

BRIDGE PORT LANE  
DRAINAGE IMPROVEMENTS  
CITY OF BRYANT, ARKANSAS

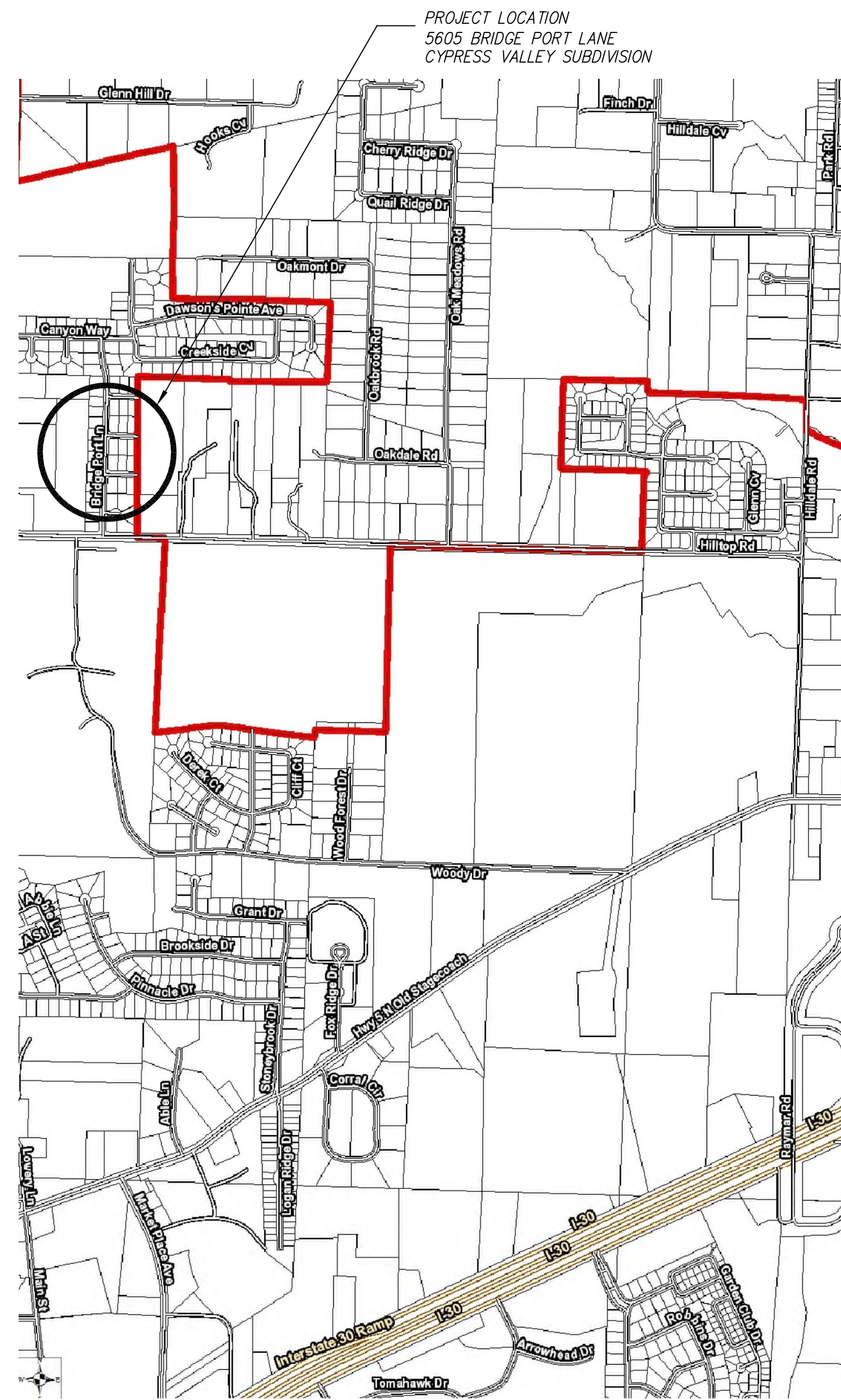
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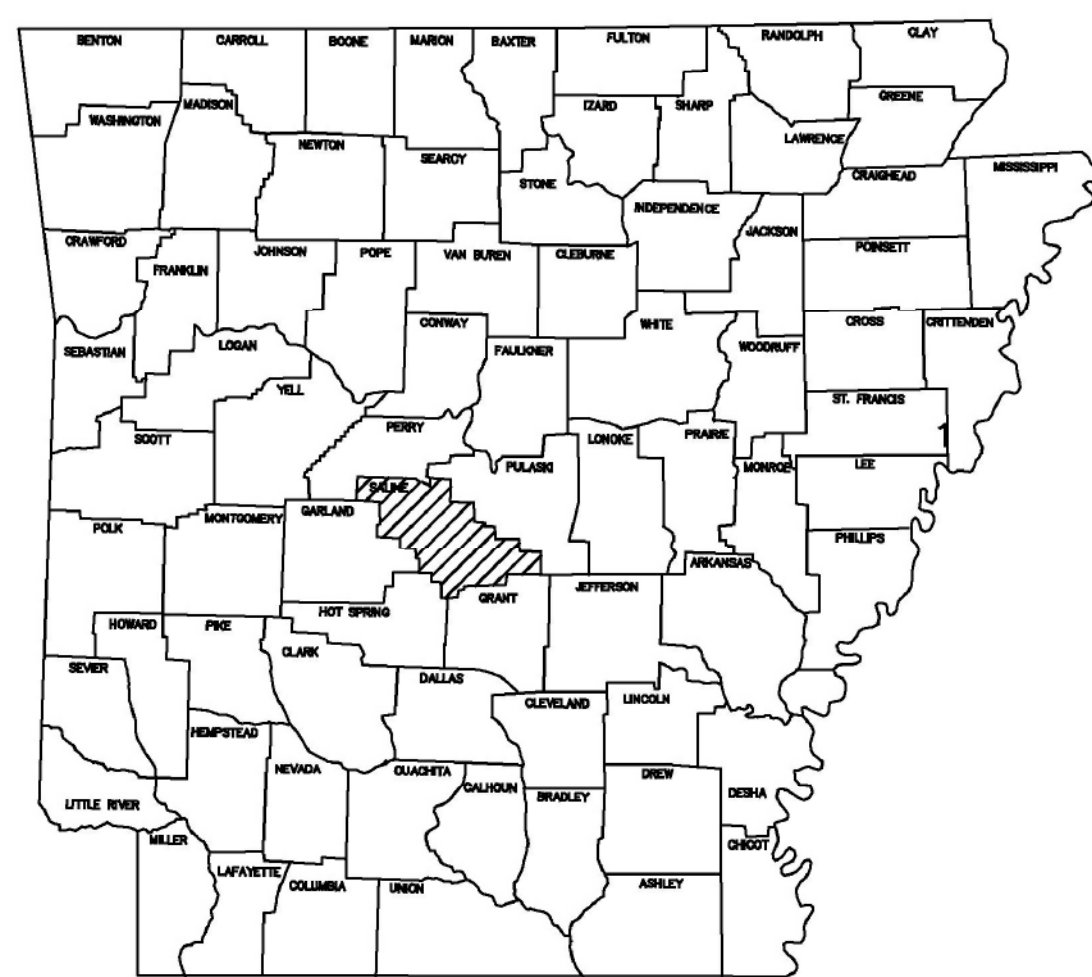
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VICINITY MAP – BRYANT, ARKANSAS



