

SANITARY SEWER IMPROVEMENTS

LIFT STATION NO. 16

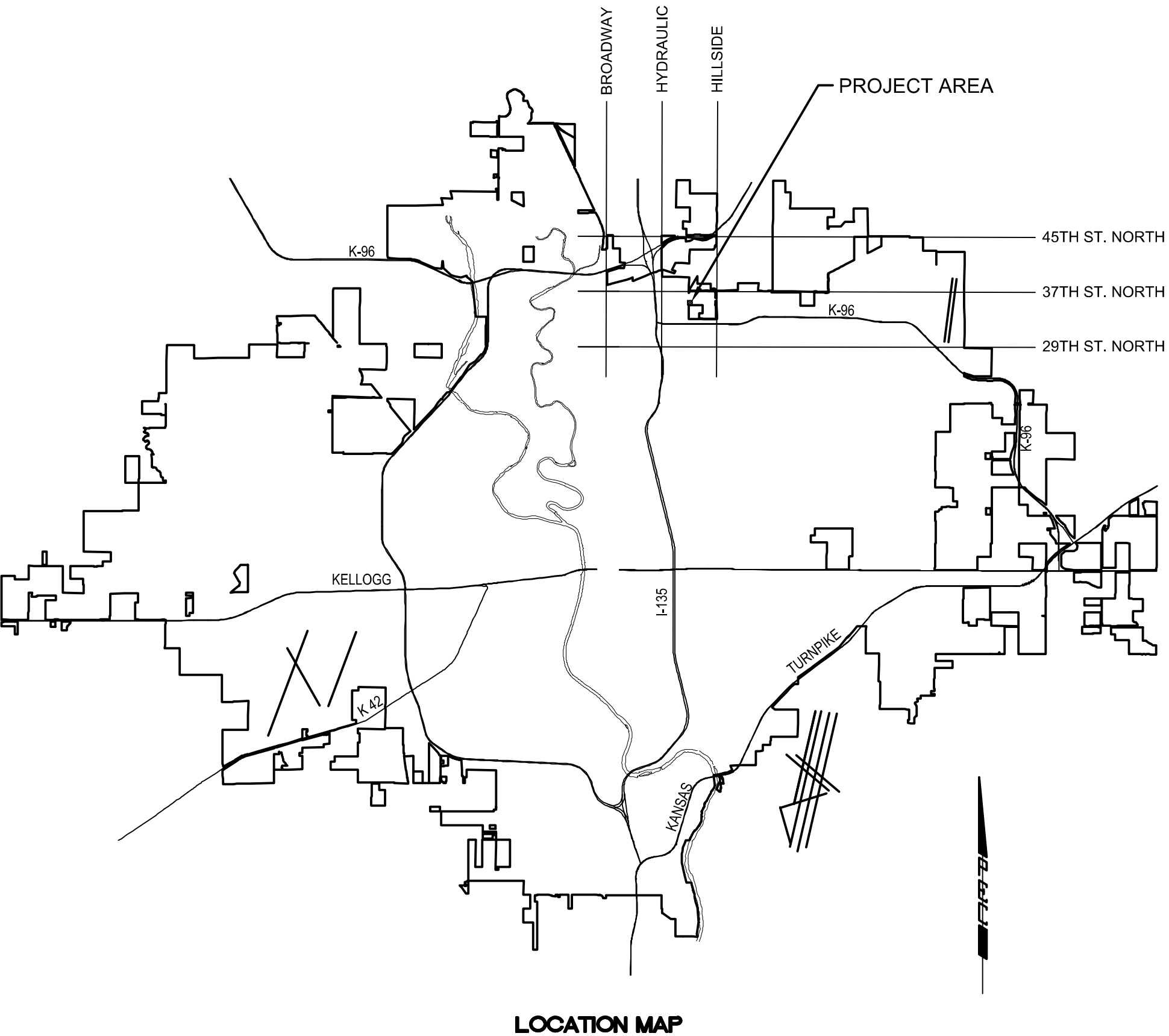
AT

POPLAR STREET, SOUTH OF E. 37TH STREET N

CITY OF WICHITA, KANSAS

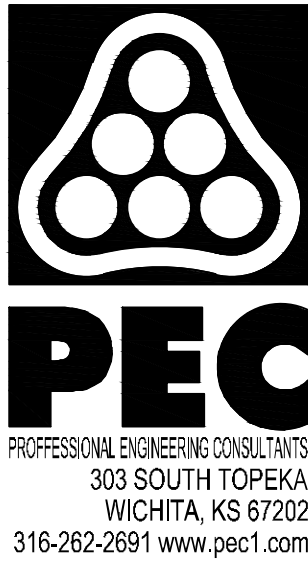
GARY JANZEN, P.E. - CITY ENGINEER

CITY OF WICHITA ENGINEERING PROJECT NO. 468-2020-019216 S0013



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POPLAR STREET,
SOUTH OF E. 37TH STREET N

GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

Issue:		
JOB NO.	35-217043-007-0042	
DATE	NOVEMBER 2021	
PM	RWG	
DESIGNED BY	RWG	
DRAWN BY	KTD	
CHECKED BY	TBK	

TITLE SHEET

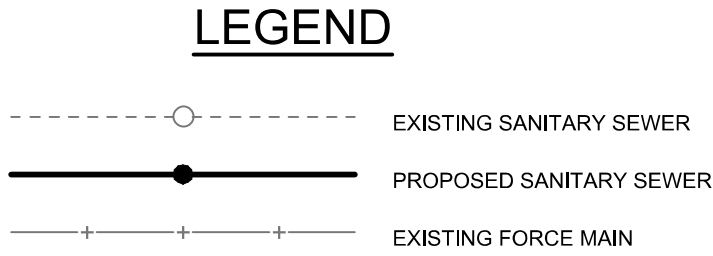
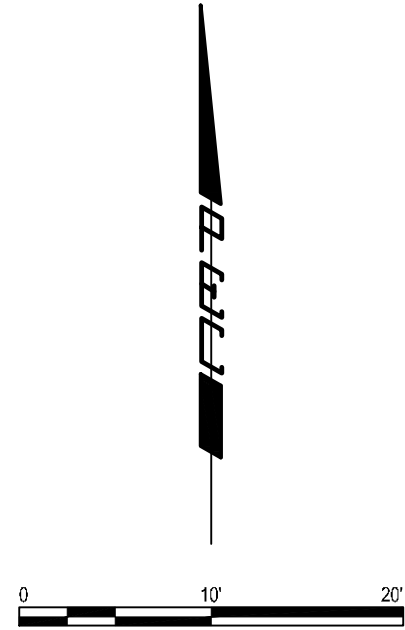
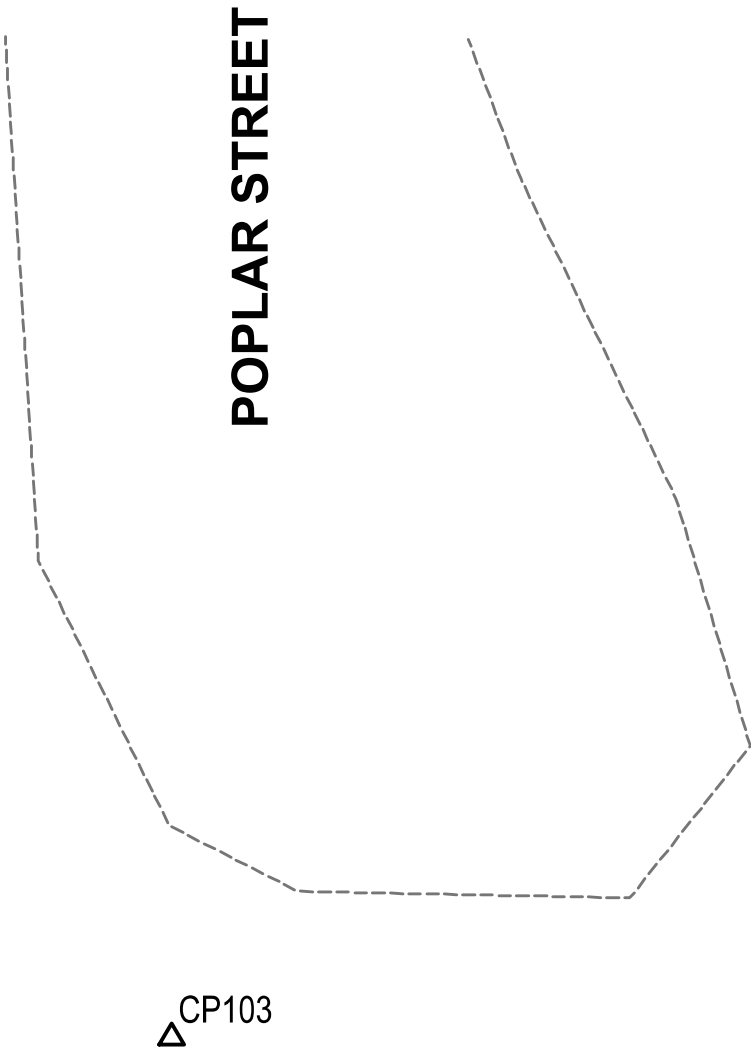
CU001

GENERAL NOTES

- ## UTILITY CONTACTS

CU002

SAVED 2/23/2022 11:17:27 AM BY KURTIS DEKAT
PLOTTED 2/25/2022 1:34:02 PM BY KURTIS DEKAT
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CONTROL SUMMARY
HORIZONTAL DATUM/COORDINATE SYSTEM: NAD 83 (2011) KANSAS SOUTH ZONE
PROJECT COORDINATE SYSTEM: (GRID) ON DESCRIBED COORDINATE SYSTEM
VERTICAL DATUM: NAVD 88
DISTANCE UNITS: US SURVEY FEET

BENCH MARKS
BM-202
ELEV: 1,339.09 (NAVD 88)
T-POST ±40' NORTH OF THE EXISTING LIFT STATION, ±45' WEST OF THE WEST EDGE OF THE POND, ±29' WEST TO A MAG NAIL IN THE SOUTH FACE OF A 12" COTTONWOOD

HORIZONTAL CONTROL POINTS
CP-103
N: 1708469.8342 E: 1657255.269
1/2" REBAR WITH PEC CP CAP, AT THE SOUTH END OF THE SERVICE ROAD TO THE LIFT STATION
1. 11.40' SSE TO A MAG NAIL IN THE WEST FACE OF A RR TIE FENCE POST
2. 11.25' SSW TO A MAG NAIL IN THE NORTH FACE OF A FENCE POST
3. 17.50' W TO THE EAST FACE OF ELECTRIC BOX #W12-J571

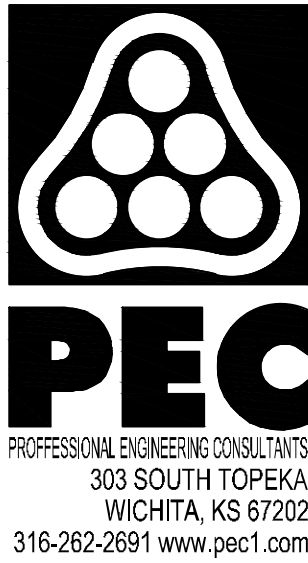
CP-104 (NOT SHOWN)
N: 1708805.318 E: 1657257.1648
1/2" REBAR WITH PEC CP CAP, ON THE EAST SIDE OF THE SERVICE ROAD TO THE LIFT STATION
1. 36.15' NNE TO THE TOP CENTER OF A GATE POST WITH CABLE
2. 39.75' NNW TO THE TOP CENTER OF A GATE POST WITH CABLE
3. 7.00' W TO THE CENTERLINE OF THE GRAVEL ROAD

COORDINATE LIST		
POINT	NORTHING	EASTING
6001	1,708,479.1405	1,657,300.0910
6002	1,708,480.4029	1,657,320.0511
6003	1,708,468.4877	1,657,320.8850
6004	1,708,467.1644	1,657,300.8484
6005	1,708,475.3579	1,657,321.3932
6006	1,708,475.7366	1,657,327.3812
6007	1,708,468.7506	1,657,327.8230
6008	1,708,468.3719	1,657,321.8350

(6000) = COORDINATE POINT NO.
COORDINATE POINTS ARE TO THE BACK OF PAVEMENT UNLESS OTHERWISE SHOWN.

SANITARY SEWER LIFT STATION NO. 16 BYPASS				
COORDINATE LIST				
POINT	NORTHING	EASTING	STATION	DESCRIPTION
5001	1,708,486.9864	1,657,307.8911	10+00.00	GATE VALVE
5002	1,708,488.1413	1,657,307.8604	10+00.00	TEE
5003	1,708,488.2547	1,657,314.1265	10+02.40	GATE VALVE
5004	1,708,487.6710	1,657,314.6085	10+07.00	5' MANHOLE

(5000) = COORDINATE POINT NO.



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CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

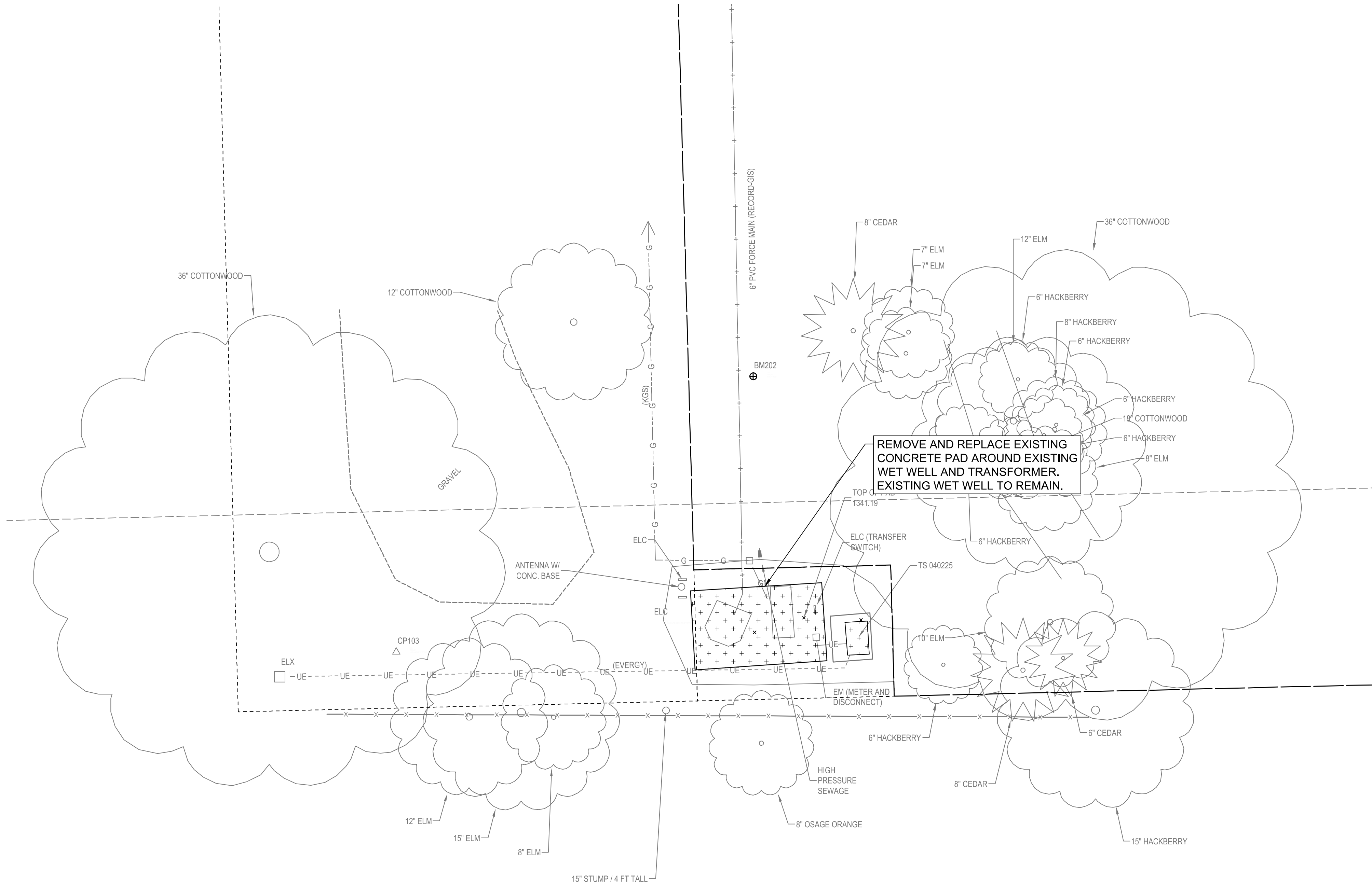
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DATE	NOVEMBER 2021
PM	RWG
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DRAWN BY	KTD
CHECKED BY	TBK

KEY MAP, BUBBLE MAP, AND CONTROL

CU003

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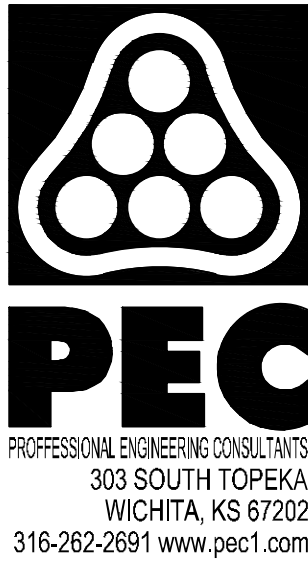


DEMOLITION LEGEND

+ + DENOTES CONCRETE PAVEMENT REMOVAL

DEMOLITION NOTES

- PRIOR TO BID, THE CONTRACTOR SHALL PERFORM A SITE REVIEW AND ACCOUNT FOR ANY DEMOLITION ITEMS THAT MAY HAVE BEEN INADVERTENTLY NOT SHOWN ON THIS DRAWING. ALL DEMOLITION IS SUBSIDIARY TO THE PROJECT.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS TO REPAIR DAMAGE TO EXISTING UTILITY SERVICE LINES OR MAIN LINES, BUILDINGS, PAVEMENT ON OR ADJACENT TO THE SITE THAT ARE TO REMAIN IN SERVICE AND ARE NOT CALLED TO BE DEMOLISHED ON THIS PLAN, INCLUDING SERVICE LINES THAT ARE NOT SHOWN ON THE SITE SURVEY.
- ALL EXISTING UTILITIES WITHIN THE PROPERTY LIMITS SHALL BE REMOVED AND TERMINATED PER THE UTILITY COMPANY REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THIS WORK AND ANY ASSOCIATED FEES.
- THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION PERMIT FEES, DISPOSAL FEES, ANY OTHER FEES ASSOCIATED WITH ANY DEMOLITION ITEMS.
- REFERENCE THE GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION PROCEDURES.
- REFERENCE CU002 FOR CIVIL GENERAL NOTES.
- SURVEY DOES NOT INCLUDE UNDERGROUND STRUCTURES OR FOUNDATIONS FROM PREVIOUS SITE CONSTRUCTION.
- IF CONTAMINATED MATERIAL IS ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY KDHE AND FOLLOW THE PROCEDURES FOR HANDLING AND DISPOSAL OF THE CONTAMINATED MATERIALS.



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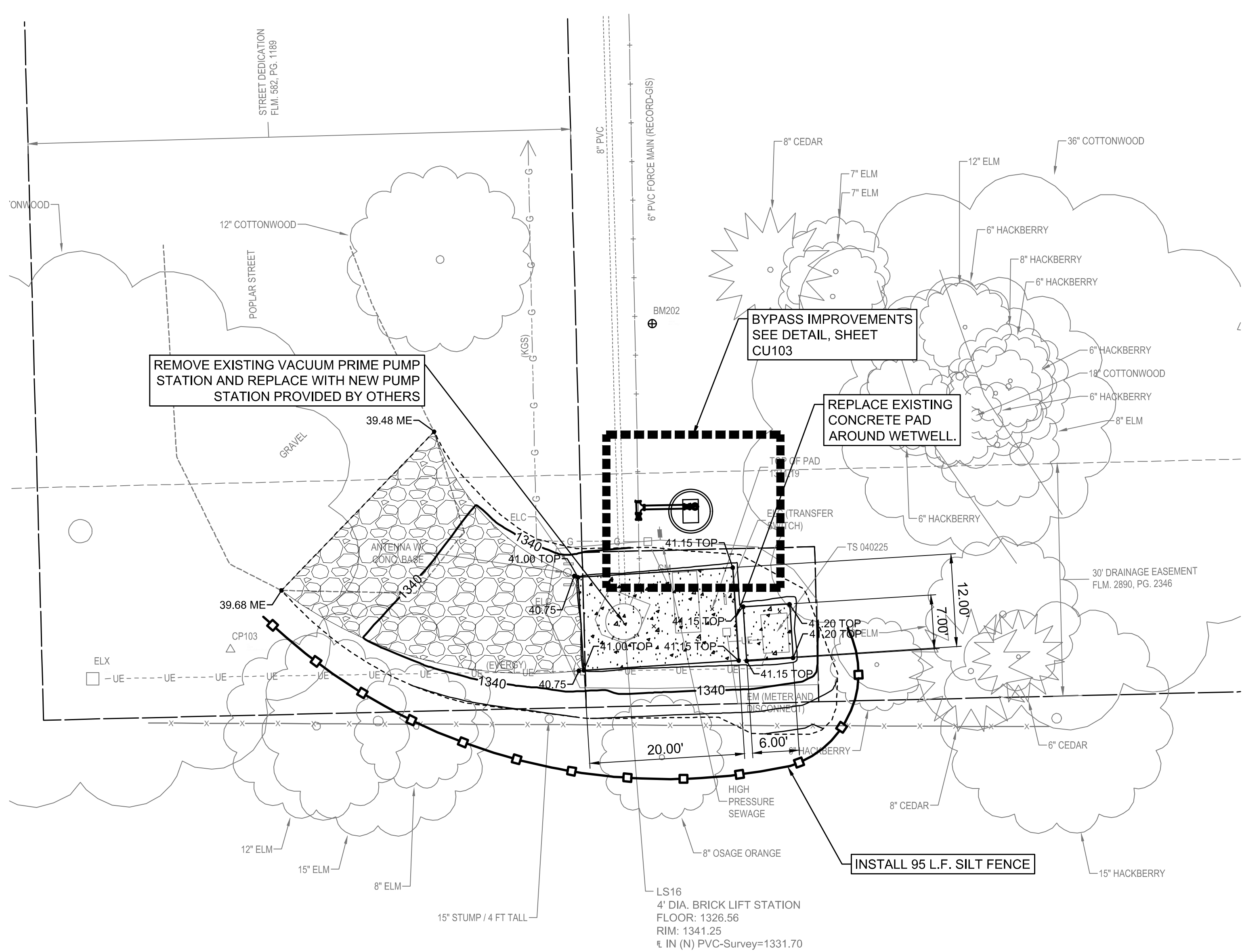
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DEMOLITION PLAN

