

# QUALITY LIQUID FEEDS INFRASTRUCTURE IMPROVEMENTS BID PACKAGE

2530 PORT PL  
MUSKOGEE, OKLAHOMA 74403

NOVEMBER 2, 2023

PREPARED FOR:  
**PORT MUSKOGEE**  
5201 THREE FORKS RD  
FORT GIBSON, OKLAHOMA 74434

**PROPERTY INFORMATION**

**OWNER / APPLICANT**  
PORT MUSKOGEE,  
5201 THREE FORKS ROAD  
FORT GIBSON, OKLAHOMA 74434

**PROPERTY ADDRESS**  
PARCEL ID: 0000-16-15N-19E-1-019-28  
ADDRESS: 2530 PORT PL  
MUSKOGEE, OK 74430  
ZONING: INDUSTRIAL

**PROPOSED USE**  
EXISTING - VACANT PROPERTY  
PROPOSED - PROCESSING EXPANSION



**VICINITY MAP**  
SCALE: 1" = 1000'

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NOT IN CONTRACT

NOT IN CONTRACT

no. | date | by | ckd | description



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*Seth M. Gilliam*  
November 2, 2023



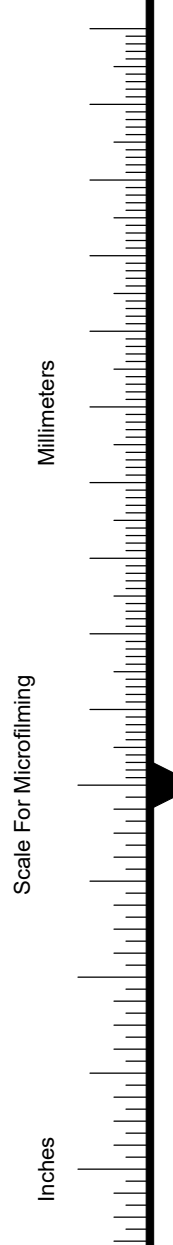
**BURNS  
MEDONNELL**  
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CHESAPEAKE, VA 23320  
757-548-2056

date NOVEMBER 2, 2023	detailed D. CORTINAS
designed A. MONSOUR	checked B. CHEWNING

**BID PACKAGE**

MUSKOGEE, OKLAHOMA  
**QUALITY LIQUID FEEDS  
INFRASTRUCTURE IMPROVEMENTS  
COVER SHEET**

project 152812	contract ---
drawing <b>C-000 - A</b>	rev. ---
sheet 1 of 18 sheets	file 152812-C-000-COVER.DWG



**NOTES**

THE REMOVAL, OR RELOCATION, OF ALL UTILITIES AND APPURTENANCE WILL BE AT THE RISK AND EXPENSE OF THE CONTRACTOR. THESE INCLUDE BUT ARE NOT LIMITED TO POWER, SEWER, WATER, TELEPHONE, LONG DISTANCE COMMUNICATION, AND CABLE TELEVISION.

ALL MISS UTILITY MARKINGS IN THE RIGHT OF WAY ARE REQUIRED TO BE ERADICATED AT THE COMPLETION OF THE PROJECT.

GENERAL

- 1. IN ACCORDANCE WITH THE OKLAHOMA UNDERGROUND FACILITIES DAMAGE PREVENT ACT, THE CONTRACTOR SHALL NOTIFY OKLAHOMA ONE-CALL SYSTEM, INC. 48 HOURS PRIOR TO THE BEGINNING OF EXCAVATION. OKLAHOMA ONE-CALL SYSTEM, INC. "CALL OKIE" 1-800-522-6543 OR 811.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
3. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
4. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL BE SEEDED AND STABILIZED.
5. WORK WITHIN THE LOCAL RIGHT-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHT-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
6. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
7. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
8. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
9. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
10. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
11. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
12. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE FOR REPAIRING RESULTING DAMAGES, IF ANY, AT NO COST TO THE OWNER.

UTILITIES

- 1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
3. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
4. RIM ELEVATIONS FOR STORM DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
C. LANDSCAPE, TOPSOIL AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.

UTILITIES (CONTINUED)

- 5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.).
6. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
7. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
A. WATER PIPES SHALL BE HDPE DR11.
B. SANITARY SEWER PIPES SHALL BE PVC SDR 26.
C. STORM DRAINAGE PIPES SHALL RCP.
8. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS.
9. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS, LOCAL MUNICIPAL, AND STATE STANDARDS.

SITE PLAN

- 1. DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
2. ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
3. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
4. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
5. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

DEMOLITION

- 1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARDS SPECIFICATIONS, AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
4. THIS DEMOLITION PLAN IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION.

EROSION CONTROL

- 1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM TIME BEFORE THEY ARE COVERED, SEEDED OR OTHERWISE STABILIZED TO PREVENT EROSION.

EROSION CONTROL (CONTINUED)

- 5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF, LEGALLY PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
6. MAINTENANCE AND REPAIR OF CONSTRUCTION EQUIPMENT SHALL BE CONFINED TO ONE AREA - LOCATED ON A LEVEL AREA, AS FAR FROM CREEKS AND WETLANDS AREAS AS POSSIBLE. STORAGE CONTAINERS AND WASTE DISPOSAL RECEPTACLES SHALL BE PROVIDED AT THIS AREA FOR OILS, FUELS, GREASE, SOLVENTS, ETC., THAT ARE USED ON THE SITE. THE MAINTENANCE AREA SHALL BE INSPECTED AND CLEANED DAILY. DISPOSAL RECEPTACLES SHALL BE EMPTIED WEEKLY, PROPERLY AND IN A LEGAL MANNER.
7. ANY FUEL STORAGE TANKS KEPT ON THE SITE SHALL BE PROVIDED WITH SECONDARY CONTAINMENT; THIS SHALL CONSIST OF A PAN UNDER THE TANK, LINED CONTAINMENT AREA WITH BERMS OR CONCRETE CONTAINMENT AREA, TO CONTAIN ANY LEAKAGE OR SPILLAGE WHICH MAY OCCUR FROM THE TANK DURING USE AND NON-USE TIMES.
8. TRASH RECEPTACLES AND OTHER WASTE-HOLDING FACILITIES SHALL BE UTILIZED AT ONE OR TWO LOCATIONS ON THE PROJECT SITE TO CONTAIN WASTES AND PREVENT ITS MOVEMENT DOWN-GRADE OR OFFSITE. THESE FACILITIES SHALL BE EMPTIED AND WASTE DISPOSED OF ON A WEEKLY BASIS, OR MORE OFTEN AS NEEDED.
9. THE CONTRACTOR SHALL TAKE NECESSARY ACTION AS REQUIRED TO MINIMIZE THE TRACKING OF MUD/SOIL ONTO THE PAVED ROADWAY FROM THE CONSTRUCTION AREA. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
10. WASHING OF CONSTRUCTION VEHICLES ON THE SITE WILL NOT BE ALLOWED. VEHICLES SHALL BE TRANSPORTED TO THE CONTRACTOR'S YARD AND WASHED AS NEEDED.
11. THE STORAGE OF ALL HAZARDOUS MATERIALS, FERTILIZERS, CHEMICALS, CEMENTS, SOLVENTS, PAINTS OR OTHER POTENTIAL WATER POLLUTANTS SHALL BE LOCATED IN AN ISOLATED, LEVEL AREA, FAR FROM CREEK/WETLAND AREAS, WHERE THEY WILL NOT CAUSE POLLUTION DUE TO RUNOFF FROM THEM DURING RAINFALL EVENTS AND SHALL BE STORED IN A HAZMAT APPROVED FACILITY. ALL MSDS SHEETS FOR EACH HAZARDOUS MATERIAL SHALL BE KEPT IN THE HAZMAT STORAGE FACILITY AND A COPY OF THE MSDS SHEET SHALL BE KEPT IN THE GENERAL CONTRACTOR'S OFFICE. TOXIC CHEMICALS AND MATERIALS, SUCH AS PESTICIDES, PAINTS AND ACIDS, SHALL BE STORED ACCORDING TO THE MANUFACTURER'S GUIDELINES. CARE SHALL BE TAKEN TO PREVENT ACCIDENTAL SPILLAGE DURING USE OF MATERIALS. CONTAINERS SHALL NOT BE WASHED IN OR NEAR FLOWING STREAMS OR STORMWATER HANDLING SYSTEMS (INLETS, DITCHES, PONDS, ETC.).
12. ADEQUATE SANITARY FACILITIES SHALL BE PROVIDED FOR WORKERS ON THE SITE IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THESE FACILITIES SHALL BE REGULARLY EMPTIED AND MAINTAINED AND PLACED AWAY FROM CREEKS/WETLANDS AS FAR AS POSSIBLE AND ANCHORED TO PREVENT OVERTURNING, AS NEEDED.
13. CONTRACTOR SHALL PERFORM DAILY WALK THROUGH OF THE PROJECT SITE TO PICK UP LOOSE DEBRIS, LITTER OR TRASH AND DISPOSE OF ALL ITEMS IN THE WASTE RECEPTACLES PROVIDED.

EXISTING CONDITIONS INFORMATION

- 1. BASE PLAN: THE EXISTING CONDITIONS INFORMATION USED FOR THIS PROJECT WAS OBTAINED BY HUB ENGINEERS FOR THE WATER RECOVERY AND RESILIENCY PROJECT. ADDITIONAL SURVEY INFORMATION IS UNDERWAY AND REQUIRED IN ORDER TO COMPLETE THE DESIGN.
2. GEOTECHNICAL DATA FROM PRIOR REPORTS WITHIN PROJECT LIMITS ARE UTILIZED.
3. ALL UNDERGROUND UTILITIES WERE NOT FLAGGED BY "OKIE", ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN. CALL "OKIE" (1-800-522-6543) BEFORE DIGGING.

CONCRETE

- 1. ALL CONCRETE SHALL BE AIR ENTRAINED (4,000 PSI) IN ACCORDANCE WITH MOST RECENT VERSION OF DEPARTMENT OF TRANSPORTATION ROADS AND BRIDGE SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.

DRAINAGE

- 1. TEMPORARY DRAINAGE DURING CONSTRUCTION SHALL BE PROVIDED BY THE CONTRACTOR TO RELIEVE AREAS THAT MAY CAUSE DAMAGE TO ROADWAYS AS DIRECTED BY THE ENGINEER OR THE CITY OF MUSKOGEE.
2. ALL CONCRETE STORM PIPE JOINTS SHALL BE COMPLETELY WRAPPED WITH TWO-FOOT WIDE APPROVED FILTER FABRIC CENTERED ABOUT THE JOINT AND SECURED IN PLACE PRIOR TO BACKFILLING.
3. END WALLS AND FLARED END SECTIONS SHALL NOT BE CONSTRUCTED ON OUTFALL PIPES UNTIL THE OWNER OR CITY GIVES APPROVAL ON SITE.

TRAFFIC CONTROL

- 1. TEMPORARY PAINT STRIPES SHALL BE 4" WIDE, WHITE, NON-REFLECTIVE TRAFFIC TYPE. PERMANENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL TYPE B, CLASS 1. STANDARDS TO BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND CURRENT ODOT SPECIFICATIONS.
2. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DETAILED TRAFFIC CONTROL PLAN (MOT) WITH THE CONTRACTOR'S PERMIT APPLICATION TO WORK IN THE RIGHT-OF-WAY. THE MOT SHALL BE A DRAWING OR AERIAL PHOTO WITH SITE SPECIFIC DETAILS. THESE SHALL INCLUDE BUT ARE NOT LIMITED TO: TRAFFIC SIGNS, DIRECTIONAL SIGNS, DESTINATION SIGNAGE, CHANNELIZING DEVICES, WATER-FILLED BARRIERS, PORTABLE MESSAGE BOARDS WITH MESSAGES TO BE DISPLAYED AND TIMES AND DURATIONS OF DISPLAYED MESSAGES. ADDITIONALLY THE MOT SHALL DISPLAY THE EXACT LOCATION OF ALL SIGNS AND/OR DEVICES INCLUDING SPACING FOR EACH SIGN AND/OR DEVICE, SPACING BEING APPROPRIATE FOR THE WORK ZONE LOCATION AND POSTED SPEED LIMITS. ALL MAINTENANCE OF TRAFFIC (MOT) PLANS SHALL CONFORM TO THE CURRENT ISSUE OF THE 'VIRGINIA WORK AREA PROTECTION MANUAL'. COPIES OR REPRODUCTIONS OF THE MOT THAT ARE INCLUDED WITH THE PROJECT DRAWINGS AND SPECIFICATION WILL NOT BE ACCEPTED WITH THE CONTRACTOR'S PERMIT APPLICATION. CONTRACTORS SHOULD CONSIDER THESE ITEMS WHEN BIDDING PROJECT CONSTRUCTION.

OVERHEAD POWER SAFETY NOTES:

- 1. SUBCONTRACTOR SHALL VERIFY HEIGHT AND LOCATION OF ALL EXISTING OVERHEAD POWER LINES PRIOR TO CONSTRUCTION.
2. SUBCONTRACTOR SHALL WORK AT A SAFE DISTANCE FROM ALL POWER LINES THROUGHOUT THE DURATION OF CONSTRUCTION. PER OSHA 1926.1408 TABLE A, ALL EQUIPMENT SHALL MAINTAIN A MINIMUM CLEARANCE OF 10' FROM ALL POWER LINES WITH VOLTAGES UP TO 50KV. CRANES SHALL MAINTAIN A MINIMUM DISTANCE OF 20' FROM ALL POWER LINES.
3. SUBCONTRACTOR SHALL MARK LOCATION OF ALL OVERHEAD POWER LINES WITH ADEQUATE, CONTRACTOR-APPROVED SIGNAGE. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO, GROUND SIGNAGE AND FLAGGING OF POWER LINES. CONTACT POWER COMPANY TO FLAG ALL POWER LINES AT CONSTRUCTION ENTRANCES AND EXITS.
4. ALL DUMP TRUCK OPERATORS SHALL BE RESPONSIBLE FOR VERIFYING THAT THE DUMP BUCKETS HAVE BEEN COMPLETELY LOWERED BEFORE PUTTING THE TRUCK IN GEAR.
5. ALL WORK WITHIN 20 FEET OF OVERHEAD POWER LINES SHALL NOT BE COMPLETED WITHOUT UTILIZING A DEDICATED SPOTTER.

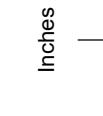
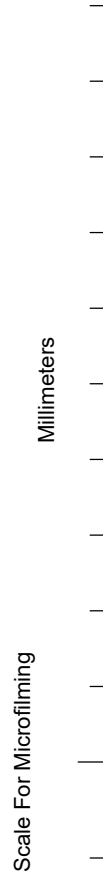


Table with columns: no., date, by, ckd, description

Professional Engineer Seal for Seth M. Gilliam, Oklahoma License No. 30930, Issued: 02/28/2019, Expires: 02/28/2024, November 2, 2023

BURNS MEDONNELL logo and address: 1317 EXECUTIVE BLVD, SUITE 300, CHESAPEAKE, VA 23320, 757-548-2056

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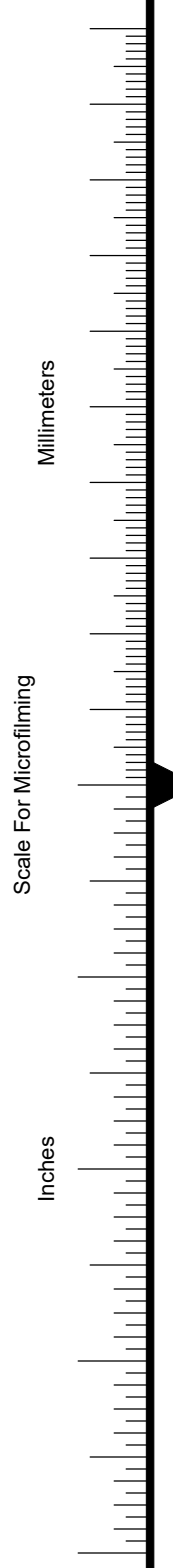
BID PACKAGE MUSKOGEE, OKLAHOMA QUALITY LIQUID FEEDS INFRASTRUCTURE IMPROVEMENTS GENERAL NOTES project 152812 contract --- drawing C-001 - A sheet 2 of 18 sheets file 152812-C-001-GENERAL.DWG

**LEGEND**

LIMITS OF DISTURBANCE		SANITARY MANHOLE	
PROPERTY / PARCEL LINE		SANITARY SEWER ID	
ROADWAY CENTERLINE		STORM DRAIN FLARED END SECTION	
CHAIN LINK FENCE		STORM DRAIN ID	
SPOT ELEVATION	LMG 12.46± r14.5	STORM DRAIN INLET	
BOLLARD	•	UTILITY POLE	
CONTOUR	—50—	TREE LINE	
WATER LINE DOMESTIC		FIRE HYDRANT	
SANITARY SEWER		WATER VALVE	
STORM SEWER		WATER FITTINGS	
OVERHEAD ELECTRIC			
UNDERGROUND ELECTRIC			
OVERHEAD TELEPHONE			
SANITARY SEWER CLEANOUT	•		
SWALE			
TOP OF BERM			

**ABBREVIATIONS**

GENERAL		UTILITY	
ABAN	ABANDON	BFP	BACK FLOW PREVENTER
ACCESS	ACCESSIBLE	BOV	BLOW OFF VALVE
ACR	ACCESSIBLE CURB RAMP	CATV	CABLE TELEVISION
ADJ	ADJUST	CB	CATCH BASIN
APPROX	APPROXIMATE	CMP	CORRUGATED METAL PIPE
ARCH	ARCHITECTURAL	CO	CLEAN OUT
BC	BOTTOM OF CURB	CORP STOP	CORPORATION STOP
BIT	BITUMINOUS	DCB	DOUBLE CATCH BASIN
BLDG	BUILDING	DMH	DRAIN MANHOLE
BS	BOTTOM OF STEP	DI	DRAIN INLET
BWLL	BROKEN WHITE LANE LINE	CIP	CAST IRON PIPE
CONC	CONCRETE	COND	CONDUIT
CL	CENTERLINE	DIP	DUCTILE IRON PIPE
DYCL	DOUBLE YELLOW CENTER LINE	DIPS	DUCTILE IRON PIPE SIZE
E&S	EROSION AND SEDIMENT CONTROL	ES	END SECTION
EL	ELEVATION	EQUIP	EQUIPMENT
ELEV	ELEVATION	EW	END WALL
EP	EDGE OF PAVEMENT	FES	FLARED END SECTION
EXIST	EXISTING	F&G	FRAME AND GRATE
FDN	FOUNDATION	F&C	FRAME AND COVER
FFE	FINISHED FLOOR ELEVATION	FM	FORCE MAIN
FL	FLOW LINE	GT	GREASE TRAP
GRAN	GRANITE	GI	GUTTER INLET
GTD	GRADE TO DRAIN	HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH POINT	HH	ELECTRIC HANDHOLE
LA	LANDSCAPE AREA	HW	HEADWALL
LP	LOW POINT	HYD	HYDRANT
LOD	LIMIT OF DISTURBANCE	MES	METAL END SECTION
MG	MATCH GRADE	INV	INVERT ELEVATION
MAX	MAXIMUM	I=	INVERT ELEVATION
MIN	MINIMUM	PWW	PAVED WATER WAY
NIC	NOT IN CONTRACT	PVC	POLYVINYLCHLORIDE PIPE
NTS	NOT TO SCALE	R	RIM ELEVATION
OC	ON CENTER	RCP	REINFORCED CONCRETE PIPE
PERF	PERFORATED	RPZ	REDUCED PRESSURE ZONE
PROP	PROPOSED	SAN	SANITARY SEWER
REM	REMOVE	SDCO	STORM DRAINAGE CLEANOUT
RET	RETAIN	SDMH	STORM DRAINAGE MANHOLE
R&D	REMOVE AND DISPOSE	SSCO	SANITARY SEWER CLEANOUT
R&R	REMOVE AND RESET	SSMH	SANITARY SEWER MANHOLE
STD	STANDARD	TELE	TELEPHONE
SW	SIDEWALK	TRANS	TRANSFORMER
SWEL	SOLID WHITE EDGE LINE	TSV	TAPPING SLEEVE, VALVE AND BOX
SWLL	SOLID WHITE LANE LINE	UP	UTILITY POLE
TC	TOP OF CURB	W	WATER
TS	TOP OF STEP	WM	WATER METER
TOS	TOP OF SLOPE	WV	WATER VALVE
TYP	TYPICAL		



no.	date	by	ckd	description
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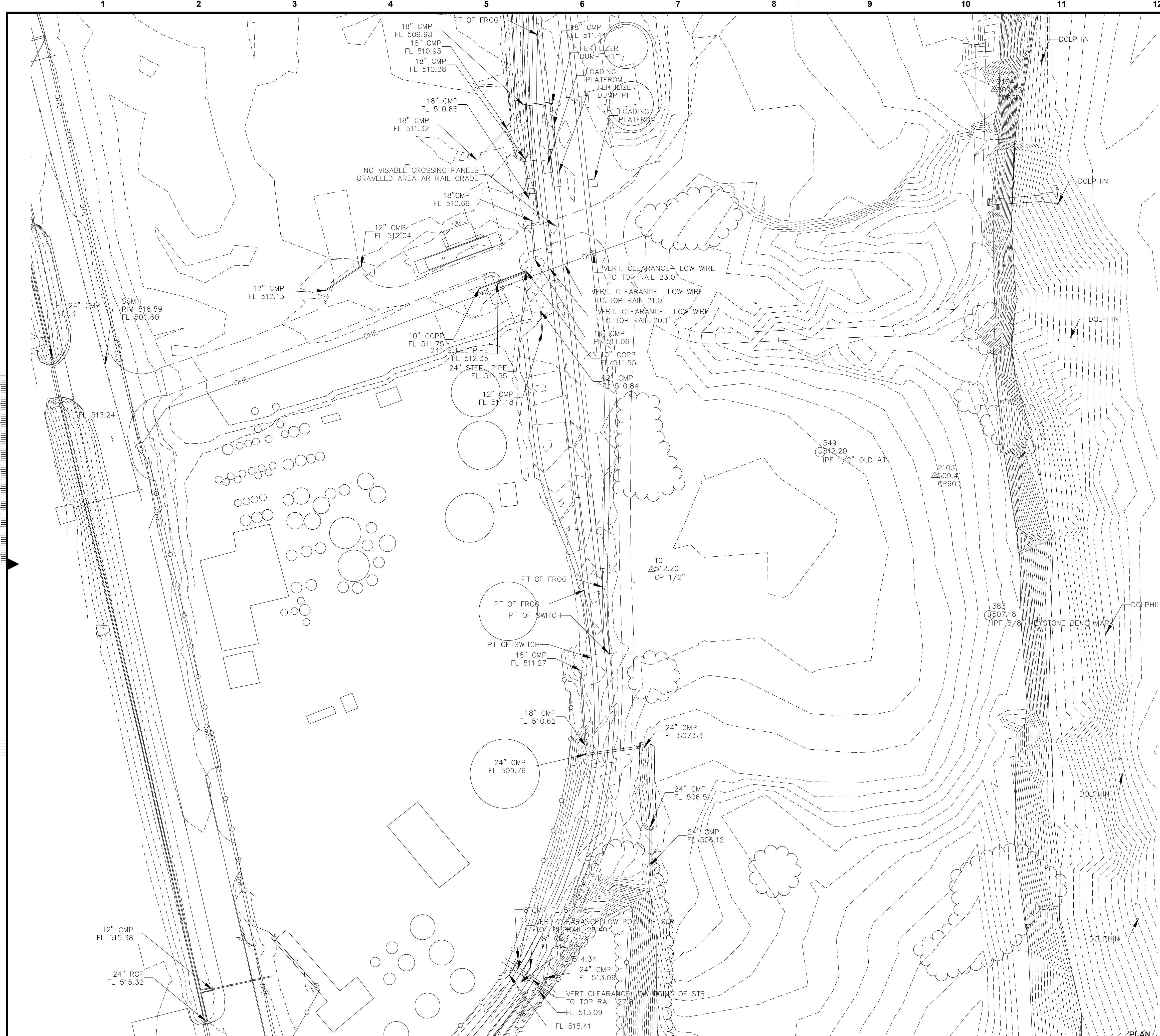
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MUSKOGEE, OKLAHOMA

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 LEGEND AND ABBREVIATIONS**

project	152812	contract	---
drawing	<b>C-002</b>	rev.	<b>A</b>
sheet	3	of	18 sheets
file 152812-C-001-GENERAL.DWG			



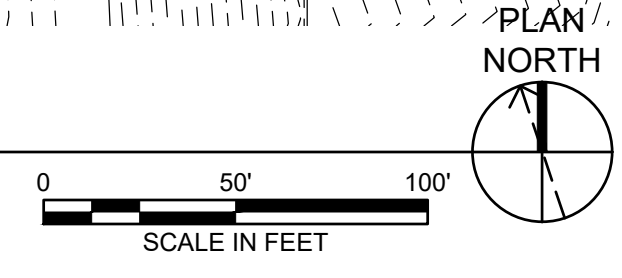
**GENERAL NOTES**

1. THE EXISTING CONDITIONS INFORMATION USED FOR THIS PROJECT WAS OBTAINED BY HUB ENGINEERS FOR THE INFRASTRUCTURE ASSESSMENT PROJECT. ADDITIONAL SURVEY INFORMATION IS UNDERWAY AND REQUIRED IN ORDER TO COMPLETE THE DESIGN.

