

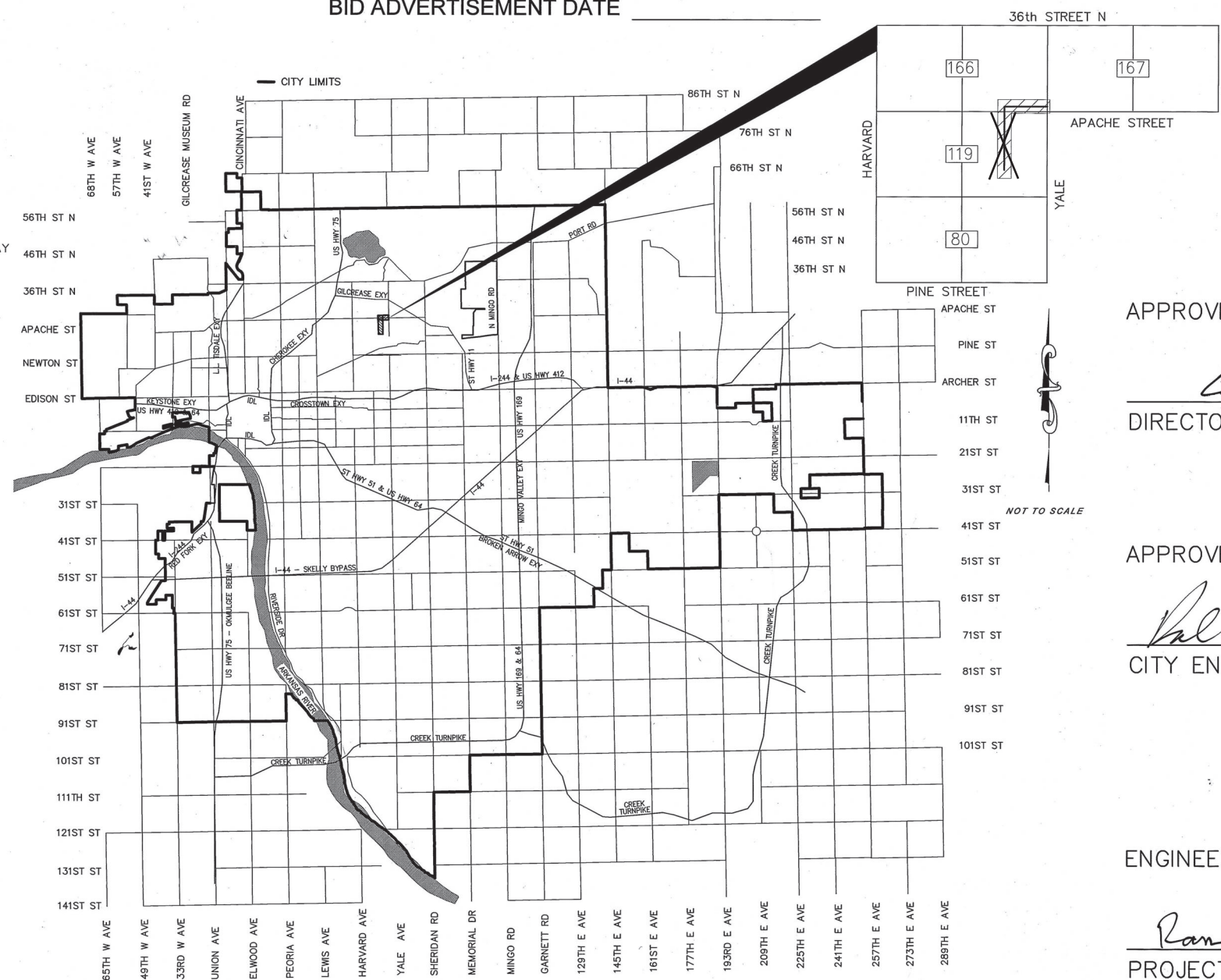
LEGEND

— T —	EXISTING TELEPHONE	□ EM	EXISTING ELECTRIC METER
□ TEL. MH	EXISTING TELEPHONE MANHOLE	□ PP	EXISTING POWER POLE
□ TCB	EXISTING TELEPHONE CONTROL BOX	→ GUY	EXISTING GUY WIRE
□ CABLE PED.	EXISTING CABLE PEDESTAL	□ ELEC. MH	EXISTING ELECTRIC MANHOLE
□ GM	EXISTING GAS METER	□ LP	EXISTING LIGHT POLE
□ GV	EXISTING GAS VALVE	□ FL	EXISTING LIGHT (FLOOD, YARD ETC.)
□ GR	EXISTING GAS RISER	— E —	EXISTING UNDERGROUND ELECTRIC CABLE
□ GAS MH	EXISTING GAS MANHOLE	— OE —	EXISTING OVERHEAD ELECTRIC WIRE
— 2" G —	EXISTING GAS LINE	—	ASPHALT
— 8" SS —	EXISTING SEWER LINE	—	CONCRETE PATTERN
○ SSMH	EXISTING SS MANHOLE	SIGN —	STREET SIGN
⊗	EXISTING MANHOLE REMOVAL	□ MB	MAILBOX
○ WWAD	EXISTING WWAD	• 1/2" PIPE	IRON ROD/PIPE FOUND
⊥ WV	EXISTING WATER VALVE	• BUSH	TREE OR BUSH
⊥ ICV	EXISTING IRRIGATION CONTROL VALVE	8" PECAN	
FH	EXISTING FIRE HYDRANT	• BM	BENCHMARK
□ WM	EXISTING WATER METER	△ CP	CONTROL POINT
⊥	EXISTING WATER TEE	• SSMH	PROPOSED NEW MANHOLE
Δ	EXISTING WATER REDUCER	• SSMH	REMOVE AND REPLACE MANHOLE
⊥	EXISTING WATER BEND	○ WWAD	PROPOSED WWAD
○ SH	EXISTING SPRINKLER HEAD	— 8" —	PROPOSED SEWER LINE
— 8" W —	EXISTING WATER	8" WATER	PROPOSED WATER LINE
○ SDMH	EXISTING STORM MANHOLE	—	PROPOSED ENCASEMENT
24" RCP	EXISTING STORM LINE	—	PROPOSED WATER VALVE
CHAIN LINK FENCE	CHAIN LINK FENCE	—	PROPOSED WATER TEE
WIRE FENCE	WIRE FENCE	—	PROPOSED WATER REDUCER
FENCE OTHER	FENCE OTHER	—	ROW LINE
WOOD FENCE	WOOD FENCE	—	PROPERTY LINE
ELEC. PED. □	EXISTING ELECTRICAL PEDESTAL	□	LIMITS OF CONCRETE PAVEMENT/DRIVEWAY REPAIR
— FO —	EXISTING FIBER OPTIC LINE	□	LIMITS OF ASPHALT PAVEMENT/DRIVEWAY REPAIR
—	EXISTING EASEMENT LINE	□	2" ASPHALT MILL AND OVERLAY
— UU —	UNKNOWN UTILITIES		

CONSTRUCTION PLANS FOR COAL CREEK BASIN 16-N SPECIFIC REMEDIATION PLAN PHASE 2 TMUA PROJECT NO. ES 2015-14

CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT

BID ADVERTISEMENT DATE



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APPROVED BY:

CLAYTON EDWARDS 11-4-20
DIRECTOR, WATER AND SEWER DEPT. DATE

APPROVED BY:

R. J. Brodner 11.06.20
CITY ENGINEER DATE

ENGINEER'S CERTIFICATION:

Randall J. Brodner 10-8-20
PROJECT MANAGER DATE



PREPARED BY
rjngroup
CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106
TULSA, OKLAHOMA 74146
(918) 627-9737

CERTIFICATE OF
AUTHORIZATION NO. CA1979,
EXP. 6/30/2024
6/30/2023



UTILITY COORDINATION BOX

	NUMBER	NOTIFIED
UTILITIES COORDINATOR	918-596-9649	
WATER DESIGN	918-596-9566	
WASTEWATER DESIGN	918-596-9564	
TRANSPORTATION DESIGN	918-596-9636	
TRAFFIC ENGINEERING DESIGN	918-596-9749	
STORMWATER DESIGN	918-596-9498	
COT IT NETWORK SERVICES	918-596-7070	
OKLAHOMA NATURAL GAS CO.	918-831-8261	
PUBLIC SERVICE CO.	918-599-2757	
AT&T	918-596-6702	
COX COMMUNICATIONS	918-669-4866	

\\TUL-PAZSURA\OFFICE-30\tulsa\PROJECTS\30-2921-00\tulsa\COAL CREEK BASIN 16-N SRP\CAO\DRAWINGS\02-00\GENERAL NOTES SHC.DWG
6/15/17 AM

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS GOVERNING SAFETY, HEALTH, AND SANITATION. THE CONTRACTOR SHALL PROVIDE ALL SAFEGUARDS, SAFETY DEVICES, AND PROTECTIVE EQUIPMENT REQUIRED AND SHALL TAKE ANY OTHER NEEDED ACTIONS ON HIS OWN RESPONSIBILITY OR AS REQUIRED DETERMINED BY THE CITY OR THE ENGINEER TO PROTECT PROPERTY OR THE PUBLIC IN CONNECTION WITH THE WORK COVERED BY THIS CONTRACT.
2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF TULSA ENGINEERING SERVICES STANDARDS AND SPECIFICATIONS AND IN ACCORDANCE WITH THE SPECIAL PROVISIONS OF THIS CONTRACT.
3. THE CONTRACTOR SHALL, IN COOPERATION WITH THE CITY, DEVELOP AND SUBMIT FOR APPROVAL, A TRAFFIC CONTROL PLAN (TCP), TO THE CITY OF TULSA ENGINEERING SERVICES, FIELD ENGINEERING. THIS TCP SHALL DETAIL SUCH MEASURES AS MAY BE REQUIRED TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE A COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROL SYSTEM DURING THE ENTIRE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL PLACE TRAFFIC CONTROL FLAGMEN, BARRICADES, SIGNS, SIGNALS, OR OTHER DEVICES AS MAY BE REQUIRED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION, PERMITTING, AND EXECUTION OF A STORMWATER POLLUTION PREVENTION PLAN (SWP3). THE CONTRACTOR SHALL PROVIDE ALL DOCUMENTATION REQUIRED OF SWP3 FOR REVIEW AND APPROVAL OF THE PLAN BY FEDERAL, STATE, AND LOCAL AUTHORITIES. THIS INCLUDES, BUT IS NOT LIMITED TO, THE NOTICE OF INTENT AND THE NOTICE OF TERMINATION.
5. THE CONTRACTOR SHALL SUBMIT A TRENCH EXCAVATION PLAN, SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF OKLAHOMA, FOR ALL LOCATIONS WHERE TRENCH OR SHAFT EXCAVATION EXCEEDS 20 FEET DEEP.
6. BORING LOGS FOR THIS PROJECT ARE AVAILABLE FOR REVIEW AT THE OFFICES OF RJN GROUP, INC., 4150 S. 100th E. AVE., SUITE 106, TULSA, OK. NEITHER THE CITY OR THE ENGINEER MAKES OR ACCEPTS, EXPRESS OR IMPLIES, ANY WARRANTIES ABOUT THE INFORMATION SHOWN ON THESE BORING LOGS.
7. IF ROCK IS ENCOUNTERED, AND THE CONTRACTOR CHOOSES TO BLAST, BLASTING WILL CONFORM TO THE CITY OF TULSA BLASTING ORDINANCE.
8. ALL EXCAVATED MATERIAL NOT NEEDED OR DEEMED UNSUITABLE FOR BACKFILL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF IN A LOCATION AND MANNER APPROVED BY THE CITY. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN AN EARTH CHANGE PERMIT IF THIS MATERIAL IS TO BE DISPOSED OF WITHIN THE CITY OF TULSA.
9. BACKFILL UNDER ALL PAVED SURFACES SHALL BE TYPE "A" AGGREGATE BASE PLACED IN 8" MAXIMUM LIFTS AND COMPACTED BY A VIBRATORY HAND TAMPER TO 95% OF THE STANDARD PROCTOR DENSITY, AS MEASURED BY THE NUCLEAR DENSITY METHOD.
10. ALL NEW MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH THE CITY OF TULSA ENGINEERING SERVICES DEPARTMENT STANDARDS.
11. THE CONTRACTOR SHALL PROVIDE A DETAILED ACCESS PLAN FOR THE CONSTRUCTION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS, CONSTRUCTION ACTIVITIES, AND PERMITS THAT MAY BE NEEDED FOR THE IMPLEMENTATION OF THIS PLAN.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF THE LOCATION OF ALL EXISTING SANITARY SEWER SERVICE LATERALS IN THE PROJECT AREA. IF ENCOUNTERED OR DAMAGED DURING CONSTRUCTION, EXISTING SERVICE LATERALS SHALL BE REMOVED AND REPLACED USING PIPE OF THE SAME SIZE AND MATERIAL AS THE EXISTING SEWER.
13. NO FILL, SPOIL, BEDDING MATERIAL OR EQUIPMENT MAY BE STORED OVERNIGHT WITHIN THE FLOOD PLAIN LIMITS.
14. ALL SEWERS SCHEDULED FOR ABANDONMENT AS PART OF THIS PROJECT SHALL BE FILLED WITH FLOWABLE FILL, SAND, OR CELLULAR CONCRETE AND THEN PLUGGED.
15. ALL DAMAGED PAVEMENT OUTSIDE OF THE TRENCH PAYLINE SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR TRENCH DEWATERING, NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.
17. CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS DAMAGED DURING THE COURSE OF CONSTRUCTION, PAYMENT SHALL BE INCLUDED IN RIGHT-OF-WAY CLEARING AND RESTORING. NO ADDITIONAL PAYMENTS SHALL BE MADE.
18. ALL SANITARY SEWER AND STORM SEWER MANHOLE CASTING AND LIDS THAT ARE LOCATED IN THE STREET AND ARE DISTURBED BY THE CONTRACTOR SHALL BE REPLACED WITH NEW ONES, AND THE OLD CASTINGS AND LIDS SHALL BE DELIVERED TO THE SEWER BASE AT 9319 E. 42nd STREET N. AND PLACED IN THE METAL RECYCLE BIN IN THE STOCKROOM AREA ~~918-680-6130~~, BETWEEN THE HOURS OF 7:30 AM AND 3:00 PM MONDAY THROUGH FRIDAY 918-586-6996
19. CONTRACTOR TO PROVIDE ORANGE SAFETY FENCE AROUND EXCAVATION PITS.

TRAFFIC CONTROL

1. ALL TRAFFIC CONTROL DEVICES, CONSTRUCTION SIGNAGE, BARRICADING, ETC. SHALL BE IN ACCORDANCE WITH THE LATEST REVISED EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL A TRAFFIC CONTROL PLAN (TCP).
2. THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTIFICATION FOR ANY AND ALL STREET / LANE CLOSURES, MODIFICATION, OR CHANGES TO THE TRAFFIC CONTROL MEASURES TO:

POLICE918-596-9222

FIRE918-596-9977

COT TRAFFIC918-596-9744

EMSA918-596-3043

MTTA918-585-1195
3. THE CONTRACTOR SHALL NOTIFY TRAFFIC OPERATIONS 48 HOURS PRIOR TO STARTING WORK OR PRIOR TO REMOVING OR RELOCATING ANY TRAFFIC SIGNS. ALL SIGNS SHALL BE HANDLED SO AS TO AVOID ANY DAMAGE TO THE SIGN OR POST. ALL SIGNS REMOVED DUE TO CONSTRUCTION SHALL BE REINSTALLED BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL CONSTRUCTION SIGNAGE AND BARRICADING, INCLUDING, BUT NOT LIMITED TO, WASHING, REPLACEMENT, REPOSITIONING OF DEVICES. WHEN AND WHERE IT IS DEEMED NECESSARY BY THE CITY OR THE ENGINEER, THE CONTRACTOR SHALL FURNISH AND INSTALL ANY ADDITIONAL TRAFFIC CONTROL DEVICES.
5. LOCAL AND THROUGH TRAFFIC SHALL BE MAINTAINED THROUGH THE PROJECT AREA AT ALL TIMES. LOCAL TRAFFIC TO ALL PUBLIC AND PRIVATE STREETS SHALL BE ACCESSIBLE FROM ANY DETOURS DURING THE CONSTRUCTION OF THIS PROJECT.
6. ROADSIDE HAZARDS SHALL BE COMPLETELY BARRICADED AROUND THEIR PERIMETER FOR SAFETY OF PEDESTRIANS AND VEHICLES. NO BARRICADES SHALL BE PLACED UNTIL ALL ADVANCED SIGNING IS IN PLACE.
7. ALL CHANNELING DEVICES, TYPE III BARRICADES, ETC., SHALL BE WEIGHTED DOWN WITH A NON-HAZARDOUS MATERIAL WHEN NECESSARY OR WHEN DIRECTED BY THE CITY OR THE ENGINEER.
8. ALL ADVANCE WARNING SIGNS SHALL BE PROVIDED WITH TYPE "A" WARNING LIGHTS.
9. ALL TYPE III BARRICADES SHALL BE FURNISHED WITH A MINIMUM OF TWO (2) TYPE "A" WARNING LIGHTS.
10. ALL CHANNELING DEVICES SHALL BE PROVIDED WITH TYPE "C" WARNING LIGHTS.
11. CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE RESIDENCES AND BUSINESSES AT ALL TIMES.

UTILITIES

1. THE LOCATION OF THE UTILITY LINES, AS SHOWN ON THESE DRAWINGS, ARE BASED ON ATLAS INFORMATION AND OBSERVED FEATURES. NEITHER THE CITY NOR THE ENGINEER ASSUMES OR IMPLIES ANY RESPONSIBILITY FOR THE ACCURACY OF THIS DATA. SERVICE LINES FROM THE MAIN UTILITY LINES TO ANY BUILDING OR FACILITY MAY NOT BE SHOWN. CONTRACTOR SHALL OBTAIN THE LOCATION OF THESE FROM THE UTILITY COMPANY AND SHALL BE HELD RESPONSIBLE FOR ANY DAMAGES TO THESE LINES OR ANY OTHER LINES OR UTILITIES DURING THE CONSTRUCTION OF THIS PROJECT.
2. THE CONTRACTOR SHALL GIVE NOTIFICATION CENTER OF THE OKLAHOMA ONE-CALL SYSTEM, INC., A MINIMUM OF TWO (2) WORKING DAYS AND A MAXIMUM OF TEN (10) WORKING DAYS PRIOR TO BEGINNING WORK IN ANY AREA. **PHONE: 1-800-522-6543.**
3. CONTRACTOR SHALL BRACE UTILITY POLES AND GUY WIRES WITHIN FIVE (5) FEET OF ANY EXCAVATION. CONTRACTOR SHALL CONTACT PUBLIC SERVICE COMPANY OF OKLAHOMA (PSO) A MINIMUM OF THREE (3) WEEKS PRIOR TO BRACING AND/OR RELOCATING ANY UTILITY POLES.

SPECIAL NOTES

1. SEQUENTIAL RESTORATION

THIS RESTORATION SHALL INCLUDE, BUT IS NOT LIMITED TO, SUCH ITEMS AS SODDING, REPLACEMENT OF SIDEWALKS, FENCES, DRIVEWAYS, AND STREET PAVEMENT, GROUTING OF SEWER SCHEDULED TO BE ABANDONED, AND ANY OTHER ITEMS SPECIFICALLY SHOWN ON THE PLANS.

