

GENERAL NOTES

- ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS, UNLESS OTHERWISE INCLUDED IN THE CONTRACT DOCUMENTS.
- EACH BIDDER SHALL VISIT THE SITE OF THE PROJECT BEFORE SUBMITTING THE PROPOSAL FOR THIS WORK SO THAT THEY WILL BE FULLY INFORMED OF THE EXISTING FIELD CONDITIONS AND THE OBSTACLES WHICH MIGHT BE ENCOUNTERED. UPON AWARD OF THE CONTRACT THE CONTRACTOR WILL NOT BE GRANTED ANY ADDITIONAL COMPENSATION WITH REGARDS TO TIME AND MONEY FOR CONDITIONS THAT MAY HAVE BEEN EVALUATED DURING ANY INSPECTION OF THE SITE.
- AT LEAST 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316)-687-2470 OR 811 TO REQUEST THE LOCAL UTILITY COMPANIES TO LOCATE ANY EXISTING LINES WITHIN THE PROJECT AREA.
- THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

EMERGENCY DISPATCH:	911
COX COMMUNICATIONS:	888-249-3530
EVERGY:	800-383-1183
AT&T:	800-286-8313
KANSAS GAS SERVICE:	888-482-4950
BLACK HILLS ENERGY:	888-890-5554
SOUTHERN STAR CENTRAL:	800-324-9696
- THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF SEVEN (7) DAYS ADVANCE NOTICE PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOT START WORK ON THE PROJECT UNTIL THE PROJECT INSPECTOR IS ASSIGNED AND IS PRESENT ON THE SITE. ANY WORK DONE WITHOUT INSPECTION WILL BE REQUIRED TO BE UNCOVERED FOR INSPECTION AT THE CONTRACTORS EXPENSE.
- ALL ELEVATIONS SHOWN ARE NAVD88 DATUM. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL RE-ESTABLISH CONTROL POINTS AND BENCH MARKS AND VERIFY THEIR ACCURACY.
- EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE DRAWINGS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. IT SHOULD BE NOTED THAT OTHER BURIED LINES AND CABLES MAY EXIST WHICH ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL HAVE ALL BURIED LINES LOCATED AND FLAGGED IN THE FIELD PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL CONTACT THE ENGINEER AND REVIEW ANY BURIED LINES LOCATED IF CONFLICTS EXIST. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING TRENCHING OPERATIONS TO AVOID DAMAGING THESE LINES. ANY LINES DAMAGED SHALL BE REPLACED OR REPAIRED IMMEDIATELY AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL EXPOSE AND VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF EXISTING UTILITIES THAT ARE IN POTENTIAL CONFLICT WITH THE PROPOSED IMPROVEMENTS. THE UTILITY LOCATES SHALL BE PERFORMED PRIOR TO THE START OF CONSTRUCTION AND ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
- EASEMENTS AND RIGHTS-OF-WAY PROVIDED BY THE OWNER FOR THE PROJECT ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACQUISITION OF ANY ADDITIONAL TEMPORARY EASEMENTS OR RIGHTS-OF-WAY DESIRED TO USE IN COMPLETING THE WORK.
- THE CONTRACTOR SHALL CONTAIN THEIR OPERATIONS TO PERMIT LOCAL AND EMERGENCY TRAFFIC THROUGH AND ACROSS CONSTRUCTION AT ALL TIMES. THE CONTRACTOR SHALL UTILIZE WARNING SIGNS, FLASHING LIGHTS, BARRICADES, AND FLAGMEN IN COMPLIANCE WITH THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

- RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED, TREE TRIMMINGS, AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WILL REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES, FLOODWAYS, OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.
- THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, AND BANKS TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE. WHERE EXISTING ENTRANCE PIPE, DRAINAGE PIPE, SIGNS, FENCES, LANDSCAPING, ETC., CONFLICT WITH THE PROPOSED WORK HEREIN, THEY SHALL BE REMOVED AND REPLACED OR RESET, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- THE CONTRACTOR SHALL TAKE CARE TO PREVENT SILT AND DEBRIS FROM ENTERING ANY STORM DRAINAGE SYSTEM DURING CONSTRUCTION. PIPES OR STRUCTURES WHICH CONTAIN MATERIALS FROM THE CONTRACTORS ACTIVITIES SHALL BE THOROUGHLY CLEANED BY THE CONTRACTOR, AT THEIR OWN EXPENSE, PRIOR TO THE FINAL INSPECTION.
- RECONSTRUCTION OF EROSION CONTROL MEASURES WHICH ARE DESTROYED BY WIND, FLOOD, FIRE, OR BY THE ACTIONS OF THE CONTRACTOR OR OTHERS SHALL BE PERFORMED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST. WHERE ADJUSTMENTS IN QUANTITIES ARE REQUIRED BY FIELD CONDITIONS, THERE SHALL BE NO ADJUSTMENT IN UNIT PRICE.
- ALL LAWN/TURF AREAS DISTURBED BY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE RESTORED WITH THE SAME GRASS/SOD AS EXISTING. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING, MULCHING, AND/OR RE-SEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS AND THE CITY OF WICHITA ADMINISTRATIVE REGULATION NO. AR6.5 WHICH GOVERNS CLEANUP AND RESTORATION OR REPLACEMENT FOLLOWING CONSTRUCTION. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO "SITE RESTORATION".
- THE CONTRACTOR SHALL SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH TEMPORARY RYE GRASS. RYE GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF SIX (6) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET. THIS TEMPORARY SEEDING MAY BE OMITTED ONLY IF PERMANENT SEEDING/SODDING IS APPLIED. TEMPORARY SEEDING OR PERMANENT SEEDING/SODDING SHALL BE APPLIED WITHIN 14 DAYS AFTER THE AREA HAS BEEN DISTURBED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION STAKING. STAKING AND BENCH MARKS DESTROYED DURING CONSTRUCTION OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL MAINTAIN UNINTERRUPTED UTILITY SERVICE TO ADJACENT FACILITIES DURING CONSTRUCTION, UNLESS OTHERWISE APPROVED BY OWNER.
- WRITTEN REQUEST TO THE OWNER WILL BE REQUIRED 72 HOURS PRIOR TO A SCHEDULED UTILITY OUTAGE. THE FIRE DEPARTMENT MUST BE NOTIFIED OF ANY FIRE HYDRANTS OR WATER MAINS TAKEN OUT OF SERVICE.
- THE CONTRACTOR SHALL INSTALL AND/OR MAINTAIN EROSION CONTROL METHODS AS SPECIFIED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL THROUGH THE COMPLETION OF THIS PROJECT. INSTALLATION OF THESE EROSION CONTROL DEVICES DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF ABATING SOIL EROSION. THE FOLLOWING QUANTITIES ARE ESTIMATED, AND SHOULD BE CONSIDERED THE MINIMUM EFFORT REQUIRED.

DITCH CHECK 1 EACH

- OPENING AND CLOSING VALVES SHALL BE DONE SLOWLY TO PREVENT DAMAGE TO THE FORCE MAINS FROM WATER HAMMER. ALL VALVES CLOSED BY THE CONTRACTOR MUST BE REOPENED AS NEW CONSTRUCTION PERMITS. PROJECT INSPECTOR MUST ASCERTAIN THAT ANY VALVE CLOSED BY THE CONTRACTOR IS REOPENED. CONTRACTOR WILL BE PERMITTED TO OPERATE VALVES ONLY WHEN THE PROJECT INSPECTOR ASSIGNED TO THE PROJECT IS PRESENT.
- CONCRETE THRUST BLOCKING SHALL BE INSTALLED AT ALL HORIZONTAL AND VERTICAL DEFLECTIONS OF 11 1/4 DEGREES OR MORE, UNLESS OTHERWISE SPECIFIED. THRUST BLOCKING SHALL BE SIZED AS SHOWN IN THE DETAILS, OR OTHERWISE SPECIFIED. COSTS FOR CONCRETE THRUST BLOCKING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.
- MAINTAIN A MINIMUM OF 10-FOOT HORIZONTAL SEPARATION BETWEEN ALL WATER LINES (MAINS, SERVICES, AND FIRE HYDRANTS) AND ALL SANITARY SEWER LINES (MAINS, SERVICES, AND MANHOLES). ALL SEPARATIONS DISTANCES ARE TO BE MEASURED FROM EDGE-TO-EDGE, AT THE CLOSEST POINT.
- MAINTAIN A MINIMUM OF 2-FOOT VERTICAL SEPARATION BETWEEN ALL WATER LINES (MAIN AND SERVICES) AND ALL GRAVITY SANITARY SEWER LINES (MAINS, SERVICES, AND MANHOLES) AT CROSSINGS. ALL SEPARATION DISTANCES ARE TO BE MEASURED FROM EDGE-TO-EDGE, AT THE CLOSEST POINT.
- MAINTAIN A MINIMUM OF 2-FOOT VERTICAL SEPARATION BETWEEN ALL WATER LINES (MAINS AND SERVICES) AND ALL PRESSURIZED SANITARY SEWER LINES (FORCE MAINS AND SERVICES) AT CROSSINGS. WATERLINES MUST ALWAYS BE PLACED ABOVE PRESSURIZED SANITARY SEWER LINES WHERE THEY CROSS. ALL SEPARATION DISTANCES ARE TO BE MEASURED FROM EDGE-TO-EDGE, AT THE CLOSEST POINT.
- THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES OR SHRUBS WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, THIS WORK SHALL BE COORDINATED WITH THE ENGINEER. TREE TRIMMING/REMOVAL SHALL BE COMPLETED IN ACCORDANCE WITH U S FISH AND WILDLIFE SERVICE, AND KANSAS DEPARTMENT OF WILDLIFE, PARKS, AND TOURISM RESTRICTIONS. FULL TREE REMOVAL SHALL BE NOTED ON THE PLANS AND SHALL BE BID AS "TREE REMOVED, LARGE", "TREE REMOVED, SMALL", OR "TREE ROW REMOVED".
- PROPERTIES WITHIN THE PROJECT LIMITS MAY HAVE UNDERGROUND SPRINKLER SYSTEMS IN PUBLIC RIGHT-OF-WAY WHICH CONFLICT WITH NEW CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO REMOVE SUCH IMPROVEMENTS SHOULD THEY NOT BE REMOVED BY THEIR OWNER AT THE TIME OF CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL REMOVE, REPLACE OR RESET ANY SPRINKLER HEADS, PIPES, AND/OR VALVES WHICH CONFLICT WITH CONSTRUCTION. ANY SPRINKLER HEADS, PIPES, AND/OR VALVES DAMAGED BY CONSTRUCTION OPERATIONS SHALL BE REPLACED IN KIND AT NO ADDITIONAL COST TO THE OWNER. PORTIONS OF UNDERGROUND SPRINKLER SYSTEMS NOT IN CONFLICT WITH NEW CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND SHALL REMAIN IN PLACE.
- THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW OF SEWAGE THROUGH CONSTRUCTION. CONTRACTOR'S PROPOSED METHOD FOR MAINTAINING SEWAGE FLOW SHALL BE SUBMITTED AND APPROVED BY THE ENGINEER PRIOR TO STARTING AND BY-PASSING OF SEWAGE FLOWS.
- THE CONTRACTOR SHALL PREVENT ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION.
- CONTRACTOR SHALL NOT DIVERT ANY SEWAGE FLOW THROUGH NEW PIPE OR MANHOLES UNTIL TESTING HAS BEEN COMPLETED AND ACCEPTED.
- CONTRACTOR SHALL POTHOLE ALL UTILITY CROSSINGS A MINIMUM OF 200 FT. AHEAD OF THE EXCAVATION FOR OPEN CUT AND 500 FT. AHEAD OF HDD INSTALLATION. CONTRACTOR TO NOTIFY RPR AND ENGINEER OF ANY CONFLICTS.
- THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION, TYPE, SIZE AND CLASS OF EXISTING PIPE PRIOR TO MAKING CONNECTIONS. EXISTING FORCE MAIN LOCATIONS AS SHOWN ON THE DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL MAKE ADJUSTMENTS AS REQUIRED. PROVISION AND INSTALLATION OF PIPE ADAPTORS, SHORT SECTION OF PIPE, AND COUPLERS SHALL BE AT NO ADDITIONAL COST TO THE PROJECT.
- FORCE MAINS SHALL HAVE A MINIMUM DEPTH OF BURY OF 42 INCHES, UNLESS SHOWN OTHERWISE.
- CONTRACTOR SHALL FIELD VERIFY ALL WATERLINE ELEVATIONS PRIOR TO FORCE MAIN CONSTRUCTION. SEWER CROSSINGS SHALL MEET SEPARATION REQUIREMENTS PER PROJECT SPECIFICATIONS.
- THE FORCE MAIN PIPE LENGTHS REPRESENT TRUE PIPE LENGTHS AND DO NOT INCLUDE FITTINGS/APPURTENANCES. THE PIPE LENGTHS DO NOT DIRECTLY CORRESPOND WITH ALIGNMENT STATIONING. THE COST OF FITTINGS IS CONSIDERED SUBSIDIARY TO PIPE.

40. THE CONTRACTOR SHALL OBTAIN ALL ADDITIONAL LOCAL, STATE, AND FEDERAL PERMITS REQUIRED FOR CONSTRUCTION ACTIVITIES.

UTILITY CONTACTS

DEB ARY
WICHITA SANITARY SEWER
8TH FLOOR - CITY HALL
455 N. MAIN
WICHITA, KS 67202
316-268-4329

GREG LOLLEY
WICHITA WATER
8TH FLOOR - CITY HALL
455 N. MAIN
WICHITA, KS 67202
316-268-4334

JOE HICKLE
WICHITA STORM SEWER
8TH FLOOR - CITY HALL
455 N. MAIN
WICHITA, KS 67202
316-268-4307

JAMES WALBURN
COX COMMUNICATIONS
ENGINEERING DEPARTMENT
901 GEORGE WASHINGTON BLVD.
WICHITA, KS 67201
316-260-7491

ZACH LAWS
EVERGY
1900 E. CENTRAL (3RD FLOOR)
P.O. BOX 208
WICHITA, KS 67201
316-261-6264

SHANNON BRINKMEYER
AT&T WICHITA CENTRAL UNIT
154 N. BROADWAY, ROOM 210
WICHITA, KS 67202
316-268-2931

LENNY VOHS
AT&T - TRANSMISSION
770-335-8244

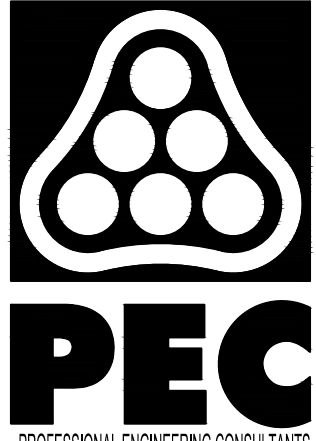
SARA PROCTOR
KANSAS GAS SERVICE
1021 E. 26TH ST. NORTH
WICHITA, KS 67219
316-832-3178

SUZETTE WILSON & CHRIS KELLY
BLACK HILLS ENERGY
2330 N. HOOVER ROAD
WICHITA, KS 67205
SUZETTE WILSON 316-941-1631
CHRIS KELLY 316-941-1633

KEVIN SCHEER, CENTRAL REGION MANAGER
SOUTHERN STAR CENTRAL GAS PIPELINE, INC.
4000 S. SENECA
WICHITA, KS 67217
ANDREW BUCHANAN - WICHITA AREA LAND REP.
316-529-8603 OFFICE

NOLAN DEALY
PHILLIPS 66 PIPELINE
2400 E. 37TH STREET NORTH
WICHITA, KS 67219
OFFICE 316-821-2267

JEFF CAPPS
ZAYO GROUP
102 N. MAIN
BUHLER, KS 67522
316-833-9032



SANITARY SEWER IMPROVEMENTS
COWSKIN FORCE MAIN
AND LIFT STATION 60
IMPROVEMENTS
 PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

Issue:	

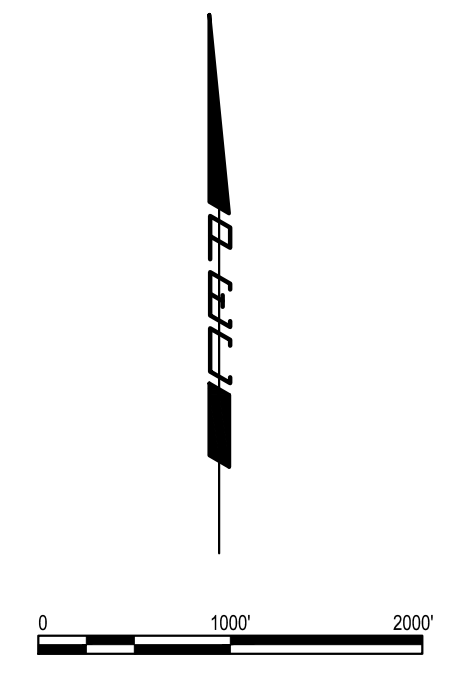
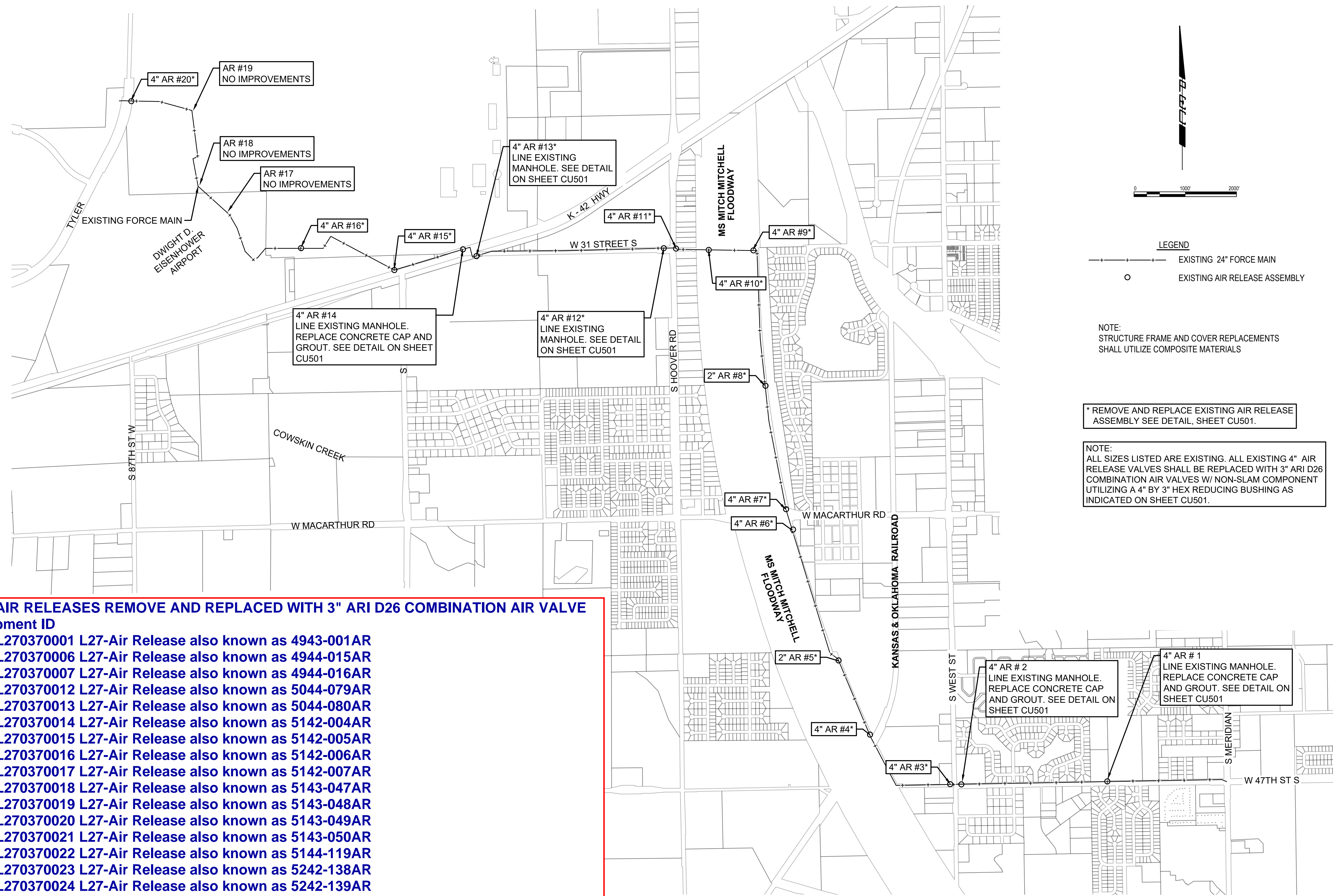
JOB NO.	35-210602-001-042
DATE	DECEMBER 2023
PM	TBK
DESIGNED BY	KJW
DRAWN BY	CSL
CHECKED BY	RWG

GENERAL NOTES

C-002

SAVED 8/29/2023 11:54:59 AM BY KONNER WELLS
 PLOTTED 12/14/2023 9:38:43 AM BY CATHY LINK
 U:\WICHITA-CIVIL\2021\210602\001\MUNI\DRAWINGS\AIR VALVE REPLACEMENTS\210602-001-C-101.DWG

ALL AIR RELEASES REMOVE AND REPLACED WITH 3" ARI D26 COMBINATION AIR VALVE
Equipment ID
 4927L270370001 L27-Air Release also known as 4943-001AR
 4927L270370006 L27-Air Release also known as 4944-015AR
 4927L270370007 L27-Air Release also known as 4944-016AR
 4927L270370012 L27-Air Release also known as 5044-079AR
 4927L270370013 L27-Air Release also known as 5044-080AR
 4927L270370014 L27-Air Release also known as 5142-004AR
 4927L270370015 L27-Air Release also known as 5142-005AR
 4927L270370016 L27-Air Release also known as 5142-006AR
 4927L270370017 L27-Air Release also known as 5142-007AR
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 4927L270370019 L27-Air Release also known as 5143-048AR
 4927L270370020 L27-Air Release also known as 5143-049AR
 4927L270370021 L27-Air Release also known as 5143-050AR
 4927L270370022 L27-Air Release also known as 5144-119AR
 4927L270370023 L27-Air Release also known as 5242-138AR
 4927L270370024 L27-Air Release also known as 5242-139AR



LEGEND
 ——— EXISTING 24" FORCE MAIN
 ○ EXISTING AIR RELEASE ASSEMBLY

NOTE:
 STRUCTURE FRAME AND COVER REPLACEMENTS SHALL UTILIZE COMPOSITE MATERIALS

* REMOVE AND REPLACE EXISTING AIR RELEASE ASSEMBLY SEE DETAIL, SHEET CU501.