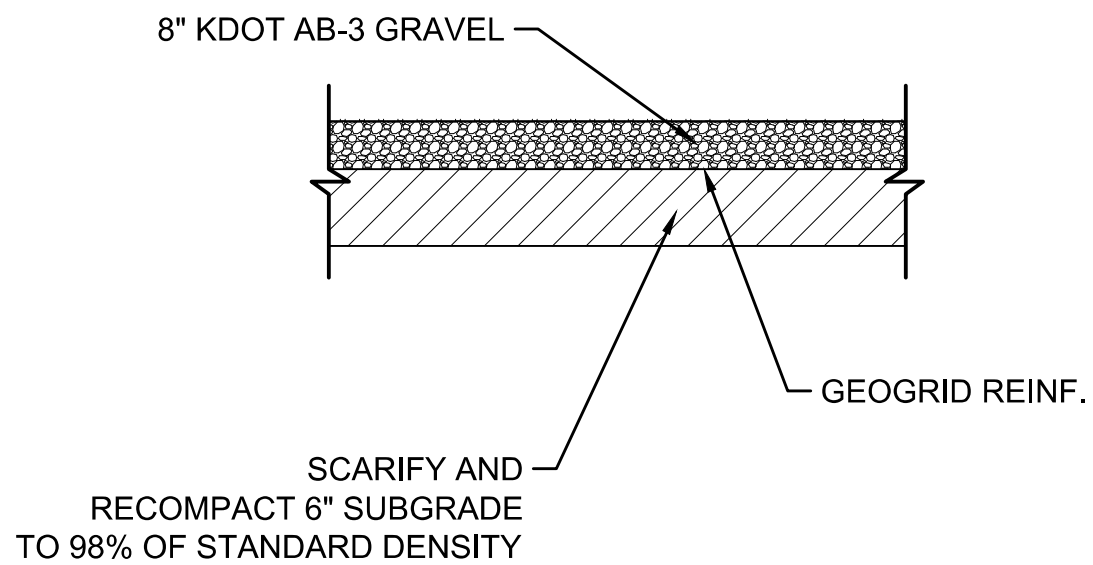
CU101

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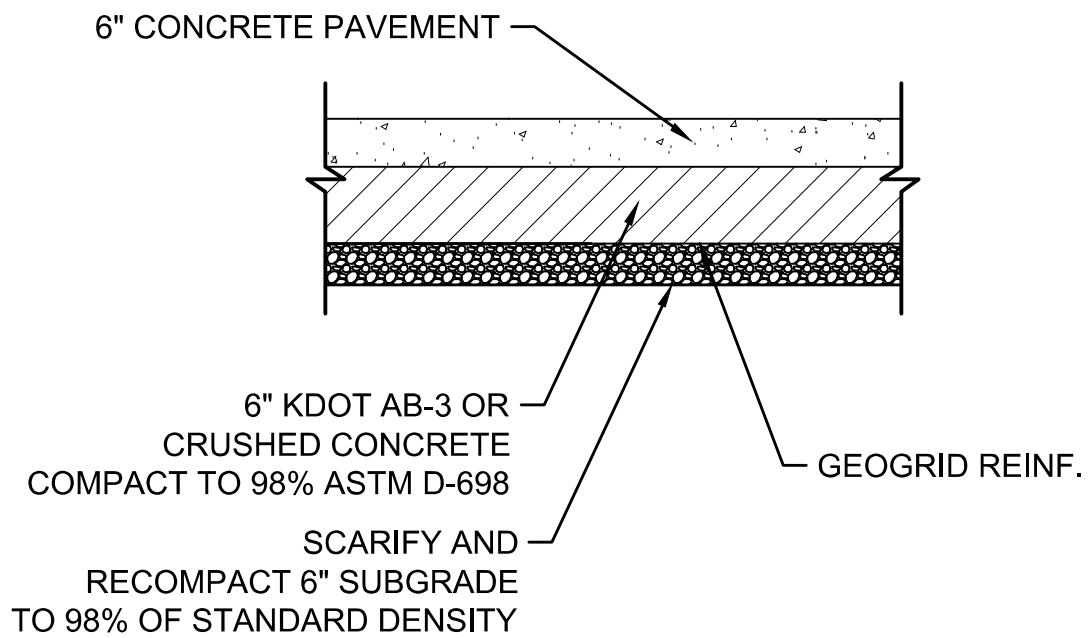
SITE GRADING NOTES

1. ALL FILL MATERIAL BLADED SMOOTH AND SLOPED TO DRAIN.
2. CADD FILES FOR GRADING WILL BE MADE AVAILABLE UPON REQUEST.
3. THE CONTRACTOR SHALL SATISFY THEMSELVES WITH THE EARTHWORK QUANTITIES AND NO CHANGE ORDER FOR EARTHWORK WILL BE APPROVED.
4. ELEVATIONS NOTED ARE TO FINISHED GRADE. REFERENCE PAVEMENT DETAILS FOR MORE INFORMATION.



TYPICAL GRAVEL SECTION

NOT TO SCALE



TYPICAL CONCRETE PAVEMENT SECTION

NOT TO SCALE

PAVING LEGEND

- PROPOSED CONCRETE PAVEMENT
- PROPOSED GRAVEL

GRADING LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED GRADING LIMITS
- PROPOSED SILT FENCE

GRADING ABBREVIATIONS

- ME MATCH EXISTING
- TOP TOP OF PAVEMENT



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PAVING AND GRADING PLAN

CU102

SAVED 2/25/2022 8:39:55 AM BY KURTIS DEKAT
PLOTTED 2/25/2022 1:34:30 PM BY KURTIS DEKAT
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PUMP STATION NOTES

1. THE OWNER WILL PROVIDE THE PUMP STATION MODULE FOR INSTALLATION BY THE CONTRACTOR. THE CONTRACTOR SHALL NOT INCLUDE THE FURNISHING OF THIS EQUIPMENT IN THE PRICE BID.
2. THE PRICE BID FOR FURNISHING AND INSTALLING THE PUMP STATION INCLUDING THE WET WELL PUMP UNIT, AND MISCELLANEOUS APPURTENANCES SHALL INCLUDE ALL COSTS FOR INSTALLING THE PUMP STATION AS SHOWN IN THE PLANS COMPLETE, IN PLACE AND IN OPERATION. THIS PRICE SHALL INCLUDE THE COST OF CONSTRUCTING AND/OR INSTALLING COMPACTED SUBGRADE, CONCRETE PAVEMENT, ELECTRICAL COMPONENTS, CONDUIT AND WIRING, DISCONNECT SWITCH, PUMP UNIT, AUXILIARY POWER SUPPLY, PHONE SERVICE, ELECTRICAL POWER SUPPLY, NATURAL GAS SUPPLY, FINISHED GRADING, LANDSCAPING, FENCING, AND ANY OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK AND PLACE THE PUMP STATION INTO SATISFACTORY OPERATION. THE PRICE BID SHALL INCLUDE ALL SANITARY SEWER PIPE AND FORCE MAIN EXTENDED OUTSIDE THE SLAB AS SHOWN IN THE SITE PLAN AND DETAILS (THIS SHEET).
3. CONTRACTOR SHALL SUPPORT ALL PIPING INSIDE THE WET WELL AS REQUIRED.
4. ALL HARDWARE WITHIN THE WET WELL INCLUDING BRACKETS, BOLTS, NUTS, ETC. SHALL BE STAINLESS STEEL.
5. THE CONTRACTOR SHALL COORDINATE WITH EVERGY ENERGY, AT&T, AND KANSAS GAS SERVICE, AND EXTEND GAS SERVICE TO THE PUMP STATION SITE. THE CONTRACTOR SHALL VERIFY THE ELECTRICAL, TELEPHONE AND GAS SERVICE REQUIREMENTS THAT ARE TO BE PROVIDED BY EVERGY, AT&T, AND KGS.

NO SEPARATE PAYMENT WILL BE MADE TO THE CONTRACTOR FOR EXTENSION OF UTILITY SERVICE LINES, AND ALL REQUIRED COSTS FOR EXTENSION OF UTILITY SERVICE LINES SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE PUMP STATION

THE CONTACT PEOPLE ARE LISTED BELOW

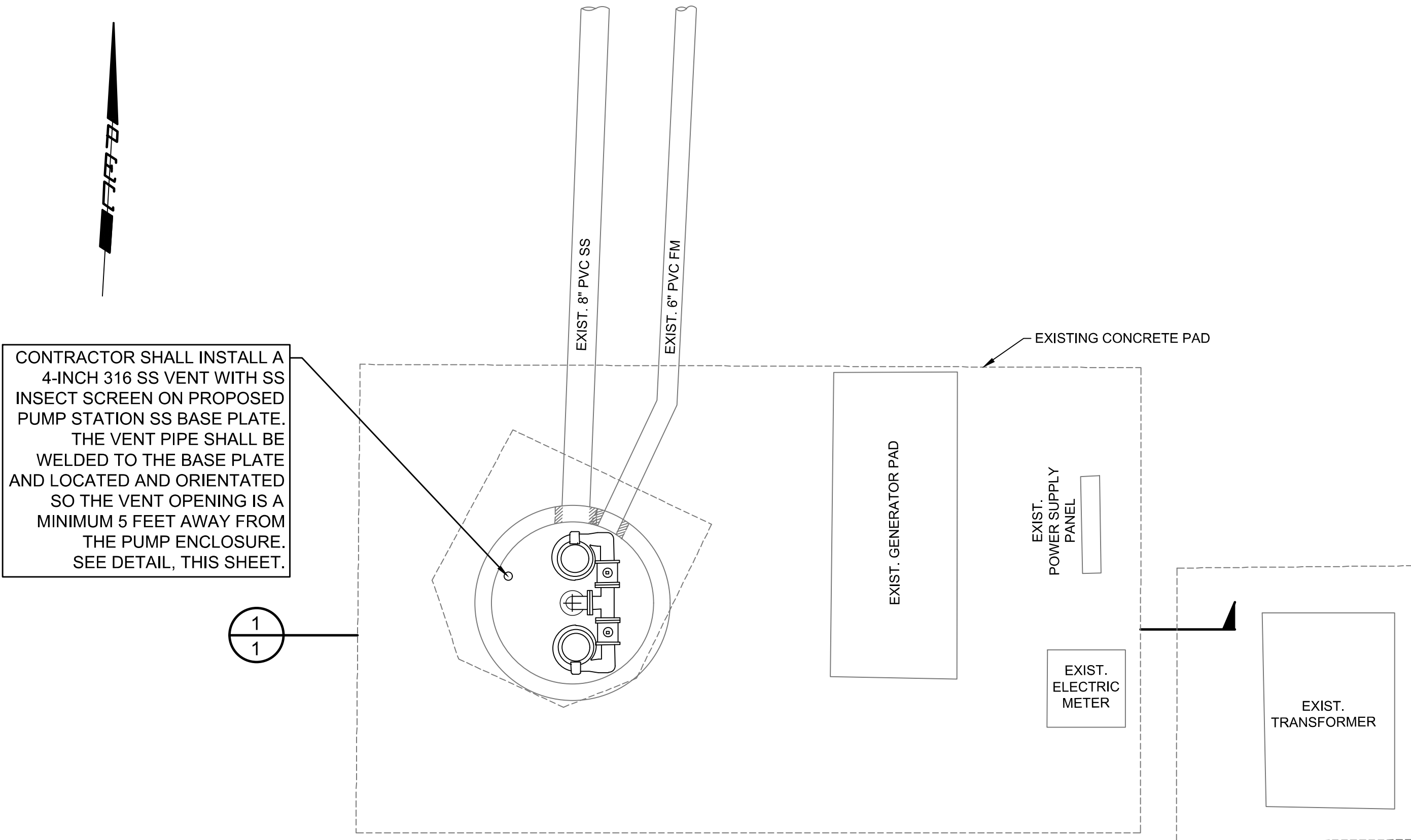
AT&T
ATTN: SHANNON BRINKMEYER
154 N. BROADWAY, ROOM 210
WICHITA, KS 67202
PH (316) 268-2931

EVERGY
ATTN: PEDRO MALDONADO
1900 E. CENTRAL (3RD FLOOR)
WICHITA, KS 67201
PH (316) 261-6245

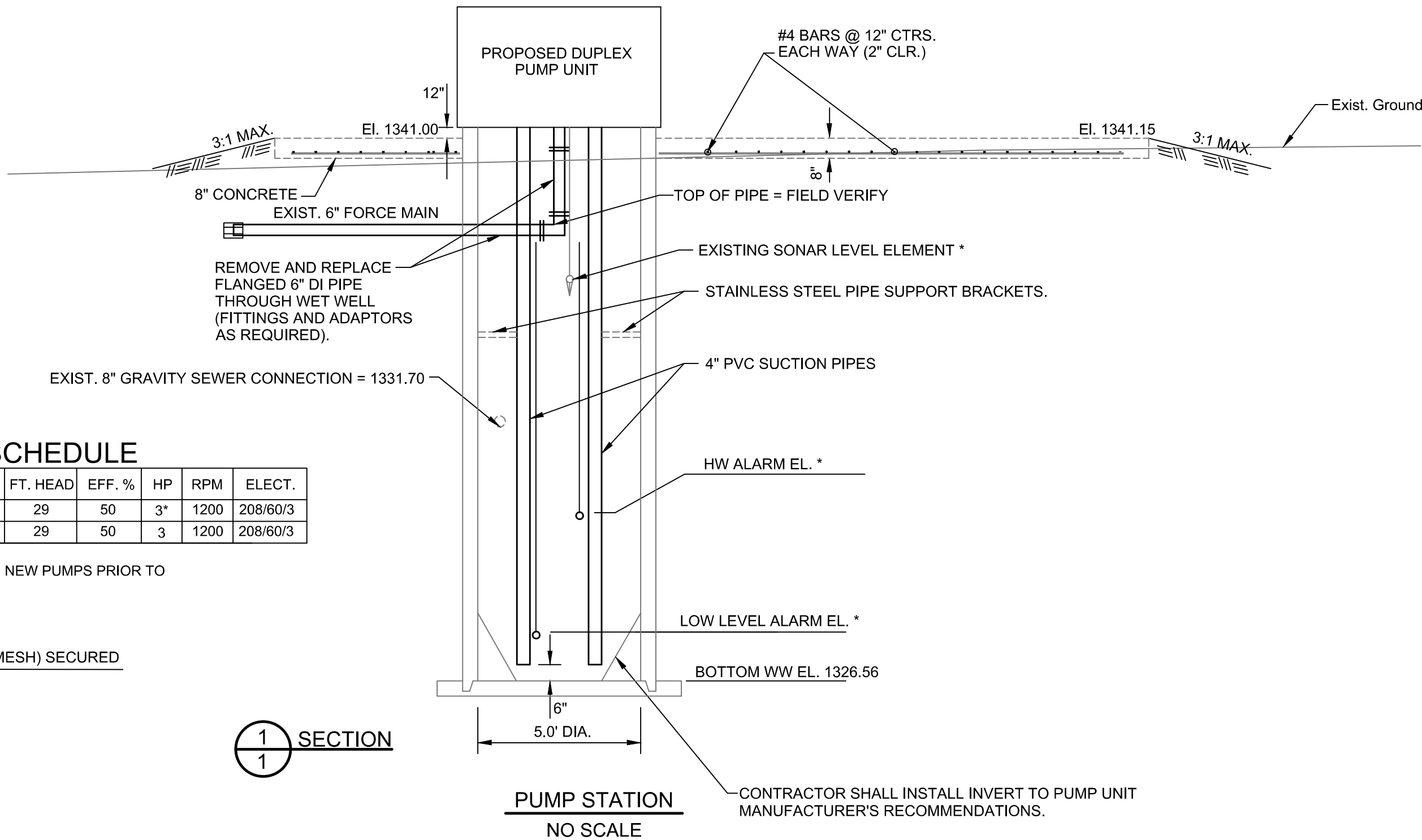
KANSAS GAS SERVICE
ATTN: ADAM KNOLLA
1021 E. 26TH ST. NORTH
WICHITA, KS 67219
PH (316) 832-3123

6. CONTRACTOR SHALL LOCATE FLOATS SO FUTURE FLOW INTO THE WET WELL WILL NOT INTERFERE WITH FLOAT OPERATION
7. THE INTERIOR SURFACE OF THE WET WELL BE COATED PER THE CITY OF WICHITA STANDARD SPECIFICATIONS FOR SPECIALIZED COATINGS.
8. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS WITH THE SMITH AND LOVELESS PUMP STATION MODULE FURNISHED BY THE OWNER FOR THE PROJECT. NO ADDITIONAL COMPENSATION WILL BE MADE TO THE CONTRACTOR FOR ITEMS NECESSARY TO SATISFACTORILY INSTALL THE PUMP STATION AS PROVIDED BY THE OWNER.
9. THE CONTRACTOR SHALL INSTALL AND OPERATE THE PUMP STATION MODULE AND RELATED COMPONENTS IN ACCORDANCE WITH THE MANUFACTURE'S REQUIREMENTS AND RECOMMENDATIONS. THE OWNER AND ENGINEER WILL NOT BE RESPONSIBLE FOR ANY FAILURE OR DEFECTS EITHER DIRECTLY OR INDIRECTLY CAUSED BY IMPROPER INSTALLATION, OPERATION, OR LACK OF COORDINATION BY THE CONTRACTOR, IN THE COMPLETED PUMP STATION.

CONTRACTOR SHALL INSTALL A 4-INCH 316 SS VENT WITH SS INSECT SCREEN ON PROPOSED PUMP STATION SS BASE PLATE. THE VENT PIPE SHALL BE WELDED TO THE BASE PLATE AND LOCATED AND ORIENTATED SO THE VENT OPENING IS A MINIMUM 5 FEET AWAY FROM THE PUMP ENCLOSURE. SEE DETAIL, THIS SHEET.



PLAN
NO SCALE



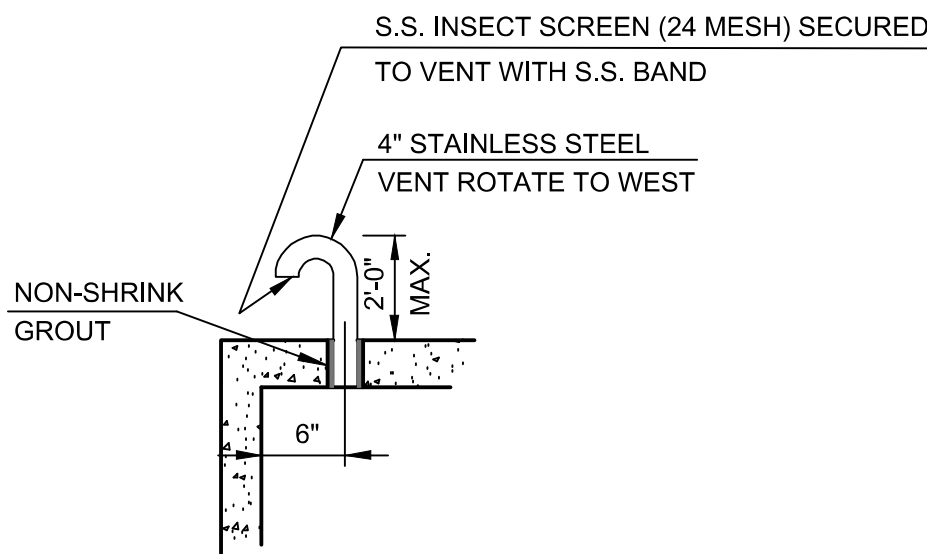
PUMP STATION
NO SCALE

* CONTRACTOR SHALL FIELD VERIFY ELEVATIONS OF EXISTING FLOATS AND LEVEL ELEMENTS AND REINSTALL AT SAME ELEVATIONS.

PUMP SCHEDULE

MARK	TYPE	STATUS	GPM	FT. HEAD	EFF. %	HP	RPM	ELECT.
P-1	VACUUM PRIMED	PROPOSED	175	29	50	3*	1200	208/60/3
P-2	VACUUM PRIMED	PROPOSED	175	29	50	3	1200	208/60/3

* CITY STAFF WILL INSTALL 10 HP MOTORS ON NEW PUMPS PRIOR TO PLACING STATION INTO OPERATION.



