CONSTRUCTION PLANS FOR CITY OF TULSA

67TH & BIRMINGHAM DRAINAGE IMPROVEMENTS

PROJECT NO. SW-2020-01-05-TO#3

CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT

SURVEY GENERAL NOTES

A. THE ELEVATIONS SHOWN HEREON ARE BASED ON NAVD 1988 DATUM.

B. THE PROPERTY DESCRIBED HEREON IS LOCATED IN FLOOD ZONE "X-UNSHADED", AS PER FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 4053810354M, EFFECTIVE DATE: MAY 2, 2019.

C. FIELDWORK COMPLETED APRIL 23, 2021.
ADDITIONAL FIELDWORK COMPLETED DECEMBER 14, 2021

SURVEY SYMBOLS

- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- STORM SEWER MANHOLE
- SANITARY SEWER MANHOLE
- IRON PIN FOUND
- BENCH MARK
- LIGHT POLE
- ELECTRIC METER
- TELEPHONE JUNCTION BOX
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- TRAFFIC SIGN
- TRAFFIC SIGNAL BOX

EXISTING UTILITY LINE SYMBOLS

- W — WATER LINE
- SS — SANITARY SEWER LINE
- STORM SEWER
- EUG — UNDERGROUND ELECTRIC
- G — GAS LINE
- UNDERGROUND TELEPHONE
- PROPERTY LINE
- BUILDING SETBACK LINE
- EASEMENT LINE

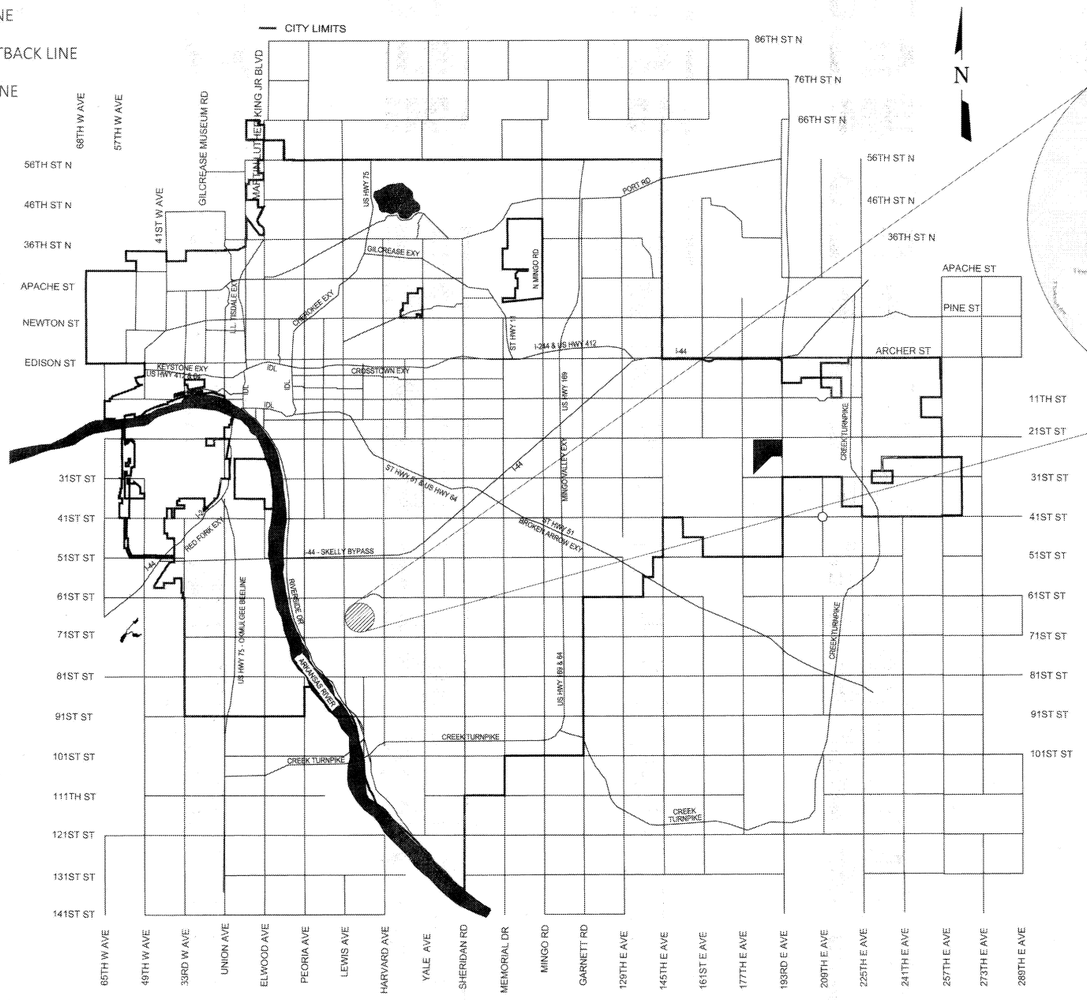
UTILITY COORDINATION

COMPANY	NUMBER	CONTACT
CITY OF TULSA	918-596-2238	CHRIS KOVAC
COX CUMMUNICATIONS	918-286-4716	BRANDON WADE
AEP/PUBLIC SERVICE CO.	918-250-6257	ADAM FIELDS
OKLAHOMA NATURAL GAS CO.	918-831-8261	CRAIG POWELL
AT&T	918-596-4237	AL NICHOLS
OKIE	811	

GOVERNING SPECIFICATIONS

CURRENT CITY OF TULSA STANDARD SPECIFICATION AND STANDARD DETAILS GOVERN. ALL OTHER CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2019 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ENTIRE PROJECT IS WITHIN THE CORPORATE LIMITS OF THE CITY OF TULSA (COT). THIS PROJECT COMPLIES WITH ALL OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ) REQUIREMENTS.



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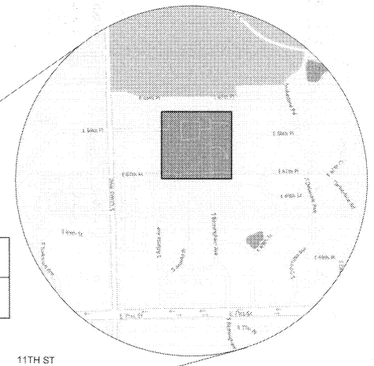

PROJECT LOCATION

PLANS PREPARED BY FREESE AND NICHOLS, INC.
4200 EAST SKELLY DRIVE SUITE 410 TULSA, OK 74135
PHONE - (539) 444-8677 WEB - WWW.FREESE.COM
CERTIFICATE OF AUTHORIZATION: CA#511
EXPIRATION DATE: 06/30/22

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CITY OF TULSA STANDARDS

102. PROJECT SIGN
306. TRENCH DETAIL CONSTRUCTION ADJACENT TO ROADWAY
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755. CONFIGURATIONS OF CAST IRON CURB INLETS
761. STANDARD INLETS AND GRATES W/ ACCESS MANHOLE BACK OF CURB
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767. STANDARD CAST IRON CURB
771. STANDARD DROP INLET 30", 36", AND 42" WITH NO ACCESS MANHOLE
773. STANDARD THREE WAY DROP INLET 48" PIPE

ODOT STANDARDS

B-510E. RCB CULVERTS - BARREL DETAILS 3'-0", 4'-0" & 5'-0" SPANS SINGLE CELL 2FT. TO 20 FT. FILL
R-36. STANDARD MEDIAN DRAINS (18" TO 36" PIPES)
R-52. STANDARD BOX INSTALLATION

CITY OF Tulsa
A New Kind of Energy.

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811
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APPROVED:

CITY ENGINEER — DATE 10.31.22

ADVERTISEMENT — DATE 11.11.22

ENGINEER'S CERTIFICATION

JONATHAN CHARLES FAUGHTENBERRY, PE #28605 — DATE 8/9/2022

PROJECT NO. SW-2020-01-05-TO#3 67TH & BIRMINGHAM DRAINAGE IMPROVEMENTS

ITEM	SPEC. NO.	DESCRIPTION		QUANTITY	UNIT
BASE BID					
1	201(A)	CLEARING AND GRUBBING	E-1, 2	0.5	ACRE
2	202(A)	UNCLASSIFIED EXCAVATION	E-3, 4, 5, R-1	560	CY
3	220	SWPPP DOCUMENTATION AND MANAGEMENT	E-6	1	LSUM
4	230(A)	SOLID SLAB SODDING	E-10, 11	600	SY
5	303(A)	AGGREGATE BASE TYPE A	E-5, S-1, 2	160	CY
6	310(B)	SUBGRADE METHOD B	E-5	40	SY
7	312	4 INCH DUCTILE IRON PLUG (RJ)	WATER 2, 8	1	EA
8	315	1-INCH WATER SERVICE CONNECTION (LONG)	WATER 15, 16	1	EA
9	325	SEPARATOR FABRIC	0	40	SY
10	411(B)	SUPERPAVE, TYPE S4	S-5, 6, 7, 8	4	TON
11	509(C)	CLASS A CONCRETE, SMALL STRUCTURES	S-12	230	CY
12	511(A)	REINFORCING STEEL	0	30500	LB
13	601(H)	TYPE I PLAIN RIPRAP	0	20	TON
14	601(I)	FILTER FABRIC (RIPRAP)	0	110	SY
15	602(C)	FILTER FABRIC (TRENCH)	0	110	SY
16	609(A)	COMBINED CONCRETE CURB & GUTTER (6"-BARRIER)	S-12, 13, 15, 16	33	LF
17	610(B)	CONCRETE DRIVEWAY (6"-H.E.S.)	S-12, 13, 16, 17	15	SY
18	611(G)	INLET CI DES. 4(D+F) W/AMH	D-1, 2, 3, 7, 8, 9, 10, 11	1	EA
19	611(G)	INLET SMD-TYPE II	D-2, 3, 7, 8, 9, 10, 11	1	EA
20	611(L)	JUNCTION BOX, (6' X 6')	D-1, 2, 3	2	EA
21	611(L)	JUNCTION BOX, (7' X 7')	D-1, 2, 3	3	EA
22	619(B)	REMOVE 4' CHAIN LINK FENCE	R-1, 2, 5, 6	120	LF
23	619(A)	REMOVAL OF AREA INLETS	R-1, 2, 3, 4, 5	5	EA
24	619(B)	REMOVAL OF EXISTING PIPE (18" RCP)	R-1, 2, 5, 6	29	LF
25	619(B)	REMOVAL OF EXISTING PIPE (21" RCP)	R-1, 2, 5, 7	150	LF
26	619(B)	REMOVAL OF EXISTING PIPE (24" RCP)	R-1, 2, 5, 6	75	LF
27	619(B)	REMOVAL OF CONCRETE DRIVEWAY	R-1, 2, 5, 6	15	SY
28	625(B)	REMOVE AND RECONSTRUCT 8' WOODEN FENCE	0	130	LF
29	641	MOBILIZATION	G-2	1	EA
30	642	CONSTRUCTION STAKING	G-3, 4	1	EA
31	880(H)	CONES	T-4	180	SD
32	COT 601	CONCRETE APRON	E-5, S-1, 2	2	SY
33	(SP)COT 771	~~SPECIAL~~ TYPE I DROP INLET	0	1	EA
34	(SP)COT 773	STANDARD 3-WAY DROP INLET	0	1	EA
35	ODOT B-501E	5'X2' END SECTION (OUTFALL)	0	1	EA
36	COT 330	EROSION CONTROL	E-7	1	LSUM
37	COT 334	CONSTRUCTION AS-BUILTS	0	1	LSUM
38	COT 335	CONTRACTOR'S QUALITY CONTROL	0	1	LSUM
39	(SP) COT 202	QUICK SET FLOWABLE FILL	G-1, D-8	15	CY
40	SPECIAL	URBAN RIGHT-OF-WAY RESTORATION	G-5, 6, 7, 8, 9, 10	1	EA
41	SPECIAL	TYPE 1 AC PATCH	S-21, G-1	40	SY
42	SPECIAL	PROJECT SIGN (CITY OF TULSA)	T-7	1	EA
43	SPECIAL	OWNER'S ALLOWANCE	0	1	EA
STORMWATER PIPE MATERIAL OPTION 1 (RCP)					
44	613(A)	30" REINFORCED CONCRETE PIPE (RCP)	D-8, 12, 13	27	LF
45	613(A)	12" REINFORCED CONCRETE PIPE (RCP)	D-8, 12, 13	7	LF
STORMWATER PIPE MATERIAL OPTION 2 (CPP)					
46	(SP) COT 215	30" CORRUGATED POLYPROPYLENE PIPE (CPP)	D-13, 14, 15	27	LF
47	(SP) COT 215	12" CORRUGATED POLYPROPYLENE PIPE (CPP)	D-13, 14, 16	7	LF

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LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES TAUGHTENBERRY
28605
OKLAHOMA

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REVISION	BY	DATE

SUMMARY OF QUANTITIES

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-6677

PLAN SCALE: 1"=N/A	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1"=N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1"=N/A	RECOMMENDED: DESIGN MANAGER		9.22	CITY ENGINEER

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ATLAS PAGE NO: 563
SHEET 2 OF 23 SHEETS

PAY ITEM NOTES EARTHWORK / EROSION CONTROL / SITE PREPARATION (E1-E11)

1. ALL COSTS FOR REMOVING TREES, SHRUBS, STUMPS, POSTS, AND ALL OTHER DEBRIS AND/OR OBSTRUCTIONS NOT COVERED BY A SEPARATE PAY ITEM ARE INCLUDED IN THE PRICE BID.

2. ALL EXISTING DRAINAGE STRUCTURES SHALL BE CLEANED AND CLEARED OF ALL SEDIMENTATION AND DEBRIS TO THE RIGHT OF WAY. COST OF CLEARING SHALL BE INCLUDED IN THE PRICE BID.

3. THE CONTRACTOR SHALL BE PAID FOR UNCLASSIFIED EXCAVATION ON THE BASIS OF PLAN QUANTITY. ANY ADDITIONAL EXCAVATION REQUIRED OR OVERRUN OF PLAN QUANTITY WILL BE PAID FOR ON THE BASIS OF UNIT PRICE BID FOR THE ITEM. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SURVEY TO VERIFY ANY ADDITIONAL QUANTITIES.

4. UNCLASSIFIED EXCAVATION INCLUDES REMOVAL OF AGGREGATE BASE AND MODIFIED SUBGRADE UNDER EXISTING PAVEMENT TO BE REPAIRED.

5. THIS QUANTITY INCLUDES AN ADDITIONAL 10% ABOVE PLAN QUANTITY FOR UNDERCUTTING OF UNSUITABLE SUBGRADE MATERIAL OR ADDITIONAL PATCHING AS DIRECTED BY THE ENGINEER.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROL AND MAINTENANCE OF THE STORM WATER DRAINAGE FROM THE CONSTRUCTION SITE. STORM WATER PONDING ON THE CONSTRUCTION SITE THAT IS THE RESULT OF CONSTRUCTION WILL NOT BE ALLOWED. ALL COST ASSOCIATED WITH STORM WATER MANAGEMENT, AS WELL AS REMOVAL OF ALL SILT AND DEBRIS FROM ALL DRAINAGE STRUCTURES, STORM SEWER PIPES AND APPURTENANCES WITHIN THE PROJECT LIMITS AT END OF PROJECT, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

7. EROSION PROTECTION SHALL BE PLACED AS FOLLOWS:

A) AROUND INLETS TO PREVENT INFLOW OF ERODED MATERIAL INTO STORM SEWER SYSTEM;

B) IN LOCATIONS THROUGHOUT PROJECT SITE, AS DETERMINED BY THE ENGINEER, TO PREVENT WASH OF ERODED MATERIAL ONTO ADJACENT PROPERTY;

C) FOR ENTIRE DURATION OF PROJECT, WITH MAINTENANCE AND REPLACEMENTS, AS DIRECTED BY THE ENGINEER;

D) WITH PERIODIC REMOVAL OF SEDIMENT IN ACCORDANCE WITH STORMWATER MANAGEMENT PLAN.

ALL COST FOR ITEMS A-D ABOVE SHALL BE INCLUDED IN UNIT PRICE BID FOR THIS ITEM.

8. NOT USED.

9. NOT USED.

10. ESTIMATED QUANTITY IS BASED ON SODDING OF ALL DISTURBED AREAS OUTSIDE THE FINAL PAVING LIMITS AND WITHIN THE FINAL GRADING LIMITS AS INDICATED BY THE TOP-OF-CUT/TOE-OF-SLOPE LINE ON THE PLANS (EXCLUDING SURFACES OF STRUCTURES, FIXTURES AND APPURTENANCES). SOD SHALL BE OF LIKE-KIND TO EXISTING SOD. PRICE BID INCLUDES PLACEMENT AND COMPACTION OF SUITABLE BACKFILL. ANY EXISTING GRASSED AREAS BEYOND THE ABOVE STATED LIMITS THAT ARE DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE RESODDED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S SOLE EXPENSE.

11. COST OF WATERING AND FERTILIZING SHALL BE INCLUDED. FERTILIZERS SHALL BE 10-20-10 AND SHALL BE APPLIED AT THE RATE OF 1.5 LBS PER 10 SQ YDS. FERTILIZER SHALL BE APPLIED PER SECTION 230.04H OF ODOT STANDARD SPECIFICATIONS. WATERING SHALL BE APPLIED AS NECESSARY UNTIL VEGETATION IS ESTABLISHED OR UNTIL THE WORK IS ACCEPTED AS COMPLETE.

PAY ITEM NOTES SURFACING / STRUCTURES (S1-S21)

1. TYPE A AGGREGATE BASE WAS ESTIMATED TO BE USED AS THE BASE MATERIAL FOR 90% OF THE PATCHING. QUICK SET FLOWABLE FILL WAS ESTIMATED TO BE USED AS THE BASE MATERIAL FOR 10% OF THE PATCHING. ACTUAL QUANTITIES TO BE DETERMINED BY THE ENGINEER.

2. INCLUDES COMPACTION OF AGGREGATE TO 98% AASHTO T180 MODIFIED PROCTOR.

3. NOT USED.

4. NOT USED.

5. THE COST OF TACK COAT, EDGE JOINT SEAL MATERIAL AND SCREENINGS FOR BLOTTING, AND ALL LABOR ASSOCIATED WITH THESE ITEMS, SHALL BE INCLUDED IN ASPHALT CONCRETE.

6. ESTIMATED AT 112 LBS PER SQ YARD PER 1 INCH THICK.

7. ODOT PAY FACTOR FOR AVERAGE LOT DENSITY SHALL NOT BE USED FOR THIS PROJECT. FAILURE TO REACH AVERAGE LOT DENSITY OF 92%-97% WILL RESULT IN REJECTION OF WORK.

8. A HIGHER GRADE OF ASPHALT BINDER THAN IS INDICATED ON THE PLANS MAY BE USED, BUT AT NO ADDITIONAL COST TO THE CITY.

9. NOT USED.

PAY ITEM NOTES SURFACING / STRUCTURES (S1-S21) (CONT.)

10. NOT USED.

11. NOT USED.

12. THE USE OF FLY-ASH IN CONCRETE IS PROHIBITED.

13. INCLUDES ALL COST OF SAWED JOINTS AND SEALING OF ALL JOINTS INCLUDING LONGITUDINAL JOINTS.

14. NOT USED.

15. THIS ITEM SHALL BE MEASURED AS THE ACTUAL AMOUNT OF CURB AND/OR GUTTER INSTALLED. NO PAYMENT WILL BE MADE FOR CURB AND/OR GUTTER THROUGH DRIVEWAYS AND INLETS.

16. CURB, GUTTER, AND/OR SIDEWALK ASSOCIATED WITH THE DRIVEWAY AND THROUGH THE DRIVEWAY IS INCLUDED IN THE COST OF THE DRIVEWAY.

17. ONE SIDEWALK PANEL ON EACH SIDE OF DRIVEWAYS SHALL BE A MINIMUM OF 6" THICK OR MATCH EXISTING DRIVEWAY THICKNESS, WHICHEVER IS GREATER. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THE COST OF THE THICKENED SIDEWALK THROUGH THIS AREA.

18. NOT USED.

19. STANDARD BEDDING MATERIAL TO BE TYPE A AGGREGATE BASE COMPACTED TO 95% STANDARD PROCTOR DENSITY (AASHTO T-99). TYPE A AGGREGATE BASE IN THE ROADWAY SHALL BE COMPACTED TO 98% MODIFIED PROCTOR (AASHTO T-180).

20. NOT USED

21. THIS PAY ITEM INCLUDES THE FOLLOWING:

A. SAW CUTTING
B. REMOVAL OF THE EXISTING CONCRETE AND/OR ASPHALTIC CONCRETE ROADWAY (CY)
C. TYPE S3 ASPHALTIC CONCRETE OR PC CONCRETE COMPLETE AND IN PLACE PER DETAIL
D. SEALING OF EDGES AND TACK COAT

DOES NOT INCLUDE THE FOLLOWING:

A. UNCLASSIFIED EXCAVATION
B. SUBGRADE METHOD B (SY)
C. SEPARATOR FABRIC (SY)
D. AGGREGATE BASE (TYPE A)
E. ASPHALT CONCRETE LEVELING OR SURFACE COURSE

PAY ITEM NOTES REMOVAL/ADJUSTMENT (R1-R6)

1. WASTE MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE IN A MANNER APPROVED BY THE ENGINEER.

2. ALL SAW CUTTING AND REMOVAL SHALL BE INCLUDED IN THE COST OF THE ITEM TO BE ADJUSTED, REMOVED, REPAIRED, OR REPLACED.

3. PAY ITEM INCLUDES REMOVAL OF ALL STRUCTURES AND OBSTRUCTIONS WITHIN PROJECT LIMITS NOT SPECIFIED BY OTHER ITEMS OF WORK.