NOTE:
 ALL SIZES LISTED ARE EXISTING. ALL EXISTING 4" AIR RELEASE VALVES SHALL BE REPLACED WITH 3" ARI D26 COMBINATION AIR VALVES W/ NON-SLAM COMPONENT UTILIZING A 4" BY 3" HEX REDUCING BUSHING AS INDICATED ON SHEET CU501.



**SANITARY SEWER IMPROVEMENTS
 COWSKIN FORCE MAIN
 AND LIFT STATION 60
 IMPROVEMENTS**

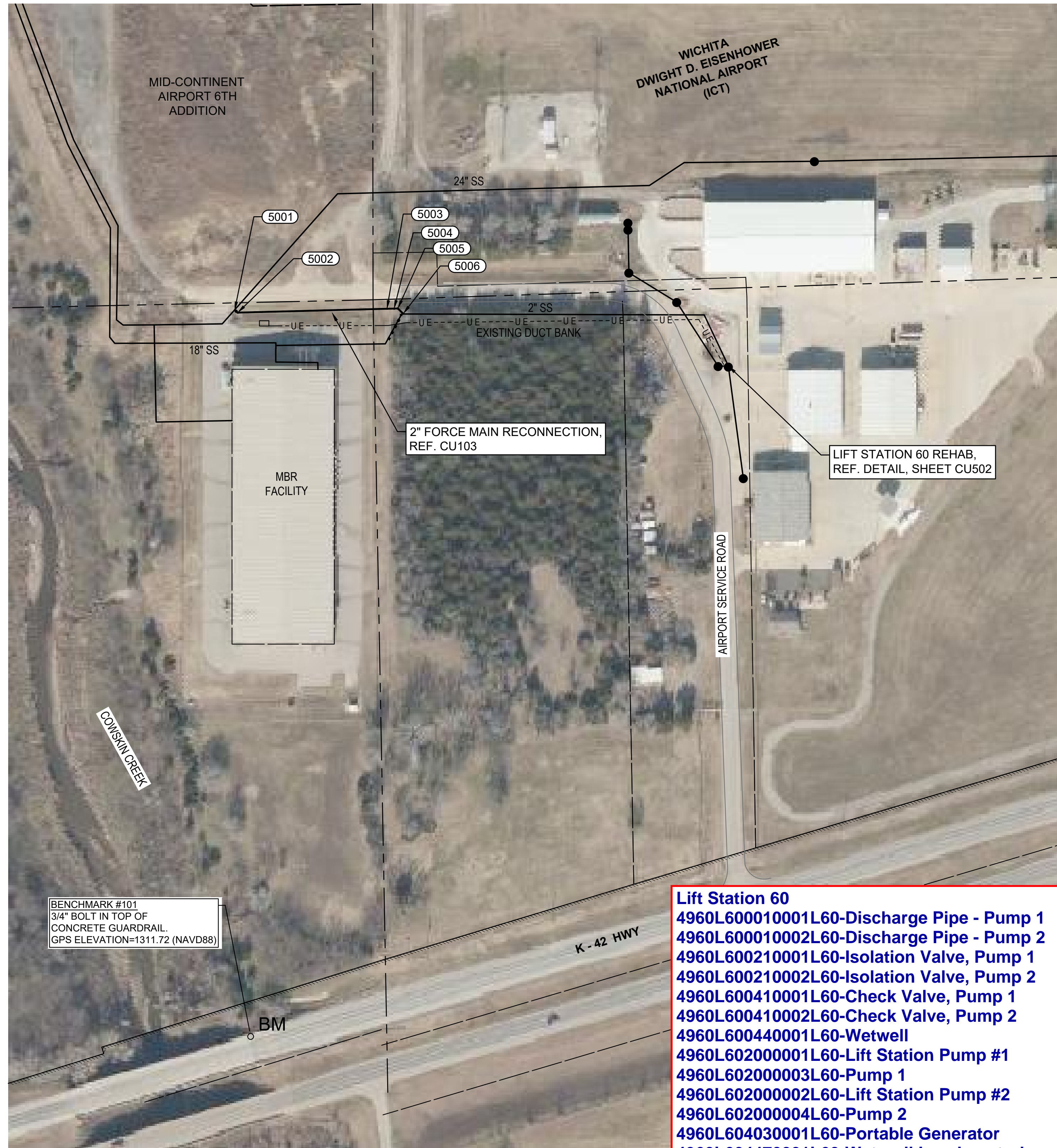
PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

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DRAWN BY	CSL
CHECKED BY	RWG

EXISTING AIR RELEASE IMPROVEMENTS

CU101

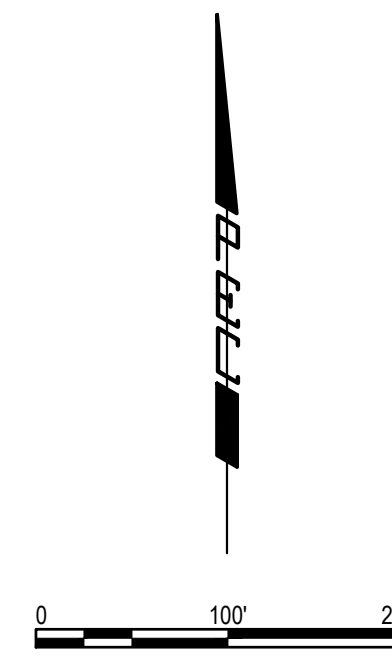
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 U:\WICHITA-CIVIL\2021\210602\001\MUNI\DRAWINGS\AIR VALVE REPLACEMENTS\210602-001-CU102.DWG



BENCHMARK #101
 3/4" BOLT IN TOP OF
 CONCRETE GUARDRAIL
 GPS ELEVATION=1311.72 (NAVD88)

LIFT STATION 60 REHAB

- Lift Station 60**
 4960L600010001L60-Discharge Pipe - Pump 1
 4960L600010002L60-Discharge Pipe - Pump 2
 4960L600210001L60-Isolation Valve, Pump 1
 4960L600210002L60-Isolation Valve, Pump 2
 4960L600410001L60-Check Valve, Pump 1
 4960L600410002L60-Check Valve, Pump 2
 4960L600440001L60-Wetwell
 4960L602000001L60-Lift Station Pump #1
 4960L602000003L60-Pump 1
 4960L602000002L60-Lift Station Pump #2
 4960L602000004L60-Pump 2
 4960L604030001L60-Portable Generator
 4960L604470001L60-Wet well Level control
 4960L605000001L60-Control Panel, Pumps
 4960L600010003L60-Forcemain-Piping

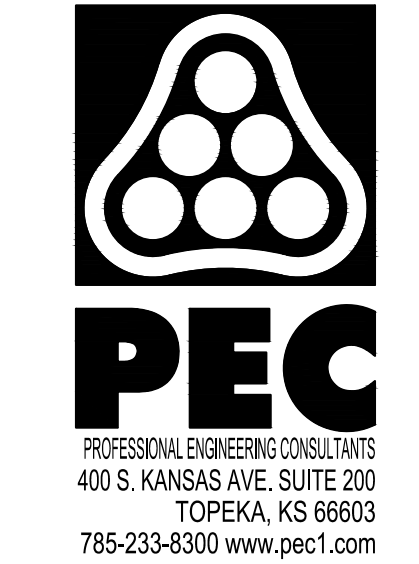


FITTING TABLE				
ID	ALIGNMENT	STATION	COORDINATES	DESCRIPTION
5001	PROP 2 INCH FM	10+00.0	N: 1,667,206.2070 E: 1,620,542.1333	2" SADDLE CONNECTION
5002	PROP 2 INCH FM	10+05.8	N: 1,667,202.4238 E: 1,620,546.5008	2" 45° BEND
5003	PROP 2 INCH FM	12+24.6	N: 1,667,208.0577 E: 1,620,765.2849	2" 22.5° BEND (VERTICAL)
5004	PROP 2 INCH FM	12+35.0	N: 1,667,208.3246 E: 1,620,775.6537	2" 22.5° BEND (VERTICAL)
5005	PROP 2 INCH FM	12+40.4	N: 1,667,208.4640 E: 1,620,781.0681	2" 45° BEND
5006	PROP 2 INCH FM	12+51.4	N: 1,667,200.9479 E: 1,620,789.0119	2" CONNECTION

5000 = COORDINATE POINT NO.

BENCHMARK #101
 3/4" BOLT IN TOP OF
 CONCRETE GUARDRAIL
 GPS ELEVATION=1311.72 (NAVD88)

Merestone Surveying Job #22-01-218
 NAD83 Kansas State Plane, South Zone, US Survey Foot
 NO C.A.F. SCALE FACTOR APPLIED
 Vertical Datum: NAVD88 (Geoid18)



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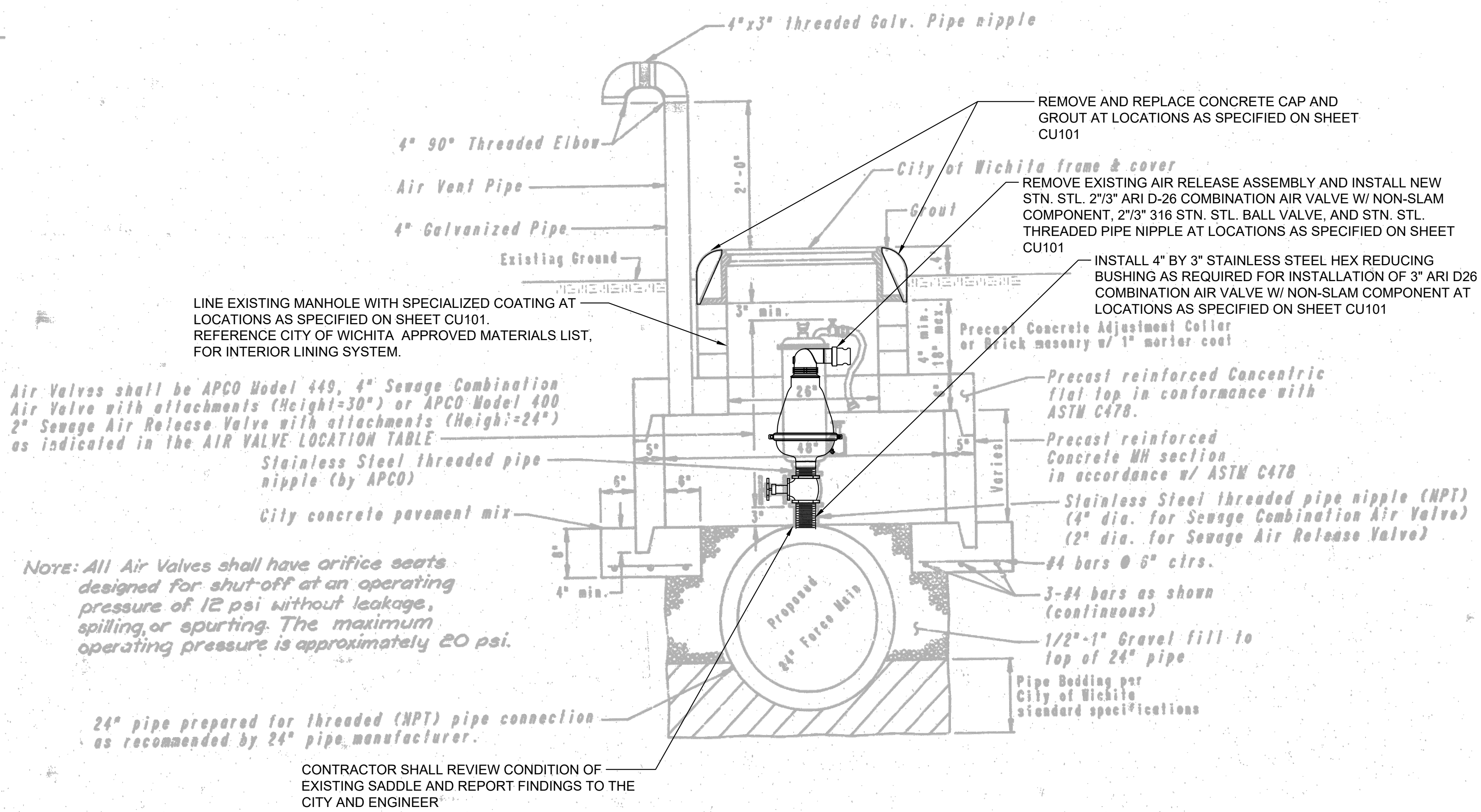
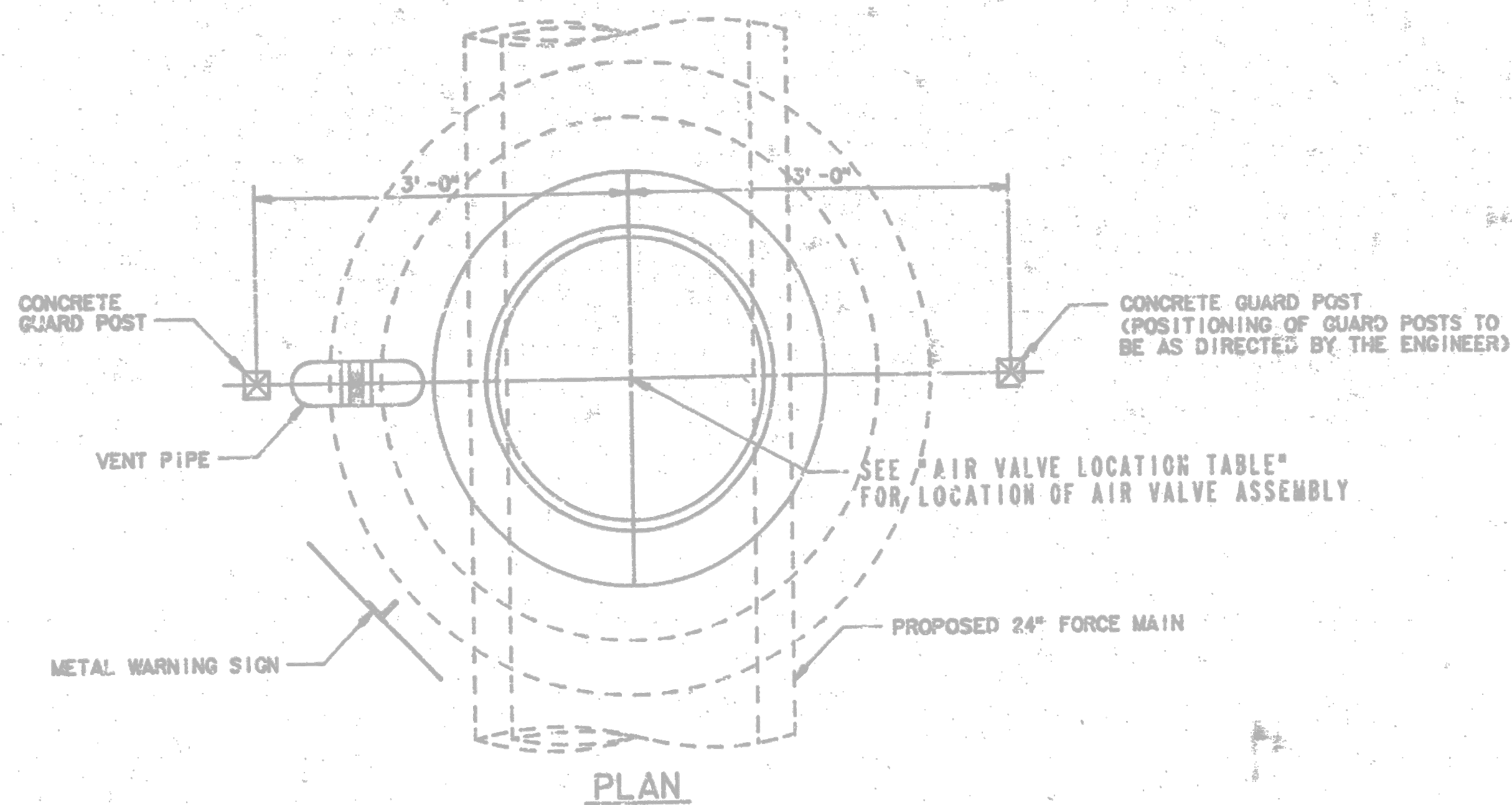
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LIFT STATION 60 FORCE MAIN
 CONNECTION KEY MAP

CU102

SAVED 12/14/2023 9:38:11 AM BY CATHY LINK
 PLOTTED 12/14/2023 9:38:59 AM BY CATHY LINK
 U:\WICHITA-CIVIL\2021\210602\001\MUNI\DRAWINGS\AIR VALVE REPLACEMENTS\210602-001-CU501.DWG



EXISTING AIR VALVE ASSEMBLY REPLACEMENT DETAIL
 NOT TO SCALE

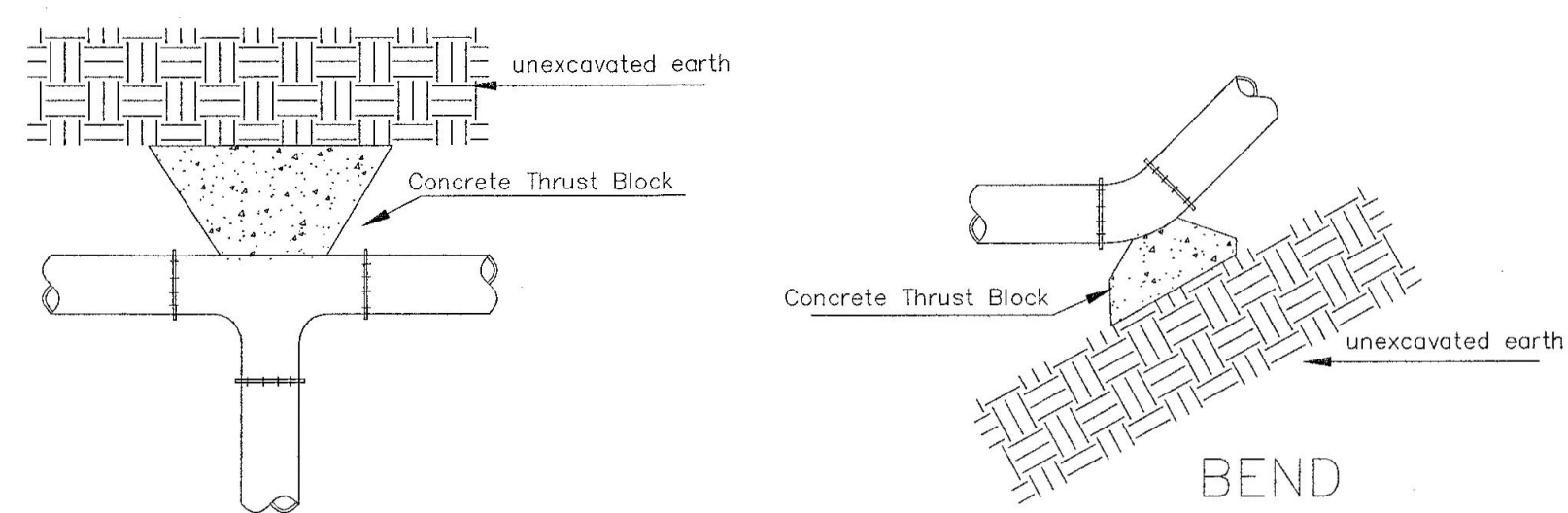


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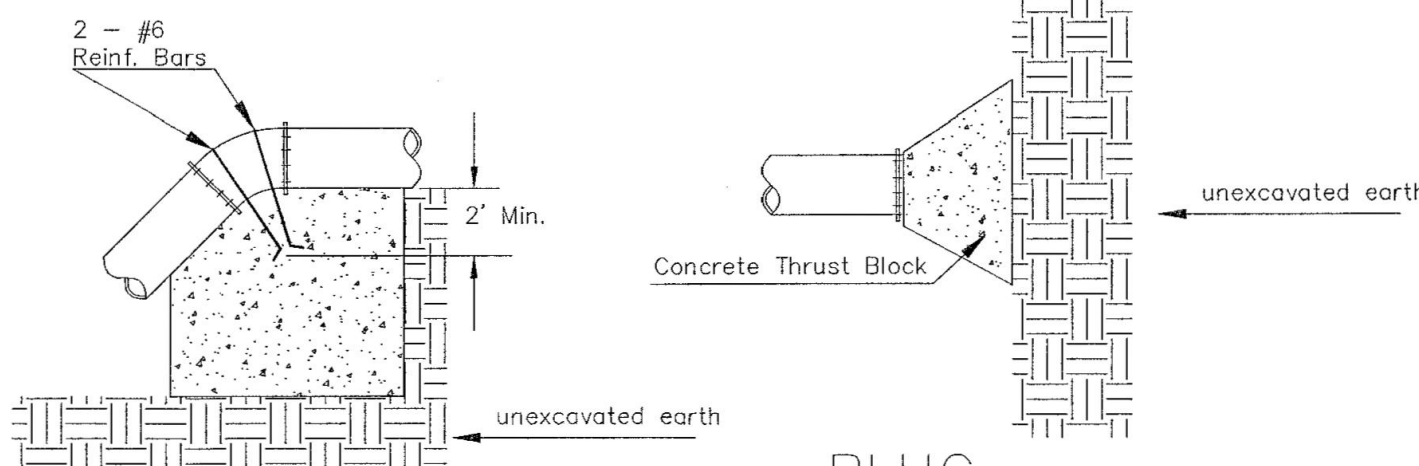
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EXISTING AIR VALVE REPLACEMENT DETAIL

