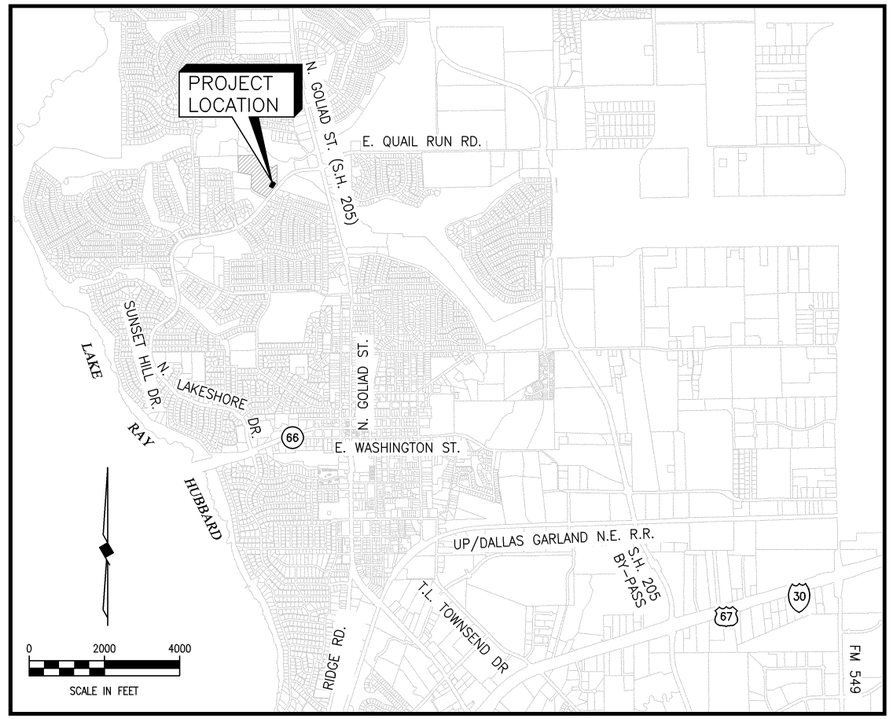
CITY OF ROCKWALL, TEXAS

CONSTRUCTION PLANS FOR:

SQUABBLE CREEK LIFT STATION IMPROVEMENTS

PERMANENT BYPASS PUMPING STATION



LOCATION MAP

COUNCIL MEMBERS

JIM PRUITT, MAYOR
JOHN HOHENSHELT, MAYOR PRO-TEM
MIKE TOWNSEND
KEVIN FOWLER
DENNIS LEWIS
DANA MACALIK
BENNIE DANIELS

CITY MANAGER

RICK CROWLEY

ASSISTANT CITY MANAGER

MARY SMITH
BRAD GRIGGS

SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
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2	BY-PASS PLAN & PROFILE
3	DETAILS & GENERAL NOTES
4A-4B	ACOUSTICAL ENCLOSURE DETAILS
5-6	ELECTRICAL/SCADA
7-9	STRUCTURAL SHEETS

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
Texas Firm 526
Dallas, Texas

May, 2018

STATE OF TEXAS
MATTHEW HICKEY
85480
LICENSED
PROFESSIONAL ENGINEER

Matthew Hickey
5/15/19

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

MATTHEW HICKEY
TEXAS P.E. NO. 85480
DATE: November 2019

REVISED: 11/22/19 - TTaylor H:\Projects\Rockwall\2015144 Squbble Ck-Quail Run By Pass\Sheets\By-Pass Pumping\2015144 By-Pass Cover.dwg PLOT SCALE: 1:2 PLOT STYLE: 11x17.ctb PLOTTED BY: Ty Taylor ON 11/22/2019

GENERAL ITEMS

1. All construction shall conform to the requirements of the "Standard Specifications for Public Works Construction" by the North Texas Central Council of Governments, 4th edition amended by the City of Rockwall. The CONTRACTOR shall reference the latest City of Rockwall standard details provided in the Rockwall Public Works Department, Engineering Divisions "Standards of Design and Construction" manual for details not provided in these plans. The CONTRACTOR shall possess one set of the NCTCOG Standard Specifications and Details and the City of Rockwall's "Standards of Design and Construction" manual on the project site at all times
2. The CONTRACTOR shall protect existing property monumentation and primary control. Any such points which the CONTRACTOR believes will be destroyed shall have offset points established by the CONTRACTOR prior to construction. Any monumentation destroyed by the CONTRACTOR shall be re-established at CONTRACTOR's expense by a registered professional land surveyor.
3. Any item called out for on the plans that does not have a specific bid item shall be subsidiary to the project and no separate pay shall be given.
4. The CONTRACTOR is solely responsible for performing all construction layouts from the site layout control points, and from the dimensions and centerlines shown. The CONTRACTOR must notify the engineer of any discrepancies before proceeding with the work.
5. CONTRACTOR shall take all available precautions to control dust. CONTRACTOR shall control dust by sprinkling water (no separate pay), or as approved by the City and engineer.
6. CONTRACTOR shall video record and provide a copy to the construction inspector of the entire job site before construction starts. Video record of the site will be used to dispute discrepancies of any preexisting conditions of the project site before construction begins.
7. It is the CONTRACTOR's responsibility to maintain a neat and accurate redline record of construction for the City's records. The CONTRACTOR shall provide the City full size reproducible markups that record all construction deviating from the plans. These redline construction plan records shall be submitted to the City at the end of the job and sign by the CONTRACTOR. These records must be received or the City will not release final retainage or acceptance on the job

EROSION CONTROL & VEGETATION

1. The CONTRACTOR or developer shall be responsible, as the entity exercising operational control, for all permitting as required by the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). This includes, but is not limited to, preparation of the Storm Water Pollution Prevention Plan (SWPPP), the Construction Site Notice (CSN), the Notice of Intent (NOI), the Notice of Termination (NOT) and any Notice of Change (NOC) and is required to pay all associated fees
2. Erosion control devices as shown on the erosion control plan for the project shall be installed prior to the start of land disturbing activities.
3. All erosion control devices are to be installed in accordance with the approved plans, specifications and Storm Water Pollution Prevention Plan (SWPPP) for the project. Erosion control devices shall be placed and in working order prior to start of construction. Changes are to be reviewed by the design engineer and the City of Rockwall prior to implementation.
4. If the Erosion Control Plans and Storm Water Pollution Prevention Plan (SWPPP) as approved cannot appropriately control erosion and off-site sedimentation from the project, the erosion control plan and/or the SWPPP is required to be revised and any changes reported to the Texas Commission on Environmental Quality (TCEQ), when applicable.
5. All erosion control devices shall be inspected weekly by the CONTRACTOR and after all major rain events, or more frequently as dictated in the project Storm Water Pollution Prevention Plan (SWPPP). CONTRACTOR shall provide copies of inspection's reports to the engineering inspection after each inspection.
6. The CONTRACTOR shall not dispose of waste and any materials into streams, waterways or floodplains. The CONTRACTOR shall secure all excavation at the end of each day and dispose of all excess materials. Disposal site shall be documented and provided to the City.
7. CONTRACTOR shall grade ground and ditches disturbed by construction to prevent ponding of storm water runoff. Grading shall be subsidiary to the appropriate bid item for unclassified street and unclassified channel excavation. Topsoil shall be stockpiled and replaced to a minimum depth of 6-inches and disc harrowed to a minimum depth of 4-inches (no pay item). CONTRACTOR shall replace grass areas disturbed by construction activities with solid sod. Sodded areas shall be watered and maintained until established.
8. The CONTRACTOR shall provide 4 inches of top soil in all parkways that are to be sodded. Top soil shall be approved by the City in writing. Topsoil shall be subsidiary to placement of grass/sod.
9. All areas outside pavement disturbed by construction activities shall have grass sod established immediately. Sod shall match existing yard type. Payment shall be made under the appropriate bid schedule item. Areas disturbed outside the R.O.W. or limits of construction shall have grass sod established immediately at the CONTRACTOR'S expense.

FRANCHISE UTILITY NOTES

1. Reasonable effort has been made to show the location of all known underground franchise utilities and service lines. However, the owner assumes no responsibility for failure to show any or all existing subsurface franchise utilities or utility line, or to show them in their exact location. The CONTRACTOR shall be responsible for the protection of all existing utilities, service lines or the like, which are exposed by the construction operation.
2. Existing franchise utilities shown in these plans reflect approximate locations prior to relocations. Some relocations have occurred with utility pole, gas, phone and cable utilities. The CONTRACTOR shall contact Dig-Tess to locate existing and new utilities not shown in these plans.
3. CONTRACTOR shall support utilities where crossing with proposed storm sewer, water lines and sanitary sewers. Method of support shall be provided to the owner 24 hours prior to crossing.
4. The location off all Atmos gas lines, AT&T, Charter and TXU/Oncor electric underground phone lines in these plans are approximate. The CONTRACTOR shall contact Atmos, TXU/Oncor, AT&T and Charter to verify location and depth of all existing gas, electric and phone lines prior to construction.
5. CONTRACTOR shall have and pay for TXU/Oncor, AT&T and/or Charter support and protect all power, guy wires or cable and/or light poles in the work area.
6. Any damage incurred to existing franchise utilities, appurtenances, utility poles, light standards, etc. By construction related activities shall be the sole responsibility of the CONTRACTOR

TRAFFIC CONTROL

1. A suggested traffic control sequence plan is provided in the plan set. At a minimum the CONTRACTOR will be required to use the suggested sequence plan. If the CONTRACTOR choses to change the traffic control sequencing, a traffic control sequencing plan and traffic control sheets of each phase will have to be provided for review and approval by the City. All shall be signed and sealed by a Registered Professional Engineer with the State of Texas.
2. Pedestrian and vehicular traffic flow, safety and access shall be maintained during all phases of construction. Barricading and traffic control during construction shall be the responsibility of the CONTRACTOR and shall conform to the "Texas Manual on Uniform Traffic Control Devices ", latest edition, Part IV in particular. Traffic flow and access shall be maintained during all phases of construction unless otherwise noted on the traffic control plan. The CONTRACTOR is responsible for providing traffic safety measures for work on the project. The CONTRACTOR shall assume full responsibility for public safety in the construction area during the duration of construction activities.
3. The CONTRACTOR shall furnish, install, maintain and remove all necessary traffic control devices in conformance with the Texas Manual on Uniform Traffic Control Devices (Part 6). The CONTRACTOR shall provide access to properties at all times during each phase of construction to all local residents, businesses, mail service, trash pick-up and emergency services.
4. No traffic signs shall be taken down without permission from the City. CONTRACTOR needing to move and replace traffic sign for construction purposes should be paid for under traffic control bid item.
5. CONTRACTOR will furnish and install all signage in accordance with TMUTCD guidelines. Prior to installation of signage, CONTRACTOR shall stake locations and receive approval from City on locations. All signage that is removed by the CONTRACTOR shall be saved and delivered to municipal service center, streets division. All replaced signs shall be new. See City requirements for sign materials.

MAILBOXES, MAIL SERVICE AND TRASH SERVICE NOTES

1. Existing mailboxes in conflict with construction shall be taken out of service, removed and replace to the same or better condition and placed in a location approved by the city/property owner. Photographs of the mailbox shall be taken with the address shown, shall be provided to the city prior to being removed.
2. Temporary mailbox shall be provided and maintained throughout the project where existing mail boxes are being removed. Addresses shall be provided on all temporary mail boxes.
3. Payment for removal and replacement of existing mailbox will be paid for under the appropriate bid item. Brick mailbox shall match existing brick.
4. Trash service shall be maintained throughout the duration of construction.