ANY RESTORATION WORK DAMAGED OR DESTROYED BY THE CONTRACTOR'S SUBSEQUENT WORK SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE. NO ADDITIONAL PAYMENT SHALL BE MADE FOR SEQUENTIAL RESTORATION.
2. PROPERTY OWNER NOTIFICATIONS

ALL PROPERTY OWNERS ADJACENT TO THE ALIGNMENT SHALL BE NOTIFIED OF THE PROJECT WITHIN 7 CALENDAR DAYS BEFORE CONSTRUCTION ON OR ADJACENT TO THE PROPERTY, AND A MINIMUM OF 48 HOURS BEFORE CONSTRUCTION.
3. TRANSITIONS BETWEEN PIPE TYPES

TRANSITION BETWEEN PIPE TYPES MAY ONLY BE MADE AT MANHOLES. IN THE EVENT THE CONTRACTOR DESIRES TO MAKE A TRANSITION BETWEEN PIPE TYPES AT ANY OTHER POINT, THEY SHALL INSTALL AN ADDITIONAL MANHOLE AT THE POINT OF TRANSITION BETWEEN THE PIPE TYPES, IF APPROVED BY ENGINEER. THIS TRANSITION MANHOLE SHALL BE CONSIDERED AS INCIDENTAL WORK AND WILL NOT BE MEASURED FOR PAYMENT.
4. ASPHALT STREET REPAIR

AFTER PIPE INSTALLATION, THE CONTRACTOR SHALL BACKFILL & PATCH EXISTING ASPHALT STREETS. ALL ASPHALT PAVEMENT CUTS SHALL BE IN ACCORDANCE WITH DETAIL NO. 714 & 733 LIMITS OF PAVEMENT ARE APPROXIMATE. SEE PAVEMENT REPAIR SHEET FOR EXTENTS OF PAVEMENT REPLACEMENT.
5. CONCRETE STREET REPAIR

ALL CONCRETE PAVEMENT CUTS SHALL BE IN ACCORDANCE WITH DETAIL NO. 714 AND STD. DRAWING NO. 727. LIMITS OF PAYMENT ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR EXACT LOCATION OF CONSTRUCTION JOINTS.
6. TRENCH SAFETY

CONTRACTOR SHALL FOLLOW REQUIREMENTS FOR EXCAVATION AND TRENCH SAFETY PER CITY OF TULSA SPECIFICATION NO. 112 AND GUIDELINES SET BY THE U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). TRENCH SAFETY SHALL BE CONSIDERED AS INCIDENTAL WORK AND WILL NOT BE MEASURED FOR PAYMENT.
7. BYPASS PUMPING

IF NECESSARY, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE BYPASS PUMPING DURING SANITARY SEWER CONSTRUCTION. CONTRACTOR SHALL SUBMIT A SEWER BYPASS PLAN PRIOR TO CONSTRUCTION.

CONTRACTOR SHALL MAINTAIN SEWER FLOW AT ALL TIMES DURING BYPASS PUMPING OPERATIONS. THE PUMP AND BYPASS LINES SHALL BE OF ADEQUATE CAPACITY AND SIZE TO HANDLE THE ANTICIPATED WET WEATHER FLOW. LIQUID LEVELS SHALL NOT BE ALLOWED TO OVER FLOW OR BACK-UP INTO ANY CUSTOMER'S DWELLING OR BUSINESS.

THE COST OF BYPASS PUMPING INCLUDING THE PUMPS, LINES, LABOR AND ANY OTHER ASSOCIATED ITEMS REQUIRED TO MAINTAIN BYPASS PUMPING SHALL BE INCLUDED IN OTHER ITEMS OF WORK. NO ADDITIONAL PAYMENT WILL BE MADE FOR BYPASS PUMPING.
8. MANHOLE FRAME & COVERS

ALL NEW MANHOLE FRAME AND COVERS INSTALLED ON THE PROJECT SHALL HAVE A MINIMUM CLEAR OPENING OF 30-INCHES REGARDLESS OF MANHOLE SIZE.

CONTRACTOR IS REQUIRED TO SUBMIT WRITTEN BYPASS PUMPING NOTIFICATION FORM TO SEWER OPERATIONS AND MAINTENANCE AT LEAST ONE WEEK PRIOR TO BYPASS PUMPING. SEE SP-12.



GENERAL NOTES

PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
rjngroup RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
			NA	DESIGNED	RJB	...	
				SURVEY	NA	...	
				PROJ. MGR.	<i>ADJ</i>	<i>10/20</i>	
			PROFILE SCALE:	LEAD ENGR.	<i>ADJ</i>	<i>10/20</i>	
			HORIZONTAL:	FIELD MGR.	<i>TRB</i>	<i>10/20</i>	
			NA	RECOMMENDED	<i>HAS</i>	<i>11-20</i>	
			VERTICAL:	DESIGN MANAGER			CITY ENGINEER
			NA	DRAWING:			DATE: OCTOBER 2020
			FILE:				
			ATLAS PAGE NO.:				SHEET 2 OF 26

PAY ITEM NOTES

RIGHT-OF-WAY CLEARING AND RESTORATION

1. RIGHT-OF-WAY CLEARING WILL BE PAID FOR AT THE UNIT BID PRICE, ON A PER SQUARE YARD BASIS FOR OPEN CUT CONSTRUCTION CALCULATED AT 20' WIDTH. NO ADDITIONAL PAYMENT WILL BE MADE FOR TRENCHLESS CONSTRUCTION.
2. ANY ITEMS REMOVED AS PART OF THIS PROJECT SHALL BE RESTORED TO EQUAL OR BETTER CONDITION. PAYMENT WILL BE INCLUDED IN THE BID PRICE FOR RIGHT-OF-WAY CLEARING AND RESTORATION.
3. THE COST OF ANY TEMPORARY FENCING FOR LIVESTOCK OR PETS IS PART OF AND INCLUDED IN RIGHT-OF-WAY CLEARING AND RESTORATION.
4. ALL COSTS ASSOCIATED WITH THE REMOVALS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR RIGHT-OF-WAY CLEARING AND RESTORATION. THIS INCLUDES, BUT IS NOT LIMITED TO, STRUCTURES, TREES, BUSHES, FENCES, AND OTHER ITEMS AS MAY BE ENCOUNTERED.
5. UNLESS NOTED FOR SALVAGE, ALL ITEMS REMOVED SHALL BE REMOVED AS PART OF THE UNIT PRICE BID FOR RIGHT-OF-WAY CLEARING AND RESTORATION. ITEMS SCHEDULED FOR SALVAGE SHALL BE RETURNED TO A SITE DESIGNATED BY THE CITY. CASTING AND LIDS ON ALL SANITARY AND STORM SEWERS SHALL BE REPLACED WITH NEW ONES AND THE OLD LIDS AND CASTINGS SHALL BE RETURNED TO THE SEWER OPERATIONS BASE AT 9319 E. 42nd STREET NORTH AND PLACED IN THE METAL RECYCLE BINS IN THE STOCKROOM AREA, PHONE: ~~(918) 660-6130~~, BETWEEN THE HOURS OF 7:30 A.M. AND 3:00 P.M., MONDAY THROUGH FRIDAY. MATERIALS NOT SALVAGED SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE CITY AND THE ENGINEER AT NO COST TO THE PROJECT.
6. AS PART OF THE UNIT BID PRICE FOR RIGHT-OF-WAY CLEARING AND RESTORATION, THE CONTRACTOR SHALL REPAIR OR REPLACE, ANY PRIVATE UTILITIES DISTURBED. THIS INCLUDES, BUT IS NOT LIMITED TO, IRRIGATION, YARD LIGHTING, EITHER GAS OR ELECTRIC, AND PET CONFINEMENT SYSTEMS. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THIS WORK.

TRAFFIC

7. THE CONTRACTOR SHALL DEVELOP A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE GENERAL NOTES.
8. ALL REFLECTORIZED SHEETING USED ON SIGN AND BARRICADES SHALL BE A CUBIC PRISMATIC TYPE AND SHALL MEET ASTM D-4956-01, TYPE IX. SHEETING ON DRUMS SHALL BE TYPE III SHEETING MEETING ASTM D-4956-04.

EROSION CONTROL

9. ALL COSTS ASSOCIATED WITH THE COST OF IMPLEMENTING, MAINTAINING, AND MODIFYING THE EROSION CONTROL MEASURE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR EACH EROSION CONTROL MEASURE.
10. THIS INCLUDES, BUT IS NOT LIMITED TO, ALL SOIL STABILIZATION PRACTICES, STRUCTURAL MEASURES, ON / OFFSITE VEHICLE CONTROL MEASURES, AND REMOVAL OF SEDIMENT TO PROPERLY ADHERE TO THE APPROVED STORMWATER POLLUTION PREVENTION PLAN. SILTATION CONTROL MEASURES, SUCH AS SEDIMENT FILTERS SHALL BE PLACED AROUND STRUCTURES AND CREEKS TO PREVENT EROSION OR THE DEPOSITION OF ERODED MATERIAL ON ADJACENT PROPERTY.
11. SHOULD THE CONTRACTOR ELECT TO DEVELOP HIS OWN SWP3, THIS PLAN SHALL BE DEVELOPED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA. COST FOR THIS ALTERNATIVE PLAN WILL BE CONSIDERED AS INCIDENTAL TO THE IMPLEMENTATION OF THE EROSION CONTROL MEASURES.
12. EROSION PROTECTION SHALL BE PLACED AROUND DRAINAGE INLETS AS REQUIRED TO PREVENT ENTRANCE OF EROSION MATERIAL. EROSION PROTECTION SHALL BE PLACED AS NECESSARY TO PREVENT EROSION WASH TO ADJACENT PROPERTY. ALL EROSION PROTECTION INSTALLED MUST BE MAINTAINED BY THE CONTRACTOR FOR DURATION OR THE PROJECT. EROSION PROTECTION SHALL BE REMOVED AT THE END OF THE PROJECT AS DIRECTED BY THE ENGINEER, COST TO BE INCLUDED IN THE PRICE BID. THE PRICE INCLUDES THE COST OF SEDIMENT REMOVAL PER THE STORMWATER MANAGEMENT PLAN.

EXCAVATION

13. THE CONTRACTOR SHALL INCLUDE THE COST OF RELOCATING UTILITY POLE ANCHORS, AND ANY BRACING OF POLES THAT MAY BE REQUIRED BY THE APPROPRIATE UTILITY COMPANY. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE APPROPRIATE UTILITY COMPANY. ALL WORK ASSOCIATED WITH THE MAINTENANCE OF OTHER UTILITIES, FACILITIES, AND LINES IS CONSIDERED AS WORK INCIDENTAL TO UNCLASSIFIED EXCAVATION AND BACKFILL AND AS SUCH, WILL NOT BE MEASURED FOR SEPARATE PAYMENT.
14. THE CONTRACTOR SHALL EXCAVATE ALL BURIED UTILITY CROSSINGS AHEAD OF PIPE LAYING OR THE INSTALLATION OF SHEETING OR SHORING TO AVOID UTILITY CONFLICTS. ALL COSTS ASSOCIATED WITH THIS WORK IS CONSIDERED INCIDENTAL TO UNCLASSIFIED EXCAVATION AND BACKFILL.
15. ~~WATER TABLE CRADLE SHALL BE INSTALLED WHERE TRENCH CONDITIONS WARRANT ITS USE AS DIRECTED BY THE ENGINEER.~~

SODDING

15. ~~46.~~ THE PAYMENT OF THE UNIT BID PRICE FOR SOLID SLAB SODDING SHALL INCLUDE ALL COSTS FOR PLACEMENT OF THE TOPSOIL AND SOD, FERTILIZATION, AND PERIODIC WATERING. FERTILIZATION SHALL BE ACCOMPLISHED USING 10-20-10 FERTILIZER APPLIED AT A RATE OF 1.5 POUNDS PER SQUARE YARD. WATERING SHALL BE AS NEEDED AND SHALL CONTINUE UNTIL THE VEGETATION IS FULLY ESTABLISHED OR THE PROJECT HAS BEEN ACCEPTED BY THE OWNER.
16. ~~47.~~ WATERING AND FERTILIZATION FOR HYDROMULCH SEEDING SHALL BE IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATION PART 325. PAYMENT FOR SOD REPLACEMENT OR HYDROMULCH SEEDING WILL BE MADE AT THE UNIT PRICE PER SQUARE YARD AND SHALL INCLUDE ALL NECESSARY TOP SOIL REPLACEMENT, FERTILIZATION, WATERING AND MAINTENANCE. NO SEPARATE ADDITIONAL PAYMENT SHALL BE MADE FOR SODDING AND SEEDING OUTSIDE OF PAY LIMIT. MAXIMUM PAY LIMIT FOR SEEDING AND SODDING SHALL BE STANDARD TRENCH WIDTH PLUS 2 FEET EACH SIDE OF TRENCH. DEVELOPED LOTS SHALL BE SOD AND UNDEVELOPED LOT MAY BE HYDROMULCH SEEDED.

PAVEMENT

17. ~~48.~~ ALL STEEL DOWELING AND REINFORCING STEEL REQUIRED FOR THE REPLACEMENT OF CURB AND GUTTERS OR CONCRETE PAVEMENT SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE REMOVAL AND REPLACEMENT OF THE ITEM. IN THE EVENT THERE IS NO ASSOCIATED BID PRICE, THE WORK IS CONSIDERED AS INCIDENTAL. CURB AND GUTTER REPLACEMENT SHALL BE AS DIRECTED BY ENGINEER AS NEEDED.
- ~~19. PAVEMENT REPLACEMENT AT RECEIVING AND LAUNCHING PITS LOCATED IN THE STREET SHALL BE DONE IN ACCORDANCE WITH THE CITY OF TULSA'S REQUIREMENTS FOR PATCHING RESIDENTIAL STREETS. PAVEMENT REPLACEMENT AT THE LAUNCHING AND RECEIVING PITS SHALL BE CONSIDERED AS INCIDENTAL WORK AND SHALL BE INCLUDED IN THE UNIT BID PRICE FOR PIPE BUSTING.~~
18. ~~20.~~ ALL TRENCHES LOCATED UNDER STREET PAVEMENT AND AREAS UNDER FULL CONCRETE PANEL REPLACEMENT SHALL BE FILLED WITH GRANULAR MATERIAL MEETING THE GRADATION REQUIREMENTS FOR TYPE "A" AGGREGATE BASE, PLACED IN MAXIMUM 8" LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY. PRIME COAT, PAVEMENT RE-STRIPING AND SUBGRADE PREPARATION SHALL ALSO BE INCLUDED IN THE UNIT BID PRICE FOR THE REMOVAL AND REPLACEMENT OF THE ITEM. NO SEPARATE PAYMENT SHALL BE MADE.
- MANHOLES
19. ~~24.~~ ALL NEW CONCRETE MANHOLES 5 FOOT IN DIAMETER AND LARGER, SHALL HAVE CORROSION PROTECTION INSTALLED PER SP-1, THE COST OF THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
20. ~~22.~~ MANHOLES WILL BE MEASURED FOR PAYMENT USING THE CITY OF TULSA'S STANDARD PAY ITEMS.
21. ~~23.~~ NO TRANSITIONS BETWEEN PIPE TYPES OR SIZES MAY BE MADE EXCEPT AT A STRUCTURE. IF A TRANSITION IS REQUIRED AT A LOCATION OTHER THAN ONE SCHEDULED FOR THE INSTALLATION OF A MANHOLE, THE CONTRACTOR WILL INSTALL AN ADDITIONAL MANHOLE AT HIS COST.
22. ~~24.~~ ALL NEW MANHOLE FRAME & COVERS INSTALLED ON THE PROJECT SHALL HAVE A MINIMUM CLEAR OPENING OF 30-INCHES REGARDLESS OF MANHOLE SIZE. ALL OVERSIZED MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN 2230 SERIES OR ENGINEER APPROVED EQUAL. FRAMES AND COVERS SHALL MEET THE REQUIREMENTS OF CITY OF TULSA STANDARD DETAIL NO. 354. THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
23. ~~26.~~ ALL SAW CUTTING AND REMOVAL SHALL BE INCLUDED IN THE COST OF ITEM TO BE ADJUSTED, REMOVED, REPAIRED, OR REPLACED. THIS ITEM SHALL INCLUDE THE COST OF NEW MANHOLE FRAME AND COVER PER CITY OF TULSA STANDARD NOS. 752, 753 AND 754. THE TOTAL COST FOR RUBBERIZED ASPHALT AND/OR SILICONE AT MANHOLES, VALVES BOXES, INLETS, AND APRONS, SHALL BE INCLUDED. NO MASONRY STRUCTURES SHALL BE CONSTRUCTED WITH IN THE RIGHT OF WAY.

PIPE

24. ~~26.~~ THE CONTRACTOR MAY UTILIZE EITHER PVC PIPE OR CENTRIFUGALLY CAST FIBERGLASS REINFORCED POLYMER MORTAR PIPE (CCFRPM) UNLESS OTHERWISE NOTED IN THE DRAWINGS.
- ~~27. WHEN UTILIZING CCFRPM PIPE, SN 48 PIPE MAY BE INSTALLED IN NON-PAVED AREAS OUTSIDE OF EXISTING STREET RIGHT-OF-WAY FOR DEPTH OF COVER LESS THAN OR EQUAL TO 15 FEET. BEDDING AND BURIAL OF CCFRPM PIPE AND FITTINGS IN NON-PAVED AREAS OUTSIDE OF STREET RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH BEDDING DETAIL ON SHEET 36 ALONG WITH SP 2 SPECIFICATIONS.~~
25. ~~28.~~ WHEN UTILIZING CCFRPM PIPE, SN 72 PIPE MUST BE INSTALLED WITHIN EXISTING STREET RIGHT-OF-WAY AND UNDER PAVED AREAS OUTSIDE OF RIGHT-OF-WAY. PAVEMENT REMOVAL AND RESTORATION AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF TULSA STANDARD DETAIL NO. 713.
26. ~~29.~~ WHEN UTILIZING CCFRPM PIPE, FRP WATERTIGHT MANHOLES, AS MANUFACTURED BY L.F. MANUFACTURING, INC., OR ENGINEER APPROVED EQUIVALENT, SHALL BE INSTALLED. FRP MANHOLES SHALL BE SUITABLE FOR HS-20 LOADING. AN ANTI-FLOATATION RING WITH AN EXTENDED, REINFORCED CONCRETE BASE SHALL ALSO BE REQUIRED. EXTENDED BASES SHALL BE A MINIMUM OF 12 INCHES THICK WITH A MINIMUM DIAMETER OF 24 INCHES GREATER THAN MANHOLE OUTSIDE DIAMETER. A PRE-CONSTRUCTION SUBMITTAL, COMPLETE WITH BUOYANCY CALCULATIONS, TO ENGINEER SHALL BE REQUIRED. SEE TECHNICAL SPECIFICATIONS AND DETAIL ON SHEET 36 FOR ADDITIONAL REQUIREMENTS. PRE-CAST CONCRETE MANHOLES WILL BE ALLOWED FOR DI PIPE INSTALLATION AS PER STANDARD SPECIFICATIONS.
27. ~~30.~~ REINFORCED CONCRETE PIPE TO BE CLASS III. ALL REINFORCED CONCRETE PIPE AND MANHOLES TO BE SUPPLIED WITH OMNI-FLEX JOINT GASKET OR APPROVED EQUAL. MASTIC JOINT SEALANT SHALL NOT BE ALLOWED.

ABANDONMENT OF SEWERS

- ~~31. MANHOLES SHALL HAVE THE TOP 3 FEET REMOVED. MANHOLES AND SANITARY SEWERS SHALL BE FILLED WITH SAND, CELLULAR CONCRETE, OR FLOWABLE FILL.~~
- ~~32. ABANDONMENT SHALL BE PERFORMED AFTER CONSTRUCTION OF ALL NEW SANITARY SEWER MAINS.~~
- ~~33. CONTRACTOR SHALL CCTV (CLOSED CIRCUIT TELEVISION INSPECTION) ALL SEWER LINES PRIOR TO ABANDONMENT TO DETERMINE LOCATION OF EXISTING SERVICE CONNECTIONS. SERVICE CONNECTIONS SHALL BE RECONNECTED TO PROPOSED SANITARY SEWER LOCATED IN THE IMMEDIATE VICINITY OF THE ABANDONED LINE. ENGINEER SHALL BE NOTIFIED IMMEDIATELY IF THERE IS NO PROPOSED SEWER TO COLLECT THE SERVICE.~~

SEWER SERVICES

28. ~~34.~~ PAYMENT FOR THE INSTALLATION OF SEWER SERVICES SHALL BE ON A LINEAR FOOT BASIS FOR THE TYPE OF PIPE SPECIFIED. ALL NEW SEWER SERVICES SHALL BE SCHEDULE 40 PVC PIPE MATERIAL AND REPLACEMENT SHALL BE OF LIKE DIAMETER OF EXISTING SEWER SERVICE. PAYMENT SHALL INCLUDE EXCAVATION/BACKFILL, PIPE FITTING, SURFACE RESTORATION, AND ALL OTHER ITEMS ASSOCIATED WITH THE INSTALLATION OF THE SEWER SERVICE. ALL 4-INCH SEWER LATERALS SHALL BE INSTALLED AT A MINIMUM SLOPE OF 2%. SEWER SERVICE CONNECTIONS SHALL BE PAID PER EACH IN A SEPARATE PAY ITEM.
29. ~~36.~~ EACH INSTALLED SERVICE CONNECTION SHALL BE SHOWN AND STATIONED ON CONTRACTOR'S RED LINE DRAWING SUBMITTAL TO ENGINEER, ACCOMPANIED WITH NEAREST HOUSE ADDRESS FOR RECORD DRAWING PREPARATION.

