DESIGN CRITERIA

1. BUILDING CODE:
   INTERNATIONAL BUILDING CODE (IBC), 2012 EDITION, INCLUDING LOCAL SUPPLEMENTS. THE STRUCTURE IS CLASSIFIED AS A RISK CATEGORY III FACILITY.

2. DEAD AND LIVE LOADS:

LOCATION	UNIFORM LIVE LOAD	CONCENTRATED LIVE LOAD	TOTAL DEAD LOAD*
LIFT STATION COVER	100 PSF	2000 LB	150 PSF

   * TOTAL DEAD LOAD INCLUDES WEIGHT OF STRUCTURAL ELEMENTS.

DELEGATED ENGINEERING OF STRUCTURAL COMPONENTS & SYSTEMS

1. ALL STRUCTURAL COMPONENTS & SYSTEMS SPECIFIED TO BE DELEGATED SHALL BE DESIGNED AND SEALED BY A SPECIALTY STRUCTURAL ENGINEER (SSE) AND SHALL MEET THE GUIDELINES PUBLISHED BY THE COUNCIL OF AMERICAN STRUCTURAL ENGINEERS (CASE) FOR DELEGATED SPECIALTY STRUCTURAL ENGINEERING.

2. REFERENCE THE GENERAL NOTES & DRAWINGS FOR BUILDING CODE, SERVICE CRITERIA, AND DESIGN LOADS.

3. SUBMITTALS FOR DELEGATED COMPONENTS & SYSTEMS SHALL INCLUDE THE FOLLOWING:

   3.A. A FULL DESIGN ANALYSIS, INCLUDING CALCULATIONS FOR GRAVITY AND LATERAL LOADS, WITH A SEALED COVER SHEET IDENTIFYING THE PROJECT NAME AND ADDRESS.

   3.B. THE SSE THAT SEALED THE CALCULATIONS SHALL ALSO SEAL THE FABRICATION, PLACING, AND ERECTION PLANS. EACH PLAN SHALL IDENTIFY THE PROJECT NAME AND ADDRESS.

   3.C. IF THE SSE THAT SEALED THE CALCULATIONS AND PLANS IS AN EMPLOYEE OF A COMPANY, THE COMPANY'S CERTIFICATE OF AUTHORIZATION NUMBER SHALL BE INCLUDED ON THE SUBMITTALS. BOTH THE SSE SEAL AND THE CERTIFICATE OF AUTHORIZATION SHALL BE ISSUED BY THE STATE IN WHICH THE PROJECT IS LOCATED, INCLUDING PROJECTS ON FEDERAL LAND.

   3.D. THE COMPANY THAT EMPLOYS THE SSE SHALL PROVIDE AN INSURANCE CERTIFICATE FOR PROFESSIONAL LIABILITY INSURANCE WITH AN AGGREGATE AMOUNT OF NO LESS THAN TWO MILLION DOLLARS ($2,000,000). CONTRACTS OR SUB-CONTRACTS FOR THIS PROJECT SHALL NOT INCLUDE A LIMIT OF LIABILITY CLAUSE.

   3.E. THE SSE THAT SEALED THE PLANS SHALL INCORPORATE A WRITTEN STATEMENT THAT THE CONTRACT DOCUMENT'S CRITERIA HAVE BEEN INCORPORATED INTO THE DESIGN.

4. THE CONTRACTOR SHALL REVIEW THE SUBMITTAL FOR QUANTITIES AND DIMENSIONS AND VERIFY THAT THE ABOVE INFORMATION HAS BEEN INCLUDED IN THE SUBMITTAL.

5. NO SUBMITTAL WILL BE REVIEWED UNLESS ALL OF THE ABOVE INFORMATION IS INCLUDED. THE ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR DELAYS CAUSED BY INCOMPLETE SUBMITTALS.

6. PRECAST CONCRETE

   6.A. PRECAST COMPONENTS & CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH THE PCI DESIGN HANDBOOK. NON-STANDARD MEMBER CROSS-SECTIONS SHALL BE APPROVED BY THE ENGINEER IN ADVANCE OF SHOP DRAWING PREPARATION. CONNECTIONS SHOWN ON THE PLANS ARE FOR CONCEPT. THE PRECAST ENGINEER SHALL DESIGN THE CONNECTIONS WITH THE CONFIGURATION SHOWN.

   6.B. ALL OPENINGS GREATER THAN 10" ON A SIDE SHALL BE NEATLY FORMED TO DIMENSIONS.

   6.C. CONCRETE SHALL MEET THE REQUIREMENTS OF THE MIX DESIGN SECTION UNDER CONCRETE. USE OF SELF-CONSOLIDATION CONCRETE SHALL NOT BE USED WITHOUT WRITTEN APPROVAL PRIOR TO USE.

   6.D. DO NOT REMOVE CONCRETE FROM FORMS UNTIL THE CONCRETE HAS ATTAINED 2500 PSI FOR PRECAST AND 3500 PSI FOR PRESTRESSED CONCRETE.

SOIL PREPARATION AND FOUNDATIONS

1. THE FOUNDATION SYSTEM IS DESIGNED AS RECOMMENDED IN THE GEOTECHNICAL INVESTIGATION PREPARED BY PEC FIELD SERVICES, JOB NO. 74-160316-001-0147. A COPY IS IN THE SPECIFICATIONS OR IS AVAILABLE FOR INSPECTION AT THE ENGINEER'S PLACE OF BUSINESS.

2. REMOVE TOP SOIL CONTAINING ORGANIC MATERIAL AND PREPARE THE BUILDING PAD IN ACCORDANCE WITH THE CIVIL ENGINEERING PLANS, SPECIFICATIONS, AND GEOTECHNICAL INVESTIGATION.

3. SOIL SUPPORTED FOUNDATIONS:

   3.A. DESIGN BEARING PRESSURE (NET) IS 2500 PSF FOR FOUNDATIONS BEARING ON UNDISTURBED SOIL OR APPROVED ENGINEERED FILL MATERIAL. BEARING MATERIALS SHALL BE VERIFIED BY A LICENSED GEOTECHNICAL ENGINEER.

   3.B. ALL FOUNDATIONS ARE DESIGNED WITH EARTH FORMED SIDES; THE TOP 7¼" OF THE FOUNDATION SHALL BE FORMED TO THE DESIGN DIMENSION WHEN VISIBLE AFTER CONSTRUCTION IS COMPLETE. THE CONSTRUCTED FOUNDATION DIMENSION SHALL BE NO LESS THAN THE DESIGN DIMENSION, AND NO MORE THAN 6" GREATER THAN THE DESIGN DIMENSION.

4. DO NOT BACKFILL FOUNDATIONS WALLS UNTIL THE RESTRAINING SLABS OR ADEQUATE BRACING ARE IN PLACE. ALL BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATION.