CU501



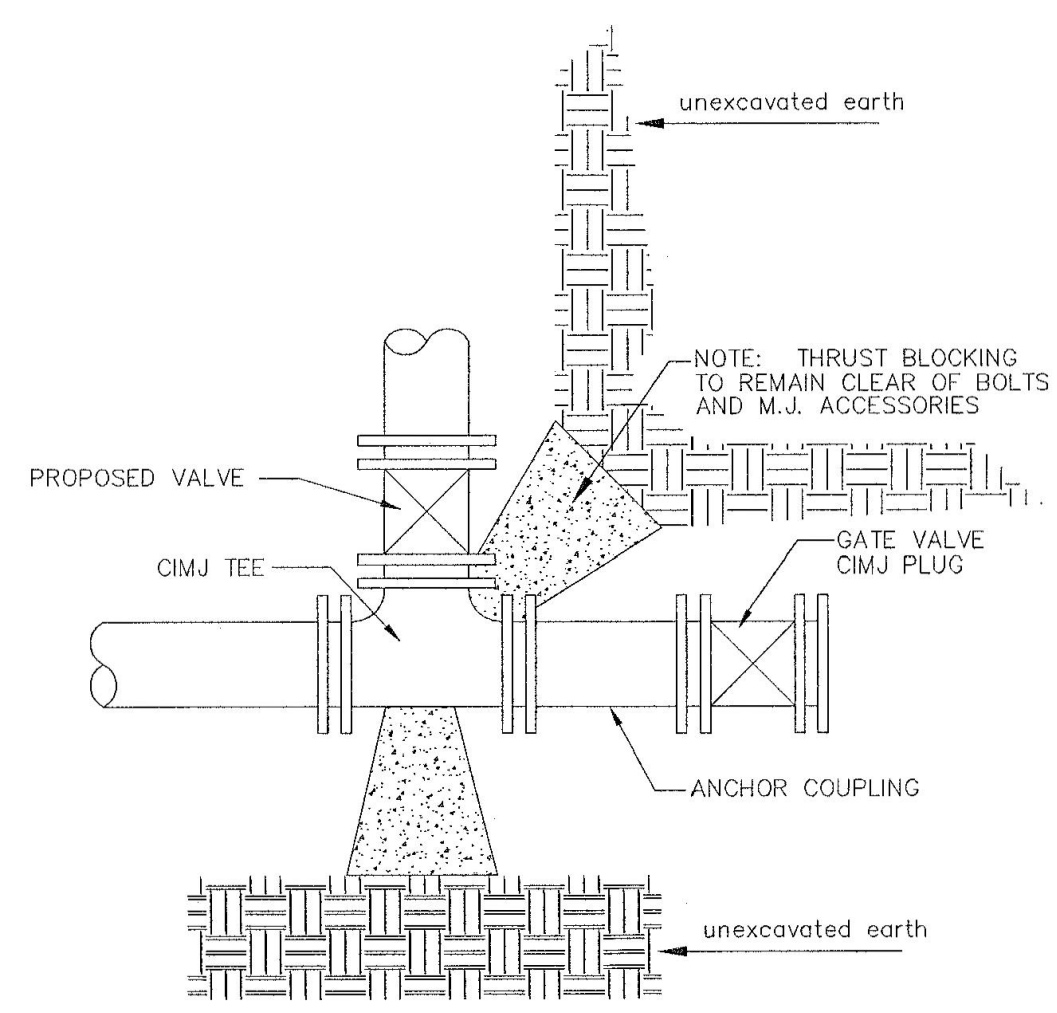
TEE



VERTICAL BEND

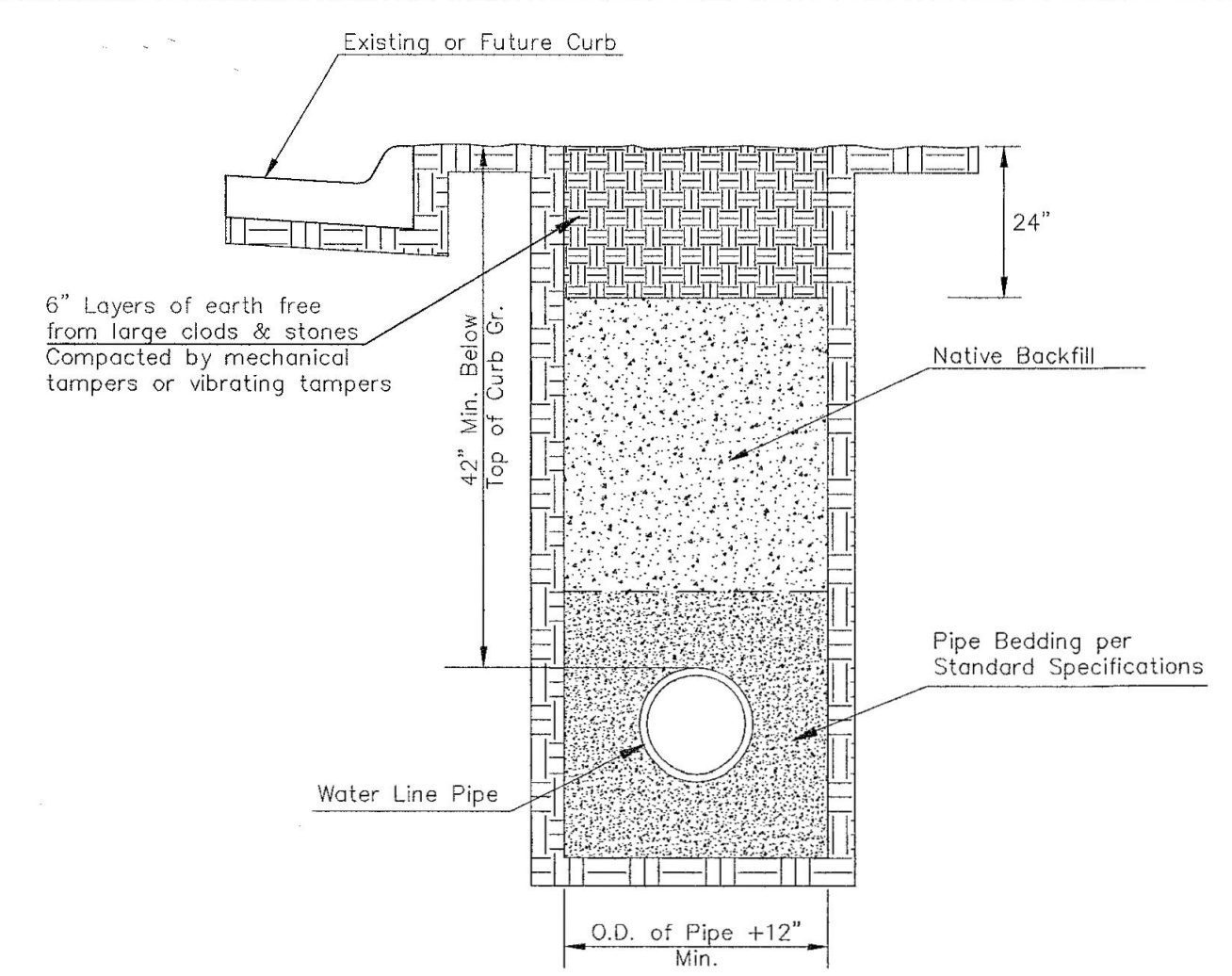
PIPE SIZE	THRUST AT FITTINGS IN TONS-AT 150#/IN ² P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

TYPICAL THRUST BLOCKS



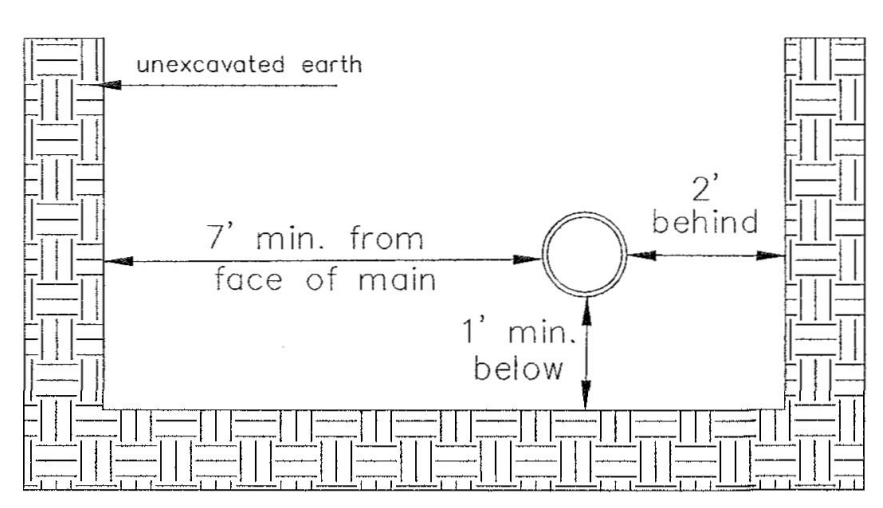
KEY BLOCK DETAIL

* PLANS GOVERN
UNLESS OTHERWISE NOTED ON PLANS



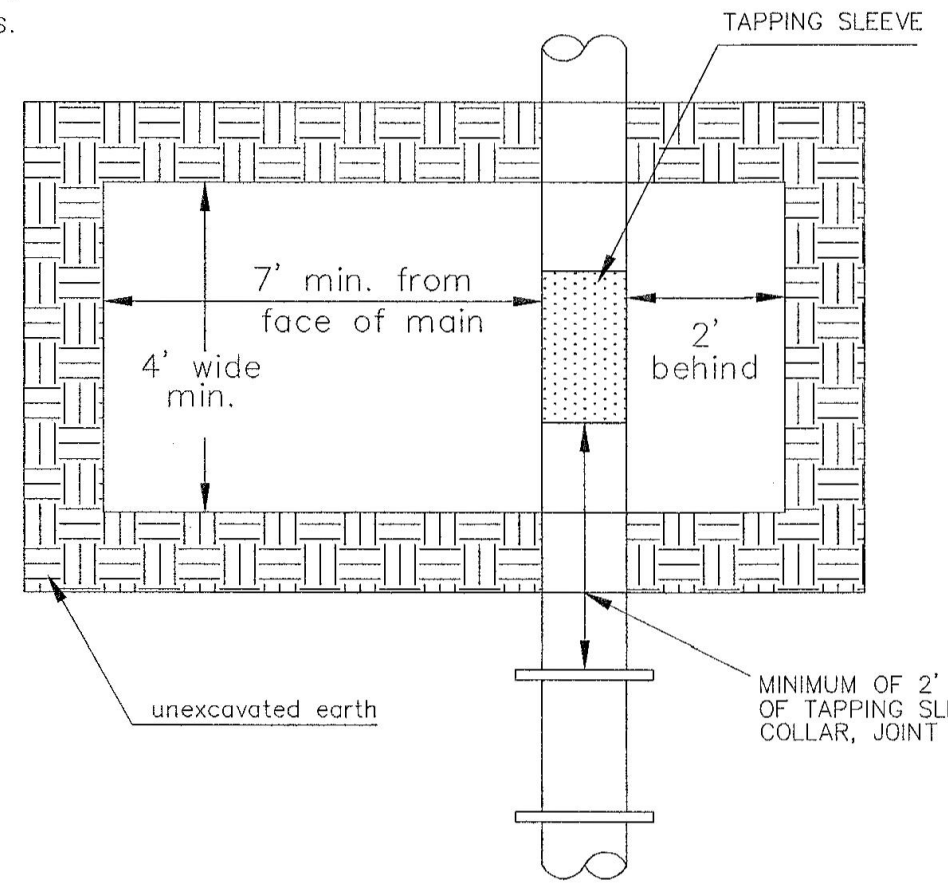
TRENCH COMPACTION IN ROAD RIGHT-OF-WAY

SIDE VIEW

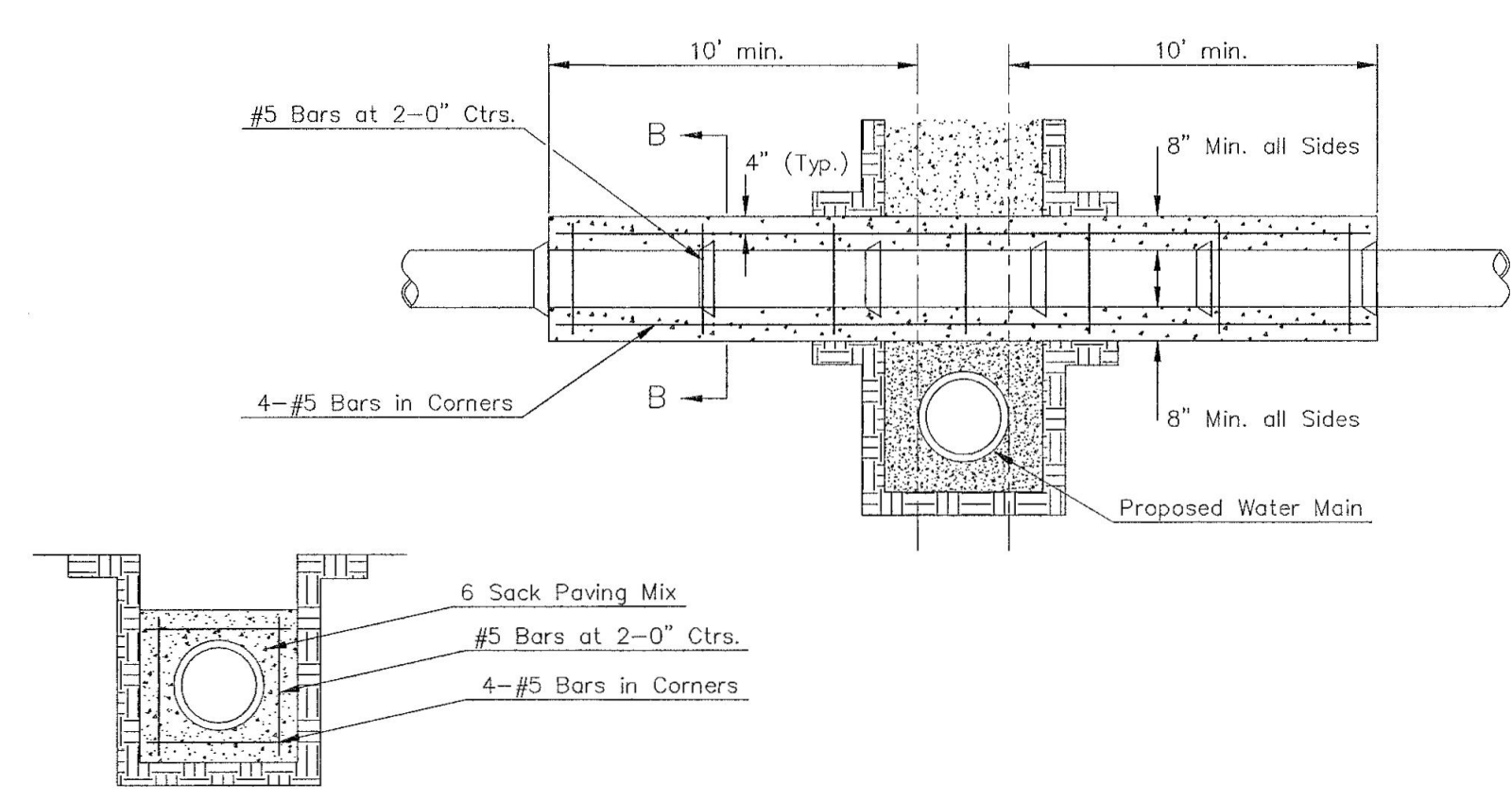


TOP VIEW

Note: When shoring is required it is to be per The City of Wichita Standard Specifications.



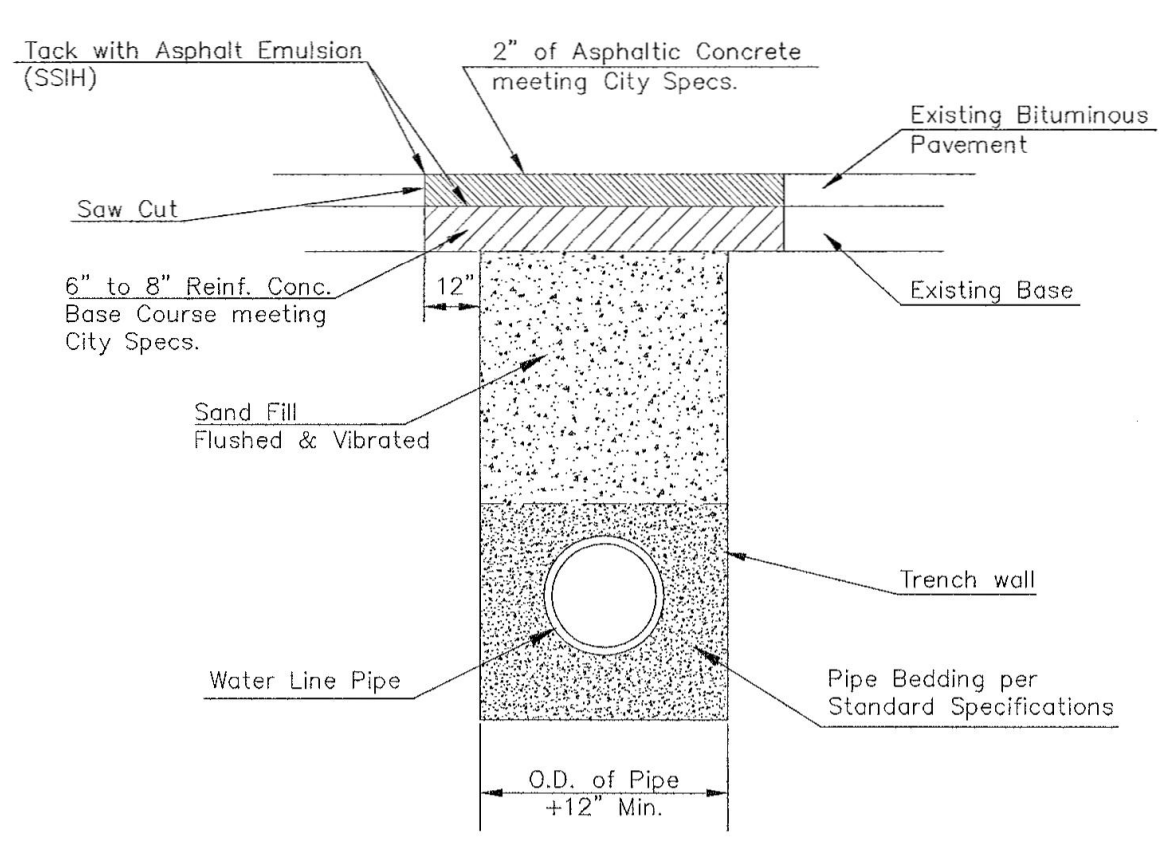
EXCAVATION FOR WET TAP



SECTION B-B

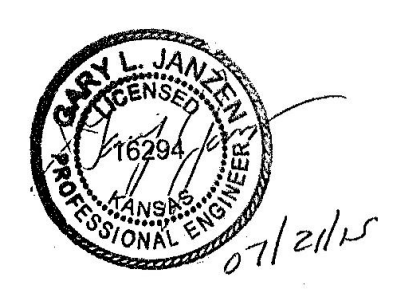
REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER

Note: Encasement to begin and end at a Bell on Sanitary Sewer Pipe.



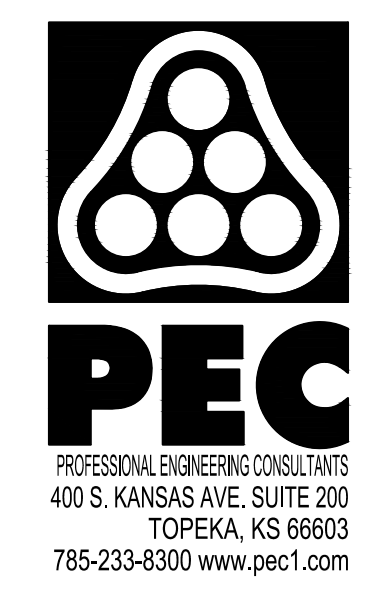
PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS

REVISED: JULY 2015



MISCELLANEOUS WATER DETAILS		
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		

WL-104



SANITARY SEWER IMPROVEMENTS
COWSKIN FORCE MAIN
AND LIFT STATION 60
IMPROVEMENTS
PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-2022-040654

Issue:	

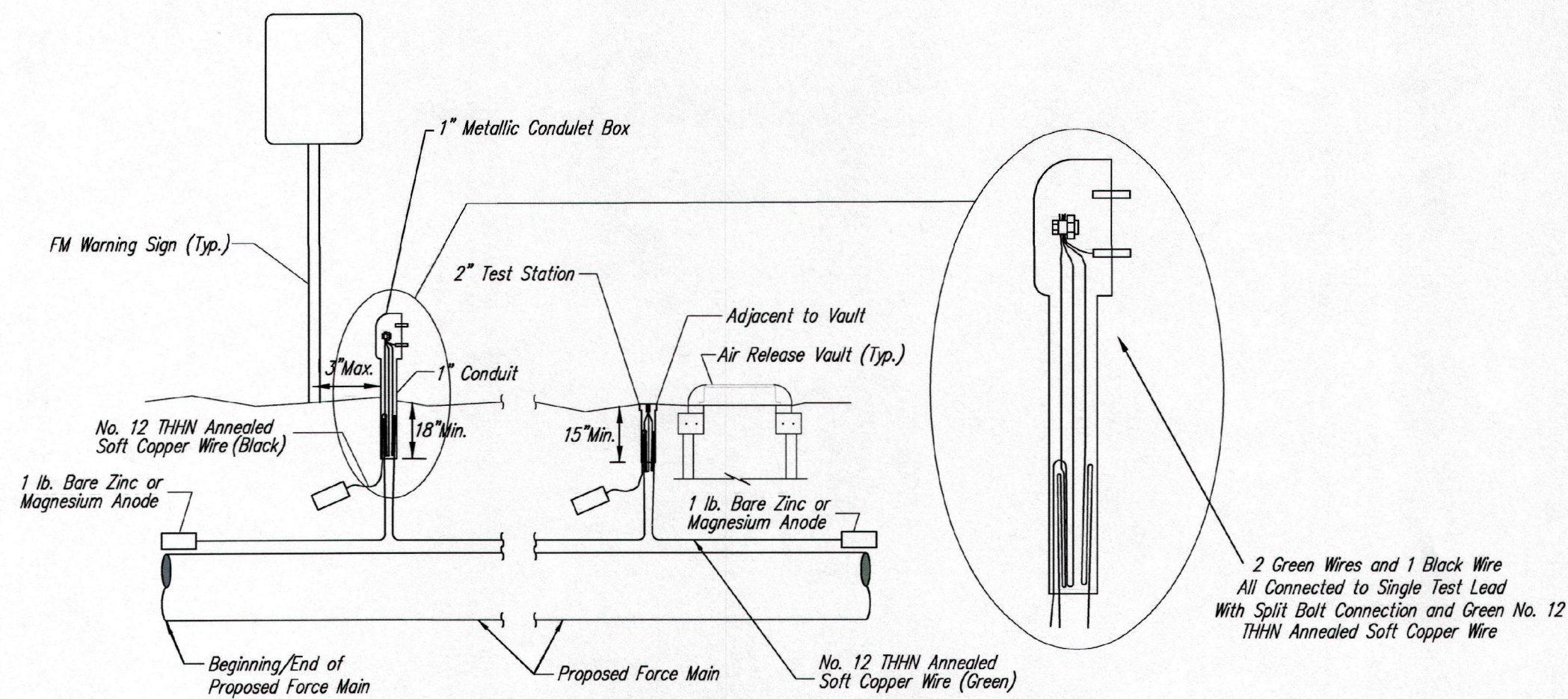
JOB NO.	35-210602-001-042
DATE	DECEMBER 2023
PM	TBK
DESIGNED BY	KJW
DRAWN BY	CSL
CHECKED BY	RWG

