

WATER SYSTEM IMPROVEMENTS FOR THE CITY OF CARMEL UTILITIES CARMEL, INDIANA DIVISION A & B UNSERVED AREAS CARMEL WEST AND HOME PLACE

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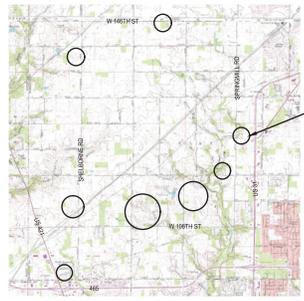


STATE LOCATION MAP
SCALE: NONE



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PROJECT NO. 206518-04-002



CARMEL - DIVISION A
VICINITY MAP
SCALE: NONE



PROJECT LOCATION (TYP)



CARMEL - DIVISION B
VICINITY MAP
SCALE: NONE



PROJECT LOCATION

DRAWINGS PREPARED FOR:

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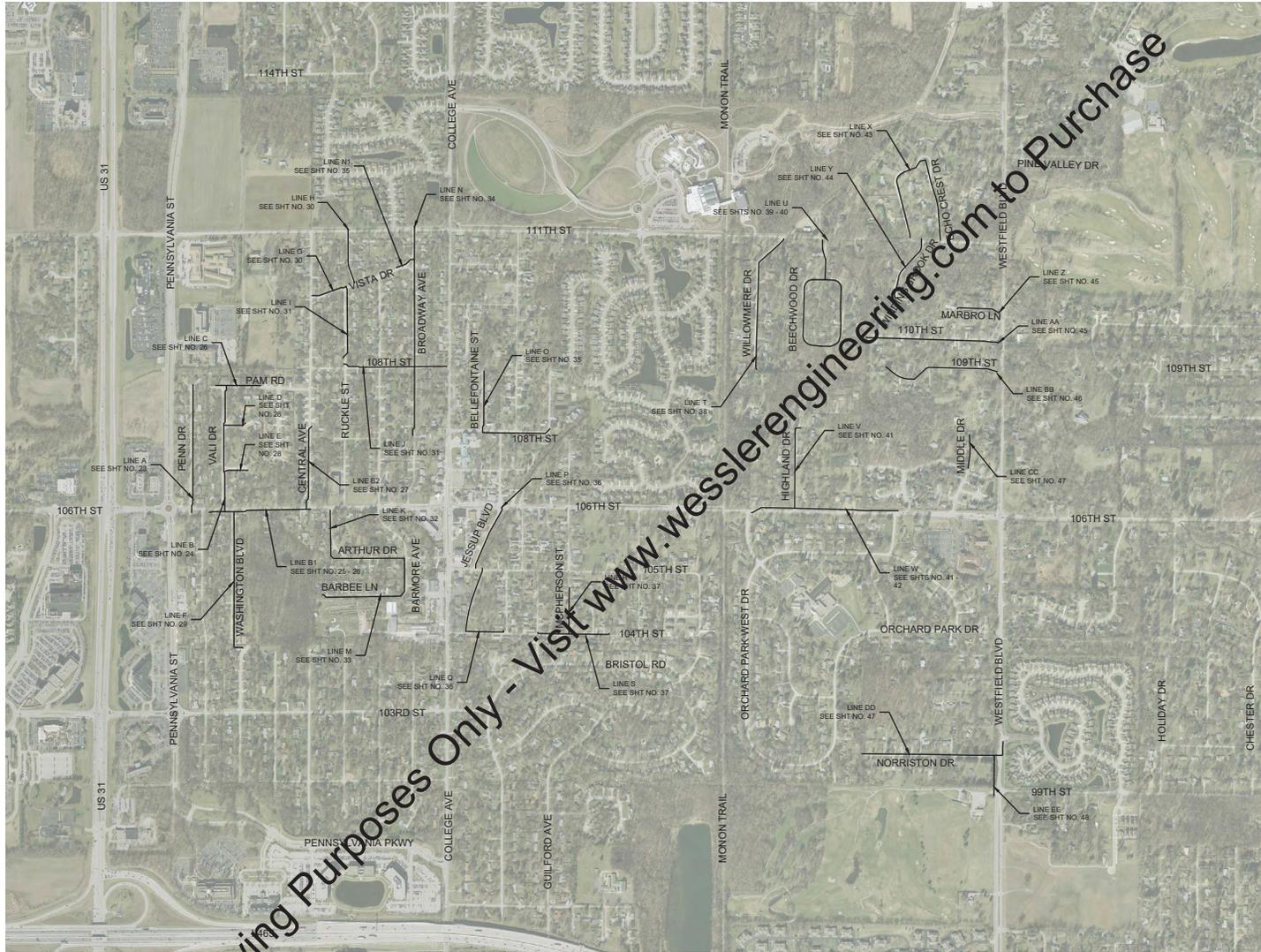
MAYOR JAMES BRAINARD, PRESIDING OFFICER
LORI WATSON, MEMBER
MARY ANN BURKE, MEMBER

CARMEL UTILITIES

JOHN DUFFY, DIRECTOR

AUGUST 2019

DREAMA E. DOOLITTLE REGISTERED ENGINEER STATE OF INDIANA NO. 10300048			
ANDREW D. GORDON REGISTERED ENGINEER STATE OF INDIANA NO. 10809017			

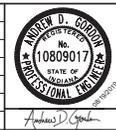


2012 IMAGERY FROM INDIANA STATE MAP.

LOCATION AND SCOPE OF WORK PLAN - DIVISION B



SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY JRW	NO. DATE INITIALS _____	REVISION DESCRIPTIONS _____ _____ _____
	CHECKED BY DED	_____	
	APPROVED BY ADG	_____	
	ISSUE DATE AUGUST 2019	_____	
	PROJECT NUMBER 206518-04-002	_____	



WATER SYSTEM IMPROVEMENTS CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE		SHEET NO. 03
LOCATION PLAN		TOTAL SHEETS 56

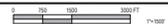


HORIZONTAL AND VERTICAL CONTROL INFORMATION

- NOTES:
 1. FIELD SURVEY PERFORMED FROM JULY TO OCTOBER 2018.
 2. COORDINATES FOR INDIANA STATE PLANE, EAST ZONE, NAD 83 AND ELEVATIONS (CP 51 AND 58) ARE BASED ON INCORS.
 3. UNITS ARE IN SURVEY FEET.
 4. CONTROL POINTS WERE SET USING GPS.

2012 IMAGERY FROM INDIANA STATE MAP.

SURVEY CONTROL PLAN - DIVISION A



CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
35	1710830.54	178734.30	875.0	MAGNAIL
36	1710614.34	178429.04	877.5	MAGNAIL
37	1710331.31	178289.56	872.6	MAGNAIL
38	1710118.40	178247.03	873.1	MAGNAIL
39	1711261.07	178247.90	881.0	MAGNAIL
40	1711689.95	178222.38	878.1	MAGNAIL
41	1711652.16	178534.26	878.6	MAGNAIL
42	1711867.21	178248.72	872.2	MAGNAIL
43	1712185.66	178248.99	875.5	MAGNAIL
44	1712172.00	179490.30	876.1	MAGNAIL
45	1711833.86	179463.21	866.8	MAGNAIL
46	1712868.86	183840.97	852.7	MAGNAIL
47	1713028.28	184272.30	852.3	MAGNAIL
48	1712999.35	184671.28	852.4	MAGNAIL
49	1712676.26	184905.56	853.5	MAGNAIL
50	1712274.93	184041.67	853.4	MAGNAIL
51	1704797.07	170279.15	884.2	MAGNAIL
52	1704902.55	170728.68	884.0	MAGNAIL
53	1705995.43	171348.09	874.7	5/8" REBAR
54	1711935.49	172217.84	901.3	5/8" REBAR
55	1712349.19	172247.97	904.0	MAGNAIL

CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
56	1711975.07	172034.92	902.3	MAGNAIL
57	1712024.07	171677.41	902.6	MAGNAIL
58	1711934.70	171376.36	903.3	MAGNAIL
59	1711708.87	171234.02	901.9	MAGNAIL
60	1711134.43	171216.47	899.4	MAGNAIL
61	1711533.41	171936.85	900.0	MAGNAIL
62	1715467.66	187029.46	855.7	MAGNAIL
63	1715198.00	187026.14	857.0	MAGNAIL
64	1719403.69	189143.39	855.0	MAGNAIL
65	1719120.99	189084.05	854.7	MAGNAIL
67	1718952.96	188919.93	857.1	MAGNAIL
102	1712907.09	183126.63	857.2	MAGNAIL
119	1727159.48	171481.91	909.0	MAGNAIL
120	1727157.16	171864.12	909.9	MAGNAIL
121	1727158.98	172202.62	911.1	MAGNAIL
122	1727142.48	172518.55	911.2	MAGNAIL
123	1730845.80	180901.61	911.2	5/8" REBAR
124	1730836.28	180241.92	912.5	MAGNAIL
125	1730589.12	180908.62	913.5	MAGNAIL
126	1730321.41	180844.12	912.0	MAGNAIL
127	1730196.16	180884.90	913.4	MAGNAIL

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY: JRW CHECKED BY: DED APPROVED BY: ADG	NO. _____ DATE _____ INITIALS _____	REVISION DESCRIPTIONS	
	ISSUE DATE: AUGUST 2019	PROJECT NUMBER: 206518-04-002	_____ _____ _____	
	_____ _____ _____			
	_____ _____ _____			

WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

SURVEY CONTROL PLAN

SHEET NO.
04
 TOTAL SHEETS
56

Drawing: J:\Carmel\Projects\206518-04-002\DWG\Sheet\Control A\206518-04-002.dwg | Layout: CP | Plotted: 08/16/19 @ 10:38:23 | Location: J:\Users\adg\My Documents\206518-04-002.dwg

HORIZONTAL AND VERTICAL CONTROL INFORMATION

- NOTES:
 1. A FIELD SURVEY WAS PERFORMED FROM JULY TO OCTOBER 2018.
 2. COORDINATES (INDIANA STATE PLANE, EAST ZONE, NAD 83) AND ELEVATIONS (NAVD 83) ARE BASED ON INCORC.
 3. UNITS ARE U.S. SURVEY FEET.
 4. CONTROL POINTS WERE SET USING GPS.

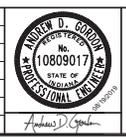
CONTROL POINTS			
POINT	NORTHING	EASTING	ELEVATION
1	1711191.20	196665.49	833.8
2	1711540.00	196669.51	837.3
3	1711981.95	196681.53	836.1
4	1712174.47	196688.01	836.5
5	1712429.23	196622.27	836.0
6	1712095.35	197360.94	831.1
7	1712437.50	197289.61	828.7
8	1711960.73	197133.02	834.4
9	1711676.04	197153.45	833.6
10	1711463.90	197145.77	834.1
11	1711442.47	197475.66	830.7
12	1711984.54	197519.49	830.4
13	1711960.95	197538.77	832.3
14	1710588.91	197071.74	831.9
15	1710206.46	197054.60	827.3
16	1709951.69	197068.36	831.8
17	1709771.19	197056.20	831.9
18	1709782.08	196715.27	823.3
19	1709782.06	197517.83	829.9
20	1709800.33	198044.10	813.8
21	1711901.88	197987.50	812.3
22	1712060.88	198073.99	811.6
23	1712429.65	198324.86	810.4
24	1712611.72	198124.99	814.0
25	1712967.33	198043.16	820.5
26	1713197.65	198283.19	831.9
27	1712903.16	198400.48	824.1
28	1710563.86	198749.78	806.7
29	1710234.12	198751.52	802.4
30	1710119.27	198726.31	800.6
31	1707420.77	197831.43	805.2
32	1707428.80	198269.22	814.9
33	1707411.51	199073.04	803.9
34	1707128.19	199072.08	800.6
66	1710942.24	191218.89	843.8
69	1710588.10	191192.85	842.8
71	1709801.90	191173.17	846.9
72	1709840.94	191575.86	845.4
73	1710228.34	191503.71	843.7
74	1710191.45	191678.37	844.7
75	1710610.88	191505.32	842.3
76	1710613.08	191723.73	843.9
77	1710977.57	191500.07	841.1
78	1709587.11	191612.80	845.2
79	1708955.12	191593.25	844.8
80	1708506.78	191592.07	845.5
81	1712468.70	193355.32	850.7
82	1712282.51	193374.10	851.1
83	1712146.49	193247.45	852.2
84	1711893.43	193374.90	852.9
85	1711499.09	193378.04	850.9
86	1711160.71	193377.74	850.4
87	1710657.33	193381.81	851.0
88	1711169.32	192712.38	847.1

CONTROL POINTS			
POINT	NORTHING	EASTING	ELEVATION
89	1711589.93	192690.33	848.6
90	1711967.38	192695.06	850.2
91	1711866.85	192455.75	851.4
92	1712126.20	192734.90	851.4
93	1712459.17	192713.16	851.3
94	1710567.65	194012.85	845.0
95	1710876.89	194032.60	848.1
96	1709852.28	194234.85	847.6
97	1709784.11	192553.67	847.1
98	1708459.94	191725.95	844.4
99	1708224.15	191671.20	844.4
100	1709389.13	192901.99	846.4
101	1709336.46	192799.46	845.9
103	1709360.87	193300.40	844.5
104	1709006.08	193298.28	848.3
105	1708993.01	193076.37	852.6
106	1708974.71	193074.33	847.7
108	1709788.52	194210.32	843.6
109	1709534.44	194044.48	841.2
110	1709256.53	193927.92	843.6
111	1709183.98	194020.20	841.4
112	1708831.86	193900.01	842.6
113	1708814.07	193997.54	841.4
114	1708609.74	194248.38	840.9
115	1708617.03	194577.57	840.2
116	1708614.17	194880.38	835.8
117	1708587.84	195188.93	833.9
118	1708876.02	194859.02	836.3
128	1710446.74	192348.80	849.3
129	1710782.22	192350.32	848.4
130	1710080.16	192349.71	848.7
131	1711765.53	198953.22	809.9
132	1711762.89	198714.86	809.7
133	1711456.25	198887.82	805.3
134	1711467.00	198598.63	801.4
135	1711483.24	198413.52	800.1
136	1711489.72	198236.95	803.7
137	1711484.09	198071.59	808.2
138	1711490.61	197874.65	812.2
139	1711181.78	198830.02	795.0
140	1711172.37	198663.54	795.6
141	1711179.19	198467.22	797.0
142	1711159.21	198333.35	799.7
143	1711059.16	198177.21	812.6
144	1711131.36	198009.40	814.1
145	1710580.82	194299.03	847.9
146	1710589.81	194683.88	852.7
147	1710579.43	194386.32	847.3

SURVEY CONTROL PLAN - DIVISION B



SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	DED				
	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

SURVEY CONTROL PLAN

SHEET NO.
05
 TOTAL SHEETS
56

Drawing: J:\Carmel\Projects\206518-04-002\DWG\206518-04-002_Survey_Control_Plan_Division_B.dwg | User: adg | Date: 8/1/2019 | Time: 10:09:46 AM | Plot: 08/01/19 10:09:46 AM | Plotter: HP DesignJet 500 | Plot Size: 36" x 48" | Scale: 1" = 100'

EXISTING FEATURES LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BENCH MARK		CISTERN
	TEMPORARY BENCH MARK		ELECTRIC METER
	SOIL BORING LOCATION		AIR CONDITIONING UNIT
	SECTION CORNER		UTILITY RISER (DEFINED BY UTILITY)
	DRILL HOLE IN CONCRETE/HARRISON MONUMENT		UTILITY PEDESTAL (DEFINED BY UTILITY)
	CONTROL POINT (SET/FOUND)		UTILITY MARKER (DEFINED BY UTILITY)
	MAGNETIC NAIL (SET/FOUND)		JOINT POWER/TELEPHONE POLE
	LIGHT POLE		CONTOUR - INTERMEDIATE ELEVATION
	PK NAIL (SET/FOUND)		CONTOUR - INDEX ELEVATION
	RAILROAD SPIKE (SET/FOUND)		OVERHEAD ELECTRIC
	R/W MARKER - CONCRETE/GRANITESTONE		OVERHEAD CABLE TV
	IRON PIPE/IRON PIN/REBAR (WITH DIAMETER)		OVERHEAD TELEPHONE
	BRASS PLUG		UNDERGROUND CABLE TV
	CABLE TV MANHOLE		UNDERGROUND ELECTRIC
	ELECTRIC MANHOLE		UNDERGROUND FIBER OPTIC
	GAS MANHOLE		GAS MAIN
	OTHER MANHOLE		DIESTER GAS
	TELEPHONE MANHOLE		PETROLEUM MAN
	TELEPHONE VAULT		UNDERGROUND TELEPHONE
	TRAFFIC MANHOLE		WATER MAIN
	TRAFFIC HANDHOLE		WATER SERVICE
	WATER MANHOLE		FORCE MAIN
	AIR RELEASE VALVE		GRAVITY SEWER PIPE
	SANITARY SEWER MANHOLE		PLANT CHLORINE PIPE
	DRAINAGE STORM SEWER MANHOLE		TOP OF BANK/TOE OF SLOPE
	SANITARY SEWER CLEANOUT		CENTERLINE OF DITCH/WALE/STREAM
	SEPTIC TANK		FENCE - FIELD
	VALVE VAULT		FENCE - METAL
	BEEHIVE INLET		FENCE - WOOD
	CURB INLET		GUARDRAIL
	DROP INLET		STREAM
	CATCH BASIN		TREE/BRUSH LINE
	DOWNSPOUT		TREE - DECIDUOUS
	GAS METER		ROCK OUTCROP
	GAS VALVE		SATELLITE
	GAS SERVICE VALVE		
	PETROLEUM VALVE		
	PETROLEUM SHUT-OFF VALVE		
	GAS STATION MONITORING WELL		
	GAS STATION FILL CAP		
	NATURAL GAS WELL/STORAGE WELL		
	SPRINKLER HEAD		
	SPRINKLER CONTROL VALVE		
	WATER METER		
	WATER VALVE		
	WATER SERVICE VALVE		
	WATER WELL		
	WET WELL		
	FIRE HYDRANT		
	PROCESS VALVE		
	YARD HYDRANT		

*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.

TABLE OF ABBREVIATIONS		
ABBREVIATION	DESCRIPTION	ABBREVIATION
AFF	ABOVE FINISHED FLOOR	IPS
ALUM	ALUMINUM	ISPC
APP	APPARENT	LBC
APPROX	APPROXIMATE(LY)	LN
ASPH	ASPHALT	LF
ASSOC	ASSOCIATES	LS
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	MA EX
AVE	AVENUE	MJ
AVG	AVERAGE	MATL
BLDG	BUILDINGS	MAX
BLVD	BULEVARD	MH
BM	BENCHMARK	MIN
CO	CLEANOUT	MISC
CI	CAST IRON	N
CL	CENTER LINE	NGS
CMA	COLD MIX ASPHALT	NO
CMP	CORRUGATED METAL PIPE	OC
CMU	CONCRETE MASONRY UNIT	OD
CONC	CONCRETE	PC
CONC	CONTINUOUS	POLY
CNR	CORNER	PI
CP	CONTROL POINT	POT
CCPP	CORRUGATED PLASTIC PIPE	PT
CR STN	CRUSHED STONE	PSI
CYD	CUBIC YARD	PNT
D	DEPTH	PVC
DI	DUCTILE IRON	R
DI MJ	DUCTILE IRON MECHANICAL JOINT	RCW
DBL	DOUBLE	RCWP
DIA	DIAMETER	RHD
DIP	DUCTILE IRON PIPE	S
DIPS	DUCTILE IRON PIPE SIZE	SR
DRIVE	DRIVE	SST
E	EASTING, EAST	SVA
EF	EACH FACE	SB
EW	EACH WAY	SCHED
EJ	EACH	SOR
EL	ELEVATION	SDR
EX	EXISTING	SECT
EXP	EXPOSITION	SF
FFE	FINISH FLOOR ELEVATION	SHT
FM	FORCE MAIN	SO
FND	FOUND	SRF
FT	FEET	ST
FOOTING	FOOTING	STA
GALVANIZED	GALVANIZED	SYD
GLOBAL POSITIONING SYSTEM	GLOBAL POSITIONING SYSTEM	TBM
HOT MIX ASPHALT	HOT MIX ASPHALT	TYP
HDPPE	HIGH DENSITY POLYETHYLENE	USGS
HORIZONTAL	HORIZONTAL	VERT
ID	INSIDE DIAMETER	VLV
IE	INVERT ELEVATION	W
INC	INCORPORATED	WSE
INDOT	INDIANA DEPARTMENT OF TRANSPORTATION	YR
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.

NEW FEATURES LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WATER METER		WATER SERVICE
	WATER VALVE		WATER MAIN
	WATER FITTING		SILT FENCE
	TEE		PAVEMENT REPAIR
	FIRE HYDRANT		ASPHALT DRIVE REPAIR
	LINE STOP		CONCRETE CURB AND GUTTER REPAIR
	CURB STOP		CONCRETE PAVEMENT REPAIR
	CAP		CRUSHED STONE DRIVE REPAIR
	SLEEVE		CONCRETE SIDEWALK REPAIR
	INLET PROTECTION		
	FILTER TUBE		

- 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 EXISTING UTILITIES, MANHOLE AND PRIVATE PROPERTY. REPAIR ALL DAMAGES AS A RESULT OF OPERATIONS, INCLUDING DAMAGE TO DRAINAGE FEATURES, FIELD TILES, PUBLIC/Private ROADS, AND LANDSCAPING (INCLUDING FENCING). REPAIR AND REPLACE ALL DAMAGE TO EXISTING UTILITIES, MANHOLES AND PRIVATE PROPERTY AS A RESULT OF REPAIR OR REPLACEMENT WORK TO THE SATISFACTION OF THE PERMITTING AGENCY, THE OWNER AND THE ENGINEER. TAKE CARE TO AVOID DAMAGE TO ADJACENT AREAS WHICH ARE NOT CALLED OUT FOR REPAIR OR REPLACEMENT. REPAIR OR REPLACE ALL SUCH DAMAGES WHICH ARE DAMAGED BY CONSTRUCTION ACTIVITIES AND CONSTRUCTION TRAFFIC AT NO ADDITIONAL COST TO THE OWNER.
 - VERIFY ALL TEMPORARY EASEMENTS ARE REQUIRED FOR THE CONSTRUCTION OF THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
 - VERIFY ALL TEMPORARY EASEMENTS AND REGULATIONS. APPLICABLE PERMITS ISSUED TO THE OWNER WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT ALL APPLICABLE PERMITTING AGENCIES WITHIN THE TIME PERIOD SPECIFIED BY THAT AGENCY PRIOR TO BEGINNING CONSTRUCTION.
 - ALL PRIVATE WELL LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. FIELD VERIFY AND DETERMINE EXACT LOCATIONS OF ALL PRIVATE WELLS IN THE PROJECT AREA.
 - 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-MEMBERSHIP 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 UTILITY SERVICE LINES FOR ALL UTILITIES EXIST TO EACH PROPERTY ALONG THE ROUTE OF THE PLANNED IMPROVEMENTS.
 - EXISTING SANITARY AND GAS SERVICE LATERALS SHOWN ON THE DRAWINGS WERE OBTAINED FROM GIS AND SHOULD BE FIELD VERIFIED DURING CONSTRUCTION.
 - EXISTING UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS AND LABELED AS "GIS" WERE OBTAINED FROM GIS MAPPING AND SHOULD BE FIELD VERIFIED DURING CONSTRUCTION.
 - 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 BE 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 THROUGH 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.
 - RESET ALL MAILBOXES AND SIGNS DISTURBED BY CONSTRUCTION ACTIVITIES.
 - IF REQUIRED, PLACE TEMPORARY OVERNIGHT AGGREGATE WEDGES AT DRIVEWAYS TO ALLOW PROPERTY OWNER ACCESS.
 - GRANULAR BACKFILL IS REQUIRED WHEN INSTALLING WATER MAIN WITHIN 5 FEET OF THE EDGE OF PAVEMENT.