5. EXTERIOR SLABS SHALL SLOPE AWAY FROM THE STRUCTURE A MINIMUM OF ¼" PER FOOT UNLESS NOTED OTHERWISE.

CONCRETE

1. ALL CONCRETE HAS BEEN DESIGNED IN ACCORDANCE WITH ACI 318 AND THE BUILDING CODE, AND IN CONFORMANCE WITH THE CURRENT "ACI MANUAL OF CONCRETE PRACTICE."

2. THE CONCRETE REQUIREMENTS ARE:

   2.A. CEMENT SHALL BE TYPE I OR II CONFORMING TO ASTM C150. FLY ASH CONFORMING TO ASTM C618 TYPE C OR F MAY BE USED TO REPLACE A MAXIMUM OF 20% OF THE CEMENT BY WEIGHT.

   2.B. FINE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL MEET ASTM C33.

   2.C. COARSE AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33, GRADE 67 OR LARGER. COARSE AGGREGATES SHALL BE NO LESS THAN 50% OF THE TOTAL AGGREGATE BY WEIGHT, UNLESS APPROVED BY THE ENGINEER PRIOR TO MIX DESIGN SUBMITTAL.

   2.D. MIX REQUIREMENTS ARE:

LOCATION	MINIMUM F'_C (PSI)	MINIMUM CEM.(PCY)	MAX. W/C RATIO	AIR CONTENT	SLUMP INCHES§
FOUNDATIONS	4000	470	0.45	5%±1%	2-5
BEAM AND SLAB	4000	470	0.45	3% MAX.	2-5
PRECAST	5000	611	0.45	5%±1%	2-5

   §PRIOR TO THE ADDITION OF WATER REDUCING ADMIXTURES, IF APPROVED BY ENGINEER, AFTER ADDITION THE SLUMP MAY NOT EXCEED 8".

   F'C SPECIFIED IS BASED ON THE 28 DAY COMPRESSIVE STRENGTH IN ACCORDANCE WITH ACI 318 ACCEPTANCE CRITERIA.

3. ADMIXTURES, HARDENERS, & CURING COMPOUNDS

   3.A. ALL CONCRETE ADMIXTURES SHALL, WHEN MIXED INTO CONCRETE, BE NON-CHLORIDE AND NON-CHLORIDE FORMING.

   3.B. ALL ADMIXTURES MUST CONFORM TO ASTM C-494 AND C-260.

   3.C. CONCRETE CURING COMPOUND AND SEALERS SHALL MEET ASTM C-309 TYPE 1 OR 1D.

   3.D. USE OF "SELF CONSOLIDATING" CONCRETE MUST BE SUBMITTED FOR APPROVAL WITH THE CONCRETE MIX DESIGN.

4. MISCELLANEOUS CONCRETE DETAILS:

   4.A. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾" INSIDE THE FORMS OR TOOLED TO ¾" RADIUS UNLESS NOTED OTHERWISE.

   4.B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL FORMING AND SHORING. SHORING FOR ELEVATED SLABS SHALL BE SET SO THAT ANY LOAD DUE TO THE CONCRETE OPERATIONS DOES NOT CAUSE THE FORMS TO SETTLE (SLACK, TAKE-UP, ETC.). ELEVATED SLABS SHALL NOT HAVE THE FORMS REMOVED WITHOUT PLACING RESHORES.

   4.C. NO ALUMINUM SHALL BE EMBEDDED IN CONCRETE. CONDUITS AND PIPING EMBEDDED IN CONCRETE WALLS, SLABS, OR BEAMS SHALL BE SPACED A MINIMUM OF FOUR DIAMETERS AND THE OUTSIDE DIAMETER SHALL BE LESS THAN 30% OF THE MEMBER THICKNESS AND PLACED BETWEEN LAYERS OF REINFORCING.

   4.D. SAW CUTTING OF EXISTING STRUCTURAL CONCRETE.

      4.D.1. THE CONTRACTOR SHALL HAVE ALL STRUCTURAL CONCRETE INTENDED TO BE CORED OR CUT INVESTIGATED WITH GROUND PENETRATING RADAR (GPR) PRIOR TO CUTTING/CORING. LOCATION OF REINFORCING SHALL BE REPORTED TO THE ENGINEER OF RECORD (EOR). THE EOR MAY DIRECT THE CONTRACTOR TO ADJUST THE OPENING LOCATION TO REDUCE THE QUANTITY OF EXISTING REINFORCING THAT WILL BE CUT.

      4.D.2. ALL NEW CIRCULAR OPENINGS SHALL BE CORE DRILLED. ALL NEW RECTANGULAR OPENINGS SHALL BE CORE DRILLED IN EACH CORNER TO PREVENT OVERCUTTING BEYOND THE INTENDED CORNERS. THE CONTRACTOR SHALL APPLY APPROPRIATE PRESSURE TO THE EQUIPMENT TO PREVENT SPALLING OVER ½" ON THE BACK SIDE OF THE OPENING.

CONCRETE REINFORCING

1. MATERIALS

	ASTM	GRADE
PLATE & ANGLE:	A36	---
REINFORCING STEEL:	A615	60
HEADED STUDS:	A108	---
DEFORMED BAR ANCHORS:	A706	60
ANCHOR RODS (BOLTS):	F1554	36

2. DETAILS:

   2.A. WELDING OF REINFORCING STEEL IS PROHIBITED UNLESS NOTED OTHERWISE.

   2.B. SHOP DRAWINGS SHALL BE SUBMITTED WITH REINFORCING STEEL IN ACCORDANCE WITH ACI 315.

   2.C. WHEN MECHANICAL SPLICES ARE INDICATED ON THE PLANS, THE SPLICE SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCING STEEL. REQUESTS BY THE CONTRACTOR FOR MECHANICAL SPLICES MUST BE SUBMITTED IN WRITING.

3. PLACEMENT:

   3.A. ALL REINFORCING AND EMBEDMENTS SHALL BE SUPPORTED ON CHAIRS/BOLSTERS TO THE DESIGN DIMENSIONS. SPACING SHALL BE SUFFICIENTLY CLOSE TO PREVENT DISPLACEMENT OR PERMANENT DEFORMATION DUE TO CONCRETE PLACEMENT, FOOT TRAFFIC, OR VIBRATION. "PUDDLING IN" OR "PULLING UP" REINFORCING IS NOT AN ACCEPTABLE METHOD FOR PLACING REINFORCING. CHAIRS/BOLSTERS SHALL HAVE PLASTIC COATED FEET OR BE MADE OF STAINLESS STEEL. CHAIRS/BOLSTERS IN CONTACT WITH EARTH SHALL HAVE BOTTOM PLATES AND BE COATED TO PREVENT CORROSION. ANCHOR RODS SHALL BE HELD IN PLACE WITH TEMPLATES SUFFICIENTLY STRONG TO PREVENT DISPLACEMENT OR TILTING.