ASPHALT PAVEMENT REPLACEMENT

30. ~~38.~~ PAY FACTORS FOR AVERAGE LOT DENSITY WILL NOT BE USED. FAILURE TO MEET AVERAGE LOT DENSITY 92-97% WILL RESULT IN REJECTION OF ASPHALT.
- ~~37. PAY ITEM "COLD MILLING PAVEMENT" SHALL INCLUDE ALL COST ASSOCIATED WITH SCHEDULED ASPHALTIC CONCRETE (AC) COLD MILLING, INCLUDING BUTT JOINTS, AS REQUIRED.~~
31. ~~39.~~ THE COST OF TACK COAT, EDGE JOINT SEAL, SCREENINGS FOR BLOTING AND ALL OTHER MATERIAL AND LABOR ASSOCIATED WITH PLACEMENT OF THESE ITEMS SHALL BE INCLUDED IN THE PRICE BID FOR ASPHALT CONCRETE.
32. ~~39.~~ ASPHALT CONCRETE ESTIMATED AT 115 LBS PER SQUARE YARD PER 1" THICK.
33. ~~40.~~ INCLUDES THE COST OF HAND WORK NECESSARY TO ASSURE PROPER DRAINAGE AT DRIVEWAYS AND STREET RETURNS.
- ~~41. THE COST OF BITUMINOUS BINDER REQUIRED FOR THE PLACEMENT OF FABRIC REINFORCEMENT OF THE STREET PRIOR TO THE AC OVERLAY SHALL BE INCLUDED IN THE COST OF FABRIC REINFORCEMENT (420A). BITUMINOUS BINDER SHALL BE INSTALLED PER THE RECOMMENDED REINFORCEMENT.~~
34. ~~42.~~ THE COST OF ASPHALT PAVEMENT REPAIR SHALL INCLUDE ANY CONCRETE BASE OR OTHER SUB-GRADE MATERIALS REQUIRED TO COMPLETE THE WORK.

CONSTRUCTION STAKING

35. ~~49.~~ UNIT PRICE QUANTITY FOR CONTRACTOR CONSTRUCTION STAKING INCLUDES ALL SURVEY WORK NECESSARY FOR SANITARY SEWER PIPE AND MANHOLE INSTALLATION.

SEQUENTIAL RESTORATION

36. ~~44.~~ THIS RESTORATION SHALL INCLUDE, BUT IS NOT LIMITED TO, SUCH ITEMS AS: SODDING, REPLACEMENT OF SIDEWALKS, FENCES, DRIVEWAYS, STREET PAVEMENT AND GROUTING OF SEWER SCHEDULED TO BE ABANDONED, AND ANY OTHER ITEMS SPECIFICALLY SHOWN ON THE PLANS.
37. ~~46.~~ ANY RESTORATION WORK DAMAGED OR DESTROYED BY THE CONTRACTOR'S SUBSEQUENT WORK SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE. NO ADDITIONAL PAYMENT SHALL BE MADE FOR SEQUENTIAL RESTORATION.

UTILITY CONFLICT BOX

- ~~46. 72" STORM RCP (SEE SHEET 26) SHALL BE REPAIRED AND RESTORED AS PART OF UTILITY CONFLICT BOX CONSTRUCTION.~~
- ~~47. PAYMENT FOR CONSTRUCTING CONCRETE 10' X 6' UTILITY CONFLICT BOX SHALL INCLUDE EXCAVATION, BACK-FILLING, FURNISHING ALL MATERIALS REQUIRED, CONSTRUCTION, PIPE CONNECTIONS, FINISHING, AND ALL REQUIRED AND NECESSARY WORK TO COMPLETE CONSTRUCTION.~~

STORMWATER

38. ~~48.~~ QUICK SET FLOWABLE FILL TO BE USED TO BACKFILL AROUND STREET CURB INLETS AND PIPES AS DIRECTED BY THE ENGINEER.
39. ~~49.~~ THIS ITEM SHALL INCLUDE THE COST OF NEW MANHOLE FRAME AND COVER PER CITY OF TULSA STANDARDS NOS. 752, 753 AND 754.
40. ~~50.~~ THE TOTAL COST FOR RUBBERIZED ASPHALT AND/OR SILICONE AT MANHOLES, VALVE BOXES, INLETS AND INLET APRONS, SHALL BE INCLUDED.
41. ~~51.~~ NO MASONRY STRUCTURES SHALL BE CONSTRUCTED WITHIN THE RIGHT OF WAY
42. ~~52.~~ REINFORCED CONCRETE PIPE TO BE CLASS III. ALL REINFORCED CONCRETE PIPE AND MANHOLES TO BE SUPPLIED WITH OMNI-FLEX JOINT GASKET OR APPROVED EQUAL. MASTIC JOINT SEALANT SHALL NOT BE ALLOWED.

QUANTITIES & PAY ITEM NOTES

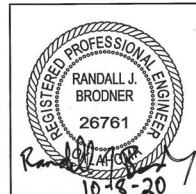
PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

rjngroup

REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
			NA	DESIGNED	RJB	...	
				SURVEY	NA	...	
			PROFILE SCALE:	PROJ. MGR.	1005	10/20	
			HORIZONTAL:	LEAD ENGR.	10/5	10/20	
			NA	FIELD MGR.	10/5	10/20	
			VERTICAL:	RECOMMENDED			
			NA	DESIGN MANAGER	HAS 11.20		
			FILE:	DRAWING:			
			ATLAS PAGE NO.:				

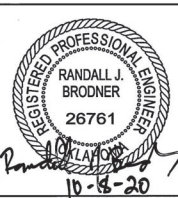


[Signature]
CITY ENGINEER

DATE: OCTOBER 2020
SHEET 3 OF 25

\\TUL-FILES\TULSA\WORK-30\TULSA\PROJECTS\SP-2521-30\TULSA COAL CREEK BASIN 16-N SP-2521\DRAWINGS\02-QUANTITIES SPEC.DWG
6:10:24 PM
12/10/2020

PAY ITEM	SPEC. NO.	DESCRIPTION	PAY ITEM NOTE NOS.	UNIT	QTY
1	102	Project Sign (City of Tulsa)		EA	2
2	301, SP-7	Right-of-Way Clearing and Restoring	1,2,3,4,5,6,36,37	SY	6,100
3	302	Unclassified Excavation and Backfill	13,14	CY	4,900
4	303	Mobilization/Demobilization		EA	1
5	304	Contractor Construction Staking	35	EA	1
6	307, SP-2, SP-6	24" Dia. Sewer Pipe by Open Cut (PS115 F679 PVC or SN 72 CCFRPM)	24,25,26	LF	2,705
7	307, SP-2, SP-6	24" Dia. Sewer Pipe in 36" Dia. Steel Casing by Other Than Open Cut (PS115 F679 PVC or SN 72 CCFRPM)	24,25,26	LF	10
8	315	Service Lateral Sch. 40 PVC	28,29	LF	180
9	315	Service Lateral Reconnection	28,29	EA	6
10	315	Cut and Plug Existing Sewer Lines		EA	1
11	315	Connect to Existing Manhole		EA	1
12	325	Sodding and Seeding	15,16	SY	2,200
13	326	Street Wash Down		LF	3,000
14	327	Safety Fence	7,8	LF	1,000
15	327, SP-12	Construction Traffic Control	7,8	LS	1
16	329	Pavement Saw Cut		LF	3,500
17	329	Remove and Replace Curb and Gutter	17,18,36,37	LF	2,200
18	329	Remove and Replace Concrete Pavement	17,18,36,37	SY	1,400
19	329	Remove and Replace Asphalt Pavement	30,31,32,33,34,36,37	SY	2,400
20	329	Remove and Replace Asphalt Driveway	30,31,32,33,34,36,37	SY	300
21	329	Remove and Replace Concrete Driveway	17,18,36,37	SY	400
22	329	Remove and Replace Concrete Sidewalk	17,18,36,37	SY	200
23	416, SP-4,5,10	Complete Manhole Replacement, 6' I.D. (0-6' Depth)	19,20,21,22,23,26	EA	7
24	416, SP-4,5,10	Manhole Depth over 6' for 6' I.D. Standard Manhole	19,20,21,22,23,26	VF	59
25	416, SP-4,5,10	Complete Manhole Drop Replacement, 6' I.D. (0-6' Depth)	19,20,21,22,23,26	EA	2
26	416, SP-4,5,10	Manhole Depth over 6' for 6' I.D. Standard Drop Manhole	19,20,21,22,23,26	VF	13
27	ODOT 221 (D)	Stormwater Inlet Protection	9,10,11,12	EA	11
28	ODOT 611 (E)	Remove and Replace Storm Inlet Design 2	38,39,40,41,42	EA	2
29	ODOT 613 (A)	15" R.C Pipe Class III, Round	27,38,42	LF	20
30	SP-8	Owner Allowance		EA	1



QUANTITIES & PAY ITEM NOTES

PROJECT NO. ES 2015-14

COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

rjngroup

REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
				DESIGNED	RJB	...	
			NA	SURVEY	NA	...	
				PROJ. MGR.	ABG	10/20	
			PROFILE SCALE:	LEAD ENGR.	ADJ	10/20	
			HORIZONTAL:	FIELD MGR.	TRB	10/20	
			NA	RECOMMENDED:	HAS	11-20	
			VERTICAL:	DESIGN MANAGER			
			NA	DRAWING:			
			FILE:				DATE: OCTOBER 2020
			ATLAS PAGE NO.:				SHEET 4 OF 25

\\TUL-PANZURA\OFFICE-30\TULSA\PROJECTS\20-2221-00 TULSA COAL CREEK BASIN 16-N BRP\CAO\DRAWINGS\9 WORK ITEM TABLE.DWG
3/24/22 PM

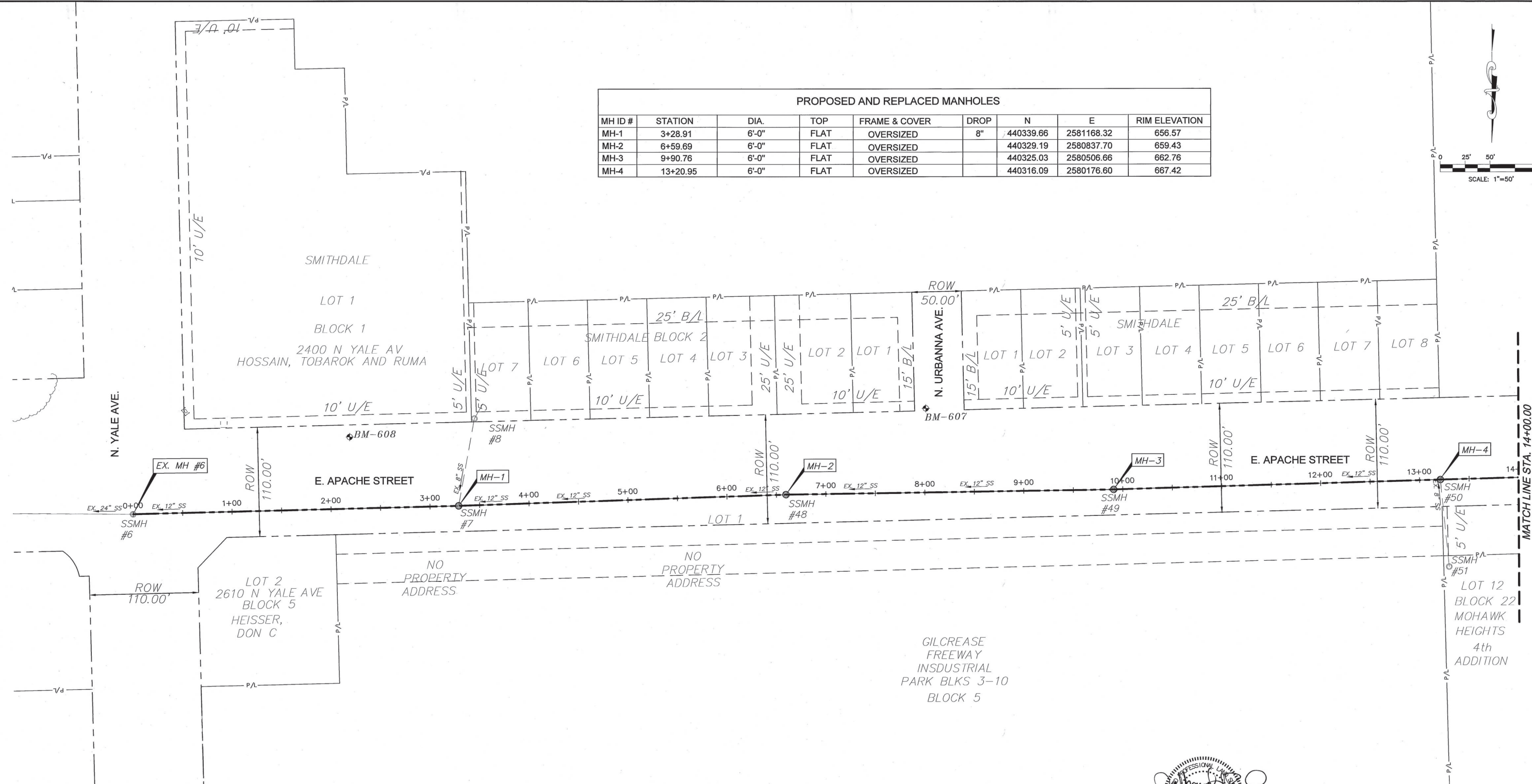
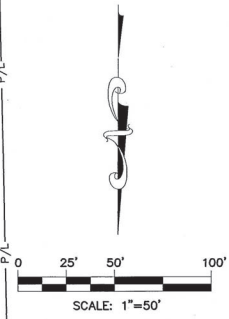
MANHOLE WORK ITEM SUMMARY TABLE																			
ITEM NO.	COT BASIN NO.	COT MH ID	PLAN MH ID	COT ATLAS PAGE	MANHOLE DEPTH (FT)	COT SPEC. NO.													
						404	404	404	314	314	314	314	314	314	314	315	421, Type Gh	PLAN SHEET NO.	
1	016	016-0006	#6	166	14.24			1								1		14	14
2	016	016-0007	MH-1	166	10.93											4.93		14	14
3	016	016-0048	MH-2	166	10.38													15	15
4	016	016-0049	MH-3	166	10.30				1						4.38			16	16
5	016	016-0050	MH-4	166	12.12				1						6.12			17	17
6	016	016-0052	MH-5	166	18.72				1						12.72			18	18
7	016	016-0053	MH-6	166	22.00				1						16.00			19	19
8	016	016-0054	MH-7	166	13.83				1						7.83			20	20
9	016	016-0055	MH-8	166	13.00				1						7.00			21	21
10	016	016-0056	MH-9	119	13.41						1					7.41		22	22
11	016	016-0083	MH-10	119	17.28						1					11.28		23	23
12	016	016-0094	MH-11	119	20.54				1						14.54			24	24
13	016	016-0095	(REMOVE)	119	24.04		1		1						18.04			25	25
14	016	(NEW)	MH-12	119	20.99				1						14.99			26	26
15	016	016-0096	MH-13	119	21.72						1				15.72			27	27
16	016	016-0108	MH-14	119	15.34						1				9.34			28	28
17	016	016-0114	MH-15	119	8.04				1						2.04			29	29
18	016	(NEW)	MH-16	119	6.18				1						0.18			30	30
19	016	016-0300	#300	119	5.61			1									1	26 & 28	26
20	016	016-0123	(REMOVE)	119	6.13		1											27	27
21	016	(NEW)	MH-17	119	6.26						1				0.26			28	28
22	016	016-0200	MH-18	119	7.10				1						1.10			29	29
23	016	016-0202	#202	119	6.39			1										30	30
24	016	016-0201	MH-19	119	9.33						1				3.33				
25	016	016-0236	MH-20	119	4.13				1										
26	016	016-0237	(REMOVE)	80	4.50		1												
27	016	016-0184	#184	119	5.87			1								1	1		
28	016	094-0159	#159	80	5.50			1											

PIPE WORK ITEM SUMMARY TABLE													
ITEM NO.	COT DSMH ID	COT USMH ID	PLAN DSMH ID	PLAN USMH ID	COT ATLAS PAGE	SURVEY LENGTH (FT)	PROP. DIA. (IN)	PROP. PIPE MATERIAL	PROP. CONSTRUCTION METHOD	COT SPEC NO.	PLAN SHEET NO.		
1	016-0006	016-0007	#6	MH-1	166	329	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	14	12	12,13
2	016-0007	016-0048	MH-1	MH-2	166	331	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	14,15	13,14	14,15
3	016-0048	016-0049	MH-2	MH-3	166	331	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	15,16	15,16	15,16
4	016-0049	016-0050	MH-3	MH-4	166	330	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	16	16,17	16,17
5	016-0050	016-0052	MH-4	MH-5	166	329	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	17,18	17,18	17,18
6	016-0052	016-0053	MH-5	MH-6	166	329	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	18	18	18
7	016-0053	016-0054	MH-6	MH-7	166	331	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	19,20	19,20	19,20
8	016-0054	016-0055	MH-7	MH-8	166	332	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	20	20	20
9	016-0055	016-0056	MH-8	MH-9	119	73	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	21	21	21
10	016-0056	016-0083	MH-9	MH-10	119	311	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT/	307/322	22,23	22,23	22,23
11	016-0083	016-0094	MH-10	MH-11	119	296	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	23	23	23
12	016-0094	(NEW MH)	MH-11	MH-12	119	499	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	24	24	24
13	(NEW MH)	016-0096	MH-12	MH-13	119	159	24	SN 72 CCFRPM OR PS115 F679 PVC	TRENCHLESS	307/322	25	25	25
14	016-0096	016-0108	MH-13	MH-14	119	308	24	SN 72 CCFRPM OR PS115 F679 PVC	TRENCHLESS	307/322	26,27	26,27	26,27
15	016-0108	016-0114	MH-14	MH-15	119	345	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	27	27	27
16	016-0114	(NEW MH)	MH-15	MH-16	119	185	24	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	28	28	28
17	(NEW MH)	(NEW MH)	MH-16	MH-17	119	37	18	CLASS 50 DIP	OPEN CUT	307	29	29	29
18	(NEW MH)	016-0200	MH-17	MH-18	119	126	18	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	30	30	30
19	016-0200	016-0201	MH-18	MH-19	119	325	18	SN 72 CCFRPM OR PS115 F679 PVC	OPEN CUT	307	31	31	31
20	016-0201	016-0236	MH-19	MH-20	119	334	12	SDR 26 PVC	OPEN CUT	307	32	32	32
21	016-0236	(REMOVE MH)	MH-20	(SOLID SLEEVE COUPLING)	119	20	8	SDR 26 PVC	OPEN CUT	307	33	33	33
22	(NEW MH)	016-0300	MH-16	#300	119	16	12	SDR 26 PVC	OPEN CUT	307	34	34	34
23	(NEW MH)	016-0184	MH-17	#184	119	10	8	SDR 26 PVC	OPEN CUT	307	35	35	35
24	016-0300	016-0184	#300	#184	119	26	8		ABANDON	404	36	36	36
25	016-0123	016-0300	#123	#300	119	10	12		ABANDON	404	37	37	37
26	016-0202	016-0237	#202	#237	119	334	8		ABANDON	404	38	38	38
27	016-0237	016-0159	#237	#159	119	389	8		ABANDON	404	39	39	39



WORK ITEM TABLE									
PROJECT NO. ES 2015-14									
COAL CREEK BASIN 16-N SPECIFIC REMEDIATION PLAN PHASE 2									
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT									
PLANS AND ESTIMATES PREPARED BY: RJN GROUP, INC. CONSULTING ENGINEERS 4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146									
rjngroup									
REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED		
			1" = 20'	DESIGNED	RJB	...			
				SURVEY	H&A	...			
			PROFILE SCALE:	PROJ. MGR.	ADD	10/20			
			HORIZONTAL:	LEAD. ENGR.	ADJ	10/20			
			1" = 20'	FIELD MGR.	IRS	10/20			
			VERTICAL:	RECOMMENDED	HAS	11/20			
			1" = 4'	DESIGN MANGER					
			FILE:	DRAWING:					
			ATLAS PAGE NO.: 166,119						
							SHEET 5 OF 25		

PROPOSED AND REPLACED MANHOLES								
MH ID #	STATION	DIA.	TOP	FRAME & COVER	DROP	N	E	RIM ELEVATION
MH-1	3+28.91	6'-0"	FLAT	OVERSIZED	8"	440339.66	2581168.32	656.57
MH-2	6+59.69	6'-0"	FLAT	OVERSIZED		440329.19	2580837.70	659.43
MH-3	9+90.76	6'-0"	FLAT	OVERSIZED		440325.03	2580506.66	662.76
MH-4	13+20.95	6'-0"	FLAT	OVERSIZED		440316.09	2580176.60	667.42



DATE: 10-8-2020

RIGHT-OF-WAY MAP
PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146



REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
			1" = 50'	DESIGNED	RJB	...	
				SURVEY	H&A	...	
				PROJ. MGR.	10/9	10/20	
				LEAD ENGR.	10/5	10/20	
				FIELD MGR.	10/5	10/20	
				RECOMMENDED	HAS	11-20	
				DESIGN MANAGER			
				FILE:	DRAWING:		
				ATLAS PAGE NO.: 166			

CITY ENGINEER
DATE: OCTOBER 2020
SHEET 6 OF 25

TULSA-PANHANDLE OFFICE-30 TULSA PROJECTS 30-2921-00 TULSA COAL CREEK BASIN 16-N BRP/CADD/DRAWINGS (06-09) SURVEY DATA SRC:WGS 83 10/8/2020 3:25:12 PM

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS: SEWER CONSTRUCTION LINE: BEGINNING AT INTERSECTION OF N. YALE AVE. AND E. APACHE ST. CONTINUING 2642 FEET WEST THEN 2997 FEET SOUTH BETWEEN N. PITTSBURG AVE. AND N. OSWEGO AVE. WITHIN EXISTING EASEMENT THROUGH BOTH RESIDENTIAL STREETS AND PRIVATE PROPERTY, ENDING BETWEEN E. VIRGIN ST. AND E. UTE ST.

