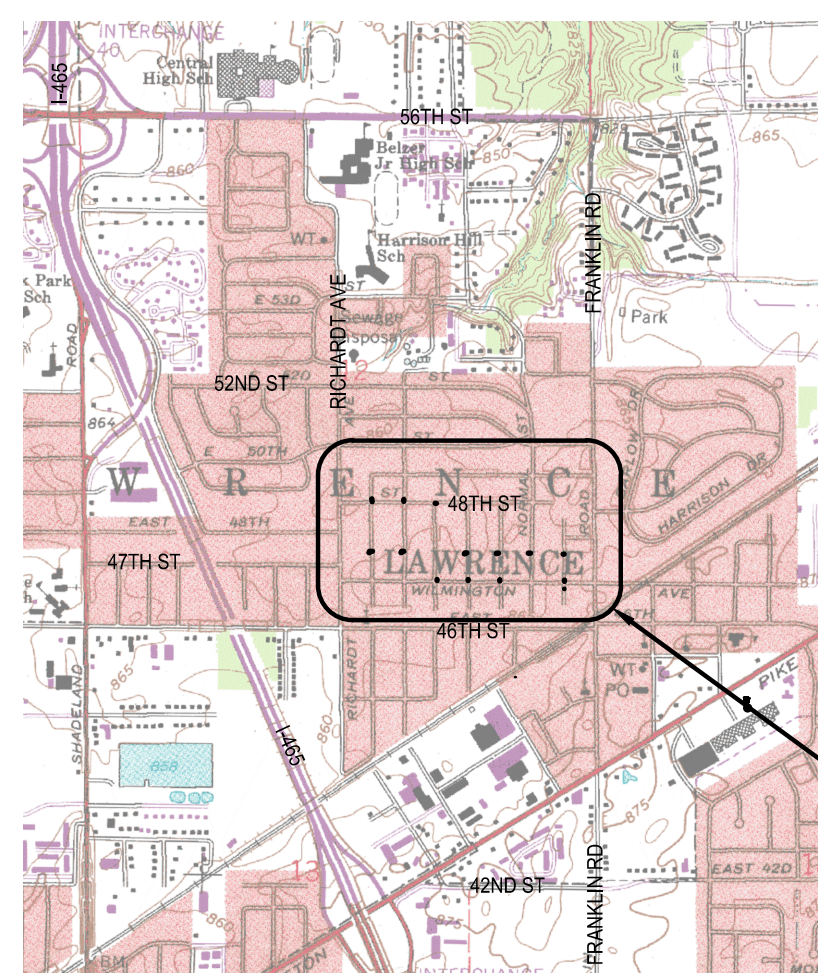
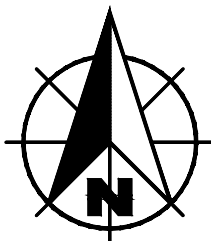


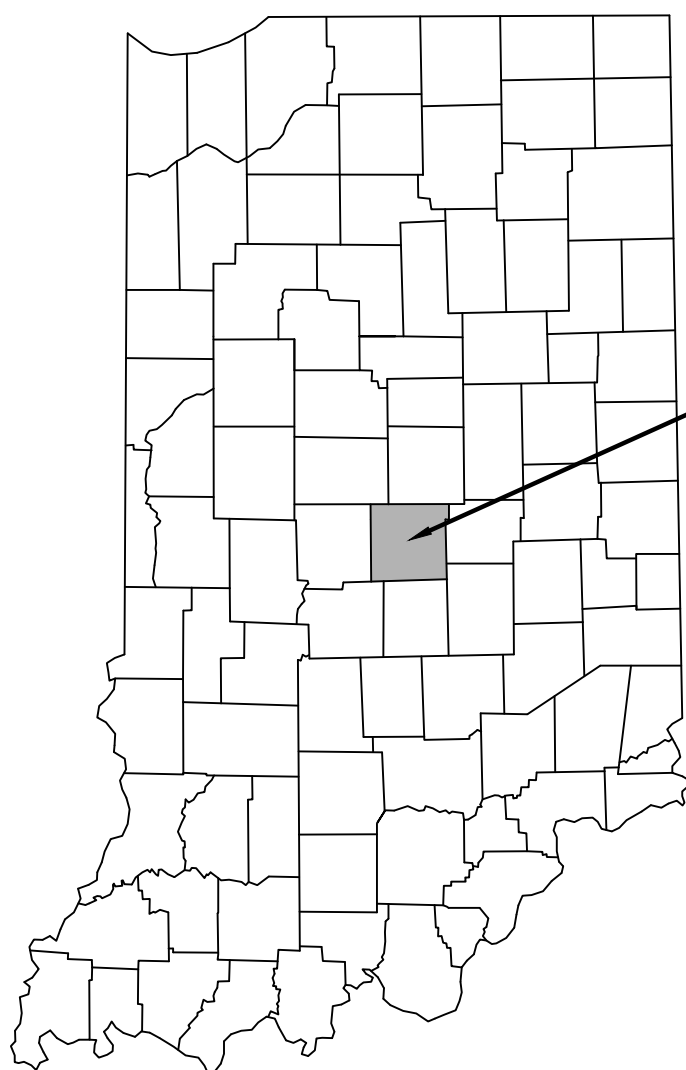
# 47TH STREET WATER MAIN IMPROVEMENTS

## FOR CITY OF LAWRENCE UTILITIES LAWRENCE, INDIANA

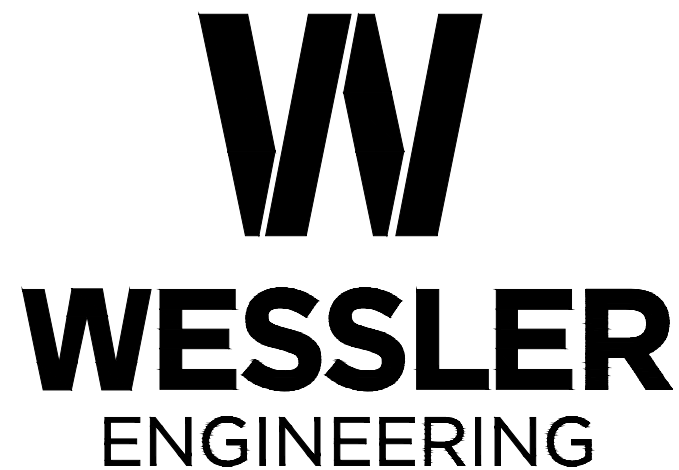


PROJECT LOCATION

LAWRENCE  
**VICINITY MAP**  
SCALE: NONE



**STATE LOCATION MAP**  
SCALE: NONE



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PROJECT NO. 208018-04-001B

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DRAWINGS PREPARED FOR:

STEVE COLLIER, MAYOR  
SCOTT SALSBERY, UTILITY SUPERINTENDENT

UTILITY SERVICE BOARD

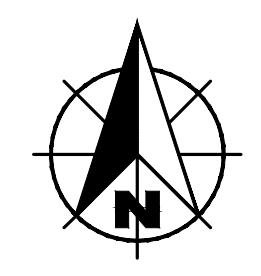
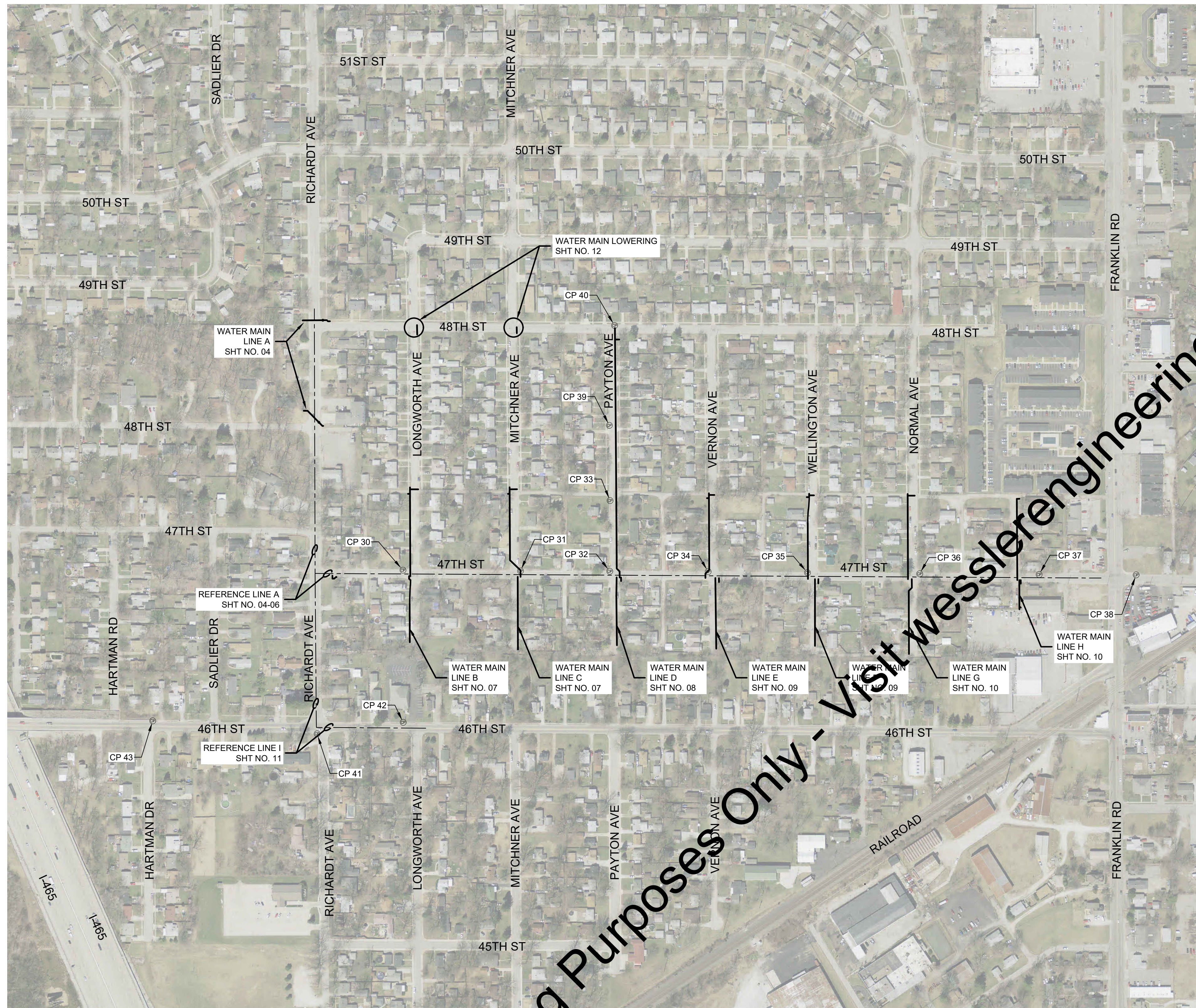
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**JULY 2019**

	<p>DYLAN L. LAMBERMONT REGISTERED ENGINEER STATE OF INDIANA NO. 10809429</p>		<p>ANDREW D. GORDON REGISTERED ENGINEER STATE OF INDIANA NO. 10809017</p>

Drawing: J:\Lawrence\Projects\208018 Lawrence Water Imp Ph 2\CADD\44-01B\DWG\Sheets\208018-GS.dwg | Layout: 1.G1 | Plotlet: 07/09/19 @ 02:21:09 | LastSavedBy: JasonW





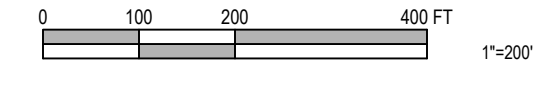
### HORIZONTAL AND VERTICAL CONTROL INFORMATION

- NOTES:
1. A FIELD SURVEY WAS PERFORMED IN DECEMBER 2018.
  2. COORDINATES (INDIANA STATE PLANE, EAST ZONE, NAD 83) AND ELEVATIONS (NAVD 83) ARE BASED ON INCORS.
  3. UNITS ARE IN SURVEY FEET.
  4. CONTROL POINTS WERE SET USING GPS.

CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 30	1673284.78	224491.38	862.2	MAGNAIL
CP 31	1673282.21	224881.93	859.4	MAGNAIL
CP 32	1673281.20	225178.36	860.5	MAGNAIL
CP 33	1673515.94	225179.47	861.7	MAGNAIL
CP 34	1673280.01	225505.32	859.8	MAGNAIL
CP 35	1673276.69	225835.53	862.0	MAGNAIL
CP 36	1673272.87	226207.93	861.6	MAGNAIL
CP 37	1673270.16	226604.91	866.7	MAGNAIL
CP 38	1673269.19	226927.22	870.4	MAGNAIL
CP 39	1673765.89	225176.95	859.3	MAGNAIL
CP 40	1674097.50	225194.27	856.3	MAGNAIL
CP 41	1672741.32	224206.11	861.7	MAGNAIL
CP 42	1672779.27	224492.00	862.6	MAGNAIL
CP 43	1672784.22	223659.80	865.6	MAGNAIL


DRAWING INDEX	
SHEET NO.	DESCRIPTION
GENERAL	
01	TITLE SHEET
02	LOCATION PLAN AND DRAWING INDEX
03	GENERAL SHEET
WATER MAINS	
04	WATER MAIN - LINE A - RICHARDT AVE AND 47TH ST
05 - 06	WATER MAIN - LINE A - 47TH ST
07	WATER MAIN - LINES B AND C - LONGWORTH AND MITCHNER AVE
08	WATER MAIN - LINE D - PAYTON AVE
09	WATER MAIN - LINES E AND F - VERNON AND WELLINGTON AVE
10	WATER MAIN - LINES G AND H - NORMAL AVE AND COTTON ST
11	WATER MAIN - LINE I - RICHARDT AVE AND 46TH ST
12	WATER MAIN - LINE J AND K - 48TH ST
ROAD PLANS	
13	ROAD PLANS - LINE A - RICHARDT AVE AND 47TH ST
14 - 15	ROAD PLANS - LINE A - 47TH ST
16	ROAD PLANS - LINES B AND C - LONGWORTH AND MITCHNER AVE
17	ROAD PLANS - LINE D - PAYTON AVE
18	ROAD PLANS - LINES E AND F - VERNON AND WELLINGTON AVE
19	ROAD PLANS - LINES G AND H - NORMAL AVE AND COTTON ST
20	ROAD PLANS - LINES I, J & K - RICHARDT AVE, 46TH ST, AND 48TH ST
DETAILS	
21 - 22	MISCELLANEOUS DETAILS
23	MAINTENANCE OF TRAFFIC PLAN AND DETAILS
24	EROSION CONTROL DETAILS

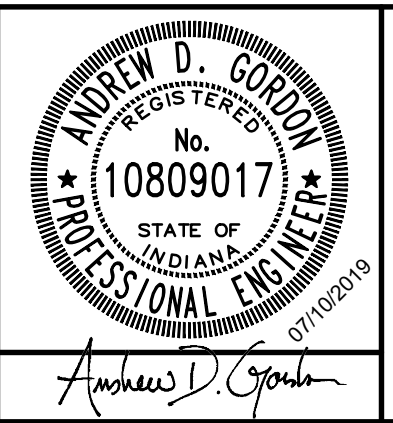
LOCATION AND SCOPE OF WORK PLAN



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2013 IMAGERY FROM INDIANA STATE MAP.

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING 	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	MAD				
	APPROVED BY	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				



**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA  
**LOCATION PLAN AND DRAWING INDEX**

SHEET NO.	<b>02</b>
TOTAL SHEETS	<b>24</b>



**EXISTING FEATURES LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BENCH MARK		CISTERN		EASEMENT - CONSTRUCTION/PERMANENT
	TEMPORARY BENCH MARK		ELECTRIC METER		LOT BOUNDARY
	SOIL BORING LOCATION		AIR CONDITIONING UNIT		PROPERTY BOUNDARY
	SECTION CORNER		UTILITY RISER (DEFINED BY UTILITY)		RIGHT-OF-WAY - TEMPORARY/PERMANENT
	DRILL HOLE IN CONCRETE/HARRISON MONUMENT		UTILITY PEDESTAL (DEFINED BY UTILITY)		SECTION BOUNDARY
	CONTROL POINT (SET/FOUND)		UTILITY MARKER (DEFINED BY UTILITY)		WETLANDS
	MAGNETIC NAIL (SET/FOUND)		JOINT POWER/TELEPHONE POLE		CONTOUR - INTERMEDIATE ELEVATION
	BOAT SPIKE (SET/FOUND)		LIGHT POLE		CONTOUR - INDEX ELEVATION
	PK NAIL (SET/FOUND)		LIGHT ON POWER POLE		OVERHEAD ELECTRIC
	RAILROAD SPIKE (SET/FOUND)		LIGHT ON JOINT POLE		OVERHEAD CABLE TV
	R/W MARKER - CONCRETE/GRANITE/STONE		POWER POLE		OVERHEAD TELEPHONE
	IRON PIPE/IRON PIN/REBAR (WITH DIAMETER)		TELEPHONE POLE		UNDERGROUND CABLE TV
	BRASS PLUG		LAMP POST		UNDERGROUND ELECTRIC
	CABLE TV MANHOLE		GUY ANCHOR		UNDERGROUND FIBER OPTIC
	ELECTRIC MANHOLE		GUY POLE OR STUB		GAS MAIN
	GAS MANHOLE		CONTROLLER CABINET		DIGESTER GAS
	OTHER MANHOLE		FLAG POLE		PETROLEUM MAIN
	TELEPHONE MANHOLE		POST		UNDERGROUND TELEPHONE
	TELEPHONE VAULT		GROUND LIGHT		WATER MAIN
	TRAFFIC MANHOLE		MAILBOX		WATER SERVICE
	TRAFFIC HANDHOLE		DOUBLE/MULTIPLE MAILBOX		FORCEMAIN
	WATER MANHOLE		MAST ARM POLE		GRAVITY SEWER PIPE
	AIR RELEASE VALVE		TRAFFIC SIGNAL STRAIN POLE		PLANT CHLORINE PIPE
	SANITARY SEWER MANHOLE		SIGNAL LOOP DETECTOR BOX		TOP OF BANK/TOE OF SLOPE
	DRAINAGE/STORM SEWER MANHOLE		SIGNAL LOOP DETECTOR LOOP		CENTERLINE OF DITCH/SWALE/STREAM
	SANITARY SEWER CLEANOUT		SIGN - SINGLE POST		FENCE - FIELD
	SEPTIC TANK		SIGN - DOUBLE POST		FENCE - METAL
	VALVE VAULT		SIGN - RAILROAD SIGNAL		FENCE - WOOD
	BEEHIVE INLET		SIGN - RAILROAD CROSSING		GUARDRAIL
	CURB INLET		BUSH		STREAM
	DROP INLET		STUMP		TREE/BRUSH LINE
	CATCH BASIN		TREE - CONIFEROUS		
	DOWNSPOUT		TREE - DECIDUOUS		
	GAS METER		ROCK OUTCROP		
	GAS VALVE		SATELLITE		
	GAS SERVICE VALVE		SPRINKLER CONTROL VALVE		
	PETROLEUM VALVE		WATER METER		
	PETROLEUM SHUTOFF VALVE		WATER VALVE		
	GAS STATION MONITORING WELL		WATER SERVICE VALVE		
	GAS STATION FILL CAP		WATER WELL		
	NATURAL GAS WELL/STORAGE WELL		WET WELL		
	SPRINKLER HEAD		FIRE HYDRANT		
	YARD HYDRANT		PROCESS VALVE		

**TABLE OF ABBREVIATIONS**

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	IPS	IRON PIPE SIZE
ALUM	ALUMINUM	ISPC	INDIANA STATE PLANE COORDINATE
APP	APPARENT	LB	POUND(S)
APPROX	APPROXIMATE(LY)	LF	LINEAR FEET
ASPH	ASPHALT	LN	LANE
ASSOC	ASSOCIATES	LS	LIFT STATION
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	MA EX	MATCH EXISTING
AVE	AVENUE	MJ	MECHANICAL JOINT
AVG	AVERAGE	MATL	MATERIAL
BLDG	BUILDING	MAX	MAXIMUM
BLVD	BOULEVARD	MH	MANHOLE
BM	BENCHMARK	MIN	MINIMUM
CO	CLEANOUT	MISC	MISCELLANEOUS
CI	CAST IRON	N	NORTHING, NORTH
CL	CENTER LINE	NGS	NATIONAL GEODETIC SURVEY
CMA	COLD MIX ASPHALT	NO.	NUMBER
CMP	CORRUGATED METAL PIPE	OC	ON CENTER
CMU	CONCRETE MASONRY UNIT	OD	OUTSIDE DIAMETER
CONC	CONCRETE	PC	POINT OF CURVE (BEGIN CURVE)
CONT	CONTINUOUS	POLY	POLYETHYLENE
CNR	CORNER	PI	POINT OF INTERSECTION
CP	CONTROL POINT	POT	POINT OF TANGENT
CPP	CORRUGATED PLASTIC PIPE	PT	POINT OF TANGENT (END CURVE)
CR STN	CRUSHED STONE	PSI	POUNDS PER SQUARE INCH
CYD	CUBIC YARD	PT	POINT
D	DEPTH	PVC	POLYVINYL CHLORIDE
DI	DUCTILE IRON	R	RADIUS
DI MJ	DUCTILE IRON MECHANICAL JOINT	ROW	RIGHT-OF-WAY
DBL	DOUBLE	RC	REINFORCED CONCRETE PIPE
DIA	DIAMETER	RD	ROAD
DIP	DUCTILE IRON PIPE	S	SOUTH
DIPS	DUCTILE IRON PIPE SIZE	SR	STATE ROUTE
DR	DRIVE	SST	STAINLESS STEEL
E	EASTING, EAST	SVA	SERVICE VALVE ASSEMBLY
EF	EACH FACE	SB	SOIL BORING
EW	EACH WAY	SCHED	SCHEDULE
EA	EACH	SDR	STANDARD DIMENSION RATIO
EJ	EAST JORDAN	SECT	SECTION
EL	ELEVATION	SF	SQUARE FEET
EX	EXISTING	SHT	SHEET
EXP	EXTENSION	SPECS	SPECIFICATION(S)
FFE	FIRST FLOOR ELEVATION	SQ	SQUARE
FM	FORCE MAIN	SRF	STATE REVOLVING FUND
FND	FOUND	ST	STREET
FT	FEET	STA	STATION
FTG	FOOTING	SYD	SQUARE YARD
GAL	GALVANIZED	TBM	TEMPORARY BENCHMARK
GPS	GLOBAL POSITIONING SYSTEM	TC	TOP OF CASTING
HMA	HOT MIX ASPHALT	TYP	TYPICAL
HDPE	HIGH DENSITY POLYETHYLENE	USGS	US GEOLOGICAL SURVEY
HORIZ	HORIZONTAL	VERT	VERTICAL
ID	INSIDE DIAMETER	VLV	VALVE
IE	INVERT ELEVATION	W	WIDTH, WEST
INC	INCORPORATED	WSE	WATER SURFACE ELEVATION
INDOT	INDIANA DEPARTMENT OF TRANSPORTATION	YR	YEAR
INSTR	INSTRUMENT		
INV	INVERT		

\*NOTE: THIS TABLE IS A LISTING OF TYPICAL ABBREVIATIONS AND MAY NOT INCLUDE ALL ABBREVIATIONS FOUND WITHIN THIS PLAN SET. IF A QUESTION ARISES ON THE MEANING OF AN ABBREVIATION NOT LISTED IN THIS TABLE, PLEASE CONTACT THE ENGINEER FOR CLARIFICATION.

**UTILITY CONTACTS**

**GAS**  
CITIZENS ENERGY GROUP  
ATTN: RICHARD MILLER  
RMILLER@CITIZENSENERGYGROUP.COM  
2150 DR MARTIN LUTHER KING JR STREET  
INDIANAPOLIS, IN 46202  
1-317-927-4684

**ELECTRIC**  
INDIANAPOLIS POWER AND LIGHT COMPANY  
ATTN: MS RHONDA WILLIAMS  
RHONDA.WILLIAMS@AES.COM  
1230 WEST MORRIS STREET  
INDIANAPOLIS, IN 46221  
1-317-261-5203

**CABLE TV**  
COMCAST CABLEVISION  
ATTN: SCOTT EVANS  
SEVANS@TELECOMPLACEMENT.COM  
478 NORTH COUNTY ROAD 1100 EAST  
ZIONSVILLE, IN 46077  
1-317-752-6569

**SEWER AND WATER**  
CITY OF LAWRENCE UTILITIES  
ATTN: SCOTT SALSBERY  
SSALSBERY@CITYOFLAWRENCE.ORG  
9201 HARRISON PARK COURT  
LAWRENCE, IN 46216  
1-317-501-8714

**COMMUNICATION**  
AT&T - DISTRIBUTION  
ATTN: MICHAEL HAYNES  
MH2623@ATT.COM  
5858 NORTH COLLEGE AVENUE  
INDIANAPOLIS, IN 46220  
1-317-252-4007

**COMMUNICATIONS/FIBER OPTIC**  
ONPOINT CONSTRUCTION MANAGEMENT  
(308) 212-0387

**ATTN: ANDREW HALL**  
AHALL@CITYOFLAWRENCE.ORG  
9201 HARRISON PARK COURT  
LAWRENCE, IN 46216  
1-317-502-5279

**GENERAL NOTES:**

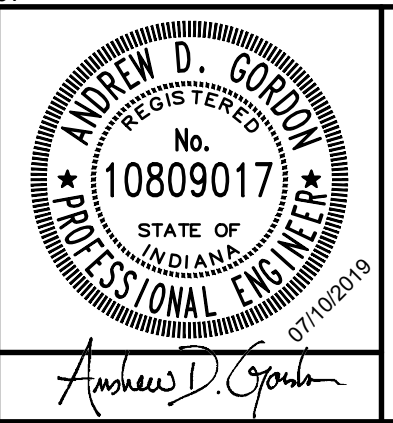
- NOTIFY THE ENGINEER IF ANY CONFLICTING INFORMATION BECOMES APPARENT IN THE CONTRACT DOCUMENTS AS SOON AS POSSIBLE AND PRIOR TO THE COMMENCEMENT OF ANY WORK IN THE VICINITY OF OR RELATIVE TO THE APPARENT CONFLICT SO THAT CLARIFICATION MAY OCCUR PRIOR TO CONSTRUCTION.
- ANY ALTERATIONS TO THESE DRAWINGS NOT AUTHORIZED BY WESSLER ENGINEERING AND NOT IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS AND RECORDS ON FILE AT WESSLER ENGINEERING SHALL RELIEVE WESSLER ENGINEERING OF ANY RESPONSIBILITY FOR THE ACCURACY OF THE DRAWINGS.
- USE CAUTION DURING THE EXECUTION OF WORK TO PREVENT DAMAGE TO STATE, COUNTY, MUNICIPAL, AND PRIVATE PROPERTY. REPAIR ALL DAMAGES AS A RESULT OF OPERATIONS, INCLUDING DAMAGE TO DRAINAGE STRUCTURES, FIELD TIES, PUBLIC/PRIVATE ROADS, AND LANDSCAPING (INCLUDING FENCING). REPAIR AND REPLACE DAMAGED ITEMS AT NO ADDITIONAL COST TO THE OWNER. PERFORM ALL REPAIR AND REPLACEMENT WORK TO THE SATISFACTION OF THE PERMITTING AGENCY, THE OWNER AND THE ENGINEER.
- TAKE CARE TO AVOID DAMAGE TO PAVED AREAS WHICH ARE NOT SPECIFICALLY CALLED OUT FOR REPAIR OR REPLACEMENT. REPAIR, OR REPLACE ALL SUCH PAVEMENTS WHICH ARE DAMAGED BY CONSTRUCTION ACTIVITIES AND CONSTRUCTION TRAFFIC AT NO ADDITIONAL COST TO THE OWNER.
- OBTAIN ALL TEMPORARY EASEMENTS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
- COMPLY WITH ALL APPLICABLE PERMITS AND REGULATIONS. APPLICABLE PERMITS ISSUED TO THE OWNER WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT ALL APPLICABLE PERMITTING AGENCIES WITHIN THE PERIOD SPECIFIED BY THAT AGENCY PRIOR TO BEGINNING CONSTRUCTION.
- ALL EXISTING AND NEW UTILITY INFORMATION, INCLUDING BUT NOT LIMITED TO LOCATION, SIZE AND INVERT ELEVATION, IS SHOWN BASED UPON AVAILABLE INFORMATION. THE ENGINEER DOES NOT GUARANTEE OR ASSUME SUCH INFORMATION TO BE TRUE, ACCURATE, ALL INCLUSIVE OR EVEN APPROXIMATE. CONTACT THE INDIANA UNDERGROUND PLANT PROTECTION SERVICE (IUPPS) AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY. CONTACT NON-MEMBER UTILITIES DIRECTLY.
- DETERMINE WHICH UTILITIES MAY CONFLICT WITH WORK AND VERIFY THEIR LOCATION, SIZE AND ELEVATION PRIOR TO CONSTRUCTION AND DETERMINE IF THERE ARE ANY DISCREPANCIES OR CONFLICTS. IF ANY DISCREPANCIES OR CONFLICTS ARE DISCOVERED, NOTIFY THE ENGINEER AS SOON AS POSSIBLE.
- EXISTING UTILITY SERVICE LINES TO INDIVIDUAL CUSTOMERS MAY NOT BE SHOWN ON THE DRAWINGS. ASSUME THAT UNDERGROUND SERVICE LINES FOR ALL UTILITIES EXIST TO EACH PROPERTY ALONG THE ROUTE OF THE PLANNED IMPROVEMENTS.
- COORDINATE ALL WORK WITH THE RESPECTIVE UTILITIES. SCHEDULE WORK ACCORDINGLY, AND NOTIFY ALL UTILITIES A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY.
- COORDINATE PLANNED UTILITY SERVICE INTERRUPTIONS WITH THE RESPECTIVE UTILITIES AND THE UTILITIES' AFFECTED CUSTOMERS. SERVICE INTERRUPTIONS SHOULD NOT LAST MORE THAN FOUR (4) HOURS. GIVE WRITTEN NOTICE TO ALL AFFECTED UTILITY CUSTOMERS AND PROPERTY OWNERS AT LEAST TWENTY-FOUR (24) HOURS BUT NOT MORE THAN SEVENTY-TWO (72) HOURS PRIOR TO ANY PLANNED INTERRUPTION OF UTILITY SERVICE.
- USE CAUTION DURING THE EXECUTION OF WORK TO PREVENT DAMAGE TO EXISTING UTILITIES. REPAIR OR REPLACE ALL PUBLIC AND PRIVATE FACILITIES DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS. BRACE AND PROTECT ALL UTILITY POLES AND EXISTING STRUCTURES ADJACENT TO NEW EXCAVATIONS. UTILITY POLE BRACING SHALL BE AS DIRECTED BY THE GOVERNING UTILITY.
- MAINTAIN EXISTING STORMWATER DRAINAGE FOR THE ENTIRE DURATION OF THE PROJECT.
- DO NOT DISTURB EXISTING MANHOLES OR INLETS, UNLESS NOTED OTHERWISE.
- ALL EQUIPMENT, APPURTENANCES AND PIPING REMOVED AS PART OF THE DEMOLITION SHALL FIRST BE OFFERED TO THE OWNER FOR SALVAGE. DELIVER SALVAGED ITEMS SELECTED BY OWNER TO A LOCATION DESIGNATED BY THE OWNER OR ENGINEER. IN THE EVENT THE OWNER DOES NOT ELECT TO KEEP THE REMOVED ITEMS, REMOVE SUCH ITEMS FROM THE SITE AND DISPOSE OF AT A LOCATION APPROVED FOR SUCH DISPOSAL AT THE CONTRACTOR'S EXPENSE.
- COORDINATE STAGING AREA LOCATIONS WITH THE OWNER.
- ALL CONSTRUCTION TRAFFIC SHALL USE MAJOR ROADS. NO CONSTRUCTION TRAFFIC SHALL USE LOCAL STREETS FOR INDIRECT ACCESS.
- TO CONTROL DUST, REMOVE SOIL FROM STREETS USED BY CONSTRUCTION TRAFFIC DAILY, VACUUM AND WATER AS NECESSARY AND/OR AS DIRECTED BY THE OWNER.
- PLACE NEW ASPHALT PAVEMENT FLUSH WITH ADA RAMPS.
- NORTHING AND EASTING INFORMATION IS GIVEN AT CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
- PLACE NO. 8 CRUSHED AGGREGATE BETWEEN PIPES AT ALL PIPE CROSSINGS TO PREVENT PIPE SETTLEMENT UNLESS SHOWN OTHERWISE.
- VERIFY EXISTING SEWER INVERTS AND LOCATIONS PRIOR TO CONSTRUCTION AND DETERMINE IF THERE ARE ANY DISCREPANCIES OR CONFLICTS.
- ADJUST SEWER LATERALS AS NECESSARY TO AVOID CONFLICTS.
- RESET ALL MAILBOXES AND SIGNS DISTURBED BY CONSTRUCTION ACTIVITIES.
- IF REQUIRED, PLACE TEMPORARY OVERNIGHT AGGREGATE WEDGES AT DRIVEWAYS TO ALLOW PROPERTY OWNER ACCESS.



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\*NOTE: THIS TABLE IS A LISTING OF TYPICAL EXISTING SYMBOLS AND MAY NOT INCLUDE ALL EXISTING SYMBOLS FOUND WITHIN THIS PLAN SET. ALL PROPOSED ITEMS WILL BE CALLED OUT ON THEIR PLAN SHEETS. IF A QUESTION ARISES ON THE MEANING OF ANY SYMBOL NOT LISTED IN THIS TABLE, PLEASE CONTACT THE ENGINEER FOR CLARIFICATION. THE SYMBOLS ARE NOT TO SCALE.

