:
- PERMANENT MAGNET ALTERNATOR FOR SEQUENTIAL STARTING PUMPS LISTED WITH A VOLTAGE LESS THAN 22%
 - ALUMINIZED STEEL CRITICAL EXHAUST SILENCER WITH S.S. FLEX CONNECTION, TAIL PIPE, AND RAIN CAP
 - 480V WATER JACKET HEATER, 6000W
 - PROVIDE RAIN TIGHT SOUND ATTENUATED ENCLOSURE NOT TO EXCEED 77DBA SOUND LEVEL AT 7M
 - BATTERY CHARGER, FLOAT EQUALIZE; MINIMUM 10A OUTPUT WITH AMMETER
 - BATTERY RACK AND CABLES
 - ELECTRONIC ENGINE SPEED GOVERNOR
 - ALTERNATOR ANTI-CONDENSATION STRIP HEATER
 - LINE CIRCUIT BREAKER, UL LISTED, THERMOMAGNETIC
 - UL LISTED DOUBLE WALL SUBBASE DIESEL FUEL TANK AND FUEL GAGE SIZED FOR 72 HOURS @ 100% LOAD
 - COMMON TROUBLE ALARM AND REMOTE ANNUNCIATOR TO SCADA OR AUTODIALER
 - ANALOG OR DIGITAL CONTROL PANEL WITH AC METERS AND DC ENGINE GAUGES
 - OIL AND COOLANT DRAIN EXTENSIONS TO PLUGS OUTSIDE THE GENERATOR SET SKID
 - VIBRATION ISOLATORS (PAD OR SPRING)
 - FIVE LIGHT STATUS PANEL WITH RUN TIME HOUR METER.
 - THREE YEAR OR 1,000 HOUR WARRANTY.
 - PROVIDE HOT DIP GALVANIZED ACCESS PLATFORM ON BOTH SIDES OF THE GENERATOR PER OSHA STANDARDS.

PROVIDE AUTOMATIC TRANSFER SWITCH WITH THE FOLLOWING FEATURES:

- PILOT LIGHT INDICATORS
- PLANT EXERCISER
- MANUAL SWITCH INSIDE OF THE LOCKING CABINET
- IN-PHASE MONITOR
- AUXILIARY CONTACTS ON NORMAL AND EMERGENCY SIDES
- ON/OFF/MANUAL SELECTOR SWITCH
- TEST SWITCH
- TOUCH PAD WITH LCD DISPLAY SCREEN
- MICROPROCESSOR BASED LOGIC AND CONTROLS

3 SCOPE OF WORK	N.T.S.
-----------------	--------

- PROGRAMMABLE TIME DELAYS AND SETTING FOR VOLTAGE/FREQUENCY PICKUP/DROPOUT
- NEMA 1 ENCLOSURE.
- INSTALL A MECHANICALLY ATTACHED ENGRAVED NAMEPLATE READING "AUTOMATIC TRANSFER SWITCH" ON THE FRONT OF THE ENCLOSURE.
- INSTALL 130K LIEBERT ACCUVAR SURGE PROTECTOR AS INDICATED.
- AUTO/SENSORY PANEL: CONTROLS VENDOR SHALL PROVIDE AND INSTALL A NEW PUMP AND ALARM CONTROLLER SEPARATELY OR IN THE NEW GASKETED MOTOR CONTROL CENTER. CONTROL POWER TRANSFORMERS SHALL BE SIZED FOR AUXILIARY CONTROL BURDEN WITH 25% SAFETY FACTOR (MINIMUM). PROVIDE AUTO DIAL PHONE CONNECTION TO PLANT OPERATOR, RACO "VERBATIM" WITH 24 CHANNELS EXPANDABLE TO 32. PROVIDE PUMP ALTERNATOR AND ELAPSED TIME METER FOR EACH PUMP. PROGRAMMABLE PUMP AND ALARM CONTROLLER SHALL INCLUDE DISPLAY WATER TANK LEVEL (MULTISMART MULTITRODE OR APPROVED EQUAL). CONTROLLER SHALL BE PROGRAMMED TO AUTOMATICALLY FILL THE GST BASED ON WATER ELEVATION, BOOSTER PUMPS BASED ON WATER DISTRIBUTION SYSTEM PRESSURE, MONITORING AND ALARMS OF GROUND STORAGE TANK AND PRESSURE TANKS LEVELS AND DISTRIBUTION PRESSURES. PROVIDE ANALOG OR DIGITAL PLANT DISTRIBUTION PRESSURE READOUT, AS A MINIMUM ALARM CONDITIONS SHALL INCLUDE HIGH GST WATER LEVEL (OVERFLOW CONDITION), LOW GST LEVEL, HIGH, OR LOW HYDRO TANK LEVELS, HIGH OR LOW HYDRO TANK/DISTRIBUTION PRESSURE, FAIL TO RUN BOOSTER PUMPS, FAIL TO RUN AIR COMPRESSOR, GENERATOR COMMON TROUBLE ALARM AND ELECTRICAL POWER FAILURE.
- CONTRACTOR SHALL INSTALL EIGHT 70W EQUIVALENT LED WALL PACKS (WILLIAMS WP1 WITH PHOTO CELL CONTROLLED 30A CONTACTOR) AS SHOW IN THE SITE PLAN. EXTEND 2#12, 1#12 GROUND IN 3/4" INCH RIGID STEEL TO A NEW 20A SINGLE POLE BREAKER IN THE NEW PANELBOARD.
- INSTALL OUTLET, LIGHTS, AND MISCELLANEOUS, OUTLINED IN THE ATTACHED ENLARGED ELECTRICAL SITE PLAN.
- ALL CONDUIT RIGID STEEL ABOVE GRADE AND RED CONCRETE ENCASED PVC BELOW GRADE (MINIMUM 3" COVER ALL SIDES)
- ALL WIRING THWN/THHN COPPER AND ALL BUS COPPER U.O.N.
- ALL WORK PER NEC AND LOCAL CODES AND ORDINANCES.

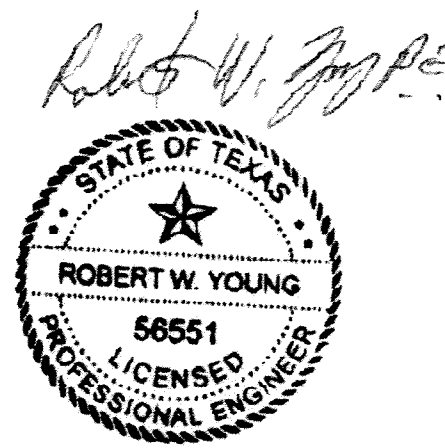
NOTE: PLANT IS IN THE ETJ OF THE CITY OF HOUSTON AND SHALL MEET ALL CITY OF HOUSTON WATER SUPPLY PLANT REQUIREMENTS

PROVIDE NATURAL GAS GENERATOR BID ALTERNATE AS SPECIFIED:
INSTALL (3) 350KW 480V 3φ 4W. KOHLER 350REZXB OR EQUAL CAT, STEWART AND STEVENSON, OR ONAN) NATURAL GAS GENERATORS WITH 54A027 OVERSIZED ALTERNATOR, 600A UNIT MOUNTED BREAKER AND MATCHING 1600A 3 POLE SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH IN NEMA 1 ENCLOSURE TO BE FLOOR MOUNTED IN THE CONTROL ROOM. PROVIDE DIGITAL PARALLELING AND SWITCHBOARD PER NEC AND MANUFACTURERS RECOMMENDATIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE SPACE REQUIREMENTS AS NECESSARY TO ACCOMMODATE THE GENERATOR PARALLELING SWITCHGEAR.

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1928, 1987 ADJ.)

NOTES



The Seal appearing on this document

was authorized by Robert W. Young.

56551 on 10/23, 20 17

REVISIONS			
NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Maxine*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



ROBERT W. YOUNG
&
ASSOCIATES, INC.

P.O. BOX 711207
HOUSTON, TX 77271-1207
(713)981-4746 TEL.
(713)981-1651 FAX.
TBB# F-007500

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

ELECTRICAL SCOPE OF
WORK/ONE LINE DIAGRAM

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
SEWER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:

F003-1445

DRAWN BY:

SMM

DRAWING SCALE:

AS SHOWN

DRAWING NO.