   3.B. MAINTAIN ACI CLEAR COVER ON REINFORCING AS LISTED BELOW UNLESS NOTED OTHERWISE.

CAST AGAINST EARTH (BOTTOM OR SIDES):	3"
FORMED - EXPOSED TO SOIL, WEATHER OR LIQUIDS:	2"
SLABS ON GRADE (FROM TOP OF SLAB):	1.5"

   3.C. PROVIDE CORNER BARS OF THE SAME SIZE AND SPACING AS ADJACENT REINFORCING.

   3.D. OPENINGS IN WALLS OR SLABS SHALL BE REINFORCED PER DETAIL.

   3.E. REINFORCING STEEL SHALL BE LAPPED PER ACI.

4. ENVIRONMENTAL STRUCTURES

   4.A. ALL EMBEDDED PLATES AND ANCHOR RODS SHALL BE HOT-DIP GALVANIZED OR 316L STAINLESS STEEL. GALVANIZATION IN THE WELD AREA SHALL BE REPAIRED PER SPECIFICATION. WELD RODS FOR STAINLESS STEEL SHALL BE LOW CARBON STAINLESS STEEL.

5. EXTERNAL FIBER REINFORCING FOR CONCRETE MEMBERS:

   5.A. THE MATERIALS FOR REINFORCING THE CONCRETE MEMBERS SHALL BE CARBON FIBER AND COMPATIBLE RESINS SUITABLE FOR EXTERIOR APPLICATIONS. FIBER AND RESIN SHALL BE SIKA CARBODUR AS MANUFACTURED BY SIKA CORPORATION OF LYNDHURST, NEW JERSEY OR AN APPROVED EQUAL.

   5.B. THE CONCRETE SURFACE SHALL BE LIGHTLY SAND BLASTED TO REMOVE SURFACE FINISHES AND OPEN THE CONCRETE PORES. ALL DUST SHALL BE REMOVED FROM THE SURFACE WITH DRY OIL-FREE COMPRESSED AIR.

   5.C. APPLY A SIKADUR 30 RESIN PUTTY FILLER TO THE SURFACE TO PROVIDE ADHESION TO THE CONCRETE AND A SMOOTH SURFACE.

   5.D. APPLY THE FIRST RESIN COAT TO THE SURFACE. WHILE THE SURFACE COAT IS STILL WET, APPLY THE CARBON FIBER MAT TO THE SURFACE AND APPLY A SECOND COAT OF RESIN TO FULLY SATURATE THE FIBER REINFORCING. ALL CARBON FIBER MATS SHALL LAP A MINIMUM OF 3".

   5.E. APPLY THE FINAL RESIN COATING TO PROVIDE A PROTECTIVE BARRIER FOR THE CARBON FIBER.

COLD-FORMED STEEL FRAMING

1. ALL COLD-FORMED STEEL STUDS, PURLINS, AND TRUSS SYSTEMS SHALL BE GALVANIZED PER AISI STANDARDS. APPLY ZINC-RICH PAINT TO ALL AREAS WHERE FINISH IS DAMAGED DUE TO WELDING.

2. THIS STRUCTURE IS DESIGNED AS CONVENTIONAL FIELD FRAMED CONSTRUCTION. SHOULD PANELIZED CONSTRUCTION BE USED, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL ENGINEERING, COORDINATION WITH ALL OTHER BUILDING SYSTEMS, AND REVIEW OF SHOP DRAWINGS. COORDINATION AND REVIEW OF PANELIZED CONSTRUCTION SHOP DRAWINGS ARE NOT INCLUDED IN THE ENGINEER OF RECORD'S SCOPE OF SERVICES FOR THIS PROJECT. REQUESTS FOR INFORMATION PERTAINING TO, OR DIRECTLY ASSOCIATED WITH, PANELIZED CONSTRUCTION WILL NOT BE REVIEWED.

3. PRODUCTS SHALL BE FORMED FROM STEEL MEETING THE REQUIREMENTS OF AISI, SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, UNLESS NOTED OTHERWISE.

4. STUD TRACK SECTIONS SHALL MEET OR EXCEED THICKNESS OF STUD MEMBERS, UNLESS NOTED OTHERWISE.

5. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS.

6. PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT LIMITED TO, TRACKS, CLIPS, WEB STIFFENERS, FASTENERS, ANCHORAGE DEVICES, CONNECTION ANGLES, BRIDGING, AND MISCELLANEOUS HARDWARE REQUIRED TO COMPLETE ALL CONNECTIONS AND INSTALLATION.

7. FASTENING OF FRAMING COMPONENTS SHALL BE WITH SELF-TAPPING SCREWS OR WELDING OF SUFFICIENT SIZE TO ENSURE THE STRENGTH OF THE CONNECTION. WELDS SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST AWS D1.3 CODE.

8. COLD-FORMED STEEL STUD PRODUCTS SHALL BE MANUFACTURED BY A CURRENT MEMBER OF THE STEEL STUD MANUFACTURER ASSOCIATION (SSMA) OR THE STEEL FRAMING INDUSTRY ASSOCIATION (SFIA).

   8.A. THE PHYSICAL AND STRUCTURAL PROPERTIES SHALL BE EQUIVALENT TO THOSE LISTED BY THE SSMA "PRODUCT TECHNICAL INFORMATION" AND ICC-ES ER-3064P FOR "S" AND "T" SECTIONS.

   8.B. PROVIDE WALL STUD BRIDGING SPACES AT 4'-0" O.C., MAX. IN ALL EXTERIOR WALLS AND INTERIOR, LOAD BEARING WALLS.

   8.C. PROVIDE DEFLECTION TRACK AT THE TOP OF ALL NON-LOAD BEARING STUD WALLS WHERE THE TOP OF WALL ABUTS THE BOTTOM OF THE STRUCTURE. DEFLECTION TRACK SHALL ACCOMMODATE A DEFLECTION DESCRIBED UNDER CONSTRUCTION DETAILS FOR STRUCTURAL MOVEMENT.

   8.D. ATTACH STUDS TO TRACK WITH A MINIMUM OF ONE SCREW IN EACH STUD FLANGE, UNLESS NOTED OTHERWISE.

DAVID K. CARPENTER LICENSED 23070 06/27/2017 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

LIFT STATION REHABILITATION
31ST STREET SOUTH AND GLENN AVENUE

GENERAL STRUCTURAL NOTES

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-85136

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	DKC	Job No.	35-160316-1-0042
Drawn by	DGC	Date	JUNE 2017

Sht. S0.1

POST INSTALLED ANCHORING SYSTEMS

1. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII) AND THE EVALUATION REPORT (ER/ESR) SPECIFIED INCLUDING HOLE PREPARATION, TEMPERATURE AND MOISTURE CONDITIONS.

