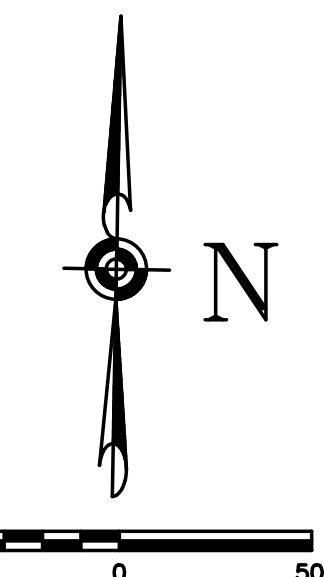
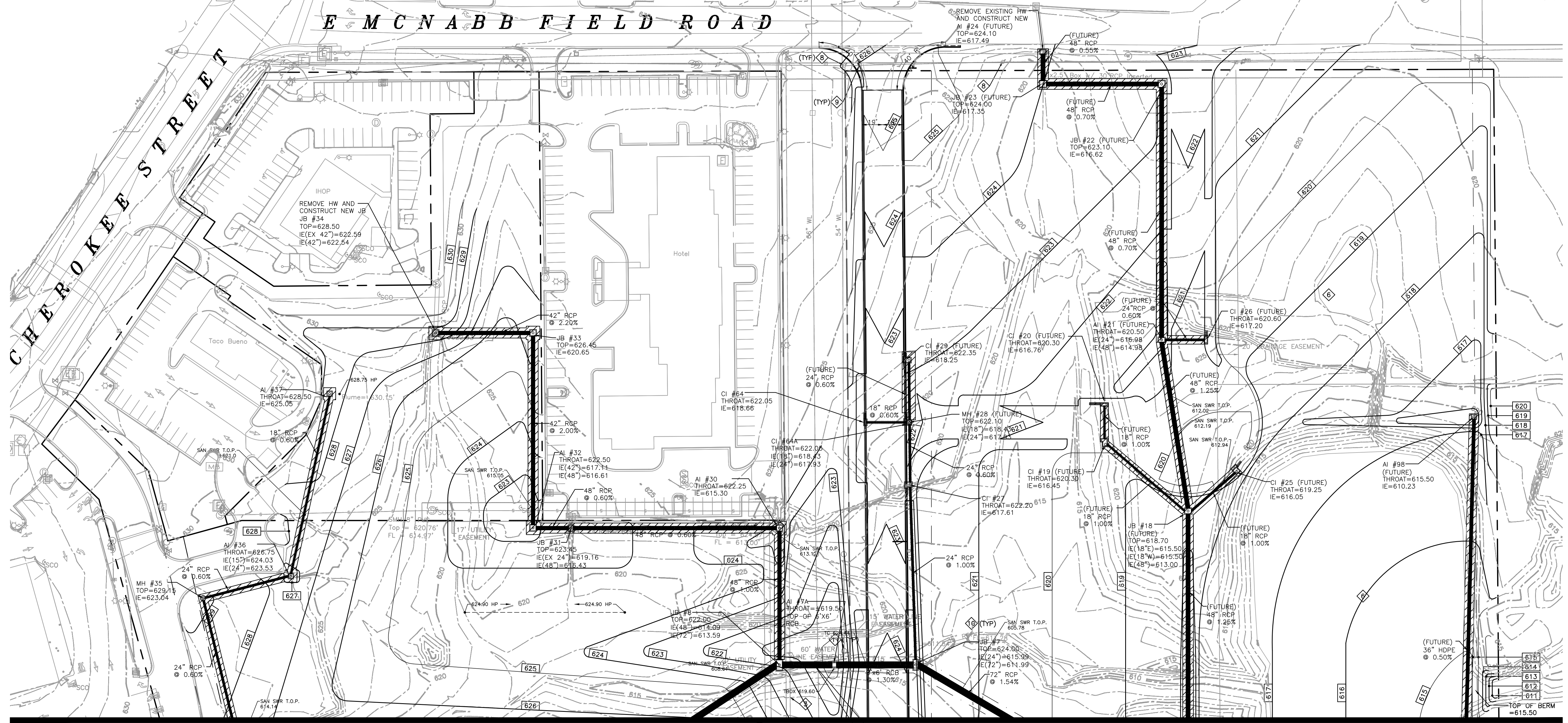