PROJECT DESCRIPTION: CONSTRUCTION OF RELIEF SANITARY SEWER

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:
A. PLACE TEMPORARY SEDIMENT CONTROL MEASURES AT LOCATIONS SHOWN.

B. PROVIDE AND PLACE ANY ADDITIONAL TEMPORARY SEDIMENT CONTROL MEASURES AS MAY BE NEEDED OR REQUIRED.

C. WHEN DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL MODIFY OR ADD ADDITIONAL SPECIFIC PRACTICES AND CONTROLS. THIS WORK IS INCIDENTAL AND WILL NOT BE MEASURED FOR PAYMENT.

D. AS RESTORATION IS COMPLETED, SOD SHALL BE PLACED OVER ALL NON-PAVED AREAS TO RESTORE THE GROUND COVER.

TOTAL AREA DISTURBED: APPROXIMATELY ONE ACRE, NO CHANGE IN AMOUNT OF IMPERVIOUS OR VEGETATED AREA.

RUNOFF COEFFICIENT: 0.40

SOIL TYPE: REPLACE WITH SOIL TYPE

AREA TO BE DISTURBED: LESS THAN ONE ACRE, NO CHANGE IN AMOUNT OF IMPERVIOUS OR VEGETATED AREA

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

MAXIMUM ACRES TO BE DISTURBED AT ANY ONE TIME: (FOR CONTRACTOR USE)

LATITUDE & LONGITUDE OF CENTER OF PROJECT: 36.190540,-95.931429

NAME OF RECEIVING WATERS: COAL CREEK

SENSITIVE WATERS OR WATERSHEDS: YES NO X

303(d) IMPAIRED WATERS: YES NO X

NOTE:
THIS SHEET SHOULD BE USED IN CONJUNCTION WITH A DRAINAGE MAP THAT ILLUSTRATES THE DRAINAGE PATTERNS/PATHWAYS AND RECEIVING WATERS
FOR THIS PROJECT. THIS SHEET SHOULD ALSO BE USED WITH THE EROSION CONTROL SUMMARIES, PAY ITEMS, & NOTES.

REVISED 04 / 24 / 2014

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- X PERMANENT SODDING, SPRIGGING OR SEEDING
- VEGETATIVE MULCHING
- SOIL RETENTION BLANKET
- PRESERVATION OF EXISTING VEGETATION

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 14 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- X STABILIZED CONSTRUCTION ENTRANCE/EXIT
- X TEMPORARY SILT FENCE
- TEMPORARY SILT DIKES
- TEMPORARY FIBER LOG
- DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ROCK FILTER DAMS
- TEMPORARY SLOPE DRAIN
- PAVED DITCH W/ DITCH LINER PROTECTION
- TEMPORARY DIVERSION CHANNELS
- TEMPORARY SEDIMENT BASINS
- TEMPORARY SEDIMENT TRAPS
- TEMPORARY SEDIMENT FILTERS
- X TEMPORARY SEDIMENT REMOVAL
- RIP RAP
- X INLET SEDIMENT FILTER
- TEMPORARY BRUSH SEDIMENT BARRIERS
- SANDBAG BERMS
- TEMPORARY STREAM CROSSINGS

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- X LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:
ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGE WAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:
PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:
PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:
A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORM AND PERMIT CERTIFICATE THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ASPHALT/CONCRETE PLANTS, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION.

THE FOLLOWING SECTIONS OF THE 2009 ODOT STANDARD SPECIFICATIONS SHOULD BE NOTED:

- 103.05 BONDING REQUIREMENTS
- 104.10 FINAL CLEANING UP
- 104.12 CONTRACTOR'S RESPONSIBILITY FOR WORK
- 104.13 ENVIRONMENTAL PROTECTION
- 106.08 STORAGE AND HANDLING OF MATERIAL
- 107.01 LAWS, RULES AND REGULATIONS TO BE OBSERVED
- 107.20 STORM WATER MANAGEMENT
- 220 MANAGEMENT OF EROSION, SEDIMENTATION AND STORM WATER POLLUTION PREVENTION AND CONTROL.
- 221 TEMPORARY SEDIMENT CONTROL

IN ADDITION:

"ODEQ GENERAL PERMIT (OKR10) FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, SEPTEMBER 13, 2012.
October 18, 2017



STORM WATER MANAGEMENT PLAN

PROJECT NO. ES 2013-11

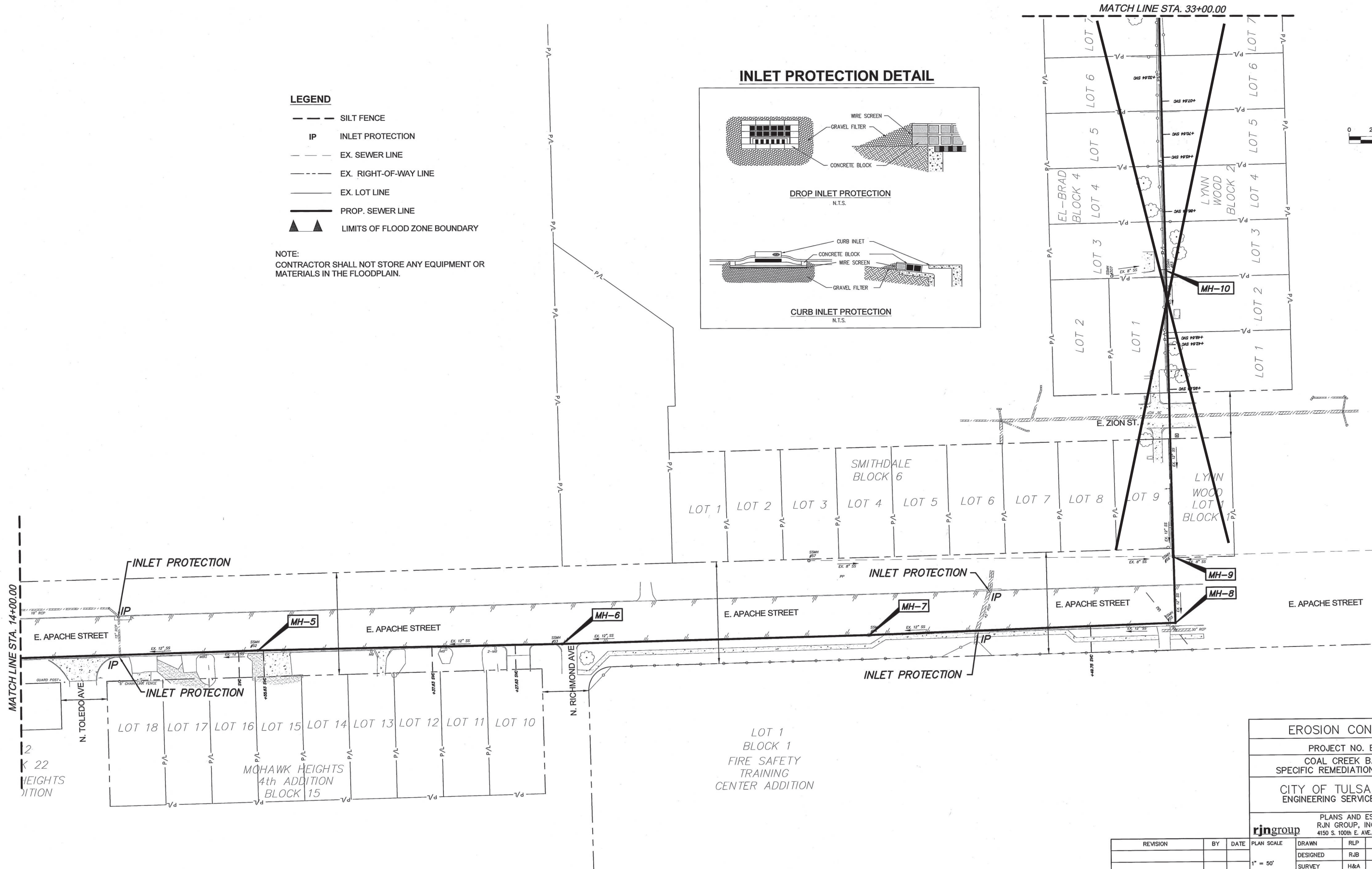
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
rjngroup
R.J.N GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
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				SURVEY	NA	...	
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			VERTICAL:	RECOMMENDED	HAS	11-20	
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\\TUL-PAZULAKA\OFFICE-30\TULSA\PROJECTS\30-221-00 TULSA COAL CREEK BASIN 16-N SEP\CAO\DRAWINGS\11-13\EROSION CONTROL PLAN SRG2.DWG
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9:33:52 AM

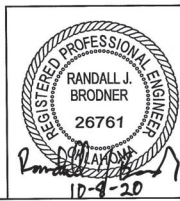
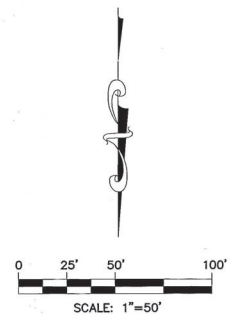
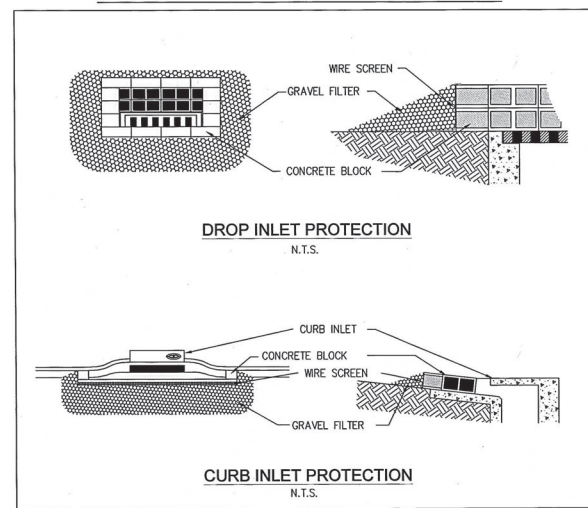


LEGEND

- SILT FENCE
- IP INLET PROTECTION
- EX. SEWER LINE
- EX. RIGHT-OF-WAY LINE
- EX. LOT LINE
- PROP. SEWER LINE
- ▲▲ LIMITS OF FLOOD ZONE BOUNDARY

NOTE:
CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIALS IN THE FLOODPLAIN.

INLET PROTECTION DETAIL



EROSION CONTROL PLAN

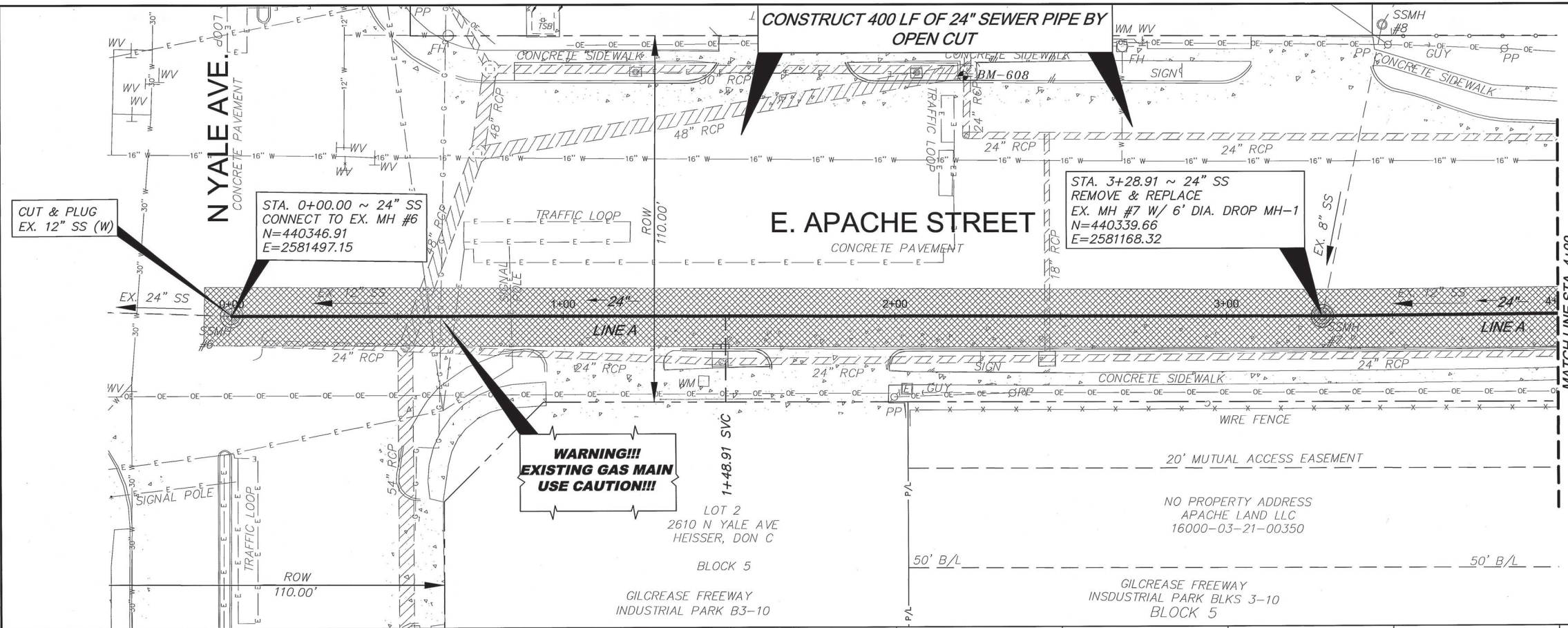
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ringroup

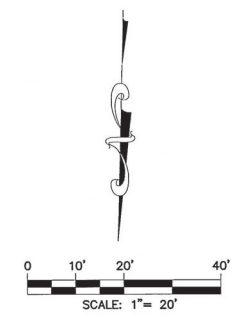
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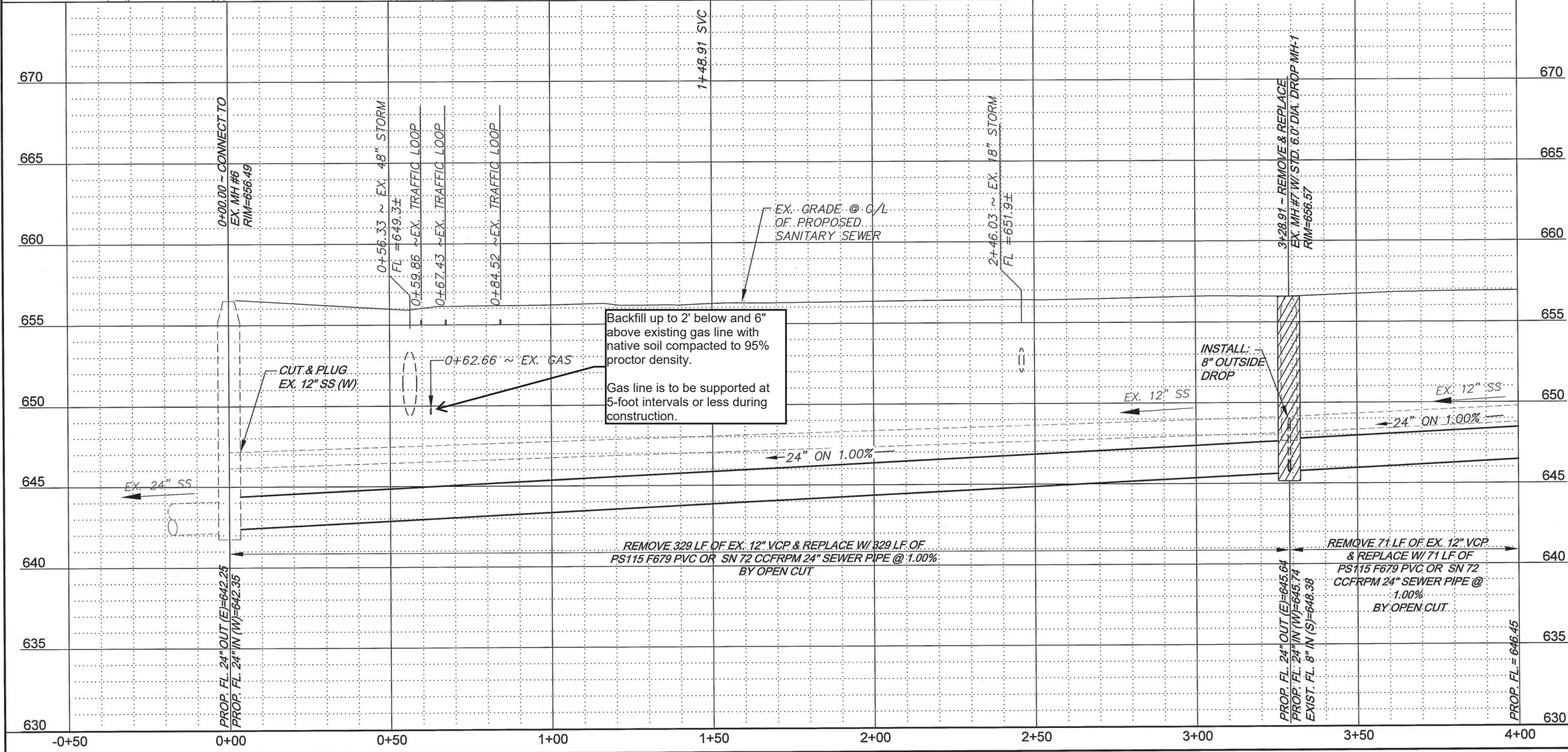
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BENCHMARK #608
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OF EXISTING MH #7

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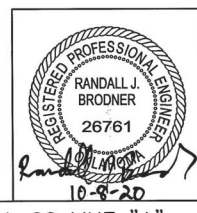
LEGEND
 LIMITS OF CONCRETE PAVEMENT
REMOVAL AND REPLACEMENT



