TOWN OF SOUTH COFFEYVILLE
STAR PIPE UTILITY RELOCATION/ ABANDONING PROJECT

SOUTH COFFEYVILLE, OKLAHOMA

MAY 2018

SEC 13, T-29-N, R-15-E

PROJECT LOCATION

SURVEY DATA

(1) HORIZONTAL CONTROL

(A) HORIZONTAL CONTROL FROM THIS SURVEY IS THE OKLAHOMA STATE PLANE COORDINATE SYSTEM (LAMBERT PROJECTION) (NORTH ZONE).

(B) ACCURACY – 3RD ORDER OR BETTER.

(2) BEARINGS

(A) THE BEARINGS SHOWN HEREIN OR HEREON ARE GRID BEARINGS DERIVED FROM THE USC&GS OKLAHOMA STATE PLANE COORDINATE SYSTEM AND ARE NOT ASTRONOMICAL.

(3) VERTICAL CONTROL

(A) LEVEL DATUM IS MEAN SEA LEVEL (NGS) NGVD 29.

(B) ACCURACY – 3RD ORDER OR BETTER.

LEGEND

- SURVEY CONTROL POINT – 60D NAIL
- EXISTING GAS METER
- EXISTING TELEPHONE PEDESTAL
- EXISTING WATER METER
- FENCE
- SECTION LINE
- PROPERTY LINE
- EXISTING POWER POLE
- EXISTING WATER VALVE
- EXISTING METER
- EXISTING WATERLINE
- PROPOSED WATERLINE
- EXISTING TRAFFIC SIGN
- EXISTING LIGHT POLE
- EXISTING CONTOUR
- TREE
- TREE LINE OR VEGETATIVE COVER
- SWALE & FLOW
- CREEK OR DITCH SWALE
- DRIVES & MINOR ROADS
- RAILROAD
- EXISTING RIGHT OF WAY
- REFERENCE POINT
- BORING LOCATION
- SURVEY BASE LINE
- CONDUIT
- CUT SLOPE
- FILL SLOPE

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SOUTH COFFEYVILLE, OK.

LOCATION MAP

NOT TO SCALE

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ENGINEER:

H. DWAYNE HENDERSON, P.E.

1909 OAK RIDGE DRIVE
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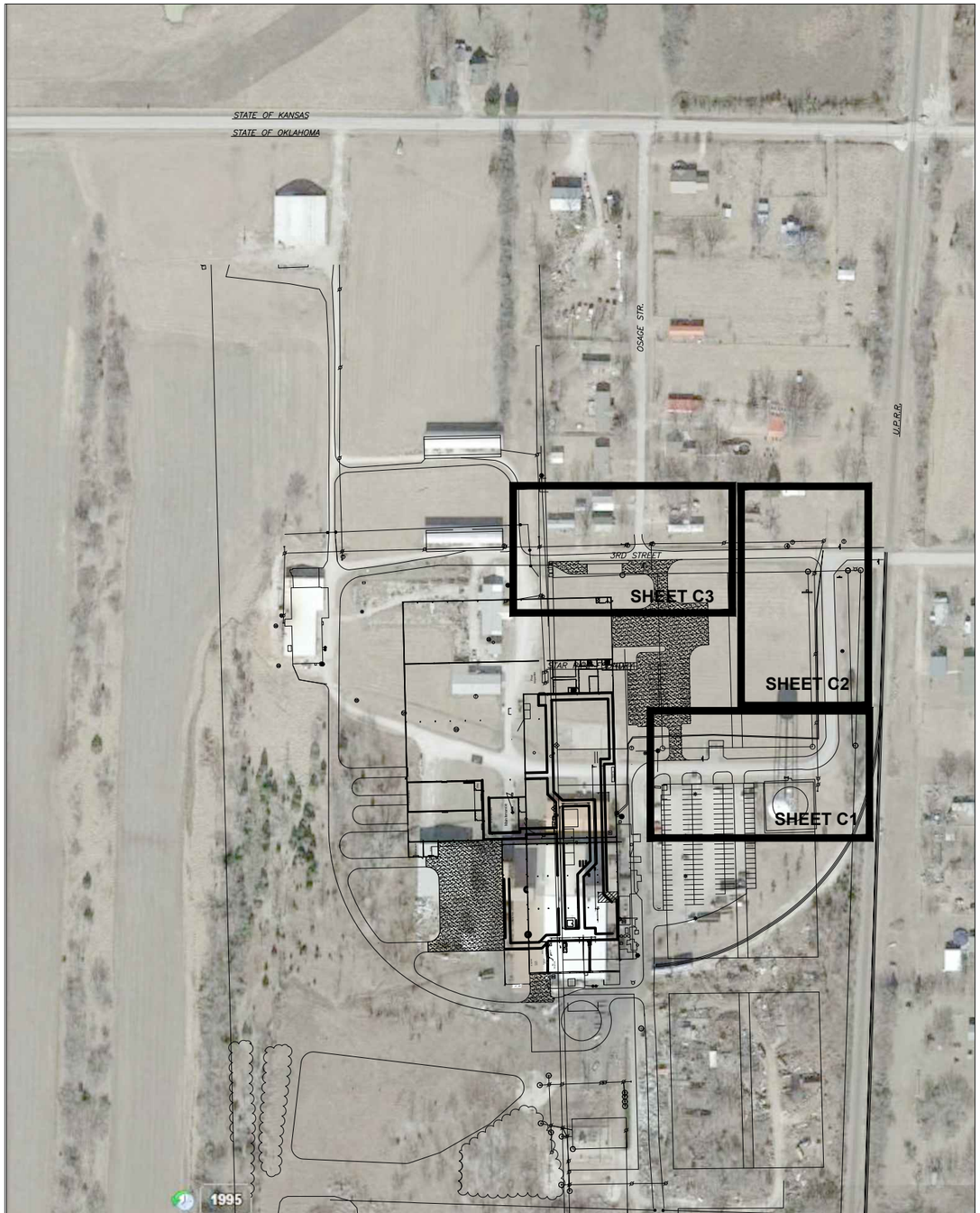
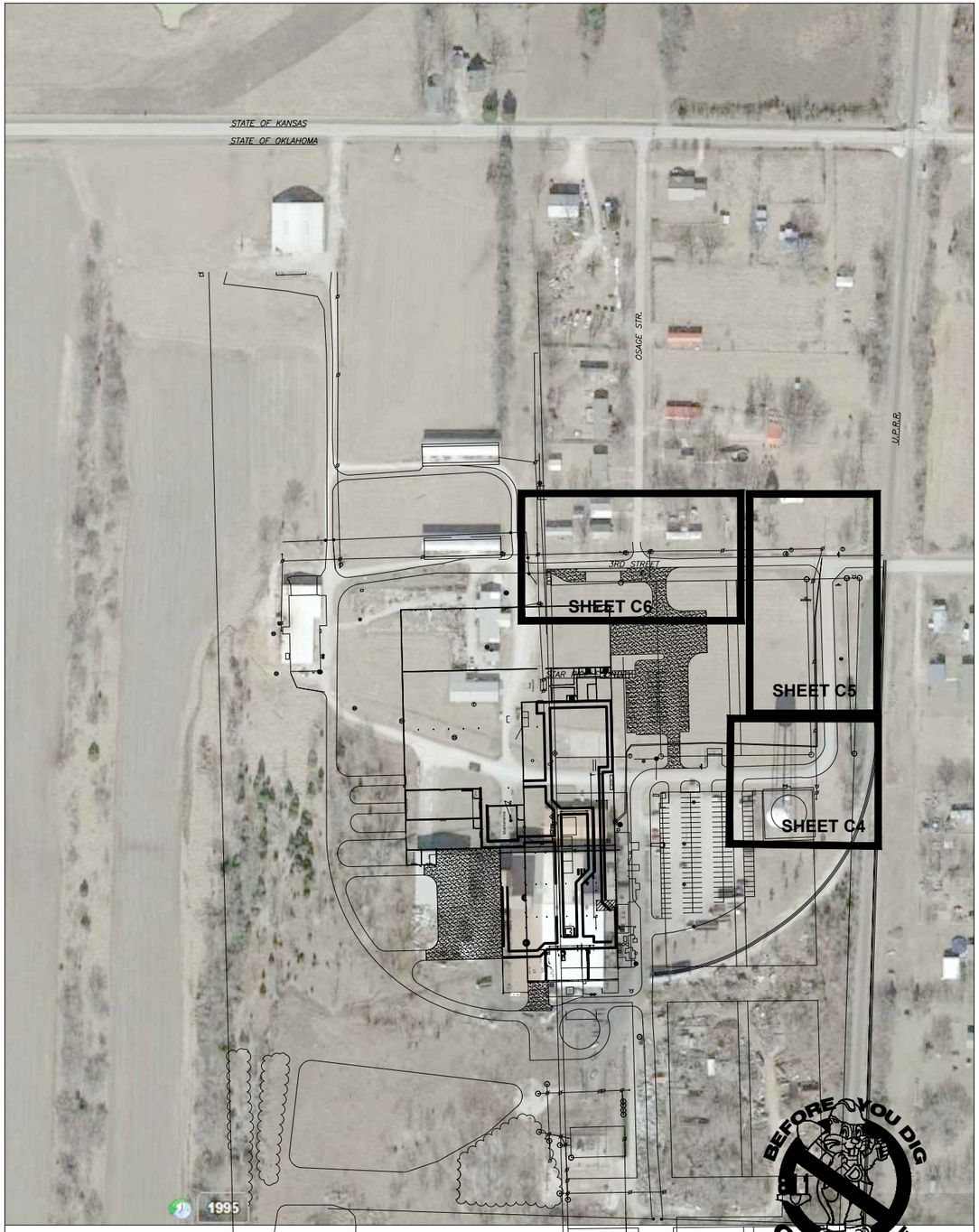
H. DWAYNE HENDERSON, P.E., OK. NO. 17763 DATE



FORCE MAIN RELOCATION SHEETS



WATER LINE RELOCATION SHEETS

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ONE INCH
0 1

DATE	BY	REVISION

DESIGN	CHECKED	DATE
HDH	HDH	3/18
DRAWN	APPROVED	SCALE
HDH	HDH	AS SHOWN

PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
LOCATION MAP

S. COFFEYVILLE OKLAHOMA

PROJECT NO.

SHEET G2

ITEM NO.	SPEC. NO.	DESCRIPTION	PAY ITEM NOTES	UNITS	ESTIMATED QUANTITY
1		MOBILIZATION/DEMOBILIZATION	1	LS	1
2		RIGHT–OF–WAY CLEARING	2	LS	1
3		PROVIDE/INSTALL 6" SDR–21 PVC WATER LINE, OPEN CUT	3	LF	1,200
4		PROVIDE/INSTALL 6" SDR–21 PVC WATER LINE, IN CASING	4	LF	105
5		6" GATE VALVES AND BOXES	5	EA	2
6		FIRE HYDRANT ASSEMBLIES, INSTALLED	6	EA	5
7		12" SDR–17, HDPE CASING, INSTALLED BY OPEN CUT	7	LF	30
8		12" SDR–17, HDPE CASING, INSTALLED BY BORE	8	LF	75
9		WATER SERVICE CONNECTION	9	EA	2
10		3/4" POLY SERVICE LINE	10	LF	200
11		PAVEMENT REMOVAL AND DISPOSAL	11	SY	100
12		ASPHALT PAVEMENT REPLACEMENT	12	SY	100
13		GRAVEL REPLACEMENT	13	SY	100
14		PROVIDE/INSTALL TAPPING TEE/VALVE ON 10" PVC LINE	14	LS	1
15		6" X 2" TAPPING SADDLE/VALVE	15	LS	1
16		CLEAN–UP	16	LS	1
17		FLOWABLE FILL	17	CY	50
101		PROVIDE/INSTALL 4" SDR–26 PVC PRESSURE PIPE, OPEN CUT	101	LF	1,290
102		PROVIDE/INSTALL 4" SDR–26 PVC PRESSURE PIPE, IN CASING	102	LF	150
103		4 GATE VALVES AND BOXES	103	EA	1
104		8" SDR–17 HDPE CASING PIPE, INSTALLED OPEN CUT	104	LF	80
105		8" SDR–17 HDPE CASING PIPE, INSTALLED BY BORE	105	LF	70
106		PROVIDE AND INSTALL NEW MANHOLE, COMPLETE	106	EA	1
107		CONNECT NEW FORCE MAIN TO EXISTING FORCE MAIN	107	EA	1
108		CONNECT NEW FORCE MAIN TO NEW MANHOLE	108	EA	1

ITEM 1 – MOBILIZATION/DEMOBILIZATION

UNDER THIS ITEM THE CONTRACTOR SHALL MOBILIZE AND DEMOBILIZE ALL EQUIPMENT, PERSONNEL AND SUPPLIES TO AND FROM THE JOB SITE AND FINAL CLEANUP. THIS ITEM INCLUDES ALL MEANS TO GAIN ACCESS TO THE SITE, SUCH AS FIELD ENTRANCE, TEMPORARY ROAD, DRAINAGE STRUCTURES, ETC. MEASUREMENT SHALL BE MADE PER A LUMP SUM. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES NEEDED TO MOBILIZE, DEMOBILIZE AND CLEANUP THE PROJECT.

ITEM 2 – RIGHT–OF–WAY CLEARING

UNDER THIS ITEM, THE CONTRACTOR SHALL CLEAR THE RIGHT–OF–WAY OF ALL FOREIGN OBJECTS, TREES, VEGETATION, ROCKS, OBSTACLES IN THE ALIGNMENT OF THE PROPOSED WATER LINE. MEASUREMENT SHALL BE PER LUMP SUM. PAYMENT SHALL BE FOR ALL WORK NEEDED TO CLEAR AND DISPOSE OF THE DEBRIS, RELOCATE SIGNS, MAILBOXES, BRACE POWER POLES, REMOVE AND RELOCATE FENCES, VEHICLES, ETC.

WHEN EXCAVATION IS IN CLOSE PROXIMITY TO TREE ROOTS, CONTRACTOR SHALL EXERCISE CAUTION DURING THE PROSECUTION OF THE WORK TO LIMIT DAMAGE TO ROOTS.

PRICE BID FOR "RIGHT–OF–WAY CLEARING" SHALL INCLUDE SUCH TEMPORARY MAILBOX FACILITIES AS ARE NECESSARY TO PROVIDE MAIL SERVICE WITHIN 24 HOURS OF DEMOLITION OF EXISTING MAILBOXES, AS WELL AS REPAIR OR REPLACEMENT, IN KIND MATERIALS AND CONSTRUCTION, OF EXISTING MASONRY STRUCTURES.