NOTICE TO CONTRACTOR - EXISTING RAW WATER MAINS
 ELEVATION OF 66 INCH AND 54 INCH RAW WATER MAINS WAS DETERMINED FROM PLANS PROVIDED BY THE CITY OF TULSA AND LIMITED FIELD INVESTIGATION. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION WITHIN THE CITY OF TULSA EASEMENT WITH CITY PERSONNEL PRIOR TO INITIATING WORK.
 CONTRACTOR AND THE CITY OF TULSA SHALL CONDUCT A PRECONSTRUCTION MEETING AT THE BEGINNING OF THE PROJECT TO REVIEW CONSTRUCTION PLANS, SEQUENCING, ETC. CONTRACTOR SHALL PROVIDE 72-HOUR NOTICE TO THE CITY OF TULSA THAT POTHOLING IS NEEDED ALONG WITH A MAP OF THE REQUESTED LOCATIONS.



LEGEND

---	PROPERTY LINE
- - -	STORM SEWER
□	CURB INLET/CATCH BASIN/AREA INLET
○	JUNCTION BOX
○	SPOT ELEVATION
▲	HIGH POINT
▨	STORM SEWER NOT IN THIS CONTRACT



- NOTES:**
- ALL UNSURFACED AREAS SHALL RECEIVE 4" TOPSOIL, SEED (SOD WHERE INDICATED ON PLANTING PLAN) AND MULCH, WATER UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
 - SEE FOUNDATION SUBSURFACE PREPARATION NOTE FOR GRANULAR MATERIAL UNDER FLOOR SLAB.
 - SEE PROJECT SITE WORK SPECIFICATIONS FOR SITE PREPARATION PROCEDURES FOR ALL AREAS EXCLUSIVE OF THE BUILDING PAD.
 - ALL SLOPES STEEPER THAN 3:1 SHALL BE PROTECTED WITH A STABILIZATION FABRIC.
 - ALL EARTHWORK TO BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS DESCRIBED IN SECTION 02300 OF THE SITING WORK SPECIFICATIONS.
 - THERE WILL BE NO SUBSTITUTIONS ALLOWED FOR PIPES SHOWN TO BE RCP.
 - RIP-RAP SHALL BE 18" THICK RIPRAP WITH A SIX INCH FILTER BLANKET PER ODOT STANDARD SPECIFICATIONS SECTION 601 (TYPE I-A).
 - SLOPE ON ALL ADA ACCESSIBLE ROUTES SHALL NOT EXCEED 1:20.
 - THE PAVEMENT SHALL BE FLUSH WITH THE TOP OF THE CONCRETE STOODS AT ALL EXITS (TYP). THE SLOPES OF PAVEMENT AREAS UP TO THESE STOODS SHALL NOT EXCEED 1:20.
 - THE CONTRACTOR SHALL HAVE ANY RIGHT-OF-WAY MONUMENTS LOCATED BY A LICENSED OKLAHOMA SURVEYOR PRIOR TO COMMENCEMENT OF GRADING ACTIVITIES WITHIN THE RIGHT-OF-WAY. ANY MONUMENTS WHICH ARE DESTROYED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED.
 - BLOCKOUTS FOR FUTURE STORM SEWERS SHALL BE PROVIDED AT INLETS AND BOXES WHERE FUTURE CONNECTIONS ARE INDICATED. COVER BLOCKOUT WITH TREATED PLYWOOD ATTACHED TO BOX.
- KEYED NOTES:**
- DOWNSPOUT COLLECTION SYSTEM. SEE ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS.
 - REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION ON COMPACTORS.
 - DEPTH OF WATER MAIN WAS NOT DETERMINED. CONTRACTOR SHALL ADJUST WATER MAIN TO ACCOMMODATE PROPOSED IMPROVEMENTS/GRADES TO ACHIEVE REQUIRED CLEARANCE AND COVER.