UTILITY CONTACTS

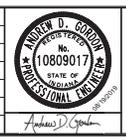
ELECTRIC/GAS	CARMEL WATER
VECTREN SHAWN WILLIAMS 1-317-730-8475	STEVE COOK 1-317-733-2858
CITIZENS GAS RICH MILLER 1-317-927-4684	JOHN DUFFY - UTILITY DIRECTOR, 1-317-971-2451
DUKE ENERGY MICHELA MIKOTA 1-317-778-5341	CITIZENS WATER SCOTT BITTER 1-317-927-4434
TELEPHONE/FIBER OPTIC	PETROLEUM
AT&T JEFF RICE - PROJECT ENGINEER 1-317-225-3313	BUCKEYE PARTS WWW.BUCKEYECOM 1-800-331-4115
COMCAST SCOTT EVANS 1-317-752-8569	MARATHON PIPE LINE LLC 1-618-540-8905
XAN RYPKEMA 1-720-888-1089	
SPECTRUM DEAN CARLSLE 1-317-607-7521	
SEWER	
CARMEL UTILITIES, SEWER DEPT. ED WOLFE - OPERATIONS DIRECTOR 1-317-571-2634	
CLAY TOWNSHIP REGIONAL WASTE DISTRICT RYAN HARTMAN - DISTRICT ENGINEER 1-317-844-9200	
UTILITY DIRECTOR, CITY OF CARMEL JOHN DUFFY 1-317-971-2451	

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AS SHOWN				

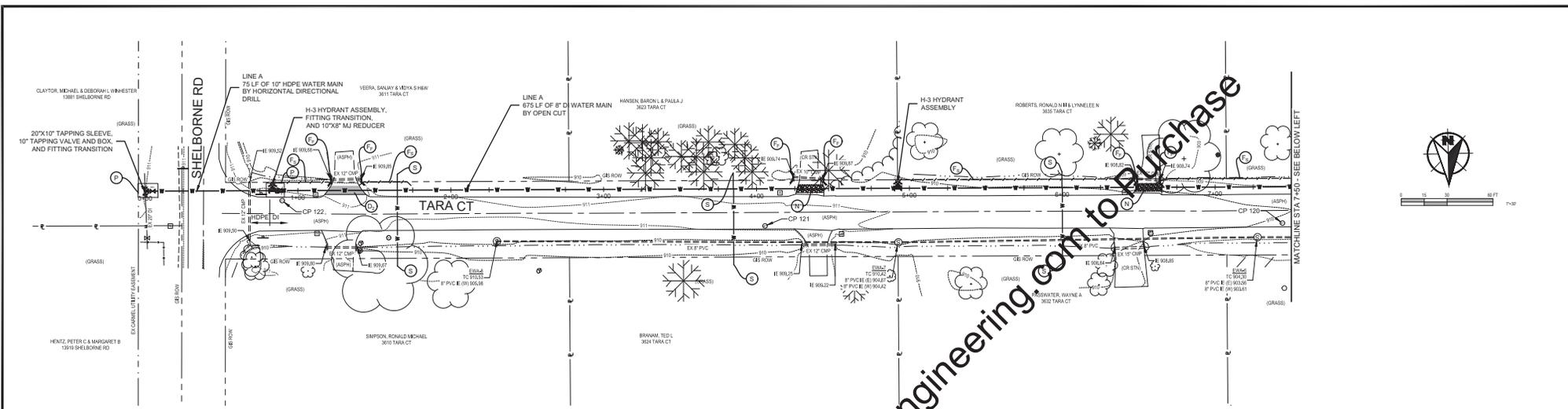
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CHECKED BY	DED
APPROVED BY	ADG
ISSUE DATE	AUGUST 2019
PROJECT NUMBER	206518-04-002



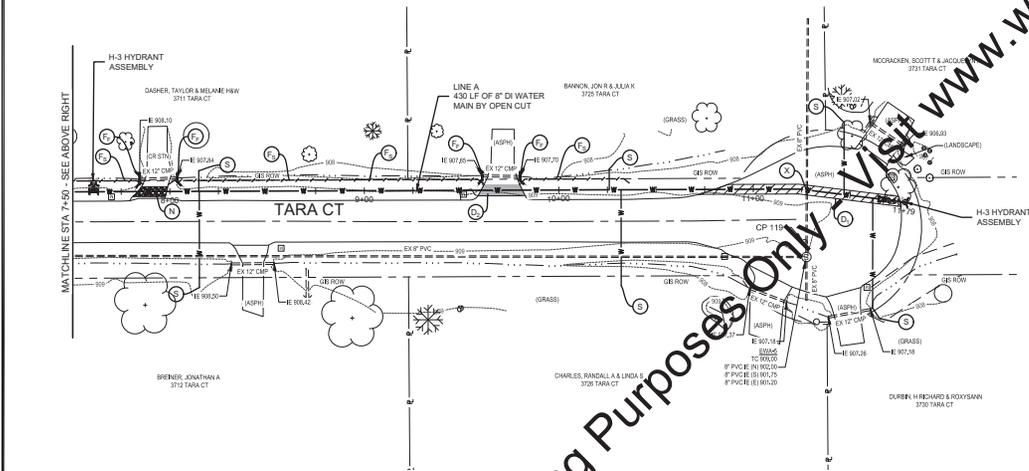
WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

GENERAL SHEET

SHEET NO.
06
TOTAL SHEETS
56



PLAN - LINE A
SCALE: 1" = 30'



PLAN - LINE A
SCALE: 1" = 30'



- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
 - P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
 - 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
 - R₂ REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S 1" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
 - S₁ 1" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S₂ 1" NEW SERVICE LINE AND METER PIT
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

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SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
CHECKED BY	DED					
APPROVED BY	ADG					
ISSUE DATE	AUGUST 2019					
PROJECT NUMBER	206518-04-002					

ANDREW D. GORDON
REGISTERED PROFESSIONAL ENGINEER
No. 10809017
STATE OF CALIFORNIA
MECHANICAL ENGINEER

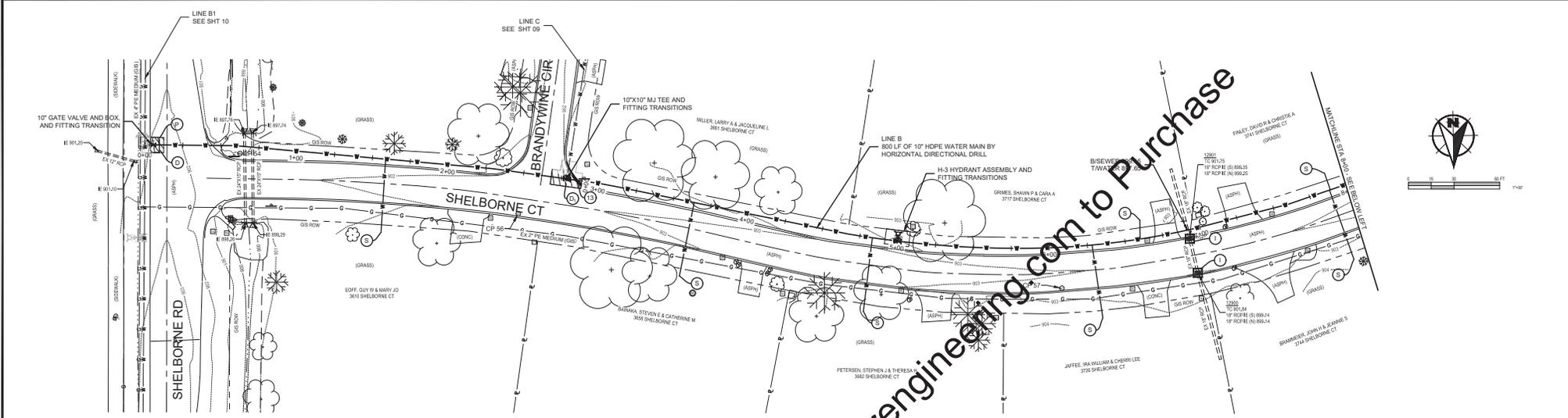
W
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WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

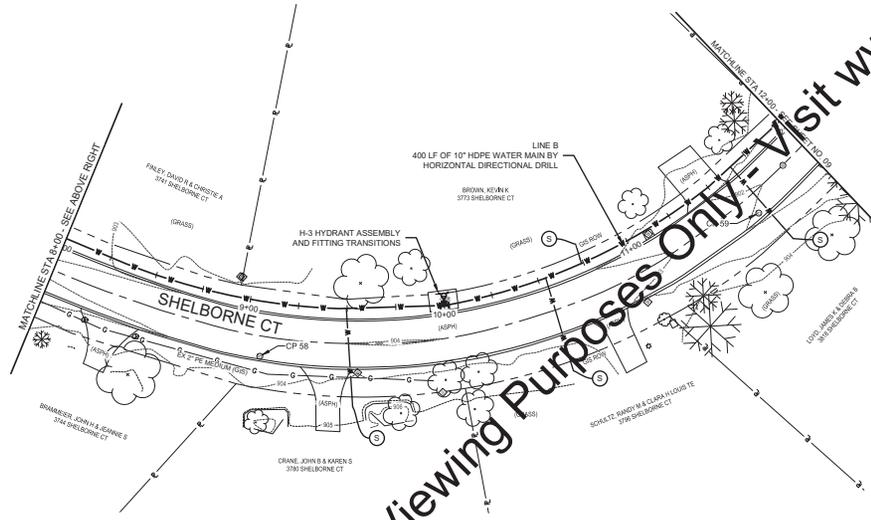
WATER MAIN - LINE A - TARA CT

SHEET NO.	07
TOTAL SHEETS	56

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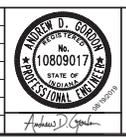
PLAN - LINE B
SCALE: 1" = 30'



PLAN - LINE B
SCALE: 1" = 30'

- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₅ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - Ha ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
 - P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
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 - S₂ 1" NEW SERVICE LINE AND METER PIT
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
CHECKED BY	DED					
APPROVED BY	ADG					
ISSUE DATE	AUGUST 2019					
PROJECT NUMBER	206518-04-002					

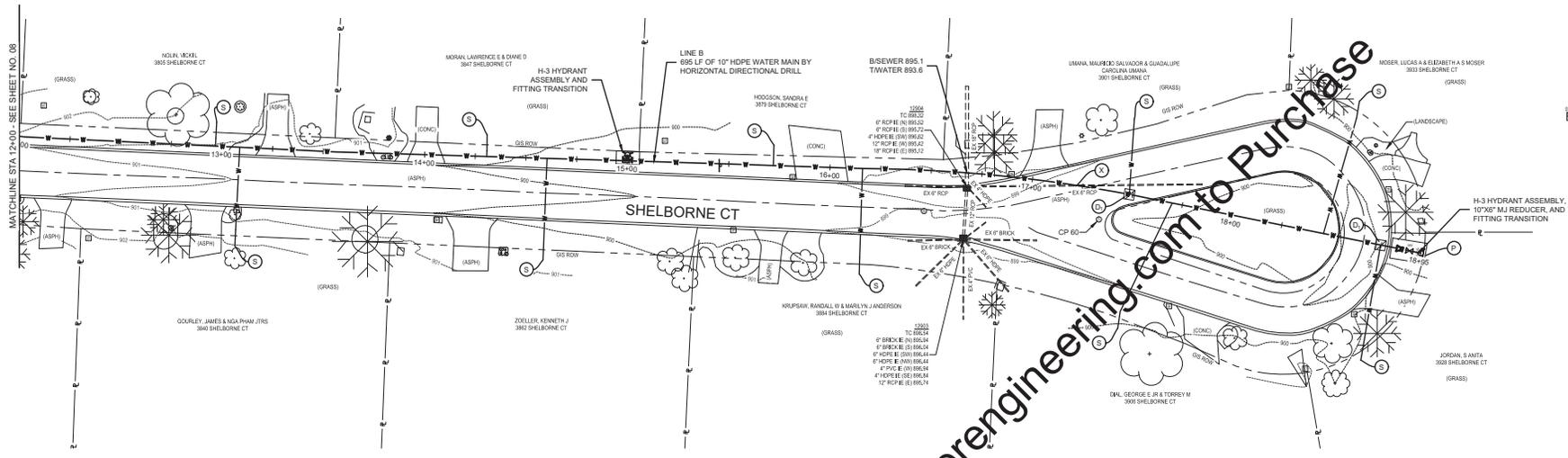


WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

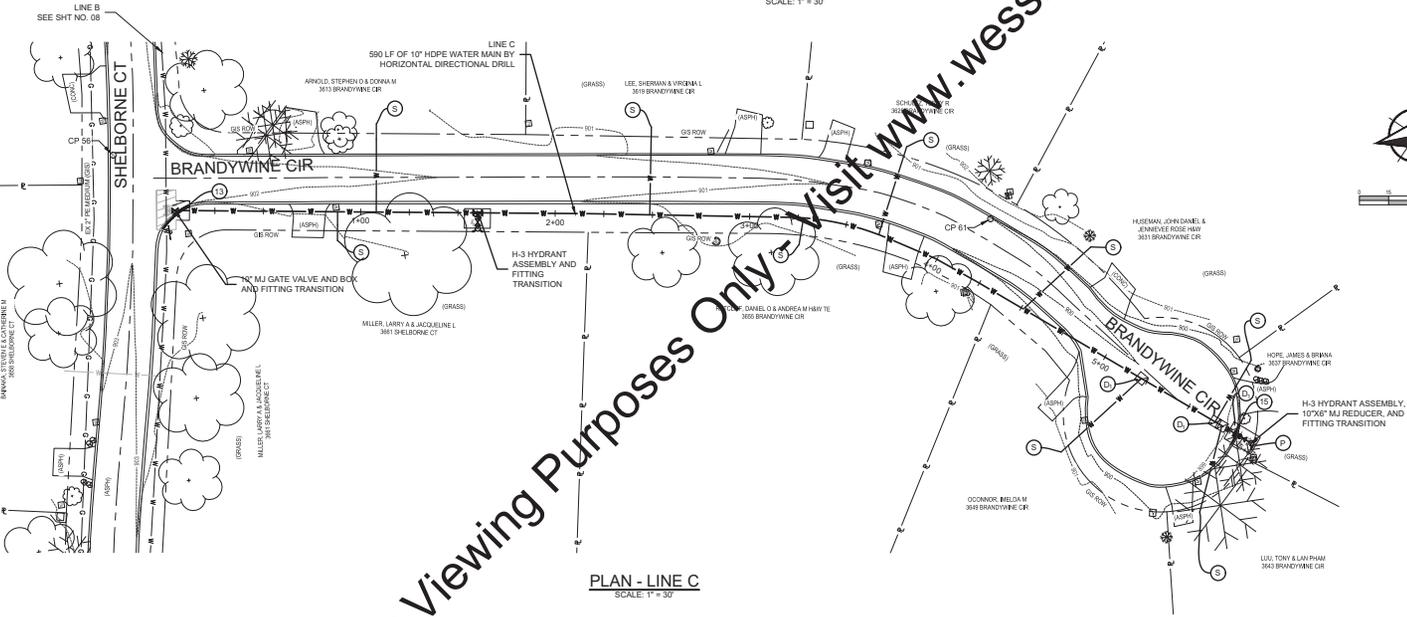
WATER MAIN - LINE B - SHELBORNE CT

SHEET NO.
08

TOTAL SHEETS
56



PLAN - LINE B
SCALE: 1" = 30'



PLAN - LINE C
SCALE: 1" = 30'



- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - Ha ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
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 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

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	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				

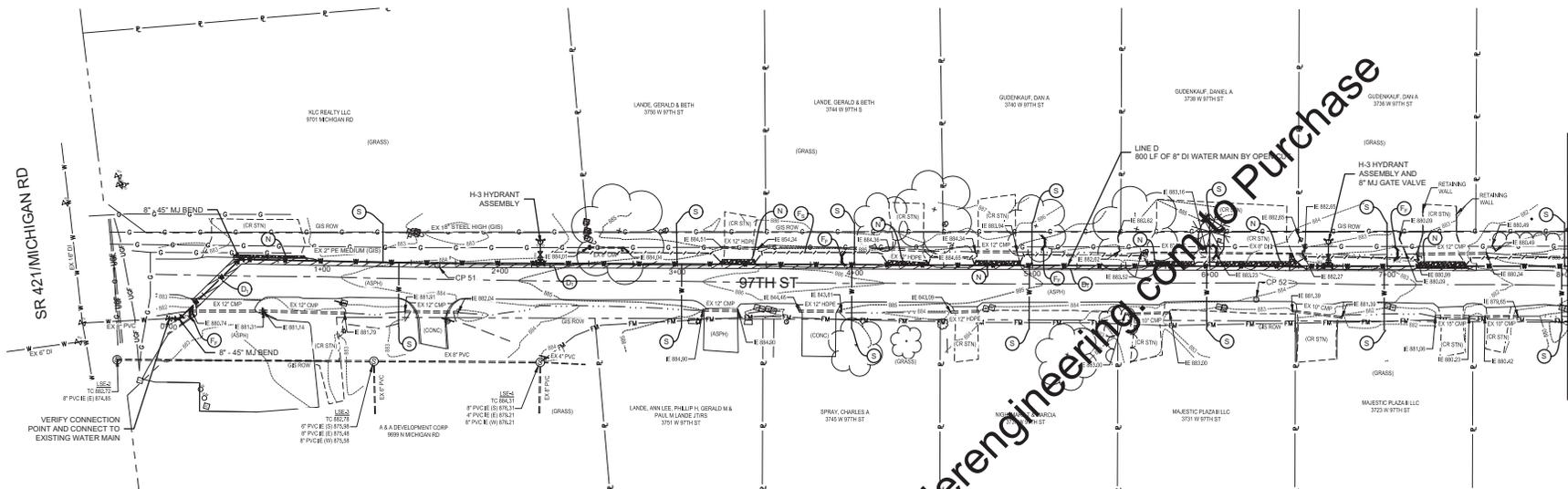


WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

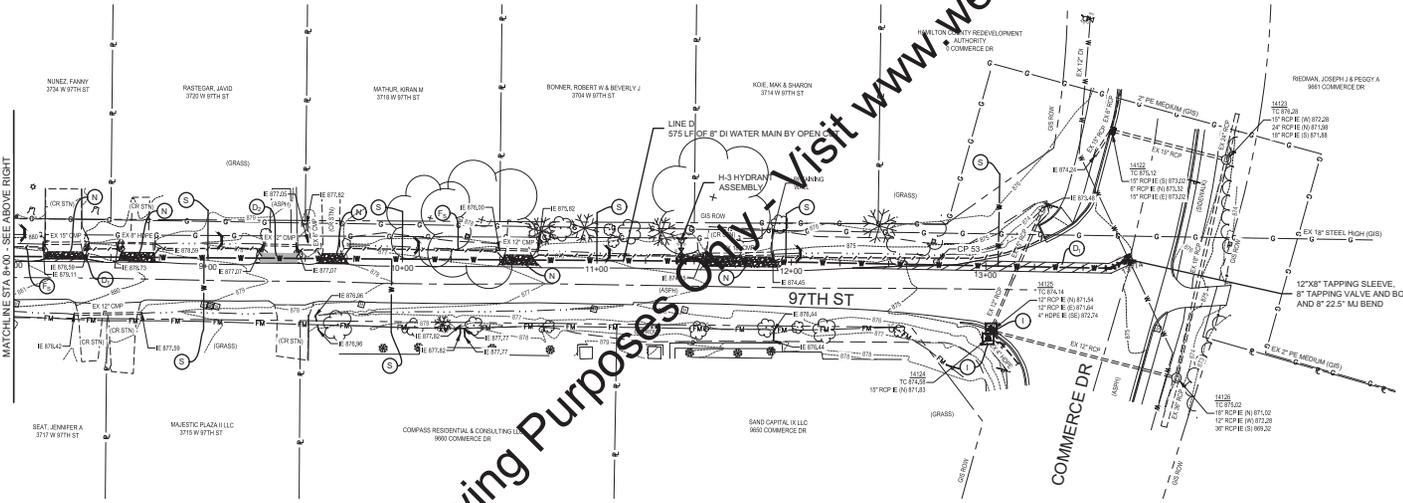
WATER MAIN - LINE B - SHELBORNE CT
WATER MAIN - LINE C - BRANDYWINE CIR

SHEET NO.
09

TOTAL SHEETS
56



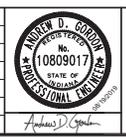
PLAN - LINE D
SCALE: 1" = 30'



PLAN - LINE D
SCALE: 1" = 30'

- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
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 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

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	PROJECT NUMBER	206518-04-002				

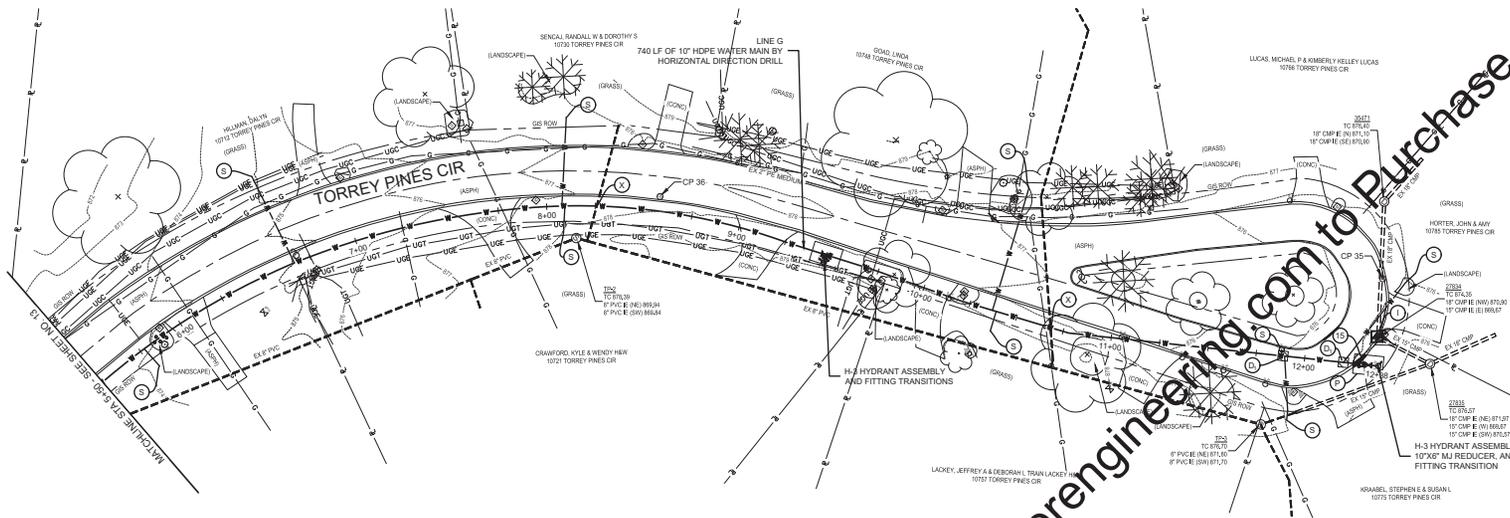


WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE D - 97TH ST

SHEET NO.
11
TOTAL SHEETS
56

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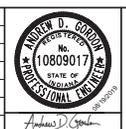


PLAN - LINE G
SCALE: 1" = 30'

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- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₅ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
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	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



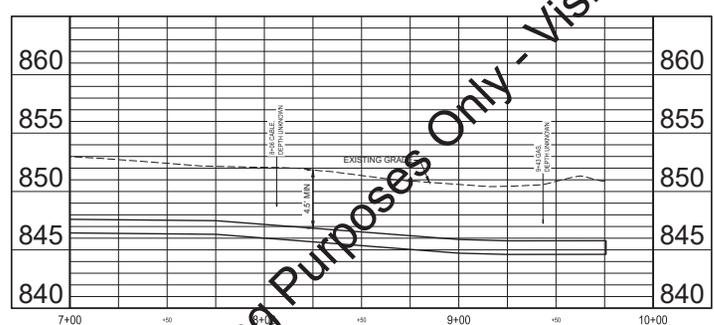
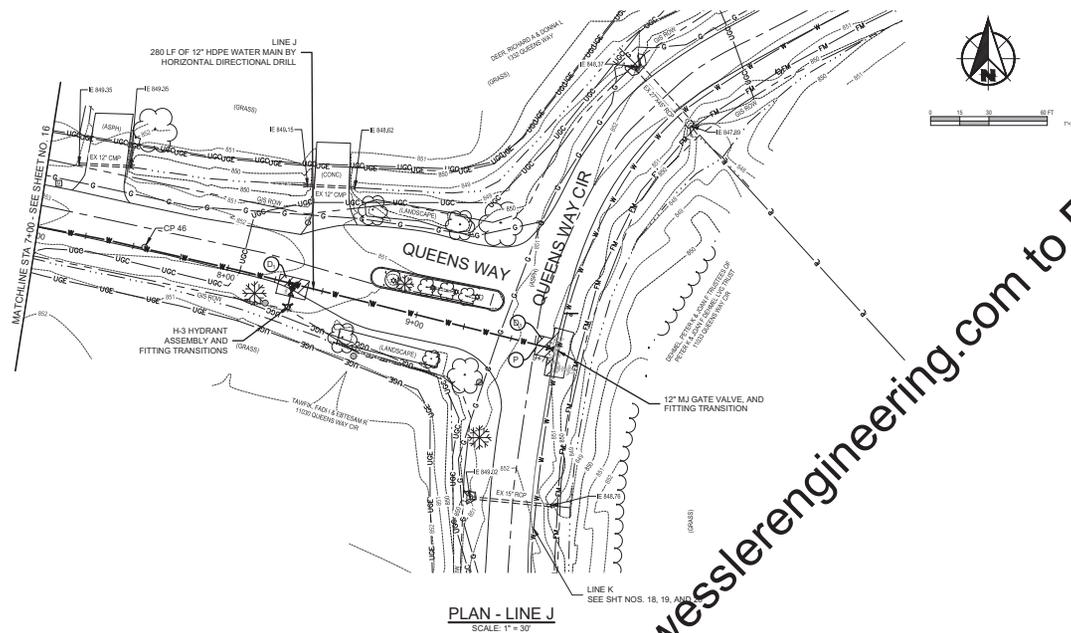
WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE G - TORREY PINES CIR

SHEET NO.
14

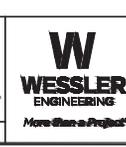
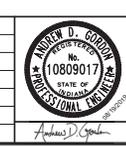
TOTAL SHEETS
56

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- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
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SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
CHECKED BY	DED					
APPROVED BY	ADG					
ISSUE DATE	AUGUST 2019					
PROJECT NUMBER	206518-04-002					

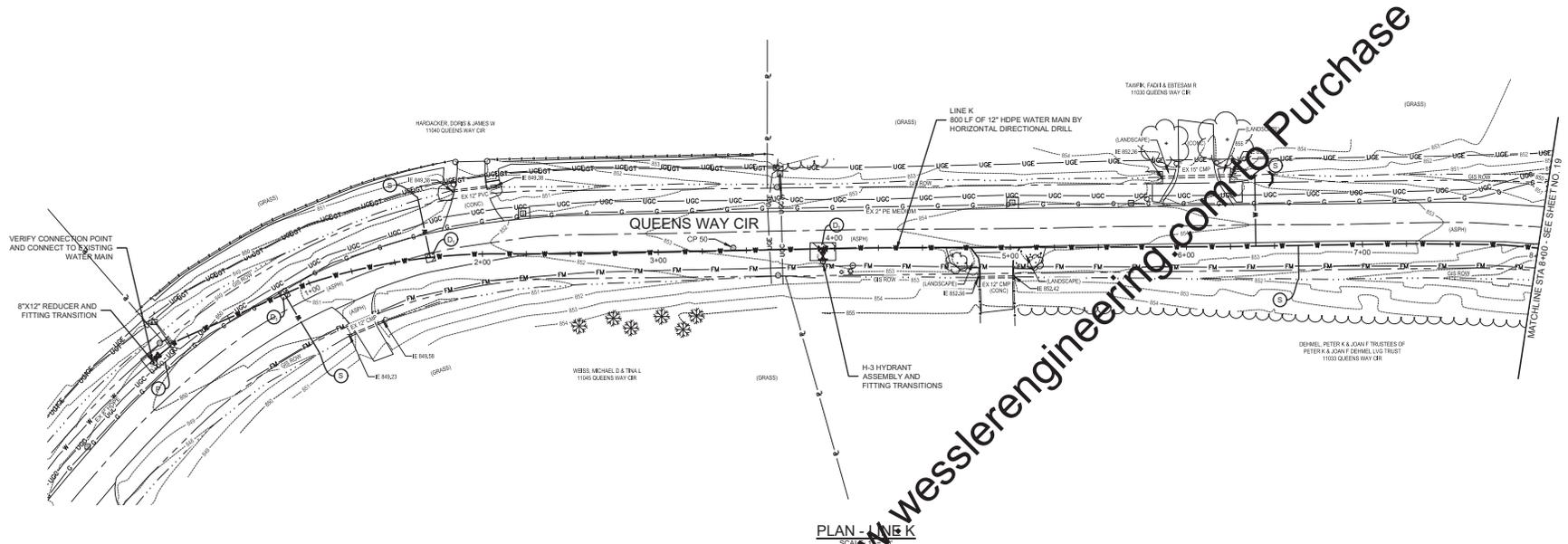


WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

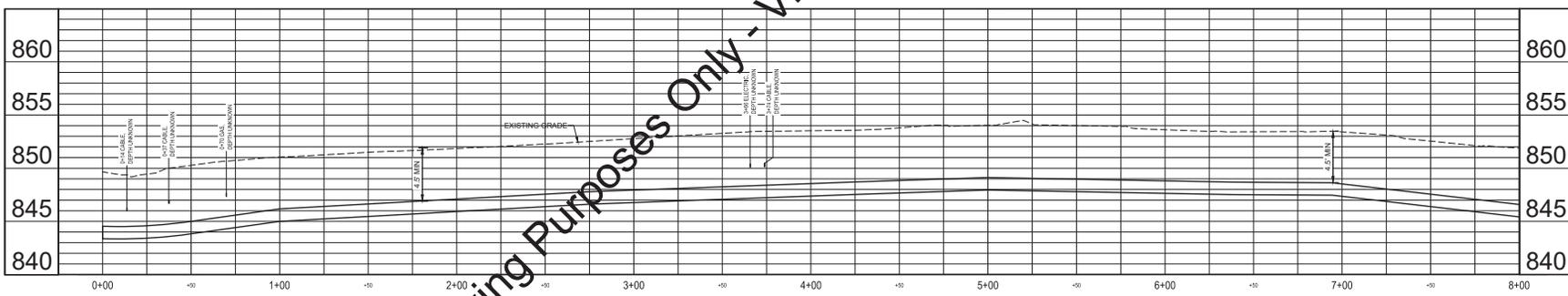
WATER MAIN - LINE J - QUEENS WAY

SHEET NO.
17
TOTAL SHEETS
56

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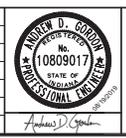
PLAN - LINE K
Scale: 1" = 30'



PROFILE - LINE K
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'

- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
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SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
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	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