WET WELL VENT DETAIL
NO SCALE



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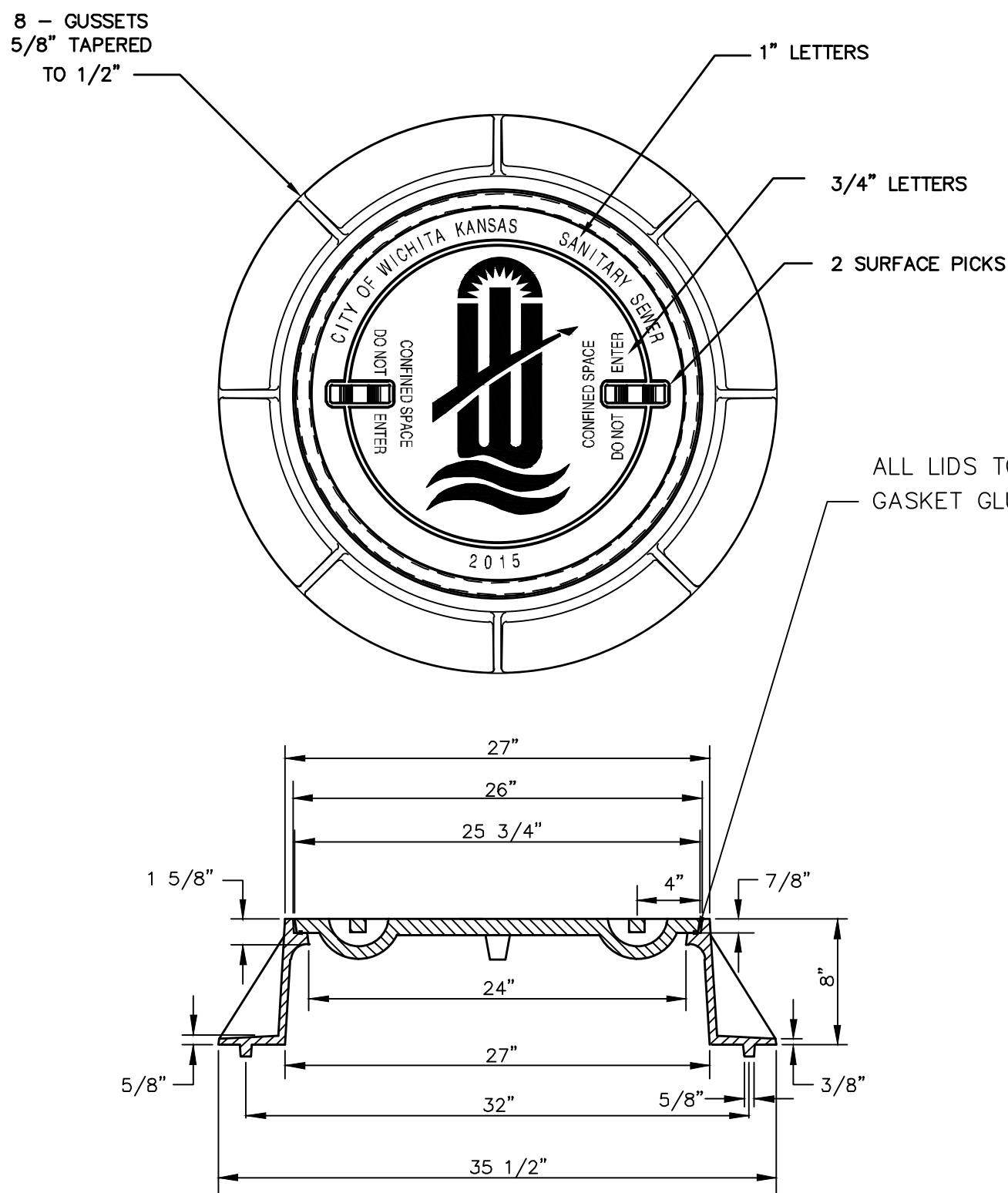
GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

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DATE	NOVEMBER 2021	
PM	RWG	
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DRAWN BY	KTD	
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LIFT STATION DETAILS

CU501

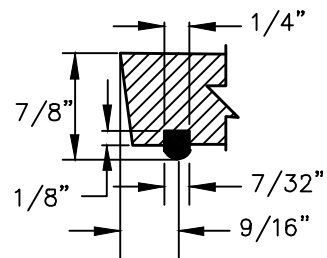
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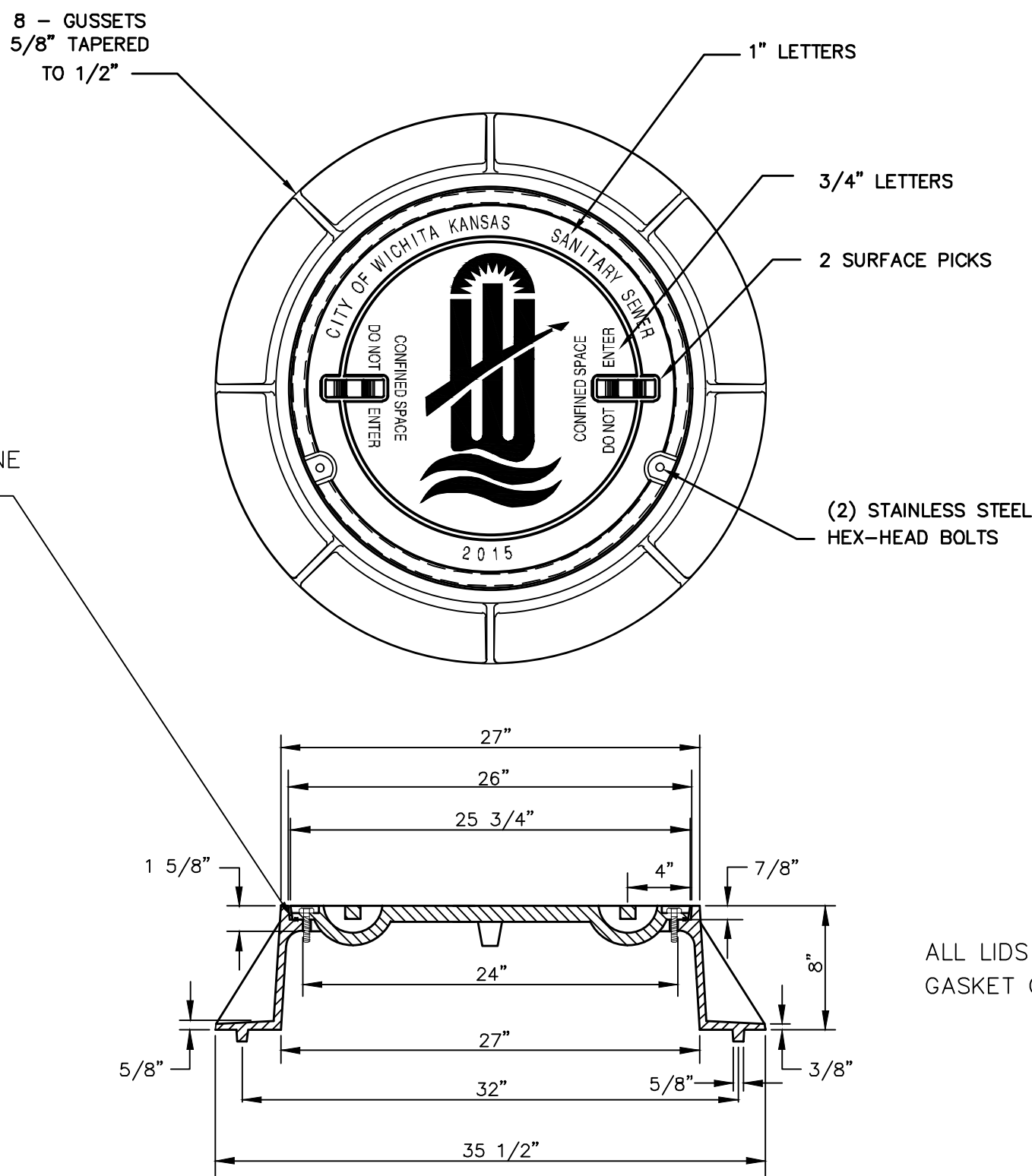
STANDARD MANHOLE FRAME & COVER

DEETER #1261 OR EJIW #1936-Z1

NOTE:
1. FURNISHED WITH MACHINED
HORIZONTAL BEARING SURFACE.



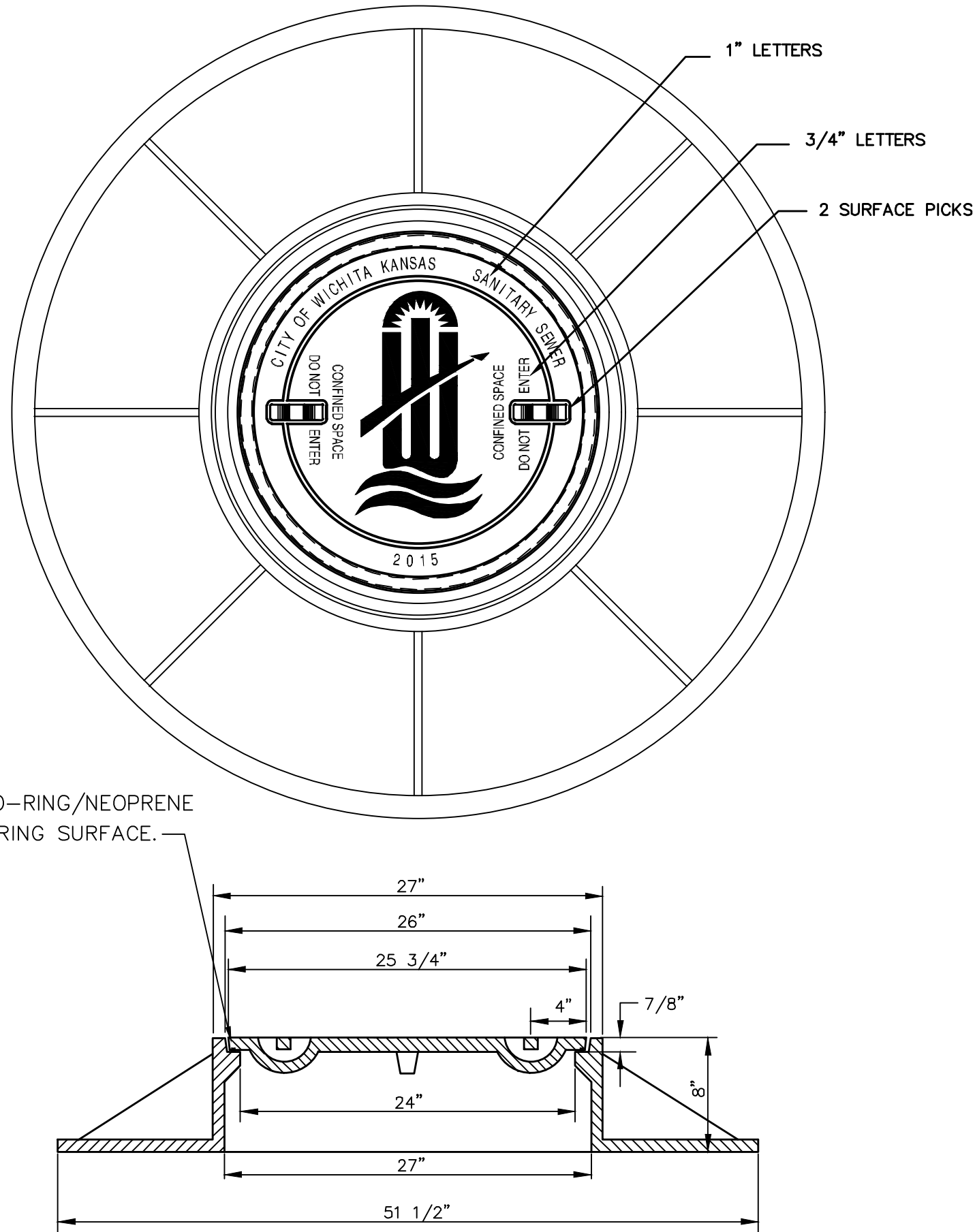
O-RING DETAIL



BOLT DOWN MANHOLE FRAME & COVER

DEETER #1261 OR EJIW #1936-Z1

NOTE:
1. FURNISHED WITH MACHINED
HORIZONTAL BEARING SURFACE.



WIDE FLANGED FRAME & COVER

DEETER #1261A

NOTE:
1. FURNISHED WITH MACHINED
HORIZONTAL BEARING SURFACE.

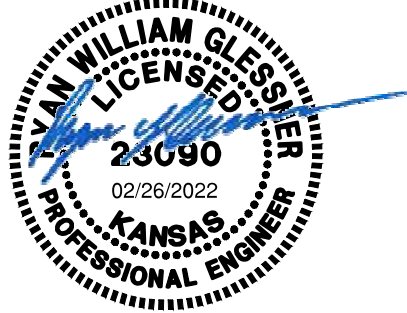
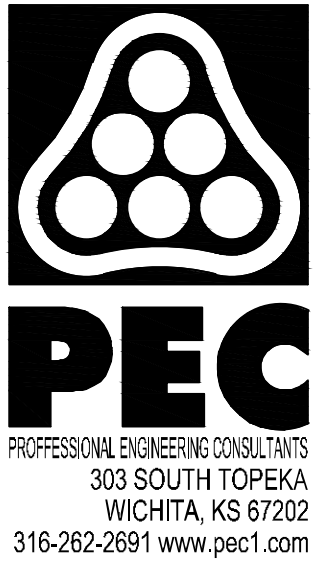
- GENERAL NOTES
- MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.
 - MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.
 - THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SEATING SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.
 - THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1"IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SANITARY SEWER". THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN WITH CITY OF WICHITA DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.



MANHOLE FRAME AND COVER (SANITARY SEWER)		
CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER	OCA NUMBER	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET

REVISED: MARCH 2016

SS-102



SANITARY SEWER IMPROVEMENTS

LIFT STATION NO. 16

AT

POPLAR STREET,

SOUTH OF E. 37TH STREET N

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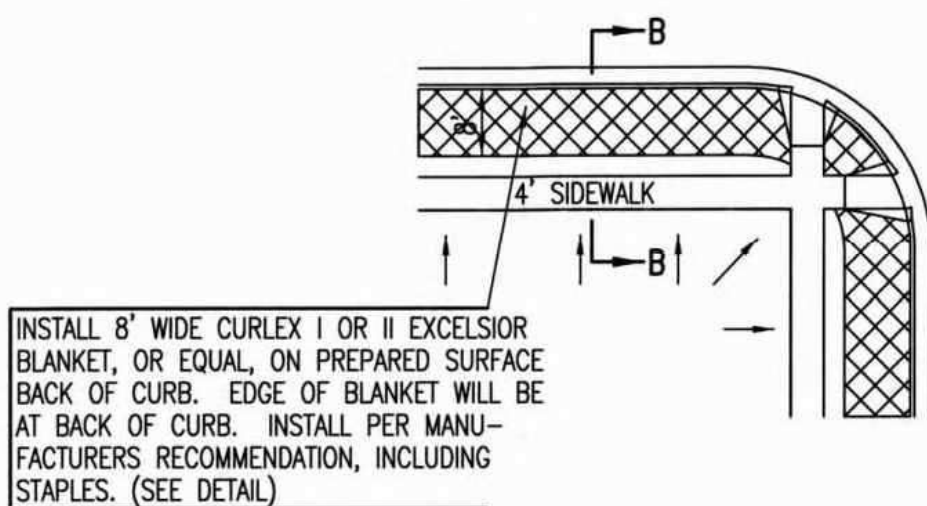
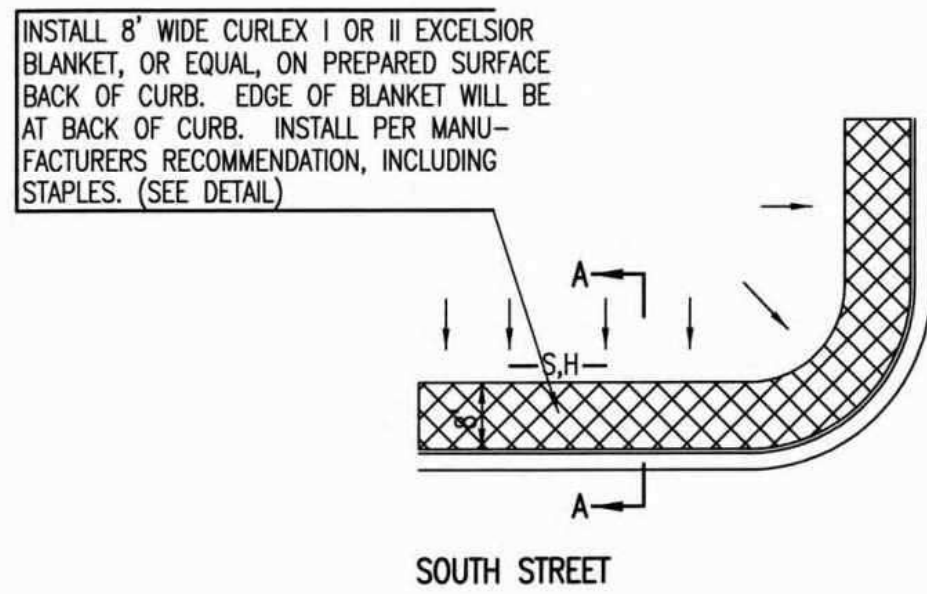
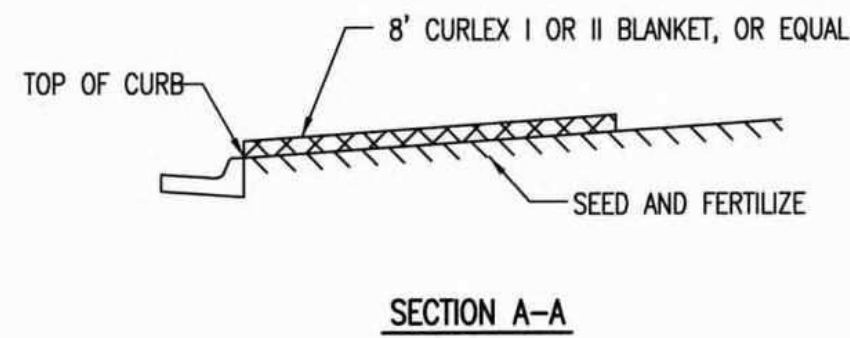
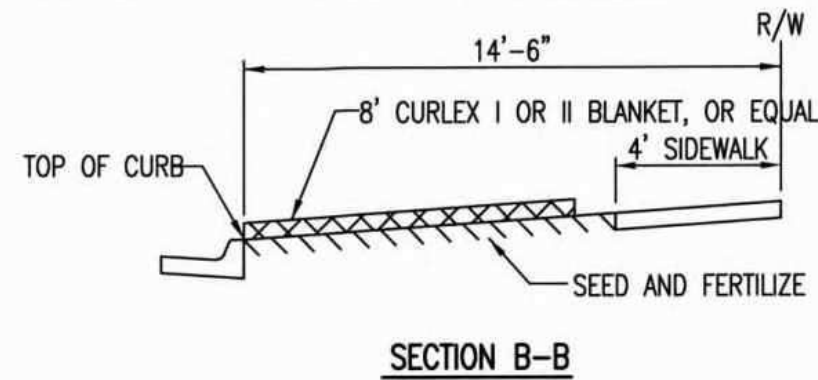
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MANHOLE FRAME AND COVER
(SANITARY SEWER)

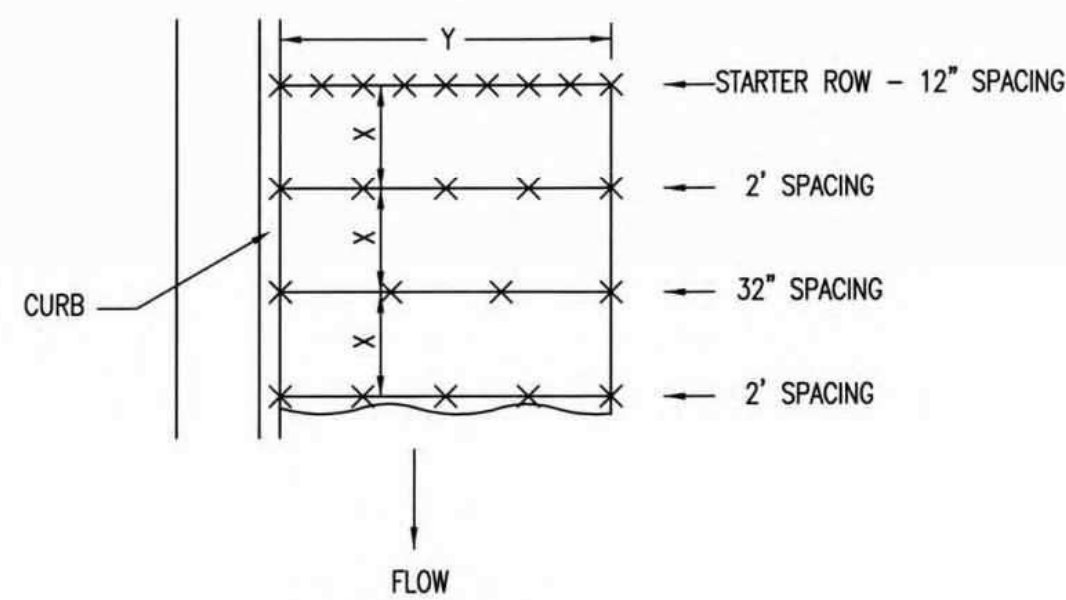
CU503

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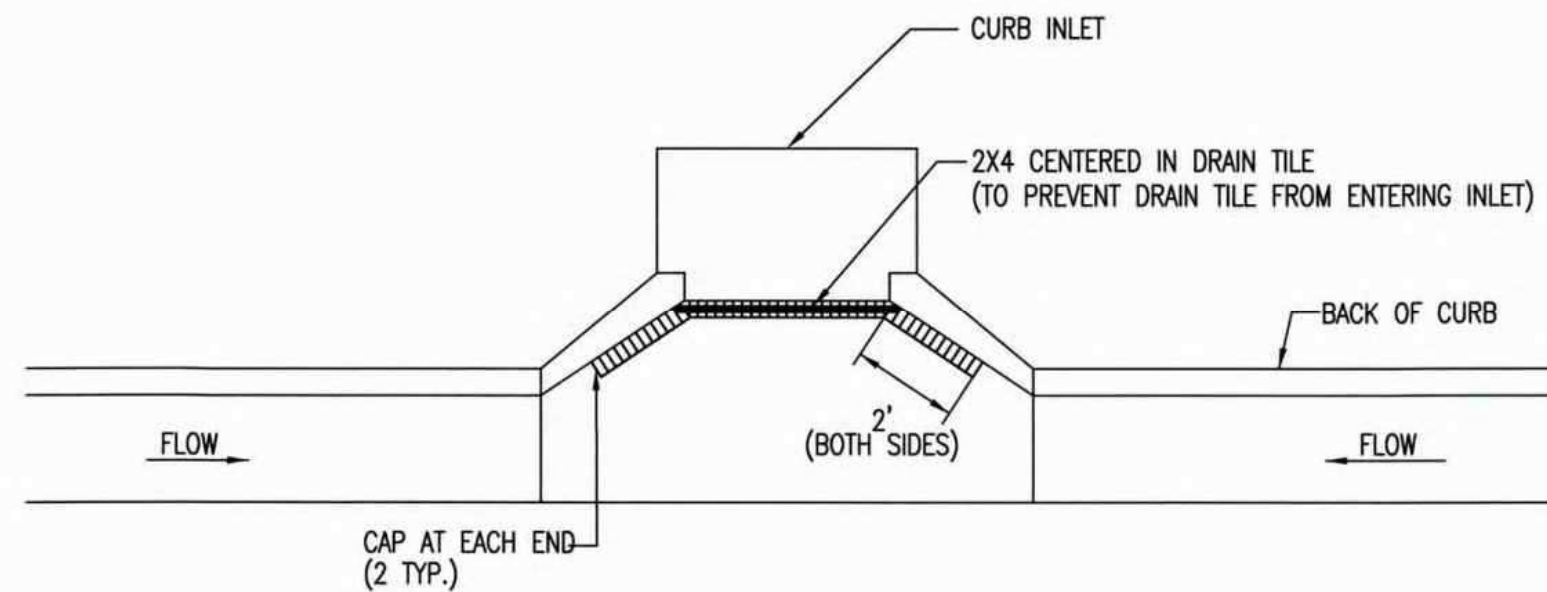
- GENERAL NOTES**
- EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
 - EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
 - AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

BACK OF CURB PROTECTION DETAIL



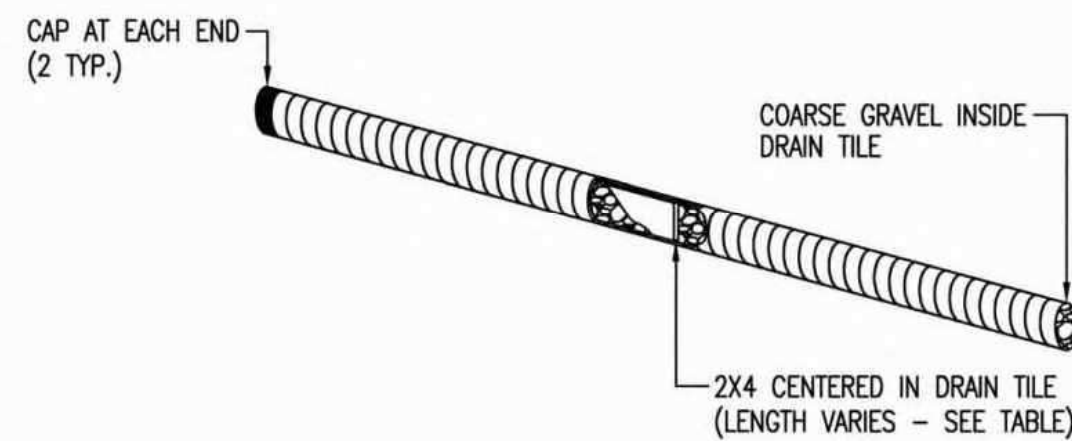
NOTES: USE 6" SEAM OVERLAP
(X & Y = RECOMMENDED BY MANUFACTURE)

