

VICINITY MAP - BRYANT, ARKANSAS



ARKANSAS

BRIDGE PORT LANE
DRAINAGE IMPROVEMENTS
CITY OF BRYANT, ARKANSAS

PREPARED BY:
BRYANT PUBLIC WORKS




1017 SW 2nd STREET
BRYANT, ARKANSAS 72022
PHONE: (501) 943-0468
WWW.CITYOFBRYANT.COM

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APPROVED BY:	DESIGNED BY: BPW	REV	DESCRIPTION	BY	DATE	SCALE:	LOCATION:		DWG. TITLE: HENSON PLACE DRAINAGE TITLE SHEET	REVISION NO./DATE: A - 08/14/19
TITLE _____ SIGNATURE _____ DATE _____	DRAWN BY: BPW	A	ISSUED FOR BID	BPW	8/28/19	NTS	2617 HENSON PLACE BRYANT, ARKANSAS 72022		PROJECT NO.:	
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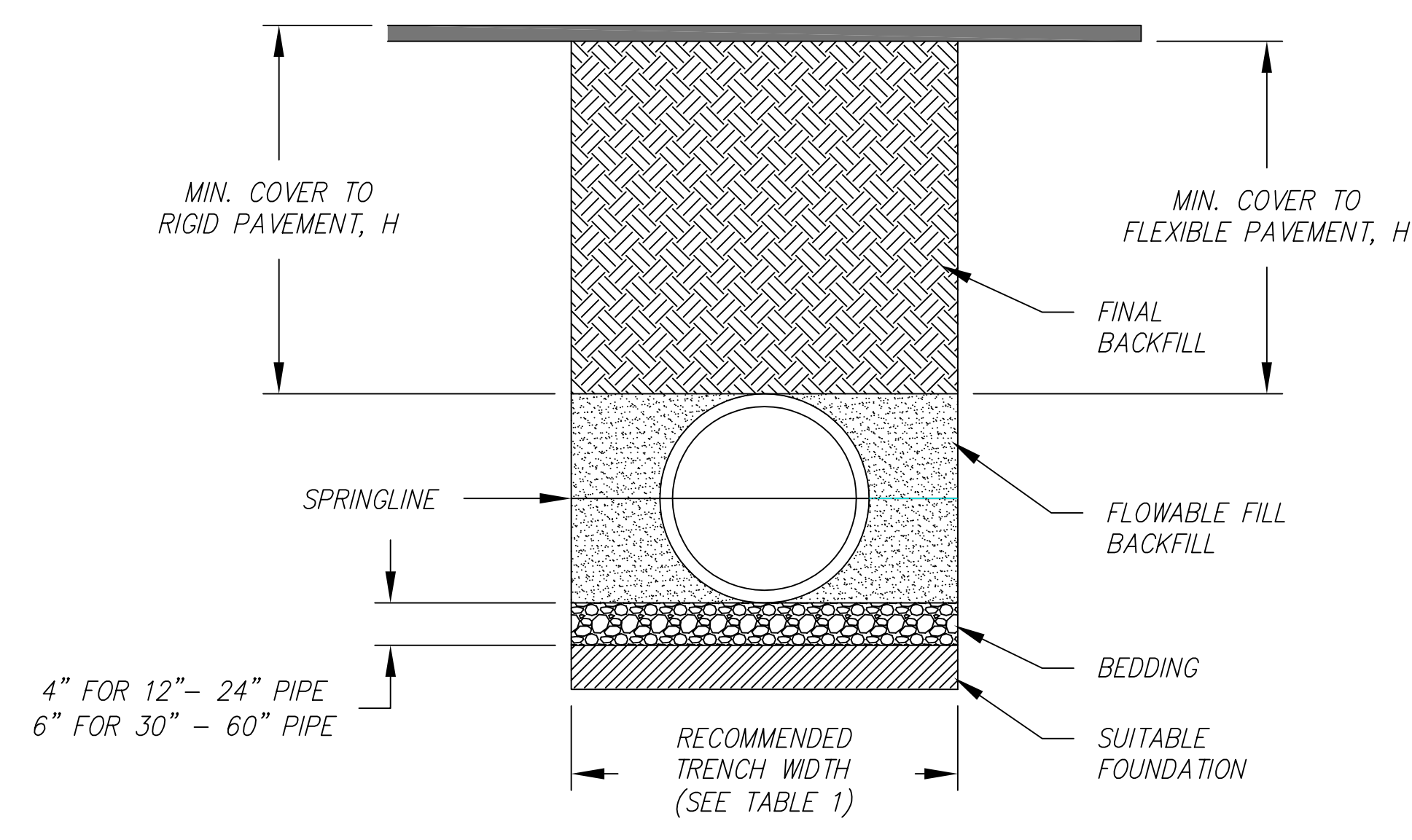
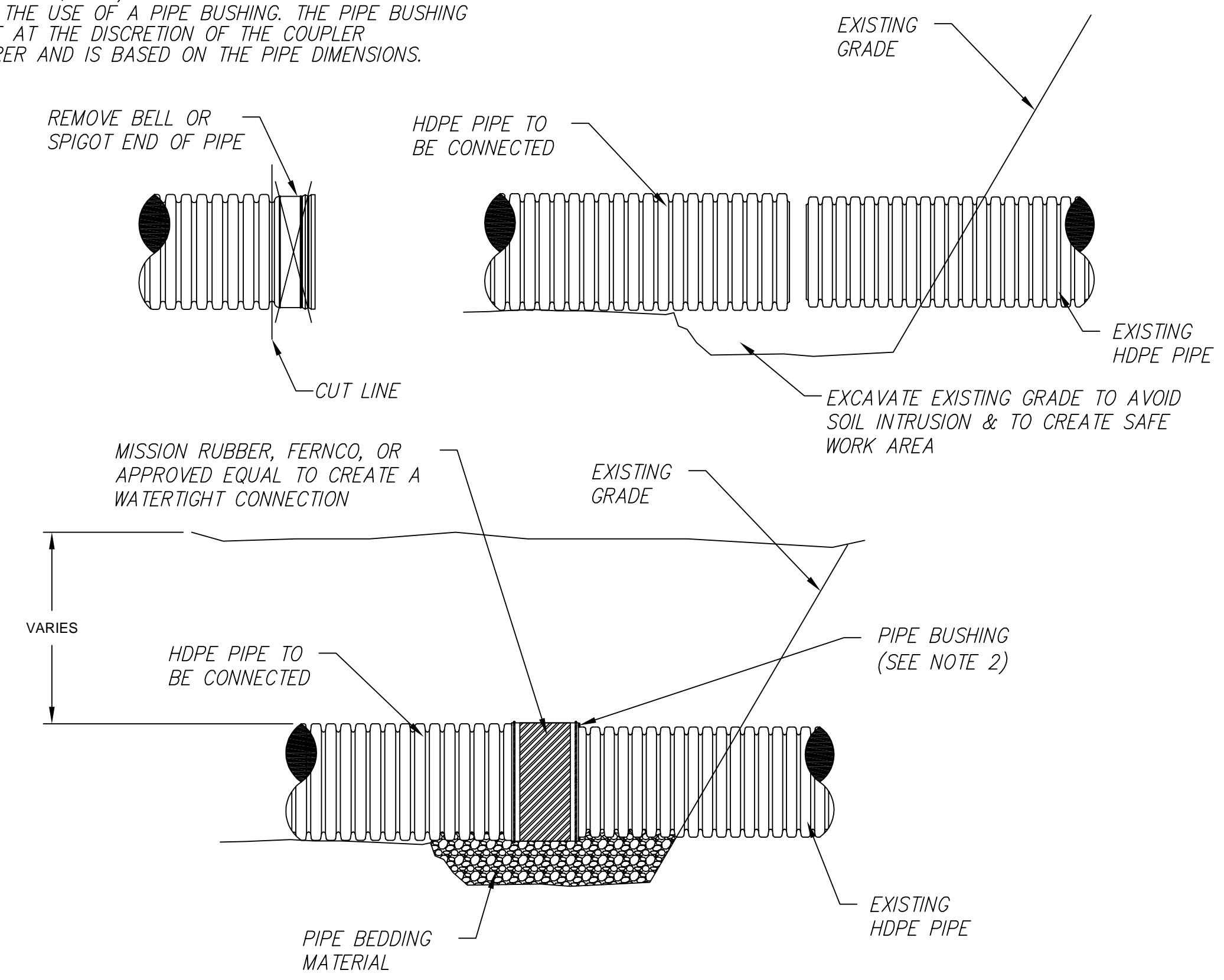


TABLE 1, RECOMMENDED TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
12" (300mm)	22" (559mm)
15" (375mm)	27" (686mm)
18" (450mm)	33" (838mm)
21" (525mm)	37" (940mm)
24" (600mm)	42" (1067mm)
30" (750mm)	51" (1295mm)
36" (900mm)	59" (1499mm)
42" (1050mm)	66" (1676mm)
48" (1200mm)	74" (1880mm)
54" (1350mm)	82" (2083mm)
60" (1500mm)	90" (2286mm)

NOTES:

1. CONNECTION AND PIPE TO BE BACKFILLED PER ASTM D2321, LATEST EDITION.
2. FOR CONNECTIONS WHERE THE OUTSIDE DIAMETERS OF THE TWO CONNECTING PIPES ARE DIFFERENT AND A WATERTIGHT CONNECTION IS REQUIRED, THE COUPLER MANUFACTURER MAY RECOMMEND THE USE OF A PIPE BUSHING. THE PIPE BUSHING SIZE WILL BE AT THE DISCRETION OF THE COUPLER MANUFACTURER AND IS BASED ON THE PIPE DIMENSIONS.