CONTRACT SHALL INCLUDE COST OF BRACING UTILITY POLES IN PAY ITEM "RIGHT–OF–WAY CLEARING". CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANY PRIOR TO BRACING TO COORDINATE THE BRACING OF THE POLE. NO ADDITIONAL PAYMENT SHALL BE MADE.

THIS ITEM INCLUDES THE CONSTRUCTION, MAINTENANCE AND REMOVAL OF ALL TEMPORARY MEASURES AND DEVISES TO CONTROL EROSION AND SEDIMENT WITHIN THE PROJECT LIMITS INCLUDING, BUT NOT LIMITED TO SILT FENCING, BERMS, DIKES, DRAINS, AND ANY OTHER ITEM NOT PAID FOR SEPARATELY BUT REQUIRED FOR EFFECTIVE AND CONTINUOUS EROSION AND SEDIMENT CONTROL SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM. CONTRACTOR SHALL SUBMIT AN EROSION AND SEDIMENT CONTROL PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING CONSTRUCTION.

ITEM 3 – PROVIDE AND INSTALL 6" SDR–21 PVC WATER LINE, OPEN CUT

UNDER THESE ITEMS THE CONTRACTOR SHALL PROVIDE AND INSTALL THE WATER LINE BY OPEN CUT AND BACKFILL AT THE LOCATION SHOWN ON THE PLANS. MEASUREMENT SHALL BE MADE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE PIPELINE FROM FITTING TO FITTING, INCLUDING ALL FITTINGS. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, BEDDING HAUNCHING, BACKFILL, EARTHWORK, TRENCHING, DETECTOR WIRE, WARNING TAPE, PRESSURE TESTING AND DISINFECTION TO COMPLETE THE PROJECT. ALSO INCLUDES PURCHASING OF WATER FROM TOWN OF SOUTH COFFEYVILLE FOR TESTING. ALL FITTINGS, JOINT RESTRAINTS, BEDDING MATERIAL AND INCLUDED IN THE COST OF THE PIPE.

ITEM 4 – PROVIDE AND INSTALL 6" SDR–21 PVC WATER LINE, IN CASING

UNDER THESE ITEMS THE CONTRACTOR SHALL PROVIDE AND INSTALL THE WATER LINE THROUGH INSTALLED CASING AT THE LOCATION SHOWN ON THE PLANS. MEASUREMENT SHALL BE MADE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE PIPELINE FROM END OF CASING TO END OF CASING. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, INCLUDING JOINT RETRAINTS, CASING END SEALS, PIPING SIGNS, EARTHWORK, TRENCHING, DETECTOR WIRE, PRESSURE TESTING AND DISINFECTION TO COMPLETE THE PROJECT. ALSO INCLUDES PURCHASING OF WATER FROM TOWN OF SOUTH COFFEYVILLE FOR TESTING. ALL FITTINGS, JOINT RESTRAINTS, BEDDING MATERIAL AND INCLUDED IN THE COST OF THE PIPE.

ITEM 4 – 6" GATE VALVE AND BOX

UNDER THIS ITEM THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW GATE VALVE, BOX AND VALVE SIGN AT THE LOCATIONS SHOWN ON THE PLANS. MEASUREMENT SHALL BE MADE FOR EACH GATE VALVE INSTALLED AND ACCEPTED. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES NEEDED TO CONSTRUCT THE IMPROVEMENTS.

ITEM 6 – FIRE HYDRANT ASSEMBLY

UNDER THIS ITEM THE CONTRACTOR SHALL PROVIDE AND INSTALL A FIRE HYDRANT ASSEMBLY AT THE LOCATIONS SHOWN ON THE PLANS, INCLUDING THE TEE FROM THE MAIN LINE, GATE VALVE AND BOX, SWIVEL ADAPTOR, FIRE HYDRANT, BEDDING AND AGGREGATE. MEASUREMENT SHALL BE MADE FOR EACH FIRE HYDRANT ASSEMBLY INSTALLED AND ACCEPTED. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES NEEDED TO CONSTRUCT THE IMPROVEMENTS.

ITEM 7 – 12" SDR–17 WELDED HDPE PIPE UNDER LOCAL STREETS/DRIVEWAYS/PARKING LOTS INSTALLED BY OPEN CUT

UNDER THESE ITEMS THE CONTRACTOR SHALL INSTALL THE WELDED HDPE CASING IN THE BORED HOLES, INSTALL THE WATER LINE ON THE SKIDS AND SEAL THE ENDS WITH A REMOVAL SEAL. MEASUREMENT SHALL BE MADE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE CASING FROM EITHER DITCHLINE TO DITCHLINE, OR TO A DISTANCE 10 FEET FROM THE EDGE OF THE EXISTING DRIVING LANE. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, INCLUDING THE PVC WATER LINE INSTALLED WITH THE CASING AND THE REQUIRED TESTING OF THE PVC PIPE.

ITEM 8 – 12" SDR–17 WELDED HDPE PIPE UNDER LOCAL STREETS/DRIVEWAYS/PARKING LOTS INSTALLED BY BORING

UNDER THESE ITEMS THE CONTRACTOR SHALL INSTALL THE WELDED HDPE CASING IN THE BORED HOLES, INSTALL THE WATER LINE ON THE SKIDS AND SEAL THE ENDS WITH A REMOVAL SEAL. MEASUREMENT SHALL BE MADE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE CASING FROM EITHER DITCHLINE TO DITCHLINE, OR TO A DISTANCE 10 FEET FROM THE EDGE OF THE EXISTING DRIVING LANE. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, INCLUDING THE PVC WATER LINE INSTALLED WITH THE CASING AND THE REQUIRED TESTING OF THE PVC PIPE.

ITEM 9 – WATER SERVICE CONNECTION
UNDER THIS ITEM, THE CONTRACTOR SHALL INSTALL WATER SERVICE CONNECTIONS AT EACH RESIDENCE ALONG THE ALIGNMENT. MEASUREMENT SHALL BE FOR EACH METER CONNECTION INSTALLED AND ACCEPTED. PAYMENT SHALL BE FOR ALL WORK SHOWN ON THE DETAIL FOR THE CONNECTION.

ITEM 10 – 3/4" POLY SERVICE LINE
UNDER THESE ITEMS THE CONTRACTOR SHALL INSTALL ¾" PEX SERVICE LINE AT THE LOCATIONS DIRECTED IN THE FIELD. MEASUREMENT SHALL BE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE PIPELINE FROM THE METER TO THE RESIDENCE APPROVED BY THE TOWN OF SOUTH COFFEYVILLE., UP TO 500 FEET. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, BEDDING HAUNCHING, BACKFILL, EARTHWORK, TRENCHING, PRESSURE TESTING AND DISINFECTION TO COMPLETE THE INSTALLATION.

ITEM 11 – PAVEMENT SAWCUT PAVEMENT REMOVAL AND DISPOSAL SHALL BE MADE BY SAWCUTTING THE PAVEMENT PRIOR TO EXCAVATING THE PAVEMENT. MEASUREMENT SHALL BE MADE PER SQUARE YARDAGE OF ASPHALT REPLACED AND ACCEPTED. PAYMENT SHALL BE MADE FOR ALL SAWCUTTING, EXCAVATION, FLOWABLE FILL BACKFILL, EQUIPMENT, LABOR AND OTHER MATERIALS NEEDED TO REMOVE THE PAVEMENT. SAWCUTTING SHALL BE TO THE FULL DEPTH OF THE PAVING SURFACE, EXCEPT AS NOTED OTHERWISE.THE USE OF THIS HAS NO SPECIFIC LOCATION AT THIS TIME SHALL BE USED ONLY IF APPROVED BY THE PROJECT ENGINEER AND/OR INSPECTOR.

ITEM 12 – ASPHALT PAVEMENT REPLACEMENT SHALL BE PAID FOR BY THE SQUARE YARD OF MATERIAL ACTUALLY REPLACED AND ACCEPTED. COST SHALL INCLUDE AGGREGATE BASE, TACK COAT AND ASPHALT PAVEMENT PLACEMENT.THE USE OF THIS HAS NO SPECIFIC LOCATION AT THIS TIME SHALL BE USED ONLY IF APPROVED BY THE PROJECT ENGINEER AND/OR INSPECTOR.

ITEM 13 – GRAVEL REPLACEMENT SHALL BE PAID FOR BY THE SQUARE YARD OF MATERIAL ACTUALLY REPLACED AND ACCEPTED. COST SHALL INCLUDE PURCHASE AND PLACEMENT OF GRAVEL. PAYMENT SHALL BE PER SQUARE YARD OF GRAVEL ACTUALLY REPLACED. THE USE OF THIS HAS NO SPECIFIC LOCATION AT THIS TIME SHALL BE USED ONLY IF APPROVED BY THE PROJECT ENGINEER AND/OR INSPECTOR.

ITEM 14 – 10" X 6" TAPPING TEE AND 6" VALVE, INSTALLED AND IN PLACE

UNDER THIS ITEM THE CONTRACTOR SHALL CONNECT THE NEW WATER LINE TO THE EXISTING WATER LINE NEW THE WATER TANK A 12" X 6" TAPPING TEE AND 6" VALVE, INSTALLED. MEASUREMENT SHALL BE MADE PER LUMP SUM. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT, EXPENSES, AND AS A MINIMUM, THE MATERIALS SHOWN ON THE PLANS TO CONSTRUCT THE IMPROVEMENTS.

ITEM 15 – CONNECTION EXISTING 2" WATER LINE

UNDER THIS ITEM THE CONTRACTOR SHALL CONNECT THE NEW WATER LINE TO THE EXISTING 2" WATER LINE USING A 6" X 2" TAPPING TEE, 2" GATE VALVE THE ABOVE REFERENCED EQUIPMENT. MEASUREMENT SHALL BE MADE PER LUMP SUM. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT, EXPENSES, AND AS A MINIMUM, THE MATERIALS SHOWN ON THE PLANS TO CONSTRUCT THE IMPROVEMENTS.

ITEM 16 – RIGHT–OF–WAY RESTORATION
UNDER THIS ITEM, THE CONTRACTOR THE CONTRACTOR SHALL RESTORE THE TRENCHLINE DISTURBED BY THE WATER AND SEWER LINES, MANHOLE CONSTRUCTION, TIE–INS, ETC, ASSOCIATED WITH THE UTILITY RELOCATION. AREAS THAT WILL BE DISTURBED BY THE STAR PIPE PROJECT ON THEIR SIDE OF THE ROADS DO NOT HAVE TO BE RESODDED AND WILL BE RESTORED AT THE END OF THE BUILDING PROJECT. AREAS DISTURBED ON THE RESIDENT SIDE OF THE STREETS SHALL BE RESTORED TO THE SAME OR BETTER THAN CONDITION PRIOR TO CONSTRUCTION BEGINNING. MEASUREMENT SHALL BE PER A LUMP SUM AND WILL BE PAID AFTER OWNER APPROVAL.

ITEM 17 – FLOWABLE FILL
UNDER THIS ITEM THE CONTRACTOR SHALL PROVIDE AND INSTALL FLOWABLE FILL IN AREAS WHERE THE INSPECTOR CALLS FOR IT. AREAS WILL BE LIMITED TO THE AREAS WHERE NORMAL BEDDING PROCEDURE IS UNTIMELY OF DIFFICULT TO PERFORM. MEASUREMENT SHALL BE MADE FOR CUBIC YARD OF FLOWABLE FILL ACTUALLY INSTALLED AND ACCEPTED. PAYMENT SHALL BE FOR ALL MATERIAL, LABOR, TRUCKING TO SITE AND EXPENSES.

ITEM 101 – PROVIDE AND INSTALL 4" SDR–26 PVC PRESSURE PIPE, OPEN CUT

UNDER THESE ITEMS THE CONTRACTOR SHALL PROVIDE AND INSTALL THE PRESSURE PIPE BY OPEN CUT AND BACKFILL AT THE LOCATION SHOWN ON THE PLANS. MEASUREMENT SHALL BE MADE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE PIPELINE FROM FITTING TO FITTING, INCLUDING FITTINGS. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, BEDDING HAUNCHING, BACKFILL, EARTHWORK, TRENCHING, DETECTOR WIRE, WARNING TAPE, PRESSURE TESTING TO COMPLETE THE PROJECT. ALSO INCLUDES PURCHASING OF WATER FROM TOWN OF SOUTH COFFEYVILLE FOR TESTING. ALL FITTINGS, JOINT RESTRAINTS, BEDDING MATERIAL AND INCLUDED IN THE COST OF THE PIPE.

ITEM 102 – PROVIDE AND INSTALL 4" SDR–26 PVC PRESSURE PIPE, IN CASING

UNDER THESE ITEMS THE CONTRACTOR SHALL PROVIDE AND INSTALL THE THROUGH INSTALLED CASING AT THE LOCATION SHOWN ON THE PLANS. MEASUREMENT SHALL BE MADE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE PIPELINE FROM END OF CASING TO END OF CASING. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, INCLUDING JOINT RETRAINTS, CASING END SEALS, PIPING SIGNS, EARTHWORK, TRENCHING, DETECTOR WIRE, PRESSURE TESTING TO COMPLETE THE PROJECT. ALSO INCLUDES PURCHASING OF WATER FROM TOWN OF SOUTH COFFEYVILLE FOR TESTING. ALL FITTINGS, JOINT RESTRAINTS, BEDDING MATERIAL AND INCLUDED IN THE COST OF THE PIPE.

ITEM 103 – 6" GATE VALVE AND BOXPRESSURE PIPE

UNDER THIS ITEM THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW GATE VALVE, BOX AND VALVE SIGN AT THE LOCATIONS SHOWN ON THE PLANS. MEASUREMENT SHALL BE MADE FOR EACH GATE VALVE INSTALLED AND ACCEPTED. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES NEEDED TO CONSTRUCT THE IMPROVEMENTS.

ITEM 104 – 8" SDR–17 WELDED HDPE PIPE UNDER LOCAL STREETS/DRIVEWAYS/PARKING LOTS INSTALLED BY OPEN CUT

UNDER THESE ITEMS THE CONTRACTOR SHALL INSTALL THE WELDED HDPE CASING IN THE BORED HOLES, INSTALL THE PRESSURE PIPE ON THE SKIDS AND SEAL THE ENDS WITH A REMOVAL SEAL. MEASUREMENT SHALL BE MADE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE CASING FROM EITHER DITCHLINE TO DITCHLINE, OR TO A DISTANCE 10 FEET FROM THE EDGE OF THE EXISTING DRIVING LANE. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, INCLUDING THE PVC PRESSURE PIPE INSTALLED WITH THE CASING AND THE REQUIRED TESTING OF THE PVC PIPE.