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TITLE	SIGNATURE	A	BPW	5/28/19	NTS	5605 BRIDGE PORT ST. BRYANT, ARKANSAS 72022		PROJECT NO.:	
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- 1. SAFETY
  - 1.1. JOBSITE SAFETY IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
  - 1.2. THIS RESPONSIBILITY COVERS THEIR OWN WORK FORCE, ALL SUBCONTRACTORS, VISITING PERSONNEL, OFFICIALS, AND THE GENERAL PUBLIC WHICH MAY HAVE ACCESS TO THE JOBSITE.
  - 1.3. THE CONTRACTOR SHALL EXERCISE COMPLETE CONTROL OVER WHO HAS ACCESS TO THE JOBSITE TO ENSURE JOBSITE SAFETY.
  - 1.4. THE CONTRACTOR SHALL CONFORM TO ALL SECURITY AND SAFETY REQUIREMENTS OF THE OWNER.
  - 1.5. ANY SAFETY OR OTHER TRAINING REQUIRED BY THE OWNER FOR THE WORK FORCE MUST BE PROVIDED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- 2. PERMITS
  - 2.1. CONTRACTOR SHALL SECURE ALL REQUIRED PERMITS AS REQUIRED BY REGULATING AUTHORITIES OR BY THE OWNER. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE TERMS AND CONDITIONS ASSOCIATED WITH EACH REQUIRED PERMIT, AS WELL AS ADHERING TO THE RULES AND REGULATIONS OF EACH REGULATING AUTHORITY.
- 3. CONTRACT DOCUMENTS
  - 3.1. ALL WORK SHALL CONFORM TO THE PLANS, THESE NOTES, AND SPECIFICATIONS IN ALL RESPECTS AND SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
- 4. INDEMNITY
  - 4.1. BY ACCEPTING THE CONTRACT FOR THIS WORK, THE CONTRACTOR, AT THEIR OWN EXPENSE AND RISK, HEREBY RELEASES AND AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE OWNER, PROJECT ENGINEER, THEIR OFFICERS, AGENTS, EMPLOYEES, CONSULTANTS, AND REPRESENTATIVES FOR DAMAGE TO THE PROPERTY OR INJURY TO, OR DEATH, OF ANY PERSONS, FROM ANY AND ALL CLAIMS, DEMANDS, ACTIONS OF ANY KIND WHATSOEVER ARISING OUT OF AND IN CONNECTION WITH THE AGREEMENT OR PROSECUTION OF WORK UNDER IT, WHETHER SUCH CLAIMS, DEMANDS, ACTIONS, OR LIABILITY ARE CAUSED BY THE CONTRACTOR, IT'S AGENTS, EMPLOYEES, SUBCONTRACTORS, PRODUCTS INSTALLED ON THE PROJECT OR CAUSED BY ANY OTHER PARTY.
- 5. CONSTRUCTION PROCEDURES, MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING STANDARDS UNLESS OTHERWISE MODIFIED ON THE DRAWINGS OR IN THESE NOTES OR SPECIFICATIONS.
  - 5.1. STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION – ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT.
  - 5.2. INTERNATIONAL BUILDING CODE
  - 5.3. ACI 315 MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES
  - 5.4. CRSI RECOMMENDED PRACTICE FOR PLACING REINFORCING STEEL.
  - 5.5. CITY OF BRYANT – WATER/WASTEWATER SPECIFICATIONS.
  - 5.6. CITY OF BRYANT – MINIMUM STREETS STANDARDS.
  - 5.7. CITY OF BRYANT – STORMWATER MANUAL & EROSION CONTROL PLAN
- 6. SITE
  - 6.1. CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTION OF ALL PROPERTY CORNERS.
  - 6.2. CONTRACTOR IS NOT TO PERFORM WORK BEYOND THE DESIGNATED WORK LIMITS WITHOUT FIRST OBTAINING WRITTEN AUTHORIZATION FROM THE PROJECT ENGINEER OR OWNER.
  - 6.3. CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE DAMAGE DONE TO ANY EXISTING ITEM DURING CONSTRUCTION SUCH AS BUT NOT LIMITED TO: DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. REPAIRS SHALL BE EQUAL TO, OR BETTER THAN EXISTING CONDITIONS.
  - 6.4. CONTRACTOR TO REMOVE OR RELOCATE, WHEN APPLICABLE, ALL ITEMS, SHOWN TO BE REMOVED OR RELOCATED AND NOT SHOWN WITHIN CONSTRUCTION LIMITS AND WHERE REQUIRED TO ALLOW FOR NEW CONSTRUCTION AS SHOWN.
  - 6.5. CONTRACTOR TO ADJUST ALL EXISTING AND PROPOSED MANHOLES, VALVE BOXES, ETC. TO FINISH GRADE, WHERE REQUIRED.
- 7. STRUCTURES
  - 7.1. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT IN TO INVERT OUT.
  - 7.2. BEDDING FOR STORM STRUCTURES SHALL CONSIST OF A MINIMUM OF 6-INCHES OF COMPACTED #57 STONE ON TOP OF COMPACTED SUBGRADE.
  - 7.3. AREAS EXPOSED BY EXCAVATION OR STRIPPING AND ON WHICH SUBGRADE PREPARATIONS ARE TO BE PERFORMED SHALL BE SCARIFIED TO MINIMUM DEPTH OF 0'-8" AND COMPACTED TO MINIMUM OF 95% OPTIMUM DENSITY. ANY AREAS THAT FAIL COMPACTION ARE TO BE STABILIZED AS DIRECTED BY THE ENGINEER.

- 8. PRIOR TO PLACING FILL IN LOW AREAS, SUCH AS PREVIOUSLY EXISTING CREEKS, PONDS, OR LAKES, PERFORM FOLLOWING PROCEDURES:
  - 8.1. DRAIN WATER OUT BY GRAVITY WITH DITCH HAVING FLOW LINE LOWER THAN LOWEST ELEVATION IN LOW AREA. IF DRAINAGE CANNOT BE PERFORMED BY GRAVITY DITCH, USE ADEQUATE PUMP TO OBTAIN THE SAME RESULTS.
  - 8.2. AFTER DRAINAGE OF LOW AREA IS COMPLETE, REMOVE MULCH, MUD DEBRIS, AND OTHER UNSUITABLE MATERIAL BY USING ACCEPTABLE EQUIPMENT AND METHODS THAT WILL KEEP NATURAL SOILS UNDERLYING LOW AREA DRY AND UNDISTURBED.
- 9. UTILITIES
  - 9.1. AN ATTEMPT HAS BEEN MADE TO APPROXIMATELY LOCATE UTILITIES ON THE DRAWINGS.
  - 9.2. UTILITIES SHOWN ON THE DRAWINGS WERE LOCATED BY VISUAL OBSERVATION, AND BY TRANSCRIBING FROM RECORD MAPS AND PLANS.
  - 9.3. NO EXCAVATIONS WERE MADE TO CONFIRM SUB-SURFACE UTILITIES. NEITHER THE SURVEYOR NOR PROJECT ENGINEER GUARANTEES THAT ALL UTILITIES HAVE BEEN SHOWN, OR THAT THOSE SHOWN ARE FULLY ACCURATE.
  - 9.4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADJUSTMENTS AND/OR RELOCATION OF EXISTING UTILITIES THAT ARE DAMAGED AS A RESULT OF WORK OF THIS PROJECT.
  - 9.5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND PROPERLY DISCONNECTING, ABANDONING, RELOCATING, AND/OR ADJUSTING ALL AFFECTED UTILITIES WITHIN THE PROJECT AREA.
  - 9.6. ALL UTILITY WORK SHALL BE COORDINATED AND EXECUTED IN ACCORDANCE WITH THE OWNER AND/OR GOVERNING UTILITY COMPANY CODES, SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
  - 9.7. DESIGN AND ALIGNMENT OF UNDERGROUND TELEPHONE, TV CABLE, GAS AND ELECTRIC SERVICES SHALL BE PROVIDED BY THE INDIVIDUAL UTILITIES AND ARE NOT NECESSARILY SHOWN WITH THESE PLANS. CONTRACTOR SHALL PROVIDE CONDUITS SIZED TO ACCOMMODATE UTILITY ROUTING WITH PULL STRINGS WHERE NECESSARY.
  - 9.8. CONTRACTOR TO PROVIDE ALL NECESSARY APPURTENANCES NECESSARY FOR COMPLETE UTILITY SERVICES WHICH ARE NOT PROVIDED BY THE UTILITY COMPANY.
  - 9.9. WATER AND SEWER RELOCATIONS SHOWN SHALL COMPLY WITH THE CITY OF BRYANT'S STANDARD WATER AND SEWER SPECIFICATIONS AND DETAILS. SERVICE LINE WORK SHALL BE COMPLETED BY A LICENSED PLUMBER AND COMPLY WITH ARKANSAS PLUMBING CODE.
- 10. DISPOSAL OF DEBRIS, WASTE OR SPOIL
  - 10.1. BURNING OF DEBRIS AND WASTE IS NOT ALLOWED. CONTRACTOR MAY BE REQUIRED TO PROPERLY HAUL AWAY AND DISPOSE OF ANY WASTE MATERIAL REMOVED FROM THE SITE.
  - 10.2. ANY WASTE OR SPOIL MATERIAL WHICH IS EXCAVATED FROM THE JOB SITE IS TO BE DISPOSED OF AS DIRECTED BY THE ENGINEER OR OWNER.
  - 10.3. REMOVAL AND DISPOSAL OF EXCAVATED WASTE MATERIAL IS CONSIDERED SUBSIDIARY TO ALL OTHER ITEMS IN THE PROJECT, AND WILL NOT BE PAID FOR SEPARATELY.
  - 10.4. CONTRACTOR SHALL FOLLOW ALL LOCAL, STATE AND FEDERAL REGULATIONS IN DISPOSING OF DEMOLISHED MATERIAL REMOVED FROM THIS SITE.
  - 10.5. CONTRACTOR SHALL REMOVE FROM SITE AND DISPOSE OF MATERIAL ENCOUNTERED IN GRADING OPERATIONS THAT, IN OPINION OF THE ENGINEER, IS UNSUITABLE OR UNDESIRABLE FOR BACKFILLING OR SUBGRADE PURPOSES. DISPOSE OF IN A MANNER SATISFACTORY TO ENGINEER. BACKFILL UNDERCUT AREAS WITH LAYERS OF SUITABLE MATERIAL AND COMPACT AS SPECIFIED HEREIN.
- 11. SUBSTITUTIONS
  - 11.1. SUBSTITUTIONS ARE NOT ALLOWED WITHOUT PRIOR APPROVAL FROM THE PROJECT ENGINEER.
- 12. ENVIRONMENTAL
  - 12.1. THE CONTRACTOR IS TO MEET ALL ENVIRONMENTAL REQUIREMENTS OF THE OWNER AND ANY REGULATORY AGENCY HAVING AUTHORITY OVER THIS SITE.
  - 12.2. THE CONTRACTOR IS TO UTILIZE BEST MANAGEMENT PRACTICES (BMP'S) FOR CONTROL OF EROSION DURING ALL CONSTRUCTION PHASES OF THIS PROJECT.
  - 12.3. MINIMUM BMP'S REQUIRED FOR THE PROJECT ARE LISTED ON SHEET THESE PLANS. CONTRACTOR SHALL PROVIDE THESE BMP'S AND ANY OTHERS REQUIRED FOR THE PROJECT.
  - 12.4. CONTRACTOR SHALL KEEP WORK AREA CLEAN AND FREE OF ACCUMULATED TRASH AND DEBRIS. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING MEASURES TO AVOID TRACKING OF MUD, DIRT, ROCKS, AND DEBRIS ONTO AREAS OUTSIDE THE PROJECT AREA. CONTRACTOR SHALL CLEAN PAVEMENTS WHEN NECESSARY OR AS OTHERWISE DIRECTED, AND SHALL CONTROL DUST BY SWEEPING AND WATERING AS NEEDED. DE-TRACKING MAY BE REQUIRED AT ALL ENTRANCES.