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

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TITLE	SIGNATURE	A ISSUED FOR BID	BPW	8/28/19	NTS	2617 HENSON PLACE BRYANT, ARKANSAS 72022	HENSON PLACE DRAINAGE GENERAL NOTES HDPE PIPE	A - 08/14/19
TITLE	SIGNATURE							PROJECT NO.:
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CLASSES OF EMBEDMENT AND BACKFILL MATERIALS

ASTM D2321 (1) (CSA B182.11) CLASS DESCRIPTION	ASTM D2487 NOTATION DESCRIPTION	AASHTO M43 NOTATION	AASHTO M145 NOTATION	BNQ 2560	ASTM D2321 (1) (CSA B182.11)										
					PERCENTAGE PASSING SIEVE SIZES				ATTERBERG LIMITS		COEFFICIENTS				
					1 1/2 IN. (40mm)	3/8" (9.5mm)	No. 4 (4.75mm)	No. 200 (0.075mm)	LL	PI	Cu	Cc			
I (2)	CRUSHED ROCK, ANGULAR 3	N/A	ANGULAR CRUSHED STONE OR ROCK, CRUSHED GRAVEL, CRUSHED SLAG; LARGE VOIDS WITH LITTLE OR NO FINES	5, 56, 57 (4), 6, 67 (4)	N/A			100%	<25%	<15%	<12%	NON PLASTIC		N/A	
II	CLEAN, COARSE-GRAINED SOILS	GW	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES; LITTLE OR NO FINES	5, 6				100%	<50% of "COARSE FRACTION"	<5%	NON PLASTIC		>4	1 to 3	
		GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES; LITTLE OR NO FINES	56, 57, 67			4						<1 or >3		
		SW	WELL-GRADED SANDS, GRAVELLY SANDS; LITTLE OR NO FINES		A1, A3	CC-14, MG-20								>6	1 to 3
		SP 6	POORLY-GRADED SANDS, GRAVELLY SAND; LITTLE OR NO FINES										<6	<1 or >3	
	COARSE-GRAINED SOILS, BORDERLINE CLEAN TO W/FINES	GW-GC, SP-SM	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES	N/A				100%	VARIES	5% TO 12%	NON PLASTIC		SAME AS FOR GW, GP, SW AND SP		
III	COURSE-GRAINED SOILS WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	GRAVEL & SAND WITH <10% FINES				100%	<50% of "COARSE FRACTION"	12% TO 50%	N/A		<4 OR <"A" LINE	N/A	
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES			<7 & >"A" LINE									
		SM	SILTY SANDS, SAND-CLAY MIXTURES		A-2-4, A-2-5, A-2-6, OR A-4 OR A-6 SOILS WITH MORE THAN 30% RETAINED ON #200 SIEVE	>50% of "COARSE FRACTION"	>4 OR <"A" LINE								
		SC	CLAYEY SANDS, SAND-CLAY MIXTURES			>7 & >"A" LINE									
	INORGANIC FINE-GRAINED SOILS	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY				> 30% (RETAINED)	<50	<4 OR <"A" LINE						
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY; GRAVELLY, SANDY, OR SILTY CLAYS; LEAN CLAYS				> 30% (RETAINED)	>7 & >"A" LINE							
IV (8)	INORGANICS FINE-GRAINED SOILS	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY	N/A	A-2-7 OR A-4 OR A-6 SOILS WITH 30% OR LESS RETAINED ON #200 SIEVE		100%	< 30% (Retained)	<50	<4 or <"A" LINE	N/A				
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY; GRAVELLY, SANDY, OR SILTY CLAYS; LEAN CLAYS	N/A					>7 & >"A" LINE						
V (7)	INORGANIC FINE-GRAINED SOILS	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	N/A			100%	100%	>50%	>50	<"A" LINE	N/A			
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	N/A						>"A" LINE					
	ORGANIC SOILS OR HIGHLY ORGANIC SOILS	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	N/A	A5, A7			100%	100%	>50%	<50	<4 OR <"A" LINE	N/A		
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	N/A						>50	<"A" LINE				
		PT	PEAT AND OTHER HIGH ORGANIC SOILS	N/A											

NOTES:

- FLOWABLE FILL SHOULD BE DESIGNED TO PROVIDE ADEQUATE STRENGTH TO CARRY ALL LIVE AND DEAD LOADING BUT ALLOW FOR ANY FUTURE EXCAVATION. TYPICAL 28 DAY COMPRESSIVE STRENGTHS RANGE BETWEEN 50 AND 100 PSI. MIX SHOULD BE OF A CONSISTENCY THAT COMPLETELY FILLS SPACE BETWEEN PIPE AND TRENCH WALLS.
- IF TRENCH IS EXCAVATED IN ROCK OR HIGH-BEARING STRENGTH SOILS, TRENCH WIDTHS FOR 24" - 60" DIA. MAY BE REDUCED, FROM VALUES IN TABLE 1, TO THE PIPE OD PLUS 12".
- FLOWABLE FILL SHOULD NOT BE PLACED WHEN TEMPERATURES ARE BELOW 40°F, AGAINST FROZEN TRENCH MATERIAL OR WHEN APPRECIABLE PRECIPITATION IS FORECASTED DURING PLACEMENT.
- PRECAUTIONS SHALL BE TAKEN TO PREVENT FLOTATION. ANCHORING SYSTEM AND/OR INCREMENTAL LIFTS SHOULD BE UTILIZED TO ENSURE PIPE REMAINS ON GRADE. REFER TO TECHNICAL NOTE 5.02, FLOWABLE FILL FOR THERMOPLASTIC PIPE, FOR EXAMPLES OF ANCHOR TYPES AND INCREMENTAL LIFT RECOMMENDATIONS.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" DIAMETER PIPE (300mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED.
- FINAL BACKFILL: FINAL BACKFILL SHALL NOT BE PLACED UNTIL A PENETROMETER READING OF AT LEAST 500 PSI PER ASTM C403 IS MEASURED, THE CRITERIA OF ASTM D 6024 ARE MET, OR OTHER MEANS APPROVED BY THE ENGINEER TO DETERMINE SUITABILITY FOR LOAD APPLICATION ARE SATISFIED.
- MINIMUM COVER: MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. SHALLOWER COVER MAY BE POSSIBLE AND IS CONTINGENT UPON THE MIX BEING DESIGNED TO CARRY THE ANTICIPATED VEHICULAR LOADS, INCLUDING IMPACTING FORCES.

- NOTES:
- REFER TO ASTM D2321 / CSA B182.11 / BNQ 2560 FOR MORE COMPLETE SOIL DESCRIPTIONS.
 - CLASS I MATERIALS ALLOW FOR A BROADER RANGE OF FINES THAN PREVIOUS VERSIONS OF D2321 / B182.11. WHEN SPECIFYING CLASS I MATERIAL FOR INFILTRATION SYSTEMS, THE ENGINEERING SHALL INCLUDE A REQUIREMENT FOR AN ACCEPTABLE LEVEL OF FINES.
 - ALL PARTICLE FACES SHALL BE FRACTURED.
 - ASSUMES LESS THAN 25% PASSES THE 3/8" SIEVE.
 - CLASS IV MATERIALS REQUIRE A GEOTECHNICAL EVALUATION PRIOR TO USE AND SHOULD ONLY BE USED AS BACKFILL UNDER THE GUIDANCE OF A QUALIFIED ENGINEER.
 - UNIFORM FINE SANDS (SP) WITH MORE THAN 50% PASSING A 100 SIEVE BEHAVE LIKE SILTS AND SHOULD BE TREATED AS CLASS III SOILS IF ALLOWED.
 - CLASS V MATERIALS SHALL NOT BE PERMITTED AS BEDDING AND BACKFILL MATERIAL.