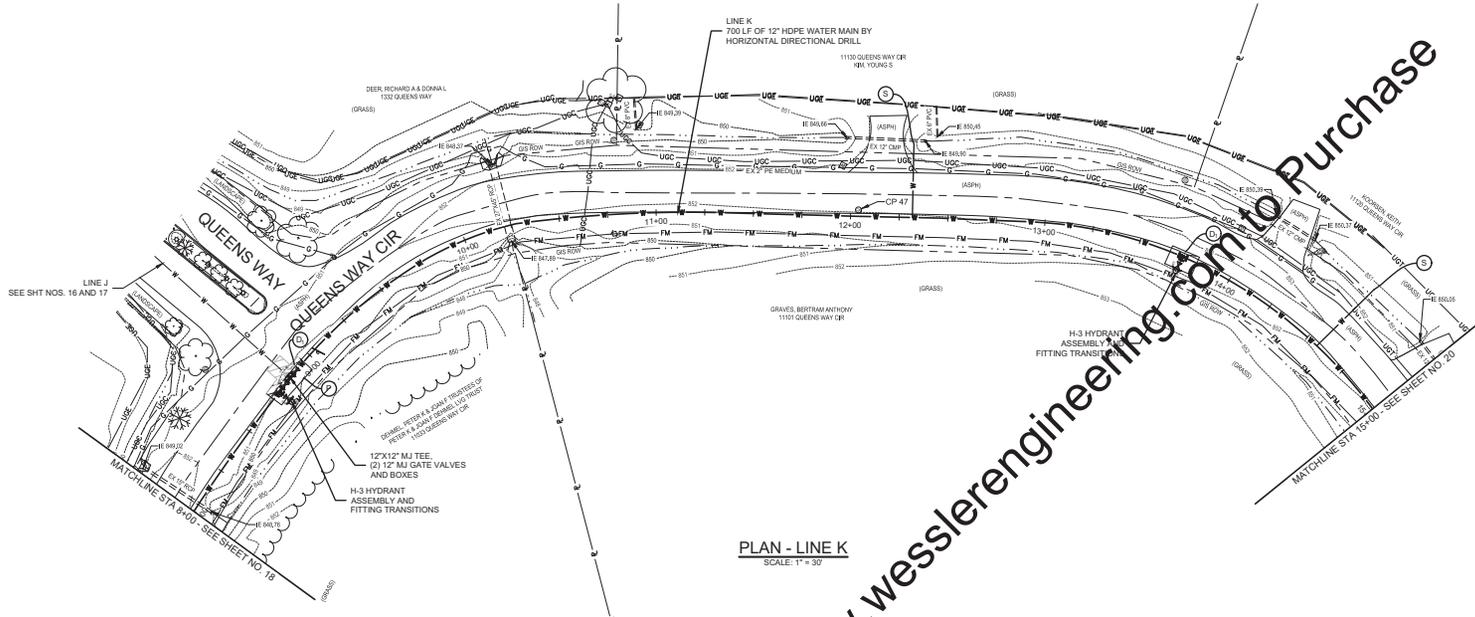
WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE K - QUEENS WAY CIR

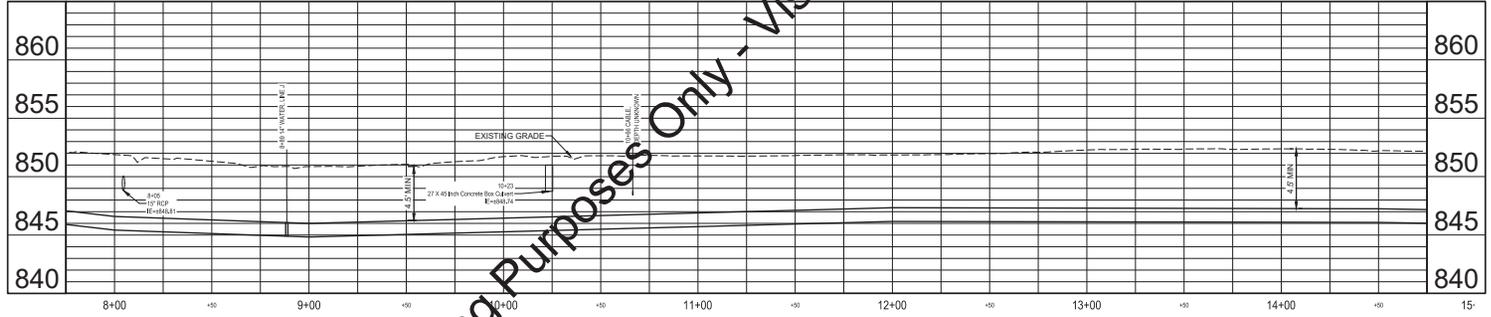
SHEET NO.
18

TOTAL SHEETS
56

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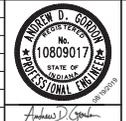
PLAN - LINE K
SCALE: 1" = 30'



PROFILE - LINE K
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'

- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - Ha ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
 - P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
 - 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
 - R₂ REMOVE EXISTING METER PIT FRAME AND LID. ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S 1" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
 - S₁ 1" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S₂ 1" NEW SERVICE LINE AND METER PIT
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

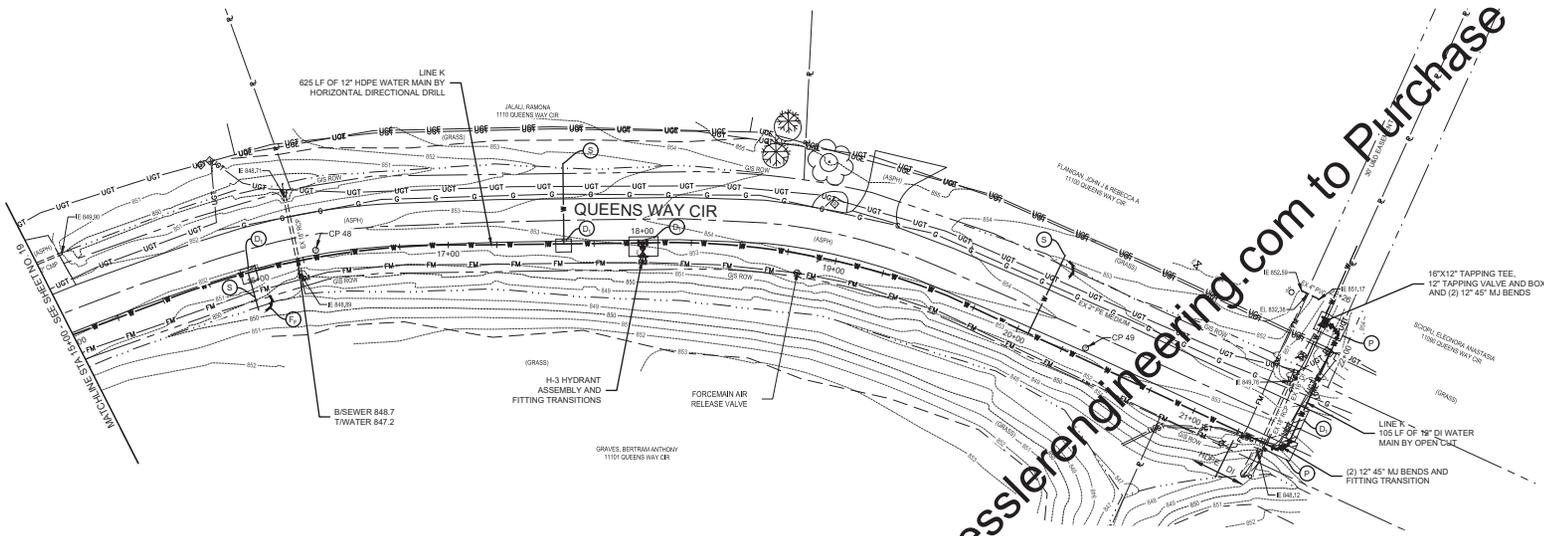
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	CHECKED BY DED				
	APPROVED BY ADG				
	ISSUE DATE AUGUST 2019 PROJECT NUMBER 206518-04-002				



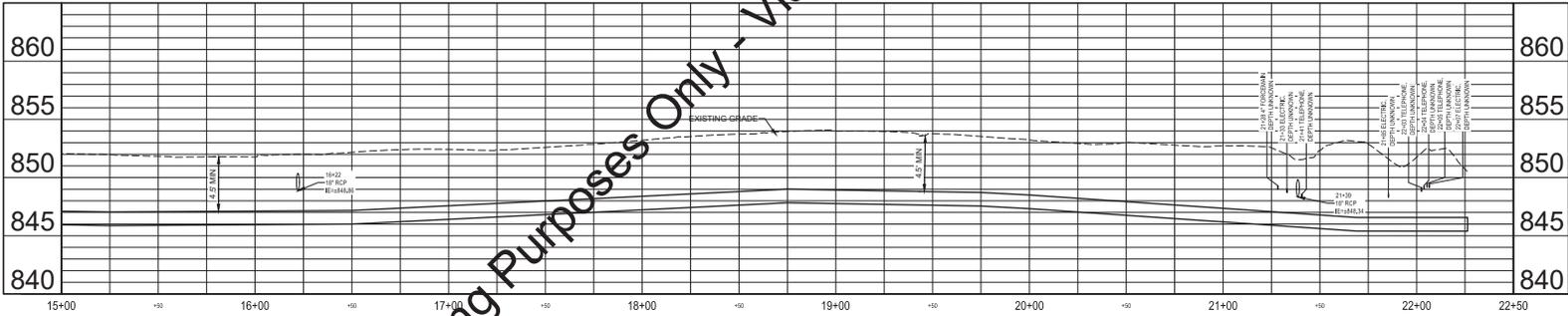
WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE
WATER MAIN - LINE K - QUEENS WAY CIR

SHEET NO.
19
 TOTAL SHEETS
56

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PLAN - LINE K
SCALE: 1" = 30'



PROFILE - LINE K
HORZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'



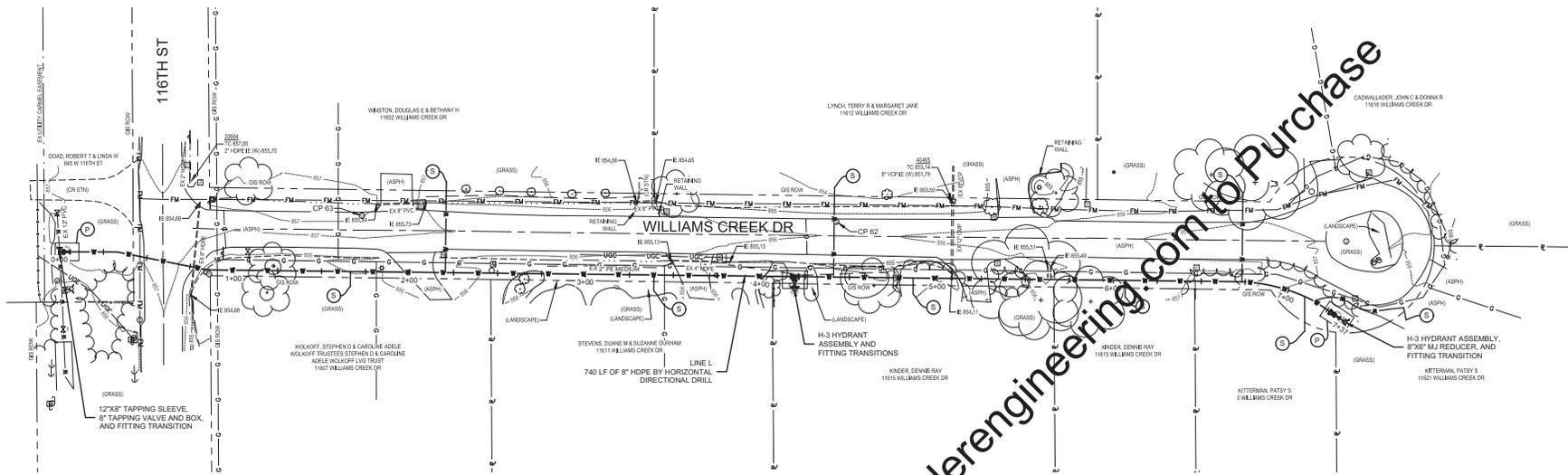
KEYED NOTES

- D PAVEMENT REPAIR (MAJOR ROADS)
- D₁ PAVEMENT REPAIR (MINOR ROADS)
- D₂ ASPHALT DRIVE REPAIR
- F₁ CONCRETE DRIVE REPAIR
- F₂ CONCRETE SIDEWALK REPAIR
- F₃ FIBER FILTRATION TUBE CHECK DAM
- F₅ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
- Ha ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
- I INLET PROTECTION
- N CRUSHED STONE SURFACE REPAIR
- P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
- 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
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- S 1" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
- S₁ 1" NEW SERVICE LINE, CURB STOP, RECONNECT
- S₂ 1" NEW SERVICE LINE AND METER PIT
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- 13 CONCRETE CURB REPAIR, MATCH EXISTING
- 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

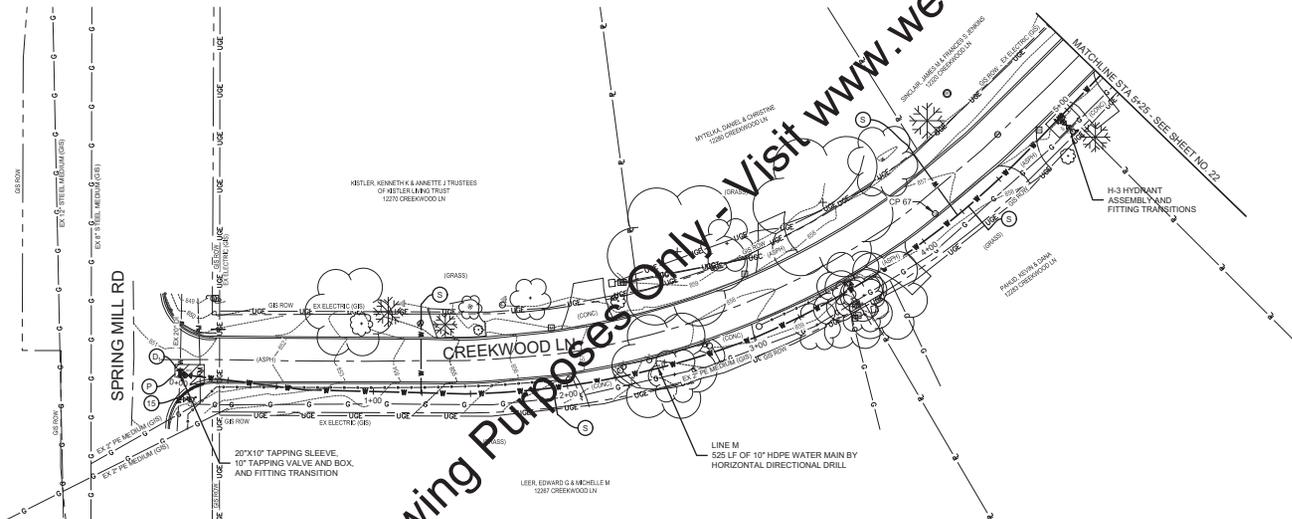
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	CHECKED BY	DED							20	
	APPROVED BY	ADG							TOTAL SHEETS	
	ISSUE DATE	AUGUST 2019							56	
PROJECT NUMBER	206518-04-002						WATER MAIN - LINE K - QUEENS WAY CIR			

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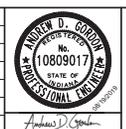
PLAN - LINE L
SCALE: 1" = 30'



PLAN - LINE M
SCALE: 1" = 30'

- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - Ha ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
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 - R₁ CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
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 - S₁ 1" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S₂ 1" NEW SERVICE LINE AND METER PIT
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	DED				
	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
PROJECT NUMBER 206518-04-002						



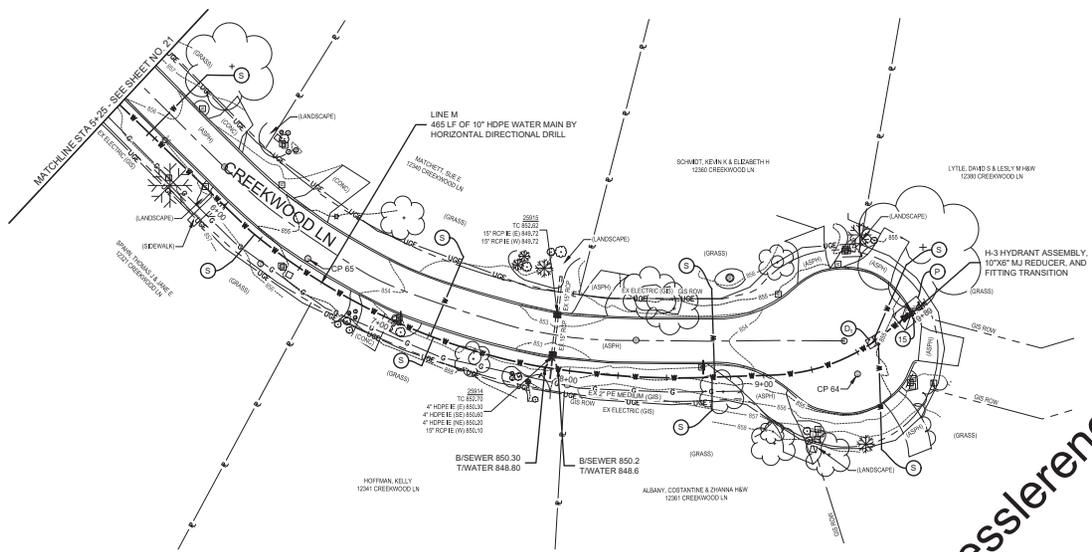
WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE L - WILLIAMS CREEK RD
WATER MAIN - LINE M - CREEKWOOD LN

SHEET NO.
21
TOTAL SHEETS
56

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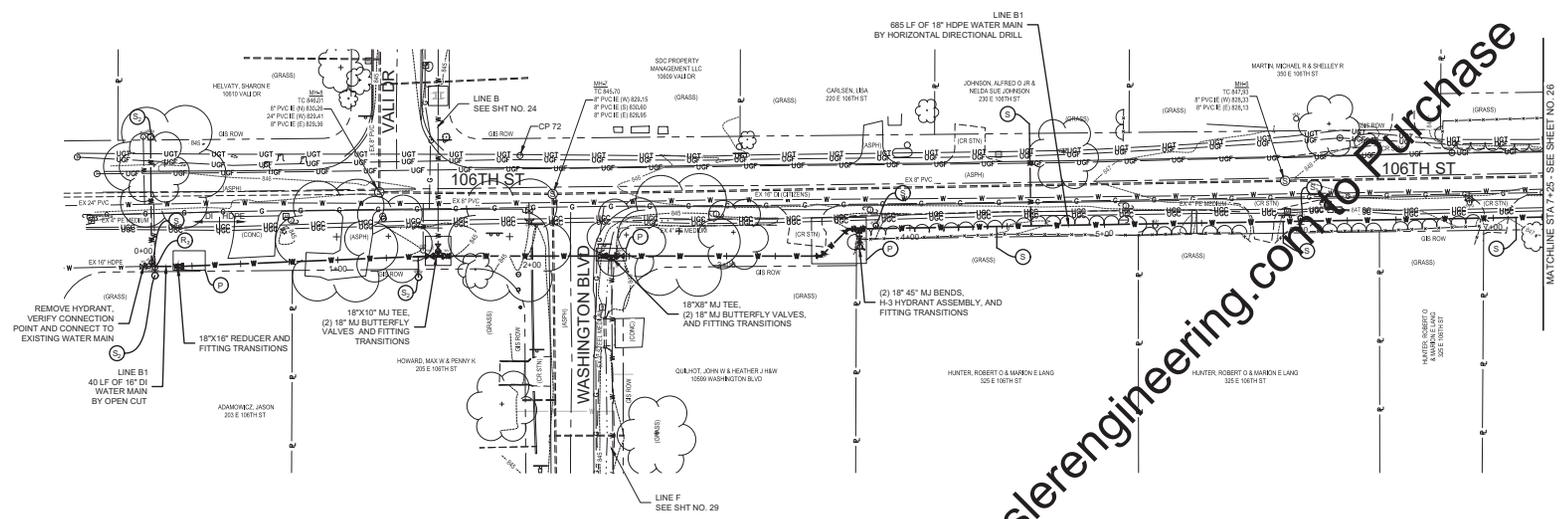


PLAN - LINE M
SCALE: 1" = 30'

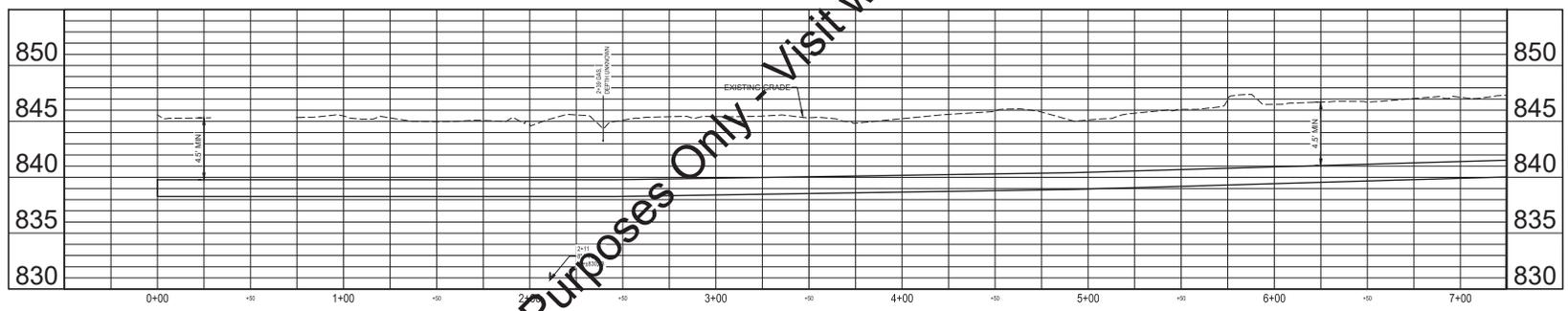
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- KEYED NOTES**
- D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - H₁ ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
 - P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
 - 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
 - R₂ REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S 1" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
 - S₁ 1" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S₂ 1" NEW SERVICE LINE AND METER PIT
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS			WATER SYSTEM IMPROVEMENTS	SHEET NO.
	CHECKED BY	DED							CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE	22
	APPROVED BY	ADG							PROJECT NUMBER 206518-04-002	TOTAL SHEETS
	ISSUE DATE	AUGUST 2019							WATER MAIN - LINE M - CREEKWOOD LN	56



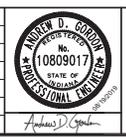
PLAN - LINE B1
SCALE: 1" = 30'



PROFILE - LINE B1
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'

- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₅ SILT FENCE/FILTER TUBE PERIMETER PROTECTION (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
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 - R₂ REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S 3/4" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
 - S₁ 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S₂ 3/4" NEW SERVICE LINE AND METER PIT
 - T REMOVE TREE
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	DED				
	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



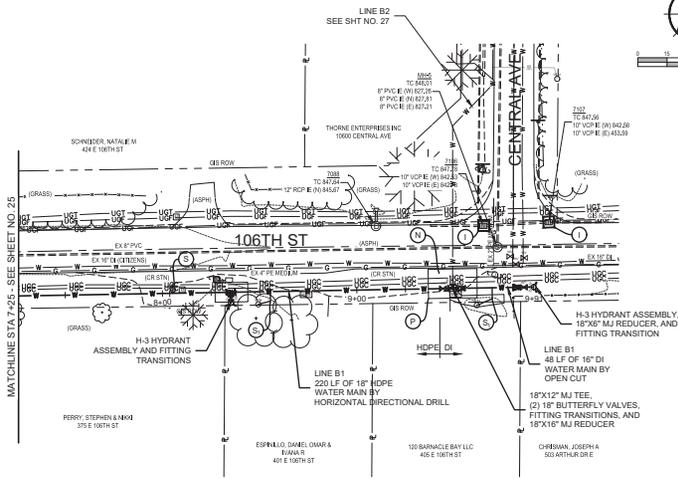
WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE B1 - 106TH ST

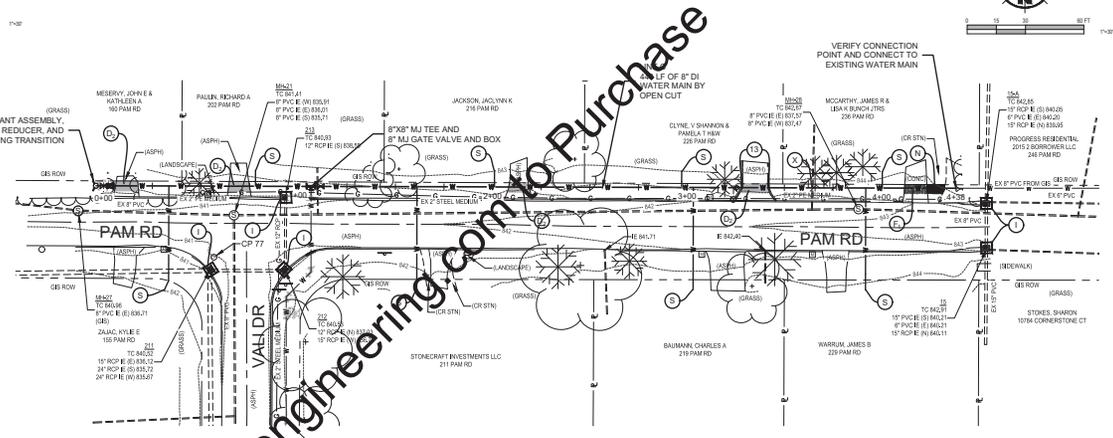
SHEET NO.
25

TOTAL SHEETS
56

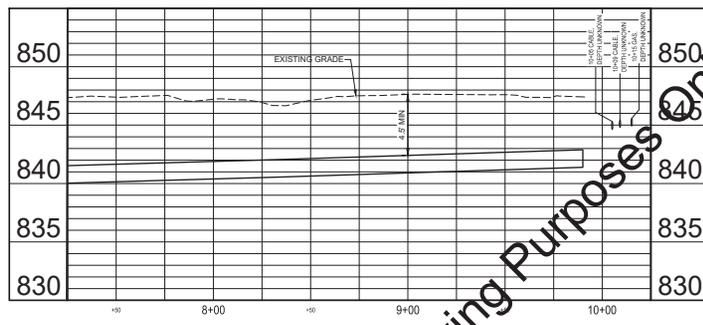
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 User: jasonw
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 Plot Orientation: Landscape
 Plot Range: All
 Plot Color: Black
 Plot Lineweight: 0.5
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 Plot Title: 206518-04-002.dwg
 Plot Sheet: 25 of 56



PLAN - LINE B1
SCALE: 1" = 30'



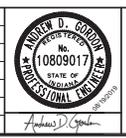
PLAN - LINE C
SCALE: 1" = 30'



PROFILE - LINE B1
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'

- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D1 PAVEMENT REPAIR (MINOR ROADS)
 - D2 ASPHALT DRIVE REPAIR
 - F1 CONCRETE DRIVE REPAIR
 - F2 CONCRETE SIDEWALK REPAIR
 - F3 FIBER FILTRATION TUBE CHECK DAM
 - F5 SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - Hs ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
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 - R1 CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
 - R2 REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S 3/4" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
 - S1 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S2 3/4" NEW SERVICE LINE AND METER PIT
 - T REMOVE TREE
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

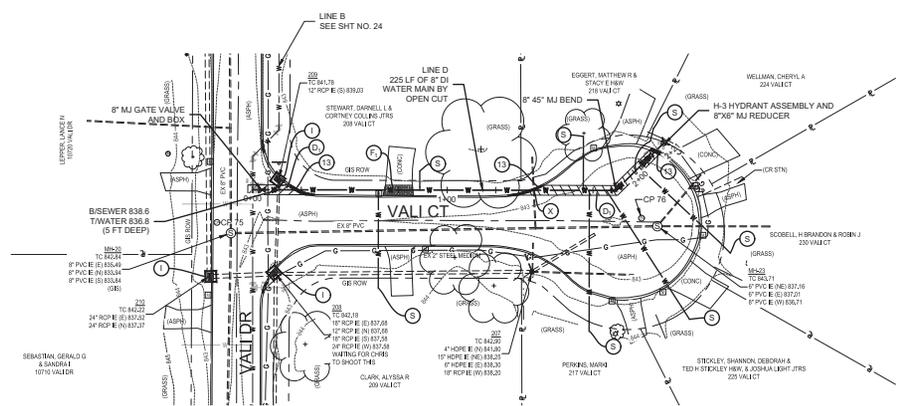
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	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