FENCES, TREES, LANDSCAPING, AND IRRIGATION NOTES

1. The removal, replacement or reconstruction of any fence for the convenience of construction shall be at the CONTRACTOR's expense (no separate pay). New materials shall match existing fences. All wood fences shall be replaced with new cedar with the post matching City requirements.
2. Temporary fencing shall be required where there is evidence of livestock and where damaged or removed fences are not to be replaced by the end of the same work day.
3. The removal and replacement of all shrubs, plants, trees, etc. For the convenience of construction shall be at the CONTRACTOR's expense (no separate pay). New shrubs, tree, etc. Shall be equal to or better than existing ones or meet
4. All shrubs, plants, trees, etc. must be approved by the City before removal.
5. The CONTRACTOR shall locate and record existing irrigation systems prior to construction. If irrigations systems are damaged during construction the CONTRACTOR shall repair to same or better condition. An irrigator licensed in the state of Texas shall repair all damaged caused by construction. CONTRACTOR shall coordinate any irrigation work with the City of Rockwall and property owner's representatives.
6. CONTRACTOR shall replace any trees removed or destroyed that are not shown in these plans to be removed or shall pay fair market value to the owner as determined by the owner. (No Separate Pay).

UTILITY NOTES

1. Reasonable effort has been made to show the location and type of all known City of Rockwall underground wet utilities and service lines. However, the City of Rockwall assumes no responsibility for failure to show any or all existing City of Rockwall underground wet utilities and service lines, or to show them in their exact location. The CONTRACTOR shall be responsible for the protection of all existing utilities, service lines or the like, which are exposed by the construction operation.
2. Bidders shall make any investigation of existing subsurface conditions as deemed necessary at no expense to the City of Rockwall. Neither the City of Rockwall nor the engineer will be responsible in any way for additional compensation for excavation work performed under this contract due to the CONTRACTOR's assumptions.
3. CONTRACTOR shall adjust all City of Rockwall utilities to the final grades.
4. CONTRACTOR shall be responsible for the protection of all existing service lines crossed or exposed by construction operations. Where existing service lines are cut, broken or damaged, the CONTRACTOR shall immediately replace the service line with same type of original construction or better.
5. The CONTRACTOR shall excavate and field locate the horizontal and vertical location of existing utility crossing locations utilizing provided project control. The CONTRACTOR shall immediately notify the engineer of any discrepancies identified between the CONTRACTORs field verified existing utility location and proposed location of utilities for the project.
6. The CONTRACTOR shall abide by all applicable federal, state, and local laws governing excavation. The CONTRACTOR shall provide detailed plans and specifications for trench safety systems that comply with applicable laws governing excavation. These plans shall be sealed by an engineer experienced in the design of trench safety systems, registered in the state of Texas. The CONTRACTOR shall submit completed trench safety plan to the engineer and City prior to commencing work. The CONTRACTOR shall be solely responsible for all aspects of work related to excavation.

WATER LINE NOTES

1. The CONTRACTOR shall maintain existing water service at all times during construction.
2. Proposed water lines shall be AWWA C-900 PVC, DR 14 PC 305 (blue in color) unless otherwise shown on water plan and profiles sheets. Proposed water lines shall be constructed with minimum cover of 4 feet. Proposed water line embedment shall be NCTCOG Class 'B-3' as amended by the City of Rockwall's public works standards of design and construction manual.
3. CONTRACTOR shall coordinate the shutting down of all water lines with the City of Rockwall, public works, water division. The City shall operate all water valves.
4. CONTRACTOR shall furnish and install gasket on water lines between all dissimilar metals and at valves (both existing and proposed).
5. All fire hydrants and valves removed and salvaged shall be returned to the City of Rockwall municipal service center.
6. Blue EMS pads shall be installed at every change in direction, valve and service tap on the proposed water line and every 250'.
7. CONTRACTOR to install new meter boxes and all fittings except for the meters per each service complete including connection to the main line.
8. Existing meter and meter boxes, and valve stem and covers not specifically called to be relocated shall be adjusted to match final grades (no pay item). Any meter in pavement shall have a traffic rated lid.

WASTEWATER LINE NOTES

1. The CONTRACTOR shall maintain existing wastewater service at all times during construction.
2. Proposed wastewater line embedment shall be NCTCOG Class 'B-2' as amended by the City of Rockwall's public works standard design and construction manual.
3. Green EMS pads shall be installed at every manhole, clean out and service lateral on proposed wastewater lines.
4. All existing wastewater services shall be transferred from wastewater lines being abandoned to proposed wastewater lines. Transferring wastewater services shall include double clean outs at the property lines, caps, tees, wyes, plugs and connection. Payment for transferring wastewater services shall be paid per each, under the appropriate bid schedule item.
5. CONTRACTOR shall CCTV all existing wastewater lines that are to be abandoned to ensure that all laterals are accounted for and transferred to proposed wastewater lines. (no separate pay)
6. Existing manholes and cleanouts not specifically called to be relocated shall be adjusted to match final grades (no pay item).

DEMOLITION, REMOVAL, DISPOSAL AND EXCAVATION NOTES

1. CONTRACTOR shall remove and properly dispose of all existing concrete and HMAC pavement outside of the City limits as required for construction of the project. All cost shall be included in the appropriate item in the bid schedule.
   Payments for removal and replacement of street, driveway and sidewalk pavement shall be based on plan quantity and no adjustments will be made unless approved in writing by the City engineer.
2. All pavements to be removed and replaced shall be saw cut to full depth along neat lines shown in the plans. Proposed concrete pavement shall be constructed with longitudinal butt construction joints at all connections to existing concrete pavement.
3. The CONTRACTOR shall remove from the project area all surplus material. This work shall be incidental and not a separate pay item. Surplus materials from excavation include dirt, trash, rock measuring greater than 6" in the largest dimension, etc. Shall be properly disposed of at a site acceptable to the City of Rockwall if within the City limits. No excess excavated material shall be deposited in low areas or along natural drainage ways without written permission from the affected property owner and the City of Rockwall. If the CONTRACTOR places excess materials in these areas without written permission, he will be responsible for all damages resulting from such fill and he shall remove the material at his own cost.
4. All excavation on the project is unclassified. If soil borings were conducted they are provided in the bid/contract documents.

PAVING

1. All paving roadway sections thickness, strength, reinforcement, joint type, joint spacing and subgrade treatment shall match the typical sections and details called out in the plans. If not called out on the plans all concrete paving shall conform to the minimum requirements of table 2.3 in the Standards of Design and Construction.
2. Reinforcing steel shall be tied (100%). Reinforcing steel shall be set on plastic chairs. Bar laps shall be minimum 30 diameters. Sawed transverse dummy joints shall be spaced every 15 feet or 1.25 time longitudinal butt joint spacing whichever is less. Sawing shall occur within 5 to 12 hours after the pour, including sealing. Otherwise, the section shall be removed and longitudinal butt joint constructed.
3. All proposed HMAC street pavement shall consist of 4 inches of Type B (Base) with 2 inches of Type D (Surface) on top of 6" flex base (if not specified in the plans)
4. No sand shall be allowed under any paving.
5. Concrete mix design shall be submitted to the City for review and approval prior to placement.
6. Fly ash may be used in concrete pavement locations provided that the maximum cement reduction does not exceed 20% by weight per C.Y. of concrete. The fly ash replacement shall be 1.25 lbs per 1.0 lb cement reduction.
7. All curb and gutter shall be integral (monolithic) with the pavement.
8. All fill shall be compacted by sheep's foot roller to a minimum 95% standard proctor. Maximum loose lift for compaction shall be 8 inches. All lifts shall be tested for density by an independent laboratory approved by the City.
9. All proposed sidewalks shall include barrier free ramps at intersecting streets, alleys, etc. Barrier free ramps shall meet current City and ADA requirements and be approved by the Texas Department of Licensing and Regulation (TDLR).
10. Sidewalks shall be doweled into pavement where it abuts curbs and driveways. Expansion joint material shall be used at these locations (no pay item).
11. All connection of proposed concrete pavement to existing concrete pavement shall include a longitudinal butt joint as the load transfer device. Concrete saw cuts for all driveways and sidewalks shall be subsidiary to the appropriate bid item for driveway and sidewalk replacement. All longitudinal butt joints shall be clean, straight and smooth (not jagged in appearance)
12. There shall be no separate payment for subgrade preparation under driveway and sidewalk areas and all cost shall be included in the appropriate items of the bid schedule.
13. Cracks formed in concrete pavement shall be repaired or removed by the CONTRACTOR at the City's discretion.

DRAINAGE / STORM SEWER NOTES

1. The CONTRACTOR shall maintain drainage at all times during construction. Ponding of water in streets, drives, trenches, etc. will not be allowed. Existing drainage ways shall not be blocked or removed unless explicitly stated in the plans or written approval is given by the City.
2. All structural concrete shall be Class "C" (4200 psi compressive strength at 28 days minimum 7.0 sack), air entrained, unless noted otherwise.
3. Proposed storm sewer embedment shall be NCTCOG Class 'B' as amended by the City of Rockwall's Public Works, Engineering Division Standards of Design and Construction Manual.
4. All storm pipe shall be reinforced concrete pipe (RCP), Class III, unless otherwise noted.

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MATTHEW HICKEY
TEXAS P.E. NO. 85480
DATE: November 2019