4. INCLUDES SAWING NOT INCLUDED IN OTHER ITEMS OF WORK

5. ITEMS TO BE REMOVED MAY OR MAY NOT BE PRESENT IN ANY SPECIFIED CONDITION.

6. SHALL INCLUDE ALL COSTS ASSOCIATED WITH PLUGGING/ PATCHING HOLES IN EXISTING STRUCTURES TO REMAIN.

PAY ITEM NOTES GENERAL (G1-G10)

1. LOCATIONS TO BE DETERMINED IN THE FIELD AND WORK TO BE PERFORMED AT THE DIRECTION OF THE FIELD ENGINEER. QUANTITY IS ESTIMATED AND MAY BE OMITTED IN ITS ENTIRETY.

2. MAXIMUM OVERALL DOLLAR AMOUNT AND SCHEDULE OF PAYMENTS SHALL BE IN ACCORDANCE SECTION 641 OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CURRENT EDITION. EXCLUDES MOBILIZATION FOR WATERLINE WORK.

3. CONSTRUCTION STAKING SHALL INCLUDE SURVEYING AND THE FURNISHING, PLACING, AND MAINTAINING OF THE CONSTRUCTION LAYOUT STAKES NECESSARY FOR THE PROPER COMPLETION AND INSPECTION OF THE ENTIRE PROJECT.

4. THE COST TO REPLACE REMOVED OR DAMAGED SECTION CORNERS AND ALL OTHER PERMANENT RIGHT OF WAY MARKERS SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM. NO ADDITIONAL PAYMENT WILL BE MADE.

PAY ITEM NOTES GENERAL (G1-G10) (CONT.)

5. CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS DAMAGED OR REQUIRING RELOCATION DURING THE CONSTRUCTION OF THIS PROJECT TO THE SATISFACTION OF THE PROPERTY OWNER AND CITY ARBORIST. COST SHALL BE INCLUDED IN THE PRICE BID.

6. ALL HOUSE NUMBERS SHALL BE REPLACED/ REESTABLISHED THROUGHOUT PROJECT LIMITS. COST TO BE INCLUDED IN URBAN RIGHT OF WAY RESTORATION. CONTRACTOR SHALL REESTABLISH DRAINS, ROOF DRAINS AND OTHER DRAINAGE THROUGH THE CURBS IN ACCORDANCE WITH CITY OF TULSA STANDARD 758. NO NEW CURB OUTLETS SHALL BE CONSTRUCTED WITHOUT APPROVAL OF THE ENGINEER.

7. AN INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFIED ARBORIST SHALL OVERSEE ALL PLANTINGS AND/OR REMOVAL OF TREES. CONTACT CITY ARBORIST TO ACCEPT FINAL PLANTINGS. CONTACT #: 918-596-2548

8. TREE GRATES ARE NOT ACCEPTABLE PER CITY ARBORIST. CONCRETE PAVERS ARE TO BE USED AS NECESSARY AROUND TREES.

9. CONTRACTOR SHALL COORDINATE WITH HOMEOWNERS TO RESET ALL PAVERS, LANDSCAPE STONE, PRIVATE SIDEWALKS AND FENCES THAT ARE DISTURBED DURING CONSTRUCTION OPERATIONS. ALL MATERIALS, LABOR, AND EQUIPMENT REQUIRED FOR RESETTING OF SUCH ITEMS IS TO BE INCLUDED IN PRICE BID FOR URBAN RIGHT OF WAY RESTORATION.

10. PAY ITEM INCLUDES ALL MOWING WITHIN THE RIGHT-OF-WAY AS DIRECTED DURING CONSTRUCTION.

PAY TEM NOTES DRAINAGE (D1-D15)

1. THIS ITEM SHALL INCLUDE THE COST OF NEW MANHOLE FRAME AND COVER PER CITY OF TULSA STD NOS.752, 753, 754, 761, 762, 769A, 769B AND 775.

2. THE TOTAL COST FOR RUBBERIZED ASPHALT AND/OR SILICONE AT MANHOLES, VALVE BOXES, INLETS, AND INLET APRONS, SHALL BE INCLUDED.

3. NO MASONRY STRUCTURES SHALL BE CONSTRUCTED WITHIN THE RIGHT OF WAY.

4. NOT USED.

5. NOT USED.

6. NOT USED.

7. INCLUDES THE COST REQUIRED TO MAKE CONNECTION AND REMOVAL OF EXISTING INLETS. THE COST OF PC CONCRETE CURB AND GUTTER THROUGH THE INLET, 5' EACH SIDE OF THE INLET, AND THE PC CONCRETE INLET APRON SHALL BE INCLUDED. GRATE AND FLOWLINE ELEVATIONS SHALL MATCH EXISTING CONDITIONS UNLESS OTHERWISE NOTED IN THE PLANS.

8. QUICKSET FLOWABLE FILL SHALL BE USED TO BACKFILL AROUND STREET CURB INLETS AND REINFORCED CONCRETE PIPE, AS NEEDED, AT THE DIRECTION OF THE ENGINEER.

9. ALL INLETS, COMPLETE IN PLACE, SHALL BE CAST IN PLACE CONCRETE OR PRECAST CONCRETE. THIS PAY ITEM INCLUDES ANY INLET FRAME(S), GRATE(S), HOOD(S) AND CONCRETE REQUIRED FOR COMPLETE INSTALLATION OF STRUCTURE PER THE CONSTRUCTION DOCUMENTS.

10. NOT USED

11. CAST IRON CURB INLET CONFIGURATION NAMING CONVENTION PROVIDED IN COT STANDARD NO. 755. SEPARATE DETAILS SHALL BE REFRENCED OR PROVIDED IN THE PLANS FOR NON-CITY-STANDARD INLETS.

STANDARD NAMING: CICI DES G{T} [W/AMH]

G: NUMBER OF GRATES.

T: LETTER(S) CORRESPONDING TO ARRANGEMENT OF CAST IRON HOODS TO BE INSTALLED UPSTREAM OF GRATES.

W/AMH: IF SHOWN, INLET TO BE CONSTRUCTED WITH ATTACHED ACCESS MANHOLE.

12. REINFORCED CONCRETE PIPE TO BE CLASS III. ALL REINFORCED CONCRETE PIPE AND MANHOLES TO BE SUPPLIED WITH AN OMNI-FLEX JOINT GASKET OR APPROVED EQUAL. MASTIC JOINT SEALANT SHALL NOT BE ALLOWED.

13. THIS PAY ITEM SHALL BE COMPLETE IN PLACE AND SHALL INCLUDE ALL PIPE, STANDARD BEDDING MATERIAL AND TRENCH EXCAVATION, JOINT GASKETS AND ALL OTHER INCIDENTALS. NO ADDITIONAL COST WILL BE MADE. PRIOR TO ACCEPTANCE, CONTRACTOR SHALL COORDINATE WITH ENGINEER FOR INSPECTION OF INTERIOR OF PIPE BY CITY OF TULSA PERSONNEL FOR DEFECTS USING SELF-PROPELLED MOBILE CLOSED-CIRCUIT CAMERA SYSTEM.

14. WHERE CORRUGATED POLYPROPYLENE PIPE CONNECTS TO REINFORCED CONCRETE STRUCTURES, CONTRACTOR SHALL ENSURE CONNECTIONS ARE WATER-TIGHT AND FULLY SEALED AGAINST SOIL INFILTRATION.

PAY ITEM NOTES DRAINAGE (D1-D15) (CONT.)

15. WHERE QUICKSET FLOWABLE FILL IS USED TO BACKFILL AROUND CORRUGATED POLYPROPYLENE PIPE, THE CONTRACTOR SHALL UTILIZE AN ANCHORING SYSTEM APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL COSTS FOR LABOR, EQUIPMENT AND MATERIALS REQUIRED TO IMPLEMENT APPROVED ANCHORING SYSTEM INCLUDED IN PRICE BID FOR CORRUGATED POLYPROPYLENE PIPE.

PAY ITEM NOTES TRAFFIC (T1-T7)

1. NOT USED.

2. NOT USED.

3. NOT USED.

4. PAYMENT SHALL BE MADE ON A SIGN-DAY BASIS ONLY FOR TRAFFIC CONTROL DEVICES THAT ARE PROPERLY INSTALLED AND IN GOOD WORKING ORDER. COSTS FOR DELIVERY, INSTALLATION, RELOCATION, MAINTENANCE REMOVAL AND REPLACEMENT, AS NEEDED AT THE DISCRETION OF THE ENGINEER, INCLUDED IN UNIT PRICE BID. ALL TRAFFIC CONTROL ITEMS SHALL MEET THE MOST CURRENT VERSION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

5. NOT USED.

6. NOT USED.

7. PRICE BID FOR THIS ITEM INCLUDES INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF PROJECT SIGN.

PAY ITEM NOTES RCB (RCB1-4)

1. ALL PRE-CAST CONCRETE PIPE AND BOX PIPE SHALL MEET THE FOLLOWING REQUIREMENTS OF ASTM:

ASTM C76 - DESIGN
ASTM C1479 - INSTALLATION OF CONCRETE PIPE
ASTM C1577 - BOX CULVERT DESIGN
ASTM C1675 - INSTALLATION OF BOX CULVERTS
ASTM C443 - JOINTS FOR GASKETED PIPE
ASTM C1677 - JOINT FOR CONCRETE BOX, USING RUBBER GASKETS

2. CONTRACTOR SHALL ONLY CROSS NEWLY INSTALLED CONCRETE BOX, PIPE, JUNCTIONS, AND INLETS WITH CONSTRUCTION EQUIPMENT IF A 3' DEEP BERM BRIDGE IS INSTALLED. CONTRACTOR SHALL GET THIS BERM AND LOCATION APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.

3. BOX PIPE AND ROUND PIPE BEDDING AND TRENCH SHALL BE CONSTRUCTED PER CITY OF TULSA STANDARD PIPE BEDDING DETAIL FOR STORM SEWER # 751.

4. PRIOR TO FINAL ACCEPTANCE, ALL PROPOSED STORM STRUCTURES ARE TO BE INSPECTED AND TESTED BY THE CITY OF TULSA."

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

PAY ITEM NOTES

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1"=N/A	DRAWN	MMM	8/2022
	DESIGNED	JCF	8/2022
	SURVEY	NP	12/2021
PROFILE SCALE:	PROJ. MGR.		8/22
HORIZONTAL 1"=N/A	LEAD ENGR.		8/22
	FIELD MGR.		8/22
VERTICAL 1"=N/A	RECOMMENDED: DESIGN MANAGER		9-22

APPROVED: CITY ENGINEER

FILE: CV-ALL-GN-NOTES.dwg DRAWING: | DATE:

ATLAS PAGE NO: 563 | SHEET 3 OF 23 SHEETS

Filename: N:\SW\Drawings\CV-ALL-GN-NOTES.dwg

GENERAL CONSTRUCTION AND PAY NOTES

WATER PAY ITEM NOTES (TYPICAL):

1. TESTING AND CHLORINATION OF WATER MAINS SHALL BE PERFORMED BY THE CITY OF TULSA. TESTING, CHLORINATION, AND FLUSHING SHALL BE DONE IN ACCORDANCE WITH SECTION 109.3 OF THE GENERAL SPECIFICATIONS.

A. CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY PLUGS WITH ADEQUATE BLOCKING OR RESTRAINTS, PLUS CORPORATION STOPS, AS DIRECTED BY CITY TESTING PERSONNEL, THEN, ONCE TESTING, CHLORINATION AND FLUSHING BY CITY PERSONNEL IS COMPLETED, REMOVE TEMPORARY BLOCKING AND TIE INTO EXISTING SYSTEM, USING FITTINGS SWABBED INTERNALLY WITH 2% BLEACH SOLUTION.

B. TESTING, CHLORINATION, AND FLUSHING OF NEW WATER MAIN SHALL BE PERFORMED BY CITY PERSONNEL ON MAINS WHICH ARE PHYSICALLY DISCONNECTED FROM THE EXISTING WATER SYSTEM. TESTING, CHLORINATION, AND FLUSHING OF NEW WATER MAINS SHALL NOT BE PERFORMED AGAINST VALVES WHICH ARE PHYSICALLY CONNECTED TO EXISTING SYSTEM.

C. ALL COSTS FOR TEMPORARY PLUGS, BLOCKING, RESTRAINING, CORPORATION STOPS, TUBING, THREADED CONNECTIONS, BLEACH AND OTHER INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE.

2. BURIED BOLTS, HARNESS LUGS, AND COUPLINGS SHALL BE GIVEN TWO COATS OF KOPPER'S BITUMASTIC 300-M (DRY MIL THICKNESS OF 16 MILS) OR EQUAL. COST TO BE INCLUDED IN UNIT PRICE BID FOR PIPE AND FITTINGS.

3. NOT USED.

4. NOT USED.

5. ALL HYDRANTS, VALVES AND OTHER FITTINGS FROM ABANDONED WATER MAINS SHALL BE SALVAGED AND DELIVERED TO SOUTH YARD, 2317 S JACKSON. PAYMENT TO BE MADE UNDER RIGHT OF WAY CLEARING AND RESTORING. NO ADDITIONAL PAYMENT SHALL BE MADE.

6. CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS, ROOF DRAINS, AND FENCING DAMAGED IN THE ZONE OF CONSTRUCTION DURING THE COURSE OF CONSTRUCTION TO SATISFACTION OF THE PROPERTY OWNER. PAYMENT SHALL BE INCLUDED IN RIGHT-OF-WAY CLEARING AND RESTORING. NO ADDITIONAL PAYMENT SHALL BE MADE.

7. NOT USED.

8. ALL COSTS FOR COMPONENTS NECESSARY TO RESTRAIN JOINTS FOR PIPE AND FITTINGS DESIGNATED RESTRAINED JOINT ("RJ") SHALL BE INCLUDED IN UNIT PRICE BID FOR PIPE OR FITTINGS.

A. DUCTILE IRON PIPE RESTRAINED JOINT SYSTEMS: US PIPE TRFLEX, GRIFFIN SNAPLOK, MCWANE THRUSTLOCK, AMERICAN FLEXRING, EBAA MEGALUG, STAR STARGRIP, SMITH-BLAIR CAMLOCK, CLOW TUFGRIP OR EQUAL SHALL BE USED ON THIS PROJECT. SHOULD RJ PIPE BE SPECIFIED THROUGH UNCASED BORES, ONLY USPIPE TRFLEX, GRIFFIN SNAPLOK, MCWANE THRUSTLOCK, OR AMERICAN FLEXRING IS TO BE USED. LOCKING GASKETS NOT PERMITTED;

B. POLYVINYL CHLORIDE (PVC) RESTRAINED JOINT SYSTEMS: EBAA MEGALUG, STAR STARGRIP OR EQUAL SHALL BE USED ON THIS PROJECT. LOCKING GASKETS NOT PERMITTED; SHOULD RJ PIPE BE SPECIFIED ON BORE CASING IS REQUIRED.

C. NOT USED.

NO ADDITIONAL PAYMENT SHALL BE MADE.

9. ALL CUT ENDS AND WHERE SALVAGED FITTINGS HAVE BEEN REMOVED FROM ABANDONED WATER LINES LEFT IN PLACE, SHALL BE PLUGGED WITH 24-IN OF CONCRETE INSIDE THE PIPE. COST OF CONCRETE PLUGGING TO BE INCLUDED IN UNIT PRICE BID FOR PIPE. NO ADDITIONAL PAYMENT SHALL BE MADE.

10. NOT USED.

11. NOT USED.

12. ALL LABOR, MATERIALS, AND EQUIPMENT TO CONNECT PROPOSED WATER MAINS TO EXISTING WATER MAINS ARE INCLUDED IN COST OF SLEEVES/ADAPTORS. CONTRACTOR TO EXCAVATE ALL EXISTING WATER MAINS AHEAD OF PIPE LAYING SO THAT THE GRADES CAN BE ADJUSTED ACCORDINGLY. FAILURE TO DO SO SHALL NOT ENTITLE THE CONTRACTOR TO CLAIM EXTRA COMPENSATION FOR ADJUSTMENTS TO THE PROPOSED WATER MAIN. COST FOR EXCAVATING EXISTING WATER MAINS SHALL BE INCLUDED IN UNIT PRICE BID FOR SLEEVES. NO ADDITIONAL PAYMENT SHALL BE MADE.

13. (OPTIONAL) AT THE DIRECTION OF THE ENGINEER, CONTRACTOR SHALL FURNISH A "LICENSED AND BONDED PLUMBER", WHICH SHALL INCLUDE ALL COSTS OF LABOR, TOOLS, PERMIT FEES, AND EQUIPMENT TO REROUTE THE EXISTING CUSTOMER SERVICE ON CUSTOMER PROPERTY TO THE PROPOSED CUSTOMER METER CAN. COST SHALL NOT EXCEED AN ALLOWANCE OF $1000 PER OCCURRENCE. MATERIALS SHALL BE PAID UNDER SEPARATE BID ITEMS. NO ADDITIONAL PAYMENT SHALL BE MADE.

14. CONTRACTOR IS REMINDED TO BACKFILL ALL TRENCHES EXCAVATED ACROSS ANY EXISTING OR PROPOSED DRIVING OR PARKING SURFACE WITH 1½ -IN TYPE A AGGREGATE BASE, PLACED IN 8-INCH MAXIMUM LIFTS AND COMPACTED TO 98% MODIFIED PROCTOR DENSITY. COST TO BE INCLUDED IN COST OF EXCAVATION AND BACKFILL. NO ADDITIONAL PAYMENT SHALL BE MADE.

15. WATER SERVICE CONNECTIONS SHALL INCLUDE COST OF MATERIAL, LABOR AND EQUIPMENT TO REMOVE AND INSTALL SADDLES, SERVICE CLAMPS, CORPORATION STOPS, BENDS, 3-PART UNIONS, COUPLINGS, SETTERS AND ANY OTHER INCIDENTALS REQUIRED FOR A COMPLETE WATER SERVICE CONNECTION WITH EXCEPTION OF METER CANS, RIMS AND LIDS. NO ADDITIONAL PAYMENT SHALL BE MADE. METER CANS, LIDS AND RIMS SHALL BE PAID AS A SEPARATE BID ITEM.

A. SHORT SERVICE SHALL BE ANY SERVICE LINE THAT IS 25-FEET OR LESS IN LENGTH. SHORT SERVICES DO NOT INCLUDE PAVEMENT REPLACEMENT. I.E. ¾-INCH WATER SERVICE CONNECTIONS (SHORT SERVICE)

B. LONG SERVICE SHALL BE ANY SERVICE LINE THAT IS GREATER THAN 25-FEET UP TO 80-FEET IN LENGTH. LONG SERVICES INCLUDE PAVEMENT REPLACEMENT AND/ OR COST TO BORE. EXAMPLE: ¾-IN WATER SERVICE CONNECTIONS (LONG SERVICE)

C. SHORT AND LONG SERVICE LINES EXCEEDING THE ABOVE PARAMETERS WILL BE COMPENSATED FOR LINEAR FOOTAGE ABOVE AND BEYOND. COMPENSATION SHALL BE PAID AS "SERVICE LINES, EXTENSION", PER LF

16. SERVICE LINES ON NON-ARTERIALS SHALL BE EITHER COPPER TUBING (TYPE K SOFT ANNEALED CONFORMING TO ASTM B 88) OR PEX TUBING (UPONOR AQUA PEX 5206 BLUE CONFORMING TO ASTM F876/F877/F2023). PEX TUBING IS NOT PERMITTED WITHIN ARTERIAL RIGHT OF WAY. WHEN CONTRACTOR ELECTS TO USE PEX TUBING:

A. ¾-INCH WATER SERVICE CONNECTION SHALL USE 1-INCH PEX TUBING MINIMUM
B. 1-INCH WATER SERVICE CONNECTION SHALL USE 1¼-INCH PEX TUBING MINIMUM

17. CONTRACTOR'S PLUMBER SHALL PROVIDE AN INFORMATIONAL BROCHURE TO THE PROPERTY OWNERS OUTLINING THE STEPS REQUIRED TO THOROUGHLY FLUSH THEIR WATERLINES AFTER CONNECTION TO THE NEW WATER MAIN. ALL COSTS TO PRODUCE AND DISTRIBUTE THE BROCHURE SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM. /

18. THE "OWNER ALLOWANCE" CAN BE USED FOR VARIOUS WORK AND MISCELLANEOUS ITEMS NOT IDENTIFIED IN THE CONTRACT DOCUMENTS WITH THE FOLLOWING PROVISIONS: THE ALLOWANCE SHALL BE USED FOR COST OF MATERIALS, LABOR, INSTALLATION AND OVERHEAD AND PROFIT FOR ADDITIONAL WORK AND MISCELLANEOUS ITEMS THAT ARE NOT IDENTIFIED IN THE CONSTRUCTION DOCUMENTS AND PLANS, AND NOT INCLUDED IN THE BID ITEMS OF THE CONTRACT.