- 13. FINAL SITE CONDITIONS
  - 13.1. ALL DISTURBED AREAS NOT RECEIVING PAVEMENT OR LANDSCAPING SHALL HAVE VEGETATION ESTABLISHED AT TIME OF FINAL INSPECTION.
  - 13.2. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPE 2H:1V OR STEEPER UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
  - 13.3. ALL CUT OR FILL SLOPES SHALL BE 3H:1V OR FLATTER UNLESS OTHERWISE NOTED.
  - 13.4. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS
  - 13.5. UPON PARTIAL OR FINAL COMPLETION OF GRADING WORK, SPREAD TOPSOIL, SEED, FERTILIZER, AND MULCH IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE STORM WATER POLLUTION PREVENTION PLAN.
- 14. TRAFFIC CONTROL
  - 14.1. CONTRACTOR SHALL ENGAGE A SUBCONSULTANT WHO SPECIALIZES IN MAINTENANCE OF TRAFFIC PLANS. SUBCONSULTANT SHALL PREPARE A MAINTENANCE OF TRAFFIC PLAN FOR THE PROJECT THAT COMPLIES WITH THE REQUIREMENTS OF MUTCD AND ALL APPLICABLE AUTHORITIES HAVING JURISDICTION OVER ROAD RIGHT-OF-WAY. CONTRACTOR SHALL SUBMIT MAINTENANCE OF TRAFFIC PLAN TO ENGINEER FOR APPROVAL PRIOR TO BEGINNING WORK.

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TITLE	SIGNATURE	DATE	A	ISSUED FOR BID	BPW	5/28/19	NTS	5605 BRIDGE PORT ST. BRYANT, ARKANSAS 72022	PROJECT NO.:	
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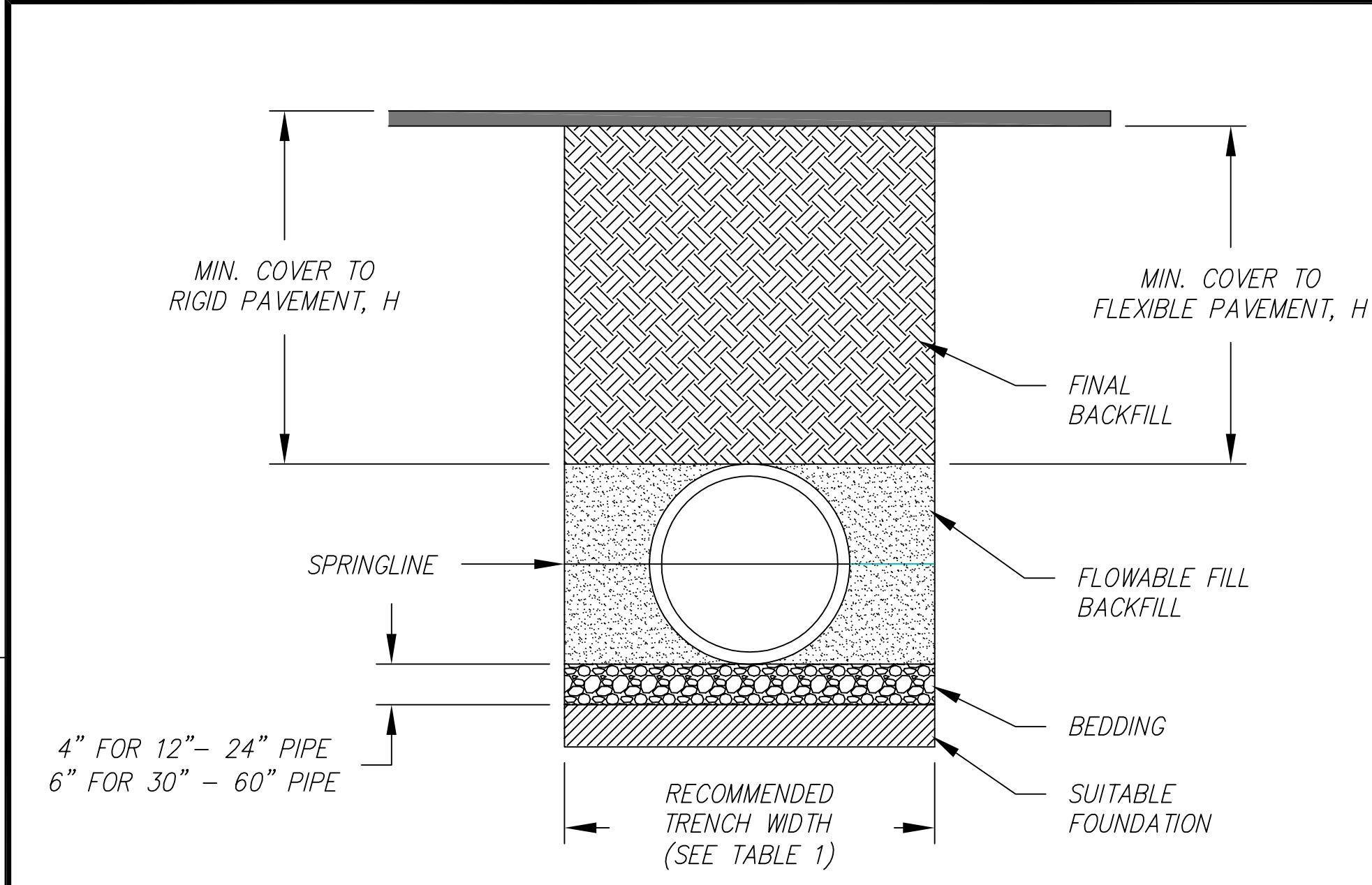
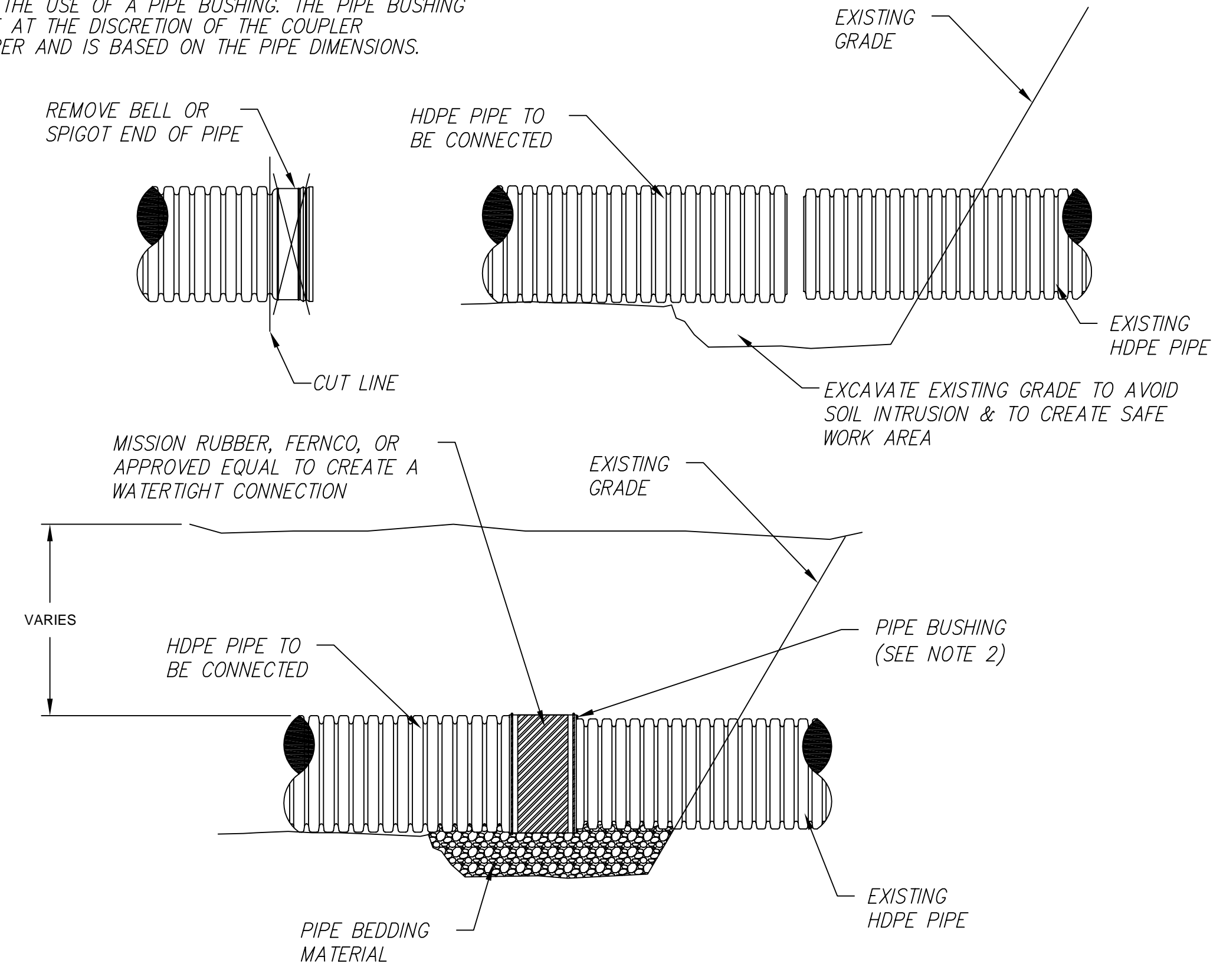