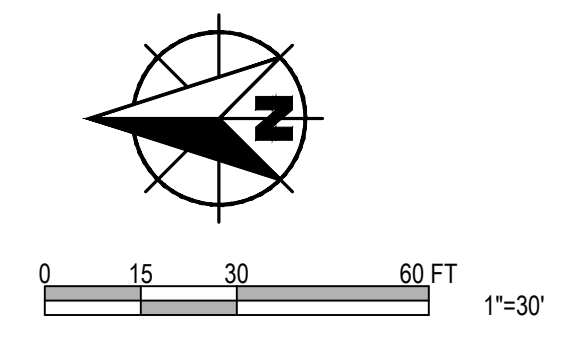
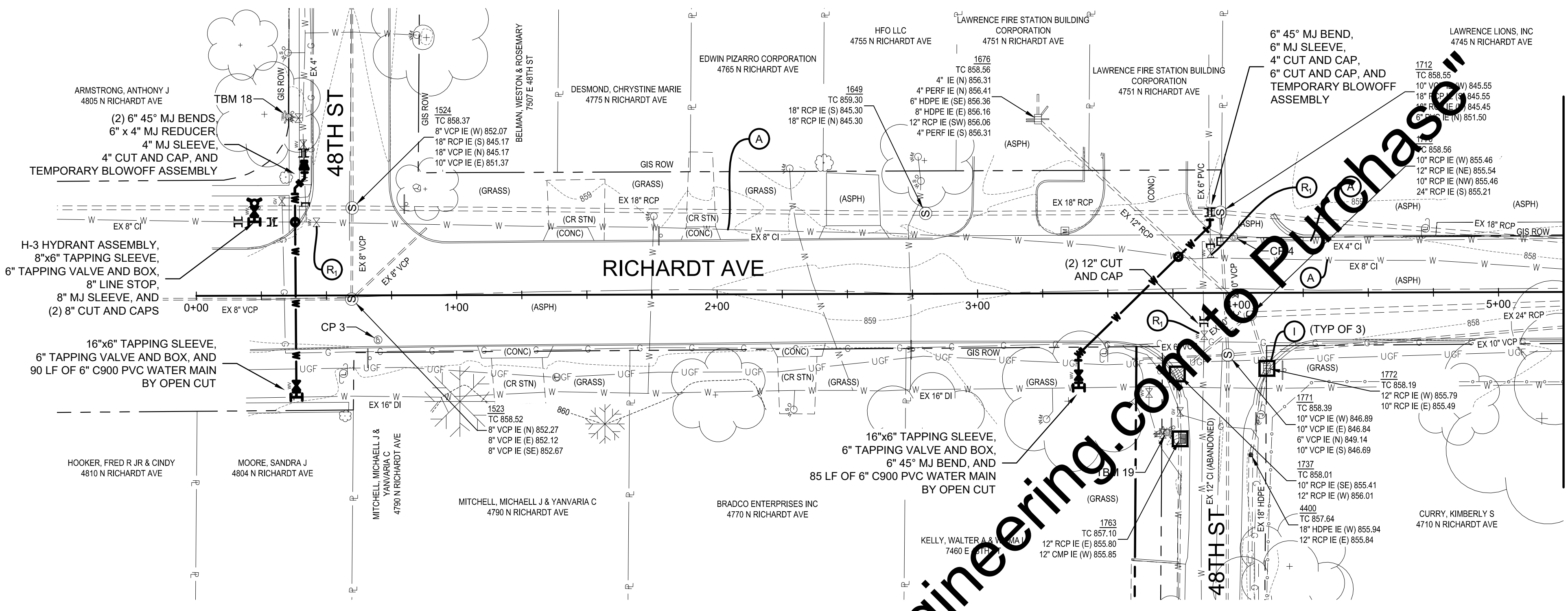
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	ISSUE DATE		
	JULY 2019		
	PROJECT NUMBER		
	208018-04-001B		



**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA  
**GENERAL SHEET**

SHEET NO.  
**03**  
 TOTAL SHEETS  
**24**

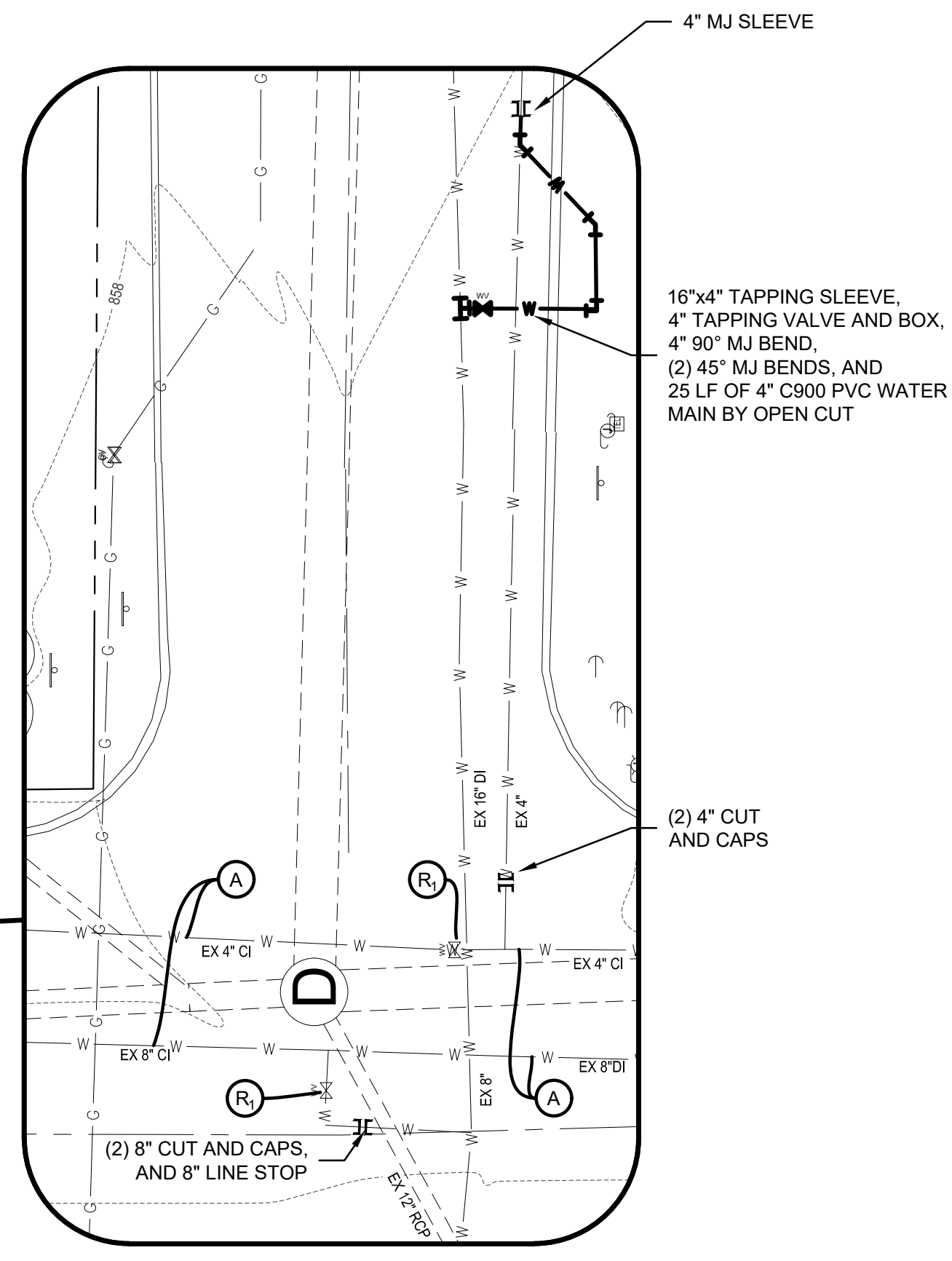
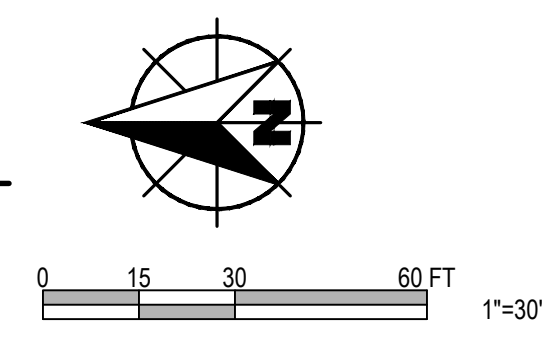
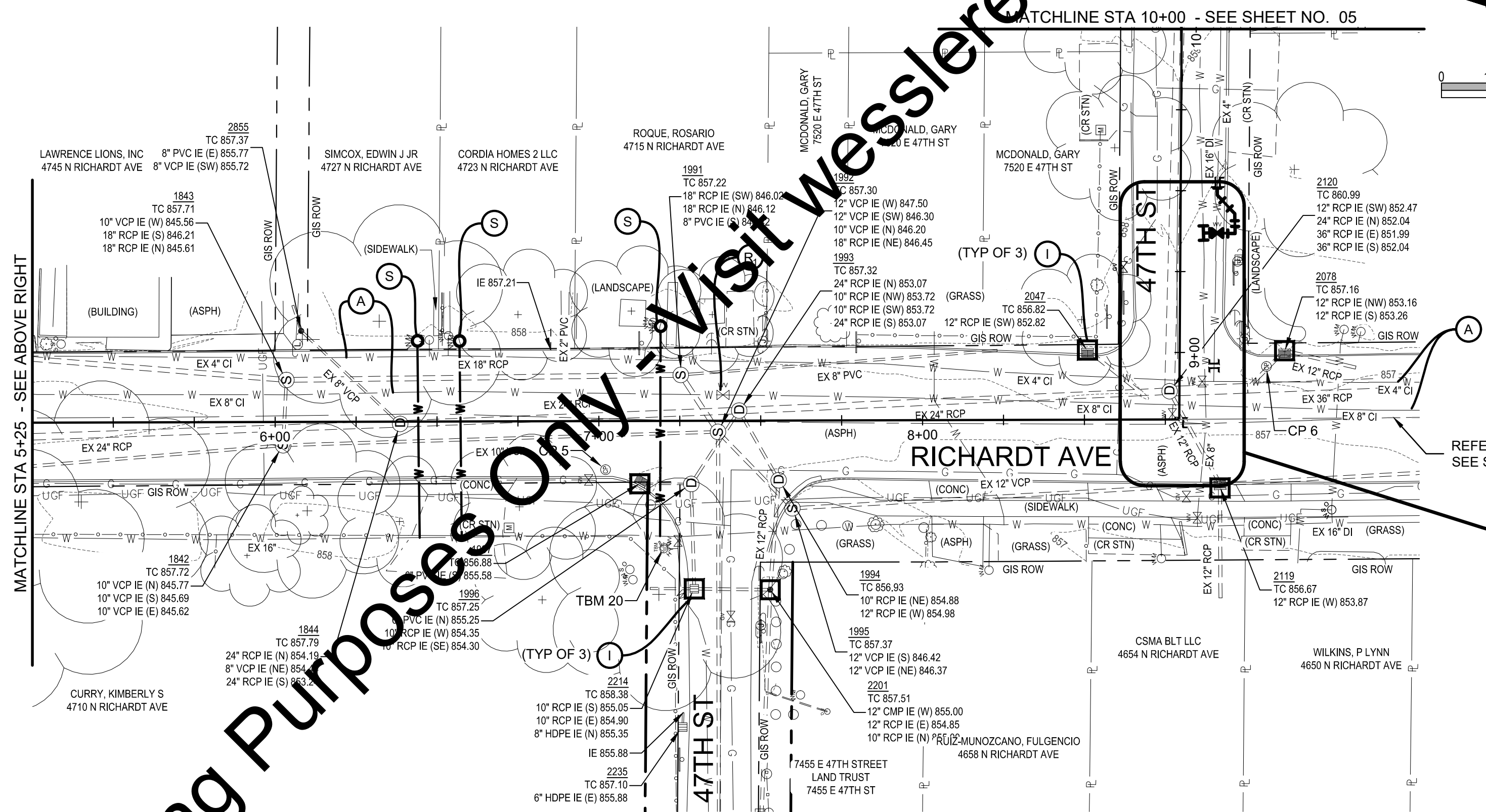




**KEYED NOTES**

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
- R<sub>1</sub> CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- S 3/4" OR 1" NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING
- S<sub>1</sub> 2" NEW SERVICE LINE, CURB STOP, RECONNECT
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- I INLET PROTECTION

**PLAN - LINE A**  
SCALE: 1" = 30'



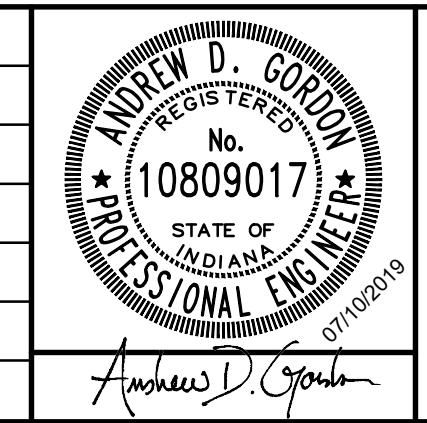
**PLAN**  
SCALE: 1" = 10'

- NOTES:
- CONTRACTOR TO VERIFY WITH OWNER DURING CONSTRUCTION WHETHER WATER SERVICE LINES TO 4715, 4723, AND 4727 N RICHARDT AVE ARE CONNECTED TO EXISTING 16" WATER MAIN.
  - TOP OF SERVICE LINES TO 4715, 4723, AND 4727 N RICHARDT AVENUE SHOULD BE INSTALLED AT 848.25 WHERE THEY CROSS THE EXISTING STORM SEWER.

**PLAN - LINE A**  
SCALE: 1" = 30'

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SCALE VERIFICATION	DRAWN BY	JRM	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
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	APPROVED	ADG				
	ISSUE DATE					
	JULY 2019					
	PROJECT NUMBER					
	208018-04-001B					

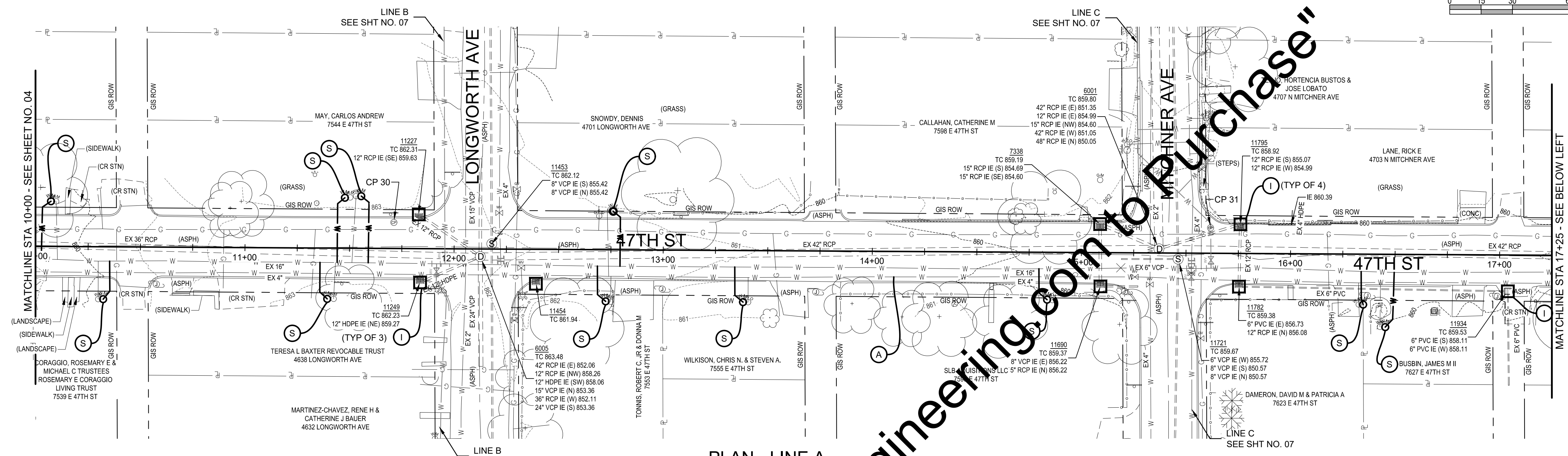
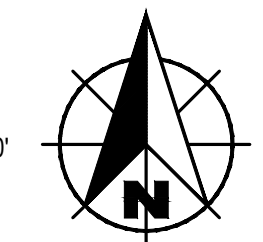
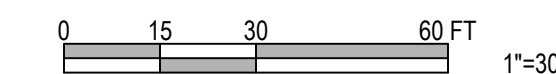


**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

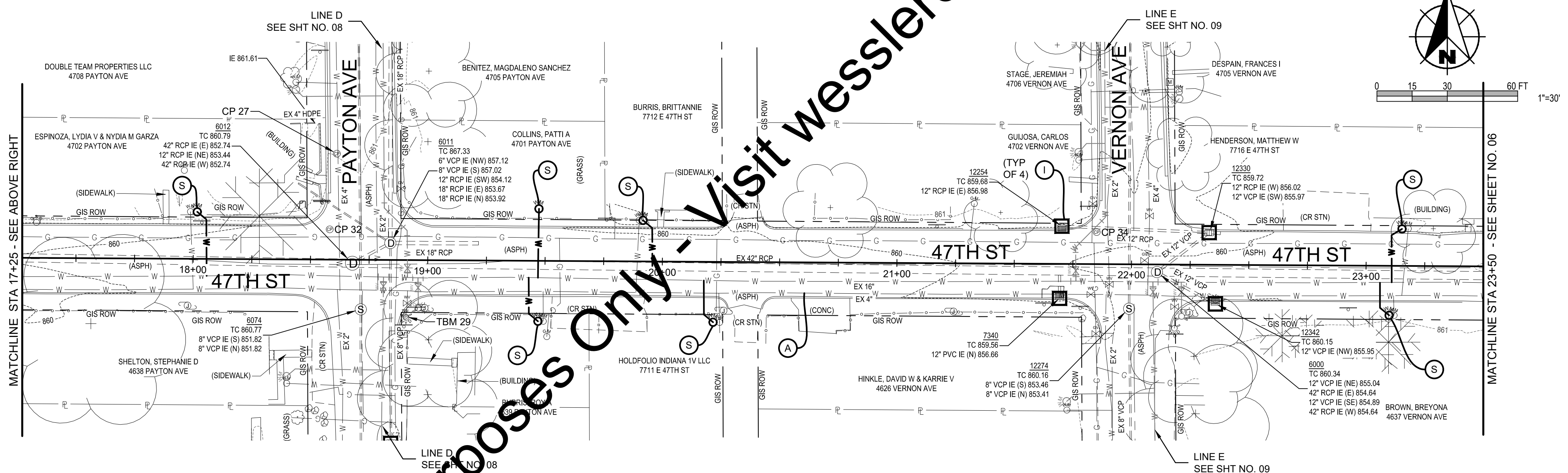
**WATER MAIN - LINE A - RICHARDT AVE AND 47TH ST**

SHEET NO.	<b>04</b>
TOTAL SHEETS	<b>24</b>





PLAN - LINE A  
SCALE: 1" = 30'



PLAN - LINE A  
SCALE: 1" = 30'

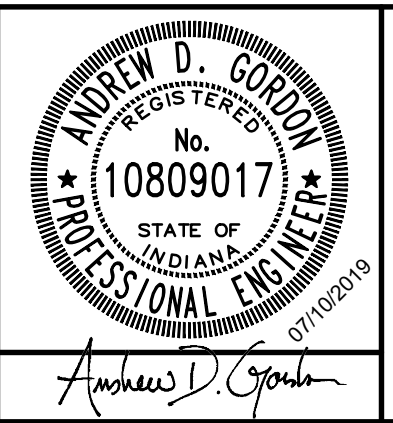
**KEYED NOTES**

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT. CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
- R1 CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- S 3/4" OR 1" NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING
- S1 2" NEW SERVICE LINE, CURB STOP, RECONNECT
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- I INLET PROTECTION

- NOTES:**
1. CONTRACTOR TO FIELD VERIFY WATER SERVICE LOCATION DURING CONSTRUCTION WITH OWNER FOR 4701 PAYTON AVE.

Drawing: J:\Lawrence\Projects\28018-PNA.dwg | Layout: 02 | Plotfile: 07/09/19 @ 02:21:42 | LastSavedBy: jasonw

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	APPROVED	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				

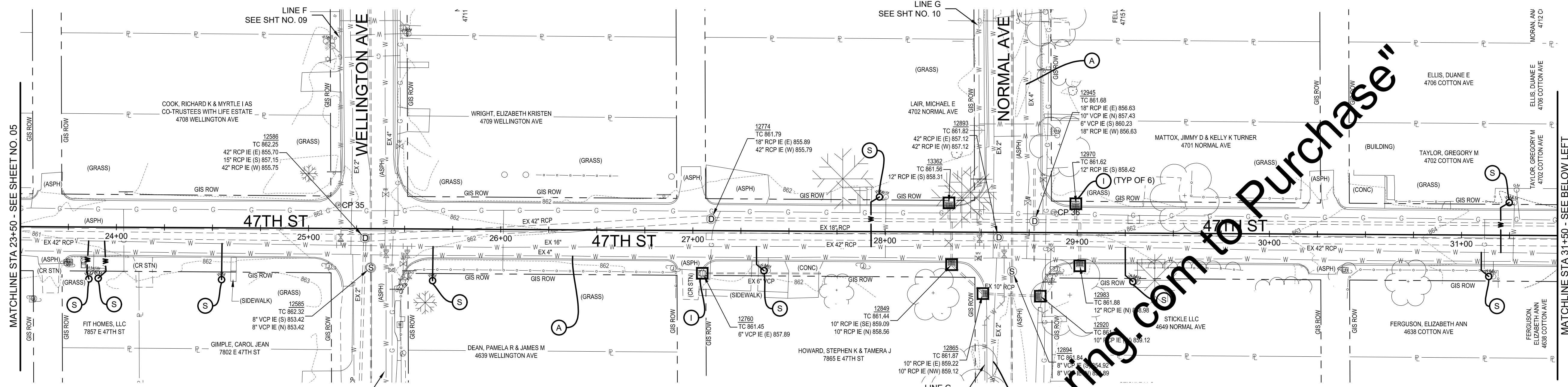


**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

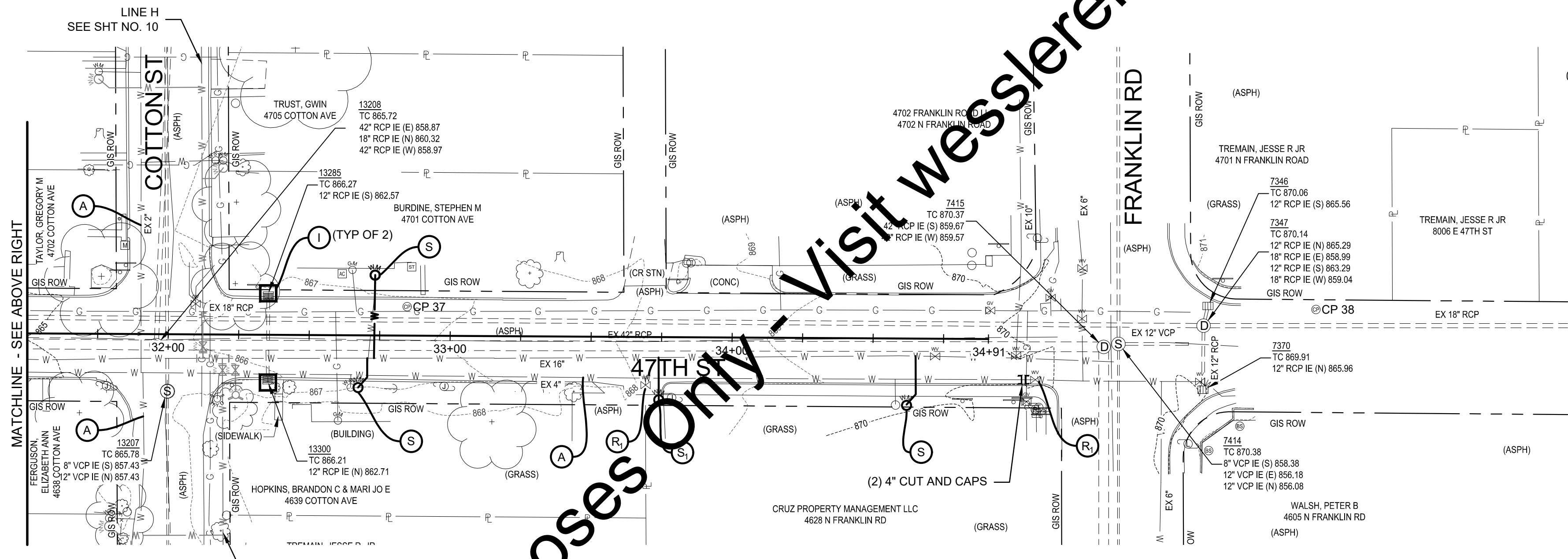
**WATER MAIN - LINE A - 47TH ST**

SHEET NO.	<b>05</b>
TOTAL SHEETS	<b>24</b>

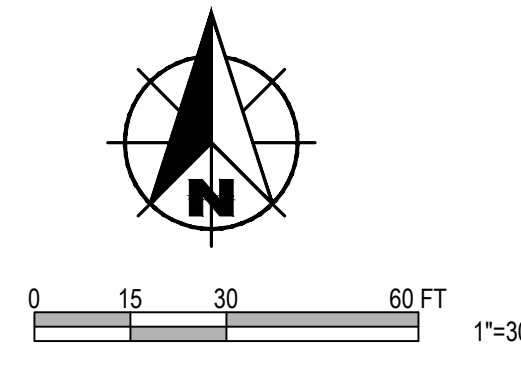
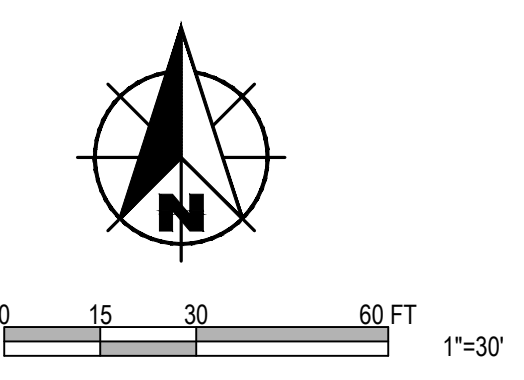




PLAN - LINE A  
SCALE: 1" = 30'



PLAN - LINE A  
SCALE: 1" = 30'




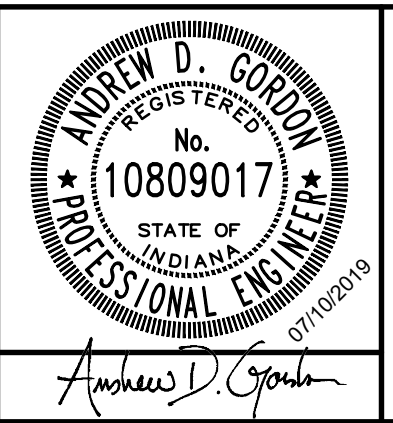
**KEYED NOTES**

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT. CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
- R<sub>1</sub> CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- S 3/4" OR 1" NEW SERVICE LINE. CURB STOP, AND METER PIT. MATCH EXISTING
- S<sub>1</sub> 2" NEW SERVICE LINE. CURB STOP. RECONNECT
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- I INLET PROTECTION

- NOTES:**
1. CONTRACTOR TO FIELD VERIFY WATER SERVICE LOCATION DURING CONSTRUCTION WITH OWNER FOR 4802 E 47TH ST.
  2. CONTRACTOR TO FIELD VERIFY WATER SERVICE LOCATION DURING CONSTRUCTION WITH OWNER FOR 4639 WELLINGTON AVE.

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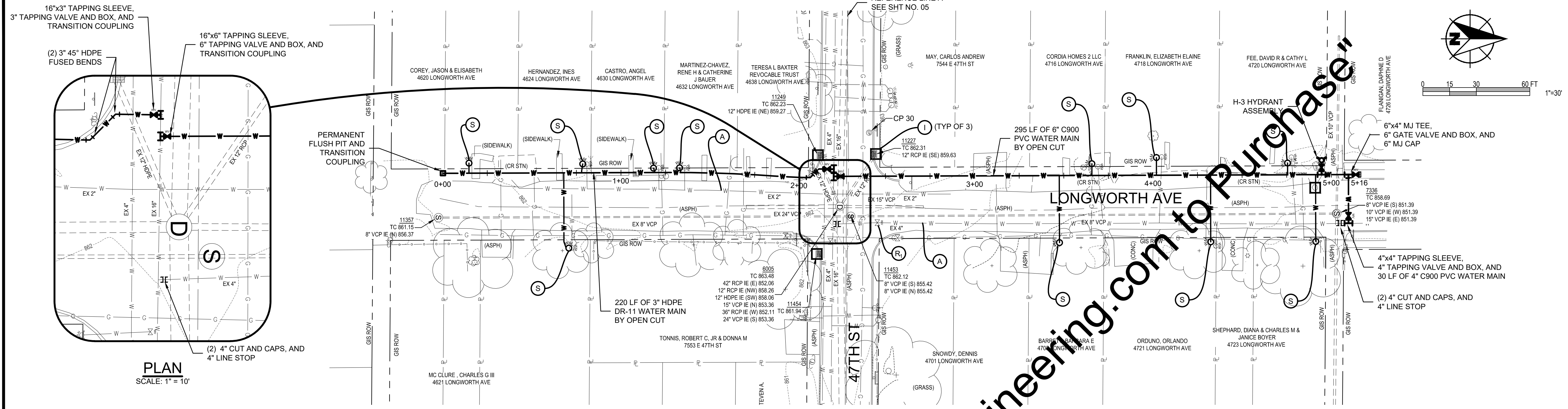
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	CHECKED BY MAF				
	APPROVED ADG				
	ISSUE DATE JULY 2019				
	PROJECT NUMBER 208018-04-001B				



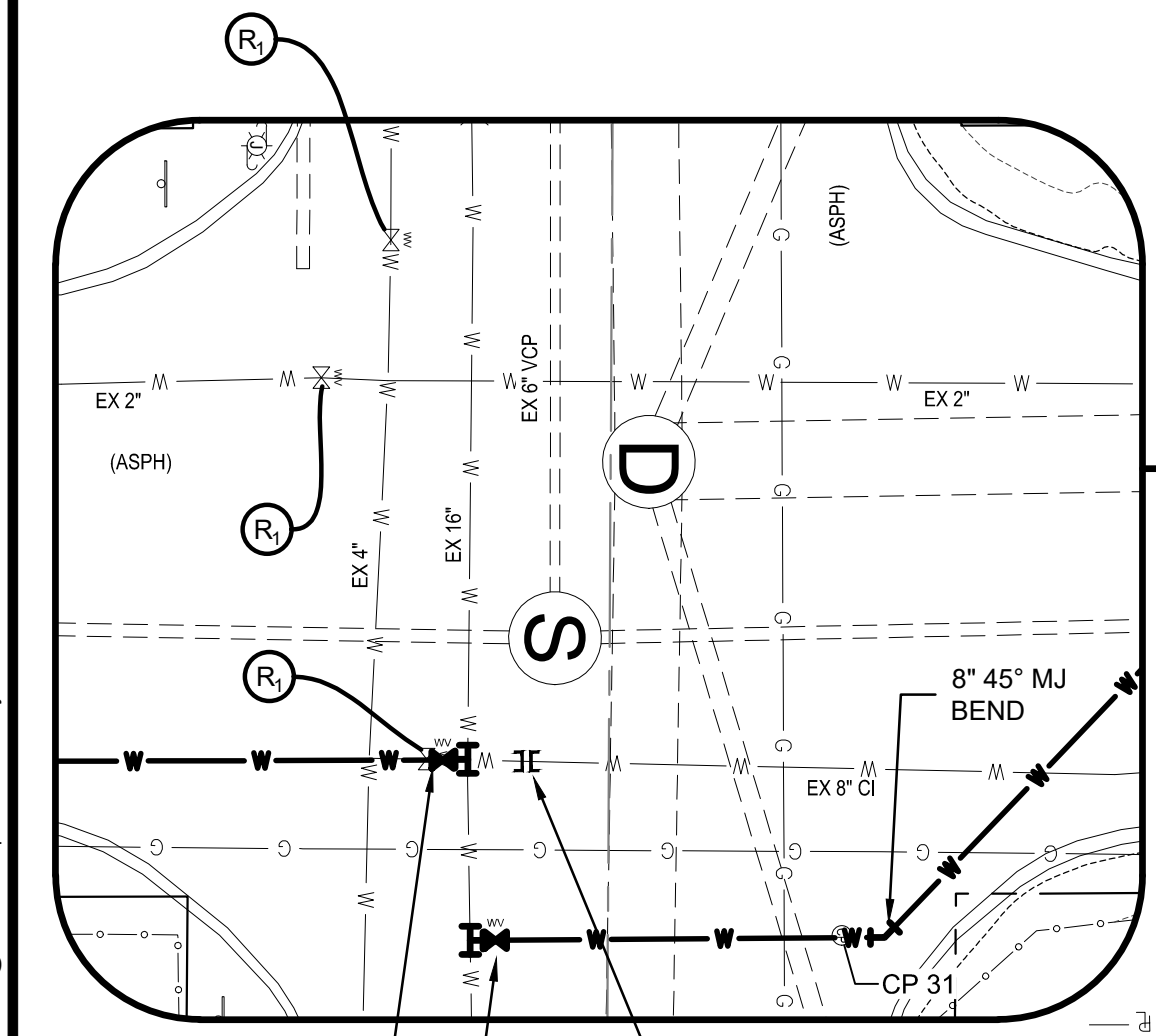
**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA  
**WATER MAIN - LINE A - 47TH ST**

SHEET NO.  
**06**  
 TOTAL SHEETS  
**24**

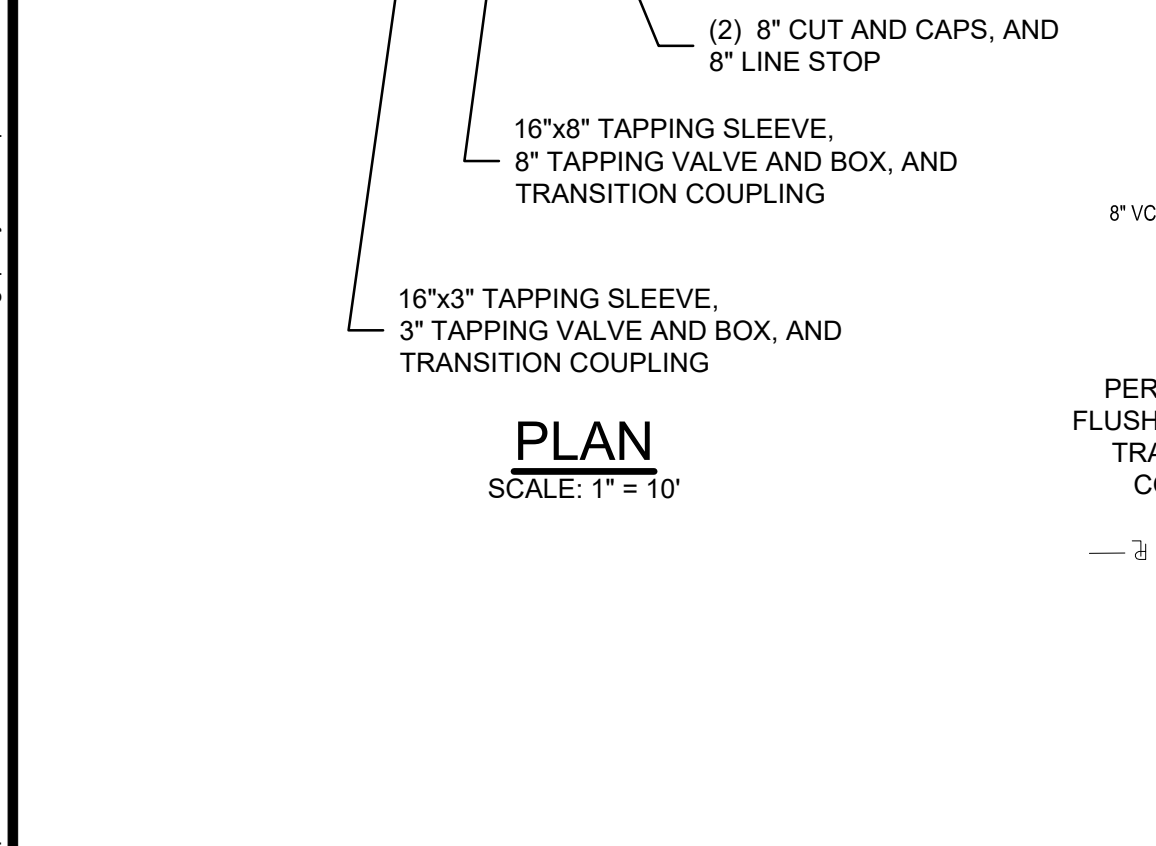




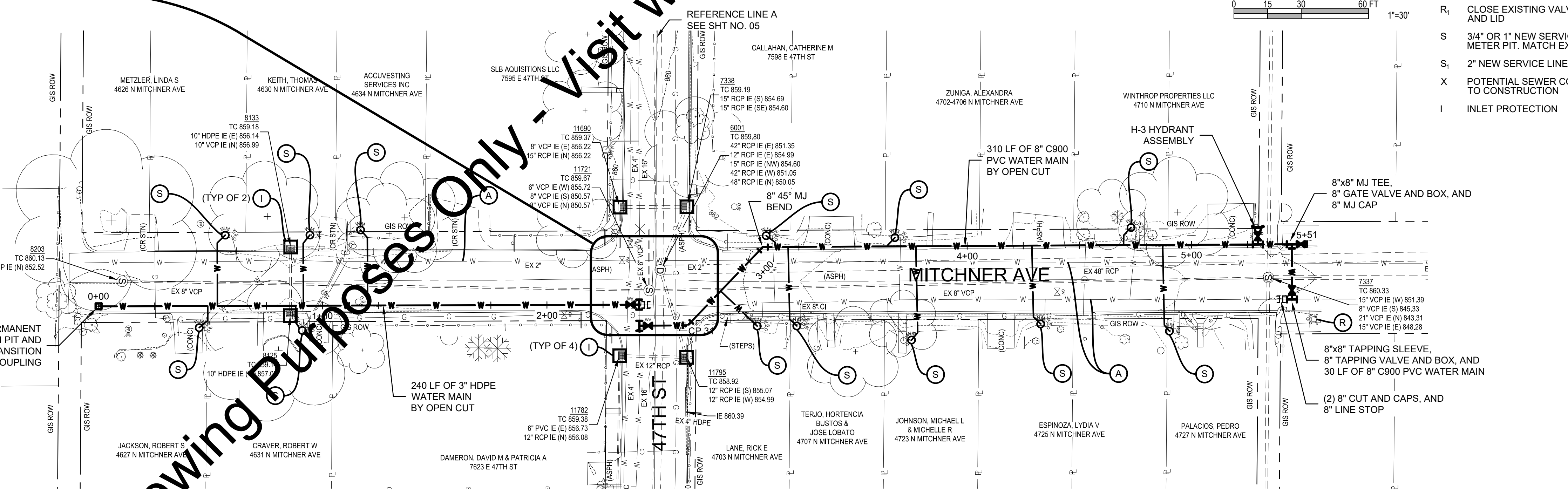
PLAN - LINE B  
SCALE: 1" = 30'



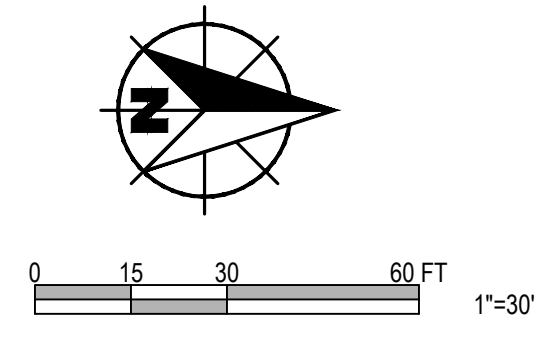
PLAN  
SCALE: 1" = 10'



PLAN  
SCALE: 1" = 10'

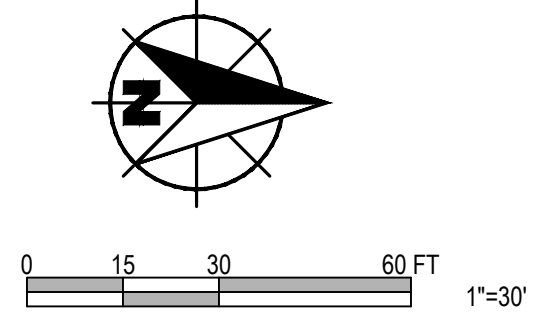


PLAN - LINE C  
SCALE: 1" = 30'



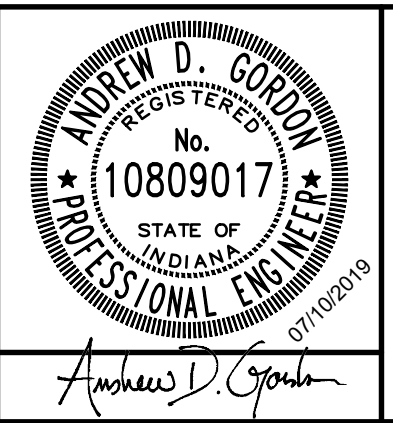
**KEYED NOTES**

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT. CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
- R1 CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- S 3/4" OR 1" NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING
- S1 2" NEW SERVICE LINE, CURB STOP, RECONNECT
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- I INLET PROTECTION



