

ARKANSAS RIVER TRAIL RIVERFRONT DRIVE TRAIL PROJECT IMPROVEMENTS

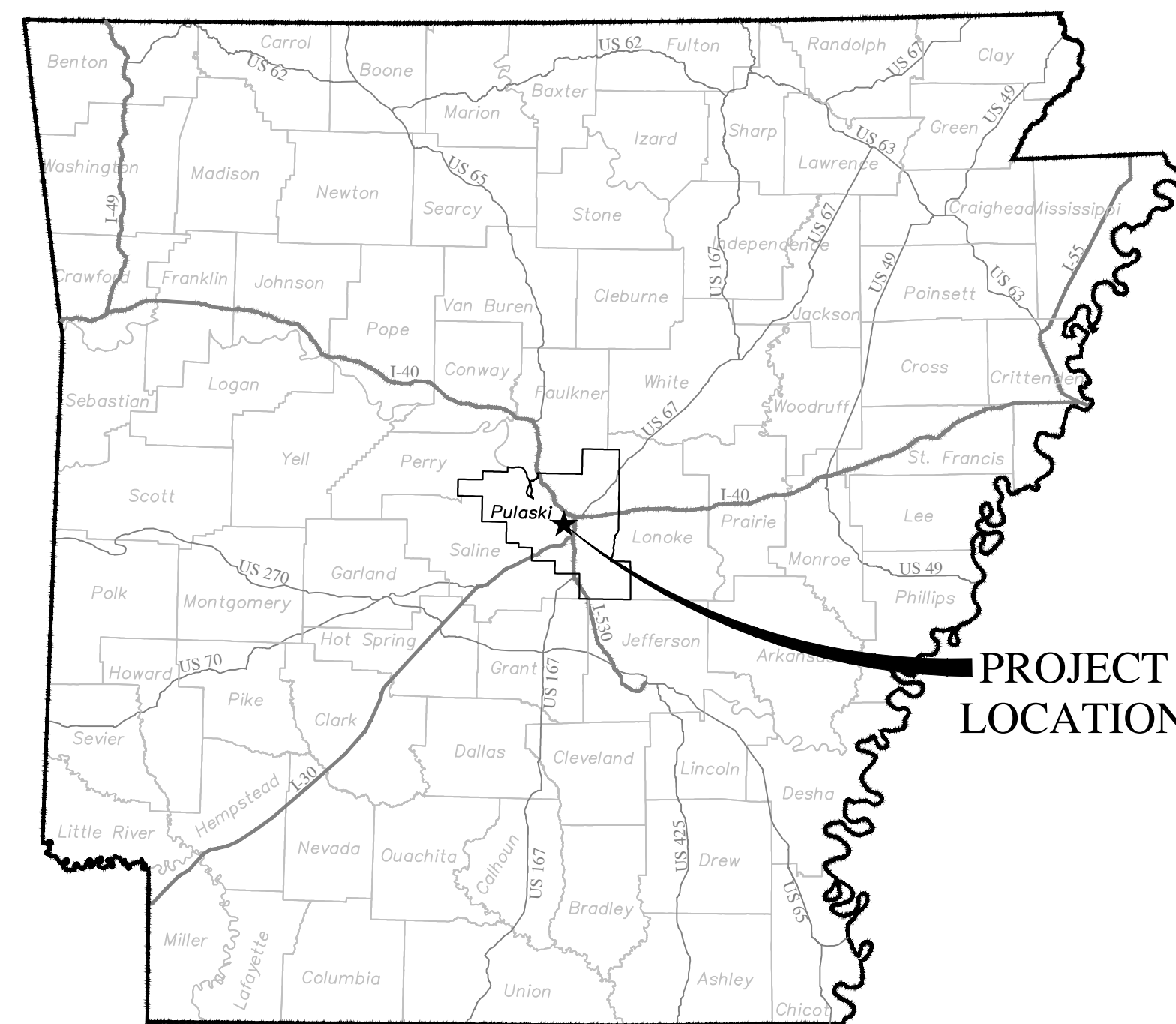
LITTLE ROCK, ARKANSAS

ArDOT JOB NO. 061490

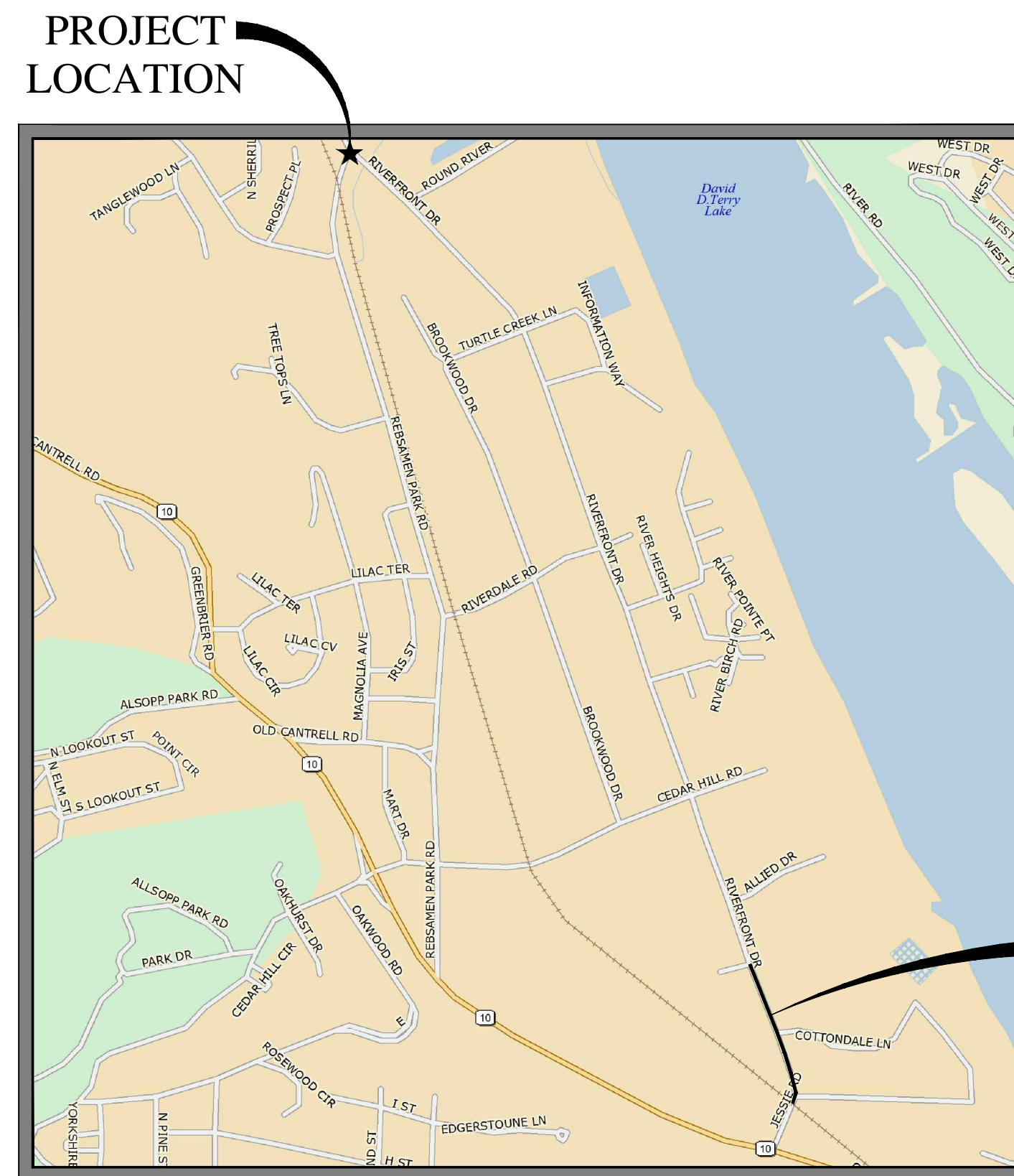
F.A.P. TAPC-9253 (75)

AR RIVER TRAIL RIVERFRONT DR. (LR) (TAP-15) (S)

PULASKI COUNTY



LOCATION MAP



VICINITY MAP

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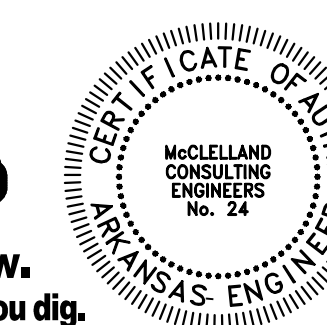
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JUNE, 2018
MCE PROJECT NO. LR17-5758

MCE McCLELLAND
CONSULTING
ENGINEERS, INC.
DESIGNED TO SERVE

1810 N. College Fayetteville, AR 72702 PH# 479-443-2377
7302 Kanis Rd. Little Rock, AR 72204 PH# 501-371-0272
4606 S. Garnett Rd. Ste. 401 Tulsa, OK 74146 PH# 918-619-6803

<http://www.mce.us.com>



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STATE OF ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 13852
DAM S. TRICHE
6-15-18

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RIVERFRONT DRIVE TRAIL
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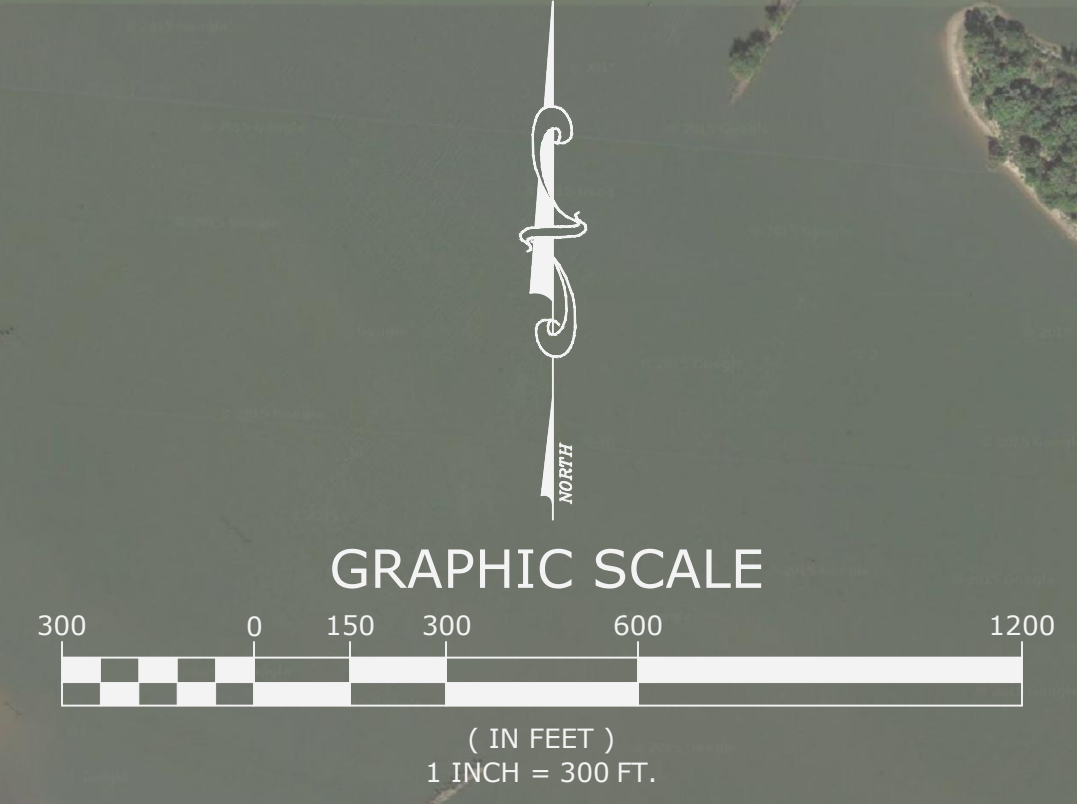
PROJECT OVERVIEW I

PROJECT ENGR: RJM
DATE: JUNE 2018
SCALE: 1"=300'
DRAWN BY: DLR
JOB NUMBER: LR17-5758

SHEET 3

SHEETS 7,9,11

SHEETS 8,10,12



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 1810 N. College, Fayetteville, AR 72702, P.O. Box 401, Fayetteville, AR 72702, Phone: 479-452-2777, Fax: 479-452-2772, P.E.# 501-01-072, 4606 S. Gambel Rd., Suite 401, Tulsa, OK 74146, P.O. Box 918, Tulsa, OK 74116, P.E.# 501-01-072, <http://www.mcc.us.com>

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13852 ADAM S. TRICHE 6-15-18 ORIGINAL SIGNATURE ON FILE © 2017

ARKANSAS RIVER TRAIL RIVERFRONT DRIVE TRAIL PROJECT IMPROVEMENTS LITTLE ROCK, ARKANSAS

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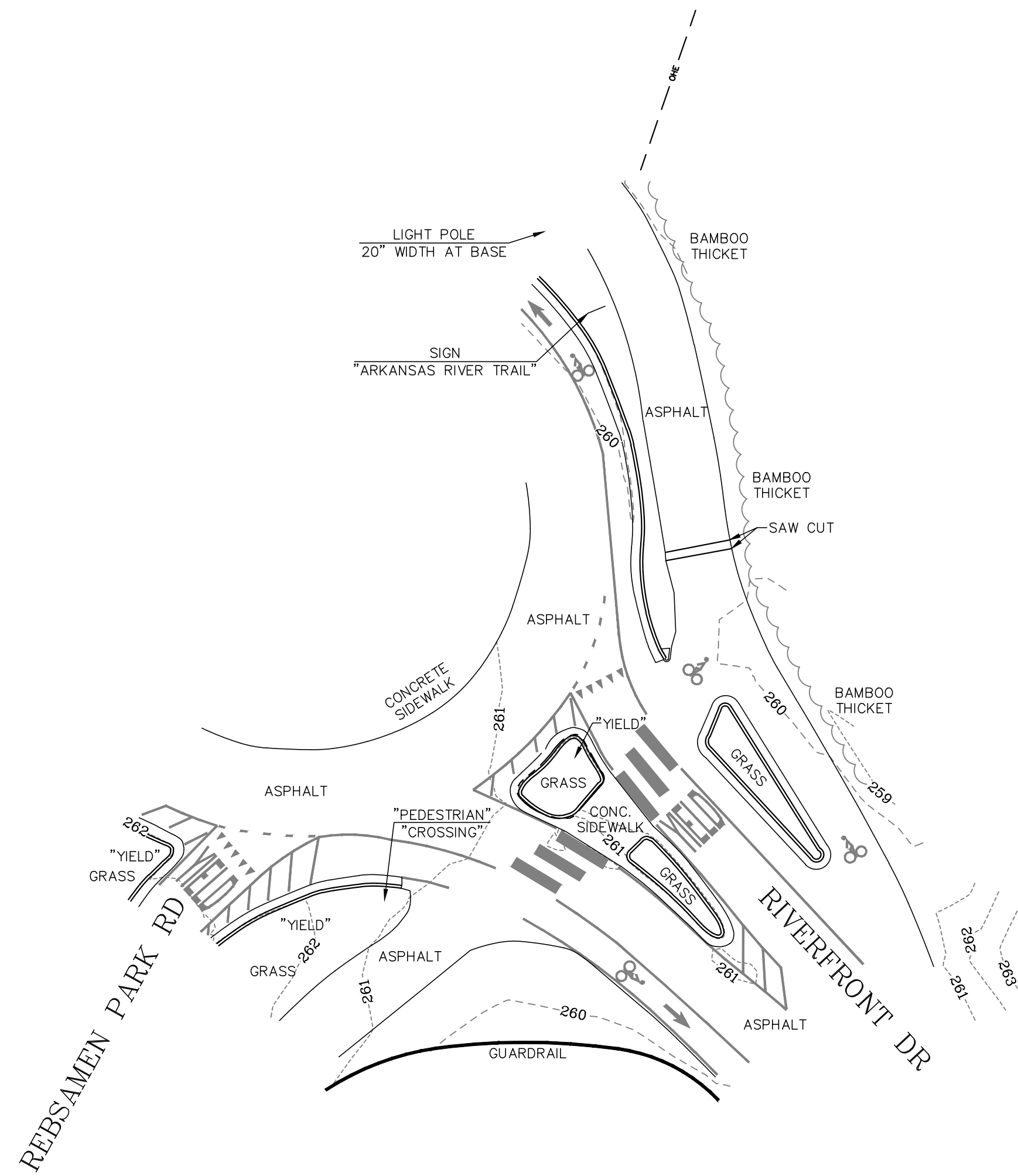
NO.	DATE	REVISIONS DESCRIPTION

PROJECT OVERVIEW II

PROJECT ENGR: RJM	DRAWN BY: DLR
DATE: JUNE 2018	JOB NUMBER: LR17-5758
SCALE: 1"=100'	

3

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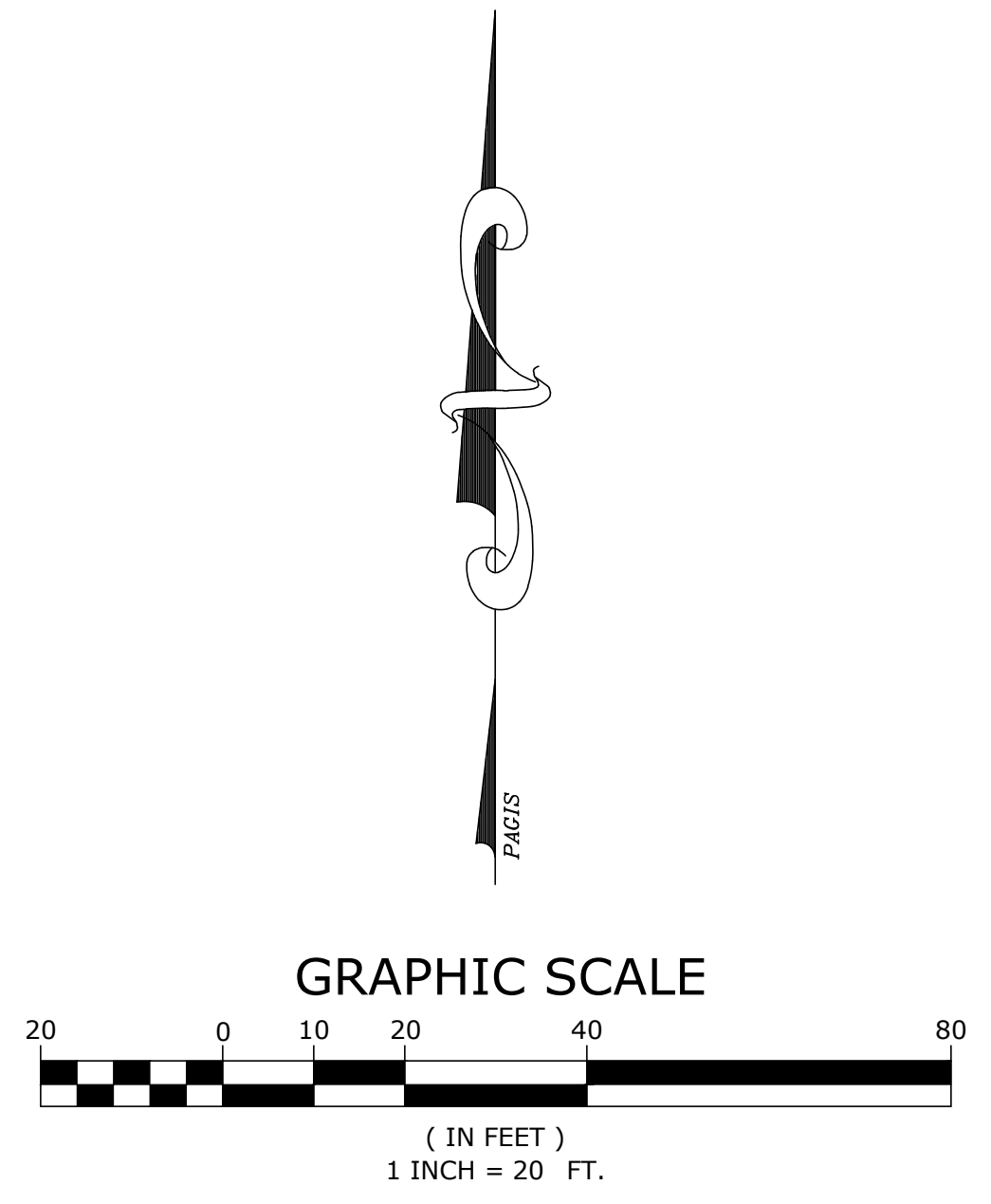


MCE CP# 11

MCE CP# 12

SURVEYOR'S NOTES:
 HORIZONTAL COORDINATES FOR THIS PROJECT ARE ARKANSAS STATE PLANE NORTH ZONE AND ELEVATIONS ARE NAVD88 BASED ON THE P.A.G.I.S REFERENCE STATION.
 CONTOUR INTERVAL = 1 FOOT.
 THIS IS A TOPOGRAPHIC SURVEY ONLY AND IN NO WAY SHOULD BE INTERPRETED AS A PROPERTY BOUNDARY SURVEY. ANY PROPERTY LINES SHOWN ARE FOR REFERENCE ONLY AND HAVE NOT BEEN VERIFIED.
 FIELD WORK FOR THIS SURVEY WAS COMPLETED JULY, 2017.
 NO STATEMENT IS MADE CONCERNING SUBSURFACE CONDITIONS.
 BURIED UTILITIES AND SUBSURFACE STRUCTURES ARE SHOWN BASED ON VISUAL INSPECTION OF MANHOLES AND OTHER SURFACE FEATURES. McCLELLAND CONSULTING ENGINEERS HAS ACCURATELY DEPICTED THE UNDERGROUND AND SUBSURFACE FEATURES TO THE BEST OF THEIR KNOWLEDGE AND ABILITY. ANY CONSTRUCTION AT THIS SITE SHOULD ONLY BE DONE AFTER CONTACTING ARKANSAS ONE CALL AT 1-800-482-8998 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.

- LEGEND**
- ▲ SURVEY CONTROL MONUMENT (TYPE AS NOTED)
 - ⊙ STORM WATER MANHOLE
 - ⊙ SANITARY SEWER MANHOLE
 - ☆ LIGHT POLE
 - ⊙ POWER POLE
 - ← GUY LINE
 - ⊙ TELEPHONE PEDESTAL
 - ⊙ GAS VALVE
 - ⊙ WATER VALVE
 - ⊙ FIRE HYDRANT
 - ⊙ TREE (TYPE AS NOTED)
 - ⊙ BUSH
 - ⊙ SIGN
 - ⊙ POST OR POLE (TYPE AS NOTED)
 - ⊙ ELECTRIC BOX
 - ===== CURB LINE
 - O— —O— OVERHEAD ELECTRIC LINE
 - --- STORM WATER LINE
 - --- SANITARY SEWER LINE
 - - - - - DITCH OR STREAM LINE



CONTROL DATA				
Point #	Northing	Easting	Elevation	Description
10	156642.3120	1220753.3020	253.53	CONTROL POINT
11	160765.9070	1218762.8210	263.49	CONTROL POINT
12	160649.3720	1218718.3110	263.80	CONTROL POINT

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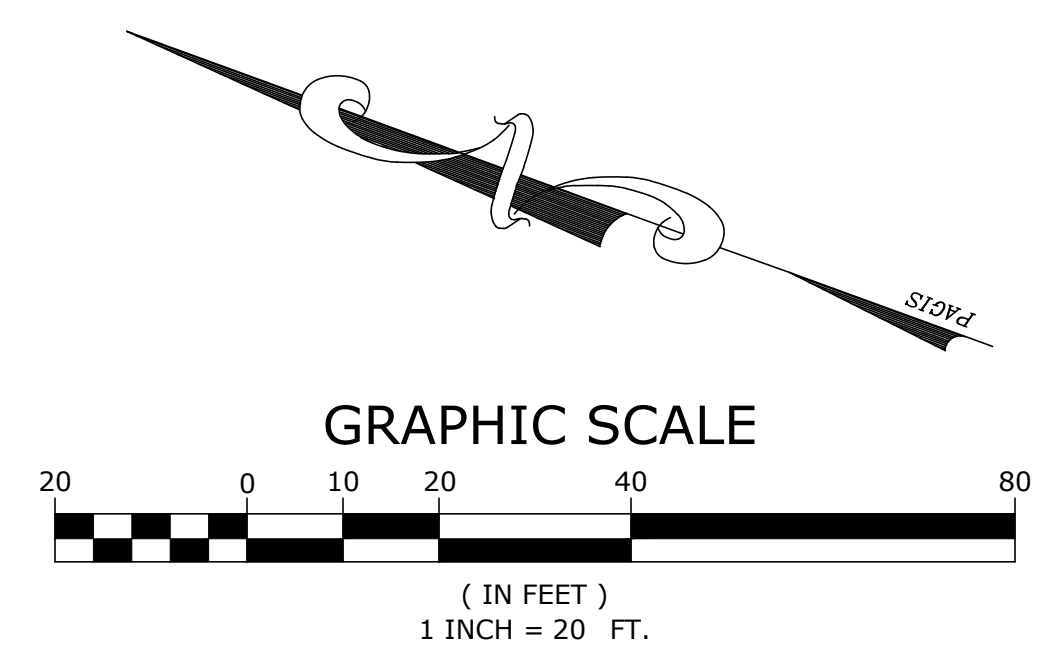
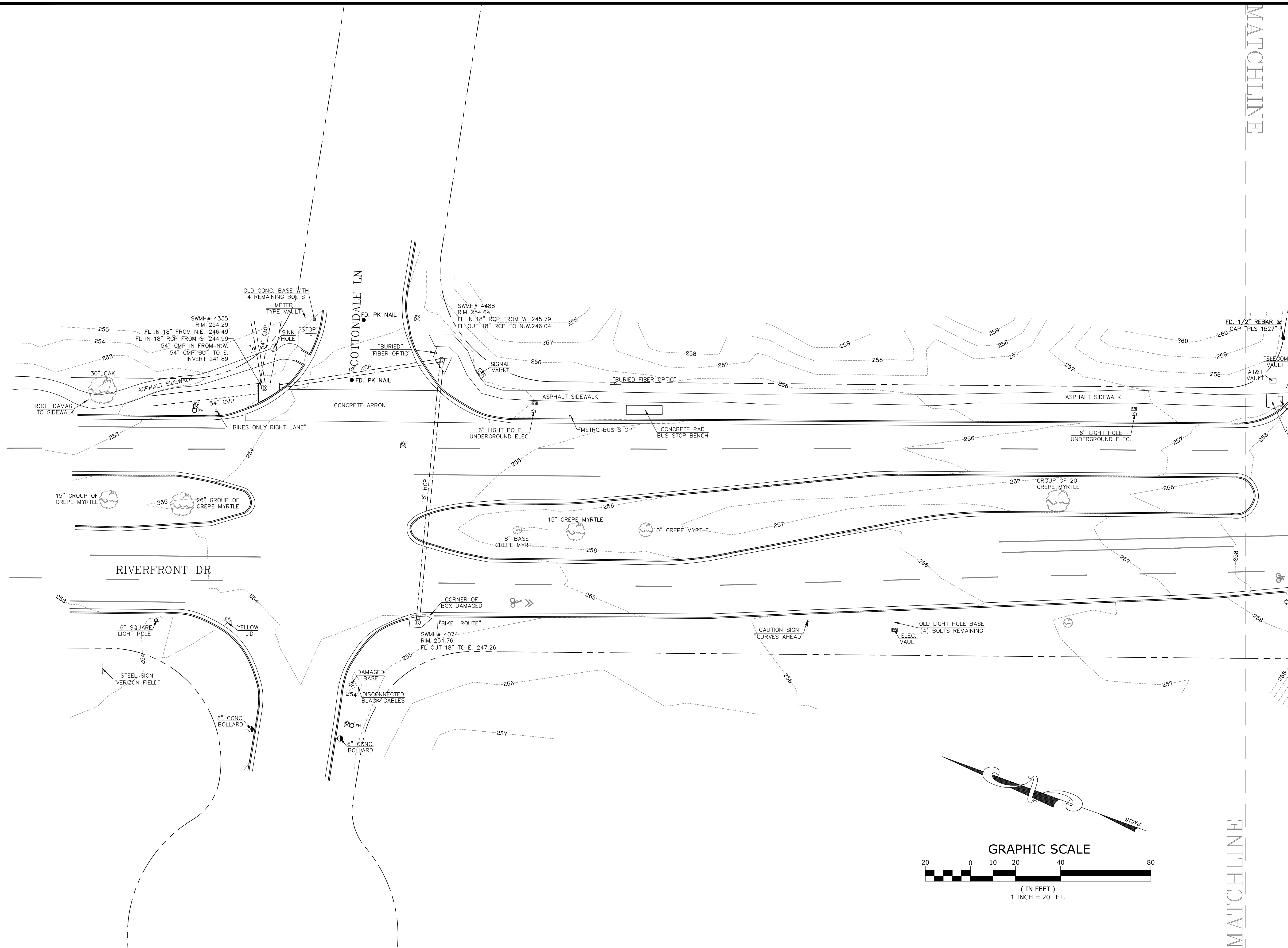
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NO.	DATE	REVISIONS DESCRIPTION