GENERAL CONSTRUCTION NOTES

May 1, 2017

CITY OF ROCKWALL
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

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Rockwall, Texas 75087

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5/15/19

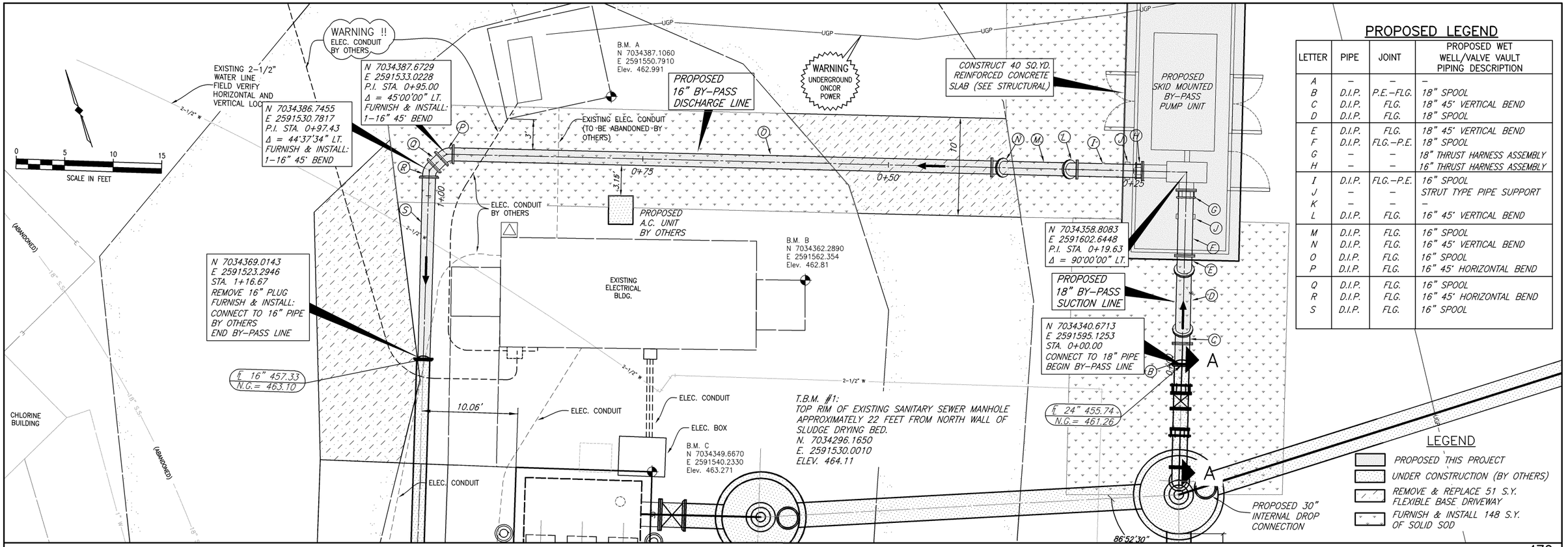
CITY OF ROCKWALL, TEXAS
SQUABBLE CREEK LIFT STATION IMPROVEMENTS

CITY OF ROCKWALL
GENERAL CONSTRUCTION NOTES

BHC PROJECT NO. 2015-144

May, 2018

SHEET NO. 1

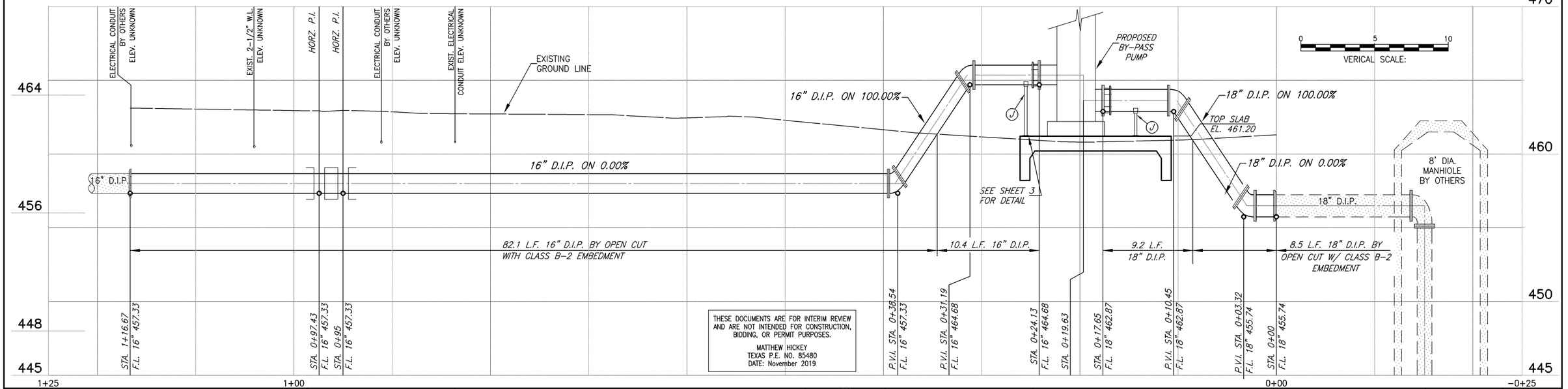


PROPOSED LEGEND

LETTER	PIPE	JOINT	PROPOSED WET WELL/VALVE VAULT PIPING DESCRIPTION
A	–	–	–
B	D.I.P.	P.E.–FLG.	18" SPOOL
C	D.I.P.	FLG.	18" 45° VERTICAL BEND
D	D.I.P.	FLG.	18" SPOOL
E	D.I.P.	FLG.	18" 45° VERTICAL BEND
F	D.I.P.	FLG.–P.E.	18" SPOOL
G	–	–	18" THRUST HARNESS ASSEMBLY
H	–	–	16" THRUST HARNESS ASSEMBLY
I	D.I.P.	FLG.–P.E.	16" SPOOL
J	–	–	STRUT TYPE PIPE SUPPORT
K	–	–	–
L	D.I.P.	FLG.	16" 45° VERTICAL BEND
M	D.I.P.	FLG.	16" SPOOL
N	D.I.P.	FLG.	16" 45° VERTICAL BEND
O	D.I.P.	FLG.	16" SPOOL
P	D.I.P.	FLG.	16" 45° HORIZONTAL BEND
Q	D.I.P.	FLG.	16" SPOOL
R	D.I.P.	FLG.	16" 45° HORIZONTAL BEND
S	D.I.P.	FLG.	16" SPOOL

LEGEND

- PROPOSED THIS PROJECT
- UNDER CONSTRUCTION (BY OTHERS)
- REMOVE & REPLACE 51 S.Y. FLEXIBLE BASE DRIVEWAY
- FURNISH & INSTALL 148 S.Y. OF SOLID SOD



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5/15/18

CITY OF ROCKWALL, TEXAS

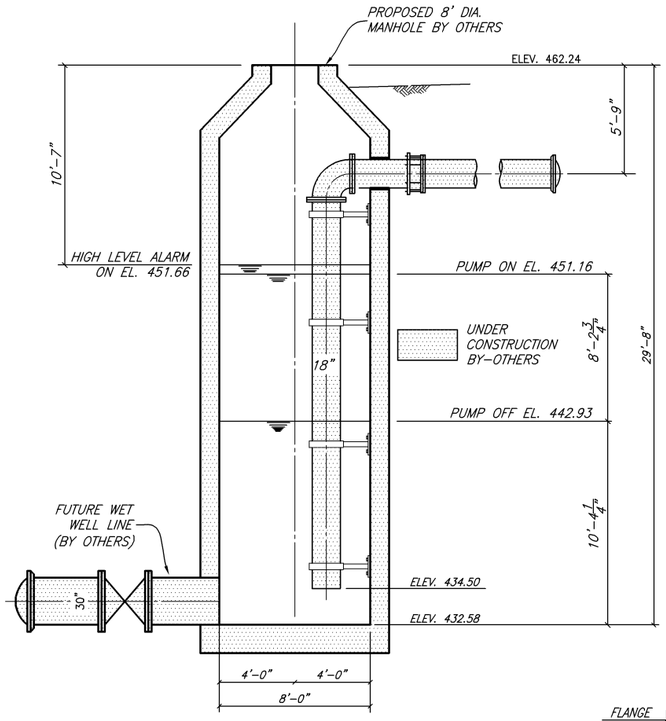
SQUABBLE CREEK LIFT STATION IMPROVEMENTS

FORCE MAIN & BY-PASS PIPING MODIFICATION PLAN

BHC PROJECT NO. 2015-144

May, 2018

SHEET NO. **2**



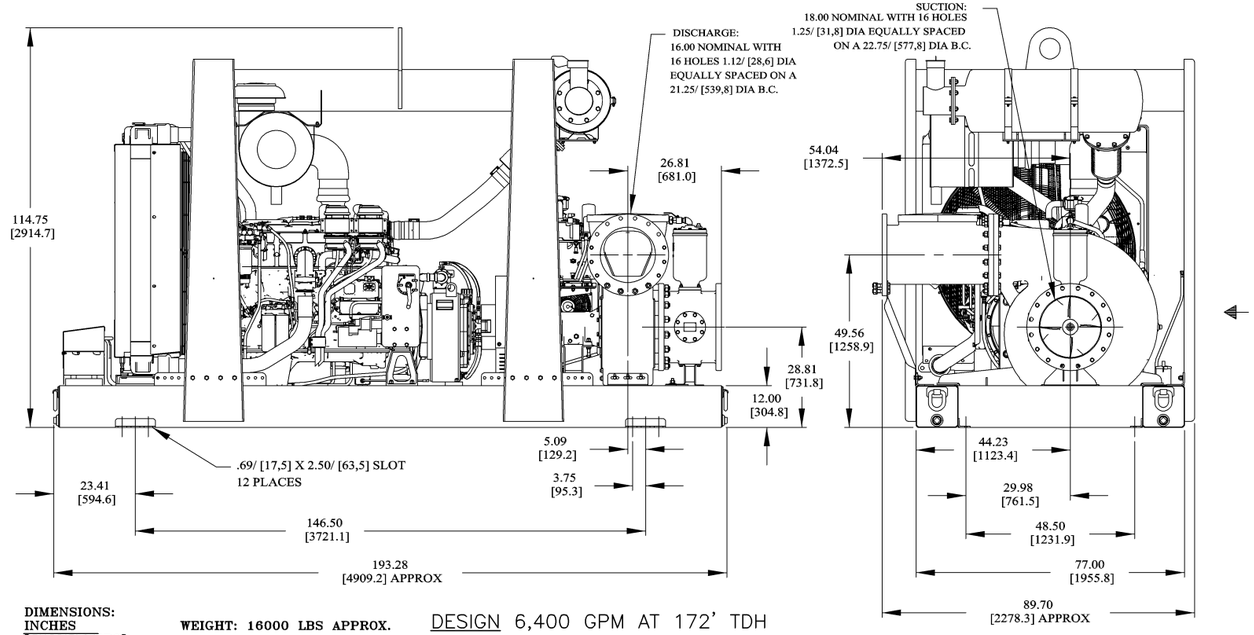
SECTION A-A - BY OTHERS

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

0 4 8

SCALE IN FEET

FULL SCALE: 1/4" = 1'-0"
HALF SCALE: 1/8" = 1'-0"



DIMENSIONS: INCHES [MILLIMETERS]

WEIGHT: 16000 LBS APPROX.

DESIGN 6,400 GPM AT 172' TDH

SKID MOUNTED BY-PASS PUMP UNIT

NOT TO SCALE

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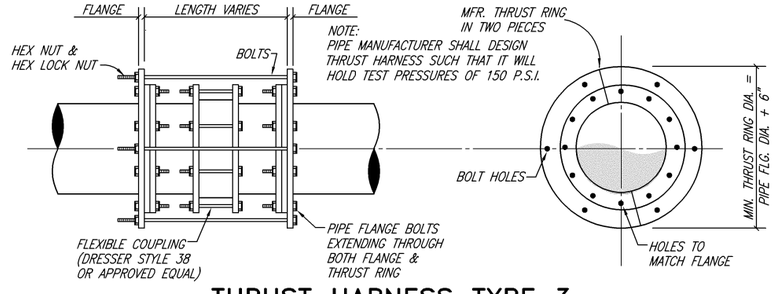
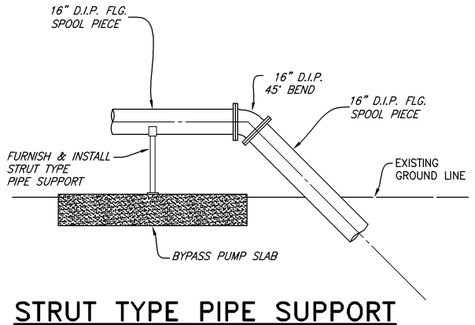