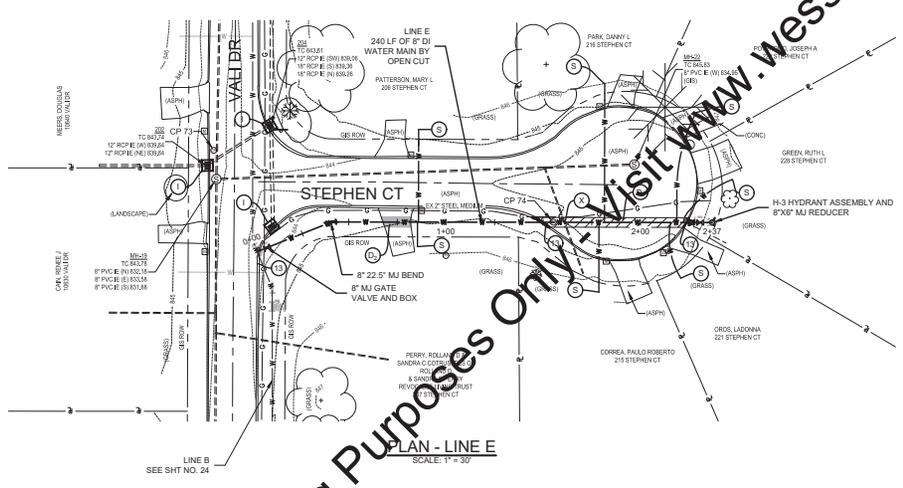
WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE
WATER MAIN - LINE B1 - 106TH ST
WATER MAIN - LINE C - PAM RD

SHEET NO.
26
 TOTAL SHEETS
56

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PLAN - LINE D
SCALE: 1" = 30'

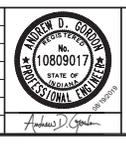


PLAN - LINE E
SCALE: 1" = 30'



- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - H₁ ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
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 - S₂ 3/4" NEW SERVICE LINE AND METER PIT
 - T REMOVE TREE
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
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SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	DED				
	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				

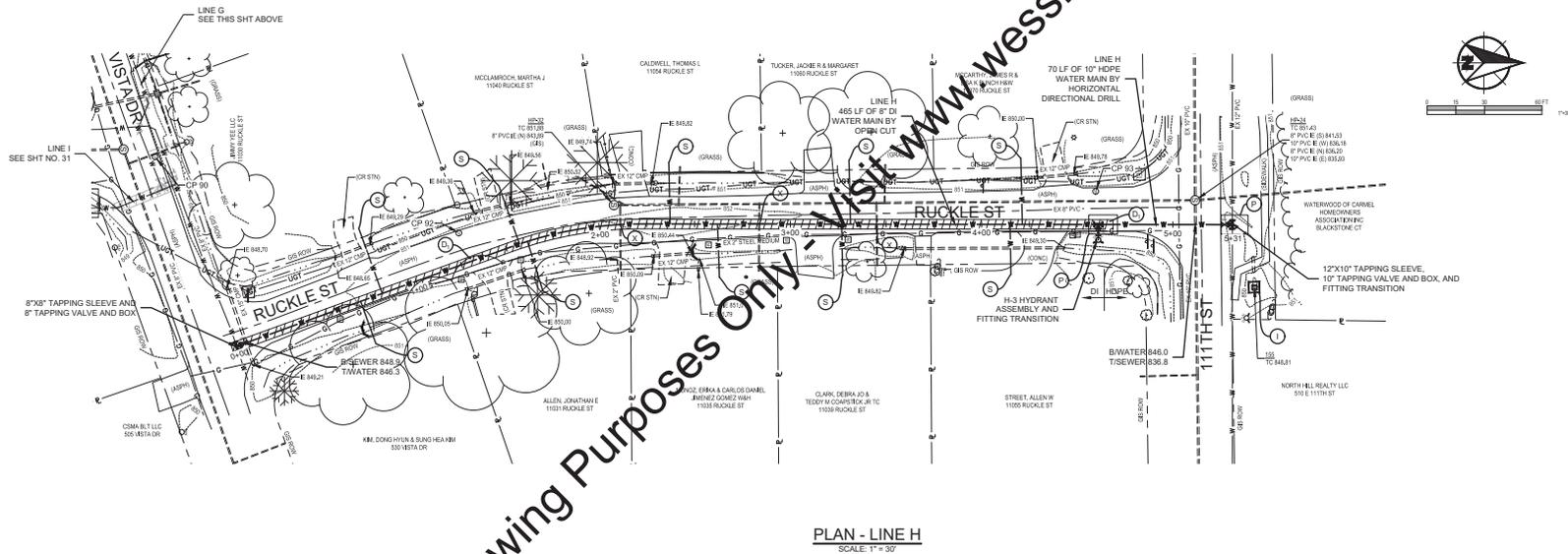
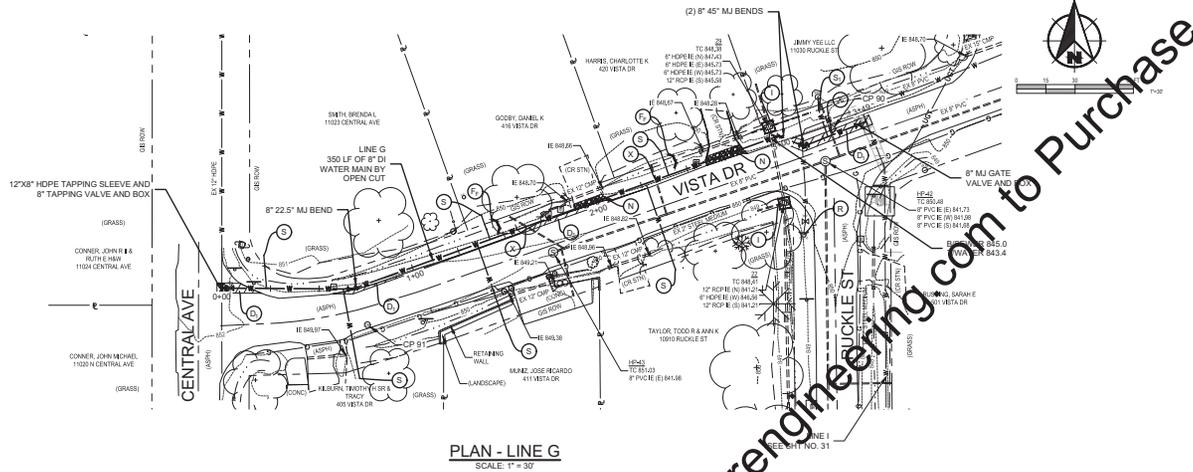


WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE
WATER MAIN - LINE D - VALI CT
WATER MAIN - LINE E - STEPHEN CT

SHEET NO.
28
 TOTAL SHEETS
56

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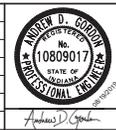
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KEYED NOTES

- A ABANDON WATER MAIN
- D PAVEMENT REPAIR (MAJOR ROADS)
- D1 PAVEMENT REPAIR (MINOR ROADS)
- D2 ASPHALT DRIVE REPAIR
- F1 CONCRETE DRIVE REPAIR
- F2 CONCRETE SIDEWALK REPAIR
- F3 FIBER FILTRATION TUBE CHECK DAM
- F5 SILT FENCE/FILTER TUBE PERIMETER PROTECTION
- Hs ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
- I INLET PROTECTION
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- R1 CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- R2 REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
- S 3/4" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
- S1 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
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SCALE VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
CHECKED BY	DED					
APPROVED BY	ADG					
ISSUE DATE	AUGUST 2019					
PROJECT NUMBER	206518-04-002					



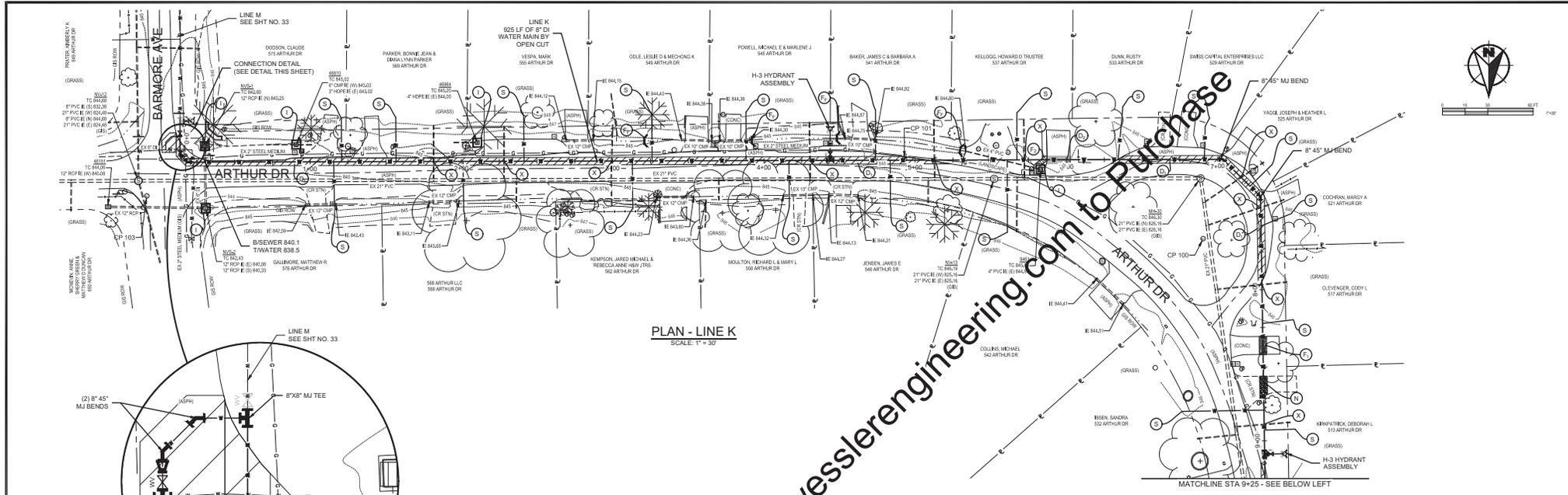
WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE G - VISTA DR
WATER MAIN - LINE H - RUCKLE ST

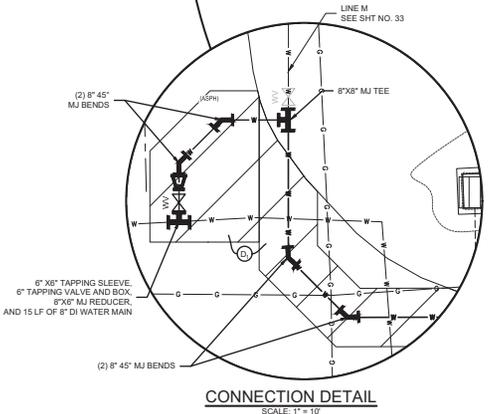
SHEET NO.	30
TOTAL SHEETS	56

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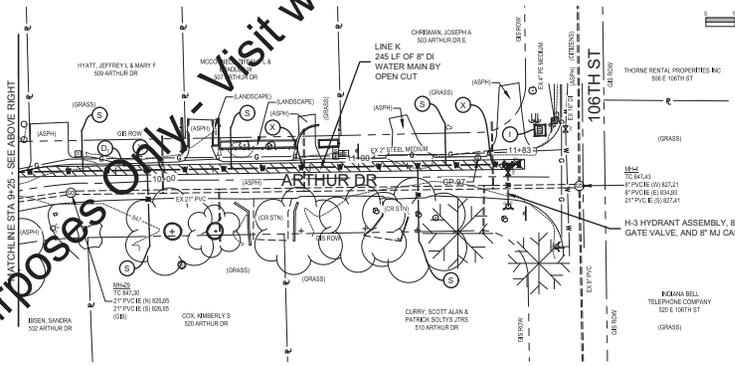
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PLAN - LINE K
SCALE: 1" = 30'



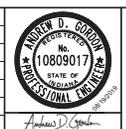
CONNECTION DETAIL
SCALE: 1" = 10'



PLAN - LINE K
SCALE: 1" = 30'

- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D1 PAVEMENT REPAIR (MINOR ROADS)
 - D2 ASPHALT DRIVE REPAIR
 - F1 CONCRETE DRIVE REPAIR
 - F2 CONCRETE SIDEWALK REPAIR
 - F3 FIBER FILTRATION TUBE CHECK DAM
 - F5 SILT FENCE/FILTER TUBE PERIMETER PROTECTION (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
 - Hs ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
 - P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
 - 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
 - R2 REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S1 3/4" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
 - S2 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
 - T REMOVE TREE
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

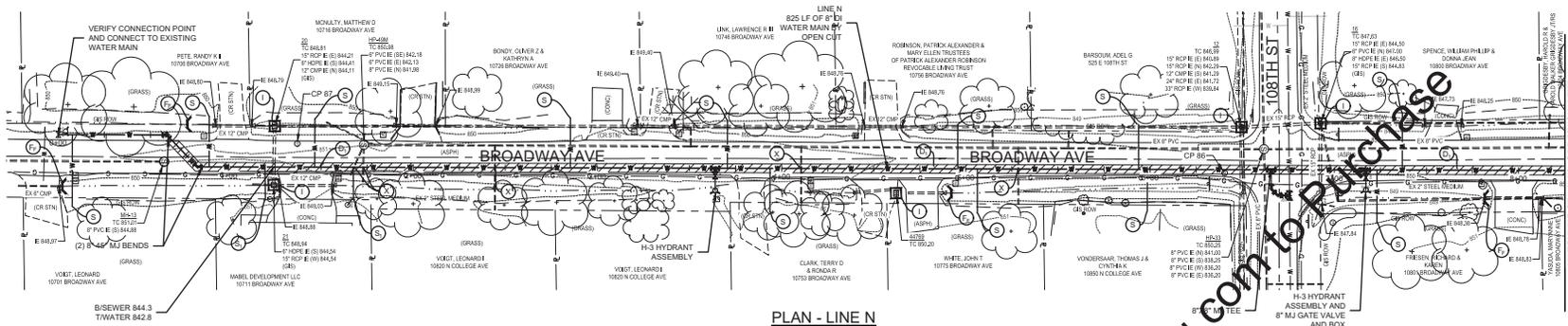
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CHECKED BY	DED					
APPROVED BY	ADG					
ISSUE DATE	AUGUST 2019					
PROJECT NUMBER	206518-04-002					



WATER SYSTEM IMPROVEMENTS	
CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE	
WATER MAIN - LINE K - ARTHUR DR	

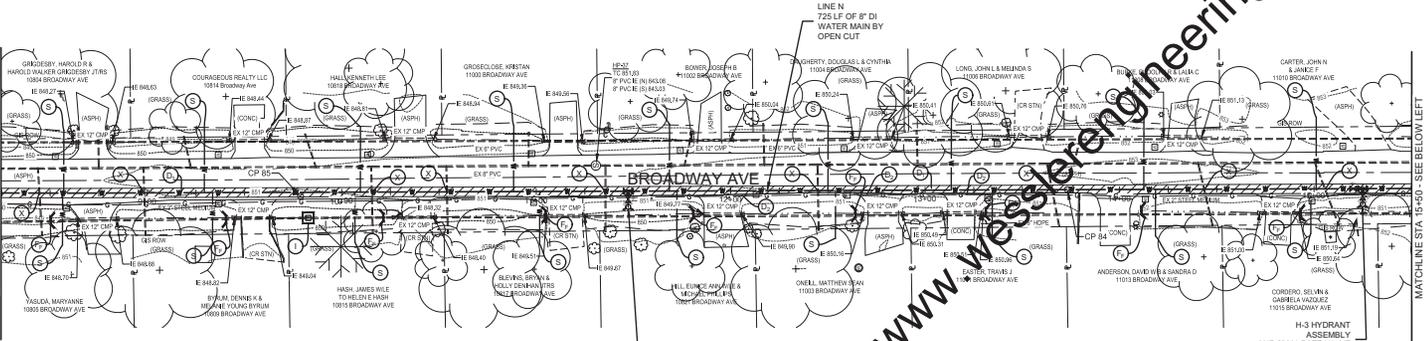
SHEET NO.	32
TOTAL SHEETS	56

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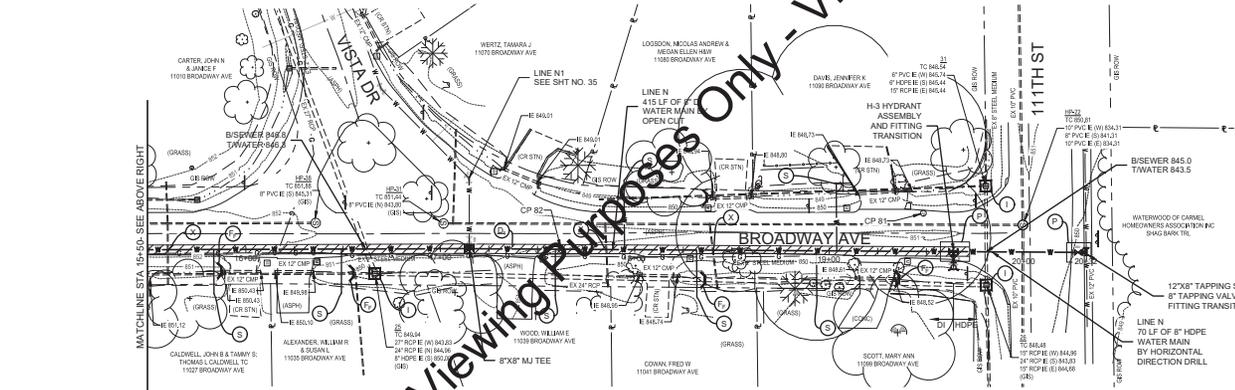
PLAN - LINE N

SCALE: 1" = 30'



PLAN - LINE N

SCALE: 1" = 30'



PLAN - LINE N

SCALE: 1" = 30'



KEYED NOTES

- A ABANDON WATER MAIN
- D PAVEMENT REPAIR (MAJOR ROADS)
- D₁ PAVEMENT REPAIR (MINOR ROADS)
- D₂ ASPHALT DRIVE REPAIR
- F₁ CONCRETE DRIVE REPAIR
- F₂ CONCRETE SIDEWALK REPAIR
- F₃ FIBER FILTRATION TUBE CHECK DAM
- F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
- H₁ ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
- I INLET PROTECTION
- N CRUSHED STONE SURFACE REPAIR
- P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
- 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
- R₂ REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
- S 3/4" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
- S₁ 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
- S₂ 3/4" NEW SERVICE LINE AND METER PIT
- T REMOVE TREE
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- 13 CONCRETE CURB REPAIR, MATCH EXISTING
- 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

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	APPROVED BY				
	ADG				
	ISSUE DATE				
	AUGUST 2019				
	PROJECT NUMBER				
	206518-04-002				



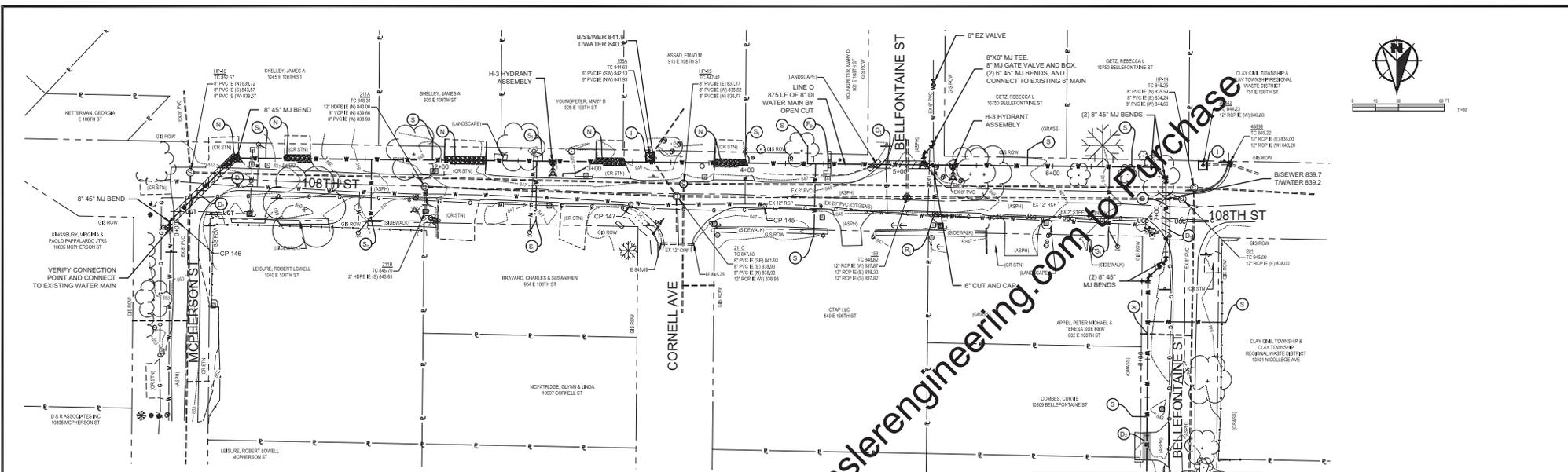
WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE N - BROADWAY AVE

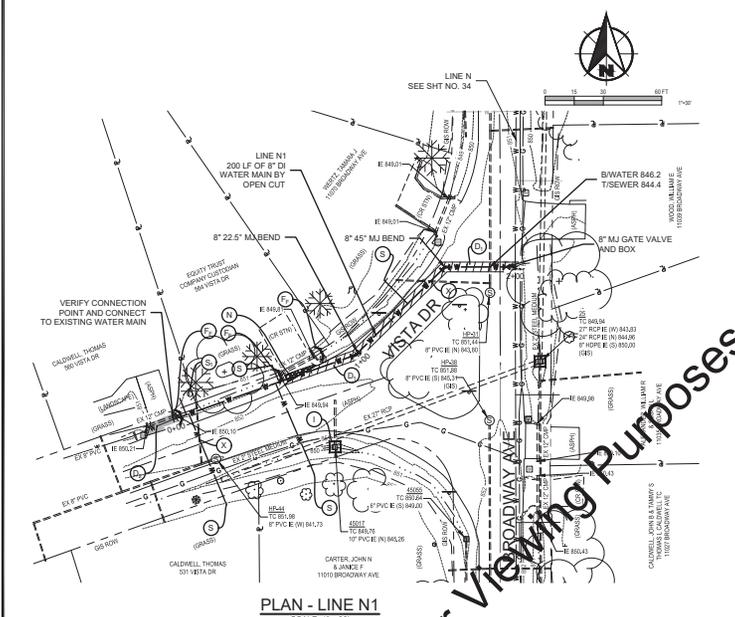
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TOTAL SHEETS
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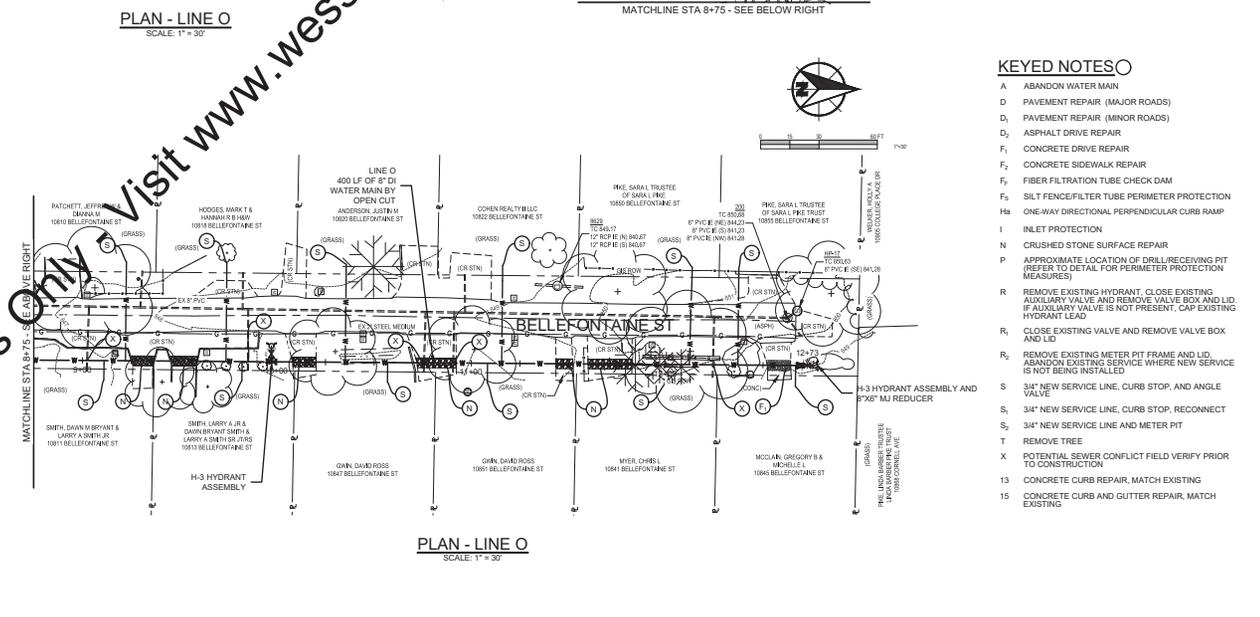
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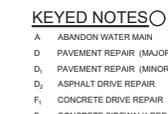
PLAN - LINE O
SCALE: 1" = 30'



PLAN - LINE N1
SCALE: 1" = 30'



PLAN - LINE O
SCALE: 1" = 30'



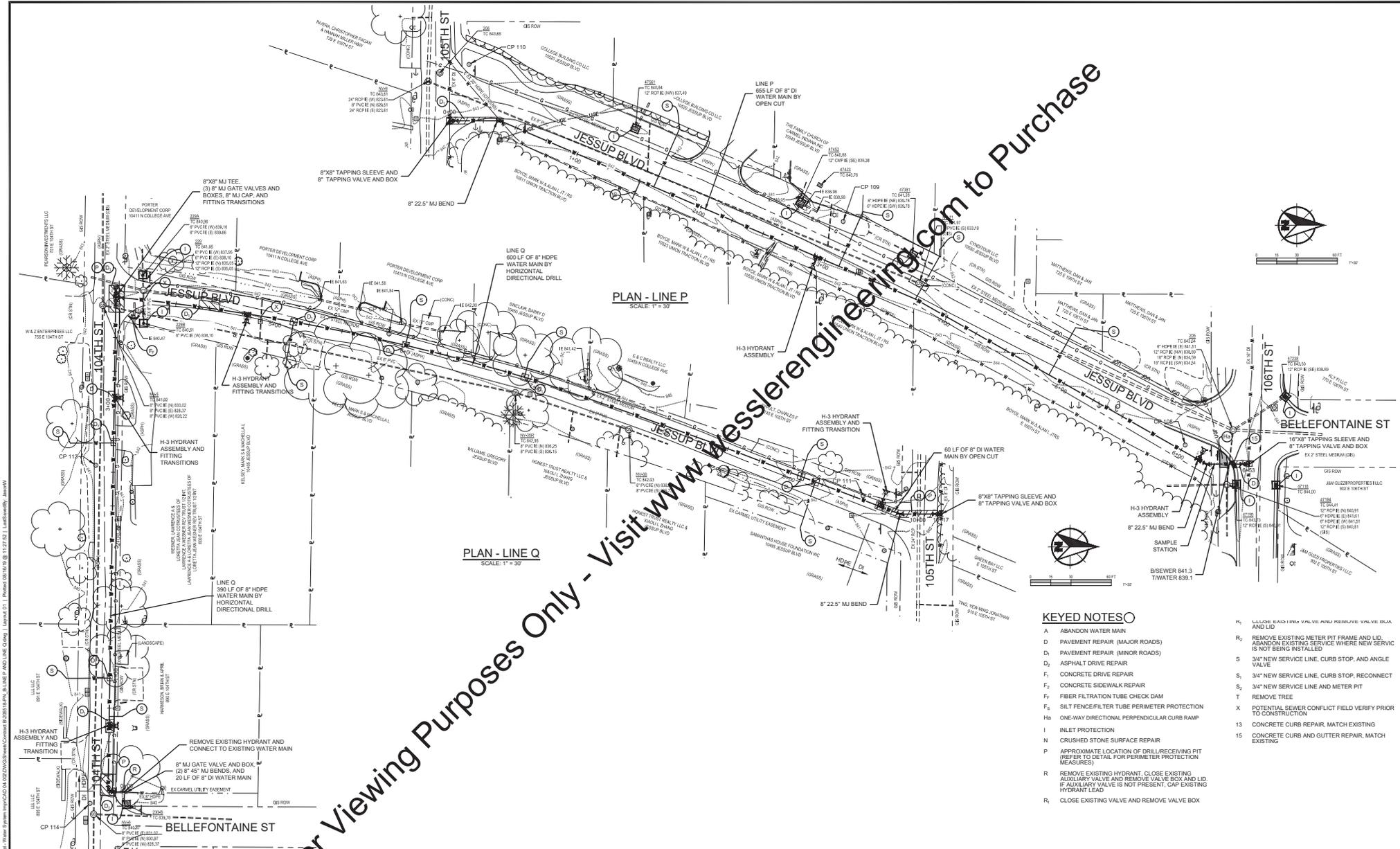
- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D1 PAVEMENT REPAIR (MINOR ROADS)
 - D2 ASPHALT DRIVE REPAIR
 - F1 CONCRETE DRIVE REPAIR
 - F2 CONCRETE SIDEWALK REPAIR
 - F3 FIBER FILTRATION TUBE CHECK DAM
 - F5 SILT FENCE/FILTER TUBE PERIMETER PROTECTION (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
 - 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
 - R2 REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S1 3/4" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
 - S2 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
 - T REMOVE TREE
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 15 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