Millimeters  
Scale For Microfilming  
Inches

**EXISTING CONDITIONS**

SCALE: 1" = 50'



no.	date	by	ckd	description
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*Seth M. Gilliam*  
 November 2, 2023

**BURNS  
MCDONNELL**  
 1317 EXECUTIVE BLVD, SUITE 300  
 CHESAPEAKE, VA 23320  
 757-548-2056

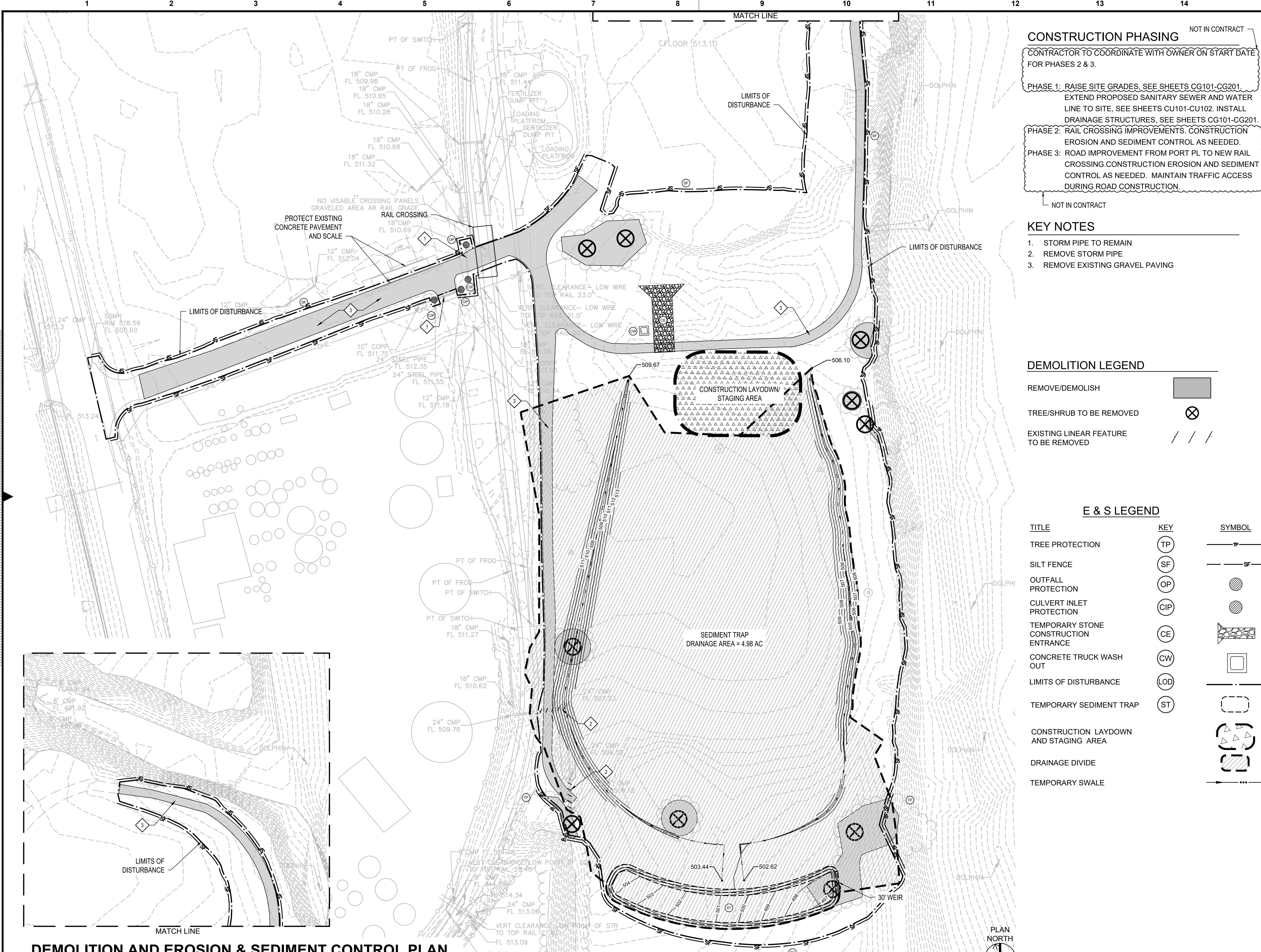
date NOVEMBER 2, 2023	detailed D. CORTINAS
designed A. MONSOUR	checked B. CHEWNING

**BID PACKAGE**

MUSKOGEE, OKLAHOMA

**QUALITY LIQUID FEEDS  
INFRASTRUCTURE IMPROVEMENTS  
EXISTING CONDITIONS**

project 152812	contract ---
drawing	rev. <b>VF101 - A</b>
sheet 4 of 18 sheets	file 152812-VF101-EX CONDITIONS.DWG



**CONSTRUCTION PHASING** NOT IN CONTRACT

CONTRACTOR TO COORDINATE WITH OWNER ON START DATE FOR PHASES 2 & 3.

PHASE 1: RAISE SITE GRADES, SEE SHEETS CG101-CG201. EXTEND PROPOSED SANITARY SEWER AND WATER LINE TO SITE, SEE SHEETS CU101-CU102. INSTALL DRAINAGE STRUCTURES, SEE SHEETS CG101-CG201.

PHASE 2: RAIL CROSSING IMPROVEMENTS. CONSTRUCTION EROSION AND SEDIMENT CONTROL AS NEEDED.

PHASE 3: ROAD IMPROVEMENT FROM PORT PL TO NEW RAIL CROSSING. CONSTRUCTION EROSION AND SEDIMENT CONTROL AS NEEDED. MAINTAIN TRAFFIC ACCESS DURING ROAD CONSTRUCTION.

NOT IN CONTRACT

**KEY NOTES**

1. STORM PIPE TO REMAIN
2. REMOVE STORM PIPE
3. REMOVE EXISTING GRAVEL PAVING

**DEMOLITION LEGEND**

REMOVE/DEMOLISH

TREE/SHRUB TO BE REMOVED

EXISTING LINEAR FEATURE TO BE REMOVED

**E & S LEGEND**

TITLE	KEY	SYMBOL
TREE PROTECTION	TP	
SILT FENCE	SF	
OUTFALL PROTECTION	OP	
CULVERT INLET PROTECTION	CIP	
TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
CONCRETE TRUCK WASH OUT	CW	
LIMITS OF DISTURBANCE	LOD	
TEMPORARY SEDIMENT TRAP	ST	
CONSTRUCTION LAYDOWN AND STAGING AREA		
DRAINAGE DIVIDE		
TEMPORARY SWALE		

no.	date	by	ckd	description

Seth M. Gilliam  
 November 2, 2023

**BURNS MCDONNELL**  
 1317 EXECUTIVE BLVD, SUITE 300  
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 757-548-2056

date	NOVEMBER 2, 2023	designed	A. MONSOUR	checked	B. CHEWNING
date	NOVEMBER 2, 2023	designed	A. MONSOUR	checked	B. CHEWNING

**BID PACKAGE**  
 MUSKOGEE, OKLAHOMA  
**QUALITY LIQUID FEEDS**  
**INFRASTRUCTURE IMPROVEMENTS**  
 DEMOLITION AND  
 EROSION & SEDIMENT CONTROL PLAN  
 project 152812 contract ---  
 drawing 152812-CD101-DEMO & ESC PLAN.DWG rev. **CD101 - A**  
 sheet 5 of 18 sheets

**DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN**

SCALE: 1" = 50'

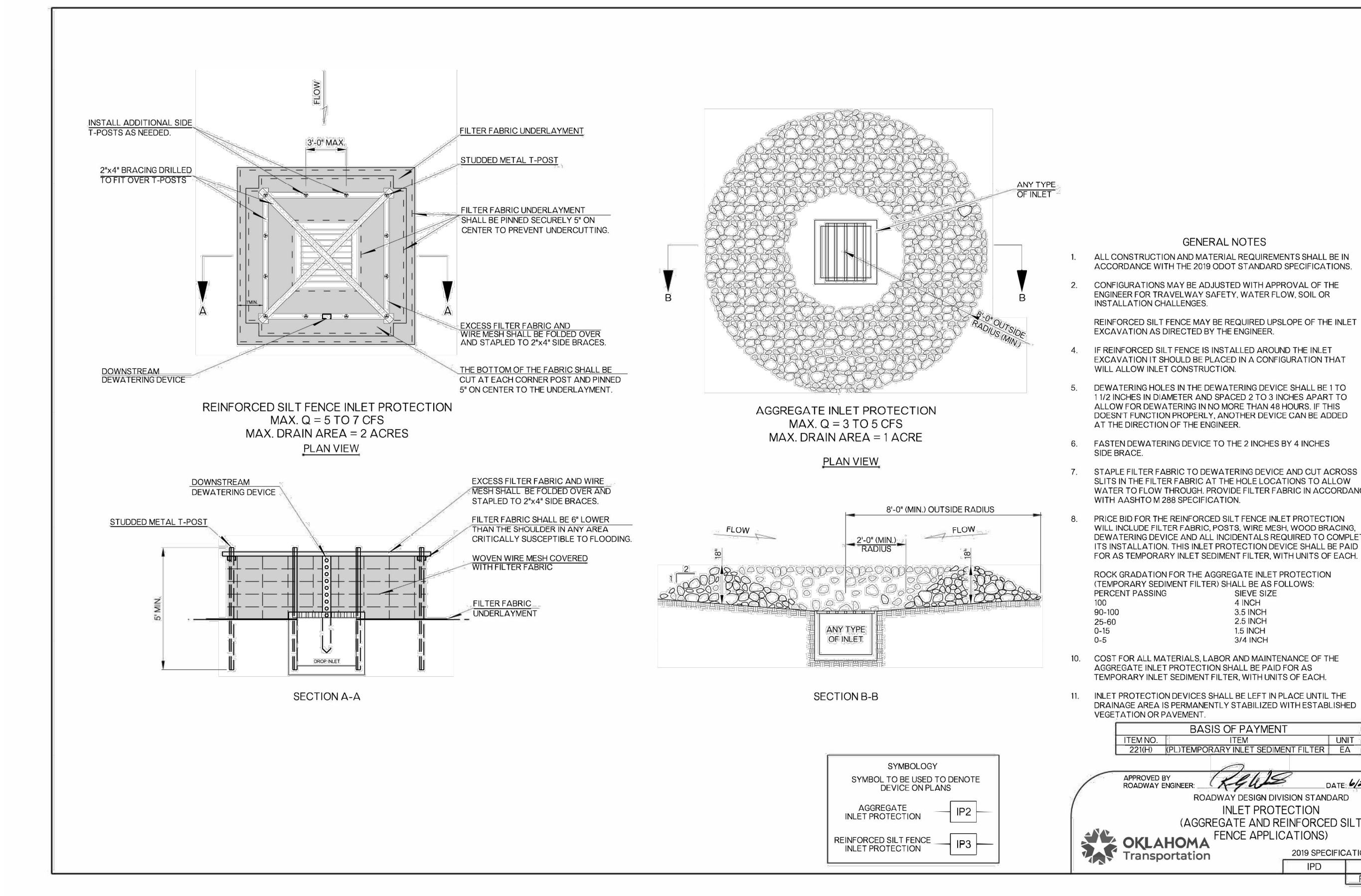
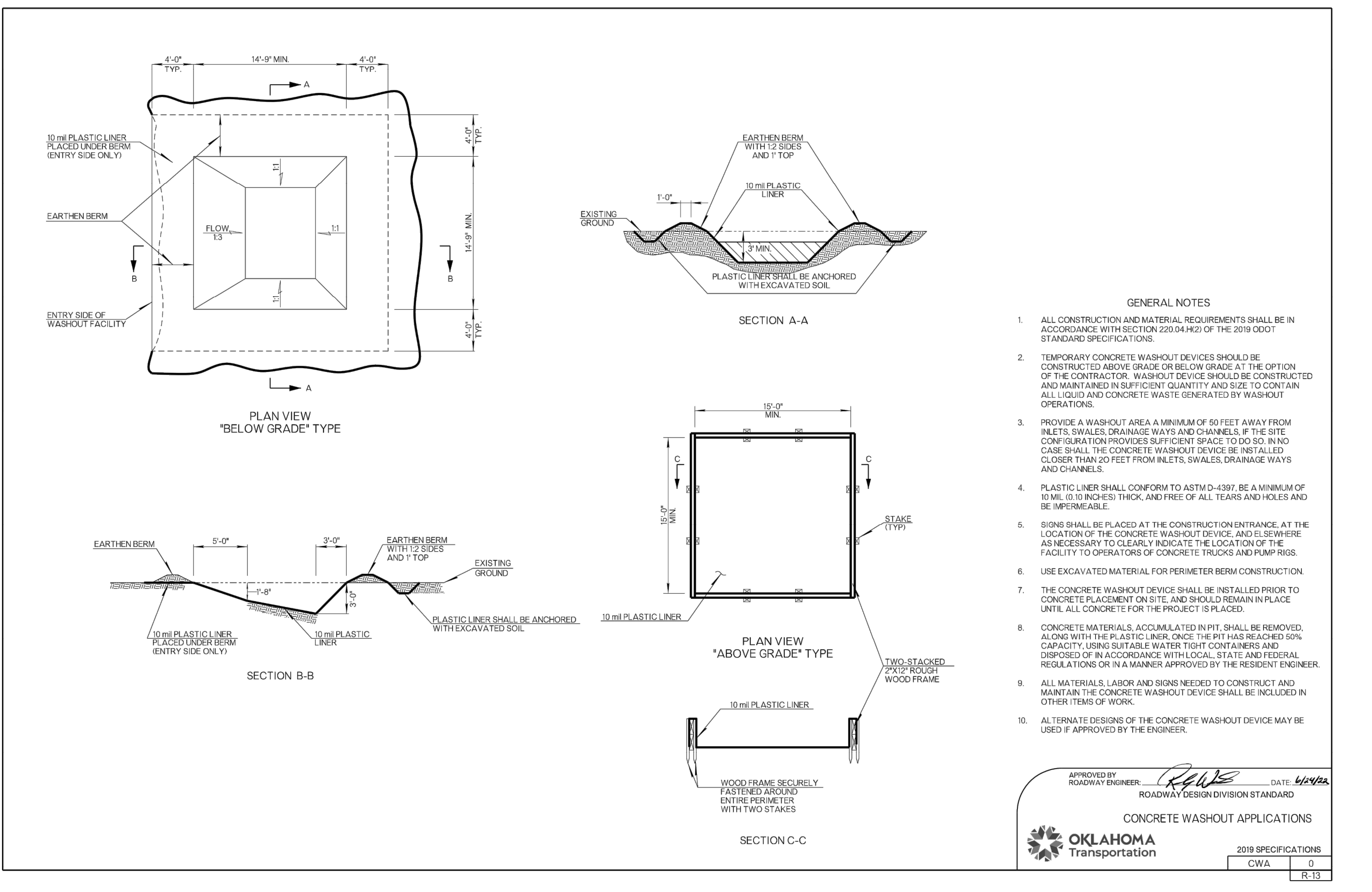
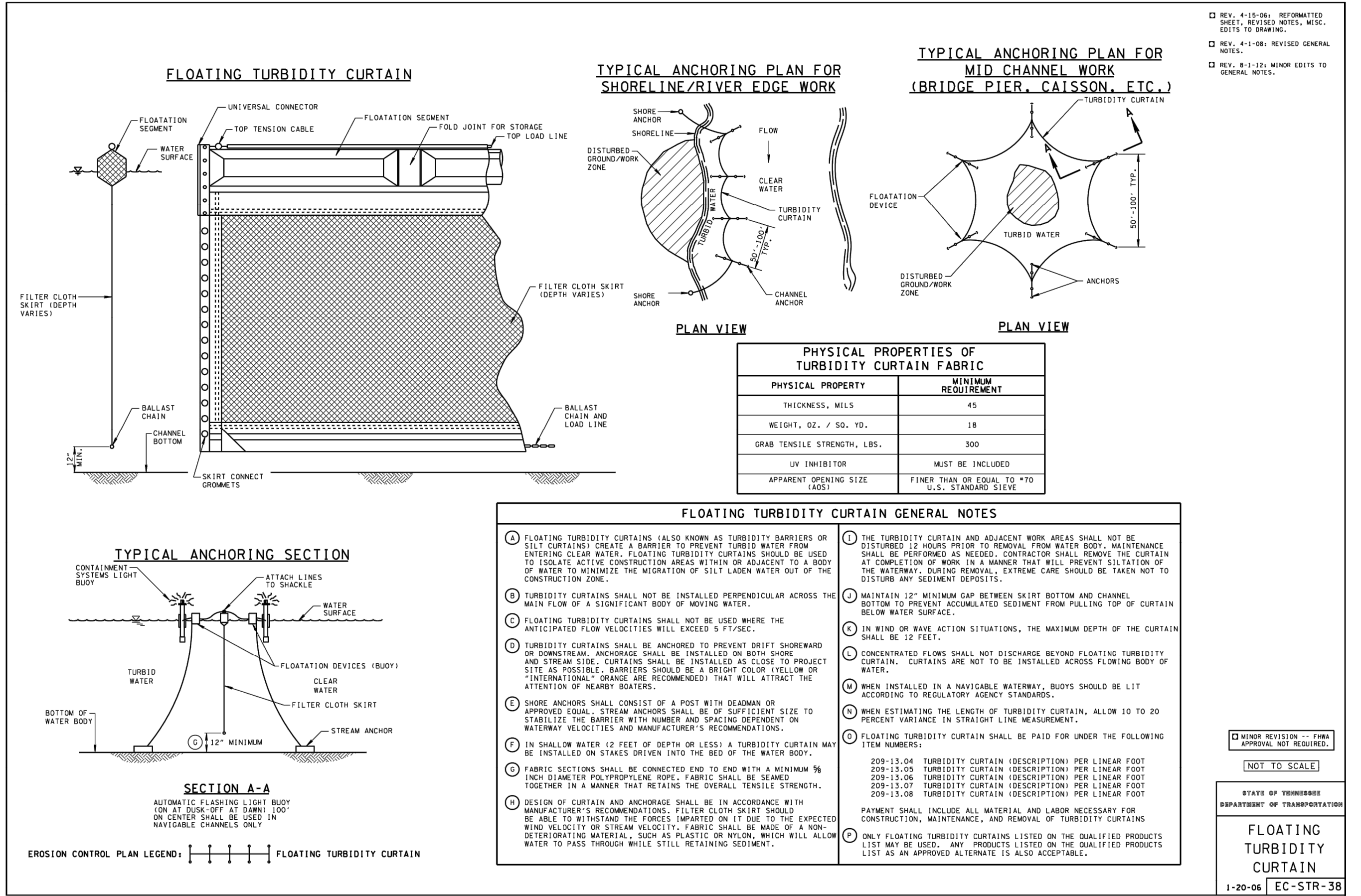
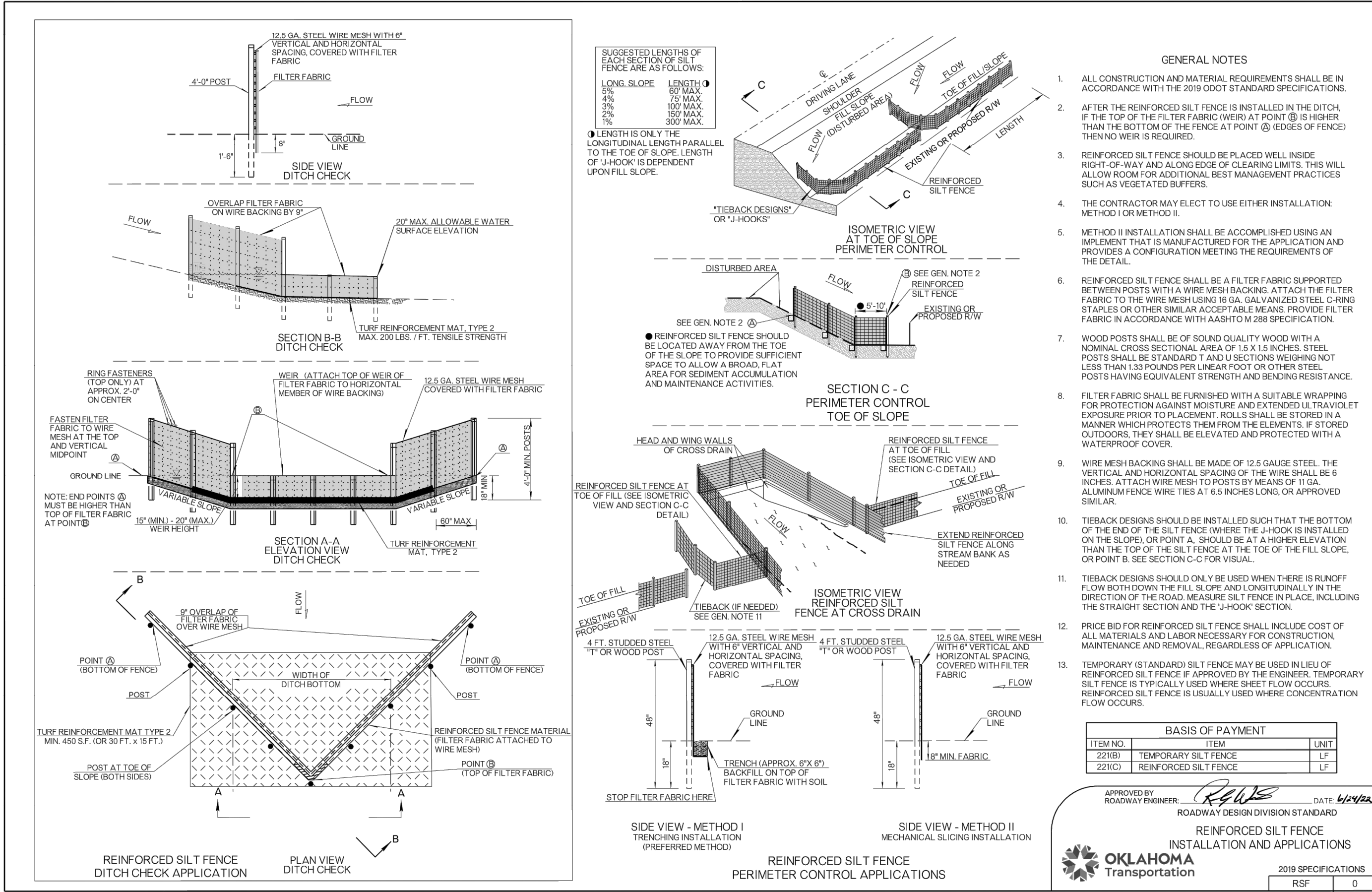


Scale For Microfilming

Inches

Millimeters

A  
B  
C  
D  
E  
F  
G  
H  
I  
J



no.	date	by	ckd	description

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November 2, 2023

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1317 EXECUTIVE BLVD, SUITE 300  
CHESAPEAKE, VA 23320  
757-548-2056

date	detailed
NOVEMBER 2, 2023	D. CORTINAS
designed	checked
A. MONSOUR	B. CHEWNING