A. THE ALLOWANCE SHALL BE USED ONLY AT THE DISCRETION OF THE CITY. ANY ALLOWANCE BALANCE REMAINING AT THE COMPLETION OF THE PROJECT WILL BE CREDITED BACK TO THE CITY ON THE FINAL APPLICATION FOR PAYMENT SUBMITTED BY THE CONTRACTOR.CO/ ;

B. THE CONTRACTOR SHALL PROVIDE, TO THE CITY, A WRITTEN REQUEST FOR THE USE OF ANY ALLOWANCE, WITH A SCHEDULE OF VALUES, AND ALL ASSOCIATED BACKUP INFORMATION, INCLUDING ANY TIME EXTENSIONS REQUIRED TO PERFORM THE WORK.CO/ ;

C. THE CONTRACTOR SHALL PROCEED WITH THE WORK INCLUDED IN THE ALLOWANCE ONLY AFTER RECEIVING A WRITTEN ORDER, FROM THE ENGINEER AND CITY AUTHORIZING SUCH WORK. PROCEEDING WITH WORK IN THE ALLOWANCE WITHOUT A WRITTEN ORDER FROM THE CITY WILL BE AT THE CONTRACTOR'S EXPENSE.

19. WHERE PLANS IDENTIFY A 22.5-DEG OR 11.25-DEG VERTICAL OR HORIZONTAL BEND, HDPE WILL BE DEFLECTED PER MANUFACTURER'S MINIMUM ALLOWABLE BEND RADIUS.

20. NOT USED.

21. TOP OF VALVE BOX SHALL BE FLUSH WITH FINISHED GRADE.

22. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING IMPROVEMENTS. LIMITS OF DISTURBANCE SHALL NOT EXCEED 9-FEET CENTERED ON THE WATERLINE. ANY DISTURBANCE OUTSIDE OF THIS AREA SHALL BE RESTORED AT THE CONTRACTORS EXPENSE. STREETS, DRIVEWAYS AND ASSOCIATED ITEMS SHALL BE PAID FOR UNDER OTHER ITEMS OF WORK.

23. THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITION. THE CONTRACTOR SHALL REPLACE THE SOD TO MATCH IN-KIND AND QUALITY. LIMITS OF DISTURBANCE SHALL NOT EXCEED 9-FEET CENTERED ON THE WATERLINE. ANY DISTURBANCE OUTSIDE OF THIS AREA SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.

24. SPOT ELEVATIONS ON THE MAIN WATER LINE RELATIVE TO FINISHED GRADE SHALL BE PROVIDED AT EACH 100-FT INTERVAL, COMPLETE WITH STATION AND OFFSET. IN ADDITION, ALL VALVES, FITTINGS, FIRE HYDRANTS (TOP OF NUT) AND OTHER MAJOR APPURTENANT ITEMS SHALL BE SHOWN WITH THE PROPER DESCRIPTION, STATION, OFFSET AND ELEVATION. /

25. SPOT ELEVATIONS ON WATER METER CANS, VAULTS, SHALL BE SHOWN WITH THE PROPER DESCRIPTION (METER TYPE, METER SIZE, METER NUMBER, SERVICE MATERIAL, SERVICE SIZE), STATION, OFFSET AND ELEVATION PER PLAN SURVEY CONTROL DATUM.

26. NOT USED.

27. PRESSURE TESTING AND CHLORINATION OF WATER MAINS SHALL NOT BE PERFORMED UNTIL THE CITY INSPECTOR HAS RECEIVED REQUIRED CONSTRUCTION AS-BUILT RECORDS.

WATER CONSTRUCTION NOTES

1. THE CITY OF TULSA FIELD ENGINEERING DEPARTMENT SHALL INSPECT ALL TRENCHING, BEDDING, PIPE INSTALLATION, BACKFILL AND COMPACTION.

2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT STANDARD SPECIFICATIONS AND STANDARD DETAILS, CITY OF TULSA ENGINEERING SERVICES DEPARTMENT.

3. EXISTING SERVICE CONNECTIONS ARE TO BE KEPT IN SERVICE UNTIL CONNECTIONS TO NEW MAIN ARE MADE. ALL SERVICE LINE RECONNECTIONS SHALL BE MADE BY THE CONTRACTOR. SERVICE RECONNECTIONS SHALL BE INSTALLED AS PER CITY OF TULSA STANDARD SPECIFICATIONS AND STANDARD DETAILS.

4. MINIMUM COVER OVER WATER LINES SHALL BE AS NOTED ON PLANS.

5. CONTRACTOR SHALL REPLACE EXISTING GRASS WITH SEED/SOD OF SAME TYPE AND VARIETY OR AS NOTED ON PLANS.

6. CONTRACTOR SHALL BORE EXISTING TREES UNDER DRIP LINE, UNLESS DIRECTED OTHERWISE BY ENGINEER.

7. CONTRACTOR SHALL BORE EXISTING DRIVEWAYS, UNLESS DIRECTED OTHERWISE BY ENGINEER.

8. WATER OPERATIONS SHALL OPERATE ALL VALVES ON TRANSMISSION MAINS (16" AND LARGER). CONTRACTOR SHALL OPERATE ALL VALVES ON DISTRIBUTION MAINS (SMALLER THAN 16") WITH THE COORDINATION OF FIELD ENGINEERING AND WATER OPERATIONS AND IN THE PRESENCE OF A FIELD ENGINEERING INSPECTOR.

a. ATTEMPTS WILL BE MADE WITH ASSISTANCE FROM THE CONTRACTOR TO NOTIFY ALL AFFECTED CUSTOMERS 48-HOURS IN ADVANCE, PARTICULARLY IF COMMERCIAL OR INDUSTRIAL CUSTOMERS ARE INVOLVED. PRIOR TO SHUTDOWN, FIELD ENGINEERING WILL NOTIFY WATER OPERATIONS, AT 918-596-9488, GIVING AN ESTIMATED DOWNTIME. WATER OPERATIONS WILL NOTIFY THE FIRE DEPARTMENT OF ALL FIRE HYDRANTS OUT OF SERVICE AND WHEN THEY ARE BACK IN SERVICE, BY STREET ADDRESS OR INTERSECTION.

b. WHERE COMMERCIAL, INDUSTRIAL, OR CRITICAL CUSTOMERS ARE AFFECTED, AND FOR ALL LINES 16-INCH AND LARGER IN SIZE, FIELD ENGINEERING WILL REQUEST WATER OPERATIONS TO SHUT DOWN THE MAIN. THERE WILL BE A MINIMUM OF 48-HOUR NOTICE TO WATER OPERATIONS.

9. CONTRACTOR SHALL PROVIDE AT LEAST 48 HOUR NOTICE TO ALL RESIDENTS OR BUSINESSES AFFECTED BEFORE TURNING OFF ANY WATER. CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING DOOR HANGERS ON AFFECTED HOMES AND BUSINESSES.

10. CONTRACTOR SHALL GIVE THE NOTIFICATION CENTER OF THE OKLAHOMA ONE-CALL SYSTEM, INC, NOTICE OF ANY EXCAVATION NO SOONER THAN 48 HOURS OR LATER THAN 10 DAYS, EXCLUDING SATURDAYS, SUNDAYS, LEGAL HOLIDAYS PRIOR TO COMMENCEMENT OF WORK, PHONE 1-800-522-6543.

11. LOCAL AND THROUGH TRAFFIC SHALL BE MAINTAINED THROUGH PROJECT AT ALL TIMES. OPEN CUT STREET CROSSINGS REQUIRE AN APPROVED TRAFFIC CONTROL PLAN WITH TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH CURRENT MUTCD REQUIREMENTS.1/

12. ANY DAMAGE CAUSED BY CONTRACTOR TO ADJACENT TRAFFIC SIGNAL INFRASTRUCTURE SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE TRAFFIC ENGINEER.

13. PRIOR TO PAVEMENT SAWING AND EXCAVATION NEAR SIGNALIZED INTERSECTION, CONTRACTOR SHALL CONTACT ENGINEERING SERVICES, TRAFFIC OPERATIONS, 918-596-9766, FOR SITE SPECIFIC, UNDERGROUND TRAFFIC UTILITY LOCATES.

14. CONSTRUCTION FOR ALL ENGINEERING SERVICES FACILITIES SHALL BE IN COMPLIANCE WITH THE LATEST EDITION OF TITLE 252, DEPARTMENT OF ENVIRONMENTAL QUALITY, CHAPTER 626, PUBLIC WATER SUPPLY CONSTRUCTION STANDARDS, OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ).

15. ALL EXCAVATED MATERIAL NOT REQUIRED IN OTHER AREAS OF THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE ENGINEER WITHOUT COST TO THE CITY. THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN AN EARTH CHANGE PERMIT IF ANY EXCESS MATERIAL IS TO BE DISPOSED OF WITHIN THE CITY LIMITS OF TULSA.

16. ANY CHANGES FROM APPROVED PLANS SHALL BE SUBMITTED TO THE CITY OF TULSA FOR WRITTEN APPROVAL PRIOR TO INSTALLATION.

Filename: N:\SW\Drawings\CV-ALL-GN-NOTES.dwg

OKIE811 know what's below. Call before you dig.

REVISION	BY	DATE

WATER PAY ITEM NOTES

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1"=N/A	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1"=N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1"=N/A	RECOMMENDED: DESIGN MANAGER		8/22	CITY ENGINEER

FILE: CV-ALL-GN-NOTES.dwg DRAWING: DATE:

ATLAS PAGE NO: 563 SHEET 4 OF 23 SHEETS

GENERAL CONSTRUCTION NOTES (VERSION 09/12/2016)

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2019 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CURRENT CITY OF TULSA ENGINEERING SERVICES DEPARTMENT'S STANDARD SPECIFICATIONS AND STANDARD DETAILS AND STANDARD DRAWINGS AND CITY OF TULSA SPECIAL PROVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING SAFETY, HEALTH AND SANITATION. THE CONTRACTOR SHALL PROVIDE ALL SAFEGUARDS, SAFETY DEVICES AND PROTECTIVE EQUIPMENT, AND TAKE ANY OTHER NEEDED ACTION ON AS HIS OWN RESPONSIBILITY OR AS THE ENGINEER MAY DETERMINE REASONABLY NECESSARY TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACT.

3. PAY ITEMS SHALL BE AS SPECIFIED ON THE CITY OF TULSA OR ON THE ODOT STANDARD DRAWINGS EXCEPT AS MODIFIED BY THE CONTRACT.

4. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.

5. THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO ALL AVAILABLE INFORMATION. THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER PRIOR TO COMMENCEMENT OF WORK TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS. THE FOLLOWING IS A LIST OF UTILITY OWNERS; AT&T, PUBLIC SERVICE COMPANY OF OKLAHOMA (AEP), OKLAHOMA NATURAL GAS (ONG), COX COMMUNICATIONS, MCI/VERIZON, EASYTEL COMMUNICATIONS, WELLSCO VALLOR TELECOM, CITY OF TULSA-WATER AND SEWER, CITY OF TULSA-TRAFFIC OPERATIONS. SEE TITLE SHEET FOR CONTACT INFORMATION.

6. THE CONTRACTOR SHALL GIVE THE NOTIFICATION CENTER OF OKLAHOMA ONE-CALL SYSTEM, INC. NOTICE OF ANY EXCAVATION NO SOONER THAN TEN DAYS NOR LATER THAN 48 HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO THE COMMENCEMENT OF WORK. PHONE 1- 800-522-6543.

7. THE CONTRACTOR SHALL TAKE REASONABLE PRECAUTIONS TO PREVENT EXCESS MOISTURE FROM INCLEMENT WEATHER OR OTHER SOURCES FROM ENTERING ANY STREET EXCAVATION. IF EXCESS MOISTURE DOES ENTER THE EXCAVATION THROUGH THE NEGLIGENCE OF THE CONTRACTOR AND THE ADJOINING PAVEMENT IS ADVERSELY AFFECTED BY THE EXCESS MOISTURE, THE CONTRACTOR SHALL REPLACE THE ADJOINING PAVEMENT AND SUBBASE AT HIS SOLE EXPENSE.

8. THE CONTRACTOR SHALL PRESERVE THE INTEGRITY OF THE SANITARY SEWER STRUCTURES AND ALL OTHER UTILITY STRUCTURES WITHIN THE PROJECT EXTENTS.

9. THE CONTRACTOR SHALL WORK IN COOPERATION WITH THE CITY OF TULSA TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROLS DURING THE ENTIRE CONSTRUCTION PERIOD. ALL FLAGMEN, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE APPROVED BY THE FIELD ENGINEERING REPRESENTATIVE.

10. CONSTRUCTION SIGNAGE WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT ADDITION, AND APPLICABLE ODOT STANDARD DRAWINGS. THE CONTRACTOR SHALL PROVIDE A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK.

11. THE CONTRACTOR SHALL NOTIFY THE CITY OF TULSA FIELD ENGINEERING, 918-596-9404, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK OR PRIOR TO REMOVING TRAFFIC SIGNS.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ALL EXISTING TRAFFIC SIGNS AND MARKINGS REMOVED OR DAMAGED AS LISTED IN THE SIGNAGE SCHEDULE FOR THE PROJECT. ALL SIGNS AND POLES PROVIDED SHALL BE NEW AND UNDAMAGED AND SHALL MEET THE REQUIREMENTS OF COT SPECIFICATION 608 TRAFFIC SIGNS. ALL TRAFFIC MATERIALS REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.

13. THE CONTRACTOR WILL BE RESPONSIBLE FOR PREPARATION AND DISTRIBUTION OF A WRITTEN NOTICE TO RESIDENTS 48 HOURS PRIOR TO BEGINNING PAVEMENT REMOVAL AND MILLING AND OVERLAY OPERATIONS.

14. LOCAL AND THROUGH TRAFFIC SHALL BE MAINTAINED THROUGH THE PROJECT AT ALL TIMES.

15. ALL PUBLIC AND PRIVATE STREETS AND DRIVES SHALL BE ACCESSIBLE AT ALL TIMES.

16. ALL BROKEN CONCRETE, WASTE MATERIAL, AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE LIMITS OF THE PROJECT AND DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE DISPOSAL OF THIS MATERIAL.

17. ALL EXCAVATED MATERIAL NOT REQUIRED IN THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE ENGINEER WITHOUT COST TO THE CITY. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN AN EARTH CHANGE PERMIT IF ANY MATERIAL IS STORED ON THE PROJECT SITE AND/OR DISPOSED OF WITHIN THE CITY LIMITS.

18. ALL TREES, BRUSH AND OTHER DEBRIS THAT MIGHT INTERFERE WITH THE FLOW OF WATER IS TO BE CLEANED OUT TO THE RIGHT-OF-WAY LINE IN A MANNER APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK. TREES OUTSIDE THE FILL SLOPES AND THE TOP OF CUT SLOPES SHALL NOT BE DISTURBED EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.

19. WHERE MATERIALS ARE TRANSPORTED IN THE PROSECUTION OF WORK, VEHICLES SHALL NOT BE LOADED BEYOND THE CAPACITY RECOMMENDED BY THE VEHICLE MANUFACTURER OR AS PRESCRIBED BY ANY FEDERAL, STATE OR LOCAL LAW OR REGULATION.

20. ANY DAMAGE TO THE ROADWAY PAVEMENT, CURB, DRIVEWAYS OR SIDEWALK CAUSED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED TO THE ENGINEER'S SATISFACTION AND SHALL BE ACCOMPLISHED AT THE CONTRACTOR'S SOLE EXPENSE. ALL DISTURBED ITEMS SHALL BE REPAIRED TO MATCH EXISTING MATERIALS AND PATTERNING.

21. IF THE CONTRACTOR ENCOUNTERS VOIDS WHEN PATCHING STREETS, THE CONTRACTOR SHALL CALL FIELD ENGINEERING AT 918-596-7814 FOR AN INSPECTION BEFORE PROCEEDING WITH WORK.

22. THE PROJECT SHALL BE CONSTRUCTED WITH CONTINUOUS FLOW OF MATERIAL SUPPLIED TO THE PROJECT SUCH THAT THE LAYDOWN MACHINE WILL REMAIN IN MOTION. ANY DELAY IN FORWARD PROGRESSION OF THE LAYDOWN MACHINE MAY REQUIRE A TRANSVERSE JOINT AS DIRECTED BY THE ENGINEER.

23. NO FLY ASH IS ALLOWED TO BE USED ON THIS PROJECT.

24. PHYSICAL TESTING FOR QUALITY ASSURANCE SHALL BE FURNISHED BY THE CITY.

25. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY QUALITY CONTROL TESTING TO ENSURE THAT PROJECT REQUIREMENTS ARE MET.

26. MASONRY STRUCTURES SHALL NOT BE CONSTRUCTED WITHIN THE STREET RIGHT-OF-WAY

27. ALL CONCRETE CURB AND GUTTERS SHALL BE MONOLITHIC POURS. DOWELED-ON CURBS WILL NOT BE ALLOWED.

28. NO LIFTING HOLES WILL BE ALLOWED ON ANY REINFORCED CONCRETE PIPES OR REINFORCED CONCRETE BOXES.

29. CURB RAMP CONSTRUCTION SHALL COMPLY WITH THE CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS.

30. REFLECTORIZED SHEETING ON SIGNS AND BARRICADES SHALL BE OF A CUBIC PRISMATIC TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE IX RETROREFLECTIVE SHEETING. REFLECTORIZED SHEETING ON DRUMS AND TUBE CHANNELIZERS SHALL BE OF A HIGH-INTENSITY TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE III RETROREFLECTIVE SHEETING.

31. ALL SANITARY AND STORM SEWER MANHOLE CASTINGS AND LIDS THAT ARE LOCATED IN THE STREET AND ARE DISTURBED BY THE CONTRACTOR SHALL BE REPLACED WITH NEW LIDS AND CASTINGS AND THE OLD ONES SHALL BE SALVAGED AND DELIVERED TO THE METAL RECYCLE BINS IN THE STOCKROOM AREA AT SEWER OPERATIONS AND MAINTENANCE, 9319 E. 42ND STREET NORTH, BETWEEN THE HOURS OF 7:30 AM AND 3:00 PM MONDAY THROUGH FRIDAY.

32. THE SIGN PLACEMENT STATIONING AND LOCATIONS SHOWN ON THE PLAN SHEETS AND SUMMARY SHEETS ARE APPROXIMATE. EXACT STATIONING AND LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR SO THAT THE SIGN IS INSTALLED IN ACCORDANCE WITH CITY OF TULSA STANDARDS, CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES IN ORDER TO PROVIDE OPTIMUM VISIBILITY TO THE ONCOMING/APPROACHING MOTORIST. IF A PROPOSED LOCATION CONFLICTS WITH OTHER SIGNS, UTILITIES, OR OTHER ROADWAY FEATURES, THE ENGINEER SHALL BE NOTIFIED

33. POST LENGTHS SHOWN ON SIGN SUMMARY ARE APPROXIMATE. EXACT LENGTHS SHALL BE DETERMINED BY A FIELD SURVEY CONDUCTED BY THE CONTRACTOR.

34. ALL ASPHALT STREETS THAT ARE TO BE RECONSTRUCTED SHALL BE LEFT WITH A DRIVABLE SURFACE AT ALL TIMES. THE CONTRACTOR WILL NOT BE ALLOWED TO MILL OFF ALL THE ASPHALT BEFORE EXCAVATION BEGINS.

35. THE CONTRACTOR SHALL REPLACE ANY SECTION CORNERS OR OTHER PERMANENT RIGHT OF WAY MARKERS REMOVED OR DISTURBED AS A RESULT OF THE CONSTRUCTION OF THIS PROJECT. REPLACEMENT OF SECTION CORNERS OR ANY OTHER MONUMENTS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR AUTHORIZED TO PERFORM WORK IN THE STATE OF OKLAHOMA.

36. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL AND MAINTENANCE OF THE STORMWATER DRAINAGE. STORMWATER PONDING ON THE CONSTRUCTION SITE THAT IS THE RESULT OF CONSTRUCTION WILL NOT BE ALLOWED.

37. STRAW OR HAY BALES AS STORMWATER BEST MANAGEMENT PRACTICES ARE NO LONGER ALLOWED ON CONSTRUCTION PROJECTS.

38. THE CONTRACTOR MUST CALL 1-800-458-4251 IMMEDIATELY IF A NATURAL GAS PIPELINE IS CUT, DAMAGED, OR OTHERWISE DISTURBED.

39. PRIOR TO FINAL ACCEPTANCE, ALL EXPOSED CURB SURFACES SHALL BE CLEANED OF ALL DISCOLORATION SUCH AS ASPHALT STAIN, TIRE MARKS, OR OTHER DISFIGUREMENT.

40. ALL FEATURES OF THIS PROJECT INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, CURB RAMPS, AND CROSSWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, ACCESSIBILITY GUIDELINES, AND THE PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY, PUBLISHED ON JULY 26, 2011 BY THE U.S. ACCESS BOARD. WHERE SPATIAL LIMITATIONS OR EXISTING FEATURES WITHIN THE LIMITS OF THE PROJECT PREVENT FULL COMPLIANCE WITH THIS ACT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER UPON DISCOVERY OF SUCH FEATURES. THE CONTRACTOR SHALL NOT PROCEED WITH ANY ASPECT OF THE WORK, WHICH IS NOT IN FULL COMPLIANCE WITH THE ADA WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER. ANY WORK, WHICH IS NOT PERFORMED WITHIN THE GUIDELINES OF THE ADA, FOR WHICH THE CONTRACTOR DOES NOT HAVE WRITTEN APPROVAL, SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

41. ALL TRENCH WIDTHS & BEDDING MATERIAL SHALL BE AS SHOWN ON COT STANDARD PIPE BEDDING DETAIL, STANDARD NO. 751. SPECIFIED TRENCH WIDTHS SHALL BE MAINTAINED FULL DEPTH FROM THE FLOWLINE TO THE GRADING TEMPLATE. THE CONTRACTOR SHALL KEEP THE OPEN TRENCH DRAINED.