SCALE VERIFICATION DRAWN BY: JRW CHECKED BY: DED APPROVED BY: ADG ISSUE DATE: AUGUST 2019 PROJECT NUMBER: 206518-04-002	NO.	DATE	INITIALS	REVISION DESCRIPTIONS

NEW YORK STATE
 No. 10809017
 STATE OF
 PROFESSIONAL ENGINEER

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WATER SYSTEM IMPROVEMENTS CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE	SHEET NO. 35 TOTAL SHEETS 56
WATER MAIN - LINE N1 - VISTA DR WATER MAIN - LINE O - BELLEFONTAINE ST	



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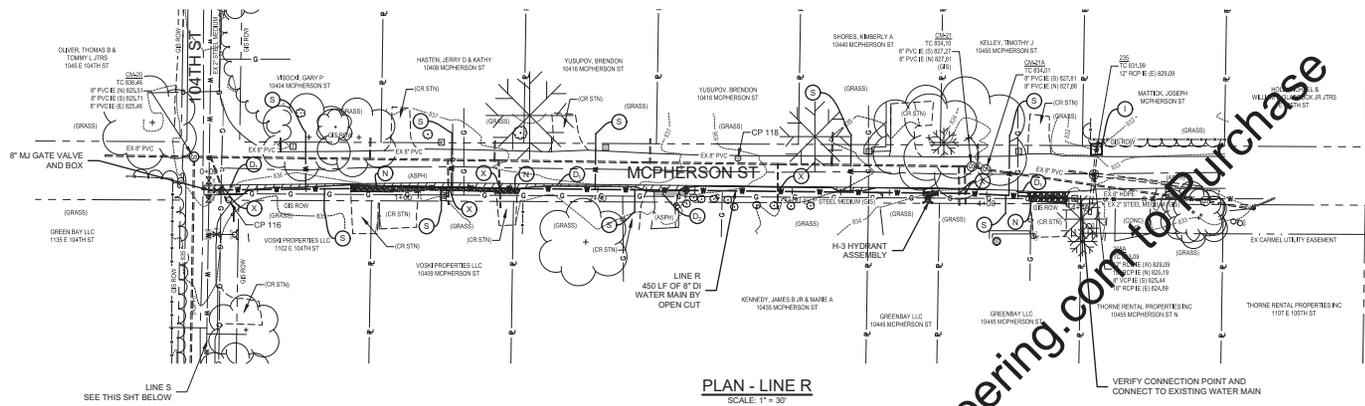
SCALE: 1" = 30' BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY: JRW CHECKED BY: DED APPROVED BY: ADG	NO. DATE INITIALS REVISION DESCRIPTIONS
	ISSUE DATE: AUGUST 2019	
	PROJECT NUMBER: 206518-04-002	

ANDREW D. GORDON
 No. 10809017
 STATE OF INDIANA
 PROFESSIONAL ENGINEER

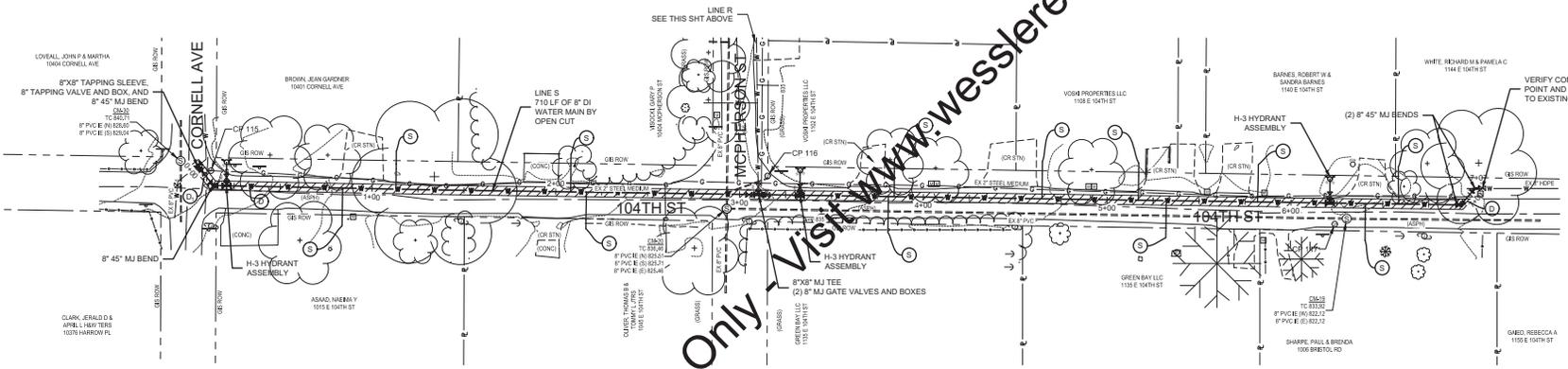
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WATER SYSTEM IMPROVEMENTS CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE	
WATER MAIN - LINE P - JESSUP BLVD WATER MAIN - LINE Q - 104TH ST AND JESSUP BLVD	

SHEET NO.	36
TOTAL SHEETS	56



PLAN - LINE R
SCALE: 1" = 30'



PLAN - LINE S
SCALE: 1" = 30'



- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - F₁ ASPHALT DRIVE REPAIR
 - F₂ CONCRETE DRIVE REPAIR
 - F₃ CONCRETE SIDEWALK REPAIR
 - F₄ FIBER FILTRATION TUBE CHECK DAM
 - F₅ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - H₁ ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
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 - S₁ 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S₂ 3/4" NEW SERVICE LINE AND METER PIT
 - T REMOVE TREE
 - X POTENTIAL SEWER COLLECTOR FIELD VERIFY FUTURE TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

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SCALE	VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
1" = 30'		CHECKED BY	DED				
		APPROVED BY	ADG				
		ISSUE DATE	AUGUST 2019				
		PROJECT NUMBER	206518-04-002				

ANDREW D. GRONK
PROFESSIONAL ENGINEER
No. 10809017
STATE OF INDIANA
EXPIRES 12/31/2020

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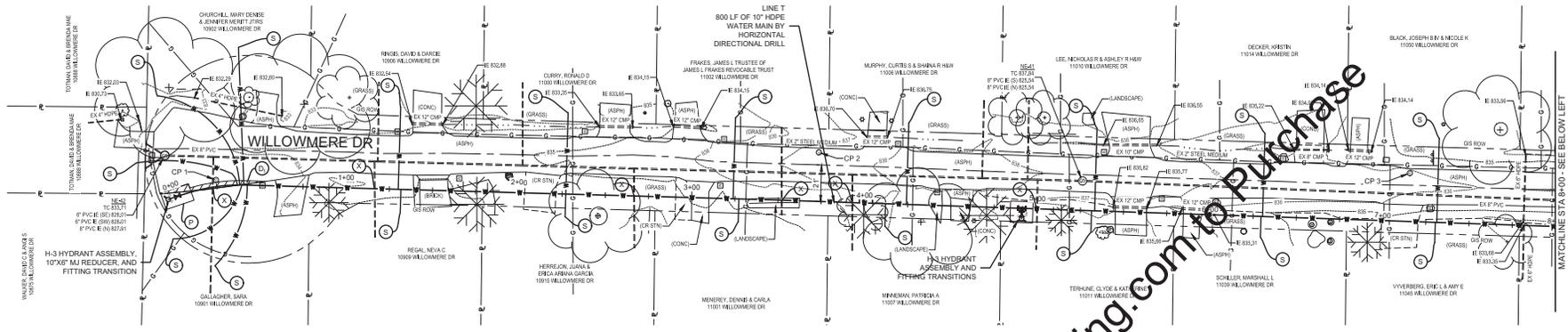
WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE R - MCPHERSON ST
WATER MAIN - LINE S - 104TH ST

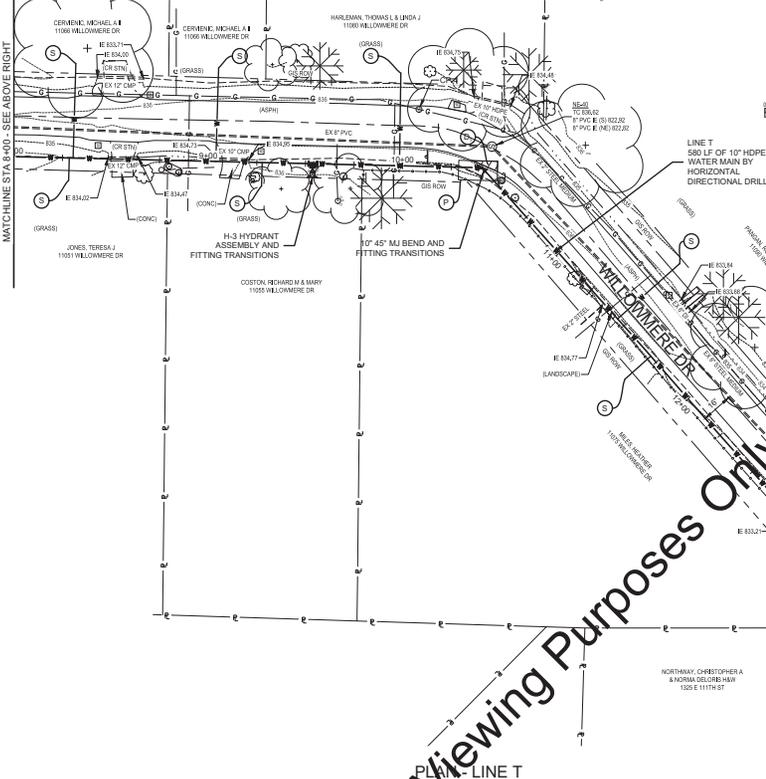
SHEET NO.
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TOTAL SHEETS
56

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PLAN - LINE T
SCALE: 1" = 30'



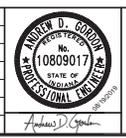
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SCALE: 1" = 30'



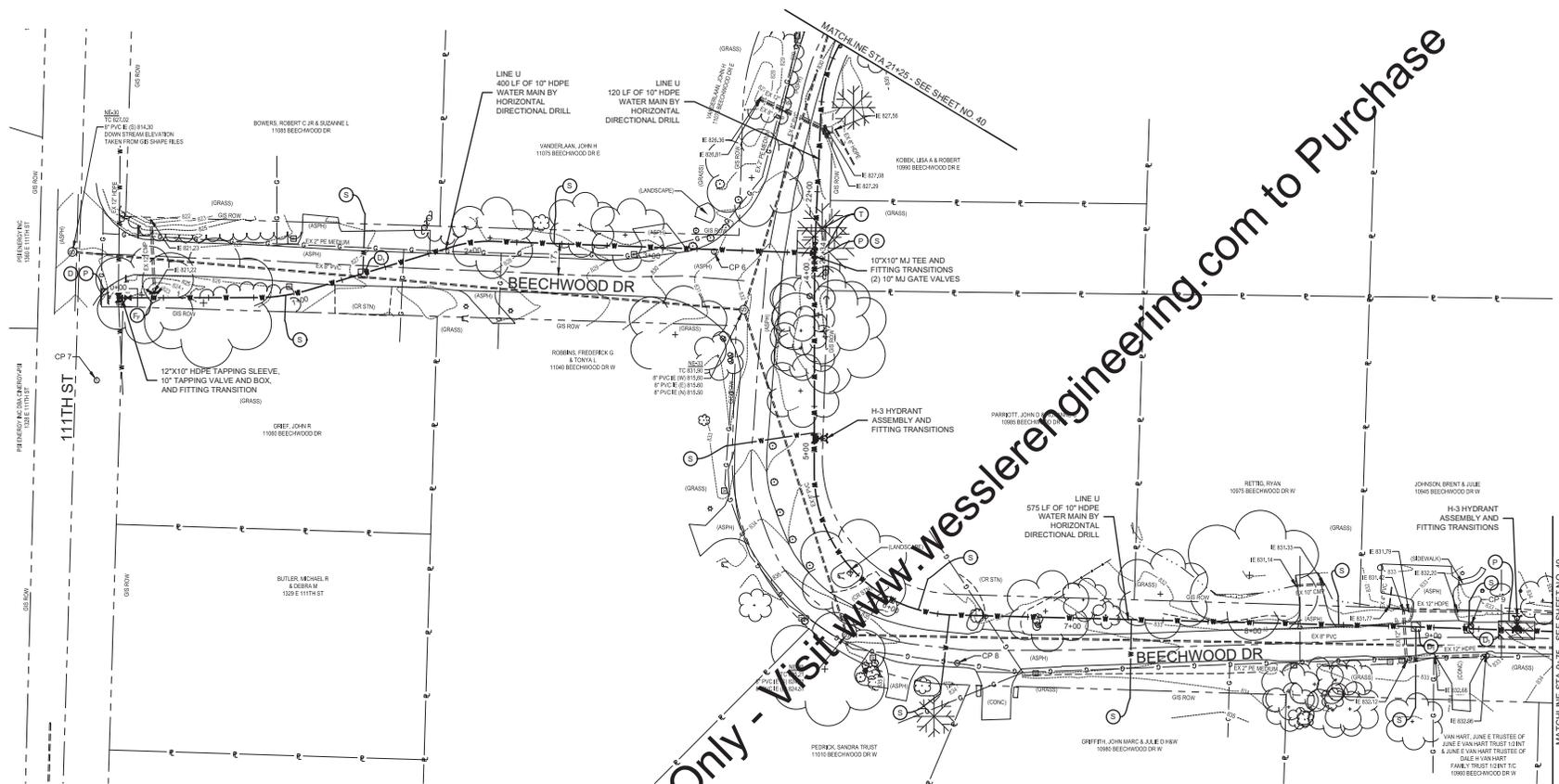
- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D1 PAVEMENT REPAIR (MINOR ROADS)
 - D2 ASPHALT DRIVE REPAIR
 - F1 CONCRETE DRIVE REPAIR
 - F2 CONCRETE SIDEWALK REPAIR
 - F3 FIBER FILTRATION TUBE CHECK DAM
 - F5 SILT FENCE/FILTER TUBE PERIMETER PROTECTION (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
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 - R1 CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
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 - S2 3/4" NEW SERVICE LINE AND METER PIT
 - T REMOVE TREE
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

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NO.	DATE	INITIALS	REVISION DESCRIPTIONS



WATER SYSTEM IMPROVEMENTS CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE	WATER MAIN - LINE T - WILLOWMERE DR

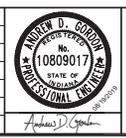


PLAN - LINE U
SCALE: 1" = 30'

- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
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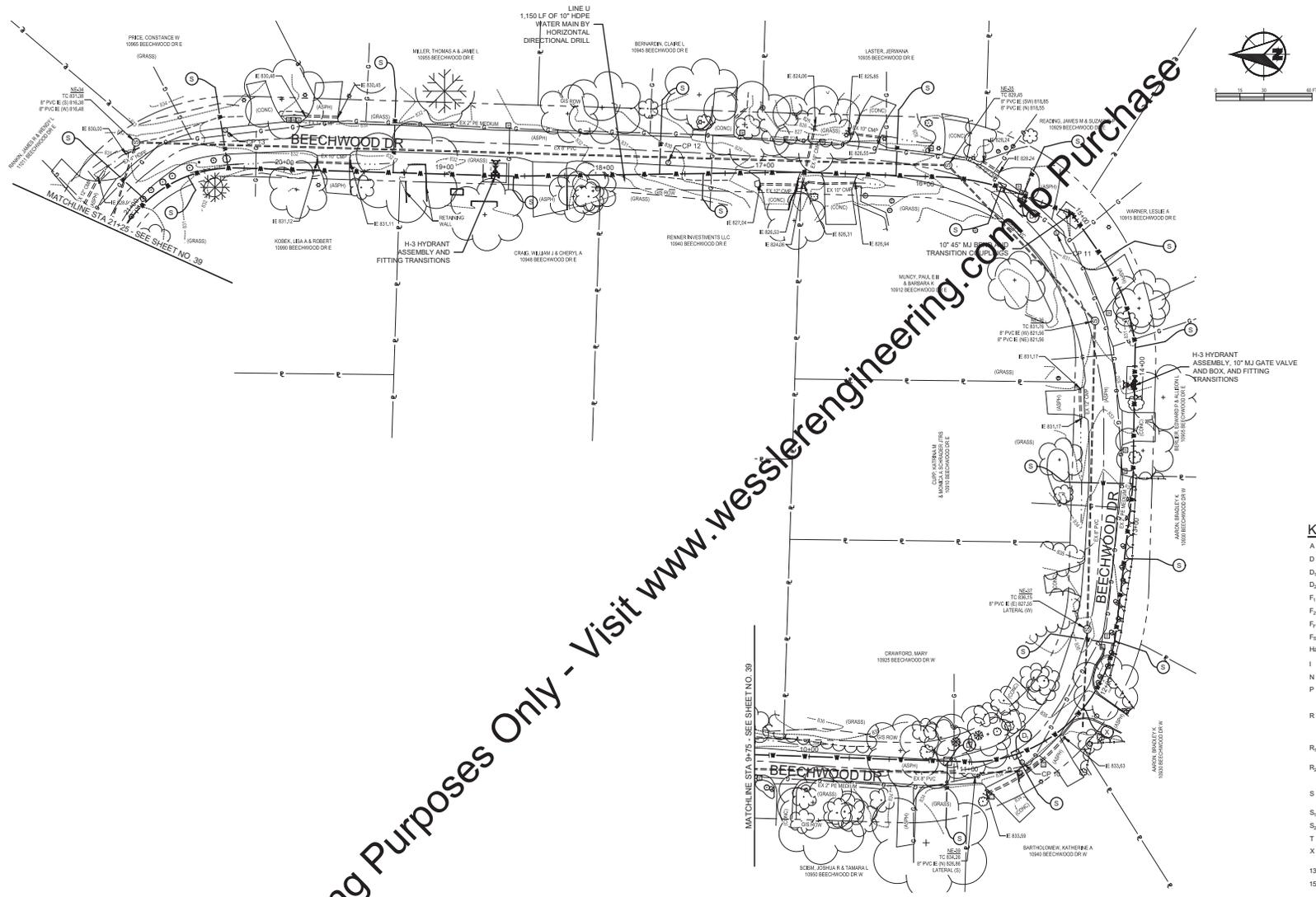
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	CHECKED BY	DED				
	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



WATER SYSTEM IMPROVEMENTS		SHEET NO. 39 TOTAL SHEETS 56
CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE		
WATER MAIN - LINE U - BEECHWOOD DR		

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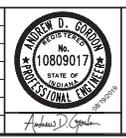


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- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
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 - T REMOVE TREE
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 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

PLAN - LINE U
SCALE: 1" = 30'

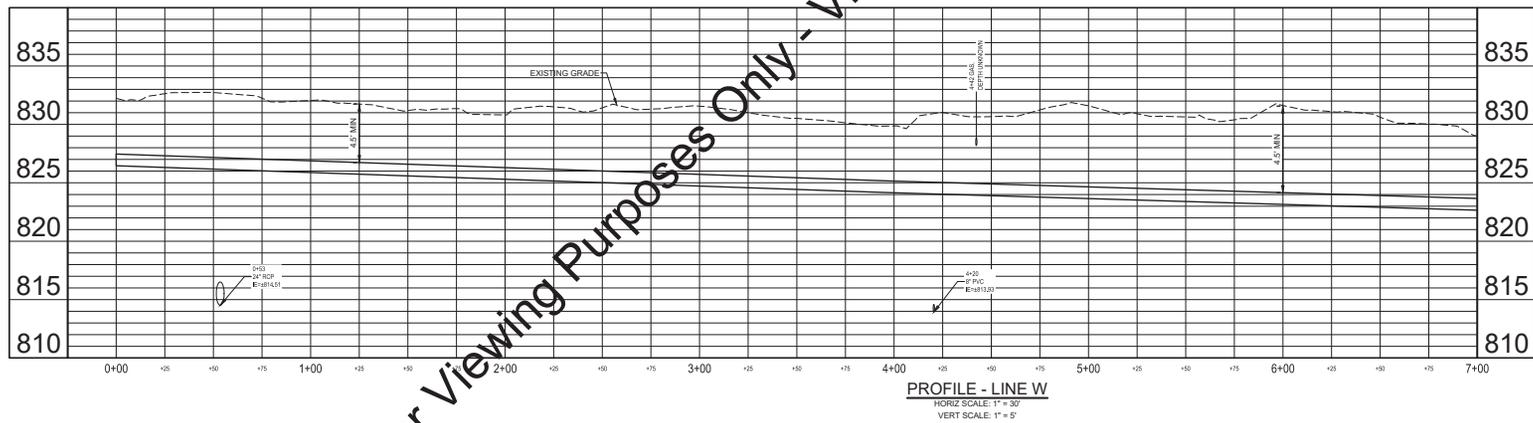
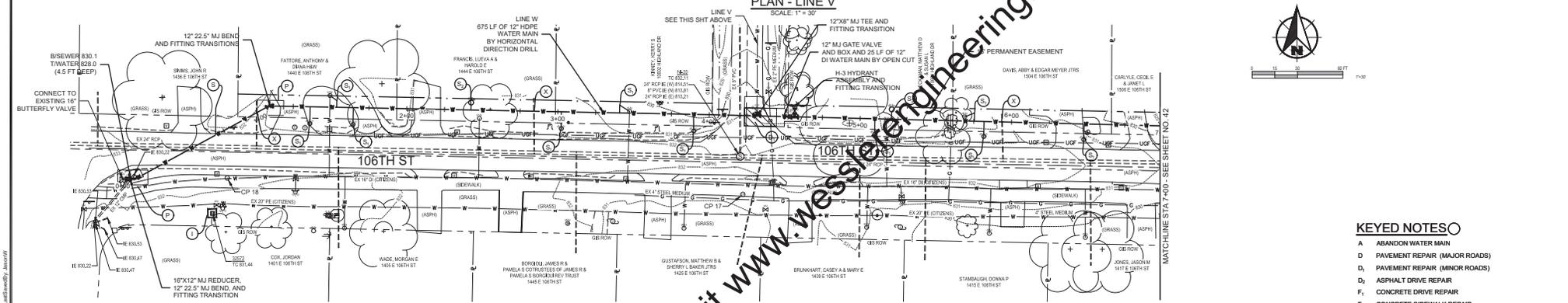
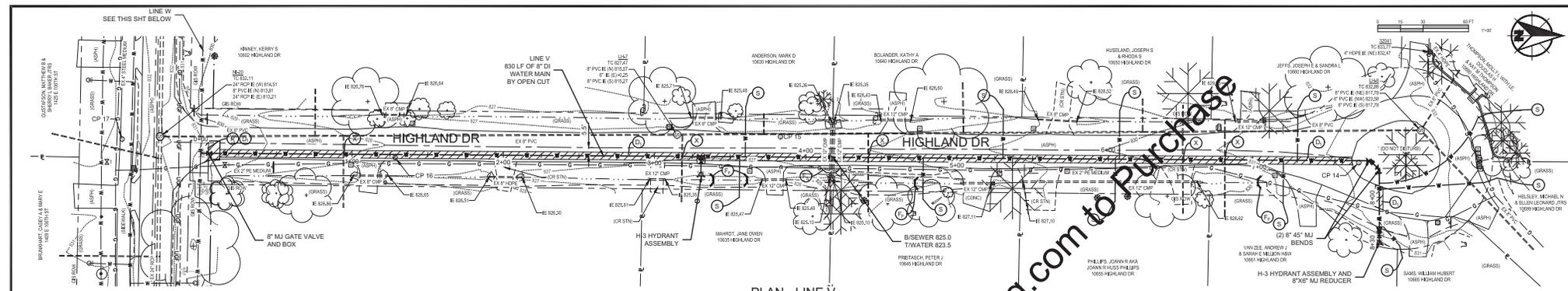
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	APPROVED BY	ADG			
	ISSUE DATE	DED			
	PROJECT NUMBER				
	AUGUST 2019				
	206518-04-002				



WATER SYSTEM IMPROVEMENTS	
CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE	
WATER MAIN - LINE U - BEECHWOOD DR	

SHEET NO. 40
TOTAL SHEETS 56

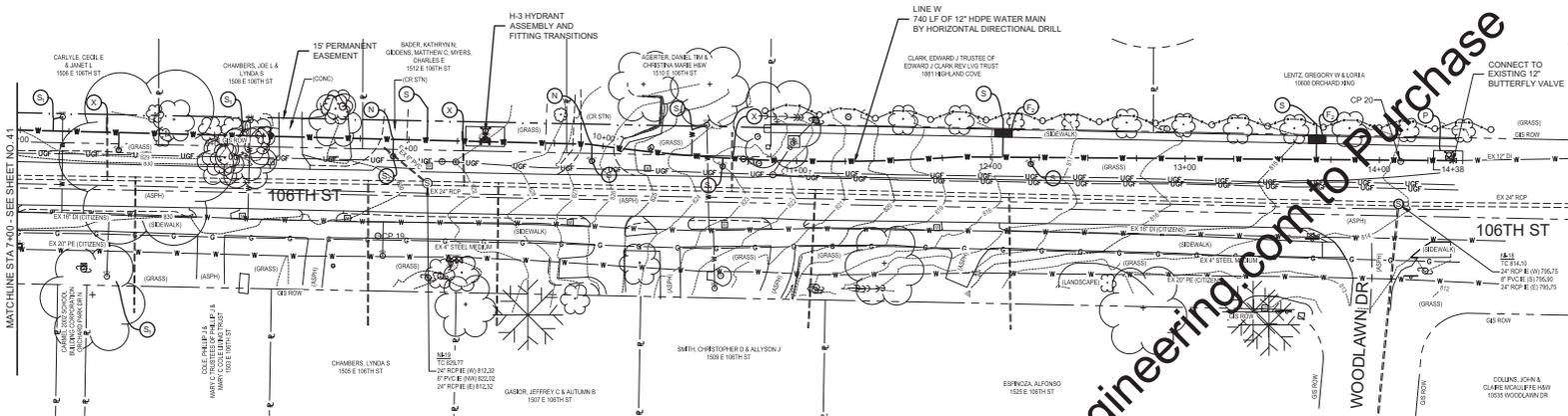
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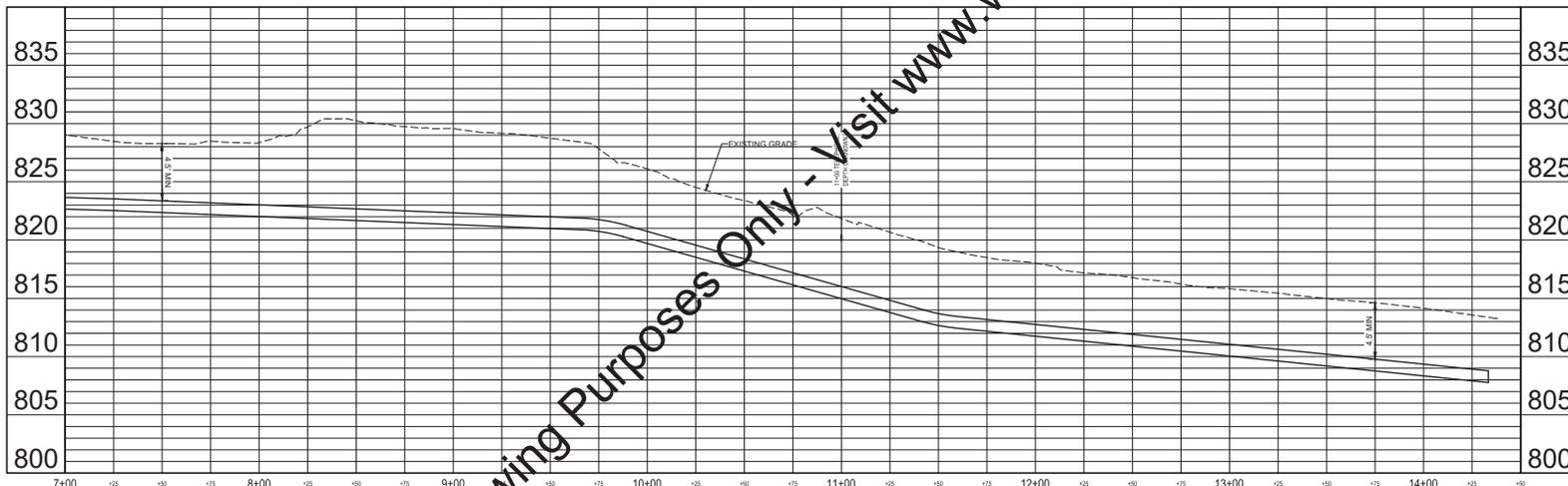
- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D1 PAVEMENT REPAIR (MINOR ROADS)
 - D2 ASPHALT DRIVE REPAIR
 - F1 CONCRETE DRIVE REPAIR
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 - F3 FIBER FILTRATION TUBE CHECK DAM
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 - R1 CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
 - R2 REMOVE EXISTING METER PIT FRAME AND LID. ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S 3/4\"/>