# BID PACKAGE

MUSKOGEE, OKLAHOMA

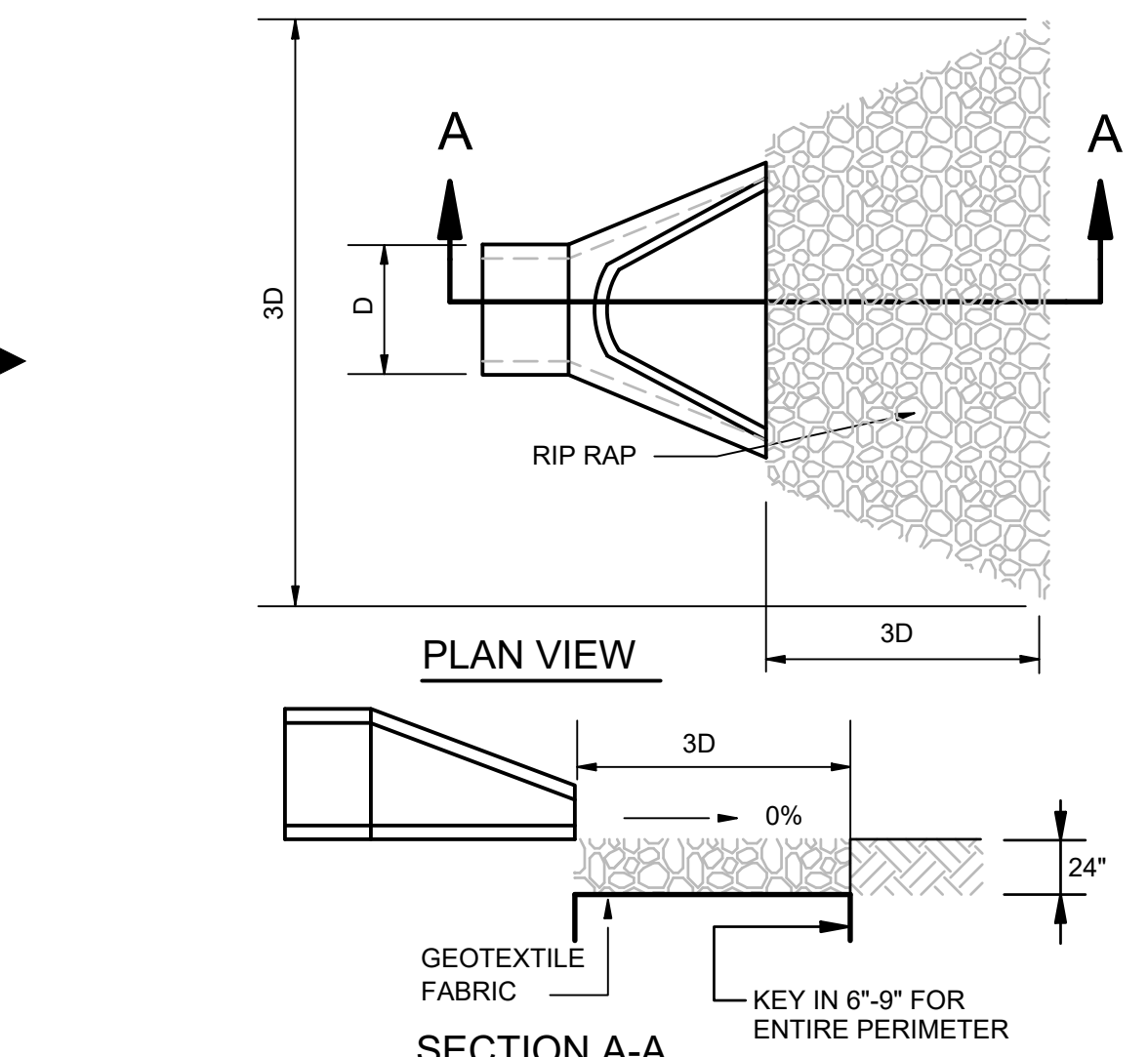
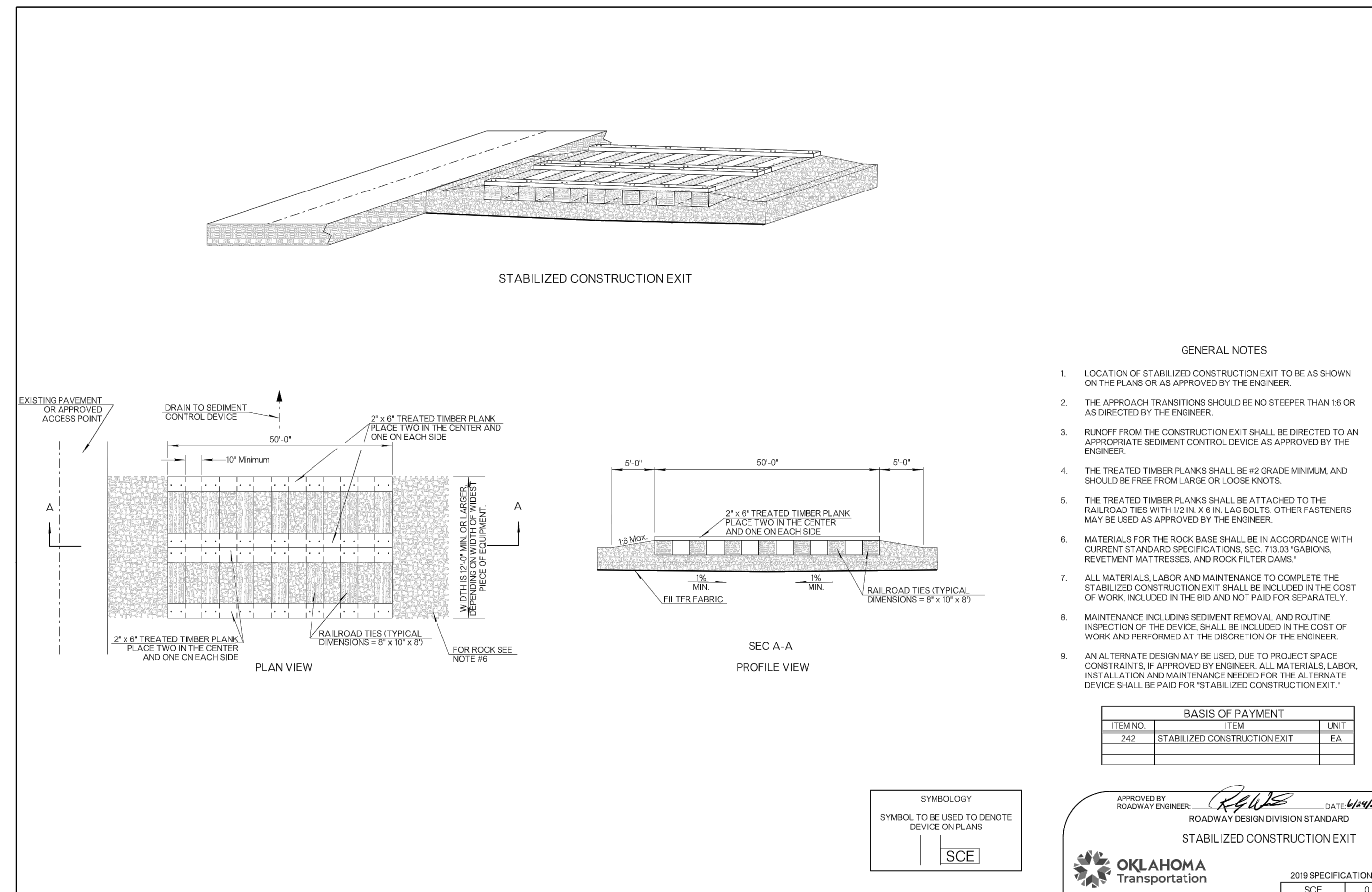
**QUALITY LIQUID FEEDS INFRASTRUCTURE IMPROVEMENTS**

EROSION AND SEDIMENT CONTROL DETAILS

project 152812 | contract ---

drawing CE501 - A

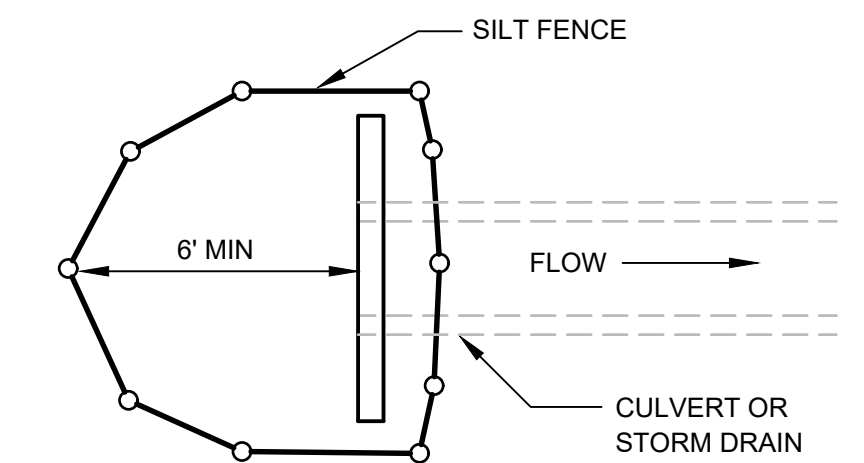
sheet 6 of 18 sheets  
file 152812-CE501-ESC DETAILS.DWG



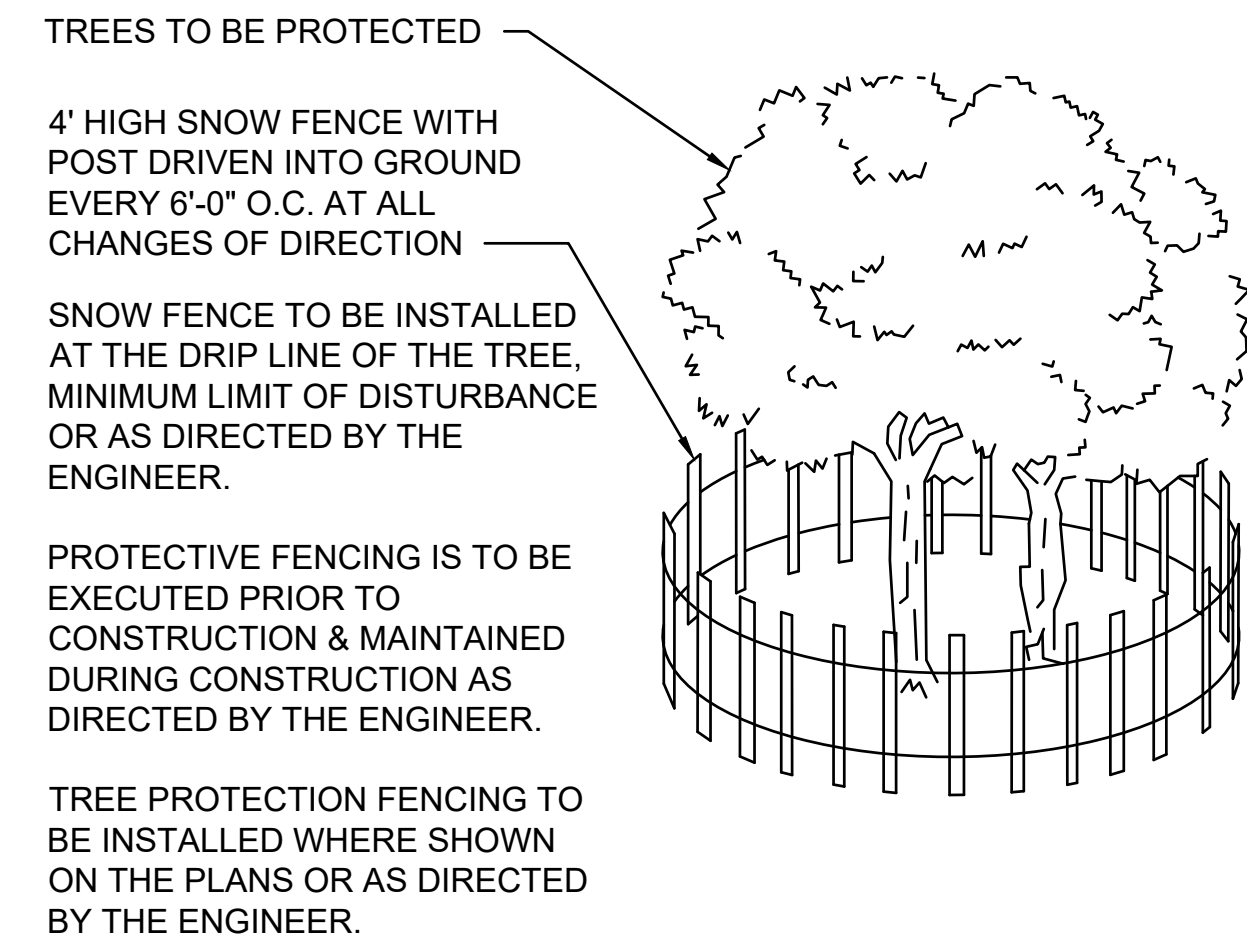
**OUTLET PROTECTION SUMMARY**

OUTLET PROTECTION ID	PIPE OUTFALL	APRON LENGTH (FT)	WIDTH AT OUTLET (FT)	WIDTH AT END OF APRON (FT)	RIPRAP D <sub>50</sub> (IN)	RIPRAP THICKNESS (IN)
OP-1	FES-100	10'	6.00'	12.00'	6"	18"
OP-2	FES-200	10'	3.75'	11.25'	6"	18"
OP-3	FES-300	10'	3.75'	11.25'	6"	18"
OP-4	FES-400	10'	3.75'	11.25'	6"	18"
OP-5	FES-900	10'	3.00'	11.00'	6"	18"
OP-6	FES-2000	10'	4.50'	11.50'	6"	18"

**OUTLET PROTECTION** (OP)



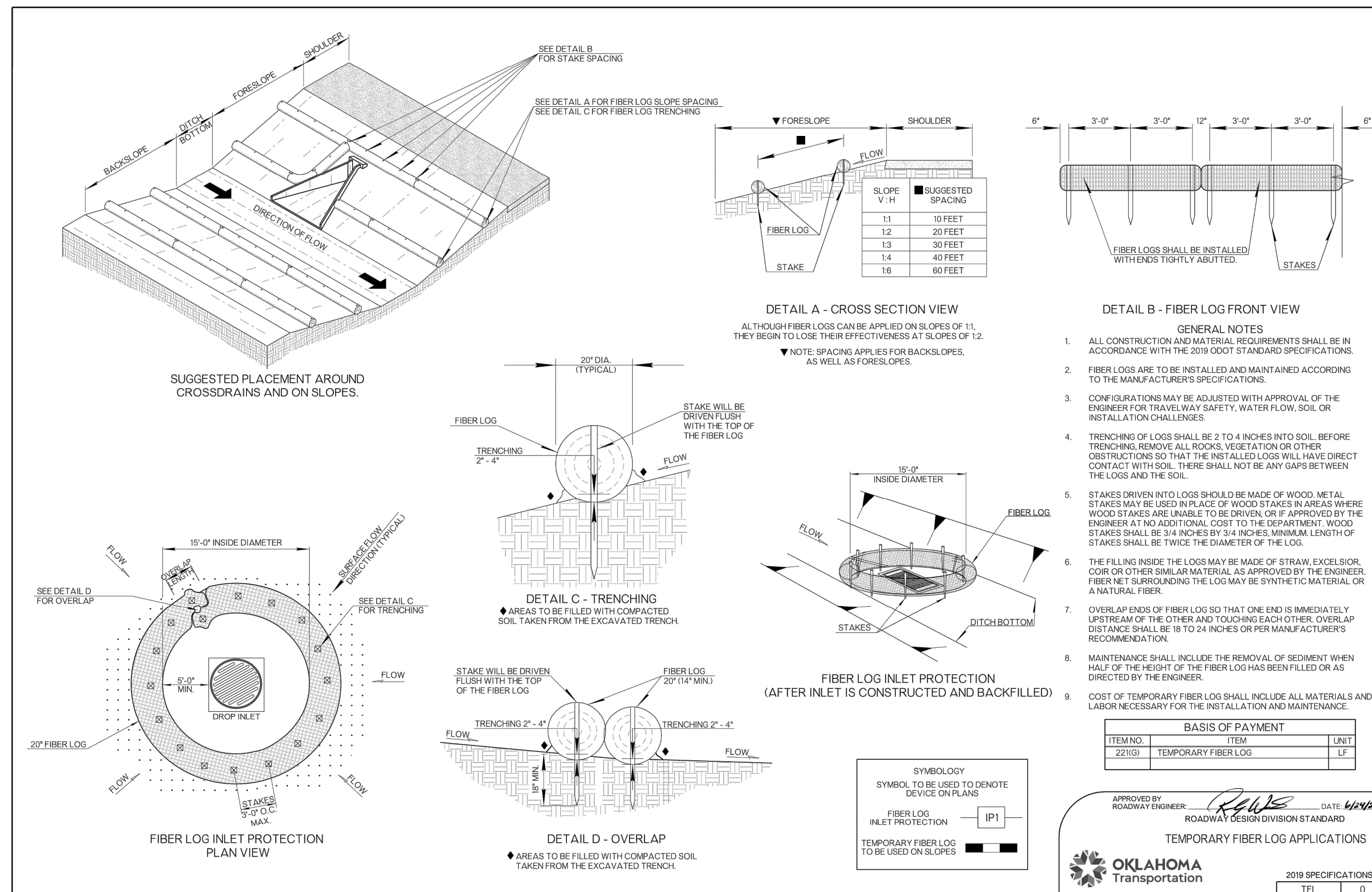
**CULVERT INLET PROTECTION** (CIP)



- NOTES:**
- THE CONTRACTOR SHALL NOT STORE EQUIPMENT AND / OR MATERIALS OF ANY NATURE UNDER THE DRIP LINE OF TREES.
  - WHERE TREE ROOTS ARE ENCOUNTERED, THE CONTRACTOR SHALL TUNNEL UNDER THE ROOTS TO AVOID DAMAGE BEING DONE TO THEM. ONLY LARGE ROOTS WHICH ARE BRUISED OR BROKEN SHALL BE PRUNED AS DIRECTED BY THE ENGINEER.
  - THE ENGINEER MAY DIRECT THE CONTRACTOR TO INSTALL A PROTECTIVE WRAPPING AROUND THE TRUNK OR BRANCHES TO MINIMIZE DAMAGE IN THE EVENT THE CONSTRUCTION EQUIPMENT ACCIDENTALLY COMES IN CONTACT WITH THE TREE. THIS WRAPPING SHALL CONSIST OF MULTIPLE LAYERS OF BURLAP AND WOODEN SNOW FENCING. THE WRAPPING SHALL BE TIED TO THE TREE IN SUCH A MANNER AS TO PRECLUDE DAMAGING THE BARK. IN NO EVENT SHALL NAILS OR OTHER MECHANICAL FASTENERS BE USED TO FASTEN ANYTHING TO THE TREES.
  - IN THE EVENT MINOR TREE DAMAGE OCCURS DESPITE THE CONTRACTOR'S BEST EFFORTS TO PROTECT THE TREES, THE CONTRACTOR SHALL BRING THE DAMAGE TO THE ENGINEER'S ATTENTION.
  - CONSTRUCTION FENCE SHALL BE SET BACK 1 FOOT PER 1 INCH OF TREE CALIPER OR THE DRIP LINE WHICHEVER IS GREATER.

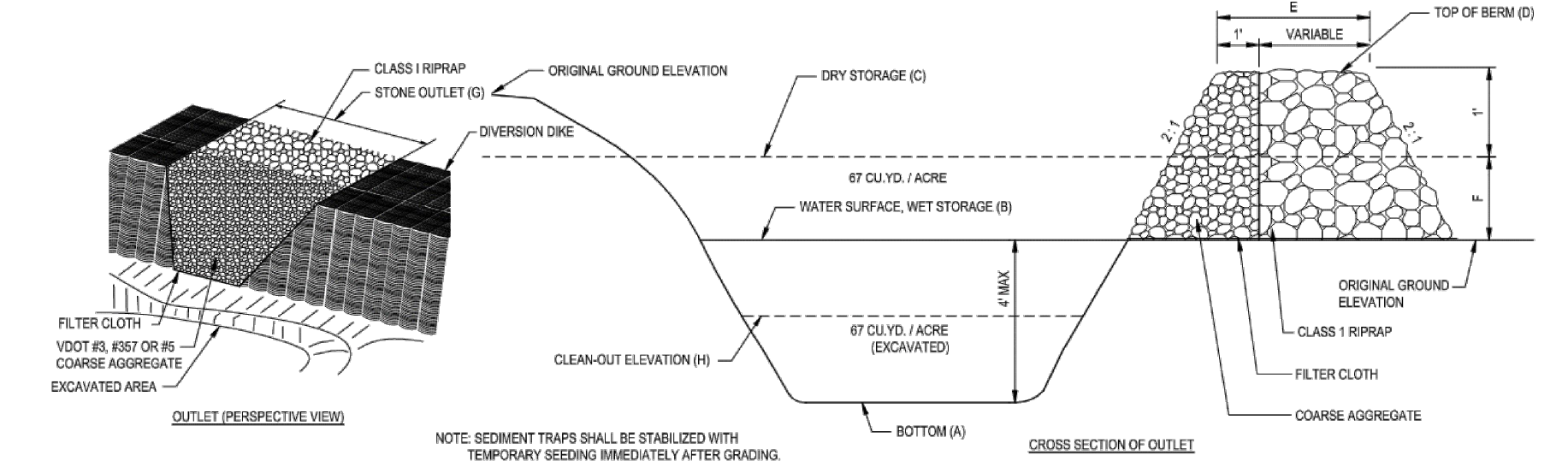
**TREE PROTECTION DETAIL**

IF AND WHERE REQUIRED BY THE LOCAL SOIL CONSERVATION DISTRICT AND / OR THE PROJECT ENGINEER



**SEDIMENT TRAP DESIGN SCHEDULE**

SEDIMENT TRAP NO.	DRAINAGE AREA (acres)	STORAGE REQUIRED		STORAGE PROVIDED		WET STORAGE DIMENSIONS			AREA AT TOP OF WET STORAGE (sq ft)	AREA AT TOP OF DRY STORAGE (sq ft)	H HEIGHT OF BERM (ft)	W BERM WIDTH (ft)	Ho WEIR OUTLET HEIGHT (ft)	L WEIR LENGTH (ft)	ELEVATION TOP OF BERM (ft)	CLEAN-OUT ELEVATION (ft)
		WET (cu ft)	DRY (cu ft)	WET (cu ft)	DRY (cu ft)	DEPTH (ft, DI)	L = (ft)	W = (ft)								
1	4.989	9099	9099	10841	9195	1.25	270.00	35.00	9450	5262	2.25	2.50	1.25	29.88	499.65	498.40



no. | date | by | ckd | description



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CHESAPEAKE, VA 23320  
757-548-2056

date: NOVEMBER 2, 2023  
designed: A. MONSOUR  
checked: D. CORTINAS, B. CHEWNING

**BID PACKAGE**

MUSKOGEE, OKLAHOMA  
QUALITY LIQUID FEEDS  
INFRASTRUCTURE IMPROVEMENTS  
EROSION AND SEDIMENT CONTROL DETAILS

project: 152812  
drawing: CE502 - A  
sheet 7 of 18 sheets  
file: 152812-CE501-ESC DETAILS.DWG

13.7.10.2 Design Detailing

The drainage area of the ditch or swale being protected should not exceed 10 acres. The maximum height of the check dam should be 2 ft. The center of the check dam should be at least 6 inches lower than the outer edges. If used in combination, the maximum spacing between the dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

13.7.10.3 Construction Guidelines

- Stone check dams should be constructed of 2 in to 3 in stone. Hand or mechanical placement will be necessary to achieve complete coverage of the ditch or swale and to ensure that the center of the dam is lower than the edges.
- Log check dams should be constructed of 4 in to 6 in logs salvaged from clearing operations on site, if possible. The logs should be embedded into the soil at least 1.5 ft. The 6-in lower height required at the center can be achieved either by careful placement of the logs or by cutting the logs after they are in place.
- Logs or brush, or both, should be placed on the downstream side of the dam to prevent scour during high flows.
- Although this practice is not intended to be used primarily for sediment trapping, some sediment will accumulate behind the check dams. Sediment should be removed from behind the check dams when it has accumulated to half of the original height of the dam.
- Check dams should be removed when their useful life has been completed. In temporary ditches and swales, check dams should be removed and the ditch filled in when it is no longer needed. In permanent structures, check dams should be removed where a permanent lining can be installed. For grass-lined ditches, check dams should be removed when the grass has matured sufficiently to protect the ditch or swale. The area beneath the check dams should be seeded and mulched immediately after they are removed.

13.7.11 Temporary Sediment Trap

This is a small, temporary ponding area formed by constructing an earthen embankment with a control outlet, generally constructed of rock or gravel (see Figure 13.7-J). The purpose is to detain sediment-laden runoff from small, disturbed areas long enough to allow the majority of the sediment to settle out.

Erosion and Sediment Control 13.7-15

13.7.11.2 Design Detailing (Trap Capacity)

The sediment trap should have an initial storage volume of 67 yd<sup>3</sup> per acre of drainage area, measured from the low point of the ground to the crest of the gravel outlet. Sediment should be removed from the basin when the volume is reduced by half.

For a natural basin, the volume may be approximated as follows:

$$V = (0.4)(A)(D) \quad \text{Equation 13.7(1)}$$

Where:

- V = the storage volume, ft<sup>3</sup>
- A = the surface area of the flooded area at the crest of the outlet, ft<sup>2</sup>
- D = the maximum depth, measured from the low point in the trap to the crest of the outlet, ft

13.7.11.3 Design Detailing

The hydraulics designer should consider the following:

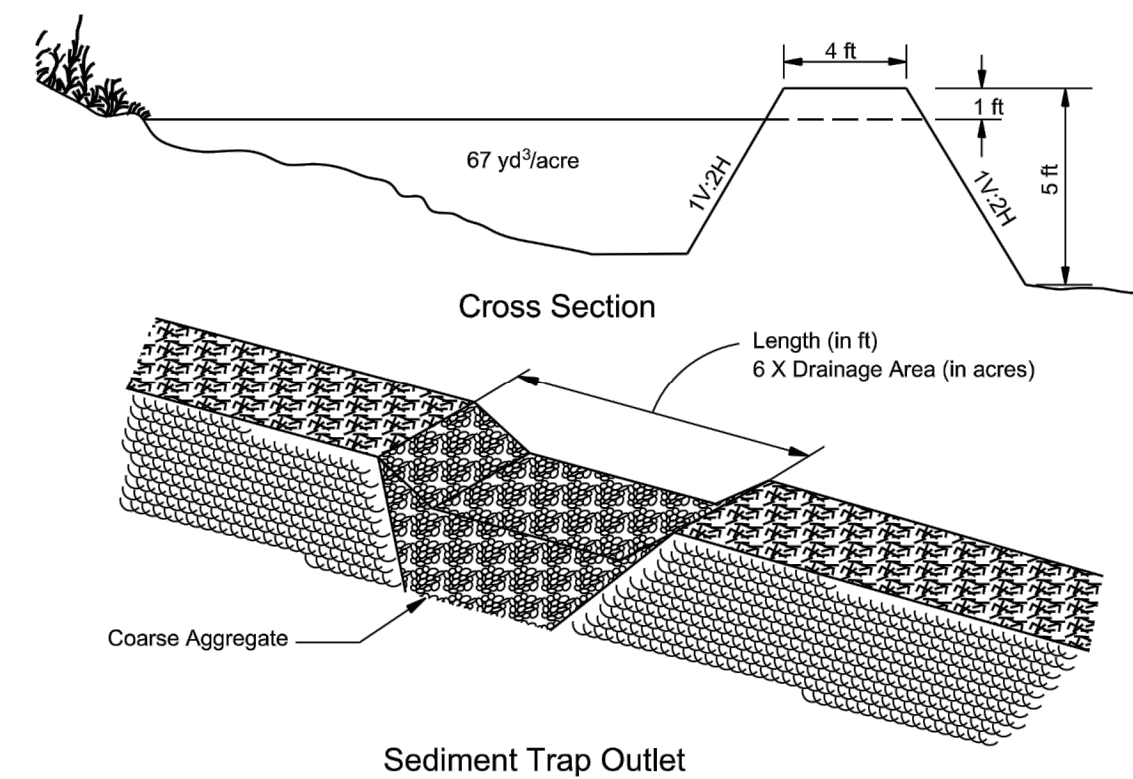
- Side Slopes.** If excavation is necessary to attain the required storage volume, side slopes should be no steeper than 1V:2H.
- Outlet.** The outlet for the sediment trap generally consists of a crushed stone section of the embankment located at the low point in the basin. The minimum length of the outlet crest should be 15 ft times the acre of the drainage area. The crest of the outlet should be at least 1 ft below the top of the embankment to ensure that the flow will travel over the stone and not the embankment.
- Embankment Cross Section.** The maximum height of the sediment trap embankment should be 5 ft as measured from the low point. Minimum top widths (W) and outlet heights (H<sub>o</sub>) for various embankment heights (H) are shown in Figure 13.7-K. Side slopes of the embankment should be 1V:2H or flatter.