DETAILS FOR APPROVED EROSION CONTROL MAT

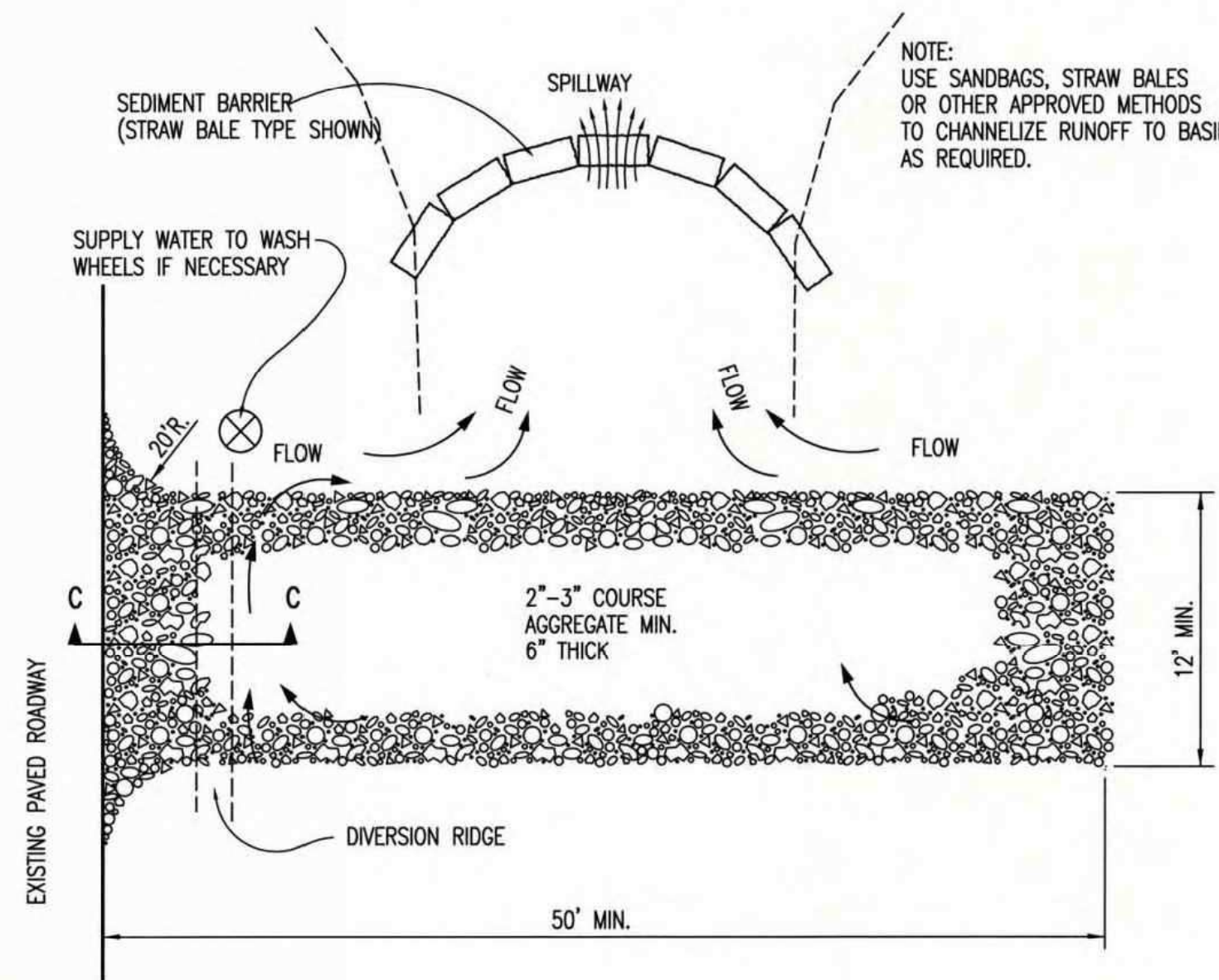
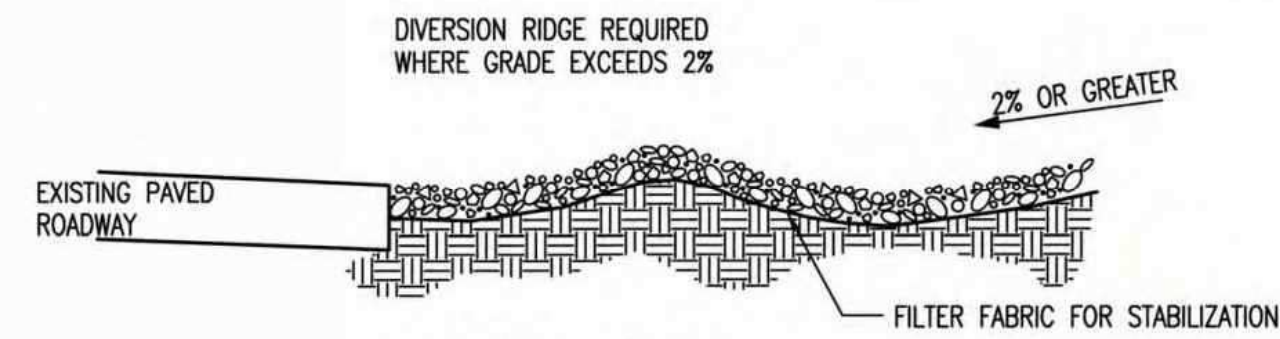


NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH
1/2"-1" DIA. GRAVEL, IN FRONT OF CURB
INLET AS SHOWN.

2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



CURB INLET PROTECTION 4" PERFORATED PIPE W/ GRAVEL



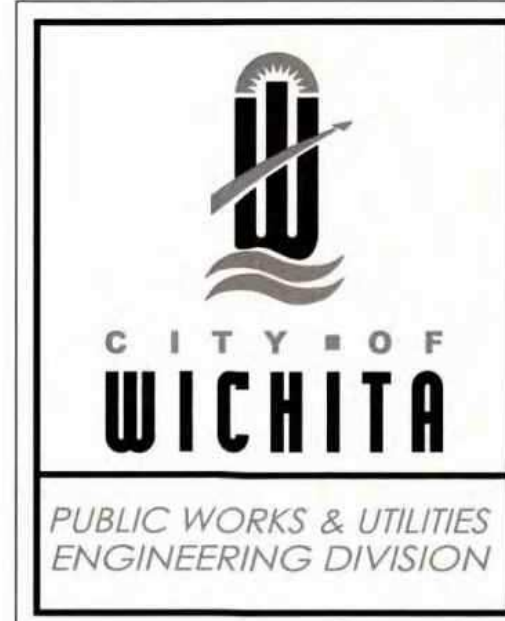
GENERAL NOTES

- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
- DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

REVISION DATE: MAY 2013



05/26/13



BACK OF CURB PROTECTION, CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER OCA NUMBER DATE

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET

SANITARY SEWER IMPROVEMENTS

LIFT STATION NO. 16

AT

POPLAR STREET,

SOUTH OF E. 37TH STREET N

GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

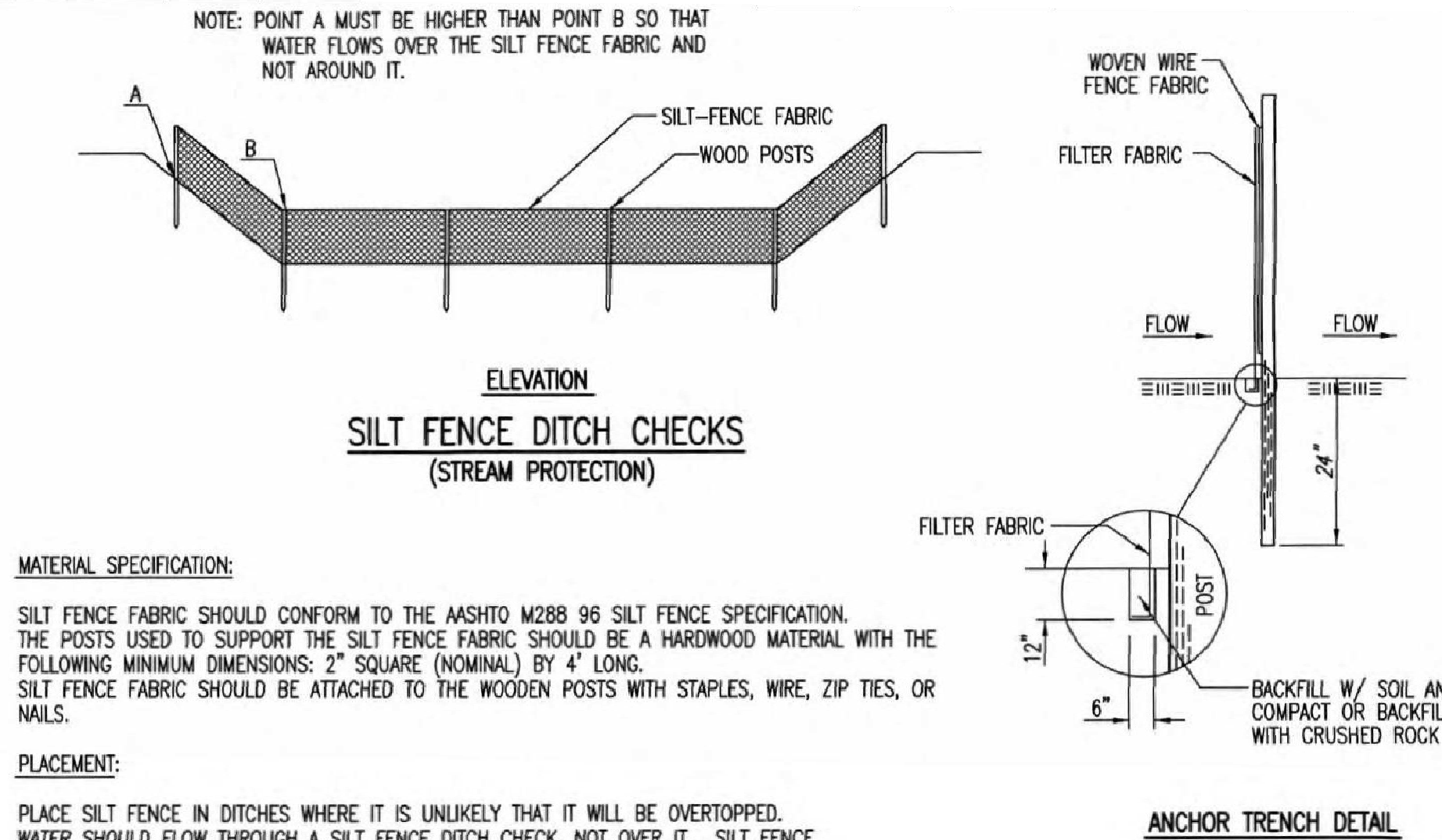
Issue:

JOB NO.	35-217043-007-0042
DATE	NOVEMBER 2021
PM	RWG
DESIGNED BY	RWG
DRAWN BY	KTD
CHECKED BY	TBK

EROSION CONTROL DETAILS

CU504

SAVED 12/21/2021 11:41:43 AM BY KURTIS.DEKAT
PLOTTED 2/25/2022 1:34:48 PM BY KURTIS.DEKAT
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MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK, NOT OVER IT. SILT FENCE DITCH CHECKS OFTEN FAIL WHEN OVERTOPPED. SILT FENCE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE SILT FENCE SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE TOP OF THE LOW POINT OF THE FENCE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK. SILT FENCE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD. SILT FENCE SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH CHECK DITCH GRADE (%)	SPACING CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS AT LEAST 12" DEEP BY 6" WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSTREAM EDGE OF THE TRENCH. LINE TWO SIDES OF THE TRENCH WITH THE FABRIC AS SHOWN ON DETAIL. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE ON THE UPSTREAM SIDE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 24". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

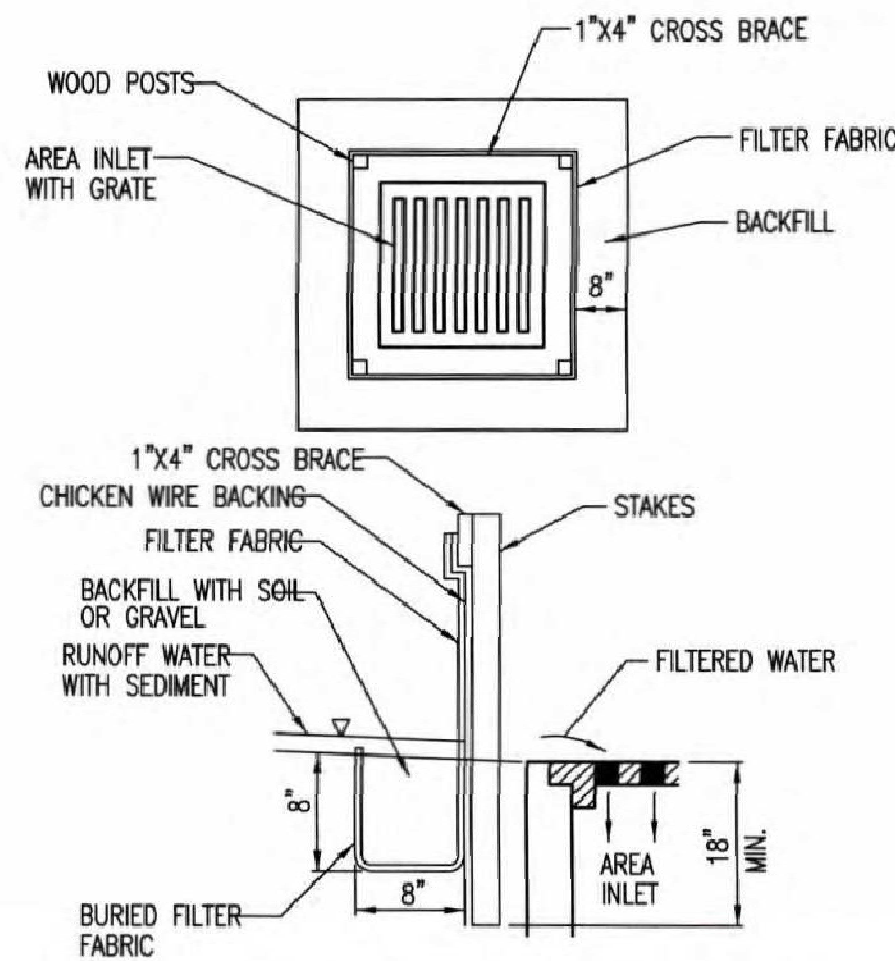
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK—NOT OVER IT. PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. SILT FENCE INSTALLATIONS QUICKLY DETERIORATE WHEN WATER OVERTOPS THEM. DO NOT PLACE SILT FENCE POSTS ON THE UPSTREAM SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE A SILT FENCE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW. DO NOT PLACE SILT FENCE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW. FOLLOW PRESORBED DITCH CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS. DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE LOW POINT ON THE TOP OF THE FENCE. DO NOT PLACE SILT FENCE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

INSPECTION AND MAINTENANCE:

SILT FENCE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE WIRE OR POLYMERIC MESH BACKING USED TO HELP SUPPORT THE SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. THE MATERIAL USED TO FRAME THE TOPS OF THE POSTS SHOULD BE 1" BY 4" BOARDS. SILT FENCE FABRIC AND SUPPORT BACKING SHOULD BE ATTACHED TO THE WOODEN POSTS AND FRAME WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

PLACE A SILT FENCE DROP INLET BARRIER IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. WATER SHOULD FLOW THROUGH SILT FENCE, NOT OVER IT. SILT FENCE BARRIERS FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED. WHEN USED AS A BARRIER FOR AREA INLETS, SILT FENCE FABRIC AND POSTS MUST BE SUPPORTED AT THE TOP BY A WOODEN FRAME. WHEN A SILT FENCE BARRIER FOR AREA INLETS IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 8" DEEP BY 8" WIDE. DRIVE POSTS TO A DEPTH OF AT LEAST 18" AROUND THE PERIMETER OF THE AREA INLET. THE DISTANCE BETWEEN POSTS SHOULD BE 4' OR LESS. IF THE DISTANCE BETWEEN TWO ADJACENT CORNER POSTS IS MORE THAN 4', ADD ANOTHER POST(S) BETWEEN THEM. CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN FRAME MADE OF 1" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING. ATTACH THE WIRE OR POLYMERIC-MESH BACKING TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC LONG ENOUGH TO WRAP AROUND THE PERIMETER OF THE AREA INLET. ADD MORE LENGTH FOR OVERLAPPING THE FABRIC JOINT. PLACE THE EDGE OF THE FABRIC IN THE TRENCH, STARTING AT THE OUTSIDE EDGE OF THE TRENCH. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED. ATTACH THE SILT FENCE TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. THE JOINT SHOULD BE OVERLAPPED TO THE NEXT POST.

NOTE: WHEN A SILT FENCE BARRIER FOR AREA INLET IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

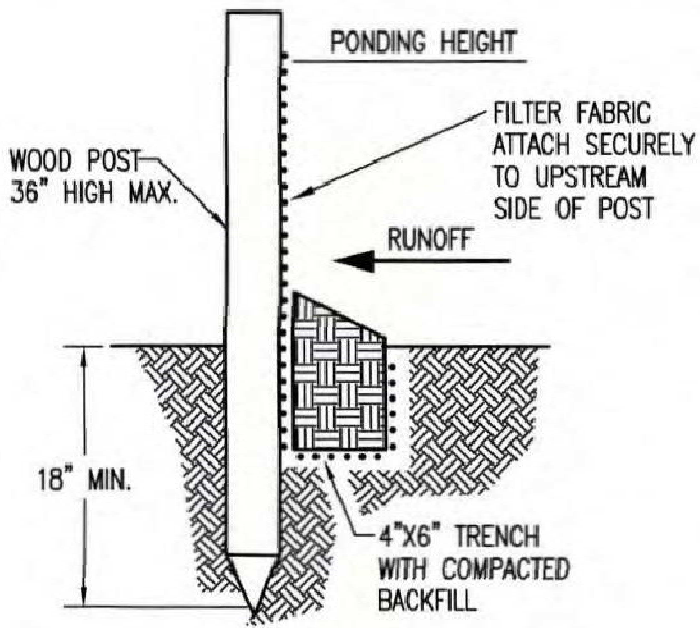
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WATER SHOULD FLOW THROUGH A SILT FENCE BARRIER FOR AREA INLET—NOT OVER IT. PLACE A SILT FENCE BARRIER FOR AREA INLET IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. SILT FENCE BARRIER FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED. DO NOT PLACE POSTS ON THE OUTSIDE OF THE SILT FENCE BARRIER FOR AREA INLET. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT INSTALL SILT FENCE BARRIER FOR AREA INLETS WITHOUT FRAMING THE TOP OF THE POSTS. THE CORNER POSTS AROUND AREA INLETS ARE STRESSED IN TWO DIRECTIONS WHEREAS A NORMAL SILT FENCE IS ONLY STRESSED IN ONE DIRECTION. THIS ADDED STRESS REQUIRES MORE SUPPORT.

INSPECTION AND MAINTENANCE:

SILT FENCE BARRIER FOR AREA INLETS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE SILT FENCE?
DOES THE SILT FENCE SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT. WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT-FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES. DO NOT PLACE SILT-FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT. SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND—SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

INSPECTION AND MAINTENANCE:

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DO THE SILT FENCES SAG EXCESSIVELY?
HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

REVISION DATE: MAY 2013		
 SILT FENCE DITCH CHECK AND BARRIER DETAILS		
CITY ENGINEER GARY JANZEN, P.E.		
PROJECT NUMBER	OCA NUMBER	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET



SW-502



SANITARY SEWER IMPROVEMENTS

LIFT STATION NO. 16

AT

POPLAR STREET,

SOUTH OF E. 37TH STREET N

GARY JANZEN, P.E. - CITY ENGINEER

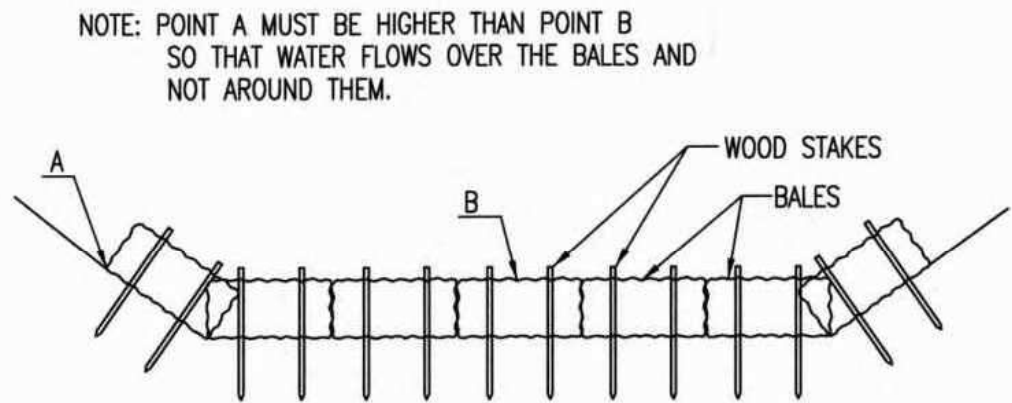
CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

Issue:		
JOB NO.	35-217043-007-0042	
DATE	NOVEMBER 2021	
PM	RWG	
DESIGNED BY	RWG	
DRAWN BY	KTD	
CHECKED BY	TBK	

EROSION CONTROL DETAILS

CU505

SAVED 12/21/2021 11:42:00 AM BY KURTIS.DEKAT
PLOTTED 2/25/2022 1:34:53 PM BY KURTIS.DEKAT
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STRAW BALE DITCH CHECKS

MATERIAL SPECIFICATION:

BALE DITCH CHECKS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. OPTIONAL: THE DOWNSTREAM SCOUR APRON SHOULD BE CONSTRUCTED OF A DOUBLE-NETTED STRAW EROSION-CONTROL BLANKET AT LEAST 6' WIDE. OPTIONAL: THE METAL LANDSCAPE STAPLES USED TO ANCHOR THE EROSION-CONTROL BLANKET SHOULD BE AT LEAST 8" LONG.

PLACEMENT:

BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK. STRAW BALE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD. BALES SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED. THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH-IT WILL BE USED LATER. OPTIONAL: ON THE DOWNSTREAM SIDE OF THE TRENCH, ROLL OUT A LENGTH OF EROSION-CONTROL BLANKET (SCOUR APRON) EQUAL TO THE LENGTH OF THE TRENCH. PLACE THE UPSTREAM EDGE OF THE EROSION-CONTROL BLANKET ALONG THE BOTTOM UPSTREAM EDGE OF THE TRENCH. THE EROSION CONTROL BLANKET SHOULD BE ANCHORED IN THE TRENCH WITH ONE ROW OF 8" LANDSCAPE STAPLES PLACED ON 18" CENTERS. THE REMAINDER OF THE EROSION-CONTROL BLANKET (THE PORTION THAT IS NOT LYING IN THE TRENCH) WILL SERVE AS THE DOWNSTREAM SCOUR APRON. THIS SECTION OF THE BLANKET SHOULD BE ANCHORED TO THE GROUND WITH 8" LANDSCAPE STAPLES PLACED AROUND THE PERIMETER OF THE BLANKET ON 18" CENTERS. THE REMAINDER OF THE BLANKET SHOULD BE ANCHORED USING TWO EVENLY SPACED ROWS OF 8" LANDSCAPE STAPLES ON 18" CENTERS PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSTREAM SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP AND EXTEND UPSTREAM NO MORE THAN 24".