MISCELLANEOUS WATER DETAILS

CU503

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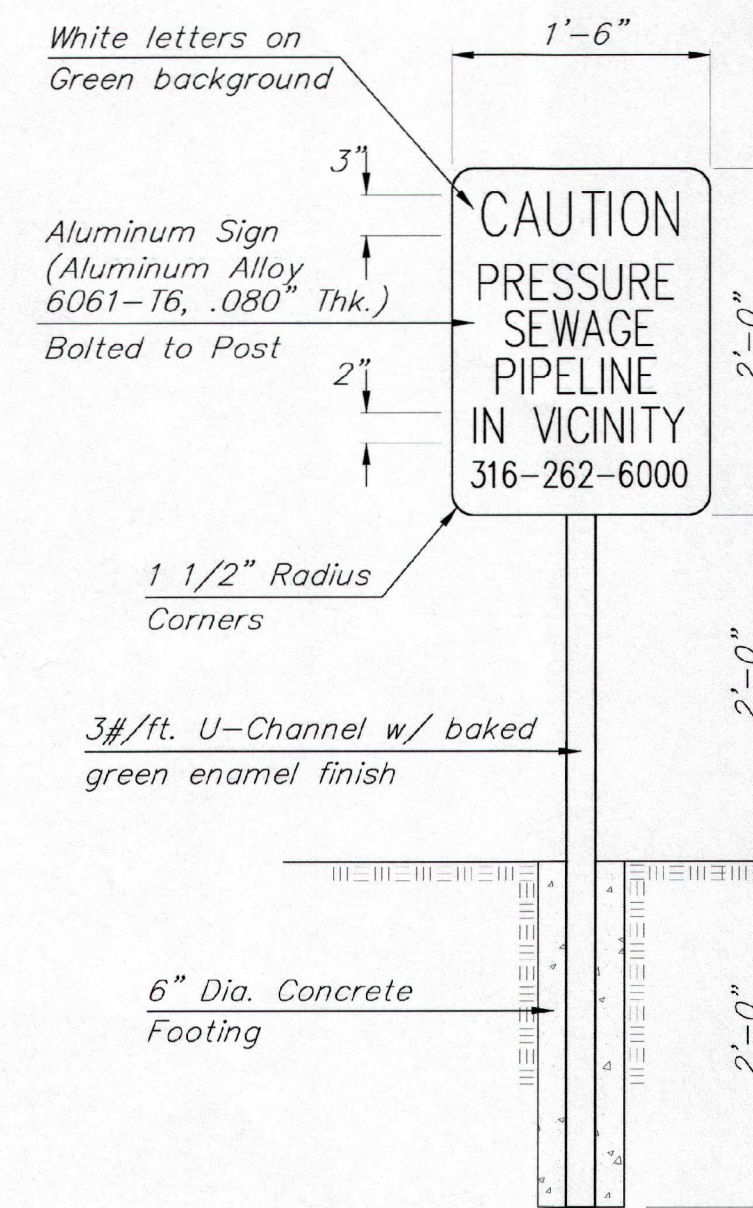
TRACER WIRE
 Conductive type pipe locator/tracer wire shall be installed to locate all sanitary sewer force main pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the force mains and pulled with the pipe. Split-bolt connectors shall be used at splice locations. Electrical tape shall cover all splices so no bare wire is exposed. Test stations shall be installed adjacent to all air release vaults and force main warning signs. Any exceptions to the location of test stations shall be approved by the engineer. At each test station, the tracer wire shall be connected to a 1 lb. Zinc or magnesium anode. Anodes shall also be attached to the tracer wire at both the beginning and the end of the proposed sewer line. A typical layout of the tracer wire and test station is provided in the above figure.

WIRE
 The tracer wire shall be Green No. 12 THHN annealed soft copper wire with thermal plastic insulation. The insulation shall be heat, oil, and gasoline resistant as manufactured by Temple Electric or approved equal. To allow for grade adjustment, a minimum of 12" of excess wire shall be coiled at the bottom of the test station for all wires. The insulation sheathing shall be removed such that 1" bare copper wire is exposed at all points of connection.

TEST STATIONS
 The test station for the force main warning signs applications shall be a 1 inch galvanized "condulet" style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for air release vault applications shall be 2 inch flush style test station T2PS38 as manufactured by HANDLEY Industries or approved equal. The conduit style shall be attached to a 1 inch rigid galvanized conduit with a minimum length of 36" and plastic end bushing. The flush style shall have the word "Sewer" stamped or molded into the lid. All test stations shall be manufactured using molded green tops or sufficiently coated with green enamel paint. The tracer wire and the anode wire shall be installed to allow 10 inches of wire within the test station. In concrete environments such as sidewalks or in the downtown area the contractor shall use the flush style test station. The location of all test stations shall be approved by the engineer, recorded, and shown in the as-built drawings.

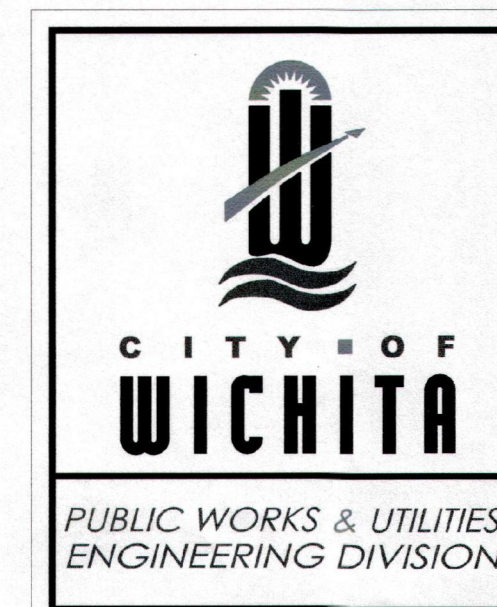
ANODES
 The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the sanitary sewer force main at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

SEWER TRACER WIRE DETAIL
 COST IS SUBSIDIARY TO PIPE INSTALLATION



FORCE MAIN WARNING SIGN DETAIL

Note: Install Metal Warning Signs at Locations as Shown on the Plans. Exact Locations of Warning Signs shall be Approved by the Engineer.



TRACER WIRE & WARNING SIGN FOR SANITARY SEWER FORCE MAIN	
CITY ENGINEER GARY JANZEN, P.E.	
PROJECT NUMBER	OCA NUMBER
	DATE 12/2012
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501	
SHEET	

SS-106



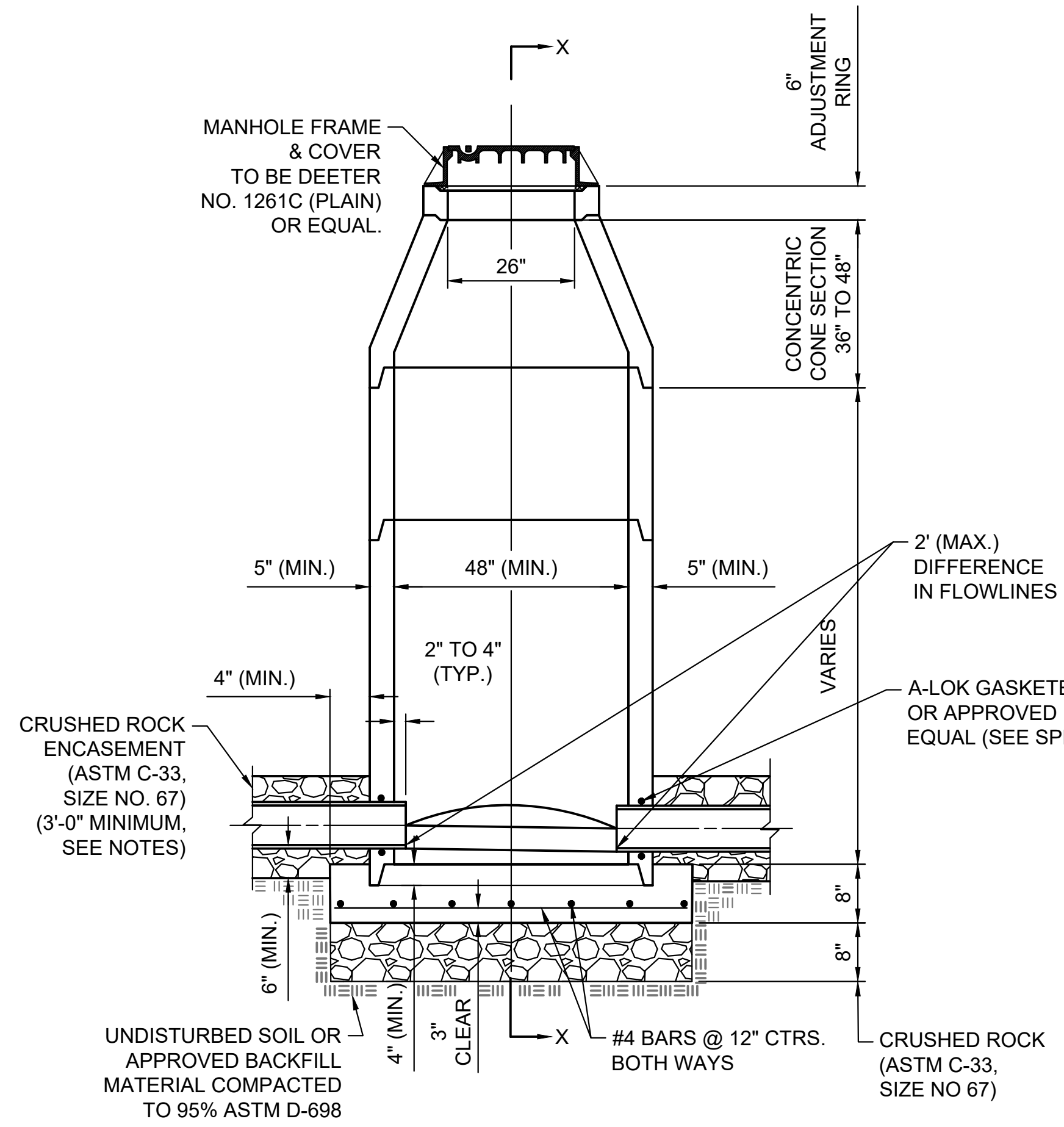
SANITARY SEWER IMPROVEMENTS
COWSKIN FORCE MAIN
AND LIFT STATION 60
IMPROVEMENTS
 PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

Issue:	
JOB NO.	35-210602-001-042
DATE	DECEMBER 2023
PM	TBK
DESIGNED BY	KJW
DRAWN BY	CSL
CHECKED BY	RWG

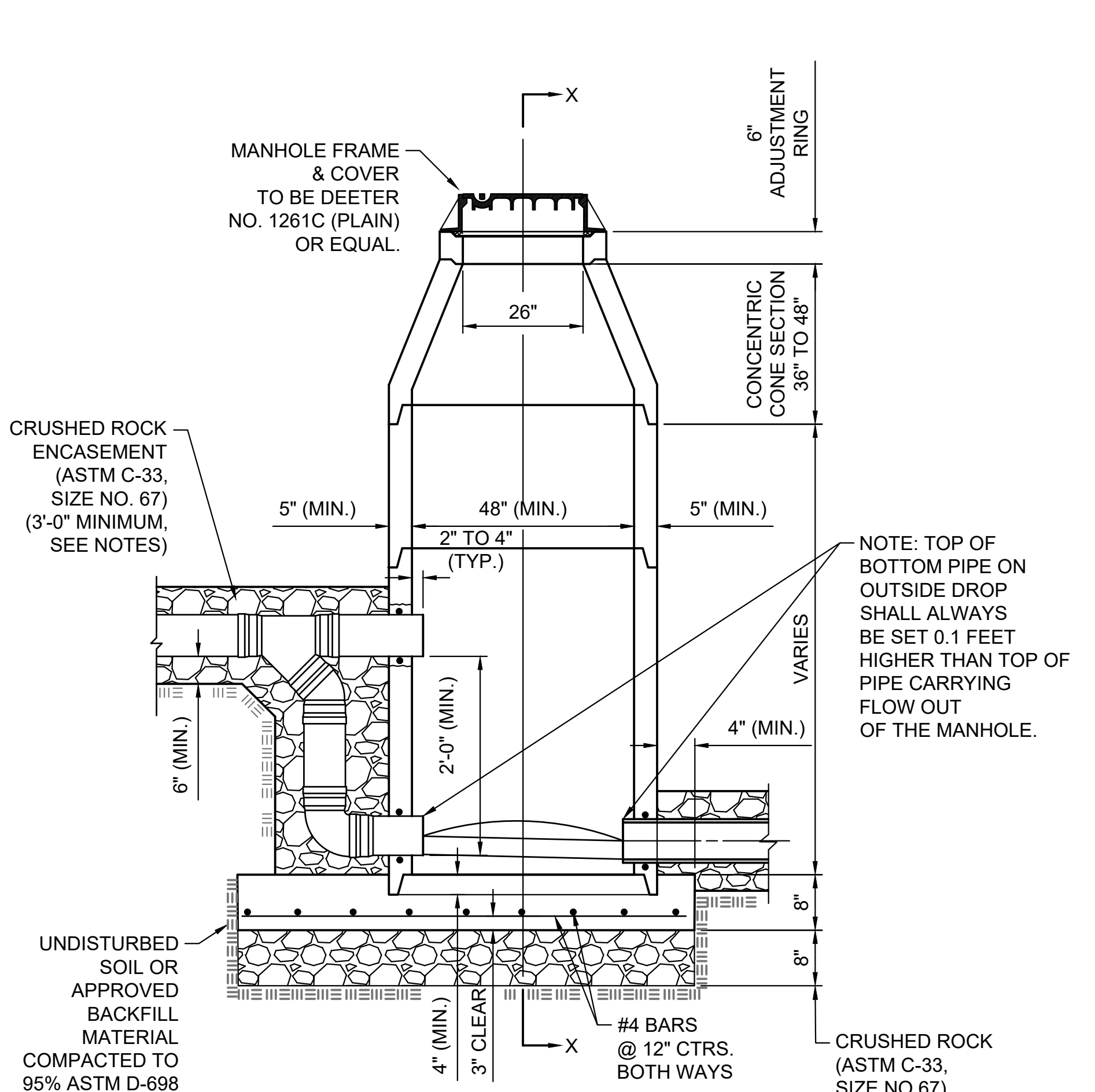
TRACER WIRE AND WARNING SIGN

CU504

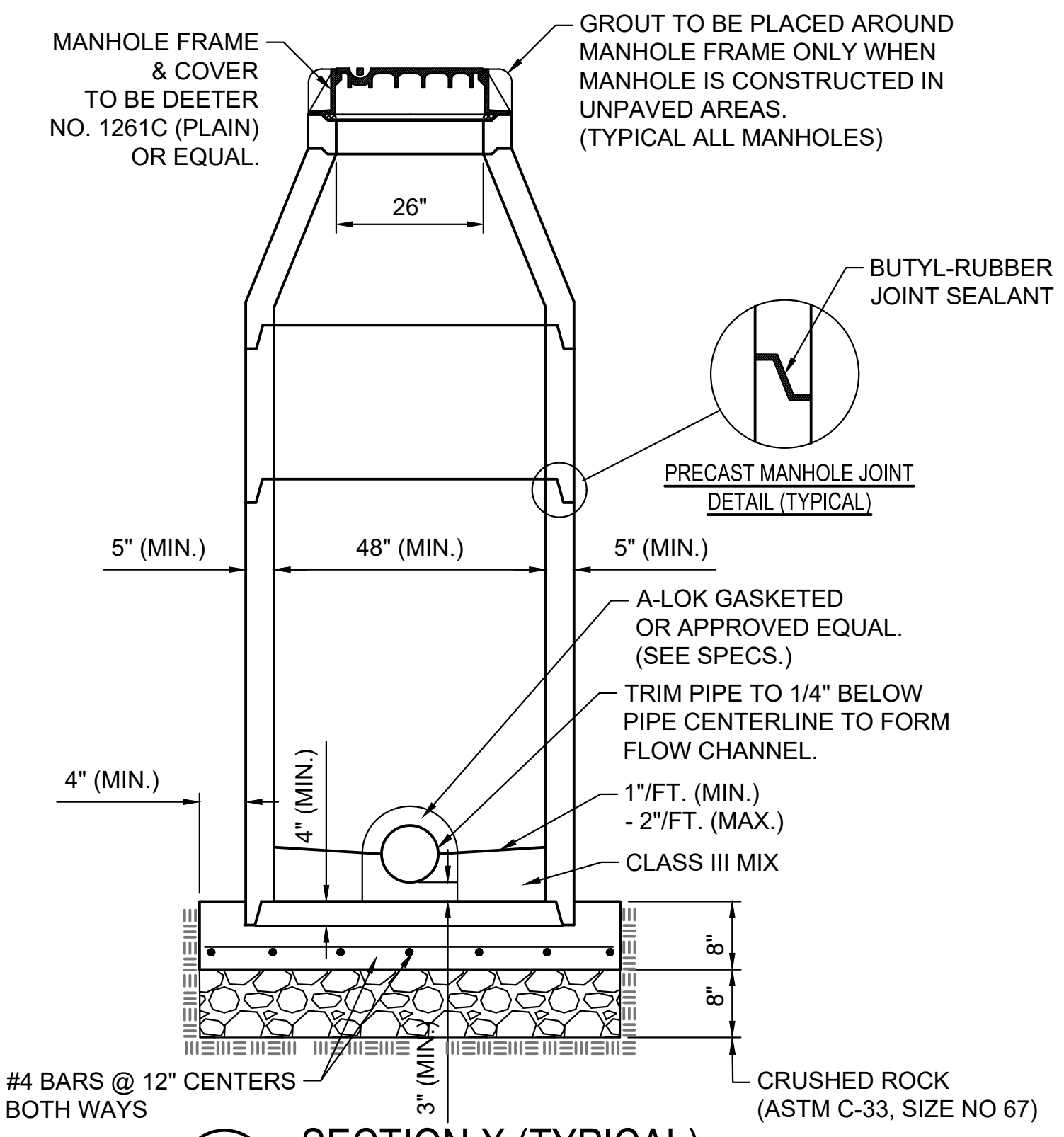
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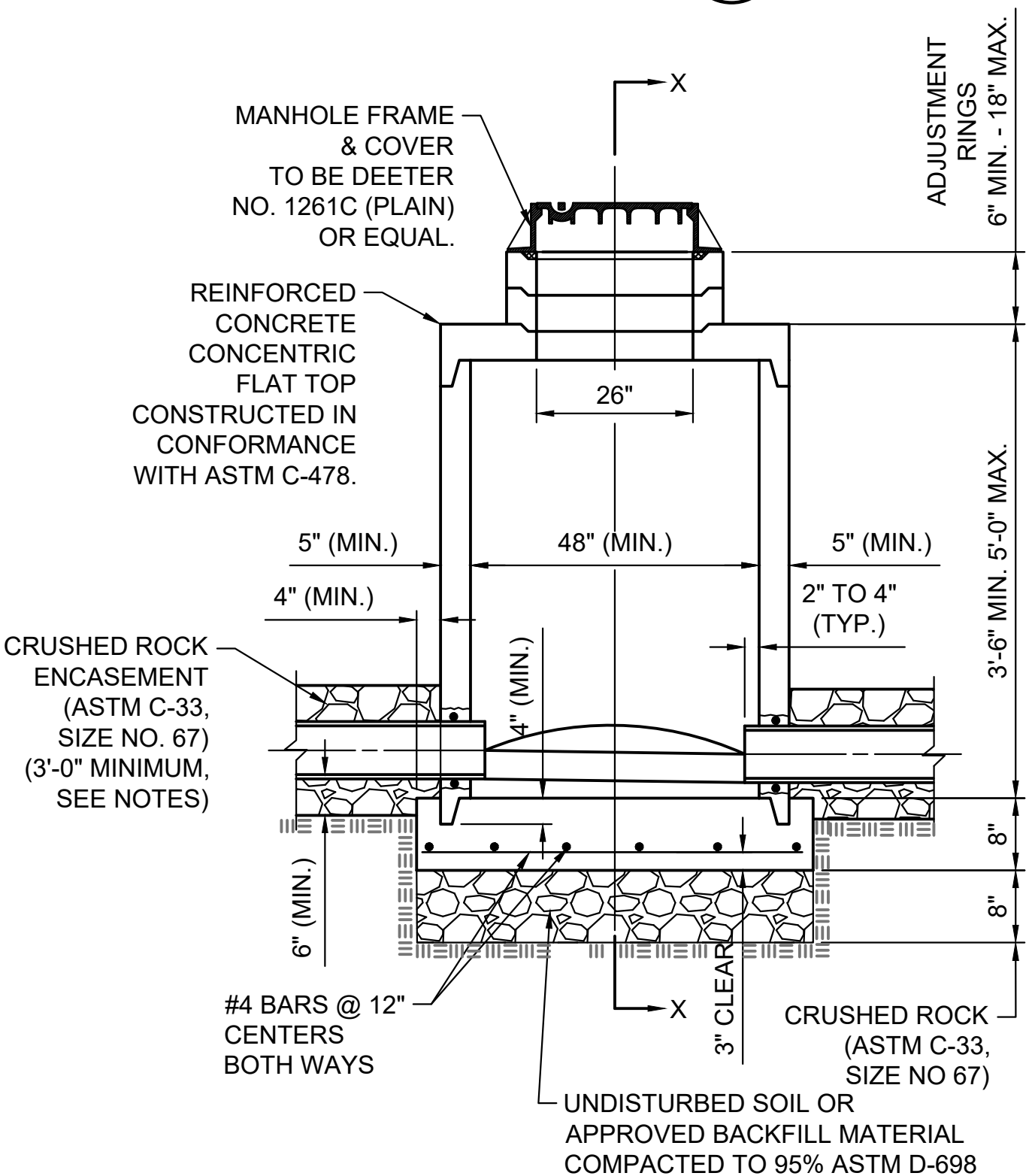
PRECAST STANDARD MANHOLE
 NOT TO SCALE