42. THE CONTRACTOR SHALL NOTIFY THE METROPOLITAN TULSA TRANSIT AUTHORITY (MTTA), ERIC SMITH 918-830-0024, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK, LANE CLOSURES OR PRIOR TO DETOURING TRAFFIC.

43. CONTRACTOR SHALL NOT STORE EQUIPMENT OR MATERIALS IN THE FLOODPLAIN.

44. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST SUBMIT A STORMWATER MANAGEMENT PLAN (SWMP) TO BE APPROVED BY THE CITY OF TULSA. THE CONTRACTOR IS ALSO RESPONSIBLE FOR EROSION CONTROL DURING THE DURATION OF CONSTRUCTION.

45. CONTRACTOR TO USE DETAIL V - TRAFFIC RATED RCB FOR ALL RCB LOCATED UNDERNEATH ROADWAY.

08/09/2022

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

GENERAL CONSTRUCTION NOTES

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-6877

PLAN SCALE: 1"=N/A	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
	LEAD ENGR.		8/22	
HORIZONTAL 1"=N/A	FIELD MGR.		8/22	
VERTICAL 1"=N/A	RECOMMENDED: DESIGN MANAGER	HAS	9.22	CITY ENGINEER

FILE: CV-ALL-GN-NOTES.dwg DRAWING:
DATE:
ATLAS PAGE NO: 563
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Filename: N:\SW\Drawings\CV-ALL-GN-NOTES.dwg

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS: NORTH WEST CORNER OF E 67TH ST AND S BIRMINGHAM AVE.

PROJECT DESCRIPTION: STORM SEWER IMPROVEMENTS AND WATER SERVICE RELOCATION.

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

1. CUT TRENCH FOR BOX PIPE
2. SET SPOIL PILE ON PERMANENT EASEMENT RIGHT OF WAY
3. PROVIDE EROSION CONTROL FOR SPOIL PILE
4. INSTALL BOX PIPE AND INLETS
5. BACKFILL TRENCH
6. REGRADE TRENCH TO ORIGINAL GRADES
7. PROVIDE RE-VEGETATION OF ALL DISTURBED AREAS

SOIL TYPE: SANDY SILT & SANDY LEAN CLAY

AREA TO BE DISTURBED: 0.5 ACRE

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°3'59" N 95°57'13" W

NAME OF RECEIVING WATERS:

SENSITIVE WATERS OR WATERSHEDS: YES [ ] NO [X]

303(d) IMPAIRED WATERS: YES [ ] NO [X]

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- [X] TEMPORARY SEEDING
- [X] PERMANENT SODDING, SPRIGGING OR SEEDING
- [X] VEGETATIVE MULCHING
- [X] SOIL RETENTION BLANKET
- [X] 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 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
- [ ] TEMPORARY SEDIMENT REMOVAL
- [X] RIP RAP
- [X] INLET SEDIMENT FILTER
- [ ] TEMPORARY BRUSH SEDIMENT BARRIERS
- [ ] SANDBAG BERMS
- [ ] TEMPORARY STREAM CROSSINGS

OFFSITE VEHICLE TRACKING:

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

NOTES:

SEQUENCING AND SEDIMENT EROSION CONTROL METHODS PROVIDED IN THIS SHEET ARE SUGGESTED METHODS BY THE ENGINEER. IT IS UP TO THE CONTRACTOR TO PROVIDE ACCURATE SEQUENCING AND EROSION CONTROL METHODS FOR THE PROJECT. CONTRACTOR SHALL PROVIDE EROSION CONTROL METHODS FOR REVIEW.

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, DRAINAGEWAYS, 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 2019 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, OCTOBER 10, 2017.~~

OKIE811 know what's below. Call before you dig.

REVISION	BY	DATE

STORM WATER MANAGEMENT PLAN

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-6677

PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022
	DESIGNED	JCF	8/2022
	SURVEY	NP	12/2021
PROFILE SCALE:	PROJ. MGR.		8/22
HORIZONTAL 1" = 20'	LEAD ENGR.		8/22
	FIELD MGR.		8/22
VERTICAL 1" = 5'	RECOMMENDED: DESIGN MANAGER		9.22

APPROVED: CITY ENGINEER

FILE: CV-ALL-GN-SWMP.dwg DRAWING:
DATE:
ATLAS PAGE NO: 563
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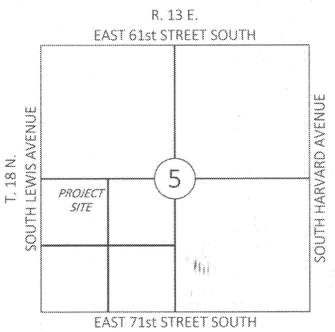
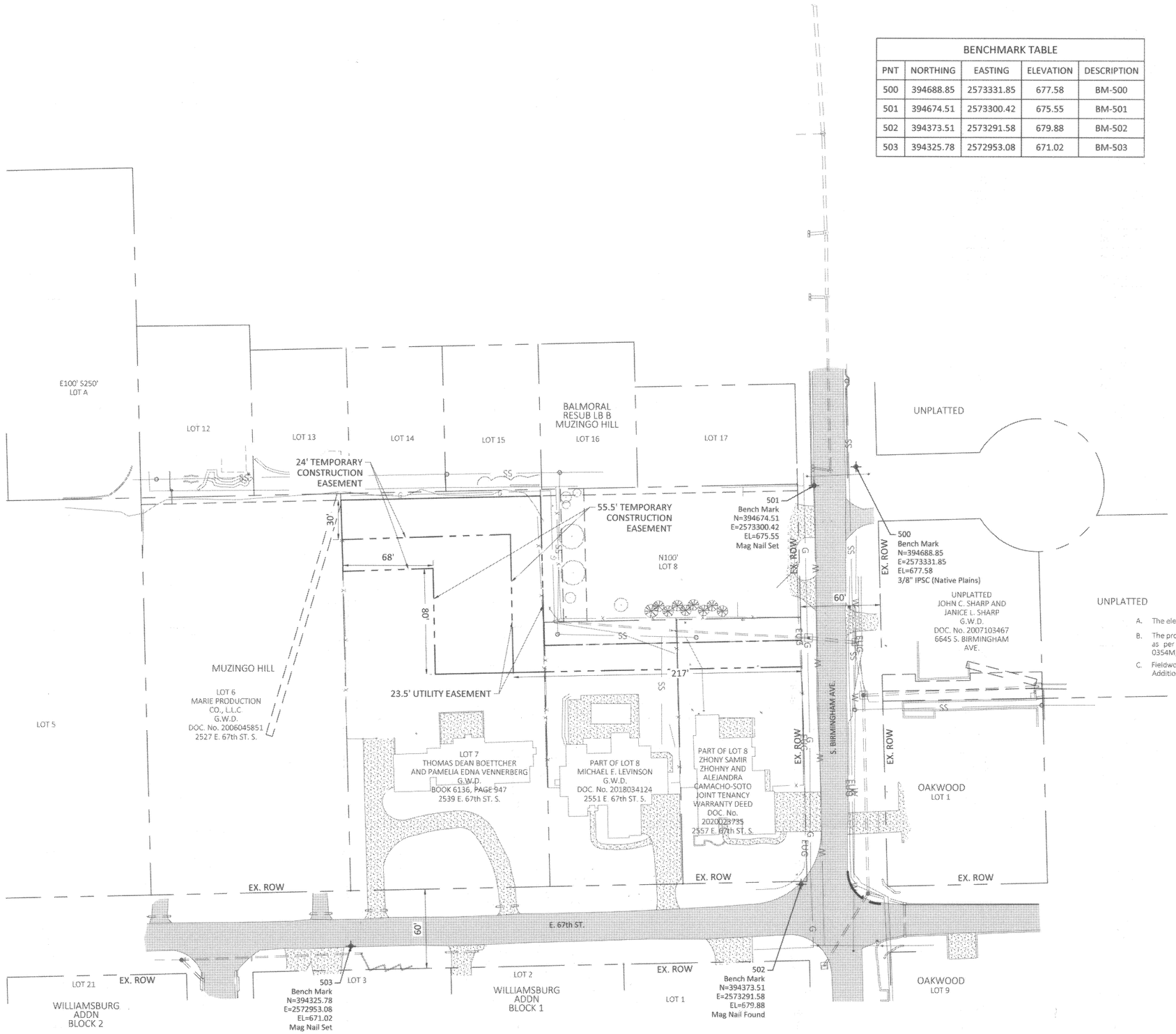
Filename: N:\SW\Drawings\CV-ALL-GN-SWMP.dwg

BENCHMARK TABLE				
PNT	NORTHING	EASTING	ELEVATION	DESCRIPTION
500	394688.85	2573331.85	677.58	BM-500
501	394674.51	2573300.42	675.55	BM-501
502	394373.51	2573291.58	679.88	BM-502
503	394325.78	2572953.08	671.02	BM-503



LOCATION MAP



SURVEYORS CERTIFICATE

I, Nathaniel J. Reed of the State of Oklahoma, and a Professional Surveyor, do hereby certify that the above shown survey is true and correct to the best of my knowledge.

WITNESS my hand and seal this 21st day of DECEMBER, 2021

NATHANIEL J. REED 1744 REGISTERED PROFESSIONAL LAND SURVEYOR STATE OF OKLAHOMA

Registered Professional Land Surveyor #1744

NATIVE PLAINS
Surveying & Mapping, LLC
A Native American Owned Business
5807 South Garnett Road, Suite K, Tulsa, Oklahoma, 74146
Telephone: 918.234.7596, Fax: 918.893.5552
Certificate of Authorization No. 4916 Expires June 30, 2021

GENERAL NOTES

A. The elevations shown hereon are based on NAVD 1988 datum.

B. The property described hereon is located in flood zone "X-UNSHADED", as per Flood Insurance Rate Map, Community Panel No. 405381 0354M, effective date: May 2, 2019.

C. Fieldwork completed April 23, 2021.
Additional Fieldwork completed December 14, 2021.

NORTH

0 20' 40' 80'
SCALE IN FEET

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

SURVEY CONTROL & RIGHT OF WAY

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

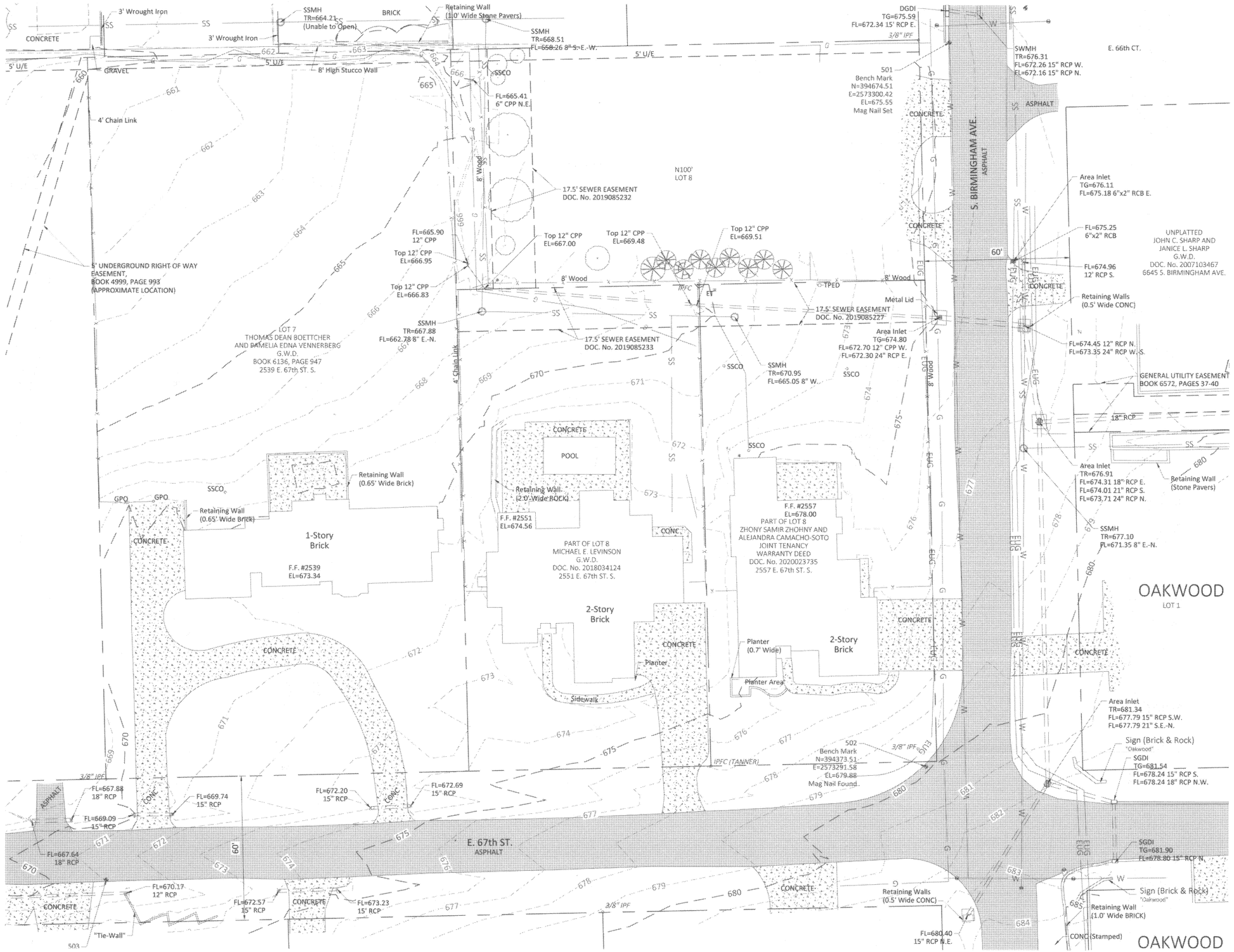
PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022
	DESIGNED	JCF	8/2022
	SURVEY	NP	12/2021
PROFILE SCALE:	PROJ. MGR.		8/22
HORIZONTAL 1" = N/A	LEAD ENGR.		8/22
	FIELD MGR.		8/22
VERTICAL 1" = N/A	RECOMMENDED DESIGN MANAGER		9.22

APPROVED: CITY ENGINEER

FILE: CV-ALL-GN-SURV.dwg DRAWING: DATE:

ATLAS PAGE NO: 583 SHEET 7 OF 23 SHEETS

Filename: N:\SW\Drawings\CV-ALL-GN-SURV.dwg



NORTH

0 10' 20' 40'
SCALE IN FEET

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811
Know what's below. Call before you dig.

REVISION	BY	DATE

EXISTING SITE PLAN

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1" = N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER		9.2.22	CITY ENGINEER

FILE: CV-PL-SITE01.dwg DRAWING:
DATE:
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Filename: N:\SWD\Drawings\CV-PL-SITE01.dwg

106 SY OF TYPE FILTER BLANKET & 10 TONS OF TYPE I PLAIN RIPRAP

OUTFALL
STA 10+48.49
TOP OF HEAD WALL
N 394651.48
E 2573051.88

24' TEMPORARY CONSTRUCTION EASEMENT

STA 10+70.00
PROP. 5'X2' RCB 45° BEND
N 394651.89
E 2573073.38

STA 10+89.11
PROP. 5'X2' RCB 45° BEND
N 394638.62
E 2573087.13

55.5' TEMPORARY CONSTRUCTION EASEMENT

PROP. 5'X2' RCB TRAFFIC RATED (PRE-CAST)

23.5' UTILITY EASEMENT

JB-1
STA 11+79.34
PROP. 7'X7' JUNCTION BOX
W/ ACCESS MANHOLE
N 394548.52
E 2573089.51

A-08
STA 13+71.43
PROP. 7'X7' JUNCTION BOX
W/ ODOT SMD TYPE II INLET
N 394552.91
E 2573281.55

PROP. 5'X2' RCB TRAFFIC RATED (PRE-CAST)

PROP. 5'X2' RCB TRAFFIC RATED (PRE-CAST)

32 LF OF PROPOSED RELOCATED FENCE

S. BIRMINGHAM AVE

STA 14+21.69
CONNECT TO:
EXISTING 12" RCP (N)
INSTALL:
8 LF 12" RCP
1-12" 45° BENDS
FL=674.60
N 394563.20
E 2573331.58

PROP. 12" RCP

A-01
STA 14+26.81
PROP. 7'X7' JUNCTION BOX
W/ ACCESS MANHOLE
& TYPE "D" GRATE
N 394554.18
E 2573336.93

PROP. 1" SERVICE CONNECTION

PROP. 4'X2' RCB TRAFFIC RATED (PRE-CAST)

A-02
STA 14+64.02
PROP. 6'X6' JUNCTION BOX
W/ 3-WAY DROP INLET
& ACCESS MANHOLE
N 394516.98
E 2573337.81

PROP. 3'X2' RCB TRAFFIC RATED (PRE-CAST)

24 LF OF CURB & GUTTER

1-4" PLUG, MJ

PROP. 30" RCP

A-04
STA 16+13.93
PROP. 6'X6' JUNCTION BOX W/
SPECIAL TYPE 1 DROP INLET
N 394367.10
E 2573341.02

2 SY OF CONCRETE APRON

A-05
STA 16+40.61
DESIGN TYPE 4(D+F)
STANDARD CAST IRON INLET
W/ ACCESS MANHOLE
N 394361.66
E 2573367.25

9 LF OF CURB & GUTTER

E. 67th ST.

10+00 11+00 12+00 13+00 14+00 15+00 16+00

26' 30' 67.7' 23.5' 112.5' 79.9' 20' 5' 216.8' 14.5' 16+41

LEGEND

- TYPE I PLAIN RIP-RAP & FILTER BLANKET
- CONCRETE APRON
- CONCRETE DRIVEWAY
- PROPOSED RCB/RCP
- PROPOSED EASEMENT

NOTES

1. FOR AREAS THAT EXCEED SLOPES GREATER THAN 3:1, PROVIDE RIP-RAP.

NORTH

0 10' 20' 40'
SCALE IN FEET

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

PROPOSED SITE PLAN

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022	APPROVED.
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		9/22	
HORIZONTAL 1"=N/A	LEAD ENGR.		9/22	
	FIELD MGR.		9/22	
VERTICAL 1"=N/A	RECOMMENDED: DESIGN MANAGER		9.22	CITY ENGINEER

FILE: CV-PL-SITE02.dwg DRAWING:
DATE:
ATLAS PAGE NO: 563
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Filename: N:\SW\Jdrawings\CV-PL-SITE02.dwg

CAUTION!!!
BEWARE HIGH PRESSURE GAS LINE IN THE AREA. CAUTION

OUTFALL
STA 10+47.77
FL ELEV= 661.40
TOP OF HEAD WALL
ELEV=664.63
N 394664.97
E 2573050.90

STA 10+70.00
PROP. 5'X2' RCB 45° BEND
N 394651.89
E 2573073.38

STA 10+89.11
PROP. 5'X2' RCB 45° BEND
N 394638.62
E 2573087.13

STA 11+79.34
PROP. 7'X7' JUNCTION BOX
W/ ACCESS MANHOLE
TOP OF STRUCTURE ELEV= 668.00
N 394548.52
E 2573089.51

STA 13+71.43
PROP. 7'X7' JUNCTION BOX
W/ ODOT SMD TYPE II INLET
TOP OF GRATE ELEV= 674.09
N 394552.91
E 2573281.55

STA 14+21.69
CONNECT TO:
EXISTING 12" RCP (N)
FL=674.96
OFFSET 9'LT
N 394563.20
E 2573331.58

STA 14+26.81
PROP. 7'X7' JUNCTION BOX
W/ ACCESS MANHOLE
& TYPE "D" GRATE
TOP OF GRATE ELEV= 676.03
N 394554.18
E 2573336.93

STA 14+64.02
PROP. 6'X6' JUNCTION BOX
W/ 3-WAY DROP INLET
& ACCESS MANHOLE
TOP OF INLET ELEV= 676.95
N 394516.98
E 2573337.81

STA 16+13.93
PROP. 6'X6' JUNCTION BOX W/
SPECIAL TYPE 1 DROP INLET
TOP OF INLET ELEV= 681.34
N 394367.10
E 2573341.02

STA 16+40.61
DESIGN TYPE 4(D+F)
STANDARD CAST IRON INLET
W/ ACCESS MANHOLE
TOP OF STRUCTURE ELEV= 682.44
N 394361.66
E 2573367.25

24' TEMPORARY CONSTRUCTION EASEMENT

55.5' TEMPORARY CONSTRUCTION EASEMENT

23.5' UTILITY EASEMENT

S. BIRMINGHAM AVE.

STORM LINE "A"

E. 67th ST.

10+00 11+00 12+00 13+00 14+00 15+00 16+00 16+47

LEGEND

- TYPE I PLAIN RIP-RAP & FILTER BLANKET
- CONCRETE APRON
- CONCRETE DRIVEWAY
- PROPOSED RCB/RCP
- PROPOSED EASEMENT
- PROPOSED INDEX CONTOURS
- PROPOSED INTERMEDIATE CONTOURS
- EXISTING INDEX CONTOURS
- EXISTING INTERMEDIATE CONTOURS

NOTES

1. FOR AREAS THAT EXCEED SLOPES GREATER THAN 3:1 PROVIDE RIP-RAP.
2. CONTRACTOR TO GRADE TO DRAIN.

NORTH

0 10' 20' 40'
SCALE IN FEET

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

PROPOSED GRADING PLAN

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		9/22	
HORIZONTAL 1" = N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED DESIGN MANAGER	HAS	9.22	CITY ENGINEER
FILE: CV-PL-GRAD01.dwg	DRAWING:			DATE:
ATLAS PAGE NO: 563				SHEET 10 OF 23 SHEETS

Filename: N:\SW\Drawings\CV-PL-GRAD01.dwg

LEGEND

- EXISTING INDEX CONTOURS
- EXISTING INTERMEDIATE CONTOURS
- FLOW PATH
- DRAINAGE AREA
- A-01 — DRAINAGE BOUNDARY

NOTES:

CALCULATIONS SHOWN ON THIS SHEET WERE ORIGINALLY PREPARED BY FREESE AND NICHOLS H&H ANALYSIS TO CAPTURE THE 100-YEAR FLOOD EVENT FOR 67TH & BIRMINGHAM DATED OCTOBER 11TH, 2021. THE INTENT OF THE INFORMATION PROVIDED HERE IS FOR REFERENCE PURPOSES ONLY. SEE H&H ANALYSIS FOR 67TH & BIRMINGHAM REPORT AND 67TH AND BIRMINGHAM STORM SEWER UPDATES MEMORANDUM FOR SUPPLEMENTAL INFORMATION.