SCALE VERIFICATION DRAWN BY: JRW CHECKED BY: DED APPROVED BY: ADG ISSUE DATE: AUGUST 2019 PROJECT NUMBER: 206518-04-002	NO.	DATE	INITIALS	REVISION DESCRIPTIONS			WATER SYSTEM IMPROVEMENTS CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE WATER MAIN - LINE V - HIGHLAND DR WATER MAIN - LINE W - 106TH ST	SHEET NO. 41
	BAR IS ONE INCH LONG ON ORIGINAL DRAWING							TOTAL SHEETS 56

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 Date: 08/14/2019 11:35:54
 Plot: 08/14/2019 11:35:54
 Plotter: HP DesignJet 500 Series
 Plot Scale: 1"=30'
 Project: 206518-04-002
 Sheet: 41 of 56



PLAN - LINE W
SCALE: 1" = 30'



PROFILE - LINE W
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'

KEYED NOTES

- A ABANDON WATER MAIN
- D PAVEMENT REPAIR (MAJOR ROADS)
- D₁ PAVEMENT REPAIR (MINOR ROADS)
- D₂ ASPHALT DRIVE REPAIR
- F₁ CONCRETE DRIVE REPAIR
- F₂ CONCRETE SIDEWALK REPAIR
- F₃ FIBER FILTRATION TUBE CHECK DAM
- F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
- H₁ ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
- I INLET PROTECTION
- N CRUSHED STONE SURFACE REPAIR
- P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
- 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
- R₂ REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
- S 3/4" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
- S₁ 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
- S₂ 3/4" NEW SERVICE LINE AND METER PIT
- T REMOVE TREE
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- 13 CONCRETE CURB REPAIR, MATCH EXISTING
- 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY JRW	NO. 	DATE 	INITIALS 	REVISION DESCRIPTIONS 		
	CHECKED BY DED						
	APPROVED BY ADG						
	ISSUE DATE AUGUST 2019						
	PROJECT NUMBER 206518-04-002						

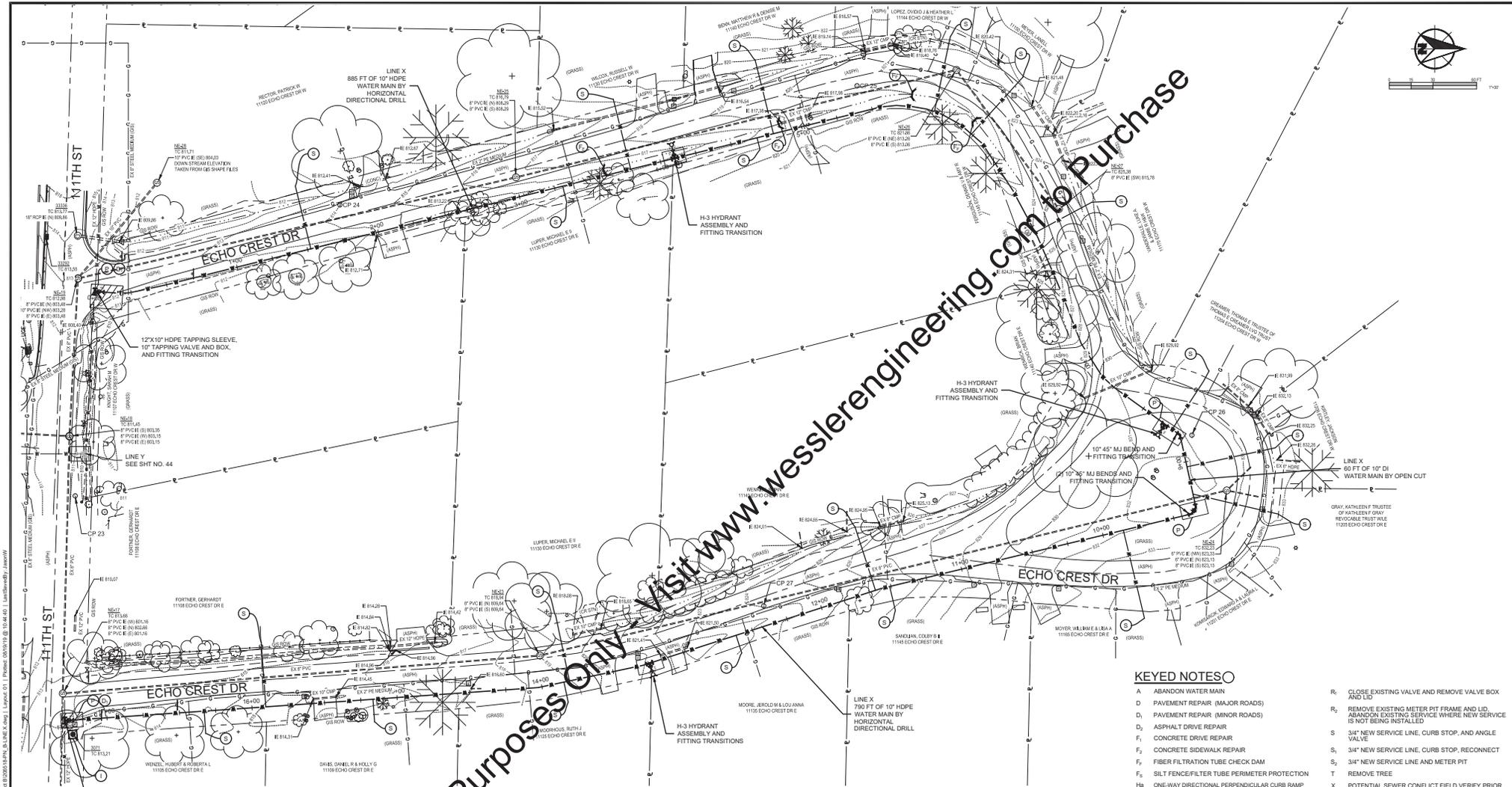
WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE W - 106TH ST

SHEET NO.
42

TOTAL SHEETS
56

Drawing: J:\Carmel\Projects\206518-Carmel - Water System Improvements\206518-PLAN, BLINE W AND LINE W.dwg | Date: 08/19/19 | 11:40:24 | L:\adg\adg | AutoCAD



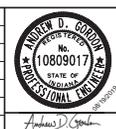
PLAN - LINE X
SCALE: 1" = 30'

KEYED NOTES

- A ABANDON WATER MAIN
- D PAVEMENT REPAIR (MAJOR ROADS)
- D₁ PAVEMENT REPAIR (MINOR ROADS)
- D₂ ASPHALT DRIVE REPAIR
- F₁ CONCRETE DRIVE REPAIR
- F₂ CONCRETE SIDEWALK REPAIR
- F₃ FIBER FILTRATION TUBE CHECK DAM
- F₅ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
- H₅ ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
- I INLET PROTECTION
- N CRUSHED STONE SURFACE REPAIR
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- R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BODY AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD
- R₁ CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
- R₂ REMOVE EXISTING METER PIT FRAME AND LID. ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
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- S₁ 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
- S₂ 3/4" NEW SERVICE LINE AND METER PIT
- T REMOVE TREE
- X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
- 13 CONCRETE CURB REPAIR, MATCH EXISTING
- 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

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DESIGNER	DATE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
CHECKED BY	JRW				
APPROVED BY	DED				
	ADG				
ISSUE DATE	AUGUST 2019				
PROJECT NUMBER	206518-04-002				

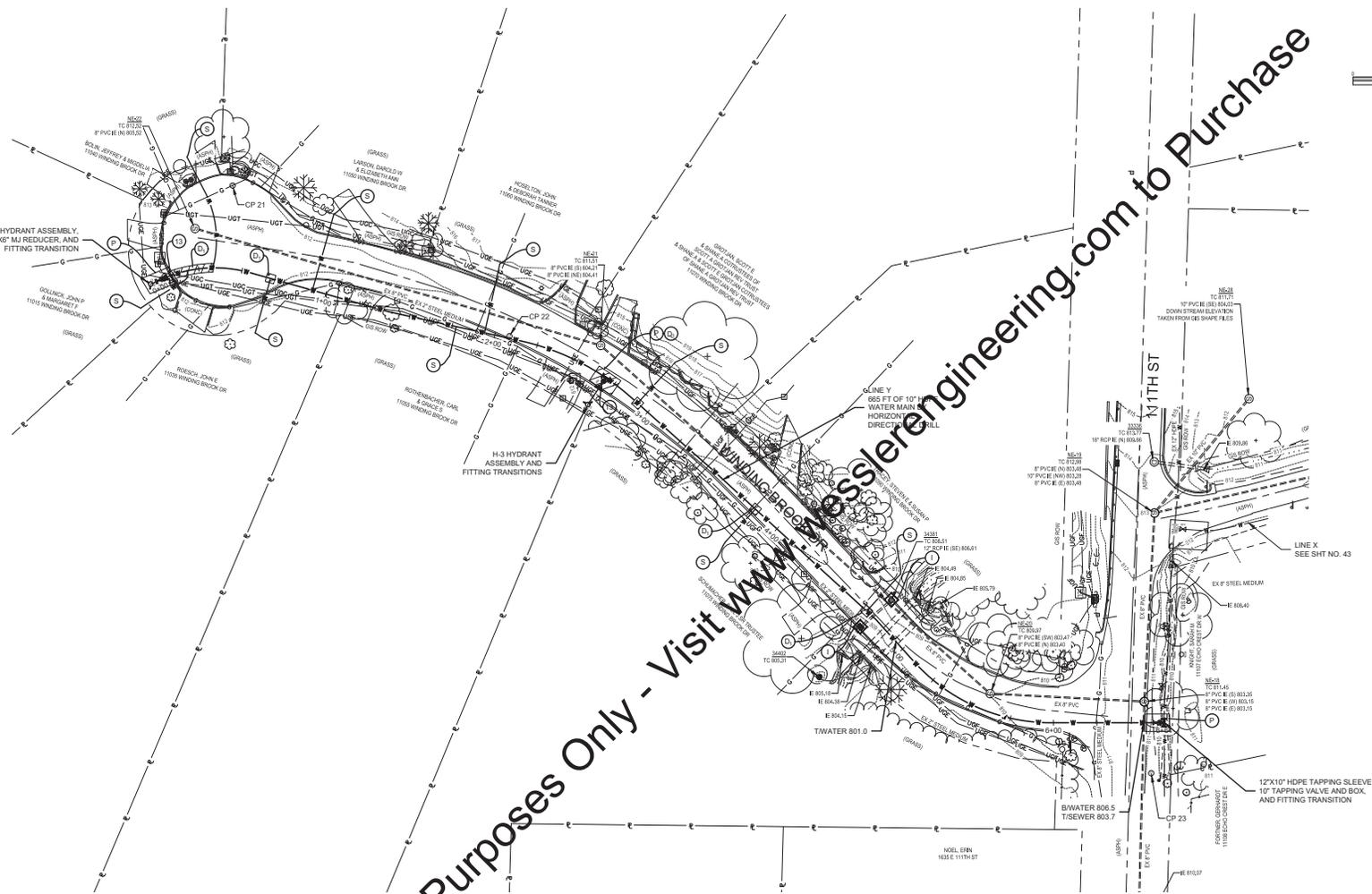


WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE X - ECHO CREST DR

SHEET NO.
43
TOTAL SHEETS
56

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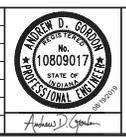
PLAN - LINE Y
SCALE: 1" = 30'

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- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₄ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - H₁ ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
 - P APPROXIMATE LOCATION OF DRILL/RECEIVING PIT (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
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 - R₁ CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID
 - R₂ REMOVE EXISTING METER PIT FRAME AND LID, ABANDON EXISTING SERVICE WHERE NEW SERVICE IS NOT BEING INSTALLED
 - S 3/4" NEW SERVICE LINE, CURB STOP, AND ANGLE VALVE
 - S₁ 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S₂ 3/4" NEW SERVICE LINE AND METER PIT
 - T REMOVE TREE
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

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	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



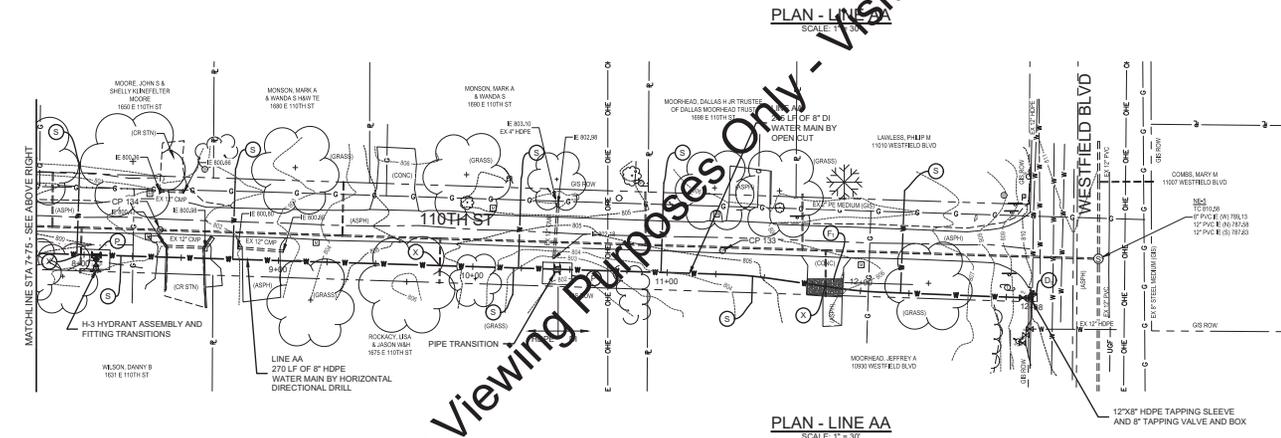
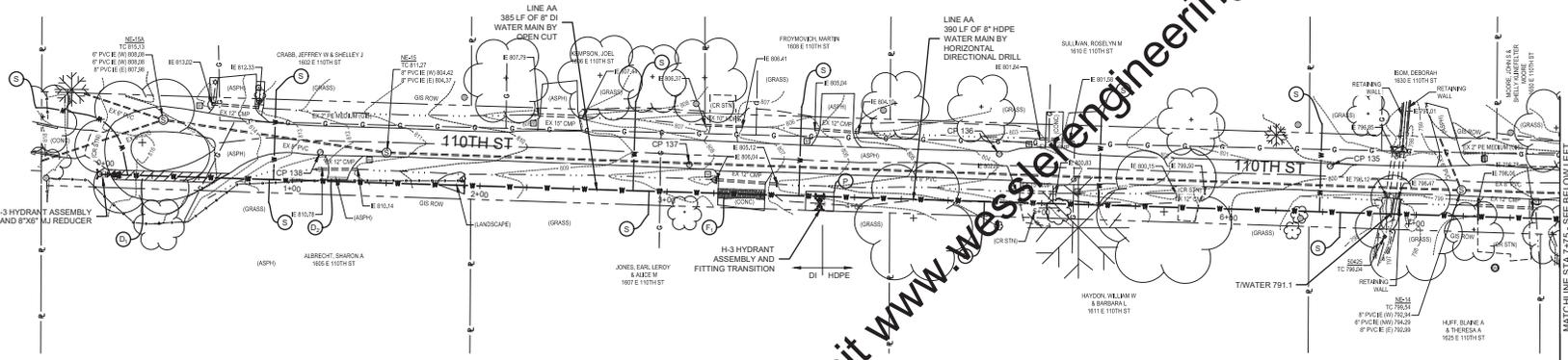
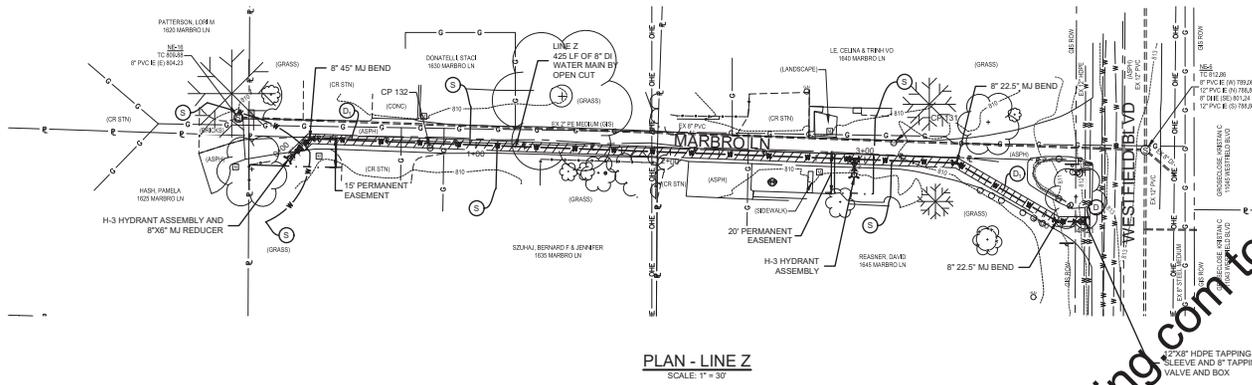
WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

WATER MAIN - LINE Y - WINDING BROOK DR

SHEET NO.
44

TOTAL SHEETS
56

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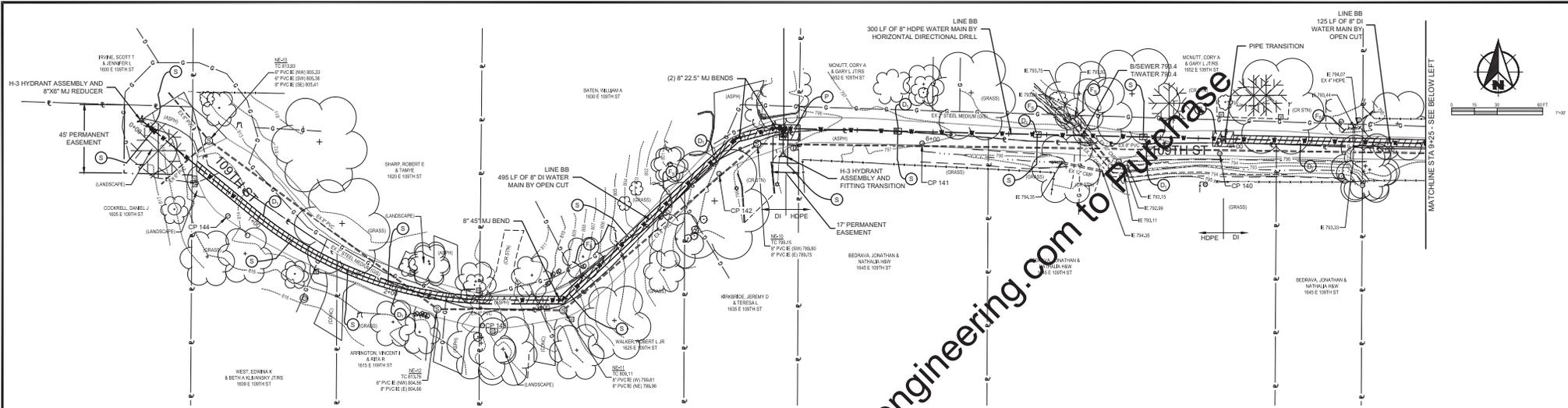


- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D1 PAVEMENT REPAIR (MINOR ROADS)
 - F1 ASPHALT DRIVE REPAIR
 - F2 CONCRETE DRIVE REPAIR
 - F3 CONCRETE SIDEWALK REPAIR
 - F4 FIBER FILTRATION TUBE CHECK DAM
 - F5 SILT FENCE/FILTER TUBE PERIMETER PROTECTION
 - Hs ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP
 - I INLET PROTECTION
 - N CRUSHED STONE SURFACE REPAIR
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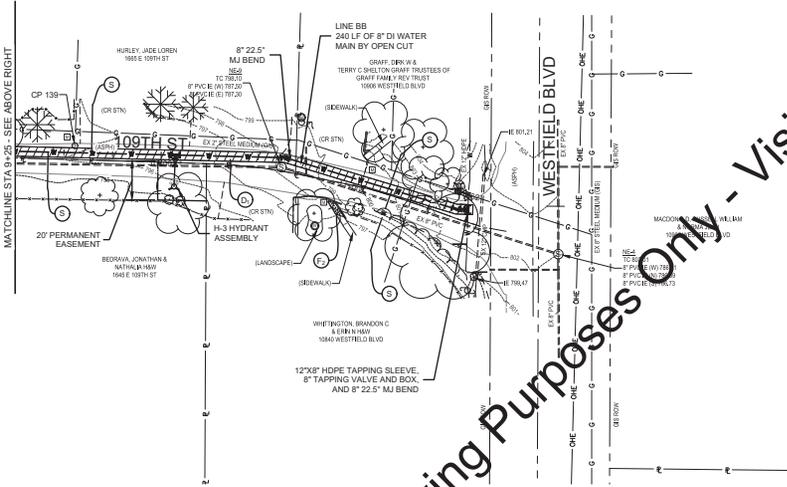
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	ISSUE DATE: AUGUST 2019		
	PROJECT NUMBER: 206518-04-002		

WATER SYSTEM IMPROVEMENTS CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE		SHEET NO. <h1 style="margin: 0;">45</h1>
WATER MAIN - LINE Z - MARBRO LN WATER MAIN - LINE AA - 110TH ST		TOTAL SHEETS <h1 style="margin: 0;">56</h1>



PLAN - LINE BB
SCALE: 1" = 30'

NOTES:
1. COORDINATE WITH ENGINEER AND OWNER ON FINAL LOCATION OF SERVICE LINES TO WATER CUSTOMERS.



PLAN - LINE BB
SCALE: 1" = 30'

- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D1 PAVEMENT REPAIR (MINOR ROADS)
 - D2 ASPHALT DRIVE REPAIR
 - F1 CONCRETE DRIVE REPAIR
 - F2 CONCRETE SIDEWALK REPAIR
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 - F5 SILT FENCE/FILTER TUBE PERIMETER PROTECTION (REFER TO DETAIL FOR PERIMETER PROTECTION MEASURES)
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SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	DED				
	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				

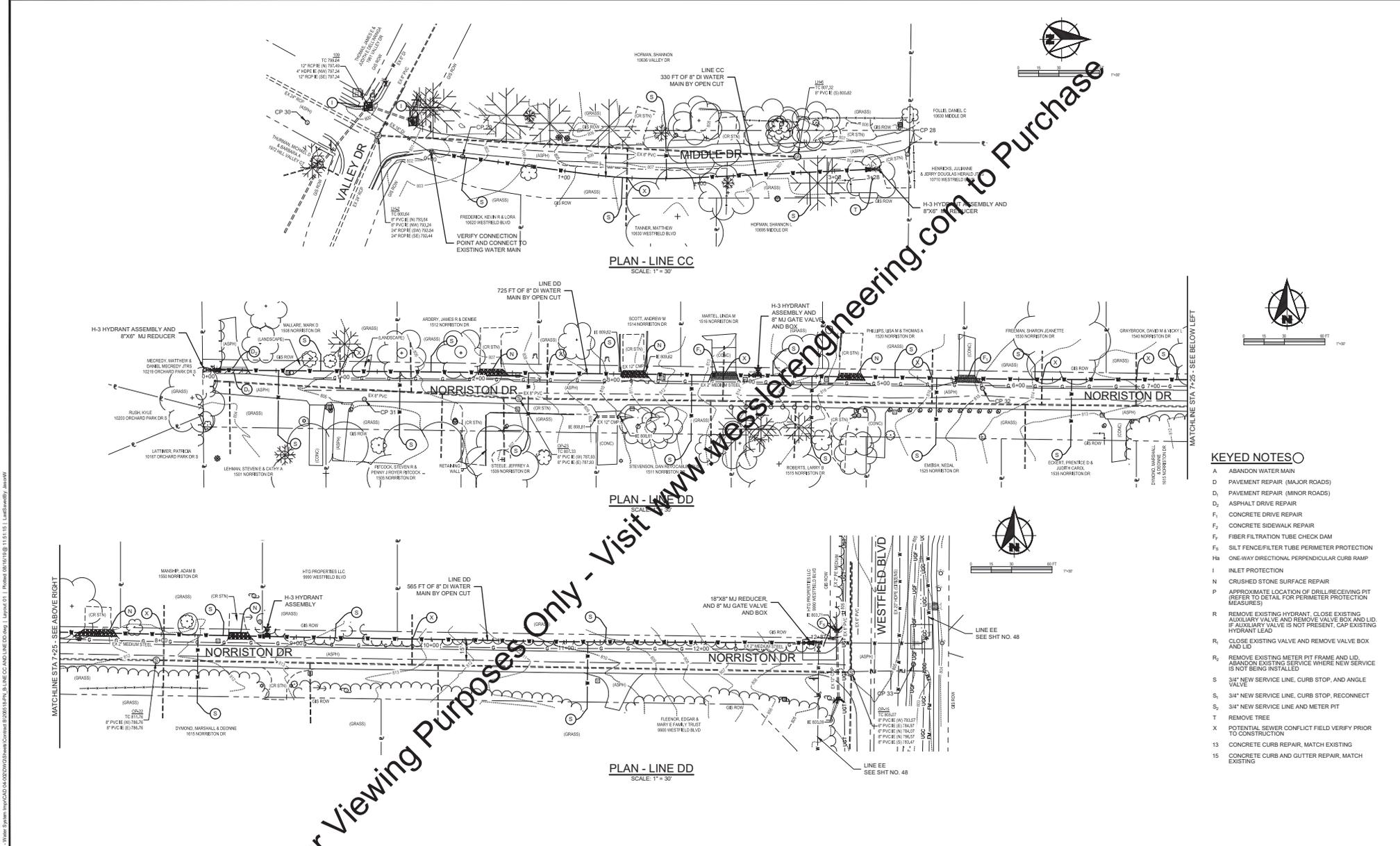


WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE
WATER MAIN - LINE BB - 109TH ST