- NOTE:**
1. THE CONTRACTOR SHALL EXCAVATE ALL BURIED UTILITY CROSSINGS AHEAD OF PIPE LAYING OR THE INSTALLATION OF SHEETING OR SHORING TO AVOID UTILITY CONFLICTS. ALL COSTS ASSOCIATED WITH THIS WORK IS CONSIDERED INCIDENTAL TO UNCLASSIFIED EXCAVATION AND BACKFILL.
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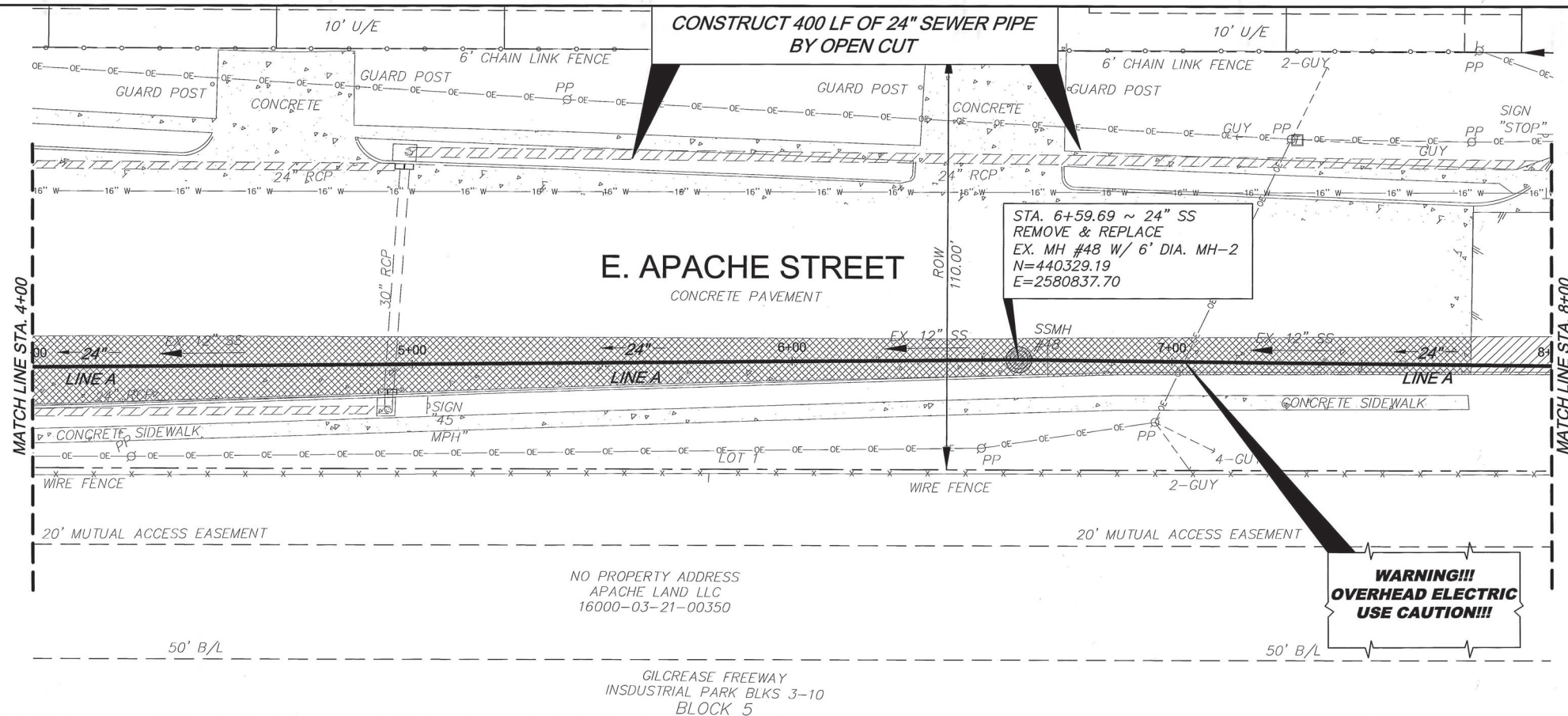
WARNING!!!
EXISTING UNDERGROUND TELEPHONE,
OVERHEAD, UNDERGROUND ELECTRIC AND
GAS UTILITIES IN AREA, CONTACT UTILITY
48 HOURS PRIOR TO CONSTRUCTION
1-800-522-6543



STA. 0+00 TO STA. 4+00 LINE "A"
PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT
PLANS AND ESTIMATES PREPARED BY:
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REVISION	BY	DATE	PLAN SCALE	DRAWN	RJP	...	APPROVED
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				SURVEY	H&A		
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BENCHMARK:

BENCHMARK #608
CHISELED "X" SET 110' EAST & 72' SOUTH
OF EXISTING MH #7

(SEE PREVIOUS SHEET)

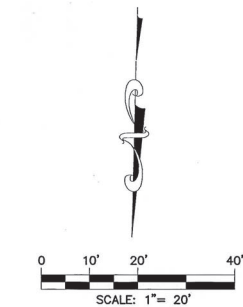
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E=2581278.16
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BENCHMARK #607
CHISELED "X" SET TOP OF CURB SE CORNER
INTERSECTION OF E. APACHE STREET &
N. URBANA AVE.

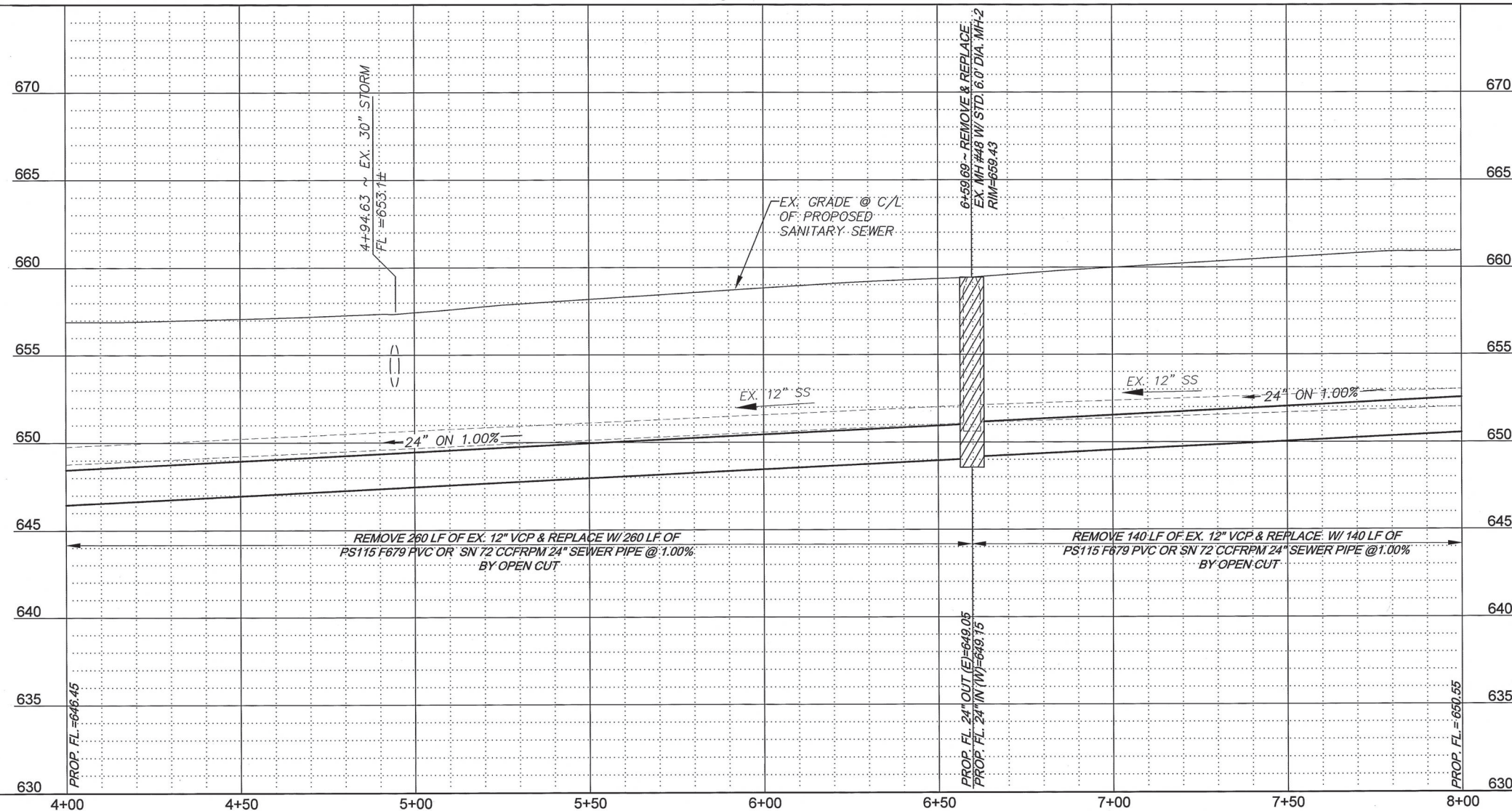
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LEGEND

- LIMITS OF CONCRETE PAVEMENT
REMOVAL AND REPLACEMENT
- LIMITS OF ASPHALT PAVEMENT
REMOVAL AND REPLACEMENT

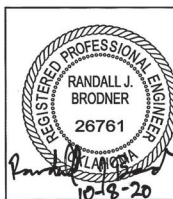


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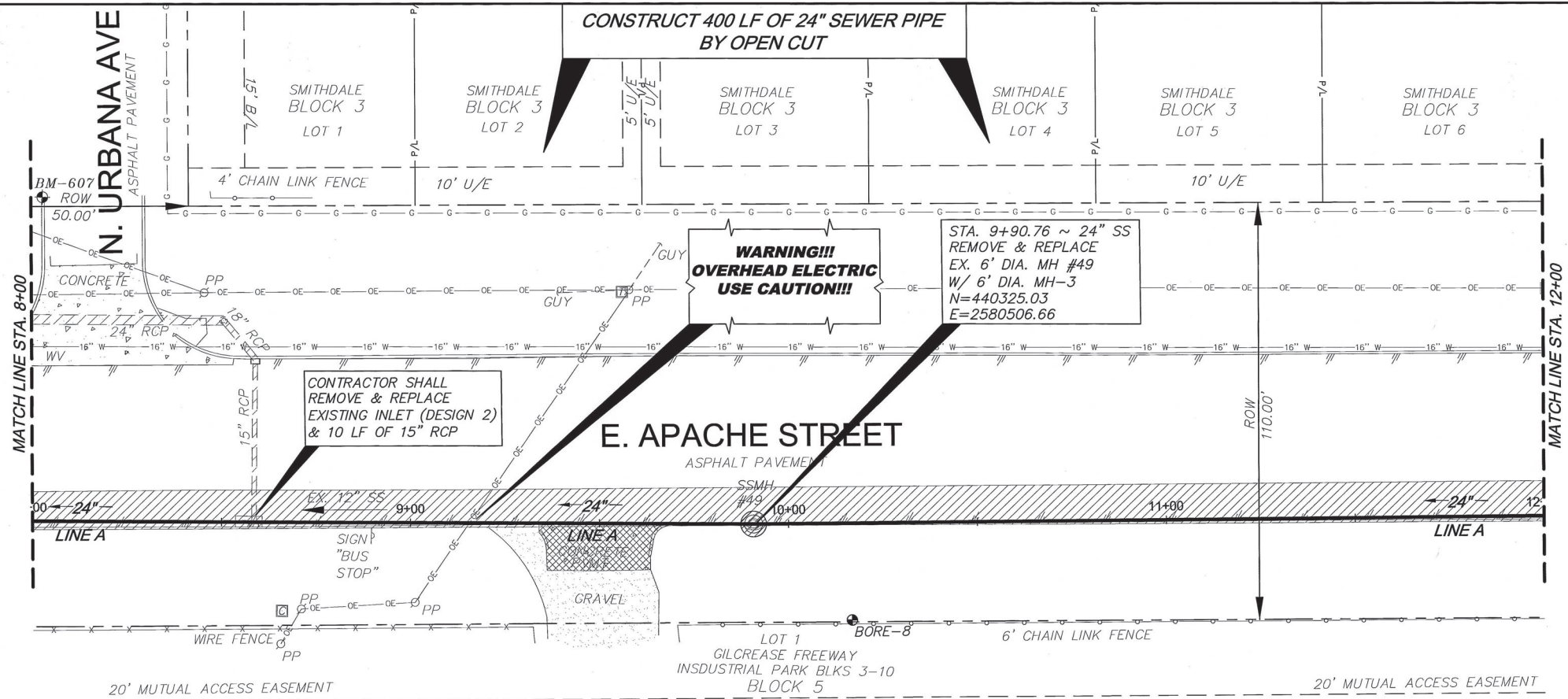
STA. 4+00 TO STA. 8+00 LINE "A"
PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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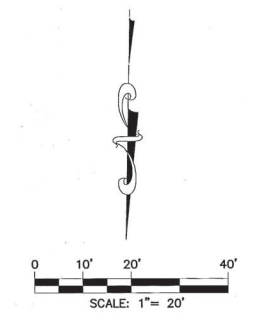
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REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
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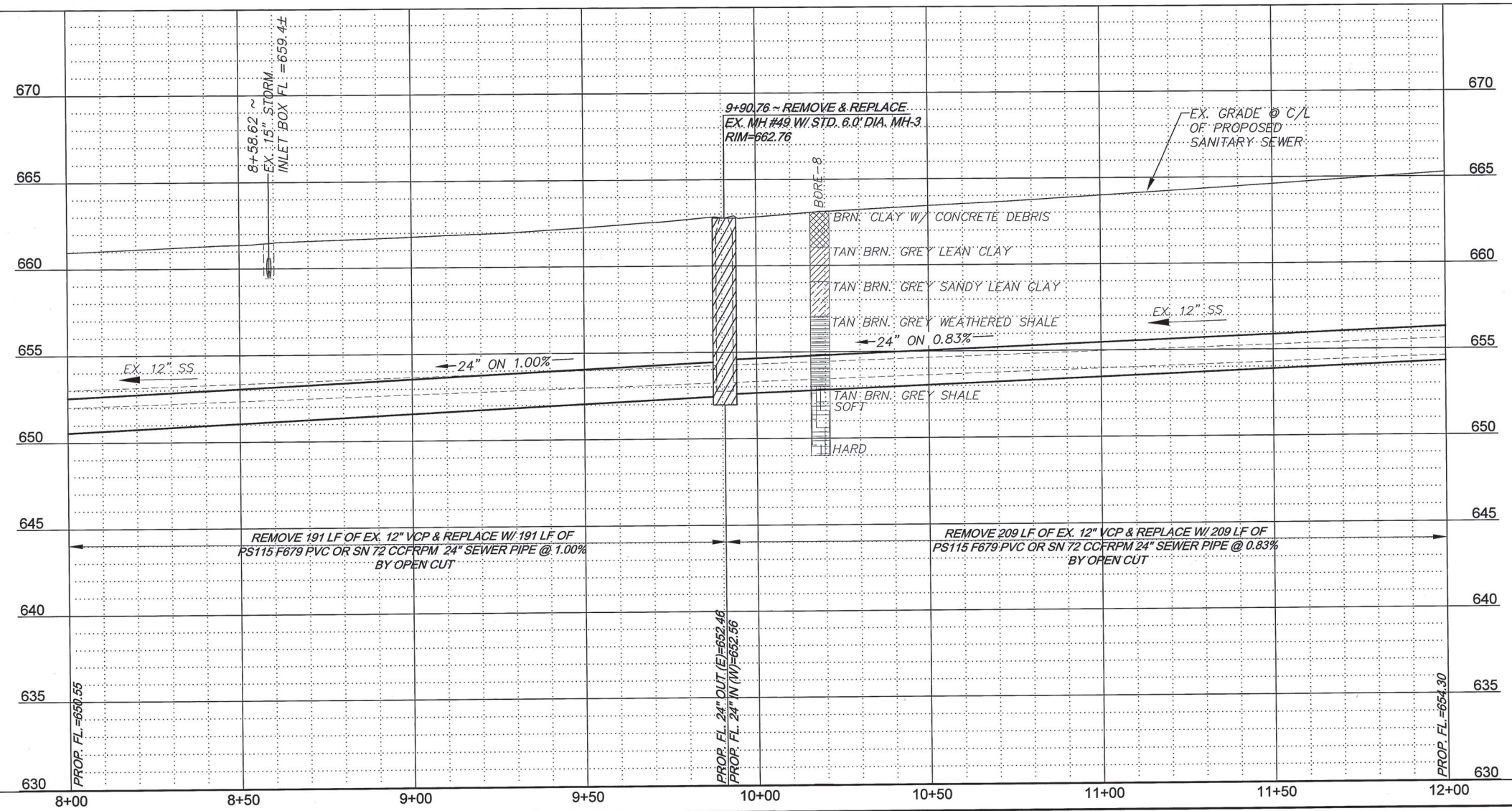


BENCHMARK:
BENCHMARK #607
CHISELED "X" SET TOP OF CURB SE CORNER
INTERSECTION OF E. APACHE STREET &
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N=440242.36
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LEGEND
LIMITS OF ASPHALT PAVEMENT
REMOVAL AND REPLACEMENT
LIMITS OF CONCRETE PAVEMENT
REMOVAL AND REPLACEMENT



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48 HOURS PRIOR TO CONSTRUCTION
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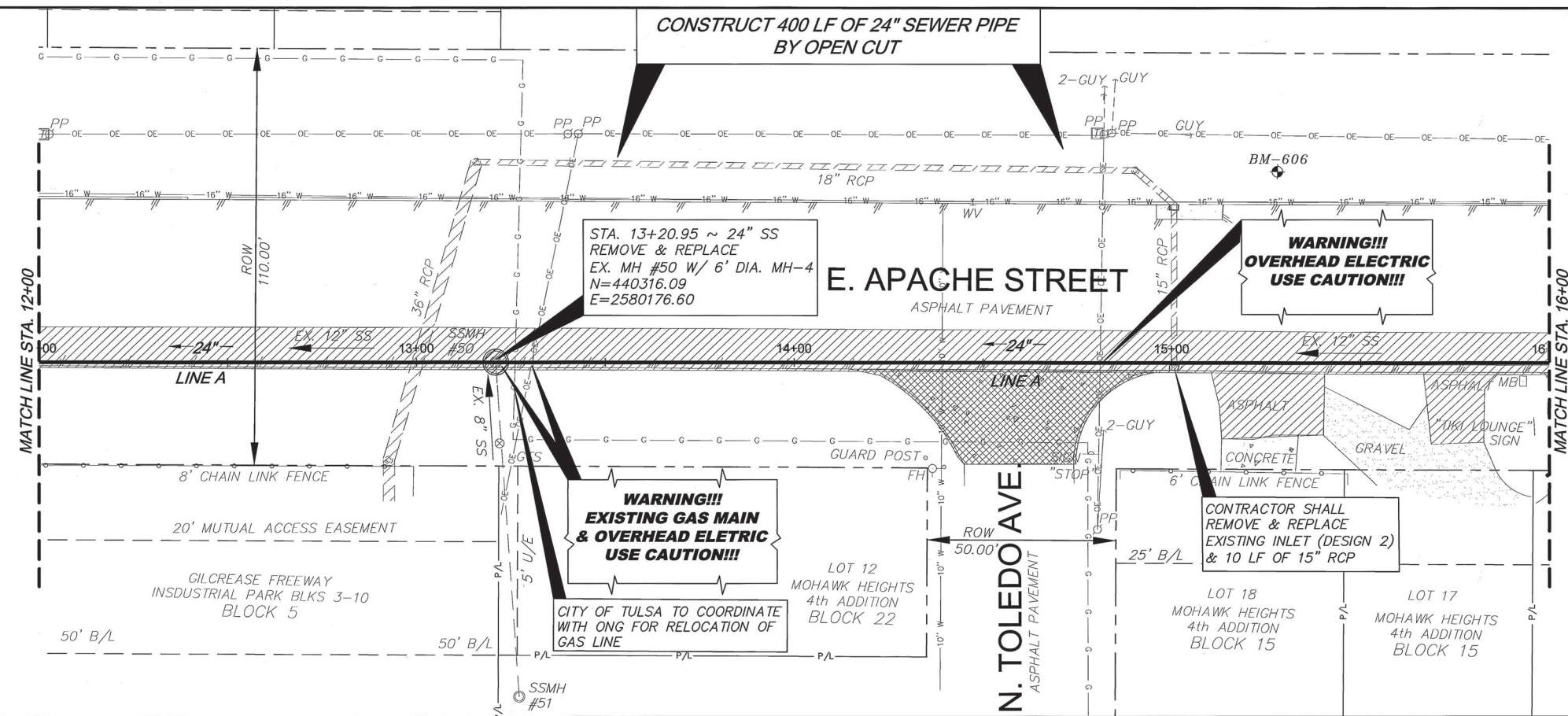
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STA. 8+00 TO STA. 12+00 LINE "A"			
PROJECT NO. ES 2015-14			
COAL CREEK BASIN 16-N			
SPECIFIC REMEDIATION PLAN PHASE 2			
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY: R/JN GROUP, INC. CONSULTING ENGINEERS 4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146			
revision		BY	DATE
DESIGNED		RJB	...
SURVEY		H&A	...
PROJ. MGR.		ADG	10/20
LEAD. ENGR.		ADJ	10/20
FIELD MGR.		AKB	10/10
RECOMMENDED		HAS	11/20
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APPROVED			
CITY ENGINEER			
DATE:		OCTOBER 2020	
SHEET		16 OF 36	