 - EXISTING FIRE HYDRANT TO REMAIN FOR USE BY CONTRACTOR. SEE DEMOLITION PLAN FOR ADDITIONAL INFORMATION.
 - REMOVE AND DISCARD FILL CONTAINING DEBRIS IN THIS AREA.
 - EXISTING POND(S) TO BE FILLED. REFER TO SITEWORK SPECIFICATIONS FOR ADDITIONAL INFORMATION.
 - CONTRACTOR TO EXERCISE CAUTION WHILE PERFORMING EARTHMOVING ACTIVITIES IN THE VICINITY OF EXISTING UTILITIES.
 - CONTRACTOR TO COORDINATE WITH ELECTRIC COMPANY FOR GRADE CHANGES AROUND EXISTING POWER POLES AND ANY NECESSARY RELOCATIONS OF EXISTING POLES DUE TO PROPOSED IMPROVEMENTS.
 - CONTRACTOR TO COORDINATE WITH TELEPHONE COMPANY FOR ANY NECESSARY RELOCATIONS OF TELEPHONE LINES, FIBER OPTIC CABLES, PEDESTALS, ETC. DUE TO PROPOSED IMPROVEMENTS.
 - REFER TO DEMOLITION PLAN FOR SPECIFIC INFORMATION REGARDING EXISTING UTILITIES, BUILDING, PAVEMENTS, ETC. TO BE REMOVED.
 - CONTRACTOR SHALL COORDINATE WITH THE CITY OF TULSA FOR ALL WORK TO BE COMPLETED WITHIN THE CITY OF TULSA EASEMENTS. CITY OF TULSA SHALL BE GIVEN A MINIMUM OF 72-HOUR NOTICE PRIOR TO EXCAVATION IN THE EASEMENT SO THAT THEY MAY HAVE A REPRESENTATIVE PRESENT DURING THE WORK. REMOVAL AND REPLACEMENT OF THE EXISTING PIPELINE MARKERS SHALL BE COORDINATED WITH THE CITY OF TULSA. ALL OTHER ABOVE GROUND STRUCTURES SHALL BE IDENTIFIED AND PROTECTED. ELEVATIONS MAY NEED TO BE ADJUSTED BASED ON THE PROPOSED GRADING PLAN. REMOVAL OR ALTERATION OF ANY VALVES, VALVE VAULTS, OR AIR RELIEF VALVES, ETC., EXCEPT AS SPECIFICALLY ADDRESSED IN THE PLANS IS NOT APPROVED.

MATCHLINE A (SHEET 2 OF 3)

MATCHLINE A (SHEET 3 OF 3)

DRAINAGE STRUCTURE STANDARDS AND DETAILS

TYPE	SHEET OR STANDARD DRAWINGS
HEADWALL FOR ROUND PIPE	DDOT STD. DWGS RCB-E1-H6-0-1-00E, RCB-E1-H6-0-2-00E & RCB-CW1-D4-0-00E
END SECTION AND CURTAIN WALL FOR 7'x6" RCB	TRANSITION DETAIL - DETAIL SHEET IV
END SECTION AND CURTAIN WALL FOR DBL 6'x6" RCB	DDOT STD. DWGS RCB-E2-H6-0-1-00E, RCB-E2-H6-0-2-00E & RCB-CW2-D4-0-00E
INLET FOR DBL 6'x6" RCB	TRANSITION DETAIL - DETAIL SHEET VI
AREA INLET TYPE 1	DETAIL SHEET V
AREA INLET TYPE 1A (TOP OF RCB)	DETAIL SHEET V
AREA INLET TYPE 2	DDOT STD. DRAWING GDI-P-1-0
JUNCTION BOX	DETAIL SHEET V
CURB INLET TYPE 1	CITY OF TULSA STD. DRAWINGS NO. 762, 765, 766 & 767
CURB INLET TYPE 2	CITY OF TULSA STD. DRAWINGS NO. 764, 765, 766 & 767
SIPHONIC MANHOLE	DETAIL SHEET VII
GRATED AREA INLET	CITY OF TULSA STD.
STORM MANHOLE	DDOT STD. DRAWING MJB-3-1 (PRECAST ONLY AND WITH PAVING TERMINAL WHERE IN PAVING)
	DDOT STD. DRAWING MFC-4-0