ITEM 105 – 8" SDR–17 WELDED HDPE PIPE UNDER LOCAL STREETS/DRIVEWAYS/PARKING LOTS INSTALLED BY BORING

UNDER THESE ITEMS THE CONTRACTOR SHALL INSTALL THE WELDED HDPE CASING IN THE BORED HOLES, INSTALL THE PRESSURE PIPE ON THE SKIDS AND SEAL THE ENDS WITH A REMOVAL SEAL. MEASUREMENT SHALL BE MADE PER LINEAR FOOT AS MEASURED ALONG THE CENTERLINE OF THE CASING FROM EITHER DITCHLINE TO DITCHLINE, OR TO A DISTANCE 10 FEET FROM THE EDGE OF THE EXISTING DRIVING LANE. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, INCLUDING THE PVC PRESSURE PIPE INSTALLED WITH THE CASING AND THE REQUIRED TESTING OF THE PVC PIPE.

ITEM 106 – PROVIDE AND INSTALL NEW PRECAST MANHOLE, COMPLETE
UNDER THESE ITEMS THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW SANITARY SEWER MANHOLE ON AN EXISTING SEWER LINE WITH PENETRATIONS FOR EXISTING CLAY PIPE AND A 4" PVC FORCE MAIN. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, TO PROVIDE AND INSTALL THE MANHOLE, HAVE IT COATED, PROVIDE A MANHOLE RING AND LID AND GASKETS.

ITEM 107 – CONNECT NEW FORCE MAIN TO EXISTING FORCE MAIN
UNDER THIS ITEM THE CONTRACTOR SHALL CONNECT THE NEW FORCE MAIN TO THE EXISTING FORCE MAIN NEAR THE OFFICE BUILDING. WORK INCLUDES DRAINING THE LINE, PROSPECTING FOR THE EXISTING LINE, REMOVING THE 90 DEGREE BEND, INSTALLING A NEW BEND AND GATE VALVE. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, REQUIRED CONNECT THE FORCE MAINS.

ITEM 108 – CONNECT NEW FORCE MAIN TO NEW MANHOLE
UNDER THIS ITEM THE CONTRACTOR SHALL CONNECT THE NEW FORCE MAIN TO THE NEW MANHOLE NEAR THE WEST END OF 3RD. PAYMENT SHALL BE FOR ALL LABOR, MACHINERY, EQUIPMENT AND EXPENSES, REQUIRED CONNECT THE FORCE MAIN.

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ONE INCH
0 1

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HDH	HDH	AS SHOWN

PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
PAY QUANTITIES
S. COFFEYVILLE OKLAHOMA

PROJECT NO.

SHEET G3

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND ELEVATION OF EXISTING WATER LINES, SEWER LINES AND OTHER UTILITY LINES TO BE CROSSED, TAPPED AND CONNECTED TO, WELL IN ADVANCE OF CONSTRUCTION TO ALLOW FOR ACCEPTABLE DEFLECTION OF NEW LINE IMPROVEMENTS. PAYMENT FOR ADDITIONAL FITTINGS, FITTINGS IN ADDITION TO WHAT IS INDICATED ON THE DRAWINGS, WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THIS PROJECT.

2. CONCRETE THRUST BLOCKING SHALL BE BUILT AT THE LOCATIONS SHOWN ON THE DRAWINGS AND ACCORDING TO THE DETAILS.

3. ALL NEW FITTINGS AND VALVES SHALL BE RESTRAINED WITH A MECHANICAL JOINT RESTRAINT SYSTEM. EACH FITTING AND VALVE SHALL BE RESTRAINED BY A MINIMUM OF TWO (2) MECHANICAL JOINT RESTRAINT SYSTEMS. TEES SHALL REQUIRE THREE (3) RESTRAINTS. CROSSES SHALL REQUIRE FOUR (4) RESTRAINTS. MECHANICAL JOINT RESTRAINT SYSTEM SHALL BE MEGALUG 1100 OR APPROVED EQUAL AND SHALL BE DESIGNED FOR THE PIPE MATERIAL BEING USED.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL PUBLIC AND PRIVATE FACILITIES INCLUDING, BUT NOT LIMITED TO UTILITIES, STREETS AND ROADS, DRAINAGE FEATURES AND FENCES. ALL KNOWN UTILITIES HAVE BEEN SHOWN ON THE DRAWINGS. BEFORE COMMENCING ANY EXCAVATION, THE CONTRACTOR SHALL NOTIFY THE "OKLAHOMA "ONE-CALL" SYSTEM OF HIS INTENT AND SHALL HAVE THE UTILITIES LOCATED IN THE FIELD.

5. ALL TESTING SHALL BE IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. TESTING SHALL BE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR AND DIRECTED BY THE INSPECTOR.

6. PIPE USED ON THIS PROJECT SHALL MEET THE FOLLOWING REQUIREMENT:
PVC PRESSURE (FORCE MAIN) PIPE – ASTM D2241, PRESSURE CLASS 200
PVC GRAVITY PIPE (8" DIAMETER AND LARGER) – SDR 35
PVC GRAVITY PIPE (SMALLER THAN 8" DIAMETER) – SCHEDULE 40
DUCTILE IRON GRAVITY PIPE – PRESSURE CLASS 150.
WATER PIPE (OVER 2" DIAMETER) SDR-21, CLASS 200
WATER PIPE (1-2" DIAMETER) SCH 40 PVC
¾" WATER SERVICE PIPE – PEX
CASING PIPE (OVER 4" DIAMETER) SDR-17 HDPE

7. ALL CAST-IN-PLACE CONCRETE USED ON THIS PROJECT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. CAST-IN-PLACE CONCRETE USED ON THIS PROJECT SHALL NOT INCLUDE FLY ASH.

8. THE CONTRACTOR SHALL EXERCISE CAUTION IN THE PROGRESS OF THE WORK IN ORDER TO PREVENT INTERRUPTION OF EXISTING UTILITIES AND INTERRUPTIONS IN THE OPERATION OF THE FOUNDRY

9. THE CONTRACTOR SHALL PROVIDE ALL LAYOUT AND CONSTRUCTION STAKING REQUIRED FOR COMPLETION OF THE PROJECT. ALL STAKING SHALL BE DONE UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF OKLAHOMA.

10. THE OWNER IS: THE CITY OF SOUTH COFFEYVILLE
PO BOX 100
SOUTH COFFEYVILLE, OKLAHOMA 74072-0100
TELEPHONE: 918-255-6045
FAX: 918-255-6430
JERI CULBERTSON, TOWN CLERK
ROBIN LAMB, PUBLIC WORKS DIRECTOR

11. THE ENGINEER IS: H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OKLAHOMA 74017
TELEPHONE: 918-637-3961
DWAYNE HENDERSON, PROJECT MANAGER

12. PROJECT FUNDING SPONSOR IS: TAMI MCKEON, ECONOMIC DEVELOPMENT DIRECTOR
GDEDA
BIG CABIN, OKLAHOMA

EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE PROJECT THAT DO NOT CONFLICT WITH THE PROPOSED CONSTRUCTION.

13. RUBBLE, DEBRIS AND OTHER TRASH SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF OFF-SITE. ALL COSTS ASSOCIATED WITH REMOVAL AND DISPOSAL OF RUBBLE, DEBRIS AND TRASH FROM THE SITE SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT AND WILL NOT BE PAID FOR SEPARATELY.

14. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR THE OPENING AND CLOSING OF VALVES AND FOR THE SCHEDULING OF SHUTDOWNS TO MAKE THE NECESSARY IMPROVEMENTS. THE CONTRACTOR SHALL NOT MANIPULATE ANY VALVES WITHOUT THE CONSENT OR PRESENCE OF OWNER FORCES.

15. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY SANITARY FACILITIES (PORTA-JOHN'S) ON-SITE FOR WORKERS. COSTS FOR PROVIDING AND MAINTAINING THESE FACILITIES SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT AND WILL NOT BE PAID FOR SEPARATELY.

16. THE CONTRACTOR SHALL NOTIFY PIPELINE UTILITY COMPANIES AT LEAST TWENTY-FOUR (24) HOURS IN ADVANCE OF WORK BEING PERFORMED ACROSS AND/OR ADJACENT TO PIPELINES.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW IN EXISTING SANITARY SEWERS AND STORM SEWERS DURING CONSTRUCTION.

18. THE CONTRACTOR, UPON COMPLETION OF THE PROJECT, SHALL RETURN ALL ROADS, TRAILS AND ACCESS WAYS INTO AND OUT OF THE PROJECT AREA TO THEIR ORIGINAL CONDITION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THIS PROJECT AND WILL NOT BE PAID FOR SEPARATELY.

19. THE CONTRACTOR WILL BE ALLOWED TO STORE EQUIPMENT AND MATERIALS ON-SITE DURING CONSTRUCTION.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL PLANT AND POWER REQUIREMENTS FOR CONSTRUCTION OF THE PROJECT. COSTS ASSOCIATED WITH PROVIDING PLANT AND POWER REQUIREMENTS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THE PROJECT AND WILL NOT BE PAID FOR SEPARATELY. SEE NOTE NUMBER 54.

21. ALL DISTURBED AREAS SHALL BE FERTILIZED AND SEEDED, SEE SPECIFICATIONS FOR REQUIREMENTS. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR WATERING AND ESTABLISHING VEGETATIVE COVER.

22. ALL EXPOSED CORNERS AND EDGES SHALL RECEIVE A ¾" CHAMFER.

23. ALL WORK SHALL BE DONE FOLLOWING THE LINES AND GRADES SHOWN ON THE DRAWINGS. ALL ADDITIONAL SURVEY, LAYOUT, STAKING AND MEASUREMENT WORK SHALL BE PERFORMED BY THE CONTRACTOR AS A PART OF THE WORK UNDER THE CONTRACTOR. ADDITIONAL PAYMENT FOR SURVEY, LAYOUT, STAKING AND MEASUREMENT WORK WILL NOT BE MADE BY THE OWNER.

24. ALL OPEN TRENCHES AND OTHER EXCAVATIONS SHALL BE PROTECTED WITH SUITABLE BARRIERS, SIGNS AND LIGHTS. OBSTRUCTIONS SUCH AS MATERIAL PILES AND EQUIPMENT SHALL BE PROTECTED WITH SIMILAR WARNING SIGNS AND LIGHTS. ALL BARRICADES, SIGNS, LIGHTS AND OTHER PROTECTIVE DEVICES SHALL BE INSTALLED AND MAINTAINED IN A MANNER ACCEPTABLE TO THE ENGINEER. BARRICADES, SIGNS, LIGHTS AND OTHER PROTECTIVE DEVICES SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THE PROJECT AND WILL NOT BE PAID FOR SEPARATELY.

25. ALL REINFORCING STEEL USED ON THIS PROJECT SHALL BE GRADE 60.

26. WORK DAYS SHALL BE LIMITED TO MONDAY THROUGH FRIDAY UNLESS PRIOR APPROVAL IS OBTAINED FROM THE OWNER AND ENGINEER.

27. THE SITE SHALL ALWAYS BE ACCESSIBLE TO THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY, THE INSPECTOR, THE OWNER AND THE ENGINEER. THE ODEQ PERMIT NUMBER FOR THIS PROJECT IS:

ODEQ:

28. ALL STEEL, EXCLUDING REINFORCING BAR, SHALL BE CLEANED, PRIMED, AND PAINTED, ACCORDING TO SPECIFICATIONS.

29. ALL REINFORCING BAR USED ON THIS PROJECT SHALL BE EPOXY COATED.

30. THE CONTRACTOR SHALL PROVIDE THE INSPECTOR WITH A COMPLETED COPY OF EACH MONTHLY PAY REQUEST BEFORE PRESENTING THE PAY REQUEST TO THE ENGINEER. PAY REQUESTS RECEIVED BY THE ENGINEER WITHOUT APPROVAL OF THE INSPECTOR WILL BE RETURNED TO THE CONTRACTOR "NOT-APPROVED".

31. THE OWNER MEETS THE FIRST/THIRD MONDAYS OF EACH MONTH.

32. WATER PROJECT IS PERMITTED THROUGH ODEQ PERMIT # SL000053180299 AND THE SEWER PROJECT THROUGH ODEQ PERMIT # SL000053180298

33. CONTRACTOR TO IDENTIFY CONCRETE WASH-OUT LOCATIONS AND HAVE THEM PRE-APPROVED AT THE PRECONSTRUCTION CONFERENCE

PROJECT MATERIALS:

1. POLYVINYL CHLORIDE (PVC) PIPE – POLYVINYL CHLORIDE PIPE (PVC PIPE) SHALL MEET THE REQUIREMENTS OF ASTM D2241. PVC PIPE SHALL BE MANUFACTURED FROM PVC 1120 MATERIAL AND SHALL HAVE AN SDR 21 PRESSURE RATING (200 PSI) FOR WATER AND SDR-26 FOR SEWER PRESSURE PIPE (FORCE MAIN) ALL DIAMETER PIPES, UNLESS OTHERWISE STATED ON THE DRAWINGS. PVC PIPE SHALL HAVE AN OUTSIDE DIAMETER BASED ON THE IPS SYSTEM. JOINTS BETWEEN PIPE SECTIONS AND BETWEEN PIPE AND FITTINGS SHALL BE THE BELL-AND-SPIGOT TYPE WITH FLEXIBLE ELASTOMERIC GASKETS CONFORMING TO ASTM D 3139. ELASTOMERIC GASKETS INCORPORATED IN THE BELL END SHALL CONFORM TO ASTM F 477.

2. FITTINGS – ALL FITTINGS 2-INCHES AND LARGER IN DIAMETER SHALL BE DUCTILE IRON. FITTINGS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C153/A21.53 AND ANSI/AWWA C111/A21.11. ALL FITTINGS SHALL BE DESIGNED AND MANUFACTURED FOR A PRESSURE RATING EQUAL TO OR GREATER THAN THAT WHICH IS REQUIRED FOR THE PIPE. THE FITTINGS SHALL BE CEMENT-LINED AND SEAL COATED IN ACCORDANCE WITH ANSI A21.4/AWWA C104. UNLESS OTHERWISE NOTED OR CALLED OUT ON THE PLANS ALL FITTING JOINTS SHALL BE MECHANICAL JOINT. MECHANICAL JOINTS SHALL MEET THE REQUIREMENTS OF ANSI A21.11/AWWA C111. ALL RETAINER GLANDS SHALL BE FULL BODY. SPLIT GLANDS WILL ONLY BE CONSIDERED FOR USE ON CONNECTION WHERE FULL BODY CANNOT BE USED. ALL FITTINGS SHALL BE RESTRAINED MECHANICALLY WITH MIDCO PERMA-GRIP RESTRAINED JOINT SYSTEM AND WITH THRUST BLOCKING. PVC WILL NOT BE ACCEPTED.