NORTH

0 50' 100' 200'
SCALE IN FEET

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES TAUGHTENBERRY
28605
OKLAHOMA

OKIE811 Know what's below. Call before you dig.

SUMMARY OF HYDROLOGIC DATA AND RUNOFF CALCULATIONS

D.A. NO.	AREA		FACTORED RUNOFF COEFF.		COLLECTING STR NO.	OVERLAND FLOW				SHALLOW CHANNELIZED FLOW, GRASS/LAWN				SHALLOW CHANNELIZED FLOW, PAVED				TOTAL TIME OF CONCENTRATION
	A	I100	C	Q100		FLOWPATH LENGTH	AVG SLOPE	VELOCITY	Ti	FLOWPATH LENGTH	AVG SLOPE	VELOCITY	Tt1	FLOWPATH LENGTH	AVG SLOPE	VELOCITY	Tt2	Tc=Ti+Tt1+Tt2
ID	ACRES	IN/HR		CFS		LF	%	FPS	MIN	LF	%	FPS	MIN	LF	%	FPS	MIN	MIN
A-01	0.11	13.22	0.51	0.75	A-01	47.5	4.21	1.44	0.55	54.08	8.14	4.31	0.21	0.0	0.0	0.0	0.0	0.76
A-02	1.53	12.05	0.52	9.56	A-02	51.2	5.99	1.72	0.50	742.86	13.75	5.64	2.20	0.0	0.0	0.0	0.0	2.69
A-03	4.83	11.05	0.48	25.86	A-03	0.0	0.00	0.00	0.00	177.79	2.17	2.20	1.35	1121.7	7.6	5.5	3.4	4.72
A-04	1.63	11.93	0.52	10.12	A-04	67.2	4.36	1.47	0.76	587.91	13.93	5.67	1.73	115.3	5.3	4.6	0.4	2.91
A-05	1.42	12.03	0.54	9.28	A-05	73.1	4.56	1.50	0.81	348.21	17.61	6.40	0.91	315.2	6.7	5.2	1.0	2.73
A-06	1.79	12.24	0.53	11.68	A-06	50.1	7.45	1.92	0.43	533.65	13.77	5.64	1.58	69.6	3.0	3.5	0.3	2.35
A-07	2.74	11.84	0.53	17.09	A-07	69.6	4.79	1.54	0.75	415.74	14.46	5.79	1.20	351.4	6.7	5.2	1.1	3.08
A-08	1.77	11.32	0.48	9.61	A-08	29.0	1.38	0.82	0.59	914.37	9.46	4.66	3.27	87.0	6.8	5.2	0.3	4.14

REVISION	BY	DATE

DRAINAGE AREA MAP

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

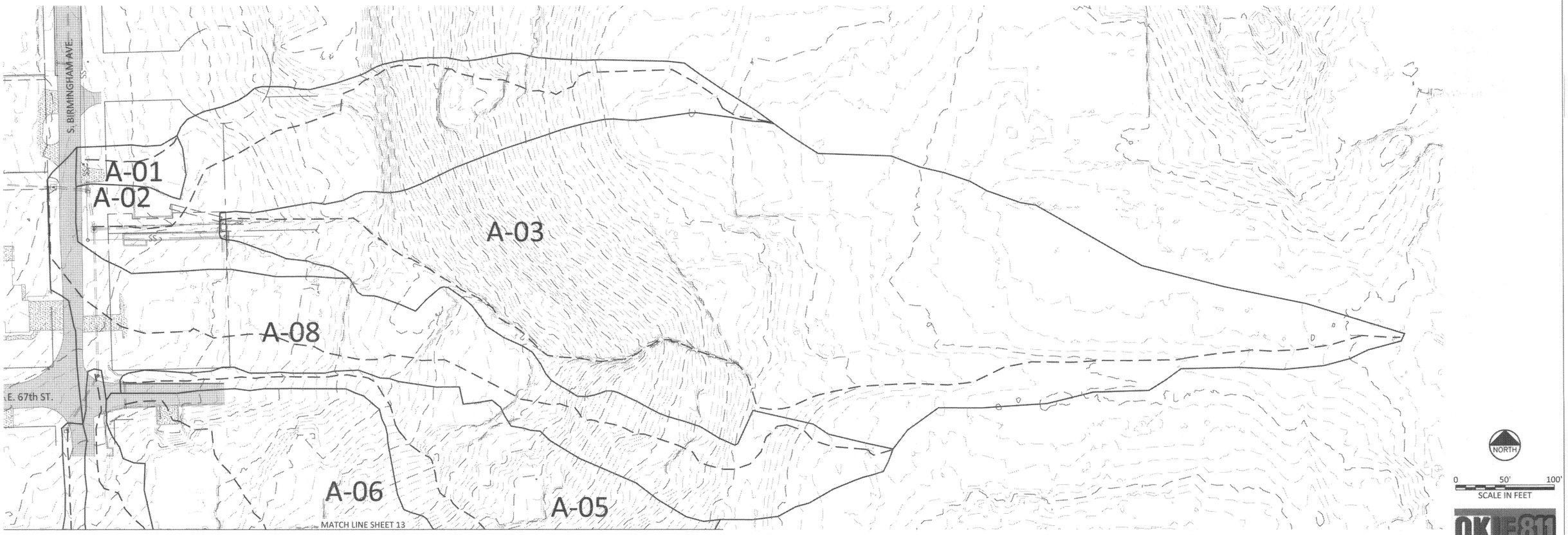
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = 100'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1" = N/A	LEAD ENGR.	BDL	8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER	HAS	9.22	CITY ENGINEER

FILE: CV-DRA-PL-MAPS.dwg DRAWING:
DATE:
ATLAS PAGE NO: 563
SHEET 11 OF 23 SHEETS

Filename: N:\SW\Drawings\CV-DRA-PL-MAPS.dwg



PIPE HYDRAULICS SUMMARY

Upstream Structure ID	Downstream Structure ID	Q Captured by inlet (cfs)	Q in Pipe (cfs)	Pipe Size/Material	Upstream Structure Grate/Rim/Throat Elevation (ft)	Invert Upstream (ft)	Downstream Grate/Rim/Throat Elevation (ft)	Invert Downstream (ft)	Pipe Length (ft)	Slope (ft/ft)	Peak Flow Velocity (ft/s)	HGL Upstream (ft)	EGL Upstream (ft)	HGL Downstream (ft)	EGL Downstream (ft)
A-01	MH-16	0.7	0.7	EXISTING - 12" RCP	676.11	674.96	676.03	674.45	26.4	0.019	4.46	675.31	675.44	674.70	675.01
A-02	MH-16	9.6	83.7	4'X2' RCB	676.95	669.35	676.03	667.27	39.3	0.053	20.32	671.35	673.05	670.03	671.74
A-03	A-02	25.9	25.9	EXISTING - 18" RCP	682.20	678.72	676.95	669.35	130.0	0.072	18.10	680.21	683.55	672.20	675.54
A-04	A-02	10.1	48.2	3'X2' RCB	681.34	676.90	676.95	672.93	147.7	0.027	14.05	678.90	679.90	674.09	677.05
A-05	A-04	9.3	21.0	30" RCP	681.54	677.24	681.34	676.90	26.0	0.013	4.28	679.77	680.05	679.70	679.99
A-06	A-05	11.7	11.7	EXISTING - 15" RCP	681.90	678.80	681.54	678.24	23.1	0.024	9.53	680.70	682.11	679.94	681.35
A-07	A-04	9.6	17.1	EXISTING - 15" RCP	683.76	680.40	681.34	677.60	62.3	0.045	13.93	684.06	687.08	679.70	682.72
A-08	MH-14	9.6	94.0	5'X2' RCB	674.09	665.88	668.00	661.38	207.6	0.022	9.40	668.49	669.87	666.29	667.67
MH-13	O-3	NA	94.0	5'X2' RCB	663.05	661.05	661.05	660.99	71.8	0.003	9.40	663.21	664.59	662.99	664.36
MH-14	MH-17	NA	94.0	5'X2' RCB	668.00	661.38	661.11	661.11	104.7	0.003	9.40	665.20	666.57	664.24	665.62
MH-16	A-08	NA	84.4	5'X2' RCB	676.03	667.27	674.09	665.98	35.3	0.037	8.44	669.48	670.59	669.18	670.29
MH-17	MH-13	NA	94.0	5'X2' RCB	611.11	661.11	611.05	661.05	16.5	0.003	9.40	663.83	665.20	663.63	665.00

NOTES:

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LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

REVISION	BY	DATE

DRAINAGE AREA MAP NORTH

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.

4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = 50'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1" = N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER		9.22	CITY ENGINEER
FILE: CV-DRA-PL-MAPS.dwg	DRAWING:			DATE:
ATLAS PAGE NO: 583				SHEET 12 OF 23 SHEETS

Filename: N:\SW\Drawings\CV-DRA-PL-MAPS.dwg

LEGEND

EXISTING INDEX CONTOURS

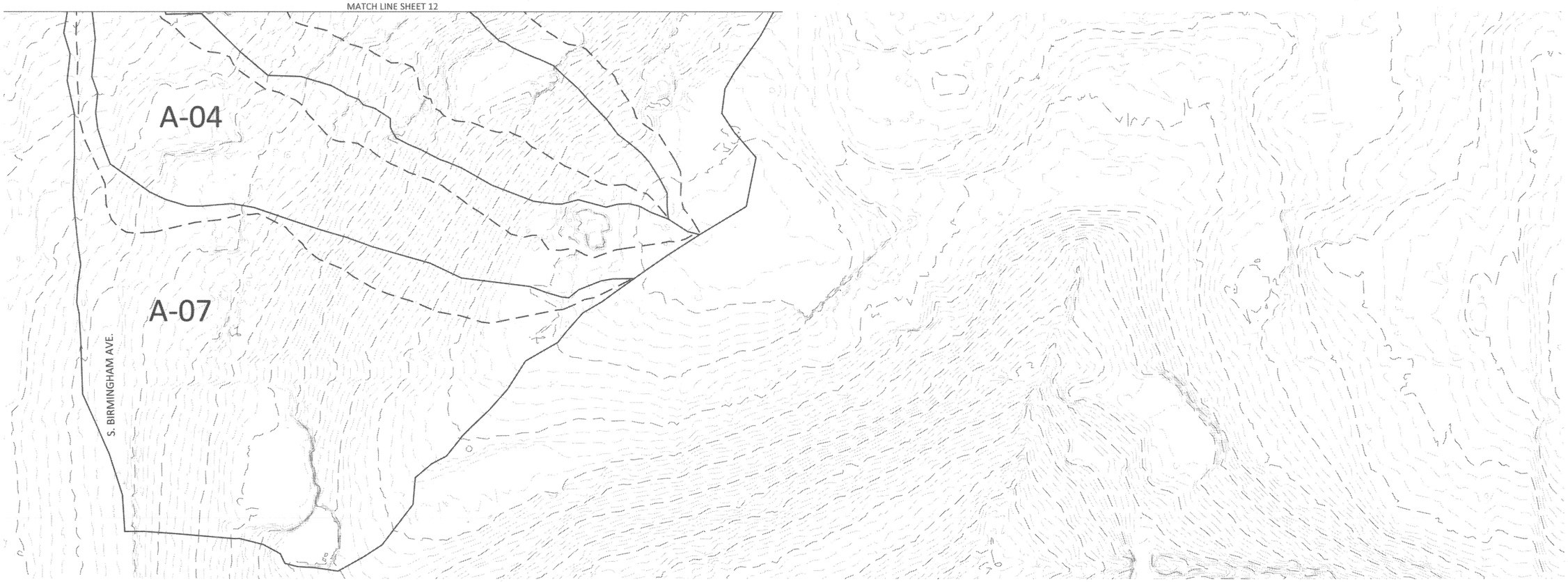
EXISTING INTERMEDIATE CONTOURS

FLOW PATH

DRAINAGE AREA

DRAINAGE BOUNDARY

A-01



NORTH

0 50' 100'

SCALE IN FEET

NOTES:

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INLET SUMMARY TABLE

STRUCTURE NUMBER	CRL STATION	SUMP/GRADE CONDITION	LONGITUDINAL SLOPE % AT INLET	CROSS SLOPE, %	INLET DESIGN	DRAINAGE AREA	AREA (ACRES)	NUMBER OF GRATES	NUMBER OF HOODS	TOP OF GRATE	FLOWLINE	STR. HEIGHT	CLOGGING FACTOR	Q100 (CFS)	Q CARRYOVER (CFS)	SUM Q AT INLET (CFS)	SPREAD AT INLET (FT)	DEPTH AT INLET (FT)	INLET CAPTURE (CFS)
A-01	14+26.81	ON GRADE	NA	NA	EXISTING - HEADWALL AND PIPE	A-01	0.11	NA	NA	NA	667.27	8.76'	1	0.75	0	0.75	NA	NA	0.75
A-02	14+64.02	SUMP	NA	NA	3 WAY DROP INLET	A-02	1.53	NA	NA	676.95	669.35	7.60'	0.6	9.56	0	9.56	0	0.6	9.56
A-04	16+13.93	ON GRADE	NA	NA	SPECIAL TYPE 1 DROP INLET	A-04	1.63	NA	NA	681.34	676.9	4.44'	0.8	10.12	4.1	14.18	0	0.69	14.18
A-05	16+40.61	ON GRADE	0.03	0.02	SPECIAL CICI	A-05	1.42	4	14	681.54	677.24	5.20'	1	9.28	9.9	19.2	0	0.33	15.15
A-08	13+71.43	SUMP	NA	NA	AREA INLET	A-08	1.77	NA	NA	674.09	665.98	8.11'	0.6	9.61	0	9.61	0	0.48	9.61

OKIE811 know what's below. Call before you dig.

REVISION	BY	DATE

DRAINAGE AREA MAP SOUTH

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

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	DESIGNED	JCF	8/2022
	SURVEY	NP	12/2021
PROFILE SCALE: HORIZONTAL 1" = N/A VERTICAL 1" = N/A	PROJ. MGR.		8/22
	LEAD ENGR.		8/22
	FIELD MGR.		8/22
	RECOMMENDED DESIGN MANAGER		9-22

APPROVED: CITY ENGINEER

FILE: CV-DRA-PL-MAPS.dwg DRAWING:

DATE:

ATLAS PAGE NO: 563

SHEET 13 OF 23 SHEETS

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

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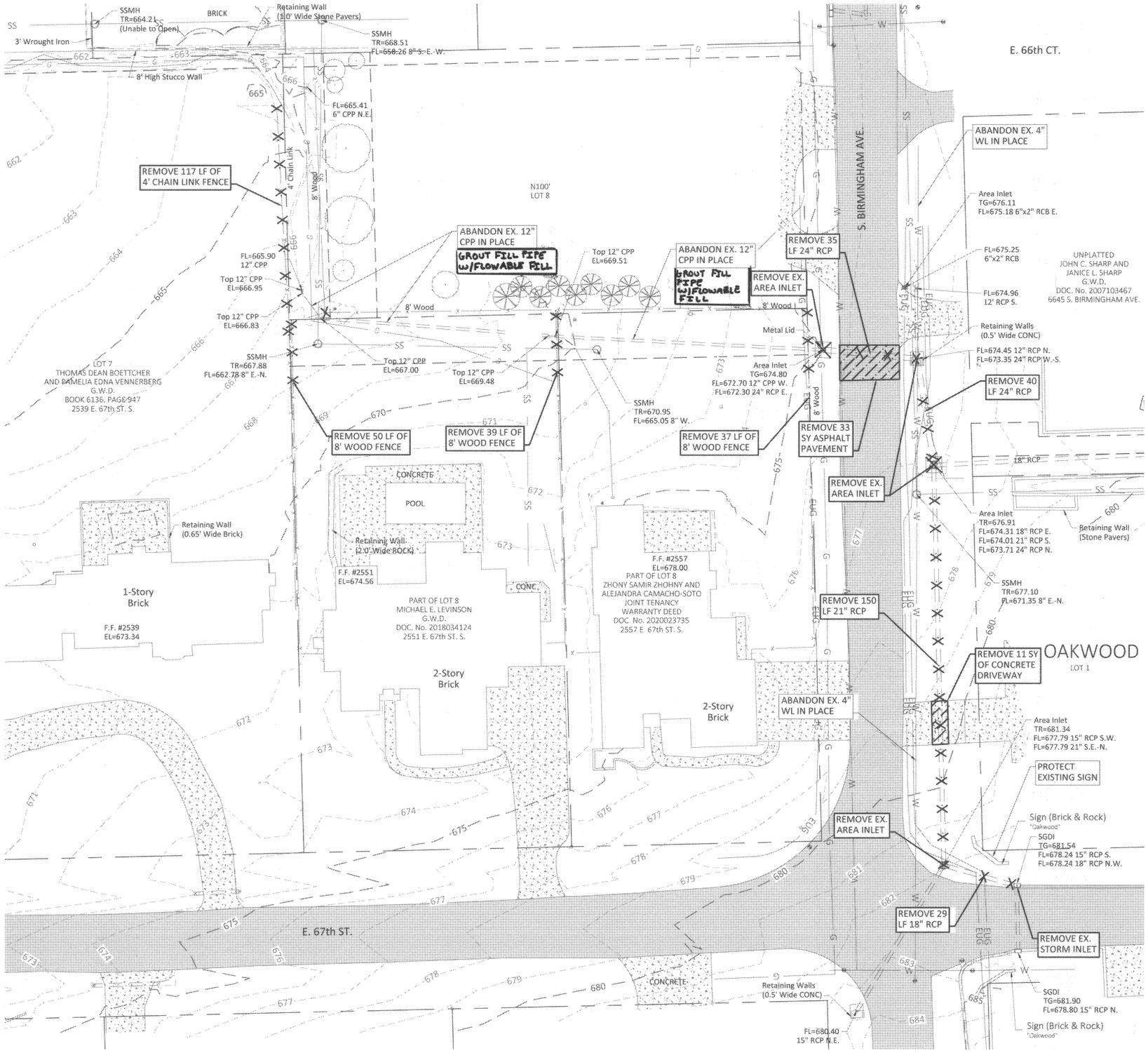

NORTH

0 10' 20' 40'
SCALE IN FEET

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

DEMOLITION PLAN

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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TULSA, OK 74135 (539) 444-8677

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	SURVEY	NP	12/2021	
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	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER		9.22	CITY ENGINEER

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ATLAS PAGE NO: 563 | SHEET 14 OF 23 SHEETS

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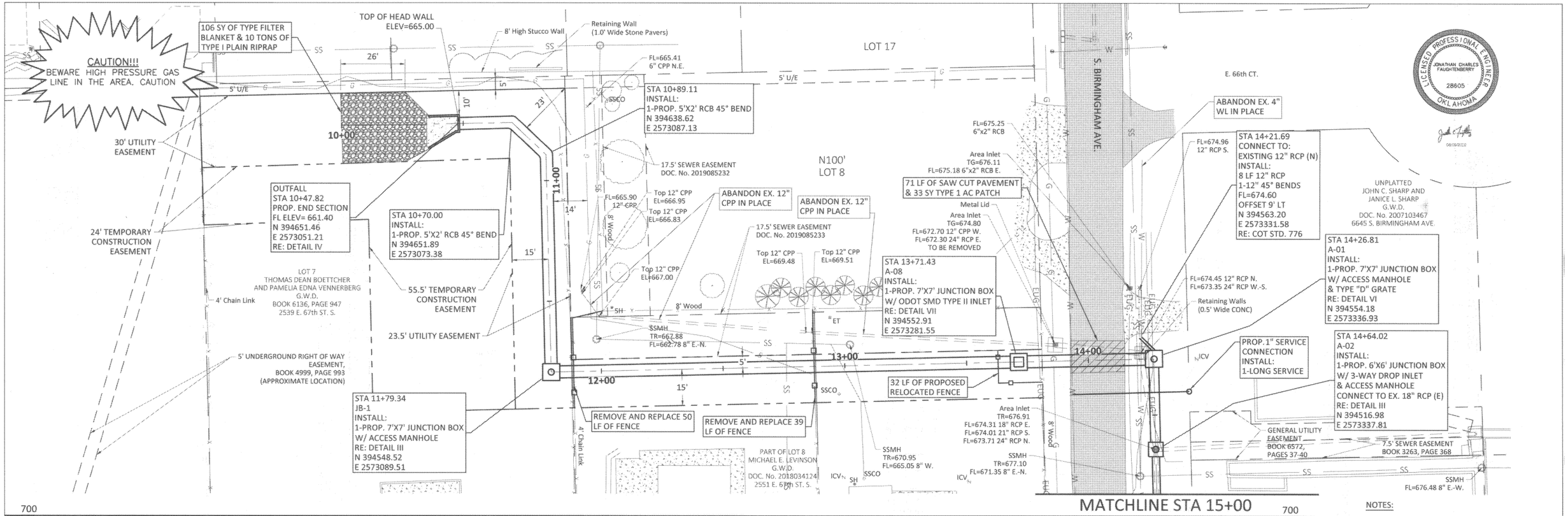