E2

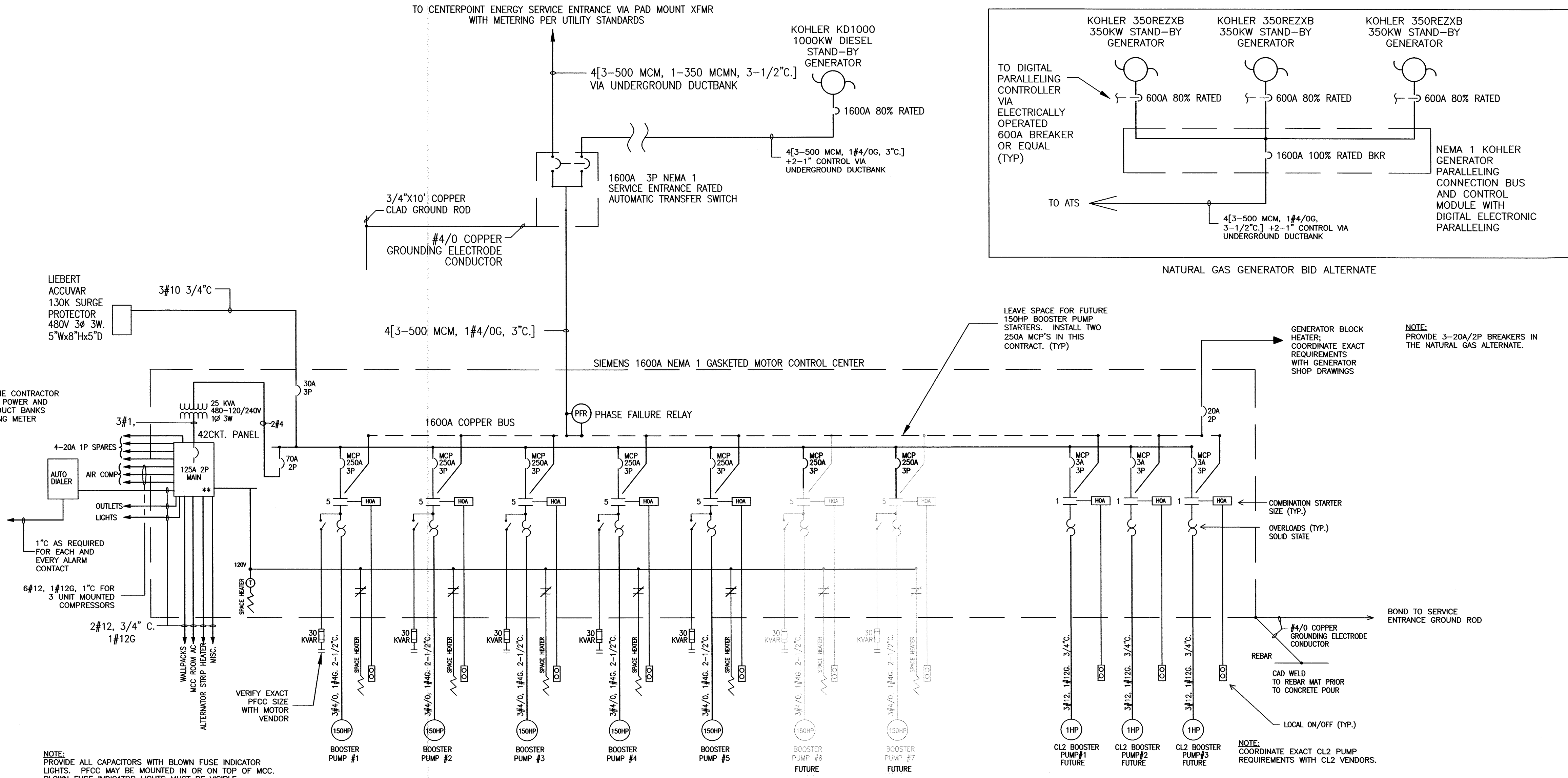
SHEET NO.