3. ADAPTERS AND RESTRAINED JOINTS – ADAPTERS FROM PVC WATER PIPE TO FLANGED JOINT VALVES OR FITTINGS SHALL BE DUCTILE IRON. ADAPTERS SHALL MEET THE REQUIREMENTS OF ANSI A21.10/AWWA C110. THE ADAPTORS SHALL BE DESIGNED AND MANUFACTURED FOR A PRESSURE RATING COMPATIBLE WITH THAT OF THE PIPE. THE ADAPTORS SHALL BE CEMENT-LINED AND SEAL COATED IN ACCORDANCE WITH ANSI A21.4/AWWA C104. UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS, ALL RESTRAINED JOINTS SHALL BE MADE UP WITH THE MIDCO PERMA-GRIP RESTRAINED JOINT SYSTEM. NO ALTERNATIVES WILL BE CONSIDERED OR APPROVED. ADAPTER ENDS CONNECTING TO FLANGE JOINT VALVES OR FITTINGS SHALL HAVE JOINTS COMPLYING WITH THE SPECIFICATIONS FOR THE APPLICABLE VALVES OR FITTINGS. PIPE JOINT RESTRAINTS SHALL BE FORD UNI-FLANGE SERIES 1300 (PREFERENCE IS 1350), DOMESTICALLY MANUFACTURED. ALL OTHER MANUFACTURERS OF SIMILAR RESTRAINTS ARE SUBJECT TO REVIEW AND APPROVAL BY THE DISTRICT.

4. GASKETS – GASKETS FOR POLYVINYL CHLORIDE PUSH-ON JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D 3139. GASKETS FOR MECHANICAL JOINTS SHALL MEET THE REQUIREMENTS OF ANSI A21.11/AWWA C111. PROPERLY SIZED TRANSITION GASKETS SHALL BE USED BETWEEN PVC AND DUCTILE IRON FITTINGS.

5. NUTS AND BOLTS – NUTS AND BOLTS FOR MECHANICAL JOINTS SHALL BE HIGH STRENGTH, HEAT-TREATED, CAST IRON. NUTS SHALL BE HEXAGON NUTS. BOLTS SHALL BE TEE HEAD BOLTS. NUTS AND BOLTS SHALL MEET THE REQUIREMENTS OF ANSI A21.11/AWWA C111.

6. POLYETHYLENE (PE) PIPE (CASING PIPE) – POLYETHYLENE (PE) PIPE SHALL BE AWWA AND NSF APPROVED FOR POTABLE WATER CONTACT. ACCEPTABLE MANUFACTURERS OF PE PIPE AND FITTING INCLUDE PERFORMANCE PIPE, RINKER, LAMPSON, AND/OR J.M. POLY PIPE. ALL OTHER MANUFACTURERS ARE SUBJECT TO REVIEW AND APPROVAL BY THE DISTRICT. ALL PE PIPE SHALL BE FURNISHED WITH AN AFFIDAVIT FROM THE MANUFACTURER STATING THAT THE PIPE MEETS THE REQUIREMENTS OF THESE SPECIFICATIONS. POLYETHYLENE (PE) PIPE SHALL CONFORM TO ASTM 3350 AND NSF STANDARD #14 FOR POTABLE WATER PIPE, AND AWWA C-901 AND C-906. ALL PIPE SHALL BE A MINIMUM OF DR 17 (100 PSI), THE PIPE SIZE SHALL BE AS SHOWN ON THE PLANS. THE PE PIPE SHALL BE HEAT FUSION BONDED.

7. VALVES – GATE VALVES: BURIED GATE VALVES SHALL BE IRON BODY, NON-RISING STEM RESILIENT SEAT GATE VALVES. VALVES SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF AWWA C509 AND BE CERTIFIED TO ANSI/NSF 61. THE INTERIOR AND EXTERIOR SURFACES OF THE VALVE SHALL BE FUSION EPOXY COATED WITH A MINIMUM 10 MIL THICKNESS. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS VALVE OPENING DIRECTION SHALL GENERALLY BE TO THE LEFT. ALL 2" VALVES SHALL HAVE A MINIMUM DESIGN WORKING PRESSURE OF 250 PSI; ALL 4" THROUGH 12" VALVES SHALL HAVE A MINIMUM WORKING PRESSURE OF 350 PSI. GATE VALVES SHALL BE MUELLER MODEL A-2360 FOR 2"; AND MODEL A-2361 FOR 4" THROUGH 12" WITH MECHANICAL AND/OR FLANGED JOINT ENDS AS REQUIRED.

8. PRESSURE-REDUCING VALVES: PRESSURE-REDUCING VALVES SHALL BE DESIGNED TO PROVIDE TIGHT SHUTOFF UNDER CONDITIONS OF NO FLOW AND SHALL NOT "HUNT" UNDER ORDINARY FLOW CONDITIONS. PRESSURE-REDUCING VALVES SHALL BE SUITABLE FOR OPERATION UNDER THE PRESSURE AND FLOW CONDITIONS AS SHOWN ON THE PLANS, OR AS SPECIFIED FOR EACH APPLICATION. AIR RELIEF VALVES: AIR-RELIEF VALVES SHALL BE INSTALLED AT THE LOCATIONS INDICATED ON THE PLANS. EACH VALVE ASSEMBLY SHALL BE INSTALLED COMPLETE WITH APPROPRIATE PIPING AND VALVES AS SHOWN ON THE PLANS. ALL PIPING AND ISOLATION VALVES SHALL BE BRASS EXCEPT FOR THE AIR OUTLET FROM THE VALVE, WHICH SHALL BE BRASS OR COPPER TUBING. UNLESS OTHERWISE STATED ON THE PLANS, AIR RELIEF VALVES SHALL BE APCO MODEL 200A WITH A 1-INCH INLET AND 3/16-INCH ORIFICE, OR APPROVED EQUAL.

9. TAPPING VALVES AND SLEEVES: TAPPING VALVES SHALL BE 200 PSI, IRON BODY, RESILIENT-SEATED GATE VALVES WITH NON-RISING STEMS CONFORMING WITH ALL APPLICABLE REQUIREMENTS OF ANSI/AWWA C500 AND C509, EXCEPT THAT THE OUTLET END SHALL BE STANDARD MECHANICAL JOINT END CONFORMING TO ANSI A21.11/AWWA C111 AND THE INLET END SHALL HAVE AN INLET FLANGE CONFORMING TO ANSI B16.1 FOR CAST IRON FLANGES, CLASS 125. TAPPING SLEEVES SHALL BE FORD STYLE FAST.

10. VALVE APPURTENANCES – VALVE ENDS OF THE MECHANICAL JOINT TYPE SHALL CONFORM TO ANSI A21.11/AWWA C111. THE END FLANGES OF FLANGED VALVES SHALL CONFORM IN DIMENSIONS AND DRILLING TO ANSI B16.1 FOR CAST-IRON FLANGES AND FLANGED FITTINGS, CLASS 125 UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS. THE LAYING LENGTHS OF THE FLANGED VALVES SHALL CONFORM TO THE DIMENSIONS OF ANSI B16.10. COATING: ALL EXTERIOR SURFACES OF EACH VALVE SHALL BE CLEANED AND PAINTED IN THE SHOP WITH AN EPOXY COATING THAT MEETS OR EXCEEDS ALL APPLICABLE REQUIREMENTS OF ANSI/AWWA C550 AND THAT IS CERTIFIED TO ANSI/NSF 61. THE INTERIOR SURFACES OF RESILIENT-SEATED GATE VALVES SHALL HAVE A PROTECTIVE COATING OF FUSION-BONDED, NONTOXIC EPOXY, WHICH IS SAFE FOR POTABLE WATER.

11. VALVE OPERATION – GATE VALVES SHALL BE EQUIPPED WITH AN AWWA 2-INCH SQUARE WRENCH NUT AND THE DIRECTION OF ROTATION TO OPEN THE VALVE SHALL BE TO THE LEFT (COUNTERCLOCKWISE) UNLESS OTHERWISE NOTED. OPERATORS FOR NON-BURIED SERVICE BUTTERFLY VALVES SHALL BE OF THE ENCLOSED GEAR-TYPE FURNISHED WITH A HAND WHEEL AND 2-INCH SQUARE AWWA OPERATING NUT. OPERATORS FOR BURIED SERVICE SHALL BE EQUIPPED WITH MECHANICAL STOP-LIMITING DEVICES TO PREVENT OVER TRAVEL OF THE DISC IN THE OPEN AND CLOSED POSITIONS. OPERATORS FOR BURIED SERVICE BUTTERFLY VALVES SHALL BE OF THE TOTALLY ENCLOSED, PERMANENTLY LUBRICATED, WORM GEAR-TYPE. THE VALVES SHALL CONFORM TOO AWWA C 504 AND SHALL BE EQUIPPED WITH A 2-INCH SQUARE AWWA OPERATING NUT WITH A REMOVABLE HAND WHEEL COMPLETE WITH SPINNER AND OPEN-CLOSE INDICATOR, SUITABLE FOR ONE -MAN OPERATION AT 150 PSI UNBALANCED ACROSS THE VALVE. THE VALVE INDICATOR SHALL BE HERMETICALLY SEALED FOR INSTALLATION INSIDE A CAST-IRON VALVE BOX AND SHALL SHOW VALVE-DISC POSITION, DIRECTION OF ROTATION, AND NUMBER OF TURNS FROM FULL OPEN TO FULL CLOSE. EXTENSION STEMS: WHEN THE DISTANCE FROM THE TOP OF THE VALVE COVER TO THE VALVE-OPERATING NUT EXCEEDS THREE (3) FEET, EACH BURIED VALVE SHALL BE PROVIDED WITH AN EXTENSION STEM AND 2-INCH OPERATING NUT.

12. CURB/CORPORATION STOPS: BURIED VALVES SMALLER THAN 2-INCH DIAMETER SHALL BE CURB/CORPORATION STOPS. CURB/CORPORATION STOPS SHALL BE ALL BRASS FORD MODEL F-1100 OR MUELLER H-15028 [MALE IRON PIPE THREAD INLET BY PACK JOINT FOR PLASTIC TUBING (CTS) OUTLET]. TAPERED THREADS ARE NOT ALLOWED.

13. VALVE BOXES – VALVE BOXES FOR BUTTERFLY VALVES AND GATE VALVES SHALL BE CAST IRON. VALVE BOXES SHALL BE TWO-PIECE OR THREE-PIECE TYPE. EACH TWO-PIECE BOX SHALL BE COMPLETE WITH BOTTOM SECTION, TOP SECTION, AND COVER. EACH THREE-PIECE BOX SHALL BE COMPLETE WITH BASE, CENTER SECTION, TOP SECTION, AND COVER. VALVE BOXES SHALL BE EXTENSION TYPE WITH SLIDE OR SCREW TYPE ADJUSTMENT. EACH BASE AND BOTTOM SECTION SHALL BE THE PROPER SIZE FOR THE VALVE SERVED. EACH VALVE BOX ASSEMBLY SHALL BE THE PROPER LENGTH FOR THE VALVE SERVED. THE MINIMUM THICKNESS OF METAL SHALL BE 3/16-INCH. CAST THE WORD "WATER" IN EACH VALVE BOX COVER. RURAL AREAS – VALVE BOXES MAY BE PVC SDR-35 PROVIDED WITH A MUSHROOM STYLE METAL CAP. THE BOX SHALL BE EXTENDED ABOVE THE ADJACENT GRADE A MINIMUM OF 12 INCHES.

14. FIRE HYDRANT ASSEMBLY – GENERAL: FLUSHING AND FIRE HYDRANTS SHALL BE DRY BARREL, STANDARD COMPRESSION, TWO-PIECE STANDPIPE, BREAK-AWAY DESIGN CONFORMING TO AWWA C502 AND SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS. ALL HYDRANT ASSEMBLIES SHALL INCLUDE AN ISOLATION GATE VALVE WITH VALVE BOX AND LID. HYDRANTS SHALL BE SET PLUMB WITH HOSE NOZZLES FACING AS DIRECTED BY OWNER. THE DISTANCE FROM THE BOTTOM OF THE HOSE NOZZLE TO THE FINISHED GRADE SHALL BE A MINIMUM OF 18-INCHES AND A MAXIMUM OF 30-INCHES. UNLESS OTHERWISE SPECIFIED OR SHOWN THE DISTANCE FROM THE CENTER OF THE HYDRANT TO THE ISOLATION BRANCH GATE VALVE SHALL BE A MINIMUM OF 30-INCHES. HYDRANT SHALL BE BLOCKED WITH A PLUG-TYPE CONCRETE BEARING BLOCK (4-INCH X 8-INCH X 16-INCH) AND SHALL BE HARNESSED TO THE 6-INCH HYDRANT BRANCH TEE. CONCRETE SHALL BE POURED BEHIND THE HYDRANT BASE AGAINST AS SOLID DITCH WALL. CONCRETE BLOCKING SHALL STAY 3-INCHES BELOW THE BASE FLANGE OF THE HYDRANT SO THE HYDRANT BARREL WEEP- HOLES WILL NOT BE BLOCKED. A SUFFICIENT QUANTITY OF GRANULAR MATERIAL SHALL BE BACKFILLED AROUND THE HYDRANT TO ALLOW FREE DRAINAGE OF THE BARREL. CLEAN GRAVEL APPROXIMATELY 1-INCH IN DIAMETER SHALL BE PLACED AROUND THE BASE FLANGE AND 12-INCHES ABOVE THE BASE FLANGE OF THE HYDRANT. HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE SECTIONS OF THE LATEST REVISION OF AWWA C600. UNLESS OTHERWISE NOTED OR APPROVED ALL HYDRANTS SHALL BE EQUIPPED WITH A 6-INCH MECHANICAL JOINT INLET CONNECTION. OPERATING STEM AND NOZZLE CAP NUTS SHALL BE PENTAGON. HYDRANT NOZZLES SHALL MEET NFPA STANDARD THREAD REQUIREMENTS. ALL NOZZLE CAPS SHALL BE EQUIPPED WITH CHAINS ATTACHED TO THE HYDRANTS AND SHALL BE FURNISHED WITH LONG LIFE RUBBER GASKETS MEETING RUBBER PRODUCTS IN AUTOMOTIVE APPLICATION, ASTM D2000 REQUIREMENTS. THE BURY DEPTH OF HYDRANT BARREL SHALL BE THREE FEET (3') BELOW FINISH GRADE TO THE INVERT OF THE CONNECTING PIPE. EXTENSIONS SHALL BE USED TO ACCOMMODATE PIPE AT GREATER DEPTHS. HYDRANTS SHALL BE EQUIPPED WITH TWO DRAIN HOLES AND PROVIDED WITH AN AUTOMATIC AND POSITIVELY OPERATING NON-CORRODIBLE DRAIN OR DIP VALVE SO AS TO DRAIN THE HYDRANT COMPLETELY WHEN THE MAIN VALVE IS SHUT. HARNESSING LUGS SHALL BE FURNISHED WITH THE HYDRANTS. HYDRANTS SHALL BE PAINTED RED. TWO 2½-INCH HOSE NOZZLES AND ONE PUMPER NOZZLE, 6-INCH SHOE AND 4½-INCH BARREL, MECHANICAL VALVE OPENING LEFT, AND A 6-INCH INLET CONNECTION. HYDRANT MODELS SHALL BE MUELLER A421.