STORM SEWER BEDDING AND BACKFILL

TYPE	STANDARD DRAWINGS
RCP PIPE	DDOT STD. DRAWING SPI-4-0 DDOT STD. DRAWING SPB-1-2 (CLASS B ONLY) (UNDER PAVING USE AGG. BASE WHERE NATIVE SOIL IS INDICATED ON ODOT STD. DRAWING)
HDPE PIPE	DDOT STD. DRAWING FPI-3-1 DDOT STD. DRAWING SPB-1-2 (CLASS A UNDER PAVING CLASS B OUTSIDE PAVING) (UNDER PAVING USE AGG. BASE WHERE NATIVE SOIL IS INDICATED ON ODOT STD. DRAWING)
PVC PIPE	DDOT STD. DRAWING FPI-3-1 DDOT STD. DRAWING SPB-1-2 (CLASS B ONLY) (UNDER PAVING USE AGG. BASE WHERE NATIVE SOIL IS INDICATED ON ODOT STD. DRAWING)
REINFORCED CONCRETE BOX	DDOT STD. DRAWING SBI-4-0 (LEAN GROUT BETWEEN BOXES ONLY)

PIPE AND RCB

TYPE	SPECIFICATION
RCP PIPE	REINFORCED CONCRETE PIPE CLASS III
REINFORCED CONCRETE BOX	ASTM C 1433 - DESIGN SHALL INCLUDE HS-20 WHEEL LOADING WITH COVER GREATER THAN 2'-0". JOINTS SHALL BE SEALED OMMIFLEX GASKETS AND CADOLIC EXTERNAL WRAP

STORM SEWER CONSTRUCTION NOTICE TO CITY OF TULSA

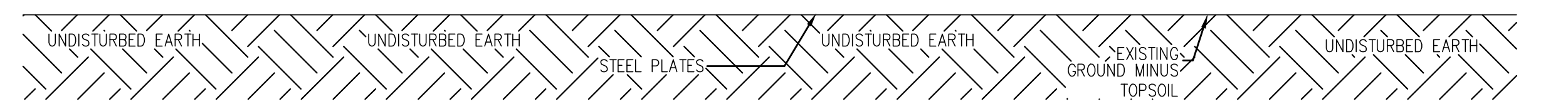
CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE STORM SEWER WITH THE CITY OF TULSA. PROVIDE A MINIMUM OF 72-HOURS NOTICE TO THE CITY THAT THE CONTRACTOR WILL BE EXCAVATING WITHIN THE 60-FOOT RAW WATER EASEMENT IN ORDER TO ALLOW THE CITY OF TULSA PERSONNEL TO BE PRESENT DURING THE REQUIRED EXCAVATION.

BEDDING AND BACKFILL OF STORM SEWER IN RAW WATER EASEMENT

GEOTRID (TENSAR TX-160) SHALL BE INSTALLED BELOW THE AGGREGATE BASE BEDDING MATERIAL FOR THE STORM SEWER IN THE 60 FOOT WIDE WATER LINE EASEMENT TO THE CITY OF TULSA. THE WIDTH OF THE GEOTRID SHALL BE AS NECESSARY TO COVER THE ENTIRE TRENCH WIDTH. INSTALLATION (INCLUDING OVERLAPS) SHALL BE AS RECOMMENDED BY THE MANUFACTURER. REFER TO THIS SHEET FOR BEDDING AND BACKFILL OF STORM SEWER IN THE 60 FOOT WIDE EASEMENT.