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SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRM	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	MAL				
	APPROVED	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				

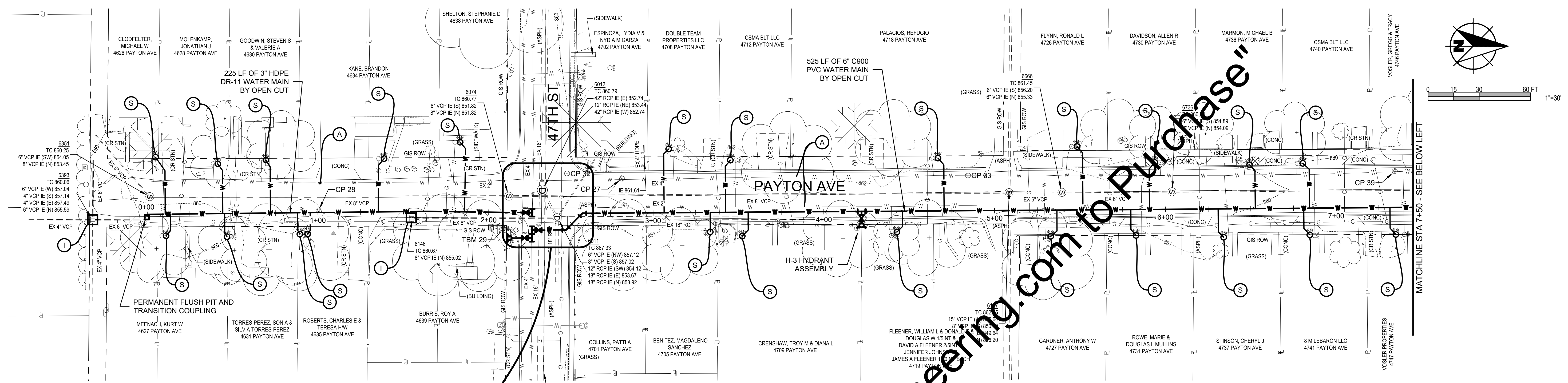


**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA  
**WATER MAIN - LINES B AND C - LONGWORTH AND MITCHNER AVE**

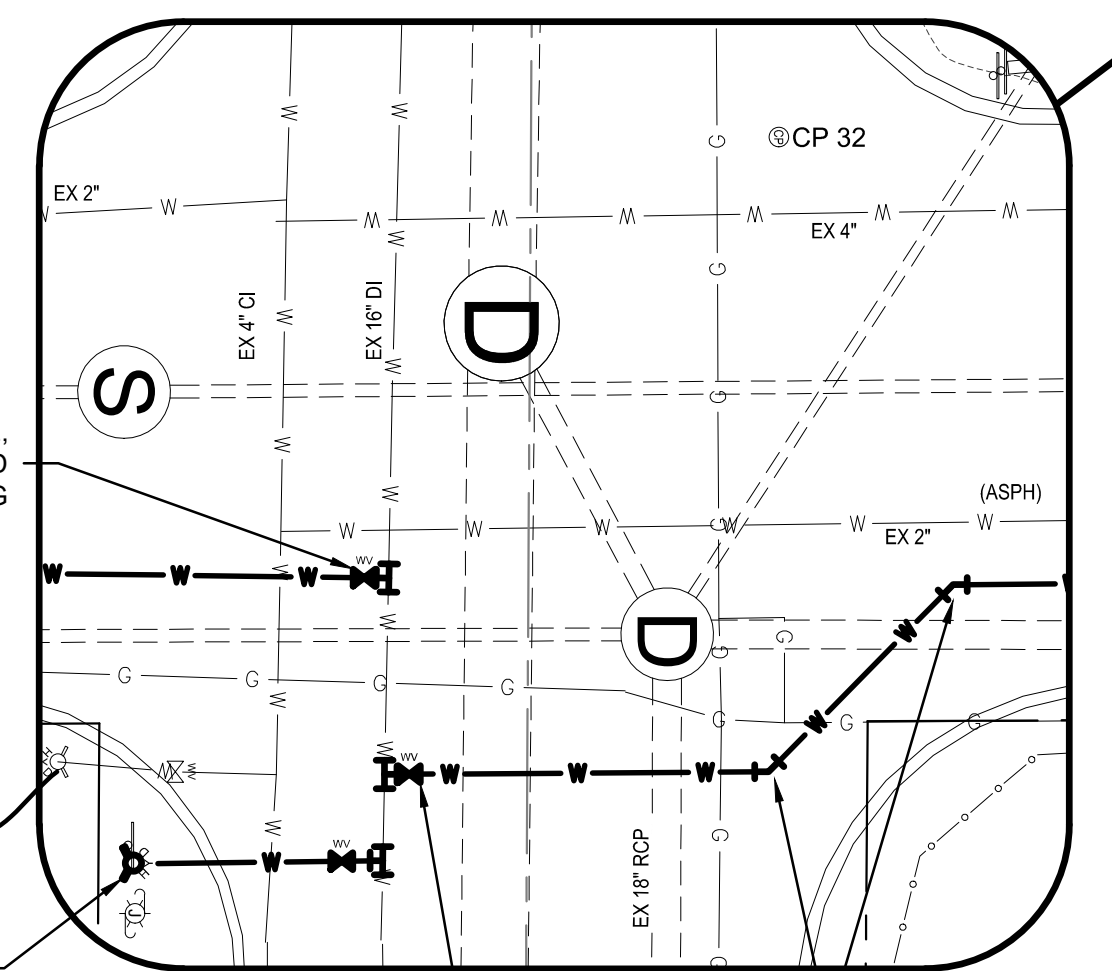
SHEET NO.  
**07**  
TOTAL SHEETS  
**24**

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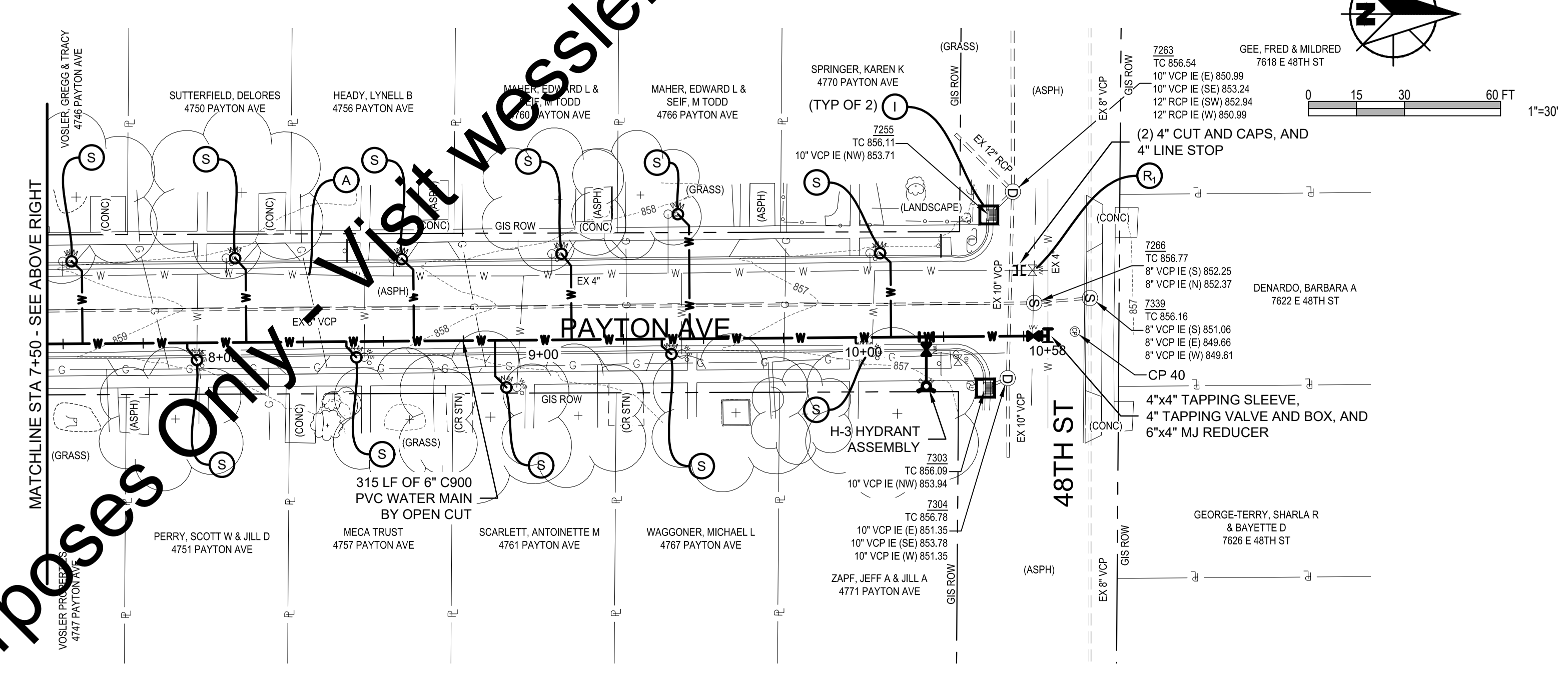




**PLAN - LINE D**  
SCALE: 1" = 30'



**PLAN**  
SCALE: 1" = 10'



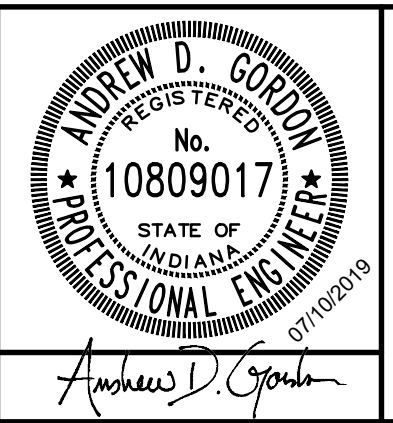
**PLAN - LINE D**  
SCALE: 1" = 30'

- KEYED NOTES**
- A ABANDON WATER MAIN
  - R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
  - R<sub>1</sub> CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
  - S 3/4" OR 1" NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING
  - S<sub>1</sub> 2" NEW SERVICE LINE, CURB STOP, RECONNECT
  - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
  - I INLET PROTECTION

- NOTES:**
1. TOP OF SERVICE LINES TO 4626, 4628, 4630, AND 4634 PAYTON AVENUE SHOULD BE INSTALLED AT 852.40 WHERE THEY CROSS THE EXISTING 2" WATER MAIN.
  2. TOP OF SERVICE LINE TO 4638 PAYTON AVENUE SHOULD BE INSTALLED AT 850.60 WHERE IT CROSSES THE EXISTING 2" WATER MAIN.

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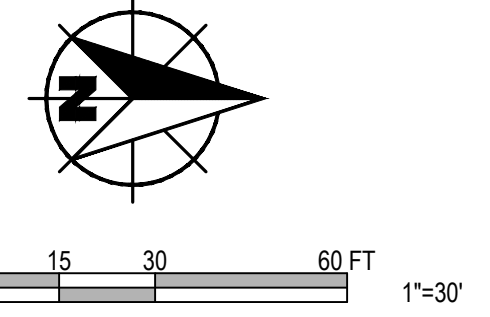
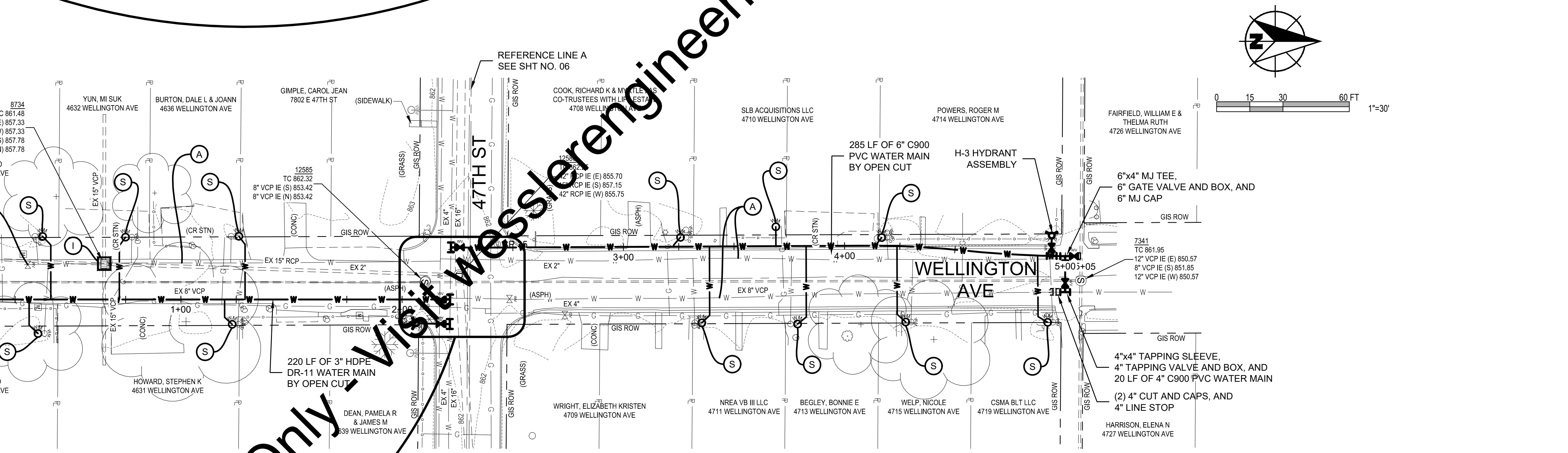
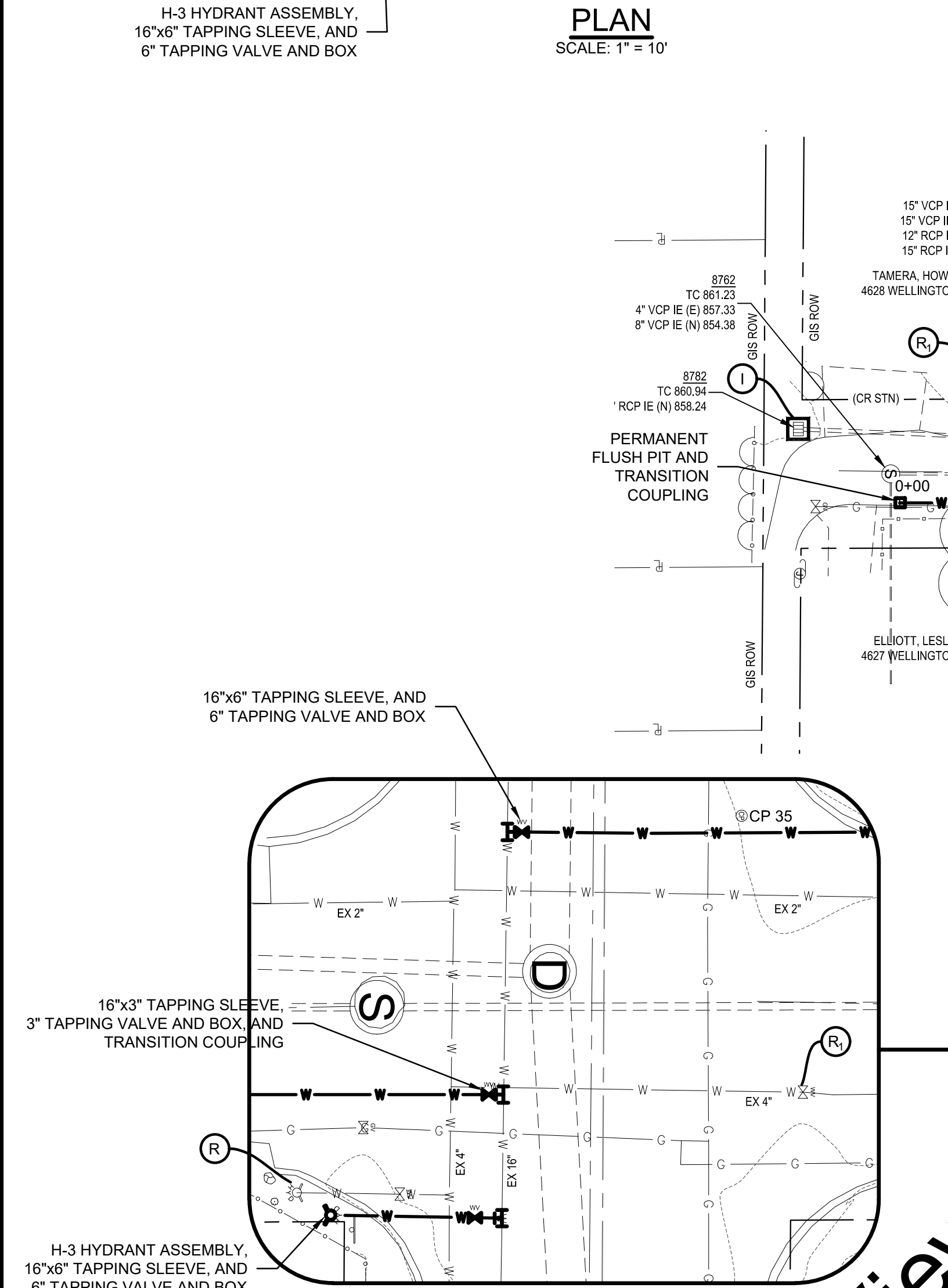
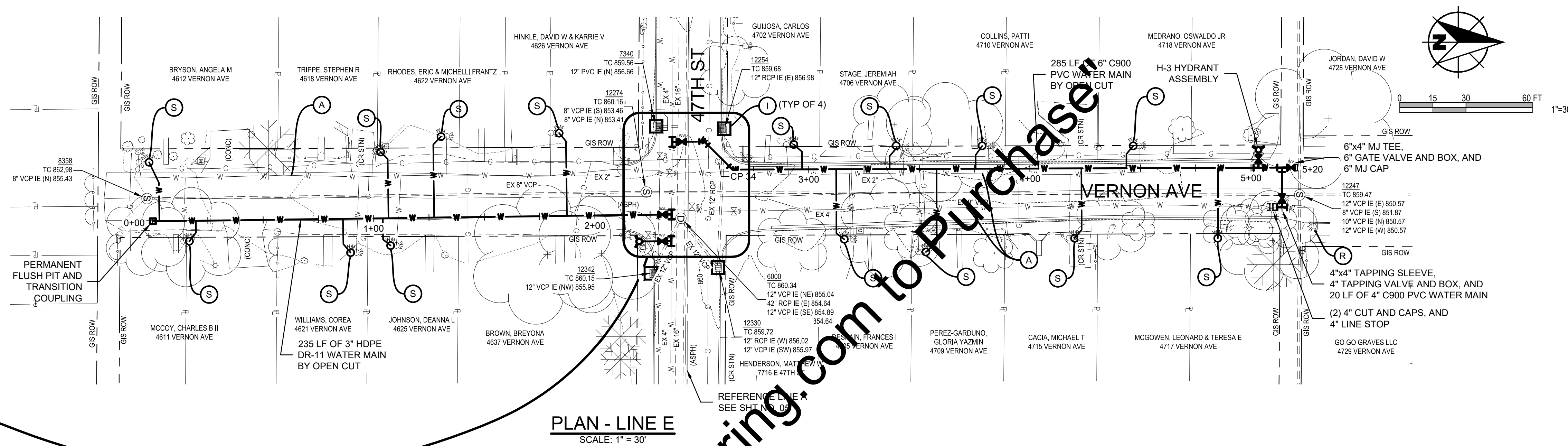
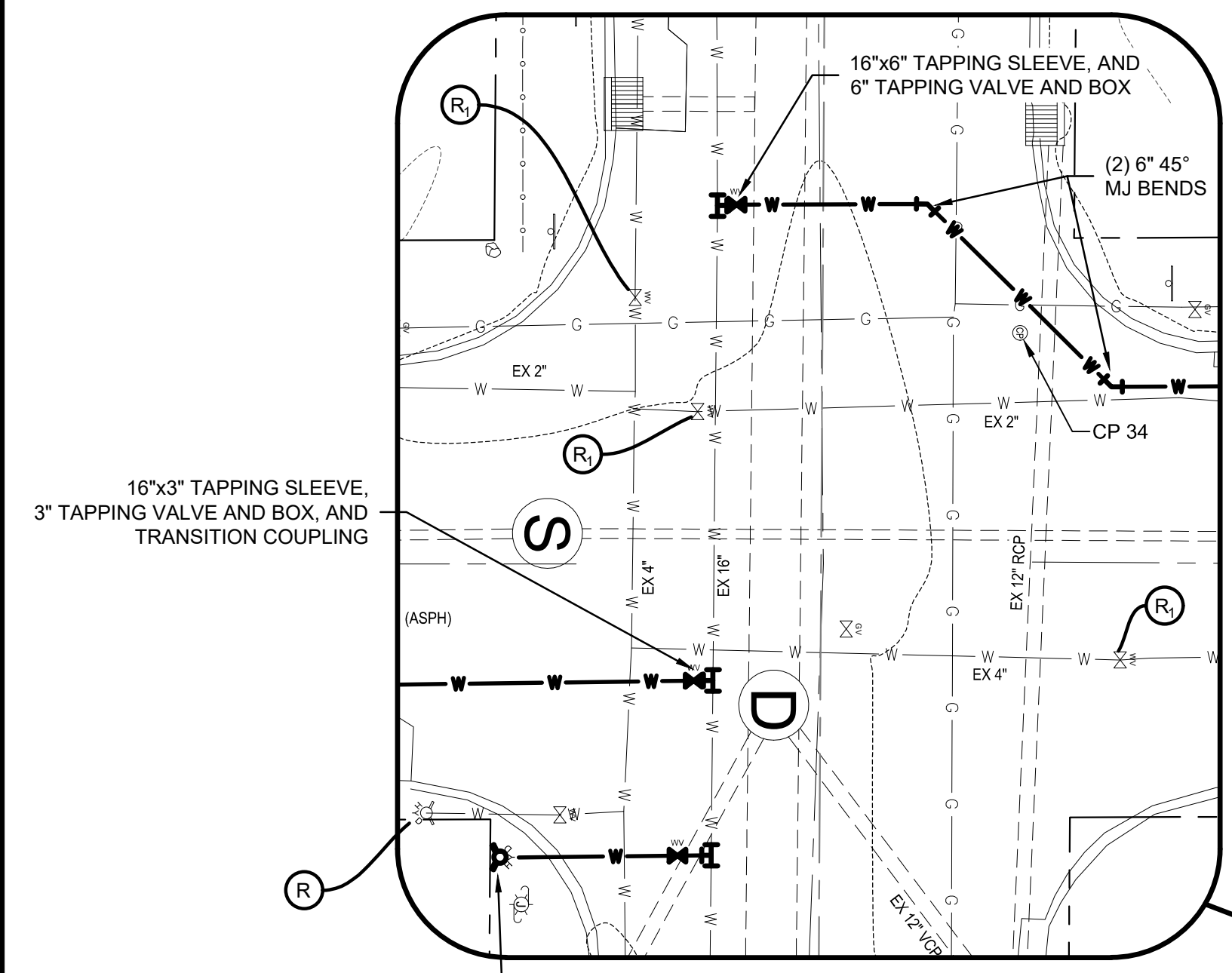
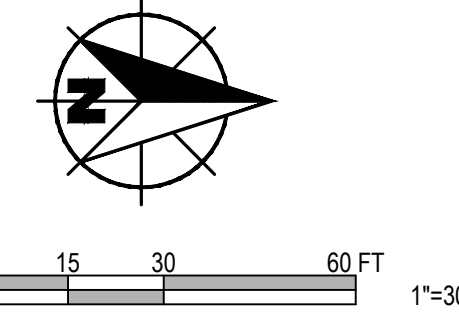
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	CHECKED BY	MAL				
	APPROVED	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				



**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA  
**WATER MAIN - LINE D - PAYTON AVE**

SHEET NO.  
**08**  
TOTAL SHEETS  
**24**

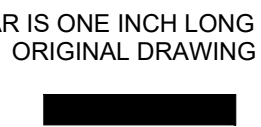


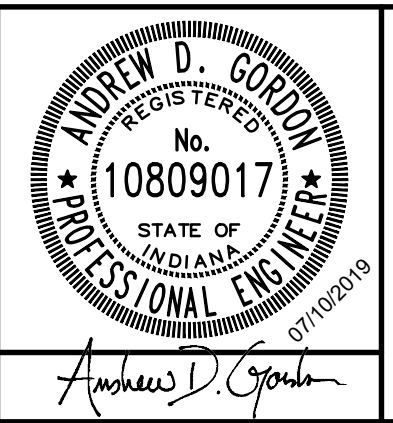


- KEYED NOTES**
- A ABANDON WATER MAIN
  - R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
  - R<sub>1</sub> CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
  - S 3/4" OR 1" NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING
  - S<sub>1</sub> 2" NEW SERVICE LINE, CURB STOP, RECONNECT
  - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
  - I INLET PROTECTION

Drawing: J:\Lawrence\Projects\28018-04-01\DWG\Sheets\28018-PN-B-H.dwg | Layout: 03 | Plotter: 07/09/19 @ 02:24:13 | LastSavedBy: Travel

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	APPROVED BY ADG				
	ISSUE DATE JULY 2019				
	PROJECT NUMBER 208018-04-001B				



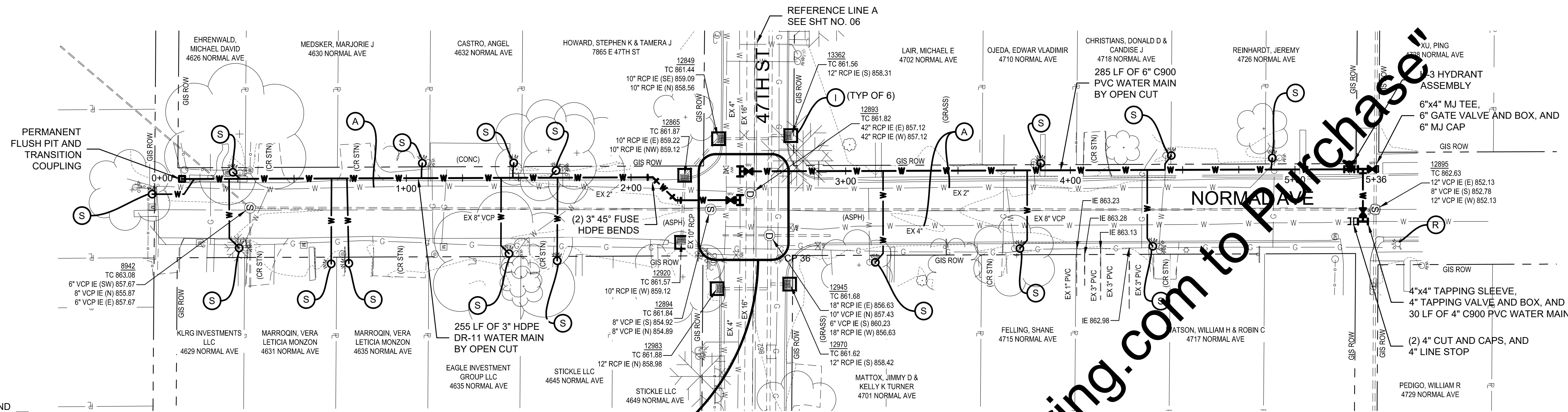
**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

**WATER MAIN - LINES E AND F - VERNON AND WELLINGTON AVE**

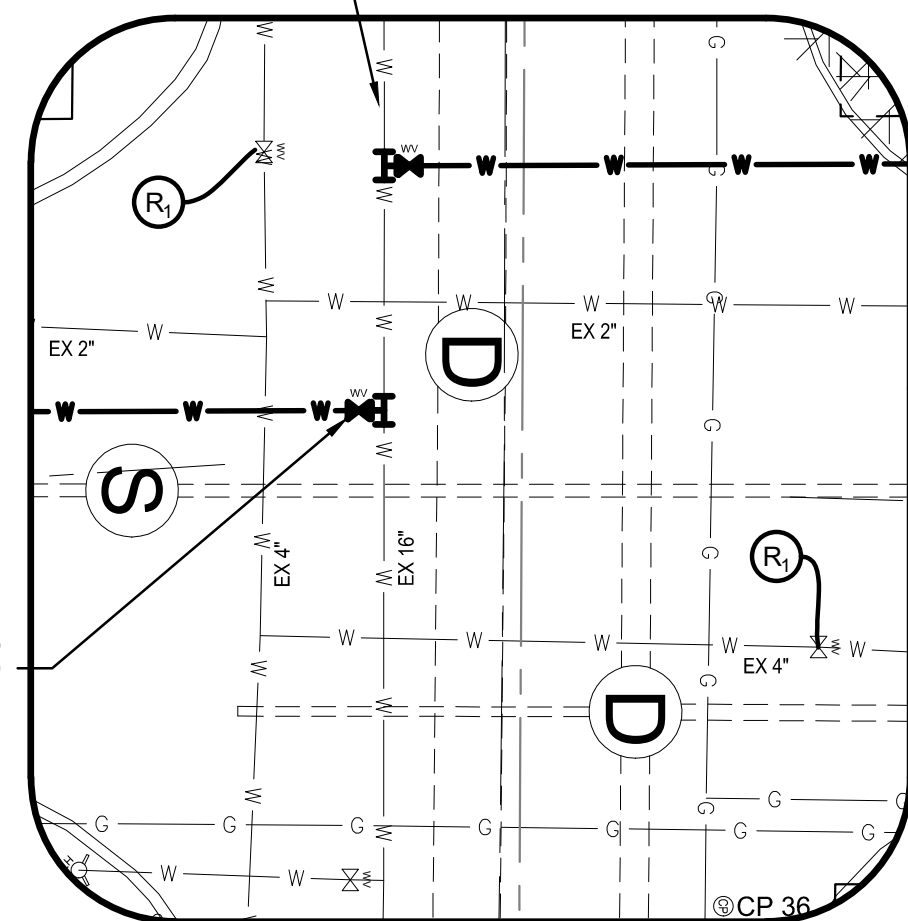
SHEET NO.  
**09**

TOTAL SHEETS  
**24**

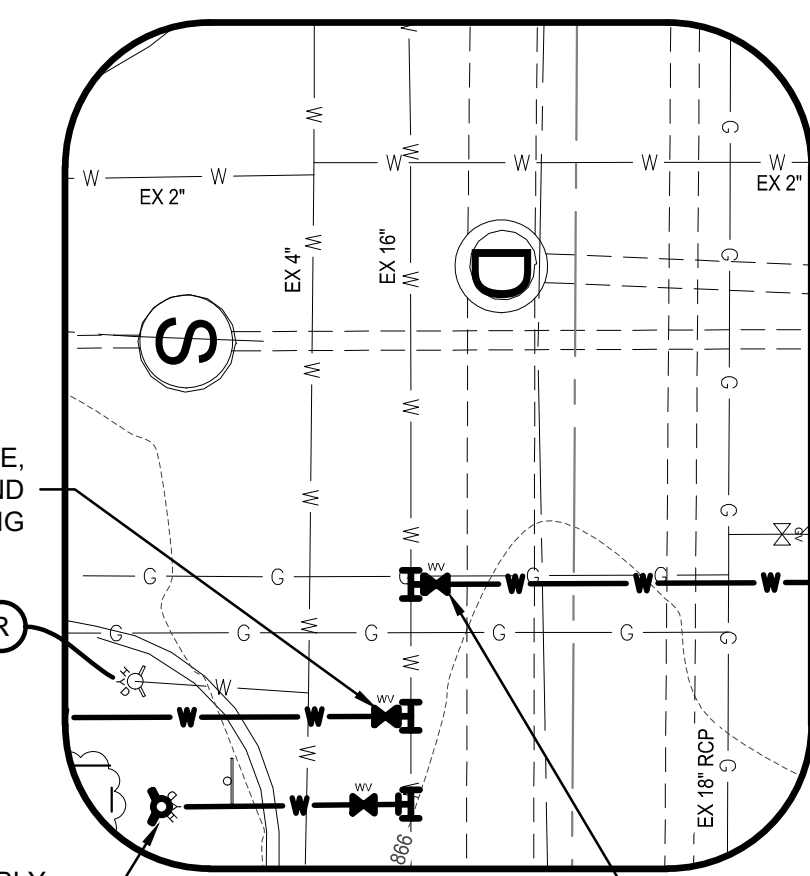




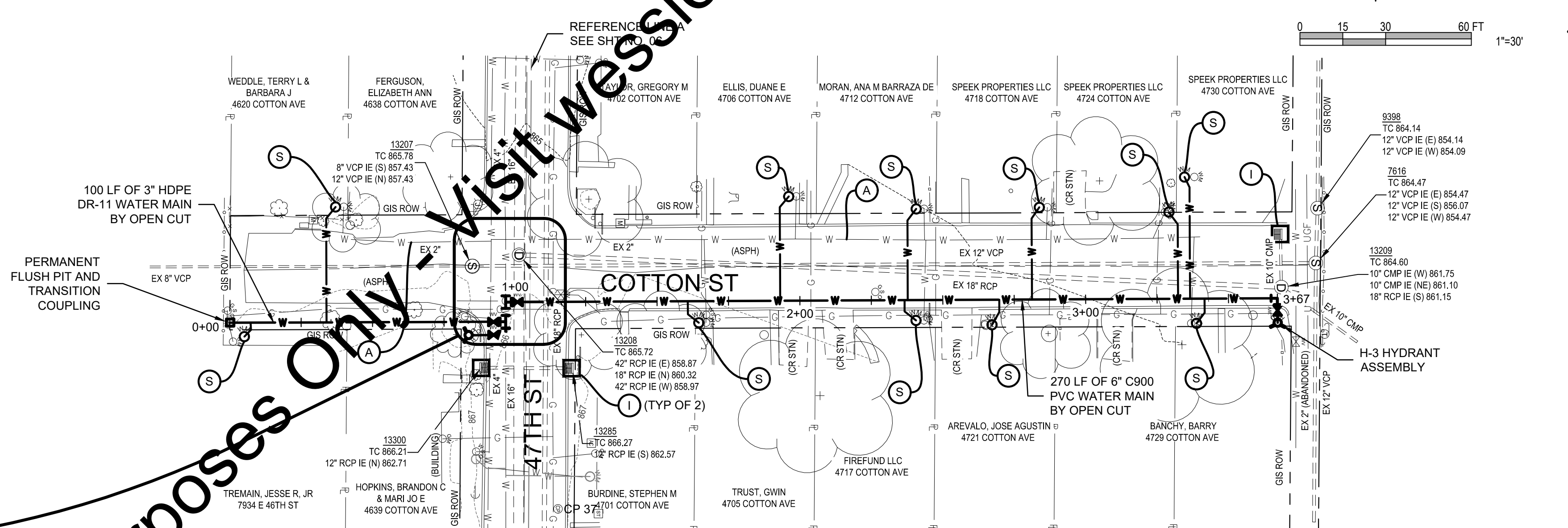
PLAN - LINE G  
SCALE: 1" = 30'



PLAN  
SCALE: 1" = 10'



PLAN  
SCALE: 1" = 10'



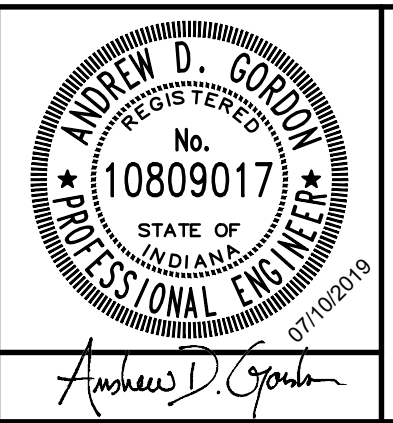
PLAN - LINE H  
SCALE: 1" = 30'

**KEYED NOTES**

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
- R<sub>1</sub> CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- S 3/4" OR 1" NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING
- S<sub>1</sub> 2" NEW SERVICE LINE, CURB STOP, RECONNECT
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- I INLET PROTECTION

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	ISSUE DATE: JULY 2019		
	PROJECT NUMBER: 208018-04-001B		



**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA

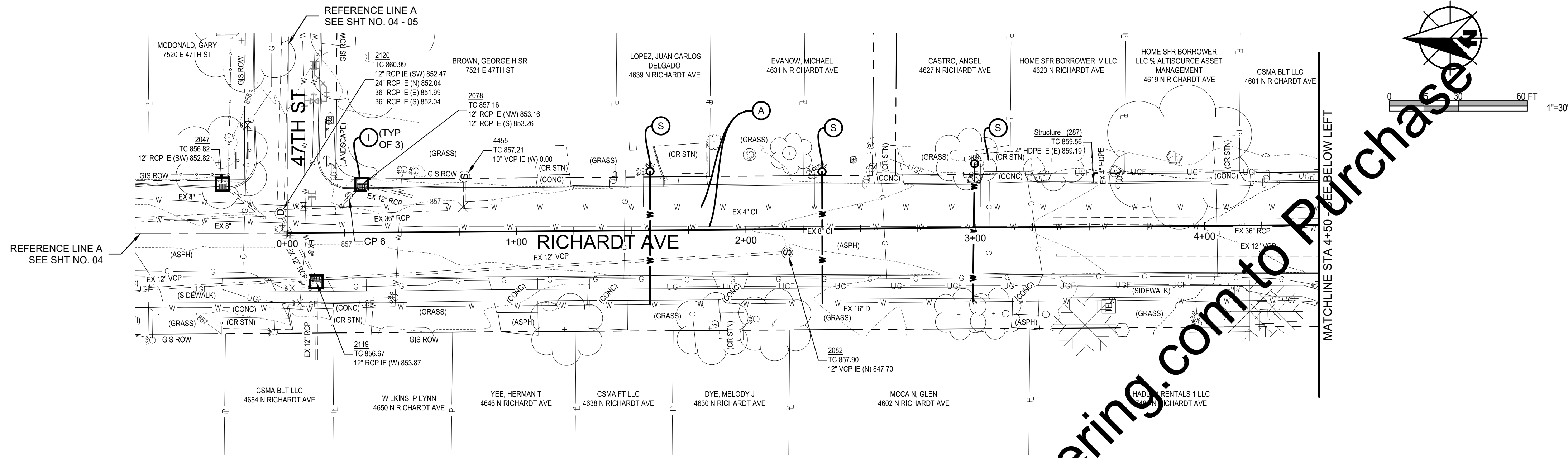
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**WATER MAIN - LINES G AND H - NORMAL AVE AND COTTON ST**