36 OF 40

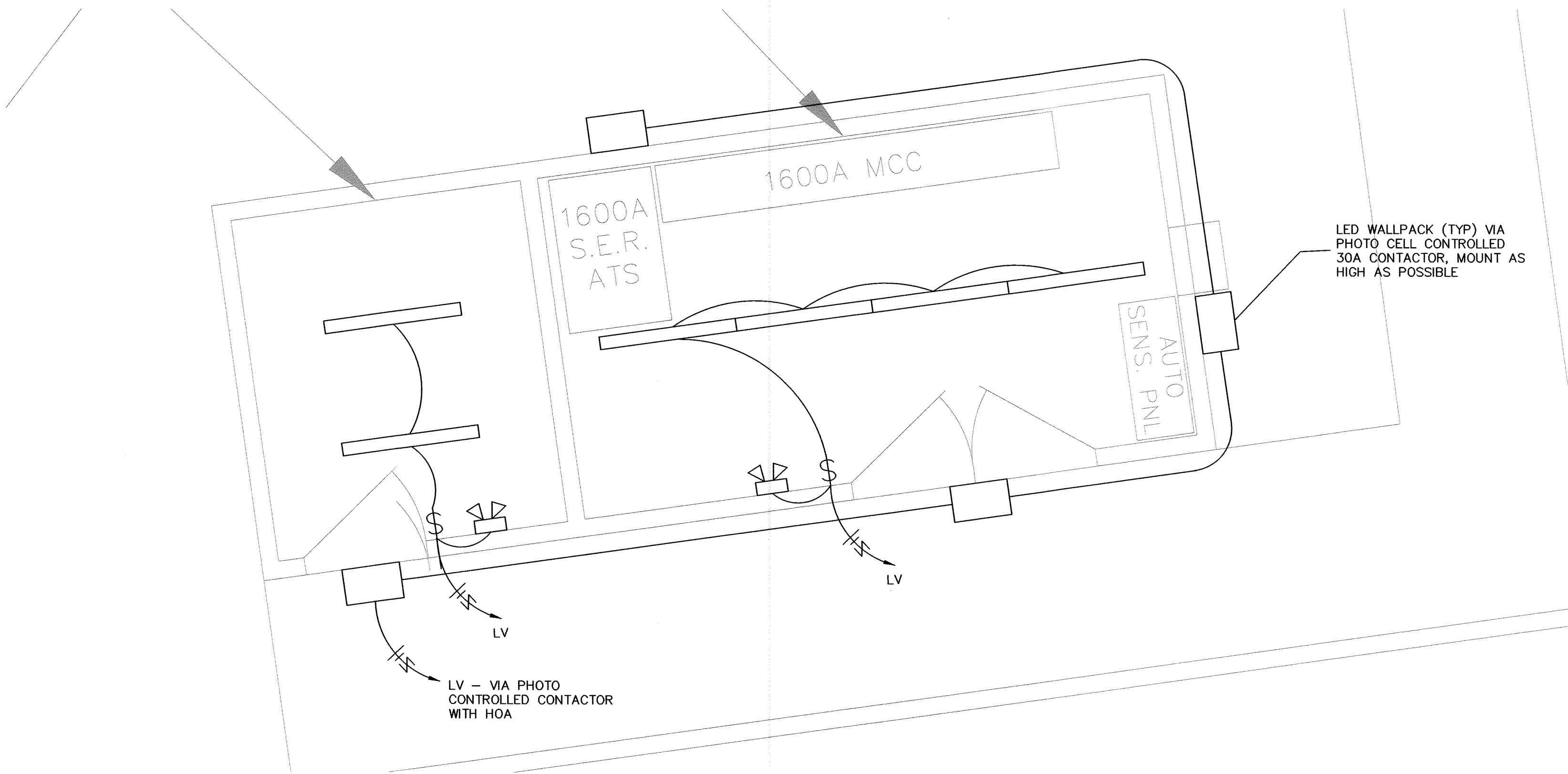
FOR CITY OF HOUSTON USE ONLY



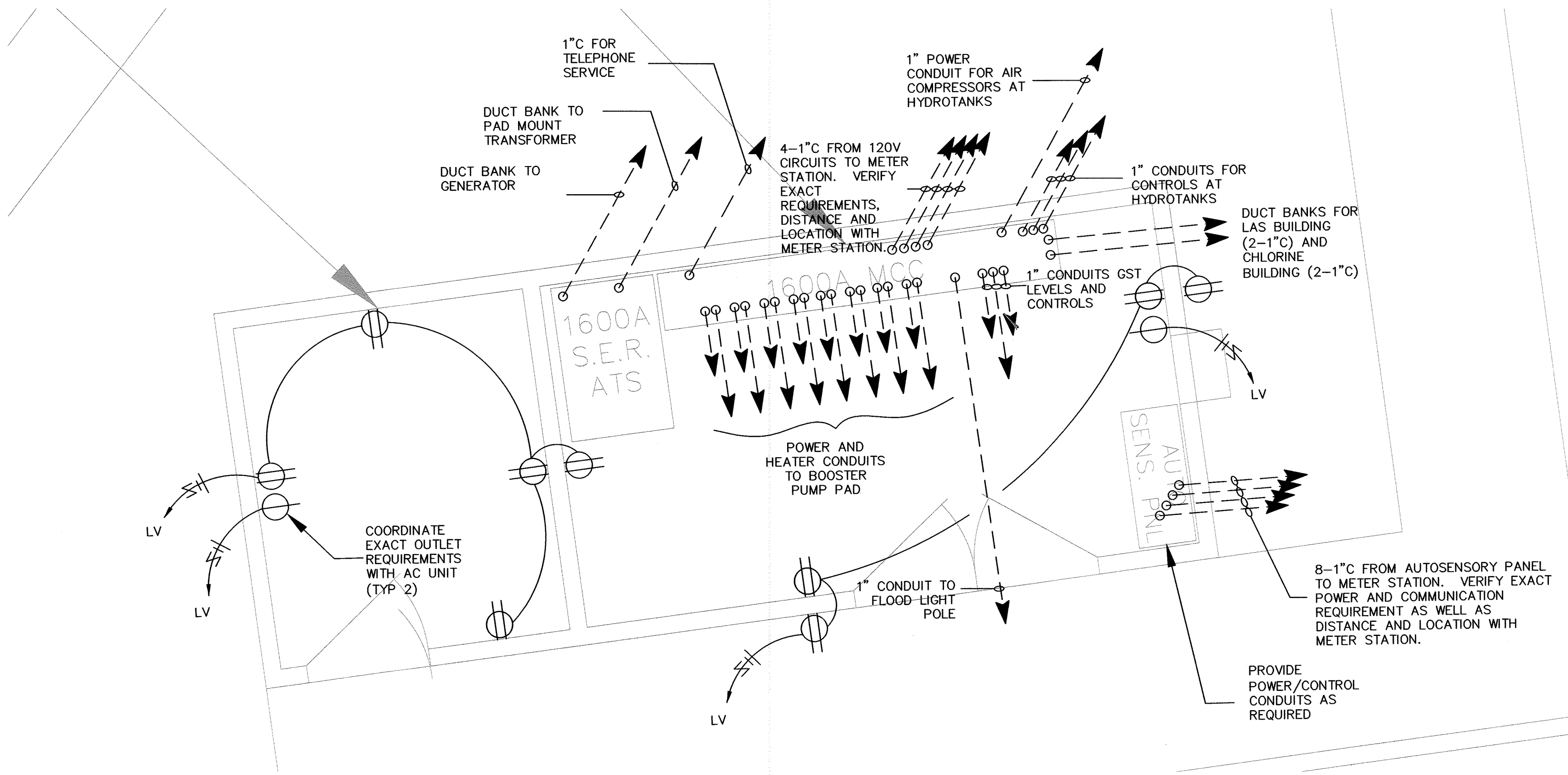
** NOTE:
IT IS THE RESPONSIBILITY OF THE CONTRACTOR
TO COORDINATE METER STATION POWER AND
COMMUNICATION CIRCUITS AND DUCT BANKS
REQUIREMENTS WITH THE EXISTING METER
STATION.



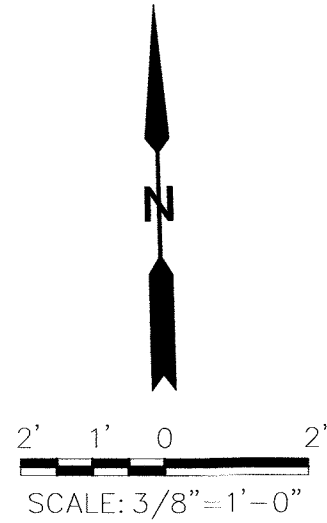
1 ELECTRICAL ONE LINE DIAGRAM	N.T.S.
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3 CONTROL BUILDING/OFFICE LIGHTING PLAN 3/8"=1'



1 CONTROL BUILDING/OFFICE POWER PLAN 3/8"=1'



LIGHTING LEGEND	
	120V-4' LED BARE STRIP WITH WIRE GUARD AND INTEGRATED LED LUMINARIES. WILLIAMS #76-4-L53/840-WG-7611-DRV-UNV OR APPROVED EQUAL.
	120V-17W LED LAMP IN VAPOR TIGHT FIXTURE WITH GLOBE GUARD. BLOCK LIGHTING #VXLG215-41-G OR APPROVED EQUAL.
	120V-DARK SKY COMPLIANT LED WALL PACK WILLIAMS #VMW H-L17/840-TL-BLK-CGL-UNV OR APPROVED EQUAL.
	120V COMPACT LED EMERGENCY LIGHT WITH 2 ADJUSTABLE HEADS. ISOLITE #RL2-LED-WH OR APPROVED EQUAL.

4 LIGHTING LEGEND	N.T.S.
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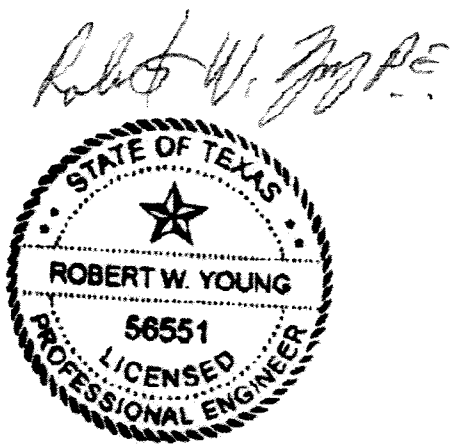
- 1 CONTRACTOR SHALL FOLLOW STANDARD LOCK-OUT/TAG-OUT PROCEDURES.
- 2 CONTRACTOR SHALL FURNISH AS BUILT DRAWINGS AT THE END OF CONSTRUCTION TO THE ENGINEER.
- 3 CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- 4 CONTRACTOR SHALL NOTIFY OPERATOR 72 HOURS PRIOR TO STARTING WORK THAT WOULD DISRUPT NORMAL ACTIVITY
- 5 ALL WIRING SHALL BE THWN/THHN. ALL BUS/WIRING COPPER
- 6 ALL CONDUIT ABOVE GRADE RIGID STEEL
- 7 ALL CONDUIT BELOW GRADE RED CONCRETE ENCASED PVC
- 8 ALL WORK PER CITY OF HOUSTON ETJ STANDARDS
- 9 ALL LIGHTING TO COMPLY WITH FORT BEND COUNTY LIGHTING REGULATIONS

2 ELECTRICAL NOTES	N.T.S.
--------------------	--------

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WESE OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES



The Seal appearing on this document was authorized by Robert W. Young, 56551 on 10/23, 20 17

REVISIONS			
NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: DEVELOPMENT COORDINATOR

DATE: 11/17/17



ROBERT W. YOUNG & ASSOCIATES, INC.