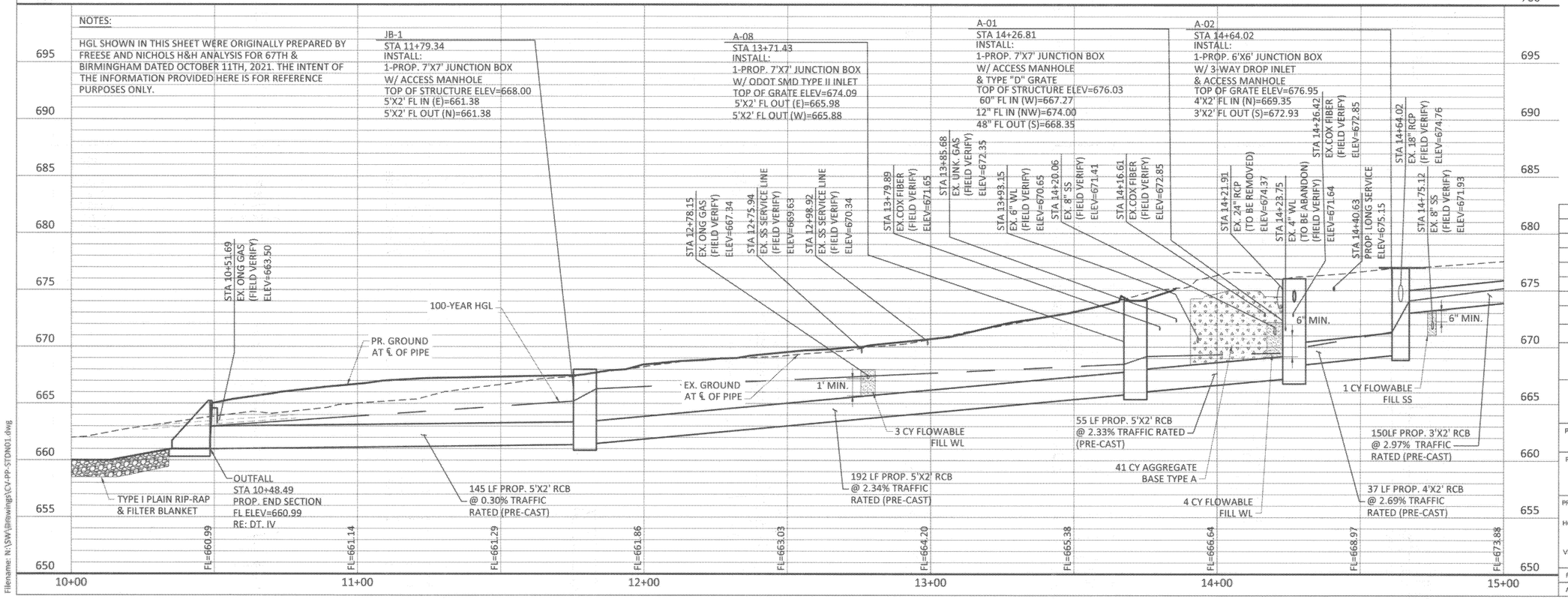

NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
2. CONTRACTOR SHALL ONLY CROSS NEWLY INSTALLED CONCRETE BOX, PIPE, JUNCTIONS, AND INLETS WITH CONSTRUCTION EQUIPMENT IF A 3' DEEP BERM BRIDGE IS INSTALLED.

NORTH

SCALE IN FEET HORIZONTAL: 0, 20', 40'

SCALE IN FEET VERTICAL: 0, 5', 10'

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

PROPOSED STORM A PLAN AND PROFILE

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410 TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1" = 20'	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = 5'	RECOMMENDED: DESIGN MANAGER		9-22	CITY ENGINEER

FILE: CV-PP-STDN01.dwg DRAWING:
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SHEET 15 OF 23 SHEETS

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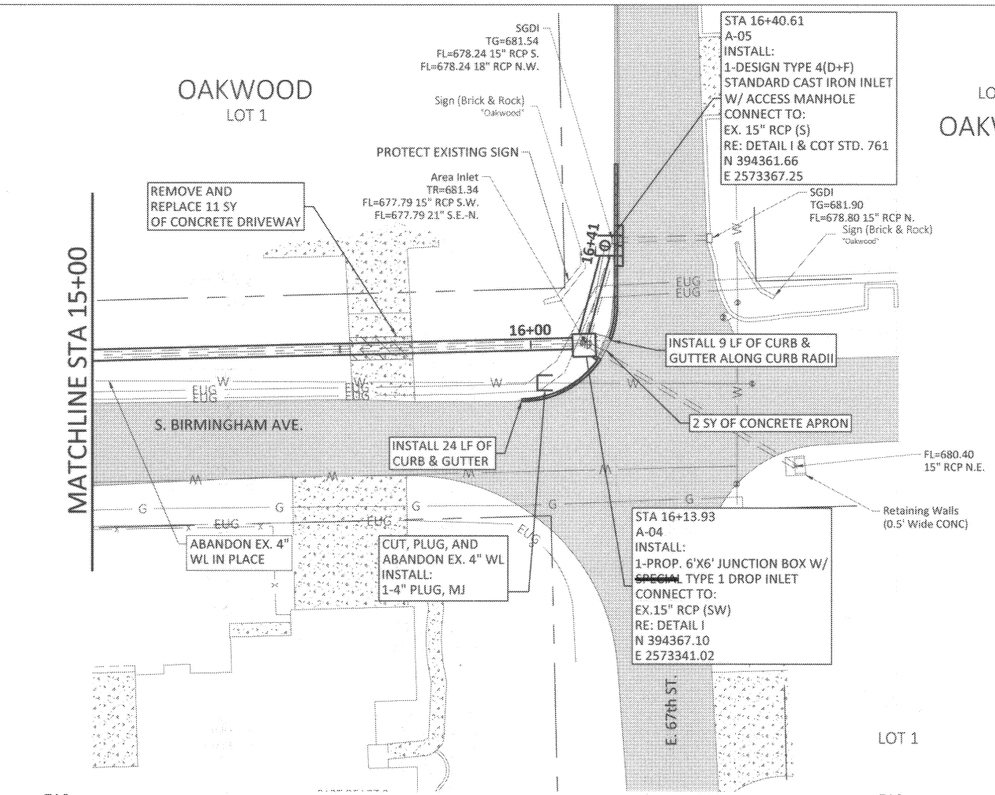

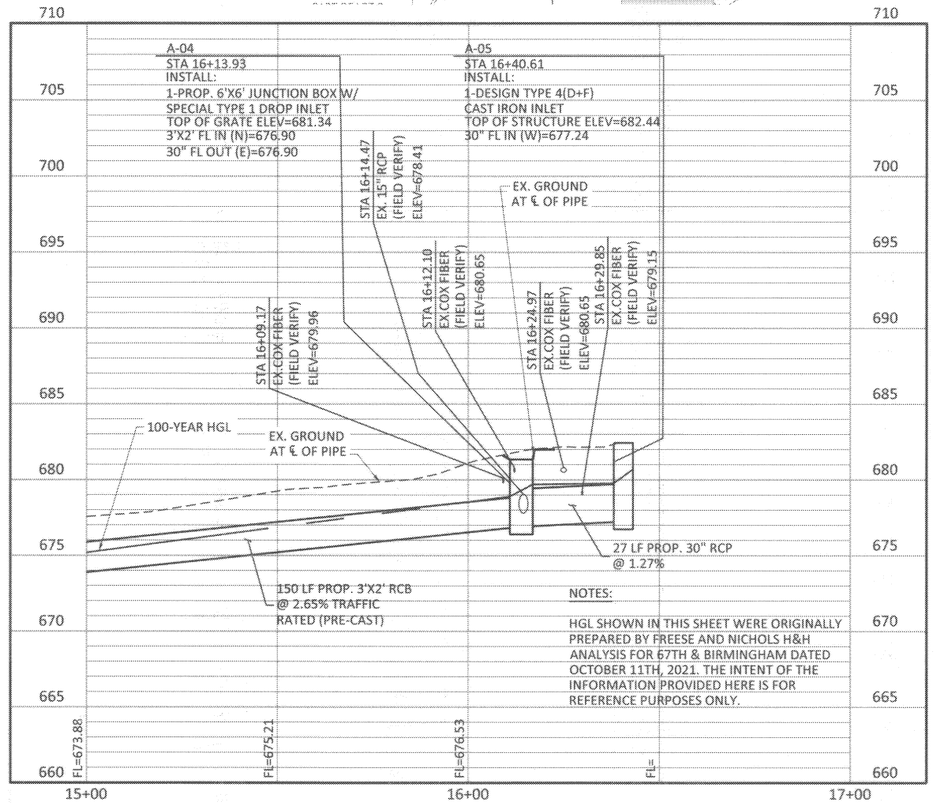

NOTES:

HGL SHOWN IN THIS SHEET WERE ORIGINALLY PREPARED BY FREESE AND NICHOLS H&H ANALYSIS FOR 67TH & BIRMINGHAM DATED OCTOBER 11TH, 2021. THE INTENT OF THE INFORMATION PROVIDED HERE IS FOR REFERENCE PURPOSES ONLY.

0 20' 40'
SCALE IN FEET
HORIZONTAL

0 5' 10'
SCALE IN FEET
VERTICAL

NORTH

NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
2. CONTRACTOR SHALL ONLY CROSS NEWLY INSTALLED CONCRETE BOX, PIPE, JUNCTIONS, AND INLETS WITH CONSTRUCTION EQUIPMENT IF A 3' DEEP BERM BRIDGE IS INSTALLED.
3. CONTRACTOR TO REMOVE AND RESET ANY EXISTING STREET SIGNS THAT ARE IN THE WAY OF CONSTRUCTION THROUGHOUT THE PROJECT LOCATION.

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

PROPOSED STORM A
PLAN AND PROFILE

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
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TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1" = 20'	LEAD ENGR.	BOC	8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = 5'	RECOMMENDED: DESIGN MANAGER	HAS	9.22	CITY ENGINEER

FILE: CV-PP-STDN01.dwg DRAWING:
DATE:
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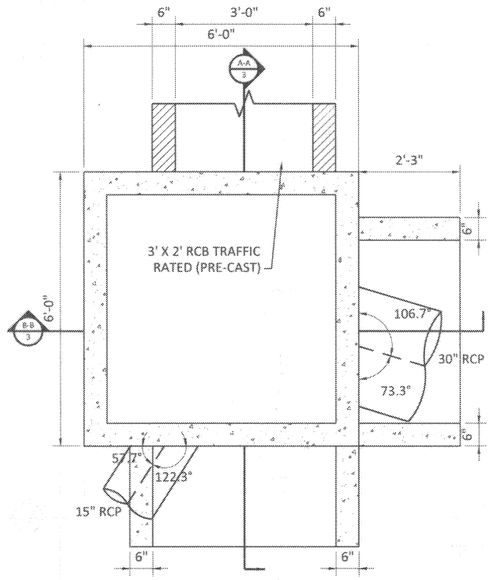
SHEET 16 OF 23 SHEETS

Filename: N:\SW\Drawings\CV-PP-STDN01.dwg

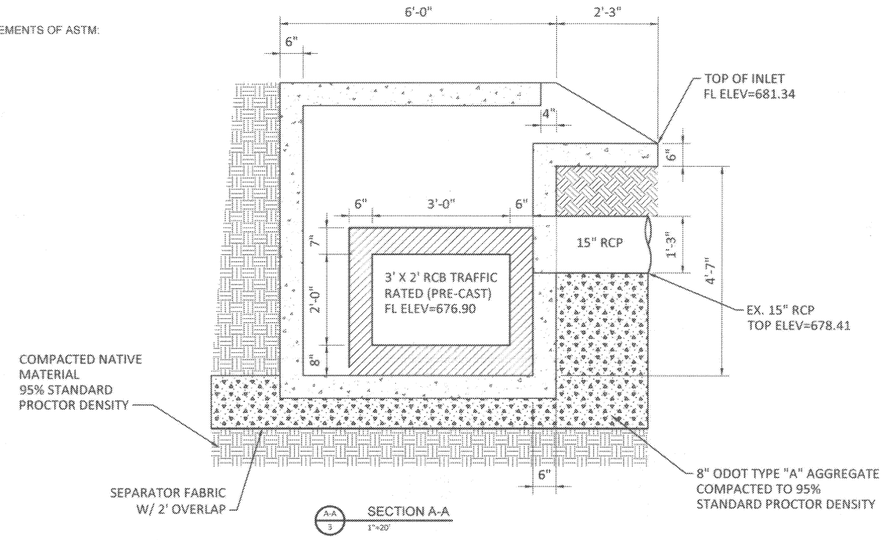
NOTES:

ALL PRE-CAST CONCRETE PIPE AND BOX PIPE SHALL MEET THE FOLLOWING REQUIREMENTS OF ASTM:

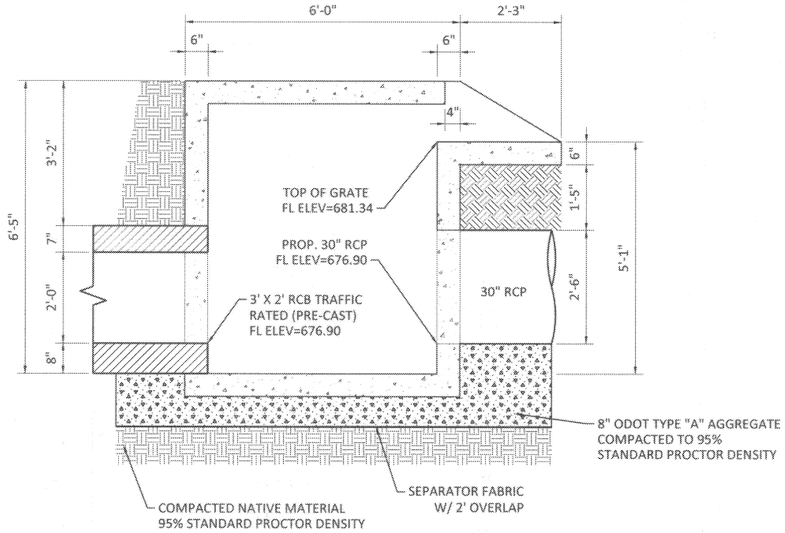
ASTM C76 - DESIGN
ASTM C1479 - INSTALLATION OF CONCRETE PIPE
ASTM C1577 - BOX CULVERT DESIGN
ASTM C1675 - INSTALLATION OF BOX CULVERTS
ASTM C443 - JOINTS FOR GASKETED PIPE



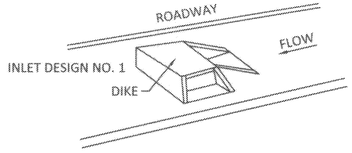
STA. 16+13.93
COT ~~SPECIAL~~ TYPE 1 DROP INLET
6/14 1"=20'

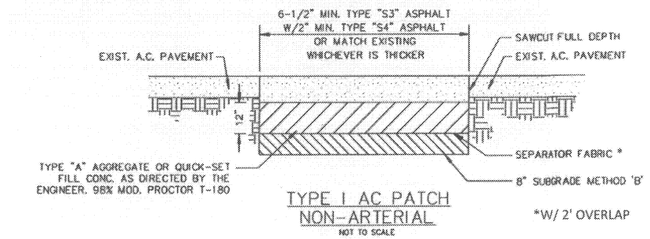


A-A / 3 SECTION A-A 1"=20'

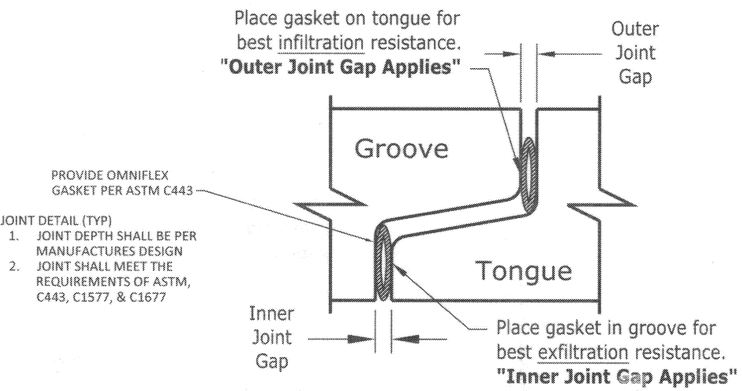


B-B / 3 SECTION B-B 1"=20'





TYPE I AC PATCH
NON-ARTERIAL
NOT TO SCALE



Jonathan Faughtenberry 05/09/2022

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

DETAILS I

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

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4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

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	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED DESIGN MANAGER		9-22	CITY ENGINEER

FILE: CV-STD-DT-DET.dwg DRAWING:
DATE:
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SHEET 17 OF 23 SHEETS

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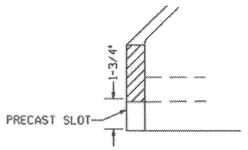
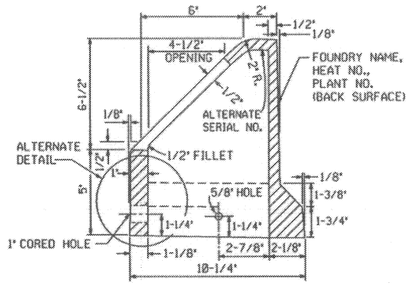
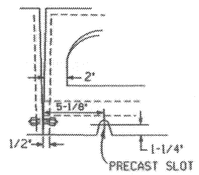


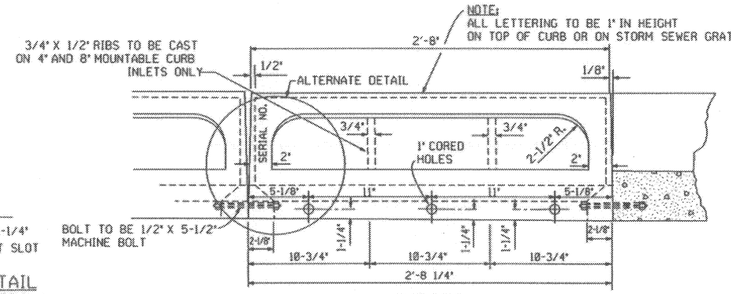
ALTERNATE DETAIL
ALL CURBS (TYPICAL)



6" MOUNTABLE CURB
183 LBS.



ALTERNATE DETAIL
ALL CURBS (TYPICAL)



ELEVATION

CAST IRON STORM SEWER CURB INLET

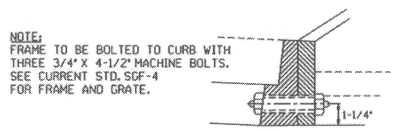
DUMP NO WASTE ◻ DRAINS TO RIVER

FOR 6" MOUNTABLE CURB

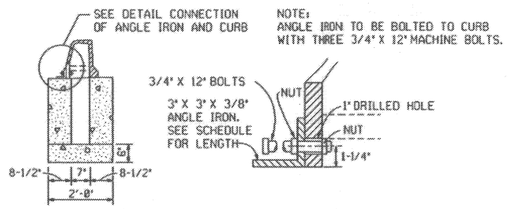
DUMP NO WASTE
DRAINS TO RIVER

FOR 6" AND 8" BARRIER CURB

LAYOUT FOR CURB NOTE

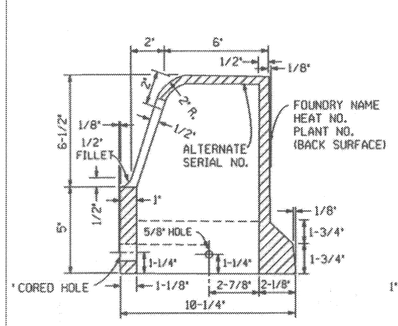


DETAIL OF CONNECTION
FRAME AND CAST IRON CURB

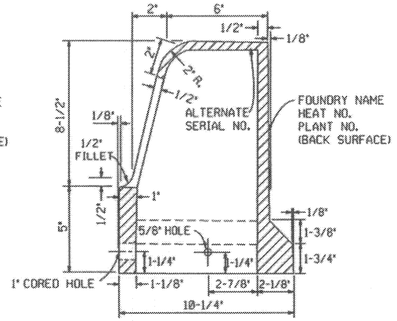


DETAIL OF CONNECTION
ANGLE IRON AND CAST IRON CURB

SCHEDULE						
INLET DESIGN	CURB OPENING DESIGNATION	INLET FRAME AND GRATE (EACH)	CAST IRON CURB INLET (EACH)	NO.	ANGLE IRON (LENGTH)	
4	D-F	4	14	2	10'-6 1/8"	12'-11 1/2"



6" BARRIER CURB
200 LBS.



8" BARRIER CURB
222 LBS.

GENERAL NOTES

1. GRATING AND FRAMES TO BE USED IN THIS INLET ARE SHOW ON THE STANDARD DRAWINGS DESIGNATED AS 'STANDARD STORMWATER GRATES' AND 'STANDARD STORMWATER FRAMES.'
2. GRAY IRON CASTINGS SHALL CONFORM TO AND BE TESTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR GRAY IRON CASTINGS, ASTM A48, AND SHALL BE CLASS 30B OR BETTER.
3. NO WORDING OR MARKING OF ANY KIND OTHER THAN THOSE SHOWN ON THE PLANS WILL BE PERMITTED ON THESE CASTINGS.
4. ALL NUTS AND BOLTS REQUIRED FOR THESE STRUCTURES SHALL BE CADMIUM PLATED AND GALVANIZED.
5. 'DUMP NO WASTE - DRAINS TO RIVER' LETTERING CAN BE PLACED ON THE TOP OF THE BARRIER CURB OR THE INLET GRATE.
6. DESIGN 5 IS THE MAXIMUM PRE-APPROVED SIZE.