2. ADHESIVE ANCHORS:

   2.A. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL ANCHOR PRODUCTS SPECIFIED. THE CONTRACTOR MUST MAINTAIN TRAINING RECORDS OF ALL CONTRACTOR PERSONNEL INSTALLING ANCHORS AND SUBMIT TO THE ENGINEER OF RECORD PRIOR TO INSTALLING ANCHORS UPON REQUEST.

   2.B. ADHESIVE ANCHORS SHALL BE USED IN CONJUNCTION WITH THE APPROPRIATE ADHESIVE SYSTEM. STANDARD REINFORCING STEEL ANCHORED IN CONCRETE SHALL BE IN ACCORDANCE WITH ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE.

   2.C. APPROVED ADHESIVE ANCHORS FOR PREVIOUSLY CAST CONCRETE:

MANUFACTURER/PRODUCT	REPORT NUMBER
HILTI HIT–HY200 SSS* WITH HIT–Z ROD	ICC–ES ESR–3187
HILTI HIT–HY200 SSS* WITH HOLLOW BIT & HAS–E ROD	ICC–ES ESR–3187
HILTI HIT–HY200 SSS* WITH HOLLOW BIT & STEEL REINFORCING	ICC–ES ESR–3187
*SAFE SET SYSTEM	

   2.D. APPROVED ADHESIVE ANCHORS FOR BRICK MASONRY

MANUFACTURER/PRODUCT	REPORT NUMBER
HILTI HIT–HY 70 SAFE SET SYSTEM WITH HAS–E ROD	ICC–ES ESR–3342

3. POWDER ACTUATED FASTENERS

   3.A. WHEN CALLED FOR ON THE PLANS, THE APPROVED ANCHORS ARE:

MANUFACTURER AND PRODUCT	USE	REPORT NUMBER
HILTI X–GN (1" EMBED)	METAL STUD TRACK TO CONCRETE	ICC–ES ESR–1752
HILTI X–EGN	METAL STUD TRACT TO STEEL	ICC–ES ESR–1752

CONTRACT/CONSTRUCTION DOCUMENTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A FULL SET OF THE MOST RECENT REVISIONS OF EACH DOCUMENT INCLUDING ALL PLANS, SPECIFICATIONS, ADDENDA, AND SUPPLEMENTAL INSTRUCTIONS.

2. THE CONTRACTOR SHALL REVIEW THE DOCUMENTS PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY MATERIALS FOR CONFLICTS. IF CONFLICTS OCCUR THE CONTRACTOR SHALL USE THE MOST STRINGENT REQUIREMENT OR REQUEST A CLARIFICATION THROUGH A REQUEST FOR INFORMATION (RFI).

3. THE DOCUMENTS MAY NOT BE REPRODUCED IN WHOLE OR IN PART FOR USE ON PROJECTS OTHER THAN IDENTIFIED IN THE TITLE BLOCK. SHOULD THE CONTRACTOR USE THE DOCUMENTS AS A PORTION OF A SHOP DRAWING SUBMITTAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CONSEQUENCES RESULTING FROM ERRORS IN THE REPRODUCED DOCUMENTS.

4. DETAILS LABELED TYPICAL ARE INTENDED TO REPRESENT A CONDITION THAT OCCURS AT SEVERAL LOCATIONS IN THE PLANS WHETHER OR NOT THE DETAIL IS REFERENCED.

5. DO NOT SCALE THE PLANS AND DETAILS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.

CONTRACTOR'S RESPONSIBILITY

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL SUB–CONTRACTOR SUBMITTALS AND NOTING ALL DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMITTING TO THE ENGINEER FOR REVIEW.

2. SUBSTITUTION REQUESTS SHALL BE SUBMITTED IN WRITING WITH THE COST REDUCTION AMOUNT AND THE SCHEDULE IMPACT FOR THE OWNER (SUBMITTALS WITHOUT THE COST AND SCHEDULE IMPACT WILL NOT BE REVIEWED). A COMPARISON OF THE DATA WITH THE MATERIAL SPECIFIED INCLUDING CODE APPROVALS SHALL BE PROVIDED.

3. DEFECTIVE WORK REPORT (DWR) SHALL BE SUBMITTED TO THE ENGINEER. THE DWR SHALL REPORT THE DEFECT AND PROPOSE A REMEDIATION OF THE DEFECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REMEDIATION OF THE DEFECT INCLUDING ENGINEERING COSTS, IF ANY.

4. WHEN THE CONTRACTOR BECOMES AWARE OF WHAT MAY BE AN UNFORESEEN CONDITION THAT COULD AFFECT COST OR SCHEDULE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING.

5. THE CONTRACTOR'S SCHEDULE MUST PROVIDE A REASONABLE TIME ALLOWANCE FOR THE ENGINEERING REVIEW AND APPROVAL.

6. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR SITE SAFETY. THE ENGINEER IS RESPONSIBLE FOR FOLLOWING THE CONTRACTOR'S CONSTRUCTION SITE SAFETY INSTRUCTIONS PROVIDED IN WRITING. ALTERNATELY, THE CONTRACTOR SHALL ASSIGN AN ESCORT TO ADVISE THE ENGINEER OF SITE SAFETY ISSUES DURING SITE VISITS. THE ENGINEER'S PURPOSE OF A SITE VISIT IS SOLELY TO BECOME FAMILIAR WITH THE GENERAL PROGRESS AND QUALITY OF THE PROJECT. THE ENGINEER'S SITE VISIT IS NOT A QUALITY CONTROL FUNCTION.

CONSTRUCTION MEANS AND METHODS ISSUES

1. SLAB ON GRADE AND ELEVATED SLABS ARE NOT DESIGNED TO SUPPORT CRANES, FORKLIFTS, TRUCKS, MANLIFTS, OR OTHER CONSTRUCTION RELATED EQUIPMENT UNLESS NOTED AS SUCH. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE IF CONSTRUCTION EQUIPMENT CAN BE SAFELY OPERATED ON THESE SLABS AND TO REPAIR ANY DAMAGE THE EQUIPMENT MAY CAUSE.

2. THE CONSTRUCTION DOCUMENTS REPRESENT A STABLE STRUCTURE IN THE COMPLETED FORM. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY BRACING AND/OR SHORES TO SAFELY CONSTRUCT THE BUILDING AND PREVENT DAMAGE DURING CONSTRUCTION.