THRUST HARNESS TYPE 3

NO SCALE

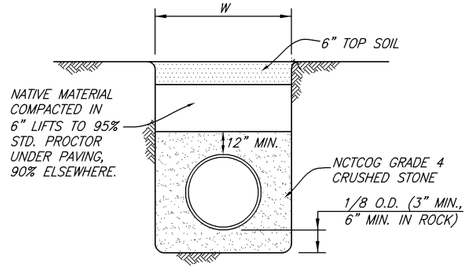
GENERAL PROJECT NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE MEASURES FOR PREVENTING STORM WATER RUNOFF FROM ENTERING THE TRENCH DURING CONSTRUCTION.
2. CONTRACTOR SHALL SECURE EXCAVATION AT THE END OF EACH DAY. THE OWNER MAY REQUIRE THAT NO TRENCHES BE LEFT OPEN OVERNIGHT.
3. IN ACCORDANCE WITH TEXAS STATE LAW, AT LEAST 2 DAYS PRIOR TO BEGINNING EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING A TEXAS REGISTERED NOTIFICATION CENTER (I.E. TEXAS 811 ONE CALL), IN ORDER TO HAVE EXISTING UTILITIES LOCATED.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UNDERGROUND UTILITIES CROSSED OR EXPOSED BY CONSTRUCTION OPERATIONS. WHERE EXISTING UNDERGROUND UTILITIES ARE CUT, BROKEN OR DAMAGED THE CONTRACTOR SHALL IMMEDIATELY REPLACE THE SERVICE LINES IN KIND WITH LIKE OR BETTER MATERIALS AT NO COST TO THE OWNER.
5. RESTORE GROUND TO ORIGINAL GRADE AND PREVENT PONDING OF STORM WATER RUNOFF ON ALL GROUND DISTURBED BY CONSTRUCTION ACTIVITIES.
6. WASTEWATER TREATMENT PLANT GATE SHALL BE KEPT CLOSED TO CONTROL ACCESS TO THE PROJECT SITE.
7. CONTRACTOR SHALL BE REQUIRED TO INSTALL TEMPORARY TEST PLUGS FOR HYDROSTATIC TESTING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
8. CONSTRUCTION SURVEYING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY ALL CONTROL MONUMENTATION PRIOR TO BEGINNING CONSTRUCTION.
9. THE CONTRACTOR SHALL PROVIDE A VIDEO TAPE TO THE OWNER DOCUMENTING THE CONDITION OF THE WASTEWATER TREATMENT PLANT AND LIFT STATION, PRIOR TO THE START OF ANY CONSTRUCTION. VIDEO TO BE PROVIDED PRIOR TO FIRST PAYMENT TO CONTRACTOR.
10. ALL DUCTILE IRON PIPING SHALL BE ANSI/AWWA C115. ALL FITTINGS SHALL BE ANST/AWWA C110 DUCTILE IRON FULL BODY, FLANGED. JOINTS SHALL BE ANSI/AWWA C111, MECHANICAL JOINT. ALL BURIED DUCTILE IRON PIPE SHALL BE POLYETHYLENE ENCASED IN ACCORDANCE WITH AWWA C105
11. DUCTILE IRON FITTINGS AND PIPE SHALL BE CERAMIC EPOXY LINED WITH PROTECTO 401 OR APPROVED EQUAL (40 MILS NOMINAL)
12. ALL EXPOSED DUCTILE IRON PIPING AND FITTINGS WITHIN THE VALVE VAULT AND WET WELL SHALL BE COATED WITH TNEMEC SERIES 435 PERMA-GLAZE APPLIED AT 15-25 MILS DFT. PRIOR TO APPLICATION, ALL SURFACES SHALL BE CLEANED PER NAPF 500-03-01 SOLVENT CLEANING USING STIFF BRISTLE BRUSHES TO REMOVE ALL GREASE, OIL, FACTORY APPLIED BITUMASTIC COATING AND ANY OTHER CONTAMINANTS. IF SURFACE PROFILE IS EQUAL TO OR GREATER THAN 1.5 MILS, CLEAN PER NAPF 500-03-03 POWER TOOL CLEANING TAKING CARE NOT TO BURNISH THE METAL. IF SURFACE PROFILE IS LESS THAN 1.5 MILS, ABRASIVE BLAST PER NAPF 500-03-04 BRUSH-OFF BLAST CLEANING TO ACHIEVE REQUIRE PROFILE.



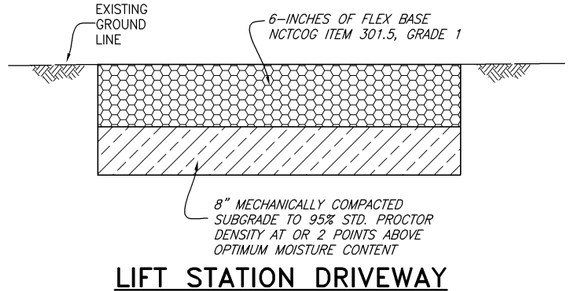
STRUT TYPE PIPE SUPPORT

NO SCALE



CLASS B-2 EMBEDMENT

STANDARD SANITARY SEWER



LIFT STATION DRIVEWAY FLEXIBLE BASE DETAIL

NO SCALE

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Matthew Hickey
5/15/19

CITY OF ROCKWALL, TEXAS
SQUABBLE CREEK LIFT STATION IMPROVEMENTS
DETAILS & GENERAL NOTES

BHC PROJECT NO. 2015-144

May, 2018

SHEET NO. **3**

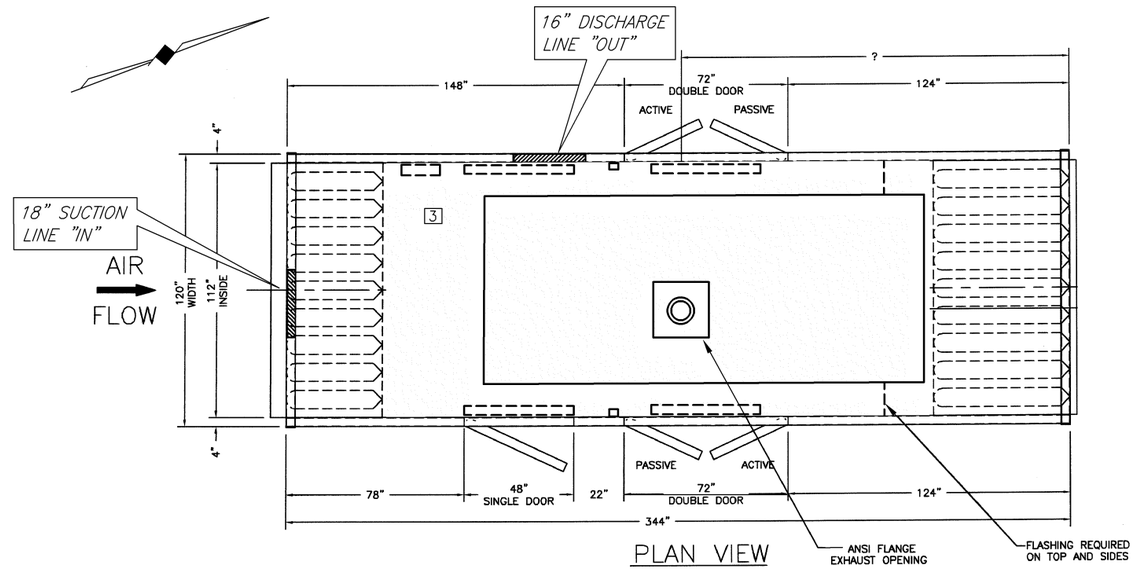
[3] LEGEND

20' LONG x 9' WIDE x 4" TALL SPILL CONTAINMENT

[3] NOTES:

1. THE SPILL CONTAINMENT DEVICE SHALL BE PLACED ON THE CONCRETE FLOOR INSIDE THE ACOUSTICAL ENCLOSURE BUILDING WITH THE SKID MOUNTED BYPASS UNIT PLACED ON TOP. PENETRATIONS THROUGH THE CONTAINMENT FLOOR FOR THE SKID MOUNTINGS TO THE FOUNDATION SHALL BE SEALED WITH "WELD-ON" 790 MULTI PURPOSE P.V.C. ADHESIVE CEMENT FOR A LIQUID TIGHT SEAL.

2. THE SPILL CONTAINMENT DEVICE SHALL BE THE ULTRA-CONTAINMENT BERM FOAM WALL MODEL CONSTRUCTED OF COPOLYMER 2000 MATERIAL BY ULTRATECH INTERNATIONAL, INC. CONTACT DOUG KAHLE OF RITZ SAFETY, LLC, DALLAS, TEXAS, AT 1-800-527-9289



PLAN VIEW

NOTES: ENCLOSURE ASSEMBLY:
* FULLY ASSEMBLED DROP OVER ENCLOSURE TO BE ANCHORED TO THE FOUNDATION.
* PANEL JOINTS ARE SKIP WELDED AND CAULKED.

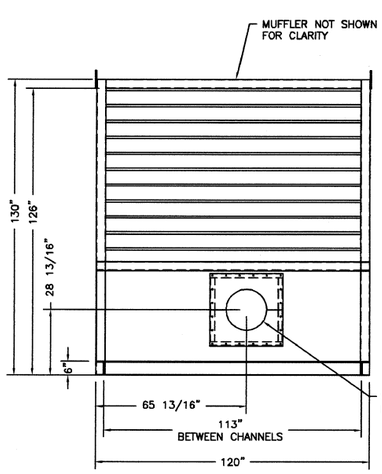
ENCLOSURE CONSTRUCTION:
* WALLS AND ROOF – 14 GAUGE GALVANNEALED STEEL.
* FRAME CONSTRUCTION – A36 STRUCTURAL CHANNEL & A-500 TUBING.
* INNER LINER – PERFORATED GALVANNEALED STEEL.
* INSULATION – MINERAL WOOL AND POLY LINER.
* DOORS – ONE (1) SINGLE & TWO (2) DOUBLE ACCESS SERVICE DOORS. SERVICE DOORS WITH STAINLESS STEEL HINGE AND DOOR LATCHES.
* BAFFLES – 42" DEEP INLET & 60" DEEP DISCHARGE PANELS. GALVANNEALED CONSTRUCTION.
* LOUVERS – FIXED INLET WEATHER LOUVERS W/BIRDSCREEN. GALVANNEALED CONSTRUCTION.
* DISCHARGE GRAVITY BACKDRAFT DAMPERS. ALUMINUM CONSTRUCTION.
* BOLTING HARDWARE – STAINLESS STEEL.

DESIGN SPECIFICATIONS:
* DESIGNED TO TO REDUCE THE AIRBORNE GEN-SET EQUIPMENT NOISE LEVELS TO 60 dB(A) WHEN MEASURED AT A DISTANCE OF 25 FEET FROM THE ENCLOSURE AND 5 1/2 FEET ABOVE GRADE IN A FREE FIELD ENVIRONMENT.
* THE GEN-SET EQUIPMENT NOISE DOESN'T EXCEED 119 dB.
* BASED ON A TOTAL AIR REQUIREMENT OF 37,949 CFM AT LESS THAN 1/2" W.G. BACK PRESSURE THROUGH THE ENCLOSURE.
* ENGINE EXHAUST IS NOT INCLUDED.

