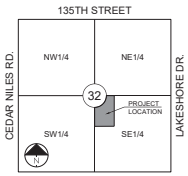
SANITARY SEWER MAIN EXTENSION PLANS
FOR
143RD STREET & ANDREWS AVE.
C.P.N. _____
IN THE CITY OF OLATHE
JOHSON COUNTY, KANSAS

LEGEND:

A/E	-	ACCESS EASEMENT
BC	-	BACK OF CURB
B/B	-	BACK TO BACK
BM	-	BENCHMARK
BL or B.L.	-	BUILDING LINE
CO	-	CLEANOUT
TJB	-	TELEPHONE JUNCTION BOX
C&G	-	CURB AND GUTTER
D/E	-	DRAINAGE EASEMENT
E/E	-	ELECTRICAL EASEMENT
EL	-	ELEVATION
FL	-	FLOW LINE
G/E	-	GAS LINE EASEMENT
HDPE	-	HIGH-DENSITY POLYETHYLENE
L/E	-	LANDSCAPE EASEMENT
MSFE	-	MINIMUM SERVICEABLE FLOOR ELEVATION
PVC	-	POLYVINYL CHLORIDE
P/L	-	PROPERTY LINE
PUB/E	-	PUBLIC EASEMENT
RCP	-	REINFORCED CONCRETE PIPE
ROW or R/W	-	RIGHT-OF-WAY
S/E	-	SANITARY SEWER EASEMENT
SL	-	SERVICE LINE
S/W	-	SIDEWALK
TE	-	TOP ELEVATION
U/E	-	UTILITY EASEMENT
WSE	-	WATER SURFACE ELEVATION
W/E	-	WATERLINE EASEMENT

ASPHALT PAVEMENT - EXISTING
ASPHALT PAVEMENT - PROPOSED
CONCRETE PAVEMENT - EXISTING
ASPHALT PAVEMENT - EXISTING
CONCRETE SIDEWALK - EXISTING
CONCRETE SIDEWALK - PROPOSED
CURB & GUTTER
CURB & GUTTER - EXISTING
TREELINE
EXISTING LOT AND R/W LINES
EXISTING PLAT LINES
P/L PROPERTY LINES
ROW RIGHT-OF-WAY
SANITARY SEWER MAIN
SANITARY SEWER MAIN - EXIST.
STO STORM SEWER
STORM SEWER - EXISTING
CATV$_X$ CABLE TV - EXISTING
FOC$_X$ FIBER OPTIC CABLE - EXISTING
T$_X$ TELEPHONE LINE - EXIST.
E$_X$ ELECTRIC LINE - EXISTING
OHP$_X$ OVERHEAD POWER LINE - EXIST.
UGE$_X$ UNDERGROUND ELECTRIC - EX.
G$_X$ GAS LINE - EXISTING
W$_X$ WATERLINE - EXISTING
LIGHT - EXISTING
EXISTING MANHOLE
CO CLEANOUT
EXISTING SANITARY MANHOLE
PROPOSED SANITARY MANHOLE
AI EXISTING AREA INLET
CI EXISTING CURB INLET
GI EXISTING GRATE INLET
JB EXISTING JUNCTION BOX
EXISTING STORM MANHOLE



SECTION 32-13-23
LOCATION MAP
SCALE 1" = 2000'

UTILITY COMPANIES

ATMOS ENERGY
CAMERON PARKS
25090 W. 110TH TERRACE
OLATHE, KANSAS 66061
(913) 254-6344

AT&T
CLAYTON ANSPAUGH
9444 NALL AVENUE
OVERLAND PARK, KANSAS 66207
913-383-4929
ca4089@att.com

CONSOLIDATED COMMUNICATIONS
TOM REAVES
9669 LACKMAN ROAD
LENEXA, KANSAS 66215
913-322-9631
tom.reaves@surewest.com

COMCAST
MELISSA WITHAR
MELISSA_WITHAR@CABLE.COMCAST.COM
DESIGN/ENGINEERING MANAGER
3400 NW DUNCAN ROAD
BLUE SPRINGS, MO 64015
(816) 795-8377
(816) 795-2242 (FAX)

GOOGLE FIBER
JERRY BOCK
908 BROADWAY BOULEVARD
KANSAS CITY, MISSOURI 64105
913-809-3847
jebock@google.com

EVERGY
GWEN CORCHES
16215 WEST 108TH STREET
LENEXA, KS 66219
(913) 894-3075
gwen.corches@evergy.com

SPECTRUM
STEVE BAXTER
8221 WEST 119TH STREET
OVERLAND PARK, KS 66212
(913) 451-5858

CITY OF OLATHE
1385 S ROBINSON
OLATHE KS, 66061
(913) 971-9311

1-800 DIG SAFE

OLATHE SANITARY SEWER NOTES:

1. Development plans are approved initially for one (1) year, after which they automatically become void and must be updated and re-approved by the City Engineer before any construction will be permitted.
2. The City of Olathe plan review is only for general conformance with City of Olathe Design Criteria and the City Code. City is not responsible for the accuracy and adequacy of the design, or dimensions and elevations. City of Olathe through approval of this document assumes no responsibility other than as stated above for the completeness and/or accuracy of this document.
3. Contractor shall have one (1) signed copy of the plans (approved by the city of Olathe) with a State approval stamp on the title sheet and one (1) copy of the appropriate *Technical Specifications and Design Criteria for Public Improvement Projects* at the job site at all times.
4. Construction of the improvements shown or implied by this set of drawings shall not be initiated or any part thereof undertaken until the City Engineer is notified of such intent and all required and properly executed bonds and contract agreements are received and approved by the City Engineer.
5. The City of Olathe *Technical Specifications for Public Improvement Projects*, latest edition, shall govern construction of this project.
6. All existing utilities indicated on the drawings are according to the best information available to the City Engineer; however, all utilities actually existing may not be shown. Utilities damaged through the negligence of the Contractor to obtain the location of same shall be repaired or replaced by the Contractor at his expense.
7. Backfill within the right-of-way shall be compacted to ninety-five (95) percent of maximum density at optimum moisture. No fill shall be placed in future rights-of-way under a Land Disturbance permit unless approved by the City Engineer.
8. All trench excavation beneath existing and proposed streets shall be backfilled in accordance with Technical Specification Section 4000. Alternate backfill materials shall require the approval of the City Engineer.
9. All service lines shall be laid on a 1.00% minimum grade unless approved by the City Engineer.
10. 1000' denotes Minimum Basement Floor Elevation.
11. Where available, all water required for the construction of this project shall be purchased from the Public Works Department through the use of a fire hydrant water meter. Meters can be obtained from the Public Works Department, Field Operations Division for a nominal deposit, refundable upon the return of the meter.
12. Saturday work shall be as approved by the City Engineer. No work shall be permitted on Sunday or a Holiday.
13. Relocation of any water line, sewer line or service line required for the construction of this project shall be the responsibility of the Contractor and shall be at his expense.
14. The Contractor shall install and properly maintain a mechanical plug at all connection points with existing lines until such time that the proposed line is tested and approved.
15. To prevent damage to main sewer line, all blasting required for laterals stub lines shall be performed during blasting for the main line.
16. A pre-blast survey shall be approved by the Fire Marshall prior to the initiation of blasting operations.
17. All structural inspections shall be completed by a professional engineer registered in the State of Kansas.

GENERAL NOTES:

1. The Engineer and/or it's representatives can not or will not provide a warranty, expressed or implied, for the construction of the designs presented in these plans. It is recommended that third party observation be provided by a qualified firm to provide continuous construction observation of the proposed improvements.
2. All construction shall conform to the City of Olathe Technical Specifications and Design Criteria, State Road and Bridge Specifications, American Public Work Association (APWA) (Kansas City Chapter) Specifications and/or the Project Specifications as applicable. Contractor shall notify the Engineer of any discrepancies between the standard specifications and the Project Specification and Contract Documents.
3. Contractor is responsible for verifying quantities prior to bidding, as well as becoming familiar with and satisfying himself as to the general, local and site conditions that may effect cost, progress, and performance of work.
4. Contractor shall promptly give engineer written notice of all conflicts, errors, ambiguities or discrepancies that the contractor discovers in the bidding documents and confirm that the written resolution thereof by the engineer is acceptable to contractor.
5. Contractor is responsible for the jobsite safety of the project and the safety of the public and shall adhere to all federal, state and local safety regulations.
6. Contractor is responsible for coordinating construction activities with other contractors concurrently working onsite. Contractor shall coordinate all subcontractor activities, and shall be the sole contact for the owner.
7. Contractor shall secure all required permits insurance requirements and bonding prior to construction. Insurance certificates shall name Owner and Engineer as additional insured.
8. Water for use on site must be purchased from the local water utility having jurisdiction, and shall be purchased per their requirements.
9. All traffic control required in conjunction with the proposed construction shall be in conformance with the Manual of Uniform Traffic Control Devices (MUTCD) and shall be a subsidiary obligation of the contract.
10. Contractor is responsible for the coordination of all material testing required for their work. This includes scheduling of tests, coordinating and providing access to sample locations, and satisfying all test result reporting requirements.

UTILITIES:

1. Existing utilities have been shown to the greatest extent possible based upon information provided to the Engineer. The contractor is responsible for contacting the respective utility companies and field locating utilities prior to construction and identifying any potential conflicts. All conflicts shall immediately be brought to the attention of the Engineer.
2. The contractor shall be responsible for coordinating any required utility relocations. Utilities damaged through the negligence of the contractor shall be repaired at the contractor's expense.
3. Contractor shall verify flow-lines and structure tops prior to construction, and shall notify Engineer of any discrepancies. Provide shop drawings for all precast and manufactured utility structures for review by the Engineer prior to construction of the structures.
4. Utility Separation: Waterlines shall have a minimum of 10 feet horizontal and 2 feet vertical separation from all sanitary sewer lines, manholes, and sanitary sewer service laterals, as measured from edge to edge. If minimum separations can not be obtained, concrete encasement of the sanitary line shall be required 10 feet in each direction of the conflict.
5. Payment for trenching, backfilling, pipe embedment, flowable fill, backfill materials, clean up, seeding, sodding and any other items necessary for the construction of the utility line shall be included in the contract price for the utility installation.
6. The Contractor shall be responsible for contacting respective utility companies 48-hours in advance for the inspection of any proposed utility main extension or service line or service connection to any existing main.
7. Trench spoils shall be neatly placed onsite adjacent to the trench, and compacted to prevent saturation and excess sediment runoff. Unsuitable materials, excess rock and shale, asphalt, concrete, trees, brush etc. shall be properly disposed of offsite. Materials may be wasted onsite at the direction of the Owner or his appointed representative.
8. All excavation is considered unclassified, unless noted otherwise. Unclassified excavation for utility trenching is subsidiary to the unit price provided for the pipe. Any quantity provided for rock excavation is estimated based on the best

SUMMARY OF QUANTITIES

	ITEM	QUANTITY	UNITS
1	12" PVC-SDR-26	931	LF
2	STANDARD 4' DIAMETER MANHOLE	5	EA
3	EXTRA DEPTH IN MANHOLE	57	VF
4	SANITARY SEWER CONNECTION	1	LS
5	REMOVE AND REPLACE EXISTING ASPHALT DRIVE	1042	SF
6	CONSTRUCTION STAKING	1	LS
7	COMPACTION TESTING	1	LS
8	CLEARING AND GRUBBING	1	LS
9	EROSION CONTROL	1	LS
10	BONDS	1	LS