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HOUSTON, TX 77271-1207
(713) 981-4746 TEL.
(713) 981-1651 FAX.
TBP# F-007500

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

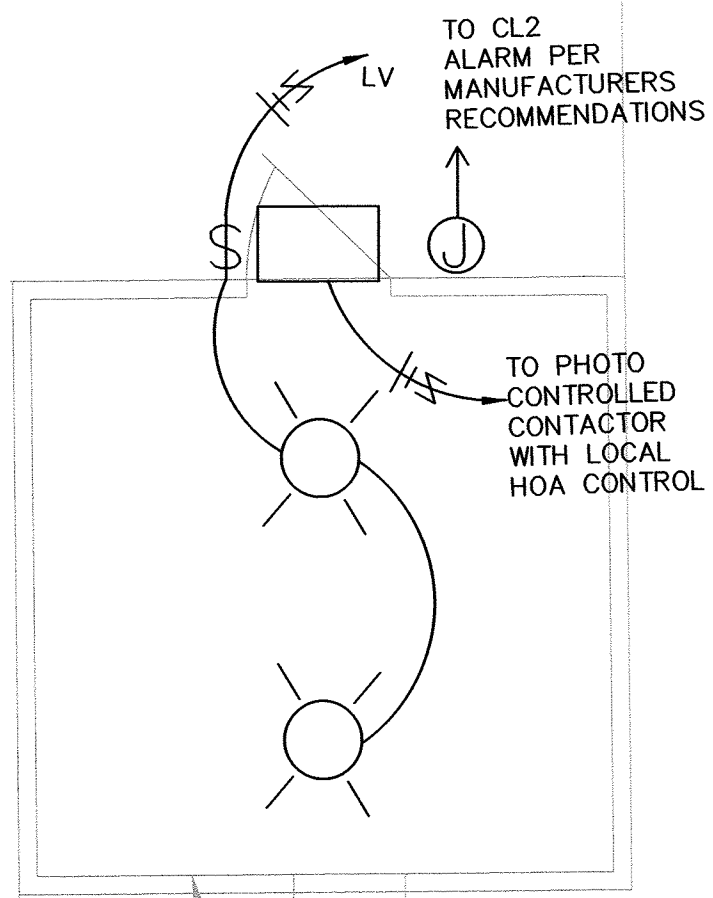
OFFICE & MCC BUILDING
ELECTRICAL POWER AND
LIGHTING PLAN

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

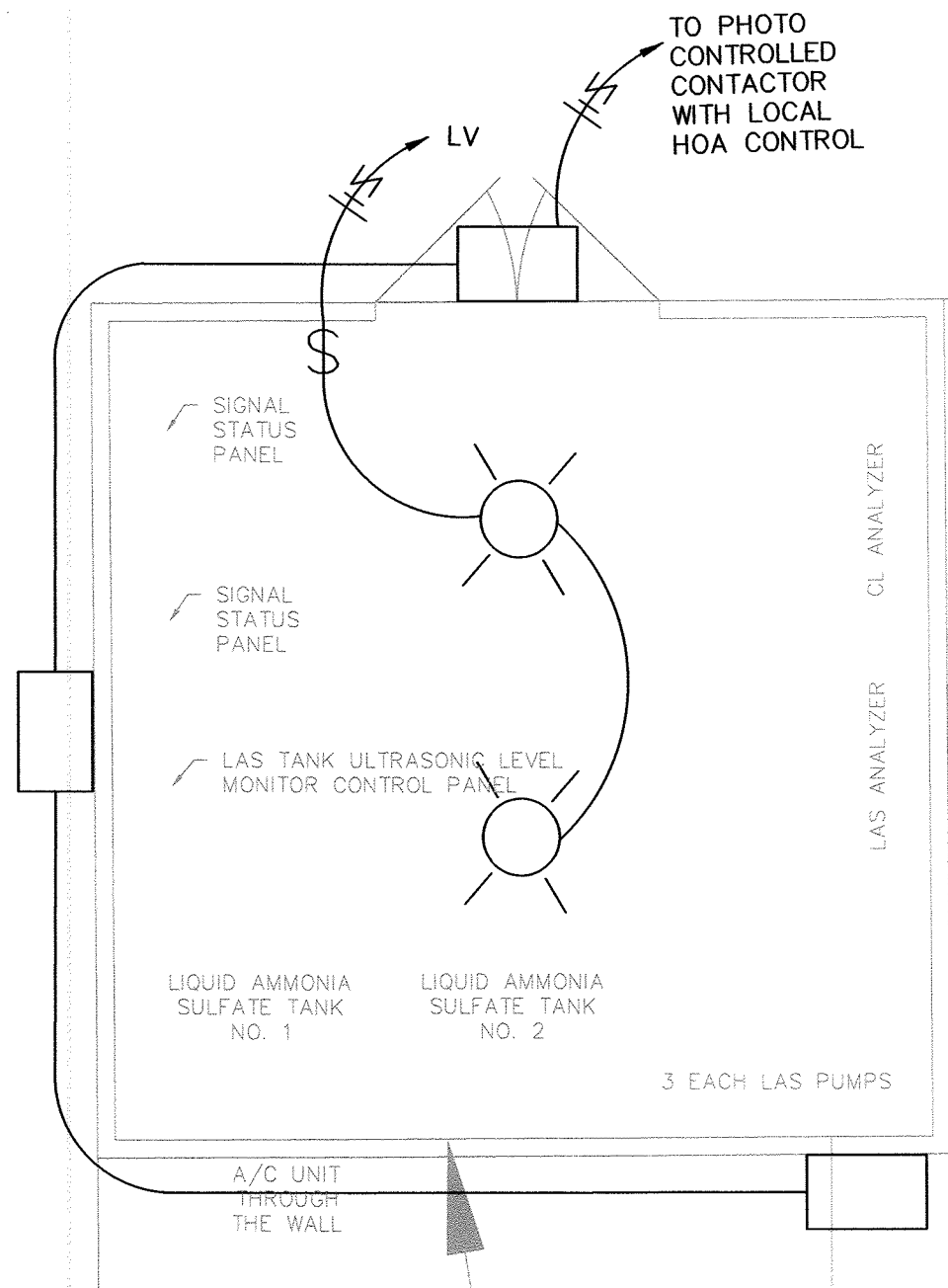
WATER	TRAFFIC & TRANSPORTATION
SEWER	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.: F003-1445	FOR CITY OF HOUSTON USE ONLY
DRAWN BY: SMM	
DRAWING SCALE: AS SHOWN	
DRAWING NO. E3	
SHEET NO. 37 OF 40	



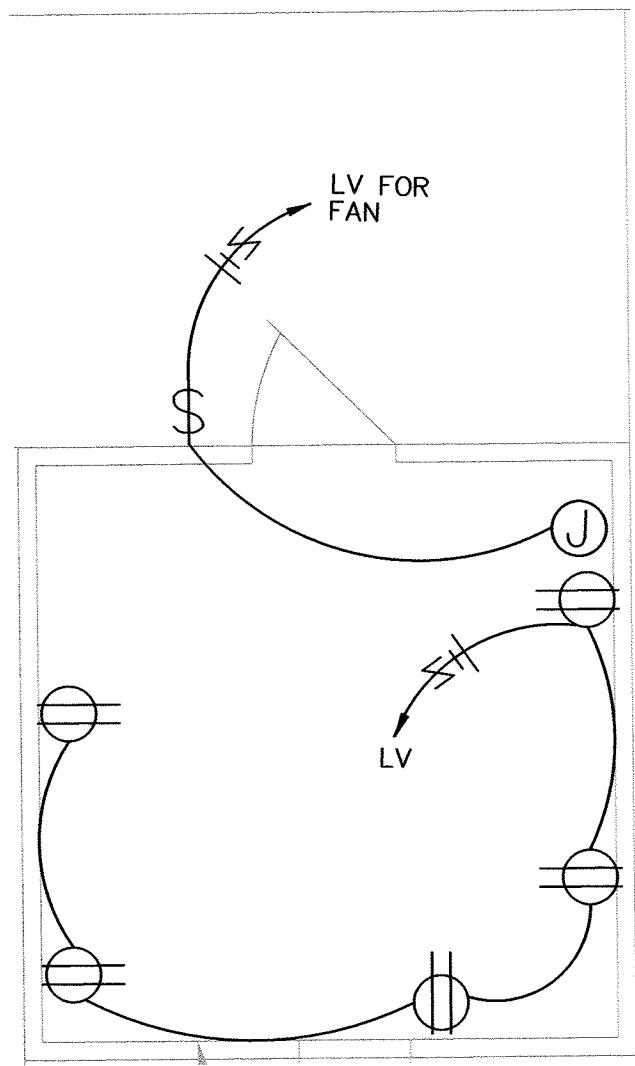
5 CHLORINE BUILDING LIGHTING PLAN

3/8"=1'