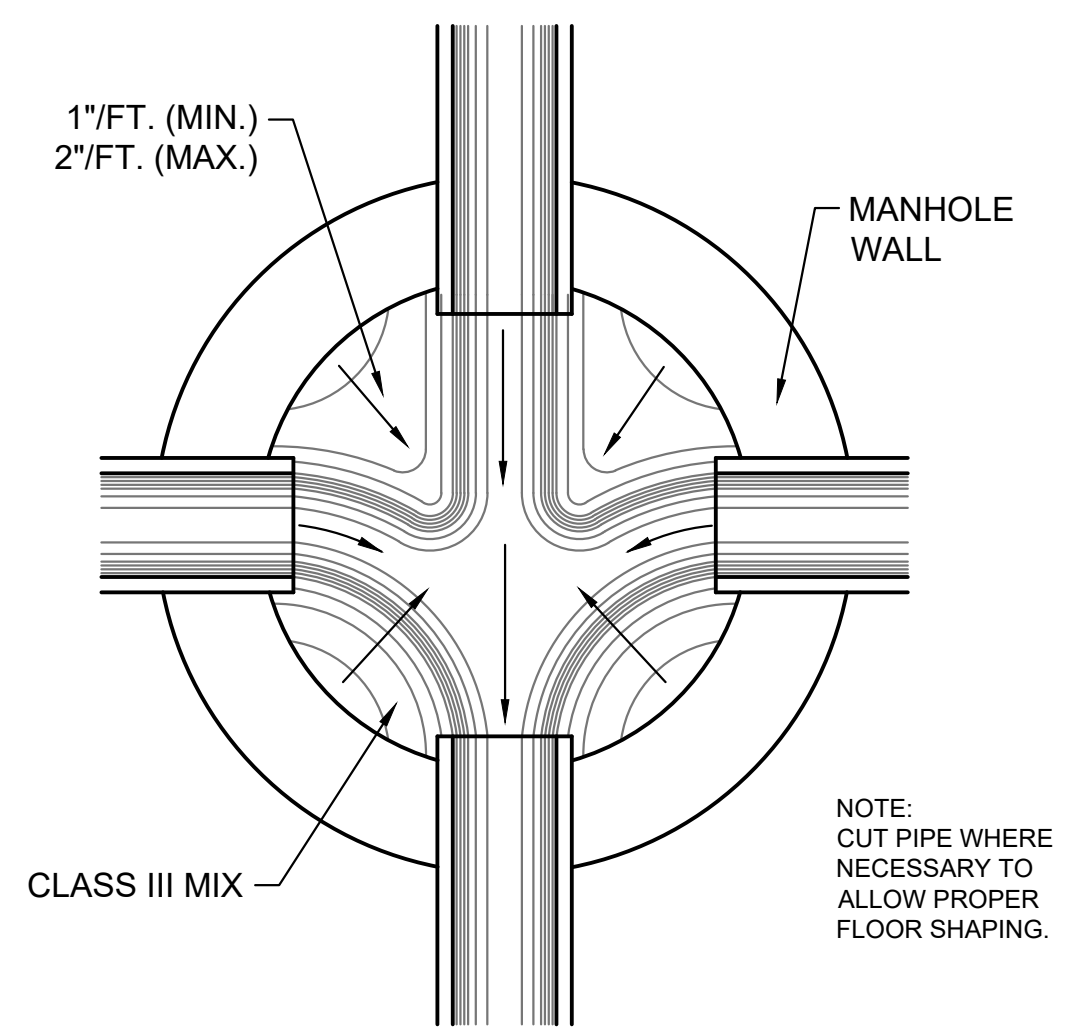
PRECAST OUTSIDE DROP MANHOLE
 NOT TO SCALE



SECTION X (TYPICAL)
 NOT TO SCALE



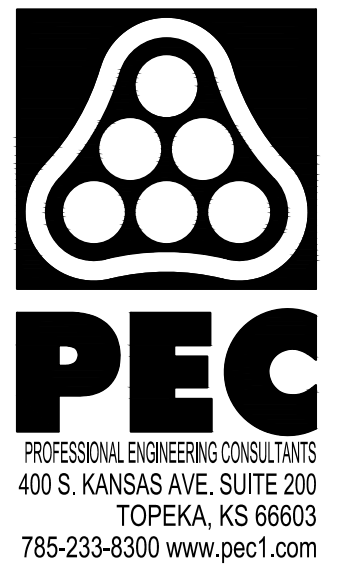
PRECAST SHALLOW MANHOLE
 NOT TO SCALE



TYPICAL MANHOLE FLOOR SHAPING
 NOT TO SCALE

PRECAST MANHOLE NOTES

- MANHOLE SUBGRADE SHALL HAVE A MINIMUM OF 1,500 PSF SOIL BEARING CAPACITY. IF MANHOLE SUBGRADE IS UNSTABLE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
- STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
- DOG HOUSE MANHOLES MAY BE USED WHERE CONNECTING TO EXISTING SEWERS. APPROVED FLEXIBLE WATERSTOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS OF ASTM C-923 SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN PLASTIC PIPE IS USED. SEWER PIPE EXTENDING FROM MANHOLES SHALL BE SUPPORTED WITH CRUSHED ROCK ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL, WHEN A-LOK GASKETS ARE NOT PROVIDED FOR THE PIPE PENETRATION TO THE MANHOLE.
- THE MANHOLE FRAME SHALL BE SEATED ON AN APPROVED BUTYL-RUBBER SEALANT TO PROVIDE A WATER-TIGHT SEAL BETWEEN THE MANHOLE ADJUSTMENT RING AND THE MANHOLE FRAME.
- GASKETED PIPE PLUGS AND CAPS SHALL BE PROVIDED BY THE PIPE SUPPLIER.
- ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
- TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
- CONCRETE FOR MANHOLE BASES SHALL BE CLASS I AS DESCRIBED IN THE SPECIFICATIONS.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE. CAST IN PLACE BASES SHALL BE 8" THICK (MIN.) WITH #4 BARS @ 12" CENTERS.
- MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN.)
- INSIDE DIAMETER OF FIVE-FOOT DIAMETER PRECAST MANHOLES SHALL REMAIN CONSTANT TO THE LOCATION OF THE REDUCING FLAT TOP WHICH CONNECTS THE FOUR-FOOT DIAMETER CONE SECTION TO THE FIVE FOOT DIAMETER MANHOLE BARREL.
- ALL INTERIOR CONCRETE SURFACES ABOVE THE BENCH OF PRECAST MANHOLES SHALL BE COATED PER THE STANDARD SPECIFICATIONS.
- EXTERIOR MANHOLE WALLS SHALL BE COATED PER THE STANDARD SPECIFICATIONS.
- MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTORS OPTION. MANHOLES WITH PRECAST BASES SHALL HAVE A-LOK OR APPROVED EQUAL GASKETS CAST INTO THE MANHOLE WALL FOR ALL PIPE PENETRATIONS. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL. CRUSHED ROCK SHALL MEET THE REQUIREMENTS FOR GRANULAR BEDDING MATERIAL.
- MANHOLE SECTIONS SHALL BE SUPPLIED WITH RECESSED LIFTING EYES. LIFTING EYE RECESSES SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.



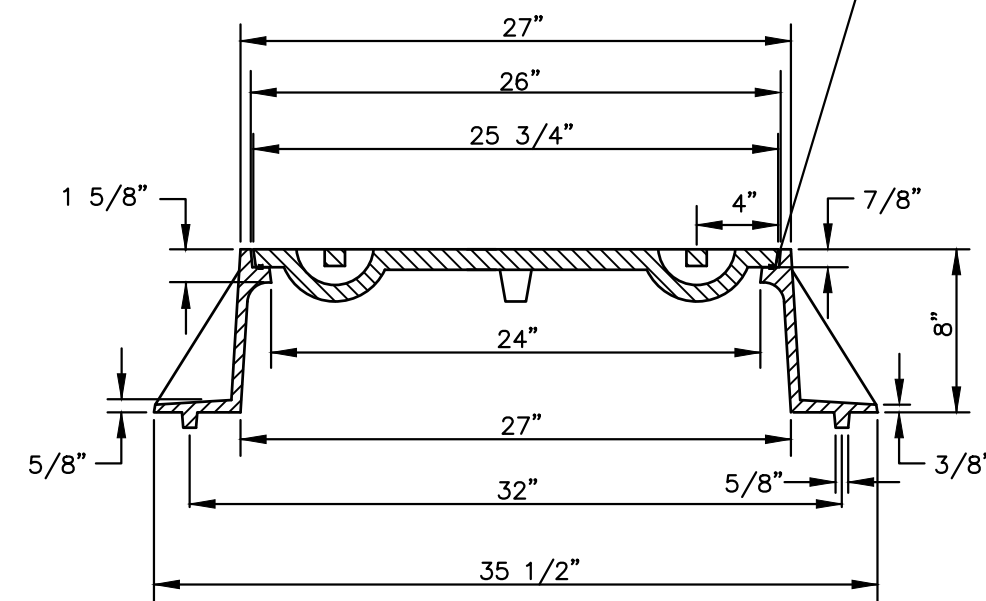
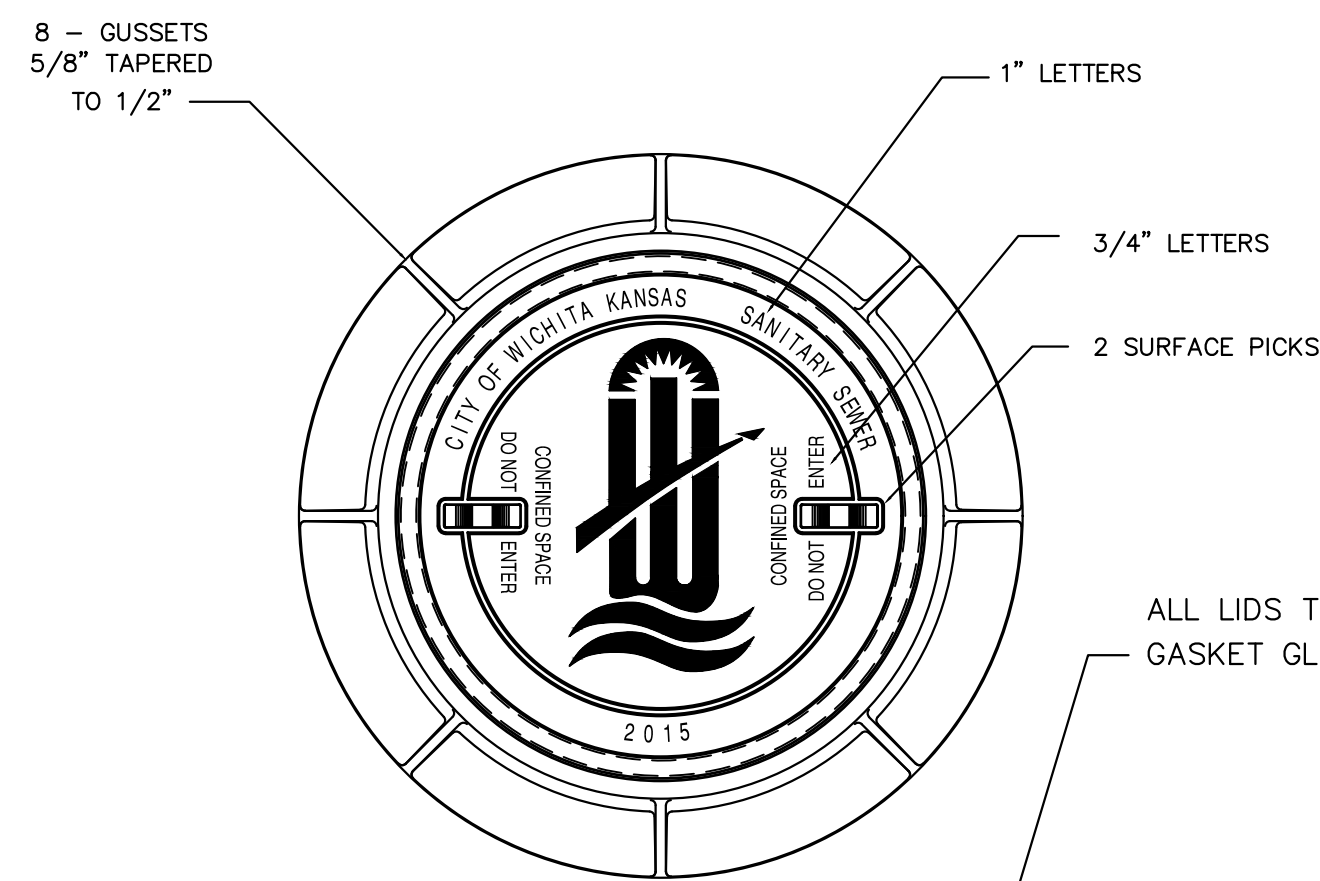
**SANITARY SEWER IMPROVEMENTS
 COWSKIN FORCE MAIN
 AND LIFT STATION 60
 IMPROVEMENTS**
 PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

Issue:	
JOB NO.	35-210602-001-042
DATE	DECEMBER 2023
PM	TBK
DESIGNED BY	KJW
DRAWN BY	CSL
CHECKED BY	RWG

PRECAST SANITARY SEWER MANHOLE

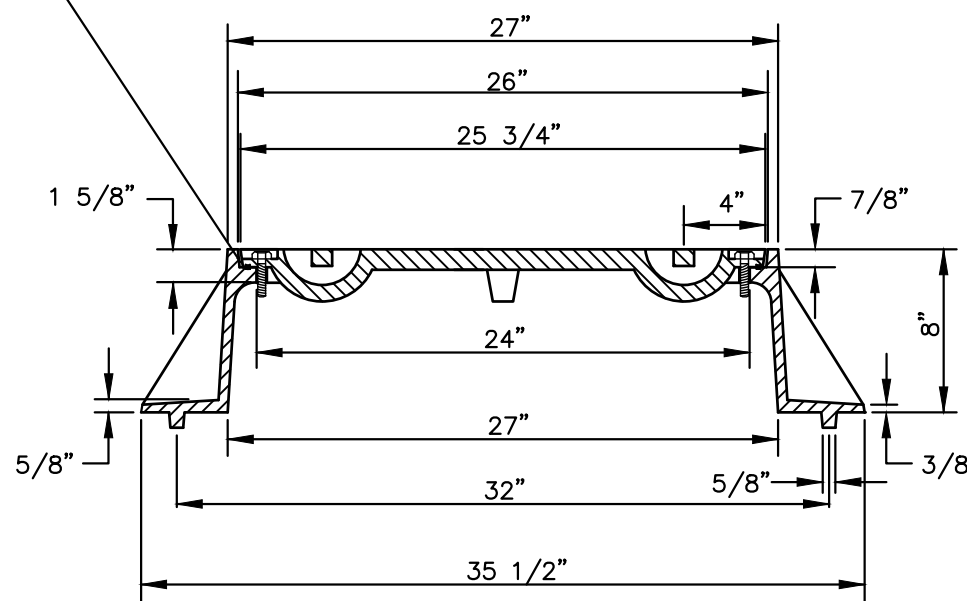
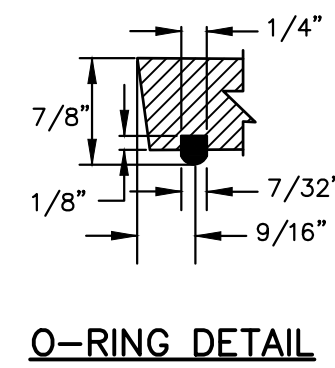
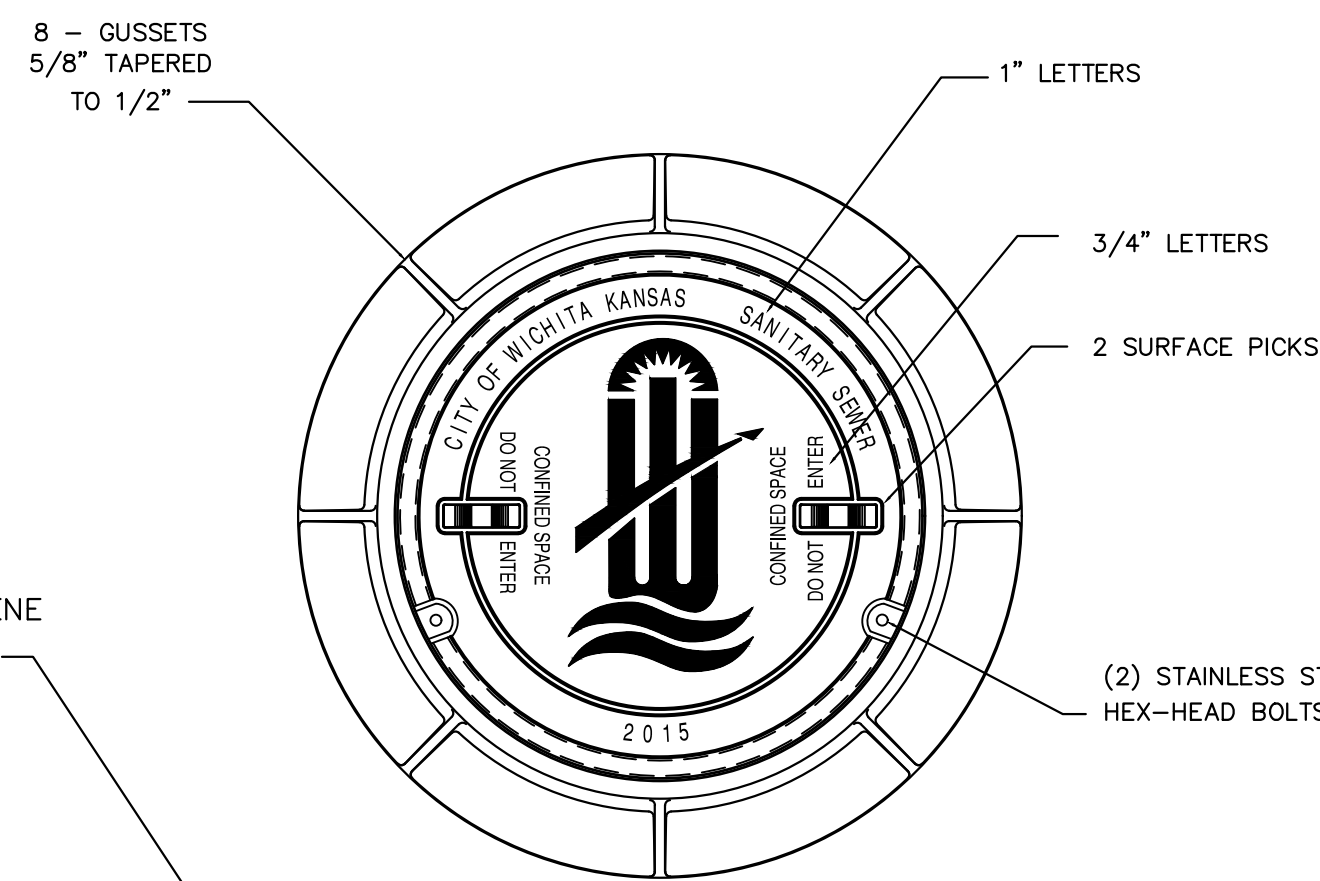
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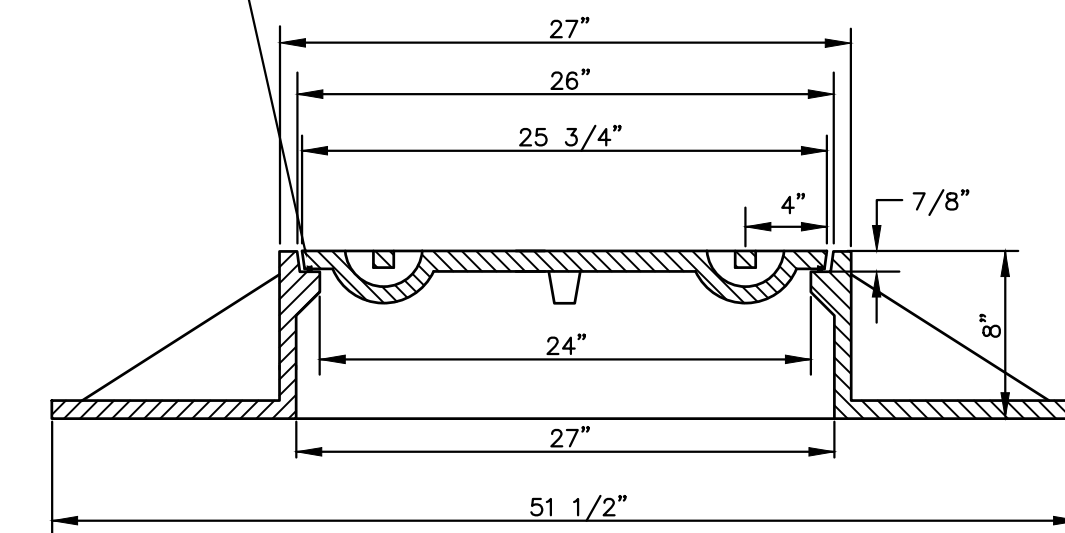
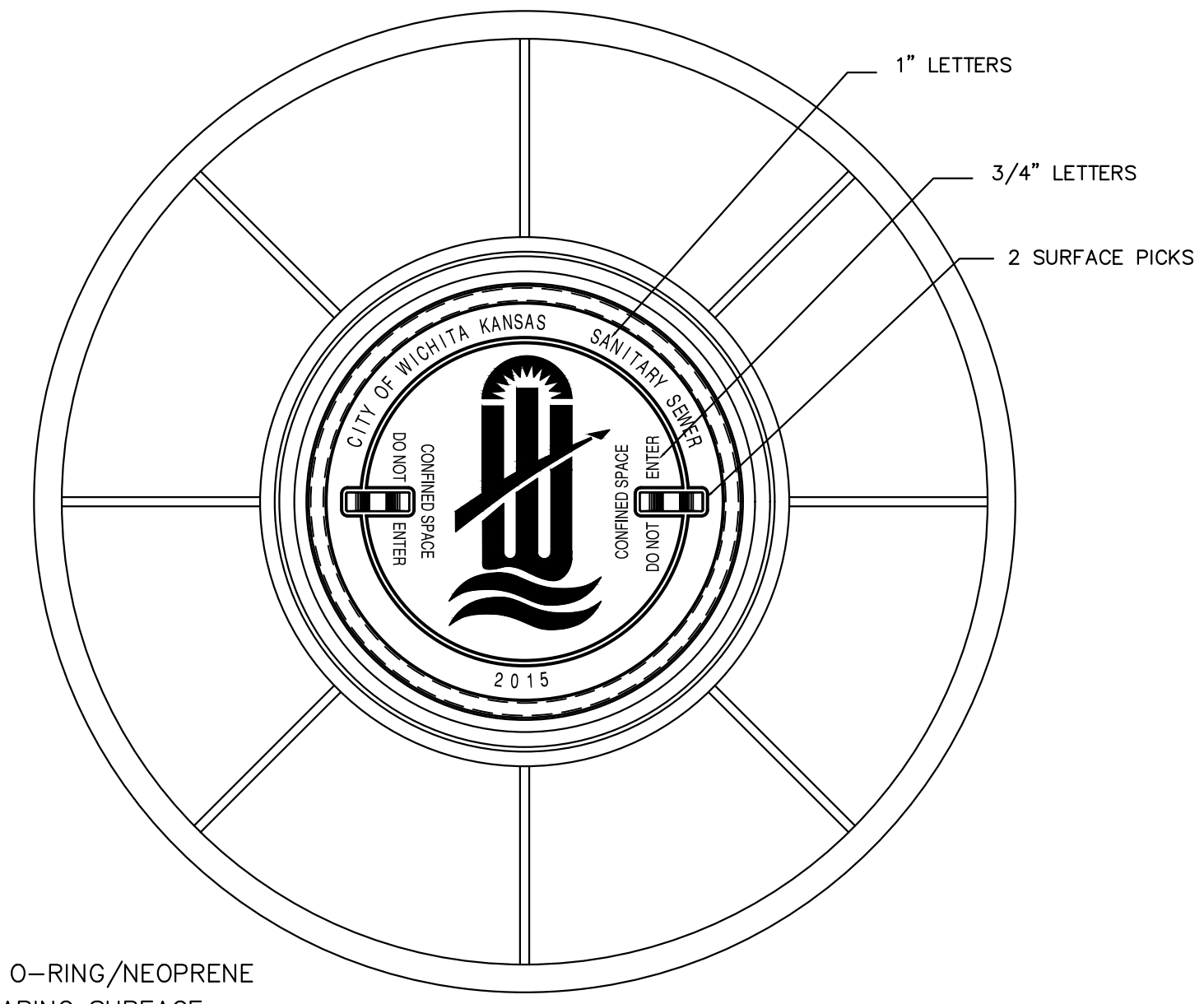
STANDARD MANHOLE FRAME & COVER
DEETER #1261 OR EJIW #1936-Z1

NOTE:
 1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.