13.7.11.4 Construction Guidelines

The hydraulics designer should consider the following construction guidelines:

- The area under the embankment should be cleared, grubbed and stripped of any vegetation and root mat. To facilitate cleanout, the pool area should be cleared.
- Fill material for the embankment should be free of roots or other woody vegetation, organic material, large stones and other objectionable material. The embankment should be compacted in 8-in layers by traversing with construction equipment.

Erosion and Sediment Control 13.7-17



Source: Virginia Erosion and Sediment Control Handbook (4)

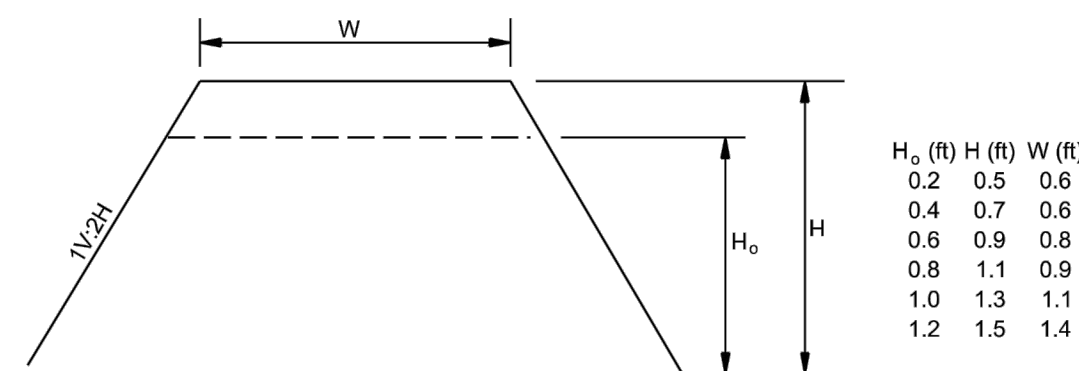
Figure 13.7-J — TEMPORARY SEDIMENT TRAP

13.7.11.1 Use Limitations

The hydraulics designer should consider the following use limitations:

- Use for drainage areas of 5 acres or less.
- Use where the sediment trap will be needed no longer than 18 months. The maximum useful life is 18 months.
- The sediment trap may be constructed either independently or in conjunction with a temporary diversion dike.
- Sediment traps should be used only for small drainage areas. If the contributing drainage area is greater than 5 acres, sediment basins should be used.
- Sediment should be periodically removed from the trap. Plans should detail how this sediment is to be disposed of, such as by use in fill areas on-site or removal to an approved off-site location.
- Sediment traps, along with other perimeter controls, should be installed before any land disturbance occurs in the drainage area.

13.7-16 Erosion and Sediment Control



Source: Modified From Virginia Erosion & Sediment Control Handbook (4)

Figure 13.7-K — MINIMUM TOP WIDTH (W) REQUIRED FOR SEDIMENT TRAP EMBANKMENTS ACCORDING TO HEIGHT OF EMBANKMENT

- The earthen embankment should be seeded with temporary or permanent vegetation within 15 days of construction.
- Construction operations should be performed so that erosion and water pollution are minimized.
- The structure should be removed and the area stabilized when the upslope drainage area has been stabilized.
- All cut and fill slopes should be 1V:2H or flatter.
- Plans should show how the site of the sediment trap is to be graded and stabilized after removal.

13.7.12 Temporary Sediment Basin

A storage area is provided to detain sediment-laden runoff from disturbed areas long enough for the majority of the sediment to settle out. The facility is a temporary basin with a controlled stormwater release structure, formed by constructing an embankment of compacted soil across a drainageway.

13.7.12.1 Use Limitations

Temporary sediment basins can be used below disturbed areas generally greater than 5 acres. There should be sufficient space and appropriate topography for the construction of a temporary impoundment. These structures are limited to a useful life of 18 months, unless they are designed as permanent ponds by a qualified professional engineer. Use the following guidelines when considering a sediment basin:

- Effectiveness.** Sediment basins are at best only 70% to 80% effective in trapping sediment that flows into them. Therefore, they should be used in conjunction with

13.7-18 Erosion and Sediment Control

The Resident Engineer will accept seed lots if the seed report correlates with the seed tags of the same lot number.

Remove the seed and tags from the original tagged and sealed bag when approved by the Resident Engineer. After approval, mix, sack, and batch the seed as required by the Contract. Tag the seed with identification and mass. Mix or sack into batches under the Resident Engineer's supervision. Ensure the seeds do not contain Johnson grass seed.

Seed Type	PLS Index % minimum	% minimum		Weed Seeds
		Purity	Germination	
<b>Bermuda grass:</b>				
Common (Cynodon dactylon)				
Unhulled	80	—	—	0.2
Hulled	82	—	—	0.2
<b>Guyton variety (Cynodon dactylon):</b>				
Unhulled	80	—	—	2.0
Hulled	82	—	—	2.0
<b>Bleeders:</b>				
Big (Andropogon gerardi) <sup>3</sup>	20	—	—	—
Caucasian (Andropogon caucasicus)	15	—	—	—
Little (Andropogon scoparius) <sup>3</sup>	15	—	—	—
Plains (Bothriochloa ischaemum) <sup>3</sup>	30	—	—	1.0
Sand (Andropogon hallii) <sup>3</sup>	20	—	—	—
Yellow (Andropogon ischaemum)	18	—	—	—
Brome, smooth (Bromus inermis)	70	—	—	2.0
Buffalo grass (Buchloe dactyloides) <sup>3</sup>	55	—	—	—
Bar-clover (Medicago hispida, arabica or rigidula)	—	98	85	1.0
<b>Clover:</b>				
Crimson (Trifolium incarnatum)	—	95	85	0.5
Large hop (Trifolium procumbens) <sup>3</sup>	—	95	85	0.5
Small hop (Trifolium dubium) <sup>3</sup>	—	95	85	0.5
Drop seed, sand (Sporobolus erypandus)	70	—	—	2.0
Fescue, tall (Festuca arundinacea)	80	—	—	0.5
<b>Grams:</b>				
Blue (Bouteloua gracilis) <sup>3</sup>	25	—	—	—
Side-outs (Bouteloua curtipendula) <sup>3</sup>	30	—	—	—
Indian grass (Sorghastrum nutans) <sup>3</sup>	35	—	—	2.0
<b>Lespedeza:</b>				
Common (Lespedeza striata)	—	97	90	0.5
Korean (Lespedeza stipulacea) <sup>3</sup>	—	97	90	0.5
Roundhead (Lespedeza capitata)	—	97	90	0.5
Sericea (Lespedeza cuneata) <sup>3</sup>	—	98	90	0.5
<b>Love grass:</b>				
Sand (Eragrostis trichodes) <sup>3</sup>	65	—	—	0.5

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Seed Type	PLS Index % minimum	% minimum		Weed Seeds
		Purity	Germination	
Weeping (Eragrostis curvula)	80	—	—	0.3
Millet, German foxtail (Setaria italica)	—	98	80	0.5
<b>Native grasses (Mostly little bluestem)<sup>3</sup></b>				
—	15	—	—	—
Oats (Avena sativa)	—	95	80	0.5
Rye (Secale cereale)	—	90	70	0.3
<b>Ryegrass:</b>				
Annual (Lolium multiflorum)	85	—	—	0.2
Perennial (Lolium perenne)	85	—	—	0.2
Sudan grass (Sorghum vulgare sudanense)	—	98	80	0.5
Switch grass (Panicum virgatum)	60	—	—	2.0
Wheat (Triticum aestivum)	—	96	80	0.1
Wheat grass, western (Agropyron amabilis) <sup>3</sup>	56	—	—	1.0

<sup>3</sup> Calculate the Pure Live Seed (PLS) Index in accordance with the equations following Table 735-1.  
<sup>4</sup> The seed must come from Oklahoma, Texas, Kansas, or New Mexico.  
<sup>5</sup> Provide seed that is pre-chilled and treated with potassium nitrate in accordance with the Hays Treatment Technique.  
<sup>6</sup> Treat the seed with a nitrogen fixing inoculant, manufactured by commercial laboratories for the legume. Store and handle the inoculant in accordance with the manufacturer's directions.

Calculate the PLS Index from information on the seed tag, in accordance with the following equation:

$$PLS_p = \frac{P \times (G + FS)}{100}$$

where

- PLS<sub>p</sub> = PLS Index of seed provided,
- P = Percent purity,
- G = Percent germination, and
- FS = Percent firm seed.

The Department defines the weight [mass] of seed in pounds [kilograms] of bulk seed. If the PLS Index of a seed lot exceeds the minimum PLS Index, specified in Table 735-1, "Seed Specifications," by at least 25 percent, adjust the amount of bulk seed for planting using the following equation:

$$BS_p = \frac{PLS \times BS_c}{PLS_p}$$

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**BURNS MEDONNELL**  
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 757-548-2056

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designed	A. MONSOUR	checked	B. CHEWNING

**BID PACKAGE**

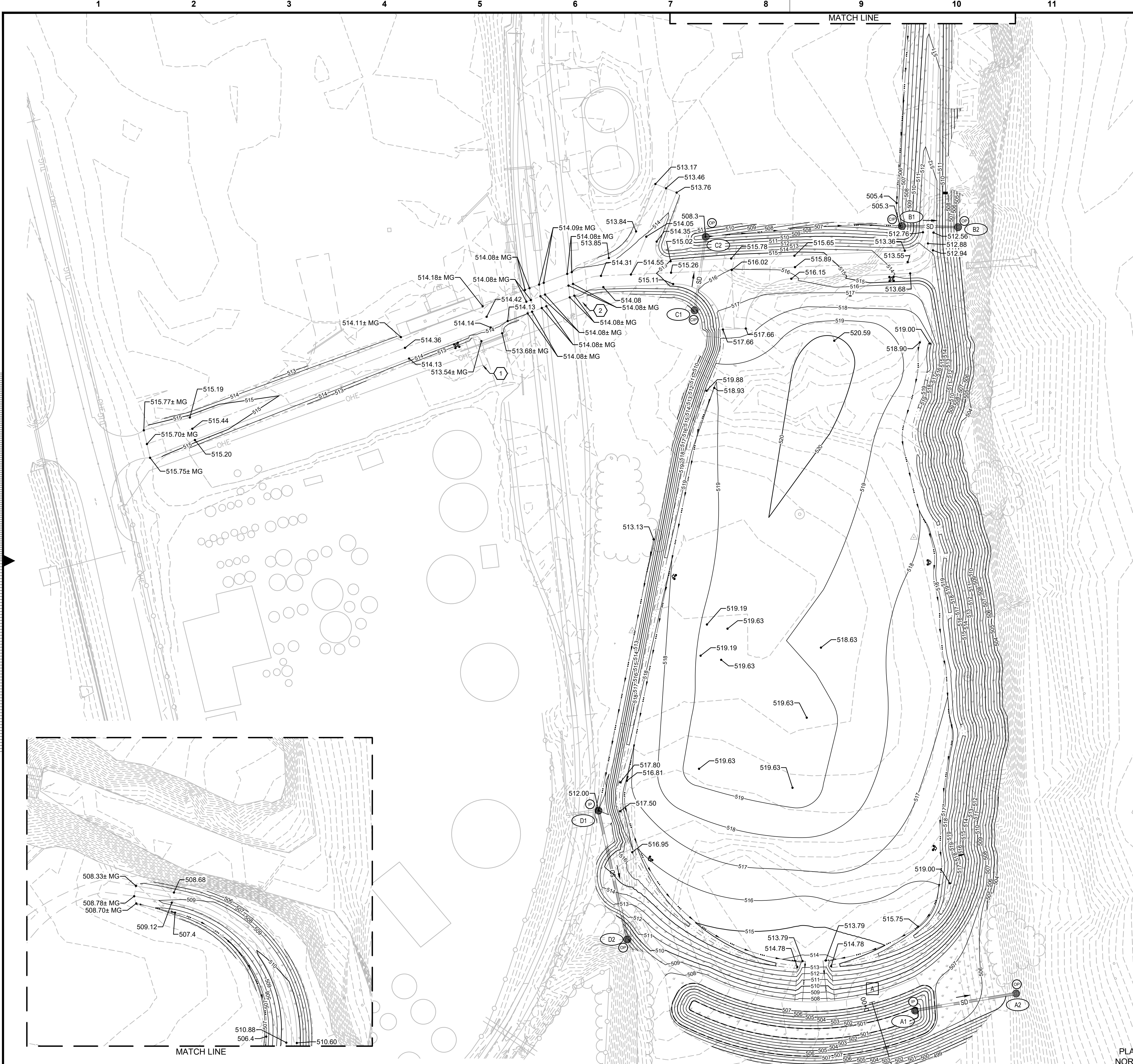
MUSKOGEE, OKLAHOMA

QUALITY LIQUID FEEDS  
 INFRASTRUCTURE IMPROVEMENTS  
 EROSION AND SEDIMENT CONTROL DETAILS

project	152812	contract	---
drawing	CE503	rev.	A

sheet 8 of 18 sheets  
 file 152812-CE501-ESC DETAILS.DWG





**GENERAL NOTES**

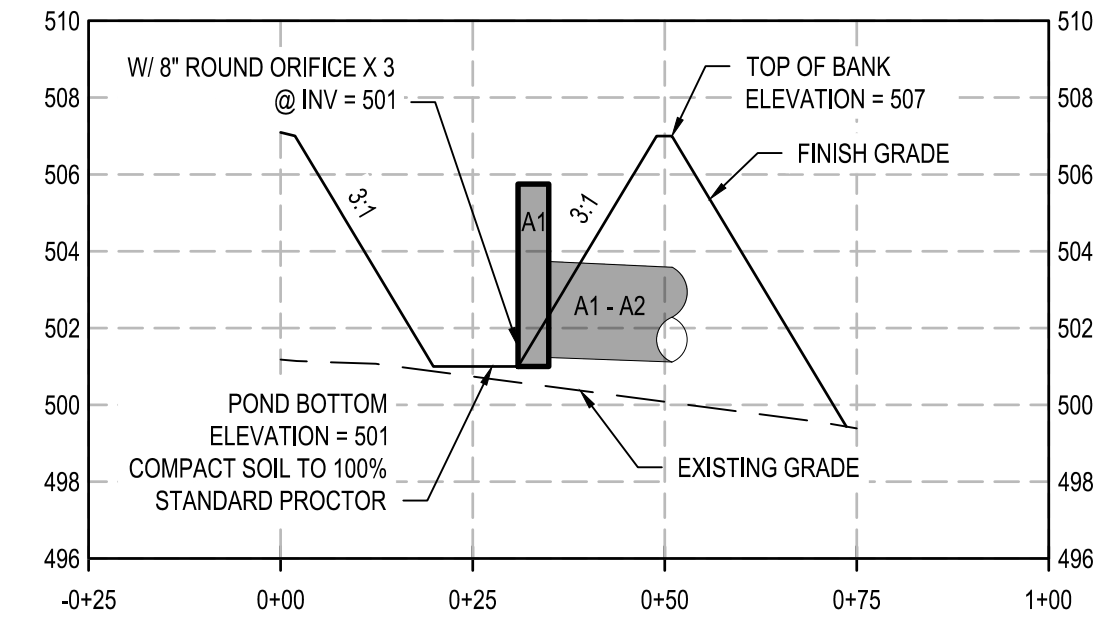
- SEE SHEET CG201 FOR STORM STRUCTURE AND PIPE DATA.
- SITE GRADING NOT IN CONTRACT. SHOWN FOR REFERENCE ONLY.

**KEY NOTES** #

- MOVE CONNEX BOX AS NEEDED FOR FINISH GRADING
- CONNECT SWALE FROM EASTERN SIDE OF EASTERMOST RAIL TO CONVEY WATER INTO STRUCTURE C1.

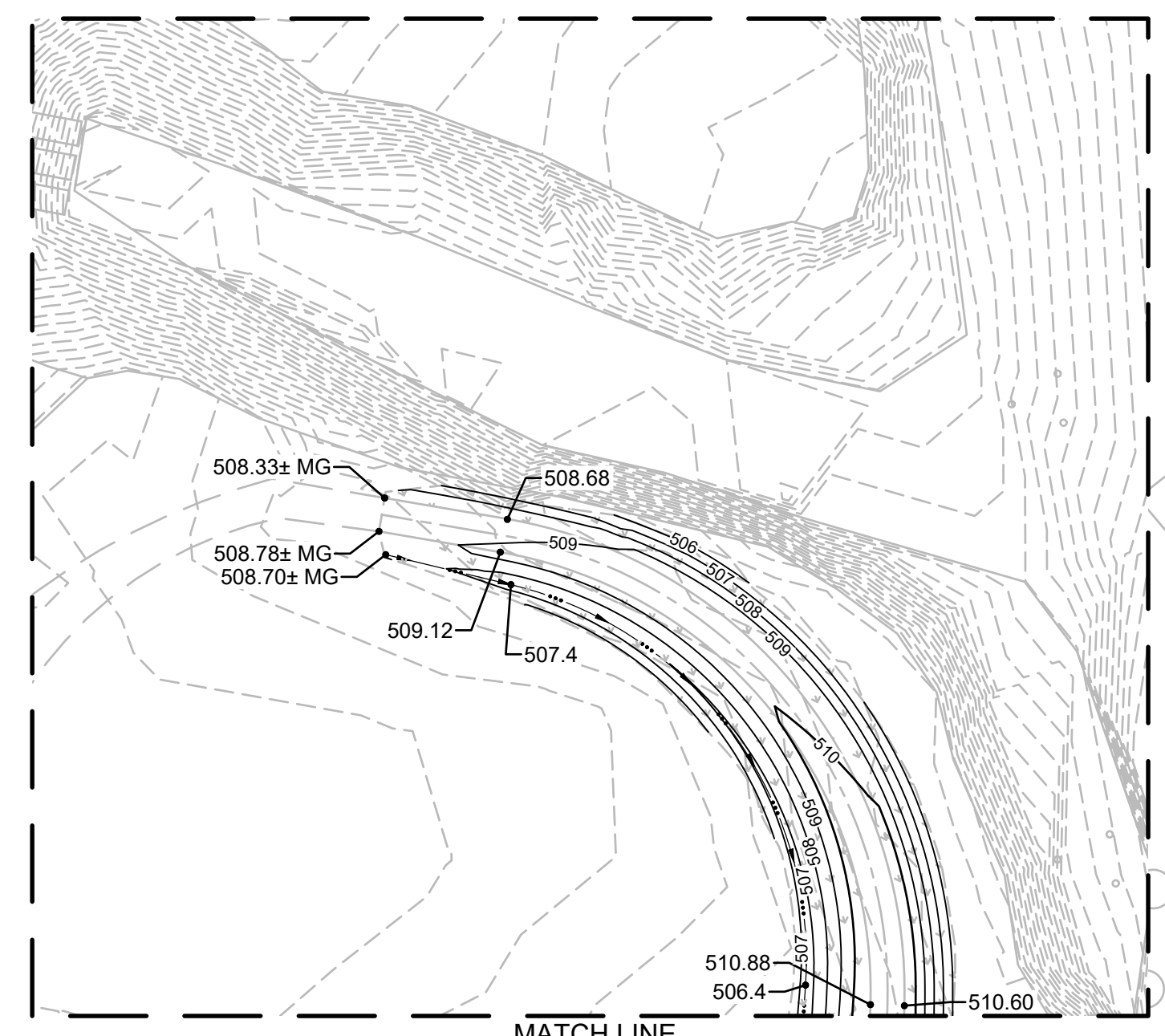
**E & S LEGEND**

TITLE	KEY	SYMBOL
OUTFALL PROTECTION	OP	
INLET PROTECTION	IP	
CULVERT INLET PROTECTION	CIP	



**A-A POND PROFILE**

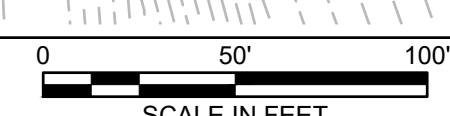
HORIZ: 1"=25'	A1	N:294837.71
VERT: 1"=5'	ODOT CONCRETE DROP INLET	E:2769005.25
		RIM=505.00
	A1 - A2	107 LF - 24" RCP @ 0.93%



**GRADING AND DRAINAGE PLAN**

SCALE: 1" = 50'

PLAN NORTH



no.	date	by	ckd	description
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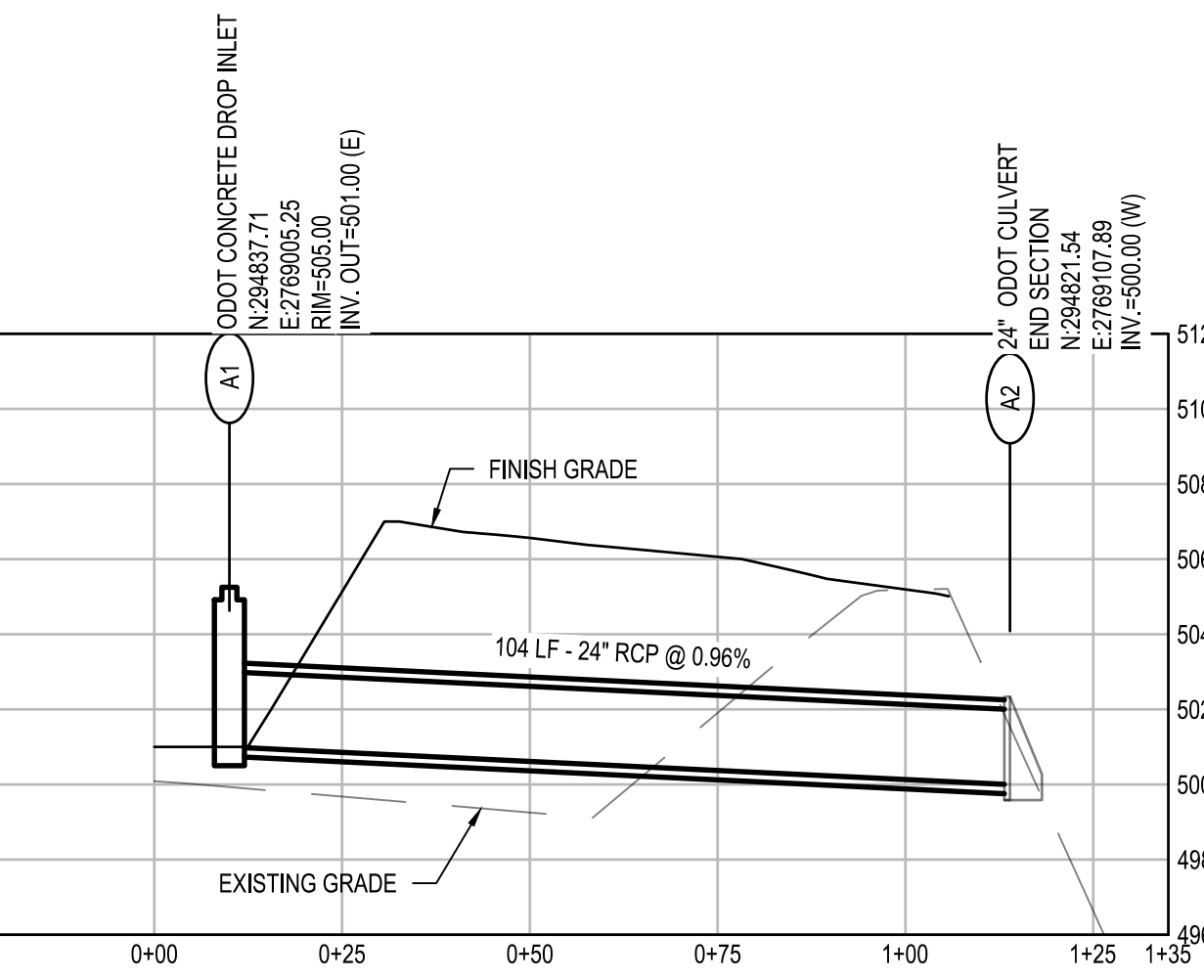
date NOVEMBER 2, 2023	detailed D. CORTINAS
designed A. MONSOUR	checked B. CHEWNING