TOLERANCES	INCHES	
	PLUS	MINUS
DIAMETER OF ROUND LIDS AND FRAME RECESS FOR ROUND LIDS	1/16	1/16
LENGTH AND WIDTH OF SQUARE OR RECTANGULAR LIDS	1/16	1/8
LENGTH AND WIDTH OF FRAME RECESS FOR SQUARE OR RECTANGULAR LIDS	1/8	1/16
METAL THICKNESS	1/16	1/16
ALL OTHER DIMENSIONS	1/8	1/8

767

CITY OF TULSA
4(D+F) CAST IRON CURB INLET

NOT TO SCALE

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

DETAILS II

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

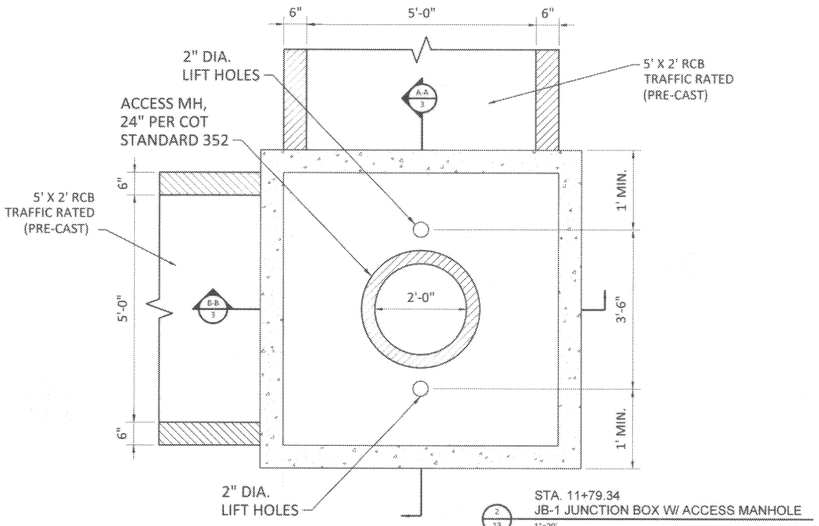
PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.

4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

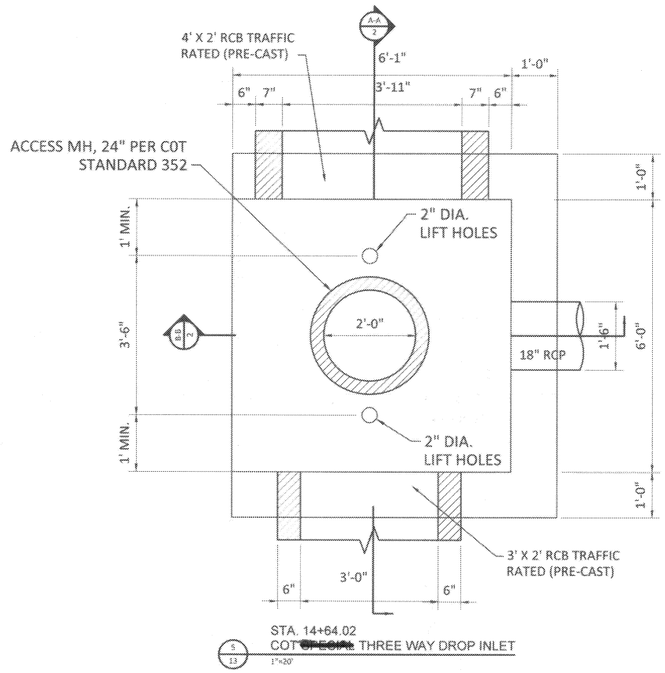
PLAN SCALE: 1" = N/A	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		4/22	
HORIZONTAL 1" = N/A	LEAD ENGR.		8/8/22	
	FIELD MGR.		8/8/22	
VERTICAL 1" = N/A	RECOMMENDED DESIGN MANAGER		8.9.22	CITY ENGINEER
FILE: CV-STD-DT-DET.dwg	DRAWING:			DATE:
ATLAS PAGE NO: 583				SHEET 18 OF 23 SHEETS

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

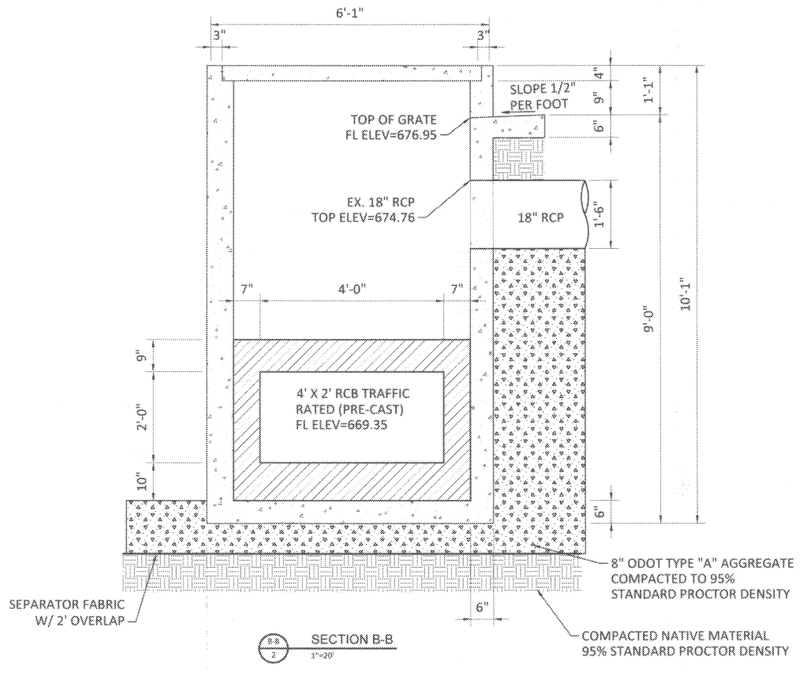
Filename: N:\SW\Drawings\CV-STD-DT-DET.dwg



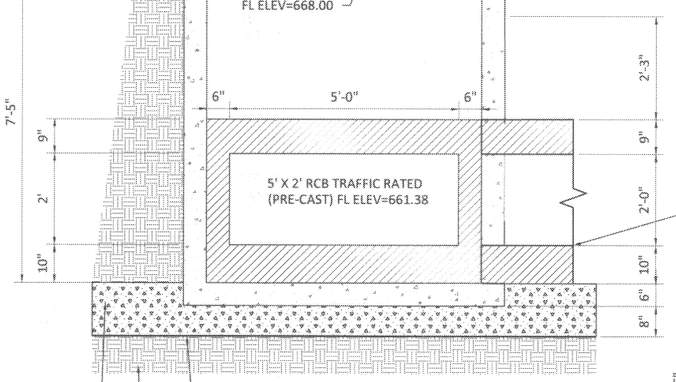
2 / 13 STA. 11+79.34
JB-1 JUNCTION BOX W/ ACCESS MANHOLE
1"=20'

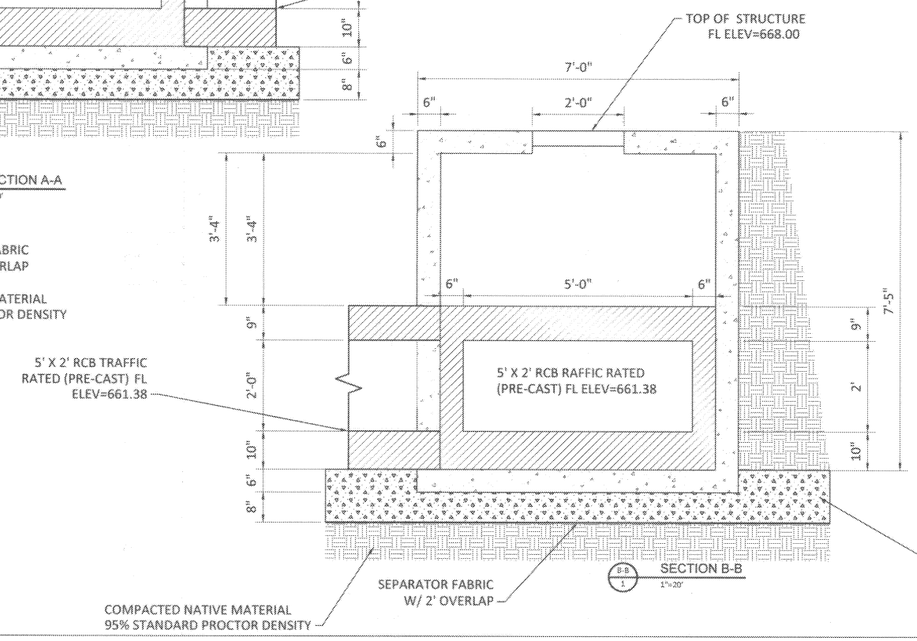


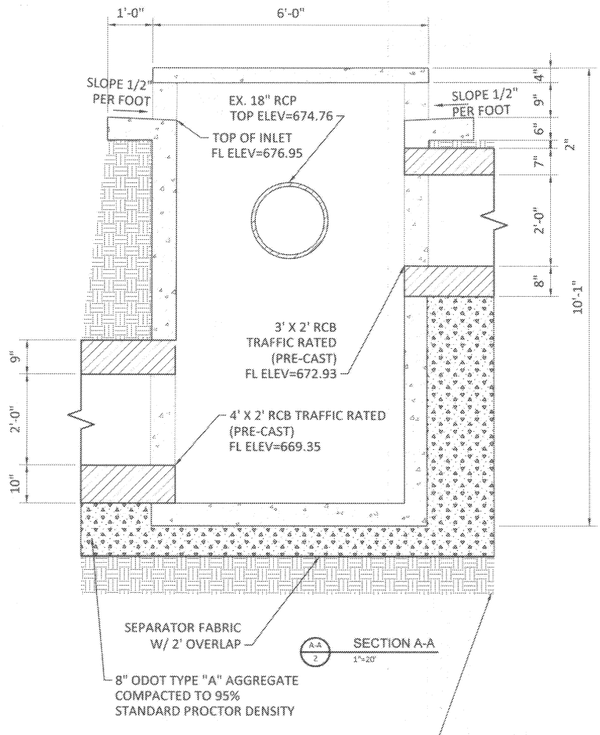
5 / 13 STA. 14+64.02
COT ~~STORM~~ THREE WAY DROP INLET
1"=20'



B-B / 2 SECTION B-B
1"=20'







LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

DETAILS III

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

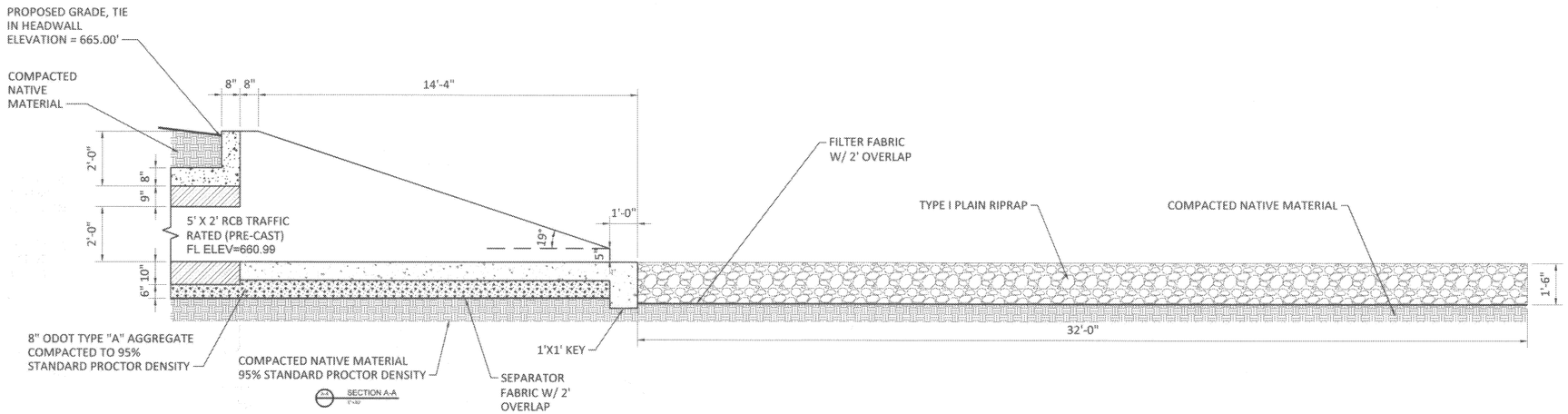
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

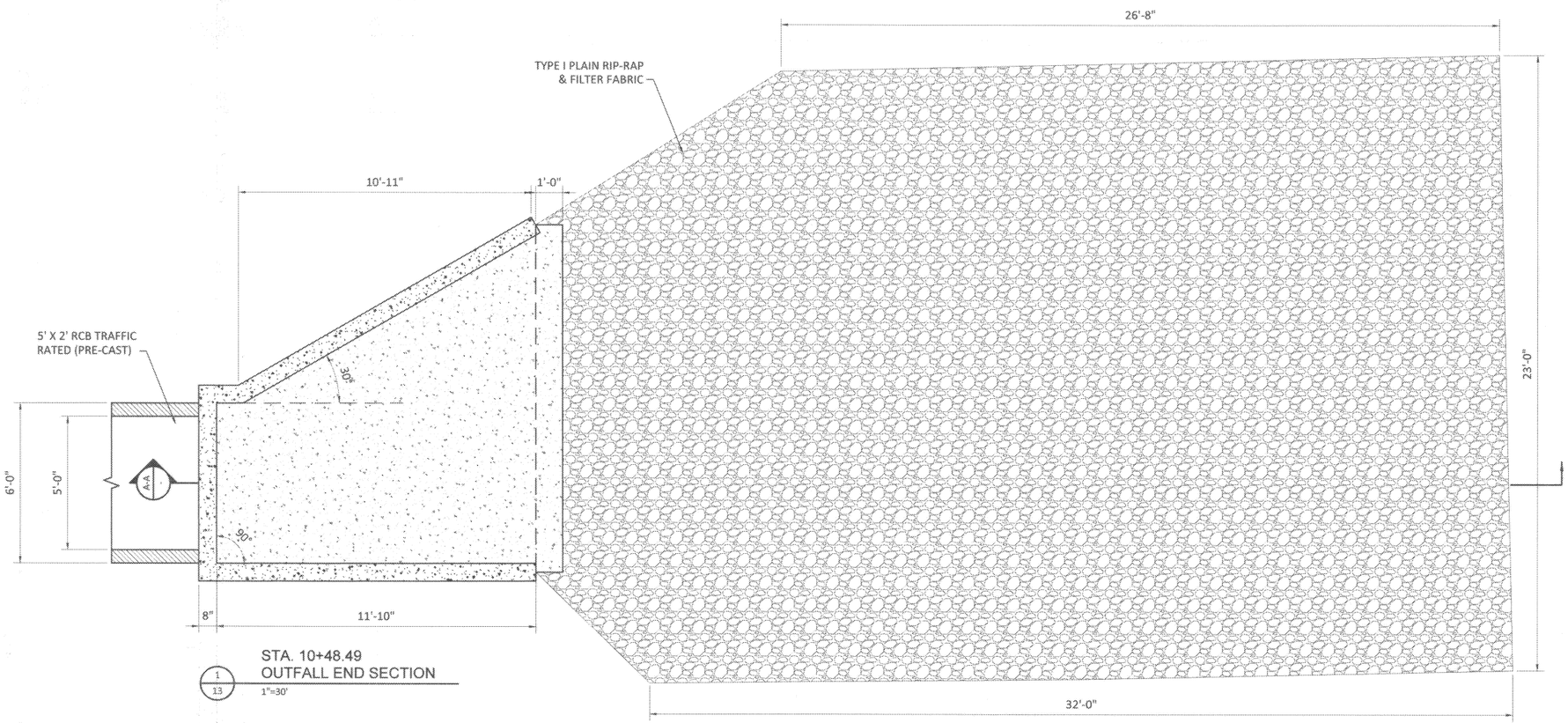
PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = N/A	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
	LEAD ENGR.	BDC	8/22	
HORIZONTAL 1" = N/A	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER	HRS	9.2.22	CITY ENGINEER

FILE: CV-STD-DT-DET.dwg DRAWING:
DATE:
ATLAS PAGE NO: 563
SHEET 19 OF 23 SHEETS

Filename: N:\SW\Drawings\CV-STD-DT-DET.dwg





1 / 13

STA. 10+48.49
OUTFALL END SECTION
1"=30'

REVISION	BY	DATE

DETAILS IV

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.

4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

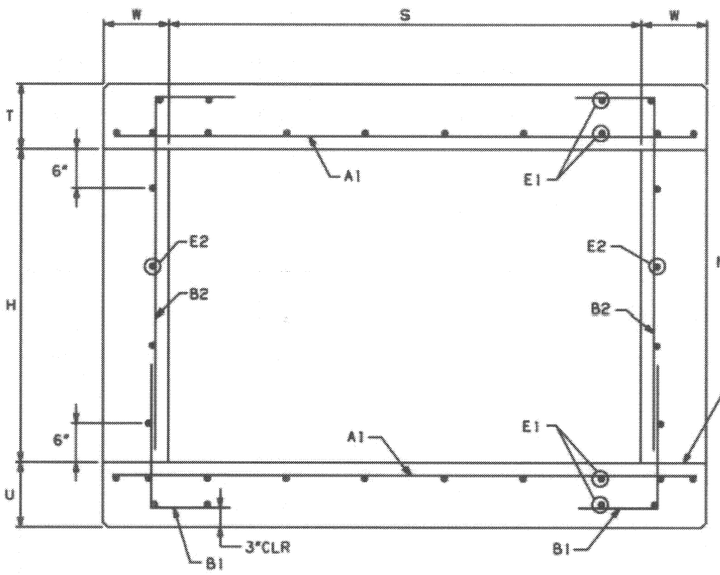
PLAN SCALE: 1" = 30'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1" = N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER		9-22	CITY ENGINEER
FILE: CV-STD-DT-DET.dwg	DRAWING:			DATE:
ATLAS PAGE NO: 563				SHEET 20 OF 23 SHEETS

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

Filename: N:\SW\Drawings\CV-STD-DT-DET.dwg

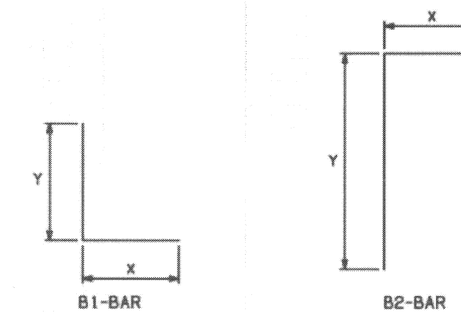
SECTION DIMENSIONS					REINFORCING STEEL																					
					A1-BARS				B1-BARS						B2-BARS						E1-BARS AT 12" MAX.			E2-BARS AT 12" MAX.		
S	H	T	U	W	SIZE	SPA	LENGTH	WEIGHT PER FT.	SIZE	SPA	"X"	"Y"	LENGTH	WEIGHT PER FT.	SIZE	SPA	"X"	"Y"	LENGTH	WEIGHT PER FT.	NO.	SIZE	WEIGHT PER FT.	NO.	SIZE	WEIGHT PER FT.
3'	2'	7"	8"	6"	#5	6"	3'-8"	15.3	#4	12"	0'-8"	1'-9"	2'-5"	3.2	#4	12"	0'-8"	2'-5"	3'-1"	4.1	18	#4	12.0	4	#4	2.7
3'	3'	7"	8"	7"	#5	6"	3'-10"	16.0	#4	12"	0'-8"	1'-9"	2'-5"	3.2	#4	12"	0'-8"	3'-5"	4'-1"	5.5	18	#4	12.0	6	#4	4.0
4'	2'	9"	10"	7"	#5	6"	4'-10"	20.2	#4	12"	0'-8"	1'-11"	2'-7"	3.5	#4	12"	0'-8"	2'-7"	3'-3"	4.3	20	#4	13.4	4	#4	2.7
4'	3'	9"	10"	7"	#5	6"	4'-10"	20.2	#4	12"	0'-8"	1'-11"	2'-7"	3.5	#4	12"	0'-8"	3'-7"	4'-3"	5.7	20	#4	13.4	6	#4	4.0
4'	4'	9"	10"	8"	#5	6"	5'-0"	20.9	#5	12"	0'-10"	2'-3"	3'-1"	6.4	#5	12"	0'-10"	4'-7"	5'-5"	11.3	20	#4	13.4	8	#4	5.3
5'	2'	9"	10"	6"	#6	6"	5'-8"	34.0	#4	12"	0'-8"	1'-11"	2'-7"	3.5	#4	12"	0'-8"	2'-7"	3'-3"	4.3	22	#4	14.7	4	#4	2.7
5'	3'	9"	10"	6"	#6	6"	5'-8"	34.0	#5	6"	0'-10"	2'-3"	3'-1"	12.9	#5	6"	0'-10"	3'-7"	4'-5"	18.4	22	#4	14.7	6	#4	4.0
5'	4'	9"	10"	7"	#6	6"	5'-10"	35.0	#5	6"	0'-10"	2'-3"	3'-1"	12.9	#5	6"	0'-10"	4'-7"	5'-5"	22.6	22	#4	14.7	8	#4	5.3
5'	5'	9"	10"	8"	#6	6"	6'-0"	36.0	#5	6"	0'-10"	2'-3"	3'-1"	12.9	#5	6"	0'-10"	5'-7"	6'-5"	26.8	22	#4	14.7	10	#4	6.7
5'	7'	10"	11"	10"	#6	6"	6'-4"	38.1	#5	6"	0'-10"	2'-4"	3'-2"	13.2	#5	6"	0'-10"	7'-8"	8'-6"	35.5	22	#4	14.7	14	#4	9.4

SECTION DIMENSIONS		QUANTITIES PER FOOT OF BARREL	
S	H	CONC. (C.Y.)	REINF. (LB.)
3'	2'	0.26	37.3
3'	3'	0.32	40.7
4'	2'	0.39	44.1
4'	3'	0.43	46.8
4'	4'	0.51	57.3
5'	2'	0.43	59.2
5'	3'	0.46	84.0
5'	4'	0.53	90.5
5'	5'	0.62	97.1
5'	7'	0.86	110.9



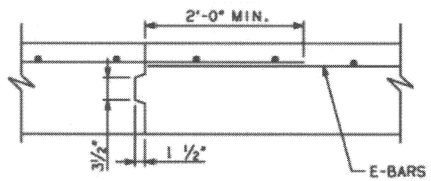
NOTE: NUMBER AND SPACING OF E-BARS SHOWN MAY NOT BE REPRESENTATIVE OF ACTUAL CULVERT SECTIONS, SEE SCHEDULE ABOVE FOR NUMBER AND SPACING OF E-BARS.