3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION THAT MAY AFFECT THE PROJECT AND REPORT DISCREPANCIES TO THE ENGINEER. ANY DIMENSIONS FOR ELEVATIONS THAT IMPACT NEW WORK SHALL BE VERIFIED PRIOR TO FABRICATION OF ANY MATERIAL. EXISTING BUILDING ELEMENTS THAT ARE TO BE ABANDONED THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN AND MATERIALS FOR ATTACHING NON–STRUCTURAL ELEMENTS TO ANY PORTION OF THE STRUCTURE TO RESIST ALL LOADS, INCLUDING SEISMIC, IN A WAY THAT DOES NOT OVERSTRESS STRUCTURAL MEMBERS. NON–STRUCTURAL ELEMENTS CAN BE FOUND IN EACH OF THE OTHER DISCIPLINES (ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC.).

STRUCTURAL TESTS, INSPECTIONS, AND QUALITY ASSURANCE

ALL STRUCTURAL TESTS AND INSPECTIONS SHALL BE PERFORMED PER CHAPTER 17 OF THE BUILDING CODE WITH LOCAL SUPPLEMENTS, UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED.

REQUIRED VERIFICATION & INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	FREQUENCY	REFERENCED STANDARD	IBC REFERENCE
1. Inspection of reinforcing steel, including prestressing tendons and placement.	Periodic	ACI 318: 3.5, 7.1-7.7	1910.4
2. Inspection of reinforcing steel welding in accordance with Table 1705.2.2, Item 2b.		AWS D1.4 ACI 318: 3.5.2	
3. Inspection of anchors cast in concrete where allowable loads have been increased or where strength design is used.	Periodic	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
4. Inspection of anchors post installed in hardened concrete members.	Periodic	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
5. Verifying use of required mix design.	Periodic	ACI 318: Ch. 4, 5.2-5.4	1904.2, 1910.2, 1910.3
6. At the time of fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Continuous	ASTM C172, ASTM C31, ACI 318: 5.6, 5.8	1910.10
7. Inspection of concrete and shotcrete placement for proper application techniques.	Continuous	ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
8. Inspection for maintenance of specified curing temperature and techniques.	Periodic	ACI 318: 5.11-5.13	1910.9
9. Inspection of prestressed concrete: a. Application of prestressing forces. b. Grouting of bonded prestressing tendons in the seismic-force-resisting system.	 Continuous Continuous	 ACI 318: 18.20 ACI 318: 18.18.4	
10. Erection of precast concrete members.	Periodic	ACI 318: Ch. 16	
11. Verification of in-situ concrete strength, prior to stressing of tendons in posttensioned concrete and prior to removal of shores and forms from beams and structural slabs.	Periodic	ACI 318: 6.2	
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	Periodic	ACI 318: 6.1.1	

DAVID K. CARPENTER LICENSED 23070 06/27/2017 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

LIFT STATION REHABILITATION
31ST STREET SOUTH AND GLENN AVENUE

GENERAL STRUCTURAL NOTES

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468–85136

PEC
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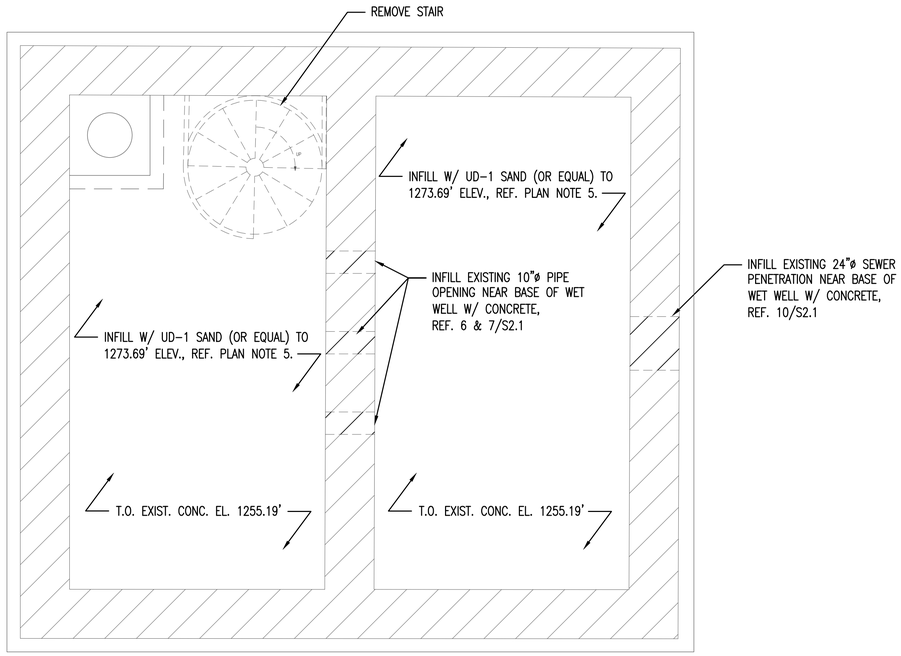
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

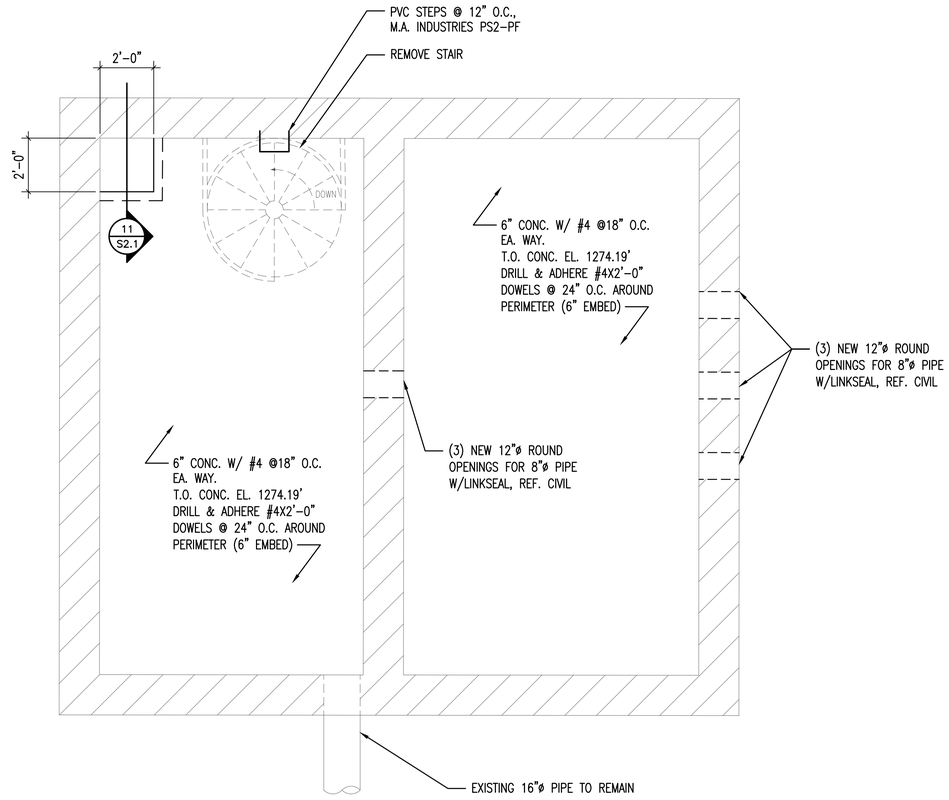
Designed by DKC	Job No. 35–160316–1–0042	Sht. S0.2
Drawn by DGC	Date JUNE 2017	