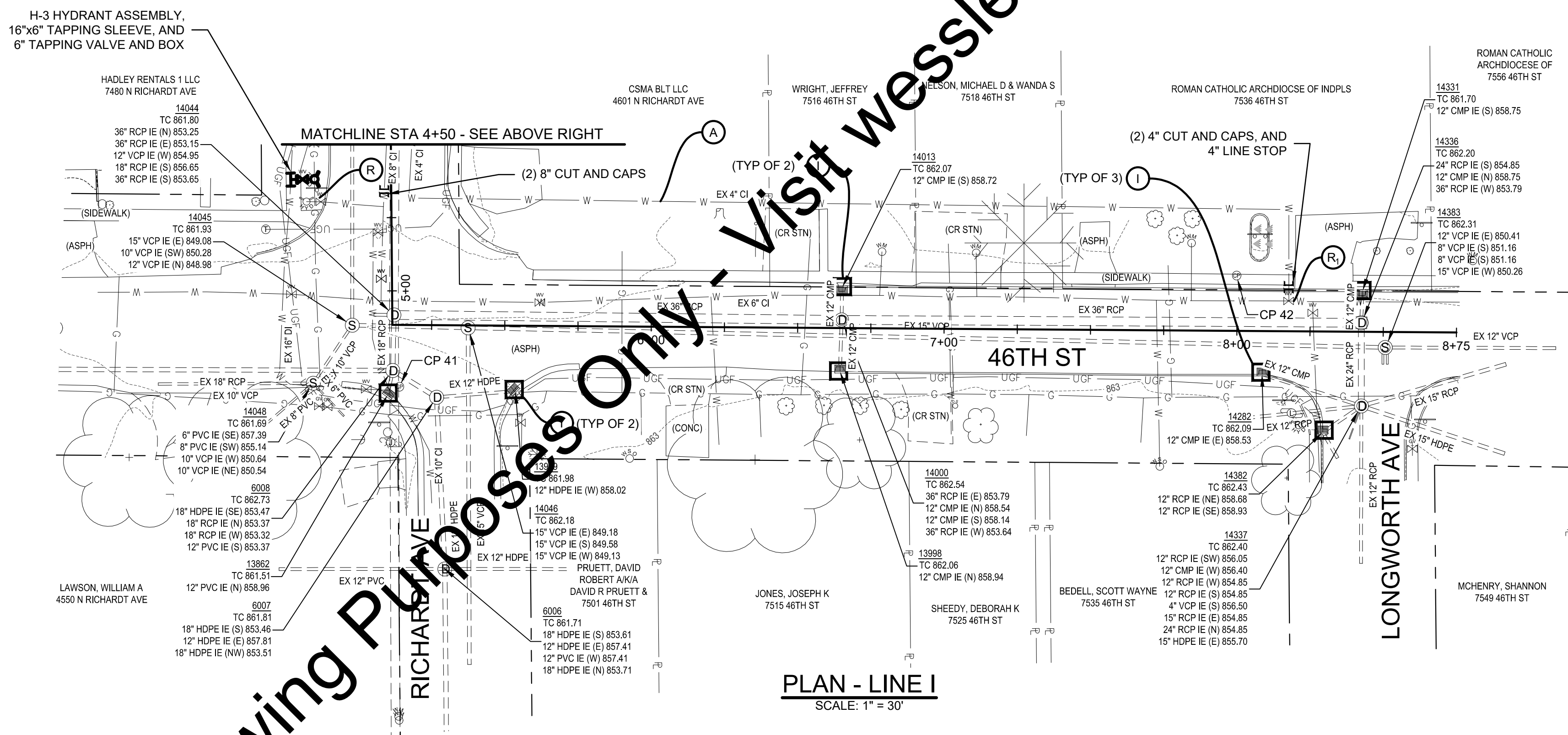
SHEET NO.  
10

TOTAL SHEETS  
24





PLAN - LINE I  
SCALE: 1" = 30'



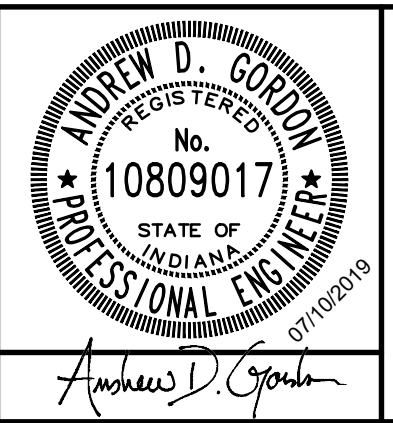
PLAN - LINE I  
SCALE: 1" = 30'

**KEYED NOTES**

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
- R<sub>1</sub> CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- S 3/4" OR 1" NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING
- S<sub>1</sub> 2" NEW SERVICE LINE, CURB STOP, RECONNECT
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- I INLET PROTECTION

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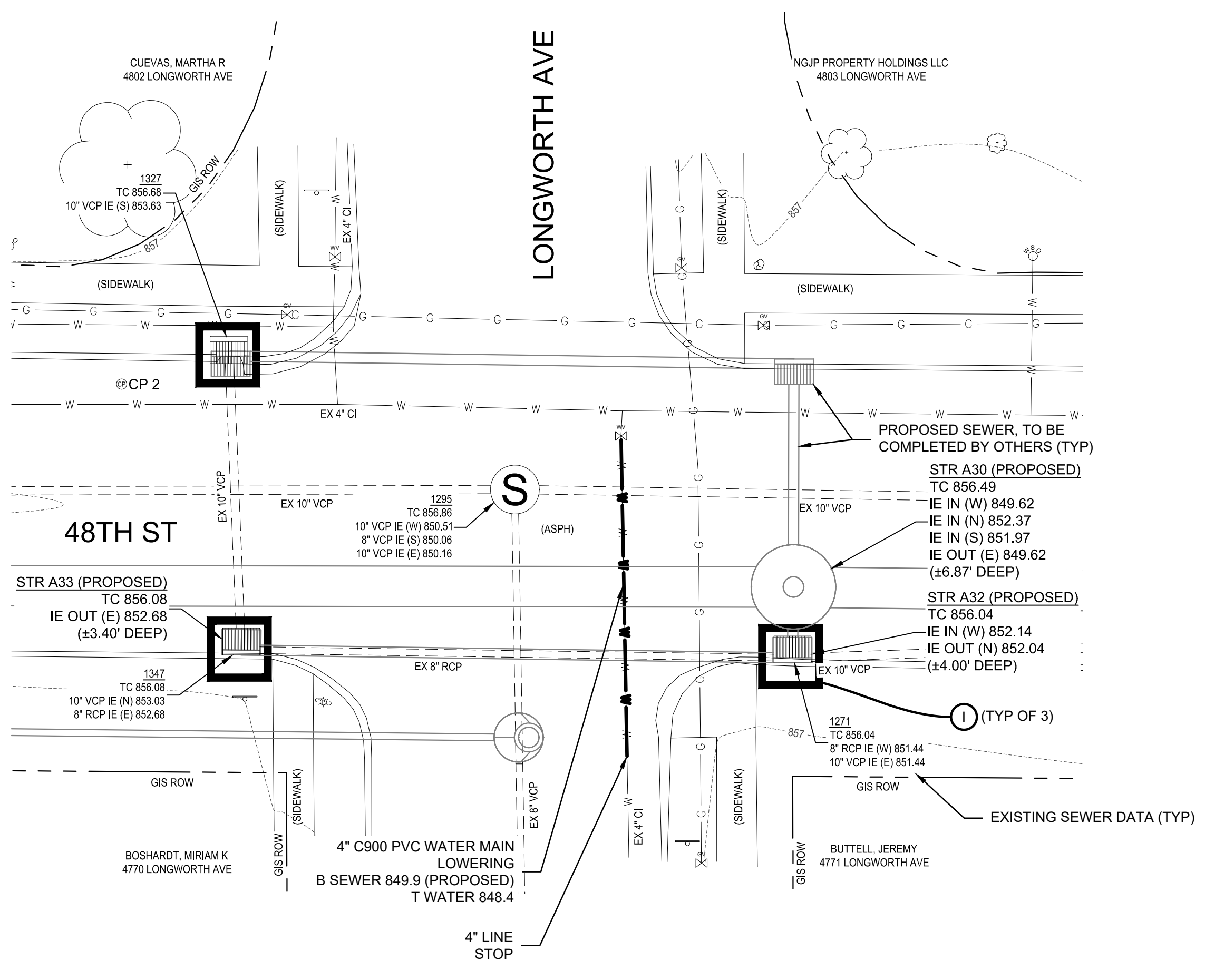
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	APPROVED	ADG				
	ISSUE DATE					
	JULY 2019					
	PROJECT NUMBER					
	208018-04-001B					



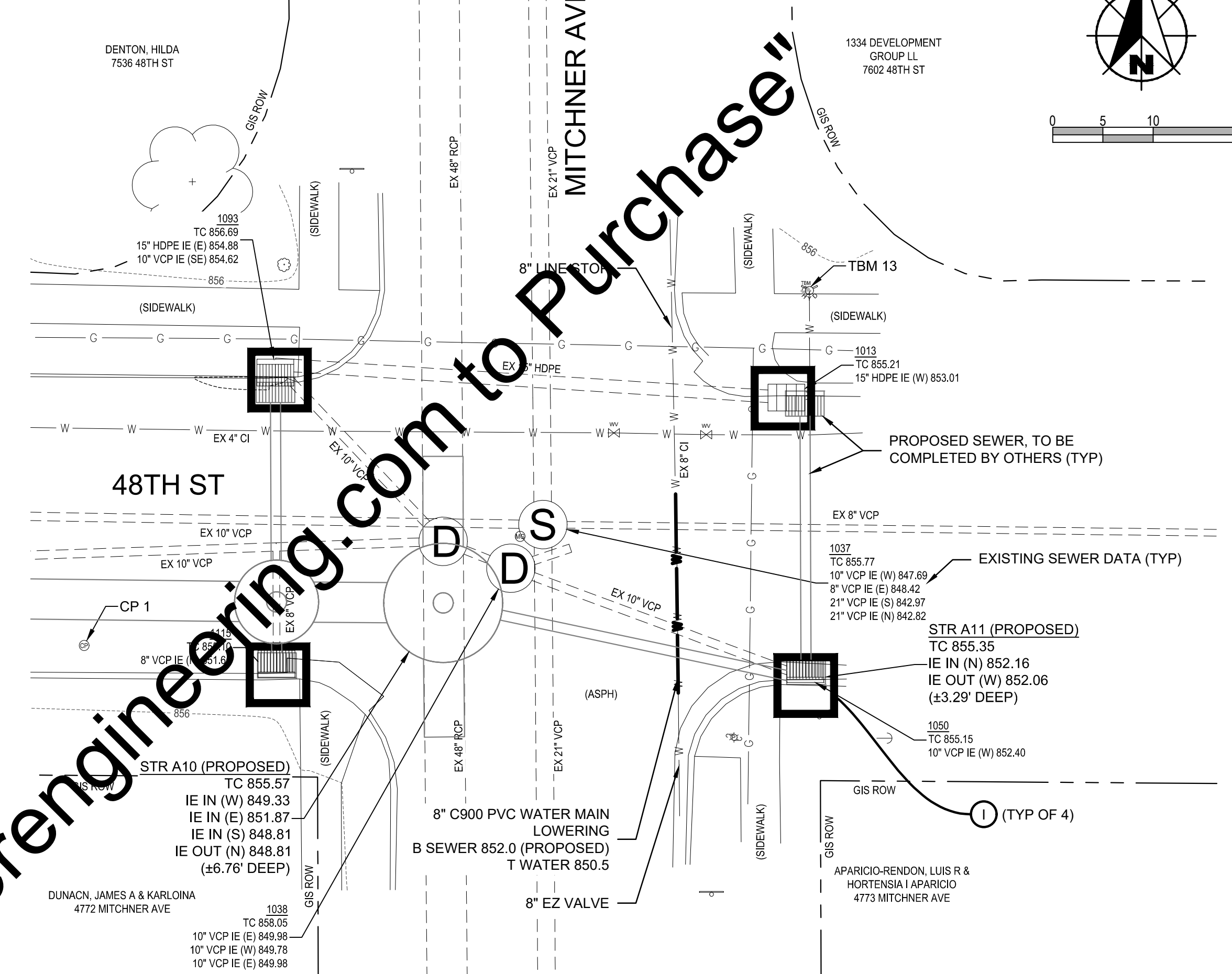
**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA  
**WATER MAIN - LINE I - RICHARDT AVE AND 46TH ST**

SHEET NO.  
**11**  
TOTAL SHEETS  
**24**

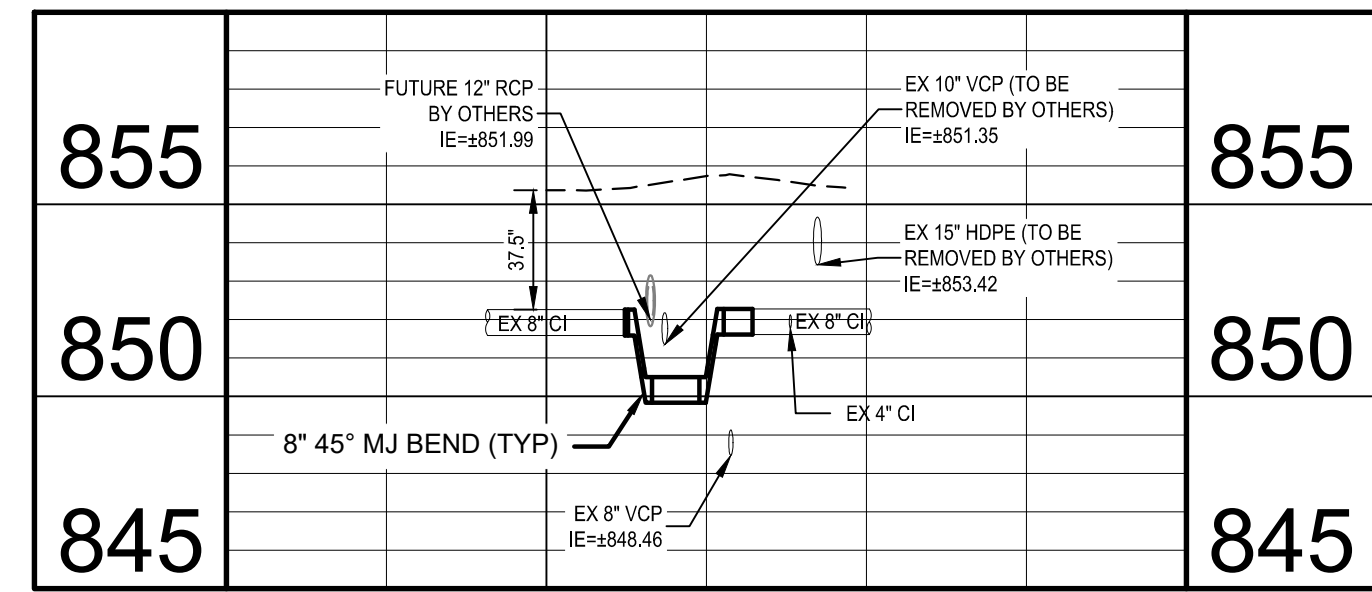
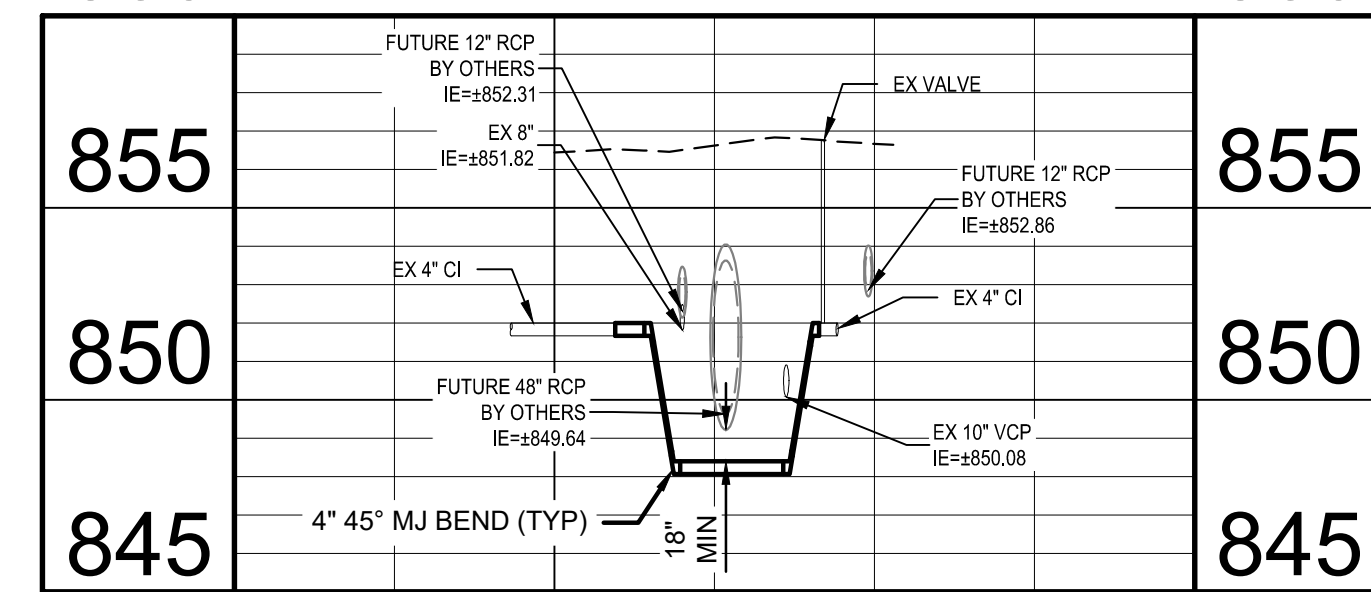




**PLAN - LINE J**  
SCALE: 1" = 10'



**PLAN - LINE K**  
SCALE: 1" = 10'



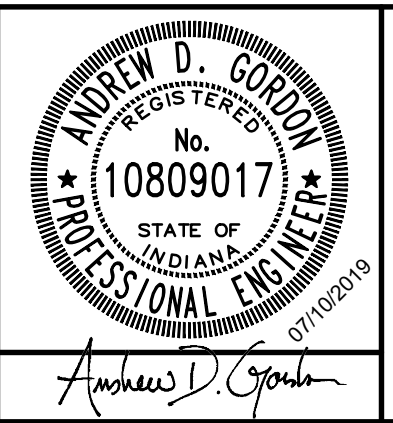
**KEYED NOTES**

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
- R<sub>1</sub> CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- S 3/4" OR 1" NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING
- S<sub>1</sub> 2" NEW SERVICE LINE, CURB STOP, RECONNECT
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- I INLET PROTECTION

- NOTES:**
1. PROVIDE SADDLE TAP OR 1" CORPORATION STOP TAP FOR BLOWING OFF THE WATER MAIN LOWERINGS.
  2. CONSTRUCT WATER MAIN LOWERINGS PER DETAIL ON SHEET 14.

Drawing: J:\Lawrence\Projects\28018\28018-04-01\DWG\Sheets\28018-PN-B-H.dwg | Layout: 06 | Plotter: 07/09/19 @ 02:25:24 | LastSavedBy: TravisL

SCALE VERIFICATION	DRAWN BY	MP	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
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	APPROVED	ADG				
	ISSUE DATE					
	JULY 2019					
	PROJECT NUMBER					
	208018-04-001B					

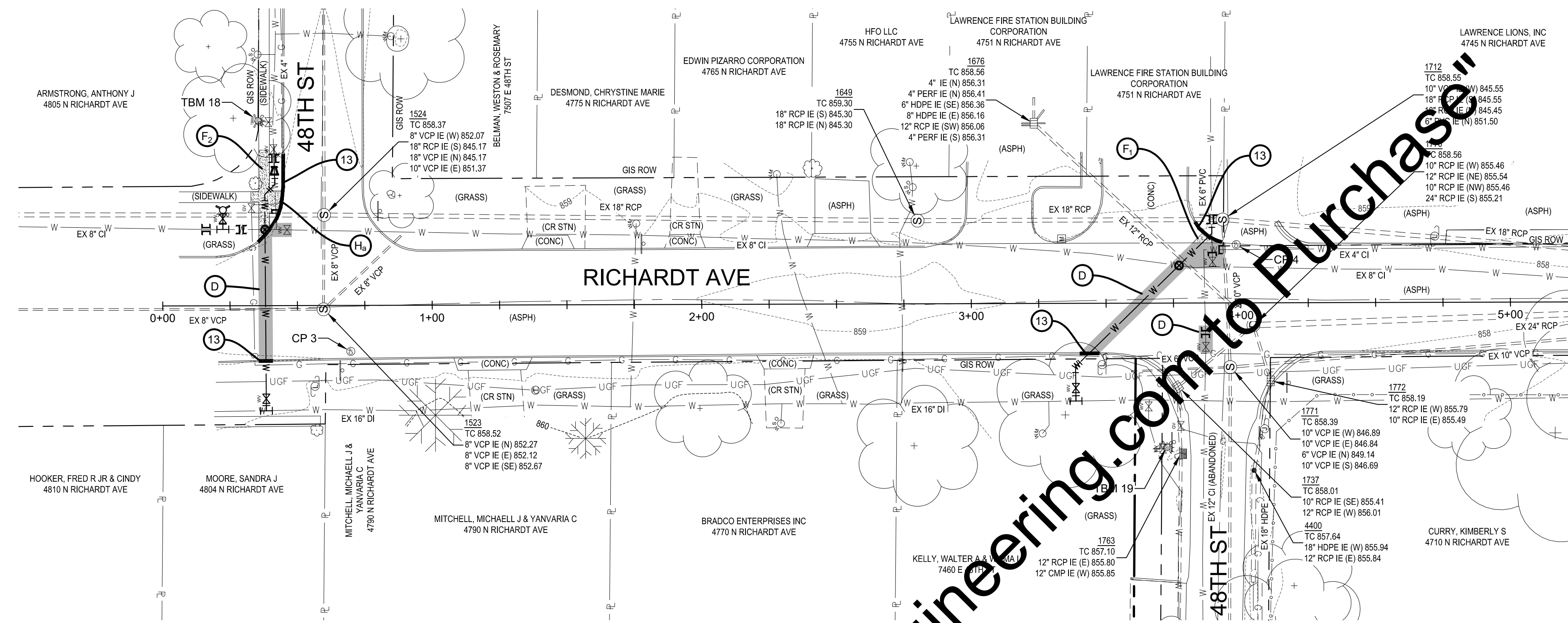


**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

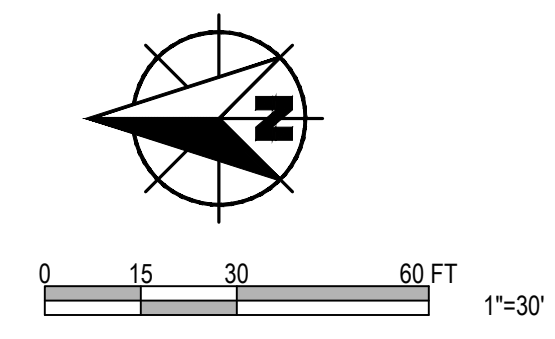
**WATER MAIN - LINE J AND K - 48TH ST**

SHEET NO.	<b>12</b>
TOTAL SHEETS	<b>24</b>





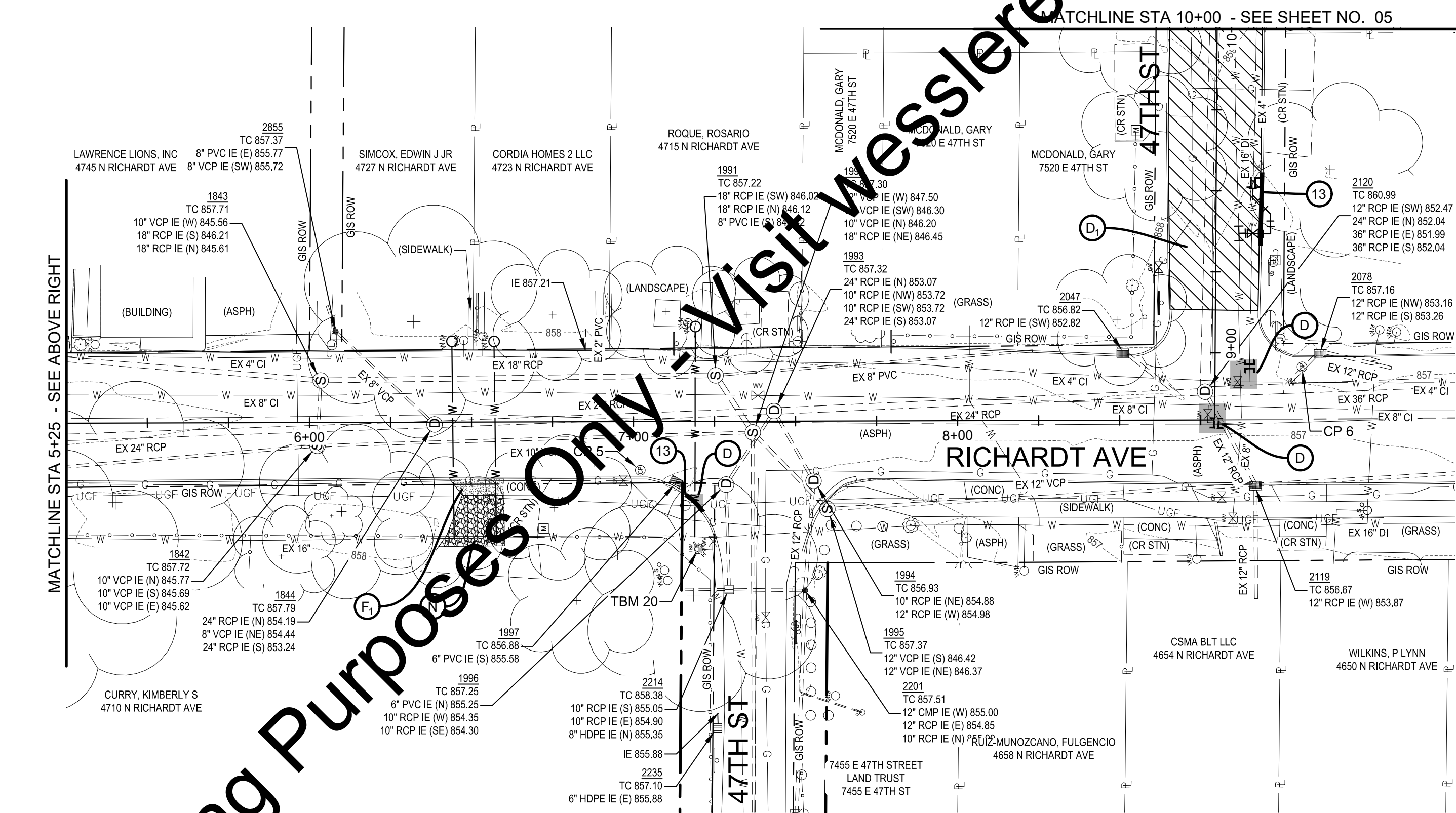
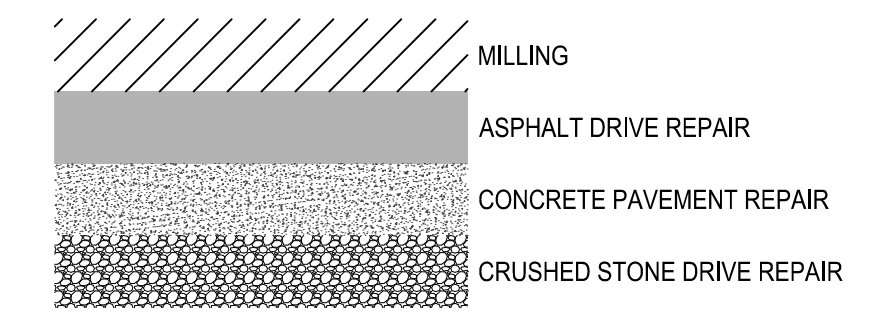
PLAN - LINE A  
SCALE: 1" = 30'



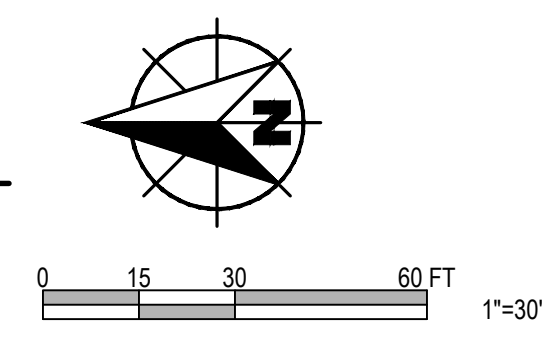
**KEYED NOTES**

- D ASPHALT PAVEMENT REPAIR
- D<sub>1</sub> ASPHALT PAVEMENT REPAIR (3" MILL AND RESURFACE)
- D<sub>2</sub> ASPHALT DRIVE REPAIR
- F<sub>1</sub> CONCRETE DRIVE REPAIR
- F<sub>2</sub> CONCRETE SIDEWALK REPAIR
- H<sub>2</sub> CONCRETE CURB RAMP
- N CRUSHED STONE SURFACE REPAIR
- 13 CONCRETE CURB REPAIR, MATCH EXISTING

**LEGEND**



PLAN - LINE A  
SCALE: 1" = 30'

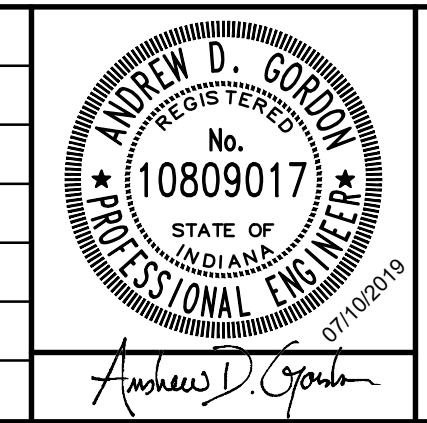


MATCHLINE STA 5+25 - SEE ABOVE RIGHT

MATCHLINE STA 5+25 - SEE BELOW LEFT

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SCALE VERIFICATION	DRAWN BY	MP	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING  	CHECKED BY	MAF				
	APPROVED	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				



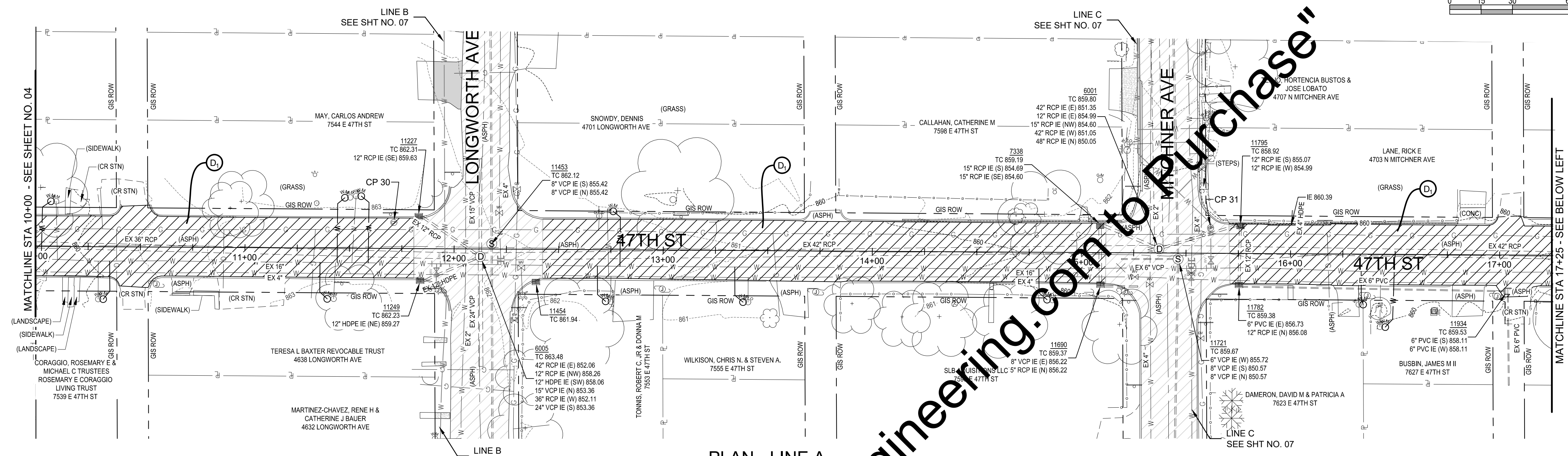
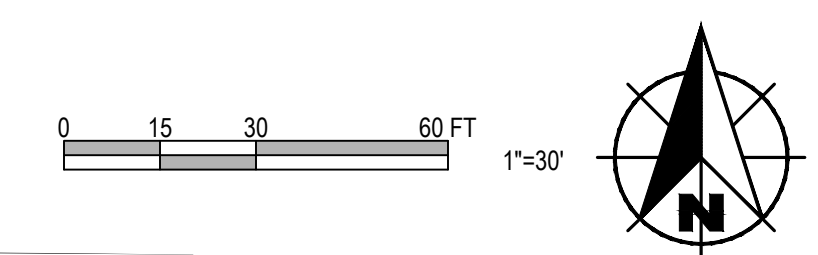
**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

**ROAD PLANS - LINE A - RICHARDT AVE AND 47TH ST**

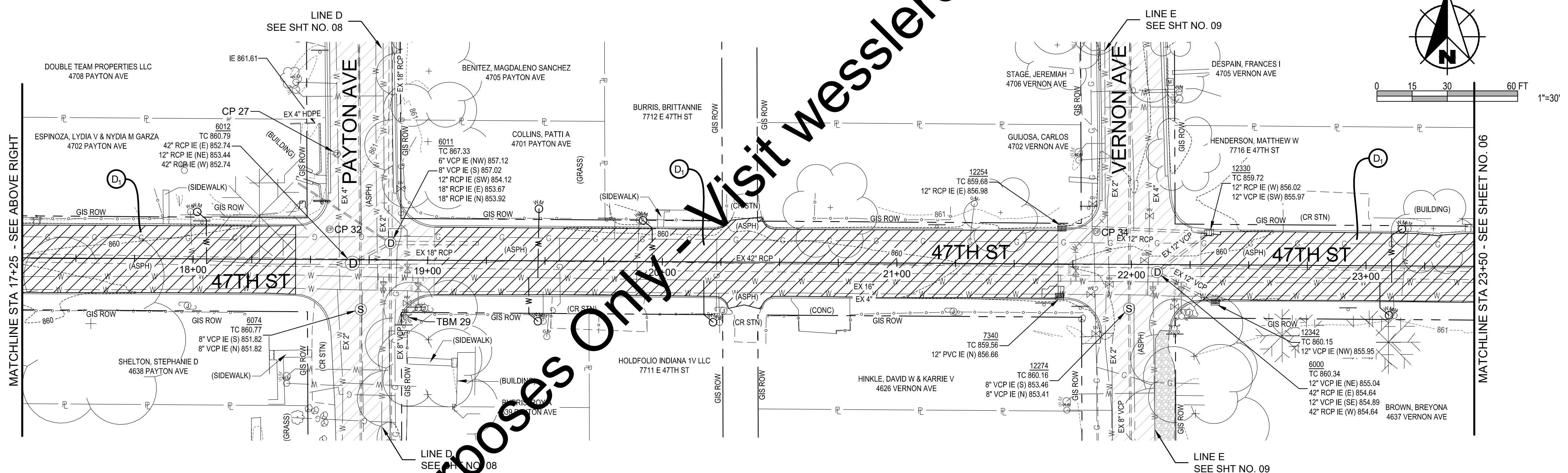
SHEET NO.	13
TOTAL SHEETS	24

Drawing: J:\Lawrence\Projects\208018-PN-ROAD-A.dwg | Layout: 01 | Plotted: 07/09/19 @ 02:26:19 | LasSaveasBy: Michelle





PLAN - LINE A  
SCALE: 1" = 30'

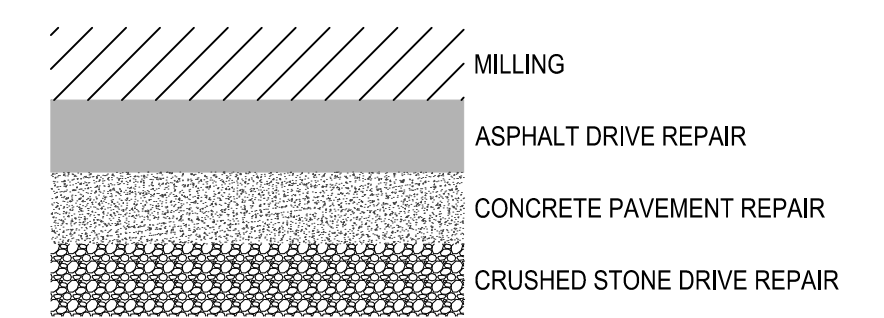


PLAN - LINE A  
SCALE: 1" = 30'