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TITLE	SIGNATURE	DATE	BPW	A	ISSUED FOR BID	BPW	8/28/19			NTS	2617 HENSON PLACE BRYANT, ARKANSAS 72022	A - 08/14/19
TITLE	SIGNATURE	DATE	BPW									PROJECT NO.:
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SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNITS
1	MOBILIZATION	1	LUMP SUM
2	MAINTENANCE OF TRAFFIC	1	LUMP SUM
3	CONSTRUCTION CONTROLS	1	LUMP SUM
4	TRENCH AND EXCAVATION SAFETY SYSTEM	1	LUMP SUM
5	FINAL CLEANUP	1	LUMP SUM
6	TOP SOIL FURNISHED AND REPLACED	200	CU. YD.
7	SOLID SODDING	300	SQ. YD.
8	SEED & STRAW	1	LUMP SUM
9	CONCRETE MODIFIED HEADWALL	1	EACH
10	24" HDPE DRAINAGE CULVERT (ASTM D2321)	120	LIN FT
11	8" SDR 26 PVC SANITARY SEWER PIPE	140	LIN FT
12	16" ASTM A53 STEEL ENCASEMENT PIPE (WITH SEALED ENDS)	20	LIN FT
13	6" VALVES (AWWA C509)	2	EACH
14	6" DUCTILE IRON PIPE	20	LIN FT
15	6" ELBOWS 45 DEGREE MECHANICAL JOINTS WITH HDWR	3	EACH
16	6" HYMAX COUPLING WITH HDWR	1	EACH
17	VARIOUS MATERIAL FOR THRUST BLOCKS	2	LOTS
18	SITE PREPARATION	1	LUMP SUM
19	WATER	1	LUMP SUM
20	REMOVE AND REPLACE WOODEN PRIVACY FENCE & GATE	1	LUMP SUM
21	REMOVE EXISTING 24" CMP DRAINAGE CULVERT	1	LUMP SUM
22	REMOVE EXISTING SECTION OF HEADWALL	1	LUMP SUM
23	REMOVE AND REPLACE SIDEWALK	1600	SQ. FT
24	DUMPED RIP RAP AT HEADWALL INLET	10	SQ. YD

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SCALE:

NTS

LOCATION:

2617 HENSON PLACE
BRYANT, ARKANSAS
72022



DWG. TITLE:
HENSON PLACE DRAINAGE
QUANTITIES

REVISION NO./DATE:
A - 08/14/19

PROJECT NO.:

SHEET NO.:
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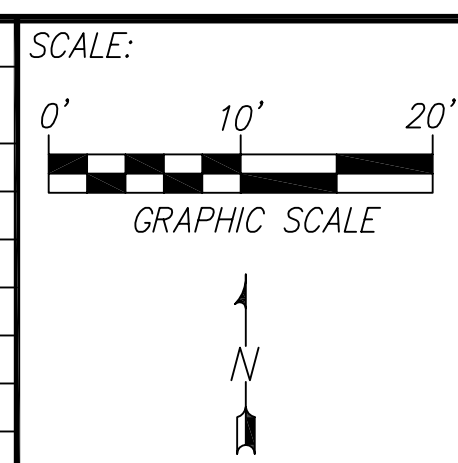


- NOTES:**
- EASEMENT, PROPERTY, & SETBACK LINES ARE PRESENTED FOR REFERENCE. THE CONTRACTOR IS TO KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE EXISTING DRAINAGE EASEMENT.
 - THE CONTRACTOR MUST ERECT BARRICADES TO MAINTAIN A SECURE SITE WHEN NOT PRESENT.

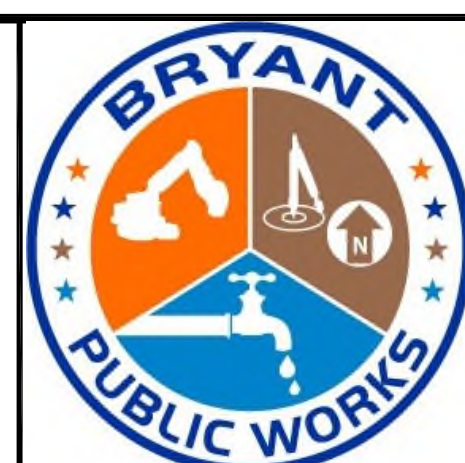
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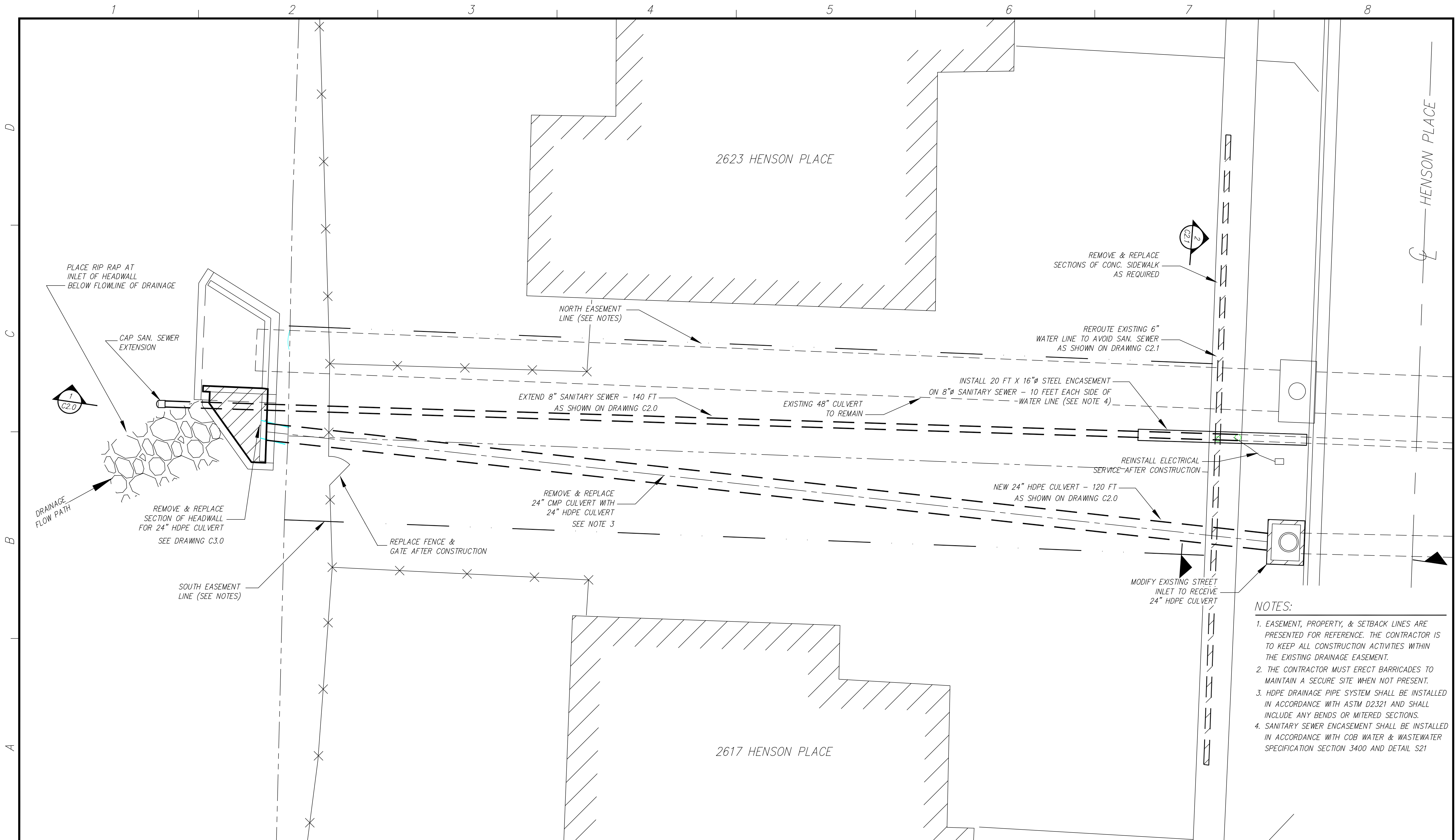
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2617 HENSON PL.
BRYANT, ARKANSAS
72022



DWG. TITLE:
HENSON PLACE DRAINAGE
DEMOLITION SITE PLAN

REVISION NO./DATE:	A - 08/14/19
PROJECT NO.:	
SHEET NO.:	C1.0

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- NOTES:**
- EASEMENT, PROPERTY, & SETBACK LINES ARE PRESENTED FOR REFERENCE. THE CONTRACTOR IS TO KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE EXISTING DRAINAGE EASEMENT.
 - THE CONTRACTOR MUST ERECT BARRICADES TO MAINTAIN A SECURE SITE WHEN NOT PRESENT.
 - HDPE DRAINAGE PIPE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 AND SHALL INCLUDE ANY BENDS OR MITERED SECTIONS.
 - SANITARY SEWER ENCASEMENT SHALL BE INSTALLED IN ACCORDANCE WITH COB WATER & WASTEWATER SPECIFICATION SECTION 3400 AND DETAIL S21

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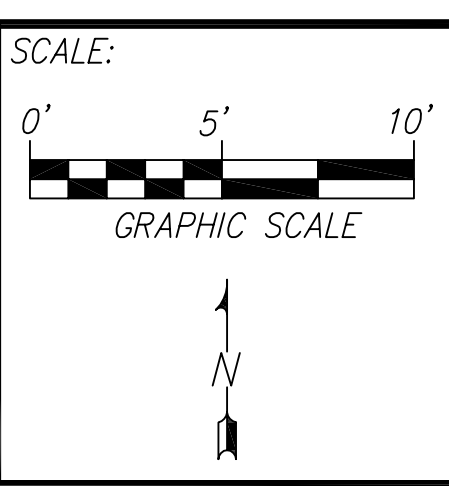
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BRYANT, ARKANSAS
72022