**BID PACKAGE**

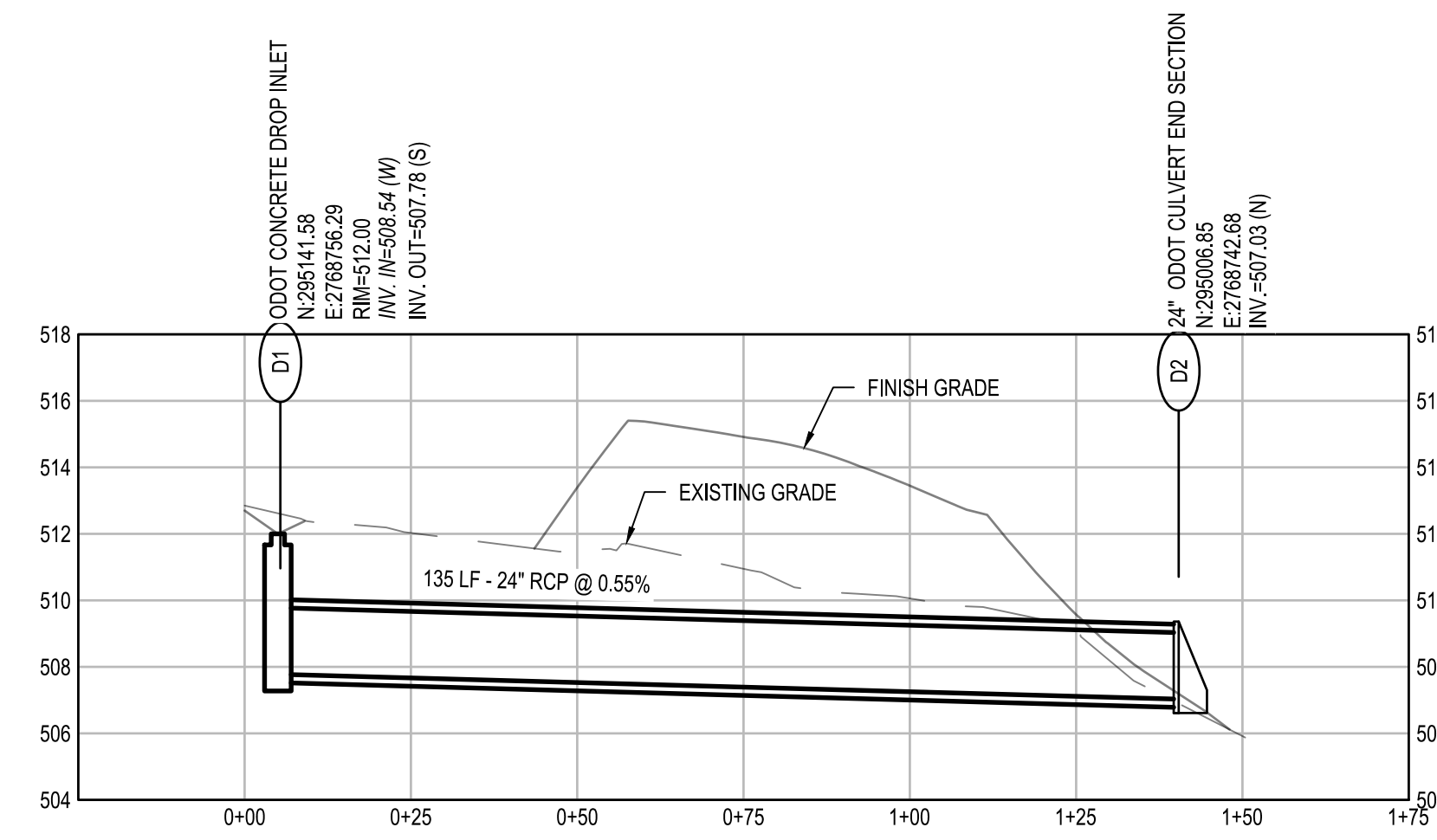
MUSKOGEE, OKLAHOMA  
**QUALITY LIQUID FEEDS**  
**INFRASTRUCTURE IMPROVEMENTS**  
 GRADING AND DRAINAGE PLAN

project 152812	contract ---
drawing <b>CG101</b>	rev. <b>A</b>

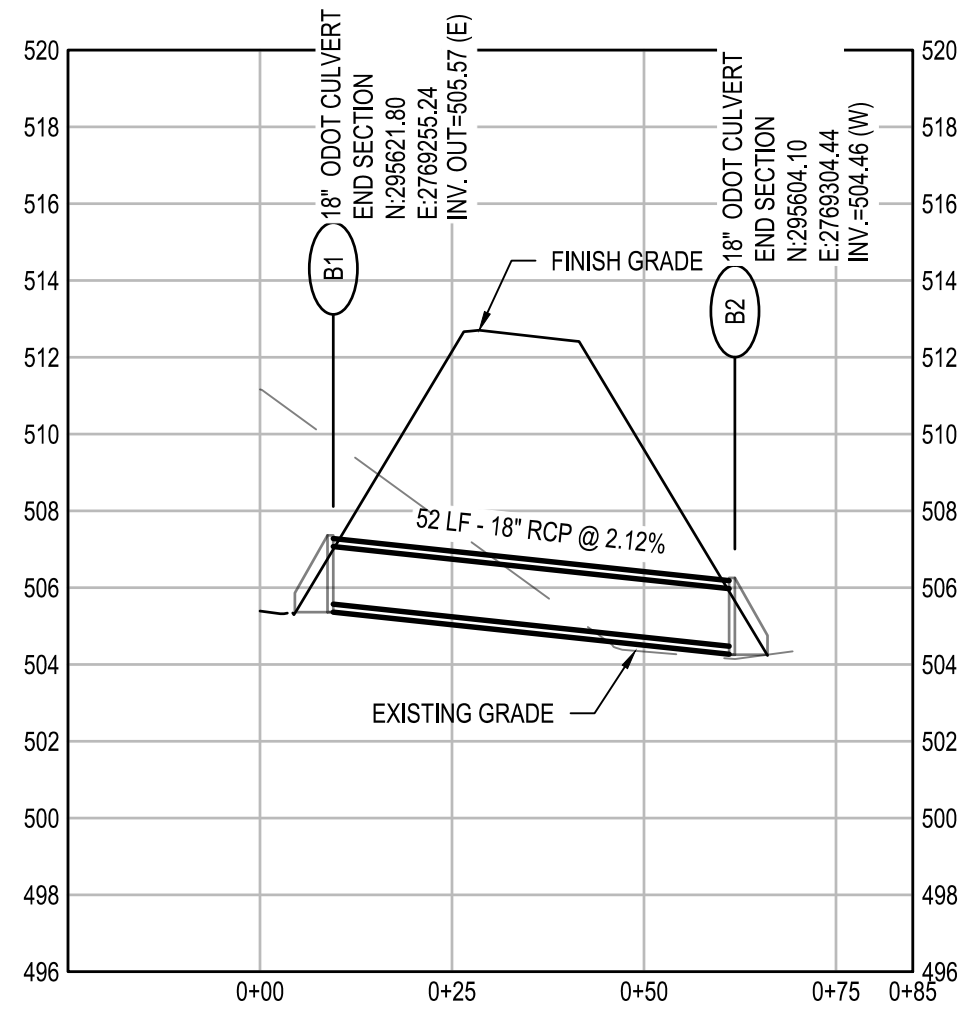
sheet 9 of 18 sheets  
 file 152812-CG101-GRADING PLAN.DWG



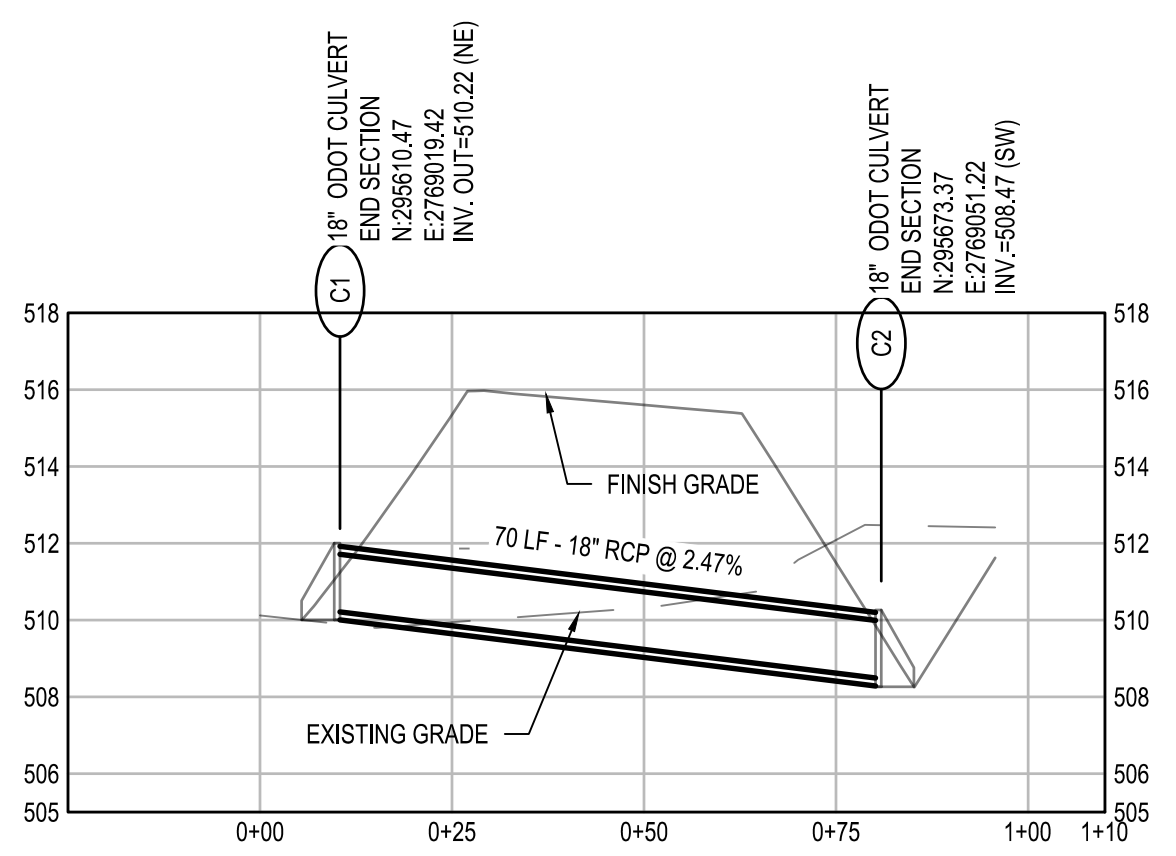
**A1 TO A2 PROFILE STA -0+25.00 TO STA 1+35.00**  
 HORIZ: 1"=25'  
 VERT: 1"=5'



**D1-D2 PROFILE STA -0+25.00 TO STA 1+75.00**  
 HORIZ: 1"=25'  
 VERT: 1"=5'

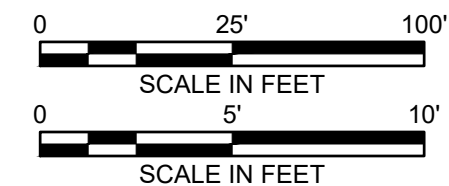


**B1-B2 PROFILE STA -0+25.00 TO STA 0+85.00**  
 HORIZ: 1"=25'  
 VERT: 1"=5'



**C1 PROFILE STA -0+25.00 TO STA 1+10.00**  
 HORIZ: 1"=25'  
 VERT: 1"=5'

Scale For Microfining  
Millimeters  
Inches



no.	date	by	ckd	description
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Oklahoma License No. 30930  
 Issued: 02/28/2019  
 Expires: 02/28/2024  
*Seth M. Gilliam*  
 November 2, 2023

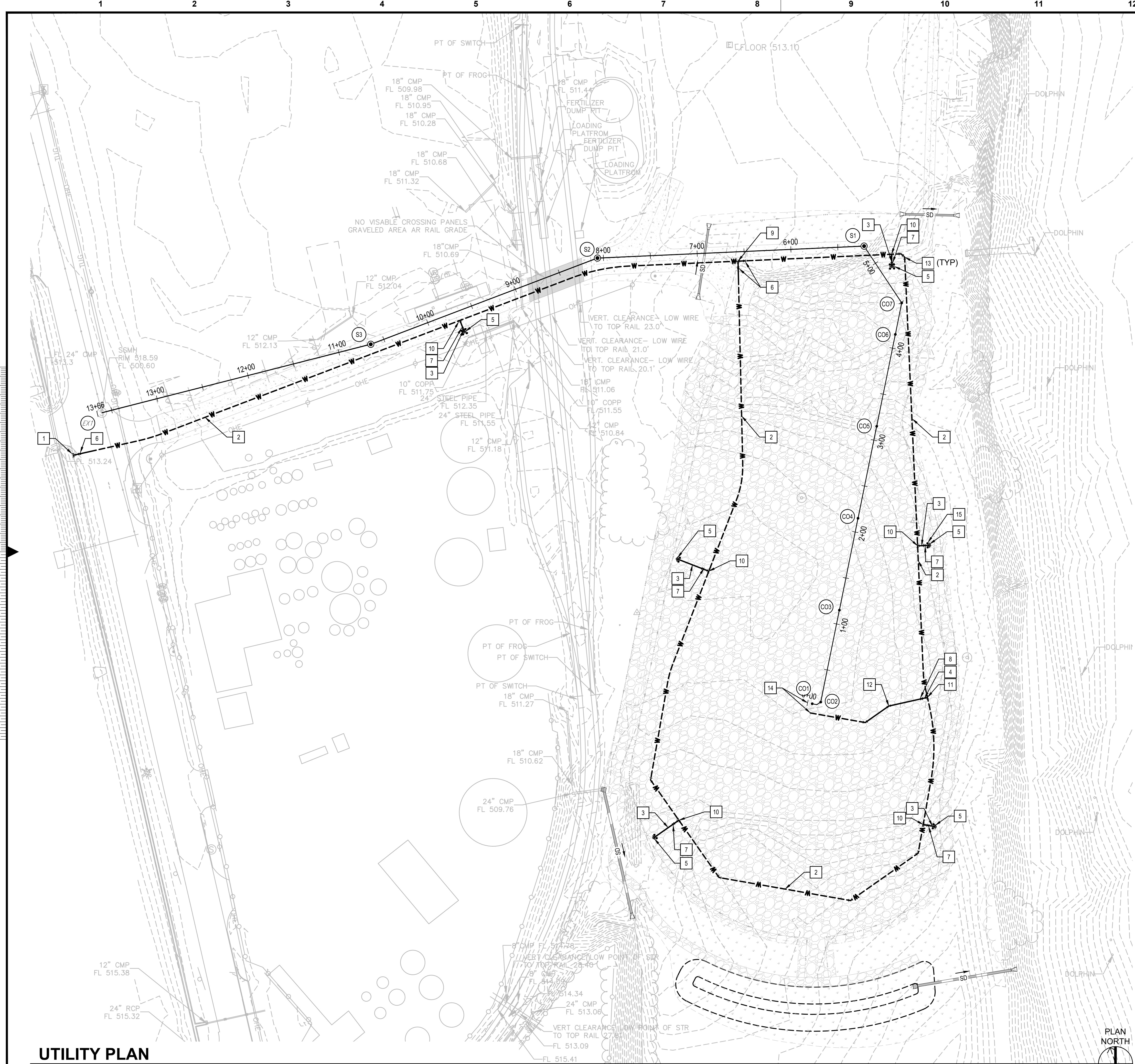
**BURNS  
 MEDONNELL**  
 1317 EXECUTIVE BLVD, SUITE 300  
 CHESAPEAKE, VA 23320  
 757-548-2056

date NOVEMBER 2, 2023	detailed D. CORTINAS
designed A. MONSOUR	checked B. CHEWNING

**BID PACKAGE**

MUSKOGEE, OKLAHOMA  
**QUALITY LIQUID FEEDS  
 INFRASTRUCTURE IMPROVEMENTS  
 STORM SEWER PROFILES**

project 152812	contract ---
drawing <b>CG201 - A</b>	rev. ---
sheet 10 of 18 sheets	file 152812-CG201-STORM PROFILES.DWG



**GENERAL NOTES**

- SEE SHEET CU201 FOR SANITARY STRUCTURE AND PIPE DATA.
- MINIMUM RADIUS FOR ROLLED 4" AND 8" HDPE DR11 SHALL BE 100' AND 200' RESPECTIVELY.
- PROPOSED WATERLINE SHALL BE INSTALLED WITH MIN. 3' COVER FOR ALL LOCATIONS.

**KEY NOTES #**

- 14" X 8" TAPPING SLEEVE AND VALVE
- 8" HDPE DR11
- 6" DIP
- 4" HDPE DR11
- FIRE HYDRANT
- 8" GATE VALVE
- 6" GATE VALVE
- 4" GATE VALVE
- 8" X 8" TEE
- 8" X 6" TEE
- 8" X 4" TEE
- 11.25° BEND
- 45° BEND (TYP)
- STUB UPS
- BOLLARD (TYP FOR 16)

Millimeters  
Scale For Microfitting  
Inches

**UTILITY PLAN**

SCALE: 1" = 50'



no.	date	by	ckd	description
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*Seth M. Gilliam*  
 November 2, 2023

**BURNS MEDONNELL**  
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 CHESAPEAKE, VA 23320  
 757-548-2056

date NOVEMBER 2, 2023	detailed D. CORTINAS
designed A. MONSOUR	checked B. CHEWNING

**BID PACKAGE**

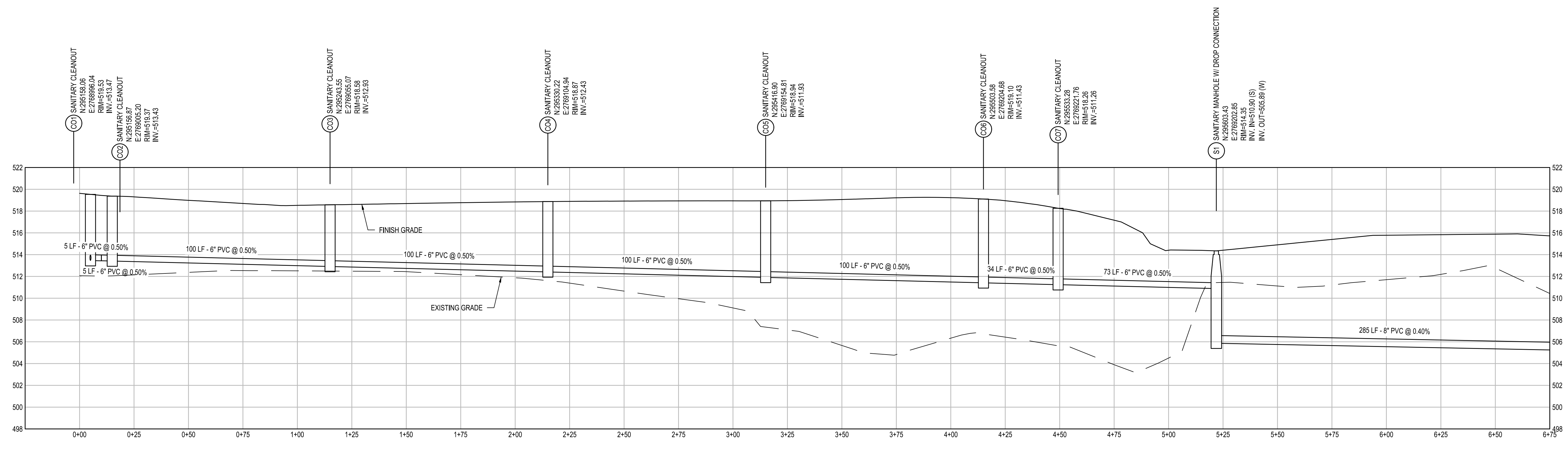
MUSKOGEE, OKLAHOMA  
**QUALITY LIQUID FEEDS  
 INFRASTRUCTURE IMPROVEMENTS  
 UTILITY PLAN**

project 152812	contract ---
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drawing **CU101** - rev. **A**

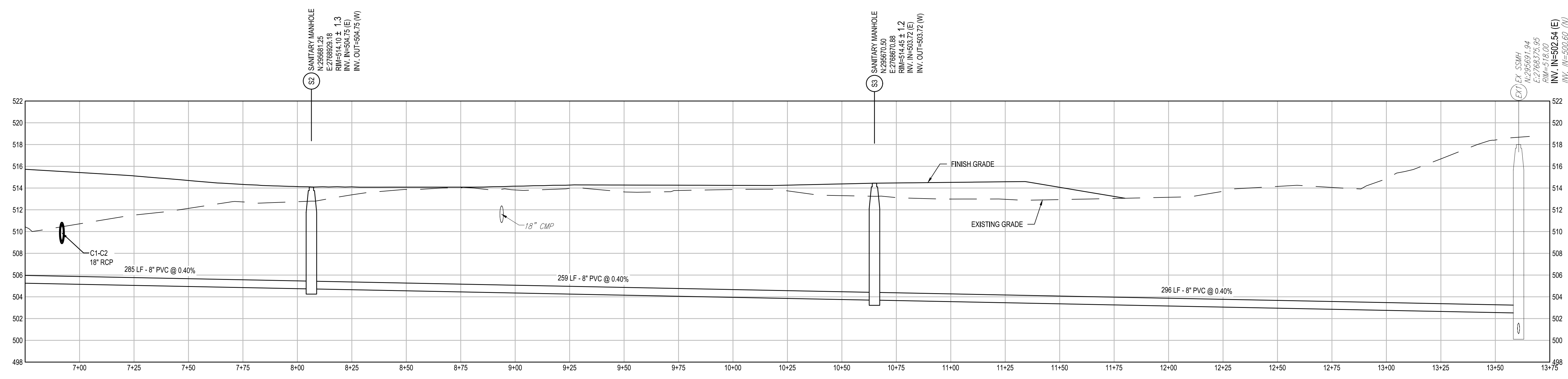
sheet 12 of 18 sheets  
 file 152812-CU101-UTILITY PLAN.DWG

no.	date	by	ckd	description
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**SANITARY SEWER PROFILE STA -0+25.00 TO STA 6+75.00**

HORIZ: 1"=25'  
VERT: 1"=5'

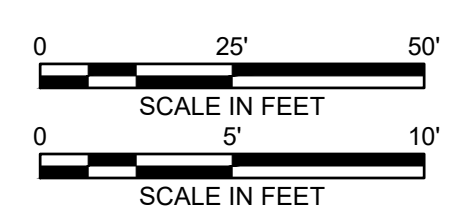


**SANITARY SEWER PROFILE STA 6+75.00 TO STA 13+75.00**

HORIZ: 1"=25'  
VERT: 1"=5'

**GENERAL NOTES**

1. SANITARY MANHOLES S2 & S3 RIM ELEVATIONS ARE SHOWN AT PROPOSED ROAD FINAL GRADE. RIM ELEVATION SHOULD BE SET TO MATCH EXISTING ROAD GRADE UNTIL FINAL PROPOSED ROAD GRADES ARE CONSTRUCTED IN A FUTURE PHASE.