SHEET NO.
46
 TOTAL SHEETS
56

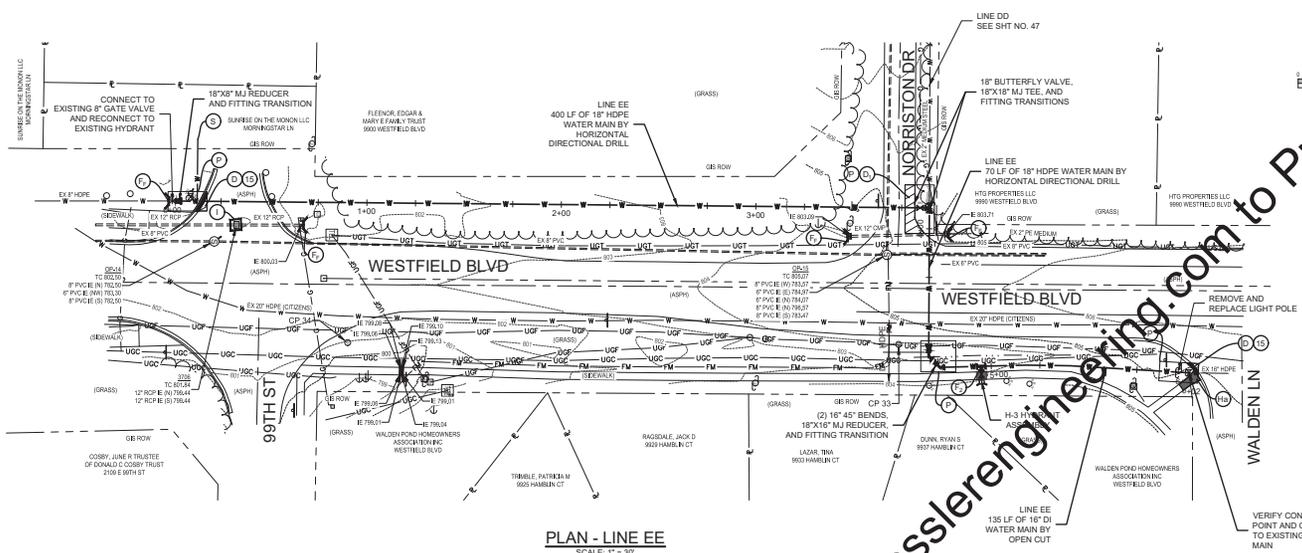
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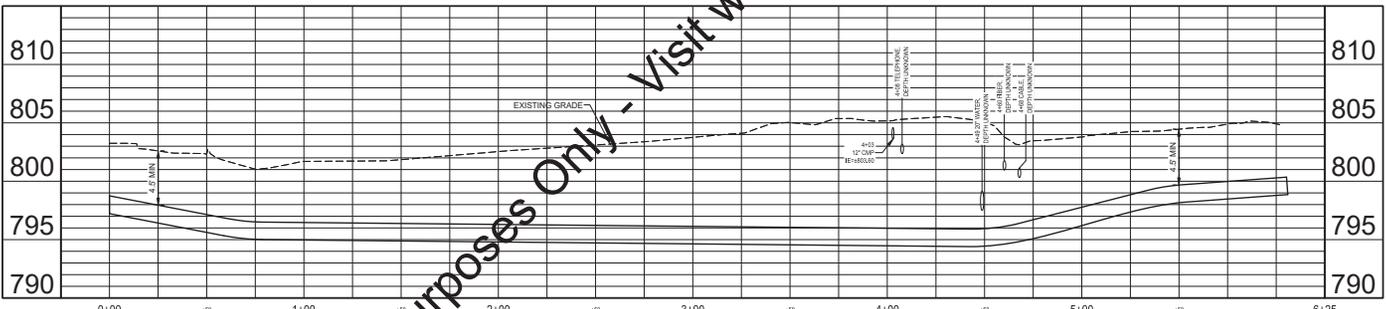


- KEYED NOTES**
- A ABANDON WATER MAIN
 - D PAVEMENT REPAIR (MAJOR ROADS)
 - D₁ PAVEMENT REPAIR (MINOR ROADS)
 - D₂ ASPHALT DRIVE REPAIR
 - F₁ CONCRETE DRIVE REPAIR
 - F₂ CONCRETE SIDEWALK REPAIR
 - F₃ FIBER FILTRATION TUBE CHECK DAM
 - F₅ SILT FENCE/FILTER TUBE PERIMETER PROTECTION
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 - S₂ 3/4" NEW SERVICE LINE, CURB STOP, RECONNECT
 - S₃ 3/4" NEW SERVICE LINE AND METER PIT
 - T REMOVE TREE
 - X POTENTIAL SEWER CONFLICT FIELD VERIFY PRIOR TO CONSTRUCTION
 - 13 CONCRETE CURB REPAIR, MATCH EXISTING
 - 15 CONCRETE CURB AND GUTTER REPAIR, MATCH EXISTING

SCALE: VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY: JRW CHECKED BY: DED APPROVED BY: ADG	NO. DATE INITIALS 	REVISION DESCRIPTIONS 			WATER SYSTEM IMPROVEMENTS CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE WATER MAIN - LINE CC - MIDDLE DR WATER MAIN - LINE DD - NORRISTON DR	SHEET NO. 47 TOTAL SHEETS 56
PROJECT NUMBER: 206518-04-002 ISSUE DATE: AUGUST 2019				Andrew D. Gordon			



PLAN - LINE EE
SCALE: 1" = 30'



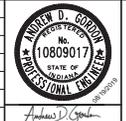
PROFILE - LINE EE
HORIZ SCALE: 1" = 30'
VERT SCALE: 1" = 5'



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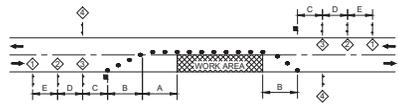
- ### KEYED NOTES
- A ABANDON WATER MAIN
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SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY DED				
	APPROVED BY ADG				
	ISSUE DATE AUGUST 2019				
	PROJECT NUMBER 206518-04-002				



WATER SYSTEM IMPROVEMENTS		SHEET NO.
CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE		48
WATER MAIN - LINE EE - WESTFIELD BLVD		TOTAL SHEETS
		56

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TEMPORARY FLAGGER OPERATION
SCALE: NONE

- ▣ WORK AREA(S)
- ⊙ TYPE A CONSTRUCTION WARNING LIGHT
- ◇ "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)
- ⚡ BARRICADE TYPE III-B
- TRAFFIC CONTROL DRUM
- TRAFFIC FLOW DIRECTION
- ⚡ FLAGGER
- ↑ SIGN, FACING LEFT
- ↓ SIGN, FACING RIGHT

TRAFFIC CONTROL METHOD
SCALE: NONE

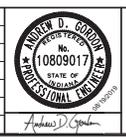
SPEED (MPH)	DISTANCE (FEET)			
	A	C	D	E
20 OR LESS	125	100	100	100
25	150	100	100	100
30	200	100	100	100
35	250	100	350	350
40	300	100	350	350
45	360	100	500	500
50	440	100	500	500
55	520	100	500	500
60	600	100	1,000	1,600
65	680	100	1,000	1,600
70	760	100	1,000	1,600

- 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

- TRAFFIC CONTROL NOTES:**
- PROVIDE SIGNS AND PLACEMENT OF SIGNS IN COMPLIANCE WITH THE MUTCD (LATEST EDITION) AND THE CURRENT INDOT STANDARDS.
 - WHEN WORKING IN THE PAVEMENT AREAS OR WHEN ADDITIONAL WORKING SPACE IS NEEDED, UTILIZE THE FLAGGER OPERATION TO MAINTAIN ONE TRAVEL LANE.
 - COVER ONE LANE ROAD AHEAD AND FLAGGER SIGNS WHEN WORK IS NOT IN PROGRESS.
 - DURING CONSTRUCTION MINIMIZE DAMAGE TO THE EXISTING PAVEMENT, CURBS, SIDEWALKS, AND DRIVES.
 - BACKFILL EXCAVATIONS IN THE PAVEMENT AREAS DAILY AND COVER WITH STEEL PLATES UNTIL THE PAVEMENT IS REPLACED.
 - IF A ROAD CLOSURE IS NEEDED, SUBMIT A DETAILED DETOUR ROUTE PLAN AND TIMELINE FOR APPROVAL 2 WEEKS PRIOR TO ANY CLOSURES.
 - PROTECTION OF AND ACCESS FOR PEDESTRIANS MUST BE MAINTAINED DURING CONSTRUCTION.
 - PROVIDE CONSTRUCTION SIGNAGE FOR SIDEWALK CLOSURES AND PEDESTRIAN DETOURS.
 - COORDINATE CLOSURES WITH ALL EMERGENCY AGENCIES, POST OFFICES, AND SCHOOL DISTRICTS.

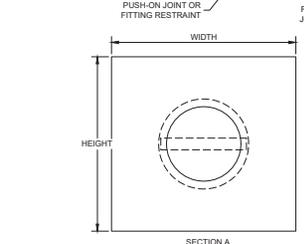
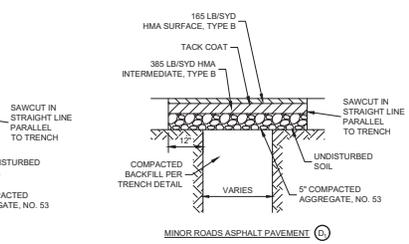
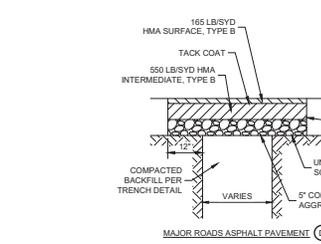
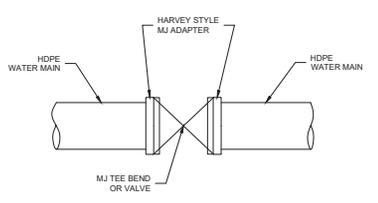
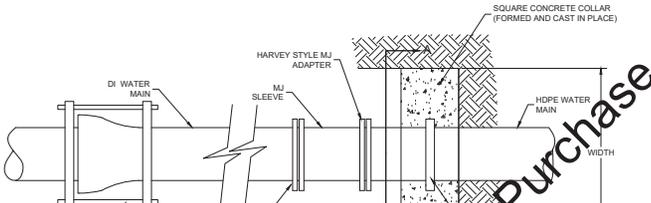
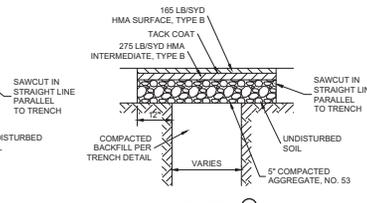
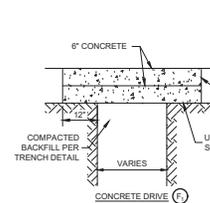
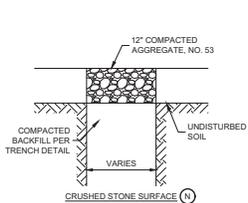
SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY	DED				
	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



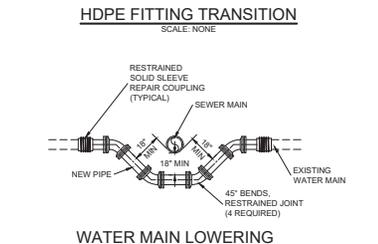
WATER SYSTEM IMPROVEMENTS	
CITY OF CARMEL UTILITIES DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE	
MAINTENANCE OF TRAFFIC	

SHEET NO.	49
TOTAL SHEETS	56

Drawing: J:\Carmel\Projects\206518_Carmel - Water System Improvements\206518-TP-B.dwg | Plotter: HP/1010 @ 11/03/11 | Layout: 01 | Plotfile: HP/1010 @ 11/03/11 | L:\Users\adg\7...



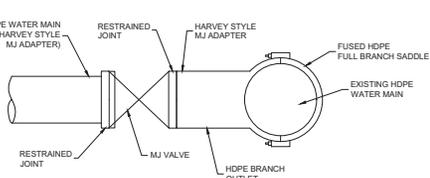
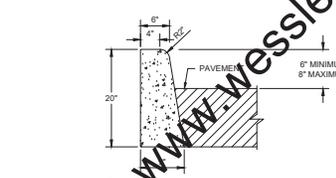
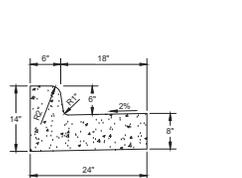
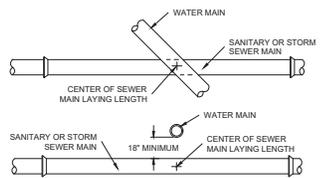
PIPE SIZE	WIDTH MINIMUM	BRACING AREA OF CONCRETE COLLAR
8"	3'-0"	9 SF
10"	3'-6"	14 SF
12"	4'-0"	18 SF
14"	4'-6"	20 SF
16"	5'-0"	25 SF



PAVEMENT REPAIR
SCALE: NONE

HDPE PIPE TRANSITION
SCALE: NONE

HDPE FITTING TRANSITION
SCALE: NONE



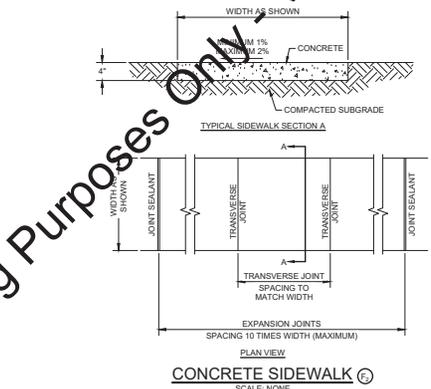
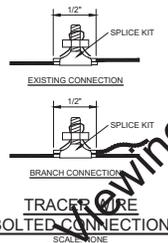
CONCRETE CURB AND GUTTER
SCALE: NONE

CONCRETE CURB
SCALE: NONE

HDPE PIPE BRANCH CONNECTION
SCALE: NONE

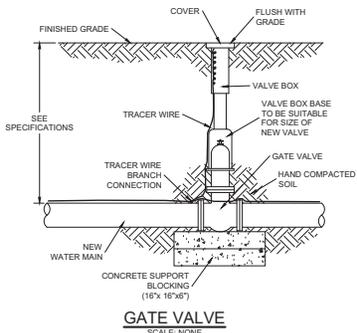
NOTES:
1. WATER MAIN AND SEWER MINIMUM SEPARATION: 18" VERTICAL SEPARATION 10'-0" HORIZONTAL SEPARATION.
2. WHERE WATER MAIN AND SEWER SEPARATION IS LESS THAN 18" VERTICAL OR 10' HORIZONTAL, THE SEWER MUST BE DUCTILE IRON, SDR-21 PVC, OR CONCRETE ENCASED.

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

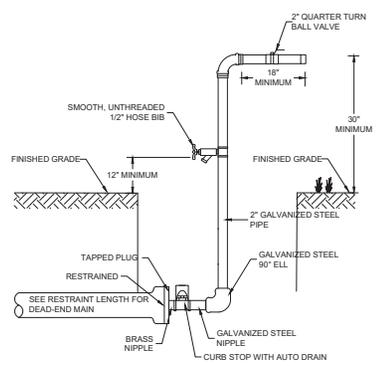


TRACER WIRE BOLTED CONNECTION
SCALE: NONE

CONCRETE SIDEWALK
SCALE: NONE



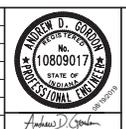
GATE VALVE
SCALE: NONE



TEMPORARY BLOW-OFF ASSEMBLY
SCALE: NONE

Drawing: J:\Carmel\Projects\206518-002\206518-002\206518-002.dwg, 11/10/2011, 11:20:41, L:\asf\asf09\jerryw

SCALE	VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
1"=1'-0"	BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	DED				
		APPROVED BY	ADG				
		ISSUE DATE	AUGUST 2019				
		PROJECT NUMBER	206518-04-002				



WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

MISCELLANEOUS DETAILS

SHEET NO.
50
TOTAL SHEETS
56

Drawn: J.Carmel@cityofcarmel.com | Title: Joint Restraint Table | Date: 03/11/2019 | Project: 206518-04 | Scale: Not To Scale | Drawing Name: JRS

Length Of Pipe To Be Restrainted In Each Direction From 1/4 Of Bend Based On 150 PSI Test Pressure		6"	8"	10"	12"	14"	16"	18"	20"	24"	30"
90° Tees & Flaps	27'	25'	42'	50'	58'	65'	73'	80'	95'	115'	
45°	7'	7'	11'	13'	15'	17'	19'	21'	24'	29'	
22-1/2°	3'	4'	5'	6'	7'	8'	9'	10'	12'	14'	
11-1/4°	2'	2'	3'	3'	4'	4'	5'	6'	7'	8'	

RESTRAINED JOINTS SHALL BE MECHANICAL JOINT WITH RETAINER GASKETS. US PIPE 18" PIPE JOINT SYSTEM, US PIPE FIELD CLG GASKET SYSTEM, OR EQUIV.

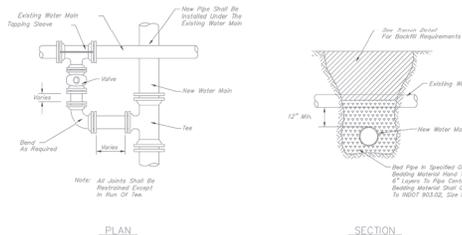
NOTE: THE ABOVE RESTRAINED JOINT LENGTHS ARE MINIMUM LENGTHS. THE DESIGN ENGINEER SHALL DETERMINE IF LONGER LENGTHS ARE REQUIRED.



CARMEL WATER STANDARD DETAILS

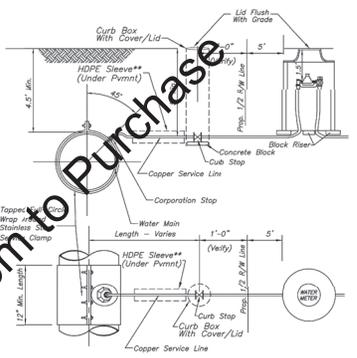
JOINT RESTRAINT TABLE

3400 N. 13th Street Carmel, IN 46031 | Phone: 317-333-2885 | Fax: 317-333-2003 | Date: April 2019 | Scale: No Scale | Drawn by: [Redacted] | Checked by: [Redacted]



Notes: 1) Tapping fittings shall be used for all mechanical joints. 2) All pipe joints are to be in one section unless otherwise noted, and shall not be installed in series.

CITY OF CARMEL STANDARD DETAILS | TITLE: WATER MAIN JOINT RESTRAINT | DATE: March 2007 | Scale: Not To Scale | Drawn by: [Redacted] | Checked by: [Redacted]

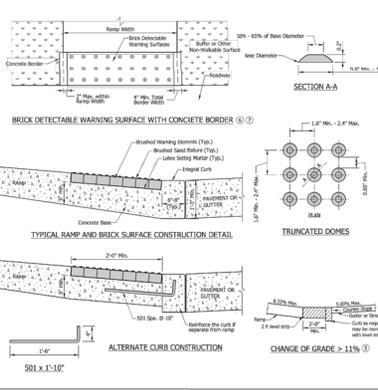


- NOTE:
- 1) 1" Or Smaller Service Line Shall Be Direct Tap Unless Approved By Carmel Utilities.
 - 2) Corporation Stop Shall Be Brand And Model Approved By Carmel Utilities.
 - 3) Service Line Tap Shall Be Installed With A Min. Horiz. Separation of 24".
 - 4) 2 Inch Taps And Smaller Shall Not Be Installed Within 18 Inches of Mechanical Joints And Bells.
 - 5) Install Meter Pits Only where Shown on Drawings.

* Service Saddle Must Be Omitted For Services 1" And Smaller And Direct Taps Made To Quilted Iron Pipe, Class 300 Or Greater, (Verify With Owner For Pressure Class DIP.)

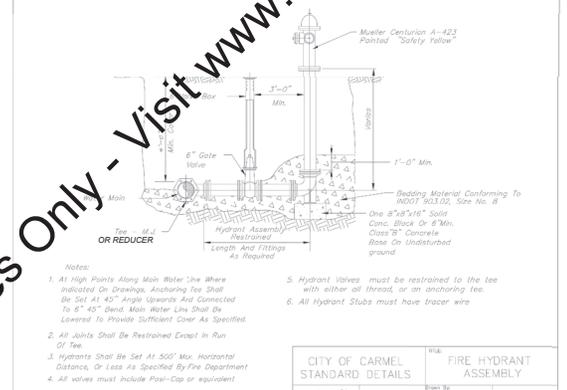
** For All Service Lines Installed Under Pavement in 106th Street, install HDPE Sleeve Under Pavement Section.

CITY OF CARMEL STANDARD DETAILS | TITLE: RESIDENTIAL WATER SERVICE WITH CURB STOP DETAIL | DATE: March 2007 | Scale: Not To Scale | Drawn by: [Redacted] | Checked by: [Redacted]



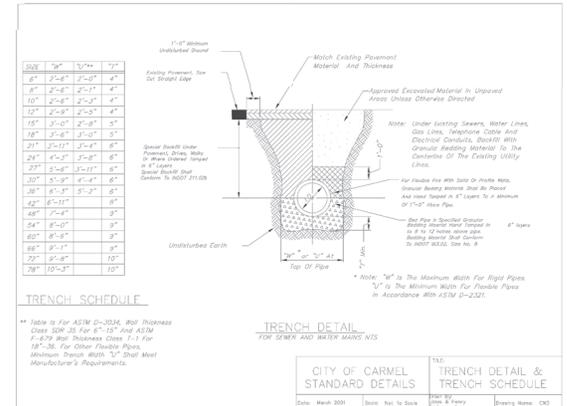
INDIANA DEPARTMENT OF TRANSPORTATION
SOFT PAVEMENT 2019
DETECTABLE WARNING SURFACE DETAILS
STANDARD DRAWING NO. E 604-SWCR-14

Notes: 1. Detectable warning surface shall consist of truncated domes. Domes shall be spaced in a square or rectangular pattern with diameter and center-to-center spacing within the ranges specified. 2. The detectable warning surface may be field cut. Truncated dome spacing between adjacent panels shall be within the ranges specified. 3. The detectable warning surface shall consist of a minimum of 2 ft in the direction of travel and a minimum of 10 ft in the direction of the ramp. 4. The detectable warning surface shall extend a minimum of 2 ft in the direction of travel and a minimum of 10 ft in the direction of the ramp. 5. When a concrete border is used, the edge detail shall not encroach upon the ramp width.



Notes: 1. At High Points Along Main Water Line Where Indicated On Drawings, Anchoring Tee Shall Be Set At 45° Angle Upwards And Connected To 60° Bend. Main Water Line Shall Be Lowered To Provide Sufficient Cover As Specified. 2. All Joints Shall Be Restrainted Except in Run Of Tee. 3. Hydrants Shall Be Set At 500' Max. Horizontal Distance, Or Less As Specified By Fire Department. 4. All valves must include Post-Cap or equivalent. 5. Hydrant Valves must be restrained to the tee with either all thread, or an anchoring tee. 6. All Hydrant Stubs must have tracer wire.

CITY OF CARMEL STANDARD DETAILS | TITLE: FIRE HYDRANT ASSEMBLY | DATE: March 07 | Scale: Not To Scale | Drawn by: [Redacted] | Checked by: [Redacted]



SCALE	VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
1"=1'-0"	BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	DED				
		APPROVED BY	ADG				
		ISSUE DATE			AUGUST 2019		
		PROJECT NUMBER			206518-04-002		



WATER SYSTEM IMPROVEMENTS

CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

MISCELLANEOUS DETAILS

SHEET NO. **51**

TOTAL SHEETS **56**

Drawing: J:\Carmel\Projects\206518\Carmel - Water System Improvements\206518-002\206518-002.dwg | Layout: 04 | Plot: 20191019 08:11:00:00 | L:\cs\lsc\dwg\04

NOTE:

- 1) 1" Or Smaller Service Line Shall Be Direct Tap Unless Approved By Carmel Utilities.
- 2) Corporation Stop Shall Be Brand And Model Approved By Carmel Utilities.
- 3) Service Line Tap Shall Be Installed With A Min. Horiz. Separation of 24".
- 4) No Meter Pits Allowed in Areas Sidewalks, Driveways, Roads, Etc.
- 5) Granular Backfill Required Around All Meter Pits With 6" Topsoil
- 6) Short Side Services Require Type K-Copper Long Side Services Require Poly SDR9 With Tracer Wire (Only with Carmel Utilities Approval)
- 7) No Service Tap shall be Under Any Part of the Drive Way, Taps under Drive Ways Shall be Abandoned and Re-Tapped Away from Driveway, Abandoned Tap will be Removed and Repair Clamp Placed.

Carmel Utilities
 3450 W. 131st. Street
 Carmel, IN 46024
 Phone: 317-733-2855
 Fax: 317-733-2853

CARMEL WATER STANDARD DETAILS
 TITLE: RESIDENTIAL WATER SERVICE (NO CURB STOP DETAIL)
 DATE: April 2019
 SCALE: No Scale
 DRAWN BY: [Redacted]
 CHECKED BY: [Redacted]
 APPROVED BY: [Redacted]
 ISSUE DATE: [Redacted]
 PROJECT NUMBER: [Redacted]

NOTE:

- 1) 1" Or Smaller Service Line Shall Be Direct Tap Unless Approved By Carmel Utilities.
- 2) Corporation Stop Shall Be Brand And Model Approved By Carmel Utilities.
- 3) Service Line Tap Shall Be Installed With A Min. Horiz. Separation of 24".
- 4) No Meter Pits Allowed in Areas Sidewalks, Driveways, Roads, Etc.
- 5) Granular Backfill Required Around All Meter Pits With 6" Topsoil
- 6) Short Side Services Require Type K-Copper Long Side Services Require Poly SDR9 With Tracer Wire (Only with Carmel Utilities Approval)
- 7) No Service Tap shall be under Any Part of the Drive Way, Taps under Drive Ways Shall be Abandoned and Re-Tapped Away from Driveway, Abandoned Tap will be Removed and Repair Clamp Placed.

Carmel Utilities
 3450 W. 131st. Street
 Carmel, IN 46024
 Phone: 317-733-2855
 Fax: 317-733-2853

CARMEL WATER STANDARD DETAILS
 TITLE: RESIDENTIAL WATER SERVICE WITH CURB STOP DETAIL
 DATE: April 2019
 SCALE: No Scale
 DRAWN BY: [Redacted]
 CHECKED BY: [Redacted]
 APPROVED BY: [Redacted]
 ISSUE DATE: [Redacted]
 PROJECT NUMBER: [Redacted]

2197 VALVE BOX
 CARMEL SPEC

VBWCW
 CARMEL CLAY SPEC

Carmel Utilities
 3450 W. 131st. Street
 Carmel, IN 46024
 Phone: 317-733-2855
 Fax: 317-733-2853

CARMEL WATER STANDARD DETAILS
 TITLE: VALVE BOX
 DATE: April 2019
 SCALE: No Scale
 DRAWN BY: [Redacted]
 CHECKED BY: [Redacted]
 APPROVED BY: [Redacted]
 ISSUE DATE: [Redacted]
 PROJECT NUMBER: [Redacted]

Carmel Utilities
 3450 W. 131st. Street
 Carmel, IN 46024
 Phone: 317-733-2855
 Fax: 317-733-2853

CITY OF CARMEL STANDARD DETAILS
 TITLE: STREAM CROSSING
 DATE: April 2019
 SCALE: No Scale
 DRAWN BY: [Redacted]
 CHECKED BY: [Redacted]
 APPROVED BY: [Redacted]
 ISSUE DATE: [Redacted]
 PROJECT NUMBER: [Redacted]

Series 415 Side Fusion Tapping Saddle

The Side Fusion Branch Saddle provides a cost effective dependable fitting for the water and industrial markets. The branch saddle can be installed with the standard side fusion equipment in the market today.