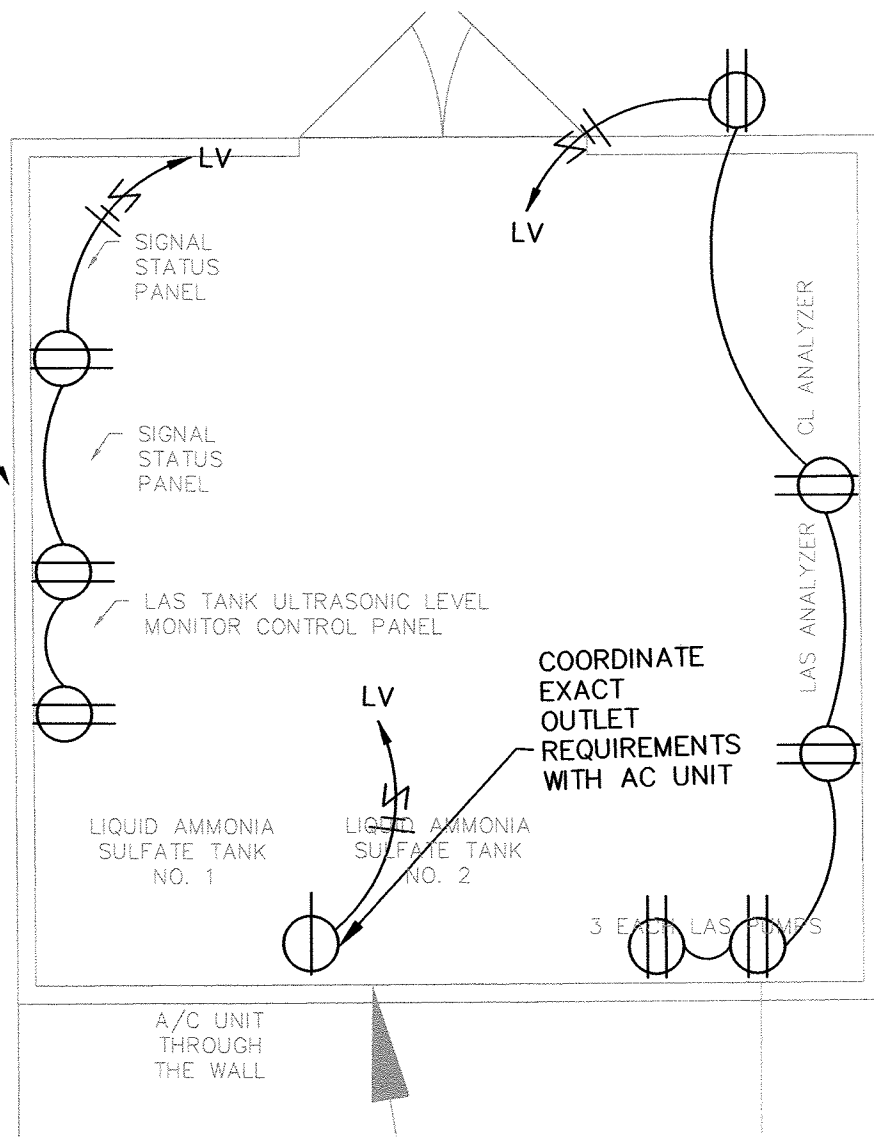
6 LAS BUILDING LIGHTING PLAN

3/8"=1'



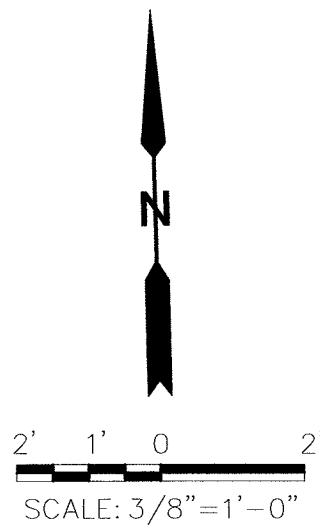
1 CHLORINE BUILDING POWER PLAN

3/8"=1'



2 LAS BUILDING POWER PLAN

3/8"=1'



SCALE: 3/8"=1'-0"

LIGHTING LEGEND	
	120V-4' LED BARE STRIP WITH WIRE GUARD AND INTEGRATED LED LUMINARIES. WILLIAMS #76-4-L53/840-WG-7611-DRV-UNV OR APPROVED EQUAL.
	120V-17W LED LAMP IN VAPOR TIGHT FIXTURE WITH GLOBE GUARD. BLOCK LIGHTING #VXLG215-41-G OR APPROVED EQUAL.
	120V-DARK SKY COMPLIANT LED WALL PACK WILLIAMS #VMW H-L17/840-TL-BLK-CGL-UNV OR APPROVED EQUAL.
	120V COMPACT LED EMERGENCY LIGHT WITH 2 ADJUSTABLE HEADS. ISOLITE #RL2-LED-WH OR APPROVED EQUAL.

4 LIGHTING LEGEND

N.T.S.

- 1 CONTRACTOR SHALL FOLLOW STANDARD LOCK-OUT/TAG-OUT PROCEDURES.
- 2 CONTRACTOR SHALL FURNISH AS BUILT DRAWINGS AT THE END OF CONSTRUCTION TO THE ENGINEER.
- 3 CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- 4 CONTRACTOR SHALL NOTIFY OPERATOR 72 HOURS PRIOR TO STARTING WORK THAT WOULD DISRUPT NORMAL ACTIVITY
- 5 ALL WIRING SHALL BE THWN/THHN. ALL BUS/WIRING COPPER
- 6 ALL CONDUIT ABOVE GRADE RIGID STEEL
- 7 ALL CONDUIT BELOW GRADE RED CONCRETE ENCASED PVC
- 8 ALL WORK PER CITY OF HOUSTON ETJ STANDARDS
- 9 ALL LIGHTING TO COMPLY WITH FORT BEND COUNTY LIGHTING REGULATIONS

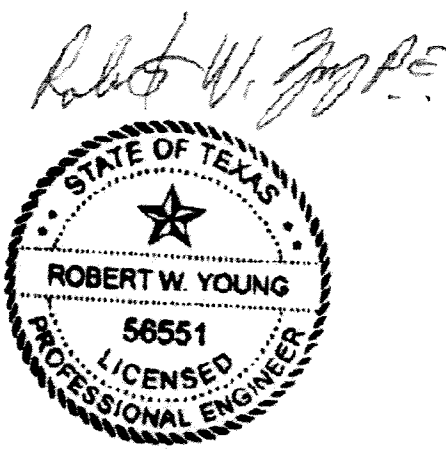
3 ELECTRICAL NOTES

N.T.S.

BENCHMARK DATA:

CONTROL BENCH - RM = (0769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WEST OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: 0769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1929, 1987 ADJ.)

NOTES



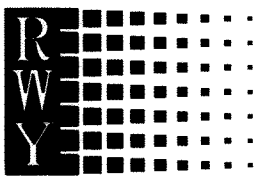
The Seal appearing on this document was authorized by Robert W. Young. 56551 on 10/23, 2017

REVISIONS

NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: DEVELOPMENT COORDINATOR

DATE: 11/17/17



ROBERT W. YOUNG & ASSOCIATES, INC.

P.O. BOX 711207
HOUSTON, TX 77271-1207
(713)981-4746 TEL.
(713)981-1851 FAX.
TBP# F-007500

FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

DISINFECTION STORAGE AND
FEED BUILDING POWER AND
LIGHTING PLANS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
DISINFECTION	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