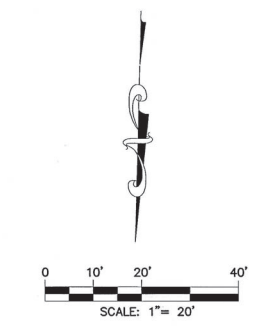
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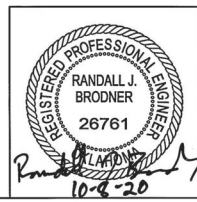
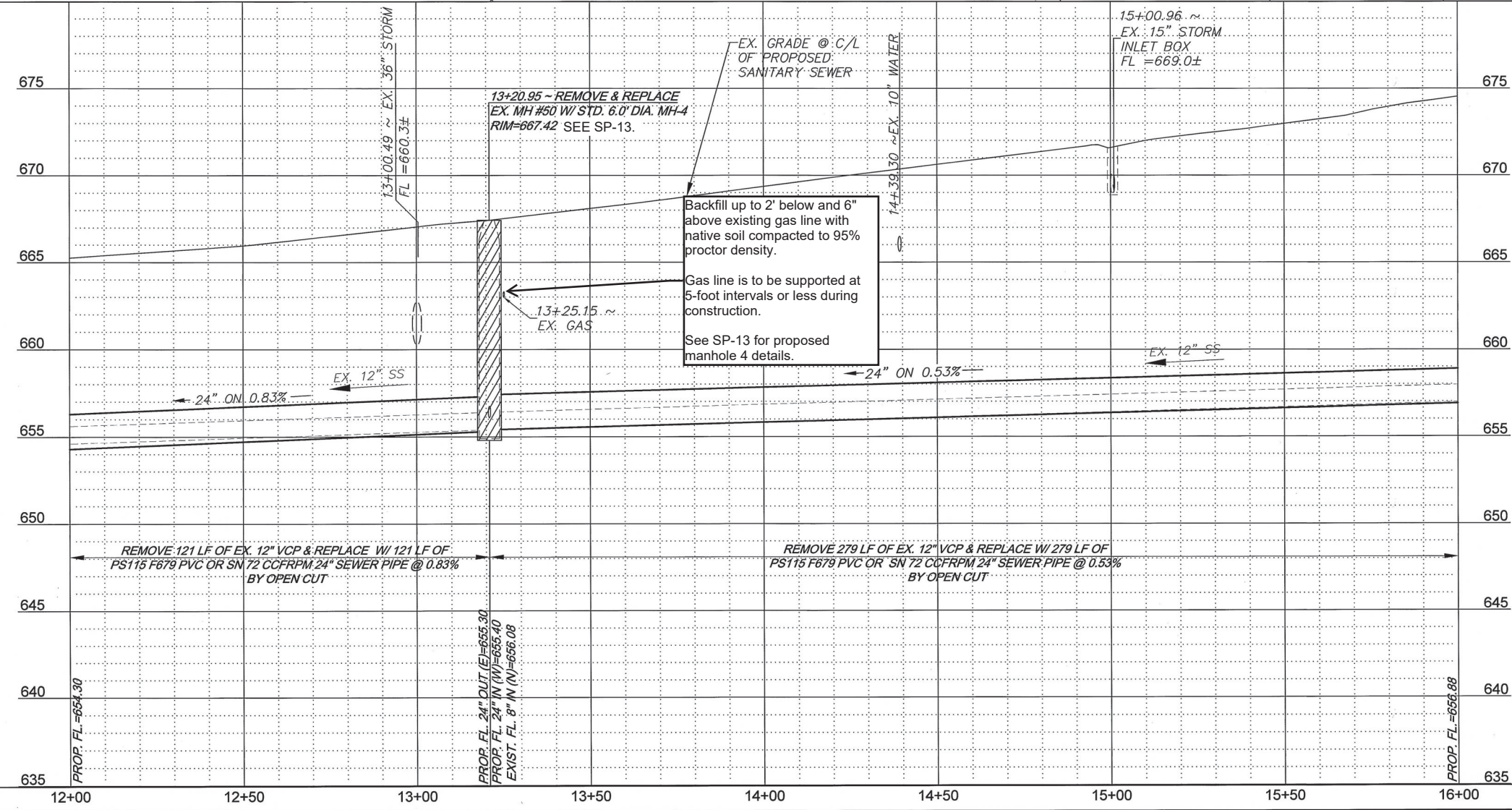
BENCHMARK:
BENCHMARK #606
IRON PIN SET TOP 67' WEST & 8' SOUTH OF
INTERSECTION OF E. APACHE STREET &
N. TOLEDO AVE.
N=440260.17
E=2579970.96
ELEV.=673.67

LEGEND
LIMITS OF ASPHALT PAVEMENT
REMOVAL AND REPLACEMENT
LIMITS OF CONCRETE PAVEMENT
REMOVAL AND REPLACEMENT

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 4. CONTRACTOR SHALL EXPOSE UNDERGROUND WATER, GAS, AND STORM UTILITIES PRIOR TO PIPE BURSTING OPERATIONS TO PREVENT POTENTIAL DAMAGE.



WARNING!!!
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OVERHEAD, UNDERGROUND ELECTRIC AND
GAS UTILITIES IN AREA, CONTACT UTILITY
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1-800-522-6543



STA. 12+00 TO STA. 16+00 LINE "A"
PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

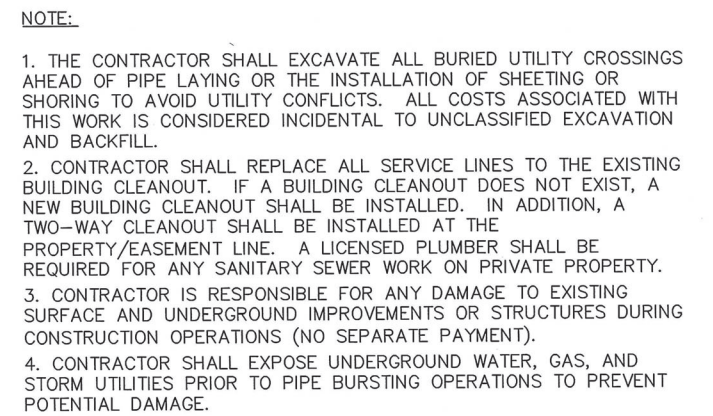
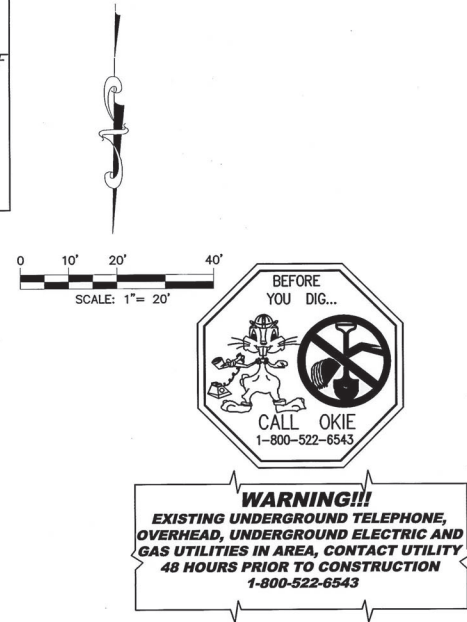
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REVISION			BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
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						FIELD MGR.	ADJ	10/20	
						RECOMMENDED			
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						FILE			
						ATLAS PAGE NO.	166		

CITY ENGINEER
DATE: OCTOBER 2020
SHEET 17 OF 30

TULSA PROJECTS\30-2821-00 TULSA COAL CREEK BASIN 16-N SRP\CAD\DRAWINGS\14-27 30282100PSR.DWG
Monday, October 12, 2020 3:58:12 PM

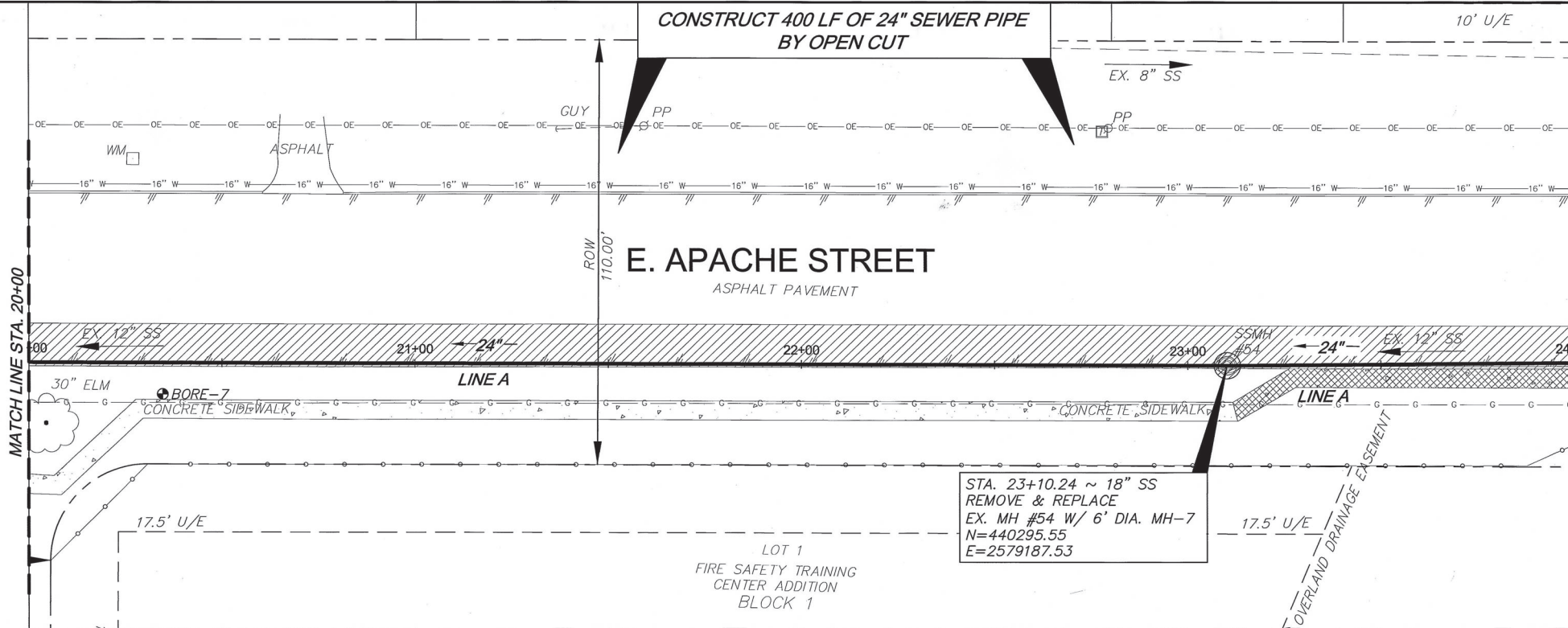


STA. 16+00 TO STA. 20+00 LINE "A"
PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N SPECIFIC REMEDIATION PLAN PHASE 2

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

ringroup PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
			1" = 20'	DESIGNED	RJB	...	
				SURVEY	H&A	...	
			PROFILE SCALE:	PROJ. MGR.	<i>ADG</i>	<i>10/20</i>	
			HORIZONTAL:	LEAD. ENGR.	<i>ADJ</i>	<i>12/10</i>	
			1" = 20'	FIELD MGR.	<i>HRB</i>	<i>10/26</i>	
			VERTICAL:	RECOMMENDED:			
			1" = 4'	DESIGN MANGER	<i>H&A</i>	<i>11-20</i>	<i>[Signature]</i>
			FILE:	DRAWING:			CITY ENGINEER
			ATLAS PAGE NO.: 166				DATE: OCTOBER 2020
							SHEET 48 OF 30



BENCHMARK:

BENCHMARK #605

CHISELED "X" SET TOP CURB 137' WEST & 44 SOUTH OF OF EXISTING MH #54

N=440247.69 (SEE NEXT SHEET)

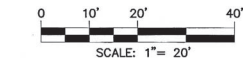
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ELEV.=674.14

LEGEND

LIMITS OF ASPHALT PAVEMENT REMOVAL AND REPLACEMENT

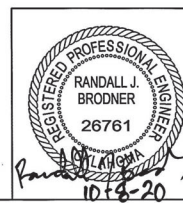
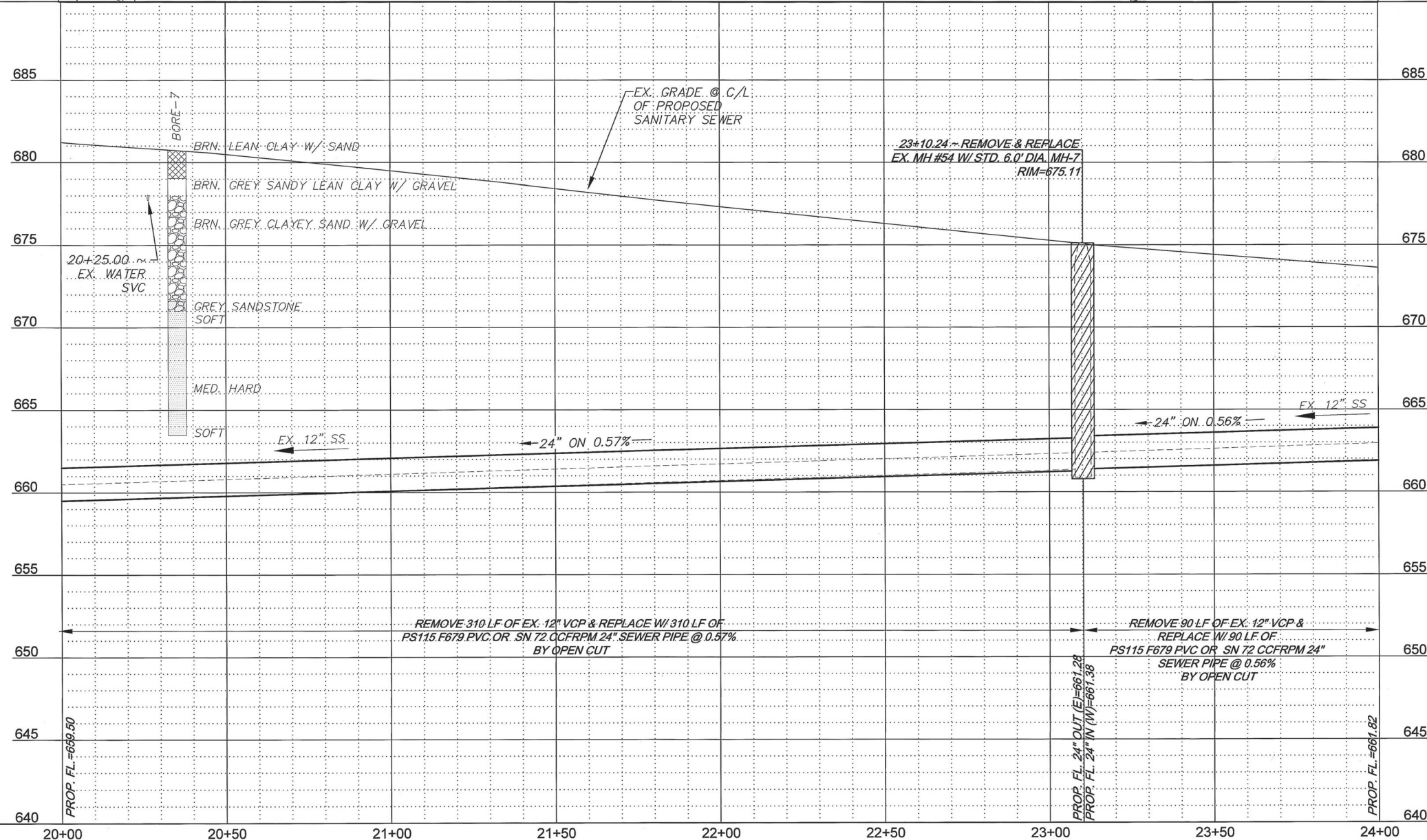
LIMITS OF CONCRETE PAVEMENT REMOVAL AND REPLACEMENT



WARNING!!!

EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION 1-800-522-6543

- NOTE:
1. THE CONTRACTOR SHALL EXCAVATE ALL BURIED UTILITY CROSSINGS AHEAD OF PIPE LAYING OR THE INSTALLATION OF SHEETING OR SHORING TO AVOID UTILITY CONFLICTS. ALL COSTS ASSOCIATED WITH THIS WORK IS CONSIDERED INCIDENTAL TO UNCLASSIFIED EXCAVATION AND BACKFILL.
 2. CONTRACTOR SHALL REPLACE ALL SERVICE LINES TO THE EXISTING BUILDING CLEANOUT. IF A BUILDING CLEANOUT DOES NOT EXIST, A NEW BUILDING CLEANOUT SHALL BE INSTALLED. IN ADDITION, A TWO-WAY CLEANOUT SHALL BE INSTALLED AT THE PROPERTY/EASEMENT LINE. A LICENSED PLUMBER SHALL BE REQUIRED FOR ANY SANITARY SEWER WORK ON PRIVATE PROPERTY.
 3. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING SURFACE AND UNDERGROUND IMPROVEMENTS OR STRUCTURES DURING CONSTRUCTION OPERATIONS (NO SEPARATE PAYMENT).
 4. CONTRACTOR SHALL EXPOSE UNDERGROUND WATER, GAS, AND STORM UTILITIES PRIOR TO PIPE BURSTING OPERATIONS TO PREVENT POTENTIAL DAMAGE.