TABLE 1, RECOMMENDED TRENCH WIDTHS

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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SCALE:	LOCATION:
NTS	5605 BRIDGE PORT ST. BRYANT, ARKANSAS 72022



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BRIDGE PORT DRAINAGE GENERAL NOTES HDPE PIPE	A - 05/14/19
	PROJECT NO.:
	SHEET 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	BNO 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	A1, A3	CG-14, MG-20	100%	<50% of "COARSE FRACTION"	<5%	NON PLASTIC		>4	1 to 3
		GP	POORLY-GRADED GRAVEL, GRAVEL-SAND MIXTURES; LITTLE OR NO FINES	56, 57, 67								4	<1 or >3
		SW	WELL-GRADED SANDS, GRAVELLY SANDS; LITTLE OR NO FINES									>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%	VARIABLE	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	A-2-4, A-2-5, A-2-6, OR A-4 OR A-6 SOILS WITH MORE THAN 30% RETAINED ON #200 SIEVE	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								>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 (9)	INORGANIC 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%	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	A5, A7	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		100%	100%	>50%	>50		<4 OR <"A" LINE		
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	N/A							<"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 / BNO 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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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	80	CU. YD.
7	SOLID SODDING	200	SQ. YD.
8	SEED & STRAW	1	LUMP SUM
9	CONCRETE HEADWALL	1	EACH
10	48" HDPE DRAINAGE CULVERT (ASTM D2321)	120	LIN FT
11	48" HDPE DRAINAGE CULVERT COUPLINGS	1	LOT
12	SITE PREPARATION	1	LUMP SUM
13	WATER	1	LUMP SUM
14	REMOVE AND REPLACE WOODEN PRIVACY FENCE & GATE	1	LUMP SUM
15	REMOVE EXISTING 48" HDPE DRAINAGE CULVERT	1	LUMP SUM
16	REMOVE EXISTING HEADWALL	1	LUMP SUM
17	DUMPED RIP RAP AT HEADWALL INLET	10	SQ. YD

D  
C  
B  
A

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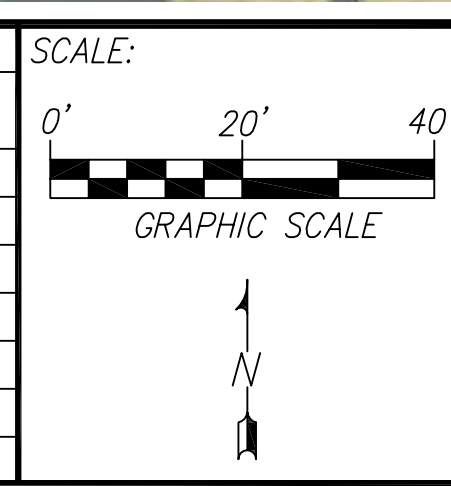
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TITLE	SIGNATURE	DATE	DRAWN BY: BPW	A	ISSUED FOR BID	BPW	5/28/19	NTS	5605 BRIDGE PORT ST. BRYANT, ARKANSAS 72022	PROJECT NO.:			
TITLE	SIGNATURE	DATE	CHECKED BY: BPW							SHEET NO.:			
TITLE	SIGNATURE	DATE								G3.0			



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	5/28/19



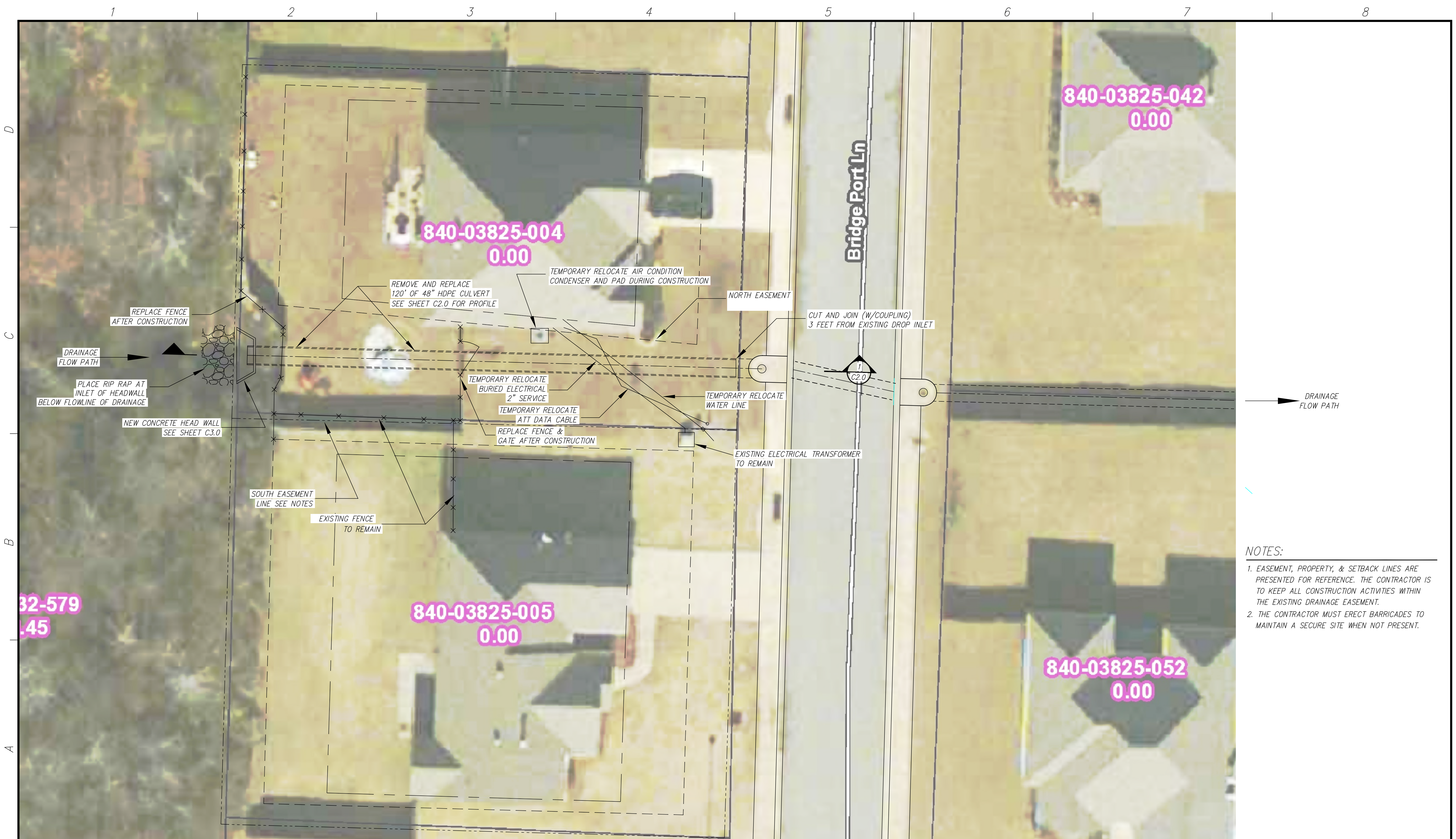
LOCATION:  
 5605 BRIDGE PORT ST.  
 BRYANT, ARKANSAS  
 72022