**KEYED NOTES**

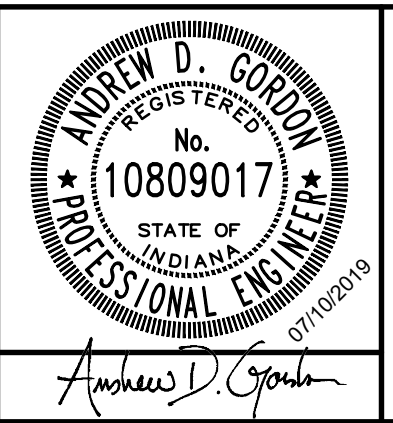
- D ASPHALT PAVEMENT REPAIR
- D<sub>1</sub> ASPHALT PAVEMENT REPAIR (3" MILL AND RESURFACE)
- D<sub>2</sub> ASPHALT DRIVE REPAIR
- F<sub>1</sub> CONCRETE DRIVE REPAIR
- F<sub>2</sub> CONCRETE SIDEWALK REPAIR
- H<sub>6</sub> CONCRETE CURB RAMP
- N CRUSHED STONE SURFACE REPAIR
- 13 CONCRETE CURB REPAIR, MATCH EXISTING

**LEGEND**



Drawing: J:\Lawrence\Projects\208018-PN-ROAD-A.dwg | Layout: 02 | Plotter: 07/09/19 @ 02:28:41 | LastSavedBy: Michelle

SCALE VERIFICATION	DRAWN BY	MR	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
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	APPROVED	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				

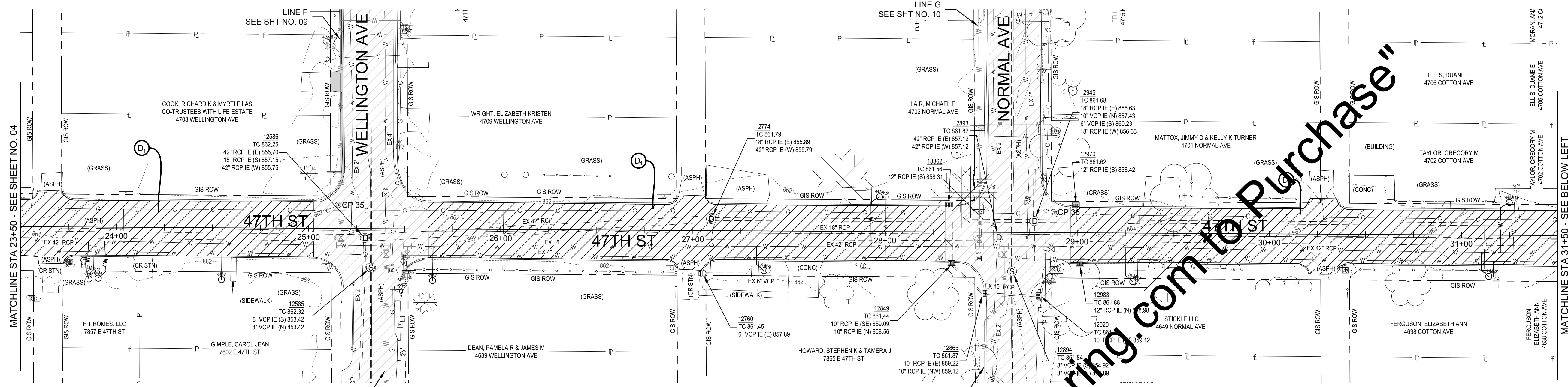


**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA  
**ROAD PLANS - LINE A - 47TH ST**

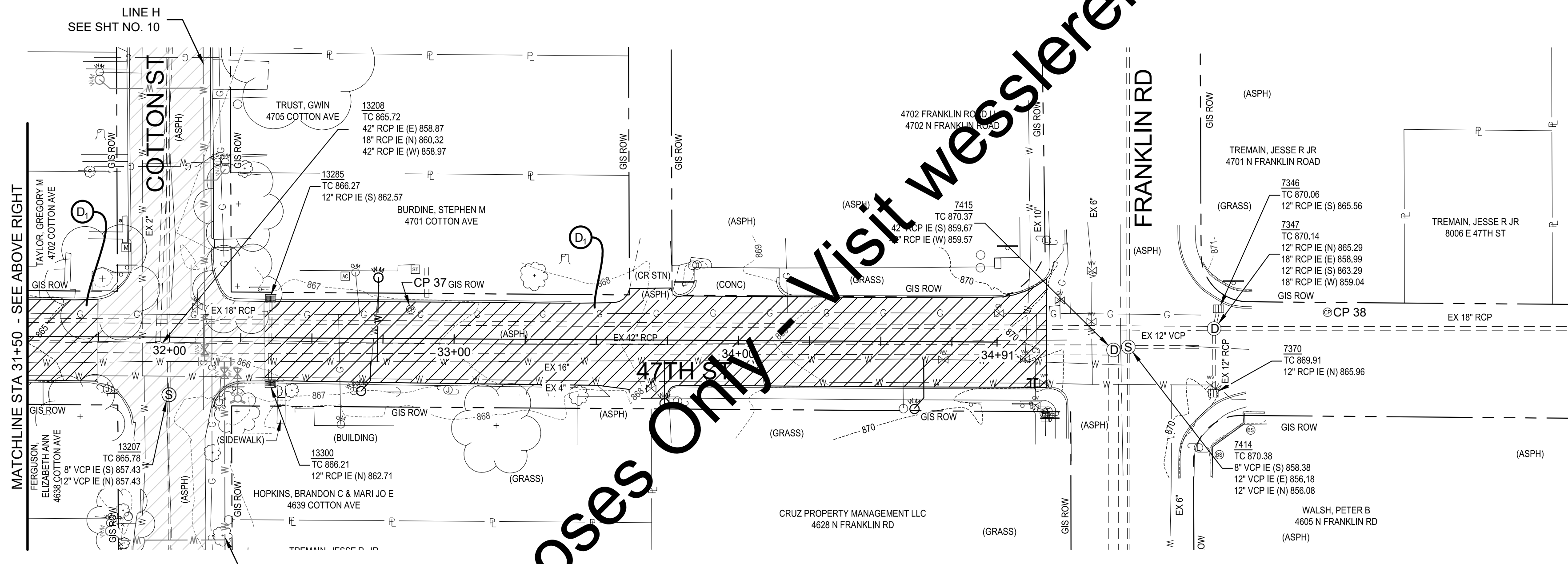
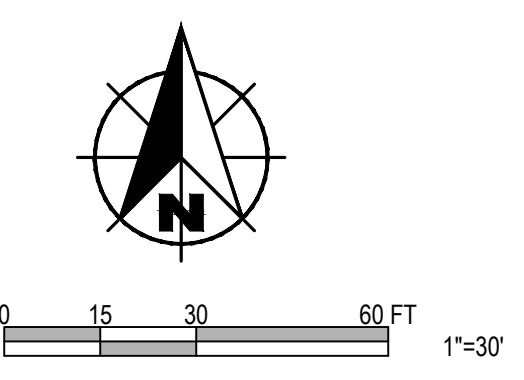
SHEET NO.	<b>14</b>
TOTAL SHEETS	<b>24</b>



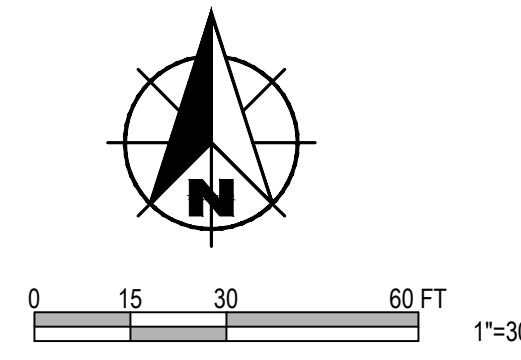
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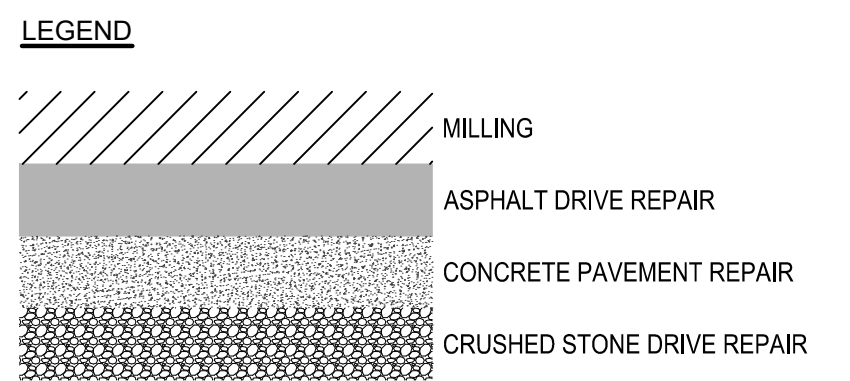
**PLAN - LINE A**  
SCALE: 1" = 30'



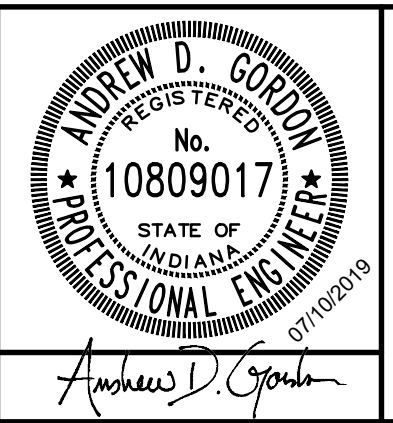
**PLAN - LINE A**  
SCALE: 1" = 30'



- KEYED NOTES**
- D ASPHALT PAVEMENT REPAIR
  - D<sub>1</sub> ASPHALT PAVEMENT REPAIR (3" MILL AND RESURFACE)
  - D<sub>2</sub> ASPHALT DRIVE REPAIR
  - F<sub>1</sub> CONCRETE DRIVE REPAIR
  - F<sub>2</sub> CONCRETE SIDEWALK REPAIR
  - H<sub>6</sub> CONCRETE CURB RAMP
  - N CRUSHED STONE SURFACE REPAIR
  - 13 CONCRETE CURB REPAIR, MATCH EXISTING



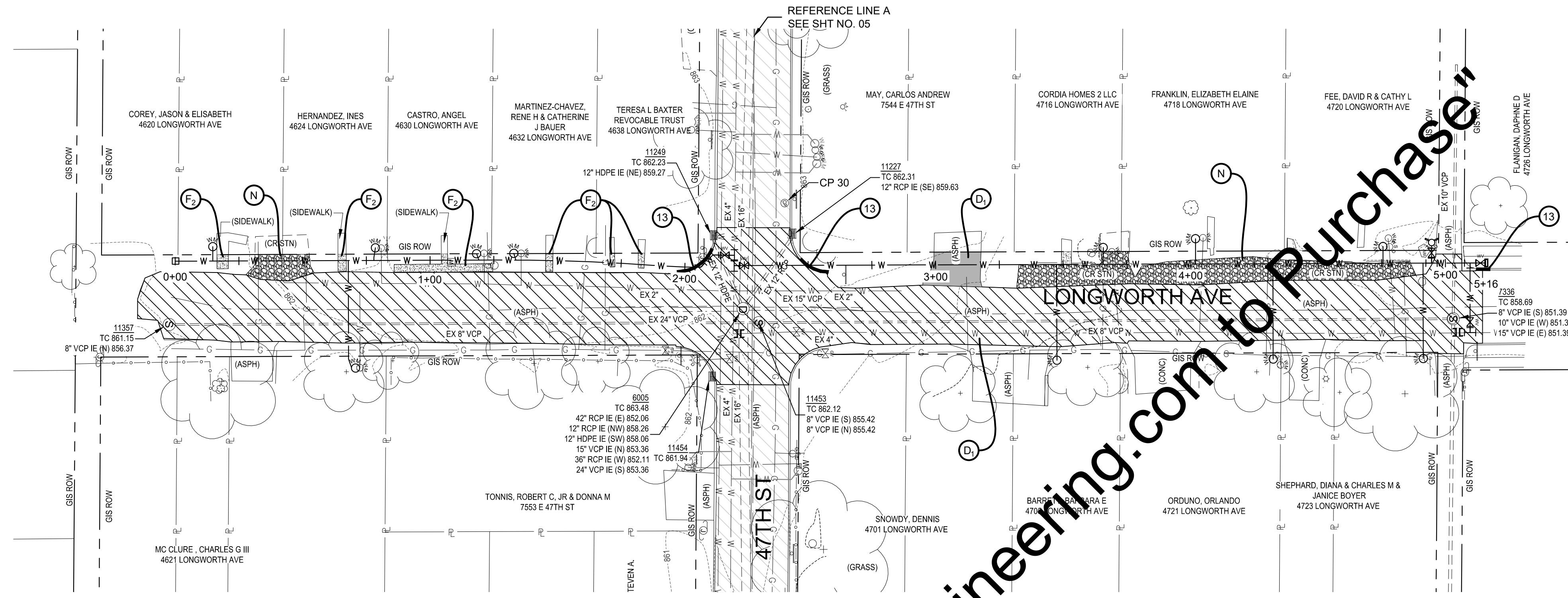
SCALE VERIFICATION	DRAWN BY	MP	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING 	CHECKED BY	M.A.E.				
	APPROVED	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				



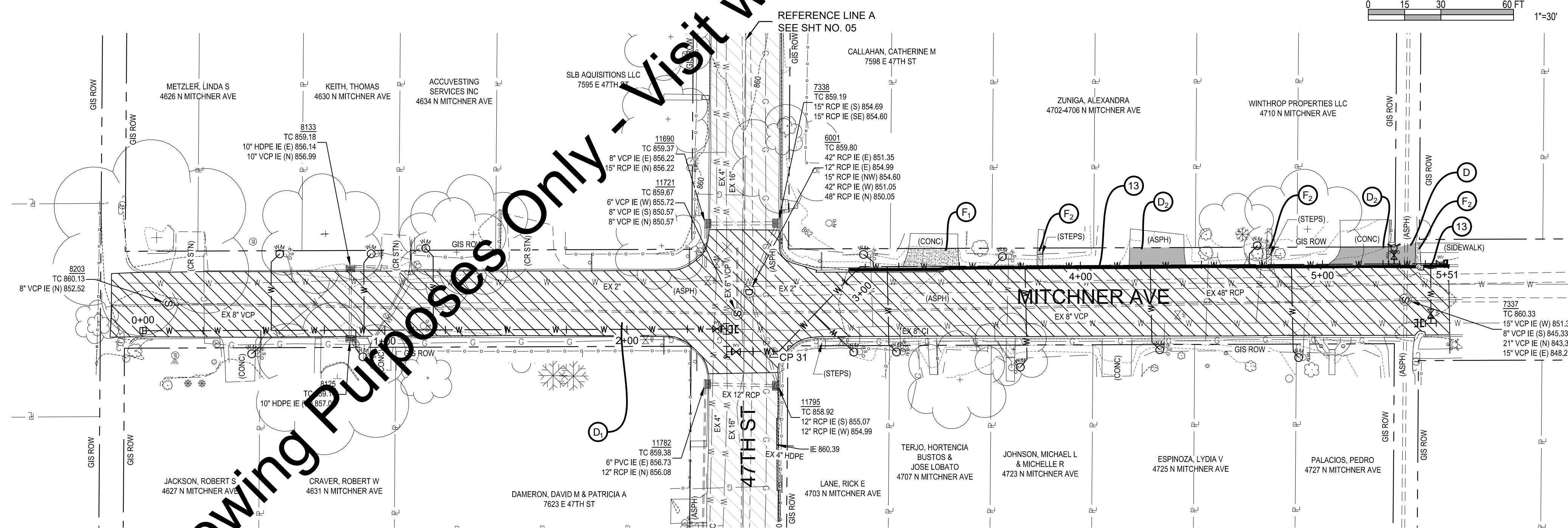
**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA  
**ROAD PLANS - LINE A - 47TH ST**

SHEET NO.  
**15**  
 TOTAL SHEETS  
**24**

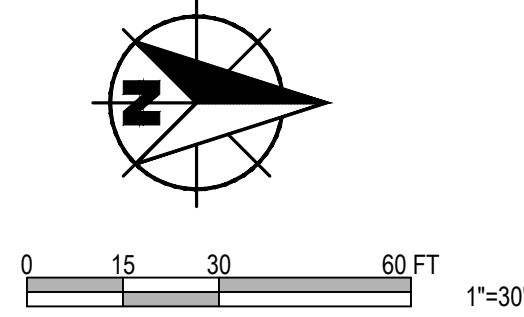
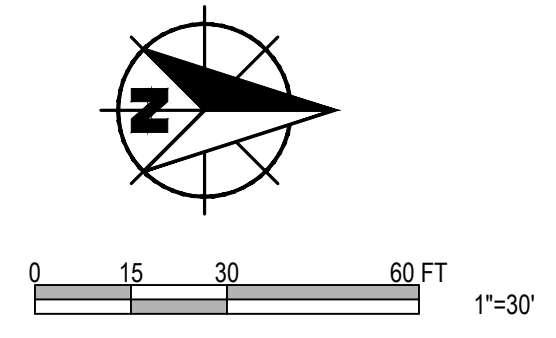




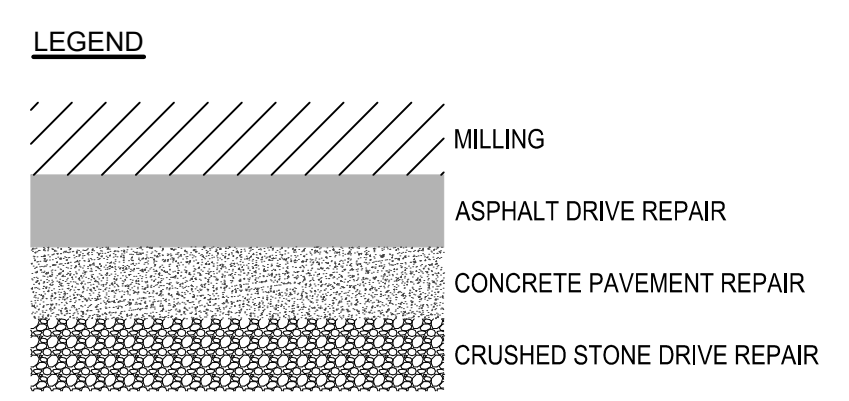
PLAN - LINE B  
SCALE: 1" = 30'



PLAN - LINE C  
SCALE: 1" = 30'

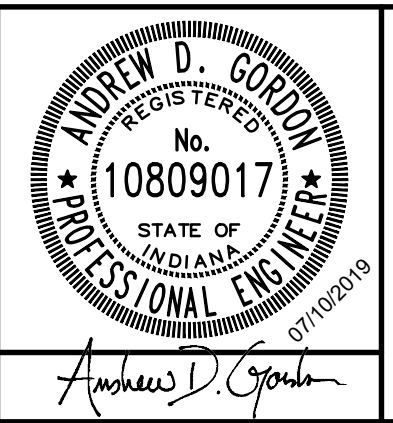


- KEYED NOTES**
- D ASPHALT PAVEMENT REPAIR
  - D<sub>1</sub> ASPHALT PAVEMENT REPAIR (3" MILL AND RESURFACE)
  - D<sub>2</sub> ASPHALT DRIVE REPAIR
  - F<sub>1</sub> CONCRETE DRIVE REPAIR
  - F<sub>2</sub> CONCRETE SIDEWALK REPAIR
  - H<sub>a</sub> CONCRETE CURB RAMP
  - N CRUSHED STONE SURFACE REPAIR
  - 13 CONCRETE CURB REPAIR, MATCH EXISTING



Drawing: J:\Lawrence\Projects\208018-PN-ROAD-04-01\DWG\Sheets\208018-PN-ROAD-B-H.dwg | Layout: 01 | Plotfile: 07/09/19 @ 02:27:58 | LastSavedBy: Michelle

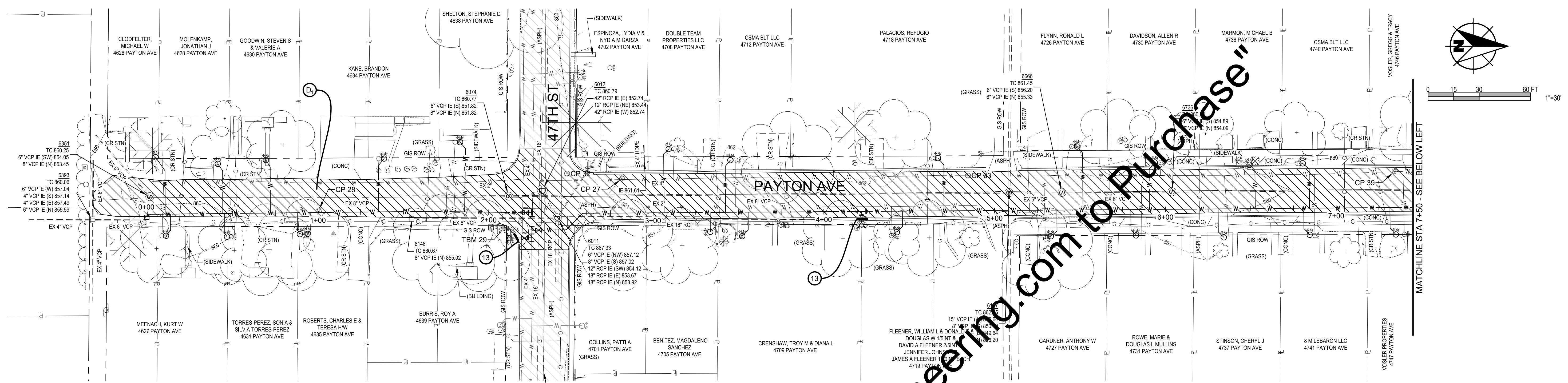
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	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				



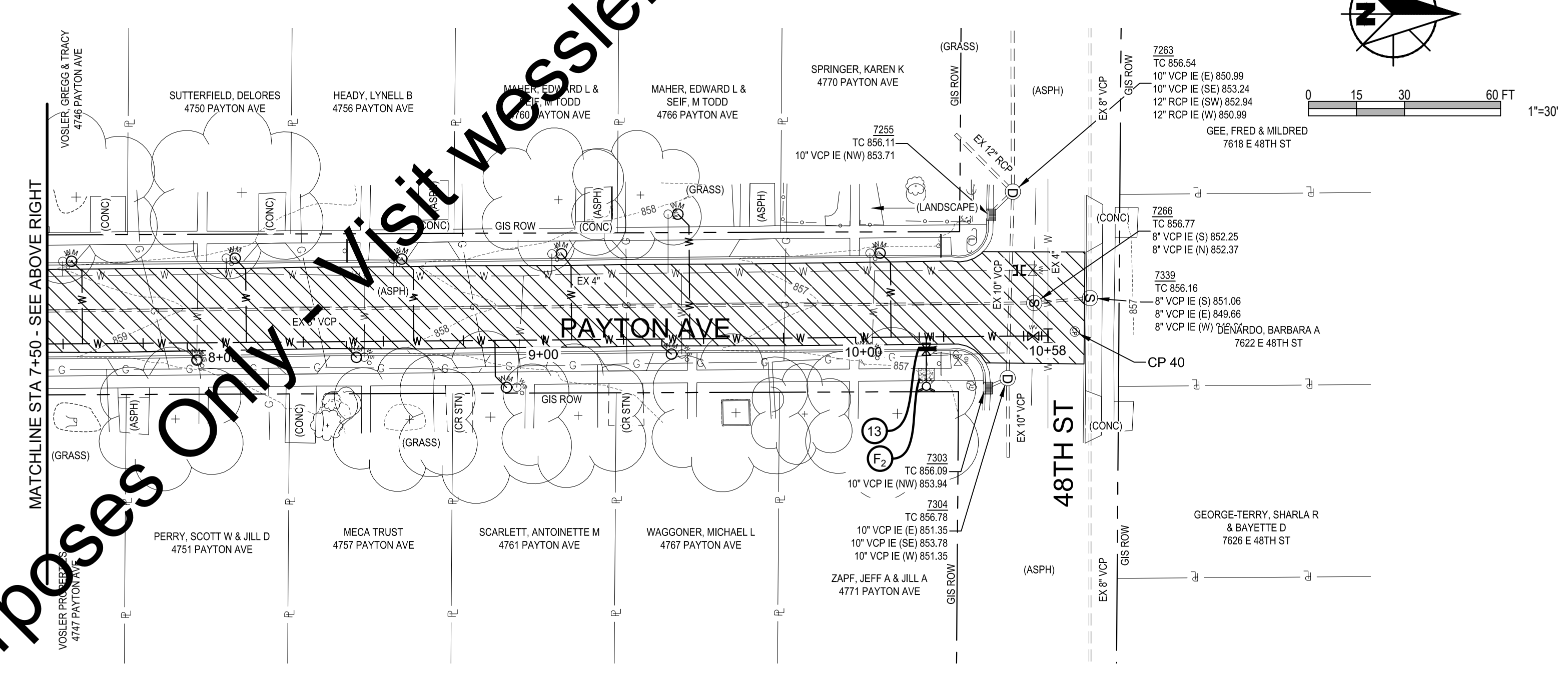
**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA  
**ROAD PLANS - LINES B AND C - LONGWORTH AND MITCHNER AVE**

SHEET NO.  
**16**  
 TOTAL SHEETS  
**24**





PLAN - LINE D  
SCALE: 1" = 30'



PLAN - LINE D  
SCALE: 1" = 30'

**KEYED NOTES**

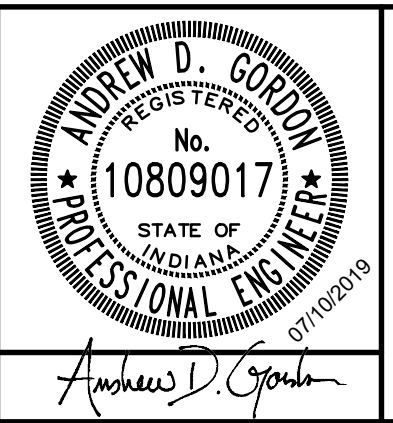
- D ASPHALT PAVEMENT REPAIR
- D<sub>1</sub> ASPHALT PAVEMENT REPAIR (3" MILL AND RESURFACE)
- D<sub>2</sub> ASPHALT DRIVE REPAIR
- F<sub>1</sub> CONCRETE DRIVE REPAIR
- F<sub>2</sub> CONCRETE SIDEWALK REPAIR
- H<sub>6</sub> CONCRETE CURB RAMP
- N CRUSHED STONE SURFACE REPAIR
- 13 CONCRETE CURB REPAIR, MATCH EXISTING

**LEGEND**

- MILLING
- ASPHALT DRIVE REPAIR
- CONCRETE PAVEMENT REPAIR
- CRUSHED STONE DRIVE REPAIR

Drawing: J:\Lawrence\Projects\208018-PN-ROAD-B-H.dwg | Layout: 02 | Plotfile: 07/09/19 @ 02:28:23 | LastSavedBy: Michelle

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING 	DRAWN BY M.P.	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
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	APPROVED BY ADG				
	ISSUE DATE JULY 2019				
	PROJECT NUMBER 208018-04-001B				

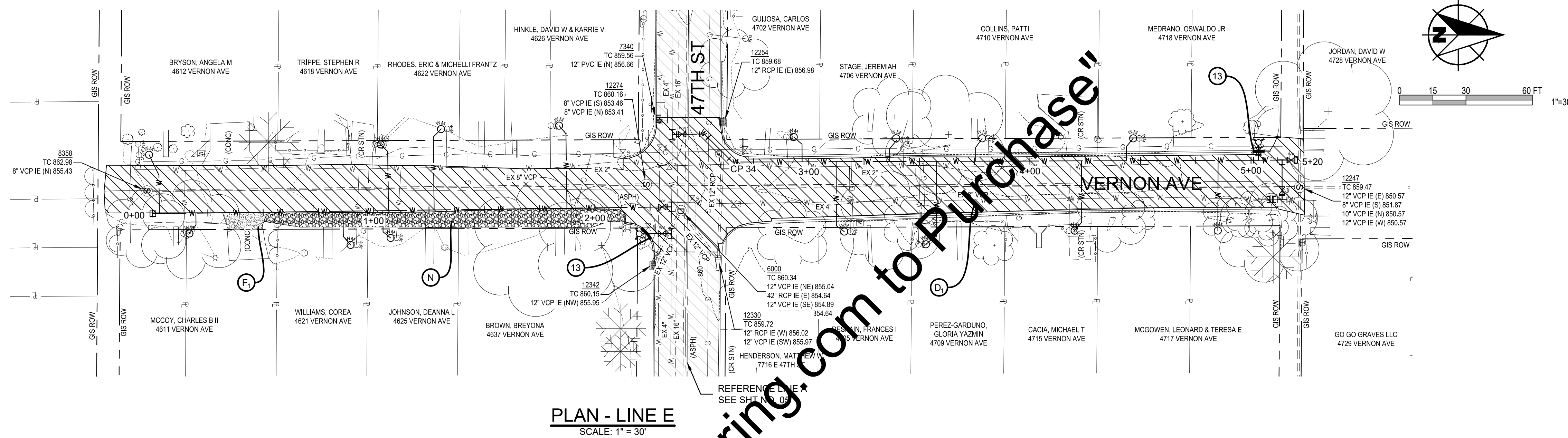


**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA  
**ROAD PLANS - LINE D - PAYTON AVE**

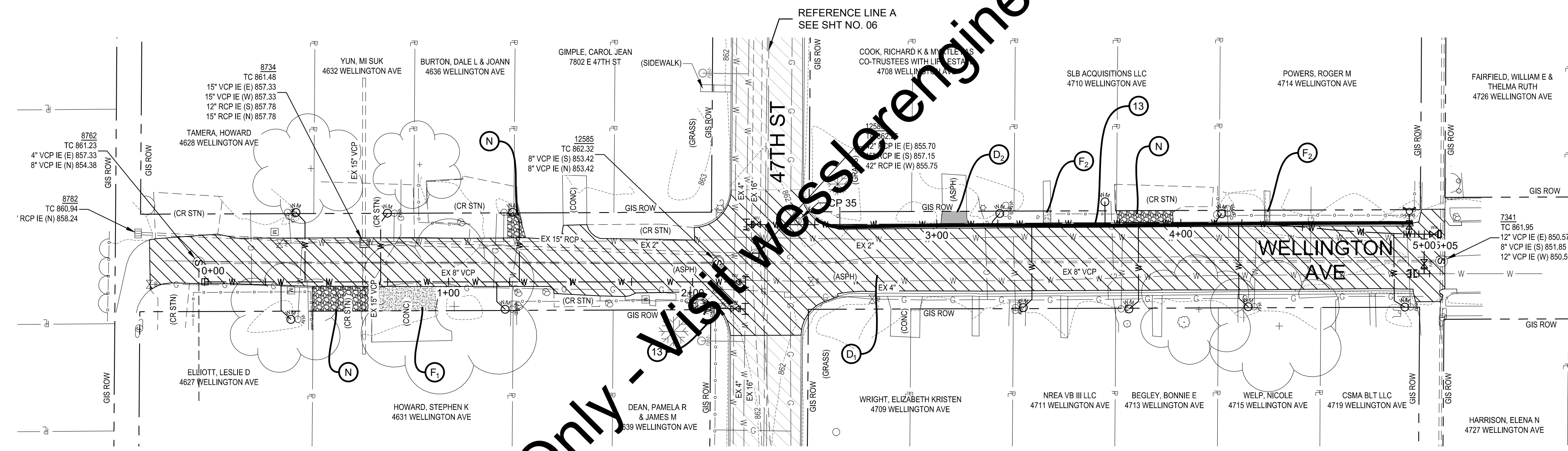
SHEET NO. <b>17</b>
TOTAL SHEETS <b>24</b>



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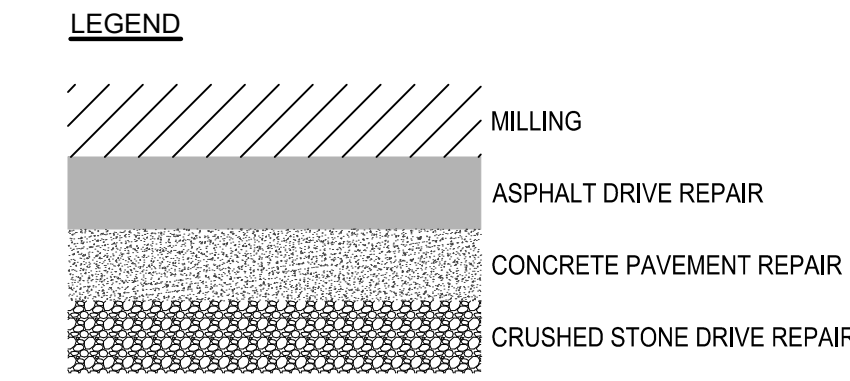


**PLAN - LINE E**  
SCALE: 1" = 30'

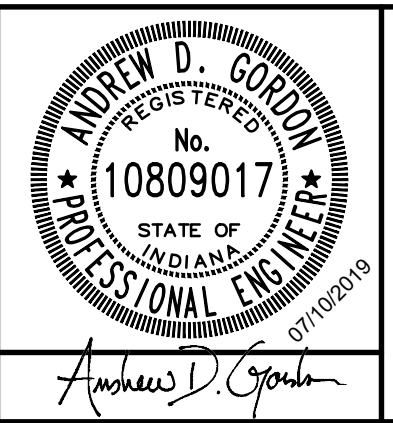


**PLAN - LINE F**  
SCALE: 1" = 30'

- KEYED NOTES**
- D ASPHALT PAVEMENT REPAIR
  - D<sub>1</sub> ASPHALT PAVEMENT REPAIR (3" MILL AND RESURFACE)
  - D<sub>2</sub> ASPHALT DRIVE REPAIR
  - F<sub>1</sub> CONCRETE DRIVE REPAIR
  - F<sub>2</sub> CONCRETE SIDEWALK REPAIR
  - H<sub>s</sub> CONCRETE CURB RAMP
  - N CRUSHED STONE SURFACE REPAIR
  - 13 CONCRETE CURB REPAIR, MATCH EXISTING



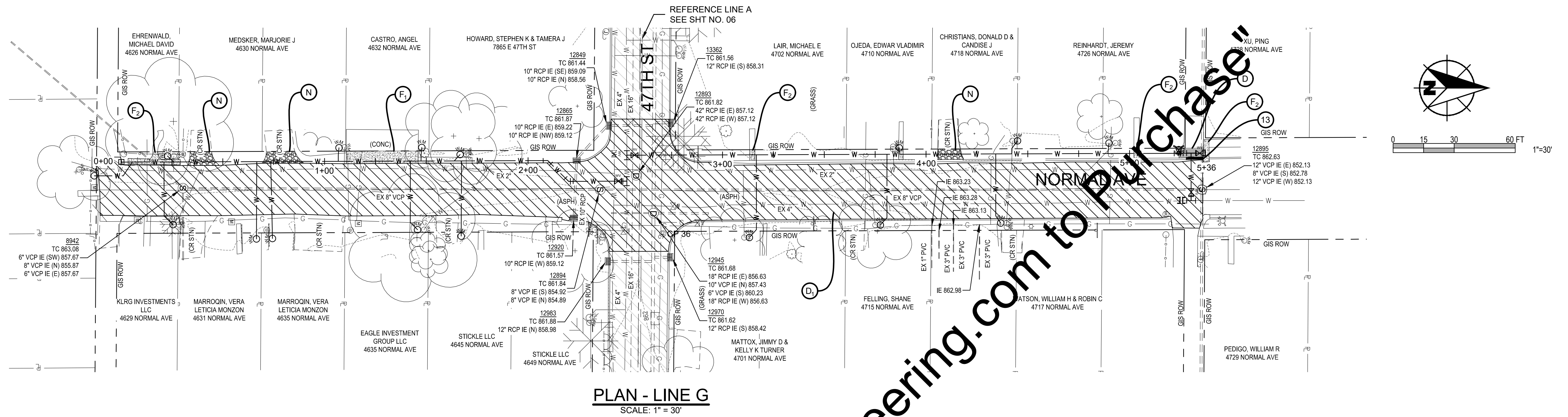
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	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				