TOPOGRAPHIC SURVEY

SURVEY MNGR: KLS	DRAWN BY: JDM
DATE: 07/19/2017	
SCALE: 1" = 20'	JOB NUMBER: LR17-5758

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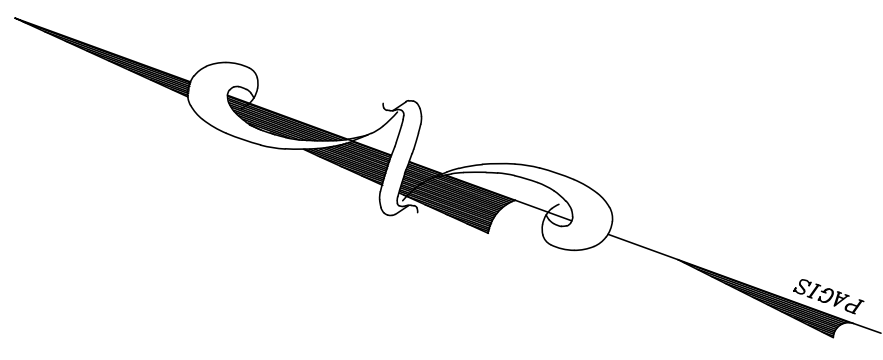
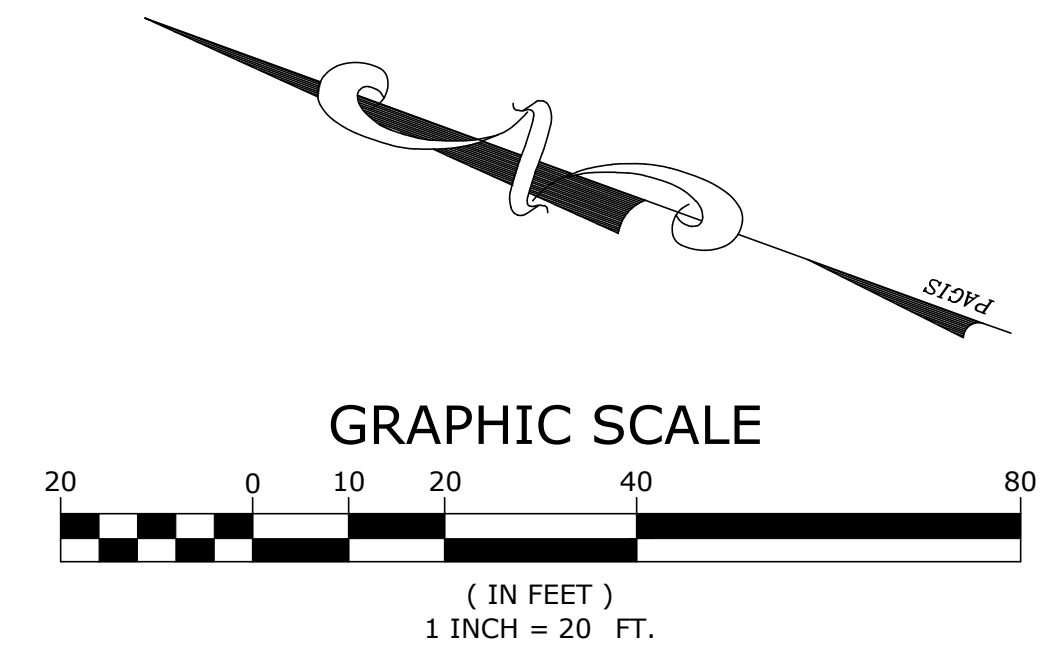
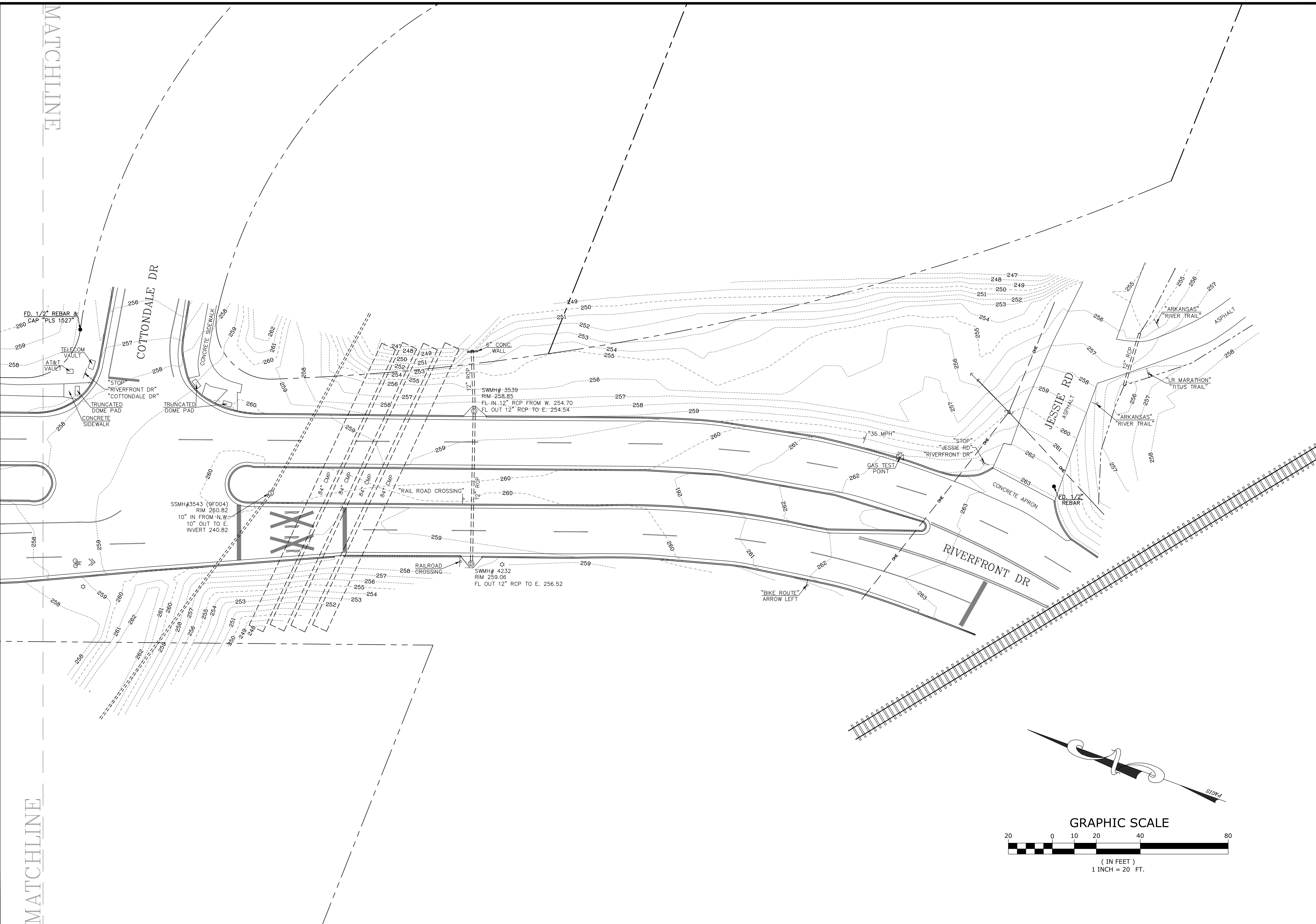
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SURVEY MNGR: KLS	DRAWN BY: JDM
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SCALE: 1" = 20'	

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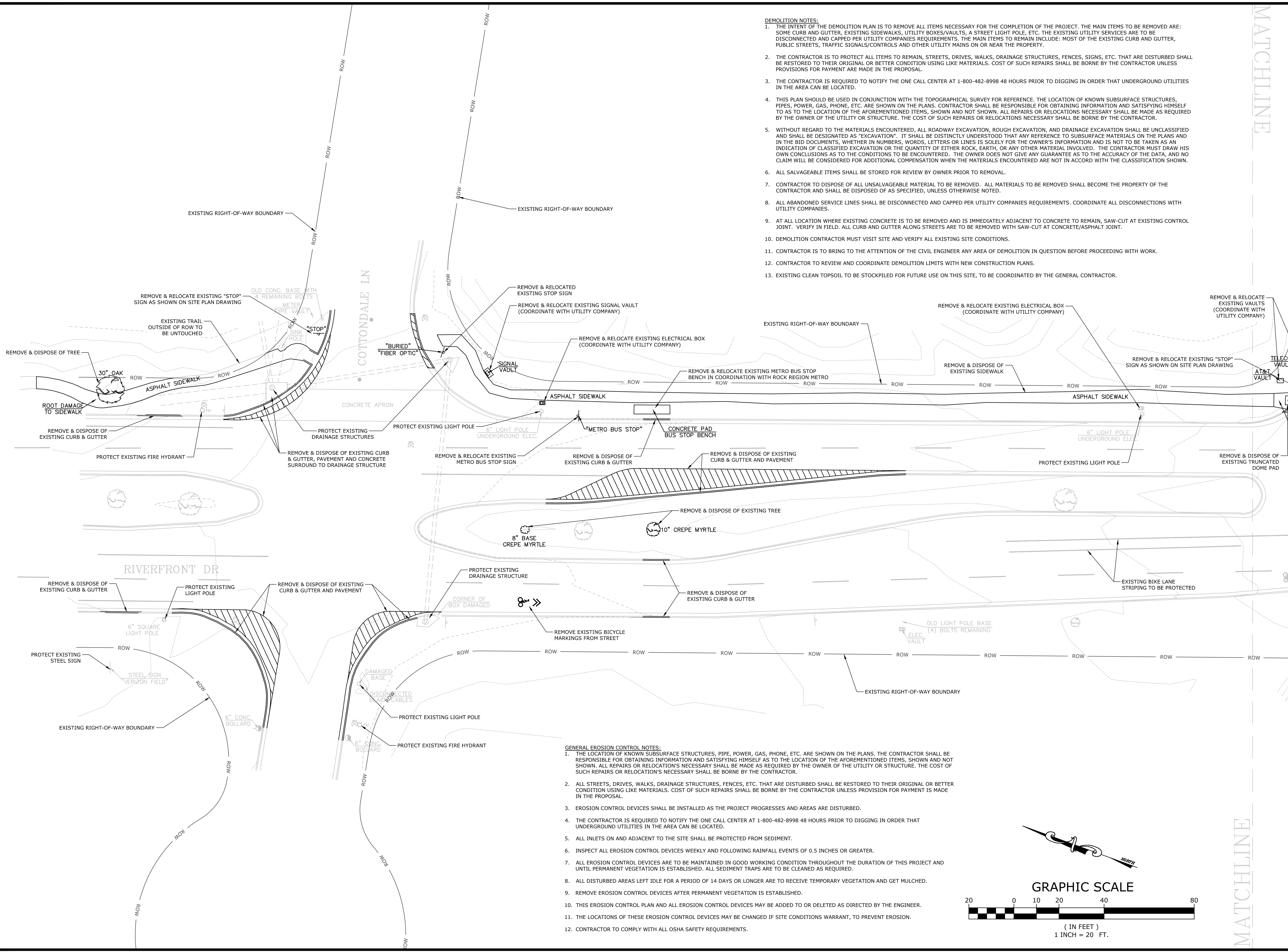
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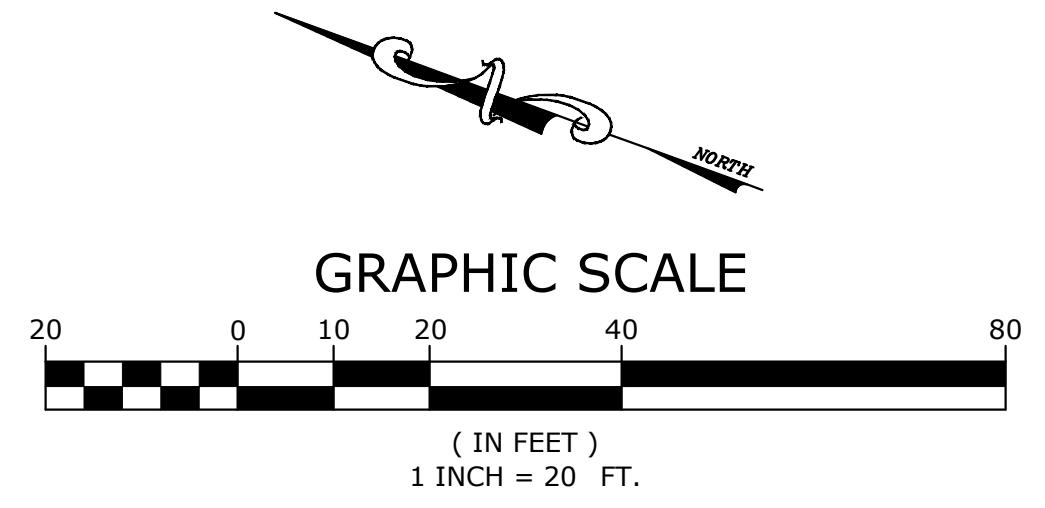
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DATE: 07/19/2017	JOB NUMBER: LR17-5758
SCALE: 1" = 20'	

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- DEMOLITION NOTES:**
- THE INTENT OF THE DEMOLITION PLAN IS TO REMOVE ALL ITEMS NECESSARY FOR THE COMPLETION OF THE PROJECT. THE MAIN ITEMS TO BE REMOVED ARE: SOME CURB AND GUTTER, EXISTING SIDEWALKS, UTILITY BOXES/VAULTS, A STREET LIGHT POLE, ETC. THE EXISTING UTILITY SERVICES ARE TO BE DISCONNECTED AND CAPPED PER UTILITY COMPANIES REQUIREMENTS. THE MAIN ITEMS TO REMAIN INCLUDE: MOST OF THE EXISTING CURB AND GUTTER, PUBLIC STREETS, TRAFFIC SIGNALS/CONTROLS AND OTHER UTILITY MAINS ON OR NEAR THE PROPERTY.
 - THE CONTRACTOR IS TO PROTECT ALL ITEMS TO REMAIN, STREETS, DRIVES, WALKS, DRAINAGE STRUCTURES, FENCES, SIGNS, ETC. THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION USING LIKE MATERIALS. COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR UNLESS PROVISIONS FOR PAYMENT ARE MADE IN THE PROPOSAL.
 - THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
 - THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE TOPOGRAPHICAL SURVEY FOR REFERENCE. THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, PIPES, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING HIMSELF AS TO THE LOCATION OF THE FOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS OR RELOCATIONS NECESSARY SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS OR RELOCATIONS NECESSARY SHALL BE BORNE BY THE CONTRACTOR.
 - WITHOUT REGARD TO THE MATERIALS ENCOUNTERED, ALL ROADWAY EXCAVATION, ROUGH EXCAVATION, AND DRAINAGE EXCAVATION SHALL BE UNCLASSIFIED AND SHALL BE DESIGNATED AS "EXCAVATION". IT SHALL BE DISTINCTLY UNDERSTOOD THAT ANY REFERENCE TO SUBSURFACE MATERIALS ON THE PLANS AND IN THE BID DOCUMENTS, WHETHER IN NUMBERS, WORDS, LETTERS OR LINES IS SOLELY FOR THE OWNER'S INFORMATION AND IS NOT TO BE TAKEN AS AN INDICATION OF CLASSIFIED EXCAVATION OR THE QUANTITY OF EITHER ROCK, EARTH, OR ANY OTHER MATERIAL INVOLVED. THE CONTRACTOR MUST DRAW HIS OWN CONCLUSIONS AS TO THE CONDITIONS TO BE ENCOUNTERED. THE OWNER DOES NOT GIVE ANY GUARANTEE AS TO THE ACCURACY OF THE DATA, AND NO CLAIM WILL BE CONSIDERED FOR ADDITIONAL COMPENSATION WHEN THE MATERIALS ENCOUNTERED ARE NOT IN ACCORD WITH THE CLASSIFICATION SHOWN.
 - ALL SALVAGEABLE ITEMS SHALL BE STORED FOR REVIEW BY OWNER PRIOR TO REMOVAL.
 - CONTRACTOR TO DISPOSE OF ALL UNSALVAGEABLE MATERIAL TO BE REMOVED. ALL MATERIALS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AS SPECIFIED, UNLESS OTHERWISE NOTED.
 - ALL ABANDONED SERVICE LINES SHALL BE DISCONNECTED AND CAPPED PER UTILITY COMPANIES REQUIREMENTS. COORDINATE ALL DISCONNECTIONS WITH UTILITY COMPANIES.
 - AT ALL LOCATION WHERE EXISTING CONCRETE IS TO BE REMOVED AND IS IMMEDIATELY ADJACENT TO CONCRETE TO REMAIN, SAW-CUT AT EXISTING CONTROL JOINT. VERIFY IN FIELD. ALL CURB AND GUTTER ALONG STREETS ARE TO BE REMOVED WITH SAW-CUT AT CONCRETE/ASPHALT JOINT.
 - DEMOLITION CONTRACTOR MUST VISIT SITE AND VERIFY ALL EXISTING SITE CONDITIONS.
 - CONTRACTOR IS TO BRING TO THE ATTENTION OF THE CIVIL ENGINEER ANY AREA OF DEMOLITION IN QUESTION BEFORE PROCEEDING WITH WORK.
 - CONTRACTOR TO REVIEW AND COORDINATE DEMOLITION LIMITS WITH NEW CONSTRUCTION PLANS.
 - EXISTING CLEAN TOPSOIL TO BE STOCKPILED FOR FUTURE USE ON THIS SITE, TO BE COORDINATED BY THE GENERAL CONTRACTOR.

- GENERAL EROSION CONTROL NOTES:**
- THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, PIPE, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING HIMSELF AS TO THE LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS OR RELOCATION'S NECESSARY SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS OR RELOCATION'S NECESSARY SHALL BE BORNE BY THE CONTRACTOR.
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 - EROSION CONTROL DEVICES SHALL BE INSTALLED AS THE PROJECT PROGRESSES AND AREAS ARE DISTURBED.
 - THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
 - ALL INLETS ON AND ADJACENT TO THE SITE SHALL BE PROTECTED FROM SEDIMENT.
 - INSPECT ALL EROSION CONTROL DEVICES WEEKLY AND FOLLOWING RAINFALL EVENTS OF 0.5 INCHES OR GREATER.
 - ALL EROSION CONTROL DEVICES ARE TO BE MAINTAINED IN GOOD WORKING CONDITION THROUGHOUT THE DURATION OF THIS PROJECT AND UNTIL PERMANENT VEGETATION IS ESTABLISHED. ALL SEDIMENT TRAPS ARE TO BE CLEANED AS REQUIRED.
 - ALL DISTURBED AREAS LEFT IDLE FOR A PERIOD OF 14 DAYS OR LONGER ARE TO RECEIVE TEMPORARY VEGETATION AND GET MULCHED.
 - REMOVE EROSION CONTROL DEVICES AFTER PERMANENT VEGETATION IS ESTABLISHED.
 - THIS EROSION CONTROL PLAN AND ALL EROSION CONTROL DEVICES MAY BE ADDED TO OR DELETED AS DIRECTED BY THE ENGINEER.
 - THE LOCATIONS OF THESE EROSION CONTROL DEVICES MAY BE CHANGED IF SITE CONDITIONS WARRANT, TO PREVENT EROSION.
 - CONTRACTOR TO COMPLY WITH ALL OSHA SAFETY REQUIREMENTS.



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STATE OF ARKANSAS
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 ADAM S. TRICHE
 6-18-19
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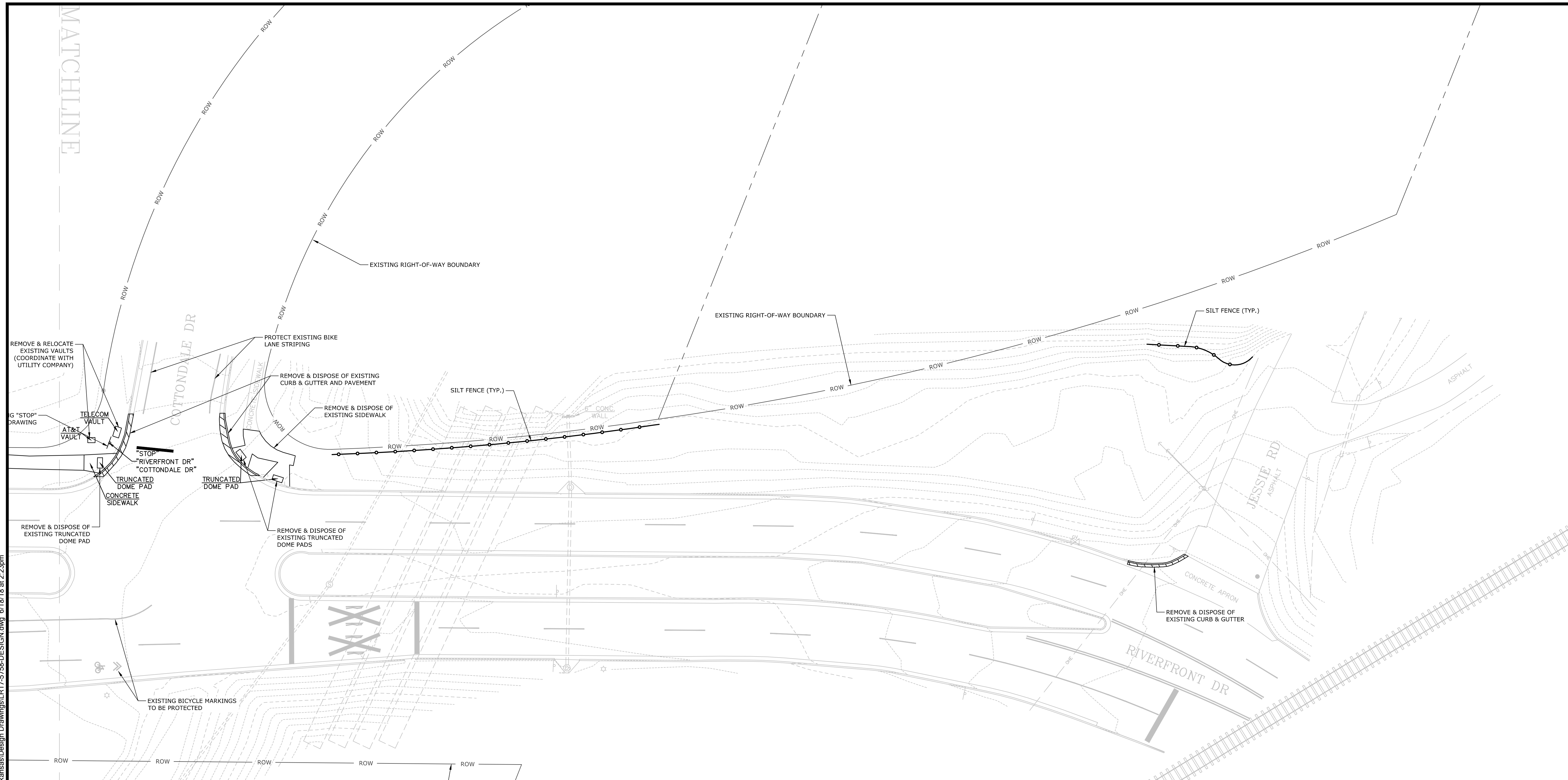
NO.	DATE	REVISIONS	DESCRIPTION

DEMOLITION & EROSION CONTROL PLAN I

PROJECT ENGR: **RJM** DRAWN BY: **DLR**
 DATE: **JUNE 2018**
 SCALE: **1"=20'** JOB NUMBER: **LR17-5758**

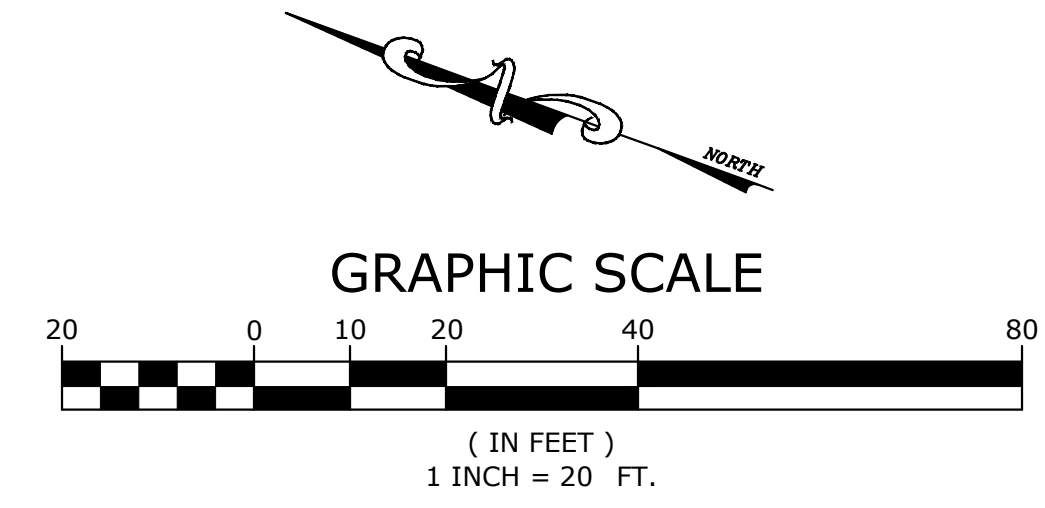
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 9. AT ALL LOCATION WHERE EXISTING CONCRETE IS TO BE REMOVED AND IS IMMEDIATELY ADJACENT TO CONCRETE TO REMAIN, SAW-CUT AT EXISTING CONTROL JOINT. VERIFY IN FIELD. ALL CURB AND GUTTER ALONG STREETS ARE TO BE REMOVED WITH SAW-CUT AT CONCRETE/ASPHALT JOINT.
 10. DEMOLITION CONTRACTOR MUST VISIT SITE AND VERIFY ALL EXISTING SITE CONDITIONS.
 11. CONTRACTOR IS TO BRING TO THE ATTENTION OF THE CIVIL ENGINEER ANY AREA OF DEMOLITION IN QUESTION BEFORE PROCEEDING WITH WORK.
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 13. EXISTING CLEAN TOPSOIL TO BE STOCKPILED FOR FUTURE USE ON THIS SITE, TO BE COORDINATED BY THE GENERAL CONTRACTOR.

- GENERAL EROSION CONTROL NOTES:**
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 8. ALL DISTURBED AREAS LEFT IDLE FOR A PERIOD OF 14 DAYS OR LONGER ARE TO RECEIVE TEMPORARY VEGETATION AND MULCHED.
 9. REMOVE EROSION CONTROL DEVICES AFTER PERMANENT VEGETATION IS ESTABLISHED.
 10. THIS EROSION CONTROL PLAN AND ALL EROSION CONTROL DEVICES MAY BE ADDED TO OR DELETED AS DIRECTED BY THE ENGINEER.
 11. THE LOCATIONS OF THESE EROSION CONTROL DEVICES MAY BE CHANGED IF SITE CONDITIONS WARRANT TO PREVENT EROSION.
 12. CONTRACTOR TO COMPLY WITH ALL OSHA SAFETY REQUIREMENTS.