DWG. TITLE:  
 BRIDGE PORT DRAINAGE  
 DEMOLITION SITE PLAN


REVISION NO./DATE:	A - 05/14/19
PROJECT NO.:	
SHEET NO.:	C1.0

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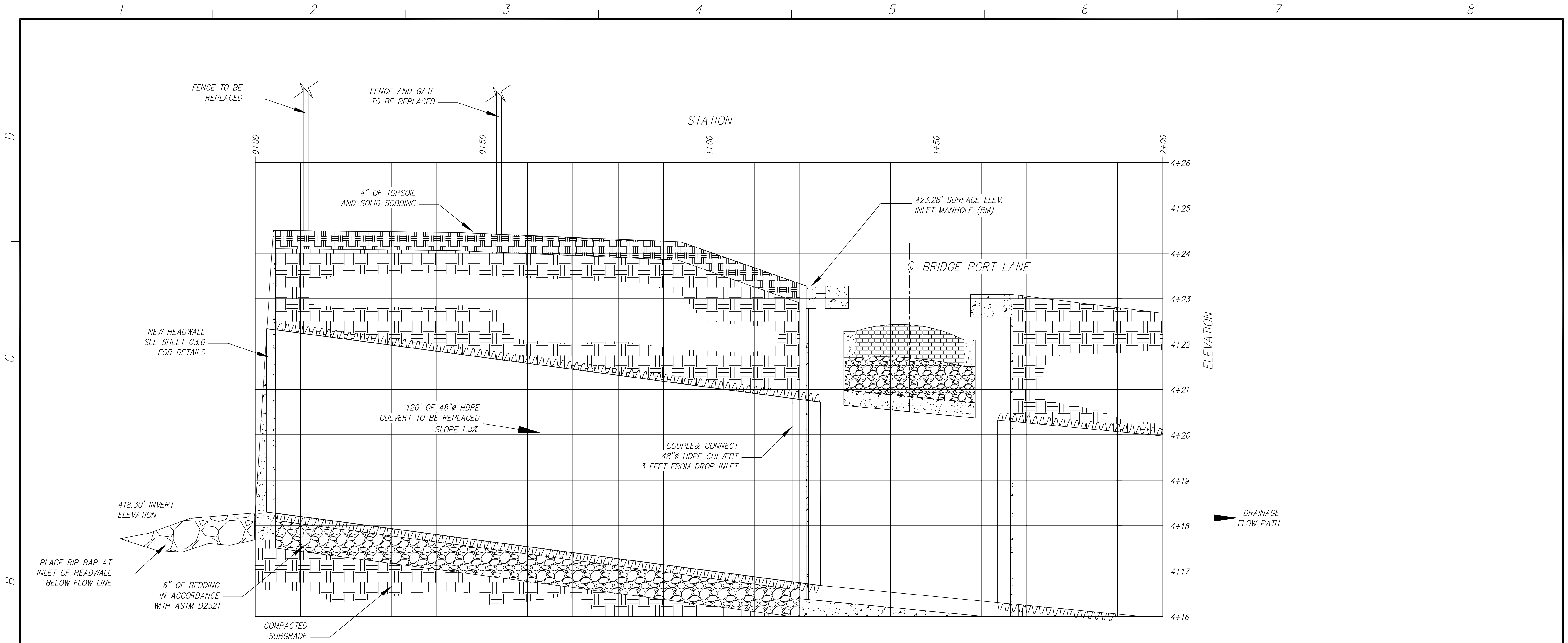


**NOTES:**

- 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.

APPROVED BY:			DESIGNED BY: BPW	REV	DESCRIPTION	BY	DATE	SCALE:	LOCATION:		DWG. TITLE:	REVISION NO./DATE:
TITLE	SIGNATURE	DATE	DRAWN BY: BPW	A	ISSUED FOR BID	BPW	5/28/19	0' 10' 20' GRAPHIC SCALE	5605 BRIDGE PORT ST. BRYANT, ARKANSAS 72022		BRIDGE PORT DRAINAGE SITE PLAN ENLARGED	A - 05/14/19
TITLE	SIGNATURE	DATE	CHECKED BY: BPW								PROJECT NO.:	
TITLE	SIGNATURE	DATE									SHEET NO.:	C1.1

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SECTION AND PROFILE  
 HORIZONTAL SCALE: 1" = 10'-0"  
 VERTICAL SCALE: 1" = 1'-0"

1  
C2.0

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

APPROVED BY:	DESIGNED BY:	REV	DESCRIPTION	BY	DATE
TITLE	BPW	A	ISSUED FOR BID	BPW	5/28/19
SIGNATURE	DRAWN BY:				
DATE	BPW				
	CHECKED BY:				
	BPW				

SCALE:	LOCATION:
0' 10' 20'	5605 BRIDGE PORT ST.
GRAPHIC SCALE	BRYANT, ARKANSAS
	72022

DWG. TITLE: BRIDGE PORT DRAINAGE PROFILE & CROSS SECTION

REVISION NO./DATE: A - 05/14/19

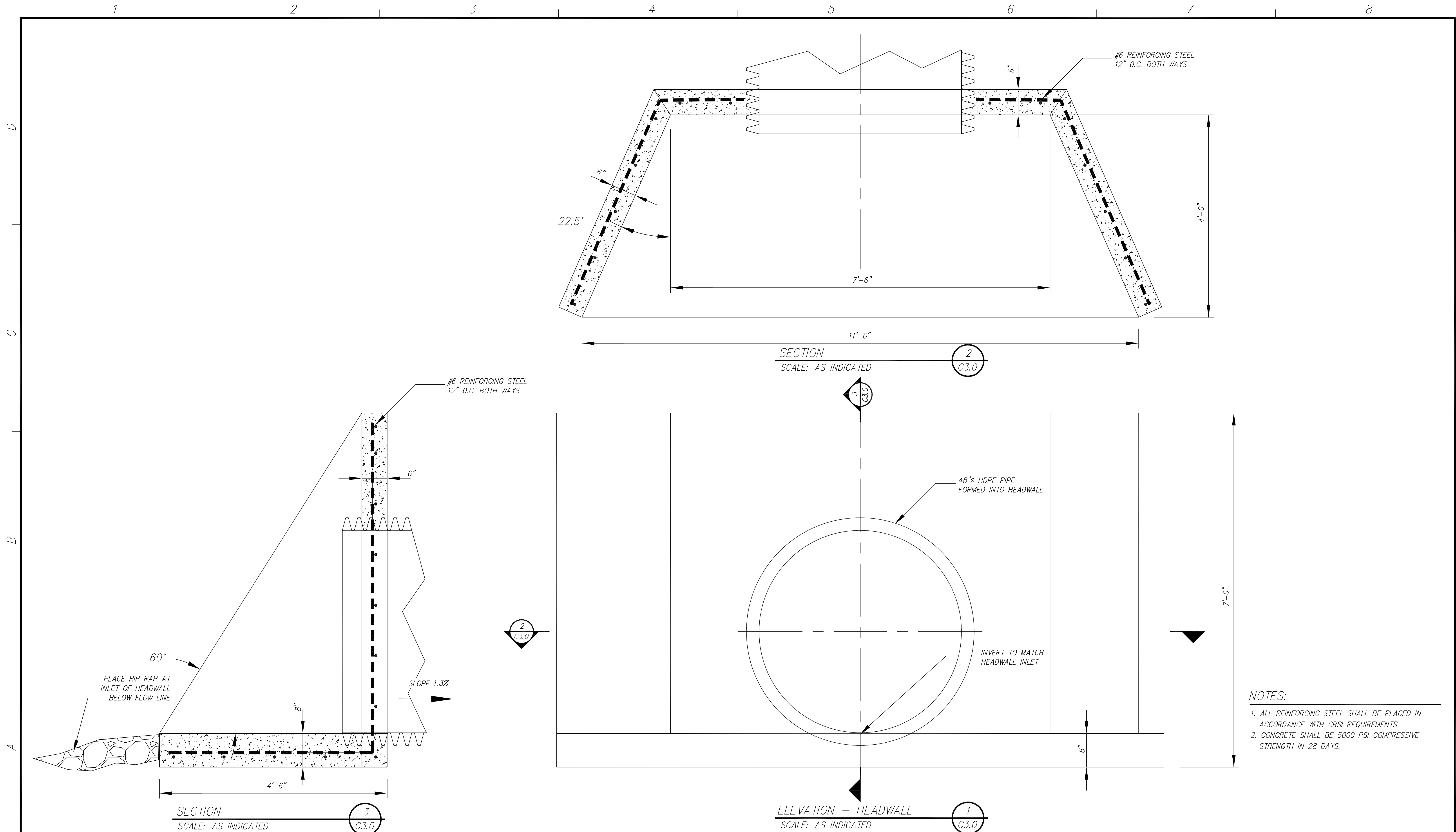
PROJECT NO.:

SHEET NO.: C2.0



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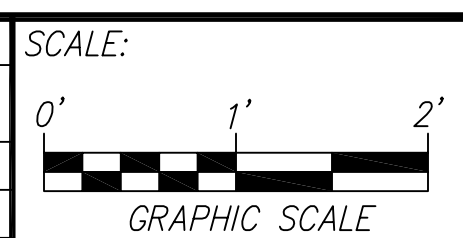




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TITLE	SIGNATURE	DATE
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TITLE	SIGNATURE	DATE

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

REV	DESCRIPTION	BY	DATE
A	ISSUED FOR BID	BPW	5/28/19



LOCATION:

5605 BRIDGE PORT ST.  
BRYANT, ARKANSAS  
72022



DWG. TITLE:

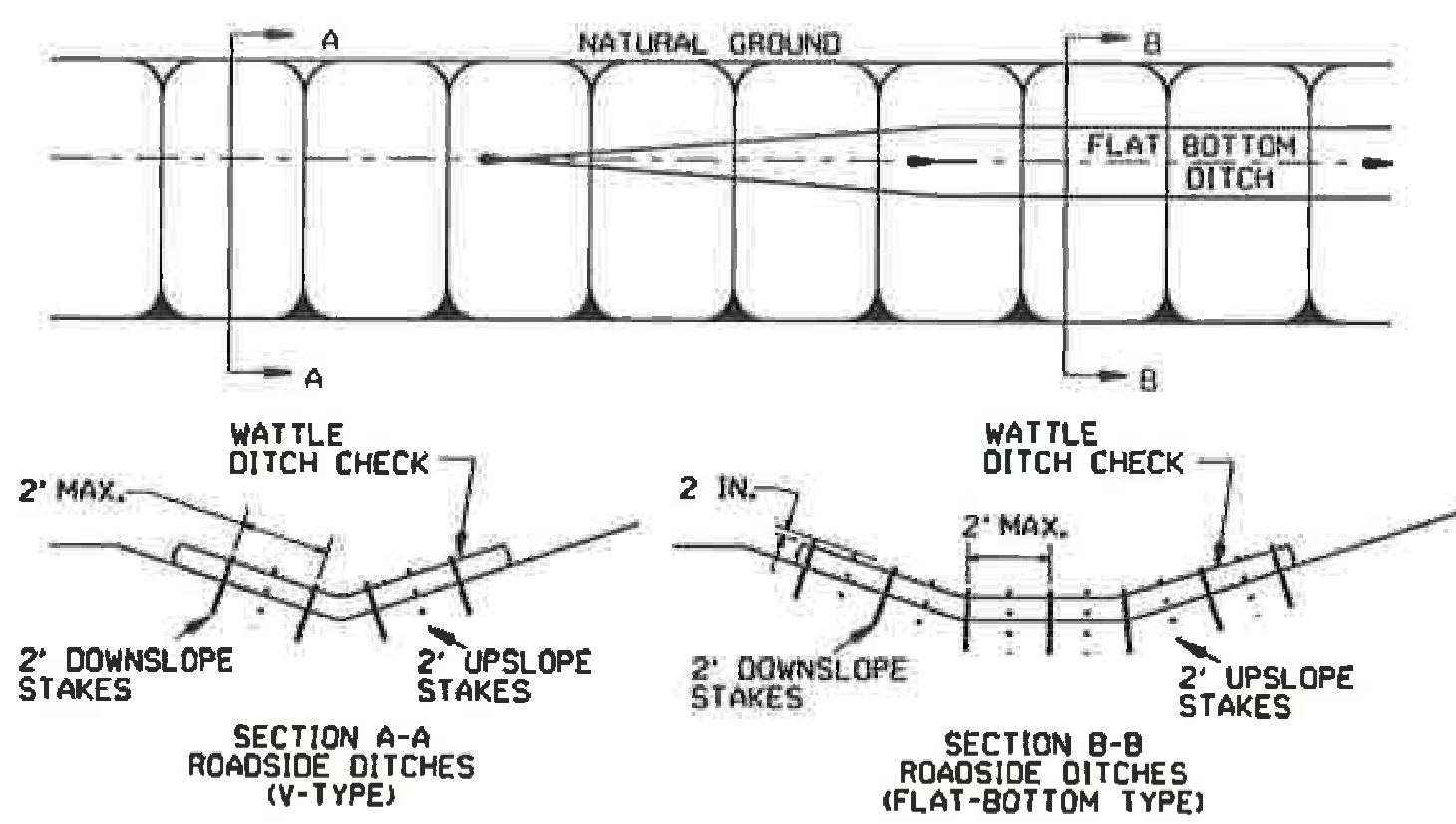
BRIDGE PORT DRAINAGE  
HEADWALL  
SECTION AND DETAILS

REVISION NO./DATE:	A - 05/14/19
PROJECT NO.:	
SHEET NO.:	C3.0

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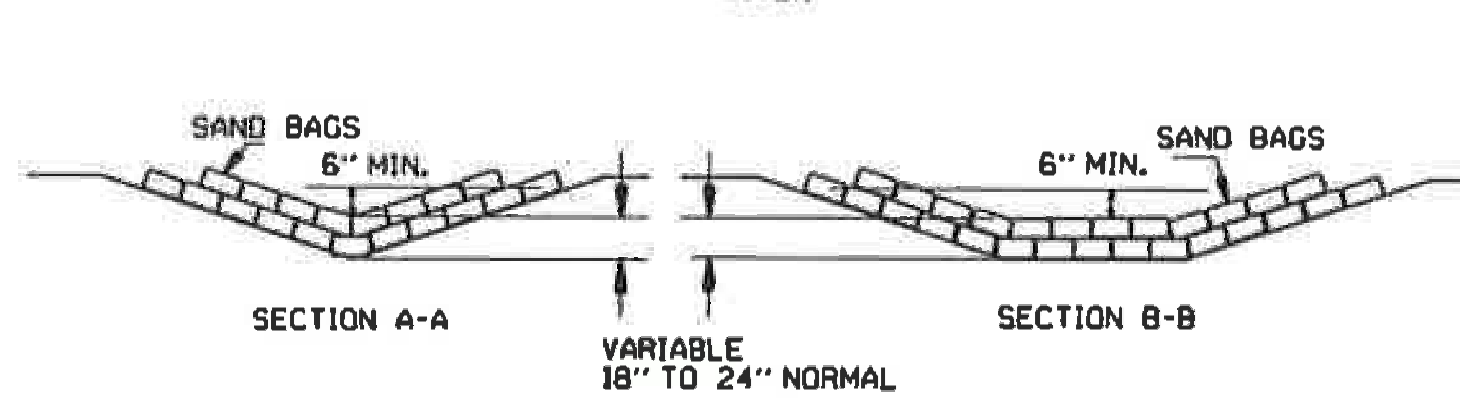
**GENERAL NOTES**