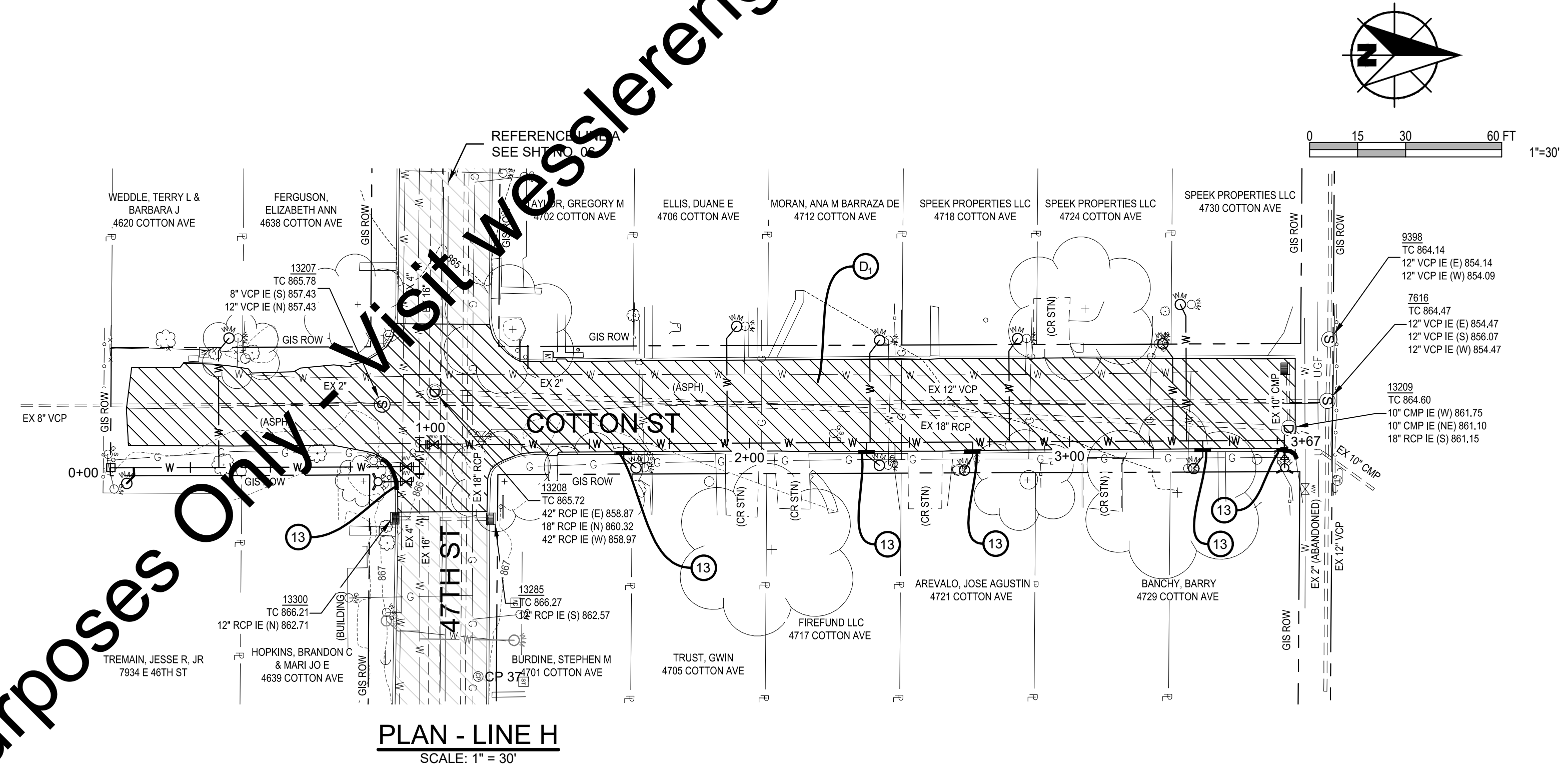
**47TH STREET WATER MAIN IMPROVEMENTS**  
 CITY OF LAWRENCE UTILITIES  
 LAWRENCE, INDIANA  
**ROAD PLANS - LINES E AND F - VERNON AND WELLINGTON AVE**

SHEET NO.	<b>18</b>
TOTAL SHEETS	<b>24</b>



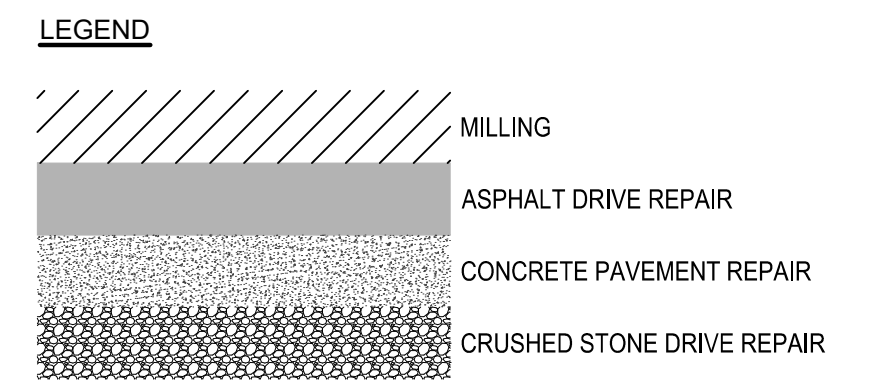


PLAN - LINE G  
SCALE: 1" = 30'



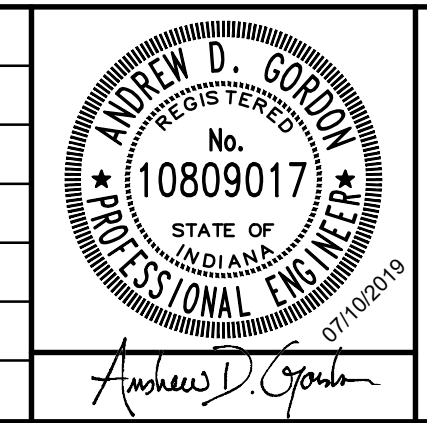
PLAN - LINE H  
SCALE: 1" = 30'

- KEYED NOTES**
- D ASPHALT PAVEMENT REPAIR
  - D<sub>1</sub> ASPHALT PAVEMENT REPAIR (3" MILL AND RESURFACE)
  - D<sub>2</sub> ASPHALT DRIVE REPAIR
  - F<sub>1</sub> CONCRETE DRIVE REPAIR
  - F<sub>2</sub> CONCRETE SIDEWALK REPAIR
  - N CONCRETE CURB RAMP
  - H CRUSHED STONE SURFACE REPAIR
  - 13 CONCRETE CURB REPAIR, MATCH EXISTING



Drawing: J:\Lawrence\Projects\208018-PN-ROAD-B-H.dwg | Layout: 04 | Plotted: 07/09/19 @ 02:29:12 | LastSavedBy: MichelleE

SCALE VERIFICATION	DRAWN BY	MP	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
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	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				

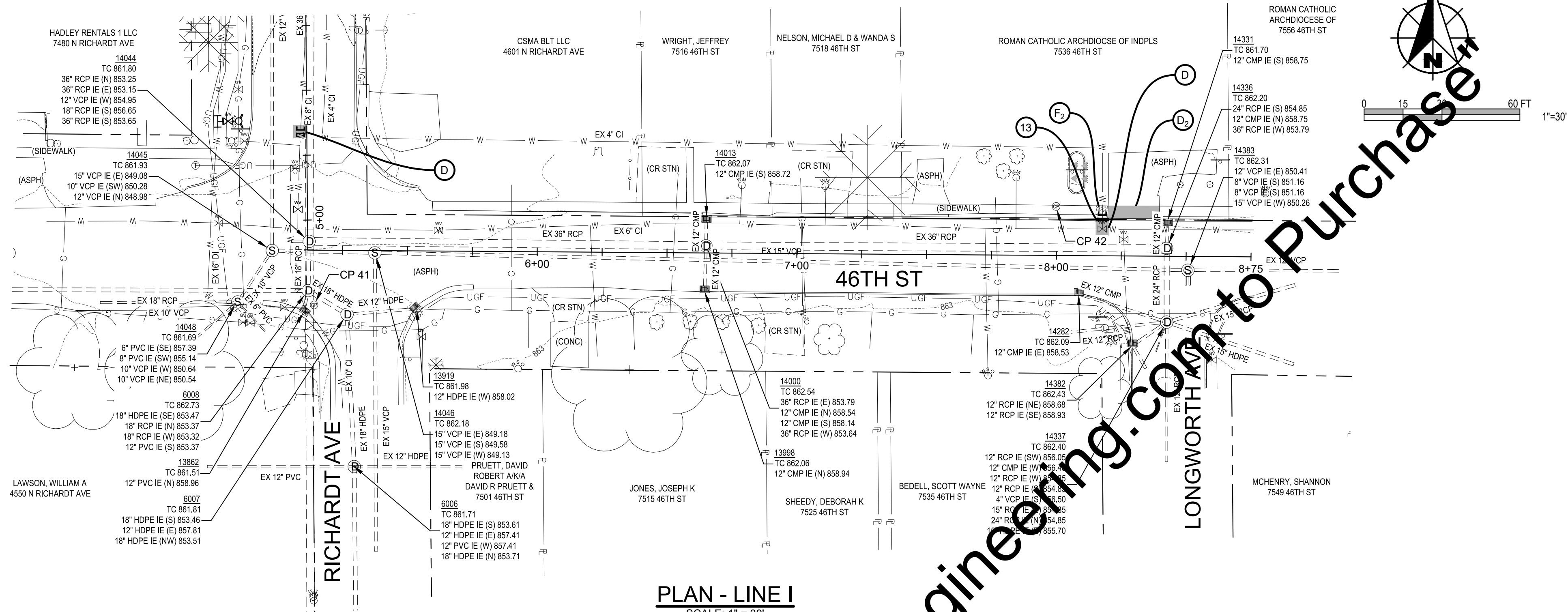


**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

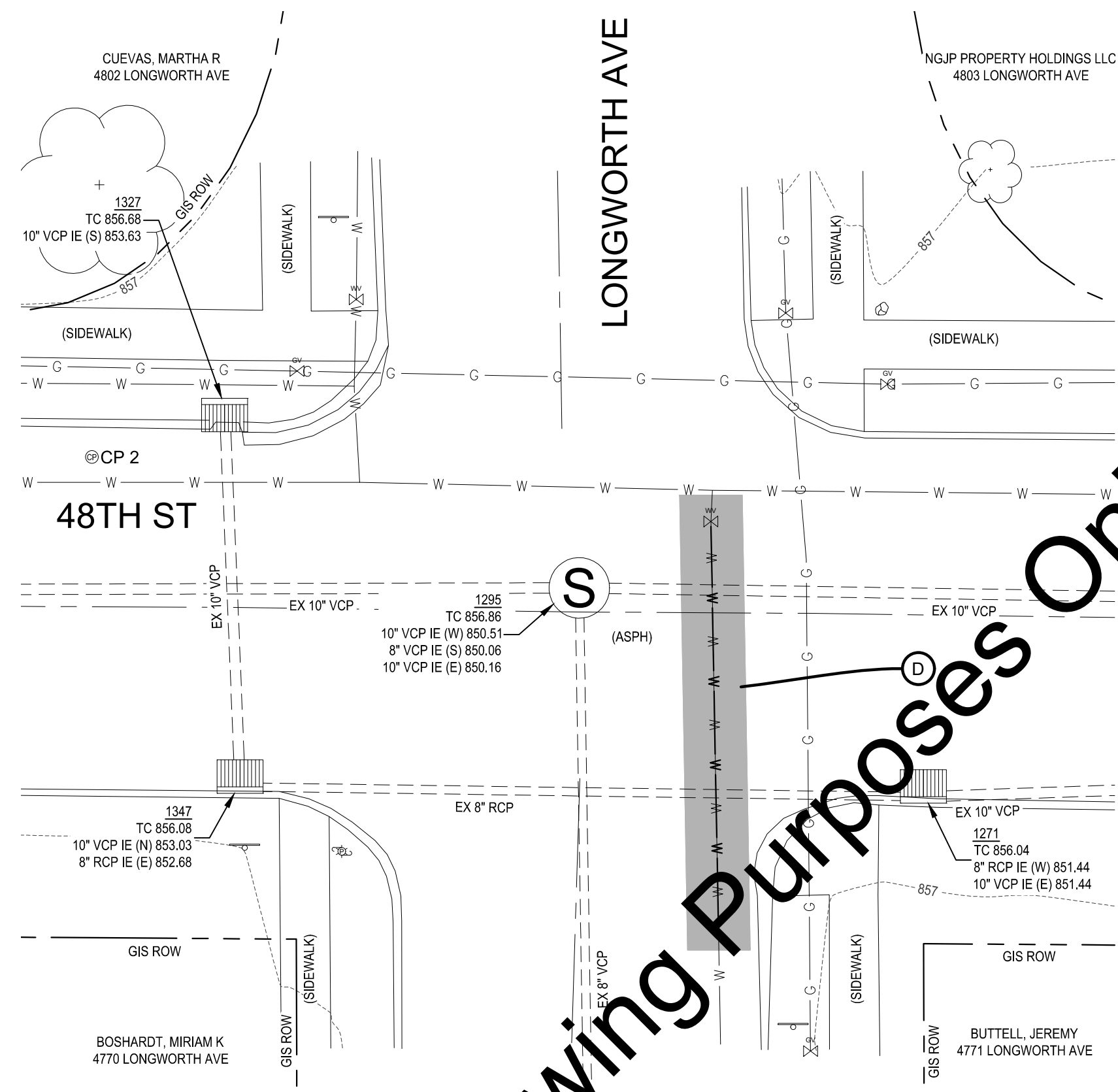
**ROAD PLANS - LINES G AND H - NORMAL AVE AND COTTON ST**

SHEET NO.	<b>19</b>
TOTAL SHEETS	<b>24</b>

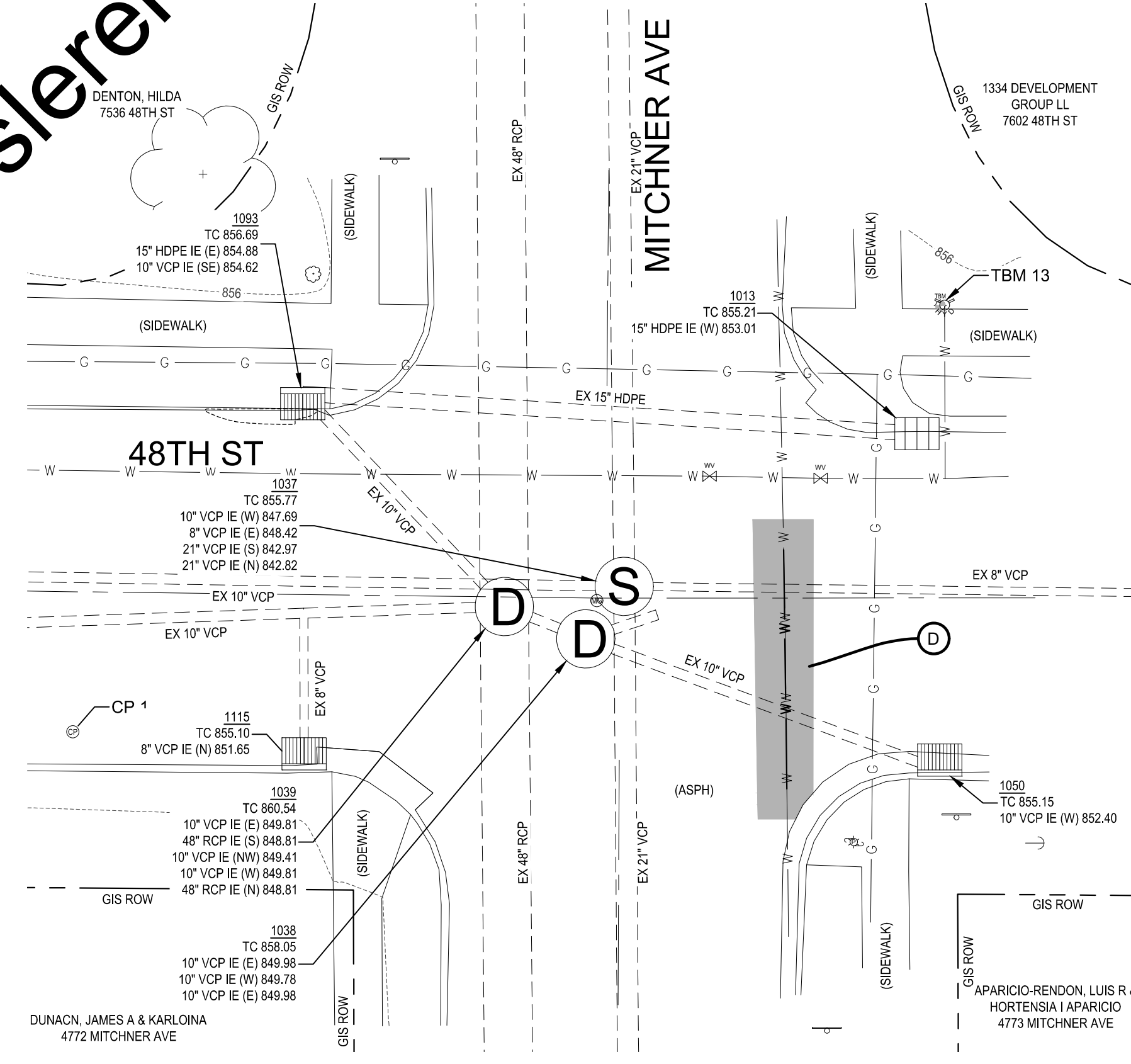




PLAN - LINE I  
SCALE: 1" = 30'

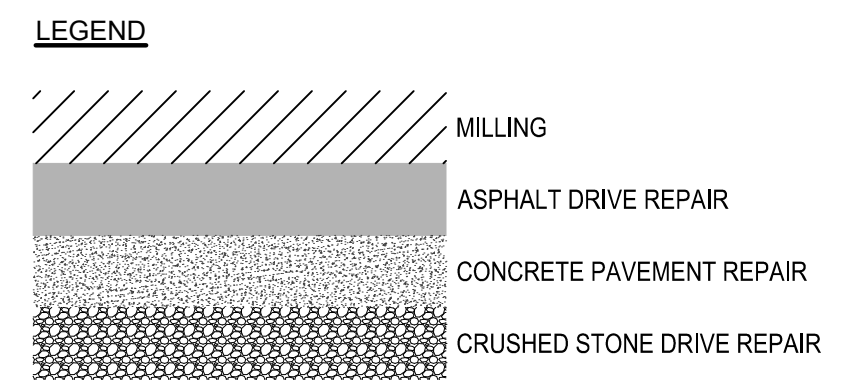


PLAN - LINE J  
SCALE: 1" = 10'



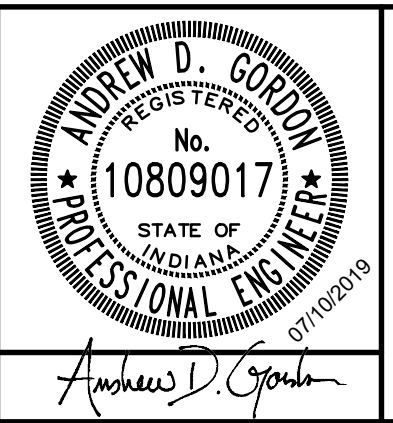
PLAN - LINE K  
SCALE: 1" = 10'

- KEYED NOTES**
- D ASPHALT PAVEMENT REPAIR
  - D<sub>1</sub> ASPHALT PAVEMENT REPAIR (3" MILL AND RESURFACE)
  - D<sub>2</sub> ASPHALT DRIVE REPAIR
  - F<sub>1</sub> CONCRETE DRIVE REPAIR
  - F<sub>2</sub> CONCRETE SIDEWALK REPAIR
  - H<sub>1</sub> CONCRETE CURB RAMP
  - N CRUSHED STONE SURFACE REPAIR
  - 13 CONCRETE CURB REPAIR, MATCH EXISTING



Drawing: J:\Lawrence\Projects\208018-PN-ROAD-04-01\DWG\Sheets\208018-PN-ROAD-B-H.dwg | Layout: 05 | Plotfile: 07/09/19 @ 02:29:42 | LastSavedBy: Michelle

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	APPROVED	ADG				
	ISSUE DATE					
	JULY 2019					
	PROJECT NUMBER					
	208018-04-001B					

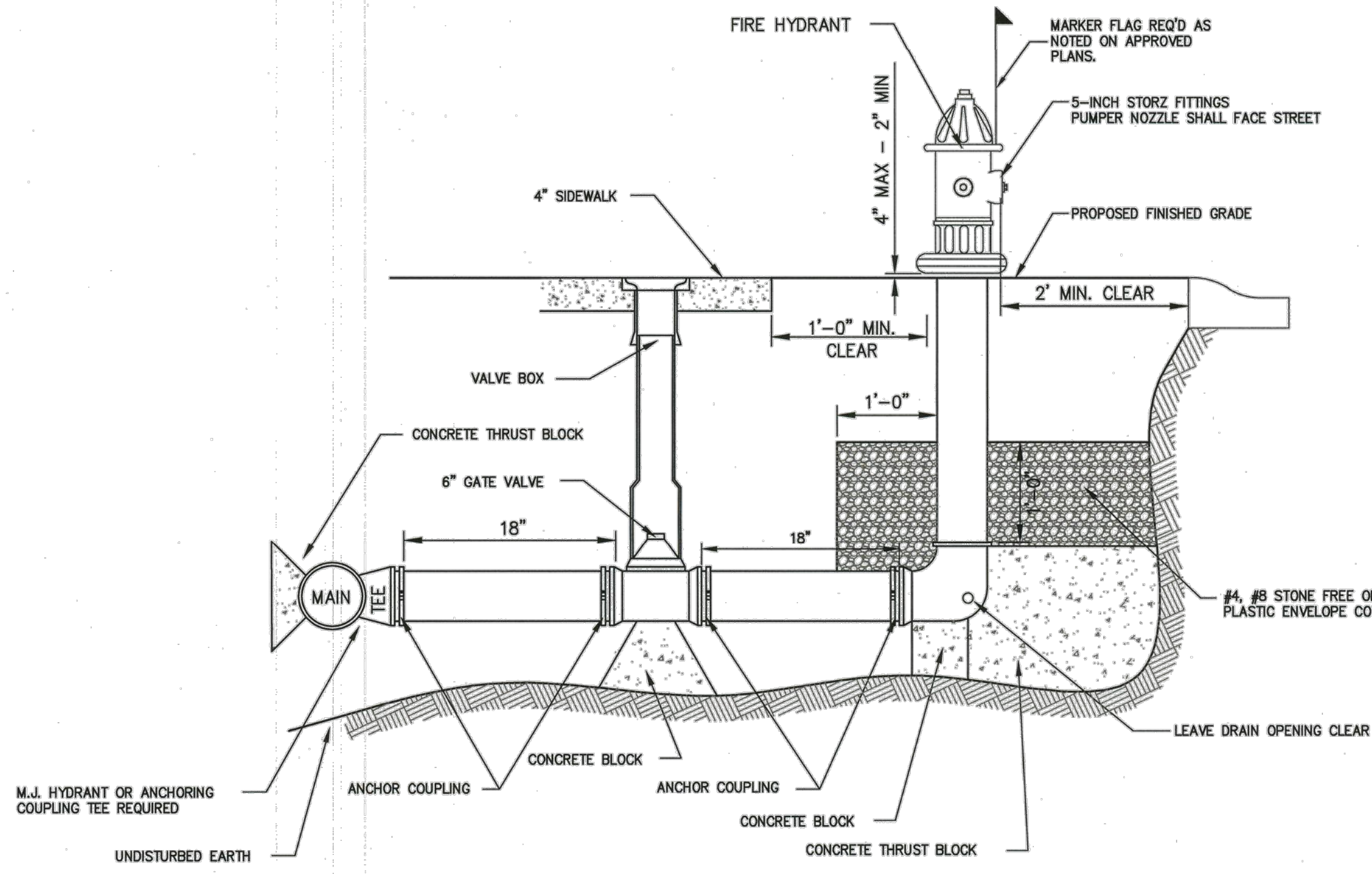


**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

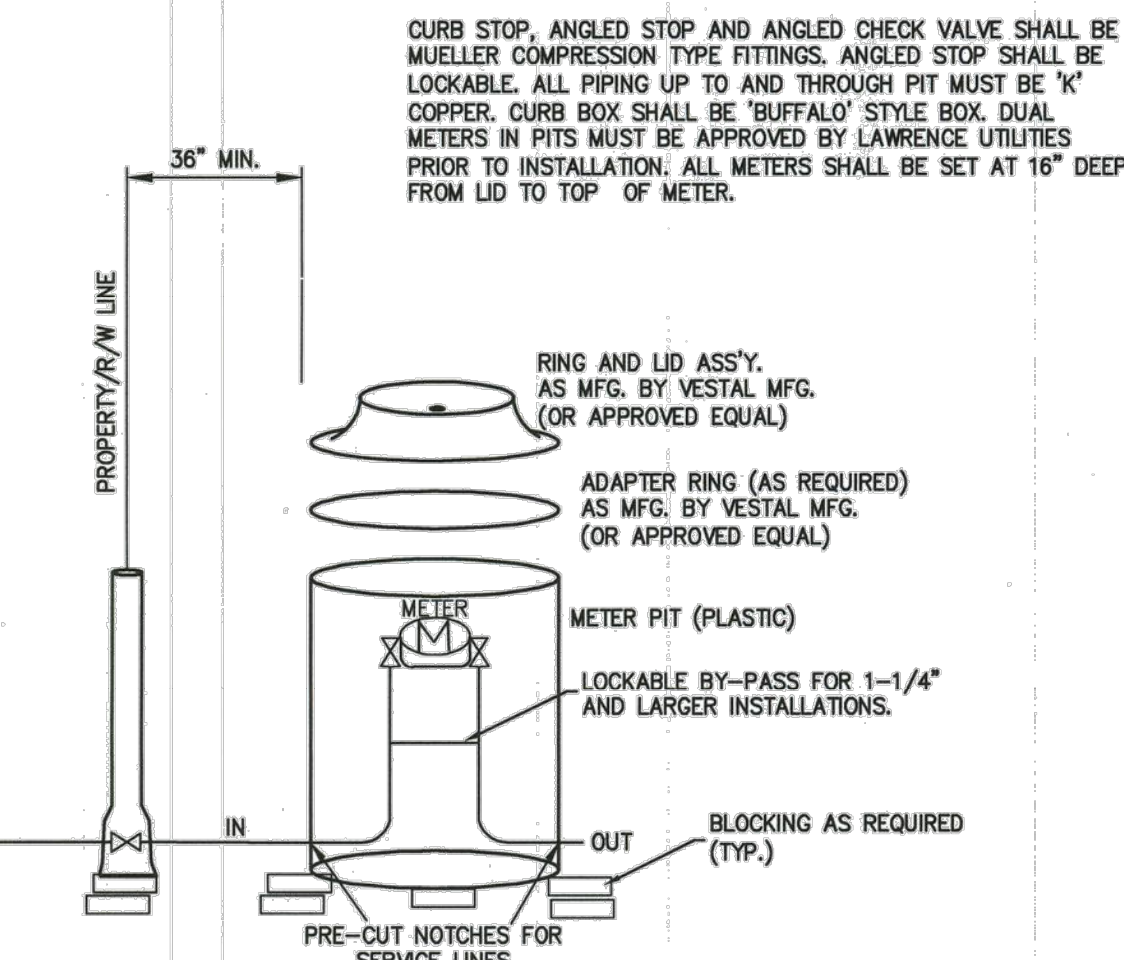
**ROAD PLANS - LINES I, J & K - RICHARDT AVE, 46TH ST, AND 48TH ST**

SHEET NO.	<b>20</b>
TOTAL SHEETS	<b>24</b>





TYPICAL FIRE HYDRANT INSTALLATION DETAIL  
(NO SCALE)



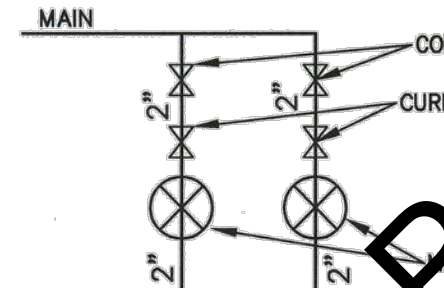
TYPICAL METER PIT DETAIL  
RESIDENTIAL/COMMERCIAL  
(NO SCALE)

SERVICE SIZE	PIT DIM.	ADAPTER RING	RING & LID	METER YOKE OR OPENING
3/4"	20"x48"	N/A	20"- 6150	Y-502 P
1"	24"x48"	24"x20"	20"- 6150	Y-504 P
1-1/2"	30"x36"	30"x20"	20"- 6150	13"
2"	36"x36"	36"x20"	20"- 6150	17"

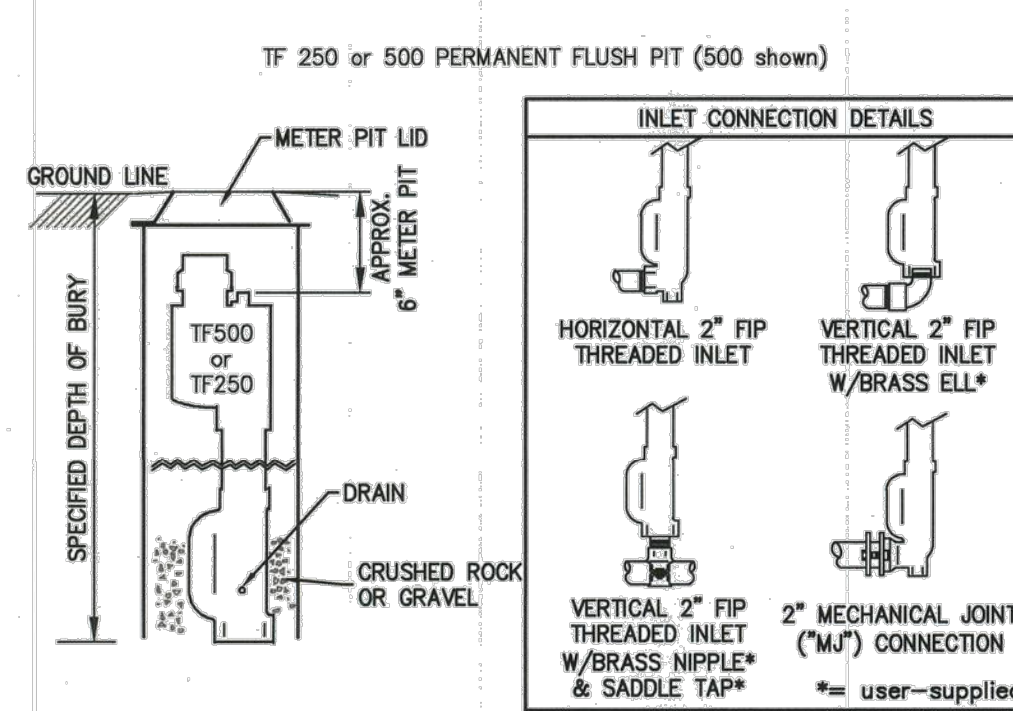
\* MUELLER DESIGNATION

METER PIT - LIST OF MATERIALS

- A) 3/4" AND 1" TYPICAL INSTALLATION COMPONENT
- DIRECT TAP
    - CORPORATION STOP 3/4" OR 1" COMPRESSION
    - CURB STOP 3/4" OR 1" COMPRESSION
  - METER PITS
    - 3/4" = PIT 20"x48" - RING & LID 20"-6150 METER YOKE OR OPENING Y-502
    - 1" = PIT 24"x48" - RING & LID 20"-6150 AND ADAPTER RING 24"x20". METER YOKE OR OPENING Y-504.
  - 1-1/2" OR 2"
    - SADDLE - STAINLESS STEEL BAND
      - CORPORATION STOP - 1-1/2" OR 2" COMPRESSION
      - SWING JOINT
    - CURB STOP - 1-1/2" OR 2" COMPRESSION
  - METER PITS
    - 1-1/2" = PIT 30"x36" - ADAPTER RING 36"x20" RING & LID 20"-6150 AND LAY LENGTH OF METER OPENING IS 13"
    - 2" = PIT 36"x36" - ADAPTER RING 36"x20" RING & LID 20"-6150 AND LAY LENGTH OF METER OPENING IS 17"
- C) INSIDE PIT SET UP
- 3/4" AND 1"
    - ANGLED VALVE 3/4" OR 1" (MUELLER OR EQUIVALENT TO COMPRESSION FITTINGS)
    - ANGLED CHECK VALVE 3/4" OR 1" (MUELLER OR EQUIVALENT TO COMPRESSION FITTINGS)
  - 1-1/2" AND 2"
    - ANGLED VALVES ON BOTH SIDES
    - 1-1/4" BYPASS (LOCKABLE)
    - PRE-MANUFACTURED METER SETS REQUIRED.



TYPICAL VALVE INSTALLATION DETAIL  
(NO SCALE)



HYDRANT SHALL BE 4" BURY, WITH (2" VERTICAL FIP / 2" HORIZONTAL FIP / 2" M.J) INLET AND 2" NPT NOZZLE OUTLET. HYDRANT SHALL FIT IN A 5-1/4" ID VALVE BOX. HYDRANT SHALL BE NON-FREEZING AND SELF-DRAINING. HYDRANT SHALL BE OPERATED BY TURNING A TOP-MOUNTED 9/16" SQUARE OPERATING NUT COUNTERCLOCKWISE TO OPEN, CLOCKWISE TO CLOSE. HYDRANT MUST SEAL THE DRAIN OUTLET IN ALL POSITIONS FROM 1/4"-OPEN TO FULLY-OPEN. ALL INTERNAL WORKING PARTS, THE INLET, AND THE OUTLET SHALL BE LEAD-FREE BRASS. ALL WORKING PARTS SHALL BE SERVICEABLE FROM ABOVE WITH NO DIGGING REQUIRED. DISASSEMBLY MUST BE ACCOMPLISHED WITH NO TURNING FORCES APPLIED TO THE HYDRANT BARREL. ALL WEAR PARTS (O-RINGS AND VALVE SEAT) SHALL BE OF COMMONLY AVAILABLE DIMENSIONS AND MATERIAL, AND NONE MAY BE OF VENDOR-UNIQUE DESIGN. HYDRANT SHALL BE THE MODEL TF500 AS MANUFACTURED BY THE KUPFERLE FOUNDRY CO., ST. LOUIS, MO 63102.

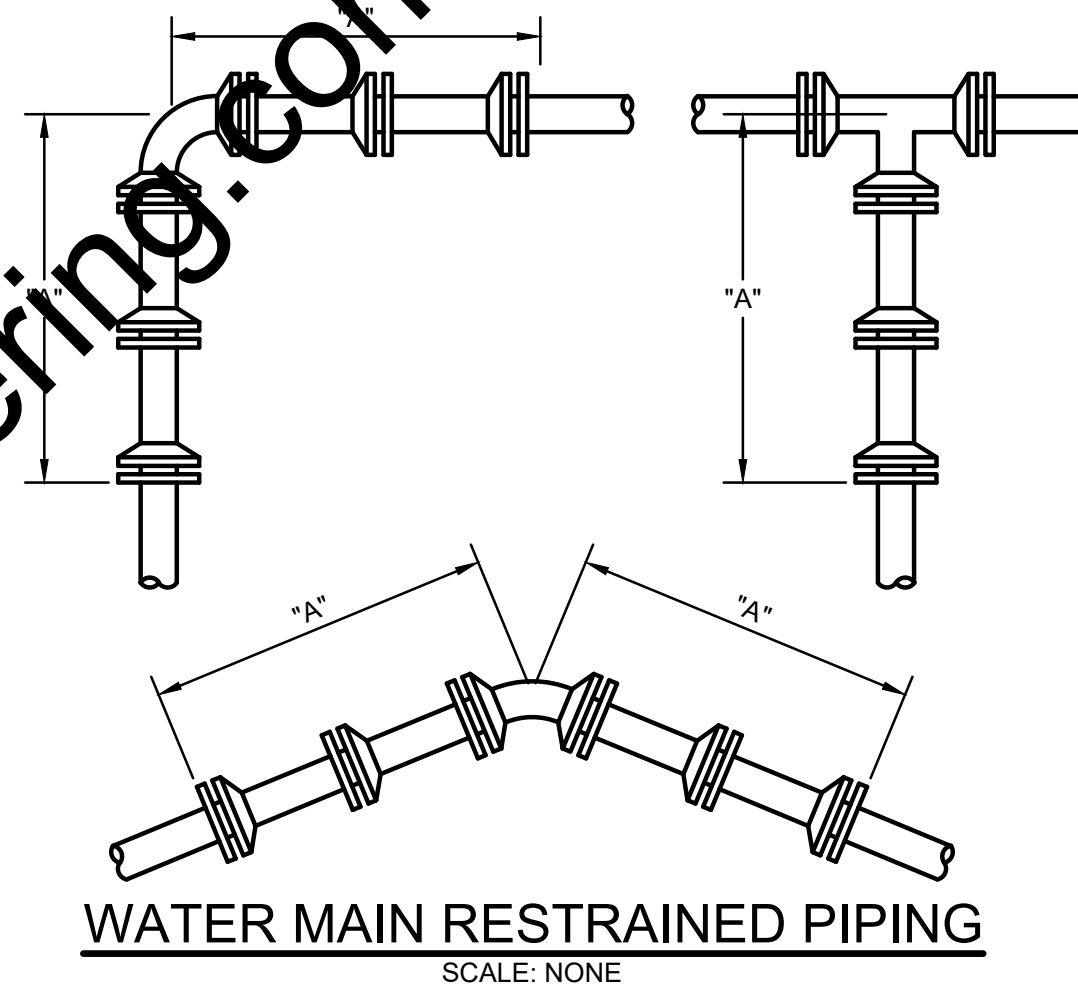
- INSURE THAT THE HYDRANT IS FREE TO MOVE VERTICALLY WITHIN THE VALVE BOX. IN ORDER TO PREVENT THE TRANSMISSION OF TRAFFIC LOADS TO THE HYDRANT, IT SHOULD NOT BE JAMMED OR WEDGED AGAINST THE VALVE BOX ID.

- THE NORMAL POSITION OF THE TOP OF THE OPERATING NUT IS ABOUT 6" BELOW THE TOP OF THE VALVE BOX, BUT YOU CAN FREELY ADJUST THIS POSITION TO SUIT YOUR CIRCUMSTANCES. JUST KEEP IN MIND THAT MAINTENANCE PROCEDURES ARE BEST PERFORMED WHEN THE BOLTS ATTACHING THE TOP CAP ARE WITHIN AN EASY REACH.