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.

ALL LIDS TO BE FURNISHED WITH O-RING/NEOPRENE GASKET GLUED IN THE COVER BEARING SURFACE.

ALL LIDS TO BE FURNISHED WITH O-RING/NEOPRENE GASKET GLUED IN THE COVER BEARING SURFACE.

GENERAL NOTES

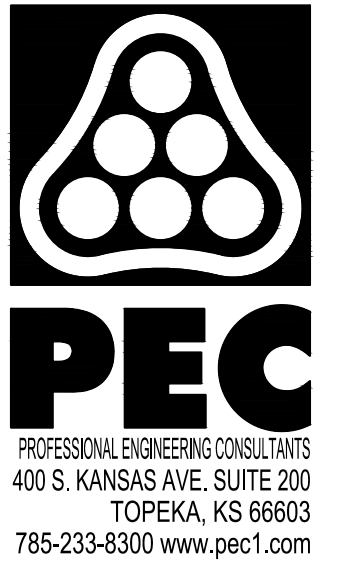
- MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS 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.

REVISED: MARCH 2016



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 _ of _

SS-102



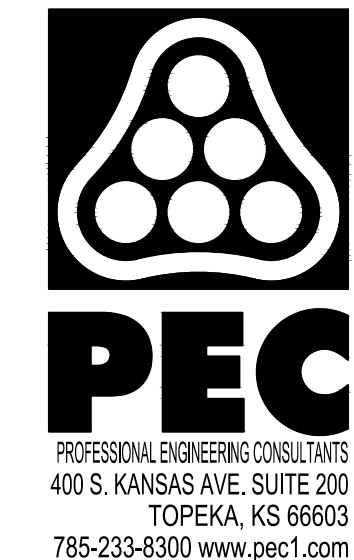
**SANITARY SEWER IMPROVEMENTS
 COWSKIN FORCE MAIN
 AND LIFT STATION 60
 IMPROVEMENTS**
 PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

Issue:	
JOB NO.	35-210602-001-042
DATE	DECEMBER 2023
PM	TBK
DESIGNED BY	KJW
DRAWN BY	CSL
CHECKED BY	RWG

MANHOLE FRAME AND COVER

CU506

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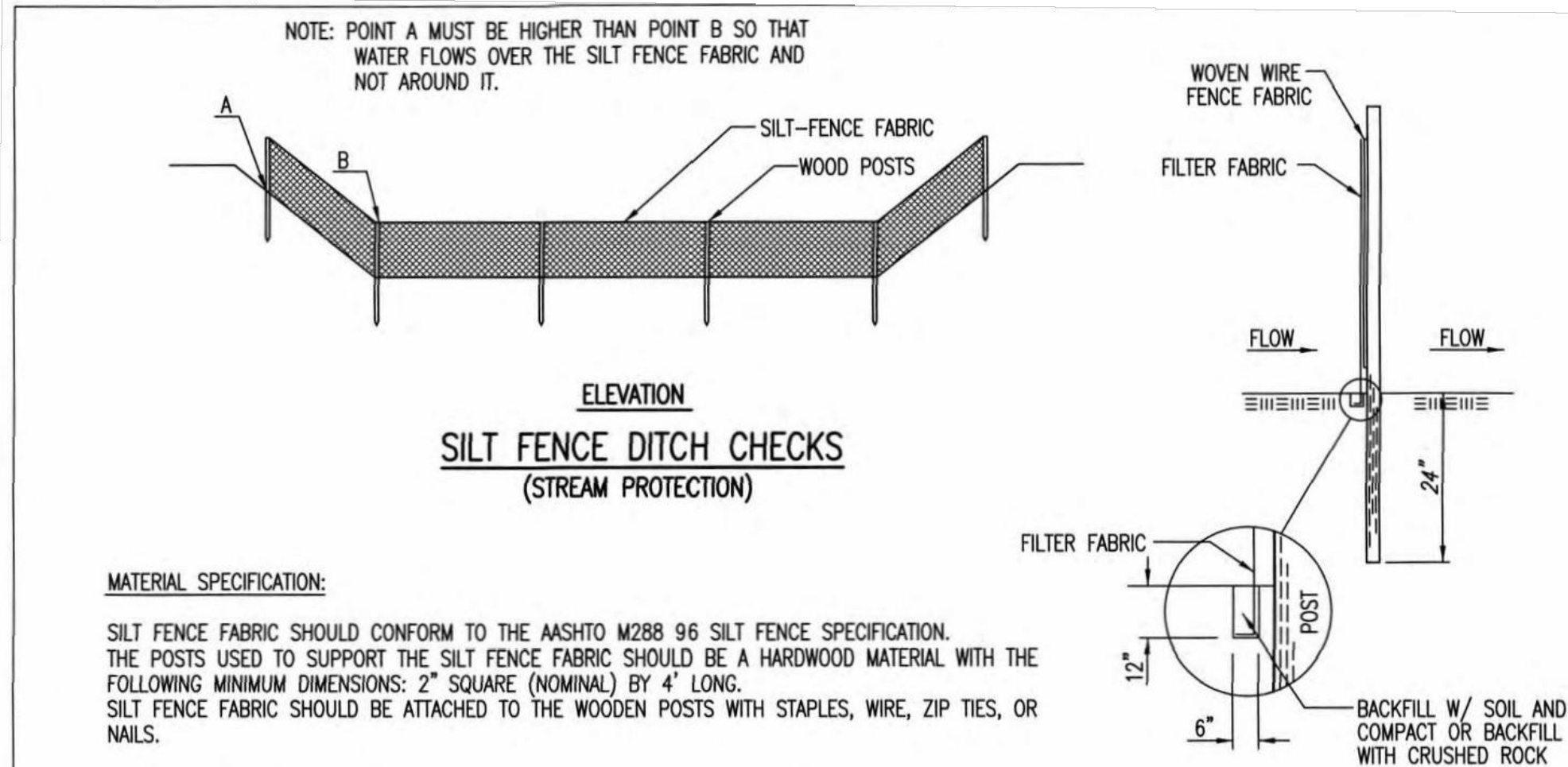


**SANITARY SEWER IMPROVEMENTS
 COWSKIN FORCE MAIN
 AND LIFT STATION 60
 IMPROVEMENTS**
 PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

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PM	TBK
DESIGNED BY	KJW
DRAWN BY	CSL
CHECKED BY	RWG

EROSION CONTROL DETAILS

CU602



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 DOWNSTREAM 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 DOWNSTREAM 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.

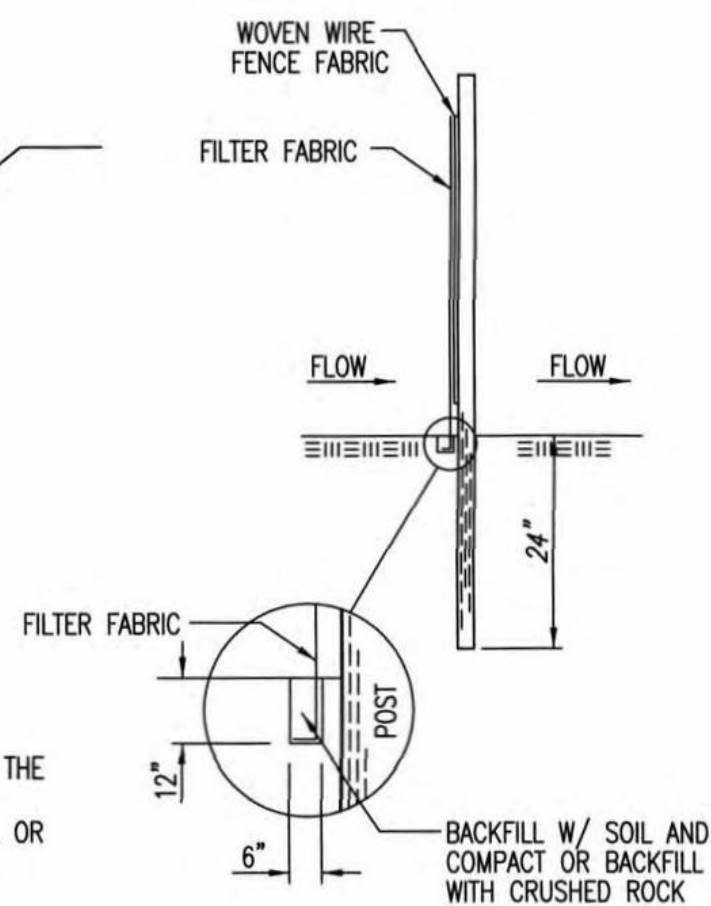
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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 DEGRADE 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 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 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.

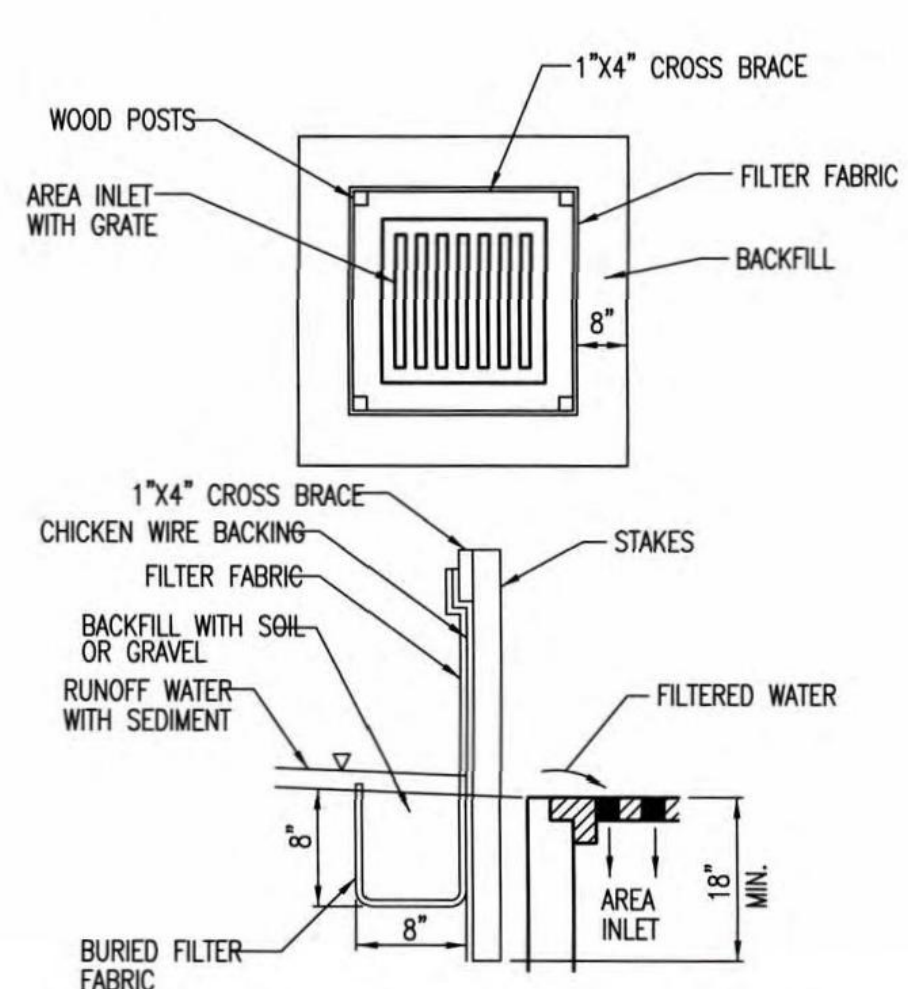
INSPECTION AND MAINTENANCE:

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?



ANCHOR TRENCH DETAIL



SILT FENCE BARRIERS FOR AREA INLETS (INLET PROTECTION)

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.

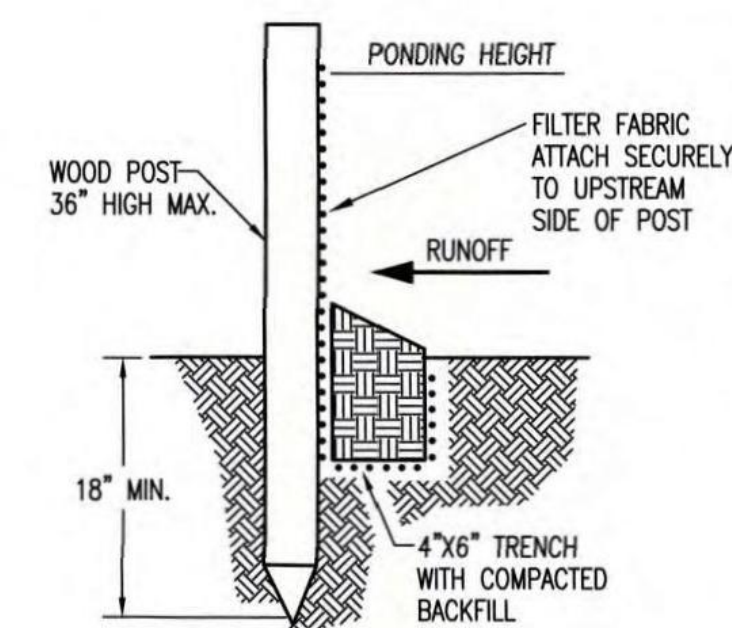
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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 RESISTED 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?



SILT FENCE BARRIERS

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 DEGRADATES. 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.

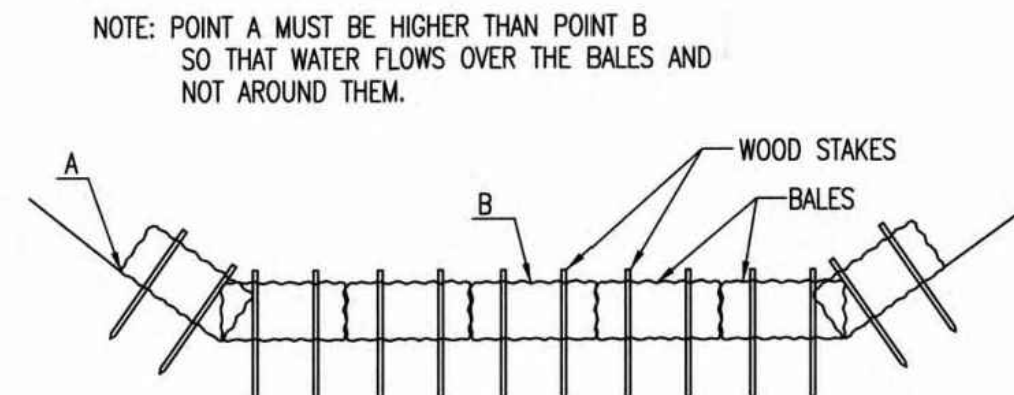
PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE

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

SHEET

5W-502



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".

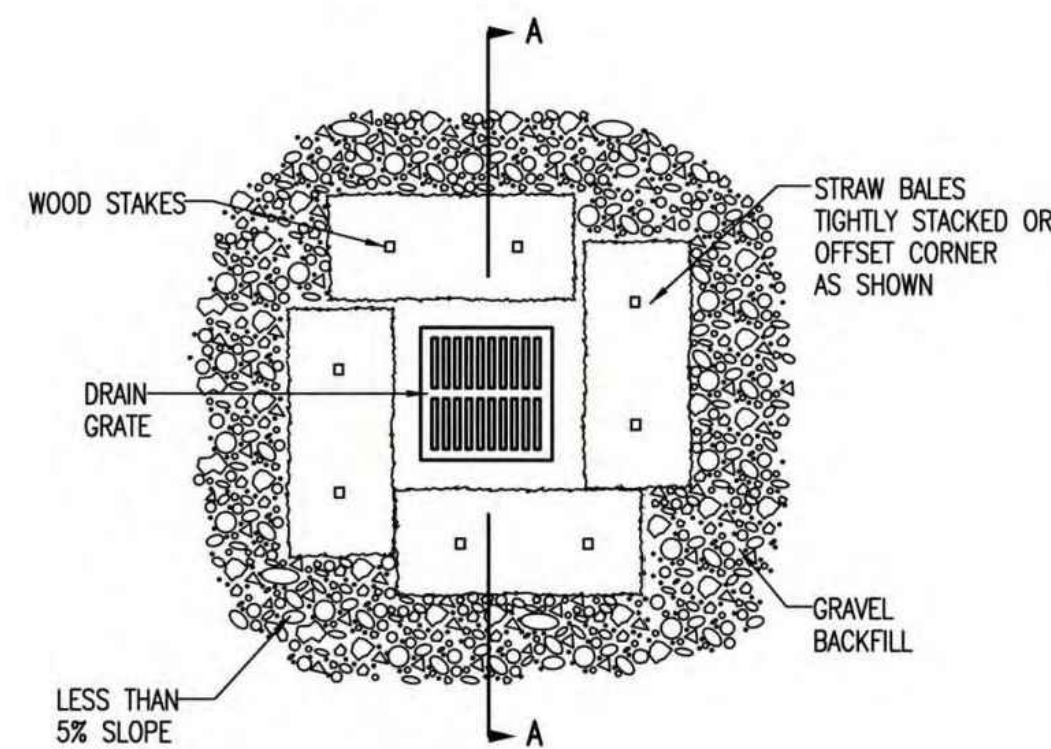
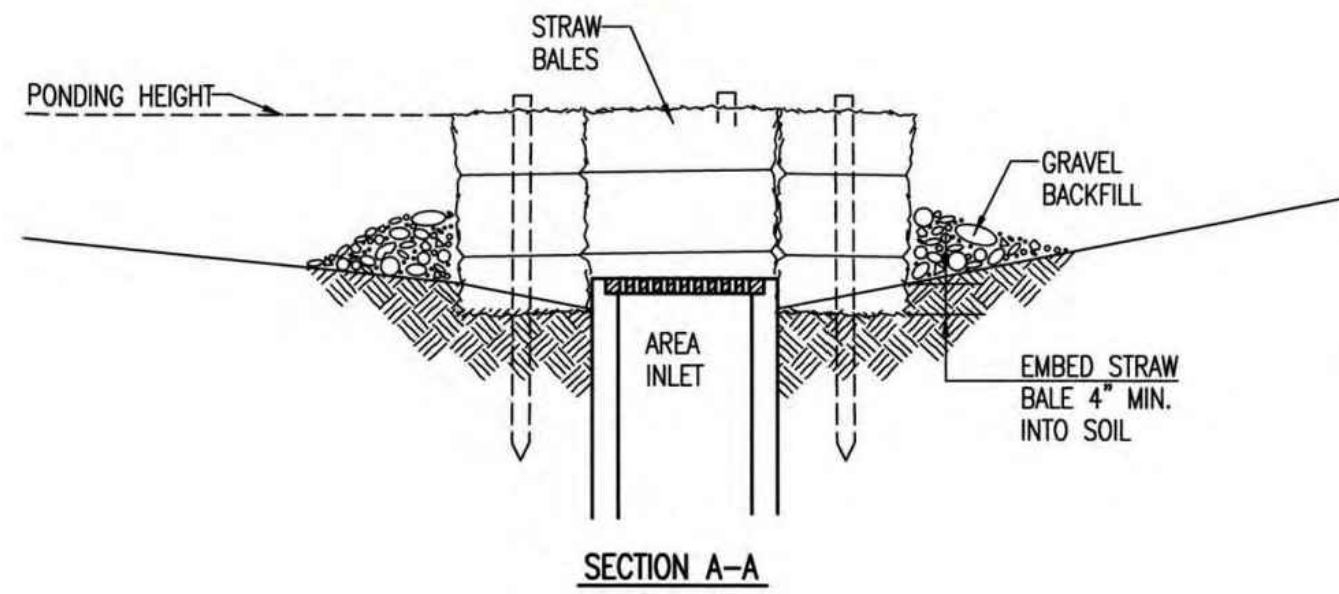
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

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.

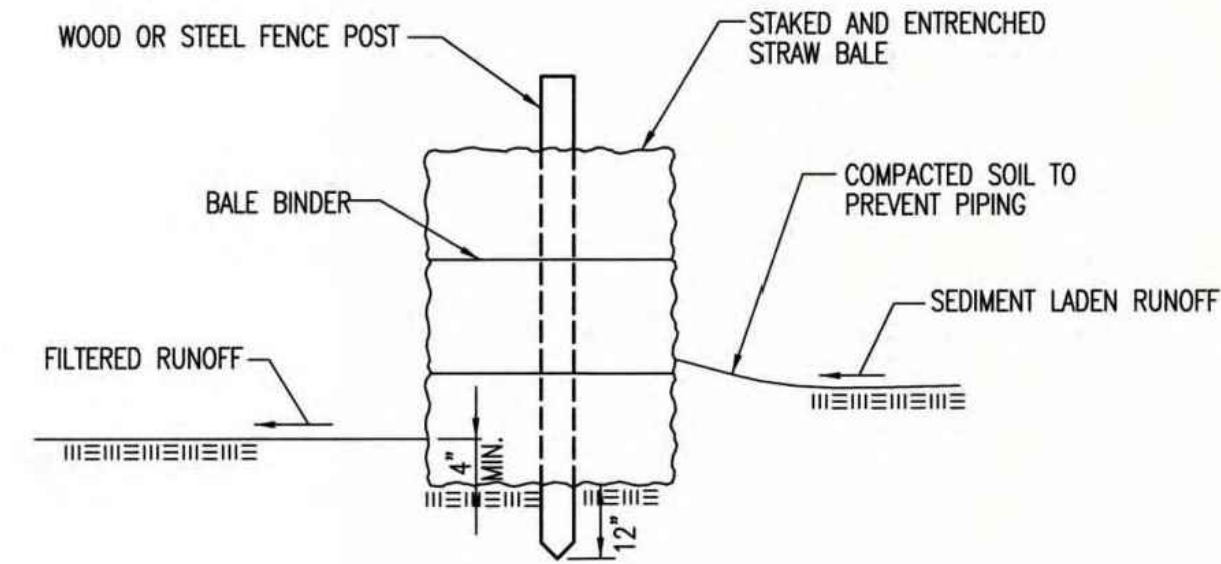
LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

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?