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL LAYOUT
3	LAND DISTURBANCE
4	EROSION DETAILS
5	LINE A PLAN & PROFILE
6	TRIBUTARY MAP
7	SANITARY DETAILS

APPROVED BY:

_____ _____
CITY ENGINEER DATE
APPROVED FOR ONE YEAR FROM THIS DATE

PREPARED FOR:

CHRIS GRALAPP, AICP
MANAGER OF PLANNING/ENERGY
OLATHE PUBLIC SCHOOLS
cgralappwdsc@olatheschools.org
p 913-780-7011
1500 W. Old 56 Hwy
Olathe, Kansas 66061

JOHNSON COUNTY BENCHMARK:

Bernsten Aluminum Disk Stamped BM 631
Set on the S.E. Corner of Headwall on South Side 143rd St.

ELEV. 946.82

PROJECT BENCHMARK:

POINT 4006 MONUMENT FOUND 1/2" RE-BAR PAND B CAP.
EASTING = 2.64830000'
NORTHING = 9.32830000'

ELEV. 952.53

SCHLAGEL
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Kansas State Certificate of Authority
#E-2290 #LA-29 #LS-54

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

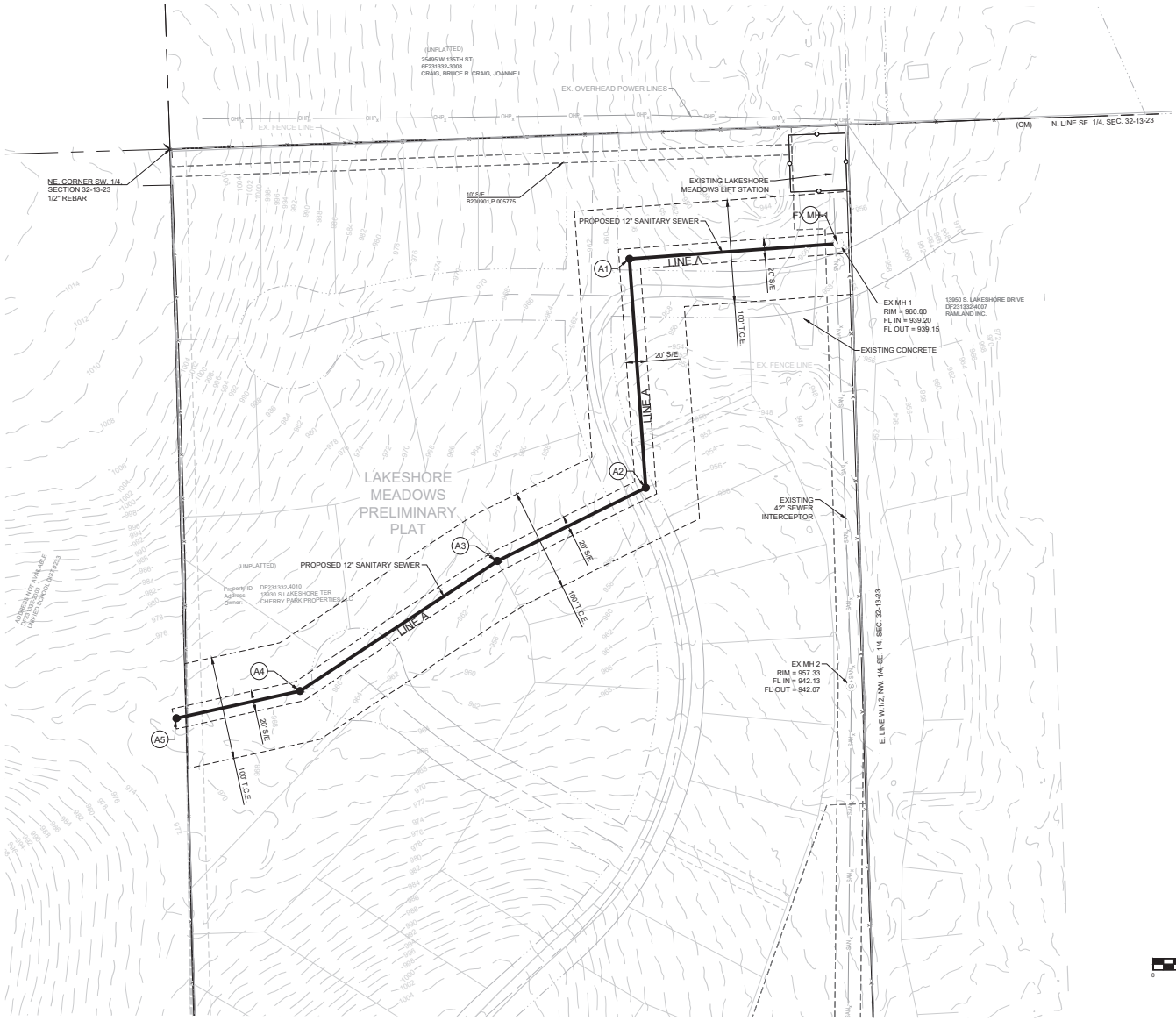
143RD STREET & ANDREWS AVE. SEWER MAIN EXTENSION
143RD STREET & ANDREWS AVE. OLATHE, KANSAS

REVISION DATE	DESCRIPTION
DATE	DESCRIPTION 1

DRAWN BY: MMT
CHECKED BY: MMT
DATE PREPARED:
PROJ. NUMBER: 24-068

COVER SHEET

SHEET
1



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JOHNSON COUNTY BENCHMARK:

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Set on the S.E. Corner of Headwall on South Side 143rd St.