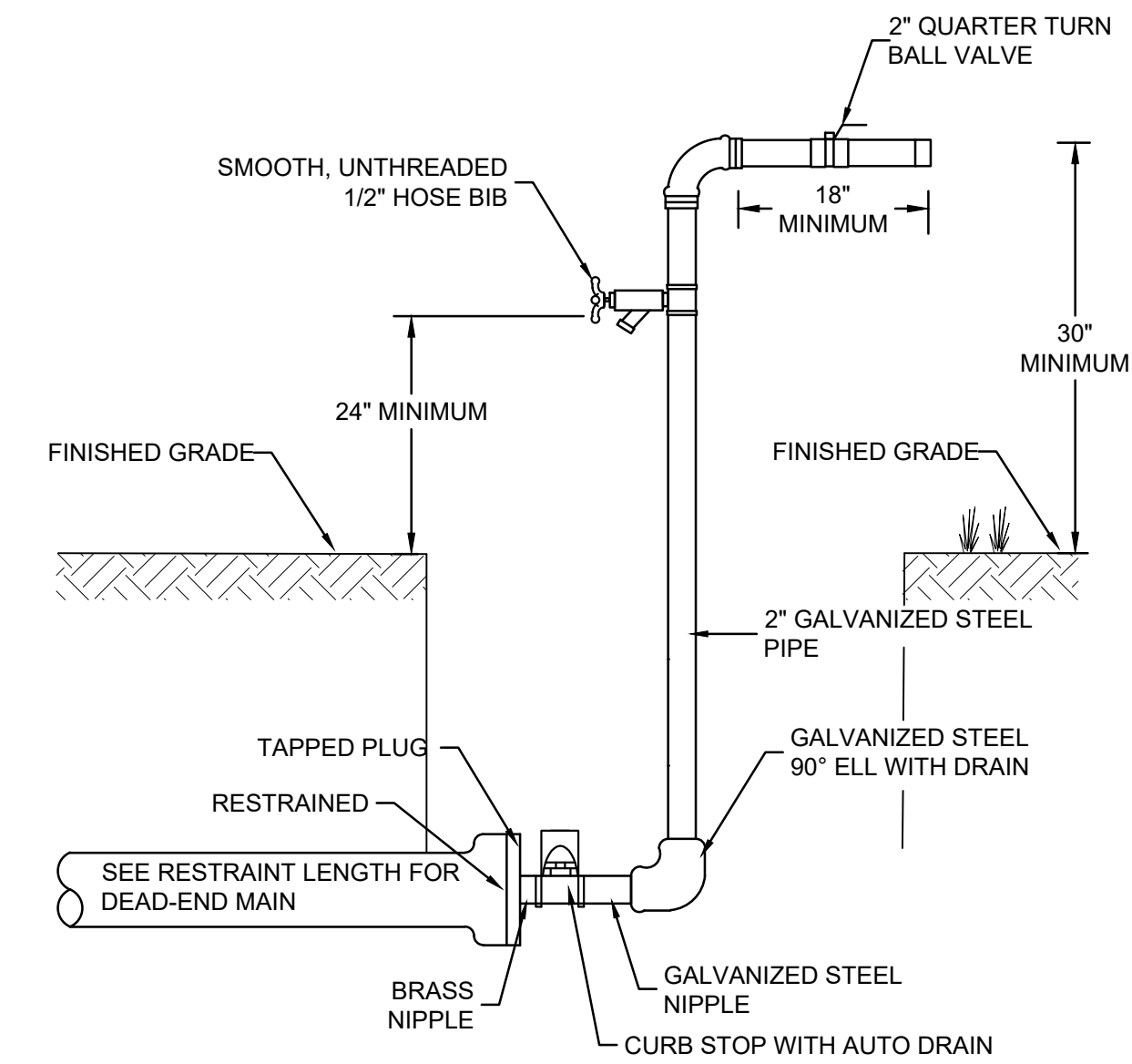
- FOLLOW THE SUGGESTIONS OF THE AWWA FOR HYDRANT INSTALLATION. IN PARTICULAR SURROUNDING THE DRAIN PORT WITH A SUFFICIENT AMOUNT OF CRUSHED ROCK/GRAVEL TO PROVIDE AN ADEQUATE DRAIN FIELD.

PERMANENT FLUSH PIT  
(NO SCALE)

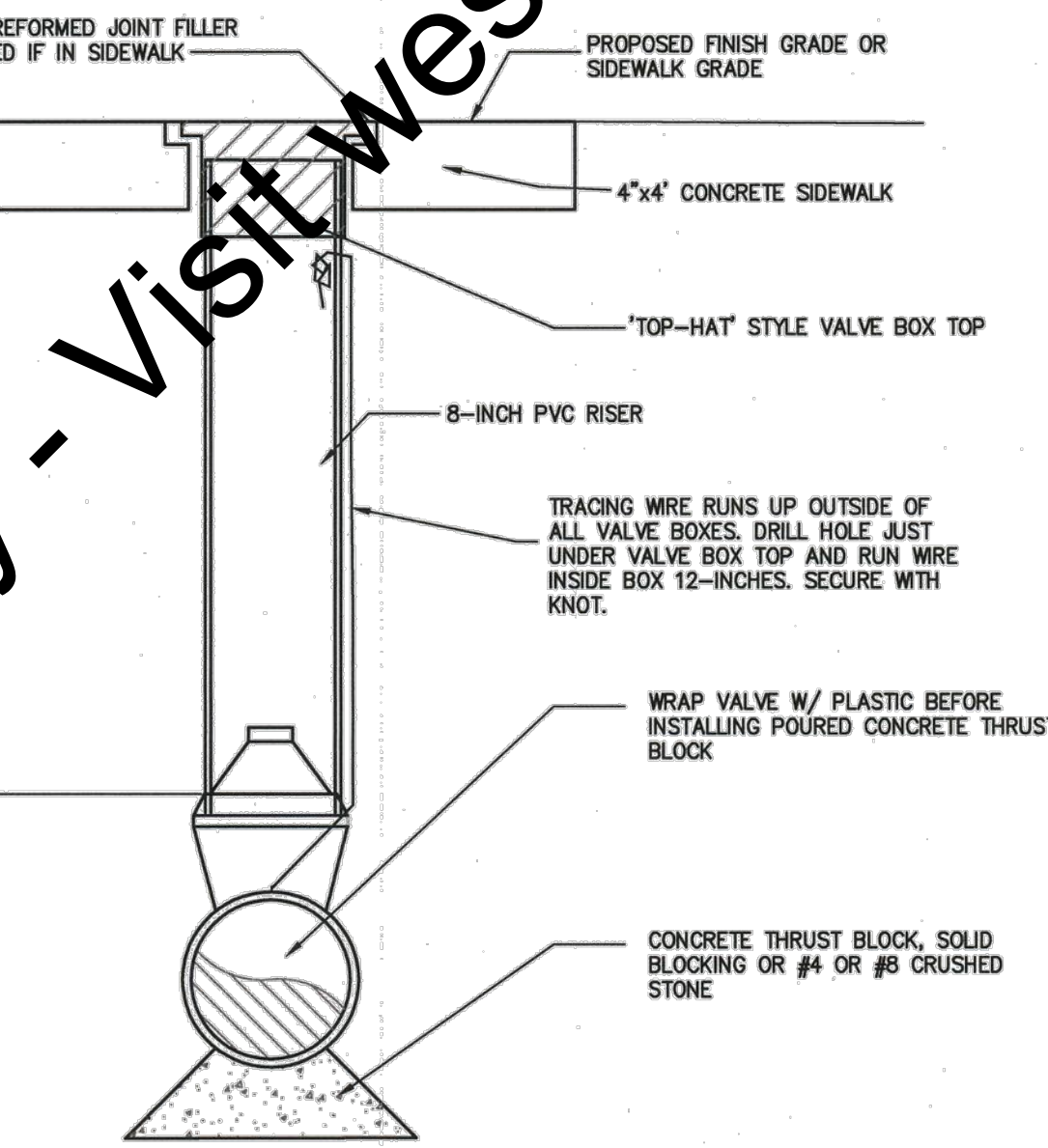
FITTING TYPE	WATER MAIN SIZE			
	3 INCH	4 INCH	6 INCH	8 INCH
11 1/4° HORIZ BEND	4	4	6	7
22 1/2° HORIZ BEND	7	8	11	11
45° HORIZ BEND	13	16	22	24
90° HORIZ BEND	31	37	53	68
11 1/4° VERT BEND	6	7	9	12
22 1/2° VERT BEND	11	14	19	24
45° VERT BEND	23	28	40	50
90° VERT BEND	55	66	95	121
REDUCER, MAIN x 6"	-	-	-	49
TEE OUTLET	39	51	79	105
VALVE OR PLUG	55	66	95	121
DEAD END	55	66	95	121



WATER MAIN RESTRAINED PIPING  
SCALE: NONE



TEMPORARY BLOW-OFF ASSEMBLY  
SCALE: NONE



\* FOR VALVES WITH BURY DEPTH OVER 6', EXTENSIONS MAY BE REQUIRED-SEE THE LAWRENCE UTILITIES INSPECTOR FOR DETAILS

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	APPROVED	ADG				
	ISSUE DATE					
	JULY 2019					
	PROJECT NUMBER					
	208018-04-001B					

ANDREW D. GORDON  
REGISTERED PROFESSIONAL ENGINEER  
No. 10809017  
STATE OF INDIANA  
07/12/2019

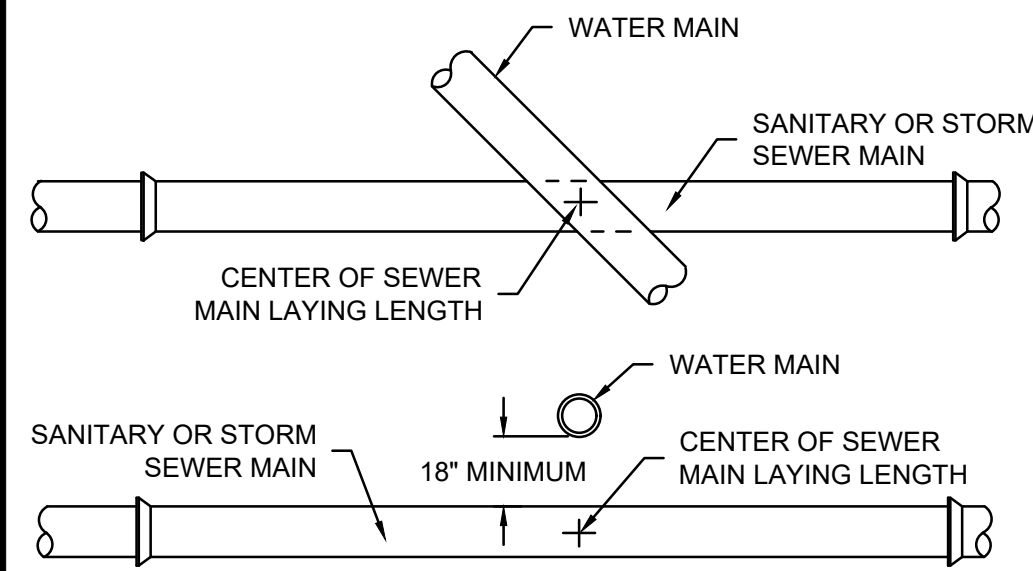
**W**  
WESSLER  
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**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

**MISCELLANEOUS DETAILS**

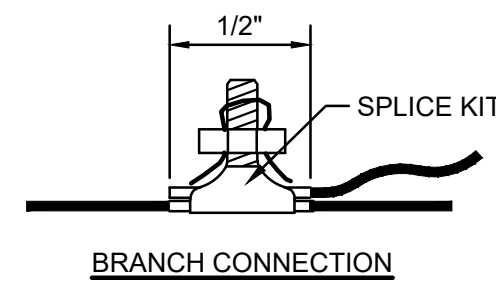
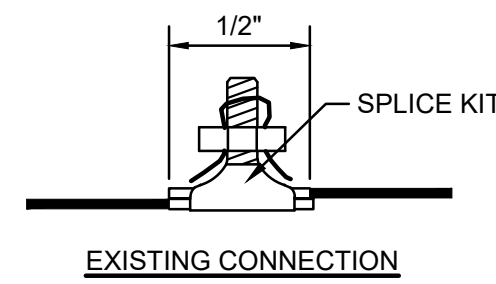
SHEET NO.  
**21**  
TOTAL SHEETS  
**24**



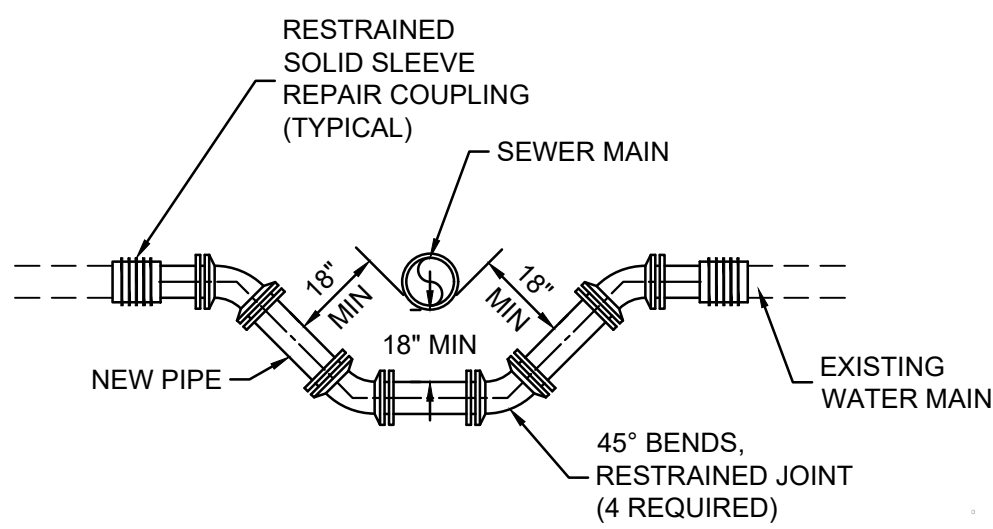


- NOTES:**
1. WATER MAIN AND SEWER MINIMUM SEPARATION: 18" VERTICAL SEPARATION 10'-0" HORIZONTAL SEPARATION.
  2. WHERE WATER MAIN AND SEWER SEPARATION IS LESS THAN 18" VERTICAL OR 10' HORIZONTAL, THE SEWER MUST BE DUCTILE IRON, SDR-21 PVC, OR CONCRETE ENCASED.

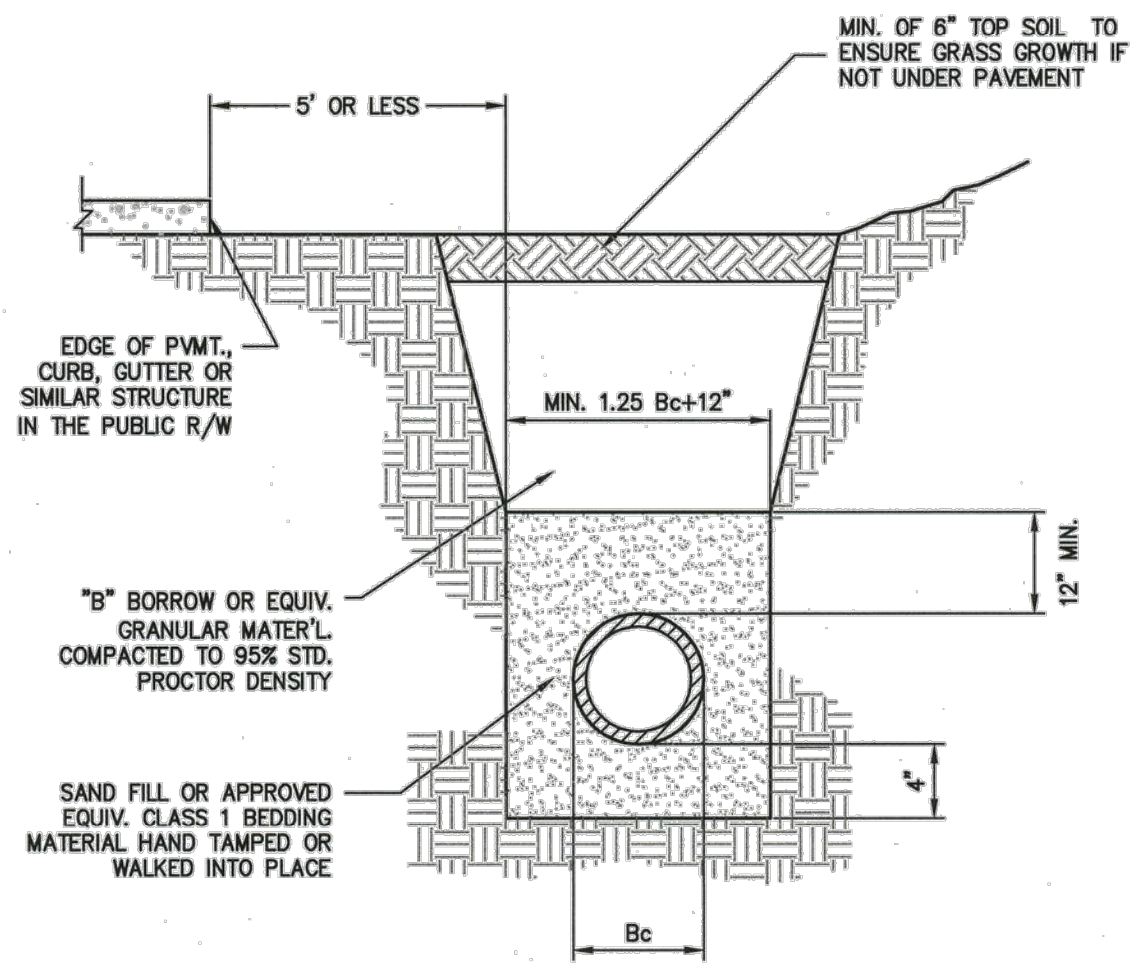
**MINIMUM CROSSOVER AND SEPARATION REQUIREMENTS FOR SEWER AND WATER MAINS**  
SCALE: NONE



**TRACER WIRE BOLTED CONNECTION**  
SCALE: NONE

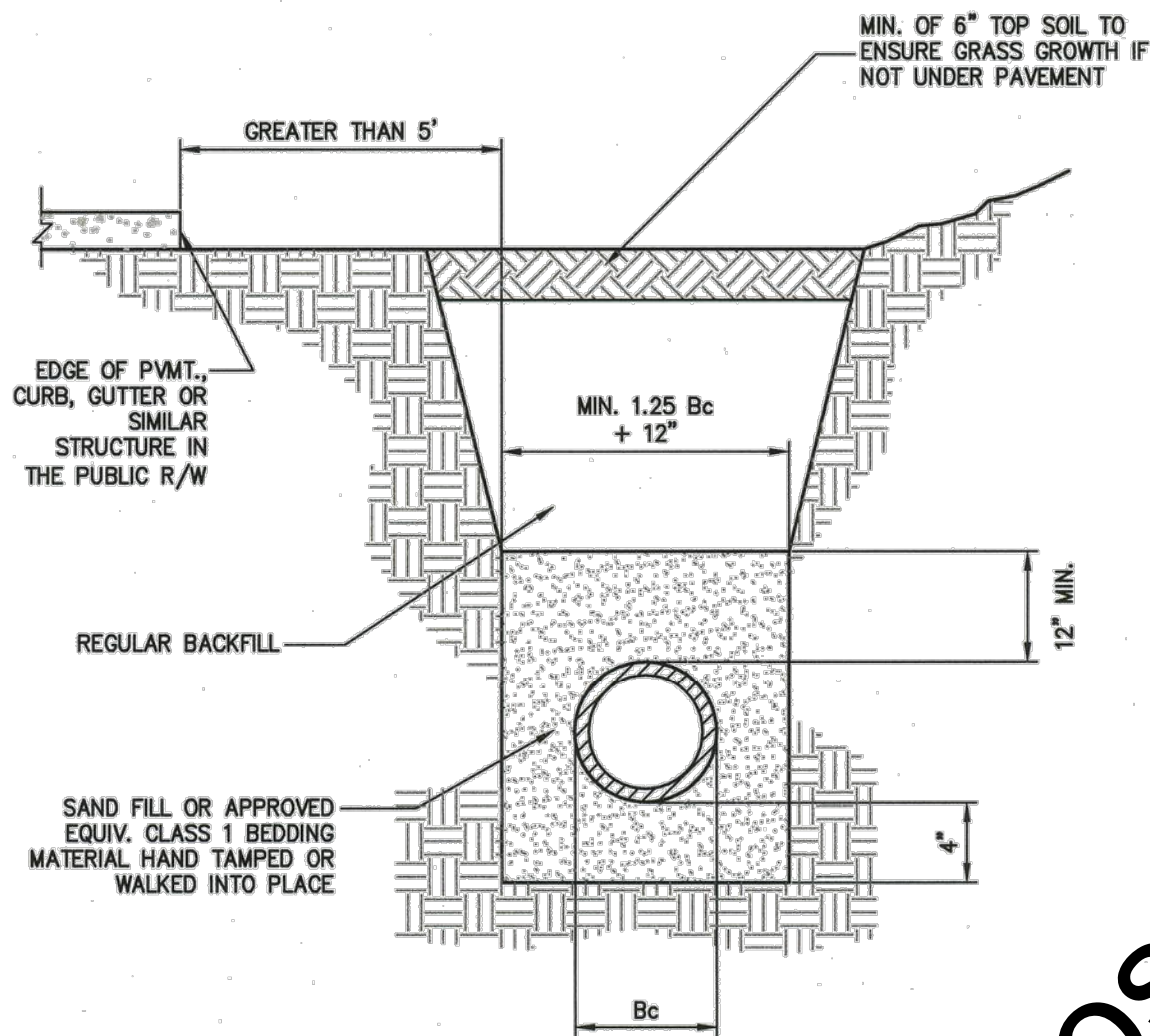


**WATER MAIN LOWERING**  
SCALE: NONE



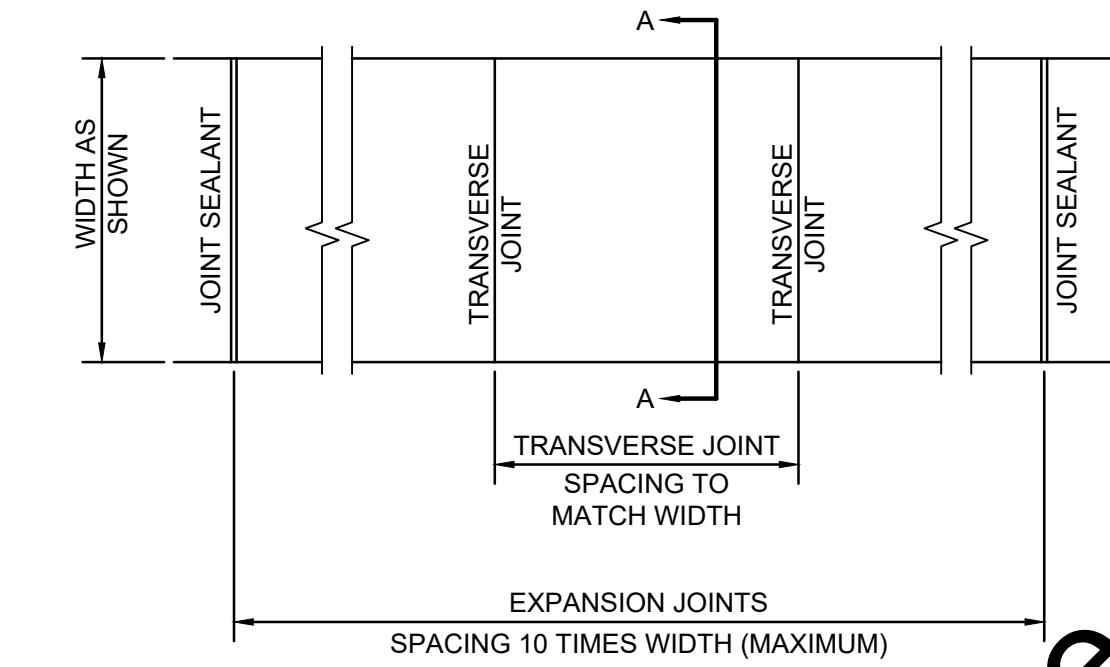
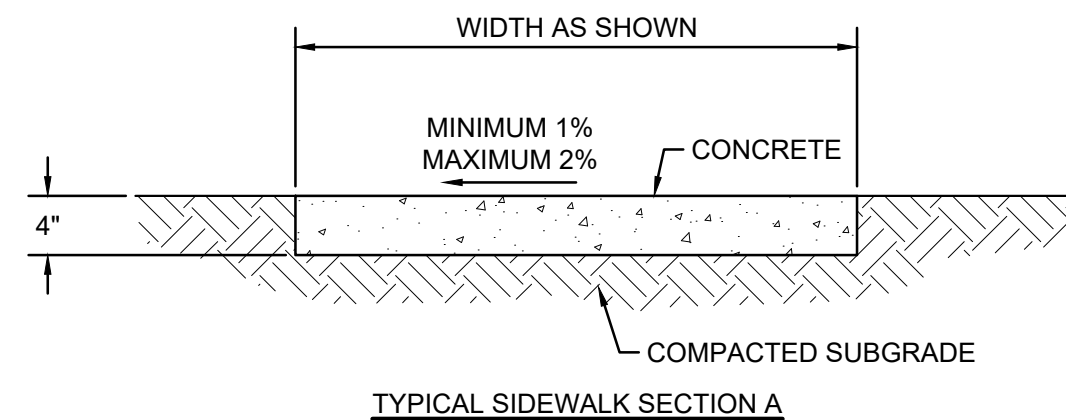
- WITHIN 5' OF EDGE OF PVMT.**
- NOTES:**
1. ALL INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS.
  2. UNDER PVMT. AREAS, TRENCH TO BE BACKFILLED W/ "B" BORROW TO BOTTOM OF BASE, ALL OTHER AREAS SHALL HAVE "B" BORROW BACKFILL TO 1'-0" ABOVE PIPE.
  3. A MIN. 9" OF CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE.

**PLASTIC PIPE (PVC & HDPE) BEDDING & BACKFILL**  
(NO SCALE)

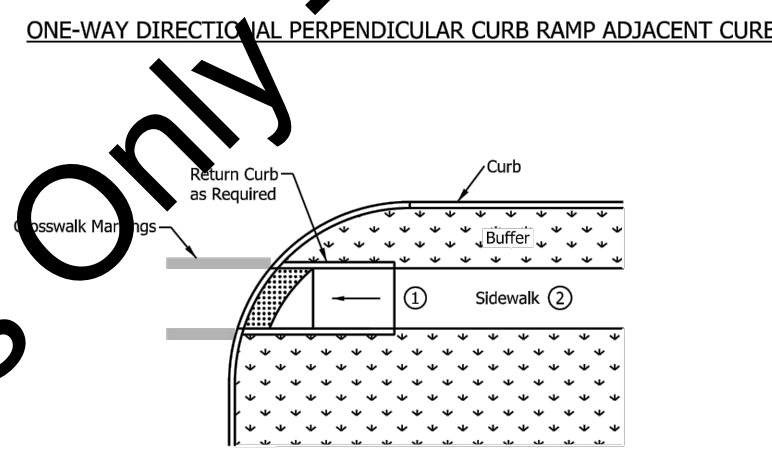
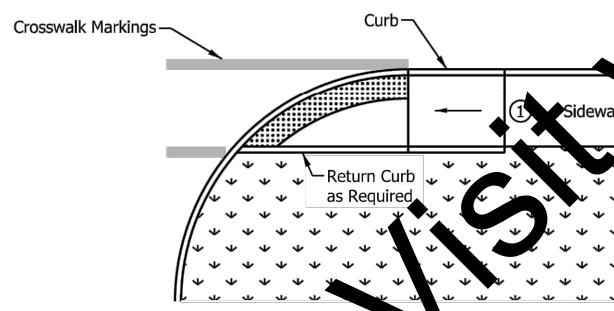


- GREATER THAN 5' FROM EDGE OF PVMT.**
- NOTES:**
1. ALL INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS.
  2. UNDER PVMT. AREAS, TRENCH TO BE BACKFILLED W/ "B" BORROW TO BOTTOM OF BASE, ALL OTHER AREAS SHALL HAVE "B" BORROW BACKFILL TO 1'-0" ABOVE PIPE.
  3. A MIN. 9" OF CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE.

**PLASTIC PIPE (PVC & HDPE) BEDDING & BACKFILL**  
(NO SCALE)

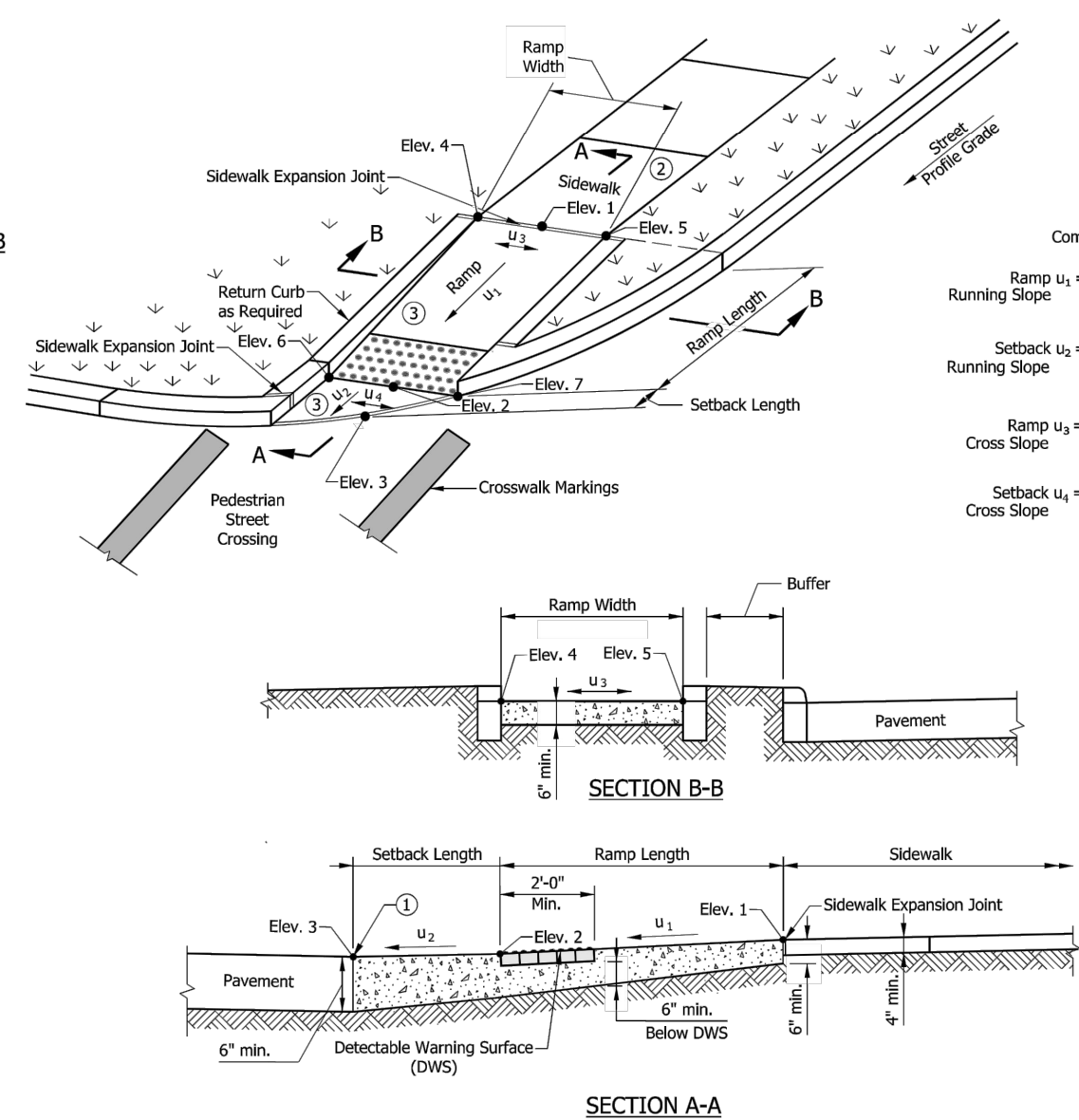


**CONCRETE SIDEWALK**  
SCALE: NONE



- NOTES:**
1. A turning space is not required at the top of the ramp for a one-way directional perpendicular curb ramp.
  2. Where there is no buffer between the sidewalk and curb the preferred minimum sidewalk width is 6 ft. Where a buffer is placed between the sidewalk and curb, the preferred minimum sidewalk width is 5 ft. See Standard Drawing Series E 604-SDWK for sidewalk details.

**CONCRETE CURB RAMP**  
SCALE: 1" = 30"



- NOTES:**
1. The bottom edge of the ramp or setback and top of curb shall be flush with the edge of adjacent pavement and gutter line.
  2. A turning space is not required at the top of the ramp for a one-way directional perpendicular curb ramp.
  3. Curb ramp surface shall be coarse broomed transverse to the running slope.
  4. See Standard Drawing E 604-SWCR-01 for cross slope exceptions.
  5. See Standard Drawing E 604-SWCR-12, -13, and -14 for Detectable Warning Surface placement, configuration, and details.
  6. See Standard Drawing E 604-CCS-01 for sidewalk expansion joint details.