BARREL SECTION



BAR BEND DIAGRAMS

NOTE: ALL "X" DIMENSIONS ARE HORIZONTAL IN BARREL SECTION.
ALL "Y" DIMENSIONS ARE VERTICAL IN BARREL SECTION.



TRANSV. CONSTR. JOINT

DESIGN DATA:

1. DESIGNED IN ACCORDANCE WITH 2007 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND INTERIM SPECIFICATIONS FROM 2008.
2. DESIGNED FOR HL-93 LOADING AND ODOT OVERLOAD TRUCK.
3. MATERIALS:
   CONCRETE (CLASS AA) f'c = 4 KSI
   REINFORCING STEEL fy = 60 KSI

GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
2. ALL CONCRETE EDGES SHALL HAVE A 1 ½" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. ALL CHAMFER STRIPS SHALL BE SIZED LUMBER.
3. ALL REINFORCING STEEL SHALL HAVE A 2" MINIMUM CLEAR COVER UNLESS OTHERWISE SHOWN.
4. THE QUANTITY FOR REINFORCING STEEL DOES NOT INCLUDE LAP SPLICES OF E1-BARS OR E2-BARS IN THE LENGTH OF THE BARREL OR AT TRANSVERSE CONSTRUCTION JOINTS. THE SPLICE LENGTH FOR E-BARS SHALL BE 24" MINIMUM. THE NUMBER OF SPLICES USED IS TO BE APPROVED BY THE ENGINEER. REINFORCING STEEL FOR SPLICES SHALL NOT BE MEASURED FOR PAYMENT, AND ALL COSTS WILL BE INCLUDED IN THE UNIT BID PRICE FOR REINFORCING STEEL.
5. TRANSVERSE CONSTRUCTION JOINTS SHALL BE PLACED IN ALL CULVERTS 100 FT. OR MORE IN LENGTH. JOINTS SHALL BE SPACED AT 60 FT. MAX.
6. REINFORCING STEEL SHALL BE CONTINUOUS THROUGH THE TRANSVERSE CONSTRUCTION JOINT AND EXTEND A MIN. OF 24" INTO ADJACENT SECTION.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
509.06 (A)	CLASS AA CONCRETE	C.Y.
511.06 (A)	REINFORCING STEEL	LB.

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

DETAILS V - TRAFFIC RATED RCB

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

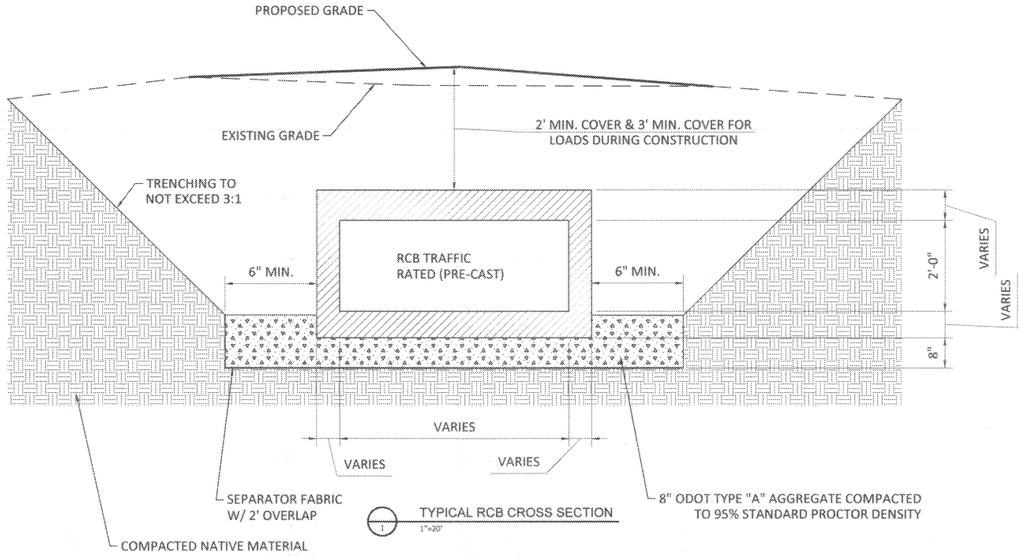
PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

Jonathan C. Faughtenberry 08/29/2022

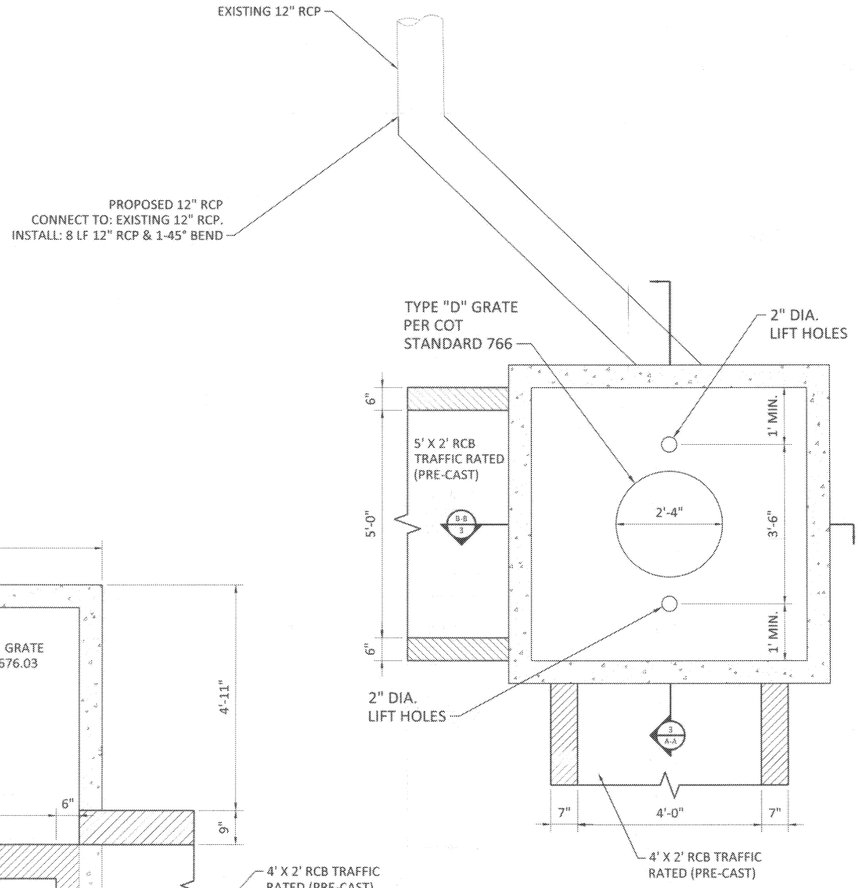
LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

PLAN SCALE: 1" = N/A	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE.	PROJ. MGR.		8/22	
HORIZONTAL 1" = N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER		9.22	CITY ENGINEER
FILE: CV-STD-DT-DET.dwg	DRAWING:			DATE:
ATLAS PAGE NO: 563				SHEET 21 OF 23 SHEETS

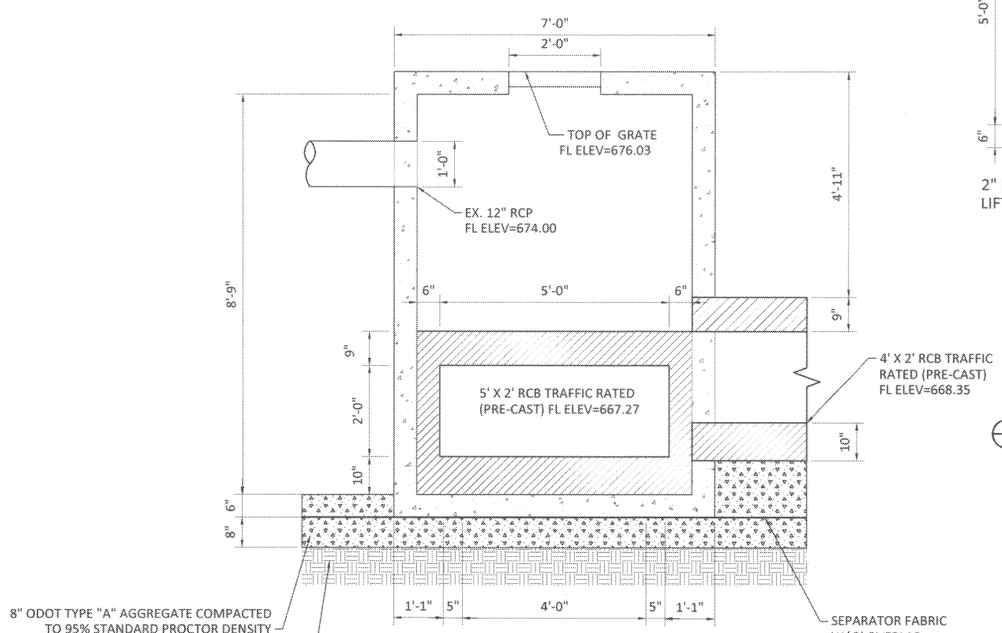
Filename: N:\SW\Drawings\CV-STD-DT-DET.dwg



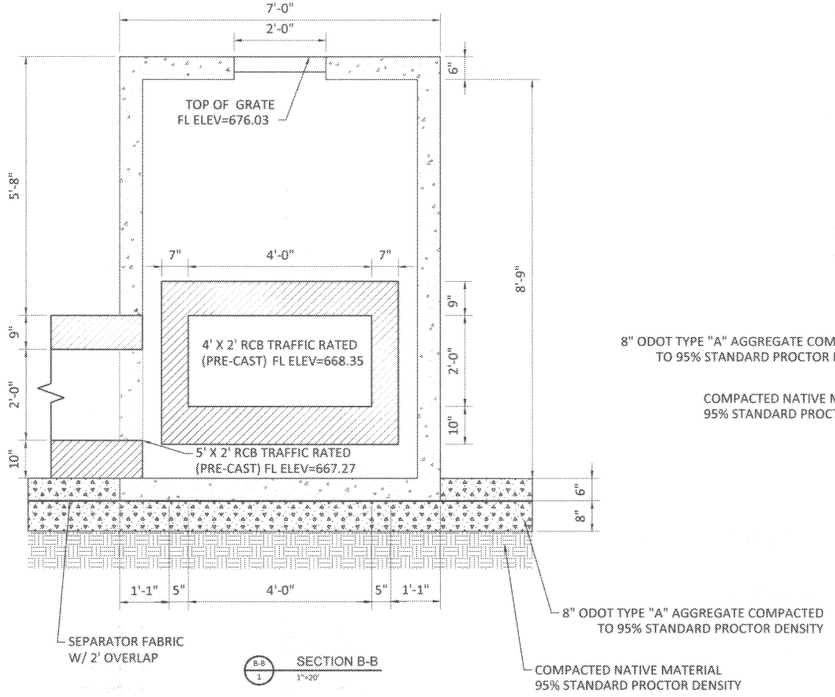
1 TYPICAL RCB CROSS SECTION 1"=20'



4 13 STA. 14+26.81 A-01 JUNCTION BOX W/ ACCESS MANHOLE & TYPE "D" GRATE 1"=20'



A-A 1 SECTION A-A 1"=20'



B-B 1 SECTION B-B 1"=20'

OKIE811 Know what's below. Call before you dig.

REVISION	BY	DATE

DETAILS VI

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM DRAINAGE IMPROVEMENTS

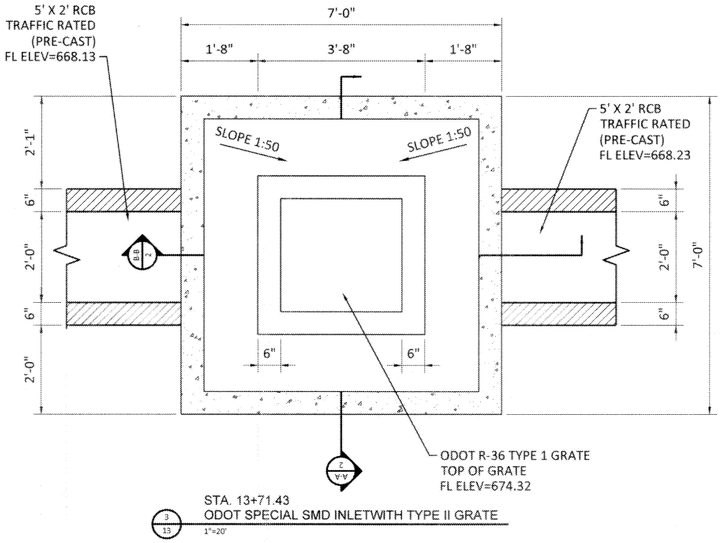
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

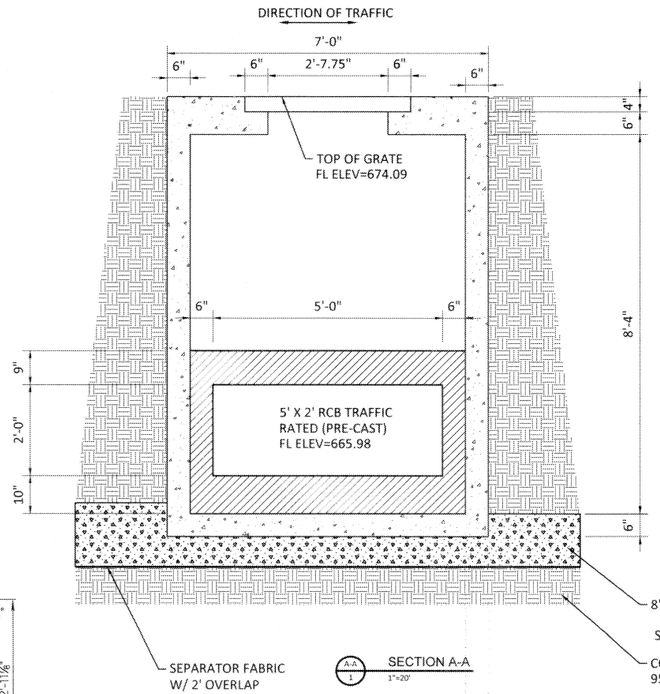
PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

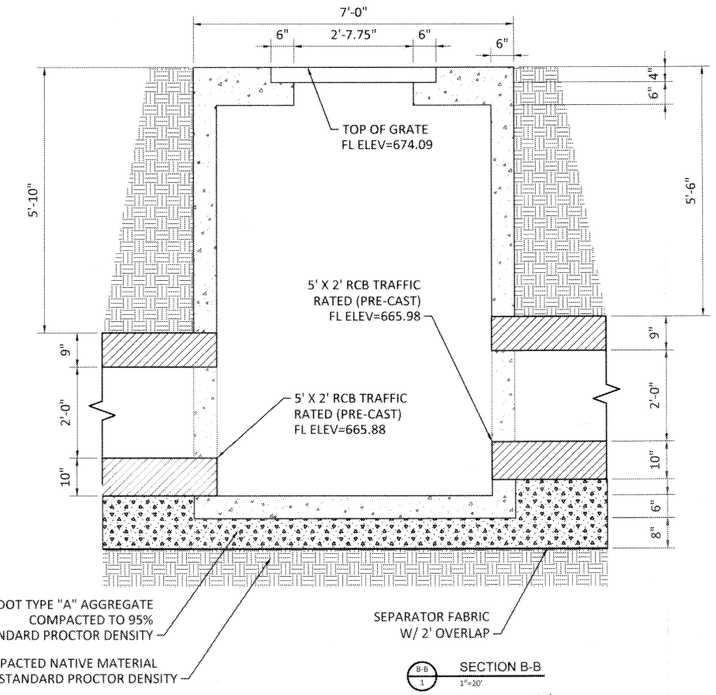
PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1" = N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER		9.22	CITY ENGINEER
FILE: CV-STD-DT-DET.dwg	DRAWING:			DATE:
ATLAS PAGE NO: 583				SHEET 22 OF 23 SHEETS

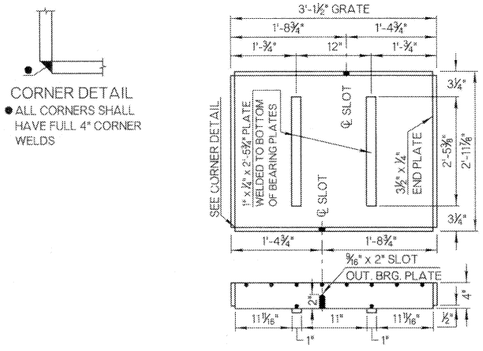
LICENSED PROFESSIONAL ENGINEER JONATHAN CHARLES FAUGHTENBERRY 28605 OKLAHOMA

Filename: N:\SW\Drawings\CV-STD-DT-DET.dwg

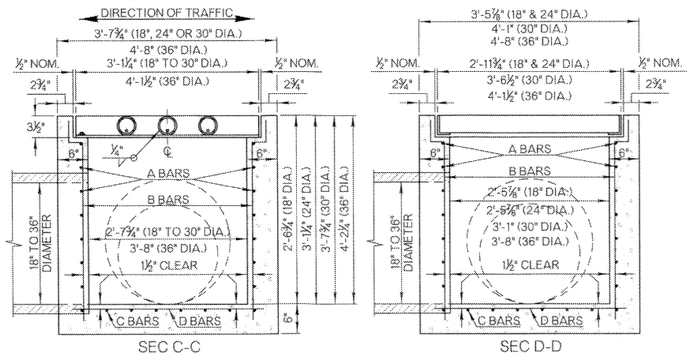




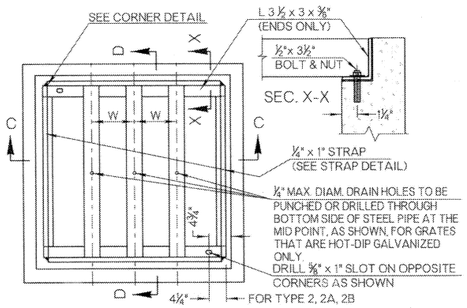




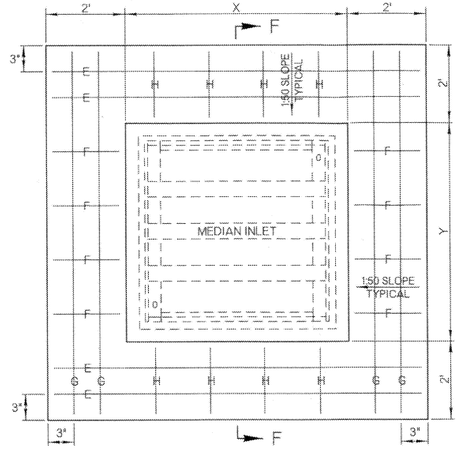
DETAIL ALTERNATE STIFFENER
TYPE 1 GRATE



SMD INLET WITH TYPE 2, 2A & 2B GRATE



PLAN - TYPE 2, 2A, 2B GRATE



MEDIAN DRAIN CONCRETE APRON DETAIL

REVISION	BY	DATE

DETAILS VII

PROJECT NO. SW-2020-01-05-TO#3

67TH & BIRMINGHAM
DRAINAGE IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
FREESE AND NICHOLS, INC.
4200 E. SKELLY DRIVE SUITE 410
TULSA, OK 74135 (539) 444-8677

PLAN SCALE: 1" = 20'	DRAWN	MMM	8/2022	APPROVED:
	DESIGNED	JCF	8/2022	
	SURVEY	NP	12/2021	
PROFILE SCALE:	PROJ. MGR.		8/22	
HORIZONTAL 1" = N/A	LEAD ENGR.		8/22	
	FIELD MGR.		8/22	
VERTICAL 1" = N/A	RECOMMENDED: DESIGN MANAGER		9.22	CITY ENGINEER

FILE: CV-STD-DT-DET.dwg DRAWING:
DATE:
ATLAS PAGE NO: 563
SHEET 23 OF 23 SHEETS

LICENSED PROFESSIONAL ENGINEER
JONATHAN CHARLES FAUGHTENBERRY
28605
OKLAHOMA

OKIE811 Know what's below. Call before you dig.

Filename: N:\SW\Drawings\CV-STD-DT-DET.dwg