15. BEDDING AND BACKFILL MATERIALS – PIPE EMBEDMENT: UNLESS OTHERWISE APPROVED THE BEDDING FOR ALL PIPE, FITTINGS AND RELATED APPURTENANCES SHALL BE SAND OR SCREENINGS THAT IS GRADED FROM FINE TO COARSE, FREE FROM OBJECTIONABLE MATERIAL, AND CONTAINING NO MORE THAN 10 PERCENT CLAY OR LOAM BY WEIGHT. ONE HUNDRED (100) PERCENT SHALL PASS A THREE-QUARTER INCH SCREEN, AND NINETY-FIVE PERCENT SHALL PASS A NUMBER FOUR (4) SCREEN.

A. SELECT BACKFILL: SELECT BACKFILL MAY BE EXCAVATED MATERIALS CONTAINING NO ROCKS OR OTHER FOREIGN OBJECTS GREATER THAN 2- INCHES IN DIAMETER, SUBJECT TO THE APPROVAL OF THE ENGINEER.

B. COMPACTED BACKFILL: BACKFILL MATERIAL MAY BE EXCAVATED MATERIAL, SUBJECT TO THE APPROVAL OF THE ENGINEER.

16. FLOWABLE FILL SHALL ONLY BE USED WHEN REQUIRED BY THE PLANS OR WHEN DIRECTED BY THE ENGINEER. FLOWABLE FILL SHALL BE SAND-CEMENT SLURRY CONSISTING OF 2,970 LBS OF SAND, 100 LBS OF CEMENT, AND APPROXIMATELY 458 LBS OF WATER PER CUBIC YARD. THE SLURRY WILL BE MIXED TO A POURABLE SOUPY MIX IN A READY MIX TRUCK. WHEN THE FLOWABLE FILL IS TO BE A QUICK-SET FLOWABLE FILL, THE CEMENT SHALL BE REPLACED WITH RAPID SET CEMENT AND THE SLURRY SHALL HAVE STRENGTH OF 65 TO 75 PSI IN 1 TO 1.5 HOURS.

17. CONCRETE – CAST-IN-PLACE CONCRETE USED FOR THRUST BLOCKS, AND ENCASEMENTS SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT TWENTY EIGHT (28) DAYS. CONCRETE FOR STRUCTURES OR OTHER USES SHALL CONFORM TO ADDITIONAL SPECIFICATIONS AS PROVIDED BY THE ENGINEER.

18. CASING PIPE SPACERS, CASING SEALS AND PIPE BELL JOINT RESTRAINTS – CASING SPACERS: UNLESS OTHERWISE SHOWN ON THE PLANS ALL WATER LINE PIPES INSTALLED THROUGH CASING PIPE, REGARDLESS OF CASING MATERIAL OR LENGTH, SHALL INCLUDE CASING SPACERS. CASING SPACERS SHALL BE NON-METALLIC POLYETHYLENE MATERIALS SIMILAR TO THAT OFFERED BY PIPELINE SEAL INSULATOR, INC.

END SEALS SHALL BE RUBBER AND SIZED TO MATE WITH THE 4" X 8" CASING AND THE 6" X 12" SIZES JOINTED WITH STAINLESS STEEL CLAMPS.

20. LOCATOR WIRE AND DETECTABLE MARKING TAPE – A NUMBER 12 (12 AWG @ 0.0808 INCHES IN DIAMETER) COATED SOLID OR STRANDED COPPER CONDUCTOR WIRE FOR THE PURPOSE OF LOCATING THE PVC PIPE SHALL BE BURIED ALONG THE TOP OF THE PIPE AND CONNECTED AT EACH VALVE BOX. WHERE TRACER WIRES MUST BE SPLICED USE PRO-TRACE TW CONNECTORS OR OTHER APPROVED EQUAL. DETECTABLE MYLAR MARKING TAPE FOR LOCATION OF PVC WATER PIPE SHALL BE REQUIRED. THE TAPE SHALL BE 2-INCHES IN WIDTH, BLUE IN COLOR WITH LETTERING INDICATING, "CAUTION – WATER LINE BELOW". THE TAPE SHALL BE BURIED 12 INCHES BELOW THE SURFACE.

DETECTIBLE WARNING TAPE SHALL BE 5.0 MIL THICK, LOW DENSITY POLYETHYLENE, ALUMINUM CORE TAPE. WATER LINE TAPE SHALL BE COLORED BLUE AND SEWER TAPE SHALL BE GREEN. OMEGA MARKING TAPE IS AN ACCEPTABLE MANUFACTURER.

BEFORE YOU DIG CALL OKIE

48 HOURS BEFORE YOU DIG... CALL OKIE 1-800-522-6543

ALL SCALES ARE BASED ON 1 INCH. IN THE EVENT THE DRAWINGS ARE PLOTTED AT 1/2 SCALE, ADJUST THE MEASUREMENTS ACCORDING TO THE FOLLOWING SCALE:

ONE INCH
0 1

DATE	BY	REVISION

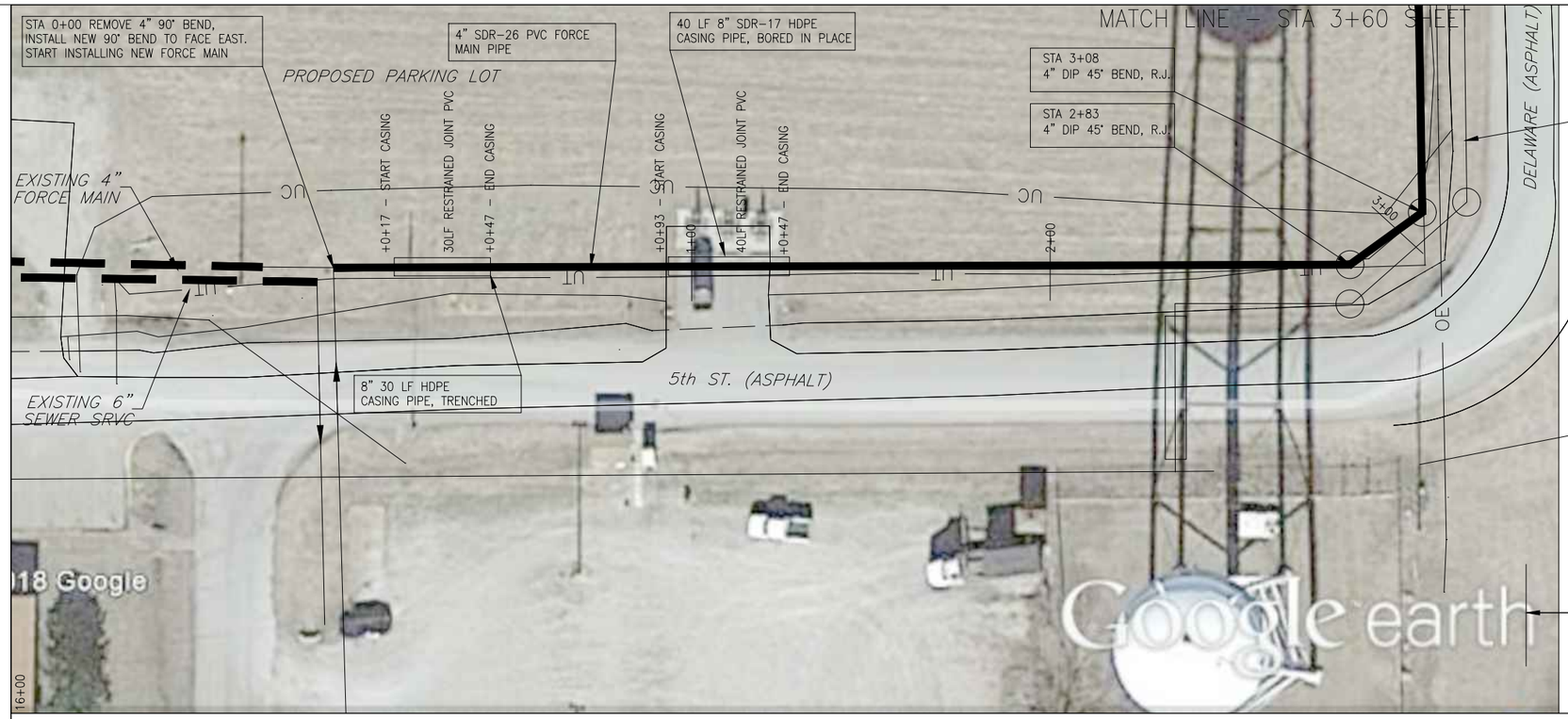
DESIGN	CHECKED	DATE
HDH	HDH	3/18
DRAWN	APPROVED	SCALE
HDH	HDH	AS SHOWN

PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
GENERAL NOTES
S. COFFEYVILLE OKLAHOMA

PROJECT NO.

SHEET G4



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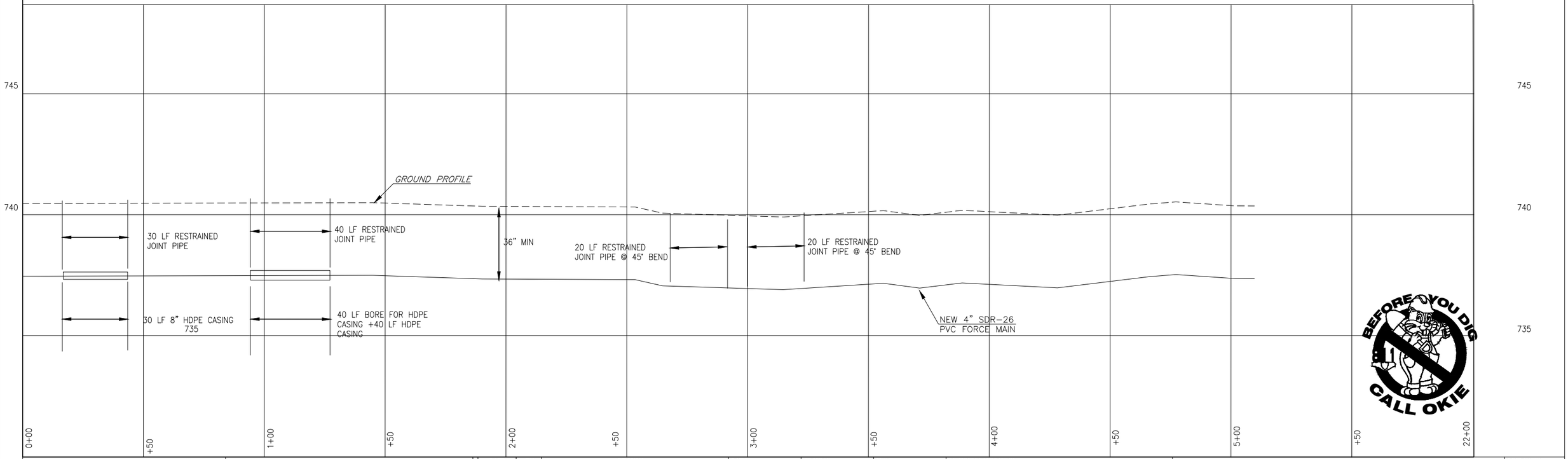

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DESIGN	CHECKED	DATE
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DRAWN	APPROVED	SCALE
HDH	HDH	AS SHOWN

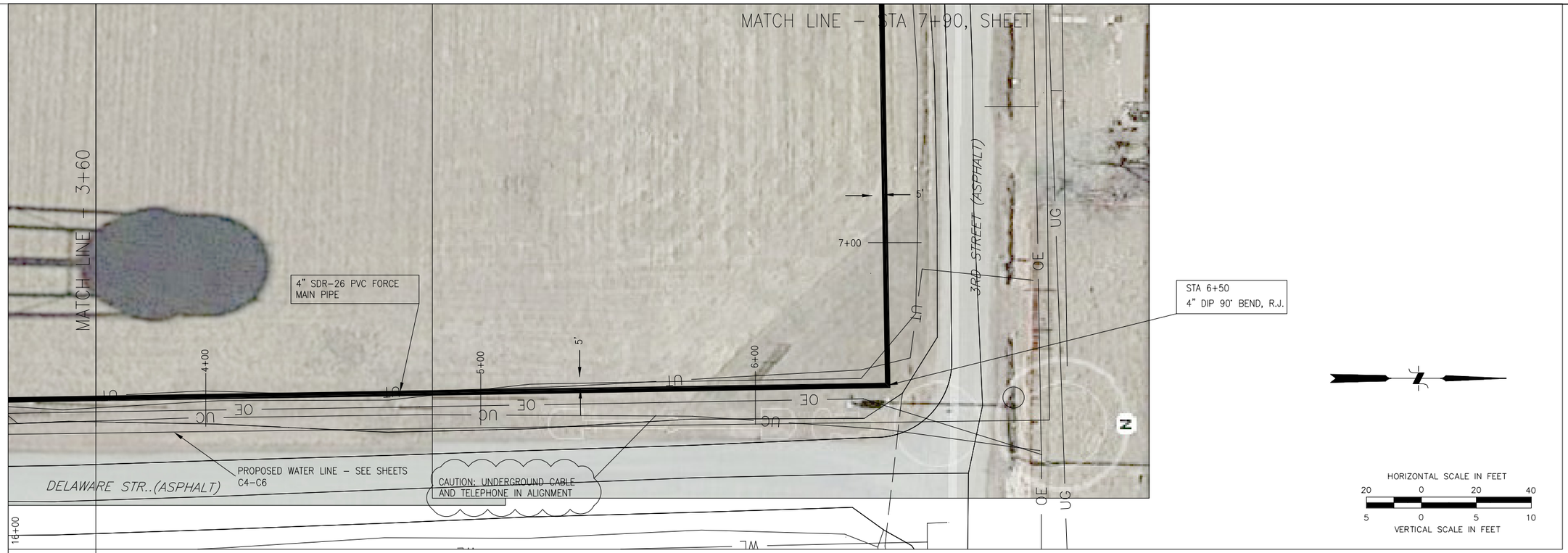
PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
FORCE MAIN PNP SHEET 1

S. COFFEYVILLE OKLAHOMA

PROJECT NO.