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 Fayetteville, AR 72702
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 Tulsa, OK 74146
 P# 918-619-6800
<http://www.mcc.us.com>

STATE OF ARKANSAS
 REGISTERED PROFESSIONAL ENGINEER
 No. 13852
 ADAM S. TRICHE
 6-18-18

ORIGINAL SIGNATURE ON FILE

ARKANSAS RIVER TRAIL
 RIVERFRONT DRIVE TRAIL
 PROJECT IMPROVEMENTS
 LITTLE ROCK, ARKANSAS

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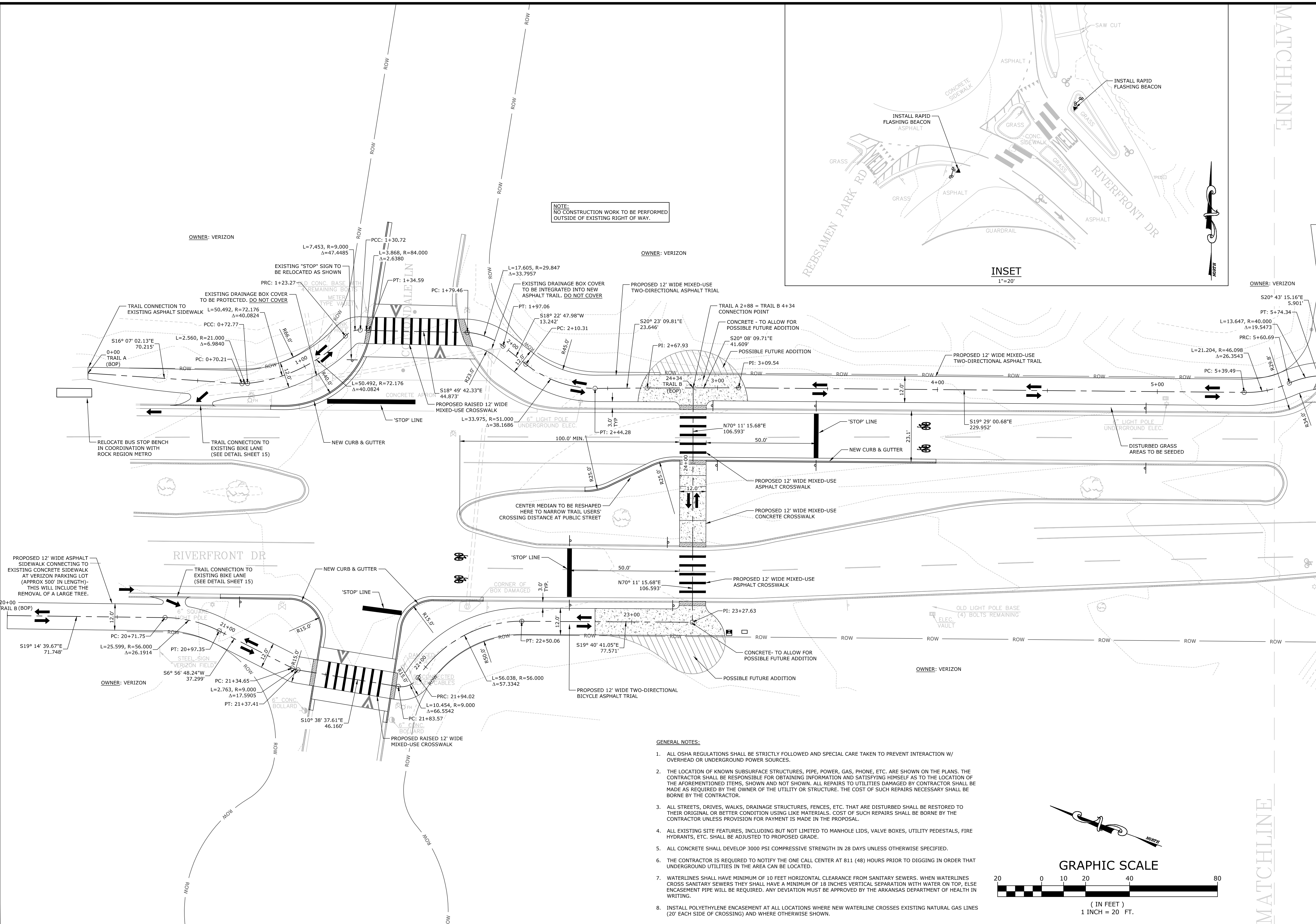
NO.	DATE	REVISIONS	DESCRIPTION

DEMOLITION & EROSION CONTROL PLAN II

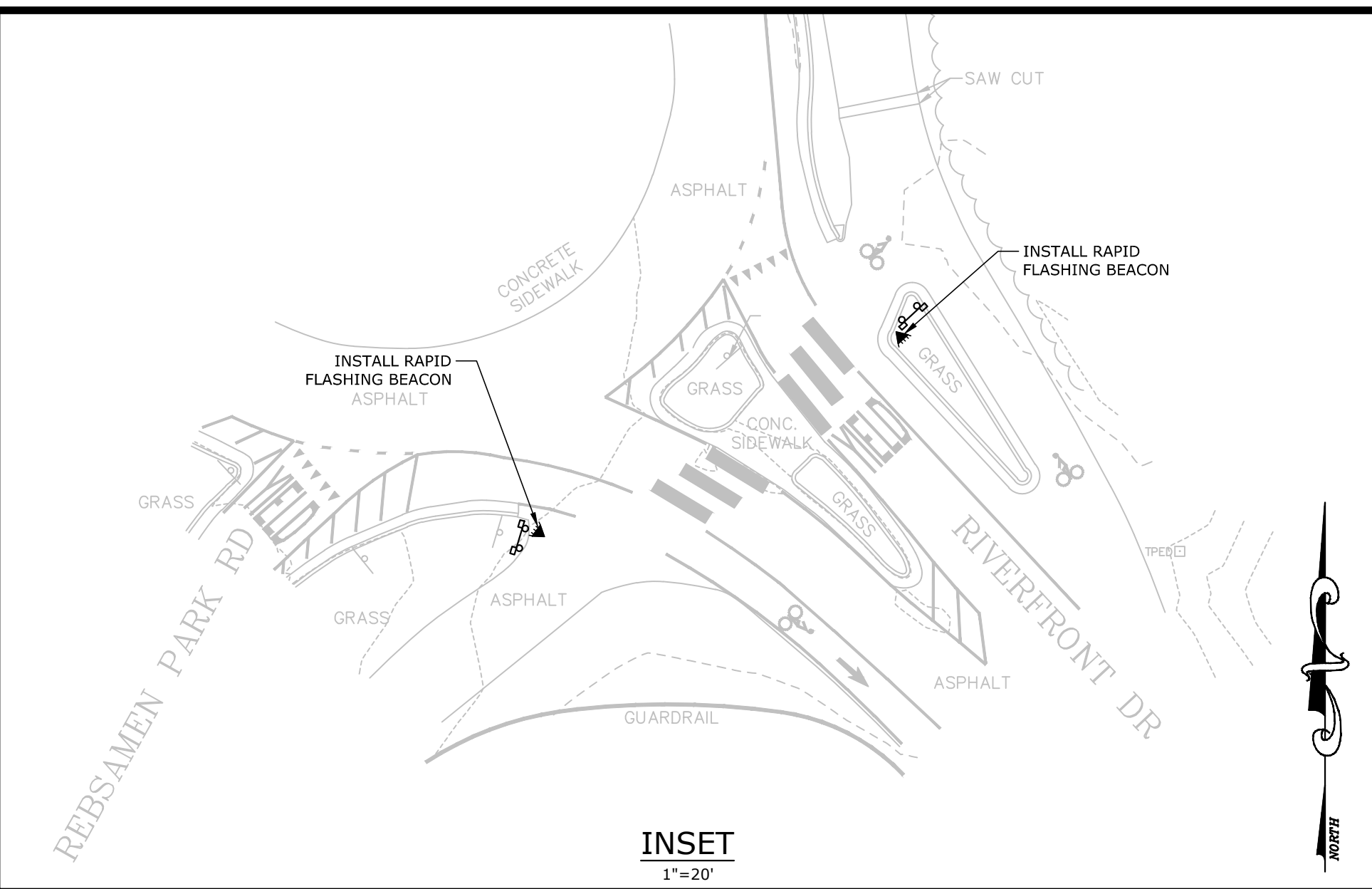
PROJECT ENGR: RJM DRAWN BY: DLR
 DATE: JUNE 2018
 SCALE: 1"=20' JOB NUMBER: LR17-5758

8

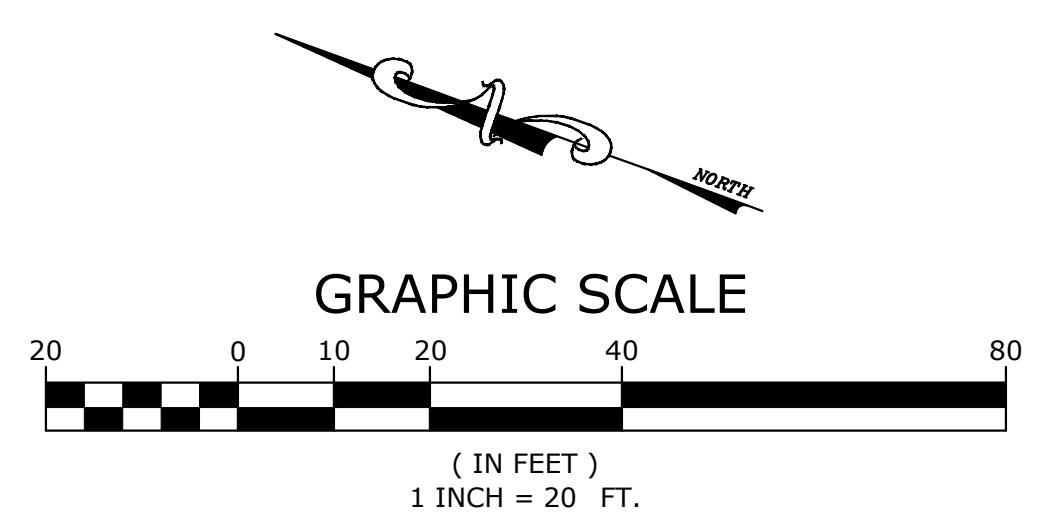
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NOTE:
NO CONSTRUCTION WORK TO BE PERFORMED OUTSIDE OF EXISTING RIGHT OF WAY.



- GENERAL NOTES:**
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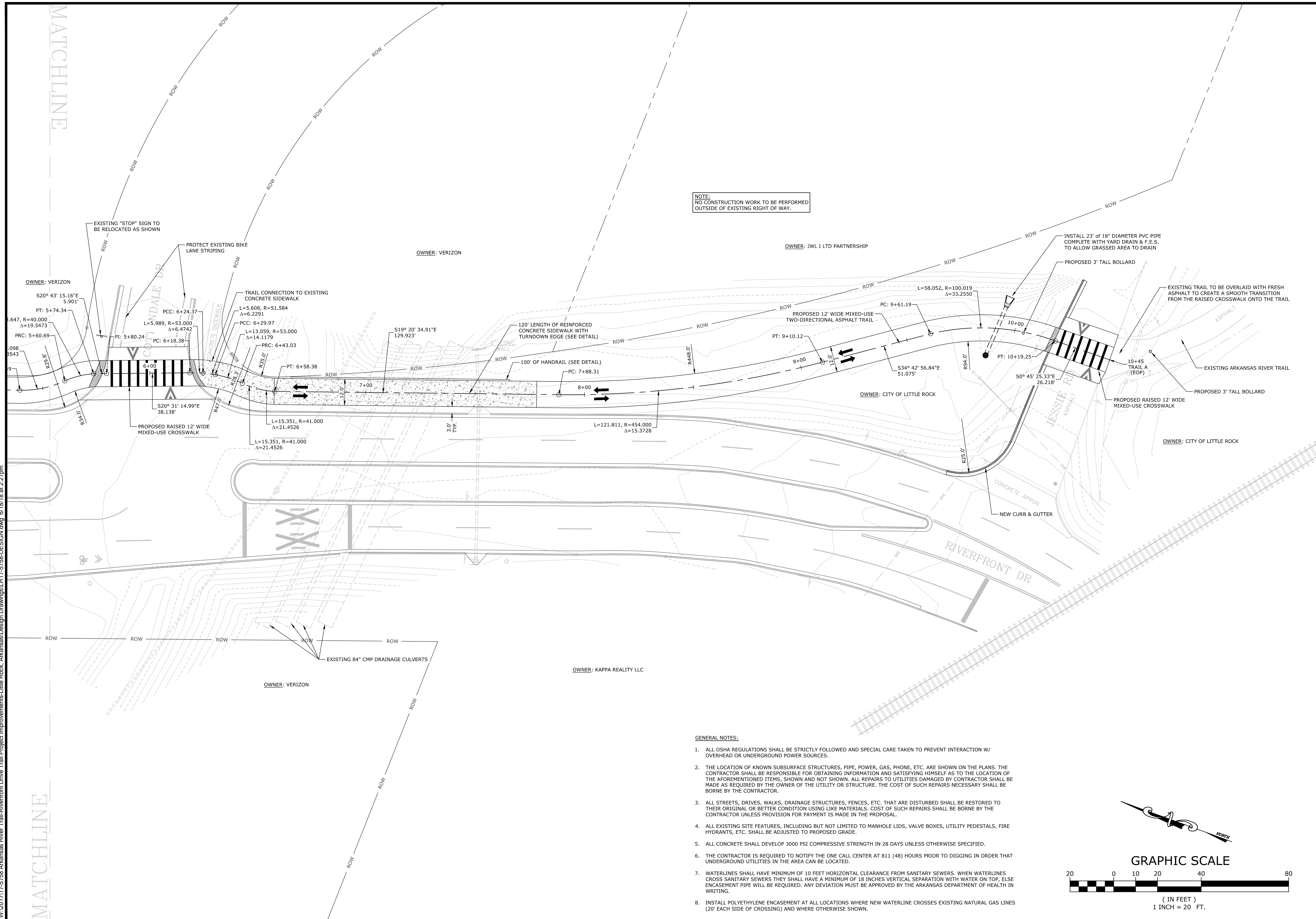
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**PRELIMINARY
SITE LAYOUT I**

PROJECT ENGR: RJM	DRAWN BY: DLR
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SCALE: 1"=20'	JOB NUMBER: LR17-5758

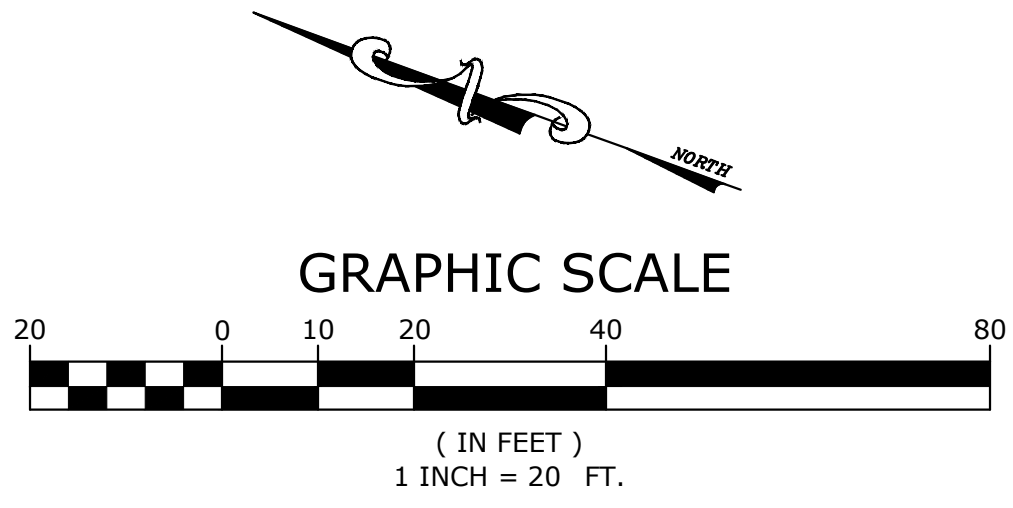
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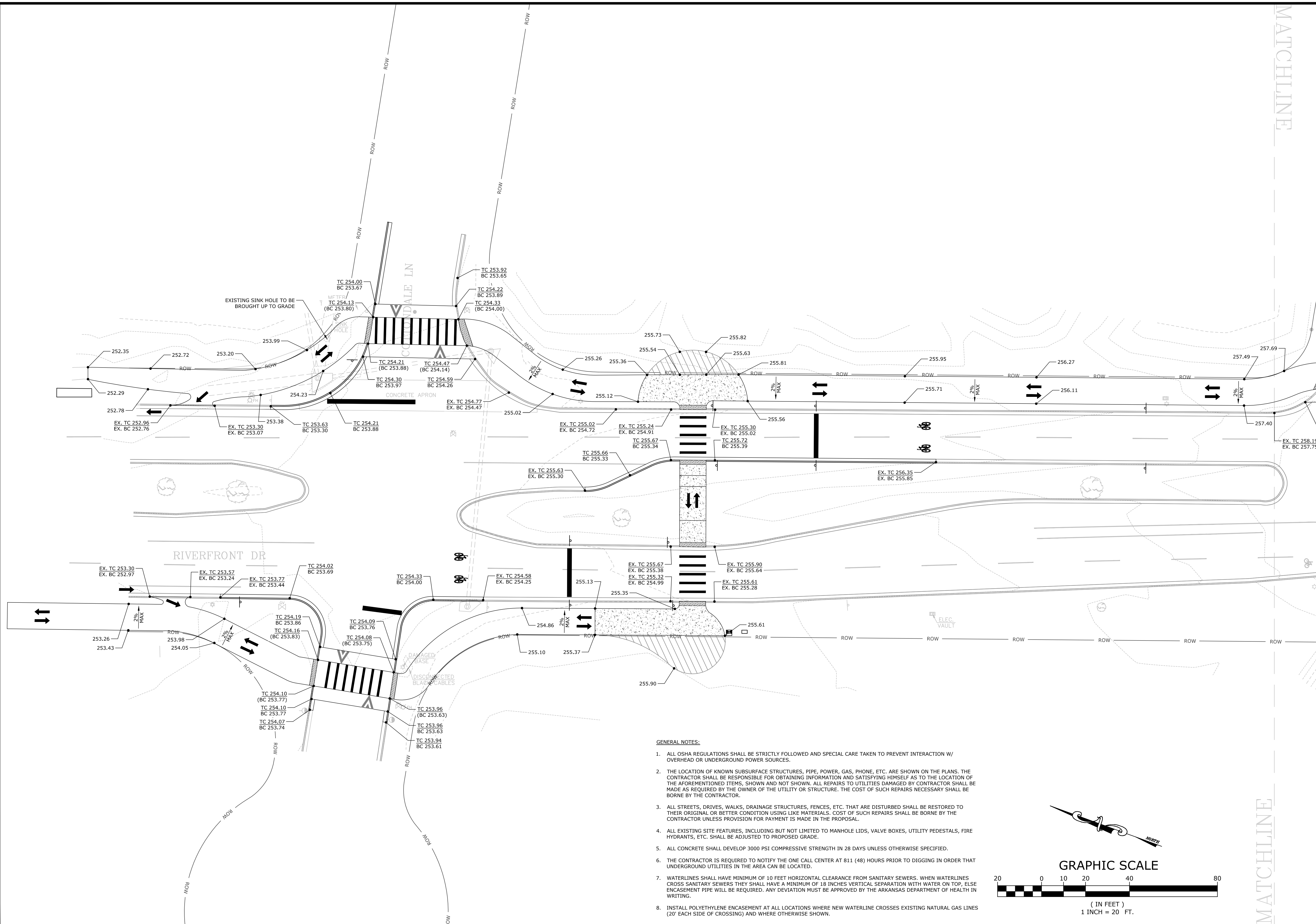
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PRELIMINARY SITE LAYOUT II

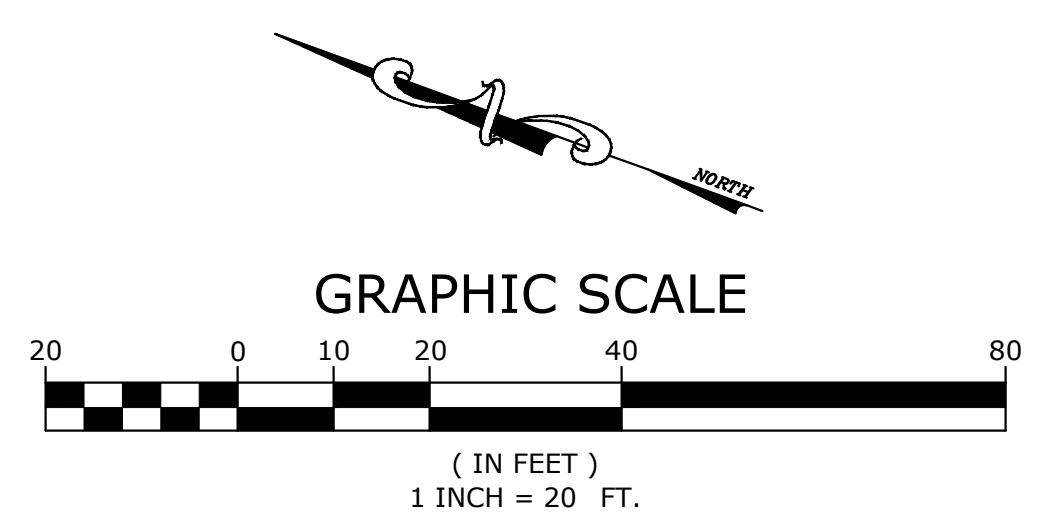
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10

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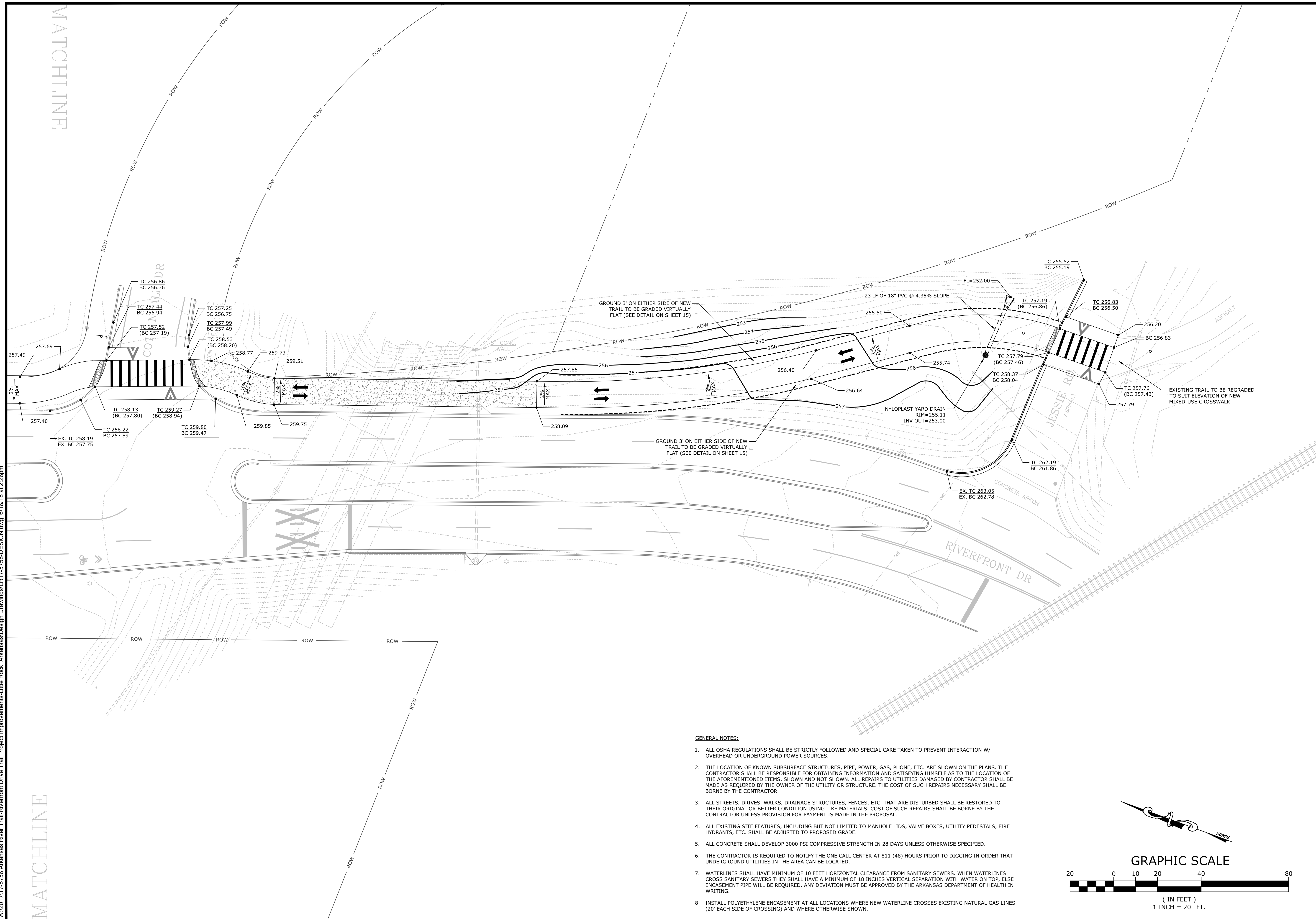
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**GRADING & DRAINAGE PLAN
 I**

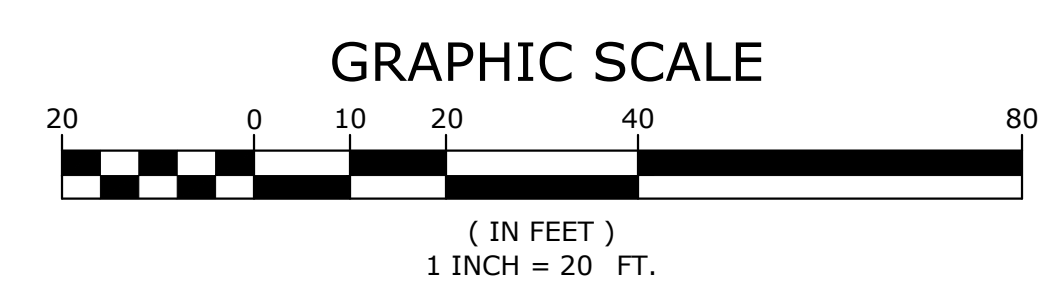
PROJECT ENGR: RJM	DRAWN BY: DLR
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GRADING & DRAINAGE PLAN II

PROJECT ENGR: **RJM** DRAWN BY: **DLR**
 DATE: **JUNE 2018**
 SCALE: **1"=20'** JOB NUMBER: **LR17-5758**

12

HAWK SIGNAL QUANTITIES

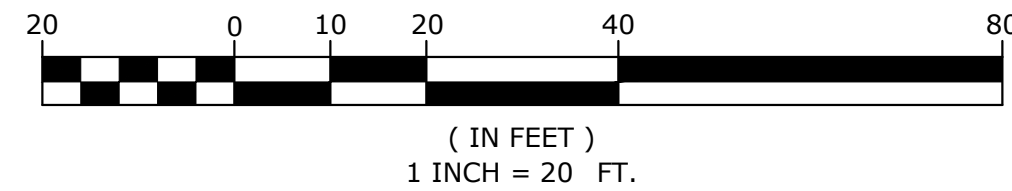
ITEM NO.	ITEM	QUAN.	UNIT
14	STANDARD SIGN	160	SQ. FT.
16	THERMOPLASTIC PAVEMENT MARKING (WHITE 12")	44	LIN. FT.
18	THERMOPLASTIC PAVEMENT MARKING (BIKE EMB.)	4	EACH
19	CHANNEL POST SIGN SUPPORT (TYPE A)	15	EACH
22	REMOVE AND DISPOSE OF SIGN POST	1	EACH
23	REMOVE AND DISPOSE OF SIGNS	1	EACH
25	CONTROLLER, HYBRID BEACON	1	EACH
26	SOLAR POWERED FLASHING BEACON	2	EACH
27	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	4	EACH
28	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	EACH
29	TRAFFIC SIGNAL CABLE (5c/14 A.W.G.)	568	LIN. FT.
30	TRAFFIC SIGNAL CABLE (12c/14 A.W.G.)	173	LIN. FT.
31	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
32	NON-METALLIC CONDUIT (3")	145	LIN. FT.
33	NON-METALLIC CONDUIT (3") W/ DIRECTIONAL BORE	60	LIN. FT.
34	CONCRETE PULL BOX (TYPE 2 HD)	5	EACH
35	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (26')	1	EACH
36	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28')	1	EACH
37	LUMINAIRE ASSEMBLY	2	EACH
38	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	2	EACH
39	ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/8 A.W.G., EGC)	225	LIN. FT.
40	ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/12 A.W.G., EGC)	112	LIN. FT.
41	ELECTRICAL CONDUCTORS-IN-CONDUIT (2c/6 A.W.G.)	20	LIN. FT.
42	ELECTRICAL CONDUCTORS FOR LUMINAIRES	285	LIN. FT.
43	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
44	PEDESTAL TYPE DISCONNECT	1	EACH

INTERVAL CHART

SIGNAL FACES	INTERSECTION INTERVALS				FLASH SEQUENCE
	1 ACTIVATION	CLEARANCE	2 CLEARANCE	ALT. FR	
1 D	FY	Y	R	ALT. FR	Y
2 D	FY	Y	R	ALT. FR	Y
3 D	FY	Y	R	ALT. FR	Y
4 D	FY	Y	R	ALT. FR	Y
5 DW	DW	DW	W	FDW	DW
6 DW	DW	DW	W	FDW	DW
7 DW	DW	DW	W	FDW	DW
8 DW	DW	DW	W	FDW	DW

D - DARK
 FY - FLASHING YELLOW
 Y - STEADY YELLOW
 R - STEADY RED
 ALT. FR - ALTERNATING FLASHING RED
 DW - DONT WALK
 W - WALK
 FDW - FLASHING DONT WALK

GRAPHIC SCALE

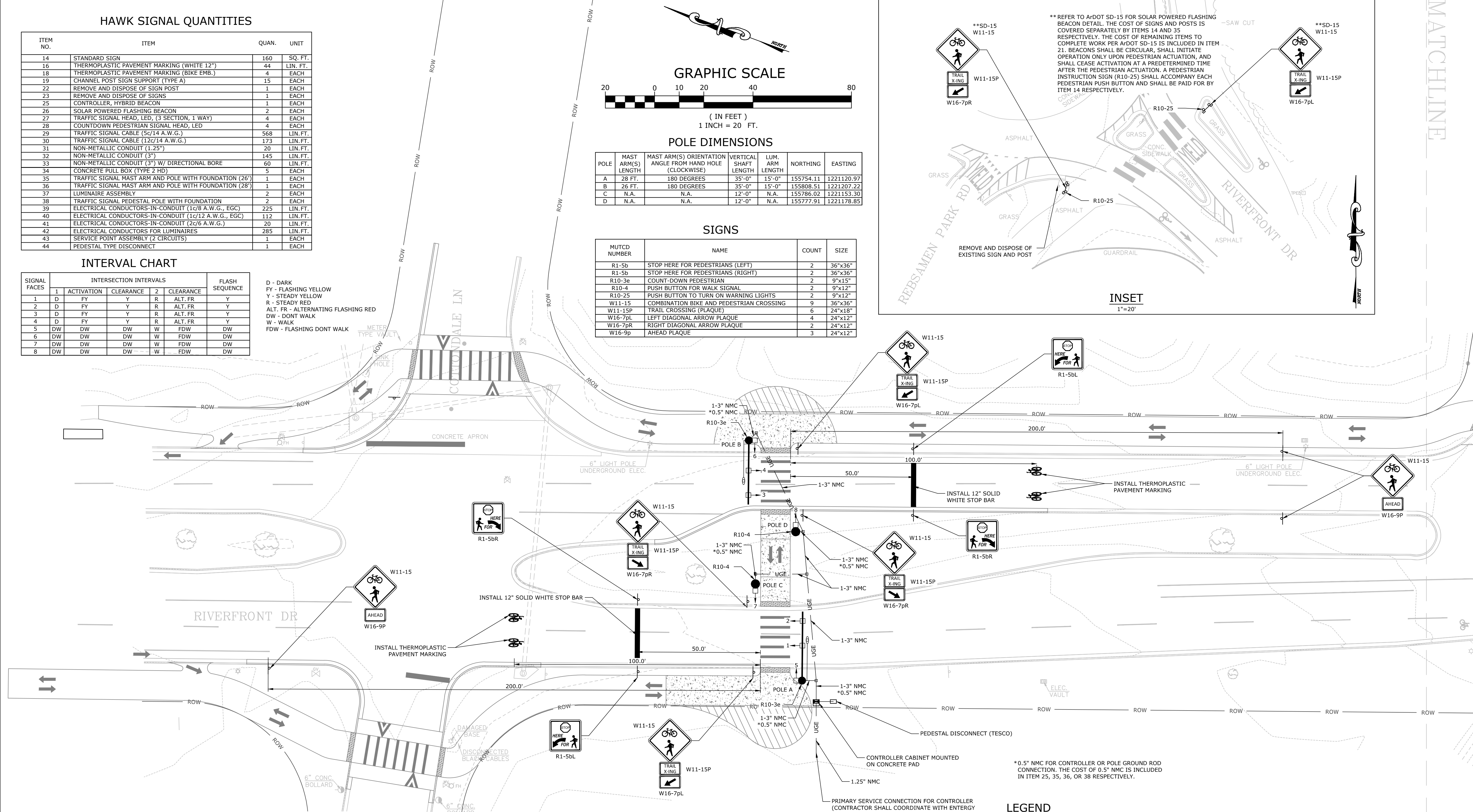
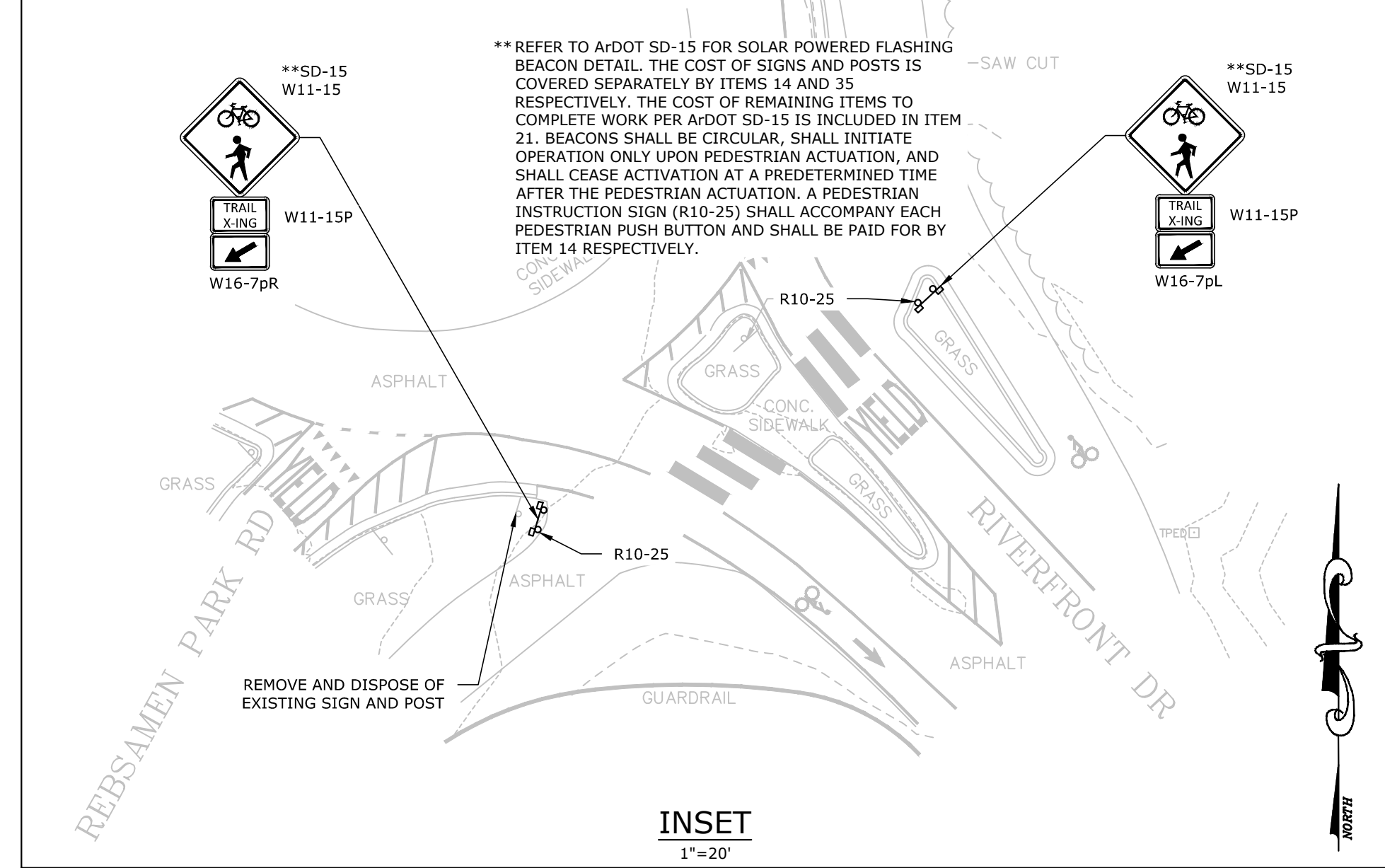


POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	NORTHING	EASTING
A	28 FT.	180 DEGREES	35'-0"	15'-0"	155754.11	1221120.97
B	26 FT.	180 DEGREES	35'-0"	15'-0"	155808.51	1221207.22
C	N.A.	N.A.	12'-0"	N.A.	155786.02	1221153.30
D	N.A.	N.A.	12'-0"	N.A.	155777.91	1221178.85

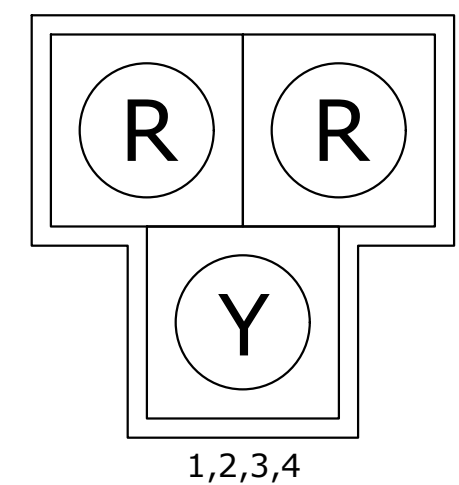
SIGNS

MUTCD NUMBER	NAME	COUNT	SIZE
R1-5b	STOP HERE FOR PEDESTRIANS (LEFT)	2	36"x36"
R1-5b	STOP HERE FOR PEDESTRIANS (RIGHT)	2	36"x36"
R10-3e	COUNT-DOWN PEDESTRIAN	2	9"x15"
R10-4	PUSH BUTTON FOR WALK SIGNAL	2	9"x12"
R10-25	PUSH BUTTON TO TURN ON WARNING LIGHTS	2	9"x12"
W11-15	COMBINATION BIKE AND PEDESTRIAN CROSSING	9	36"x36"
W11-15P	TRAIL CROSSING (PLAQUE)	6	24"x18"
W16-7pL	LEFT DIAGONAL ARROW PLAQUE	4	24"x12"
W16-7pR	RIGHT DIAGONAL ARROW PLAQUE	2	24"x12"
W16-9p	AHEAD PLAQUE	3	24"x12"

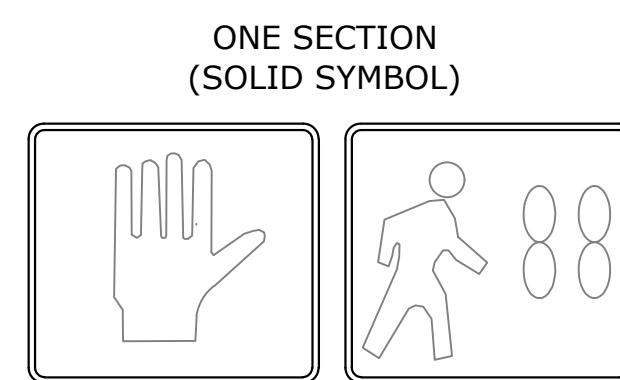


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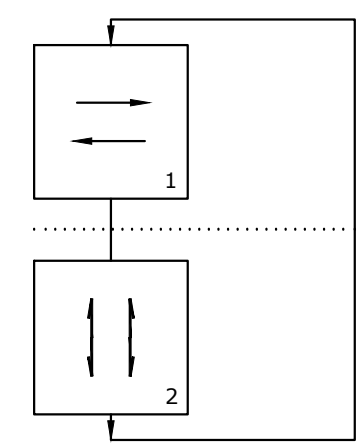
- SPECIAL NOTES:**
- SEE WIRING PLAN FOR CONDUITS AND WIRING.
 - REFER TO ATTACHED ARDOT STANDARD DETAIL SHEETS.
 - ALL SIGNS TO CONFORM TO MUTCD 2009.
 - CONTRACTOR SHALL FIELD VERIFY POLE LOCATIONS WITH REGARD TO HORIZONTAL PLACEMENT FOR CLEARANCE FROM UTILITIES AND OTHER APPURTENANCES AND VERIFY VERTICAL CLEARANCE FOR POLE SHAFT FOR ABSENCE OF CONFLICT WITH OVERHEAD UTILITIES AND OTHER APPURTENANCES.
 - CONTRACTOR SHALL OBTAIN APPROVAL OF PERMITTING JURISDICTIONS PRIOR TO ORDERING POLES AND SIGNAL HEADS.
 - ALL CONDUIT TO BE 3" NON-METALLIC UNLESS OTHERWISE SPECIFIED ON PLANS.
 - ALL TRAFFIC SIGNAL HEADS SHALL BE LED.
 - THERE SHALL BE NO DEVIATION FROM THIS PLAN WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER.
 - PEDESTRIAN PUSH BUTTON SHALL BE BULLDOG POLARA. THE PRICE FOR PUSH BUTTONS TO BE INCLUDED IN ITEMS 35, 36, & 38.
 - ALL SIGNAL POLES SHALL BE GALVANIZED.
 - LUMINAIRES SHALL BE LEOTEK 6C1-60F-MV-NW-3-6Y-700



SIGNAL HEADS
N.T.S.



ONE SECTION (SOLID SYMBOL)



PHASING DIAGRAM
N.T.S.

- NOTES:**
- ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
 - REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
 - ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMP AND A CROSSWALK THAT MEETS A.D.A.S. STANDARDS.

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 PROJECT IMPROVEMENTS
 LITTLE ROCK, ARKANSAS

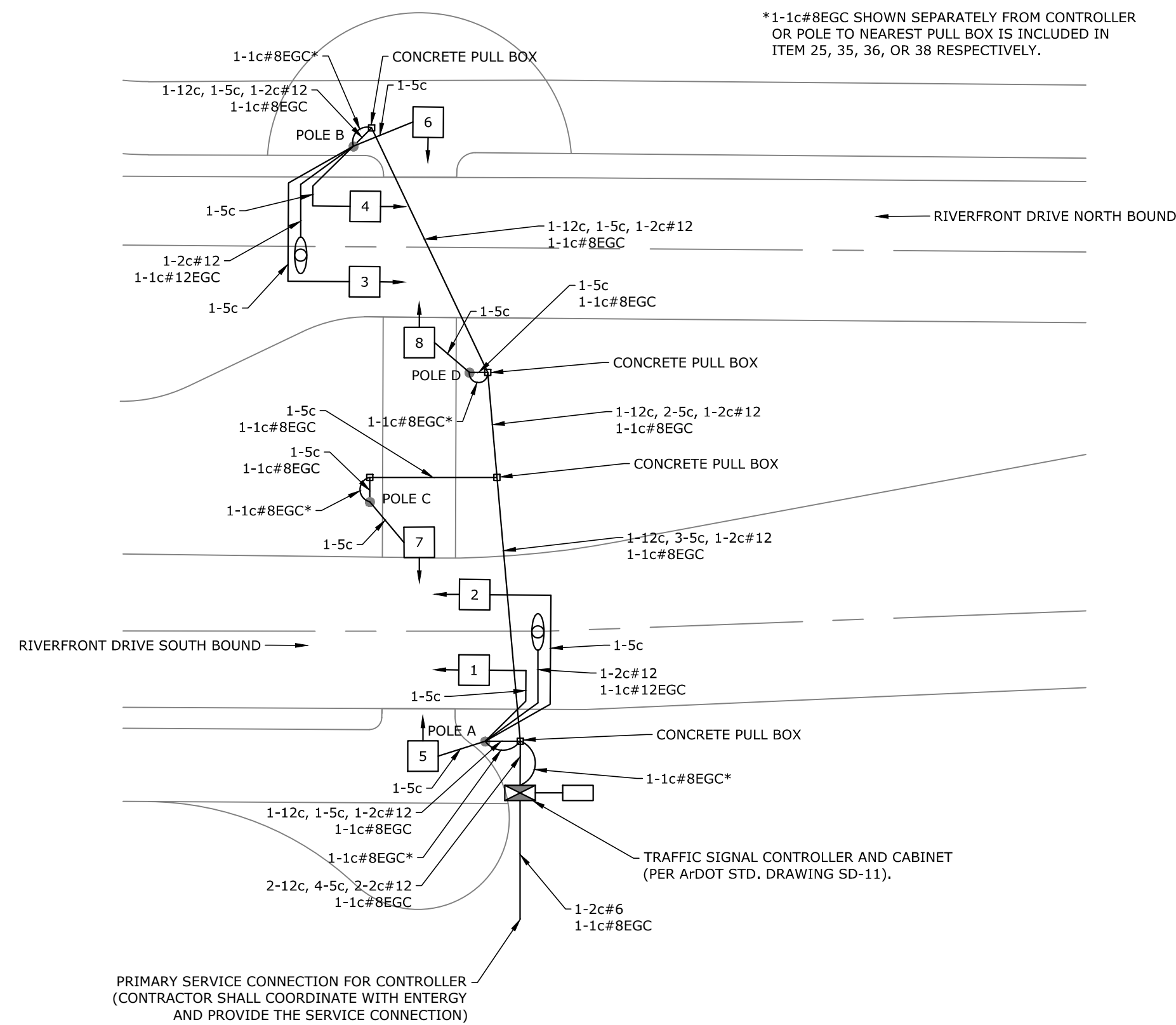
One Call
811
 Know what's below.
 Call before you dig.

NO.	DATE	REVISIONS	DESCRIPTION

HAWK SIGNAL PLAN

PROJECT ENGR: RJM	DRAWN BY: DLR
DATE: JUNE 2018	JOB NUMBER: LR17-5758
SCALE: 1"=20'	

W:\201717-5758 Arkansas River Trail Project Improvements-Little Rock, Arkansas\Design Drawings\LR17-5758-DESIGN.dwg 6/18/18 at 2:30pm



*1-1c#8EGC SHOWN SEPARATELY FROM CONTROLLER OR POLE TO NEAREST PULL BOX IS INCLUDED IN ITEM 25, 35, 36, OR 38 RESPECTIVELY.

PRIMARY SERVICE CONNECTION FOR CONTROLLER (CONTRACTOR SHALL COORDINATE WITH ENERGY AND PROVIDE THE SERVICE CONNECTION)

GENERAL NOTES:

- ALL OSHA REGULATIONS SHALL BE STRICTLY FOLLOWED AND SPECIAL CARE TAKEN TO PREVENT INTERACTION W/ OVERHEAD OR UNDERGROUND POWER SOURCES.
- THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, PIPE, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING HIMSELF AS TO THE LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS TO UTILITIES DAMAGED BY CONTRACTOR SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS NECESSARY SHALL BE BORNE BY THE CONTRACTOR.
- ALL STREETS, DRIVES, WALKS, DRAINAGE STRUCTURES, FENCES, ETC. THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION USING LIKE MATERIALS. COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR UNLESS PROVISION FOR PAYMENT IS MADE IN THE PROPOSAL.
- ALL CONCRETE SHALL DEVELOP 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
- WATERLINES SHALL HAVE MINIMUM OF 10 FEET HORIZONTAL CLEARANCE FROM SANITARY SEWERS. WHEN WATERLINES CROSS SANITARY SEWERS THEY SHALL HAVE A MINIMUM OF 18 INCHES VERTICAL SEPARATION WITH WATER ON TOP, ELSE ENCASEMENT PIPE WILL BE REQUIRED. ANY DEVIATION MUST BE APPROVED BY THE ARKANSAS DEPARTMENT OF HEALTH IN WRITING.
- INSTALL POLYETHYLENE ENCASEMENT AT ALL LOCATIONS WHERE NEW WATERLINE CROSSES EXISTING NATURAL GAS LINES (20' EACH SIDE OF CROSSING) AND WHERE OTHERWISE SHOWN.
- GROUND DISTURBED DURING CONSTRUCTION IS TO BE VEGETATED WITH BERMUDA SOD. CONTRACTOR TO TEMPORARILY IRRIGATE SOD UNTIL FULLY ESTABLISHED.

CONDUIT:

- WHERE A TRENCH IS CUT THROUGH THE SURFACED PARKING SHOULDER, MEDIAN, DRIVEWAYS, OR SIDEWALK FOR LAYING CONDUIT, THE BASE AND SURFACING SHALL BE REPLACED WITH SIMILAR MATERIALS EQUAL IN APPEARANCE AND QUALITY TO THE ORIGINAL CONSTRUCTION. REPLACING BASE AND SURFACE WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO INSTALLING CONDUIT. ALL CONDUIT WILL HAVE MINIMUM COVER OF 18 in.
- WHEN BORING IS USED FOR UNDER PAVEMENT CONDUIT INSTALLATIONS, MAXIMUM ALLOWABLE OVERCUT SHALL BE 1 in. IN DIAMETER. CONDUIT UNDER NEWLY POURED PAVEMENT SHALL BE BORED.
- WHEN CONDUITS ARE BORED OR PUSHED, THE VERTICAL AND HORIZONTAL TOLERANCES SHALL NOT EXCEED 18 in. AS MEASURED FROM THE INTENDED TARGET POINT.
- A SAW CUT TRENCH DETAIL FOR INSTALLATION OF CONDUIT UNDER EXISTING PAVEMENT SHALL ONLY BE USED AT LOCATIONS WHERE CONDUIT CANNOT BE JACKED OR BORED. THE USE OF SAWCUT TRENCH SHALL ONLY BE MADE AT LOCATIONS APPROVED BY THE ENGINEER.
- THE MINIMUM BEND RADIUS ON CONDUIT SHALL BE AS FOLLOWS: 3" CONDUIT - 18 in.
- FOR CONDUIT RUNS IN EXCESS OF 250 ft., THE CONTRACTOR MAY INSTALL PULL BOXES AT HIS OWN EXPENSE, AT THE DISCRETION OF THE ENGINEER, FOR USE IN PULLING CABLE.
- CONTRACTOR SHALL PROVIDE PULL ROPE FOR FUTURE WIRE INSTALLATION FROM JUNCTION BOX TO JUNCTION BOX AND JUNCTION BOX TO POLE AND ALL CONDUIT.
- CONDUIT SHALL BE HDPE WITH NO IN-GROUND SPLICES.

FULL ACTUATED SOLID STATE TRAFFIC SIGNAL CONTROLLER:

- THE CONTRACTOR SHALL INSTALL NEW CONTROLLERS AND CABINETS MOUNTED TO POLE PER A/DOT DETAIL SHEET SD-11.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL FIELD WIRE IN THE CABINET.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING AND LOGIC CHANGES NECESSARY TO ACCOMPLISH PHASE ROTATION AND SEQUENCING SHOWN ON THE PLANS.
- THE CONTROLLER ASSEMBLY SHALL BE SIEMENS M52 (OR APPROVED EQUAL) AND TEMPLE 2-PHASE CABINET (OR APPROVED EQUAL).

HIGHWAY TRAFFIC SIGNAL HEADS:

- ALL TRAFFIC SIGNAL HEADS FOR THIS PROJECT SHALL BE POLYCARBONATE. ALL HEADS SHALL BE BLACK. ALL VISORS SHALL BE TUNNEL TYPE.
- ALL SIGNAL HEADS SHALL BE COVERED WITH BURLAP UNTIL PLACED INTO OPERATION. LED'S FOR SIGNAL FACES SHALL BE FURNISHED BY THE CONTRACTOR.
- SIGNAL HEADS MOUNTED ON POLES AND MAST ARMS SHALL BE LEVEL AND PLUMB.
- THE CONTRACTOR SHALL PROVIDE NECESSARY MOUNTING HARDWARE TO INSURE PROPER MOUNTING OF ALL SIGNAL HEADS.
- ALTERNATIVE SIGNAL HEAD MOUNTING HARDWARE MAY BE APPROVED AS DIRECTED BY THE ENGINEER.

TRAFFIC SIGNAL NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2017) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
- EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND E.G.C. TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.
- ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAIN-TIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT ELECTRICAL SERVICE WIRE (2c/#6 A.W.G. USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S/COUNTY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT, ARE NEEDED WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.
- CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
- TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.
- CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSES.
- ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, STANDARD DRAWINGS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
- CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED.
- TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
- PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.
- FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON STANDARD DRAWING). PAYMENT WILL BE INCLUDED IN SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.
- ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE THREE (3") INCH DIAMETER UNLESS SPECIFIED ON PLANS.
- CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
- LUMINAIRE ASSEMBLIES SHALL BE OF THE LEOTEK LED TYPE.
- HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.
- THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY/COUNTY.
- TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, THIRTY-EIGHT (38') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF TWENTY-ONE (21) FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL SIX (6) FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.
- THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS SIX (6) FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.
- AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYPED INTO COMPETENT ROCK.
- CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.
- CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.
- ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.
- TRAFFIC SIGNAL CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.
- ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4th EDITION (2001) WITH 2003 AND 2006 INTERIMS.
- DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.
- ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.
- IN PULL BOXES, POLE BASES, JUNCTION BOXES AND CONTROLLER CABINETS, THE DIRECTION OF EACH CABLE RUN SHALL BE INDICATED BY ATTACHING A PERMANENT TAG OF RIGID PLASTIC OR NON-FERROUS METAL TO THE CONDUIT. TAGS SHALL BE EMBOSSED, STAMPED OR ENGRAVED WITH LETTERS 1/4" OR GREATER IN HEIGHT AND SECURED TO THE CONDUIT WITH NYLON OR PLASTIC TIES. IN INSTANCES WHERE THE CONDUIT OR CONDUIT ENTRANCES ARE NOT VISIBLE OR ACCESSIBLE, A DIRECTION TAG SHALL BE ATTACHED TO EACH CABLE.
- THE CONTRACTOR SHALL PERFORM ALL WORK POSSIBLE THAT WILL MINIMIZE THE TIME THAT THE TRAFFIC SIGNAL IS OUT OF OPERATION. IF, IN THE OPINION OF THE ENGINEER, TRAFFIC CONDITIONS WARRANT THE CONTRACTOR SHALL PROVIDE FLAGMEN TO DIRECT TRAFFIC WHILE THE TRAFFIC SIGNAL IS OUT OF OPERATION.

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PH # 501-511-0272
http://www.mccc.us.com

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13852
ADAM S. TRICHE
6-18-19
ORIGINAL SIGNATURE ON FILE

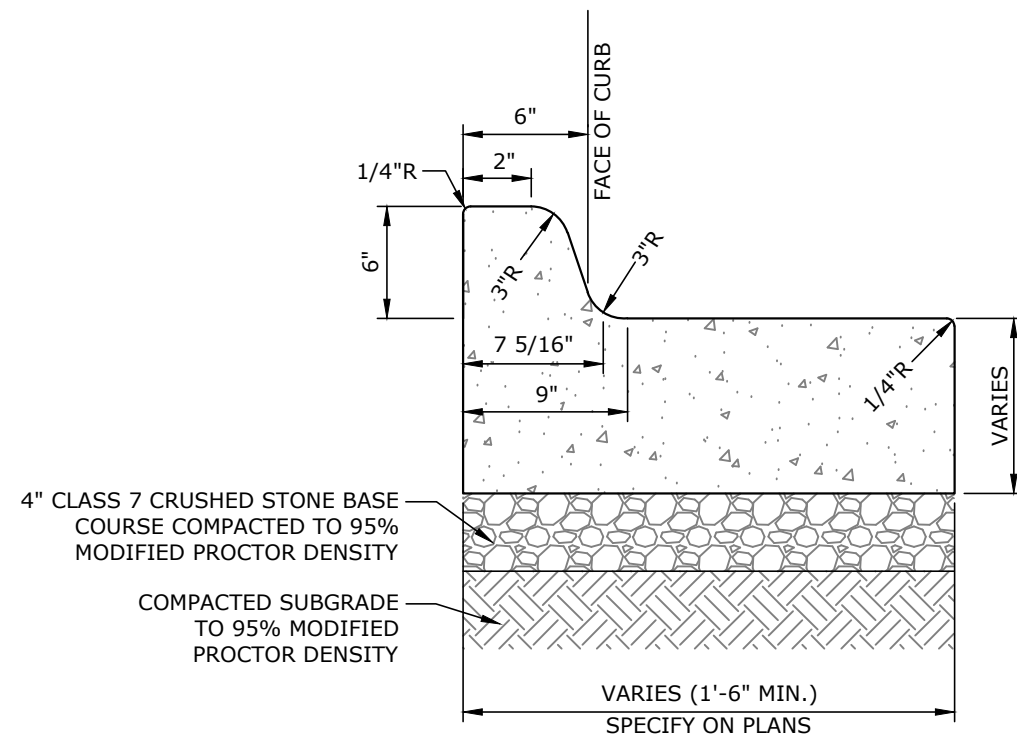
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RIVERFRONT DRIVE TRAIL
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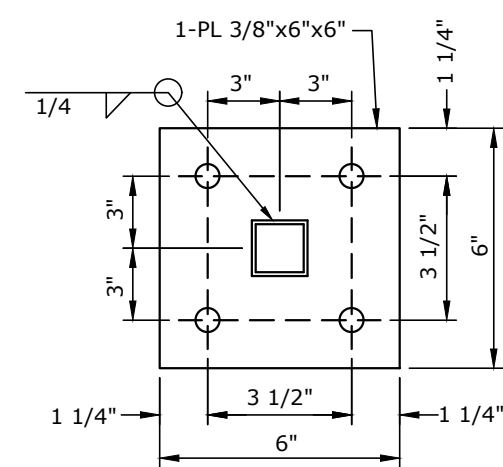
NO.	DATE	REVISIONS DESCRIPTION

HAWK SIGNAL NOTES

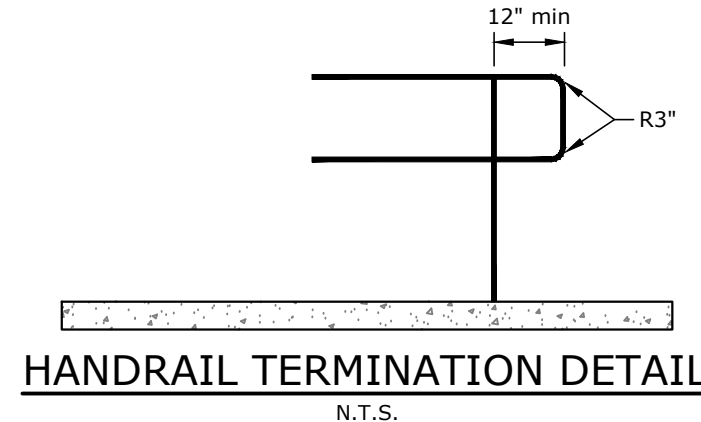
PROJECT ENGR: RJM	DRAWN BY: DLR
DATE: JUNE 2018	JOB NUMBER: LR17-5758