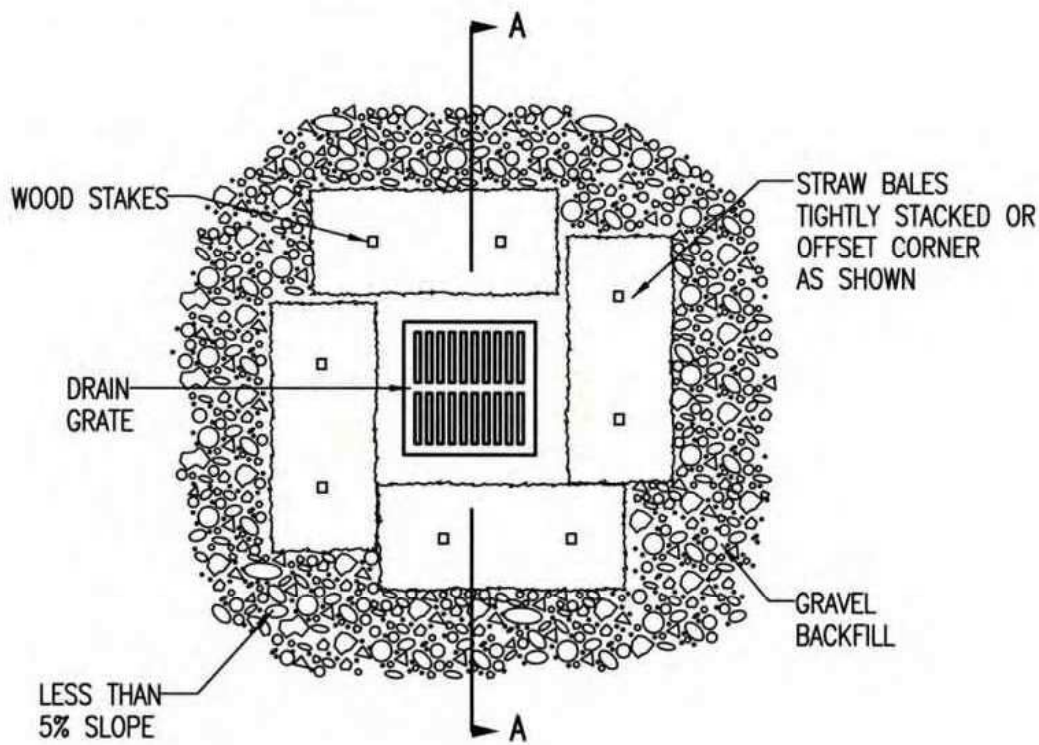
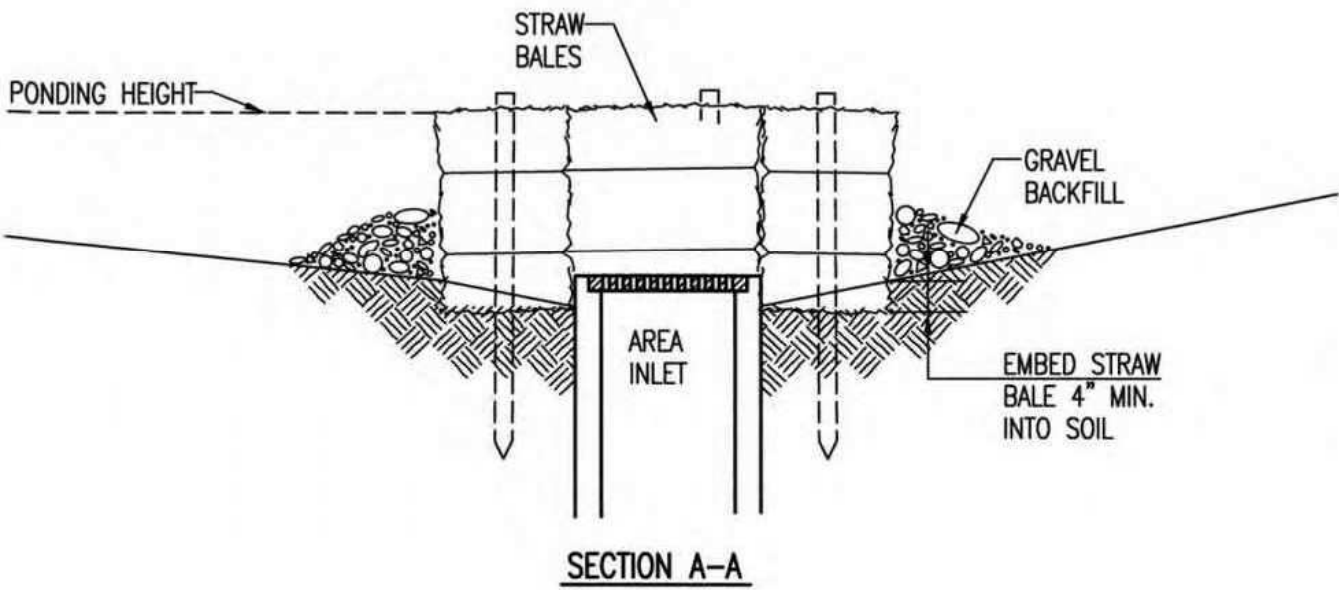
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

DO NOT PLACE A BALE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW. DO NOT PLACE BALE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW. FOLLOW PRESCRIBED DITCH-CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS. DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. DO NOT PLACE BALE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT. BALE DITCH CHECKS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE CHECK.

INSPECTION AND MAINTENANCE:

BALE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW AROUND THE DITCH CHECK?
DOES WATER FLOW UNDER THE DITCH CHECK?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES AND/OR SCOUR APRONS (OPTIONAL) DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



STRAW BALE BARRIERS FOR AREA INLETS (INLET PROTECTION)

MATERIAL SPECIFICATION:

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET. WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP. NOTE: WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

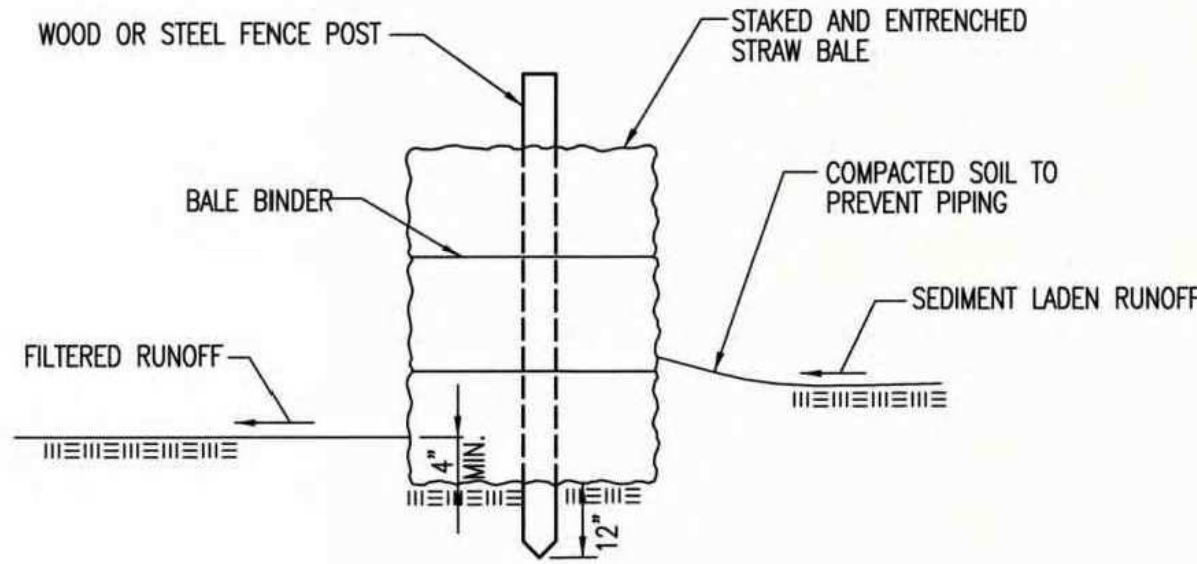
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR. BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

DOES WATER FLOW UNDER THE AREA INLET BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



STRAW BALE BARRIERS

MATERIAL SPECIFICATION:

BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT. WHEN PRACTICABLE, BALE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. BALE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

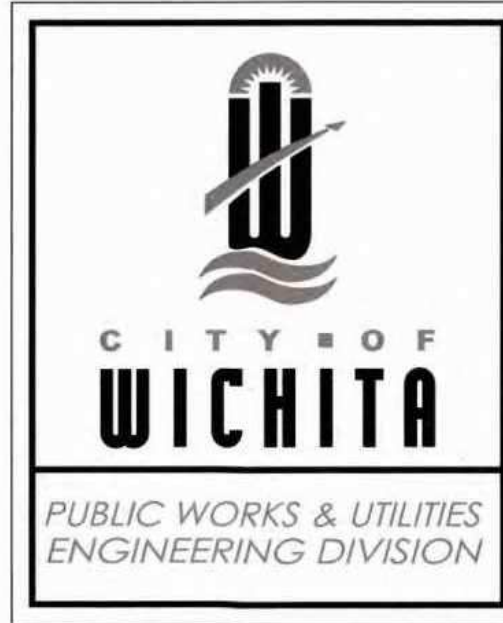
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS. DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT. BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
DOES WATER FLOW UNDER THE SLOPE BARRIER?
DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
ARE ANY BALES DISLODGED?
ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?



STRAW BALE DITCH CHECK AND BARRIER DETAILS

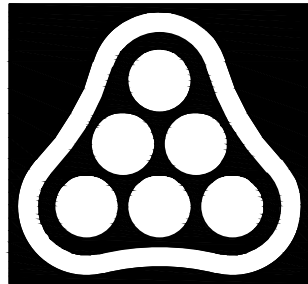
CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER OCA NUMBER DATE

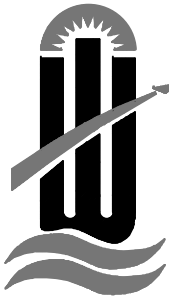
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET

SW-503



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



CITY OF
WICHITA



SANITARY SEWER IMPROVEMENTS

LIFT STATION NO. 16

AT

POPLAR STREET,

SOUTH OF E. 37TH STREET N

GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

Issue:		

JOB NO.	35-217043-007-0042
DATE	NOVEMBER 2021
PM	RWG
DESIGNED BY	RWG
DRAWN BY	KTD
CHECKED BY	TBK

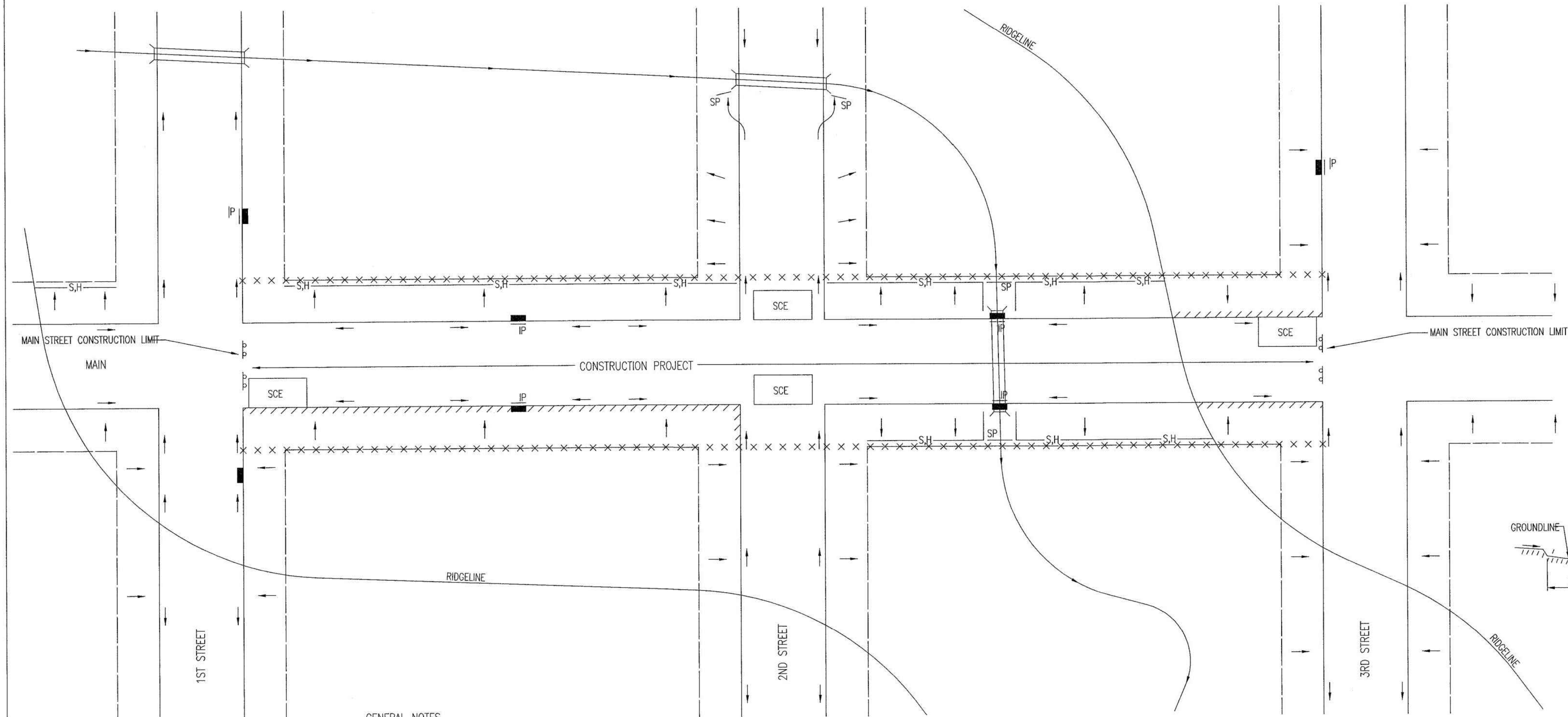
EROSION CONTROL DETAILS

CU506

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PLOTTED 2/25/2022 1:34:58 PM BY KURTIS.DEKAT
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- GENERAL NOTES
1. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
 2. EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.
 3. IF THE PROJECT WILL DISTURB 1 ACRE OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.

4. FOR PROJECTS DISTURBING LESS THAN 1 ACRE, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES MUST BE USED ON ALL PROJECTS.
5. FAILURE TO USE AND MAINTAIN EROSION CONTROL DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.
6. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT DEVICE OTHER THAN THOSE SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.

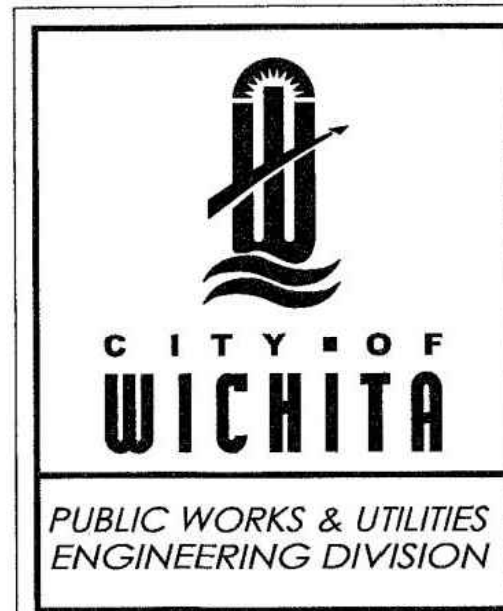


- LEGEND
- R-O-W LIMITS
 - DRAINAGE FLOW PATH
 - x x x x x R/W LIMIT WITHIN CONSTRUCTION LIMIT
 - STORM WATER INLETS
 - IP INLET PROTECTION
 - S.H— SILT FENCE OR HAY BALE BARRIER
 - SP STREAM PROTECTION
 - SCE STABILIZED CONSTRUCTION ENTRANCE
 - //// BACK OF CURB PROTECTION

GENERAL NOTES

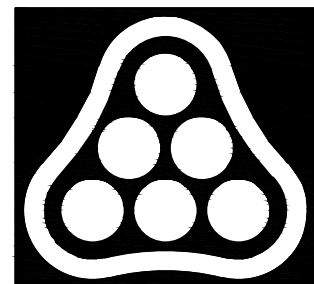
1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, LAKES, AND OTHER DRAINAGE FACILITIES, AND OFF OF STREETS.
2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT-OF-WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.
3. EROSION CONTROL DEVICES WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.
4. INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.
5. EROSION CONTROL DEVICES SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.
6. STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.

7. ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.
8. THE CONTACTOR WILL BE REQUIRED TO PLACE EROSION CONTROL DEVICES BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
 - A. THE DEVICE REQUIRED WILL BE APPROVED EROSION CONTROL MAT LISTED ON THE CITY'S APPROVED MATERIAL LIST. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE SOIL EROSION BMPs - BACK OF CURB SEDIMENT BARRIER DETAILS)
 - B. THIS DEVICE SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMPs MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
 - C. ADDITIONALLY, OTHER EROSION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
 - D. SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT-OF-WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE CURB BACKFILL DETAIL)



REVISION: JUNE 2015		
STREET IMPROVEMENT PROJECTS		
CITY ENGINEER		
GARY JANZEN, P.E.		
PROJECT NUMBER	OCA NUMBER	DATE
CITY ENGINEER'S OFFICE		SHEET
CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		

SW-504



PROFESSIONAL ENGINEERING CONSULTANTS
303 SOUTH TOPEKA
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SANITARY SEWER IMPROVEMENTS

LIFT STATION NO. 16

AT

POPLAR STREET,

SOUTH OF E. 37TH STREET N

GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

Issue:		

JOB NO.	35-217043-007-0042
DATE	NOVEMBER 2021
PM	RWG
DESIGNED BY	RWG
DRAWN BY	CSL
CHECKED BY	TBK

EROSION CONTROL DETAILS

C507

LEGEND

- DRAINAGE FLOW PATH
- RIDGE LINES
- × POINT OF COMPLIANCE
- S.H. SILT FENCE OR HAY BALE BARRIER
- DRAINAGEWAY FLOWLINE

The diagram illustrates a drainage management plan for a new subdivision. It shows the layout of 'WEST STREET' and 'SOUTH STREET', the location of an existing creek, and the proposed subdivision boundaries. Key features include:

- Drainage Flow Paths:** Indicated by arrows showing the general direction of water flow across the site.
- Ridge Lines:** Solid lines representing the topography of the land.
- Points of Compliance:** Marked with 'x' symbols, indicating specific locations where regulatory requirements must be met.
- Silt Fences/Hay Bale Barriers (S.H.):** Indicated by short horizontal lines, these are placed at various points along the creek and near the streets to control sediment.
- Draineway Flowlines:** Indicated by arrows within the creek channel, showing the specific path of water flow.
- Subdivision Layout:** The plan shows the 'NEW SUBDIVISION' area, which is adjacent to an 'EXISTING' area and a larger 'SUBDIVISION' area.

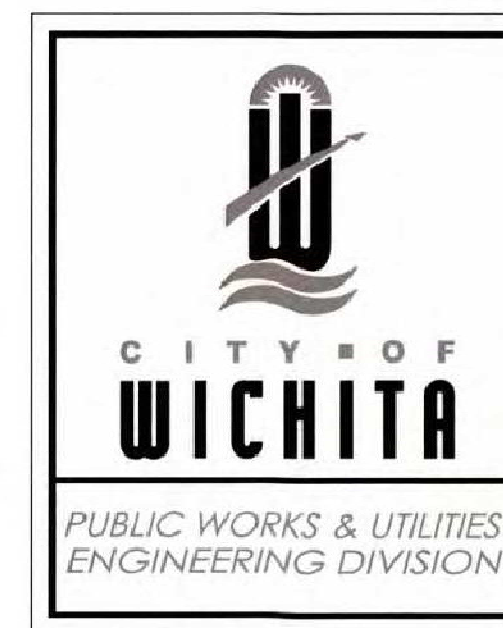
-
- LEGEND**
- NEW STREETS
 - ADDITIONAL POINTS OF COMPLIANCE
- The map shows a proposed subdivision bounded by West Street to the west and South Street to the south. A creek flows from the northwest corner towards the southeast. The subdivision layout includes several streets and a creek. The creek is labeled "CREEK". The area to the east of the subdivision is labeled "EXISTING" and "SUBDIVISION". The map also shows "ADDITIONAL POINTS OF COMPLIANCE" marked with 'x' symbols along the creek and the boundaries of the subdivision.

-
- LEGEND**
- PROPOSED NEW STREETS
 - CURB INLETS
 - AREA DRAINS
 - IP INLET PROTECTION
- The site plan shows a rectangular area bounded by West Street to the west and South Street to the south. A dashed line indicates the boundary of the 'NEW SUBDIVISION'. A 'CREEK' flows from the northwest corner towards the center. The plan includes several 'CURB INLETS' (represented by short horizontal lines) and 'AREA DRAINS' (represented by small squares). 'INLET PROTECTION' (IP) is marked at various points along the streets and within the subdivision. The plan also shows 'EXISTING' and 'SUBDIVISION' areas to the east of the main site.

-

THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.

REVISION DATE: MAY 2013



SW-505

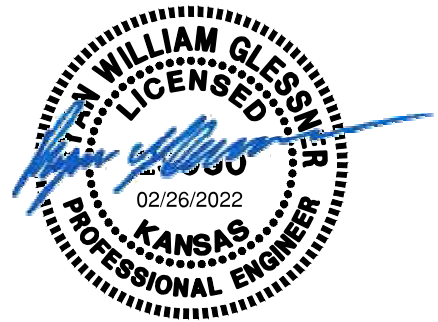
SANITARY SEWER IMPROVEMENTS
LIFT STATION NO. 16
AT
POPLAR STREET,
SOUTH OF E. 37TH STREET N
GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-2020-019216 S00

[illegible]

JOB NO.	35-217043-007-0042
DATE	NOVEMBER 2021
PM	RWG
DESIGNED BY	RWG
DRAWN BY	KTD
CHECKED BY	TBK

EROSION CONTROL DETAILS

CU508



SAVED:3/9/2022 10:47:31 AM BY BEN CHAPLIN
PLOTTED:3/9/2022 1:53:13 PM BY BEN CHAPLIN
U:\WICHITA-CIVIL\2021\217043\007\EECD\DRAWINGS\SSM\E001 ELECTRICAL LEAD SHEET.DWG

DIVISION 26 – ELECTRICAL

A. General Instructions:

1. Codes, Permits and Inspections:
- a. Wiring shall be in accordance with latest edition National Electrical Code (NEC), NFPA, and/or applicable local, state, and Utility Company rules, laws, codes, and ordinances.
- b. Secure all permits and inspections required for the installation of the electrical work.
- c. All work shall comply with the latest edition of the Americans With Disabilities Act (ADA).
- d. Pay all fees associated with new utility services.

2. Verifications:

- a. Verify mounting heights and locations of electrical equipment before installation or rough-in.
- b. Verify exact location of electrical service entrance including point of service and system characteristics.