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Kansas State Certificate of Authority
#E-2246 #LA-147 & #LS-54

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

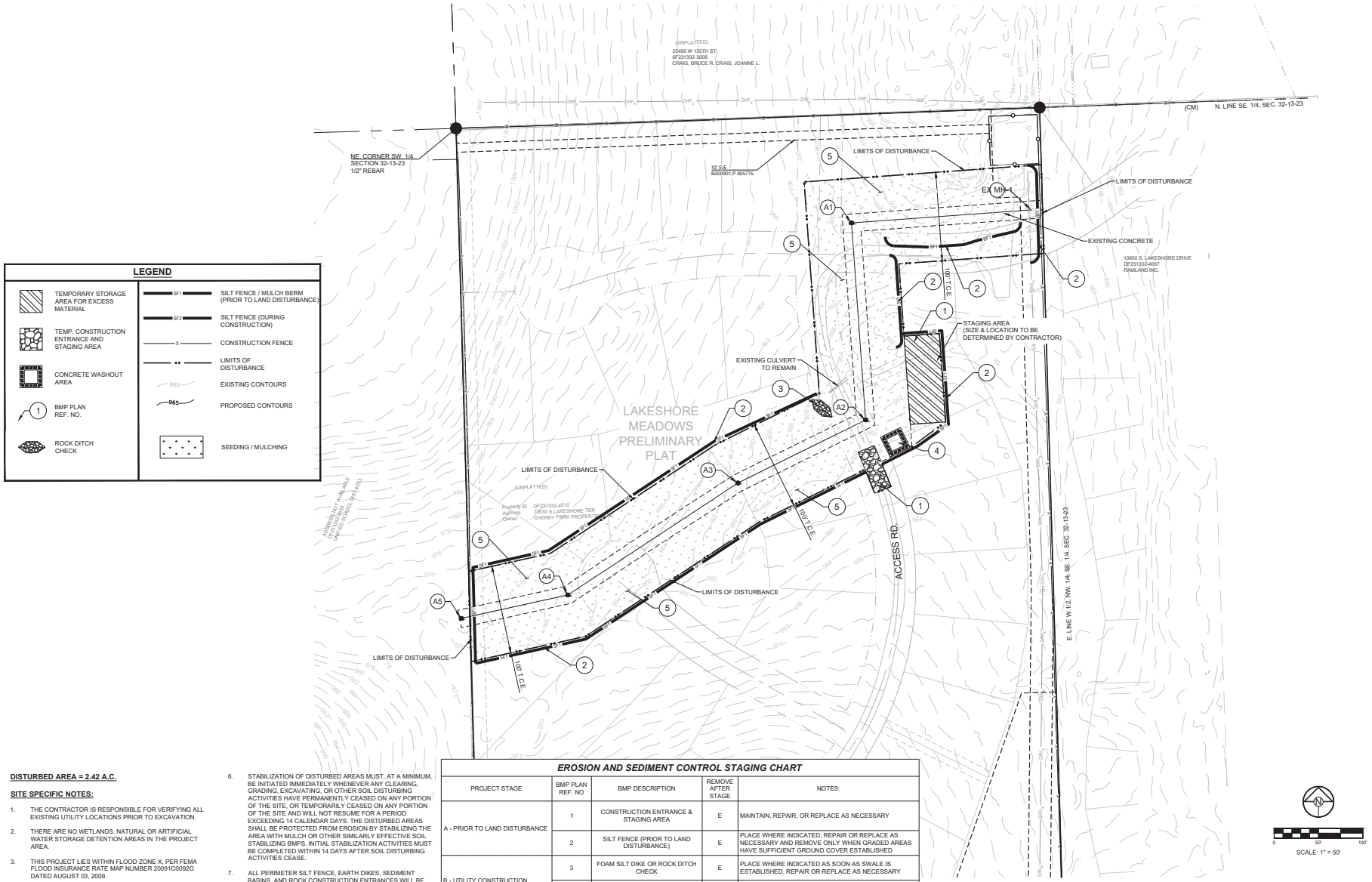
143RD STREET & ANDREWS AVE. SEWER MAIN EXTENSION
143RD STREET & ANDREWS AVE. OLATHE, KANSAS

REVISION DATE	DESCRIPTION
DATE	DESCRIPTION 1

DRAWN BY: AM
CHECKED BY: MVB
DATE PREPARED:
PROJ. NUMBER: 24-068

GENERAL LAYOUT

SHEET 2



DISTURBED AREA = 2.42 A.C.

SITE SPECIFIC NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
2. THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
3. THIS PROJECT LIES WITHIN FLOOD ZONE X, PER FEMA FLOOD INSURANCE RATE MAP NUMBER 20091C0092G DATED AUGUST 03, 2009.
4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
5. ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
6. STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMPS. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
7. ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
8. SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
9. AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

EROSION AND SEDIMENT CONTROL STAGING CHART

PROJECT STAGE	BMP PLAN REF. NO	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A - PRIOR TO LAND DISTURBANCE	1	CONSTRUCTION ENTRANCE & STAGING AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	2	SILT FENCE (PRIOR TO LAND DISTURBANCE)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
B - UTILITY CONSTRUCTION	3	FOAM SILT DIKE OR ROCK DITCH CHECK	E	PLACE WHERE INDICATED AS SOON AS SWALE IS ESTABLISHED, REPAIR OR REPLACE AS NECESSARY
	4	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
C - AFTER UTILITY CONSTRUCTION	5	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT				ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

PROJECT BENCHMARK:

POINT 4006 MONUMENT FOUND 1/2" RE-BAR PAND B CAP.
EASTING = 2.64830000'
NORTHING = 9.32830000'

ELEV. 952.53

JOHNSON COUNTY BENCHMARK:

Bernsten Aluminum Disk Stamped BM 631
Set on the S.E. Corner of Headwall on South Side 143rd St.