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

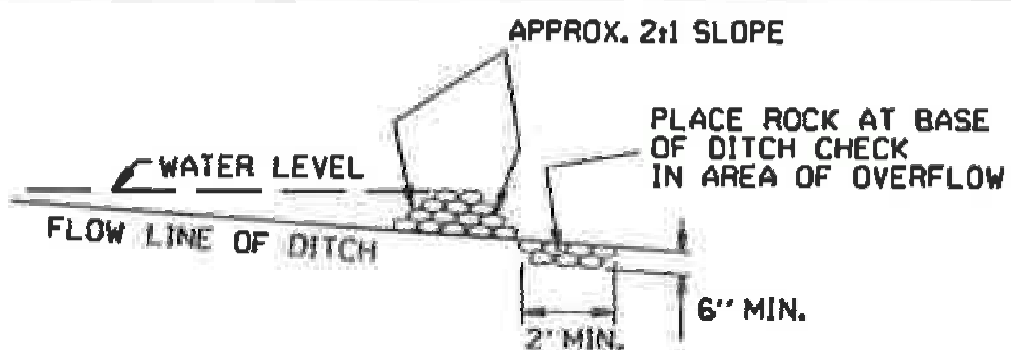


**WATTLE DITCH CHECK (E-1)**

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

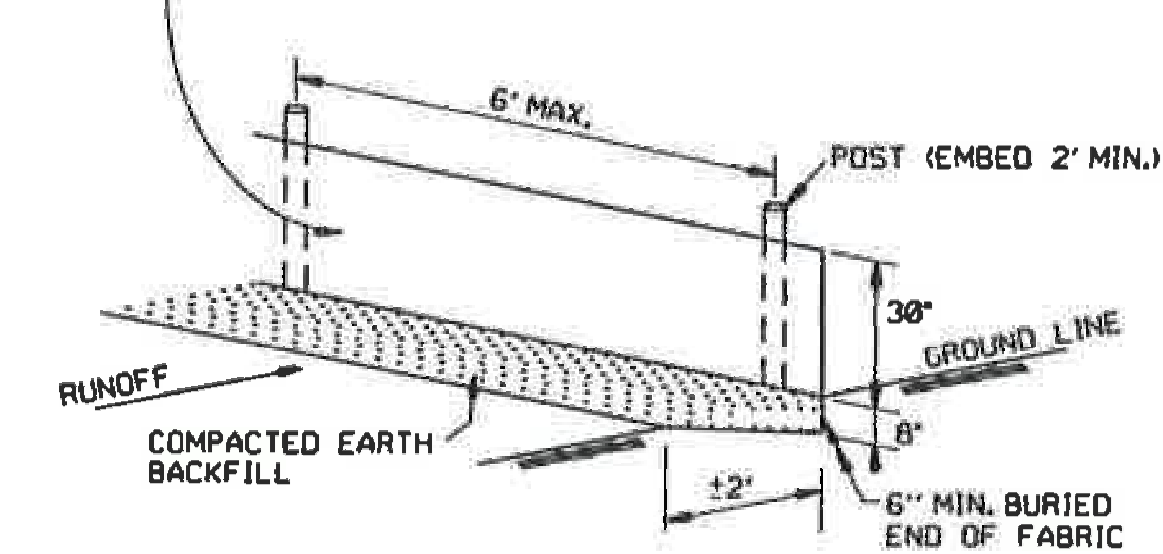


**SAND BAG DITCH CHECK (E-5)**

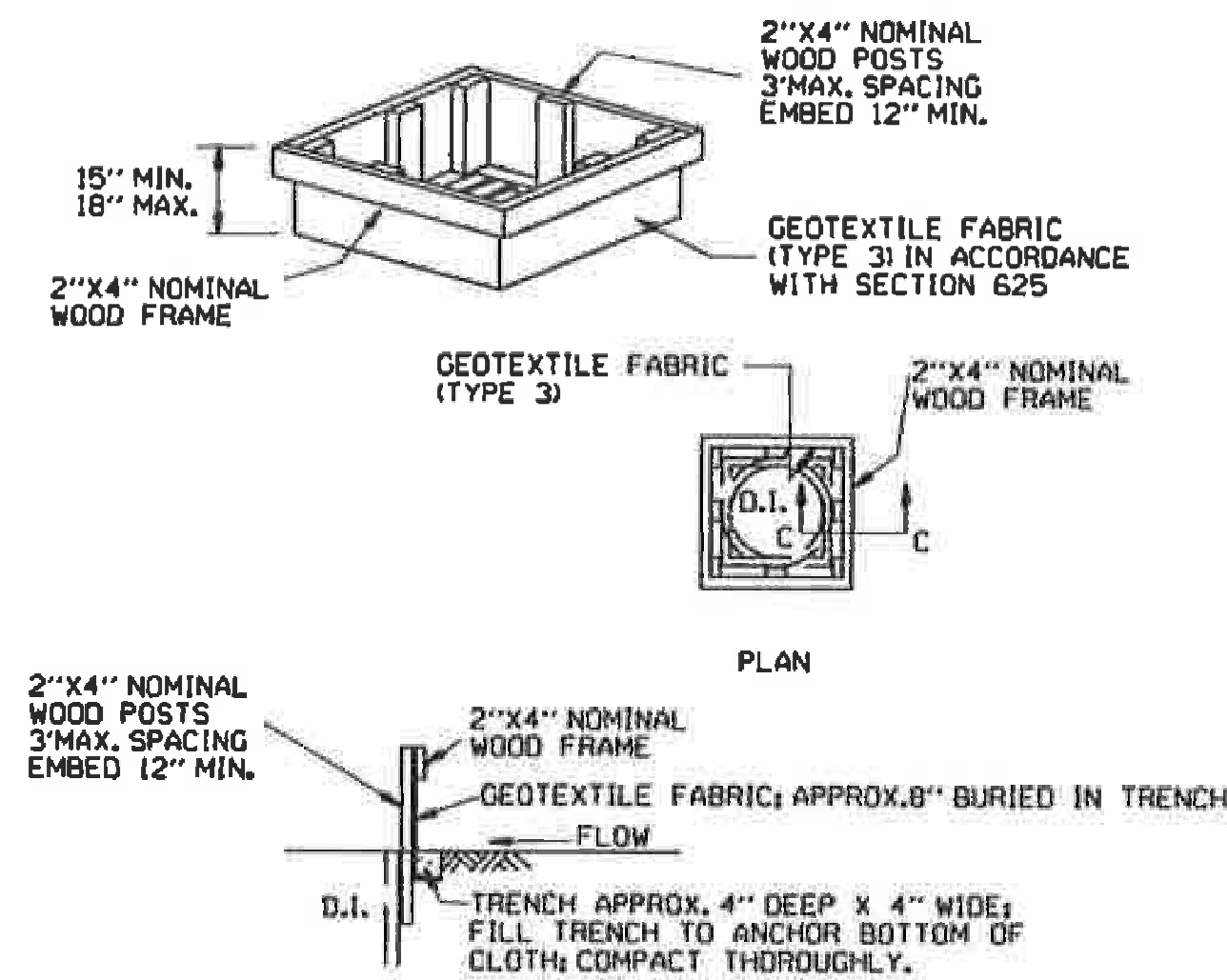


**ROCK DITCH CHECK (E-6)**

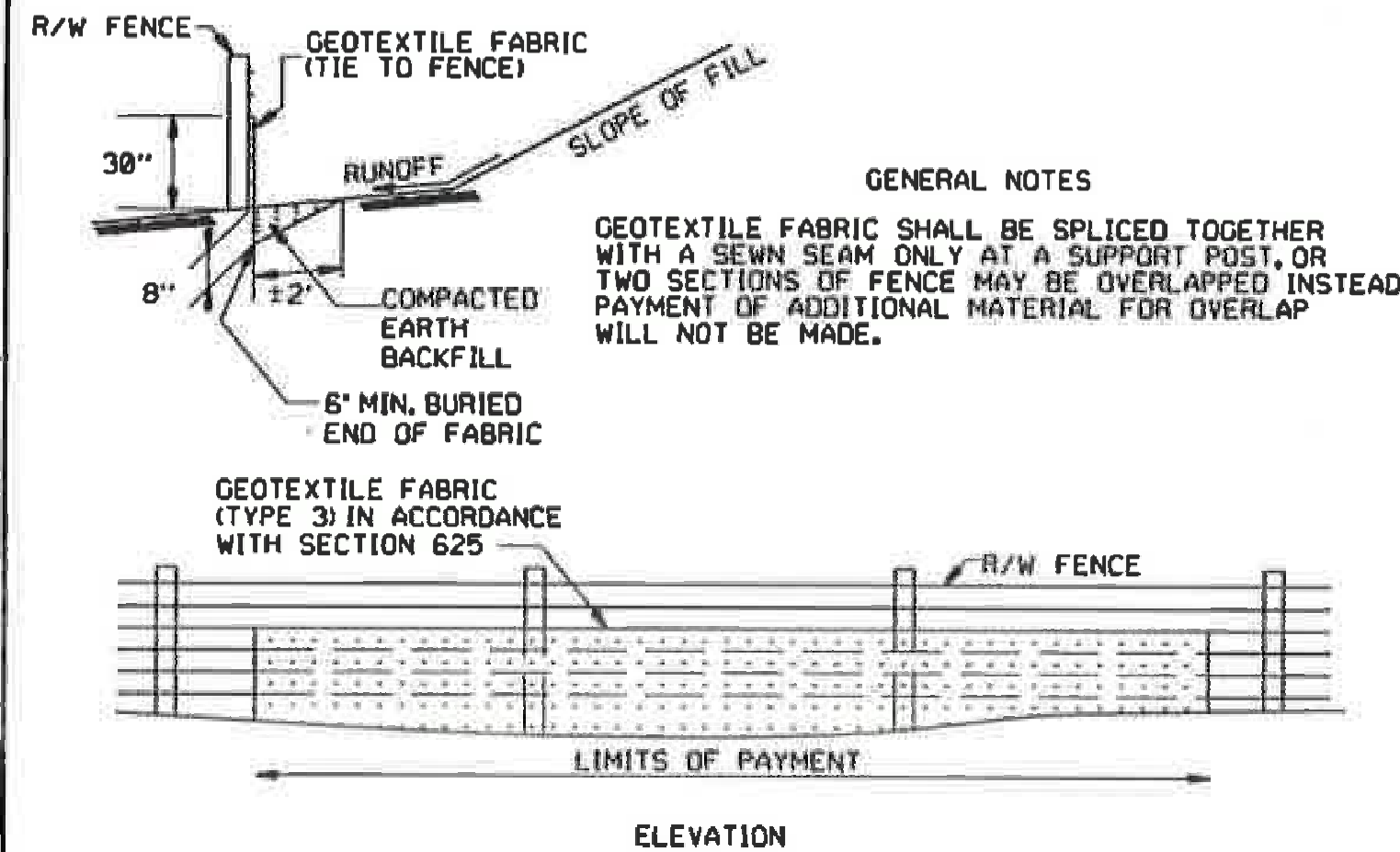
**GENERAL NOTES**  
 GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625  
 GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