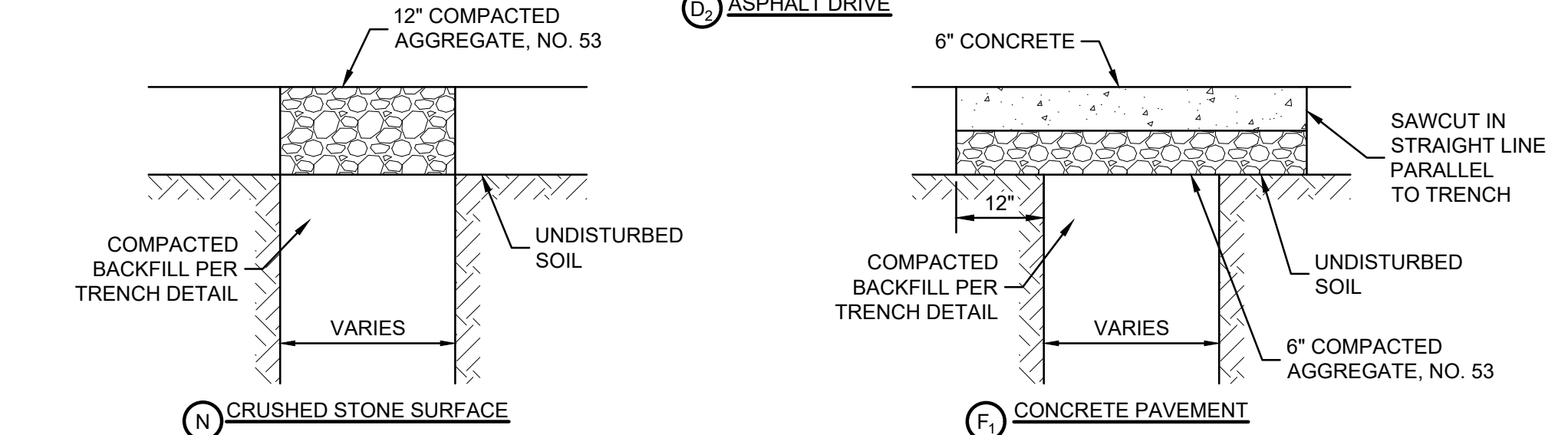
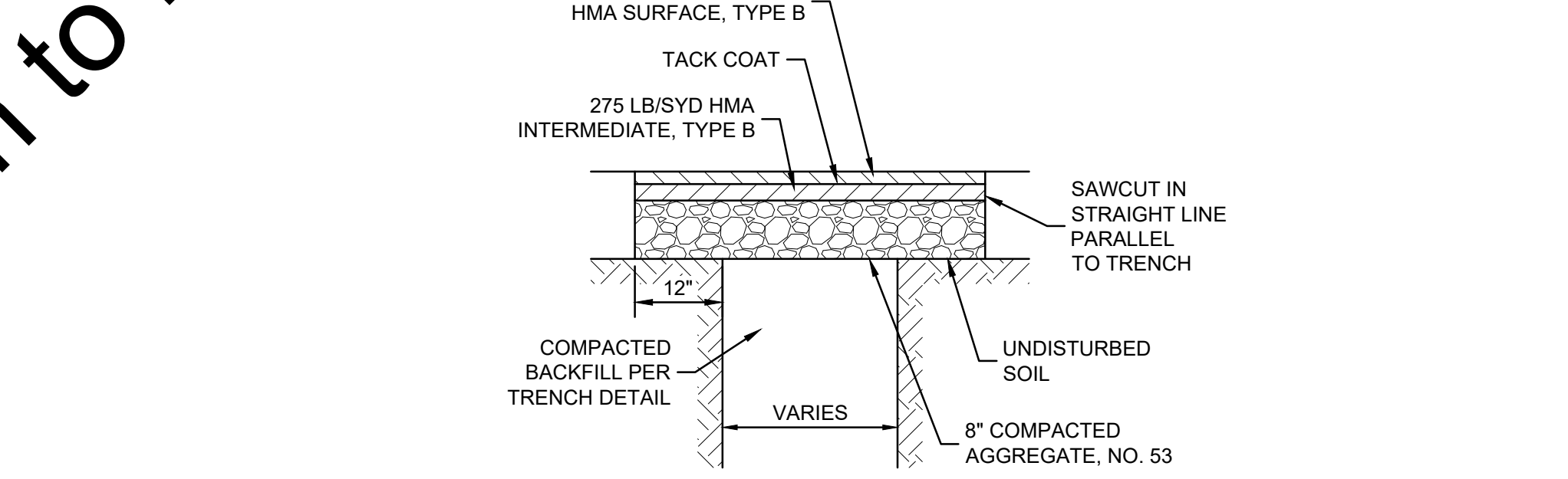
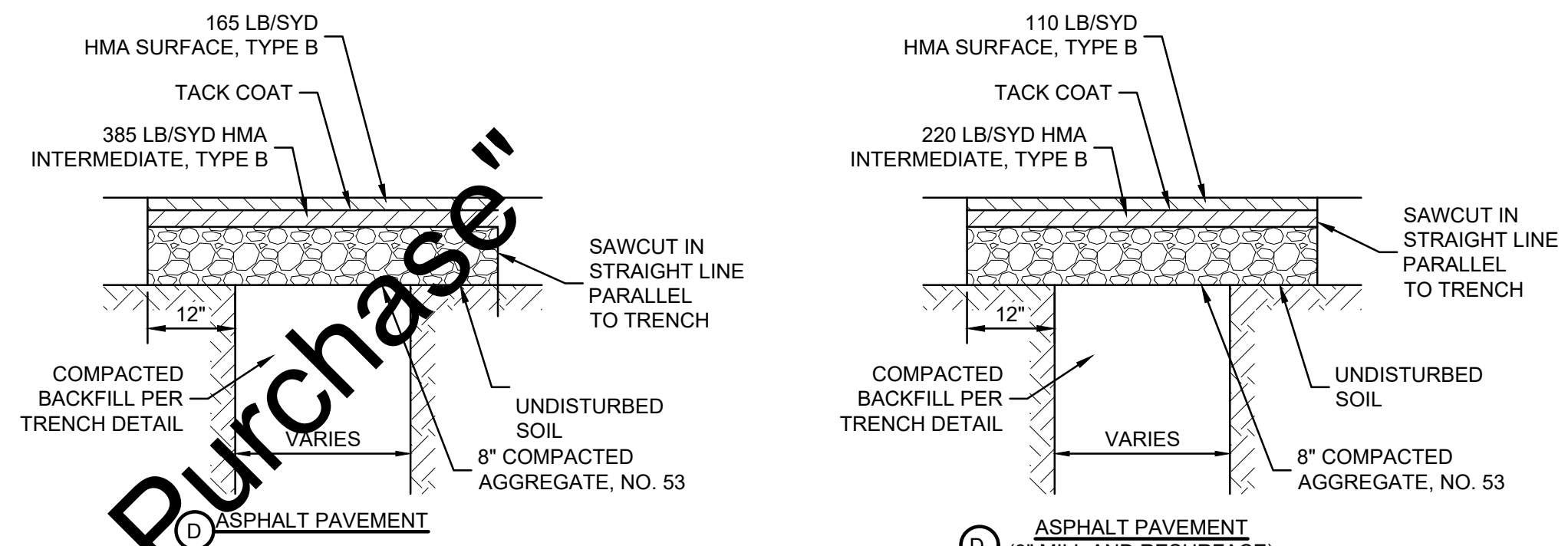
**Component Slope Equations:**

Running Slope:  $\frac{Elev. 1 - Elev. 2}{Ramp Length} \leq 8.33\%$

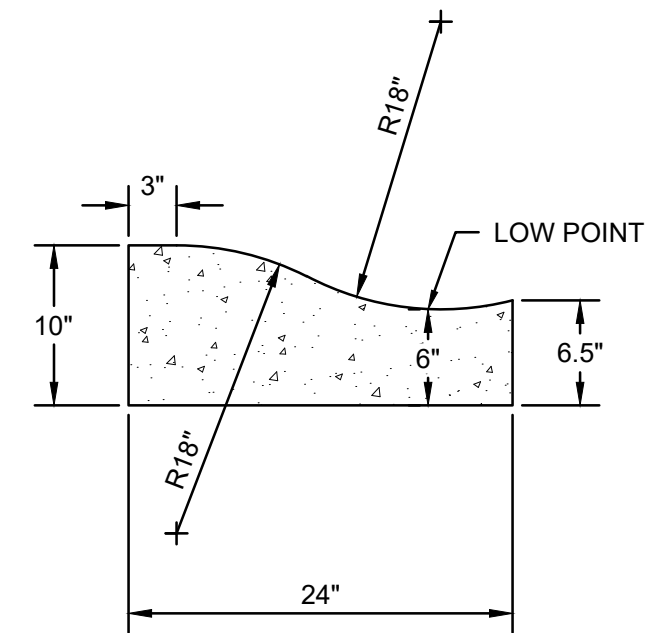
Setback  $u_2 = \frac{Elev. 2 - Elev. 3}{Setback Length} \leq$  Profile Grade of Adjacent Street

Ramp  $u_3 = \frac{Elev. 4 - Elev. 5}{Ramp Width} \leq 2.00\%$

Setback  $u_4 = \frac{Elev. 6 - Elev. 7}{Ramp Width} \leq 2.00\%$



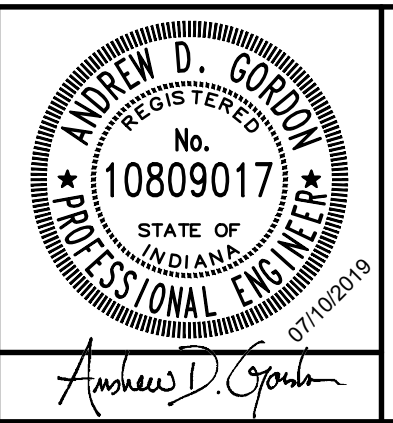
**PAVEMENT REPAIR**  
SCALE: NONE



**CONCRETE CURB**  
SCALE: NONE

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	APPROVED	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				

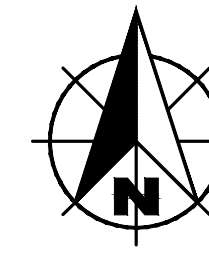
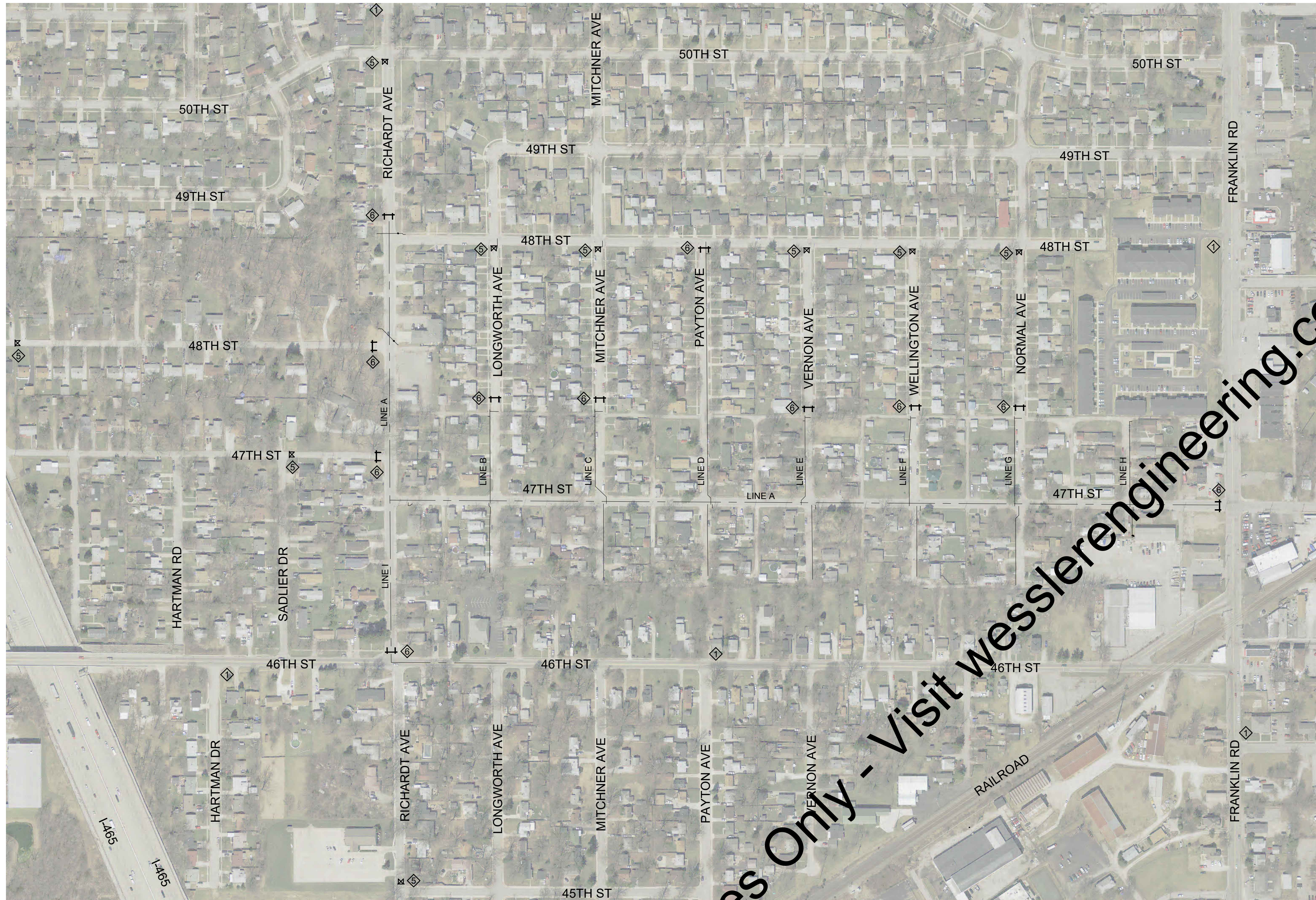


**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

**MISCELLANEOUS DETAILS**

SHEET NO.	<b>22</b>
TOTAL SHEETS	<b>24</b>





SPEED (MPH)	DISTANCE (FEET)				
	A	B	C	D	E
20	120	100	100	100	100
25	160	100	100	100	100
30	200	100	100	100	100
35	280	100	350	350	350
40	320	100	350	350	350
45	360	100	500	500	500
50	440	100	500	500	500
55	520	100	500	500	500
60	600	100	1,000	1,600	2,640
65	680	100	1,000	1,600	2,640
70	760	100	1,000	1,600	2,640

**NOTES:**

- DISTANCES SHOWN ARE APPROXIMATE. ADJUST SIGN FOR CURVES, HILLS, INTERSECTIONS, DRIVEWAYS, ETC TO IMPROVE SIGN VISIBILITY.
- THE SPACING OF CHANNELIZING DEVICES SHOULD BE A DISTANCE IN FEET EQUAL TO THE SPEED LIMIT IN MPH WHEN USED FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET EQUAL TO 2.0 TIMES THE SPEED LIMIT IN MPH USED FOR TANGENT CHANNELIZATION.

**ADVANCE WARNING SIGN AND FLAGGER OPERATION SPACING**

SCALE: NONE

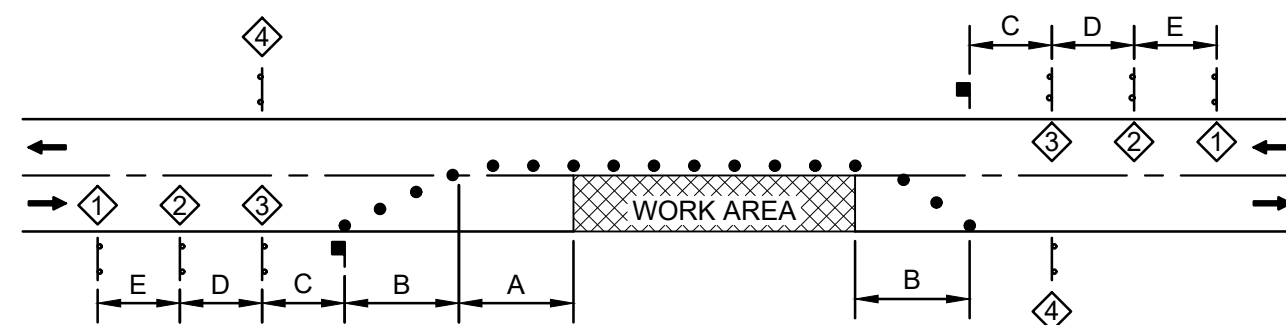
- ◇ "ROAD WORK AHEAD" (W20-1) OR "UTILITY WORK AHEAD" (W21-7)
- ◇ "ONE LANE ROAD AHEAD" (W20-4)
- ◇ FLAGGER SIGN (W20-7)
- ◇ "END ROAD WORK" (G20-2)
- ◇ "ROAD CLOSED TO THRU TRAFFIC" (R11-4)
- ◇ "ROAD CLOSED" (R11-2)
- ↑↑ BARRICADE TYPE IIB
- TRAFFIC CONTROL DRUM
- TRAFFIC FLOW DIRECTION
- ⊠ ROAD CLOSURE SIGN ASSEMBLY, INCLUDES R11-4, BARRICADE TYPE IIB, AND TYPE B CONSTRUCTION WARNING LIGHT
- ▬ FLAGGER
- ↑ SIGN, FACING LEFT
- ↓ SIGN, FACING RIGHT

**TRAFFIC CONTROL LEGEND**

SCALE: NONE

2013 IMAGERY FROM INDIANA STATE MAP.

**MAINTENANCE OF TRAFFIC PLAN**



**TEMPORARY FLAGGER OPERATION**

SCALE: NONE

**TRAFFIC CONTROL NOTES:**

- PROVIDE SIGNS AND PLACEMENT OF SIGNS IN COMPLIANCE WITH THE MUTCD (LATEST EDITION) AND THE CURRENT INDOT STANDARDS.
- WHEN ADDITIONAL WORKING SPACE IS NEEDED, UTILIZE THE FLAGGER OPERATION TO MAINTAIN ONE TRAVEL LANE.
- COVER SIGNS 2 AND 3 WHEN WORK IS NOT IN PROGRESS.
- DURING CONSTRUCTION MINIMIZE DAMAGE TO THE EXISTING PAVEMENT, DRIVES, CURBS AND SIDEWALKS.
- BACKFILL EXCAVATIONS IN THE PAVEMENT AREAS DAILY AND TEMPORARILY COVER ANY OPENINGS WITH STEEL PLATES UNTIL PAVEMENT IS REPLACED.
- IF THE CLOSURE OF A STREET IS NEEDED, UTILIZE INDOT STANDARD DRAWINGS E 801-TCDD-02 AND E 801-TCDD-04.
- DO NOT CLOSE TWO ADJACENT STREETS OR INTERSECTIONS AT THE SAME TIME.
- RECOMMENDED DETOUR ROUTE IS: 50TH STREET, FRANKLIN ROAD, 46TH STREET.
- SUBMIT A DETAILED DETOUR ROUTE PLAN AND TIMELINE FOR APPROVAL 2 WEEKS PRIOR TO ANY CLOSURES.
- PROTECTION OF AND ACCESS FOR PEDESTRIANS, EMERGENCY VEHICLES, SCHOOL BUSES AND ADJACENT RESIDENTIAL PROPERTIES MUST BE MAINTAINED DURING CONSTRUCTION.
- COORDINATE CLOSURES WITH ALL EMERGENCY AGENCIES AND SCHOOL DISTRICTS.
- PROVIDE UP TO 50 UNDISTRIBUTED CONSTRUCTION SIGNS (TYPE B) FOR SIDEWALK CLOSURES AND PEDESTRIAN ROUTING.

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	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				

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**47TH STREET WATER MAIN IMPROVEMENTS**

CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

**MAINTENANCE OF TRAFFIC PLAN AND DETAILS**

SHEET NO.  
**23**

TOTAL SHEETS  
**24**



SEASONAL SOIL PROTECTION CHART

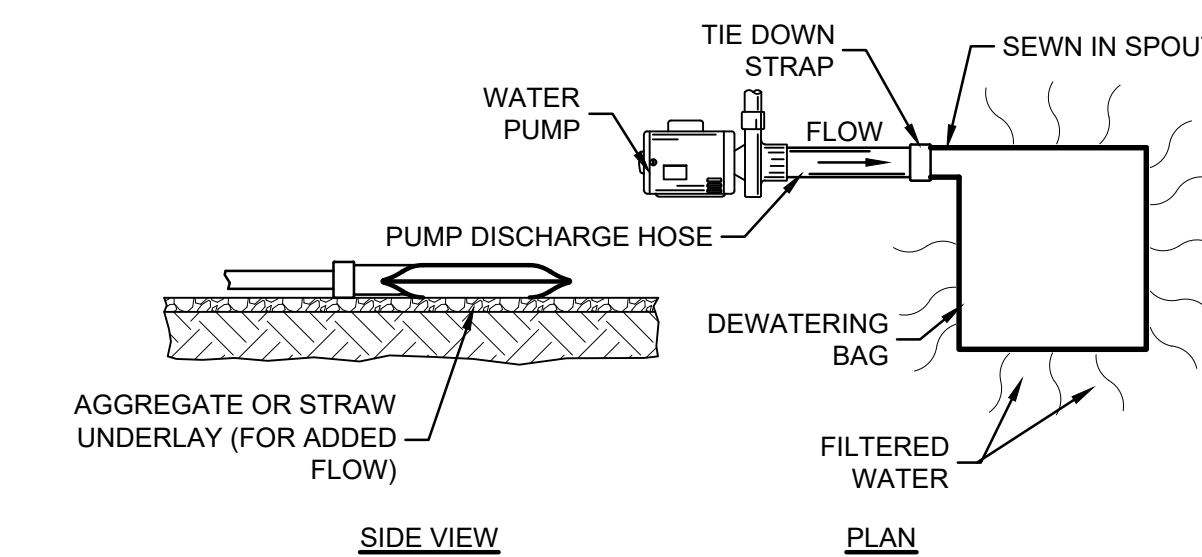
STABILIZATION PRACTICE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDING	A											
DORMANT SEEDING	B											
TEMPORARY SEEDING	C, D, E											
SODDING	F											
MULCHING	G											

- A. = KENTUCKY BLUEGRASS 40 LB/ACRE
- B. = KENTUCKY BLUEGRASS 210 LB/ACRE
- C. = SPRING OATS 100 LB/ACRE (1" PLANTING DEPTH)
- D. = WHEAT OR RYE 150 LB/ACRE (1" - 1.5" PLANTING DEPTH)
- E. = ANNUAL RYEGRASS 40 LB/ACRE (1/4" PLANTING DEPTH)
- F. = SOD
- G. = ANCHORED STRAW/HAY (2 TONS/ACRE) OR WOOD FIBER/CELLULOSE (1 TON/ACRE)

- NOTES:**
- IRRIGATION NEEDED DURING MAY THROUGH SEPTEMBER.
  - IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.
  - ANCHORED MULCH IS REQUIRED FOR PERMANENT, DORMANT AND TEMPORARY SEEDING.
  - OPTIMUM SEEDING DATES PROVIDED. DATES MAY BE EXTENDED OR SHORTENED BASED ON PROJECT LOCATION.
  - SEED MIXTURES PROVIDED FOR LAWNS AND HIGH MAINTENANCE AREAS.
- MAINTENANCE:**
- INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.
  - CHECK FOR EROSION AND MOVEMENT OF MULCH AND REPAIR IMMEDIATELY.
  - MONITOR FOR EROSION DAMAGE AND ADEQUATE COVER (70% DENSITY).
  - RESEED, FERTILIZE OR APPLY MULCH WHERE NECESSARY.

EROSION CONTROL SCHEDULE	
CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
NOTIFY IDEM RULE 5 COORDINATOR (317-233-1864) AND THE STORMWATER AUTHORITY WITHIN 48 HOURS PRIOR TO STARTING CONSTRUCTION. POST THE CONTACT INFORMATION AT THE CONSTRUCTION ENTRANCE. INCLUDE A COPY OF THE NOTICE OF INTENT (NOI) AND THE ONSITE PERSON WHO IS RESPONSIBLE FOR IMPLEMENTING THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP SHOULD BE ONSITE AND WEEKLY SITE INSPECTION REPORTS MUST BE AVAILABLE WITHIN 48 HOURS OF REQUEST.	WITHIN 48 HOURS PRIOR TO STARTING CONSTRUCTION.
CONSTRUCTION ACCESS - ENTRANCE TO SITE, CONSTRUCTION ROUTES, AREAS DESIGNATED FOR EQUIPMENT PARKING OR MATERIAL STAGING.	THIS IS THE FIRST LAND-DISTURBING ACTIVITY. AS SOON AS CONSTRUCTION BEGINS, STABILIZE ANY BARE AREAS WITH AGGREGATE AND TEMPORARY VEGETATION.
SEDIMENT TRAPS AND BARRIERS - BASIN TRAPS, SILT FENCE.	AFTER CONSTRUCTION IS ACCESSED, BASINS SHALL BE INSTALLED, WITH THE ADDITION OF MORE TRAPS AND BARRIERS AS NEEDED DURING GRADING.
RUNOFF CONTROL - DIVERSIONS, PERIMETER PROTECTION, CHECK DAMS, OUTLET PROTECTION.	RUNOFF CONTROL PRACTICES SHALL BE INSTALLED AFTER THE INSTALLATION OF SEDIMENT TRAPS AND BEFORE LAND GRADING. ADDITIONAL RUNOFF CONTROL MEASURES MAY BE INSTALLED DURING GRADING.
RUNOFF CONVEYANCE SYSTEM - STABILIZE STREAM BANKS, STORM DRAINS, CHANNELS, INLET AND OUTLET PROTECTION, SLOPE DRAINS.	AS NECESSARY, STABILIZE STREAM BANKS AND SIDE SLOPES OF RUNOFF SYSTEMS AS SOON AS POSSIBLE. USE EROSION CONTROL BLANKETS OR SLOPE DRAINS TO PREVENT EROSION. INSTALL INLET PROTECTION TO PREVENT SEDIMENTS FROM ENTERING STORM DRAINAGE SYSTEMS. PROTECT STORM OUTLETS TO PREVENT EROSION.
LAND CLEARING AND GRADING - SITE PREPARATION (CUTTING, FILLING, AND GRADING, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, DRAINS, SURFACE ROUGHENING).	IMPLEMENT CLEARING AND GRADING AFTER INSTALLATION OF SEDIMENT TRAPS AND RUNOFF CONTROL MEASURES, AND INSTALL ADDITIONAL CONTROL MEASURES AS GRADING CONTINUES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED, AND MARK TREES AND BUFFER AREAS FOR PRESERVATION.
SURFACE STABILIZATION - TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP, EROSION CONTROL BLANKET.	APPLY TEMPORARY OR PERMANENT STABILIZING MEASURES IMMEDIATELY TO ANY DISTURBED AREAS WHERE WORK HAS BEEN EITHER COMPLETED OR DELAYED.
CONSTRUCTION - STRUCTURES, UTILITIES, PAVING.	DURING CONSTRUCTION, INSTALL ANY EROSION AND SEDIMENTATION CONTROL MEASURES THAT ARE NEEDED.
LANDSCAPING AND FINAL STABILIZATION - TOPSOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIPRAP.	THIS IS THE LAST CONSTRUCTION PHASE. STABILIZE ALL DISTURBED AREAS, INCLUDING BORROW AND SPOIL AREAS, AND REMOVE ALL TEMPORARY CONTROL MEASURES. A UNIFORM DENSITY OF 70% VEGETATED COVER IS REQUIRED.

EROSION CONTROL SCHEDULE  
SCALE: NONE

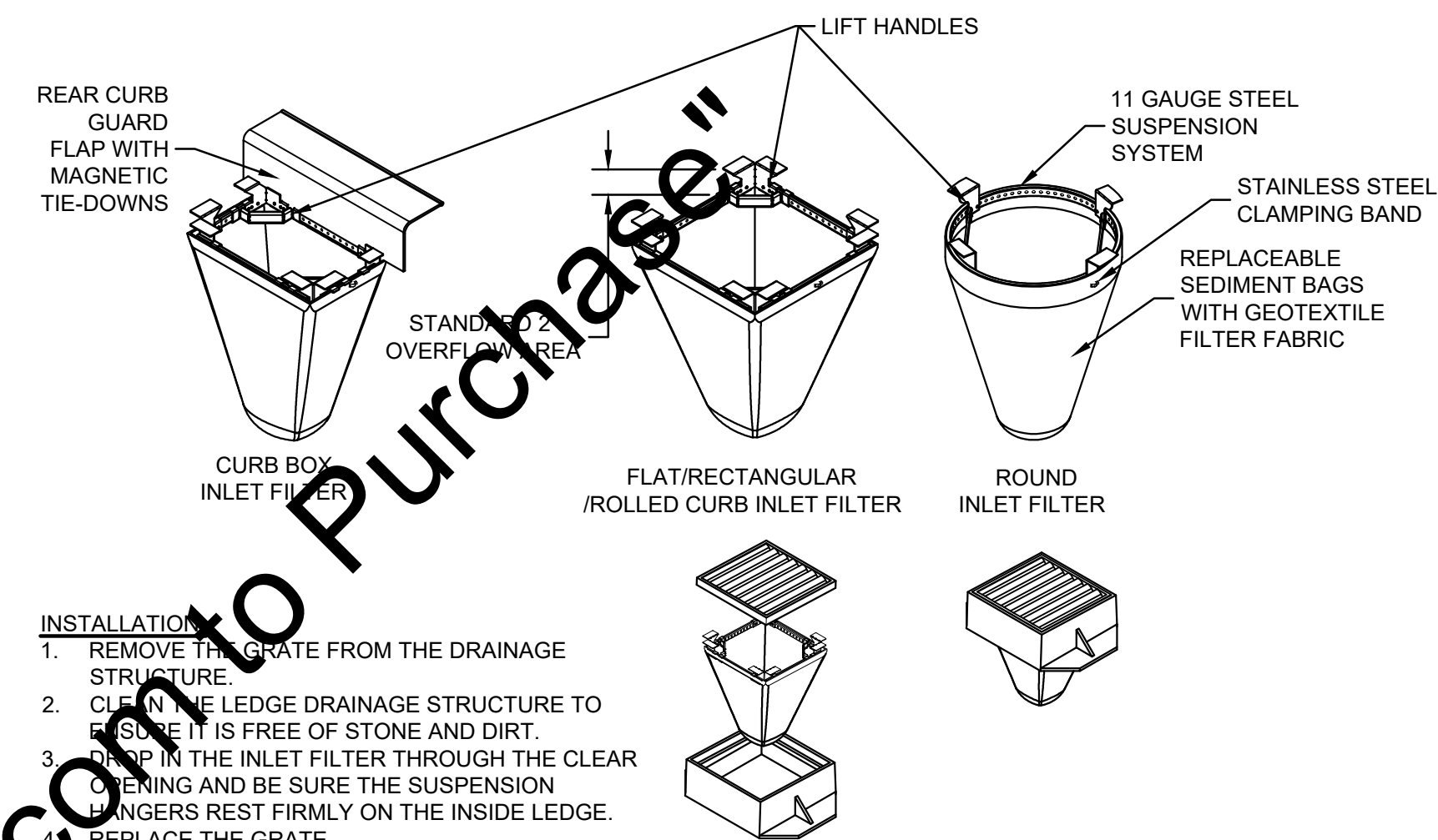


MECHANICAL PROPERTIES	TEST METHOD	UNITS	INDUSTRY STANDARD
GRAB TENSILE STRENGTH	ASTM D4632	KN (LB)	0.9 (205) X 0.9 (205)
GRAB TENSILE ELONGATION	ASTM D4632	%	50 X 50
PUNCTURE STRENGTH	ASTM D4833	KN (LB)	0.58 (130)
MULLEN BURST STRENGTH	ASTM D3786	kPa (PSI)	2618 (380)
TRAPEZOID TEAR STRENGTH	ASTM D4533	KN (LB)	0.36 (80) X 0.36 (80)
UV RESISTANCE	ASTM D4355	%	70
APPARENT OPENING SIZE	ASTM D4751	Mm (US STD SIEVE)	0.180 (80)
FLOW RATE	ASTM D4491	1/MIN/M <sup>2</sup> (GAL/MIN/FT <sup>2</sup> )	3866 (95)
PERMITTIVITY	ASTM D4491	S <sup>-1</sup>	1.2

- MAINTENANCE:**
- DURING THE ACTIVE DEWATERING PROCESS, INSPECTION OF THE PUMPING BAG SHOULD BE REVIEWED FREQUENTLY. SPECIAL ATTENTION SHOULD BE PAID TO THE BUFFER AREA FOR ANY SIGN OF EROSION AND CONCENTRATION OF FLOW. OBSERVE WHERE POSSIBLE THE VISUAL QUALITY OF THE EFFLUENT AND DETERMINE IF ADDITIONAL TREATMENT CAN BE PROVIDED.
  - DISPOSE OF ACCUMULATED SEDIMENT REMOVED DURING PUMPING OPERATIONS IN CONFORMANCE WITH THE SPECIFICATIONS.
  - REPLACE THE BAG OR DISPOSE OF SILT WHEN HALF FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE TO AN IMPRACTICAL RATE.

SOURCE:  
KRISTAR  
DANDY DEWATERING BAG  
SEDCATCH

PUMPING BAG  
SCALE: NONE

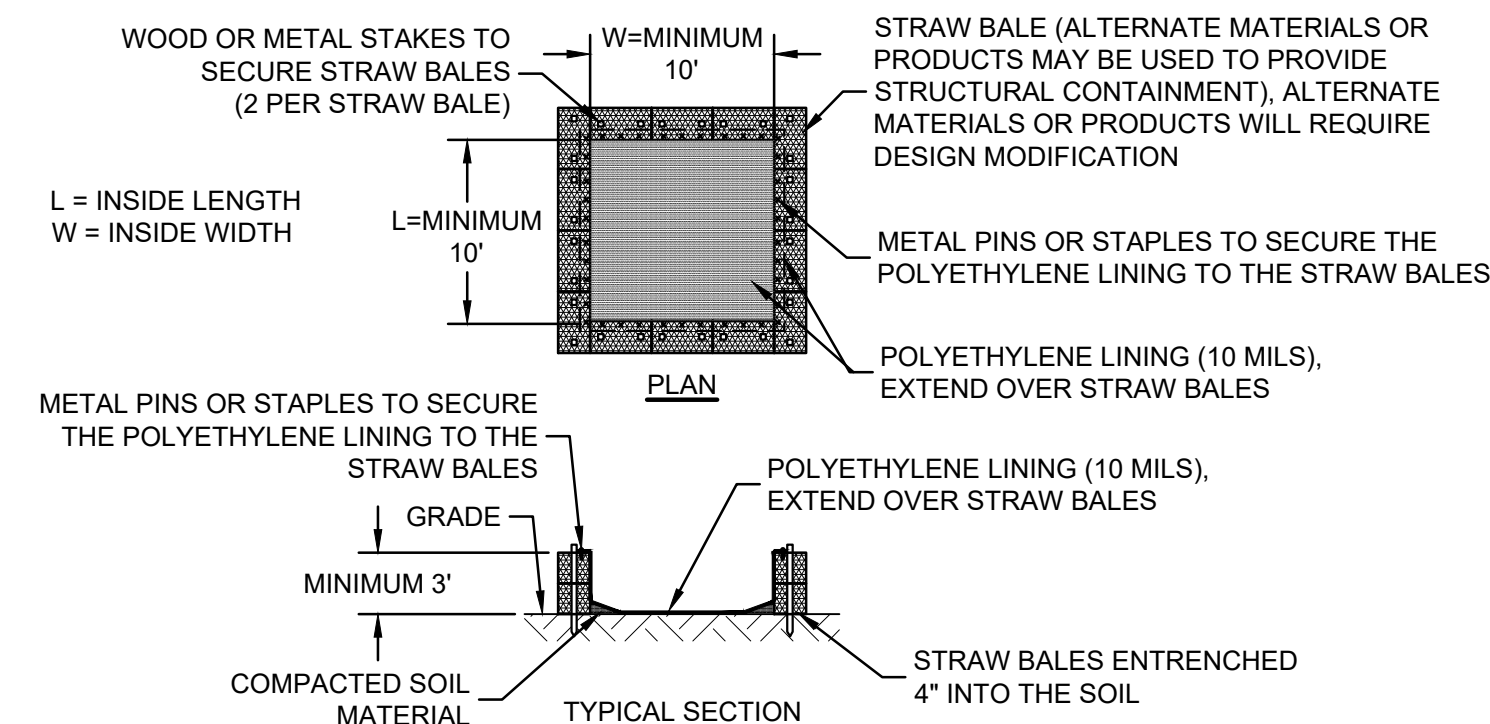


- INSTALLATION:**
- REMOVE THE GRATE FROM THE DRAINAGE STRUCTURE.
  - CLEAN THE LEDGE DRAINAGE STRUCTURE TO ENSURE IT IS FREE OF STONE AND DIRT.
  - STEEP IN THE INLET FILTER THROUGH THE CLEAR OPENING AND BE SURE THE SUSPENSION HANGERS REST FIRMLY ON THE INSIDE LEDGE.
  - REPLACE THE GRATE.
- FOR CURB BOX INLET FILTERS: INSERT INLET FILTER AS DESCRIBED ABOVE IN COMBINATION WITH THE CURB BOX FLAP IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- MAINTENANCE:**
- INSPECT THE INLET FILTER DAILY AND AFTER EACH STORM EVENT AND EMPTY IF THE SEDIMENT BAG IS MORE THAN HALF FILLED WITH SEDIMENT AND DEBRIS, OR AS DIRECTED BY THE ENGINEER.
  - REMOVE THE GRATE AND LIFT THE INLET FILTER FROM THE DRAINAGE STRUCTURE. DISPOSE OF ACCUMULATED SEDIMENTS AND DEBRIS PROPERLY. MATERIAL SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM.
  - REMOVE ANY CAKED ON SILT FROM THE SEDIMENT BAG AND REVERSE FLUSH THE BAG FOR OPTIMAL FILTRATION.
  - REPLACE THE BAG IF THE INNER FILTER MEMBRANE IS TORN.

INLET FILTER SPECIFICATIONS		
WOVEN GEOTEXTILE SEDIMENT BAG SPECS (2 FT VOL)		
MATERIAL PROPERTY	TEST METHOD	VALUE (AVG)
GRAB TENSILE	ASTM D4632	255 X 275
PUNCTURE STRENGTH	ASTM D4833	135 LB
TRAPEZOIDAL TEAR	ASTM D4533	75 LB
UV RESISTANCE	ASTM D4355	90%
APP OPEN SIZE (AOS)	ASTM D4751	NO. 20 SIEVE
PERMITTIVITY	ASTM D4491	1.5 S <sup>-1</sup>
WATER FLOW RATE	ASTM D4491	200 GPM/SQFT
SEDIMENT REMOVAL EFFICIENCY (8% MIX)	ASTM D7351	82%

SOURCE: FLEX STORM INLET FILTER

INLET PROTECTION  
SCALE: NONE



- NOTES:**
- LOCATE WASHOUTS AT LEAST 50' FROM ANY CREEKS, WETLANDS, DITCHES, KARST FEATURES, OR STORM DRAIN/CONVEYANCES.
- WASHOUT PROCEDURES:**
- DO NOT LEAVE EXCESS MUD IN THE CHUTES OR HOPPER AFTER POURING CONCRETE. MAKE EVERY EFFORT TO EMPTY THE CHUTE AND HOPPER AT THE POUR. THE LESS MATERIAL LEFT IN THE CHUTES AND HOPPER, THE QUICKER AND EASIER THE CLEANOUT. SMALL AMOUNTS OF EXCESS CONCRETE (NOT WASHOUT WATER) MAY BE DISPOSED OF IN AREAS THAT WILL NOT FLOW TO AN AREA THAT IS TO BE PROTECTED.
  - SCRAPE AS MUCH MATERIAL FROM THE CHUTES AS POSSIBLE BEFORE WASHING THEM. USE NON-WATER CLEANING METHODS TO MINIMIZE THE CHANCE FOR WASTE TO FLOW OFF SITE.
  - STOP WASHING OUT IN AN AREA IF YOU OBSERVE WATER RUNNING OFF THE DESIGNATED AREA OR IF THE WATER IS NOT BEING CONTAINED WITHIN THE WASHOUT AREA.
  - DO NOT BACK FLUSH EQUIPMENT AT THE PROJECT SITE.
  - DO NOT USE ADDITIVES WITH WASH WATER.
  - DO NOT WASH OUT OR DRAIN WASTE WATERS TO STORM DRAINS, WETLANDS, STREAMS, RIVERS, CREEKS, DITCHES OR STREETS.

- MAINTENANCE:**
- MAINTENANCE REQUIREMENTS PROVIDED IN SPECIFICATIONS.

CONCRETE WASHOUT  
SCALE: NONE

- EROSION CONTROL NOTES:**
- ALL STOCKPILES SHOULD BE PROTECTED WITH PERIMETER CONTROLS AND TEMPORARILY STABILIZED IF LEFT IDLE FOR MORE THAN 15 DAYS.
  - INLET PROTECTIONS SHOULD BE INSTALLED BEFORE ANY LAND DISTURBING STARTS.
  - DEWATERING PROTECTIONS SHOULD BE USED WHEN PUMPING ANY SEDIMENT-LADEN WATER FROM THE SITE.
  - STREETS SHOULD BE SWEEP REGULARLY TO KEEP THEM FREE OF SEDIMENT.
  - DISTURBED AREAS LEFT IDLE/PLANNED TO BE LEFT IDLE FOR 15 DAYS MUST BE TEMPORARILY STABILIZED.
  - SELF-INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL MEASURES ARE REQUIRED WEEKLY AND AFTER 0.5 INCH RAINFALL EVENTS. THE INSPECTIONS SHOULD BE LOGGED AND KEPT ON-SITE, AS THEY CAN BE REQUESTED BY THE INSPECTING AUTHORITY.

SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	MAD				
	APPROVED BY	ADG				
	ISSUE DATE	JULY 2019				
	PROJECT NUMBER	208018-04-001B				

Professional Engineer Seal for Andrew D. Gordon, No. 10809017, State of Indiana, Registered Professional Engineer, No. 07102019.

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**47TH STREET WATER MAIN IMPROVEMENTS**  
CITY OF LAWRENCE UTILITIES  
LAWRENCE, INDIANA

**EROSION CONTROL DETAILS**

SHEET NO.  
**24**  
TOTAL SHEETS  
**24**