ELEV. 946.82

SCALE: 1" = 50'

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ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
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Kansas State Certificates of Authority
#E-2246 #LA-147 & #LS-54

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

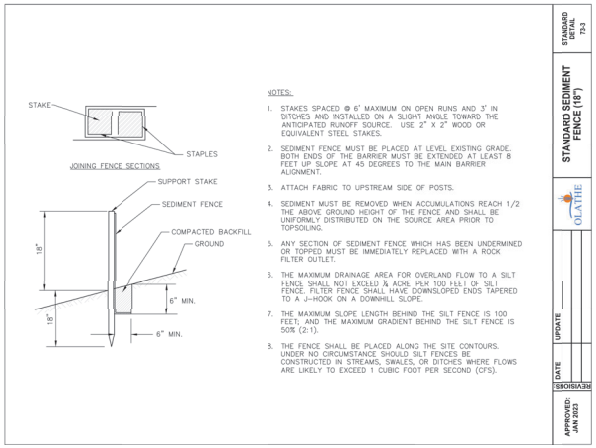
143RD STREET & ANDREWS AVE. SEWER MAIN EXTENSION
143RD STREET & ANDREWS AVE. OLATHE, KANSAS

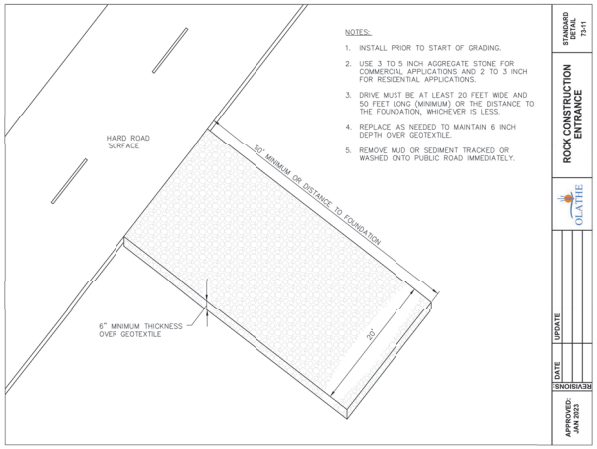
REVISION DATE	DESCRIPTION
DATE	DESCRIPTION 1

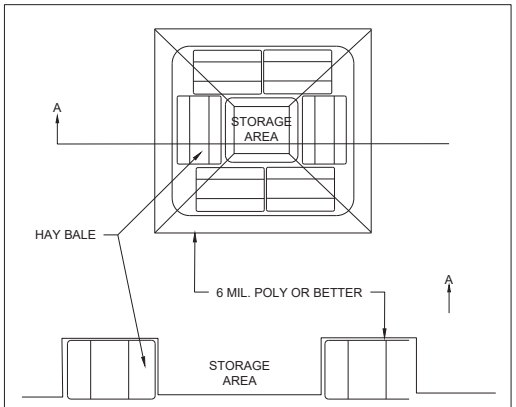
DRAWN BY: mwt
CHECKED BY: mwt
DATE PREPARED:
PROJ. NUMBER: 24-066

LAND DISTURBANCE

SHEET 3







SECTION A-A

NOTES:
1. INCREASE SIZE OF WASHOUT PIT AS REQUIRED TO ADEQUATELY CAPTURE WASHOUT WATER VOLUME.
2. REMOVE AND DISPOSE OF WASTE CONCRETE AND WASH-WATER AFTER CONCRETE HAS HARDENED.
3. RELOCATE AS NECESSARY.
4. DISCHARGE OF CONCRETE WASHOUT WATER INTO THE ENVIRONMENT IS NOT PERMITTED.
5. CONTRACTOR IS RESPONSIBLE FOR REPAIRING DAMAGE CAUSED BY CONCRETE WASHOUT AREA.

CONCRETE WASHOUT AREA

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#E-2041 #LA-97 & #LS-54

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

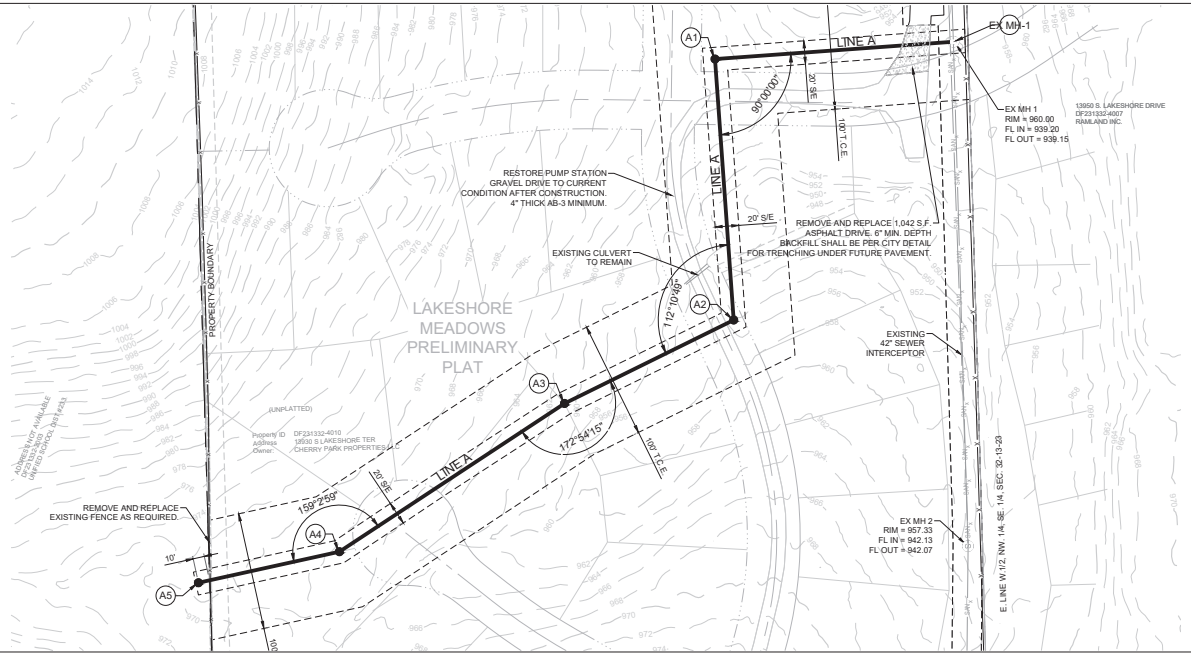
143RD STREET & ANDREWS AVE. SEWER
MAIN EXTENSION
143RD STREET & ANDREWS AVE. OLATHE, KANSAS