DRAWN BY:
SMM

DRAWING SCALE:
AS SHOWN

DRAWING NO.
E4

SHEET NO.
38 OF 40

FOR CITY OF HOUSTON USE ONLY

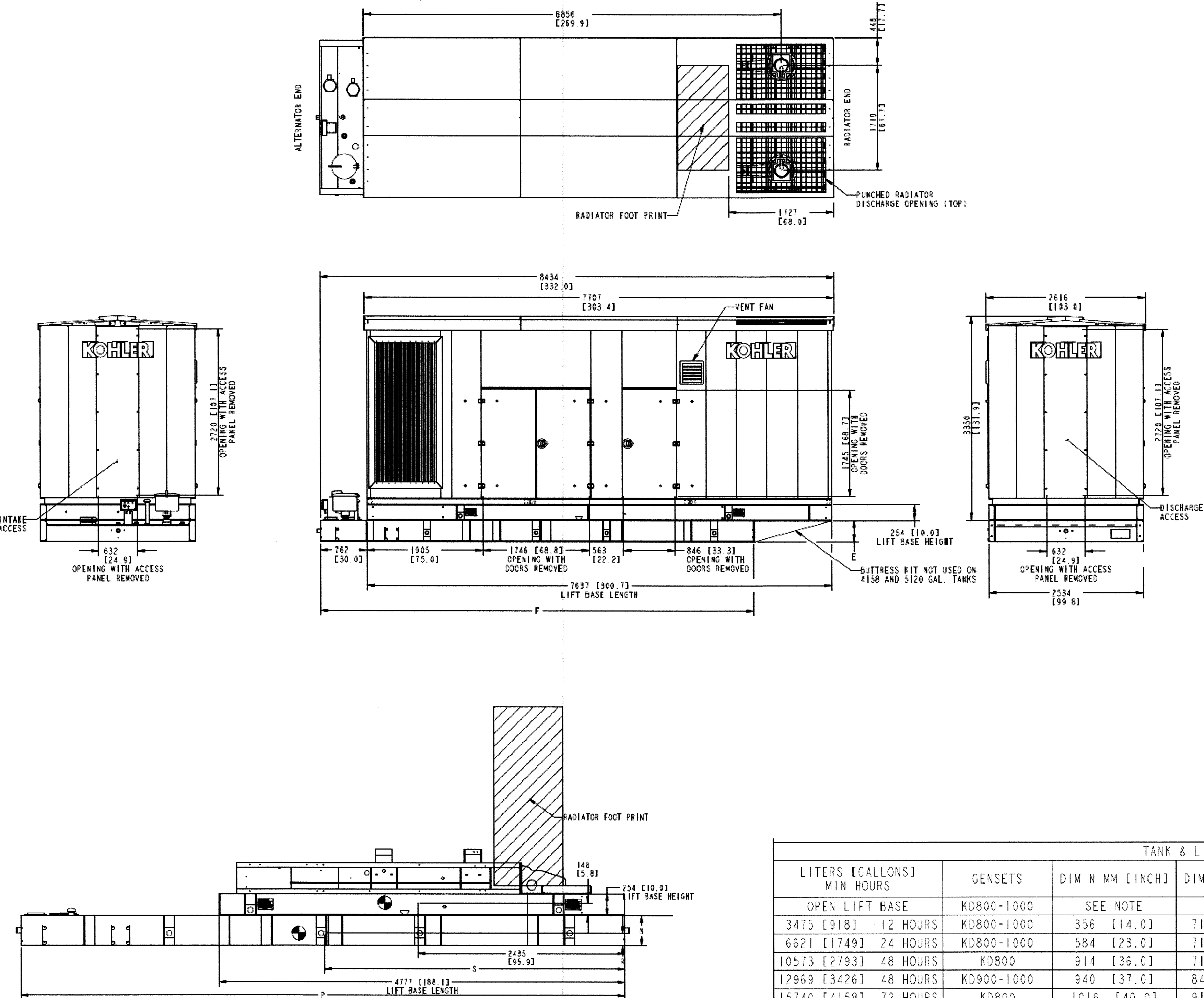


Fuel Tank Capacity, L (gal.)	Est. Fuel Supply Hours at 60 Hz with Full Load (nominal)	Max. Dimensions, mm (in.)			Max. Weight, † kg (lb.)	Fuel Tank Height, mm (in.)	Sound Pressure Level at 60 Hz with Full Load, dB(A) ‡
		Length	Width §	Height			

KD1000 SL2 Sound Enclosure with Internal Silencer and State Code Subbase Fuel Tank *

Lifting Base	0	8434 (332)	2616 (103)	3353 (132)	11213 (24721)	—	77
3475 (918)	12			3706 (146)	14801 (32631)	356 (14.0)	
6621 (1749)	24			3934 (155)	15281 (33690)	584 (23.0)	
12969 (3426)	48			4290 (169)	17064 (37621)	940 (37.0)	
19381 (5120)	72			4366 (172)	18243 (40218)	1016 (40.0)	

COORDINATE EXACT PARAMETERS WITH VENDOR DATA SUBMITTAL

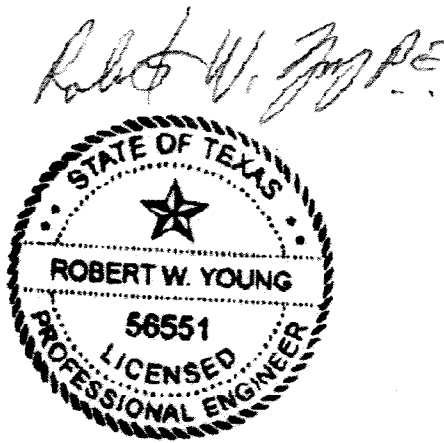


TANK & LIFT BASE INFORMATION						
LITERS [GALLONS] MIN HOURS	GENSETS	DIM N MM [INCH]	DIM P MM [INCH]	WEIGHT KG [LBS] (NO FUEL)	VERTICAL C.G. DIM R MM [INCH]	HORIZONTAL C.G. DIM S MM [INCH]
OPEN LIFT BASE	KD800-1000	SEE NOTE	SEE NOTE	729 [1,608 LB]	148 [5.8]	2435 [95.9]
3475 [918] 12 HOURS	KD800-1000	356 [14.0]	7112 [280.0]	3588 [7,910 LB]	145 [5.7]	3538 [139.3]
6621 [1749] 24 HOURS	KD800-1000	584 [23.0]	7112 [280.0]	4068 [8,969 LB]	256 [10.1]	3538 [139.3]
10573 [2793] 48 HOURS	KD800	914 [36.0]	7112 [280.0]	4647 [10,246 LB]	415 [16.3]	3488 [137.3]
12969 [3426] 48 HOURS	KD900-1000	940 [37.0]	8400 [330.7]	5851 [12,900 LB]	419 [16.5]	4300 [169.3]
15740 [4158] 72 HOURS	KD800	1016 [40.0]	9144 [360.0]	6058 [13,356 LB]	451 [17.8]	4713 [185.6]
19381 [5120] 72 HOURS	KD900-1000	1016 [40.0]	11050 [435.0]	7030 [15,497 LB]	451 [17.8]	5713 [224.9]

BENCHMARK DATA:

CONTROL BENCH - RM = (Q769) BRASS DISK SET IN EAST END OF SOUTH HEADWALL, APPROX. 0.45 MILE WESE OF MILEPOST NO. 25 & APPROX. 17' SOUTH OF CENTERLINE OF FM 1093 (FBCSD ID: Q769). POINT IS WEST OF THE INTERSECTION OF HARLEM ROAD & FM 1093 (RED LIGHT) 3.03 MILES. ELEVATION: 105.52 (NGVD 1928, 1987 ADJ.)

NOTES



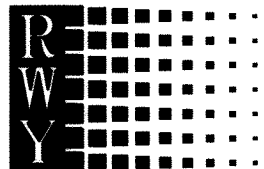
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NUMBER	DESCRIPTION	DATE	INITIALS

APPROVED: *Max*
DEVELOPMENT COORDINATOR

DATE: 11/17/17



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FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

GENERATOR ELEVATION,
DETAILS AND TANK
DIMENSIONS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
SEWER/WASTE	STORM WATER QUALITY
STORM	FACILITIES
STREET & BRIDGE	

JAC JOB No.:
F003-1445

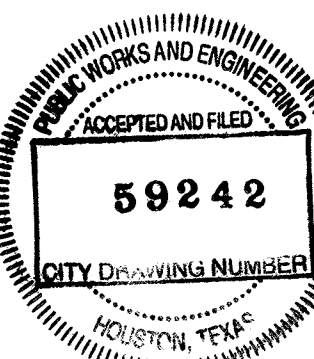
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SMM