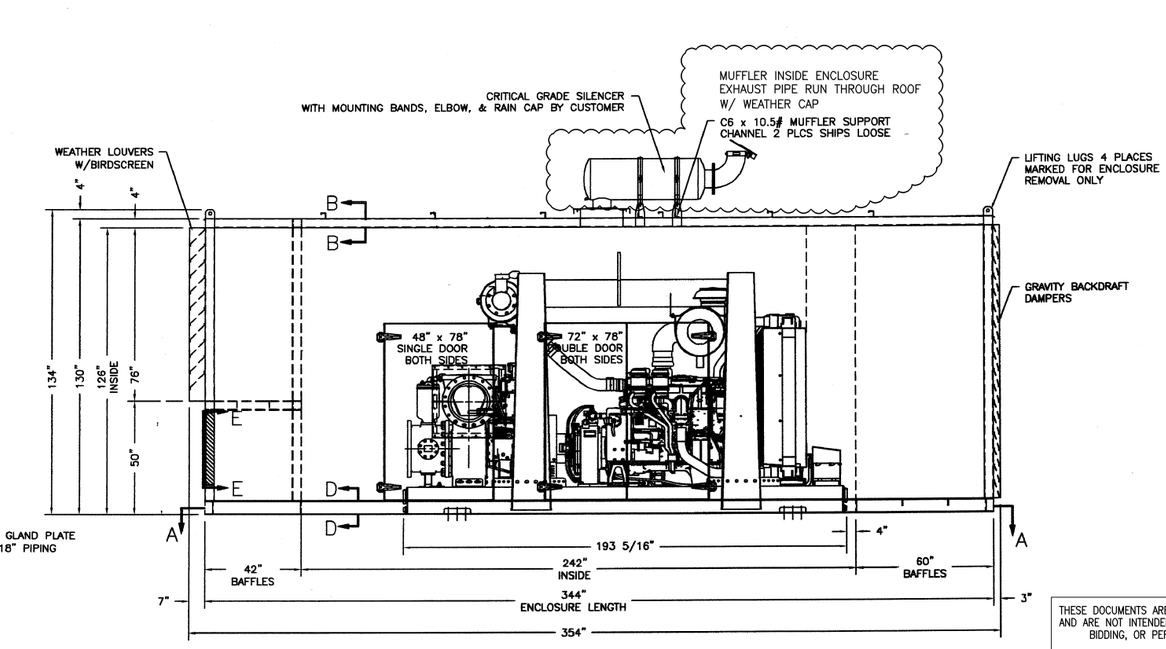
PAINTING:
* ALL EXTERIOR GALVANNEALED SURFACES TO BE SOLVENT CLEANED PER SSPC-SP1 AND PAINTED AS FOLLOWS:
  INTERMEDIATE – ONE COAT INDUSTRIAL POLYURETHANE (1-1.5 MILS DFT)
  FINISH – ONE COAT INDUSTRIAL POLYURETHANE (.5-1 MILS DFT)
* ALL CARBON STEEL SURFACES TO BE POWER TOOL CLEANED PER SSPC-SP3 AND PAINTED AS FOLLOWS:
  PRIMER – ONE COAT INDUSTRIAL PRIMER (2-4 MILS DFT)
  FINISH – ONE COAT INDUSTRIAL POLYURETHANE (2-4 MILS DFT)
* COLOR – PRECISION TAN.

ELECTRICAL:
* SEE DRAWING

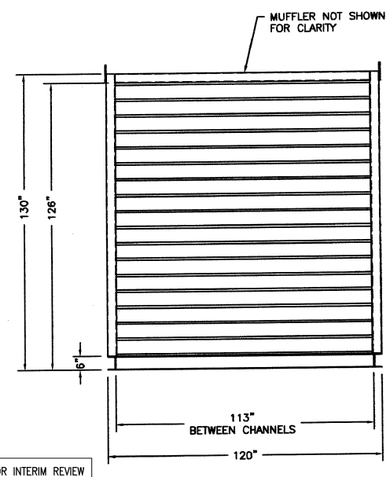
ENCLOSURE SHIPPING SIZE & WEIGHT:
* SIZE – 358" L x 149" W x 140" H
* WEIGHT – 19,000 LBS.



FRONT VIEW



ELEVATION VIEW



END VIEW

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

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DATE: November 2019

[3] ADDED SPILL CONTAINMENT (06/22/2018)

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CITY OF ROCKWALL, TEXAS

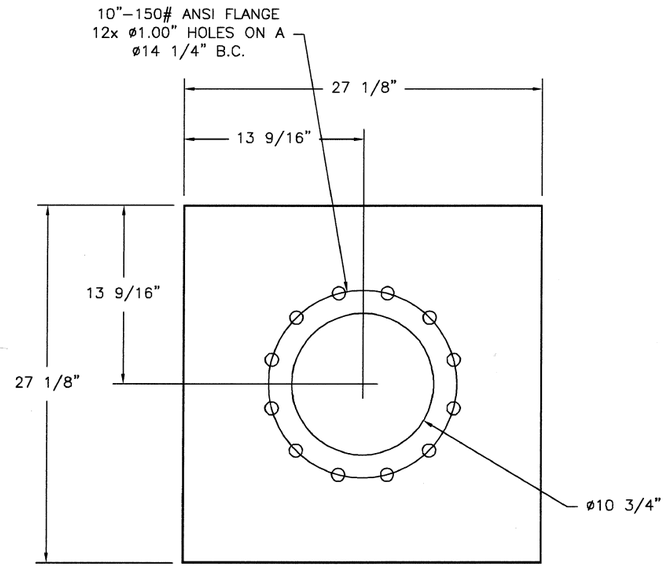
SQUABBLE CREEK LIFT STATION IMPROVEMENTS

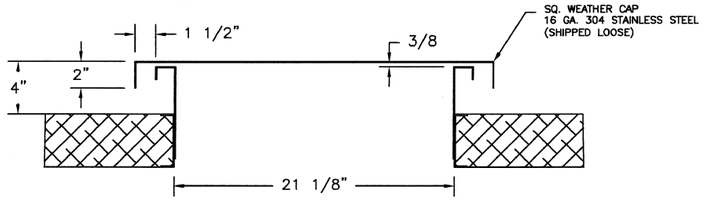
BY-PASS PUMP - ACOUSTICAL ENCLOSURE

BHC PROJECT NO. 2015-144

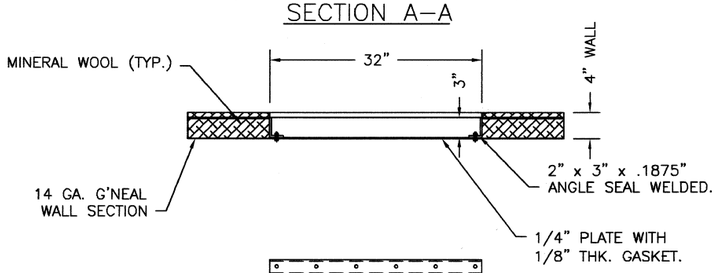
May, 2018

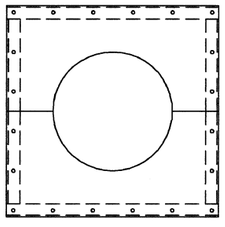
SHEET NO. 4A





SECTION A–A





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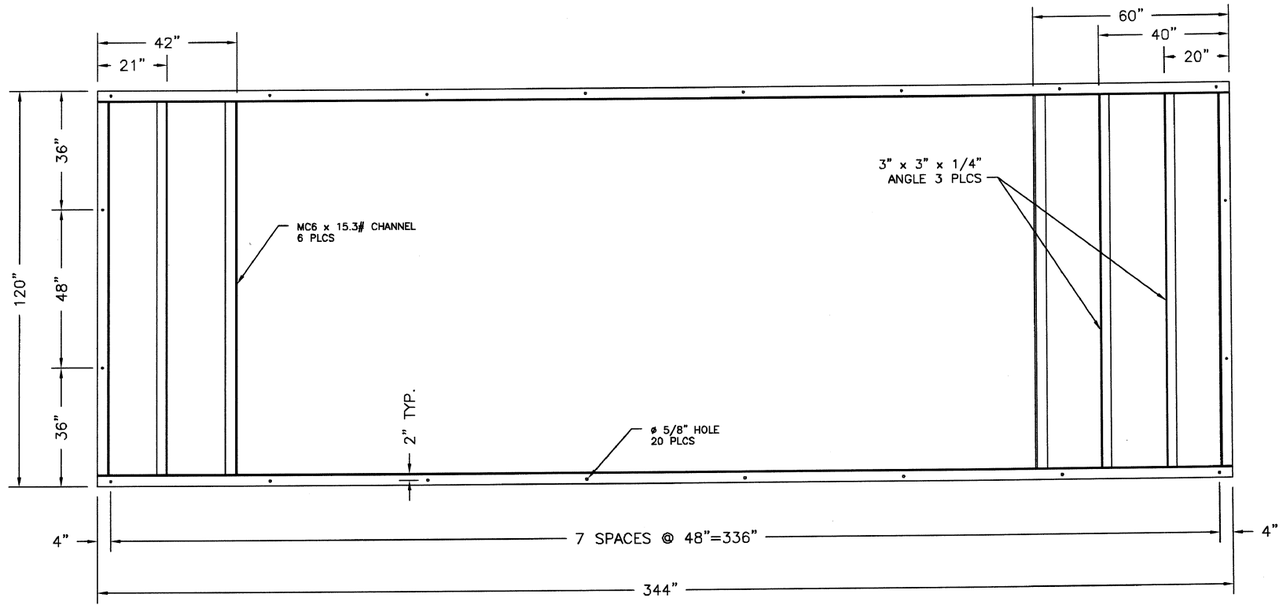
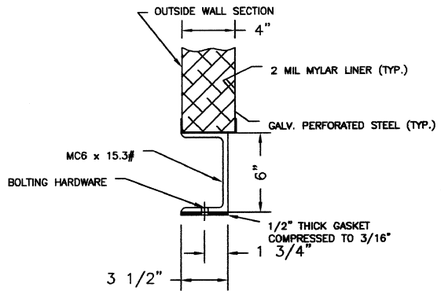
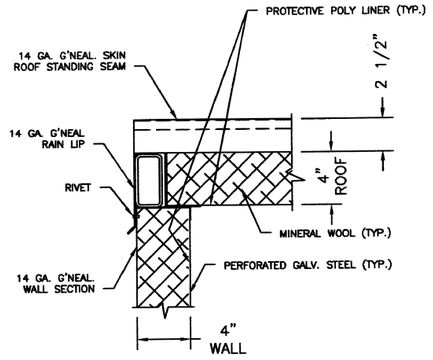