REVISION DATE	DESCRIPTION
DATE	DESCRIPTION 1

DRAWN BY: AMS
CHECKED BY: MAB
DATE PREPARED:
PROJ. NUMBER: 24-069

EROSION DETAILS

SHEET 4



JOHNSON COUNTY BENCHMARK:

Bernsten Aluminum Disk Stamped BM 631
Set on the S.E. Corner of Headwall on South Side 143rd St.

ELEV. 946.82

PROJECT BENCHMARK:

POINT 4006 MONUMENT FOUND 1/2" RE-BAR PAND B CAP.
EASTING = 2.64830000'
NORTHING = 9.32830000'

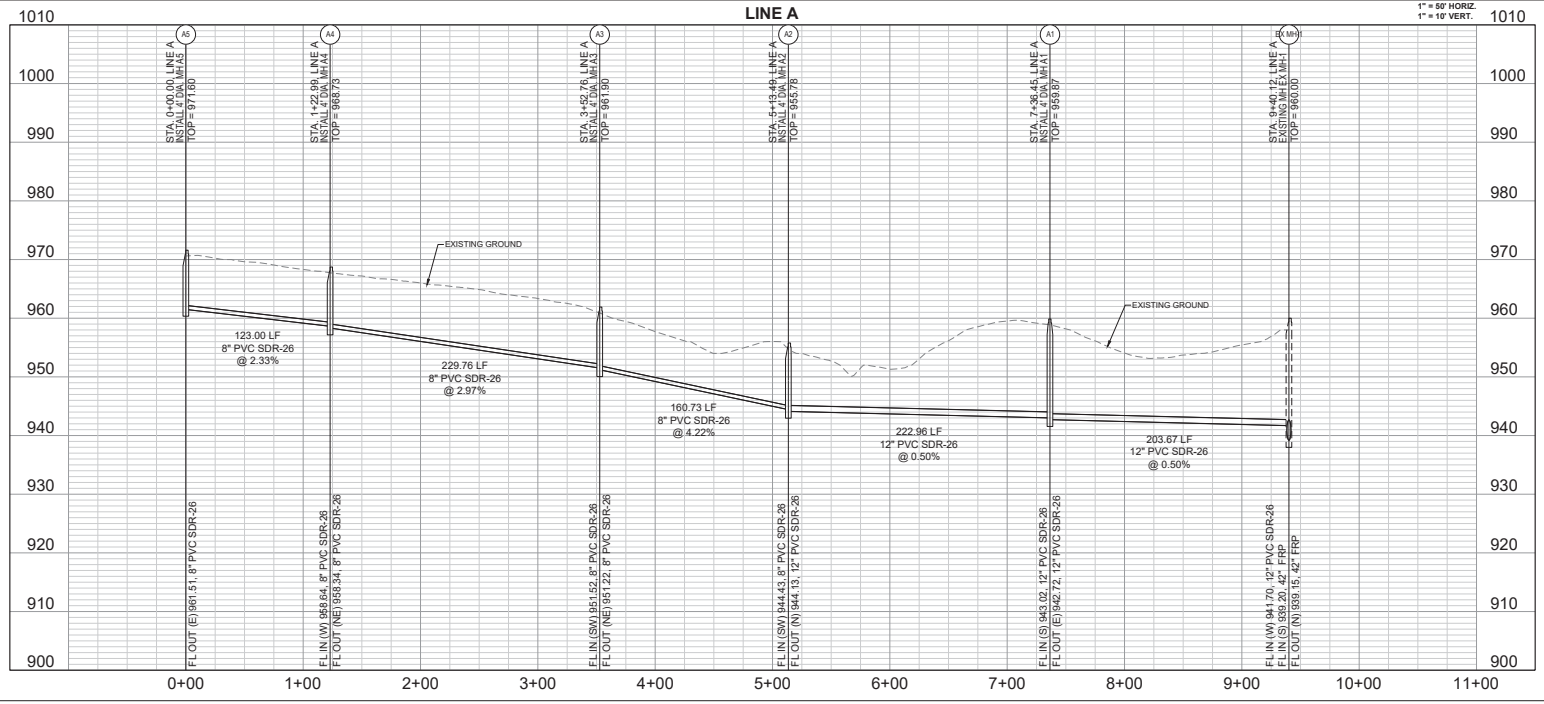
ELEV. 952.53

Structure Table		
Structure Name	Structure Northing	Structure Easting
A1	212957.2016	2200600.4064
A2	212734.8079	2200616.2920
A3	212663.6769	2200472.1547
A4	212537.3234	2200280.2531
A5	212510.8891	2200160.1401

N

0 50' 100'

SCALE: 1" = 50'



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PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