3. Wiring Methods:

- a. The Electrical Contractor shall cooperate with other Contractors and install equipment in proper sequence so as not to interfere with the progress of other Contractors.
- b. All materials shall be new and carry the Underwriter's Label or be "listed" by that group, and be fully equal to makes specified.
- c. Use only insulated copper conductors in conduit. Use flexible conduit for connections to motors and similar equipment.
- d. All wiring shall be concealed and all outlets shall be flush mounted in finished spaces except as noted otherwise.
- e. All systems wiring in return air plenums shall be in conduit or be plenum rated.

4. Tests:

- a. This Contractor shall be responsible for performing all tests necessary to prevent concealment of defective or improper work.
- b. Upon completion of work, test the installation thoroughly and render it free from shorts, grounds or improper connections.

5. Guarantee:

- a. This Contractor shall guarantee that all defective items of workmanship, material, labor or mechanical operation developing within one (1) year from the date of final acceptance of completed installation shall be replaced to the complete satisfaction of the Owner.

6. Workmanship:

- a. Electrical equipment shall be installed in a neat and workmanlike manner. Unsightly installations shall be removed or reworked at no additional expense to the Owner.

7. Identification of Disconnecting Means:

- a. Provide a permanent nameplate for each disconnect switch indicating its purpose. The marking shall be of sufficient durability to withstand the environment it is installed in as required by N.E.C. Section 110.22 and 230.72(A).

B. Electrical Equipment:

1. Conduits:

- a. All conduit installed in earth, concrete, below concrete on earth, or exposed to weather shall be rigid steel or intermediate metal conduit. Electrical metallic tubing for all dry interior runs. Fittings shall be fully approved in accordance with N.E.C.
- b. Flexible or P.V.C. conduit may be used where not exposed to damage and approved by N.E.C. and local codes.
- c. Provide a ground wire sized per N.E.C. Art. 250.122 in all conduits, both metallic and nonmetallic.
- d. Conduit shall be installed and sized according to code requirements and protected from damage during construction.
- e. Conduit may be re-routed where such action does not adversely affect the intended design or circuiting.
- f. Final connections to all kitchen and mechanical equipment shall be with U. L. approved liquidtight conduit. Liquidtight and fittings shall be U.L. listed for grounding.

2. Conductors:

- a. Conductors shall be copper, generally with 600 volt rated insulation. Branch circuit wiring min. size #12 Type "THW" or "THWN/THHN" as required. Service entrance, feeder conductors Type "THWN/THHN" or "XHHW". Low voltage wire shall be Type "TF" or "TFF" minimum #18 gauge unless noted otherwise. All other types shall be as required by N.E.C.
- b. All conductors shall be color coded with type and size marking. Connections to service equipment, feeder panels shall be made with solderless lugs. All splices, taps, connections to service entrance conductors shall be made by bronze solderless lugs. All other splices, connections shall be pressure type connectors.
- c. Insulate joints, splices with Scotch #33 plastic tape or plastic moulded jackets.

3. Outlet Boxes and Plaster Rings:

- a. Outlet boxes shall be galvanized steel of type and size approved for particular installation requirements.
- b. Use 4" square box with suitable plaster ring installed flush with finish materials in stud or concrete walls.
- c. Use standard octagon boxes for ceiling light outlets. All boxes shall be securely mounted to building construction and flush with finish materials.

4. Wall Receptacles:

- a. Duplex receptacles shall be "Specification Grade", back or side wired, grounding type. Manufacturer shall be Hubbell or equal.
- b. Weatherproof receptacles (indicated WP) shall be weather resistant GFCI duplex receptacles with extra-duty, weatherproof while-in-use metallic cover plate.

5. Grounding:

- a. Provide system ground as required by N.E.C. and utility company if not already existing.
- b. Bond mechanical equipment frames.
- c. Bond all service entrance equipment and conduit system.
- d. An equipment grounding conductor sized per N.E.C. Art. 250.122 shall be provided in all conduits. The ground wire is required for both metallic and nonmetallic conduit installations.

6. Branch Circuit Panels

- a. Branch circuit lighting panels equal to Square D, G.E., Siemens, or Cutler Hammer, with thermal magnetic breakers and ground buses. Load center construction is not permitted. Electrical Contractor shall obtain available short circuit current from local Utility co. Panelboards shall be U.L. listed for available fault current. Breakers and panels shall be fully rated or U.L. series rated with specified fuses (50,000 AIC minimum).
- b. Breakers shall have individual plastic cases sized as scheduled. Two pole breakers shall be common trip (single pole units with tie bars are not acceptable).
- c. Panel shall be mounted as noted on the drawings. Provide with a hinged door and a neatly typed circuit directory card.
- d. Re-assign circuits to properly balance the loads on the phases if final connections and tests show it to be advisable.

7. Equipment Supplied By Other Contractors And/Or The Owner

- a. The Electrical Contractor shall furnish, install and connect all wiring, conduit, boxes, toggle switches, thermal switches, disconnect switches, remote pushbutton stations, etc., for all equipment requiring electrical power that is either furnished or specified by other contractors and/or the Owner, shown on drawings or listed below. The E.C. shall receive, install and connect all magnetic starters and controllers, capacitors, power factor correction devices, transformers, alarms, bells, horns, relays, remote switches for equipment supplied by others (i.e. starters or capacitors or power factor correction devices for Mechanical Equip., etc.). In general, all major equipment will be specified to be factory prewired with only service and interconnecting required at the site by the Electrical Contractor; however, the E.C. shall check all Divisions of the specification to verify whether the equipment is specified to be factory prewired. If not, then it shall be the responsibility of the Electrical Contractor to provide the complete wiring of the equipment in accordance with wiring diagrams provided by other Contractors and/or Owner to the Electrical Contractor. All interconnecting of equipment shall be by the Electrical Contractor.
- b. All line and low voltage wiring and connections required to control the equipment are a part of this section. All wiring shall be in conduit.
- c. It shall be assumed the Contractor is familiar with the equipment to be furnished by the other Contractors and/or the Owner in connection with this work and that provisions for such connections and work have been included in the Contractor's price. In no case will extra remuneration be allowed for such work.
- d. Connections to all equipment have been designed from units as specified on the drawings or in the specifications. In the event equipment or control differs on approved mechanical shop drawings it shall be the responsibility of the supplying contractor to coordinate the electrical connections to the units and reimburse electrical contractor for any changes in the electrical system design. These changes shall not involve additional cost to the Owner.

GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) & THE AMERICANS WITH DISABILITIES ACT (ADA).
2. REFER TO RELATED CIVIL DRAWINGS FOR RELATED INFORMATION.
3. REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.
4. ALL MOUNTING HEIGHTS TO CENTERLINE OF ITEM UNLESS OTHERWISE NOTED. VERIFY ALL OUTLET LOCATIONS ON THE JOB PRIOR TO ROUGH-IN.
5. CONDUIT RUN W/CONDUCTORS AS INDICATED & GROUND WIRE SIZED PER N.E.C. 250.122. CONDUIT SIZE AS REQUIRED.
6. WHEN INCREASED CONDUCTOR SIZES ARE SHOWN ON THE PLANS, THE LARGER CONDUCTOR SIZE SHALL BE USED THROUGHOUT THE LENGTH OF THE CIRCUIT, INCLUDING NEUTRAL AND GROUND.
7. BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS WITH INDIVIDUAL NEUTRALS. A MAXIMUM OF THREE CIRCUITS (MAXIMUM OF THREE PHASE CONDUCTORS) MAY BE GROUPED IN A SINGLE CONDUIT. WHERE MULTIPLE CIRCUITS ARE LOCATED IN THE SAME RACEWAY, JUNCTION BOX OR ENCLOSURE, NEUTRALS SHALL BE MARKED OR LABELED TO INDICATE WHICH CIRCUIT THEY ARE ASSOCIATED WITH. SEE SPECIFICATION SECTION "LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES" FOR ADDITIONAL INFORMATION.

ELECTRICAL SHEET INDEX

SHEET NO.	DESCRIPTION
E001	ELECTRICAL LEAD SHEET
E201	ELECTRICAL SITE DEMOLITION PLAN
E401	ELECTRICAL SITE POWER PLAN
E501	ELECTRICAL DETAILS
E502	ELECTRICAL DETAILS
E601	ELECTRICAL ONE-LINE DIAGRAMS
E602	CONTROLS SCHEMATIC AND SCHEDULE

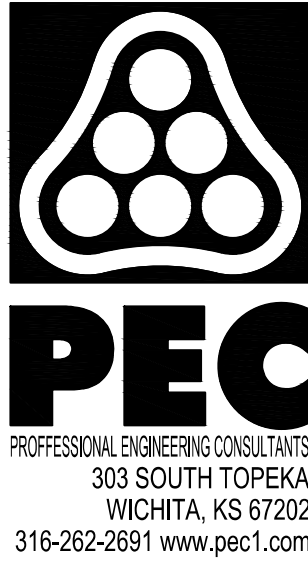
CONTROL CABLES CONDUIT SCHEDULE

# OF CABLES	ESTIMATED CONDUIT SIZE
1	1/2"
2	3/4"
3	1"
5	1 1/4"
7	1 1/2"
13	2"
18	2 1/2"
29	3"
38	3 1/2"

NOTE:
ABOVE CONDUIT SIZES DEPEND ON ACTUAL CABLES INSTALLED. VERIFY CABLE SIZES & ADJUST CONDUIT AS REQUIRED. RUN ALL CONTROL CABLES IN SEPARATE CONDUIT FROM POWER CIRCUITS. ALSO RUN SHIELDED & LAN LAN CABLES IN SEPARATE CONDUIT FROM OTHER CONTROLS. CONTRACTOR CAN SIZE CONDUIT FOR ACTUAL CABLE SIZE, PER N.E.C. FILL TABLE WITH 25% SPARE CAPACITY. SUBMIT CALCULATIONS.

SYMBOL LIST

SYMBOL	DESCRIPTION	MOUNTING
WP	WEATHERPROOF	
UON	UNLESS OTHERWISE NOTED	
	GROUND FAULT DUPLEX RECEPTACLE	18" AFF
	JUNCTION BOX	
	BRANCH CIRCUIT PANEL & PANEL DESIG.	72" TO TOP
	ELECTRICAL DISTRIBUTION EQUIPMENT	
	EQUIPMENT – SEE EQUIPMENT CONNECTION SCHEDULE	
	CONDUIT HOME RUN, 1 CIRCUIT. 2#12 & 1#12 GRD. GEN. NOTE 5 & 6	CEIL./WALL
	CONDUIT RUN 2#12 & 1#12 GRD.–	CEIL./WALL
	CONDUIT RUN 2#12 & 1#12 GRD.–	EARTH/FLOOR
	CONDUIT HOME RUN, 1 CIRCUIT. 2#12 & 1#12 GRD. 1°C.	CEIL./WALL
	CONDUIT HOME RUN, 2 CIRCUITS. 4#12 & 1#12 GRD. 1°C.	CEIL./WALL
	CONDUIT HOME RUN, 3 CIRCUITS. 6#12 & 1#12 GRD. 1°C.	CEIL./WALL
	CONDUIT RUN PARTIAL CIRCUIT. 2#12 & 1#12 GRD. 1°C.	CEIL./WALL
	CONDUIT HOME RUN, 2 CIRCUITS PHASE CONDUCTORS (#12 UON) NEUTRAL CONDUCTOR (#12 UON) SWITCH LEGS (#12 UON) GROUND CONDUCTOR (#12 UON)	CEIL./WALL
	CONTACTS (NORMALLY OPEN, CLOSED)	
	CIRCUIT BREAKER	
	DISCONNECT (SEE EQUIP CONN SCHED) (VOLTAGE / SWITCH SIZE / FUSE SIZE / # OF POLES NOTED IF EQUIPMENT NOT SCHEDULED)	
	GROUND CONNECTION	
	LIGHTNING ARRESTOR	
	FEEDER DESIGNATION	
	SURGE PROTECTIVE DEVICE	
	CIRCUIT BREAKER (MOLDED CASE NON-ADJUSTABLE TRIP / ADJUSTABLE TRIP) (# OF POLES IF OTHER THAN 3)	
	3Ø TRANSFORMER (DELTA PRIMARY / WYE SECONDARY)	
	PANELBOARD (WITH BUILT-IN SPD)	
	METER (UTILITY / PANEL MOUNTED)	
	EQUIPMENT (SINGLE MOTOR / MULTI- MOTOR OR OTHER TYPE AS NOTED)	
	TRANSFER SWITCH (ATS = AUTOMATIC, MTS = MANUAL) (SIZE / VOLTAGE / POLES / AIC RATING / NEMA RATING) (NEMA RATING IF OTHER THAN NEMA-1)	
	CONDUIT HOME RUN, DISCRETE CONTROLS. NUMBER OF CIRCUITS	



SANITARY SEWER IMPROVEMENTS

LIFT STATION NO. 16

AT

POPLAR STREET,

SOUTH OF E. 37TH STREET N

GARY JANZEN, P.E. - CITY ENGINEER

CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

Issue:		
JOB NO.	217043-007	
DATE	MARCH 2022	
PM	RWW	
DESIGNED BY	DCG	
DRAWN BY	BAC	
CHECKED BY	RWW	

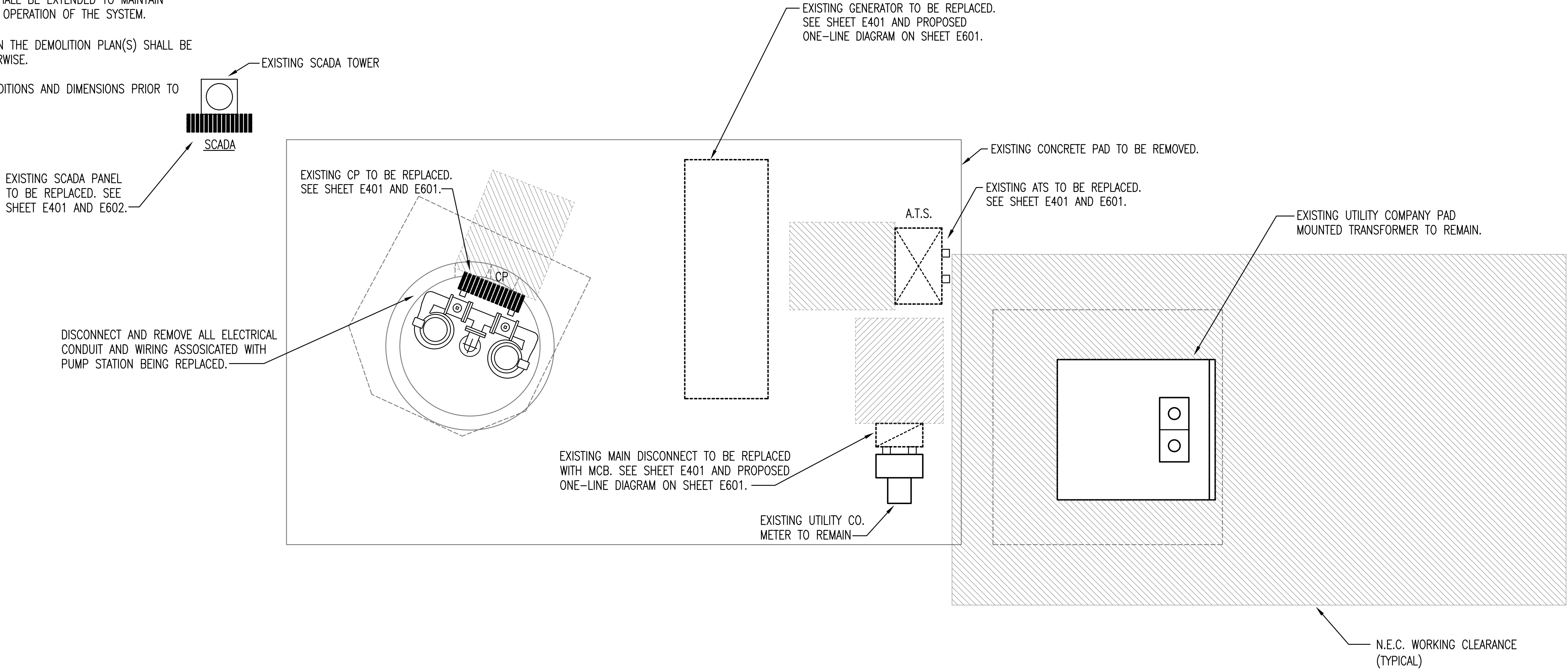
ELECTRICAL LEAD SHEET

E001

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 U:\WICHITA-CIVIL\2021\217043\07\ELEC\DRAWINGS\SSME201 ELECTRICAL DEMOLITION PLAN.DWG

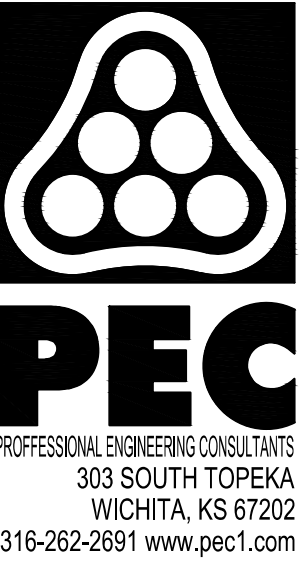
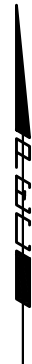
DEMOLITION NOTES:

- DEMOLITION PLANS SHOW THE GENERAL EXTENT OF THE ELECTRICAL DEMOLITION WORK. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL SERVICES TO ALL EQUIPMENT BEING REMOVED, SEE MECHANICAL PLANS. OWNER SHALL HAVE THE OPTION TO RETAIN REUSABLE ITEMS, SUCH AS COVERPLATES, RECEPTACLES, LIGHTS, PANELS, ETC. NOT BEING USED IN THE FINISHED WORK. COORDINATE WITH OWNER PRIOR TO STARTING DEMOLITION. PROPERLY AND LEGALLY DISPOSE OF ALL EQUIPMENT AND MATERIALS BEING REMOVED.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ALL OPENINGS IN EXISTING CONSTRUCTION AFTER REMOVAL OF EQUIPMENT, RACEWAY SYSTEMS, OUTLET BOXES, ETC.
- WHERE EQUIPMENT AND OTHER DEVICES ARE BEING REMOVED, THE CIRCUITING SHALL BE REMOVED, IF POSSIBLE, BACK TO POINT OF SUPPLY. WHERE REQUIRED, CIRCUITING SHALL BE EXTENDED TO MAINTAIN CONTINUITY OF THE CIRCUIT OR OPERATION OF THE SYSTEM.
- ALL DEVICES SHOWN DASHED ON THE DEMOLITION PLAN(S) SHALL BE REMOVED, UNLESS NOTED OTHERWISE.
- FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK.



A ELECTRICAL SITE DEMOLITION PLAN

0' 1' 2' 3' 1/2"=1'-0"



SANITARY SEWER IMPROVEMENTS

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POPLAR STREET,

SOUTH OF E. 37TH STREET N

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CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

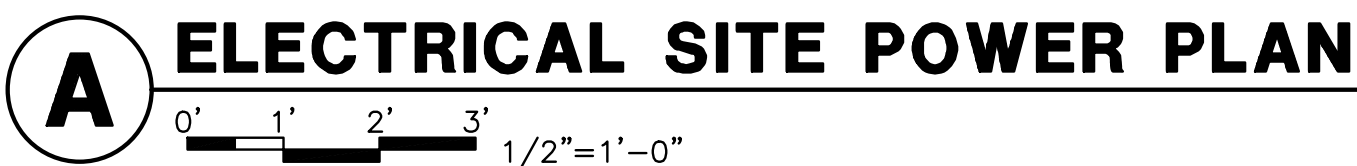
Issue:		

JOB NO.	217043-007
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ELECTRICAL SITE DEMOLITION
PLAN

E201

1. UNLESS OTHERWISE NOTED, ALL CONDUIT ROUTED ON SITE SHALL BE 1" MINIMUM.
2. ALL RISERS SHALL BE PVC COATED RIGID GALVANIZED STEEL (RGS) ALL ELLS BELOW GRADE SHALL BE PVC COATED RIGID GALVANIZED STEEL (RGS). PROVIDE WITH PVC TO STEEL ADAPTER(S) AS NECESSARY. (THIS REQUIREMENT SHALL NOT APPLY TO FIXTURE POLE BASES)
3. ALL ELECTRICAL WORK AND FEES ASSOCIATED WITH UTILITIES SHALL BE VERIFIED AND COORDINATED WITH LOCAL SERVICE PROVIDER PRIOR TO BID.
4. CONTRACTOR SHALL REFERENCE ALL RELATED CONTRACT DOCUMENTS, SITE SURVEY, AND OTHER RESOURCES FOR POSSIBLE CONFLICTS WITH OTHER UNDERGROUND UTILITIES. AT UTILITY CROSSINGS, CONTRACTOR SHALL VERIFY UTILITY DEPTHS AND COORDINATE CONDUIT ROUTING AS NECESSARY.
5. CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING CONDITIONS OF PROJECT SITE PRIOR TO BID.