PROTECTION OF RAW WATER LINES DURING CONSTRUCTION:

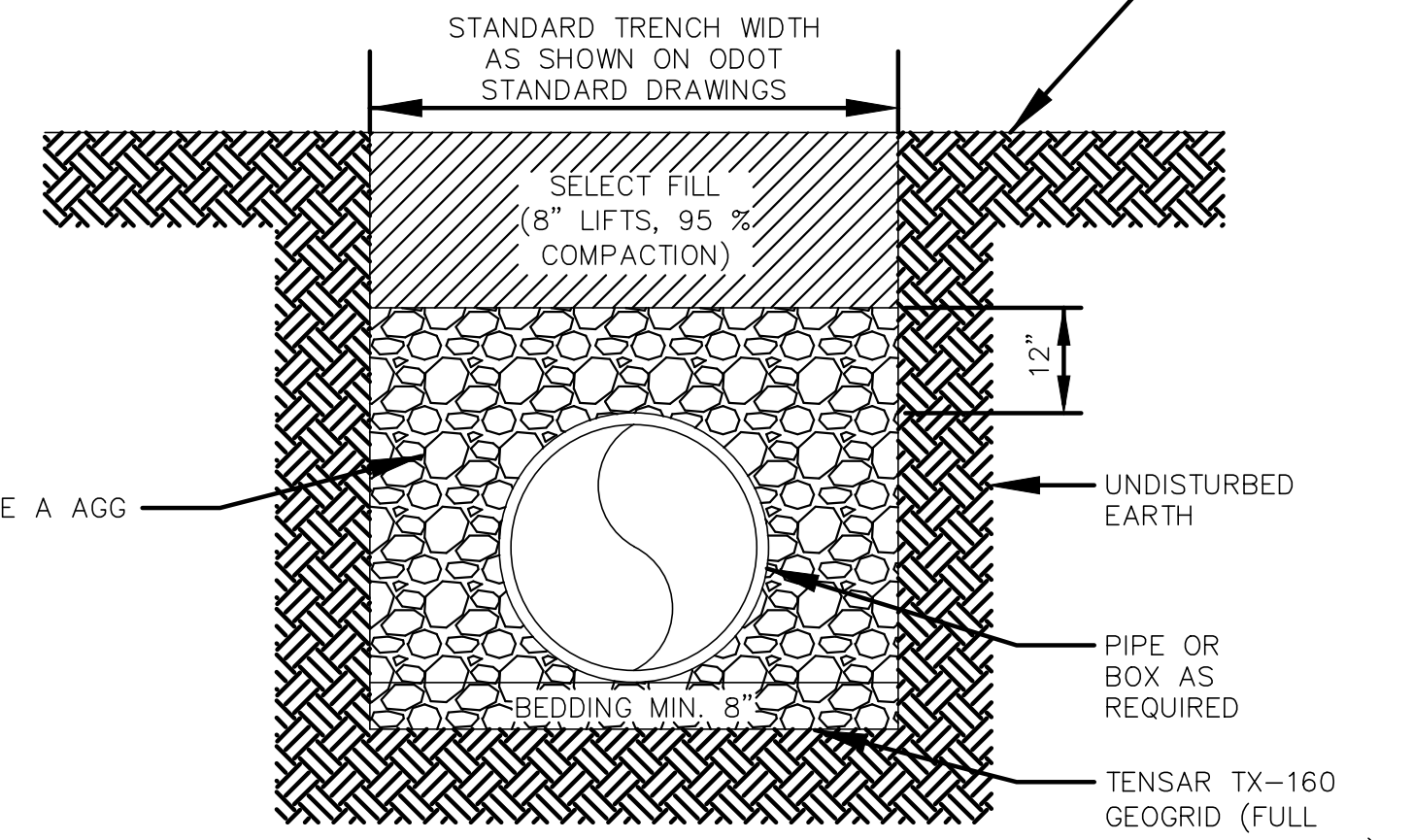
- MOVEMENT OF EQUIPMENT AND VEHICLES (OTHER THAN NORMAL PASSENGER CARS AND PICKUP TRUCKS WITH A GROSS VEHICLE WEIGHT LESS THAN 8,000 POUNDS) OVER RAW WATER LINES SHALL NOT BE ALLOWED IN UNPROTECTED AREAS. THE CONTRACTOR SHALL DETERMINE THE NUMBER OF PROTECTED CROSSINGS. A MINIMUM OF TWO PROTECTED CROSSINGS ARE REQUIRED WITH A MINIMUM WIDTH OF 20 FEET AND COVERING THE ENTIRE 60' EASEMENT.
- PROTECTION OF RAW WATER LINES SHALL CONSIST OF STEEL PLATES (MINIMUM 1" THICK).
- UNPROTECTED AREAS OF THE EASEMENT SHALL BE CLEARLY MARKED BY ORANGE CONSTRUCTION FENCING. DO NOT REMOVE FENCE UNTIL CONSTRUCTION IS COMPLETE.
- EARTHWORK WITHIN THE 60' WATER EASEMENT TO THE CITY OF TULSA SHALL BE PERFORMED BY USE OF SMALL EQUIPMENT ONLY SUCH AS A SMALL BACKHOE. FILL MATERIAL AND AGGREGATE WITHIN THE EASEMENT SHALL BE PLACED IN MAXIMUM LIFTS OF THREE INCHES AND COMPACTED BY HAND OPERATED EQUIPMENT TO THE SPECIFIED DENSITY OF 95% STANDARD PROCTOR DENSITY.
- CONTRACTOR SHALL INSPECT AND MAINTAIN TEMPORARY CROSSING THROUGHOUT THE DURATION OF THE PROJECT.