SHEET C1



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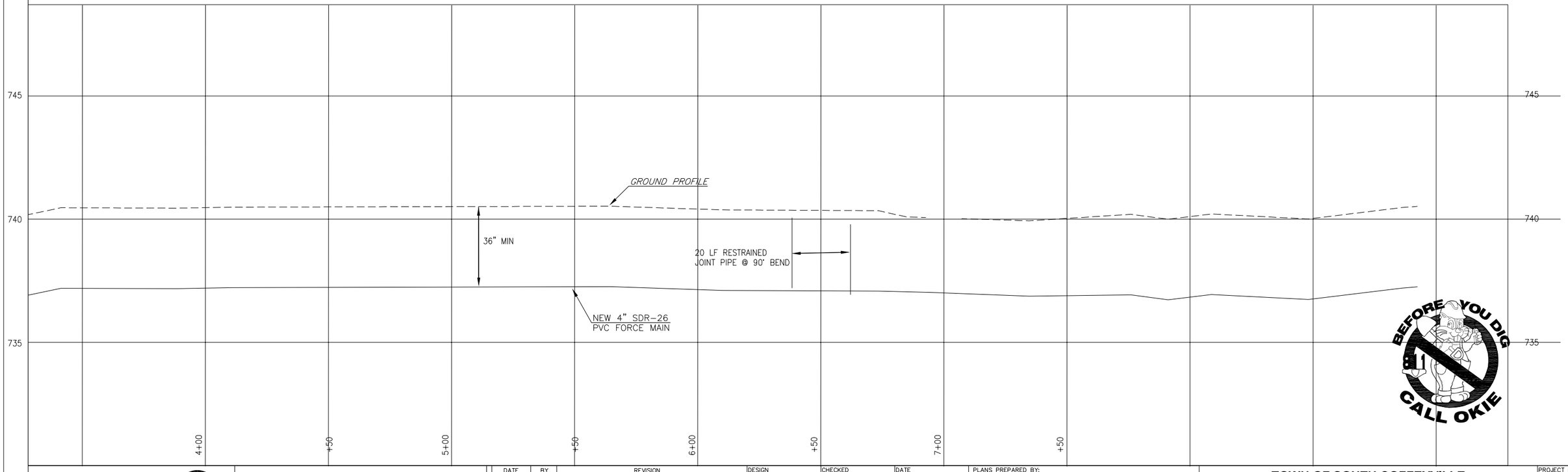

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DATE	BY	REVISION

DESIGN	CHECKED	DATE
HDH	HDH	3/18
DRAWN	APPROVED	SCALE
HDH	HDH	AS SHOWN

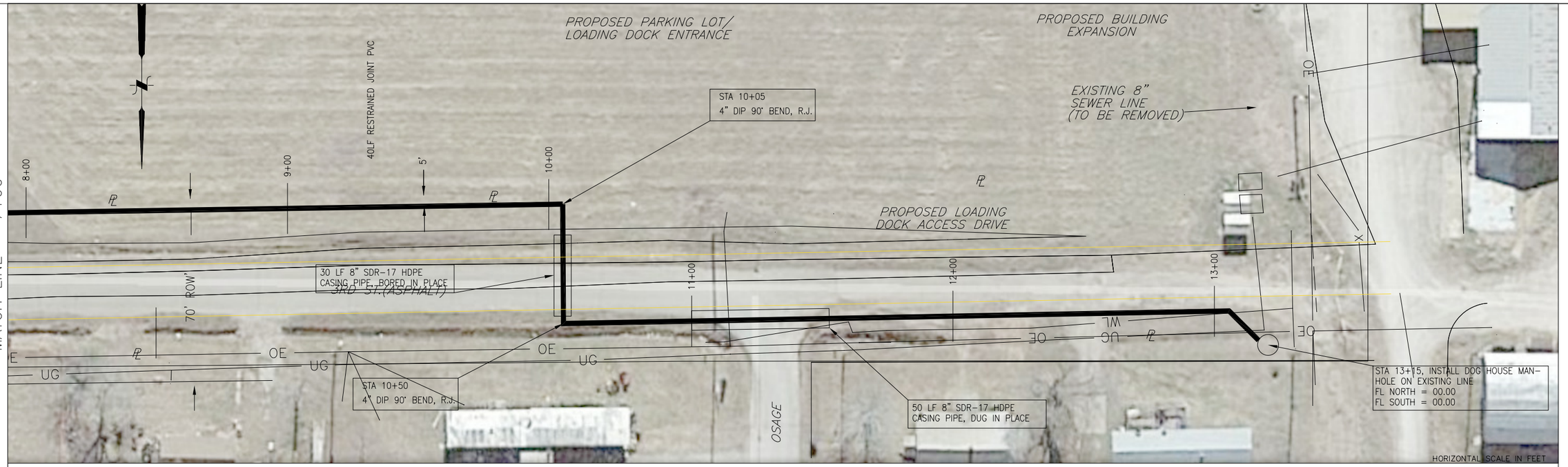
PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
FORCE MAIN PNP SHEET 2

S. COFFEYVILLE OKLAHOMA

PROJECT NO.

SHEET C2



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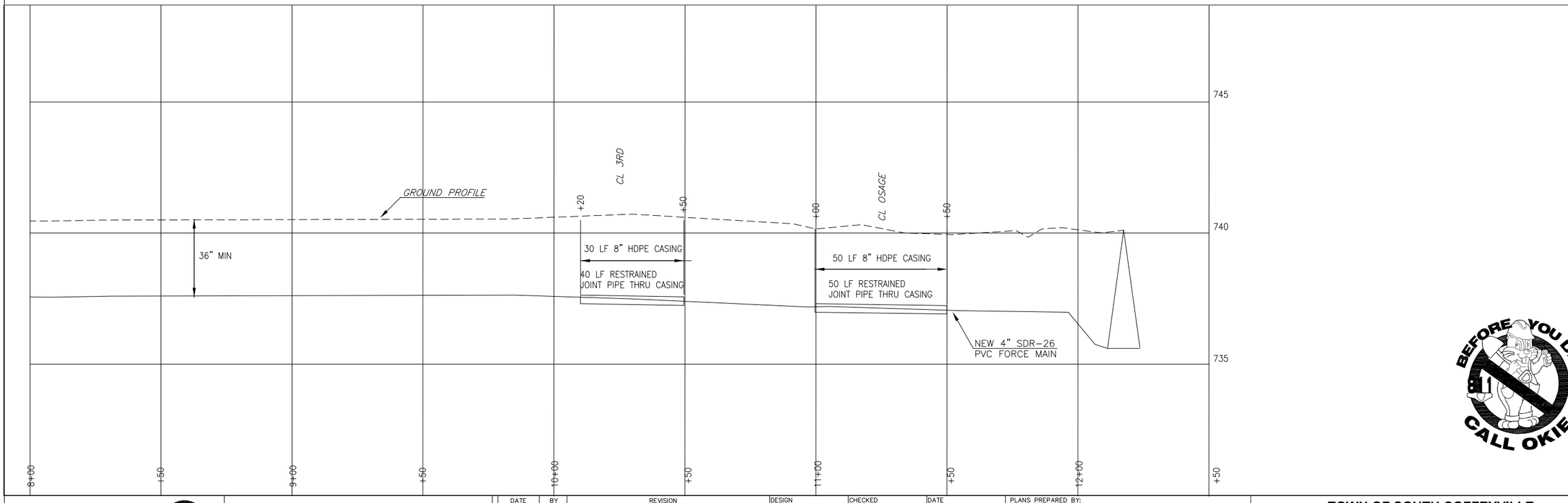

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DRAWN	APPROVED	SCALE
HDH	HDH	AS SHOWN

PLANS PREPARED BY:
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CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
FORCE MAIN PNP SHEET 3

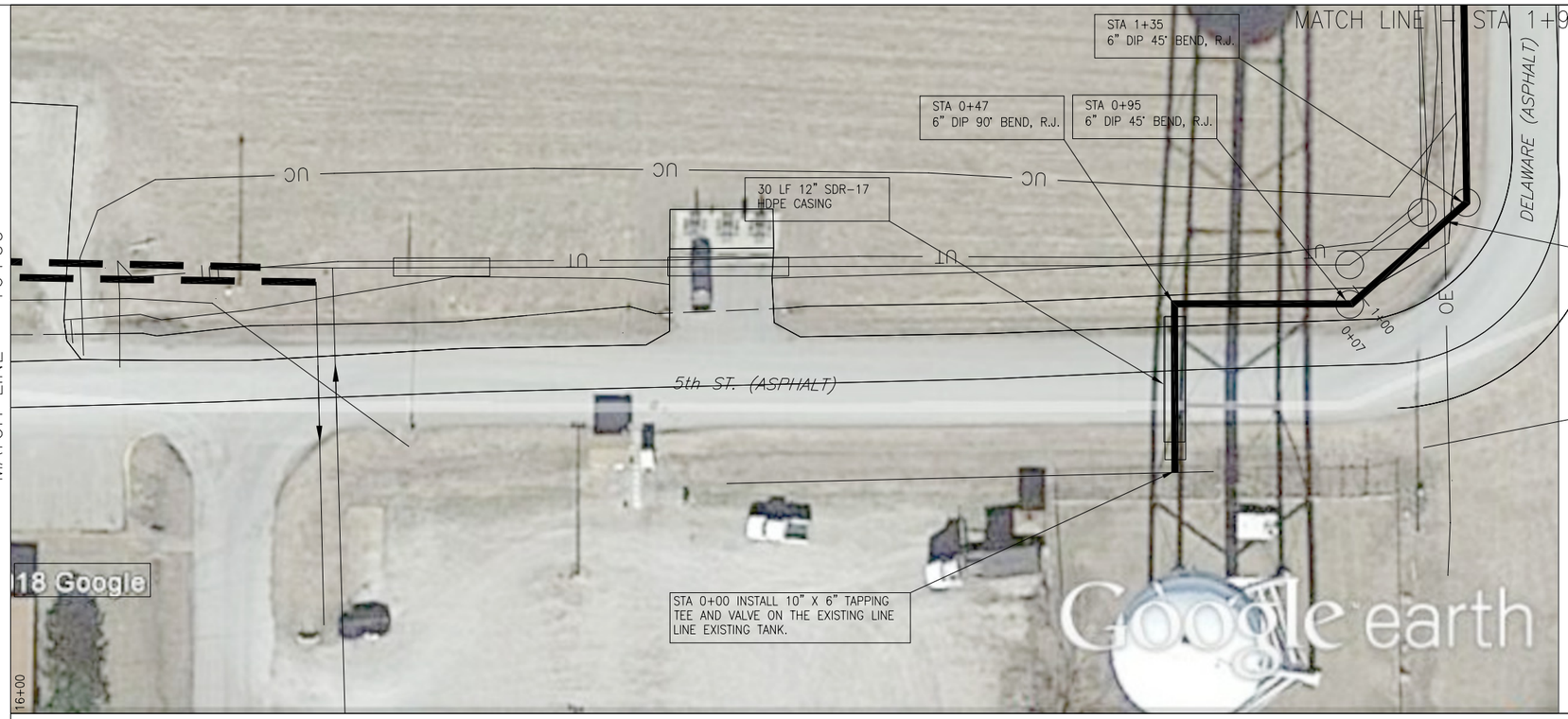
S. COFFEYVILLE OKLAHOMA

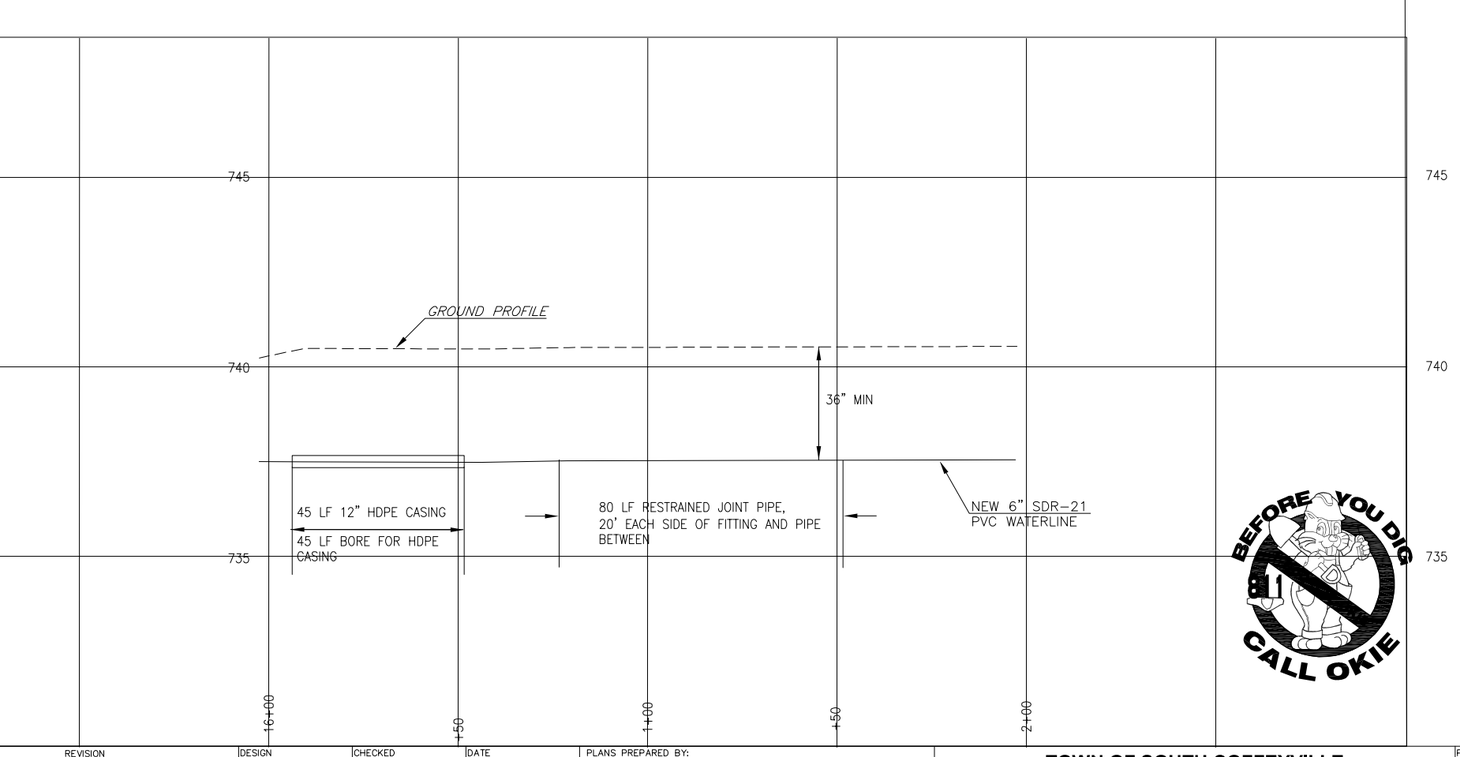
PROJECT NO.