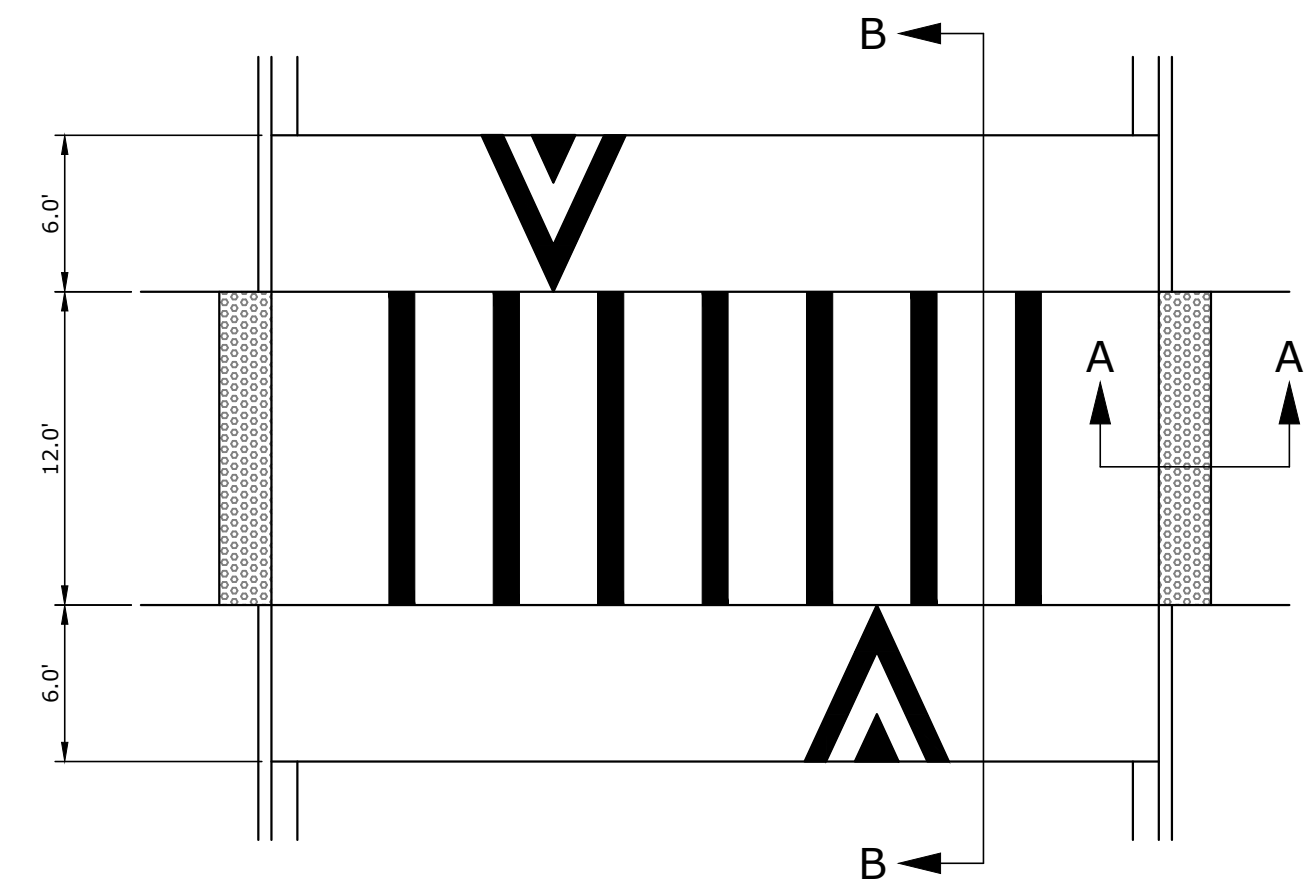
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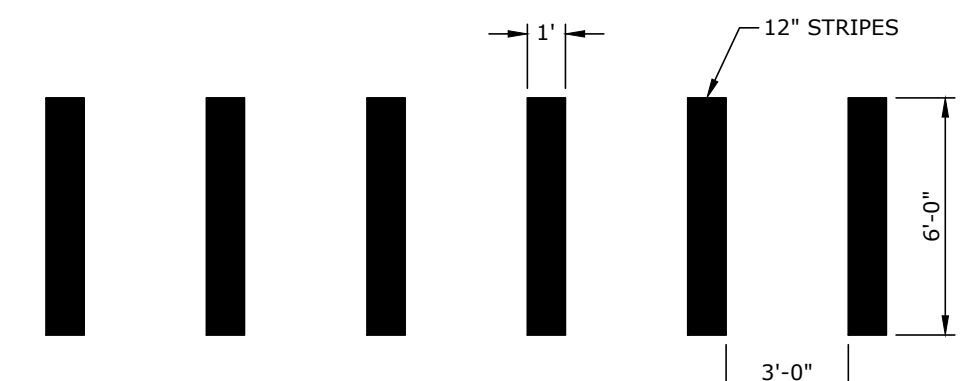
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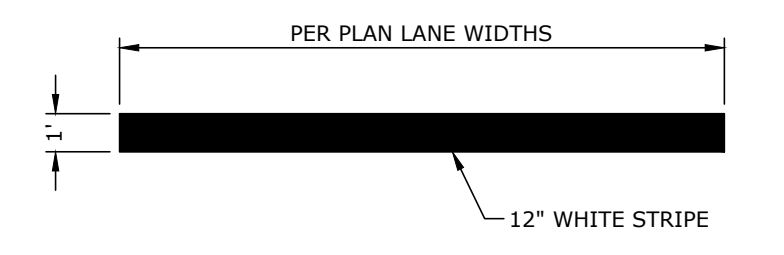
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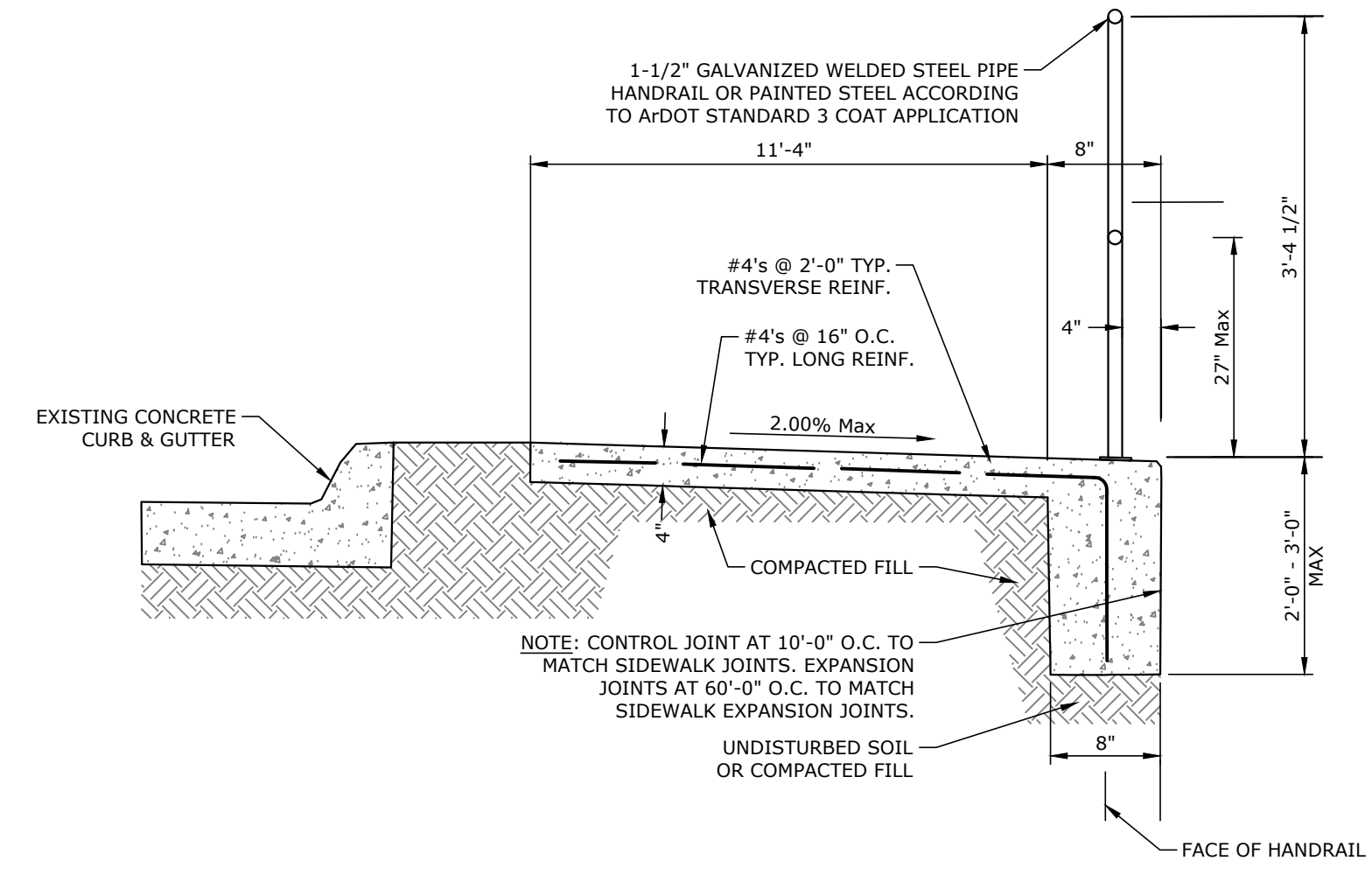
PLAN VIEW



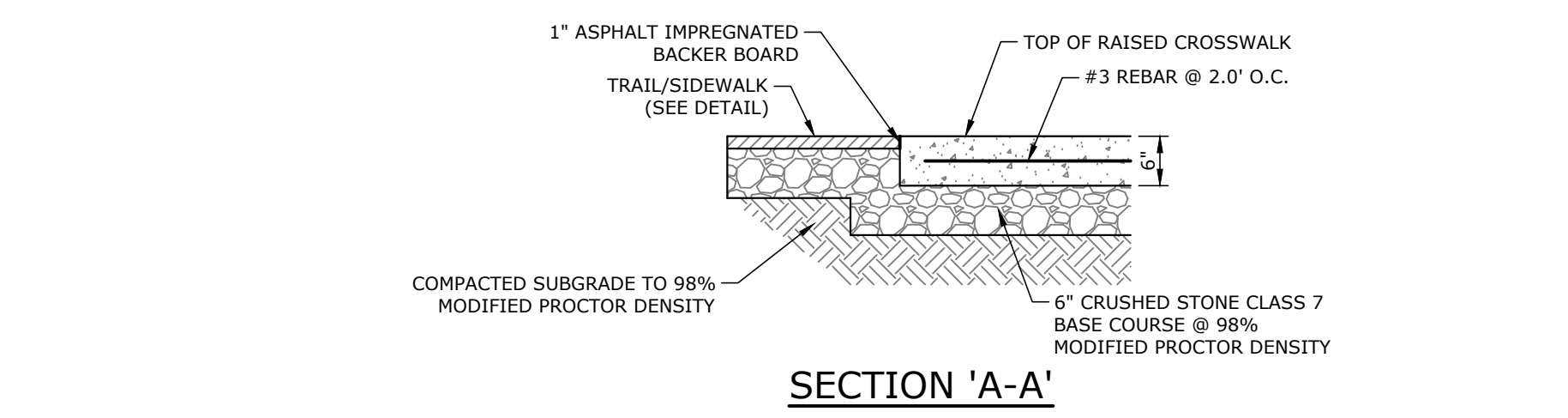
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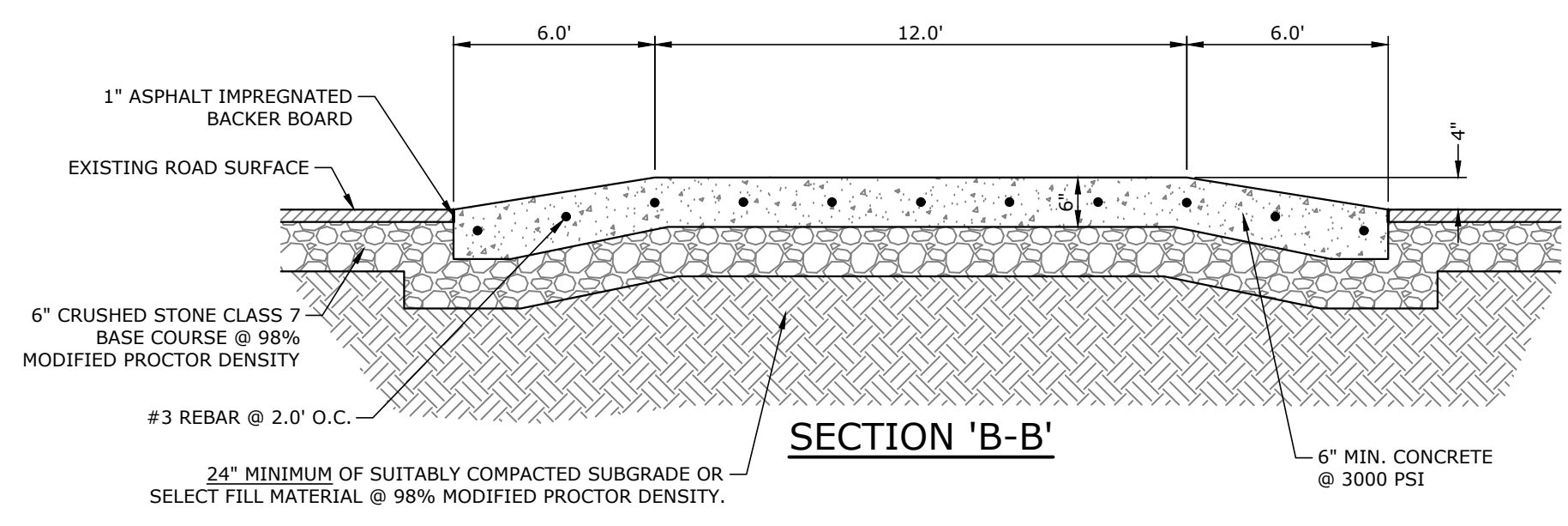
STOP LINE STRIPING DETAIL (TYP.)
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SIDEWALK WITH TURNDOWN EDGE
N.T.S.

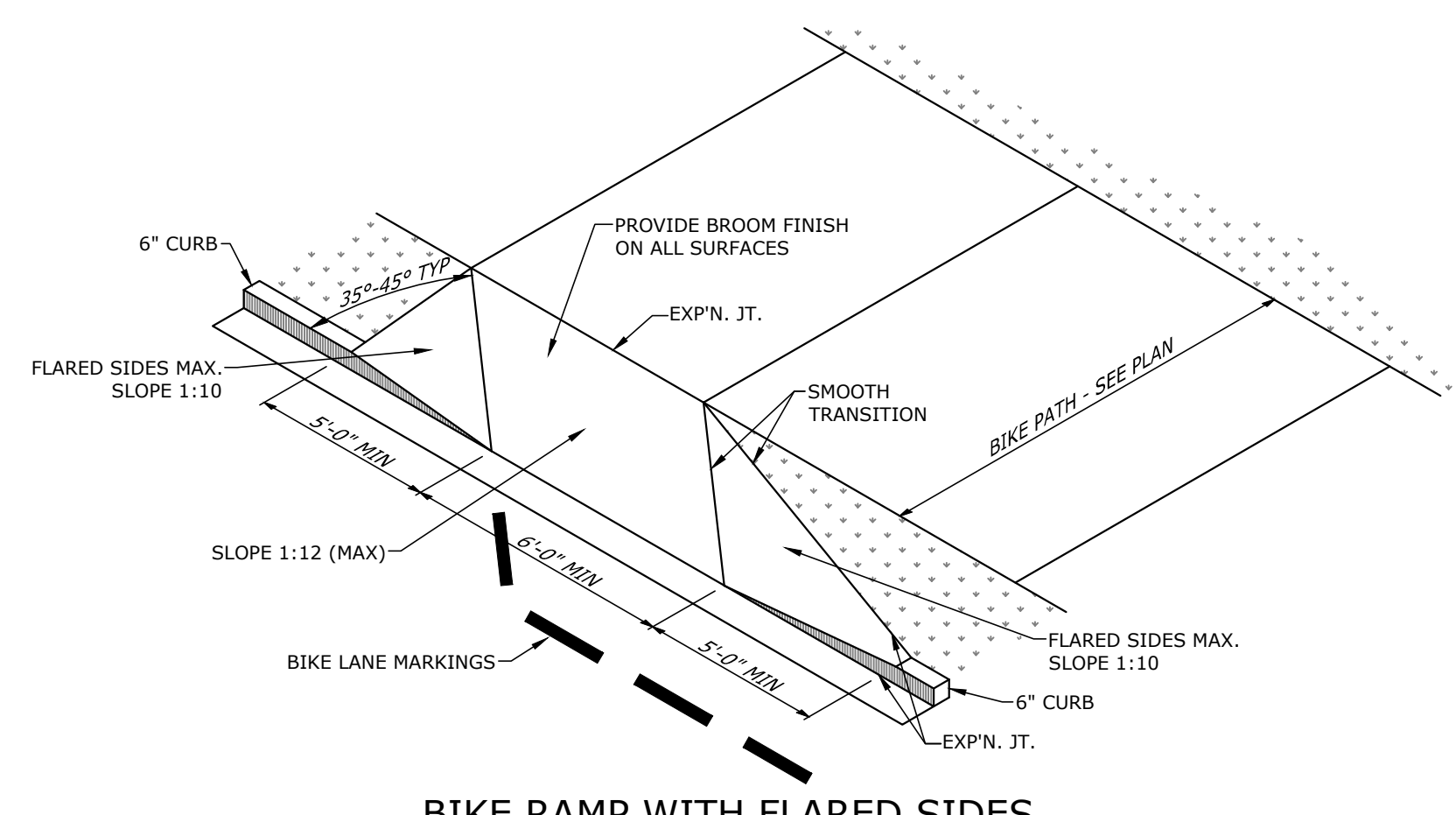


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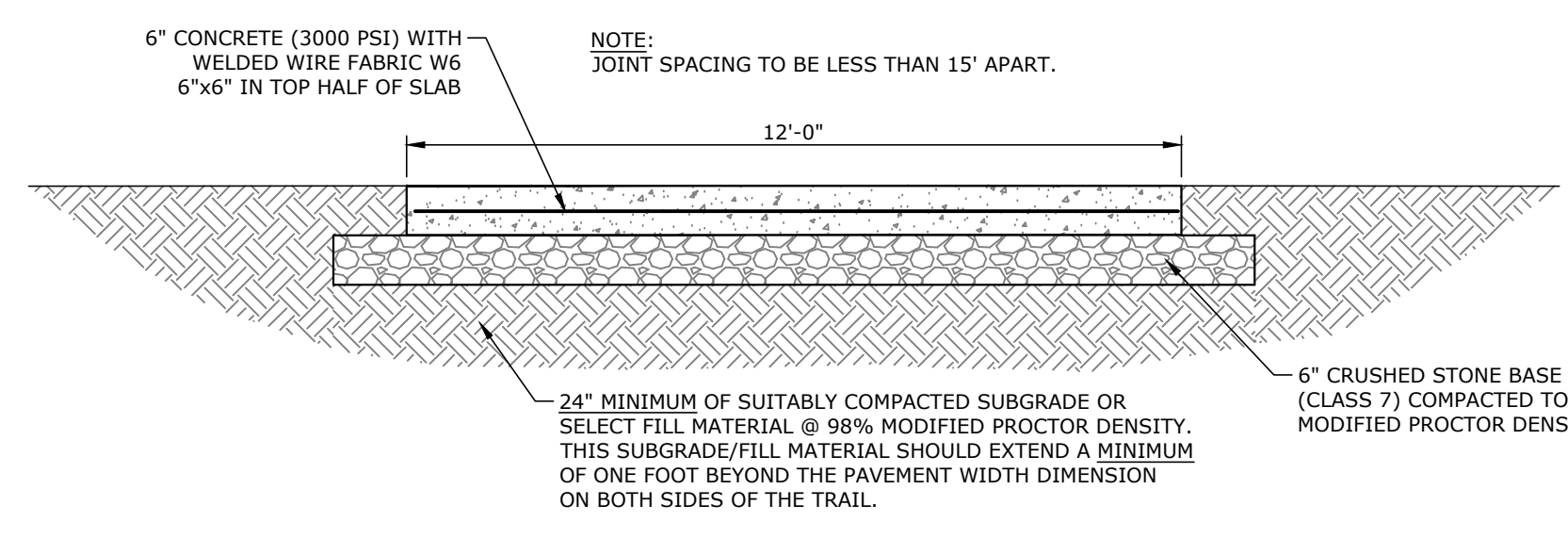


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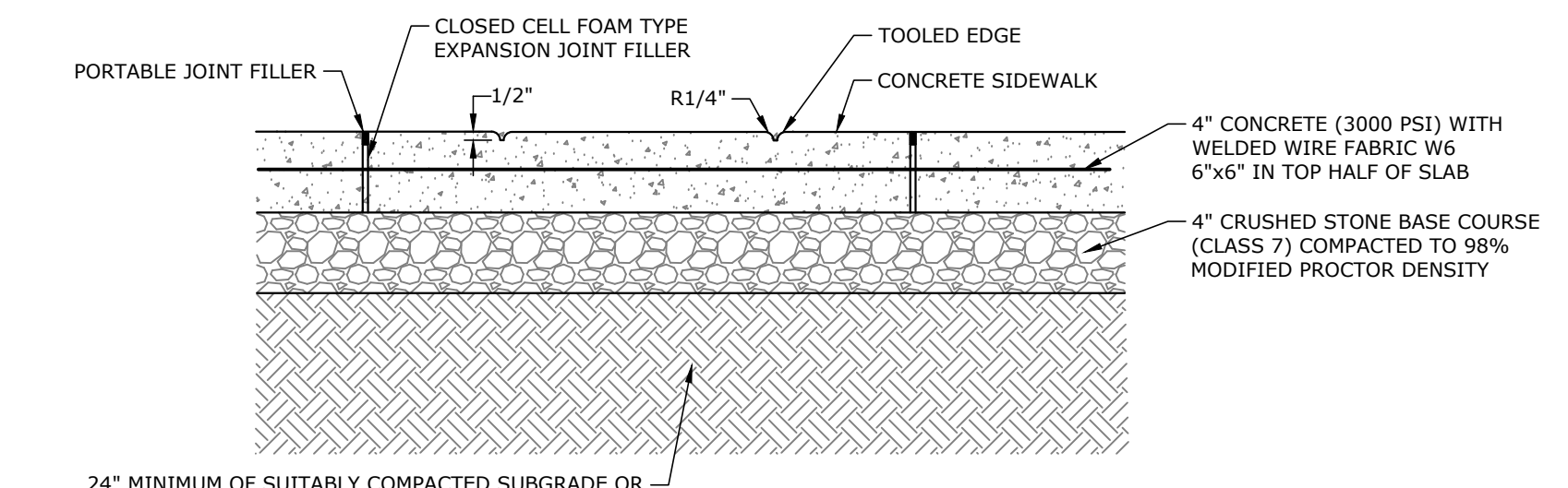
RAISED MIXED USE CROSSWALK DETAIL
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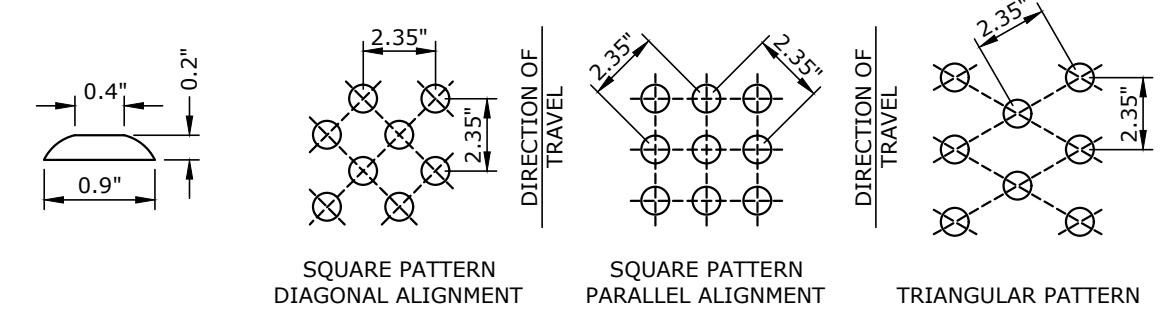
BIKE RAMP WITH FLARED SIDES
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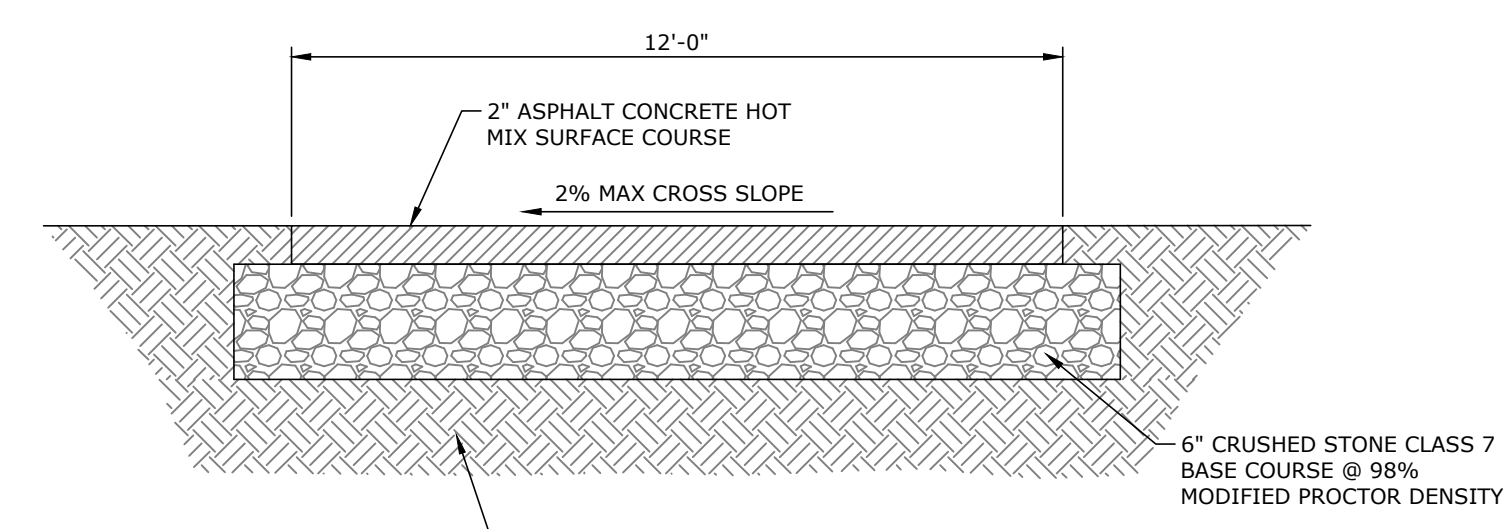
CONCRETE SIDEWALK DETAIL
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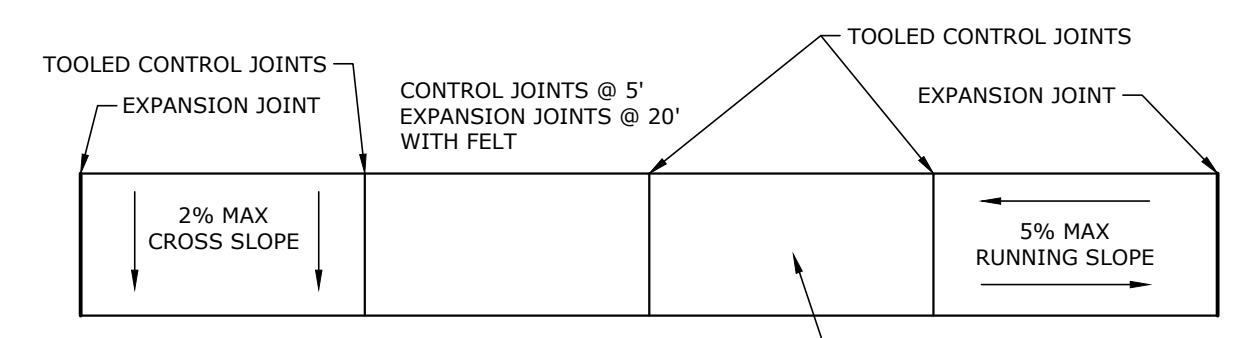
SIDEWALK JOINTING DETAIL
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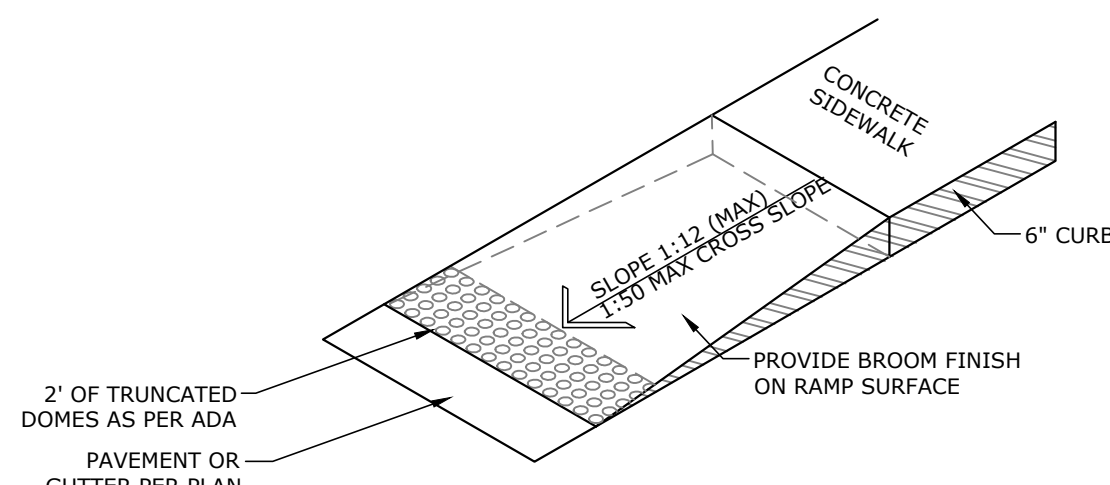
ADAAG TRUNCATED DOMES
N.T.S.



TYPICAL ASPHALT TRAIL SECTION
N.T.S.



CONCRETE SIDEWALK JOINT PLAN
N.T.S.



A.D.A. ACCESSIBLE RAMP DETAIL
N.T.S.