DWG. TITLE:

HENSON PLACE DRAINAGE
ENLARGED SITE PLAN

REVISION NO./DATE:

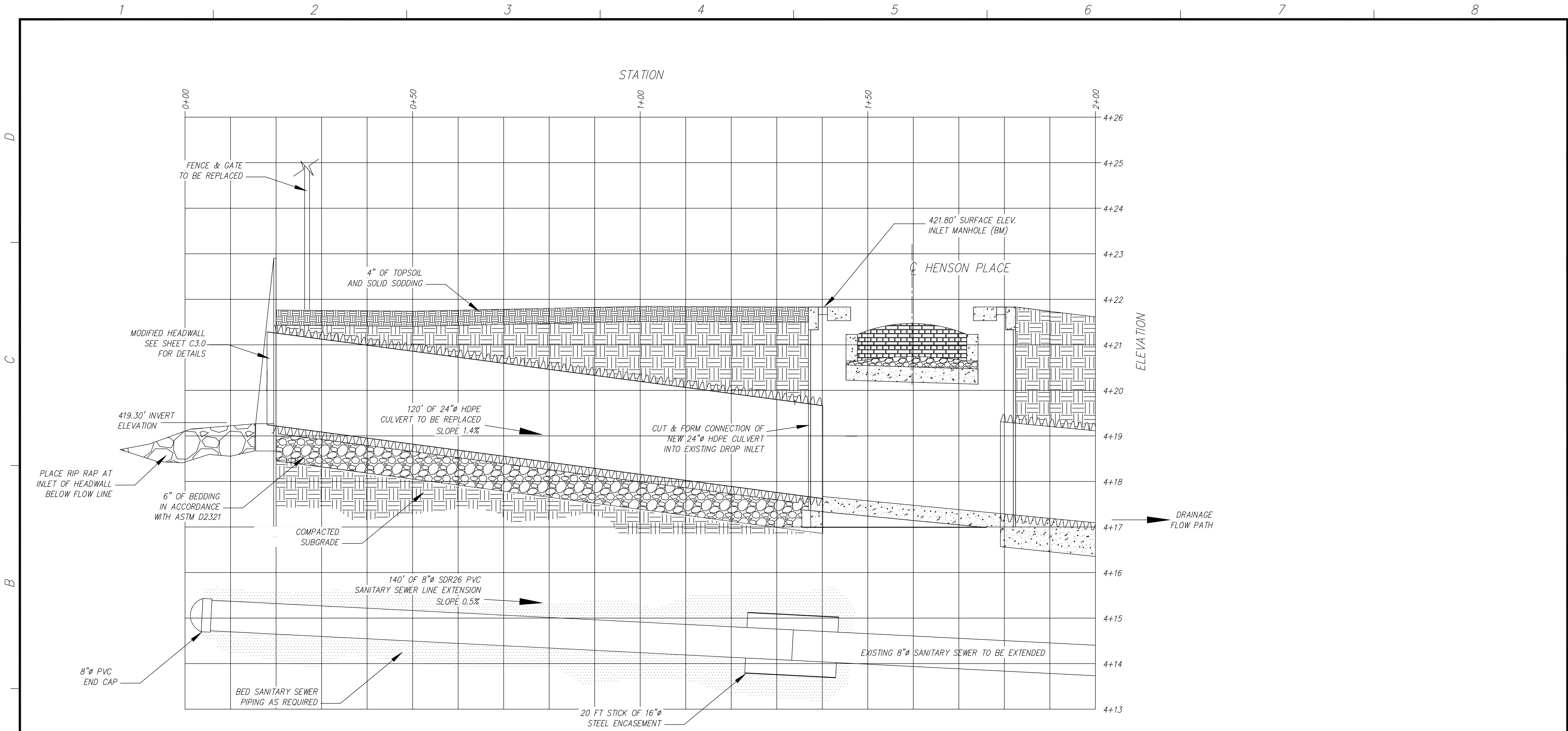
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SECTION AND PROFILE
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 VERTICAL SCALE: 1" = 1'-0"

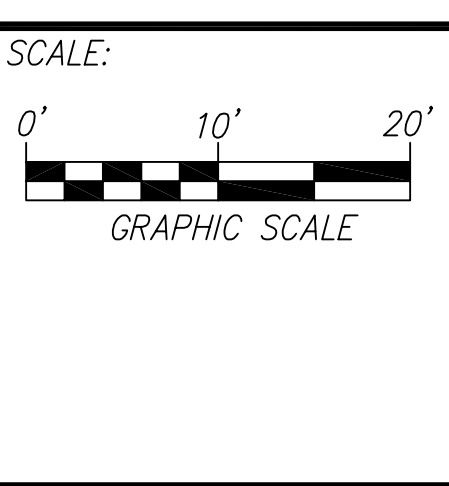
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- NOTES:
1. ANCHOR HDPE CULVERT AS REQUIRED TO PREVENT FLOTATION.
 2. BED TRENCH AND CULVERT AS REQUIRED.

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LOCATION:
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DWG. TITLE:
 HENSON PLACE DRAINAGE
 PROFILE & CROSS SECTION

REVISION NO./DATE: A - 08/14/19
PROJECT NO.:
SHEET NO.: C2.0

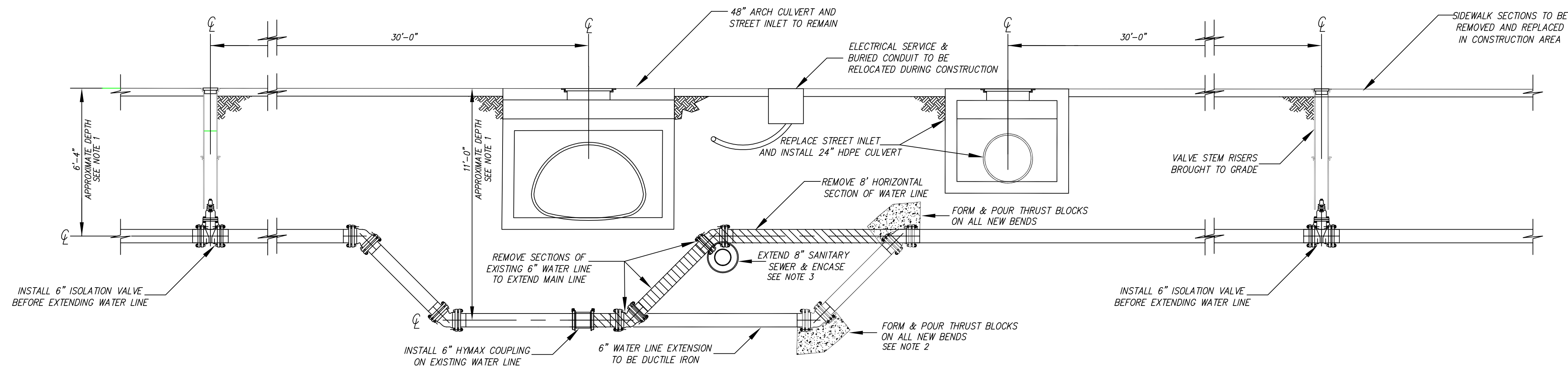
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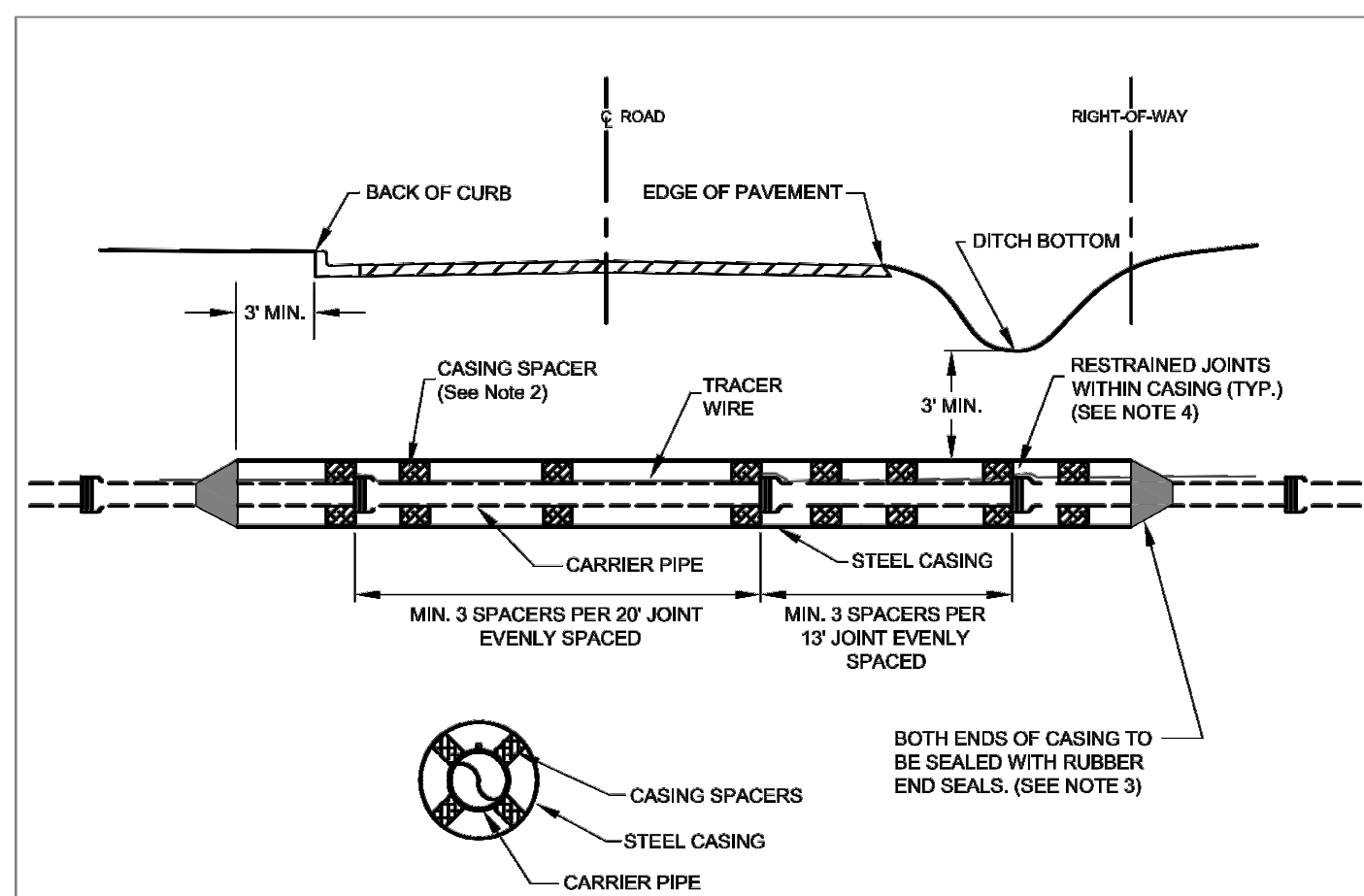
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SECTION C2.1
SCALE: AS INDICATED