REVISION DATE: MAY 2013

<p>CITY OF WICHITA PUBLIC WORKS & UTILITIES ENGINEERING DIVISION</p>		<p>STRAW BALE DITCH CHECK AND BARRIER DETAILS</p>	
		<p>CITY ENGINEER GARY JANZEN, P.E.</p>	
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-503



**SANITARY SEWER IMPROVEMENTS
COWSKIN FORCE MAIN
AND LIFT STATION 60
IMPROVEMENTS**
 PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

Issue:		

JOB NO.	35-210602-001-042
DATE	DECEMBER 2023
PM	TBK
DESIGNED BY	KJW
DRAWN BY	CSL
CHECKED BY	RWG

EROSION CONTROL DETAILS

CU603

SAVED 9/1/2022 5:08:14 PM BY CATHY.LINK
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GENERAL NOTES

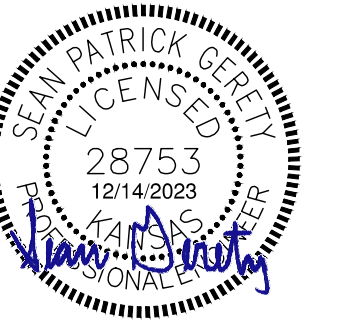
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) & THE AMERICANS WITH DISABILITIES ACT (ADA).
- REFER TO RELATED CIVIL DRAWINGS FOR RELATED INFORMATION.
- REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.
- E.C. SHALL REFER TO CIVIL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTION OF INTERLOCKING AND CONTROLS OF PROCESS EQUIPMENT.
- ALL MOUNTING HEIGHTS TO CENTERLINE OF ITEM UNLESS OTHERWISE NOTED. VERIFY ALL OUTLET LOCATIONS ON THE JOB PRIOR TO ROUGH-IN.
- CONDUIT RUN W/CONDUCTORS AS INDICATED & GROUND WIRE SIZED PER N.E.C. 250.122. CONDUIT SIZE AS REQUIRED.
- 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.
- 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.
- LABEL THE FRONT OF EACH RECEPTACLE COVERPLATE WITH PANEL DESIGNATION AND CIRCUIT NUMBER USING CLEAR THERMAL TRANSFER (ELECTRONIC DYMO) LABELS WITH 1/8" HIGH BLACK LETTERS (OR CONTRASTING COLOR IF PLATES ARE BLACK OR BROWN). LABELS SHALL BE SUITABLE FOR INDOOR/OUTDOOR USE. LABEL THE BACK OF EACH LIGHT SWITCH COVERPLATE WITH PANEL DESIGNATION AND CIRCUIT NUMBER USING A FINE BLACK PERMANENT MARKER.

SYMBOL LIST

SYMBOL	DESCRIPTION	MOUNTING
	DISCONNECT SWITCH	
	VFD	
	MOTOR	
	WEATHERPROOF	
	JUNCTION BOX	
	RECEPTACLE	
	BRANCH CIRCUIT PANEL	
	UTILITY COMPANY METER	
	FEEDER DESIGNATION	

SHEET INDEX

SHEET NO.	DESCRIPTION
E-001	ELECTRICAL LEAD SHEET
E-002	ELECTRICAL CONTROLS SCHEMATIC
E-101	ELECTRICAL DEMOLITION PLAN
E-301	ELECTRICAL POWER PLAN
E-501	ELECTRICAL DETAILS
E-502	ELECTRICAL DETAILS
E-601	ELECTRICAL SCHEDULES



**SANITARY SEWER IMPROVEMENTS
 COWSKIN FORCE MAIN
 AND LIFT STATION 60
 IMPROVEMENTS**
 PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

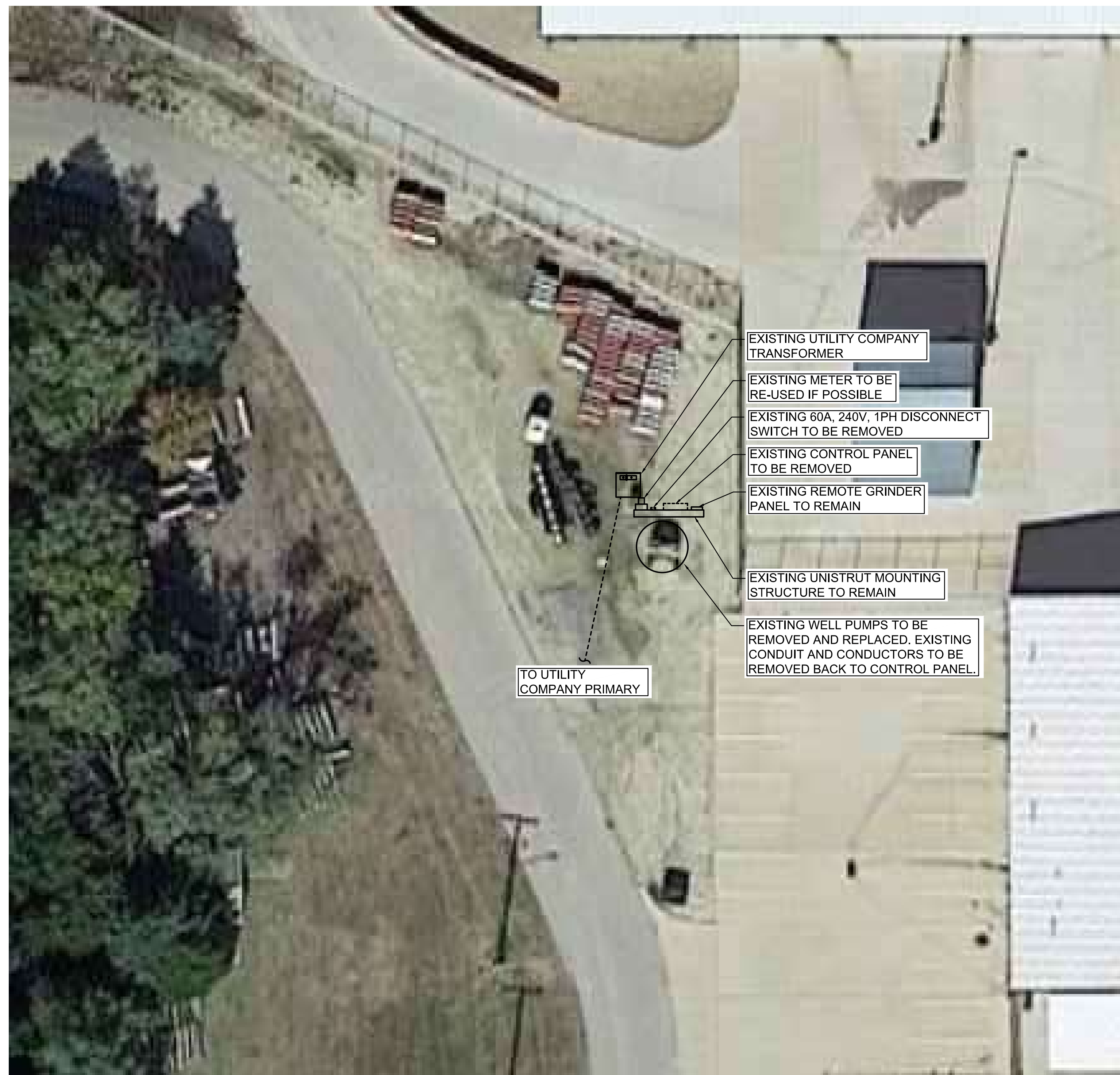
Issue:									

JOB NO.	35-210602-001-042
DATE	DECEMBER 2023
PM	TBK
DESIGNED BY	SPG
DRAWN BY	JAB
CHECKED BY	RWW

ELECTRICAL LEAD SHEET

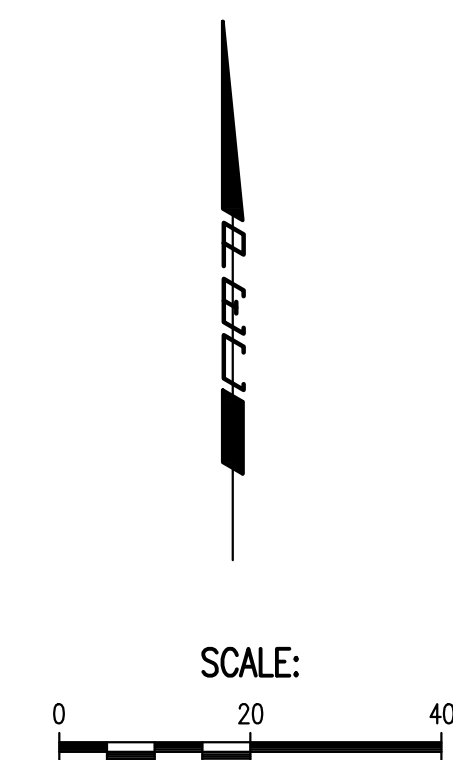
E-001

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 U:\WICHITA-CIVIL\2023\1210602\02\PECC\DRAWINGS\ELECAE-102 ELECTRICAL DEMOLITION PLAN.DWG



DEMOLITION NOTES:

1. DEMOLITION PLANS SHOW THE GENERAL EXTENT OF THE ELECTRICAL DEMOLITION WORK. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL SERVICES TO ALL EQUIPMENT BEING REMOVED. 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.
2. 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.
3. ALL DEVICES SHOWN DASHED ON THE DEMOLITION PLAN(S) SHALL BE REMOVED, UNLESS NOTED OTHERWISE.
4. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK.



A ELECTRICAL DEMOLITION PLAN
 SCALE: 1" = 20'-0"



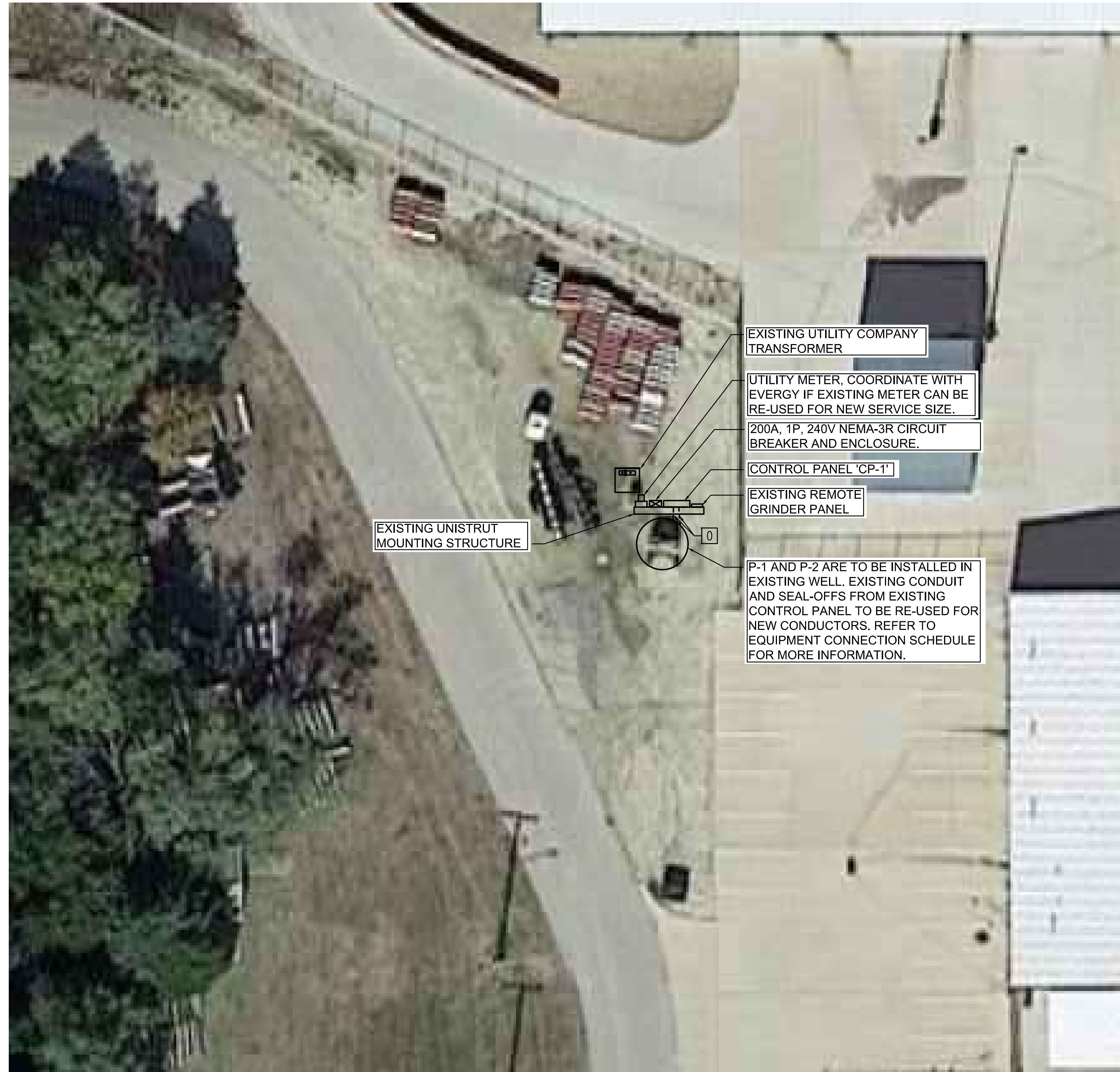
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ELECTRICAL DEMOLITION
 PLAN

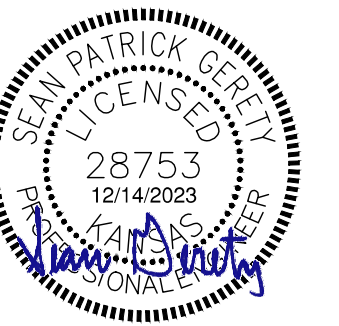
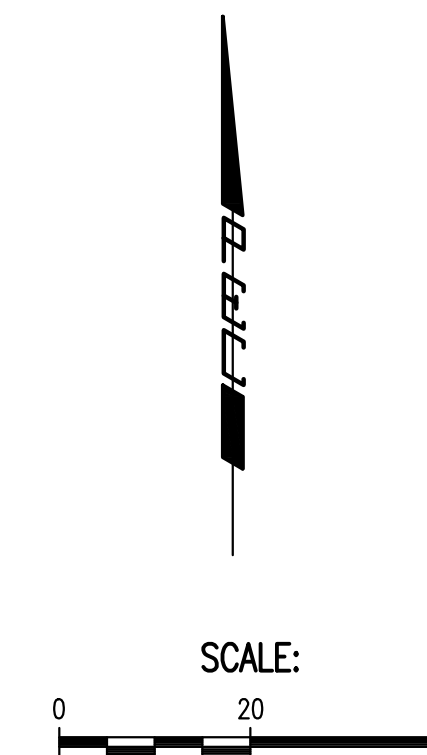
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A ELECTRICAL POWER PLAN
 SCALE: 1" = 20'-0"

ELECTRICAL SITE PLAN NOTES:

- UNLESS OTHERWISE NOTED, ALL CONDUIT ROUTED ON SITE SHALL BE 1" MINIMUM.
- 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)
- ALL ELECTRICAL WORK AND FEES ASSOCIATED WITH UTILITIES SHALL BE VERIFIED AND COORDINATED WITH LOCAL SERVICE PROVIDER PRIOR TO BID.
- 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.
- CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING CONDITIONS OF PROJECT SITE PRIOR TO BID.



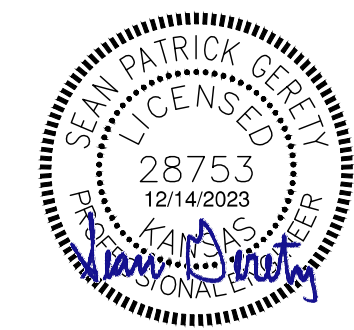
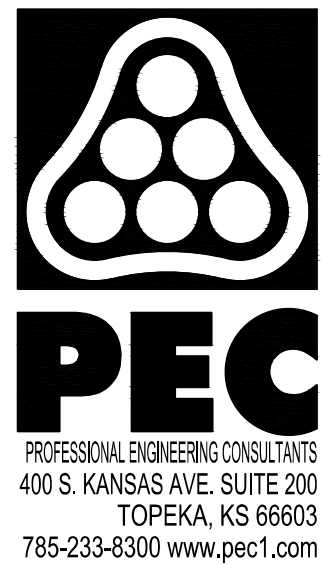
**SANITARY SEWER IMPROVEMENTS
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ELECTRICAL POWER PLAN

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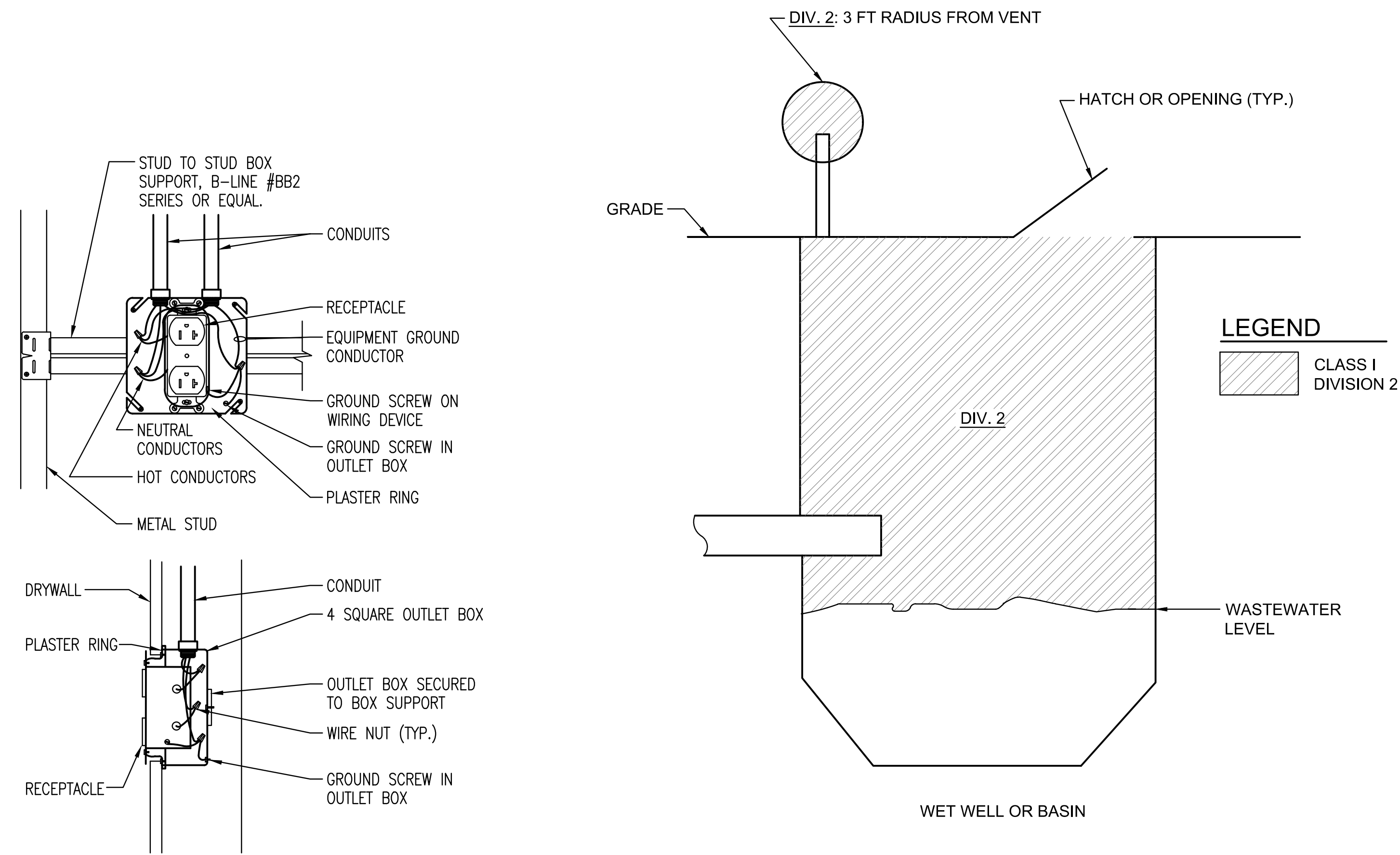
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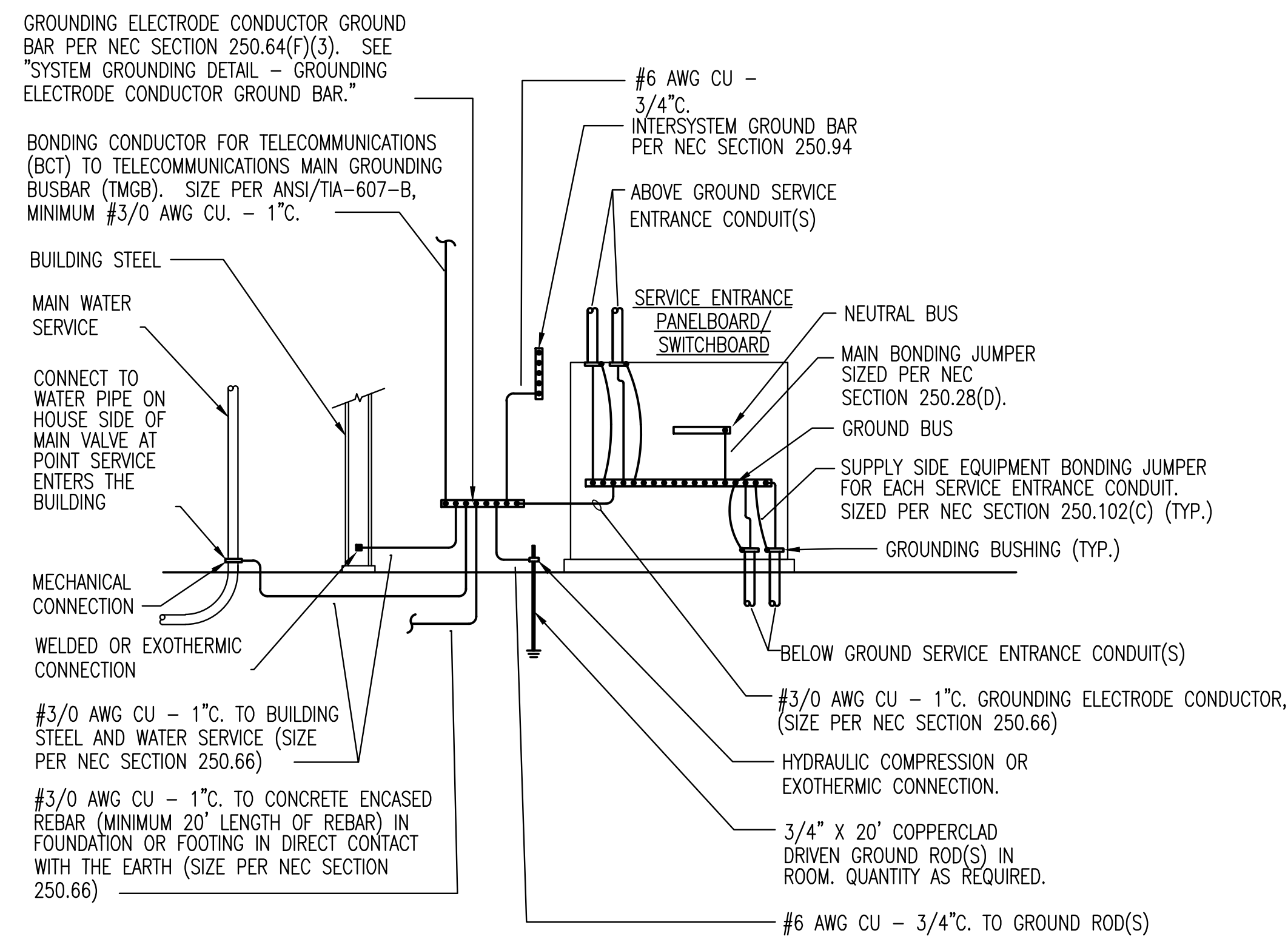
ELECTRICAL DETAILS