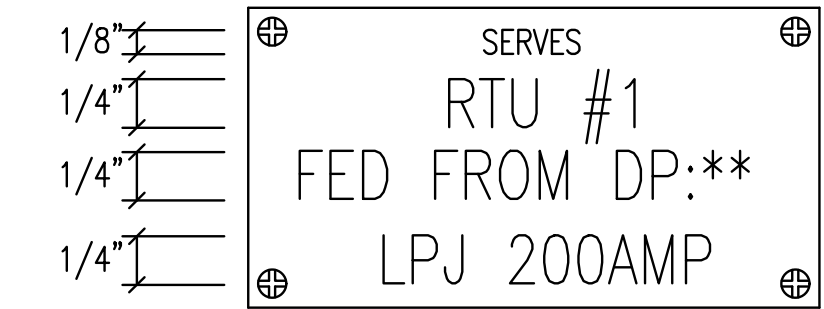


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CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

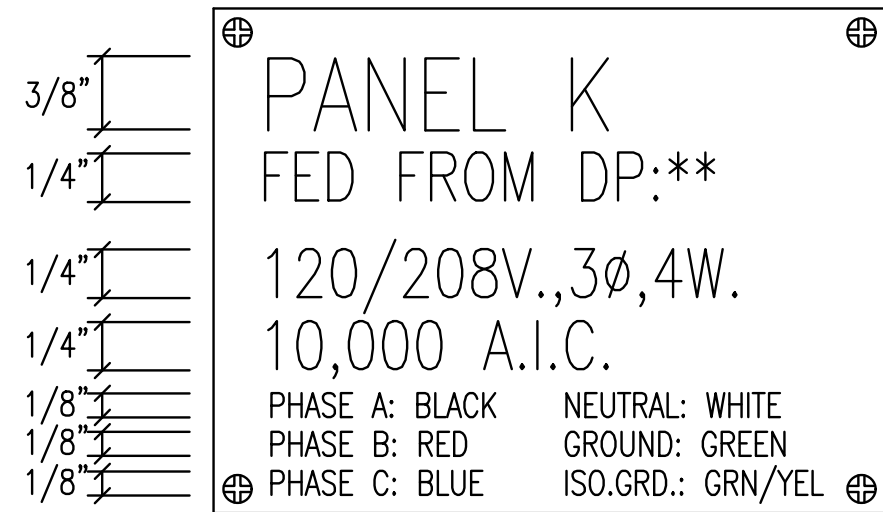
ELECTRICAL SITE POWER PLAN

E401

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PLOTTED 3/9/2022 1:53:26 PM BY BEN CHAPLIN
U:\WICHITA-CIVIL\2021\217043\07\TELEC\DRAWINGS\SSM\E501 ELECTRICAL DETAILS.DWG

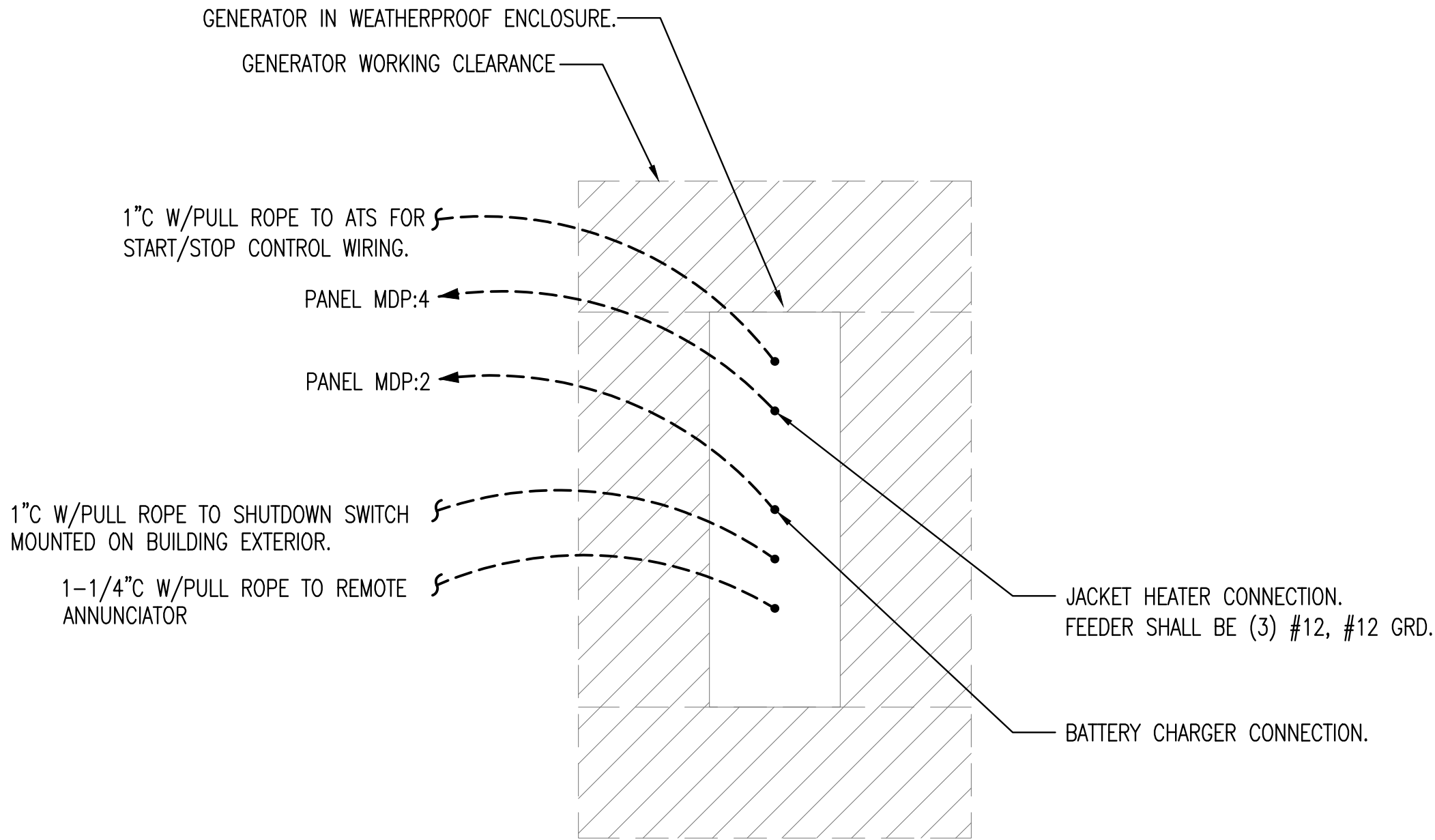


DISCONNECT SWITCH

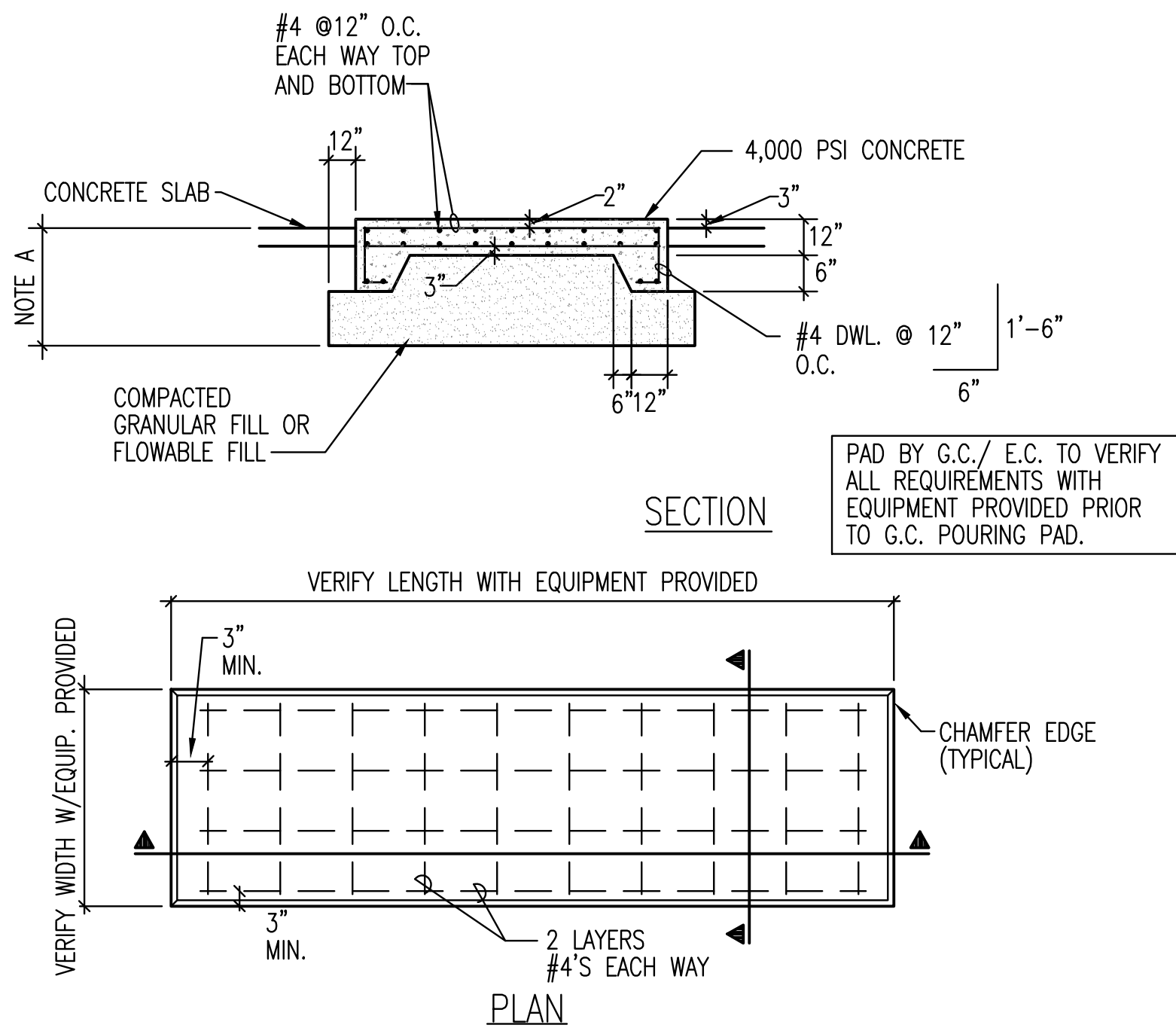


BRANCH CIRCUIT/DISTRIBUTION PANEL

1 TYPICAL NAME PLATES
NO SCALE

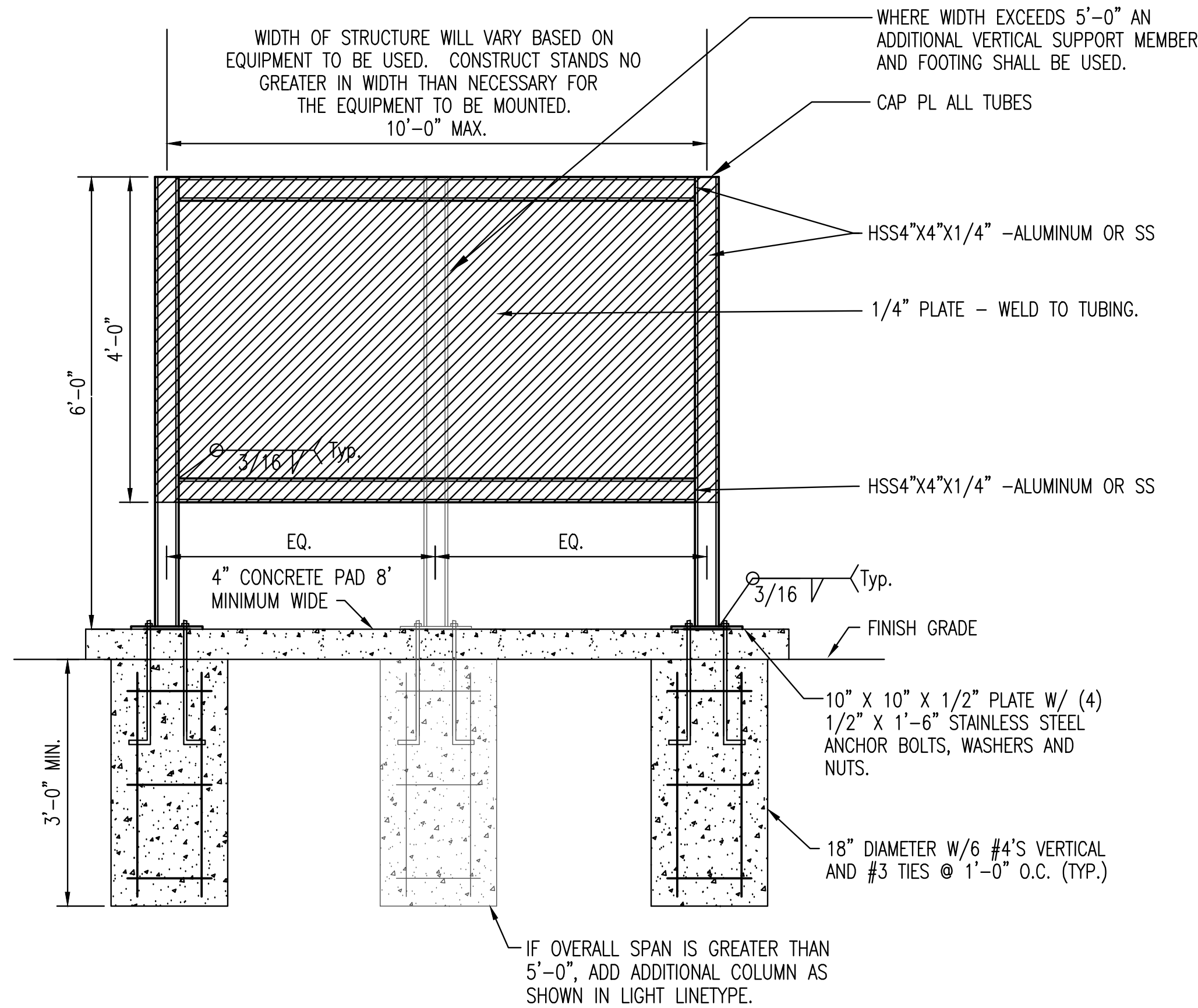


2 ENLARGED GENERATOR DETAIL
NO SCALE
NOTE: ALL CONDUIT SHALL BE 1" MINIMUM UNLESS OTHERWISE NOTED.



3 ENGINE GENERATOR PAD DETAIL
NO SCALE

NOTE A: OVER EXCAVATE TO A MINIMUM DEPTH OF 24" BELOW GRADE OR 6" BELOW FROST, WHICHEVER IS GREATER.



CONTRACTOR OPTION TO FABRICATE ENTIRE STRUCTURE OF STAINLESS STEEL OR ALUMINUM. IF STAND IS CONSTRUCTED OF STAINLESS STEEL THE SAME TUBING, PLATE SIZES, AND WELDS SHALL BE USED.

CONNECT ALL EQUIPMENT TO STRUCTURE USING STAINLESS STEEL BOLT AND/OR SCREWS.

IF ALUMINUM IS USED A 10" X 10" X 1/16" RUBBER PAD SHALL BE INSTALLED BETWEEN THE HOUSEKEEPING PAD AND THE PLATES AT THE BOTTOM OF EACH STAND VERTICAL MEMBER WHERE THEY ATTACH TO THE ANCHOR BOLTS

4 TYPICAL ELECTRICAL STRUCTURE DETAIL
NO SCALE



SANITARY SEWER IMPROVEMENTS

LIFT STATION NO. 16

AT

POPLAR STREET,

SOUTH OF E. 37TH STREET N

GARY JANZEN, P.E. - CITY ENGINEER

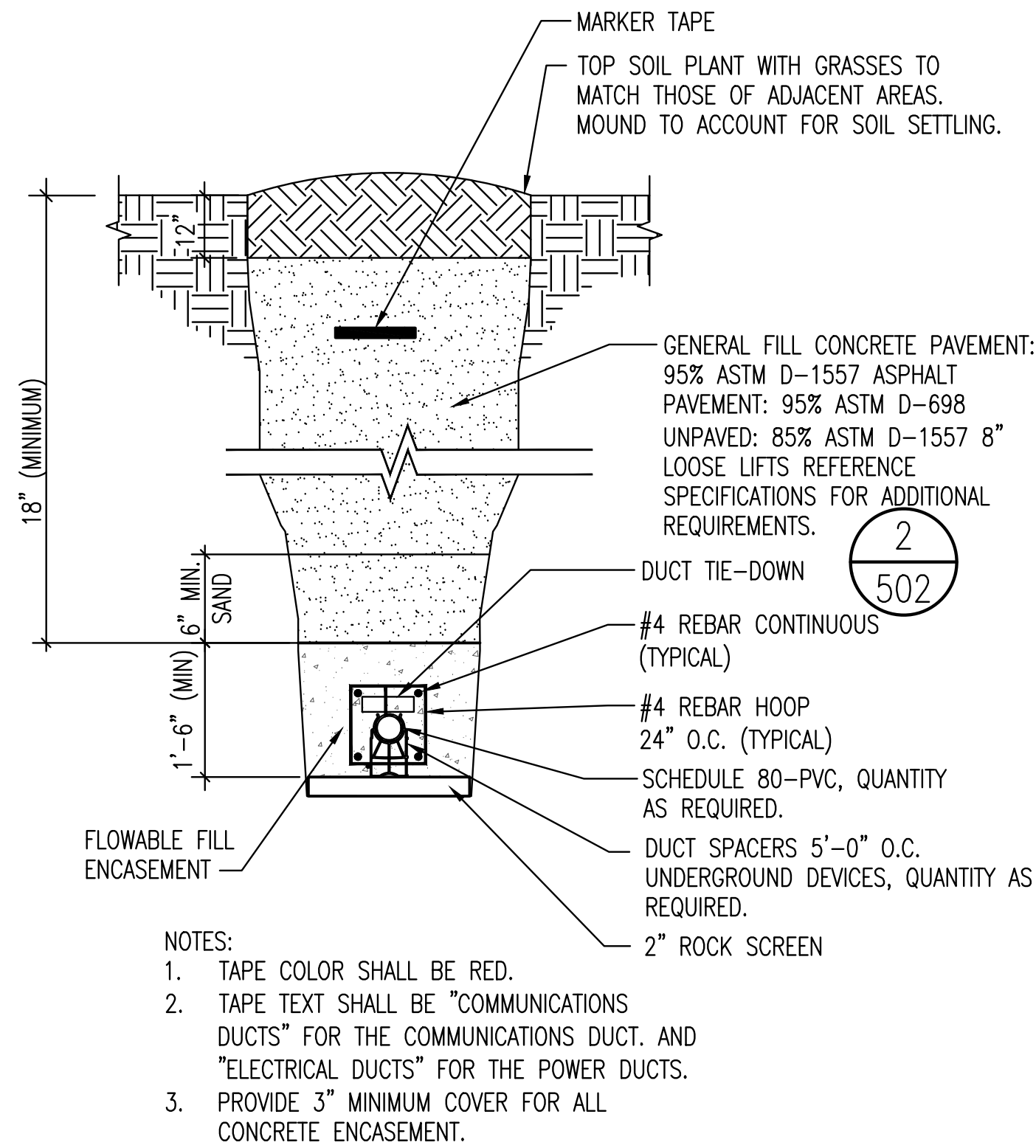
CITY OF WICHITA PROJECT NO. 468-2020-019216 S0013

Issue:		
JOB NO.	217043-007	
DATE	MARCH 2022	
PM	RWW	
DESIGNED BY	DCG	
DRAWN BY	BAC	
CHECKED BY	RWW	

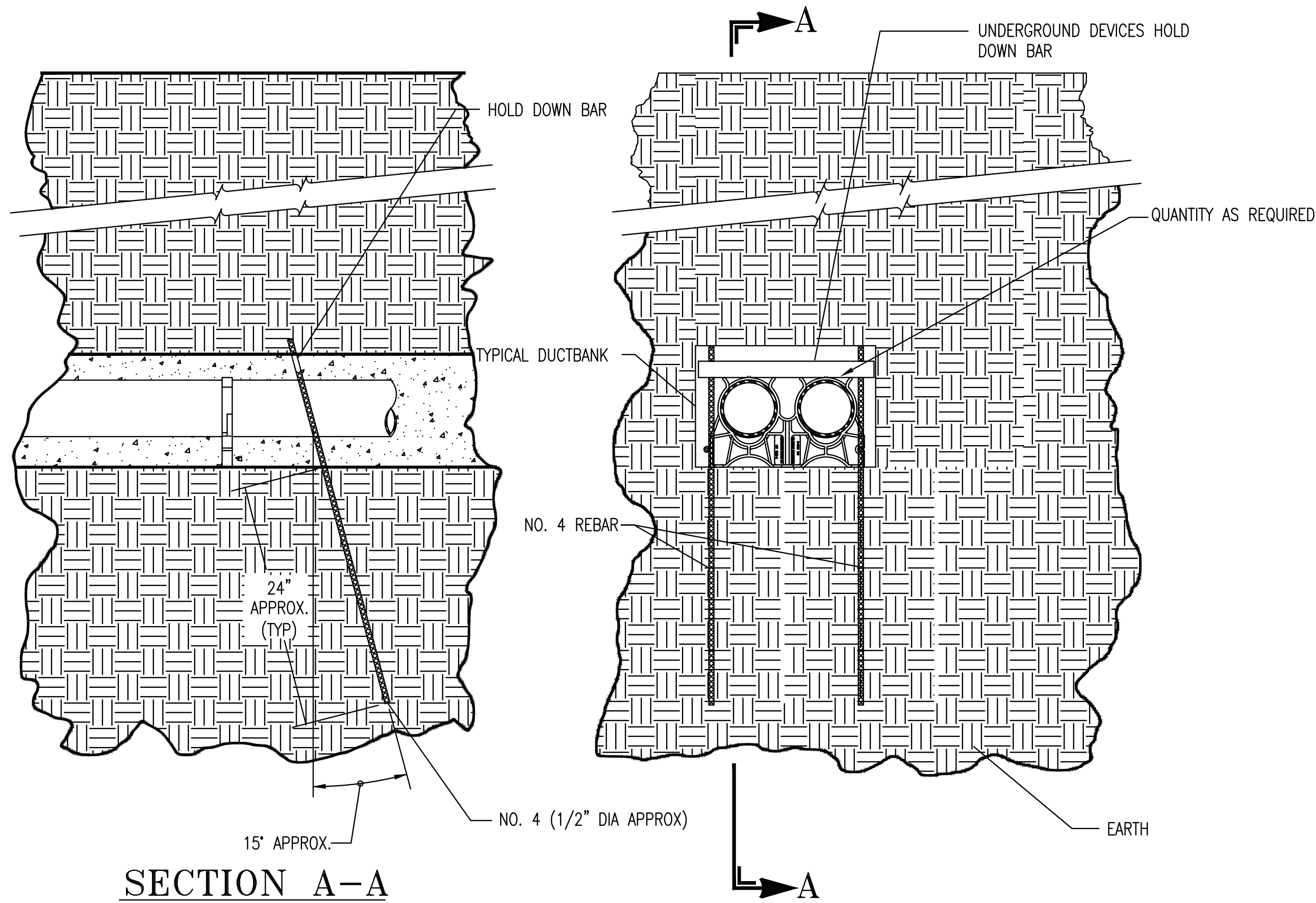
ELECTRICAL DETAILS

E501

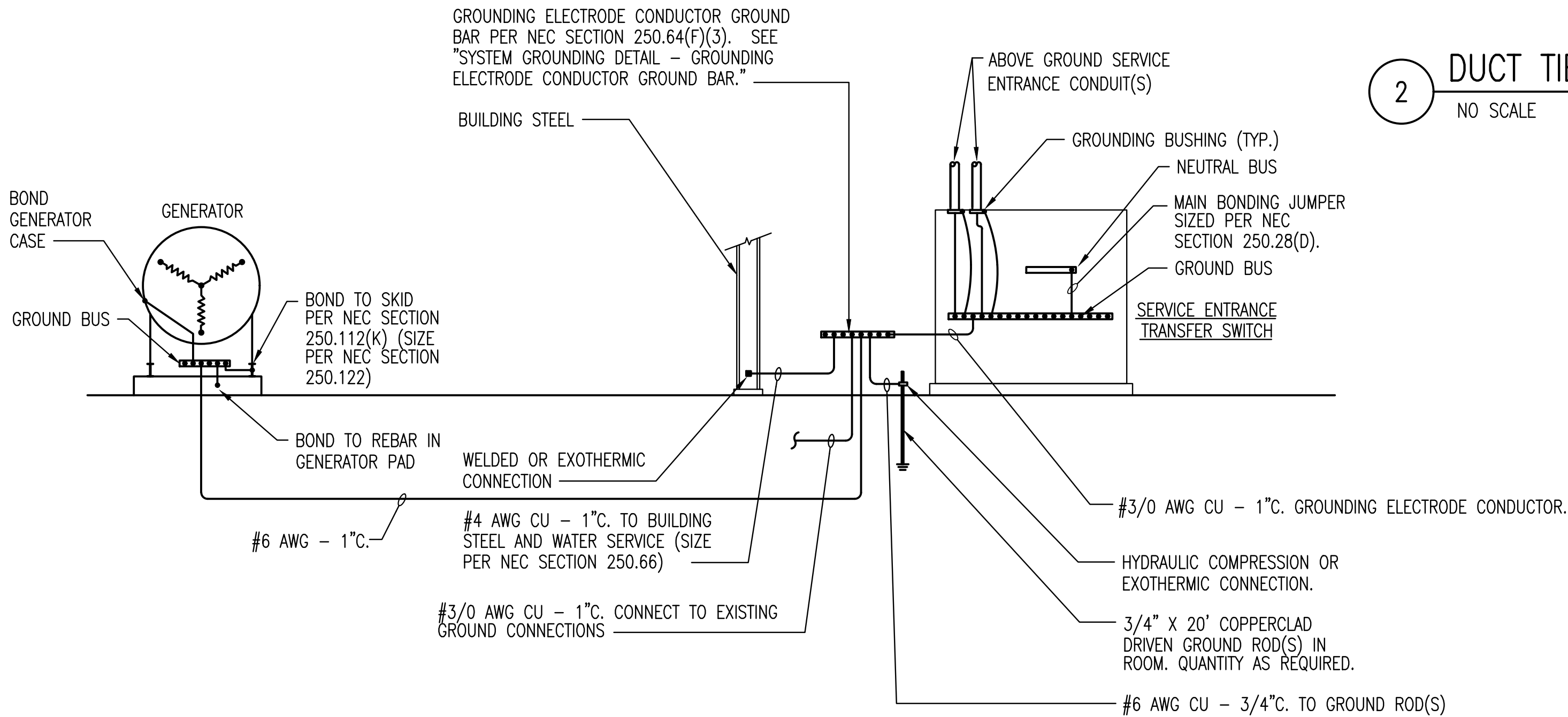
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1 DUCTBANK SECTION
NO SCALE



2 DUCT TIE-DOWN DETAIL
NO SCALE

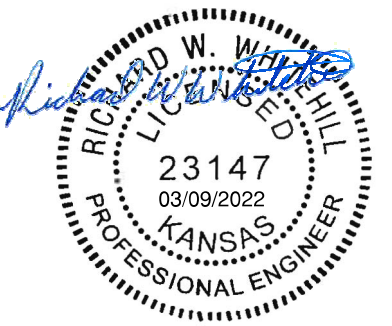


NOTES:

1. PROVIDE OTHER GROUNDING CONNECTIONS AS SPECIFIED IN NEC SECTION 250.50.
2. LABEL EACH GROUNDING ELECTRODE CONDUCTOR AND BONDING JUMPER.
3. WHERE CONDUCTORS ARE ROUTED IN FERROUS CONDUIT, BOND BOTH ENDS OF THE CONDUIT TO THE CONDUCTOR.