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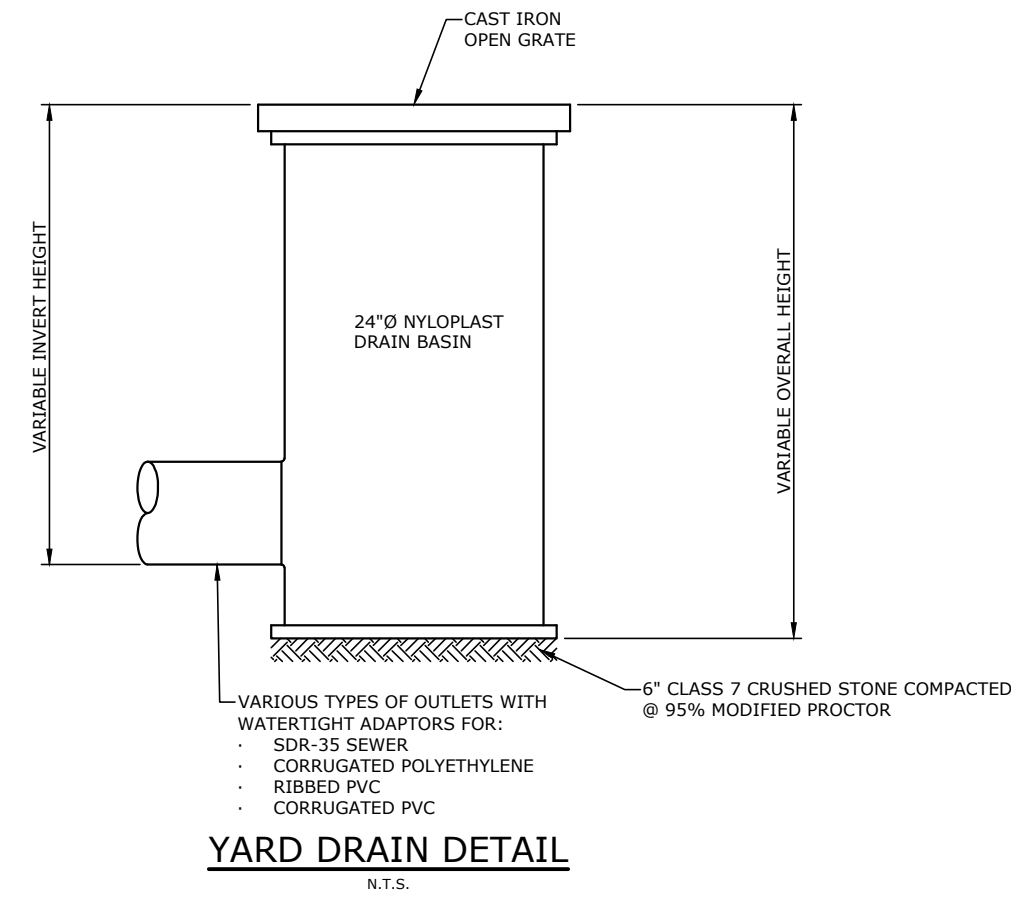
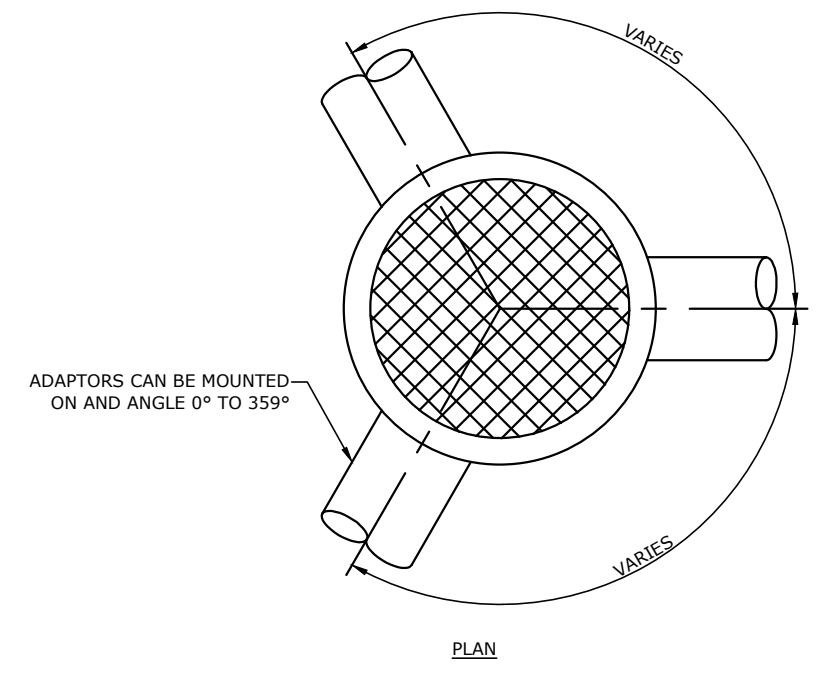
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MISCELLANEOUS DETAILS I

PROJECT ENGR: DPW	DRAWN BY: DLR
DATE: JUNE 2018	JOB NUMBER: LR17-5758
SCALE: AS SHOWN	



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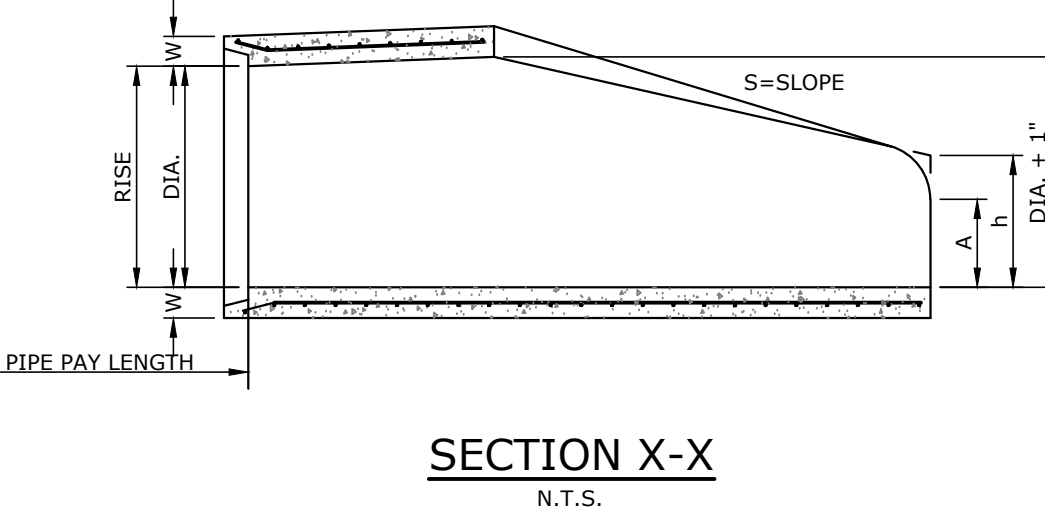
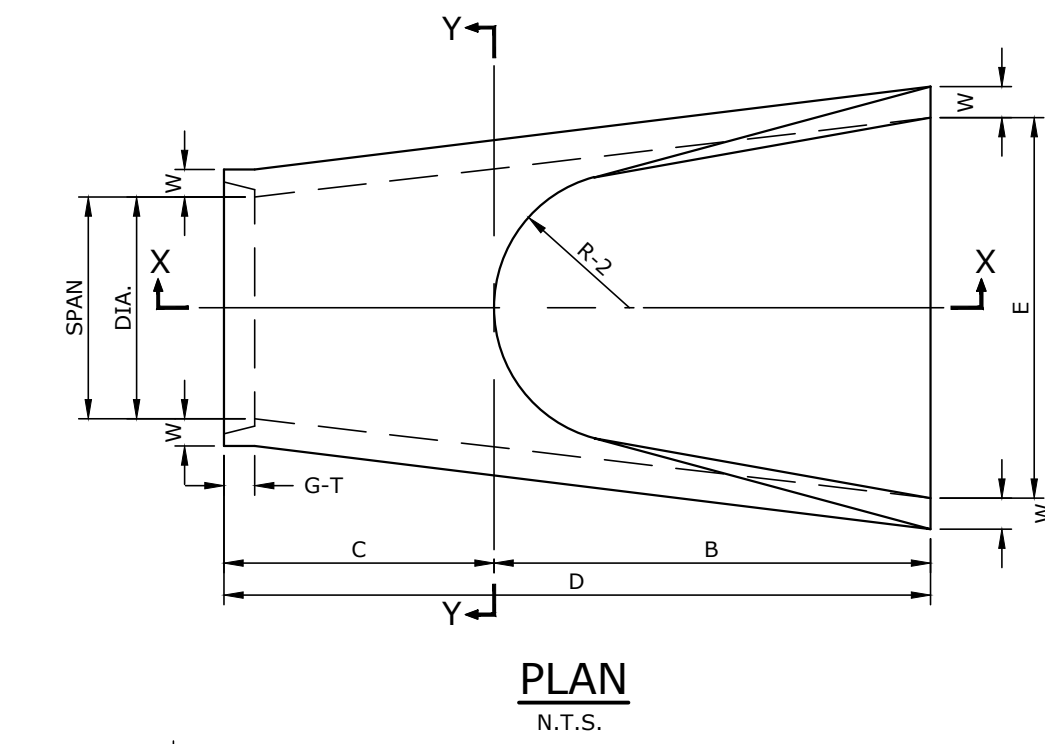
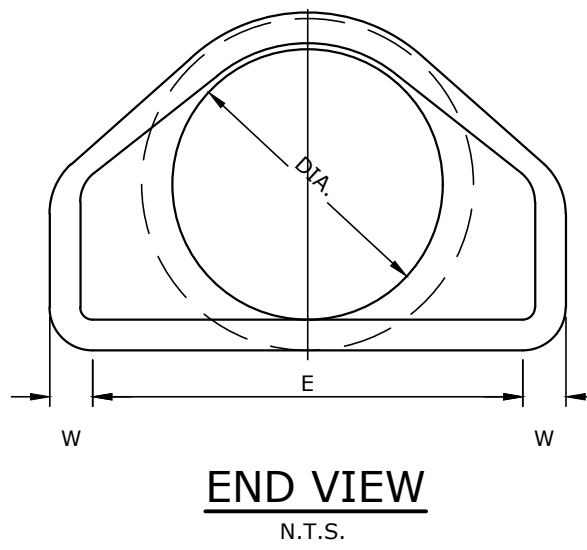
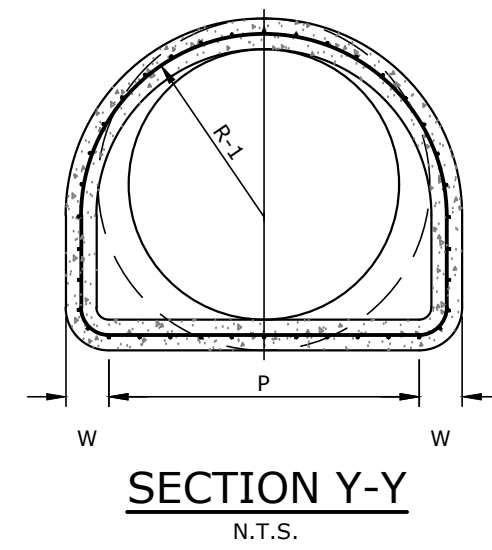


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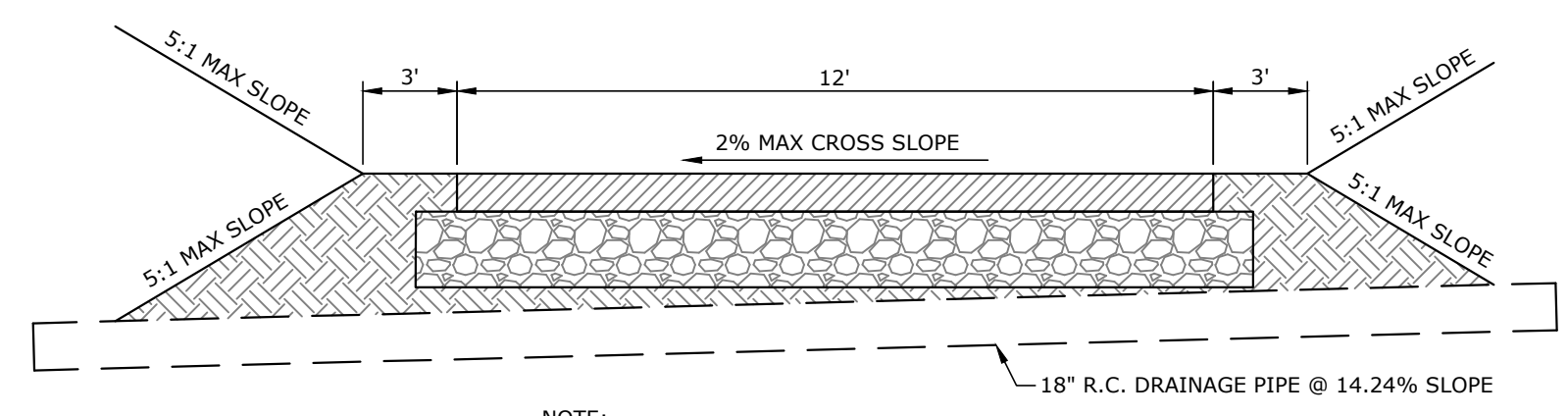
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12"	2"	4"	2'-0"	4'-1"	6'-1"	2'-0"	2.2:1	13"			9"		530	
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-6"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53 7/8"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65 1/2"	33 3/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72 1/2"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"



NOTE: TONGUE END ON UPSTREAM SECTION
GROOVED END ON DOWNSTREAM SECTION

**END SECTION FOR REINFORCED
CONCRETE PIPE CULVERTS**

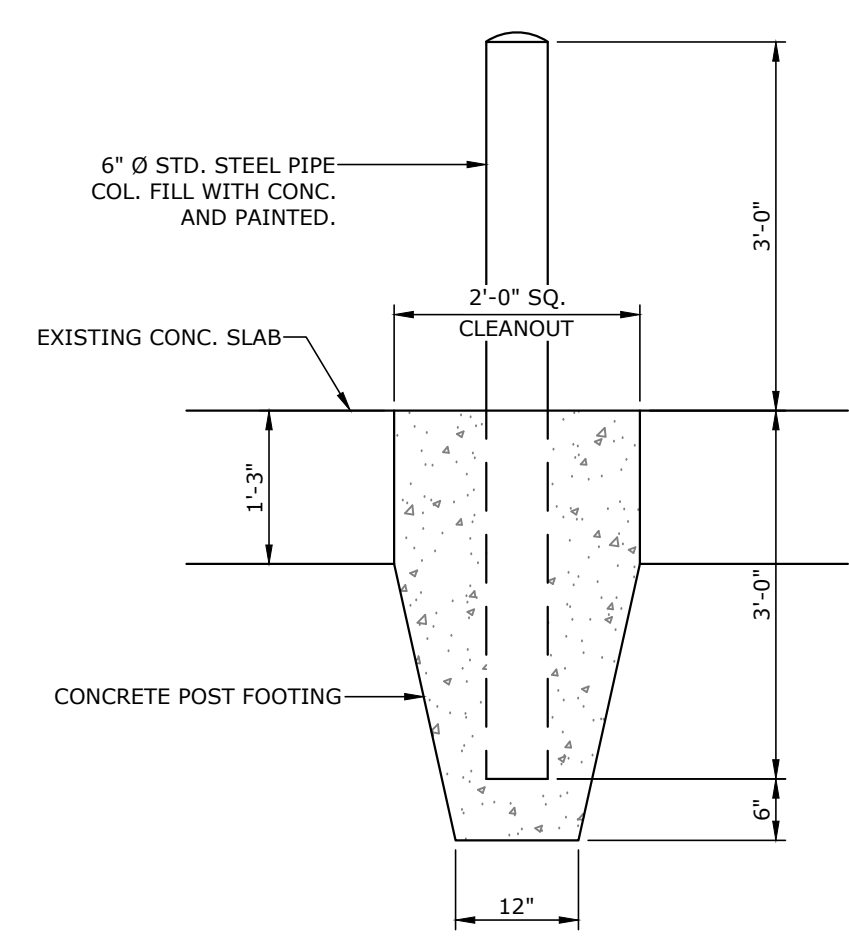
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NOTE:
LOCATION OF CROSS DRAIN TO BE DETERMINED IN THE FIELD.

CROSS DRAIN (TYPICAL)

N.T.S.



BOLLARD DETAIL

N.T.S.

MCC
DESIGNED TO SERVE
McCLELLAND CONSULTING ENGINEERS, INC.

1810 N. College
Payetteville, AR 72702
PH# 479-443-2177

7302 Kains Rd.
Little Rock, AR 72204
PH# 501-511-0772

4606 S. Gambert Rd. Ste. 401
Tulsa, OK 74146
PH# 918-619-8803

http://www.mcc.us.com

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13852
ADAM S. TRICHE
6-18-19

ORIGINAL SIGNATURE ON FILE

ARKANSAS RIVER TRAIL
RIVERFRONT DRIVE TRAIL
PROJECT IMPROVEMENTS
LITTLE ROCK, ARKANSAS

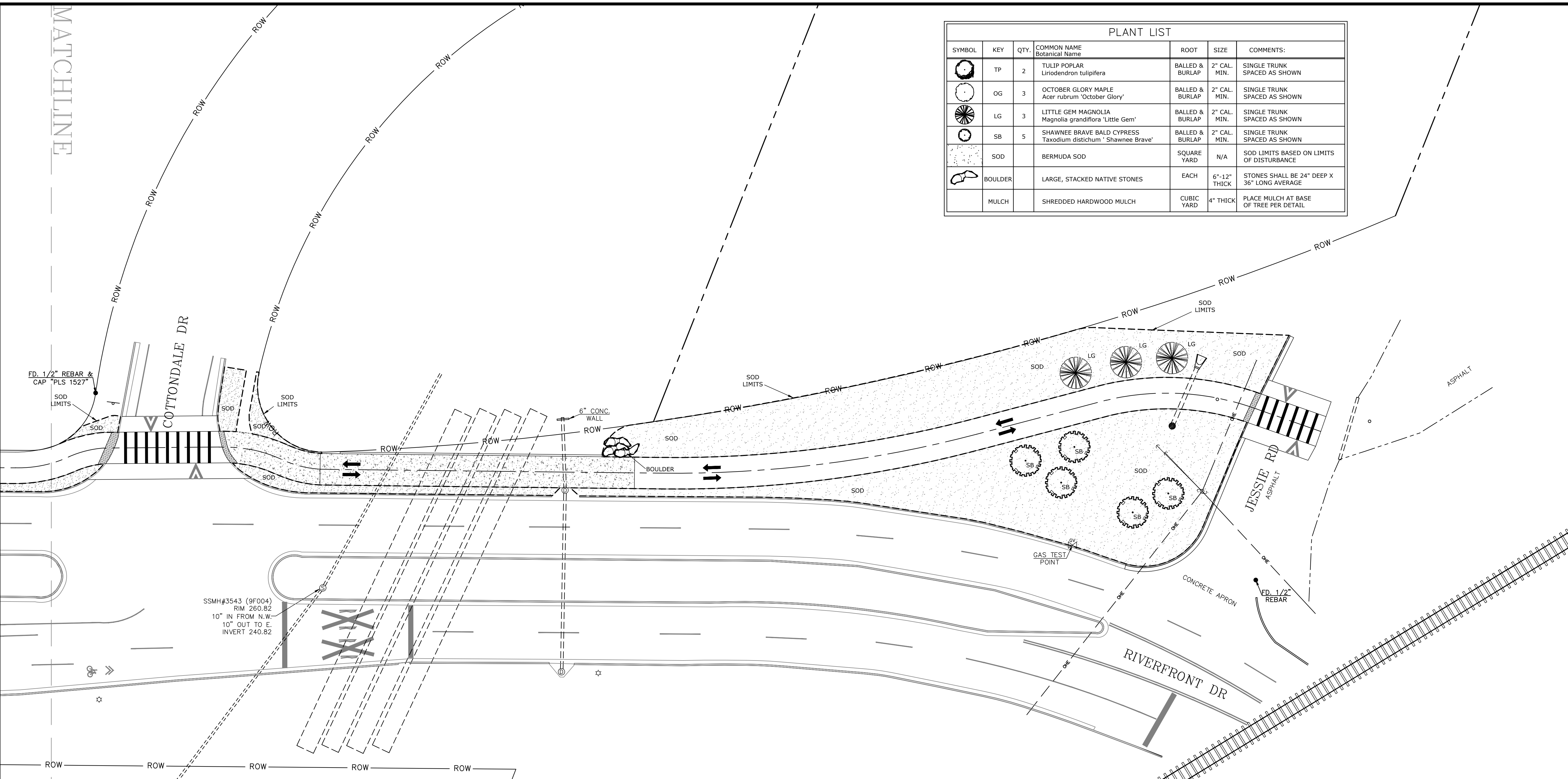
One Call
811
Know what's below.
Call before you dig.

NO.	DATE	REVISIONS DESCRIPTION

MISCELLANEOUS
DETAILS II

PROJECT ENGR: DPW	DRAWN BY: DLR
DATE: JUNE 2018	
SCALE: AS SHOWN	JOB NUMBER: LR17-5758

W:\201717-5758 Arkansas River Trail-Riverfront Drive Trail Project Improvements-Little Rock, Arkansas\Design Drawings\LR17-5758Landscape.dwg 6/18/18 at 2:13pm



PLANT LIST						
SYMBOL	KEY	QTY.	COMMON NAME Botanical Name	ROOT	SIZE	COMMENTS:
	TP	2	TULIP POPLAR Liriodendron tulipifera	BALLED & BURLAP	2" CAL. MIN.	SINGLE TRUNK SPACED AS SHOWN
	OG	3	OCTOBER GLORY MAPLE Acer rubrum 'October Glory'	BALLED & BURLAP	2" CAL. MIN.	SINGLE TRUNK SPACED AS SHOWN
	LG	3	LITTLE GEM MAGNOLIA Magnolia grandiflora 'Little Gem'	BALLED & BURLAP	2" CAL. MIN.	SINGLE TRUNK SPACED AS SHOWN
	SB	5	SHAWNEE BRAVE BALD CYPRESS Taxodium distichum 'Shawnee Brave'	BALLED & BURLAP	2" CAL. MIN.	SINGLE TRUNK SPACED AS SHOWN
	SOD		BERMUDA SOD	SQUARE YARD	N/A	SOD LIMITS BASED ON LIMITS OF DISTURBANCE
	BOULDER		LARGE, STACKED NATIVE STONES	EACH	6"-12" THICK	STONES SHALL BE 24" DEEP X 36" LONG AVERAGE
	MULCH		SHREDDED HARDWOOD MULCH	CUBIC YARD	4" THICK	PLACE MULCH AT BASE OF TREE PER DETAIL

MCCLELLAND CONSULTING ENGINEERS, INC.
 DESIGNED TO SERVE
 1810 N. College
 Fayetteville, AR 72702
 P# 494-443-2377

4606 S. Gambel Rd. Ste. 401
 Tulsa, OK 74146
 P# 918-439-8800
<http://www.mcc.us.com>

STATE OF ARKANSAS
 REGISTERED PROFESSIONAL ENGINEER
 No. 13852
 ADAM S. TRICHE
 6-18-18

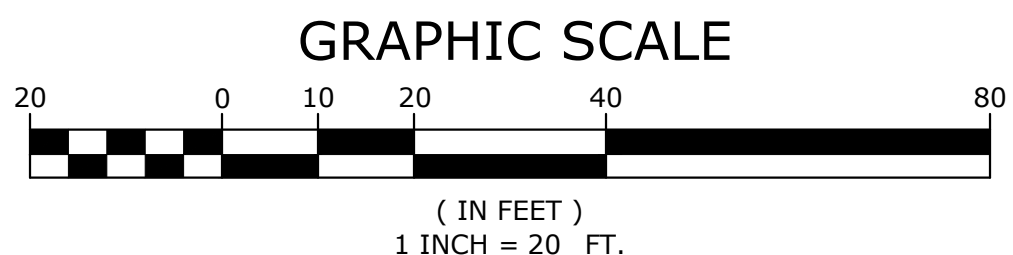
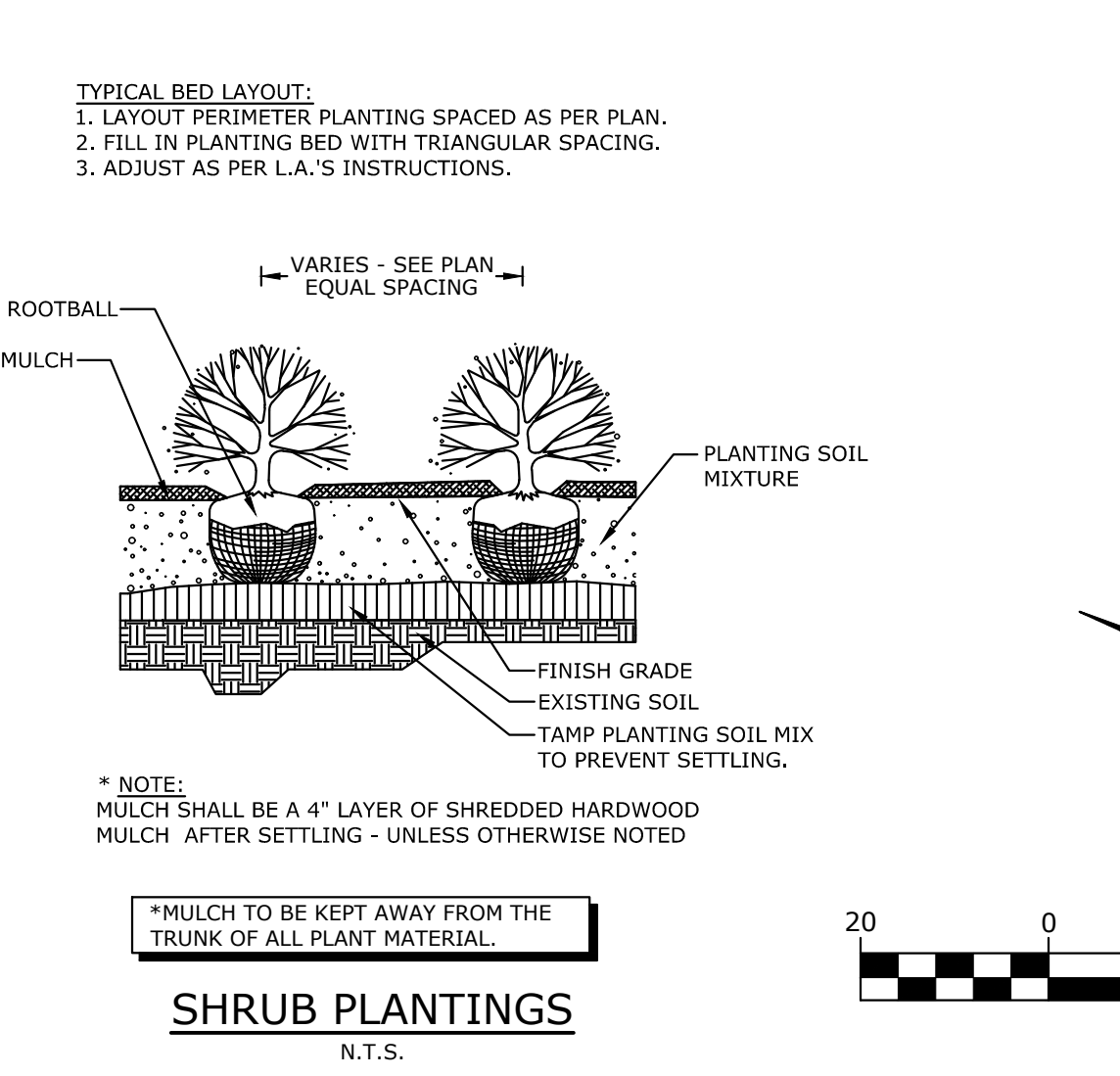
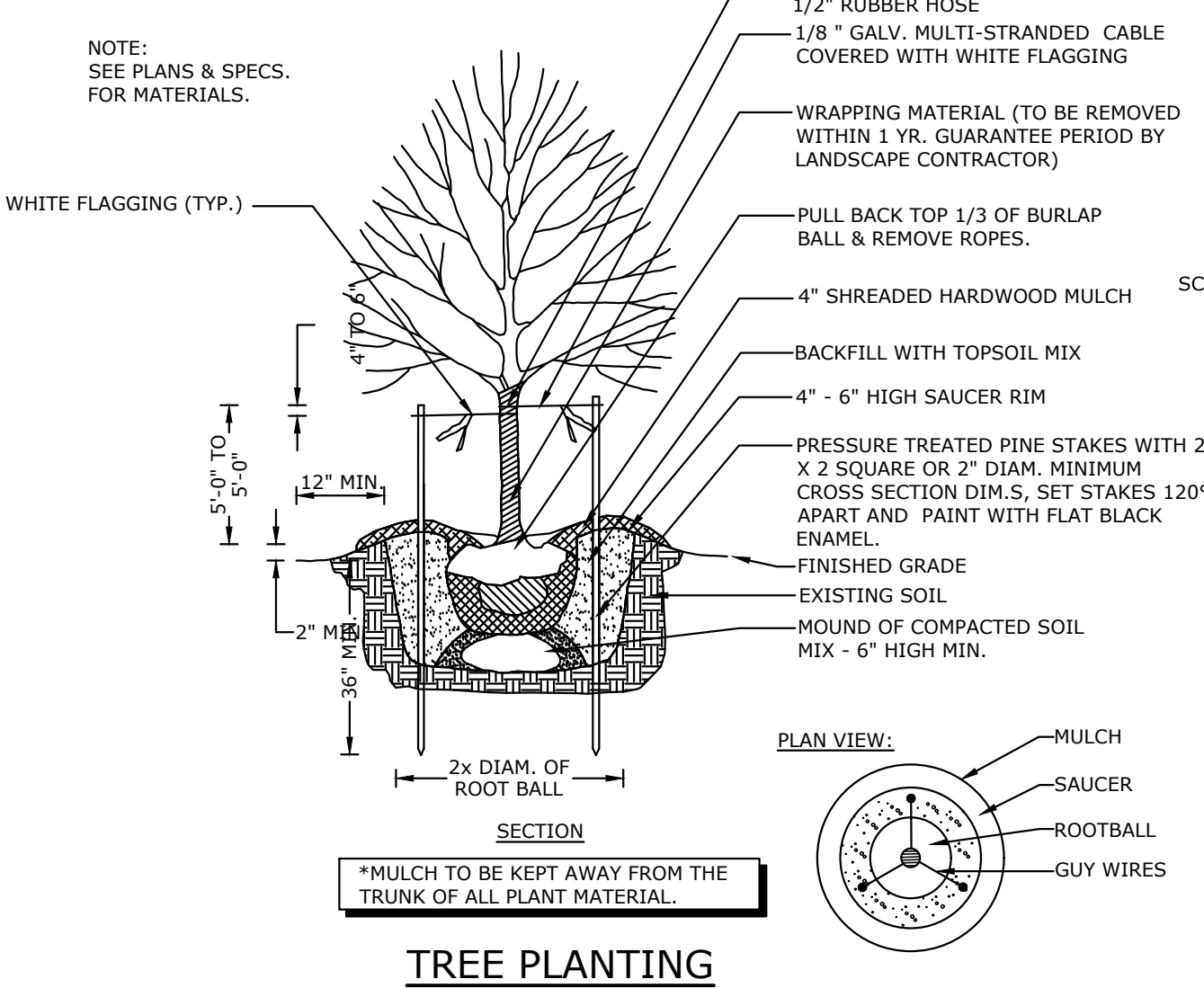
ORIGINAL SIGNATURE ON FILE

ARKANSAS RIVER TRAIL
 RIVERFRONT DRIVE TRAIL
 PROJECT IMPROVEMENTS
 LITTLE ROCK, ARKANSAS

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811
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LANDSCAPE NOTES