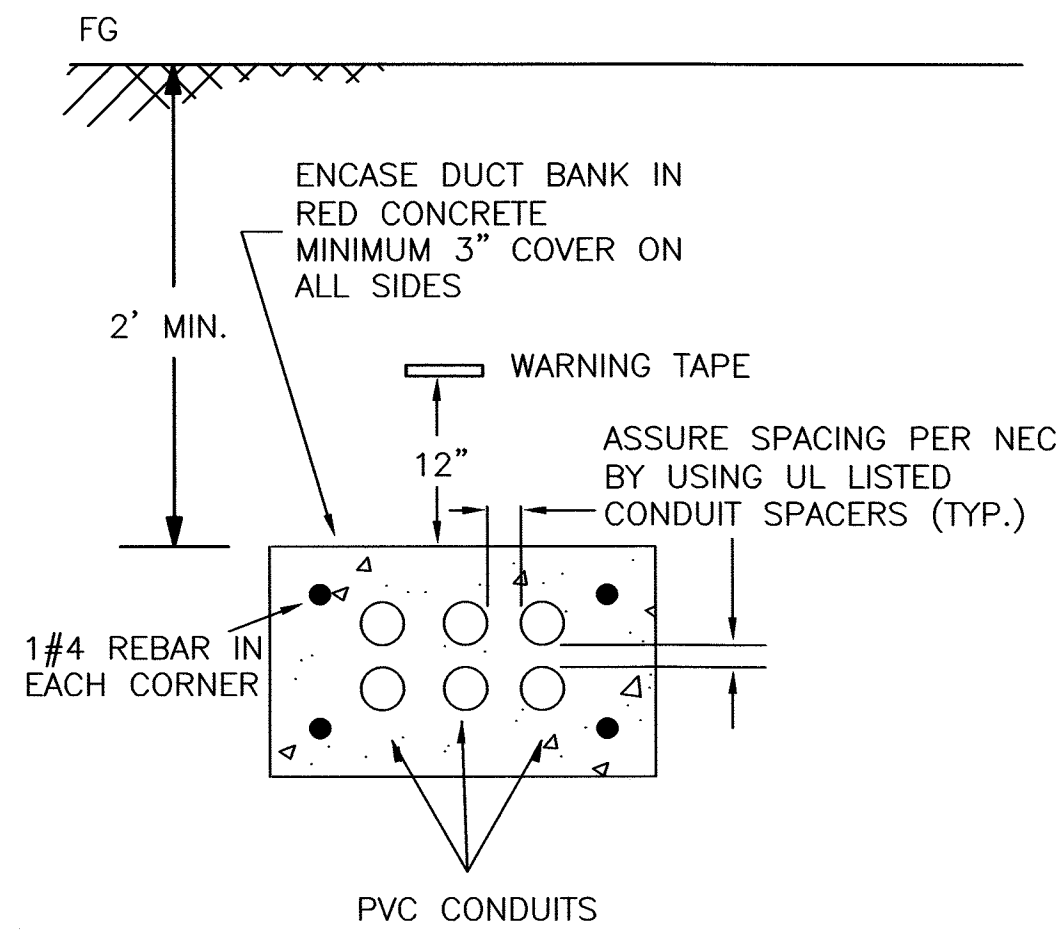
DRAWING SCALE:
AS SHOWN

DRAWING NO.
E5

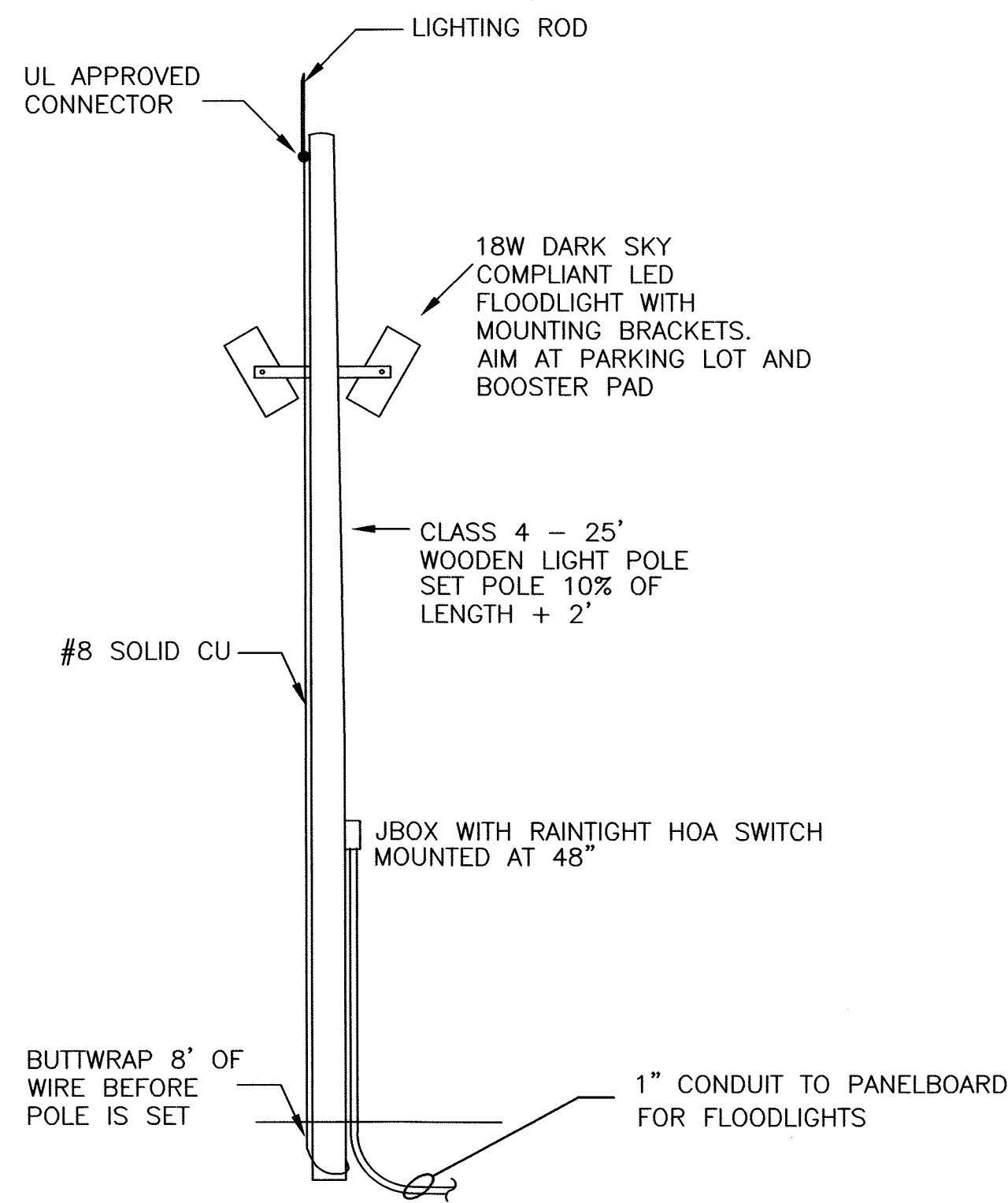
SHEET NO.
39 OF 40

FOR CITY OF HOUSTON USE ONLY

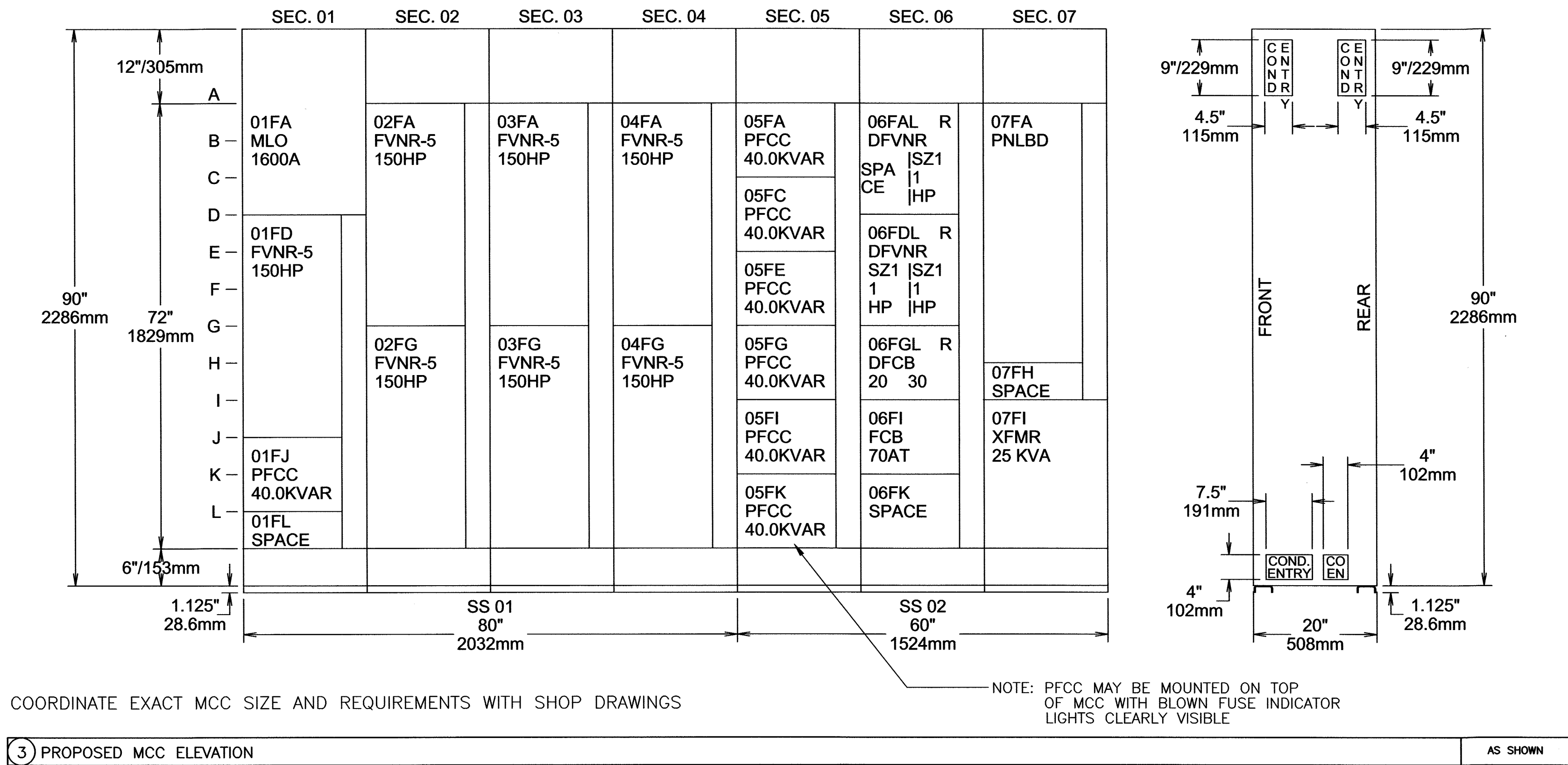




4 TYPICAL DUCT BANK AS SHOWN

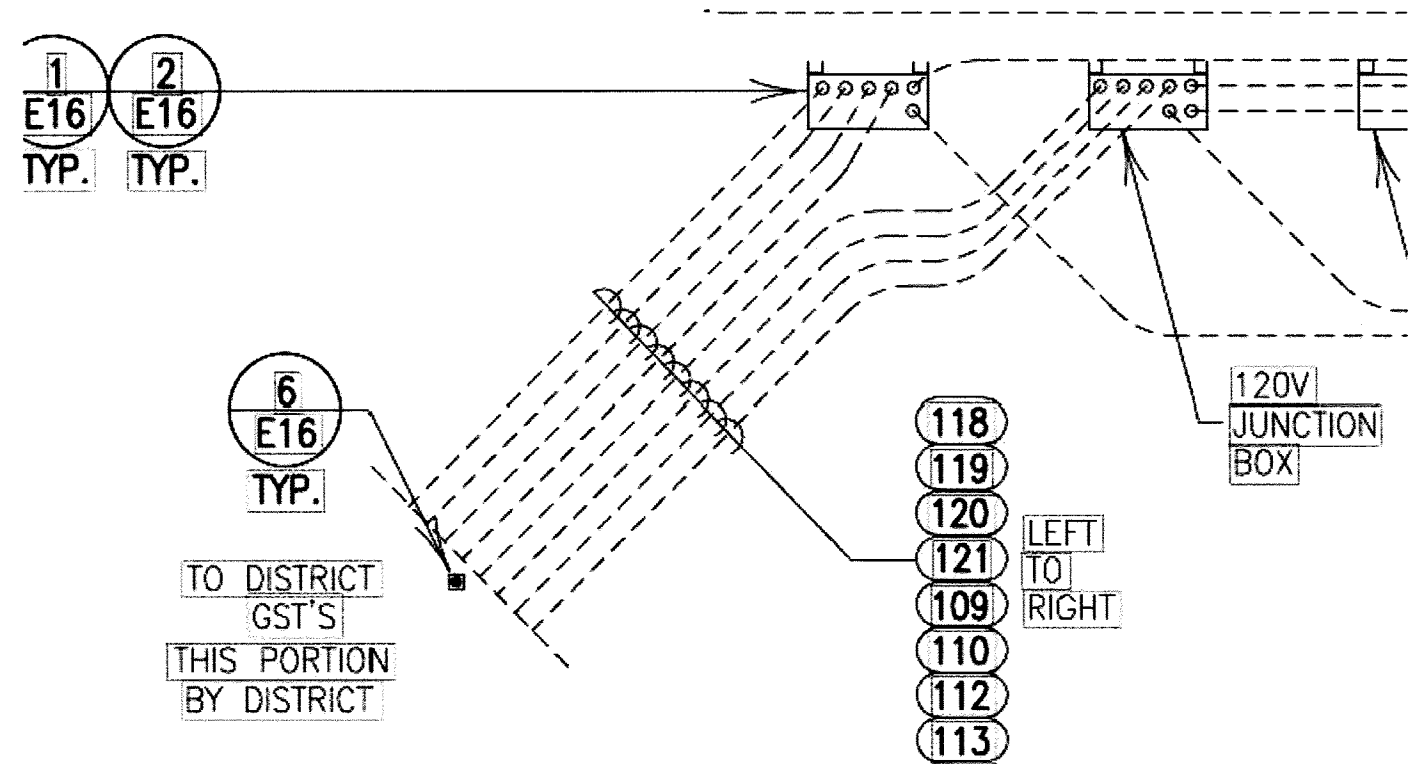


2 SITE LIGHTING POLE DETAIL AS SHOWN



COORDINATE EXACT MCC SIZE AND REQUIREMENTS WITH SHOP DRAWINGS

3 PROPOSED MCC ELEVATION AS SHOWN



CONDUIT SCHEDULE													
CONDUIT NO.	DESCRIPTION	CONDUIT SIZE	POWER CONDUCTORS				CONTROL CONDUCTORS			ROUTING			REMARKS
			NO.	SIZE	NEUTRAL	GROUND	NO.	SIZE	GND.	FROM	METHOD	TO	
109	GST No. 1 HEAT TRACE POWER	1	1	12	12	12				120V JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO GST No. 1 BY DISTRICT
110	GST No. 2 HEAT TRACE POWER	1	1	12	12	12				120V JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO GST No. 2 BY DISTRICT
112	FUTURE GST No. 3 HEAT TRACE POWER	1	1	PULL WIRE ONLY						120V JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	EMPTY CONDUIT, FUTURE USE
113	FUTURE GST No. 4 HEAT TRACE POWER	1	1	PULL WIRE ONLY						120V JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	EMPTY CONDUIT, FUTURE USE