STA. 20+00 TO STA. 24+00 LINE "A"

PROJECT NO. ES 2015-14

COAL CREEK BASIN 16-N

SPECIFIC REMEDIATION PLAN PHASE 2

CITY OF TULSA, OKLAHOMA

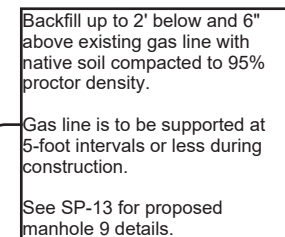
ENGINEERING SERVICES DEPARTMENT



PLANS AND ESTIMATES PREPARED BY:

RJN GROUP, INC. CONSULTING ENGINEERS

4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

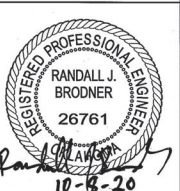
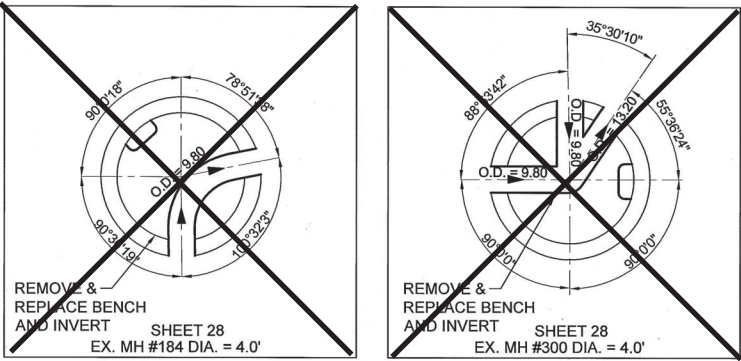
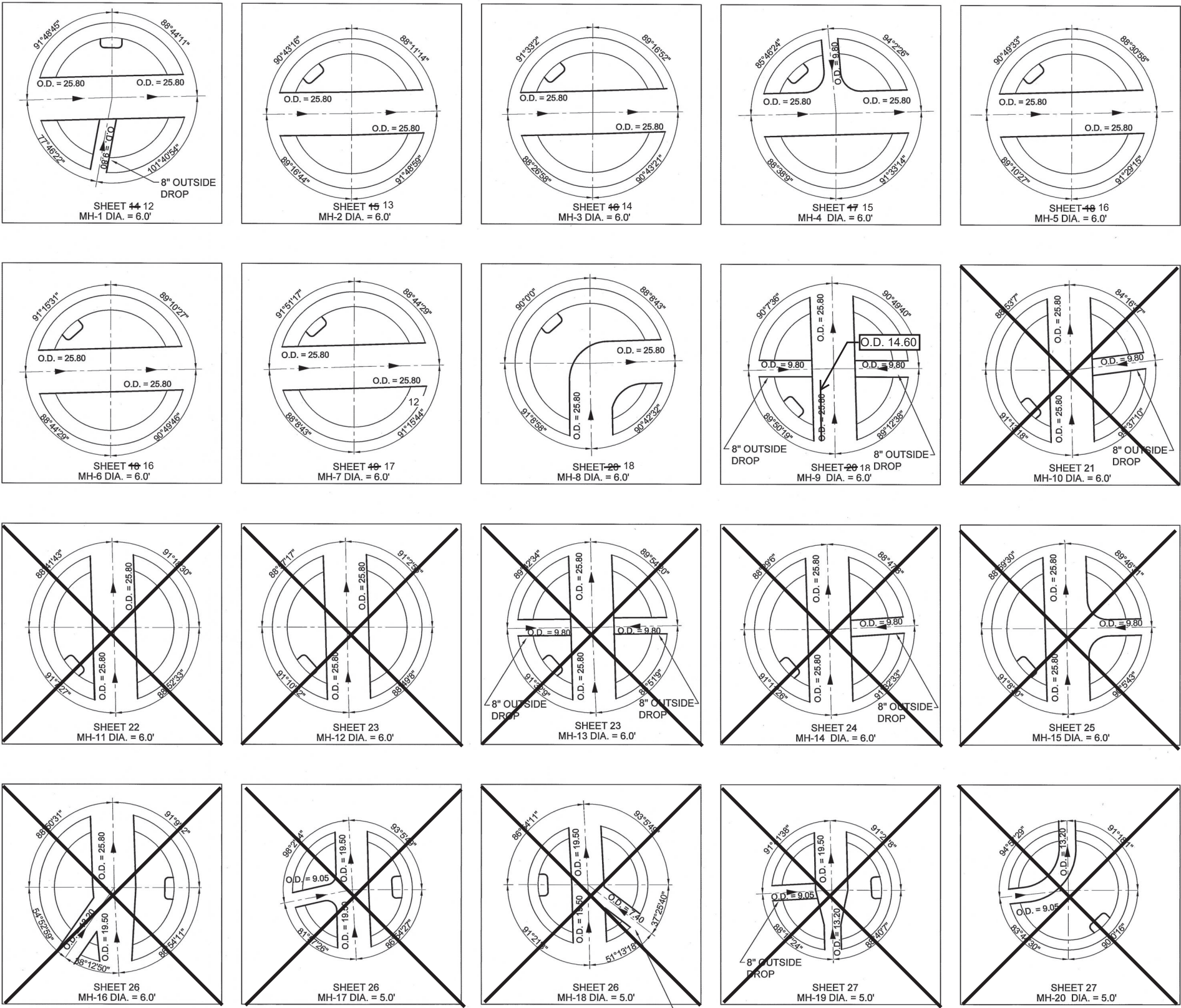
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						SURVEY	H&A	...	
						PROJ. MGR.	ADD	10/20	
						LEAD. ENGR.	ADS	10/20	
						FIELD MGR.	TRB	10/20	
						RECOMMENDED	HAS	11-20	
						DESIGN MANGER			
						FILE:	DRAWING:		
						ATLAS PAGE NO.:	186		



STA. 24+00 TO STA. 28+00 LINE "A"				
PROJECT NO. ES 2015-14				
COAL CREEK BASIN 16-N SPECIFIC REMEDIATION PLAN PHASE 2				
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT				
 PLANS AND ESTIMATES PREPARED BY: R/JN GROUP, INC. CONSULTING ENGINEERS 4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146				
PLAN SCALE	DRAWN	R/LP	...	APPROVED
	DESIGNED	R/JB	...	
1" = 20'	SURVEY	H&A	...	
	PROJ. MGR.	<i>ADG</i>	<i>10/20</i>	
PROFILE SCALE:	LEAD. ENGR.	<i>ADJ</i>	<i>10/20</i>	
HORIZONTAL:	FIELD MGR.	<i>RJB</i>	<i>10/16</i>	
1" = 20'	RECOMMENDED	<i>HAS 11-20</i>		
VERTICAL:	DESIGN MANGER			
1" = 4'				CITY ENGINEER
FILE:	DRAWING:			DATE: OCTOBER 2020
ATLAS PAGE NO.: 166,119				SHEET 20 OF 30

PROPOSED MANHOLES

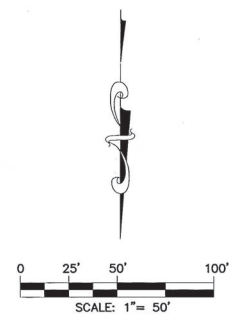
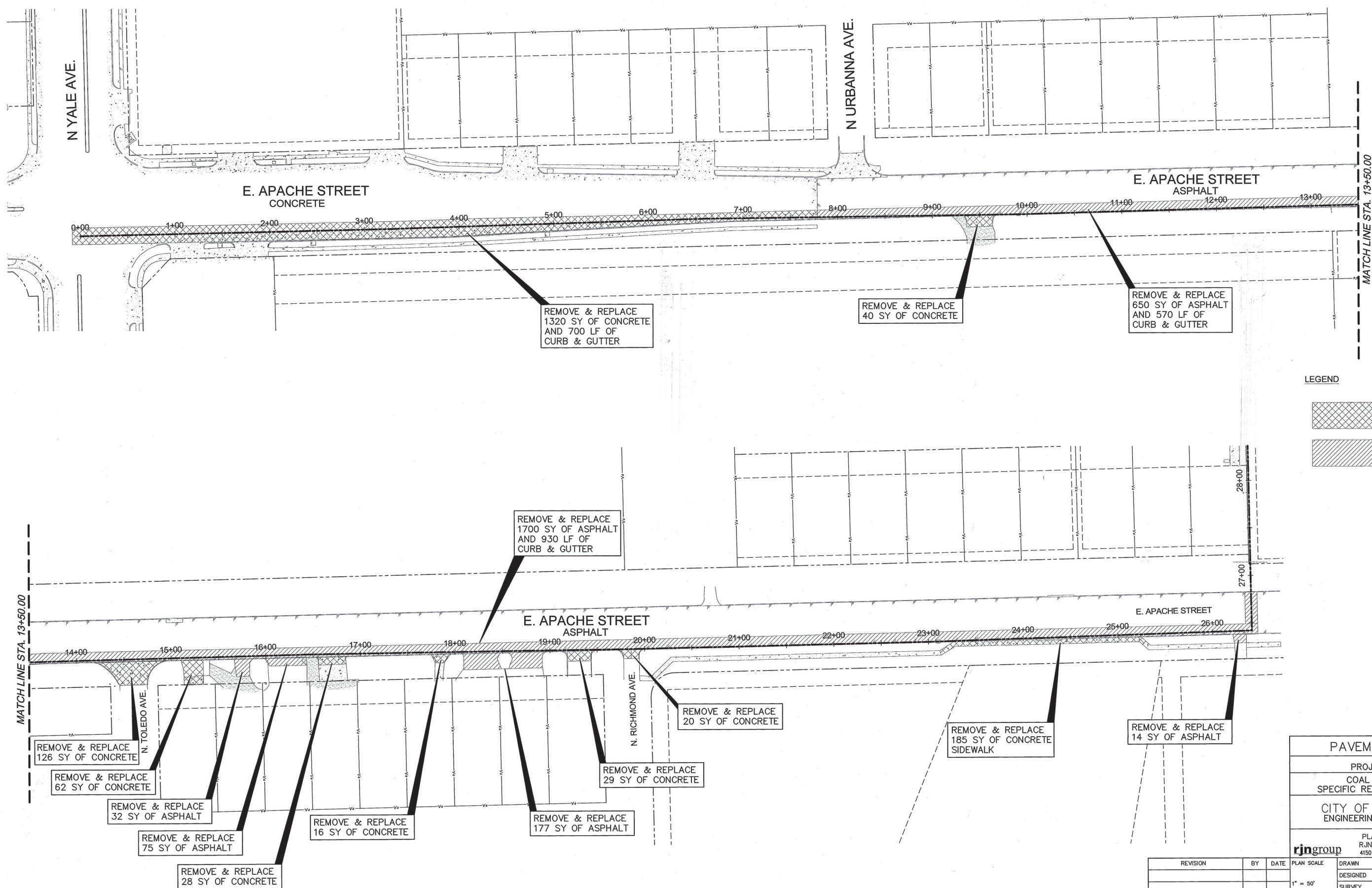
ADDITIONAL MANHOLES WITH WORK ITEMS




MANHOLE LAYOUT				
PROJECT NO. ES 2015-14				
COAL CREEK BASIN 16-N SPECIFIC REMEDIATION PLAN PHASE 2				
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT				
PLANS AND ESTIMATES PREPARED BY: RJN GROUP, INC. CONSULTING ENGINEERS 4150 S. 100th E. AVE., SUITE 106, TULSA, OKLAHOMA 74146				
rjngroup		DATE	APPROVED	
PLAN SCALE	DRAWN	RLP	...	
	DESIGNED	RJB	...	
	SURVEY	H&A	...	
	PROJ. MGR.	AOG	10/20	
	LEAD ENGR.	AJS	10/20	
	FIELD MGR.	H&A	10/20	
	RECOMMENDED	H&A	11-20	
FILE:	DRAWING:	DATE:	OCTOBER 2020	
ATLAS PAGE NO.: 166, 119		SHEET	29 OF 39	


CONTRACTOR TO
FIELD VERIFY
ANGLE OF 6° PIPE

TULSA, OKLAHOMA
PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2
OCTOBER 2020
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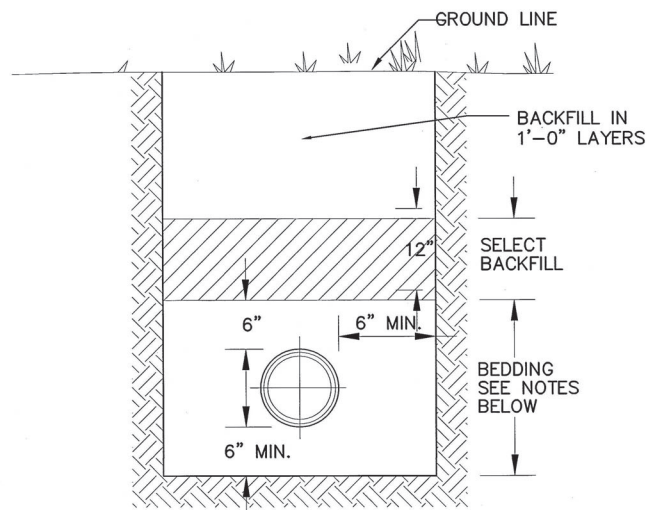
LEGEND

 CONCRETE
REMOVE & REPLACE

 ASPHALT
REMOVE & REPLACE



PAVEMENT REPAIR PLAN			
PROJECT NO. ES 2015-14			
COAL CREEK BASIN 16-N			
SPECIFIC REMEDIATION PLAN PHASE 2			
CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY: RJN GROUP, INC. CONSULTING ENGINEERS 4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146			
revision		PLAN SCALE	
BY	DATE	1" = 50'	
DESIGNED		DRAWN	
SURVEY		RLP	
PROJ. MGR.		H&A	
LEAD ENGR.		H&A 10/20	
FIELD MGR.		H&A 10/20	
RECOMMENDED		H&A 11-20	
DESIGN MANAGER		CITY ENGINEER	
FILE:		DATE: OCTOBER 2020	
ATLAS PAGE NO.:		SHEET 31 OF 39	



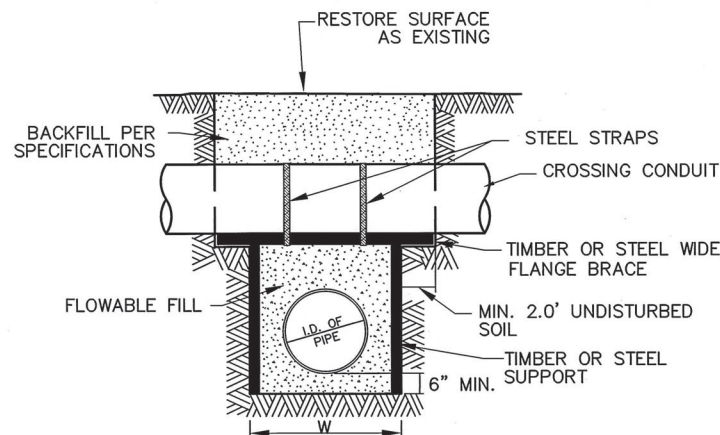
TRENCH CROSS-SECTION

NOTE:

1. BEDDING SHALL BE A CLEAN CRUSHED STONE, 1/4" TO 1", (GRAD. #57). THE CRUSHED STONE SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 12" IN THICKNESS, AND THEN COMPACTION TO A MINIMUM OF 70% RELATIVE DENSITY PER ASTM D4253. COMPACTION SHALL BE FIELD TESTED BY AN INDEPENDENT LABORATORY TO ENSURE 70% RELATIVE DENSITY.
2. COMPACTION TEST LOCATIONS WILL BE DETERMINED BY THE CITY AND AT LEAST TWO (2) TESTS ON RANDOM LIFTS SHALL BE CARRIED OUT FOR EACH 1000 LINEAR FEET OF PIPE AS A MINIMUM.
3. IF ANY COMPACTION TEST RESULTS ARE UNSATISFACTORY, THE CONTRACTOR SHALL RE-EXCAVATE AND RE-COMPACT THE BACKFILL AT ITS EXPENSE UNTIL THE DESIRED COMPACTION IS OBTAINED.
4. FOR PAVED AREAS, SEE STANDARD DETAIL AND SPECIFICATIONS FOR PAVEMENT REMOVAL AND PLACEMENT.

BEDDING DETAIL CCFRPM PIPE

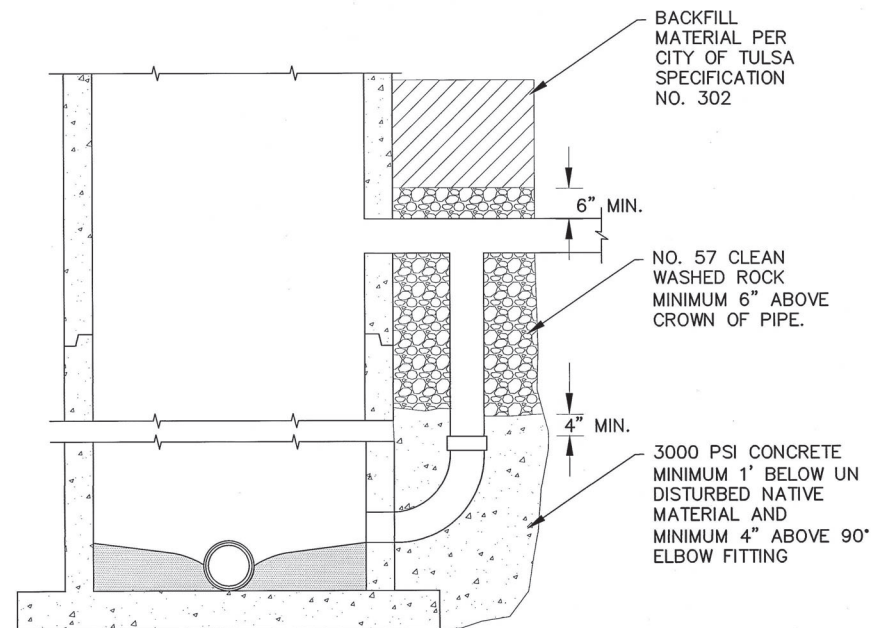
NTS



NOTE:

1. W= TRENCH WIDTH STANDARD PLUS WIDTH OF SUPPORTS.
2. PLACE A MINIMUM OF 10 LINEAR FEET OF FLOWABLE FILL IN TRENCH EACH WAY OF CROSSING UTILITY OUTSIDE WALL. FLOWABLE FILL SHALL BE INCLUDED IN PAY ITEM FOR UTILITY CROSSING SUPPORT.

UTILITY CROSSING SUPPORT



OUTSIDE DROP CONNECTION DETAIL

NTS



MISCELLANEOUS DETAILS

PROJECT NO. ES 2015-14

COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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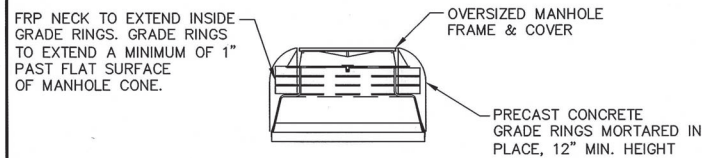
rjngroup

REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
				DESIGNED	RJB	...	
				SURVEY	NA	...	
				PROJ. MGR.	AG	10/20	
				LEAD ENGR.	AG	10/20	
				FIELD MGR.	RJB	10/20	
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				DRAWING:			
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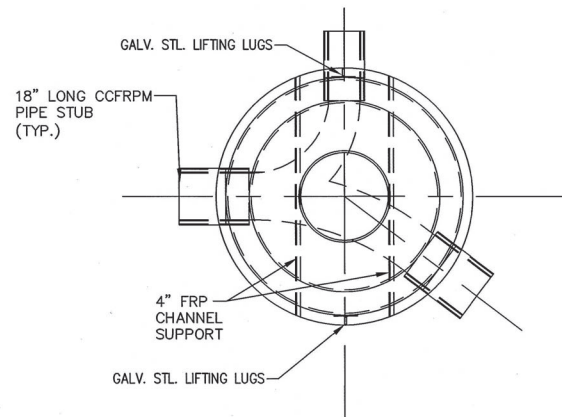
CITY ENGINEER

DATE: OCTOBER 2020

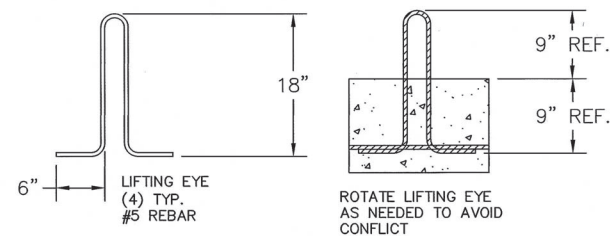
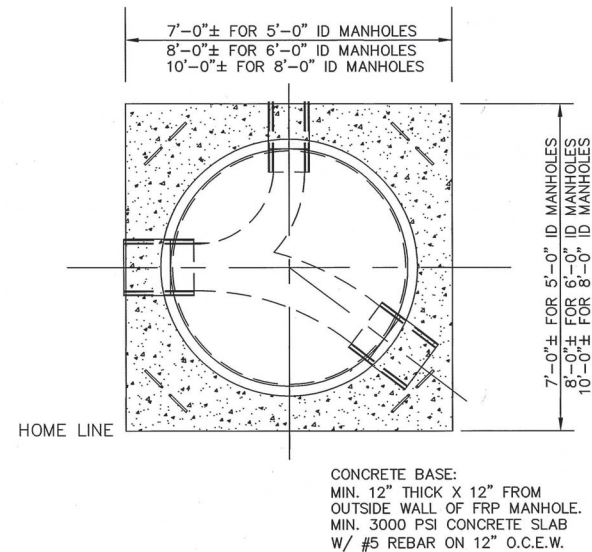
SHEET 33 OF 33