- CONTRACTOR IS RESPONSIBLE FOR THE ENSURING THAT ALL PROPOSED LANDSCAPING IS INSTALLED IN ACCORDANCE WITH PLANS, DETAILS, SPECIFICATIONS (IF APPLICABLE) AND ALL LOCAL CODES AND REQUIREMENTS.
- CONTRACTOR TO INSPECT SITE AND VERIFY CONDITIONS AND DIMENSIONING PRIOR TO PROCEEDING WITH WORK DESCRIBED HERE IN. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES PRIOR TO BEGINNING ANY CONSTRUCTION.
- IMMEDIATELY AFTER AWARD OF CONTRACT, NOTIFY THE OWNER'S REPRESENTATIVE AND/OR THE LANDSCAPE ARCHITECT OF UNAVAILABILITY OF SPECIFIED PLANT MATERIAL FROM COMMERCIAL NURSERIES. THE OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT WILL PROVIDE ALTERNATE PLANT MATERIAL SELECTIONS IF UNAVAILABILITY OCCURS. SUCH CHANGES SHALL NOT ALTER THE ORIGINAL BID PRICE UNLESS A CREDIT IS DUE TO THE OWNER.
- ALL PLANT MATERIALS TO CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1.
- CONTAINER GROWN STOCK SHOULD HAVE GROWN IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL TOGETHER.
- ANY PLANT SUBSTITUTIONS, RELOCATION, OR REQUIRED CHANGE SHALL REQUIRE THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER. NOTIFY REPRESENTATIVE OF ANY LAYOUT DISCREPANCIES PRIOR TO ANY PLANTING. QUANTITIES SHOWN IN PLANT LIST ARE FOR CONVENIENCE ONLY AND NOT TO BE USED FOR PRICING. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
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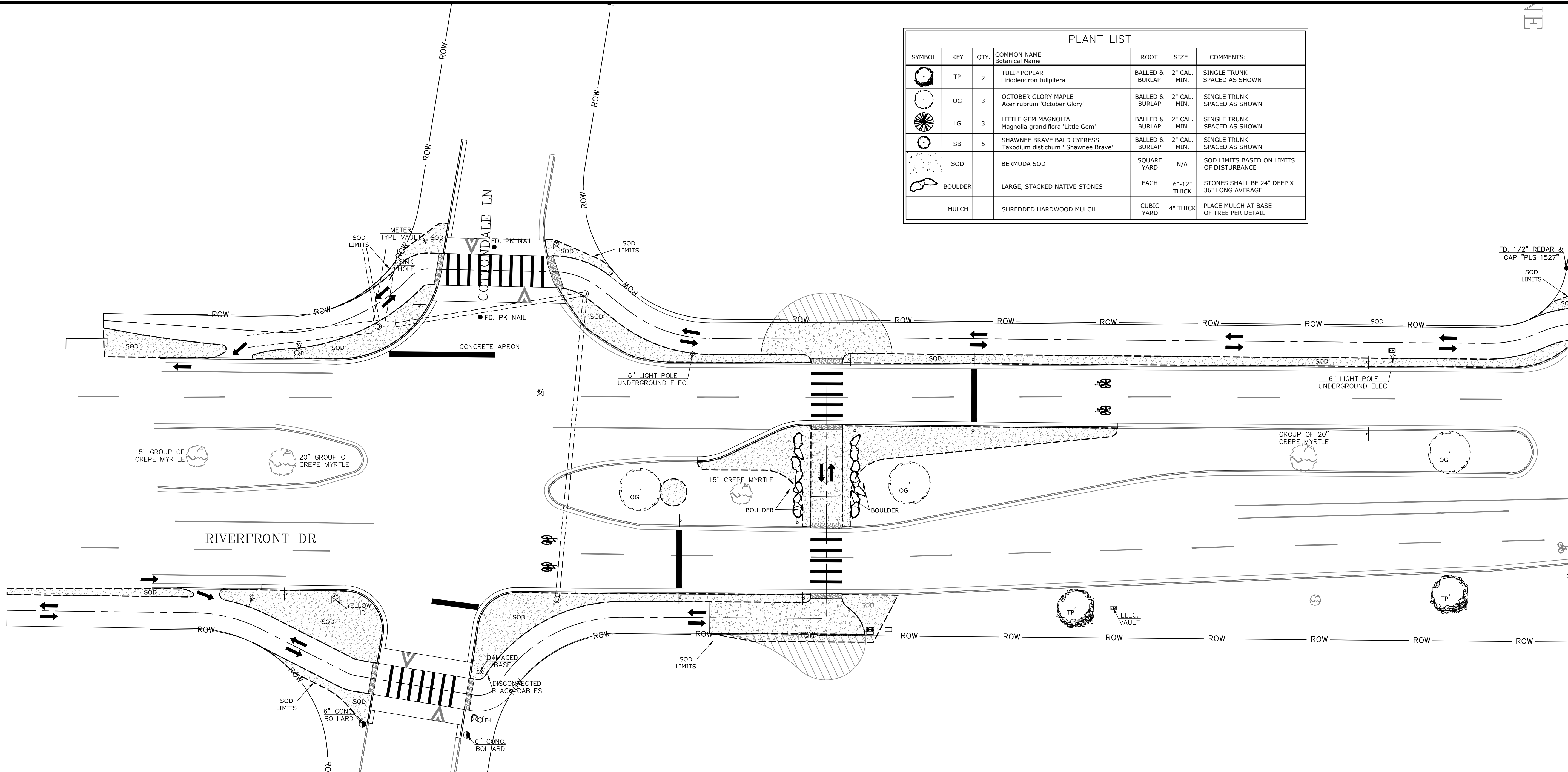
REVISIONS	DESCRIPTION
NO.	DATE

PROJECT ENGR: **RJM** DRAWN BY: **EH4**
 DATE: **JUNE 2018**
 SCALE: **1"=20'** JOB NUMBER: **LR17-5758**

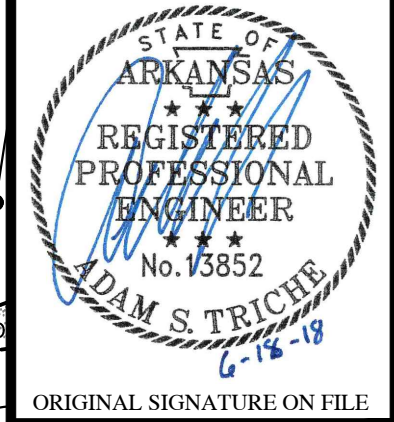
LANDSCAPE PLAN I

17

W:\201717-5758 Arkansas River Trail-Riverfront Drive Trail Project Improvements-Little Rock, Arkansas\Design Drawings\LR17-5758Landscape.dwg 6/18/18 at 2:14pm



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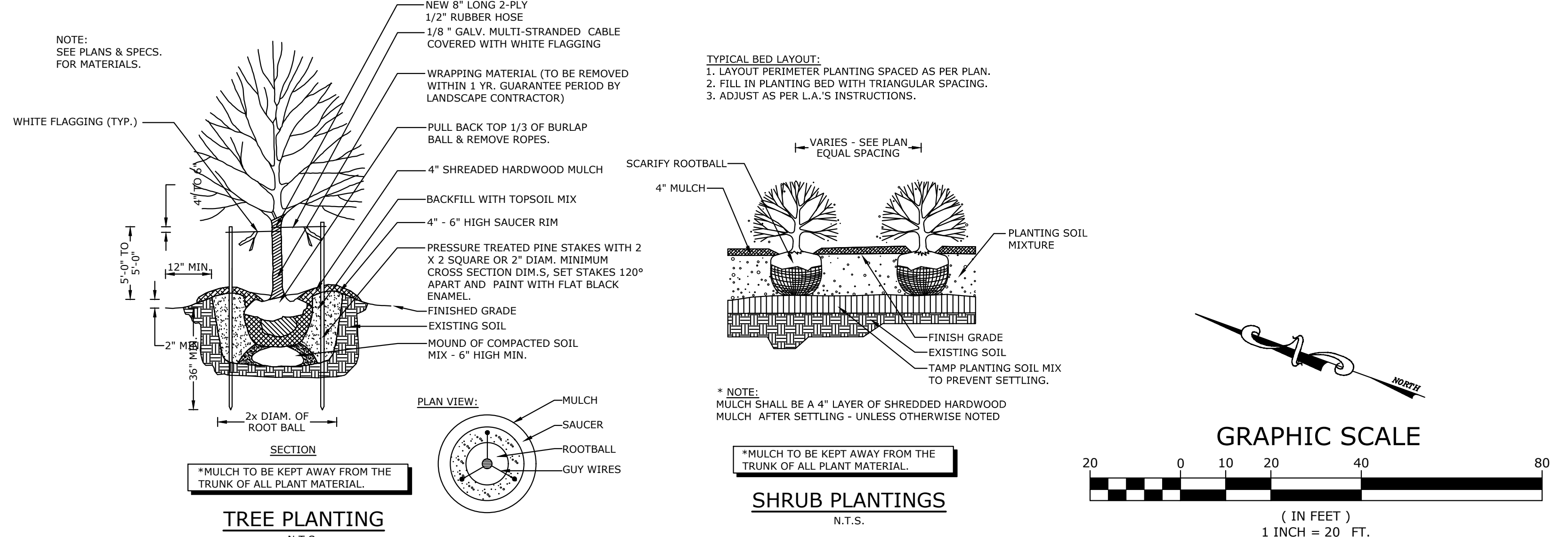


ARKANSAS RIVER TRAIL
RIVERFRONT DRIVE TRAIL
PROJECT IMPROVEMENTS
LITTLE ROCK, ARKANSAS



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LANDSCAPE PLAN II

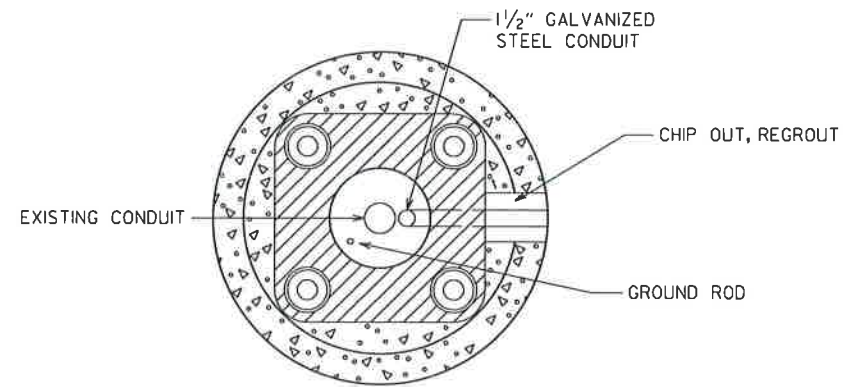
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DRAWN BY: EH4

DATE: JUNE 2018

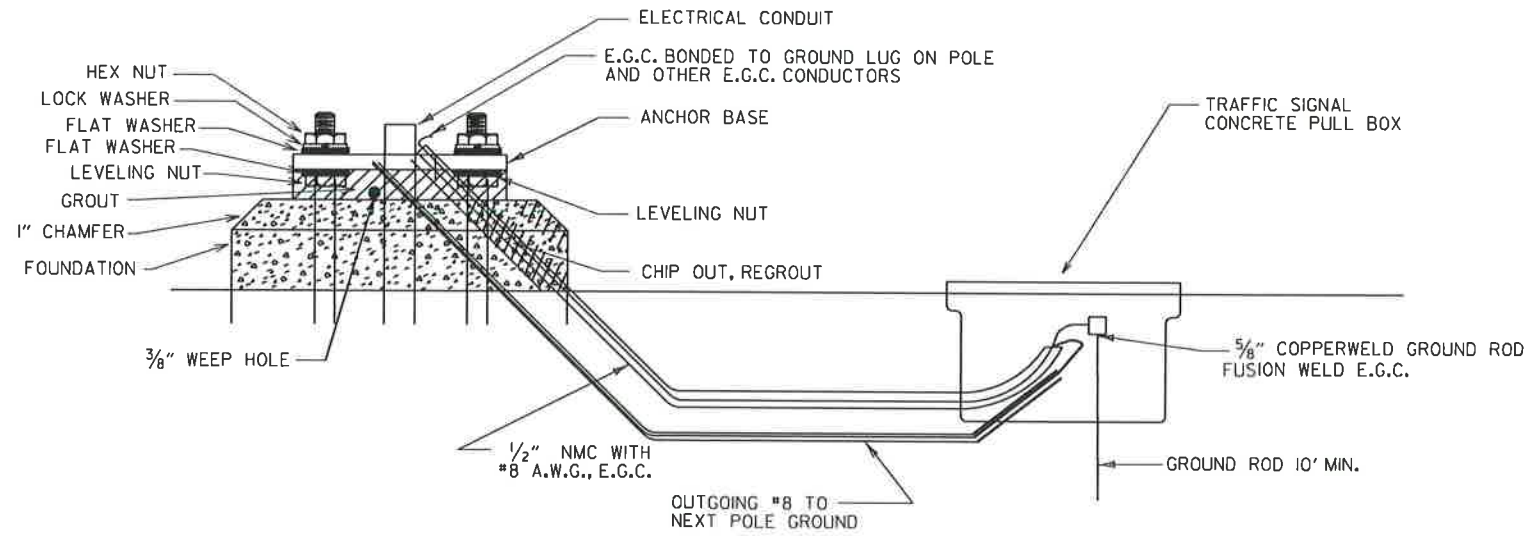
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18

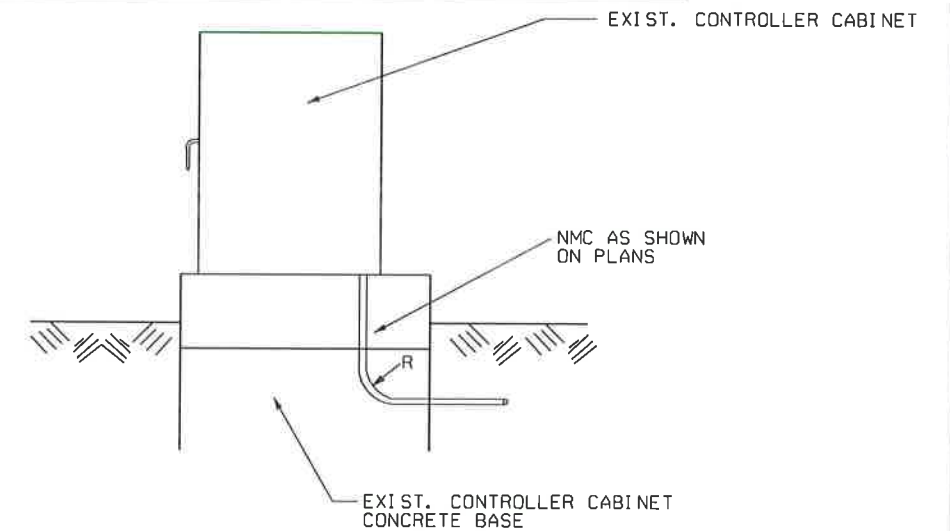
CONDUIT ENTRY TO EXISTING POLE BASE



ANCHOR BASE

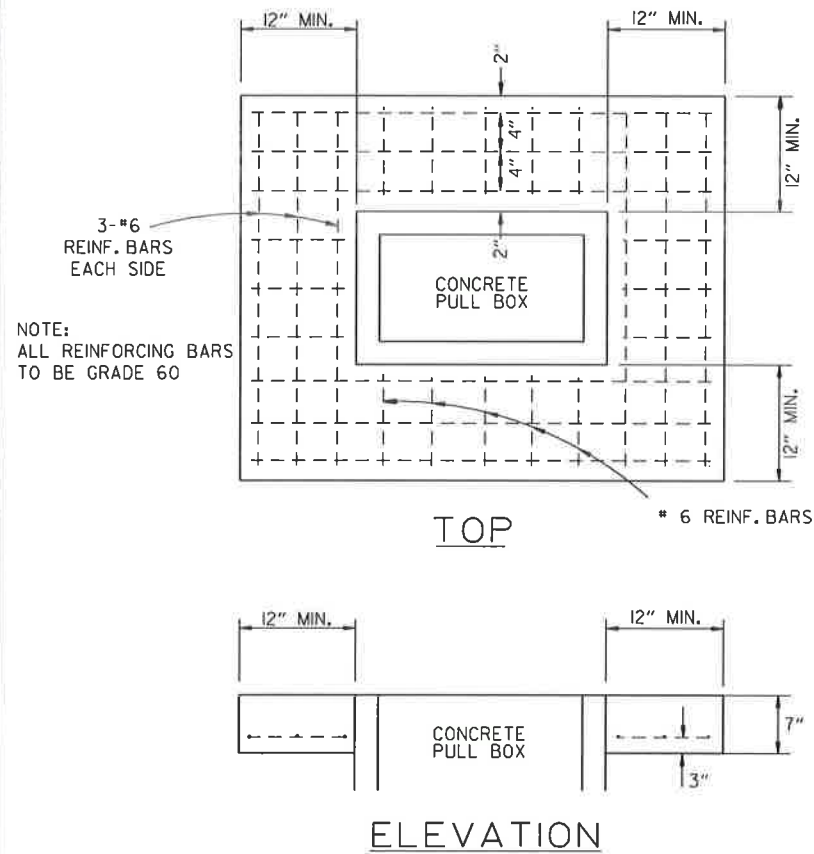
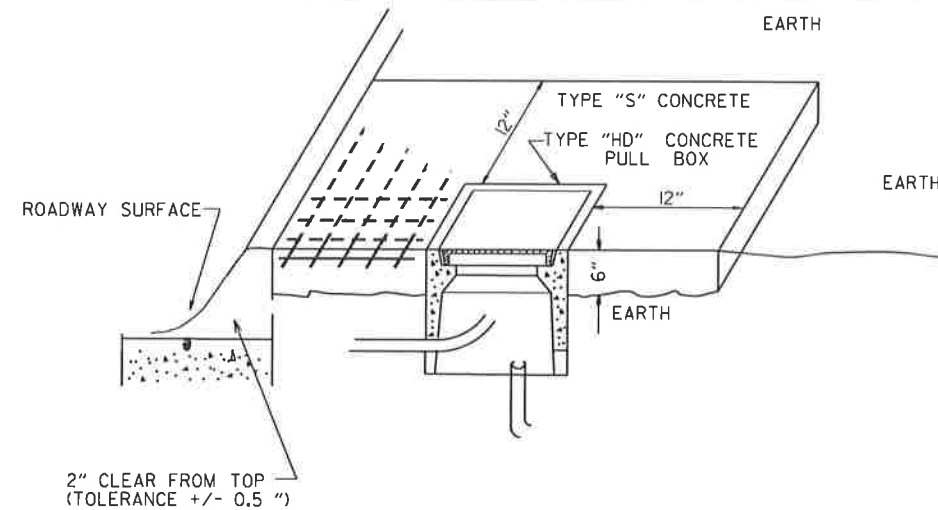


CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

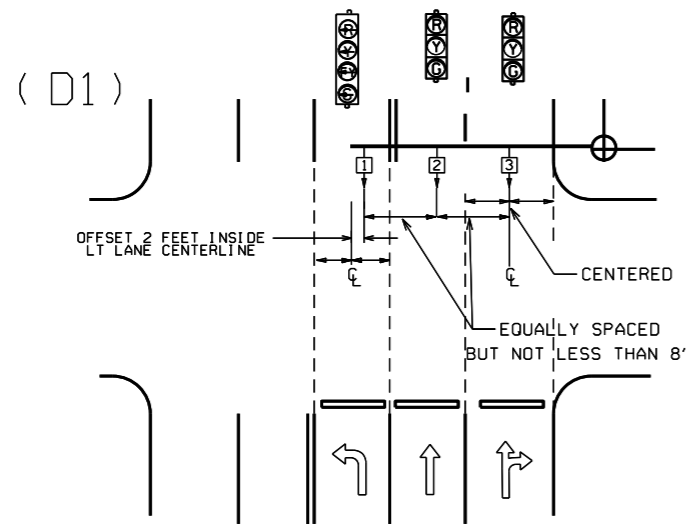
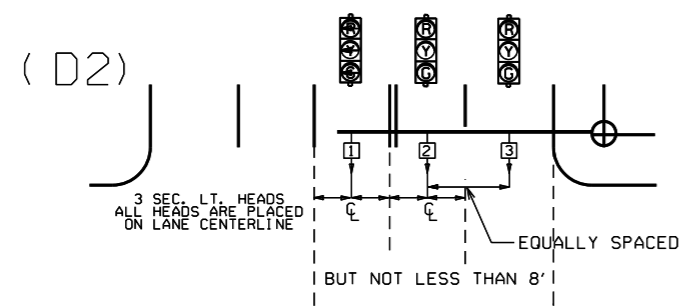
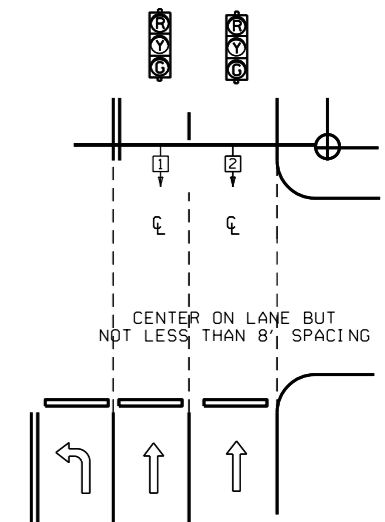
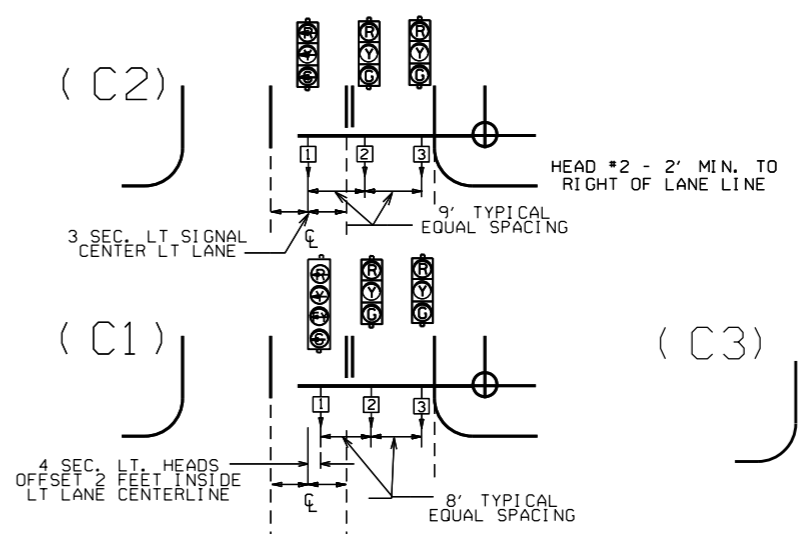
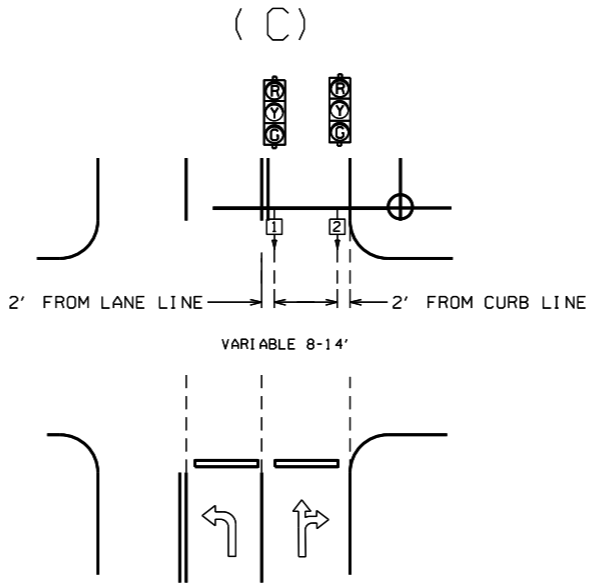
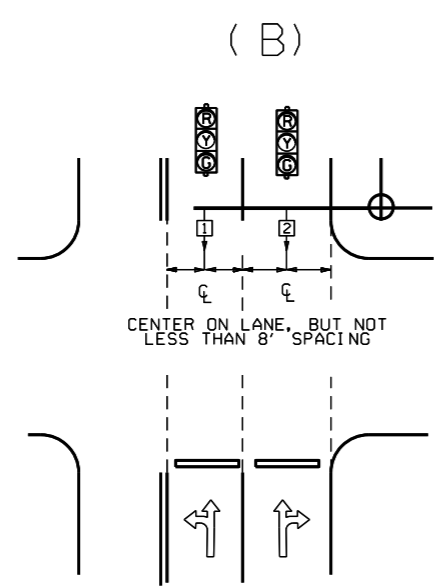
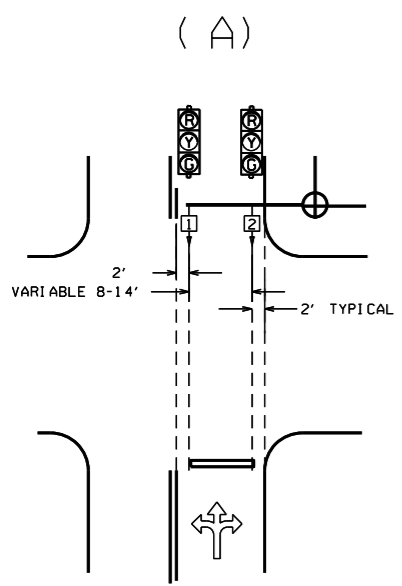
TYPE "HD" CONCRETE PULL BOX DETAIL



NOTE: ALL TYPE 1 AND TYPE 2 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 7" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S". THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE CONCRETE PULL BOX IS REQUIRED IN CONCRETE.

11-16-17	REVISED NOTES		
09-02-15	REVISED PULL BOX DEPTH		
09-12-13	ISSUED AS STANDARD DRAWING		
05-21-09	REVISED DRAWING		
07-31-08	ADDED & REVISED CONDUIT ENTRY		
06-23-04	REVISED CLEARANCE AT CURB ENTRY		
01-04-02	ADDED REINFORCING TO BOX APRON		
07-02-01	REVISED		
12-27-99	REVISED NOTES		
11-18-98	ISSUED		
DATE	REVISION	FILMED	

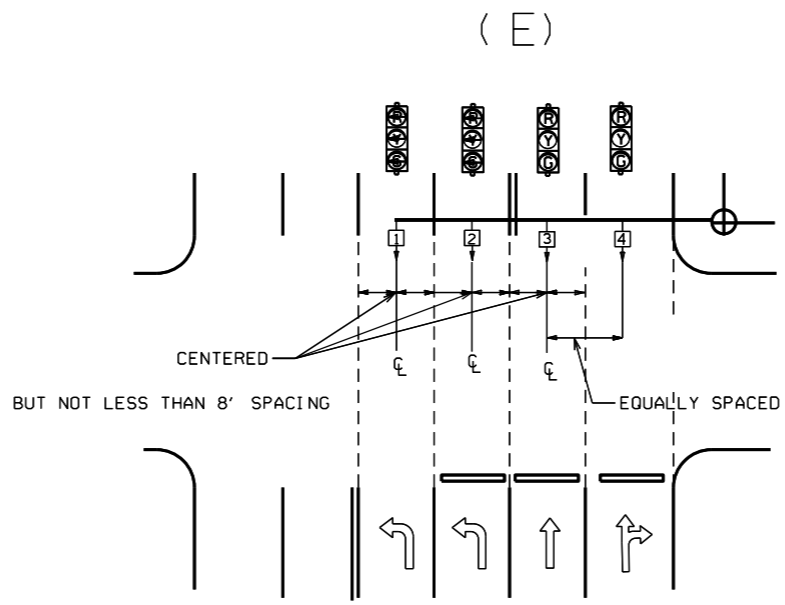
ARKANSAS STATE HIGHWAY COMMISSION
HEAVY DUTY PULL BOX
STANDARD DRAWING SD-6



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

GENERAL NOTES:

- FOUR SECTION "PROTECTED/PERMISSIVE" LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.
- THREE SECTION "PROTECTED" LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.
- WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.
- SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.
- ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.
- MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-5 OF 2009 MUTCD.