SECTION B–B



SECTION D–D



SECTION C–C

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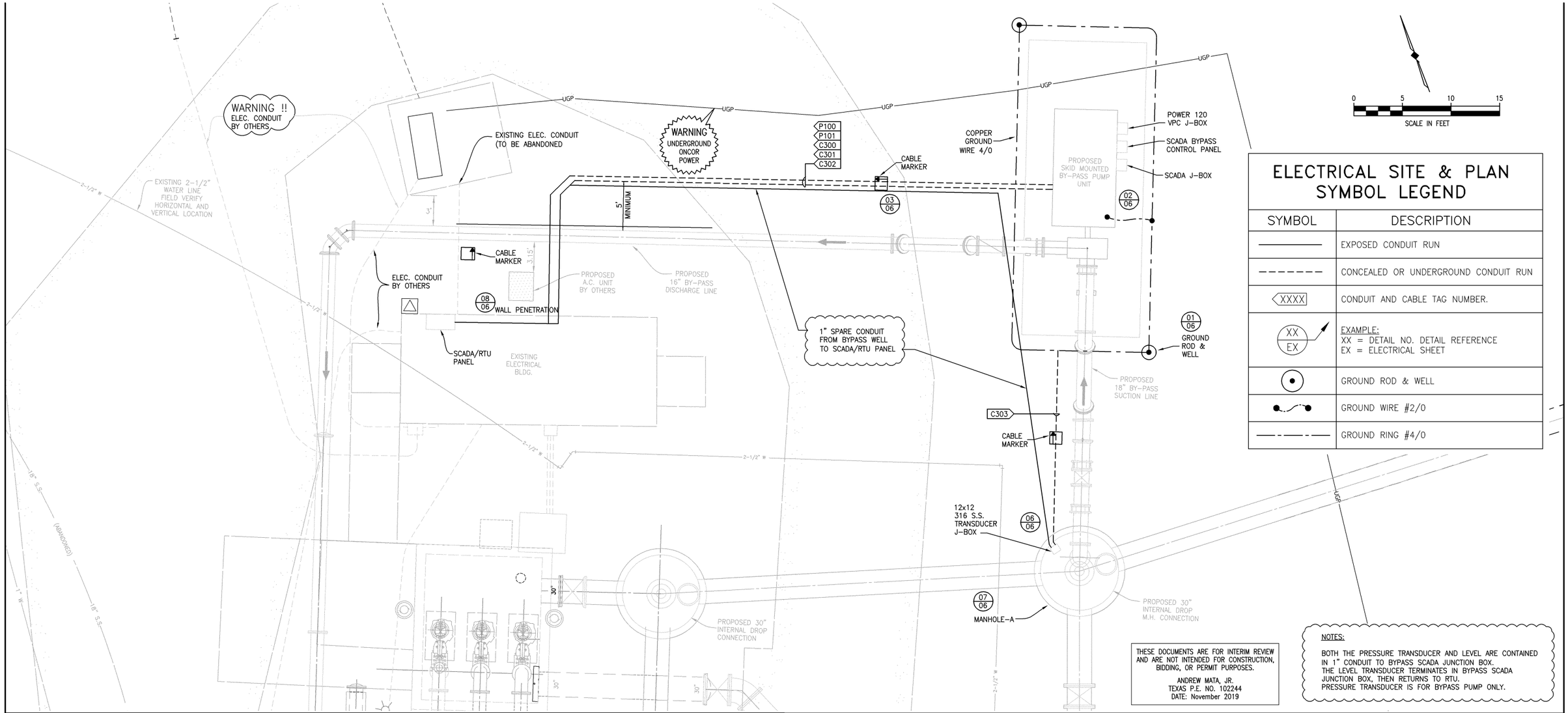
SQUABBLE CREEK LIFT STATION IMPROVEMENTS

BY-PASS PUMP - SOUND ATTENUATED ENCLOSURE

BHC PROJECT NO. 2015-144

May, 2018

SHEET NO. **4B**



ELECTRICAL SITE & PLAN SYMBOL LEGEND

SYMBOL	DESCRIPTION
———	EXPOSED CONDUIT RUN
- - - - - - -	CONCEALED OR UNDERGROUND CONDUIT RUN
XXXX	CONDUIT AND CABLE TAG NUMBER.
XX / EX	EXAMPLE: XX = DETAIL NO. DETAIL REFERENCE EX = ELECTRICAL SHEET
●	GROUND ROD & WELL
●~~~●	GROUND WIRE #2/0
———·———	GROUND RING #4/0

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NOTES:

BOTH THE PRESSURE TRANSDUCER AND LEVEL ARE CONTAINED IN 1" CONDUIT TO BYPASS SCADA JUNCTION BOX.
THE LEVEL TRANSDUCER TERMINATES IN BYPASS SCADA JUNCTION BOX, THEN RETURNS TO RTU.
PRESSURE TRANSDUCER IS FOR BYPASS PUMP ONLY.

CONDUIT AND CABLE SCHEDULE

TAG	WIRING	CONDUIT	SOURCE	DESTINATION	COMMENTS
P100	4#10, #12G.	1"C.	LIGHTING PANEL 1 CKT 17	BYPASS GENERATOR JACKET WATER HEATER	
P101	4#12, #12G.	1"C.	LIGHTING PANEL 1 CKT 16	BYPASS GENERATOR BATTERY CHARGER	
C300	10#14, #14G.	1"C.	SCADA/RTU PANEL	BYPASS GENERATOR	GENSET PANEL
C301	10#14, #14G.	1"C.	SCADA/RTU PANEL	BYPASS PUMP UNIT	CONTROL PANEL
C302	2-2/C SH #16, #14G	1"C.	SCADA/RTU PANEL	BYPASS PUMP UNIT	
C303	SUBMERSIBLE LEVEL CABLE	1"C.	BY PASS PUMP CONTROL PANEL	SUBMERSIBLE LEVEL TRANDUCER	

SQUABBLLE CREEK BYPASS PUMPING UNIT SCADA/RTU INPUT/OUTPUT TABLE

TAG DESCRIPTION	I/O TYPE	FUNCTION	FIELD DEVICE	COMMENTS
WET WELL LEVEL	A/I	MONITOR	BYPASS PUMP UNIT SUBMERSIBLE LEVEL TRANSDUCER	
WET WELL HIGH LEVEL	A/I	ALARM	BYPASS PUMP UNIT SUBMERSIBLE LEVEL TRANSDUCER	
WET WELL LOW LEVEL	A/I	ALARM	BYPASS PUMP UNIT SUBMERSIBLE LEVEL TRANSDUCER	
BYPASS PUMP RUNNING	D/I	STATUS	STARTER RELAY	PUMP ON/OFF
BYPASS PUMP FAILURE	D/I	ALARM	PUMP MOTOR	PUMP FAILURE
BYPASS GENERATOR RUNNING	D/I	STATUS	GENSET CONTACTS	
BYPASS GENERATOR LOW FUEL	D/I	ALARM	GENSET CONTACTS	
BYPASS GENERATOR ALARM	D/I	ALARM	GENSET CONTACTS	

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CITY OF ROCKWALL, TEXAS
SQUABBLE CREEK LIFT STATION IMPROVEMENTS

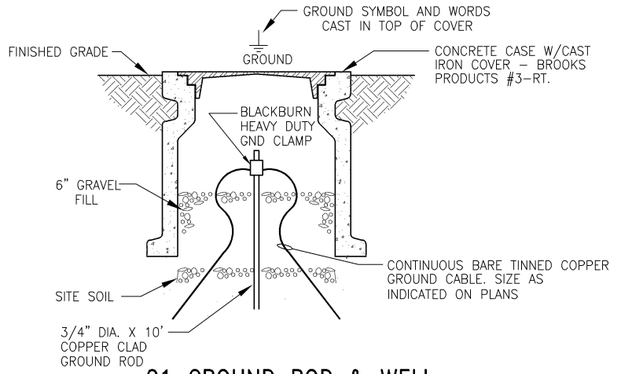
ELECTRICAL PLAN

BHC PROJECT NO. 2015-144

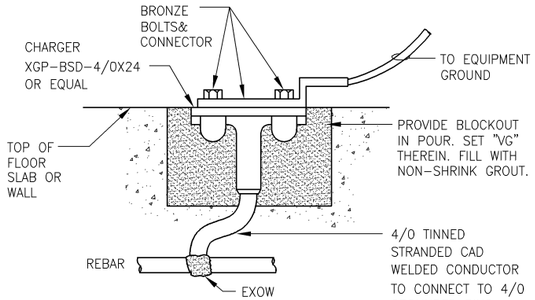
May, 2018

SHEET NO. **5**

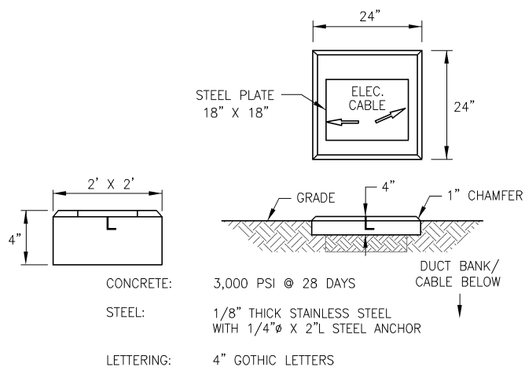
REVISED: 11/22/19 – TTAYLOR H:\Projects\Rockwall\2015144 Squbble Ck–Quail Run By Pass\Sheets\By–Pass Pumping\Electrical Sheets\2015144 LS Prop ByPass Elec–Plan.dwg PLOT SCALE: 1:2 PLOT STYLE: 11x17.ctb PLOTTED BY: TY TAYLOR ON 11/22/2019



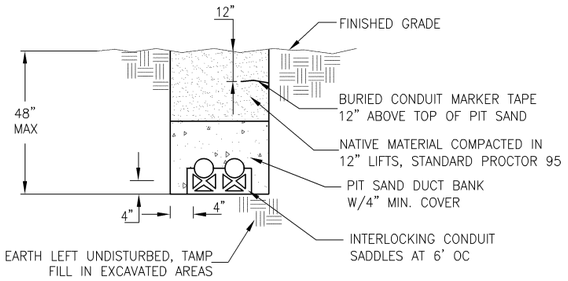
01 GROUND ROD & WELL
NOT TO SCALE



02 IN–SLAB GROUNDING CONDUCTOR VG CONNECTOR
NOT TO SCALE



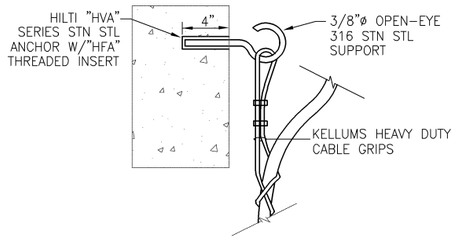
03 CABLE MARKER
NOT TO SCALE



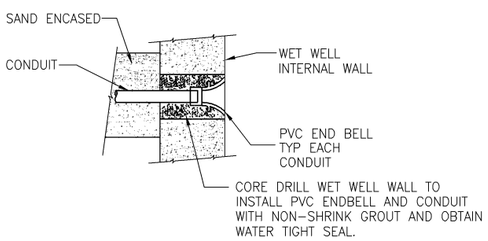
NOTES:

1. NUMBER AND SIZE OF CONDUITS SHALL BE AS SHOWN ON THE PLANS.
2. TOP OF PIT SAND ENCASEMENT SHALL BE A MININUM OF 13" BELOW FINISHED GROUND.

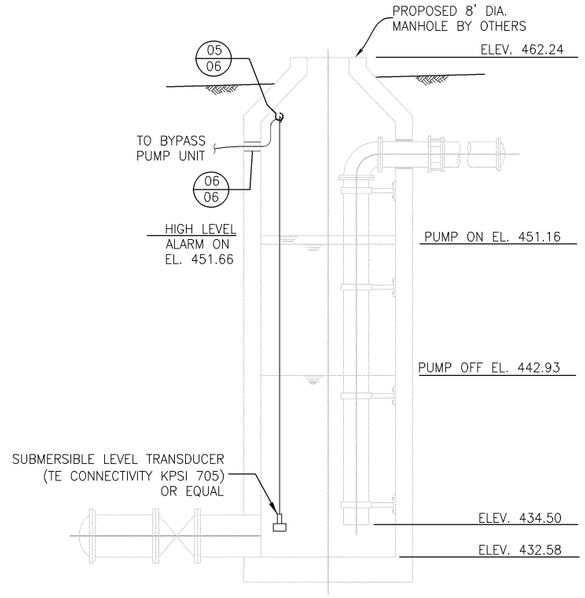
04 DETAIL–CONCRETE ENCASED UNDERGROUND DUCTBANK
NOT TO SCALE



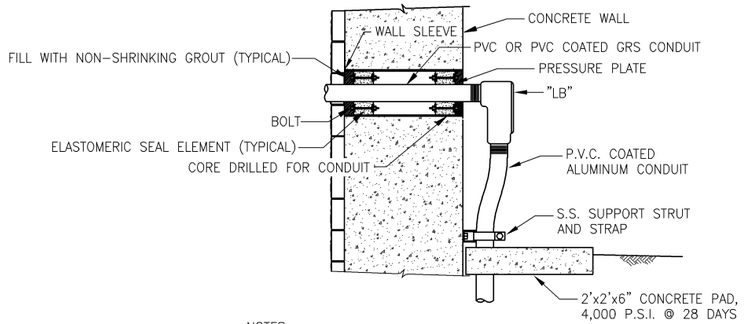
05 TYPICAL CABLE SUPPORT
NOT TO SCALE



06 END BELL IN SUCTION BYPASS MANHOLE
NOT TO SCALE



07 SUCTION BYPASS MANHOLE–A
NOT TO SCALE



NOTES:

1. WALL SLEEVE SHALL BE SELECTED FOR WATER VAPOR CONTAINMENT.
2. LINK SEAL SHALL BE 316 S.S. (S–316) FOR CONDUIT.
3. WALL SLEEVE TYPICAL HEIGHT 2' FROM GROUND LEVEL. CONTRACTOR SHALL CONFIRM HEIGHT IN FIELD WITH EXISTING ELECTRICAL EQUIPMENT INSIDE ELECTRICAL ROOM.