1 / S1.1 **EXISTING LIFT STATION FOUNDATION PLAN**
3/8"=1'-0"

PLAN NOTES

1. REFERENCE S0.1 & S0.2 FOR STRUCTURAL GENERAL NOTES.
2. REF. 8/S2.1 FOR ALL NEW PIPE PENETRATIONS GREATER THAN 10".
3. LOCATE EXISTING REINFORCEMENT PRIOR TO CORING. MINIMIZE EXISTING REINFORCEMENT THAT WILL BE CUT. REF. GENERAL NOTES.
4. REFERENCE S2.1 FOR TYPICAL STRUCTURAL DETAILS.
5. COMPACT INFILL SAND TO 98% COMPACTION. PLACE IN 9" TALL LIFTS MAX.



2 / S1.1 **EXISTING LIFT STATION BASEMENT PLAN**
3/8"=1'-0"

No.	Revision	By	Date

DAVID K. CARPENTER LICENSED 23070 06/27/2017 KANSAS PROFESSIONAL ENGINEER

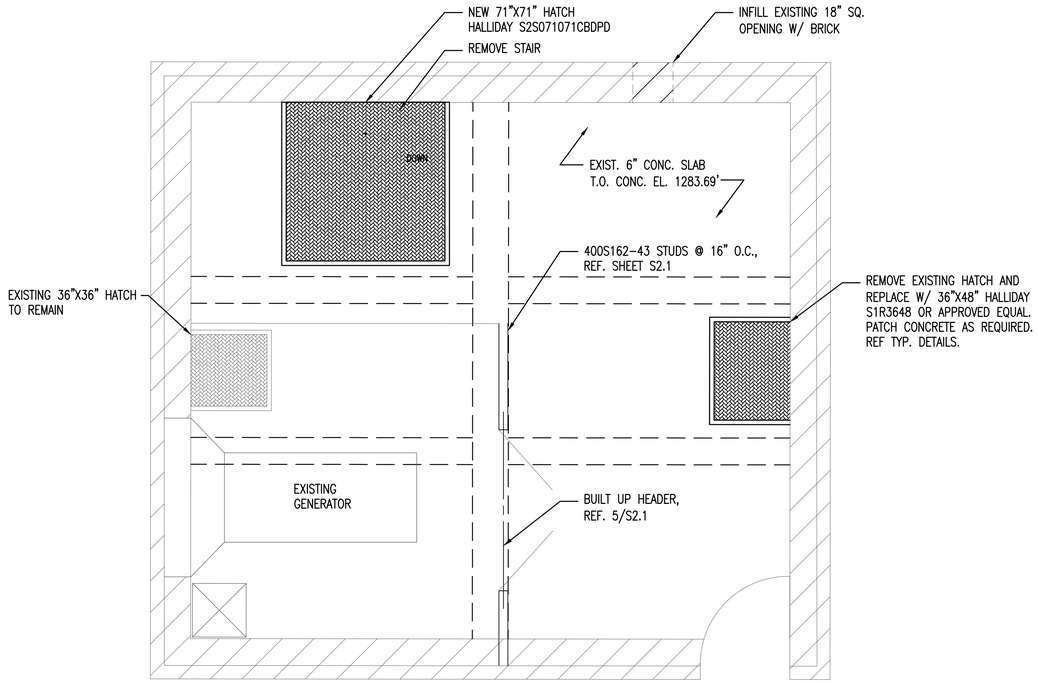
LIFT STATION REHABILITATION
31ST STREET SOUTH AND GLENN AVENUE

EXISTING LIFT STATION PLANS

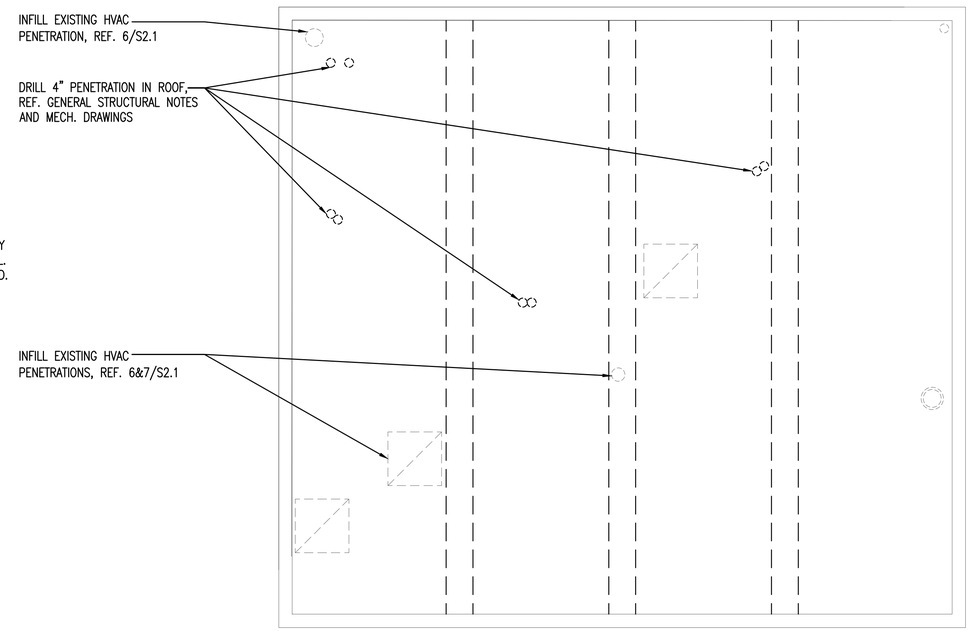
GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-85136

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	DKC	Job No.	35-160316-1-0042
Drawn by	DGC	Date	JUNE 2017
		Sht.	S1.1



1 S1.2 **EXISTING LIFT STATION FLOOR PLAN**
3/8"=1'-0"



2 S1.2 **EXISTING LIFT STATION ROOF PLAN**
3/8"=1'-0"

PLAN NOTES

1. REFERENCE S0.1 & S0.2 FOR STRUCTURAL GENERAL NOTES.
2. REF. 8/S2.1 FOR ALL NEW PIPE PENETRATIONS GREATER THAN 10".
3. LOCATE EXISTING REINFORCEMENT PRIOR TO CORING. MINIMIZE EXISTING REINFORCEMENT THAT WILL BE CUT. REF. GENERAL NOTES.
4. REFERENCE S2.1 FOR TYPICAL STRUCTURAL DETAILS.