118	LIT-1 GST No. 1 SIGNAL TO NFBWA CONTROL PANEL	1					1	18 GA. 2-COND. SH. PR.		ANALOG JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO GST No. 1 BY DISTRICT
119	LIT-2 GST No. 2 SIGNAL TO NFBWA CONTROL PANEL	1					1	18 GA. 2-COND. SH. PR.		ANALOG JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO GST No. 2 BY DISTRICT
120	FUTURE LIT-3 GST No. 3 SIGNAL TO NFBWA CONTROL PANEL	1					1	PULL WIRE ONLY		ANALOG JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	EMPTY CONDUIT, FUTURE USE
121	FUTURE LIT-4 GST No. 4 SIGNAL TO NFBWA CONTROL PANEL	1					1	PULL WIRE ONLY		ANALOG JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	EMPTY CONDUIT FUTURE USE

NOTE: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE EXACT METER STATION REQUIREMENTS WITH METER STATION AND OWNERS DESIGNATED REPRESENTATIVE.

1 METER STATION REQUIREMENTS AS SHOWN

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FORT BEND COUNTY MUD No. 30
WATER SUPPLY PLANT NO. 3
PHASE I

ELECTRICAL DETAILS

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER	TRAFFIC & TRANSPORTATION
STORM	STORM WATER QUALITY
STREET & BRIDGE	FACILITIES

JAC JOB No.: F003-1445

FOR CITY OF HOUSTON USE ONLY

DRAWN BY: SMM

ACCEPTED AND FILED

DRAWING SCALE: AS SHOWN

59242

DRAWING NO. E6

CITY DRAWING NUMBER

SHEET NO. 40 OF 40