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November 2, 2023

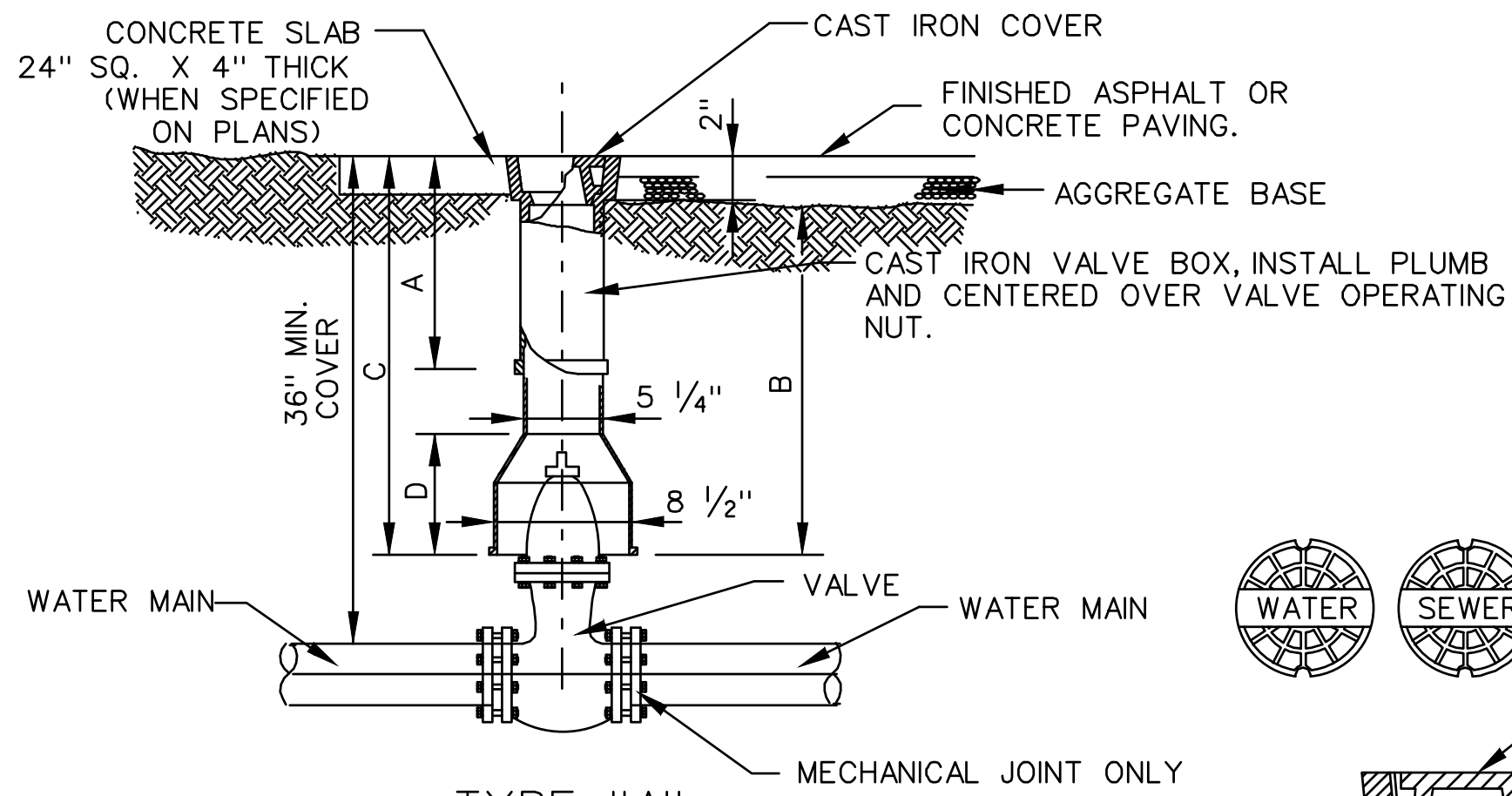
**BURNS  
MEDONNELL**  
1317 EXECUTIVE BLVD, SUITE 300  
CHESAPEAKE, VA 23320  
757-548-2056

date NOVEMBER 2, 2023	detailed D. CORTINAS
designed A. MONSOUR	checked B. CHEWNING

**BID PACKAGE**

MUSKOGEE, OKLAHOMA  
**QUALITY LIQUID FEEDS  
INFRASTRUCTURE IMPROVEMENTS  
UTILITY PROFILES**

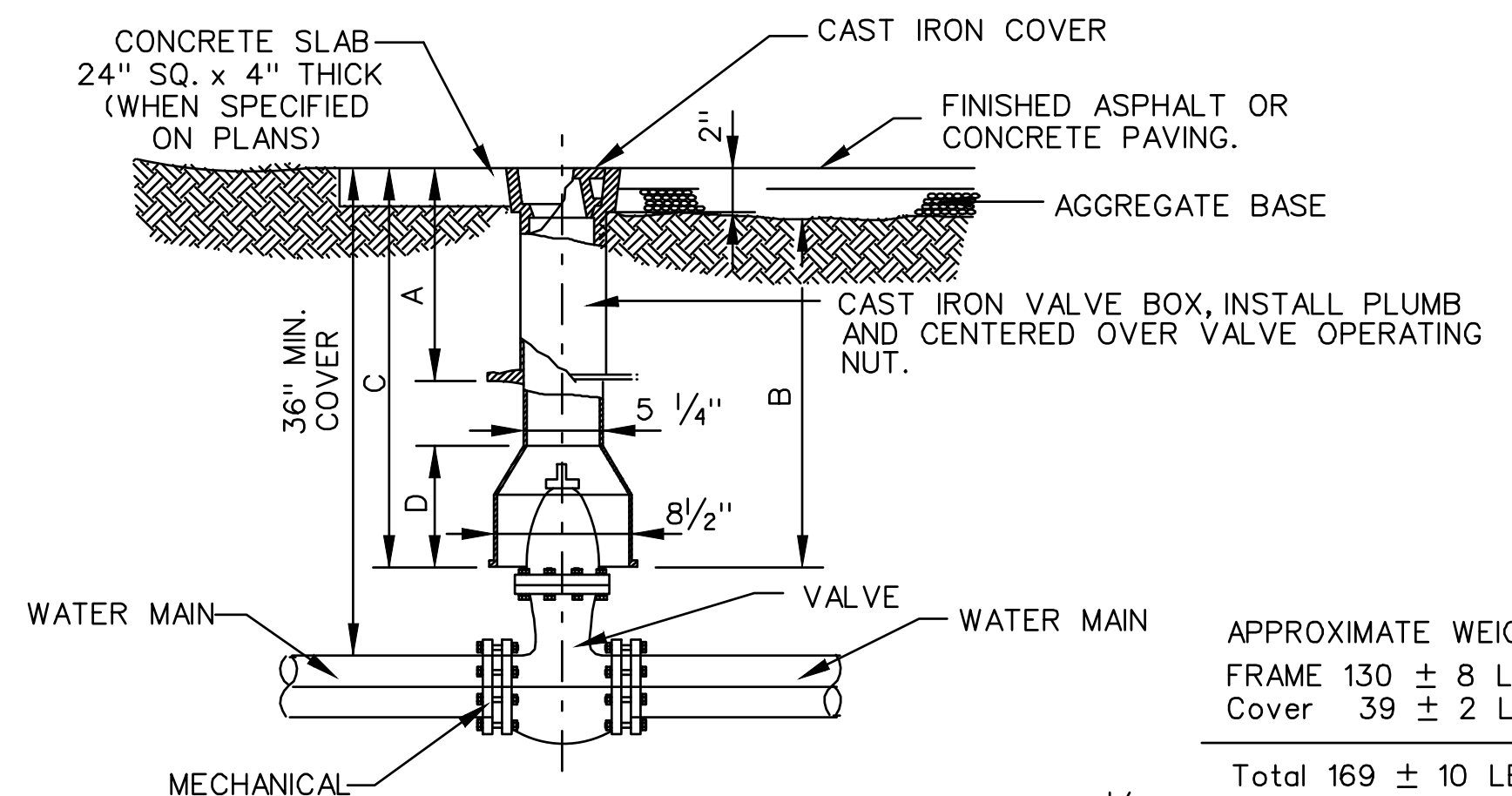
project 152812	contract ---
drawing <b>CU201</b>	rev. <b>A</b>
sheet 13 of 18 sheets	file 152812-CU201-UTILITY PROFILES.DWG



TYPE "A"

EXTENSION RANGE - C	DIM. A	DIM. B	DIM. D
18"-24"	10.5"	14.5"	6.5"
24"-29"	15"	24"	6.5"
36"-48"	15"	36"	8.5"
36"-60"	26"	36"	8.5"

LONGER BOXES ARE MADE BY ADDING EXTENSIONS.

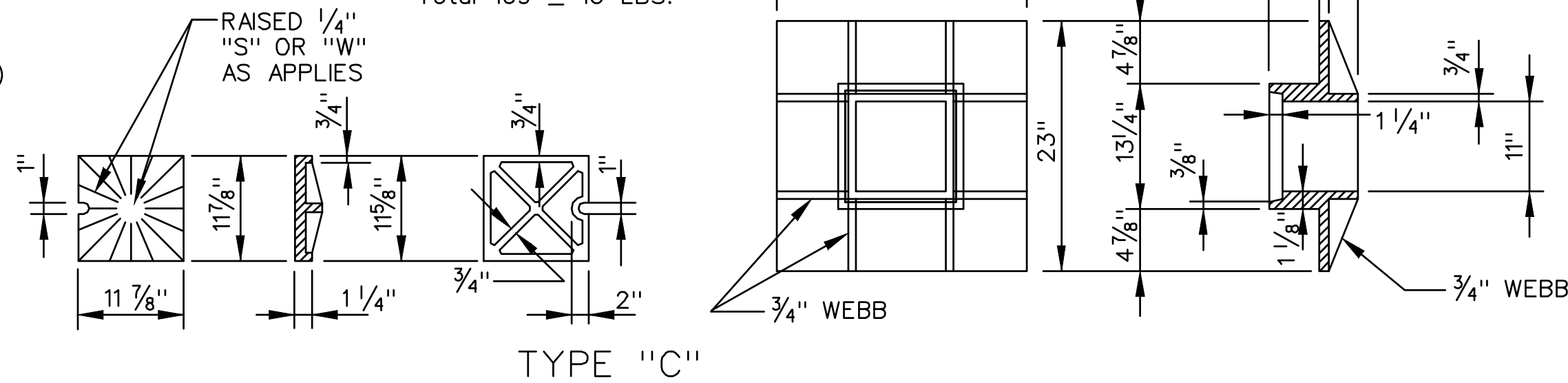


TYPE "B"

EXTENSION RANGE - C	DIM. A	DIM. B	DIM. D
18"-24"	10.5"	15"	6.5"
23"-29"	15.5"	15"	6.5"
24"-36"	15.5"	24.5"	6.5"
36"-48"	15.5"	26"	8.5"
38"-48"	26.5"	24.5"	6.5"
36"-60"	26.5"	36"	8.5"

LONGER BOXES ARE MADE BY ADDING EXTENSIONS.

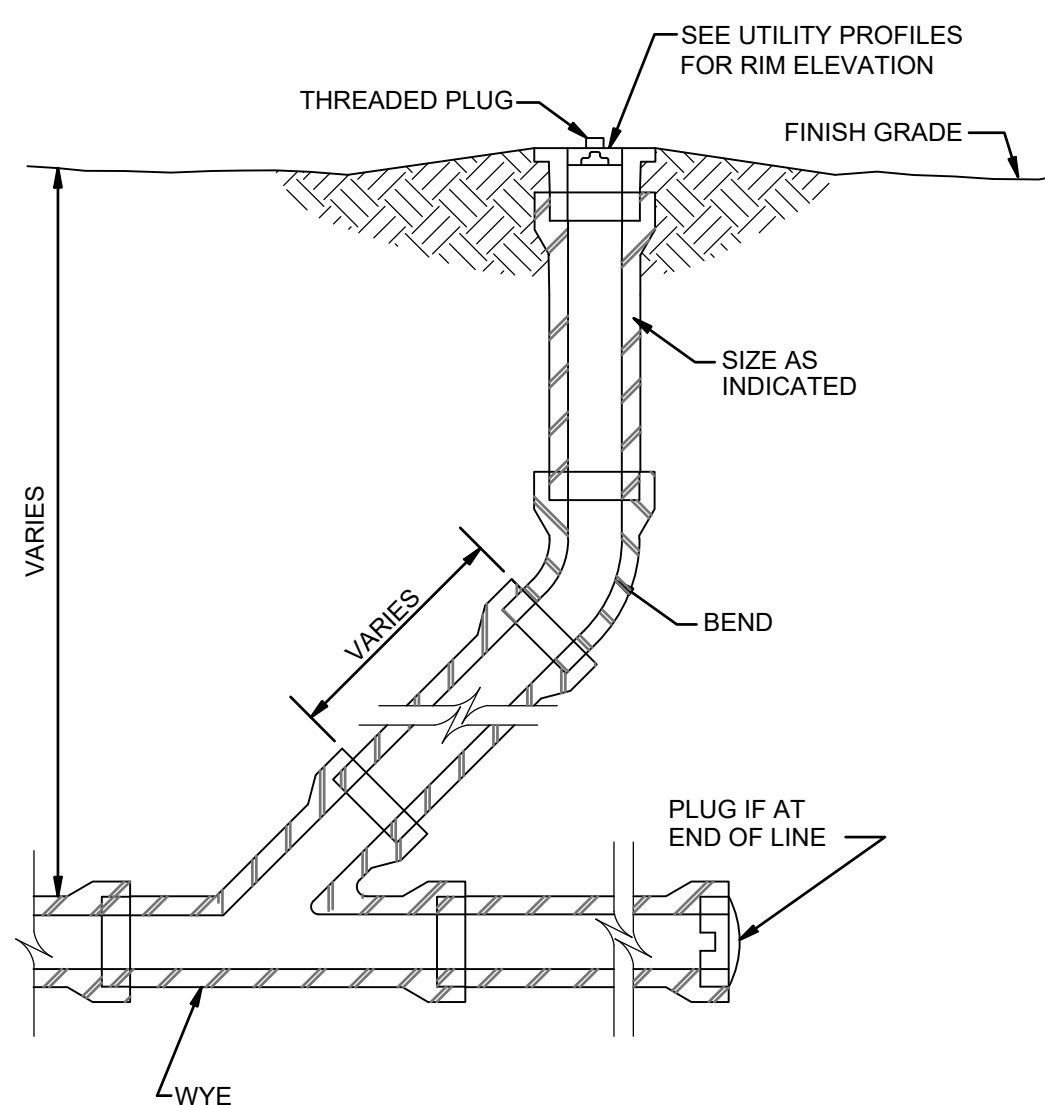
APPROXIMATE WEIGHTS  
 FRAME 130 ± 8 LBS.  
 Cover 39 ± 2 LBS.  
 Total 169 ± 10 LBS.



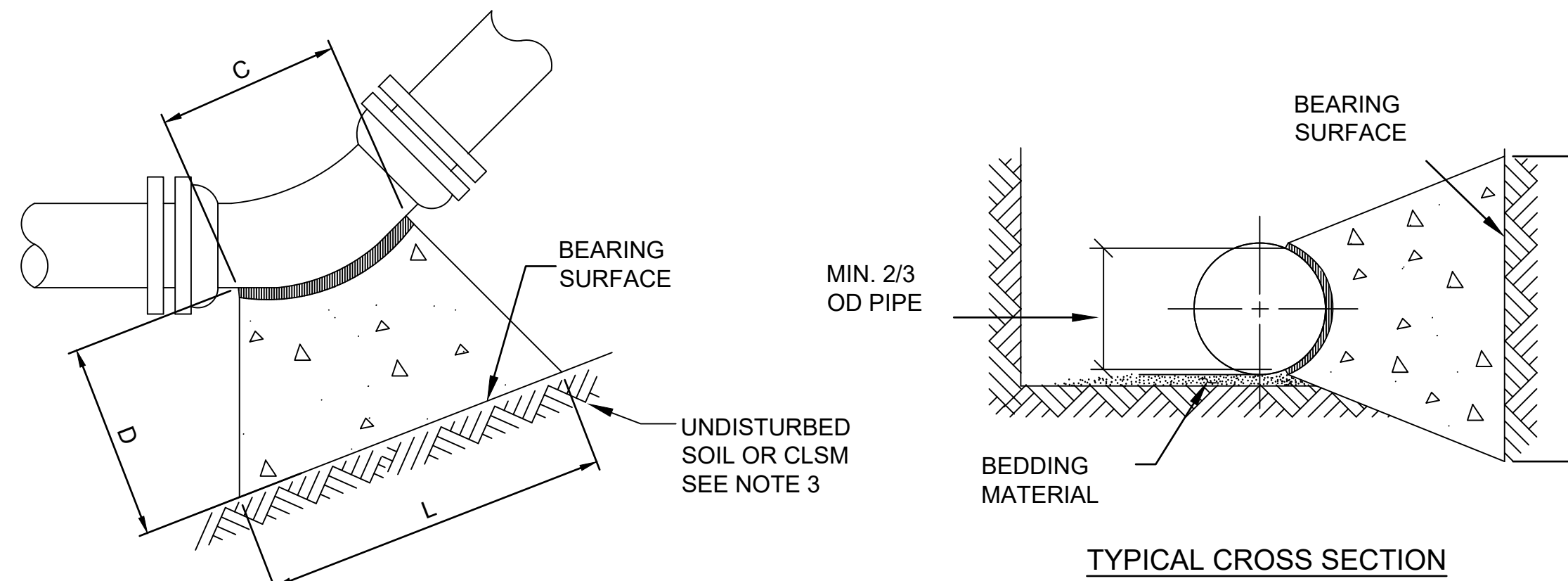
TYPE "C"

NOTE:  
 1. CAST IRON SHALL CONFORM TO ASTM A-48M CLASS 30S.

**VALVE BOX SETTING**  
 NOT TO SCALE



**CLEANOUT**  
 NOT TO SCALE



45° BEND

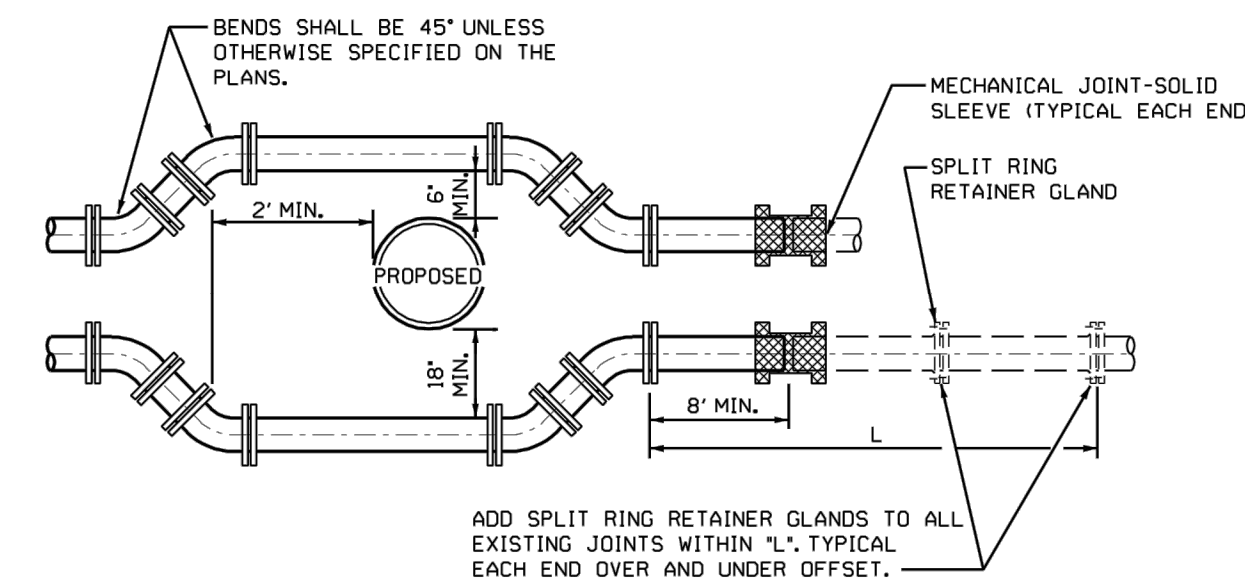
THRUST BLOCK TABLE

SIZE (in.)	TYPE OF BEND	MIN. BEARING SURFACE	L (feet)	H (feet)	C (feet)	D (feet)
8"	45°	1.9 SF	2'	2'	1' MIN.	1'
8"	TEE	2.5 SF	2'	2'	1' MIN.	14"

**HORIZONTAL BEND THRUST BLOCK**  
 NOT TO SCALE

NOTES:

1. PROTECT BOLTS FROM CONCRETE ENCASEMENT. USE POLYETHYLENE WRAP AS A BOND BREAKER BETWEEN RESTRAINT GLAND, BOLTS, AND PIPE.
2. CONCRETE SHALL HAVE MIN. COMPRESSIVE STRENGTH  $f_c=5,000$  PSI.
3. THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED NATIVE MATERIAL. IF NATIVE MATERIAL IS DISTURBED BEYOND LIMITS OF PROPOSED THRUST BLOCK DURING PCCP REMOVAL, CONTROLLED LOW STRENGTH MATERIAL (CLSM 100 PSI MIN.) SHALL BE USED AS BACKFILL.
4. ENSURE PROPER COMPACTION OF BEDDING AND CONSOLIDATION OF CONCRETE IN PIPE HAUNCHES.



SIZE (DIA.-INCHES)	4'	6'	8'	10'	12'	16'	18'	20'	24'
LENGTH (L'-FEET)	12'	17'	22'	26'	31'	39'	43'	47'	55'

DESIGN CONDITION  
 PRESSURE - 150 PSI  
 SOIL TYPE - SILT  
 DEPTH OF COVER - 3 FEET

NOTES:

1. RETAINER GLANDS ARE REQUIRED AT EACH FITTING.
2. ALL PIPE AND FITTINGS SHALL BE DUCTILE IRON, MECHANICAL JOINT, CLASS 52 (MINI)-WATER MAIN AND FITTINGS SHALL BE CEMENT MORTAR LINED.
3. FOR 12" AND SMALLER LINES, MECHANICAL JOINT OFFSET FITTINGS MAY BE USED IN LIEU OF THE 45° BENDS SHOWN SUBJECT TO THE APPROVAL OF THE ENGINEER. IF USED, THE OFFSETS MUST RESULT IN THE CLEARANCES SHOWN BEING MET OR EXCEEDED.
4. EXISTING EX. PIPE SHALL BE REPLACED WITH AN 8" MINIMUM LENGTH OF D.I. PIPE AT BOTH ENDS OF THE OFFSET AND RETAINER GLANDS INSTALLED.
5. THE EXISTING PIPE SHALL HAVE ALL JOINTS WITHIN THE LENGTH "L" RESTRAINED BY ADDING A SPLIT RING RETAINER GLAND (MEG-A-LUG OR EQUAL) WITH BOLTS TO THE M.J. BELL.
6. LENGTH "L" IN FEET SHALL CONFORM TO THE TABLE ABOVE.
7. SPLIT RING RETAINER GLANDS ARE FOR USE ON DUCTILE IRON MECHANICAL JOINT PIPE ONLY. IF EXISTING PIPE IS ANY OTHER MATERIAL, REMOVE AND REPLACE WITH D.I. MECHANICAL JOINT PIPE FOR THE LENGTH "L" SPECIFIED.
8. \* REQUIRED RESTRAINING LENGTH (L) APPLIES FOR DESIGN CONDITION SPECIFIED.