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C2.1



- NOTES:**
- STEEL CASING SHALL BE CONSTRUCTED OF SPIRAL OR STRAIGHT WELDED STEEL WITH A MINIMUM DIAMETER AND THICKNESS AS SHOWN BELOW (SEE TABLE).
 - PROVIDE CASING SPACERS BY CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MFG. CO. OR APPROVED EQUAL, MINIMUM 1/2-INCHES WIDE.
 - PROVIDE END SEALS BY CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MFG. CO. OR APPROVED EQUAL.
 - ONE CASING SPACER SHALL BE PLACED AT THE INSERTION STOP LINE TO RESIST OVER INSERTION.
 - ALL FORCE MAINS SHALL BE FULLY RESTRAINED WHERE ENCASEMENTS ARE GREATER THAN 25 FEET IN LENGTH. SELF-RESTRAINING GASKETS OR BELL RESTRAINTS SHALL BE USED FOR ALL JOINTS INSIDE THE ENCASEMENT PIPE AND FOR THE FIRST JOINT IN EACH DIRECTION OUTSIDE THE ENCASEMENT PIPE.
 - DIRECT BURY STEEL ENCASUREMENT SHALL BE POLY WRAPPED.

CARRIER (Ø)	2"	3"	4"	6"	8"	10"	12"
CASING (Ø)	2 1/2"	3 1/2"	4 1/2"	6 1/2"	8 1/2"	10 1/2"	12 1/2"
CASING WALL THICKNESS	0.250	0.250	0.250	0.250	0.250	0.250	0.375

STEEL ENCASUREMENT

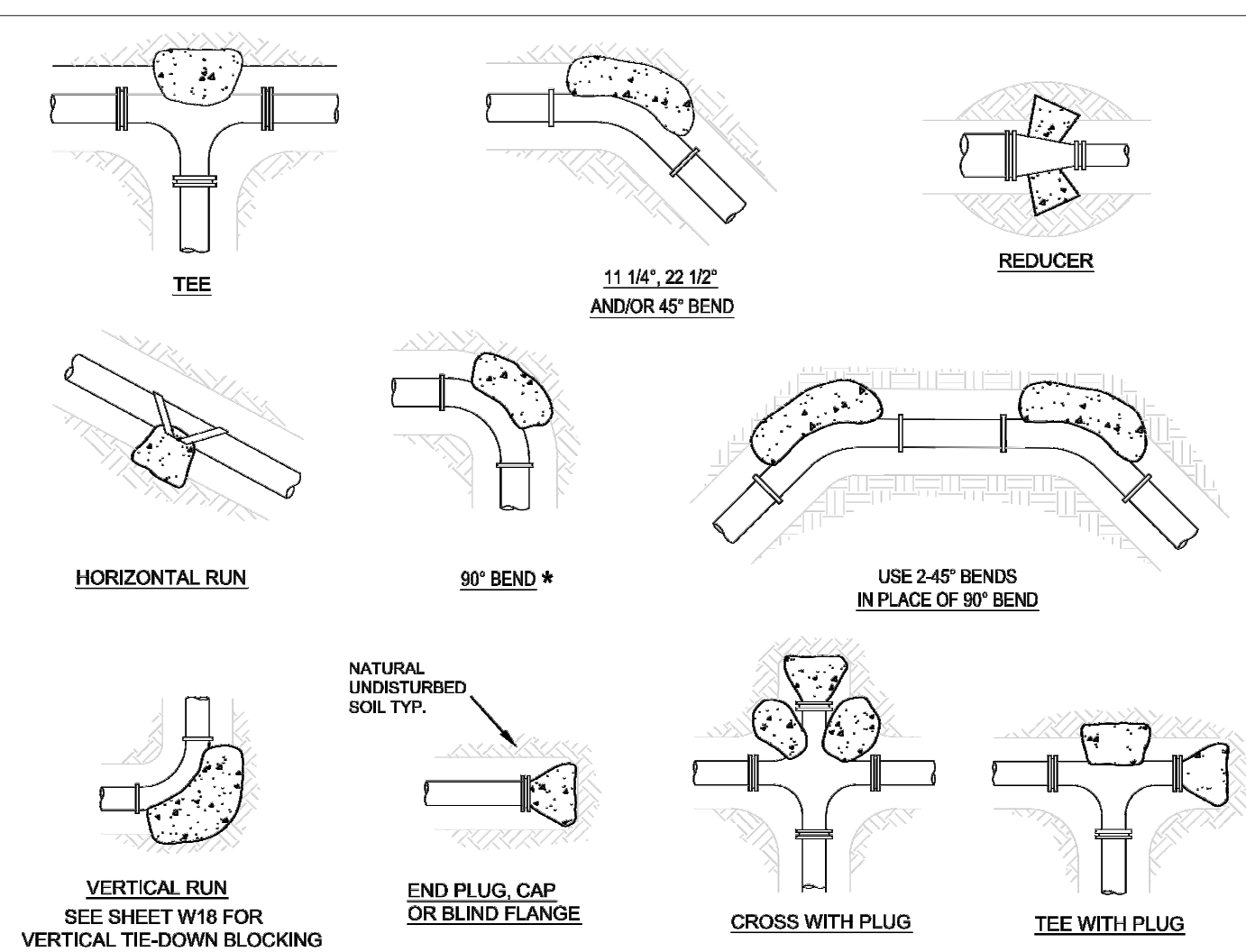
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 36th STREET
BRYANT, AR
PHONE: (501) 846-0868

TITLE: SEWER DETAILS
DESCRIPTION: STEEL ENCASUREMENT

DATE: APRIL 2015
REVISION: REVISED

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FILE: W18-Steel Encasement.dwg

SHEET: 21



FITTING	MINIMUM BEARING AREA OF THRUST BLOCK IN SQ. FT. (HORIZONTAL BENDS)				MINIMUM BEARING AREA OF THRUST BLOCK IN SQ. FT. (VERTICAL BENDS)				MIN. WEIGHT
	Ø 3"	Ø 4"	Ø 6"	Ø 8"	Ø 3"	Ø 4"	Ø 6"	Ø 8"	
2, 3, & 4	1.9	2.7	4.4	6.7	0.4	2.3	3.4	5.5	1.9
6	6.9	7.9	14.3	22.2	1.5	6	10.9	17.2	6.7
8	9.6	13.9	24.4	37.8	2.2	8	13.9	22.2	10.9
10	20.9	29.9	54.9	84.9	4.9	17	27.1	45.9	22.2
12	35.9	50.9	97.9	149.9	7.9	28	47.9	81.9	37.8
16	44.9	63.9	121.9	184.9	10.9	36	62.9	107.9	47.9
24	79.4	110.9	205.9	309.9	18.4	64	110.9	184.9	79.4

- THRUST BLOCK NOTES:**
- CONCRETE FOR THRUST BLOCKS - CLASS A CONCRETE SHALL DEVELOP NOT LESS THAN 3000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS AND BE PLACED AGAINST UNDISTURBED SOIL.
 - ALL BENDS, BOTH HORIZONTAL AND VERTICAL, SHALL BE BACKED WITH CONCRETE. VERTICAL BENDS SHALL BE PLACED ON CONCRETE PADS WHERE BENDS TURN UP, OR LOADED WHERE BENDS TURN DOWN.
 - WRAP PIPE JOINTS IN 8 MIL "POLYETHYLENE" BEFORE PLACING CONCRETE.
 - BEARING AREA SHOWN IN TABLE IS BASED UPON A 2000 LB/SF. SOIL BEARING, AND UPON A PIPELINE PRESSURE OF 200 PSI, PLUS 100 PSI WATER HAMMER. AREAS SHOWN SHALL BE ADJUSTED, SHOULD FIELD CONDITIONS VARY.
 - MJ RESTRAINTS ARE REQUIRED FOR ALL FITTINGS.
 - USE LONG-RADIUS FITTINGS WHEREVER POSSIBLE.
 - ALL BOLTS FOR FITTINGS SHALL BE 316 STAINLESS STEEL.
 - ALL DUCTILE IRON FITTINGS SHALL BE FUSION-BONDED EPOXY COATED INSIDE AND OUTSIDE IN ACCORDANCE WITH ANSI/AWWA C150.1.16.
 - UNIT WEIGHT OF CONCRETE FOR VERTICAL THRUST BLOCKS IS 150 LBS/CU. FT.