℄ = CENTER OF LANE FROM APPROACH SIDE

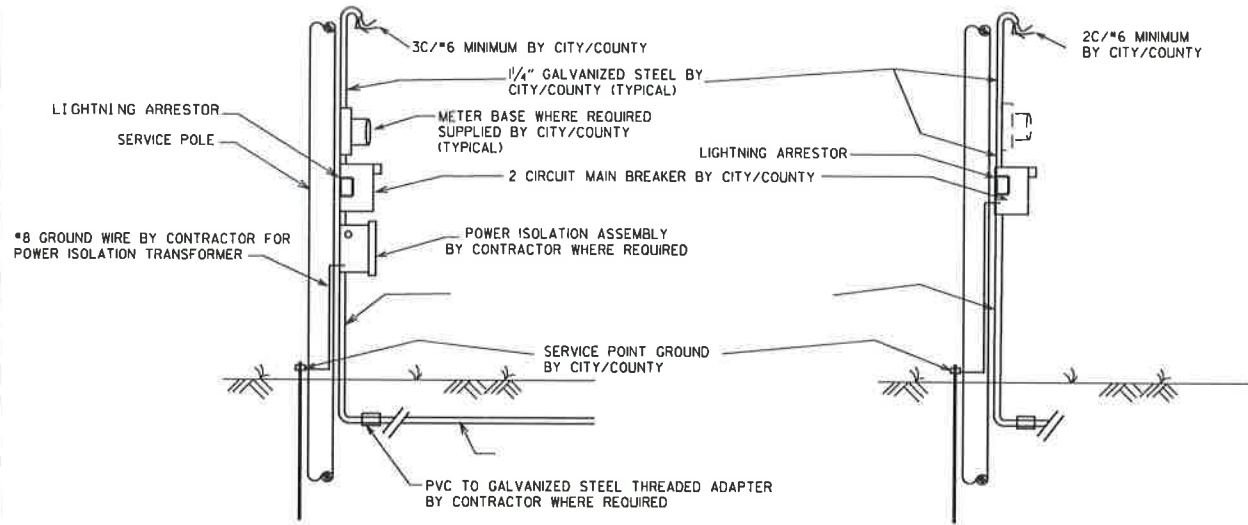
DATE	REVISION	DATE FILM	ARKANSAS STATE HIGHWAY COMMISSION
12-8-16	REVISED NOTE 6		SIGNAL HEAD PLACEMENT
9-12-13	ISSUED AS STANDARD DRAWING		
3-11-10	2009 MUTCD		STANDARD DRAWING SD-8
12-9-99	ISSUED		

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

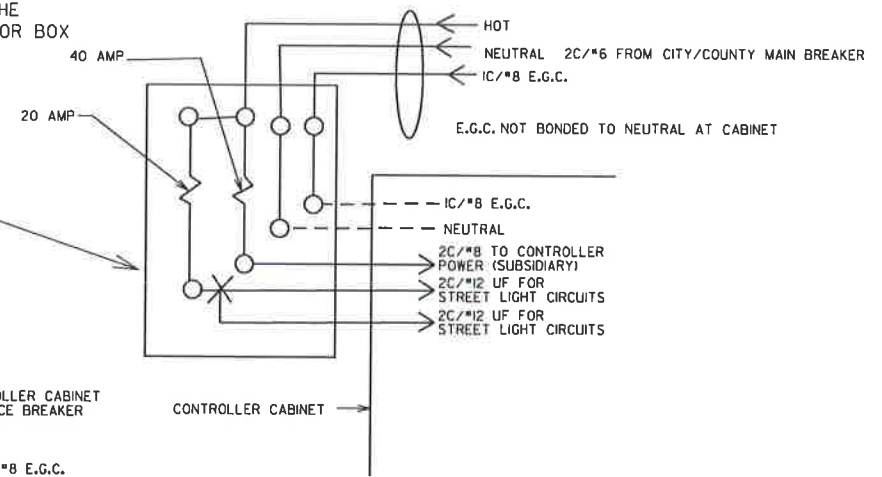
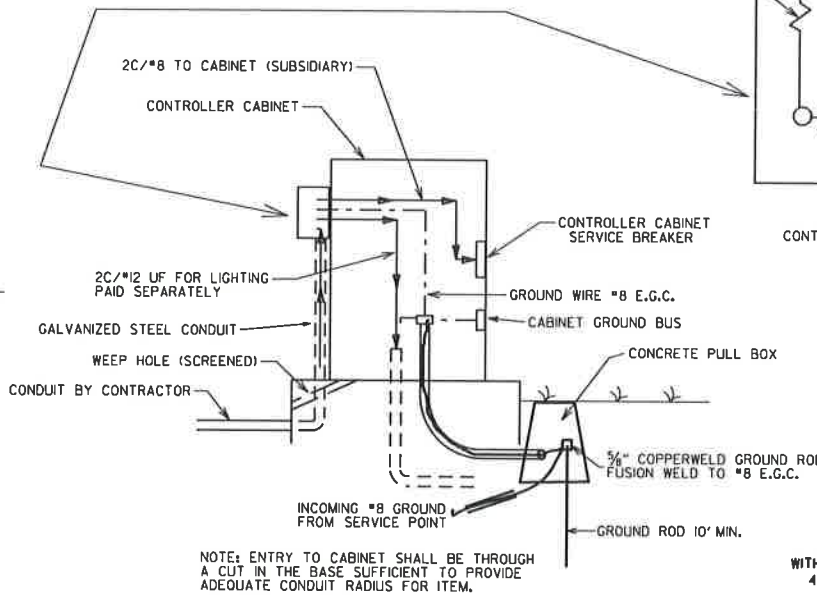
GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 701. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

WITH POWER ISOLATION ASSEMBLY

WITHOUT POWER ISOLATION ASSEMBLY



SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



MAIN BREAKER WIRING (TYPICAL)

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY):

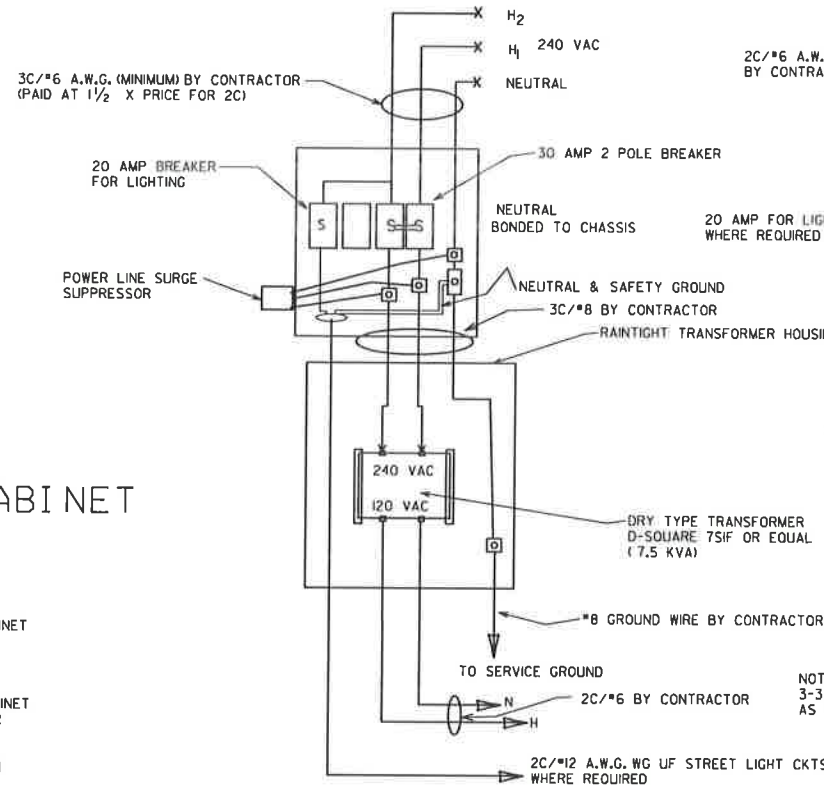
ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES: MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S/COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAIN-TIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY COMPANY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION STREET LIGHTING CIRCUIT (2C/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT SEPARATE FROM THE CIRCUIT SERVING TRAFFIC SIGNAL. SERVICE WIRE AND WIRING FROM THE CONTROLLER TO MAIN BREAKER IS PROVIDED BY THE CONTRACTOR AS A PART OF THIS CONTRACT. WIRE AND WIRING FROM MAIN BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

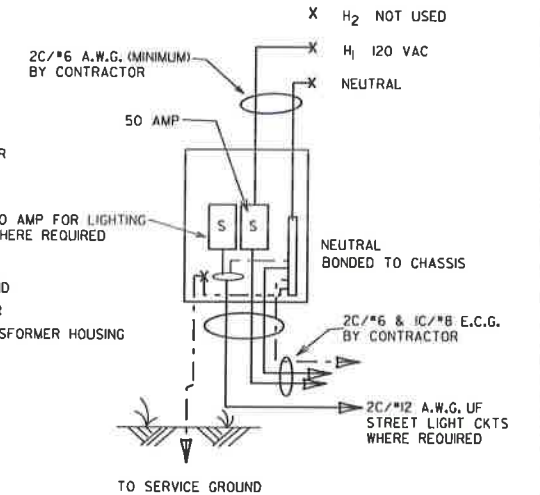
MAIN BREAKER NOT NEAR CONTROLLER CABINET: THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT, WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

MAIN BREAKER NEAR CONTROLLER CABINET: ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

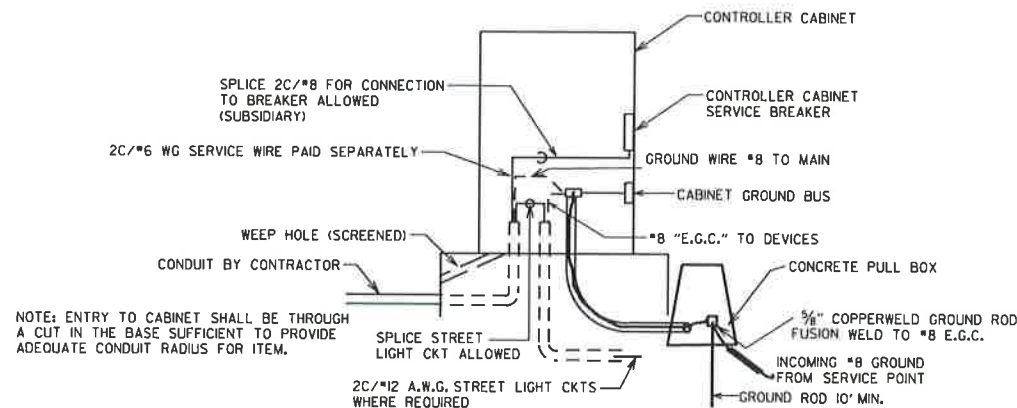
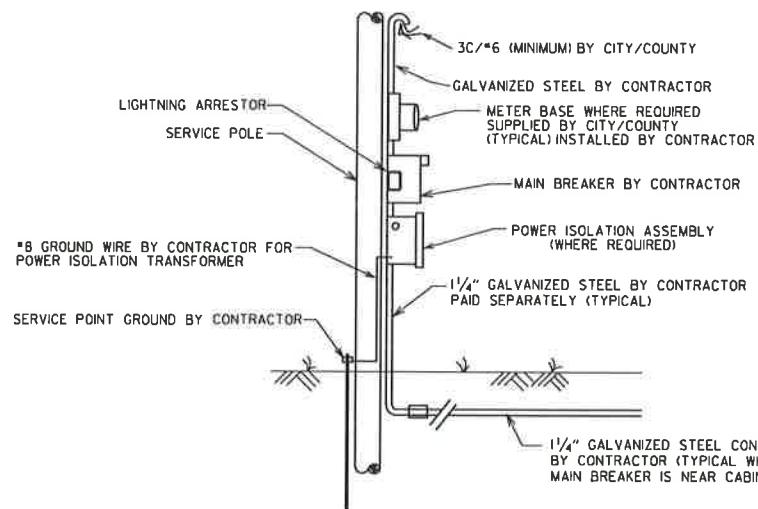
WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER



WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED



DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
04-18-13	ADDED LIGHTNING ARRESTOR	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
03-03-03	ADDED EGC NOTE	
09-26-01	REVISED	
12-27-99	REVISED	
07-28-99	REVISED	
02-05-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION
SERVICE POINT
STANDARD DRAWING SD-9

NOTES:
 PEDESTRIAN AND TRAFFIC SIGNAL HEAD SIGNS:
 EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (RIO-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE RIO-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
 1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
 DESIGN SPECIFICATIONS; AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE THE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY II FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH MAST ARMS LESS THAN 60' AND ON ROUTES WHERE THE SPEED LIMITS OF 45 MPH AND LESS WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE THE SPEED LIMIT IS 45 MPH AND LESS AND MAST ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS:
 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, TWELVE (12") INCH AND HAVE FIVE (5") INCH BACK PLATES.

SIGNAL HEADS AT THE END OF MAST ARM - ONE 4 SEC., 85 LB., 14.5 SQ. FT., ONE SIGN MOUNTED 3 FEET FROM SIGNAL HEAD (2'-0" X 2'-6" 20 LB.) REMAINING SIGNAL HEADS SPACED AT 8 FT. (13 SEC., 56 LB., 8.3 SQ. FT.); DESIGN TO ACCOMMODATE:
 2 SIGNAL HEADS FOR MAST ARMS 10 FT. TO 16 FT.
 3 SIGNAL HEADS FOR MAST ARMS 18 FT. TO 24 FT.
 4 SIGNAL HEADS FOR MAST ARMS OVER 26 FT.

STREET NAME SIGN - 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE, DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT.
 ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) - VARIABLE ARM LENGTH (MAX. WT. 75 LB., 3.3 SQ. FT.)
 PEDESTRIAN SIGNALS - TWO 1 SEC., 12 INCH MOUNTED 8 FT. FROM BASE OF POLE, POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

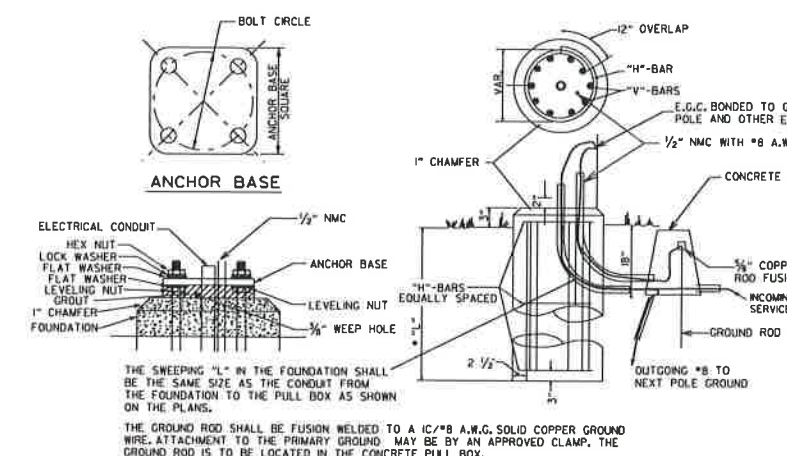
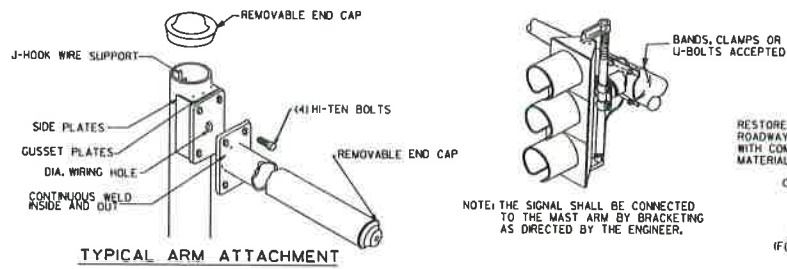
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE - HAND HOLES SHALL BE 4 IN. X 6 IN. FOR STANDARD, AND 3 IN. X 5 IN. FOR PED POLES, MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLE WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.25 TO 0.15 INCHES PER FOOT.

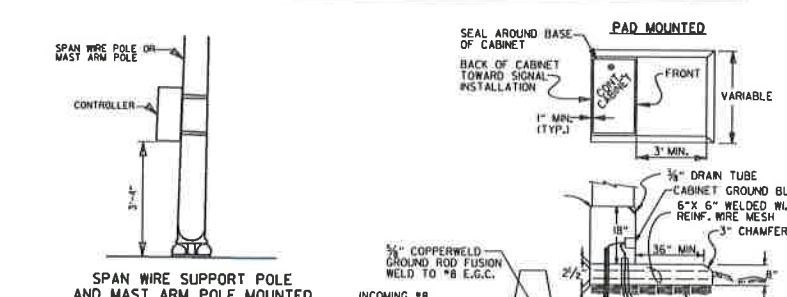
MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE MAST ARM SHALL MAINTAIN A POSITIVE SLOPE AFTER IT IS PLACED UNDER LOAD.

7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



TYPICAL FOUNDATION DETAILS
 POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FOUNDATION DIAMETER	DEPTH "L"*	STEEL		
			VERTICAL	HORIZONTAL	O.C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' TO 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
OVER 12' TO 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
OVER 20' TO 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
OVER 35' TO 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
OVER 50' TO 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
TWINS TO 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
TWINS OVER 20' TO 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
TWINS OVER 44' TO 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
TWINS OVER 50' TO 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



CONTROLLER CABINET MOUNTING DETAILS

NOTE:
 UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 3/4" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPARATELY.

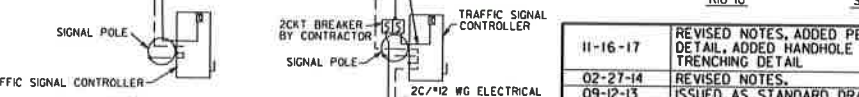
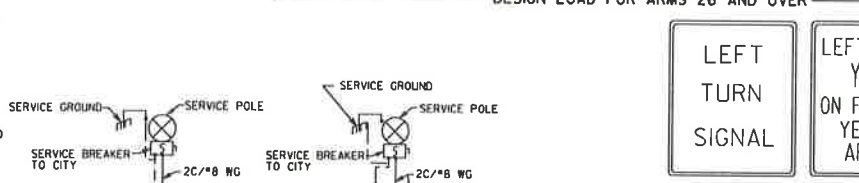
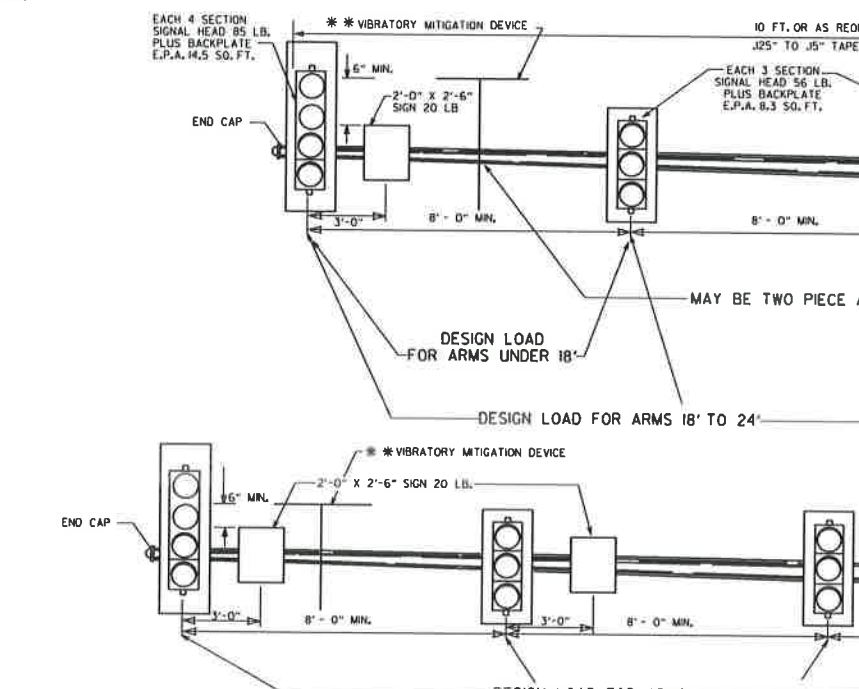
9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUDED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE ROADWAY MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS.

** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60" X 16" X 0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH THE HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OF SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

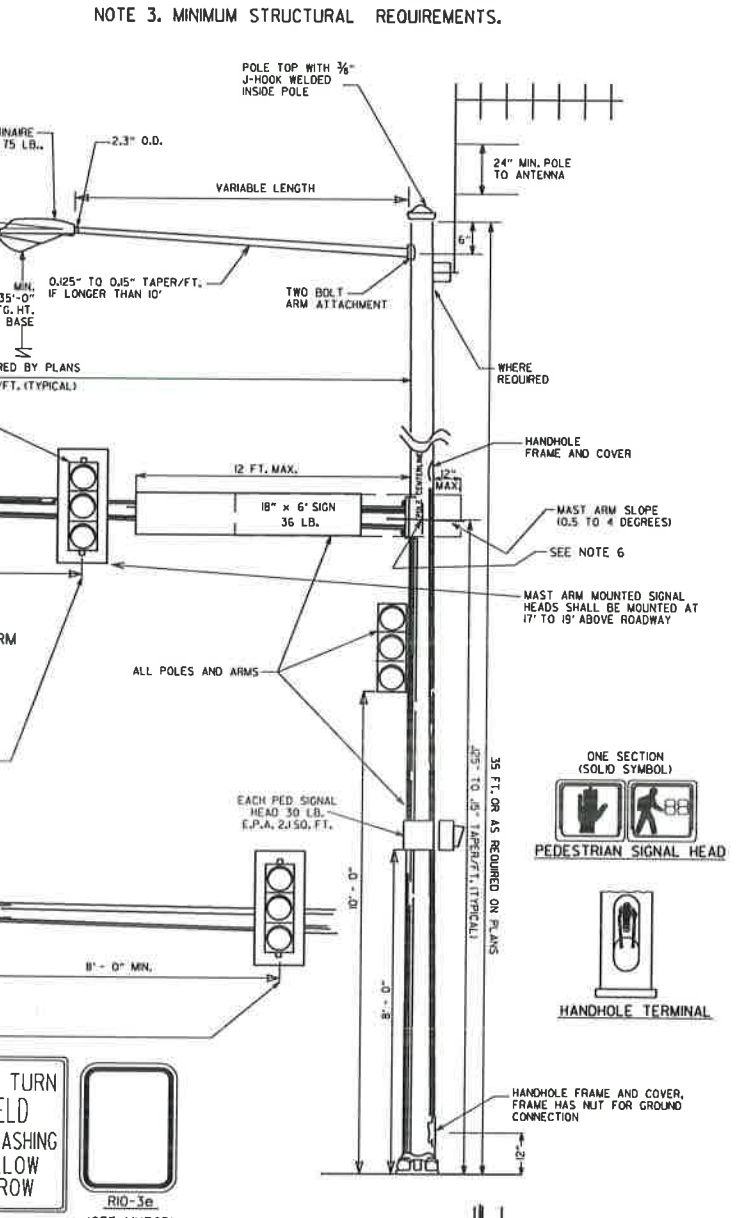
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.



SIGNAL OPERATION NOTES:
 FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

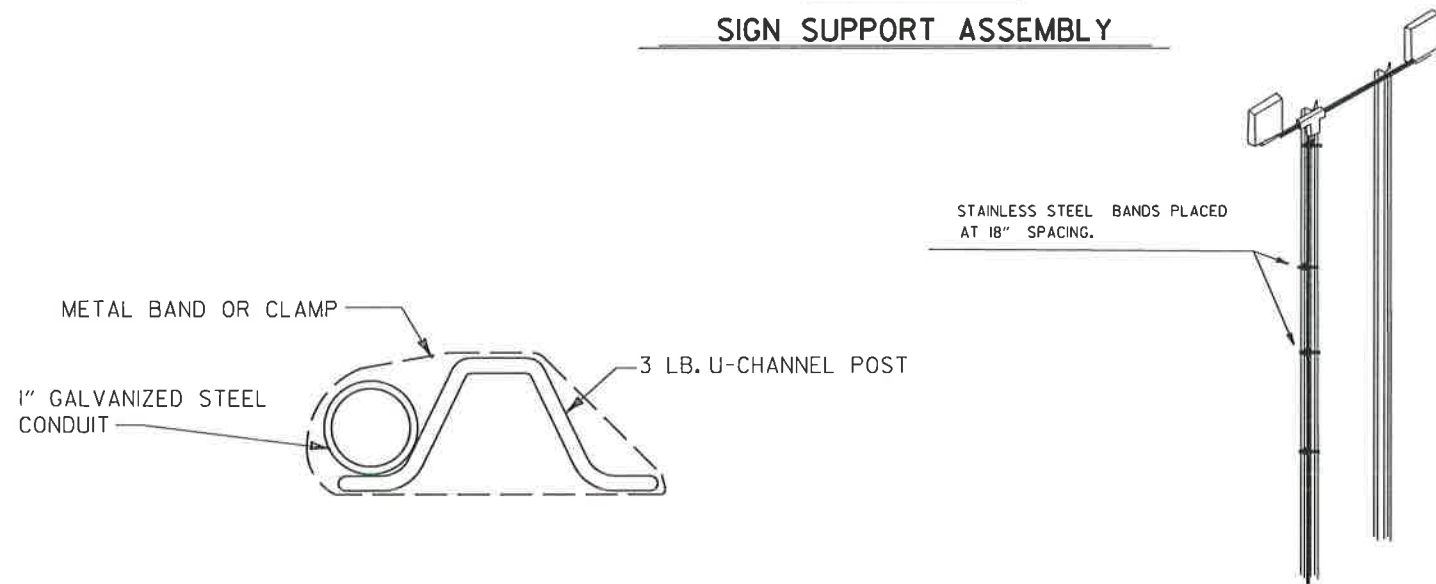
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD, AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATION IN FLASH SEQUENCE.

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

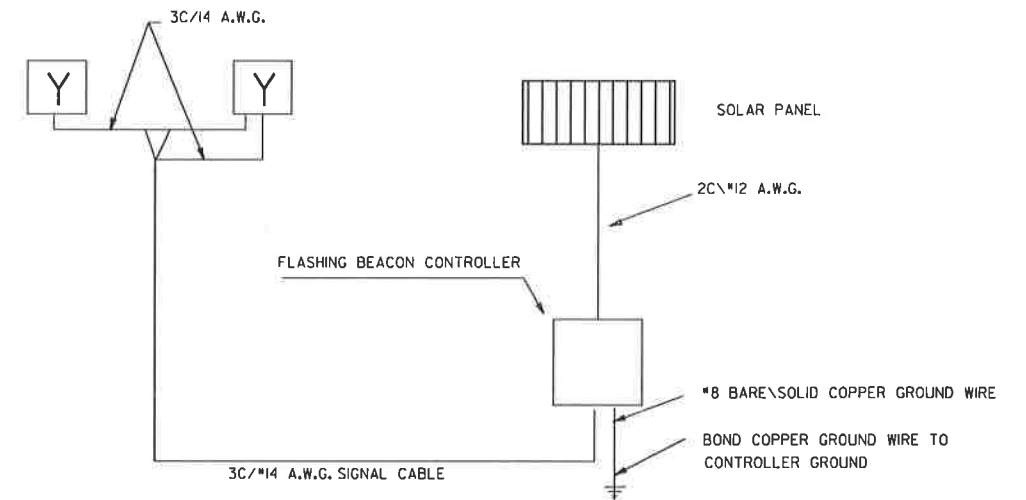


DATE	REVISION	FILMED
11-16-17	REVISED NOTES, ADDED PEDESTRIAN SIGNAL HEAD DETAIL, ADDED HANDHOLE TERMINAL DETAIL, ADDED TRENCHING DETAIL	
02-27-14	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
12-08-16	REVISED NOTES	
02-27-14	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
07-21-11	REVISED VMD, SIGNAL HEADS	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
04-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
04-18-08	REVISED AASHTO NOTES	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
06-23-04	REVISED	
05-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
06-11-01	REV. NOTES & POLE MAST ARM SLOPE	
04-11-01	REVISED POLE TAPERS	
04-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
11-22-99	REVISED FOUNDATION DETAILS	
11-17-98	REVISED DETAILS AND NOTES	
11-21-95	ISSUED	

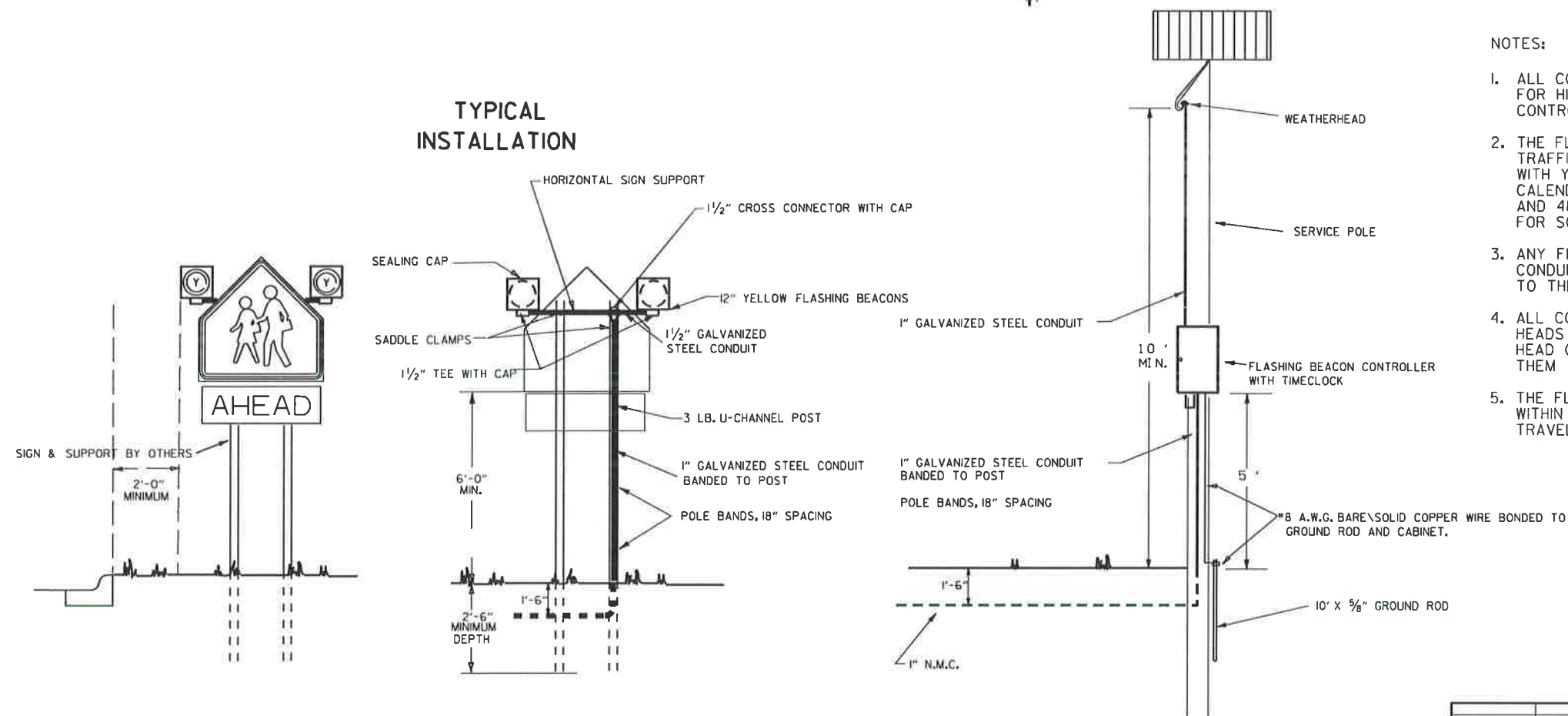
**DETAIL OF
SIGN SUPPORT ASSEMBLY**



WIRING DIAGRAM



**TYPICAL
INSTALLATION**



NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), DIVISION 700, TRAFFIC CONTROL FACILITIES.
2. THE FLASHING BEACON ASSEMBLY SHALL INCLUDE LIGHTING SUPPRESSORS, TRAFFIC SIGNAL CABLE, TWO 12" TRAFFIC SIGNAL HEADS (1 SEC., 1 WAY) WITH YELLOW LENSES, FLASHING BEACON CONTROLLER AND A SOLID STATE CALENDAR DATE TIME CLOCK WITH DAYLIGHT SAVINGS TIME PROGRAMMING AND 48 HOUR POWER FAIL PROTECTION, DATE TIME CLOCK REQUIRED ONLY FOR SCHOOL ZONES. SIGNAL HEADS SHALL BE WIRED TO FLASH ALTERNATELY.
3. ANY FITTINGS, BANDS, GROUND ROD OR ACCESSORIES NECESSARY TO MOUNT CONDUIT AND FLASHING BEACON CONTROLLER SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM FOR FLASHING BEACON CONTROLLER.
4. ALL COUPLINGS, TEES, CLAMPS AND HARDWARE NECESSARY TO MOUNT SIGNAL HEADS SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM FOR TRAFFIC SIGNAL HEAD (1 SEC., 1 WAY). THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.
5. THE FLASHING BEACON CONTROLLER AND SOLAR PANEL SHOULD BE LOCATED WITHIN THE HIGHWAY RIGHT-OF-WAY BUT AS FAR AWAY FROM THE VEHICLE TRAVEL WAY AS POSSIBLE TO AVOID VEHICLE IMPACTS.

		ARKANSAS STATE HIGHWAY COMMISSION
		SOLAR POWERED FLASHING BEACON INSTALLATION FOR SCHOOL ZONE SIGNING
11-16-17	REVISED NOTES	
02-27-04	REVISED NOTE 1	
09-12-13	ISSUED AS STANDARD DRAWING	
04-17-08	MINOR REVISIONS	
08-19-03	ISSUED	
DATE	REVISION	FILMED
		STANDARD DRAWING SD-15