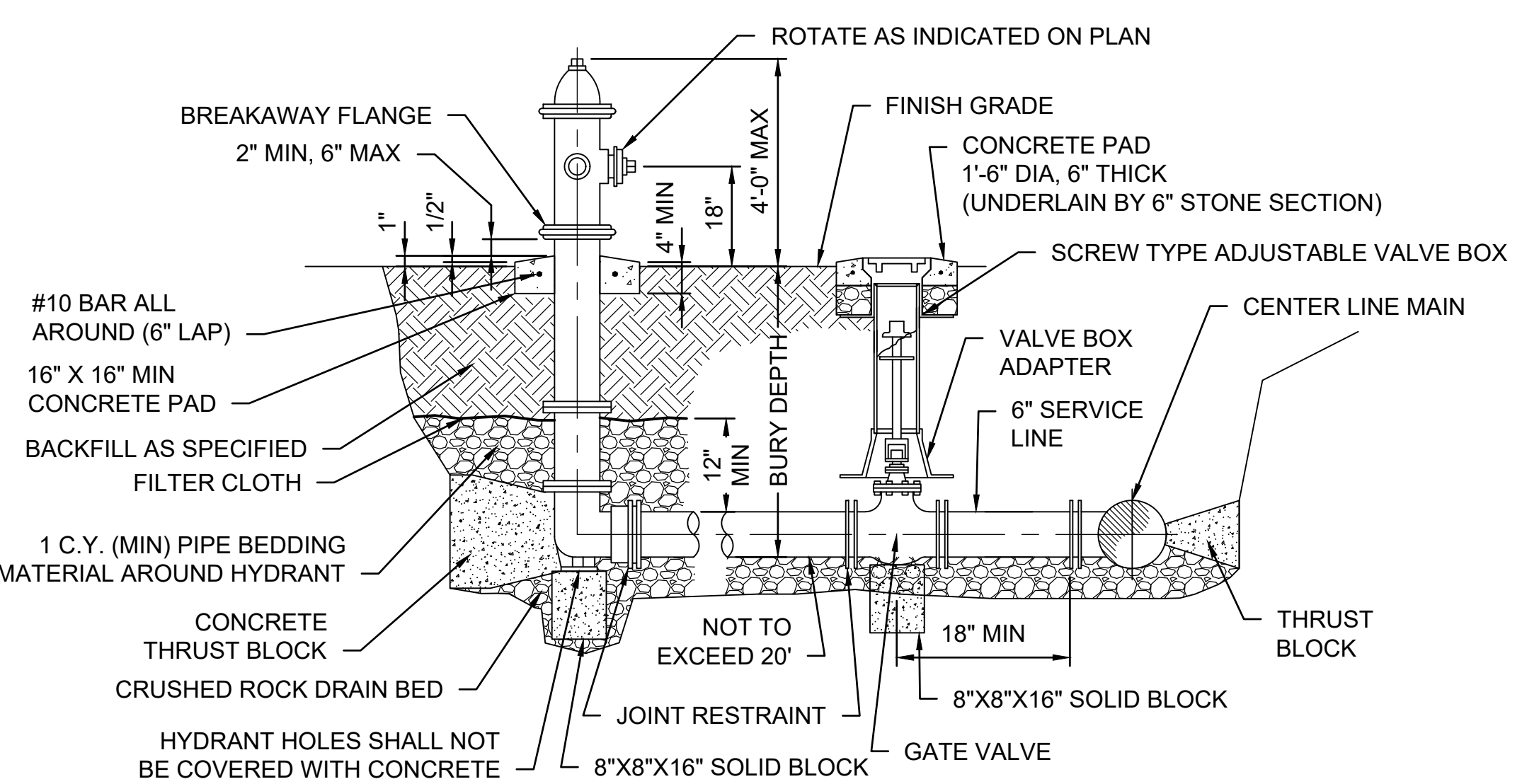
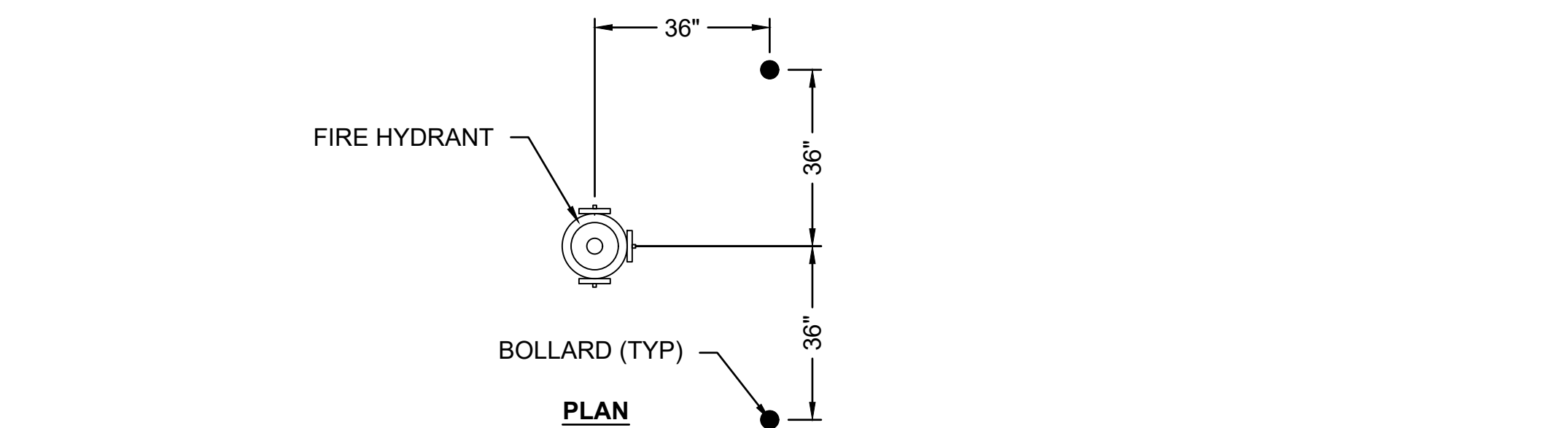
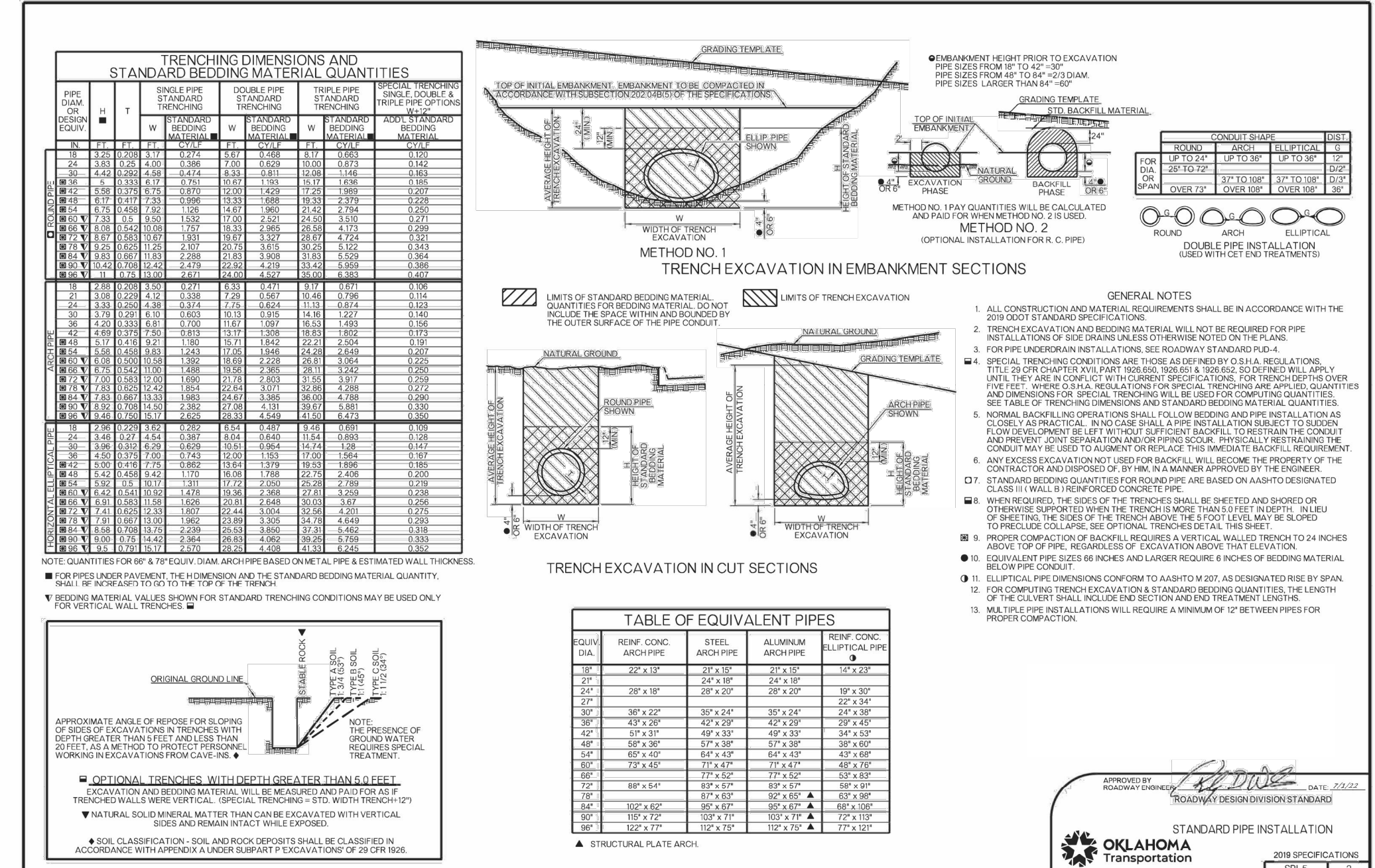
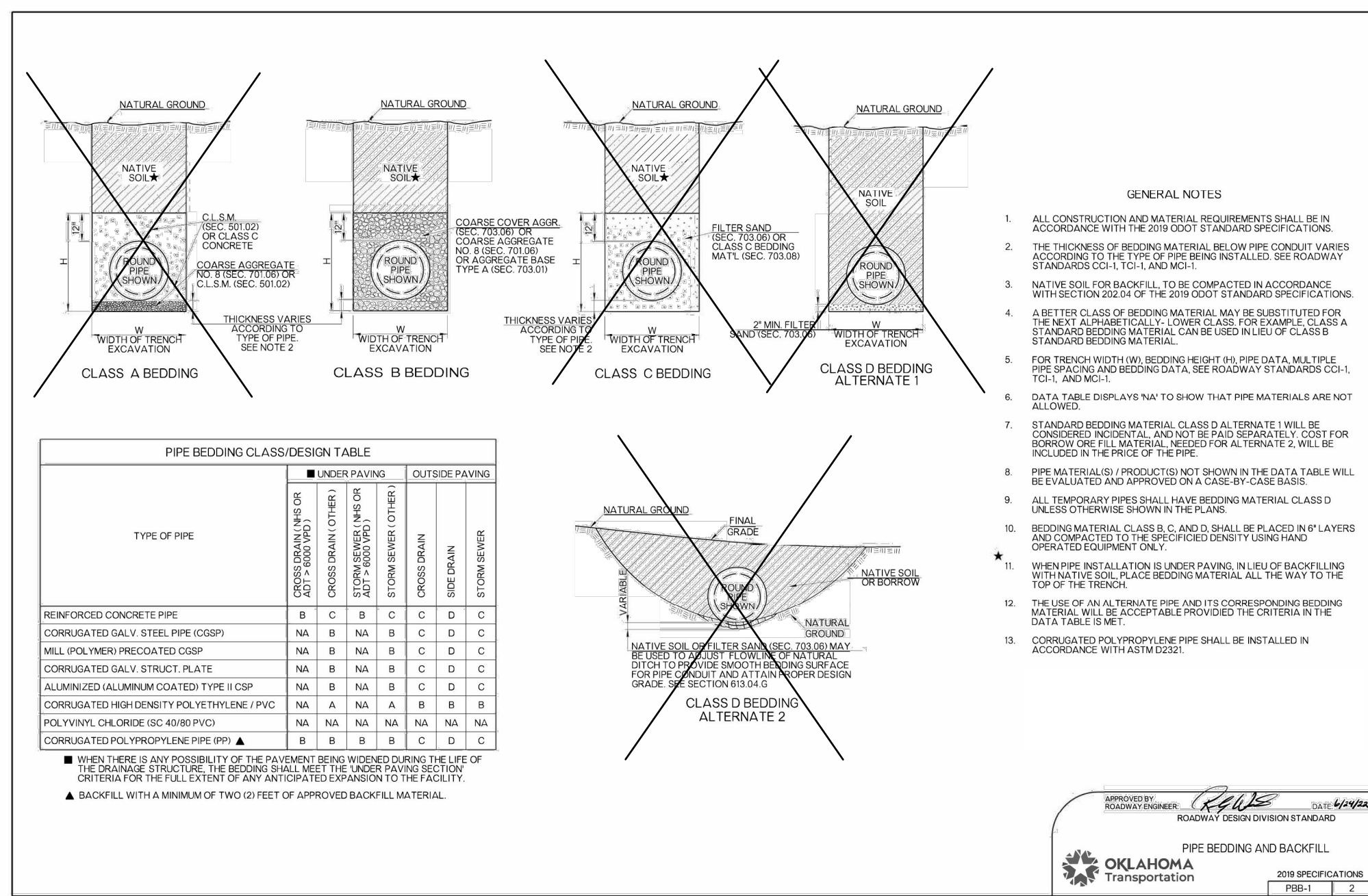
**RESTRAINED JOINTS FOR TEE, CROSS, WYE AND HORIZONTAL BEND**  
 NOT TO SCALE

no. | date | by | ckd | description

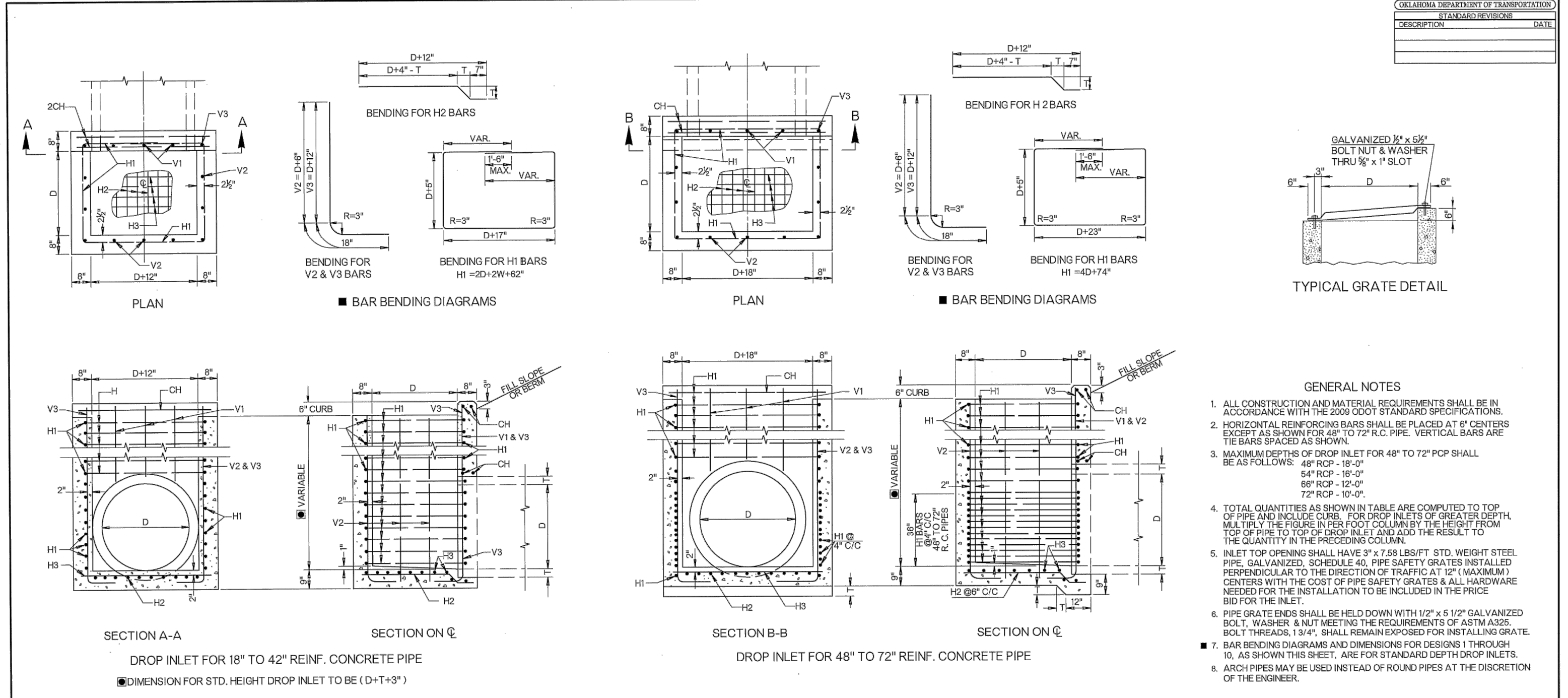
**BURNS MEDONNELL**  
 1317 EXECUTIVE BLVD, SUITE 300  
 CHESAPEAKE, VA 23320  
 757-548-2056

date: NOVEMBER 2, 2023  
 designed: A. MONSOUR  
 checked: D. CORTINAS  
 B. CHEWNING

**BID PACKAGE**  
 MUSKOGEE, OKLAHOMA  
 QUALITY LIQUID FEEDS  
 INFRASTRUCTURE IMPROVEMENTS  
 SITE DETAILS  
 project: 152812 | contract: ---  
 drawing: C-501 - A  
 sheet: 14 of 18 sheets  
 file: 152812-C-501-SITE DETAILS.DWG





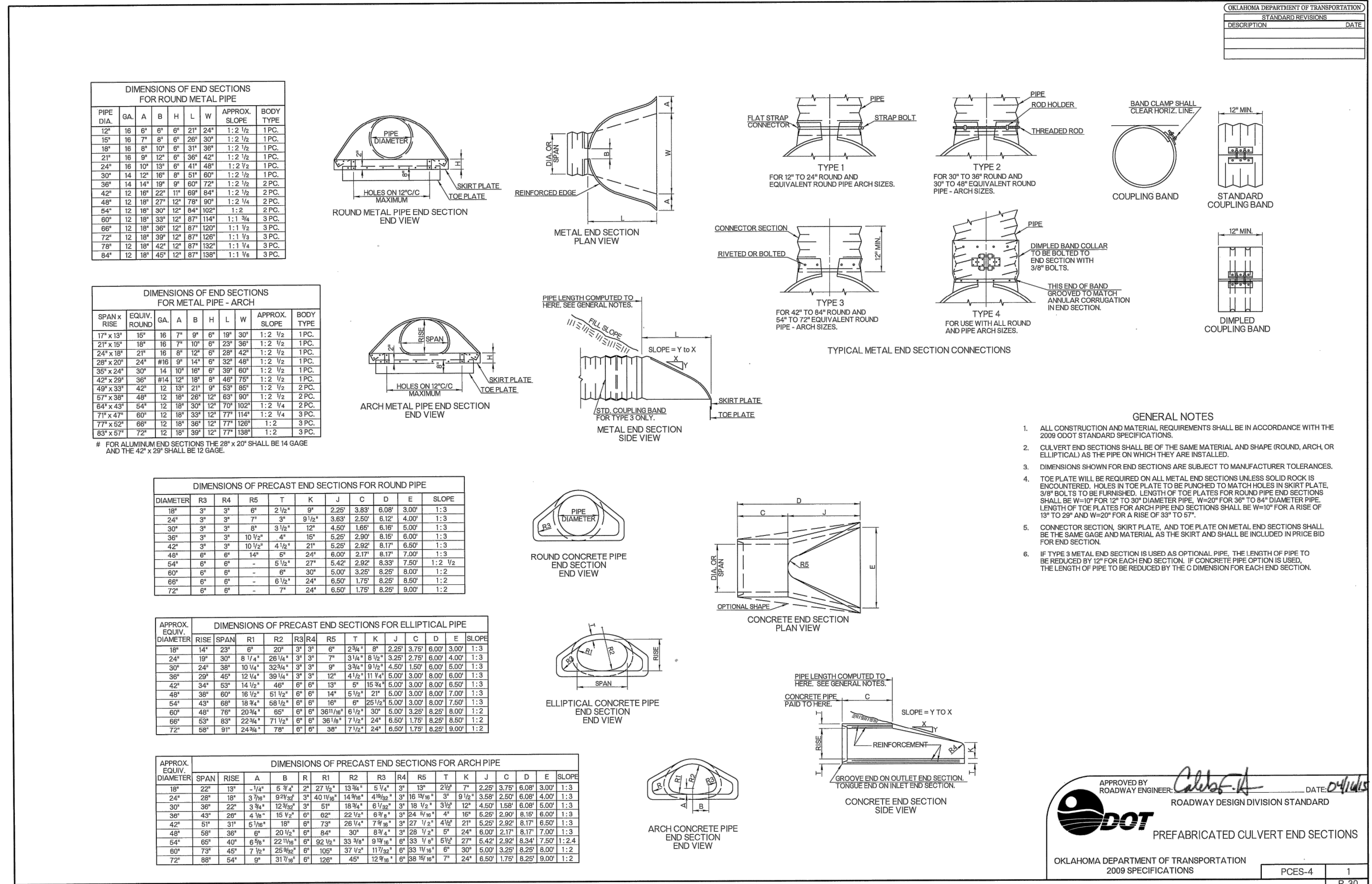


- GENERAL NOTES**
- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 CDOT STANDARD SPECIFICATIONS.
  - HORIZONTAL REINFORCING BARS SHALL BE PLACED AT 6" CENTERS EXCEPT AS SHOWN FOR 48" TO 72" R.C. PIPE. VERTICAL BARS ARE TO BE SPACED AS SHOWN.
  - MAXIMUM DEPTHS OF DROP INLET FOR 48" TO 72" R.C. PIPE SHALL BE AS FOLLOWS: 48" RCP - 18" 54" RCP - 18" 60" RCP - 12" 72" RCP - 10"
  - TOTAL QUANTITIES AS SHOWN IN TABLE ARE COMPUTED TO TOP OF PIPE AND INCLUDE THE PIPE DEPTHS OF 6" GREATER DEPTH MULTIPLY THE FIGURE IN PER FOOT COLUMN BY THE HEIGHT FROM TOP OF PIPE TO TOP OF DROP INLET AND ADD THE RESULT TO THE QUANTITY IN THE PRECEDING COLUMN.
  - INLET TOP OPENING SHALL HAVE 3" x 7.68 LBS/FT STD. WEIGHT STEEL PIPE, GALVANIZED, SCHEDULE 40, PIPE SAFETY GRATES RETAILED PERPENDICULAR TO THE DIRECTION OF TRAFFIC AT 12" (MAXIMUM) CENTERS WITH THE COST OF PIPE SAFETY GRATES & ALL HARDWARE NEEDED FOR THE INSTALLATION TO BE INCLUDED IN THE PRICE BID FOR THE INLET.
  - PIPE GRATE ENDS SHALL BE HELD DOWN WITH 1/2" x 5/8" GALVANIZED BOLT, WASHER & NUT MEETING THE REQUIREMENTS OF ASTM A325 BOLT THREADS, 1 3/4", SHALL REMAIN EXPOSED FOR INSTALLING GRATE.
  - BAR BENDING DIAGRAMS AND DIMENSIONS FOR DESIGNS 1 THROUGH 10, AS SHOWN THIS SHEET, ARE FOR STANDARD DEPTH DROP INLETS.
  - ARCH PIPES MAY BE USED INSTEAD OF ROUND PIPES AT THE DISCRETION OF THE ENGINEER.

**DIMENSIONS REINFORCING STEEL & QUANTITIES**

NO.	DIAMETER OF PIPE	REINFORCING STEEL												CLASS A CONCRETE		REINFORCING STEEL		PIPE GRATES				
		H2			V2			V3			H1			TOTAL TO TOP OF PIPE INCLUDING CURB	PER FOOT OF ADDITIONAL HEIGHT	TOTAL TO TOP OF PIPE INCLUDING CURB	PER FOOT OF ADDITIONAL HEIGHT	NO. OF PIPES	EA.			
IN	FOOT	IN	EA	IN	EA	IN	EA	IN	EA	IN	EA	IN	EA	IN	EA	IN	EA	IN	EA	IN	EA	
1	18"	1.77	23"	4	29"	5	134"	7	30"	7	26"	2	16"	6	42"	2	48"	0.58	0.21	77	24	2
2	24"	3.14	3"	4	30"	6	189"	8	36"	8	30"	3	19"	9	48"	2	54"	0.96	0.26	104	29	2
3	30"	4.91	3"	4	41"	7	182"	9	42"	9	38"	4	14"	7	54"	2	60"	1.20	0.30	138	35	3
4	36"	7.07	4"	4	47"	8	206"	10	48"	10	44"	4	16"	8	60"	2	66"	1.58	0.35	178	42	3
5	42"	9.62	4"	5	53"	9	230"	11	54"	11	50"	5	18"	10	66"	2	72"	2.11	0.40	223	49	4
6	48"	12.57	5"	5	59"	10	254"	12	60"	12	56"	5	19"	10	72"	2	78"	2.60	0.45	333	52	4
7	54"	15.90	5"	6	65"	10	278"	13	66"	13	62"	6	21"	10	78"	2	84"	3.18	0.49	385	60	5
8	60"	19.63	6"	6	71"	11	302"	14	72"	14	68"	6	22"	11	84"	2	90"	3.78	0.54	448	66	5
9	66"	23.76	6"	7	77"	11	326"	15	78"	15	74"	7	24"	12	90"	2	96"	4.47	0.59	517	74	6
10	72"	28.27	7"	7	83"	11	350"	16	84"	16	80"	7	25"	14	96"	2	102"	5.21	0.64	594	83	6

APPROVED BY ROADWAY ENGINEER: *Calder A* DATE: 04/16/23  
 ROADWAY DESIGN DIVISION STANDARD  
**DOT**  
 CONCRETE DROP INLETS FOR 18" TO 72" R.C. PIPES  
 OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 SPECIFICATIONS CDIP-1 1 R-34



- GENERAL NOTES**
- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 CDOT STANDARD SPECIFICATIONS.
  - CULVERT END SECTIONS SHALL BE OF THE SAME MATERIAL AND SHAPE (ROUND, ARCH OR ELLIPTICAL) AS THE PIPE WHICH THEY ARE INSTALLED.
  - DIMENSIONS SHOWN FOR END SECTIONS ARE SUBJECT TO MANUFACTURER TOLERANCES.
  - TOE PLATE WILL BE REQUIRED ON ALL METAL END SECTIONS UNLESS SOLID ROCK IS ENCOUNTERED. HOLES IN TOE PLATE TO BE RICHED TO MATCH HOLES IN SHORT PLATE. SIP BOLTS TO BE FURNISHED. LENGTH OF TOE PLATES FOR ROUND PIPE END SECTIONS SHALL BE 10" FOR 12" TO 30" DIAMETER PIPE, 10" FOR 36" TO 48" DIAMETER PIPE, 12" FOR 54" TO 60" DIAMETER PIPE, 14" FOR 66" TO 72" DIAMETER PIPE. LENGTH OF TOE PLATES FOR ARCH PIPE END SECTIONS SHALL BE 10" FOR A RISE OF 10" TO 24" AND 14" FOR A RISE OF 24" TO 30".
  - CONNECTOR SECTION, SHORT PLATE, AND TOE PLATE ON METAL END SECTIONS SHALL BE THE SAME GAGE AND MATERIAL AS THE SHORT AND SHALL BE FULLY WELDED FOR END SECTION.
  - IF TYPE 1 METAL END SECTION IS USED AS AN OPTIONAL PIPE, THE LENGTH OF PIPE TO BE REDUCED BY 2" FOR EACH END SECTION. IF CONCRETE PIPE OPTION IS USED, THE LENGTH OF PIPE TO BE REDUCED BY THE DIMENSION FOR EACH END SECTION.