08 LINK–SEAL
NOT TO SCALE

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CITY OF ROCKWALL, TEXAS
SQUABBLE CREEK LIFT STATION IMPROVEMENTS

ELECTRICAL DETAIL SHEET

BHC PROJECT NO. 2015-144

May, 2018

SHEET NO. 6

STRUCTURAL NOTES

GENERAL

1. THIS PROJECT SHALL MEET ALL REQUIREMENTS OF THE CITY OF ROCKWALL, TEXAS AND THE 2012 INTERNATIONAL BUILDING CODE.
2. THE GENERAL CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL OPENINGS (COORDINATE WITH APPLICABLE TRADES). THE CONTRACTOR SHALL PROVIDE FOR ALL OPENINGS, WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL PRIOR TO CONSTRUCTION.
3. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH THE CIVIL DRAWINGS BEFORE CONSTRUCTION AND NOTIFY THE CIVIL ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK.
4. COMPLETE SHOP DRAWINGS AS REQUIRED FOR THE STRUCTURAL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. SUCH REVIEW BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR CORRECT FABRICATION AND CONSTRUCTION OF THE WORK. ALLOW TEN (10) BUSINESS DAYS FOR REVIEW FROM THE TIME SUBMITTALS ARE RECEIVED IN OUR OFFICE.
5. ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE DETAILED ON THESE DRAWINGS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.
6. THE STRUCTURAL DRAWINGS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
7. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMEN AND OTHER PERSONS DURING CONSTRUCTION.

SPECIAL INSPECTION

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION:
(EXPANDED TABLE OF SPECIAL INSPECTIONS AVAILABLE UPON REQUEST.)
(REFERENCE SHEET S002 FOR ADDITIONAL INFORMATION.)

1. SUBGRADE PREPARATION AND FOUNDATION BEARING
2. REINFORCED CONCRETE OVER 2500 PSI
3. REINFORCING STEEL
4. EPOXY ANCHOR BOLT INSTALLATION

DESIGN LOADS

1. FLOOR LIVE LOAD 100 PSF
2. BYPASS PUMP = 16,000 LBS.
3. WIND LOAD BASED ON 115 MPH WIND – ULTIMATE STRESS DESIGN
   EXPOSURE CATEGORY C
4. SEISMIC LOADS
   I_e = 1.25
   S_S = 0.1052
   S_1 = 0.0554
   SITE CLASS C
   S_{DS} = 0.084
   S_{D1} = 0.063
   DESIGN CATEGORY A

FOUNDATION DESIGN AND SITEWORK FOR BUILDING

1. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS CONTAINED IN A GEOTECHNICAL INVESTIGATION REPORT BY: HENLEY-JOHNSTON & ASSOCIATES; DATED: JULY 19, 2016; REPORT NO.: 15794G.
2. FOUNDATION DESIGN IS BASED ON AN ALLOWABLE BEARING PRESSURE OF 2,500 PSF FOUNDED AT LEAST 1 FOOT INTO SUITABLE BEARING NATURAL SOILS OR NEWLY PLACED STRUCTURAL COMPACTED FILL.
3. THE CONTRACTOR SHALL READ THE SOILS REPORT REFERENCED ABOVE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL SITE AND SUBGRADE PREPARATION RECOMMENDATIONS CONTAINED THEREIN. INFORMATION CONTAINED IN THE "FOUNDATION DESIGN AND SITEWORK FOR BUILDING" SECTION OF THE STRUCTURAL NOTES REPRESENTS A GENERAL OVERVIEW OF SITE WORK TO BE PERFORMED, AND SHALL NOT BE USED AS A SUBSTITUTE FOR THE SOILS REPORT REFERENCED ABOVE.
4. REMOVE ALL VEGETATION AND DEBRIS, INCLUDING PAVEMENTS, SIDEWALKS, BUILDING FOUNDATIONS, AND ABANDONED UTILITIES.
5. EXCAVATE TO ALLOW FOR A MINIMUM OF 10 FEET OF MOISTURE CONDITIONED SOILS WHICH SHALL EXTEND 3 FEET BEYOND THE FOUNDATION LINES AS PER THE SOILS REPORT.
6. SUBGRADES WITHIN THE PROPOSED BUILDING AREA SHOULD BE PROOFROLLED, IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER, WITH APPROPRIATE RUBBER-TIRE MOUNTED HEAVY CONSTRUCTION EQUIPMENT OR A LOADED DUMP TRUCK TO DETECT LOOSE YIELDING SOILS WHICH MUST BE REMOVED TO A STABLE SUBGRADE.
7. THE APPROVED SUBGRADE SHOULD BE SCARIFIED TO A DEPTH OF 6 TO 8 INCHES, MOISTURE CONDITIONED TO AT LEAST 2 TO 4 PERCENT ABOVE OPTIMUM MOISTURE CONTENT AND PROPERLY RECOMPACTED.
8. DURING WET WEATHER, SUBGRADE STABILITY PROBLEMS SHOULD BE EXPECTED. IN THE EVENT THE SUBGRADE IS EXPOSED TO SIGNIFICANT INCREASES IN MOISTURE AND SUBGRADE STABILITY PROBLEMS DEVELOP, OVEREXCAVATION ON THE ORDER OF 6 TO 8 INCHES SHOULD BE EXPECTED TO ACHIEVE A STABLE SUBGRADE.
9. PROVIDE POSITIVE DRAINAGE AWAY FROM EXCAVATIONS SO AS NOT TO ALLOW STANDING WATER FOR LONG PERIODS OF TIME.
10. INSTALL MOISTURE CONDITIONED SUBGRADE AS PER SOILS REPORT.
11. PROVIDE A MINIMUM OF 12" OF SELECT FILL BELOW SLAB AS PER SOILS REPORT.
12. PERFORM ALL SITEWORK UNDER THE DIRECT SUPERVISION OF THE GEOTECHNICAL ENGINEER.
13. REFERENCE THE SOILS REPORT FOR ANY QUESTIONS CONCERNING SUBGRADE PREPARATION, SITE CONDITIONS OR FOUNDATION PLACEMENT.

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS, (U.N.O.).
2. MINIMUM CEMENT CONTENT SHALL BE 5.5 SACKS PER CUBIC YARD.
3. TYPE C OR F FLY ASH MAY BE USED UP TO 20% OF TOTAL CEMENT CONTENT BY VOLUME. THIS IS ONLY FOR CONCRETE SPECIFIED IN THESE STRUCTURAL DRAWINGS. REFER TO SPECIFICATIONS BY OTHER DISCIPLINES.
4. MAXIMUM SLUMP SHALL BE 5 IN., U.N.O.
5. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
6. CONCRETE MIX SHALL NOT USE ANY ADMIXTURES WHICH CONTAIN CALCIUM CHLORIDE.
7. CONCRETE TEST REPORTS SHALL BE MADE AVAILABLE AT THE JOB SITE.

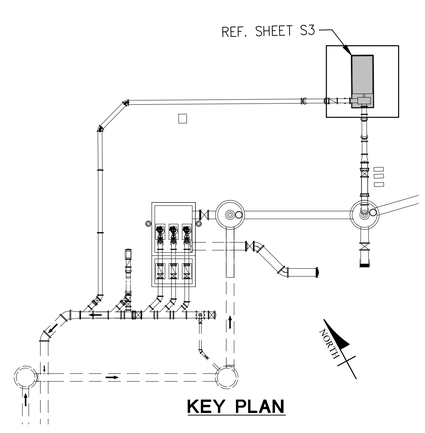
REINFORCING STEEL

1. BARS SHALL BE ASTM A615, GRADE 60.
2. DETAIL, FABRICATE, AND PLACE IN CONFORMANCE WITH ACI 315 AND 318.
3. LAP ALL REINFORCING STEEL 40 BAR DIAMETERS (U.N.O.).
4. PROVIDE ACCESSORIES FOR SUPPORT OF ALL REINFORCING.
5. SUBMIT SHOP DRAWINGS SHOWING ALL REINFORCING FOR APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

	MINIMUM COVER, IN.
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3
B. CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 THROUGH #18 BAR	2
#5 BAR, W31 OR D31 WIRE, AND SMALLER	1½
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS, WALLS, JOISTS:	
#14 AND #18 BARS	1½
#11 BAR AND SMALLER	¾
BEAMS, COLUMNS:	
PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS	1½