SHEET C3

MATCH LINE – 16+00

MATCH LINE H STA 1+90, SHEET





HORIZONTAL SCALE IN FEET
20 0 20 40
5 0 5 10
VERTICAL SCALE IN FEET

48 HOURS BEFORE YOU DIG...
CALL OKIE
1-800-522-6543

ALL SCALES ARE BASED ON 1 INCH. IN THE EVENT THE DRAWINGS ARE PLOTTED AT 1/2 SCALE, ADJUST THE MEASUREMENTS ACCORDING TO THE FOLLOWING SCALE:

ONE INCH
0 1

DATE	BY	REVISION

DESIGN	CHECKED	DATE
HDH	HDH	3/18
DRAWN	APPROVED	SCALE
HDH	HDH	AS SHOWN

PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
WATER LINE PNP SHEET 1

S. COFFEYVILLE OKLAHOMA

PROJECT NO.

SHEET C4

MATCH LINE – 1+90

MATCH LINE – STA 6+90, SHEET

STA 2+30
INSTALL COMPLETE FIRE HYDRANT ASSEMBLY

STA 3+85
INSTALL COMPLETE FIRE HYDRANT ASSEMBLY

45 LF 12" SDR-17 HDPE CASING PIPE, BORED IN PLACE

6" SDR-21 PVC WATER LINE

STA 5+35
INSTALL 6" DIP TEE, R.J. COMPLETE FIRE HYDRANT ASSEMBLY

PROPOSED FORCE MAIN RELOCATION ALIGNMENT

3RD (ASPHALT)

DELAWARE (ASPHALT)

CAUTION: UNDERGROUND CABLE AND TELEPHONE IN ALIGNMENT

2+00 3+00 4+00 5+00 6+00 16+00

UT OE UC UG

HORIZONTAL SCALE IN FEET
20 0 20 40
5 0 5 10
VERTICAL SCALE IN FEET

745
740
735
725
720
715

2+30 INSTALL FH ASSEMBLY
3+85 INSTALL FH ASSEMBLY
5+35 INSTALL FH ASSEMBLY

GROUND PROFILE

36" MIN

NEW 6" SDR-21 PVC WATERLINE

+75 +30

45 LF 12" HDPE CASING
45 LF BORE FOR HDPE CASING

2+00 +50 3+00 +50 4+00 +50 5+00 +50 6+00 +50 7+00

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0 1

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PLANS PREPARED BY:
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CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
WATER LINE PNP SHEET 2

S. COFFEYVILLE OKLAHOMA

PROJECT NO.

SHEET C5

BEFORE YOU DIG CALL OKIE

MATCH LINE – 6+90

MATCH LINE – 22+00

6" SDR-21 PVC WATER LINE

30 LF 12" SDR-11 HDPE CASING PIPE

EXISTING 6" WATER LINE

STA 12+05
INSTALL COMPLETE FIRE HYDRANT ASSEMBY

30 LF 8" SDR-17 HDPE CASING PIPE, OPEN CUT

STA 10+10
INSTALL COMPLETE FIRE HYDRANT ASSEMBY

STA 10+05
INSTALL 6" X 2" TAPPING TEE
2" TEE, CUT IN
2" GATE VALVE AND BOX

70' ROW

HORIZONTAL SCALE IN FEET
20 0 20 40

VERTICAL SCALE IN FEET
5 0 5 10

GROUND PROFILE

36" MIN

NEW 6" SDR-21
PVC WATERLINE

30 LF 12" SDR-11
HDPE CASING

+10 INSTALL FH ASSEMBLY

+05 INSTALL FH ASSEMBLY

745 740 735

725 720 715

7+00 +50 8+00 +50 9+00 +50 10+00 +50 11+00 +50 12+00 +50

48 HOURS BEFORE YOU DIG....
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1-800-522-6543

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0 1

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HDH	HDH	AS SHOWN

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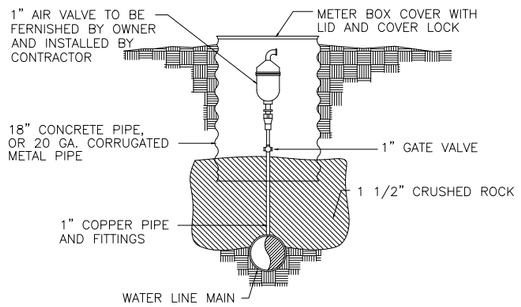
TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
WATER LINE PNP SHEET 3

S. COFFEYVILLE OKLAHOMA

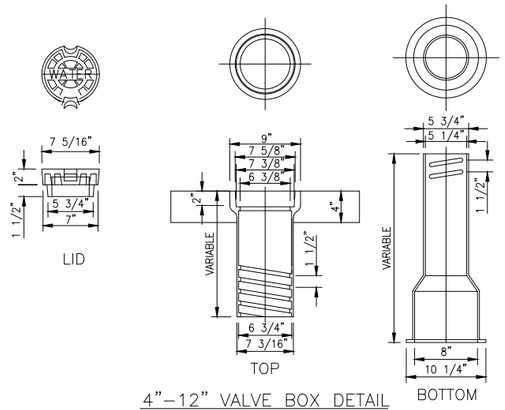
PROJECT NO.

SHEET C6

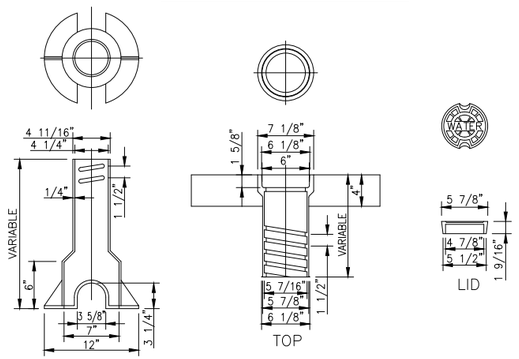


AIR RELEASE VALVE
SCALE: N.T.S.

WATER MAIN 'A'	BUTTERFLY VALVE 'B'	AIR RELEASE & VACUUM VALVE 'C'
16"	4"	4"
24"	4"	4"
30"	4"	4"
36"	4"	4"
36"	8"	8"
48"	8"	8"



4"–12" VALVE BOX DETAIL

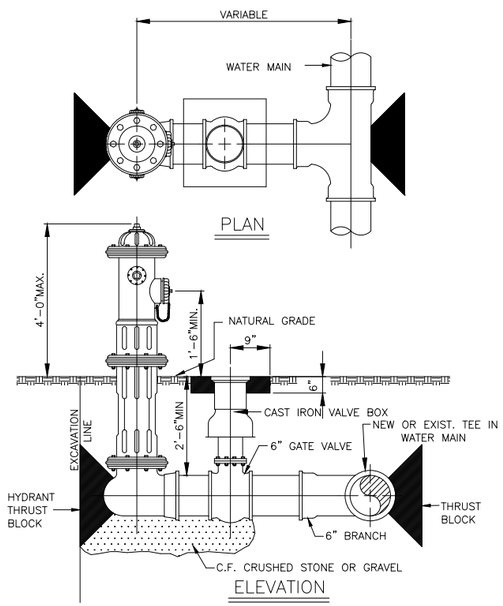


2"–3" VALVE BOX DETAIL

NOTES:
1. IN PAVED AREAS, WATER LINE CONTRACTOR TO PLACE 2 FOOT SQUARE CONCRETE PAD AROUND EACH WATER VALVE AFTER PAVING IS COMPLETE. . THE PAVEMENT SHALL BE SAW–CUT FOR PAD PLACEMENT.
2. VALVE BOXES REQUIRING OVER 2 ADDITIONAL BOTTOM SECTIONS SHALL BE EXTENDED USING PVC PIPE WITH A BOTTOM AND TOP SECTION PLACED ON TOP OF THE PVC PIPE.

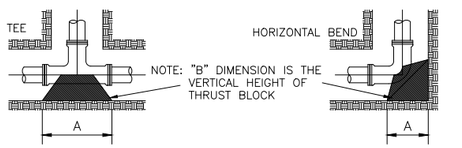
TYPICAL GATE VALVE BOXES

SCALE: NTS



FIRE HYDRANT ASSEMBLY DETAIL

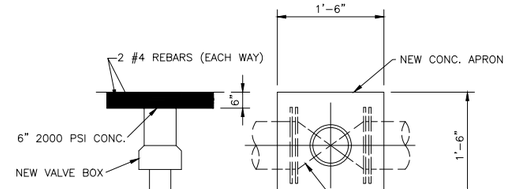
SCALE : 1/2"=1'-0"



PIPE SIZE	TEES		BENDS							
			90		45		22 1/2		VERT.	
	A	B	A	B	A	B	A	B	A	B
4"	16"	14"	16"	16"	12"	8"	8"	8"	12"	14"
6"	24"	21"	24"	24"	18"	12"	12"	12"	18"	21"
8"	39"	24"	24"	26"	21"	15"	15"	15"	18"	24"
10"	48"	30"	30"	32"	26"	24"	18"	18"	18"	24"
12"	48"	30"	32"	34"	28"	30"	18"	18"	20"	28"
14"	54"	36"	36"	39"	30"	30"	21"	21"	20"	28"
16"	54"	38"	38"	41"	32"	32"	24"	24"	21"	30"

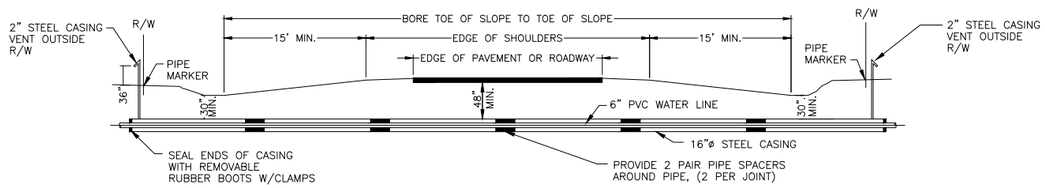
TYPICAL THRUST BLOCK DETAILS

SCALE : NOT TO SCALE



GATE VALVE APRON

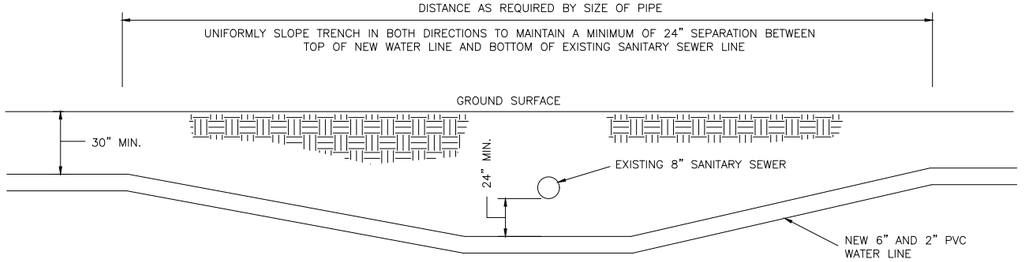
SCALE : 1" = 1'–0"



NOTE: CONTRACTOR TO COMPLY WITH ALL CONDITIONS OF STATE AND COUNTY PERMITS. NO EXCAVATION SHALL BE MADE CLOSER THAN 15' FROM THE EDGE OF PAVING AND SHALL NOT BE LEFT OPEN LONGER THAN NECESSARY TO INSTALL CASING AND PIPE. NOTIFY THE STATE AND COUNTY COMMISSIONER OFFICE BEFORE EXCAVATING WITHIN STATE AND COUNTY R/W. APPLICABLE STATE AND COUNTY ROAD PERMITS TO BE KEPT ON JOB SITE AND AVAILABLE TO THE STATE OR COUNTY AT ALL TIMES DURING CONSTRUCTION. WITHIN STATE AND COUNTY ROAD R/W.

TYPICAL STATE HIGHWAY & COUNTY ROADWAY CROSSING

SCALE: 1\8"=1'–0"



TYPICAL SANITARY SEWER & NEW WATER LINE CROSSING

SCALE: 1/4"=1'–0"

48 HOURS BEFORE YOU DIG... CALL OKIE 1–800–522–6543

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ONE INCH
0 1

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HDH	HDH	AS SHOWN

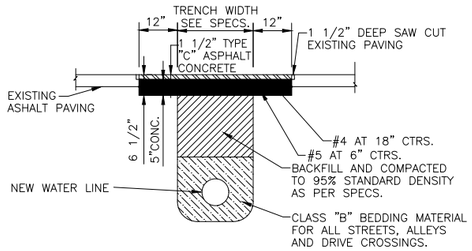
PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
STANDARD DETAILS (1)

S. COFFEYVILLE OKLAHOMA

PROJECT NO.