E-501



1 TYPICAL RECEPTACLE MOUNTING DETAIL
 NO SCALE

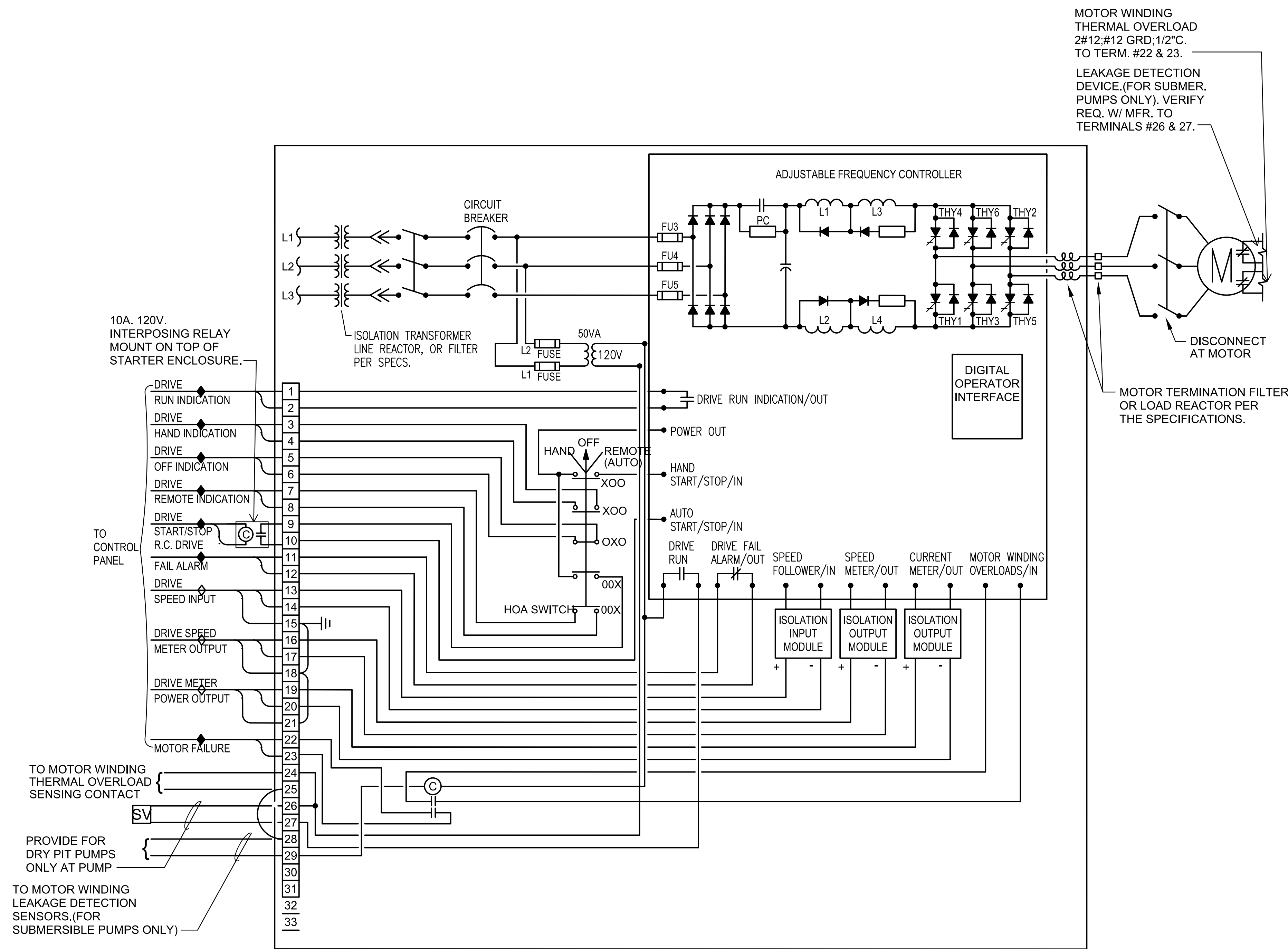
2 TYPICAL AREA CLASSIFICATION - LIFT STATION
 NO SCALE
 NOTE: NFPA 820 SEC 4.2



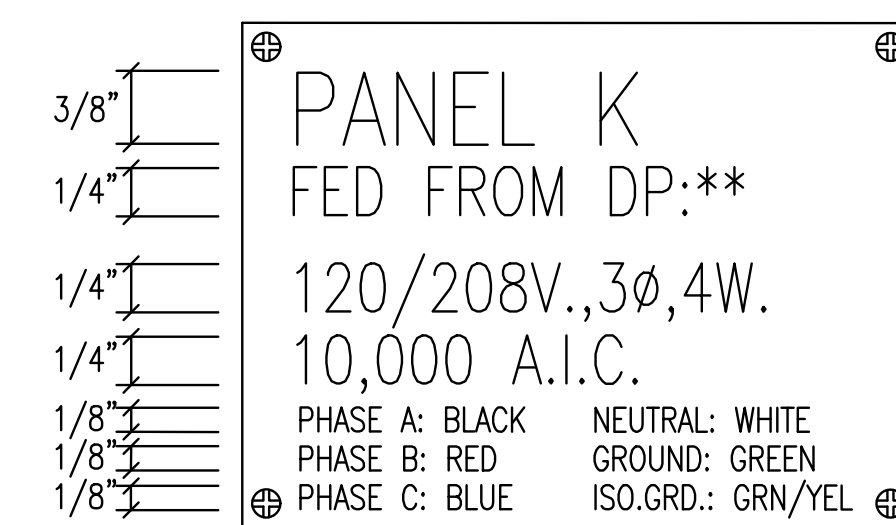
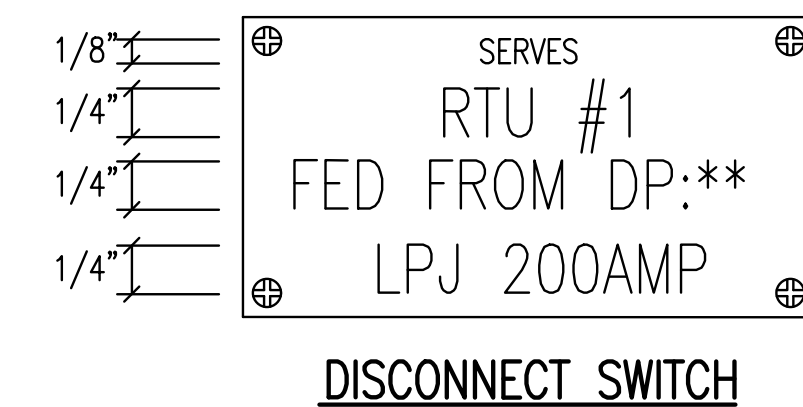
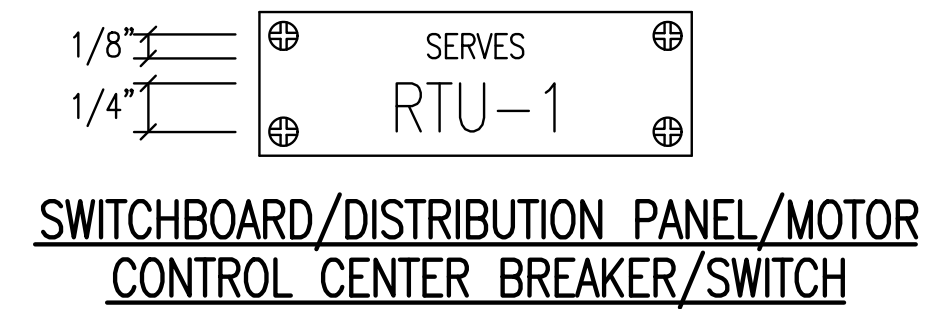
- NOTES:**
1. PROVIDE OTHER GROUNDING CONNECTIONS AS SPECIFIED IN NEC SECTION 250.50.
 2. LABEL EACH GROUNDING ELECTRODE CONDUCTOR AND BONDING JUMPER.
 3. WHERE CONDUCTORS ARE ROUTED IN FERROUS CONDUIT, BOND BOTH ENDS OF THE CONDUIT TO THE CONDUCTOR.

3 SYSTEM GROUNDING DETAIL - PANEL
 NO SCALE

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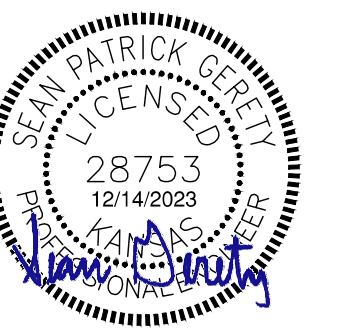


1 TYPICAL VARIABLE FREQUENCY DRIVE WIRING DIAGRAM
 NO SCALE



2 TYPICAL NAME PLATES
 NO SCALE

NOTE: SEE SPECIFICATION SECTION 260500 FOR NAME PLATE COLOR REQUIREMENTS.

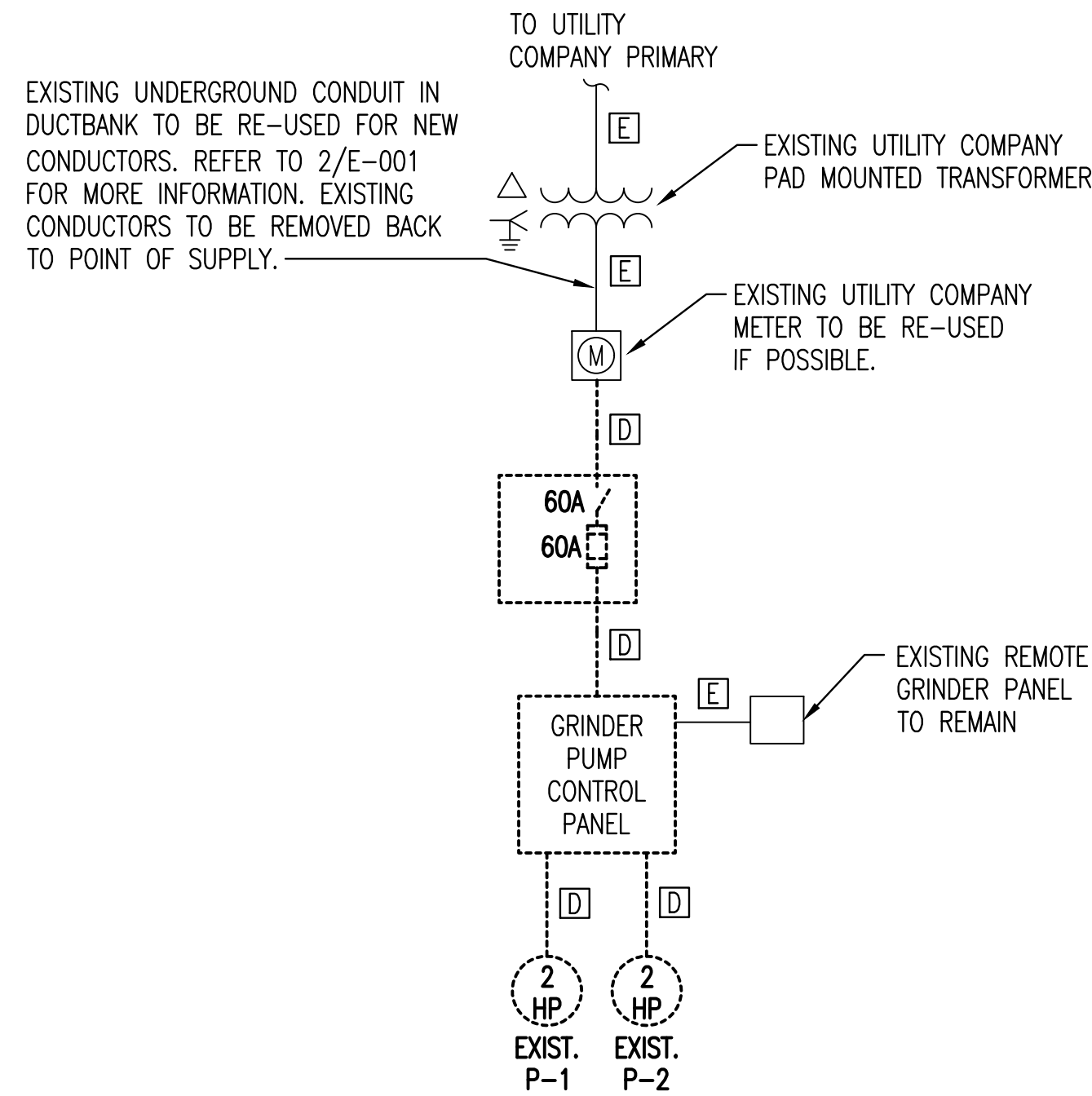


SANITARY SEWER IMPROVEMENTS
 COWSKIN FORCE MAIN
 AND LIFT STATION 60
 IMPROVEMENTS

PAUL GUNZELMAN, P.E. - INTERIM CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-2022-040654

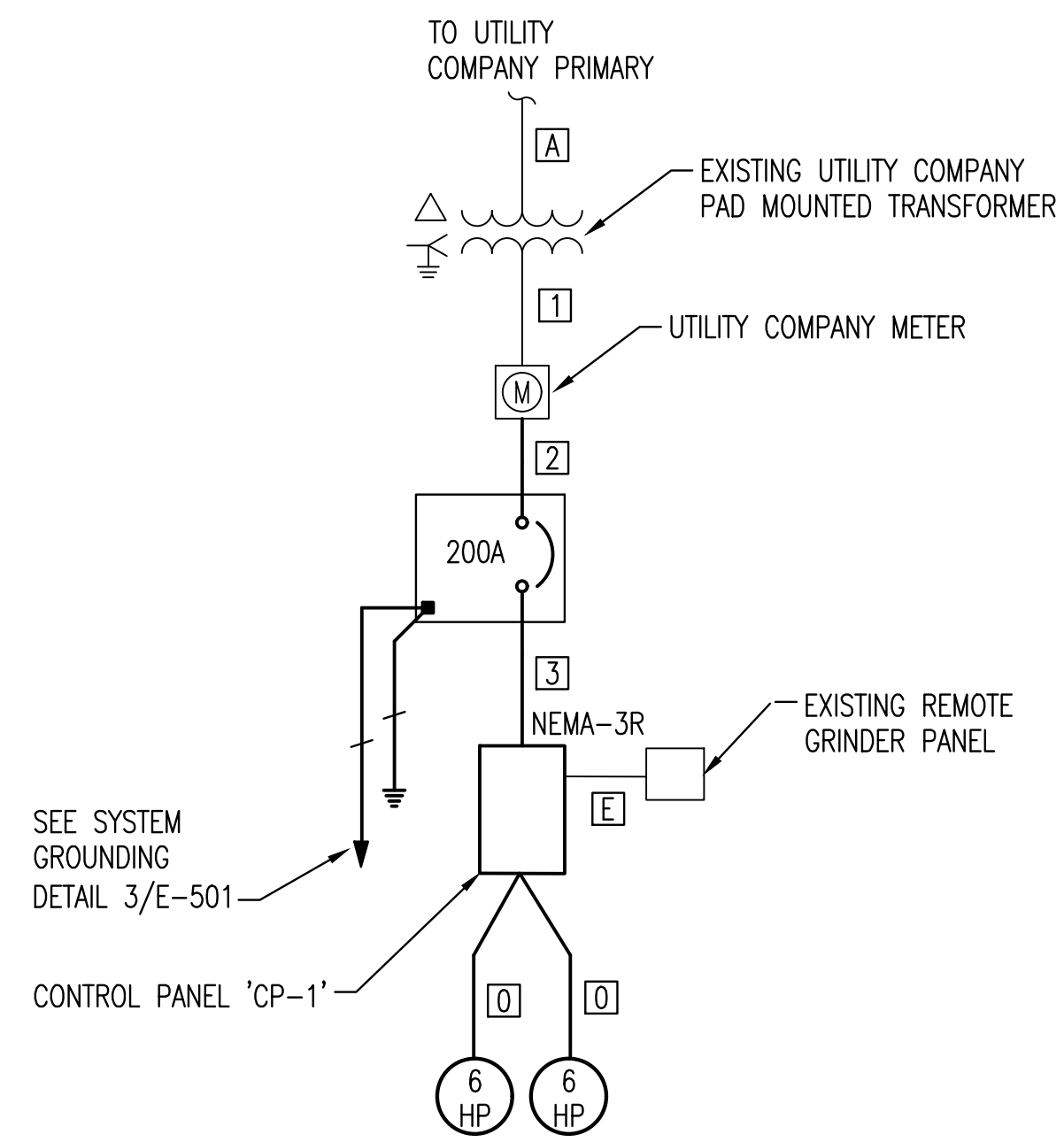
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ELECTRICAL DETAILS



1 DEMOLITION ONE-LINE DIAGRAM

NO SCALE



2 PROPOSED ONE-LINE DIAGRAM

NO SCALE

FEEDER SCHEDULE

DESIG.	EQUIPMENT SERVED	CONDUCTORS			GROUND SIZE PER SET	ISOLATED GROUND SIZE	CONDUIT SIZE PER SET	SPARE CONDUIT
		SETS	NO.	SIZE				
② A	UTILITY COMPANY PRIMARY	1	---	W/PULLROPE	---	---	---	---
① 1	UTILITY COMPANY METER	1	4	#3/0 AWG CU	---	---	---	---
2	MAIN CIRCUIT BREAKER	1	4	#3/0 AWG CU	---	---	2" C.	---
3	CONTROL PANEL 'CP-1'	1	4	#3/0 AWG CU	---	---	2" C.	---
E	EXISTING TO REMAIN							
D	EXISTING TO BE REMOVED							
0	SEE MECHANICAL CONNECTION SCHEDULE							

① RE-USE EXISTING UNDERGROUND CONDUIT FOR ROUTING OF CONDUCTORS IF POSSIBLE. IF NOT POSSIBLE, CONTRACTOR TO PROVIDE 2" CONDUIT.
 ② CONTRACTOR TO FIELD VERIFY EXISTING UNDERGROUND CONDUIT SIZE. COORDINATE REQUIREMENTS WITH EVERY FOR NEW SERVICE SIZE CONDUCTORS.

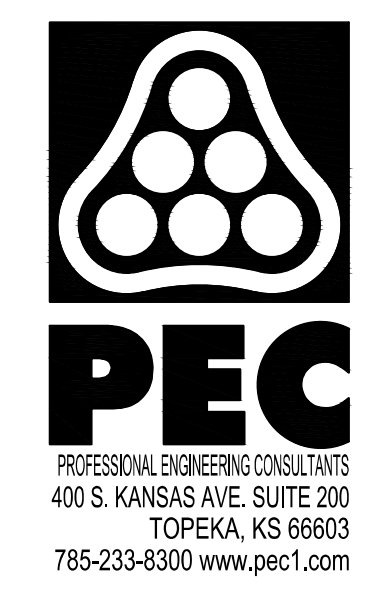
GENERAL ONE-LINE DIAGRAM NOTES:

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

EQUIPMENT CONNECTION SCHEDULE

MECHANICAL EQUIPMENT CONNECTIONS															
UNIT DESIG.	UNIT VOLTAGE	LOAD			PANEL DEVICE				DEVICE AT UNIT			S E T S	FEEDER DESCRIPTION OR SEE THE FEEDER SCHEDULE	REMARKS OR SEE THE INDICATED NOTES BELOW	
		H.P.	FLA	KVA	CIRCUIT NUMBER	BKR. SW. FUSE	NEMA START. SIZE	BKR. SW. FUSE	NEMA START. SIZE	OTHER					
P	PUMP														
④ 1	240/3	6	31.1	12.90	VFD	110		3			VFD		1	3 #1 AWG THWN; #6 AWG GRD; 1-1/2" C.	
④ 2	240/3	6	31.1	12.90	VFD	110		3			VFD		1	3 #1 AWG THWN; #6 AWG GRD; 1-1/2" C.	

- ALL CONNECTIONS AND ELECTRICAL EQUIPMENT LISTED IN SCHEDULE SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. FIELD VERIFY CONNECTION REQUIREMENTS AND EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN.
- REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTIONS OF INTERLOCKING, THERMOSTAT LOCATIONS, EXHAUST FAN CONTROL SWITCHES, AND OTHER CONTROLS OF MECHANICAL EQUIPMENT.
- SIZE FUSES FOR MOTOR FUSTATS BASED ON 125% OF MANUFACTURER'S NAMEPLATE FULL LOAD AMPERAGE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- PUMPS TO BE PROVIDED WITH VFD FOR PHASE CONVERSION. VFD TO TAKE 240V/1PH INCOMING LINE AND CONVERT INTO 240V/3PH POWER FOR PUMP CONNECTIONS. VFD TO BE SIZED 1.73 TIMES LARGER THAN THE 6HP MOTOR LOAD.



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ELECTRICAL SCHEDULES

E-601

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