POST-INSTALLED ANCHORS

1. EXCEPT WHERE NOTED ON DRAWINGS, THE FOLLOWING SIMPSON PRODUCTS MAY BE USED. CONTACT WWW.STRONGTIE.COM FOR ADDITIONAL PRODUCT DATA.
   A. ALL DRILLED AND EPOXIED ANCHOR BOLTS PLACED IN CRACKED OR UNCRACKED CONCRETE SHALL BE THREADED RODS WITH SIMPSON SET-XP ADHESIVE SYSTEM OR APPROVED EQUAL (TYP., U.N.O.) ICC ESR-2508.
   B. ALL DRILLED AND EPOXIED ANCHOR BOLTS PLACED IN HOLLOW OR GROUTED CONCRETE BLOCK SHALL BE THREADED RODS WITH SIMPSON SET ADHESIVE SYSTEM OR APPROVED EQUAL. ALL ANCHOR BOLTS PLACED IN HOLLOW CONCRETE BLOCK SHALL UTILIZE A SCREEN TUBE PER THE MANUFACTURER'S RECOMMENDATIONS (TYP., U.N.O.) ICC ESR-1772.
   C. ALL DRILLED AND EPOXIED REBAR PLACED IN CRACKED OR UNCRACKED CONCRETE SHALL UTILIZE THE SIMPSON SET-XP ADHESIVE SYSTEM OR APPROVED EQUAL (TYP., U.N.O.) ICC ESR-2508.
2. EXCEPT WHERE INDICATED ON THE DRAWINGS, THE FOLLOWING HILTI PRODUCTS MAY BE USED. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.
   A. ANCHORAGE TO CONCRETE
      a. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         (1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HIT-Z ROD PER ICC ESR-3187.
         (2) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT SYSTEM WITH HAS-E THREADED ROD PER ICC ESR-3187.
         (3) HILTI HIT-RE 500-SD EPOXY ADHESIVE ANCHORING SYSTEM WITH HAS-E THREADED ROD PER ICC ESR-2322 FOR SLOW CURE APPLICATIONS
      b. MEDIUM DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         (1) HILTI KWIK HUS EZ AND KWIK HUS EZ-I SCREW ANCHORS PER ICC ESR-3027
         (2) HILTI KWIK BOLT-TZ EXPANSION ANCHORS PER ICC ESR-1917
         (3) HILTI KWIK BOLT 3 EXPANSION ANCHORS (UNCRACKED CONCRETE ONLY) PER ICC ESR-2302
      c. HEAVY DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         (1) HILTI HDA UNDERCUT ANCHORS PER ICC ESR 1546
         (2) HILTI HSL-3 EXPANSION ANCHORS PER ICC ESR 1545
   B. REBAR DOWELING INTO CONCRETE
      a. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         (1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187.
         (2) HILTI HIT-RE 500-SD EPOXY ADHESIVE ANCHORING SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-2322.
   C. ANCHORAGE TO SOLID GROUTED MASONRY
      a. ADHESIVE ANCHORS USE:
         (1) HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM PER ICC ESR-3342.
         (2) STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR.
      b. MECHANICAL ANCHORS USE:
         (1) HILTI KWIK BOLT-3 EXPANSION ANCHORS PER ICC ESR 1385
   D. ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY
      a. ADHESIVE ANCHORS USE:
         (1) HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM PER ICC ESR-3342.
         (2) STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR.
         (3) THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION.
3. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
4. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
5. INSTALL ACCORDING TO MANUFACTURER'S SPECIFICATIONS. THREADED ROD AND REBAR DIAMETERS AND EMBEDMENT LENGTHS SHALL BE AS NOTED ON DRAWINGS.
6. OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING PRODUCTS WHICH HAVE SPECIFIC APPLICATIONS THAT ARE INTENDED FOR OVERHEAD USE.
7. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
8. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
9. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.



KEY PLAN

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BY M.H. *DATE* 11/22/2019

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ANDREW J. LLORET
72614
LICENSED
PROFESSIONAL ENGINEER
5/16/18

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CITY OF ROCKWALL, TEXAS
SQUABBLE CREEK LIFT STATION PERMANENT BYPASS

SHEET TITLE: STRUCTURAL NOTES AND KEY PLAN

BHC PROJECT NO. 2015-144

MAY 2018

(S1)
SHEET NO. 7

Statement of Special Inspections

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☑ Soils and Foundations
- ☑ Cast-in-Place Concrete
- ☐ Masonry
- ☐ Structural Steel
- ☐ Wood Construction
- ☑ Special Cases

General Notes

The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

The qualifications of all personnel performing Special Inspections and testing activities are subject to the approval of the Building Official and E.O.R. The credentials of all inspectors and testing technicians shall be provided if requested.

The special inspectors shall keep records of inspections and shall furnish inspection reports to the owner, Engineer of Record (E.O.R.) and Architect of Record (A.O.R.). Field and testing result reports shall be submitted to all designated parties as they are completed. The reports shall indicate that the work performed was done in accordance to the construction drawings. Discrepancies shall be brought to the attention of the general contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the E.O.R. prior to completion of that phase of work. A final report that documents required special inspections and corrections of discrepancies shall be submitted by the General Contractor to the Owner, E.O.R. and A.O.R.

Soils and Foundations

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Shallow Foundations	*Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.* *Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill.*	*P* *C*
2. Controlled Structural Fill	*Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material.* *Inspect placement, lift thickness and compaction of controlled fill.* *Test density of each lift of fill by nuclear methods (ASTM D2922)* *Verify extent and slope of fill placement.*	*C*

Note:
1. Special Inspection is not required during placement of controlled fill having a total depth of 12 inches or less.

Cast-in-Place Concrete

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Mix Design	*Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design. Submit proposed mix design of each class of concrete to Structural Engineer of Record and to inspection and testing firm for review prior to commencement of work.*	*P*
2. Material Certification	*Review for conformance to contract documents. Submit to Structural Engineer of Record for review.*	*P*
3. Reinforcement Installation	*Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters. Submit certified copies of mill test report of reinforcement materials analysis.*	*P*
4. Anchor Rods	*Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.*	*C*
5. Concrete Placement	*Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.*	*C*
6. Sampling and Testing of Concrete	*Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064). Three concrete test cylinders will be taken for every 75 or less cubic yards of each class of concrete placed, or concrete placed on any given day. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete represents.*	*C*
7. Curing and Protection	*Inspect curing, cold weather protection and hot weather protection procedures.*	*P*

Note: Special Inspection is not required for flatwork patios, driveways and sidewalks, on grade not shown on structural drawings.

Special Cases

Item	Scope	Monitoring: Periodic (P) Continuous (C)
Epoxy Anchors in Concrete or CMU	*Review anchors and product being used for conformance to contract documents. Observe installation for compliance to manufacturers specifications. Perform pull test to 125% of allowable design load per manufacturer specifications. (Minimum of 10% of total anchors, to include a minimum of one of each type, size or embedment.)*	*C*

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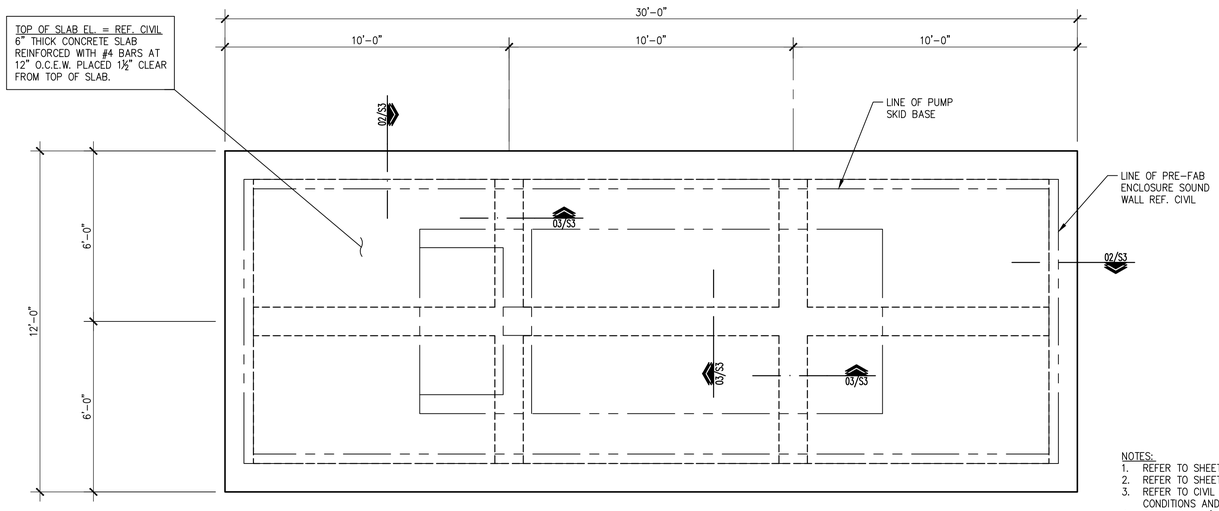
CITY OF ROCKWALL, TEXAS
SQUABBLE CREEK LIFT STATION PERMANENT BYPASS

SHEET TITLE: SPECIAL INSPECTIONS

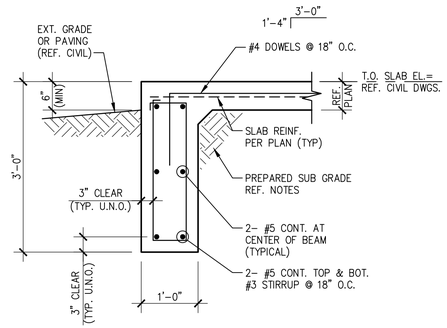
BHC PROJECT NO. 2015-144

MAY 2018

(S2)
SHEET NO. 8

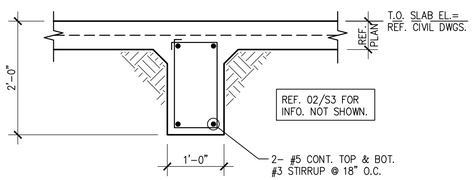


NOTES:
1. REFER TO SHEET S1 FOR STRUCTURAL NOTES.
2. REFER TO SHEET S2 FOR SPECIAL INSPECTIONS.
3. REFER TO CIVIL DRAWINGS. VERIFY AND COORDINATE ALL CONDITIONS AND DIMENSIONS WITH CIVIL DRAWINGS.
4. REFER TO 04/S3 AND 05/S3 FOR TYPICAL CORNER BAR DETAILS.
5. REFER TO 06/S3 FOR TYPICAL PIPE PENETRATION DETAIL.

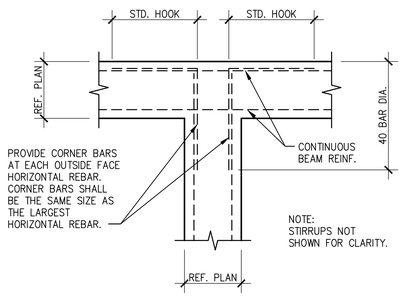


02 SECTION
SCALE: 3/4"=1'-0"

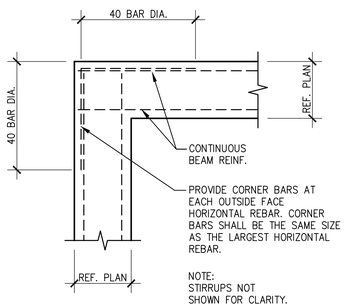
01 BYPASS PUMP PAD FOUNDATION PLAN
SCALE: 3/8"=1'-0"



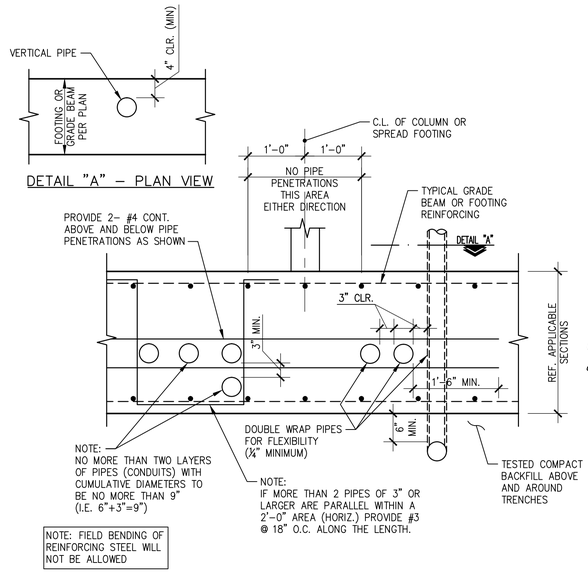
03 SECTION
SCALE: 3/4"=1'-0"



04 TYP. CORNER BAR DETAIL
SCALE: 3/4"=1'-0"



05 TYP. CORNER BAR DETAIL
SCALE: 3/4"=1'-0"



06 TYPICAL PENETRATION THRU FOOTINGS OR GRADE BEAMS
SCALE: 3/4"=1'-0"

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CITY OF ROCKWALL, TEXAS
SQUABBLE CREEK LIFT STATION PERMANENT BYPASS
SHEET TITLE: BYPASS PUMP PAD FOUNDATION PLAN AND DETAILS

BHC PROJECT NO. 2015-144
MAY 2018

(S3)
SHEET NO. 9