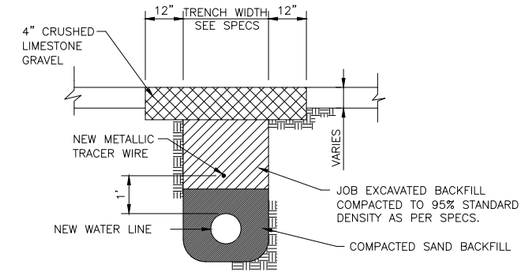
SHEET D1



NOTE: CLASS "B" BEDDING MATERIAL TO BE CRUSHED STONE OR PEA GRAVEL GRADED AS FOLLOWS.
- 100% PASSING 3/4"
95 - 100% PASSING NO. 4
45 - 100% PASSING NO. 16
10 - 100% PASSING NO. 50
2 - 100% PASSING NO. 100

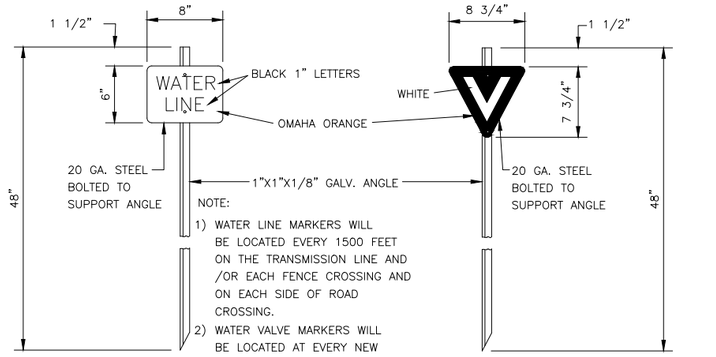
TYPICAL ASPHALT CUT & PERMANENT REPAIR

SCALE: 1/2"=1'-0"



TYPICAL GRAVEL SURFACE REPAIR

SCALE : 1/2"=1'-0"

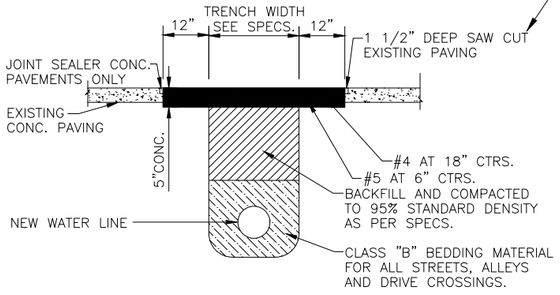


WATER LINE MARKER

WATER LINE VALVE MARKER

SCALE: 1 1/2"=1'-0"

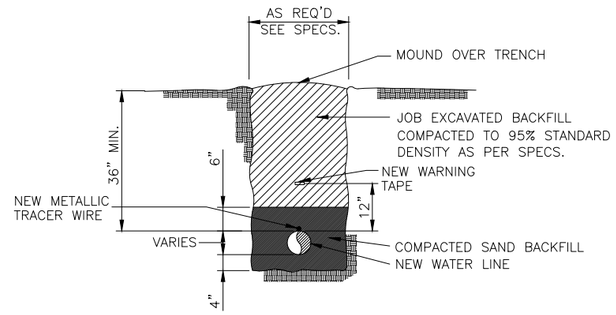
NOTE: THESE DETAILS USED ONLY AS NEEDED



NOTE: CLASS "B" BEDDING MATERIAL TO BE CRUSHED STONE OR PEA GRAVEL GRADED AS FOLLOWS.
- 100% PASSING 3/4"
95 - 100% PASSING NO. 4
45 - 100% PASSING NO. 16
10 - 100% PASSING NO. 50
2 - 100% PASSING NO. 100

TYPICAL CONCRETE PAVING CUT & PERMANENT REPAIR

SCALE: 1/2"=1'-0"



TYPICAL TRENCHING & BACKFILL DETAIL

SCALE: 1/2"=1'-0"

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ONE INCH
0 1

DATE	BY	REVISION

DESIGN	CHECKED	DATE
HDH	HDH	3/18
DRAWN	APPROVED	SCALE
HDH	HDH	AS SHOWN

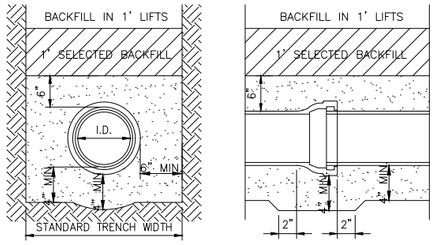
PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
STANDARD DETAILS (2)

S. COFFEYVILLE OKLAHOMA

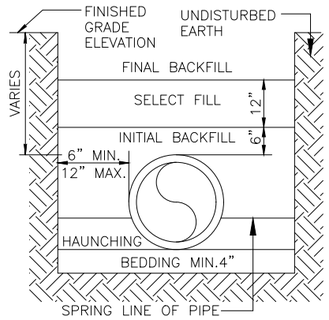
PROJECT NO.

SHEET D2



CROSS SECTION

LONGITUDINAL SECTION



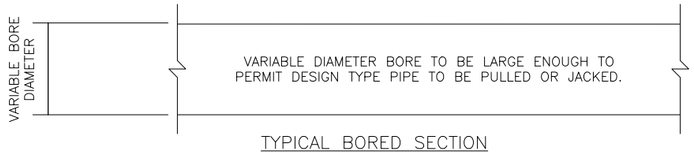
	NON–PAVED AREAS		PAVED AREAS	
	P V C	DUCTILE IRON	P V C	DUCTILE IRON
FINAL BACKFILL	EXCAVATED MATERIAL	EXCAVATED MATERIAL	ODOT AGG. BASE TYPE "A"	ODOT AGG. BASE TYPE "A"
SELECT FILL	SELECT FILL	SELECT FILL	ODOT AGG. BASE TYPE "A"	ODOT AGG. BASE TYPE "A"
INITIAL BACKFILL AND HAUNCHING	ODOT AGG. BASE TYPE "A"	ODOT AGG. BASE TYPE "A"	ODOT AGG. BASE TYPE "A"	ODOT AGG. BASE TYPE "A"
BEDDING	ODOT AGG. BASE TYPE "A"	ODOT AGG. BASE TYPE "A"	ODOT AGG. BASE TYPE "A"	ODOT AGG. BASE TYPE "A"

TYPICAL SANITARY SEWER PIPE BEDDING DETAIL

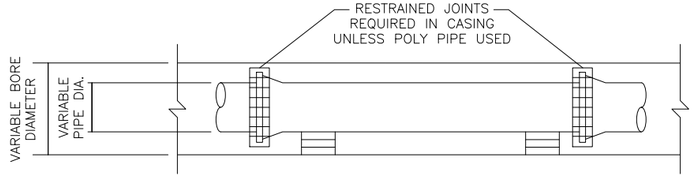
TRENCH CONDITIONS

1. SELECT FILL CONSIST OF EXCAVATED MATERIALS CONTAINING NO ROCKS LARGER THAN 2 INCHES.
2. CRUSHED ROCK SHALL BE ODOT TYPE "A" BASE.
3. BEDDING REQUIRED ONLY FOR ROCK EXCAVATION.
4. COMPACTION REQUIREMENTS:
   (a) NON–PAVED AREAS 90% MAXIMUM STANDARD PROCTOR DENSITY FOR COHESSIONLESS SOILS AND 85% FOR COHESIVE SOILS.
   (b) PAVED AREAS 95% MAXIMUM STANDARD PROCTOR DENSITY FOR COHESIONLESS SOILD.
5. FILLS OVER 10 FEET DEEP – MATERIAL IN THE AREA FROM SELECT FILL TO BEDDING SHALL BE 3/4" CRUSHER RUN WELL GRADED.
6. FLOWABLE FILL MAY BE SUBSTITUTED FOR ALL MATERIALS IN ROAD CROSSING.
7. IN AREAS WHERE WATER INFILTRATION CANNOT BE CONTROLLED BEDDING AND INITIAL BACKFILL SHALL BE MATERIAL CONFORMING TO ODOT SECTION 703.04(A).
8. PIPE IN PROXIMITY TO WATER LINES SHALL COMPLY WITH O.D.E.Q. STANDARDS.
9. PIPE UNDER PAVED AREAS SHALL BE PVC SDR 32.5 DUCTILE IRON. WATER PIPE OR MAY BE SLEEVED.

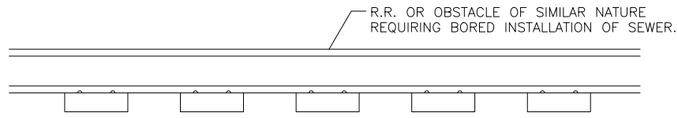
1. REFER TO PLAN & PROFILE FOR CASING SIZE & LENGTH.
2. SKID ASSEMBLIES SHALL BE THOSE MANUFACTURED BY PIPELINE SEAL AND INSULATOR, INC; CASCADE WATER WORKS MANUFACTURING COMPANY; OR APPROVED EQUAL.
3. EACH END OF CASING SHALL BE SEALED WITH A WATER–TIGHT, REMOVABLE SEAL.
4. FOR INDIVIDUAL CARRIER PIPE SECTIONS OF TWELVE (12) FEET OR LESS IN LENGTH, A MINIMUM OF THREE (3) SKID ASSEMBLIES ARE REQUIRED.
5. ALL CARRIER PIPE SHALL HAVE MECHANICALLY RESTRAINED JOINTS.
6. BANDED WOODEN SKID ASSEMBLIES WITH SAND FILL ARE NOT ALLOWED.
7. SAND FILL IS NOT REQUIRED FOR FOR SPECIFIED SKID ASSEMBLIES.
8. ALL ENCASED CROSSINGS SHALL BE SEALED AT BOTH ENDS WITH AN APPROVED CONDUIT SEAL AND VENTED TO FREE AIR OUTSIDE THE RIGHT–OF–WAY LINES WHERE REQUIRED BY ENGINEER. THE TOP OF CONDUIT SHALL BE A MINIMUM OF 48 INCHES BELOW SUBGRADE; BUT NOT LESS THAN 30 INCHES BELOW THE BOTTOM OF ANY SIDE DITCH. VENTS SHALL BE SIZED TO ALLOW PROPER RELEASE OF CARRIER PIPE CONTENTS IN CASE OF FAILURE. MINIMUM PIPE SIZE FOR VENTS IS 2 INCH (NOM.) AND THE VENT MUST EXTEND A MINIMUM OF 36 INCHES ABOVE THE NATURAL GROUND LEVEL. WHEN REQUIRED BY ENGINEER, UTILITY OWNER MUST INSTALL IDENTIFICATION MARKERS IDENTIFYING THE UTILITY OWNER, ADDRESS, TELEPHONE AND SIZE AND NATURE OF THE FACILITY AT EACH RIGHT–OF–WAY LINE DIRECTLY ABOVE THE UTILITY. MARKERS MUST BE A MINIMUM OF 130 SQ. INCHES AND BE PLAINLY VISIBLE FROM WITHIN THE RIGHT–OF–WAY.

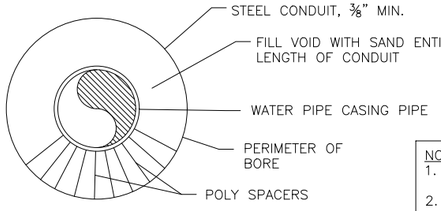


TYPICAL BORED SECTION
LONGITUDINAL VIEW



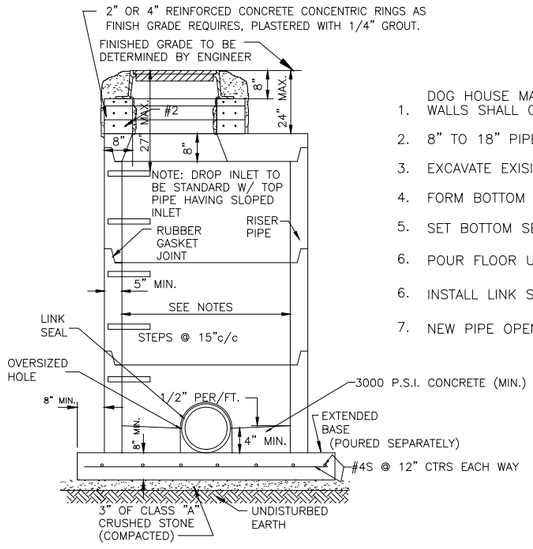
TYPICAL BORE WITH PIPE INSTALLED
LONGITUDINAL VIEW





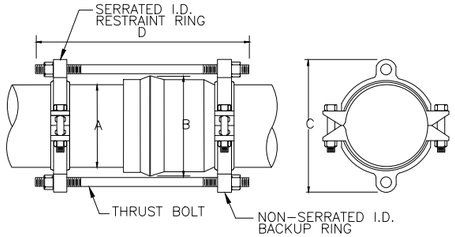
BORED CROSSING DETAILS

NOTE:
1. COMPRESSION TYPE JOINTS TO BE USED IF POSSIBLE.
2. IF COMPRESSION TYPE JOINT IS NOT AVAILABLE, MJ TYPE SHALL BE USED AND JOINTS BOLTED BEFORE PULLING PIPE INTO PLACE.



DOG HOUSE MANHOLE
1. WALLS SHALL CONFORM TO CURRENT ASTM C478.
2. 8" TO 18" PIPE, 4' ID MANHOLE REQUIRED.
3. EXCAVATE EXISING PIPE, 12" BELOW FLOWLINE
4. FORM BOTTOM UNDER PIPE, REINFORCE
5. SET BOTTOM SECTION OF MANHOLE ON FORMS
6. POUR FLOOR UP TO SPRING LINE OF EXISTING PIPE
6. INSTALL LINK SEAL AROUND EXISTING PIPES FOR WATER TIGHT SEAL
7. NEW PIPE OPENINGS SHALL BE EQUIPPED WITH A–LOK GASKETS

TYPICAL PRECAST DOGHOUSE MANHOLE DETAIL



NOMINAL PIPE SIZE	A PIPE O.D.	B MAXIMUM BELL O.D. CLEARED	C MAX. RESTRAINT O.D. (CASING CLEARED)	D OVER ALL LENGTH	THRUST BOLT (NUMBER–SIZE)
4	4.80	6.75	9.25	13	2– 3/4X13
6	6.90	8.75	11.25	18	2– 3/4X18
8	9.05	12.25	14.75	18	2– 3/4X18
10	11.10	14.20	16.85	22	4– 3/4X22
12	13.20	16.90	19.45	22	4– 3/4X22

RESTRAINED JOINT DETAIL

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DATE	BY	REVISION

DESIGN HDH | CHECKED HDH | DATE 3/18
DRAWN HDH | APPROVED HDH | SCALE AS SHOWN

PLANS PREPARED BY:
H. DWAYNE HENDERSON, P.E.
1909 OAK RIDGE DRIVE
CLAREMORE, OK 74017

TOWN OF SOUTH COFFEYVILLE
STAR PIPE EXPANSION PROJECT
STANDARD DETAILS (3)
S. COFFEYVILLE OKLAHOMA

PROJECT NO.
SHEET D3