143RD STREET & ANDREWS AVE. SEWER
MAIN EXTENSION
143RD STREET & ANDREWS AVE. OLATHE, KANSAS

REVISION DATE	DESCRIPTION
DATE	DESCRIPTION 1

DRAWN BY: MMT
CHECKED BY: RMH
DATE PREPARED:
PROJ. NUMBER: 24-066

LINE A PLAN & PROFILE

SHEET
5

KDHE Minimum Flows**

Manhole #	Residential - Low Density: Tributary Area (acres)	Average Daily Flow (mgd)	Peak Daily Flow (mgd)	Peak Flow (cfs)	Residential - High Density: Tributary Area (acres)	Average Daily Flow (mgd)	Peak Daily Flow (mgd)	Peak Flow (cfs)	Commercial: Tributary Area (acres)	Average Daily Flow (mgd)	Peak Daily Flow (mgd)	Peak Flow (cfs)	Total Average Daily (mgd)	Total Peak Daily (mgd)
EX MH	75.53	0.0795	0.3977	0.6152	0.00	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000	0.0795	0.3977
A5	65.33	0.0653	0.3267	0.5053	0.00	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000	0.0653	0.3267
												Total	0.1449	0.7243

Design Variables: 1000 gallons per day per acre; Peaking factor of 5

Design Variables: 3000 gallons per day per acre; Peaking factor of 5

Design Variables: 1667 gallons per day per acre; Peaking factor of 5

** Per KDHE Minimum Standards of Design for Water Pollution Control Facilities, Sec. VI - Sanitary Sewer Design, minimum average design flows

Olathe Minimum Flows

Manhole #	ONSITE FLOWS: Residential - Single Family: Lot Count (EDU)	Average Daily Flow (mgd)	Peak Daily Flow (mgd)	Peak Flow (cfs)	Residential - Multi-Family: Lot Count (EDU)	Average Daily Flow (mgd)	Peak Daily Flow (mgd)	Peak Flow (cfs)	OFFSITE FLOWS: Residential - Low Density: Tributary Area (acres)	Average Daily Flow (mgd)	Peak Daily Flow (mgd)	Peak Flow (cfs)	Residential - High Density: Tributary Area (acres)	Average Daily Flow (mgd)	Peak Daily Flow (mgd)	Peak Flow (cfs)	Commercial: Tributary Area (acres)	Average Daily Flow (mgd)	Peak Daily Flow (mgd)	Peak Flow (cfs)	Total Average Daily (mgd)	Total Peak Daily (mgd)	Total Design Peak Flow (cfs)
EX MH	153.00	0.0579	0.2142	0.3960	0.00	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000	23.40	0.0715	0.2647	0.4895	0.1294	0.4789	0.8855
A5	156.00	0.0468	0.1732	0.3217	0.00	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000	0.00	0.0000	0.0000	0.0000	18.51	0.0505	0.1867	0.2889	0.0973	0.3599	0.6197
																				Total	0.2267	0.8388	

Design Variables: Peaking factor of 3.7; Peak Rates per Table DC003-2-1

Design Variables: Peaking factor of 3.7; Peak Rates per Table DC003-2-1

Design Variables: Peaking factor of 3.7; Peak Rates per Table DC003-2-2

Design Variables: Peaking factor of 3.7; Peak Rates per Table DC003-2-2

Design Variables: Peaking factor of 3.7; Peak Rates per Table DC003-2-2

PIPE CAPACITY CALCULATION

LINE "A"

PIPE SEGMENT M.H. ID	FLOWLINE INVERT (feet)	FLOWLINE INVERT (feet)	DROP IN MANHOLE (feet)	LENGTH (feet)	PIPE DIAMETER (inches)	SLOPE %	DESIGN FLOW (cfs)	Q FULL (cfs)	Q 1/2 FULL (cfs)	VELOCITY 1/2 FULL (fps)	Q 2.5 FULL (cfs)	VELOCITY 2.5 FULL (fps)	% OF Q ALLOWED	% OF Q FULL
EX MH	"C"	941.7	"C"											
B1	942.72	943.02	0.30	203.67	12.0	0.50	**0.615**	2.53	1.26	3.22	**2.80**	**3.59**	30.83%	24.35%
B2	944.13	944.43	0.30	222.96	12.0	0.50	**0.615**	2.53	1.26	3.22	**2.80**	**3.59**	30.83%	24.35%
B3	951.22	951.52	0.30	160.73	8.0	4.22	**0.615**	2.49	1.24	7.13	**1.97**	**7.95**	31.28%	24.71%
B4	958.34	958.64	0.30	229.76	8.0	2.97	**0.615**	2.09	1.04	5.98	**1.65**	**6.67**	37.29%	29.46%
B5	961.51	961.81	0.30	123.00	8.0	2.33	**0.505**	1.85	0.92	5.30	**1.46**	**5.91**	34.58%	27.32%

Design Notes:
1. Mannings "N" value of 0.013 has been assigned to all pipes

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#E-2041 #LA-97 #LS-54

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

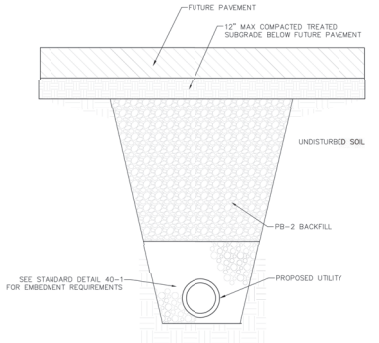
143RD STREET & ANDREWS AVE. SEWER MAIN EXTENSION
143RD STREET & ANDREWS AVE. OLATHE, KANSAS

REVISION DATE	DESCRIPTION
DATE	DESCRIPTION 1

DRAWN BY: AMS
CHECKED BY: MAB
DATE PREPARED:
PROJ. NUMBER: 24-069

TRIBUTARY MAP

SHEET 6



STANDARD DETAIL 463

TRENCHING UNDER FUTURE STREETS

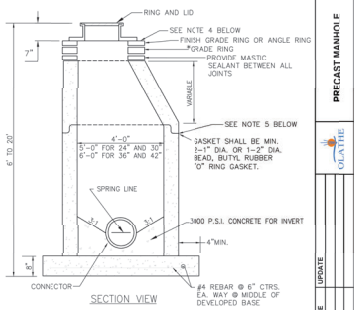
OLATHE

REVISIONS	DATE	UPDATE

APPROVED: JAN 2024

NOTES:

1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS. WALL THICKNESS NOT LESS THAN 1/12 OF MANHOLE INSIDE DIAMETER "PLUS" ONE-INCH, OR FIVE INCHES, WHICHEVER IS GREATER.
2. MANHOLE MAY BE TRANSITIONED TO 4'-0" DIA., 8' ABOVE F.L. OF OUTFALL FOR 3'-0" AND 6'-0" MANHOLES.
3. THE BOTTOM SECTION OF ALL PRECAST MANHOLES NOT BUILT MONOLITHIC WITH THE BASE SHALL BE SET INTO A STEEL REINFORCED POURED CONCRETE BASE A MINIMUM OF 4". (#4 @ 6" E.W.). IN THIS CASE, THE BASE THICKNESS SHALL BE INCREASED TO 12".
4. ADJUSTMENT RINGS AND MANHOLE JOINTS BELOW GRADE SHALL BE SEALED WITH TAPE THAT COMPLIES WITH ASTM C877, TYPE III. USE TAPE WITH A MINIMUM 8-INCH WIDTH TO COVER JOINTS AND ENTIRE SURFACE OF THE ADJUSTMENT RINGS, OVERLAPPING ONTO THE MANHOLE RING 4 TO 6 INCHES.
5. THE COMPRESSIVE STRENGTH OF CONCRETE USED IN THE CONSTRUCTION OF PRECAST REINFORCED CONCRETE MANHOLES SHALL NOT BE LESS THAN 4000 PSI.
6. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED.
7. GRADE RING(S) SHALL PROVIDE A MAXIMUM ADJUSTMENT OF 9", IN ANY COMBINATION OF A MAXIMUM OF 3 RINGS.



SECTION VIEW

STANDARD DETAIL 314

PRECAST MANHOLE

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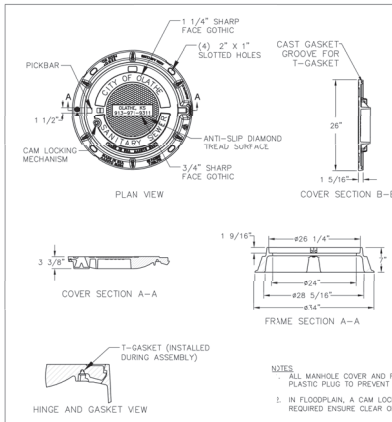
REVISIONS	DATE	UPDATE

APPROVED: JAN 2023



NOTES:

1. ALL MANHOLE COVER AND FRAMES TO BE HINGED, WITH PLASTIC PLUG TO PREVENT INFILTRATION.
2. IN FLOODPLAIN, A CAM LOCKING MECHANISM IS REQUIRED ENSURE CLEAR OPENING OF 24"

STANDARD DETAIL 314

STANDARD SANITARY SEWER MANHOLE COVER

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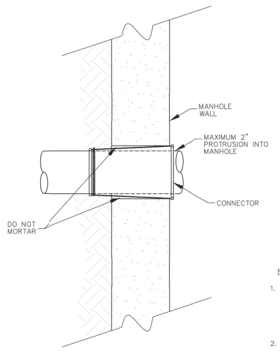
REVISIONS	DATE	UPDATE

APPROVED: JAN 2023



SECTION VIEW

NOTES:

1. A PIPE TO MANHOLE CONNECTOR USING AN ASTM C923 RESILIENT DEVICE THAT PROVIDES A POSITIVE, FLEXIBLE WATERTIGHT SEAL FOR PIPE(S) ENTERING EXISTING MANHOLES SHALL BE INSTALLED BY THE CONTRACTOR FROM OUTSIDE THE MANHOLE.
2. ALL OPENINGS TO ACCOMMODATE THESE CONNECTORS SHALL BE CORE-DRILLED.

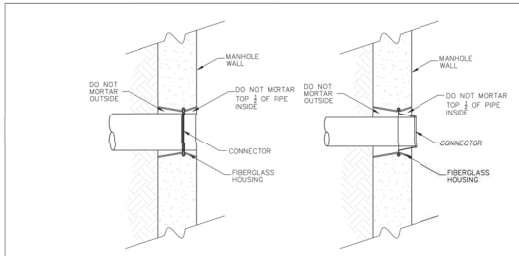
STANDARD DETAIL 315

CONNECTIONS TO EXISTING MANHOLES

OLATHE

REVISIONS	DATE	UPDATE

APPROVED: JAN 2023



SECTION VIEW
FOR PIPE SLOPES: LESS THAN OR EQUAL TO 15%

SECTION VIEW
FOR PIPE SLOPES: GREATER THAN 15%

NOTES:

1. FLEXIBLE CONNECTOR SHALL BE CAST INTO ALL PRECAST MANHOLES AND SHALL CONFORM TO ASTM C923.
2. PRECAST MANHOLE MANUFACTURER SHALL INSTALL CONNECTORS PER MANUFACTURER'S INSTRUCTIONS.

STANDARD DETAIL 314

CONNECTIONS TO NEW PRECAST MANHOLES

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REVISIONS	DATE	UPDATE

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PREPARED BY:

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143RD STREET & ANDREWS AVE. SEWER MAIN EXTENSION

143RD STREET & ANDREWS AVE. OLATHE, KANSAS

REVISION DATE	DESCRIPTION
DATE	DESCRIPTION 1

DRAWN BY: AM
CHECKED BY: MVD
DATE PREPARED:
PROJ. NUMBER: 24-069

SANITARY DETAILS

SHEET 7