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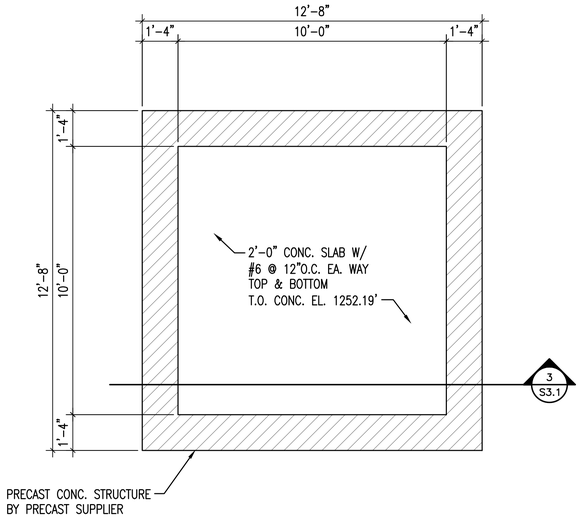
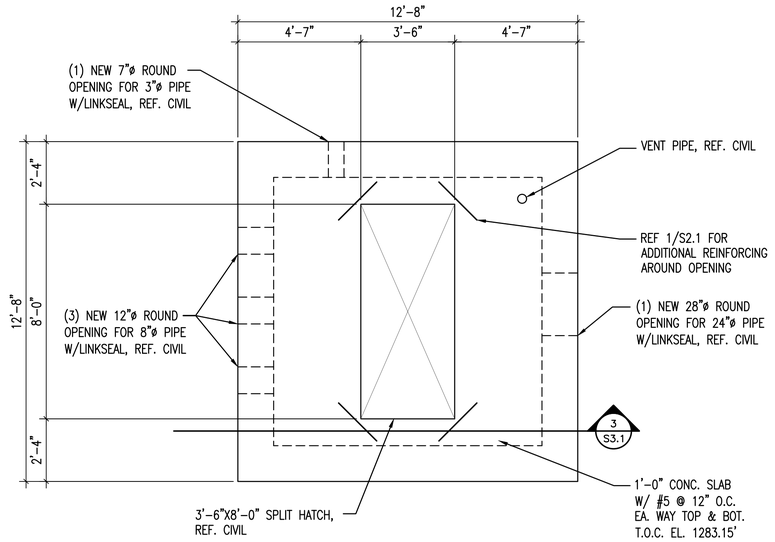
Sht. S1.2



1 S1.3 LIFT STATION FOUNDATION

3/8"=1'-0"

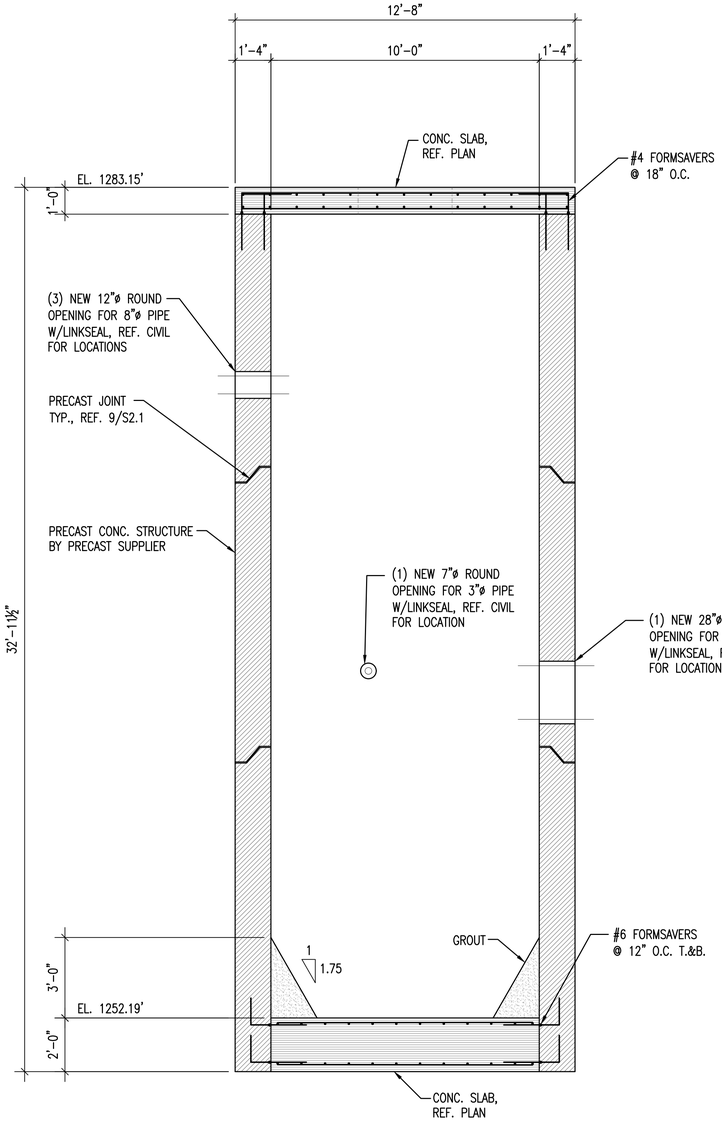


2 S1.3 LIFT STATION COVER PLAN

3/8"=1'-0"

PLAN NOTES

1. REFERENCE S0.1 & S0.2 FOR STRUCTURAL GENERAL NOTES.
2. REFERENCE CIVIL AND ELECTRICAL DRAWINGS FOR ADDITIONAL PENETRATIONS IN CONCRETE.
3. LOCATE EXISTING REINFORCEMENT PRIOR TO CORING DRILLING NEW PENETRATIONS. REINFORCEMENT SHALL NOT BE CUT.
4. REFERENCE S2.1 FOR TYPICAL STRUCTURAL DETAILS.