APPROVED BY ROADWAY ENGINEER: *Calder A* DATE: 04/16/23  
 ROADWAY DESIGN DIVISION STANDARD  
**DOT**  
 PREFABRICATED CULVERT END SECTIONS  
 OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 SPECIFICATIONS PCES-4 1 R-30

no.	date	by	ckd	description

Professional Engineer  
 Seth M. Gilliam  
 30930  
 OKLAHOMA  
 Oklahoma License No. 30930  
 Issued: 02/28/2019  
 Expires: 02/28/2024  
*Seth M. Gilliam*  
 November 2, 2023

**BURNS MEDONNELL**  
 1317 EXECUTIVE BLVD, SUITE 300  
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 757-548-2056

date	designed	checked
NOVEMBER 2, 2023	A. MONSOUR	B. CHEWNING

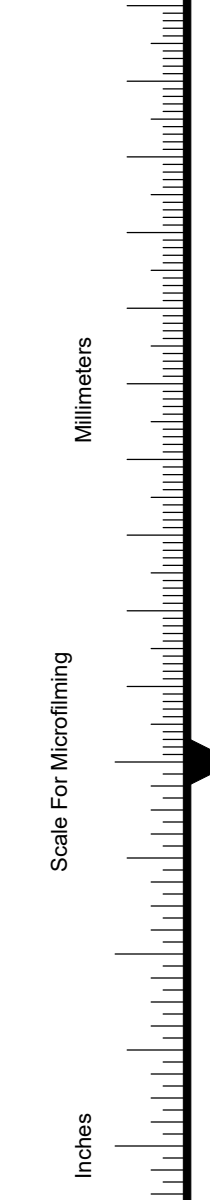
**BID PACKAGE**

MUSKOGEE, OKLAHOMA

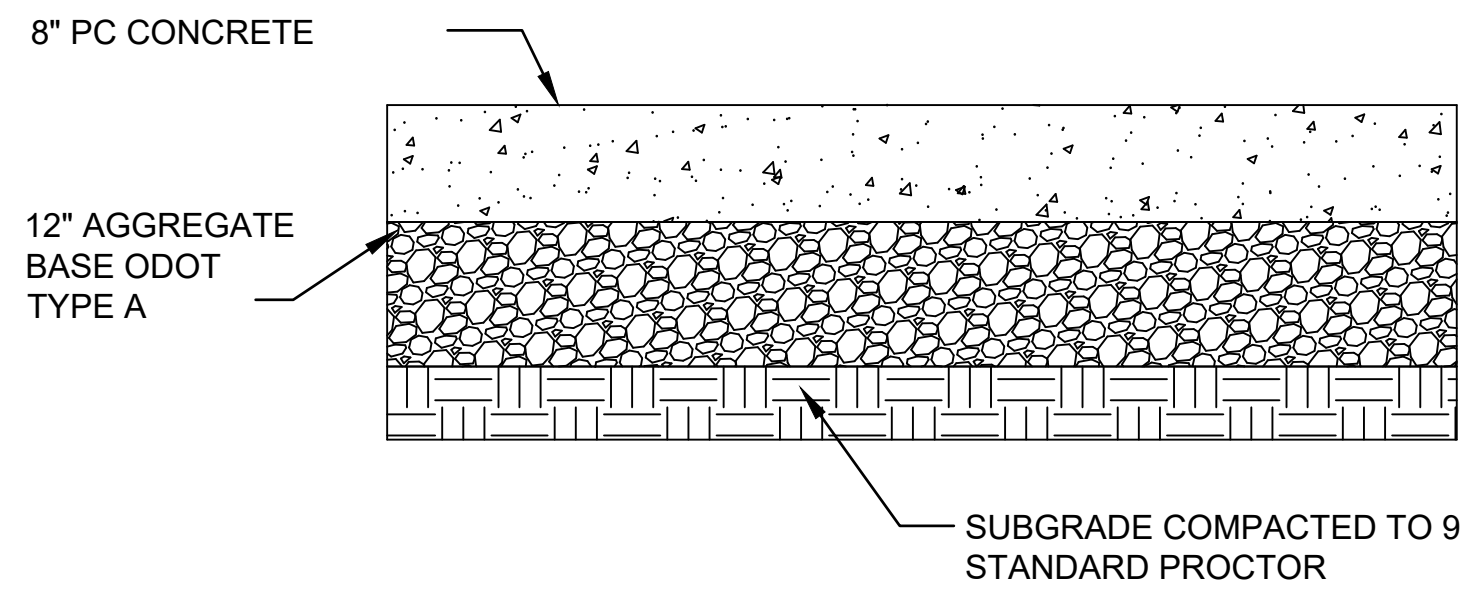
QUALITY LIQUID FEEDS  
 INFRASTRUCTURE IMPROVEMENTS  
 SITE DETAILS

project	contract
152812	---

drawing sheet 17 of 18 sheets  
**C-504 - A**  
 file 152812-C-501-SITE DETAILS.DWG





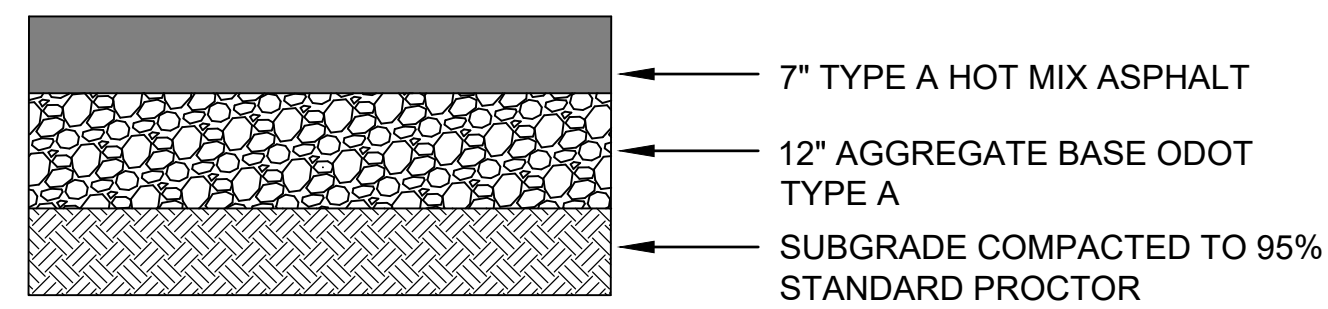


**NOTES:**

- JOINTS WILL BE TOOLED, NO SAW CUT. THE FINISH WILL BE A LIGHT BROOM FINISH PERPENDICULAR TO TRAFFIC FLOW.
- DEPTHS WITHIN 5 FEET OF FINAL SUBGRADE: COMPACT TO AT LEAST 95% OF THE MATERIALS STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698)
- DEPTHS GREATER THAN 5 FEET BELOW FINAL SUBGRADE: COMPACT TO AT LEAST 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698)

**HEAVY DUTY CONCRETE PAVEMENT SECTION**

NOT TO SCALE

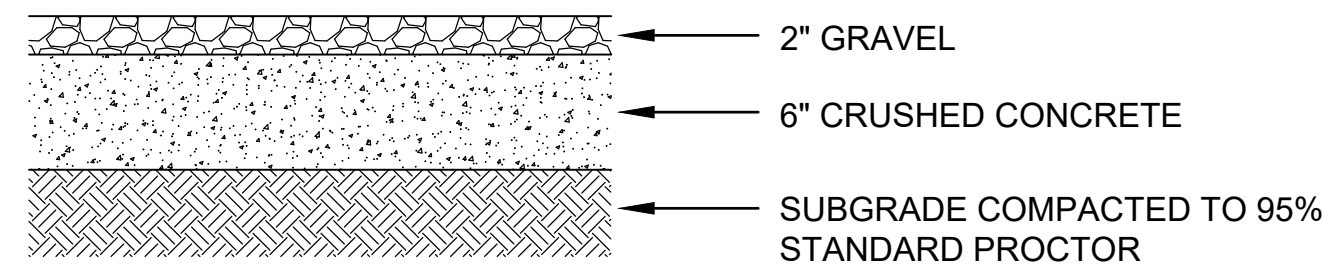


**HEAVY DUTY ASPHALT PAVEMENT SECTION**

NOT TO SCALE

**NOTES:**

- HOT MIX ASPHALT IS EQUIVALENT TO ODOT TYPE S3 PG 64-22
- DEPTHS WITHIN 5 FEET OF FINAL SUBGRADE: COMPACT TO AT LEAST 95% OF THE MATERIALS STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698)
- DEPTHS GREATER THAN 5 FEET BELOW FINAL SUBGRADE: COMPACT TO AT LEAST 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698)

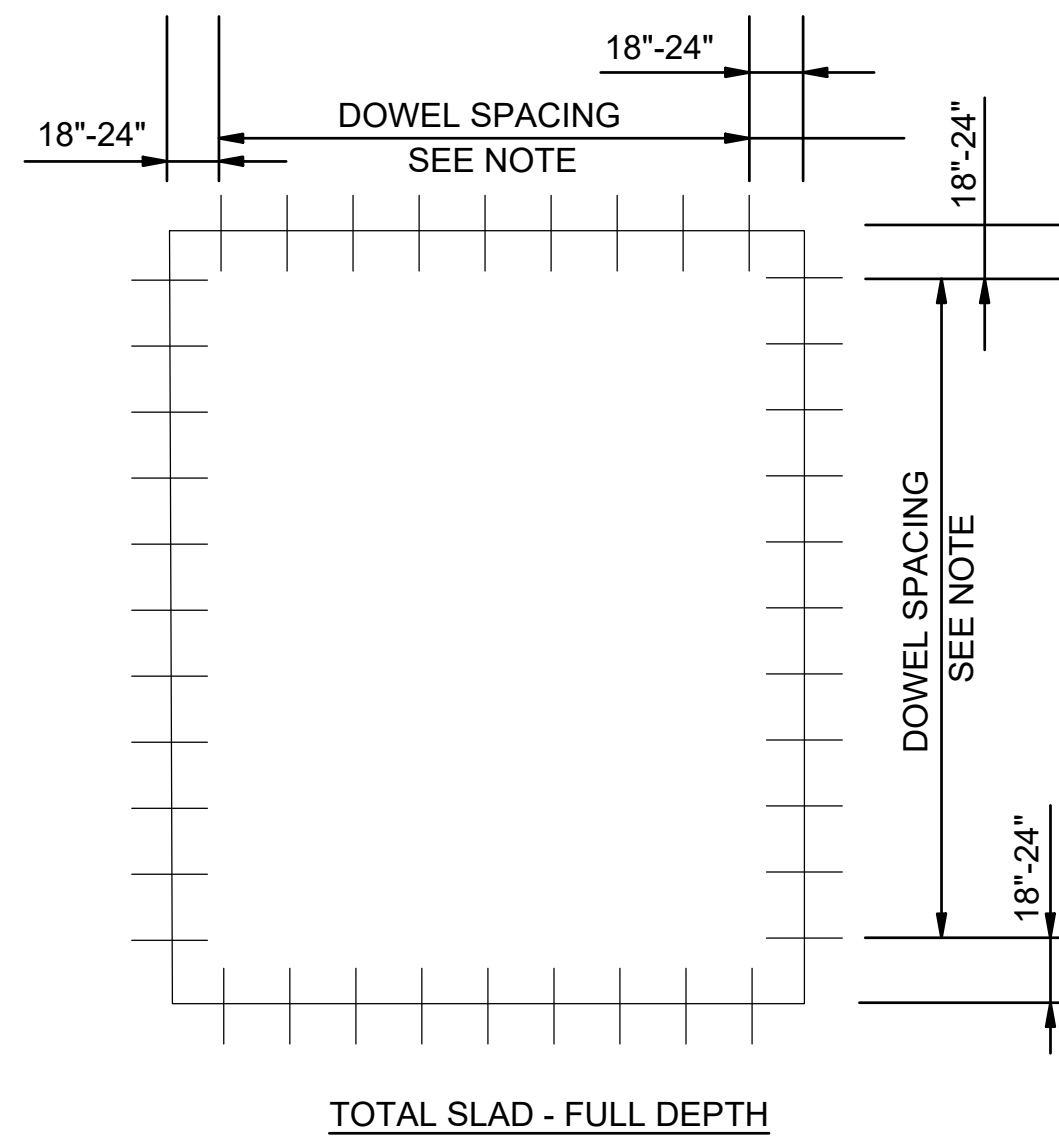


**GRAVEL AREA SECTION**

NOT TO SCALE

**NOTES:**

- DEPTHS WITHIN 5 FEET OF FINAL SUBGRADE: COMPACT TO AT LEAST 95% OF THE MATERIALS STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698)
- DEPTHS GREATER THAN 5 FEET BELOW FINAL SUBGRADE: COMPACT TO AT LEAST 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698)

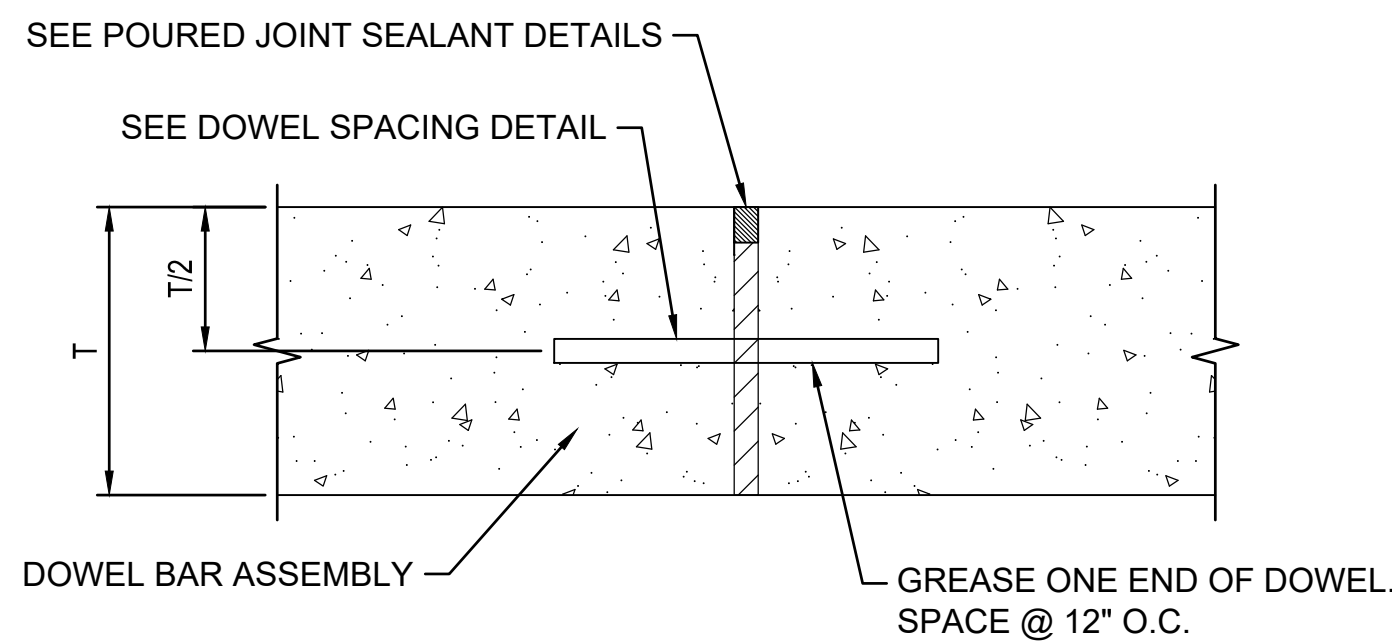


**NOTES:**

- PROVIDE 1" DIA DOWEL BAR, 16 INCHES LONG WITH 12" O.C. (MAX) SPACING FOR 8"-11.5" THICK CONCRETE. PROVIDE 1-1/4" DIA DOWEL BAR, 20 INCHES LONG WITH 15" O.C. (MAX) SPACING FOR 12"-14" THICK CONCRETE

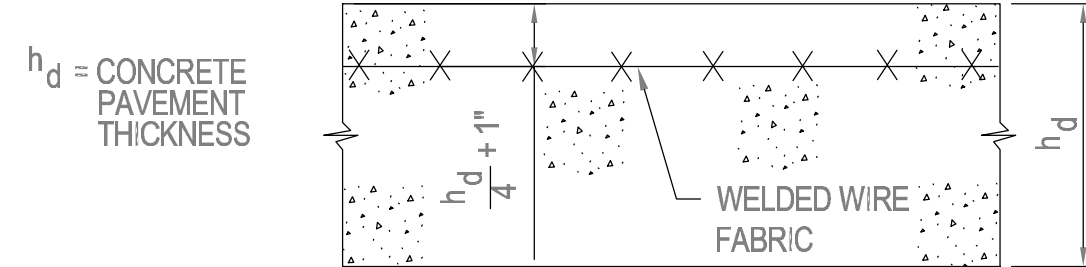
**DOWEL SPACING - TYPICAL PLANS**

NOT TO SCALE



**DOWELED EXPANSION JOINT**

NOT TO SCALE

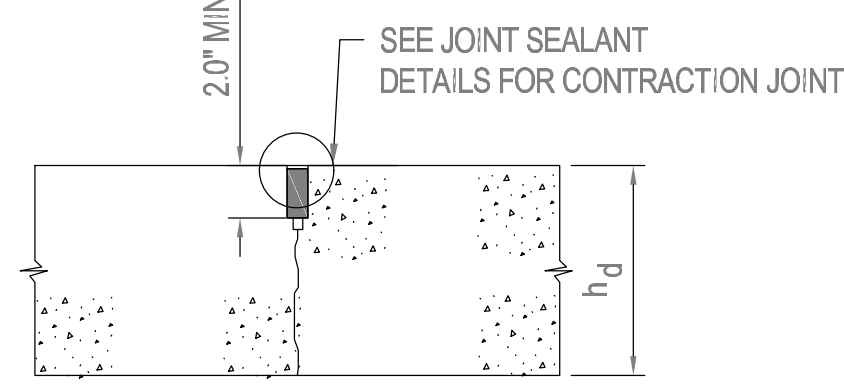


**NOTES:**

- CONCRETE PAVEMENT STEEL REINFORCEMENT SHALL BE WELDED WIRE FABRIC 6X6-W1.4XW1.4
- WELDED WIRE FABRIC SHALL BE MATS, NOT ROLLED.
- STEEL REINFORCEMENT SHALL END 3" FROM JOINTS.
- WELDED WIRE FABRIC SHALL BE SUPPORTED AT THE DEPTH SHOWN.
- USE WELDED WIRE FABRIC IN ODD SHAPED SLABS AND SLABS WITH PENETRATIONS.

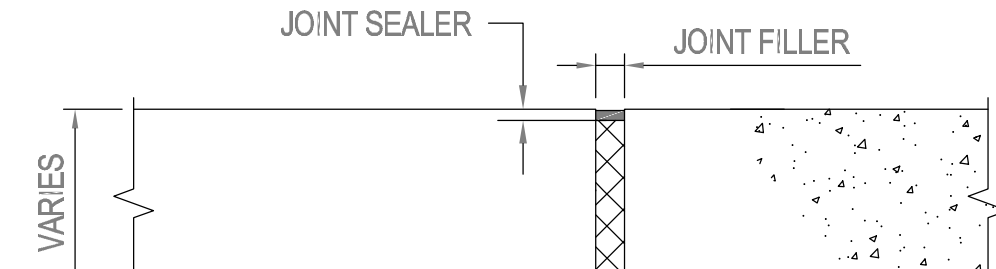
**REINFORCED SLAB (R)**

NOT TO SCALE



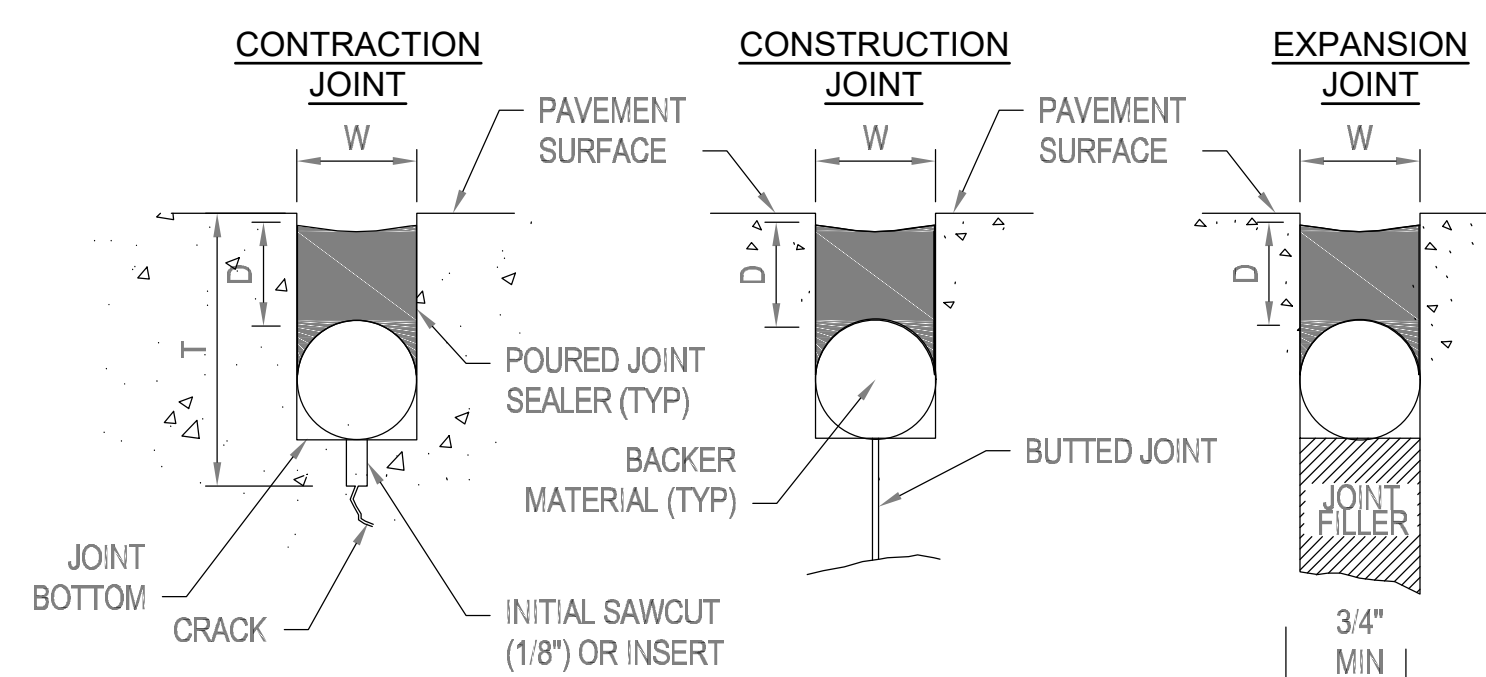
**CONTRACTION JOINT (CJ)**

NOT TO SCALE



**EXPANSION JOINT, PLAIN CONCRETE PAVEMENT**

NOT TO SCALE



- W = WIDTH OF SEALANT RESERVOIR (SEE TABLE)
- D = DEPTH OF SEALANT (1.0 TO 1.5 X W) FOR POURED SEALANT; 0.5W FOR SILICONE SEALANT
- T = DEPTH OF INITIAL SAWCUT OR INSERT TYPE JOINT FORMER (CONTRACTION JOINT)
  - 1/2 SLAB THICKNESS + 1/2" FOR PAVEMENT LESS THAN 12 INCHES
  - 3 INCHES FOR PAVEMENT 12-18 INCHES\*
  - 1/2 SLAB THICKNESS FOR PAVEMENTS MORE THAN 18 INCHES\*
  - DIAMETER OF BACKER MATERIAL = W + 1/4"

JOINT SPACING FT	WIDTH IN	
	MIN	MAX
20	1/2	5/8
20 (NAVY)	3/8	-

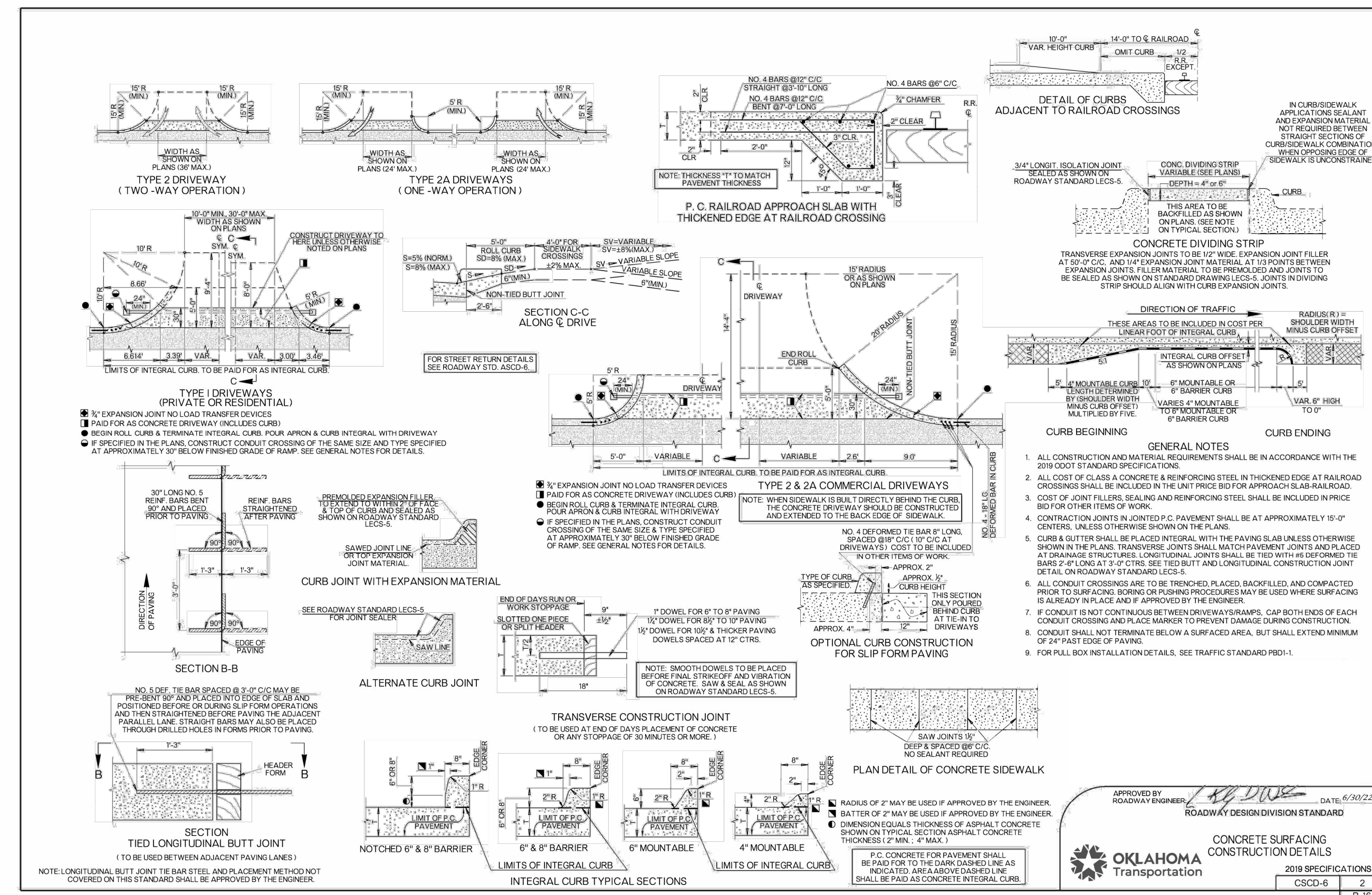
\* DESIGNER MAY WANT TO CONSIDER REQUIRING 1/4" SLAB THICKNESS

**NOTE:**

- TOP OF SEALANT WILL BE 1/4" TO 3/8" BELOW TOP OF PAVEMENT. IN AREAS TO BE GROOVED, THE JOINT SEAL SHALL BE RECESSED BELOW THE DEPTH OF THE GROOVES.

**POURED JOINT SEALANT DETAILS (BACKER MATERIAL)**

NOT TO SCALE



no.	date	by	ckd	description



Oklahoma License No. 30930  
 Issued: 02/28/2019  
 Expires: 02/28/2024  
 November 2, 2023



1317 EXECUTIVE BLVD, SUITE 300  
 CHESAPEAKE, VA 23320  
 757-548-2056

date	designed	checked
NOVEMBER 2, 2023	A. MONSOUR	B. CHEWNING
	designed	checked
	D. CORTINAS	

**BID PACKAGE**

MUSKOGEE, OKLAHOMA

**QUALITY LIQUID FEEDS  
 INFRASTRUCTURE IMPROVEMENTS  
 SITE DETAILS**

project	contract
152812	---
drawing	rev.
<b>C-505</b>	<b>A</b>
sheet 18 of 18 sheets	file 152812-C-501-SITE DETAILS.DWG