3 SYSTEM GROUNDING DETAIL - PANEL WITH 3-POLE ATS
NO SCALE

DESIGNER NOTE: SIZE GROUNDING ELECTRODE CONDUCTORS AND BONDING JUMPERS TO BUILDING STEEL AND WATER SERVICE PER NEC SECTION 250.66



SANITARY SEWER IMPROVEMENTS
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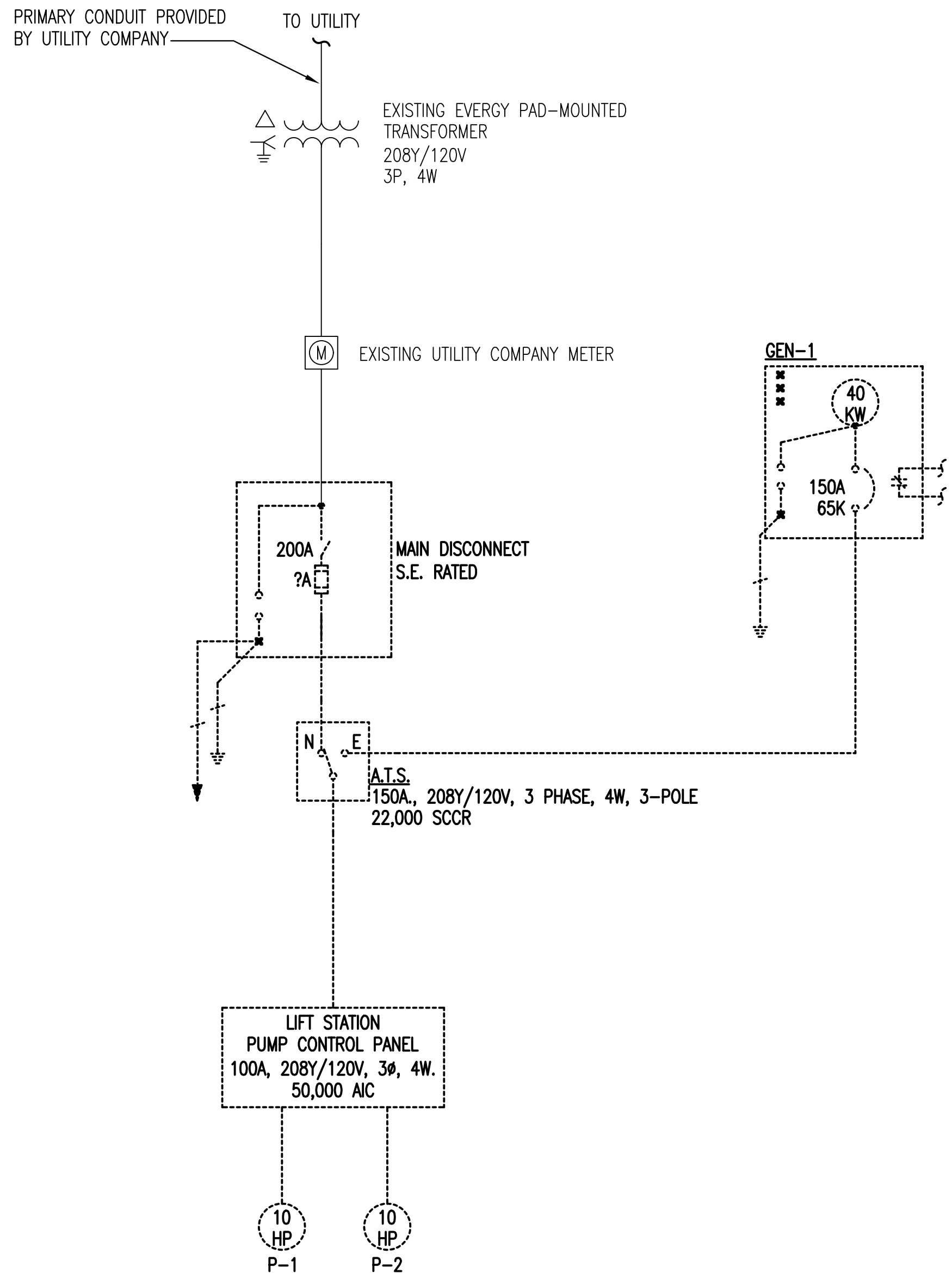
ELECTRICAL DETAILS

E502

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U:\WICHITA-CIVIL\2021\217043\007\ELEC\DRAWINGS\SSM\E601 ELECTRICAL ONE-LINE DIAGRAM.DWG

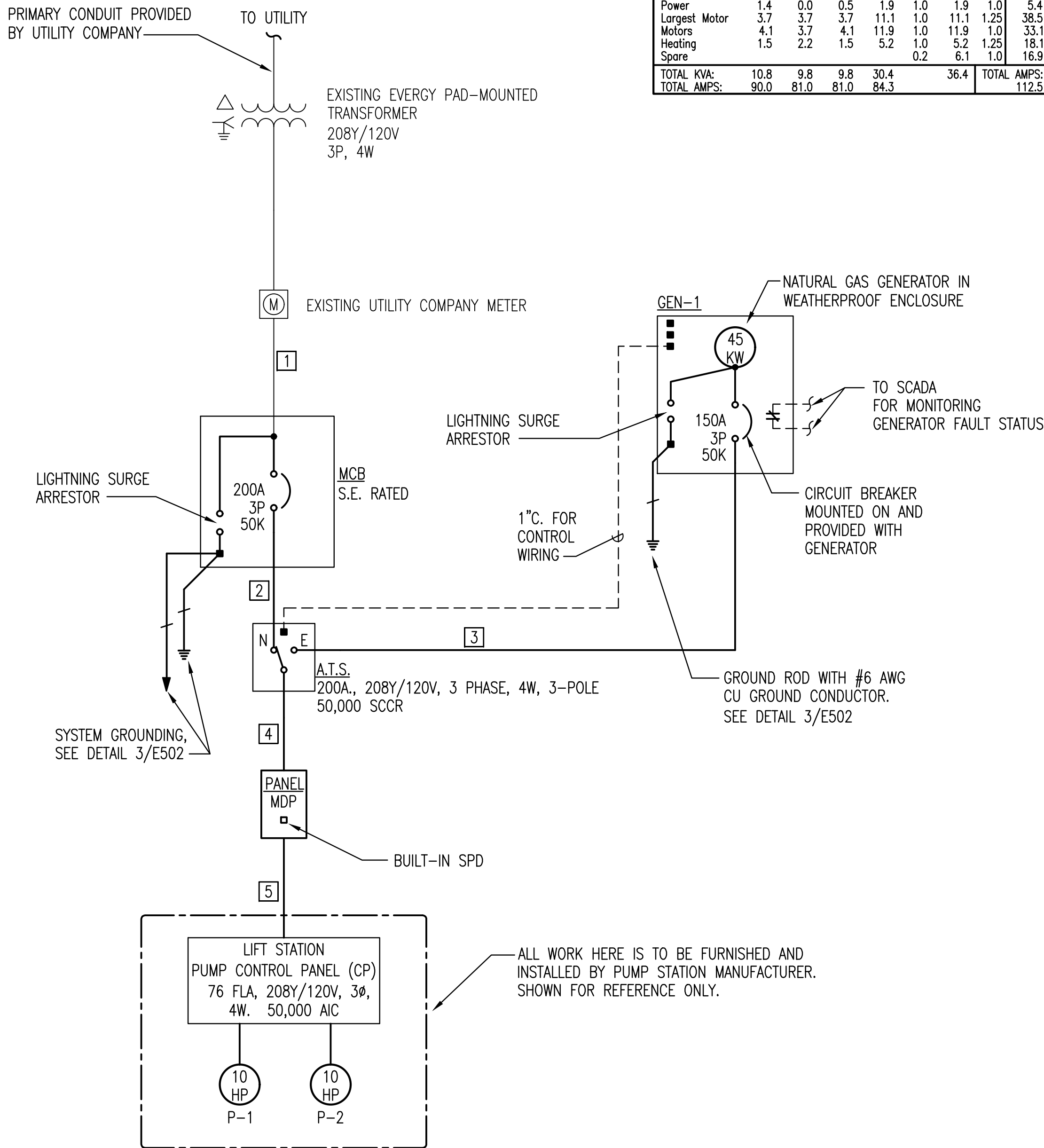
GENERAL ONE-LINE DIAGRAM NOTES:

1. UNLESS OTHERWISE NOTED, ALL CIRCUIT BREAKERS AND/OR SWITCHES ARE THREE POLE.
2. ALL ELECTRICAL EQUIPMENT AND WIRING SHOWN IN A LIGHT LINE, IS EXISTING TO REMAIN.
3. ALL ELECTRICAL EQUIPMENT AND WIRING SHOWN IN A DARK LINE, IS NEW WORK UNDER THIS CONTRACT.
4. ALL ELECTRICAL EQUIPMENT AND WIRING SHOWN IN A DARK DASHED LINE, IS TO BE REMOVED UNDER THIS CONTRACT.



1 EXISTING ONE-LINE DIAGRAM

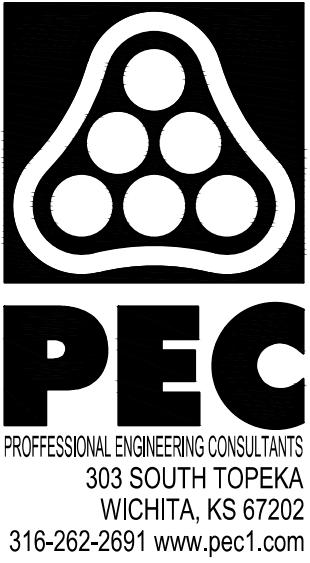
FEEDER SCHEDULE									
DESIG.	EQUIPMENT SERVED	CONDUCTORS			GROUND SIZE PER SET	ISOLATED GROUND SIZE	CONDUIT SIZE PER SET	SPARE CONDUIT	
		SETS	NO.	SIZE					
1	CIRCUIT BREAKER: MCB	1	4	#3/0 AWG CU	#6	---	2-1/2"	---	
2	ATS MAIN FEEDER	1	4	#3/0 AWG CU	#6	---	2-1/2"	---	
3	ATS GENERATOR FEEDER	1	4	#1/0 AWG CU	#6	---	2"	---	
4	PANELBOARD:MDP	1	4	#3/0 AWG CU	#6	---	2-1/2"	---	
5	PUMP CONTROL PANEL:CP	1	4	#1 AWG CU	#6	---	2"	---	
E	EXISTING 200A FEEDER TO REMAIN								



2 PROPOSED ONE-LINE DIAGRAM

PANELBOARD: MDP										208Y/120 VOLTS, 3 PHASE, 4 WIRE		
W/GRD. BUS W/SPD										225 AMP MLO, SURFACE MTD.		
										50000 AIC LABELED		
CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P.	AMP SIZE	PHASE	AMP SIZE	P.	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.
1	25916		PANELBOARD: CP	3	110	A	20	1	GEN BATT CHG	PMR	720	2
3						B	20	1	GEN COOLANT HTR	HEAT	1500	4
5						C	20	1	ATS HEATER	HEAT	1500	6
7		SPWR	SPARE	1	20	A	20	1	SCADA PANEL	PMR	720	8
9		SPWR	SPARE	1	20	B	20	1	SPARE	SPWR		10
11		SPWR	SPARE	1	20	C	20	1	SPARE	SPWR		12
13		SPWR	SPARE	1	20	A	20	1	SPARE	SPWR		14
15		SPWR	SPARE	1	20	B	20	1	SPARE	SPWR		16
17		SPWR	SPARE	1	20	C	20	1	SPARE	SPWR		18
19		SPWR	SPARE	1	20	A	20	1	SPARE	SPWR		20
21		SPWR	SPARE	1	20	B	20	1	SPARE	SPWR		22
23		SPWR	SPARE	1	20	C	20	1	SPARE	SPWR		24

PANELBOARD: MDP		CONNECTED KVA:			DEMAND FACTOR	KVA	CONF. FACT	SIZING AMPS:			
Receptacles	Power	PH-A	PH-B	PH-C				TOTAL	PH-A	PH-B	PH-C
0.0	1.4	0.0	0.0	0.0	1.0	0.2	1.0	0.5	0.0	1.5	0.0
0.0	3.7	0.0	0.5	1.9	1.0	1.9	1.0	5.4	12.0	0.0	4.2
0.0	4.1	3.7	3.7	11.1	1.0	11.1	1.25	39.5	38.5	38.5	38.5
0.0	4.1	3.7	4.1	11.9	1.0	11.9	1.0	33.1	34.3	30.8	34.3
0.0	1.5	2.2	1.5	5.2	1.0	5.2	1.25	18.1	15.6	23.1	15.6
0.0					0.2	6.1	1.0	16.9	16.9	16.9	16.9
TOTAL KVA:		10.8	9.8	9.8	30.4	36.4		TOTAL AMPS:	PH-A	PH-B	PH-C
TOTAL AMPS:		90.0	81.0	81.0	84.3			112.5	117.3	110.8	109.5



SANITARY SEWER IMPROVEMENTS
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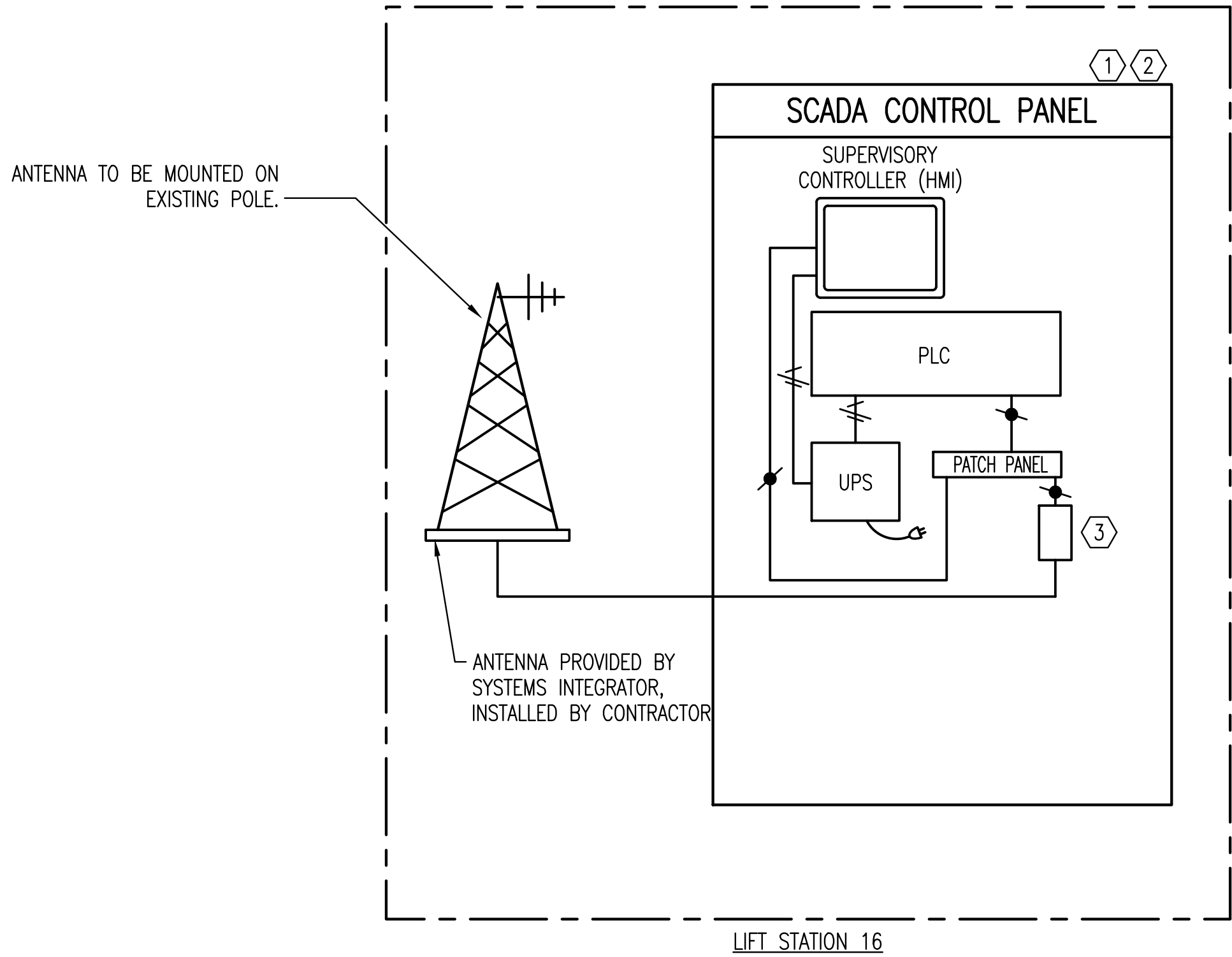
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ELECTRICAL ONE-LINE
DIAGRAMS

E601

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 U:\WICHITA-CIVIL\2021\217043\007\TELEC\DRAWINGS\SSM\E602 CONTROLS SCHEMATIC AND SCHEDULE.DWG

SCADA CONTROL PANEL													LOCATION: LIFT STATION	
CIRCUIT NO.	EQUIPMENT SERVED/ MARK	CONNECT				DESCRIPTION/FUNCTION	CONDUCTORS IN CABLE	DISCRETE	ANALOG	DIGITAL	INPUT	OUTPUT	REMARKS	
		DEVICE	CTL. PNL	STARTER	VFD									
1	GEN-1	-	X	-	-	GENSET READY	2	X	-	-	X	-	FROM GENERATOR CONTROL PANEL AT UNIT	
2	GEN-1	-	X	-	-	GENSET RUNNING	2	X	-	-	X	-	FROM GENERATOR CONTROL PANEL AT UNIT	
3	GEN-1	-	X	-	-	GENSET FAIL	2	X	-	-	X	-	FROM GENERATOR CONTROL PANEL AT UNIT	
4	GEN-1	-	X	-	-	GENSET LOW FUEL PRESSURE	2	X	-	-	X	-	FROM GENERATOR CONTROL PANEL AT UNIT	
5	GEN-1	-	X	-	-	GENERATOR BREAKER STATUS	2	X	-	-	X	-	FROM GENERATOR CONTROL PANEL AT UNIT	
6	ATS	-	X	-	-	ATS POSITION	2	X	-	X	X	-	FROM ATS	
7	CP	-	X	-	-	FAULT ALARM	2	X	-	-	X	-	FROM CP	

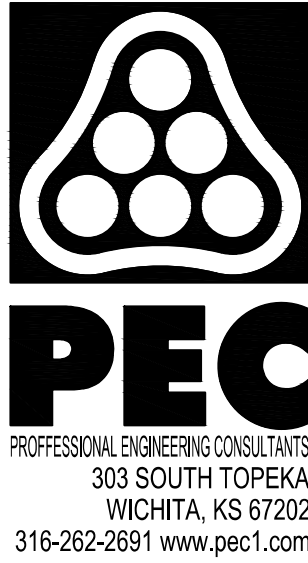


CONTROL PANEL NOTES:

- CONDUIT FOR ANALOG CABLES SHALL TERMINATE IN EQUIPMENT ENCLOSURE AS CLOSE AS POSSIBLE TO THE TERMINALS. ANALOG CABLES SHALL NOT PASS NEAR TO CABLES OR EQUIPMENT OPERATING OVER 24V.
- INTERNAL AND EXTERNAL I/O SHALL BE LANDED ON TERMINAL STRIPS.
- I/O IDENTIFIED ON CONTROL DIAGRAM SHEETS ARE FOR INPUTS AND OUTPUTS EXTERNAL TO THE EQUIPMENT CONTROL PANEL. I/O NECESSARY FOR THE COMPLETE FUNCTIONALITY OF THE EQUIPMENT (INTERNAL I/O) SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT AND WIRING AS REQUIRED FOR COMPLETE FUNCTIONALITY OF EQUIPMENT AS SPECIFIED AND AS IDENTIFIED BY THE MANUFACTURER. COORDINATE FIELD WIRING REQUIREMENTS WITH EQUIPMENT MANUFACTURER.

KEY NOTES:

- BY SYSTEMS INTEGRATOR.
- CONTROL PANEL SHALL BE PROVIDED WITH AN ETHERNET PORT FOR CONNECTION OF A LAPTOP COMPUTER.
- RADIO MODEM.



SANITARY SEWER IMPROVEMENTS
 LIFT STATION NO. 16
 AT
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CONTROLS SCHEMATIC AND SCHEDULE

E602