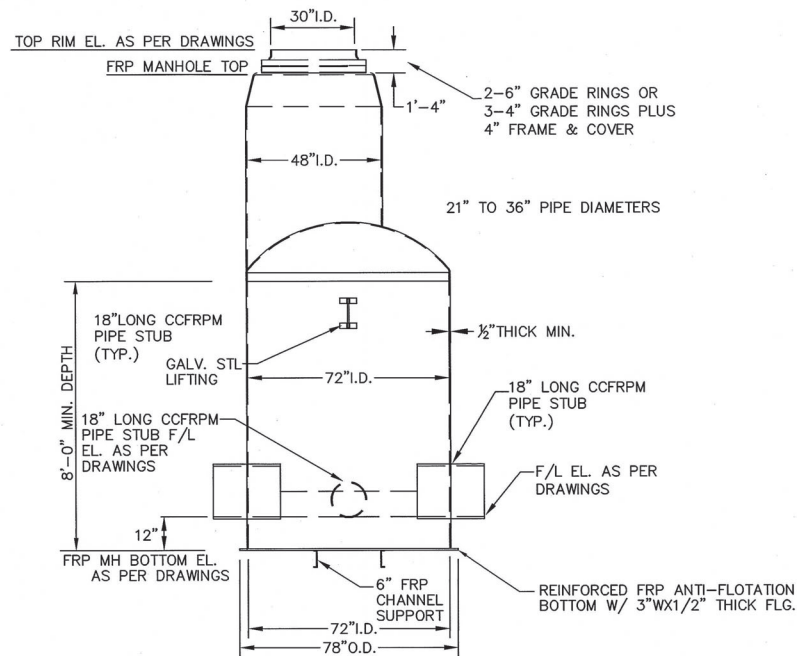
FRP GRADE RING DETAIL



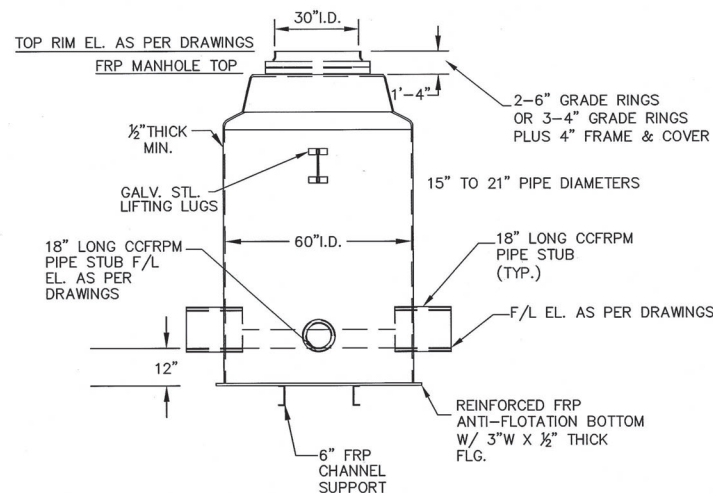
5' & 6' - ID FRP MANHOLE PLAN DETAIL



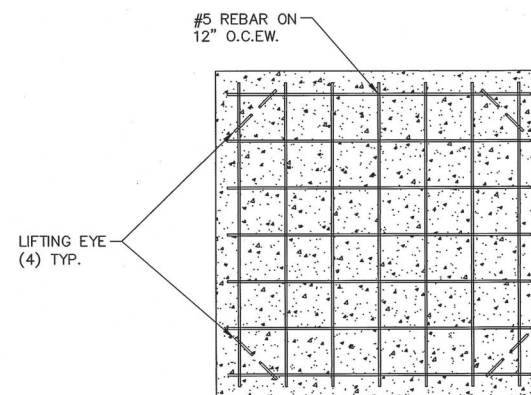
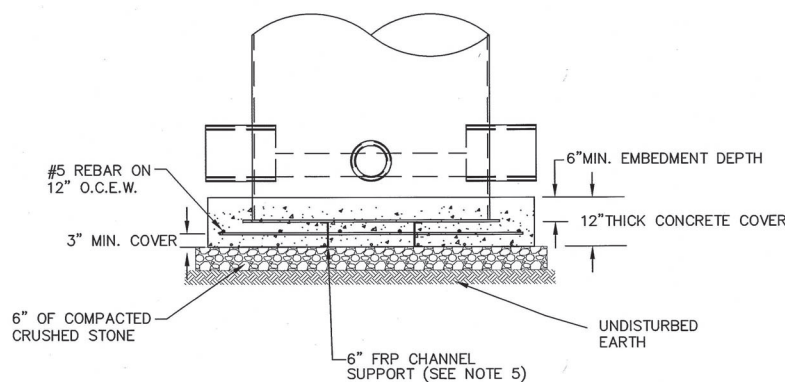
FRP LIFTING EYE DETAIL



6' - ID FRP MANHOLE DETAIL



5' - ID FRP MANHOLE DETAIL

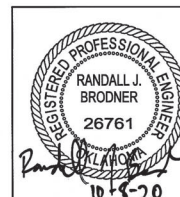


VIEW A-A

FRP MANHOLE CONCRETE CONCRETE BASE DETAIL

NOTES:

- MANHOLES SHALL BE DESIGNED, FABRICATED, INSPECTED, TESTED AND MARKED IN ACCORDANCE WITH A.S.T.M. D-3753 CURRENT EDITION.
- MANHOLE SHALL CONTAIN FRP BENCH AND INVERT UP TO MIN. 3/4 PIPE DIAMETER.
- STUBOUTS SHALL HAVE 9" MIN. CLEAN PROJECTION.
- STEP PLACEMENT SHALL CONFORM TO CITY OF TULSA STANDARD SPECIFICATIONS AND DETAILS.
- DRILL HOLES IN FRP CHANNEL SUPPORTS TO ACCOMMODATE #5 REBARS INSTALLED 12" O.C. PERPENDICULAR TO THE FRP CHANNEL.



FRP MANHOLE DETAILS

PROJECT NO. ES 2015-14

COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

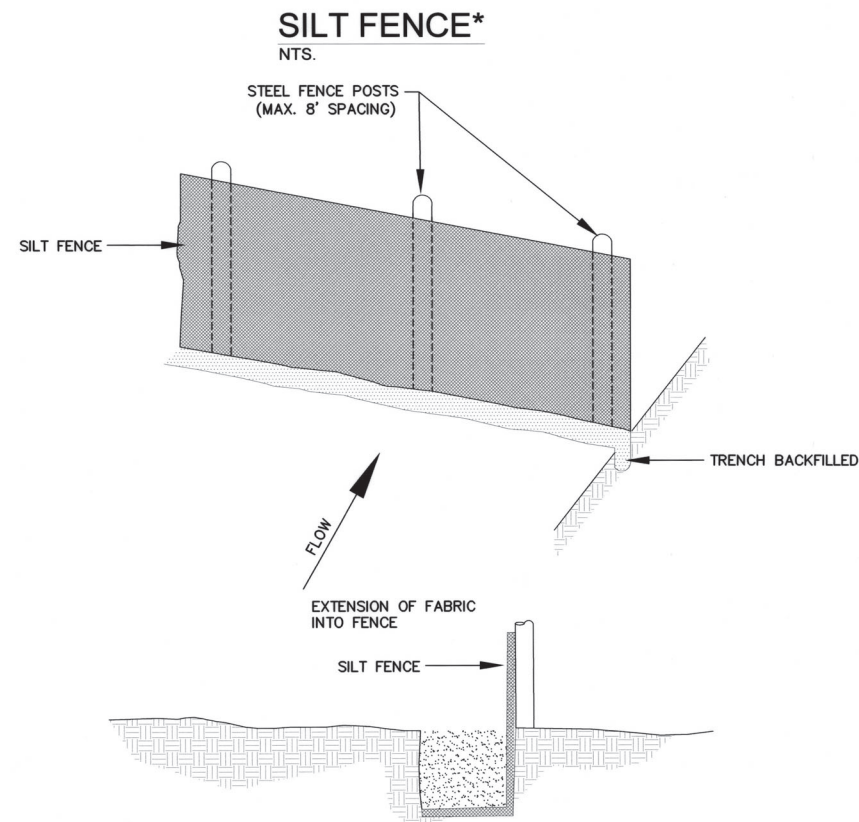
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

rjngroup

BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
		NA	DESIGNED	RJB	...	
			SURVEY	NA	...	
			PROJ. MGR.	ASG	10/20	
		PROFILE SCALE:	LEAD ENGR.	ASG	10/20	
		HORIZONTAL:	FIELD MGR.	TRD	10/20	
		VERTICAL:	RECOMMENDED	HAS	11/20	
		NA	DESIGN MANAGER			
		FILE:	DRAWING:			
		ATLAS PAGE NO.:				

CITY ENGINEER
DATE: OCTOBER 2020
SHEET 22 OF 25



NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH SHOULD BE A MINIMUM OF 6 INCHES DEEP AND 3-4 INCHES WIDE TO ALLOW FOR THE SILT FENCE TO BE LAID IN THE TRENCH 4" AND BACKFILLED.
4. SILT FENCE SHOULD BE SECURELY TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW DRAINAGE.
7. SEDIMENT TRAPPED BY THIS PRACTICE SHALL BE DISPOSED OF IN AN APPROVED SITE, IN A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES AND DISPOSED OF IN AN APPROVED SPOIL SITE OR AS IN NO.7 ABOVE.

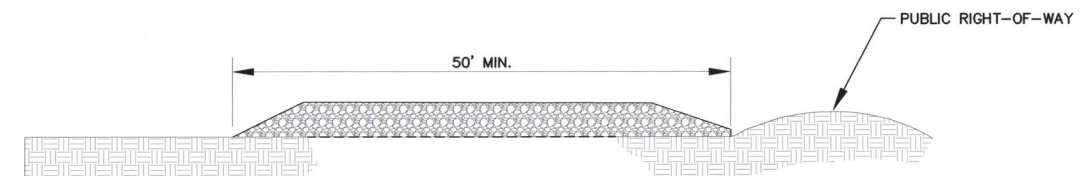
* DRAINAGE AREA LESS THAN TWO (2) ACRES.

STANDARD SYMBOL $\frac{SF}{L=}$

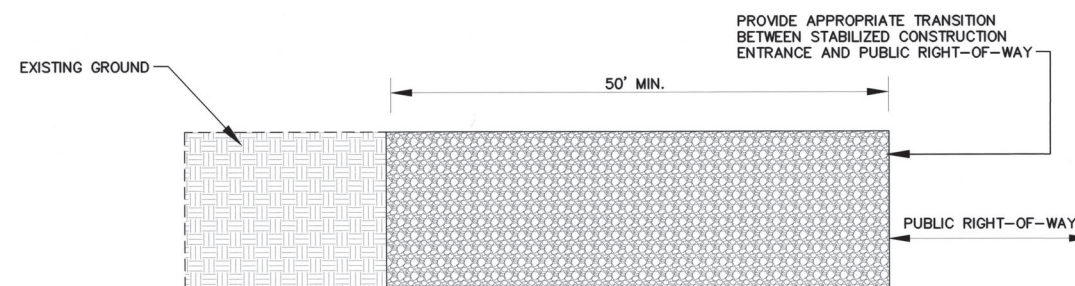
REFERENCE:
CHAPTER 1000: CITY OF TULSA MANAGEMENT CRITERIA MANUAL.

STANDARD OBTAINED FROM: USDA-SCS, MD. STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS.

STABILIZED CONSTRUCTION ENTRANCE
NTS.



PROFILE
NTS.



PLAN VIEW
NTS.

NOTES:

1. STONE SIZE AASHTO DESIGNATION M43, SIZE NO. 2 (2-1/2" TO 1-1/2"). USE CRUSHED STONE.
2. LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE OF PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE THROUGH USE OF SANDBAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.
6. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.



EROSION CONTROL DETAILS

PROJECT NO. ES 2015-14

COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

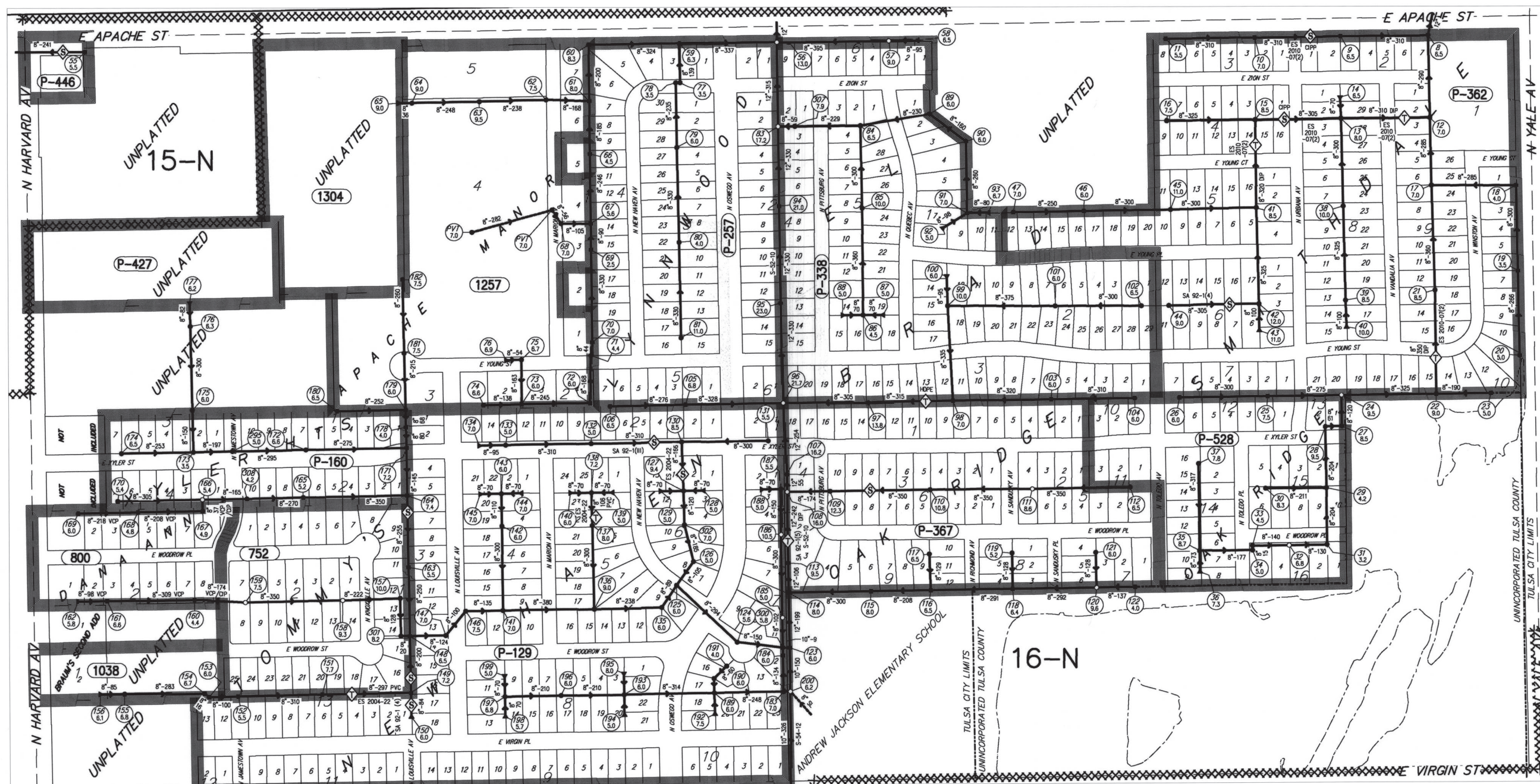
CITY OF TULSA, OKLAHOMA
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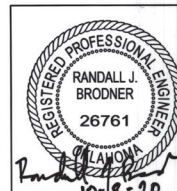
rjngroup

REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
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				SURVEY	NA	...	
				PROJ. MGR.	ADJ	10/20	
			PROFILE SCALE:	LEAD ENGR.	ADJ	10/20	
			HORIZONTAL:	FIELD MGR.	STB	10/20	
			NA	RECOMMENDED	1485	11-20	
			VERTICAL:	NA	DESIGN MANAGER		
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			ATLAS PAGE NO.:				

CITY OF TULSA STANDARD 126
STANDARD SILT FENCE, AND CONSTRUCTION ENTRANCE



FOR REFERENCE ONLY



EXISTING ATLAS PAGE 119

PROJECT NO. ES 2015-14
COAL CREEK BASIN 16-N
SPECIFIC REMEDIATION PLAN PHASE 2

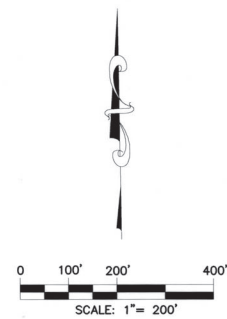
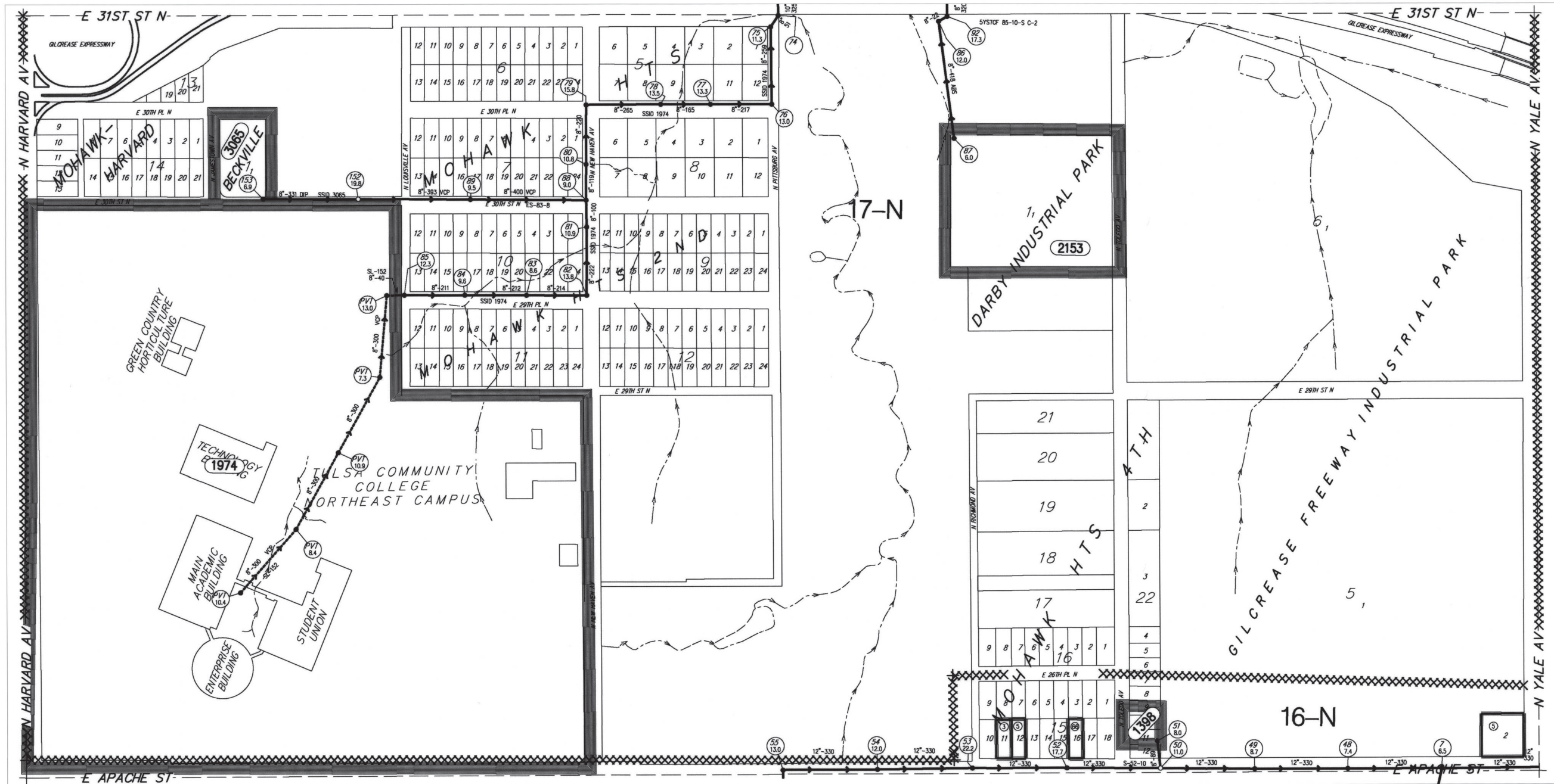
CITY OF TULSA, OKLAHOMA
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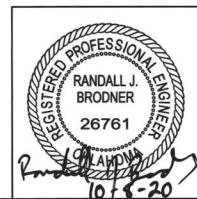
rjngroup

REVISION	BY	DATE	PLAN SCALE	DRAWN	RLP	...	APPROVED
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				PROJ. MGR.	AAJ	10/20	
				LEAD ENGR.	AAJ	10/20	
				FIELD MGR.	TLB	10/20	
				RECOMMENDED	AAJ	11-20	
				DESIGN MANAGER			
				FILE:	DRAWING:		
				ATLAS PAGE NO.:	119		

CITY ENGINEER
DATE: OCTOBER 2020
SHEET 38 OF 39
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FOR REFERENCE ONLY



EXISTING ATLAS PAGE 166			
PROJECT NO. ES 2015-14			
COAL CREEK BASIN 16-N			
SPECIFIC REMEDIATION PLAN PHASE 2			
CITY OF TULSA, OKLAHOMA			
ENGINEERING SERVICES DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY: R/JN GROUP, INC. CONSULTING ENGINEERS 4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146			
rjngroup		APPROVED	
REVISION	BY	DATE	PLAN SCALE
			1" = 200'
			DRAWN
			DESIGNED
			SURVEY
			PROJ. MGR.
			LEAD ENGR.
			FIELD MGR.
			RECOMMENDED
			DESIGN MANAGER
			FILE
			ATLAS PAGE NO.: 166
			DATE: OCTOBER 2020
			SHEET 30 OF 30