THRUST BLOCKING

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 36th STREET
BRYANT, AR
PHONE: (501) 846-0868

TITLE: WATER DETAILS
DESCRIPTION: THRUST BLOCKING

DATE: APRIL 2015
REVISION: REVISED

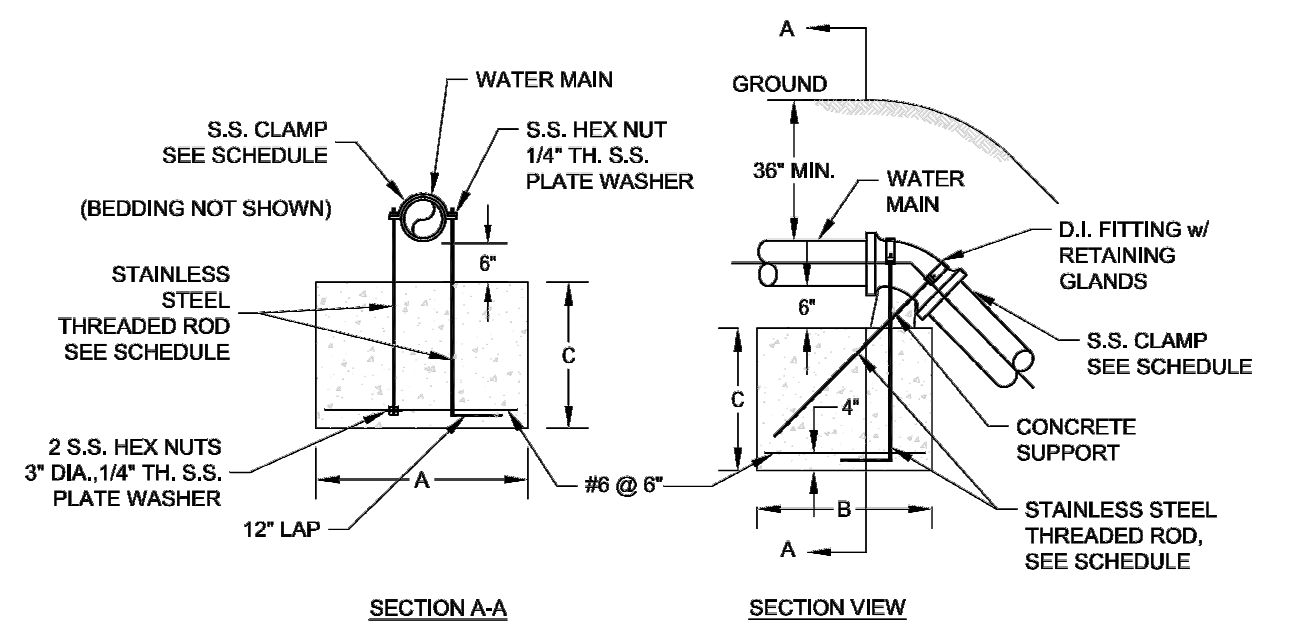
DRAWN BY: [Signature]
CHECKED BY: [Signature]
FILE: W18-Thrust Blocking.dwg

SHEET: 21

PIPE SIZE	BENDS	ROD DIA.		
			45°	22 1/2°
8"	VOLUME REQ'D (CU. FT.)	98.5	50.2	25.2
	A (FT.)	5.00	4.00	3.00
	B (FT.)	4.00	3.20	2.80
	C (FT.)	5.00	4.00	3.00
MIN. CLAMP (2 EA.)		3/8 IN. X 2 IN.		
12"	VOLUME REQ'D (CU. FT.)	209.5	106.8	53.7
	A (FT.)	6.00	5.00	4.00
	B (FT.)	6.00	4.25	3.50
	C (FT.)	6.00	5.00	4.00
MIN. CLAMP (2 EA.)		1/2 IN. X 2 IN.		
18"	VOLUME REQ'D (CU. FT.)	457.2	233.1	117.1
	A (FT.)	8.00	6.50	5.00
	B (FT.)	7.25	5.50	4.75
	C (FT.)	8.00	6.50	5.00
MIN. CLAMP (2 EA.)		5/8 IN. X 3 IN.		
24"	VOLUME REQ'D (CU. FT.)	800.3	408.0	205.0
	A (FT.)	9.50	7.50	6.00
	B (FT.)	9.00	7.25	5.75
	C (FT.)	9.50	7.50	6.00
MIN. CLAMP (2 EA.)		3/4 IN. X 3 IN.		

VOLUME CALCULATED ON THE BASIS OF CONCRETE REACTING THRUST ON THE RESPECTIVE BENDS UNDER AN INTERNAL PRESSURE OF 250 PSI, 50 PSI SURGE AND THE WEIGHT OF CONCRETE IS 150 POUNDS PER CU. FT.

ALL FITTINGS SHALL BE MECHANICAL JOINTS WITH RETAINING GLANDS. BEDDING NOT SHOWN.



VERTICAL TIE-DOWN BLOCKING

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 36th STREET
BRYANT, AR
PHONE: (501) 846-0868

TITLE: WATER DETAILS
DESCRIPTION: VERTICAL TIE-DOWN BLOCKING

DATE: APRIL 2015
REVISION: REVISED

DRAWN BY: [Signature]
CHECKED BY: [Signature]
FILE: W17-Vertical Tie-Down Blocking.dwg

SHEET: 21

NOTES:

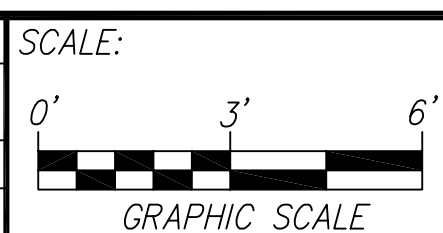
- CONTRACTOR TO VERIFY ALL FIELD DIMENSIONS.
- INSTALL THRUST BLOCKS ON ALL BENDS IN ACCORDANCE WITH COB WATER SPECIFICATION SECTION 4100-3.15
- SANITARY SEWER ENCASUREMENT SHALL BE INSTALLED IN ACCORDANCE WITH COB WATER & WASTEWATER SPECIFICATION SECTION 3400 AND DETAIL S21

APPROVED BY:

TITLE	SIGNATURE	DATE
TITLE	SIGNATURE	DATE
TITLE	SIGNATURE	DATE

DESIGNED BY:	BPW
DRAWN BY:	BPW
CHECKED BY:	BPW

REV	DESCRIPTION	BY	DATE
A	ISSUED FOR BID	BPW	#/##/19



LOCATION:

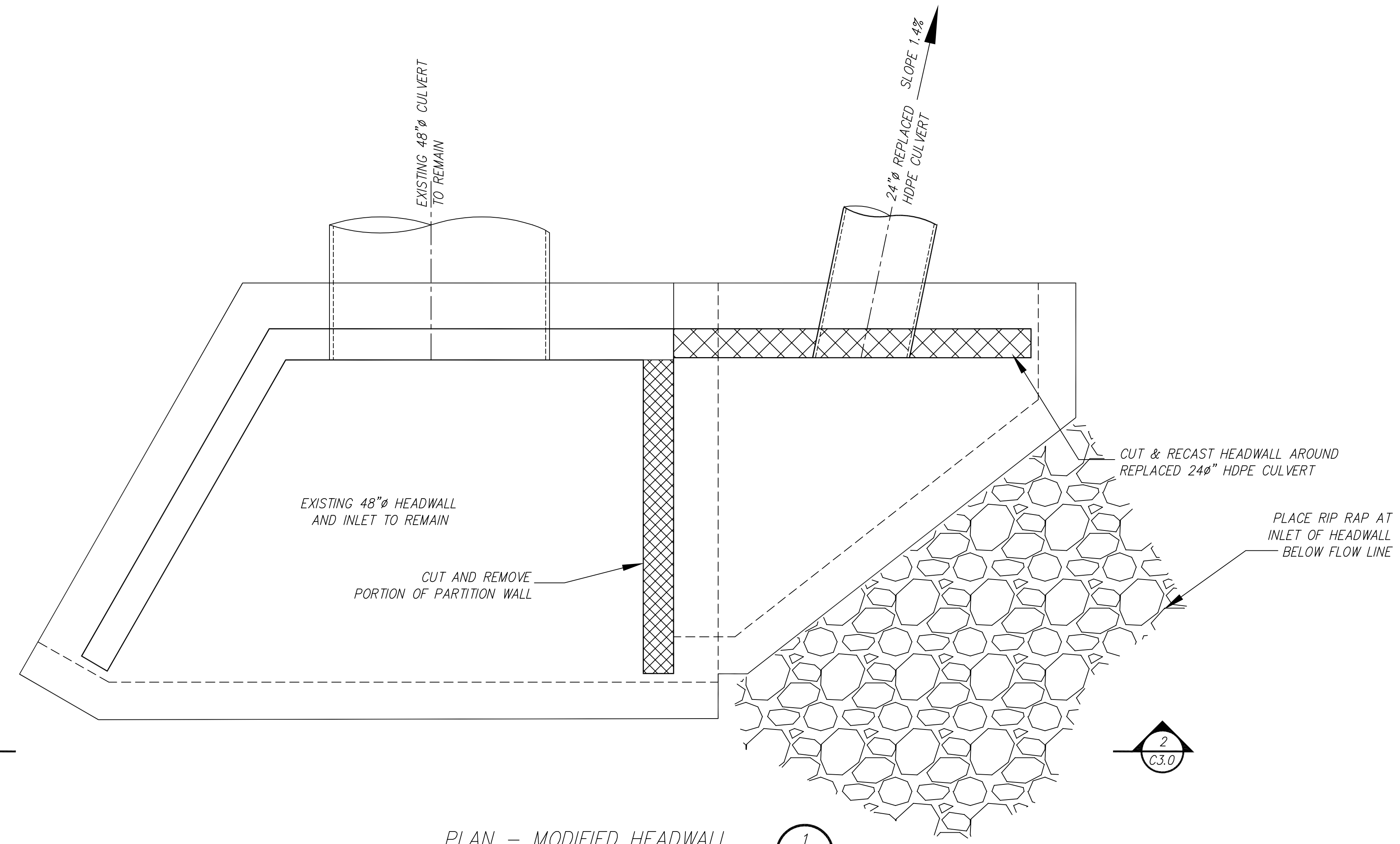
2617 HENSON PL.
BRYANT, ARKANSAS
72022



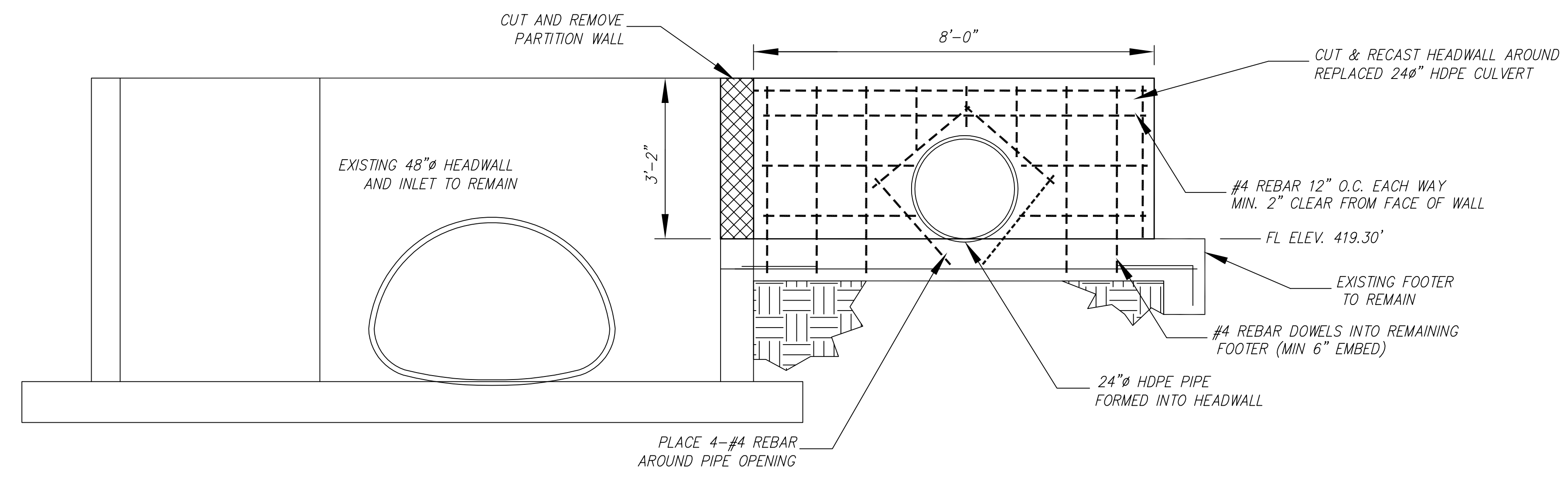
DWG. TITLE: HENSON DRAINAGE SECTION AND DETAILS

REVISION NO./DATE:	A - 08/14/19
PROJECT NO.:	
SHEET NO.:	C2.1

XXX##XXX.DWG



PLAN - MODIFIED HEADWALL
SCALE: AS INDICATED

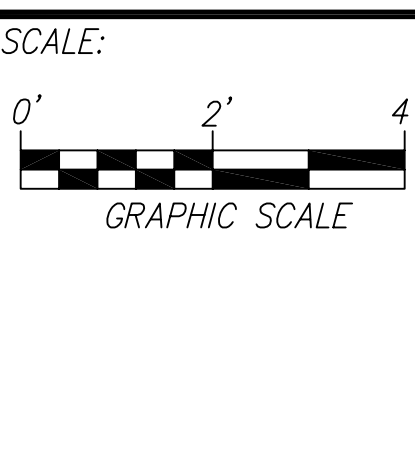


ELEVATION - HEADWALL
SCALE: AS INDICATED

- NOTES:
1. ALL REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH CRSI REQUIREMENTS
 2. CONCRETE SHALL BE 5000 PSI COMPRESSIVE STRENGTH IN 28 DAYS.

APPROVED BY:	DESIGNED BY:	REV	DESCRIPTION	BY	DATE
TITLE	SIGNATURE	A	ISSUED FOR BID	BPW	8/28/19
TITLE	SIGNATURE				
TITLE	SIGNATURE				

DRAWN BY:	CHECKED BY:
BPW	BPW



LOCATION:

2617 HENSON PLACE
BRYANT, ARKANSAS
72022



DWG. TITLE:

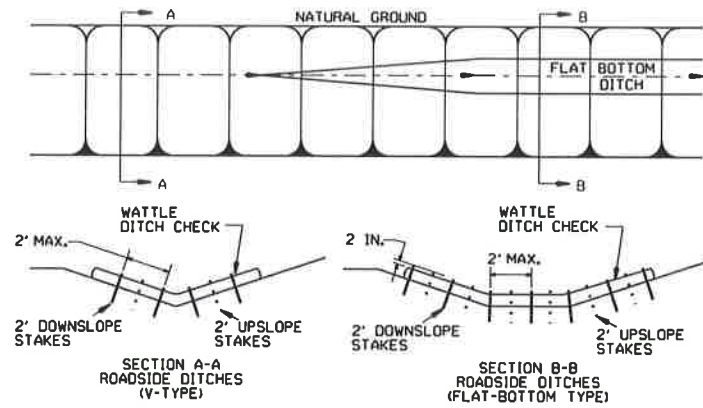
HENSON PLACE DRAINAGE
HEADWALL MODIFICATIONS
SECTION AND DETAILS

REVISION NO./DATE:
A - 08/14/19
PROJECT NO.:
SHEET NO.:
C3.0

XXX###XXX.DWG

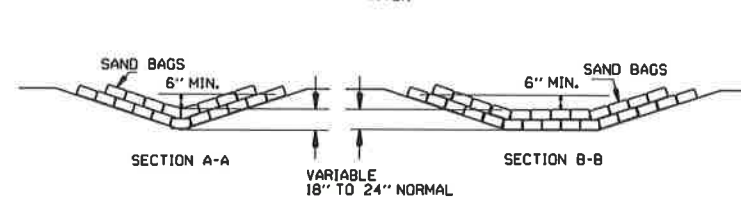
GENERAL NOTES

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

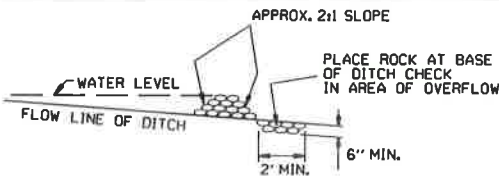


WATTLE DITCH CHECK (E-1)

NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS. PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW.