**SILTS FENCE (E-11)**

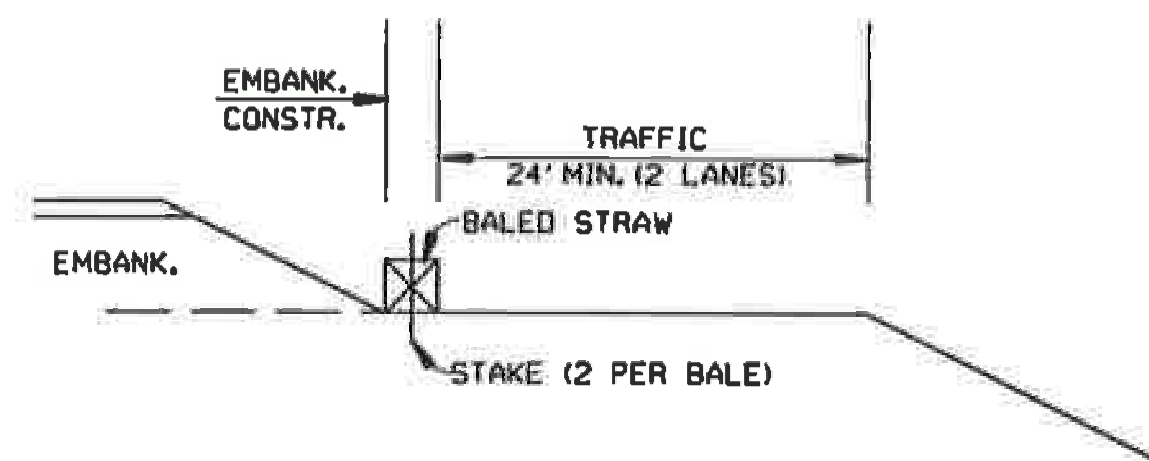


**DROP INLET SILTS FENCE (E-7)**

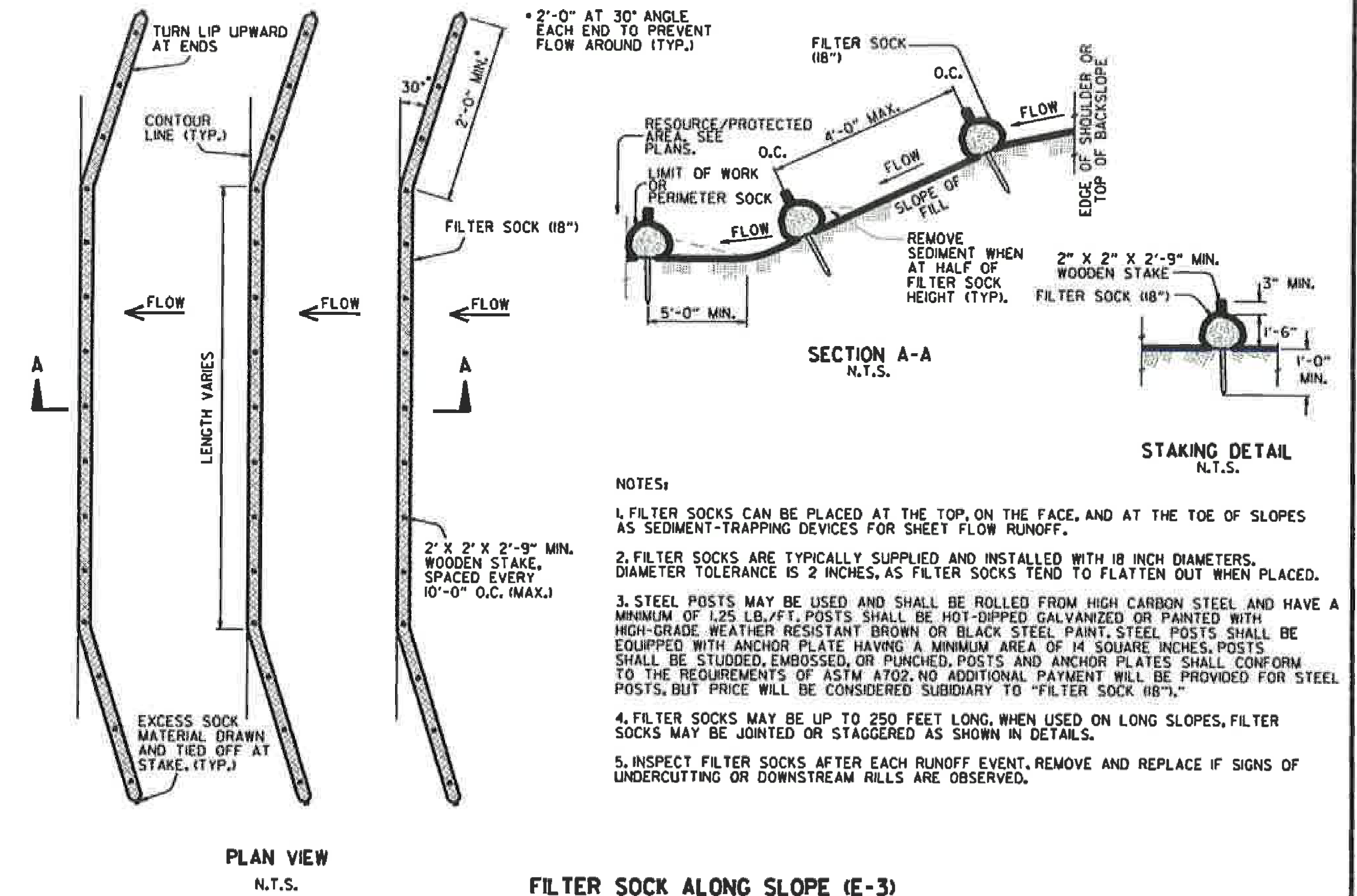


**SILTS FENCE ON R/W FENCE (E-4)**

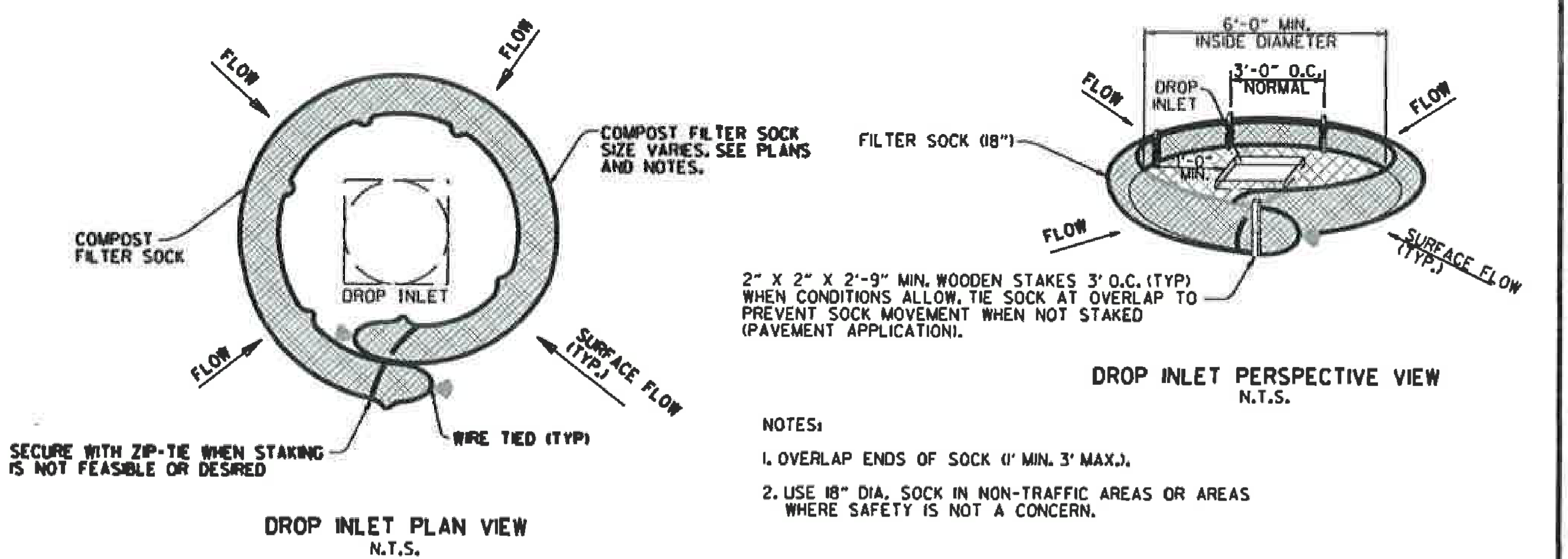
**GENERAL NOTES**  
 1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.  
 2. NO GAPS SHALL BE LEFT BETWEEN BALES.  
 3. BALED STRAW FILTER BARRIERS COMPLETED AND 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)**



**COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)**

DATE	REVISION	FILED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILTS FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13\"/>	
06-02-94	REVISED E-1, 4, 7 & 14 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

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