Meets ASTM D1586, D1599, D1588, and AWWA C906

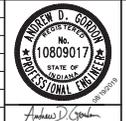
- Branch outlet sizes: 1/2" NPT or (OD) (AWWA thread)
- Main size 4"-64" diameters
- Stone size available 2" or 4" joint head
- Full Pressure Rated 230 PSI
- HDPE Branch Saddle PE 5408 ASTM D3330 (Black) Cell Classification 344544C
- Female Threaded Insert Brass AWWA C905 AWWA C900
- Stainless Compression Ring Grade type 304 or 316

Size	Weight	Material
1/2"	0.10	PE
3/4"	0.15	PE
1"	0.20	PE
1 1/2"	0.30	PE
2"	0.40	PE
3"	0.60	PE
4"	0.80	PE
6"	1.20	PE
8"	1.60	PE
10"	2.00	PE
12"	2.40	PE
14"	2.80	PE
16"	3.20	PE
18"	3.60	PE
20"	4.00	PE
24"	4.80	PE
30"	6.00	PE
36"	7.20	PE
42"	8.40	PE
48"	9.60	PE
54"	10.80	PE
60"	12.00	PE

Carmel Utilities
 3450 W. 131st. Street
 Carmel, IN 46024
 Phone: 317-733-2855
 Fax: 317-733-2853

CARMEL WATER STANDARD DETAILS
 TITLE: POLY-CAM SIDE FUSION TAPPING SADDLE
 DATE: April 2019
 SCALE: No Scale
 DRAWN BY: [Redacted]
 CHECKED BY: [Redacted]
 APPROVED BY: [Redacted]
 ISSUE DATE: [Redacted]
 PROJECT NUMBER: [Redacted]

SCALE	VERIFICATION	DRAWN BY	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
1" = 1"	SCALE VERIFICATION	JRW				
	CHECKED BY	DED				
	APPROVED BY	ADG				
	ISSUE DATE	AUGUST 2019				
	PROJECT NUMBER	206518-04-002				



WATER SYSTEM IMPROVEMENTS
 CITY OF CARMEL UTILITIES
 DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

MISCELLANEOUS DETAILS

SHEET NO. **53**
 TOTAL SHEETS **56**

D:\Drawing - J:\Carmel\Projects\20618-Carmel - Water System Improvements\CAD\04-02\20618-Carmel - Water System Improvements\DWG\20618-04-002.dwg, 11/10/18, 11:43:06 AM, L:\Users\jdedon\My Documents\20618-04-002.dwg, 11/10/18, 11:43:06 AM, L:\Users\jdedon\My Documents\20618-04-002.dwg

The specified equipment shall be compatible with the site below.

SIZE	HEIGHT	LENGTH
4"	18"	17 1/4"
6"	21"	17 1/4"
8"	24"	17 1/4"
10"	27"	19 1/4"
12"	29"	19 1/4"

- The EZ Valve shall be capable of generous right assembly to exterior of the pipe to which it is to be engaged in a working position not to exceed 250 PSI.
- The EZ Valve assembly shall be designed so to be easily opened 120 degrees perpendicular across the top of the pipe, which allows an easy (2) operators rubber gaskets, constructed of EPDM or NBR, by using a perpendicular easy hand mechanism, allows for quick.
- The EZ Valve shall be constructed of a true (2) pieces, Double line casting (1) top & bottom to be total together, using stainless steel valve manufacturer to the stainless steel specification of 304 vls steel that meet to same standard and are carbon steel.
- The EZ Valve shall meet or exceed AWWA Specification 200 for Double Seat Valve suitable for double valve service.
- The Double Seat Gate shall have a stainless rubber seal 3/16 degrees around the gate and be responsible to the 10 (Double Diameter) of the pipe.
- The valve stem shall be made of stainless steel 1 CR 12, with a tensile strength of 60,000psi.
- The valve body shall have an Antiseek™ impregnated epoxy coating which conforms to NSF-61. The coating shall be applied and adhere recessed and it shall be blue in color.
- The EZ Valve shall use stainless steel fasteners joining the Valve Housing to the Valve cap casting, unless otherwise noted in assembly drawings.
- The Fastener Fasteners, (MS) Diagonal around the Valve Casting shall be constructed of stainless steel 304.
- The valve shall be UL and NSF-61 compliant.

Carmel Utilities
3400 N. 17th Street, Carmel, IN 46017
Phone: 317-733-2855, Fax: 317-733-2853
CARMEL WATER STANDARD DETAILS
EZ VALVE
REV: 01
DATE: April 2019
SCALE: No Scale
DRAWN BY: [Redacted]
CHECKED BY: [Redacted]
APPROVED BY: [Redacted]
ISSUE DATE: AUGUST 2019
PROJECT NUMBER: 20618-04-002

TYPICAL HYDRANT CONNECTION USING AN ANCHOR TEE AND ANCHOR COUPLING TO RESTRAIN THE HYDRANT GATE VALVE AND THE HYDRANT TO THE WATER MAIN

Carmel Utilities
3400 N. 17th Street, Carmel, IN 46017
Phone: 317-733-2855, Fax: 317-733-2853
CARMEL WATER STANDARD DETAILS
DUCTILE IRON ANCHOR COUPLING
REV: 01
DATE: April 2019
SCALE: No Scale
DRAWN BY: [Redacted]
CHECKED BY: [Redacted]
APPROVED BY: [Redacted]
ISSUE DATE: [Redacted]
PROJECT NUMBER: [Redacted]

ALPHA ROMAC VALVE AND HYDRANT

Carmel Utilities
3400 N. 17th Street, Carmel, IN 46017
Phone: 317-733-2855, Fax: 317-733-2853
CARMEL WATER STANDARD DETAILS
ALPHA ROMAC VALVE AND HYDRANT
REV: 01
DATE: April 2019
SCALE: No Scale
DRAWN BY: [Redacted]
CHECKED BY: [Redacted]
APPROVED BY: [Redacted]
ISSUE DATE: [Redacted]
PROJECT NUMBER: [Redacted]

SPECIAL JOINT RESTRAINT

SIZE	DIMENSIONAL	ADAPTOR	PAK	TOTAL		
INCH	INCH	WEIGHT	WEIGHT	HEIGHT		
	O. D.	T. L.	Net	Net		
3	3.96	.34	4	6	5	11
4	4.80	.35	4	8	8	16
6	6.50	.37	4	16	9	25
8	9.05	.39	4	19	10	29
10	11.10	.40	4	29	13	42
12	13.20	.43	4.5	31	15	46
14	15.30	.48	6.75	55	16	71
16	17.40	.51	6.75	60	20	80
18	19.50	.55	6.75	92	16	108
20	21.60	.58	6.75	101	20	121
24	25.80	.62	6.75	117	28	135
30	32.60	.66	7.75	153	68	221
36	38.30	.75	7.75	228	68	306

Carmel Utilities
3400 N. 17th Street, Carmel, IN 46017
Phone: 317-733-2855, Fax: 317-733-2853
CARMEL WATER STANDARD DETAILS
FOSTER ADAPTER
REV: 01
DATE: April 2019
SCALE: No Scale
DRAWN BY: [Redacted]
CHECKED BY: [Redacted]
APPROVED BY: [Redacted]
ISSUE DATE: [Redacted]
PROJECT NUMBER: [Redacted]

FIRE HYDRANT ASSEMBLY

Carmel Utilities
3400 N. 17th Street, Carmel, IN 46017
Phone: 317-733-2855, Fax: 317-733-2853
CARMEL WATER STANDARD DETAILS
FIRE HYDRANT ASSEMBLY
REV: 01
DATE: April 2019
SCALE: No Scale
DRAWN BY: [Redacted]
CHECKED BY: [Redacted]
APPROVED BY: [Redacted]
ISSUE DATE: [Redacted]
PROJECT NUMBER: [Redacted]

TRENCH SCHEDULE

W"	T ₁ "	T ₂ "	T ₃ "
6"	2'-0"	2'-0"	4"
8"	2'-0"	2'-0"	4"
10"	2'-0"	2'-0"	4"
12"	2'-0"	2'-0"	4"
15"	3'-0"	2'-0"	5"
18"	3'-0"	3'-0"	5"
21"	3'-0"	3'-0"	5"
24"	4'-0"	3'-0"	6"
30"	5'-0"	4'-0"	6"
36"	6'-0"	5'-0"	6"
42"	6'-11"	6'-0"	6"
48"	7'-4"	6"	6"
54"	8'-0"	6"	6"
60"	8'-0"	6"	6"
66"	8'-11"	6"	6"
72"	9'-0"	6"	6"
78"	10'-0"	6"	6"

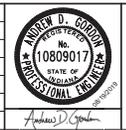
TRENCH DETAIL FOR WATER MAIN (12")

Carmel Utilities
3400 N. 17th Street, Carmel, IN 46017
Phone: 317-733-2855, Fax: 317-733-2853
CARMEL WATER STANDARD DETAILS
TRENCH DETAIL & TRENCH SCHEDULE
REV: 01
DATE: April 2019
SCALE: No Scale
DRAWN BY: [Redacted]
CHECKED BY: [Redacted]
APPROVED BY: [Redacted]
ISSUE DATE: [Redacted]
PROJECT NUMBER: [Redacted]

SMOOTH CORR METER PITS AND RISER

Carmel Utilities
3400 N. 17th Street, Carmel, IN 46017
Phone: 317-733-2855, Fax: 317-733-2853
CARMEL WATER STANDARD DETAILS
SMOOTH CORR METER PITS AND RISER
REV: 01
DATE: April 2019
SCALE: No Scale
DRAWN BY: [Redacted]
CHECKED BY: [Redacted]
APPROVED BY: [Redacted]
ISSUE DATE: [Redacted]
PROJECT NUMBER: [Redacted]

SCALE	VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING		CHECKED BY	DED				
		APPROVED BY	ADG				
		ISSUE DATE	AUGUST 2019				
		PROJECT NUMBER	20618-04-002				

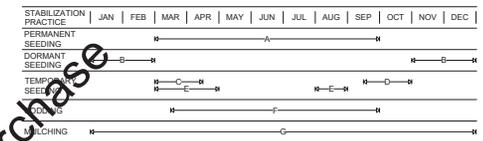


WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

MISCELLANEOUS DETAILS

SHEET NO. **54**
TOTAL SHEETS **56**

SEASONAL SOIL PROTECTION CHART



- 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 120 LB/ACRE (1.5" PLANTING DEPTH)
- E = ANNUAL RYEGRASS 40 LB/ACRE (1/4" PLANTING DEPTH)
- F = SOD
- G = ANCHORED STRAWHAY (2 TONS/ACRE) OR WOOD FIBER/CELLULOSE (1 TON/ACRE)

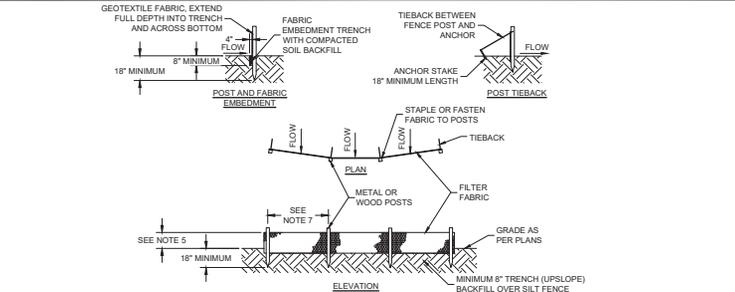
- NOTES:
- IRRIGATION NEEDED DURING MAY THROUGH SEPTEMBER.
 - IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.
 - ANCHORED MULCH IS REQUIRED FOR PERMANENT, DORMANT AND TEMPORARY SEEDING.
 - OPTIMUM SEEDING DATES PROVIDED. DATES MAY BE EXTENDED OR SHORTENED BASED ON PROJECT LOCATION.
 - SEED MIXTURES 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 ON-SITE PERSON WHO IS RESPONSIBLE FOR IMPLEMENTING THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP SHOULD BE ON-SITE 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 SLOPE 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, SOODING, 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 - PERMANENT SEEDING, MULCHING, SOODING, RIPRAP.	THIS IS THE LAST CONSTRUCTION PHASE. STABILIZE ALL DISTURBED AREAS, INCLUDING BORROW AND SPOIL AREAS AND REPAIR ALL TEMPORARY CONTROL MEASURES. A UNIFORM DENSITY OF 70% VEGETATED COVER IS REQUIRED.

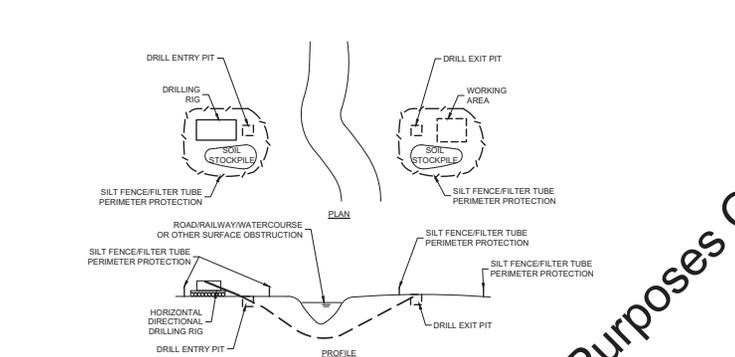
EROSION CONTROL SCHEDULE

SCALE: NONE



- NOTES:
- SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF WOVEN OR NON-WOVEN GEOTEXTILE FABRIC AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:
 - TEXTILE STRENGTH AT 20% (MAXIMUM) ELONGATION, PER ASTM D4832.
 - WOVEN EXTRA STRENGTH - 50 LB/LIN INCH (MINIMUM), NON-WOVEN EXTRA STRENGTH - 70 LB/LINCH (MINIMUM).
 - WOVEN STANDARD STRENGTH - 30 LB/LIN INCH (MINIMUM), NON-WOVEN STANDARD STRENGTH - 50 LB/LINCH (MINIMUM).
 - APPARENT OPENING SIZE (AOS) (U.S. SIEVE) - NO. 30 PARTICLE SIZE OF 0.6 mm (MAXIMUM), ASTM D4751.
 - PERMITTIVITY $0.05 \text{ in}^2 \text{ (MAXIMUM), ASTM D4891}$.
 - POSTS FOR SILT FENCES SHALL BE EITHER 2"x2" SQUARE WOOD OR EQUIVALENT METAL POSTS WITH A MINIMUM LENGTH OF 5'. METAL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.
 - ANCHOR STAKES FOR SILT FENCES SHALL BE 1"x2" WOOD (PREFERRED) OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 18".
 - WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 42" IN HEIGHT, A MINIMUM OF 14 GAUGE, AND SHALL HAVE A MAXIMUM MESH SPACING OF 6".
 - THE HEIGHT OF THE BARRIER SHALL BE A MINIMUM OF 18" AND A MAXIMUM OF 30".
 - THE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER FABRIC SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND SECURELY SEALED.
 - POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 18"). WHEN STANDARD STRENGTH FABRIC IS USED WITH THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6'.
 - THE SPACING OF TIEBACKS SHALL EQUAL THE SPACING OF THE POSTS. ADDITIONAL POST DEPTH OR TIEBACKS MAY BE REQUIRED IN UNSTABLE SOILS.
 - A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4" WIDE AND A MINIMUM OF 6" DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
 - WHEN STANDARD STRENGTH FILTER FABRIC IS USED WITH A WIRE MESH SUPPORT FENCE IT SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY 1/4" WIRE STAPLES. THE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2" AND SHALL NOT EXTEND MORE THAN 36" ABOVE THE ORIGINAL GROUND SURFACE.
 - A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4" WIDE AND A MINIMUM OF 6" DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
 - WHEN STANDARD STRENGTH FILTER FABRIC IS USED WITH A WIRE MESH SUPPORT FENCE IT SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY 1/4" WIRE STAPLES. THE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2" AND SHALL NOT EXTEND MORE THAN 36" ABOVE THE ORIGINAL GROUND SURFACE.
 - WHEN EXTRA STRENGTH FILTER FABRIC OR BURLAP AND POST SPACING IS LESS THAN THE MAXIMUM SPECIFIED SPACING OF 6', THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED.
 - BACKFILL THE TRENCH AND COMPACT THE SOIL OVER THE FILTER FABRIC.
 - REMOVE SILT FENCES WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
 - SILT FENCE SHALL NOT BE USED AS A DIVERSION AND SHALL NOT BE INSTALLED ACROSS A STREAM, CHANNEL, DITCH, SWALE, ETC.
- MAINTENANCE:
- INSPECT AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. INSPECT AT LEAST ONCE EVERY 7 CALENDAR DAYS.
 - REPLACE OR REPAIR FABRIC IMMEDIATELY IF IT DECOMPOSES OR IS INEFFECTIVE.
 - SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
 - SPREAD ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED AND DRESS TO CONFORM WITH THE FINISHED GRADING.

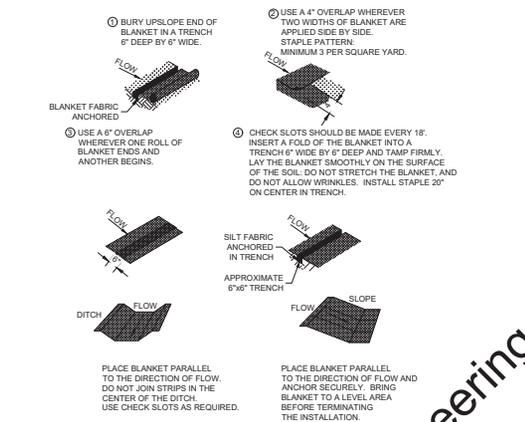
SILT FENCE



- NOTES:
- INSTALL SILT FENCE/FILTER TUBE PERIMETER PROTECTION PRIOR TO ANY EXCAVATION.
 - FILTER WATER FROM BORE PIT DEWATERING, AND DO NOT DIRECTLY DISCHARGE TO ANY DITCH, STREAM, WETLAND OR STORM WATER CONVEYANCE. REFER TO PUMPING BAG DETAIL.
 - PLACE SOIL STOCKPILES WITHIN SILT FENCE/FILTER TUBE PERIMETER BOUNDARY.
 - SOIL FROM STOCKPILES SHALL BE USED FOR BACKFILL OR DISPOSED OF PROPERLY.
 - RESEED AND MULCH ALL DISTURBED SOIL SURFACES.
 - ENVIRONMENTAL PROTECTION TO BE PROVIDED AS NECESSARY TO CONTAIN ANY DRILLING FLUID SPILLS.
- MAINTENANCE:
- REPLACE SILT FENCE/FILTER TUBE PERIMETER AFTER EACH RAINFALL, AND REPAIR IMMEDIATELY.
 - REMOVE SEDIMENT DEPOSITS FROM SILT FENCE/FILTER TUBE PERIMETER IMMEDIATELY.

HORIZONTAL DIRECTIONAL DRILLING

SCALE: NONE



EROSION CONTROL BLANKET

SCALE: NONE

- PRODUCT:
- NORTH AMERICAN GREEN SC150, OR EQUAL.
- NOTES:
- PROTECT THE SLOPES WITH AN EROSION CONTROL BLANKET WHERE CONSTRUCTION DISTURBS SLOPES EQUAL OR STEEPER THAN 3:1.
 - INSPECT FOR EROSION AFTER EACH STORM EVENT DURING VEGETATION ESTABLISHMENT, AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.
 - IF ANY AREAS SHOW EROSION, PULL BACK THAT PORTION OF THE BLANKET, ADD SOIL, RESEED, RELAY AND STAPLE THE BLANKET.
 - CHECK AREAS PERIODICALLY AFTER VEGETATION ESTABLISHMENT.

MECHANICAL PROPERTIES

MECHANICAL PROPERTIES	TEST METHOD	UNITS	INDUSTRY STANDARD
GRAB TENSILE STRENGTH	ASTM D4832	kN (LB)	0.9 (205) X 0.9 (205)
GRAB TENSILE ELONGATION	ASTM D4832	%	50 X 50
PUNCTURE STRENGTH	ASTM D4833	kN (LB)	0.58 (130)
MULLEN BURST STRENGTH	ASTM D798	kPa (PSI)	26.8 (380)
TRAPEZOID TEAR STRENGTH	ASTM D4533	kN (LB)	0.36 (80) X 0.36 (80)
UV RESISTANCE	ASTM D4366	%	70
APPARENT OPENING SIZE	ASTM D4751	Mm (US STD SIEVE)	0.180 (80)
FLOW RATE	ASTM D4491	1MIN/MP (GAL/MIN/FT)	3866 (95)
PERMITTIVITY	ASTM D4491	S ²	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

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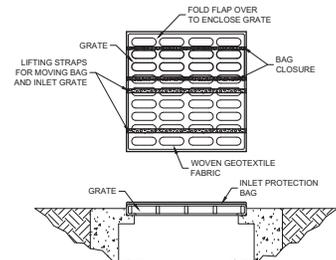
SCALE	VERIFICATION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAS IS ONE INCH LONG ON ORIGINAL DRAWING		CHECKED BY	DED				
		APPROVED BY	ADG				
		ISSUE DATE	AUGUST 2019				
		PROJECT NUMBER	206518-04-002				

W
WESSLER
ENGINEERING
More Than a Project™

WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

EROSION CONTROL DETAILS

SHEET NO. **55**
TOTAL SHEETS **56**

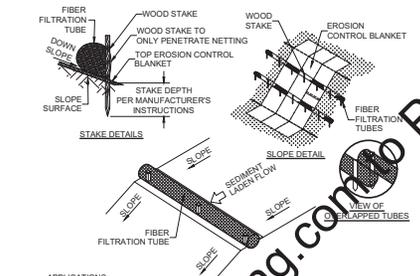


PRODUCT:
1. DANDY BAG, OR APPROVED EQUAL.

INSTALLATION:
1. THE EMPTY INLET PROTECTION BAG SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END.
2. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE.
3. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME.

MAINTENANCE:
1. REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT.
2. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE INLET PROTECTION BAG AS NEEDED.
3. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.

INLET PROTECTION BAG
SCALE: NONE

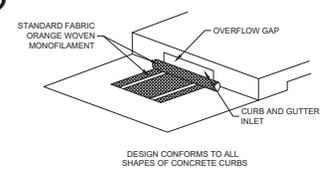


APPLICATIONS:
1. TOP OF SLOPES.
2. AT PROJECT PERIMETER.

INSTALLATION:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. USE THE APPROPRIATE SIZE, LENGTH AND DISTANCE BETWEEN TUBES AS SPECIFIED BY THE MANUFACTURER.
3. ENTRENCH PER MANUFACTURER'S INSTRUCTIONS.

MAINTENANCE:
1. REMOVE ALL ACCUMULATED SEDIMENT WHEN IT REACHES 1/4 THE HEIGHT OF THE TUBE.
2. REPAIR ERODED AND DAMAGED AREAS.
3. IF PONDING BECOMES EXCESSIVE DUE TO REDUCED FILTERING CAPACITY, REMOVE THE TUBE AND EITHER RECONSTRUCT OR REPLACE WITH NEW PRODUCT.
4. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.

FIBER FILTRATION TUBES - SLOPE
SCALE: NONE

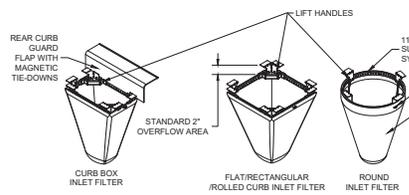


PRODUCT:
1. DANDY CURB SACK, OR APPROVED EQUAL.

INSTALLATION:
1. REMOVE THE GRATE FROM THE CATCH BASIN AND STAND ON END.
2. CRADLE THE GRATE BETWEEN THE UPPER AND LOWER STRAPS.
3. INSERT THE GRATE INTO THE INLET WITH THE LIFTING DEVICES. LOWER BACK EDGE WITH TUBE INTO PLACE. TUBE SHOULD PARTIALLY BLOCK THE CURB HOOD OPENING.

MAINTENANCE:
1. REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT.
2. REMOVE THE SEDIMENT THAT HAS ACCUMULATED WITHIN THE FABRIC AS NEEDED.
3. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.

CURB AND GUTTER INLET PROTECTION
SCALE: NONE



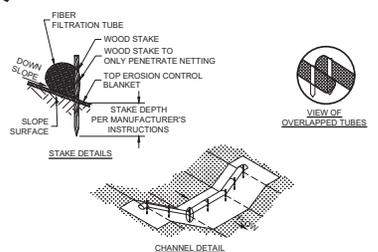
INLET FILTER SPECIFICATIONS		
WOVEN GEOTEXTILE SEDIMENT BAG SPECS (2 FT VOL)		
MATERIAL PROPERTY	TEST METHOD	VALUE (AVG)
GRAB TENSILE	ASTM D4832	235 X 275
PUNCTURE STRENGTH	ASTM D4833	135 LB
TRAPEZOIDAL TEAR	ASTM D4533	75 LB
UV RESISTANCE	ASTM D4355	90%
APP OPEN SIZE (AOS)	ASTM D4751	NO. 20 SIEVE
PERMITTIVITY	ASTM D4491	1.5 S ⁻¹
WATER FLOW RATE	ASTM D4491	200 GPM/SOFT
SEDIMENT REMOVAL EFFICIENCY (8% MIX)	ASTM D7351	82%

SOURCE: FLEX STORM INLET FILTER

INSTALLATION:
1. REMOVE THE GRATE FROM THE DRAINAGE STRUCTURE.
2. CLEAN THE LEDGE DRAINAGE STRUCTURE TO ENSURE IT IS FREE OF STONE AND DIRT.
3. DROP IN THE INLET FILTER THROUGH THE CLEAR OPENING. MAKE SURE THE SUSPENSION SYSTEM REST FIRMLY ON THE SURFACE OF THE GRATE.
4. RE-ASSEMBLE GRATE.
5. FOR CURB BOX INLET FILTERS: INSERT INLET FILTER AS DESCRIBED ABOVE IN COMBINATION WITH THE CURB BOX FLAP IN ACCORDANCE WITH THE MANUFACTURER'S COMMENTATIONS.

MAINTENANCE:
1. 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.
2. 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.
3. REMOVE ANY CAKED ON SILT FROM THE SEDIMENT BAG AND REVERSE FLUSH THE BAG FOR OPTIMAL FILTRATION.
4. REPLACE THE BAG IF THE INNER FILTER MEMBRANE IS TORN.

INLET FILTER PROTECTION
SCALE: NONE

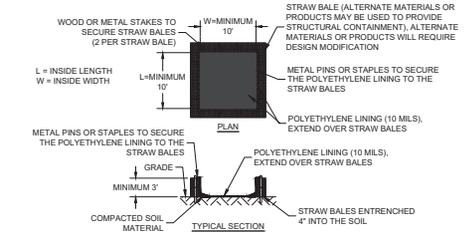


APPLICATIONS:
1. DOWN-GRADE OF A PROJECT LIMITS.
2. ACROSS DITCHES OR SWALES.
3. TO SLOW FLOWS AND FILTER SEDIMENTS.

INSTALLATION:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. USE THE APPROPRIATE SIZE, LENGTH AND DISTANCE BETWEEN TUBES AS SPECIFIED BY THE MANUFACTURER.
3. ENTRENCH PER MANUFACTURER'S INSTRUCTIONS.

MAINTENANCE:
1. REMOVE ALL ACCUMULATED SEDIMENT WHEN IT REACHES 1/4 THE HEIGHT OF THE TUBE.
2. REPAIR ERODED AND DAMAGED AREAS.
3. IF PONDING BECOMES EXCESSIVE DUE TO REDUCED FILTERING CAPACITY, REMOVE THE TUBE AND EITHER RECONSTRUCT OR REPLACE WITH NEW PRODUCT.
4. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.

FIBER FILTRATION TUBES - CHANNEL
SCALE: NONE



NOTES:
1. LOCATE WASHOUTS AT LEAST 50' FROM ANY CREEKS, WETLANDS, DITCHES, KARST FEATURES, OR STORM DRAIN CONVEYANCES.

WASHOUT PROCEDURES:
1. 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.
2. 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.
3. 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.
4. DO NOT BACK FLUSH EQUIPMENT AT THE PROJECT SITE.
5. DO NOT USE ADDITIVES WITH WASH WATER.
6. DO NOT WASH OUT OR DRAIN WASTE WATERS TO STORM DRAINS, WETLANDS, STREAMS, RIVERS, CREEKS, DITCHES OR STREETS.

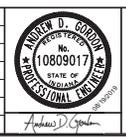
MAINTENANCE:
1. MAINTENANCE REQUIREMENTS PROVIDED IN SPECIFICATIONS.

CONCRETE WASHOUT
SCALE: NONE

SCALE	REVISION	DRAWN BY	JRW	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
1" = 10'	1	DED					
	2	ADG					
	3						
	4						
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	8						
	9						
	10						

SCALE: 1" = 10'
BAR IS ONE INCH LONG ON ORIGINAL DRAWING

PROJECT NUMBER:
206518-04-002



WATER SYSTEM IMPROVEMENTS
CITY OF CARMEL UTILITIES
DIVISION A & B - UNSERVED AREAS CARMEL WEST AND HOME PLACE

EROSION CONTROL DETAILS

SHEET NO. **56**
TOTAL SHEETS **56**