CITY OF TULSA 54" AND 66" RAW WATER LINES

- TYPICAL SECTION NOTES:**
- REMOVAL OF TOPSOIL SHALL BE BY SMALL EQUIPMENT SUCH AS A BOBCAT OR A SMALL BACKHOE.

RAW WATER LINE PROTECTION DETAIL



NOTE: REFER TO STORM SEWER PLAN AND PROFILE SHEETS FOR SEPERATION BETWEEN RAW WATER LINES AND STORM SEWERS.

CITY OF TULSA 54" AND 66" RAW WATER LINES

- TRENCHING AND BEDDING NOTES:**
- SELECT FILL CONSISTS OF EXCAVATED MATERIALS CONTAINING NO ROCKS LARGER THAN 2" DIAMETER.
 - BEDDING MATERIAL SHALL CONFORM TO ODOT TYPE A AGGREGATE BASE.
 - REFER TO STORM SEWER PLAN AND PROFILE SHEETS FOR DEPTH TO RAW WATER LINES.

BEDDING AND BACKFILL FOR STORM SEWER IN 60' RAW WATER LINE EASEMENT

UNDERCUTTING NOTICE
 THE CONTRACTOR IS SPECIFICALLY CAUTIONED REGARDING THE PRESENCE OF POTENTIALLY UNSTABLE SOILS ON THIS SITE AND THE NEED FOR UNDERCUTTING AND/OR STABILIZATION. THE CONTRACTOR'S BASE BID SHALL INCLUDE PROVISIONS FOR ADDRESSING THIS CONDITION.

DEWATERING NOTE
 WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS. REFER TO MASTER SITE SPECIFICATIONS.

FUTURE PARKING LOT CONSTRUCTION RECOMMENDATIONS
 ALL FUTURE PARKING LOT CONSTRUCTION SHOULD CONSIDER THE POTENTIAL FOR EXPANSIVE CLAY WITHIN THE UPPER SUBGRADE AREAS. THE MASS GRADING REQUIREMENTS FOR THE AREAS OUTSIDE OF THE WALMART TRACT AND THE ROADWAYS DID NOT INCLUDE ANY STABILIZATION OF THE EXPANSIVE CLAY. ALL FUTURE PARKING LOT DESIGN SHOULD INCLUDE REQUIREMENTS TO ADEQUATELY STABILIZE THE CLAY SUBGRADE.