3 S1.3 LIFT STATION SECTION

3/8"=1'-0"

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LIFT STATION REHABILITATION
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PROPOSED LIFT STATION PLANS AND SECTION

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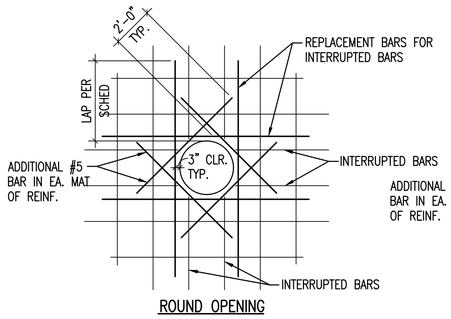
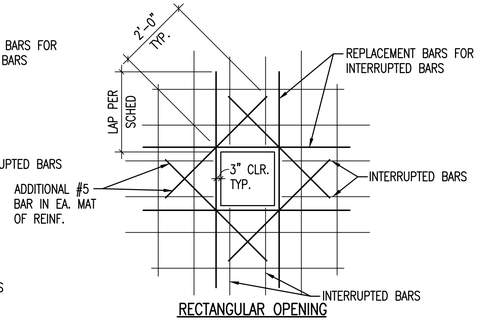
Drawn by DGC	Date JUNE 2017	



ROUND OPENING



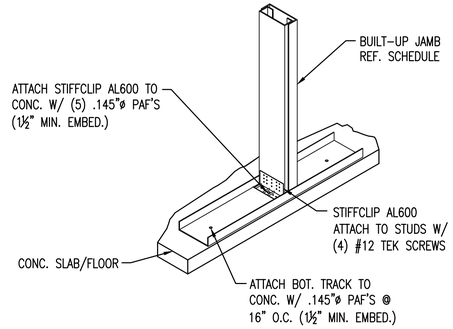
RECTANGULAR OPENING

NOTES:

1. USE THIS DETAIL FOR ALL OPENINGS GREATER THAN 8" IN CONCRETE WALLS AND ELEVATED SLABS , PROVIDE #5 ON DIAGONAL AT EACH CORNER AS SHOWN. EXTEND BARS 2'-0" PAST OPENING. REPLACE ALL VERTICAL AND HORIZONTAL BARS INTERUPTED BY THE OPENING WITH AN EQUAL NUMBER AND SIZE BARS EVENLY DIVIDED ON EACH SIDE OF THE OPENING UNLESS NOTED OTHERWISE.
2. REFER TO ARCHITECTURAL, STRUCTURAL & MECHANICAL PLANS FOR ALL OPENING LOCATIONS.

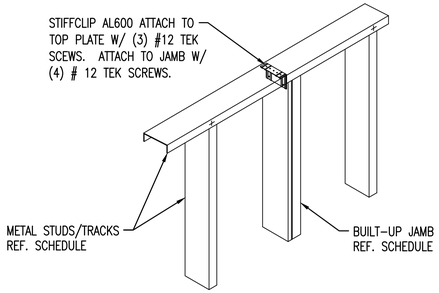
1 S2.1 TYP.WALL/ELEVATED SLAB OPENING REINF.

NO SCALE



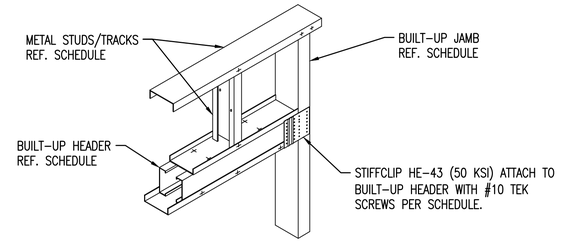
2 S2.1 TYP. JAMB TO CONC. CONN.

NO SCALE



3 S2.1 TYP. JAMB AT TOP PLATE CONN.

NO SCALE



4 S2.1 TYP. HEADER CONN. TO JAMB

NO SCALE

HEADER

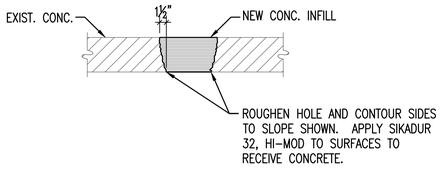
(2) VERT. 400S162-43 W/ (2) VERT. 400T125-43 CAPPED T.&B. W/ 400T125-43

JAMB

(2) 400S162-43 W/ (2)#12 TEK SCREWS @ 24"O.C. VERT., CAPPED W/ 400T125-43

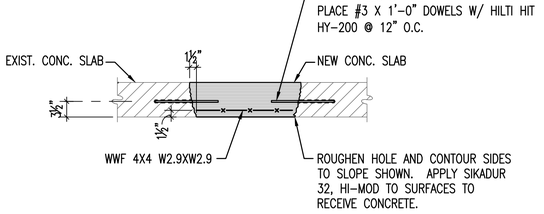
5 S2.1 TYP. HEADER AND JAMB DETAIL

NO SCALE



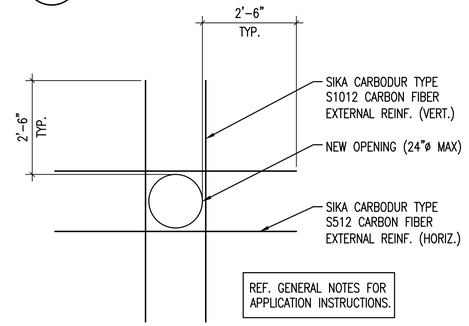
6 S2.1 EXISTING HOLES LESS THAN 10"

NO SCALE



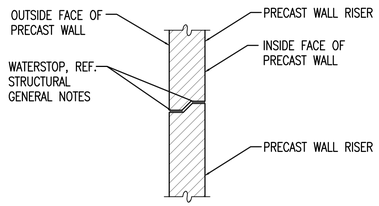
7 S2.1 EXISTING HOLES FROM 10" - 36"

NO SCALE



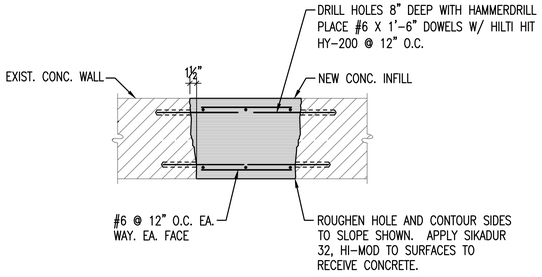
8 S2.1 NEW OPENING DETAIL

3/4"=1'-0"



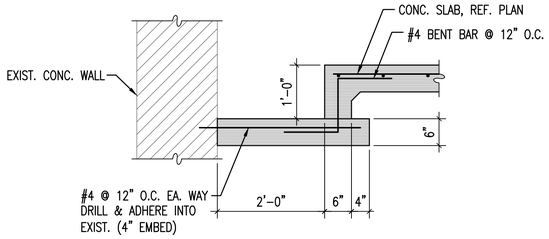
9 S2.1 PRECAST RISER JOINT

NO SCALE



10 S2.1 EXISTING HOLES FROM 10" - 36"

NO SCALE



11 S2.1 SUMP BASIN

NO SCALE

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TYPICAL STRUCTURAL DETAILS

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Sht. S2.1