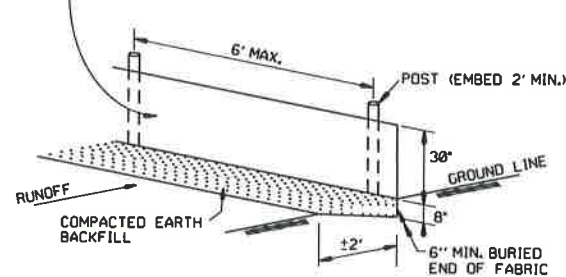


SAND BAG DITCH CHECK (E-5)

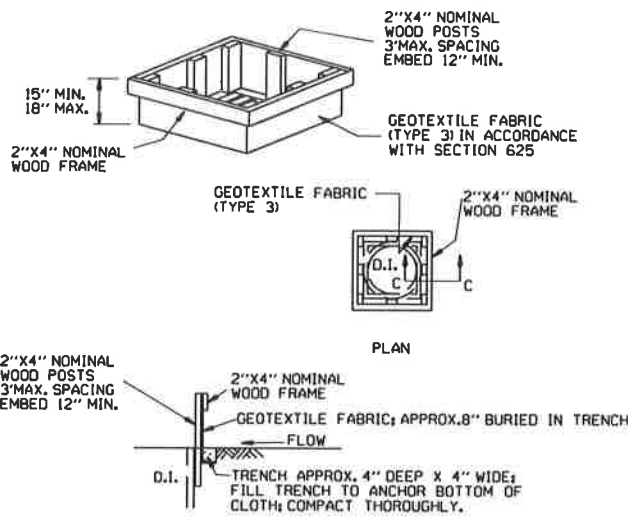


ROCK DITCH CHECK (E-6)

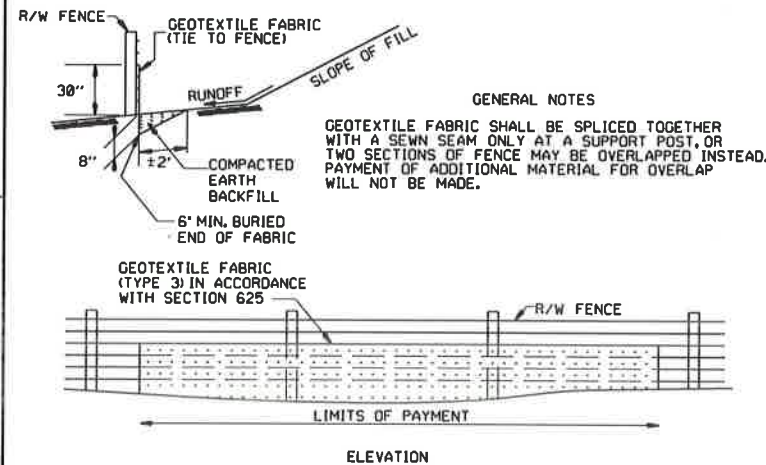
GENERAL NOTES
 GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625
 GEOTEXTILE FABRIC SHALL BE SPICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

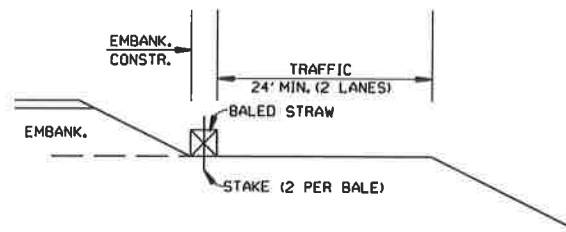


DROP INLET SILT FENCE (E-7)

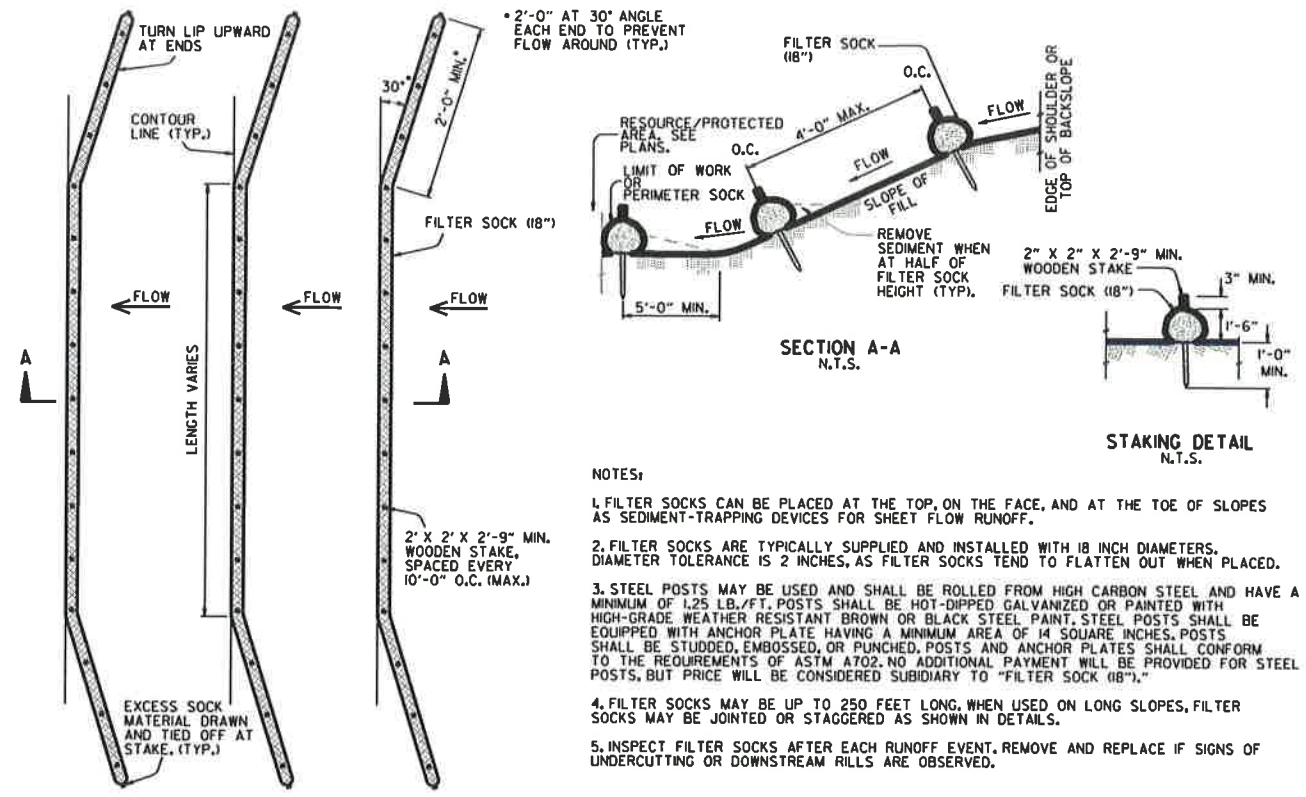


SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES
 1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
 2. NO GAPS SHALL BE LEFT BETWEEN BALES.
 3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.

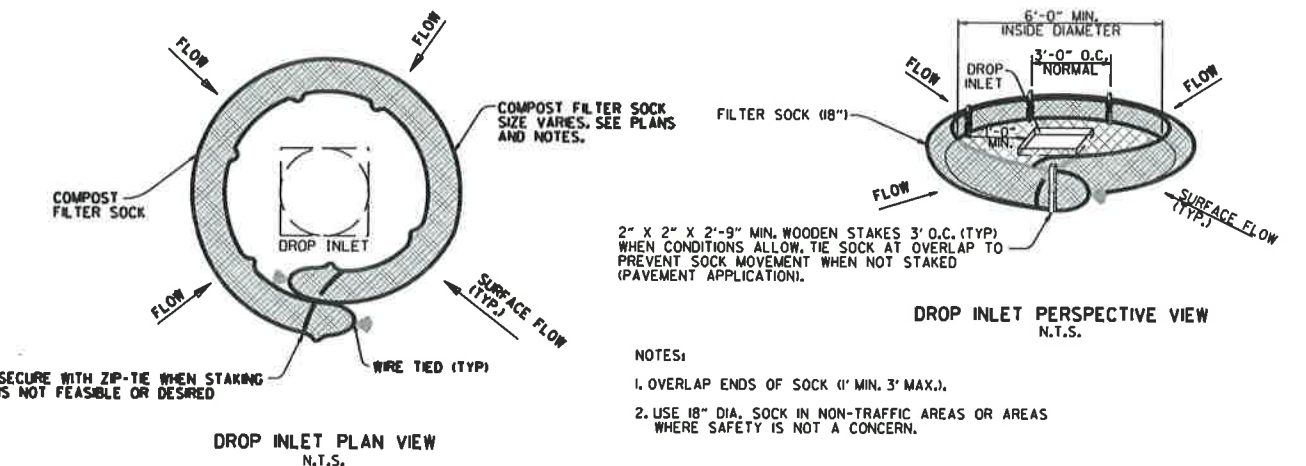


BALED STRAW FILTER BARRIER (E-2)



FILTER SOCK ALONG SLOPE (E-3)

NOTES:
 1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.
 2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.
 3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18\"/>



COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

NOTES:
 1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).
 2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
1-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	7-20-95
07-20-95	REVISED SILT FENCE E-4 AND E-11	
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1, 4, 7 & 11 DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION CONTROL DEVICES
 STANDARD DRAWING TEC-1