FUTURE BUILDING UNDERCUTTING RECOMMENDATIONS
 ALL FUTURE BUILDING CONSTRUCTION SHOULD CONSIDER THE POTENTIAL FOR EXPANSIVE CLAY WITHIN THE UPPER SUBGRADE AREAS. THE GEOTECHNICAL INVESTIGATION RECOMMENDS A 2' BUFFER (MIN) BELOW THE BUILDING FLOOR SUBGRADE ELEVATION TO HELP MITIGATE THE EFFECTS OF THE EXPANSIVE CLAY. THE MASS GRADING REQUIREMENTS FOR THE AREAS OUTSIDE OF THE WALMART TRACT DID NOT INCLUDE ANY STABILIZATION OF THE FUTURE BUILDING PADS.

EXISTING FILL CONSIDERATIONS OUTSIDE THE WALMART TRACT
 ALL FUTURE CONSTRUCTION SHOULD CONSIDER THE EXISTENCE OF PREVIOUSLY PLACED FILL. THE MASS GRADING INCLUDED REQUIREMENTS FOR PROOF ROLLING OF THE ENTIRE SITE AND REPAIR OF UNSTABLE AREAS DISCOVERED AS A RESULT OF PROOFROLLING ACTIVITIES. ALL FUTURE BUILDING CONSTRUCTION SHOULD INCLUDE REQUIREMENTS FOR THE GEOTECHNICAL ENGINEER TO INSPECT ALL FOOTING EXCAVATIONS PRIOR TO CONCRETE PLACEMENT TO CONFIRM THAT ADEQUATE BEARING CAPACITY EXISTS.

STORM SEWER NOTE
 STORM SEWER IS SHOWN FOR REFERENCE ONLY AND NOT INCLUDED IN THE DEMOLITION AND GRADING CONTRACT.

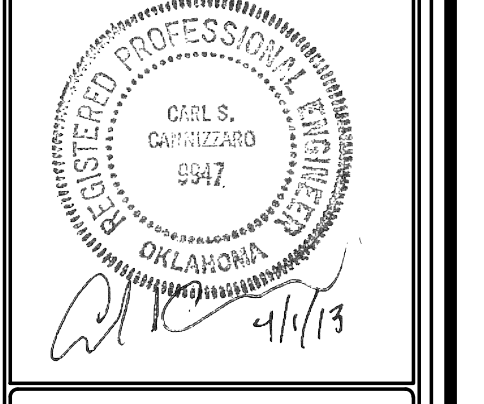
CAUTION - NOTICE TO CONTRACTOR
 THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES, APPURTENANCES AND IMPROVEMENTS WHICH CONFLICT WITH THE IMPROVEMENTS SHOWN BY THESE PLANS.

REVISIONS

NO.	DATE	DESCRIPTION

CATOOSA HILLS, LLC
 LLOYD & CINDY ROSSON
 416 TIMBERCREST ROAD
 OKLAHOMA 74015
 PH: (918) 671-1101

GRADING PLAN (SHEET 1 OF 3)
CATOOSA HILLS SUBDIVISION
CATOOSA, OKLAHOMA



The BDB Engineering Group, LLC.
 4150 SOUTH 100TH EAST AVE. STE 109
 OKLAHOMA CITY, OKLAHOMA 73124
 PH (918) 392-2400 FX (918) 392-7881
 CERTIFICATE OF AUTHORIZATION NO. 6825
 RENEWAL DATE: 6/30/2013

DWG: CATOOSAHILLS_CATORAD
 DATE: APRIL 1, 2013
 SCALE: 1" = 50'
 SHEET 21 OF 45

